FUJIFILM

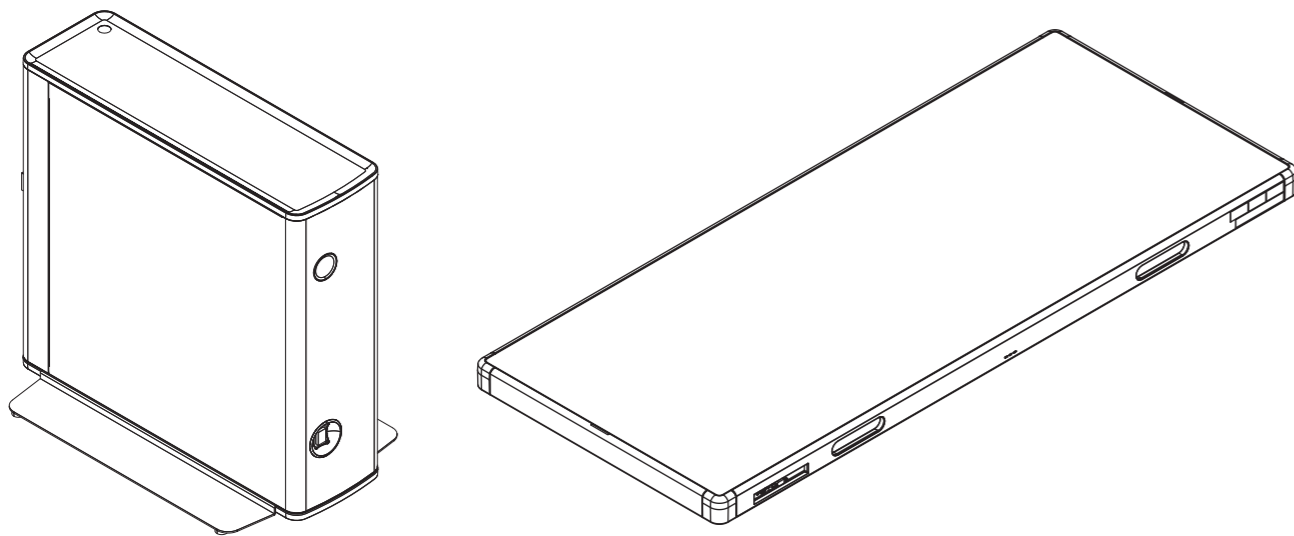# DR-ID 1300

DR-ID 1300PU

Service Manual

The relationship between mR (milliroentgen), which is the unit of radiation, and µC/kg (micro-coulomb/kilogram), which is the SI derived unit of radiation, is as follows.

1 mR = 0.258 µC/kg

Document No.	018-234-06E
Version 06 -	Mar. 31, 2020

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Handling of This Manual

About This Manual

■ Scope

The Service Manual is applicable to the digital radiography DR-ID 1300.

```
( DR-ID 1300 )
        ├DR-ID 1300PU
        │      ├DR-ID 1300MP (Power supply unit)
        │      ├DR-ID 1305SE (Flat panel sensor)
        │      └DR-ID 1200MC (Control cabinet)
        └DR-ID 300CL (Image processing unit)
```

Precautions for Handling of This Manual

1. FUJIFILM Corporation reserves all rights related to this manual.
2. This manual should be accessible only to technical service personnel authorized by FUJIFILM Corporation.
3. Since this manual contains confidential information of FUJIFILM Corporation, such as the internal structure of the product, appropriate measures should be taken to prevent illegal or inappropriate disclosure and/or use of this manual.
4. The following conducts are prohibited without prior written approval of FUJIFILM Corporation:
   - Copy or transcribe a whole or part of the contents of this manual.
   - Disclose, furnish, lend, and/or transfer a whole or part of the contents of this manual to persons other than the afore-described technical service personnel.
   - Use a whole or part of the contents of this manual for purposes other than technical servicing of the product.
5. Portions of the descriptions in this manual may be revised due to improvements on the product.

About Notation in the Manual

■ Notation of Warnings, Cautions, etc.

The notation formats of "warning," "caution," "instruction," "note," and "reference" are shown below.

⚠ *WARNING*

Used when death or serious injury may occur if the instruction is not observed.

⚠ *CAUTION*

Used when minor or medium levels of physical injury may be incurred if the instruction is not observed.
Also used when the machine may suffer serious trouble (such as unrecoverable or difficult-to-recover trouble).

◆ *INSTRUCTION* ◆

Used when the machine may suffer damage, or any failure or malfunction may occur, if the instruction is not observed.

◆ *NOTE* ◆

Used to indicate the matters that need attention during steps of the procedure.

◇ *REFERENCE* ◇

Used to indicate terminology or supplemental explanations.

■ Notation of Unit Symbols

For notation of unit symbols, metric units set forth in the International Systems of Units (SI) are used, as a rule. However, metric units that are allowed in the Measurement Law, not in the SI, are used in some cases.

■ Indication of Refer To

The "☞" mark is used to indicate the chapter or section you should refer to.
Its format is as indicated below.

☞ **{MC:1._Precautions for Check, Replacement, and Adjustment}**

■ Notation in the Manual

This service manual may use the following notations.

Name	Notation
Console Advance	DR-ID 300CL, DX Console, Console, CL, CSL
Image Reader Unit	RU
Flat panel sensor	SE, Panel, FPD
RU PC-TOOL	PC-TOOL

■ Notation of Symbols

- Check/Adjustment indicator: Indicates that it is necessary to check or adjust the installation location when the part or component removed is to be reinstalled. This indicator is placed in the illustration that depicts the procedures for removing/installing the parts or components.
When you see this indicator in an illustration, see "■ Check/Adjustment Procedures" or "● CHECK" in a later section.

CHECK

- Half-punch indicator: Indicates that it is necessary to align the half-punches when installing the parts or components. However, it is not indicated for the half-punches for improving ease of assembly or preventing erroneous assembly procedures.

FIT ON

- 3B: Indicates that screw-locking bond needs to be applied to screw sections of installed parts/components.
Recommended screw-locking bond: Three Bond 1401B

Servicing Instruments and Tools That Require Inspection/Calibration

The machine should be installed and serviced by use of servicing instruments and tools that have been regularly inspected and calibrated as appropriate.

If the machine were serviced using servicing instruments and tools that have not been inspected and calibrated, proper performance of the machine could not be guaranteed.

Servicing instruments and tools that require inspection/calibration are as listed below.

The inspection/calibration should be planned and performed in accordance with the specifications and operation manuals of the applicable servicing instruments and tools.

■ Instruments and Tools That Require Inspection/Calibration

Name	Inspection	Calibration
Dosimeter	-	○
Steel rule (150 mm)	○	-
Steel rule (300 mm)	○	-
Digital multimeter	○	○
Calipers	○ (∗)	-

∗: A block gauge for use in inspection requires calibration.

DR-ID 1300 / DR-ID 1300PU Service Manual - Contents

Safety Precaution

Product Specifications

Machine Description (MD)

Troubleshooting (MT)

Checks, Replacement and Adjustment of Parts (MC)

Maintenance Utility (MU1) (DR Maintenance Software)

Maintenance Utility (MU2) (RU PC-TOOL)

Service Parts List (SP)

Preventive Maintenance (PM)

Installation (IN)

Installation (IN1)
(DR Maintenance Software)

Installation (IN2) (RU PC-TOOL)

Installation (AppxIN)

Performance Check (PC)

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DR-ID 1300 / DR-ID 1300PU
Service Manual

Safety Precaution

1. Safety Precautions

Warnings, operating precautions, and instructions should be observed to avoid possible physical hazards and serious accidents that may occur during installation and servicing.
Labels and name plates that describe relevant precautions are attached to the machine. The instructions on such labels and name plates should also be observed while installation/servicing procedures are performed.

1.1 General Precautions

■ Electrical System Components/Parts

- Be sure to turn OFF the circuit breaker on the machine before an installation and servicing. If an installation and servicing procedure is performed while the power is ON, you may experience an electric shock, burn, short circuit, or machine malfunction. Since some parts are not fully discharged (such as the power supply) or remain at a high temperature even after the power is turned OFF, exercise due care not to touch them. Installation or servicing procedures that are to be performed with the power turned ON must be completed while exercising due care to avoid electric shock and short circuit, as instructed in this Service Manual.
- Fully exercise care not to splash water on the SE.
- When servicing a board, be sure to wear an antistatic wristband to ground your body. If your body is not grounded, static buildup on your body may damage electronic components on the board.

■ Heavy Objects

When removing or installing a heavy object, pay due attention to your working posture and get an assistant(s) as needed. Also, use suitable ancillary gear as appropriate.

■ Safety Devices

Always keep effective, the safety features of the safety devices such as fuses, circuit breakers and covers. Do not make any alternation or modification that may impair their functionality.

■ Grounding

Safety provided by grounding is assured by properly establishing power cable and additional protective ground wire connections and securing the parts with retaining screws. To maintain safety, ensure that the parts and retaining screws removed for servicing purposes are restored to states existing upon installation. After the parts and retaining screws are restored to the above-mentioned states, follow the procedures set forth in this Service Manual to verify that the retaining screws are securely tightened to properly secure the parts.

■ Screws

- All existing screw connections must be tightened sufficiently firmly, but they may not be overstressed when tightening. Screw connections with incorrect stress can result in physical injury or property damage.
- Damaged or missing screws may be replaced only with our specified ones.

■ Lithium Batteries

Handling of lithium batteries mounted on the MPC54B board needs sufficient attention, since chemically active lithium metal and combustible materials such as organic electrolyte are used. Observe the instructions in the Service Manual for handling and disposal of the lithium batteries.

■ Handling Hazardous Materials

Hazardous materials are designated as substances which can ignite or explode or which are toxic, injurious to health, corrosive or irritating. Their properties together with the relevant hazards and protective measures are identified clearly by symbols. Therefore, the required protective measures must be complied with to secure safety before handling the hazardous materials.

■ Special Exposure Stand

Use this product in combination with an exposure stand for the digital radiography DR-ID 1300 or other equipment with the same capability.
Refer to the following section for notes on the exposure stand.

☞ **{Spec:10._Exposure Stand}**

■ Other Precautions

- When performing a servicing procedure while the power is turned ON with covers removed, carefully proceed with the procedure while observing the instructions described in this Service Manual. Further, exercise care not to drop screws or other fasteners into the machine. If any fastener is dropped, be sure to collect it.
- Keep clean the product name plates, safety standards labels, product serial number labels, caution labels, and other labels attached to the machine, and do not peel them or put another name plate or label over them.
- Upon completion of the servicing procedures, put covers, screws, and other fasteners back to their original locations and secure them in place.
- Replace a damaged or worn component with the component specified in the manual.

1.2 Precautions on Infection

The machine can be contaminated by infected blood or other bodily fluids.
Comply with safety information on protection against infectious diseases when
servicing the machine. Do not touch blood or other biological fluids.
If not observed, severe injury and even death may result.

1.3 Requirement

1.3.1 DR-ID 300CL (Computer)

IEC60950-1 Approval

1.3.2 Monitor

IEC60950-1 Approval

1.4 Precautions on the Patient Environment

Before the machine is installed, the supervisor at the machine installation site (the hospital's director) should check to see whether the machine is installed in the patient environment or not.

■ Definition of the Patient Environment, Medically-Used Room and Non-Medically Used Room

● Patient environment

The patient environment is defined as an area where a patient gets medical practice (treatment, tests, diagnosis or monitoring), measuring 2.5 m in all horizontal directions from the patient's body and 2.5 m in height during the medical practice. It excludes the space traveled by the patient to reach the medically-used room.

<For bed-type machine>

<For stand-type machine>
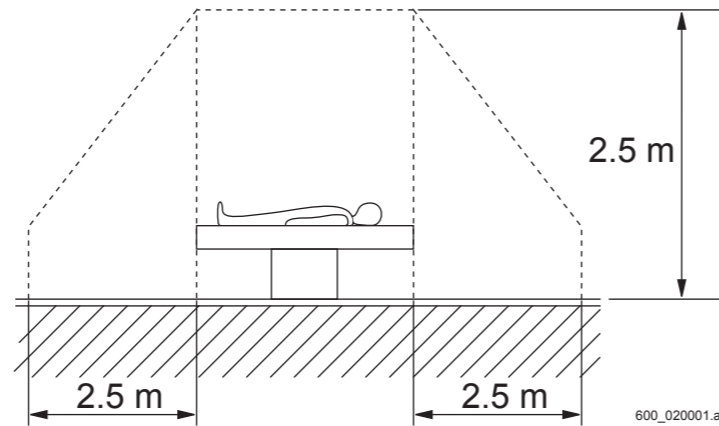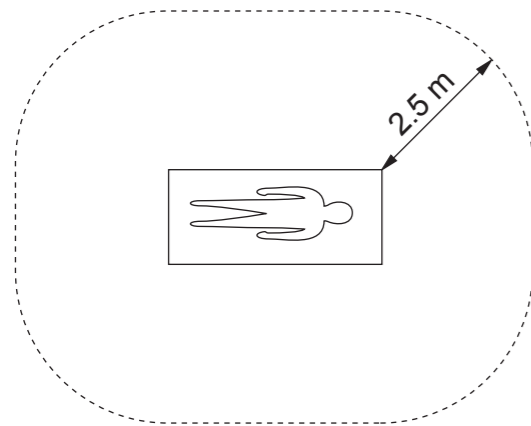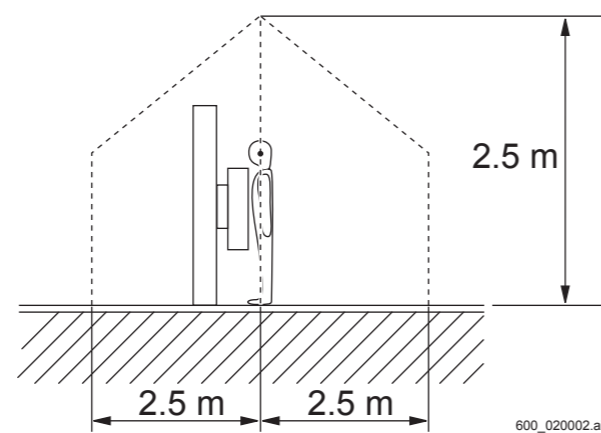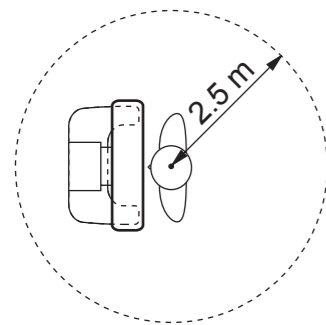
● Medically-used room

Room equipped with protective grounding (medical use outlet or medical use grounding terminal) implemented by the medical grounding method. The protective grounding inside the medically-used room is equipotential, and the protective grounding of this medically-used room is equipotential to that in the other medically-used room. Generally, a portion of the medically-used room is the patient environment.

● Non-medically used room

Areas outside the medically-used room are considered the non-medically used room.

1.5 Cautions on Connection

Do not connect unspecified instruments.

1.5.1 Cautions on the MP Power Cable

The power cables which can be connected with the MP depend on the installation site.
<Japan>
Use supplied power cables.
Do not use other power cables.
<Outside Japan>
Use specified power cables.
Do not use other power cables.
Refer to the following section for the cable specifications.

☞ **{Spec:6._Electrical Specifications}**

1.5.2 Cautions on the X-Ray Shot Cable

Measure the voltage between the cables connecting to the RDY1-$\overline{\text{RDY1}}$ and the RDY2-$\overline{\text{RDY2}}$ terminals in all techniques before connecting the X-ray shot cable to the terminal block of the AC bucky relay unit.

Check to make sure that the measured voltage conforms to the coil voltages (100/110 VAC, 110/120 VAC, 200/220 VAC and 220/240 VAC) of the relay to be used.

If the voltage between cables differs from the coil voltage of the relay, commission the service personnel of the X-ray equipment to check the cable connection.

If erroneous connection is made, the machine might get damaged.

1.6 Cautions on the Table Tap and Extension Cord

Do not use a table tap or an extension cord to supply the power to the system components.

1.7 Safety and Other Symbols

1.7.1 Japan

The safety symbols applied in the machine are listed below:

Symbol	Description
600_020027.ai	Attention, consult ACCOMPANYING DOCUMENTS.
600_020028.ai	OFF (To indicate disconnection from the mains, at least for mains switches or their positions, and all those cases where safety is involved.)
600_020029.ai	ON (To indicate connection to the mains, at least for mains switches or their positions, and all those cases where safety is involved.)
600_020030.ai	Protective earth (ground)
600_020031.ai	Alternating current
600_020032.ai	This symbol indicates that the equipment is a Type B Applied Part.
600_020033.ai	Ready (To indicate the machine is ready for operation.)
600_020034.ai	Electric energy
600_020035.ai	General mandatory action sign
1200_020016.ai	No stepping on surface
1300_020022.ai	Caution for local load

1.7.2 Outside Japan

The safety symbols applied in the machine are listed below:

Symbol	Description
CE 1300_020023.ai	This symbol indicates compliance of the equipment with Directive 93/42/EEC.
CE 0123 600_020042.ai	This symbol indicates compliance of the equipment with Directive 93/42/EEC.
EC REP 1300_020028.ai	Indicates the Authorized representative in the European Community.

Symbol	Description
600_020027.ai	Attention, consult ACCOMPANYING DOCUMENTS.
600_020028.ai	OFF (To indicate disconnection from the mains, at least for mains switches or their positions, and all those cases where safety is involved.)
600_020029.ai	ON (To indicate connection to the mains, at least for mains switches or their positions, and all those cases where safety is involved.)
600_020030.ai	Protective earth (ground)
600_020031.ai	Alternating current
600_020032.ai	This symbol indicates that the equipment is a Type B Applied Part.
600_020033.ai	Ready (To indicate the machine is ready for operation.)
600_020034.ai	Electric energy
600_020035.ai	General mandatory action sign
600_020043.ai	This symbol indicates that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC) and your national law. This product should be handed over to a designated collection point. Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about waste, please contact FUJIFILM dealers.
600_020044.ai	Year of manufacture
1300_020026.ai	Manufacturer
SN 1300_020027.ai	Serial Number
600_020097.ai	Environmentally Friendly Use Period (EFUP)
600_020100.ai	Refer to Instruction Manual/Booklet
1200_020016.ai	No stepping on surface
1300_020022.ai	Caution for local load

1.8   Precautions on the MP Installation

The surface temperature of the MP will be raised only when the MP is malfunctioning.
Install the MP in an area that is located away from the floor path into the exposure
chamber.

2. Labels

2.1 Rating Indication Labels and Caution Labels

2.1.1 SE

■ 1305SE

1300_020001.ai
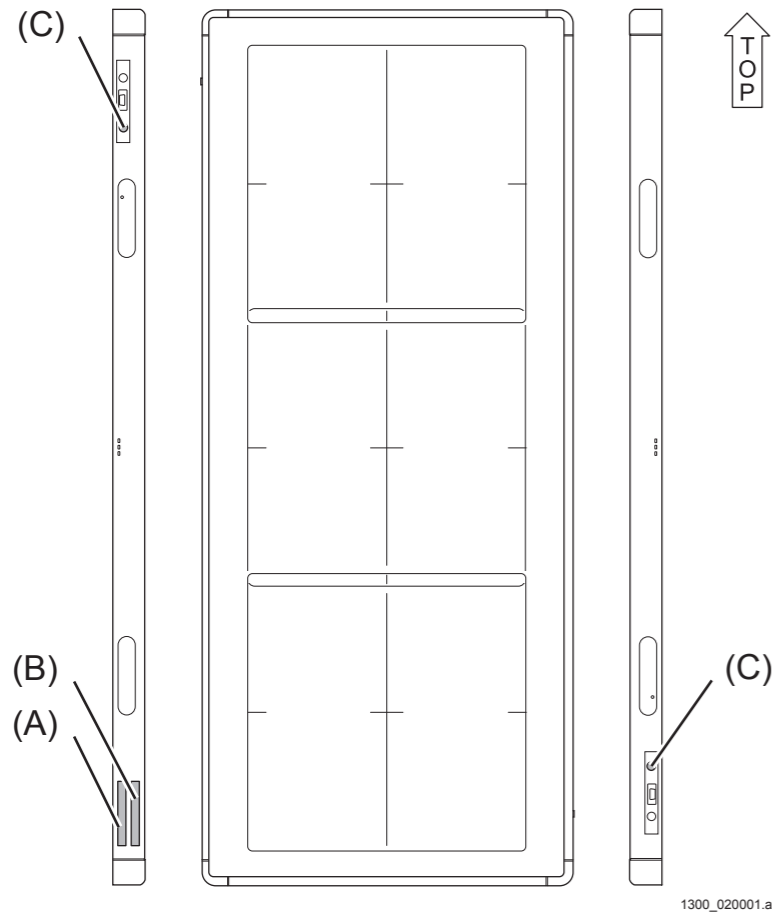
● **Japan**

(A) SE identification label

1300_020002.ai

(B) Panel ID label

1300_020024.ai

(C) Protective earth (ground) Label

600_020041.ai
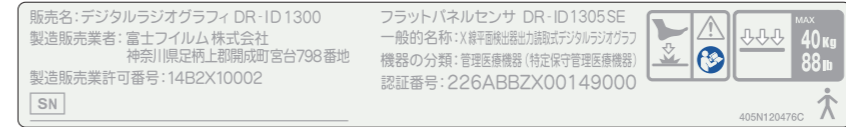
● **Outside Japan**

(A) SE system label

1300_020007E.ai

(B) Panel ID label

1300_020024.ai

(C) Protective earth (ground) Label

600_020041.ai
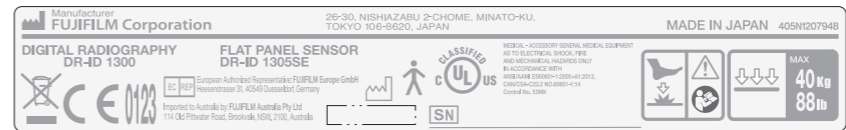
2.1.2 MP

■ MP Left-Hand Side
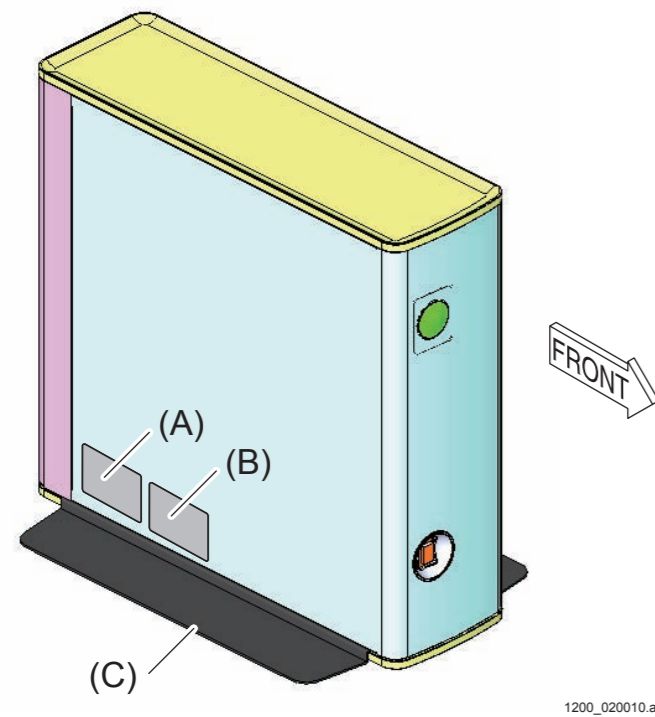
1200_020010.ai

● Japan

(A) PU pharmaceutical certification label

FUJIFILM Corporation

販売名 ： デジタルラジオグラフィ DR-ID 1300
製造販売業者： 富士フイルム株式会社
　　　　　　　神奈川県足柄上郡開成町宮台798番地
製造販売業許可番号： 14B2X10002
一般的名称：X線平面検出器出力読取式デジタルラジオグラフ
機器の分類： 管理医療機器（特定保守管理医療機器）
認証番号 ： 226ABBZX00149000
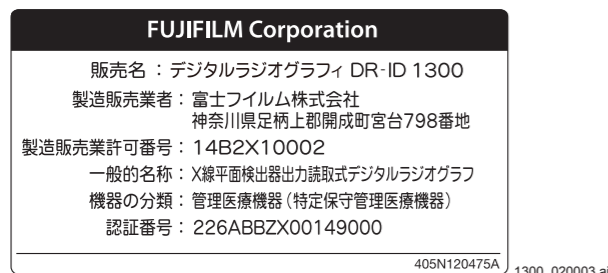
405N120475A　1300_020003.ai

(B) PU rating indication label

FUJIFILM Corporation

MODEL **DR-ID 1300PU**

定格入力　　　　　　50-60Hz
　　　　　　　　　　100 V ～
　　　　　　　　　　2 A

SN
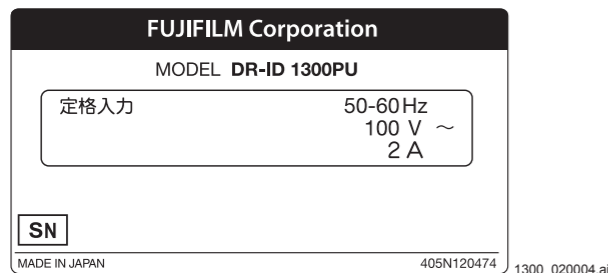
MADE IN JAPAN　　　405N120474　1300_020004.ai

(C) Stand bracket identification label

FUJIFILM Corporation
Model: 899Y120214　　1300_020015.ai

● Outside Japan

(A) PU system label

Manufacturer
FUJIFILM Corporation　26-30, NISHIAZABU 2-CHOME, MINATO-KU, TOKYO 106-8620, JAPAN

DIGITAL RADIOGRAPHY DR-ID 1300
This equipment is DR-ID 1300MP

Imported to Australia by:
FUJIFILM Australia Pty Ltd
114 Old Pittwater Road, Brookvale,
NSW. 2100, Australia

EC REP　European Authorized Representative:
FUJIFILM Europe GmbH
Heesenstrasse 31, 40549 Duesseldorf,
Germany

MADE IN JAPAN　　405N120795A　1300_020008E.ai

(B) PU rating label

Manufacturer
FUJIFILM Corporation　26-30, NISHIAZABU 2-CHOME, MINATO-KU, TOKYO 106-8620, JAPAN

DR-ID 1300PU

CLASSIFIED c(UL)us
MEDICAL - GENERAL MEDICAL EQUIPMENT
AS TO ELECTRICAL SHOCK, FIRE
AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH
ANSI/AAMI ES60601-1:2005+A1:2012,
CAN/CSA-C22.2 NO.60601-1:14
Control No. 03MK

50-60 Hz
100-240 V ～
2-0.84 A

SN
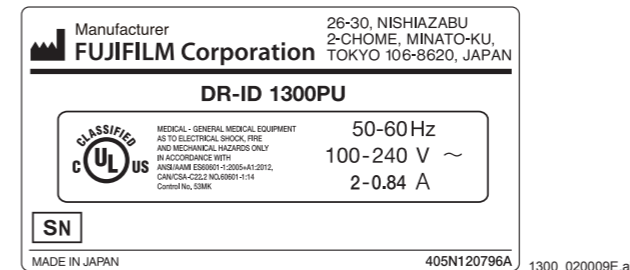
MADE IN JAPAN　　405N120796A　1300_020009E.ai

(C) Stand bracket identification label

FUJIFILM Corporation
Model: 899Y120214　　1300_020015.ai

■ **MP Top**

1200_020022.ai

(D)

(D) Caution label

1200_020015.ai

■ **MP Rear**

1200_020013.ai

(E)
(F)
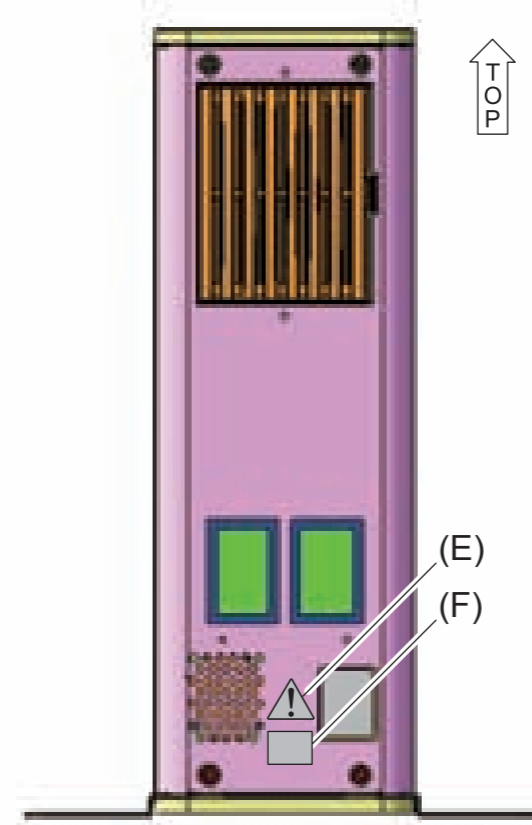
(E) Caution label

600_020016.ai

(F) Caution label

600_020080.ai

◇ *REFERENCE* ◇

The power cables which can be connected with the MP depend on the installation site.
<Japan>
Use supplied power cables.
Do not use other power cables.
<Outside Japan>
Use specified power cables.
Do not use other power cables.
Refer to the following section for the cable specifications.

☞ *{Spec:6._Electrical Specifications}*

■ Inside MP

● Front face of the relay unit

(G)

(I)

(J)

● Rear of the relay unit

(H)

FRONT

FRONT

(I)

(I)

(I)

(I)

AC bucky relay unit

(I)

MPC54B board
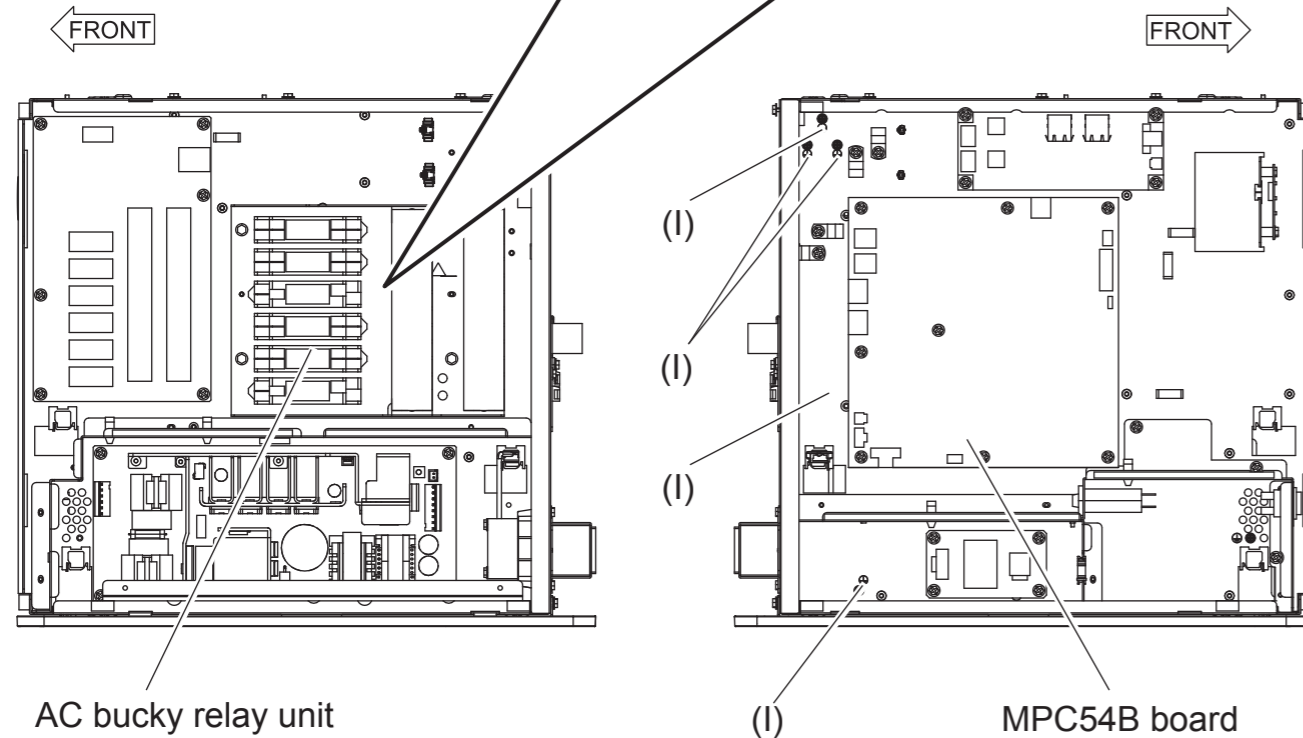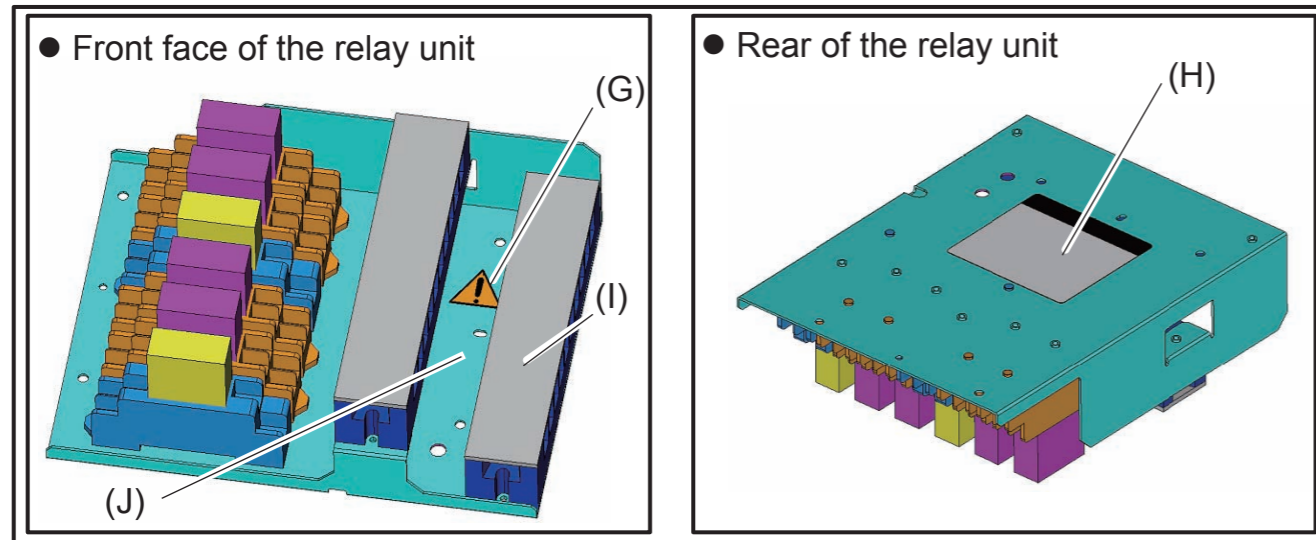
1300_020006E.ai

(G) Caution label

600_020016.ai

◇ *REFERENCE* ◇

Measure the voltage between the cables connecting to the RDY1-$\overline{RDY1}$ and the RDY2-$\overline{RDY2}$ terminals in all techniques before connecting the X-ray shot cable to the terminal block of the AC bucky relay unit.

Check to make sure that the measured voltage conforms to the coil voltages (100/110 VAC, 110/120 VAC, 200/220 VAC and 220/240 VAC) of the relay to be used.

If the voltage between cables differs from the coil voltage of the relay, commission the service personnel of the X-ray equipment to check the cable connection.

If erroneous connection is made, the machine might get damaged.

(H) AC bucky relay unit rating identification label

● **100-110 V**

| Manufacturer **FUJIFILM Corporation** | 26-30, NISHIAZABU 2-CHOME, MINATO-KU, TOKYO 106-8620, JAPAN |

富士フイルム ACブッキー用リレーユニット（100−110V）
AC Bucky Relay UNIT 100-110V

	100-110 V ∼
Coil :	50Hz : 11- 13 mA
	60Hz : 9- 10.6 mA
Contact :	10 A

CLASSIFIED c(UL)us

MEDICAL –FIELD-INSTALLED GENERAL MEDICAL EQUIPMENT
AS TO ELECTRICAL SHOCK, FIRE
AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH
ANSI/AAMI ES60601-1:2005+A1:2012,
CAN/CSA-C22.2 NO.60601-1:14
Control No. 53MK

CE 2015

SN

MADE IN JAPAN   405N101988F   1300_020011.ai

● **110-120 V**

| Manufacturer **FUJIFILM Corporation** | 26-30, NISHIAZABU 2-CHOME, MINATO-KU, TOKYO 106-8620, JAPAN |

富士フイルム ACブッキー用リレーユニット（110−120V）
AC Bucky Relay UNIT 110-120V

	110-120 V ∼
Coil :	50Hz : 10-11.8mA
	60Hz : 8.2-9.7mA
Contact :	10 A

CLASSIFIED c(UL)us

MEDICAL –FIELD-INSTALLED GENERAL MEDICAL EQUIPMENT
AS TO ELECTRICAL SHOCK, FIRE
AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH
ANSI/AAMI ES60601-1:2005+A1:2012,
CAN/CSA-C22.2 NO.60601-1:14
Control No. 53MK

CE 2015

SN

MADE IN JAPAN   405N101989F   1300_020012.ai

● **200-220 V**


```
Manufacturer                    26-30, NISHIAZABU
FUJIFILM Corporation            2-CHOME, MINATO-KU,
                                TOKYO 106-8620, JAPAN

富士フイルム  ACブッキー用リレーユニット（200−220V）
AC Bucky Relay UNIT 200-220V

                        200-220  V  〜
        Coil :    50Hz :   5.5-6.5 mA
                  60Hz :   4.5-5.3 mA
        Contact :              10  A

MADE IN JAPAN                    405N101990F
```
1300_020013.ai

● **220-240 V**


```
Manufacturer                    26-30, NISHIAZABU
FUJIFILM Corporation            2-CHOME, MINATO-KU,
                                TOKYO 106-8620, JAPAN

富士フイルム  ACブッキー用リレーユニット（220−240V）
AC Bucky Relay UNIT 220-240V

                        220-240  V  〜
        Coil :    50Hz :   5.0-5.9 mA
                  60Hz :   4.1-4.8 mA
        Contact :              10  A

MADE IN JAPAN                    405N101991F
```
1300_020014.ai

(I) Protective ground mark (engraved mark)

600_020041.ai

(J) Caution label

600_020080.ai

■ **Retaining Bracket for MP**

(K)
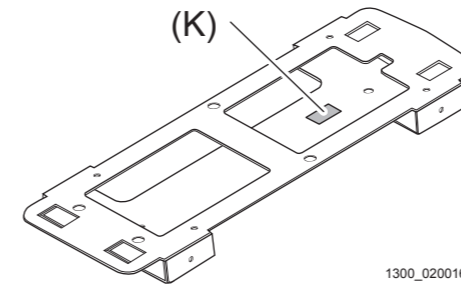
1300_020016.ai

(K) Retaining bracket for MP identification label

```
FUJIFILM Corporation
Model: 898Y120208
```
1300_020017.ai

■ **SE Cable**

(L)
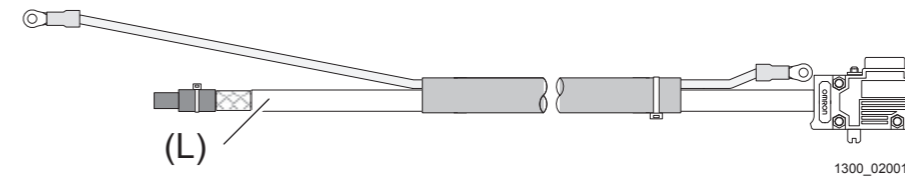
1300_020018.ai

(L) SE cable 4 m identification label

```
FUJIFILM Corporation
Model: 136Y201946
```
1300_020025.ai

SE cable 10 m identification label

```
FUJIFILM Corporation
Model: 136Y121297
```
1300_020020.ai

SE cable 20 m identification label

```
FUJIFILM Corporation
Model: 136Y121296
```
1300_020019.ai

■ PU Power Cable Caution Label (USA Only)

Power Cable Caution Label (Only Hospital Grade Power Cable for U.S.A.)

INSTRUCTION

INSTRUCTION

TO ACHIEVE PROPER
GROUNDING RELIA-
BILITY, THIS PLUG
MUST BE FULLY
INSERTED INTO A
RECEPTACLE MARKED
"HOSPITAL GRADE".

600_020018.ai

2.1.3   MC

■ MC system label

Manufacturer
FUJIFILM Corporation   26-30, NISHIAZABU
2-CHOME, MINATO-KU,
TOKYO 106-8620, JAPAN

FUJIFILM DIGITAL RADIOGRAPHY
MODEL   **DR-ID 1300**   CE 0123

Imported to Australia by:
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EC REP   European Authorized Representative:
FUJIFILM Europe GmbH
Heesenstrasse 31, 40549 Duesseldorf,
Germany

This equipment is DR-ID 1200MC

SN

MADE IN JAPAN   405N120801A   1200_020025.ai

■ MC application

DR-ID 1200
Application Software

FUJIFILM

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114Y2312001A12
MADE IN JAPAN
Manufacturer FUJIFILM Corporation
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MINATO-KU, TOKYO 106-8620, JAPAN

CE 0123

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3. CLASSIFICATION

3.1 DR-ID 1300PU

1. According to the type of protection against electrical shock

Class 1 machine

2. According to the degree of protection against electrical shock

Type B applicable

> ⚠️ **WARNING**
>
> *<Requirements on protection against electrical shock>*
> *The X-ray generator to be connected with the machine need be a permanently installed machine which conforms to the IEC60601-1 or similar standards.*
> *The following I/F cables for connecting the X-ray generator with the machine need be connected to the external connection terminal of the X-ray generator.*
> *- X-CON connection serial cable (exposure condition, exposure performance)*
> *- X-ray camera connection cable (shot signal)*

3. Protection against harmful ingress of water (protection class against water penetration)

DR-ID 1300PU: IPX0

4. According to the degree of safety of application in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide

Equipment not suitable for use in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide.

5. According to the mode of operation

Continuous use

4. Cautions on Electromagnetic Waves

4.1 DR-ID 1300PU

4.1.1 Electromagnetic Compatibility (EMC)

This equipment has been tested and found to comply with the limits for medical devices to the IEC 60601-1-2 (EN60601-1-2), Medical Device Directive 93/42/EEC.

These limits are designed to provide reasonable protection against harmful interference in a typical medical installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to other devices, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.

If the problem cannot be solved with the above measures, stop using this equipment and consult the manufacturer or our official dealer for help.

⚠ *WARNINGS*

- *Do not place devices generating electromagnetic wave near this equipment.*
- *If a device(s) other than those specified is connected, predetermined EMC performance cannot be guaranteed.*

This Service Manual contains the names of standards applied in IEC 60601-1-2. The names of standards applied in EN 60601-1-2 are replaced as follows.

IEC 60601-1-2 (descriptions in this Service Manual)	Standards applied in EN 60601-1-2
CISPR 11	EN 55011
IEC 61000-3-2	EN 61000-3-2
IEC 61000-3-3	EN 61000-3-3
IEC 61000-4-2	EN 61000-4-2
IEC 61000-4-3	EN 61000-4-3
IEC 61000-4-4	EN 61000-4-4
IEC 61000-4-5	EN 61000-4-5
IEC 61000-4-6	EN 61000-4-6
IEC 61000-4-8	EN 61000-4-8
IEC 61000-4-11	EN 61000-4-11

4.1.2 Further Information for IEC 60601-1-2 (EN60601-1-2)

- Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the accompanying documents.
- Portable and mobile RF communications equipment can affect medical electrical equipment.
- Information regarding the cable affecting EMC is as follows.

Name	Connected Device	Maximum Length	General Specification
Power cable	DR-ID 1300PU	3 m	Use a hospital-grade power cable. (for North America)
			A non-hospital grade power cable can be used.(for other countries)

- The use of accessories, transducers and cables other than those specified, with the exception of transducers and cables sold by FUJIFILM Corporation as replacement parts for internal components, may result in increased emissions or decreased immunity of the DR-ID 1300PU.
- The DR-ID 1300PU should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the DR-ID 1300PU should be observed to verify normal operation in the configuration in which it will be used.
- Basic performance of the equipment and the system
  Image data are acquired from the DR-ID 1300PU and are saved in and displayed on the DR-ID 300CL.

Guidance and manufacturer's declaration - electromagnetic emissions		
The DR-ID 1300PU is intended for use in the electromagnetic environment specified below. The customer or the user of the DR-ID 1300PU should assure that they are used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The DR-ID 1300PU uses RF energy only for their internal function. Therefore, their RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The DR-ID 1300PU is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Complies	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

* IEC61000-3-2, which set limits for harmonic emissions, and IEC61000-3-3, which set limits for voltage fluctuations/flicker emissions, are applicable to equipment with power-supply voltage over 220 V. It is not necessary to apply these standards to equipment with power-supply voltage less than 220 V.

Guidance and manufacturer's declaration - electromagnetic immunity			
The DR-ID 1300PU is intended for use in the electromagnetic environment specified below. The customer or the user of the DR-ID 1300PU should assure that they are used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 s	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the DR-ID 1300PU requires continued operation during power mains interruptions, it is recommended that the DR-ID 1300PU be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: U_T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration - electromagnetic immunity			
The DR-ID 1300PU is intended for use in the electromagnetic environment specified below. The customer or the user of the DR-ID 1300PU should assure that they are used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the DR-ID 1300PU, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: (((•)))
NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
[a] Field strength from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the DR-ID 1300PU is used exceeds the applicable RF compliance, the DR-ID 1300PU should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the DR-ID 1300PU. [b] Over the frequency range 150 kHz to 80 MHz, field strength should be less than 3 V/m.			

Recommended separation distances between Portable and mobile RF communications equipment and the DR-ID 1300PU			
TheDR-ID 1300PU is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the DR-ID 1300PU can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the DR-ID 1300PU as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

5. CONNECTABLE PERIPHERALS

Peripheral equipment to be connected with the analog interface or the digital interface should conform to the related standards (that is, the IEC60950-1 for a data processor, and the IEC60601-1 or JIS T 0601-1 for medical equipment).

Furthermore all configurations shall comply with the system standard IEC 60601-1-1 or JIS T 0601-1-1.

Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore responsible that the system complies with the requirements of IEC 60601-1-1 or JIS T 0601-1-1.

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DR-ID 1300 / DR-ID 1300PU
Service Manual

Product Specifications

1. Commodity Composition and Optional Items

1.1 Commodity Composition

■ Flat Panel Sensor (SE)

Model	Type *1	Destination	Product abbreviation	Remarks
DR-ID 1305 SE	GOS	Japan	DR-ID 1305 SE #	17 x 17 inch, 3 reams
		Outside Japan	DR-ID 1305 SE E	

*1: Scintillator material

■ Power Supply Unit (MP)

Model	Type	Destination	Product abbreviation	Remarks
DR-ID 1300 MP	-	Japan	DR-ID 1300 MP #	MP Falling Prevention Kit A supplied as standard.
		Outside Japan	DR-ID 1300 MP E	

■ Control Cabinet (MC)

Model	Type	Destination	Product abbreviation	Remarks
DR-ID 1200 MC	MC Software Only	Japan	DR-ID 1200 MC SOFT #	V2.0 or later Install the MC application to the DX Console.
		Outside Japan	DR-ID 1200 MC SOFT E	

1.2 Optional Items

1.2.1 For DR-ID 1300 Only

■ Supplied Options

Name of machine	Type	Destination	Product abbreviation	Remarks
SE Cable	4m	Outside Japan	DR1300 SE-CBL 4M E	MP - SE
	10m	Japan	DR1300 SE-CBL 10M #	
		Outside Japan	DR1300 SE-CBL 10M E	
	20m	Japan	DR1300 SE-CBL 20M #	
		Outside Japan	DR1300 SE-CBL 20M E	

1.2.2 For both DR-ID 1200 and DR-ID 1300

■ Options for the Power Supply Unit (MP)

Name of machine	Type	Destination	Product abbreviation	Remarks
MP Falling Prevention Kit A	Not for retaining the anchor	Outside Japan	DR1200 MP FLOOR FIX KIT A E	
MP Falling Prevention Kit B	For retaining the anchor	Japan	DR1200 MP FLOOR FIX KIT B #	
		Outside Japan	DR1200 MP FLOOR FIX KIT B E	

1.2.3 For both DR-ID 600 , DR-ID 1200 and DR-ID 1300

■ X-Ray Shot Cable

Name of machine	Type	Destination	Product abbreviation	Remarks
X-Ray Shot Cable	3-core, 5m	Japan	DR600 3S-CBL 5M #	Connected between X-ray generator and MP, used for shot signal cooperation. Refer to the DB provided by FUJIFILM for application of respective cables.
		Outside Japan	DR600 3S-CBL 5M E	
	3-core, 15m	Japan	DR600 3S-CBL 15M #	
		Outside Japan	DR600 3S-CBL 15M E	
	9-core, 5m	Japan	DR600 9S-CBL 5M #	
		Outside Japan	DR600 9S-CBL 5M E	
	9-core, 15m	Japan	DR600 9S-CBL 15M #	
		Outside Japan	DR600 9S-CBL 15M E	
MP-MIKASA X-Ray shot cable	-	Japan	DR600 MIKASA MP-CBL #	For connection to an X-ray generator made by MIKASA

■ AC Bucky Relay Unit

Name of machine	Type	Destination	Product abbreviation	Remarks
AC Bucky Relay Unit	100V	Japan	DR600 AC UNIT 100V #	Connection unit for AC bucky. Composed of relay and terminal block. Refer to the DB provided by FUJIFILM for application of respective cables.
		Outside Japan	DR600 AC UNIT 100V A E	
	120V	Japan	DR600 AC UNIT 120V #	
		Outside Japan	DR600 AC UNIT 120V A E	
	200V	Japan	DR600 AC UNIT 200V #	
		Outside Japan	DR600 AC UNIT 200V A E	
	220V	Japan	DR600 AC UNIT 220V #	
		Outside Japan	DR600 AC UNIT 220V A E	

■ I/F box, Cables

Name of machine	Type	Destination	Product abbreviation	Remarks
I/F box	-	Japan	DR600 I/F BOX #	When the X-ray shot cable cannot be connected to the X-ray generator, the shot signal between the X-ray generator and DR-ID 1300 is used for cooperation.
		Outside Japan	DR600 I/F BOX E	
Hand switches	2 buttons	Japan	DR600 I/F BOX HAND SW #	Exposure switch for use as connected with the I/F box.
		Outside Japan	DR600 I/F BOX HAND SW E	
I/F box cable (Used to connect between the I/F box and the MP)	10m	Japan	DR600 I/F BOX-MP CBL 10M #	Used together with the I/F box. Refer to the DB provided by FUJIFILM for application of respective cables.
		Outside Japan	DR600 I/F BOX-MP CBL 10M E	
	15m	Japan	DR600 I/F BOX-MP CBL 15M #	
		Outside Japan	DR600 I/F BOX-MP CBL 15M E	
I/F box cable (Used to connect between the I/F box and the X-ray equipment)	110-3 wire	Japan	DR600 I/F BOX CBL 110-3 #	Used together with the I/F box. Refer to the DB provided by FUJIFILM for application of respective cables.
		Outside Japan	DR600 I/F BOX CBL 110-3 E	
	110-4 wire	Japan	DR600 I/F BOX CBL 110-4 #	
		Outside Japan	DR600 I/F BOX CBL 110-4 E	
	GE1	Japan	DR600 I/F BOX CBL GE #	
		Outside Japan	DR600 I/F BOX CBL GE E	
	GE2	Japan	DR600 I/F BOX CBL GE2 #	
		Outside Japan	DR600 I/F BOX CBL GE2 E	
	Shimadzu	Japan	DR600 I/F BOX CBL S #	
		Outside Japan	DR600 I/F BOX CBL S E	
	Siemens	Japan	DR600 I/F BOX CBL SMS #	
		Outside Japan	DR600 I/F BOX CBL SMS E	
	Toshiba	Japan	DR600 I/F BOX CBL TM #	
		Outside Japan	DR600 I/F BOX CBL TM E	
	CPI	Japan	DR600 I/F BOX CBL CPI #	
		Outside Japan	DR600 I/F BOX CBL CPI E	
	DelMedical	Japan	DR600 I/F BOX CBL DEL #	
		Outside Japan	DR600 I/F BOX CBL DEL E	
	DelMedical round terminal	Japan	DR600 I/F BOX CBL DEL 2 #	
		Outside Japan	DR600 I/F BOX CBL DEL 2 E	
	Philips	Japan	DR600 I/F BOX CBL PH 2 #	
		Outside Japan	DR600 I/F BOX CBL PH 2 E	

◆ *NOTE* ◆

Check the following items about the usage conditions of the user and equipment to determine whether or not the I/F box can be used.

- Measuring the setup time of the X-ray equipment
  Use a stopwatch to measure the time from when you press the first stage of the hand SW until when the setup for irradiation is completed (the Ready lamp goes on).
  Note that there may be two different numbers of the revolutions of the anode depending on the X-ray equipment, so select conditions for high speed revolution (high tube voltage, large tube current) as the irradiation conditions.
  The difference between the numbers of revolutions can be determined by the difference between the setup times (high speed revolution takes longer for setup) or that between the revolution sounds of the anode (high speed revolution has high revolution sound).

- Checking the maximum irradiation time
  Check with the user about the possible maximum irradiation time.

- Determining the maximum accumulation time of images
  Perform the following calculation to determine the accumulation time to be set.
  Accumulation time = Maximum irradiation time above + Setup time above
  Select larger time than the accumulation time above and the selectable minimum time of mode2.

If the selected time is longer than 3.8 seconds, you cannot use the I/F box.

2. Dimensions, Weight and Location of the Center of Gravity

2.1 DR-ID 1300PU

■ SE

● 1305SE

Dimensions: W567.4 x D1339.8 x H50 (mm)
Weight: Approx. 19.5 kg

◆ *NOTE* ◆

Specifications, dimensions and weight are subject to change without notice due to continual improvements.
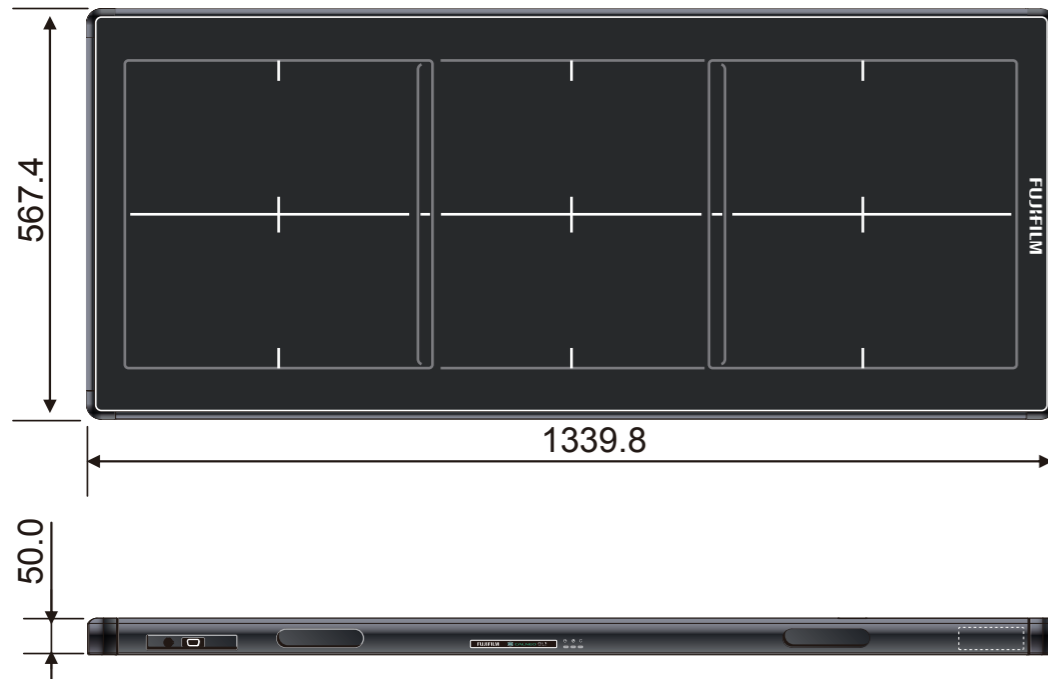
Unit: mm

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■ MP

Dimensions: W120 x D388 x H361 (mm)
Weight: Approx. 8.7 kg
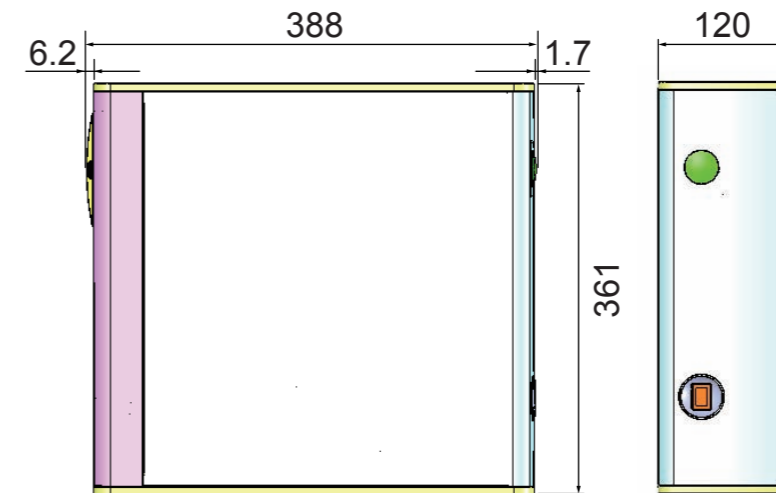
Unit: mm

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3. Installation Space

⚠️ **WARNING**

When installing the MP, cables, SE or the exposure stand, check the surrounding conditions and install the unit where the operation of the customer or motion of the patient is not interfered. If the MP, cables, SE or the exposure stand is installed in the activity range of the customer or the patient such as the floor or the passage, it might cause injury of the customer or the patient as she/ he might stumble or tumble.

◆ *NOTE* ◆

When installing the MP, be sure to use the bracket on the floor or the fixing bracket to prevent it from falling.

3.1 DR-ID 1300PU

◆ *NOTE* ◆

When installing the DR-ID 1305SE, attach it to and use it on another manufacturer's exposure stand.

3.1.1 DR-ID 1305SE

● **Distance between the SE and the MP**

Distance from the MP to the AP: Any one of these, approx. 4 m, approx.10 m, approx. 20 m
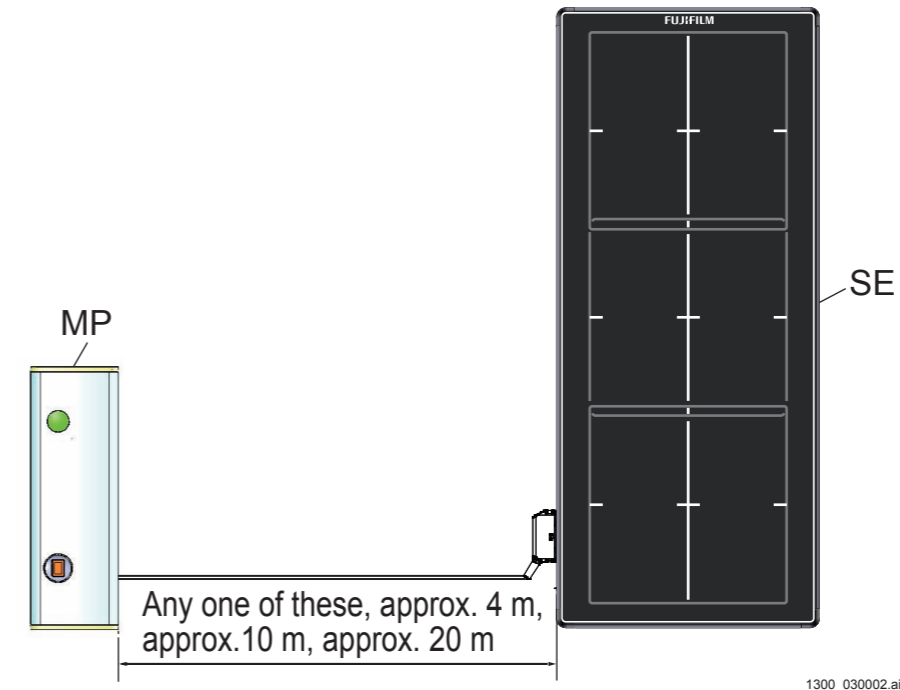
3.1.2 DR-ID 1300MP

A single MP is shared in a 2-panel structure.

● **Vertical setting**

<Not fixed with an anchor (optional)>

100 or more

FRONT

385.8

240

0 or more   0 or more

Unit: mm

1200_030006E.ai

<Fixed with an anchor (optional)>

100 or more

FRONT

385.8

136.6

100 or more 100 or more

Unit: mm

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● **Horizontal setting**

100 or more

375.2

0 or more   0 or more

Unit: mm

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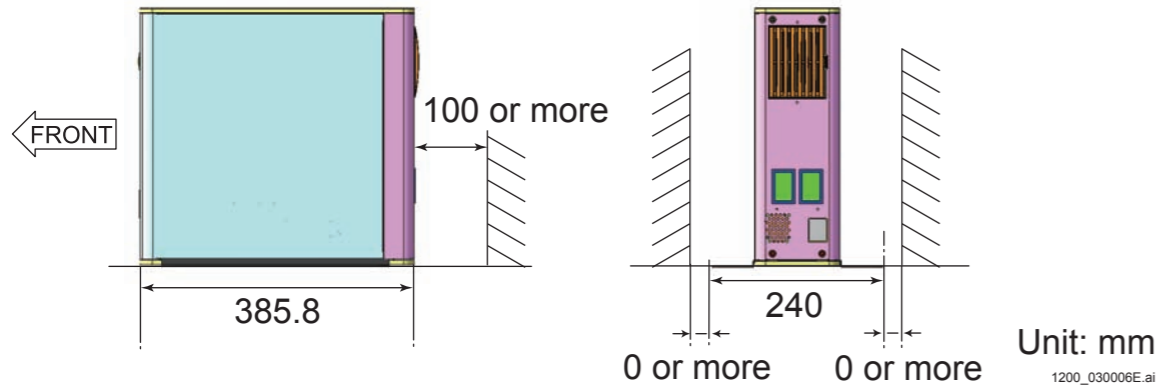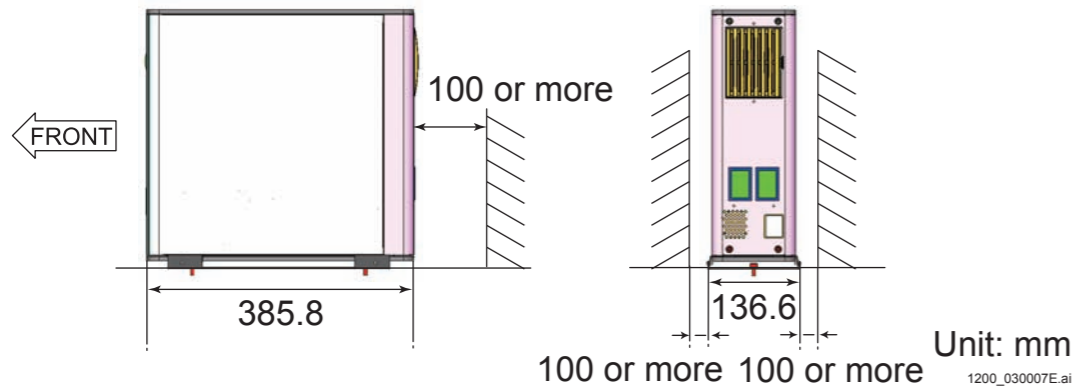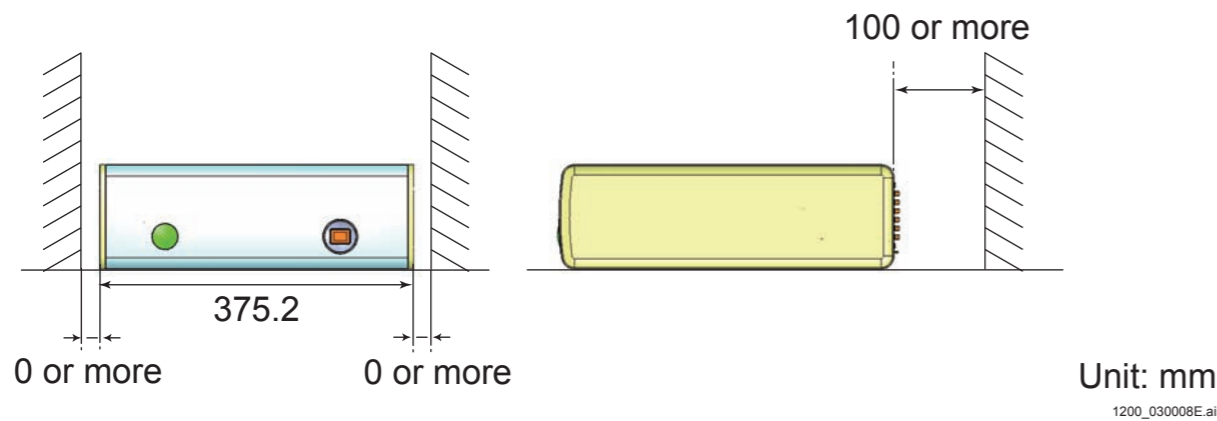
◆ *NOTE* ◆

When installing the MP horizontally, install the MP to make the breaker switch and the indicator underside. If the MP is installed upside down, the power supply is deteriorated.

3.2 DR-ID 300CL (Computer)

■ **Vertical Setting**

FRONT

130 or more   100 or more

Computer

254

66

0 or more   0 or more

Unit: mm

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■ **Horizontal Setting**

130 or more FRONT 100 or more

251

Unit: mm

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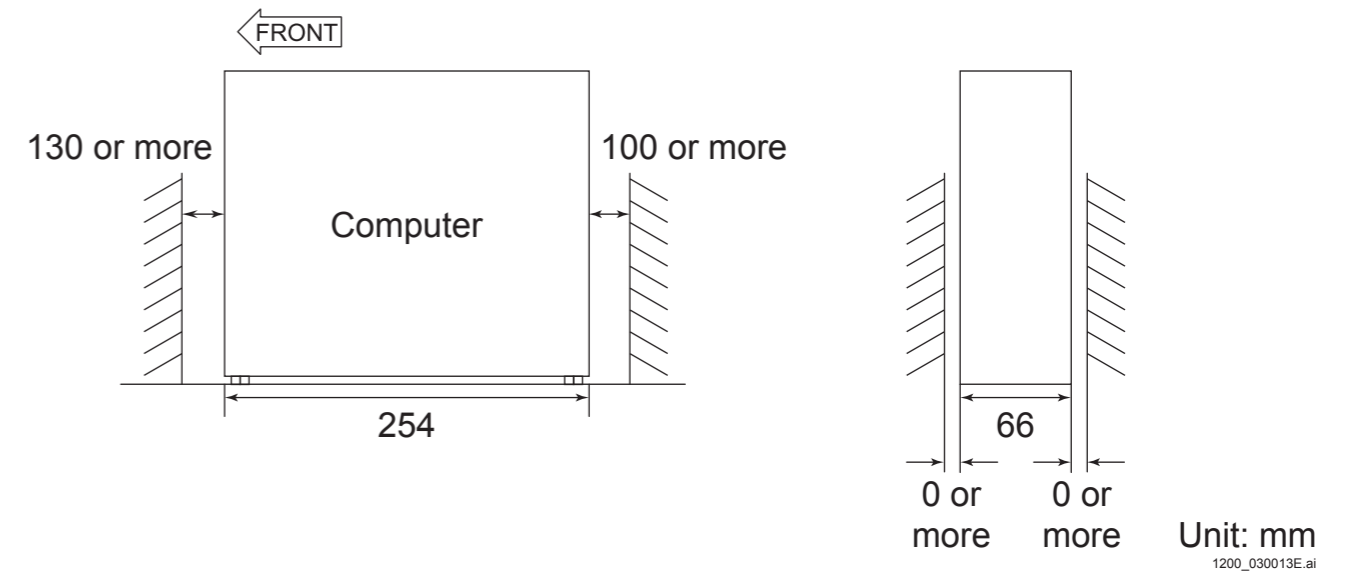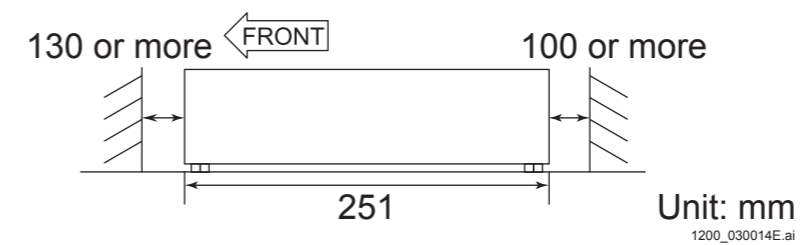
4. Means for Moving and Fixing the Machine

■ Moving

Not specified

■ Fixing

For placing on the floor (not fixed)

◇ *REFERENCE* ◇

For the DR-ID 1300MP, the bracket for anchoring is specified as an optional item.
Refer to the following figure to anchor the DR-ID 1300MP.
<DR-ID 1300MP>

Unit: mm

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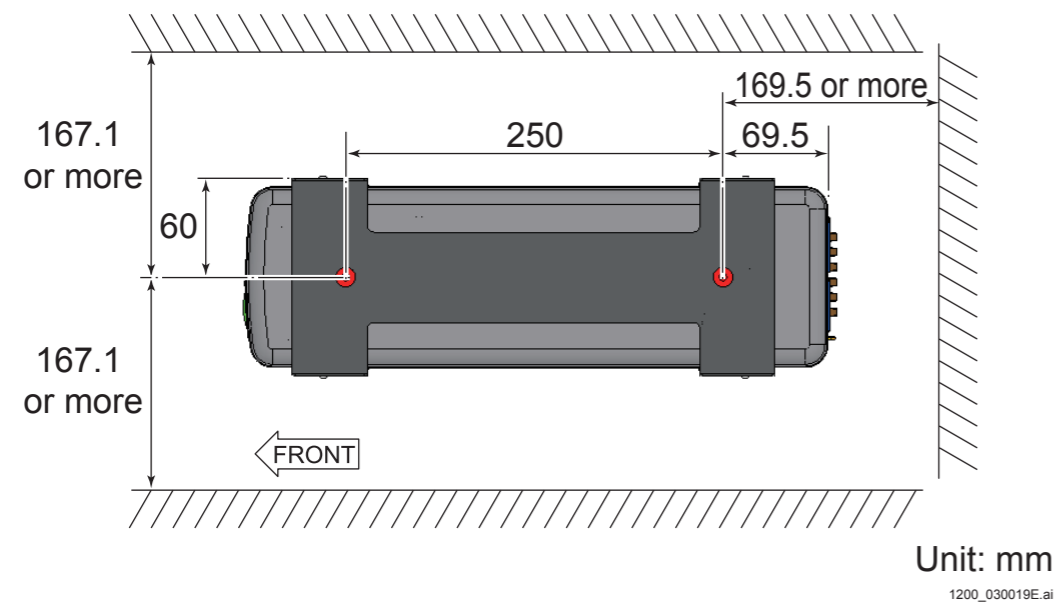
5. Environmental Conditions

5.1 DR-ID 1300PU

The environmental conditions for installing the DR-ID 1300PU are described below.

■ Climate Conditions

Unit		DR-ID 1305SE/ DR-ID 1300MP
Operating	Temperature	15°C−30°C
	Humidity	15%−80% RH (without moisture condensation)
	Atmospheric pressure	700−1060 hPa
Non-operating	Temperature	5°C−35°C
	Humidity	10%−80% RH (without moisture condensation)
	Atmospheric pressure	700−1060 hPa
Transit/ storage	Temperature	-30°C−50°C
	Humidity	10%−90% RH (without moisture condensation)
	Atmospheric pressure	700−1060 hPa

■ Floor (Machine Surface) Vibration

10 to 55 Hz in frequency and 0.0075 mm or less in amplitude

■ Installation Site Conditions

Avoid the following installation sites:
- Places where the temperature changes drastically
- Places near heat sources such as heaters
- Places where water leakage or machine submersion may occur
- Places where a corrosive gas may be generated
- Dusty places
- Places where the machine is subject to constant or excessive vibration or shock
- Places exposed to direct sunlight
- Places where no ventilation equipment is provided

5.2 DR-ID 300CL (Computer)

☞ **See the DR-ID 300CL Service Manual.**

5.3 Monitor

☞ **See the DR-ID 300CL Service Manual.**

6. Electrical Specifications

6.1 DR-ID 1300PU

■ **Frequency**

50−60 Hz

■ **Input Voltage**

100-240 V ~

■ **Power Source and Grounding Conditions**

AC outlet (3-pin)

■ **Rated Amperage**

2-0.84 A (100-240 VAC)

■ **Overload Protection**

Circuit breaker incorporated (3A)

■ **Power Consumption**

200 W or lower

■ **Maximum permissible conductor impedance per unit length (km)**

26 Ω

■ **I/F Cable**

For some parts, such as network cables, locally obtained parts may be used. In this case, parts that meet the requirements set forth below should be obtained locally.

● **Network cable**

Connected Device	Maximum Cable Length	General Specification
Between the DR-ID 1300MP and the DR-ID 300CL	100 m	<Grade> Category 5e or more (UTP type) 1000Base-T <Connection> Straight cable

● **Network HUB**

A 1000Base-T compliant HUB should be used.

■ **PU Power Cable**

● **Japan**

- Use the supplied cable.

● **USA**

- Wire diameter: 18 AWG or more
- Rated voltage: 125 VAC or higher
- Rated current: 7 A or higher
- Cable type: SJT
- Cable length: 3 m or shorter
- The caution label indicating that the cable should be grounded with an outlet conforming to the UL60601 must be applied.
- Use a detachable power cable as UL listed.
- Use a plug of the hospital grade.

● **Canada**

- Wire diameter: 18 AWG or more
- Rated voltage: 125 VAC or higher
- Rated current: 7 A or higher
- Cable type: SJT
- Cable length: 3 m or shorter
- Plug
  Mold type: Use a plug of the hospital grade conforming to the CSA C22.2 No. 21.
  Assembly type: Should conform to the SA C22.2 No. 42.
- Cable: Should conform to the CSA C22.2 No. 21.

● **Europe**

- Use the cable certified by the country where the machine is to be installed.
- Cable section area: 1.0 mm^2 or more
- Rated voltage: 250 VAC or higher
- Rated current: 6 A or higher
- Cable type: H05VV-F
- Cable length: 3 m or shorter

6.2 DR-ID 300CL (Computer)

☞ **See the DR-ID 300CL Service Manual.**

6.3 Monitor

☞ **See the DR-ID 300CL Service Manual.**

7.   Other Specifications

■ SE

● X-ray conversion mode

Indirect conversion mode (GOS* scintillator)
* GOS: Terbium-activated gadolinium oxysulfide; one of materials emitting light by
   X-ray energy

● Number of pixels

2,832 x 8,228 (pixel)

● Effective image area

424.8 x 1234.2 (mm)

● Pixel resolution

0.15 (mm/pixel)

● Concentration resolution

16 bit

● Image quality

With quality of radiation of RQA5 and a dose of 258 nC/kg;
Noise (DQE):   23.3 to 31.9% (per cycle/mm)
Sharpness (MTF): 54.0 to 66.0% [Normally sharp](per cycle/mm)
                          67.5 to 82.5% [Highly sharp](per cycle/mm)

● Withstand load (SE)

Point load (Φ40)
40 kgf

■ Maximum Attenuation Equivalent

0.1 mmAl (SE front cover)

■ DR-ID 300CL (computer) minimum specification

☞   **See the DR-ID 300CL Service Manual.**

■ Performance

● Image display

<Preview display time (sequential display for the first image)>
- Image reading for 49 x 17 inch size : 9 seconds

<Time until the confirmation of the long cassette and still image from the start of exposing>
- Image reading for 49 x 17 inch size :   20 seconds
- Image reading for 17 x 17 inch size* :   6 seconds
      * Using the top panel or bottom panel of the detector

● Exposure cycle

<X-ray connection/X-ray automatic detection function (AUTO DETECT)>
- Image reading for 49 x 17 inch size :   26 seconds
- Image reading for 17 x 17 inch size* :   10 seconds
      * Using the top panel or bottom panel of the detector

   ◆ *NOTE* ◆

- *Time for SW1 to be ready for being accepted after the accumulation is completed*
- *Time when exposure is performed in the mode1 (accumulation time: 600 msec)*
- *The user's operation time is not included.*

■ Noise (MP)

Operation: 55 dB or less
Standby: 50 dB or less (except single noise)

   ◇ *REFERENCE* ◇

The values are measured at positions that are 1.2 to 1.5 m above the floor and a 1 m interval from the device surface.

8.   Grid

◇ *REFERENCE* ◇

The grid is not included in the machine components.

The only recommended grid is a long-length grid for a long panel made by Mitaya Manufacturing Co., Ltd. You cannot combine this grid with a short grid.
The specification of recommended long-length grid for a long panel made by Mitaya Manufacturing Co., Ltd. is following.
- Grid density: 40 lines/cm
- Grid ratio: Any one of 10:1, 8:1, or 6:1
- Focusing distance: 100 to 300 cm

9. Lattice

◇ *REFERENCE* ◇

The lattice is not included in the machine components.

The distributors locally select and purchase the lattices which comply with the following specifications.
The distributors are responsible for the quality of the lattice they select and their connectivity to the DR-ID 1300 system.
- Lattice interval: 50 mm ± 1 mm
- Lattice member diameter: 1 mm ± 0.2 mm
- Oblique direction angle of X-ray: 15 degrees or less

For the procedure for the quality of the lattice, refer to the following.

☞ **{IN:Appendix 6._Lattice}**

10. Exposure Stand

◇ *REFERENCE* ◇

The exposure stand is not included in the machine components.

Use the exposure stand that meets the following requirements:
- An opening of D100 x H50 mm or larger can be provided at the center of the external dimensions on the SE longitudinal side of the exposure stand, and the SE LED must be able to be checked through this opening.
- An opening of D100 x H50 mm or larger can be provided approximately 200 mm from the end opposite to the SE cable connector on the SE longitudinal side of the exposure stand, and the SE LED must be able to be checked through this opening.
- There must be no risk that a finger of a patient is caught between the exposure stand and the SE.
- The surface of the exposure stand where patients and operators will directly touch must not be coarse and has no sharp edge.
- If the exposure stand is equipped with the external cover, display the panel effective area and overlapping part on the top place of the exposure stand, with the center of this top plate taken as the exposure center.
- If the exposure stand is equipped with the external cover, provide a fixed guide within the exposure stand so that the center of the external dimension (exposure center) of the SE matches the center of the top plate of the exposure stand (exposure center).

Use the stand type exposure stand that meets the following requirements:
- The stand must be able to support the SE without causing it to fall down.
- When a patient leans against the stand, it must be able to support the SE.
- At the bottom surface of the SE for the exposure housing that supports the SE, the lower limit detecting sensor must be installed.
- If the exposure stand is equipped without the external cover, the display of the panel effective area and overlapping part must be able to be checked.

Use the bed type exposure stand that meets the following requirements:
- The SE surface is not used as applied part.
- The stand must not be broken with a patient weighing at least 135 kg on it.
- With a patient weighing at least 135 kg on it, the stand must be able to support SE.
- Even with a patient weighing at least 135 kg on it, no load must be directly applied to the surface of the SE.

11. Action in case of Failure

A charge-free guarantee period similar to that of a conventional machine is applied to the machine.

However, since the SE is a precision instrument, a failure due to inadvertence of a customer might occur. In such a case, the charge-free guarantee period is not applicable, that is, the customer need bear the cost for repair.

A period of one year after the installation of the machine is specified as the guarantee period, and components are provided free from FUJIFILM against the failure during that period. However, if the failure is not attributed to the design and production of the manufacturer (FUJIFILM), the charge-free guarantee period is not applicable as in conventional cases.

11.1 Failure Attributed to the Customer

11.1.1 How to Determine Whether the Failure Is Attributed to the Customer

Conditions to determine whether the failure is attributed to the customer are as follows.

If one of the following conditions applies, the failure is determined to be attributed to the customer.

- The external form of the SE deforms (dent, crack, breakage or the like);
- A trace of water damage or liquid contamination is observed.

11.1.2 Action When the Failure Is Attributed to the Customer

The machine is repaired (primary repair by the sales company), referring to the troubleshooting manual.

A defective point is identified. Cable connection is checked, or the board is replaced as needed. The customer must bear the cost of the primary repair.

If "guarantee against drop" is contracted between the customer and the sales company, the bearer of the cost may depend on the contract. Check the individual contract.

◆ *INSTRUCTION* ◆

Observe the following terms when the primary repair takes place by the sales company.

- Do not repair or modify if the external form of the SE deforms.

■ Cases Where the Repair Is Not Possible

Install the SE from the stock at the sales company, return the defective SE to the manufacturer (FUJIFILM), and order a new SE. Consult the manufacturer (FUJIFILM) for guarantee as special support is provided for the SE.

■ When the Failure Is Solved by the Primary Repair

Even if the failure is solved, the machine might get damaged.

Although the SE with the failure solved by the primary repair can be continuously used if the customer demands, the following conditions should be explained to the customer:

- The quality of the SE cannot be guaranteed, and the failure may possibly recur.
- If the failure recurs, the customer must bear the cost of the repair.

11.2   Failure Attributed to the Manufacturer

11.2.1   How to Determine Whether the Failure Is Attributed to the Manufacturer

If none of conditions mentioned in Sect. 11.1.1 is applicable, the failure is determined to be attributed to the manufacturer (FUJIFILM).

11.2.2   Action When the Failure Is Attributed to the Manufacturer

The machine is repaired (primary repair by the sales company), referring to the troubleshooting manual.
A defective point is identified. Cable connection is checked, or the board is replaced as needed.
The manufacturer (FUJIFILM) bears the cost of the primary repair during the charge-free guarantee period. Request via the PRS (Parts Request System).

◆ *INSTRUCTION* ◆

Observe the following terms when the primary repair takes place by the sales company.
- Do not repair or modify if the external form of the SE deforms.

■ Cases Where the Repair Is Not Possible

Install the SE from the stock at the sales company, return the defective SE to the manufacturer (FUJIFILM), and request the SE to apply for the free guarantee of charge.

■ When the Failure Is Solved by the Primary Repair

The machine can be continuously used as it is free from the possibility of the damage and has no problem on its quality.

12. Disposal of the Machine

Dispose of the machine or its components in compliance with the local regulations.
Classify the wastes according to the local situations for collection or disposal.
Take appropriate actions as consigning to waste disposers in principle.

⚠️ **WARNING**

Observe precautions mentioned in the "Safety Precautions" and "Checks, Replacement and Adjustment of Parts (MC)" when a component is to be removed.

12.1 Lithium Batteries

■ Japan

Handling of lithium batteries needs sufficient attention, since chemically active lithium metal and combustible materials such as organic electrolyte are used.

● **MP:**

Remove the board (MPC54B board) on which the lithium batteries are mounted when disposing of the MP. Be sure to return the removed board to the Parts Center.

■ Outside Japan

Dispose of according to the local regulations.

12.2 SE

Parts of the components of the SE contain such substances which possibly may contaminate the environments if inadvertently disposed of.
Be sure to return the SE to the Parts Center when the machine is to be disposed of.
However, if the contamination of the SE surface is intense and can not be removed, do not return the SE to the Parts Center, and dispose of according to the local regulations.

DR-ID 1300 / DR-ID 1300PU
Service Manual

Machine Description (MD)

1. Summary of the Machine

1.1 Features of the Machine

■ DR-ID 1305SE

- 48.6 x 16.7 inch size flat panel sensor (DR-ID 1305SE) enables long-length radiography of the entire lower limbs or the entire vertebrae with a single irradiation. This enhances the work efficiency of long-length radiography and also shortens a constrained time of a patient, reducing patient burden.
- The flat panel sensor (DR-ID 1305SE) is also available for standard radiography. 48.6 x 16.7 inch size flat panel sensor enhances the work efficiency of patient positioning.
- By utilizing FUJIFILM's proprietary ISS (Irradiation Side Sampling) method and GOS scintillator with an optimal composition of large and small phosphor particles, images with high sensitivity and high sharpness are obtained. In addition, the noise reduction circuit enhances the sensitivity and sharpness in low-density areas.
- After an X-ray irradiation process is completed, the image appears on the monitor of the image processing unit in 9 to 19 seconds.
- The flat panel sensor (DR-ID 1305SE) has the X-ray automatic detection function (AUTO DETECT). With this function, the flat panel sensor detects even a small amount of X-ray precisely to start an exposure without connecting it to the X-ray device.
- Up to two flat panel sensors (DR-ID 1305SE) can be used at the same time.

1.2 System Configuration Examples

The machine consists of the DR-ID 1305SE, DR-ID 1300MP and DR-ID 1200MC, and serves as the system (DR-ID 1300) when combined with the DR-ID 300CL.

DR-ID 1300 (system)	DR-ID 1300PU (panel unit)	DR-ID 1305SE (flat panel sensor of wired type)
		DR-ID 1300MP (power supply unit)*1
		DR-ID 1200MC (control software)*2
	DR-ID 300CL (image processing unit)	

*1: For supplying the power to the SE (flat panel sensor).

*2: For controlling the SE (flat panel sensor)

■ In case of the DR-ID 1305SE single configuration

Hospital Network

Ceiling suspended
X-ray tube support

X-ray tube

Collimator

DR-ID 1305SE

DR-ID 1305SE — DR-ID 1300MP

DX Console
(DR-ID 300CL)
[DR-ID 1200MC]

Generator

X-ray operator
console

Remote
control
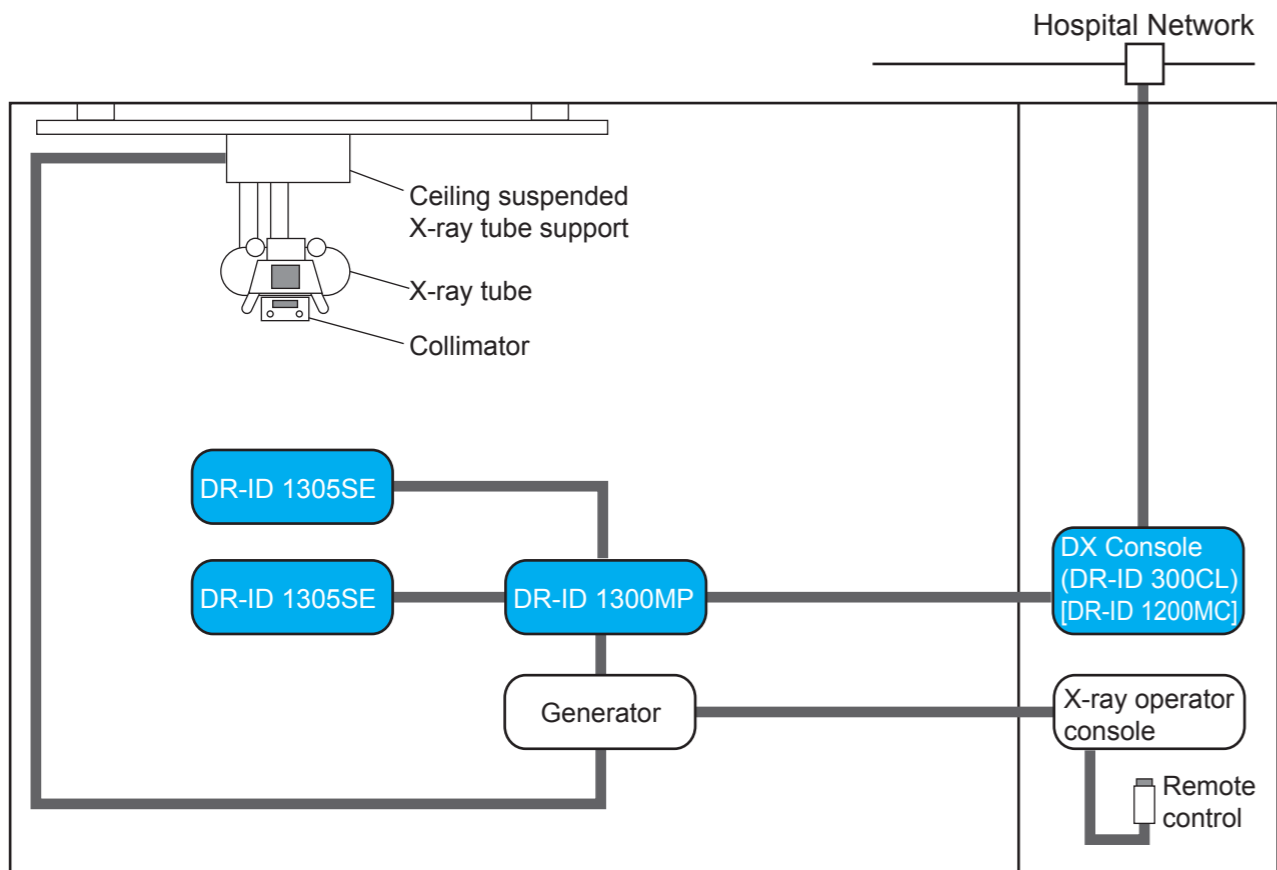
■ : DR-ID 1300

1300_100001.ai

■ In case of the configuration connecting between the DR-ID 1305SE and DR-ID 1201SE/1202SE/1211SE/1212SE

Hospital Network

Ceiling suspended
X-ray tube support

X-ray tube

Collimator

Battery charger

AP

DR-ID 1201SE/1202SE/
1211SE/1212SE

DR-ID 1200DS

DR-ID 1201SE/1202SE/
1211SE/1212SE

DR-ID 1200MP

HUB

DX Console
(DR-ID 300CL)
[DR-ID 1200MC]

DR-ID 1201SE/1202SE/
1211SE/1212SE

Generator

X-ray operator
console

Remote
control

DR-ID 1305SE — DR-ID 1300MP

DR-ID 1305SE
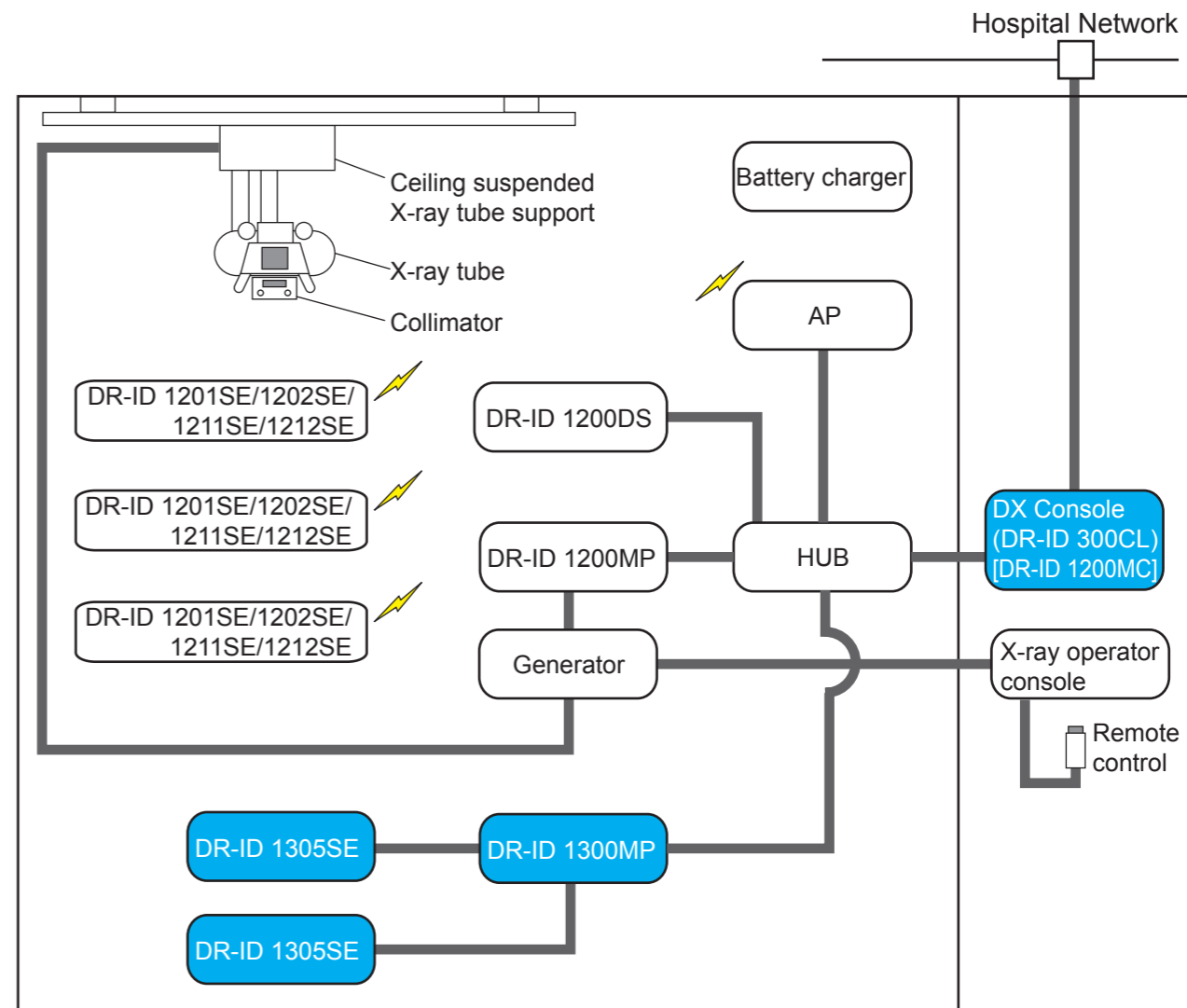
■ : DR-ID 1300

1300_100012.ai

1.3 General Configuration of the DR-ID 1300PU and Names

1.3.1 External View and Functions

(B)

(A)

1300_100002.ai

No.	Name	Description
(A)	DR-ID 1305SE (flat panel sensor)	- Serves as the indirect FPD (X-ray flat panel detector) by means of gadolinium oxide sulfur, converts the X-ray energy transmitting through a subject into a digital image signal, and transfers it to the MC. The control signal and image signals are together transmitted/received via the MC also including the Ethernet function. - Incorporates the status lamp (LED) indicating the SE status.
(B)	DR-ID 1300MP (power supply unit)	- Operates by an instruction from the MC, and has a MC protocol conversion function. - Transmits/receives the X-ray shot signal and exposure conditions/exposure performance data, and transmits the information to the MC. - Supplies power (24 V) to the SE. - The power cable is shipped together with the machine from the factory to destinations inside Japan. The cable needs to be locally prepared in other countries.

◇ *REFERENCE* ◇

Indications of the status lamps (LED's) are as follows:

Status lamp A

Status lamp B

READY
POWER
ERROR

READY
READY
READY

The order of the LEDs is the same as that of the panels.

1300_100003E.ai
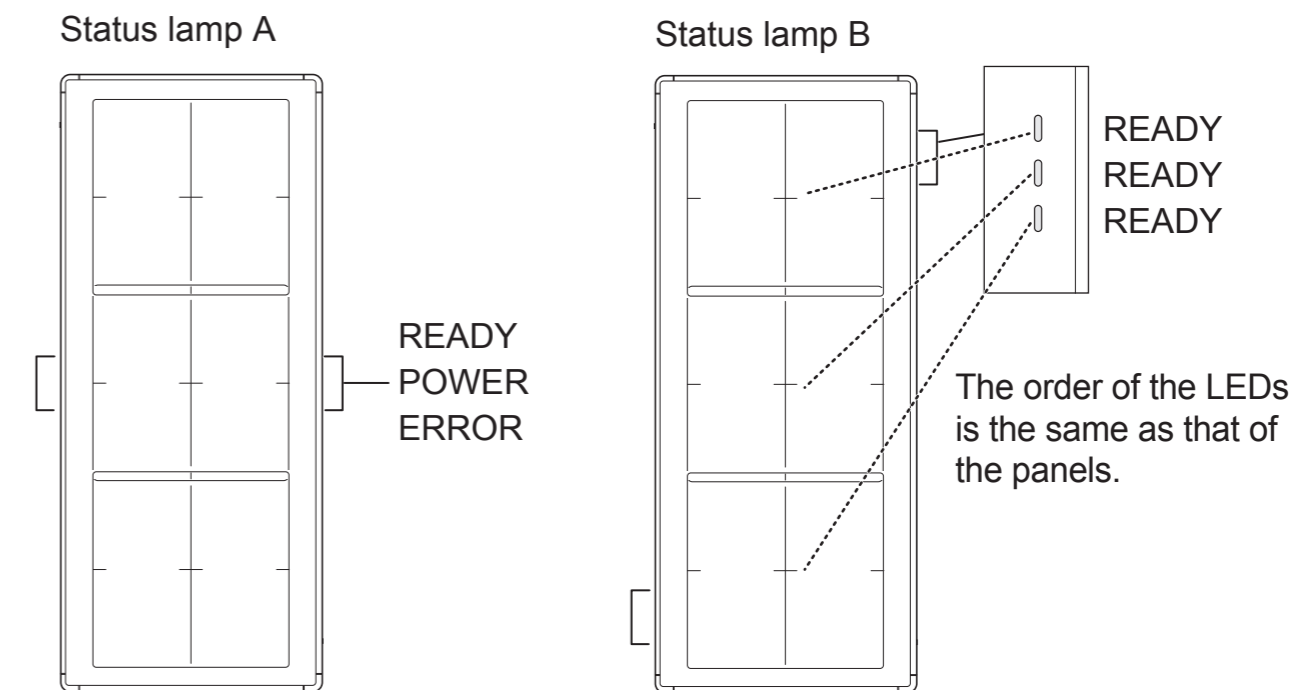
- Status lamp A

LED	Lighting state	Description
READY LED (Green)	Lit	Exposure possible
	Flashing at 1.0-sec intervals	During exposure sequence
	Unlit	Standby
POWER LED (Blue)	Lit	Power ON
	Flashing	-
	Unlit	Power OFF
ERROR LED (Orange)	Lit	Communication error
	Flashing at 1.0-sec intervals	Hardware error
	Unlit	Normal

- Status lamp B (for each panel)

LED	Lighting state	Description
READY LED (Green)	Lit	Exposure possible
	Flashing at 1.0-sec intervals	During exposure sequence
	Unlit	Standby

1.3.2 Electric parts

■ SE rear
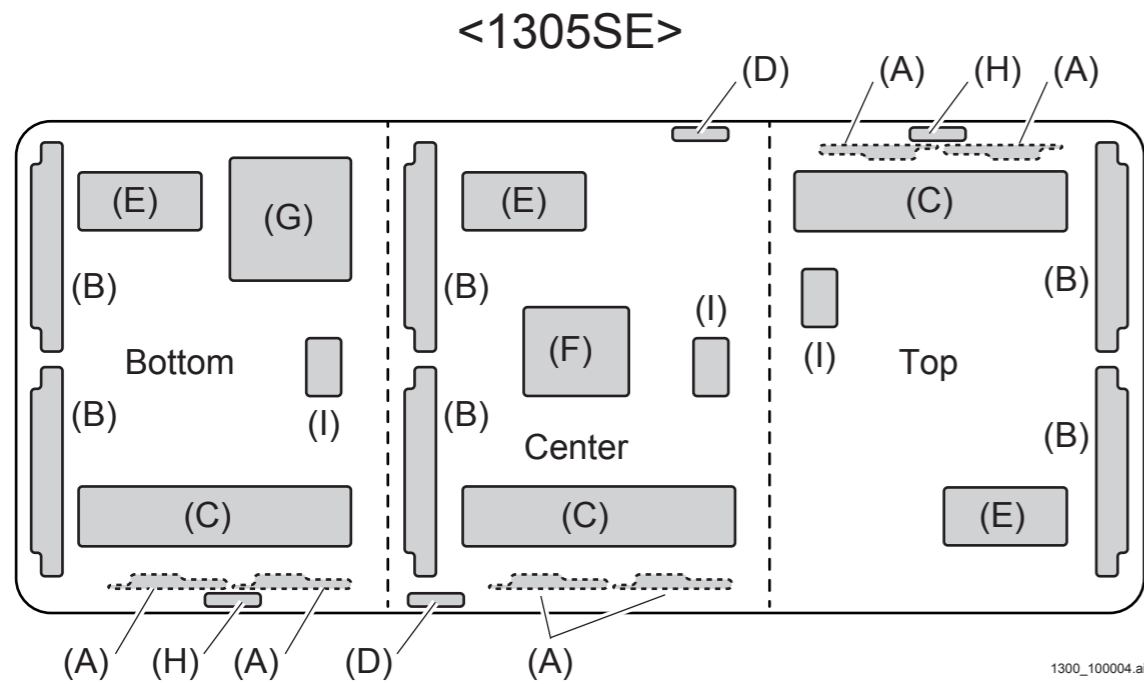
<1305SE>

1300_100004.ai

The shading in the following table indicates parts for which market replacement is not possible.

No.	Name	1305SE	Function Description
(A)	GTD	65A	The gate control signal (charge read switch) received from the RMV board is amplified and sent to the gate control IC.
(B)	ABA	65A	The analog signal read from the panel is converted to a digital signal and sent to the RMV board.
(C)	RMV	65A	- Control of image reading. The image data received from the ABA board are subjected to compensation processing and are sent to the MC. - With each image acquisition completion, the temperature in the panel is monitored by Thermistor. - Control of wired communication with the panel outside. - Control of each board in the panel, based on requests from the MC (battery monitoring, LED control, shock sensor control, SE application update, log output to the FTP server, etc.). - Perform command communications between the RMV boards for each panel unit.
(D)	LED	65B	Lighting of the panel LED (status lamp)
(E)	POW	65A	Supply of the DC power for the boards in the panel.
(F)	POD	65A	- Convert the SE input power 24 V DC into the power supply for the panel system 12 V, into the power supply for the PDV, and into the power supply for the HUB 5 V. - Relay the LED control signal from the RMV board to the LED board.
(G)	HUB	-	Connect each board in the panel with LAN cables.
(H)	LED	65C	Lighting for each panel selection READY LED.
(I)	COC	65A	Separate control signals for each panel selection READY LED from the RMV65A board.

DR-ID 1300 / DR-ID 1300PU *Service Manual*

1.3.3   I/O Parts Information

■ **MP**

DETAIL A

(C)   (A)

MP

A

FRONT

(B)
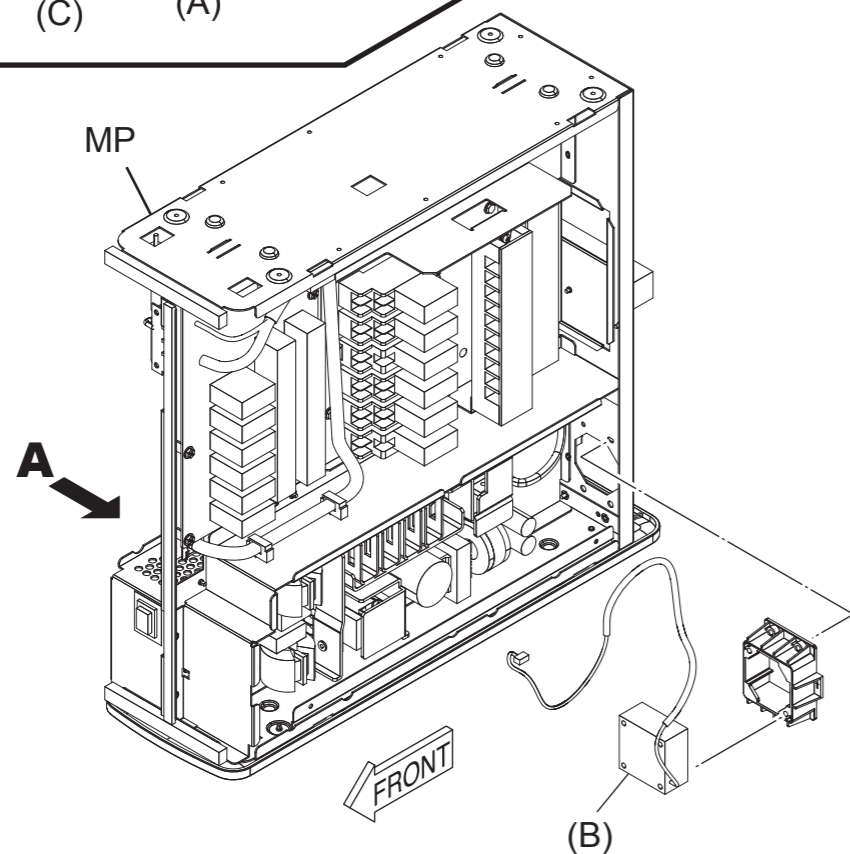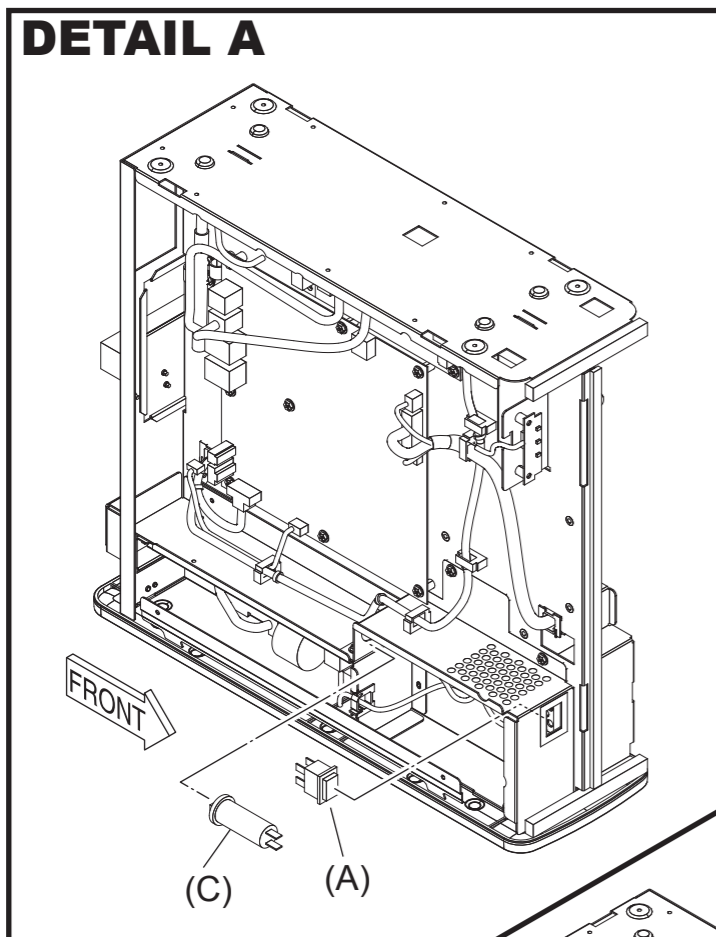
1200_100013.ai

No.	Name	Symbol	Type	Description
(A)	Power circuit breaker	-	200 VAC	Power supply circuit breaker switch - Handle mark: I / O 600_100009.ai
(B)	MP cooling fan	FAN1	24 VDC	Cools the interior of the MP and exhausts the air inside the MP.
(C)	Circuit protector			

1.3.4　Board-Related Information

■ MP

DETAIL A

A MP

FRONT

1300_100010.ai
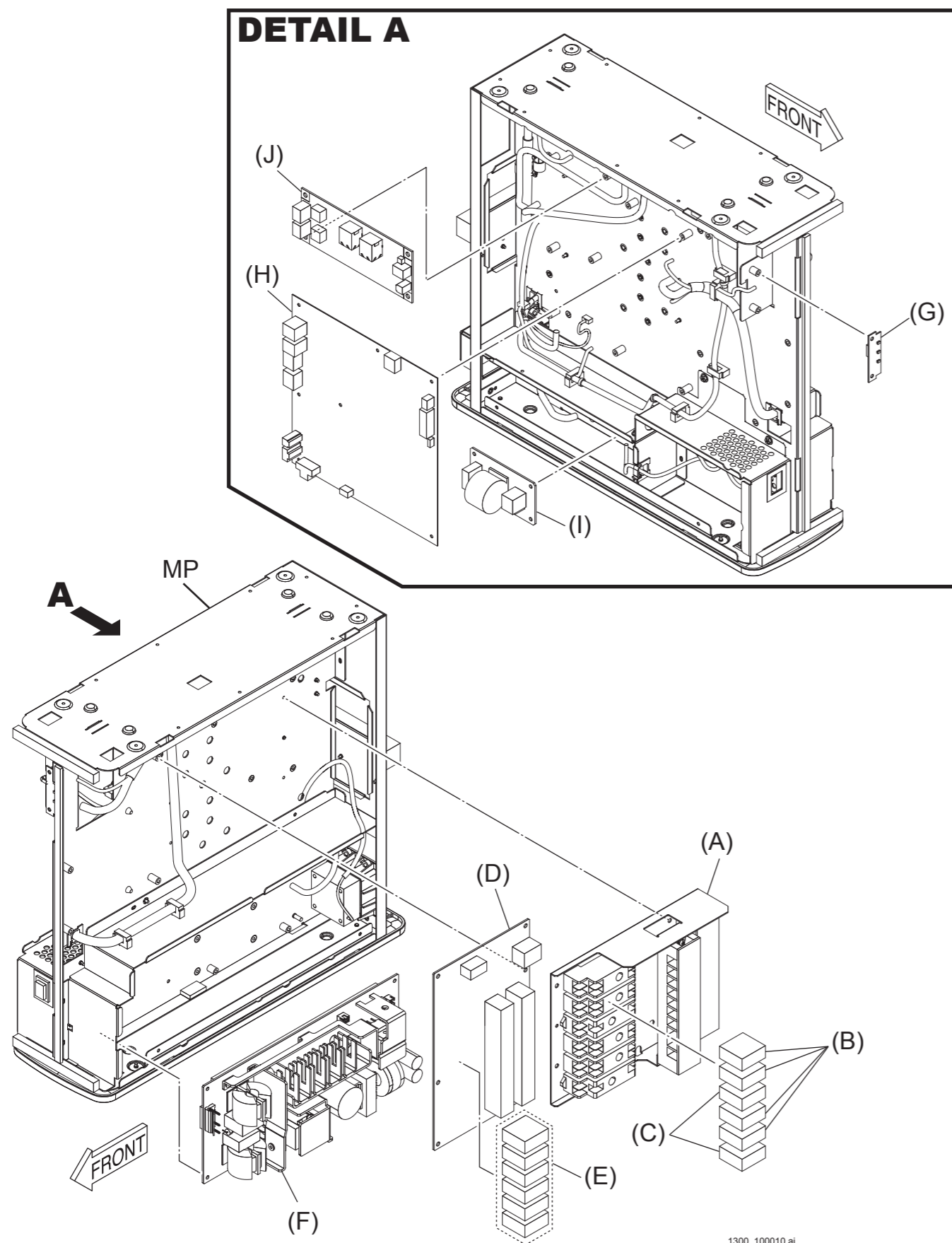
No.	Name	Description
(A)	AC bucky relay unit	Optional item. Four kinds of variation are available. - Type of 100 V-110 V - Type of 110 V-120 V - Type of 200 V/220 V - Type of 220 V-240 V ☞ {Product Specification:1.2_Optional Items}
(B)	AC relay*	When the AC bucky relay unit is a type of 100-110 V. Part No.: AHN210X0 (Panasonic Electric Works)
		When the AC bucky relay unit is a type of 110-120 V. Part No.: AHN210X1 (Panasonic Electric Works)
		When the AC bucky relay unit is a type of 200-220 V. Part No.: AHN210Y0 (Panasonic Electric Works)
		When the AC bucky relay unit is a type of 220-240 V. Part No.: AHN210Y2 (Panasonic Electric Works)
(C)	DC relay*	Part No.: AHN12205 (Panasonic Electric Works)
(D)	MPX54A board	Connection board with the X-ray equipment. Transmits X-ray exposure conditions and the shot signal to the X-ray equipment.
(E)	Relay	Contact signal output relay. Part No.: AHN22005 (Panasonic Electric Works)
(F)	Power supply unit	Board-type power supply unit. Supplies power of 12 VDC to the inside of the MP and the SE. Part No.: CME240P-24 (TDK Lambda)
(G)	LED60C board	LED board for indicating power supply status. Indicates the power supply status.
(H)	MPC54B board	For LAN connection. MP control board with the CPU mounted. The remote switch (optional) can be connected.
(I)	NFB51A board	Noise filter
(J)	MPL65A board	Relay the system power DC24V for SE and the LAN signal to the SE.

*:　The AC relay and the DC relay incorporated in the AC bucky relay unit need to be replaced periodically. The relay incorporated in the MPX54A board need not be replaced unless a failure occurs.

2. Block Diagram

2.1 System Block Diagram

<Type of cables>
1. Option cable
2. Option cable
3. Cable supplied by dealer

X-ray control BOX

② I/F BOX cable

SE

① 10m/20m (LAN+24V power)

② Shot signal cable

I/F BOX

② RS232C cable

CSL

MP

MPL** board

MPC** board

RJ45

D-Sub

SE

RJ45

D-Sub

24V

AC-DC Power supply

NFB board

③ LAN cable UTP

Inlet

① 10m/20m (LAN+24V power)

③ Power cable (3m) AC100V-240V with protective earth conductor

AC 100V Power supply

X-ray room (IEC 60601 environment)

Outside the X-ray room (IEC 60950 environment)

1300_100005E.ai
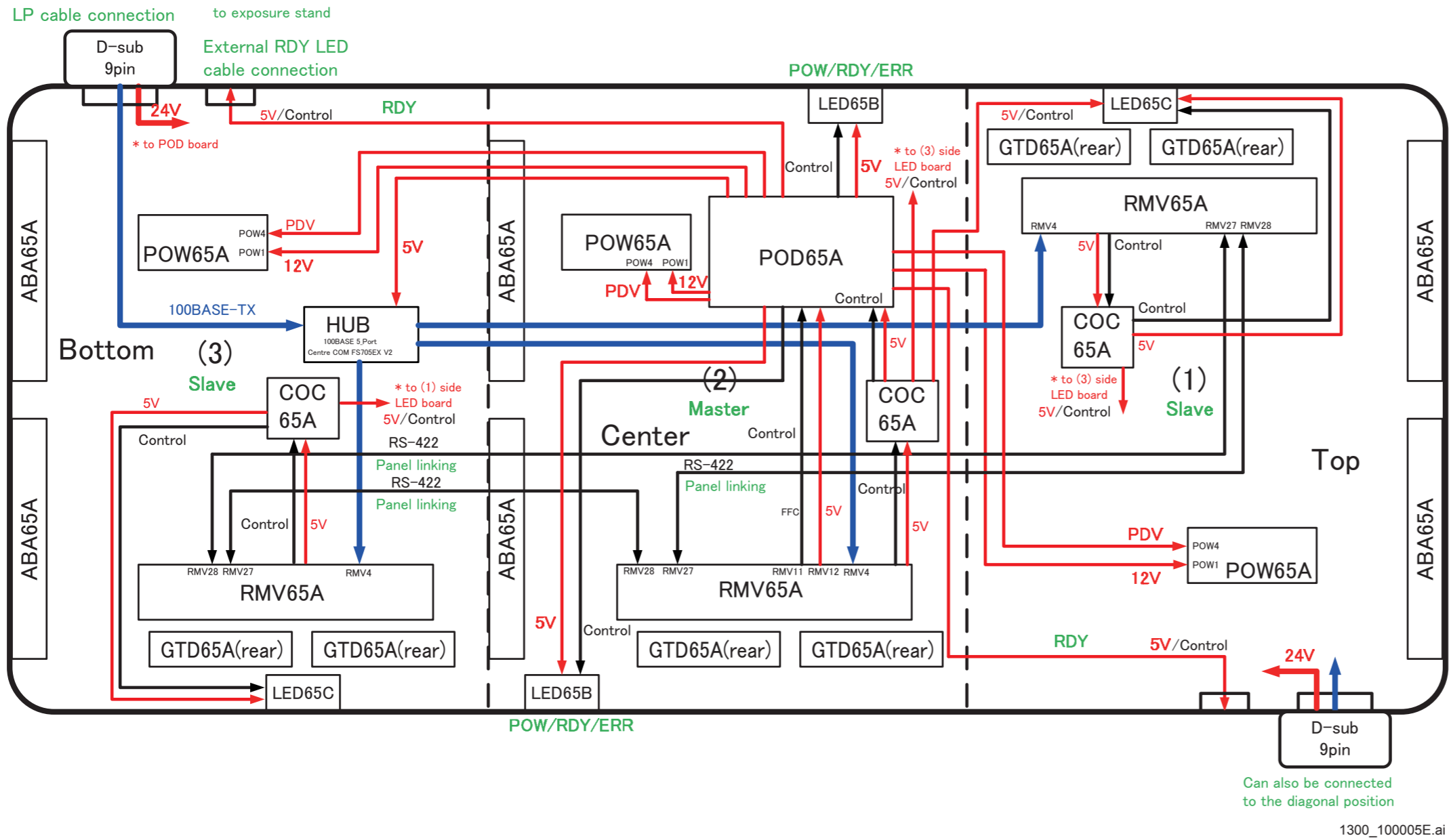
2.2 SE Block Diagram

1300_100005E.ai

2.3 MP Block Diagram

MPC54B

DAP (Not used) X-con (Not used)

Isolated specification

ETHERNET 100BASE-TX

Pulse transformer TRX100BTH/JPC | RJ 45

ETHERNET 100BASE-TX

DX Console (1200MC)

HUB 100BASE

ETHERNET 100BASE-TX

Pulse transformer TRX100BTH/JPC | RJ 45

ETHERNET 100BASE-TX

232C transceiver   232C transceiver

EthPHY 100BASE

FUSE | 24V→12V | FUSE | +12V

ETHERNET 100BASE-TX

FUSE | 24V→12V | FUSE | +12V

ETHERNET 100BASE-TX

AC100 to 240V power

IN LET | NFB 51A | SW-NFB

CPU

MPL65A

ETHERNET 100BASE-TX

from AC/DC power +24V

MPL3 MPL7
MPL1
FET | FUSE | +24V
MPL2
MPL5

LP cable

LP panel 1

DC power CME240P-24/ TDK Lambda | +24V

+24V

to MPL65A board

+24V

+24V | FUSE | 24V→5V | SW | Tr | FUSE

FET

MPL6 +24V
FET | FUSE
MPL4   MPL8

LP cable

LP panel 2

FAN

Detect the FAN rotation

+5V | LED60C

FUSE | +5V

74HCT240/EN controller

FUSE | +5V

MPX54A Isolated specification

+5V_D   5V_ISO
MPX4
5V→5V DCDC

FPGA

Panel 2_detecting the 12 V fuse meltdown | Photo coupler
Panel 1_detecting the 12 V fuse meltdown | Photo coupler | Photo coupler

Detecting the MPC-MPX connector unconnected

GND

MPX3
Photo coupler | 232C transceiver | MPX5

MPX1, 2
Relay | SHOT_GO | X-CON
Photo coupler | SHOT_SW1
Photo coupler | SHOT_SW2

Detect the remote SW state
Control the remote SWLED

Select signal
Selector | Board Ver

For Checking Board Ver

Panel 2_12V output control
Panel 1_12V output control
+5V D output control

Relay | BKY_SW1 | Bucky
Relay | BKY_SW2

Board Ver

ERC54A

GND   Remote SW

AC bucky relay uint (Option)

1300_100007E.ai

3. Effective Area and Center Position of Image

3.1 Effective Area

An effective area of an image extends over 1234.2 mm x 424.8 mm (8,228 x 2,832 pixels).

1234.2mm (8228Pixel)

424.8mm (2832Pixel)

Center of the image area

SE

1300_100008E.ai

3.2 Center of the Image

The center of the image is as shown below:

1339.8

669.9

SE

283.7

567.4

Center of the image area

Unit: mm

1300_100009E.ai

4. Calibration

The machine generates the image calibration data by five kinds of the calibrations below.
Make sure to appropriately perform the marker calibration; otherwise, an image is not correctly synthesized and thus an image to be output will be misaligned with the panel boundary. Also in the case of misalignment due to aging, perform marker calibration.

	Background calibration (*1)	Automatic offset update	Full calibration	Automatic defect calibration	Marker calibration
Timing	At machine start-up/termination	When the machine is running and the exposure menu has not been registered (about 10 minutes interval)	- At installation - At preventive maintenance	Set the implementation propriety and the start time in EDIT CONFIGURATION (default: 4 AM)	- At installation - At preventive maintenance
Method	Automatic execution	Automatic execution	Service engineer executes from the RU PC-TOOL.	Automatic execution	Service engineer executes from the RU PC-TOOL.
Necessity of exposure	Not necessary	Not necessary	Necessary	Not necessary	Necessary
Image calibration data to be generated	- For offset calibration (at start-up/termination) - For defect calibration (at termination only)	- For offset calibration	- For offset calibration - For gain calibration - For defect calibration - For lag calibration (*2)	- For defect calibration	- For positioning
Required time (per one panel)	About 30 seconds	About 30 seconds	About 40 minutes		About 5 minutes

*1: If starting the machine after the short time interruption (up to about 5 minutes) of the power supply, battery replacement, etc., the background calibration is not performed. After starting up, it is immediately usable.

*2: The full calibration does not generate the lag calibration data itself but calculates the lag calibration factor only. The lag calibration data is calculated by multiplying the offset image captured automatically when the exposure menu is registered at a normal exposure by the lag calibration factor.

DR-ID 1300 / DR-ID 1300PU
Service Manual

Troubleshooting (MT)

1. Overview of Troubleshooting

The SE (FPD) used in the machine is an expensive component.

If the SE (FPD) malfunctions, check the status indication of the status lamps (LED's) provided on the SE, and check the error log for analysis.

It is undesirable to replace the SE (FPD) unit without careful consideration even if the SE (FPD) is suspected to have a failure.

1.1 Troubleshooting from Error Log

1.1.1 Checking the Error Log

Using the RU PC-TOOL ERROR DB, view the error log and check the occurrence of error codes.
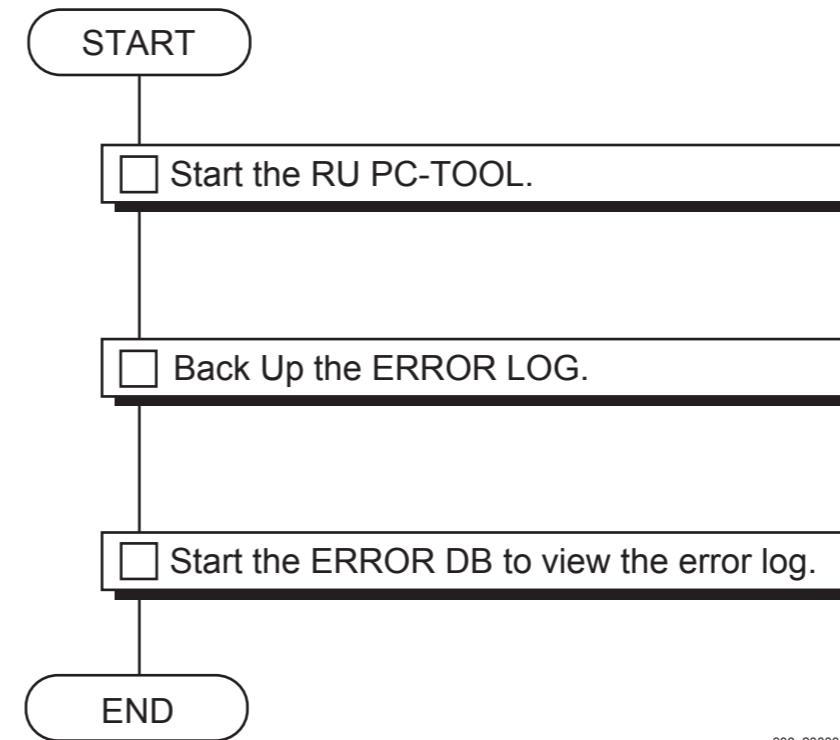
```
        ┌─────────┐
        │  START  │
        └─────────┘
             │
   ┌──────────────────────────┐
   │ ☐ Start the RU PC-TOOL.  │
   └──────────────────────────┘
             │
   ┌──────────────────────────┐
   │ ☐ Back Up the ERROR LOG. │
   └──────────────────────────┘
             │
   ┌──────────────────────────────────────┐
   │ ☐ Start the ERROR DB to view the     │
   │   error log.                         │
   └──────────────────────────────────────┘
             │
        ┌─────────┐
        │   END   │
        └─────────┘
                              600_200001.ai
```

■ **Purpose of Making a Backup of the Error Log**

An error log is added to the file whenever an error occurs during the operation of the machine, and when the file becomes full, its entries are overwritten on a first-in, first-out basis.

Before troubleshooting, back up the error log, which contains the information about errors encountered during the user's use of the machine.

■ **Purpose of Viewing the Error Log**

When an error occurs, it may incur two or more additional errors. The error code displayed on the CL represents the last-encountered error.

You must therefore view the error log to locate the error code related to the encountered trouble before proceeding to perform troubleshooting.

1.1.2 Determining the Error Code of the Encountered Trouble

(1) Group the errors that occurred from the error codes displayed on the ERROR DB window of the RU PC-TOOL.

(Example)
Divide into error occurrence groups A and B based on the error occurrence time.

(2) Locate the error that is responsible for the encountered trouble (the error that occurred first).

(Example)
The first error in the error occurrence group A is "12500".

Error code that occurred first.
Start the analysis from this error code.

Error DB window
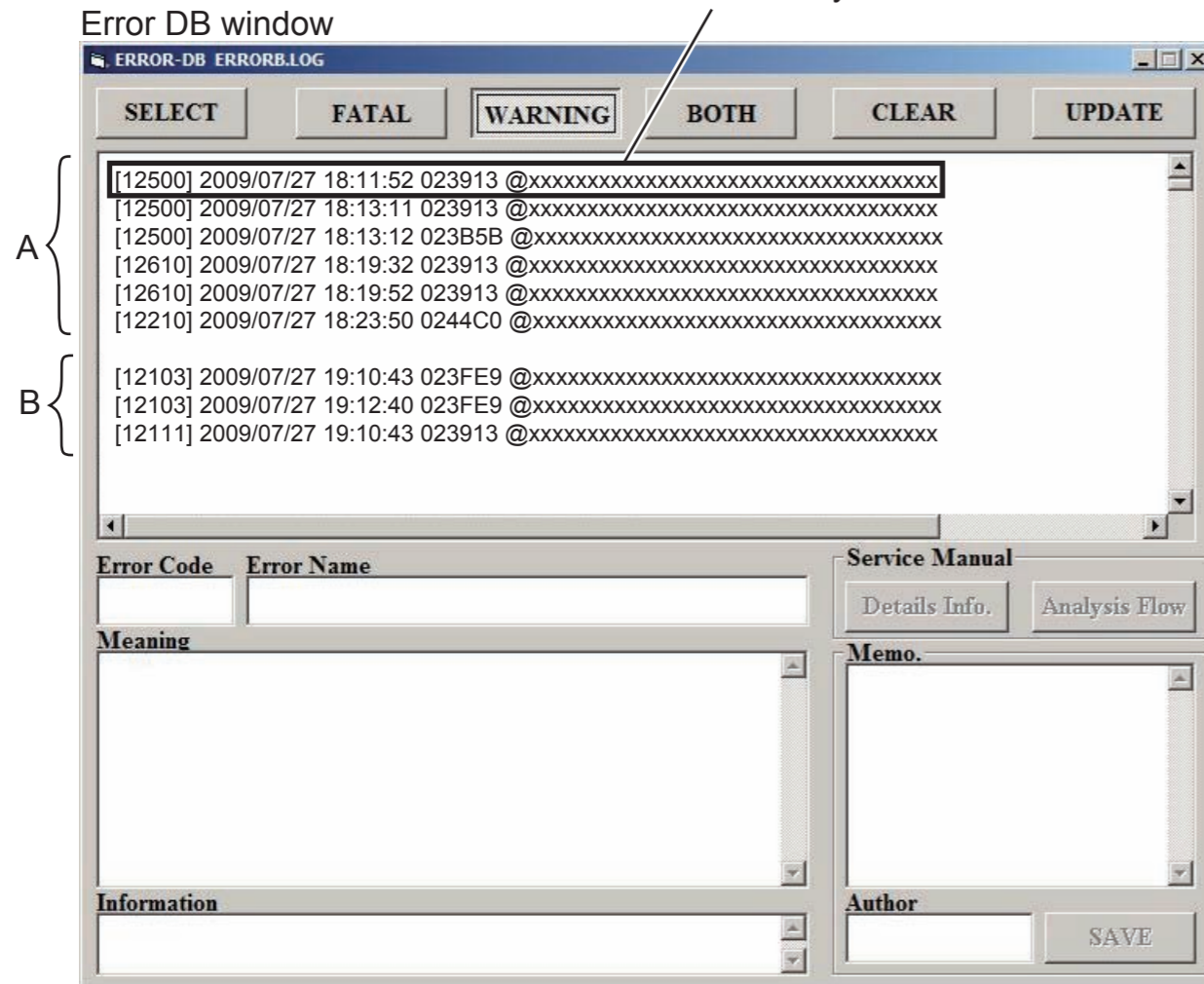
600_200002.ai

1.2 How to View Error Code

An error code is expressed as a 5-digit number starting with "1".

00 to 99: Reference number for each error category
1 to 9:   Error category
0 to 2:   Error level
1:        Always 1
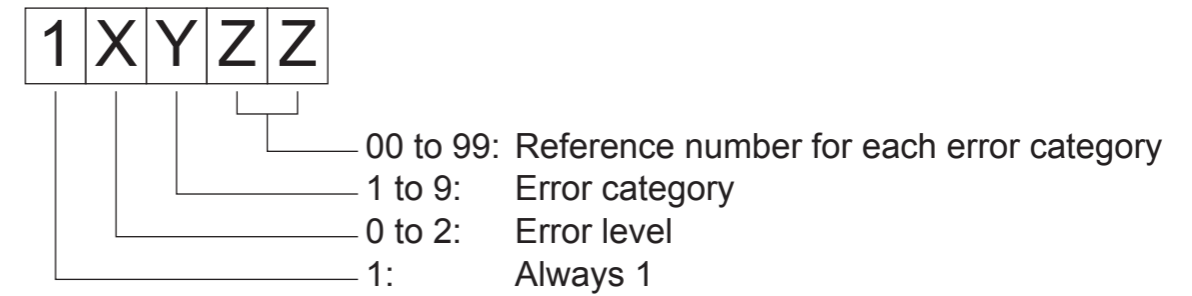
600_200003.ai

■ X: Error Level

Indicates the error level.

0: FATAL error
Level where the system shuts down and routine processing cannot be continued.
The user is notified of the error by the indication on the CL. It is necessary to immediately troubleshoot and take remedial action when a FATAL error occurs.

1: WARNING error
Level where an error occurs due to erroneous user operation, but routine processing can be continued.
The user is notified of the error by the indication on the CL. The user can continue routine processing after confirmation. If erroneous user operations frequently occur, it is necessary to guide the user for improvement.

2: LOG error
Level where an accidental retry error causing no problem in performance, and routine processing can be continued.
An error is logged, but the user is not notified when the error occurs.
It is necessary to check the error log in periodic servicing and take remedial action.
The logged errors may be used for design analysis.

■ Y: Error Category

Indicates a part where the error is detected.

Value	Category	Description
1	Vacant	-
2	Error in panel	Error related to the panel (FPD)
3	Error in mechanical control	Error related to the mechanism such as bucky control
4	Error in retro radiation source	Failure in communication with the retro radiation source, or data inconsistency
5	Error in CL (IIP)	Failure in communication with the CL (IIP)
6	Error in file	Failure in reading/writing data from/in the HDD and FTP
7	Error in MP	Failure in communication with the MP or SE, or data inconsistency
8	Vacant	-
9	Error in software	Item not applicable to 1 to 8 (for debugging software)

■ ZZ: Serial Number for Error Category

Indicates a serial number for each error category.

1.3   How to Use the Detail Error Log

Error codes appearing on the ERROR DB window of the RU PC-TOOL or error codes appearing when an error occurs in carrying out utilities store the log of various kinds of detail error information in response to the situations of the error. You can narrow down the cause of the error from the detail error information.

■ Display Example of the Detail Error Log

<Display example>
[12500] 2009/07/27 18:11:52 023913 @complementMAS...428 PARAM=uAs VALUE=0

Error code   Expansion error log

Error DB window

600_200004.ai
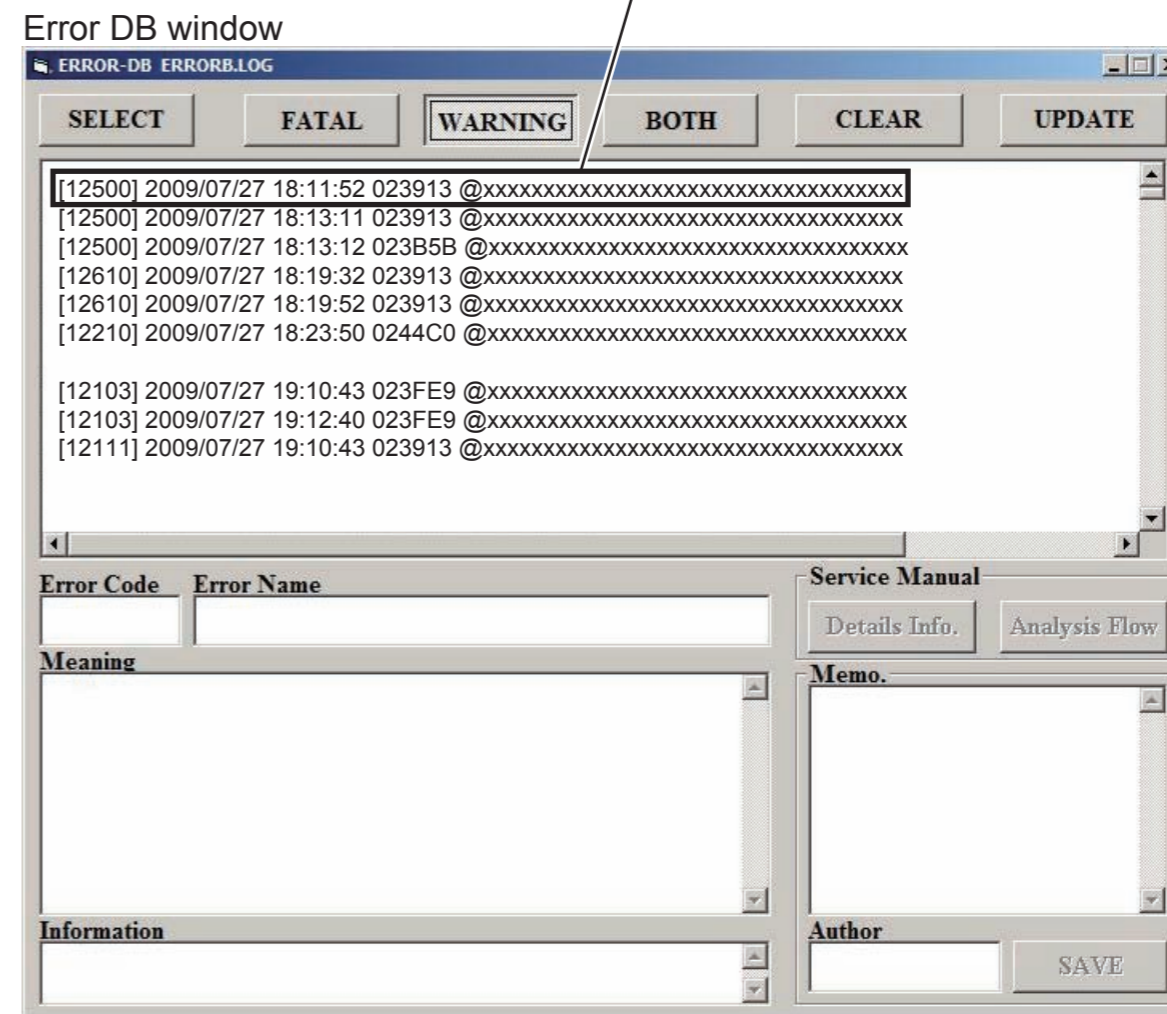
1.3.1　11112 Error

When the 11112 error occurs, the following information for identifying the failure is indicated in the detail error log.
Display example:
[11112]2010/03/09 18:43:39 00E8DD @SE[M120001] err[0x01000000]
@SE[val1] err[val2]
- val1: Serial ID
- val2: RMV detail error (in hexadecimal system)

■ 1201SE/1202SE/1211SE/1212SE/1213SE/1214SE/1305SE

Bit	Detailed code	Detailed error name	Countermeasure
0	0x00000001	Connector (ABA1_CNCHK_1)	Disconnect and insert the RMV21 cable or replace the RMV board. If it does not improve, replace the SE.
1	0x00000002	Connector (ABA1_CNCHK_2)	Disconnect and insert the RMV22 cable or replace the RMV board. If it does not improve, replace the SE.
2	0x00000004	Connector (ABB2_CNCHK_1)	Disconnect and insert the RMV23 cable or replace the RMV board. If it does not improve, replace the SE.
3	0x00000008	Connector (ABB2_CNCHK_2)	Disconnect and insert the RMV19 cable or replace the RMV board. If it does not improve, replace the SE.
4	0x00000010	Connector (POW)	Disconnect and insert the harness between RMV3-POW2. If it does not improve, replace the POW board.
5	0x00000020	Impact detection (GLG)	Escalation is not required
6	0x00000040	Disconnection detection (X free)	Replace the SE.
7	0x00000080	ADAS header error	For V16.2 or earlier: Upgrade the MC to version V16.3 or later, and also upgrade the SE accordingly. For V16.3 or later: If it occurs via a timing other than READY, it is probably being generated by static electricity etc., so restore by restarting the SE. If it does not restore even if it is restarted, then replace the POW board and the RMV board. If it does not restore even if the boards are replaced, then replace the SE.
8	0x00000100	Connector (POW_ABB_1)	Check the connection conditions of the RMV board and POW board connectors. If it does not improve, replace the POW board.
9	0x00000200	Connector (POW_ABB_2, POW_PDV_FUSE)	Check the RMV board, POW board and GLG board's connect connection condition. If it does not improve, replace the POW board.
10	0x00000400	Connector (GTD_CNCHK_1) / RMV23 harness check	Disconnect and insert the RMV23 cable. If it does not improve, replace the SE.
11	0x00000800	Connector (GTD_CNCHK_2)	Disconnect and insert the RMV24 cable. If it does not improve, replace the SE.
12	0x00001000	Connector (LED)	Malfunctioning is occurring via one of the RMV/LEC/REC/SPR. Replace the corresponding parts, and perform isolating/handling.
13	0x00002000	Fuse (5V)	Replace the POW board.
14	0x00004000	Fuse (2.5V)	Replace the POW board.
15	0x00008000	Connector (GLG)	Disconnect and insert the cable between the RMV board and the GLG board. If it does not improve, replace the RMV board and the GLG board.
16	0x00010000	Sleep mode recovery error	Replace the RMV board.
17	0x00020000	Image FLASH error	Replace the RMV board.

Bit	Detailed code	Detailed error name	Countermeasure
18	0x00040000	X-ray detection before ready User operation error.	Escalation is not required
19	0x00080000	Panel cracking judgment	If the image is white, replace the GLG board, POW board, and RMV board. Otherwise, disconnect and insert the cables connected to the RMV board, POW board, and GLG board. If it does not improve, replace the SE.
20	0x00100000	DDR2 error	Replace the RMV board.
21	0x00200000	Config error	Replace the RMV board.
22	0x00400000	PPC access error	Replace the RMV board.
23	0x00800000	Electrical noise detection	Occurring due to static electricity, etc. If this occurs frequently, then an on-site investigation which includes the facility environment and users, etc. needs to be conducted. "Error code: 13043 Electrical noise detected" is displayed on the CSL.
24	0x01000000	Thermistor error	Restart. There is a high probability that this is occurring due to static electricity, etc. If this occurs frequently, then an on-site investigation which includes the facility environment and users, etc. needs to be conducted.
25	0x02000000	Undefined	
26	0x04000000	Long panel error	Check the RMV board's connect connection condition. Also check that the panel ID settings are correct.
27	0x08000000	IP address jig error	Replace the RMV board and SE connector. For the DR-ID1214SE (the initial letter of panel ID is Y), and DR-ID1213SE (the initial letter of panel ID is W), also replace the BCN board.
28	0x10000000	Gate IC error	Replace the RMV board and POW board. If it does not improve, replace the SE.
29	0x20000000	Serial ID registration error	Error occurs via the SE's FPGA. Upgrade or downgrade the SE's FPGA.
30	0x40000000	Image processing error	Replace the RMV board.
31	0x80000000	Exposure sequence error	Replace the RMV board.
32	0x10080000	Gate IC/Panel cracking judgment	Replace the GLG board, POW board and RMV board. If it does not improve, replace the SE.

■ RMV board error (RMV65A board)

If the RMV board connectors are not inserted correctly or the RMV board cables are disconnected, the following errors appear.

Connector	Error display	Probable cause
RMV1	No error	The RMV65A power does not turn on.
RMV2	No error	Does not recognize the battery. Does not recognize the memory switch and the sleep recovery switch.
RMV3	11112 error	POW board
RMV4	No error	Wired communication is invalid.
RMV5	-	
RMV6	11244 error	H/W error
RMV7	-	
RMV8	11112 error	GLG board
RMV9	11244 error	SD card error
RMV10	No error	
RMV11	11112 error	LED
RMV12	11112 error, MCU error	LED does not appear.
RMV13	No error	MCU JTAG
RMV14	No error	
RMV15	No error	Debug serial report
RMV16	No error	Does not recognize returning of the IP address. Does not recognize the wired cable connection. Wireless communication is valid.
RMV17	No error	PPC JTAG
RMV18	No error	FPGA JTAG
RMV19	11112 error	Connector (ABB2_CNCHK_2)
RMV20	11112 error	Connector (ABA1_CNCHK_2)
RMV21	11112 error	Connector (ABA1_CNCHK_1)
RMV22	11112 error	Connector (BB2_CNCHK_1)
RMV23	11112 error	Gate IC error
RMV24	11112 error	Gate IC error
RMV25	11112 error	Thermistor error
RMV27	11112 error	Long panel
RMV28	11112 error	Long panel

2. Error Code Table

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
10150	Memory map reconfiguration error	A retry of memory map reconfiguration is made, but an error is detected, resulting in system shutdown.	
10212	FPD high temperature error	[During bootup/routine processing] A high temperature (Approx. 60°C or higher) of the FPD is detected, resulting in system shutdown. <Reference> - You can know the No. of the FPD of interest and the temperature when the error is detected on the error log. - This temperature is an estimate since it fluctuates depending on the SE type and the external temperatures.	- Check the temperature and humidity of the examination room. - Check the FPD.
10213	FPD low temperature error	[During bootup/routine processing] A low temperature (Approx. -10°C or lower) of the FPD is detected, resulting in system shutdown. <Reference> - You can know the No. of the FPD of interest and the temperature when the error is detected on the error log. - This temperature is an estimate since it fluctuates depending on the SE type and the external temperatures.	- Check the temperature and humidity of the examination room. - Check the FPD.
10214	IP address multiple connection error	[During bootup/routine processing] The FPD with the same IP address is connected, and the system shuts down.	- Check the IP address setting.
10600	Correction data load error	[During bootup] An attempt is made to read the correction data from the SSD and load onto the CPU board memory and the SODIMM mounted on the SPC board, but read from the SSD fails. After two retries are made, a retrial count is over, resulting in system shutdown. <Reference> You can know the file name where a failure in loading occurs on the error log.	- Check the SSD.
10601	System file load error	[During bootup] An attempt is made to read the system file (except the correction data) from the SSD and load onto the CPU board memory and the SODIMM mounted on the SPC board, but read from the SSD fails. <Reference> You can know the file name where a failure in loading occurs on the error log.	- Check the SSD.

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
10750	MPX fuse blown error	*[During bootup/routine processing]* A blown fuse of the MPX board is detected, and the system shuts down.	
10751	MP fan stop	*[During bootup/routine processing]* MP cooling fan (FAN1) stop is detected, and the system shuts down.	- Check the fan (FAN1). - Check the MPC board.
10752	MPX connector disconnected	*[During bootup/routine processing]* The system shuts down, as the cable is disconnected from the MPX board or the cable is unconnected.	- Check the MPX board.
10753	MP connection error	*[During bootup/routine processing]* Disconnection of a line between the MP and the MC is detected.	- Check the MP power. (If the power of the MP is OFF, turn it ON.) - Select a defective item from the detail error log mentioned in ERRORDB.LOG, and check it.
10900	Parameter error	*[During bootup]* Parameter settings for the stand and the bed are not made, and the system shuts down.	- Check the parameters.
10902	System configuration error	*[During bootup]* The following mismatches are found when the config is checked during startup of the MC: - Emergency mode ON & Long-time accumulation ON - AutoDetect OFF & Long-time accumulation ON - Third panel configuration ON & Emergency mode OFF	- An invalid combination is set in the config.
10990	Software logic error	*[During bootup/routine processing]* An error is detected in the logic for controlling the software, and the system shuts down.	
10991	Parameter file key not hit	*[During bootup/routine processing]* An attempt is made to load the parameter file, but the key is not detected, resulting in system shutdown.	
11111	RMV board blown fuse detected	*[During bootup/routine processing]* - The RMV board detects blowout of a fuse of the POW board mounted on the FPD, and disables the FPD. - The RMV board detects a failure in connection of a power connector of the GTD board mounted on the FPD, and disables the FPD. - The RMV board detects an error of the MP cooling fan (P-FAN), and disables the FPD. *[During M-Utility]* Blowout of a fuse of the POW board is detected by the RMV board during the check of fuses. \<Reference\> You can know which device (fuse, connector or fan) is defective on the error log.	- Check the FPD. - Check the MP cooling fan (P-FAN).

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
11112	**RMV board communication error**	*[During bootup/routine processing]* Although an attempt is made to set the reading mode for the RMV board mounted on the FPD, an error in communication is detected when reading back the register value after setting of the reading mode. The communication is retried, but results in a failure. The FPD is disabled. *[During M-Utility]* - An error is detected by Communication Check of RMV.	- Select a defective matter from the detail error log indicated in ERRORDB.LOG, and check it. ☞ **{MT:1.3.1_11112 Error}**
11140	**CPU image correction error**	*[During routine processing]* Processing of the CPU image correction library fails.	
11160	**Exposure time sequence timeout**	*[During routine processing]* Signals necessary for continuing the exposure cannot be received after starting the exposure, resulting in timeout.	
11201	**FAN stop error**	*[During bootup/routine processing]* MP cooling fan stop is detected. <Reference> You can know which fan stops on the error log.	- Check the MP cooling fan (P-FAN).
11210	**FPD low temperature warning**	*[During bootup/routine processing]* A low temperature (Approx. 10°C or lower) in the FPD is detected, and the FPD is disabled. <Reference> - You can know the No. of the FPD of interest and the temperature when the error is detected on the error log. - This temperature is an estimate since it fluctuates depending on the SE type and the external temperatures.	- Check the environments at the installation site. - Check the use conditions. - Check the FPD.
11211	**FPD high temperature warning**	*[During bootup/routine processing]* The panel gets high temperature (Approx. 40°C or higher) and is disabled. <Reference> - You can know the No. of the FPD of interest and the temperature when the error is detected on the error log. - This temperature is an estimate since it fluctuates depending on the SE type and the external temperatures.	- Check the environments at the installation site. - Check the use conditions. - Check the MP cooling fan (P-FAN). - Check the FPD.
11215	**Battery high temperature warning**	*[During bootup/routine processing]* The battery temperature rises to the warning level.	- Check the ambient temperature. - Space exposures to lower the temperature in the FPD.

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
11216	**Battery high temperature error**	*[During bootup/routine processing]* The battery temperature rises to the banning-of-use level.	- Remove the battery from the FPD. If the removed battery remains hot, replace it with a new one, as the battery is defective. - Remove the battery from the FPD. If the temperature of the removed battery lowers, check the cables in the FPD.
11217	**Battery low temperature warning**	*[During bootup/routine processing]* The battery temperature lowers to the warning level.	- Check the ambient temperature.
11218	**Battery low temperature error**	*[During bootup/routine processing]* The battery temperature lowers to the banning-of-use level.	- Check the ambient temperature.
11219	**Panel high temperature error (SE board ambient temperature)**	*[During bootup/routine processing]* The board ambient temperature rises to the banning-of-use level (Approx. 60°C or higher). <Reference> This temperature is an estimate since it fluctuates depending on the SE type and the external temperatures.	- Check the ambient temperature. - Check the thermistor (temperature sensor).
11220	**Panel low temperature error (SE board ambient temperature)**	*[During bootup/routine processing]* The board ambient temperature lowers to the banning-of-use level (Approx. -10°C or lower). <Reference> This temperature is an estimate since it fluctuates depending on the SE type and the external temperatures.	- Check the ambient temperature. - Check the thermistor (temperature sensor).
11225	**Panel self-diagnosis error**	*[During bootup/panel connection]* A self-diagnosis request has been made from the MC to the panel and the response from the panel was NG. <Reference> The detected SE serial ID can be confirmed in the error log.	- Execute [SE(n) Board State] of SE by MUTL and confirm that the board has no abnormality. - Confirm that the network between MC-SE us connected normally. - Inspect the boards (RMV, wireless module, POW, GTD, ABA, ABB) and the cables in the panel.
11226	**Not supporting AUTO DETECT**	*[During bootup/panel connection]* At the time of active AUTO DETECT, connection of a panel not compatible with AUTO DETECT has been detected as the result of checking the SE serial ID. <Reference> The detected SE serial ID can be confirmed in the error log.	- Check that no panel not compatible with AUTO DETECT is connected. - Check for wrong input of an SE serial ID with PC-TOOL.
11228	**Panel cracking judgment error**	*[During menu registration]* The SE has detected a panel cracking and informs the MC.	- Panel breakage (9 mm x 9 mm or more) is detected.

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
11229	**Wrong irradiation detection error**	X-ray irradiation is performed before the panel turns on the Ready state.	- Urge users to pay attention to performing the exposure after checking the Ready state because the X-ray irradiation is performed before the panel turns on the Ready state.
11231	**Invalid data generated for defect correction**	*[During bootup]* The value of the maximum defect pixel size or defect pixel density exceeding the specification is detected in defect correction data generation of background calibration (calibration automatically taking place when the CU starts up). *[During full calibration]* The value of the maximum defect pixel size or defect pixel density exceeding the specification is detected in defect correction data generation of full calibration. \<Reference> You can know in which specifications the error is detected on the error log.	- Check the FPD.
11232	**Panel noise warning**	*[During routine processing]* The SE has detected electrical noise.	- Restart the panel. - If this occurs multiple times, then check the noise source.
11239	**Initialization calibration error**	*[During initialization calibration]* The calibration requirement for the SE is NG.	- This might occur if X-rays were irradiated during the initialization calibration, or if it was affected by magnetic field noise from nearby electronic devices which were being operated nearby. If this occurs several times, then check reducing the noise. In addition, even if the initialization calibration fails, if the subsequent offset calibration succeeds, and no abnormalities are generated in the exposure images, then there is no problem.
11240	**Panel disconnection detected**	*[During bootup/routine processing]* Disconnection of the line to the panel is detected.	- Check the switch-HUB incorporated in the MP. - Check the network interface board incorporated in the MC. - Check the wireless module. - Check the POW board.
11242	**Unregistered panel detected**	*[During bootup/routine processing]* A panel with an unregistered serial ID is detected.	- Check the RMV board. - Check the cable connecting between the POW board connector and the GTD board connector.
11243	**Image acquisition timeout (between panel and MC)**	*[During routine processing]* An error occurs in the image acquisition sequence from the panel.	- Check the wireless module. - Check the POW board. - Check the RMV board.
11246	**SE communication error (warning level)**	*[During bootup/routine processing]* An error occurs in a control command to the panel.	- Check communication between the FPD and the MP. - Check the connection with the AP (for wireless type). - Check the connection of the SE cables (for wired type).

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
11247	**Exposure menu registration error**	*[During registration of exposure menu]* An error occurs in exposure menu registration.	- Check the connection with the AP (for wireless type). - Check the connection of the SE cables (for wired type).
11248	**Mode 2 accumulation time mismatch error**	*[During bootup]* Values of the mode 2 accumulation time set in the SE and the MC do not match.	- Start up the MUTL and set the mode 2 accumulation time.
11271	**MCU error**	The SE detects an error of MCU (microcomputer) and informs the MC.	- The SE detects an error of the microcomputer.
11404	**DAP communication error**	*[During bootup/routine processing]* A DAP communication error occurs.	Check the DAP relay cable.
11408	**X-ray irradiation before it is ready for exposure error**	*[During routine processing]* At the time of active AUTO DETECT, exposure has been implemented after exposure menu registration before completion of the exposure preparation (before lighting of the ShotReady icon of the CL).	- Register the exposure menu again and expose again.
11602	**Correction data load error**	*[During bootup]* Read of the correction data load file fails (when the maximum retry count is exceeded). <Reference> You can check the file name you failed to read on the error log.	- Rewrite the file you failed to read.
11603	**Correction data transfer error (MC → SE)**	*[During bootup]* An error occurs in transfer of the correction data from the MC to the SE.	- Check communication among the MC, the MP and the FPD. - Check the connection with the AP (for wireless type). - Check the connection of the SE cables (for wired type).
11750	**MP communication connection error**	*[During bootup/routine processing]* Disconnection of a line from the MP is detected.	
11751	**MPC fuse blown error**	*[During bootup/routine processing]* A blown fuse on the MPC board is detected.	
11752	**Panel connector disconnection in MP**	*During bootup/routine processing]* Disconnection of the panel connector connected in the MP is detected.	
11900	**Parameter error**	*[During bootup]* An error is detected in an item set by service personnel (wrong value setting, inconsistency of combination, or the like)	
12150	**Memory map reconfiguration retry**	*[During bootup/routine processing]* A retry of memory map reconfiguration fails.	

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
12199	Image processing error	*[During routine processing]* An error is detected during image processing.	
12210	Specified FPD type not installed	*[During routine processing]* As a result of comparison of the configuration settings with the information acquired from the FPD (presence of FPD connection, direct/indirect type) is made, connection of the FPD of CALNEO (DR-ID300) not conforming to the machine (indirect type) is recognized. <Reference> You can check the FPD No. of interest, the FPD specified in the configuration and information of the actually connected FPD on the error log.	- Check the configuration settings. - Check the FPD.
12211	Specified FPD does not match FPD configuration	*[During routine processing]* Although the configuration setting is specified as a 1-panel system, the 2-panel system is determined due to erroneous software setting during the manufacturing process. Setting for the unconnected FPD is made. *[During M-Utility]* An attempt is made to carry out respective modes of offset calibration/defect calibration/residual image calibration, but results in failure. <Reference> You can check the FPD No. of interest on the error log.	N/A
12220	FPD recovered from low temperature state	*[During routine processing]* The FPD temperature restores from a low temperature to such conditions that exposures can take place. <Reference> You can know the FPD No. of interest on the error log.	- Check the environments at the installation site. - Check the FPD.
12221	FPD recovered from high temperature state	*[During bootup/routine processing]* The FPD temperature restores from a high temperature to such conditions that exposures can take place. <Reference> You can know the FPD No. of interest on the error log.	- Check the environments at the installation site. - Check the FPD.
12222	Initialization error during SE connection	*[During bootup]* An error occurs in bootup in connecting the SE.	- Check the board condition in the FPD. ☞ **{MU2:[5.2]_SE Board State >>}**

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
12230	**Gain correction data generation error**	*[During full calibration]* Gain correction data generation cannot take place due to excess or insufficiency of X-ray irradiation and insufficiency of the irradiation field. *[During M-Utility]* An attempt is made to carry out gain calibration but results in failure. <Reference> You can check the FPD No. of interest, and the conditions of the dose and the irradiation field under which the gain correction data cannot be generated on the error log.	The following cases are being considered. 1. The exposure conditions (kV, mAs, SID) are inappropriate, and the dose is insufficient. 2. The dose is sufficient, but the irradiation field is narrow, and the entire panel is not being irradiated with X-rays. 3. The dose and field are both normal, but the TFT is splitting and no signals are being output from some of the regions. In the case of 1, measure the dose with a dosimeter. In the case of 2 and 3, check the images which were exposed under the calibration and same conditions, and check whether the X-rays are being recognized in the assumed regions.
12231	**Defect correction data generation error**	*[During bootup]* The values of a total defective pixel count, continuous defect lines and a total defective line exceeding the specifications are detected in defect correction data generation of background calibration (calibration automatically taking place when the CU starts up). *[During full calibration]* The values of a total defective pixel count, continuous defect lines and a total defective line exceeding the specifications are detected in defect correction data generation. <Reference> You can know the No. of the FPD of interest and in which specifications the error is detected on the error log.	- Check the FPD.
12232	**Grid detected at start of calibration**	*[During full calibration]* Although an attempt is made to start gain calibration with exposure or defect calibration, the calibration cannot take place since the grid is detected to be mounted.	- Check the grid.
12233	**Insufficient number of exposures for gain calibration**	*[During full calibration]* After gain calibration is to take place, the number of exposures necessary for the gain calibration is recognized to be insufficient. <Reference> Sixteen exposures are necessary to carry out the gain calibration.	- Check the exposure count. - Continue exposures until the necessary exposure count for the gain calibration is reached, and click [Create a Gain Data].
12234	**Insufficient number of exposures for defect calibration**	*[During full calibration]* After defect calibration is to take place, the number of exposures necessary for the defect calibration is recognized to be insufficient. <Reference> Five exposures are necessary to carry out the defect calibration.	- Check the exposure count. - Continue exposures until the necessary exposure count for the defect calibration is reached, and click [Create a Gain Data].

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
12235	Insufficient number of exposures for residual image calibration	*[During full calibration]* After residual image calibration is to take place, the number of exposures necessary for the residual image calibration is recognized to be insufficient. <Reference> A single exposure is necessary to carry out the residual image calibration.	- Check the exposure count. - Continue exposures until the necessary exposure count for the residual image calibration is reached, and click [Create a Gain Data].
12236	Defect map compression/ decompression failure	Compression or decompression of the defect map fails.	
12240	Exposure menu error (SE not connected)	*[During exposure menu registration]* The exposure menu cannot be accepted because the SE is not connected.	- Check communication among the MC, the MP and the FPD. - Check the connection with the AP (for wireless type). - Check the connection of the SE cables (for wired type).
12242	Exposure menu error (serial ID not registered)	*[During exposure menu registration]* The exposure menu cannot be accepted because the SE serial ID is not registered.	- Register the serial ID of the SE.
12243	Image transfer error (log level)	*[During routine processing]* Image transfer fails. Or an error occurs in the exposure sequence.	- Check communication among the MC, the MP and the FPD. - Check the connection with the AP (for wireless type). - Check the connection of the SE cables (for wired type).
12245	Exposure menu error (panel degeneration)	*[During exposure menu registration]* The exposure menu cannot be accepted because the panel is degenerated.	- Select a defective item from the detail error log, and check it.
12246	Panel communication error (log level)	*[During exposure menu registration]* An error occurs in a control command to the panel.	- Check communication among the MC, the MP and the FPD. - Check the connection with the AP (for wireless type). - Check the connection of the SE cables (for wired type).
12250	DR cassette unit error	*[During bootup/routine processing]* An error is detected in the DR cassette unit.	
12255	Long panel error	*[During bootup/routine processing]* An error is detected in the long panel hardware or the SE setting.	- Check the long panel setting.
12280	Marker calibration data generation error	*[During full calibration]* An error is detected in marker calibration data generation.	- Check the marker position and exposure conditions. - Check the hardware error.
12281	Insufficient number of exposures for marker calibration	*[During full calibration]* After marker calibration is to take place, the number of exposures necessary for the marker calibration is recognized to be insufficient.	- Check whether the exposure count has turned to the fourth exposure.

| Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
12405	Unexpected notification of exposure performance	*[During routine processing]* The exposure performance is notified although the exposure conditions are not notified.	
12406	Exposure performance out of range	The exposure performance notified from the retro radiation source is out of the range defined by the CU.	
12407	Serial communication error	The following error occurs in the serial communication with the retro irradiation source.	
12500	Invalid exposure parameters	*[During routine processing]* Exposure condition parameters sent from the CL are unrecognizable values. <Reference> You can know the unrecognizable items and values on the error log.	- Check the CL exposure conditions.
12501	Invalid application mode	*[During routine processing]* An application mode which cannot be supported by the system controller of the CU is sent from the CL. <Reference> - An application mode refers to a mode of exposures such as normal still image exposure, long cassette exposure, tomography and energy subtraction. - The unsupportable mode application mode means such conditions that an erroneous mode is set against the operative method, such as tomography in the chest position or long cassette exposure in the bed position. - You can know the application mode and the operative method on the error log.	- Check the CL exposure conditions.
12502	Line disconnection detected	*[During routine processing]* Breakage of the line with the CL is detected. (Except when the line is intentionally cut for termination or utility)	- Check the LAN cable.
12503	Invalid message from CL	*[During routine processing]* An unrecognizable message is received during communication with the CL. <Reference> You can know the command name which is received but cannot be recognized on the error log.	- Check the CL software version. - Check the CU software version.
12504	CL response error	*[During bootup/routine processing]* Response other than normal is received from the CL.	
12599	CL system error	*[During bootup/routine processing]* An error is detected in the CL system.	

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
12600	**Correction data load read retry**	*[During bootup]* An attempt is made to read the correction data from the SSD (solid state device) and load into the CPU board memory and the SODIMM mounted on the SPC board, but results in a failure in reading from the SSD. The attempt is retried. \<Reference\> You can know the file name which cannot be read on the error log.	- Check the SSD.
12601	**System file load retry**	*[During bootup]* As reading of the system file fails, a retry is made to read from the backup file. \<Reference\> You can check that recovery is made during bootup on the error log.	- Check the SSD. - Make another attempt to update in version.
12610	**FTP transfer failed**	*[During bootup/routine processing]* Transfer to the FTP (file transfer protocol) fails. \<Reference\> You can know the file name which cannot be transferred on the error log.	- Check the FTP server. - Check the LAN cable.
12611	**FTP setting failed**	*[During routine processing]* Occurs when the FTP connection settings (user name, password, IP address) which are being used for the MP version upgrade etc. cannot be set. Occurs when there are mismatches in the versions between the MP and MC.	If this occurs in an MC V16.5 or later usage environment during the installation, then upgrade the MP version (requires 00.04.05 or later). The FTP connections will be set to the MP by this work. This may be recorded when starting up in an MC V17.1 environment, but the occurrence of this error is not a problem.
12699	**File operation error**	*[During bootup/routine processing]* An error is detected during file operation.	
12700	**Process request from MUTL rejected**	*[During bootup]* Some processing takes place during background calibration (calibration automatically taking place when the CU starts up). *[During M-Utility]* An attempt is made to carry out respective modes of offset calibration/defect calibration/residual image calibration, but results in failure.	- Check the user operation.
12900	**Parameter error**	*[During bootup/routine processing]* An error is detected in an item set by service personnel (wrong value setting, inconsistency of combination, or the like)	
12901	**Exposure menu error (operative method not specified)**	*[During exposure menu registration]* The exposure menu cannot be accepted because the operative method is not specified.	- Check the selector menu of the CL. - Check the settings in EDIT CONFIG.

Error Code	Error Name	Occurrence Condition	Probable Cause and Remedy
12902	**System configuration error**	*[During bootup/routine processing]* An item that needs to be edited from its default value is not changed in EDIT CONFIG. Example) MC ID Code	- There are missing settings in the config.
12910	**Control timeout detected**	*[During bootup/routine processing]* The application software detects control timeout.	
12920	**Unknown machine connection error**	*[During bootup]* A machine to which the standard sequence cannot pass is connected during connection.	- Check communication among the MC, the MP and the FPD. - Check the connection with the AP (for wireless type). - Check the connection of the SE cables (for wired type).
12990	**Software logic error (only in log)**	*[During bootup/routine processing]* The application program detects a logic error for software control.	
13043	**Electrical noise detection error**	*[During routine processing]* A noise error is detected in the panel.	- Added from MC V16.3. The ready lamp turns off when an electrical noise error occurs, and an error message is displayed after the exposure cannot be done. - Click [OK] and check that the ready lamp turns on again. <NOTE> When a 13043 error occurs, 11112 (detail code: 0x00800000) is recorded in the error log.

3. Troubleshooting Based on LED Indication

The LED's indicating the status are incorporated in the SE (FPD).
You can roughly identify the cause of an error by checking the lighting state of the LED's before starting troubleshooting.

☞ **{MD:1.3.1_External View and Functions}**
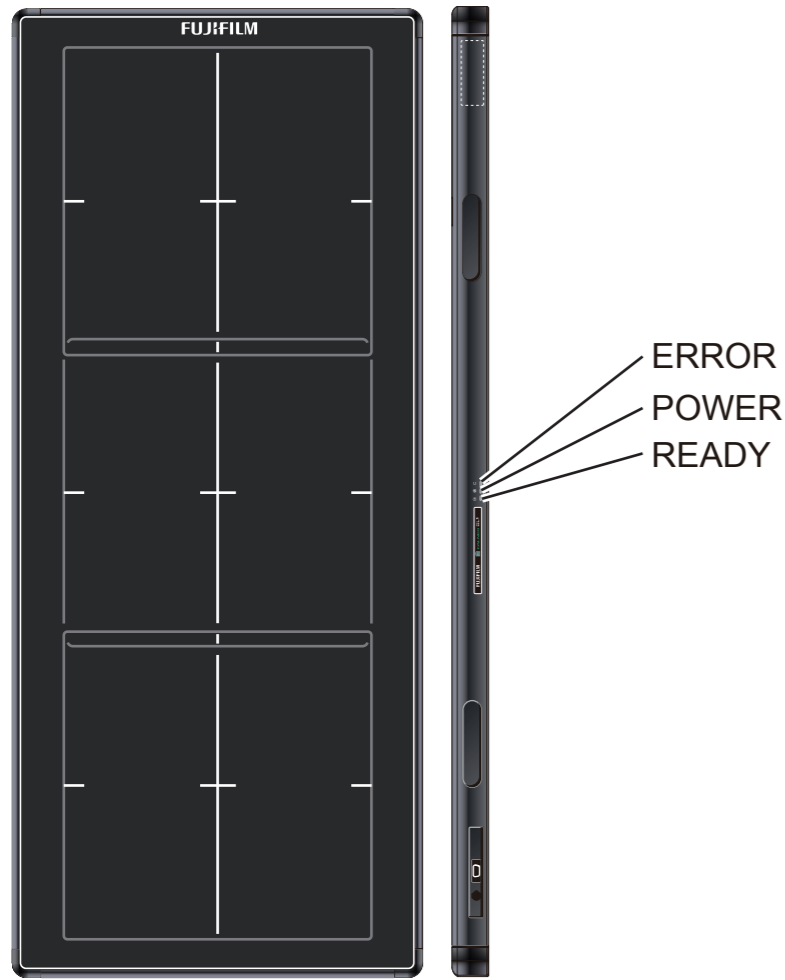
ERROR
POWER
READY

1300_100003.ai

■ SE Analysis Flow

● When the READY lamp is not lit:

◇ *REFERENCE* ◇

The READY lamp lights up when exposures can be made.

START
↓
Are the CL settings correct?
YES ← → NO → Again make the CL settings.
↓
Is MC connection normal?
YES ← → NO → Again connect the MC.
↓
Check the appearing error code, and take countermeasures.

600_200007.ai
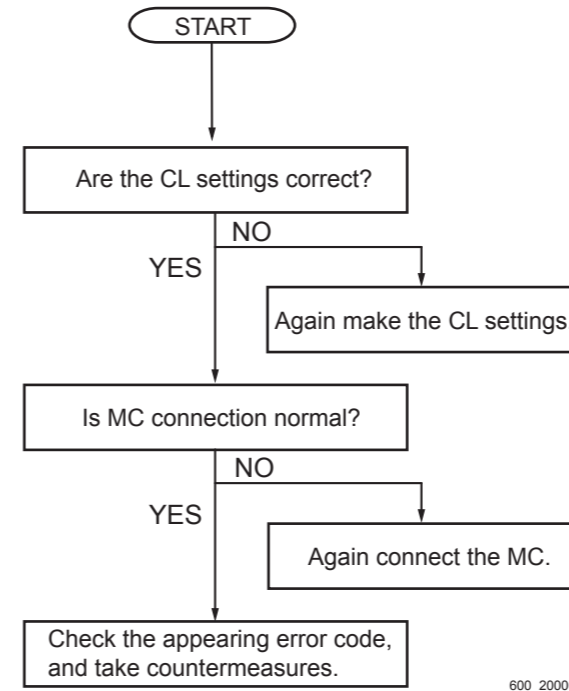
● When the ERROR lamp is lit or flashing:

START
↓
Is the ERROR lamp lit/flashing?
Lit / Flashing

A communication error occurs. Check the appearing error code, and take countermeasures.

A hardware error occurs. Check the appearing error code, and take countermeasures.

600_200008.ai
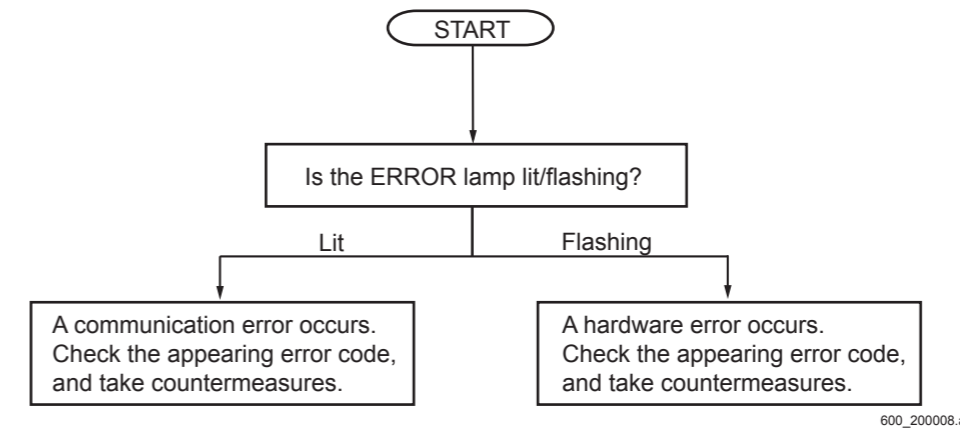
4. Analysis of Abnormal Images

◆ *INSTRUCTION* ◆

If you contact TIMS to proceed the abnormal image analysis efficiently, provide the following information.
In addition, depending upon the analysis results, both types of SEs the GOS and Csl might need to be calibrated.

- *The CL screen capture of the abnormal image as a JPEG image*
- *Writting of arrow and malfunction details (white streak, black streak, horizontal streak, vertical streak, gradation, etc.) on the aforementioned abnormal spot*
- *Image data files for 3 images each for before and after the abnormal image occurred that have been saved in the "C:\Program Files \Fujifilm\IIP\Data\Image" of the CL, apart from the individual information file (*.inf)*
- *Calibration data of the current panel and other registered panels, and the number of the current panel from "Back up Correct ALL Data" of PC-TOOL*
- *Log data from "Back up Correct ALL LOG" of PC-TOOL*
 *Open "IMO.LOG", "OPER.LOG" or "ISC.LOG" with Notepad and confirm that the time before and after the abnormal image occurred is included in the log. As the result of confirmation, if the time has not been updated, restart the CL and reacquire the log data.*
- *Hearing about when the abnormal image occurred*
  Perform the hearing on the following items in the possible range.
  - *Exposure condition (region, kV, mAs, SID, etc.), irradiation field focusing and added filter when the abnormal image was exposed.*
  - *Exposure environment (ambient temperature, total image count of the day, X-ray equipment manufacturer, if the equipment have been operated for 24 consecutive hours or not, specification of the grid being used, exposure workflow, etc.)*
  - *If abnormal images occurred repeatedly*

4.1 Analyzing Moiré

When the movable grid is used, the moiré might occur due to X-ray irradiation time or the grid drive timing.

■ **Analysis Flow**
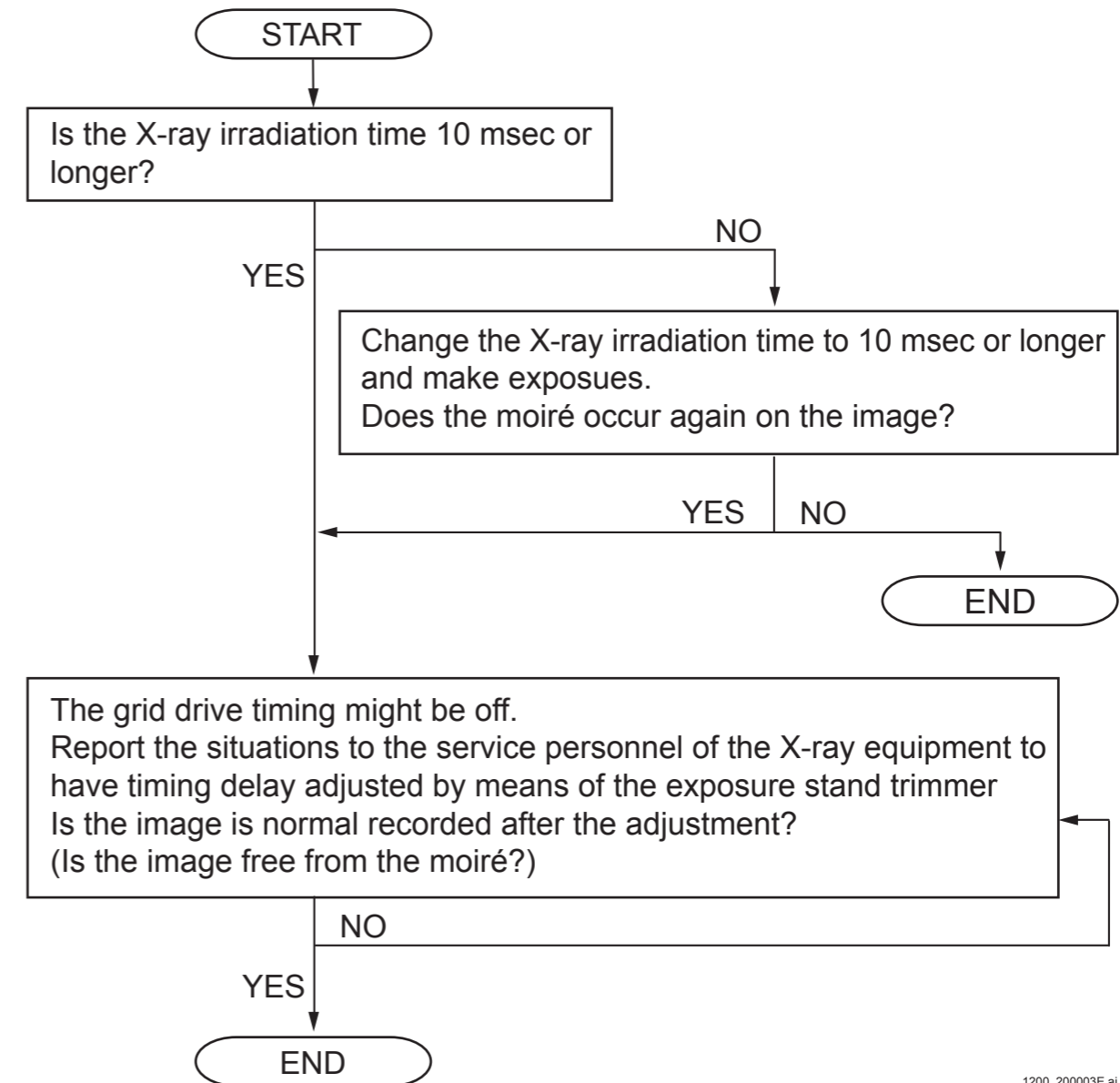
1200_200003E.ai

■ Adjustment Procedures for the Grid Drive Timing

If the cause of the moiré is determined to be misalignment of the grid drive timing, follow the procedures below:

(1) Register the following menu on the CL.

"QC test" - "Image format"

(2) Move the grid and make exposures with a dose of 1 mR.

The grid and the SE should be set on the exposure stand beforehand.

◇ *REFERENCE* ◇

Example of exposure conditions with a dose of 1 mR.
- *Distance:*   *1.8 m*
- *Voltage:*   *80 kV*
- *Amperage:*   *50 mA*
- *Time:*   *0.013 msec*

(3) Output a film in a single image format.

(4) Check if the moiré is observed on the output film.

If the moiré occurs although the X-ray irradiation time is suitable (longer than 10 msec), the cause of the problem is determined to be misalignment of the grid drive timing.

(5) Report the situations to the service personnel of the X-ray equipment to have timing delay adjusted by means of the exposure stand trimmer.

Check to make sure that no moiré occurs on the output film.

⚠ *CAUTION*

Commission the service personnel of the X-ray equipment to make adjustment of the grid drive timing.
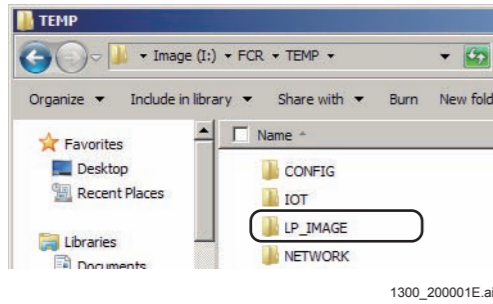
◇ *REFERENCE* ◇

If the moiré occurs after the timing is adjusted by means of the exposure stand trimmer, the cause might lie in some failure in the drive unit mechanism of the grid mounted on the exposure stand.

4.2　Writing out the image data

DR-ID 1300 always keeps 50 latest images stored. The following describes the procedure for writing these images when a malfunction occurs.

(1)　**Start up the RU PC-TOOL.**

(2)　**Select "LOG ALL" from the BACKUP menu and click [EXECUTE].**

(3)　**Open the LP_IMAGE folder in the Back up Data generated.**

1300_200001E.ai

(4)　**Start up BackupLPImage.bat.**

◇ *REFERENCE* ◇

An image file is saved in the location where BackupLPImage.bat exists. You can move BackupLPImage.bat to a desired location including an USB memory stick.

1300_200002E.ai
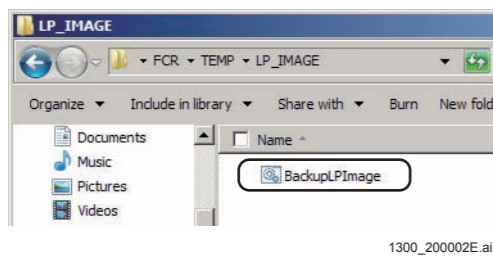
→ The DOS prompt screen appears, and the image files are copied in the folder. After the files have been copied, the following screen appears.

1300_200003.ai
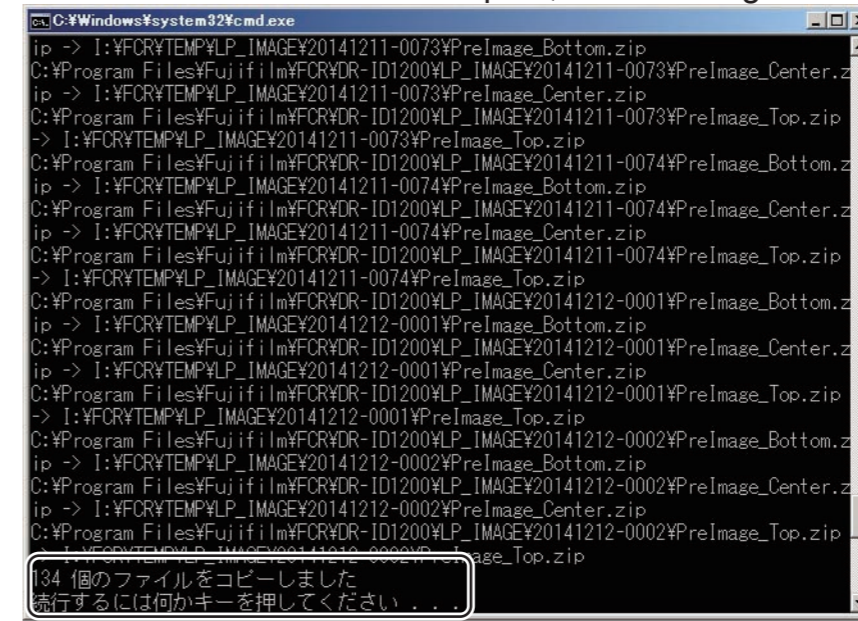
(5)　**Confirm that images are stored in the LP_IMAGE folder.**

5. BACKUP FILE

5.1 CALIB LOG

How to read the CALIB LOG file is as follows.

[2014/10/21 15:29:58]   3AA988   @<P1, L121402, center>   <C4>   <M0>xxxxx

| Date and time | TICK after the MC application starts up (10ms units) | SE reg No. (1-100) | SE serial ID | SE position (DR-ID 1305SE only) | Calibration type | Read mode | Results |

- Calibration type
  C1: Offset calibration   C2: Gain calibration
  C3: Lag calibration   C4: Automatic offset update
  C5: Defect calibration   C7: Marker calibration
- Read mode
  M0: mode 0   M1: mode 1   M2: mode 2
- Results
  For offset calibration:
  - Results (success, abort, fail)
  - Response results from the SE (3 words)
  For gain calibration:
  - Results (success: "0", fail: other than "0")
  For defect calibration:
  - Results (success: "0", fail: other than "0")
  - Defect detection results
  - Histogram of the defect size (DefectSizeHistogram)
  - Histogram of the defect cluster (DefectClusterHistogram)
  - Horizontal line defect / vertical line defect (LineH/LineV)
  - Number of the defect pixels (NumberOfDefectPixel)
  For lag calibration:
  - Results (success: "0", fail: other than "0")
  - ROI number (NumOfROI_x/NumOfROI_y)
  - ROI coordinates of the exposure part per ROI numbers (IROI/x1/y1/x2/y2)
  - ROI coordinates of the Pb part per ROI numbers (PbROI/x1/y1/x2/y2)
  - Acquisition timing for each frame, average QL of ROI for each exposure part, and average QL of ROI for each Pb part (Frame/Time/QLave_X/QLave_Pb)
  - Judgment results for lag correction ON/OFF (JudgementCorrect)
  - Decay constant per ROI numbers (IROI/A(iROI))

For marker calibration:
- Results (success: "0", fail: other than "0")
- Calibration mode (Factory mode: "factory", Maintenance mode: "maintenance")
- Border edge factor for quadruple exposures (BorderEdge)
- Marker calibration results (MarkerCalibResult)

5.2   SERegistInfo.txt

How to read the SERegistInfo.txt file is as follows.

```
001     Lxxxxxx
002     Lxxxxxx
003     Lxxxxxx
004     Wxxxxxx
005     Nxxxxxx
```

SE
reg No.
(1-100)

SE
serial
ID

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

Appendix 1. Troubleshooting for 10753 Error

Describe the action for 10753 error.
- Changing the BIOS Setting
- Updating MP OS Version
- Checking the Network Connection Configuration
- Action for the case where the F-Secure is installed
- Analysis with Log

1.1 Changing the BIOS Setting

When the MC PC (the console PC if MC is integrated) is HP 600G1 SFF/HP 800G1 SFF, "error 10753 (MP connection error)" may occur while the system is in operation. This section introduce the setting change of the PC (BIOS) to suppress the error occurrence.

(1) Turn OFF the power of the PC.

(2) Turn ON the power of the PC while pressing the <ESC> key.

→ Startup Menu is displayed.

(3) Press the <F10> key.
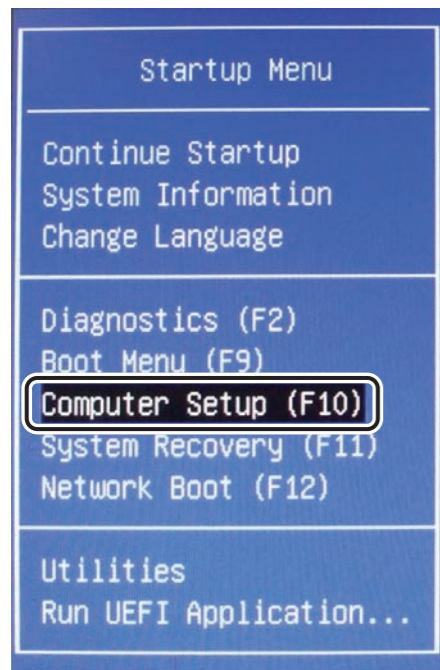
600_700334.ai

→ BIOS setup window is displayed.

(4) Select [File] > [System Information].

600_700335.ai

→ System Information window is displayed.

(5) Check the BIOS version.
- V02.16 or later: Perform step (6) or later.
- V02.15 or earlier: Perform step (6) only. Step (7) or later is unnecessary.

600_700336.ai

(6) Press the <ESC> key and select [Ignore Changes and Exit]
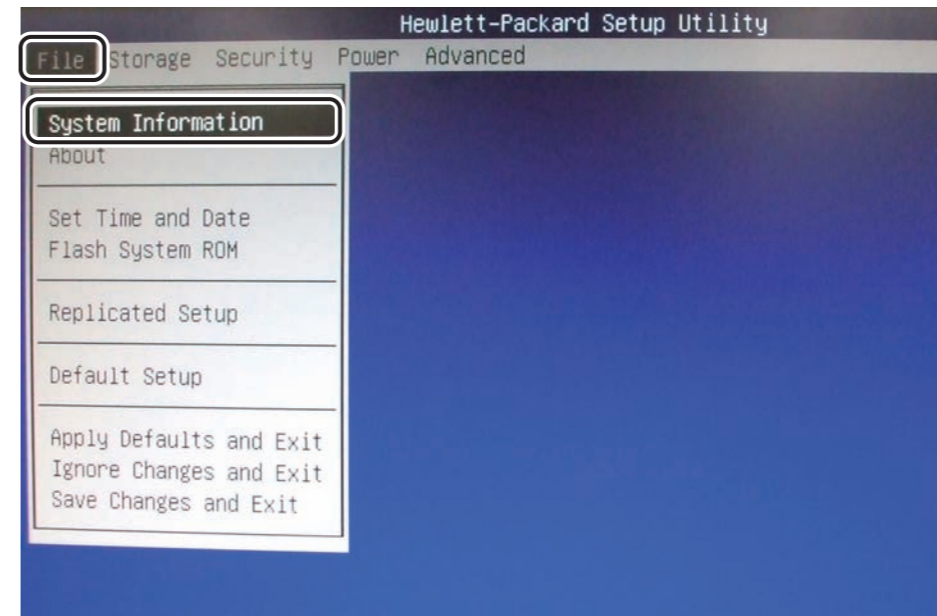
→ BIOS setup window is completed.

(7) Select [Power] > [Hardware Power Management].
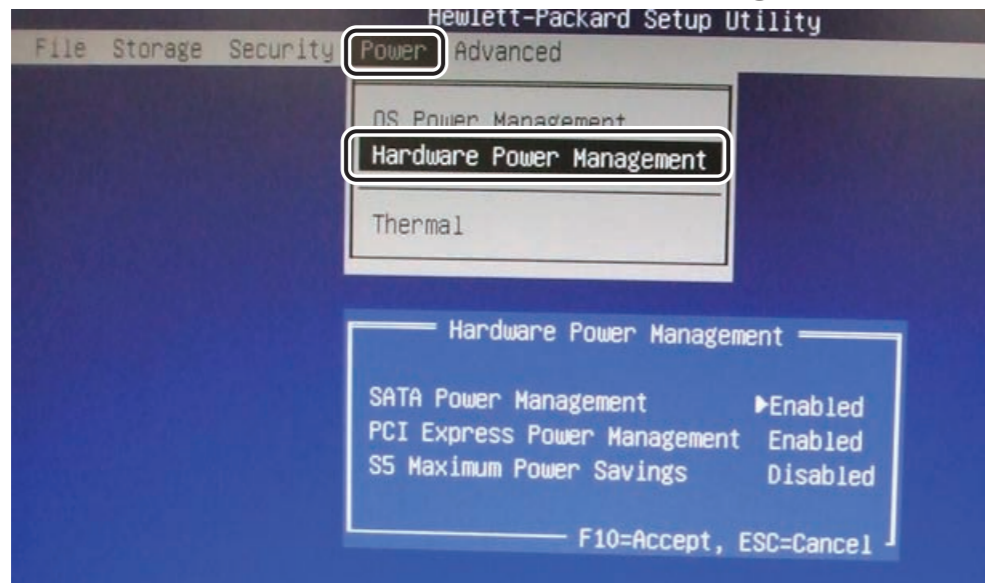
600_700337.ai

→ Hardware Power Management window is displayed.

(8) Select [PCI Express Power Management] and change [Enabled] to [Disabled] by pressing the right arrow key.

600_700338.ai

(9) Press the <F10> key twice to confirm the setting.

(10) Select [File] > [Save Changes and Exit].
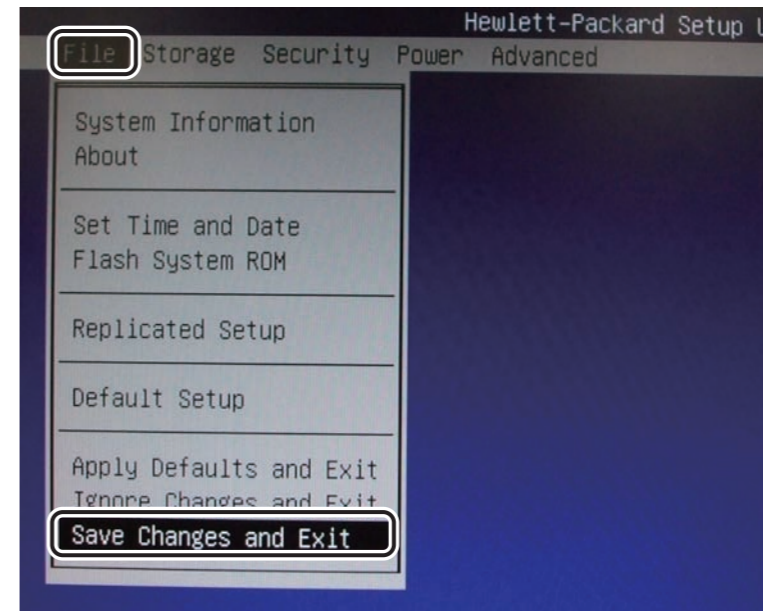
600_700339.ai

→ Save Changes and Exit window is displayed.

(11) Select [Yes].
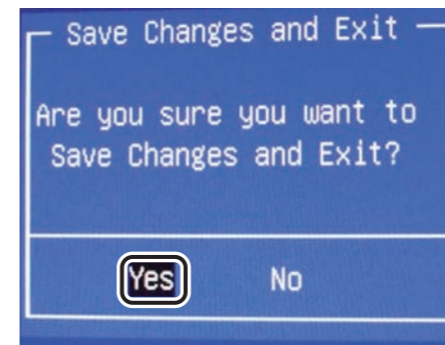
600_700340.ai

→ BIOS setup is completed.

■ Checking the PCI Express Power Management Setting

Check that the [PCI Express Power Management] is "Disabled".

(1) Turn OFF the power of the PC.

(2) Turn ON the power of the PC while pressing the <ESC> key.

→ Startup Menu is displayed.
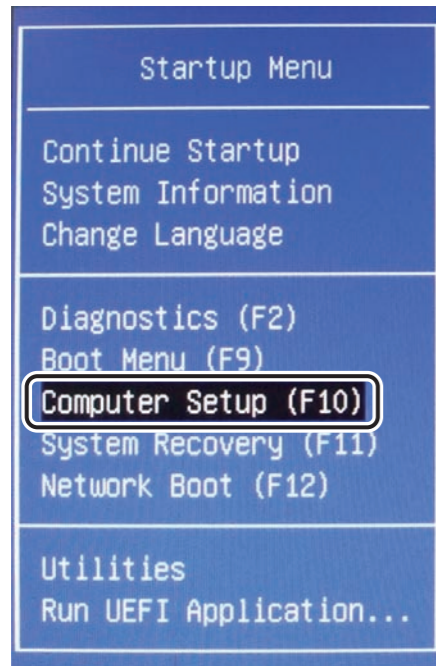
(3) Press the <F10> key.

600_700334.ai

→ BIOS setup window is displayed.

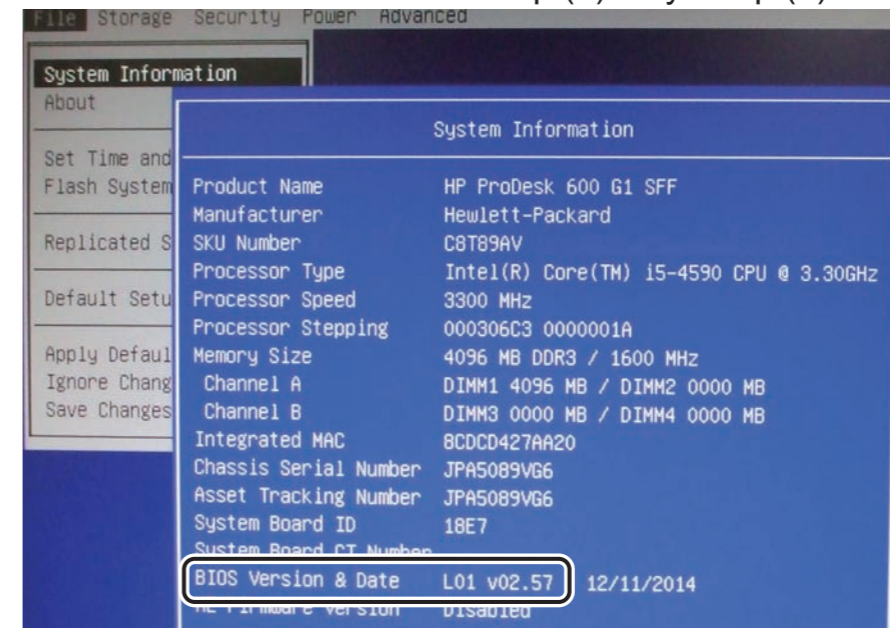**(4) Select [Power] > [Hardware Power Management].**
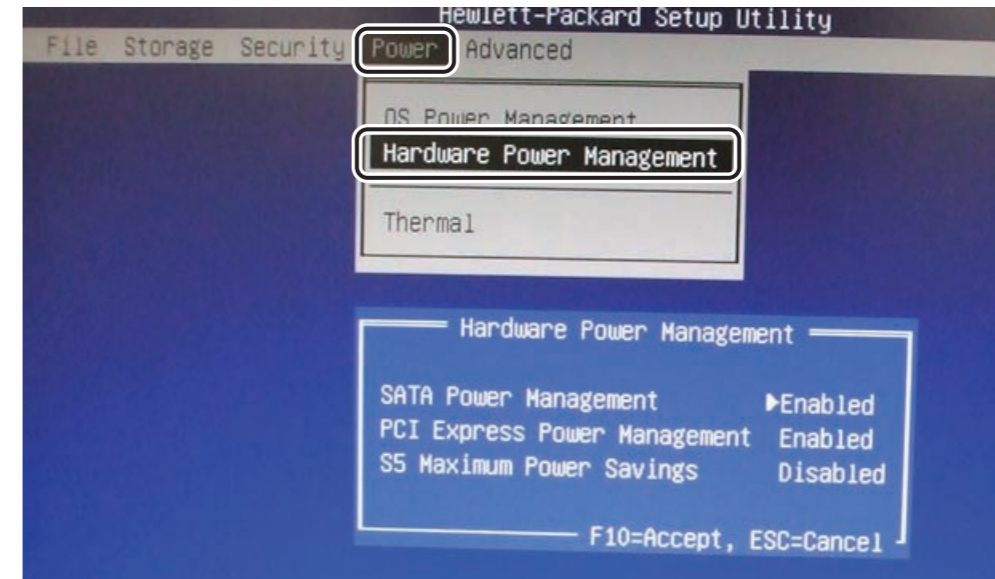
600_700337.ai

→ Hardware Power Management window is displayed.

(5) Check that the [PCI Express Power Management] is "Disabled".
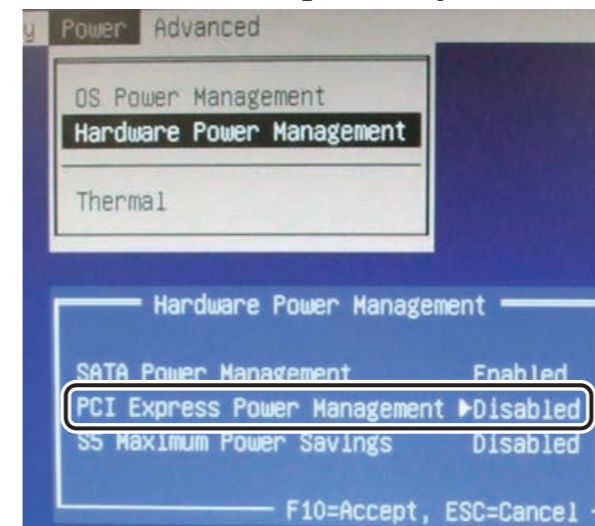
600_700338.ai

(6) Press the <ESC> key and select [Ignore Changes and Exit] to complete BIOS setup window.

→ BIOS setup window is completed.

1.2 Updating MP OS Version

1.3 Checking the Network Connection Configuration

When the local network connecting the MC, MP, AP, HUB, and cradle is in line, a communication error may occur.
To prevent the error for this case, connect them with the star.

■ Network Configuration to be Modified

● **Example 1: Devices including a HUB are connected in line**

600_203001.ai
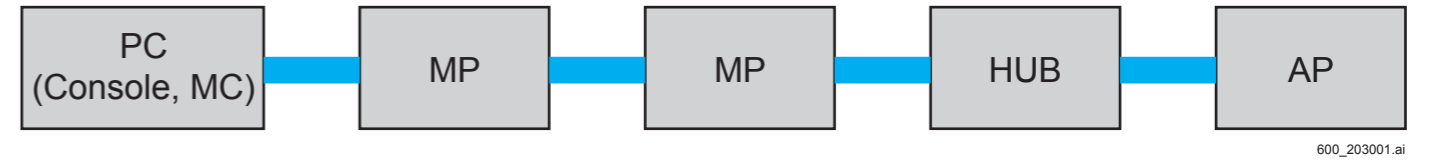
● **Example 2: MPs including a HUB are connected in line.**

600_203002.ai
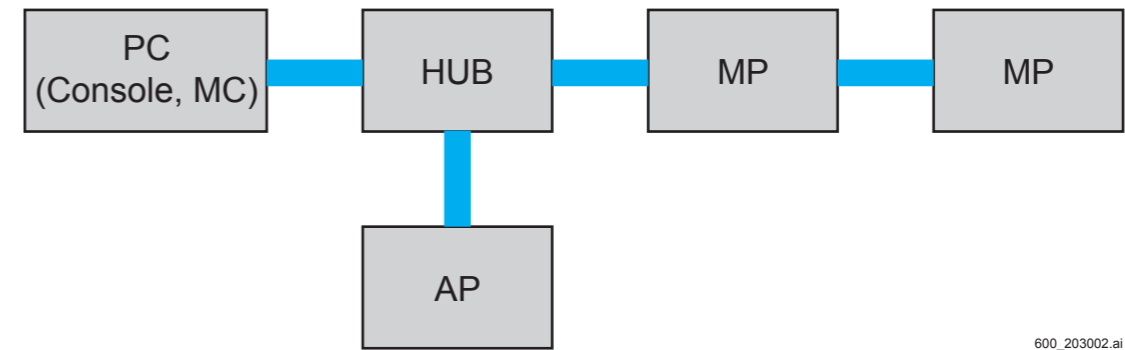
■ Modified Network Configuration

Each device directly connects to the HUB.

600_203003.ai
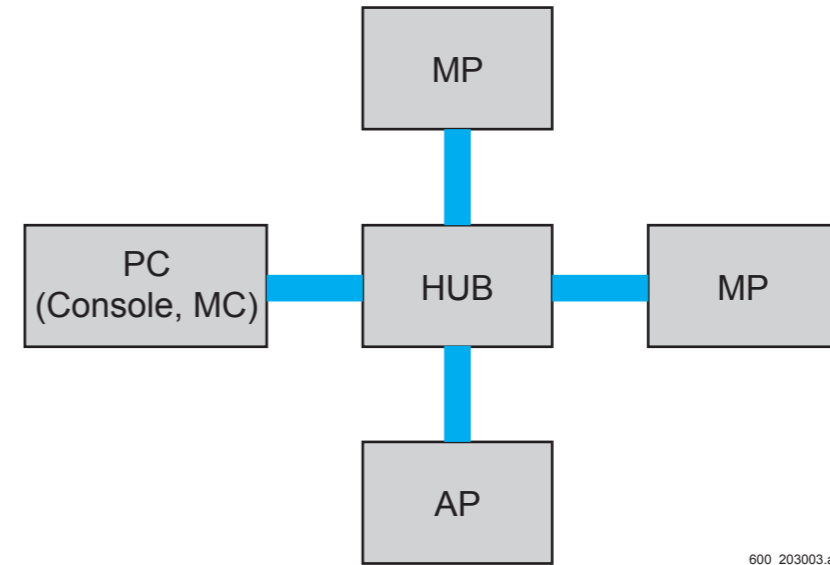
1.4 Action for the Case Where the F-Secure is Installed

If the MC application is installed in the DX console in which the F-Secure has been installed, the "10753 error (MP communication disconnection)" may occur.

This is caused by the duplication of the start-up of the F-Secure services and the MC-to-MP communication for initialization in the case where the F-Secure is not set to be delayed in starting up at the time of the installation/version upgrade.

For a countermeasure for this case, refer to the ECN shown below.

- "ECNxxx, 10753 due to incomplete setting of F-Secure: Sporadic disconnections of the MC-to-MP line"

1.5 Analysis with Log

The 10753 error, a failure in connecting the MP communication, is also caused from the MP accidentally not being powered on or being delayed in turning on.
This section describes the analysis procedure with the log.

■ Analysis procedure

Check the following with the MC started up.

(1) Check the time stamp of the 10753 error with RU PC-TOOL - ERROR DB.

[10753] 2013/12/13 09:12:26 002488 @MP-MC NOT CONNECT

(2) Perform RU PC-TOOL - BACKUP - LOG ALL.

(3) Check the time stamp from the file in the "TRACE5" folder in the backup folder of the log.

"mc_wlan_com10753.001" or "mc_wlan_com210753.001"

● Normal case

There is a life check requirement (LifeCkRq)/response (LifeCkRs) from the MP.

2013/12/13 09:48:18 00000F04   192.168.0.20
0005000710010200 LifeCkRq
2013/12/13 09:48:18 00000F04   192.168.0.20
0007000510010300 LifeCkRs 0000
:
:

* LifeCkRq: Life check requirement from the MC
  LifeCkRs: Life check response from the MP

● In the case where the MP is not running when MC starts up (failure of user operation)

There is no life check requirement/response (LifeCkRq /LifeCkRs) from the MP.

2013/12/13 09:12:24 000023D4   CONNECT NEW SE
0006000510010300 WakeUpNt 0000
2013/12/13 09:12:24 000023D4   CONNECT NEW SE
0005100600010400 RMLRegRq 01001800
2013/12/13 09:12:24 000023D4   CONNECT NEW SE
1006000500010600 RMLRegRs 000018000421AA0C
2013/12/13 09:12:24 000023D4   192.168.0.30
0005100600010500 RMLRegRq 020030003400
:
:

Explain the operation procedure for turning on the MP first then the MC (or the DX Console, if the MC software has been installed in the DX Console).

The example log above is that for when the MC is started up first and then the MP later. Because this procedure interrupts the normal startup, no life check requirement/response is logged. However, turning on the MP also turns on the HUB inside the MP, and the communication between the MC and the SE starts, and then the CONNECT NEW SE is recorded.

● **In the case where the MP has some abnormalities**

There is a log of life check requirement (LifeCkRq) but no response (LifeCkRs) from the MP.

2013/02/19 13:46:59 00191361   192.168.0.20   0005000710010200
LifeCkRq
:
:

* In the case where two MPs are connected, the logged IP address can be used to identify the unresponsive MP.

Ex.) Normal case (Two MPs process the life check requirement /response.)
2013/02/19 13:46:32 00190931   192.168.0.20
0005000710010200 LifeCkRq
2013/02/19 13:46:32 00190931   192.168.0.20
0007000510010300 LifeCkRs 0000
2013/02/19 13:46:32 00190931   192.168.0.21
0005000710010200 LifeCkRq
2013/02/19 13:46:32 00190931 192.168.0.21 0007000510010300 LifeCkRs 0000
:
:

* LifeCkRq: Life check requirement from the MC
  LifeCkRs: Life check response from the MP

Ex.) Abnormal case (One MP processes the life check requirement /response.)
2013/02/19 13:46:59 00191361   192.168.0.20
0005000710010200 LifeCkRq
2013/02/19 13:46:59 00191361   192.168.0.20
0007000510010300 LifeCkRs 0000
2013/02/19 13:46:59 00191361   192.168.0.21
0005000710010200 LifeCkRq

.
.

The MP of 192.168.0.21 does not respond to the underlined life check requirement in red. This shows that a possibly abnormal MP has this IP address.
Possibly abnormal parts are the ERC54A board and the HUB of this MP.
Replace the parts, identify the location of the failure, and then repair it.
If the failure is not solved after the parts are replaced, check the MPC54A board.

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DR-ID 1300 / DR-ID 1300PU
Service Manual

Checks, Replacement and Adjustment of Parts (MC)

1. Precautions for Check, Replacement, and Adjustment

- In this volume, descriptions are omitted regarding components that do not require special attention or adjustment during their removal/reinstallation. For removal procedures for such components, refer to the Service Parts List Volume.
- When performing check/replacement/adjustment procedures on the machine, the following precautions should be observed.

⚠ WARNINGS

- **To avoid electric shock hazards, power OFF the machine before performing the procedures.**
- **Wear safety shoes for operation.**

⚠ WARNING/CAUTION

Observe the warnings and cautions described in the "Safety Precautions".

⚠ CAUTIONS

- **When servicing a board, be sure to wear a wristband to ground your body. If your body is not grounded, static buildup on your body may damage electronic components on the board.**
- **When servicing a board, do not apply force to the center of the board or bend the board while holding both sides of the board. If the board is bent or force is applied to its center, a crack may occur on a soldered connection, resulting in a failure in its connection.**
- **When servicing a board, do not touch connector pins mounted on the board with bare hands.**
- **Never remove the red-painted screws.**

◆ INSTRUCTIONS ◆

- *The yellow-painted screws require adjustments when components are reinstalled. When reinstalling the components, follow the check/adjustment procedures.*
- *Safety provided by grounding is assured by properly establishing power cable and additional protective ground wire connections and securing the parts with retaining screws. To maintain safety, ensure that the parts and retaining screws removed for servicing purposes are restored to states existing upon installation. After the parts and retaining screws are restored to the above-mentioned states, follow the procedures set forth in this Service Manual to verify that the retaining screws are securely tightened to properly secure the parts.*
- *Do not leave an object which might cause damage on the SE (Flat Panel Sensor) (such as a tool, a screw or a removed component). If the SE gets scratched, abnormalities in image might result.*
- *Do not drop the SE nor apply a load larger than specified onto the exposure plane.*

☞ **{Operation Manual: Precautions}**

◆ INSTRUCTION ◆

Exercise care not to make a radius of curvature of the SE cable smaller than 50 mm when handling the SE cable. If the radius of curvature is smaller than 50 mm, disconnection might occur in the cable, resulting in abnormality in image.

◆ NOTE ◆

Photos used for describing the procedures or the like in the manual may sometimes appear to be different from the actual machine.

◇ REFERENCE ◇

The following characters are used as abbreviations to express colors of cables or the like.

Abbreviation	Color	Abbreviation	Color
RED	Red	ORN	Orange
WHT	White	GRY	Gray
BLK	Black	YEL	Yellow
GRN	Green	BLU	Blue
BRN	Brown	PUR	Purple
Y/G	Spiral of yellow and green		

2. MP (Power Supply Unit)

⚠ *WARNING*

Be sure to turn OFF the power circuit breaker and disconnect the power cable from the outlet before servicing the MP, to avoid electric shock hazards.

⚠ *CAUTIONS*

- *When servicing a board, be sure to wear a wristband to ground your body. If your body is not grounded, static buildup on your body may damage electronic components on the board.*
- *When replacing the fuse, check the rated amperage of the fuse to be replaced, and replace it with a fuse of the same rated amperage.*
  At that time, check the rated amperage (A) silk-screened on the board as well.
- *To remove the fuse, pull it straight up and off.*
- *When attaching the fuse, exercise care not to bend the pins of the fuse.*
- *The power supply unit is built in the MP. Exercise care not to drop a screw or the like into the power supply unit when servicing the MP.*
  If you accidentally drop something, pick it up quickly.
  If the power is turned ON with the screw or the like dropping in the power supply unit, short-circuiting will result.

2.1 MP Cover

■ Removal Procedures

(1) **Remove the top cover.**

#1 Loosen: TP3x6 (x2)

Top cover

#1

FRONT

1200_700026E.ai
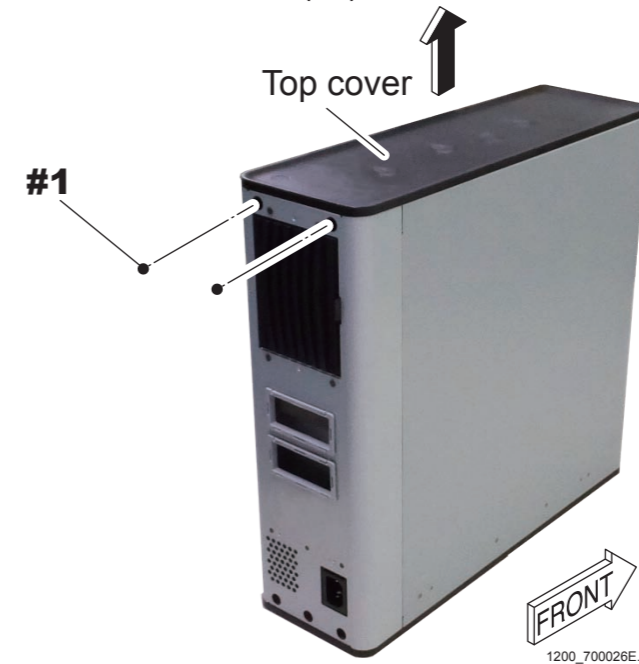
(2) **Remove the front cover.**

#1 Remove: TP3x6 (x6)

#1

Front cover

FRONT

1200_700027E.ai
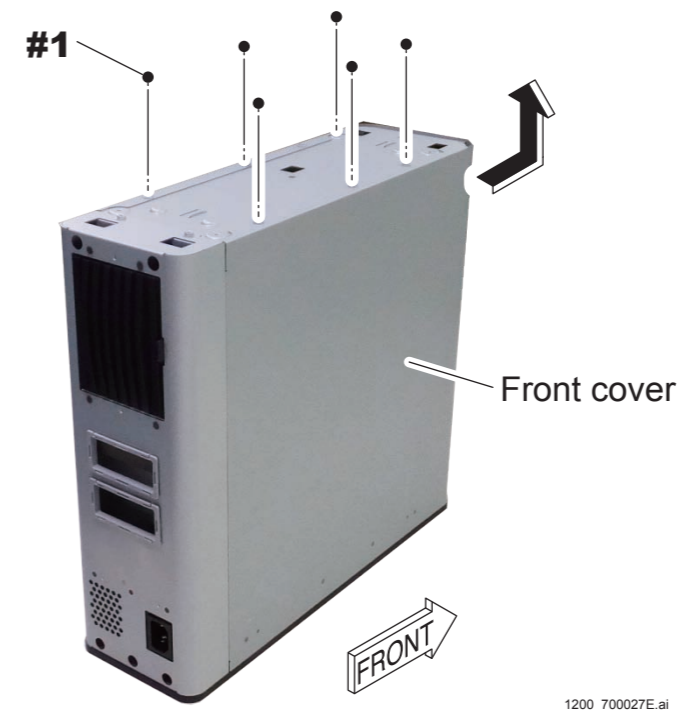
(3) Remove the rear cover.

#1 Remove: TP3x6 (x3)

Rear cover

#1

FRONT

1200_700028E.ai
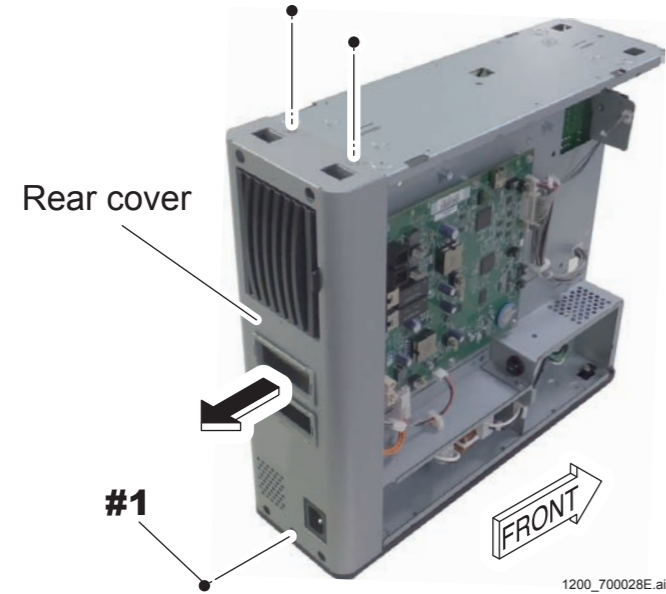
■ **Reinstallation Procedures**

Reverse the removal procedures for reinstallation.

◇ *REFERENCE* ◇

- *Reinstall the front cover by referring to the following image.*
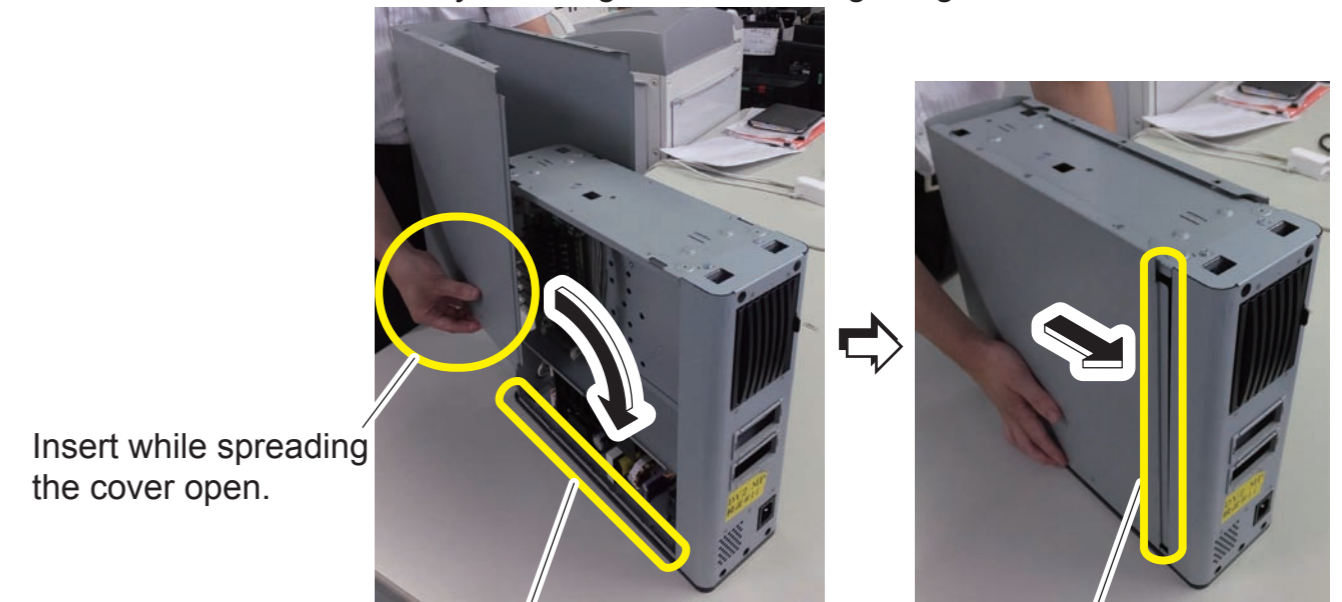
Insert while spreading the cover open.

Insert the cover against the guide.   Push the cover against the guide.

1200_700109E.ai

- *When replacing the front cover, be sure to order the following two types of labels (A) and (B), and apply them on the new cover. Refer to the following for the application locations.*

15±1mm

(A)

(B)

20±1mm

2±1mm

FRONT

1200_300220.ai
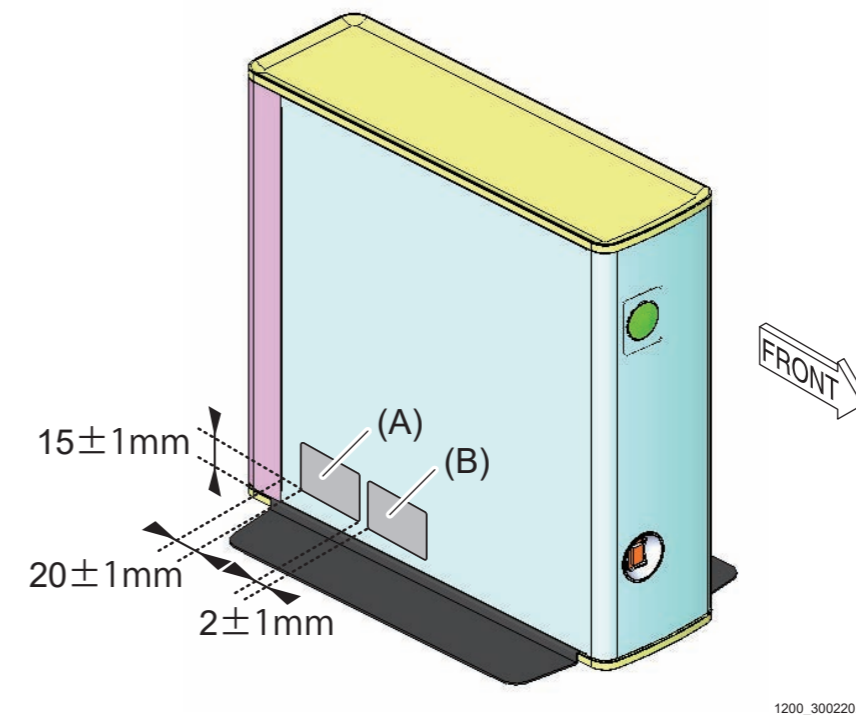
2.2 MPX54A Board

◆ *INSTRUCTION* ◆

Do not hold the relay mounted on the board when you are mount/dismount the MPX54A board. Otherwise, the relay might come off or get damaged, resulting in some failure.

GOOD   **NO GOOD**

Do not hold the relay.

Hold here.
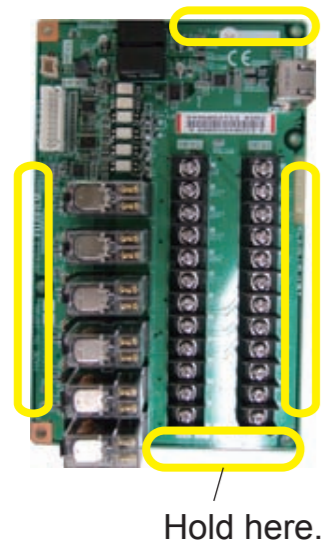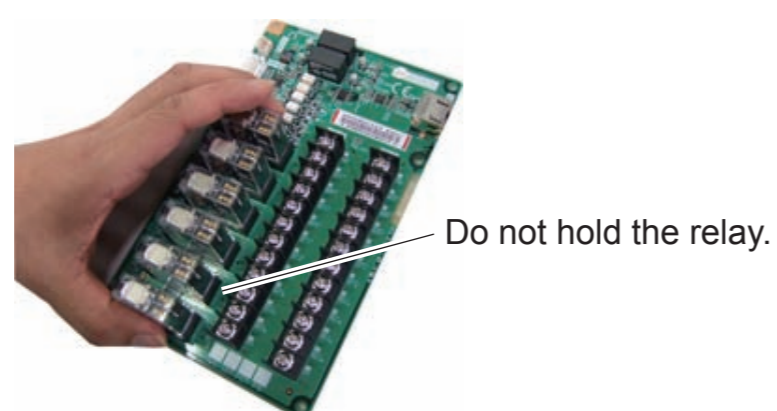
600_300009.ai

◇ *REFERENCE* ◇

The MPX54A board is equipped with exchangeable relays (K1 to K6).

■ Board Location

DETAIL A   MPX54A board

FRONT

A

FRONT
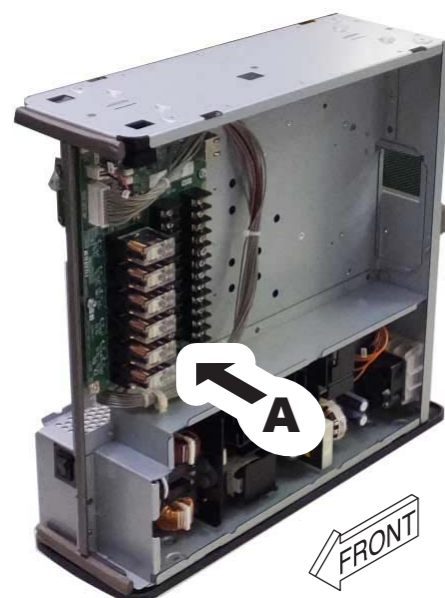
1200_300009.ai

■ Removal Procedures

(1) Remove the covers of the MP.

☞ {MC:2.1_MP Cover}

(2) Disconnect the X-ray shot cables from the MPX54A board.

Reverse the installation procedures mentioned in the Installation manual for disconnection.

☞ {IN1:6.5_Connecting the X-Ray Shot Cable}

☞ {IN2:6.5_Connecting the X-Ray Shot Cable}

(3) Remove the MPX54A board.

#1 Disconnect: Cable connectors (MPX3, 4)
#2 Remove: TP3x6 (x6)

MPX54A board

#1

#2

FRONT
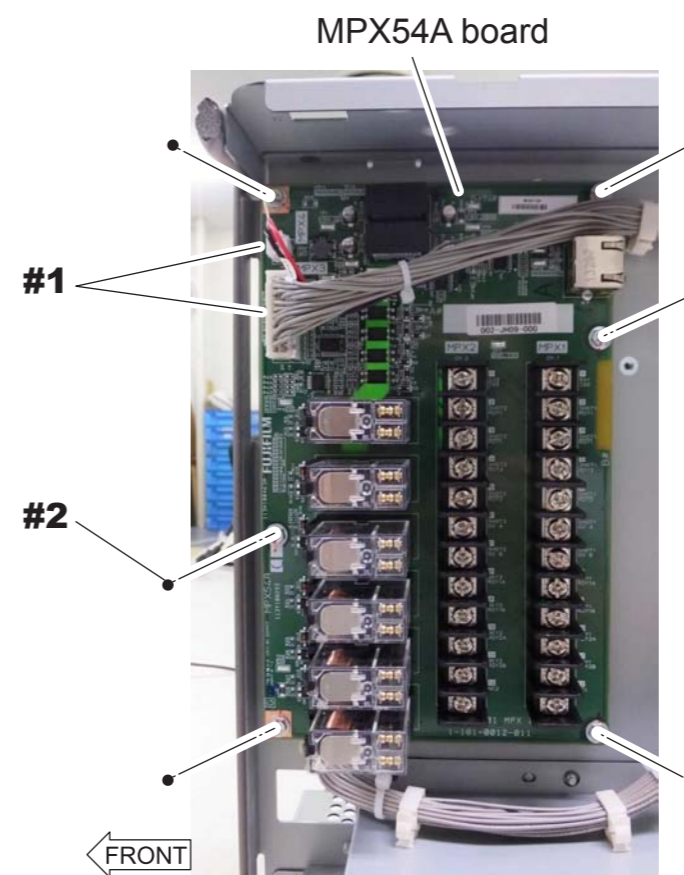
1200_300010.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

2.3　MPC54B Board

◆ **INSTRUCTIONS** ◆

- *Refer to the following procedures for replacing the MP (when two MP have been installed, the MP2 is also included) MPC54B board whose local IP address is changed from the default value.*

　☞ *{MC:2.12_Replacing the MP whose Local IP Address Is Changed}*

- *When replacing the MPC54B board, refer to the following procedures for updating MP application software version.*

　☞ *{IN1:10.5_Updating MP Application Software Version}*

　☞ *{IN2:10.5_Updating MP Application Software Version}*

■ Board Location

DETAIL A　MPC54B board

1200_300008.ai
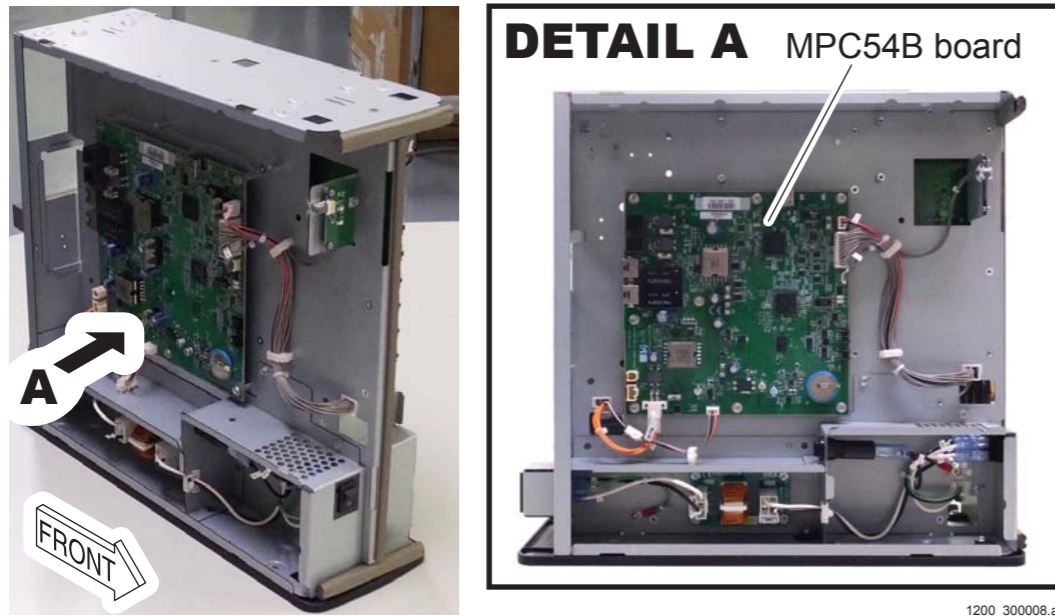
■ Removal Procedures

(1) Remove the covers of the MP.

　☞ {MC:2.1_MP Cover}

(2) Remove the MPC54B board.

#1 Disconnect: Cable connectors (MPC1, 12, 13, 18, 21)

#2 Remove: M3x6 (x8)

#1　MPC12　MPC13　MPC18　#2

MPC1　MPC21　FRONT

1200_300011.ai
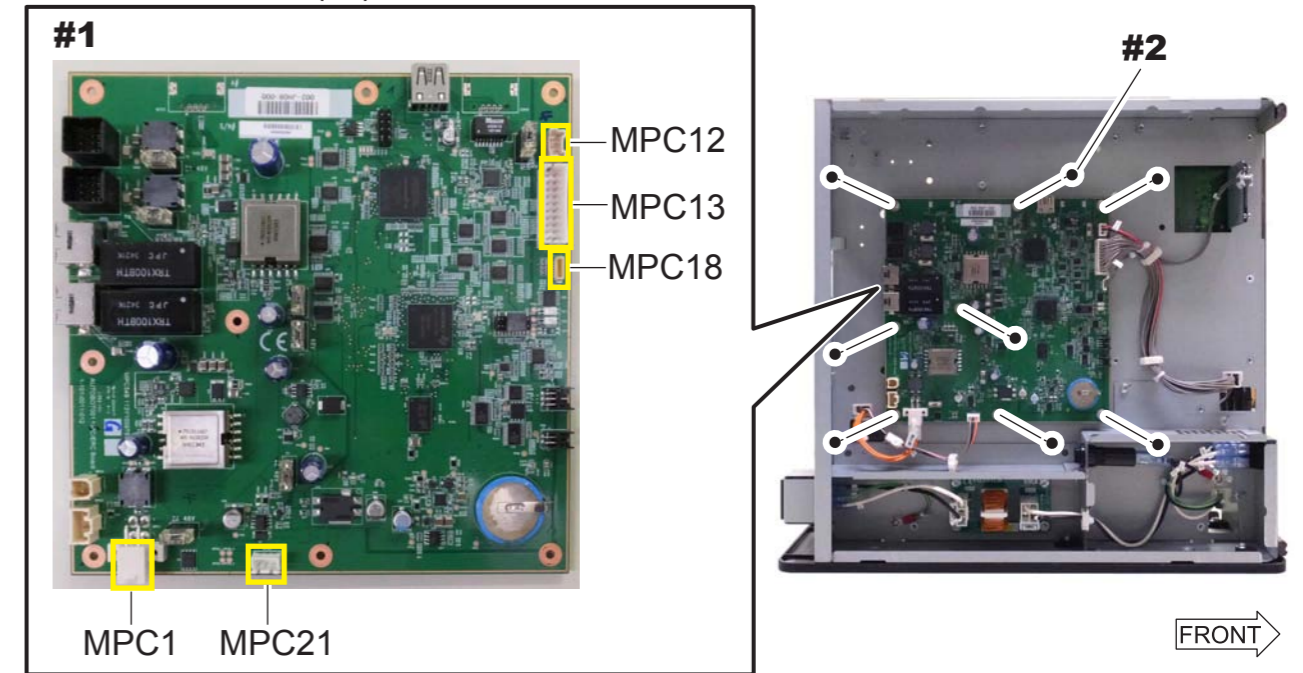
◆ *NOTE* ◆

*The LAN connector's height has been changed for the MPC54B board's L versions or later. In the DR-ID 1300MP, when replacing the boards for J versions or earlier to boards for the L versions or later, also replace the brackets which are attached to the LAN connector.*

Older board (J version or earlier)　　Newer board (L version or later)
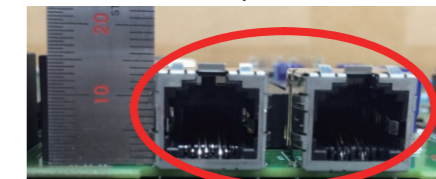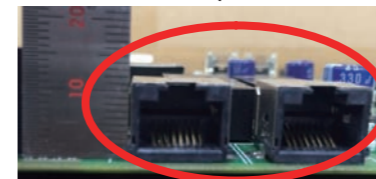
Older board bracket　　Newer board bracket

1200_300221E.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

2.3.1 Fuses

■ Fuse Locations
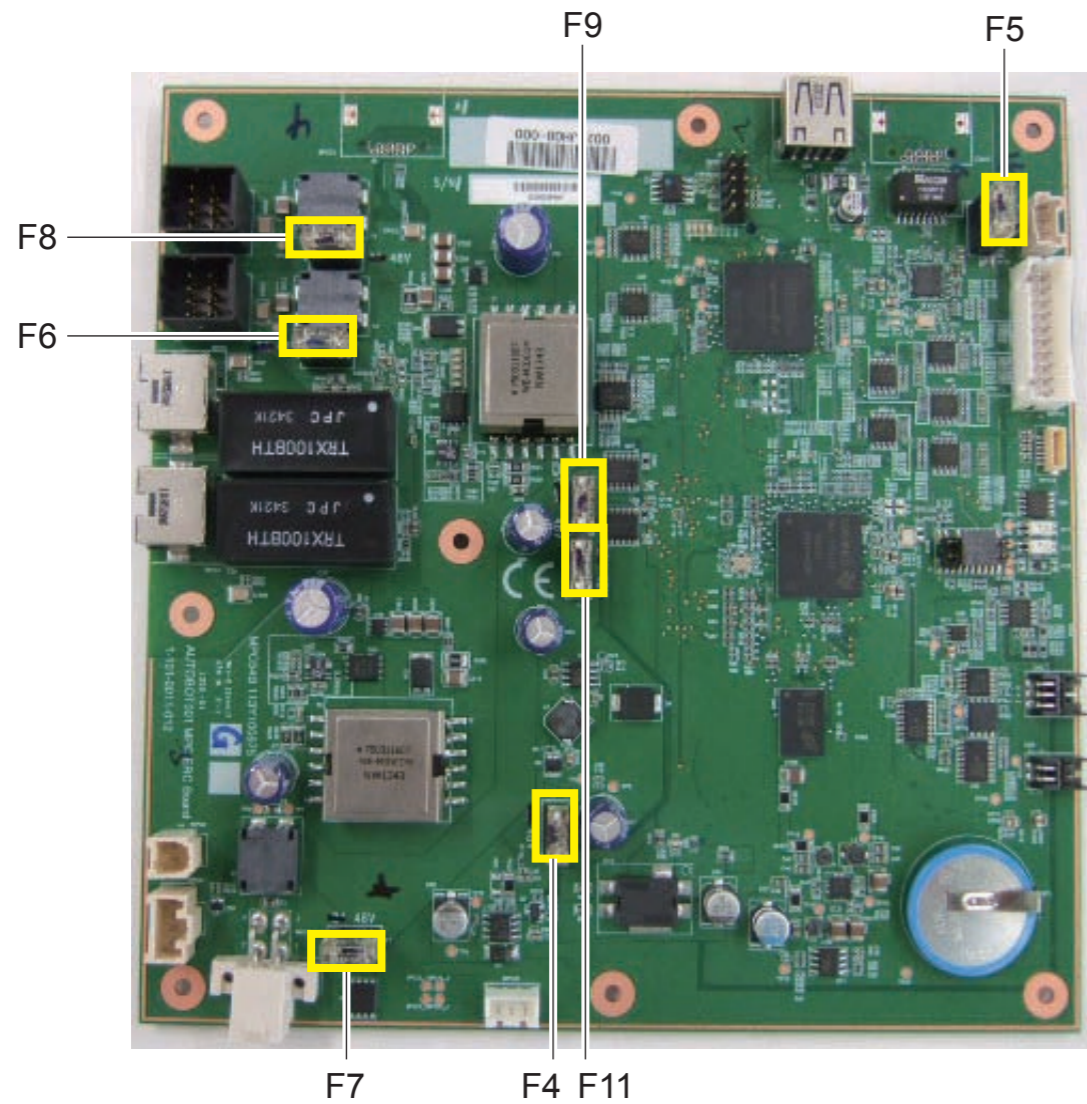
1200_300002.ai

■ Fuse Information

Board indications	Type	Rated voltage (V)	Rated amperage (A)	Model
F4	Micro fuse	48	4	LM40(D)CDL Daito Communication Apparatus Co. Ltd.
F5	Micro fuse	48	2	LM20(D)CDL Daito Communication Apparatus Co. Ltd.
F6	Micro fuse	48	2	LM20(D)CDL Daito Communication Apparatus Co. Ltd.
F7	Micro fuse	48	2	LM20(D)CDL Daito Communication Apparatus Co. Ltd.
F8	Micro fuse	48	2	LM20(D)CDL Daito Communication Apparatus Co. Ltd.
F9	Micro fuse	48	0.3	LM03(D) Daito Communication Apparatus Co. Ltd.
F11	Micro fuse	48	2	LM20(D)CDL Daito Communication Apparatus Co. Ltd.

1200_300216.ai
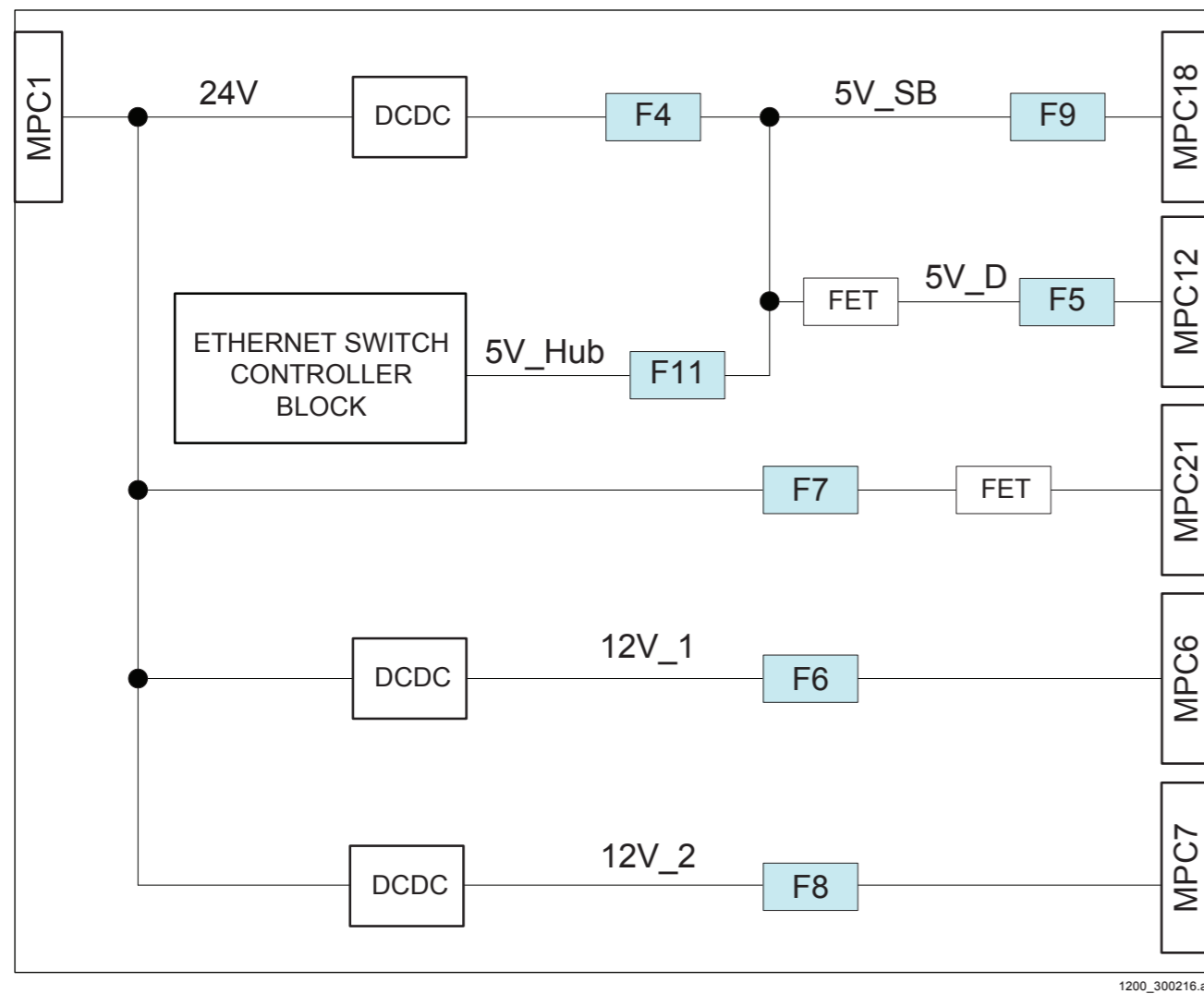
■ Handling Fuse Failures

Change the target fuse.

2.3.2 Setting the Jumper Pin

■ Jumper Pin Location

600_300168.ai
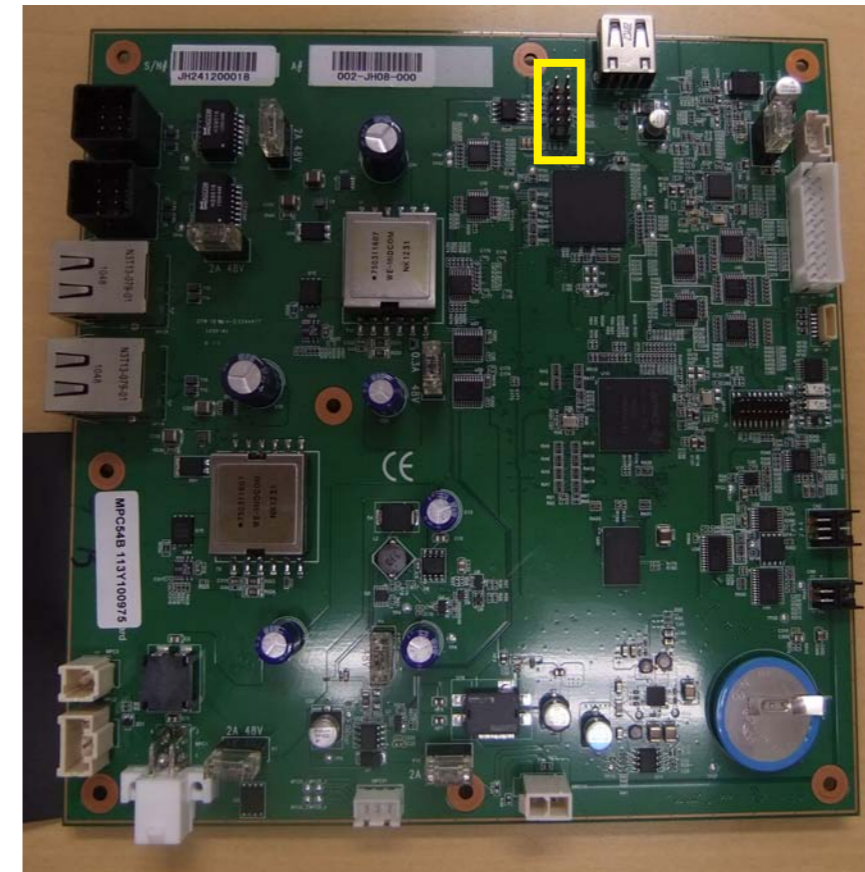
■ Jumper Pin Information

No jumper pin is used in the machine.

2.4 LED60C Board

■ Board Location

LED60C board

1200_300012E.ai
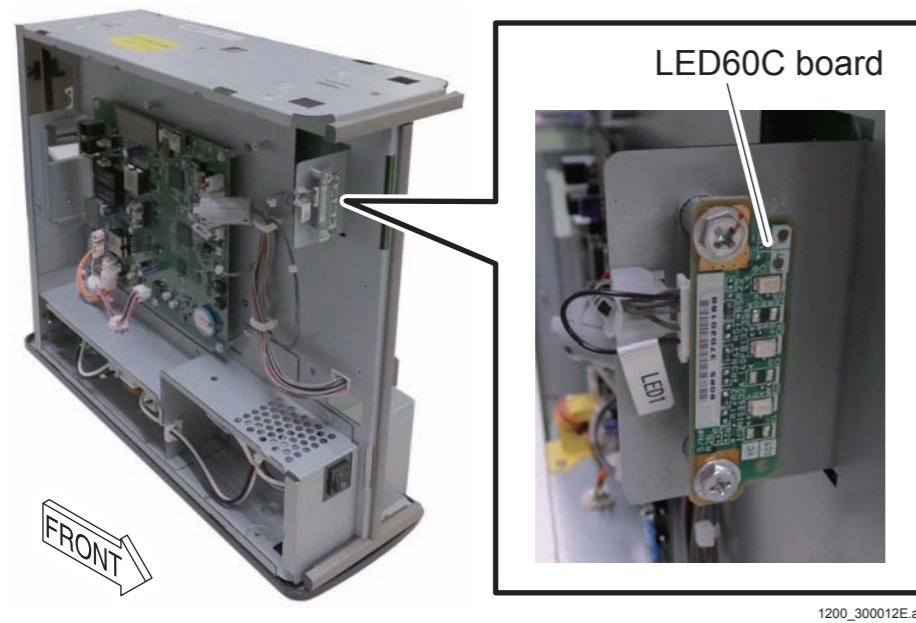
■ Removal Procedures

(1) Remove the covers of the MP.

☞ {MC:2.1_MP Cover}

(2) Remove the LED60C board.

#1 Remove: M3x6 (x1)
#2 Disconnect: Cable connector (LED1)

LED60C board

#2

#1

1300_300006.ai
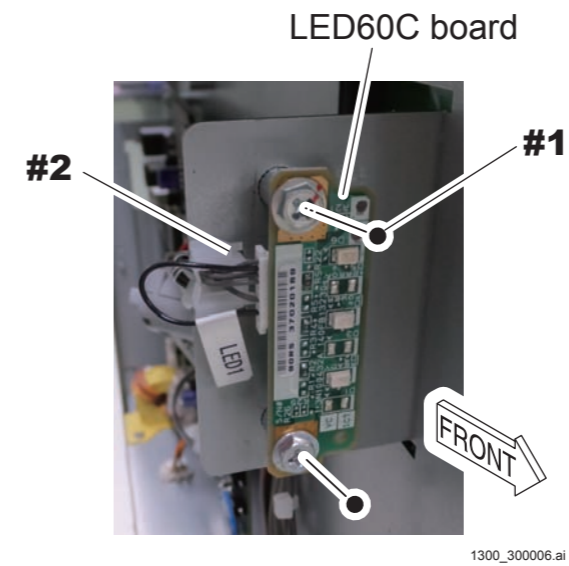
■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

2.5 MPL65A Board

■ Board Location

DETAIL A   MPL65A board

1300_300007.ai
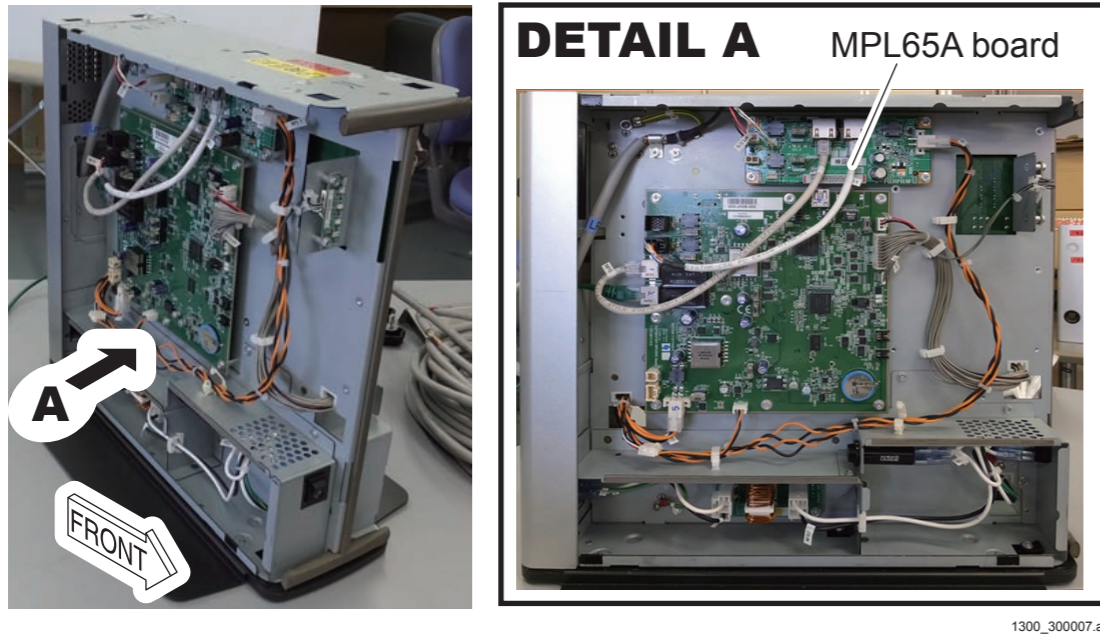
■ Removal Procedures

(1) **Remove the covers of the MP.**

☞ {MC:2.1_MP Cover}

(2) **Remove the MPL65A board.**

#1 Disconnect: Cable connectors (MPL1, 3-5, 7)
#2 Remove: M3x6 (x4)

◆ *NOTE* ◆

If two SE cables are connected, remove also the cable connectors of MPL 6 and 8.
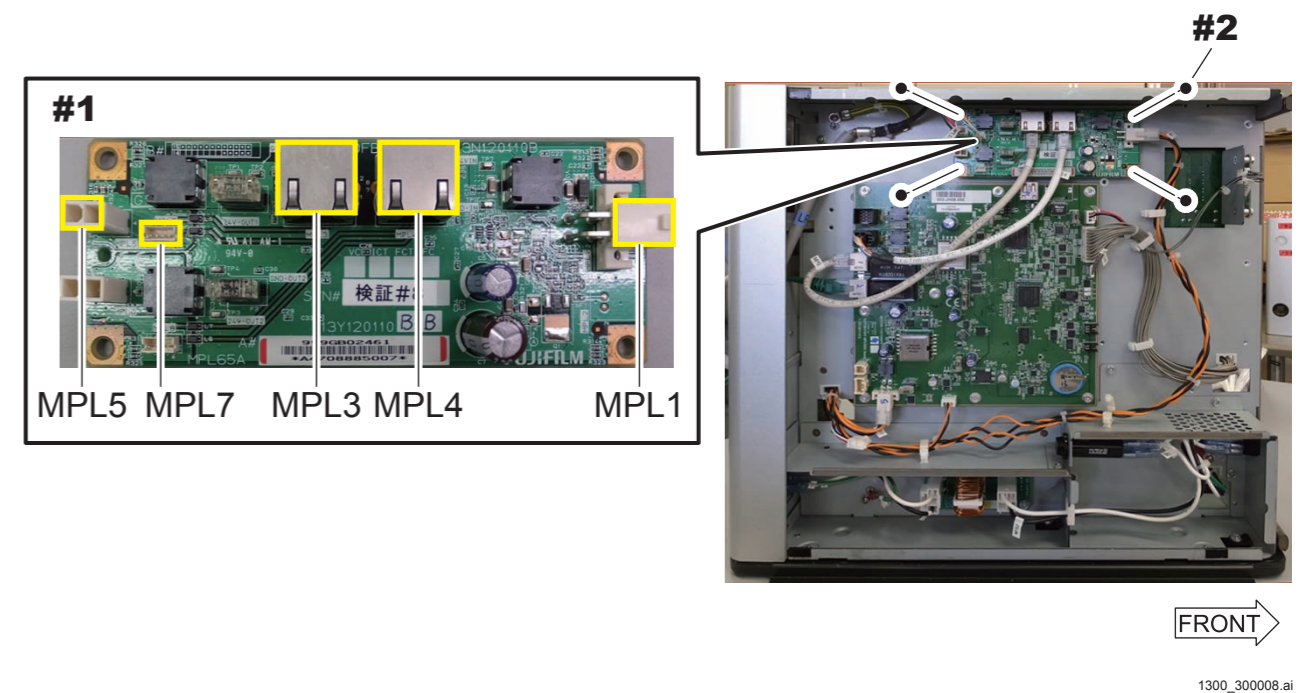
#1

#2

MPL5 MPL7   MPL3 MPL4   MPL1

FRONT

1300_300008.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

■ Fuse Locations

1300_300001.ai
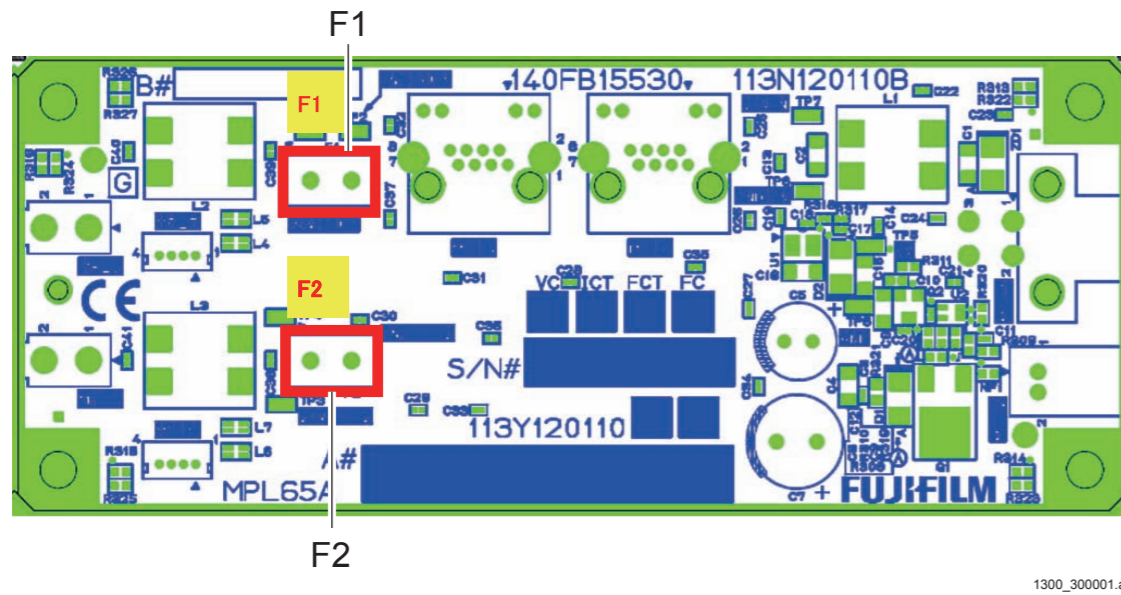
■ Fuse Information

Board indications	Type	Rated voltage (V)	Rated amperage (A)	Model
F1	Micro fuse	48	4	LM40(D)CDL Daito Communication Apparatus Co. Ltd.
F2	Micro fuse	48	4	LM40(D)CDL Daito Communication Apparatus Co. Ltd.

■ Handling Fuse Failures

Change the target fuse.

2.6   NFB51A Board

■ Board Location

NFB51A board

FRONT

1200_300019.ai
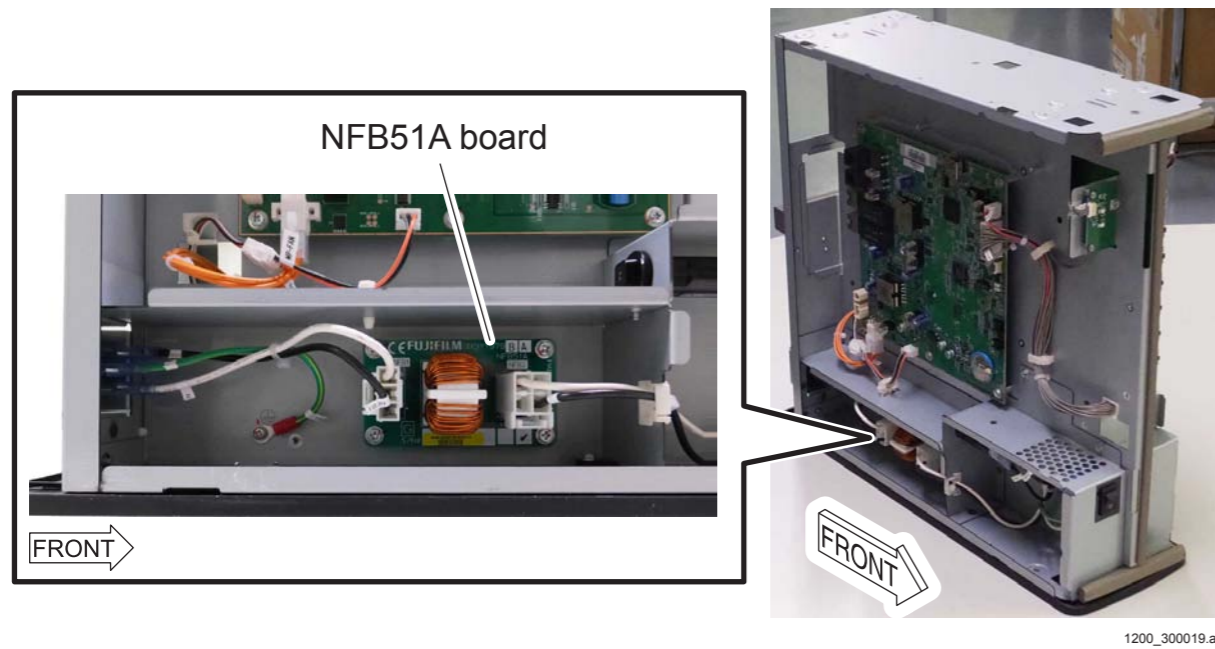
■ Removal Procedures

(1) Remove the covers of the MP.

☞ {MC:2.1_MP Cover}

(2) Remove the NFB51A board.

#1 Unclamp: Clamp (x1)
#2 Disconnect: Cable connectors (NFB1, NFB2)
#3 Remove: M3x6 (x4)

#2   #3   #1

FRONT

FRONT

1200_300018.ai
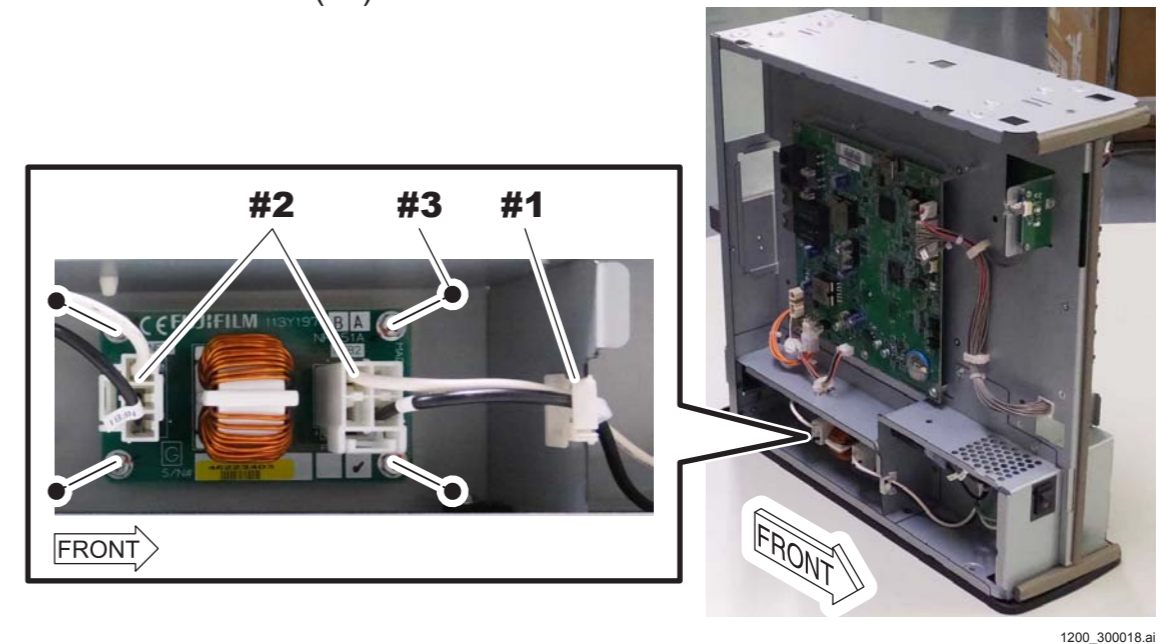
■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

2.7 Cooling Fan (FAN1)

■ Removal Procedures

(1) Remove the covers of the MP.

☞ {MC:2.1_MP Cover}

(2) Remove the fan together with the fan cover.

#1 Disconnect: Cable connector (MPC1)
#2 Unclamp: Clamps (x2)
#3 Remove: M3x6 (x4)

DETAIL A

1200_300014.ai
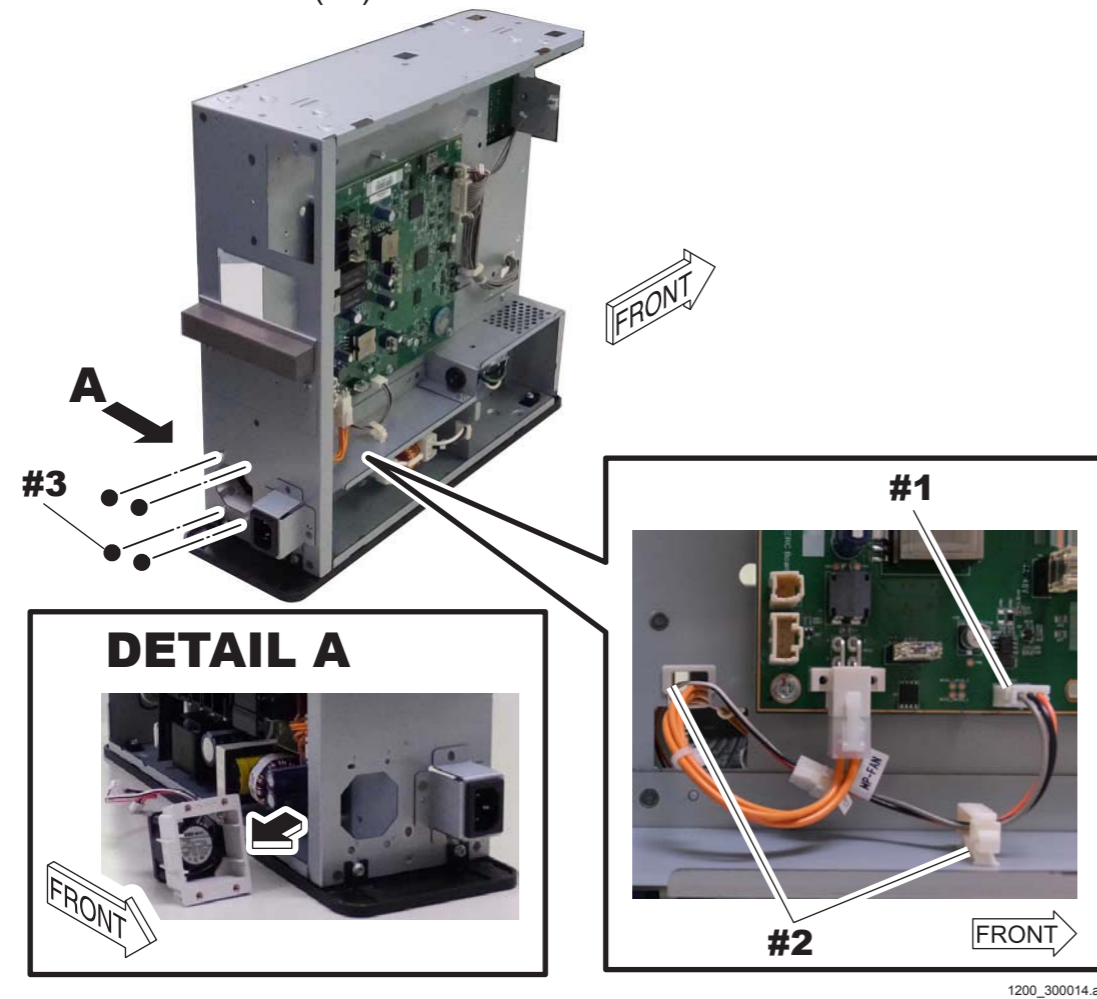
(3) Remove the relay connector and the relay cable from the fan.

Relay connector   Relay cable

1200_300159E.ai
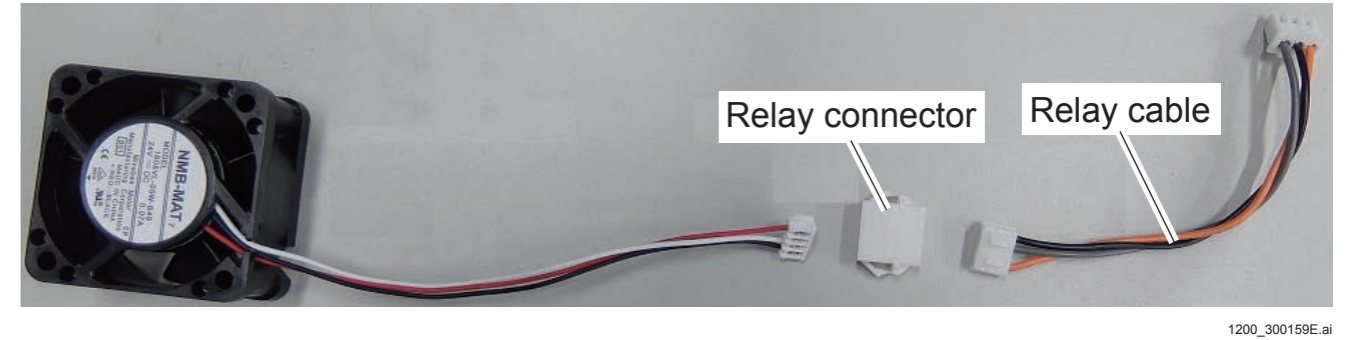
(4) Remove the fan.

#1 Remove: M3x25 (x2)

FAN   Cover

1200_300015.ai
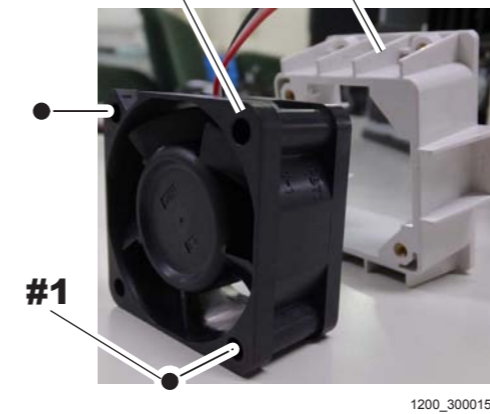
■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

◆ NOTE ◆

The cooling fan (FAN1) is for exhaustion. Check the arrow indicating the direction of the air engraved on the fan before putting the fan on the fan cover.

DETAIL A

FAN

1200_300016.ai
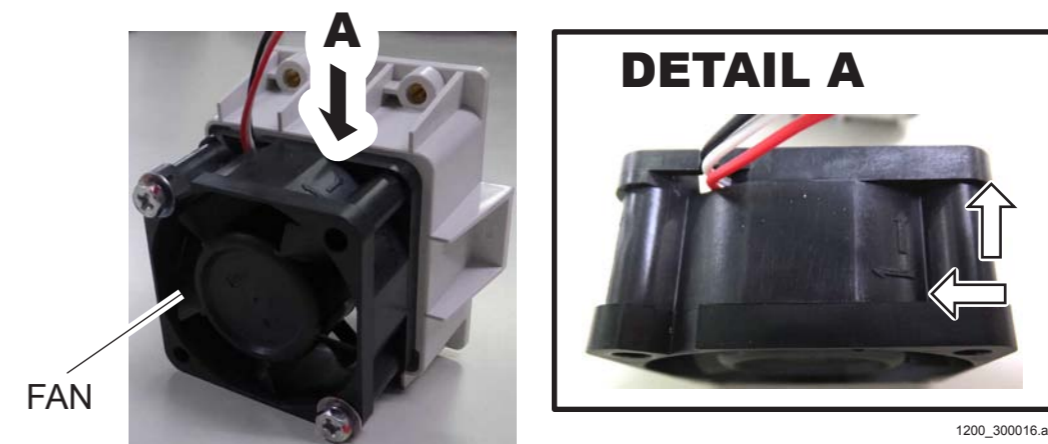
2.8   Power Supply Unit

⚠ *CAUTION*

The power supply unit is equipped with a rotary dial (VR51). The rotary dial is designed for adjustment in the factory and must not be controlled on the market.

Power supply unit

⚠ VR51

600_300177.ai
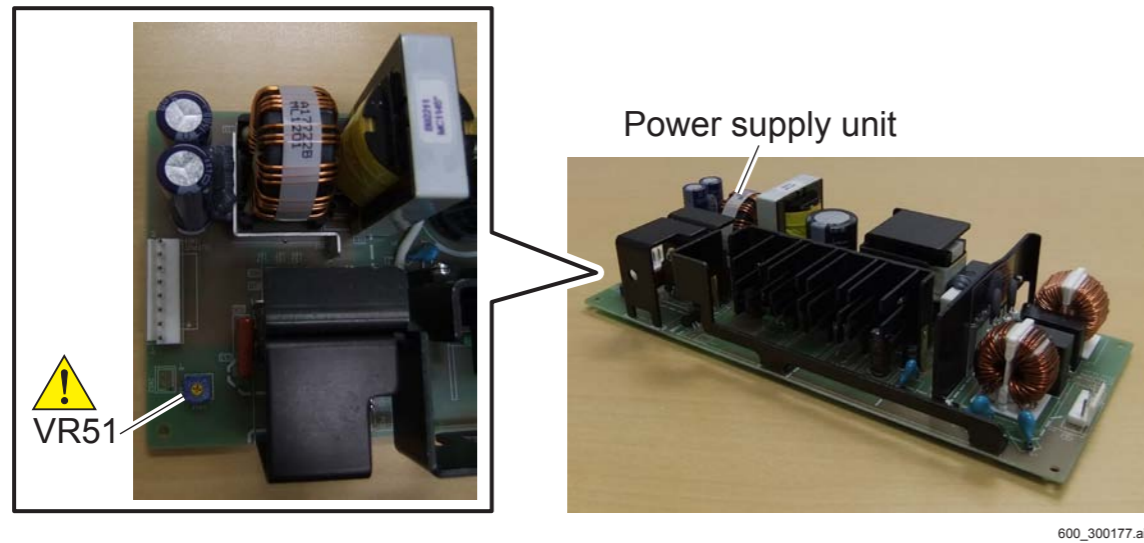
■ Removal Procedures

(1) Remove the covers of the MP.
☞ {MC:2.1_MP Cover}

(2) Remove the MPX54A board.
☞ {MC:2.2_MPX54A Board}

(3) Remove the power supply unit.
#1 Disconnect: Cable connectors (CN1, CN51)
#2 Remove: M3x6 (x5)
#3 Draw out: Power supply unit

#1   #2

FRONT   FRONT
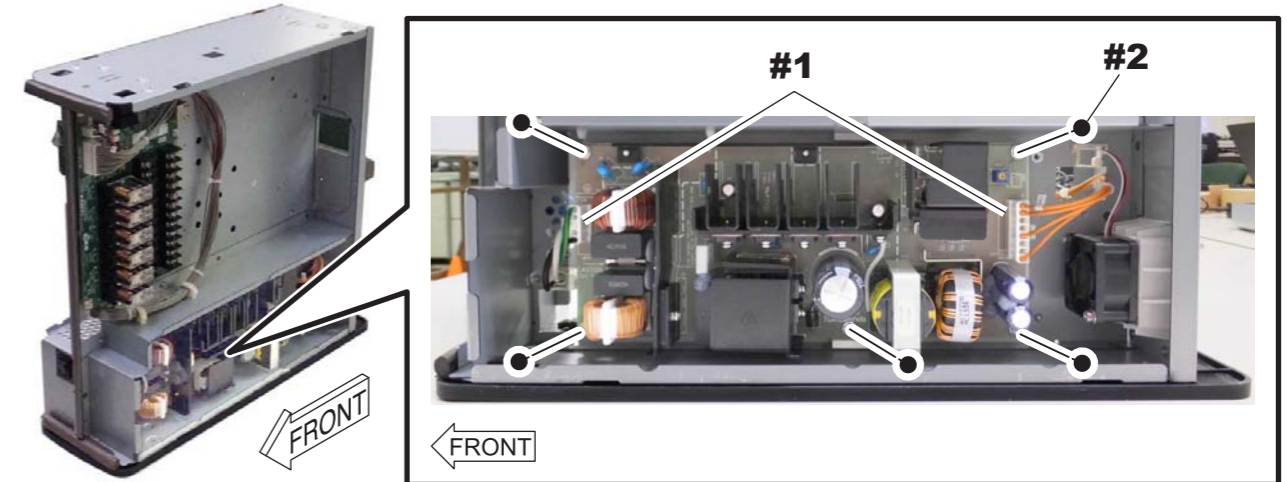
1200_300017.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

2.9　Switch Cover

■ Removal Procedures

(1) **Remove the covers of the MP.**

☞ {MC:2.1_MP Cover}

(2) **Remove the switch cover.**

Front cover

1200_300078E.ai
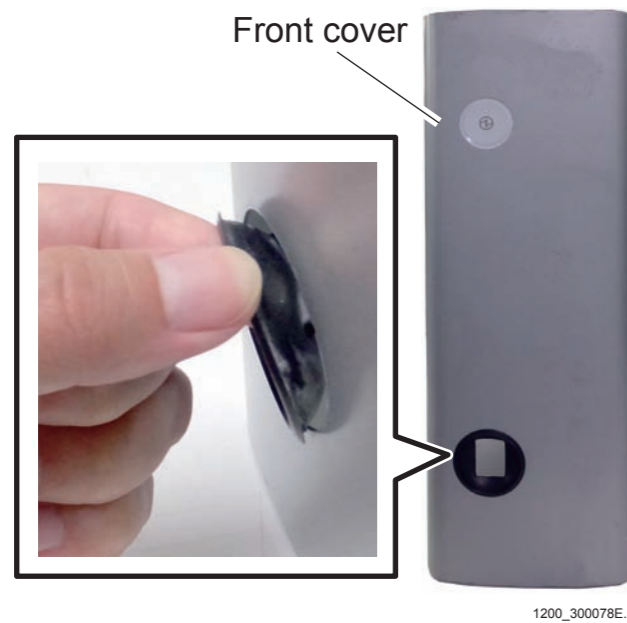
■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

◆ *NOTE* ◆

Align the tabs on the switch cover with the notches on the front cover.

Switch cover　　　　　　　Front cover

1200_300079E.ai
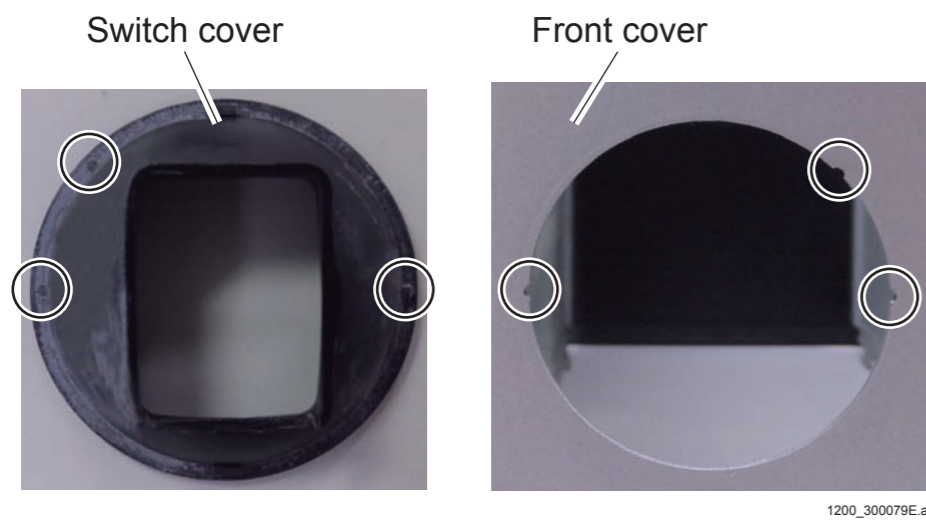
2.10　Outlet

■ Removal Procedures

(1)　Remove the covers of the MP.

☞ {MC:2.1_MP Cover}

(2)　Remove the outlet.

#1 Disconnect: Cable terminals (L, N, FG)

DETAIL A

#1

A

Outlet

1200_300080E.ai
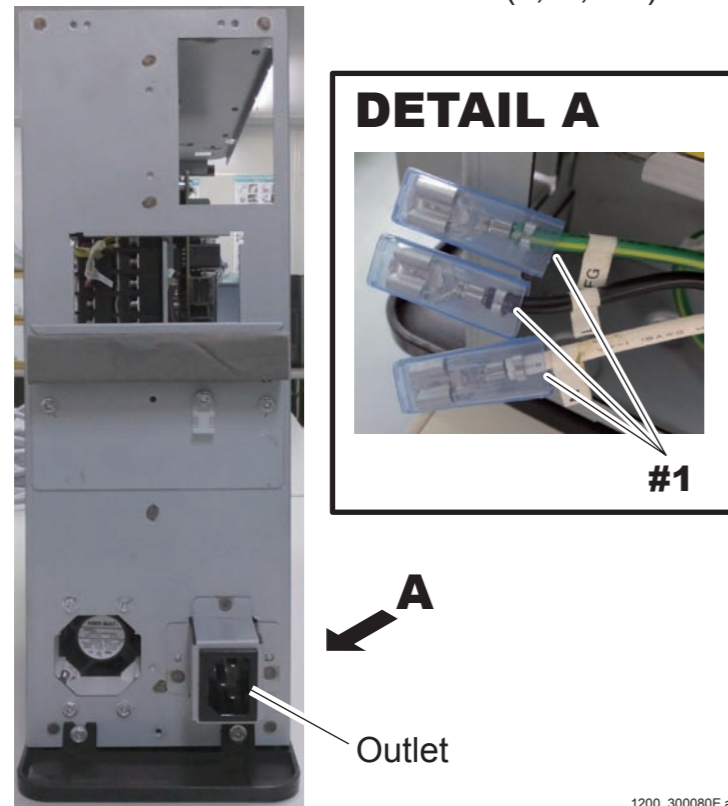
◇ *REFERENCE* ◇

The outlet is installed in the MP with the tabs (two places on the right side and one place on the left side) directed toward the outlet's opening.

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

◆ *NOTE* ◆

Install the cable terminals (L, N, FG) as follows.

N

FG

L

1200_300082.ai
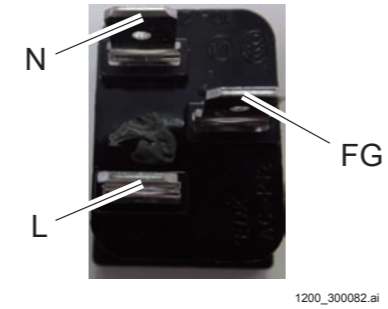
2.11 AC Bucky Relay Unit (Optional)

■ Removal Procedures

(1) Remove the AC bucky relay unit.

Reverse the reinstallation procedures for removal.

☞ {IN1:6.5.3_Connecting the X-Ray Shot Cable (Bucky AC Type)}

☞ {IN2:6.5.3_Connecting the X-Ray Shot Cable (Bucky AC Type)}

■ Reinstallation Procedures

(1) Mount the AC bucky relay unit.

☞ {IN1:6.5.3_Connecting the X-Ray Shot Cable (Bucky AC Type)}

☞ {IN2:6.5.3_Connecting the X-Ray Shot Cable (Bucky AC Type)}

2.11.1 Relay

◇ REFERENCE ◇

The model of the relay incorporated in the AC bucky relay unit depends on the AC bucky relay unit type.
Identify the model before replacing the relay.

☞ **{MD:1.3.4_Board-Related Information}**

■ Removal Procedures

(1) Remove the AC bucky relay unit.

#1 Disconnect: Relays

1300_300023.ai
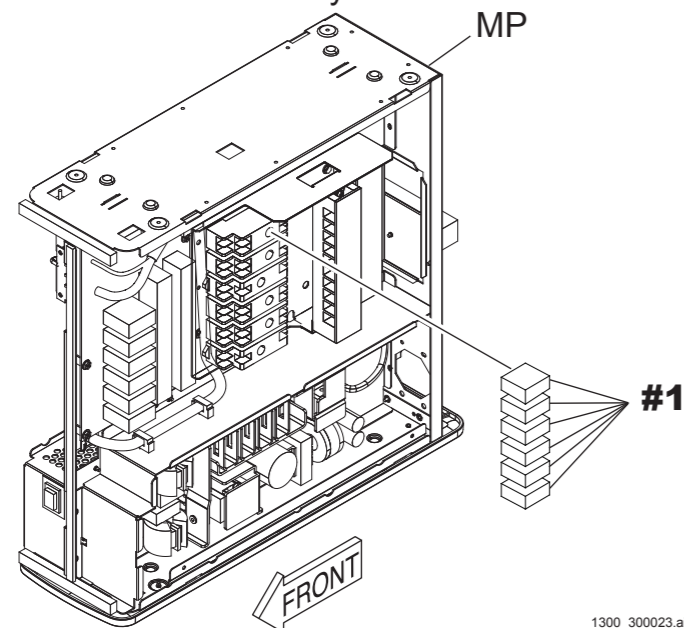
◇ REFERENCE ◇

The relay incorporated in the AC bucky relay unit is retained by a hook. Follow the procedures below to attach/detach the relay.
<To detach>
#1 Disengage: Hook
#2 Push down: Hook

600_300038.ai
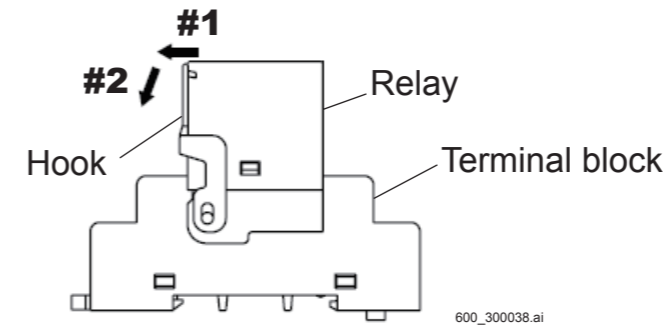
<To attach>
#1 Press: Hook
#2 Push up: Hook

600_300039.ai
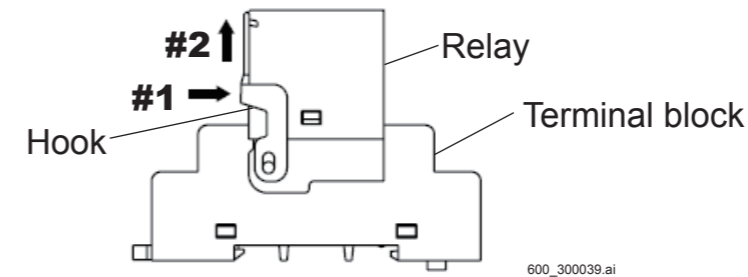
■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

2.12 Replacing the MP whose Local IP Address Is Changed

When the MP whose local IP address is changed from the default value (192.168.0.20) is to be replaced, refer to the following procedures to proceed with operation.
Also refer to the following procedures for replacing the MP MPC54B board whose local IP address is changed from the default value (192.168.0.20).

■ Changing the Local IP Address to the Default Value

◇ REFERENCE ◇

The IP address of the MC ETH1 needs to be returned to the default value when the MP or the MPC54B board is to be replaced. Mentioned below are the procedures for returning the IP address of the MC ETH1 and then replacing the MP.

(1) **Back up the respective data.**
- CONFIGURATION
- HISTORY LOG
- CORRECT ALL DATA
  ☞ {MU2:1.13_BACKUP}

(2) **Set the IP address of the MP and MC to the default value on the Local Network PreSetting.**
☞ {MU2:[1.1]_Local Network PreSetting >>}

◇ REFERENCE ◇

It is not necessary to change the IP address of the SE.

(3) **Click [MP Network Setting >>] on the Network Setting window.**
The MP Network Setting >> window appears.

(4) **Click [MP1 Network Setting >>] on the MP Network Setting window >>.**
The MP1 Network Setting >> window appears.

(5) **Click [Setting for MP1].**
The confirmation dialogue box of "Are you sure?" appears.

(6) **Click [OK].**

(7) **Click [MP Network Setting >>] on the Network Setting window.**
The MP Network Setting >> window appears.

(8) **Click [MP2 Network Setting >>] on the MP Network Setting window >>.**
The MP2 Network Setting >> window appears.

(9) **Click [Setting for MP1].**
The confirmation dialogue box of "Are you sure?" appears.

(10) **Click [OK].**

(11) **Click [BACK] to return to the MP Network Setting >> window.**

(12) **Click [BACK] to return to the Network Setting window.**

(13) **Turn OFF the power of the MP, and then turn it ON again.**

(14) **Left-click the MC Manager from the task tray and execute "EXIT".**
Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

(15) **Delete the RU registered in the RU PC-TOOL.**
☞ {MU2:1.3_DELETE}

(16) **Re-install the RU PC-TOOL.**

◇ REFERENCE ◇

The IP address of the MC ETH1 restores to the default value by re-installing the RU PC-TOOL.

■ **Procedures for Replacing the MP or the MPC54B Board**

(1) **Replace the MP or the MPC54B board.**

◇ *REFERENCES* ◇

Refer to the following for replacing the MPC54B board.

☞ *{MC:2.3_MPC54B Board}*

(2) **Update MP application software version.**

☞ {IN1:10.5_Updating MP Application Software Version}

☞ {IN2:10.5_Updating MP Application Software Version}

◇ *REFERENCES* ◇

By changing the board, the IP address has been changed to 192.162.0.20 (default value) which is equivalent to MP1. Therefore, update MP application software version by clicking [MP1 Software VerUp Install] on the MP1 Install >> window.

■ **Changing the Local IP Address**

(1) **Return the local IP address of the SE/MP/MC to the original value (value before changed to the default value).**

☞ {IN:Appendix 3._Replacement Procedure of the Local Network}

◇ *REFERENCE* ◇

It is not necessary to change the IP address of the SE.

(2) **Restore the respective data which has been backed up.**

- CONFIGURATION
- HISTORY LOG
- CORRECT ALL DATA

☞ {MU2:1.14_RESTORE}

3. SE (Flat Panel Sensor)

⚠ WARNING

Never service the SE with the power supplied under any conditions.

Before servicing the SE, be sure to turn OFF the power of the machine or disconnect the SE cable from the MP and the connection cable to shut the power to the SE.

Otherwise, electrification, burn injury or short-circuiting might occur, resulting in death or serious damage.

⚠ CAUTION

- *Reserve a space which anyone other than service personnel cannot easily access before servicing the SE in terms of assuring safety and performance.*
- *When servicing a board, be sure to wear a wristband to ground your body. If your body is not grounded, static buildup on your body may damage electronic components on the board.*
- *Never remove the ABA65A boards and GTD65A boards among the boards mounted on the SE. Otherwise, the SE might break down and causing abnormal images.*

  As the above boards cannot be removed, the flat cable connected with the connector of the above boards cannot be disconnected, either.
- *Do not scratch the ASIC mounted on the SE. Otherwise, abnormal images might result.*

⚠ ASIC ⚠ ABA65A board ⚠ Flat cable

TOP

SE

⚠ ASIC

1300_300002.ai
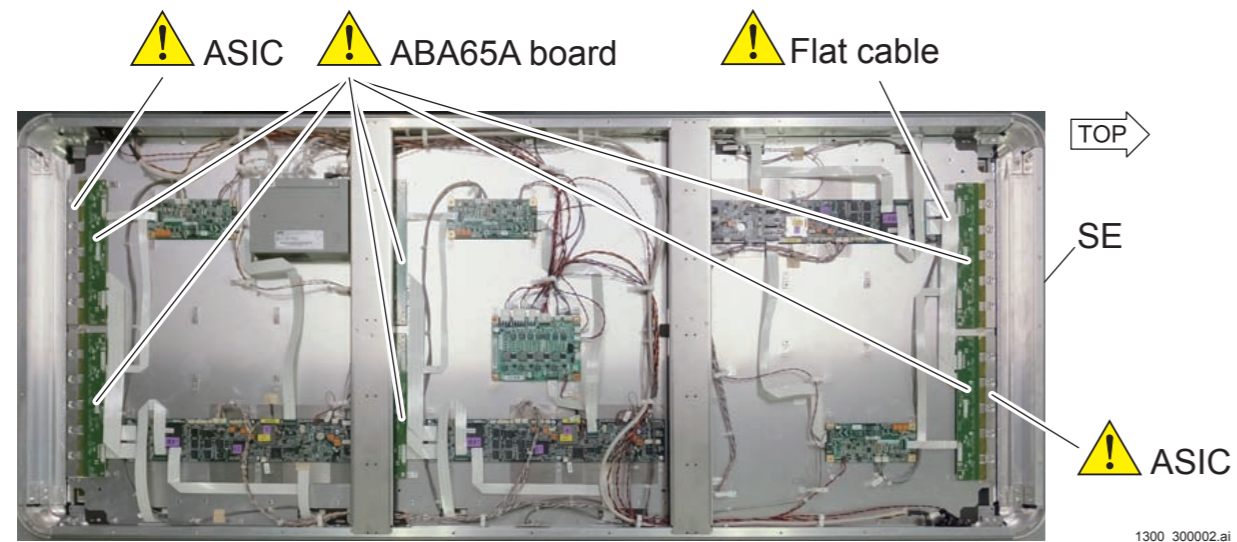
◆ INSTRUCTION ◆

- *Remove the SE cover where there is no dirt or dust around the machine.*
- *Follow the same procedures as those for installation when the SE is to be replaced with a new one.*

3.1   SE (1305SE)

■ Board Locations

Detachable boards incorporated in the SE are shown below.

1300_300004.ai
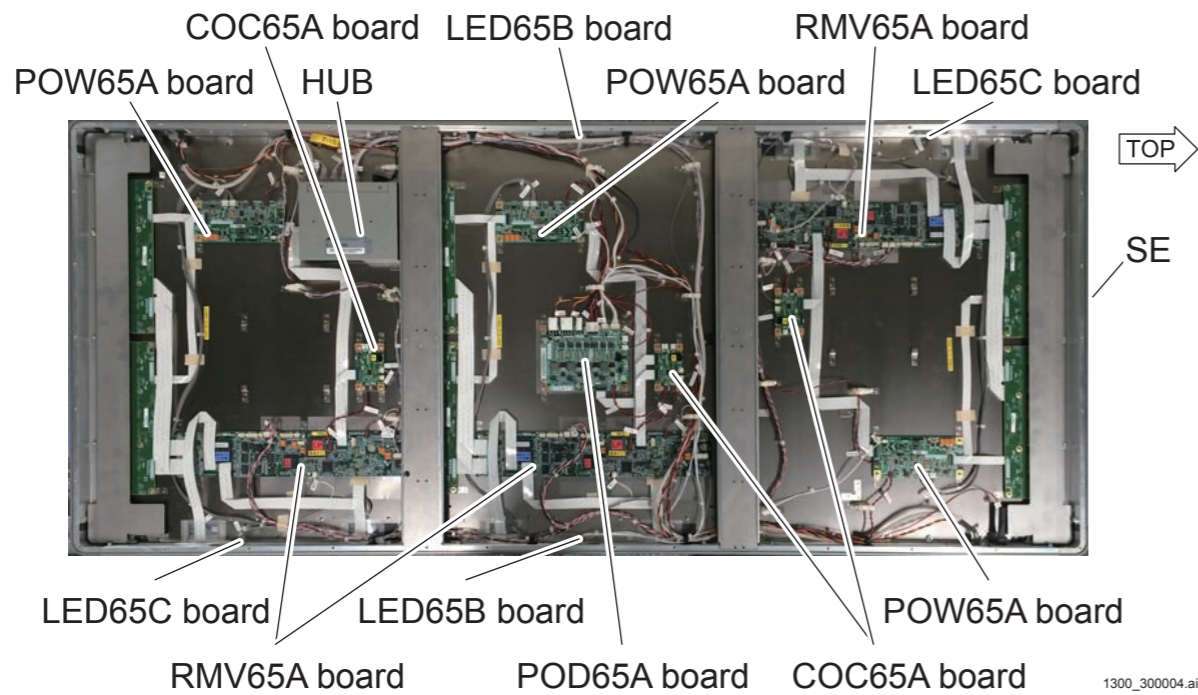
3.1.1   SE Rear Cover

■ Removal Procedures

Place the exposure plane downward when removing the SE rear cover. Check to make sure that the exposure plane is free from anything which might scratch the plane before removing the SE rear cover, and place a shock absorbing member for protecting the exposure plane.

Shock absorber

1300_300007.ai
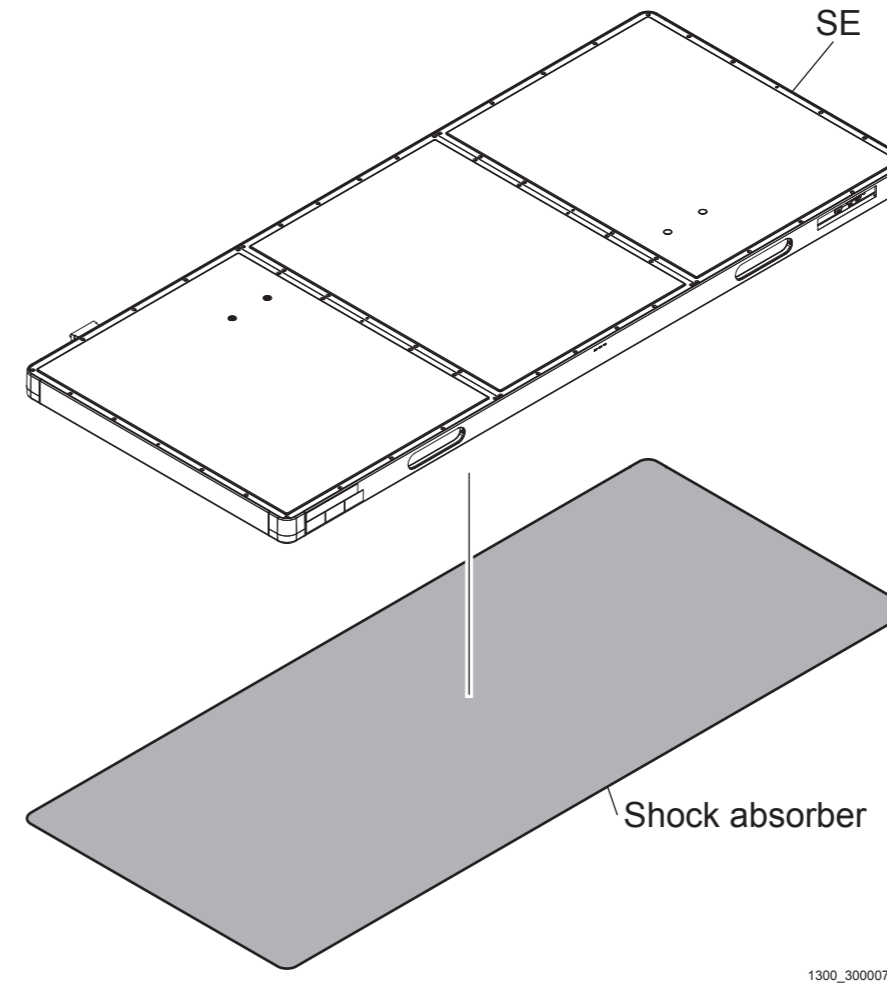
(1) Remove the SE rear cover.

#1 Remove: Screws (for TOP cover: x20, for CENTER cover: x22, for BOTTOM cover: x22)

1300_300005.ai
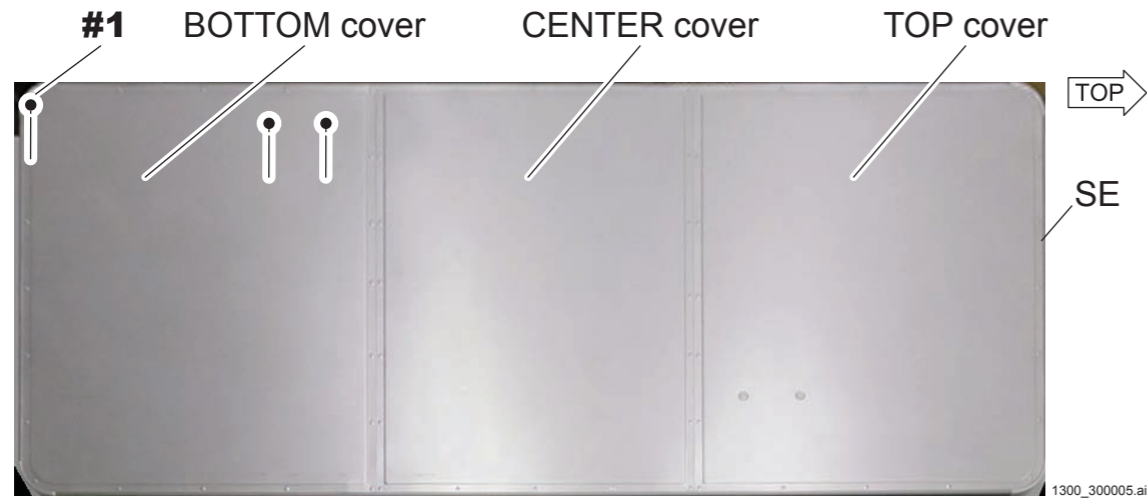
◇ *REFERENCE* ◇

You can remove any of the TOP, CENTER and BOTTOM covers as needed.

■ **Reinstallation Procedures**

Reverse the removal procedures for reinstallation.

3.1.2 POW65A Board

■ **Removal Procedures**

(1) Remove the SE rear cover.

☞

(2) Remove the POW65A board.

#1 Disconnect: Cable connectors (POW1-7, 9)
#2 Remove: M2.6x3 (x4)

1300 300009.ai
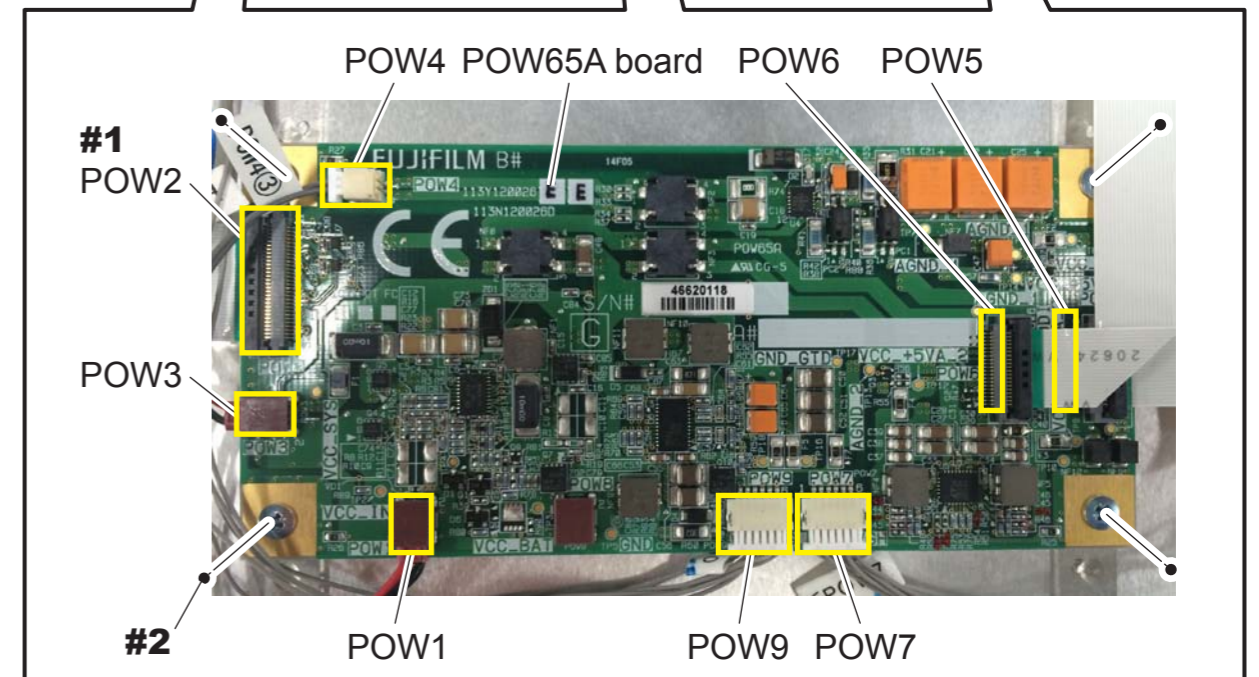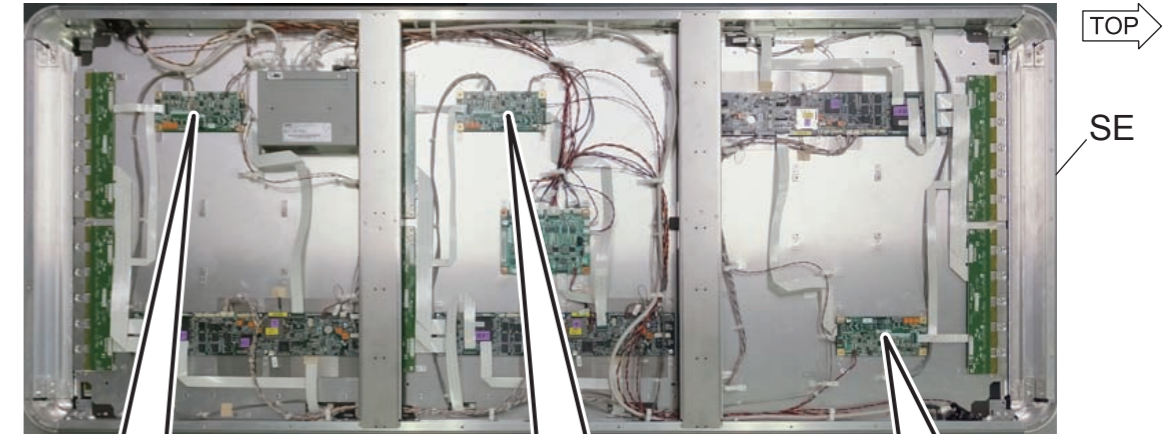
■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

◆ *NOTE* ◆

Be careful not to insert the cable connector for POW1 into POW8.

■ Fuse Locations
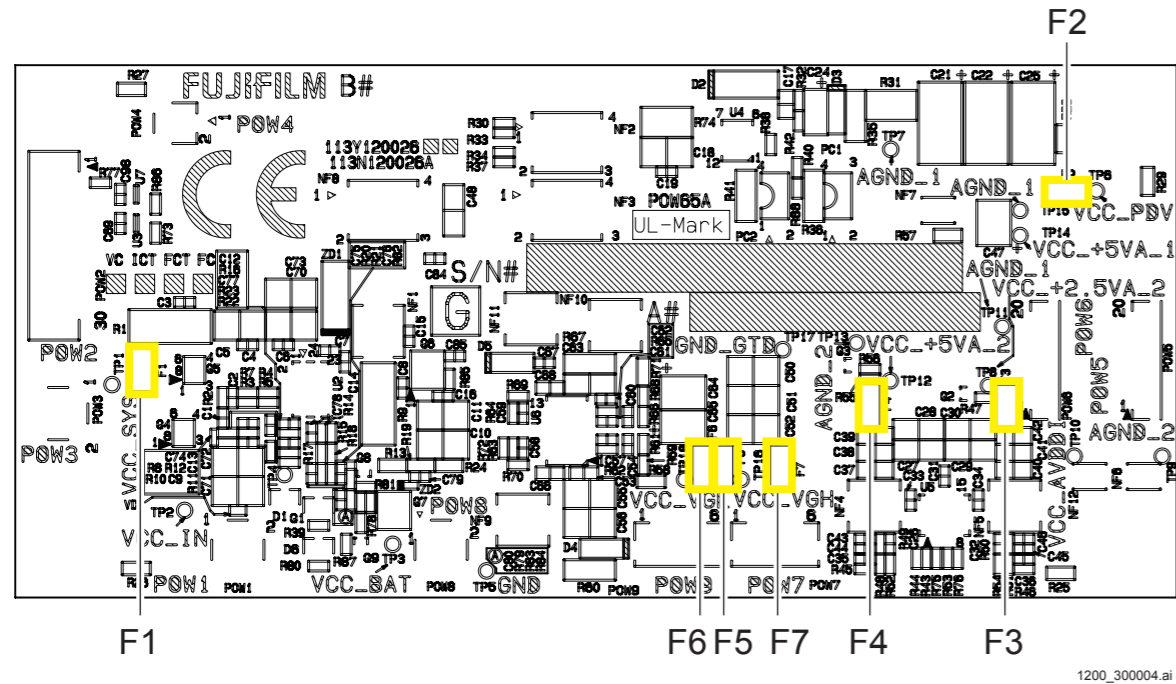
1200_300004.ai

■ Fuse Information

Board indications	Type	Rated voltage (V)	Rated amperage (A)	Model
F1	Chip fuse	76	3.15	KMS32 Daito Communication Apparatus Co. Ltd.
F2	Chip fuse	24	0.3	KMC03 Daito Communication Apparatus Co. Ltd.
F3	Chip fuse	24	2.0	KMC20 Daito Communication Apparatus Co. Ltd.
F4	Chip fuse	24	1.6	KMC16 Daito Communication Apparatus Co. Ltd.
F5	Chip fuse	24	0.4	KMC04 Daito Communication Apparatus Co. Ltd.
F6	Chip fuse	24	0.25	KMC025 Daito Communication Apparatus Co. Ltd.
F7	Chip fuse	24	0.5	KMC05 Daito Communication Apparatus Co. Ltd.

1200_300214.ai
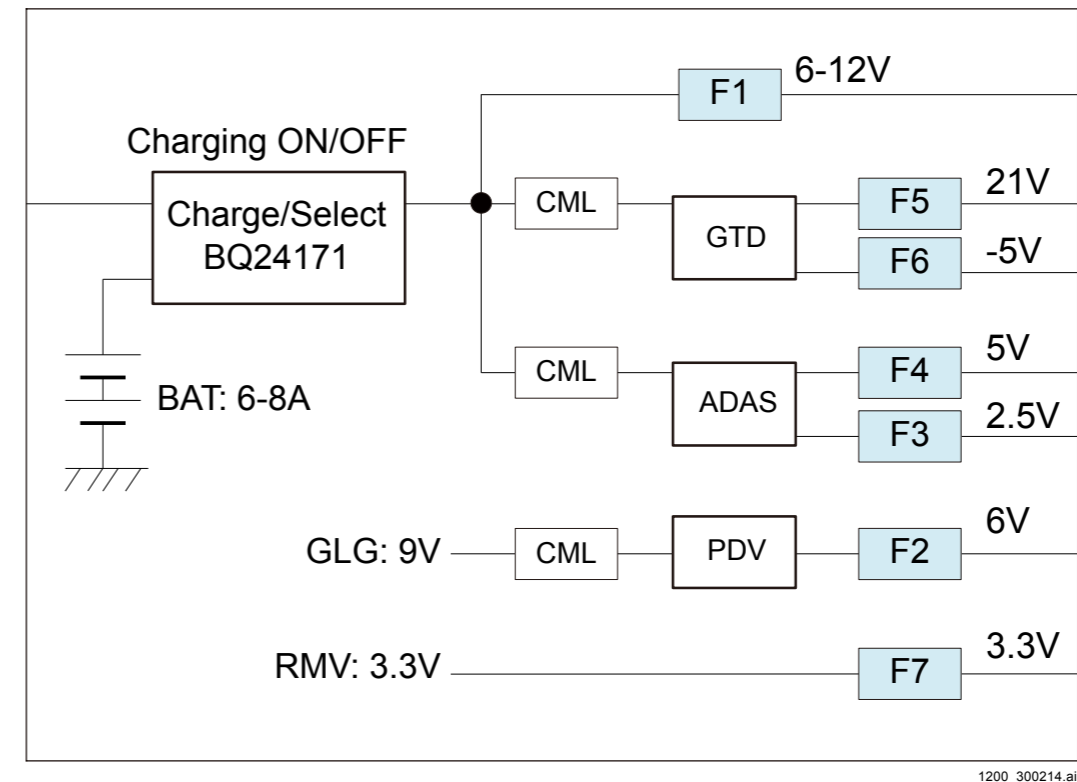
■ Handling Fuse Failures

Change the board.

3.1.3 RMV65A Board

■ Removal Procedures

(1) Remove the SE rear cover.

☞ {MC:3.1.1_SE Rear Cover}

(2) Remove the RMV65A board.

#1 Disconnect: Cable connectors (RMV1, 3, 4, 11, 12, 16, 19-25, 27, 28)
#2 Remove: M2.6x3 (x6)
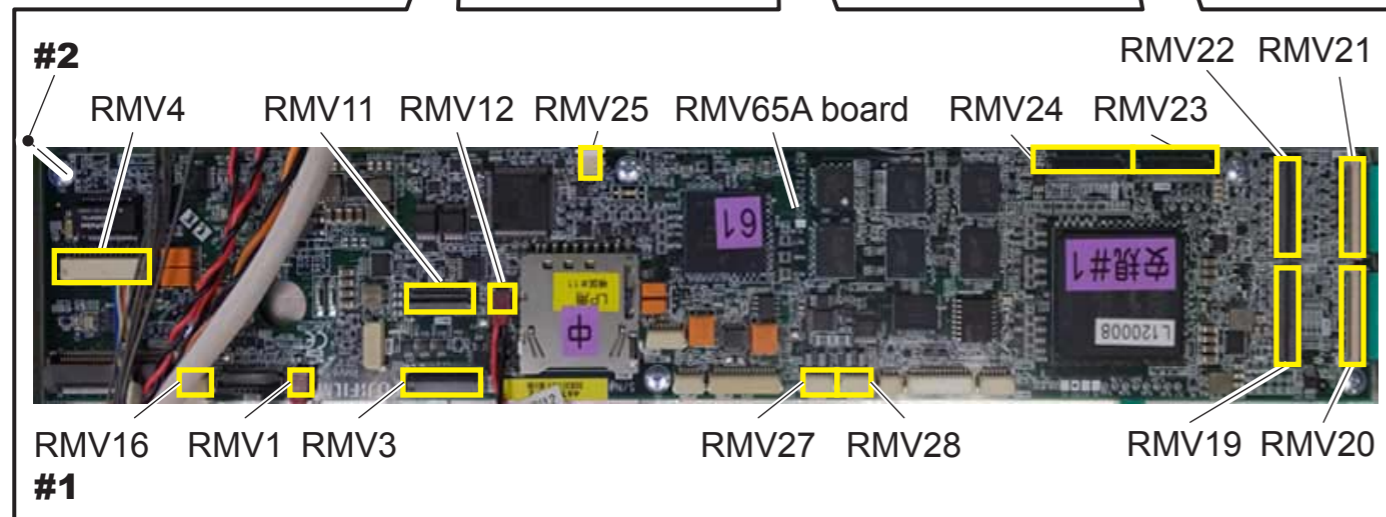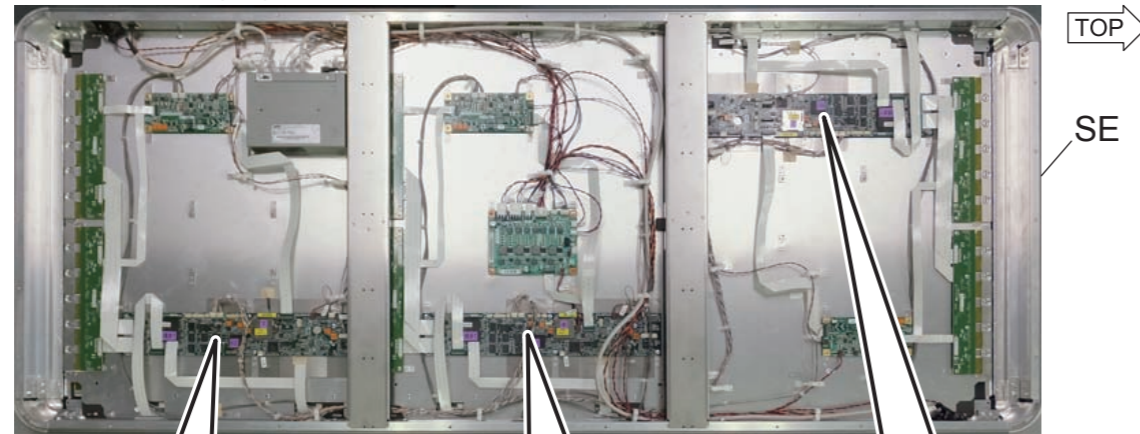
1300_300010.ai

◆ NOTE ◆

- *Cables are connected to the cable connectors of RMV11 and 12 only on the RMV65A board for the CENTER panel unit.*
- *The cable connectors of RMV4 on the RMV65A boards for the TOP and BOTTOM panel units are hidden under the harness, so remove the boards before removing the cable connectors.*

■ Reinstallation Procedures

(1) Reinstall the RMV65A board.

Reverse the removal procedures for reinstallation.

(2) Reinstall the SE rear cover.

☞ {MC:3.1.1_SE Rear Cover}

(3) For the two panel units whose RMV65A boards have not been replaced, transit to the ExtraSleep mode.

(4) Input the SE serial ID of the panel unit whose RMV65A board was replaced.

◇ REFERENCE ◇

Input the serial ID only after the RMV65A board is replaced.

I. **Start up the MUTL.**
II. **Click [BOARD STATE CHECK] and click [SE Write Serial ID>>].**

#1 Click: [BOARD STATE CHECK]
#2 Click: [SE Write Serial ID]
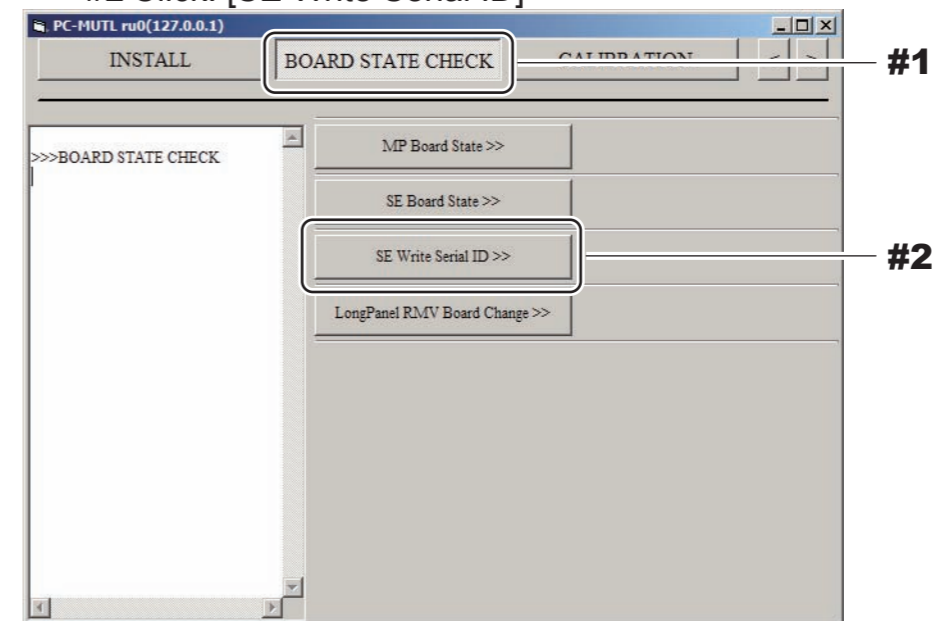
1300_300022E.ai

III. Input the serial ID mentioned on the machine-specific CD, and then click [Set].

◆ *NOTE* ◆

The first letter of the serial ID must be entered as a capital letter.

#1 Input: Serial ID
#2 Click: [SET]

■ Fuse Locations
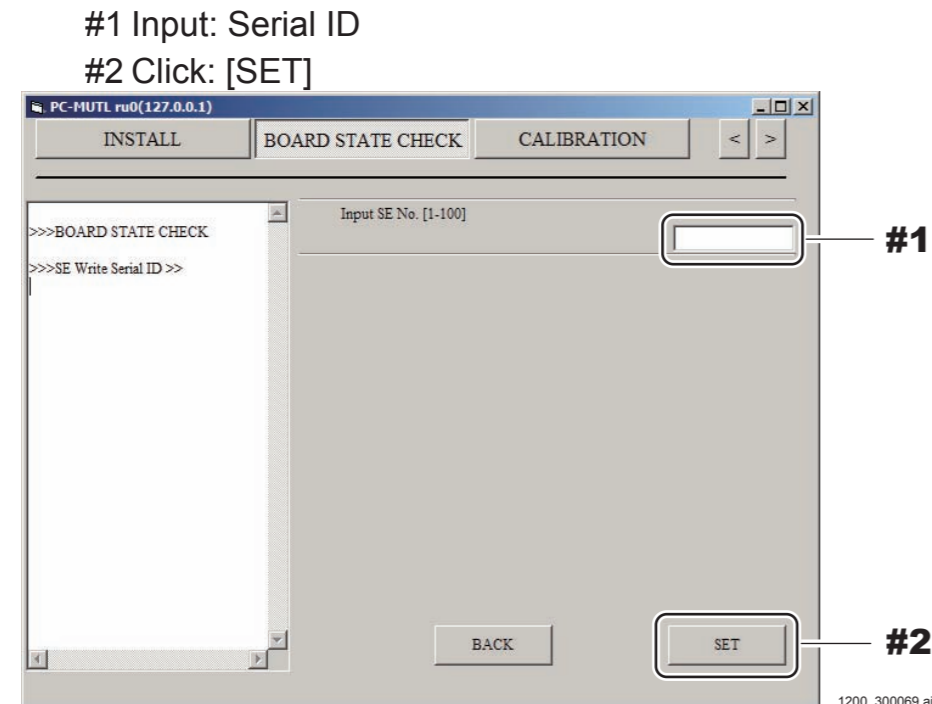
(5) Set the IP address of the SE.

☞ {IN1:10.10_Setting the IP Address of the SE}

☞ {IN2:10.11_Setting the IP Address of the SE}

(6) Install the communication setting file to the panel unit whose RMV65A board was replaced.

(7) Update SE application software version.

☞ {IN1:10.11_Updating SE Application Software Version}

☞ {IN2:10.10_Updating SE Application Software Version}

(8) Restore the calibration data.

☞ {MU2:1.14_RESTORE}

(9) Perform the forced transfer of the SE correct data and check the SE correct data save status.

☞ {IN2:10.13_Forced Transfer of the SE Correct Data}

(10) Restart the MP.

■ Fuse Information
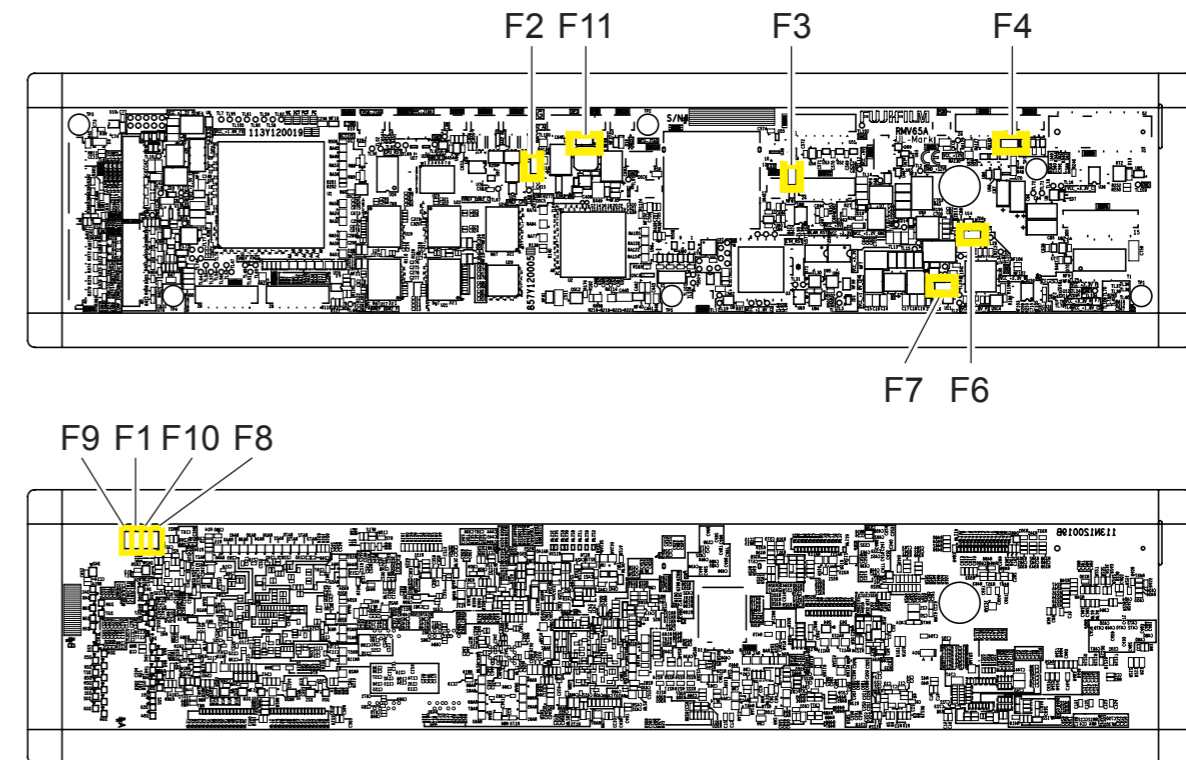
Board indications	Type	Rated voltage (V)	Rated amperage (A)	Model
F1	Chip fuse	24	0.2	KMC02 Daito Communication Apparatus Co. Ltd.
F2	Chip fuse	24	1.25	KMC13 Daito Communication Apparatus Co. Ltd.
F3	Chip fuse	24	0.8	KMC08 Daito Communication Apparatus Co. Ltd.
F4	Chip fuse	24	1.6	KMC16 Daito Communication Apparatus Co. Ltd.
F6	Chip fuse	24	2.0	KMC20 Daito Communication Apparatus Co. Ltd.
F7	Chip fuse	24	0.2	KMC02 Daito Communication Apparatus Co. Ltd.
F8	Chip fuse	24	0.2	KMC02 Daito Communication Apparatus Co. Ltd.
F9	Chip fuse	24	0.2	KMC02 Daito Communication Apparatus Co. Ltd.
F10	Chip fuse	24	0.2	KMC02 Daito Communication Apparatus Co. Ltd.
F11	Chip fuse	24	2.0	KMC20 Daito Communication Apparatus Co. Ltd.
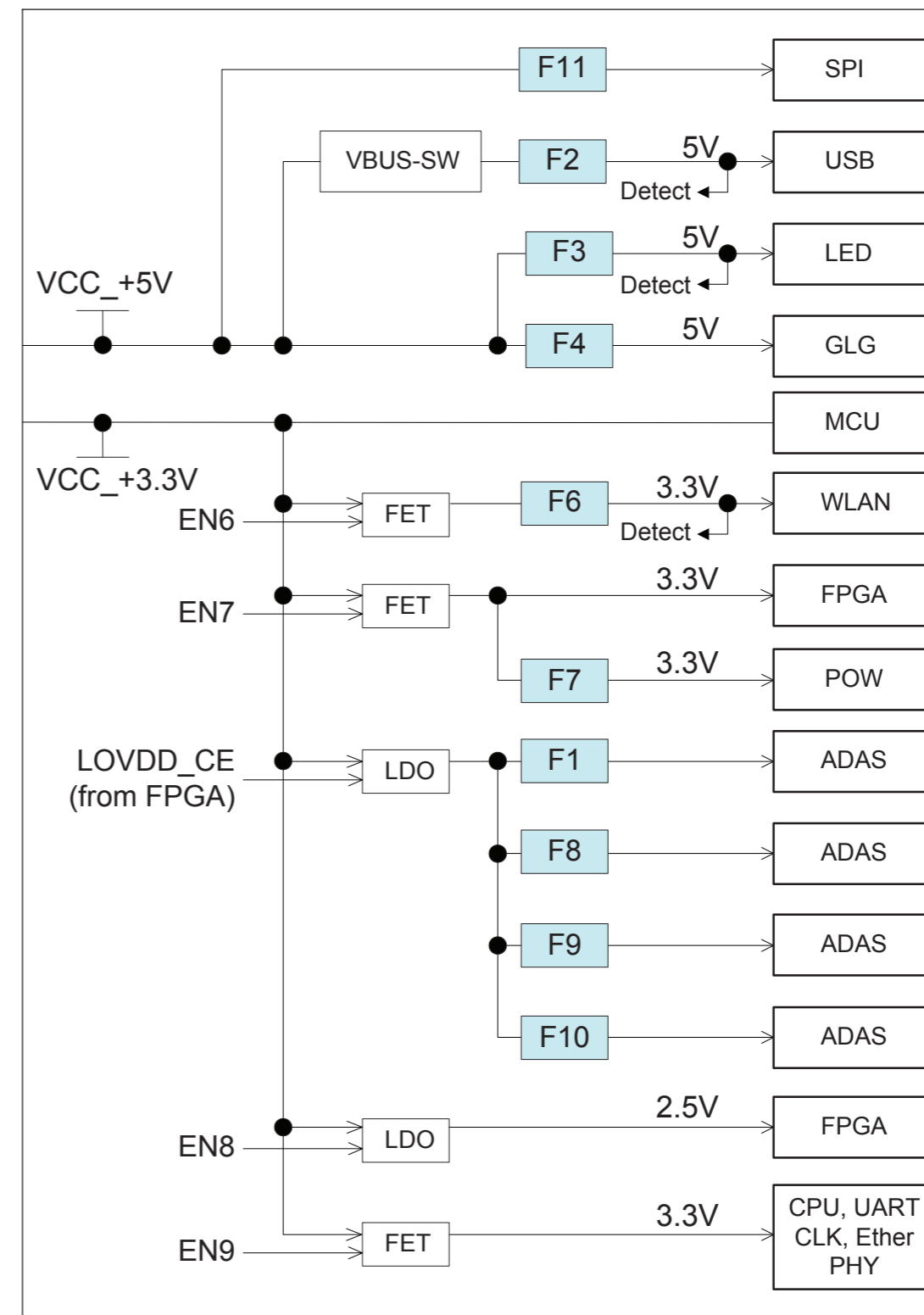
1200_300218.ai

■ Handling Fuse Failures

Change the board.

3.1.4 LED65B Board

■ Removal Procedures

(1) **Remove the SE rear cover.**
☞ {MC:3.1.1_SE Rear Cover}

(2) **Remove the LED65B board.**
#1 Remove: M2.6x3 (x2)
#2 Disconnect: Cable connectors (LED1)
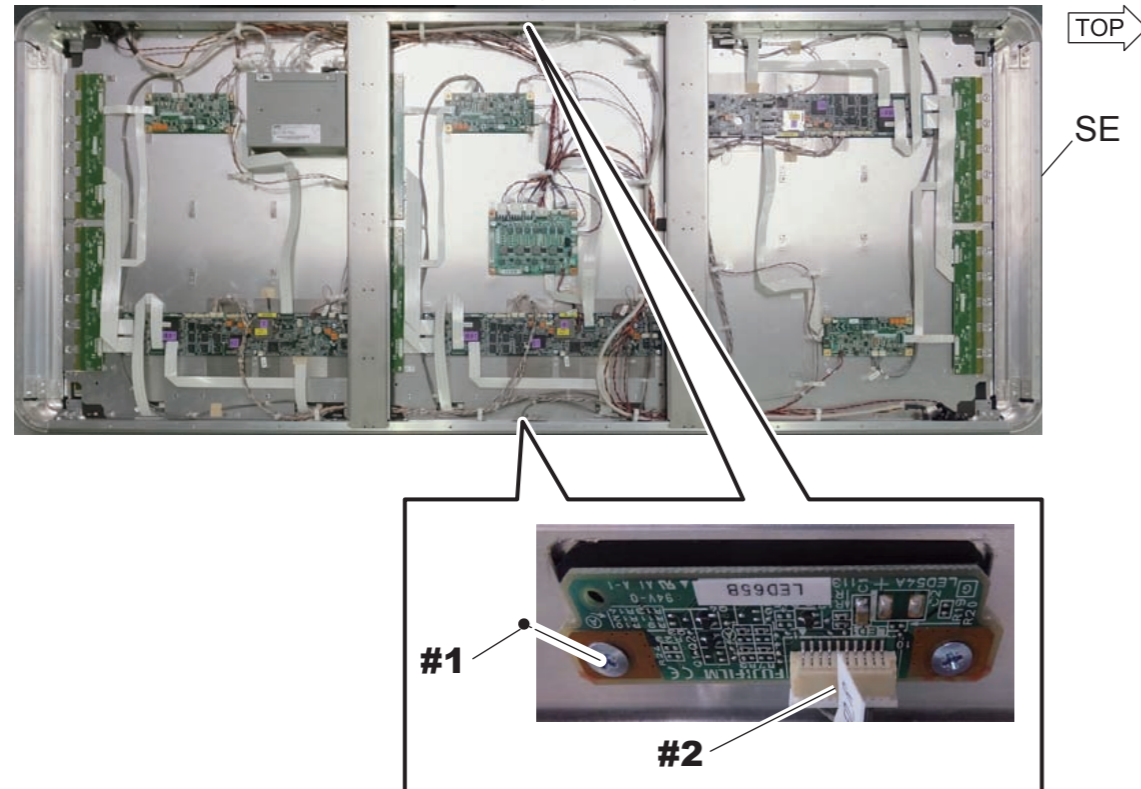
1300_300011.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

3.1.5 LED65C Board

■ Removal Procedures

(1) **Remove the SE rear cover.**
☞ {MC:3.1.1_SE Rear Cover}

(2) **Remove the LED65C board.**
#1 Remove: M2.6x3 (x2)
#2 Disconnect: Cable connectors (LED1)
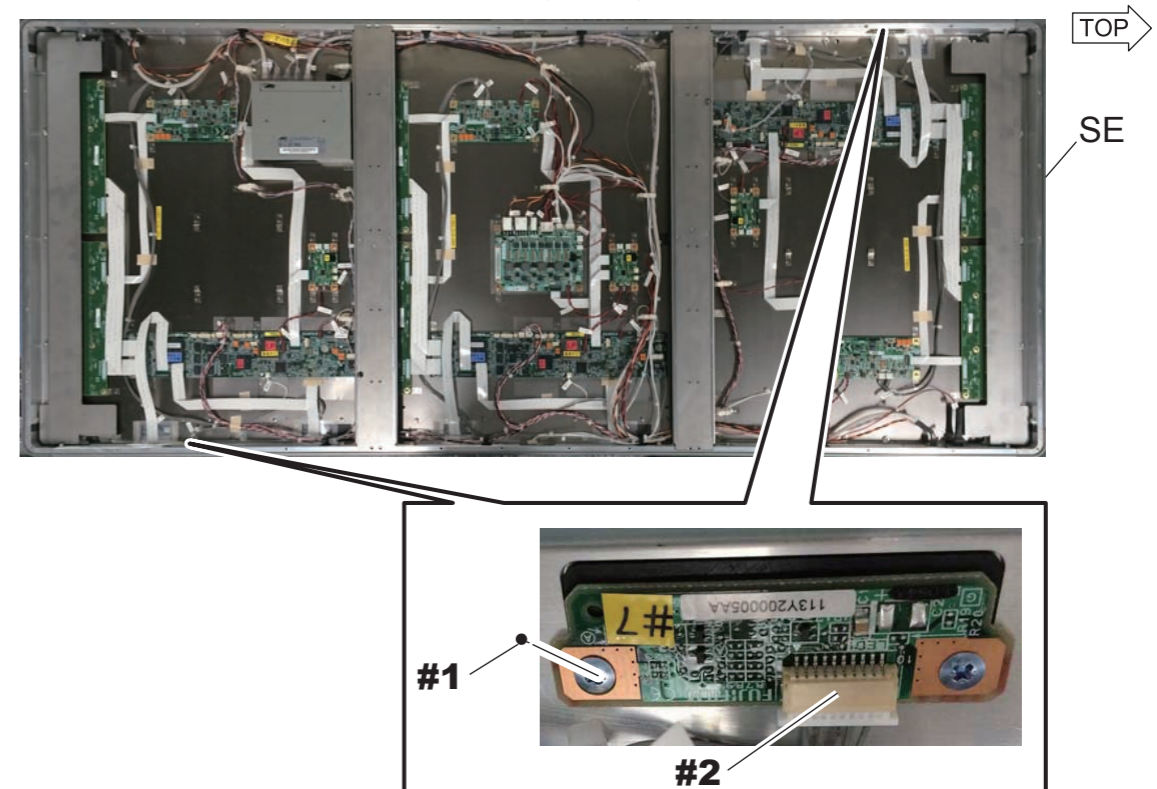
1300_300024.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

3.1.6   COC65A Board

■ Removal Procedures

(1) **Remove the SE rear cover.**

☞ {MC:3.1.1_SE Rear Cover}

(2) **Remove the COC65A board.**

#1 Disconnect: For TOP and BOTTOM: Cable connectors (COC1, 3, 4, 9)
For CENTER: Cable connectors (COC1, 3, 4, 7-9)

#2 Remove: M2.6x3 (x4)

TOP

SE

COC1   COC7

#1
COC3

COC4

COC9

COC65A
board

COC8

#2
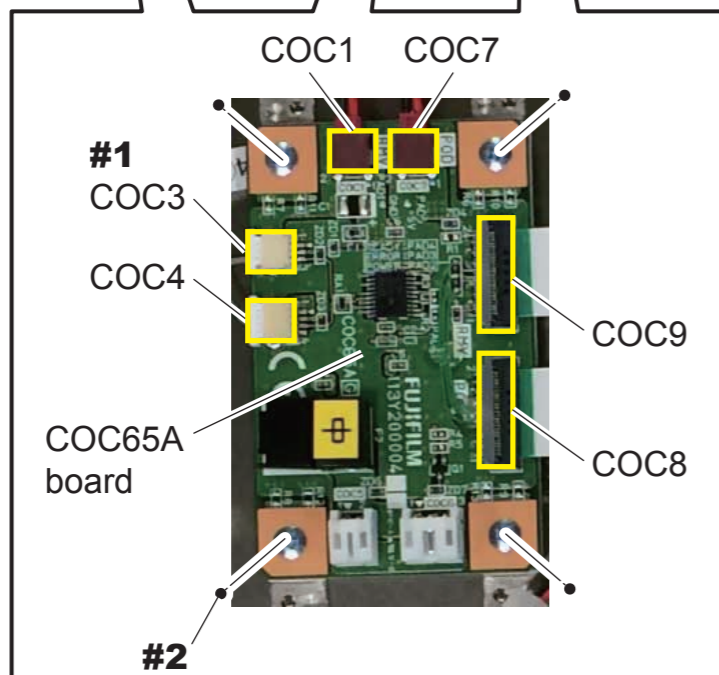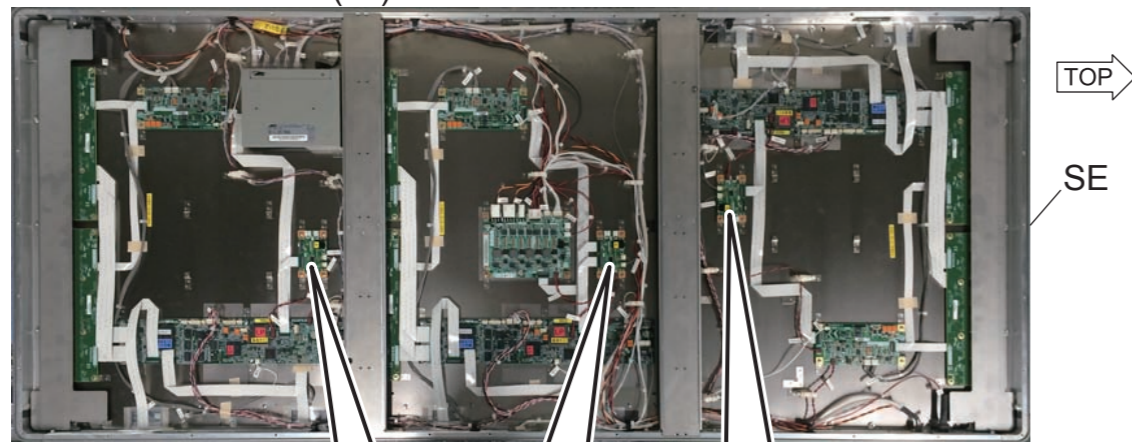
1300_300025.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

■ Fuse Locations

F1

F2
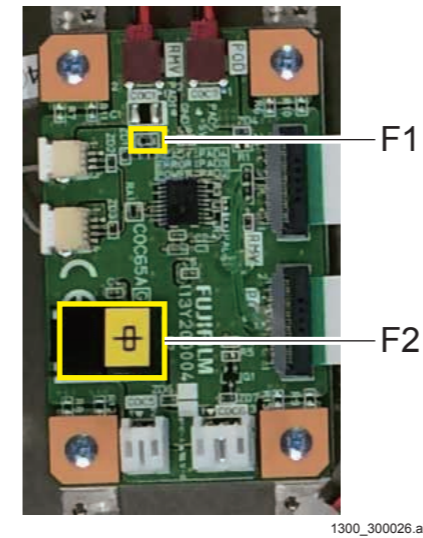
1300_300026.ai

■ Fuse Information

Board indications	Type	Rated voltage (V)	Rated amperage (A)	Model
F1	Chip fuse	24	0.5	KMC05 Daito Communication Apparatus Co. Ltd.
F2	Micro fuse	48	0.5	LM05(D)CDL Daito Communication Apparatus Co. Ltd.

■ Handling Fuse Failures

F1: Change the board.
F2: Change the fuse.

3.1.7 POD65A Board

■ Removal Procedures

(1) **Remove the SE rear cover.**

☞ {MC:3.1.1_SE Rear Cover}

(2) **Remove the POD65A board.**

#1 Disconnect: Cable connectors (POD1 to POD10)
#2 Remove: M2.6x3 (x4)
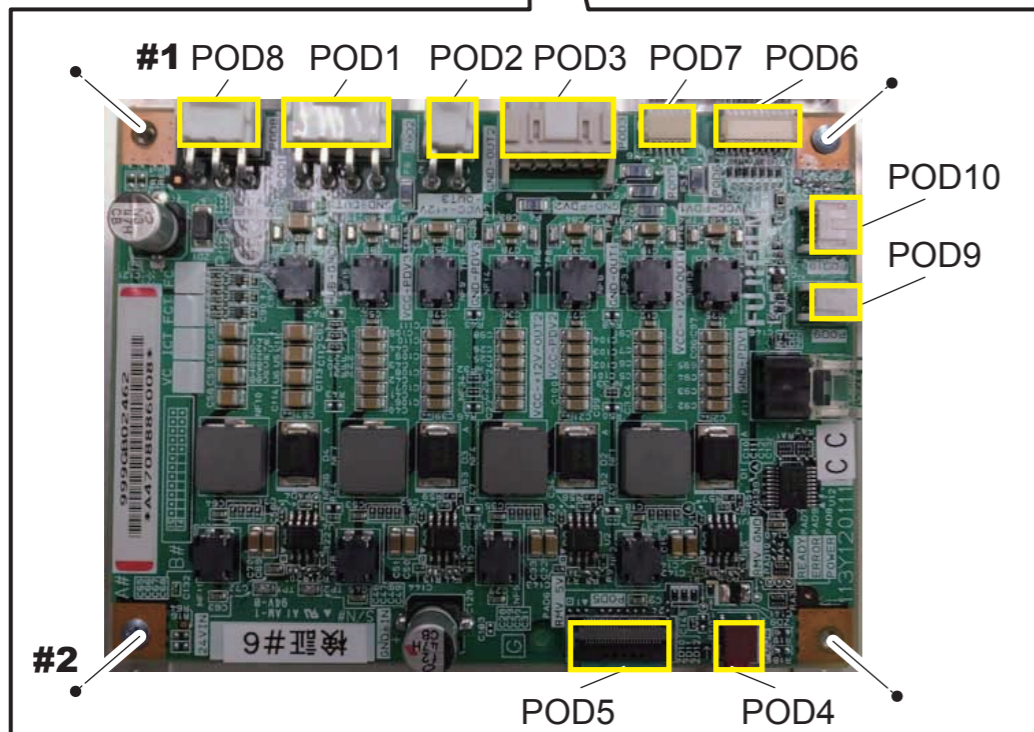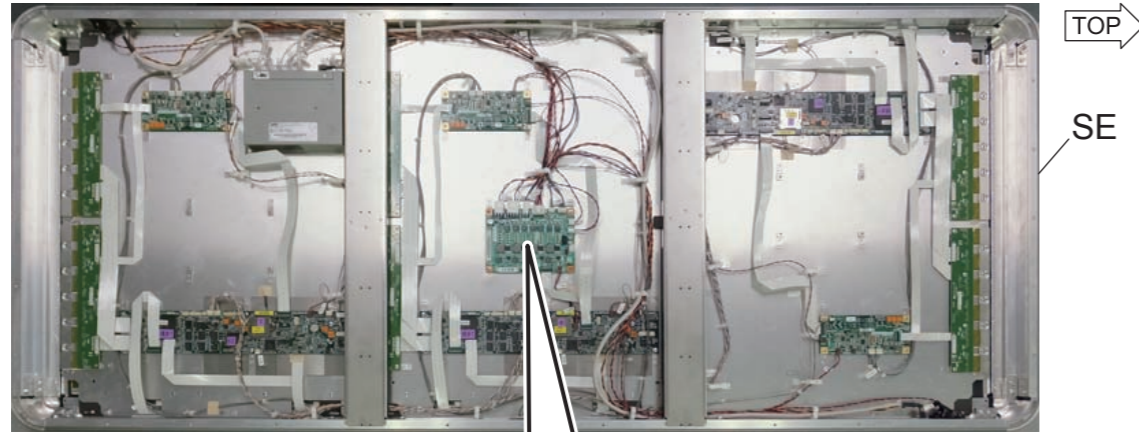
1300_300012.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

■ Fuse Locations
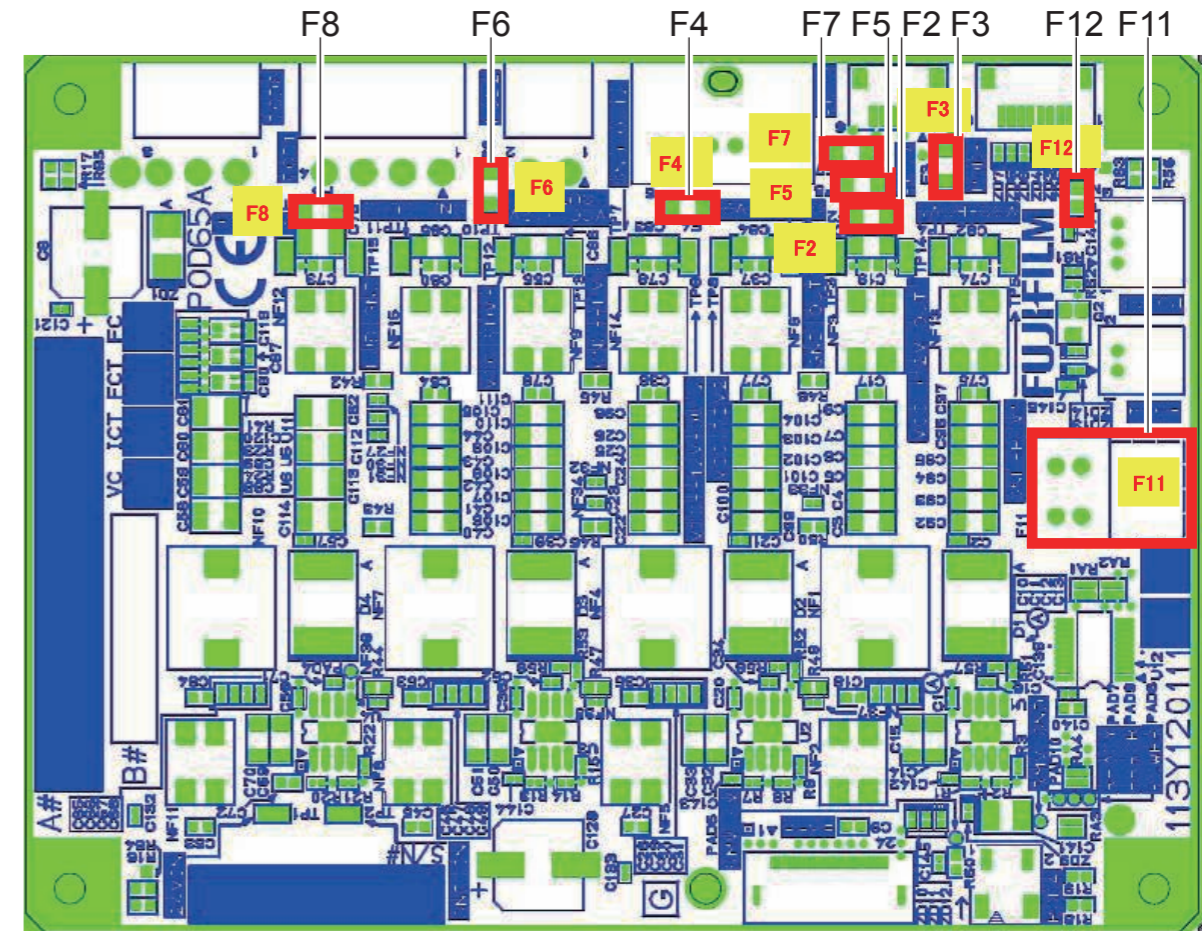
1300_300003.ai

■ Fuse Information

Board indications	Type	Rated voltage (V)	Rated amperage (A)	Model
F2	Chip fuse	76	2.5	KMS25 Daito Communication Apparatus Co. Ltd.
F3	Chip fuse	76	1.6	KMS16 Daito Communication Apparatus Co. Ltd.
F4	Chip fuse	76	2.5	KMS25 Daito Communication Apparatus Co. Ltd.
F5	Chip fuse	76	1.6	KMS16 Daito Communication Apparatus Co. Ltd.
F6	Chip fuse	76	2.5	KMS25 Daito Communication Apparatus Co. Ltd.
F7	Chip fuse	76	1.6	KMS16 Daito Communication Apparatus Co. Ltd.
F8	Chip fuse	76	2.5	KMS25 Daito Communication Apparatus Co. Ltd.
F11	Micro fuse	48	0.5	LM05(D)CDL Daito Communication Apparatus Co. Ltd.
F12	Chip fuse	24	0.5	KMC05 Daito Communication Apparatus Co. Ltd.

■ Handling Fuse Failures

F2 to F8, F12:   Change the board.
F11:   Change the fuse.

3.1.8   HUB

■ Removal Procedures

(1) Remove the SE rear cover.

☞ {MC:3.1.1_SE Rear Cover}

(3) Remove the HUB.

#1 Disconnect: Power cable
#2 Disconnect: Cable connectors (HUB1 to HUB5)
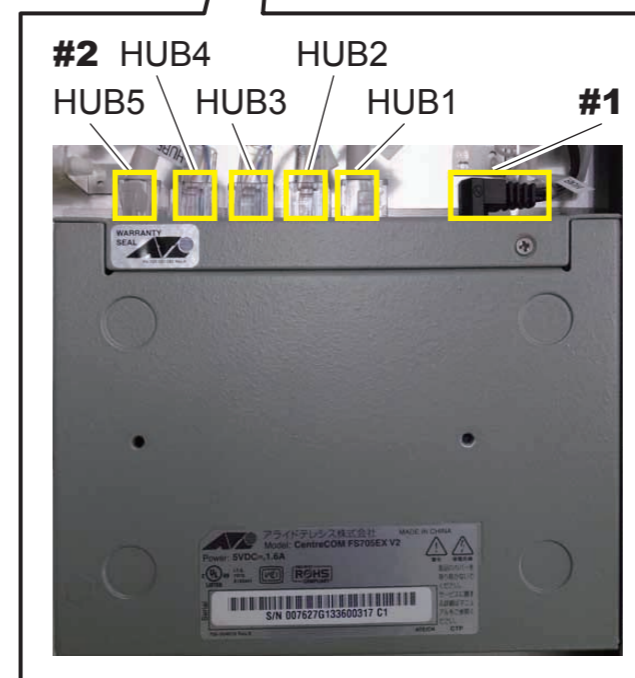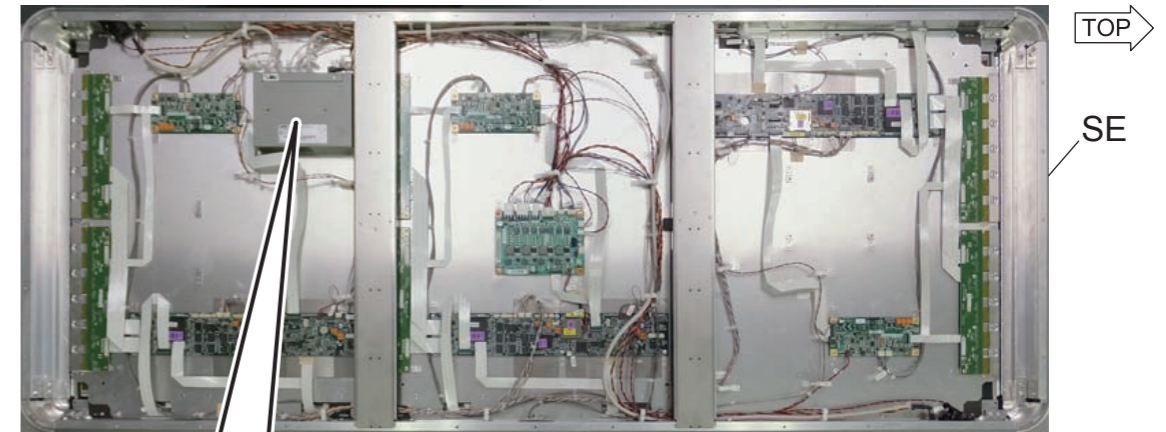
1300_300013.ai

◆ NOTE ◆

Do not remove the attached black shading tape because the LED light source of HUB may affect images.

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

◆ *NOTE* ◆

Fix the HUB using the screws for the BOTTOM cover at the two locations at the top.
Align the HUB to the upper right bracket shown in the figure below.

1300_300014.ai

3.1.9   D-SUB Connector

■ Removal Procedures

(1) Remove the SE rear cover.

☞ {MC:3.1.1_SE Rear Cover}

(2) Disconnect the cable connector for the HUB.

For the TOP side: Cable connector (HUB1)
For the BOTTOM side: Cable connector (HUB5)

HUB5   HUB1
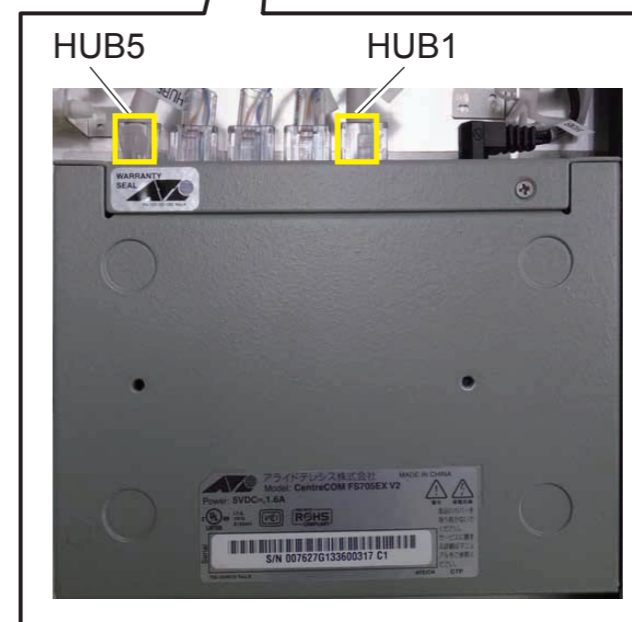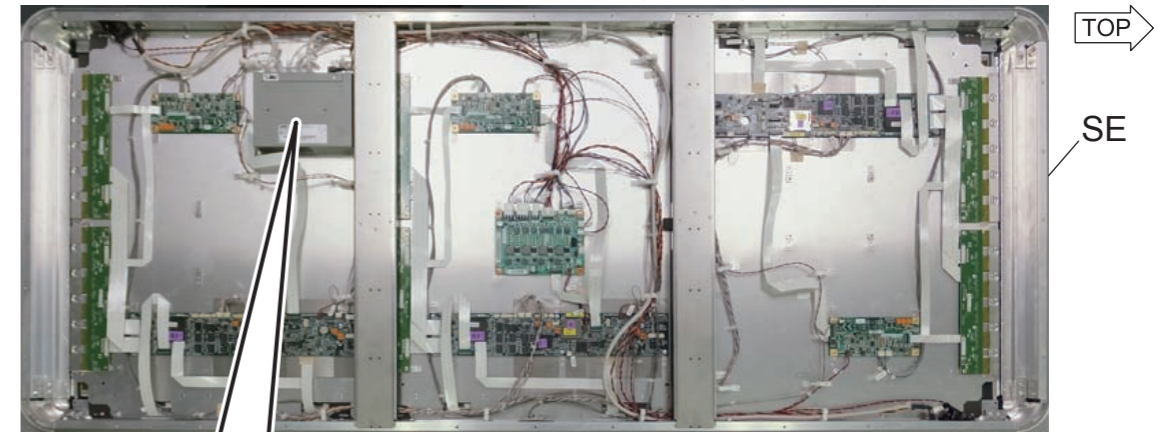
1300_300015.ai

(3) Disconnect the cable connector for the POD65A.

For the TOP side: Cable connector (POD1)
For the BOTTOM side: Cable connector (POD8)

POD8 POD1
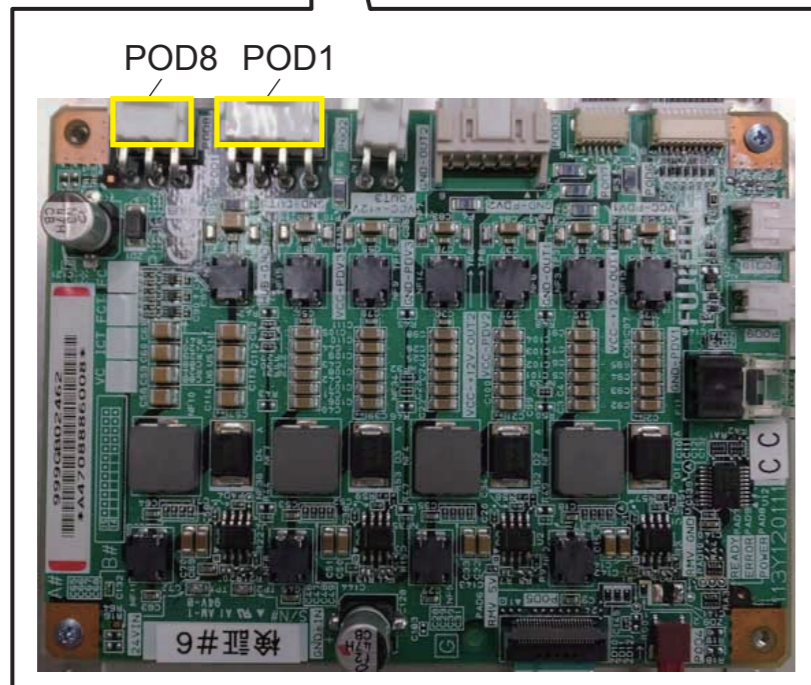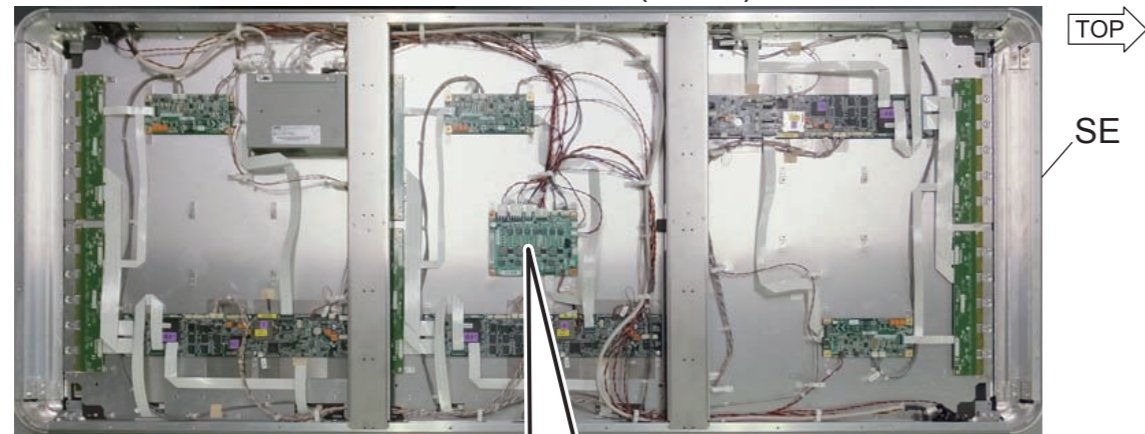
1300_300016.ai

(4) Disconnect the D-SUB connector.

#1 Unclump: Clumps
#2 Remove : Hexagon-headed bolt (x2)

#1

TOP

SE

#2
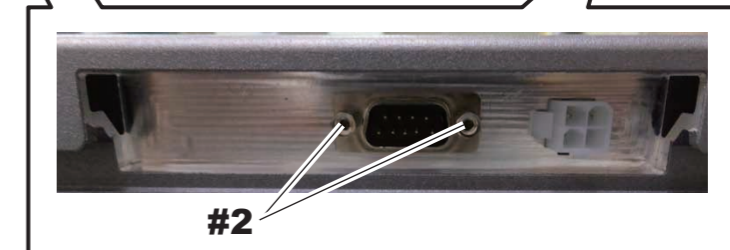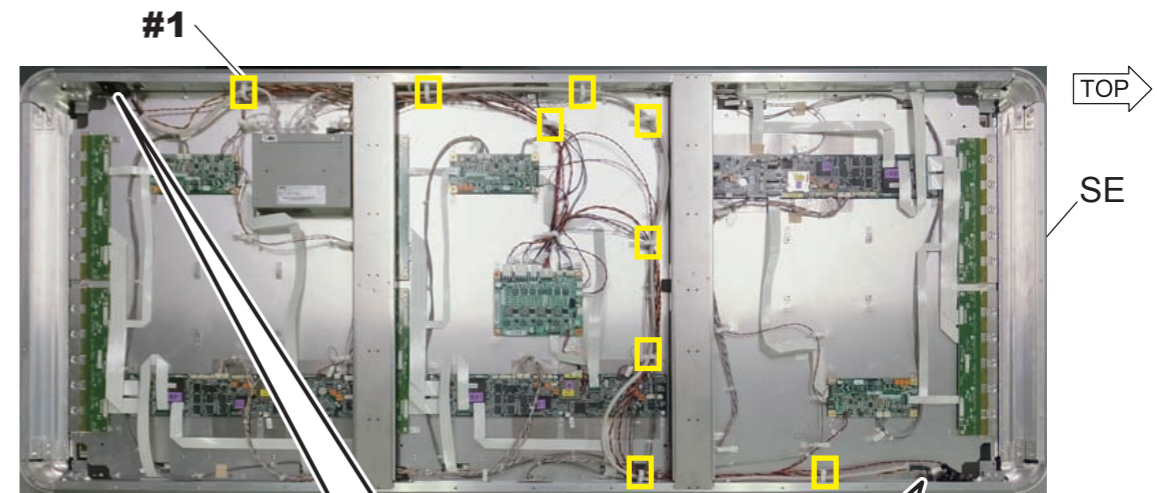
1300_300017.ai

■ **Reinstallation Procedures**

Reverse the removal procedures for reinstallation.

3.1.10 LED Connector

■ Removal Procedures

(1) **Remove the SE rear cover.**

☞ {MC:3.1.1_SE Rear Cover}

(2) **Disconnect the cable connector for the POD65A.**

For the TOP side: Cable connector (POD10)
For the BOTTOM side: Cable connector (POD9)
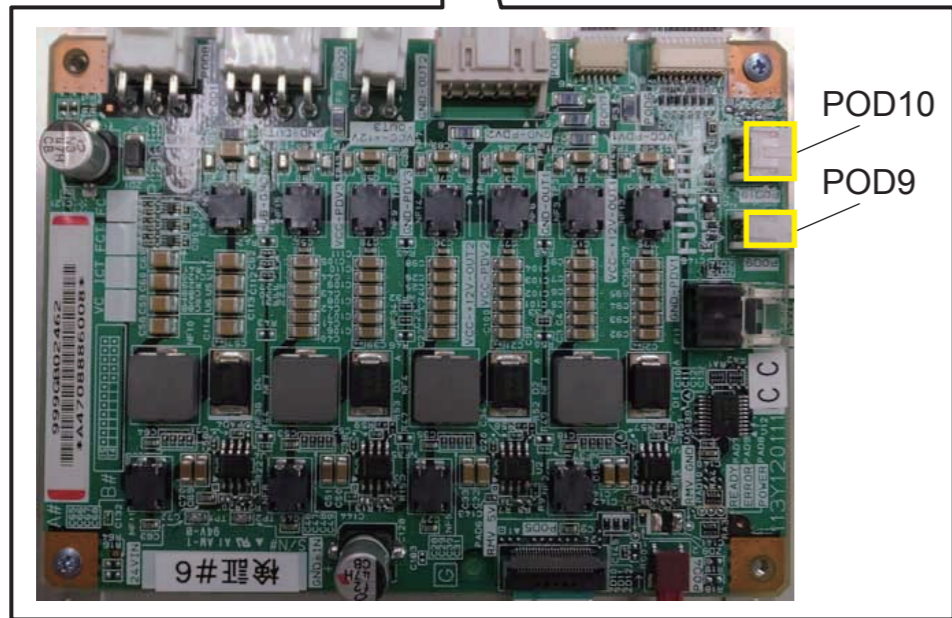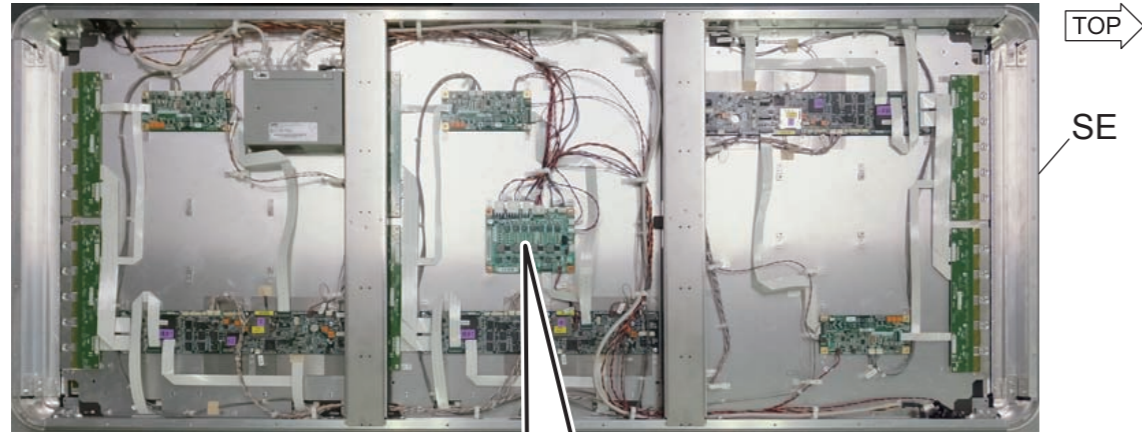
1300_300018.ai

(3) **Disconnect the LED connector.**

#1 Unclump: Clumps
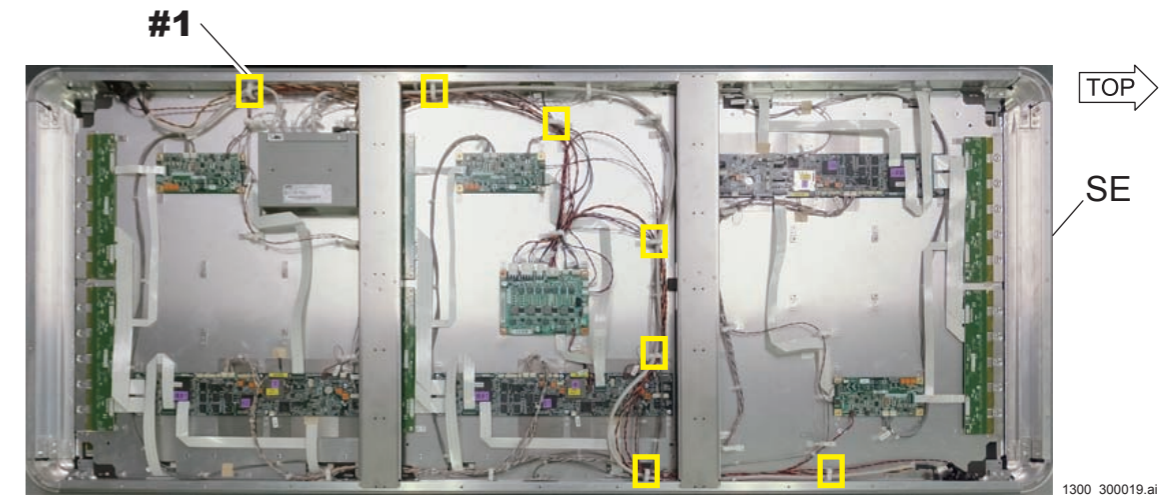
1300_300019.ai

■ Reinstallation Procedures

Reverse the removal procedures for reinstallation.

3.2 Replacing the SE whose Local IP Address Is Changed

When the SE whose local IP address is changed from the default value (192.168.0.90 to 92) is to be replaced, refer to the following procedures to proceed with operation.

■ Procedures for Replacing the SE

(1) **Delete the SE to be replaced.**

☞ {MU2:[2.2]_SE DELETE >>}

(2) **Restore the following IP addresses to the default value.**

- MC ETH1 IP
- MP1
- MP2
- SE △ WIRED (△: SE No. to be replaced)
- SE △ WIRELESS (△: SE No. to be replaced)

☞ {MU2:[1.1]_Local Network PreSetting >>}

(3) **Replace the SE.**

■ Changing the Local IP Address

(1) **Return the local IP address of the SE/MP/MC to the original value (value before changed to the default value).**

☞ {IN:Appendix 3._Replacement Procedure of the Local Network}
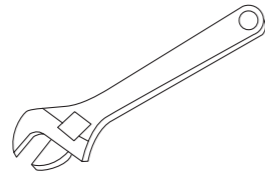
4. List of Tools

4.1 Standard Tools

◆ NOTE ◆

To service the machine, use the servicing instruments and tools that have been inspected and calibrated.

If the machine were serviced using servicing instruments and tools that have not been inspected and calibrated, proper performance of the machine could not be guaranteed.
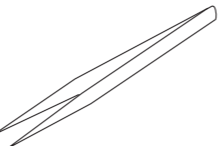
Adjustable wrench 150 mm	
Reference type: W-120	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	

Nippers 150 mm	
Reference type: N-25	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	
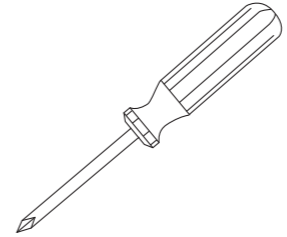
Long-nose pliers 150 mm	
Reference type: P-22	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	
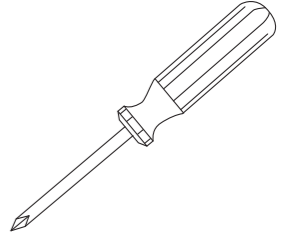
Pliers 150 mm	
Reference type: JP-200	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	
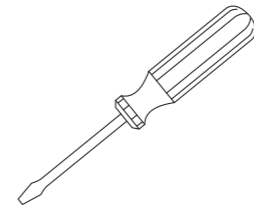
Water pump pliers	
Reference type: P-245	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	
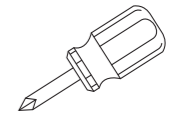
Tweezers 125 mm	
Reference type: P-87	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	
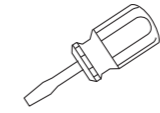
600_300090.ai
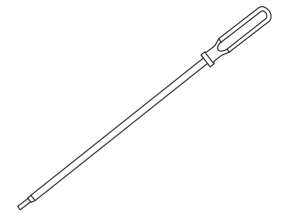
Phillips screwdriver No. 1	
Reference type: NO.6300-1	
Reference manufacturer: VESSEL	
Qty.: 1	
Remarks:	
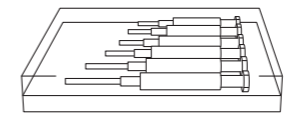
Phillips screwdriver No. 2	
Reference type: NO.6300-2	
Reference manufacturer: VESSEL	
Qty.: 1	
Remarks:	
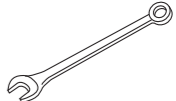
Thin-blade screwdriver	
Reference type: NO.110-4	
Reference manufacturer: PB	
Qty.: 1	
Remarks:	
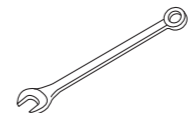
Phillips stubby screwdriver	
Reference type: NO.195-2	
Reference manufacturer: PB	
Qty.: 1	
Remarks:	
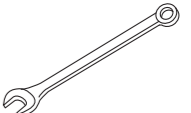
Thin-blade stubby screwdriver	
Reference type: NO.135-2	
Reference manufacturer: PB	
Qty.: 1	
Remarks:	

High-frequency screwdriver	
Reference type: D-29	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	
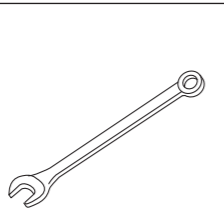
Jeweler's screwdriver set	
Reference type: NO.146	
Reference manufacturer: ENGINEER	
Qty.: 1	
Remarks:	
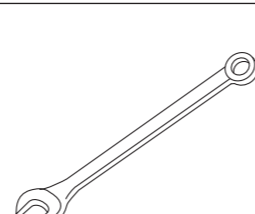
Combination box-open-end wrench (5.5 mm)	
Reference type: M41-5.5	
Reference manufacturer: KTC	
Qty.: 1	
Remarks:	
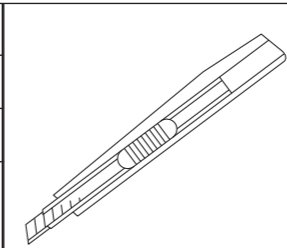
Combination box-open-end wrench (7 mm)	
Reference type: M41-7	
Reference manufacturer: KTC	
Qty.: 1	
Remarks:	
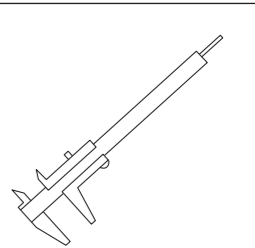
Combination box-open-end wrench (8 mm)	
Reference type: M41-8	
Reference manufacturer: KTC	
Qty.: 1	
Remarks:	
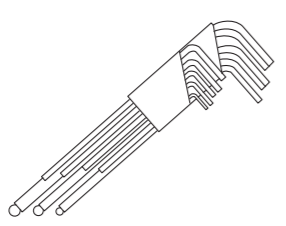
600_300091.ai
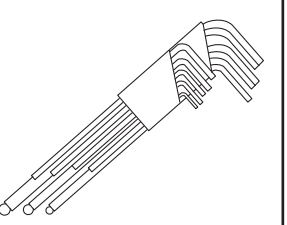
Combination box-open-end wrench (10 mm)

Reference type: M41-10

Reference manufacturer: KTC
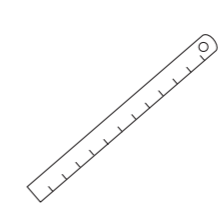
Qty.: 1

Remarks:

Combination box-open-end wrench (13 mm)

Reference type: M41-13

Reference manufacturer: KTC
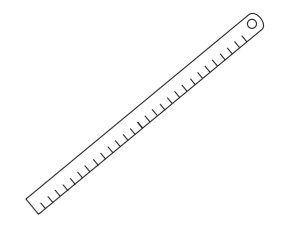
Qty.: 1

Remarks:

Cutter

Reference type: -

Reference manufacturer: Any commercially available one
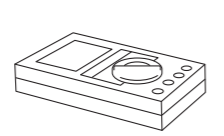
Qty.: 1

Remarks:

Calipers

Reference type: N-15

Reference manufacturer: Mitutoyo

Qty.: 1

Remarks: Inspection required. A block gauge for use in inspection requires calibration.
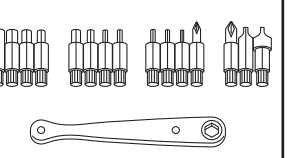
Allen wrench set

Reference type: BLX-9

Reference manufacturer: Bondhus
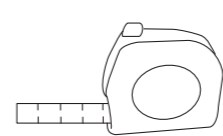
Qty.: 1

Remarks:

Allen wrench

Reference type: 1.5 mm

Reference manufacturer: Bondhus

Qty.: 1

Remarks: Used to attach/detach a bolt fixing the SE rear cover.
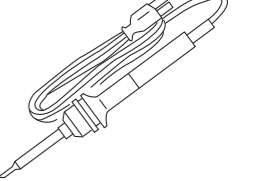
Steel rule (150 mm)

Reference type: Type C

Reference manufacturer: YAMAYO

Qty.: 1

Remarks: Inspection required
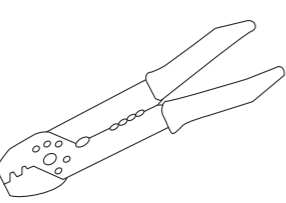
Steel rule (300 mm)

Reference type: Type C

Reference manufacturer: YAMAYO

Qty.: 1

Remarks: Inspection required
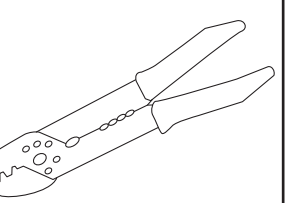
Digital multimeter

Reference type: CD731

Reference manufacturer: SANWA

Qty.: 1

Remarks: Inspection and calibration required
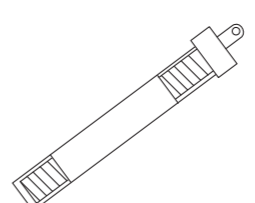
Midget ratchet set

Reference type: 7331

Reference manufacturer: CHAPMAN

Qty.: 1

Remarks:
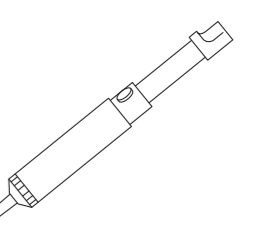
Steel tape measure (5.5 m)

Reference type: WS5005

Reference manufacturer: NEOLOCK

Qty.: 1

Remarks:
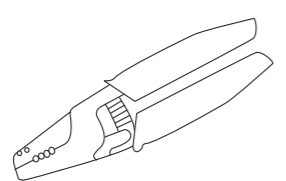
Soldering iron (30 W)

Reference type: Dash15

Reference manufacturer: HAKKO
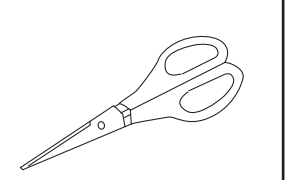
Qty.: 1

Remarks:

Crimp pliers

Reference type: P-73

Reference manufacturer: HOZAN

Qty.: 1

Remarks:

Crimp pliers

Reference type: A125

Reference manufacturer: IZUMI

Qty.: 1

Remarks: Used to replace a terminal of the X-ray shot cable.
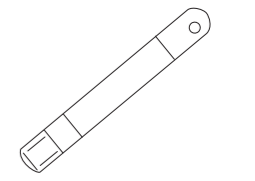
Solder

Reference type: NO.66

Reference manufacturer: HAKKO

Qty.: 1

Remarks:

Desoldering tool with a vacuum attachment

Reference type: US140

Reference manufacturer: EDSYN

Qty.: 1

Remarks:

Wire stripper

Reference type: P-95

Reference manufacturer: HOZAN

Qty.: 1

Remarks:

Scissors

Reference type: -

Reference manufacturer: Any commercially available one

Qty.: 1

Remarks:

Adapter plug

Reference type: 999-1

Reference manufacturer: HAKKO

Qty.: 1

Remarks:

Penlight

Reference type: BF-318

Reference manufacturer: MATSUSHITA ELECTRIC

Qty.: 1

Remarks:

600_300092.ai

600_300093.ai
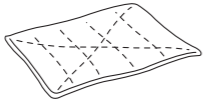
4.2 Special Tools and Measuring Instruments
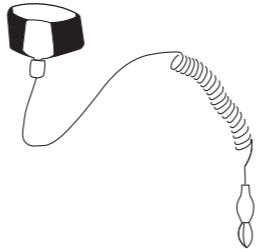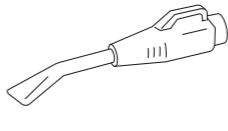
Loupe	
Reference type: 10X	
Reference manufacturer: PEAK	
Qty.: 1	
Remarks:	

Blower	
Reference type: JUMBO	
Reference manufacturer: HURRICANE	
Qty.: 1	
Remarks:	

Cloth	
Reference type: -	
Reference manufacturer: -	
Qty.: 1	
Remarks:	
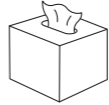
Wristband	
Reference type: -	
Reference manufacturer: -	
Qty.: 1	
Remarks:	

Push-pull gauge	
Reference type: -	
Reference manufacturer: -	
Qty.: 1	
Remarks: For 1kg. Inspection and calibration required	

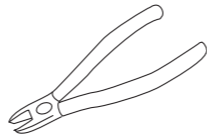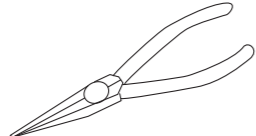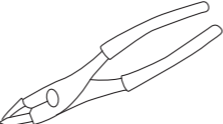| Dosimeter	
Reference type: -	
Reference manufacturer: -	
Qty.: 1	
Remarks: Calibration required	

600_300094.ai

◆ *NOTE* ◆

To service the machine, use the servicing instruments and tools that have been inspected and calibrated.
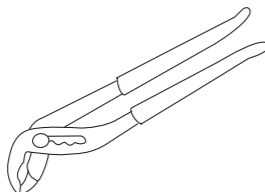
If the machine were serviced using servicing instruments and tools that have not been inspected and calibrated, proper performance of the machine could not be guaranteed.

Vacuum cleaner	
Reference type: -	
Reference manufacturer: Any commercially available one	
Qty.: 1	
Remarks:	

Maintenance PC	
Reference type:	
Reference manufacturer: -	
Qty.: 1	
Remarks:	

Dust-free paper	
Reference type: Kimwipe	
Reference manufacturer: CRECIA	
Qty.: 1	
Remarks:	

600_300095.ai

4.3　Special Consumables

Electrical tape

Reference type: 33+	
Reference manufacturer: 3M	
Qty.: 1	
Remarks:	

Cable tie

Reference type: PLT1M	
Reference manufacturer: KITAGAWA KOGYO	
Qty.: 50	
Remarks:	

Cable tie

Reference type: PLT1.5M	
Reference manufacturer: KITAGAWA KOGYO	
Qty.: 50	
Remarks:	
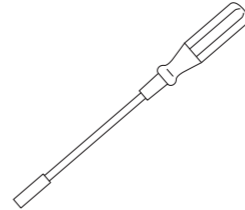
Cable tie

Reference type: PLT2M	
Reference manufacturer: KITAGAWA KOGYO	
Qty.: 50	
Remarks:	
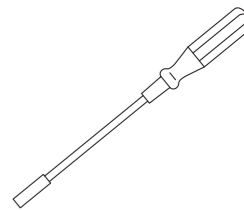
Screw locking bond

Reference type: #1401B	
Reference manufacturer: Three Bond	
Qty.: 1	
Remarks:	
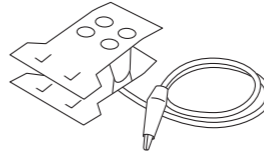
Lubricant

Reference type: Molykote EM-30L	
Reference manufacturer:	
Qty.: 1	
Remarks:	
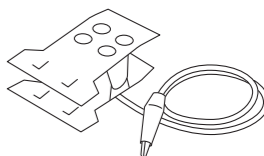
Polyimide tape

Reference type: No.5412	
Reference manufacturer: 3M	
Qty.: 1	
Remarks: For retaining the cables in the SE. 308S0086	

1300_300021E.ai
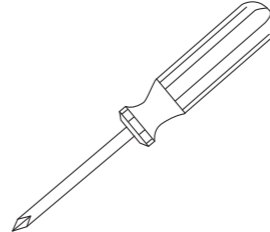
4.4　Semi-Standard Tools
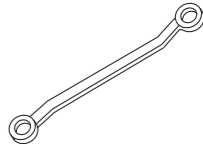
Box driver (7 mm)

Reference type: D-50 (2757)	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	

Box driver (8 mm)

Reference type: D-50 (2758)	
Reference manufacturer: HOZAN	
Qty.: 1	
Remarks:	

IC clip

Reference type: TC-16	
Reference manufacturer: 3M	
Qty.: 1	
Remarks:	

IC clip

Reference type: TC-24	
Reference manufacturer: 3M	
Qty.: 1	
Remarks:	

Magnetized Phillips screwdriver

Reference type:	
Reference manufacturer:	
Qty.: 1	
Remarks:	

Closed wrench (17 mm)

Reference type:	
Reference manufacturer:	
Qty.: 2	
Remarks:	

600_300097.ai

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

Appendix 1. Updating/Downgrading MP OS Version

Appendix 1.1   Checking the MP OS Version

◆ *NOTE* ◆

These procedures are for when the RU PC-TOOL is going to be used.
If the DR Maintenance Software is going to be used, refer to the following, and check the MP OS version.

☞ *{MU1: 1.1.1_Update MP}*

(1) **Start up the MUTL.**
(2) **Click [VERSION CHECK] command, and then click [MP Version >>] and [MP1 Version Check >>].**
   #1 Click: [VERSION CHECK]
   #2 Click: [MP Version >>]
   #3 Click: [MP1 Version Check >>]
   VERSION CHECK window

MP Version>>window

MP1 Version Check>>window

1200_700092E.ai
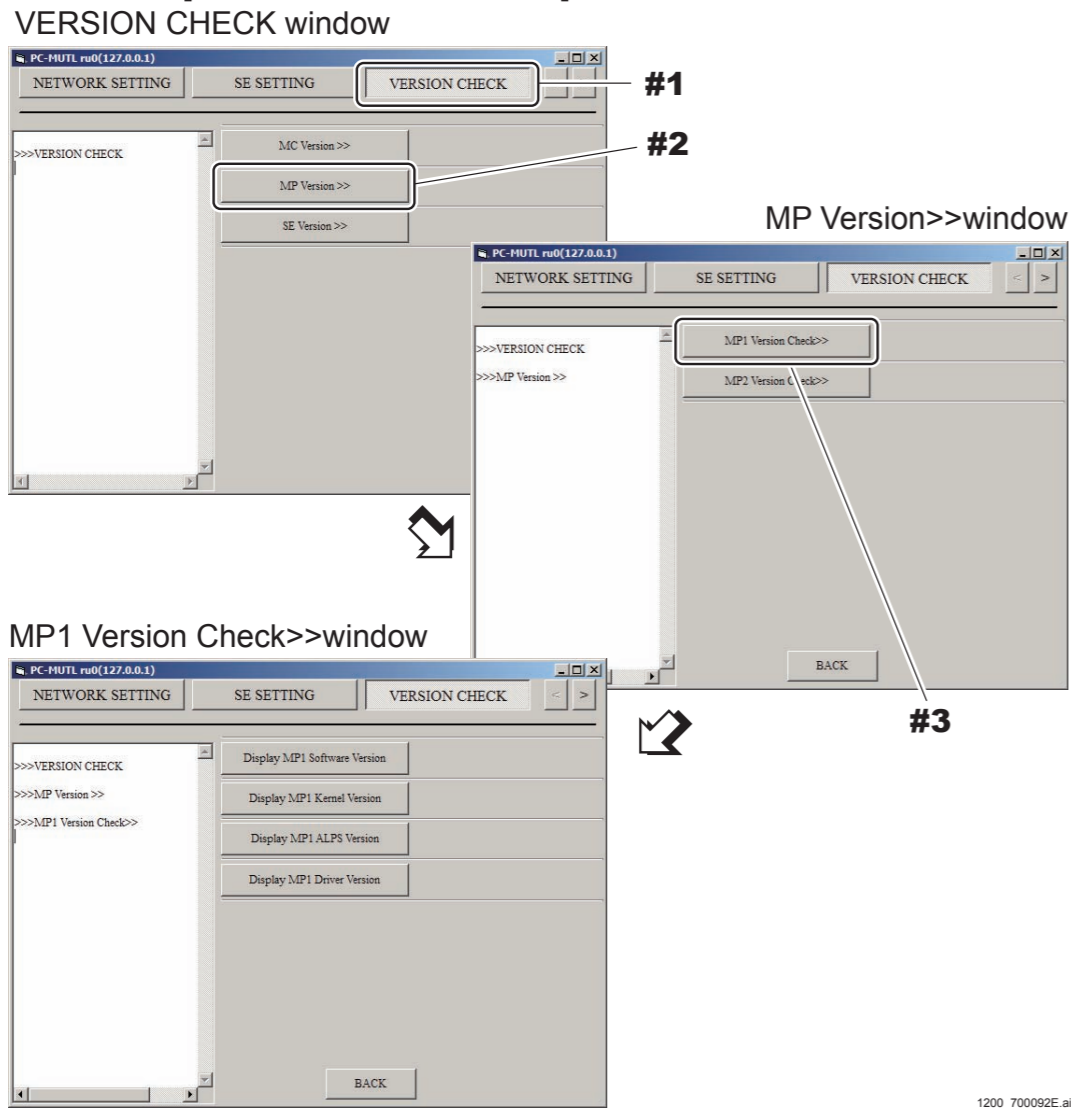
(3) **Click [Display MP1 Kernel Version] on the MP1 Version Check >> window to display the version of the MP application software.**
   Check that the displayed version coincides with the version indicated in Readme. txt in the MP OS media.
   #1 Click: [Display MP1 Kernel Version]
   #2 Check: Version
   Display MP1 Software Version   <Display example>

1200_600164E.ai
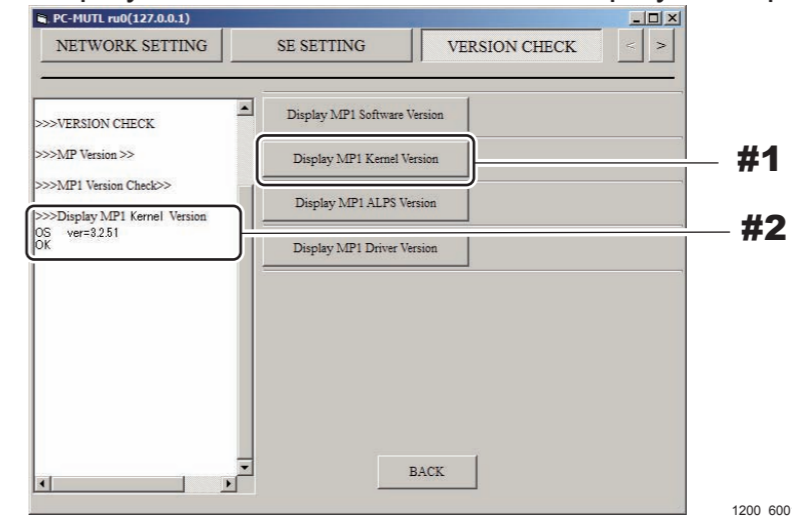
This procedure is terminated when the version coincides with the version indicated in Readme.txt.

Follow the procedures below when the version does not coincide with the version indicated in Readme.txt.

☞ *For updating MP OS version: {MC: Appendix 1.2_Updating MP OS Version}*

☞ *For downgrading MP OS version: {MC: Appendix 1.3_Downgrading MP OS Version}*

◇ *REFERENCE* ◇

The appropriate version of the MP OS is indicated in Readme.txt in the MP OS media.
   Readme.txt <Display example>

```
# MP Version(Debian)
MP Software ver : 00.04.03      New MP Kernel ver
Kernel ver    : 3.2.51
ALPS ver      : ALPS 10.10.00
DRIVER ver    :
  SYS INFO    : 02.00.01
  FPGA        : 200
  GPIO        : 200
  LED         : 02.00.02
  SLD         : 02.00.03
  BDCTL       : 02.00.01
  TIMER       : 02.00.01
  REG         : 02.00.01

# MP Version
MP Software ver : 00.04.03      Old MP Kernel ver
Kernel ver    : 2.6.21.7-hrt1-WR2.0bl_small
ALPS ver      : ALPS 10.10.00
DRIVER ver    :
```

1200_300179.ai

Appendix 1.2　　Updating MP OS Version

◆ *NOTE* ◆

- *This procedure is an example whereas the MP IP address is "192.168.0.20". For two MP configuration, perform the procedure on each MP.*
- *This procedure is an example whereas the MC application is installed in the DX Console. When the MC application is installed in the MC, use the MC to perform this procedure if the MC IP address is "192.168.0.10" for example.*
- *This procedure is an example whereas the DVD drive is the D drive.*

■ Preparations

(1) Turn ON the DX Console power.

(2) Select "Shut Down" in the menu of the DX Console while pressing the <Shift> key to terminate the DX Console application and the MC application.

■ Updating OS Version

◆ *INSTRUCTION* ◆

In case of the configuration installing the MC application in the MC, connect the monitor, mouse and keyboard to an MC PC.

(1) Insert the MP OS Installer Ver. 1.0 media into the DVD drive for the DX Console and open Windows Explorer.

(2) Open "D:\kernel_fwupdate_ip_fix\debian_version" folder and execute "fwupdate.bat".
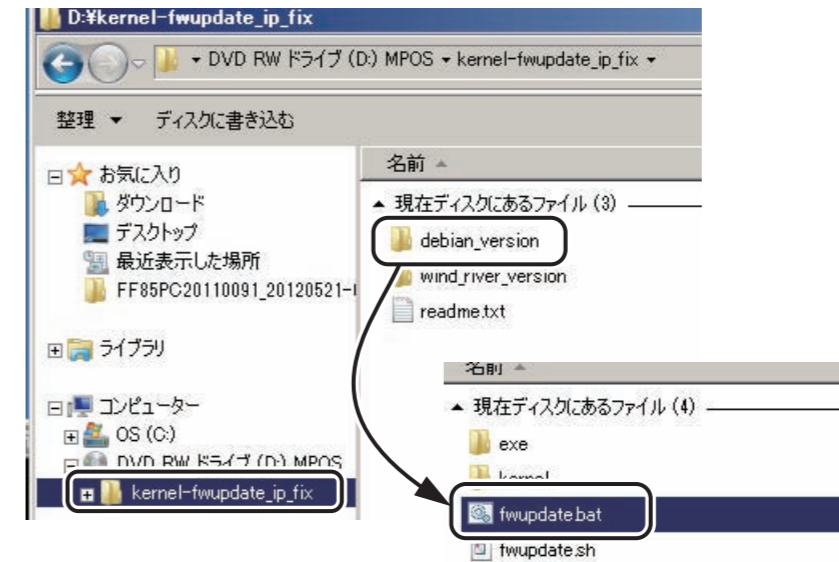
1200_300166.ai

The Command Prompt window appears.

(3) Press the <Enter> key.

1200_300167.ai

(4) Enter the MP IP address (192.168.0.20) and press the <Enter> key.

1200_300168.ai

(5) Enter the IP address of the currently operating PC (192.168.0.10) and press the <Enter> key.


```
C:¥Windows¥system32¥cmd.exe

D:¥kernel-fwupdate_ip_fix¥debian_version>echo off
Active code page: 437
kernel-fwupdate start.
Warning!!!
Until kernel-fwupdate is complete, please do not close the command prompt.
Press any key to continue . . .
Input MP IP address :
192.168.0.20
Input PC IP address :
192.168.0.10
```
1200_300169.ai

The OS version update starts.


```
C:¥Windows¥system32¥cmd.exe

D:¥kernel-fwupdate_ip_fix¥debian_version>echo off
Active code page: 437
kernel-fwupdate start.
Warning!!!
Until kernel-fwupdate is complete, please do not close the command prompt.
Press any key to continue . . .
Input MP IP address :
192.168.0.20
Input PC IP address :
192.168.0.10
Until the end of Kernel-fwupdate takes about 40 minutes.
MP_IPADDRESS=192.168.0.20
PC_IPADDRESS=192.168.0.10
.
copy the file to the FTP transfer area.
```
1200_300170.ai

It takes up to approx. 5 minutes to complete the installation.

⚠ **CAUTION**

While write into the HDD is in progress, never turn OFF the MP power. If turned OFF, the data on the HDD gets damaged, and the MP cannot boot up as a result.

(6) The MP restarts automatically after the following window appears.


```
C:¥Windows¥system32¥cmd.exe
OK.

 RootFileSystem img write...
 RootFileSystem img write end.
RootFileSystem checksum check Start.
1+0 records in
1+0 records out
/tmp/rfs.img checksum:ece93947ba29a6727216f98f155e5f05
/dev/mtd2 checksum:ece93947ba29a6727216f98f155e5f05
RootFileSystem checksum check OK.
 OK.

Kernel & Filesystem Update Complete
# ############################# #
#                               #
#        Update Success.        #
#                               #
# ############################# #

reboot start...
# Client:  connect error 0
.
Finished.
Press any key to continue . . . . ▪
```
1200_300171.ai

(7) Press the <Enter> key to close the Command Prompt window.

◆ *INSTRUCTION* ◆

For two MP configuration, perform steps (2) to (7) for the other MP.

(8) Remove the MP OS Installer Ver. 1.0 media from the DVD drive for the DX Console and restart the system.

(9) Check the MP OS version.

☞ {MC: Appendix 1.1_Checking the MP OS Version}

Appendix 1.3　　Downgrading MP OS Version

■ Preparations

(1)　**Turn ON the DX Console power.**

(2)　**Select "Shut Down" in the menu of the DX Console while pressing the <Shift> key to terminate the DX Console application and the MC application.**

■ Downgrading OS Version

◆ *INSTRUCTION* ◆

In case of the configuration installing the MC application in the MC, connect the monitor, mouse and keyboard to an MC PC.

---

(1)　**Insert the MP OS Installer Ver. 1.0 media into the DVD drive for the DX Console and open Windows Explorer.**

(2)　**Open "D:\kernel_fwupdate_ip_fix\wind_river_version" folder and execute "fwupdate.bat".**

1200_300177.ai

The Command Prompt window appears.

(3)　**Press the <Enter> key.**

(4)　**Enter the MP IP address (192.168.0.20) and press the <Enter> key.**

(5)　**Enter the IP address of the currently operating PC (192.168.0.10) and press the <Enter> key.**
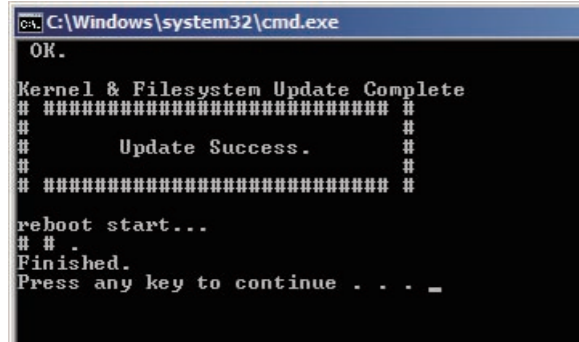
The OS version downgrade starts.

It takes up to approx. 40 minutes to complete the installation.

⚠ CAUTION

While write into the HDD is in progress, never turn OFF the MP power. If turned OFF, the data on the HDD gets damaged, and the MP cannot boot up as a result.

---

(6)   The MP restarts automatically after the following window appears.

1200_300178.ai

(7)   Press the <Enter> key to close the Command Prompt window.

◆ *INSTRUCTION* ◆

For two MP configuration, perform steps (2) to (7) for the other MP.

(8)   Remove the MP OS Installer Ver. 1.0 media from the DVD drive for the DX Console and restart the system.

(9)   Check the MP OS version.

☞ {MC: Appendix 1.1_Checking the MP OS Version}

Appendix 1.4 Countermeasure for the Error Occurrence

If an error is generated when mounting the DVD drive, take necessary actions as follows.

■ If the /mnt/cdrom folder does not exist

Execute the following command to create the folder.

"mkdirΔ/mnt/cdrom" (Δ shows a space)


```
Telnet 192.168.0.10
Debian GNU/Linux 6.0
localhost login: root
Password:
Last login: Wed Jan 28 14:06:10 UTC 2015 on tty1
Linux localhost 2.6.32-5-686 #1 SMP Tue Mar 8 21:36:00 UTC 2011 i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@localhost:/root> mount -t iso9660 /dev/cdrom /mnt/cdrom
mount: mount point /mnt/cdrom does not exist
root@localhost:/root> mkdir /mnt/cdrom
root@localhost:/root>
```

1200_300172.ai

◆ NOTE ◆

If an attempt is made to create the folder when the /mnt/cdrom folder exists, the following error appears.


```
Telnet 192.168.0.10
Debian GNU/Linux 6.0
localhost login: root
Password:
Last login: Thu Jan 29 20:09:59 UTC 2015 on pts/1
Linux localhost 2.6.32-5-686 #1 SMP Tue Mar 8 21:36:00 UTC 2011 i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@localhost:/root> mkdir /mnt/cdrom
mkdir: cannot create directory `/mnt/cdrom': File exists
root@localhost:/root>
```

1200_300173.ai

■ If the DVD drive is recognized in different devices with /mnt/cdrom1

The following error appears.


```
root@localhost:/root> mount -t iso9660 /dev/cdrom1 /mnt/cdrom
mount: special device /dev/cdrom1 does not exist
root@localhost:/root>
```

1200_300174.ai

Execute the following command to check the device name.

"lsΔ/dev/" (Δ shows a space)


```
root@localhost:/root> ls /dev/
block            loop0          sda1      tty18    tty42    ttyS0
bsg              loop1          sda2      tty19    tty43    ttyS1
bus              loop2          sda3      tty2     tty44    ttyS2
cdrom1           loop3          sda4      tty20    tty45    ttyS3
cdrom2           loop4          sg0       tty21    tty46    urandom
cdrom3           loop5          sg1       tty22    tty47    vcs
cdrw1            loop6          sg2       tty23    tty48    vcs1
cdrw2            loop7          shm       tty24    tty49    vcs2
cdrw3            MAKEDEV        snapshot  tty25    tty5     vcs3
char             mcelog         snd       tty26    tty50    vcs4
console          mem            sndstat   tty27    tty51    vcs5
core             net            sr0       tty28    tty52    vcs6
cpu_dma_latency  network_latency sr1      tty29    tty53    vcsa
disk             network_throughput stderr tty3    tty54    vcsa1
dvd1             null           stdin     tty30    tty55    vcsa2
dvd2             port           stdout    tty31    tty56    vcsa3
dvd3             ppp            tty       tty32    tty57    vcsa4
dvdrw1           psaux          tty0      tty33    tty58    vcsa5
dvdrw2           ptmx           tty1      tty34    tty59    vcsa6
dvdrw3           pts            tty10     tty35    tty6     vga_arbiter
fd               random         tty11     tty36    tty60    xconsole
full             root           tty12     tty37    tty61    zero
hpet             rtc            tty13     tty38    tty62
initctl          rtc0           tty14     tty39    tty63
input            scd0           tty15     tty4     tty7
kmsg             scd1           tty16     tty40    tty8
log              sda            tty17     tty41    tty9
root@localhost:/root>
```

1200_300175.ai

After the device name (cdrom*) appears, execute the "mount" command.

◇ REFERENCE ◇

"" is usually one-digit number.*

◆ NOTE ◆

When there are multiple "cdrom", even if the "mount" command is successful, the "cd" command may fail.*


```
root@localhost:/root> mount -t iso9660 /dev/cdrom1 /mnt/cdrom
mount: block device /dev/sr0 is write-protected, mounting read-only
root@localhost:/root> cd /mnt/cdrom/kernel-fwupdate_ip_fix/debian_version
-bash: cd: /mnt/cdrom/kernel-fwupdate_ip_fix/debian_version: No such file or directory
root@localhost:/root>
```

1200_300176.ai

In this case, specify the other "cdrom" after restarting the MC, then execute the "mount" command.*

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Appendix 2. Installing the New HUB Replacement Kit

Because the Allied Telesis-made HUB: 853S0003 (manufacturer model No. FS705EX_ V2) has been discontinued, then change the HUB to the same manufacturer's replacement: AT-FS710/5E.
For the AT-FS710/5E, the HUB mounting hole and the DC jack are changed, therefore the HUB unit itself cannot be replaced.
Therefore this describes the replacement procedures for using a new HUB replacement kit to replace the old HUB with a new HUB.

1300_3B0001.ai
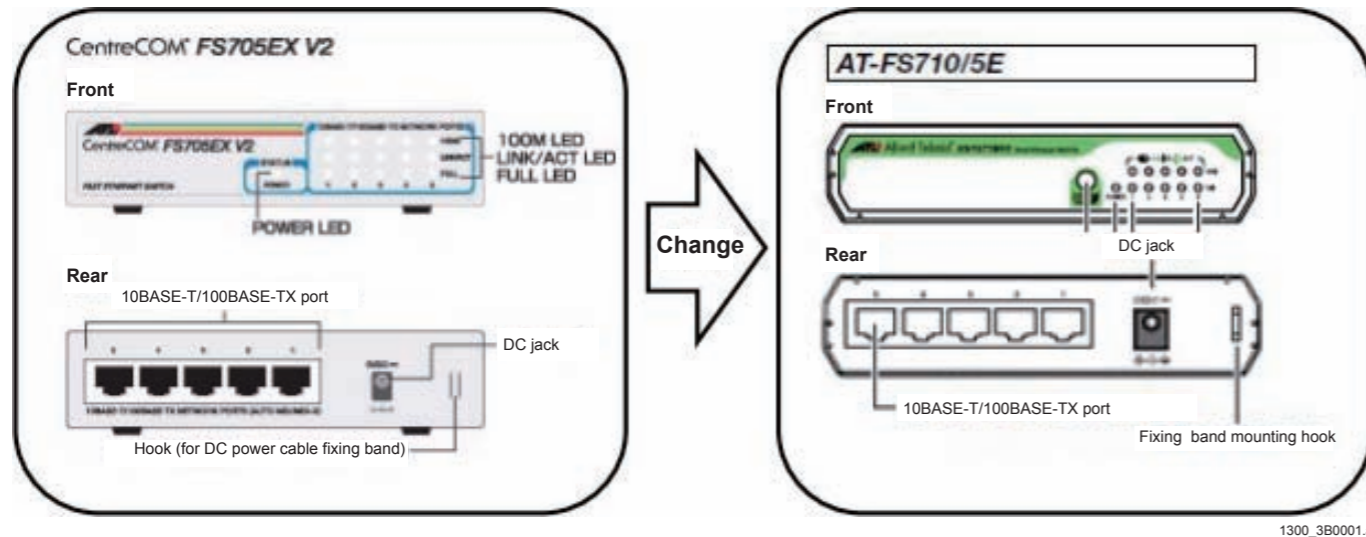
■ Configuration for the New HUB Replacement Kit

Part	Qty.	Remarks
Rear cover assembly	1	
HUB assembly	1	HUB (AT-FS710/5E): 1, HUB power cable: 1
HUB mounting positioning spacer	2	
Mounting screw	22	For mounting the rear cover
Rear cover HUB mounting part spacer	2	Used to connect the rear cover and the HUB

■ Parts Replacement Procedure

(1) **Remove the old HUB.**

☞ {MC:3.1.1_SE Rear Cover}

☞ {MC:3.1.8_HUB}

(2) **Remove the old HUB power cable.**

(3) **Install the HUB mounting positioning spacers (x2) for the new HUB.**
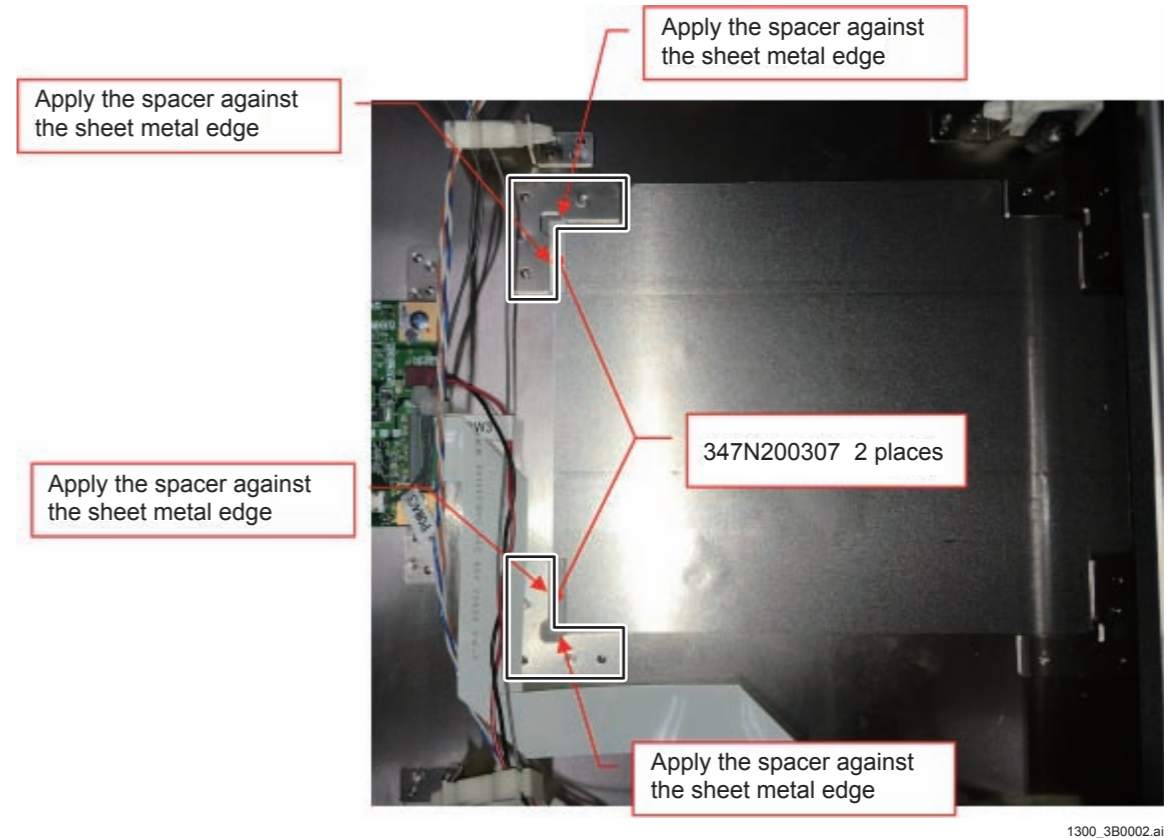
1300_3B0002.ai

(4) **Route the new HUB power cable along the same route as the old HUB power cable.**

(5) Install the new HUB.

◆ *NOTE* ◆

Install the HUB at the position where it is applied to the two spacers installed in step (3).

Apply the HUB
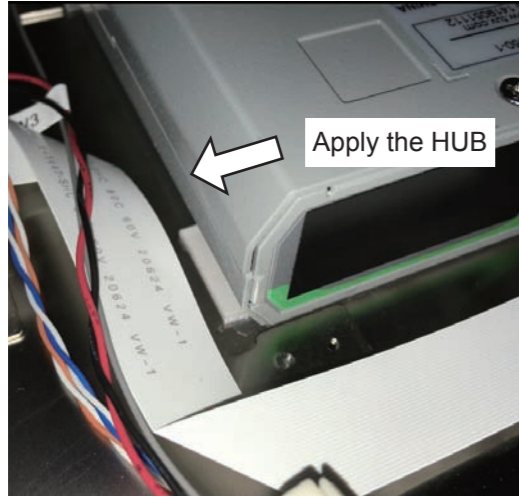
1300_3B0003-01.ai

(6) Install the LAN cable and the power cable to the new HUB.

◆ *NOTE* ◆

- *Connect the LAN cable to the HUB in the order of HUB5 to HUB1. After that, insert the DC jack (new cable) into the power outlet.*
- *Use the LED ON/OFF switch with the switch popped out.*

OK   **NG**

LED ON/OFF switch: popped out   *LED ON/OFF switch: retracted*

1300_3B0003.ai

(6)

(5)
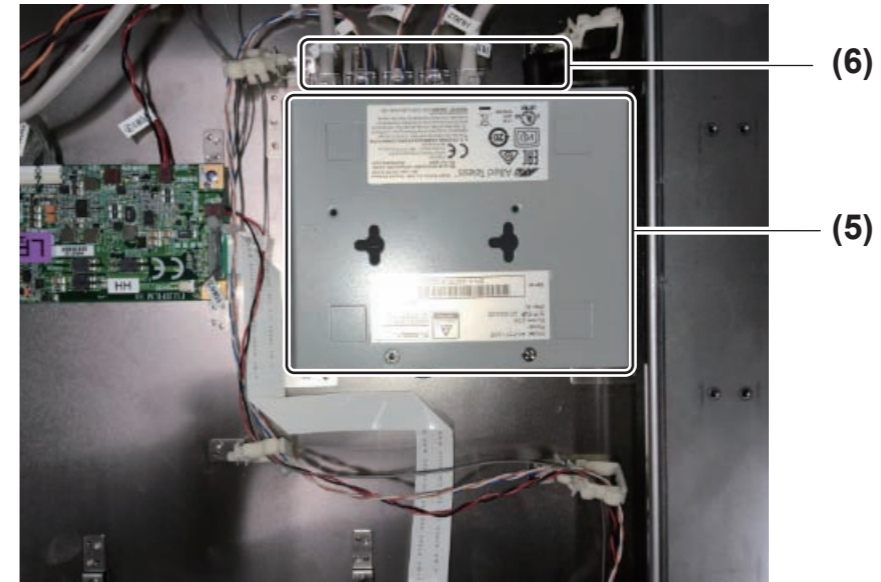
1300_3B0004.ai

(7) Install the rear cover.

◆ *NOTE* ◆

For the HUB mounting part, use the rear cover HUB mounting part spacer the same way as for the old HUB.

(8) After the installation is completed, confirm that it operates normally.

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DR-ID 1300 / DR-ID 1300PU Service Manual

Maintenance Utility (MU1)
(DR Maintenance Software)

Control Sheet

Issue date	Revision number	Reason	Pages affected
06.30.2017	04	New release (FM9473)	All pages
12.28.2017	05	Revision for MC V16.2 (FM9490)	1 to 3, 16, 40, 43, 45, 46, 61, 63, 64, 66, 68, 69, 73, 74, 77, 78, 80, 83
12.28.2017	05	Changes in pagination (FM9490)	47 to 60, 62, 65, 67, 70 to 72, 75, 76, 79, 81, 82
03.31.2020	06	Revision for MC V17.2 (FM9623)	3, 16, 43 to 52, 72, 78 to 80, 83, 84
03.31.2020	06	Changes in pagination (FM9623)	17 to 42, 53 to 71, 73 to 77, 81, 82, 85 to 99

1. DR Maintenance Software

■ Outline of the DR Maintenance Software

The DR Maintenance Software is a tool for exclusive use of the service engineer to set and check the RU functional conditions by the operation from the CL.

The "OPERATION" and "INSTALLATION" exist for the DR Maintenance Software. In this manual each of the functions in the "OPERATION" are explained.

◆ NOTE ◆

When installing the device, refer to the "INSTALLATION".

◆ NOTE ◆

The DR Maintenance Software operating environment is as per the following.
- MC application: V15.2 or later
- OS: Windows7 or Windows10
- Web browser: Internet Explorer 11

◆ NOTE ◆

If Windows 7 is being used as the OS, then install Internet Explorer 11.

☞ *{IN:Appendix 8._Installing the Internet Explorer 11}*

Since Internet Explorer 11 is already installed if Windows 10 is being used as the OS, then the aforementioned procedures are unnecessary.

■ Starting up the DR Maintenance Software

◆ INSTRUCTION ◆

Before starting up the DR Maintenance Software, check that the network cable connections and the network settings are completed.
For mobile configurations, check that the FUJIFILM AP is connected.

(1) Open the Internet Explorer.

DR Maintenance Software starts.

◆ NOTE ◆

If "DR Maintenance Software" is not displayed, then refer to "■ How to Register the DR Maintenance Software Home Page".

(2) Select the "OPERATION" at the upper left corner of the window.

1200_400052E.ai
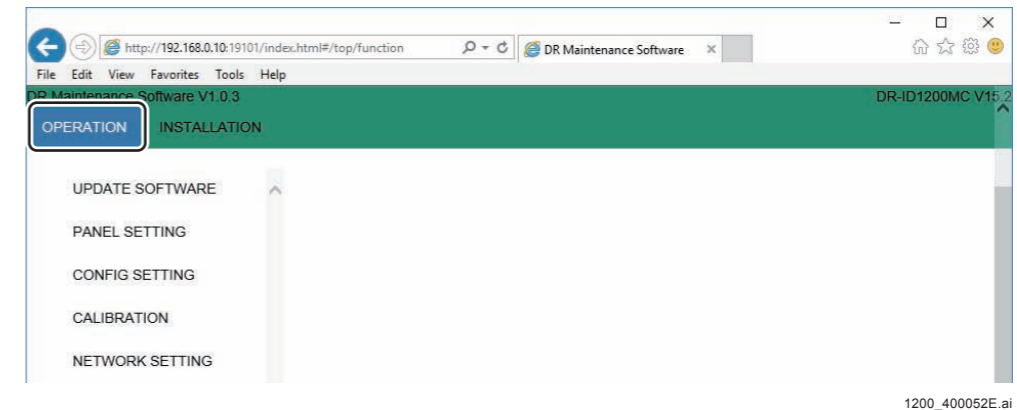
■ How to Register the DR Maintenance Software Home Page

(1) **Click ⚙ at the upper right side of the window, and click [Internet options].**
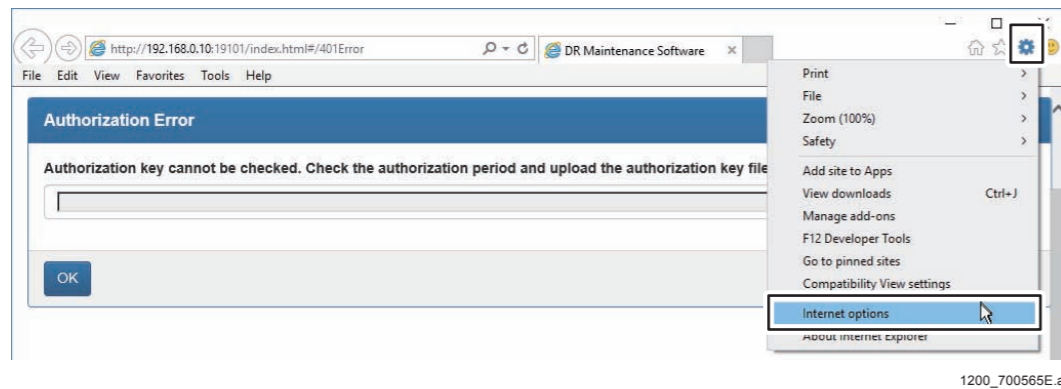
1200_700565E.ai

(2) **Change the address in the "Home page" field to the following address, click [Use current], and then click [OK].**
http://192.168.0.10:19101/index.html

1200_700566E.ai
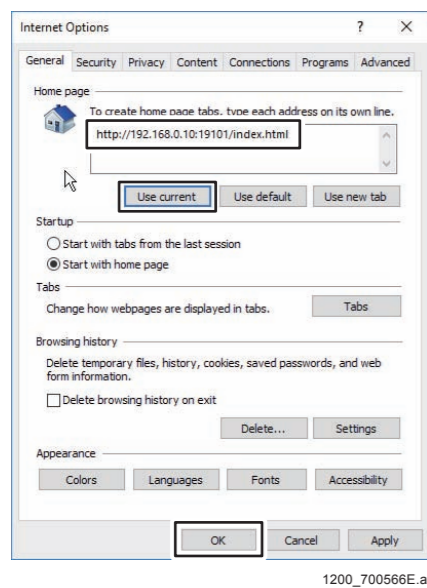
DR Maintenance Software address is registered to homepage.

■ Tree of DR Maintenance Software

Tree of Maintenance Utility
☞ **{1.1_UPDATE SOFTWARE}**
☞ **{1.1.1_Update MP}**
☞ **{1.1.2_Update SE}**
☞ **{1.2_PANEL SETTING}**
☞ **{1.2.1_SE Registration/Deletion}**
☞ **{1.2.2_SE Wireless Setting}**
☞ **{1.2.3_LED Color Setting}**
☞ **{1.2.4_Memory Mode Setting}**
☞ **{1.2.5_CALNEO GL Panel Registration/Deletion}**
☞ **{1.3_CONFIG SETTING}**
☞ **{1.3.1_MC Setting}**
☞ **{1.3.2_RU Image FLAG}**
☞ **{1.3.3_Wireless Setting}**
☞ **{1.3.4_SE Sleep Mode Setting}**
☞ **{1.4_CALIBRATION}**
☞ **{1.4.1_SE Calibration}**
☞ **{1.4.2_Long Panel Calibration}**
☞ **{1.4.3_Sensitivity Correction Coefficient}**
☞ **{1.4.4_GLG Calibration}**
☞ **{1.4.5_SE Correct Data Transfer}**
☞ **{1.4.6_Line Defects Data Registration}**
☞ **{1.4.7_Long Panel Line Defect Data Registration}**
☞ **{1.4.9_Point Defect Specifications Excess Area Display}**
☞ **{1.4.10_Long Panel Point Defect Specifications Excess Area Display}**
☞ **{1.5_NETWORK SETTING}**
☞ **{1.5.1_Local Network}**
☞ **{1.6_CHECK DEVICE STATE}**
☞ **{1.6.1_Check Version}**
☞ **{1.6.2_Check Board Status}**

Tree of Maintenance Utility
☞ **{1.6.3_SE Wireless Setting}**
☞ **{1.6.4_Battery Information}**
☞ **{1.6.5_SE Registration Information}**
☞ **{1.7_HISTORY}**
☞ **{1.7.1_UPRIGHT}**
☞ **{1.7.2_TABLE}**
☞ **{1.8_LOG}**
☞ **{1.9_UTILITY}**
☞ **{1.9.1_Terminate MC}**
☞ **{1.9.2_Reboot MC}**
☞ **{1.9.3_Force Reboot MC}**
☞ **{1.9.4_Web Maintenance Status}**
☞ **{1.9.5_Check PING}**
☞ **{1.9.6_Check FTP}**
☞ **{1.9.7_FTP Network Setting (for Active Line)}**
☞ **{1.9.8_Force Serial ID Writing}**
☞ **{1.9.9_Replace Long Panel RMV Board}**
☞ **{1.9.10_Update SE CPU (0x0220)}**
☞ **{1.9.11_Update SE FPGA}**
☞ **{1.9.12_Replace MP}**
☞ **{1.9.13_LED Color RGB Setting}**
☞ **{1.9.14_Battery Threshold Setting}**
☞ **{1.9.15_Force Charge the Battery}**
☞ **{1.10_BACKUP/RESTORE}**
☞ **{1.10.1_SE Correct Data Backup/Restore}**
☞ **{1.10.2_CALNEO GL Panel Correct Data Backup/Restore}**
☞ **{1.10.3_DR-ID 1422SE Correct Data Back up/Restore}**
☞ **{1.10.4_Config Setting Backup/Restore}**
☞ **{1.10.5_HISTORY Backup}**
☞ **{1.10.6_LOG Backup}**

1.1 UPDATE SOFTWARE

1.1.1 Update MP

The current versions of each MP software are displayed.
If "Updated Version" is newer, upgrade will be implemented.

1200_400053E.ai
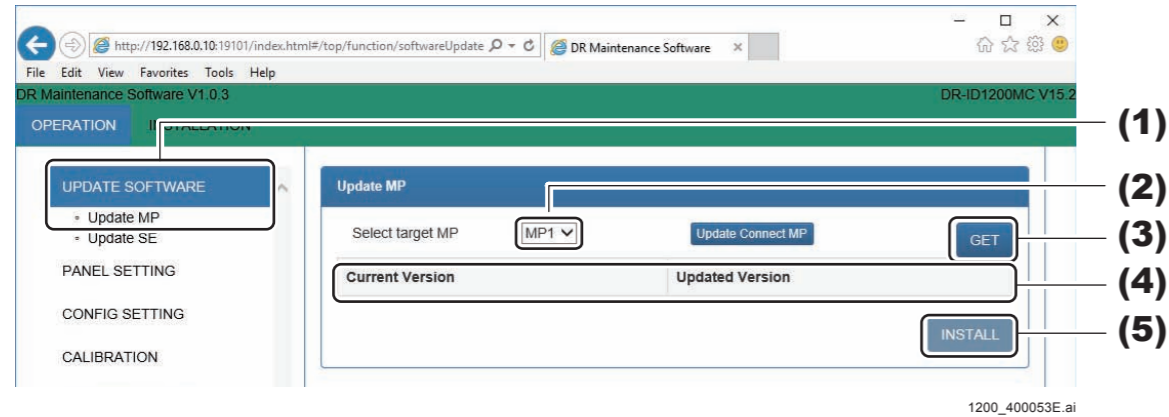
(1) **Click "UPDATE SOFTWARE" - "Update MP".**
The Update MP window opens.

(2) **Select the target MP from the drop-down list box.**

(3) **Click [GET].**
Update MP appears.

(4) **Confirm the "Current Version" and the "Updated Version".**

(5) **If "Updated Version" is newer, click [INSTALL].**
The MP software is updated with the updated version.

1.1.2 Update SE

The current versions of each SE software are displayed.
If "Updated Version" is newer, upgrade will be implemented.

1200_400054E.ai
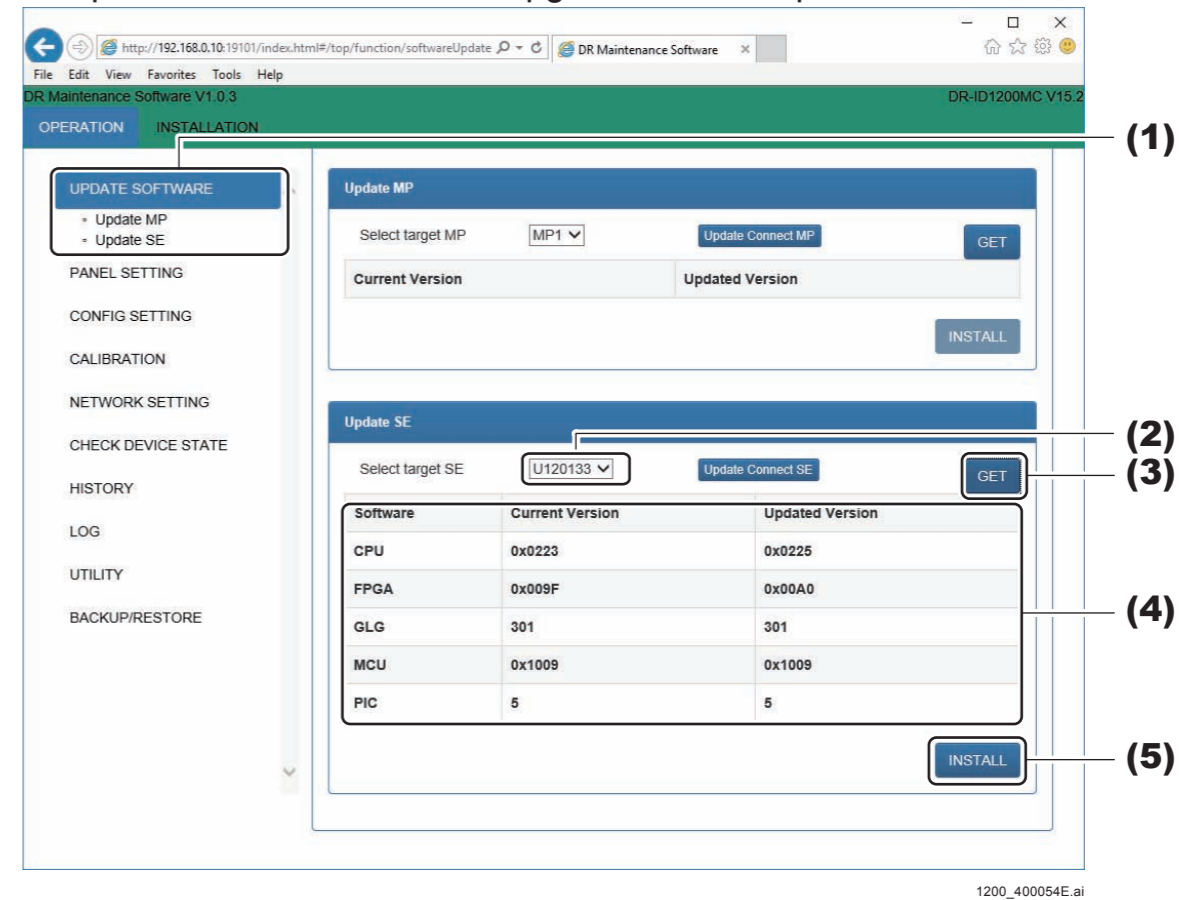
(1) **Click "UPDATE SOFTWARE" - "Update SE".**
The Update SE window opens.

(2) **Select the target SE from the drop-down list box.**

(3) **Click [GET].**
Update SE appears.

(4) **Confirm the "Current Version" and the "Updated Version".**

(5) **If "Updated Version" is newer, click [INSTALL].**
All of the target SE software is updated with the updated version.

1.2　PANEL SETTING

1.2.1　SE Registration/Deletion

Used to register the serial ID of the panel unit, or to cancel a registered panel unit.

■ SE Registration

Used to register the serial ID of the panel unit.
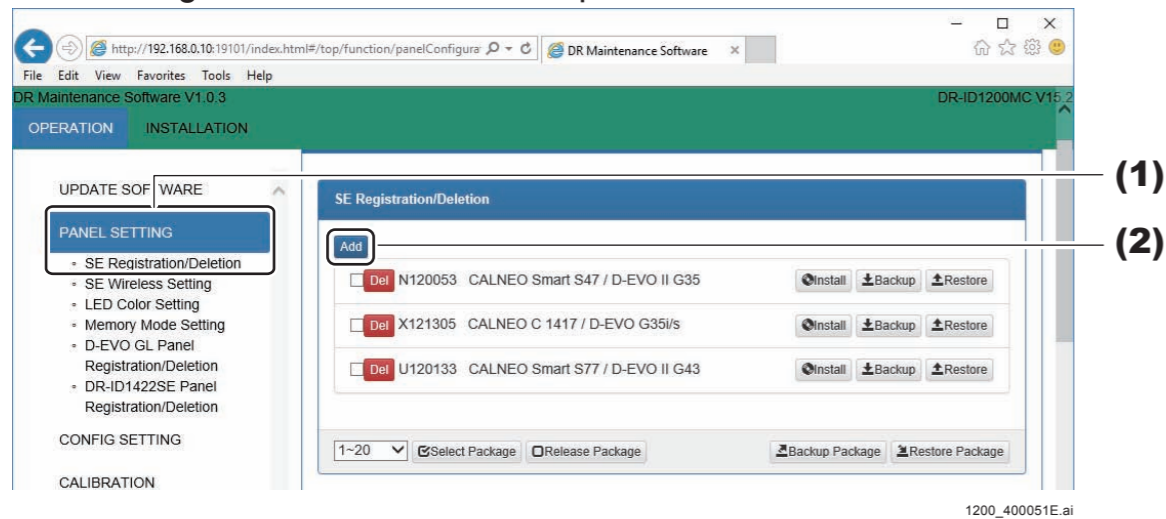
1200_400051E.ai

(1) Click "PANEL SETTING" - "SE Registration/Deletion".
The SE Registration/Deletion window opens.

(2) Click [Add].
The Panel Registration window opens.

(3) Input the serial ID and click [OK].

1200_400055E.ai
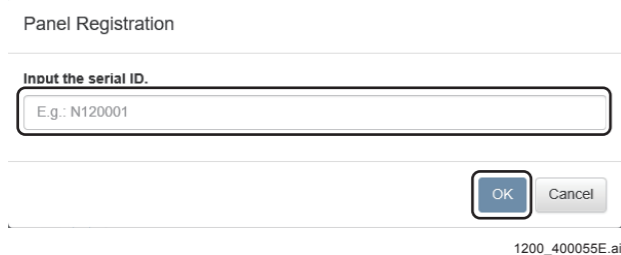
The serial ID of the SE is registered.

◆ *NOTE* ◆

- *The first letter of the serial ID must be entered as a capital letter.*
- *For SE registration of the long panel, first register three panels as the FPD panels. This is the same as the conventional SE panel.*
  After that, for the long panel registration, specify the panel unit consisting of the three panels - TOP, CENTER, and BOTTOM - for the panels registered above. The panel unit where TOP, CENTER and BOTTOM are specified functions as one long panel.

◇ *REFERENCE* ◇

The serial ID of an SE is mentioned on the surface of the machine-specific data CDROM.

■ SE Deletion

A registered panel unit can be canceled.
Used when the panel unit needs to be replaced.

◆ NOTE ◆

Disconnect the SE cable from the SE before deleting the SE. Otherwise, the SE cannot be deleted.

1200_400056E.ai
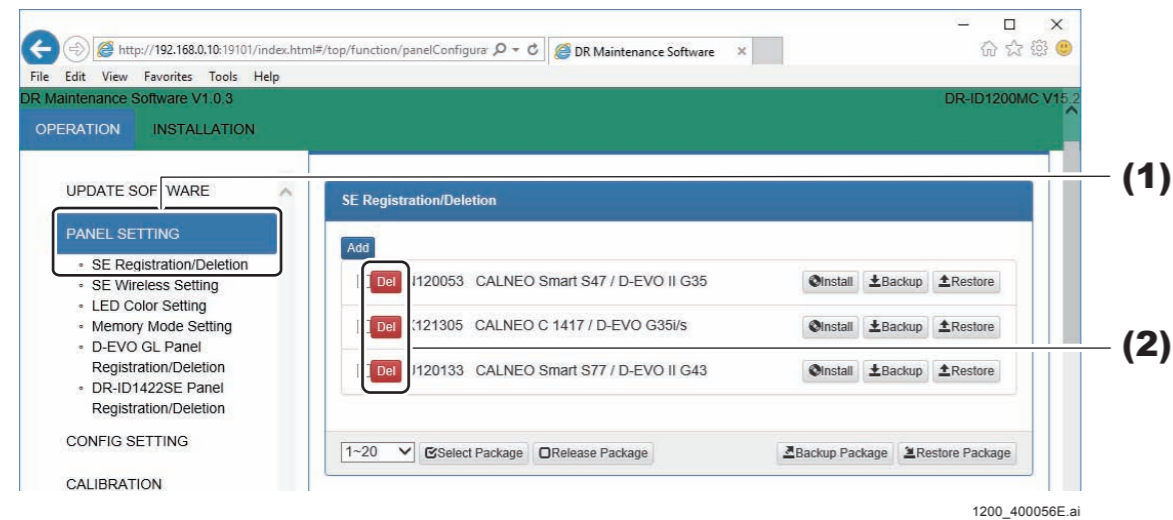
(1) Click "PANEL SETTING" - "SE Registration/Deletion".
The SE Registration/Deletion window opens.

(2) Click [Del] for the corresponding SE.
The Panel Deletion window opens.

(3) Click [OK].
The SE Registration is deleted.

1.2.2 SE Wireless Setting

Use this when the SE country code display, or when measuring the baud rates.

■ SE Country Code Display

Display the SE Country Code
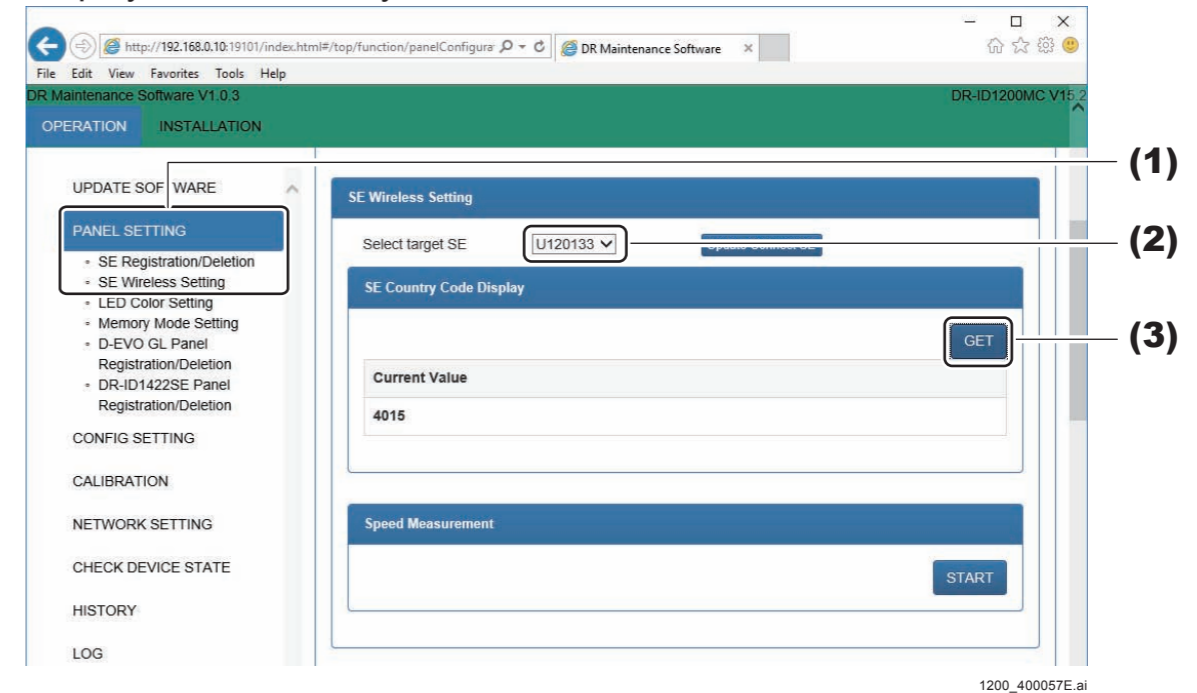
1200_400057E.ai

(1) Click "PANEL SETTING" - "SE Wireless Setting".
The SE Wireless Setting window opens.

(2) Select the target SE from the drop-down list box.

(3) Click [GET] in the "SE Country Code Display".
The SE Country Code will be displayed.

■ Speed Measurement

◆ NOTE ◆

Not used in the DR-ID 1300.

Communication rate of the SE connected via the wireless LAN can be measured.

1200_400058E.ai
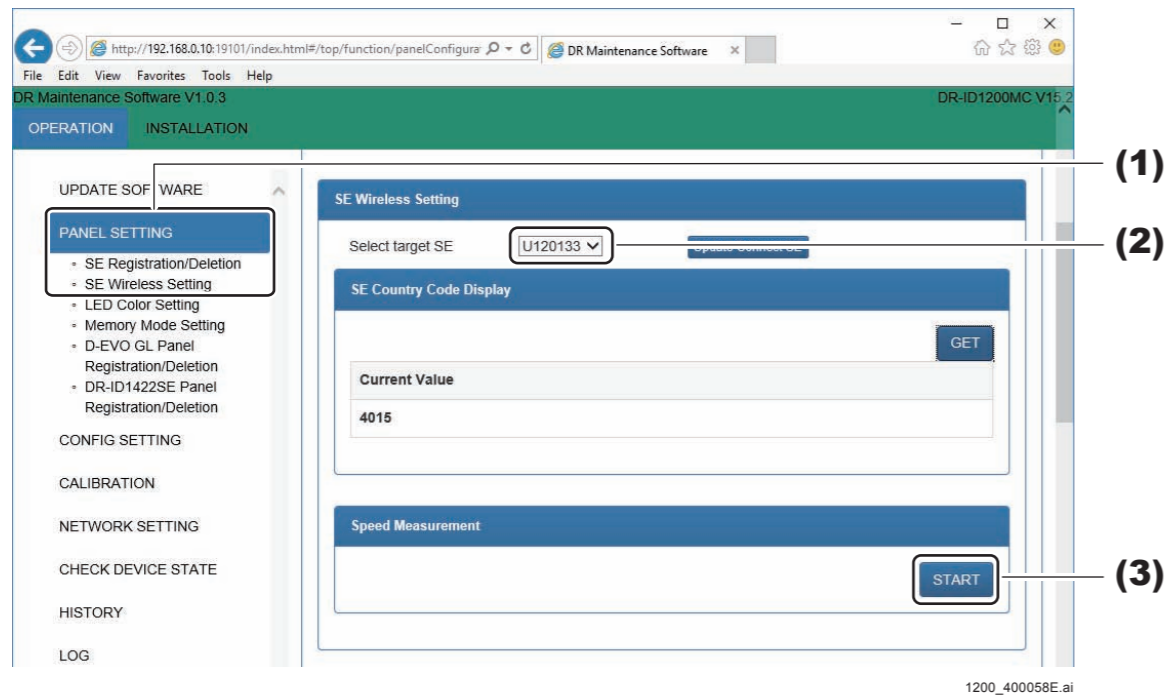
(1) Click "PANEL SETTING" - "SE Wireless Setting".

The SE Wireless Setting window opens.

(2) Select the target SE from the drop-down list box.

(3) Click [START] in the "Speed Measurement".

Measurement of radio wave conditions starts, and SE wireless communication speed is appears in pop-up window.

(4) Check that the average speed is following status.

- DR-ID 1201SE, DR-ID 1211SE, DR-ID 1213SE, DR-ID 1214SE, DR-ID 601SE, DR-ID 611SE: 5000msec or less.
- DR-ID 1202SE, DR-ID 1212SE, DR-ID 602SE, DR-ID 612SE: 6000msec or less.
- DR-ID 613SE: 4000msec or less.

1.2.3 LED Color Setting

◆ NOTE ◆

Not used in the DR-ID 1300.

Register the selector color of the SE.
The following colors can be selected.
White, Pink, Blue, LimeYellow, Purple, Orange

1200_400059E.ai
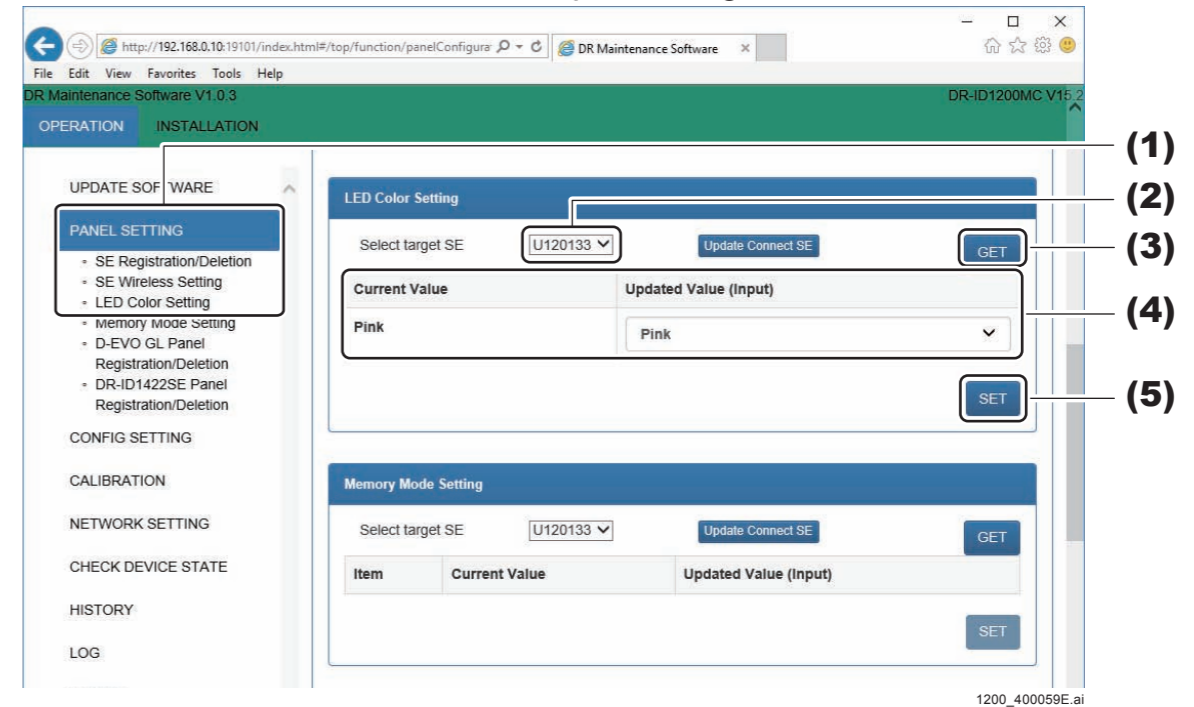
(1) Click "PANEL SETTING" - "LED Color Setting".

The LED Color Setting window opens.

(2) Select the target SE from the drop-down list box.

(3) Click [GET].

The selector color appears.

(4) Check "Current Value" and "Updated Value".

(5) To change the selector color, select from the drop-down list box, and click [SET].

The selector color is registered.

◆ NOTE ◆

Restart the SE when the selector color is registered. The selector color registration will be reflected in the SE after restart.

1.2.4 Memory Mode Setting

◆ *NOTE* ◆

Not used in the DR-ID 1300.

Check the memory exposure information, and set the Read Mode for the memory exposure mode.

1200_400060E.ai
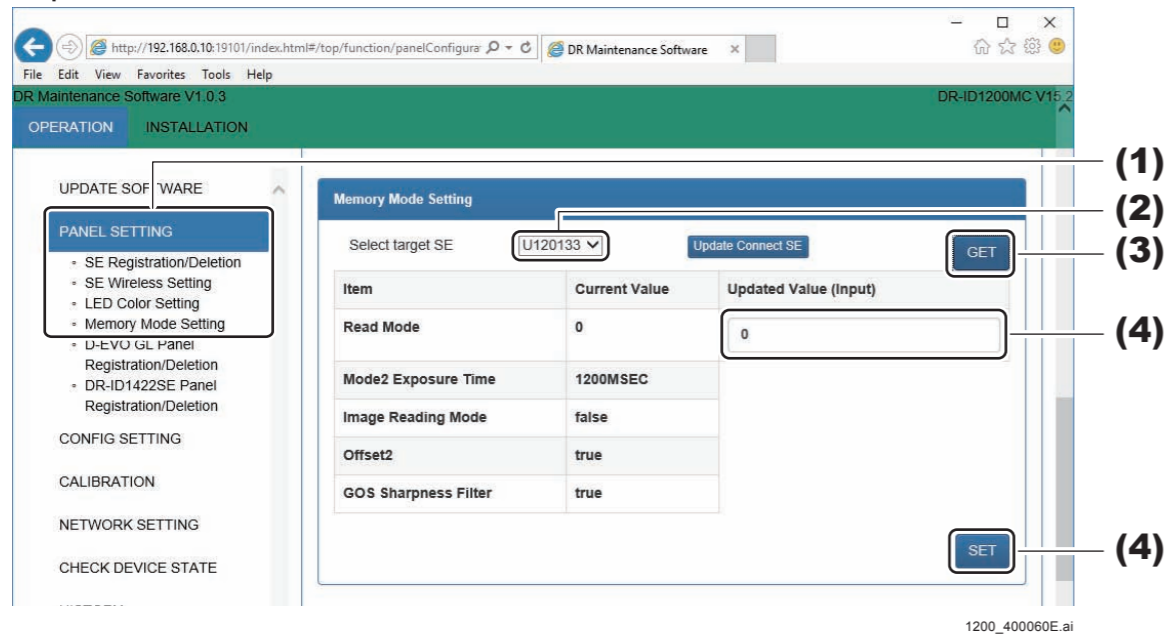
(1) **Click "PANEL SETTING" - "Memory Mode Setting".**

The Memory Mode Setting window opens.

(2) **Select the target SE from the drop-down list box.**

(3) **Click [GET].**

The memory exposure information will be displayed.

(4) **To change the Read Mode (Read Mode setting), enter the "Updated Value", and click [SET].**

The Read Mode is registered.

◆ *NOTE* ◆

In the Read Mode (read mode setting), set the Read Mode for memory exposure in addition to the routine exposure. Any of "0", "1" or "2" can be inputted into [Read Mode].

1.2.5 CALENO GL Panel Registration/Deletion

Use when registering the serial ID of the three pieces of panel unit for long panel, or deleting the registered panel unit.

■ CALENO GL Panel Registration

Use when registering the serial ID of the three pieces of panel unit for long panel. Register the serial ID of TOP, CENTER, BOTTOM three panel units for one piece of long panel.

◆ *NOTE* ◆

The first letter of the serial ID must be entered as a capital letter.

◇ *REFERENCE* ◇

The SE serial ID is contained in the folder name which is in the route for the machine-specific CD-ROM. (Eg: L120001(TOP))
- *<Serial ID for the TOP panel unit> (TOP) folder*
- *<Serial ID for the CENTER panel unit> (CENTER) folder*
- *<Serial ID for the BOTTOM panel unit> (BOTTOM) folder*

1300_410014E.ai
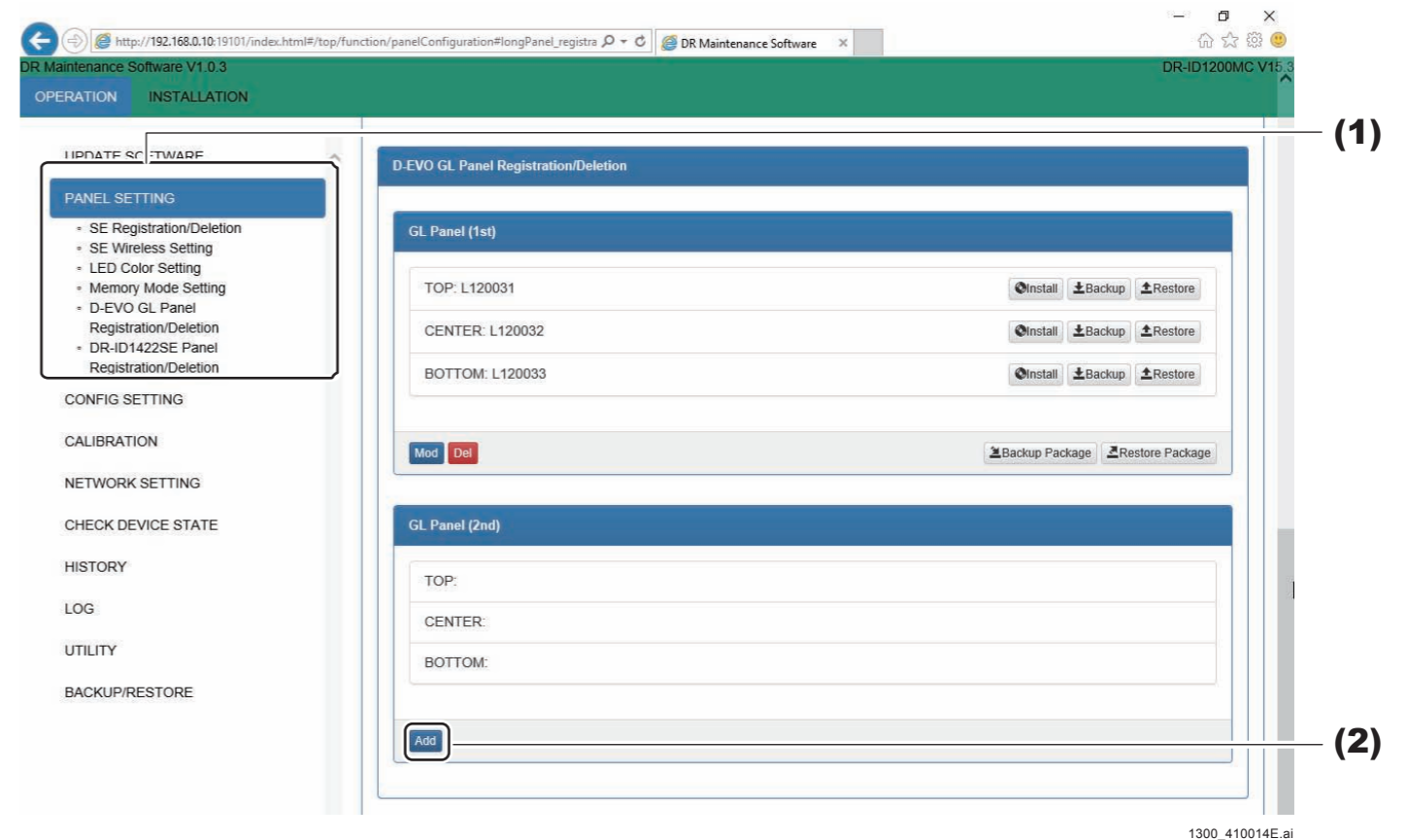
(1) Click "PANEL SETTING" - "CALENO GL Panel Registration/Deletion".

The CALENO GL Panel Registration/Deletion window opens.

(2) Click [Add].

The CALENO GL Panel window opens.

◇ *REFERENCE* ◇

If [Mod] is clicked, the registered long panel serial IDs can be changed.

(3) After entering the SE (3 panel units) serial ID which are to be registered, click [OK].

1300_700066E.ai
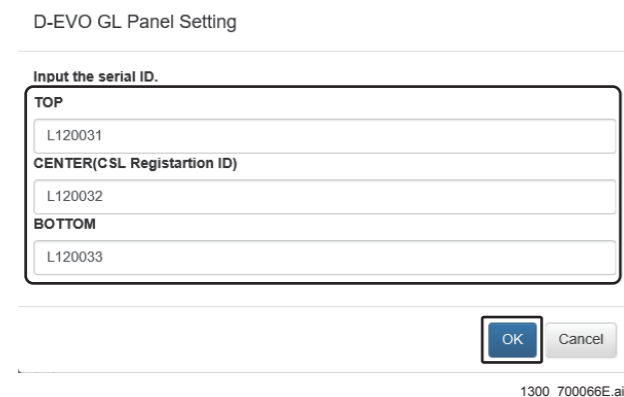
The serial ID of the CALENO GL Panel is registered.

■ CALENO GL Panel Deletion

A registered long panel can be canceled.
Used when the long panel needs to be replaced.

◆ *NOTE* ◆

Disconnect the SE cable from the SE before deleting the SE. Otherwise, the SE cannot be deleted.

1300_410015E.ai
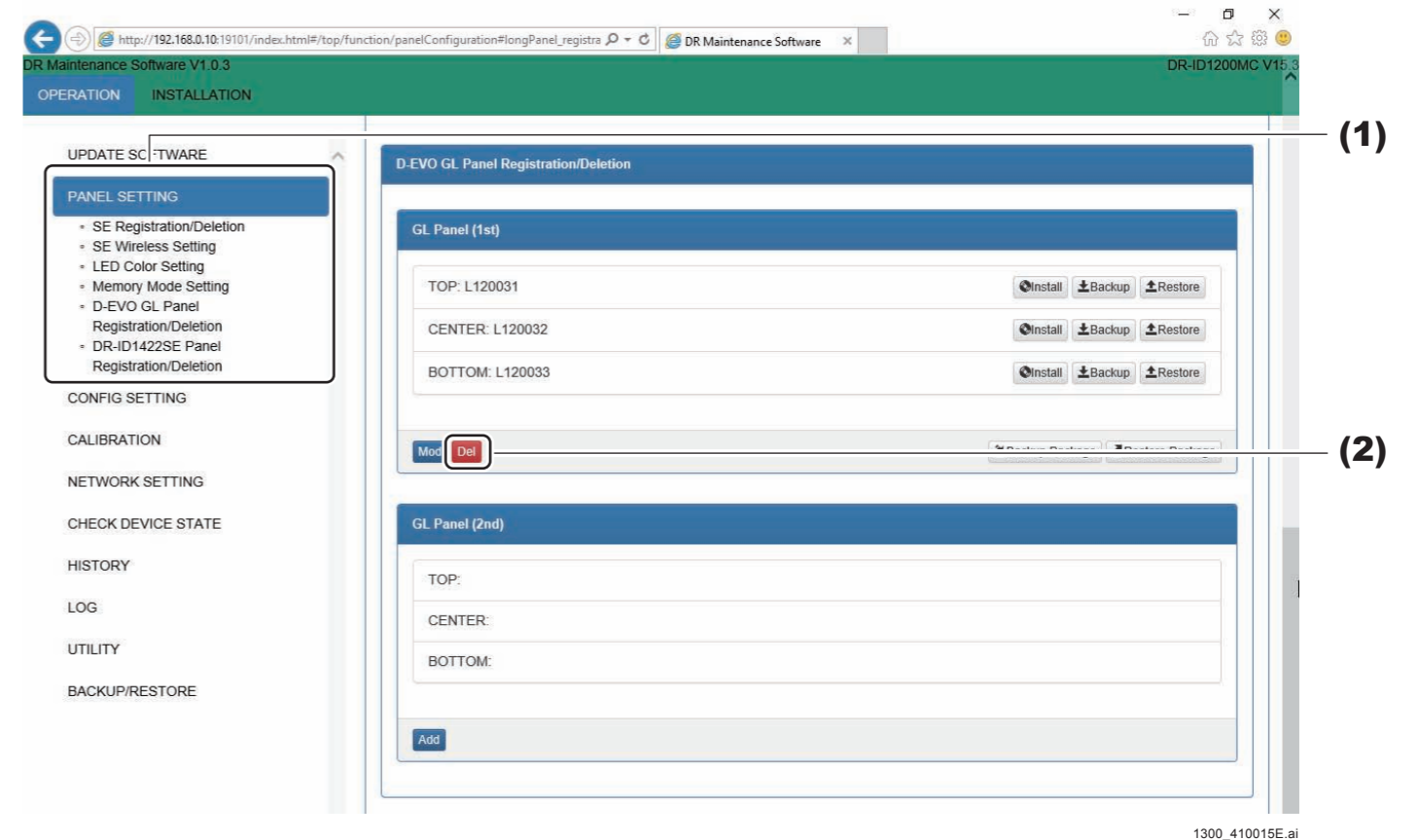
(1) Click "PANEL SETTING" - "CALENO GL Panel Registration/Deletion".

The CALENO GL Panel Registration/Deletion window opens.

(2) Click [Del] for the corresponding SE.

The Panel Deletion window opens.

(3) Click [OK].

The CALENO GL Panel Registration is deleted.

1.3 CONFIG SETTING

In accordance with the device usage configuration, the registered RU system configuration information can be checked and changed. The information whose settings have been changed is written on the HDD.
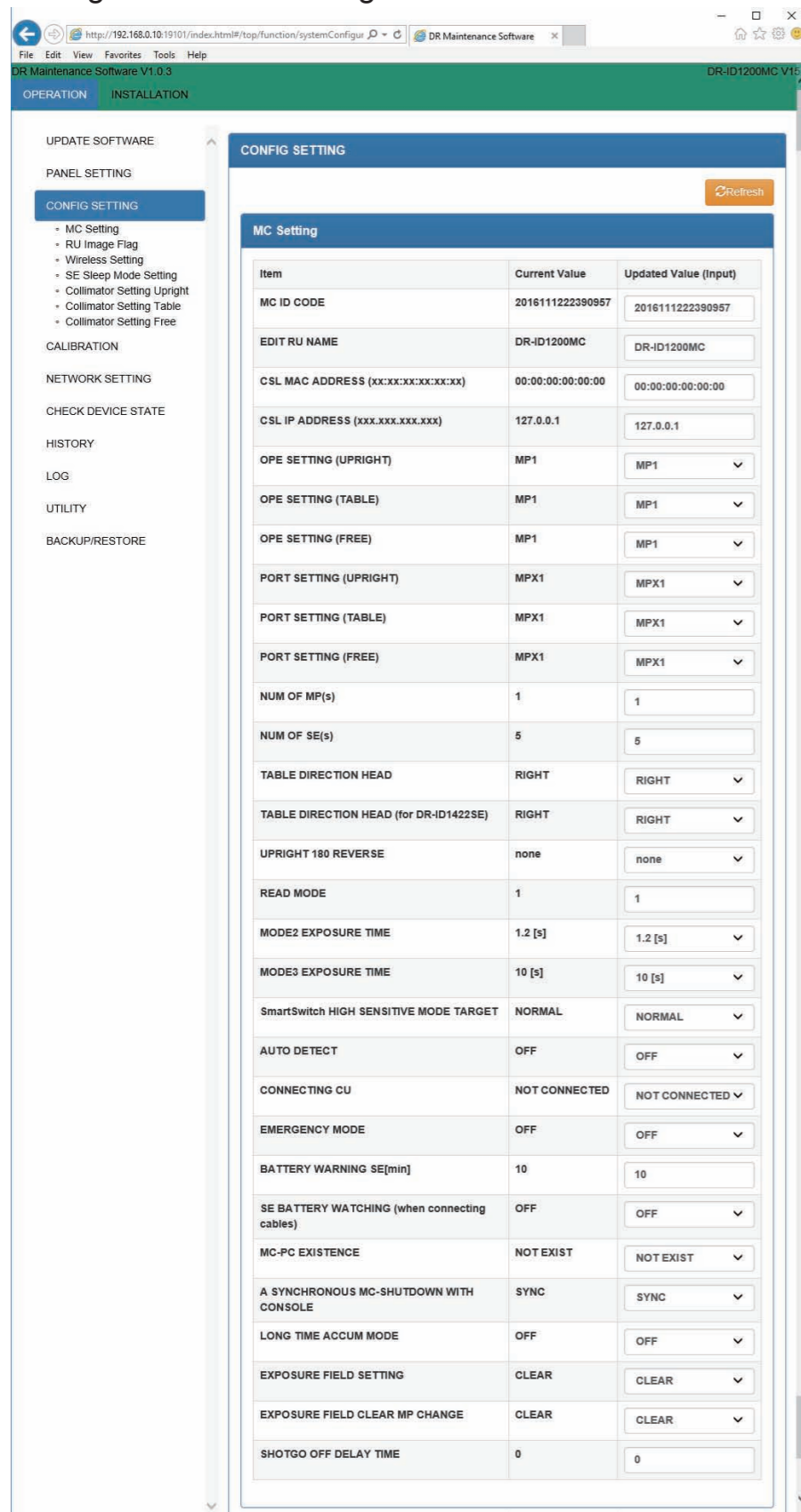
1200_400061E.ai

1.3.1 MC Setting

1200_400062E.ai
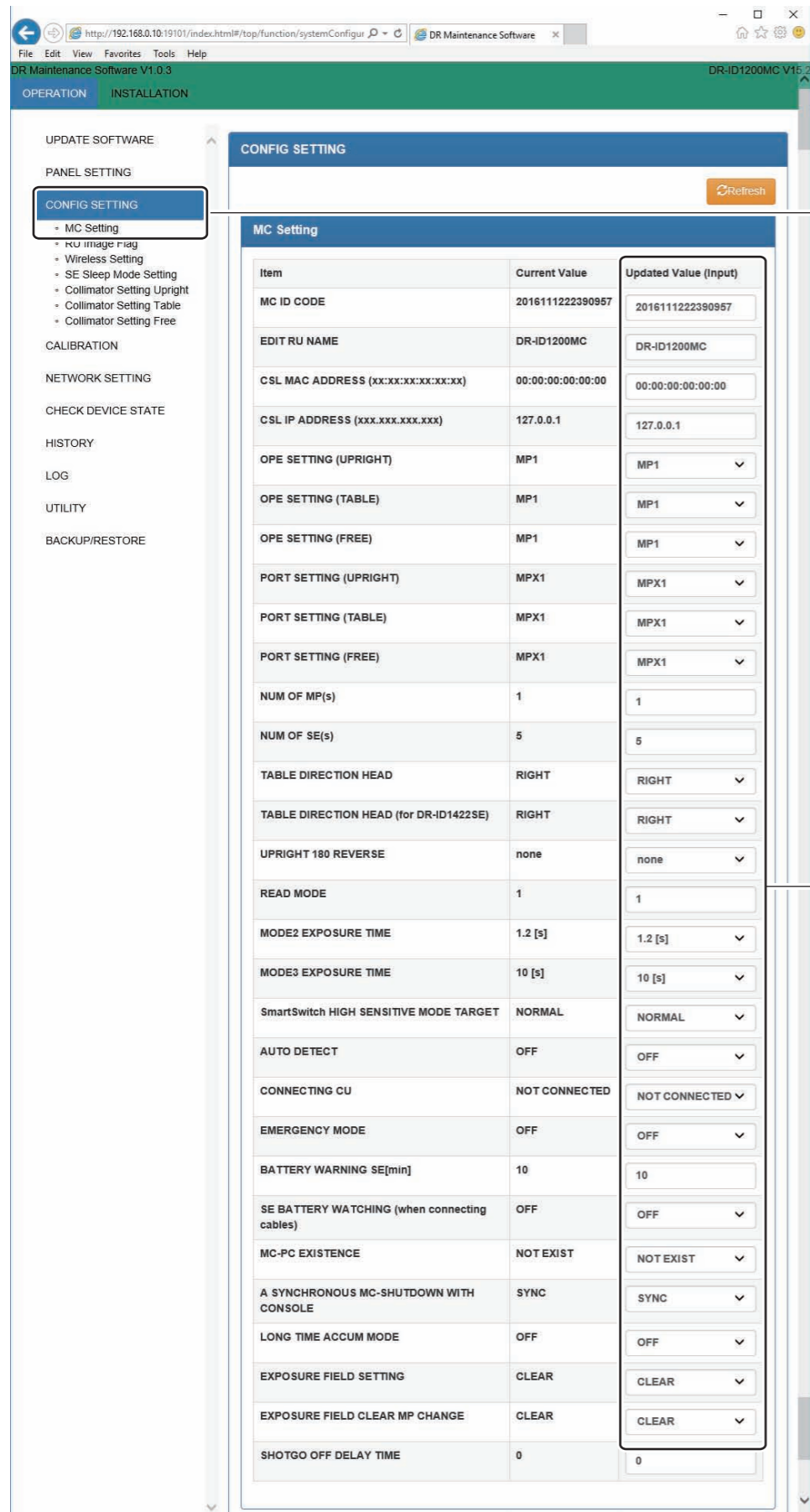
(1) Click "CONFIG SETTING" - "MC Setting".

The MC Setting window opens.

(2) To change the setting values, input the "Updated Value", and click [SET] at the bottom of the window.

The data is written into the HDD.

◆ NOTE ◆

Do not turn OFF the power of the MC during write into the HDD. Otherwise, the HDD data gets damaged, and the MC cannot boot up.

(3) Left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

◇ REFERENCE ◇

The settings become effective after restart of the MC.

■ Setting Items

● MC ID CODE

Check just the SEs shared via multiple MCs when connected to FUJIFILM APs.
The "MC_ID_MODE" checks that other MCs are not redundant, and makes changes if they are redundant.

● EDIT RU NAME

Input the RU name.

◆ *NOTE* ◆

The RU maximum input character count is 15 one-byte characters.

● CSL MAC ADDRESS (xx:xx:xx:xx:xx:xx)

Inputs the MAC address [Default: 00:00:00:00:00:00].

◆ *NOTE* ◆

If the PC for MC is available, input this MAC address after starting the DX Console with the Wake on LAN when turning ON the MC power.

◇ *REFERENCE* ◇

<How to display the MAC address>

(1) ***Press the Windows key and the [R] key concurrently.***

→ The "Run..." window opens.

(2) ***Input "cmd△/k ipconfig△/all", and click [OK]. (△ indicates a space.)***

→ The MAC address appears in "Physical Address" of the "Ethernet adapter Local Area Connection:" block.

● CSL IP ADDRESS (xxx.xxx.xxx.xxx)

Inputs the IP address [Default: 127.0.0.7].

◆ *NOTE* ◆

If the PC for MC is available, change its IP address.

● OPE SETTING (UPRIGHT)

Specifies to which MP the X-ray shot cable corresponding to the operative method [Stand] of the X-ray equipment is to be connected.

<Options>
- None: Not connected
- MP1 [default]:   Connected to MP1
- MP2:   Connected to MP2

☞ **{■ OPE SETTING (UPRIGHT/TABLE/FREE)}**

● OPE SETTING (TABLE)

Specifies to which MP the X-ray shot cable corresponding to the operative method [Bed] of the X-ray equipment is to be connected.

<Options>
- None: Not connected
- MP1 [default]:   Connected to MP1
- MP2:   Connected to MP2

☞ **{■ OPE SETTING (UPRIGHT/TABLE/FREE)}**

● OPE SETTING (FREE)

Specifies to which MP the X-ray shot cable corresponding to the operative method [FREE (general)] of the X-ray equipment is to be connected.

<Options>
- None: Not connected
- MP1 [default]:   Connected to MP1
- MP2:   Connected to MP2

☞ **{■ OPE SETTING (UPRIGHT/TABLE/FREE)}**

● PORT SETTING (UPRIGHT)

Specifies to which terminal block the X-ray shot cable corresponding to the operative method [Stand] of the X-ray equipment is to be connected.

<Options>
- MPX1 [default]:   Connected to MPX1
- MPX2:   Connected to MPX2

● **PORT SETTING (TABLE)**

Specifies to which terminal block the X-ray shot cable corresponding to the operative method [Bed] of the X-ray equipment is to be connected.
<Options>
- MPX1 [default]:   Connected to MPX1
- MPX2:   Connected to MPX2

● **PORT SETTING (FREE)**

Specifies to which terminal block the X-ray shot cable corresponding to the operative method [FREE (general)] of the X-ray equipment is to be connected.
<Options>
- MPX1 [default]:   Connected to MPX1
- MPX2:   Connected to MPX2

● **NUM OF MP (s)**

Specifies the number of MPs to be connected.

◆ *NOTE* ◆

Specify only the number of MPs. Do not include the number of PBs and DSs.

<Settable range>
- 0 [default]:   Not connected
                  (such as a mobile configuration, a configuration using the DS only, etc.)
- 1:   One MP connected
- 2:   Two MPs connected

● **NUM OF SE (s)**

Specifies the number of SEs (FPDs) to be connected concurrently.
<Settable range>
- 1:   One SE connected
- 2:   Two SEs connected
- 3:   Three SEs connected
- 4:   Four SEs connected
- 5 [default]:   Five SEs connected

◆ *NOTE* ◆

- *For connecting one long panel, select "1".*
- *For connecting two long panels, select "2".*

● **TABLE DIRECTION HEAD (for DR-ID 1422SE)**

Selects the direction of the patient's head during exposure on the bed.
<Options>
- LEFT: Left
- RIGHT [default]:   Right

● **UPRIGHT 180 REVERSE**

Selects whether the exposure image of the stand SE (FPD) is to be rotated 180 degrees.
<Options>
- none [default]:   Not rotated
- 180:   Rotated 180 degrees

● READ MODE

Sets charge accumulation time of the SE (FPD). Eight options are available and are divided into "fixed modes" and "variable modes".

- FIXED MODE
  Sets constant time irrespective of the X-ray irradiation time specified in each exposure menu of the CL. Used when the X-ray high voltage generator is not connected.
- VARIABLE MODE
  The reading mode is changed over the FIXED MODE (200 ms), the FIXED MODE (500 ms) and the FIXED MODE (1200 ms) depending on the X-ray irradiation time specified in each exposure menu of the CL. Used when the X-ray high voltage generator is connected.

◆ INSTRUCTION ◆

If the X-ray irradiation time specified by the customer in the X-ray high voltage generator is changed, the change cannot be reflected in the mode setting as the change is not fed back to the MC before exposure. If the X-ray irradiation time changed by the customer is longer than the charge accumulation time specified in the MC, the irradiation is terminated upon completion of accumulation, and images with insufficient dose may result.
Instruct the customer not to set the charge accumulation time longer than specified in the mode when the customer is to change the X-ray irradiation time.

◇ REFERENCE ◇

You can check the X-ray irradiation time specified in each exposure menu through the user utility of the CL.

○ Settings without the X-ray high voltage generator connected

Select among the fixed modes when the X-ray high voltage generator is not connected. Ask the customer about the exposure conditions in which the longest X-ray irradiation time is required when a fixed mode is to be used, and select the mode with a longer charge accumulation time specified than the X-ray irradiation time.

Option	Charge accumulation time	X-ray irradiation time	Remarks
0: FIXED MODE (200 ms)	200 msec	200 msec or less	Select for exposures with low dose or exposures considering throughputs such as chest mass-screening.
1: FIXED MODE (500 ms) [default]	500 msec	500 msec or less	Usually select this mode.
2: FIXED MODE (1200 ms)	1200 to 3800 msec (*)	1200 to 3800 msec	Image quality might degrade for low dose exposures.

*: Charge accumulation time is set in "MODE2 EXPOSURE TIME".

○ Setting with the X-ray high voltage generator connected

Select among variable modes when the X-ray high voltage generator is to be connected.

Option	X-ray irradiation time specified in the exposure menu	Charge accumulation time	Remarks
3: VARIABLE MODE (1.0)	200 msec or less	200 msec	Accumulation might terminate during X-ray irradiation (irradiation is forced to terminate at the same time), and might result in images with insufficient dose.
	201 to 500 msec	500 msec	
	501 msec or more	1200 to 3800 msec (*)	
4: VARIABLE MODE (1.1)	181 msec or less	200 msec	
	182 to 454 msec	500 msec	
	455 msec or more	1200 to 3800 msec (*)	
5: VARIABLE MODE (1.2)	166 msec or less	200 msec	Usually select this mode.
	167 to 416 msec	500 msec	
	417 msec or more	1200 to 3800 msec (*)	
6: VARIABLE MODE (1.4)	142 msec or less	200 msec	
	143 to 357 msec	500 msec	
	358 msec or more	1200 to 3800 msec (*)	
7: VARIABLE MODE (1.7)	117 msec or less	200 msec	
	118 to 294 msec	500 msec	
	295 msec or more	1200 to 3800 msec (*)	

*: When selecting any of options 3 to 7, enable the X-CON setting in the DX Console, and set the appropriate value to the irradiation time in the exposure menu.

Example) If "3" is selected, the charge accumulation time becomes 200 msec when the irradiation time has been set to 190 msec with the exposure menu of the DX Console. Also, the charge accumulation time becomes 500 msec when the irradiation time has been set to 300 msec with the exposure menu.

● MODE 2 EXPOSURE TIME

Sets the charge accumulation time of READ MODE 2. Set in a range of 1.2 to 3.8 s. The setting can be changed in 0.2-s steps.
<Settable range>
- 1.2 to 3.8 s [default: 1.2 s]   Charge accumulation time of READ MODE 2

◆ *NOTE* ◆

For the facilities that may use the machine long time under high temperature, to prevent artifact, it is recommended to set the charge accumulation time of READ MODE 2 at or lower than 1.2 seconds.

● MODE 3 EXPOSURE TIME

◆ *NOTE* ◆

Do not use this item.

● Smart Switch HIGH SENSITIVE MODE TARGET

◆ *NOTE* ◆

Do not use this item.

● AUTO DETECT

Set whether to use the automatic X-ray detection function (AUTO DETECT) or not.
<Options>
- OFF [default]:   Not used
- ON: Used

● CONNECTING CU

Set to CONNECTED when the machine is to be connected to the DX Console to which AcSelarete or CALNEO U/T is connected.
Usually, use the setting of NOT CONNECTED [default].
<Options>
- NOT CONNECTED [default]
- CONNECTED

● EMERGENCY MODE

Set whether the emergency mode is to be used or not.
<Options>
- OFF [default]:   Not used
- ON: Used

◇ *REFERENCE* ◇

Emergency mode is the mode that the calibration would be stopped automatically and the exposure would be ready when the system starts.
When it is set to ON, the exposure would be ready as soon as the system starts.

● BATTERY WARNING[min]

Sets the threshold value of remaining battery charge.
If the remaining battery charge lowers to the set threshold value, exposure cannot be accepted. The SE LED flashes in this case.
The setting is made as the remaining battery time (minutes).
Always use the setting of 10 [default] in this machine.
<Settable range>
- 0 to 120 minutes [default: 10]

● SE BATTERY WATCHING (when connecting cables)

Set this option to ON for a configuration, such as the mobile configuration, wired with the SE but the battery of which is not charged.
Set this to OFF [default] for a configuration including the MP, DS, and PB.
<Options>
- OFF [default]:   Not watched
- ON: Watched

◇ *REFERENCE* ◇

This function depends on whether this machine supplies power to the SE.
- Supply power to and communicate with the SE.
  Irrespective of ON or OFF, the battery is monitored.
- Supply no power to but communicate with the SE.
  If setting to "OFF", does not activate monitoring of the battery.
  If setting to "ON", activates monitoring the battery.

● **MC-PC EXISTENCE**

Set the availability of the PC for the MC.
<Options>
- NOT EXIST [default]:   Select this option when no PC is available for the MC.
- EXIST: Select this option when the PC is available for the MC.

● **A SYNCHRONOUS MC-SHUTDOWN WITH CONSOLE**

Set the termination processing queue control of the MC and the Console.
<Options>
- SYNC [default]:   Select this option when no PC is available for the MC.
- ASYNC: Select this option when the PC is available for the MC.

● **LONG TIME ACCUM MODE**

Set whether long time accumulation mode is to be used or not by selecting "ON" for "AUTO DETECT" and "OFF" for "EMERGENCY MODE".
<Options>
- OFF [default]:   Not used
- ON: Used

◇ *REFERENCE* ◇

- *It takes 10 seconds to read the images by setting "ON" to "LONG TIME ACCUM MODE" only when the specified menus are selected in the DX Console. When the common menus are selected, the reading time is the one that set by "READ MODE".*
- *When setting "ON" to "LONG TIME ACCUM MODE", set 7 minutes or more to "SLEEP START TIME" in "SE SLEEP MODE SETTING" window.*

● **SHOT GO OFF DELAY TIME**

Set a regulatory time to secure a required irradiation time when irradiation does not continue for a preset time due to any reason such as a delay in communication. [default: 0]

◇ *REFERENCE* ◇

The X-ray irradiation time is often stopped by a signal from the MP due to communication delays, which shortens the exposure time. To ensure the irradiation time, set the SHOTGO OFF DELAY TIME value to around "the shortage of time + 10" ms.

● **FTP over SSL on MC**

This setting item is added in the MC V16.5. Turn ON this only for facilities that have enabled the VA security. This setting switches the FTP protocol used in the system to the FTP over SSL protocol.
<Options>
- OFF [default]:   For the normal use environment, set this item.
- ON: For the VA security environment, set this item.

● **FTP over SSL on FCR**

This setting item is added in the MC V16.5. Turn ON this only for facilities that have enabled the VA security. This setting switches the FTP protocol used in the system to the FTP over SSL protocol.
<Options>
- OFF [default]:   For the normal use environment, set this item.
- ON: For the VA security environment, set this item.

● **Xair Mode**

This setting item is added in the MC V16.6. Turn ON this setting only for facilities that have enabled the Xair. This setting sets the minimum threshold of the tube current when detecting X-ray from 10 to 5 mA, and the SmartSwitch mode appropriate for the low output from the Xair.
<Options>
- OFF [default]:   For the normal use environment, set this item.
- ON: Set only at the Xair usage site.

■ OPE SETTING (UPRIGHT/TABLE/FREE)

OPE SETTING corresponds to Reader Type (selector) set on the DX Console.
Make the OPE SETTING and Reader Type settings coincide with each other.

DR Maintenance Software

Selector (DX Console)

Corresponding

1200_400063E.ai
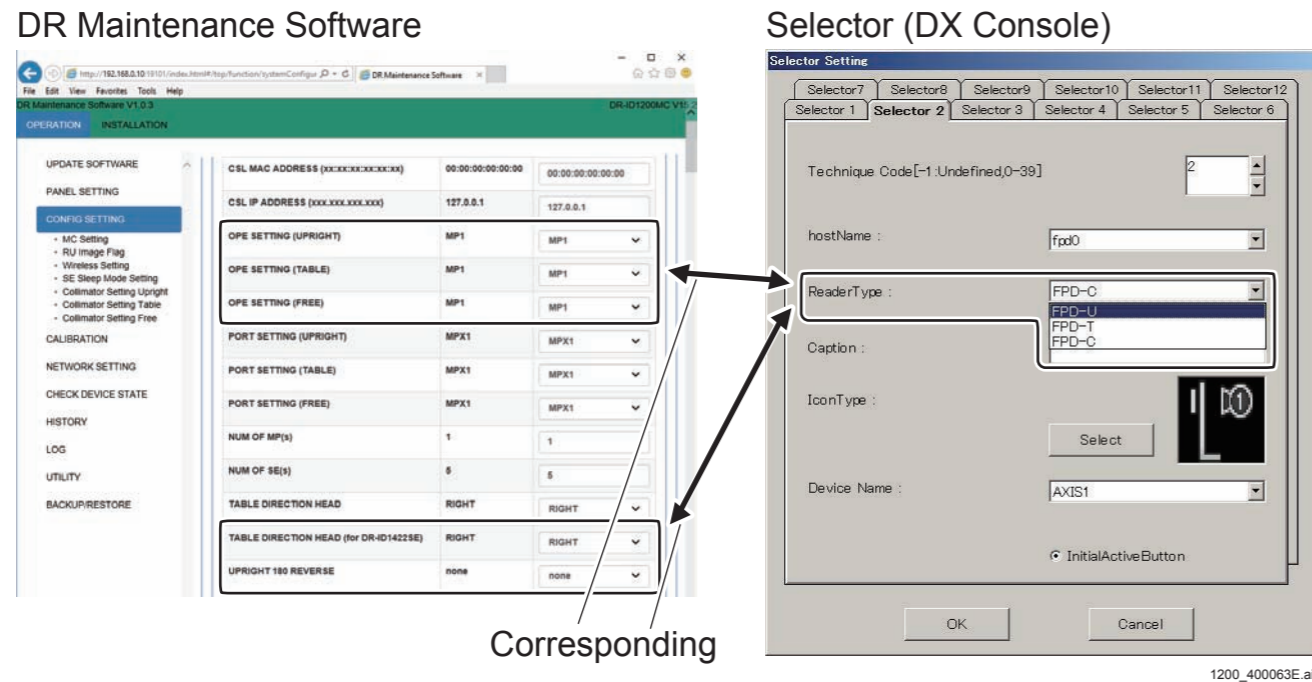
◆ NOTES ◆

- *If [FPD-U] is registered in any selector, always carry out the following operations.*
  - *Connect the stand-type X-ray shot cable to the MP.*
  - *Specify the destination of connection via the Maintenance Software in [OPE SETTING (UPRIGHT)] and [PORT SETTING (UPRIGHT)].*
  - *Specify whether the exposure image is to be rotated 180 degrees via the Maintenance Software in [UPRIGHT 180 REVERSE].*
- *If [FPD-T] is registered in any selector, always carry out the following operations.*
  - *Connect the bed-type X-ray shot cable to the MP.*
  - *Specify the destination of connection via the Maintenance Software in [OPE SETTING (TABLE)] and [PORT SETTING (TABLE)].*
  - *Specify the direction of the patient's head via the Maintenance Software in [TABLE DIRECTION HEAD (for DR-ID 1422SE)].*
- *If [FPD-C] is registered in any selector, always carry out the following operations.*
  - *Connect the free X-ray shot cable to the MP.*
  - *Specify the destination of connection via the Maintenance Software in [OPE SETTING (FREE)] and [PORT SETTING (FREE)].*

1.3.2　RU Image Flag

1200_400064E.ai
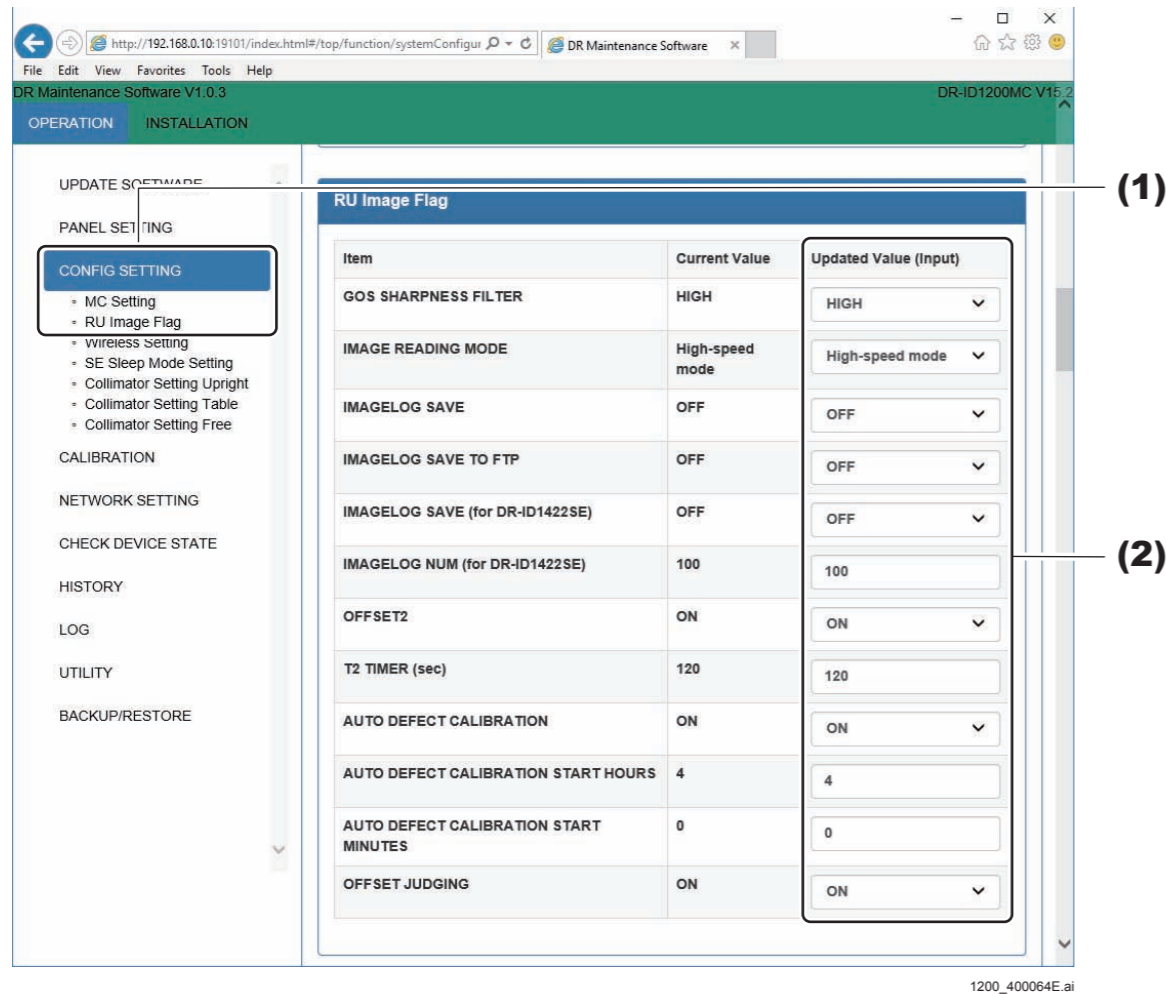
(1)　Click "CONFIG SETTING" - "RU Image Flag".

The RU Image Flag window opens.

(2)　To change the setting values, input the "Updated Value", and click [SET] at the bottom of the window.

The data is written into the HDD.

◆ *NOTE* ◆

Do not turn OFF the power of the MC during write into the HDD. Otherwise, the HDD data gets damaged, and the MC cannot boot up.

(3)　Left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

◇ *REFERENCE* ◇

The settings become effective after restart of the MC.

■ Setting Items

● GOS SHARPNESS FILTER

Select the sharpness of the GOS panel (1201SE, 1202SE).
Select HIGH when a highly sharp image is to be obtained, making use of the features of DR.
Select NORMAL when an image with normal sharpness close to the FCR is to be obtained.
<Options>
- HIGH [default]:　　　　　Highly sharp
- NORMAL:　　　　　Normally sharp

◆ *NOTE* ◆

As this setting causes a large change of the image quality, select according to the desire of the user.

◇ *REFERENCE* ◇

This setting does not influence the image quality of the CsI panel (1211SE / 1212SE / 1213SE / 1214SE).

● IMAGE READING MODE

◆ *NOTE* ◆

For the DR-ID 1300 series SE, this setting is disabled.

Selects the image compensation processing mode.
Normally use the default setting. If the noise is generated via image evaluations whereas physical phantoms such as mesh, etc. were used, change to the Standard Mode.
<Options>
- Standard Mode
- High-Speed Mode [default]

◆ *NOTE* ◆

When this setting has been changed, perform the full calibration after restarting the MC in the following procedure. If not, the image compensation processing mode is not switched correctly.
1. Change the setting.
2. Restart the MC.
3. Perform the full calibration.

◇ *REFERENCE* ◇

- *In comparison with High-Speed Mode, the time required for image acquisition in the Standard Mode is approximately 370 ms longer.*
- *Even if the noise is generated via image evaluations whereas physical phantoms such as mesh, etc. were used, this noise is not generated in human body exposures.*

● **IMAGE LOG SAVE**

Selects whether or not the recorded image log is to be stored in the HDD.
Always use the setting of OFF [default] in the machine.
<Options>
- OFF [default] :   Not stored
- ON: Stored

◆ *NOTE* ◆

When set to "ON", the PC capacity is compressed and the throughput is degraded.

● **IMAGE LOG SAVE TO FTP**

Selects whether or not the recorded image log is to be stored in the FTP.
Always use the setting of OFF [default] in the machine.
<Options>
- OFF [default] :   Not stored
- ON: Stored

◆ *NOTE* ◆

When set to "ON", the PC capacity is compressed and the throughput is degraded.

● **OFFSET2 (blemish/unevenness correction setting)**

Select whether or not the blemish/unevenness correction is to be performed.
<Options>
- OFF: Not performed
- ON [default]:   Performed

● **T2 TIMER(sec)**

Set the start time (sec) of the calibration executed in the background. When the exposure has been completed, the calibration begins after the time elapsed that was set.
- Character string: [default: 120]

● **AUTO DEFECT CALIBRATION**

Set whether the automatic defect calibration is to be executed or not.
<Options>
- OFF: Not executed
- ON [default]:   Executed

● **AUTO DEFECT CALIBRATION START HOURS**

When "ON" is selected in "AUTO DEFECT CALIBRATION", input the automatic execution time hourly.
- 2-character string or less [default: 4]

● **AUTO DEFECT CALIBRATION START MINUTES**

When "ON" is selected in "AUTO DEFECT CALIBRATION", input the automatic execution time minutely.
- 2-character string or less [default: 0]

● **OFFSET JUDGING**

Select whether or not the blemish/unevenness correction is to be performed.
<Options>
- OFF: Not performed
- ON [default]:   Performed

1.3.3 Wireless Setting

◆ *NOTE* ◆

The DR-ID 1305SE does not have the wireless function. Set the wireless function only for connecting the DR-ID 1201SE/1202SE/1211SE/1212SE/1213SE/1214SE.

1200_400065E.ai
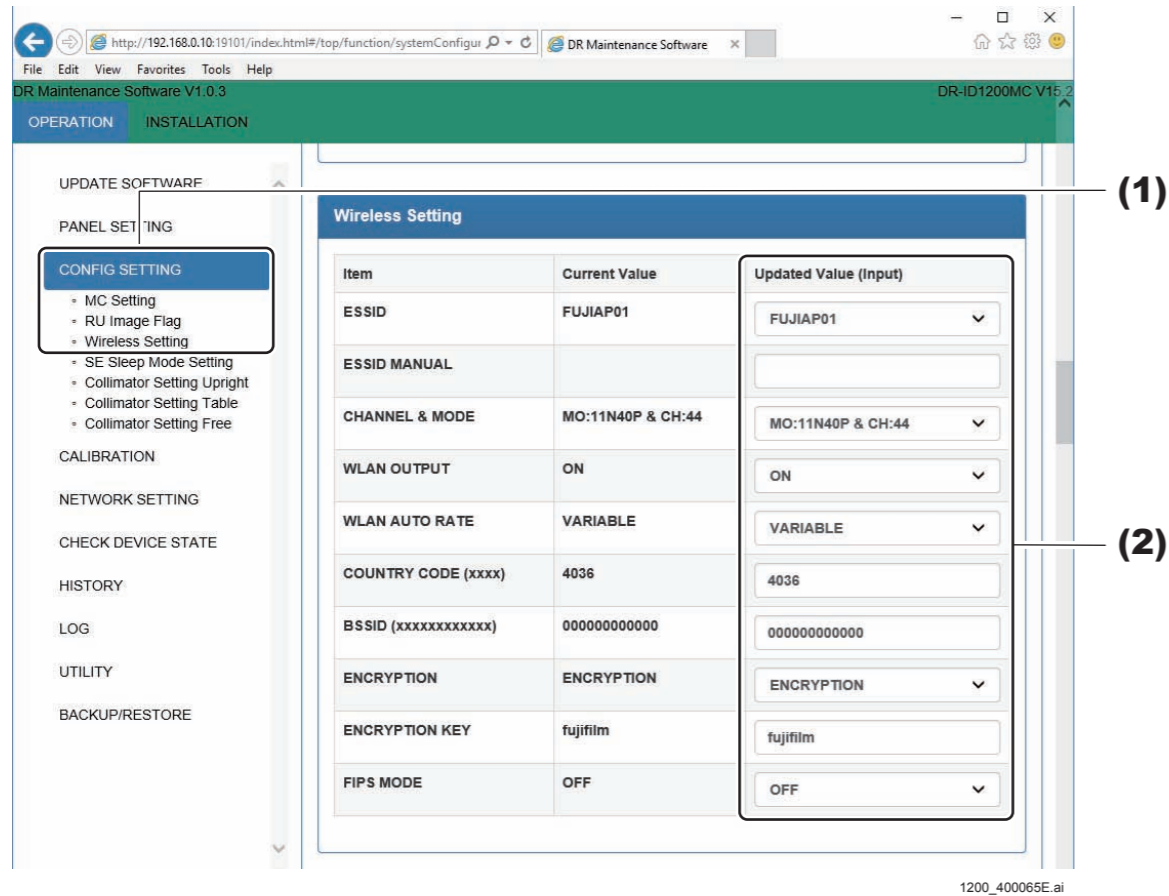
(1) **Click "CONFIG SETTING" - "Wireless Setting".**
The Wireless Setting window opens.

(2) **To change the setting values, input the "Updated Value", and click [SET] at the bottom of the window.**
The data is written into the HDD.

◆ *NOTE* ◆

Do not turn OFF the power of the MC during write into the HDD. Otherwise, the HDD data gets damaged, and the MC cannot boot up.

(3) **Left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".**

◇ *REFERENCE* ◇

The settings become effective after restart of the MC.

■ Setting Items

◆ *NOTE* ◆

Select the same settings for the AP.
☞ *{IN1:10._Installing the RU Software}*
☞ *{IN2:10._Installing the RU Software}*

● ESSID

Sets the network identifier of the wireless LAN for the SE.
Usually use the setting of FUJIAP01 [default].
When two or more SE's are to be installed in one installation site, make settings so that the identifiers of the respective SE's do not overlap.
Make the same setting of the identifier on the AP.
<Options>
- FUJIAP01 to FUJIAP10, MANUAL [default: FUJIAP01]

● ESSID MANUAL (arbitrary ID setting for wireless LAN)

Sets an arbitrary ID in case that "MANUAL" has been selected at "ESSID".
When two or more SE's are to be installed in one installation site, make settings so that the ID's of the respective SE's do not overlap. Make the same setting of the ID on the AP.

- A single-byte text string of 32 characters or less [default: blank]

● CHANNEL & MODE

Selects the wireless channel to be used.
Setting a dual channel with higher communication rate is recommended for the machine.
If the communication rate drops, overlapping channels in the site are possibly present. Change the setting.

◇ *REFERENCE* ◇

- *When multiple access points are vicinally placed, changing the channel currently used can prevent decreasing the communication speed due to interferences.*
- *The Auto 20/40 MHz mode changes the band automatically between 20 and 40 MHz. The 40 MHz band can provide faster communication than the 20 MHz band, but the channel cannot be fixed to the 40MHz band.*

◆ *NOTE* ◆

- *In accordance with the Radio Law, the W52 and W53 type channels (36, 40, 44, 48, 52, 56, 60 and 64) cannot be used outdoors. If wireless communications are to be used outdoors, select a 5 GHz other than the aforementioned channels or a 2.4 GHz. All of the channels can be used indoors.*
- *When selecting 2.4 GHz on the FUJIFILM-made AP, select 20 MHz on the "Channel Width". Do not select 40 MHz.*
- *When the system coexistent with the SE of DR-ID 600 series and DR-ID 1200 series, only use channels that have been used conventionally.*

◆ *NOTE* ◆

When the W53 or W56 type channel is selected, if interference is detected, then perform the following workaround operations. This is because avoiding interference with the weather radar is required by the DFS (Dynamic Frequency Selection).
- *In order to detect radar waves about one minute before starting the communication with each channel, the wireless communication cannot be performed during the detection.*
- *If radar waves are detected during wireless communications, the wireless communications will be interrupted, and the channel will be changed. After the channel has been changed, then the radar wave detection will be implemented again in about one minute, and if no radar waves are detected, then the wireless communications will be resumed on the changed channel. At this time, the SE will automatically follow over to the AP channel. The wireless communications will be maintained on the changed channel until the AP is restarted.*
- *In case of the FUJIFILM-made AP, the "WSTAT" LED flashes red during the DFS search operation.*

● WLAN OUTPUT

Set whether the wireless LAN output is to be used or not.
<Options>
- OFF: Not used
- ON [default]:   Used

● **WLAN AUTO RATE**

Set whether the wireless LAN transmission rate is constant or varible.
<Options>
- CONSTANT [default]
- VARIABLE

◇ *REFERENCE* ◇

If the wireless environment is not stable or easily fluctuates, set to "VARIABLE". If the wireless environment is stable, use "CONSTANT".

● **COUNTRY CODE (xxxx)**

Since there is wireless communication with SE, inputting the country code according to the country where it used is required.

- 4-character string or less [default: 4036]

◆ *NOTE* ◆

- *Change the country code for the countries where SE is used.*
  China: 156
  Taiwan: 158

- *For MC V2.2 or later, input "4036".*
- *For MC V2.1 or earlier;*
      When only using the DR-ID 1200 series SE, input "4015".
      When the system coexistent with the SE of DR-ID 600 series and DR-ID 1200 series, input "4036".

● **BSSID (xxxxxxxxxxxx)**

Input the MAC address of the AP (BSSID) when wireless connection is to be made by specifying the AP. Although input is not needed usually, inputting the BSSID is recommended when two or more AP's are to be used.
The MAC address is mentioned on the label or in the instruction manual of the AP.
<Settable range>
- 12-character string [default: 000000000000]

● **ENCRYPTION (encryption yes/no setting)**

This sets whether wireless communication is to be encrypted or not.
<Options>
• OFF: No encryption
• ENCRYPTION [default]:   WPA2-PSK encryption
• EAP-TLS: EAP-TLS encryption

◇ *REFERENCE* ◇

- *For MC V12 or earlier, the default value is "OFF".*
- *When selecting "ENCRYPTION", a separate encryption setting on the AP side is also required.*
  Encryption method: AES
  Authentication method: WPA2-PSK (Wi-Fi Protected Access 2 Pre Shared Key)
- *When SE is shared by multiple systems, the encryption settings in the SE are rewritten by connecting the SE once to the SE cable of the movement destination.*

● **ENCRYPTION KEY (encryption key)**

Enter the text string (pass phrase) for generation of the encryption key for wireless communication.
<Setting range>
A single-byte text string of 8 to 63 characters [default: fujifilm]

◇ *REFERENCE* ◇

- *The pass phrase entered for this item also must be set on the AP side.*
- *This unit is not compatible with the pass phrase automatic change function (only manual setting is possible).*

● **FIPS MODE (encryption setting for image transfer)**

This sets whether FIPS MODE is to be used or not.
<Options>
• OFF [default]:   Not used
• ON: Used

◇ *REFERENCE* ◇

- *Image transfer is to be encrypted only for wireless communications.*
- *This setting does not cover the 601SE/602SE/611SE/612SE/613SE.*

1.3.4　SE Sleep Mode Setting

1200_400066E.ai
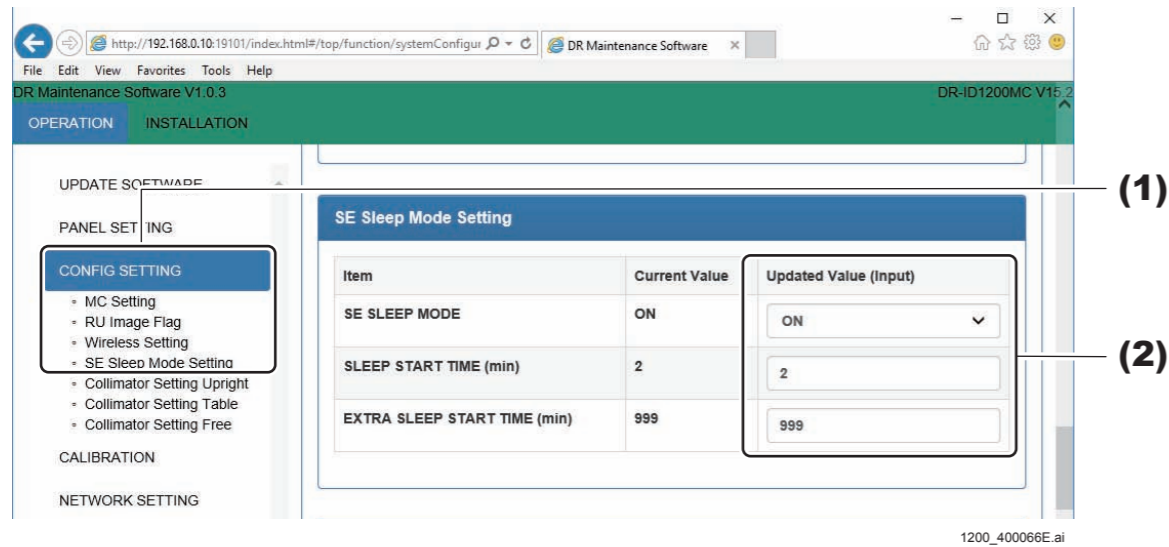
(1) **Click "CONFIG SETTING" - "SE Sleep Mode Setting".**
The SE Sleep Mode Setting window opens.

(2) **To change the setting values, input the "Updated Value", and click [SET] at the bottom of the window.**
The data is written into the HDD.

◆ *NOTE* ◆

Do not turn OFF the power of the MC during write into the HDD. Otherwise, the HDD data gets damaged, and the MC cannot boot up.

(3) **Left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".**

◇ *REFERENCE* ◇

The settings become effective after restart of the MC.

■ **Setting Items**

● **SE SLEEP MODE**

Set the SE sleep mode.
<Options>
- OFF: Disable the power save mode.
- ON [default]:   Enable the power save mode.

● **SLEEP START TIME (min)**

Set the time in minutes units until when the power save mode is started.
<Setting range>
- 2 to 10 [default: 2]

◇ *REFERENCE* ◇

Shift to the sleep mode mainly in the following cases.
- *After completing the initialization calibration*
- *After completing the exposure*
- *After cancelling the exposure*
- *After switching the panel by changing the selector for the DX Console*
- *After completing the automatic offset update*
- *After completing the periodical defect calibration*
- *After completing the automatic log update*

● **EXTRA SLEEP START TIME (min)**

Set the time in minutes units until when the extra sleep mode is started.
<Setting range>
- 2 to 999 [default: 999]

◇ *REFERENCE* ◇

- *After all the SEs shift to the sleep mode and past the set time by this setting, shift to the extra sleep mode.*
- *When set to "999", do not shift to the extra sleep mode.*

1.4 CALIBRATION

1.4.1 SE Calibration

◆ *NOTE* ◆

For the DR-ID 1300, perform the following calibration.

☞ *{MU1:1.4.2._Long Panel Calibration}*

Used to make the following calibration on the SE.
Refer to the Installation manual for the detailed procedures.

☞ *{IN1:11._Image Calibration}*

☞ *{IN2:11._Image Calibration}*

- Offset Calibration
- Gain Calibration
- Defect Calibration
- Lag Calibration

◆ *INSTRUCTION* ◆

*Check to make sure that background calibration (which takes place automatically when the MC is started) is completed before carrying out the following calibration.
The image correction data cannot be correctly performed if the calibration takes place while the background calibration is in progress.*
- Offset Calibration
- Gain Calibration
- Defect Calibration
- Lag Calibration
You can check whether background calibration is completed on the status lamp "READY" of the SE
- While background calibration is in progress:
  "READY" is flashing.
- While background calibration is not carried out:
  "READY" is unlit.

◆ *NOTE* ◆

When performing the calibration with the FIPS MODE set to "ON" in the CONFIG SETTING, a warning message is displayed to indicate that the data transfer rate is slow. Set the FIPS MODE to "OFF" or perform the calibration after wire-line connecting the SE.

1200_400067E.ai

(1) **Click "CALIBRATION" - "SE Calibration".**
The SE Calibration window opens.

(2) **Select the target SE from the drop-down list box.**

(3) **Implement each calibration.**

■ Offset Calibration

Carries out offset calibration.

No exposure is made during offset calibration.

◇ *REFERENCE* ◇

The offset calibration takes place for all of connected SE's.
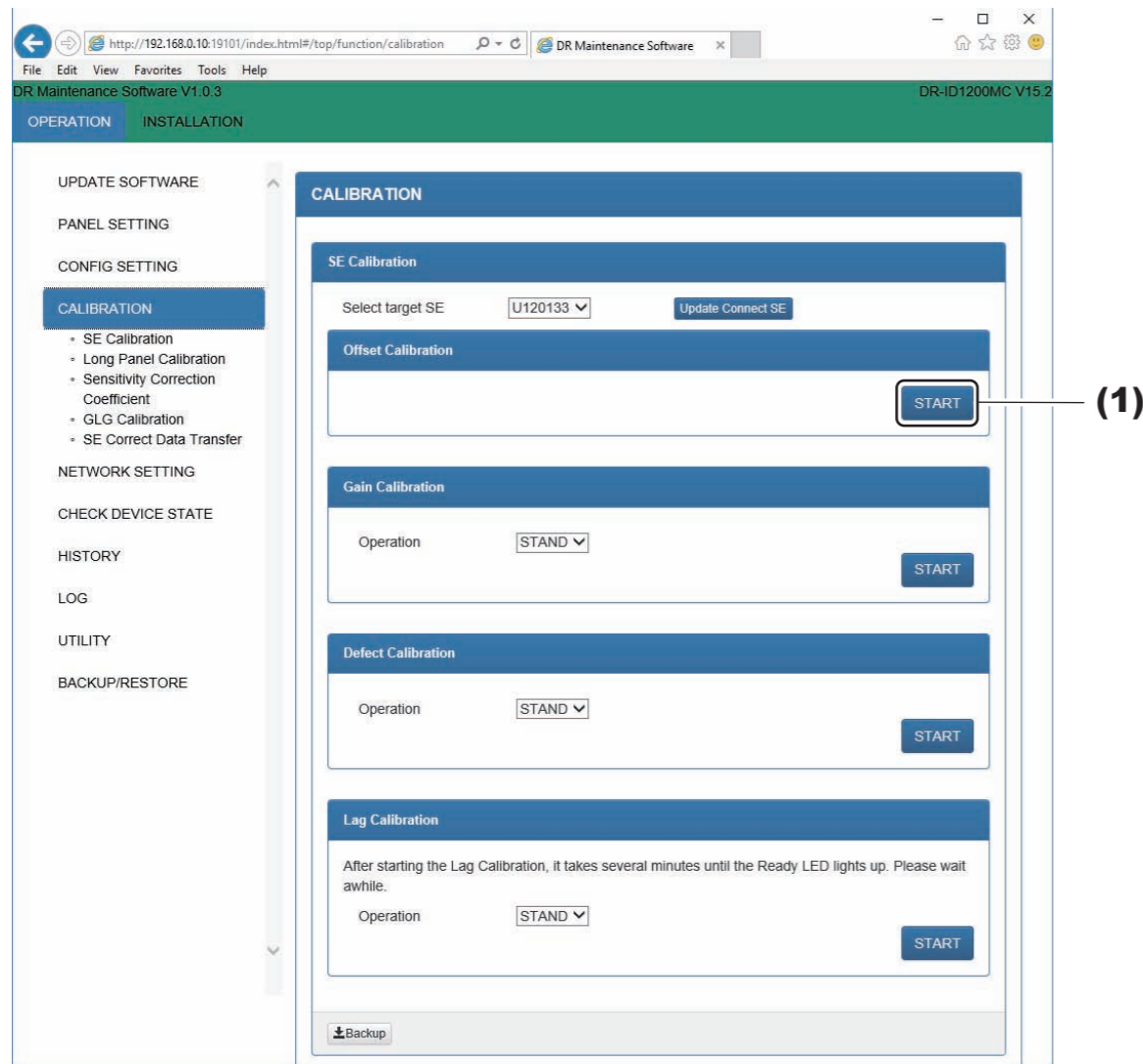
1200_400069E.ai

(1) Click [START].

The offset correction data generation images (4 frames) are read out from the SE (FPD).

If the offset correction data is generated and stored in the HDD, "Succeeded"is displayed on the pop-up window.

◆ *NOTE* ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◇ *REFERENCE* ◇

Whether the diagnosis is successfully completed appears on the result display area.

An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

(2) Click [OK].

■ Gain Calibration

Carries out gain calibration.
- Exposure count: 16

1200_400070E.ai

(1) Select the target operative method from the drop-down list box.

(2) Click [START].

If the exposing preparations are finished, then [Ready] will be displayed on the green button in the pop up window.

◆ NOTE ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◇ REFERENCE ◇

Whether the calibration is successfully completed appears after completion.

An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

◆ NOTE ◆

Before going to the next step (exposure), check that [Ready] is lit up with the green button.

If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

(3) Expose 16 times with the following condition. Confirm that [Ready] lights with the green button at each exposure.

◆ NOTE ◆

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.

1305SE: Tube voltage of 75 kV, dose of 10 mR
The gain correction data generation images (16 frames) are read out from the SE (FPD).

◆ INSTRUCTION ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

When the gain correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.

◆ *NOTE* ◆

If "NG" appeared, check the following.
- Exposure condition
- Exposure field is the entire SE.

◆ *NOTE* ◆

If the calibration failed, restart the MC.

(4) Click [OK].

■ **Defect Calibration**

Carries out defect calibration.
- Exposure count: 5

1200_400071E.ai

(1) **Select the target operative method from the drop-down list box.**

(2) **Click [START].**

If the exposing preparations are finished, then "OK" will be displayed in the results display area.

◆ NOTE ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◇ REFERENCE ◇

Whether the calibration is successfully completed appears after completion.
An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

If the exposing preparations are finished, then [Ready] will be displayed on the green button in the pop up window.

(3) **Expose 5 times with the following condition.**

◆ NOTE ◆

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.

1305SE: Tube voltage of 75 kV, dose of 5 mR
The defect calibration correction data generation images (5 frames) are read out from the SE (FPD).

◆ INSTRUCTION ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◆ NOTE ◆

When performing defect calibration, make sure to have the exposure conditions such as the correct dose setting (kV, mA, msec, SID) for defect correction calibration.
If defect correction calibration is performed by using the exposure conditions for gain correction, a defect is expanded and its size cannot be detected correctly. As a result, because the number of the defects becomes an erroneous value and the defect size is increased more than expected, a calibration error may occur.

When the defect correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.

◆ NOTE ◆

If "NG" appeared, check the following.
- Exposure condition
- Exposure field is the entire SE.

(4) **Click [OK].**

■ Lag Calibration

Carries out lag calibration.
- Exposure count: 1

1200_400072E.ai

(1) Select the target operative method from the drop-down list box.

(2) Click [START].

◆ NOTE ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◇ REFERENCE ◇

Whether the calibration is successfully completed appears after completion.
An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

After about 2 minutes, the [Ready] button will be displayed in green in the pop up window.

◆ NOTE ◆

If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

(3) Expose 1 time with the following condition.

1305SE: Tube voltage of 80 kV, dose of 100 mR
Images for lag correction data generation (7 frames) are read from the SE (FPD).
Images of seven frames are read with a predetermined interval for one exposure.
The number of image reads is displayed in the format of "n/7".

◆ INSTRUCTION ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◆ *NOTE* ◆

- *In the beginning when afterimage calibration is implemented, record the exposing conditions, and subsequently be sure to expose with the same conditions.*
  This is for comparing the afterimage amounts over time, so that SE (FPD) degradation analysis can be done in advance.
- *If 100mR or greater irradiating cannot be performed via conditions with a 80kV tube voltage, and maximum irradiating times of 200 ms, then close the distance between the X-ray tube and the panel as much as possible (to the limit whereas the entire panel will be irradiated by the X-rays).*
  Nevertheless, if 100mR or greater irradiating cannot be performed, raise the tube voltage up to 100kV. With these conditions, if the irradiating is 20mR or greater, implement the afterimage correction calibrating.
  If the aforementioned conditions do not reach 20mR or greater, the afterimage correction calibrating needs to be implemented via another X-ray device.

When the log correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.

◆ *NOTE* ◆

If "NG" appeared, check the following.
- Exposure condition
- Exposure field is the entire SE.

(4) Click [OK].

1.4.2 Long Panel Calibration

Used to make the following calibration on the DR-ID 1305SE.
Refer to the Installation manual for the detailed procedures.

☞ **{IN1:11._Image Calibration}**
☞ **{IN1:12._Marker Calibration}**
- Offset Calibration
- Gain Calibration
- Defect Calibration
- Lag Calibration
- Long Panel Calibration

◆ *INSTRUCTION* ◆

Check to make sure that background calibration (which takes place automatically when the MC is started) is completed before carrying out the following calibration. The image correction data cannot be correctly performed if the calibration takes place while the background calibration is in progress.
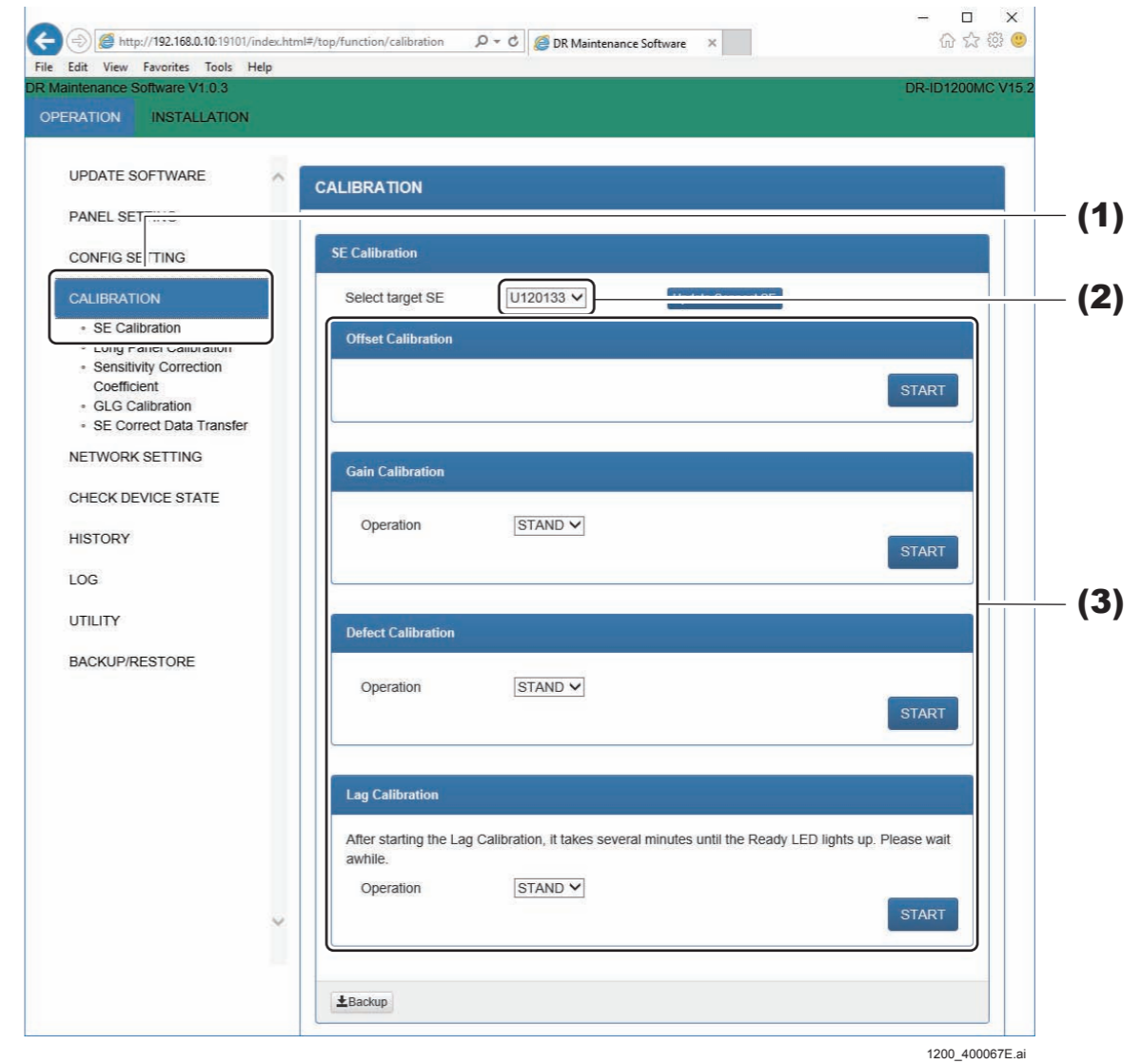- *Offset Calibration*
- *Gain Calibration*
- *Defect Calibration*
- *Lag Calibration*
- *Long Panel Calibration*
You can check whether background calibration is completed on the status lamp "READY" of the SE
- *While background calibration is in progress:*
  "READY" is flashing.
- *While background calibration is not carried out:*
  "READY" is unlit.

◆ *NOTE* ◆

When performing the calibration with the FIPS MODE set to "ON" in the CONFIG SETTING, a warning message is displayed to indicate that the data transfer rate is slow. Set the FIPS MODE to "OFF" or perform the calibration after wire-line connecting the SE.

1300_410001E.ai

(1) Click "CALIBRATION" - "Long Panel Calibration".
The Long Panel Calibration window opens.

(2) Select the target SE from the drop-down list box.

(3) Implement each calibration.

■ Offset Calibration

Carries out offset calibration.
No exposure is made during offset calibration.

◇ *REFERENCE* ◇

The offset calibration takes place for all of connected SE's.

1300_410069E.ai

(1) Click [START].

The offset correction data generation images (4 frames) are read out from the SE (FPD).

If the offset correction data is generated and stored in the HDD, "Succeeded" is displayed on the pop-up window.

◆ NOTE ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◇ REFERENCE ◇

Whether the diagnosis is successfully completed appears on the result display area.

An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

(2) Click [OK].

■ **Gain Calibration**

Carries out gain calibration.
- Exposure count: 16

1300_410070E.ai

(1) Select the target operative method from the drop-down list box.

(2) Click [START].

If the exposing preparations are finished, then [Ready] will be displayed on the green button in the pop up window.

◆ *NOTE* ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◇ *REFERENCE* ◇

Whether the calibration is successfully completed appears after completion.

An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

◆ *NOTE* ◆

Before going to the next step (exposure), check that [Ready] is lit up with the green button.

If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

(3) Expose 16 times with the following condition. Confirm that [Ready] lights with the green button at each exposure.

◆ *NOTE* ◆

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.

1305SE: Tube voltage of 75 kV, dose of 10 mR

The gain correction data generation images (16 frames) are read out from the SE (FPD).

◆ *INSTRUCTION* ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

When the gain correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.

◆ *NOTE* ◆

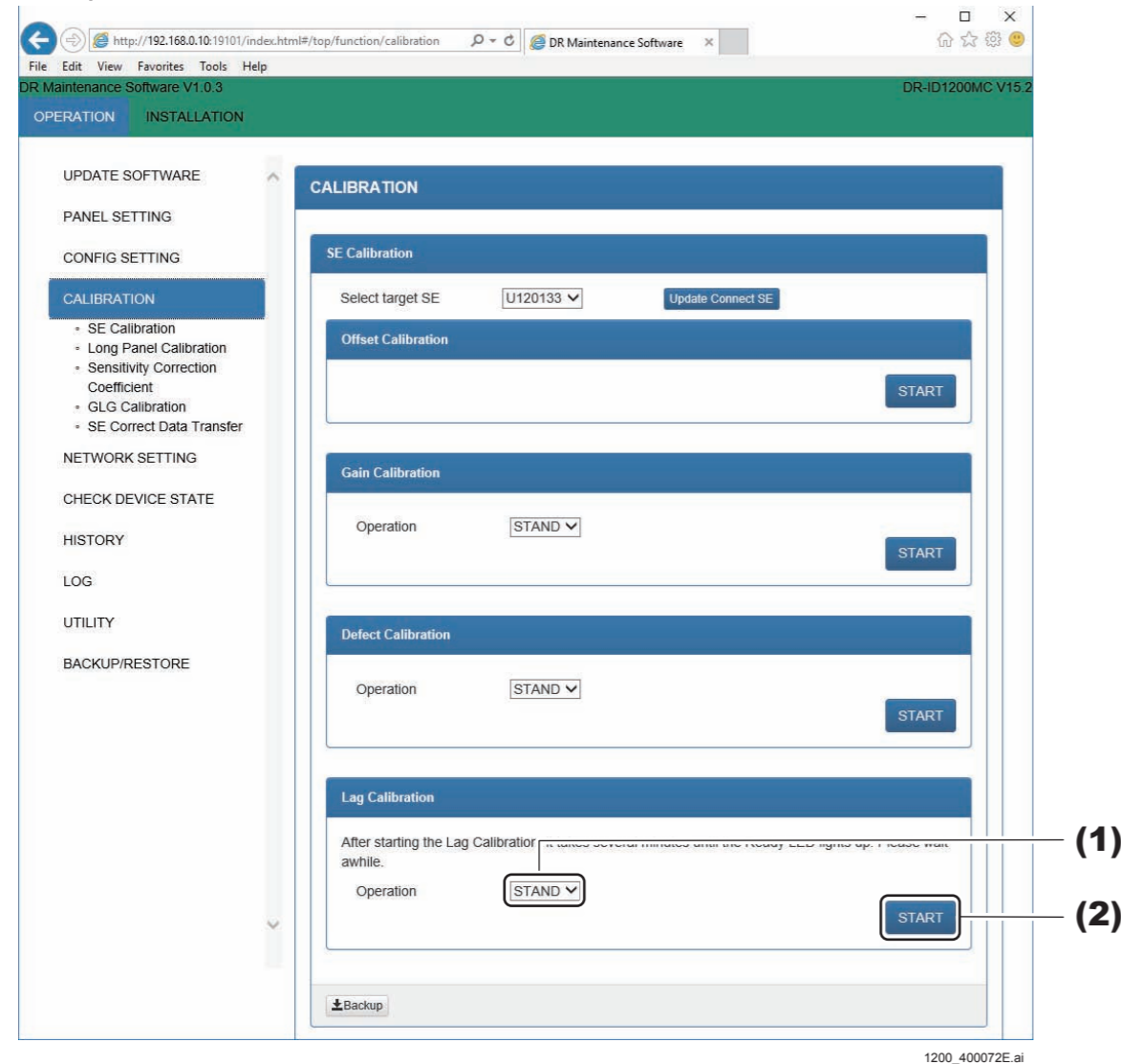*If "NG" appeared, check the following.*
- *Exposure condition*
- *Exposure field is the entire SE.*

◆ *NOTE* ◆

If the calibration failed, restart the MC.

(4) Click [OK].

■ Defect Calibration

Carries out defect calibration.
- Exposure count: 5

1300_410071E.ai

(1) Select the target operative method from the drop-down list box.

(2) Click [START].

If the exposing preparations are finished, then "OK" will be displayed in the results display area.

◆ *NOTE* ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◇ *REFERENCE* ◇

Whether the calibration is successfully completed appears after completion.

An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

If the exposing preparations are finished, then [Ready] will be displayed on the green button in the pop up window.

(3) Expose 5 times with the following condition.

◆ *NOTE* ◆

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.

1305SE: Tube voltage of 75 kV, dose of 5 mR

The defect calibration correction data generation images (5 frames) are read out from the SE (FPD).

◆ *INSTRUCTION* ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◆ *NOTE* ◆

When performing defect calibration, make sure to have the exposure conditions such as the correct dose setting (kV, mA, msec, SID) for defect correction calibration.

If defect correction calibration is performed by using the exposure conditions for gain correction, a defect is expanded and its size cannot be detected correctly. As a result, because the number of the defects becomes an erroneous value and the defect size is increased more than expected, a calibration error may occur.

When the defect correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.

◆ *NOTE* ◆

If "NG" appeared, check the following.
- *Exposure condition*
- *Exposure field is the entire SE.*

(4) Click [OK].

■ **Lag Calibration**

Carries out lag calibration.
- Exposure count: 1

1300_410072E.ai

DR-ID 1300 / DR-ID 1300PU *Service Manual*

(1) Select the target operative method from the drop-down list box.

(2) Click [START].

◆ *NOTE* ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◇ *REFERENCE* ◇

Whether the calibration is successfully completed appears after completion. An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

After about 2 minutes, the [Ready] button will be displayed in green in the pop up window.

◆ *NOTE* ◆

If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

(3) Expose 1 time with the following condition.

1305SE: Tube voltage of 80 kV, dose of 100 mR

Images for lag correction data generation (7 frames) are read from the SE (FPD). Images of seven frames are read with a predetermined interval for one exposure. The number of image reads is displayed in the format of "n/7".

◆ *INSTRUCTION* ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◆ *NOTE* ◆

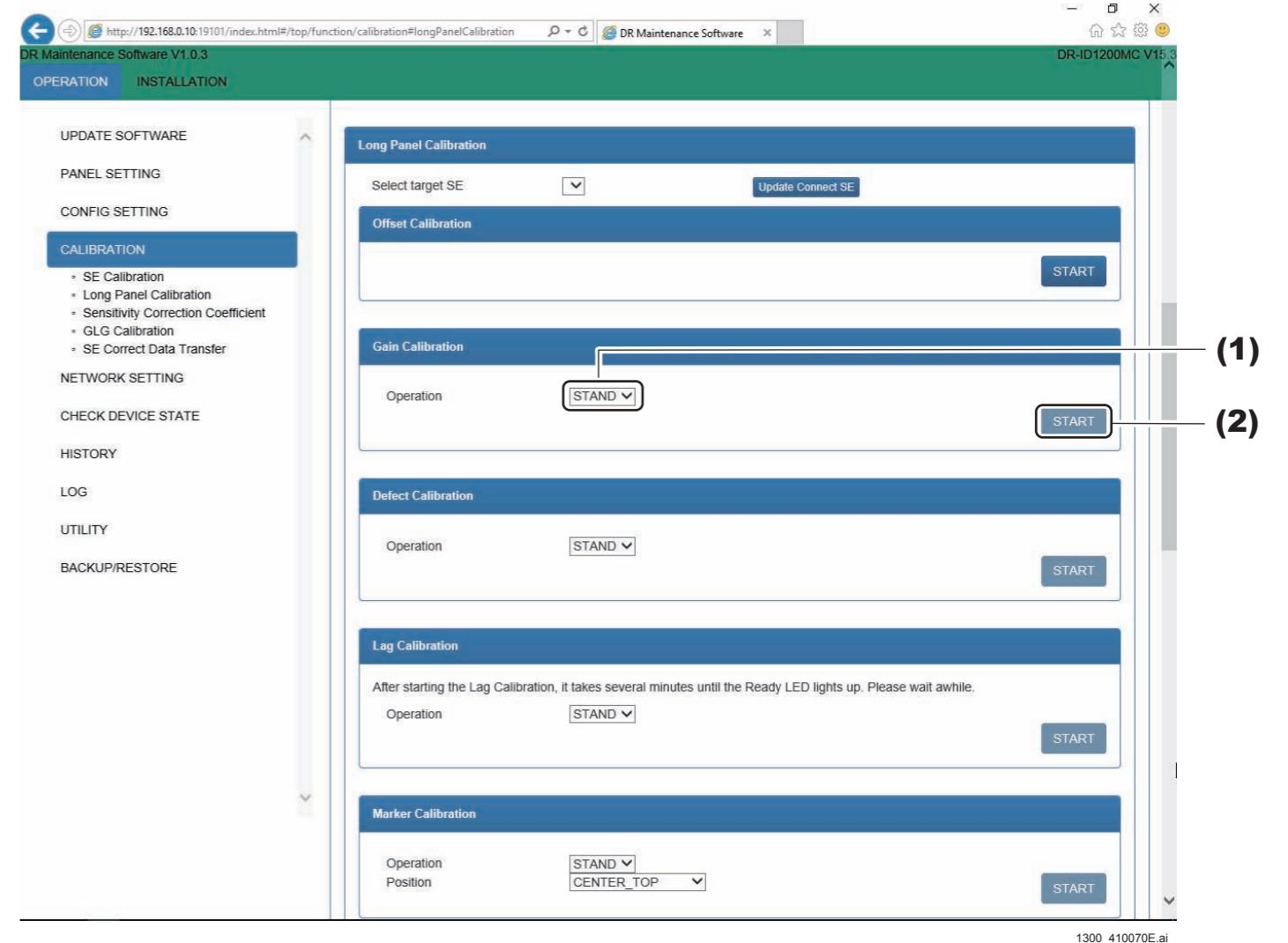- *In the beginning when afterimage calibration is implemented, record the exposing conditions, and subsequently be sure to expose with the same conditions.*
  This is for comparing the afterimage amounts over time, so that SE (FPD) degradation analysis can be done in advance.
- *If 100mR or greater irradiating cannot be performed via conditions with a 80kV tube voltage, and maximum irradiating times of 200 ms, then close the distance between the X-ray tube and the panel as much as possible (to the limit whereas the entire panel will be irradiated by the X-rays).*
  Nevertheless, if 100mR or greater irradiating cannot be performed, raise the tube voltage up to 100kV. With these conditions, if the irradiating is 20mR or greater, implement the afterimage correction calibrating.
  If the aforementioned conditions do not reach 20mR or greater, the afterimage correction calibrating needs to be implemented via another X-ray device.

When the log correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.

◆ *NOTE* ◆

If "NG" appeared, check the following.
- *Exposure condition*
- *Exposure field is the entire SE.*

(4) Click [OK].

■ Marker Calibration

Carries out Marker Calibration.
- Exposure count: 1

1300_410006E.ai
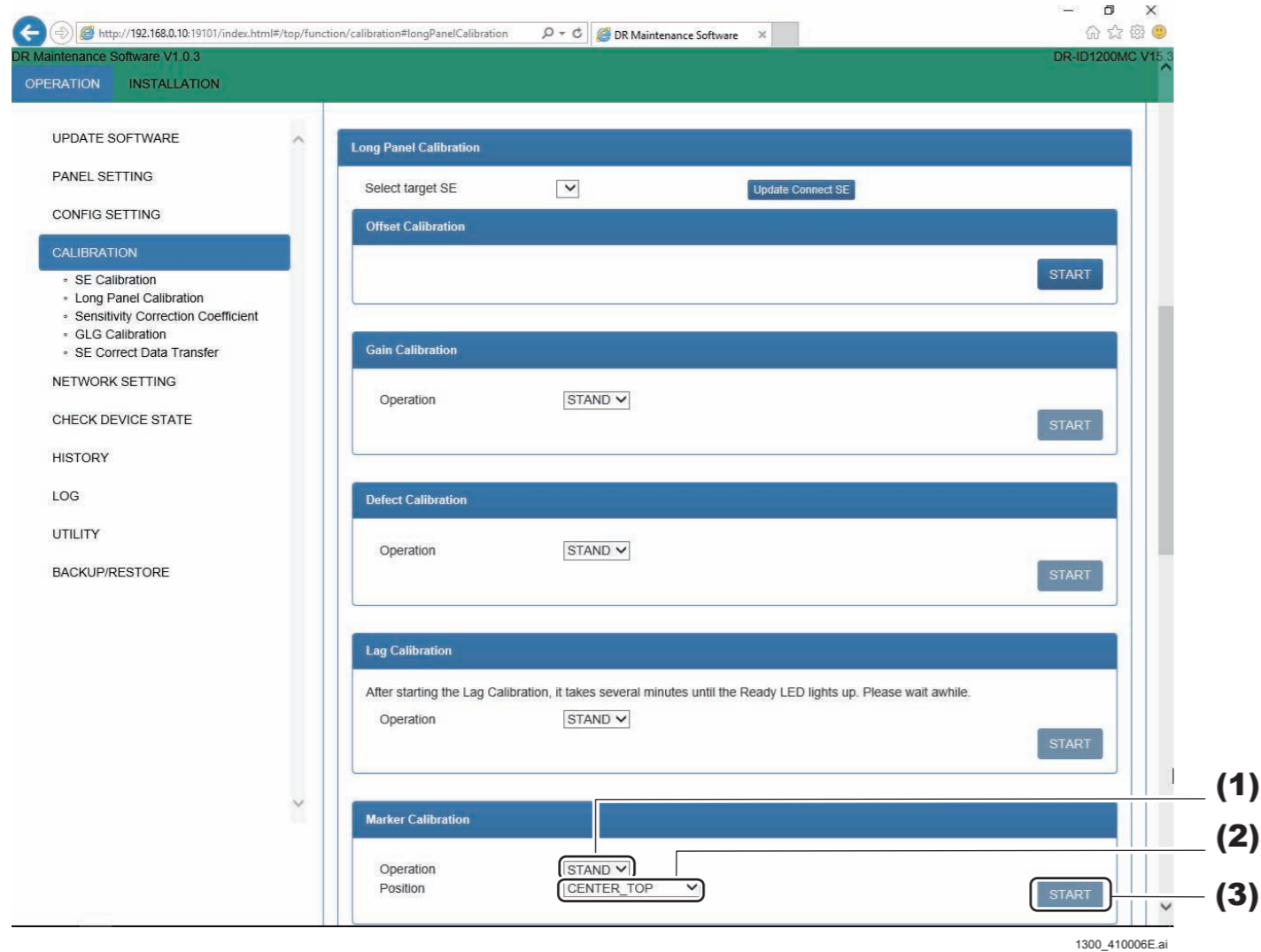
(1) Select the target operative method from the drop-down list box.

(2) Select "CENTER_TOP" in "Position".

(3) Click [START].

If the exposing preparations are finished, then [Ready] will be displayed on the green button in the pop up window.

◆ NOTE ◆

Clicking [START] during automatic offset update (approximately 30 seconds every 10 minutes), "Error 12700 currently unavailable" is displayed. Again click [START] approx. 30 seconds later in this case.

◆ NOTE ◆

Before going to the next step (exposure), check that [Ready] is lit up with the green button.
If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

◆ INSTRUCTION ◆

In regard to procedures, refer to the Installation (IN1) and perform the following items.
- *Installing the Calibration Phantom*
- *Exposing Calibration*
- *Creating Calibration Data and Checking Result*
- *Changing the Calibration Position and Exposing Calibration*
- *Checking the Image Composition Accuracy*

☞ **{IN1:12._Marker Calibration}**

1.4.3   Sensitivity Correction Coefficient

It is used when selecting the target SE and changing the sensitivity correction coefficient.

1200_400073E.ai
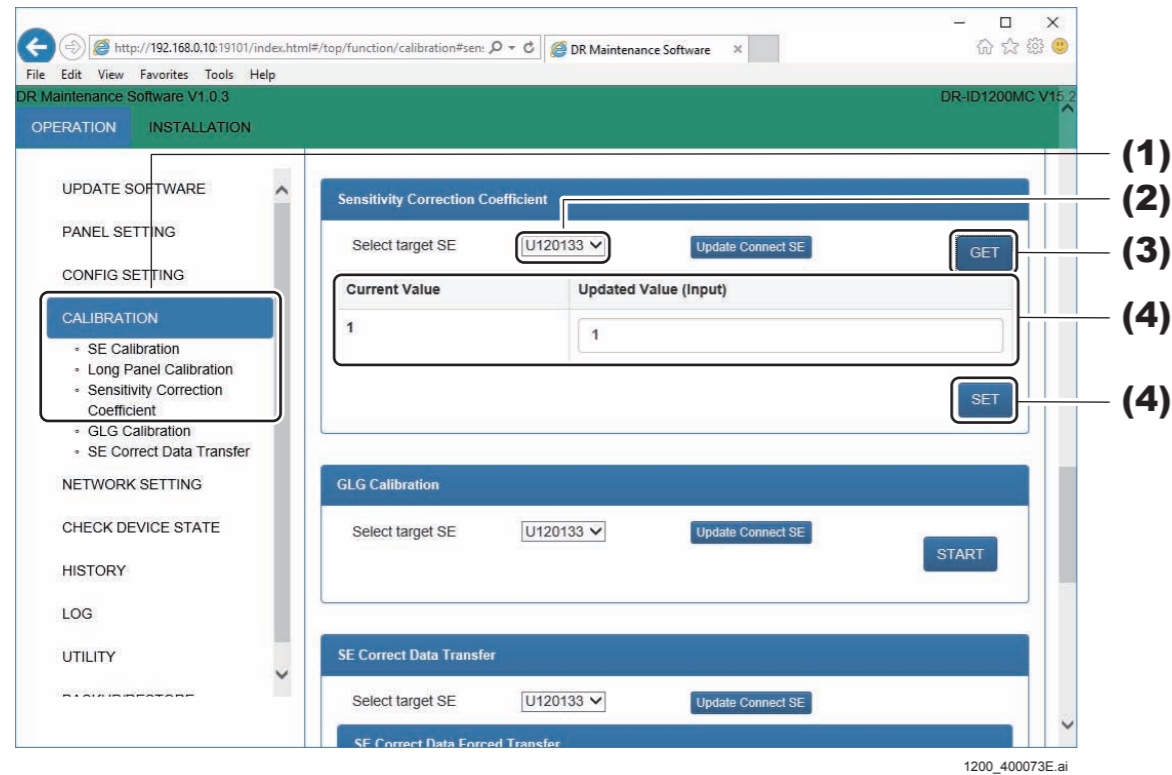
(1) **Click "CALIBRATION" - "Sensitivity Correction Coefficient".**
The Sensitivity Correction Coefficient window opens.

(2) **Select the target SE from the drop-down list box.**

(3) **Click [GET].**
The Sensitivity Correction Coefficient are displayed.

(4) **When making changes, input them in "Updated Value", and click [SET].**
The SE software will be updated with the updated version.

1.4.4   GLG Calibration

Not used in the DR-ID 1300.

Zero point adjustment for the high G sensor (3 directions) is performed. GLG calibration must be performed at the time of replacement of the GLG board.

1200_400074E.ai
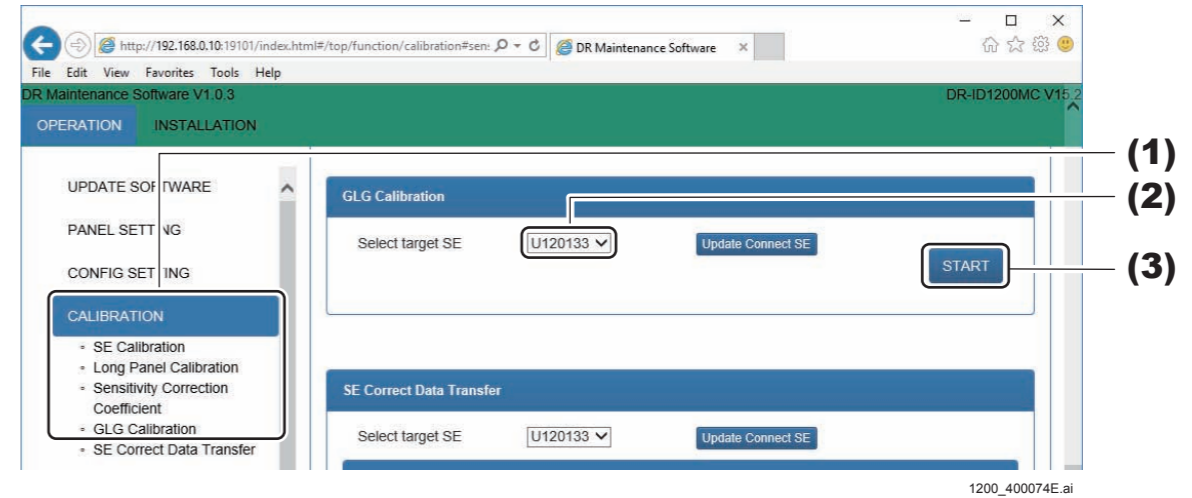
(1) **Click "CALIBRATION" - "GLG Calibration".**
The GLG Calibration window opens.

(2) **Select the target SE from the drop-down list box.**

(3) **Click [START].**
If it is successful the high G sensor 0G output will be acquired, "Succeeded" appears in the pop up window.

(4) **Click [OK].**
The offset value is stored in the FRAM of the GLG board (restart is not required).

◇ *REFERENCE* ◇

After execution of calibration, the actually measured value min us the offset value is stored in the log as the measured value.

1.4.5   SE Correct Data Transfer

It is used to confirm or set the SE correct data.
- SE Correct Data Forced Transfer
- SE Correct Data Save Status
- SE Correct Data Status (Memory)
- SE Correct Data Status (FLASH)

1200_400075E.ai
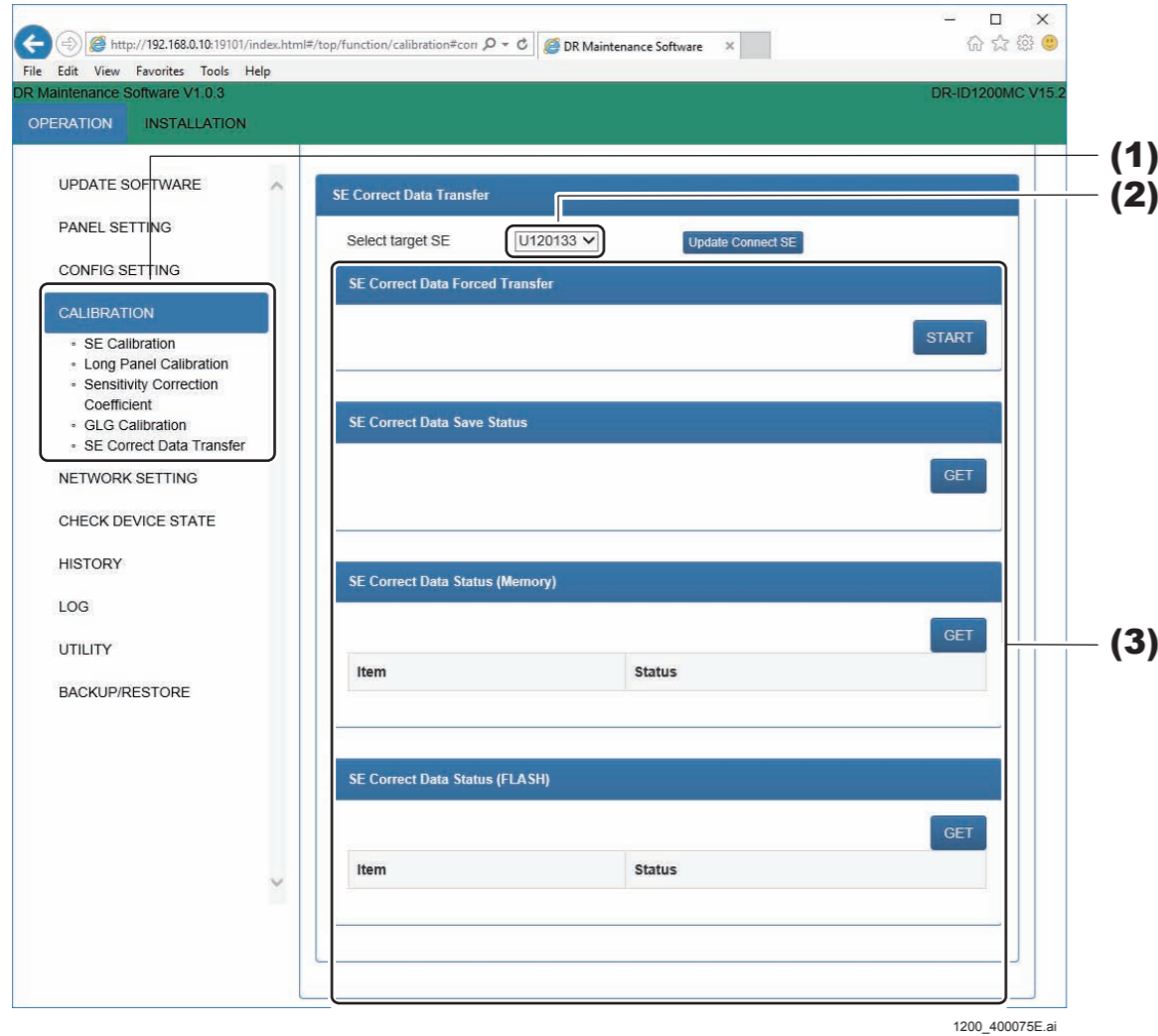
(1) Click "CALIBRATION" - "SE Correct Data Transfer".
The SE Correct Data Transfer window opens.

(2) Select the target SE from the drop-down list box.

(3) Implement the correction data processing.

■ SE Correct Data Forced Transfer

Transfer the SE correct data retained by the MC to the SE.

◆ *INSTRUCTION* ◆

After forcing the transfer of the SE correct data, perform "■ SE Correct Data Forced Transfer" to check the correction data status.

1200_400076E.ai
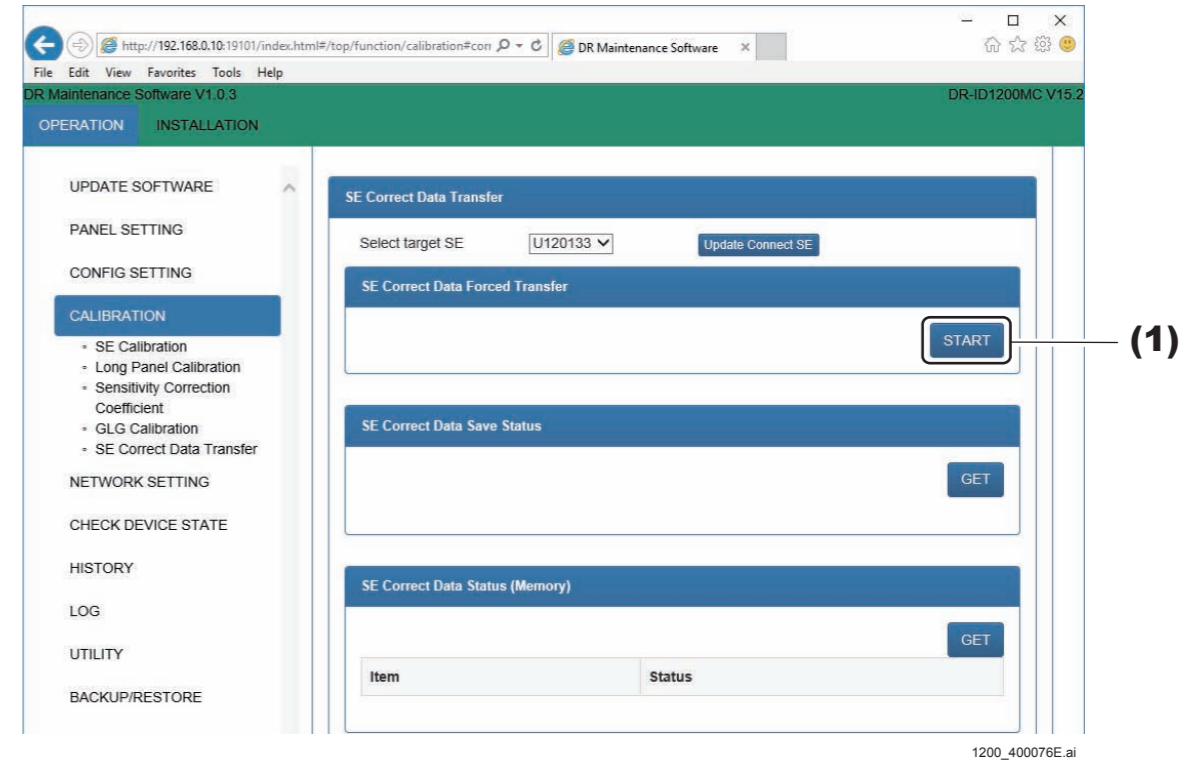
(1) Click [START].
"Succeeded" appears in the pop up window after finishing transfer.

(2) Click [OK].

■ SE Correct Data Save Status

After finishing the full calibration or the SE correct data transfer, check whether the correction data storage has been completed or not.
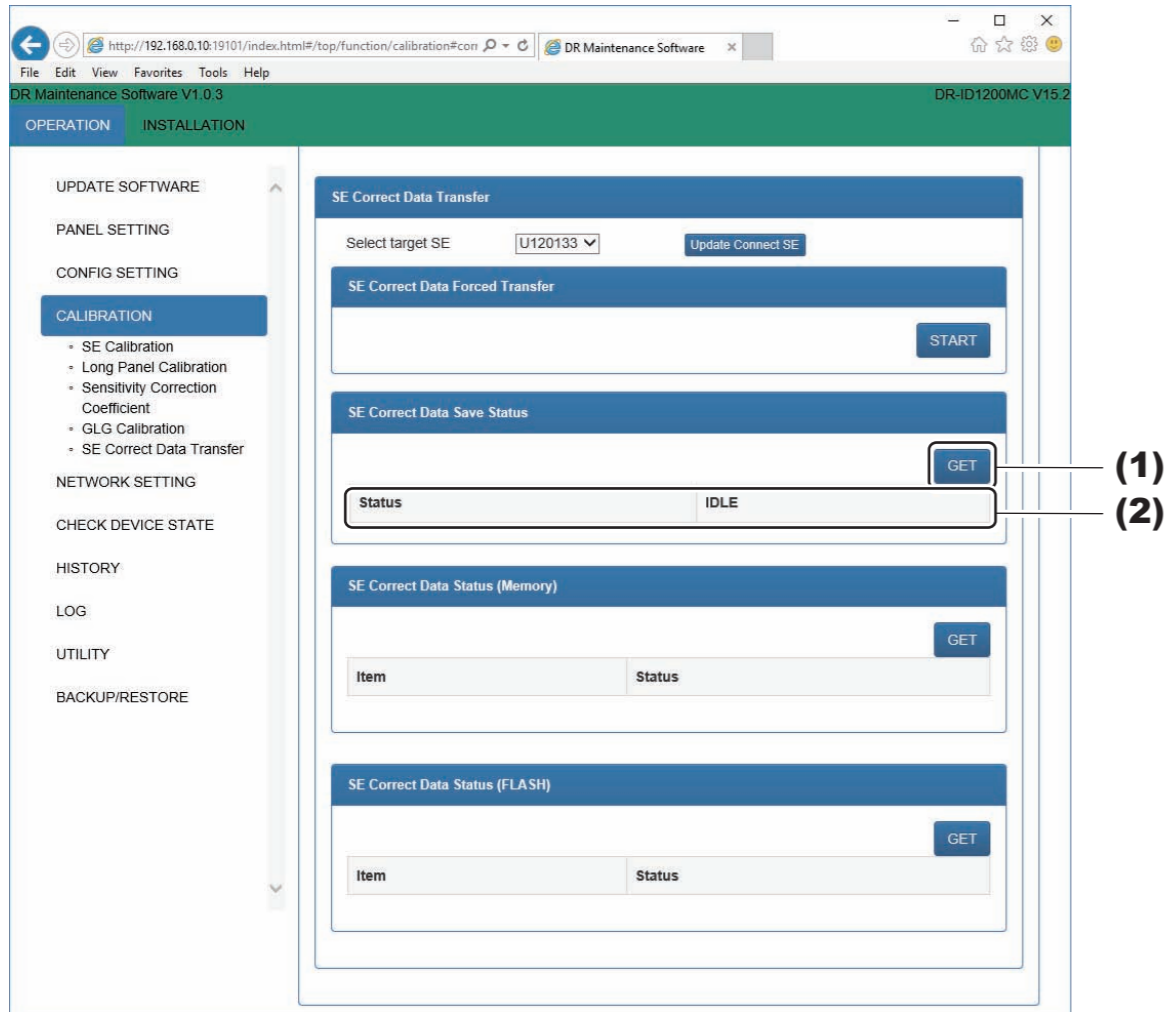
1200_400077E.ai

(1) Click [GET].

Depending upon the saving status, the following will be displayed. Verify that transferring has completed.
"PROCESSING" "COMPLETED" "TRANSFER FAILED"
If the transferring failed, then re-implement a forced transfer of the correction data.

(2) Confirm the correct data save status.

■ SE Correct Data Status (Memory)

Check the list of correct data stored by the memory in the SE.
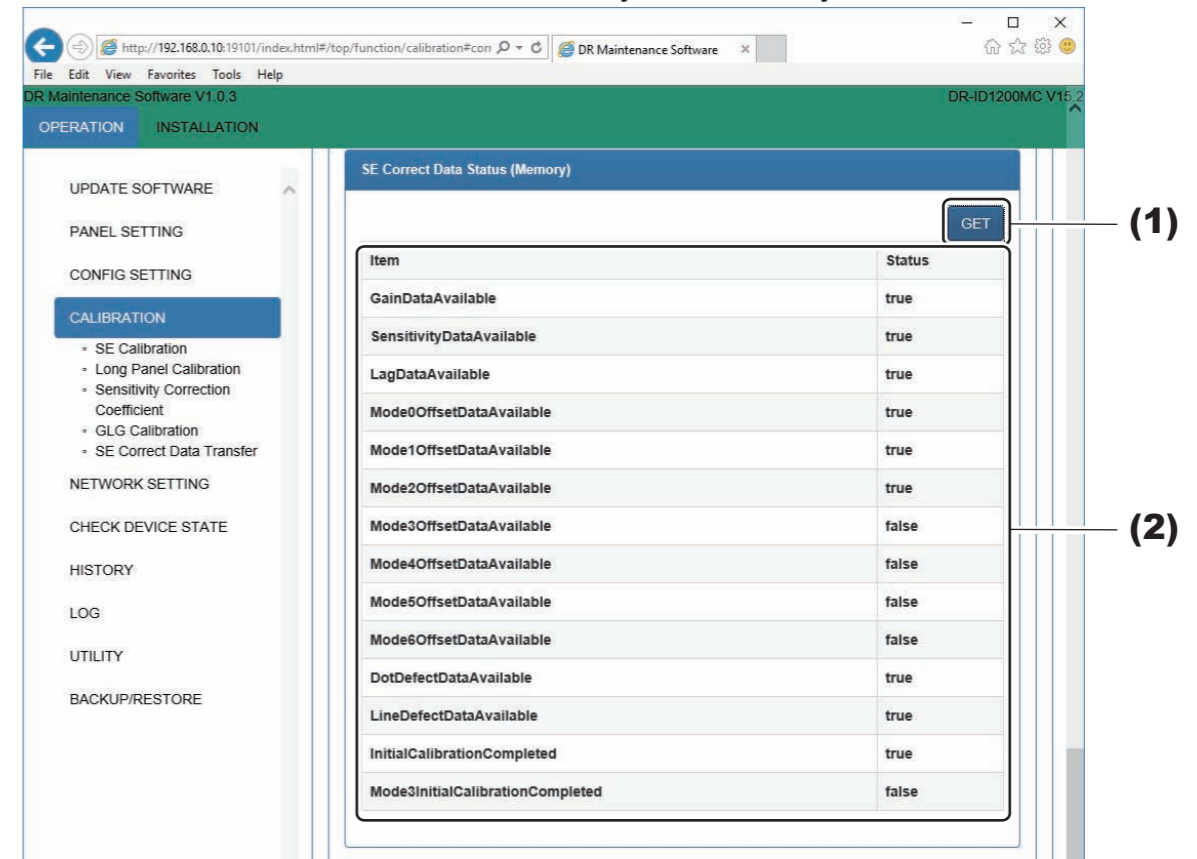
1200_400078E.ai

(1) Click [GET].

The list of correct data is displayed.

(2) Confirm the list of correct data.

◇ *REFERENCE* ◇

- *There is no problem if the list of correct data is displayed as shown below.*
  In addition, the display of the "Mode3OffsetDataAvailable" - "Mode6OffsetDataAvailable" and "Mode3InitialCalibrationCompleted" depends on the setting for the LONG TIME ACCUM MODE. Therefore, there is no problem if "NG" is displayed.

GainDataAvailable	*:true*
SensitivityDataAvailable	*:true*
LagDataAvailable	*:true*
Mode0OffsetDataAvailable	*:true*
Mode1OffsetDataAvailable	*:true*
Mode2OffsetDataAvailable	*:true*
Mode3OffsetDataAvailable	*:true*
Mode4OffsetDataAvailable	*:true*
Mode5OffsetDataAvailable	*:true*
Mode6OffsetDataAvailable	*:true*
DotDefectDataAvailable	*:true*
LineDefectDataAvailable	*:true*
InitialCalibrationCompleted	*:true*
Mode3InitialCalibrationCompleted	*:true*

- *If the initialization calibration has not been completed, "false" is displayed.*

■ Correct Data Status (FLASH)

Check the list of correct data stored in the FLASH of SE.

1200_400079E.ai
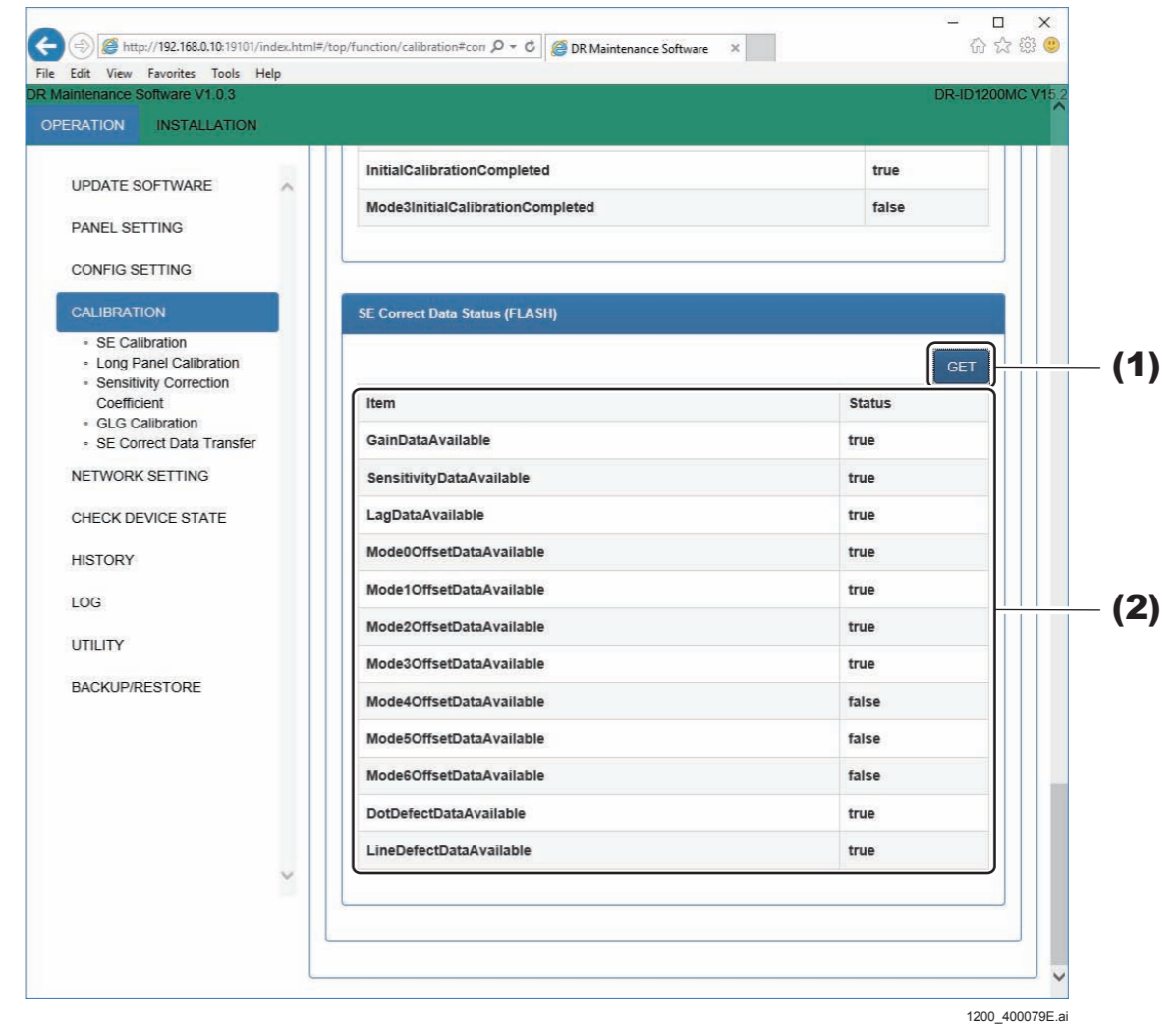
(1) Click [GET].
The list of FLASH correct data is displayed.

(2) Confirm the list of correction data's (FLASH) saving conditions.

1.4.6　Line Defects Data Registration

By using this function, the line defects which are not being detected by the automatic defect calibration can be registered to the calibration subjects. In addition, if there are defects which cannot be dealt with via calibration, a "12231 Defect correction data generation anomaly" error occurs when the FPD is started up.

■ Preparation

(1) **Back up the correction data for the target panel with the DR maintenance software.**

　☞ **{MU1:1.10.1_SE Correct Data Backup/Restore}**

(2) **Click "CONFIG SETTING" - "MC Setting" in the DR Maintenance Software to return the MC rotation setting to the default value.**
　　I.　Click "CONFIG SETTING" - "MC Setting" in the DR Maintenance Software.
　　II.　Set "TABLE DIRECTION HEAD" to the default value (RIGHT).
　　III.　Set "UPRIGHT 180 REVERSE" to the default value (none).
　　IV.　Click [SET] at the bottom of the window.

1200_400062E-1.ai
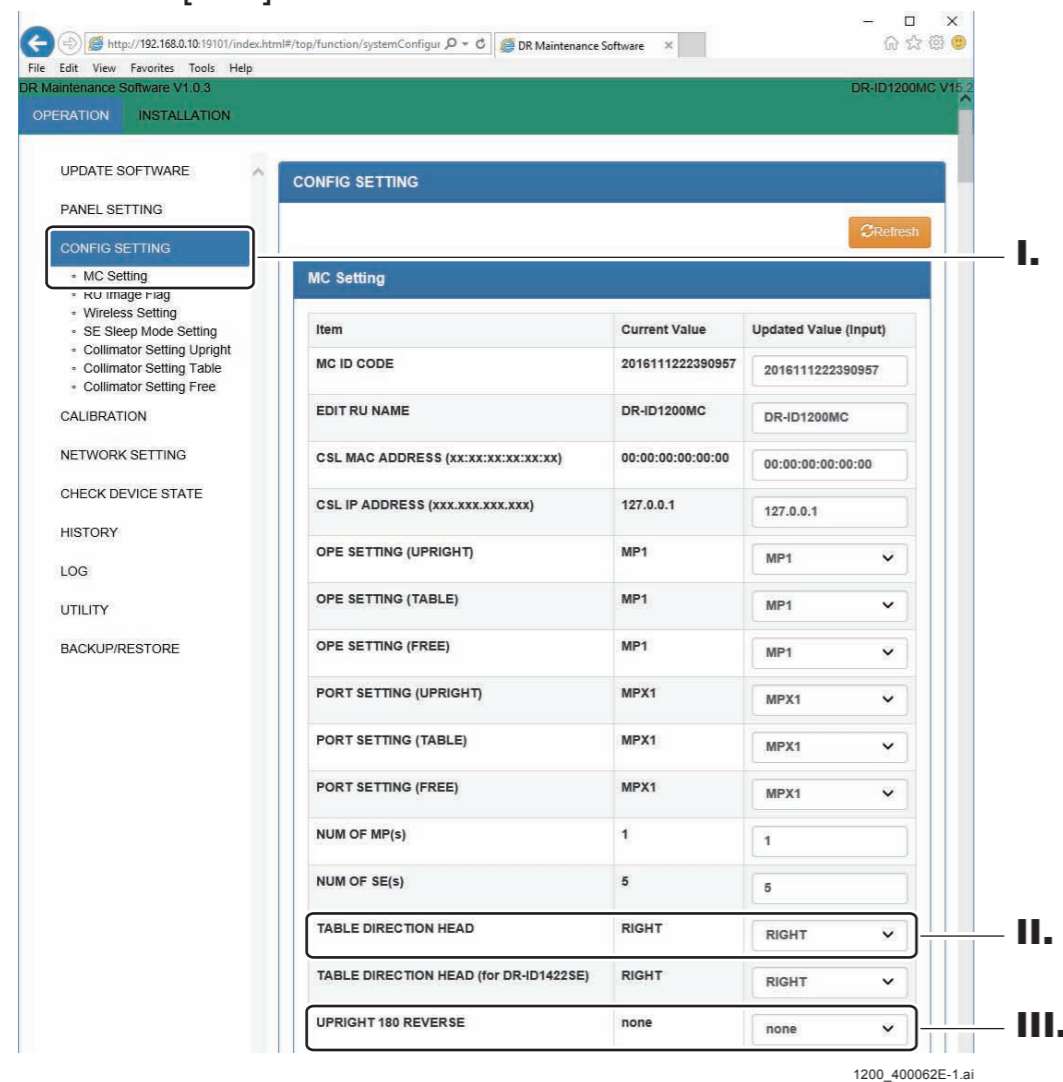
(3) **Download and install the free software ImageJ.**

Search for "ImageJ" with a search engine, or download it at "https://imagej.nih. gov/ij/".

■ Identify the line defect locations

(1) **On the CSL, expose under the following conditions, and identify the images in which the line defects are visible.**

Exposure menu: Sensitivity, Rotation: OFF, Image format: none

(2) **Acquire the image files.**

　● **Image data**
They are in the following folder.
C:\Program Files\Fujifilm\IIP\Data\Image

The image data's file creation dates and times, will be the exposure dates and times. Search for the target files based on the file creation dates and times.

　● **File names**
They are as per the following
Routine numerals.std (Raw data)

◇ *REFERENCE* ◇

The images can also be collected by also implementing the DX image pickup tools which are distributed by the ECN.
If the DX image pickup tools are usable, then use the DX image pickup tools.

(3) Identify the defect locations from the image data.

● **Using ImageJ**
- Start up ImageJ
- Click "File" - "Import" - "Raw", select the image data (std file) (# 1), and click [Open] (# 2).
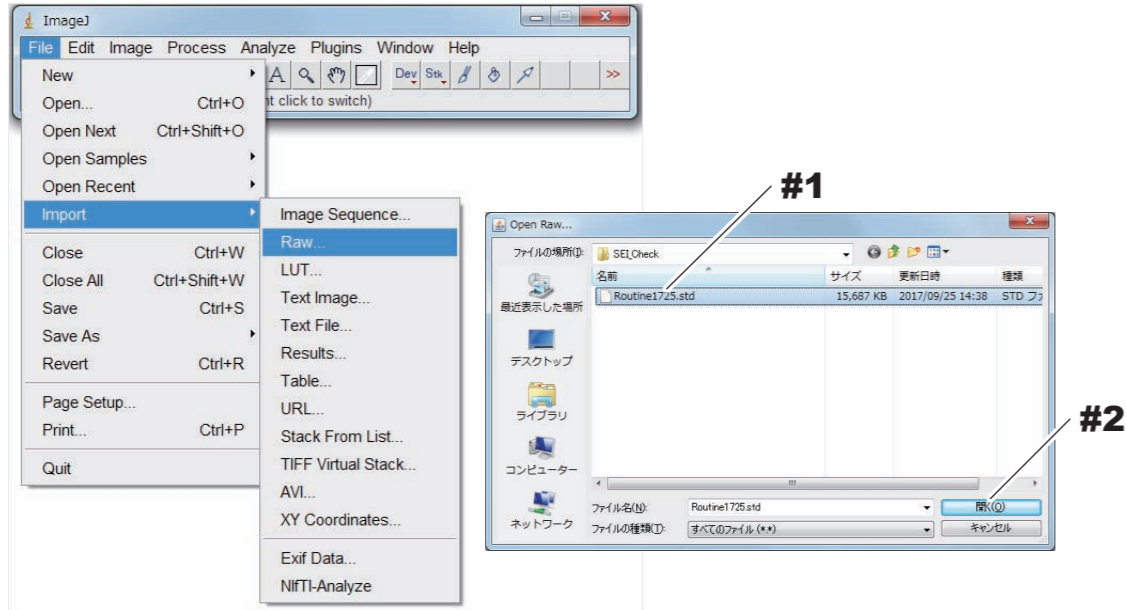
POCX01020D007.ai

- Since the following sub-window will be displayed, set the frame, and click [OK].
Image type: Select 16-bit Unsigned
Width: Varies for each SE size (refer to the following table)
Height: Varies for each SE size (refer to the following table)
White is zero: Check ON
Little-endian byte order: Check ON
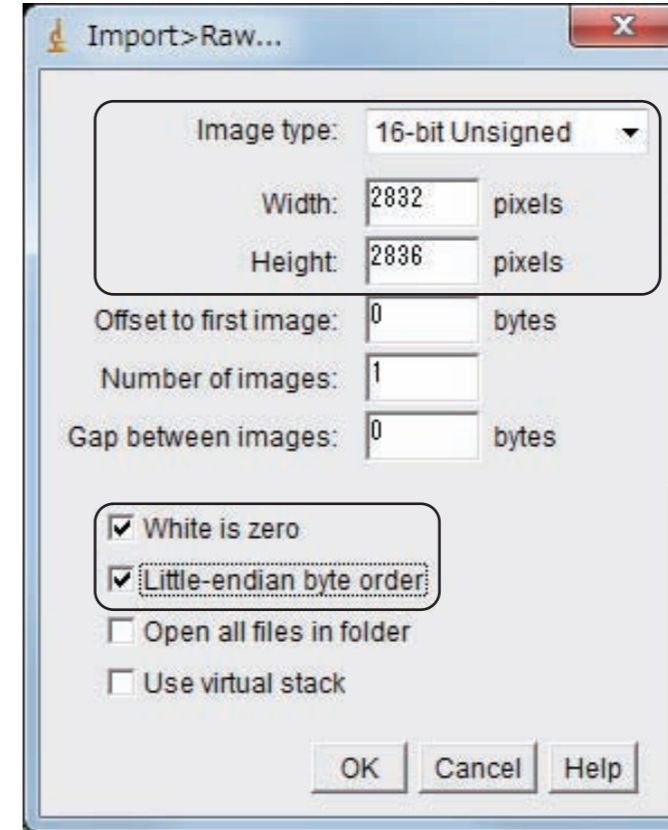
POCX01020D008.ai

Pixel values for each SE size when reading raw data

SE size	Width	Height
17 x 17	2832	2836
14 x 17	2336	2836
10 x 12	1648	1980
24 x 30	1536	1920

● **Read images**

Since the read images information is displayed in the upper left frame of the window, check that the pixel values and Image Type are correct.

Example) 17x17 sized image: 2832 x 2836 Pixels, 16-bit
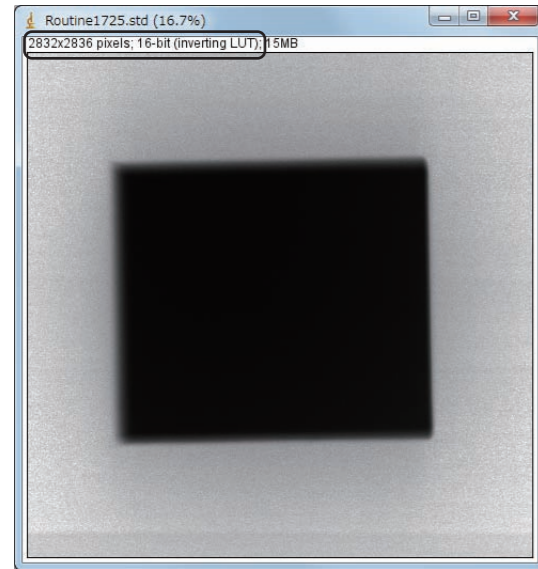
POCX01020D009.ai

No good example)
If the Image Type is incorrect
Read at 8 bits
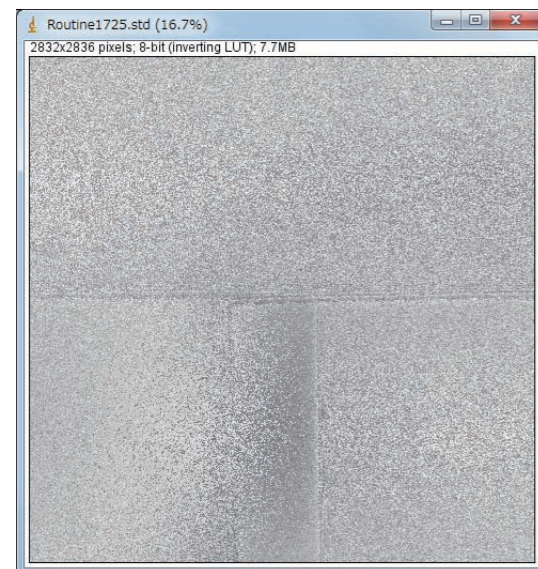
No good example)
If the SE size pixel values are incorrectly input
17x17 is read at 14x17

POCX01020D010E.ai

(4) **Select the Image – Zoom – View 100% menu, and check the line defect locations on the pixel same size images.**

◇ *REFERENCE* ◇

Change the tones in the following menu as need be, to make them easily visible.
Image – Adjust – Brightness/Contrast

By using the "hand" icon, the image display positions can be changed.

(5) **If line defects are found, press the magnify button in the following figure to enlarge and display the line defects up to 600%, and check the line defect coordinate positions.**

◇ *REFERENCE* ◇

The coordinates will be registered if the vertical line defects are x coordinates, and if the horizontal line defects are y coordinates.
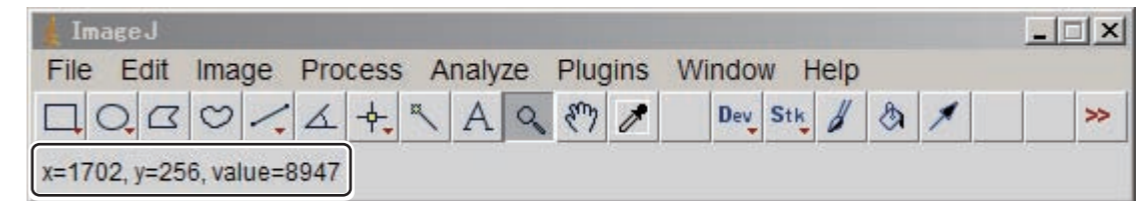
1200_400171.ai

■ Line defects registration

(1) Select "Register line defect data" from the DR Maintenance Software screen's menu on the left.

(2) Click the pull-down menu in "Select target SE", and select the target SE.

◆ NOTE ◆

The SE (FPD) that can be selected in this menu is the SE which is registered in the SE registration. Note that it is not the "SE which is connected".

(3) In the "Enter the vertical line defect X coordinate", or the "Enter the horizontal line defect Y coordinate" text box, enter the line defect coordinates which were confirmed via ImageJ.

◇ REFERENCE ◇

Up to five vertical line defects, and up to five horizontal line defects can be simultaneously registered.

(4) Click [Set].
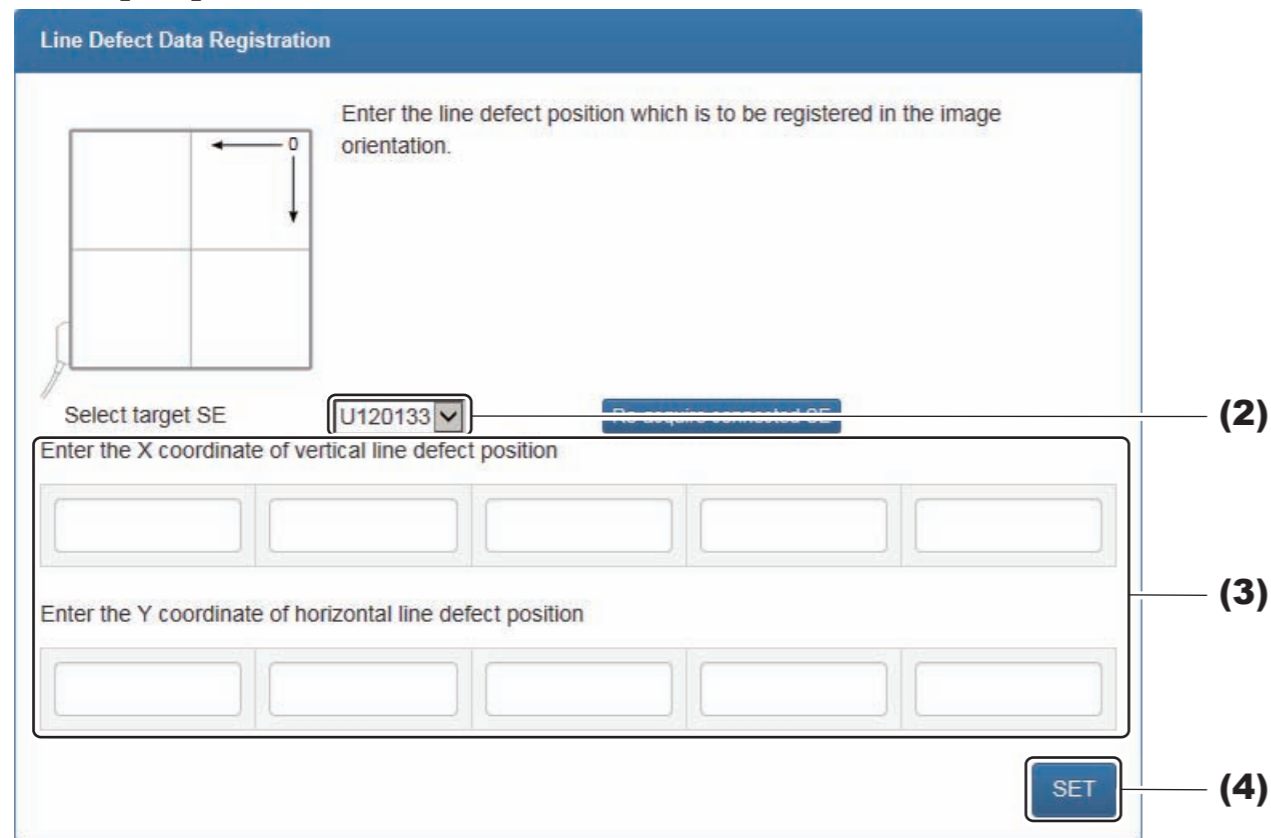
1200_700567.ai

If data registration is successful, the following screen is displayed.

Suceeded

Registering the line defects has succeeded. Perform the following procedures.
1. After the Console is started up, "Shut down the system". (Calibrate when shutting down)
2. After the Console is started up, perform the forced transfer of the SE correction data. Go to 4. for the panels which do not need to perform the forced transferring.
3. After confirming that the correction data has been saved to the flash memory, restart the panel.
4. Check that no errors are generated when the panel is initialized.
5. Confirm that no abnormal images are being exposed, and refer to DV.txt or DH.txt and confirm that the coordinate position x = **** or y = **** is being added.

OK

1200_700568.ai

◇ REFERENCE ◇

If it fails, recheck the FPD connections.
If an overabundance of line defect data are registered is displayed, no more correction data can be registered.

(5) Restart the PC.

(6) Confirm that the PC and CSL are started up, and that the target FPD is being recognized by the CSL.

(7) Select "Complete System" from CSL.

Calibrating will be executed when it is shut down.

(8) Start the PC again.

(9) Start the DR Maintenance Software.

(10) Select the "OPERATION" - "CALIBRATION" - "SE Correct Data Transfer".

(11) Select the target FPD and execute "SE Correct Data Forced Transfer".

☞ **{MU1:1.4.5_SE Correct Data Transfer}**

■ Operation check

(1) Restart the FPD.

At this time, no errors should occur in the FPD initialization.

(2) Do not place any subjects on the FPD, and select the "Image format" exposure menu, and irradiate the X-rays.

At this time, there are not any image anomalies.

(3) Back up the correction data for the target FPD with the DR maintenance software.

(4) Check that the registered coordinates are written in the log files in the backed up correction data.

If there are vertical line defects, refer to DV.txt, and for horizontal line defects refer to DH.txt.

◆ *INSTRUCTION* ◆

If the line defects are registered in incorrect locations, restore the correction data which was obtained in "■ Preparation (1)", and re-execute.

◇ *REFERENCE* ◇

If the line defects with 3 or more lines continue in both the vertical and horizontal directions, or if the intervals between the line defects are 3 lines or less, a 12231 error will occur.

1.4.7　Long Panel Line Defect Data Registration

By using this function, the line defects which are not being detected by the automatic defect calibration can be registered as calibration targets. Also, if there were defects which could not be dealt with by the calibration, a "12231 defect correction data generation error" error will be generated when the FPD is started up.

■ Preparation

☞ **{MU1:1.4.6_Line Defects Data Registration}_"■ Preparation"**

■ Identify the line defect locations

☞ **{MU1:1.4.6_Line Defects Data Registration}_"■ Identify the line defect locations"**

■ Line defects registration

(1) **Select "Long Panel Line Defect Data Registration" from the DR Maintenance Software screen's menu on the left.**

(2) **Click the pull-down menu in "Select target SE", and select the target SE.**

◆ *NOTE* ◆

The SE (FPD) that can be selected in this menu is the SE which is registered in the SE registration. Note that it is not the "SE which is connected".

(3) **In the "Enter the vertical line defect X coordinate", or the "Enter the horizontal line defect Y coordinate" text box, enter the line defect coordinates which were confirmed via ImageJ.**

◇ *REFERENCE* ◇

Up to five vertical line defects, and up to five horizontal line defects can be simultaneously registered.

(4) **Click [Set].**

1300_410016E.ai

If data registration is successful, the following screen is displayed.

Suceeded

Registering the line defects has succeeded. Perform the following procedures.
1. After the Console is started up, "Shut down the system". (Calibrate when shutting down)
2. After the Console is started up, perform the forced transfer of the SE correction data.
Go to 4. for the panels which do not need to perform the forced transferring.
3. After confirming that the correction data has been saved to the flash memory, restart the panel.
4. Check that no errors are generated when the panel is initialized.
5. Confirm that no abnormal images are being exposed, and refer to DV.txt or DH.txt and confirm that the coordinate position x = **** or y = **** is being added.

OK

1200_700568.ai

◇ *REFERENCE* ◇

If it fails, recheck the FPD connections.
If an overabundance of line defect data are registered is displayed, no more correction data can be registered.

(5) Restart the PC.

(6) Confirm that the PC and CSL are started up, and that the target FPD is being recognized by the CSL.

(7) Select "Complete System" from CSL.

Calibrating will be executed when it is shut down.

(8) Start the PC again.

(9) Start the DR Maintenance Software.

(10) Select the "OPERATION" - "CALIBRATION" - "SE Correct Data Transfer".

(11) Select the target FPD and execute "SE Correct Data Forced Transfer".

☞ **{MU1:1.4.5_SE Correct Data Transfer}**

■ **Operation check**

☞ **{MU1:1.4.6_Line Defects Data Registration}_"■ Operation check"**

1.4.8 Dual Panel Line Defect Data Registration

◆ *NOTE* ◆

Not used in the DR-ID 1300.

1.4.9 Point Defect Specifications Excess Area Display

From the log information which is saved in the MC, display the point defect areas that have grown beyond the specifications on the FPD. These point defects are registered in the logs when the defect calibration is performed (when fully calibrating, when finishing calibrating, and when automatic defect calibrating).

Moreover, the point defect areas that are displayed here are corrected by the FPD calibration and may not affect the images.

In addition, the specifications for the point defects are not disclosed.

(1) Select the panel which is desired for displaying the point defect areas.

◇ *REFERENCE* ◇

The FPD that can be selected here is the FPD whose logs are registered in the MC, not the FPD which is currently connected.

(2) Click [Acquire].

1200_700569.ai

The registered point defects are displayed.

The point defects which exceed the point defect agglutination specifications are displayed via "□".

The point defects which exceed the point defect size specifications are displayed via "X".

◇ *REFERENCE* ◇

If there are not any point defects exceeding the specifications, the message stating that there are not any defects exceeding the specifications is displayed.

1.4.10 Long Panel Point Defect Specifications Excess Area Display

From the log information which is saved in the MC, display the point defect areas that have grown beyond the specifications on the FPD. These point defects are registered in the logs when the defect calibration is performed (when fully calibrating, when finishing calibrating, and when automatic defect calibrating).

Moreover, the point defect areas that are displayed here are corrected by the FPD calibration and may not affect the images.

In addition, the specifications for the point defects are not disclosed.

(1) Select "Long Panel Point Defect Specifications Excess Area Display" from the DR Maintenance Software screen's menu on the left.

(2) Select the panel which is desired for displaying the point defect areas.

◇ *REFERENCE* ◇

The FPD that can be selected here is the FPD whose logs are registered in the MC, not the FPD which is currently connected.

(3) Click [Acquire].
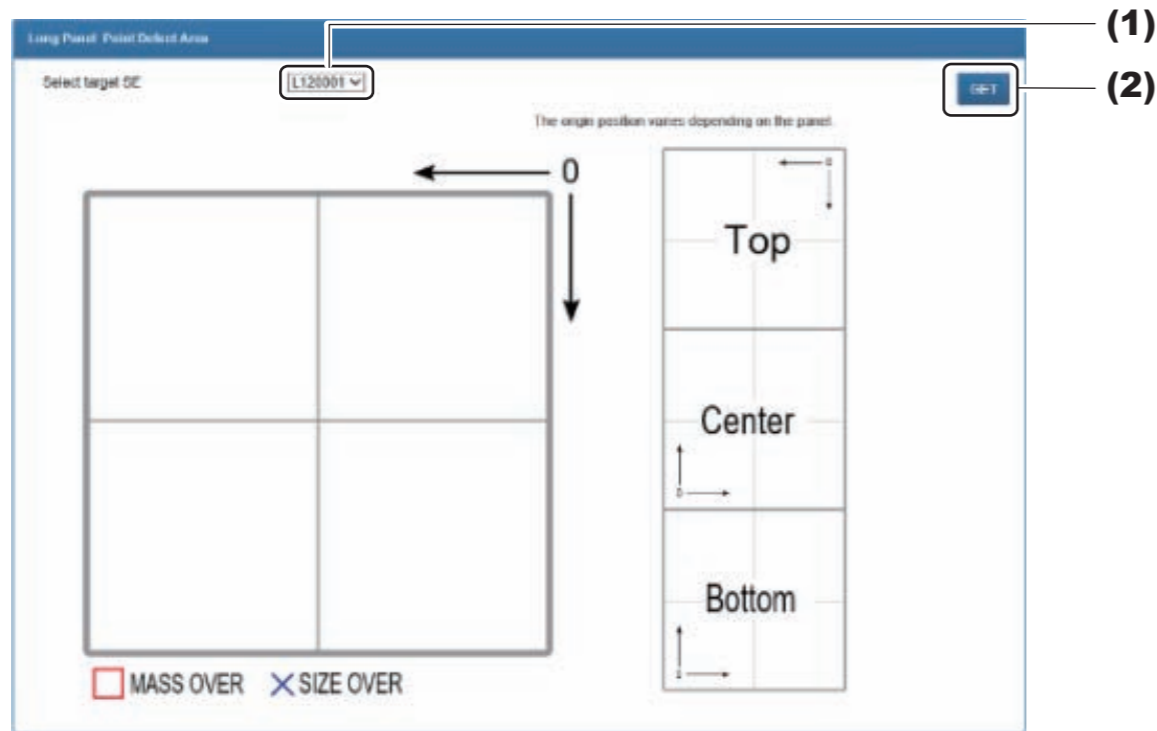
1300_410017E.ai

The registered point defects are displayed.

The point defects which exceed the point defect agglutination specifications are displayed via "□".

The point defects which exceed the point defect size specifications are displayed via "X".

◇ *REFERENCE* ◇

If there are not any point defects exceeding the specifications, the message stating that there are not any defects exceeding the specifications is displayed.

1.4.11 Dual Panel Point Defect Specifications Excess Area Display

◆ *NOTE* ◆

Not used in the DR-ID 1300.

1.5 NETWORK SETTING

Used to set and check the IP addresses and to measure wireless communication rate.

◆ *INSTRUCTION* ◆

The segment No. of the network address must be set to the same value among the MC, MP, SE and AP. If different network address values are set, the network among the machines might get disconnected. Initialization of the machines might be needed in such a case.

How far in the IP address the network address indicates depends on the setting of the subnet mask. The default value of the subnet mask of the machine is 255.255.255.0, and locations assigned by 255 (mask value areas) indicate the network address.

Segment No.

192.168.0.0

Network address

Host address

DRID600_G0070.ai

■ MC ETH0 and MC ETH1

MC ETH0 indicates the network setting between the MC and CL, and MC ETH1 indicates the network setting between the MC and MP.
The connection diagram of the MP/MC/CL and default IP addresses are shown below.

MP

MC/CL

192.168.0.20 — ETH1 — 192.168.0.10

ETH0

172.16.1.20

DRID600_G0142.ai

1.5.1   Local Network

Input the set value when the IP address of the local network is to be changed. To make the changed set value effective, the set value needs to be enabled (setting executed) respectively for the SE, MP and MC.

⚠ **CAUTION**

Enable the set value in the order of the SE, MP, DS, AP and MC to make them effective. If a wrong order is taken, the setting does not get effective, and might result in need of initializing the machine.

◆ *INSTRUCTION* ◆

If the segment No. of the network address is changed, the network address of the access point (AP) must be changed to include the same segment No. If the network address of the access point differs, wireless connection of the SE cannot be made.

1200_400111E.ai

(1) **Click [NETWORK SETTING].**
The NETWORK SETTING window opens.

(2) **If the Network Address Field and the MC Subnet Mask are to be changed, change the input values.**
In order to activate the changed setting values, the respective SEs, MPs, and MCs need to be activated (settings implemented).

(3) **Implement the network settings pertaining to the respective SEs, MPs, and MCs.**

◆ *NOTE* ◆

After setting, implement "■ Restarting the config and checking the setting effected".
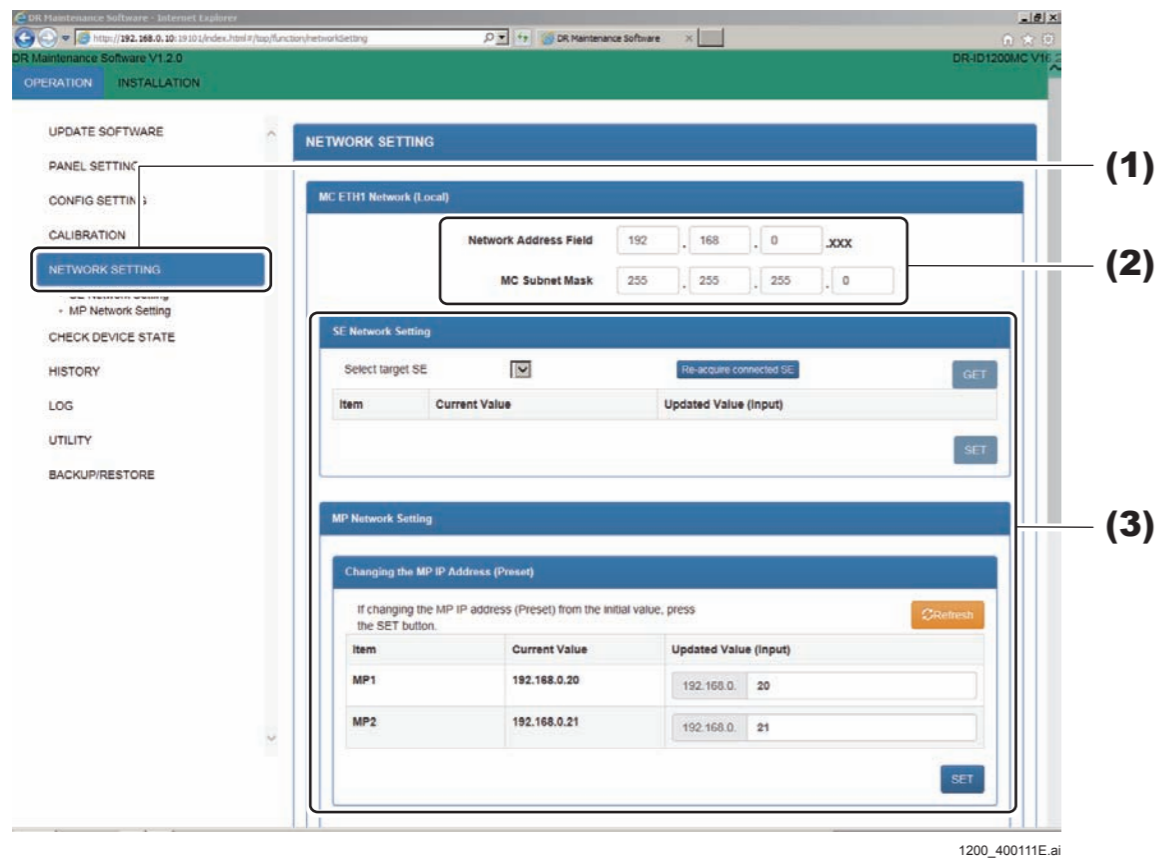
■ SE Network Setting

Set the SE's IP address.

⚠ *CAUTION*

Enable the set value in the order of the SE, MP, DS, AP and MC to make them effective. If a wrong order is taken, the setting does not get effective, and might result in need of initializing the machine.

<Enabling the set value (SE)>

◆ **INSTRUCTION** ◆

Connect only one SE when enabling the set value (SE). Otherwise, the SE whose IP address is changed cannot be identified, and might result in need of initializing the SE.

1200_400112E.ai

(1) **Click "NETWORK SETTING" - "SE Network Setting".**
The SE Network Setting window opens.

(2) **Select the target SE from the drop-down list box.**

(3) **Click [GET].**
The IP Address of the SE (wired wireless) are displayed.

(4) **When making changes, input them in "Updated Value", and click [SET].**
The IP Address of the SE will be updated.

(5) **Remove the battery pack from the SE.**

(6) **Disconnect the SE cable from the SE.**

(7) **If an unspecified SE exists, repeat procedures (2) to (6).**

(8) **Reinstall the SE cable and battery pack on the SE whose setting has been completed.**
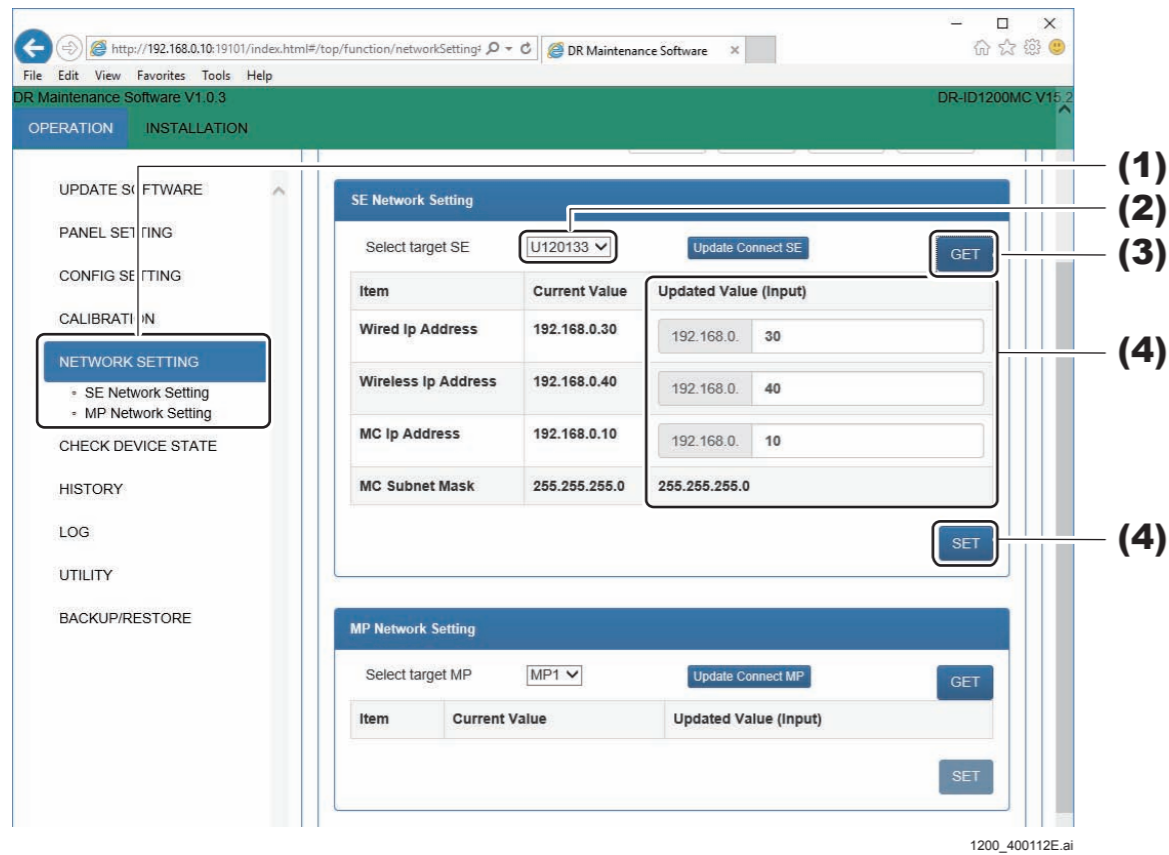
■ MP Network Setting

● Changing the MP IP Address (Preset)

Set the MP's IP address.

⚠ *CAUTION*

Enable the set value in the order of the SE, MP and MC to make them effective.
If a wrong order is taken, the setting does not get effective, and might result in need of initializing the machine.

1200_400113E.ai
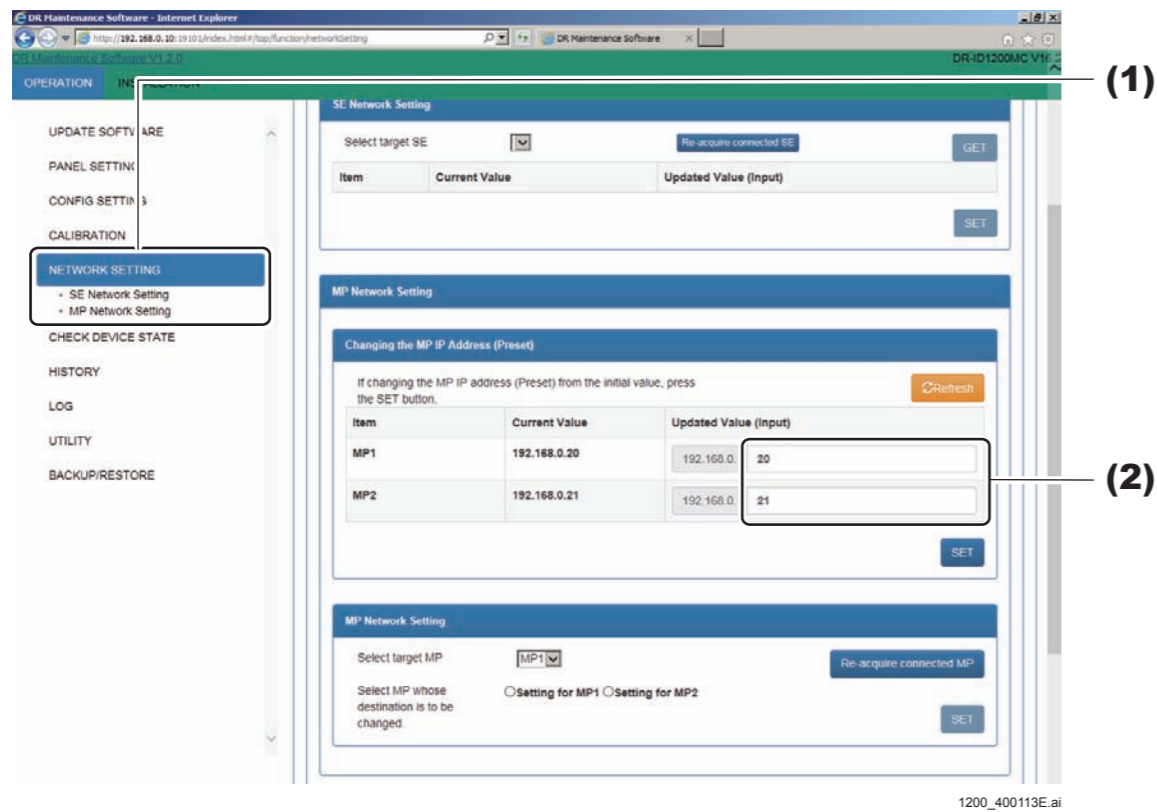
(1) **Click "NETWORK SETTING" - "MP Network Setting".**
The MP Network Setting window opens.

(2) **When making changes, input them in "Updated Value", and click [SET].**
The IP Address of the MP will be updated.

(3) **Turn OFF the power of the MP, and then turn it ON again.**

(4) **Left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".**

● Changing the MP's IP addresses (MP2 settings)

If two MPs are going to be connected, change and set MP1 as MP2.

1200_400170E.ai

(3)

(4)

(4)

(5)
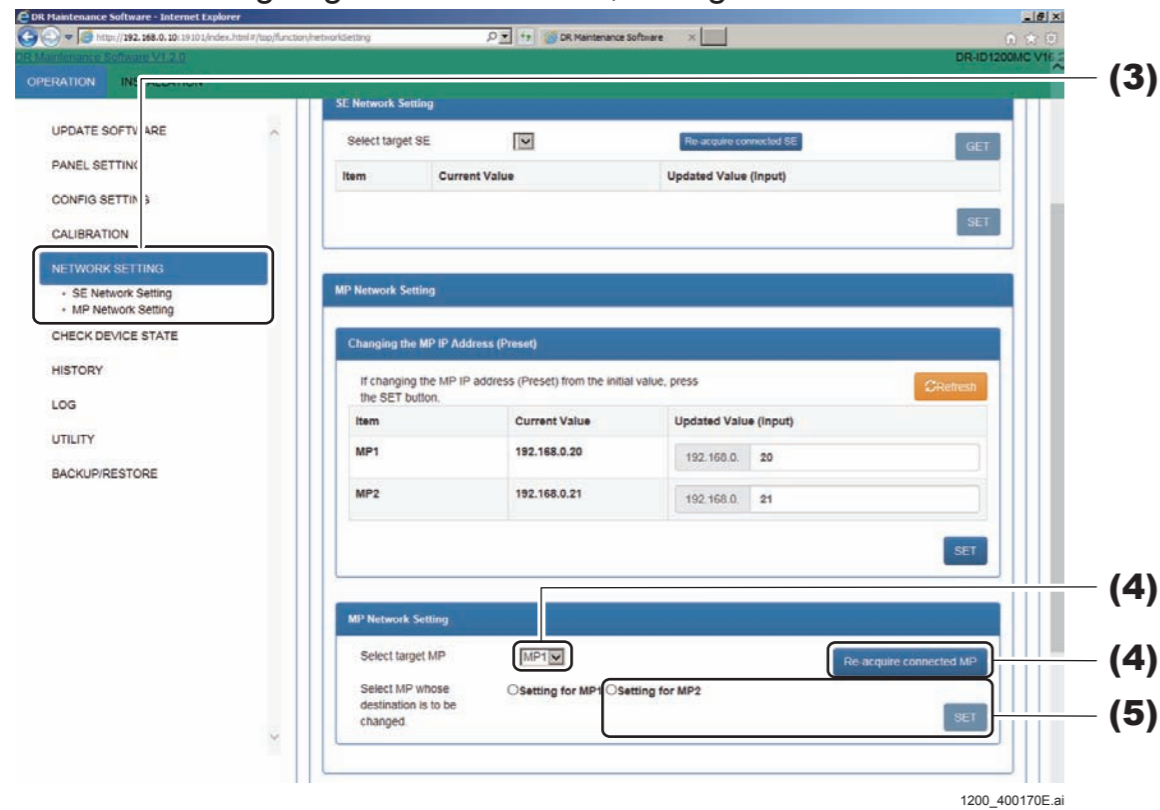
(1) **Turn OFF the power of the first MP.**

(2) **Turn ON the power of the second MP.**

(3) **Click "NETWORK SETTING" - "MP Network Setting".**

The MP Network Setting window opens.

(4) **Select "MP1" from the drop-down list box, and click [Re-acquire connected MP].**

(5) **Select "Setting for MP2", and click [SET].**

The MP2 IP address which was input via "Changing the MP's IP addresses (presets)" will be enabled, and at the same time MP1 will be set as MP2.

(6) **Turn OFF the power of the MP, and then turn it ON again.**

(7) **Left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".**

◇ *REFERENCE* ◇

The relationship between the target MP and "Select MP whose destination is to be changed." radio button is mentioned below.

● *Target MP: MP1*
- *Setting for MP1*
  Set the IP address of the MP1 as the MP1 value input in "Changing the MP IP Address (Preset)".
- *Setting for MP2*
  Change the setting of the MP1 to the MP2.
  The MP2 value input in "Changing the MP IP Address (Preset)" gets effective.

● *Target MP: MP2*
- *Setting for MP1*
  Change the MP set as the MP2 to the MP1.
  Not in use usually.
- *Setting for MP2*
  Change the IP address of the MP2.
  Set the IP address of the MP2 to the MP2 value input in "Changing the MP IP Address (Preset)".

■ MC ETH1 Network Setting

Set the following MC addresses.
- IP Address (Default: 192.168.0.10)
- Subnet Mask (Default: 255.255.255.0)

⚠ *CAUTION*

Enable the set value in the order of the SE, MP and MC to make them effective.
If a wrong order is taken, the setting does not get effective, and might result in need of initializing the machine.


1200_400114E.ai
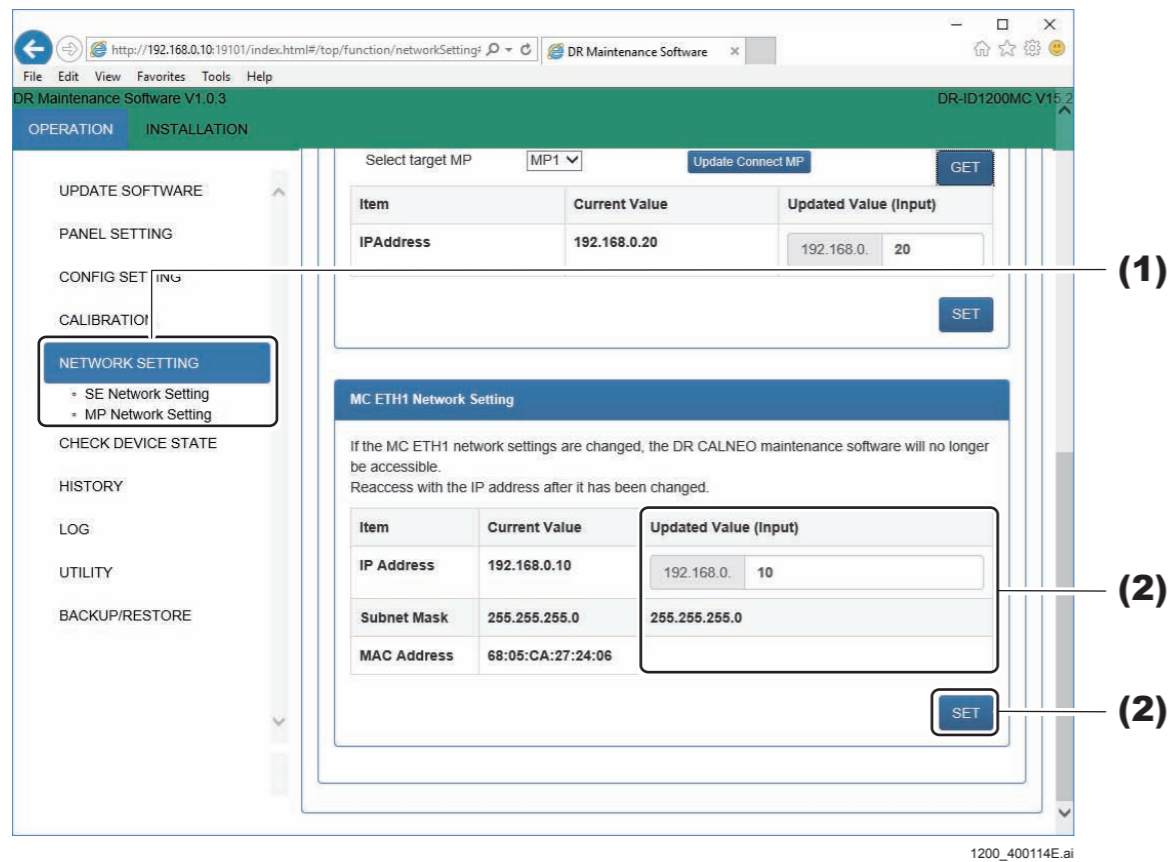
(1) Click "NETWORK SETTING" - "MC ETH1 Network Setting".
The MC ETH1 Network Setting window opens.

(2) To change the addresses, enter the "Updated Value", and click [SET].
The IP Address of the MC will be updated.

■ Restarting the config and checking the setting effected
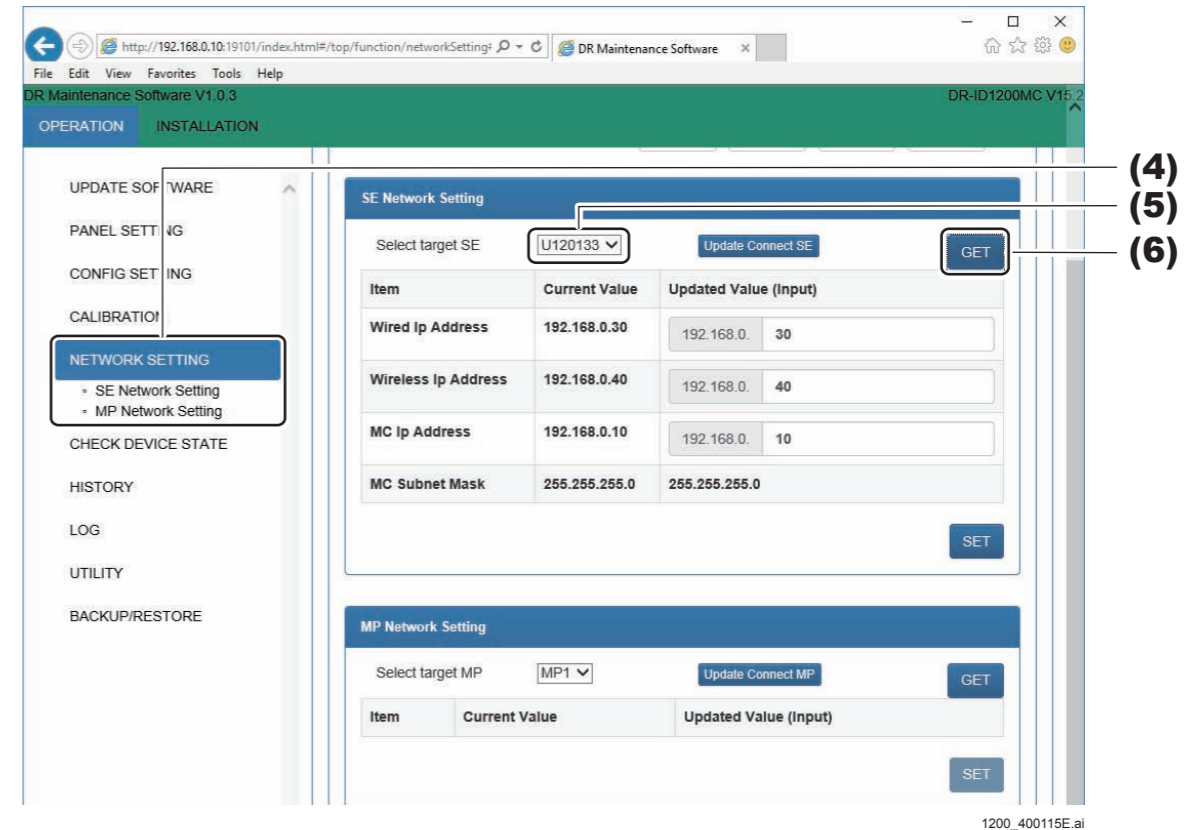
1200_400115E.ai

(1) Turn OFF the power in the order named of the CL, MC and MP.

(2) Turn ON the power in the order named of the MP, CL and MC.

(3) Start up the MUTL.

(4) Click [NETWORK SETTING] and click [SE Network Setting].
The SE Network Setting window opens.

(5) Select the target SE from the drop-down list box.

(6) Click [GET].
Check that the IP address of the SE has been changed.

◇ *REFERENCE* ◇

If you confirm the IP address of the SE, you can determine that the change in settings of the MP and the MC normally ends. This is because connection of the SE can be confirmed only when connection between the MC and the MP is normal.

1.6   CHECK DEVICE STATE

1.6.1   Check Version

Check the version in MC, MP, SE.

■ Check MC Version

1200_400080E.ai
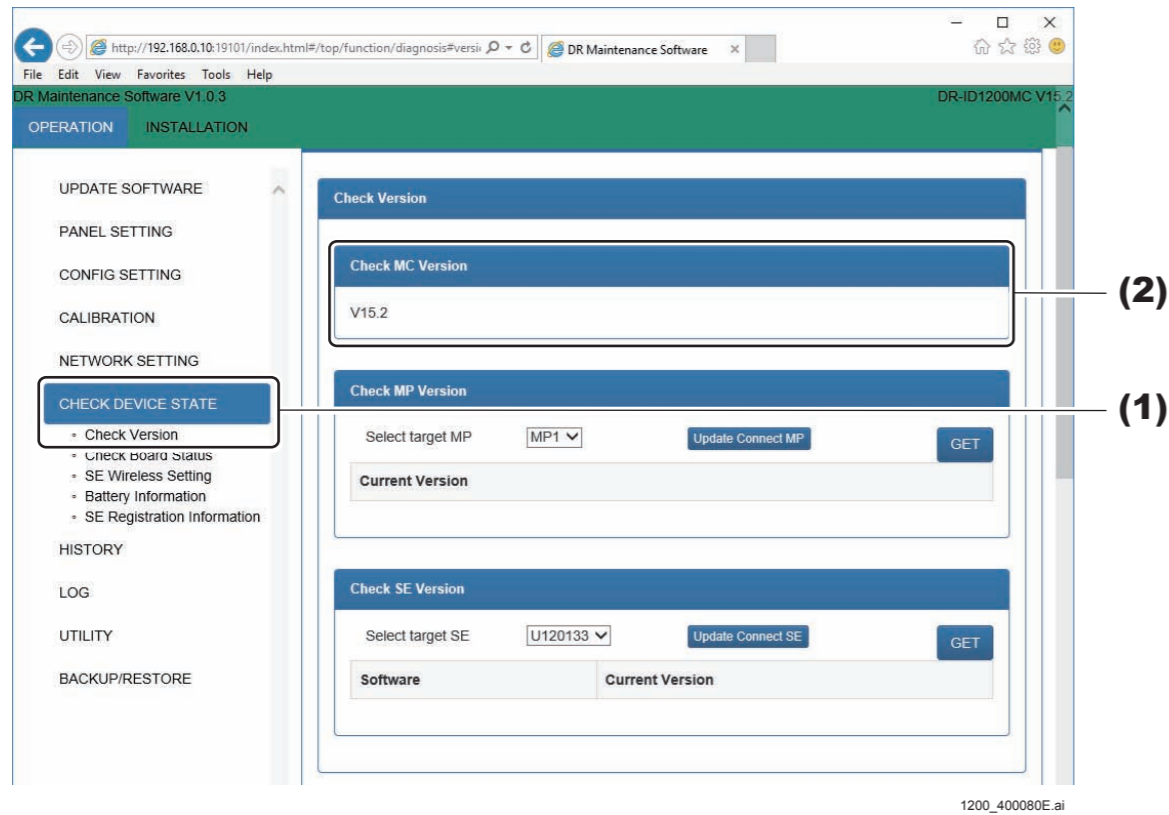
(1) **Click "CHECK DEVICE STATE" - "Check Version".**
The Check Version window opens.

(2) **Check the version in "Check MC Version".**

■ Check MP Version
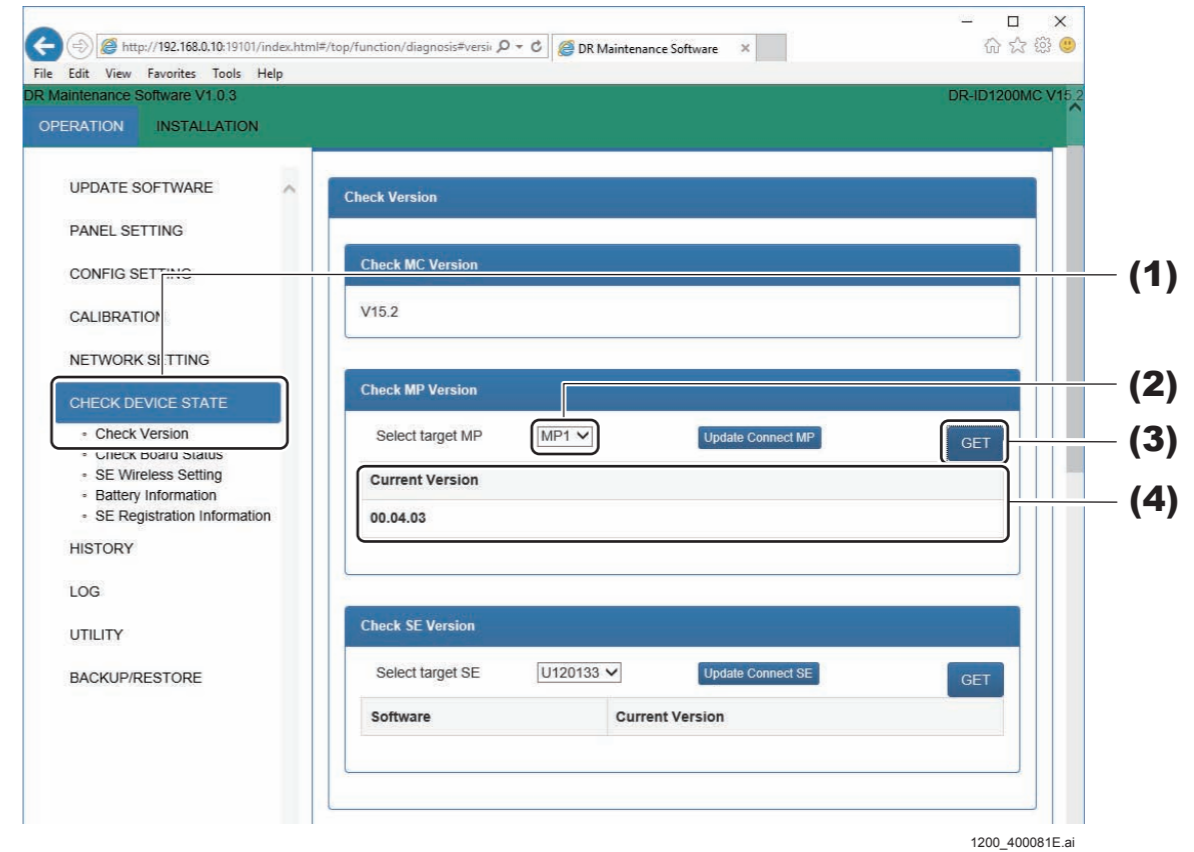
1200_400081E.ai

(1) **Click "CHECK DEVICE STATE" - "Check Version".**
The Check Version window opens.

(2) **Select the target MP in "Check MP Version" from the drop-down list box.**

(3) **Click [GET].**
The MP Version are displayed.

(4) **Confirm the "Current Version".**

■ Check SE Version
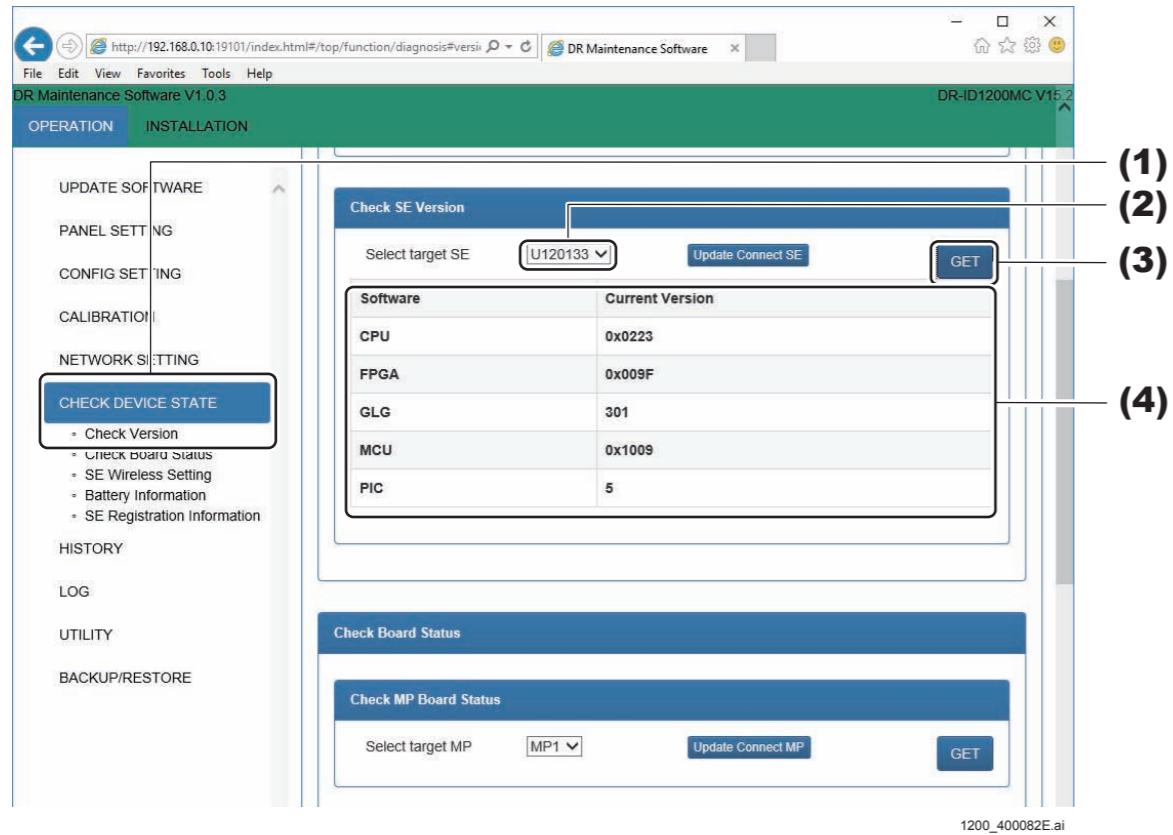
1200_400082E.ai

(1) **Click "CHECK DEVICE STATE" - "Check Version".**
The Check Version window opens.

(2) **Select the target SE in "Check SE Version" from the drop-down list box.**

(3) **Click [GET].**
The SE Version are displayed.

(4) **Confirm the "Current Version".**

1.6.2 Check Board Status

Check the MP and SE board conditions. In addition, implement the settings when the battery was first used, and run a GLG board self-diagnostic.

■ Check MP Board Status
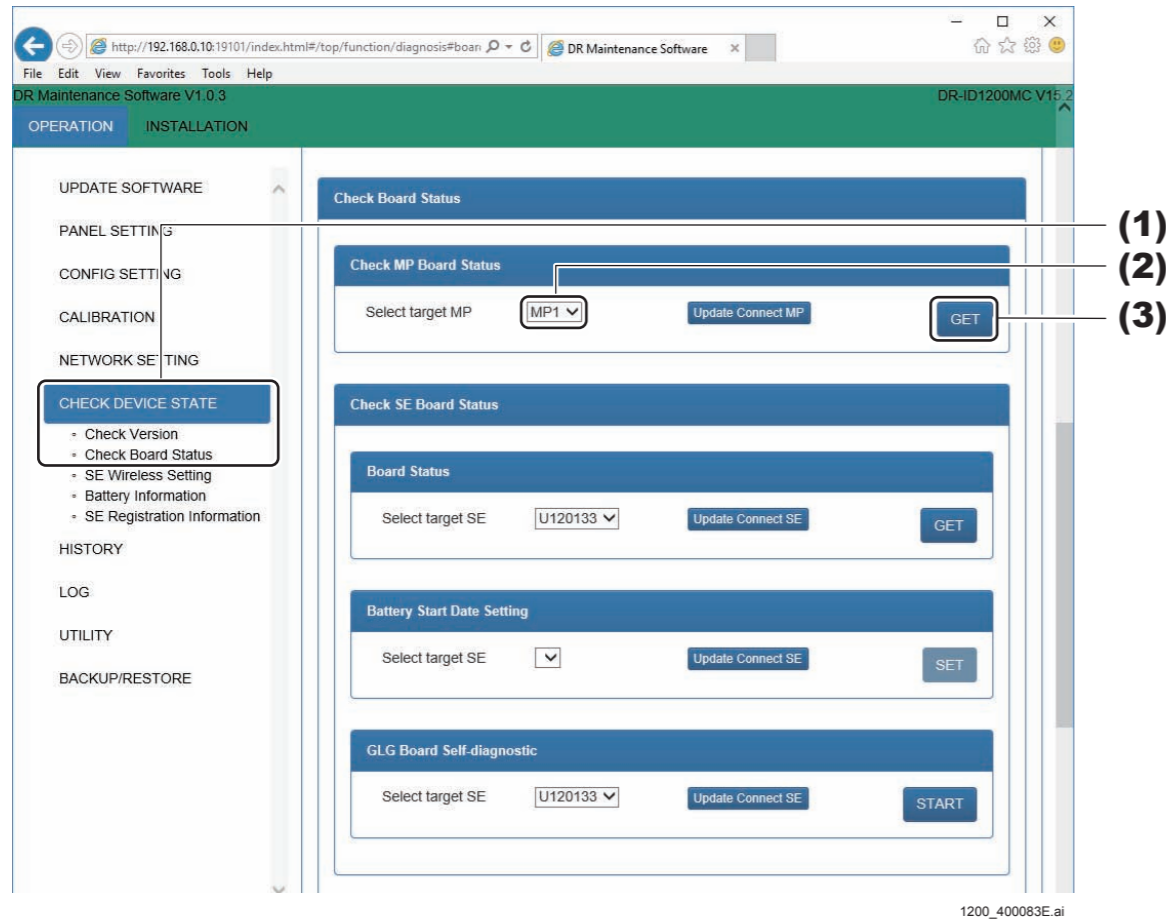
1200_400083E.ai

(1) Click "CHECK DEVICE STATE" - "Check Board Status".

The Check Board Status window opens.

(2) Select the target MP in "Check MP Board Status" from the drop-down list box.

(3) Click [GET].

The MP board status will be displayed in the pop up window.

1200_700554E.ai
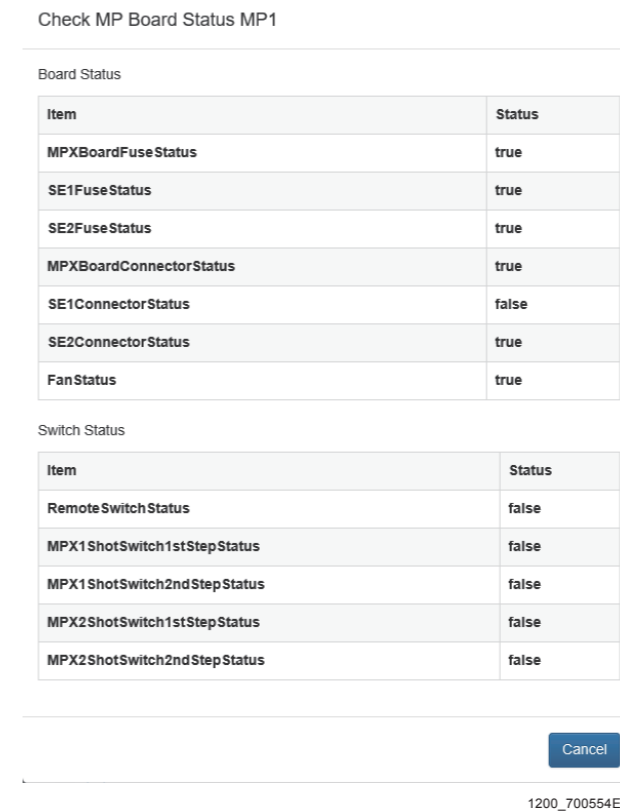
- Fuse Status:
  The status of the fuse connected with the MP board appears.
  Normal: MPX Board Fuse Status: true, SE1 Fuse Status: true, SE2 Fuse Status : true
  Defective: Other than above.

- Connector Status:
  The status of the connector connected with the MP board appears.
  Normal: MPX Board Connector Status : true
  SE1 Connector Status : true
  (when connected with the MPC board's MPC6 connector cable)
  SE2 Connector Status : true
  (when connected with the MPC board's MPC7 connector cable)
  Defective: Other than above.

- Fan Status:
  The status of the fan connected with the MP board appears.
  Normal: Fan Status: true
  Defective: Other than above.

- RemoteSW Status:
  The ON/OFF status of the remote switch appears.
  ON: true
  OFF: false

- MPX1 Shot Switch 1st Step Status:
  The ON/OFF status of the MPX1 shot switch port 1 appears.
  Shot Switch 1st: is ON: true
  Shot Switch 1st is OFF: false

- MPX1 Shot Switch 2nd Step Status:
  The ON/OFF status of the MPX1 shot switch port 2 appears.
  Shot Switch 2nd is ON: true
  Shot Switch 2nd is OFF: false

- MPX2 Shot Switch 1st Step Status:
  The ON/OFF status of the MPX2 shot switch port 1 appears.
  Shot Switch 1st: is ON: true
  Shot Switch 1st is OFF: false

- MPX2 Shot Switch 2nd Step Status:
  The ON/OFF status of the MPX2 shot switch port 2 appears.
  Shot Switch 2nd is ON: true
  Shot Switch 2nd is OFF: false

(4) **Check the board states, and click [Cancel].**

■ Check SE Board Status
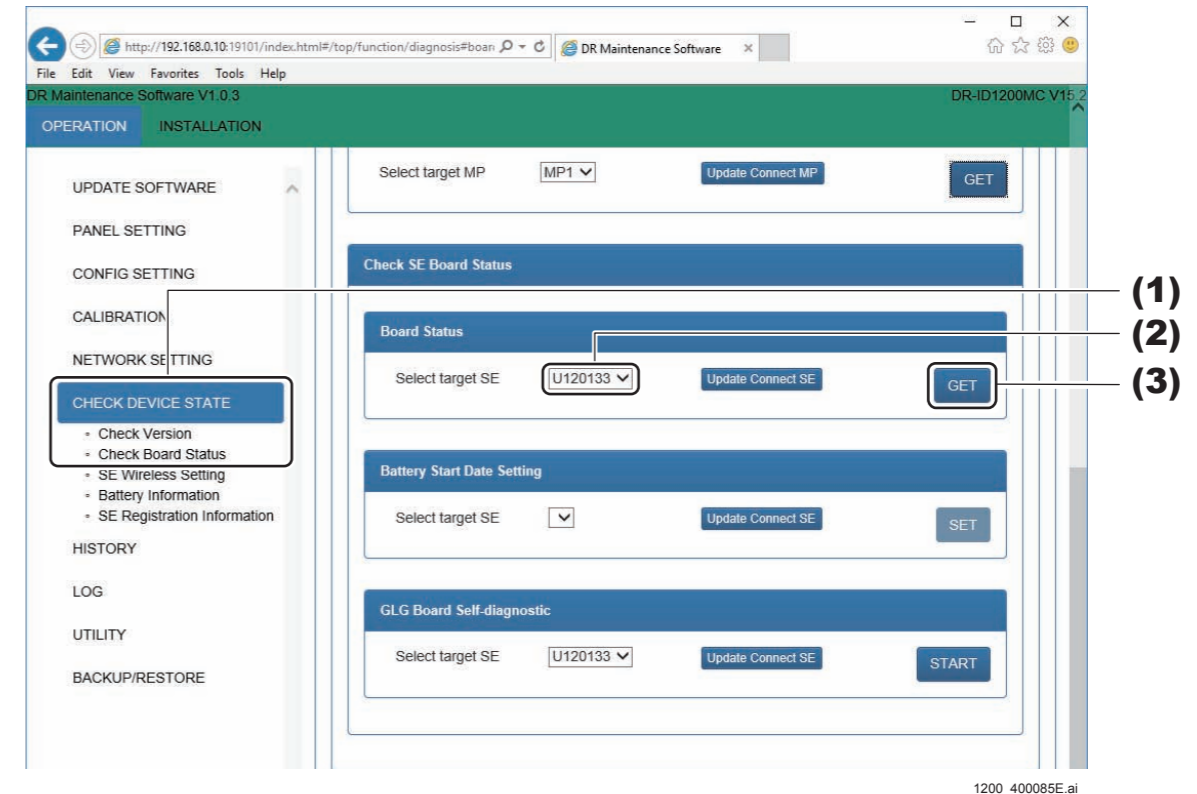
1200_400085E.ai

(1) **Click "CHECK DEVICE STATE" - "Check Board Status".**
The Check Board Status window opens.

(2) **Select the target SE in "Check SE Board Status" - "Board Status" from the drop-down list box.**

(3) Click [GET].

The SE board conditions will be displayed in the pop up window.

Check SE Board Status U120133

Board Status

Item	Status
Hardware Status	true
Configuration Status	true
Battery Status	true
MCU Status	true
SD Card Status	true
Temperature	28 (deg C)
Extra Sleep Button Status	false
Memory Image Button Status	false

Battery Status

Item	Status
Battery ID	0
Manufacture Date	
Insert Withdraw Count	0
Temperature	0 (0.1K)
Status	0x0000
Cycle Count	0
First Use	
First Use Date	

Cancel

1200_400088E.ai

- Board Status
Acquires the board conditions in the SE, and displays the contents.
Normal: Hardware Status : true
          Configuration Status : true
          Battery Status : true (when there is a battery)
          MCU Status : true
          SDCard Status : true
Defective: Other than above.

- Temperature
Displays the temperature of the stand SE.
Display example: Temperature = 29.4 deg C

- SE Button Status
Displays the button status of the SE.
Normal: Extra Sleep Button Status: true or false
            Memory Image Button Status: true or false

- Battery

◆ *NOTE* ◆

Not used in the DR-ID 1300.

Displays the following information on the battery
Battery ID: 0 to 65535
Manufacture Date:YYYY/MM/DD
Insert Withdraw Count:0 to 65535
Temperature:0 to 65535[0.1K]
Status:0xXXXX
Cycle Count:0 to 65535
First Use:
First Use Date:YYYY/MM/DD

(4) Check the board state, and click [Cancel].

■ Battery Start Date Setting

◆ NOTE ◆

Not used in the DR-ID 1300.

Set the start date for battery use.
Accurate display of the battery capacity becomes possible by performing "Battery Start Date Setting".
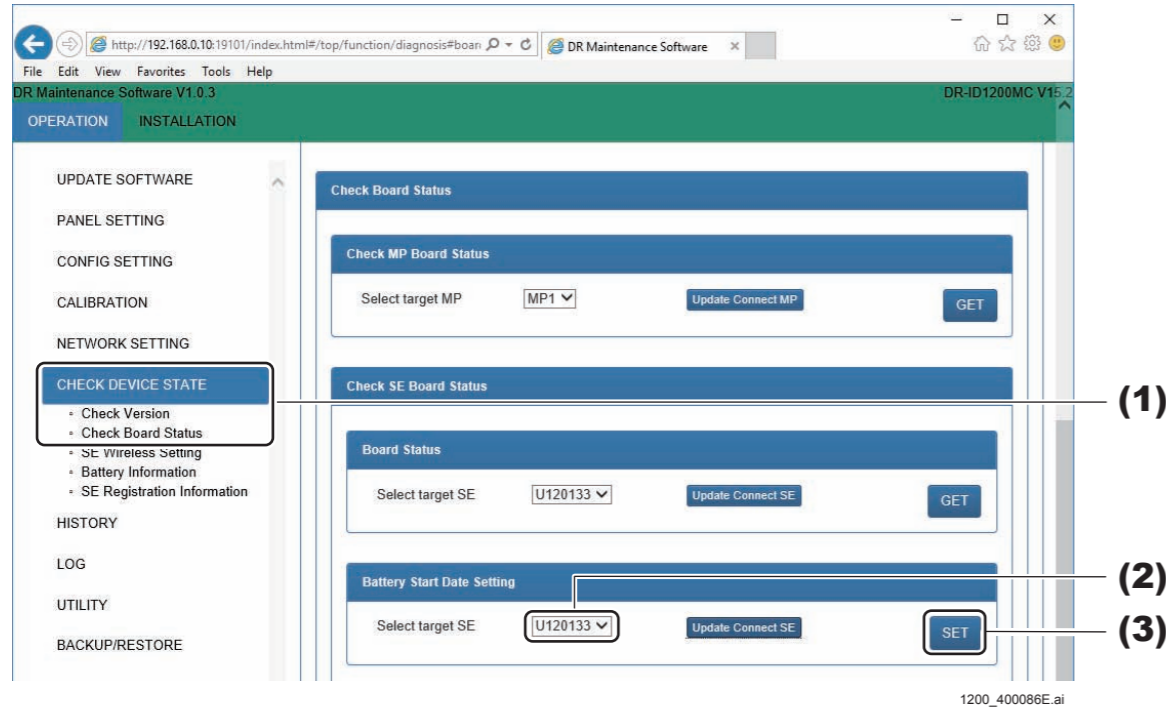
1200_400086E.ai

(1) Click "CHECK DEVICE STATE" - "Check Board Status".
The Check Board Status window opens.

(2) Select the target SE in "Check SE Board Status"-"Battery Start Date Setting" from the drop-down list box.

(3) Click [SET].
If the battery usage start day has been set, and it is successful, a pop up window displaying "Succeeded" will pop up.

(4) Click [OK].

■ GLG Board Self-diagnostic

◆ NOTE ◆

Not used in the DR-ID 1300.

The following tests are performed for the GLG board, and the results (Succeeded/Failed) are displayed in the result display area.
- Memory check (writing of data to and reading of data from FRAM and RAM)
- Data acquisition from RTC
- Low G sensor data setting and data acquisition
- AD converter diagnosis
- Reading of set data

◇ REFERENCE ◇

Self-diagnostic of the GLG board is performed also at the time of equipment start.
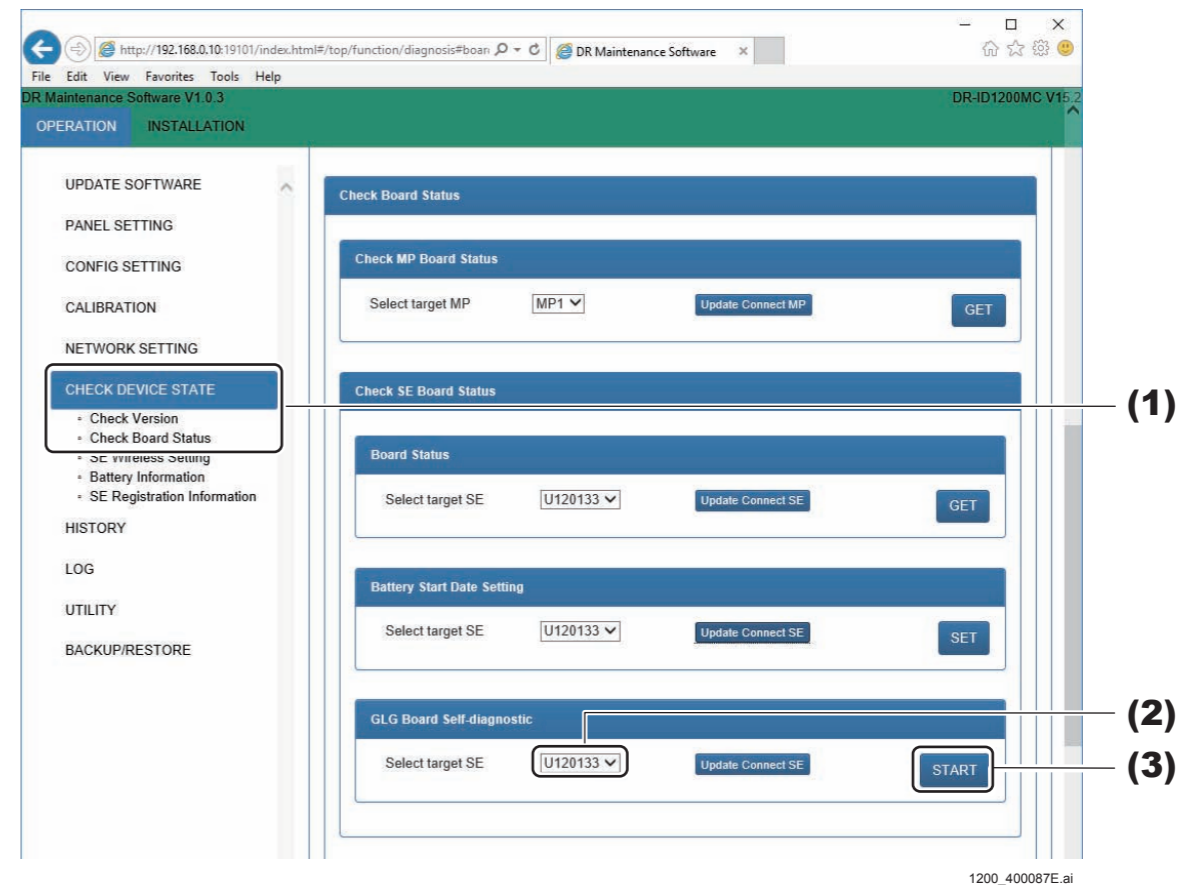
1200_400087E.ai

(1) Click "CHECK DEVICE STATE" - "Check Board Status".
The Check Board Status window opens.

(2) Select the target SE in "Check SE Board Status"-"GLG Board Self-diagnostic" from the drop-down list box.
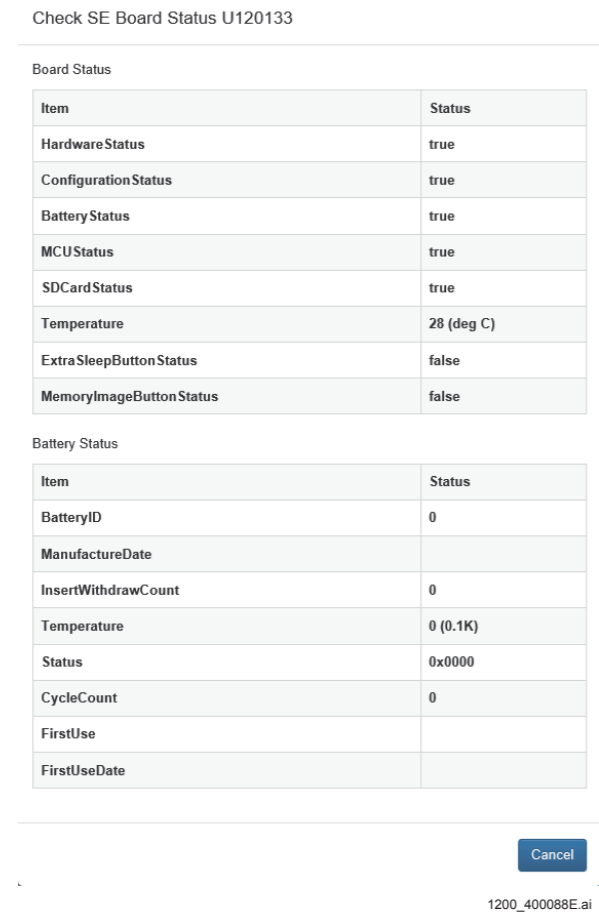
(3) Click [START].

If the GLG board self-diagnostic has been started, and it is successful, a pop up window displaying "Succeeded" will pop up.

(4) Click [OK].

1.6.3 SE Wireless Setting

◆ NOTE ◆

Not used in the DR-ID 1300.

Communication rate of the SE connected via the wireless LAN can be measured.

◇ REFERENCE ◇

The details which are to be measured via "Panel settings" – "SE wireless settings" are the same.

1200_400090E.ai
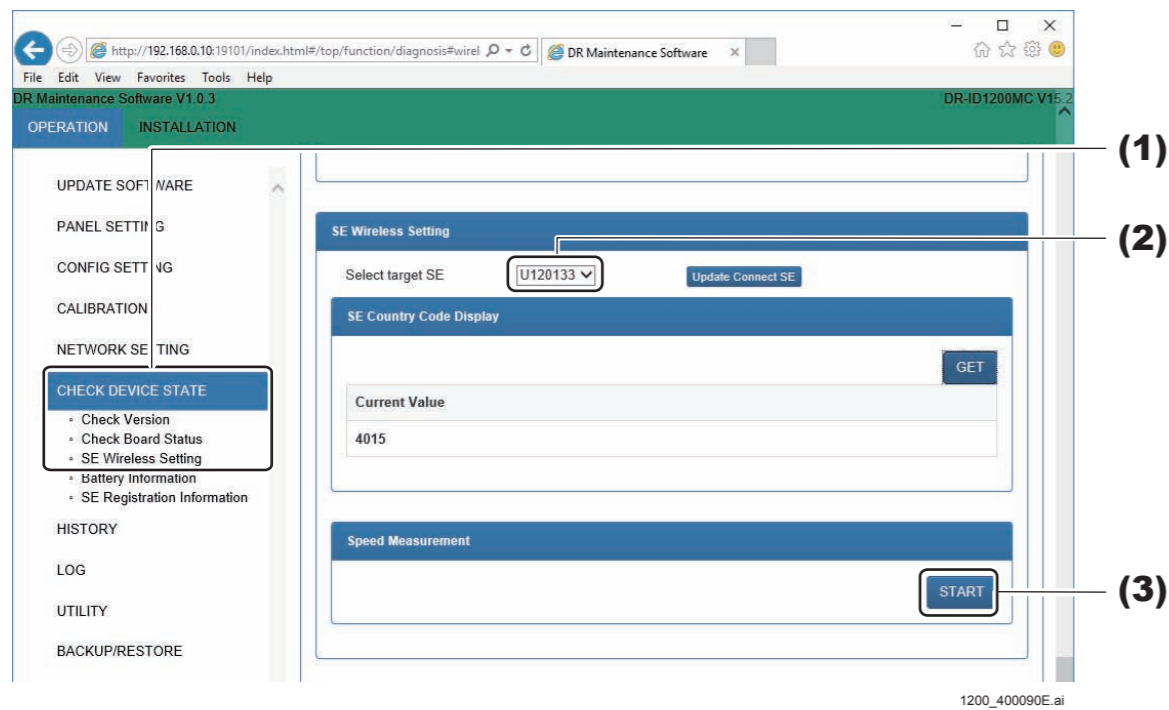
(1) Click "CHECK DEVICE STATE" - "SE Wireless Setting".

The SE Wireless Setting window opens.

(2) Select the target SE from the drop-down list box.

(3) Click [START] in the "Speed Measurement".

The wireless signal state measuring begins, and the SE wireless communications speed is displayed in a pop up window. The measuring finishes after about one minute.

Measure the Communications Speed [U120133]

1 : 1682 msec : 16063104 byte
2 : 1778 msec : 16063104 byte
3 : 1692 msec : 16063104 byte
4 : 1730 msec : 16063104 byte
5 : 1679 msec : 16063104 byte
6 : 1734 msec : 16063104 byte
7 : 1681 msec : 16063104 byte
8 : 1774 msec : 16063104 byte
9 : 1689 msec : 16063104 byte
10 : 1727 msec : 16063104 byte

average : 1716.6 msec

Suceeded

OK

1200_400091E.ai
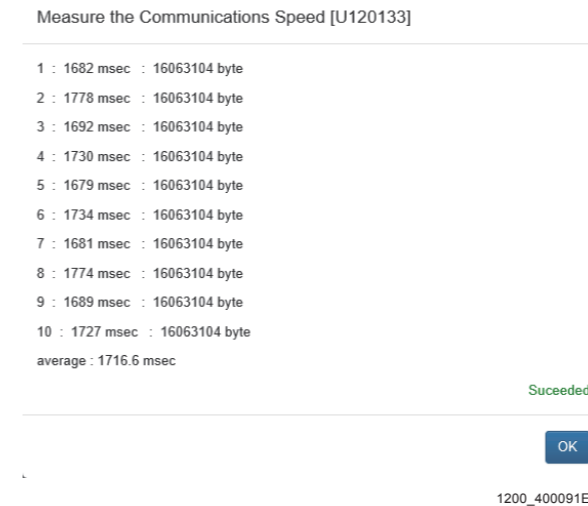
(4) Check that the average speed is following status, and click [OK].

- DR-ID 1201SE, DR-ID 1211SE, DR-ID 1213SE, DR-ID 1214SE, DR-ID 601SE, DR-ID 611SE: 5000msec or less.
- DR-ID 1202SE, DR-ID 1212SE, DR-ID 602SE, DR-ID 612SE: 6000msec or less.
- DR-ID 613SE: 4000msec or less.

1.6.4　Battery Information

◆ *NOTE* ◆

Not used in the DR-ID 1300.

Check the battery serial no. In addition, the battery serial no. can be deleted.

1200_400092E.ai
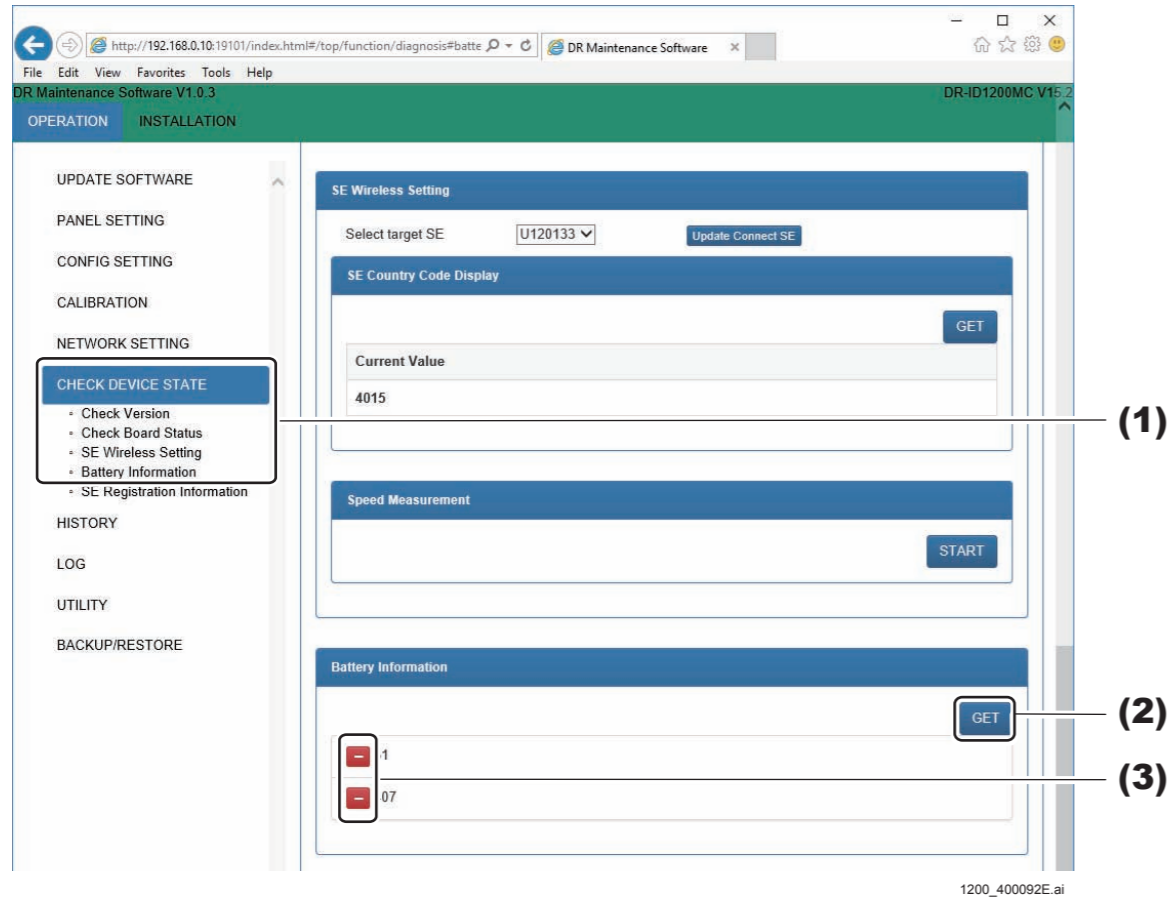
(1) **Click "CHECK DEVICE STATE" - "Battery Information".**
The Battery Information window opens.

(2) **Click [GET].**
Serial No. of the batteries are displayed.

(3) **To delete the battery serial no., click [–], and click the [OK] in the pop up window.**
Serial No. of the batteries are deleted.

1.6.5　SE Registration Information

Check the serial ID and IP address of the SE

1200_400093E.ai
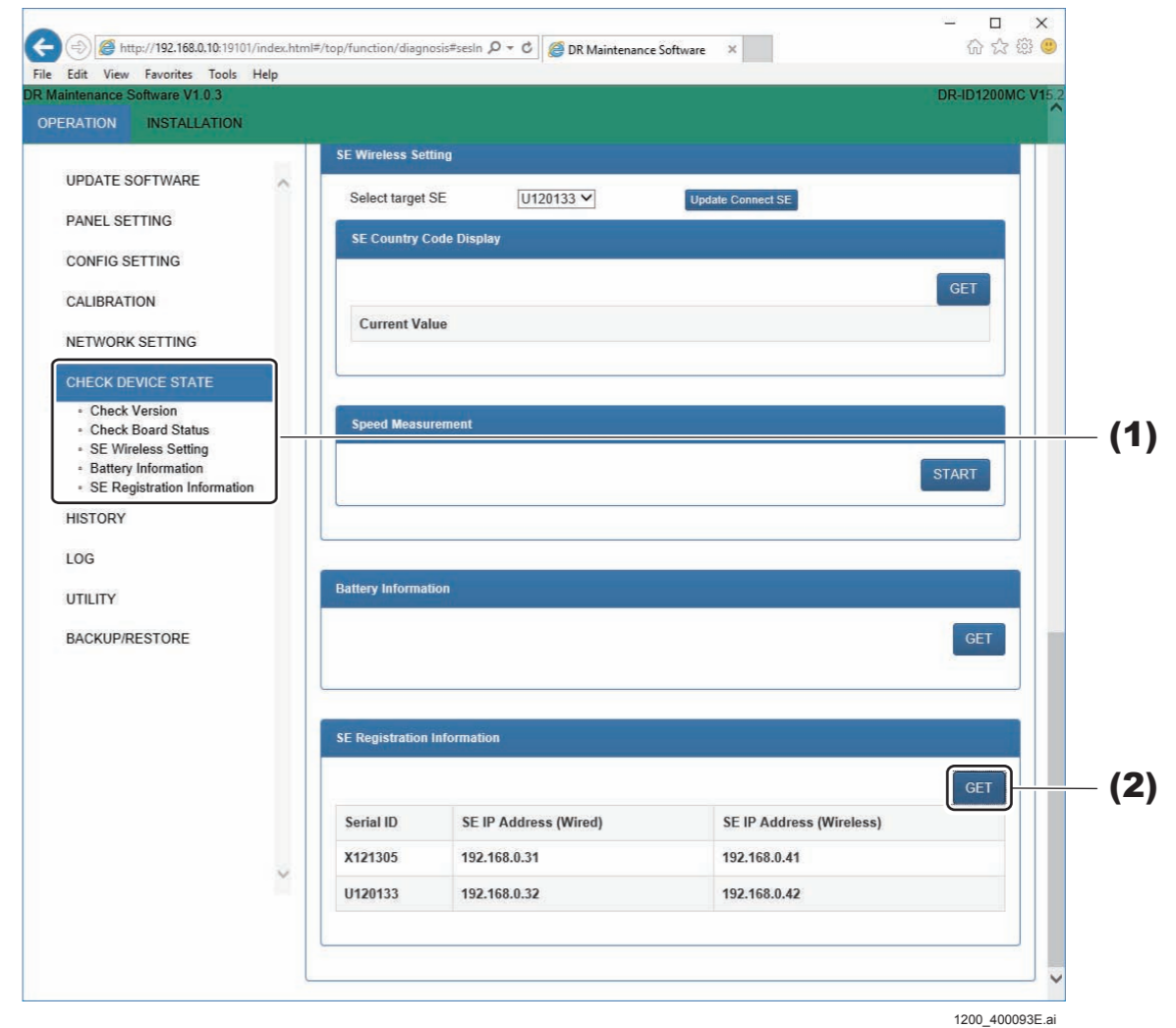
(1) **Click "CHECK DEVICE STATE" - "SE Registration Information".**
The SE Registration Information window opens.

(2) **Click [GET].**
The registered serial ID and IP address of the SE are displayed.

1.7   HISTORY

Display and edit statistical information pertaining to the SE exposing history.

1200_400094E.ai
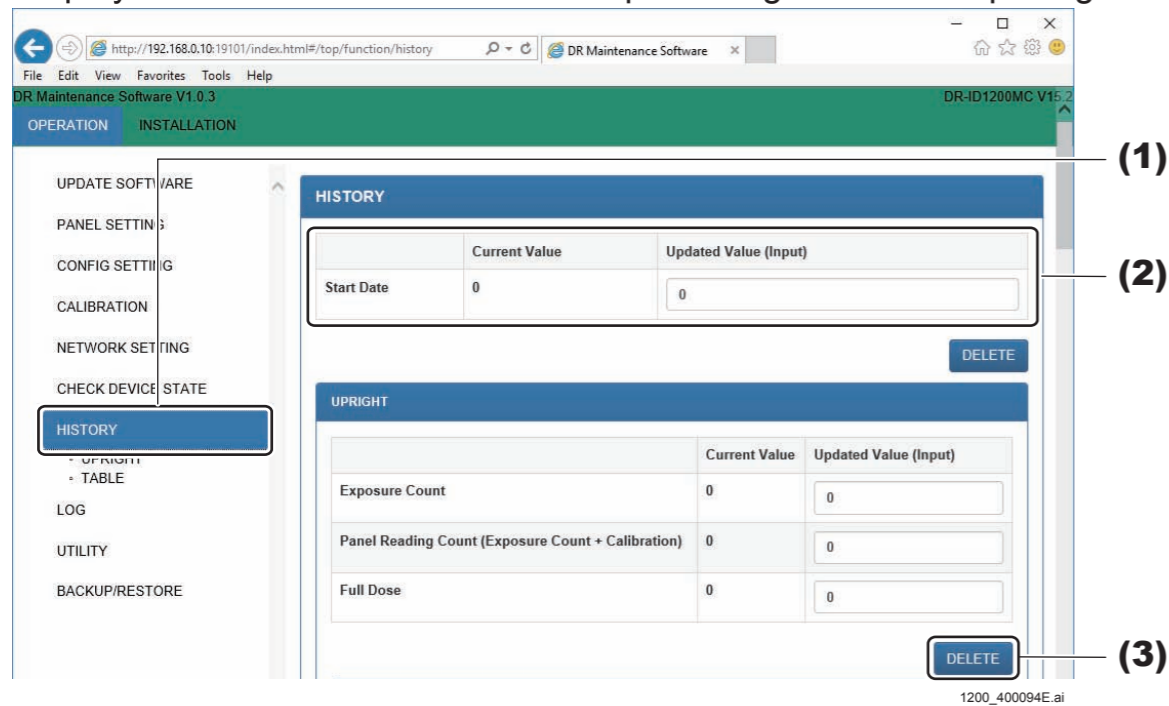
(3) If the history is to be deleted, click [DELETE], and click [OK] in the pop up window.

The history will be deleted.

◆ *INSTRUCTION* ◆

After exiting the DX Console application, perform the following procedure.

(1) Click "HISTORY".

The HISTORY window opens.

(2) To confirm and make changes to the following information, input the "Updated Value", and click [SET] at the bottom of the screen.

Item	Function
Start Date	Date when the RU software is installed

The information will be changed.

◆ *INSTRUCTION* ◆

To fix the "Start Date" input values, click [SET] at the bottom of the screen, and the MC Manager needs to be restarted (if configured whereas the MC application is installed on the MC computer, then turn OFF the MC's main power breaker).

1.7.1   UPRIGHT

Display and edit statistical information pertaining to the SE(Upright) exposing history.
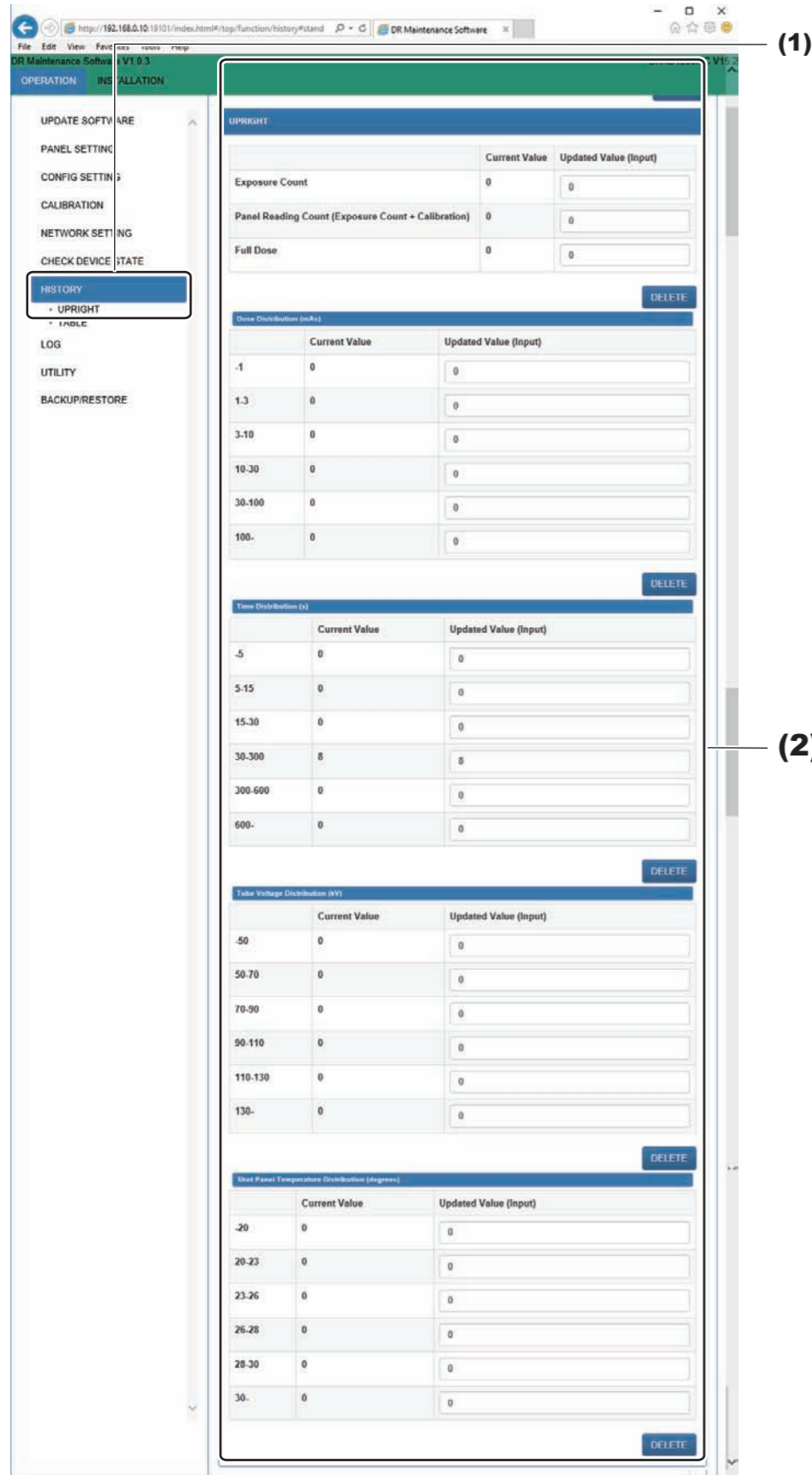
1200_400096E.ai

◆ **INSTRUCTION** ◆

After exiting the DX Console application, perform the following procedure.

(1) **Click "HISTORY" - "UPRIGHT".**
The UPRIGHT window opens.

(2) **To confirm and make changes to the following information, input the "Updated Value", and click [SET] at the bottom of the window.**

Item	Function
Exposure Count	Exposure count
Panel Reading Count (Exposure Count + Calibration)	Panel reading count (exposure count + calibration)
Full Dose	Total dose of exposures
Dose Distribution (mAs)	Displays the exposure count for each of the following ranges. <1, 1-3, 3-10, 10-30, 30-100, 100<
Time Distribution (s)	Displays the exposure count for each of the following ranges. <5, 5-15, 15-30, 30-300, 300-600, 600<
Tube Voltage Distribution (kV)	Displays the exposure count for each of the following ranges. <50, 50-70, 70-90, 90-110, 110-130, 130<
Shot Panel Temperature Distribution (degrees)	Displays the exposure count for each of the following ranges. <20, 20-23, 23-26, 26-28, 28-30, 30<

The information will be changed.

(3) **If the history is to be deleted, click [DELETE], and click [OK] in the pop up window.**
The history is deleted.

1.7.2   TABLE

Display and edit statistical information pertaining to the SE(Table) exposing history.
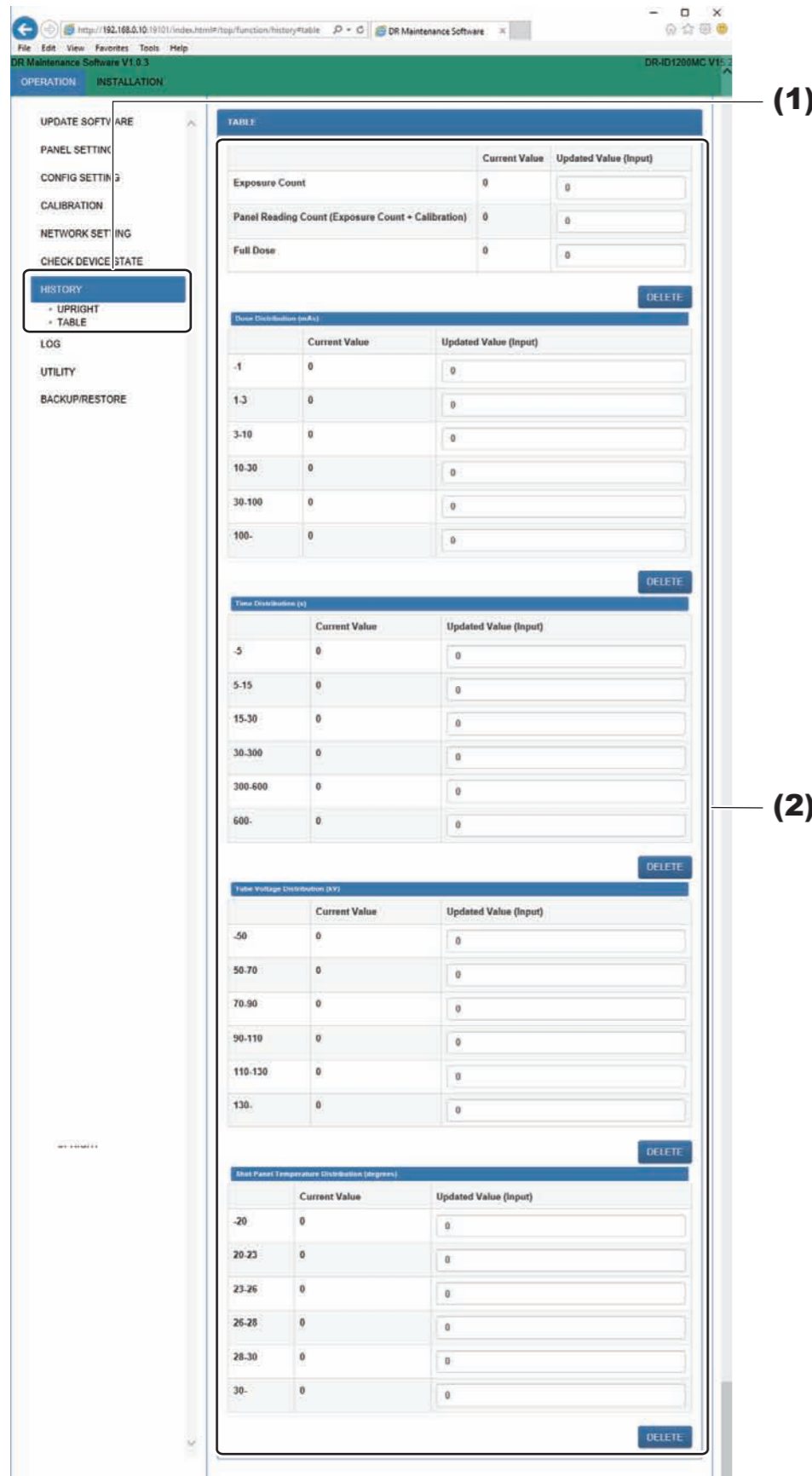
1200_400097E.ai

◆ **INSTRUCTION** ◆

After exiting the DX Console application, perform the following procedure.

(1) Click "HISTORY" - "TABLE".
The TABLE window opens.

(2) To confirm and make changes to the following information, input the "Updated Value", and click [SET] at the bottom of the window.

Item	Function
Exposure Count	Exposure count
Panel Reading Count (Exposure Count + Calibration)	Panel reading count (exposure count + calibration)
Full Dose	Total dose of exposures
Dose Distribution (mAs)	Displays the exposure count for each of the following ranges. <1, 1-3, 3-10, 10-30, 30-100, 100<
Time Distribution (s)	Displays the exposure count for each of the following ranges. <5, 5-15, 15-30, 30-300, 300-600, 600<
Tube Voltage Distribution (kV)	Displays the exposure count for each of the following ranges. <50, 50-70, 70-90, 90-110, 110-130, 130<
Shot Panel Temperature Distribution (degrees)	Displays the exposure count for each of the following ranges. <20, 20-23, 23-26, 26-28, 28-30, 30<

The information will be changed.

(3) If the history is to be deleted, click [DELETE], and click [OK] in the pop up window.
The history is deleted.

1.8 LOG

Refer to the log data, and check the error names and generation conditions.

1200_400095E.ai
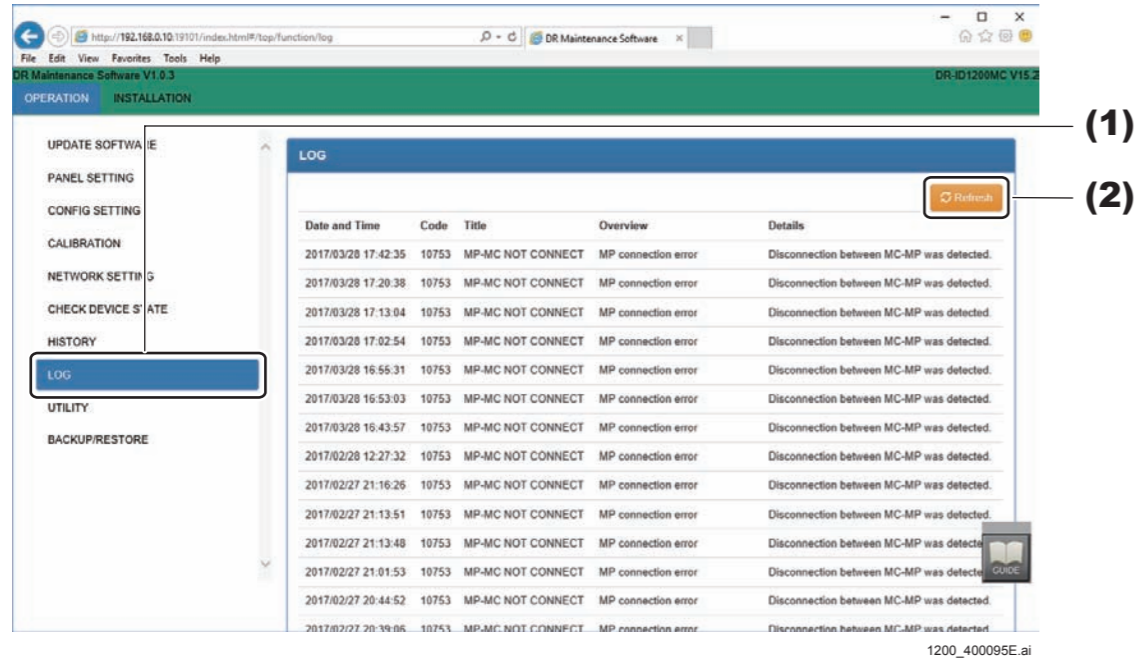
(1) Click "LOG".

The Log window opens.

(2) Click [Refresh] to update the Log.

The latest log data is displayed.

(3) If the log history is to be deleted, click [DELETE] at the bottom of the window, and click [OK] in the pop up window.

The log history will be deleted.

1.9   UTILITY

Implement the following utility functions in the DR Maintenance Software.
- Terminate MC
- Reboot MC
- Force Reboot MC
- Web Maintenance Status
- Check PING
- Check FTP
- FTP Network Setting (Log FTP destination address)
- Force Serial ID Writing
- Replace Long Panel RMV Board
- Update SE CPU (0x0220)
- Update SE FPGA
- Replace MP
- LED Color RGB Setting
- Battery Threshold Setting
- Force Charge the Battery

1.9.1   Terminate MC

Shut down the MC PC in the environments that have MC PC.

◆ *INSTRUCTION* ◆

This function is deactivated in the configuration installing the MC application in the DX Console.

1200_400098E.ai
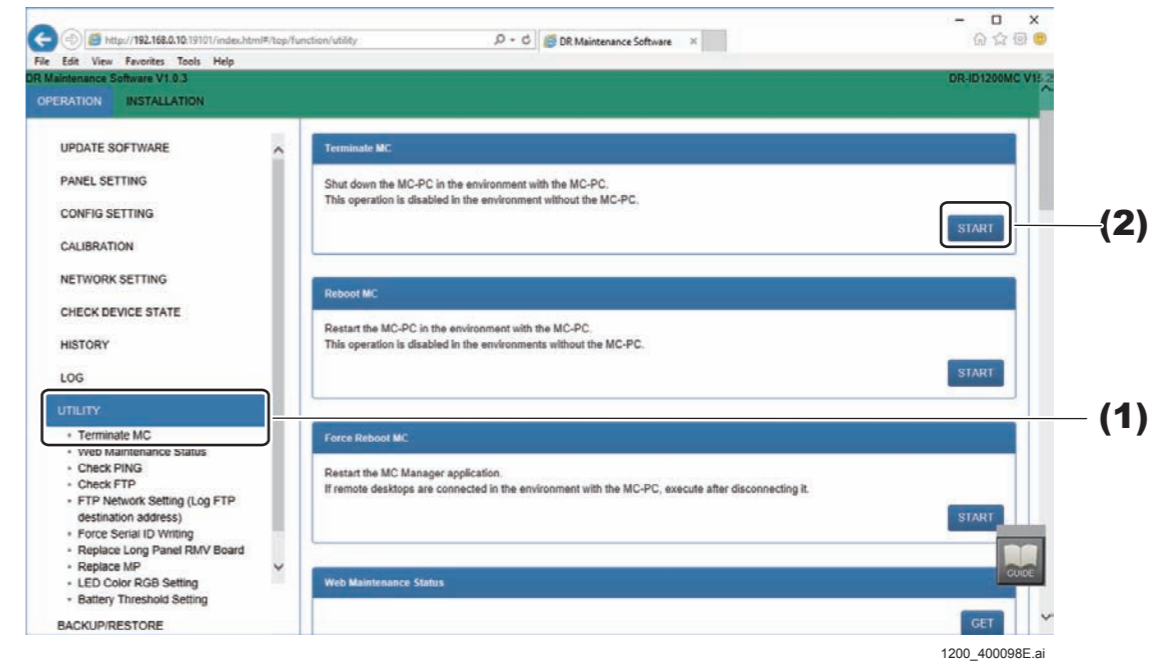
(1) Click "UTILITY" - "Terminate MC".

The Terminate MC window opens.

(2) Click [START].

If the MC computers are shut down, and it is successful, a pop up window displaying "Succeeded" will pop up.

(3) Click [OK].

1.9.2 Reboot MC

Shut down the MC PC in the environments that have MC PC.

◆ *INSTRUCTION* ◆

This function is deactivated in the configuration installing the MC application in the DX Console.

1200_400099E.ai
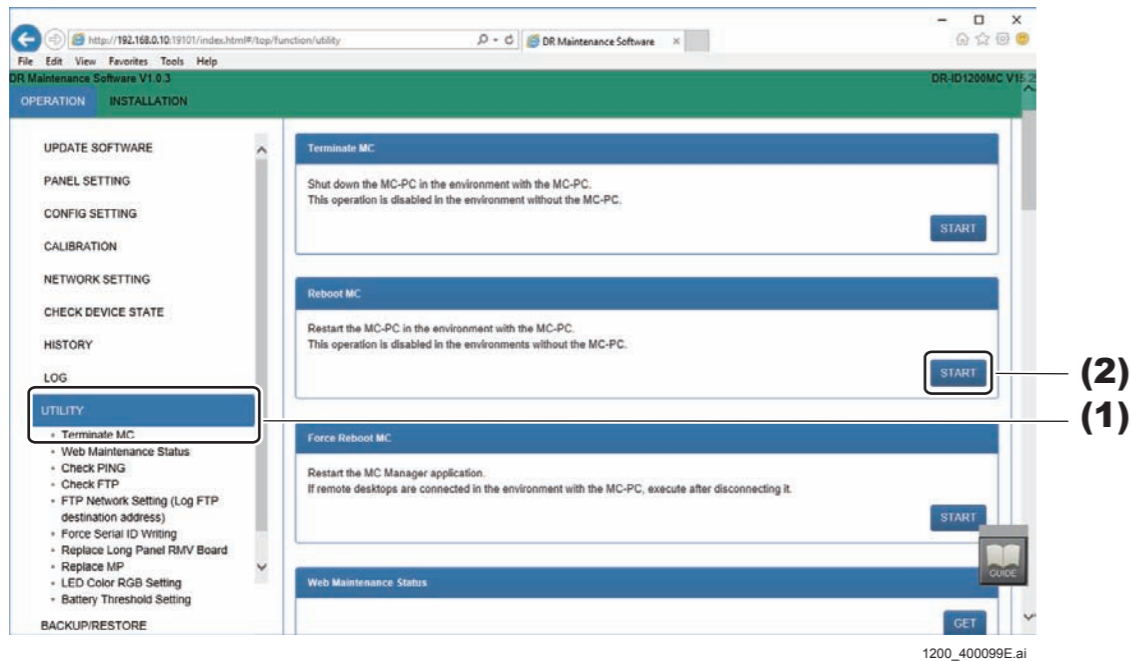
(1) Click "UTILITY" - "Terminate MC".
The Terminate MC window opens.

(2) Click [START] in the "Reboot MC"
Reboot the PC.

1.9.3 Force Reboot MC

Reboot the MC Manager.

1200_400100E.ai

(1) Click "UTILITY" - "Terminate MC".
The Terminate MC window opens.
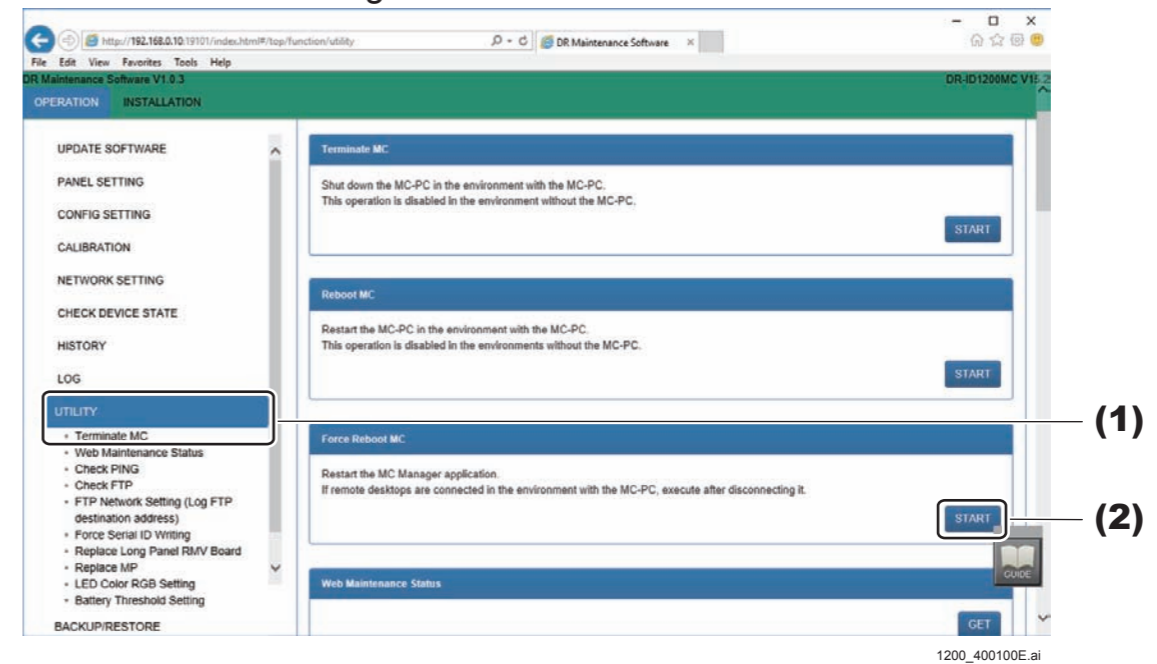
(2) Click [START] in the "Force Reboot MC"
Reboot the MC Manager, and if it succeeds, "Succeeded" will be displayed in the pop up window.

(3) Click [OK].

1.9.4　Web Maintenance Status

Check the DR Maintenance Software versions.

1200_400101E.ai
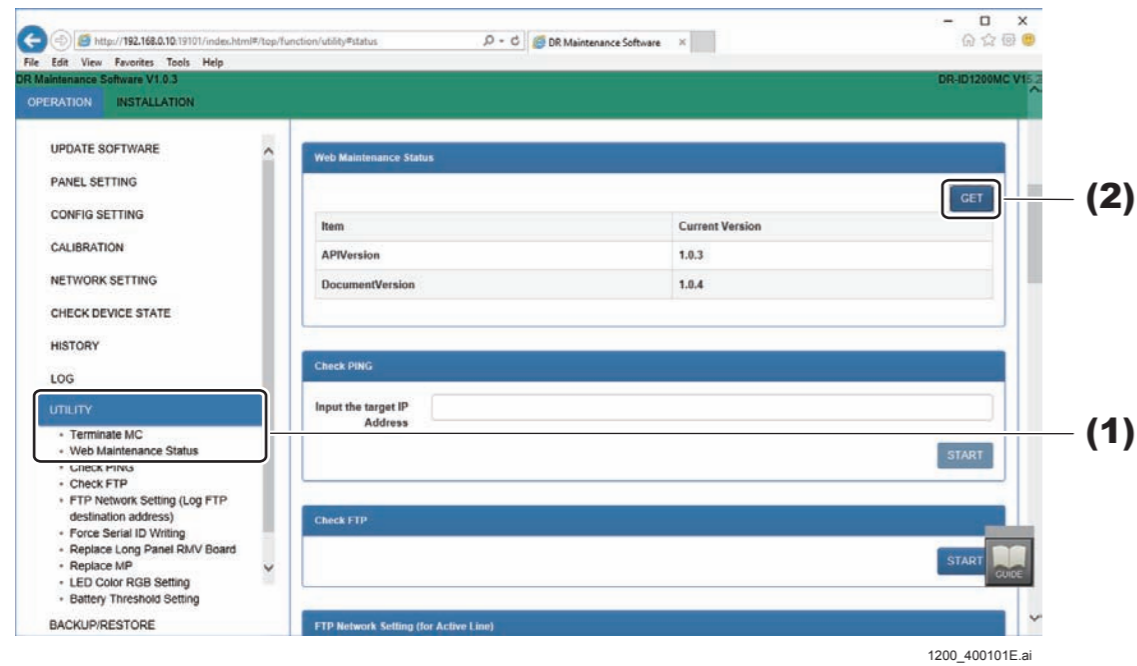
(1)　Click "UTILITY" - "Web Maintenance Status".

The Web Maintenance Status window opens.

(2)　Click [GET].

The DR Maintenance Software versions appears.

1.9.5　Check PING

Implement a communications check via PING.

1200_400102E.ai
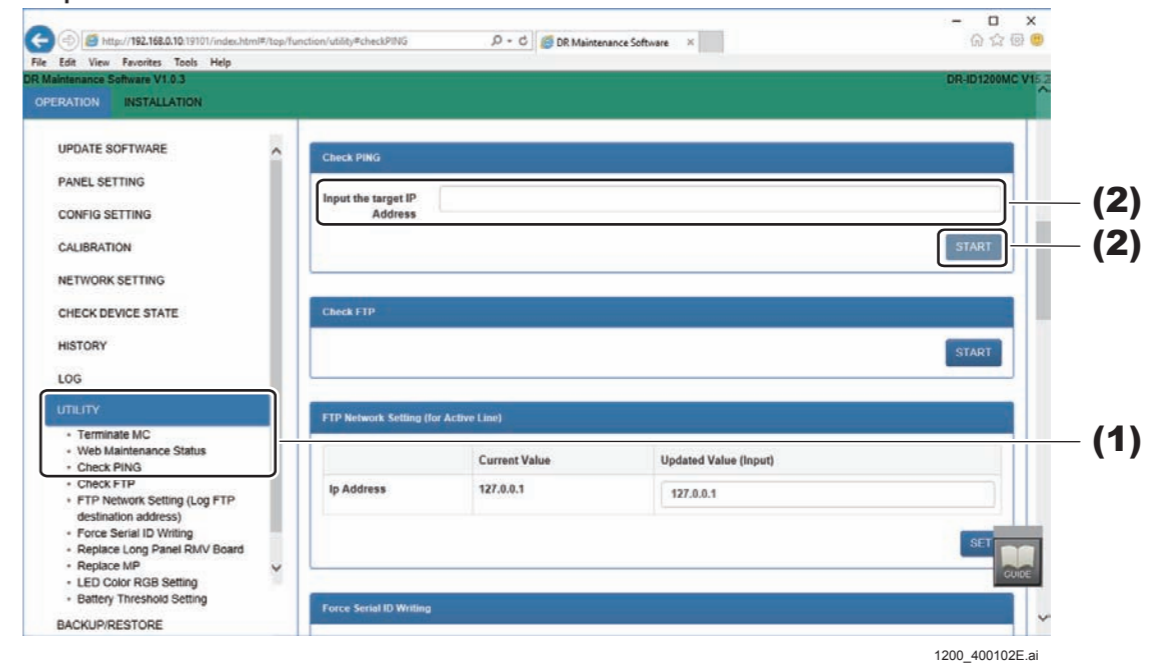
(1)　Click "UTILITY" - "Check PING".

The Check PING window opens.

(2)　Input the connection confirmation IP address, and click [START].

PING is implemented, and the confirmation results are displayed in the pop up window.

1200_400103E.ai
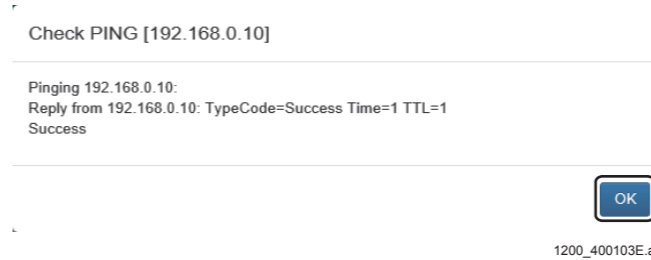
◆ NOTE ◆

If the communications verification is normal, "Succeeded" will be displayed. When it fails, since "Failed" will be displayed, check the network connections.

(3)　Click [OK].

1.9.6　Check FTP

Access the FTP server from the CSL-PC, and check whether or not the FTP server is operating.
Also, access the FTP server from the RU, and check whether or not the FTP server is operating.

1200_400104E.ai
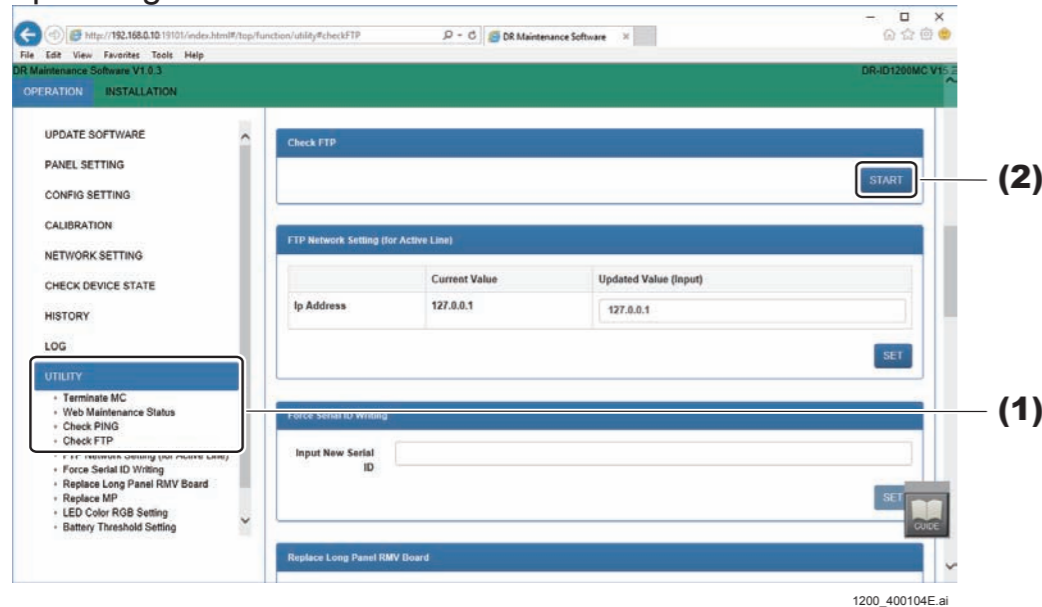
(1)　**Click "UTILITY" - "Check FTP".**
The Check FTP window opens.

(2)　**Click [START].**
The confirmation results are displayed in the pop up window.

1200_400105E.ai
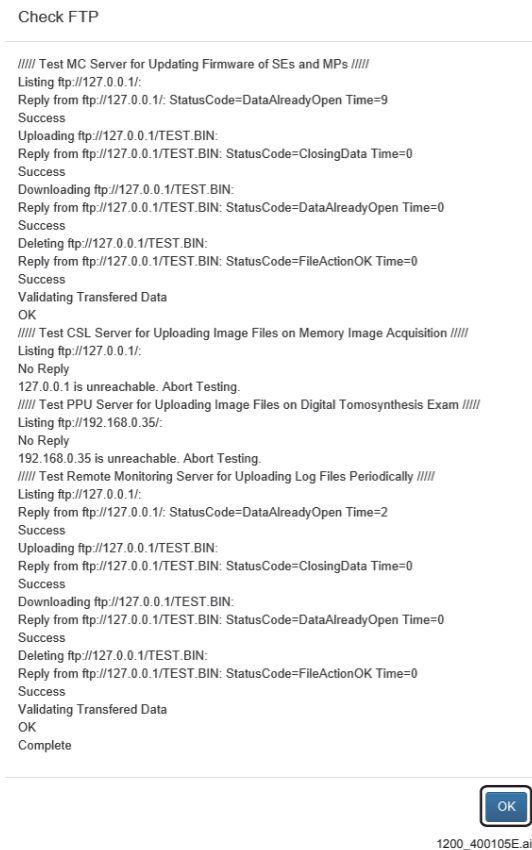
(3)　**Click [OK].**

1.9.7　FTP Network Setting (Log FTP Destination Address)

Implement the FTP server network settings.

1200_400106E.ai
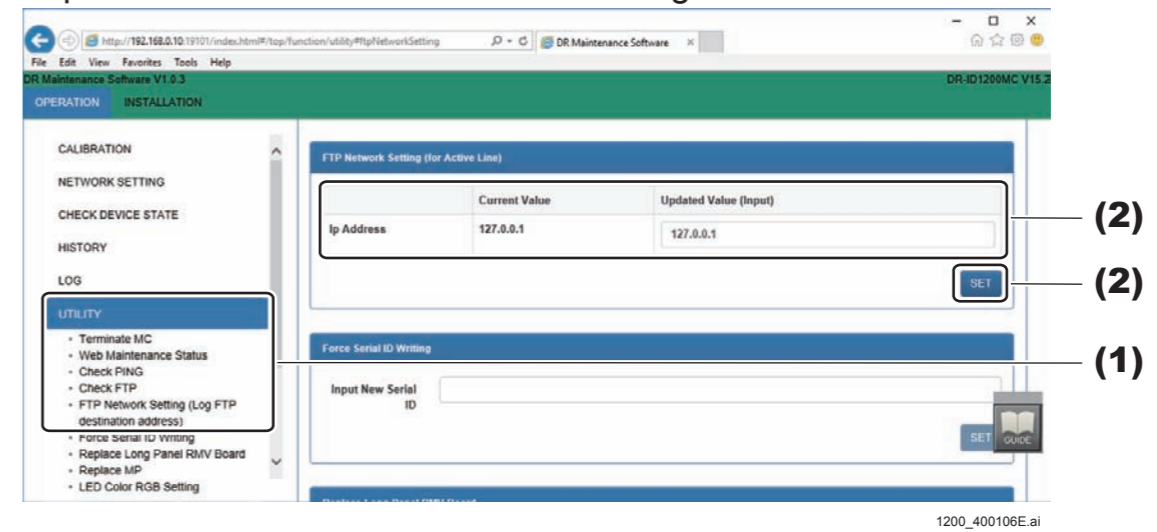
(1)　**Click "UTILITY" - "FTP Network Setting (Log FTP destination address)".**
The FTP Network Setting (Log FTP destination address) window opens.

(2)　**To change the setting values, input the "Updated Value", and click [SET] at the bottom of the window.**

1.9.8　Force Serial ID Writing

Implement SE's serial ID forced writing.

1200_400107E.ai
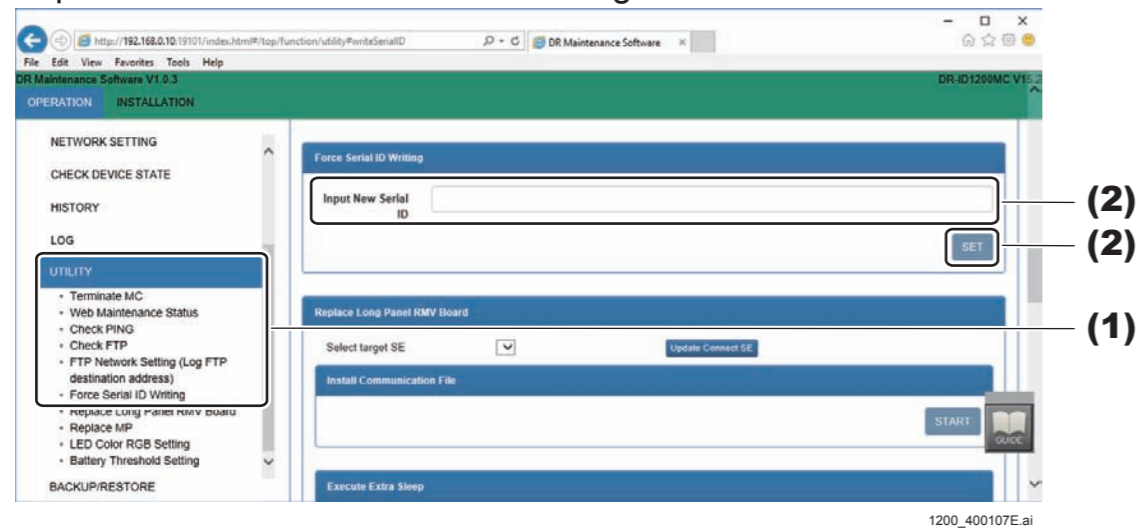
(1)　Click "UTILITY" - "Force Serial ID Writing".

The Force Serial ID Writing window opens.

(2)　Input the new SE serial ID, and click [SET].

The force serial ID writing will be implemented, and the implemented results are displayed in the pop up window.

(3)　Click [OK].

(4)　Reboot the SE.

1.9.9　Replace Long Panel RMV Board

When the RMV board is replaced, if [SET] is clicked after the SE serial ID is input, then the communications setting file installation or Extra Sleep mode can be gone to.

◆ *NOTE* ◆

The first letter of the serial ID must be entered as a capital letter.

◇ *REFERENCE* ◇

The serial ID of an SE is mentioned on the surface of the machine-specific data CD-ROM.

■ Install Communication File

Install the communication setting file to the RMV board of the target panel unit.
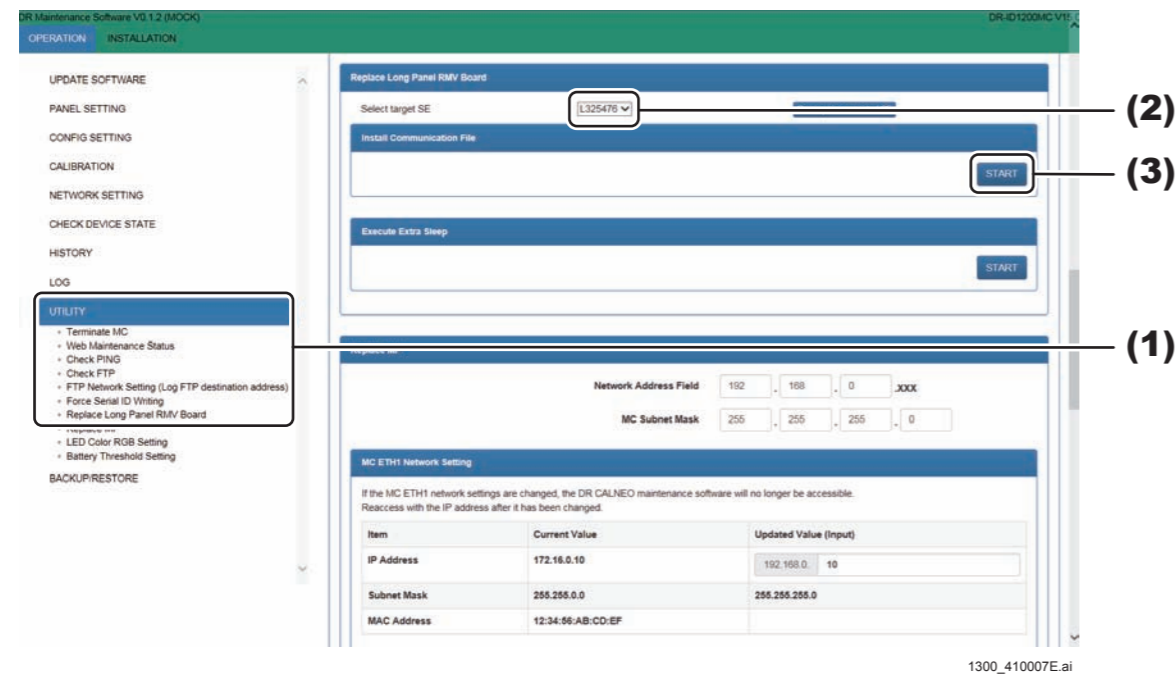
1300_410007E.ai

(1)　**Click "UTILITY" - "Replace Long Panel RMV Board".**
　　　The Replace Long Panel RMV Board window opens.

(2)　**Select the target SE (Panel units) from the drop-down list box.**

(3)　**Click [START] in the "Install Communication File"**
　　　The communication setting file will be installed on the RMV board.

■ Execute Extra Sleep

After replacing the RMV board, to write the serial ID on it, you need to stop the communication with the RMV boards installed in the other panel units. Click [START] in the "Execute Extra Sleep" to stop the communication with the selected panel unit.
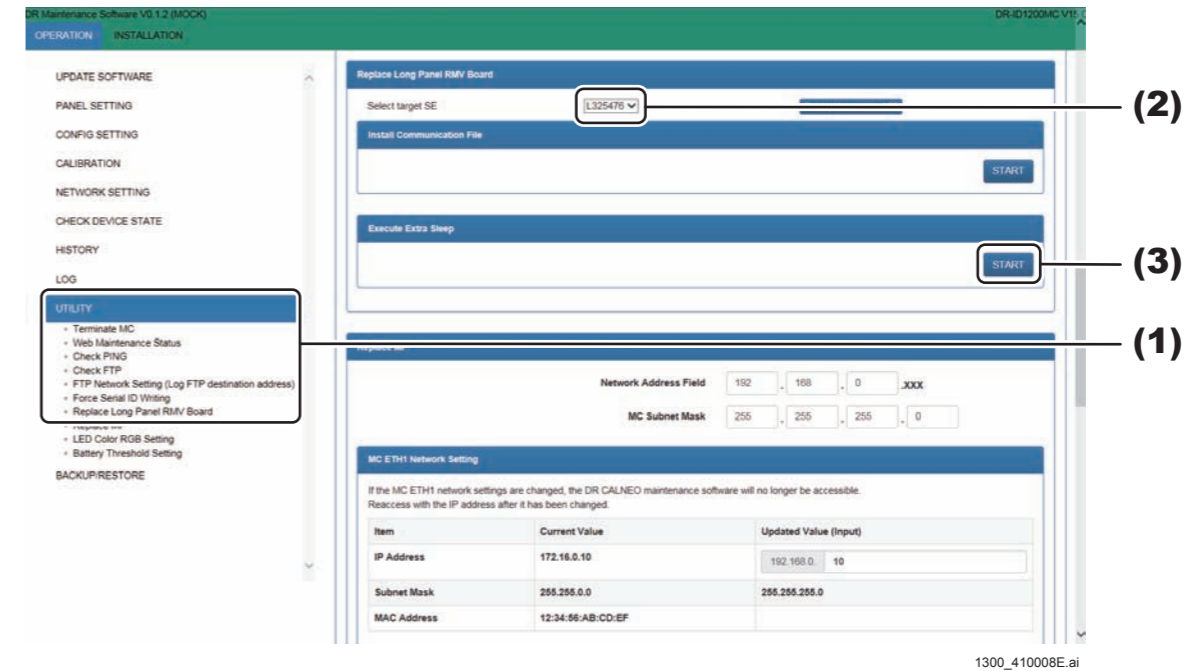
1300_410008E.ai

(1)　**Click "UTILITY" - "Replace Long Panel RMV Board".**
　　　The Replace Long Panel RMV Board window opens.

(2)　**Select the target SE (Panel units) from the drop-down list box.**

(3)　**Click [START] in the "Execute Extra Sleep"**
　　　Stop the communication with the selected panel unit.

◆ *NOTE* ◆

After the Extra Sleep is executed, the serial ID forced writing will be performed in the replaced RMV board.

☞　**{MU1:1.9.8._Force Serial ID Writing}**

1.9.10　Update SE CPU (0x0220)

When upgrading the SE software version, if the SE CPU version is less than 0x0220 (equivalent to MC V11.0), and if it has not been once upgraded to 0x0220, it cannot be upgraded to the latest version.

If the SE CPU version is less than 0x0220, then use "Update SE CPU (0x0220)", and upgrade it to 0x0220 in DR Maintenance Software.

POCX010405002J.ai
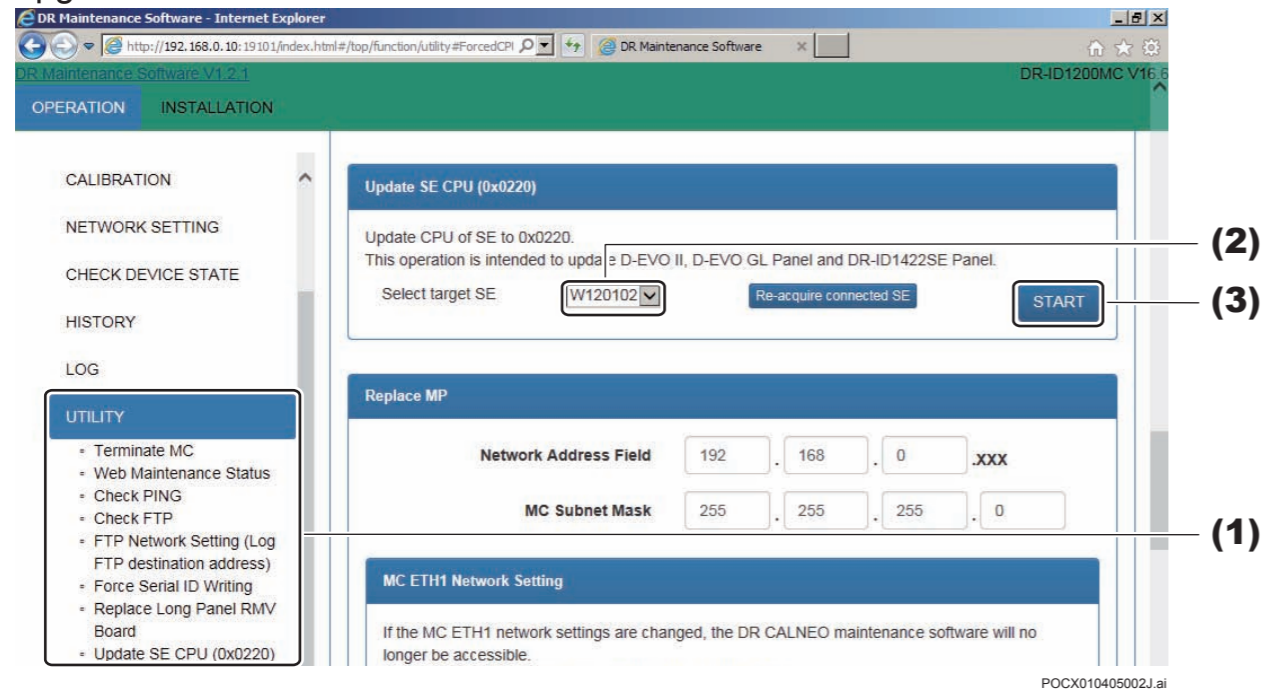
(1)　Click "UTILITY" - "Update SE CPU (0x0220)".

The Update SE CPU (0x0220) window opens.

(2)　Select the target SE from the drop-down list box.

(3)　Click [START].

The SE's CPU version is upgraded, and the implementation results are displayed on the pop-up screen.

(4)　Click [OK].

◆ INSTRUCTION ◆

After the above is completed, manually upgrade the SE software version via the following procedures.

☞ *{MU1:1.1.2_Update SE}*

1.9.11 Update SE FPGA

For the MC version V17.1 or later, if the fpgaRmv (FPGA) software shown below (corresponding to MC V16.1) or earlier of the SE is upgraded, a message "The selected SE does not support this function." appears, resulting in failure of upgrade of the FPGA software.

Panel	fpgaRMV (FPGA) software
DR-ID 1201SE	0x0080
DR-ID 1202SE	0x00A0
DR-ID 1211SE	0x00B0
DR-ID 1212SE	0x00B0
DR-ID 1213SE	0x00B8
DR-ID 1214SE	0x00C8

If the FPGA version of the SE is earlier than these, use "Upgrading the SE FPGA" to install an in-between version of FPGA software.

1200_400134.ai

(1) Click "UTILITY" - "Update SE FPGA".
The Update SE FPGA window opens.

(2) Select the target SE from the drop-down list box.

(3) Click [START].
The SE's CPU version is upgraded, and the implementation results are displayed on the pop-up screen.

(4) Click [OK].

◆ **INSTRUCTION** ◆

After the above is completed, manually upgrade the SE software version via the following procedures.

☞ *{MU1:1.1.2_Update SE}*

1.9.12 Replace MP

Configure the settings if the MP is to be replaced.

1200_400116E.ai
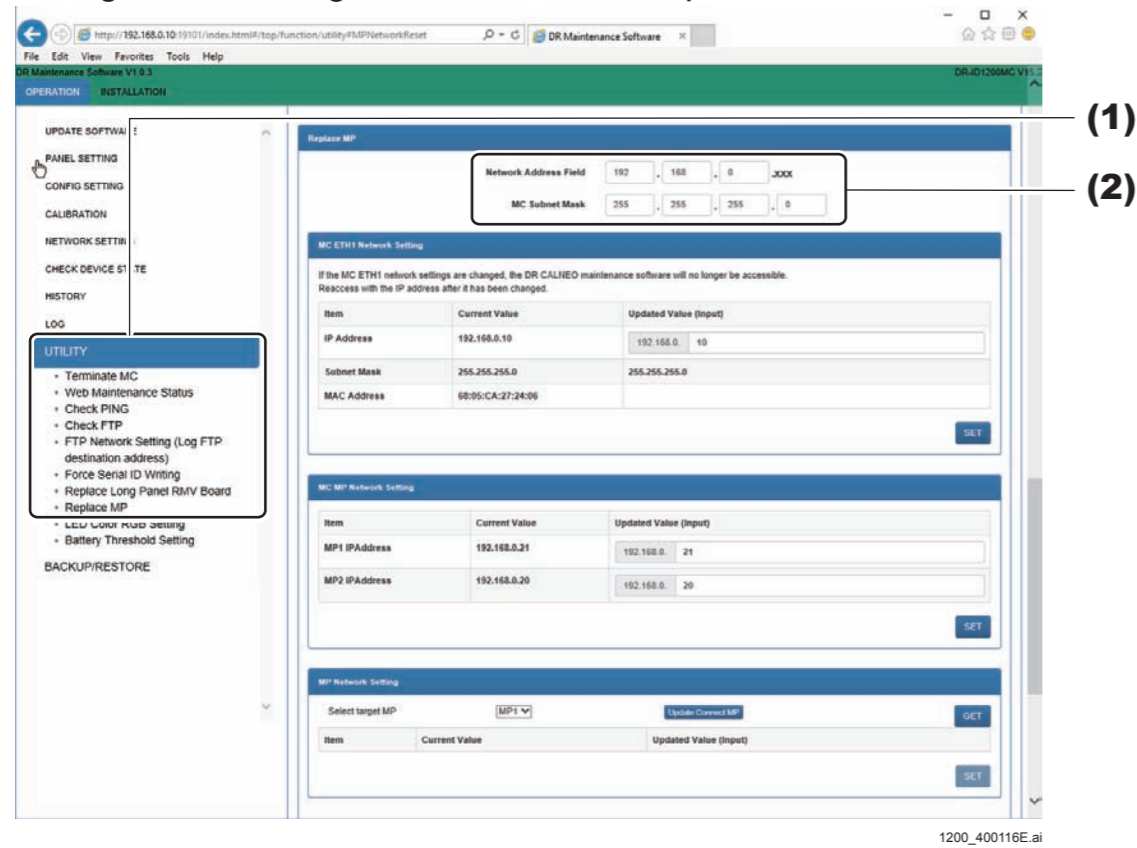
(1) **Click "UTILITY" - "Replace MP".**
The Replace MP window opens.

(2) **To change the Network Address Field and the MC Subnet Mask, change the input values.**

■ MC ETH1 Network Setting

Set the following MC addresses.
- IP Address (Default value: 192.168.0.10)
- Subnet Mask (Default value: 255.255.255.0)

1200_400117E.ai
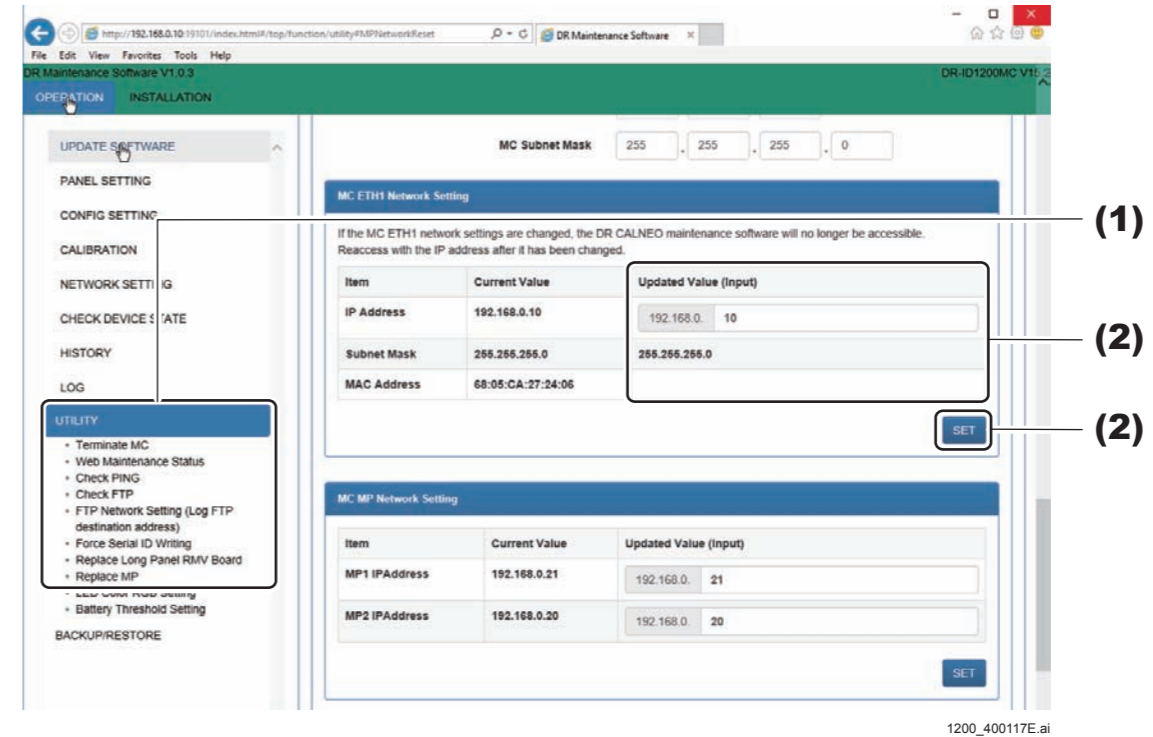
(1) **Click "UTILITY" - "Replace MP".**
The Replace MP window opens.

(2) **If the address is to be changed, input "Updated Value" in the MC ETH1 Network Setting window, and click [SET].**
The address of the MC will be updated.

■ MC MP Network Setting

Set the MP1 and MP2 addresses.
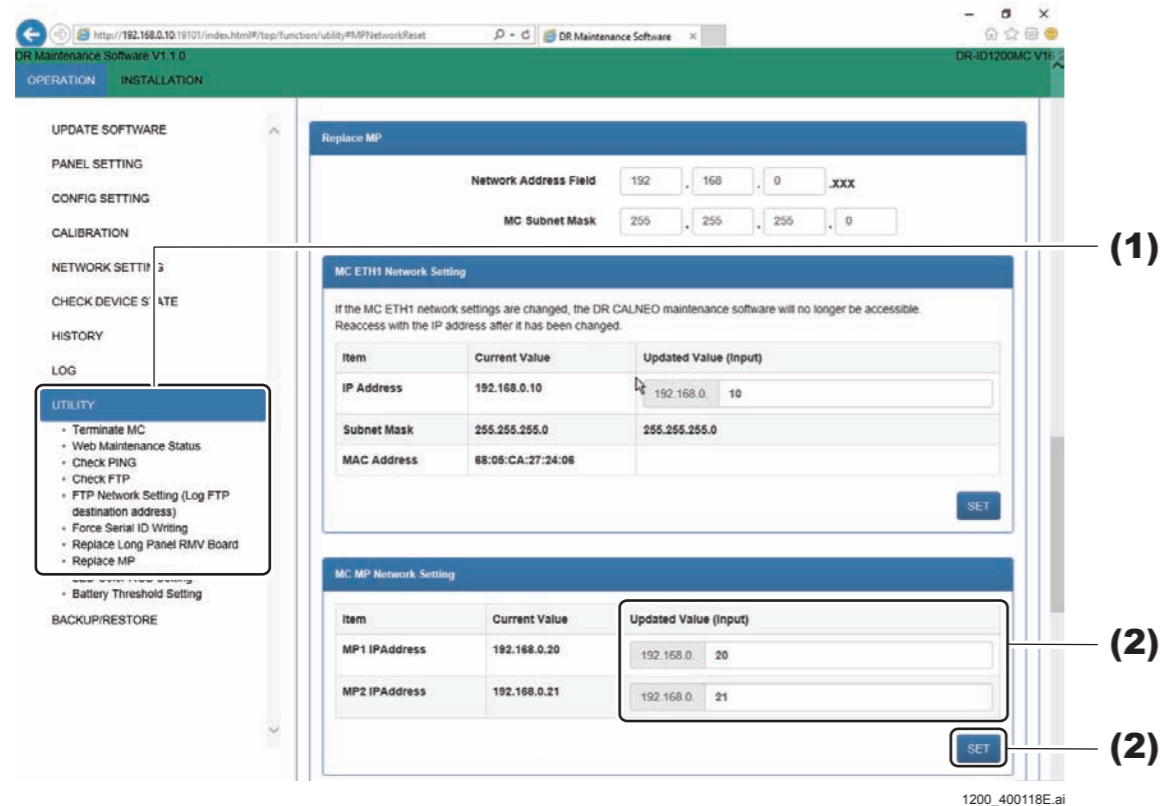
1200_400118E.ai

(1) **Click "UTILITY" - "Replace MP".**
The Replace MP window opens.

(2) **If the MP1 and MP 2 addresses are to be changed, input "Updated Value" in the MC MP Network Setting window, and click [SET].**
The address of the MP will be updated.

(3) **Turn OFF the power of the MP, and then turn it ON again.**

(4) **Left-click the MC Manager from the task tray and execute "EXIT".**
Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

■ Changing the MP IP Address (Preset)

Chang the MP IP address (preset) from the default values.
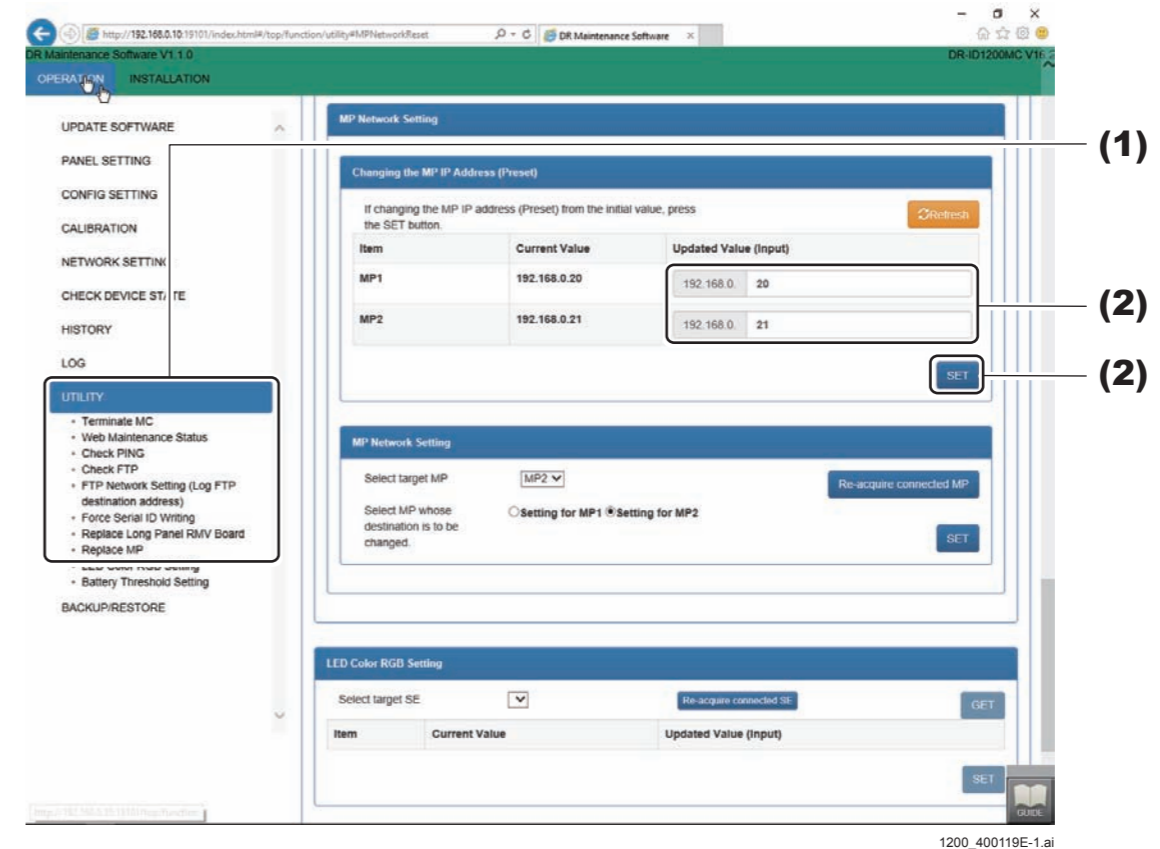
1200_400119E-1.ai

(1) **Click "UTILITY" - "Replace MP".**
The Replace MP window opens.

(2) **If the MP1 and MP 2 addresses are to be changed, input "Updated Value" in the Changing the MP IP Address (Preset) window, and click [SET].**
The address of the MP will be updated.

(3) **Turn OFF the power of the MP, and then turn it ON again.**

(4) **Left-click the MC Manager from the task tray and execute "EXIT".**
Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

■ MP Network Setting

If two MPs are going to be connected, change and set MP1 as MP2.

1200_400119E.ai
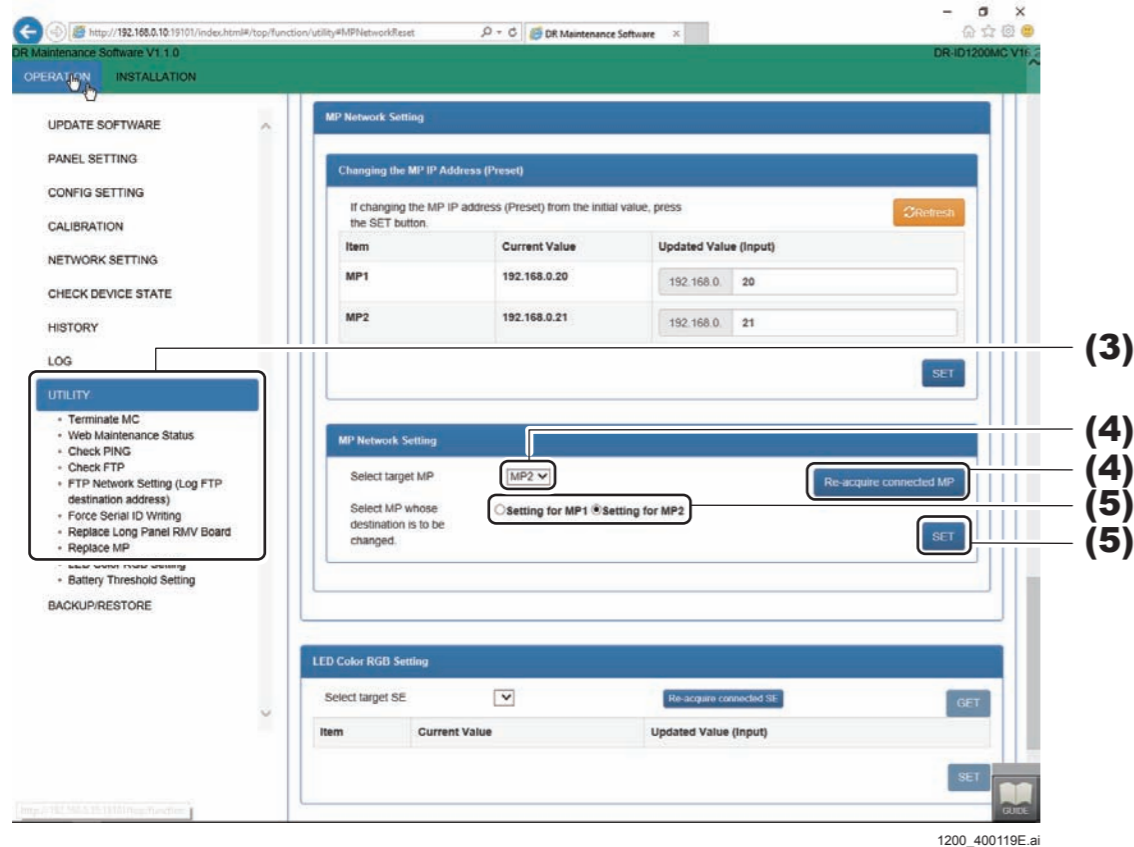
(1) Turn OFF the power of the first MP.

(2) Turn ON the power of the second MP.

(3) Click "UTILITY" - "Replace MP".

The Replace MP window opens.

(4) Select "MP1" from the drop-down list box, and click [Re-acquire connected MP].

(5) Select "Setting for MP2", and click [SET].

The MP2 IP address which was input via "Changing the MP's IP addresses (presets)" will be enabled, and at the same time MP1 will be set as MP2.

(6) Turn OFF the power of the MP, and then turn it ON again.

(7) Left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

◇ REFERENCE ◇

The relationship between the target MP and "Select MP whose destination is to be changed." radio button is mentioned below.
- *Target MP: MP1*
- *Setting for MP1*
  Set the IP address of the MP1 as the MP1 value input in "Changing the MP IP Address (Preset)".
- *Setting for MP2*
  Change the setting of the MP1 to the MP2.
  The MP2 value input in "Changing the MP IP Address (Preset)" gets effective.
- *Target MP: MP2*
- *Setting for MP1*
  Change the MP set as the MP2 to the MP1.
  Not in use usually.
- *Setting for MP2*
  Change the IP address of the MP2.
  Set the IP address of the MP2 to the MP2 value input in "Changing the MP IP Address (Preset)".

1.9.13　LED Color RGB Setting

◆ *NOTE* ◆

Not used in the DR-ID 1300.

Set the LED display colors via the RGB.

1200_400109E.ai
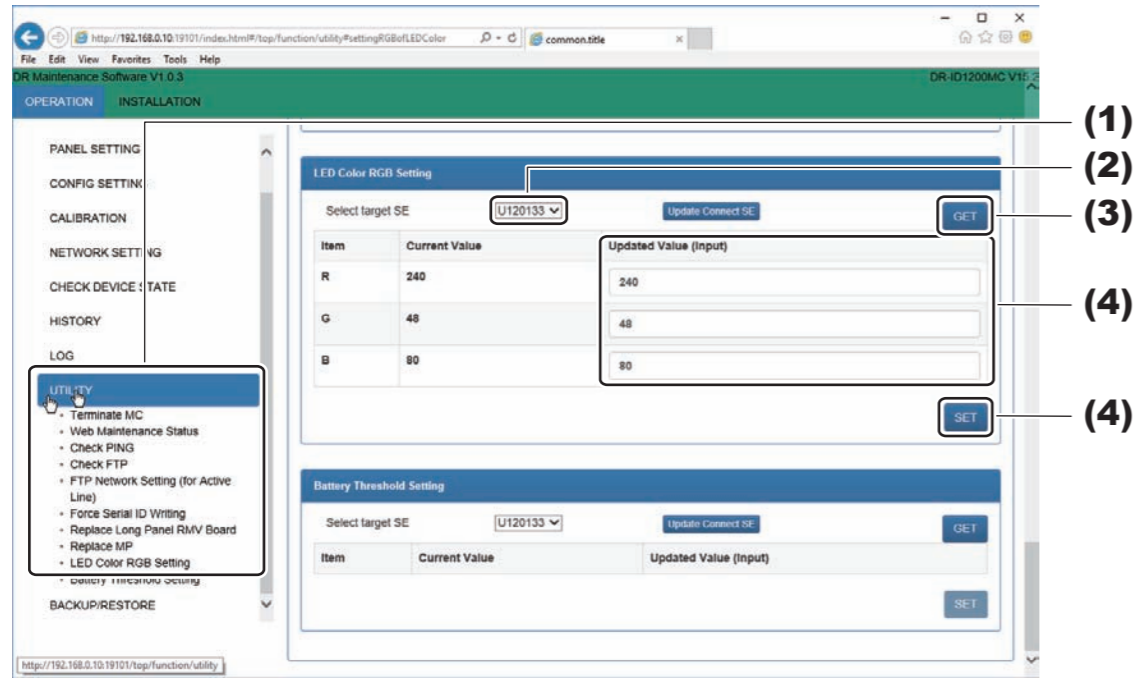
(1) Click "UTILITY" - "LED Color RGB Setting".

The LED Color RGB Setting window opens.

(2) Select the target SE from the drop-down list box.

(3) Click [GET].

The SE LED colors is displayed.

(4) To change the setting values, input the "Updated Value", and click [SET] at the bottom of the window.

The SE LED colors will be changed.

◆ *NOTE* ◆

Restart the SE when the selector color is registered. The selector color registration will be reflected in the SE after restart.

1.9.14　Battery Threshold Setting

◆ *NOTE* ◆

Not used in the DR-ID 1300.

Set the battery reserve threshold values

1200_400110E.ai
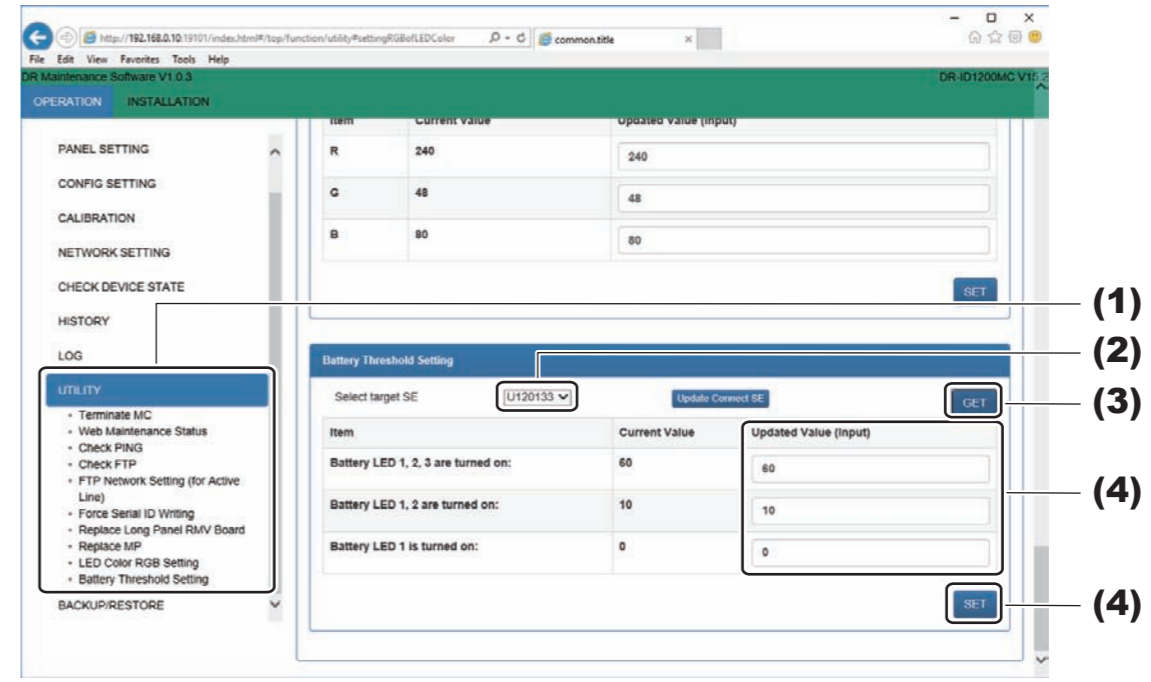
(1) Click "UTILITY" - "Battery Threshold Setting".

The Battery Threshold Setting window opens.

(2) Select the target SE from the drop-down list box.

(3) Click [GET].

The battery reserve threshold values is displayed.

(4) To change the setting values, input the "Updated Value", and click [SET] at the bottom of the window.

The battery reserve threshold values will be changed.

1.9.15 Force Charge the Battery

◆ *NOTE* ◆

Not used in the DR-ID 1300.

1.10   BACKUP/RESTORE

Backup/restore the configuration information and the error log in the HDD.
You can backup/restore the following data:
- SE Correct Data
  For 1 image: YYYYMMDDhhmmss- (Panel ID).ZIP
  For an SE batch: YYYYMMDDhhmmss-PANELS.ZIP
- MC Configuration Data
  YYYYMMDDhhmmss-MC-CONFIG.ZIP
- Exposing History (back up only)
  YYYYMMDDhhmmss-MC-STATISTIC.ZIP
- The log (back up only)
  ALL LOG: YYYYMMDDhhmmss-MC-ALLLOG.ZIP
  CALIBRATION LOG: YYYYMMDDhhmmss-MC-CALIBRATIONLOG.ZIP
  ERROR LOG: YYYYMMDDhhmmss-MC-ERRORLOG.ZIP

◆ *NOTE* ◆

- *The backup files will be saved in the "Downloads" folder by default.*
- *The restored data become effective after the RU is restarted.*

1.10.1   SE Correct Data Backup/Restore

◆ *NOTE* ◆

If it is a system which includes the DR-ID 1200, execute these procedures for the Correct Data Backup/Restore.
For the DR-ID 1300, execute the Correct Data Backup/Restore as per the following.

Backup and restore the SE correction data.
Backing up and restoring can be done per each SE1 sheet, or per batches.

◆ *NOTE* ◆

The restored data become effective after the RU is restarted.

■ Backup (Per Each SE1 Sheet)
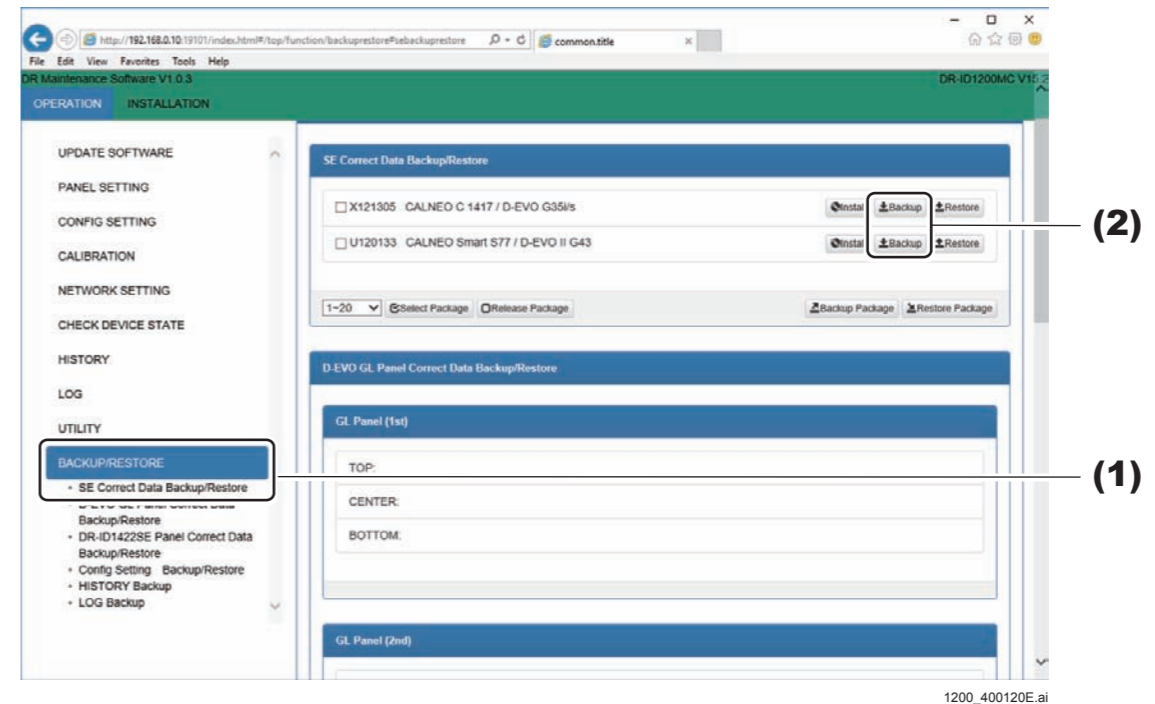
1200_400120E.ai

(1) **Click "BACKUP/RESTORE" - "SE Correct Data Backup/Restore".**
The SE Correct Data Backup/Restore window opens.

(2) **Click [Backup] of the target SE.**
The backing up is implemented, and when it is completed the pop up window will be displayed.

(3) Click [SAVE].

The back up file saving is completed.

◆ *NOTE* ◆

The backup files will be saved in the "Downloads" folder by default.
File name: YYYYMMDDhhmmss-(Panel ID).ZIP

(4) Click [Open folder].

The back up file will be displayed.

■ **Backup Package**

1200_400121E.ai
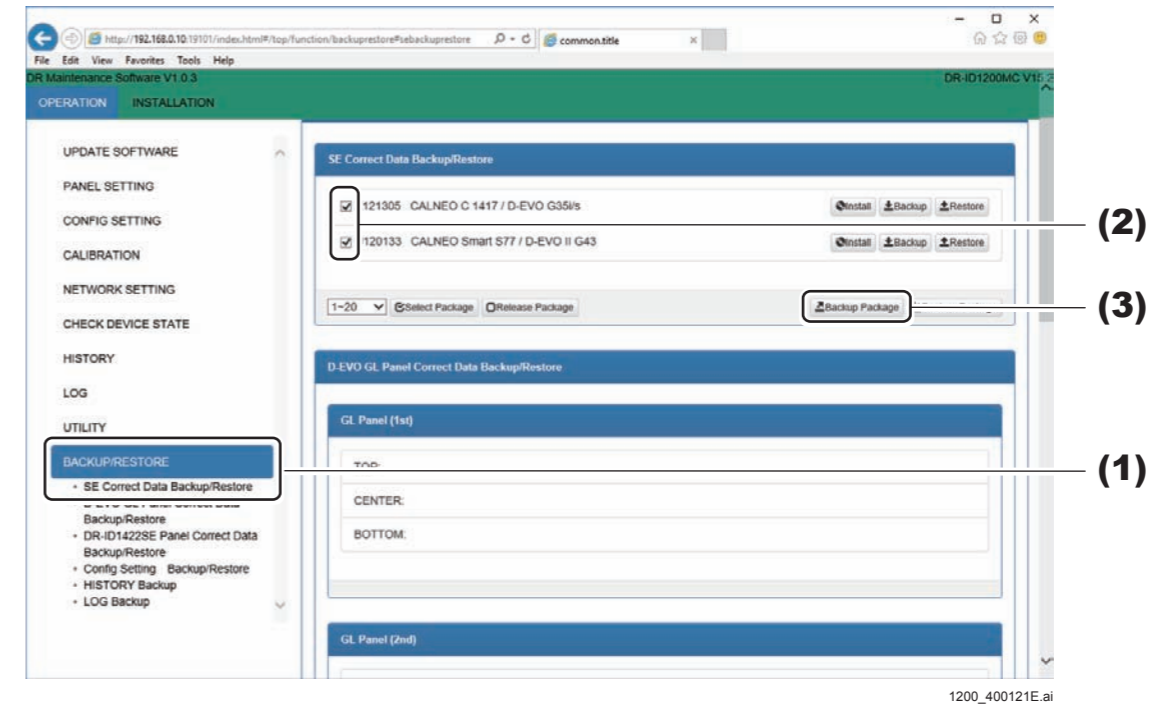
(1) Click "BACKUP/RESTORE" - "SE Correct Data Backup/Restore".

The SE Correct Data Backup/Restore window opens.

(2) Turn ON the target SE checkbox.

(3) Click [Backup Package].

The backing up is implemented, and when it is completed the pop up window opens.

(4) Click [SAVE].

The backup file saving is completed.

◆ *NOTE* ◆

The backup files will be saved in the "Downloads" folder by default.
File name: YYYYMMDDhhmmss-PANELS.ZIP

(5) Click [Open folder].

The backup file will be displayed.

■ Restore (Per Each SE1 Sheet)
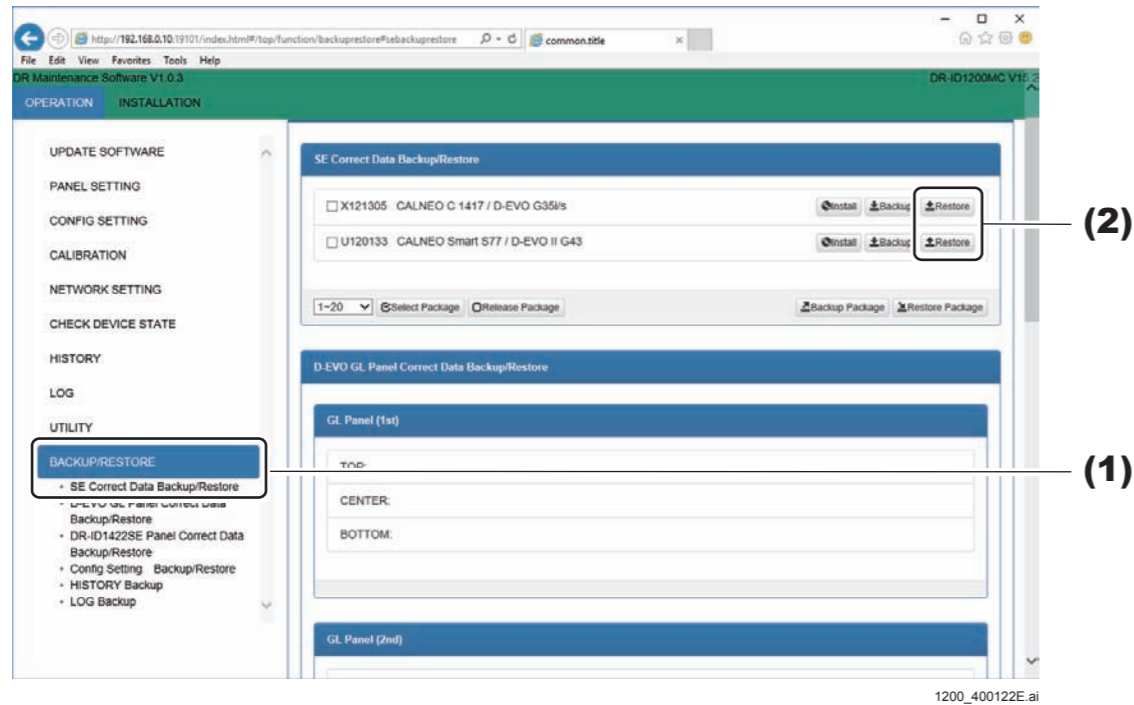
1200_400122E.ai

(1) Click "BACKUP/RESTORE" - "SE Correct Data Backup/Restore".

The SE Correct Data Backup/Restore window opens.

(2) Click [Restore] the target SE.

The correction data restore window is displayed.

1200_400123E.ai

(3) Click [Browse], and after selecting the target correction data, click [OK].

◆ NOTE ◆

Select the file downloaded with DR Maintenance Software.
File name: YYYYMMDDhhmmss-(Panel).ZIP

The restoring is implemented, and if it completed, "Succeeded" will be displayed in the pop up window.

(4) Click [OK].

The SE correction data forced transferring is implemented, and if it completed, "Succeeded" will be displayed in the pop up window.

(5) Click [OK].

■ Restore Package

1200_400125E.ai

(1) **Click "BACKUP/RESTORE" - "SE Correct Data Backup/Restore".**

The SE Correct Data Backup/Restore window opens.

(2) **Turn ON the target SE checkbox.**

(3) **Click [Restore Package].**

The correction data restore window opens.

1200_400126E.ai
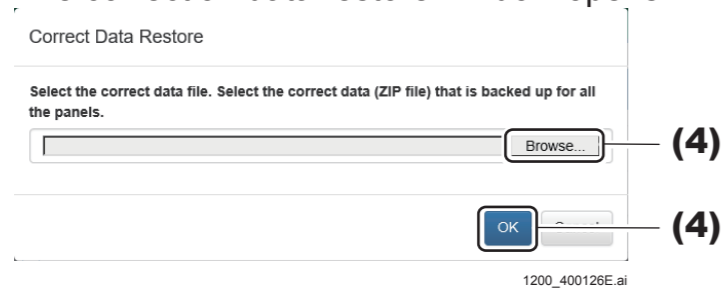
(4) **Click [Browse], and after selecting the target correction data, click [OK].**

◆ NOTE ◆

Select the file downloaded with "Backup Package" of DR Maintenance Software. File name: YYYYMMDDhhmmss-PANELS.ZIP

The restoring is implemented, and if it completed, "Succeeded" will be displayed in the pop up window.

(5) **Click [OK].**

◆ NOTE ◆

To implement the SE correction data forced transferring, implement each SE.

1.10.2 CALNEO GL Panel Correct Data Backup/Restore

Backup and restore the DR-ID 1305SE correction data.
Backing up and restoring can be done per each Panel unit sheet, or per batches.

◆ *NOTE* ◆

The restored data become effective after the RU is restarted.

■ Backup (Per Each Panel unit Sheet)
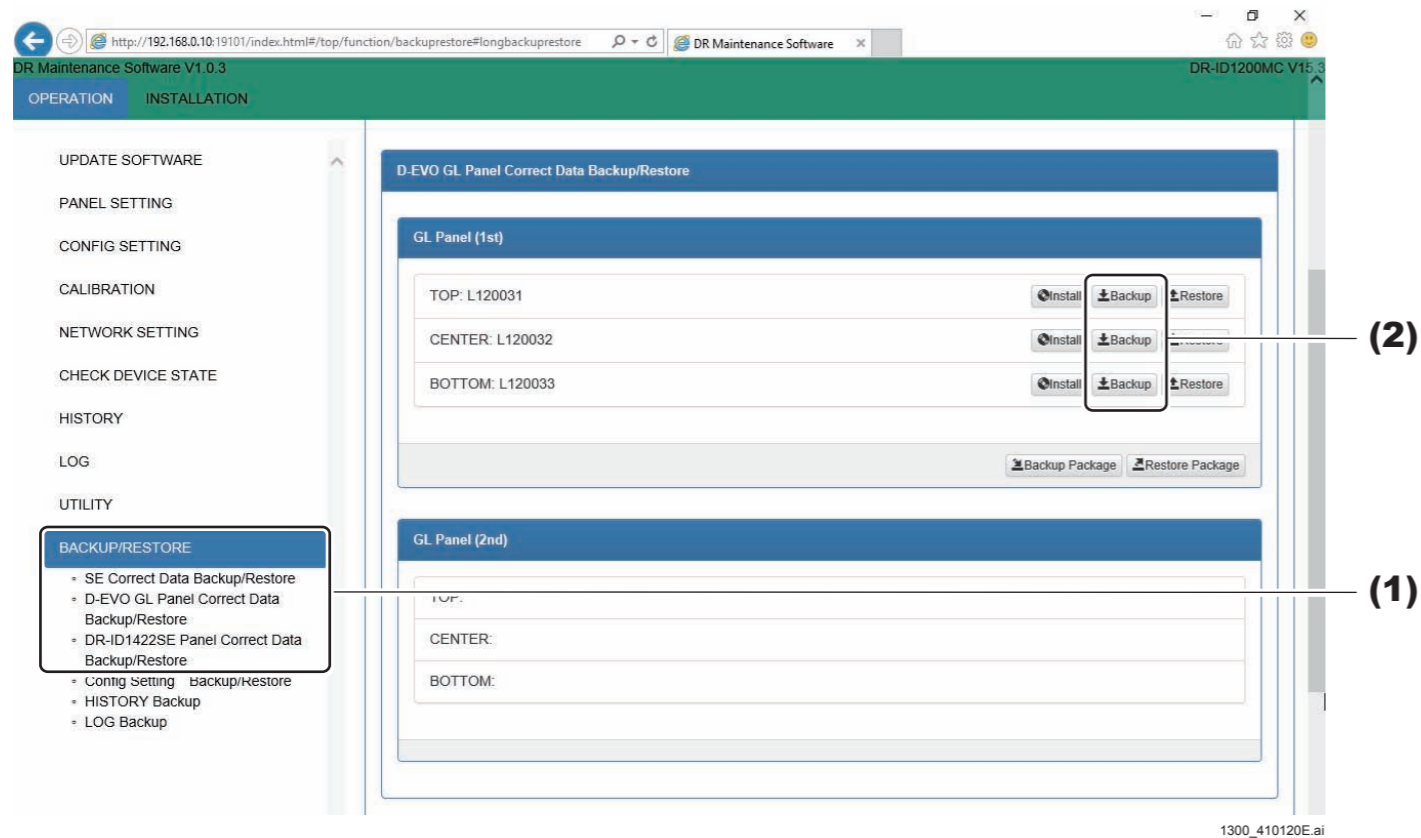
1300_410120E.ai

(1) Click "BACKUP/RESTORE" - "CALNEO GL Panel Correct Data Backup/Restore".

The CALNEO GL Panel Correct Data Backup/Restore window opens.

(2) Click [Backup] of the target Panel unit.

The backing up is implemented, and when it is completed the pop up window will be displayed.

(3) Click [SAVE].

The back up file saving is completed.

◆ *NOTE* ◆

The backup files will be saved in the "Downloads" folder by default.
File name: YYYYMMDDhhmmss-(Panel ID).ZIP

(4) Click [Open folder].

The back up file will be displayed.

■ Backup Package

1300_410010E.ai

(1) Click "BACKUP/RESTORE" - "CALNEO GL Panel Correct Data Backup/ Restore".

The CALNEO GL Panel Correct Data Backup/Restore window opens.

(2) Click [Backup Package].

The backing up is implemented, and when it is completed the pop up window opens.

(3) Click [SAVE].

The backup file saving is completed.

◆ *NOTE* ◆

The backup files will be saved in the "Downloads" folder by default.
File name: YYYYMMDDhhmmss-PANELS.ZIP

(4) Click [Open folder].

The backup file will be displayed.

■ Restore (Per Each Panel unit Sheet)
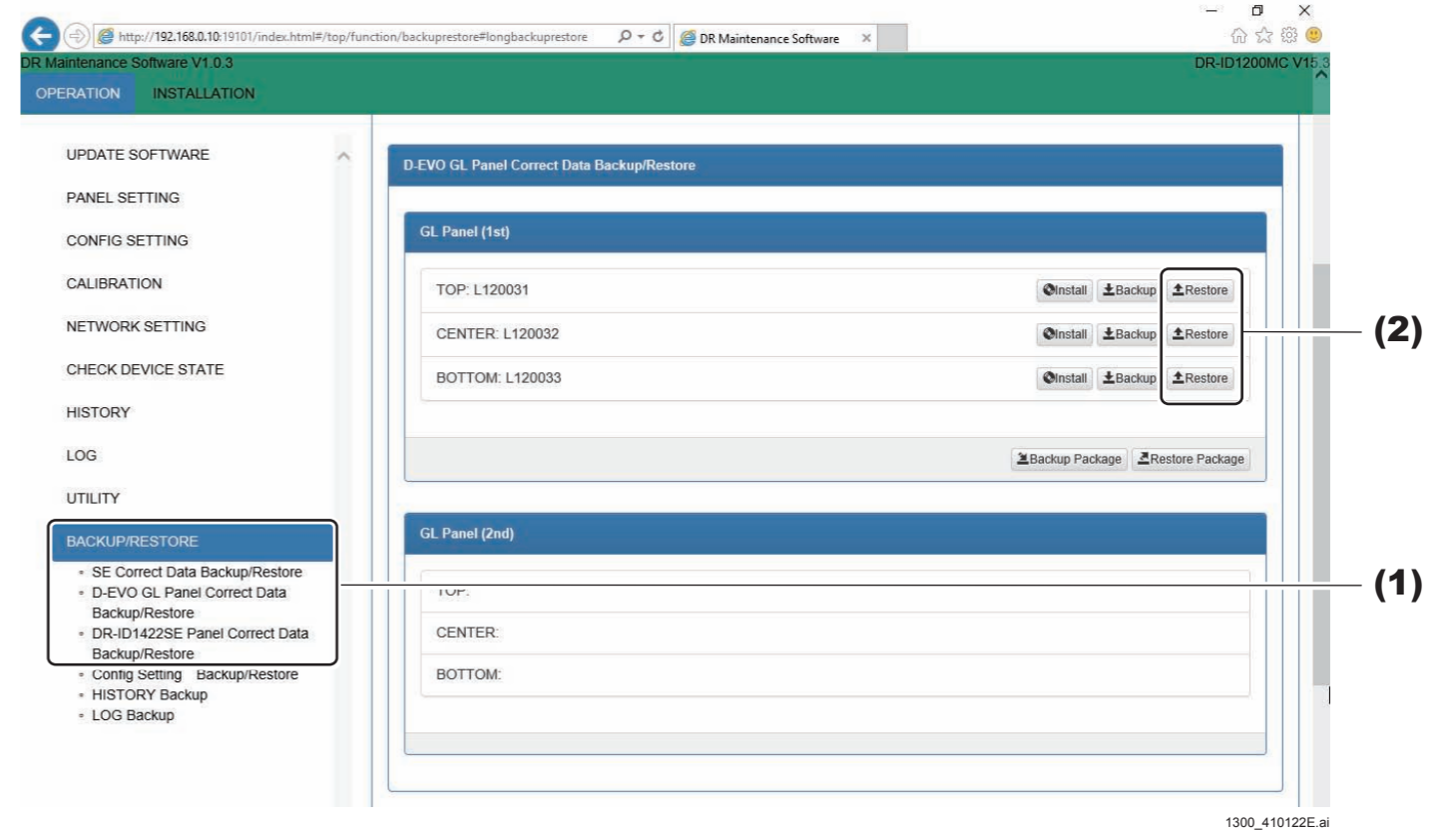
1300_410122E.ai

(1) Click "BACKUP/RESTORE" - "CALNEO GL Panel Correct Data Backup/ Restore".

The CALNEO GL Panel Correct Data Backup/Restore window opens.

(2) Click [Restore] the target Panel unit

The correction data restore window is displayed.

1200_400123E.ai

(3) Click [Browse], and after selecting the target correction data, click [OK].

◆ *NOTE* ◆

Select the file downloaded with DR Maintenance Software.
File name: YYYYMMDDhhmmss-(Panel).ZIP

The restoring is implemented, and if it completed, "Succeeded" will be displayed in the pop up window.

(4) Click [OK].

The SE correction data forced transferring is implemented, and if it completed, "Succeeded" will be displayed in the pop up window.

(5) Click [OK].

■ **Restore Package**

1300_410125E.ai

(1) Click "BACKUP/RESTORE" - "CALNEO GL Panel Correct Data Backup/ Restore".

The CALNEO GL Panel Correct Data Backup/Restore window opens.

(2) Click [Restore Package].

The correction data restore window opens.

1200_400126E.ai

(3) Click [Browse], and after selecting the target correction data, click [OK].

◆ *NOTE* ◆

Select the file downloaded with "Backup Package" of DR Maintenance Software.
File name: YYYYMMDDhhmmss-PANELS.ZIP

The restoring is implemented, and if it completed, "Succeeded" will be displayed in the pop up window.

(4) Click [OK].

◆ *NOTE* ◆

To implement the SE correction data forced transferring, implement each SE.

1.10.3 DR-ID 1422SE Panel Correct Data Backup/Restore

◆ *NOTE* ◆

Not used in the DR-ID 1300.

1.10.4　Config Setting Backup/Restore

Backup and restore the MC configuration data.

■ Back up

1200_400127E.ai
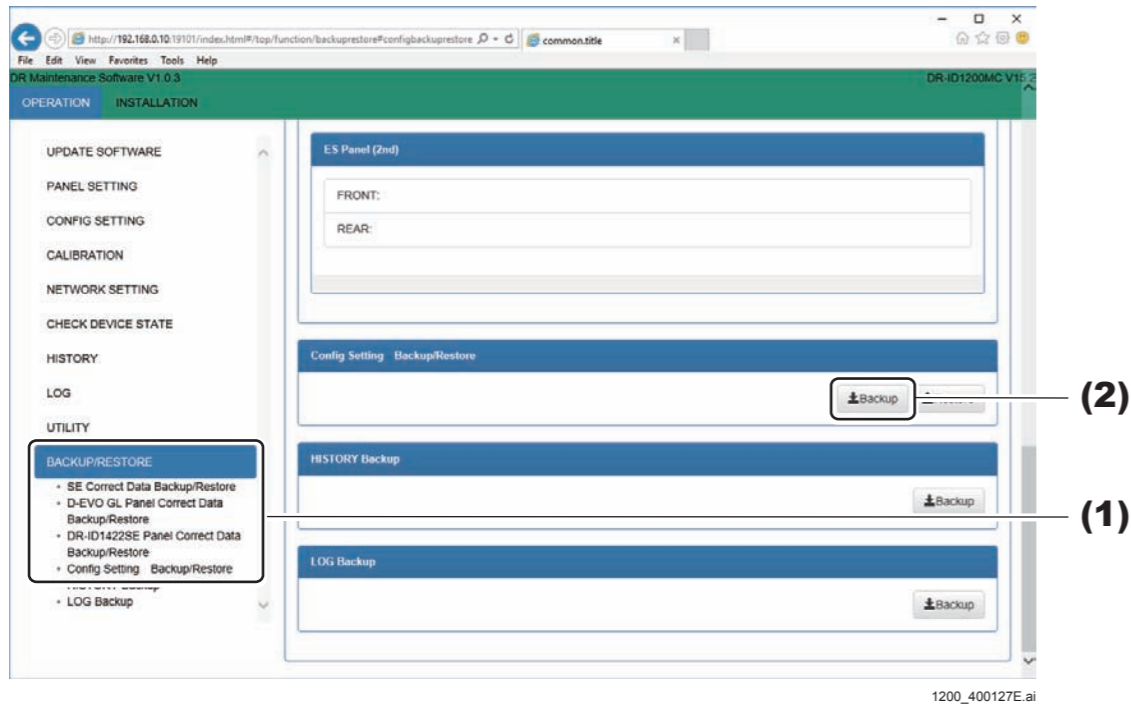
(1)　Click "BACKUP/RESTORE" - "Config Setting Backup/Restore".

The SE Config Setting Backup/Restore window opens.

(2)　Click [Backup].

(3)　Click [SAVE].

The backup file saving is completed.

◆ *NOTE* ◆

The backup files will be saved in the "Downloads" folder by default.
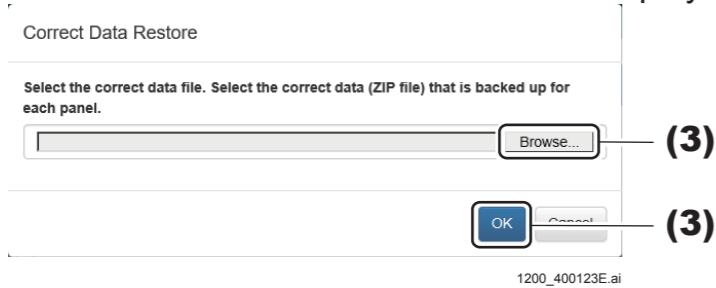*File name: YYYYMMDDhhmmss-MC-CONFIG.ZIP*

(4)　Click [Open folder].

The backup file is displayed.

■ Restore

1200_400128E.ai
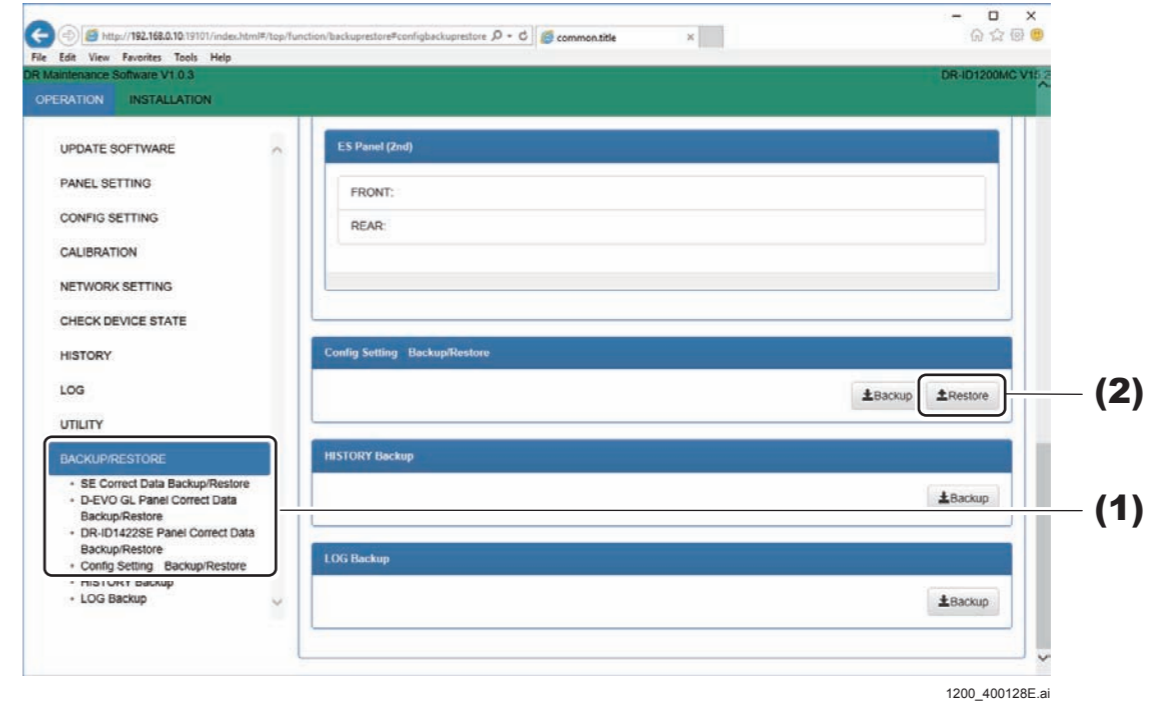
(1)　Click "BACKUP/RESTORE" - "Config Setting Backup/Restore".

The Config Setting Backup/Restore window opens.

(2)　Click [Restore].

The Restore configuration files is displayed.

1200_400129E.ai
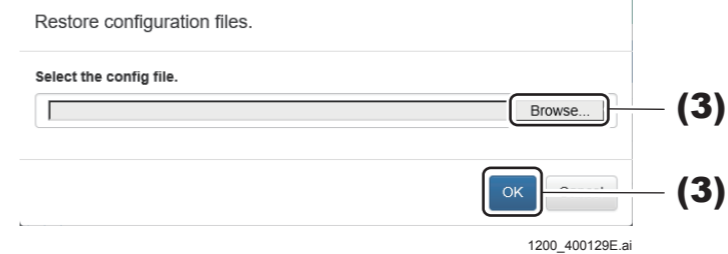
(3) Click [Browse], and after selecting the target configuration data, click [OK].

◆ *NOTE* ◆

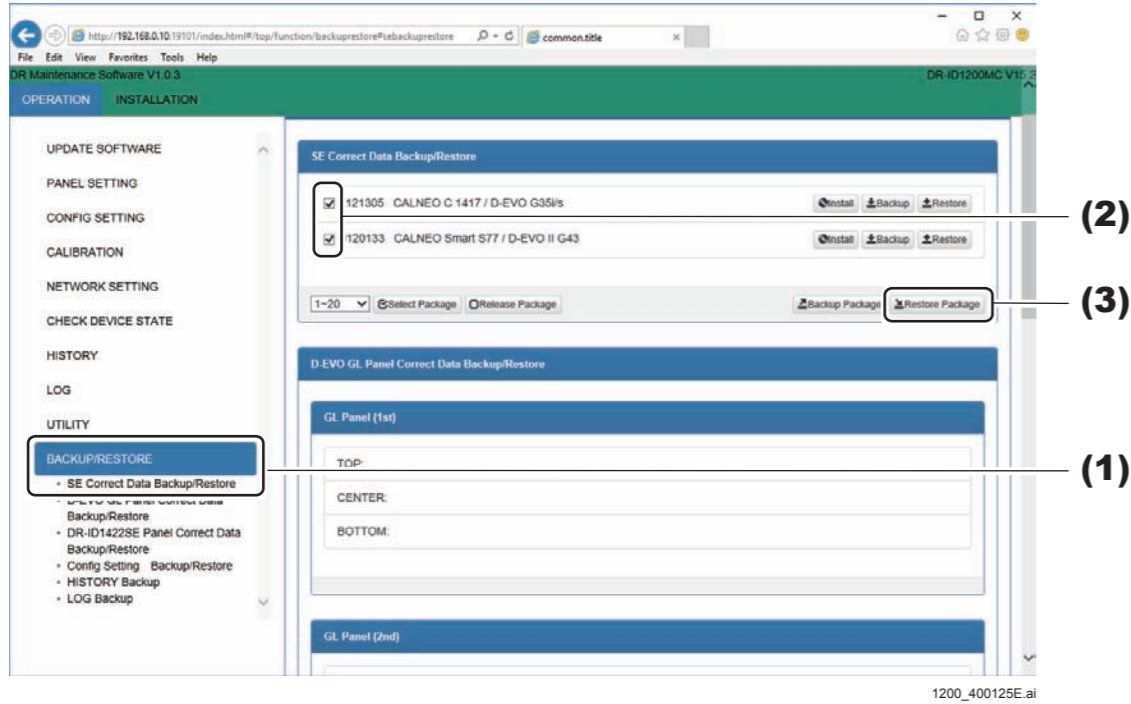*Select the file downloaded with DR Maintenance Software.*
File name: YYYYMMDDhhmmss-MC-CONFIG.ZIP

The restoring is implemented, and if it completed, "Succeeded" will be displayed in the pop up window.

(4) Click [OK].

1.10.5 HISTORY Backup

Backup the exposing histories and battery information which is saved on the MC.

1200_400130E.ai
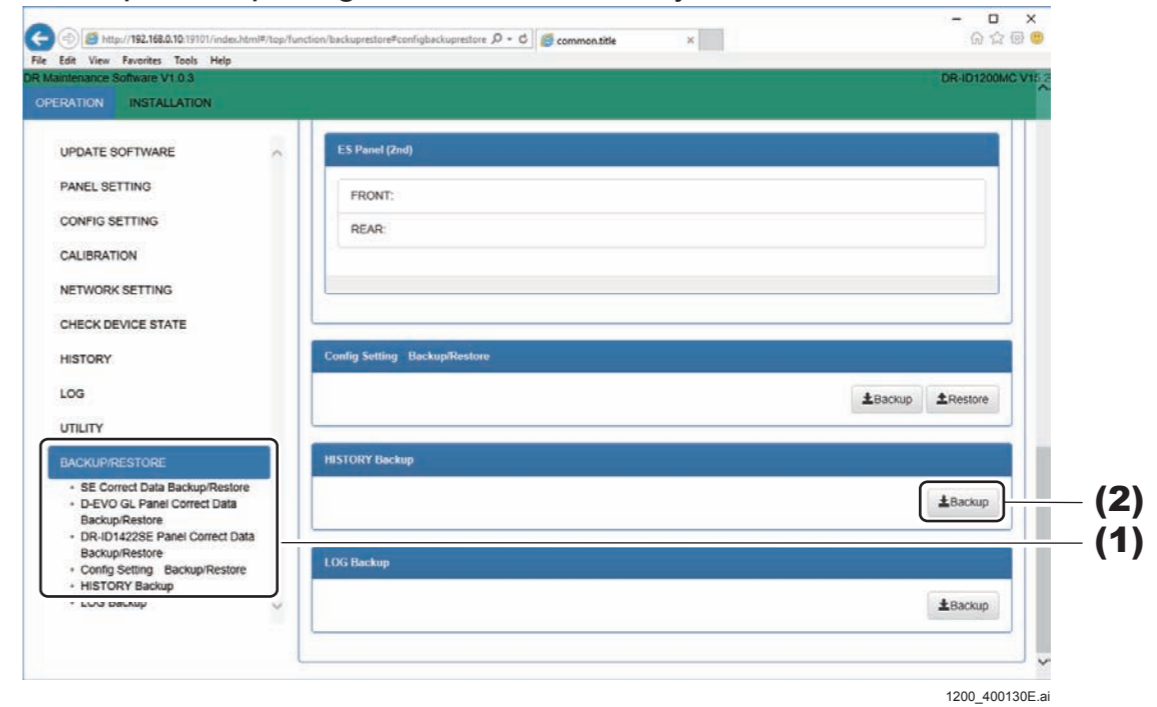
(1) Click "BACKUP/RESTORE" - "HISTORY Backup".

The HISTORY Backup window opens.

(2) Click [Backup].

(3) Click [SAVE].

The backup file saving is completed.

◆ *NOTE* ◆

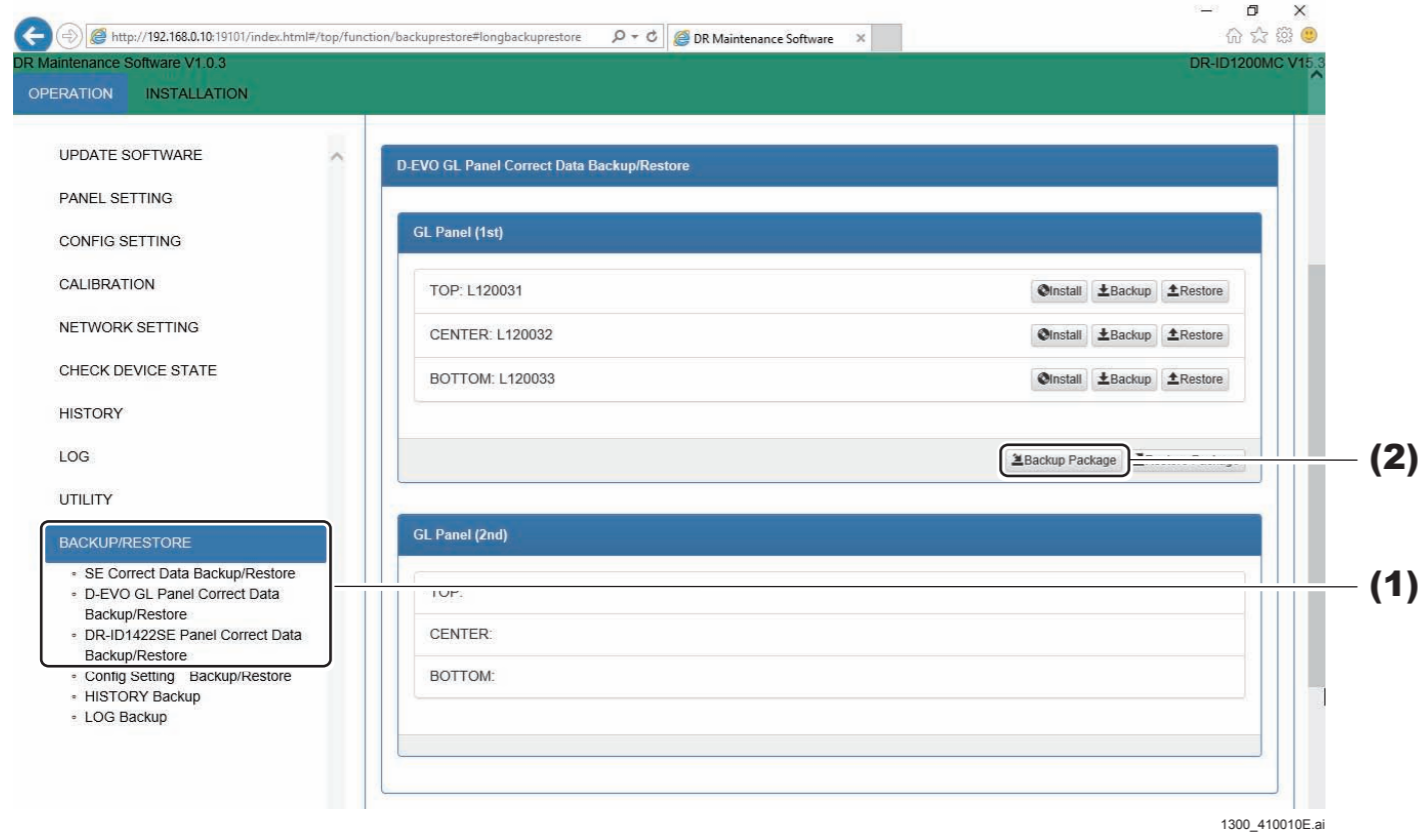*The backup files will be saved in the "Downloads" folder by default.*
File name: YYYYMMDDhhmmss-MC-STATISTIC.ZIP

(4) Click [Open folder].

The backup file is displayed.

1.10.6   LOG Backup

Back up the following logs.
- All Log
- Calibration Log
- Error Log

1200_400131E.ai
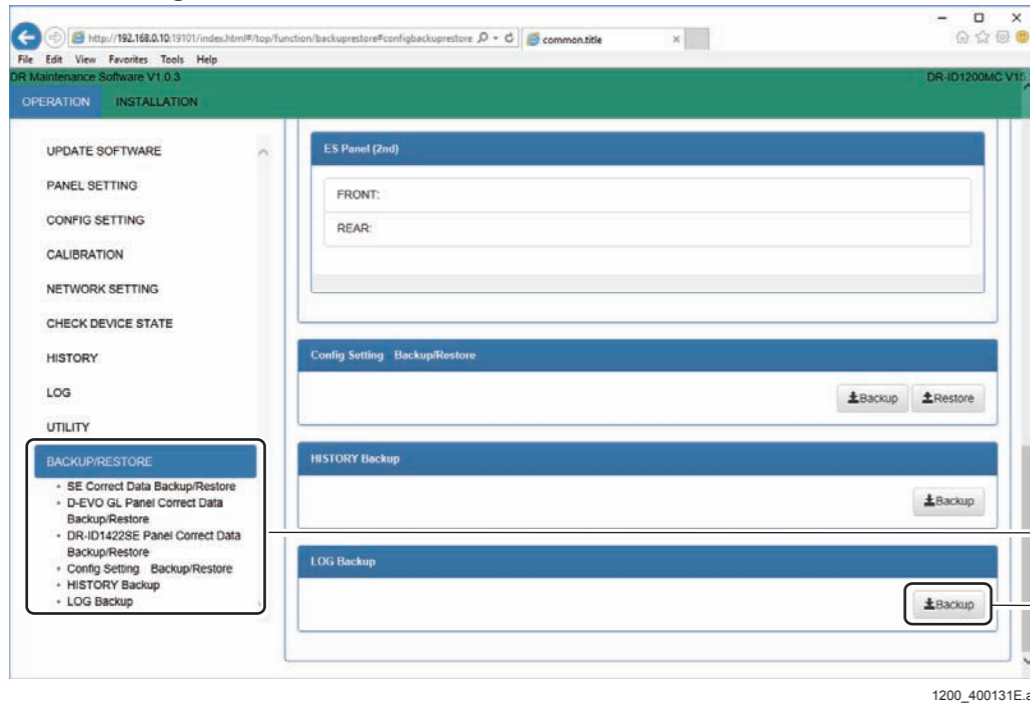
(1)   Click "BACKUP/RESTORE" - "LOG Backup".

The LOG Backup window opens.

(2)   Click [Backup].

The Save Log window opens.

1200_400132E.ai
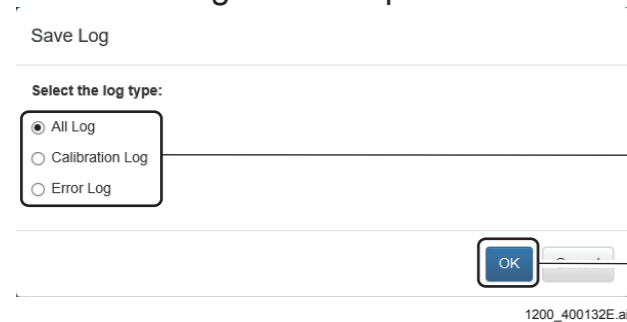
(3)   After selecting the log type, click [OK].

The target Log will be saved.

◆ NOTE ◆

The backup files will be saved in the "Downloads" folder by default.
ALL LOG: YYYYMMDDhhmmss-MC-ALLLOG.ZIP
CALIBRATION LOG: YYYYMMDDhhmmss-MC-CALIBRATIONLOG.ZIP
ERROR LOG: YYYYMMDDhhmmss-MC-ERRORLOG.ZIP

(4)   Click [Save].

The log file saving is completed.

(5)   Click [Open folder].

The log file is displayed.

■ Log item

Copies the configuration information and the error log in the HDD to a desired location on the CL (a recording medium or a folder).
You can back up the following data:
If "ALL LOG" is selected, all of the following logs will be backed up at one time.

No.	Select item	Function
1	CALIBRATION LOG	Calibration history log Folder name: CALIB File name: CALIB.LOG
2	ERROR LOG	Error log Folder name: ERROR File name: ERRORB.LOG
3		Configuration file Folder name: CONFIG
4		Communication log between the CL and the MC Folder name: CONSOLE File name: CONSOLE.LOG
5		Panel drop/impact log Folder name: GLG When the following execution file is copied into the folder where the log file is saved and is double-clicked, a file converted to a viewable format is generated in the same folder (file name after conversion: GLG_[file name before conversion]). C:¥ProgramFiles¥FujiFilm¥FCR¥DR-ID1200¥SYSTEM¥COMMON¥GLG.exe

No.	Select item	Function
6		ISC TRACE LOG: Communication log between packages (subsystems). For design verification. Folder name: ISC File name: ISC.LOG
7		Panel log. For design verification. Folder name: MONOLITH
8		Communication log of TCP Folder name: NETWORK
9		Communication log between packages (subsystems). For design verification. The X-ray automatic detection log and the compensation data share log are included here. Folder name: TRACE
10		IO TRACE LOG: Not used in the machine. Folder name: IOT
11		Not used in the machine. Folder name: LP_IMAGE
12		Not used in the machine. Folder name: ES_IMAGE

◆ *NOTE* ◆

Refer to the following for further details on the CALIBRATION LOG files, and GLG log files.

☞ **{MT:5._BACKUP FILE}**

■ Relation among configurations

■ Point 1: X-ray shot cable

The name of a connector to which a cable of each operative method
is connected is registered in advance via the DR Maintenance Software.

X-CON
- Free
- Table
- Upright

SE1
SE serial No.

SE2
SE serial No.

MP1
- MPC7
- MPC6
- MPX1
- MPX2

MC

[DR Maintenance Software]

[OP SETTING(FREE)]

[OP SETTING(TABLE)]

[OP SETTING(UPRIGHT)]
[MP1] or
[MP2] or
[None]

[PORT SETTING(UPRIGHT)]
[MPX1] or
[MPX2] or
[None]

[SE Registration]
SE1: SE serial No.
SE2: SE serial No.
SE3: SE serial No.
SE4: SE serial No.
SE5: SE serial No.

CSL

[Selector Setting]

[Selector12]

[Selector1]
[Technique Code]: Defines the operative method.
[Reader Type]:
    [FPD-C]: FREE exposure with FPD or
    [FPD-T]: TABLE exposure with FPD or
    [FPD-U]: UPRIGHT exposure with FPD
[Caption]: Selector name
[Icon Type]: Selector icon
[Device Name]: Panel identification name

[Device Setting]
[Device Name]: Panel identification name
[FPD Device ID]: SE Serial No.
[Device Type]: Defines the panel for use.
        [D-EVO] or
        [AcSelarate]
[Device Color]: Identification of SE

Image processing is selected
depending on the type of the panel.

■ Point 2: SE serial No.

Serial Nos. of all panels are registered in advance via the DR Maintenance Software.
The operative method for exposure and the panel to be used are determined based on the
CSL setting (not depending on the connector (MPC6 or 7) to which the panel is connected).

DRID600_G0139E.ai

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DR-ID 1300 / DR-ID 1300PU
Service Manual

Maintenance Utility (MU2)
(RU PC-TOOL)

1. PC-TOOL

■ Outline of the PC-TOOL

The PC-TOOL is a tool for exclusive use of the service engineer to set and check the RU functional conditions by the operation from the CL.

■ PC-TOOL Window

DRID600_G0001.ai
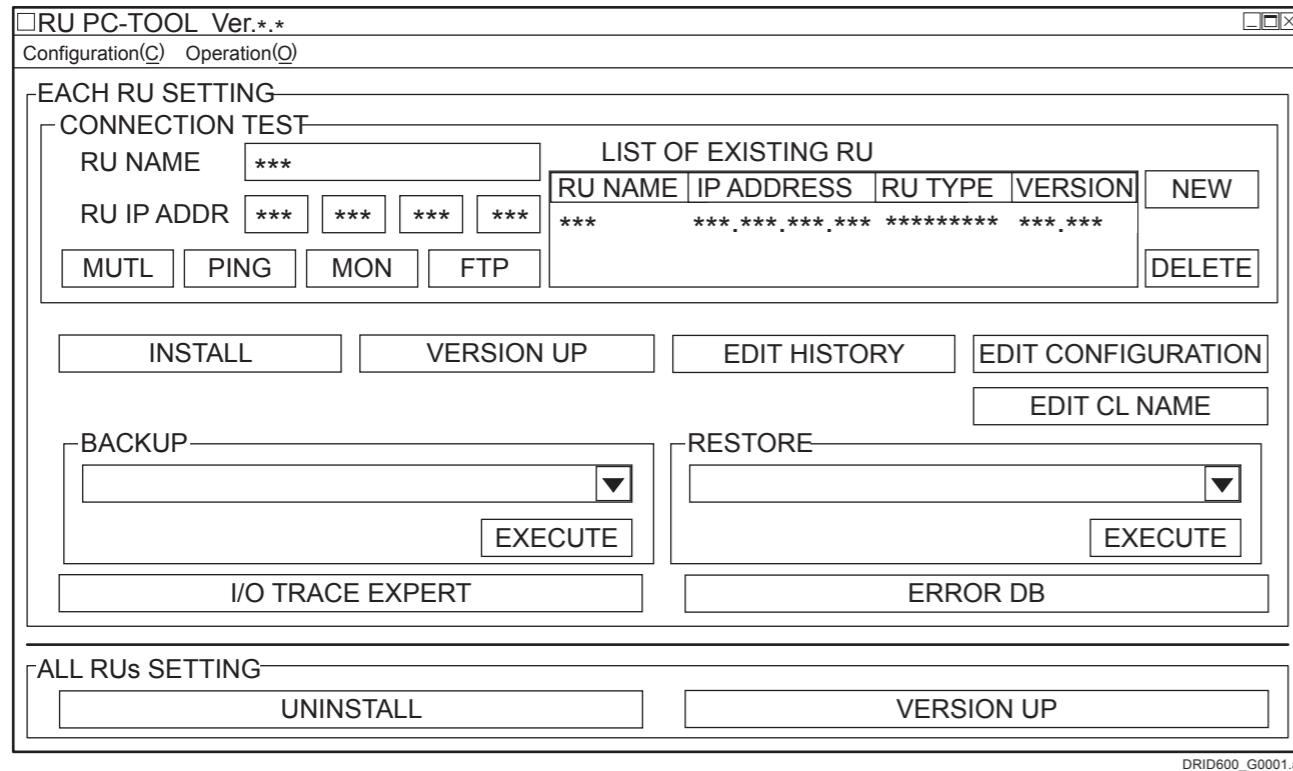
■ Tree of PC-TOOL

Tree of PC-TOOL
PC-TOOL
☞ {1.1_NEW}
☞ {1.2_LIST OF EXISTING RU}
☞ {1.3_DELETE}
☞ {1.4_MUTL}
☞ {1.5_PING}
☞ {1.6_MON}
☞ {1.7_FTP}
☞ {1.8_INSTALL}
☞ {1.9_VERSION UP}
☞ {1.10_EDIT HISTORY}
☞ {1.11_EDIT CONFIGURATION}
☞ {1.12_EDIT CL NAME}
☞ {1.13_BACKUP}
☞ {1.14_RESTORE}
☞ {1.15_I/O TRACE EXPERT}
☞ {1.16_ERROR DB}
☞ {1.17_UNINSTALL (All RUs)}
☞ {1.18_VERSION UP (All RUs)}
☞ {1.19_Configuration}
☞ {1.19.1_CDPath}

■ [INSTALL] Button

Clicking [INSTALL], an FTP folder is created in the FTP server HDD. After the RU software is copied in the FTP server, installed in the MC.
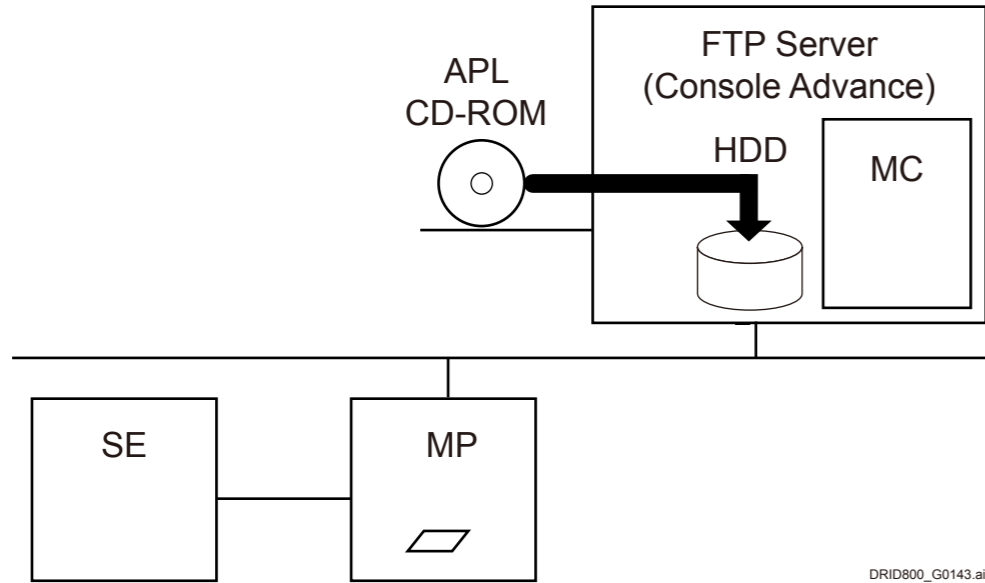
DRID800_G0143.ai

■ [VERSION UP] Button

Unlike other types of machines, clicking [VERSION UP] causes only the MC application programs to be version-updated by the software installed in the HDD of the DX Console (FTP server).

◇ *REFERENCE* ◇

The MP and SE application programs are version-updated via the MC, by means of the software installed in the HDD of the DX Console (FTP server).

Execute the following command to version-update the MP and SE application programs.

- *Updating MP Application Software Version*

  Install >> Install MP Software >> MP1 Install>>MP1 Software VerUp Install
- *Updating SE Application Software Version*

  Install >> Install SE Software >> Install SE FPGA Software, Install SE LAN Software and Install SE MCU Software
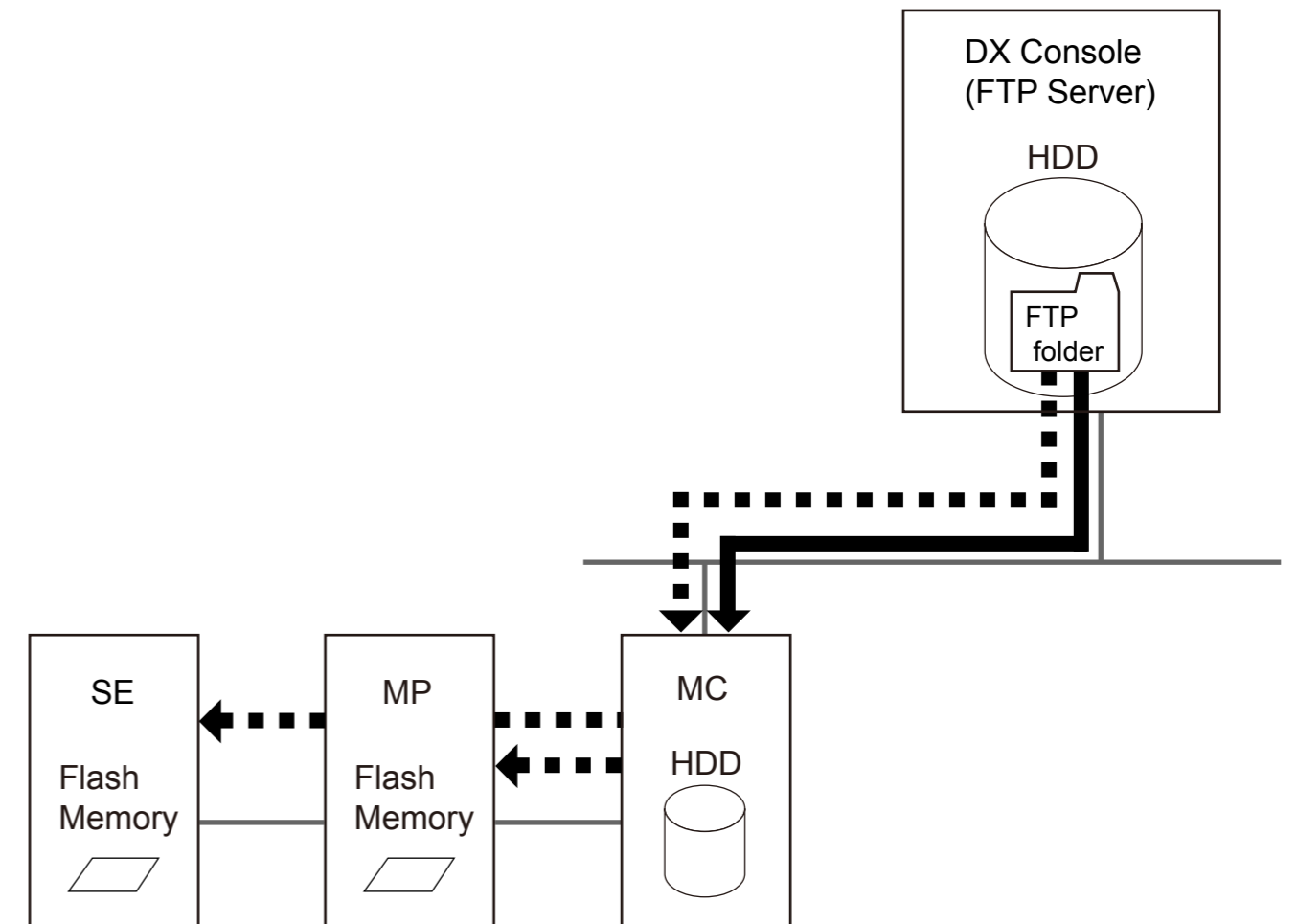
DRID600_G0062.ai

■ **Starting Up and Exiting the PC-TOOL**

● **Starting up the PC-TOOL**

(1) **Press the [Windows] key on the keyboard, and enter the Windows Start menu.**

(2) **Open the "Run..." window from the Start menu of Windows. Specify ["C:\Program Files\FujiFilm\FCR\TOOL\RuPcTool\RuPCTool.exe"], and then click [OK].**
→The "PC-TOOL" main window appears.
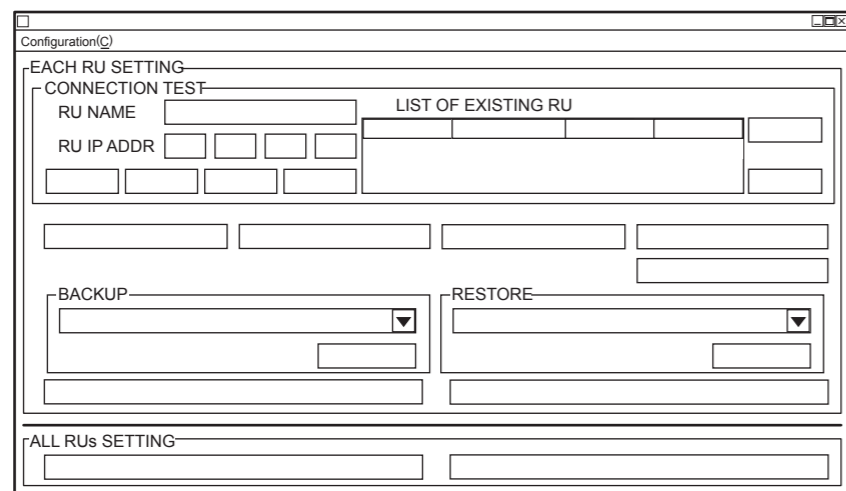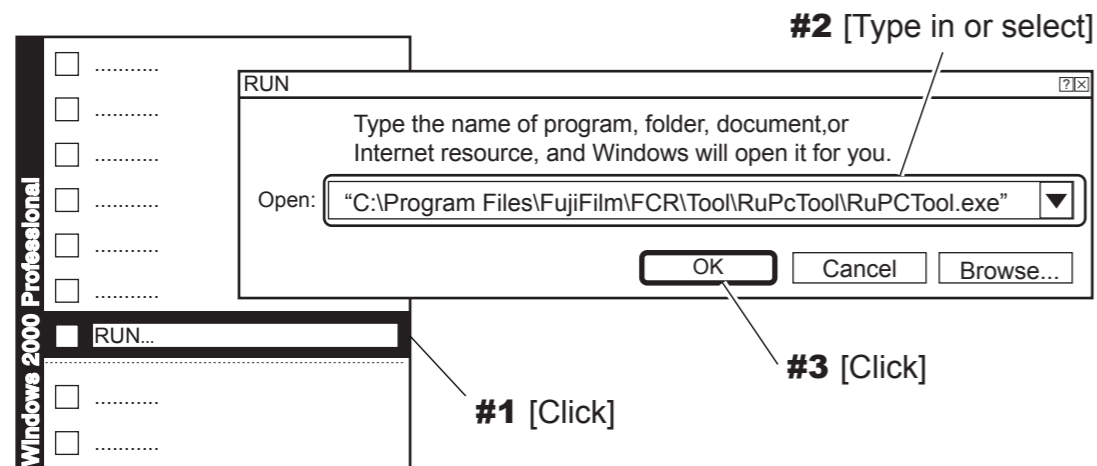
DRID600_G0002.ai

● **Exiting the PC-TOOL**

(1) **Click ☒ located in the upper right corner of the Main Screen of the PC-TOOL.**

1.1   NEW

■ Function

Sets the name and IP address of the RU when it is to be newly installed or added.

■ Procedures

The example below shows how to register the RU whose IP address is "172.16.1.10".

(1) Start up the RU PC-TOOL.

☞ {MU2:1._PC-TOOL}

(2) Click [NEW].

(3) Set the "RU NAME" and "RU IP ADDR".

◆ NOTE ◆

The maximum input character count for "RU NAME" is as per the following.
- *MC application V3.4 or earlier: 16 one-byte characters*
- *MC application V11.0 or later: 15 one-byte characters*
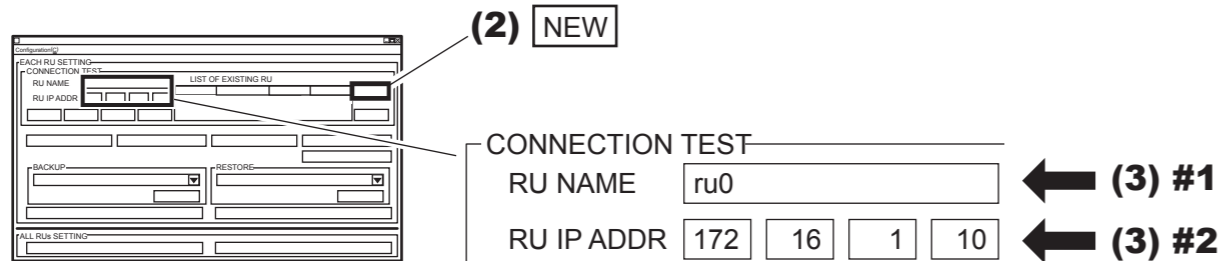
DRID600_G0003.ai

(4) Exit the RU PC-TOOL.

1.2   LIST OF EXISTING RU

■ Function

Displays a list of RUs that have been completely installed.

■ Procedures

(1) Start up the RU PC-TOOL.

☞ {MU2:1._PC-TOOL}

The RU PC-TOOL window opens on the CL screen to display the "LIST OF EXISTING RU", which displays a list of RUs that have been completely installed.

◆ INSTRUCTION ◆

Uninstall the RU of interest if the "RU TYPE" column is left blank, and again install it.

<Display example>

RU NAME	IP ADDRESS	RU TYPE	VERSION
ru0	172.16.1.10	DR-ID1300	V1.0
ru1	172.16.1.11		V1.0

Nothing is displayed.
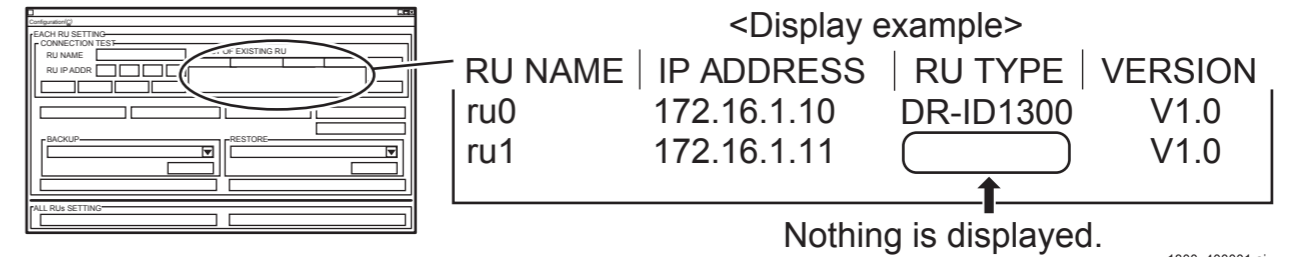
1300_400001.ai

(2) Exit the RU PC-TOOL.

1.3 DELETE

■ Function

Delete the RU registered in the "LIST OF EXISTING RU" from the FTP server.

◆ NOTE ◆

Be sure to back up the data before exercising the "DELETE" function.

◇ REFERENCE ◇

Upon execution of "DELETE", information of the corresponding RU is deleted from the "LIST OF EXISTING RU".

■ Procedures

(1) **Start up the RU PC-TOOL.**
☞ {MU2:1._PC-TOOL}

(2) **Select the RU to be deleted from the RU's registered in the "LIST OF EXISTING RU".**

(3) **Click [DELETE].**

<Display example>

RU NAME	IP ADDRESS	RU TYPE	VERSION
ru0	172.16.1.10	DR-ID1300	V1.0
ru1	172.16.1.11	*********	V1.0

(2)

(3) DELETE

1300_400002.ai

(4) **Exit the RU PC-TOOL.**

1.4 MUTL

■ Function

Performs Board check details/adjustment/checks and calibration.

■ Starting Up and Exiting the MUTL

● Starting up the MUTL

(1) **Start up the RU PC-TOOL.**
☞ {MU2:1._PC-TOOL}

(2) **From "LIST OF EXISTING RU", select an [RU].**

(3) **Click [MUTL].**

MUTL window appears on the CL screen.

(3)

<Display example>

RU NAME	IP ADDRESS	RU TYPE	VERSION
ru0	172.16.1.10	DR-ID1300	V1.0
ru1	172.16.1.11	*********	V1.0

(2)

MUTL window

1300_400003.ai

● Exiting the MUTL

(1) **Click ☒ in the upper right corner of the MUTL window.**

(2) **Exit the RU PC-TOOL.**

■ Common MUTL Operating Procedures

The operating procedures common to various MUTL windows are described below:

"Category selection" buttons

"Category change" buttons

"Function execution" buttons

"Result display area"   "Lower hierarchical level" mark

1200_400004E.ai
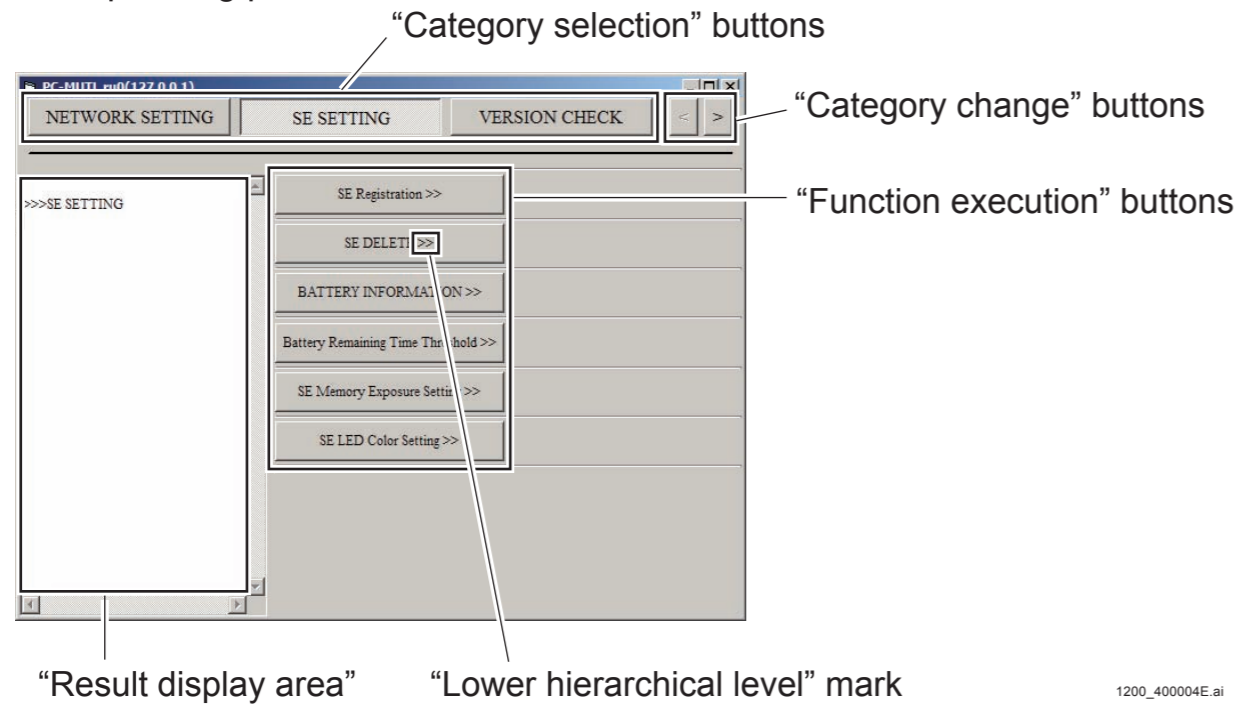
● "Category selection" buttons

The "category selection" buttons are used to select an MUTL category. The following MUTL categories are selectable:
- NETWORK SETTING
- SE SETTING
- VERSION CHECK
- INSTALL
- BOARD STATE CHECK
- CALIBRATION
- SYSTEM

● "Category change" buttons

These buttons are used to change the displayed category. When you click the rightward arrow button, the next category appears on the display. Clicking the leftward arrow button displays the previous category.

The following windows are used for the MUTL categories:
- MUTL window 1: NETWORK SETTING, SE SETTING, VERSION CHECK
- MUTL window 2: INSTALL, BOARD STATE CHECK, CALIBRATION
- MUTL window 3: SYSTEM

● "Function execution" buttons

These buttons are used to execute the MUTL functions.

Some functions are executed the moment a button is clicked. The other functions are executed when you enter a setting and then click a button.

● "Lower hierarchical level" mark ">>"

When you click a button having this mark, the associated lower hierarchical level buttons appear on the display.

● "Result display area"

Results of operation of the "Function execution" buttons are displayed as a text. The following types of displays are shown.
- OK/Error indication type
  Displays the MUTL result as "OK" or "Error". "OK" appears if the result is good, and "Error!!" appears if not. An error code is displayed on the right of "Error" in some cases.
- Address indication type
  Displays a network address or a MAC address.
- Board version indication type
  Displays the version of the selected board.
- Exposure count indication type
  Displays the number of exposures in progress (exposure count).

■ Tree of MUTL

Tree of Maintenance Utility
☞ {[1]_NETWORK SETTING}
☞ {[1.1]_Local Network PreSetting>>}
MC ETH1/MP>>
MC ETH1 IP
MP1
MP2
SE Network Address Setting>>
Input "OOO.OOO.OOO" No.(0-255)
SE1-5>>
SE1 WIRED
SE1 WIRELESS
...
SE5 WIRED
SE5 WIRELESS
...
SE46-50>>
NEXT>>
SE51-55>>
SE51 WIRED
SE51 WIRELESS
...
SE55 WIRED
SE55 WIRELESS
...
SE96-100>>
☞ {[1.2]_SE Network Setting>>}
Connected SE Serial ID
Connected SE Number

Tree of Maintenance Utility
Connected SE IP Addr
Execute SE IP Setting
☞ {[1.3]_MP Network Setting>>}
☞ {[1.3.1]_MP1 Network Setting>>}
Setting for MP1
Setting for MP2
☞ {[1.3.2]_MP2 Network Setting>>}
Setting for MP1
Setting for MP2
☞ {[1.4]_MC ETH0 IP Setting>>}
MC IP Address
MC SubNetMask
MC Default GW
FTP IP Address
☞ {[1.5]_Update Network Setting (MC ETH0)}
☞ {[1.6]_Update Network Setting (MC ETH1)}
MC MAC Address
☞ {[1.7]_Wireless Speed Measurement>>}
SE1-10>>
Measurement for using SE1
...
Measurement for using SE10
...
SE91-100>>
☞ {[2]_SE SETTING}
☞ {[2.1]_SE Registration>>}
SE1-10>>
SE1 Serial ID
...

Tree of Maintenance Utility

| SE10 Serial ID |
| ... |
| SE91-100>> |
| ☞ {[2.2]_SE DELETE>>} |
| SE1-10>> |
| DELETE SE1 |
| ... |
| DELETE SE10 |
| ... |
| SE91-100>> |
| ☞ {[2.3]_LongPanel Registration>>} |
| LongPanel 1>> |
| Top SE Serial ID |
| Center SE Serial ID |
| Bottom SE Serial ID |
| LongPanel 2>> |
| Top SE Serial ID |
| Center SE Serial ID |
| Bottom SE Serial ID |
| ☞ {[2.4]_LongPanel DELETE>>} |
| LongPanel 1>> |
| Top SE DELRTE |
| Center SE DELRTE |
| Bottom SE DELRTE |
| LongPanel 2>> |
| Top SE DELRTE |
| Center SE DELRTE |
| Bottom SE DELRTE |
| ☞ {[2.5]_BATTERY INFORMATIOIN>>} |

Tree of Maintenance Utility

| DISPLAY BATTERY SERIAL NO LIST |
| DELETE BATTERY INFORMATION>> |
| Input Battery Serial No |
| ☞ {[2.6]_Battery Remaining Time Threshold>>} |
| Inupt Threshold>> |
| Threshold1[min] |
| Threshold2[min] |
| Threshold3[min] |
| Regist Threshold>> |
| Input SE No. [1-100] |
| SE Serial ID |
| Regist |
| ☞ {[2.7]_SE Memory Exposure Setting>>} |
| Input SE No. [1-100] |
| SE Serial ID |
| Mode2 Exposure Time |
| GOS Sharpness Filter |
| Offset2 |
| Image Reading Mode |
| Read Mode |
| ☞ {[2.8]_SE LED Color Setting>>} |
| Create LED Color>> |
| PINK>> |
| R |
| G |
| B |
| BLUE>> |
| R |
| G |

Tree of Maintenance Utility (Left Column)

		B	
	LIME YELLOW>>		
		R	
		G	
		B	
	PURPLE>>		
		R	
		G	
		B	
	ORANGE>>		
		R	
		G	
		B	
	Selector Color Setting>>		
		Input SE No. [1-100]	
			SE Serial ID
			SE Selector Color

☞ **{[3]_VERSION CHECK}**

☞ **{[3.1]_MC Version>>}**

Display MC Software Version

Display MC Kernel Version

Display MC ALPS Version

☞ **{[3.2]_MP Version>>}**

☞ **{[3.2.1]_MP1 Version Check>>}**

Display MP1 Software Version

Display MP1 Kernel Version

Display MP1 ALPS Version

Display MP1 Driver Version

☞ **{[3.2.2]_MP2 Version Check>>}**

Tree of Maintenance Utility (Right Column)

Display MP2 Software Version

Display MP2 Kernel Version

Display MP2 ALPS Version

Display MP2 Driver Version

☞ **{[3.3]_SE Version>>}**

SE1-10>>

Display SE1 Version Info

...

Display SE10 Version Info

...

SE91-100>>

☞ **{[4]_INSTALL}**

☞ **{[4.1]_Install MP Software>>}**

☞ **{[4.1.1]_MP1 Insatall>>}**

MP1 Software VerUp Insatall

☞ **{[4.1.2]_MP2 Insatall>>}**

MP2 Software VerUp Insatall

☞ **{[4.2]_Install SE Software>>}**

Input SE No. [1-100]

SE Serial ID

Insatall SE FPGA Software

Insatall SE GLG Software

Insatall SE LAN Software

Insatall SE MCU Software

☞ **{[5]_BOARD STATE CHECK}**

☞ **{[5.1]_MP Board State>>}**

☞ **{[5.1.1]_MP1 Board State>>}**

Connector Status

Fan Status

Tree of Maintenance Utility
Fuse Status
RemoteSW Status
ShotSW Port1 Status
ShotSW Port2 Status
☞ **{[5.1.2]_MP2 Board State>>}**
Connector Status
Fan Status
Fuse Status
RemoteSW Status
ShotSW Port1 Status
ShotSW Port2 Status
☞ **{[5.2]_SE Board State>>}**
Input SE No. [1-100]
SE Serial ID
SE Board State
Temperature
Battery
BatteryDateSetting
GLG Check
GLG Calibration>>
Get X axial Offset
Get Y axial Offset
Get Z axial Offset
Save Offset Data
☞ **{[5.3]_SE Write SerialID>>}**
☞ **{[5.4]_LongPanel RMV Board Change>>}**
Input SE No. [1-100]
Install SE NetSel File
Extra Sleep

Tree of Maintenance Utility
☞ **{[6]_CALIBRATION}**
☞ **{[6.1]_Offset Calibration>>}**
Start
Create an Offset Data
☞ **{[6.2]_Gain Calibration>>}**
Input SE No. [1-100]
SE Serial ID
Operation Setting
Start
Display Image Count
Display ShotRdy
Create a Gain Data
☞ **{[6.3]_Defect Calibration>>}**
Input SE No. [1-100]
SE Serial ID
Operation Setting
Start
Progress Indicator
Display ShotRdy
Create a Defect Data
☞ **{[6.4]_Lag Calibration>>}**
Input SE No. [1-100]
SE Serial ID
Operation Setting
Start
Display Progress Status
Display ShotRdy
Create a Lag Data

Tree of Maintenance Utility
☞ {[6.5]_Marker Calibration>>}
Input SE No. [1-100]
Top SE Serial ID
Center SE Serial ID
Bottom SE Serial ID
Operation Setting
Calib Position
Start
Display Image Count
Display ShotRdy
Create a Marker Data
☞ {[6.6]_SE Correct Data Save Status>>}
Input SE No. [1-100]
☞ {[6.7]_SE Correct Data Transfer>>}
Input SE No. [1-100]
☞ {[6.8]_SE Correct Data Status>>}
Input SE No. [1-100]
☞ {[6.9]_SE FLASH Correct Data Status>>}
Input SE No. [1-100]
☞ {[7]_SYSTEM}
☞ {[7.1]_Termination>>}
Terminate
Forced Terminate
Forced Reboot
Auto Shutdown Setting

[1]   NETWORK SETTING

■ Display Window

NETWORK SETTING window

1200_400005E.ai
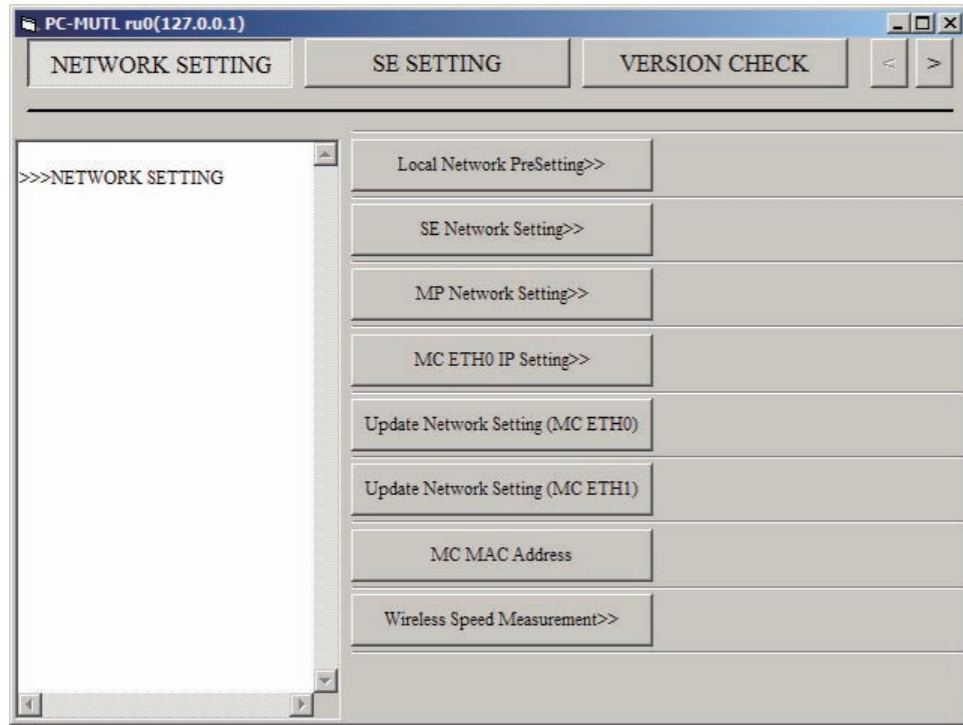
■ Function Description

Used to set and check the IP addresses and to measure wireless communication rate.

◆ *INSTRUCTION* ◆

The segment No. of the network address must be set to the same value among the MC, MP, SE and AP. If different network address values are set, the network among the machines might get disconnected. Initialization of the machines might be needed in such a case.

How far in the IP address the network address indicates depends on the setting of the subnet mask. The default value of the subnet mask of the machine is 255.255.255.0, and locations assigned by 255 (mask value areas) indicate the network address.

Segment No.

192.168.0.0

Network address

Host address

DRID600_G0070.ai

● MC ETH0 and MC ETH1

MC ETH0 indicates the network setting between the MC and CL, and MC ETH1 indicates the network setting between the MC and MP.
The connection diagram of the MP/MC/CL and default IP addresses are shown below.

MP

MC/CL

192.168.0.20   ETH1   192.168.0.10

ETH0

172.16.1.20

DRID600_G0142.ai

[1.1]   Local Network PreSetting >>

◆ INSTRUCTION ◆

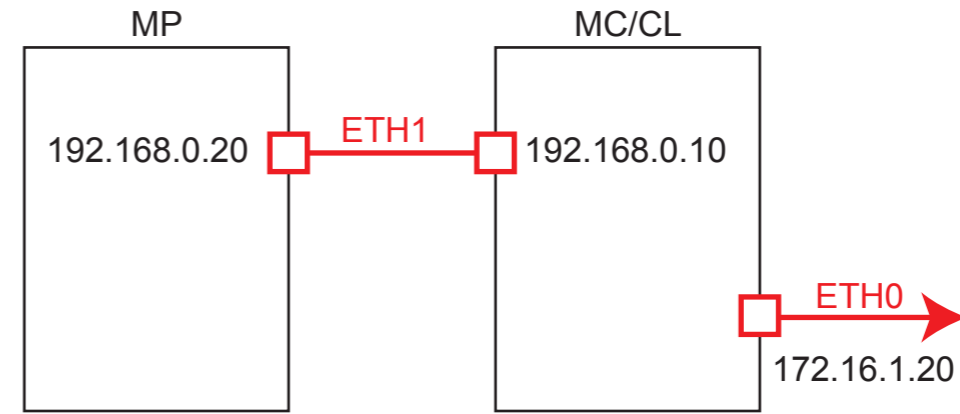*If the segment No. of the network address is changed, the network address of the access point (AP) must be changed to include the same segment No. If the network address of the access point differs, wireless connection of the SE cannot be made.*

■ Display Window

Local Network PreSetting>> window
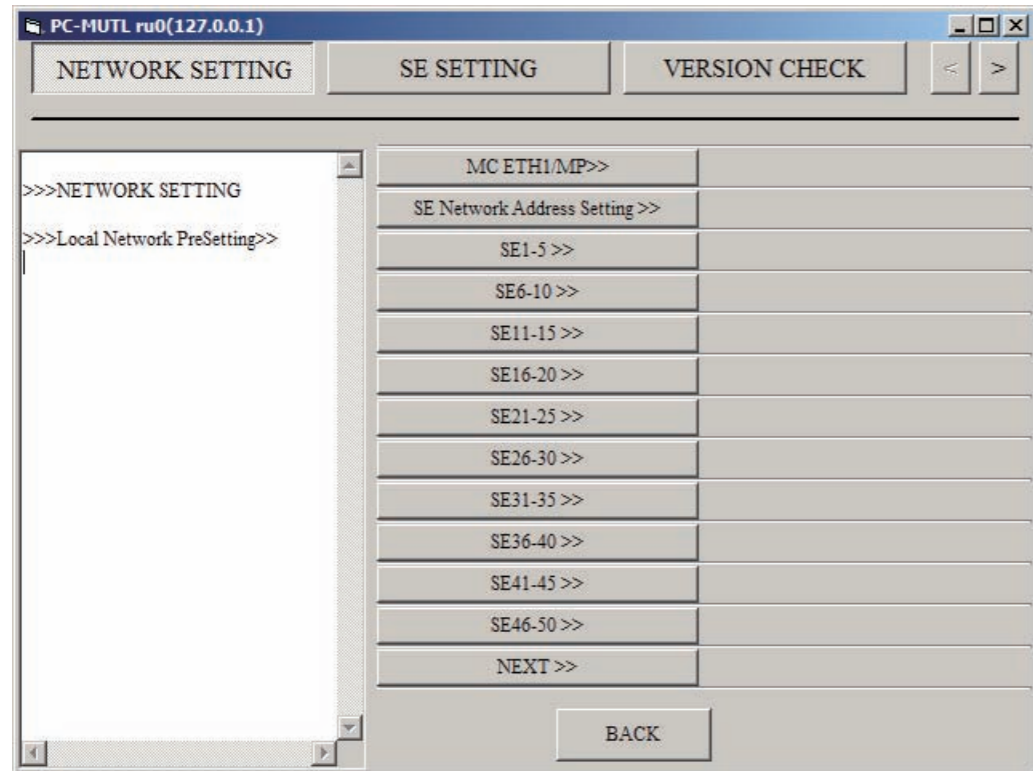
1200_400006E.ai

■ Function Description

Input the set value when the IP address of the local network is to be changed. To make the changed set value effective, the set value needs to be enabled (setting executed) respectively for the SE, MP and MC.

■ Procedures

● Inputting the IP addresses

(1) **Click [NETWORK SETTING], and click [Local Network PreSetting >>].**
   #1 Click: [NETWORK SETTING]
   #2 Click: [Local Network PreSetting >>]
   NETWORK SETTING window

Local Network
PreSetting >> window

1200_700163E.ai

(2) Click [MC ETH1/MP>>] and input the MC/MP network address, then click [SET].

Clicking [SET], the indication changes over to the input value, but the set value is not effective. To make the changed set value effective, the set value needs to be enabled (setting executed) respectively for the SE, MP and MC.
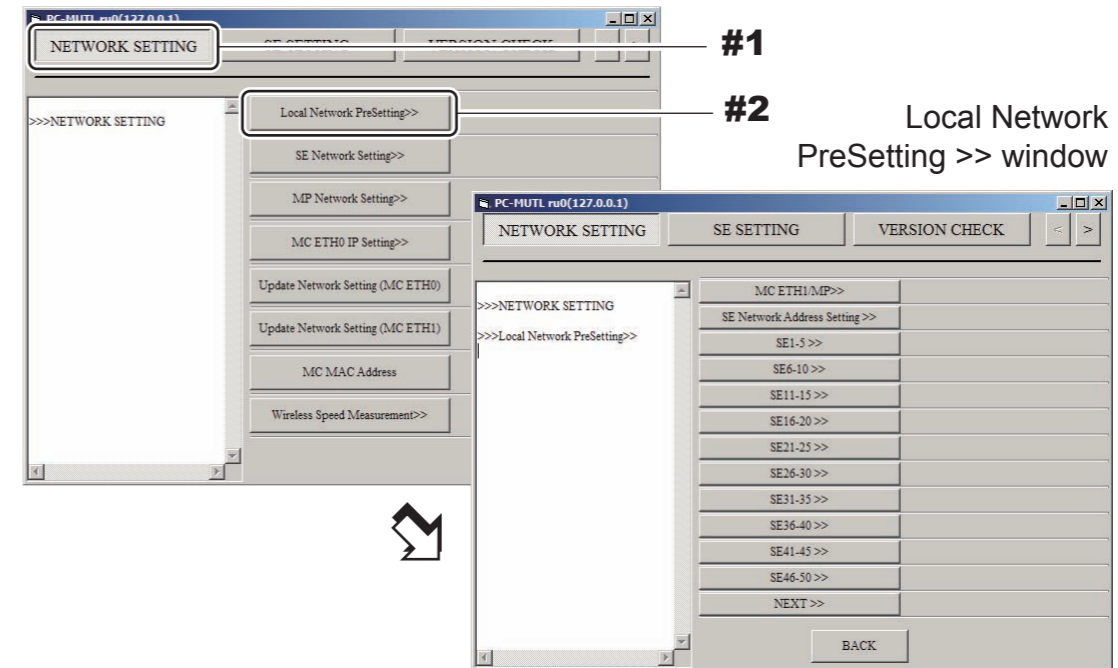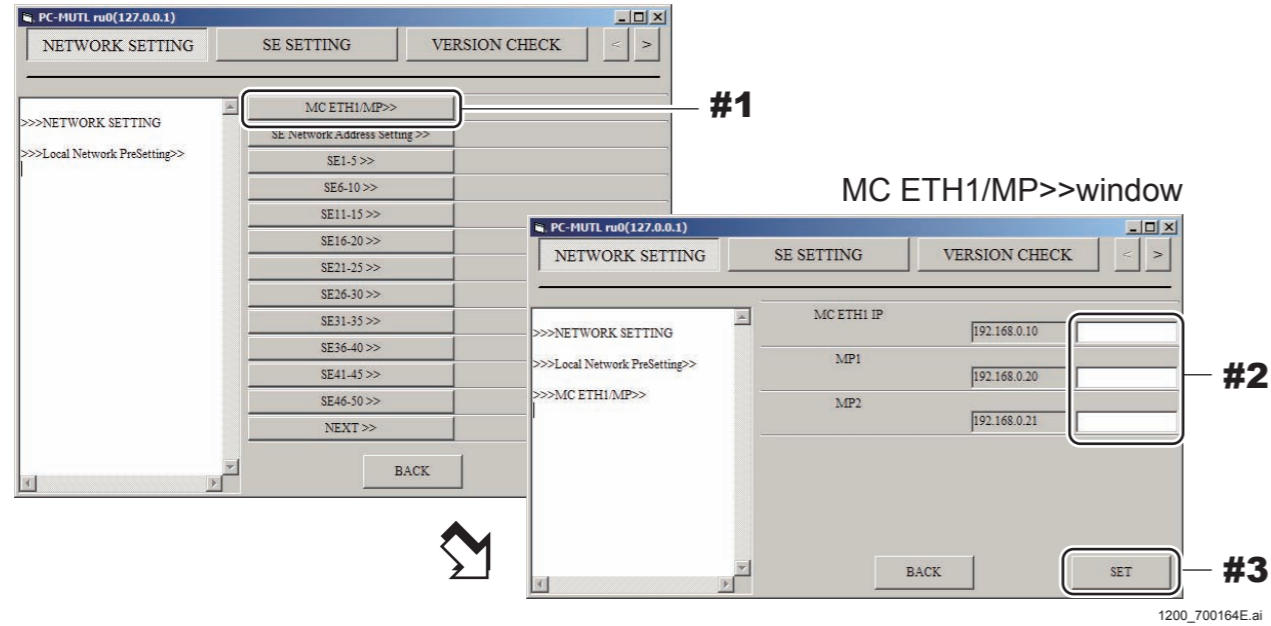
#1 Click: [MC ETH1/MP>>]
#2 Input: MC/MP network address
#3 Click: [SET]
Local Network PreSetting >> window

MC ETH1/MP>>window

1200_700164E.ai

(3) Click the target SE, input the SE network address and click [SET].

Clicking [SET], the indication changes over to the input value, but the set value is not effective. To make the changed set value effective, the set value needs to be enabled (setting executed) respectively for the SE, MP and MC.

#1 Click: Target SE
#2 Input: SE network address
#3 Click: [SET]
Local Network PreSetting>>window

SE1-5>>window

1200_700166E.ai
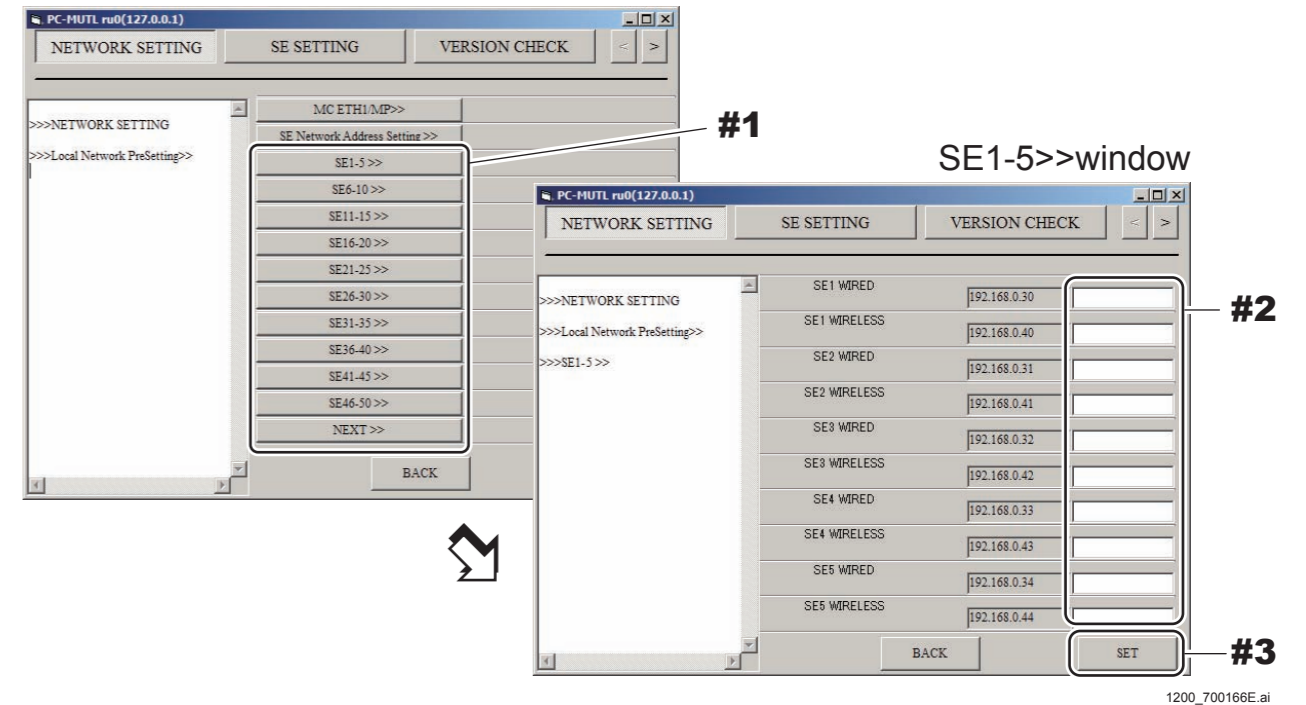
◇ *REFERENCE* ◇

By clicking [SE Network Address Setting] on the "Local Network PreSetting>>" window, the SE Network Address Batch Setting window opens and the SE network addresses can be set collectively.

(4) Clicking [BACK], return to the Local Network PreSetting window.

(5) If there is any item that you wish to input, click the corresponding button and repeat procedures (3) to (4).

(6) Clicking [BACK], return to the NETWORK SETTING window.

● **Enabling the set value**

⚠️ *CAUTION*

Enable the set value in the order of the SE, MP and MC to make them effective. If a wrong order is taken, the setting does not get effective, and might result in need of initializing the machine.

<Enabling the set value (SE)>

◆ *INSTRUCTION* ◆

*Connect only one SE when enabling the set value (SE). Otherwise, the SE whose IP address is changed cannot be identified, and might result in need of initializing the SE.*

(1) **Click [SE Network Setting >>] on the NETWORK SETTING window.**
The SE Network Setting >> window appears.

(2) **Click [Execute SE IP Setting].**
The confirmation dialogue box of "Are you sure?" appears.

(3) **Click [OK].**

(4) **Check that the set value is effective.**
#1 Check: OK indication
SE Network Setting>>window <Display example>

1200_700167E.ai
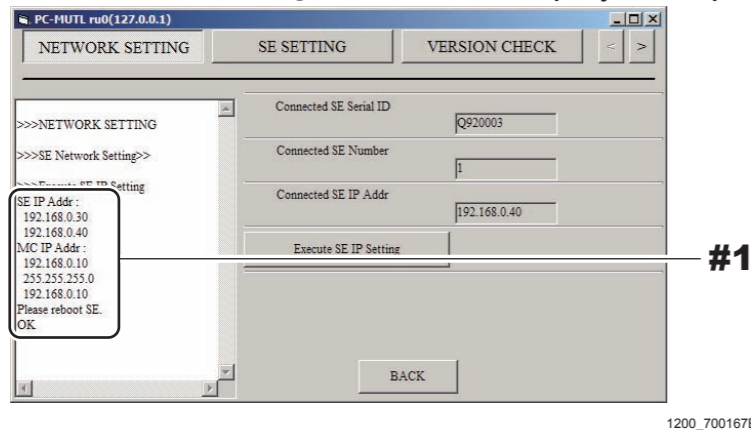
(5) **Clicking [BACK], return to the NETWORK SETTING window.**

(6) **Disconnect the SE cable from the SE.**

(7) **If an unspecified SE exists, repeat procedures (1) to (6).**

(8) **Reinstall the SE cable and battery pack on the SE whose setting has been completed.**

<Enabling set value (MP)>

(1) **Click [MP Network Setting >>] on the NETWORK SETTING window.**
The MP Network Setting window >> appears.

(2) **Click [MP1 Network Setting >>] on the MP Network Setting window >>.**
The MP1 Network Setting >> window appears.

(3) **Click [Setting for MP1].**
The confirmation dialogue box of "Are you sure?" appears.

(4) **Click [OK].**

(5) **Check that the set value is effective.**
#1 Check: OK indication
MP Network Setting>>window <Display example>

1200_700168E.ai

(6) **Click [BACK] to return to the MP Network Setting >> window.**

(7) **Clicking [BACK], return to the NETWORK SETTING window.**

(8) **Turn OFF the power of the MP, and then turn it ON again.**

(9) **Left-click the MC Manager from the task tray and excute "EXIT".**
Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

<Enabling set value (MC)>

(1) Click [Update Network Setting (MC ETH1)] on the NETWORK SETTING window.

The confirmation dialogue box of "Are you sure?" appears.

(2) Click [OK].

(3) Check that the set value is effective.
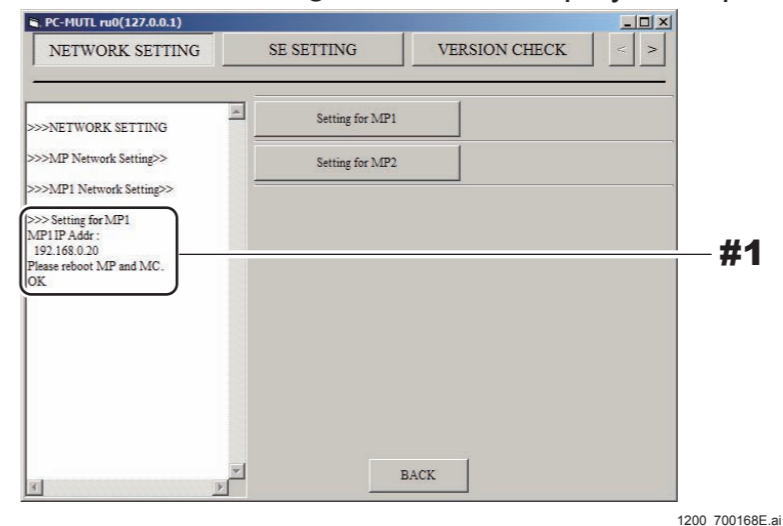
#1 Check: OK indication

Update Network Setting
(MC ETH1)   <Display example>

1200_700169E.ai

(4) Left-click the MC Manager from the task tray and excute "EXIT".

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

<Restarting the machine and checking the setting effected>

(1) Turn OFF the power in the order named of the CL, MC and MP.

(2) Turn ON the power in the order named of the MP, CL and MC.

(3) Start up the MUTL.

(4) Click [Network Setting] and click [SE Network Setting >>].

Check that the IP address of the SE has been changed.

◇ *REFERENCE* ◇

If you confirm the IP address of the SE, you can determine that the change in settings of the MP and the MC normally ends. This is because connection of the SE can be confirmed only when connection between the MC and the MP is normal.

[1.2]   SE Network Setting >>

■ Display Window

SE Network Setting>>window
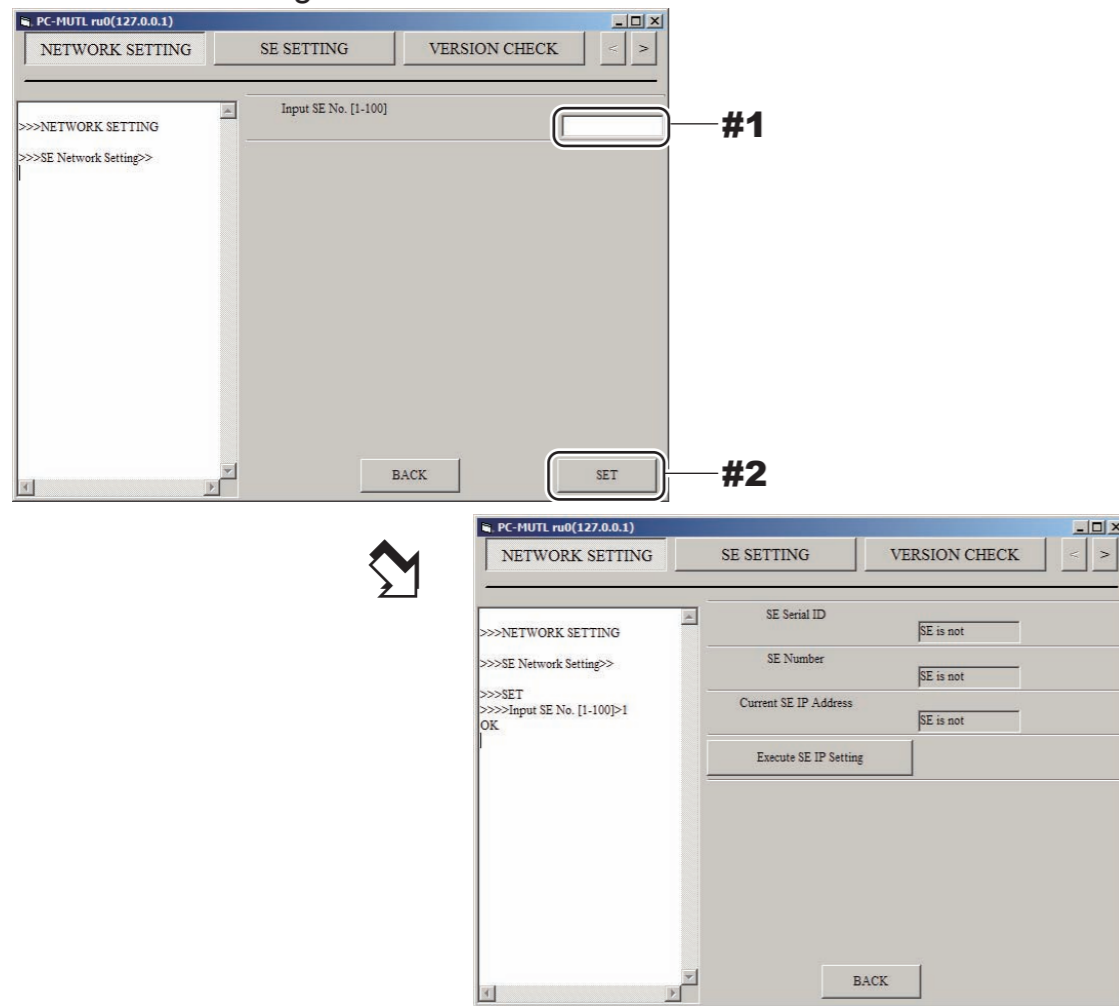
#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

Inputting the SE serial ID and clicking [SET], the SE network setting is displayed.
Used to check information such as the serial ID and the SE No of the connected SE.

- SE Serial ID:
  The serial ID of the connected SE is displayed.
  When not connected: "No SE is Connected" appears.
- SE Number:
  The SE No. of the connected SE is displayed.
  When not connected: "No SE Panel is Connected" appears.
- Current SE IP Address:
  The current IP address of the SE is displayed.
  When not connected: "No SE Panel is Connected" appears.
- Execute SE IP Setting:
  The IP address of the SE input in the Local Network Presetting is made effective.
  The IP address which is effective appears in the result display area.

[1.3]   MP Network Setting >>

■ Display Window

MP Network Setting >> window

1200_400008E.ai
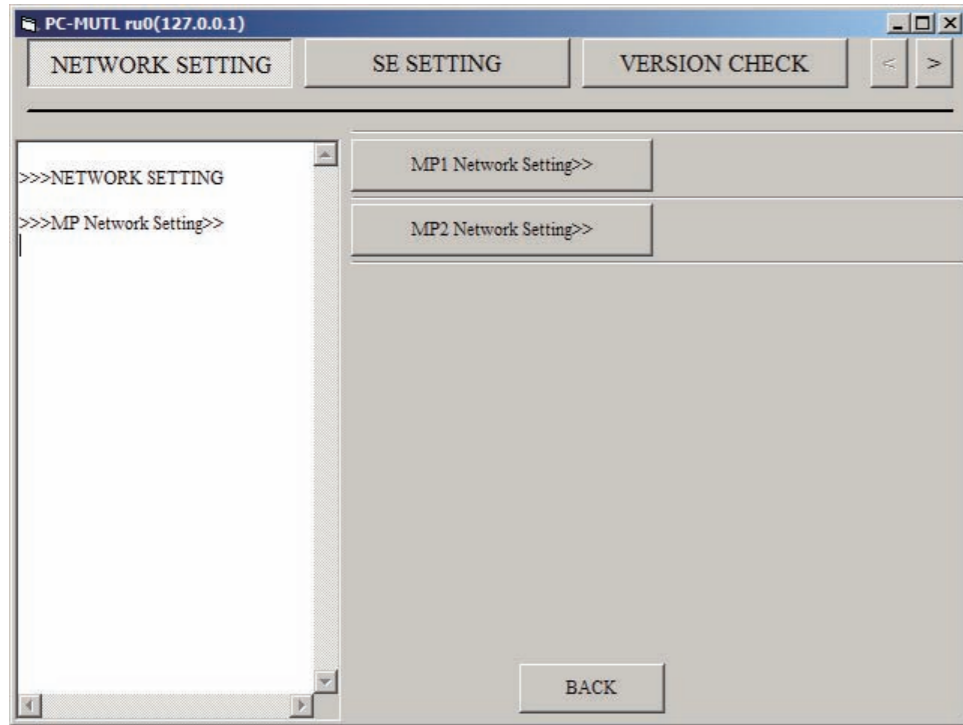
■ Function Description

Used to select the MP for making the MP network setting from the MP1 and the MP2.
The MP setting when shipped from the factory is set as MP1.
When two MP's are connected, the second MP needs to be set as MP2.

☞ **{MU2: [1.3.1]_MP1 Network Setting >>}**

◇ *REFERENCE* ◇

The command tree structure and function description for the MP network setting are mentioned below.

[NETWORK SETTING]

— [Local Network PreSetting]

— [MP Network Setting >>]

— [MP1 Network Setting >>]

— [Setting for MP1]
Set the IP address of the MP1 as the MP1 value input in [Local Network PreSetting].

— [Setting for MP2]
Change the setting of the MP1 to the MP2.
The MP2 value input in [Local Network PreSetting] gets effective.

— [MP2 Network Setting >>]

— [Setting for MP1]
Change the MP set as the MP2 to the MP1.
Not in use usually.

— [Setting for MP2]
Change the IP address of the MP2.
Set the IP address of the MP2 to the MP2 value input in [Local Network PreSetting].

1200_700172E.ai

[1.3.1]   MP1 Network Setting >>

■ Display Window

MP1 Network Setting >> window

1200_400009E.ai

■ Function Description

Used to enable the IP address of the MP input in [Local Network PreSetting].

- Setting for MP1:
  Sets the IP address of the MP1 as the IP address of the MP1 input in [Local Network PreSetting].
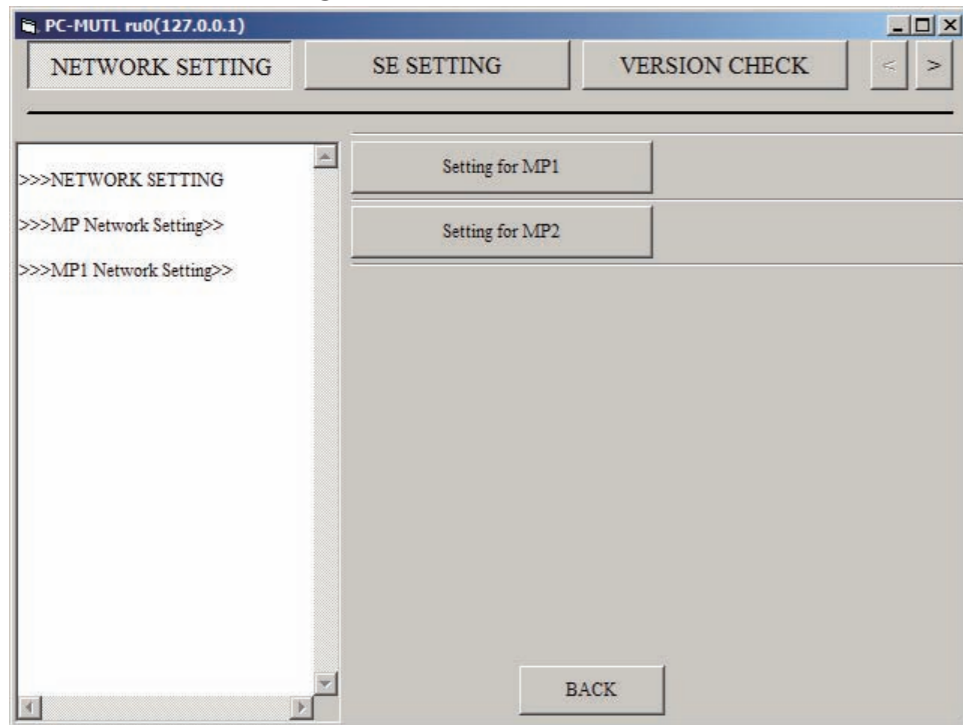- Setting for MP2:
  Used to change the setting of MP1 to MP2.
  The IP address of the MP2 input in [Local Network PreSetting] is effective, and at the same time the MP1 is set as the MP2.

[1.3.2]   MP2 Network Setting >>

■ Display Window

Same as the MP1 Network Setting >> window.
Refer to [1.3.1] MP1 Network Setting >>.
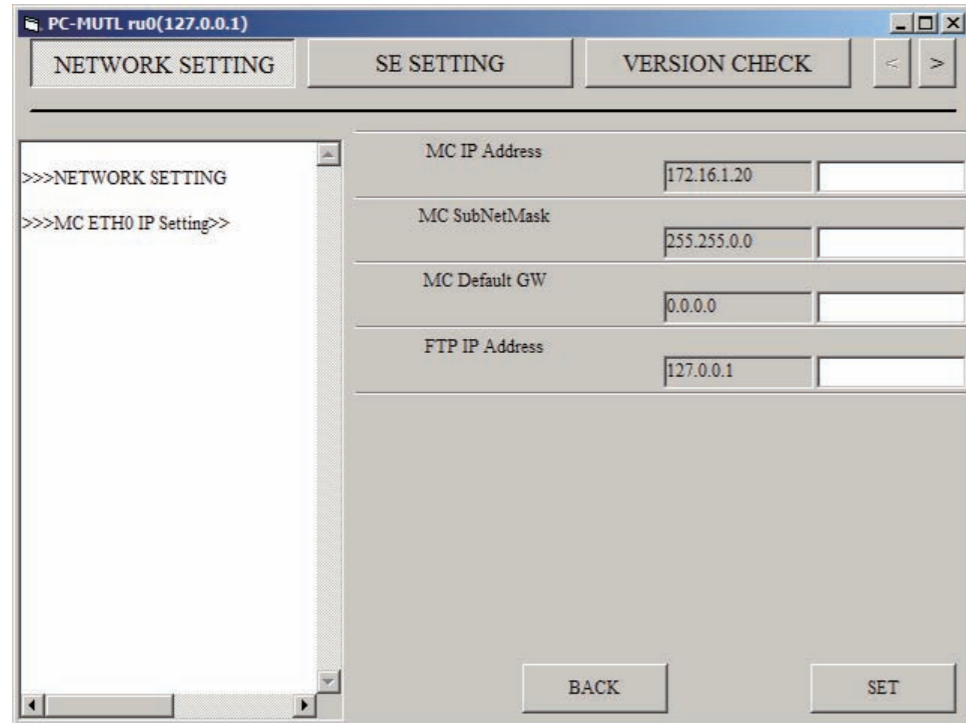
■ Function Description

Used to enable the IP address of the MP input in [Local Network Presetting].

- Setting for MP1:
  Changes the MP set as MP2 to MP1.
  Not in use usually.
- Setting for MP2:
  Sets the IP address as the IP address of the MP2 input in [Local Network Presetting].

[1.4] MC ETH0 IP Setting >>

■ Display Window

MC ETH0 IP Setting >> window

1200_400010E.ai

■ Function Description

Addresses of the following four items can be set.
The set value gets effective by clicking [Update Network Setting (MC ETH0)] on the "Network Setting" window. That is, by just clicking [SET], the input value does not get effective.

- MC IP Address (Default value: 172.16.150.135)
- MC SubNet Mask (Default value: 255.255.0.0)
- MC Default GW (Default value: 0.0.0.0)
- FTP IP Address (Default value: 127.0.0.1)

[1.5] Update Network Setting (MC ETH0)

■ Display Window

See the "Network Setting" window.

■ Function Description

Enables the network address input in the MC ETH0 Network Setting >> window.

Clicking [MC ETH0 Network Setting >>] on the "Network Setting" window, the confirmation window of "Are You Sure?" appears. Clicking [OK] on the confirmation window, the network address input in the MC ETH0 Network Setting >> window gets effective.

[1.6] Update Network Setting (MC ETH1)

■ Display Window

See the "Network Setting" window.

■ Function Description

Enables the network address input in the Local Network Presetting>> window.

Clicking [Update Network Setting (MC ETH1)] on the "Network Setting" window, the confirmation window of "Are You Sure?" appears. Clicking [OK] on the confirmation window, the network address of the MC ETH1 input in the Local Network Presetting >> window gets effective.
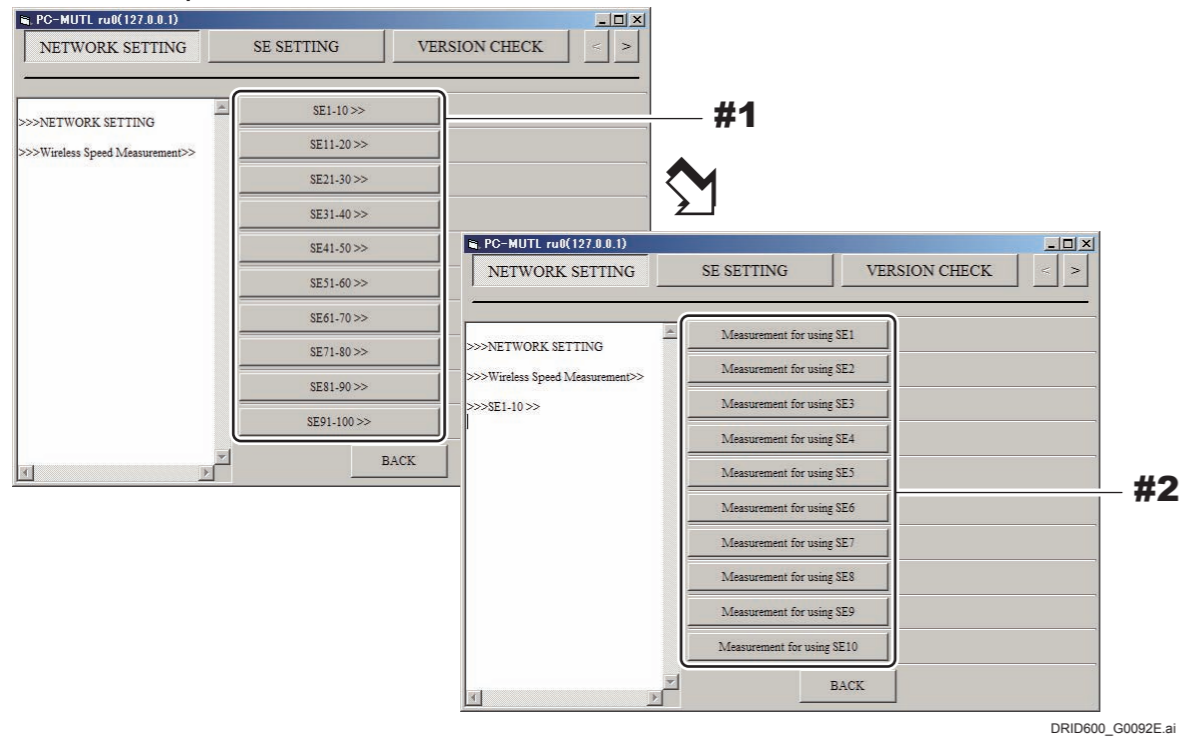
[1.7] Wireless Speed Measurement >>

◆ *NOTE* ◆

Not used in the DR-ID 1300.

■ Display Window

Wireless Speed Measurement >> window

#1

#2

DRID600_G0092E.ai

#1 Click: Target SE button
#2 Click: Target measurement SE button
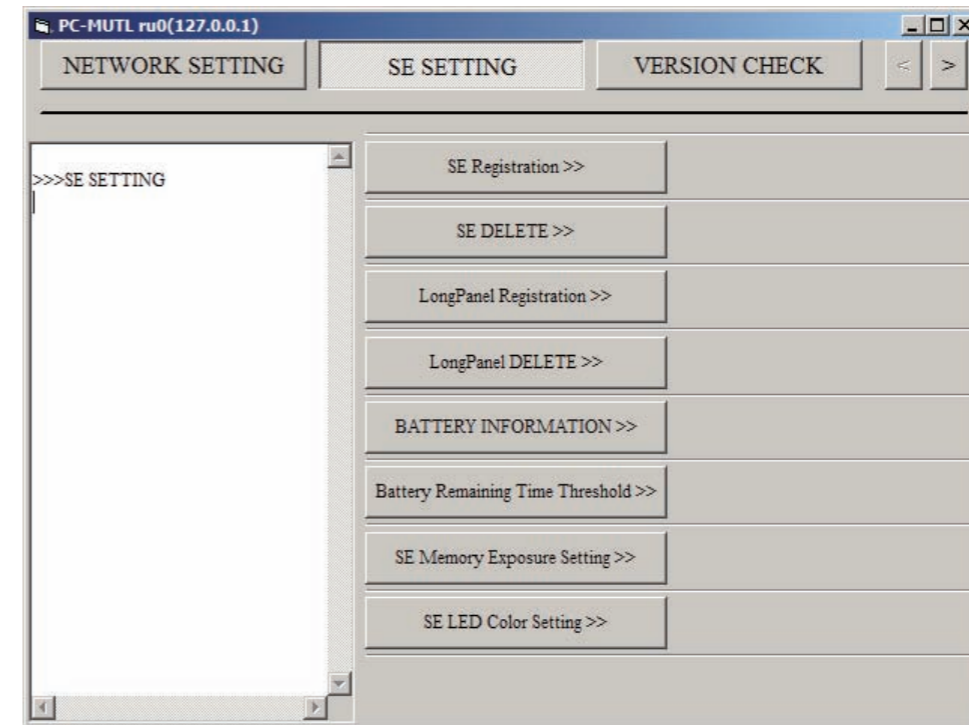
■ Function Description

Communication rate of the SE connected via the wireless LAN can be measured.
Buttons corresponding to the respective SE's are available, and the communication rate of the SE corresponding to the pressed button appears in the result display area.
Clicking one of the buttons, the confirmation window of "Are You Sure?" appears.
Clicking [OK] on the confirmation window, measurement of radio wave conditions starts.
The measurement ends approx. in one minute.

[2] SE Setting

■ Display Window

SE SETTING window

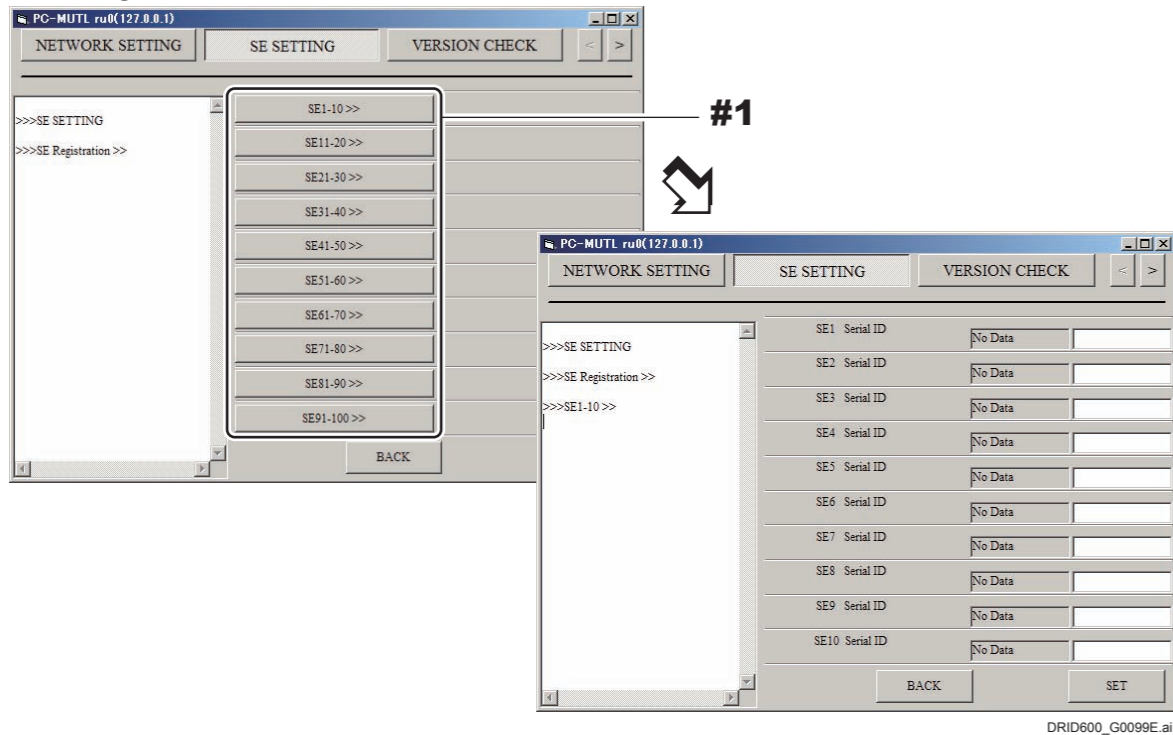1200_400011E.ai

■ Function Description

Used to register or check the set contents of the SE.
- SE Registration
- SE DELETE
- LongPanel Registration
- LongPanel DELETE
- BATTERY INFORMATION
- Battery Remaining Time Threshold
- SE Memory Exposure Setting
- SE LED Color Setting

[2.1]　SE Registration >>

■ Display Window

SE Registration >> window

DRID600_G0099E.ai

#1 Click: Target SE button

■ Function Description

Used to register the serial ID of the panel unit.
Select the panel unit to be registered.
Inputting the serial ID and clicking [SET], the registration ends.

◆ NOTE ◆

- *The first letter of the serial ID must be entered as a capital letter.*
- *For SE registration of the long panel, first register three panels as the FPD panels.*
  This is the same as the conventional SE panel.

  After that, for the long panel registration, specify the panel unit consisting of the three panels - TOP, CENTER, and BOTTOM - for the panels registered above. The panel unit where TOP, CENTER and BOTTOM are specified functions as one long panel.

◇ REFERENCE ◇

The serial ID of an SE is mentioned on the surface of the machine-specific data CDROM.

[2.2]　SE DELETE >>

■ Display Window

SE DELETE >> window
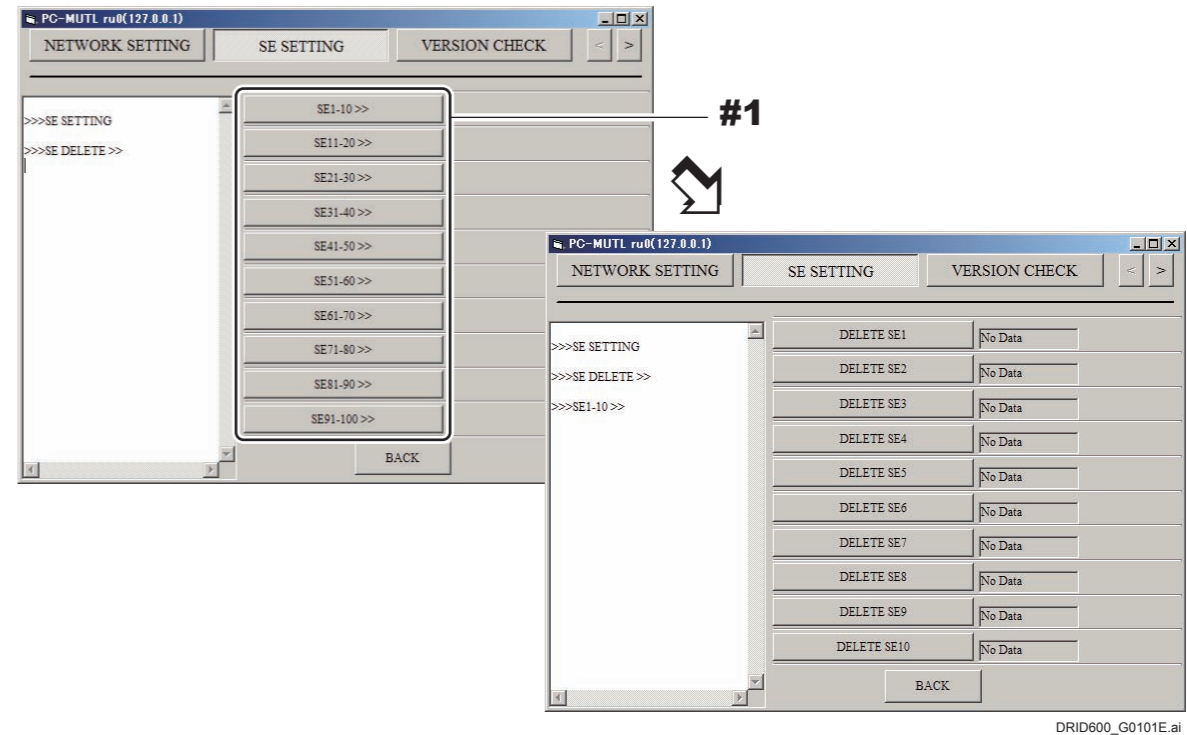
DRID600_G0101E.ai

#1 Click: Target SE button

■ Function Description

A registered panel unit can be canceled.
Used when the panel unit needs to be replaced.

◆ NOTE ◆

Disconnect the SE cable and remove the battery from the SE before deleting the SE. Otherwise, the SE cannot be deleted.

◇ REFERENCE ◇

A message indicating that the serial ID of the SE, a replacement count of the connector and the power supplied time are reset appears in the result display area upon deregistration.
Deregistration is reflected after the machine is rebooted.

[2.3]   LongPanel Registration >>

■ Display Window

LongPanel Registration>> window
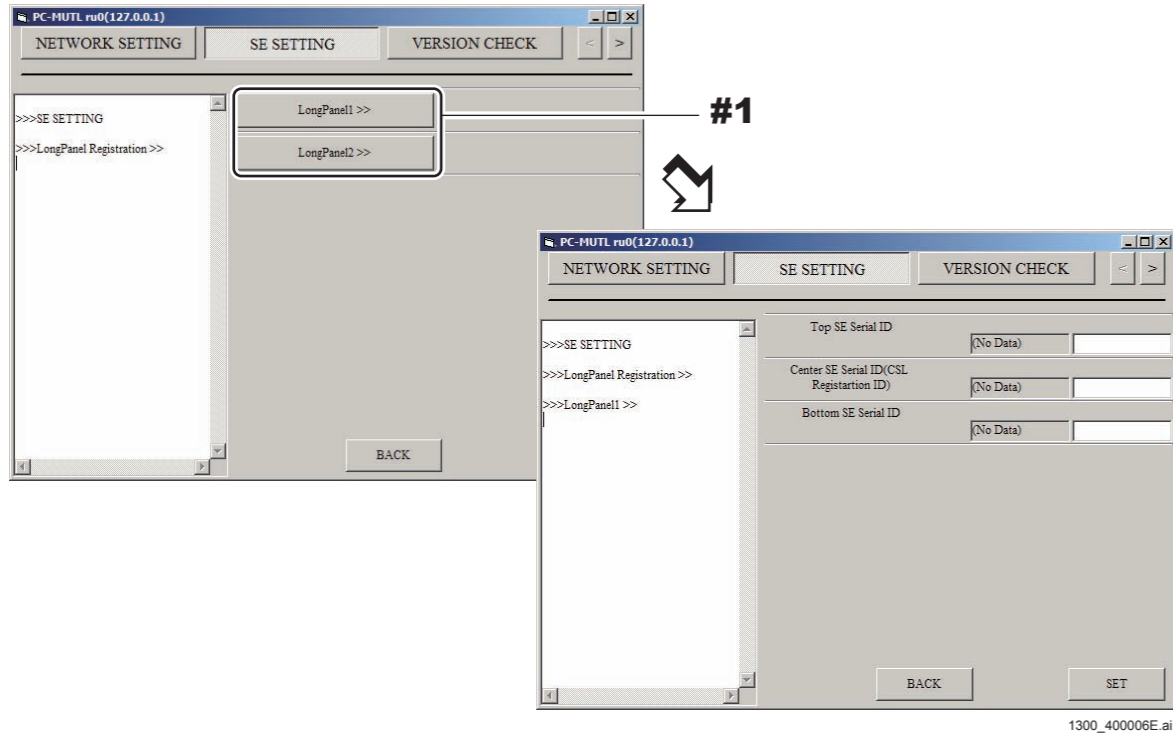
#1 Click: Target long panel button

■ Function Description

Used to register the serial ID of the three panel units for the long panel.
Register the serial ID of the three panel units (TOP, CENTER and BOTTOM) for each long panel.
Inputting the serial ID and clicking [SET], the registration ends.

◆ *NOTE* ◆

*The first letter of the serial ID must be entered as a capital letter.*

◇ *REFERENCE* ◇

The serial ID of an SE is mentioned on the surface of the machine-specific data CDROM.

[2.4]   LongPanel DELETE >>

■ Display Window

LongPanel DELETE>> window
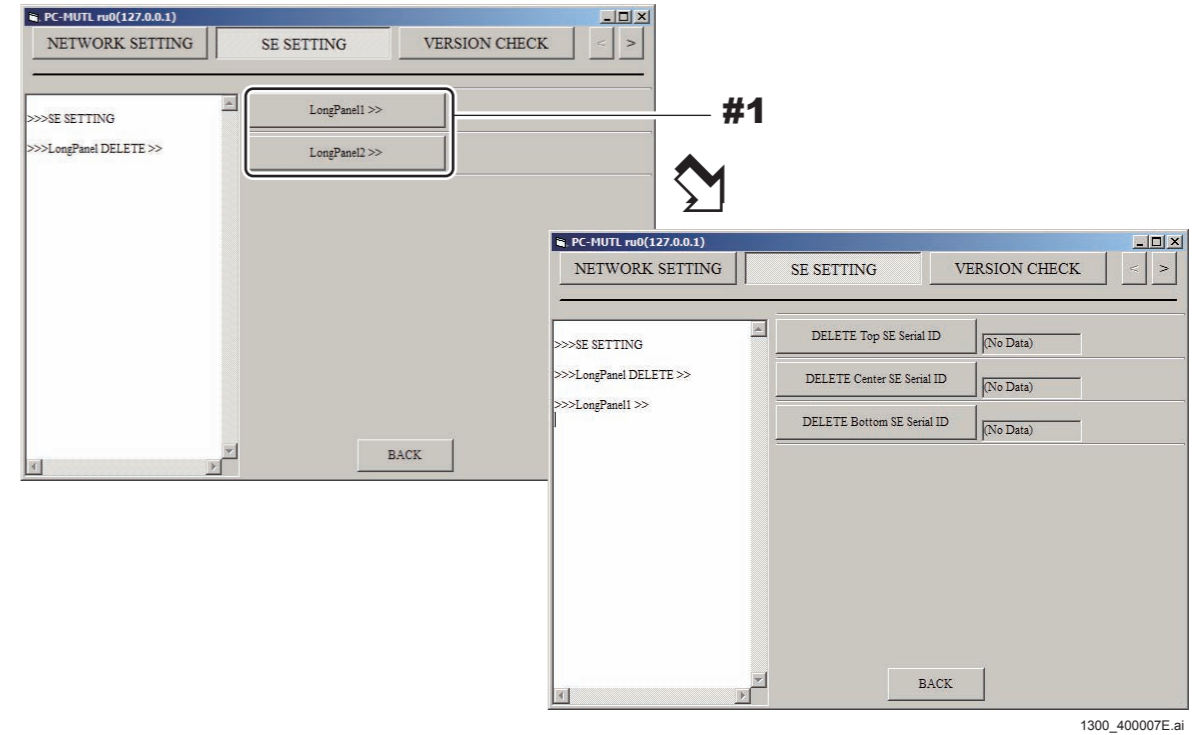
#1 Click: Target long panel button

■ Function Description

A registered long panel can be canceled.
Used when the long panel needs to be replaced.

◆ *NOTE* ◆

Disconnect the SE cable from the SE before deleting the long panel. Otherwise, the long panel cannot be deleted.

◇ *REFERENCE* ◇

A message indicating that the serial ID of the SE, a replacement count of the connector and the power supplied time are reset appears in the result display area upon deregistration.
Deregistration is reflected after the machine is rebooted.

[2.5]   BATTERY INFORMATION >>

◆ NOTE ◆

Not used in the DR-ID 1300.

■ Display Window

Battery Remaining Time Threshold>> window
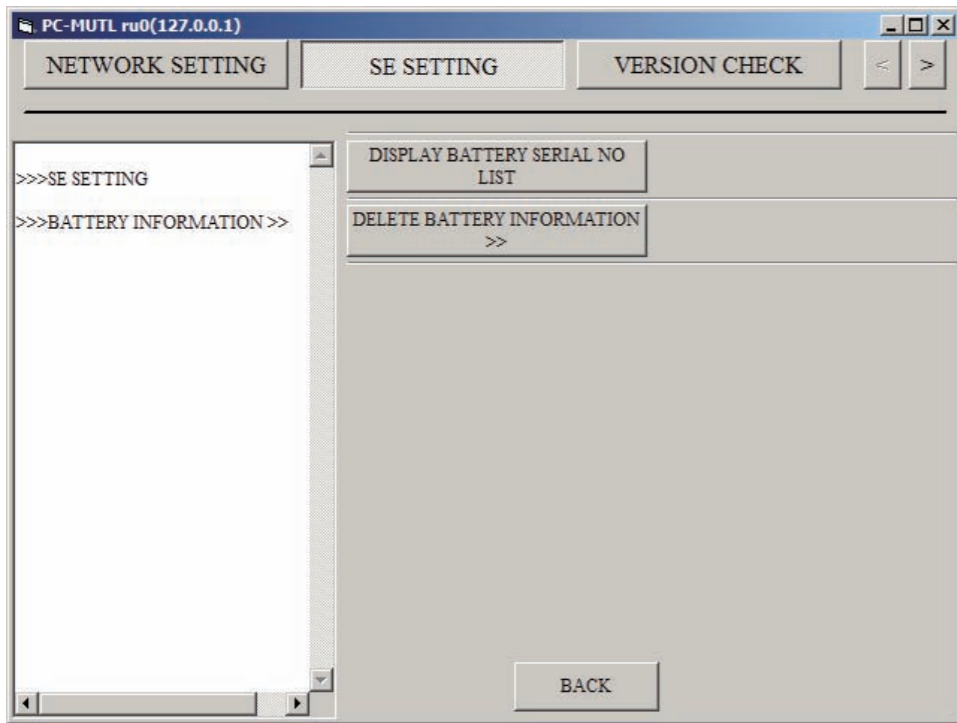

1200_700170E.ai

■ Function Description

- DISPLAY BATTERY SERIAL NO LIST:
  Serial Nos. of the batteries are displayed.
- DELETE BATTERY INFORMATION >>:
  Battery information is deleted. Clicking [DELETE BATTERY INFORMATION >>], inputting the battery serial No., and clicking [SET], the battery information is deleted.

[2.6]   Battery Remaining Time Threshold>>

◆ NOTE ◆

Not used in the DR-ID 1300.

■ Display Window

Battery Remaining Time Threshold>> window
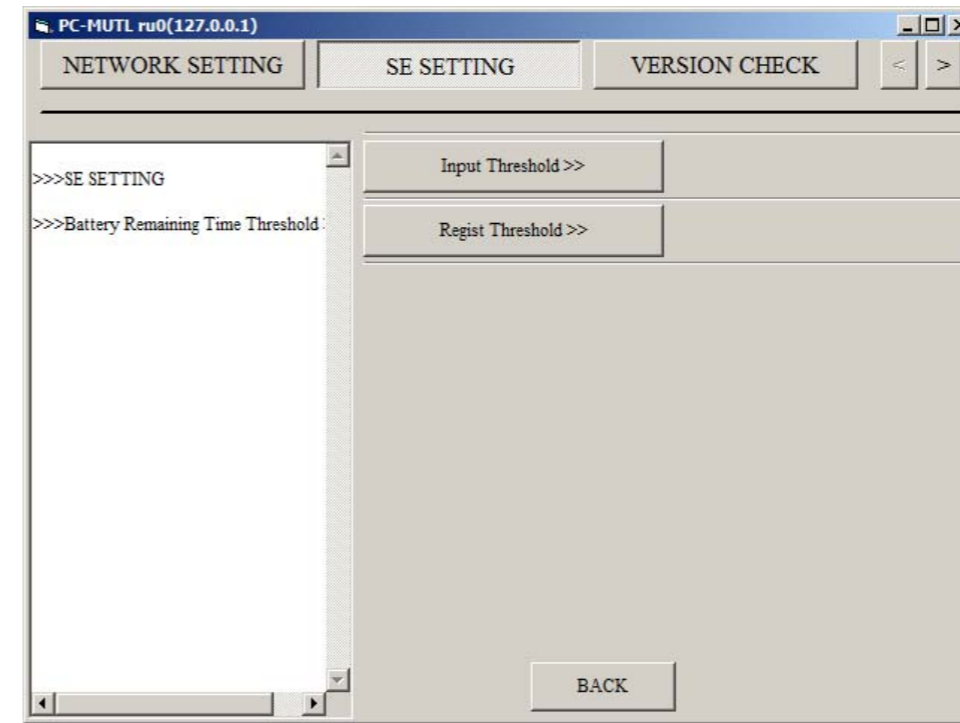
1200_400012E.ai

■ Function Description

- Input Threshold >>:
  Set the battery remaining time threshold by three levels. Usually use the default setting.
- Regist Threshold >>:
  Register the battery threshold. Clicking [Regist Threshold >>], inputting the SE No. and clicking [Regist], the battery threshold set by [Input Threshold >>] is registered to the target SE.

[2.7]   SE Memory Exposure Setting>>

◆ *NOTE* ◆

Not used in the DR-ID 1300.

■ Display Window

SE Memory Exposure Setting>>window
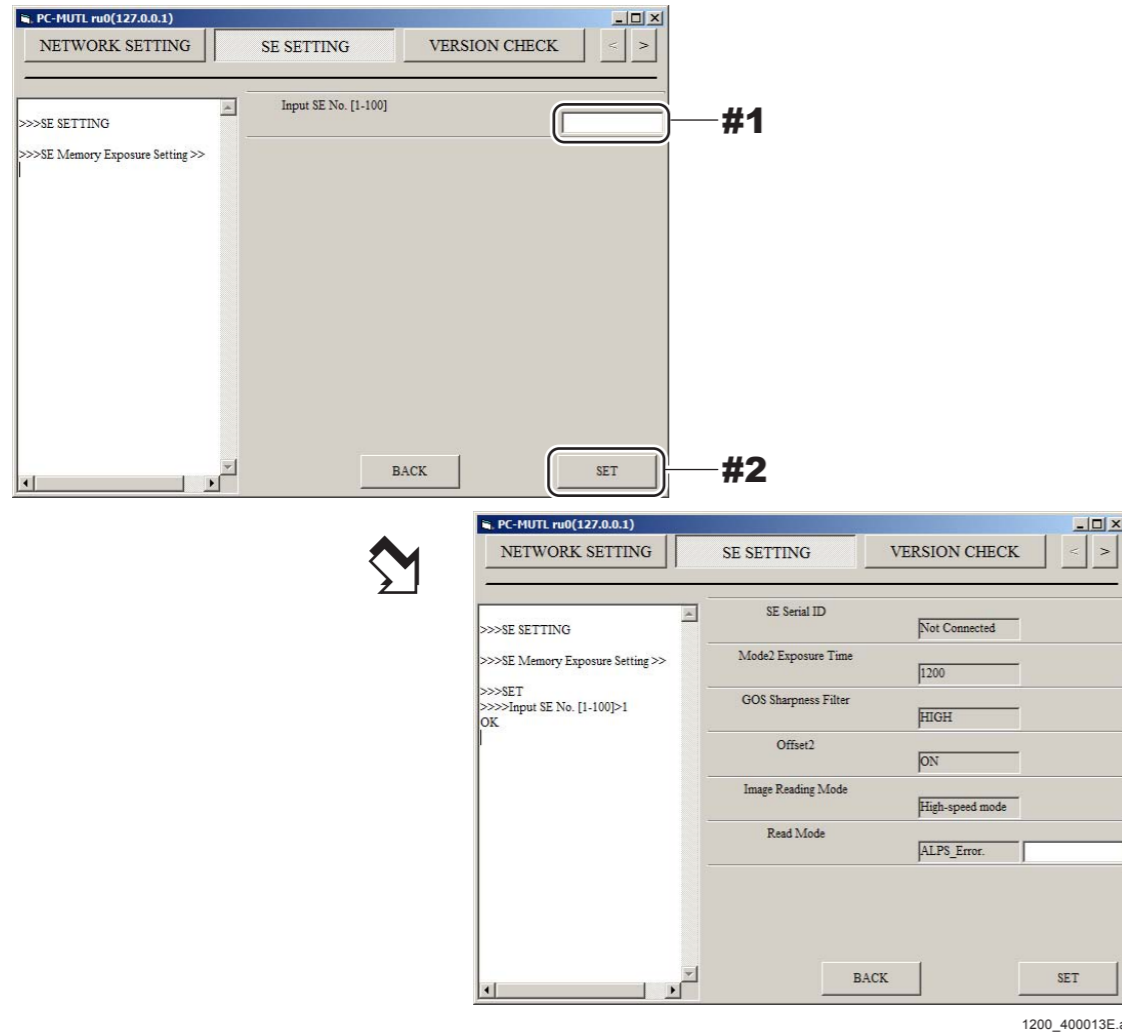
#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

Inputting the SE No. and clicking [SET], the memory exposure setting is displayed. In the Read Mode (read mode setting), set the Read Mode for memory exposure in addition to the routine exposure. Input [Read Mode] and click [SET].

◆ *NOTE* ◆

Any of "0", "1" or "2" can be inputted into [Read Mode].

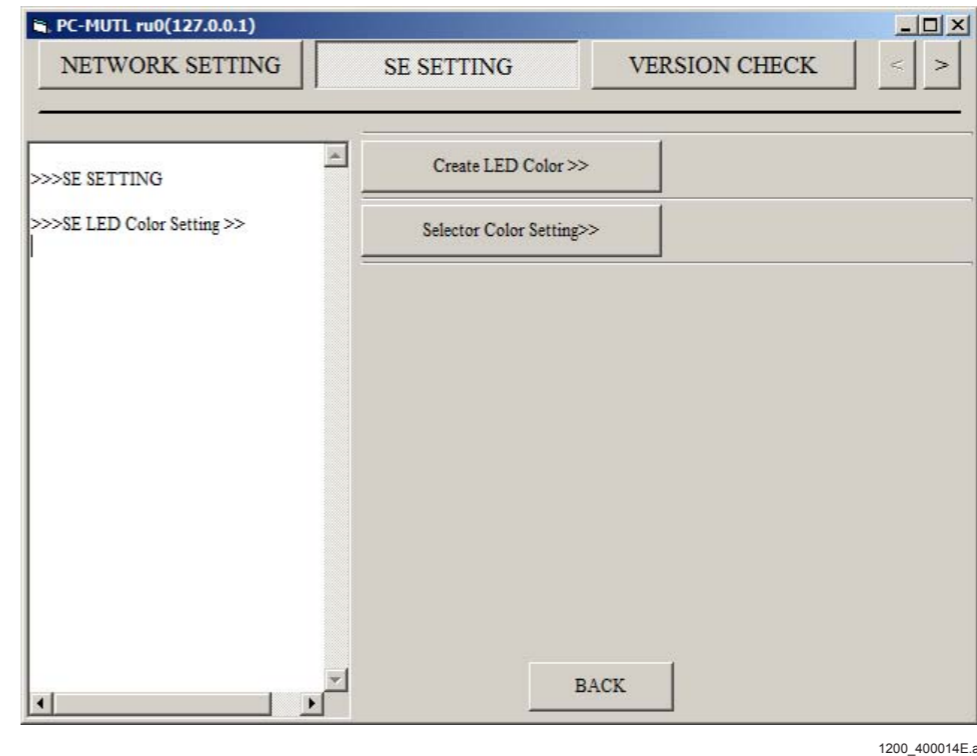## [2.8]   SE LED Color Setting>>

◆ *NOTE* ◆

Not used in the DR-ID 1300.

■ Display Window

SE LED Color Setting>> window

■ Function Description

- Create LED color >>:
  Register the LED color. Usually use the default setting. Clicking the color button, inputting RGB of the LED color and clicking [SET], the LED color is registered.
    - Pink (R,G,B) (Default value: 240, 48, 80)
    - Light blue (R,G,B) (Default value: 16, 48, 224)
    - Yellow (R,G,B) (Default value: 128, 160, 8)
    - Purple (R,G,B) (Default value: 88, 8, 240)
    - Orange (R,G,B) (Default value: 240, 48, 0)
- Selector Color Setting >>:
  Register the selector color of the SE. Inputting the target SE No. and clicking [SET], the Selector Color Setting >>window opens. Inputting the selector color according to te No. displayed on the left side of the window, and clicking [SET], the selector color registration is completed.

◆ NOTE ◆

Restart the SE when the selector color is registered. The selector color registration will be reflected in the SE after restart.

[3]   Version Check

■ Display Window

VERSION CHECK window
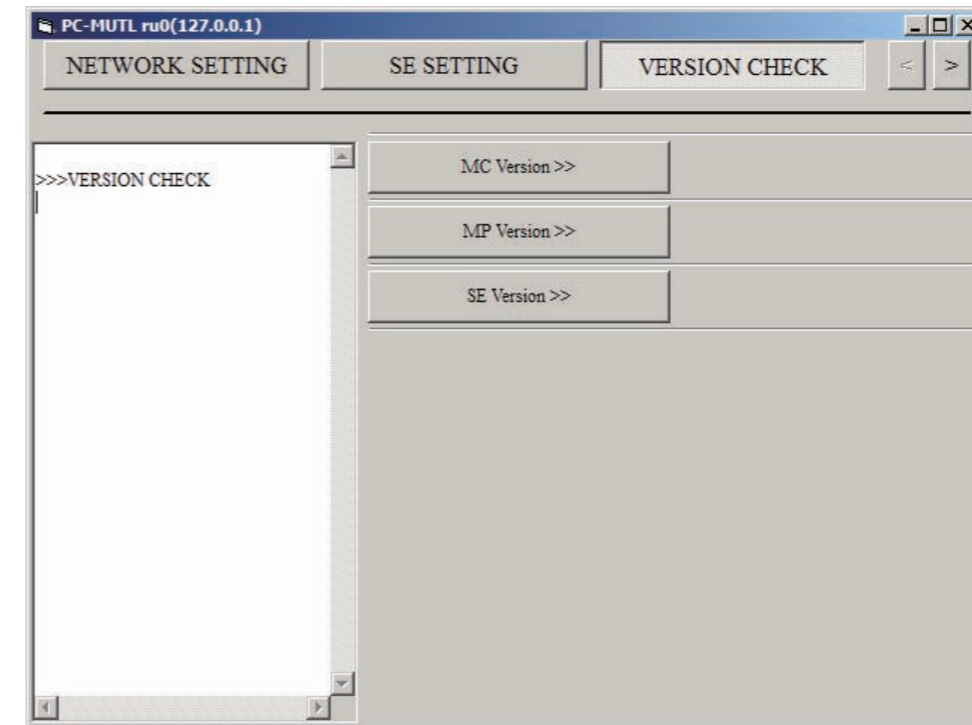
1200_400015E.ai

■ Function Description

Selects the unit whose software version is to be checked.
- MC Version >>
- MP Version >>
- SE Version >>

[3.1]　MC Version >>

■ Display Window

MC Version >> window
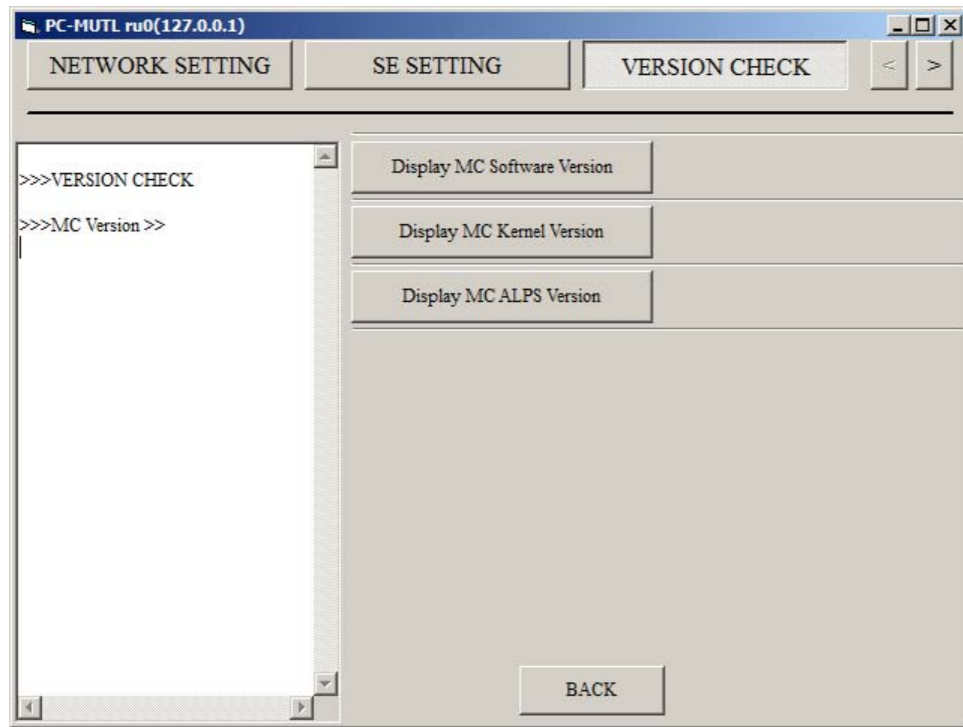
1200_400016E.ai

■ Function Description

Displays the software versions of the MC. Clicking one of the following buttons, the software version of interest appears in the result display area.
- [Display MC Software Version] button
- [Display MC Kernel Version] button
- [Display MC ALPS Version] button

[3.2]　MP Version >>

■ Display Window

MP Version >> window

1200_400017E.ai

■ Function Description

Selects the MP whose software version is to be checked.
- MP1 Version Check >>
- MP2 Version Check >>

[3.2.1]   MP1 Version Check >>

■ Display Window

MP1 Version >> window
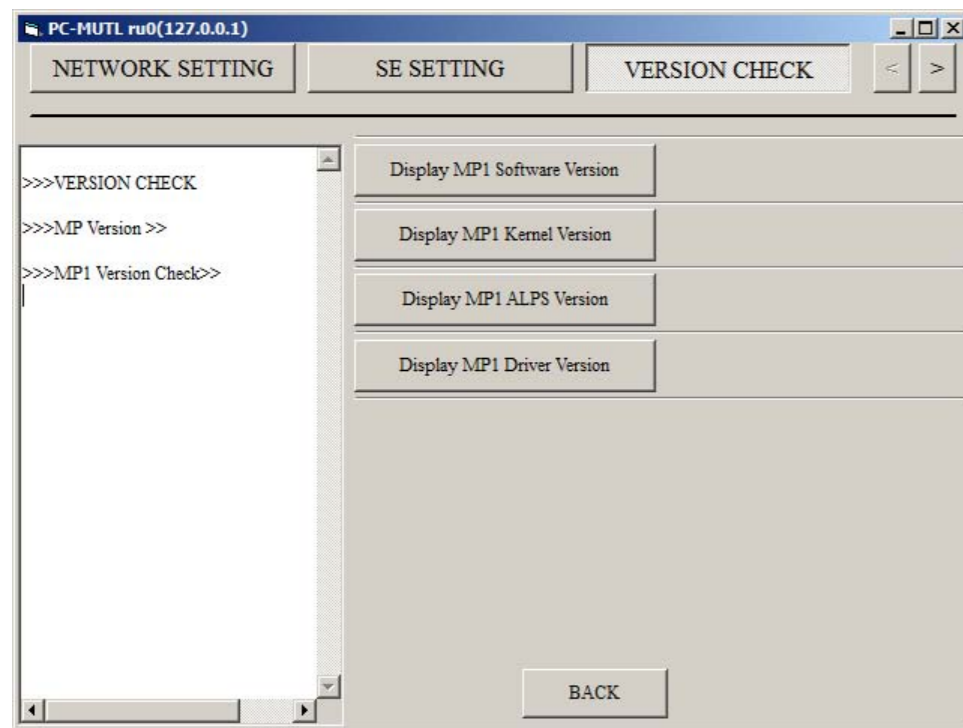
1200_400018E.ai

■ Function Description

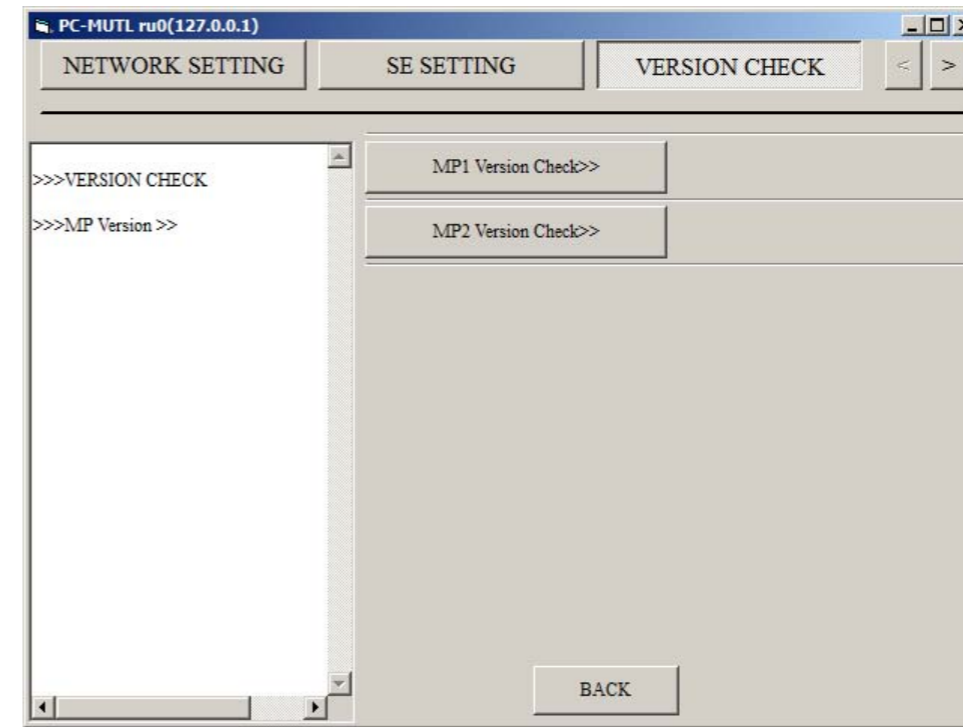Displays the software versions of the MP1. Clicking one of the following buttons, the software version of interest appears in the result display area.
- [Display MP1 Software Version] button
- [Display MP1 Kernel Version] button
- [Display MP1 ALPS Version] button
- [Display MP1 Driver Version] button

[3.2.2]   MP2 Version Check >>

"Display window" and "Function" are the same as those of MP1 Version Check >>. Read MP1 as MP2.

[3.3] SE Version >>
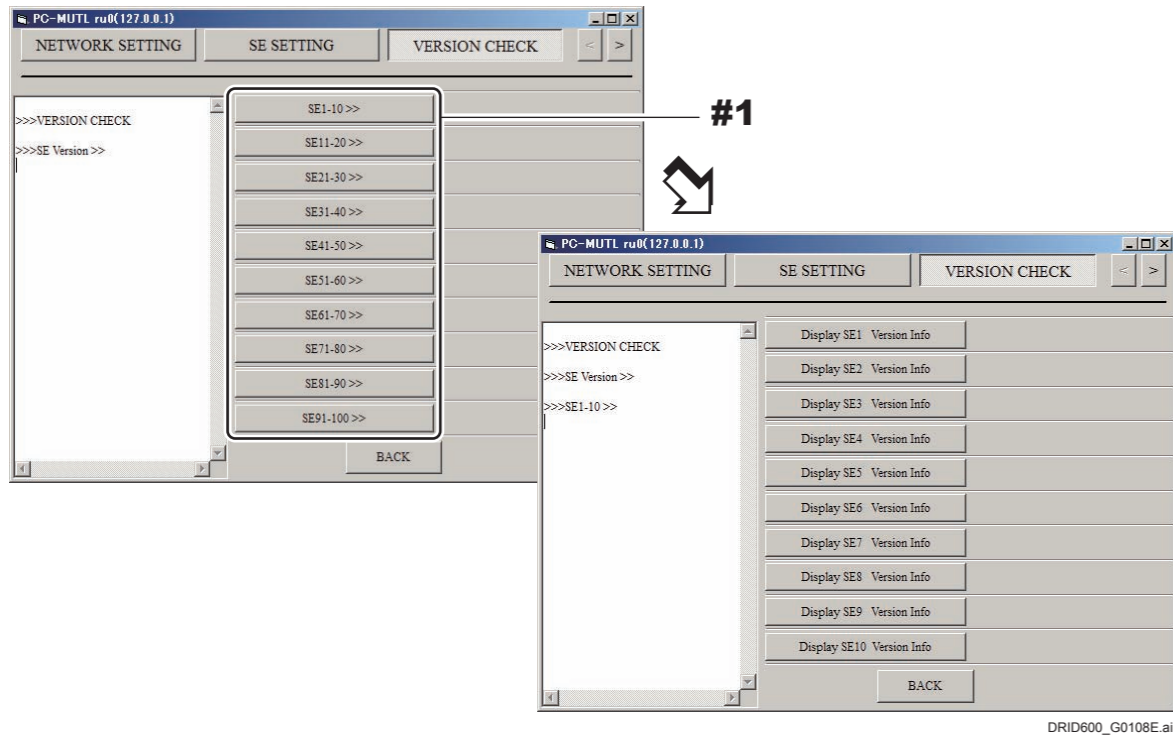
■ Display Window

#1 Click: Target SE button

■ Function Description

The software versions of the SE boards are displayed.
- mcu
- aplWlan
- wifiWlan
- ethWlan
- fpgaDrv
- rmv
- fpgaRmv
- adc

[4] Install

■ Display Window

INSTALL window
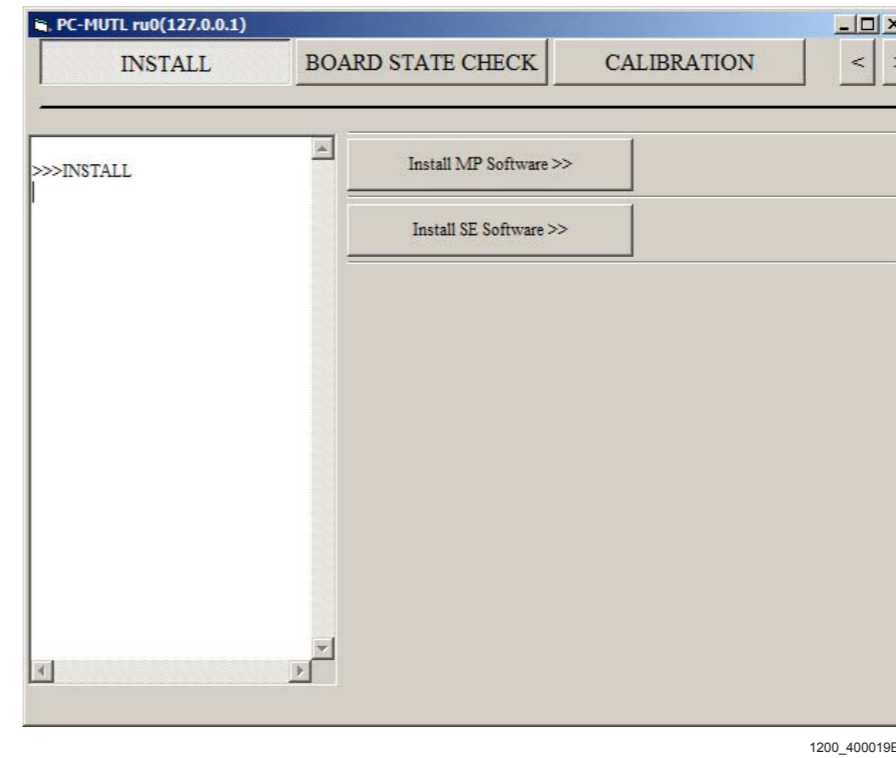
■ Function Description

Selects the unit on which the software is to be installed.
- Install MP Software >>
- Install SE Software >>

[4.1]　Install MP Software >>

■ Display Window

Install MP Software>> window

1200_400020E.ai
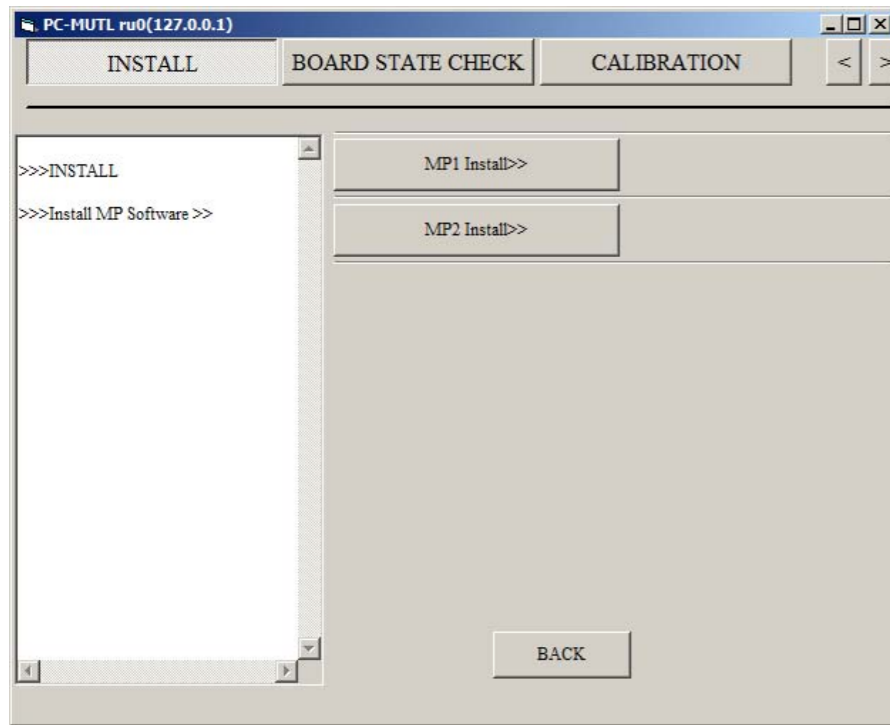
■ Function Description

Selects the MP on which the MP application is to be installed.
- MP1 Install >>
- MP2 Install >>

[4.1.1]　MP1 Install >>

■ Display Window

MP1 Install >> window

1200_400021E.ai
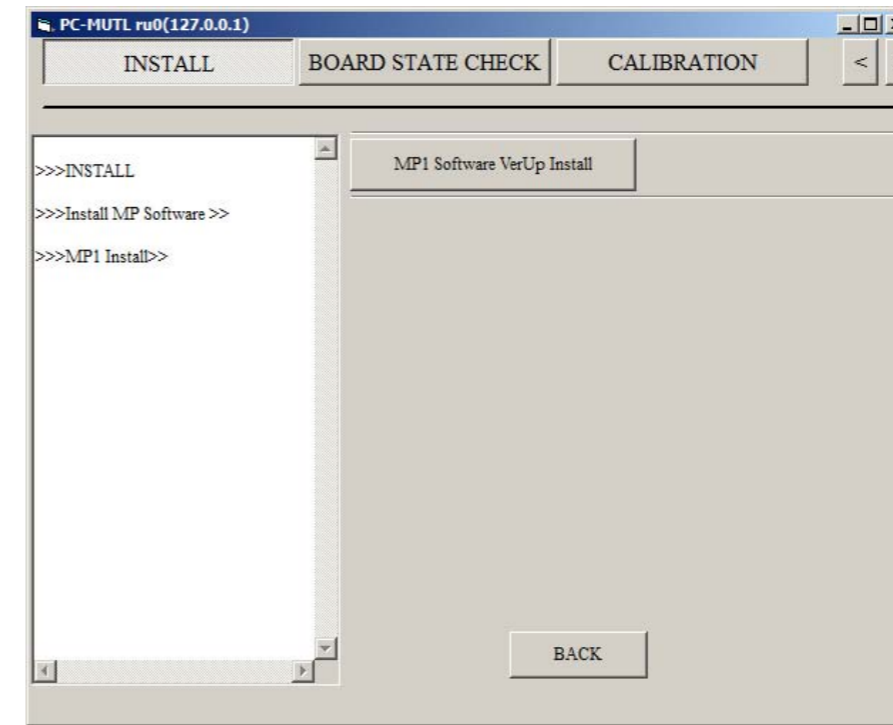
■ Function Description

MP1 Software VerUp Install:
The MP application is version-updated. The result appears in the result display area.

[4.1.2] MP2 Install >>

"Display window" and "Function" are the same as those of MP1 Install >>.
Read MP1 as MP2.

☞ **{MU2:[4.1.1]_MP1 Install >>}**

[4.2] Install SE Software >>

■ Display Window

Install SE Software >> window

1200_400022E.ai
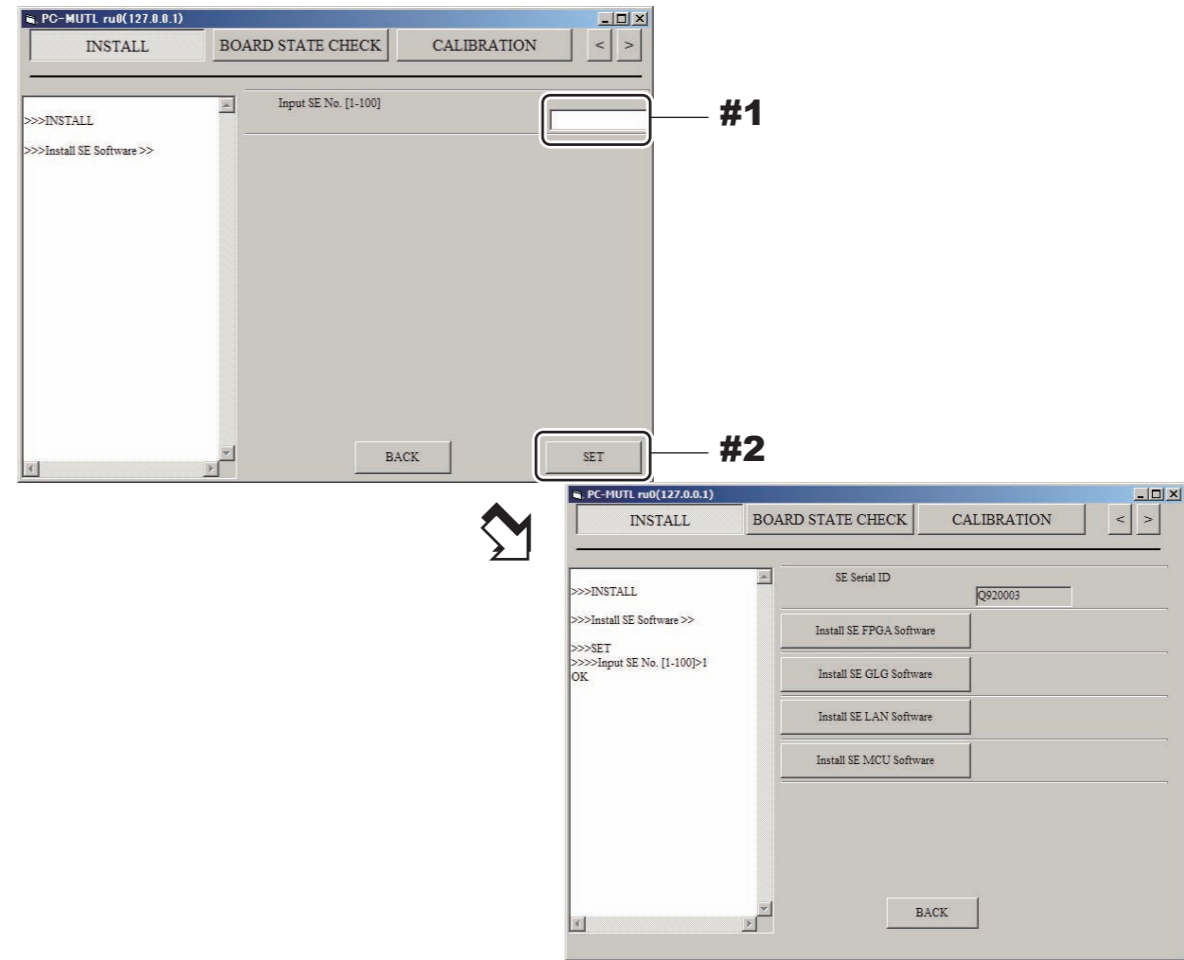
#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

- SE Serial ID:
  Displays the SE serial ID.
- Install SE FPGA Software:
  Installation of the FPGA application.
- Install SE GLG Software:
  Installation of the GLG board application.
- Install SE LAN Software:
  Installation of the LAN application
- Install SE MCU Software:
  Installation of the MCU application.

[5] Board State Check

■ Display Window

BOARD STATE CHECK window

1200_400023E.ai
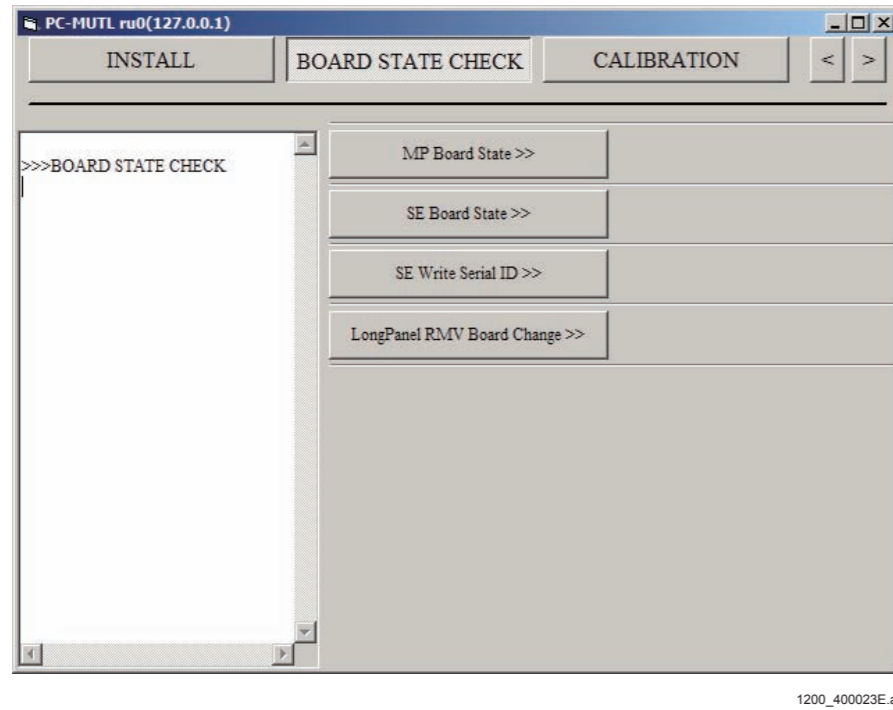
■ Function Description

Checks the conditions of the following boards. Input the SE serial ID also.
- MP board State
- SE board State
- SE Write Serial ID
- LongPanel RMV Board Change

[5.1] MP Board State >>

■ Display Window

MP Board State>>window

1200_400024E.ai
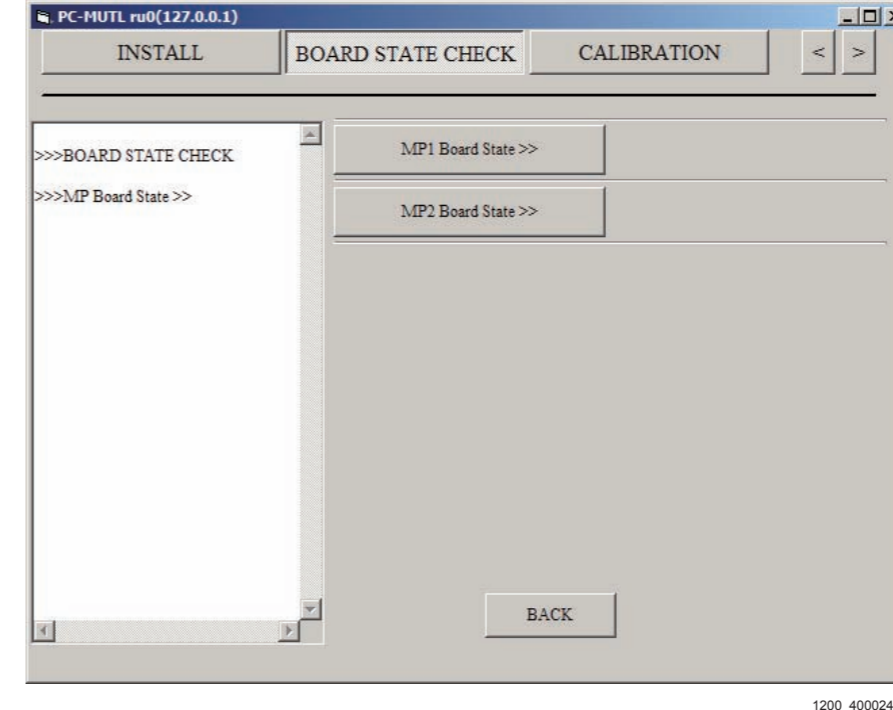
■ Function Description

Selects the MP whose board conditions are to be checked.
- MP1 Board State
- MP2 Board State

[5.1.1] MP1 Board State >>

■ Display Window

MP1 Board State>>window

1200_400025E.ai
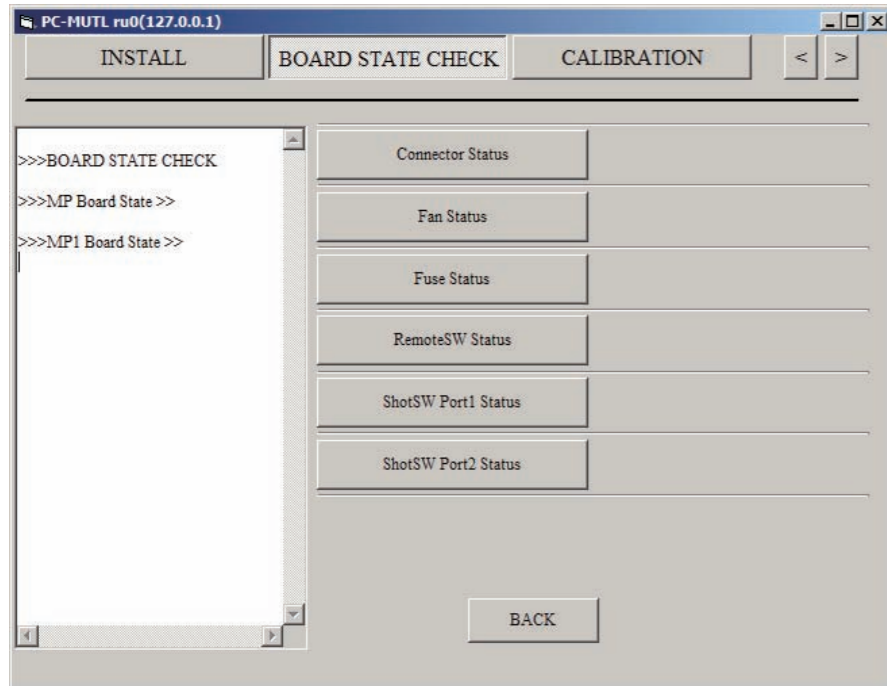
■ Function Description

Acquires the conditions of components connected with the board in the MP1. You can view the acquired results in the result display area.

- Connector Status:
  The status of the connector connected with the MP board appears in the result display area.
  Normal processing: MPX Connector: ON
                      Upright SE Connector: ON
                      (when connected with the MPC board's MPC6 connector cable)
                      Table SE Connector: ON
                      (when connected with the MPC board's MPC7 connector cable)
  Error: Other than above.

- Fan Status:
  The status of the fan connected with the MP board appears in the result display area.
  Normal processing: MP Fan Status: ON
  Error: Other than above.

- Fuse Status:
  The status of the fuse connected with the MP board appears in the result display area.
  Normal processing: MPX Fuse: OK, UprightSE Fuse: OK, TableSE Fuse: OK
  Error: Other than above.

- RemoteSW Status:
  The ON/OFF status of the remote switch appears in the result display area.
  ON: OFF/[ON]
  OFF: [OFF]/ON

- ShotSW Port1 Status
  The ON/OFF status of the shot switch port 1 appears in the result display area.
  ShotSW1 is ON: OFF/[ON]
  ShotSW1 is OFF: [OFF]/ON

- ShotSW Port2 Status
  The ON/OFF status of the shot switch port 2 appears in the result display area.
  ShotSW2 is ON: OFF/[ON]
  ShotSW2 is OFF: [OFF]/ON

[5.1.2] MP2 Board State >>

"Display window" and "Function" are the same as those of MP1 Board State >>.
Read MP1 as MP2.

☞ **{MU2:[5.1.1]_MP1 Board State >>}**

[5.2]   SE Board State >>

■ Display Window

SE Board State >> window

DRID600_G0086E.ai
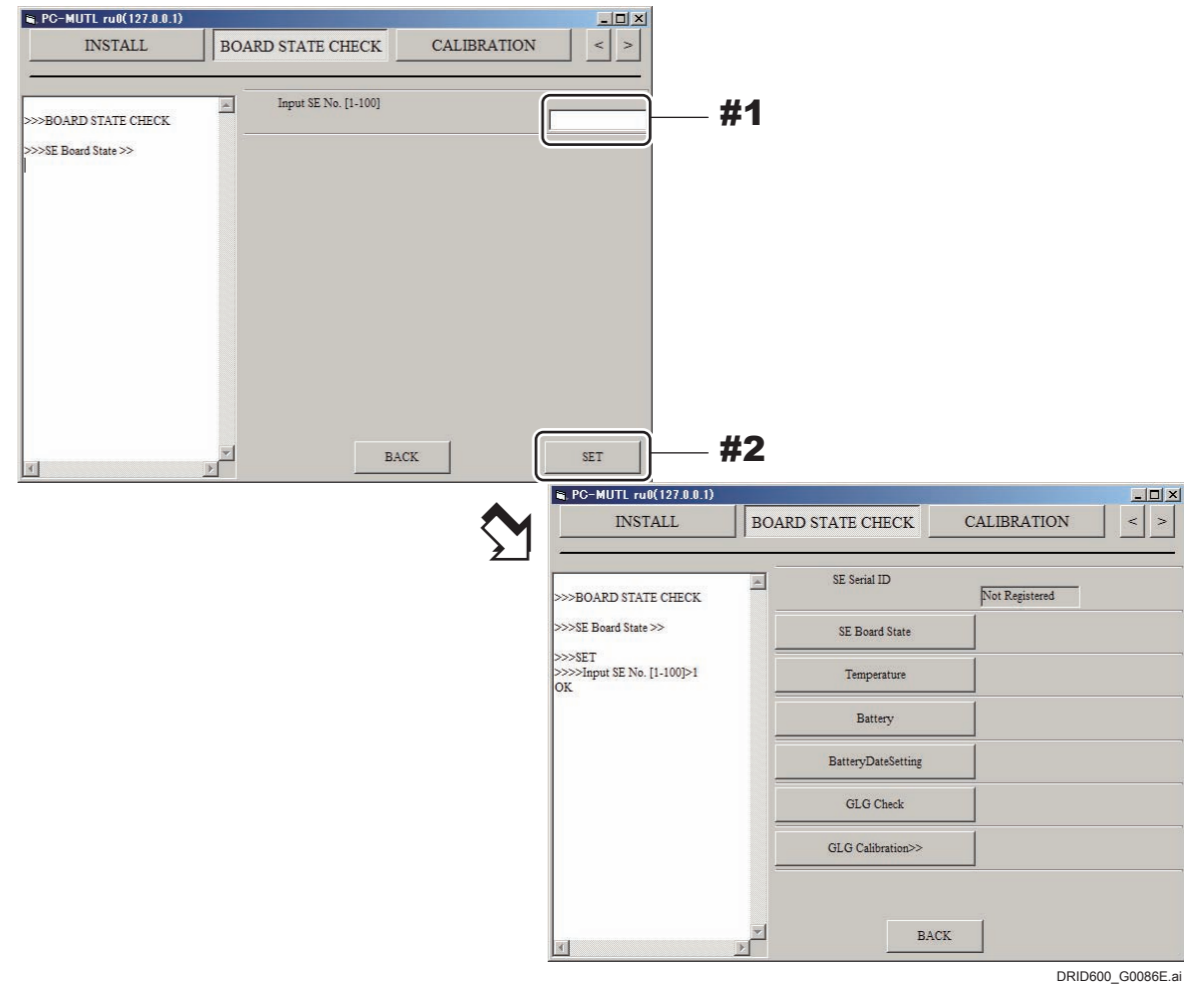
#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

Acquires conditions of components connected with the board in the SE. You can view the result in the result display area.

● SE Board State

Acquires the board conditions in the SE, and displays the contents in the result display area.

Normal: WLAN H/W Status: OK, WLAN Power Status: OK, WLAN SettingFile Status: OK, RMV H/W Status: OK, RMV Power Status: OK

Defective: Other than the above

● Temperature

Displays the temperature of the stand SE panel in the result display area.
Display example: Temperature = 29.4 deg C

● **Battery:**

◆ *NOTE* ◆

Not used in the DR-ID 1300.

Displays the following information on the battery in the result display area.
Serial No.: 0 to 65535
Date of manufacture: YYYY/MM/DD
Battery Status: 0xXXXX
Failure cause (Manufacture Access): 0bXXXXXXXXXXXXXXXX
Battery capacity: 0 to 65535 [unit mAh/10 mWh]
Fitting (putting on/off) count of battery (B/I Logic Count): 0 to 65535
Charge/discharge count (Cycle Count): 0 to 65535
Remaining time (Time to Empty): 0 to 65535 [unit min]
Battery temperature: 0 to 65535 [0.1 K]
<Display example>
Serial No = 66
Manufacture Date = 2010/09/23
Battery Status = 0x0080
Manufacture Access = 0b1110000000000000
Battery Capacity: 2619 (unit mAh/10 mWh)
B/I Logic Count: 0
Cycle Count: 27
Time to Empty: 65535 (min)
Temperature: 2956 (0.1 K)

● **Battery Date Setting**

◆ *NOTE* ◆

Not used in the DR-ID 1300.

Set the start date for battery use.
Accurate display of the battery capacity becomes possible by performing "Battery Date Setting".

● **GLG Check**

◆ *NOTE* ◆

Not used in the DR-ID 1300.

The following tests are performed for the GLG board, and the results (OK/NG) are displayed in the result display area.
- Memory check (writing of data to and reading of data from FRAM and RAM)
- Data acquisition from RTC
- Low G sensor data setting and data acquisition
- AD converter diagnosis
- Reading of set data

◇ *REFERENCE* ◇

Self-diagnosis of the GLG board is performed also at the time of equipment start.

● **GLG Calibration**

◆ *NOTE* ◆

Not used in the DR-ID 1300.

GLG Calibration>>window
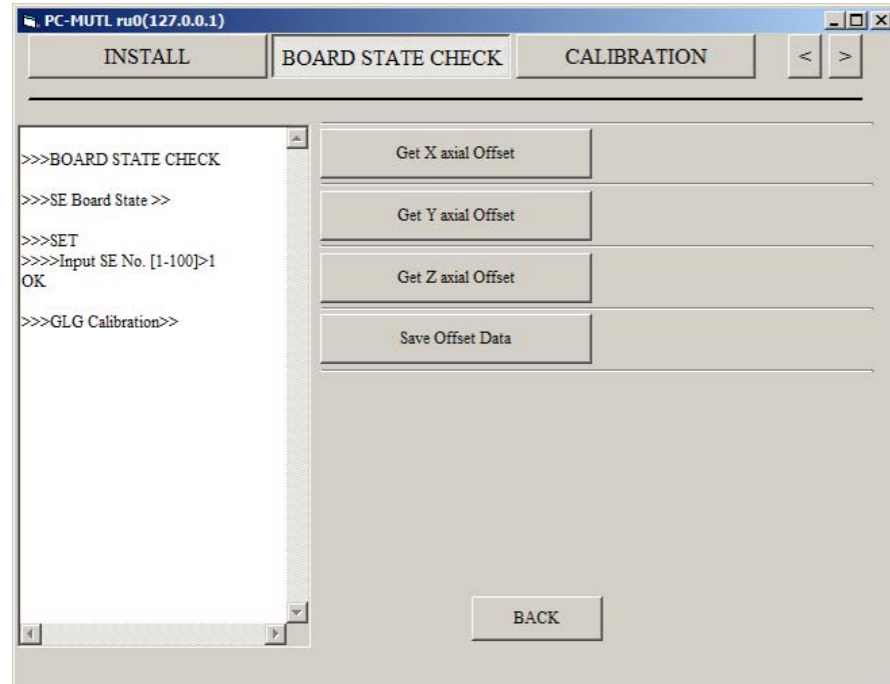
1200_400026E.ai

Zero point adjustment for the high G sensor (3 directions) is performed. GLG calibration must be performed at the time of replacement of the GLG board.

<Procedures>

(1) **Start the system.**

(2) **Place the SE onto a stable surface with no vibrations (the orientation does not matter).**

(3) **Click [Get X axial Offset], [Get Y axial Offset], [Get Z axial Offset]. (The order of clicking does not matter.)**

→ The 0 G output of the high G sensor is acquired.

(4) **Click [Save Offset Data].**

→ The offset value is stored in the FRAM of the GLG board (restart is not required).

◇ *REFERENCE* ◇

After execution of calibration, the actually measured value minus the offset value is stored in the log as the measured value.

[5.3] SE SerialID Write>>

■ **Display Window**

SE Write Serial ID>> window

1200_400040E.ai
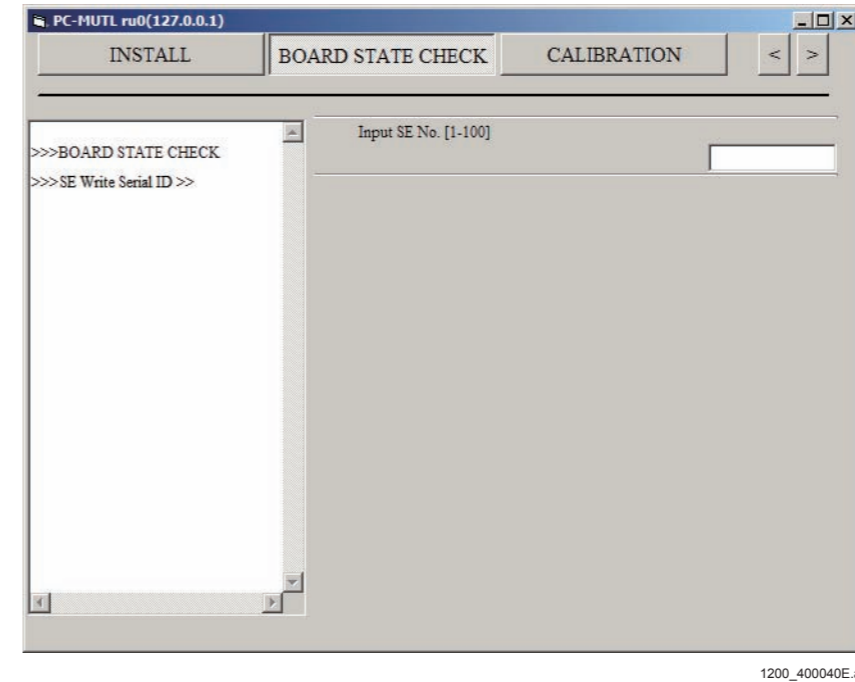
■ **Function Description**

When replacing the RMV board, inputting the SE serial ID and clicking [SET], the serial ID registration is completed.

◆ *NOTE* ◆

The first letter of the serial ID must be entered as a capital letter.

◇ *REFERENCE* ◇

The serial ID of an SE is mentioned on the surface of the machine-specific data CD-ROM.

[5.4]　LongPanel RMV Board Change>>

■ Display Window

LongPanel RMV Board Change>> window

1300_400014E.ai
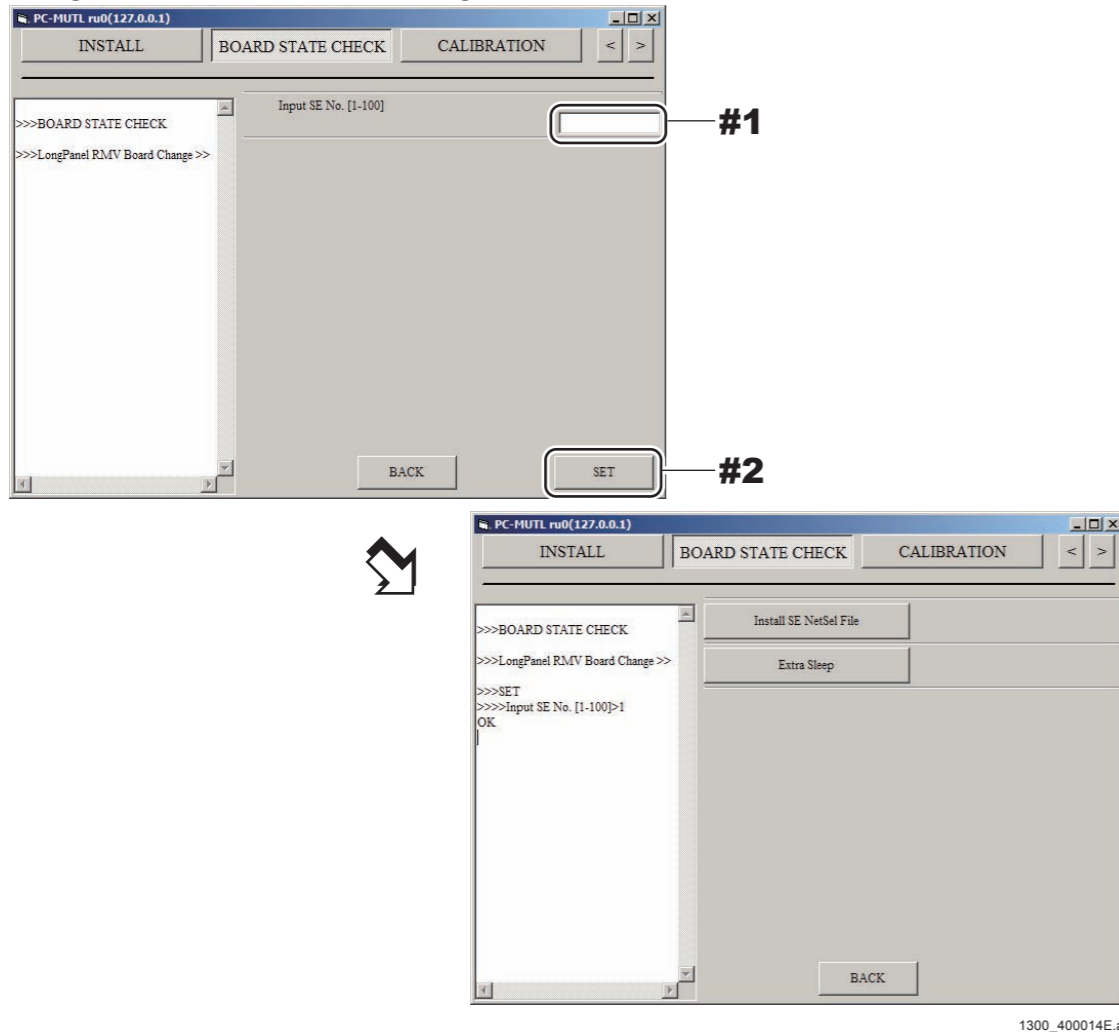
#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

When the RMV board is replaced, if [SET] is clicked after the SE serial ID is input, then the communications setting file installation or Extra Sleep mode can be gone to.

◆ NOTE ◆

The first letter of the serial ID must be entered as a capital letter.

◇ REFERENCE ◇

The serial ID of an SE is mentioned on the surface of the machine-specific data CD-ROM.

● Installing the communication setting file

Install the communication setting file to the RMV board of the target panel unit.
Clicking [Install communication setting file], the confirmation window of "Are You Sure?" appears.
Click [OK] to execute installation.

● Extra Sleep

After replacing the RMV board, to write the serial ID on it, you need to stop the communication with the RMV boards installed in the other panel units. Click [Extra Sleep] to stop the communication with the selected panel unit.
Clicking [Extra Sleep], the confirmation window of "Are You Sure?" appears.
Click [OK] to go to the Extra Sleep mode.

[6]   Calibration

■ Display Window

CALIBRATION window


```
1200_400027E.ai
```

■ Function Description

Used to make the following calibration on the SE.
Refer to the Installation manual for the detailed procedures.

☞ **{IN1:11._Image Calibration}**

☞ **{IN2:11._Image Calibration}**

☞ **{IN1:12._Marker Calibration}**

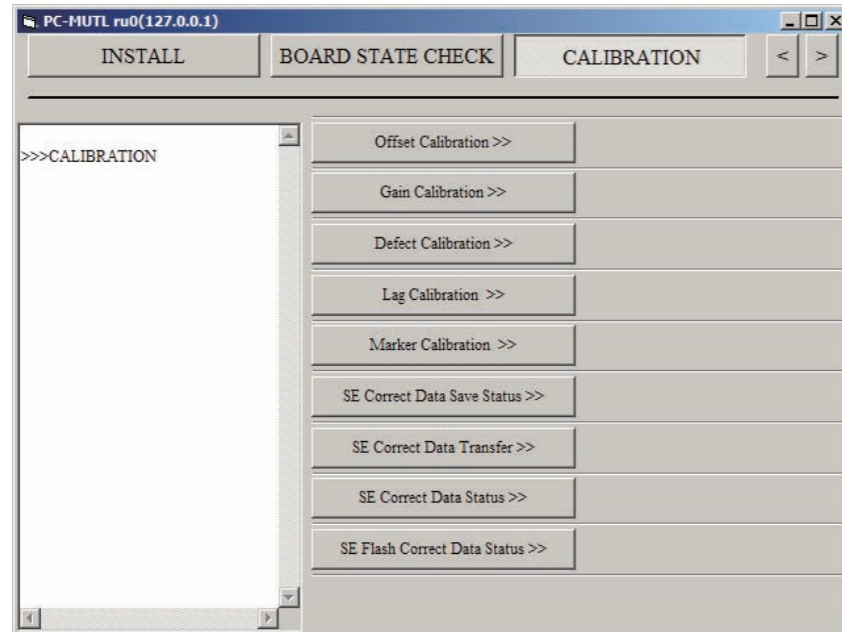☞ **{IN2:12._Marker Calibration}**

- Offset calibration
- Gain calibration
- Defect calibration
- Lag calibration
- Marker calibration

Also, it is used to confirm or set the SE correct data.

- SE Correct Data Save Status
- SE Correct Data Transfer
- SE Correct Data Status
- SE Flash Correct Data Status

◆ INSTRUCTION ◆

Check to make sure that background calibration (which takes place automatically when the MC is started) is completed before carrying out the following calibration. The image correction data cannot be correctly performed if the calibration takes place while the background calibration is in progress.
- Offset calibration
- Gain calibration
- Defect calibration
- Lag calibration
- Marker calibration
You can check whether background calibration is completed on the status lamp "READY" of the SE
- While background calibration is in progress:
  "READY" is flashing.
- While background calibration is not carried out:
  "READY" is unlit.

[6.1]   Offset Calibration >>

■ Display Window

Offset Calibration>> window
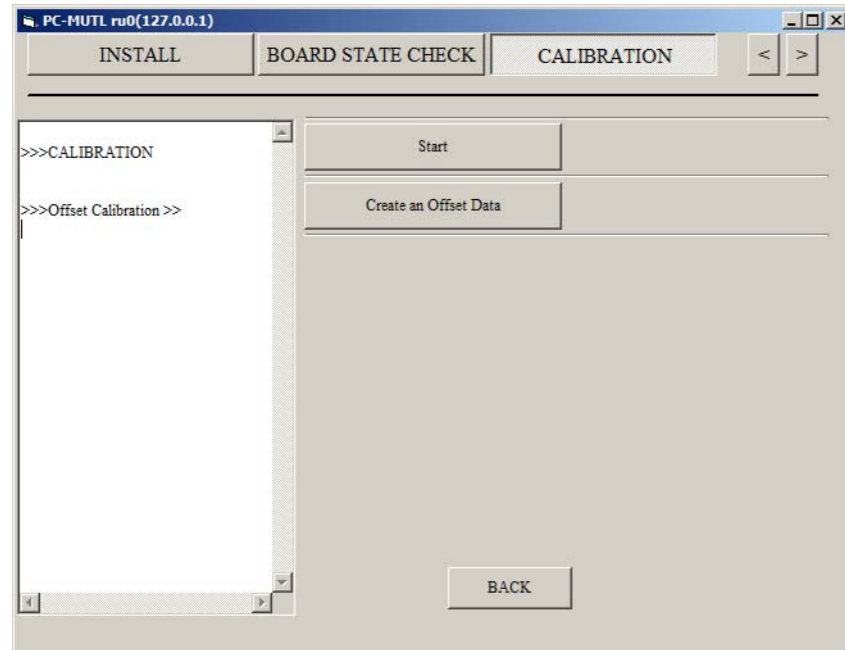
1200_400028E.ai

■ Function Description

Carries out offset calibration.
No exposure is made during offset calibration.
The offset calibration takes place for all of connected SE's.

◆ NOTES ◆

- *Always click [Create an Offset Data] after you click [Start]. Processing cannot be terminated, waiting for data generation, if you click [BACK] without clicking [Create an Offset Data]. Return to the "Store Mode" window, and again follow the procedures in this case.*
- *Clicking [Start] during automatic offset update (always taking place approx. at 10-minute intervals when no exposure menu is selected), "Error 12700 currently unavailable" is displayed. Again click [Start] approx. 30 seconds later in this case.*

◇ REFERENCE ◇

Whether the check is successfully completed appears on the result display area.
An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

Correction data for use in still image radiography is generated.
Clicking [Start], the mode setting takes place.
Clicking [Create an Offset Data] thereafter, the correction data is generated.

[6.2] Gain Calibration >>

■ Display Window

Gain Calibration >> window
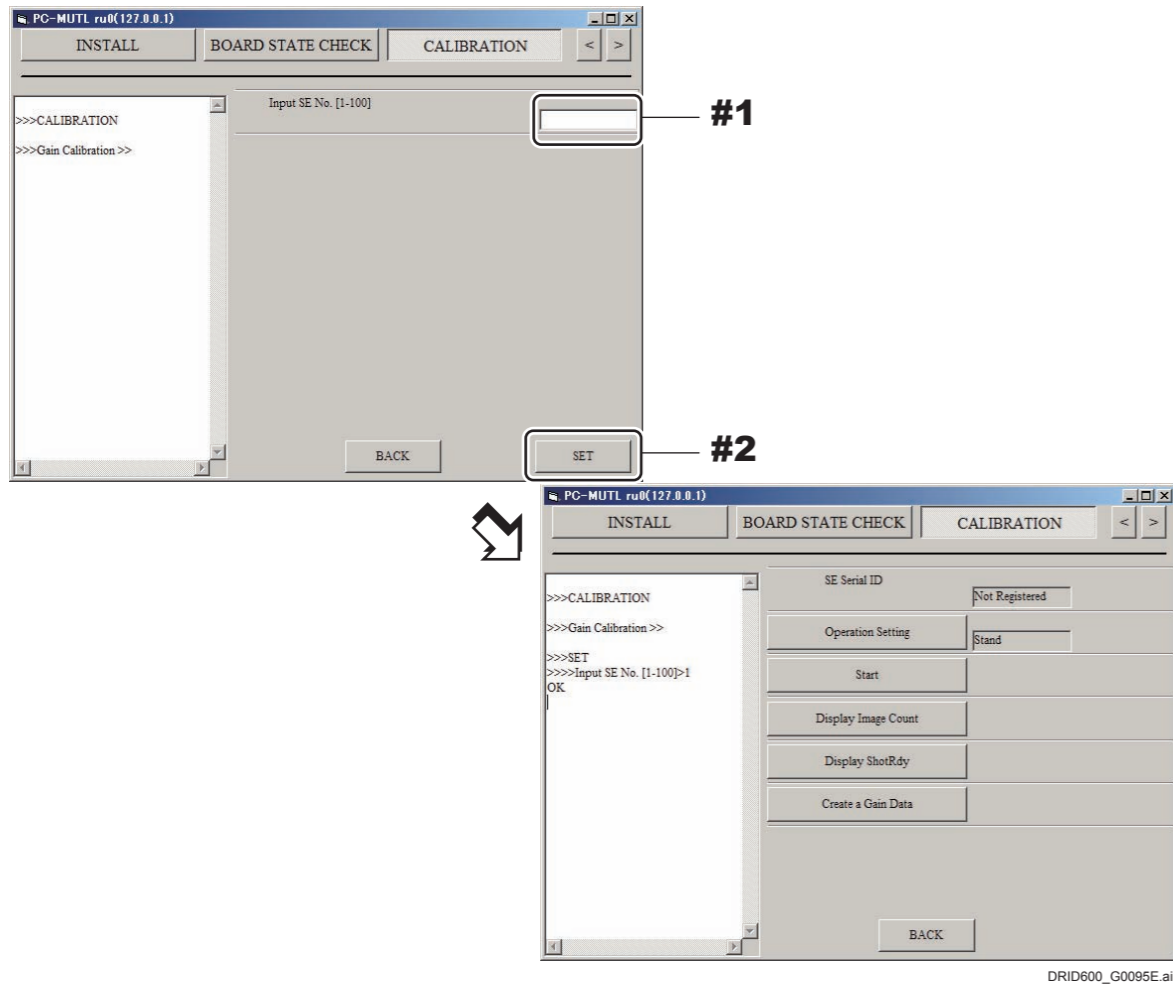
#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

Gain calibration takes place under the following conditions:
- Exposure conditions: Tube voltage of 75 kV, dose of 10 mR
- Exposure count: 16

◆ NOTE ◆

- *Do not change the tube position in the gain calibration. If the tube position is changed, a line defect is wrongly detected at the upper and lower ends of the CENTER panel unit. This may cause an artifact or a defective at the boundary of the panel unit.*
- *If an artifact has occurred, take the following measure.*
    - *For TOP panel unit or BOTTOM panel unit*
      Perform the full calibration for the target panel unit.
    - *For CENTER panel unit*
      Perform the full calibration and marker calibration.

◆ NOTE ◆

- *Be sure to make sixteen exposures after you click [Start]. Then click [Create a Gain Data]. Processing cannot be terminated, waiting for data generation, if you click [BACK] without clicking [Create a Gain Data]. Return to the "Gain Calibration" window and again follow the procedures in this case.*
- *If you click [Create a Gain Data] before you make sixteen exposures, "error code" is displayed in the result display area. If "error code" appears, continue to make exposures, and click [Create a Gain Data] after you have made sixteen exposures.*
- *Clicking [Start] during automatic offset update (always taking place approx. at 10-minute intervals when no exposure menu is selected), "Error 12700 currently unavailable" is displayed. Again click [Start] approx. 30 seconds later in this case.*

◇ REFERENCE ◇

Whether the check is successfully completed appears on the result display area.
An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

- Operation Setting:
  Selects the operative method for calibration.
- Start:
  Clicking [Start], the mode setting takes place.
- Display Image Count:
  Clicking [Display Image Count], you can view the exposure count.
- Display ShotRdy:
  Completion of the shooting preparation by the panel is checked.
  <Result indication>
  - SHOT_READY: Completed
  - NOT_READY: Not completed
- Create a Gain Data:
  Gain data is generated.

[6.3]   Defect Calibration >>

■ Display Window

Defect Calibration >> window

#1 Input: Target SE No.
#2 Click: [SET]

DRID600_G0096E.ai
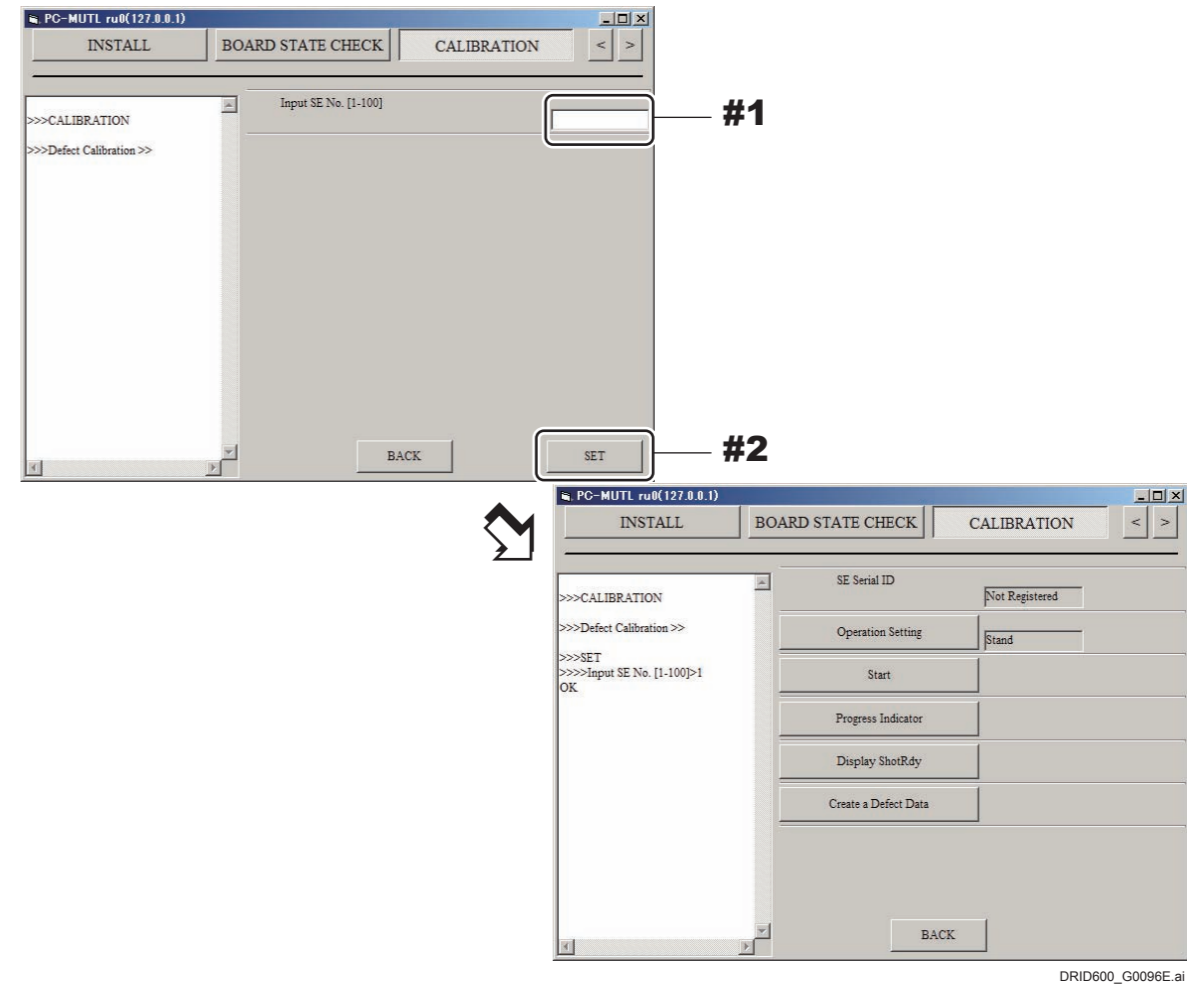
■ Function Description

Defect correction calibration takes place under the following conditions:
- Exposure conditions: Tube voltage of 75 kV, dose of 5 mR
- Exposure count: 5

◆ NOTE ◆

When performing defect calibration, make sure to have the exposure conditions such as the correct dose setting (kV, mA, msec, SID) for defect correction calibration.

If defect correction calibration is performed by using the exposure conditions for gain correction, a defect is expanded and its size cannot be detected correctly. As a result, because the number of the defects becomes an erroneous value and the defect size is increased more than expected, a calibration error may occur.

◆ NOTE ◆

- *When performing the defect calibration after the gain calibration, do not move the tube. Keep the same position of the tube as when the gain calibration was performed. If the tube position is changed, a line defect is wrongly detected at the upper and lower ends of the CENTER panel unit. This may cause an artifact or a defective at the boundary of the panel unit.*
- *If an artifact has occurred, take the following measure.*
  - *For TOP panel unit or BOTTOM panel unit*
    Perform the full calibration for the target panel unit.
  - *For CENTER panel unit*
    Perform the full calibration and marker calibration.

◆ NOTES ◆

- *Be sure to make five exposures after you click [Start]. Then click [Create a Defect Data]. Processing cannot be terminated, waiting for data generation, if you click [BACK] without clicking [Create a Defect Data]. Return to the "Defect Calibration" window and again follow the procedures in this case.*
- *If you click [Create a Defect Data] before you make five exposures, "error code" is displayed in the result display area. If "error code" appears, continue to make exposures, and click [Create a Defect Data] after you have made five exposures.*
- *Clicking [Start] during automatic offset update (always taking place approx. at 10-minute intervals when no exposure menu is selected), "Error 12700 currently unavailable" is displayed. Again click [Start] approx. 30 seconds later in this case.*

◇ *REFERENCE* ◇

Whether the check is successfully completed appears on the result display area.
An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

- Operation Setting:
  Selects the operative method for calibration.
- Start:
  Clicking [Start], the mode setting takes place.
- Progress Indicator:
  Clicking [Progress Indicator], you can view the exposure count.
- Display ShotRdy:
  Completion of the shooting preparation by the panel is checked.
  <Result indication>
  - SHOT_READY: Completed
  - NOT_READY: Not completed
- Create a Defect Data:
  Defect data is generated.

[6.4]   Lag Calibration >>

■ Display Window

Lag Calibration >> window
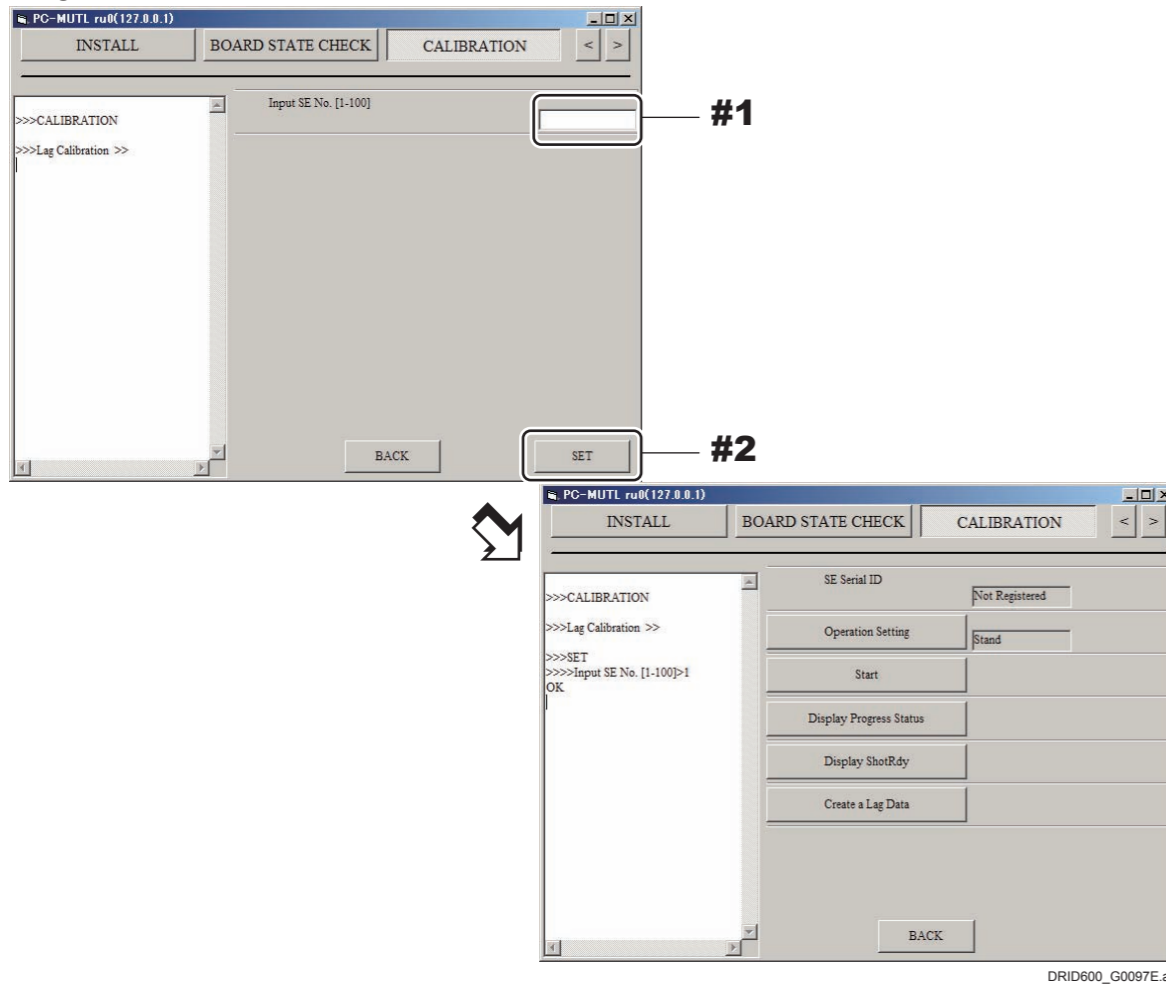
#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

Lag correction calibration takes place under the following conditions:
- Exposure conditions: Tube voltage of 80 kV, dose of 100 mR or more, irradiation time of 200 msec or shorter
- Exposure count: 1

◆ *NOTES* ◆

- *Be sure to make a single exposure after you click [Start]. Then click [Create a Lag Data]. Processing cannot be terminated, waiting for data generation, if you click [BACK] without clicking [Create a Lag Data]. Return to the "Lag Calibration" window and again follow the procedures in this case.*
- *Clicking [Start] during automatic offset update (always taking place approx. at 10-minute intervals when no exposure menu is selected), "Error 12700 currently unavailable" is displayed. Again click [Start] approx. 30 seconds later in this case.*

◇ *REFERENCE* ◇

Whether the check is successfully completed appears on the result display area.
An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

- Operation Setting:
  Selects the operative method for calibration.
- Start:
  Clicking [Start], the mode setting takes place.
- Display Progress Status:
  Clicking [Display Progress Status], you can view the number of acquired frame data. Data of eight frames are acquired by a single exposure.
- Display ShotRdy:
  Completion of the shooting preparation by the panel is checked.
  <Result indication>
  - SHOT_READY: Completed
  - NOT_READY: Not completed
- Create a Lag Data:
  Lag correction data is generated.

[6.5]   Marker Calibration >>

■ Display Window

Marker Calibration >> window


```
PC-MUTL ru0(127.0.0.1)
INSTALL   BOARD STATE CHECK   CALIBRATION   <  >
                          Input SE No. [1-100]        ─── #1
>>>CALIBRATION
>>>Marker Calibration >>


                          BACK        SET        ─── #2
```

```
PC-MUTL ru0(127.0.0.1)
INSTALL   BOARD STATE CHECK   CALIBRATION   <  >
                    Top SE Serial ID       Not Supported
>>>CALIBRATION
>>>Marker Calibration >>   Center SE Serial ID   Not Supported

>>>SET                    Bottom SE Serial ID   Not Supported
>>>>Input SE No. [1-100]>1
OK                        Operation Setting     Stand

                          Calib Position        Top-Center

                          Start

                          Display Image Count

                          Display ShotRdy

                          Create a Marker Data

                                  BACK
                                          1300_400009E.ai
```
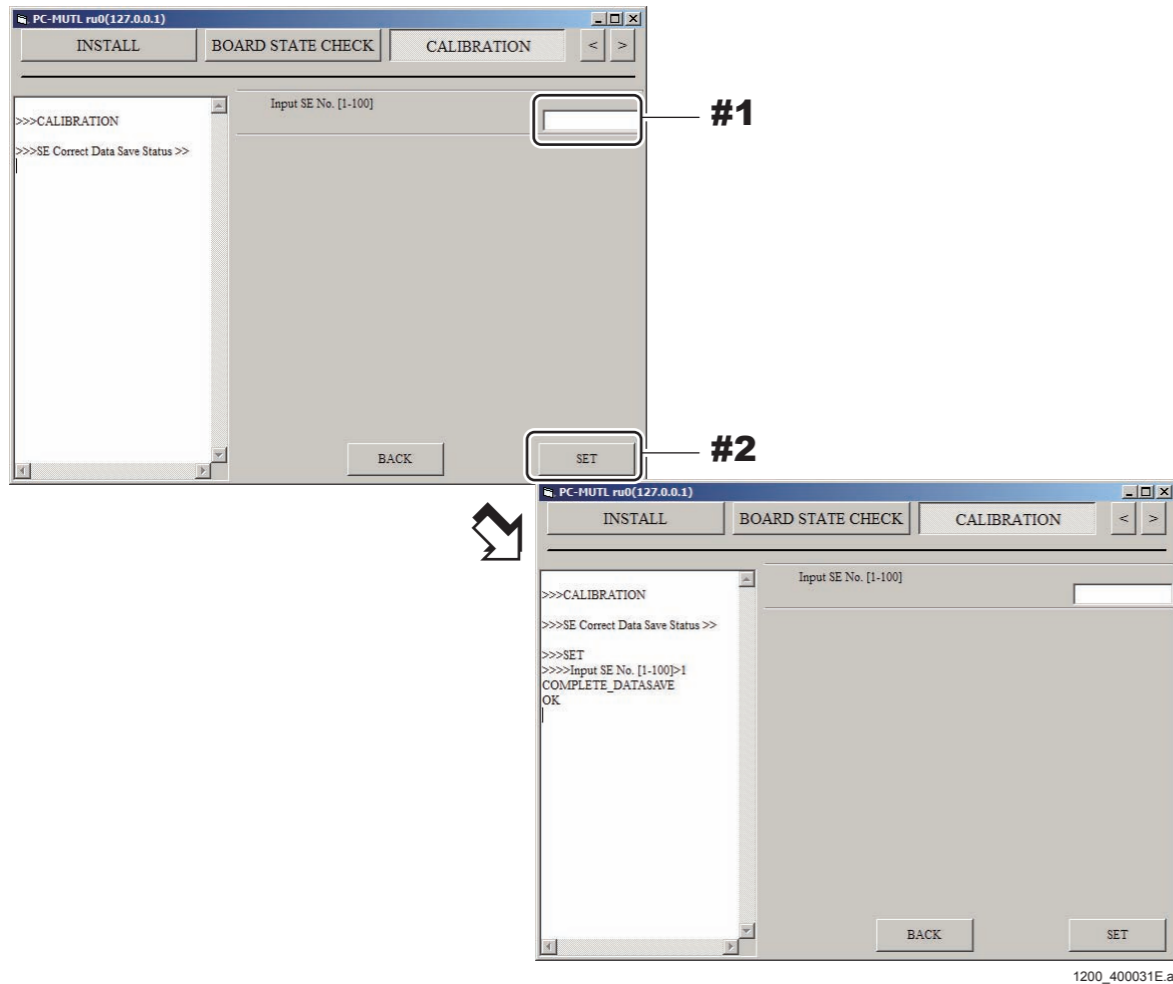
#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

- Operation Setting:
  Selects the operative method for calibration.
- Calib Position:
  Selects the position where the calibration is to be performed.
- Start:
  Clicking [Start], the mode setting takes place.
- Display Image Count:
  Clicking [Display Image Count], you can view the exposure count.
- Display ShotRdy:
  Completion of the shooting preparation by the panel is checked.
  <Result indication>
  - SHOT_READY: Completed
  - NOT_READY: Not completed
- Create a Marker Data:
  Marker correction data is generated.

[6.6]　SE Correct Data Save Status>>

■ Display Window

SE Correct Data Save Status >> window

1200_400031E.ai
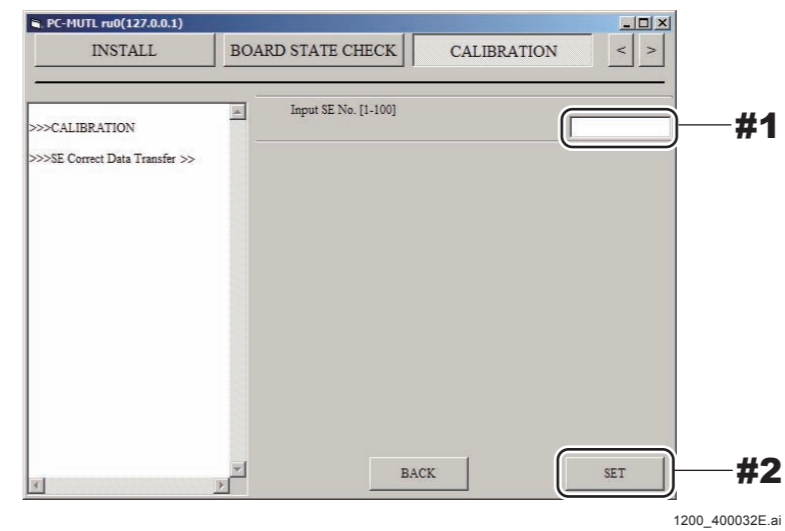
#1 Input: Target SE No
#2 Click: [SET]

■ Function Description

After finishing the full calibration or the SE correct data transfer, check whether the correction data storage has been completed or not.
Inputting the SE No. and clicking [SET], the correct data save status after the calibration is displayed.

[6.7]　SE Correct Data Transfer>>

■ Display Window

SE Correct Data Transfer >> window

1200_400032E.ai

#1 Input: Target SE No
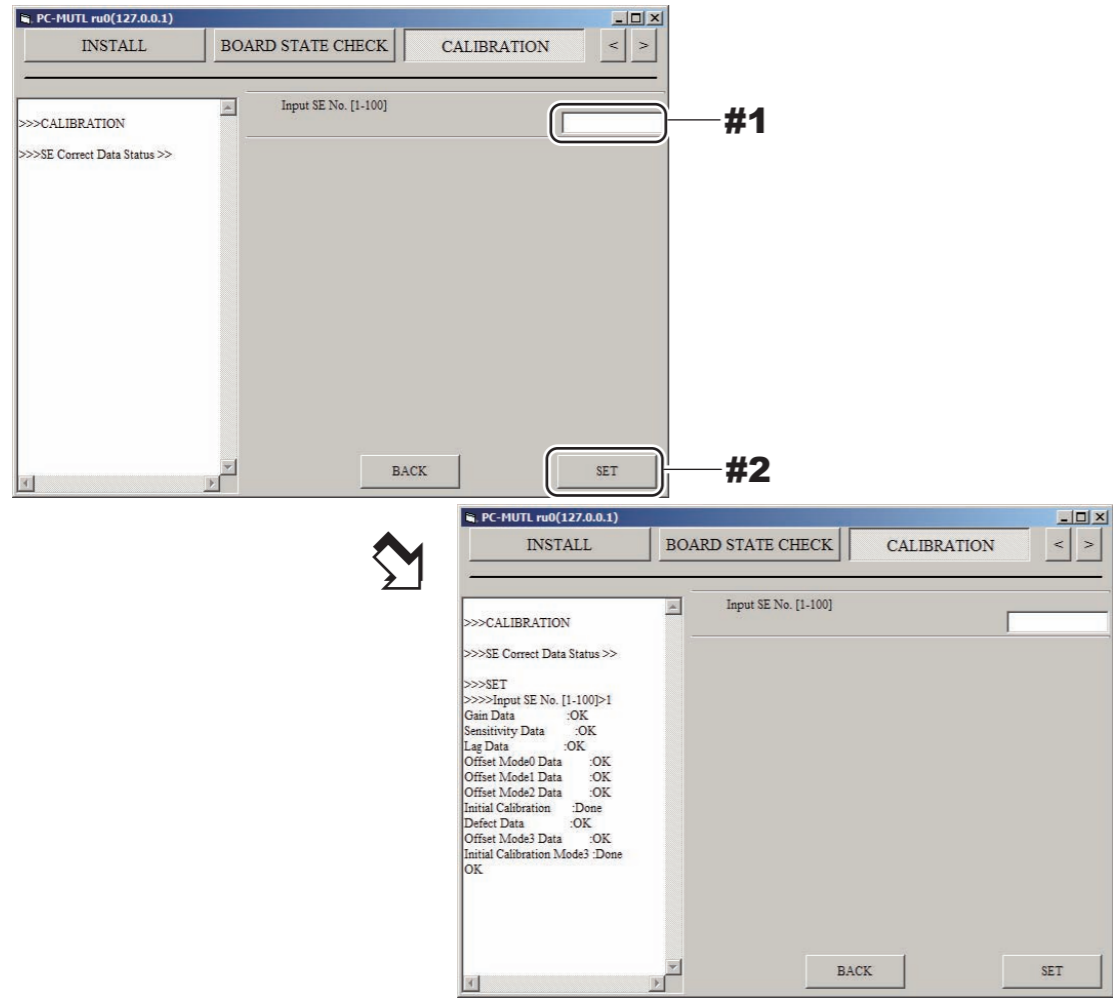#2 Click: [SET]

■ Function Description

Transfer the SE correct data retained by the MC to the SE.
Display "STILL_DATASAVE" during transfer.
Display "COMPLETE_DATASAVE" after finishing transfer.

[6.8]   SE Correct Data Status>>

■ Display Window

SE Correct Data Status >> window

1200_400033E.ai

#1 Input: Target SE No
#2 Click: [SET]

■ Function Description

Check the list of correct data stored in the SE.
Inputting the SE No. and clicking [SET], the correct data status is displayed.

- There is no problem if the list of correct data is displayed as shown below. In addition, the display of the "Offset Mode3 Data" and "Initial Calibration Mode3" depends on the setting for the LONG TIME ACCUM MODE. Therefore, there is no problem if "NG" is displayed.
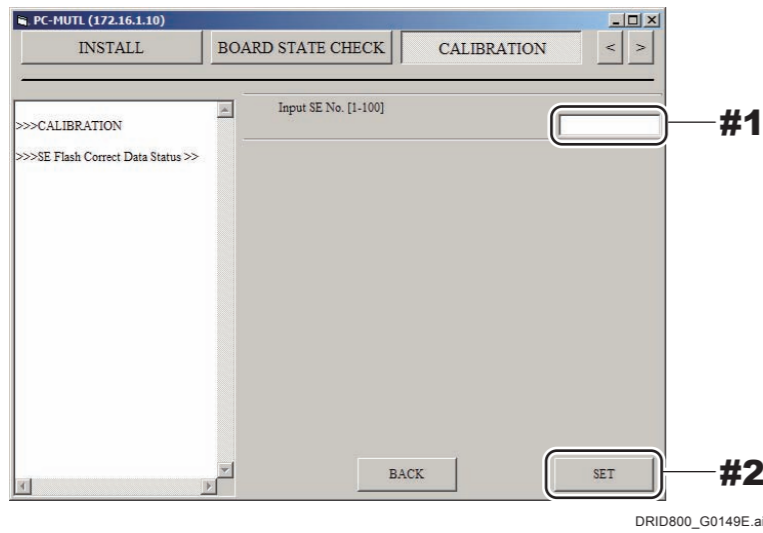
Gain Data	:OK
Sensitivity Data	:OK
Lag Data	:OK
Offset Mode0 Data	:OK
Offset Mode1 Data	:OK
Offset Mode2 Data	:OK
Defect Data	:OK
Offset Mode3 Data	:OK
Initial Calibration	:Done
Initial Calibration Mode3	:Done

- If the initialization calibration has not been completed, "Not Yet" is displayed.

[6.9] SE Flash Correct Data Status >>

■ Display Window

SE Flash Correct Data Status >>

DRID800_G0149E.ai

#1 Input: Target SE No.
#2 Click: [SET]

■ Function Description

Check the list of correct data stored in the FLASH of SE.
Inputting the SE No. and clicking [SET], the flash correct data status is displayed.
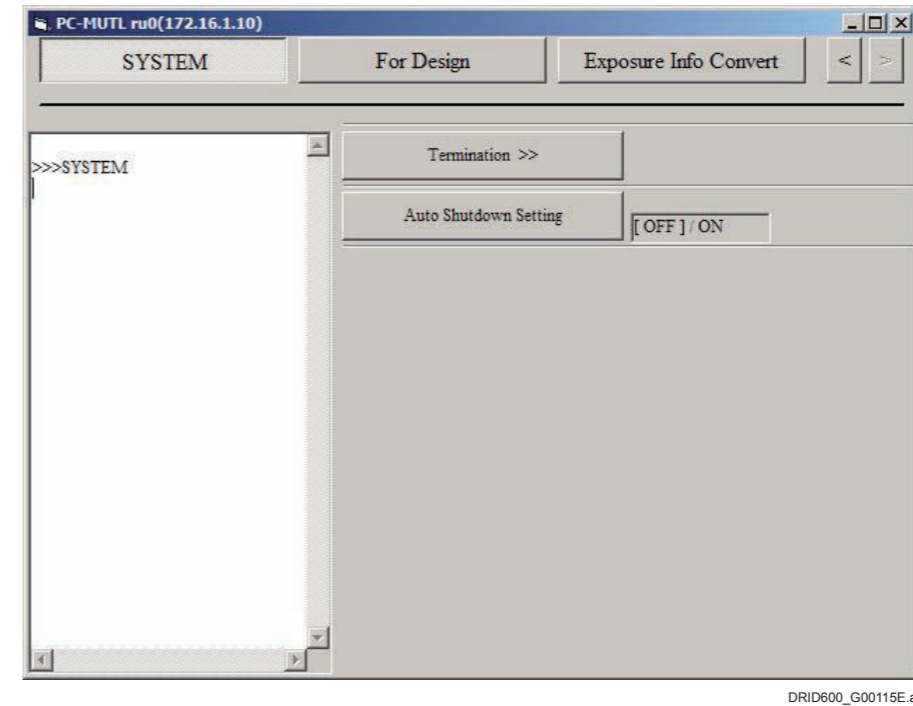
◇ *REFERENCE* ◇

If the initialization calibration has not been completed, "Not Yet" is displayed.

[7] SYSTEM

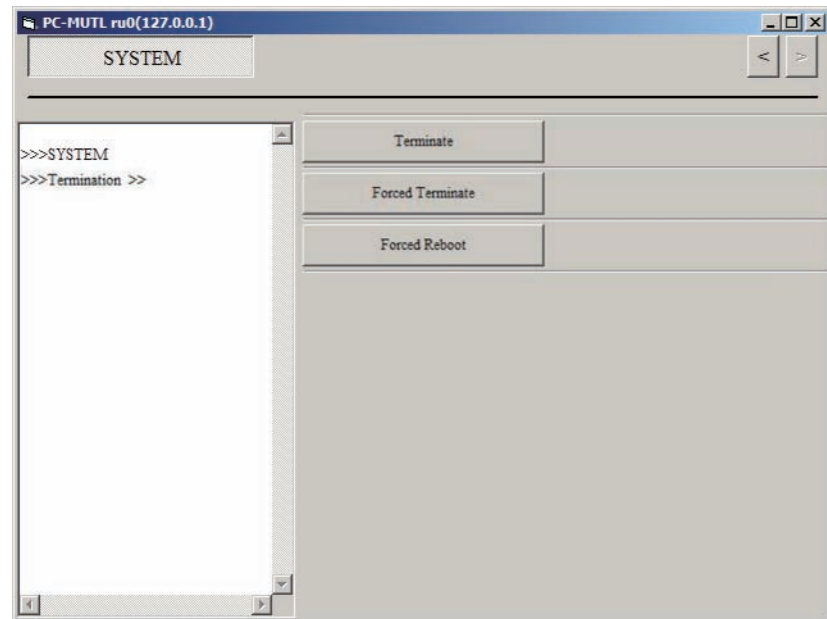### ■ Display Window

SYSTEM window

DRID600_G00115E.ai

■ Function Description

Used to select a way to shut down the system.
Each time you click [Auto Shutdown Setting], ON/OFF setting is changed over.

[7.1]   Termination >>

■ Display Window

Termination>> window

1200_400029E.ai

■ Function Description

You can exit from or restart the system by selecting among three kinds of shutdown or reboot methods on the "Termination" window.

◆ NOTE ◆

When the MC application is installed in the Console, the [Terminate], [Forced Terminate], and [Forced Reboot] buttons are disabled.

- Terminate:
  The system is normally shut down including termination calibration.

- Forced Terminate:
  The system is shut down without termination calibration.

- Forced Reboot:
  The system is restarted without termination calibration.

1.5　PING

■ Function

Executes the PING command from the CL on the machine displayed in the "IP Address", and checks whether the network is correctly connected.
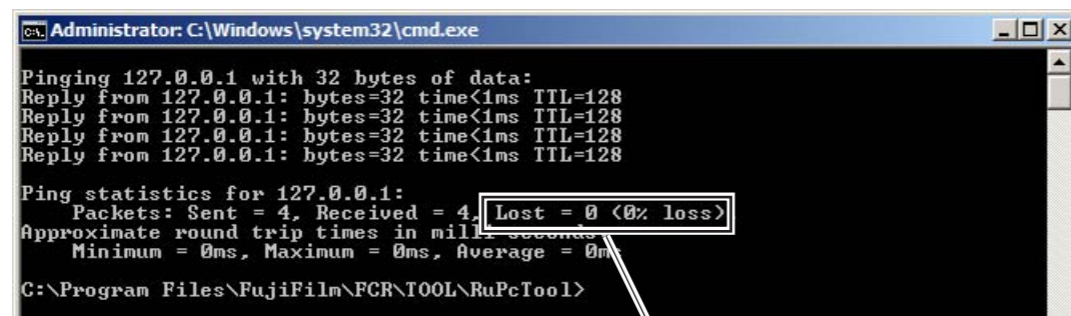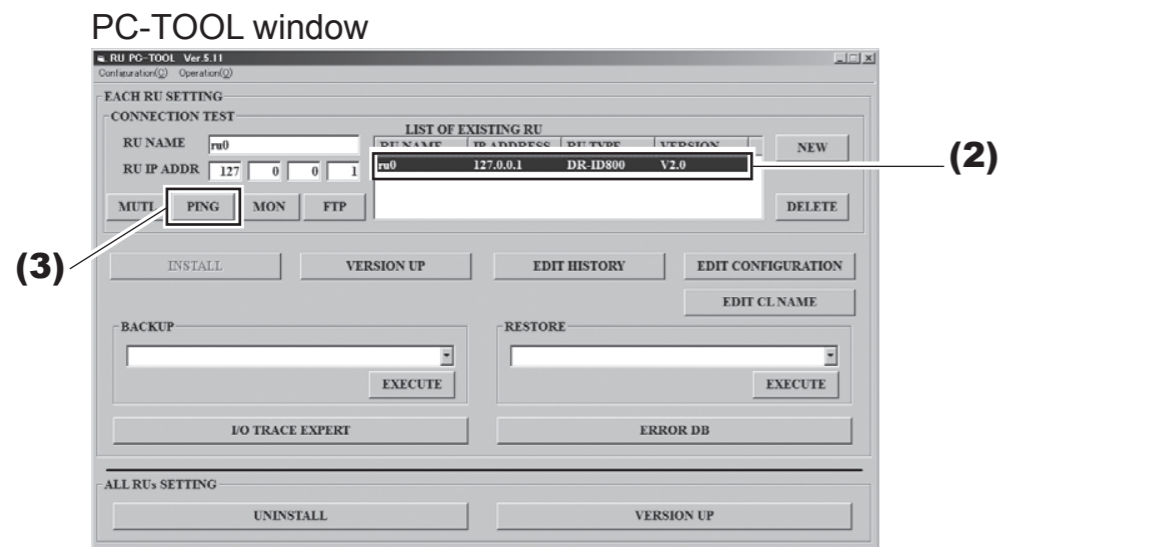
■ Procedures

(1)　Start up the RU PC-TOOL.

☞ {MU2:1._PC-TOOL}

(2)　Select the machine to be checked.

(3)　Click [PING].

The "PING" result is displayed on the CL window.

PC-TOOL window

Check that the display reads "0% loss".　1200_700171E.ai

◇ REFERENCE ◇

"Lost = 0 (0 % loss)" means that there is no problem as a result of executing the PING command. If other than "(0 % loss)", it is a sign that there was some problem.

<GOOD indication>
The result is normal when the following message appears.
"172.16.1.10" is shown as an example.
| Ping statistics for 172.16.1.10:　　　　　　　　　|
|　　Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),　|
| Approximate round trip times in milli-seconds:　　　|
|　　Minimum = 0 ms, Maximum = 0 ms, Average = 0 ms　|

<NO GOOD indication>
Other than above.

(4)　Exit the RU PC-TOOL.

☞ {MU2:1._PC-TOOL}

1.6   MON

■ Function

The I/O status of the RU (OPEN/CLOSE) appears in real time, but this function is not used in the machine as no corresponding I/O is included.

■ Display Window

DRID600_G0055.ai

1.7   FTP

■ Function

Used to access the FTP server from the CL and check whether the FTP server is working. Or, used to access the FTP server from the RU and check whether the FTP server is working.

■ Procedures

(1) Start up the RU PC-TOOL.

☞ {MU2:1._PC-TOOL}

(2) Select the machine to be checked.

(3) Click [FTP].

Operation check results of the FTP server are displayed in the command prompt, and operation check status is displayed in the message window of the PC-TOOL.

PC-TOOL window

Result window

\<GOOD indication\>
OK value = 0 = 0x0

\<NO GOOD indication\>
Other than above.

1200_400034E.ai

(4) Exit the RU PC-TOOL.

☞ {MU2:1._PC-TOOL}

1.8 INSTALL

■ Function

Installs the RU software when a new RU or an additional RU is to be installed.

◆ *INSTRUCTION* ◆

- *The RU PC-TOOL needs to be installed beforehand.*

☞ *{IN2:10.2_Installing the RU PC-TOOL}*

- *The RU name and the IP address of the RU need to be installed beforehand.*

☞ *{MU2:1.1_NEW}*

■ Procedures

☞ **{IN2:10.3_Installing the RU Software}**

◆ *NOTE* ◆

- *Installing the NIC first and then changing the setting of the CSL-PC + performing the BAT are required before performing [INSTALL].*

☞ *{IN2:10.1_Installing and Setting the NIC Board to the DX Console}*

- *When the MC application is installed, the MC Manager restarts automatically after the completion of the installation.*

1.9 VERSION UP

■ Function

Version-updates the RU software.

■ Procedures

(1) **Restart the CL after clicking the CL software system exit button, and sequentially click the upper left and upper right of the screen within three seconds after the initial screen appears.**

MC Manager only starts.

◆ *NOTE* ◆

*If step 1 could not be performed within three seconds, re-execute step 1 when the CL software has started up.*

(2) **Check that the MC Manager icon has appeared on the task tray.**

(3) **Insert the application disk into the drive.**

(4) **Select ".\install\remote\MCSetupWizard.bat" from "FILE EXECUTION" area, and click [EXECUTE].**

(5) Input the target MC IP address and click [Connect].

◇ *REFERENCE* ◇

Input "127.0.0.1" as the MC IP address.

#1 Input: MC IP address
#2 Click: [Connect]
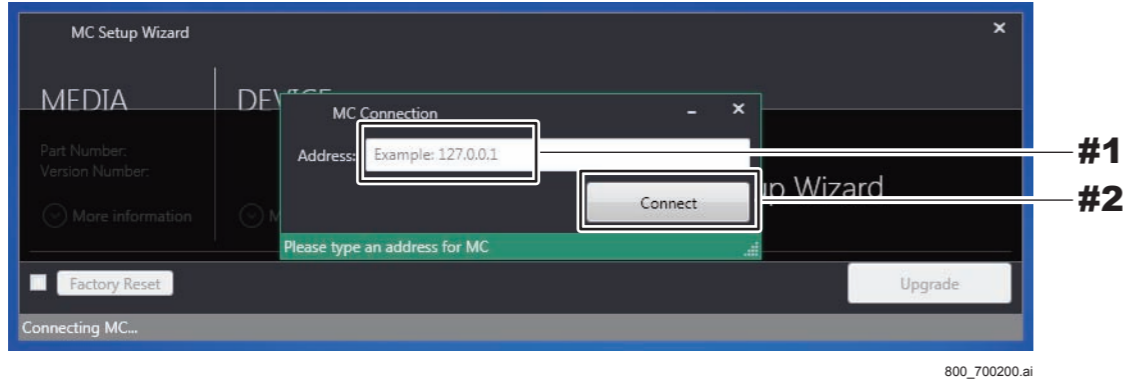

800_700200.ai

◆ *NOTE* ◆

- *If the MC could not be connected to due to the mistaken inputting of the IP address, a connection error occurs. After checking the connection status, re-execute the version upgrade.*
- *If the MC application was not factory-installed, and if the model media being used differs from the model which was installed, then the error will appear. Confirm the MC application installation status and the media model information, and re-execute the version upgrade.*

◆ *INSTRUCTION* ◆

If the RU registration has been already completed, steps 6 and 7 are not necessary. Proceed to step 8.
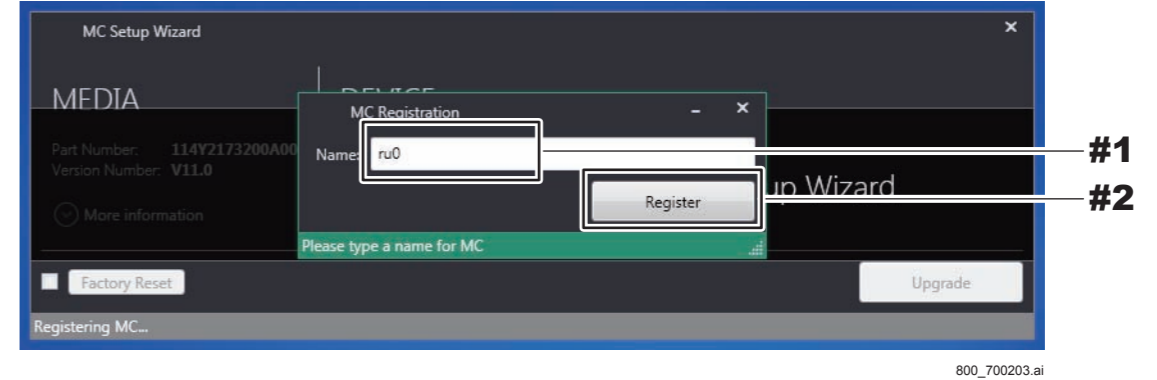
(6) If the RU registration has not been completed, the following window appears. Click [OK].

#1 Click: [OK]

800_700202.ai
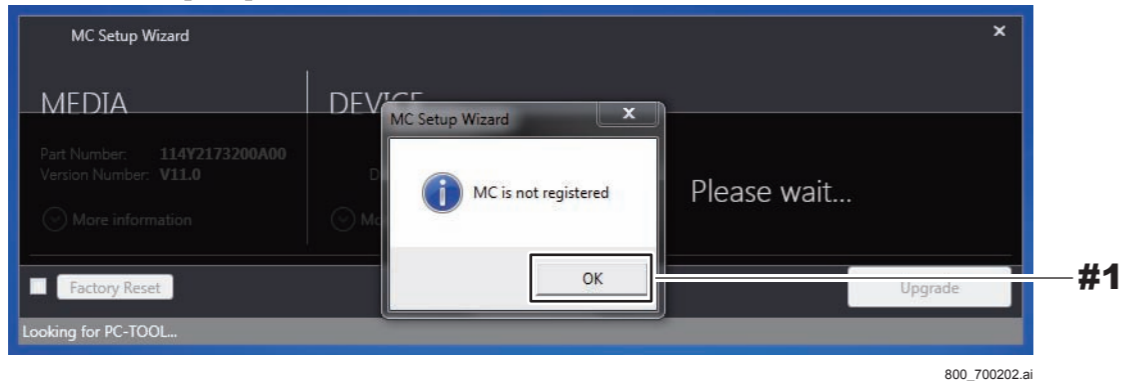
**(7) Input the RU NAME and click [Register].**

#1 Input: RU NAME
#2 Click: [Register]

800_700203.ai

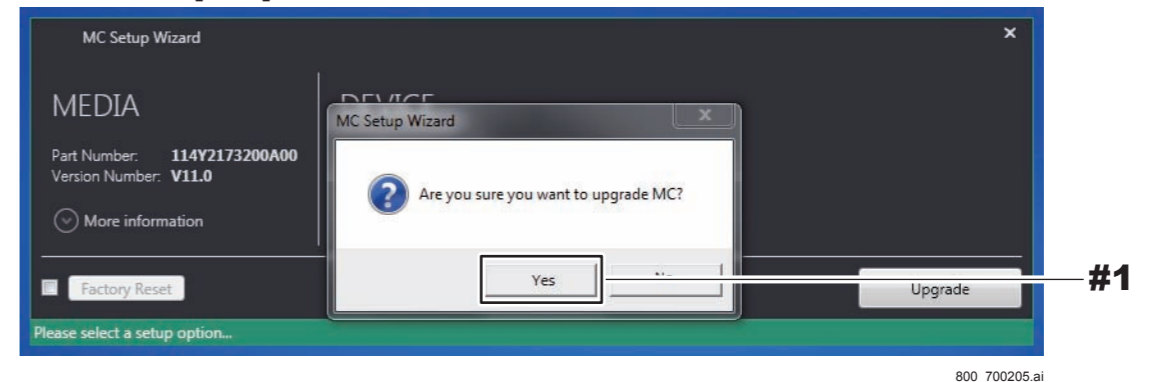The version and the media version that are installed on the device appear.

(8) Check that there are not any problems with the version and the media version that are installed on the device, and click [Upgrade].

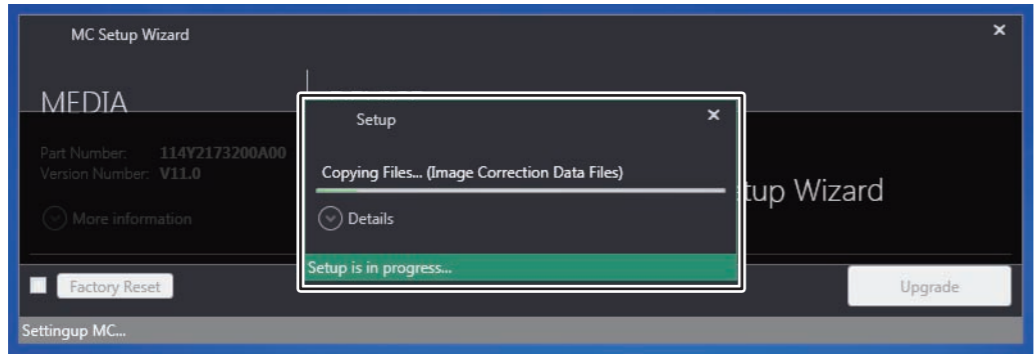#1 Check: the version and the media version that are installed on the device
#2 Click: [Upgrade]
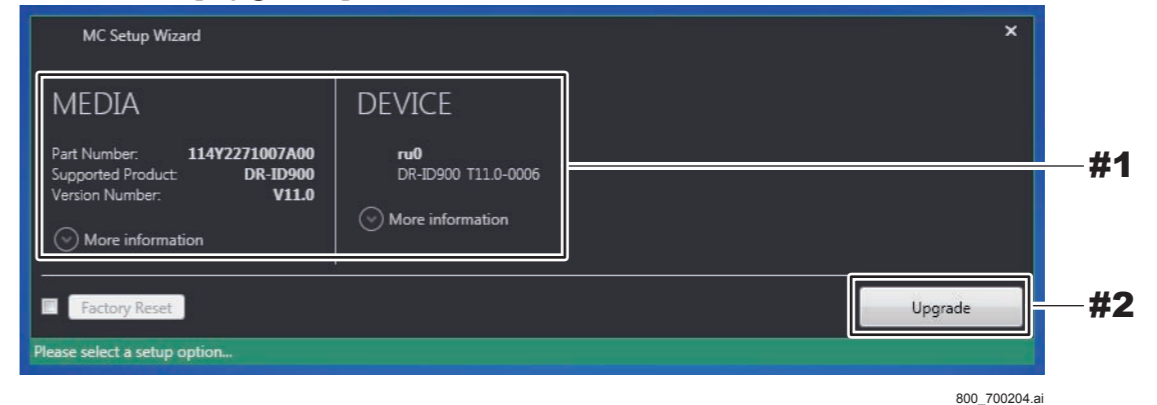
800_700204.ai

(9) Click [Yes].
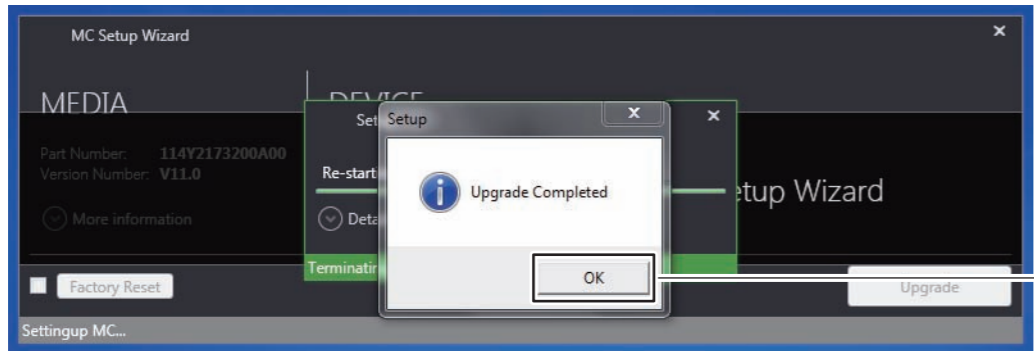
#1 Click: [Yes]

800_700205.ai

MU2-53

The following window opens during the version-update.

800_700206.ai

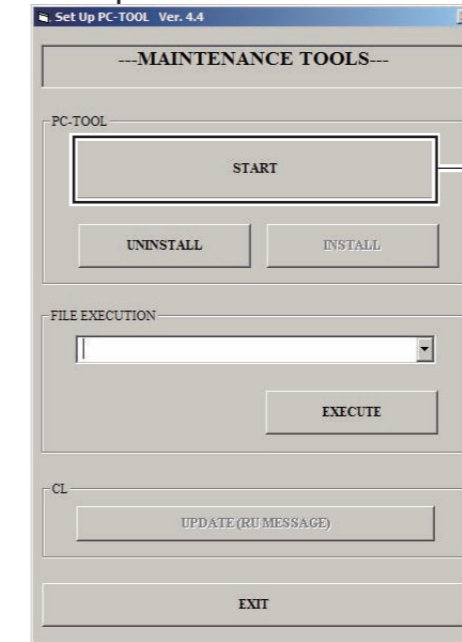**(10) Check that the installation is completed, and click [OK].**
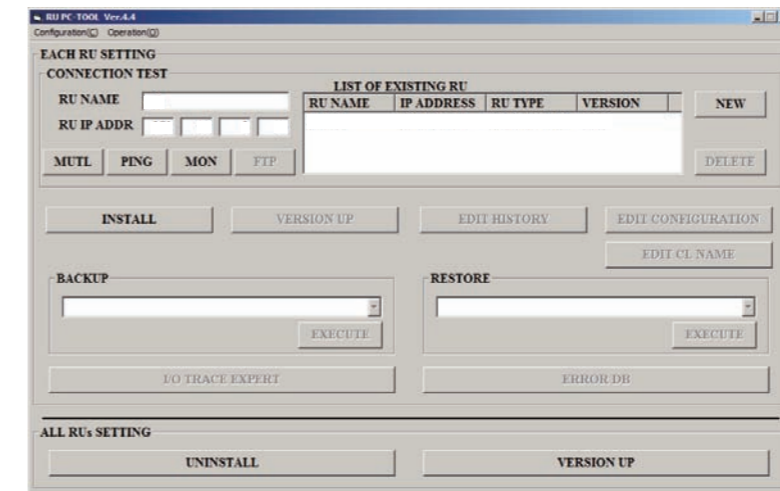
#1   Click: [OK]

#1

800_700207.ai

(11) Click [START] in the "Set Up PC-TOOL" window to start the RU PC-TOOL window.

#1   Click: [START]

Set Up PC-TOOL window

#1

RU PC-TOOL window

600_700056.ai

(12) Check that the version indication in the "LIST OF EXISTING RU" has changed.

RU PC-TOOL window
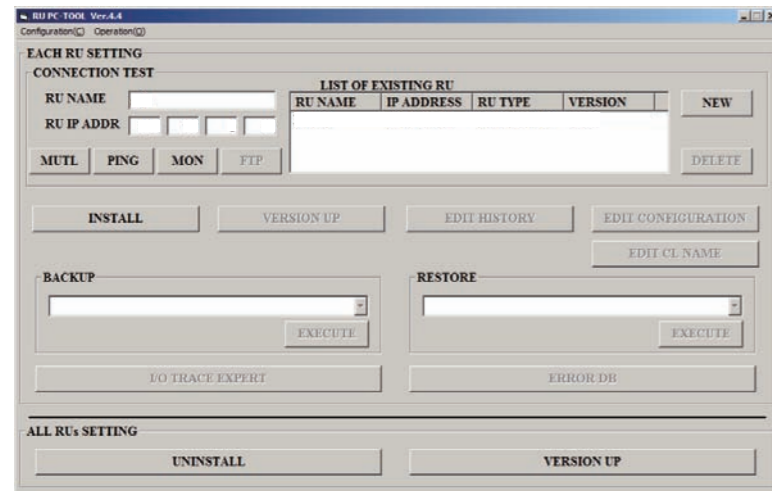
600_700289.ai

(13) Restart the CL.

◆ *NOTE* ◆

- *When the MC application is upgraded, the MC Manager restarts automatically after the completion of the upgrading.*
- *The settings become effective after the RU is restarted.*

(14) Update SE Application Software Version.

   ☞ {IN2:10.10_Updating SE Application Software Version}

(15) Update MP Application Software Version.

   ☞ {IN2:10.5_Updating MP Application Software Version}

1.10 EDIT HISTORY

■ Function

Displays and edits statistic information on use conditions of the SE (FPD).

■ Details of Item

No.	Item	Function
1	INSTALLATION DATE	Date when the RU software is installed
2	Reading Count	Exposure count
3	Panel Reading Count	Panel reading count (exposure count + calibration)
4	Full Dose	Total dose of exposures
5	Dose Distribution (mAs)	Dose distribution Displays the exposure count for each of the following ranges. <1, 1-3, 3-10, 10-30, 30-100, 100<
6	Time Distribution (s)	Time distribution from menu registration to exposure Displays the exposure count for each of the following ranges. <5, 5-15, 15-30, 30-300, 300-600, 600<
7	Tube Voltage Distribution (kV)	Tube voltage distribution Displays the exposure count for each of the following ranges. <50, 50-70, 70-90, 90-110, 110-130, 130<
8	Shot Panel Temperature Distribution (degrees)	Panel temperature distribution during exposure Displays the exposure count for each of the following ranges. <20, 20-23, 23-26, 26-28, 28-30, 30<

◇ REFERENCE ◇

Information in the item Nos. 4 to 8 refer to the exposure performance values transmitted from the X-ray high voltage generator, and collected only when the X-ray high voltage generator connection serial cable is used.

EDIT HISTORY window

DRID600_G0057.ai
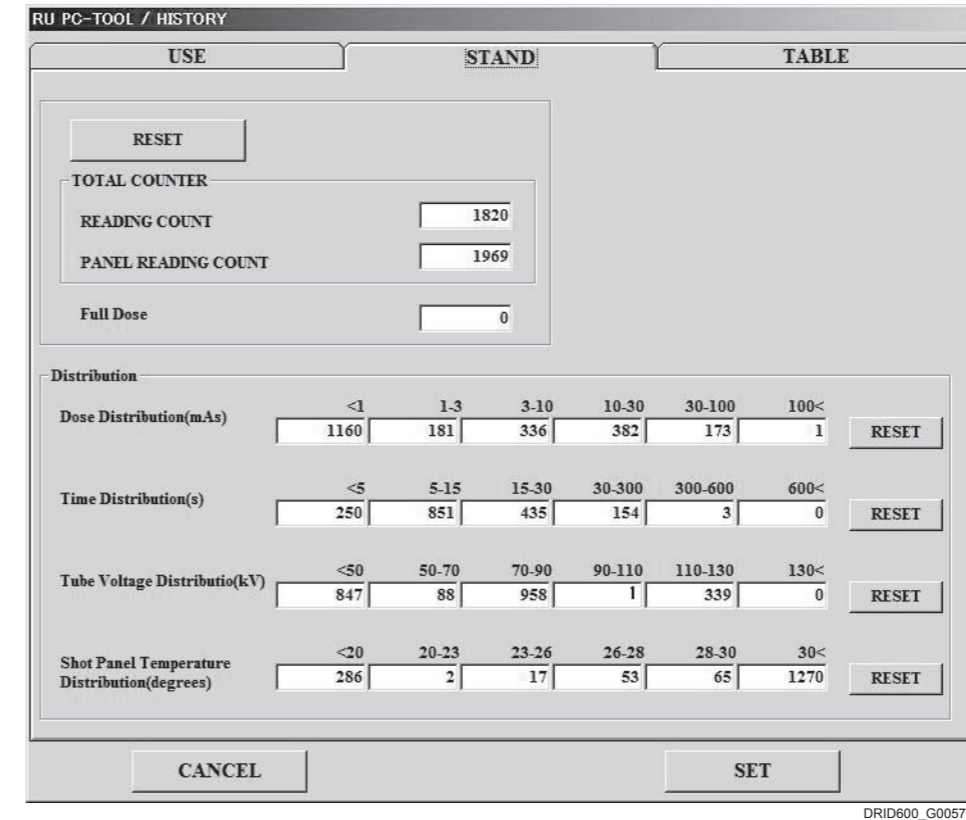
■ Procedures

◆ INSTRUCTION ◆

After exiting the DX Console application, perform the following procedure.

(1) Select the RU in the "LIST OF EXISTING RU".

(2) Click [EDIT HISTORY].

→ The [EDIT HISTORY] window appears.
"USE" tab: INSTALLATION DATE (item No. 1 in the left table)
"STAND" tab: Stand SE (FPD) (item Nos. 2 to 8 in the left table)
"TABLE" tab: Bed SE (FPD) (item Nos. 2 to 8 in the left table)

(3) Confirm or change the settings appearing on the window.

(4) Click one of the following buttons.

[CANCEL]: Cancels the changes, and exit from the [EDIT HISTORY] window.
[RESET]: Clears the displayed value.
[SET]: Stores the changes, and exit from the [EDIT HISTORY] window.

◆ INSTRUCTION ◆

To make the input value in the "INSTALLATION DATE" effective, you need to click [SET] and turn OFF the main power circuit breaker of the MC.

1.11   EDIT CONFIGURATION

■ Function

System configuration information of the registered RU can be changed depending on the use conditions at the customer's site. Changed configuration information is written in the HDD.

■ Procedures

(1) **Start up the RU PC-TOOL.**

☞ {MU2:1._PC-TOOL}

(2) **Select an [RU] from "LIST OF EXISTING RU".**

(3) **Click [EDIT CONFIGURATION].**

The [RU CONFIGURATION SETTING] window appears.

(4) **Set the CONFIGURATION items.**

Configuration window includes the following four pages.
- RU CONFIGURATION SETTING
- WIRELESS SETTING
- RU IMAGE FLAG
- SE SLEEP MODE SETTING

(5) **Click [SET].**

The data is written into the HDD.

◆ *NOTE* ◆

Do not turn OFF the power of the MC during write into the HDD. Otherwise, the HDD data gets damaged, and the MC cannot boot up.

(6) **Left-click the MC Manager from the task tray and execute "EXIT".**

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".
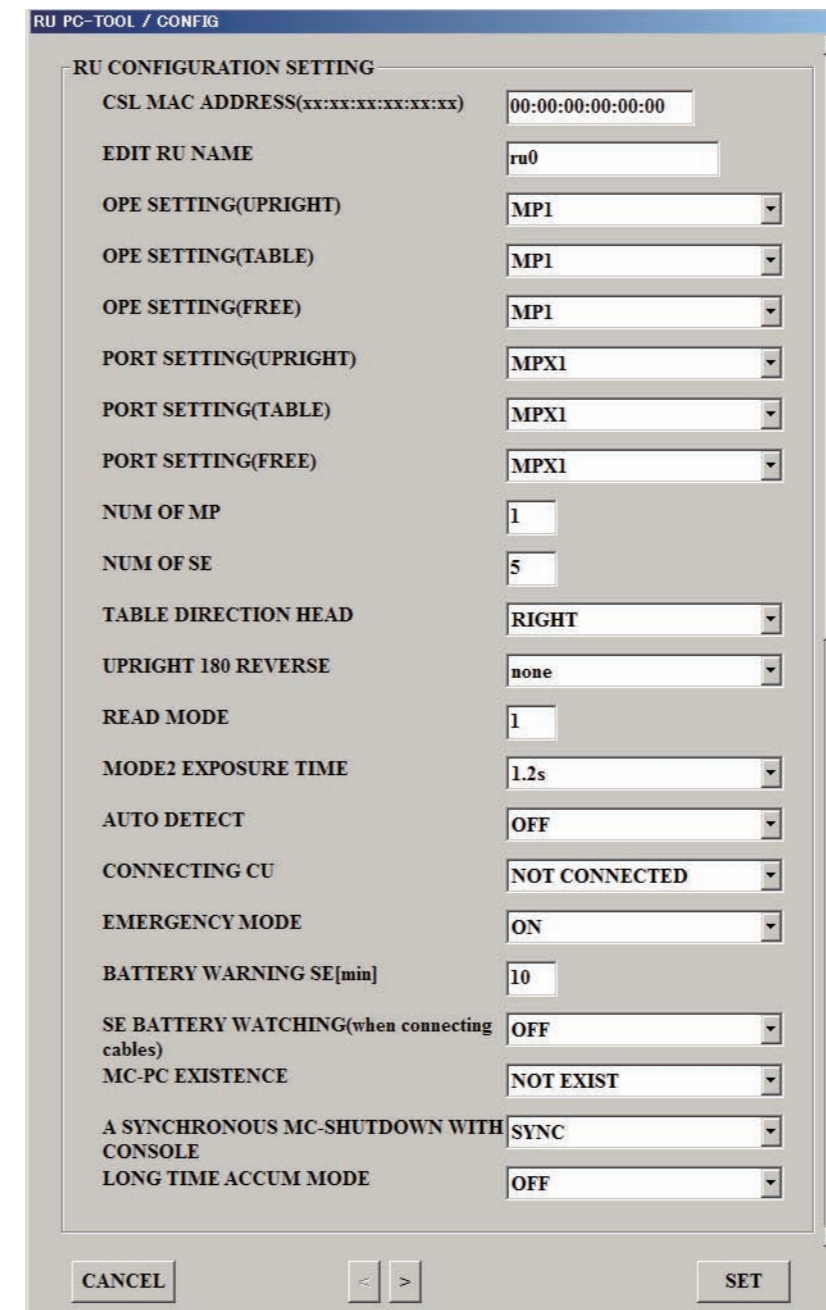
◇ *REFERENCE* ◇

The settings become effective after restart of the MC.

■ Details of Item

<"RU CONFIGURATION SETTING" window>

RU CONFIGURATION SETTING window

● **CSL MAC ADDRESS (xx:xx:xx:xx:xx:xx)**

Inputs the MAC address [Default: 00:00:00:00:00:00].

◆ *NOTE* ◆

If the PC for MC is available, input this MAC address after starting the DX Console with the Wake on LAN when turning ON the MC power.

◇ *REFERENCE* ◇

<How to display the MAC address>

(1) **Press the Windows key and the [R] key concurrently.**

→ *The "Run..." window appears.*

(2) **Input "cmd△/k ipconfig△/all", and click [OK]. (△ indicates a space.)**

→ *The MAC address appears in "Physical Address" of the "Ethernet adapter Local Area Connection:" block.*

● **EDIT RU NAME**

Input the RU name.

◆ *NOTE* ◆

The RU maximum input character count is 15 one-byte characters.

● **OPE SETTING (UPRIGHT)**

Specifies to which MP the X-ray shot cable corresponding to the operative method [Stand] of the X-ray equipment is to be connected.
<Options>
- None: Not connected
- MP1 [default]:   Connected to MP1
- MP2:   Connected to MP2

☞ **{MU:1.11_EDIT CONFIGURATION_■ OPE SETTING (UPRIGHT/TABLE/FREE)}**

● **OPE SETTING (TABLE)**

Specifies to which MP the X-ray shot cable corresponding to the operative method [Bed] of the X-ray equipment is to be connected.
<Options>
- None: Not connected
- MP1 [default]:   Connected to MP1
- MP2:   Connected to MP2

☞ **{MU:1.11_EDIT CONFIGURATION_■ OPE SETTING (UPRIGHT/TABLE/FREE)}**

● **OPE SETTING (FREE)**

Specifies to which MP the X-ray shot cable corresponding to the operative method [FREE (general)] of the X-ray equipment is to be connected.
<Options>
- None: Not connected
- MP1 [default]:   Connected to MP1
- MP2:   Connected to MP2

☞ **{MU:1.11_EDIT CONFIGURATION_■ OPE SETTING (UPRIGHT/TABLE/FREE)}**

● **PORT SETTING (UPRIGHT)**

Specifies to which terminal block the X-ray shot cable corresponding to the operative method [Stand] of the X-ray equipment is to be connected.
<Options>
- MPX1 [default]:   Connected to MPX1
- MPX2:   Connected to MPX2

● **PORT SETTING (TABLE)**

Specifies to which terminal block the X-ray shot cable corresponding to the operative method [Bed] of the X-ray equipment is to be connected.
<Options>
- MPX1 [default]:   Connected to MPX1
- MPX2:   Connected to MPX2

● **PORT SETTING (FREE)**

Specifies to which terminal block the X-ray shot cable corresponding to the operative method [FREE (general)] of the X-ray equipment is to be connected.
<Options>
- MPX1 [default]:   Connected to MPX1
- MPX2:   Connected to MPX2

● **NUM OF MP**

Specifies the number of MP's to be connected.
<Settable range>
- 1 [default]:   One MP connected
- 2:   Two MP's connected

● **NUM OF SE**

Specifies the number of SE's (FPD's) to be connected concurrently.
<Settable range>
- 1:   One SE connected
- 2:   Two SE's connected
- 3:   Three SE's connected
- 4:   Four SE's connected
- 5 [default]:   Five SE's connected

◆ *NOTE* ◆

- *For connecting one long panel, select "1".*
- *For connecting two long panels, select "2".*

● **TABLE DIRECTION HEAD**

Selects the direction of the patient's head during exposure on the bed.
<Options>
- LEFT: Left
- RIGHT [default]:   Right

● **UPRIGHT 180 REVERSE**

Selects whether the exposure image of the stand SE (FPD) is to be rotated 180 degrees.
<Options>
- none [default]:   Not rotated
- 180:   Rotated 180 degrees

● **READ MODE**

Sets charge accumulation time of the SE (FPD). Eight options are available and are divided into "fixed modes" and "variable modes".
- FIXED MODE
  Sets constant time irrespective of the X-ray irradiation time specified in each exposure menu of the CL. Used when the X-ray high voltage generator is not connected.
- VARIABLE MODE
  The reading mode is changed over the FIXED MODE (200 ms), the FIXED MODE (500 ms) and the FIXED MODE (1200 ms) depending on the X-ray irradiation time specified in each exposure menu of the CL. Used when the X-ray high voltage generator is connected.

◆ *INSTRUCTION* ◆

If the X-ray irradiation time specified by the customer in the X-ray high voltage generator is changed, the change cannot be reflected in the mode setting as the change is not fed back to the MC before exposure. If the X-ray irradiation time changed by the customer is longer than the charge accumulation time specified in the MC, the irradiation is terminated upon completion of accumulation, and images with insufficient dose may result.
Instruct the customer not to set the charge accumulation time longer than specified in the mode when the customer is to change the X-ray irradiation time.

◇ *REFERENCE* ◇

You can check the X-ray irradiation time specified in each exposure menu through the user utility of the CL.

○ Settings without the X-ray high voltage generator connected

Select among the fixed modes when the X-ray high voltage generator is not connected. Ask the customer about the exposure conditions in which the longest X-ray irradiation time is required when a fixed mode is to be used, and select the mode with a longer charge accumulation time specified than the X-ray irradiation time.

Option	Charge accumulation time	X-ray irradiation time	Remarks
0: FIXED MODE (200 ms)	200 msec	200 msec or less	Select for exposures with low dose or exposures considering throughputs such as chest mass-screening.
1: FIXED MODE (500 ms) [default]	500 msec	500 msec or less	Usually select this mode.
2: FIXED MODE (1200 ms)	1200 to 3800 msec (*)	1200 to 3800 msec	Image quality might degrade for low dose exposures.

*: Charge accumulation time is set in "MODE2 EXPOSURE TIME".

○ Setting with the X-ray high voltage generator connected

Select among variable modes when the X-ray high voltage generator is to be connected.

Option	X-ray irradiation time specified in the exposure menu	Charge accumulation time	Remarks
3: VARIABLE MODE (1.0)	200 msec or less	200 msec	Accumulation might terminate during X-ray irradiation (irradiation is forced to terminate at the same time), and might result in images with insufficient dose.
	201 to 500 msec	500 msec	
	501 msec or more	1200 to 3800 msec (*)	
4: VARIABLE MODE (1.1)	181 msec or less	200 msec	
	182 to 454 msec	500 msec	
	455 msec or more	1200 to 3800 msec (*)	
5: VARIABLE MODE (1.2)	166 msec or less	200 msec	Usually select this mode.
	167 to 416 msec	500 msec	
	417 msec or more	1200 to 3800 msec (*)	
6: VARIABLE MODE (1.4)	142 msec or less	200 msec	
	143 to 357 msec	500 msec	
	358 msec or more	1200 to 3800 msec (*)	
7: VARIABLE MODE (1.7)	117 msec or less	200 msec	
	118 to 294 msec	500 msec	
	295 msec or more	1200 to 3800 msec (*)	

*: When selecting any of options 3 to 7, enable the X-CON setting in the DX Console, and set the appropriate value to the irradiation time in the exposure menu.

Example) If "3" is selected, the charge accumulation time becomes 200 msec when the irradiation time has been set to 190 msec with the exposure menu of the DX Console. Also, the charge accumulation time becomes 500 msec when the irradiation time has been set to 300 msec with the exposure menu.

● MODE 2 EXPOSURE TIME

Sets the charge accumulation time of READ MODE 2. Set in a range of 1.2 to 3.8 s.
The setting can be changed in 0.2-s steps.
<Settable range>
- 1.2 to 3.8 s [default: 1.2 s]   Charge accumulation time of READ MODE 2

◆ NOTE ◆

For the facilities that may use the machine long time under high temperature, to prevent artifact, it is recommended to set the charge accumulation time of READ MODE 2 at or lower than 1.2 seconds.

● AUTO DETECT

Set whether to use the automatic X-ray detection function (AUTO DETECT) or not.
<Options>
- OFF [default]:   Not used
- ON: Used

● CONNECTING CU

Set to CONNECTED when the machine is to be connected to the DX Console to which AcSelarete or CALNEO U/T is connected.
Usually, use the setting of NOT CONNECTED [default].
<Options>
- NOT CONNECTED [default]
- CONNECTED

● EMERGENCY MODE

Set whether the emergency mode is to be used or not.
<Options>
- OFF [default]:   Not used
- ON: Used

◇ REFERENCE ◇

Emergency mode is the mode that the calibration would be stopped automatically and the exposure would be ready when the system starts.
When it is set to ON, the exposure would be ready as soon as the system starts.

● BATTERY WARNING[min]

Sets the threshold value of remaining battery charge.
If the remaining battery charge lowers to the set threshold value, exposure cannot be accepted. The SE LED flashes in this case.
The setting is made as the remaining battery time (minutes).
Always use the setting of 10 [default] in this machine.
<Settable range>
- 0 to 120 minutes [default: 10]

● SE BATTERY WATCHING (when connecting cables)

Set to ON when the MP does not exist in the facility.
<Options>
- OFF [default]:   Not watched
- ON: Watched

● MC-PC EXISTENCE

Set the availability of the PC for the MC.
<Options>
- NOT EXIST: Select this option when no PC is available for the MC.
- EXIST [default]:   Select this option when the PC is available for the MC.

● A SYNCHRONOUS MC-SHUTDOWN WITH CONSOLE

Set the termination processing queue control of the MC and the Console.
<Options>
- SYNC: Select this option when no PC is available for the MC.
- ASYNC [default]:   Select this option when the PC is available for the MC.

● LONG TIME ACCUM MODE

Set whether long time accumlation mode is to be used or not by selecting "ON" for "AUTO DETECT" and "OFF" for "EMERGENCY MODE.
<Options>
- OFF [default]:   Not used
- ON: Used

◇ REFERENCE ◇

- *It takes 10 seconds to read the images by setting "ON" to "LONG TIME ACCUM MODE" only when the specified menus are selected in the DX Console. When the common menus are selected, the reading time is the one that set by "READ MODE".*
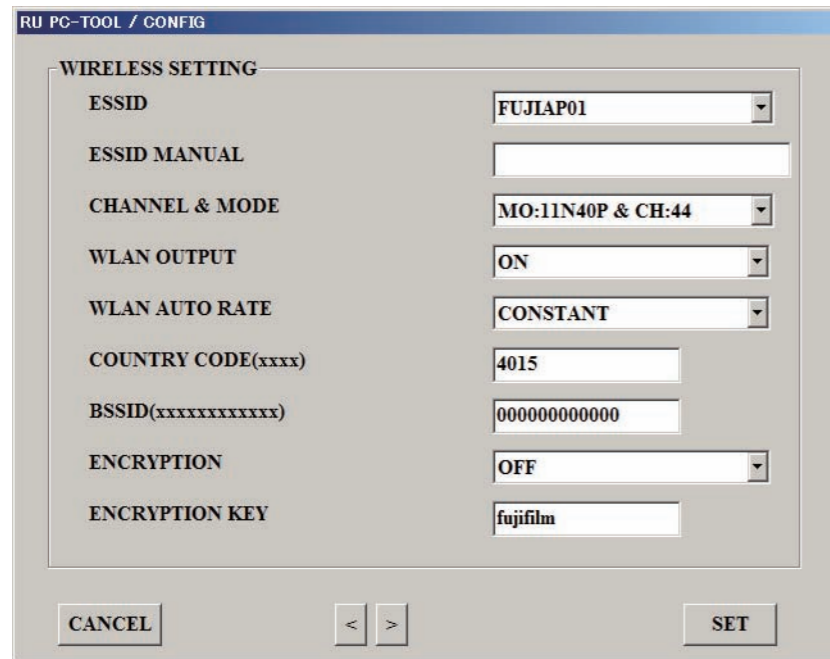- *When setting "ON" to "LONG TIME ACCUM MODE", set 7 minutes or more to "SLEEP START TIME" in "SE SLEEP MODE SETTING" window.*

<**"WIRELESS SETTING" window**>

◆ *NOTE* ◆

The DR-ID 1305SE does not have the wireless function. Set the wireless function only for connecting the DR-ID 1201SE/1202SE/1211SE/1212SE/1213SE/1214SE.

WIRELESS SETTING window

1200_400036.ai

● **ESSID**

Sets the network identifier of the wireless LAN for the SE.
Usually use the setting of FUJIAP01 [default].
When two or more SE's are to be installed in one installation site, make settings so that the identifiers of the respective SE's do not overlap.
Make the same setting of the identifier on the AP.
<Options>
- FUJIAP01 to FUJIAP10, MANUAL [default: FUJIAP01]

● **ESSID MANUAL (arbitrary ID setting for wireless LAN)**

Sets an arbitrary ID in case that "MANUAL" has been selected at "ESSID".
When two or more SE's are to be installed in one installation site, make settings so that the ID's of the respective SE's do not overlap. Make the same setting of the ID on the AP.

- A single-byte text string of 32 characters or less

● **CHANNEL & MODE**

Selects the wireless channel to be used.
Setting a dual channel with higher communication rate is recommended for the machine.
If the communication rate drops, overlapping channels in the site are possibly present. Change the setting.

◇ *REFERENCE* ◇

- *When multiple access points are vicinally placed, changing the channel currently used can prevent decreasing the communication speed due to interferences.*
- *The Auto 20/40 MHz mode changes the band automatically between 20 and 40 MHz. The 40 MHz band can provide faster communication than the 20 MHz band, but the channel cannot be fixed to the 40MHz band.*

◆ *NOTE* ◆

- *In accordance with the Radio Law, the W52 and W53 type channels (36, 40, 44, 48, 52, 56, 60 and 64) cannot be used outdoors. If wireless communications are to be used outdoors, select a 5 GHz other than the aforementioned channels or a 2.4 GHz. All of the channels can be used indoors.*
- *When the W53 or W56 type channel is selected, if interference is detected, then perform the following workaround operations. This is because avoiding interference with the weather radar is required by the DFS (Dynamic Frequency Selection).*
  - *In order to detect radar waves about one minute before starting the communication with each channel, the wireless communication cannot be performed during the detection.*
  - *If radar waves are detected during the the wireless communication, the wireless communication may be interrupted or the bandwidth may be changed automatically.*
  - *In case of the FUJIFILM-made AP, the "WSTAT" LED flashes red during the DFS search operation.*
- *When selecting 2.4 GHz on the FUJIFILM-made AP, select 20 MHz on the "Channel Width". Do not select 40 MHz.*

● **WLAN OUTPUT**

Set whether the wireless LAN output is to be used or not.
<Options>
- OFF: Not used
- ON [default]:   Used

● **WLAN AUTO RATE**

Set whether the wireless LAN transmission rate is constant or varible.
<Options>
- CONSTANT [default]
- VARIABLE

◇ *REFERENCE* ◇

If the wireless environment is not stable or easily fluctuates, set to "VARIABLE". If the wireless environment is stable, use "CONSTANT".

● **COUNTRY CODE (xxxx)**

Input the counry code according to that has set to the SE at factory prior to shipment.

- 4-character string or less [default: 4036]

◆ *NOTE* ◆

- *The communication with the SE can be possible by inputting the country code. The country codes are described as follows.*

  Japan: 4015
  Europe: 56
  USA: 841
  China: 156
  Taiwan: 158
  Other countries: 392

- *For the system coexistent with the SE of DR-ID 600 series, set "4036" regardless of the above. Moreover, select frequency 5GHz W52 from "CHANNEL & MODE".*

● **BSSID (xxxxxxxxxxxx)**

Input the MAC address of the AP (BSSID) when wireless connection is to be made by specifying the AP. Although input is not needed usually, inputting the BSSID is recommended when two or more AP's are to be used.
The MAC address is mentioned on the label or in the instruction manual of the AP.
<Settable range>
- 12-character string [default: 000000000000]

● **ENCRYPTION (encryption yes/no setting)**

This sets whether wireless communication is to be encrypted or not.
<Options>
• OFF: No encryption
• ON [default]:   Encryption

◇ *REFERENCE* ◇

- *For MC software V13 or later, the default value is changed to ON.*
- *A separate encryption setting on the AP side is also required.*
  Encryption method: AES
  Authentication method: WPA2-PSK (Wi-Fi Protected Access 2 Pre Shared Key)
- *When SE is shared by multiple systems, the encryption settings in the SE are rewritten by connecting the SE once to the SE cable of the movement destination.*

● **ENCRYPTION KEY (encryption key)**

Enter the text string (pass phrase) for generation of the encryption key for wireless communication.
<Setting range>
A single-byte text string of 8 to 63 characters [default: Fujifilm]

◇ *REFERENCE* ◇

- *The pass phrase entered for this item also must be set on the AP side.*
- *This unit is not compatible with the pass phrase automatic change function (only manual setting is possible).*

<"RU IMAGE FLAG" window>

RU IMAGE FLAG window
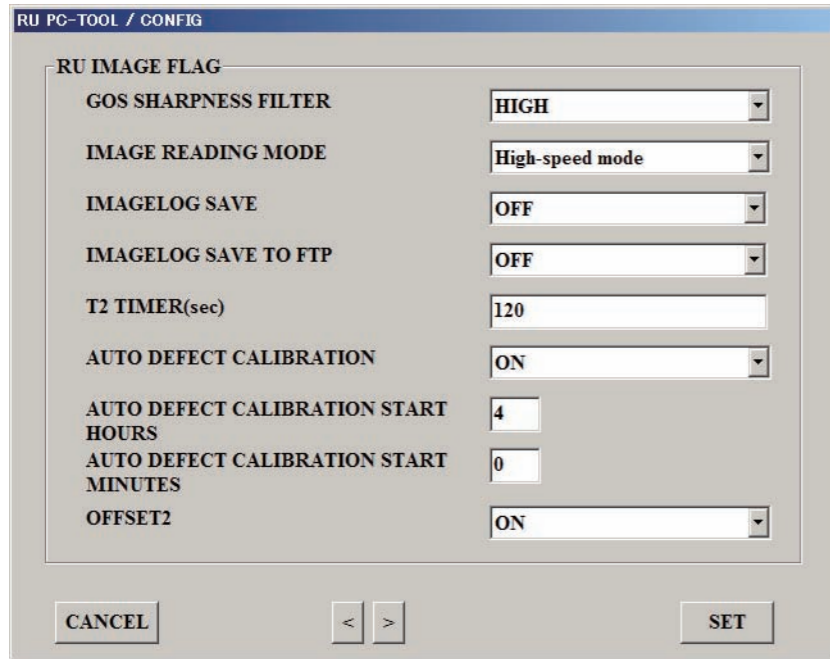
1200_400037.ai

● GOS SHARPNESS FILTER

Select the sharpness of the GOS panel.
Select HIGH when a highly sharp image is to be obtained, making use of the features of DR.
Select NORMAL when an image with normal sharpness close to the FCR is to be obtained.
<Options>
- HIGH [default]:   Highly sharp
- NORMAL: Normally sharp

◆ NOTE ◆

As this setting causes a large change of the image quality, select according to the desire of the user.

● IMAGE READING MODE

Selects the image compensation processing mode.
Normally use the default setting. If the noise is generated via image evaluations whereas physical phantoms such as mesh, etc. were used, change to the Standard Mode.
<Options>
- Standard Mode
- High-Speed Mode [default]

◆ NOTE ◆

When this setting has been changed, perform the full calibration after restarting the MC in the following procedure. If not, the image compensation processing mode is not switched correctly.
1. Change the setting.
2. Restart the MC.
3. Perform the full calibration.

◇ REFERENCE ◇

- *In comparison with High-Speed Mode, the time required for image acquisition in the Standard Mode is approximately 370 ms longer.*
- *Even if the noise is generated via image evaluations whereas physical phantoms such as mesh, etc. were used, this noise is not generated in human body exposures.*

● IMAGE LOG SAVE

Selects whether or not the recorded image log is to be stored in the HDD.
Always use the setting of OFF [default] in the machine.
<Options>
- OFF [default]   :   Not stored
- ON: Stored

◆ NOTE ◆

When set to "ON", the PC capacity is compressed and the throughput is degraded.

● **IMAGE LOG SAVE TO FTP**

Selects whether or not the recorded image log is to be stored in the FTP server.
Always use the setting of OFF [default] in the machine.
<Options>
- OFF [default]   :   Not stored
- ON: Stored

◆ *NOTE* ◆

When set to "ON", the PC capacity is compressed and the throughput is degraded.

● **T2 TIMER(sec)**

Set the start time (sec) of the calibration executed in the background. When the exposure has been completed, the calibration begins after the time elapsed that was set.
- Character string: [default: 120]

● **AUTO DEFECT CALIBRATION**

Set whether the automatic defect calibration is to be executed or not.
<Options>
- OFF: Not executed
- ON [default]:   Executed

● **AUTO DEFECT CALIBRATION START HOURS**

When "ON" is selected in "AUTO DEFECT CALIBRATION", input the automatic execution time hourly.
- 2-character string or less [default: 4]

● **AUTO DEFECT CALIBRATION START MINUTES**

When "ON" is selected in "AUTO DEFECT CALIBRATION", input the automatic execution time minutely.
- 2-character string or less [default: 0]

● **OFFSET2 (blemish/unevenness correction setting)**

Select whether or not the blemish/unevenness correction is to be performed.
<Options>
- OFF: Not performed
- ON [default]:   Performed

<**"SE SLEEP MODE SETTING" window**>

SE SLEEP MODE SETTING window
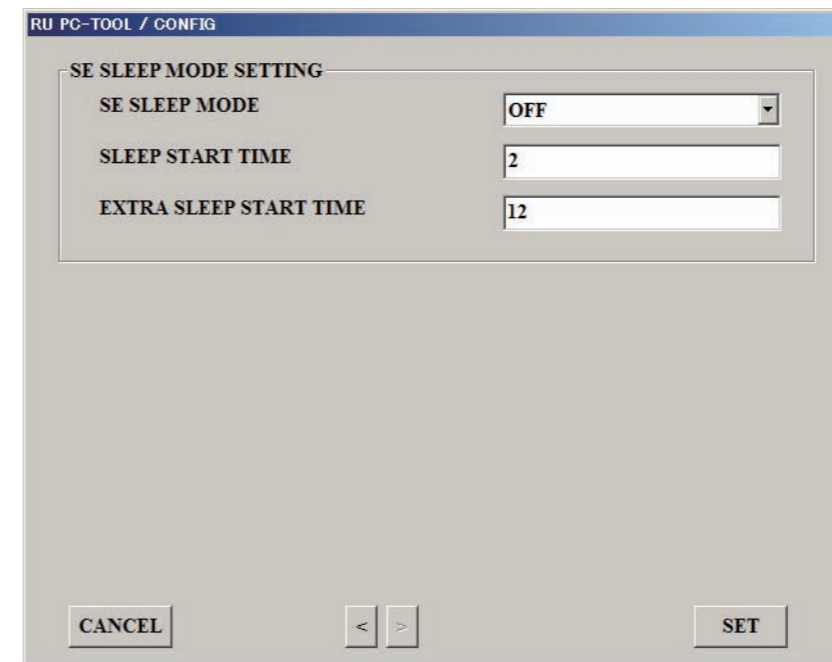
1200_400038.ai

● **SE SLEEP MODE**

Set the SE sleep mode.
<Options>
- OFF: Disable the power save mode.
- ON [default]:   Enable the power save mode.

● **SLEEP START TIME**

Set the time in minutes units until when the power save mode is started.
<Setting range>
- 2 to 10 [default: 2]

◇ *REFERENCE* ◇

Shift to the sleep mode mainly in the following cases.
- *After completing the initialization calibration*
- *After completing the exposure*
- *After cancelling the exposure*
- *After switching the panel by changing the selector for the DX Console*
- *After completing the automatic offset update*
- *After completing the periodical defect calibration*
- *After completing the automatic log update*

● **EXTRA SLEEP START TIME**

Set the time in minutes units until when the extra sleep mode is started.
<Setting range>
- 2 to 999 [default: 999]

◇ *REFERENCE* ◇

- *After all the SEs shift to the sleep mode and past the set time by this setting, shift to the extra sleep mode.*
- *When set to "999", do not shift to the extra sleep mode.*

■ **OPE SETTING (UPRIGHT/TABLE/FREE)**

OPE SETTING corresponds to Reader Type (selector) set on the DX Console.
Make the OPE SETTING and Reader Type settings coincide with each other.

EDIT CONFIGURATION   Selector (DX Console)
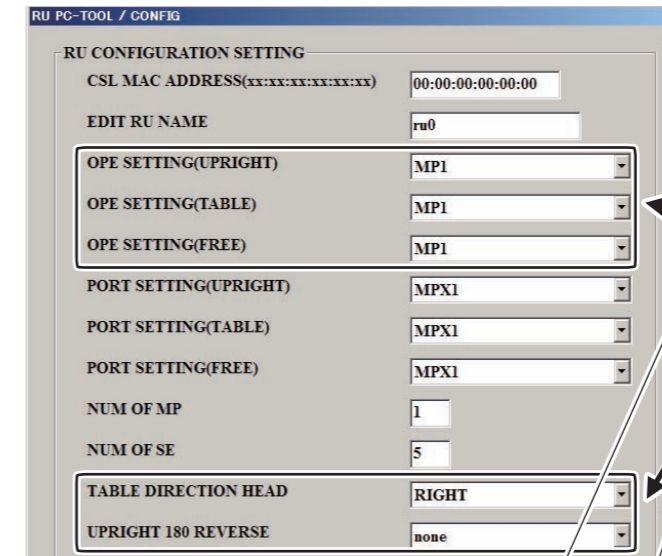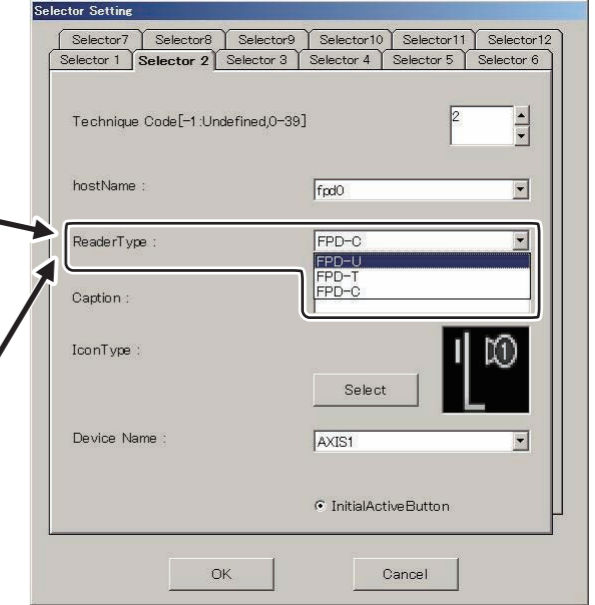
Corresponding

1200_400041E.ai

◆ *NOTES* ◆

- *If [FPD-U] is registered in any selector, always carry out the following operations.*
  - *Connect the stand-type X-ray shot cable to the MP.*
  - *Specify the destination of connection via the PC-TOOL in [OPE SETTING (UPRIGHT)] and [PORT SETTING (UPRIGHT)].*
  - *Specify whether the exposure image is to be rotated 180 degrees via the PC-TOOL in [UPRIGHT 180 REVERSE].*
- *If [FPD-T] is registered in any selector, always carry out the following operations.*
  - *Connect the bed-type X-ray shot cable to the MP.*
  - *Specify the destination of connection via the PC-TOOL in [OPE SETTING (TABLE)] and [PORT SETTING (TABLE)].*
  - *Specify the direction of the patient's head via the PC-TOOL in [TABLE DIRECTION HEAD].*
- *If [FPD-C] is registered in any selector, always carry out the following operations.*
  - *Connect the free X-ray shot cable to the MP.*
  - *Specify the destination of connection via the PC-TOOL in [OPE SETTING (FREE)] and [PORT SETTING (FREE)].*

DR-ID 1300 / DR-ID 1300PU *Service Manual*

■ Relation among configurations

■ Point 1: X-ray shot cable

The name of a connector to which a cable of each operative method
 is connected is registered in advance via the PC-TOOL.

X-CON
- Free
- Table
- Upright

SE1
SE serial No.

SE2
SE serial No.

MP1
| MPC7 | MPX1 |
| MPC6 | MPX2 |

MC

[EDIT CONFIGURATION]

[OP SETTING(FREE)]

[OP SETTING(TABLE)]

[OP SETTING(UPRIGHT)]
[MP1] or
[MP2] or
[None]

[PORT SETTING(UPRIGHT)]
[MPX1] or
[MPX2] or
[None]

[MUTL] - [SE Registration]
SE1: SE serial No.
SE2: SE serial No.
SE3: SE serial No.
SE4: SE serial No.
SE5: SE serial No.

CSL

[Selector Setting]

[Selector12]

[Selector1]
[Technique Code]:   Defines the operative method.
[Reader Type]:
  [FPD-C]: FREE exposure with FPD or
  [FPD-T]: TABLE exposure with FPD or
  [FPD-U]: UPRIGHT exposure with FPD
[Caption]: Selector name
[Icon Type]: Selector icon
[Device Name]: Panel identification name

[Device Setting]
[Device Name]: Panel identification name
[FPD Device ID]: SE Serial No.
[Device Type]:   Defines the panel for use.
      [D-EVO] or
      [AcSelarate]
[Device Color]: Identification of SE

■ Point 2: SE serial No.

Serial Nos. of all panels are registered in advance via the PC-TOOL.
The operative method for exposure and the panel to be used are determined based on the
CSL setting (not depending on the connector (MPC6 or 7) to which the panel is connected).

Image processing is selected
depending on the type of the panel.

1300_400004E.ai

1.12 EDIT CL NAME

■ Function

Edits/adds the CL of the image destination, and edits the list of the master CL.

■ Procedures for Editing/Adding the Image Destination

(1) **Select the RU in which the CL of the image destination is to be edited or added from the "LIST OF EXISTING RU", and click [EDIT CL NAME].**
→ The "CL NAME" window appears.

(2) **Select the CL to be edited and click [MODIFY] when the CL is to be edited, or click [NEW] when the CL is to be added.**
→ The window for prompting the input of "CL IP ADDRESS" and "CL NAME" appears.

(3) **Input "CL IP ADDRESS" and "CL NAME" and click [SET].**

(4) **Click [SET].**
→ The RU PC-TOOL window restores.

■ Procedures for Setting the Master CL

(1) **Select the CL to be the master CL among those appearing on the "CL NAME" window.**

(2) **Click [>>], and click [SET].**
→ The RU PC-TOOL window restores.

1.13   BACKUP

■ Function

Copies the configuration information and the error log in the HDD to a desired location on the CL (a recording medium or a folder).
You can back up the following data:

No.	Selection item	Data to be backed up
1	CONFIGURATION	Configuration file Folder name: CONFIG
2	LOG ALL	Logs of Nos. 1 "CONFIGURATION" and 2.1 to 2.9 below are backed up together. Collect the following logs together with the mentioned logs. NETWORK: Communication log of TCP STATISTIC: BATTERY.CFG (battery information) and HISTORY.CFG (history information)
2.1		ERROR LOG: Error log File name: ERROR.cab
2.2		IO TRACE LOG: Not used in the machine. Folder name: IOT
2.3		ISC TRACE LOG: Communication log between packages (subsystems). For design verification. File name: ISC.cab
2.4		SOFT LOG: Communication log between packages (subsystems). For design verification. File name: Trace.cab, Trace2.cab, Trace3.cab, Trace4.cab, Trace5.cab The X-ray automatic detection log and the compensation data share log are included here.
2.5		CSL LOG: Communication log between the CL and the MC File name: CONSOL.cab
2.6		RADCON LOG: Serial communication log between the MC and the X-CON File name: RADCON.cab
2.7		CALIB LOG: Calibration history log File name: CALIB.cab
2.8		HISTORY LOG: Use status statistic file of the FPD File name: HISTORY.cab
2.9	SE REGISTRATION INFORMATION	Output the registration information of panels to the log.
3	CORRECT ALL DATA	Collectively acquire the data of the registered panels (maximum of 100 pieces).
4	CORRECT PANEL DATA	Acquire the data of an individual panel by specifying the panel number.

◆ *NOTE* ◆

Refer to the following for further details on the CALIBRATION LOG files, GLG log files and SERegistInfo.txt.

☞ *{MT:5._BACKUP FILE}*

■ Procedures

Select the item to be backed up, and then select the location for backup (drive or folder).
You can select only the drive or the folder recognized by the CL as the location.

Select the item to be backed up with the RU PC-TOOL, and then click "EXECUTE".

Select panel number.

To change the backup location,

click ⋯ .

Only the drives and directories recognized by the CL are displayed as the locations available for backup.
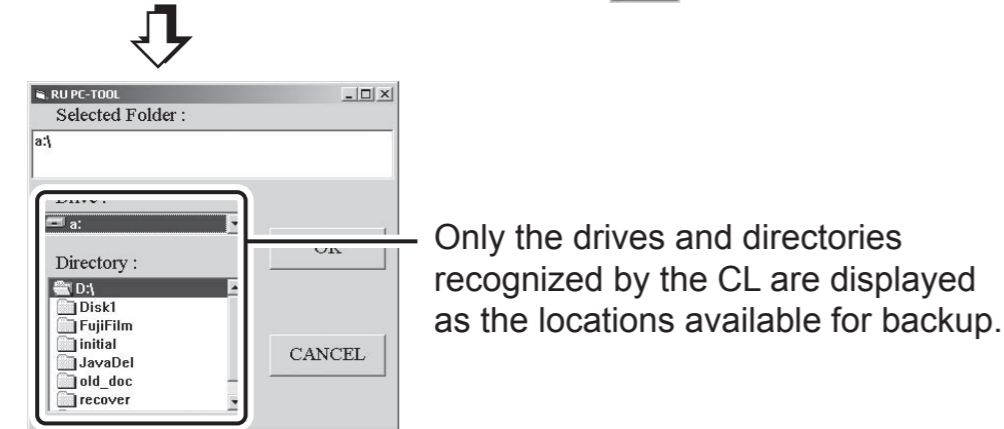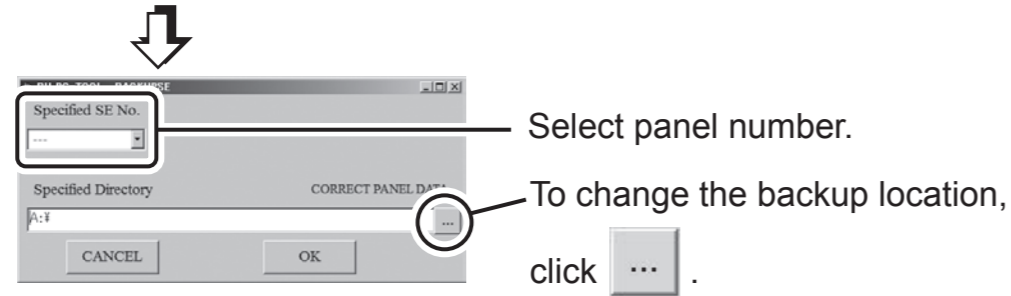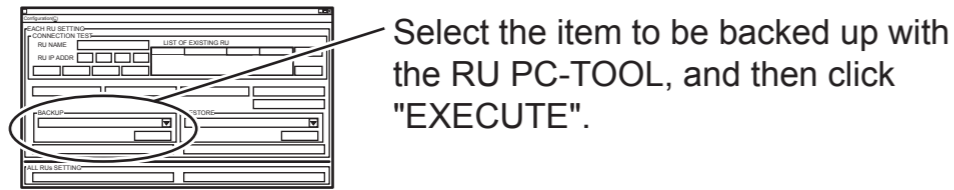
Choose a backup location (by double-clicking it).

The selected location appears.
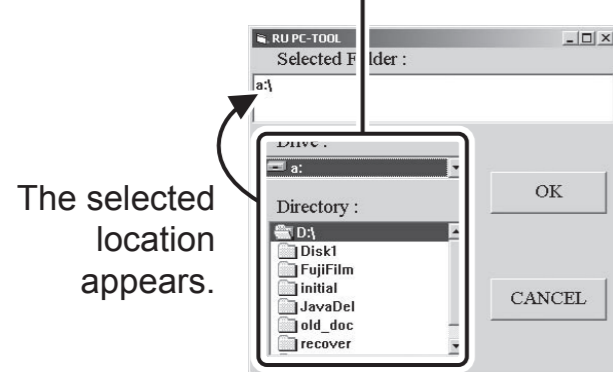
DRID600_G0066.ai

1.14   RESTORE

■ Function

Copies the configuration information and the machine-specific data from a desired location on the CL (a recording medium or a folder) to the HDD of the MC.
You can restore the following data:

No.	Selection item	Data to be restored
1	CONFIGURATION	Configuration file
2	HISTORY LOG	Use status statistic file of the FPD
3	INDIVIDUAL PANEL DATA	Update the machine-specific data (defect upon shipment, sensitivity correction coefficient) of an individual panel by specifying the panel number.
4	CORRECT PANEL DATA	Update the correction data (gain, offset, dot defect 4, 2, 5, 6, defect upon shipment, sensitivity correction coefficient) of an individual panel by specifying the panel number.

◆ NOTE ◆

The restored data become effective after the RU is restarted.

■ Procedures

Select the item to be restored, and then select the location where the data resides (drive or folder).
You can select only the drive or the folder recognized by the CL as the location.

◆ INSTRUCTION ◆

Do not restore the data (file or folder) while selected via the Windows Explorer. Restore may result in failure, and an error message may appear.

Select the item to be restored with the RU PC-TOOL, and then click on "EXECUTE".

Select panel number.

Click ⎙ to change the region to restore.

Only the drives and directries recognized by the CL are displayed as regions to which the data can be restored.

The selected location appears.

Select (double-click) the region to restore.

ex.: When restoring the configuration, do not specify the folder CONFIG, but the folder one level higher.

DRID600_G0067.ai

1.15   I/O TRACE EXPERT

Not used in the machine.

1.16 ERROR DB

■ Function

Refers to the error log data and checks the error name and occurrence conditions.

DRID600_G0068.ai
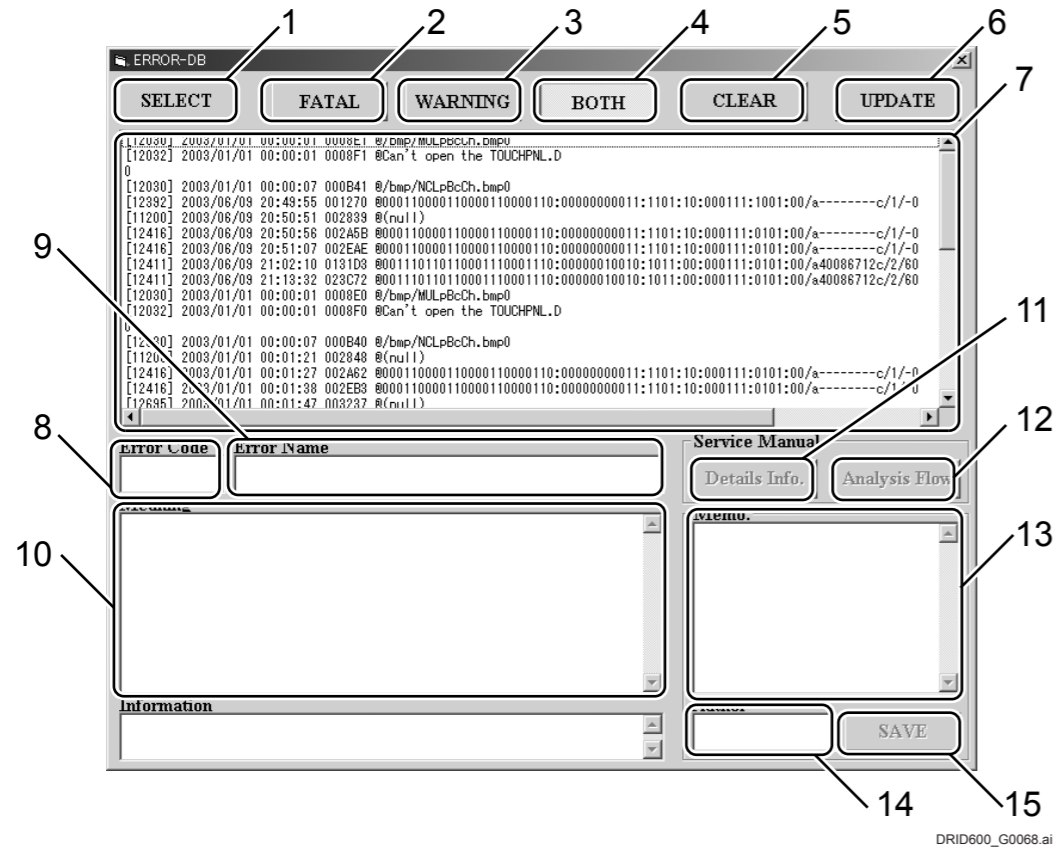
■ Procedures

(1) **Select an RU from "LIST OF EXISTING RU".**

(2) **Click [ERROR DB].**

→The "ERROR DB" window appears.

(3) **Click [UPDATE], and update the error log.**

	Item name	Function
1	"SELECT" button	An error log file to be viewed is selected.
2	"FATAL" button	Of the error log files, only "FATAL" errors are displayed.
3	"WARNING" button	Of the error log files, only "WARNING" errors are displayed.
4	"BOTH" button	Both "FATAL" and "WARNING" errors windows are displayed.
5	"CLEAR" button	The error log of the FTP server is cleared.
6	"UPDATE" button	Copies the latest error log data from the HDD of the MC to the FTP server of the CL.
7	Error message list box	The contents of the error log file selected are displayed. Displays the name and occurrence conditions on the bottom of the window, when selecting the displayed data.
8	"Error Code" text box	Displays the code of the selected error message.
9	"Error Name" text box	Displays the name of the selected error message.
10	"Meaning" text box	Displays the occurrence conditions of the selected error message.
11	"Details Info." button	Unusable
12	"Analysis Flow" button	Unusable
13	"Memo." text box	You can keep a note about the selected error message.
14	"Author" text box	The name of the person (author) who entered text in the "Memo." text box is entered.
15	"SAVE" button	The contents of "Memo." and "Author" are saved. To delete them, erase them by use of the Delete key and press the [SAVE] button again.

1.17   UNINSTALL (ALL RUs)

■ Function

Uninstall all of the RU software of a machine type recorded in the CD-ROM (RU software) inserted into the CL.

Upon the uninstallation, the folders of the uninstalled RU's are deleted from the FTP server and the RU's disappear from "LIST OF EXISTING RU".

In addition, the contents of "C:\ProgramFiles\FujiFilm\FCR" directory on the CL are deleted.

◆ NOTE ◆

If a plurality of RU's of the DR-ID 1300 exist, the software and configuration data for the RU of the DR-ID 1300 are all deleted from the FTP server upon executing UNINSTALL.

■ Procedures

⚠ CAUTIONS

- *Before executing UNINSTALL, be sure to take note of the IP addresses (user settings) of the RU, CL, and FTP server. Once UNINSTALL is executed, all the user settings are lost.*
- *For the RU connected to the CL, back up the following files. Those files must be restored after installation.*
  - *CONFIGURATION*
  - *HISTORY LOG*

(1) **Insert the CD-ROM (RU software) into the CL.**

(2) **Select an RU from "LIST OF EXISTING RU".**

(3) **Click [UNINSTALL] on ALL RUs SETTING.**

    → The Confirmation window appears.

(4) **Click [OK].**

(5) **Verify that the RU selected in the procedure (2) is deleted from "LIST OF EXISTING RU."**

1.18   VERSION UP (ALL RUs)

■ Function

The entire RU software recorded in the CD-ROM (RU software) inserted into the CL is version-updated.

⚠ CAUTIONS

- *Never turn OFF the power of the MC during version-update. Otherwise, the contents of the HDD are damaged, and the MC cannot boot up.*
- *When one or more RU's are to be version-updated, the RU application program is version-updated sequentially for the connected RU's. Be sure to check the RU software version of all RU's after installation, and make sure that version-update is completed.*

■ Procedures

(1) **Select an RU from "LIST OF EXISTING RU".**

(2) **Use the [PING] command to check the connection of the machine.**
    ☞ {MU2:1.5_PING}

(3) **Repeat procedures (1) and (2) for all the RU's connected to the CL.**

(4) **Insert the CD-ROM (RU software) into the CL.**

(5) **Click [VERSION UP] on ALL RUs SETTING.**

(6) **Click [OK].**

(7) **Set the version update conditions, and click [OK].**

    → The version update of the RU software starts.

(8) **Click [OK].**

    → The version update starts.

(9) **Check that the version update is completed, and press the [Enter] key.**

(10) **Click [OK].**

    → Return to the RU PC-TOOL window.

(11) **Check that the version indication in the "LIST OF EXISTING RU" has changed.**

1.19   Configuration

1.19.1   CDPath

■ Function

When the RU software data is copied in the CL or the like, the RU software is installed by specifying the folder path in which the data is stored.

◆ NOTES ◆

- *Copy the whole CD-ROM (RU software) data into a single folder when copying the data into the CL or the like. If it is partially copied or folder configuration is changed, the installation might fail.*
- *Make the "CDPath" setting only when installation is to be made from copied data. If "CDPath" is set, installation from the CD-ROM (RU software) cannot be executed.*

■ Procedures for Setting "CDPath"

The procedures for copying the complete CD contents to the "Copy CD-R" of the C drive are described as an example.

(1)   Select "CDPath" from the [Configuration (C)] menu.

→ The "CD PATH SETTING" window appears.

(2)   Input or select the path of the folder in which the CD-ROM (RU software) data is completely copied.

(3)   Click [SET].

→ "CDPath" is set.

■ Procedures for Canceling "CDPath"

(1)   Select "CDPath" from the [Configuration (C)] menu.

→ The "CD PATH SETTING" window appears.

(2)   Click [CLEAR].

→ The path in the text box is cleared.

(3)   Click [SET].

→ The "CDPath" setting is canceled.

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Control Sheet

Issue date	Revision number	Reason	Pages affected
03.31.2016	03	New release (FM9369)	All pages
06.30.2017	04	Revison for MC V15 (FM9473)	2 to 4, 7, 13
06.30.2017	04	Change in pagination (FM9473)	5, 6, 8 to 12, 14 to 19
12.28.2017	05	Revison for MC V16.2 (FM9490)	2, 4, 6, 13
03.31.2020	06	Revison for MC V17.2 (FM9623)	4, 6, 13

DR-ID 1300 / DR-ID 1300PU
Service Manual

Service Parts List (SP)

How to Use Service Parts List

■RANK

- **Handling RANK characters** (parts that are handled in a special manner during parts operation, such as management)

Character	Under Warranty	Out of Warranty
R	Must be returned.	Repairable
Q	Must be returned. (We use for analysis.)	Not repairable
T	Must Not be returned. (Consumable part. Not applicable to free-of-charge warranty.)	Not repairable
without R, Q, T	Must Not be returned.	Not repairable

- **Export regulation-applicable character**(Parts with the following character are controlled by Export regulation.)

Character	Significance
+	Parts applicable to export regulations.

- **Fault RANK characters** (which provide reference for determining the recom-mended stock quantity)

All parts are assigned with one of characters A through E.

Character	Significance
A	Consumable parts or parts that will be replaced at short intervals.
B	Parts that may become faulty accidentally and have a relatively high failure rate.
C	Parts that have a sufficiently long MTBF, but are expected to have a relatively high failure rate.
D	Parts that have a sufficiently long MTBF, but are expected to become faulty.
E	Parts that are necessary for fault analysis, or parts that may be needed in case of unexpected accidents such as man-induced damage.

<The RANK guide>
The Fault RANK characters, Handling RANK characters, and Export regulation-applicable character are assigned in that order.
Thus, at least one character or up to three characters are assigned in the RANK column.

■REF.NO.

REF. NO. is a part number indicated in the Service Parts Exploded Views. For parts having different functions, they are clearly distinguished in the REMARKS and SERIAL NUMBER columns.

■PART NUMBER

PART NUMBER is a code number that is unique to each part. An alphabetic letter at the rightmost position of the code number has the following meaning.

○For hardware
The alphabet denotes the version number of a part. If parts have different version numbers, they are upward-compatible.
○For software
The alphabet denotes a difference in the specifications. Parts differing in the suffix are not compatible with each other. Version number is omitted in the list.

■PART NAME

PART NAME represents a general name of a part.

■QTY.

○QTY. denotes the quantity of parts used in each unit.

○A part whose quantity is suffixed with -S represents a small part that is shipped in packs of 50. (Even if such a part is ordered in quantity of 1, a pack containing 50 pieces of that part is supplied.)

■REMARKS

The REMARKS column indicates a unique name of a part or relevant information of each part.

■SERIAL NUMBER

The units may contain different parts depending on their shipment control number. SERIAL NUMBER indicates the shipment control number to which the relevant parts are applicable. If the SERIAL NUMBER column is blank, the parts are applicable to all the relevant units. The shipment control number is represented by lower five digits of eight-digit number indicated on the rating indication label.

■REFER TO

The "REFER TO" column shows reference sections concerning the part.Clicking the reference section in the "REFER TO" column jumps to the top page of the reference section where the related information is in.

- **Quantities of recommended spare parts**

It is recommended as a rough guide to hold in stock a certain quantity of parts according to the rank (A, B, C, D, E) assigned to the parts, as follows. For periodically replaced parts, hold them in stock separately. Adjust the stock quantity of service parts depending on the number of working units (N). Quantity used in a single system : Q

○N = 1
Rank A = $1 + Q \times 0.3$
Rank C = $1 + Q \times 0.05$
Rank D = $1 + Q \times 0.02$

○$2 \leqq N \leqq 10$
Rank A = $2 + N \times Q \times 0.3$
Rank C = $2 + N \times Q \times 0.05$
Rank D = $2 + N \times Q \times 0.02$

○$11 \leqq N \leqq 300$
Rank A = $3 + N \times Q \times 0.3$
Rank C = $3 + N \times Q \times 0.05$
Rank D = $2 + N \times Q \times 0.02$

- **Precautions to be Observed When Returning Parts for Repair**

When returning a component for repair, pack it in the same manner as for the supplied substitute, using the substitute packing materials.
The use of different packing materials or packing methods may incur damage to packed component during transit.

01 MP
MP

DETAIL A

FRONT

A

FRONT

1300_500001.ai
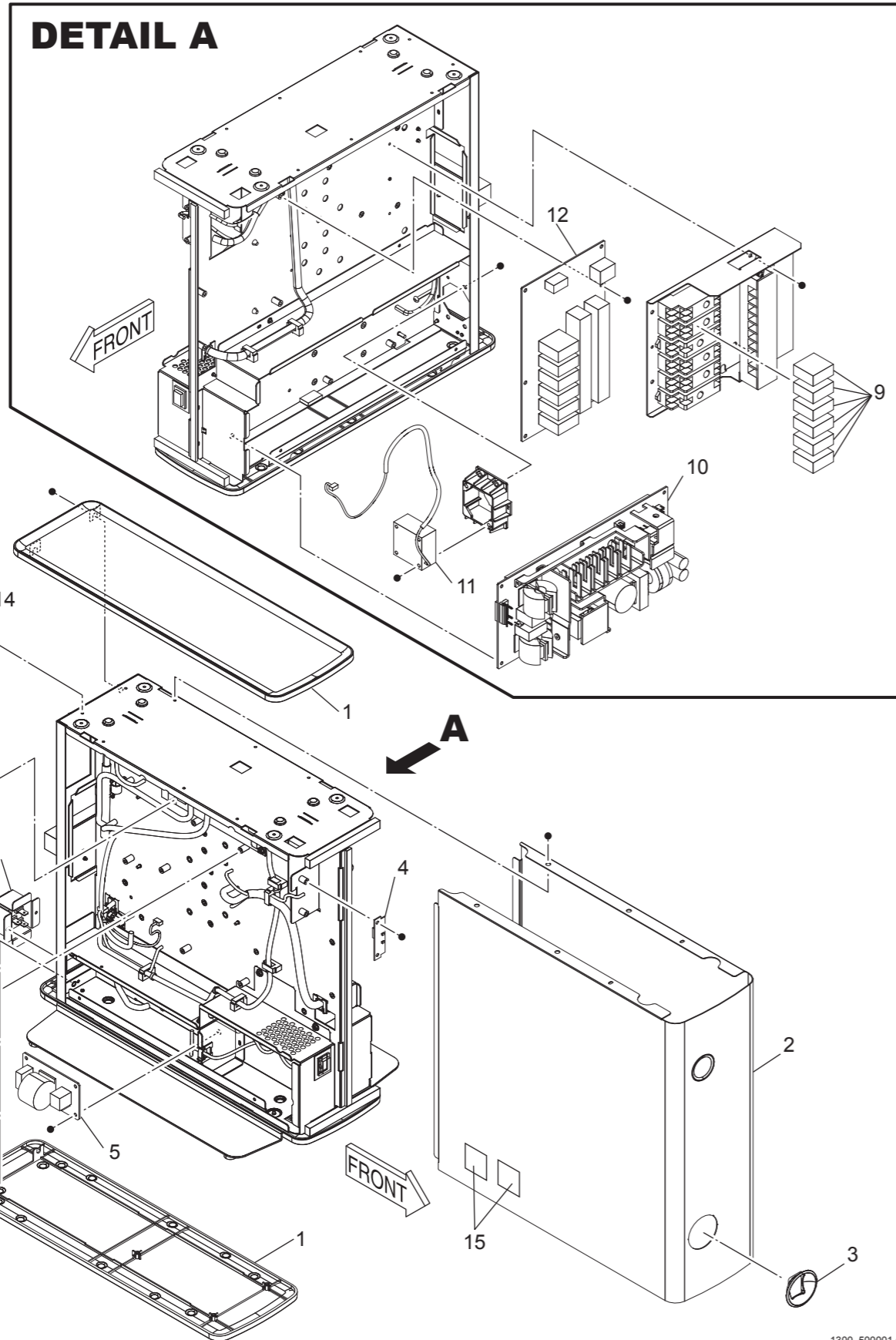
RANK	REF.	PART NO.		PART NAME	QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	350Y120177	カバー	Cover	2	上下カバー Top/Bottom Cover		
E	2	350Y120080F	カバー	Cover	1	前カバー MP3 Front Cover		
E	3	350N120130F	カバー	Cover	1	スイッチ周りカバー Switch Cover		
C	4	113Y100858A	ボードアセンブリ LED60C	Board Assembly LED60C	1			
C	5	113Y1979B	ボードアセンブリ NFB51A	Board Assembly NFB51A	1			
C	6	113Y100975L	ボードアセンブリ MPC54B	Board Assembly MPC54B	1			
A	6.1	137S1422	ヒューズ	Fuse	1	48V / 4A for MPC54B F4 型式／Model：LM40(D)CDL (*1)		
A	6.2	137S1420	ヒューズ	Fuse	5	48V / 2A for MPC54B F5,F6,F7,F8,F11 型式／Model：LM20(D)CDL (*1)		
A	6.3	137S1170	ヒューズ	Fuse	1	48V / 0.3A for MPC54B F9 型式／Model：LM03(D) (*1)		
D	7	120S5277	コンセント	AC INLET	1			
E	8	350Y120078E	カバー	Cover	1	後カバー Rear Cover		
D	9	131S0534	リレー	Relay	1	型式／Model：AHN22005 (*2)		
C	10	125N100032B	電源部 PSU27A	Power Supply Unit PSU27A	1	型式／Model：CME240P-24 (*3)		
E	11	119N100041	ファン	Fan	1	DC ファン DC Fan		
C	12	113Y100293C	ボードアセンブリ MPX54A	Board Assembly MPX54A	1			
C	13	113Y120110C	ボードアセンブリ MPL65A	Board Assembly MPL65A	1			
A	13.1	137S1422	ヒューズ	Fuse	2	48V / 4A for MPL65A F1, F2 型式／Model：LM40(D)CDL (*1)		
E	14	345Y130006	ガスケット	Gasket	1	MP の背面カバー用 For MP Rear Cover		
E	15	405Y200096	銘板アセンブリ	Label Assembly	1	(*4)		

01 | **MP**
MP

*1: メーカ／大東通信機株式会社
Manufacturer / Daito Communication Apparatus Co.

*2: メーカ／パナソニック電工株式会社
Manufacturer / Panasonic Electric Works Co.

*3: メーカ／ TDK ラムダ株式会社
Manufacturer / TDK-Lambda Co.

*4: REF.4 購入時に合わせて、シリアル番号を連絡の上、発注すること。
Order REF.15 with sending the MP serial number when purchasing REF.4.

02

SE
SE
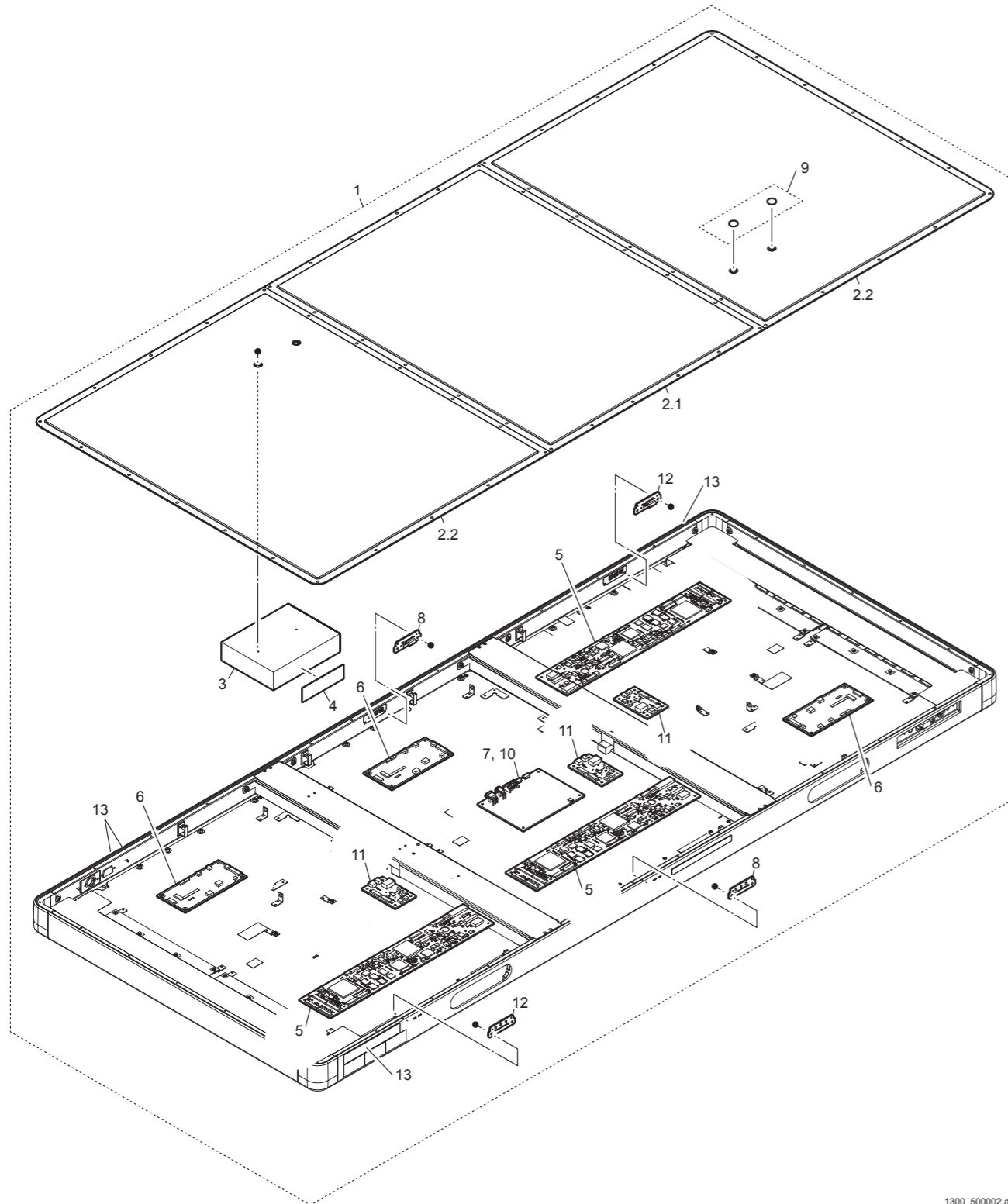
1300_500002.ai

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
CR	1.1	812Y120036	フラットパネルセンサ	Flat Panel Sensor	1	国内 (1305SE)For Japan, Ed2		
CR	1.2	812Y120168	フラットパネルセンサ	Flat Panel Sensor	1	海外 Ed3.1(1305SE)For Overseas, Ed3.1		
C	1.3	812Y120036A	フラットパネルセンサ	Flat Panel Sensor	1	国内 Ed3.1(1305SE)For Japan, Ed3.1		
C	2.1	898Y120391	背面カバーCENTER キット	Center Rear Cover Kit	1			
C	2.2	898Y120393B	背面カバーTOP/BOTTOMキット	Top/Bottom Rear Cover Kit	1			
E	3	136Y201926B	HUB キット	HUB Kit	1	HUB 本体、電源ケーブル、遮光テープHUB, Power cable, Masking part		
E	4	345N120151	遮光テープ	Masking part	1	HUB		
C	5	857Y200089	ボードアセンブリRMV65A	Board Assembly RMV65A	3			
E	6	857Y120042F	プリント基板POW65A	Board POW65A	3			
E	7	113Y120111C	ボードアセンブリPOD65A	Board Assembly POD65A	1			
C	8	113Y120162A	ボードアセンブリLED65B	Board Assembly LED65B	2			
E	9	898Y120392	ねじキャップキット	Screw Cap Kit	1			
E	10	137S1175	ヒューズ	Fuse	1	48V / 0.5Afor POD65A F11型式／Model：LM05(D)CDL (*1)		
E	11	113Y200004C	ボードアセンブリCOC65A	Board Assembly COC65A	3			
E	12	113Y200005A	ボードアセンブリLED65C	Board Assembly LED65C	2			
E	13	405Y200092	銘板アセンブリ	Label Assembly	1			
E	14	310N120042	GL 用キャリブ治具ピン	Calibration Jig for D-EVO GL	1			

*1：メーカ／大東通信機株式会社
　　Manufacturer / Daito Communication Apparatus Co.

03

オプション（回路パーツ）
Options (Circuit Parts)

MP

FRONT
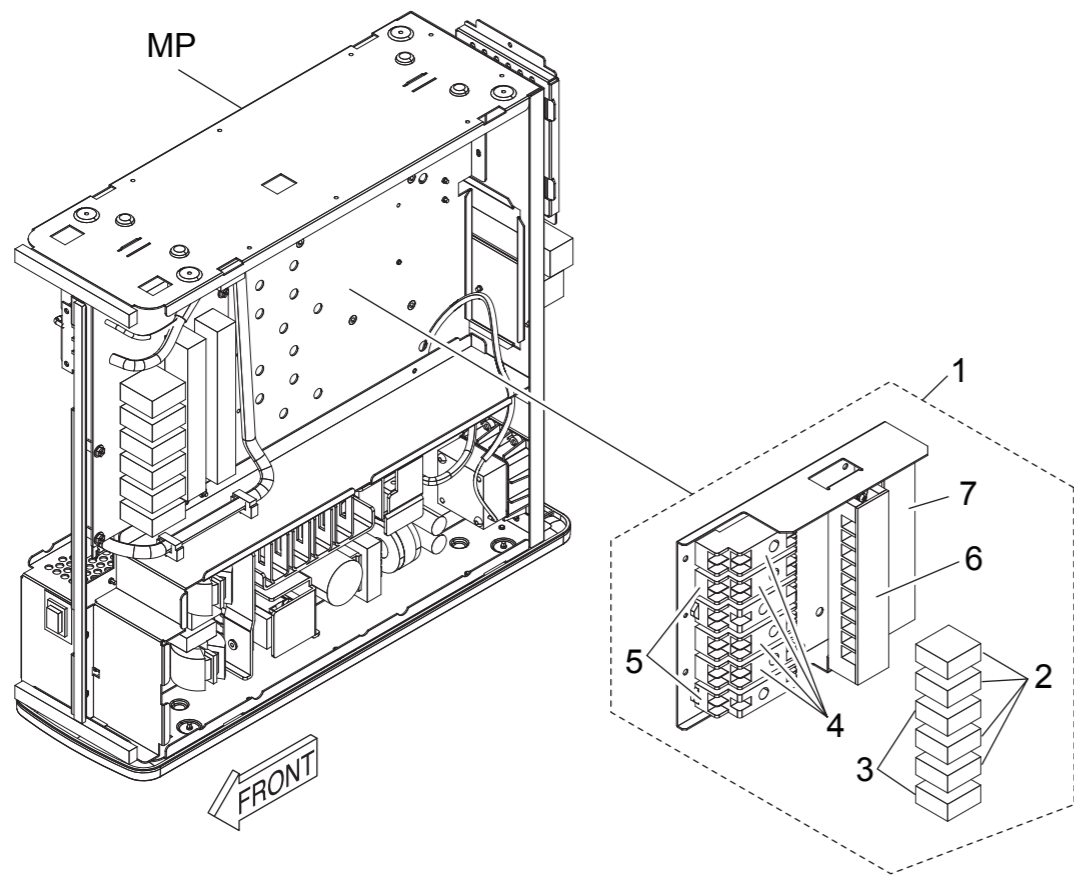
1200_500009.ai

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
C	1.1	*********	AC ブッキー用リレーユニット	AC Bucky Relay Unit	1	100-110V 用 for 100V-110V		
C	1.2	*********	AC ブッキー用リレーユニット	AC Bucky Relay Unit	1	110V-120V 用 for 110V-120V		
C	1.3	*********	AC ブッキー用リレーユニット	AC Bucky Relay Unit	1	200V-220V 用 for 200V-220V		
C	1.4	*********	AC ブッキー用リレーユニット	AC Bucky Relay Unit	1	220V-240V 用 for 220V-240V		
D	2.1	131S0530	リレー	Relay	4	100-110V 用 for 100V-110V 型式／Model： AHN210X0 (*)		
D	2.2	131S0531	リレー	Relay	4	110V-120V 用 for 110V-120V 型式／Model： AHN210X1 (*)		
D	2.3	131S0532	リレー	Relay	4	200V-220V 用 for 200V-220V 型式／Model： AHN210Y0 (*)		
D	2.4	131S0533	リレー	Relay	4	220V-240V 用 for 220V-240V 型式／Model： AHN210Y2 (*)		
D	3	131S0529	リレー	Relay	2	型式／Model： AHN12205 (*)		
D	4	120S5279	ソケット	Socket	4	HN2_terminal blocks		
D	5	120S5278	ソケット	Socket	2	HN1_terminal blocks		
D	6	135N100012	端子台	Terminal block	1	TB1		
D	7	135N100013	端子台	Terminal block	1	TB2		
D	8	113Y100550E	ボードアセンブリ HSC54A	Board Assembly HSC54A	1	Hand Sw IF BOX 用 For Hand Sw IF BOX		

*: メーカ／パナソニック電工株式会社
Manufacturer / Panasonic Electric Works Co.

04 ケーブル CABLE

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO	CONNECTION DIAGRAM
E	1	136N120068A	ケーブル	Electric cable	1	LP: POD5-RMV11 国内／ For Japan, Ed2 (*1)			
E	2	136N120069A	ケーブル	Electric cable	3	LP: RMV3-POW2			
E	3	136Y120129C	ケーブル	Cable	3	LP: RMV- サーミスタ / Thermistor			
E	4	136Y120375B	ケーブル	Electric cable	1	LP: Dsub ① -HUB1,POD1			
E	5	136Y120376A	ケーブル	Electric cable	1	LP: POD3-POW1			
E	6	136Y120377A	ケーブル	Electric cable	1	LP: POD7-POW4			
E	7	136Y120378	ケーブル	Electric cable	1	LP: POD4-RMV12 国内／ For Japan, Ed2 (*1)			
E	8	136Y201926B	ケーブル	Electric cable	1	LP: POD2-HUB_5V Cable with HUB			
E	9	136Y120380	ケーブル	Electric cable	1	LP: HUB2-RMV4 TOP			
E	10	136Y120381	ケーブル	Electric cable	1	LP: HUB3-RMV4 CENTER			
E	11	136Y120382	ケーブル	Electric cable	1	LP: HUB4-RMV4 BOTTOM			
E	12	136Y120383A	ケーブル	Electric cable	1	LP: RMV27-RMV28			
E	13	136Y120386A	ケーブル	Electric cable	1	LP: POD6-LED			
E	14	136Y120387	ケーブル	Electric cable	3	LP: RMV1-POW3			
E	15	136Y120391	ケーブル	Electric cable	3	LP: RMV16 ループバック / Loopback			
E	16	136Y120800B	ケーブル	Electric cable	1	LP: Dsub ③ -HUB5,POD8			
E	17	136Y121001C	ケーブル	Electric cable	1	LP: ① -POD10			
E	18	136Y121002C	ケーブル	Electric cable	1	LP: ③ -POD9			
E	19	136Y120388	ケーブル	Electric cable	3	LP: RMV16 ループバック / Loopback (サービス用 /For service)			
E	20	136Y120301A	ケーブル	Cable	1	MP: INLET-NFB			
E	21	136Y120302A	ケーブル	Cable	1	MP: NFB,DC power-SW			
E	22	136Y120304A	ケーブル	Cable	1	MPC-LED			
E	23	136Y120306B	ケーブル	Cable	1	MPC-MPX			
E	24	136Y120362	ケーブル	Electric cable	1	DC power-MPC,MPL			
E	25	136Y120363A	ケーブル	Electric cable	1	MPC6-MPL4			
E	26	136Y120374	ケーブル	Electric cable	1	MPC5-MPL3			
E	27	136Y120393A	ケーブル	Cable	1	MPC-FAN			
E	28	136Y102483A	ケーブル	Cable	1	MP 医用電源コード (国内 /For Japan)			
E	29	898Y200030	ケーブル	Electric cable	1	海外 / 国内 Ed3.1 LP cable 20m For Overseas For Japan, Ed3.1			

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO	CONNECTION DIAGRAM
E	30	898Y200031	ケーブル	Electric cable	1	海外 / 国内 Ed3.1 LP cable 10m For Overseas For Japan, Ed3.1			
E	31	898Y201161	ケーブル	Electric cable	1	海外 LP cable 4m For Overseas			
E	32	136Y200025	ケーブル	Electric cable	3	LP: LED1-COC			
E	33	136Y200026	ケーブル	Electric cable	3	LP: LED3-COC			
E	34	136Y200027	ケーブル	Electric cable	3	LP: COC1-RMV12			
E	35	136Y200028	ケーブル	Electric cable	1	LP: COC7-POD4			
E	36	136N200001A	ケーブル	Electric cable	3	LP: COC-RMV			
E	37	136N200002A	ケーブル	Electric cable	1	LP: COC-POD			

*1: 本パーツは Ed2 対応機専用である。Ed2 対応機の交換時のみ使用すること。

This part is for a machine that applies to Ed2. Use only when exchanging for a machine that applies to Ed2.

05 治工具
Tools

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
C	1	136Y102973	DR-ID 600/800/900/1200/1300MP IP アドレスリセット治具	DR-ID 600/800/900/1200/1300MP IP Address reset jig	1			

06A 回路図（MP）
CIRCUIT DIAGRAM (MP)
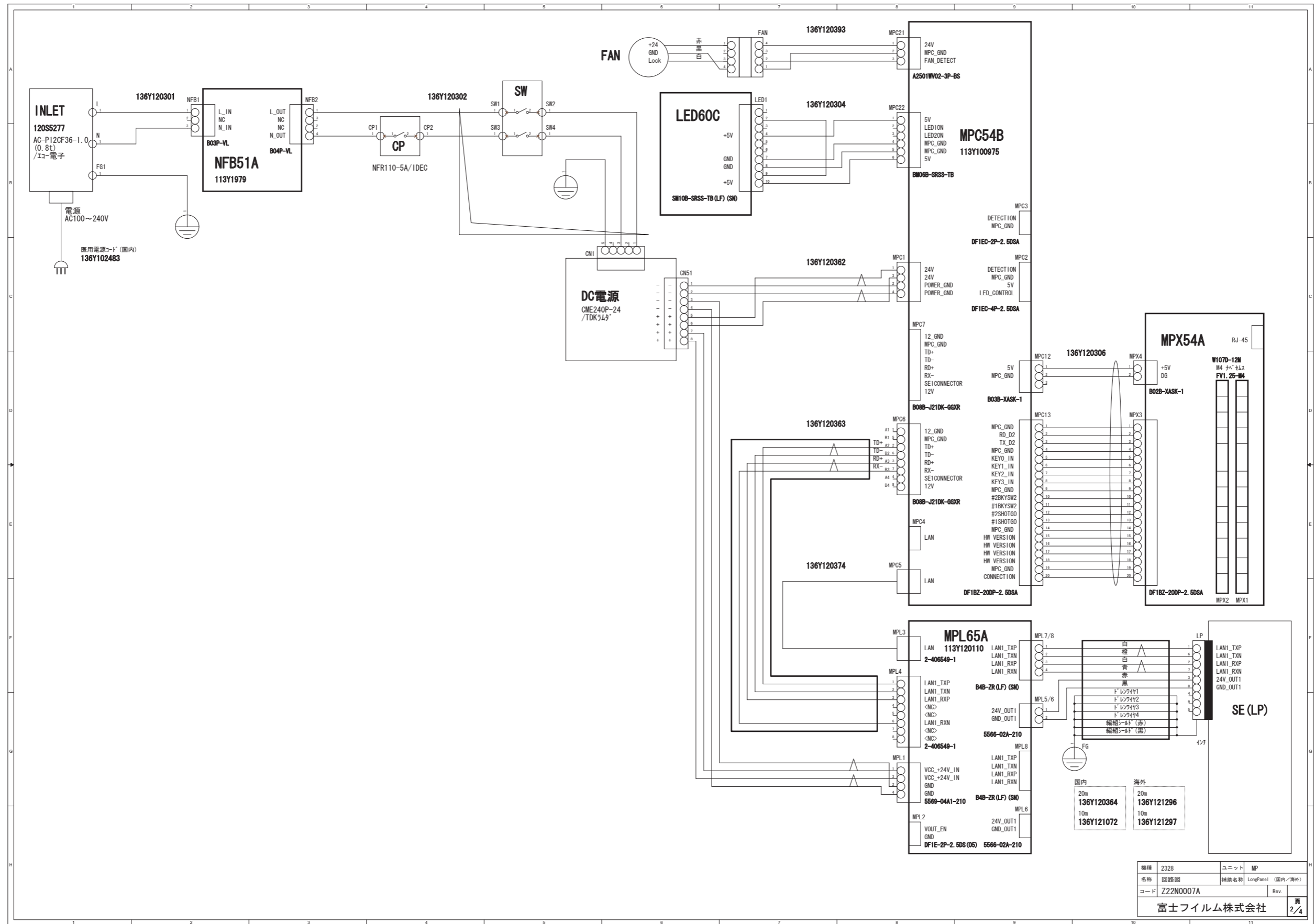
06B

回路図（SE）（#******** - #*******）（日本国内機（IEC:60601-1 Ed2））
CIRCUIT DIAGRAM (SE) (#******** - #*******) (For Japan (IEC:60601-1 Ed2))

06B 回路図（SE）（#******** - #*******）（日本国内機（IEC:60601-1 Ed2））
CIRCUIT DIAGRAM (SE) (#****** - #*******) (For Japan (IEC:60601-1 Ed2))**
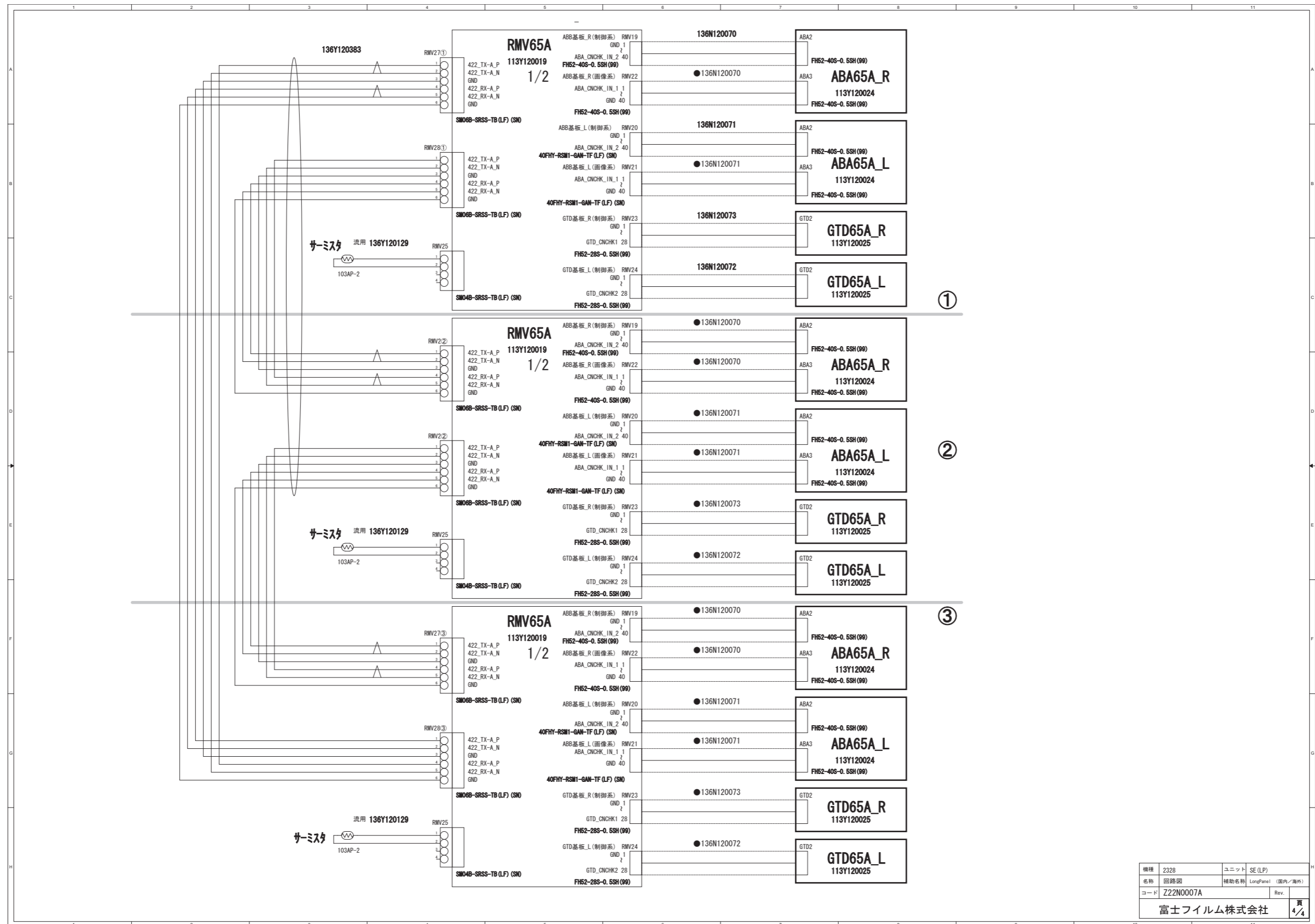
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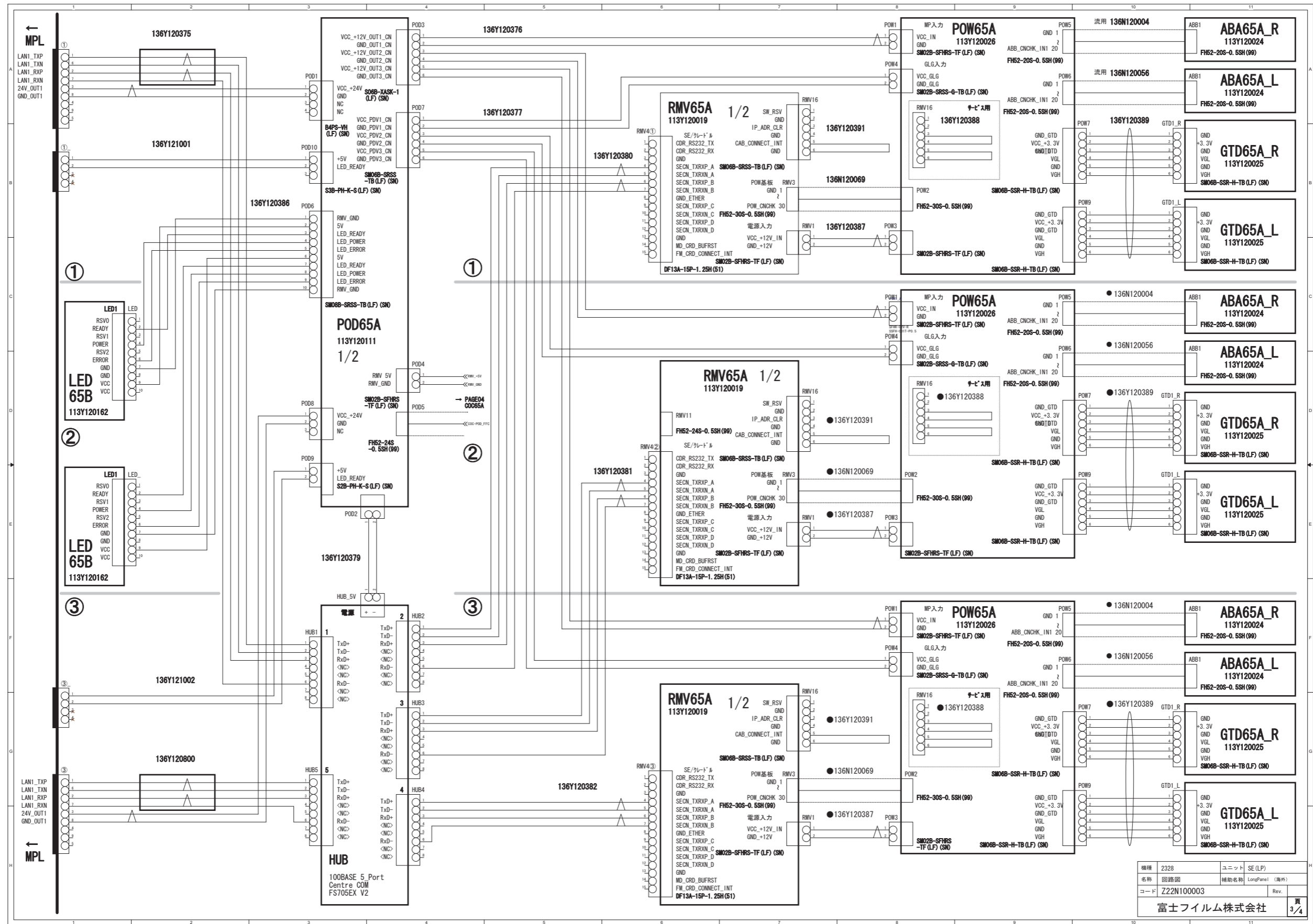
回路図（SE）（#******** - #*******）
CIRCUIT DIAGRAM (SE) (#******** - #*******)

06C 回路図（SE）（#******** - #*******）
CIRCUIT DIAGRAM (SE) (#******** - #*******)
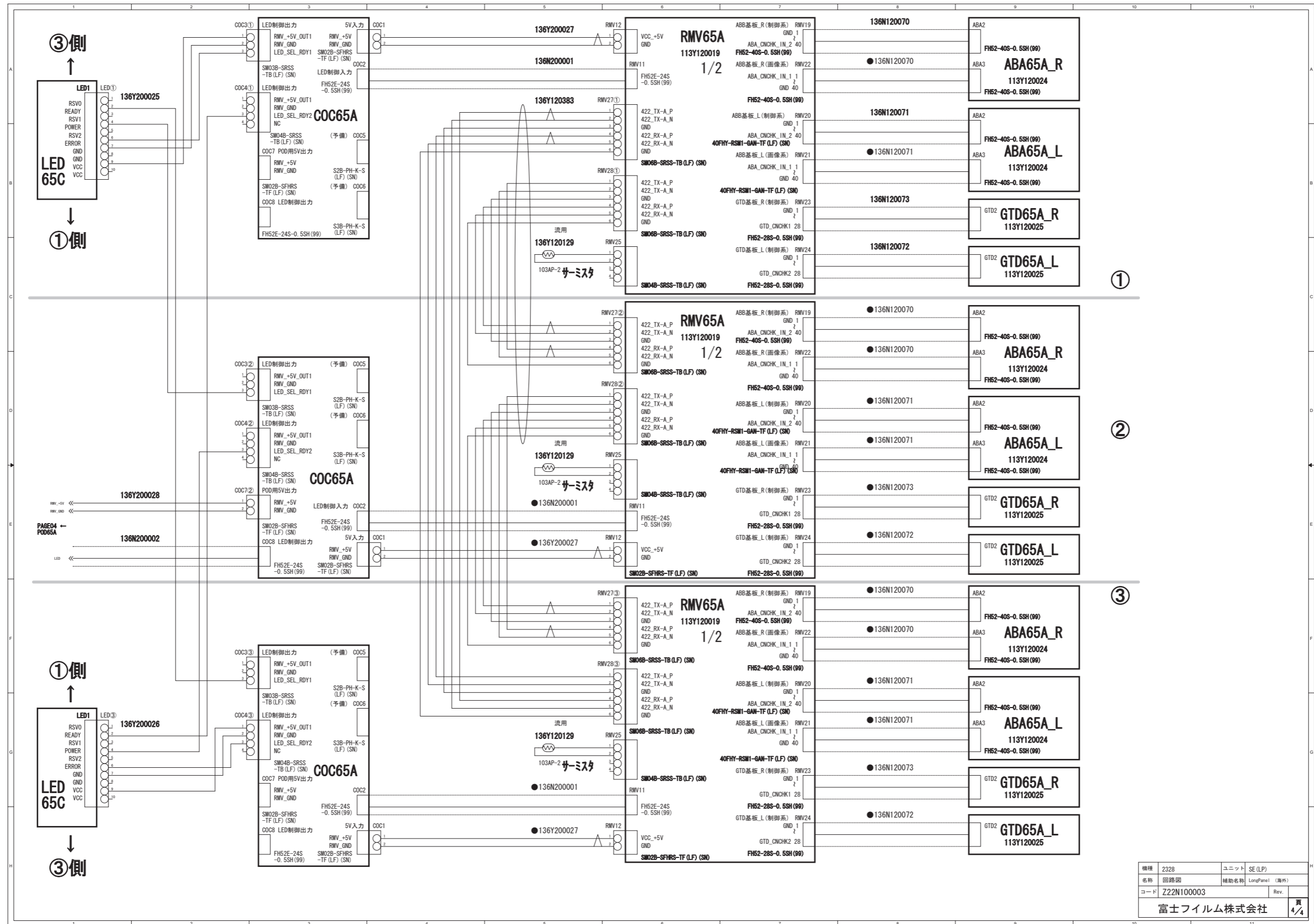
07　部品番号検索表
PARTS NOS. SEARCH TABLE

Part No.	INDEX No.-Drawing No	Part No.	INDEX No.-Drawing No	Part No.	INDEX No.-Drawing No	Part No.	INDEX No.-Drawing No	Part No.	INDEX No.-Drawing No	Part No.	INDEX No.-Drawing No
113Y100293C	01-12	136Y120387	04-14								
113Y100550E	03-8	136Y120388	04-19								
113Y100858A	01-4	136Y120391	04-15								
113Y100975L	01-6	136Y120393A	04-27								
113Y120110C	01-13	136Y120800B	04-16								
113Y120111C	02-7	136Y121001C	04-17								
113Y120162A	02-8	136Y121002C	04-18								
113Y1979B	01-5	136Y200025	04-32								
113Y200004C	02-11	136Y200026	04-33								
113Y200005A	02-12	136Y200027	04-34								
119N100041	01-11	136Y200028	04-35								
120S5277	01-7	136Y201926B	02-3								
120S5278	03-5	136Y201926B	04-8								
120S5279	03-4	137S1170	01-6.3								
125N100032B	01-10	137S1175	02-10								
131S0529	03-3	137S1420	01-6.2								
131S0530	03-2.1	137S1422	01-6.1								
131S0531	03-2.2	137S1422	01-13.1								
131S0532	03-2.3	310N120042	02-14								
131S0533	03-2.4	345N120151	02-4								
131S0534	01-9	345Y130006	01-14								
135N100012	03-6	350N120130F	01-3								
135N100013	03-7	350Y120078E	01-8								
136N120068A	04-1	350Y120080F	01-2								
136N120069A	04-2	350Y120177	01-1								
136N200001A	04-36	405Y200092	02-13								
136N200002A	04-37	405Y200096	01-15								
136Y102483A	04-28	812Y120036	02-1.1								
136Y102973	05-1	812Y120036A	02-1.3								
136Y120129C	04-3	812Y120168	02-1.2								
136Y120301A	04-20	857Y120042F	02-6								
136Y120302A	04-21	857Y200089	02-5								
136Y120304A	04-22	898Y120391	02-2.1								
136Y120306B	04-23	898Y120392	02-9								
136Y120362	04-24	898Y120393B	02-2.2								
136Y120363A	04-25	898Y200030	04-29								
136Y120374	04-26	898Y200031	04-30								
136Y120375B	04-4	898Y201161	04-31								
136Y120376A	04-5										
136Y120377A	04-6										
136Y120378	04-7										
136Y120380	04-9										
136Y120381	04-10										
136Y120382	04-11										
136Y120383A	04-12										
136Y120386A	04-13										

08 締結用および配線用のサービス部品一覧表
List of Service Parts for Securing and Wiring
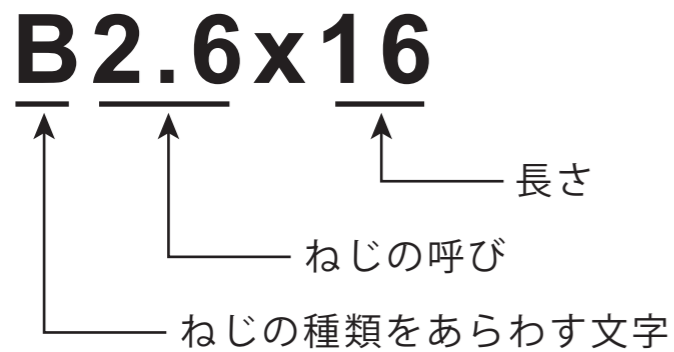
1. 締結用および配線用のサービス部品について

● 発注の際は部品コードと発注数量を明記すること。発注数量は 100 個単位とする。

2. ねじ類

● サービス部品一覧表の中のねじの記載方法の例を以下に示す。この記載方法はサービスマニュアル内の記載方法と同じである。

B2.6x16

長さ

ねじの呼び

ねじの種類をあらわす文字
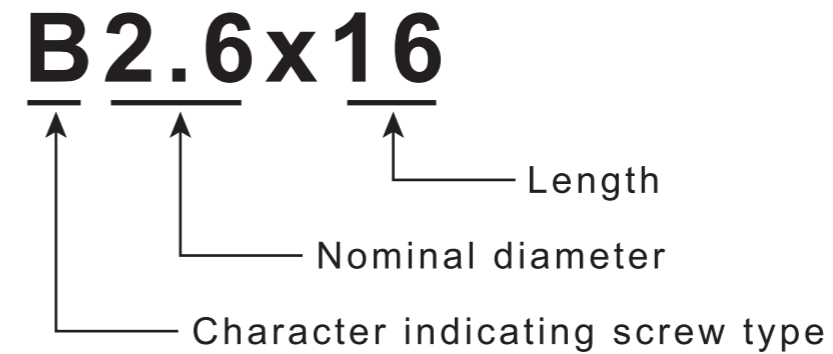
1. Service Parts for Securing and Wiring

● Clearly indicate the part code and quantity required when ordering service parts. Service parts can be ordered in sets of 100.

2. Screws

● The following is an example of how screws in the service parts table are described. This description method is the same as that in this Service Manual.

B2.6x16

Length

Nominal diameter
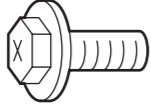
Character indicating screw type

08 締結用および配線用のサービス部品一覧表
List of Service Parts for Securing and Wiring

ネジ

記号 Symbol	部品コード Parts code	参考情報 Reference information		
		形状 Shape	部品名称	Parts name
TP3x6	308S0414		六角頭 TP ネジ	Cross-recessed hexagonheaded TPscrew

09 ネジ・座金類の記号一覧表
Table of Screws / Washers Indication Symbols

Table of Screws/Washers Indication Symbols

No.	Part name	Indication Symbols	Symbol in the disassembly chart (example)	Size	Shape
1	Cross-recessed flat-head screw	S	S3×10	M3×10	1. Flat-head screw S
2	Cross-recessed truss-head screw	T	**T4×8	M4×8 M4×10	2. Truss-head screw T
3	Cross-recessed pan-head screw with spring washer	A	M2.6×16	M2.6×16	3. Pan-head screw with spring washer A
4	Cross-recessed pan-head screw with spring and plain washers	B	B3×6	M3×6 M3×30 M3×35	4. Pan-head screw with spring and plain washers B
5	Cross-recessed hexagonheaded screw with spring and plain washers	BR	BR3×10 BR3×12	M3×10 M3×12 M4×8 M4×12	5. Hexagon-headed screw with spring and plain washer BR
6	Hexagon-headed bolt	Q	Q3×20	M3×20	6. Hexagon-headed bolt Q
7	Hexagon-Headed bolt with spring and plain washer	BQ	BQ4×10	M4×10	7. Hexagon-Headed bolt with spring and plain washer BQ
8	Deltight screw*	DT	*DT3×6	M3×6 M4×8	8. Deltight screw* DT
9	Plax**	Ps	**Ps3×6	Nominal diameter 3×6	9. Plax Ps
10	Hexagon-headed setscrew (double-point)	WP	WP4×6	M3×5 M4×6 M4×8	10. Hexagon-headed set screw WP
11	TPscrew	TP	TP3×6	M3×6 M4×8	11. TP Screw TP
12	Hexagon nut	Na	Na20	M16 M20	12. Hexagon nut Na
13	Plain washer	W	W4	M4	13. Plain washer W
14	Spring washer	SW	SW3	M3	14. Spring washer SW
15	E ring	E	E6	Nominal diameter 4 Nominal diameter 6	15. E ring E
16	K-CL ring	KL	KL4 KL6	M4 M6	16. K-CL ring KL
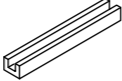
1200_500022.ai

* : Self-tapping screw with a noncircular end
** : Stainless-made

10 消耗品一覧表
List of Quick Wearing Parts

List Of Quick Wearing Parts

No.	Part name	Shape
1	Fixing plug	
2	Binding band	1. Fixing plug 2. Binding band 3. N.K. clamp
3	N.K. clamp	
4	Edging	4. Edging 5. Edge saddle
5	Edge saddle	600_500003.ai

DR-ID 1300 / DR-ID 1300PU Service Manual

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

DR-ID 1300 / DR-ID 1300PU
Service Manual

Preventive Maintenance (PM)

1.　Preventive Maintenance Program

1.1　How to Use the Preventive Maintenance Volume

- Perform the corresponding maintenance programs according to the notations of age (1Y , 2Y , 3Y , 4Y , 5Y).
- The preventive maintenance program list is prepared for the respective ages of 1, 2, 3, 4 and 5 years. As the tasks to be performed depend on the age of service, follow the list in carrying out the preventive maintenance program.

1.2　Notation of Age

The following notations are mentioned for the respective maintenance programs. Check what the notation means before starting the task.

1Y ：	Procedure performed at an age of 1 year.
2Y ：	Procedure performed at an age of 2 years.
3Y ：	Procedure performed at an age of 3 years.
4Y ：	Procedure performed at an age of 4 years.
5Y ：	Procedure performed at an age of 5 years.

1.3   Preventive Maintenance Program List

The preventive maintenance program is defined in terms of the age of the machine. When the age of the machine reaches the specified value, take each action of the preventive maintenance program corresponding to the age. Take the action referring to the list, as the program differs depending on the age of the machine.

◆ *INSTRUCTION* ◆

Safety provided by grounding is assured by properly establishing power cable and additional protective ground wire connections and securing the parts with retaining screws. To maintain safety, ensure that the parts and retaining screws removed for servicing purposes are restored to states existing upon installation. After the parts and retaining screws are restored to the above-mentioned states, follow the procedures set forth in this service manual to verify that the retaining screws are securely tightened to properly secure the parts.

■ **Preventive Maintenance Program List**

Maintenance program	Cycle					Time requirements	Replacement parts
	1Y	2Y	3Y	4Y	5Y		
2. Checking the Error Log	○	○	○	○	○	10 min	
3. Checking for Image Problems	○	○	○	○	○	10 min	
4. Inspecting the Fan (MP)	○	○	○	○	○	3 min	
5. Inspecting the Filter (MP)	○	○	○	○	○	2 min	
6. Replacing the Relay *1 (MP)	○	○	○	○	○		<AC relay> - AHN210X0: For use of 100-110 V - AHN210X1: For use of 110-120 V - AHN210Y0: For use of 200/220 V - AHN210Y2: For use of 220-240 V <DC relay> - AHN12205: Applicable to all types
7. Checking the Cables (SE)	○	○	○	○	○	1 min	
8. Checking the Exposure	○	○	○	○	○		
9. Checking for Image Problems	○	○	○	○	○	10 min	
10. Checking the Error Log	○	○	○	○	○	5 min	
11. Cleaning the Periphery of the Machine and the External Cover	○	○	○	○	○	5 min	

*1: Replacement of the relay refers to one incorporated in the AC bucky relay unit.

◇ *REFERENCE* ◇

The model of the relay depends on a type of the AC bucky relay unit.

Identify the type of the AC bucky relay unit, and select the relay for replacement.

☞ ***{MD:1.3.4_Board-Related Information}***

2. Checking the Error Log

1Y , 2Y , 3Y , 4Y , 5Y

(1) Check the error log.

☞ {IN1:14._Checking the Error Log}

☞ {IN2:14._Checking the Error Log}

3. Checking for Image Problems

1Y , 2Y , 3Y , 4Y , 5Y

(1) Check the images.

☞ {IN1:13._Checking for Image Problems}

☞ {IN2:13._Checking for Image Problems}

4. Inspecting the Fan (MP)

1Y , 2Y , 3Y , 4Y , 5Y

(1) Check to make sure that the MP fan is working.

#1 Check: Exhaust air

MP

FRONT

#1

1200_600001.ai
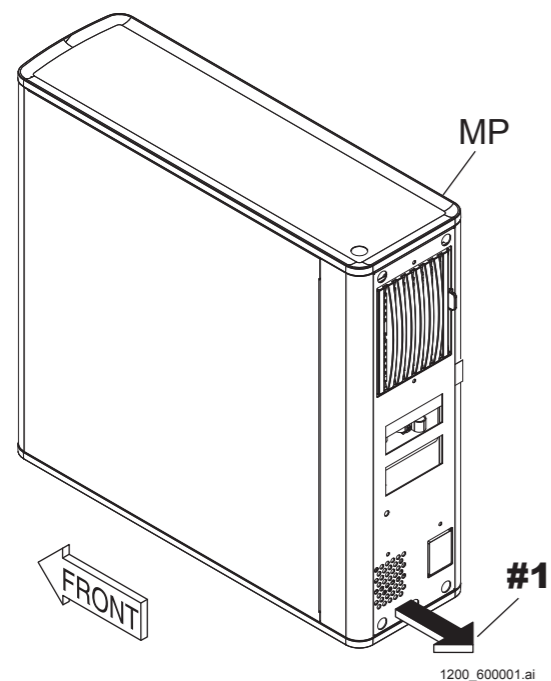
5. Inspecting the Filter (MP)

1Y , 2Y , 3Y , 4Y , 5Y

(1) Remove the filter from the MP.

#1   Remove: Filter

MP

DETAIL A

#1

FRONT

1200_600002.ai
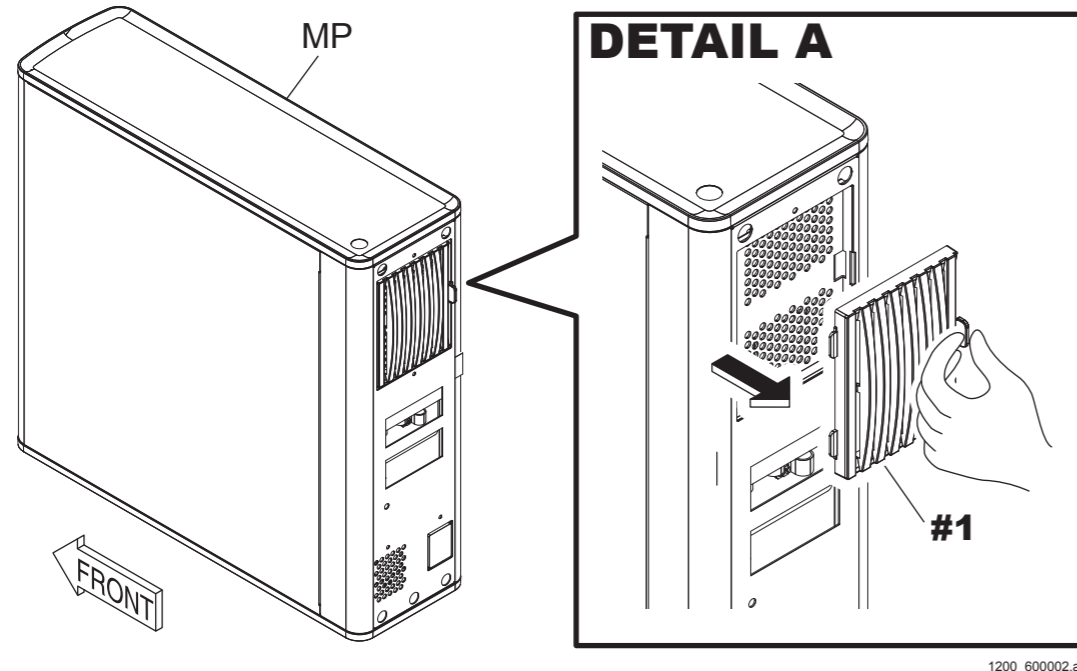
(2) Clean the filter with a vacuum cleaner.

◆ *NOTE* ◆

Replace the filter if the filter cannot be cleaned by the vacuum cleaner.

(3) Reinstall the filter.

6. Replacing the Relay (MP)

1Y , 2Y , 3Y , 4Y , 5Y

Take the following procedures only when the AC bucky relay unit (optional) is mounted.

⚠️ **WARNING**

Be sure to turn OFF the circuit breaker on the distribution switchboard to avoid electric shock hazards.

(1) **Replace the relay.**

☞ {MC:2.11.1_Relay}

7. Checking the Cables

(1) Check that the SE cable has no twist or breakage of the jacket.
#1 Check: Cable

MP

#1

SE

FRONT

1300_600001.ai
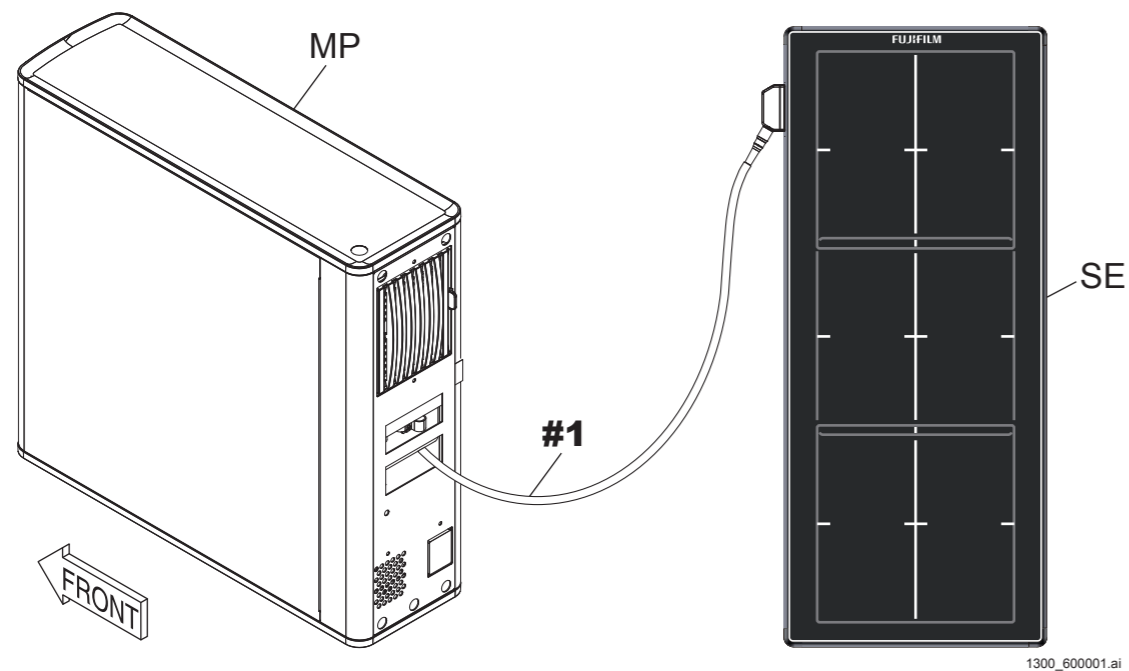
8. Checking the Exposure

1Y , 2Y , 3Y , 4Y , 5Y

(1) **Install the jig pin on the boundary between the TOP panel unit and the CENTER panel unit.**

☞ {IN1:12._Marker Calibration}

☞ {IN2:12._Marker Calibration}

(2) **Expose an IP.**

(3) **Visually check the connection of the calibration phantom for misalignment.**

◆ *NOTE* ◆

If a misalignment is found, perform the full calibration and marker calibration for the CENTER panel unit again.

9. Checking for Image Problems

1Y , 2Y , 3Y , 4Y , 5Y

(1) Check the images.

☞ {IN1:13._Checking for Image Problems}

☞ {IN2:13._Checking for Image Problems}

10. Checking the Error Log

1Y , 2Y , 3Y , 4Y , 5Y

(1) Check the error log.

☞ {IN1:14._Checking the Error Log}

☞ {IN2:14._Checking the Error Log}

11. Cleaning the Periphery of the Machine and the External Cover

1Y , 2Y , 3Y , 4Y , 5Y

(1) Make sure that no dirt or dust remains around the machine. If dirty, clean around the machine.

(2) Clean the SE with a cloth moistened with ethanol etc.

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

DR-ID 1300 / DR-ID 1300PU
Service Manual

Installation (IN)

How to Read the Installation Manual

The installation procedures vary depending upon the application version that is being used in installing this machine. Refer to the procedures which correspond to the application version that is being used.

■ MC application V15.2 or later

The procedures for using the DR Maintenance Software.

☞ {Installation (IN1) (DR Maintenance Software)}

◆ NOTE ◆

The DR Maintenance Software operating environment is as per the following.
- MC applicatio: V15.2 or later
- OS: Windows7 or Windows10
- Web browser: Internet Explorer 11

◆ NOTE ◆

If Windows 7 is being used as the OS, then install Internet Explorer 11.

☞ *{IN:Appendix 8._Installing the Internet Explorer 11}*

Since Internet Explorer 11 is already installed if Windows 10 is being used as the OS, then the aforementioned procedures are unnecessary.

■ MC application V15.0 or earlier

The procedures for using the RU PC-TOOL.

☞ {Installation (IN2) (RU PC-TOOL)}

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

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DR-ID 1300 / DR-ID 1300PU
Service Manual

Installation (IN1)
(DR Maintenance Software)

1. Installation Work Flowchart

START

☐ 2. Installation Preparations

└ ☐ 2.1 Tools and Measuring Instruments Necessary for Installation

☐ 3. Precautions in Installation

☐ 4. Transfer and Unpacking

├ ☐ 4.1 Unloading and Preparation for Transfer
├ ☐ 4.2 Transfer of Instruments
├ ☐ 4.3 Unpacking the MP
├ ☐ 4.4 Unpacking the SE
├ ☐ 4.5 Unpacking the DX Console
└ ☐ 4.6 Unpacking the Monitor

☐ 5. Checking the Items Supplied

☐ 6. Installing the MP

├ ☐ 6.1 Removing the Covers
├ ☐ 6.2 Checking the Power Cable
├ ☐ 6.3 Installing the Foot Cover or the Anchor Mounting Bracket (Optional)
├ ☐ 6.4 Connecting the Cables
├ ☐ 6.5 Connecting the X-Ray shot cable
├ ☐ 6.6 Binding and Checking the Cables
└ ☐ 6.7 Reinstalling the Covers

Ⓐ

Ⓐ

└ ☐ 6.8 Fixing the Anchor (Optional)

☐ 7. Installing the SE

☐ 8. Mounting the NIC board to the DX Console

├ ☐ 8.1 Mounting the NIC board
└ ☐ 8.2 Connecting the Network Cables

☐ 9. Installing the DX Console

☐ 10. Installing the RU Software

├ ☐ 10.1 Network Settings
├ ☐ 10.2 Installing the MC Application/DR Maintenance Software
├ ☐ 10.3 Starting up the DR Maintenance Software
├ ☐ 10.4 Preparation before Setting DR Device
├ ☐ 10.5 Updating MP Application Software Version
├ ☐ 10.6 Changing the IP Address for Using Two MPs
├ ☐ 10.7 Configuration Settings
├ ☐ 10.8 Setting the DX Console
├ ☐ 10.9 Setting the Serial ID of the GL Panel
├ ☐ 10.10 Setting the IP Address of the SE
├ ☐ 10.111 Updating SE Application Software Version
├ ☐ 10.12 Installing the Machine-Specific Data
└ ☐ 10.13 Changing the IP Address of the SE/MP/MC and the FTP Server

Ⓑ

Ⓑ

☐ **11. Image Calibration**

☐ **11.1 Offset Calibration**

☐ **11.2 Gain Calibration**

☐ **11.3 Checking the Calibration Results**

☐ **12. Marker Calibration**

☐ **13. Checking for Image Problems**

☐ **13.1 Checking for Irregularities, Density Problems, White Blank Portion, and Sensitivity Problems in the Images**

☐ **14. Checking the Error Log**

☐ **15. Clearing the EDIT HISTORY**

☐ **16. Backing Up the Data**

☐ **17. Final Checks**

☐ **17.1 Checking the SE**

☐ **17.2 Checking the Status of Boards**

☐ **18. Visual Inspection and Cleaning of the Machine**

END

2.   Installation Preparations

2.1   Tools and Measuring Instruments Necessary for Installation

Prepare the tools, jigs and measuring instruments before installing the machine.

☞   **{Handling of this Manual: Servicing Instruments and Tools That Require Inspection/Calibration}**

◆ *NOTE* ◆

The SE cable is always needed to install the machine. Prepare the SE cable for use of the jig if the SE cable (optional) is not purchased by the customer.

3. Precautions in Installation

⚠️ *WARNING/CAUTION*

Observe the warning and precautions mentioned in "Safety Precaution".

⚠️ *CAUTION*

When connecting or disconnecting the cable connector, wear an antistatic wrist band to ground the human body. Otherwise, static electricity charged in the human body might damage electronic components.

◆ *INSTRUCTION* ◆

It is recommended that you should not install machine cables (such as the power cables and communication cables) near such instruments that generate magnetic field noise (such as a motor, transducer and switching power source) and other cables to assure appropriate image quality.

◆ *INSTRUCTION* ◆

Do not make a radius of curvature of the SE cable smaller than 50 mm. If the radius of curvature is smaller than 50 mm, disconnection might occur in the cable, resulting in abnormality in image.

◆ *NOTE* ◆

- *When installing the SE into the exposure stand, SE LED must be able to be checked through the opening of the exposure stand.*
- *If the exposure stand is equipped with the external cover, the panel effective area and overlapping part on the top place of the exposure stand must be able to be checked.*
- *If the exposure stand is equipped without the external cover, the display of the panel effective area and overlapping part must be able to be checked.*

4. Transfer and Unpacking

4.1 Unloading and Preparation for Transfer

⚠ *CAUTION*

Before unloading the machine, secure a proper machine transfer route.

◆ *INSTRUCTION* ◆

Fully leave the machine with the plastic cover put on in the room. If the cover is put off immediately after the machine is transferred into the room, the machine might get condensation.

4.2 Transfer of Instruments

⚠ *CAUTION*

If the machine is to be transferred over differing floor levels, slowly move the machine not to shock it. Note that the carrier can come over a differing level up to approx. 10 mm.

4.3 Unpacking the MP

(1) Take out the MP from transporting box.

#1   Take out: MP

Ferrite Core

Accessories

Falling prevention stand
(only inside Japan)

#1

Pad

Transporting box

1300_700056E.ai

4.4 Unpacking the SE

(1) Take out the SE from transporting box.

 #1   Take out: SE

Transporting box

CD-R

Fuse

Letter of
guarantee

#1

Vinyl sheet

Pad

Transporting
box

1300_700006E.ai

4.5 Unpacking the DX Console

(1) Take out the DX Console from transporting box.

4.6 Unpacking the Monitor

(1) Take out the monitor from transporting box.

5.   Checking the Items Supplied

Check the components against the packing list supplied.

■ MP

Item	Qty.	Remarks
MP	1	-
Jig cable	1	Short-circuiting cable for initializing the MP
Jig cable	1	Short-circuiting cable for initializing the SE
Calibration phantom	2	For marker calibration
Cable	1	Medical power cable Only inside Japan
Cross recessed pan head screw (M3x6)	3	
Plain washer (W3)	3	
Spring washer (SW3)	3	
Fastener	3	
Cable tie	3	
Cable tie	2	
Clamp	6	
Terminal	18	
Terminal	18	
Fuse	1	
Fuse	1	
Fuse	1	
Screw	10	
Stand	1	Only inside Japan
MP falling prevention kit	1	Only inside Japan
Letter of guarantee/Report of completion of installation/Performance check list	1	Only inside Japan
Operation manual	1	DR-ID 1300, DR-ID 1300PU

■ SE (1305SE)

Item	Qty.	Remarks
SE	1	-
Machine-specific data	1	
Fuse	1	
Letter of guarantee/Report of completion of installation/Notes on the X-ray exposure/Performance check list	1	Only inside Japan

■ DR-ID 300CL

☞ **For details on the DR-ID 300CL, refer to the DR-ID 300CL Service Manual.**

■ Optional Items

● Connector cable for the X-ray

Name	Qty.	Remarks
X-Ray shot cable	1	9-core Cable length: 5 m Cable to connect between MP and X-ray equipment.
X-Ray shot cable	1	9-core Cable length: 15 m Cable to connect between MP and X-ray equipment.
X-Ray shot cable	1	3-core Cable length: 5 m High-current cable to connect between MP and X-ray equipment.
X-Ray shot cable	1	3-core Cable length: 15 m High-current cable to connect between MP and X-ray equipment.
Generator	1	MIKASA Generator-MP terminal block

● AC bucky relay unit

Item	Qty.	Remarks
AC bucky relay unit	1	For 100V
AC bucky relay unit	1	For 120V
AC bucky relay unit	1	For 200V
AC bucky relay unit	1	For 220V

● **IF box-related**

Name	Qty.	Remarks
I/F box	1	Used to synchronize exposure timing with accumulation start timing by means of a hand switch signal. (the Main Kit of Hand SW Interface BOX)
Hand switches (2button)	1	Exposure switch for use as connected with the I/F box.
I/F box cable_10m	1	Used to connect between the I/F box and the MP.
I/F box cable_15m	1	
I/F box cable_GE1	1	Used to connect between the I/F box and the X-ray equipment.
I/F box cable_GE2	1	
I/F box cable_Siemens	1	
I/F box cable_Shimadzu	1	
I/F box cable_Toshiba	1	
I/F box cable_DelMedical	1	
I/F box cable_CPI	1	
I/F box cable_Philips	1	
I/F box cable_110-3 wire	1	
I/F box cable_110-4 wire	1	

● **SE cable-related**

Name	Qty.	Remarks
SE cable	1	4m (Only for overseas)
SE cable	1	10m
SE cable	1	20m

● **Fixture**

Name	Qty.	Remarks
Anchor fixing bracket of MP	1	

6.2　Checking the Power Cable

⚠️ *WARNING*

Disconnect the power plug from the outlet before measuring a resistance value.

(1)　Connect the power cable to the MP, and set the power switch to the ON position.

(2)　Measure the resistance value of the power cable.

(Reference value)

Terminal	L to N	L to E	N to E
Resistance value	Over 100 kΩ	∞	∞

<For use in Japan>　<For use in USA>　<For use in Europe, etc>　<For use in UK, etc>

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(3)　Measure the resistance value between the E terminal of the power cable and the bottom of the machine frame, and make sure that there is continuity.

(4)　Set the main power switch to the OFF position after completion of the measurement.

6.3　Installing the Foot Cover or the Anchor Mounting Bracket (Optional)

Install the foot cover (when installing on the floor) or the anchor mounting bracket (when fixing the anchor :optional) before connecting the cables.

6.3.1　Installing the Foot Cover

(1)　Remove the MP bottom cover.

#1　Remove: T3x6 (x2)

FRONT

#1

Bottom cover

1200_700149.ai

(2)　Turn the height retaining brackets of the bottom cover over and reinstall them to the same position.

#1　Remove: T3x6 (x3)
#2　Turn over: height retaining brackets (x3)
#3　Tighten: T3x6 (x3)

#1　　Bottom cover

#3

#2

FRONT

1200_700150.ai

(3) Install the foot cover.

#1 Tighten: T3x6 (x4)

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(4) Reinstall the bottom cover.

#1 Tighten: T3x6 (x2)

1200_700152.ai

6.3.2 Installing the Anchor Mounting Bracket (Optional)

(1) Perform the procedures (1) to (2) in "6.3.1 Installing the Foot Cover".

☞ {IN1:6.3.1_Installing the Foot Cover}

(2) Install the anchor mounting bracket to the MP.

#1 Tighten: T3x6 (x4)

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(3) Install the bottom cover.

#1 Tighten: T3x6 (x2)

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6.4   Connecting the Cables

(1)   Route the SE cable (For stand and for bed) from the lower opening on the MP rear cover, and connect the cable connector and the protective ground wire.

#1   Route: SE cable and protective ground wire

#2   Connect: Cable connector (For stand: MPL5 and MPL7, for bed: MPL6 and MPL8)

#3   Tighten: N3x6, SW3, W3

#4   Clamp: Clamp

#5   Tighten: protective ground wire
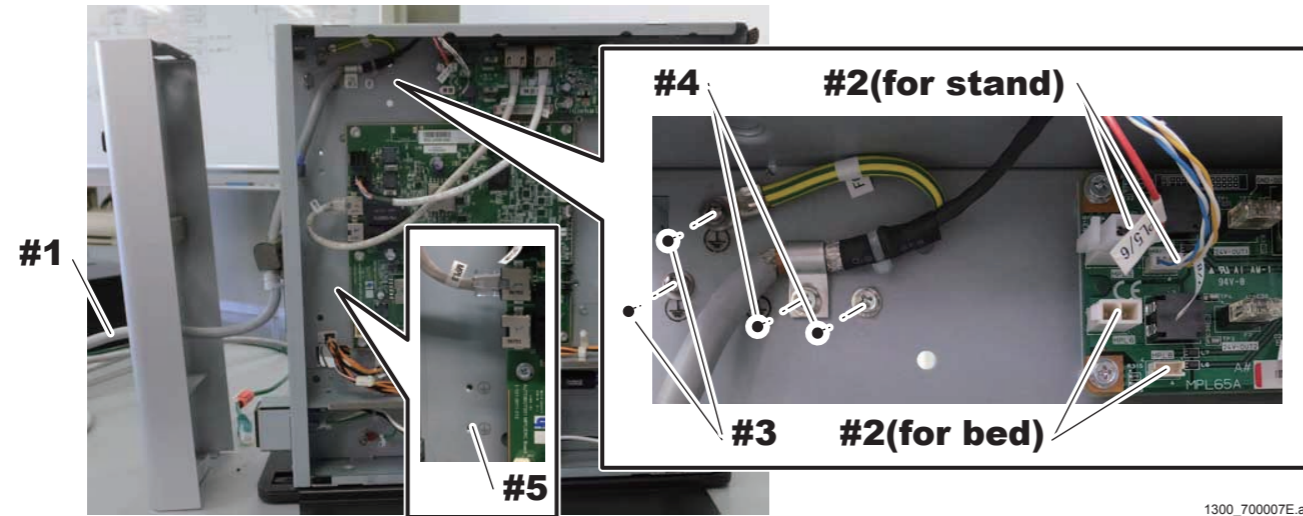
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◆ NOTE ◆

- *Connect the stand SE cable to the MPL5 and MPL7 cable connectors, and connect the bed SE cable to the MPL6 and MPL8 cable connectors.*
- *Firmly secure the #4 clamps. If they are not secured, there might be noise effects.*

(2)   Tighten the SE cable (MP-side) with the two cable ties that are passed through the clamp, and attach the ferrite core (FC1).

#1   Tighten: Cable tie (Panduit PLT1.5I: lateral direction, inside)

#2   Tighten: Cable tie (Panduit PLT1.5I: vertical direction, outside)

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◆ INSTRUCTION ◆

When tightening the cable tie, adjust the length of the cable tie as in the figure below. When measuring the length of the cable tie, set the steel rule up against the cable bundle tie and measure the length to the tip.

Cable tie (outside)
97 mm or more

Cable tie (inside)
105 mm or more

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(3) Route the LAN cables between the MP and DX Console from the lower opening on the MP rear cover and connect them.

#1   Route: LAN cable
#2   Connect: LAN cable connector (MPC4)

#2
MPC4

#1

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6.5 Connecting the X-Ray Shot Cable

⚠️ *WARNINGS*

● *Be sure to turn OFF the power supply of the X-ray high voltage generator to avoid electric shock hazards due to high voltage.*

● *The X-ray high voltage generator is a product of another manufacturer. Commit the cable connection to the service personnel of the X-ray equipment.*

How to connect the X-Ray shot cable depends on the grid oscillation mode.
Refer to the corresponding connection method.

● **Steady grid type**

The grid is fixed and does not oscillate.

☞ {IN1:6.5.1_Connecting the X-Ray Shot Cable (Steady Grid Type)}

● **Bucky contact type**

The grid is oscillated by the motor. When the relay contact is closed, the motor starts to drive.

☞ {IN1:6.5.2_Connecting the X-Ray Shot Cable (Bucky Contact Type)}

● **Bucky AC type**

The grid is pressed against the leaf spring, and the grid rebounds by means of reaction force of the spring. A solenoid is employed as a mechanical part against which the grid is pressed.
The AC bucky relay unit (optional) is required when the bucky AC type is to be connected.

☞ {IN1:6.5.3_Connecting the X-Ray Shot Cable (Bucky AC Type)}

6.5.1 Connecting the X-Ray Shot Cable (Steady Grid Type)

■ **Connection Diagram of the X-Ray High Voltage Generator (When a Single SE Is Connected)**

■ Signal Descriptions

● SHOT1 RDY1/$\overline{\text{RDY1}}$ (Input)

The signal is generated when only the first stage of the shot switch on the X-ray high voltage generator is pressed. (Prep signal)

● SHOT1 RDY2/$\overline{\text{RDY2}}$ (Input)

The signal is generated when the first and second stages of the shot switch on the X-ray high voltage generator are pressed. (RAD signal)

● SHOT1 GO A/B (Output)

The signal generates X-rays.
A relay type is normally open (NO).

■ Contact Capacity

The specifications of relays (K4, K5 and K6) are as follows.

● Relay model

AHN22005 (Panasonic Electric Works)

● Rated control capacity

Standard contact: 30 VDC

● Maximum switching current

1 A

■ Timing Chart

A: Preparation starts for SE exposures corresponding to the first stage of the switch when the shot switch (first stage) is turned ON.

B: Preparation starts for SE exposures corresponding to the second stage of the switch when the shot switch (second stage) is turned ON.

C: Charge accumulation of the SE (FPD) starts.

D: An exposure request signal is output, and X-ray exposure starts.

E: X-ray exposure ends.

F: Charge accumulation of the SE (FPD) ends.

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DR-ID 1300 / DR-ID 1300PU Service Manual

■ Procedures for Connecting the Cable

⚠ *CAUTION*

Measure the voltage between the cables connecting to the RDY1-$\overline{RDY1}$ and the RDY2-$\overline{RDY2}$ terminals before connecting the X-Ray shot cable, to make sure that a high voltage (100 VAC, for example) is not observed whichever technique of the X-ray high voltage generator is selected.
If the high voltage (such as 100 VAC) is observed in the cable voltage, contact a service personnel of the X-ray equipment for checking the connection.
If erroneous connection is made, the machine might get damaged. Exercise care.

◆ INSTRUCTION ◆

Always use a reusable band (clamp) included in the supplied accessories to retain the cable, as the band is a UL-standard component. The manufacturer and the part No. of the reusable band are mentioned below for your reference.
Manufacturer: Kitagawa Industries, Co. Ltd.
Name: Reusable band
Part No.: LWS-3S V0

(1) Insert the X-Ray shot cable (optional) from the upper opening on the MP rear cover.

#1 Insert: X-Ray shot cable (optional)

(2) Connect the cable terminals with the terminal block of the MPX54A board.

#1 Connect: Cable terminals

(3) Wrap a plastic tape around the unconnected (remaining) cable terminals.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1   Wrap: Plastic tape

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(4) Insert the second X-Ray shot cable (optional) from the upper opening on the MP rear cover.

◆ *NOTE* ◆

If the second cable is not present, the procedure is not necessary. Proceed to the procedure (7).

#1   Insert: X-Ray shot cable (optional)

FRONT

#1

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(5) Connect the cable terminals with the terminal block of the MPX54A board.

#1   Connect: Cable terminals

#1

MPX2   MPX1

1 5V2 ISO	1 5V1 ISO
2 SHOT2 RDY1	2 SHOT1 RDY1
3 SHOT2 $\overline{RDY1}$	3 SH
4 SHOT2 RDY2	4 SH
5 SHOT2 $\overline{RDY2}$	5 SH
6 SHOT2 GO A	6 SH
7 SHOT2 GO B	7 SH
8 BKY2 RDY1A	8 BKY1 RDY1A
9 BKY2 RDY1B	9 BKY1 RDY1B
10 BKY2 RDY2A	10 BKY1 RDY2A
11 BKY2 RDY2B	11 BKY1 RDY2B
12 NC2	12 NC1

600_700016.ai

(6) Wrap a plastic tape around the unconnected (remaining) cable terminals.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1   Wrap: Plastic tape

#1

600_700014.ai

(7) Tie the remaining cables and the X-ray shot cable(s) together, and retain with the reusable band (supplied accessory).

#1   Retain: Reusable band(s) (supplied accessory)

<When one X-Ray shot cable is used>

#1

FRONT

1200_700031.ai

<When two X-Ray shot cables are used>

#1

FRONT

1200_700032.ai

(8) **Wrap a plastic tape around the unconnected (remaining) cable terminals of the X-Ray shot cable, and tie them with the reusable band (supplied accessory).**

When two cables are used, wrap each of the cable terminals with the plastic tape.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1   Wrap: Plastic tape
#2   Tie: Cables
#3   Retain: Reusable band (supplied accessory)

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6.5.2 Connecting the X-Ray Shot Cable (Bucky Contact Type)

■ **Connection Diagram of the X-Ray High Voltage Generator (When a Single SE Is Connected)**

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■ Signal Descriptions

● SHOT1 RDY1/$\overline{\text{RDY1}}$ (Input)

The signal is generated when only the first stage of the shot switch on the X-ray high voltage generator is pressed. (Prep signal)

● SHOT1 RDY2/$\overline{\text{RDY2}}$ (Input)

The signal is generated when the first and second stages of the shot switch on the X-ray high voltage generator are pressed. (RAD signal)

● BKY1 RDY1 A/B (Output)

The signal prepares for the bucky operation.
A relay type is normally open (NO).

● BKY1 RDY2 A/B (Output)

The signal operates the bucky upon completion of the preparation for the SE exposure.
A relay type is normally open (NO).

■ Contact Capacity

The specifications of relays (K4, K5 and K6) are as follows.

● Relay model

AHN22005 (Panasonic Electric Works)

● Rated control capacity

Standard contact: 30 VDC

● Maximum switching current

1 A

■ Timing Chart

A: The signal for preparing for the bucky operation is output, and preparation starts for SE exposures corresponding to the first stage of the switch when the shot switch (first stage) is turned ON.

B: Preparation starts for SE exposures corresponding to the second stage of the switch when the shot switch (second stage) is turned ON.

C: The signal for operating the bucky is output upon completion of the preparation for the SE (FPD) exposure.

D: An exposure request signal is output after a predetermined time elapses since the bucky operation starts, and X-ray exposure starts.

E: X-ray exposure ends.

F: Charge accumulation of the SE (FPD) ends.

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■ Procedures for Connecting the Cable

⚠ *CAUTION*

Measure the voltage between the cables connecting to the RDY1-RDY1 and the RDY2-RDY2 terminals before connecting the X-Ray shot cable, to make sure that a high voltage (100 VAC, for example) is not observed whichever technique of the X-ray high voltage generator is selected.

If the high voltage (such as 100 VAC) is observed in the cable voltage, contact a service personnel of the X-ray equipment for checking the connection.

If erroneous connection is made, the machine might get damaged. Exercise care.

◆ *INSTRUCTION* ◆

Always use a reusable band (clamp) included in the supplied accessories to retain the cable, as the band is a UL-standard component. The manufacturer and the part No. of the reusable band are mentioned below for your reference.

Manufacturer:	*Kitagawa Industries, Co. Ltd.*
Name:	*Reusable band*
Part No.:	*LWS-3S V0*

◆ *NOTE* ◆

Abut the cable terminals as shown below when fastening them together.

(1) Insert the X-Ray shot cable (optional) and the bucky cable from the upper opening on the MP rear cover.

#1 Insert: X-Ray shot cable (optional) and the bucky cable

(2) Connect the cable terminals with the terminal block of the MPX54A board.

#1   Connect: Cable terminals

600_700026.ai

(3) Wrap a plastic tape around the unconnected (remaining) cable terminals.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1   Wrap: Plastic tape

600_700014.ai

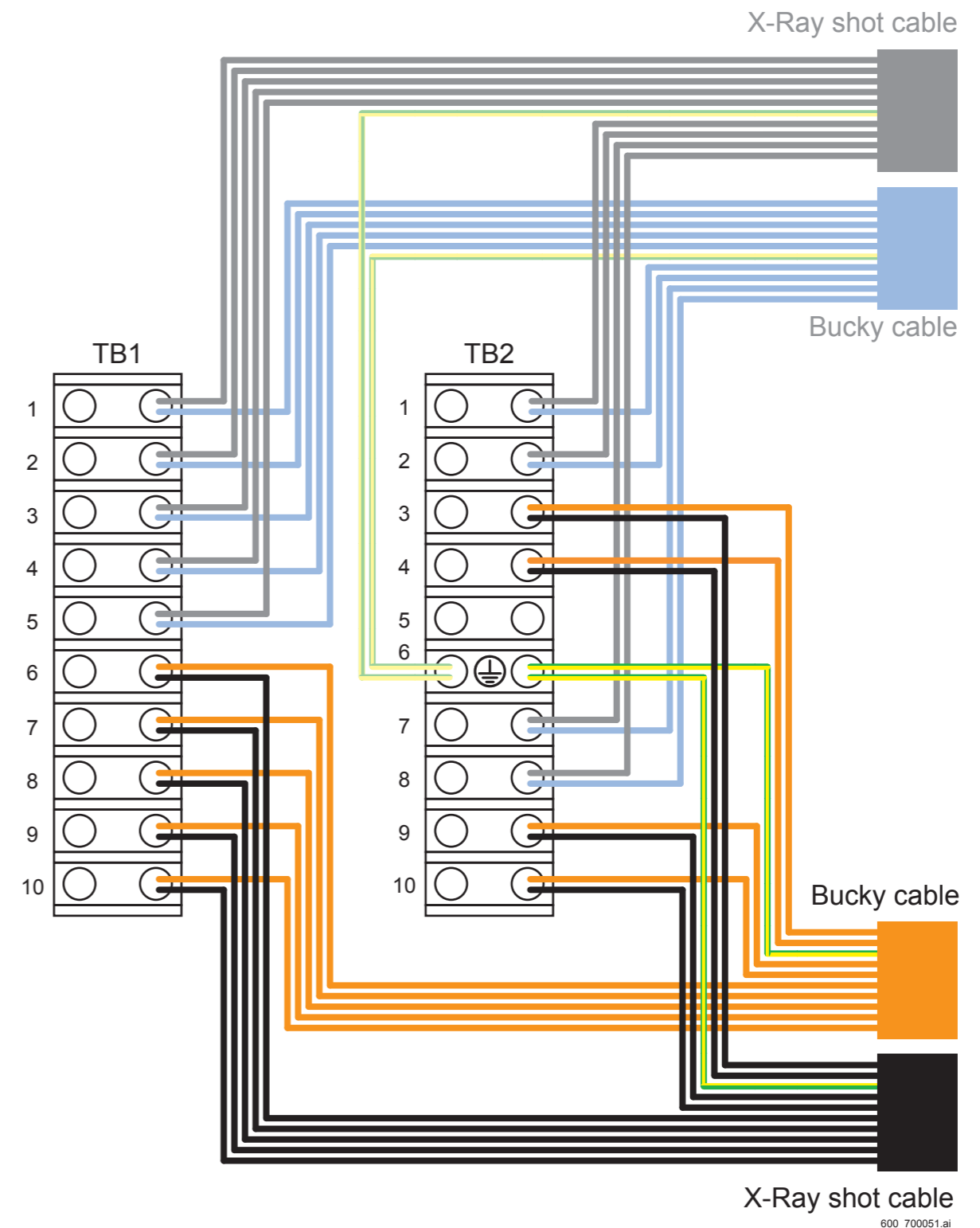**(4) Insert the second X-Ray shot cable (optional) and the bucky cable from the upper opening on the MP rear cover.**

◆ *NOTE* ◆

If the second cable and the bucky cable are not present, the procedure is not necessary. Proceed to the procedure (7).
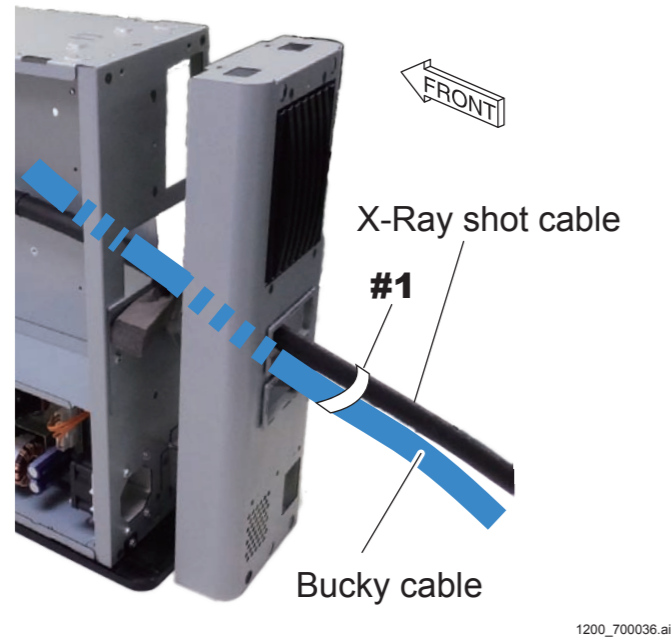
#1   Insert: X-Ray shot cable (optional) and the bucky cable

1200_700035.ai

(5) Connect the cable terminals with the terminal block of the MPX54A board.

#1　Connect: Cable terminals

MPX2　　　　**#1**　MPX1　　　　　　X-Ray shot cable

1 5V2 ISO	1 5V1 ISO
2 SHOT2 RDY1	2 SHOT1 RDY1
3 SHOT2 RDY1	3 SHO
4 SHOT2 RDY2	4 SHO
5 SHOT2 RDY2	5 SHO
6 SHOT2 GO A	
7 SHOT2 GO B	7 SHOT1 GO B
8 BKY2 RDY1A	8 BKY
9 BKY2 RDY1B	9 BK
10 BKY2 RDY2A	10 BK
11 BKY2 RDY2B	BK
12 NC2	NC

#1

Bucky cable

600_700028.ai

(6) Wrap a plastic tape around the unconnected (remaining) cable terminals.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1　Wrap: Plastic tape

#1　　600_700014.ai

(7) Tie the remaining cables and the X-Ray shot cable(s) together, and retain with the reusable band(s) (supplied accessory).

#1 Retain: Reusable band(s) (supplied accessory)

<When one X-Ray shot cable and one bucky cable are used>

#1

Bucky cable

1200_700145.ai

<When two X-Ray shot cables and two bucky cables are used>

#1
X-Ray shot cables

#2
Bucky cables

FRONT

1200_700146.ai

(8) Retain the X-Ray shot cable(s) and the bucky cable(s) on the MP rear.

#1 Retain: Reusable band (supplied accessory)

<When one X-Ray shot cable and one bucky cable are used>

FRONT

X-Ray shot cable

#1

Bucky cable

1200_700036.ai

<When two X-Ray shot cables and two bucky cables are used>

X-Ray shot cables

#1

Bucky cables

FRONT

1200_700037.ai

(9) Wrap a plastic tape around the unconnected (remaining) cable terminals of the X-Ray shot cable, and tie them with the reusable band (supplied accessory).

When two cables are used, wrap each of the cable terminals with the plastic tape.

◆ NOTE ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1 Wrap: Plastic tape
#2 Tie: Cables
#3 Retain: Reusable band (supplied accessory)

1200_700033.ai

6.5.3 Connecting the X-Ray Shot Cable (Bucky AC Type)

◇ *REFERENCE* ◇

The relay incorporated in the AC bucky relay unit needs to be replaced periodically.
Refer to the following for the replacement interval and the replacement procedures.
- Replacement interval

☞ *{PM:1.3_Preventive Maintenance Program List}*

- Replacement procedures

☞ *{MC:2.11_AC Bucky Relay Unit (Optional)}*

■ Connection Diagram of the X-Ray High Voltage Generator (When a Single SE Is Connected)

600_700033.ai

■ Signal Descriptions

● SHOT1 RDY1 L/N (Input)

The signal is generated when only the first stage of the shot switch on the X-ray high voltage generator is pressed. (Prep signal)

● SHOT1 RDY2 L/N (Input)

The signal is generated when the first and second stages of the shot switch on the X-ray high voltage generator are pressed. (RAD signal)

● BKY1 RDY2 L (Output)

The signal operates the bucky upon completion of the preparation for the SE exposure.
A relay type is normally open (NO).

■ Contact Capacity

The specifications of relays (K1, K2 and K3) are as follows.

● Relay model and rated control capacity

- AHN210 (Panasonic Electric Works)

Coil voltage	Rated excitation current
AHN210X0:	100/110 VAC 9.0/13.0 mA
AHN210X1:	110/120 VAC 8.2/11.8 mA
AHN210Y0:	200/220 VAC 4.5/6.5 mA
AHN210Y2:	220/240 VAC 4.1/5.9 mA

- AHN12205 (Panasonic Electric Works)
Standard contact: 250 VAC and 30 VDC

● Maximum switching current

1 A

■ Timing Chart

A: Preparation starts for SE exposures corresponding to the first stage of the switch when the shot switch (first stage) is turned ON.

B: Preparation starts for SE exposures corresponding to the second stage of the switch when the shot switch (second stage) is turned ON.

C: The signal for operating the bucky is output upon completion of the preparation for the SE (FPD) exposure.

D: An exposure request signal is output after a predetermined time elapses since the bucky operation starts, and X-ray exposure starts.

E: X-ray exposure ends.

F: Charge accumulation of the SE (FPD) ends.

600_700034.ai

■ Mounting the AC Bucky Relay Unit (Optional)

◆ NOTE ◆

Abut the cable terminals as shown below when fastening them together.

(1) Mount the AC bucky relay unit (optional) on the MP.

#1 Tighten: TP3x6 (x4)

(2) Connect the cable terminals with the terminal block of the MPX54A board.

#1 Connect: Cable terminals

*: Short cable (supplied accessory)

■ Procedures for Connecting the Cable

⚠ *CAUTION*

Measure the voltage between the cables connecting to the RDY1-$\overline{RDY1}$ and the RDY2-$\overline{RDY2}$ terminals in all techniques before connecting the X-Ray shot cables. Check to make sure that the measured voltage conforms to the coil voltages (100/110 VAC, 110/120 VAC, 200/220 VAC and 220/240 VAC) of the relay to be used.

If the voltage between cables differs from the coil voltage of the relay, commission the service personnel of the X-ray equipment to check the cable connection.

If erroneous connection is made, the machine might get damaged. Exercise care.

⚠ *CAUTION*

Use the cable and the terminal as specified below when connecting the X-Ray shot cable and the bucky cable. When crimping the terminal, use the crimp nippers as indicated below. If the following specifications of the cable and the terminal are not observed, the machine might get damaged.

- *Cable: AWG18 to 22 thick*
- *Terminal: FV1.25-M4 (J.S.T. Connector)*
- *Crimp nippers: Manufactured by IZUMI; A125*

◆ *INSTRUCTION* ◆

Always use a reusable band (clamp) included in the supplied accessories to retain the cable, as the band is a UL-standard component. The manufacturer and the part No. of the reusable band are mentioned below for your reference.
Manufacturer: Kitagawa Industries, Co. Ltd.
Name: Reusable band
Part No.:   LWS-3S V0

◆ *NOTE* ◆

Abut the cable terminals as shown below when fastening them together.

(1) Remove the terminal block covers of the AC bucky relay unit.

#1   Remove: B3x6 (x4)

AC bucky relay unit   **#1**

Covers

1200_700148.ai

(2) Insert the X-Ray shot cable (optional) and the bucky cable from the upper opening on the MP rear cover.

#1   Insert: X-Ray shot cable (optional) and the bucky cable

FRONT

X-Ray shot cable

MP

Bucky cable

1200_700038.ai

(3) Connect the cable terminals to the terminal blocks (TB1 and TB2) of the AC bucky relay unit.

⚠ *WARNING*

Be sure to connect the X-Ray shot cable and the FG line of the bucky cable to the FG (TB2-6) of the terminal block. If the FG line is fixed to the MP frame or the like, electrification or ignition might result due to difference in ground levels.

◆ NOTE ◆

If two X-Ray shot cables and two bucky cables are to be connected, make connection of the first cable to the terminal indicated in a white cell and the second cable to the terminal indicated in a shaded cell shown in the table below. The method of connecting the second cable is described in the procedure (4).

No.	TB1		TB2	
	X-Ray shot cable	Bucky cable	X-Ray shot cable	Bucky cable
1	X-Con BKY	SHOT1 RDY1 (L)	X-Con BKY	Stand AC (L)
2	X-Con BKY	SHOT1 RDY1 (N)	X-Con BKY	Stand AC (N)
3	X-Con	SHOT1 RDY2 (L)	X-Con BKY	Bed AC (L)
4	X-Con BKY	SHOT1 RDY2 (N)	X-Con BKY	Bed AC (N)
5	BKY	SHOT1 RDY2 (L)	N.C.	N.C.
6	X-Con BKY	SHOT2 RDY1 (L)	X-Con BKY	Stand FG
			X-Con BKY	Bed FG
7	X-Con BKY	SHOT2 RDY1 (N)	X-Con BKY	Stand Exp A
8	X-Con	SHOT2 RDY2 (L)	X-Con BKY	Stand Exp B
9	X-Con BKY	SHOT2 RDY2 (N)	X-Con BKY	Bed Exp A
10	BKY	SHOT2 RDY2 (L)	X-Con BKY	Bed Exp B

600_700050.ai

(4) Insert the second X-Ray shot cable (optional) and the bucky cable from the MP rear, and connect the cable terminals with the terminal blocks (TB1 and TB2) of the AC bucky relay unit.

⚠ *WARNING*

Be sure to connect the X-Ray shot cable and the FG line of the bucky cable to the FG (TB2-6) of the terminal block. If the FG line is fixed to the MP frame or the like, electrification or ignition might result due to difference in ground levels.

◆ *NOTE* ◆

If the second X-Ray shot cable and the second bucky cable are not present, the procedure is not necessary. Proceed to the procedure (5).

◆ *NOTE* ◆

The terminals to be connected with the second X-Ray shot cable and the second bucky cable are indicated in white cells in the table below.

No.	TB1		TB2	
	X-Ray shot cable	Bucky cable	X-Ray shot cable	Bucky cable
1	X-Con BKY	SHOT1 RDY1 (L)	X-Con BKY	Stand AC (L)
2	X-Con BKY	SHOT1 RDY1 (N)	X-Con BKY	Stand AC (N)
3	X-Con	SHOT1 RDY2 (L)	X-Con BKY	Bed AC (L)
4	X-Con BKY	SHOT1 RDY2 (N)	X-Con BKY	Bed AC (N)
5	BKY	SHOT1 RDY2 (L)	N.C.	N.C.
6	X-Con BKY	SHOT2 RDY1 (L)	X-Con BKY	Stand FG
			X-Con BKY	Bed FG
7	X-Con BKY	SHOT2 RDY1 (N)	X-Con BKY	Stand Exp A
8	X-Con	SHOT2 RDY2 (L)	X-Con BKY	Stand Exp B
9	X-Con BKY	SHOT2 RDY2 (N)	X-Con BKY	Bed Exp A
10	BKY	SHOT2 RDY2 (L)	X-Con BKY	Bed Exp B

(5) **Put on the terminal block covers.**

(6) **Retain the X-Ray shot cable(s) and the bucky cable(s) on the MP rear.**

#1 Retain: Reusable band (supplied accessory)

<When one X-Ray shot cable and one bucky cable are used>

X-Ray shot cable

#1

Bucky cable

1200_700036.ai

<When two X-Ray shot cables and two bucky cables are used>

X-Ray shot cables

#1

Bucky cables

FRONT

1200_700037.ai

6.6　Binding and Checking the Cables

⚠ *CAUTION*

Exercise care not to stumble over the bundle of cables during installation. Furthermore, after doing the wiring, be careful to lay out the cables so that no one trips over all of them.

(1) **Make sure that the X-Ray shot cable(s) and the bucky cable(s) are bound together.**

(2) **Bind the LAN cables together.**

FRONT

LAN cable (between MP and MC)　　X-Ray shot cable(s)
LAN cable (between MP and AP)　　and the bucky cable(s)

1200_700039.ai

6.7 Reinstalling the Covers

(1) Reinstall the MP front cover, the rear cover and the top cover.

Reverse the removal procedures for reinstallation.

6.8 Fixing the Anchor (Optional)

(1) Make two marks on the floor by an oil-based marker or a center punch.

(2) Drill a hole on the two positions marked on the floor by the oil-based pen, the center punch or the like.

◆ INSTRUCTIONS ◆

- *Use a drill that is suitable for floor hole drilling.*
- *When drilling the anchor holes, take dust-preventive measures by a vacuum cleaner or the like. If no vacuum cleaner is available, protect the machine against dust by covering it with a plastic sheet.*
- *The anchor which is to be used when fixing is as per the following. In step 6, adjust the depth of the hole so that the anchor is less than 14mm.*
  Part No.: SANKO TECHNO C-645
  Anchor diameter: 6 mm, Pilot hole size: 6.4 mm, Length: 45 mm

(3) With a vacuum cleaner or like device, remove concrete chips and dust from the drilled holes.

(4) Embed the anchors in the holes.

#1 Embed: Anchors (x2)

◆ INSTRUCTION ◆

Remove the cuttings that are stuck in the holes.

◆ NOTE ◆

The anchors corresponding to the anchor nut size should be prepared.

1200_700007.ai

(5) Put the protruded section of the anchor through the fixing hole of the bracket, and then place the bracket.

1200_700157.ai

(6) Fix the bracket using anchor nuts.
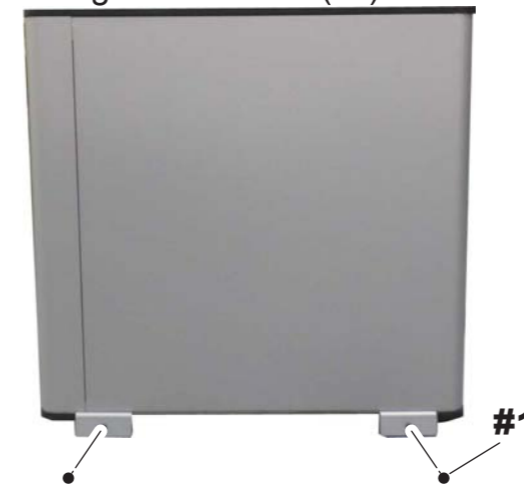
#1 Fix: Anchor nuts (x2)

Less than 14mm

1200_700158.ai

(7) Place the MP with fixing bracket on the anchor-fixed bracket, and then fix the MP at two locations on the front and the rear.

#1 Tighten: Screws (x4)

1200_700155.ai

7. Installing the SE

⚠️ *CAUTIONS*

- *Do not connect the SE to the power supply unit other than the MP or the DS. Otherwise, the connector might get damaged.*
- *Exercise care not to drop the connector when connecting/disconnecting the SE cable (SE-side). The connector might get damaged.*
- *Make sure that the MP power or the DS power is turned OFF before connecting/disconnecting the SE cable (SE-side).*

◇ *REFERENCE* ◇

The SE power is configured to be automatically turned OFF if an unregistered SE is connected. A new SE needs to be registered before connecting it.

■ **Installation Procedures**

(1) **Connect the protective ground wire and the SE cable to the SE.**

#1 Tighten: protective ground wire
#2 Connect: Cable connector

1300_600001E.ai

(2) **Turn ON the power of the MP.**

8. Mounting the NIC Board to the DX Console

8.1 Mounting the NIC Board

⚠️ *CAUTION*

When connecting or disconnecting the cable connector, wear an antistatic wrist band to ground the human body. Otherwise, static electricity charged in the human body might damage electronic components.

(1) **Turn OFF the power and disconnect all of the cables.**

(2) **Remove the cover.**
   #1 Pull: Lever
   #2 Remove: Cover

600_700102.ai

(3) **Pull up the latch, and remove the slot bracket.**

◆ *INSTRUCTION* ◆

Remove the slot bracket as indicated in the figure below.

#1 Pull up: Latch
#2 Remove: Slot bracket

600_700103.ai

(4) **Mount the network interface board.**

(5) **Lower the latch, and fix the network interface board.**

600_700104.ai

(6) **Put on the cover removed in the procedure (2).**

Reverse the removal procedures for reinstallation.

8.2   Connecting the Network Cables

(1)   Connect the LAN cable between the MP and the DX Console to the DX Console.

#1   Connect: LAN cable (between the MP and the DX Console)

DX Console

MP

#1#2

1200_700104.ai

■ Network Configuration

● **In case of one DR-ID 1305SE configuration**

Hospital Network

DR-ID 1305SE

192.168.0.90 (TOP)
192.168.0.91 (CENTER)
192.168.0.92 (BOTTOM)

DR-ID 1300MP

192.168.0.20

172.16.1.20
(Eth0)

Console Advance
(DR-ID 300CL)
[DR-ID 1200MC]

192.168.0.10
(Eth1)

━━━ LAN cable

━━━ DR-ID1300 SE cable

1300_700059E.ai

◆ *NOTE* ◆

In case of one DR-ID 1305SE configuration, connect the SE cable to MPL5 connector and MPL7 connector of the MPL65A board into the MP.

● **In case of two DR-ID 1305SE configuration**

192.168.0.93 (TOP)
192.168.0.94 (CENTER)
192.168.0.95 (BOTTOM)

Hospital Network

DR-ID 1305SE

DR-ID 1305SE

192.168.0.90 (TOP)
192.168.0.91 (CENTER)
192.168.0.92 (BOTTOM)

DR-ID 1300MP

192.168.0.20

172.16.1.20
(Eth0)

Console Advance
(DR-ID 300CL)
[DR-ID 1200MC]

192.168.0.10
(Eth1)

━━━ LAN Cable

━━━ DR-ID1300 SE Cable

1300_700060E.ai

● **In case of the configuration connecting between the DR-ID 1305SE and DR-ID 1201SE/1202SE/1211SE/1212SE**

Hospital Network

192.168.0.25

AP

192.168.0.30~192.168.0.34 (Wired)
192.168.0.40~192.168.0.44 (Wireless)

DR-ID 1201SE/1202SE/
1211SE/1212SE

192.168.0.55

DR-ID 1200DS

DR-ID 1201SE/1202SE/
1211SE/1212SE

192.168.0.21

DR-ID 1201SE/1202SE/
1211SE/1212SE

DR-ID 1200MP

HUB

172.16.1.20
(Eth0)

Console Advance
(DR-ID 300CL)
[DR-ID 1200MC]

192.168.0.10
(Eth1)

192.168.0.93 (TOP)
192.168.0.94 (CENTER)
192.168.0.95 (BOTTOM)

192.168.0.20

DR-ID 1305SE

DR-ID 1300MP

DR-ID 1305SE

192.168.0.90 (TOP)
192.168.0.91 (CENTER)
192.168.0.92 (BOTTOM)

━━━ LAN cable

━━━ DR-ID1300 SE cable

━━━ DR-ID1200 SE cable

1300_700058E.ai

9. Installing the DX Console

■ Installing the DX Console

☞ **Refer to the DR-ID 300CL Service Manual.**

◆ *NOTE* ◆

Be sure to make [Device Color] set in [IIP Service Utility] – [Device Setting] coincide with the color of the color labels (machine identification label) applied to the SE.

■ Wake on LAN

The machine is equipped with the Wake on LAN function which automatically boots up upon startup of the CL.
Refer to the DR-ID 300CL Service Manual for the setting method.

☞ **Refer to the DR-ID 300CL Service Manual.**

◇ *REFERENCE* ◇

The MAC address of the MC is required during the setting operation on the CL. The MAC address of the MC appears by selecting "Network Address" in the "MUTL".

10. Installing the RU Software

◆ *NOTE* ◆

- *Install the RU software programs after the DX Console setting is complete.*
- *The IP addresses used in the local network of the system are as follows.*

Item	IP address
1300MC	192.168.0.10
MP1	192.168.0.20
1305SE1 (TOP)	192.168.0.90
1305SE1 (CENTER)	192.168.0.91
1305SE1 (BOTTOM)	192.168.0.92
1305SE2 (TOP)	192.168.0.93
1305SE2 (CENTER)	192.168.0.94
1305SE2 (BOTTOM)	192.168.0.95

- *The IP address of the local network can be changed. However, exercise care not to cause the IP addresses to duplicate.*

■ Flow of the Installation Procedures of the RU Software

```
              START

  □  10.1 Network Settings

  □  10.2 Installing the MC Application/DR Maintenance Software

  □  10.3 Starting up the DR Maintenance Software

  □  10.4 Preparation before Setting DR Device

  □  10.5 Updating MP Application Software Version

  □  10.6 Changing the IP Address for Using Two MPs

  □  10.7 Configuration Settings

  □  10.8 Setting the DX Console

  □  10.9 Setting the Serial ID of the GL Panel

  □  10.10 Setting the IP Address of the SE

  □  10.11 Updating SE Application Software Version

  □  10.12 Installing the Machine-Specific Data

  □  10.13 Changing the IP Address of the SE/MP/MC and the FTP Server

              END
```

10.1 Network Settings

■ Installing the NIC

(1) **Installing the network interface board in the CSL-PC.**

☞ {IN1:8._Mounting the NIC board to the DX Console}

■ Setting the NIC

(1) **Right-click the ⊞ button, and select "Control Panel".**

#1 Right-click: ⊞ menu

#2 Select: [Control Panel]
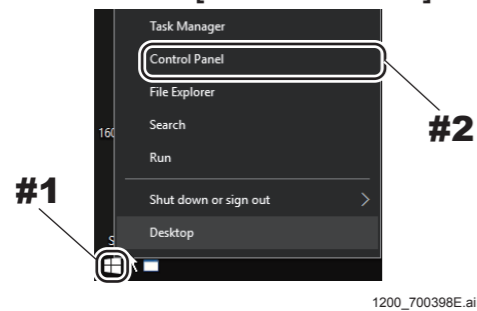
1200_700398E.ai

The All Control Panel Items window opens.

(2) **Click [Network and Sharing Center].**

The Network and Sharing Center window opens.

#1 Click: [Network and Sharing Center]

1200_700399E.ai

(3) **Click [Change adapter settings].**

The Network Connections window opens.

#1 Click: [Change adapter settings]

1200_700400E.ai
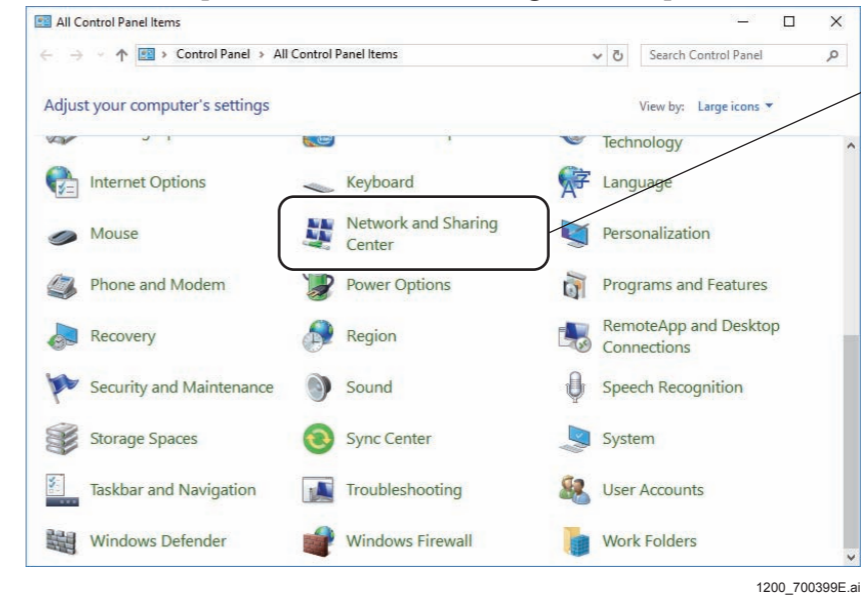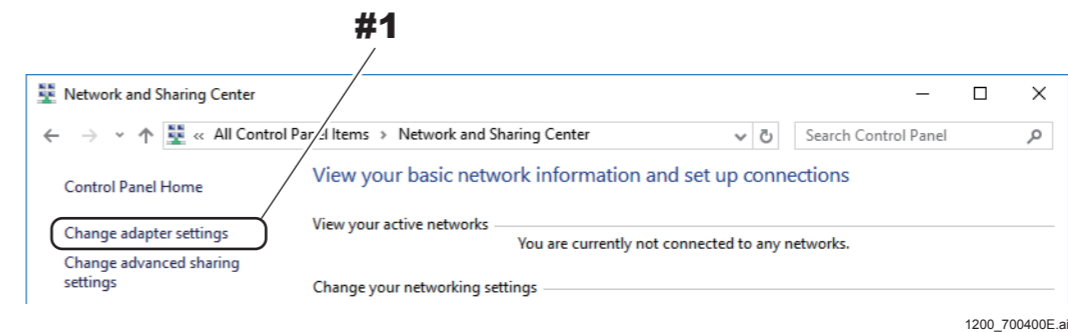
(4) Rename "Ethernet" to "Eth0", and "Ethernet 2" to "Eth1".

◆ *NOTE* ◆

Be sure to rename the Eth0/Eth1.
Otherwise, errors may occur, for example, software update.

#1 Rename: "Ethernet" to "Eth0"
#2 Rename: "Ethernet 2" to "Eth1"
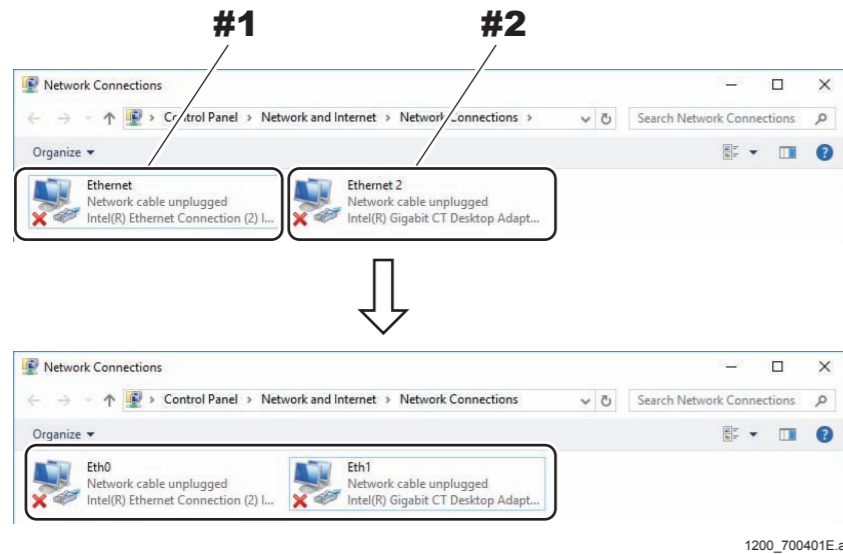
1200_700401E.ai

(5) Select "Eth1", and then select [Properties] from the right-click menu.
The Network Properties dialog opens.

(6) Select "Internet Protocol Version 4 (TCP/IPv4)" and click [Properties].
The Internet Protocol Version 4 (TCP/IPv4) Properties dialog opens.
#1 Select: Internet Protocol Version 4 (TCP/IPv4)
#2 Click: [Properties]

1200_700402E.ai

(7) Click the [Use the following IP address:] radio button, and then input the IP address below.
- IP address: 192.168.0.10
- Subnet mask: 255.255.255.0
#1 Select: Use the following IP address
#2 Input: IP address, Subnet mask

1200_700403E.ai

■ Enable Telnet Client

(1) Click [Programs and Features].

The Programs and Features window opens.

#1 Click: [Programs and Features]

1200_700408E.ai

(2) Click [Turn Windows features on or off].

The Windows Features window opens.

#1 Click: [Turn Windows features on or off]

1200_700409E.ai

(3) Place a checkmark to "Telnet Client", then click [OK].

Return to the Programs and Features window.

#1 Check ON: "Telnet Client"

#2 Click: [OK]

1200_700410E.ai

◇ *REFERENCE* ◇

For Windows 7, place a checkmark to the check-box of "Telnet Server".

■ **Setting the Firewall**

(1) Right-click the ▦ button, and select "Control Panel".

#1 Right-click: ▦ button

#2 Select: [Control Panel]

1200_700398E.ai
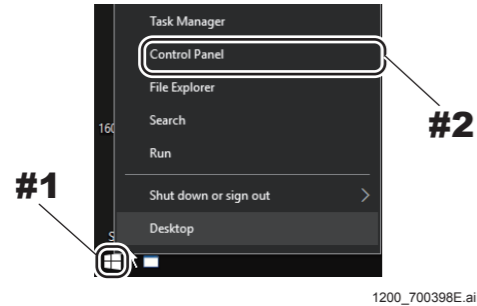
The All Control Panel Items window opens.

(2) Click [Windows Firewall].

The Windows Firewall window opens.

(3) Select [Advanced settings].

The Windows Firewall with Advanced Security window opens.

#1 Select: Advanced settings

1200_700473E.ai

(4) Select [Inbound Rules].

#1 Select: Inbound Rules

1200_700474E.ai
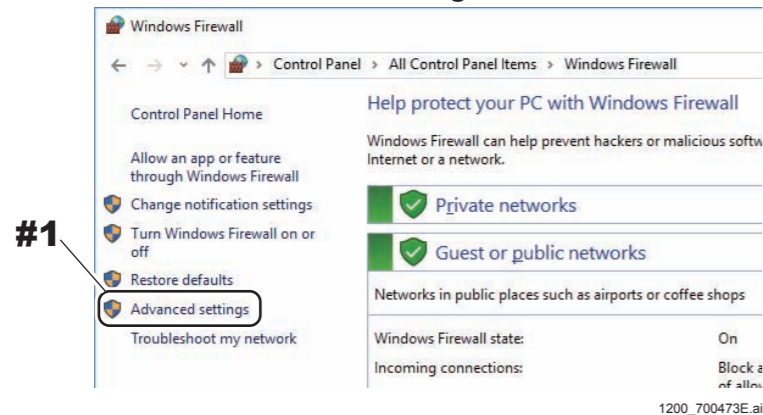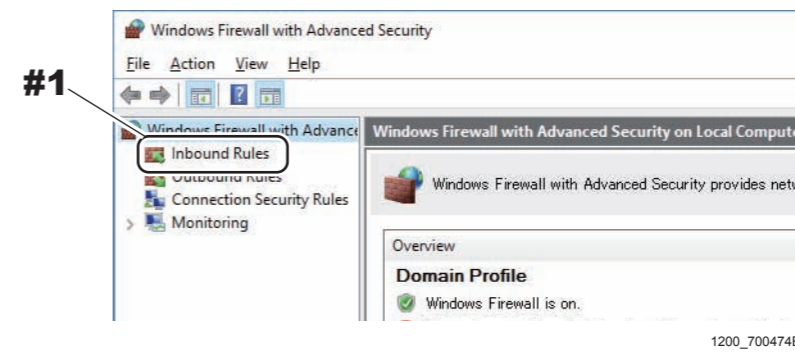
(5) Right-click [FTP Server Passive (FTP Passive Traffic-In)] and select "Enable Rule".

The "Enabled" of [FTP Server Passive (FTP Passive Traffic-In)] changes to "Yes".

#1 Right-click: FTP Server Passive (FTP Passive Traffic-In)

#2 Click: Enable Rule

1200_70047SE.ai
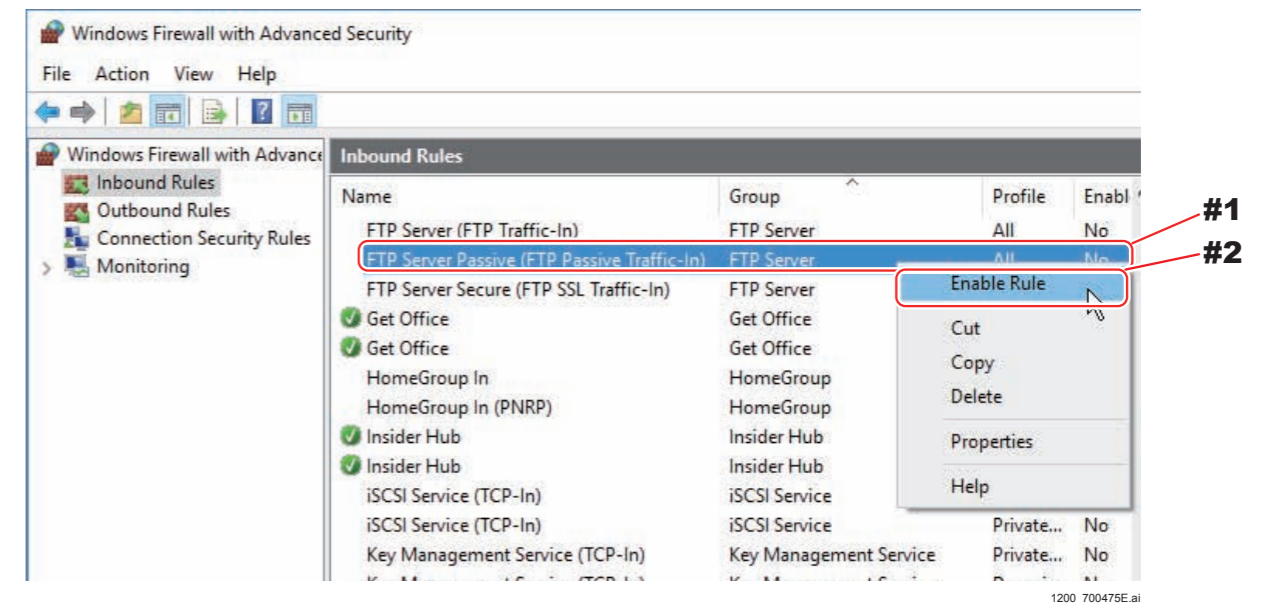
(6) Select [Exit] from [File] menu.

The system returns to the Windows Firewall window.
#1   Click: [File] menu
#2   Click: Exit
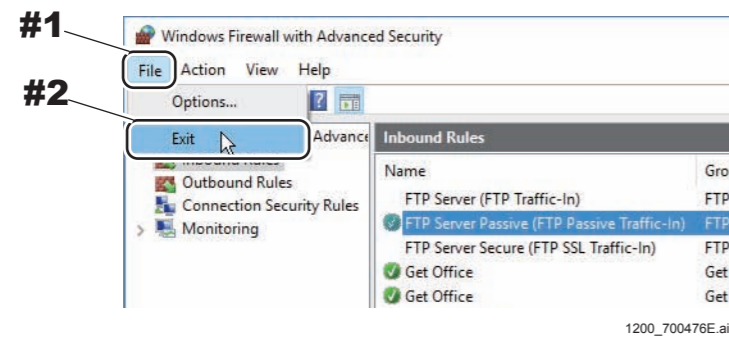
(7) Close the Windows Firewall window.

The system returns to the desktop screen.

10.2 Installing the MC Application/DR Maintenance Software

■ Installing the RU PC-TOOL

(1) Turn ON the power of the machine.

◆ INSTRUCTION ◆

When the CSL-PC power is turned ON for the first time, do so after one of two SE's, if connected, is removed.
This is because the default IP address (IP address when shipped out from the factory) which is registered in the SE is the same (192.168.0.30) for all SE's.
If two SE's are connected therefore, the SE cannot be identified due to the duplicate address, resulting in an error.

◇ REFERENCES ◇

If the Wake on LAN setting is not completed, turn ON the power in the following order:
(1) Turn ON the MP power.
(2) Turn ON the CSL-PC power.

(2) Within a period of 3 seconds after the initial window opens, sequentially click the upper left and upper right corners of the window.

The "IIP Service Utility" window opens.
Click the upper left corner and then the upper right corner.

FUJIFILM

DXL04010001.ai

(3) Insert the install disk into the DVD drive of the CSL-PC.

Upon inserting the install disk into the DVD drive, the "Set Up PC-TOOL" window automatically starts.

(4) Click [INSTALL].

A window for selecting the installation location opens.
#1 Click: [INSTALL]

Set Up PC-TOOL window

Set Up PC-TOOL Ver. 6.00

---MAINTENANCE TOOLS---

PC-TOOL

START

UNINSTALL   INSTALL   #1

FILE EXECUTION

EXECUTE

CL

UPDATE (RU MESSAGE)

EXIT

Installation selection window

RU PC-TOOL

○ For FTP-Server
○ For Client PC

CANCEL   SET

1200_700412.ai

(5) Check that the installation location is "For FTP-Server", and click [SET].

RU PC-TOOL Setup start window (wizard window) opens.
#1 Verify: For FTP-Server
#2 Click: [SET]

Installation selection window

RU PC-TOOL

#1 — ○ For FTP-Server
○ For Client PC

CANCEL   SET   #2

RU PC-TOOL Setup start window (wizard window)

RU PC-TOOL - InstallShield Wizard

Preparing to Install...

RU PC-TOOL Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.

Configuring Windows Installer

Cancel
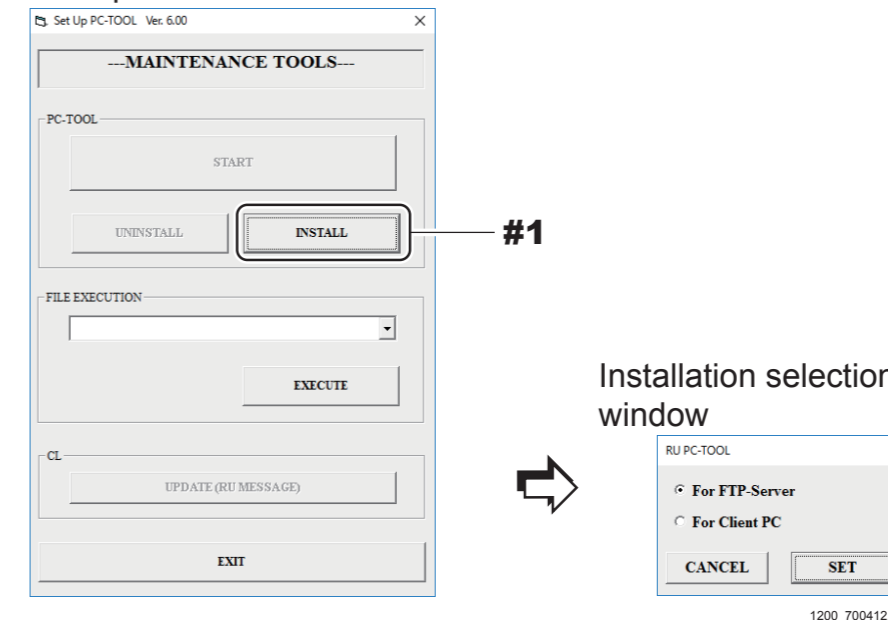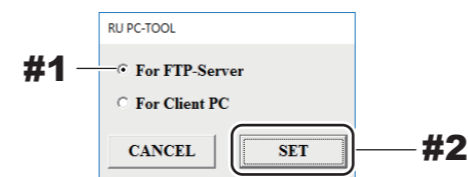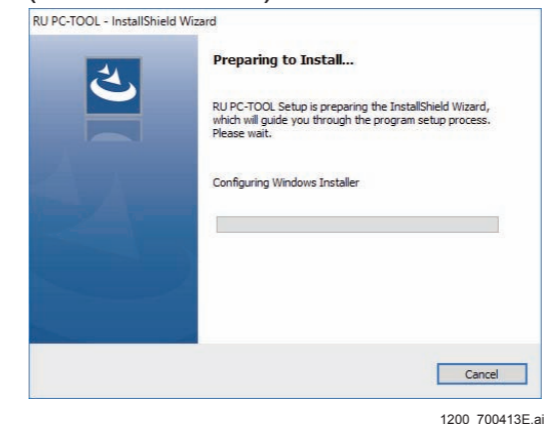
1200_700413E.ai

(6) Click [Next].

#1   Click: [Next]

1200_700414.ai
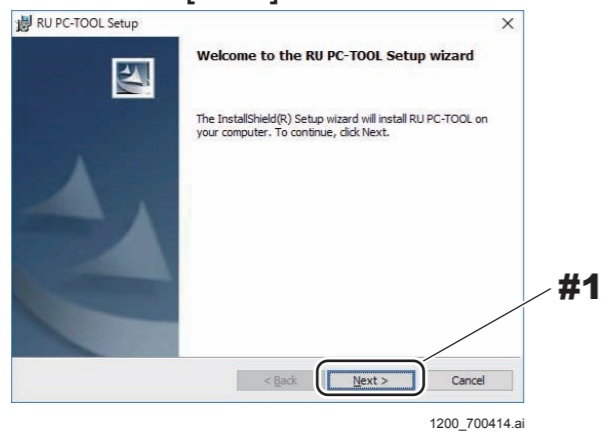
The window opens, prompting to start the installation (wizard window).

(7) Click [Install] and start installation.

#1   Click: [Install]
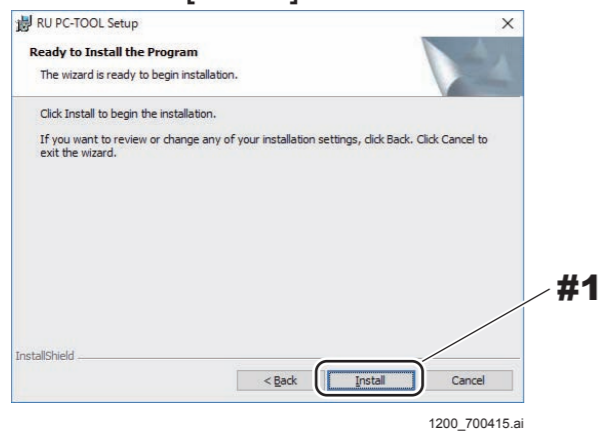
1200_700415.ai

Upon completion of the installation, the RU PC-TOOL Set Up window (wizard window) opens.

(8) Click [Finish].

#1   Click: [Finish]

1200_700416.ai
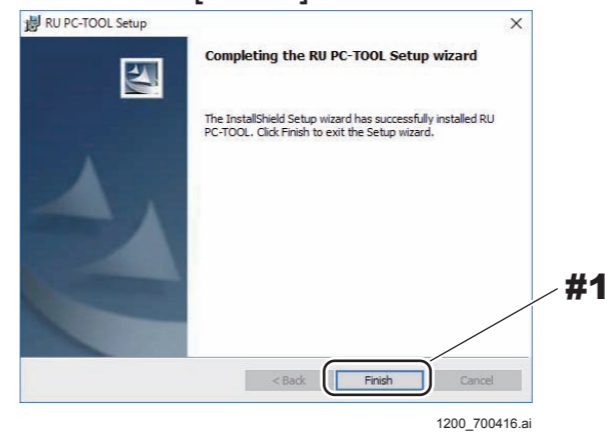
The Command Prompt window opens. When the Command Prompt window opens, press any key on the keyboard.

The Command Prompt window opens three times.

■ Install the MC application

● Install the MC application

(1) Insert the application disk into the DVD drive of the CSL-PC.

**(2) Double-click "SetupRun.exe" into the drive on the My Computer.**
The "Set Up PC-TOOL" window appear.

**(3) Select ".\install\local\Install.bat" from the "FILE EXECUTION", and then click [EXECUTE].**
#1 Select: .\install\local\Install.bat
#2 Click: [EXECUTE]

Set Up PC-TOOL window

1200_700417.ai

The following window opens.

1200_700418.ai
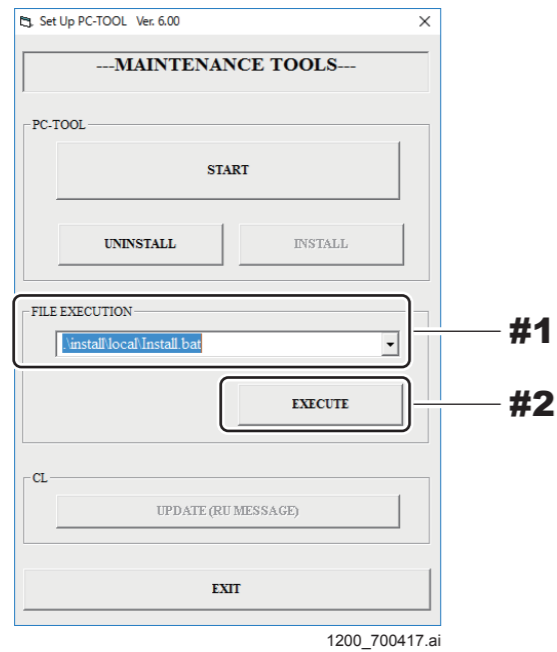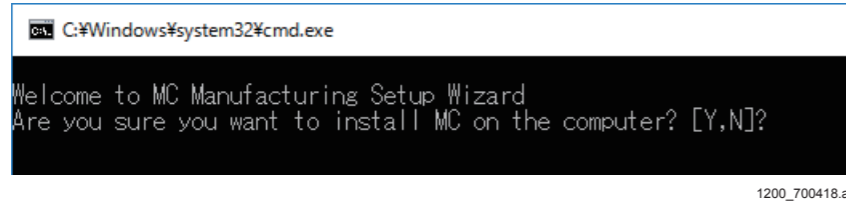
(4) Press <Y> key.

(5) Input the following values as the "Network Configuration" setting.
- For MC-less configurations: 1

1200_700419.ai

The following window opens.

1200_700420.ai
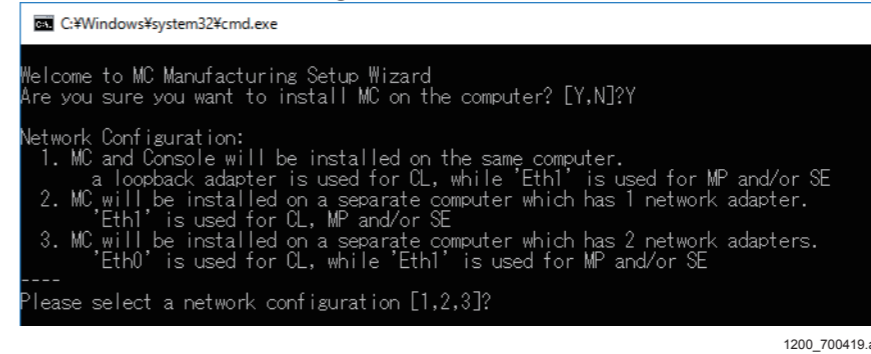
(6) Press <Y> key.
The "Maintenance mode" window opens.

(7) Click [Canel].

#1   Click: [Canel]
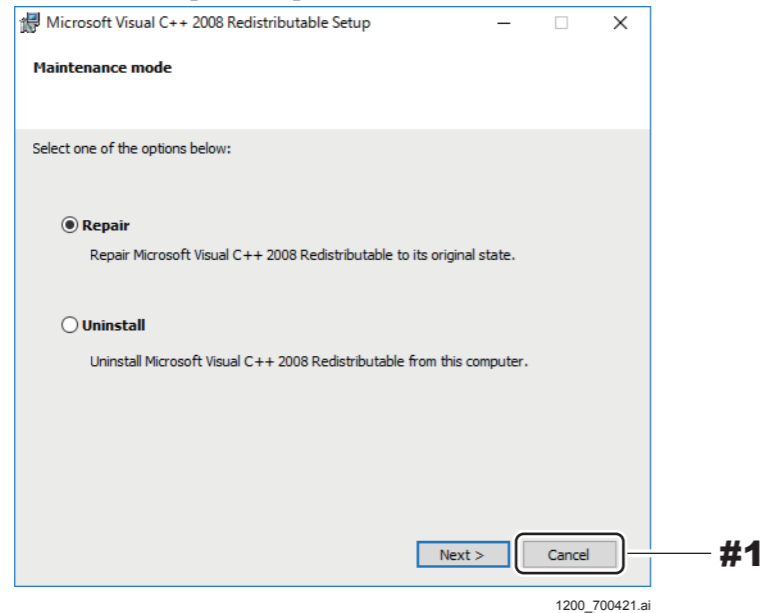
The "Do you want to cancel the setup?" window opens.

(8) Click [Yes].

(9) Click [Finish].

#1 Click: [Finish]
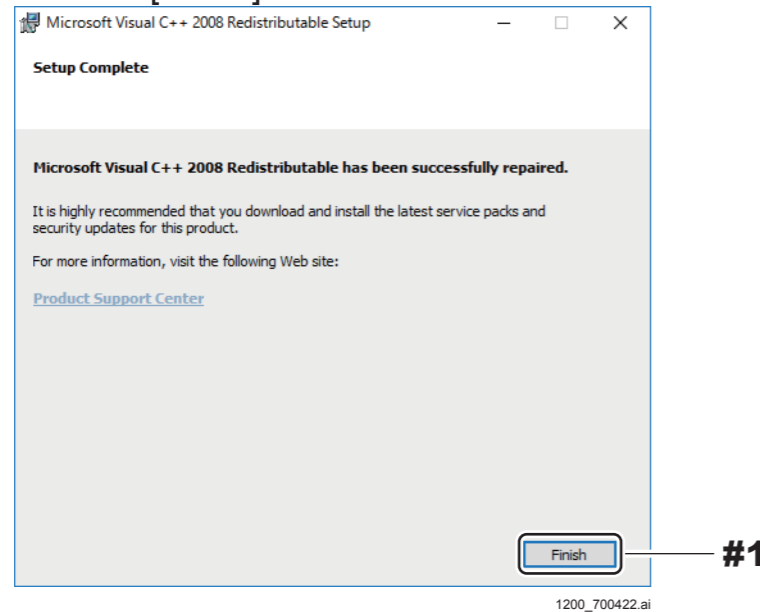
When the Installation is completed, the "WinPcap 4.1.3 Setup Wizard" window opens.

(10) Click [Next].

The "License Agreement" window opens.

(11) Click [I Agree].
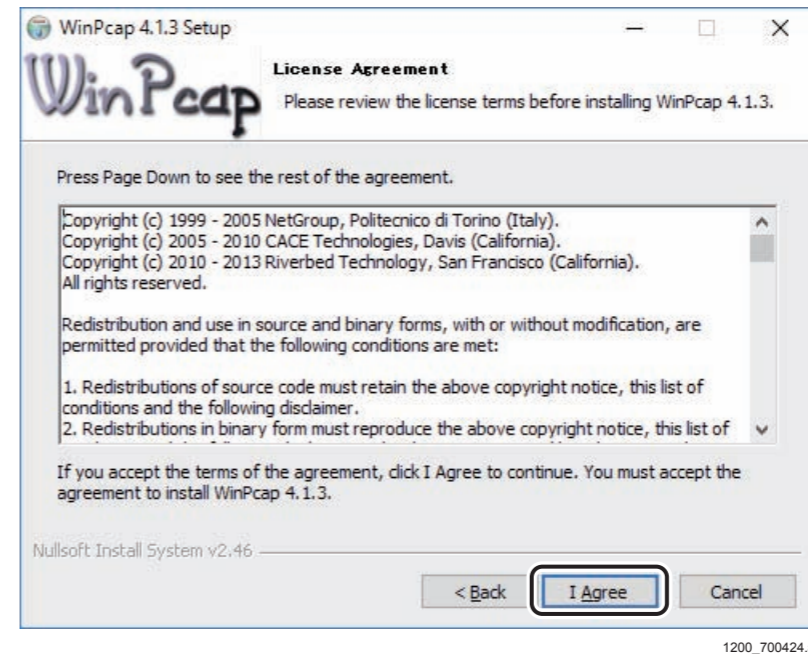
The "Installation options" window opens.

(12) Confirm that the "Automatically start the WinPcap driver at boot time" check box is checked, and then click [Install].
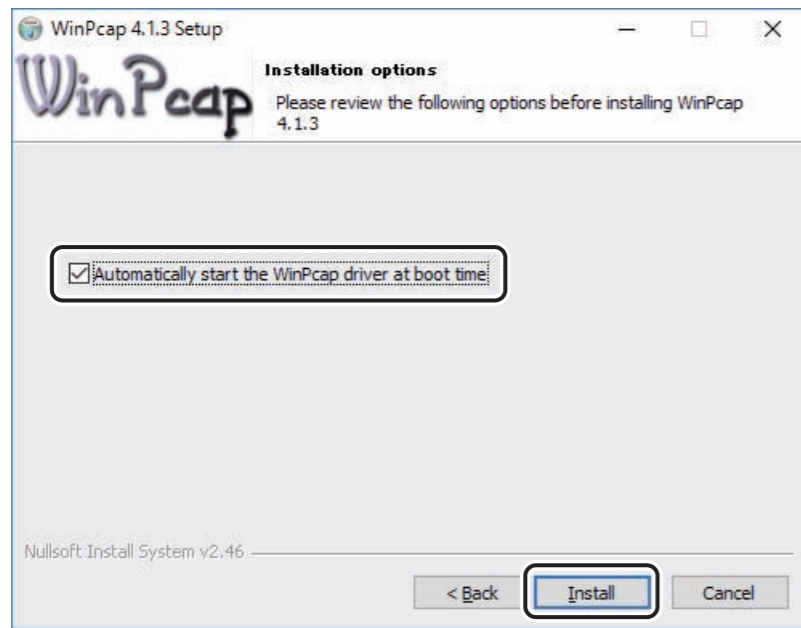
1200_700425.ai

The "Completing the WinPcap 4.1.3 Setup Wizard" window opens.

(13) Click [Finish].

1200_700426.ai

After the Installation is completed, the following window opens.
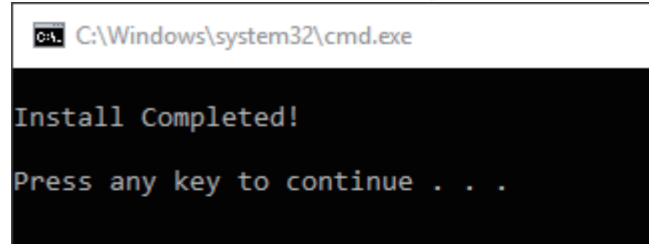
1200_700427.ai

(14) Press <Enter> key.

The installation has been completed.

(15) Restart the PC.

(16) Within a period of 3 seconds after the initial window opens, sequentially click the upper left and upper right corners of the window.

The "IIP Service Utility" window opens.

Click the upper left corner and then the upper right corner.

DXL04010001.ai

(17) Check that the MC Manager icon has appeared on the task tray.

● **Registering to the MC Manager start menu**

(1) Right-click I:/MC/MCManager.exe, and select "Pin to Start".
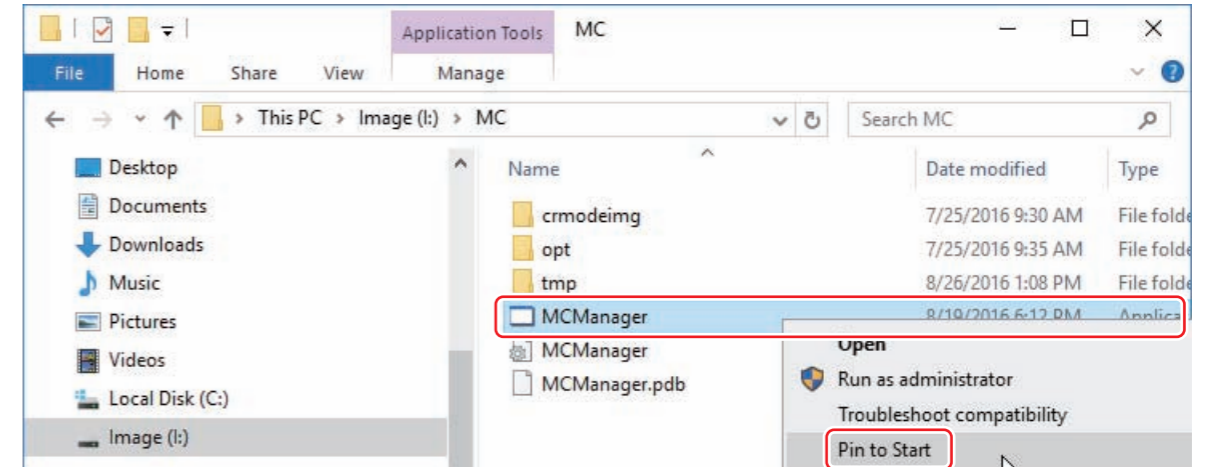
1400_700020E.ai

The MC Manager is pinned to the start menu.

● **Setup the MC application**

(1) Double-click "SetupRun.exe" into the drive on the My Computer.
The "Set Up PC-TOOL" window appear.

(2) Select ".\install\remote\MCSetupWizard.bat" from "FILE EXECUTION" area, and click [EXECUTE].
#1 Select: .\install\remote\MCSetupWizard.bat
#2 Click: [EXECUTE]

Set Up PC-TOOL window

1200_700428.ai
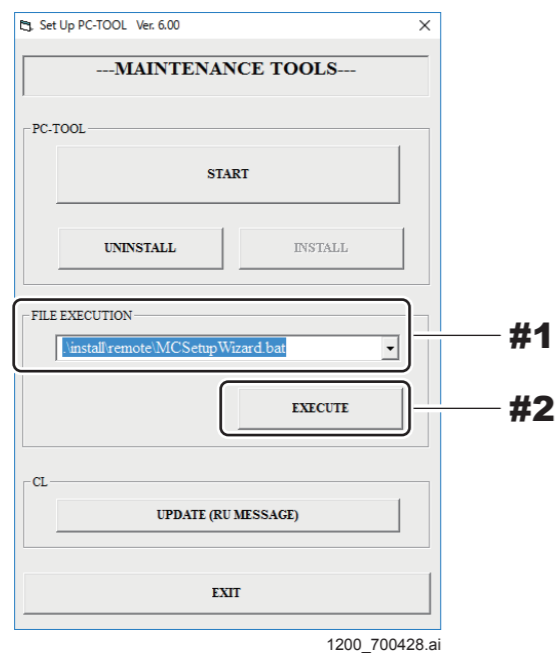
(3) Input the target MC IP address and click [Connect].
#1 Input: MC IP address (for MC-less configuration "127.0.0.1")
#2 Click: [Connect]
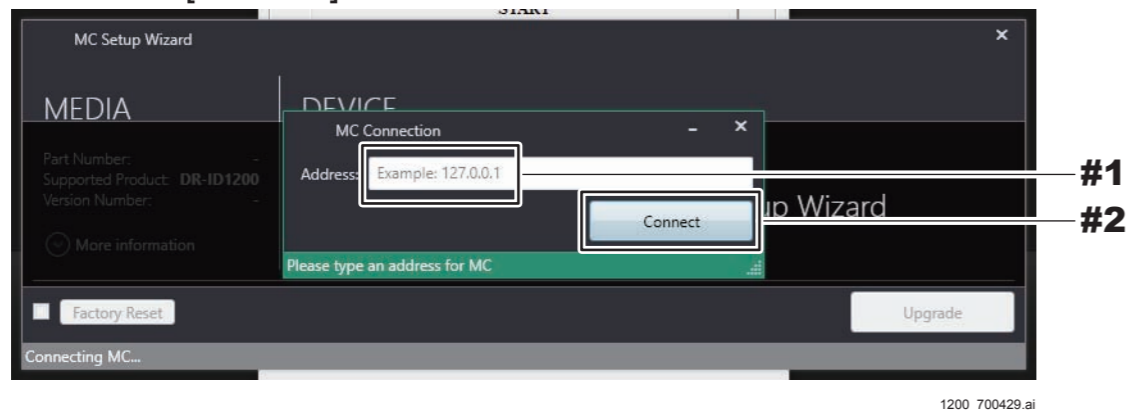
1200_700429.ai

◆ *NOTE* ◆

- *If the MC could not be connected to due to the mistaken inputting of the IP address, a connection error occurs. After checking the connection status, re-execute the version upgrade.*

1200_700430.ai

- *If the MC application was not factory-installed, and if the model media being used differs from the model which was installed, then the error will appear. Confirm the MC application installation status and the media model information, and re-execute the version upgrade.*

◆ *INSTRUCTION* ◆

If the RU registration has been already completed, steps 4 and 5 are not necessary. Proceed to step 6.

(4) If the RU registration has not been completed, the following window opens. Click [OK].
#1 Click: [OK]
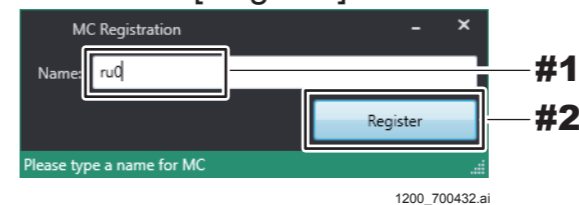
1200_700431.ai

(5) Input the RU NAMEand click [Register].
#1 Input: RU NAME
#2 Click: [Register]

1200_700432.ai

The version and the media version that are installed on the device appear.

(6) Check that there are not any problems with the version and the media version that are installed on the device, and click [Upgrade].

#1 Check: the version and the media version that are installed on the device
#2 Click: [Upgrade]

1200_700433.ai

(7) Click [Yes].

#1 Click: [Yes]

1200_700434.ai

The following window opens during the version-update.

1200_700435.ai

(8) Check that the installation is completed, and click [OK].

#1 Click: [OK]

1200_700436.ai
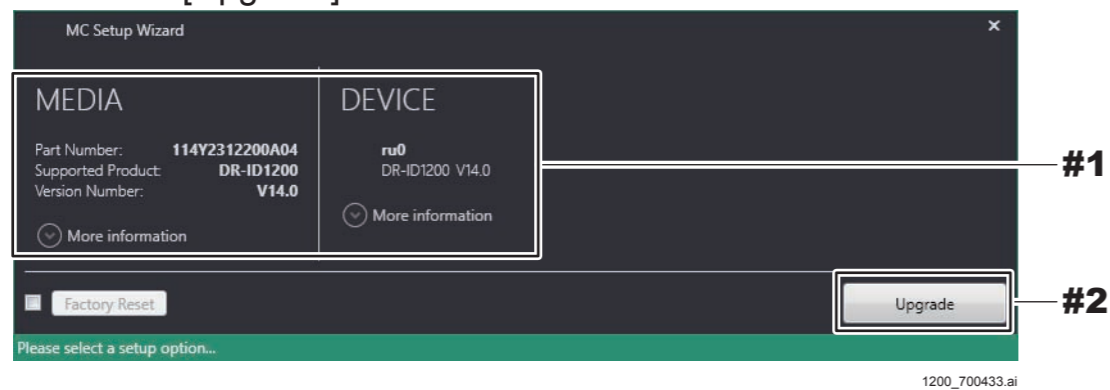
The system returns to the desktop screen.

(9) Remove the disk from the DVD drive.

(10) Restart the PC.

(11) Within a period of 3 seconds after the initial window opens, sequentially click the upper left and upper right corners of the window.

The "IIP Service Utility" window opens.

Click the upper left corner and then the upper right corner.

DXL04010001.ai

◆ *NOTE* ◆

If any error occurs during installation, reinstall the MC application after uninstalling it. Follow the procedures below to uninstall the MC application.

1. Insert the install disk into the DVD drive.
The "Set Up PC-TOOL" window starts.
2. Select ".\Initial\apl_initial\uninstall.bat" from the "FILE EXECUTION" pull-down menu, and then click [EXECUTE].
The "Are you sure you want to uninstall MC application?" dialog appears.
3. Click [OK].

■ Installing the DR Maintenance Software

◆ INSTRUCTION ◆

If the OS is Windows 7, install Internet Explorer 11 before installing DR Maintenance Software.

☞ **{IN:Appendix 8._Installing the Internet Explorer 11}**

(1) Double-click "SetupRun.exe" into the application disk drive on the My Computer.

The "Set Up PC-TOOL" window appear.

(2) Select ".\install\DRWM\Setup.bat" from the "FILE EXECUTION", and then click [EXECUTE].

#1 Select: .\install\DRWM\Setup.bat
#2 Click: [EXECUTE]

Set Up PC-TOOL window

1200_700482.ai

The following window opens.

1200_700483.ai
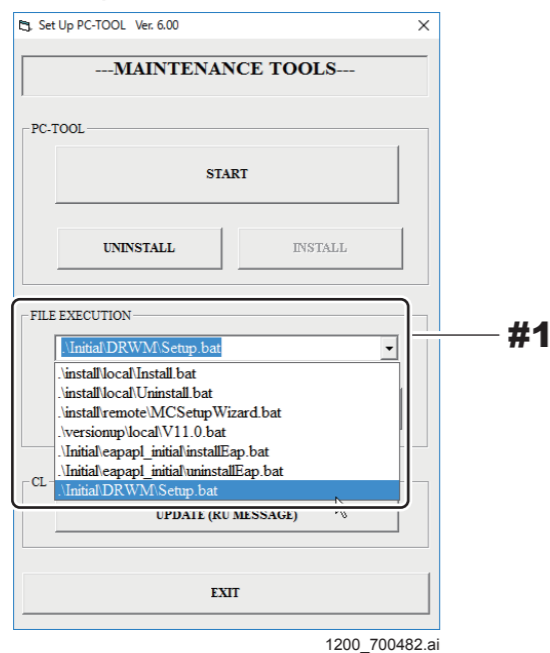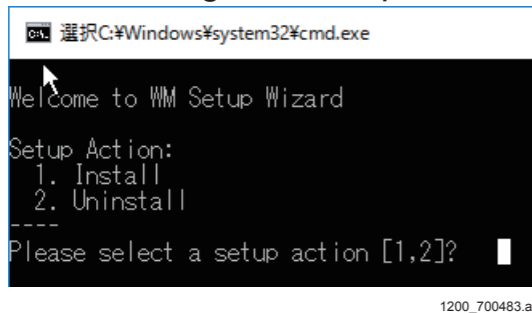
(3) Press <1> key.

The following window opens.

1200_700484.ai
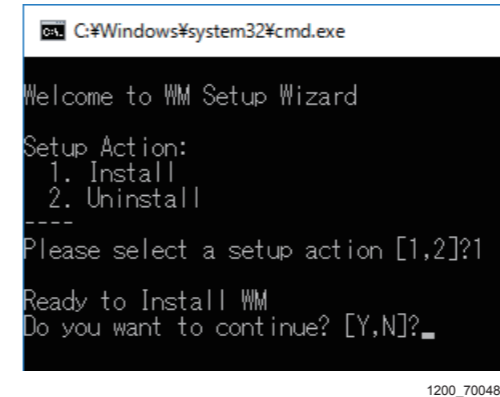
◆ INSTRUCTION ◆

For the MC V16.5 or later, select the standard mode or the VA expanded security mode here. Normally, select "1. Standard" (standard mode).

POCX010713001J.ai
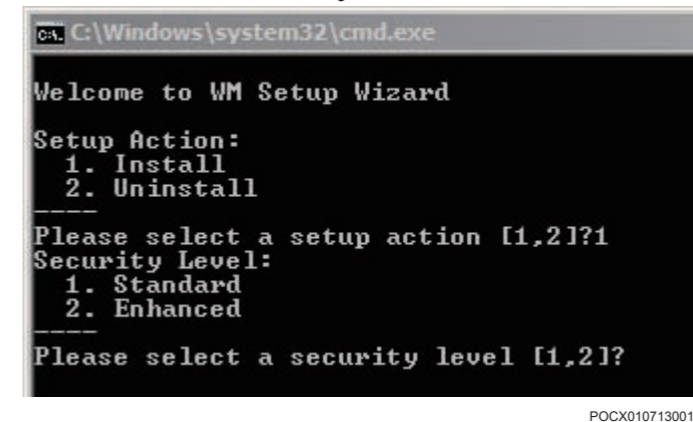
(4) Press <Y> key.

(5) Press <Enter> key.

■ Unlocking the DR Maintenance Software's Security Lock

In order to use DR Maintenance Software, the security lock needs to be unlocked.

◆ NOTE ◆

An unlocking key file (PCToolSecKey.key) until June 30, 2017 is supplied inside the application disk.
Subsequent valid files are distributed via ECN every year around April.

◆ INSTRUCTION ◆

Check that connecting the Network Cables and Network Settings before starting DR Maintenance Software.
When the mobile configuration, Check the FUJIFILM-made AP will be connected.

☞ **{IN1:10.1_Network Settings}**

(1) **Open Internet Explorer, enter the following address into the address bar and press the [Enter] key.**
http://192.168.0.10:19101/index.html

The following window is displayed.
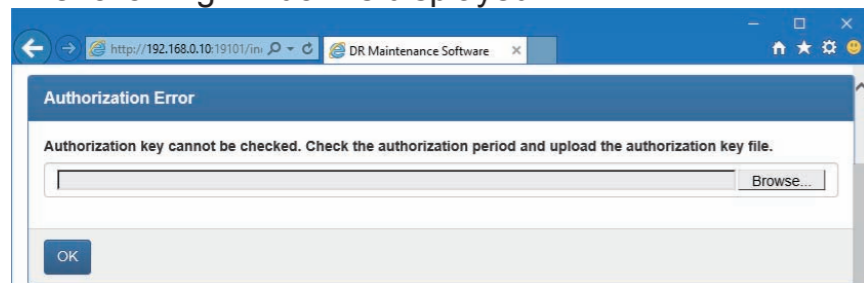
1200_700486E.ai

Procedures (2) to (3) are procedures that registered homepage above address.

(2) **Click ⚙ on the upper right side of the window, and click [Internet options]**.
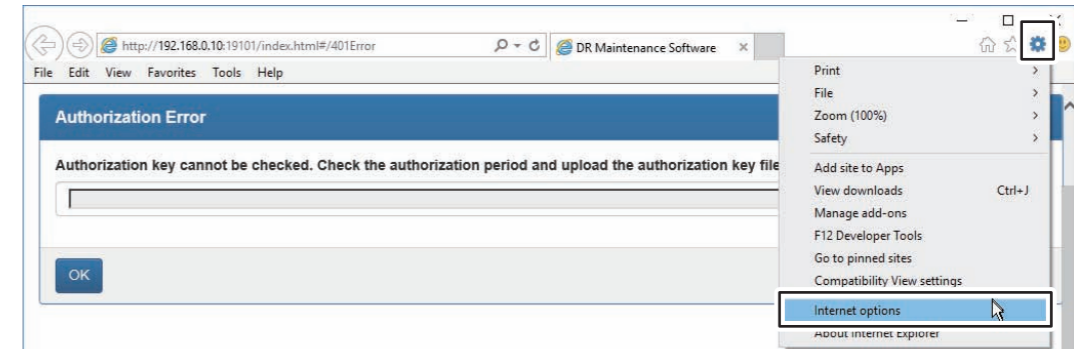
1200_700565E.ai

(3) **Change the address in the "Home page" field to the following address, click [Use current], and then click [OK].**
http://192.168.0.10:19101/index.html
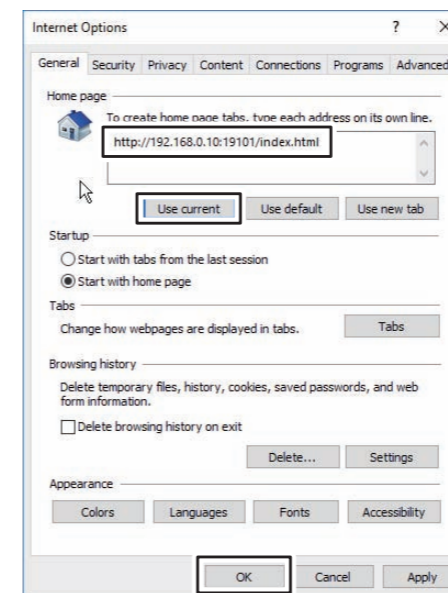
1200_700566E.ai

DR Maintenance Software address is registered to homepage.

(4) **Click the [Browse] in the DR Maintenance Software, select the "PCToolSecKey.key" in the application disk of top directory, and click [Open].**
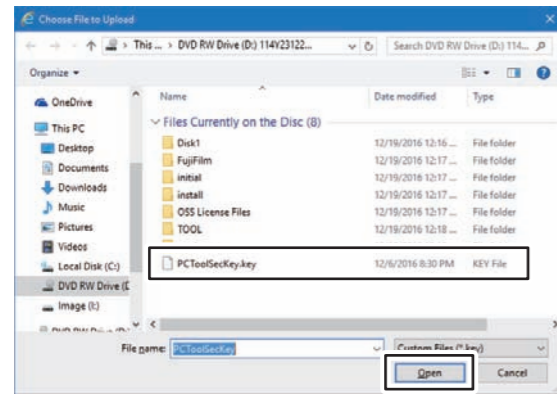
1200_700487E.ai

(5) **Click [OK].**
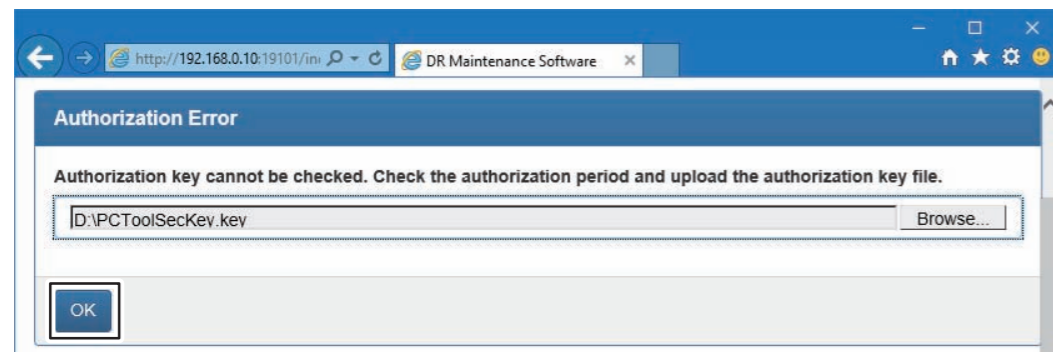
1200_700488E.ai

Security Lock is canceled.

(6) **Click [OK].**
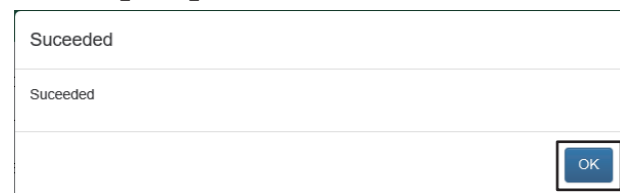
1200_700489E.ai

10.3 Starting up the DR Maintenance Software

(1) **Open the Internet Explorer.**

DR Maintenance Software starts.

(2) **Select the "INSTALLATION" at the upper left corner of the window.**
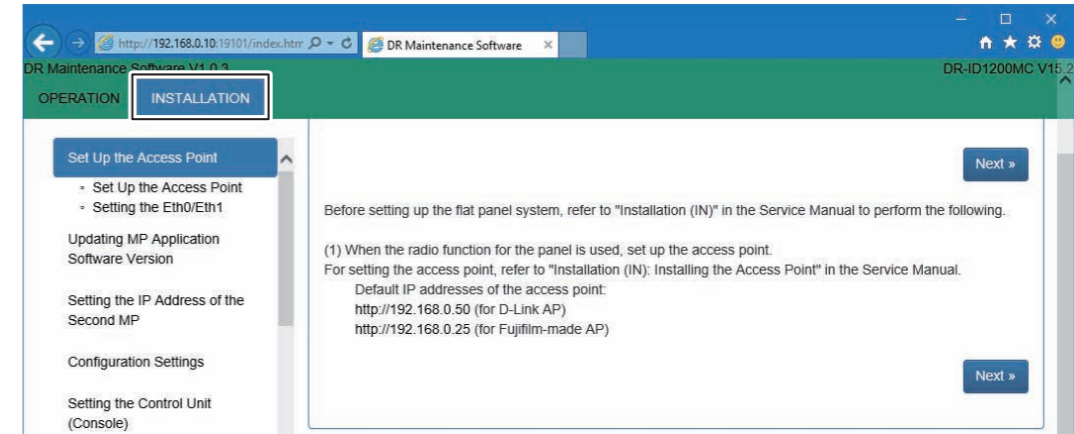
1200_700564E.ai

◆ *NOTE* ◆

Perform the subsequent proceduese according to the DR Maintenance Software.

◇ *REFERENCES* ◇

When the DR Maintenance Software is restarted, open the Internet Explorer again.

10.4 Preparation before Setting DR Device

■ Checking the Network Settings

(1) Check that there is no problem in MC application and Network Settings.

1200_700491E.ai

(2) Click [Next].

10.5 Updating MP Application Software Version

■ Checking the MP Application Software Version

(1) Select "MP1" from the drop-down list box, and click [GET].

1200_700492E.ai
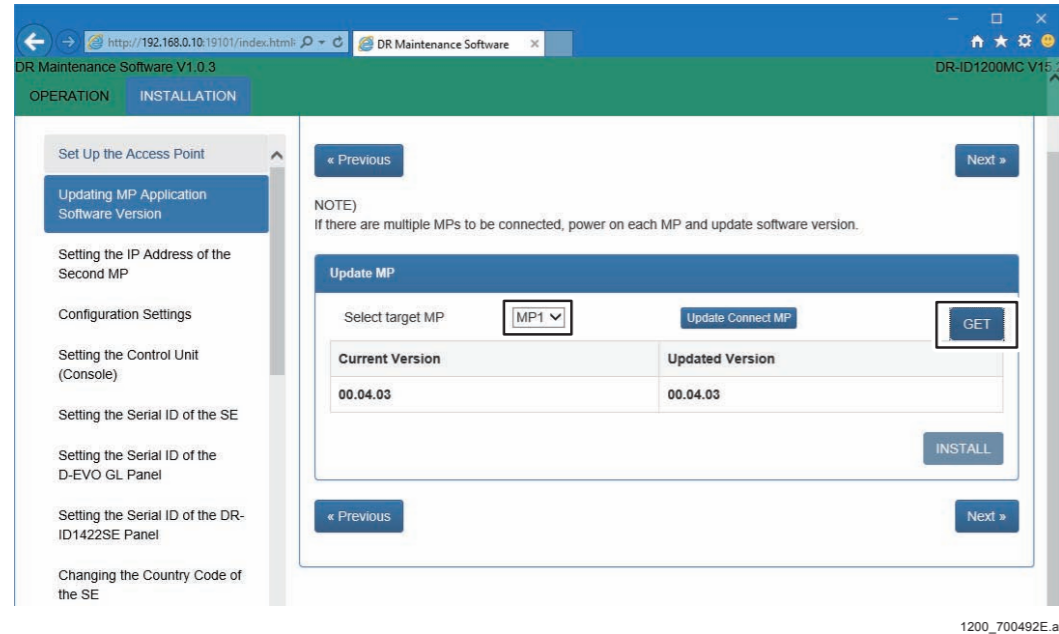
The MP Application Software Version appears.

(2) Confirm the "Current Version" and the "Updated Version".

◆ INSTRUCTION ◆

If "Current Version" and "Updated Version" are identical with each other, click the [Next] to go to the following procedure.

☞ {IN1:10.6_Changing the IP Address for Using Two MPs}

■ Updating MP Application Software Version

◆ NOTE ◆

Follow the procedures below only when the version update of the MP application software is necessary.

(1) Make sure that the install disk is inserted in the DVD drive of the CL.

(2) Click [INSTALL].

◇ REFERENCES ◇

If "Current Version" and "Updated Version" are identical with each other, the [INSTALL] cannot be clicked.

1200_700493E.ai
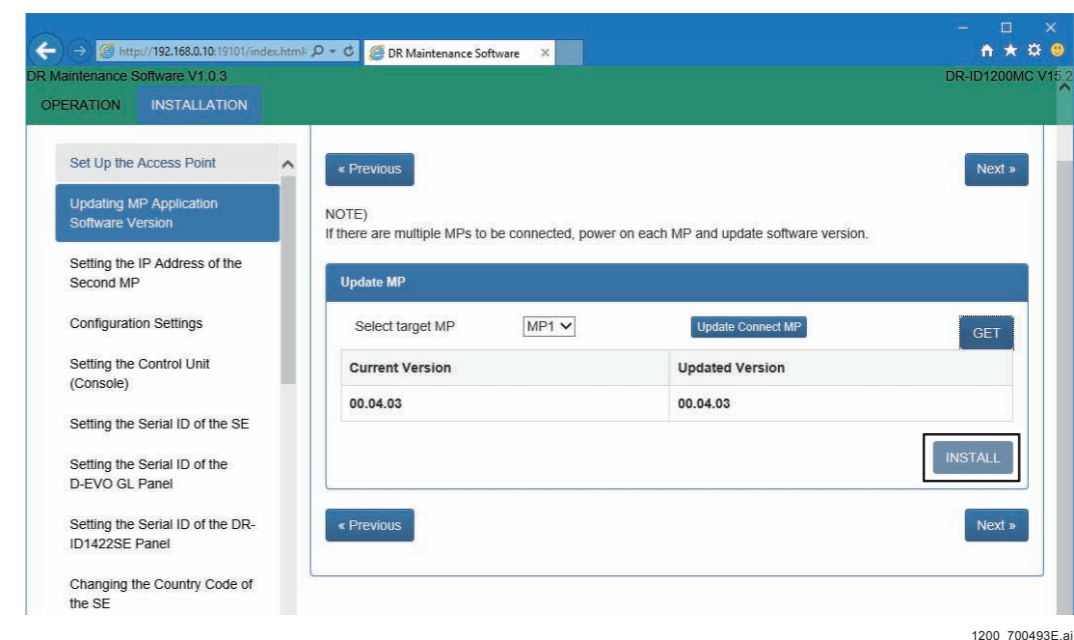
The MP Application Software Version has been updated.

◆ NOTE ◆

If the MP application failed in upgrading the version, restart the MP and retry from connection check.

(3) Check that the installation is completed, and restart the MP.

(4) Check the MP application software version.

☞ {■ Checking the MP Application Software Version}

10.6 Changing the IP Address for Using Two MPs

(1) Click "Setting the IP Address of the Second MP" on the left side of DR Maintenance Software.

(2) Turn OFF the power of the first MP.

(3) Turn ON the power of the second MP.

(4) Select "MP1" from the drop-down list box, and click [Re-acquire connected MP].

(5) Select "Setting for MP2", and click [SET].

1200_700543E.ai
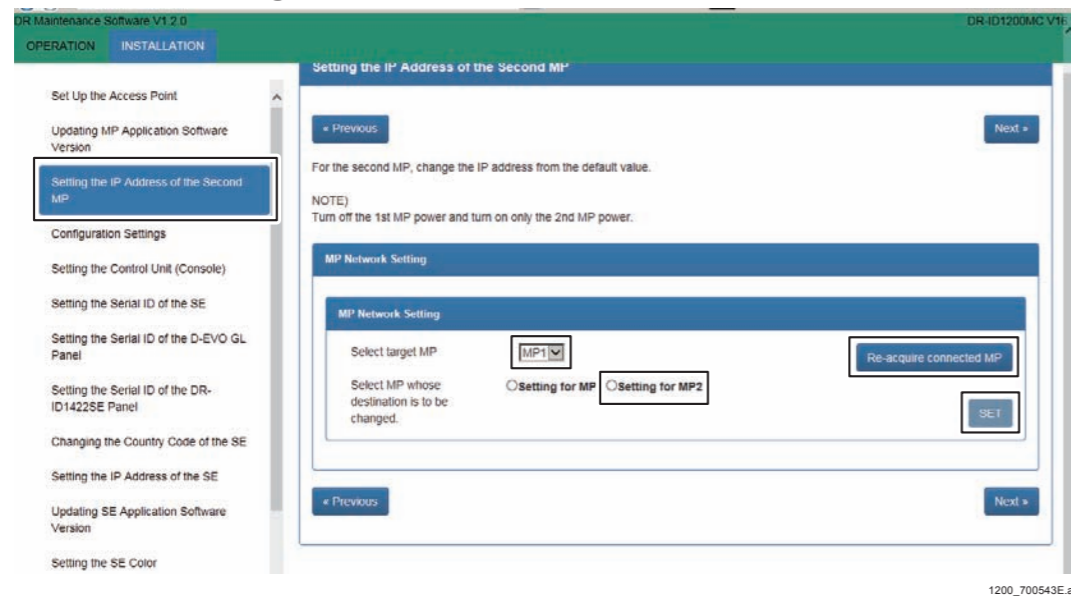
The following window opens.
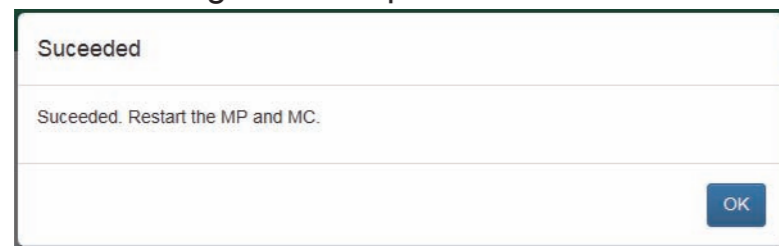
1200_700006E.ai

(6) Turn OFF the power of the MP, and then turn it ON.

(7) Left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu".

(8) Select the "INSTALLATION" at the upper left corner of the DR Maintenance Software, click [Re-acquire connected MP] in the "Updating MP Application Software Version", confirm that the "MP1" and "MP2" can be selected from pull-down menu.
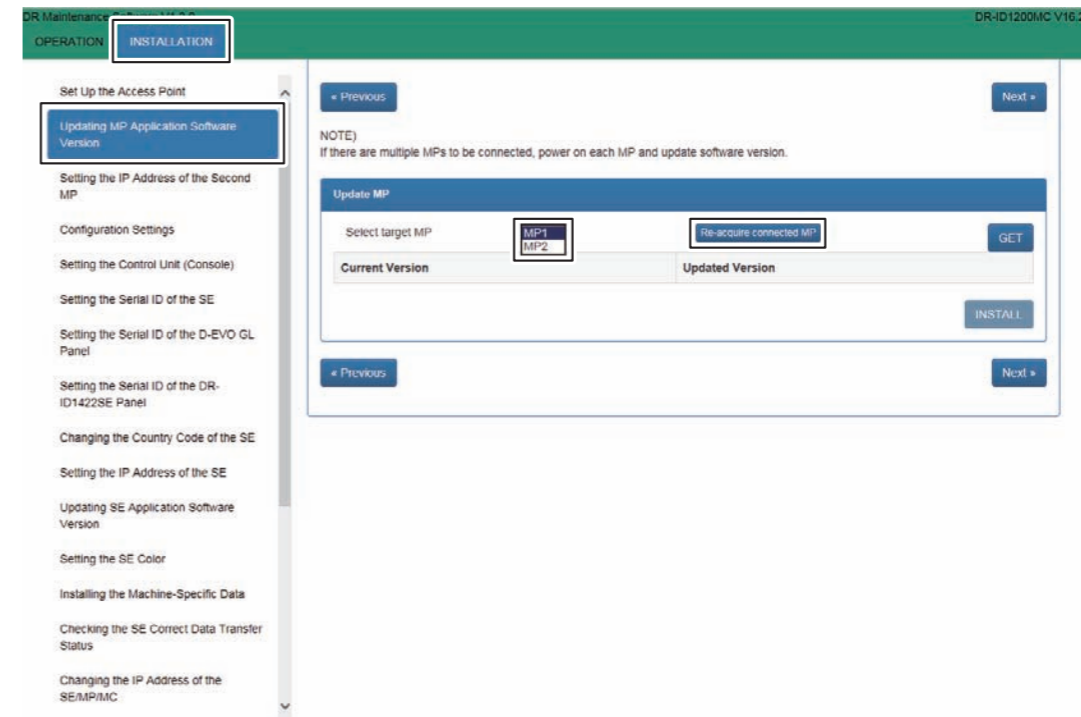
1200_700545E.ai

(9) Click [Next] twice.

10.7   Configuration Settings

(1) Make configuration settings, then click [SET] at the bottom of the window.

☞ {MU1:1._DR Maintenance Software}

1200_700495E.ai
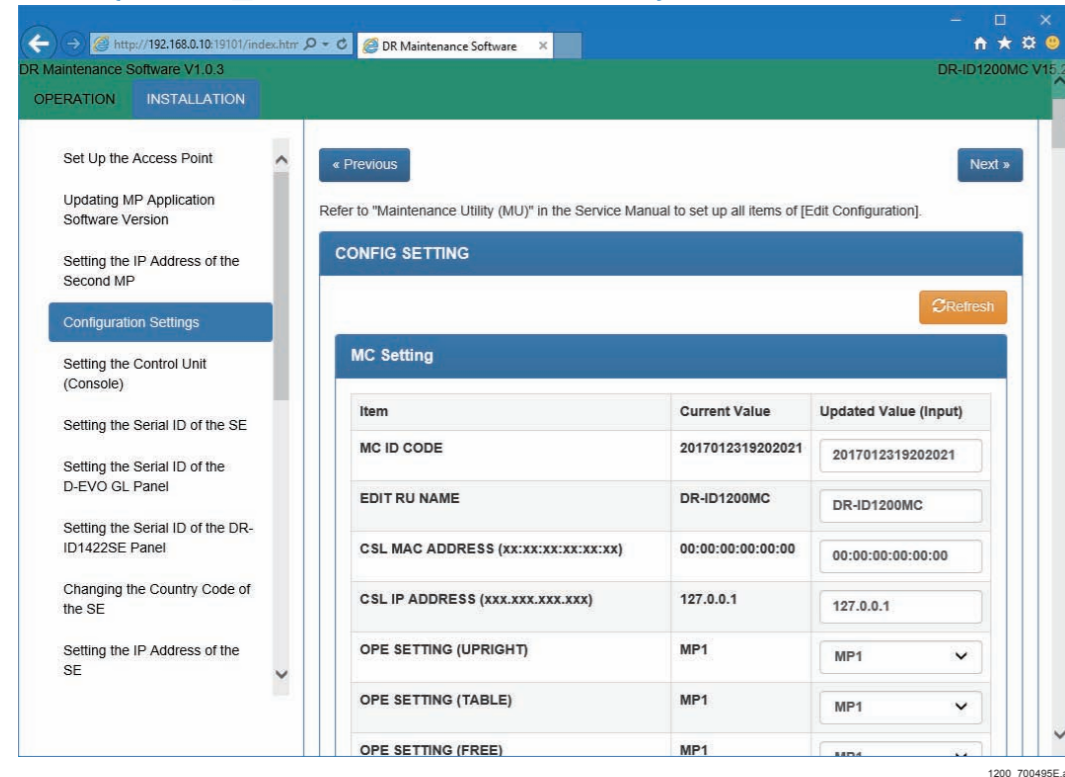
(2) Click [Next].

10.8   Setting the DX Console

(1) Turn ON the DX Console power.

(2) Within a period of 3 seconds after the initial window opens, sequentially click the upper left and upper right corners of the window.

The "IIP Service Utility" window opens.

Click the upper left corner and then the upper right corner.

DXL04010001.ai

(3) Click [Device Setting] and click [Modify].

#1   Click: [Device Setting]
#2   Click: [Modify]
IIP Service Utility window

Device Setting window

1200_700136.ai
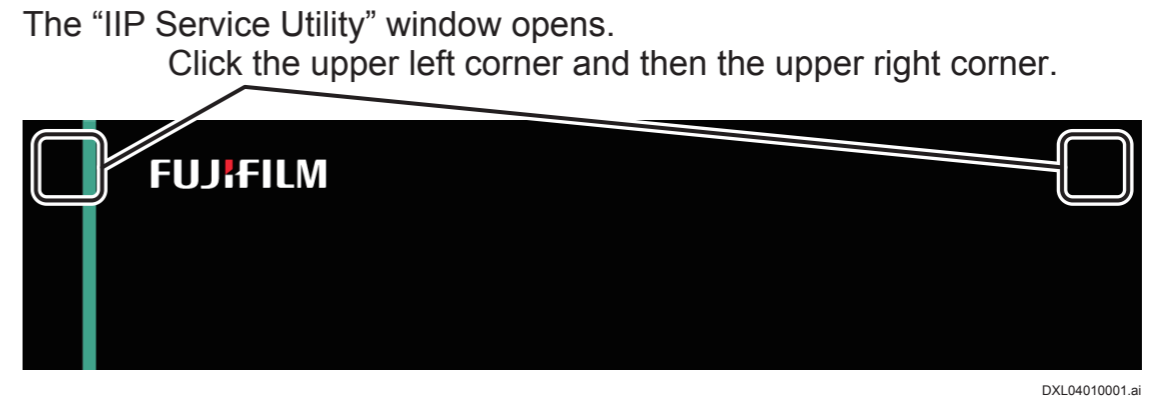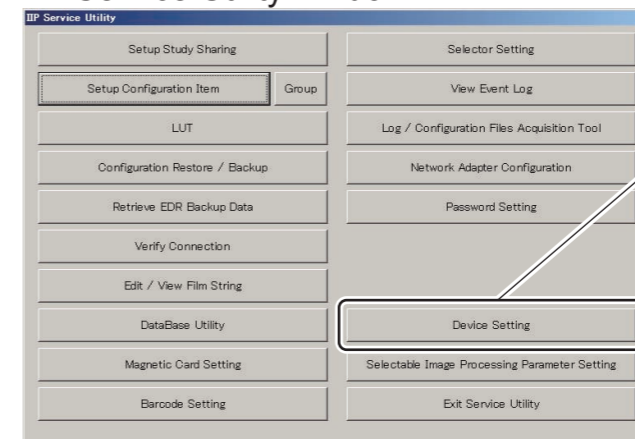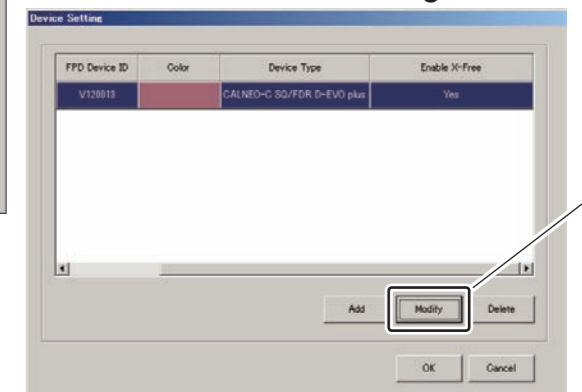
(4) Input "FPD Device ID" and click [OK].

◆ *NOTE* ◆

- ***Be sure to set [FPD Device ID] set to coincide with [SE Serial ID] of the CENTER panel unit displayed in the DR Maintenance Software "Update SE" window.***

☞ *{MU1:1.2.1_SE Registration/Deletion}*

- *Be sure to make [Device Color] set in [IIP Service Utility] – [Device Setting] coincide with the color of the color labels (machine identification label) applied to the SE.*

The system returns to the IIP Service Utility window.

#1　Input: FPD Device ID **(= SE serial ID for CENTER panel unit)**

#2　Click: [OK]

Device Setting window
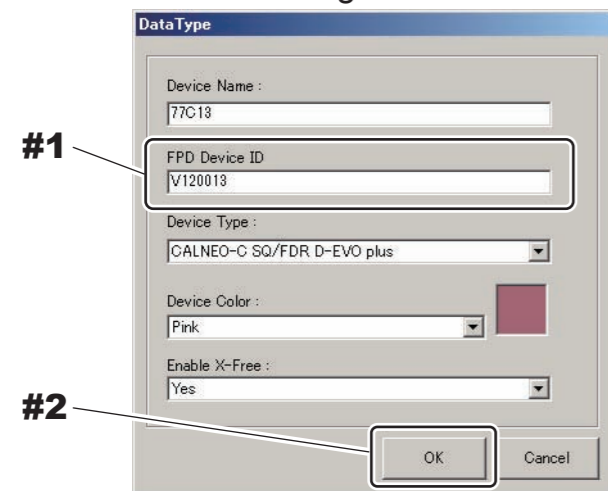
1200_700137.ai

(5) Click [Selector Setting].

#1　Click: [Selector Setting]

IIP Service Utility window

1200_700138.ai

(6) Set "Reader Type" and click [OK].

The system returns to the IIP Service Utility window.

#1　Set: Reader Type

#2　Click: [OK]

Selector Setting window

1200_700139.ai

◆ *NOTE* ◆

Correspond with the Edit Configuration settings.

(7) Click [Setup Configuration Item].

(8) Select "CONFIG - NETWORK CONFIG - ALL OTHER NODES" and click [NEW].

The New Node window opens.
#1 Select: ALL OTHER NODES
#2 Click: [NEW]
Setup Configuration Item window

1200_700140.ai

(9) Make the following settings and click [OK].

◆ *NOTE* ◆

The IP address to be entered in "IP Address" depends on the installation destination of the MC application.
- To install in the DX Console: 127.0.0.1

#1 Input: HostName and IP Address (127.0.0.1)
#2 Select: CU/MC
#3 Click: [OK]
New Node window

1200_700144.ai

◆ *NOTE* ◆

Depending on the SE registration count, set the image folder sizes.
As needed, click "SYSTEM CONFIG" – "99.CONFIG FIX" via the IIP Service Utility window – [Setup Configuration Item], and set the "MaximumDataSize" values. If the setting values are incorrect, then the "[MD10016] hard disc is full." error might be displayed.

For details, see "21. Setting the Images Folder Size (V7.3 or later)" in "MC: Checks, Replacement and Adjustment of Parts" under "DR-ID 300CL Service Manual".

(10) Restart the DR Maintenance Software.

◇ *REFERENCES* ◇

To restart the DR Maintenance Software, once close and reopen Internet Explorer.

(11) Click [Next] on the DR Maintenance Software.

1200_700496E.ai
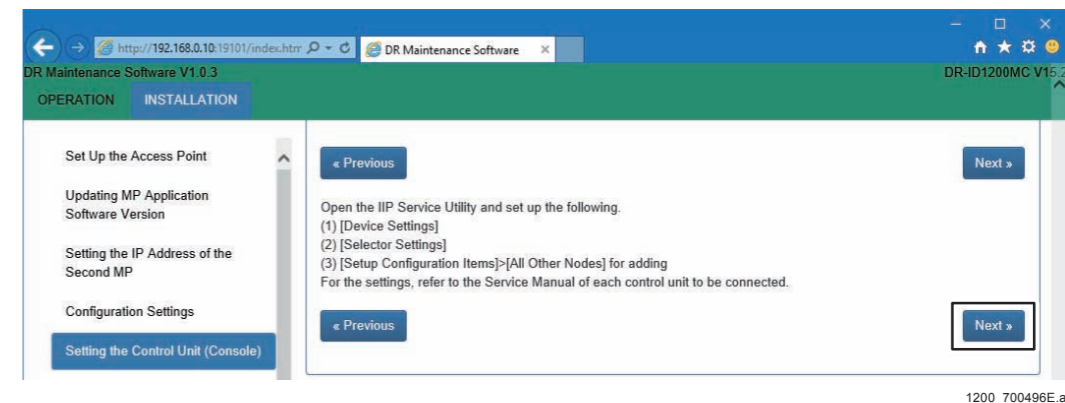
(12) Click [Next] in the "Setting the Serial ID of the SE" window.

1200_700497E.ai
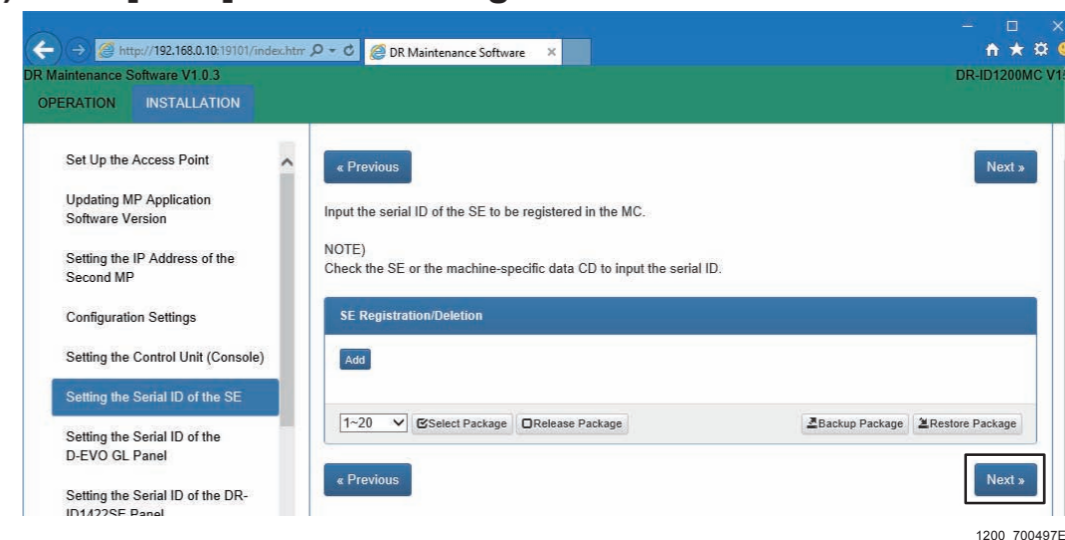
◆ *NOTE* ◆

With the DR-ID 1300, set the SE serial ID via the "Setting the Serial ID of the GL Panel". Therefore, do not enter anything in the "Setting the Serial ID of the SE".

10.9   Setting the Serial ID of the GL Panel

With the DR-ID 1300, set the SE serial ID via the "Setting the Serial ID of the GL Panel".

◆ *INSTRUCTION* ◆

- *Take the procedures from "10.9 Setting the Serial ID of the GL Panel" to "10.11 Updating SE Application Software Version" with connecting only one SE.*
- *For making the setting of the second SE, replace the SE after the setting of the first SE is completed.*

◆ *NOTE* ◆

- *If two SE's are connected, set the serial ID after one of them is removed. The default IP address (IP address when shipped out from the factory) which is registered in the SE is the same (192.168.0.90 to 92) for all SE's. If two SE's are connected therefore, the SE cannot be identified due to the duplicate address, resulting in an error.*
- *Always turn OFF the MP power before installing/removing the SE.*

(1)   Click [Add].
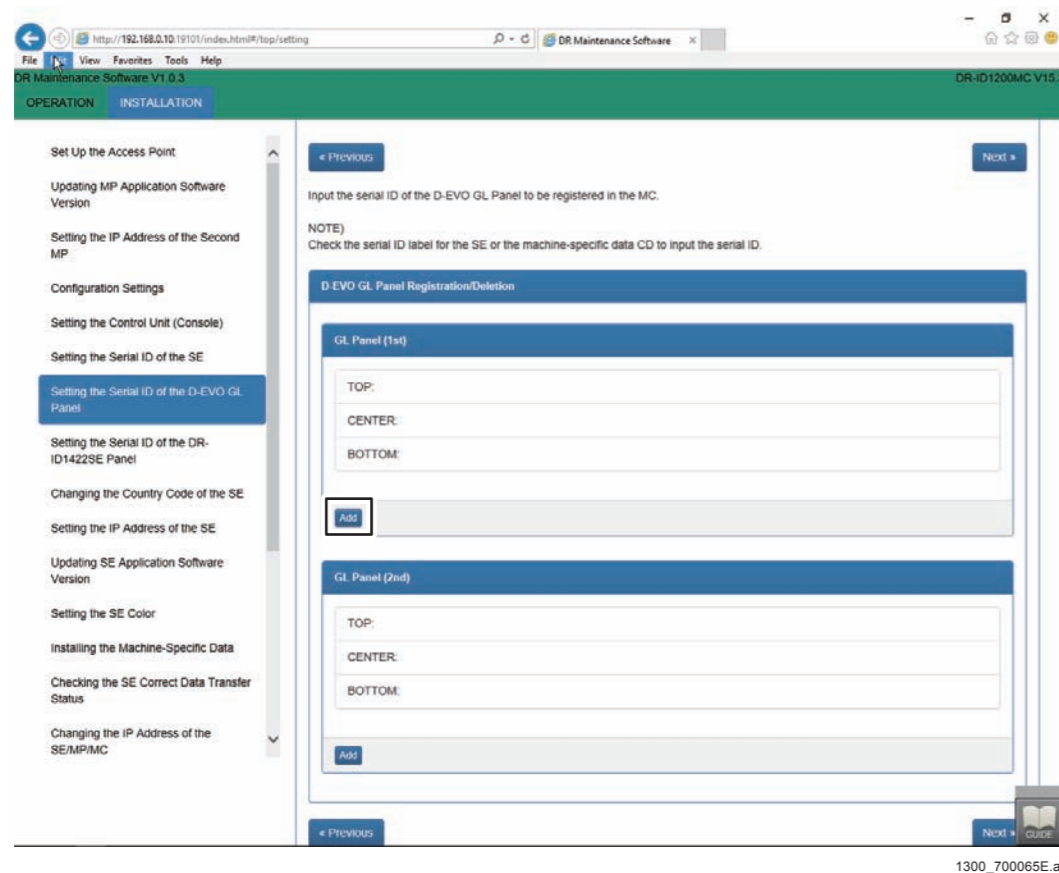
The D-EVO GL Panel Setting window opens.

(2)   After entering the SE (3 panel units) serial ID which are to be registered, click [OK].

◆ *NOTE* ◆

The first letter of the serial ID must be entered as a capital letter.

◇ *REFERENCE* ◇

The SE serial ID is contained in the folder name which is in the route for the machine-specific CD-ROM. (Eg: L120001(TOP))
- *<Serial ID for the TOP panel unit> (TOP) folder*
- *<Serial ID for the CENTER panel unit> (CENTER) folder*
- *<Serial ID for the BOTTOM panel unit> (BOTTOM) folder*

(3) Confirm that the serial ID is displayed, then click [Next].
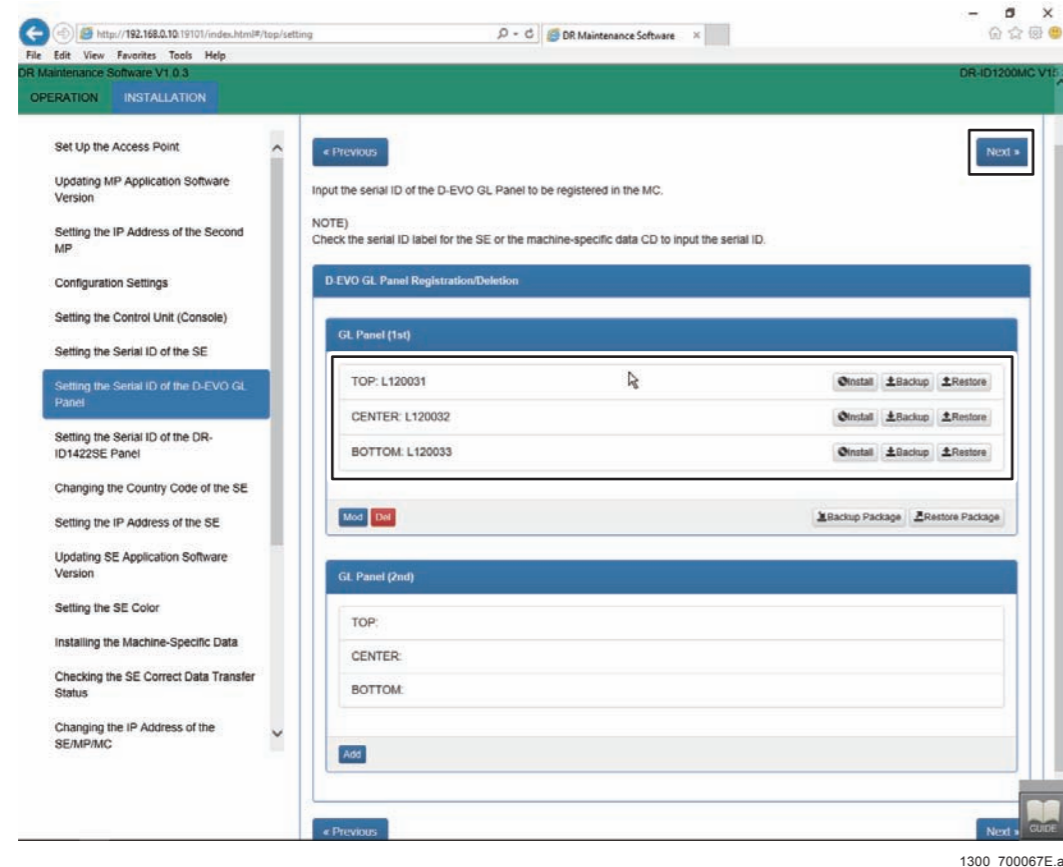
1300_700067E.ai

(4) Left-click the MC Manager from the task tray and execute "EXIT".

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu".

◆ **NOTE** ◆

With the DR-ID 1300, do not perform "Changing the SE Country Code".

10.10 Setting the IP Address of the SE

Select the target SE, and set the IP address.

◆ **INSTRUCTION** ◆

Be sure that the number of the connected SE is one when setting the IP address of SE. Because all the default IP addresses (when shipped out from the factory) are the same each other, connecting multiple SEs in parallel causes "10214 IP address multiple connection error", resulting in system down.

◇ *REFERENCE* ◇

The default IP address is as the following.

Item	IP address
1305SE (TOP)	192.168.0.90
1305SE (CENTER)	192.168.0.91
1305SE (BOTTOM)	192.168.0.92

(1) Select the target SE from the drop-down list box, and click [GET].

1200_700501E.ai
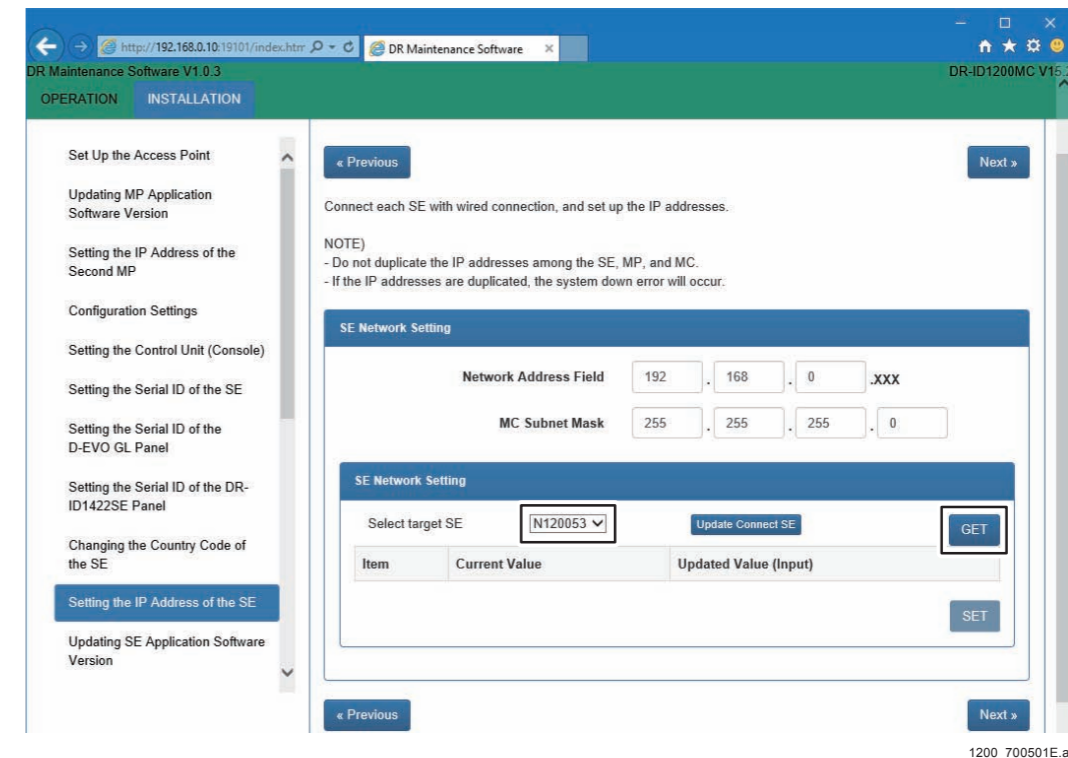
The IP Address of the SE (wired/wireless) appears.

(2) When changing, input the "Updated Value", and click [SET].

1200_700502E.ai
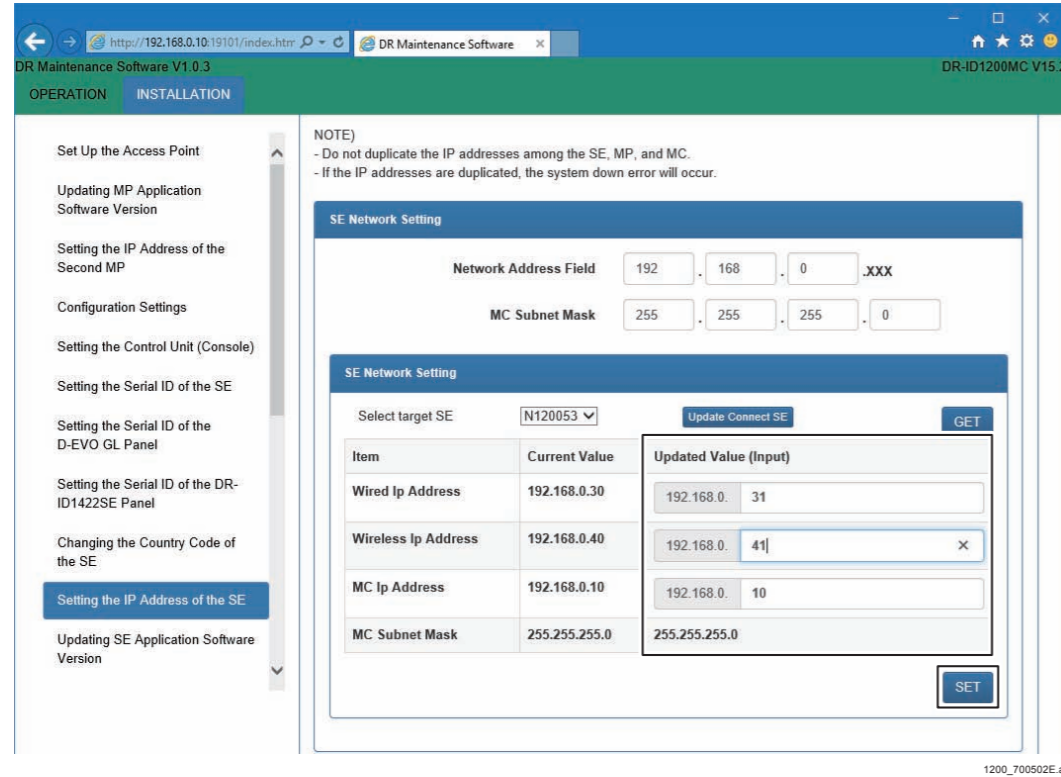
The IP Address of the SE will be updated.

(3) Click [OK], and restart the SE.

1200_700503E.ai
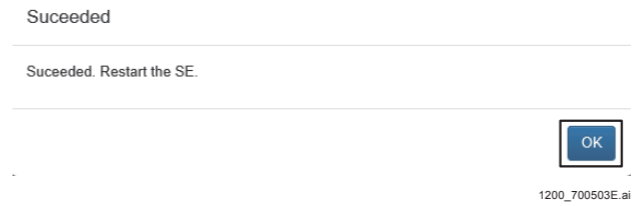
(4) Click [GET], confirm that the IP address has been changed, and click [Next].
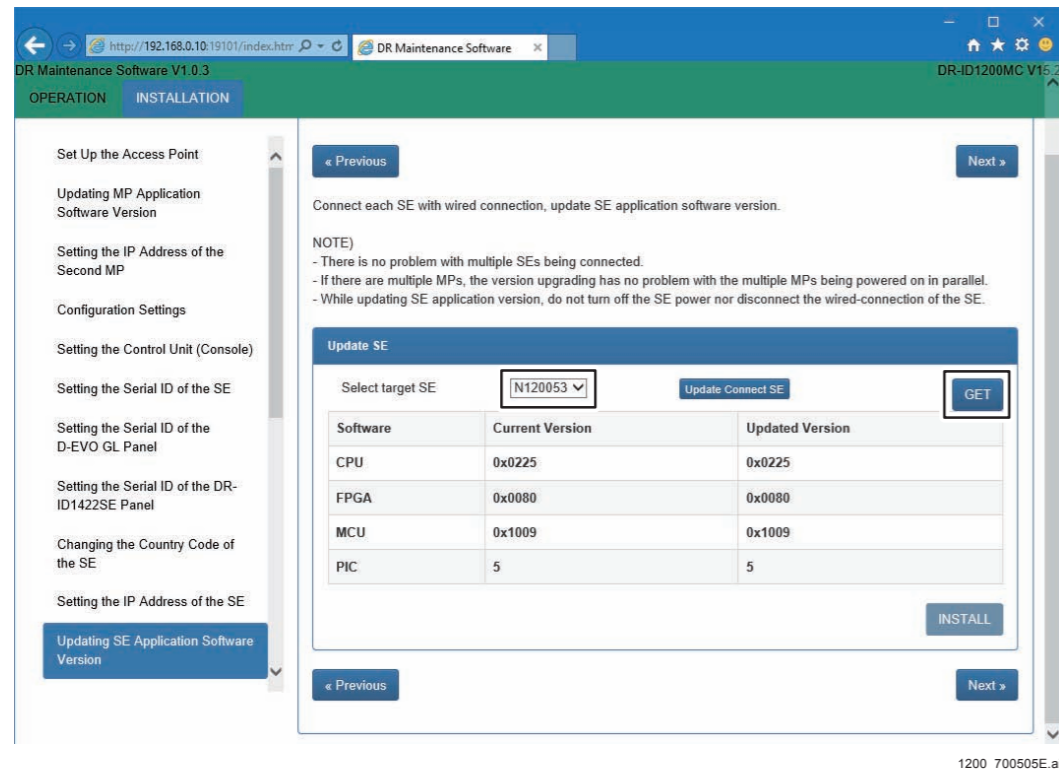

1200_700505E.ai
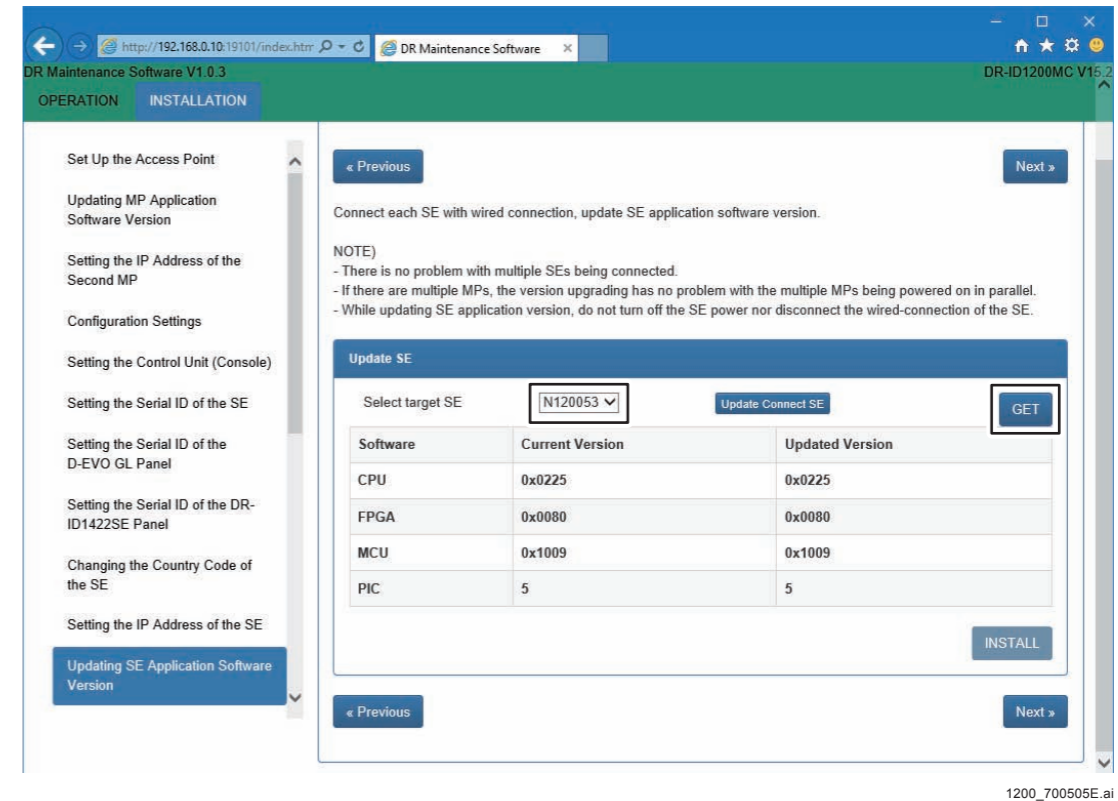
10.11 Updating SE Application Software Version

◆ **INSTRUCTION** ◆

Perform the following procedures for all of the three panel units.

■ Checking the SE Application Software Version

(1) Select the target SE from the drop-down list box, and click [GET].

1200_700505E.ai

The software version of the SE appears.

(2) Confirm the "Current Version" and the "Updated Version".

◆ **INSTRUCTION** ◆

If "Current Version" and "Updated Version" are identical with each other, click the [Next] to go to the following procedure.

☞ **{IN1:10.12_Installing the Machine-Specific Data}**

■ Updating SE Application Software Version

◆ *NOTE* ◆

Follow the procedures below only when the version update of the SE application software is necessary.

(1) Click [INSTALL].

1200_700506E.ai
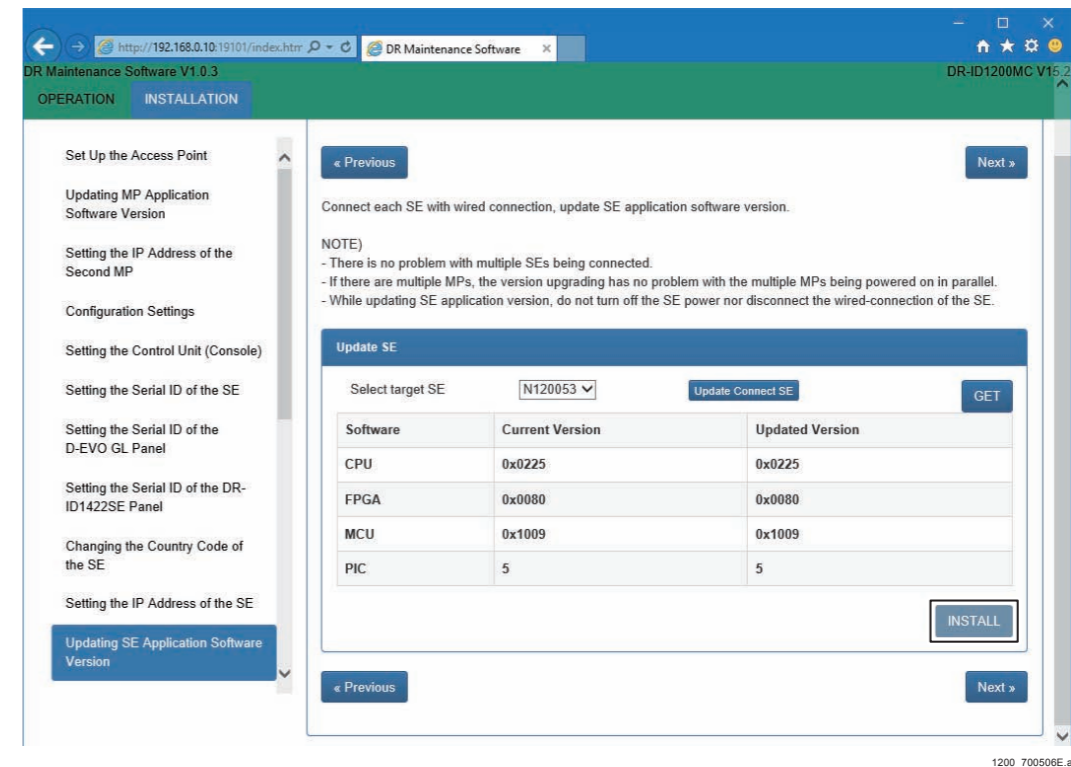
The software version of the SE has been updated after update version.

◆ *NOTE* ◆

- *If any error occurred during version upgrade of the SE application, restart the SE and retry the version upgrade again.*
- *The version upgrade of SE application renews necessary software only. Wait a while until a completion message appears.*

◆ *NOTE* ◆

- *When the CPU software installed in the SE is old*
  If the CPU software installation fails during a software update, check the CPU software version.
 *If the CPU software version is less than 0x0220 (corresponding MC V11.0), this function cannot be updated because the CPU software installed in the SE is old.*
  Upgrade the SE application version again after updating the FPGA software from "OPERATION>UTILITY> Update SE CPU (0x220)".
  ☞ *{MU1:1.9.10_Update SE CPU (0x0220)}*

- *When the FPGA software installed in the SE is old*
  When updating the software, if the message "This function is not supported by the selected SE" is displayed and the FPGA software installation fails, check the version of the FPGA software.
  If the FPGA software version is earlier than the following version, the FPGA software installed in the SE is old and cannot be updated directly.

Panel	fpgaRMV (FPGA) software
DR-ID 1201SE	0x0080
DR-ID 1202SE	0x00A0
DR-ID 1211SE	0x00B0
DR-ID 1212SE	0x00B0
DR-ID 1213SE	0x00B8
DR-ID 1214SE	0x00C8
DR-ID 1305SE	0x00A0

Upgrade the SE application version again after updating the FPGA software from "OPERATION>UTILITY> Update SE FPGA".
☞ *{MU1:1.9.11_Update SE FPGA}*

(2) Check that the installation is completed, click [OK], and restart the SE.

Install [N120053]

FPGA   Suceeded

Suceeded. Restart the SE.

OK

1200_700507E.ai
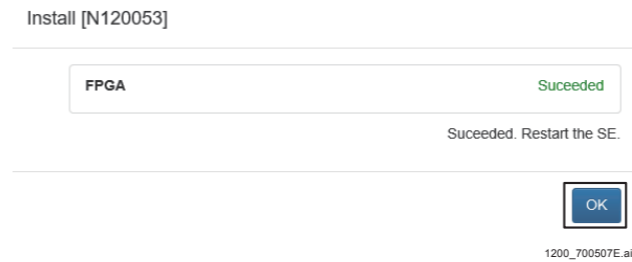
(3) Click [GET], confirm that the SE application version has been updated, and click [Next].

1200_700508E.ai
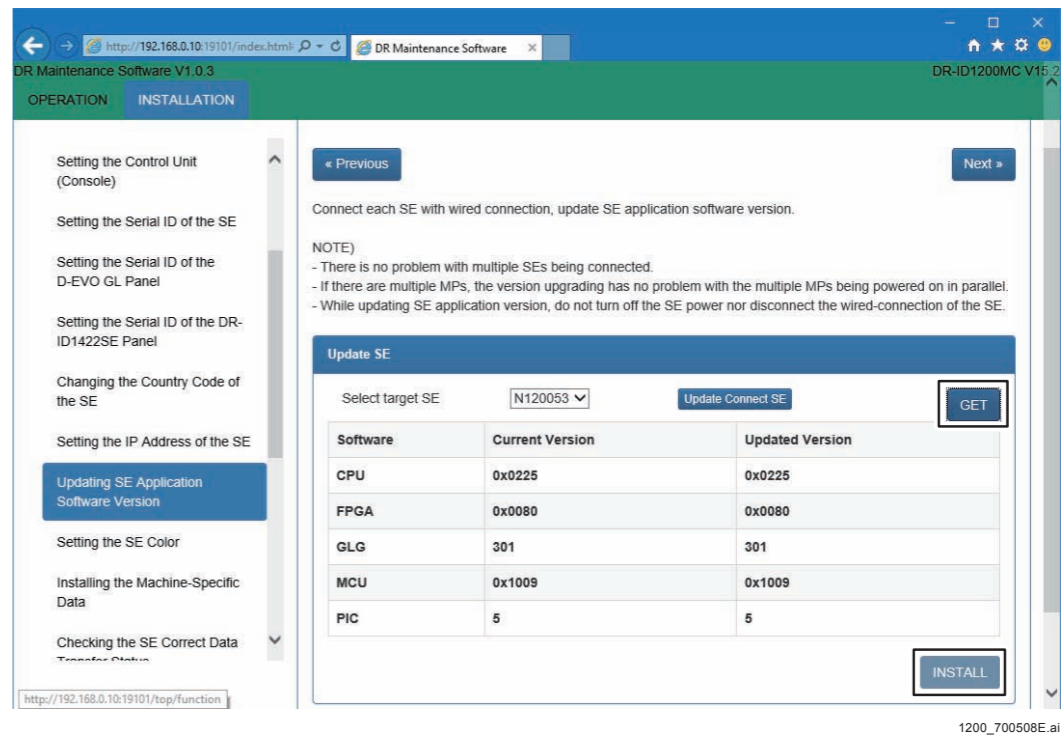
☞ *{■ Checking the SE Application Software Version}*

◆ *NOTE* ◆

*With the DR-ID 1300, do not perform "Setting the SE LED Color".*

10.12 Installing the Machine-Specific Data

◆ INSTRUCTION ◆

As DR-ID 1305SE has three panel units: TOP, CENTER and BOTTOM, select and install the machine-specific data corresponding to the panel units in the machine-specific data CD-R.

Unless the machine-specific data corresponding to the panel units are not installed, you cannot obtain the correct result.

(1) **Insert the machine-specific data CD into the DVD drive of the CL.**

(2) **Click [Install] of the panel unit where you want to install the machine-specific data.**
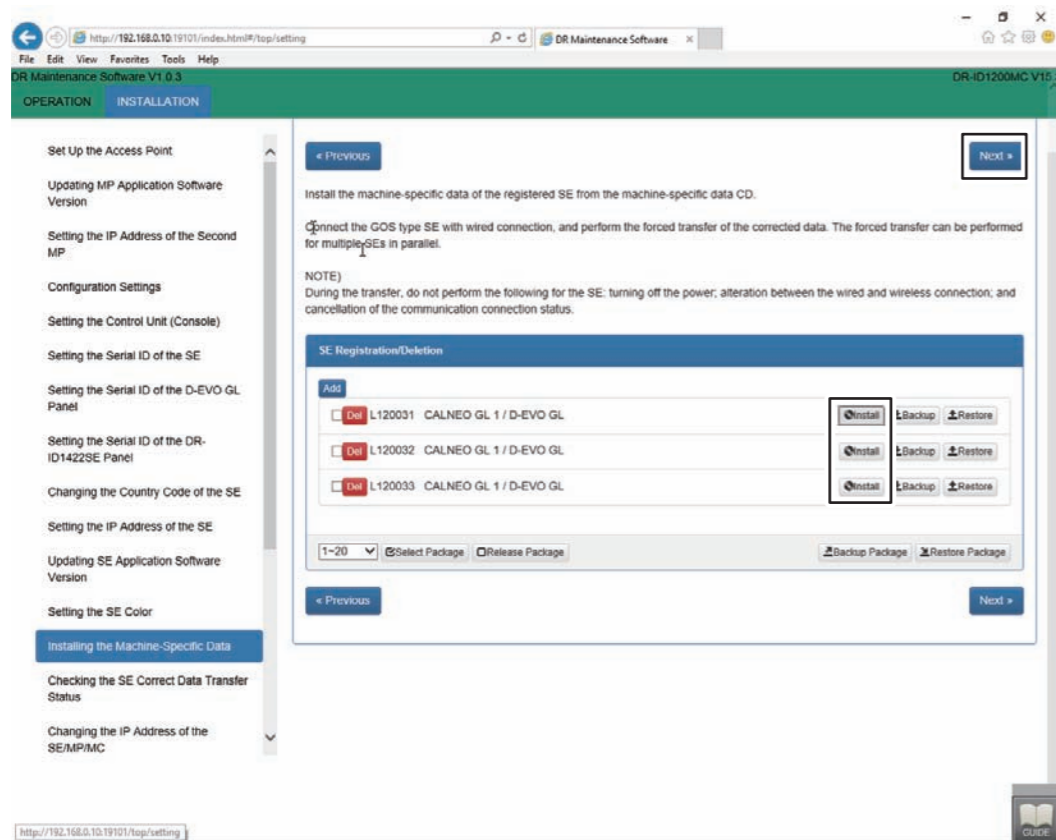
1300_700062E.ai

(3) **Click [Browse], and select all of the files inside the folders in the "CORRECTH" from the DVD drives.**

◆ NOTE ◆

Folders cannot be specified as reference destinations. Therefore, open up the relevant folder, and specify all of the files inside of that folder.
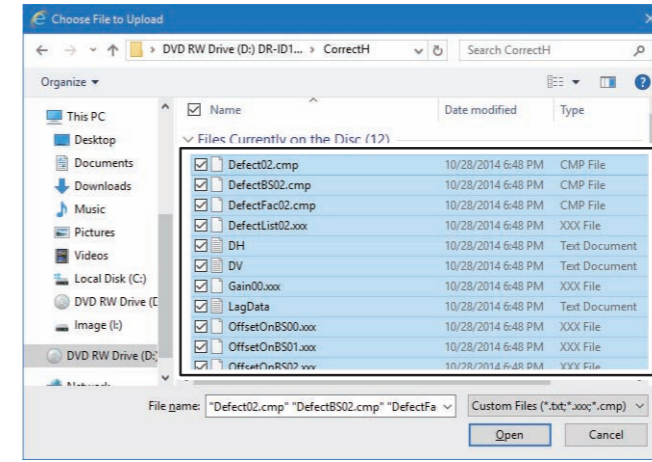
1200_700544E.ai

Installing the Machine-Specific Data

Select the machine-specific data files on the machine-specific data CD.
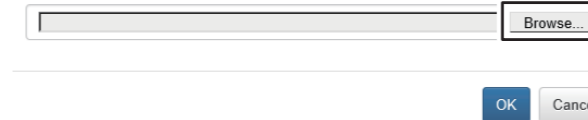
1200_700514E.ai

IMAGE READING MODE	
High-Speed Mode	Standard Mode
CORRECTH	CORRECTS

◆ *NOTE* ◆

- *Select the folder corresponding with the IMAGE READING MODE settings in RU Image Flag.*

☞ *{MU1:1.3.2_RU Image Flag}*

- *The folders suitable for IMAGE READING MODE are stored in the folders by the serial ID of the panel unit in the root of the machine-specific data CD-ROM. Select the folder in the serial ID of the panel unit corresponding to the panel number.*

CD-ROM
└<Serial ID for TOP panel unit> (TOP) folder
　　　└CORRECTH folder
　　　└CORRECTS folder
└<Serial ID for CENTER panel unit> (CENTER) folder
　　　└CORRECTH folder
　　　└CORRECTS folder
└<Serial ID for BOTTOM panel unit> (BOTTOM) folder
　　　└CORRECTH folder
　　　└CORRECTS folder

◇ *REFERENCE* ◇

Select the "CORRECTH" folder nomally.

However, if in the acceptance check the noise was generated in the image whereas physical phantoms such as mesh, etc. are used to expose, select the "CORRECTS" folder. For the procedure for changing the folder selection, refer to "● IMAGE READING MODE" of "MU1:1.3.2_RU Image Flag".

☞ *{MU1:1.3.2_RU Image Flag}*

(4) Click [OK].

Installing the Machine-Specific Data

Select the machine-specific data files on the machine-specific data CD.

D:\CorrectH\Defect02.cmo, D:\CorrectH\DefectBS02.cmo, D:\CorrectH\D｜ Browse...

OK　Cancel

1200_700515E.ai
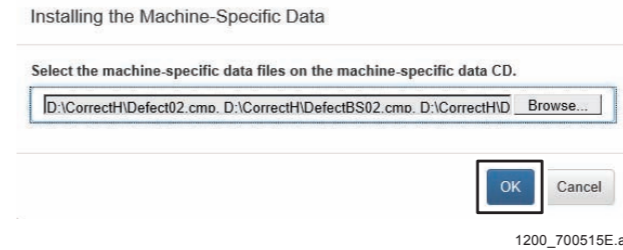
The Machine-Specific Data has been installed.

◆ *NOTE* ◆

In case of installing the machine-specific data failed, restart the SE and execute from SE connection confirmation again.

(5) For forced transfer of SE correct data, then click [OK].

Correct Data Forced Transfer

Data restore suceeded. Force transfer the correct data?(N120053)
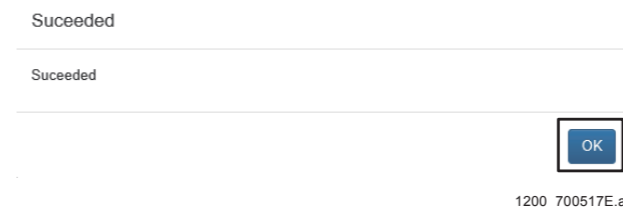
OK　Cancel
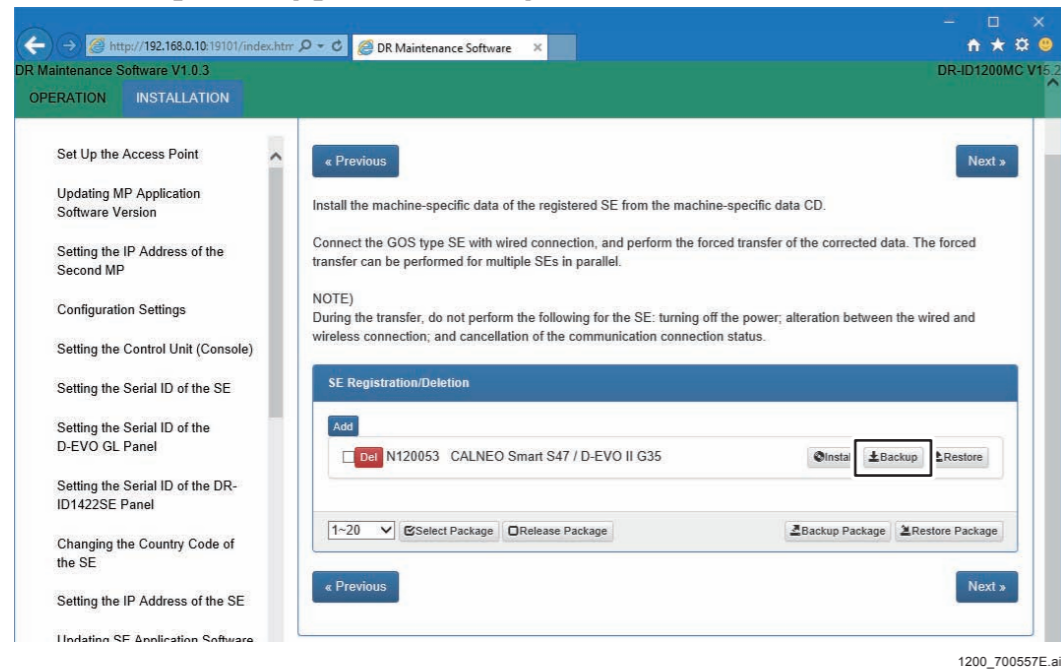
1200_700516E.ai
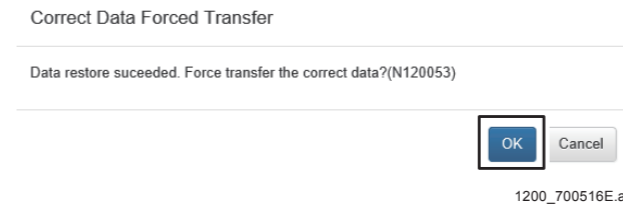
SE correct data is forcibly transferred.

◆ *NOTE* ◆

In case of correct data forced transfer failed, restart the SE and execute from SE connection confirmation again.

(6) Click [OK].

Suceeded

Suceeded

OK

1200_700517E.ai

(7) Repeat (2) to (6) for the remaining two panel units.

(8) Backup the SE correct data.

  I.   Click [Backup], and backup the correct data.


1200_700557E.ai

◇*REFERENCE*◇

To back up correct data of multiple SEs together, click [Backup Package].

  II.   Open "PanelCorrectSensitivity.txt" with WordPad.

 If the number is other than 150,8000: Restoration of the serial number is successful.

  If the number is 150,8000: Compare with machine-specific CD and confirm that time stamp and contents are the same. If they are the same, the machine-specific has been successfully restored. If it is different, restoring the machine-specific has failed, so install the machine-specific again.

(9) Click [Next].

(10) In order to confirm the transfer status of the SE correct data, select the target SE from the drop-down list box, and click [GET].
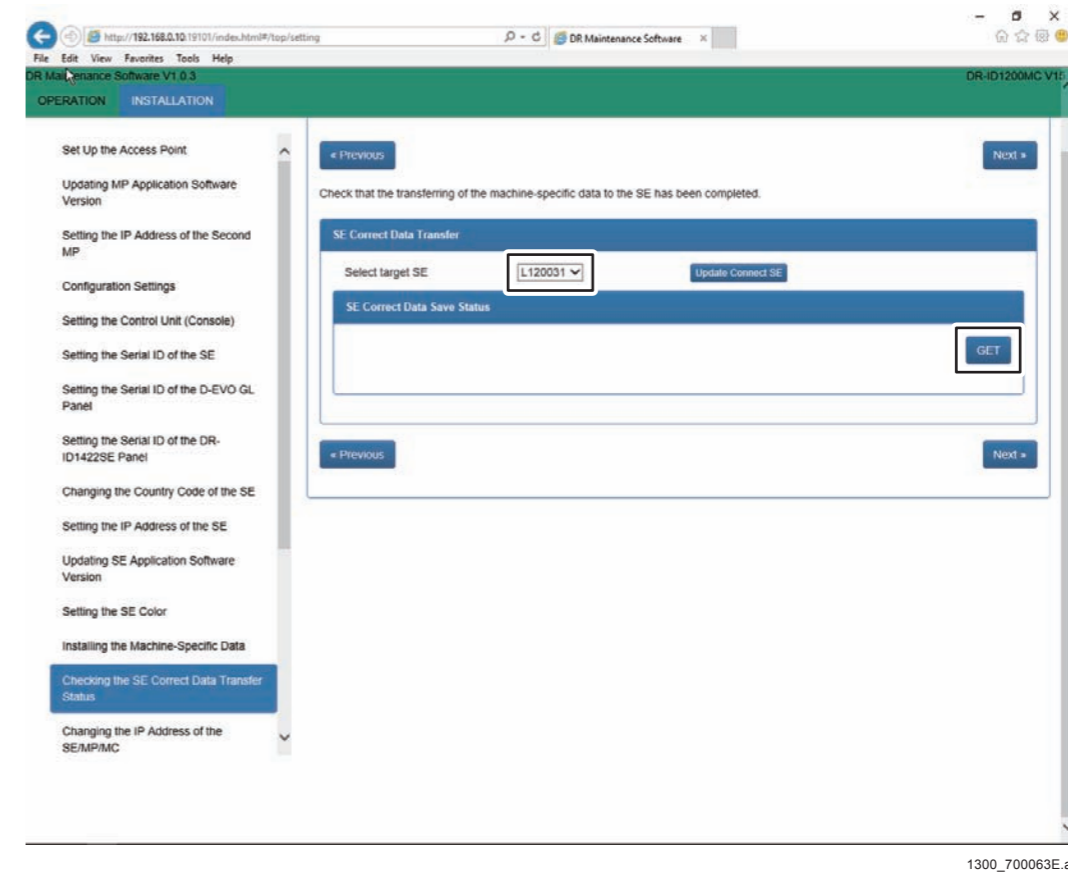
1300_700063E.ai

(11) Check that the transport status of SE correct data is "Completed".

While transferring, "PROCESSING" will be displayed.

If "TRANSFER FAILED" is displayed, then redo the transfer from step (2).
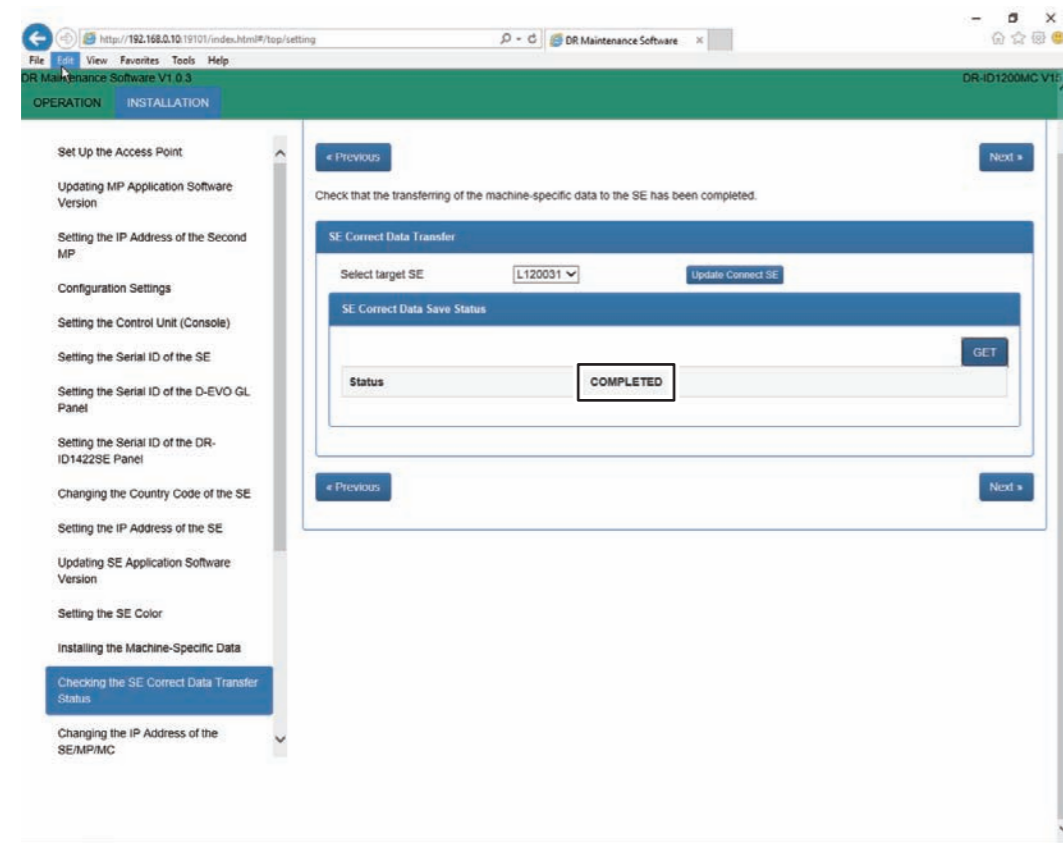
1300_700064E.ai

(12) Remove the machine-specific data CD from the CL.

(13) If there are two or more SE's, repeat the procedures (1) to (12).

(14) Complete the CL and confirm that the background calibration is performed.

◇ REFERENCE ◇

Defect correction data is generated according to the background calibration during the CL termination.

◆ NOTE ◆

In case of the background calibration failed, restart the SE and execute from SE connection confirmation again.

10.13 Changing the IP Address of the SE/MP/MC and the FTP Server

◆ NOTE ◆

These procedures are only to be executed if the SE/MP/MC, and FTP server IP addresses need to be changed from their defaults.

◆ NOTE ◆

- The IP addresses used in the local network of the system are as follows.

Item	IP address
MC ETH1 IP	192.168.0.10
MP1	192.168.0.20
MP2	192.168.0.21
AP	192.168.0.25
SE1 WIRED	192.168.0.30
SE1 WIRELESS	192.168.0.40
SE2 WIRED	192.168.0.31
SE2 WIRELESS	192.168.0.41
SE3 WIRED	192.168.0.32
SE3 WIRELESS	192.168.0.42
SE4 WIRED	192.168.0.33
SE4 WIRELESS	192.168.0.43
SE5 WIRED	192.168.0.34
SE5 WIRELESS	192.168.0.44

- The IP address of the local network can be changed. However, exercise care not to cause the IP addresses to duplicate.

  <Example>

  The IP addresses duplicate if MC ETH0 is changed as follows when MC ETH1 is 192.168.0.10 (default value).

  MC SubNetMask: 255.255.255.0

 MC ETH0:   192.168.0.200

■ Changing the Network Address Field and the MC Subnet Mask

◆ *INSTRUCTION* ◆

The segment No. of the network address must be set to the same value among the MC, MP, SE and AP. If different network address values are set, the network among the machines might get disconnected. Initialization of the machines might be needed in such a case.

How far in the IP address the network address indicates depends on the setting of the subnet mask. As the default value of the subnet mask of the machine is 255.255.255.0, and locations assigned by 255 (mask value areas) indicate the network address.

The default value of the network address is "192.168.0".

Segment No.

192.168.0.0

Network address

Host address
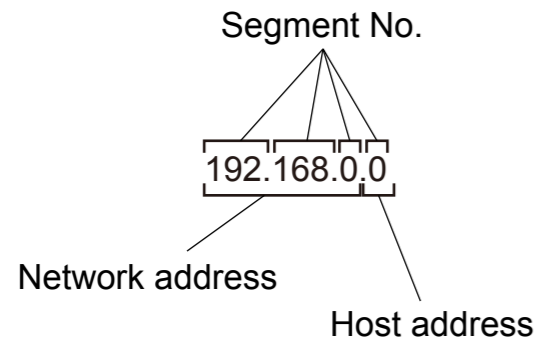
600_700206.ai

(1) Change the Network Address Field and MC Subnet Mask of MC ETH 1 Network (Local).
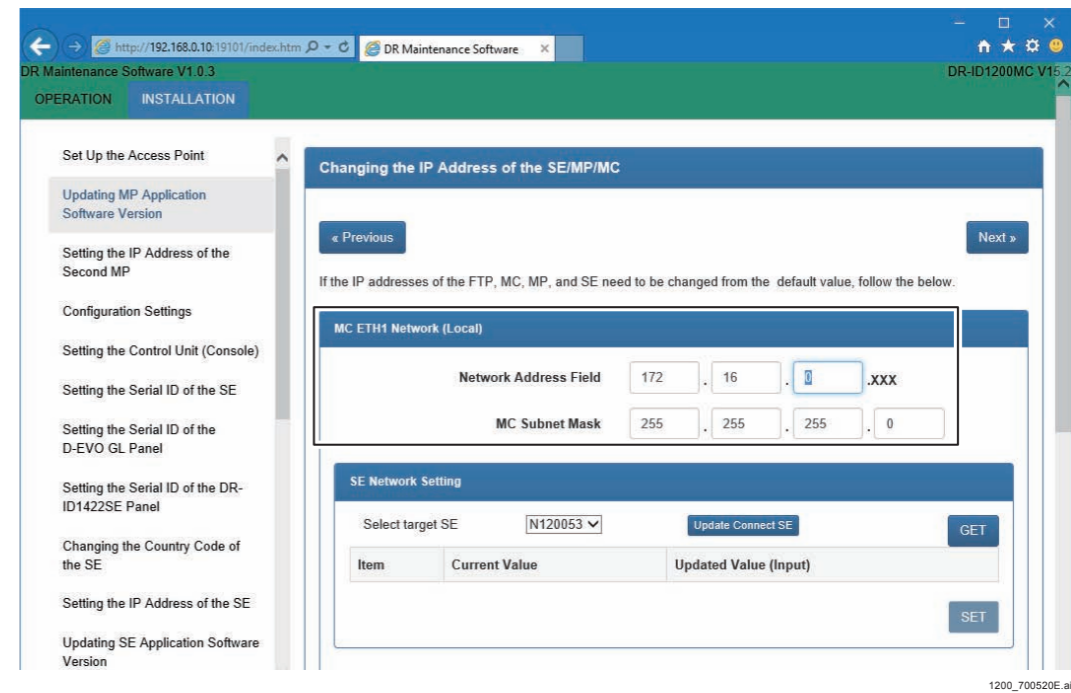
1200_700520E.ai

■ Changing the SE Network Setting

(1) Select the target SE from the drop-down list box then click [GET], confirm the address and click [SET].

1200_700521E.ai

(2) Click [OK].

1200_700522E.ai
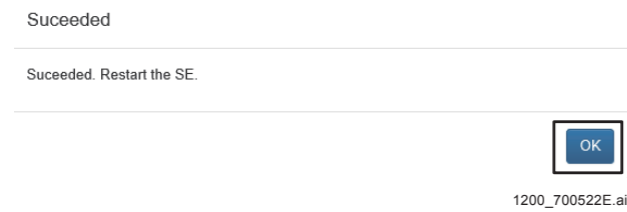
◇ *REFERENCE* ◇

Do not restart the SE for this step, but perform in the next step.

■ Changing the MP Network Setting

(1) Select the target SE from the drop-down list box then click [GET], and click [SET].
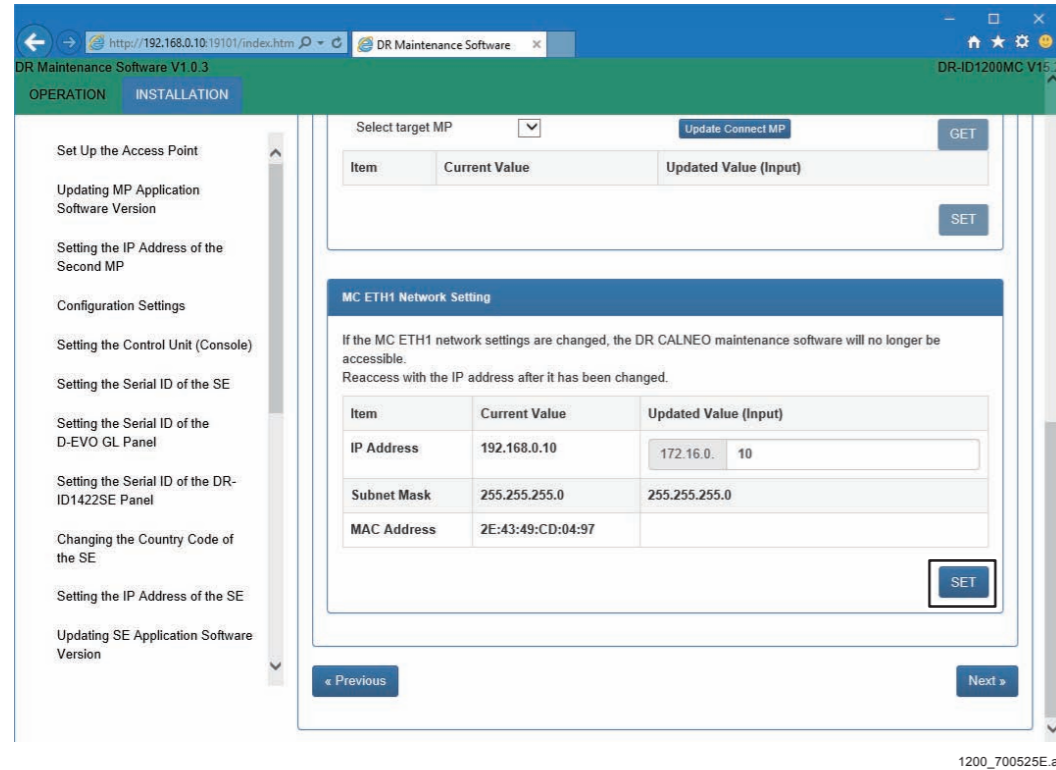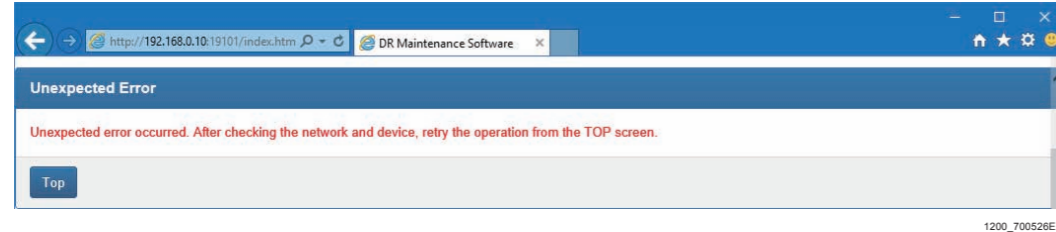

1200_700523E.ai
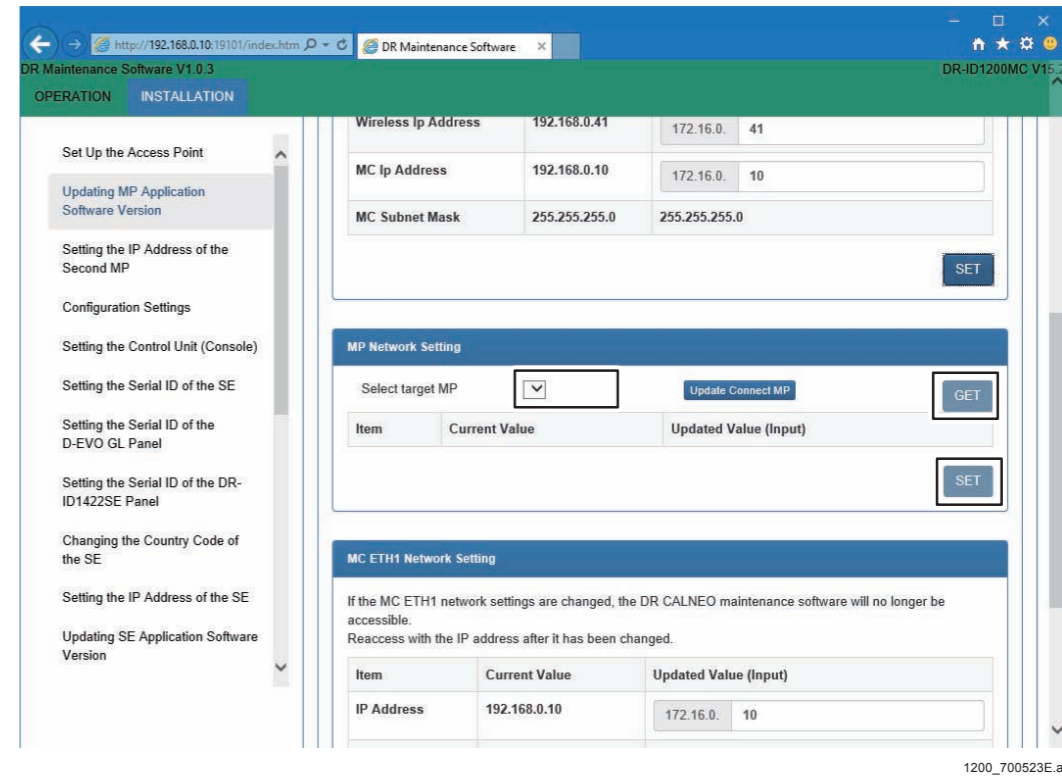
(2) Click [OK].

◇ *REFERENCE* ◇

Do not restart the MP and MC Manager for this step, but perform in the next step.

■ **Changing the MC Network Setting**

(1) **Click [SET] of MC ETH1 Network Setting.**

1200_700525E.ai

The following window opens.

1200_700526E.ai

(2) **Restart all of the SE/MP/MC.**

(3) **Open the Internet Explorer, input "http://(Changed the IP address of MC):19101/index.html" in the address bar and press the [Enter] key.**
DR Maintenance Software starts.

(4) **Select the "Changing the IP address SE/MP/MC", confirm that the SE/MP/MC IP address has been changed correctly.**

◆ *INSTRUCTION* ◆

If the IP address of the MP or the SE is lost by mistake during the operation procedures, restore the IP address.

☞ *{IN:Appendix 2._Restoring the IP Address of the MP/SE}*

(5) **Restart the DR Maintenance Software.**

◇ *REFERENCE* ◇

In case of the DR Maintenance Software restart, reopen the Internet Explorer again.

(6) **Click [Next].**

11. Image Calibration

◆ INSTRUCTION ◆

- *Check that background calibration automatically executed upon startup of the machine is completed before carrying out calibration.*
- *Keep the CL software running. If the software is terminated, the MC power will be automatically turned OFF, and calibration might result in failure.*
- *Perform the offset calibration and gain calibration only for the CENTER panel unit. Perform the full calibration only when a problem occurs due to artifacts or other factors.*

  Refer to the following for the defect calibration and lag calibration procedures.

  ☞ *{IN:Appendix 5._Defect Calibration and Lag Calibration}*

◇ REFERENCE ◇

Messages of "Calibrating" and "Urgent use is possible" alternately appear on the DX Console status indication area.

#1 Check: Status indication

1200_700172E.ai

◇ REFERENCE ◇

Refer to the table below for the kinds of calibration to be executed.

Calibration type		Exposure conditions	Target panel	Grid
		1305SE		
Offset	For reading mode 0	No exposure	CENTER panel unit	Can be kept mounted.
	For reading mode 1			
	For reading mode 2			
Gain	-	Exposure conditions: - Tube voltage of 75 kV - Dose of 10 mR (*) Number of exposures: 16	CENTER panel unit	Cannot be mounted.
Marker	-	Exposure conditions: - Tube voltage of 80 kV - Amperage: 100 mA - Time: 20 msec - SID: 120 cm Number of exposures: 4	Between the TOP and the CENTER panel units Between the CENTER and BOTTOM panel units	Cannot be mounted.

*: Set the exposure time to 200 msec or less.

DR-ID 1300 / DR-ID 1300PU *Service Manual*

■ Preparations

(1) Open the exposure stand and remove the grid.

◆ NOTE ◆

Make sure that an X-ray is directly irradiated to DR-ID 1305SE with the exposure stand open.

(2) Clean the SE exposure plane with a dry cloth.

(3) Adjust the position of the X-ray tube so that SID becomes 215 cm or longer.

◆ NOTE ◆

At the time of calibration, set the SID sufficiently large. If not large enough, the EI and S values between the TOP, CENTER and BOTTOM deviate due to the sensitivity correction of the panel unit affected by the heel effect, resulting in the change in the apparent sensitivity.

(4) Adjust the irradiation field to cover the entire exposure plane.

(5) Start up the DR Maintenance Software.

(6) Click [Calibration].

The Calibration window opens.

11.1 Offset Calibration

◆ INSTRUCTION ◆

- *In the case where the machine-specific data is installed into a fresh installation of the MC application V12.0 or later, perform the offset calibration on the CENTER panel unit.*
- *In the case where the MC application is upgraded from V11.0 or earlier to V12.0 or later, the gain calibration has been performed under the MC application V11.0 or earlier. Therefore, perform the offset calibration on all of the panel units (TOP, CENTER and BOTTOM).*
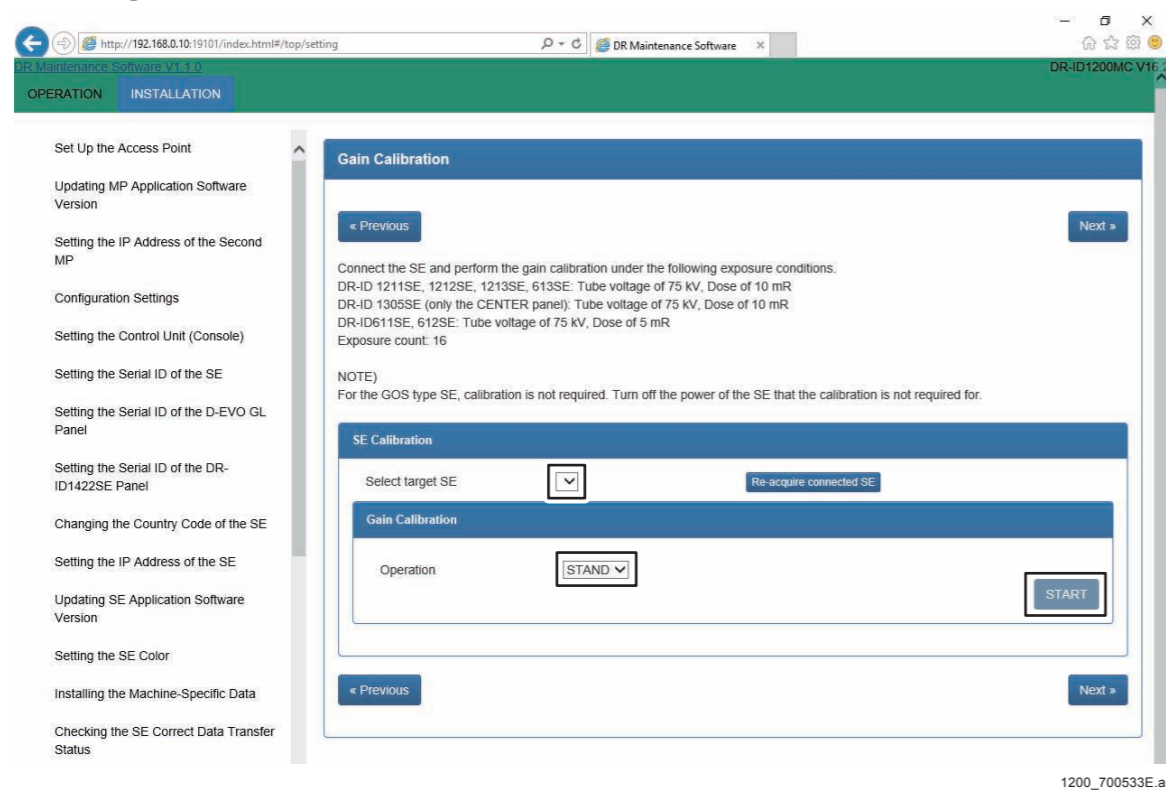
◇ REFERENCE ◇

Offset calibration is carried out for all SE's which are connected.

(1) Click [START] of "Offset Calibration".
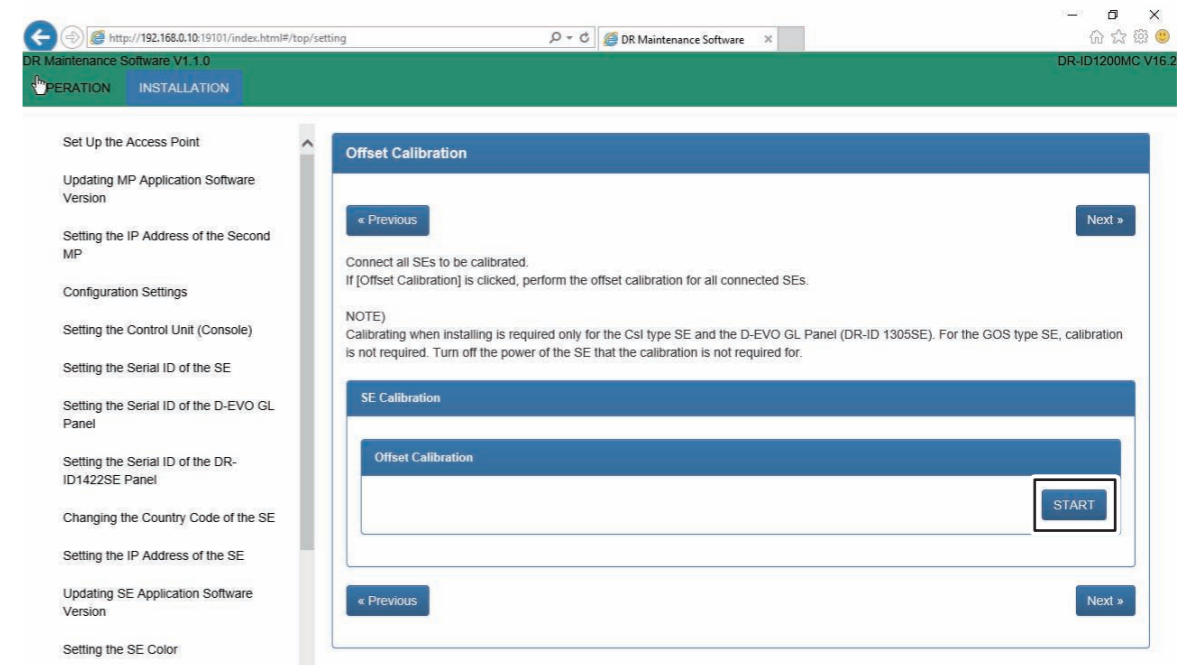
1200_700532E.ai

Images for offset correction data generation (4 frames) are read from the SE (FPD).

If the offset correction data which was generated is stored on a HDD, a pop up window displaying "Succeeded" pops up.
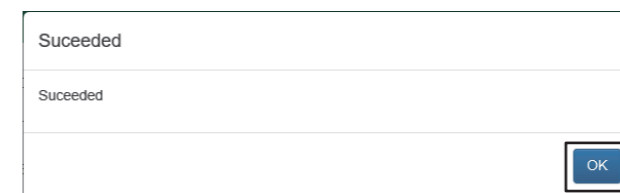
1200_700489E.ai

◆ NOTE ◆

If you click [START] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [START] again after an interval of approx. 30 seconds, in this case.

◇ REFERENCE ◇

Whether the diagnosis is successfully completed appears on the result display area.

An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

◆ NOTE ◆

If the calibration failed, restart the SE and retry from connection check.

(2) **Click [OK].**

(3) **Click [Next].**

11.2 Gain Calibration

⚠️ *CAUTION*

Keep to the exposure interval defined in the Operation Manual of the X-ray high voltage generator when making continuous exposures. An interval of 1 minute or longer normally needs to be taken.

◆ INSTRUCTION ◆

- *In the case where the machine-specific data is installed into a fresh installation of the MC software V12.0 or later, perform the gain calibration on the CENTER panel unit.*

- *In the case where the MC software is upgraded from V11.0 or earlier to V12.0 or later, the gain calibration has been performed under the MC software V11.0 or earlier. Therefore, perform the gain calibration on all of the panel units (TOP, CENTER and BOTTOM).*

◆ NOTE ◆

- *Do not change the tube position in the gain calibration. If the tube position is changed, a line defect is wrongly detected at the upper and lower ends of the CENTER panel unit. This may cause an artifact or a defective at the boundary of the panel unit.*

- *If an artifact has occurred, take the following measure.*
    - *For TOP panel unit or BOTTOM panel unit*
      Perform the full calibration for the target panel unit.
    - *For CENTER panel unit*
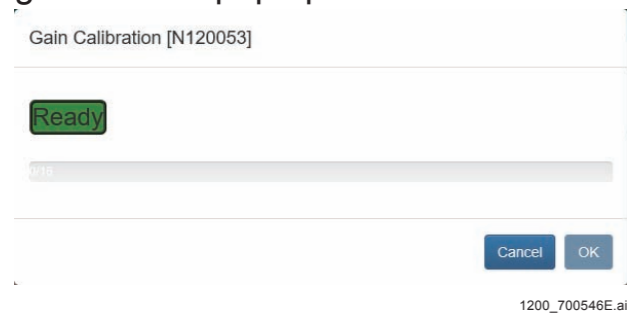   *Perform the full calibration and marker calibration.*

◇ REFERENCE ◇

The focal size of the X-ray high voltage generator may be either large or small.

(1) Select a SE to be calibrated and set an operation with "Operation Setting", and then click [START] of "Gain Calibration".

1200_700533E.ai

If exposing preparations are completed, the [Ready] button will be displayed in green in the pop up window.

1200_700546E.ai

◆ *NOTE* ◆

If you click [Start] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [Start] again after an interval of approx. 30 seconds, in this case.

◇ *REFERENCE* ◇

Whether the calibration is successfully completed appears after completion. An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

◆ *NOTE* ◆

Before going to the next step (exposure), check that [Ready] is lit up with the green button.
If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

(2) Expose 16 times with the following condition. Confirm that [Ready] lights with the green button at each exposure.

◇ *REFERENCE* ◇

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.

- 1305SE : Tube voltage of 75 kV, Dose of 10 mR
Images for gain correction data generation (16 frames) are read from the SE (FPD).

◆ *INSTRUCTION* ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◇ *REFERENCE* ◇

Exposure condition examples for exposing an IP to a dose of 10 mR are shown below. (1305SE)

SID:	*215 m*
Voltage:	*75 kV*
Amperage:	*100 mA*
Time:	*90 msec*

When the gain correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.
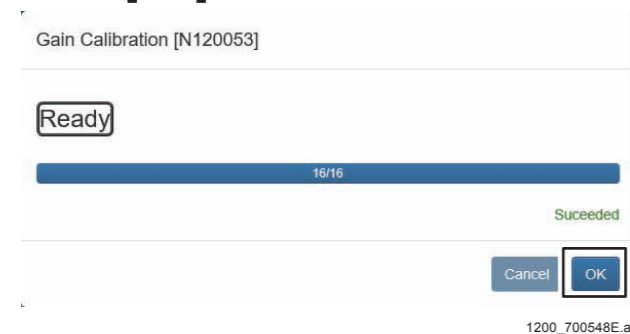
◆ **NOTE** ◆

If "NG" appeared, check the following.
- *Exposure condition*
- *Exposure field is the entire SE.*

◆ **NOTE** ◆

If the calibration freezes in the above procedures, restart the SE and the MC, then re-execute from the SEs whose connections have been checked.

(3) Click [OK].

1200_700548E.ai

(4) Click [Next].

◆ **NOTE** ◆

Do not perform defect calibration and lag calibration when installing.

11.3　Checking the Calibration Results

The calibration results can be checked after the calibration.

(1) Click [Backup] in the "SE Correct Data Backup/Restore" in the "BACKUP/RESTORE", and back up the SE correction data.

1200_700558E.ai
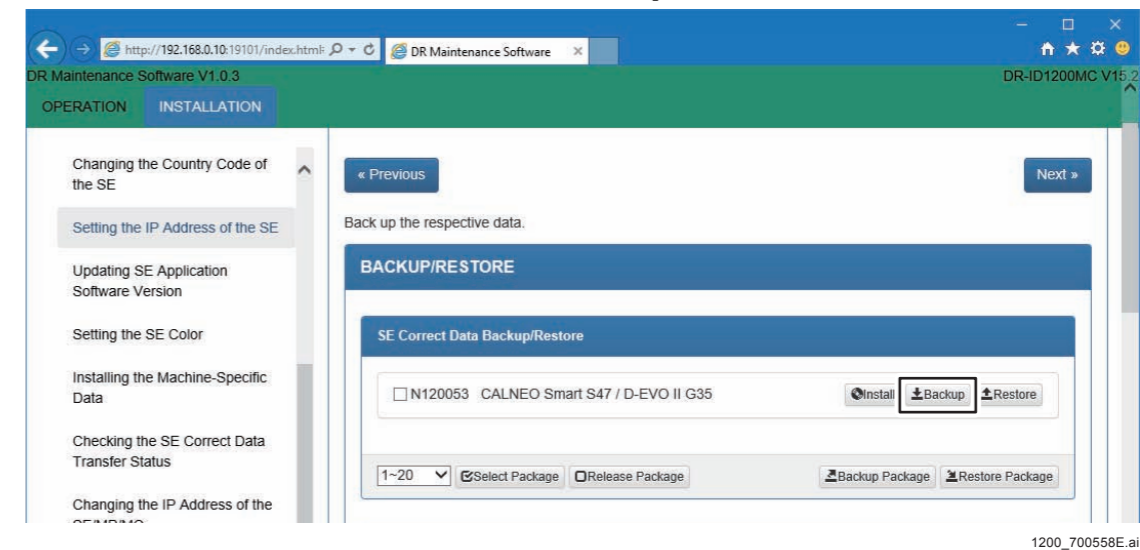
◇ *REFERENCE* ◇

To backup correct data of multiple SEs together, click [Backup Package].

(2) Open the files written below with the Word Pad.
- Gain calibration: PanelCorrectSensitivity.txt

  If the number is other than 150,8000: Restoration of the serial number is successful.

  If the number is 150,8000: Compare with machine-specific CD and confirm that time stamp and contents are the same. If they are the same, the machine-specific has been successfully restored. If it is different, restoring the machine-specific has failed, so install the machine-specific again.

◆ **INSTRUCTION** ◆

Perform the procedures from "11.1_Offset Calibration" to "11.3_Checking the Calibration Results" at an installation site where two or more SEs are connected.

☞ *{IN1:11.1_Offset Calibration}*

12. Marker Calibration

DR-ID 1305SE has the structure where three panel units are connected, each of which outputs an image - three images in total. To output these three images as one long-length image, perform the marker calibration to synthesize an image from these three images without being misaligned with each other.

Perform the maker calibration for the two boundaries: one between the TOP and the CENTER panel units, and the other between the CENTER and BOTTOM panel units.

◆ NOTE ◆

When performing the full calibration for the CENTER panel unit, make sure to also perform the marker calibration. If the marker calibration is not performed, an image cannot be correctly synthesized and an artifact occurs.

■ Preparing for Calibration

(1) **Select the SE No. of CENTER panel unit for calibration and set the operative method in [Operation Setting] .**

1300_700068E.ai
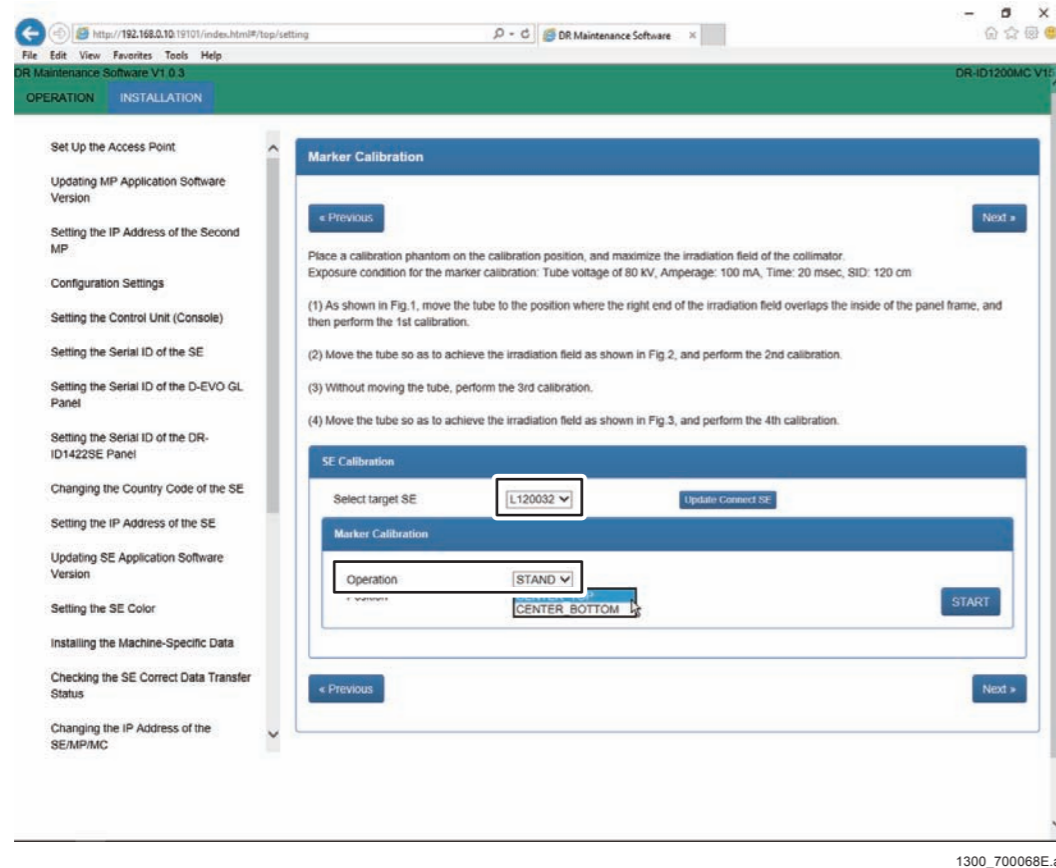
◇ REFERENCE ◇

Select an operative method from STAND / TABLE / FREE.

(2) **Select "CENTER_TOP" in "Position" and then click "Start" in "Marker Calibration".**
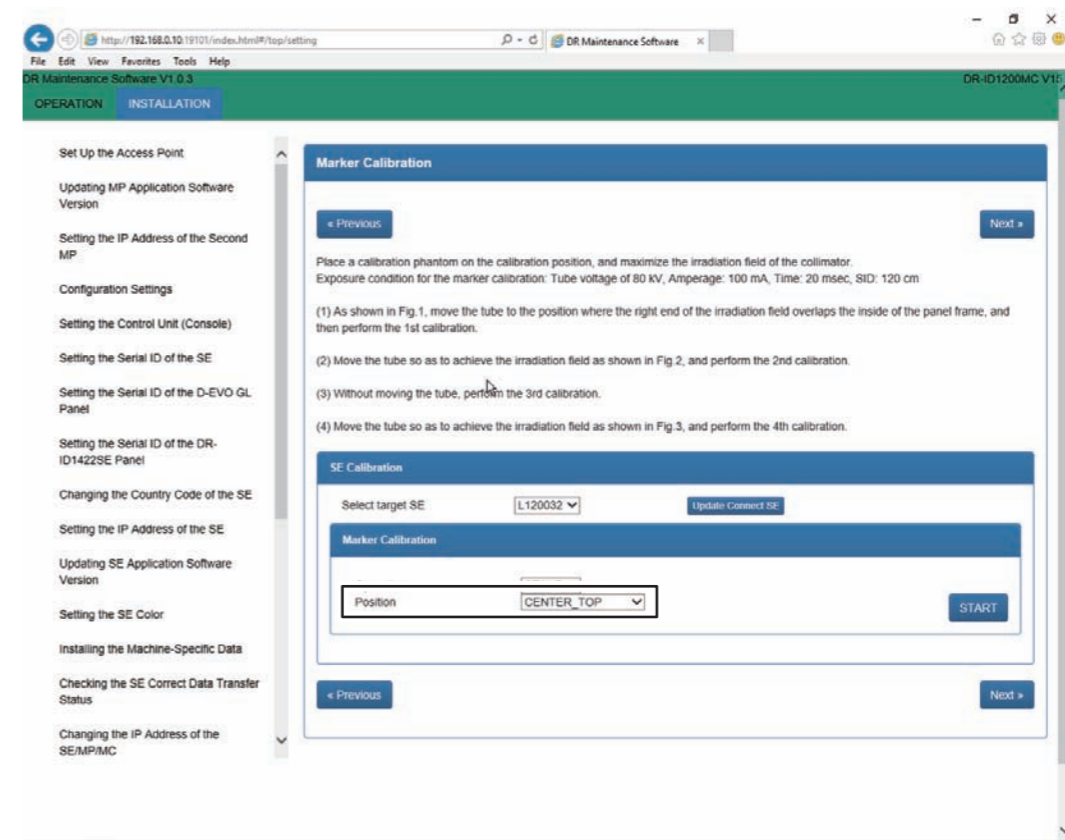
1300_700069E.ai

If exposing preparations are completed, the [Ready] button will be displayed in green in the pop up window.

1300_700070E.ai

◆ NOTE ◆

If you click [Start] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [Start] again after an interval of approx. 30 seconds, in this case.

◆ NOTE ◆

Before going to the next step (exposure), check that [Ready] is lit up with the green button.
If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

■ Installing the Calibration Phantom

(1) **Install the included calibration phantom at the boundary between the TOP and the CENTER panel units when selecting "CENTER_TOP" for [Position], and when selecting "CENTER_BOTTOM", at the boundary between the CENTER and the BOTTOM panel units.**
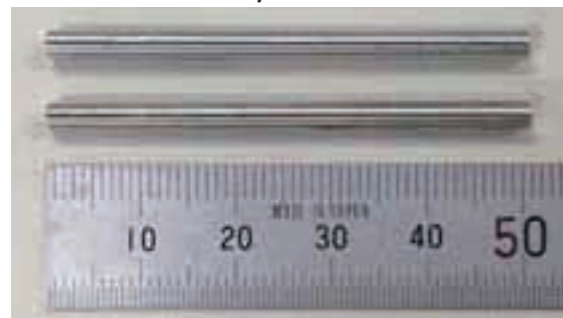
◆ INSTRUCTION ◆

The following illustrates an example of the included calibration phantom installed at the boundary between the TOP and the CENTER panel units. Align the calibration phantom with the points designating the installation position printed on the panel surface. For the panel placed vertically, attach the calibration phantom with curing tape or other adhesives.

1300_700023E.ai

(A) Boundary between the TOP and the CENTER panel units
(B) Boundary between the CENTER and the BOTTOM panel units
(C) Installation positions for the calibration phantom
(D) Align two calibration phantoms on the specific installation position for each boundary.

◇ REFERENCE ◇

The calibration phantom is the metal stick that is included with the MP.

1300_700057.ai

■ Exposing Calibration

(1) **Perform positioning under the following conditions:**
- Move the irradiation field center of the tube to the position that matches the center (red cross) of the overlapping part of the panels.
- Make the distance 120 cm from the panel surface to the focal spot of the tube.
- Maximize the irradiation field of the collimator.
- Move the tube in the short direction of the panel up to the position where the right end of the light irradiation field overlaps with the inside of the panel frame.
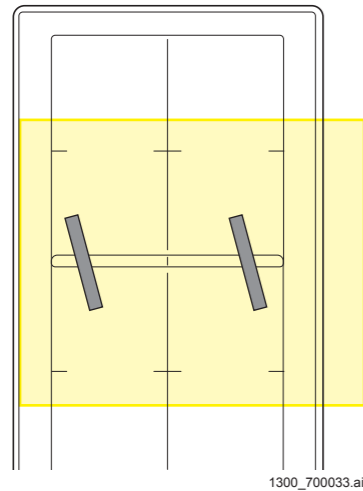

1300_700031.ai

(2) **Expose the 1st shot with the following conditions. Confirm that [Ready] lights with the green button at each exposure.**
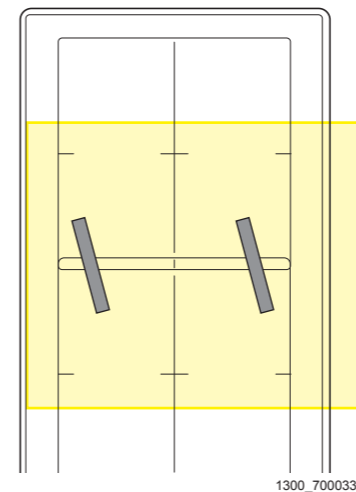
◇ REFERENCE ◇

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.
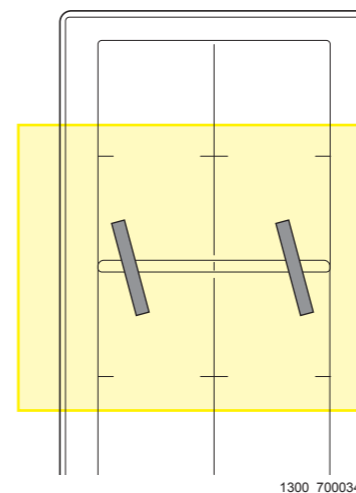
- Tube voltage of 80 kV, Amperage: 100 mA, Time: 20 msec, SID: 120 cm

(3) Move the irradiation field in the opposite direction as shown below.

1300_700033.ai

(4) After checking that the green [Ready] button is lit, expose the 2nd shot with the following conditions. Confirm that [Ready] lights with the green button at each exposure.

◇ *REFERENCE* ◇

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.

- Tube voltage of 80 kV, Amperage: 100 mA, Time: 20 msec, SID: 120 cm

(5) After checking that the green [Ready] button is lit, expose the 3rd shot with the following conditions. Confirm that [Ready] lights with the green button at each exposure.

◇ *REFERENCE* ◇

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.

- Tube voltage of 80 kV, Amperage: 100 mA, Time: 20 msec, SID: 120 cm

◆ *NOTE* ◆

Do not move the irradiation field.

1300_700033.ai

(6) Return the irradiation field to the position of the first shot as shown below.

1300_700034.ai

(7) After checking that the green "Ready" button is lit, expose the 4th shot with the following conditions. Check that the exposure count turned to "4/4" .

- Tube voltage of 80 kV, Amperage: 100 mA, Time: 20 msec, SID: 120 cm

■ **Creating Calibration Data and Checking Result**

(1) **Click [OK].**
    If the data generated will be stored on the HDD, "Succeeded" will appear after it has finished.

    ◆ *NOTE* ◆

    If the data generation failed, an error number appears on the status screen. In that case, check the position of the calibration phantom and the irradiation field, and then perform again the "■ Exposing Calibration". If an error still occurs, obtain the following data and report the failure.
    - *LogAll (IMO.log / Calib.log)*

(2) **Check that the calibration data have been generated.**

    ◇ *REFERENCE* ◇

    The data are stored in the following location. Check the time stamp of the file generated.
    - *C:\Program Files\FujiFilm\MC\opt\config\machine\correct\PANEL2\ LPMarkerData.txt*

■ **Changing the Calibration Position and Exposing Calibration**

(1) **Change the setting of [Calib Position] from the value selected in the step (6) of "■ Preparing for Calibration" to "CENTER_BOTTOM".**
    Then, perform "■ Preparing for Calibration", "■ Installing Calibration Phantom", "■ Exposing Calibration", and "■ Creating Calibration Data and Checking Result".

■ Checking the Image Composition Accuracy

(1) Left-click the MC Manager from the task tray and execute "EXIT".

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

(2) Create the confirmation menu.

Start the User Utility and copy the "Finger" menu (MPM code: 0607), and then edit the following items as shown below. With the other settings left unchanged, exit the User Utility.
- Menu name: Synthesized calibration checking test
- Function: Leave the setting as "RT"

(3) Start up the application for the CSL.

(4) Select the check menu created in step (2), and perform exposure at the two positions shown below with the calibration phantom left placed. Visually check the connection of the calibration phantom for misalignment.

- Tube voltage of 80 kV, Amperage: 50 mA, Time: 13 msec, SID: 180 cm

1st shot   2nd shot

1300_700036E.ai

◆ NOTE ◆

If a misalignment is found, perform the full calibration and marker calibration for the CENTER panel unit again.

13. Checking for Image Problems

13.1 Checking for Irregularities, Density Problems, White Blank Portion, and Sensitivity Problems in the Images

In the QC menu, select the panel units of TOP, CENTER and BOTTOM, and check that there is no problem with the images.

◆ *INSTRUCTION*◆

Check for the irregularities and the density problems respectively with the grid removed and with the grid mounted.
If the grid is not to be used, you only need to check with the grid removed.

(1) **From the CL, register the following exposure menu:**
- "QC-Test" - "IMAGE-FORMAT" (size: 17 inches x 17 inches)

(2) **Expose an IP.**
- When the automatic X-ray detection function is used, expose an IP to a tube voltage of 55 kV and a dose of 1.5 mR.

◆ *INSTRUCTION* ◆

When exposing an IP, position the tube directly above the center of the panel unit for each panel unit that is to be acquired, then take exposures.

◇ *REFERENCE* ◇

Exposure condition examples for exposing an IP to a tube voltage of 55 kV and a dose of 1.5 mR are shown below.

Distance:	*180 cm*
Voltage:	*55 kV*
Amperage and time:	*1.6 mAs*
(When the amperage and the time can be specified, minimize the amperage.)	

◆ *NOTE* ◆

- *If the exposure is performed with the exposure menu other than the specified ones or with the exposure condition other than the referred one, abnormal images, such as horizontal streak, may be found despite no error in the SE since the study conditions are tight.*
When an abnormal image occurred, perform the exposure with the specified exposure menu and exposure condition, and check the images.
- *When exposure is performed for the CENTER panel unit with the QC menu (exposure menu when the third digit of the MPM code is 9), the upper and lower ends of the image is blackened. Also, in other exposures, the left and right ends of the image are blackened. At the boundary of blackening treatment, an artifact may occur due to image processing.*

- When the automatic X-ray detection function is not used, expose an IP to a dose of 1 mR.

◇ *REFERENCE* ◇

Exposure condition examples for exposing an IP to a dose of 1 mR are shown below.

Distance:	*180 cm*
Voltage:	*80 kV*
Amperage:	*50 mA*
Time:	*13 msec*

(3) **Output the film in the one-image format to the printer.**

(4) **Check the output film for irregularities, partial density problems, and white blank portions.**

If moiré is determined to occur on the image, identify the cause and deal with the problem according to the procedures mentioned in the Troubleshooting manual. The image problems might be possibly caused by the movable grid.

☞ {MT:4.1_Analyzing Moiré}

(5) Check for sensitivity and density problems.

Check to make sure that the system sensitivity value and the film density value appearing on the output film are approximately 200 and 1.2, respectively.

◆ *NOTE* ◆

If the S value is more than 300 or less than 100, the Machine-Specific Data may not be correctly installed. In such a case, reinstall the Machine-Specific Data and perform "11. Calibration".

☞ *{IN1:10.12_Installing the Machine-Specific Data}*

◇ *REFERENCE* ◇

If the gain calibration is not performed with SID = 215 cm or more, the S value of the TOP/BOTTOM panel unit may deviate from the S value of the CENTER panel unit.

◆ *INSTRUCTION* ◆

If the images have any problems, perform "11.1 Offset Calibration", "11.2 Gain Calibration", "Appendix 5.1 Defect Calibration", and "Appendix 5.2 Lag Calibration" in this order, and then perform "13.1 Checking for Irregularities, Density Problems, White Blank Portion, and Sensitivity Problems in the Images" again. If the images of the CENTER panel unit have problems, "Appendix 5.1 Defect Calibration" is not required to be performed.

☞ *{IN1:11._Image Calibration}*

☞ *{IN:Appendix 5._Defect Calibration and Lag Calibration}*

If the problems still remain in the images after the countermeasures above, obtain the data below and request troubleshooting.
- *The capture image of the DX Console screen*

  Indicate abnormal images and portions of the images by using circles and arrows.
- *Information on the facility and miscellaneous*
    - *Frequency*
    - *Repeatability*
    - *Whether the problem occurs with other panels.*
    - *Exposure conditions (kV, mA, msec, SID, grid, irradiation fields)*
    - *Software version (MC and DX Console)*
    - *Something you found*
- *Log (LOG ALL)*

  Secure and collect corresponding logs as soon as quickly before carelessly eliminating them. Immediately after the problem occurs, check that the log includes the time of the problem (the log has been updated).
- *Calibration data (CORRECT)*

  Even if, for example, only the TOP panel is abnormal, the CENTER and/or the BOTTOM panel units may relate in part to the problem. Collect all calibration data for the three panel units.
- *Input images to the MC software (a total of three images each for TOP, CENTER and BOTTOM)*

  In the case where the raw image saving mode is OFF, the latest 50 exposures of images before the stitching area correction are saved by the procedures below. Collect corresponding one exposure (three images).
    1. *Use the LOG ALL of the PC TOOL to save the log.*
       A "LP_IMAGE" folder is newly created in the folder saved with the LOG ALL.
    2. *Perform "BackupLPImage.bat" in the "LP IMAGE" folder.*
       The latest 50 exposures of raw images are saved in the "LP IMAGE" folder.
- *Routine files (a total of four images each for TOP, CENTER, BOTTOM and Synthesis)*

  Obtain complete set of the Routine files having extensions other than "inf" that includes personal information.
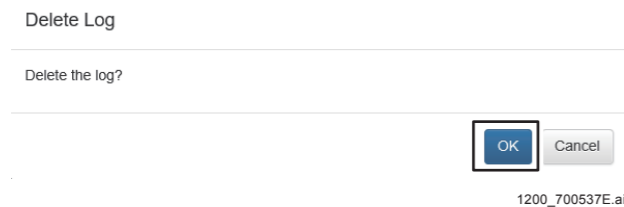
14. Checking the Error Log

■ DR Maintenance Software

(1) **Start up the DR Maintenance Software.**

(2) **Click [ERROR DB] and check the error log.**

(3) **Click [DELETE].**
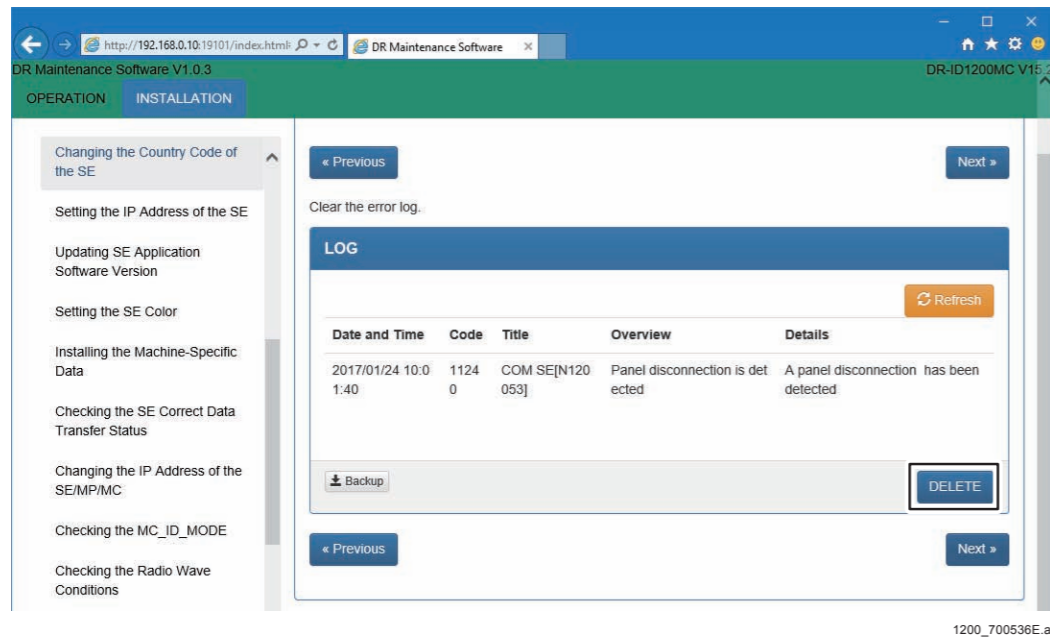
1200_700536E.ai

(4) **Click [OK] to clear the error log.**

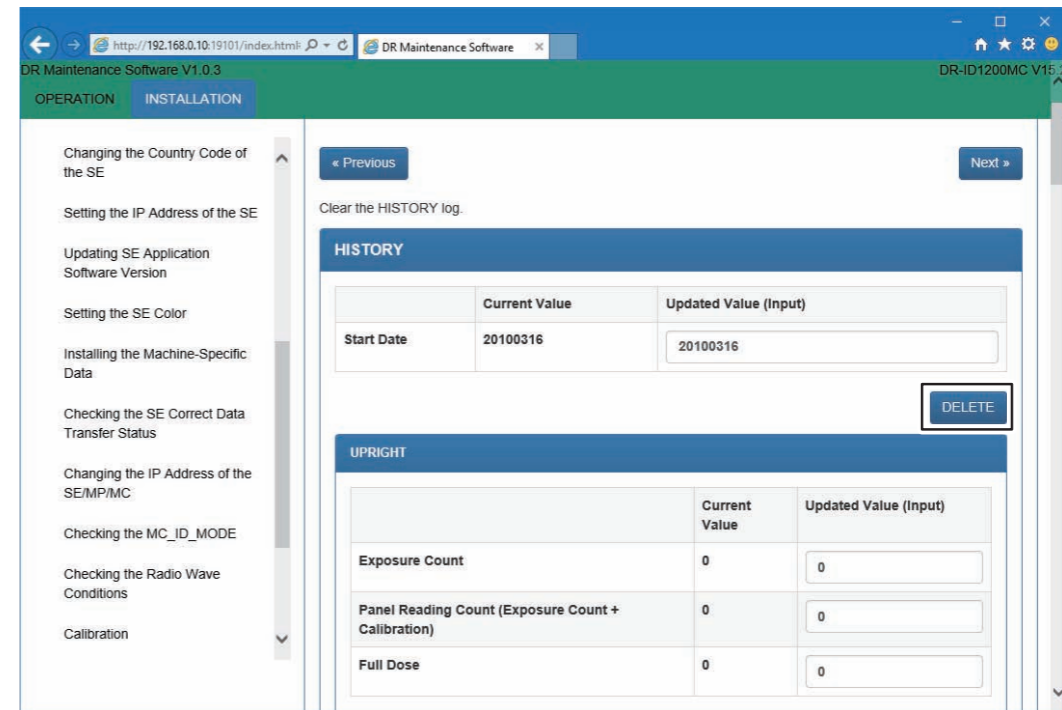1200_700537E.ai

15. Clearing the EDIT HISTORY

◆ *INSTRUCTION* ◆

After exiting the DX Console application, perform the following procedure.

(1) **Start up the DR Maintenance Software.**

(2) **Click [HISTORY].**

(3) **Click [DELETE].**

1200_700538E.ai

(4) **Click [OK] to clear the HISTORY.**

16. Backing Up the Data

■ Backing up the device information

(1) Click [Next] on the DR maintenance software.

Backup window of various data is displayed.

(2) Back up SE Correct Data.

#1 Click: [Select Package]
#2 Click: [Backup Package]
#3 Click: [Save]

1200_700604.ai
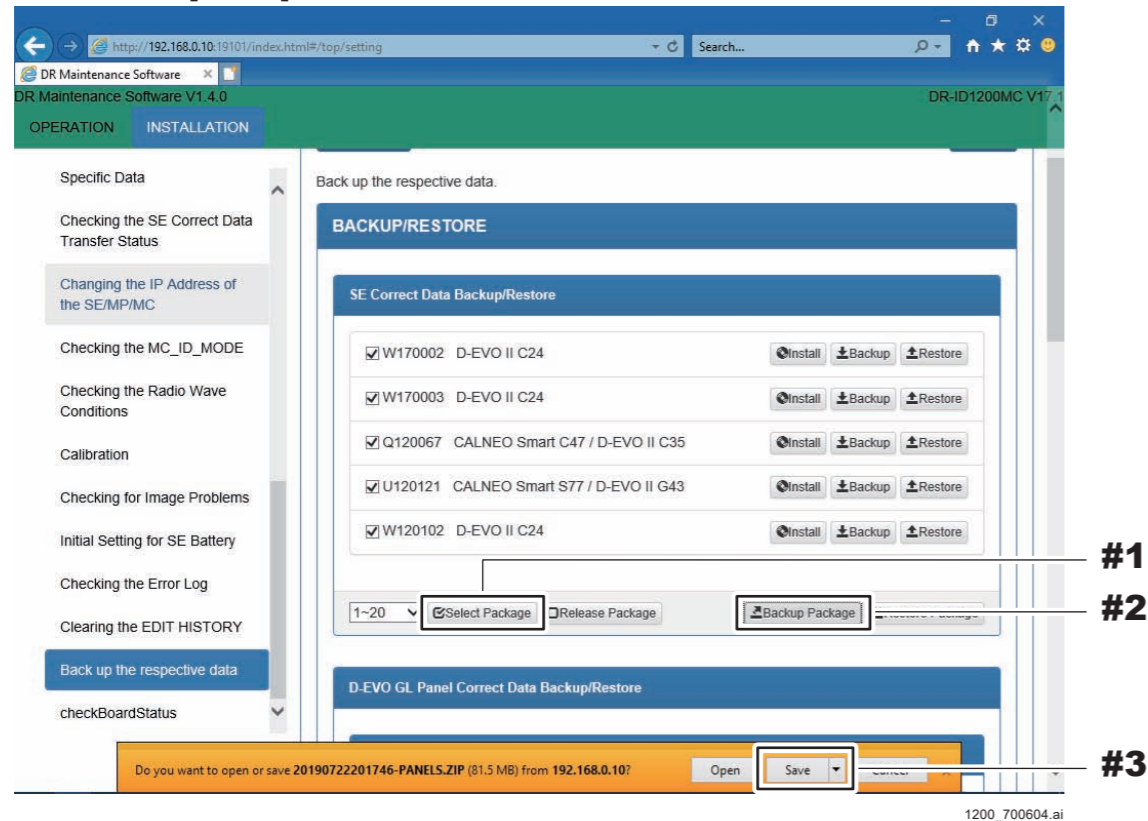
SE correction data is saved.

◇ REFERENCE ◇

The correction data are saved in the backup folder of the Window with a file name "YYYYMMDDhhmmss-PANELS.ZIP". "YYYYMMDDhhmmss" is a time stamp at saving.

☞ *{MU1:1.10.1_SE Correct Data Backup/Restore}*

(3) Make a backup of the device configuration.

#1 Scroll down: Window
#2 Click: [Backup] (Column of the device configuration backup and restoration)
#3 Click: [Save]

1200_700605.ai
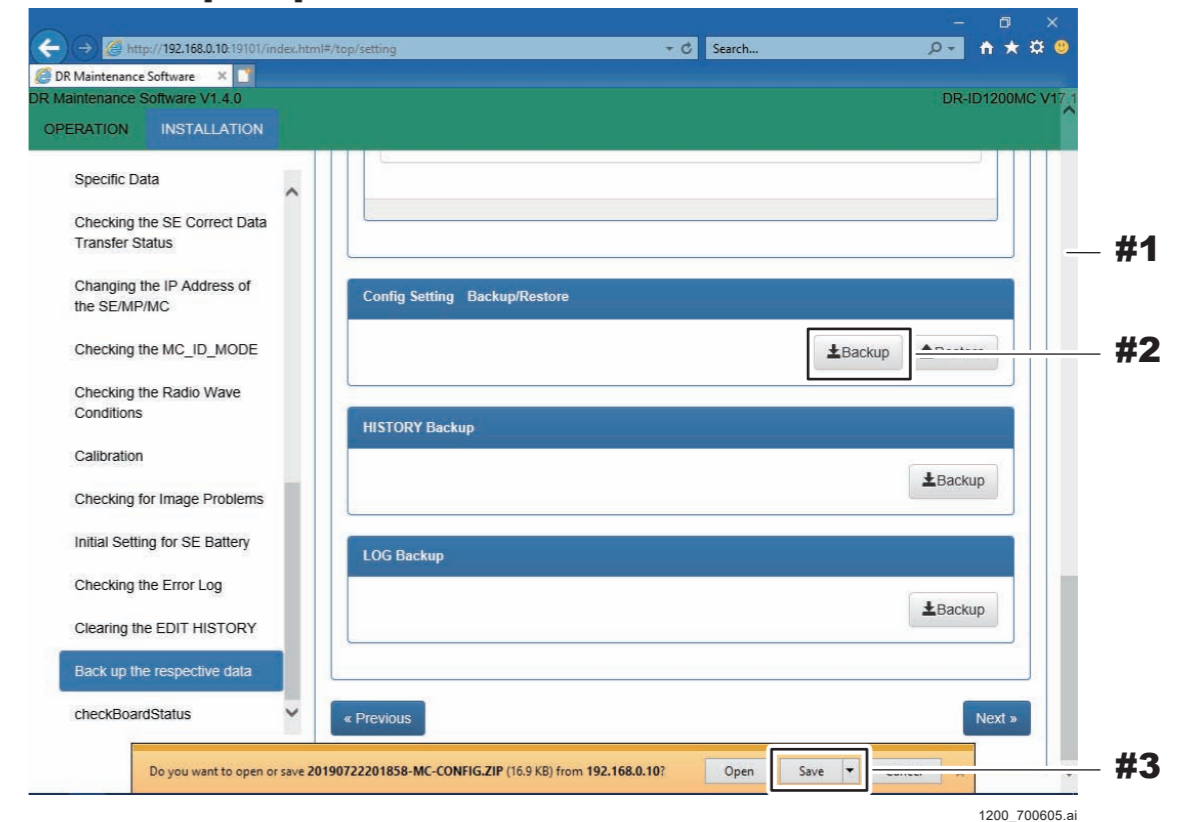
Device setting information is saved.

◇ REFERENCE ◇

The device setting information are saved in the backup folder of the Window with a file name "YYYYMMDDhhmmss-MC-CONFIG.ZIP". "YYYYMMDDhhmmss" is a time stamp at saving.

☞ *{MU1:1.10.4_Config Setting Backup/Restore}*

(4) Back up the error log.

#1 Click: [Backup] (Log Backup column)
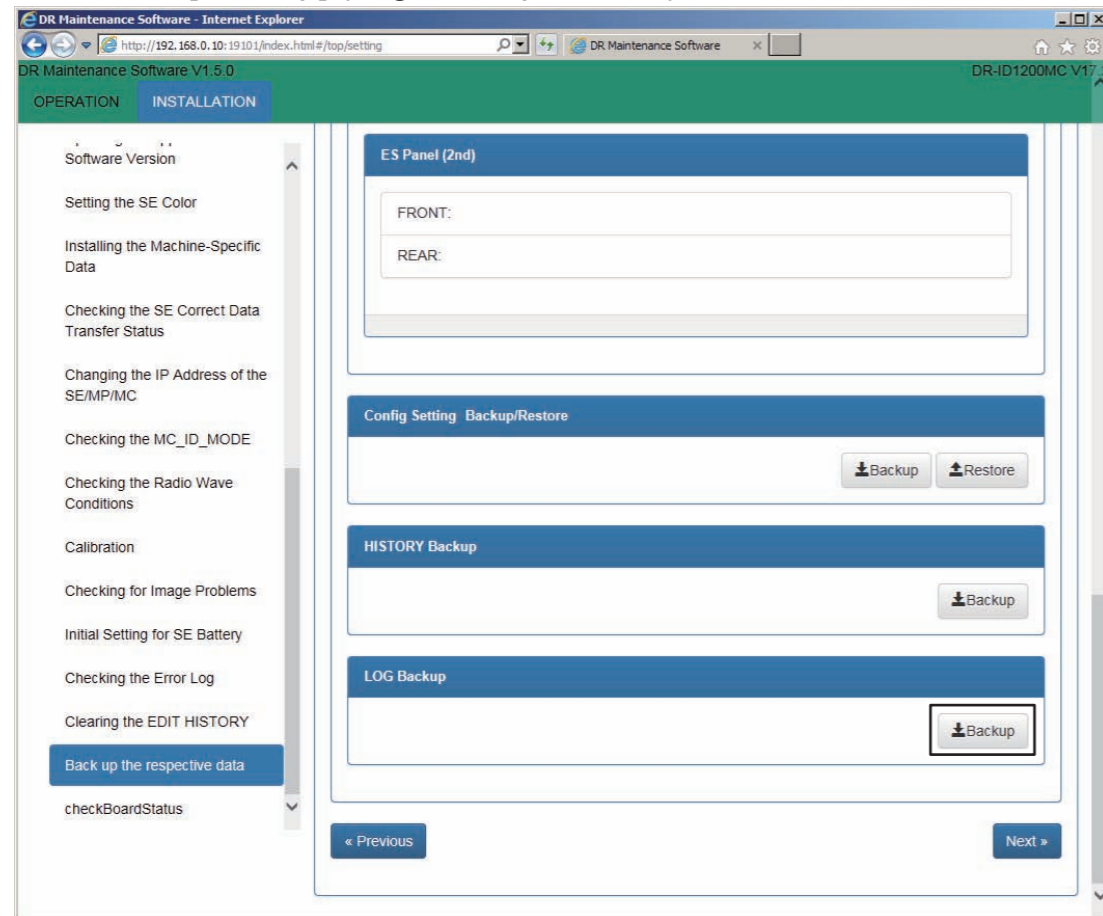
1200_700540.ai

#2 Click: [All Log]

#3 Click: [OK]
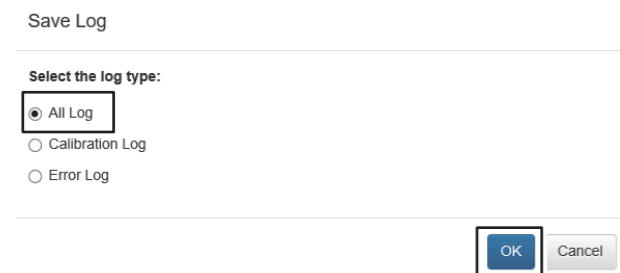
1200_700559E.ai

The log file is saved.

◇ *REFERENCE* ◇

The error log are saved in the backup folder of the Window with a file name "YYYYMMDDhhmmss-MC-ALLLOG.ZIP". "YYYYMMDDhhmmss" is a time stamp at saving.

☞ ***{MU1:1.10.6_LOG Backup}***

(5) Exit the DR Maintenance Software.

17. Final Checks

17.1 Checking the SE

(1) **Check that the SE is not damaged.**

17.2 Checking the Status of Boards

(1) **Start up the DR Maintenance Software.**

(2) **Click [Get] in "Board status check", and check the following board statuses.**

1200_700541E.ai

Make sure that the board is free from errors on the Board State display.

- MP board status

1200_700554E.ai

Status	Item	Normal display
BoardFuseStatus	MPXBoardFuseStatus	"true", if there is any MP.
	SE1FuseStatus	"true", if there is any MP.
	SE2FuseStatus	"true", if there is any MP.
BoardConnector Status	MPXBoardConnectorStatus	"true", if there is any MP.
	SE1ConnectorStatus	"true", if any SE is connected.
	SE2ConnectorStatus	"true", if any SE is connected.
BoardFanStatus	FanStatus	"true", if there is any MP.
SwitchStatus	RemoteSwitchStatus	There is no problem with "false".
	MPX1ShotSwitch1stStepStatus	There is no problem with "false".
	MPX1ShotSwitch2ndStepStatus	There is no problem with "false".
	MPX2ShotSwitch1stStepStatus	There is no problem with "false".
	MPX2ShotSwitch2ndStepStatus	There is no problem with "false".

- SE board status

Check SE Board Status N120053

Board Status

Item	Status
Hardware Status	true
Configuration Status	true
Battery Status	true
MCU Status	true
SDCard Status	true
Temperature	31 (deg C)
Extra Sleep Button Status	false
Memory Image Button Status	false

Battery Status

Item	Status
BatteryID	31
ManufactureDate	2014/06/17
InsertWithdrawCount	0

1200_700555E.ai

Status	Item	Normal display
SE BoardStatus	Hardware Status	true
	Configuration Status	true
	Battery Status	"true", if there is any battery.
	MCU Status	true
	SDCard Status	true
Panel Temperature	Temperature	A temperature close to the room temperature
SE Button Status	Extra Sleep Button Status	There is no problem with "false".
	Memory Image Button Status	There is no problem with "false".
Battery Serial No	Battery ID	Any one of "0" to "65535"
Battery Manufacture Date	Manufacture Date	Display with "YYYY/MM/DD".
Battery Insert Withdraw Count	Insert Withdraw Count	Any one of "0" to "65535"
Battery Temperature	Temperature	
Battery Status	Status	
Battery Cycle Count	Cycle Count	Any one of "0" to "65535"
Battery First Use	First Use	
Battery First Use Date	First Use Date	

18. Visual Inspection and Cleaning of the Machine

Visually check the units for damage.
If contaminated, wipe off with a dry cloth.

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DR-ID 1300 / DR-ID 1300PU Service Manual

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DR-ID 1300 / DR-ID 1300PU
Service Manual

Installation (IN2) (RU PC-TOOL)

1. Installation Work Flowchart

START

☐ 2. **Installation Preparations**

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☐ 3. **Precautions in Installation**

☐ 4. **Transfer and Unpacking**

☐ 4.1 **Unloading and Preparation for Transfer**

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☐ 6.6 **Binding and Checking the Cables**

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Ⓐ

☐ 6.8 **Fixing the Anchor (Optional)**

☐ 7. **Installing the SE**

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☐ 8.1 **Mounting the NIC board**

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☐ **11. Image Calibration**

☐ **11.1   Offset Calibration**

☐ **11.2   Gain Calibration**

☐ **11.3   Checking the Calibration Results**

☐ **12. Marker Calibration**

☐ **13. Checking for Image Problems**

☐ **13.1   Checking for Irregularities, Density Problems, White Blank Portion, and Sensitivity Problems in the Images**

☐ **14. Checking the Error Log**

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☐ **16. Backing Up the Data**

☐ **17. Final Checks**

☐ **17.1   Checking the SE**

☐ **17.2   Checking the Status of Boards**

☐ **18. Visual Inspection and Cleaning of the Machine**

END

2. Installation Preparations

2.1 Tools and Measuring Instruments Necessary for Installation

Prepare the tools, jigs and measuring instruments before installing the machine.

☞ **{Handling of this Manual: Servicing Instruments and Tools That Require Inspection/Calibration}**

◆ *NOTE* ◆

The SE cable is always needed to install the machine. Prepare the SE cable for use of the jig if the SE cable (optional) is not purchased by the customer.

3. Precautions in Installation

⚠️ *WARNING/CAUTION*

Observe the warning and precautions mentioned in "Safety Precaution".

⚠️ *CAUTION*

When connecting or disconnecting the cable connector, wear an antistatic wrist band to ground the human body. Otherwise, static electricity charged in the human body might damage electronic components.

◆ *INSTRUCTION* ◆

It is recommended that you should not install machine cables (such as the power cables and communication cables) near such instruments that generate magnetic field noise (such as a motor, transducer and switching power source) and other cables to assure appropriate image quality.

◆ *INSTRUCTION* ◆

Do not make a radius of curvature of the SE cable smaller than 50 mm. If the radius of curvature is smaller than 50 mm, disconnection might occur in the cable, resulting in abnormality in image.

◆ *NOTE* ◆

- *When installing the SE into the exposure stand, SE LED must be able to be checked through the opening of the exposure stand.*
- *If the exposure stand is equipped with the external cover, the panel effective area and overlapping part on the top place of the exposure stand must be able to be checked.*
- *If the exposure stand is equipped without the external cover, the display of the panel effective area and overlapping part must be able to be checked.*

4. Transfer and Unpacking

4.1 Unloading and Preparation for Transfer

⚠️ *CAUTION*

Before unloading the machine, secure a proper machine transfer route.

◆ *INSTRUCTION* ◆

Fully leave the machine with the plastic cover put on in the room. If the cover is put off immediately after the machine is transferred into the room, the machine might get condensation.

4.2 Transfer of Instruments

⚠️ *CAUTION*

If the machine is to be transferred over differing floor levels, slowly move the machine not to shock it. Note that the carrier can come over a differing level up to approx. 10 mm.

4.3 Unpacking the MP

(1) **Take out the MP from transporting box.**

#1　Take out: MP

Ferrite Core

Accessories

Falling prevention stand
(only inside Japan)

#1

Pad

Transporting box

1300_700056E.ai

DR-ID 1300 / DR-ID 1300PU *Service Manual*

4.4   Unpacking the SE

(1) Take out the SE from transporting box.

#1   Take out: SE

Transporting box

CD-R

Fuse

Letter of
guarantee

#1

Vinyl sheet

Pad

Transporting
box

1300_700006E.ai

4.5   Unpacking the DX Console

(1) Take out the DX Console from transporting box.

4.6   Unpacking the Monitor

(1) Take out the monitor from transporting box.

5. Checking the Items Supplied

Check the components against the packing list supplied.

■ MP

Item	Qty.	Remarks
MP	1	-
Jig cable	1	Short-circuiting cable for initializing the MP
Jig cable	1	Short-circuiting cable for initializing the SE
Calibration phantom	2	For marker calibration
Cable	1	Medical power cable Only inside Japan
Cross recessed pan head screw (M3x6)	3	
Plain washer (W3)	3	
Spring washer (SW3)	3	
Fastener	3	
Cable tie	3	
Cable tie	2	
Clamp	6	
Terminal	18	
Terminal	18	
Fuse	1	
Fuse	1	
Fuse	1	
Screw	10	
Stand	1	Only inside Japan
MP falling prevention kit	1	Only inside Japan
Letter of guarantee/Report of completion of installation/Performance check list	1	Only inside Japan
Operation manual	1	DR-ID 1300, DR-ID 1300PU

■ SE (1305SE)

Item	Qty.	Remarks
SE	1	-
Machine-specific data	1	
Fuse	1	
Letter of guarantee/Report of completion of installation/Notes on the X-ray exposure/Performance check list	1	Only inside Japan

■ DR-ID 300CL

☞ **For details on the DR-ID 300CL, refer to the DR-ID 300CL Service Manual.**

■ Optional Items

● Connector cable for the X-ray

Name	Qty.	Remarks
X-Ray shot cable	1	9-core Cable length: 5 m Cable to connect between MP and X-ray equipment.
X-Ray shot cable	1	9-core Cable length: 15 m Cable to connect between MP and X-ray equipment.
X-Ray shot cable	1	3-core Cable length: 5 m High-current cable to connect between MP and X-ray equipment.
X-Ray shot cable	1	3-core Cable length: 15 m High-current cable to connect between MP and X-ray equipment.
Generator	1	MIKASA Generator-MP terminal block

● AC bucky relay unit

Item	Qty.	Remarks
AC bucky relay unit	1	For 100V
AC bucky relay unit	1	For 120V
AC bucky relay unit	1	For 200V
AC bucky relay unit	1	For 220V

● **IF box-related**

Name	Qty.	Remarks
I/F box	1	Used to synchronize exposure timing with accumulation start timing by means of a hand switch signal. (the Main Kit of Hand SW Interface BOX)
Hand switches (2button)	1	Exposure switch for use as connected with the I/F box.
I/F box cable_10m	1	Used to connect between the I/F box and the MP.
I/F box cable_15m	1	
I/F box cable_GE1	1	Used to connect between the I/F box and the X-ray equipment.
I/F box cable_GE2	1	
I/F box cable_Siemens	1	
I/F box cable_Shimadzu	1	
I/F box cable_Toshiba	1	
I/F box cable_DelMedical	1	
I/F box cable_CPI	1	
I/F box cable_Philips	1	
I/F box cable_110-3 wire	1	
I/F box cable_110-4 wire	1	

● **SE cable-related**

Name	Qty.	Remarks
SE cable	1	4m (Only for overseas)
SE cable	1	10m
SE cable	1	20m

● **Fixture**

Name	Qty.	Remarks
Anchor fixing bracket of MP	1	

6. Installing the MP

6.1 Removing the Covers

(1) Remove the MP top cover.
#1 Loosen: T3x6 (x2)

Top cover

#1

FRONT

1200_700026E.ai

(2) Remove the MP front cover.
#1 Remove: T3x6 (x6)

#1

Front cover

FRONT

1200_700027E.ai

(3) Remove the MP rear cover.
#1 Remove: T3x6 (x3)

Rear cover

#1

FRONT

1200_700028E.ai

6.2   Checking the Power Cable

⚠️ *WARNING*

Disconnect the power plug from the outlet before measuring a resistance value.

(1) **Connect the power cable to the MP, and set the power switch to the ON position.**

(2) **Measure the resistance value of the power cable.**

(Reference value)

Terminal	L to N	L to E	N to E
Resistance value	Over 100 kΩ	∞	∞

<For use in Japan> <For use in USA> <For use in Europe, etc> <For use in UK, etc>

600_700005.ai

(3) **Measure the resistance value between the E terminal of the power cable and the bottom of the machine frame, and make sure that there is continuity.**

(4) **Set the main power switch to the OFF position after completion of the measurement.**

6.3   Installing the Foot Cover or the Anchor Mounting Bracket (Optional)

Install the foot cover (when installing on the floor) or the anchor mounting bracket (when fixing the anchor :optional) before connecting the cables.

6.3.1   Installing the Foot Cover

(1) **Remove the MP bottom cover.**

#1   Remove: T3x6 (x2)

Bottom cover

1200_700149.ai

(2) **Turn the height retaining brackets of the bottom cover over and reinstall them to the same position.**

#1   Remove: T3x6 (x3)
#2   Turn over: height retaining brackets (x3)
#3   Tighten: T3x6 (x3)

Bottom cover

1200_700150.ai

(3) Install the foot cover.

#1 Tighten: T3x6 (x4)

Foot cover

#1

FRONT

TOP

1200_700151.ai

(4) Reinstall the bottom cover.

#1 Tighten: T3x6 (x2)

Bottom cover

FRONT

TOP

#1

1200_700152.ai

6.3.2   Installing the Anchor Mounting Bracket (Optional)

(1) Perform the procedures (1) to (2) in "6.3.1 Installing the Foot Cover".

(2) Install the anchor mounting bracket to the MP.

#1 Tighten: T3x6 (x4)

#1

FRONT

1200_700159.ai

(3) Install the bottom cover.

#1 Tighten: T3x6 (x2)

#1

FRONT

1200_700154.ai

6.4 Connecting the Cables

(1) Route the SE cable (For stand and for bed) from the lower opening on the MP rear cover, and connect the cable connector and the protective ground wire.

#1 Route: SE cable and protective ground wire
#2 Connect: Cable connector (For stand: MPL5 and MPL7, for bed: MPL6 and MPL8)
#3 Tighten: N3x6, SW3, W3
#4 Clamp: Clamp
#5 Tighten: protective ground wire

1300_700007E.ai

◆ NOTE ◆

Connect the stand SE cable to the MPL5 and MPL7 cable connectors, and connect the bed SE cable to the MPL6 and MPL8 cable connectors.

(2) Tighten the SE cable (MP-side) with the two cable ties that are passed through the clamp, and attach the ferrite core (FC1).

#1 Tighten: Cable tie (Panduit PLT1.5I: lateral direction, inside)
#2 Tighten: Cable tie (Panduit PLT1.5I: vertical direction, outside)

1200_700059E.ai

◆ INSTRUCTION ◆

When tightening the cable tie, adjust the length of the cable tie as in the figure below. When measuring the length of the cable tie, set the steel rule up against the cable bundle tie and measure the length to the tip.

Cable tie (outside)
97 mm or more

Cable tie (inside)
105 mm or more

1200_700175E.ai

(3) Route the LAN cables between the MP and DX Console from the lower opening on the MP rear cover and connect them.

#1 Route: LAN cable

#2 Connect: LAN cable connector (MPC4)

#2
MPC4

#1

1300_700009.ai

6.5   Connecting the X-Ray Shot Cable

⚠ *WARNINGS*

● *Be sure to turn OFF the power supply of the X-ray high voltage generator to avoid electric shock hazards due to high voltage.*

● *The X-ray high voltage generator is a product of another manufacturer. Commit the cable connection to the service personnel of the X-ray equipment.*

How to connect the X-Ray shot cable depends on the grid oscillation mode. Refer to the corresponding connection method.

● **Steady grid type**

The grid is fixed and does not oscillate.

☞ {IN2:6.5.1_Connecting the X-Ray Shot Cable (Steady Grid Type)}

● **Bucky contact type**

The grid is oscillated by the motor. When the relay contact is closed, the motor starts to drive.

☞ {IN2:6.5.2_Connecting the X-Ray Shot Cable (Bucky Contact Type)}

● **Bucky AC type**

The grid is pressed against the leaf spring, and the grid rebounds by means of reaction force of the spring. A solenoid is employed as a mechanical part against which the grid is pressed.
The AC bucky relay unit (optional) is required when the bucky AC type is to be connected.

☞ {IN2:6.5.3_Connecting the X-Ray Shot Cable (Bucky AC Type)}

6.5.1   Connecting the X-Ray Shot Cable (Steady Grid Type)

■ **Connection Diagram of the X-Ray High Voltage Generator (When a Single SE Is Connected)**
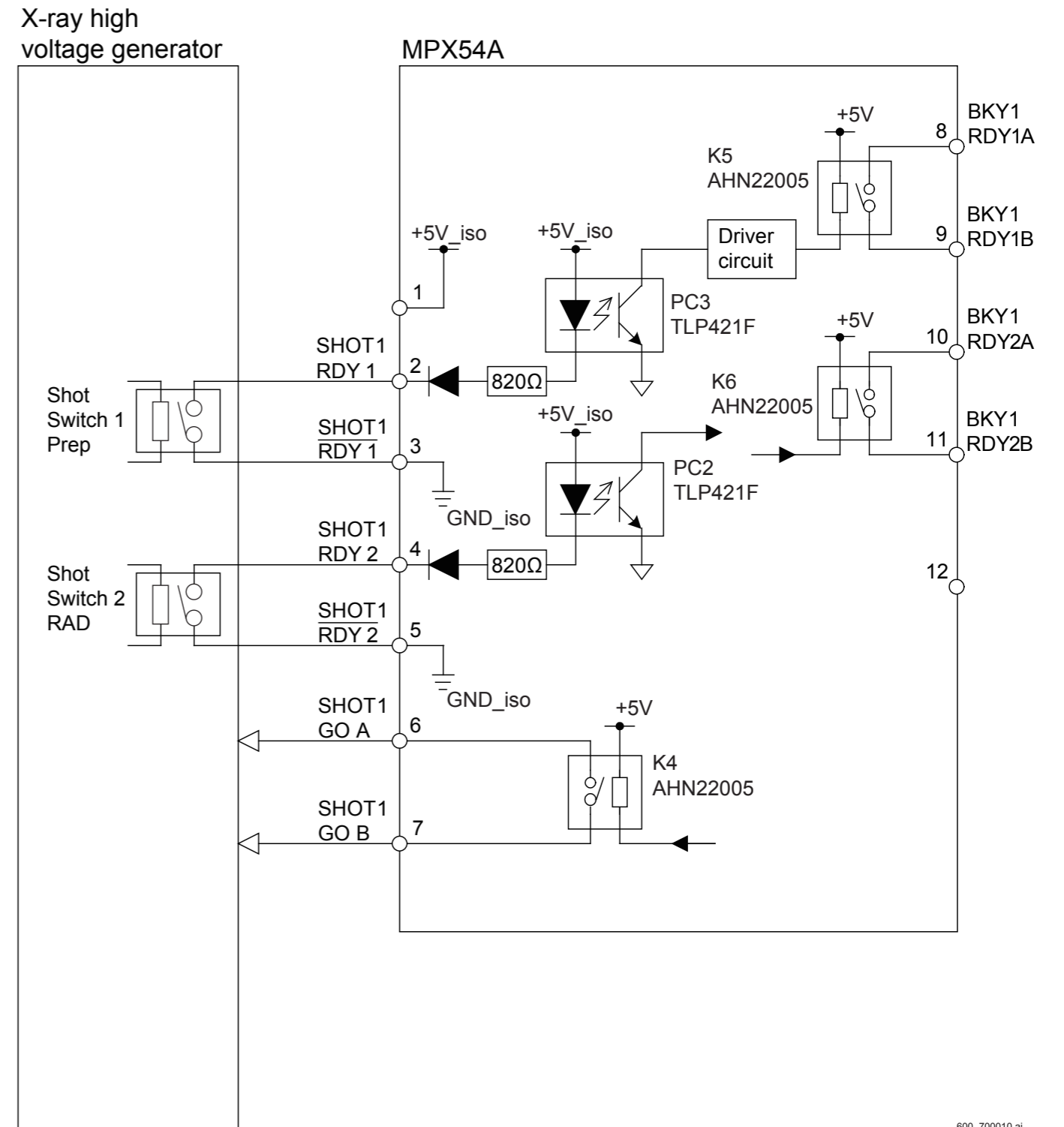
600_700010.ai

■ Signal Descriptions

● SHOT1 RDY1/$\overline{\text{RDY1}}$ (Input)

The signal is generated when only the first stage of the shot switch on the X-ray high voltage generator is pressed. (Prep signal)

● SHOT1 RDY2/$\overline{\text{RDY2}}$ (Input)

The signal is generated when the first and second stages of the shot switch on the X-ray high voltage generator are pressed. (RAD signal)

● SHOT1 GO A/B (Output)

The signal generates X-rays.
A relay type is normally open (NO).

■ Contact Capacity

The specifications of relays (K4, K5 and K6) are as follows.

● Relay model

AHN22005 (Panasonic Electric Works)
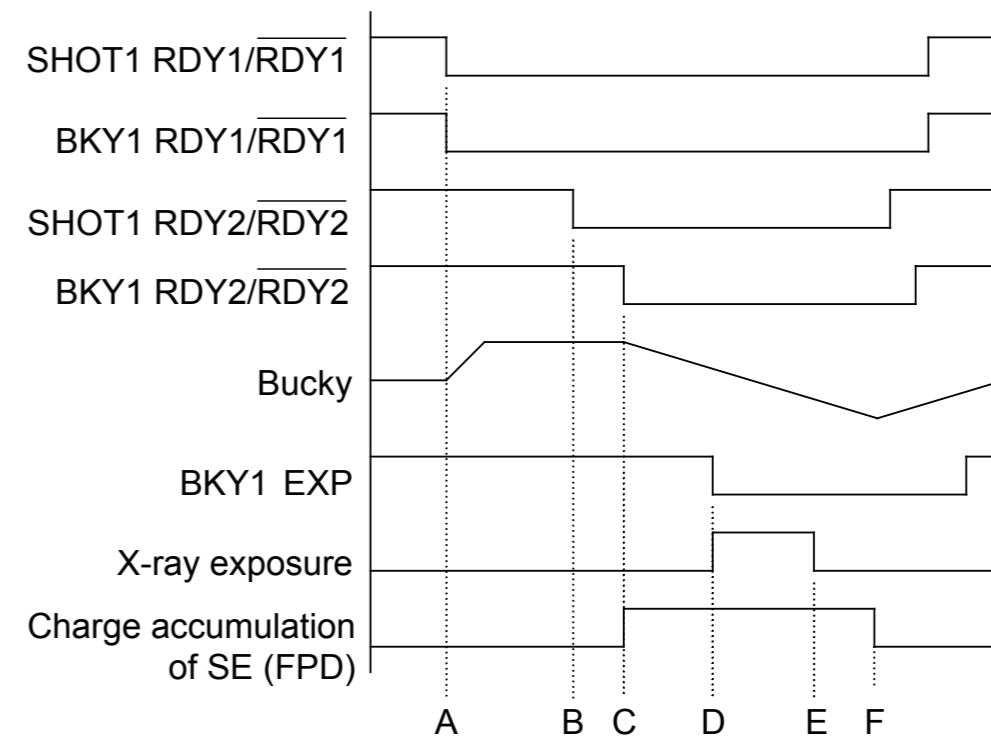
● Rated control capacity

Standard contact: 30 VDC

● Maximum switching current

1 A

■ Timing Chart

A: Preparation starts for SE exposures corresponding to the first stage of the switch when the shot switch (first stage) is turned ON.

B: Preparation starts for SE exposures corresponding to the second stage of the switch when the shot switch (second stage) is turned ON.

C: Charge accumulation of the SE (FPD) starts.

D: An exposure request signal is output, and X-ray exposure starts.

E: X-ray exposure ends.

F: Charge accumulation of the SE (FPD) ends.

600_700011.ai

■ Procedures for Connecting the Cable

⚠ *CAUTION*

Measure the voltage between the cables connecting to the RDY1-RDY1 and the RDY2-RDY2 terminals before connecting the X-Ray shot cable, to make sure that a high voltage (100 VAC, for example) is not observed whichever technique of the X-ray high voltage generator is selected.

If the high voltage (such as 100 VAC) is observed in the cable voltage, contact a service personnel of the X-ray equipment for checking the connection.

If erroneous connection is made, the machine might get damaged. Exercise care.

◆ *INSTRUCTION* ◆

Always use a reusable band (clamp) included in the supplied accessories to retain the cable, as the band is a UL-standard component. The manufacturer and the part No. of the reusable band are mentioned below for your reference.
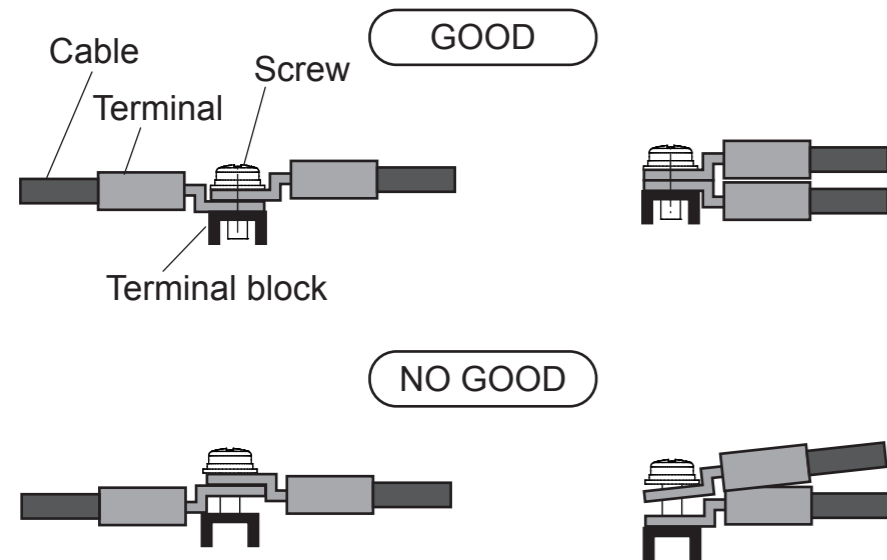
Manufacturer:	*Kitagawa Industries, Co. Ltd.*
Name:	*Reusable band*
Part No.:	*LWS-3S V0*

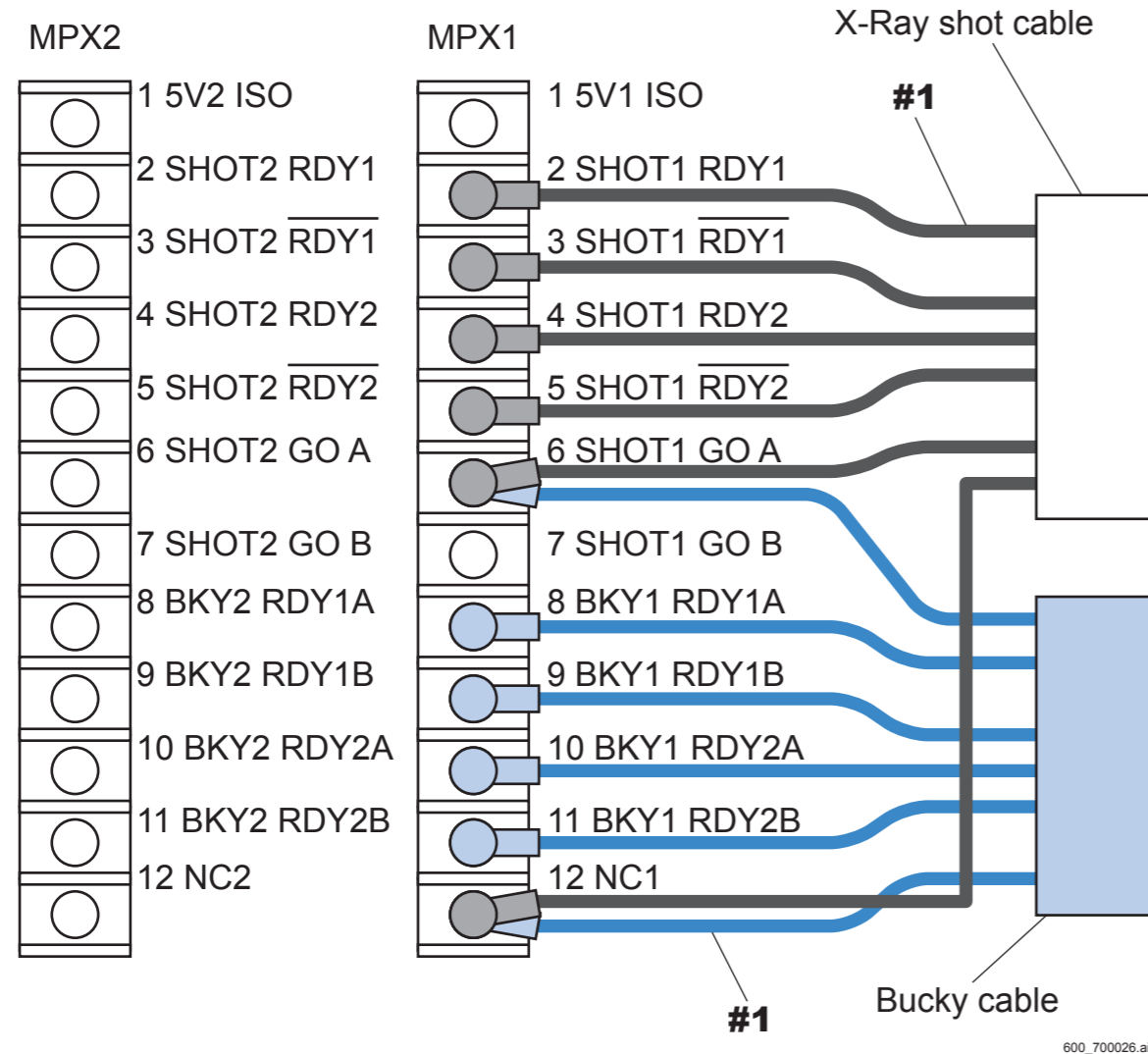**(1) Insert the X-Ray shot cable (optional) from the upper opening on the MP rear cover.**

#1 Insert: X-Ray shot cable (optional)

1200_700029.ai

(2) Connect the cable terminals with the terminal block of the MPX54A board.

#1 Connect: Cable terminals

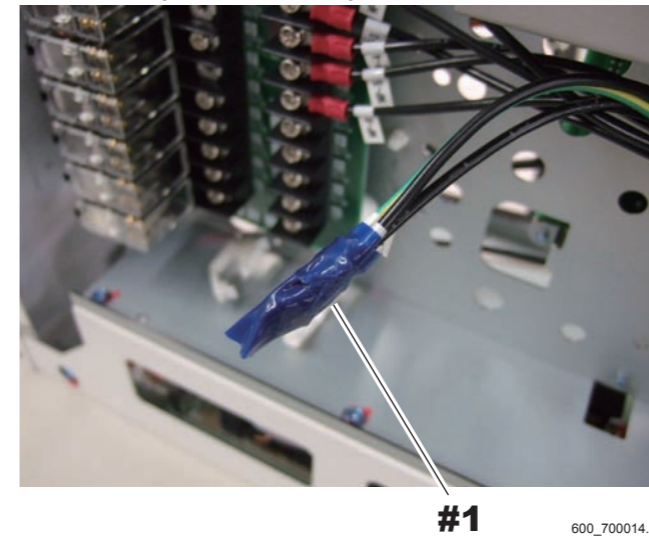| MPX2	MPX1
1 5V2 ISO	1 5V1 ISO
2 SHOT2 RDY1	2 SHOT1 RDY1
3 SHOT2 $\overline{RDY1}$	3 SHOT1 $\overline{RDY1}$
4 SHOT2 RDY2	4 SHOT1 RDY2
5 SHOT2 $\overline{RDY2}$	5 SHOT1 $\overline{RDY2}$
6 SHOT2 GO A	6 SHOT1 GO A
7 SHOT2 GO B	7 SHOT1 GO B
8 BKY2 RDY1A	8 BKY1 RDY1A
9 BKY2 RDY1B	9 BKY1 RDY1B
10 BKY2 RDY2A	10 BKY1 RDY2A
11 BKY2 RDY2B	11 BKY1 RDY2B
12 NC2	12 NC1
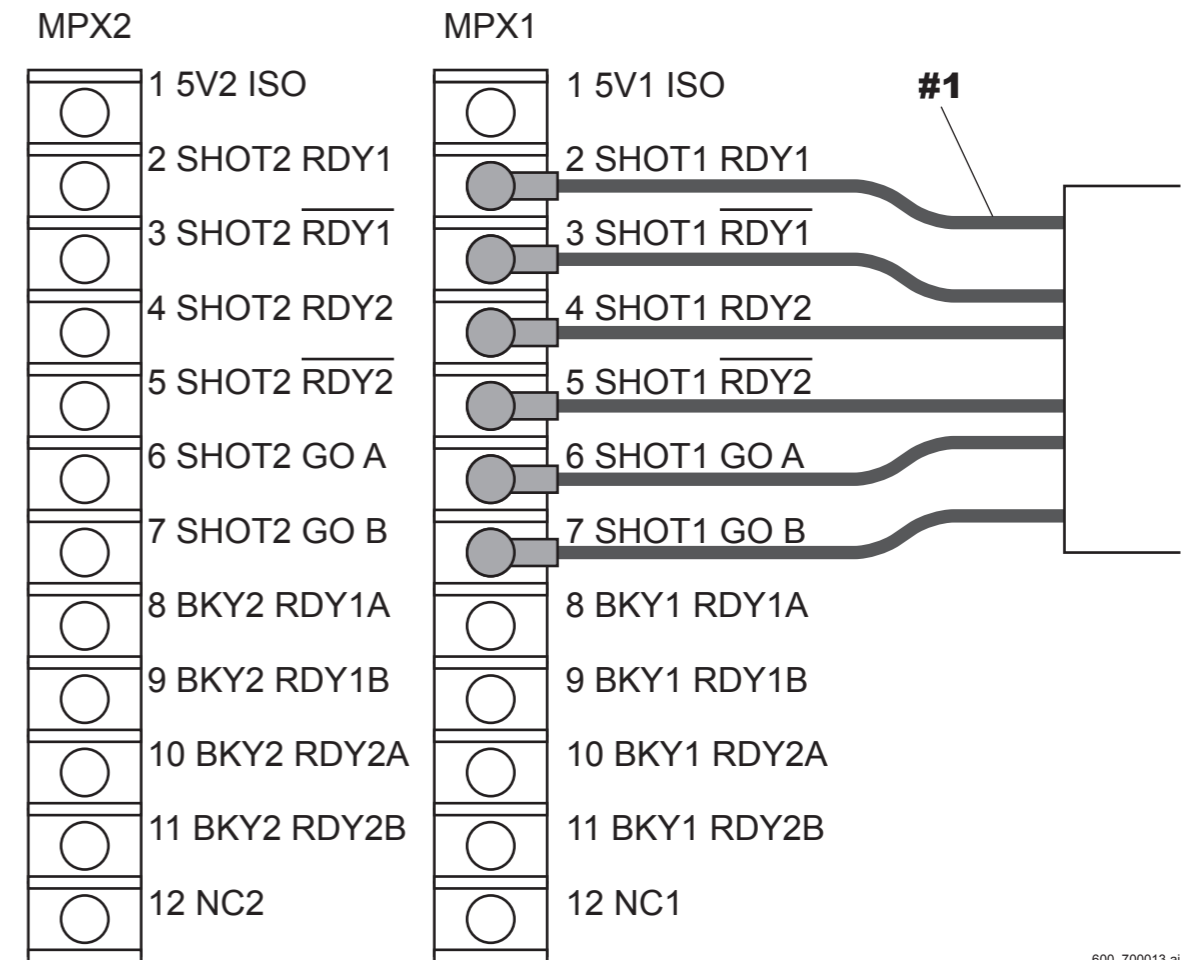
600_700013.ai

(3) Wrap a plastic tape around the unconnected (remaining) cable terminals.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.
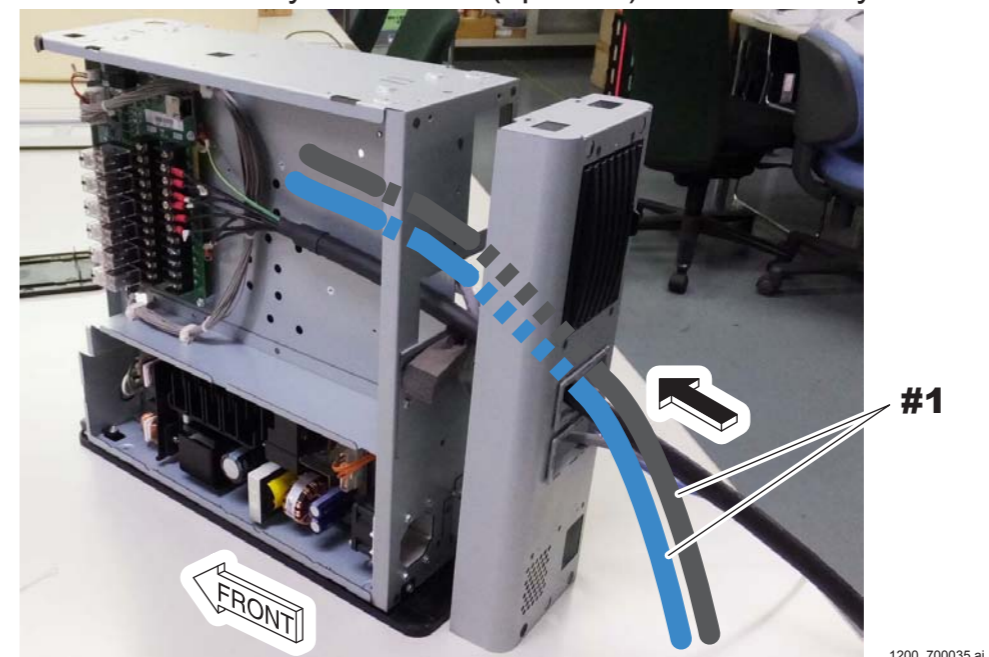
#1   Wrap: Plastic tape

#1

600_700014.ai

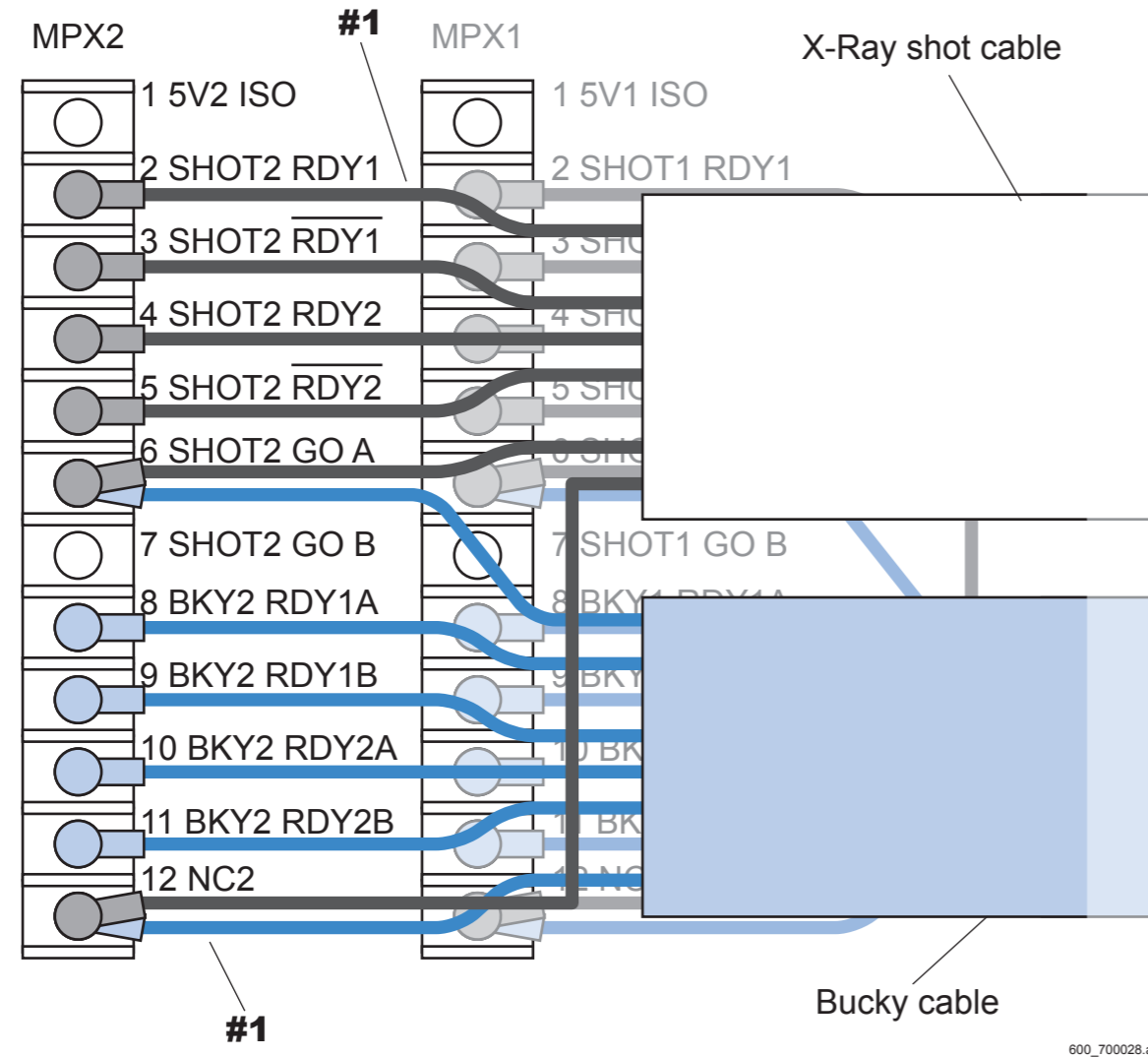**(4) Insert the second X-Ray shot cable (optional) from the upper opening on the MP rear cover.**

◆ *NOTE* ◆

If the second cable is not present, the procedure is not necessary. Proceed to the procedure (7).

#1   Insert: X-Ray shot cable (optional)

FRONT

#1

1200_700030.ai

(5) Connect the cable terminals with the terminal block of the MPX54A board.

#1   Connect: Cable terminals

#1

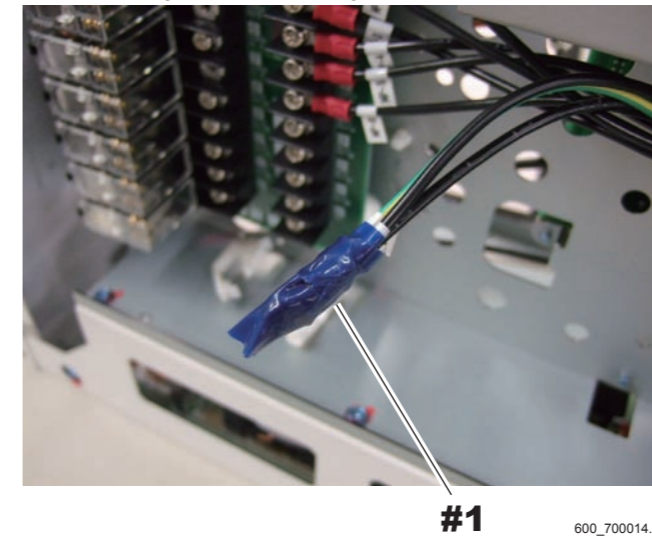| MPX2		MPX1	
1 5V2 ISO		1 5V1 ISO	
2 SHOT2 RDY1		2 SHOT1 RDY1	
3 SHOT2 RDY1		3 SH	
4 SHOT2 RDY2		4 SH	
5 SHOT2 RDY2		5 SH	
6 SHOT2 GO A		6 SH	
7 SHOT2 GO B		7 SH	
8 BKY2 RDY1A		8 BKY1 RDY1A	
9 BKY2 RDY1B		9 BKY1 RDY1B	
10 BKY2 RDY2A		10 BKY1 RDY2A	
11 BKY2 RDY2B		11 BKY1 RDY2B	
12 NC2		12 NC1	

600_700016.ai

(6) Wrap a plastic tape around the unconnected (remaining) cable terminals.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.
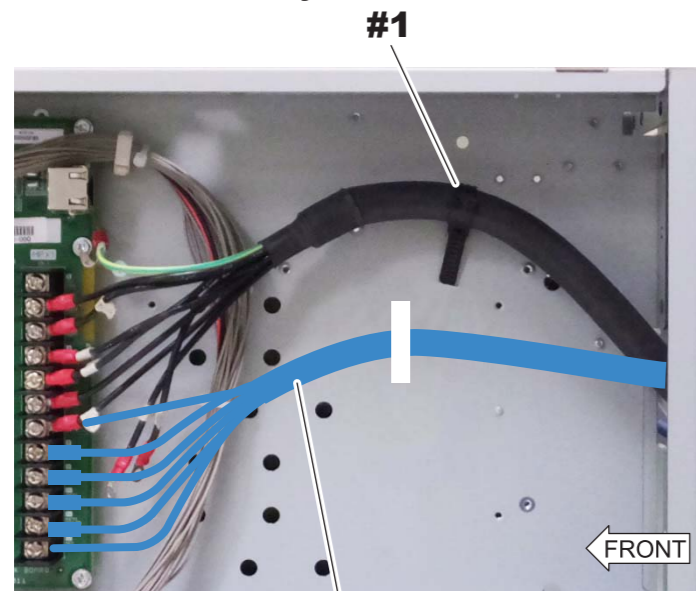
#1   Wrap: Plastic tape

#1

600_700014.ai

(7) Tie the remaining cables and the X-ray shot cable(s) together, and retain with the reusable band (supplied accessory).
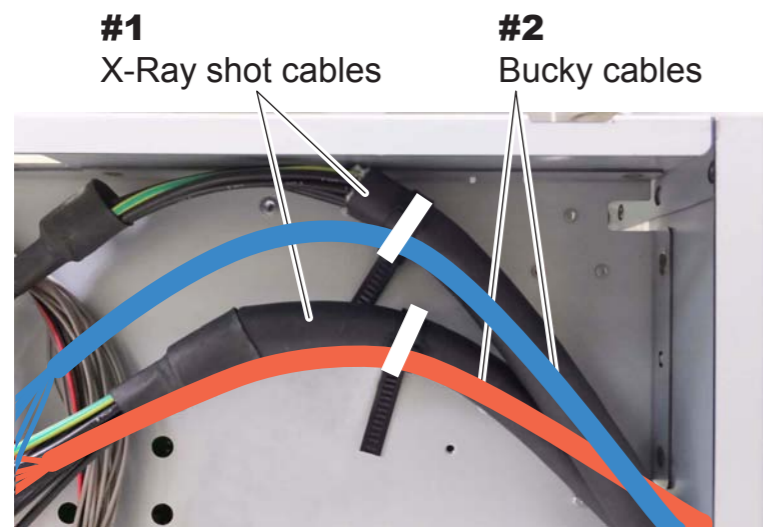
#1   Retain: Reusable band(s) (supplied accessory)

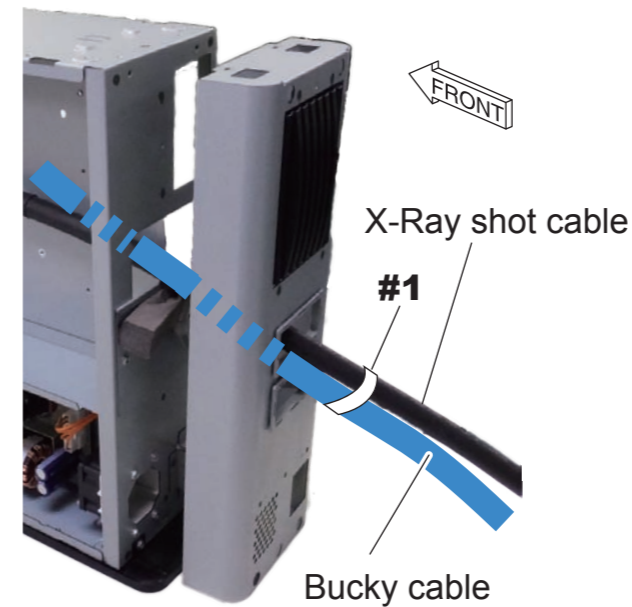**<When one X-Ray shot cable is used>**

#1

FRONT

1200_700031.ai

<When two X-Ray shot cables are used>

#1

FRONT

1200_700032.ai

(8) Wrap a plastic tape around the unconnected (remaining) cable terminals of the X-Ray shot cable, and tie them with the reusable band (supplied accessory).

When two cables are used, wrap each of the cable terminals with the plastic tape.

◆ NOTE ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1 Wrap: Plastic tape
#2 Tie: Cables
#3 Retain: Reusable band (supplied accessory)

1200_700033.ai

6.5.2 Connecting the X-Ray Shot Cable (Bucky Contact Type)

■ **Connection Diagram of the X-Ray High Voltage Generator (When a Single SE Is Connected)**

600_700022.ai

DR-ID 1300 / DR-ID 1300PU Service Manual

■ Signal Descriptions

● SHOT1 RDY1/$\overline{\text{RDY1}}$ (Input)

The signal is generated when only the first stage of the shot switch on the X-ray high voltage generator is pressed. (Prep signal)

● SHOT1 RDY2/$\overline{\text{RDY2}}$ (Input)

The signal is generated when the first and second stages of the shot switch on the X-ray high voltage generator are pressed. (RAD signal)

● BKY1 RDY1 A/B (Output)

The signal prepares for the bucky operation.
A relay type is normally open (NO).

● BKY1 RDY2 A/B (Output)

The signal operates the bucky upon completion of the preparation for the SE exposure.
A relay type is normally open (NO).

■ Contact Capacity

The specifications of relays (K4, K5 and K6) are as follows.

● Relay model

AHN22005 (Panasonic Electric Works)

● Rated control capacity

Standard contact: 30 VDC

● Maximum switching current

1 A

■ Timing Chart

A: The signal for preparing for the bucky operation is output, and preparation starts for SE exposures corresponding to the first stage of the switch when the shot switch (first stage) is turned ON.

B: Preparation starts for SE exposures corresponding to the second stage of the switch when the shot switch (second stage) is turned ON.

C: The signal for operating the bucky is output upon completion of the preparation for the SE (FPD) exposure.

D: An exposure request signal is output after a predetermined time elapses since the bucky operation starts, and X-ray exposure starts.

E: X-ray exposure ends.

F: Charge accumulation of the SE (FPD) ends.

600_700023.ai

■ Procedures for Connecting the Cable

⚠ CAUTION

Measure the voltage between the cables connecting to the RDY1-RDY1 and the RDY2-RDY2 terminals before connecting the X-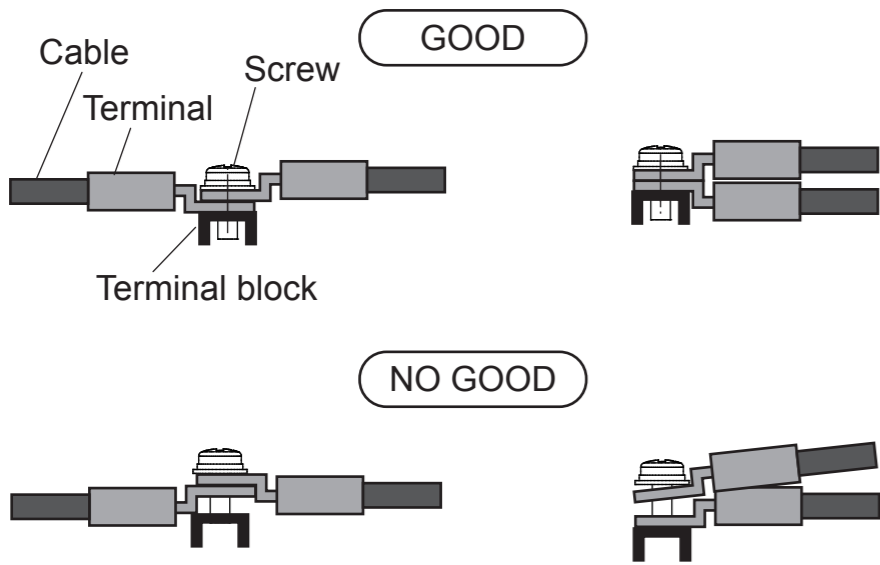Ray shot cable, to make sure that a high voltage (100 VAC, for example) is not observed whichever technique of the X-ray high voltage generator is selected.

If the high voltage (such as 100 VAC) is observed in the cable voltage, contact a service personnel of the X-ray equipment for checking the connection.

If erroneous connection is made, the machine might get damaged. Exercise care.

◆ INSTRUCTION ◆

Always use a reusable band (clamp) included in the supplied accessories to retain the cable, as the band is a UL-standard component. The manufacturer and the part No. of the reusable band are mentioned below for your reference.

Manufacturer:	*Kitagawa Industries, Co. Ltd.*
Name:	*Reusable band*
Part No.:	*LWS-3S V0*

◆ NOTE ◆

Abut the cable terminals as shown below when fastening them together.

Cable
Terminal
Screw
GOOD

Terminal block

NO GOOD

600_700132.ai

(1) Insert the X-Ray shot cable (optional) and the bucky cable from the upper opening on the MP rear cover.

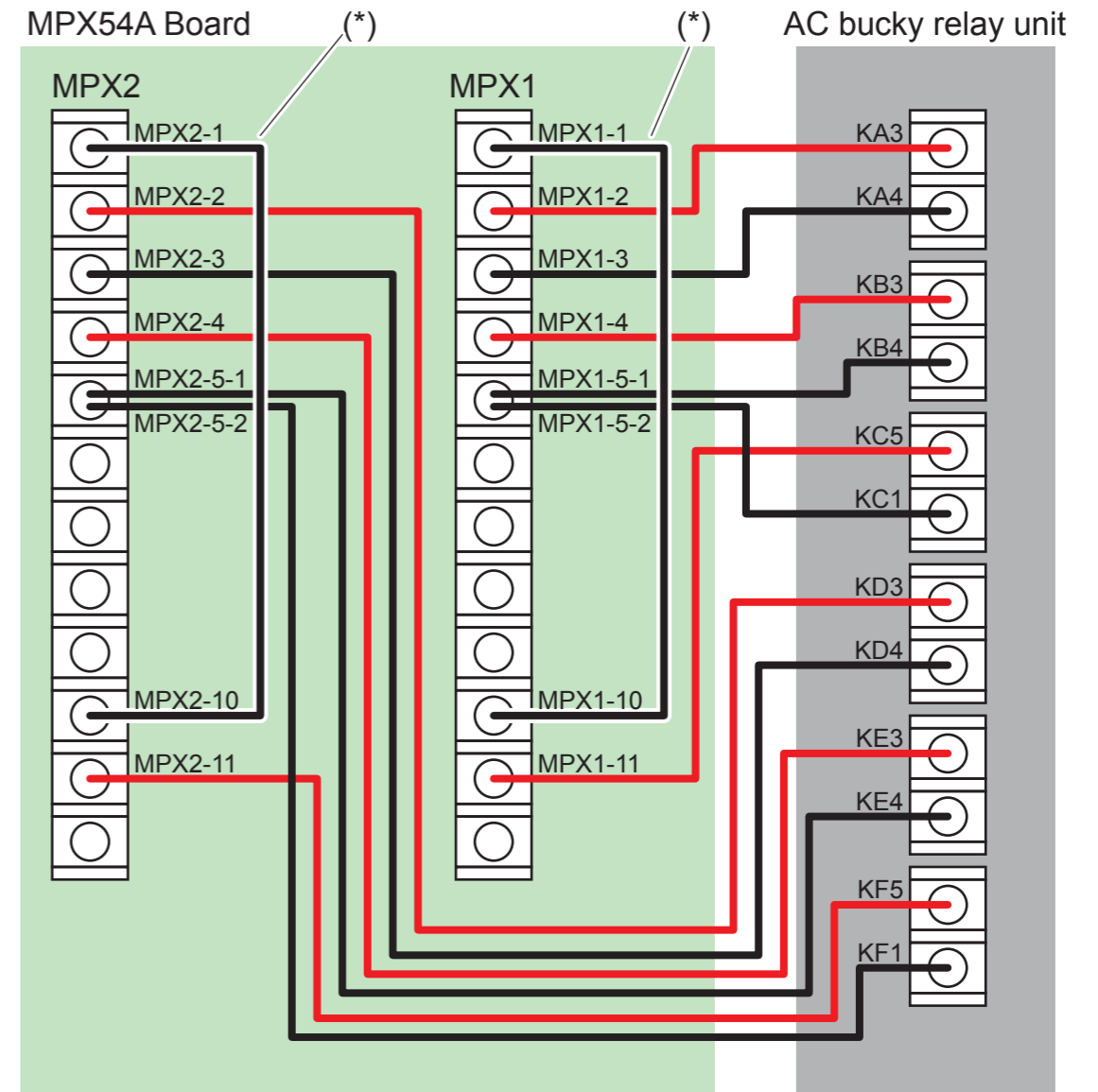#1 Insert: X-Ray shot cable (optional) and the bucky cable

X-Ray shot cable

#1

FRONT

Bucky cable

1200_700034.ai

(2) Connect the cable terminals with the terminal block of the MPX54A board.

#1 Connect: Cable terminals

MPX2

- 1 5V2 ISO
- 2 SHOT2 RDY1
- 3 SHOT2 $\overline{RDY1}$
- 4 SHOT2 RDY2
- 5 SHOT2 $\overline{RDY2}$
- 6 SHOT2 GO A
- 7 SHOT2 GO B
- 8 BKY2 RDY1A
- 9 BKY2 RDY1B
- 10 BKY2 RDY2A
- 11 BKY2 RDY2B
- 12 NC2

MPX1

- 1 5V1 ISO
- 2 SHOT1 RDY1
- 3 SHOT1 $\overline{RDY1}$
- 4 SHOT1 RDY2
- 5 SHOT1 $\overline{RDY2}$
- 6 SHOT1 GO A
- 7 SHOT1 GO B
- 8 BKY1 RDY1A
- 9 BKY1 RDY1B
- 10 BKY1 RDY2A
- 11 BKY1 RDY2B
- 12 NC1

X-Ray shot cable

#1

Bucky cable

#1

600_700026.ai

(3) Wrap a plastic tape around the unconnected (remaining) cable terminals.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1 Wrap: Plastic tape

#1

600_700014.ai

(4) Insert the second X-Ray shot cable (optional) and the bucky cable from the upper opening on the MP rear cover.

◆ *NOTE* ◆

If the second cable and the bucky cable are not present, the procedure is not necessary. Proceed to the procedure (7).

#1 Insert: X-Ray shot cable (optional) and the bucky cable

FRONT

#1

1200_700035.ai

(5) Connect the cable terminals with the terminal block of the MPX54A board.

#1   Connect: Cable terminals

MPX2   **#1**   MPX1   X-Ray shot cable

1 5V2 ISO   1 5V1 ISO

2 SHOT2 RDY1   2 SHOT1 RDY1

3 SHOT2 $\overline{RDY1}$ 3 SHO

4 SHOT2 RDY2   4 SHO

5 SHOT2 $\overline{RDY2}$ 5 SHO

6 SHOT2 GO A

7 SHOT2 GO B   7 SHOT1 GO B

8 BKY2 RDY1A   8 BKY

9 BKY2 RDY1B   9 BK

10 BKY2 RDY2A   10 BK

11 BKY2 RDY2B   11 BK

12 NC2

Bucky cable

#1

600_700028.ai

(6) Wrap a plastic tape around the unconnected (remaining) cable terminals.

◆ *NOTE* ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1   Wrap: Plastic tape

#1   600_700014.ai

(7) Tie the remaining cables and the X-Ray shot cable(s) together, and retain with the reusable band(s) (supplied accessory).

#1 Retain: Reusable band(s) (supplied accessory)

<When one X-Ray shot cable and one bucky cable are used>

Bucky cable

1200_700145.ai

<When two X-Ray shot cables and two bucky cables are used>

#1 X-Ray shot cables   #2 Bucky cables

1200_700146.ai

(8) Retain the X-Ray shot cable(s) and the bucky cable(s) on the MP rear.

#1 Retain: Reusable band (supplied accessory)

<When one X-Ray shot cable and one bucky cable are used>

X-Ray shot cable

#1

Bucky cable

1200_700036.ai

<When two X-Ray shot cables and two bucky cables are used>

X-Ray shot cables

#1

Bucky cables

1200_700037.ai

(9) Wrap a plastic tape around the unconnected (remaining) cable terminals of the X-Ray shot cable, and tie them with the reusable band (supplied accessory).

When two cables are used, wrap each of the cable terminals with the plastic tape.

◆ NOTE ◆

No cable terminal may remain depending on the X-ray high voltage generator to be connected in some cases. If no cable terminal remains, the procedure is not necessary.

#1   Wrap: Plastic tape
#2   Tie: Cables
#3   Retain: Reusable band (supplied accessory)

1200_700033.ai

6.5.3 Connecting the X-Ray Shot Cable (Bucky AC Type)

◇ *REFERENCE* ◇

The relay incorporated in the AC bucky relay unit needs to be replaced periodically.
Refer to the following for the replacement interval and the replacement procedures.
- *Replacement interval*

  ☞ *{PM:1.3_Preventive Maintenance Program List}*

- *Replacement procedures*

  ☞ *{MC:2.11_AC Bucky Relay Unit (Optional)}*

■ **Connection Diagram of the X-Ray High Voltage Generator (When a Single SE Is Connected)**

600_700033.ai

■ Signal Descriptions

● SHOT1 RDY1 L/N (Input)

The signal is generated when only the first stage of the shot switch on the X-ray high voltage generator is pressed. (Prep signal)

● SHOT1 RDY2 L/N (Input)

The signal is generated when the first and second stages of the shot switch on the X-ray high voltage generator are pressed. (RAD signal)

● BKY1 RDY2 L (Output)

The signal operates the bucky upon completion of the preparation for the SE exposure.
A relay type is normally open (NO).

■ Contact Capacity

The specifications of relays (K1, K2 and K3) are as follows.

● Relay model and rated control capacity

- **AHN210 (Panasonic Electric Works)**

Coil voltage	Rated excitation current
AHN210X0:	100/110 VAC 9.0/13.0 mA
AHN210X1:	110/120 VAC 8.2/11.8 mA
AHN210Y0:	200/220 VAC 4.5/6.5 mA
AHN210Y2:	220/240 VAC 4.1/5.9 mA

- **AHN12205 (Panasonic Electric Works)**
Standard contact: 250 VAC and 30 VDC

● Maximum switching current

1 A

■ Timing Chart

A: Preparation starts for SE exposures corresponding to the first stage of the switch when the shot switch (first stage) is turned ON.
B: Preparation starts for SE exposures corresponding to the second stage of the switch when the shot switch (second stage) is turned ON.
C: The signal for operating the bucky is output upon completion of the preparation for the SE (FPD) exposure.
D: An exposure request signal is output after a predetermined time elapses since the bucky operation starts, and X-ray exposure starts.
E: X-ray exposure ends.
F: Charge accumulation of the SE (FPD) ends.

■ Mounting the AC Bucky Relay Unit (Optional)

◆ NOTE ◆

Abut the cable terminals as shown below when fastening them together.

Cable
Screw
Terminal
GOOD
Terminal block
NO GOOD

600_700132.ai

(1) Mount the AC bucky relay unit (optional) on the MP.

#1 Tighten: TP3x6 (x4)

AC bucky relay unit **#1**

MP

FRONT

1200_700147.ai

(2) Connect the cable terminals with the terminal block of the MPX54A board.

#1 Connect: Cable terminals

MPX54A Board   (*)   (*)   AC bucky relay unit

MPX2   MPX1

MPX2-1	MPX1-1	KA3
MPX2-2	MPX1-2	KA4
MPX2-3	MPX1-3	KB3
MPX2-4	MPX1-4	KB4
MPX2-5-1	MPX1-5-1	KC5
MPX2-5-2	MPX1-5-2	KC1
		KD3
		KD4
MPX2-10	MPX1-10	KE3
MPX2-11	MPX1-11	KE4
		KF5
		KF1

600_700036.ai

*: Short cable (supplied accessory)

■ Procedures for Connecting the Cable

⚠ *CAUTION*

Measure the voltage between the cables connecting to the RDY1-RDY1 and the RDY2-RDY2 terminals in all techniques before connecting the X-Ray shot cables. Check to make sure that the measured voltage conforms to the coil voltages (100/110 VAC, 110/120 VAC, 200/220 VAC and 220/240 VAC) of the relay to be used.

If the voltage between cables differs from the coil voltage of the relay, commission the service personnel of the X-ray equipment to check the cable connection.

If erroneous connection is made, the machine might get damaged. Exercise care.

⚠ *CAUTION*

Use the cable and the terminal as specified below when connecting the X-Ray shot cable and the bucky cable. When crimping the terminal, use the crimp nippers as indicated below. If the following specifications of the cable and the terminal are not observed, the machine might get damaged.

- *Cable: AWG18 to 22 thick*
- *Terminal: FV1.25-M4 (J.S.T. Connector)*
- *Crimp nippers: Manufactured by IZUMI; A125*

◆ *INSTRUCTION* ◆

Always use a reusable band (clamp) included in the supplied accessories to retain the cable, as the band is a UL-standard component. The manufacturer and the part No. of the reusable band are mentioned below for your reference.

Manufacturer: Kitagawa Industries, Co. Ltd.
Name: Reusable band
Part No.: LWS-3S V0

◆ *NOTE* ◆

Abut the cable terminals as shown below when fastening them together.

(1) Remove the terminal block covers of the AC bucky relay unit.

#1   Remove: B3x6 (x4)

AC bucky relay unit   **#1**

Covers

1200_700148.ai

(2) Insert the X-Ray shot cable (optional) and the bucky cable from the upper opening on the MP rear cover.

#1   Insert: X-Ray shot cable (optional) and the bucky cable

FRONT

X-Ray shot cable

MP

Bucky cable

1200_700038.ai

(3) Connect the cable terminals to the terminal blocks (TB1 and TB2) of the AC bucky relay unit.

⚠ *WARNING*

Be sure to connect the X-Ray shot cable and the FG line of the bucky cable to the FG (TB2-6) of the terminal block. If the FG line is fixed to the MP frame or the like, electrification or ignition might result due to difference in ground levels.

◆ *NOTE* ◆

If two X-Ray shot cables and two bucky cables are to be connected, make connection of the first cable to the terminal indicated in a white cell and the second cable to the terminal indicated in a shaded cell shown in the table below. The method of connecting the second cable is described in the procedure (4).

No.	TB1		TB2	
	X-Ray shot cable	Bucky cable	X-Ray shot cable	Bucky cable
1	X-Con BKY	SHOT1 RDY1 (L)	X-Con BKY	Stand AC (L)
2	X-Con BKY	SHOT1 RDY1 (N)	X-Con BKY	Stand AC (N)
3	X-Con	SHOT1 RDY2 (L)	X-Con BKY	Bed AC (L)
4	X-Con BKY	SHOT1 RDY2 (N)	X-Con BKY	Bed AC (N)
5	BKY	SHOT1 RDY2 (L)	N.C.	N.C.
6	X-Con BKY	SHOT2 RDY1 (L)	X-Con BKY	Stand FG
			X-Con BKY	Bed FG
7	X-Con BKY	SHOT2 RDY1 (N)	X-Con BKY	Stand Exp A
8	X-Con	SHOT2 RDY2 (L)	X-Con BKY	Stand Exp B
9	X-Con BKY	SHOT2 RDY2 (N)	X-Con BKY	Bed Exp A
10	BKY	SHOT2 RDY2 (L)	X-Con BKY	Bed Exp B

X-Ray shot cable

Bucky cable

TB1   TB2

600_700050.ai

DR-ID 1300 / DR-ID 1300PU *Service Manual*

(4) **Insert the second X-Ray shot cable (optional) and the bucky cable from the MP rear, and connect the cable terminals with the terminal blocks (TB1 and TB2) of the AC bucky relay unit.**

⚠ *WARNING*

Be sure to connect the X-Ray shot cable and the FG line of the bucky cable to the FG (TB2-6) of the terminal block. If the FG line is fixed to the MP frame or the like, electrification or ignition might result due to difference in ground levels.

◆ *NOTE* ◆

If the second X-Ray shot cable and the second bucky cable are not present, the procedure is not necessary. Proceed to the procedure (5).

◆ *NOTE* ◆

The terminals to be connected with the second X-Ray shot cable and the second bucky cable are indicated in white cells in the table below.

No.	TB1		TB2	
	X-Ray shot cable	Bucky cable	X-Ray shot cable	Bucky cable
1	X-Con BKY	SHOT1 RDY1 (L)	X-Con BKY	Stand AC (L)
2	X-Con BKY	SHOT1 RDY1 (N)	X-Con BKY	Stand AC (N)
3	X-Con	SHOT1 RDY2 (L)	X-Con BKY	Bed AC (L)
4	X-Con BKY	SHOT1 RDY2 (N)	X-Con BKY	Bed AC (N)
5	BKY	SHOT1 RDY2 (L)	N.C.	N.C.
6	X-Con BKY	SHOT2 RDY1 (L)	X-Con BKY	Stand FG
			X-Con BKY	Bed FG
7	X-Con BKY	SHOT2 RDY1 (N)	X-Con BKY	Stand Exp A
8	X-Con	SHOT2 RDY2 (L)	X-Con BKY	Stand Exp B
9	X-Con BKY	SHOT2 RDY2 (N)	X-Con BKY	Bed Exp A
10	BKY	SHOT2 RDY2 (L)	X-Con BKY	Bed Exp B

600_700051.ai

(5) **Put on the terminal block covers.**

(6) **Retain the X-Ray shot cable(s) and the bucky cable(s) on the MP rear.**

#1　Retain: Reusable band (supplied accessory)

<When one X-Ray shot cable and one bucky cable are used>

X-Ray shot cable

#1

Bucky cable

1200_700036.ai

<When two X-Ray shot cables and two bucky cables are used>

X-Ray shot cables

#1

Bucky cables

FRONT

1200_700037.ai

6.6　Binding and Checking the Cables

⚠ *CAUTION*

Exercise care not to stumble over the bundle of cables during installation. Furthermore, after doing the wiring, be careful to lay out the cables so that no one trips over all of them.

(1) **Make sure that the X-Ray shot cable(s) and the bucky cable(s) are bound together.**

(2) **Bind the LAN cables together.**

LAN cable (between MP and MC)　X-Ray shot cable(s)
LAN cable (between MP and AP)　and the bucky cable(s)

1200_700039.ai

6.7 Reinstalling the Covers

(1) Reinstall the MP front cover, the rear cover and the top cover.

Reverse the removal procedures for reinstallation.

6.8 Fixing the Anchor (Optional)

(1) Make two marks on the floor by an oil-based marker or a center punch.

(2) Drill a hole on the two positions marked on the floor by the oil-based pen, the center punch or the like.

◆ *INSTRUCTIONS* ◆

- *Use a drill that is suitable for floor hole drilling.*
- *When drilling the anchor holes, take dust-preventive measures by a vacuum cleaner or the like. If no vacuum cleaner is available, protect the machine against dust by covering it with a plastic sheet.*
- *The anchor which is to be used when fixing is as per the following. In step 6, adjust the depth of the hole so that the anchor is less than 14mm.*
  Part No.: SANKO TECHNO C-645
  Anchor diameter: 6 mm, Pilot hole size: 6.4 mm, Length: 45 mm

(3) With a vacuum cleaner or like device, remove concrete chips and dust from the drilled holes.

(4) Embed the anchors in the holes.

#1 Embed: Anchors (x2)

◆ *INSTRUCTION* ◆

Remove the cuttings that are stuck in the holes.

◆ *NOTE* ◆

The anchors corresponding to the anchor nut size should be prepared.

1200_700007.ai

(5) Put the protruded section of the anchor through the fixing hole of the bracket, and then place the bracket.

#1

1200_700157.ai

(6) Fix the bracket using anchor nuts.

#1 Fix: Anchor nuts (x2)

Less than 14mm

1200_700158.ai

(7) Place the MP with fixing bracket on the anchor-fixed bracket, and then fix the MP at two locations on the front and the rear.

#1 Tighten: Screws (x4)

#1

1200_700155.ai

7. Installing the SE

⚠️ *CAUTIONS*

- *Do not connect the SE to the power supply unit other than the MP or the DS. Otherwise, the connector might get damaged.*
- *Exercise care not to drop the connector when connecting/disconnecting the SE cable (SE-side). The connector might get damaged.*
- *Make sure that the MP power or the DS power is turned OFF before connecting/disconnecting the SE cable (SE-side).*

◇ *REFERENCE* ◇

The SE power is configured to be automatically turned OFF if an unregistered SE is connected. A new SE needs to be registered before connecting it.

■ **Installation Procedures**

(1) **Connect the protective ground wire and the SE cable to the SE.**

    #1   Tighten: protective ground wire
    #2   Connect: Cable connector

1300_600001E.ai

(2) **Turn ON the power of the MP.**

8. Mounting the NIC Board to the DX Console

8.1 Mounting the NIC Board

⚠️ *CAUTION*

When connecting or disconnecting the cable connector, wear an antistatic wrist band to ground the human body. Otherwise, static electricity charged in the human body might damage electronic components.

(1) **Turn OFF the power and disconnect all of the cables.**

(2) **Remove the cover.**
- #1 Pull: Lever
- #2 Remove: Cover

600_700102.ai

(3) **Pull up the latch, and remove the slot bracket.**

◆ *INSTRUCTION* ◆

Remove the slot bracket as indicated in the figure below.

- #1 Pull up: Latch
- #2 Remove: Slot bracket

600_700103.ai

(4) **Mount the network interface board.**

(5) **Lower the latch, and fix the network interface board.**

600_700104.ai

(6) **Put on the cover removed in the procedure (2).**

Reverse the removal procedures for reinstallation.

8.2   Connecting the Network Cables

(1)   **Connect the LAN cable between the MP and the DX Console to the DX Console.**

#1   Connect: LAN cable (between the MP and the DX Console)

DX Console

MP

#1#2

1200_700104.ai

■ **Network Configuration**

◆ *NOTE* ◆

The IP addresses with red letters in the following figures are the items that are required to be changed from the default values.
Refer to the following for the changing procedure for the DR-ID 1305SE.
☞ *{IN2:10.11_Setting the IP Address of the SE}*

● **In case of one DR-ID 1305SE configuration**

Hospital Network

DR-ID 1305SE

192.168.0.90 (TOP)
192.168.0.91 (CENTER)
192.168.0.92 (BOTTOM)

DR-ID 1300MP

192.168.0.20

172.16.1.20
(Eth0)

Console Advance
(DR-ID 300CL)
[DR-ID 1200MC]

192.168.0.10
(Eth1)

LAN cable

DR-ID1300 SE cable

1300_700059E.ai

◆ *NOTE* ◆

In case of one DR-ID 1305SE configuration, connect the SE cable to MPL5 connector and MPL7 connector of the MPL65A board into the MP.

● **In case of two DR-ID 1305SE configuration**

192.168.0.93 (TOP)
192.168.0.94 (CENTER)
192.168.0.95 (BOTTOM)

Hospital Network

DR-ID 1305SE

DR-ID 1305SE

172.16.1.20
(Eth0)

192.168.0.90 (TOP)
192.168.0.91 (CENTER)
192.168.0.92 (BOTTOM)

DR-ID 1300MP

192.168.0.20

Console Advance
(DR-ID 300CL)
[DR-ID 1200MC]

192.168.0.10
(Eth1)

──── LAN Cable

──── DR-ID1300 SE Cable

1300_700060E.ai

● **In case of the configuration connecting between the DR-ID 1305SE and DR-ID 1201SE/1202SE/1211SE/1212SE**

Hospital Network

192.168.0.25

AP

192.168.0.30~192.168.0.34 (Wired)
192.168.0.40~192.168.0.44 (Wireless)

DR-ID 1201SE/1202SE/
1211SE/1212SE

192.168.0.55

DR-ID 1200DS

DR-ID 1201SE/1202SE/
1211SE/1212SE

192.168.0.21

DR-ID 1201SE/1202SE/
1211SE/1212SE

DR-ID 1200MP

HUB

172.16.1.20
(Eth0)

Console Advance
(DR-ID 300CL)
[DR-ID 1200MC]

192.168.0.10
(Eth1)

192.168.0.93 (TOP)
192.168.0.94 (CENTER)
192.168.0.95 (BOTTOM)

192.168.0.20

DR-ID 1305SE

DR-ID 1300MP

DR-ID 1305SE

192.168.0.90 (TOP)
192.168.0.91 (CENTER)
192.168.0.92 (BOTTOM)

──── LAN cable

──── DR-ID1300 SE cable

──── DR-ID1200 SE cable

1300_700058E.ai

9.   Installing the DX Console

■ Installing the DX Console

☞ **Refer to the DR-ID 300CL Service Manual.**

◆ *NOTE* ◆

Be sure to make [Device Color] set in [IIP Service Utility] – [Device Setting] coincide with the color of the color labels (machine identification label) applied to the SE.

■ Wake on LAN

The machine is equipped with the Wake on LAN function which automatically boots up upon startup of the CL.
Refer to the DR-ID 300CL Service Manual for the setting method.

☞ **Refer to the DR-ID 300CL Service Manual.**

◇ *REFERENCE* ◇

The MAC address of the MC is required during the setting operation on the CL. The MAC address of the MC appears by selecting "Network Address" in the "MUTL".

10. Installing the RU Software

◆ *NOTE* ◆

- *Install the RU software programs after the DX Console setting is complete.*
- *The IP addresses used in the local network of the system are as follows.*

Item	IP address
1300MC	192.168.0.10
MP1	192.168.0.20
1305SE1 (TOP)	192.168.0.90
1305SE1 (CENTER)	192.168.0.91
1305SE1 (BOTTOM)	192.168.0.92
1305SE2 (TOP)	192.168.0.93
1305SE2 (CENTER)	192.168.0.94
1305SE2 (BOTTOM)	192.168.0.95

- *The IP address of the local network can be changed. However, exercise care not to cause the IP addresses to duplicate.*

■ Flow of the Installation Procedures of the RU Software

START

☐ **10.1 Installing and Setting the NIC Board to the DX Console**

☐ **10.2 Installing the RU PC-TOOL**

☐ **10.3 Installing the RU Software**

☐ **10.4 Unlocking the RU PC-TOOL's Security Lock**

☐ **10.5 Updating MP Application Software Version**

☐ **10.6 Configuration Settings**

☐ **10.7 Setting the DX Console**

☐ **10.8 Setting the Serial ID of the SE**

☐ **10.9 Setting the Serial ID of the Long Panel**

☐ **10.10 Updating SE Application Software Version**

☐ **10.11 Setting the IP Address of the SE**

☐ **10.12 Installing the Machine-Specific Data**

☐ **10.13 Forced Transfer of the SE Correct Data**

☐ **10.14 Changing the IP Address of the SE/MP/MC**

END

10.1 Installing and Setting the NIC Board to the DX Console

■ **Installing the NIC**

(1) **Installing the network interface board in the DX Console.**

☞ {IN2:8._Mounting the NIC board to the DX Console}

■ **Setting the NIC/Telnet**

(1) **Click [Control Panel] from [Start] menu.**
#1 Click: [Start] menu
#2 Click: [Control Panel]
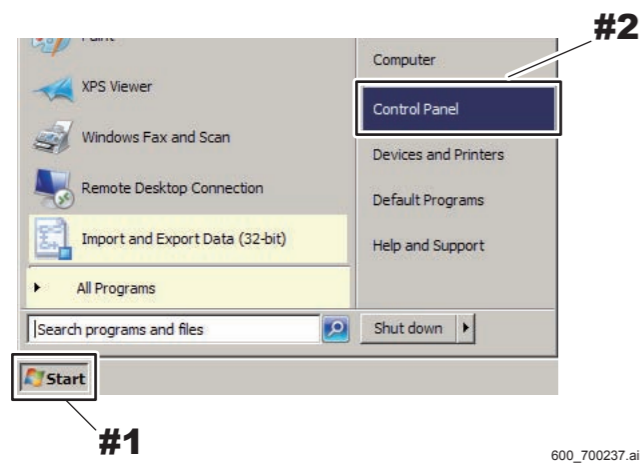
The All Control Panel Items window opens.

(2) **Click [Network and Sharing Center].**
The Network and Sharing Center window opens.
#1 Click: [Network and Sharing Center]
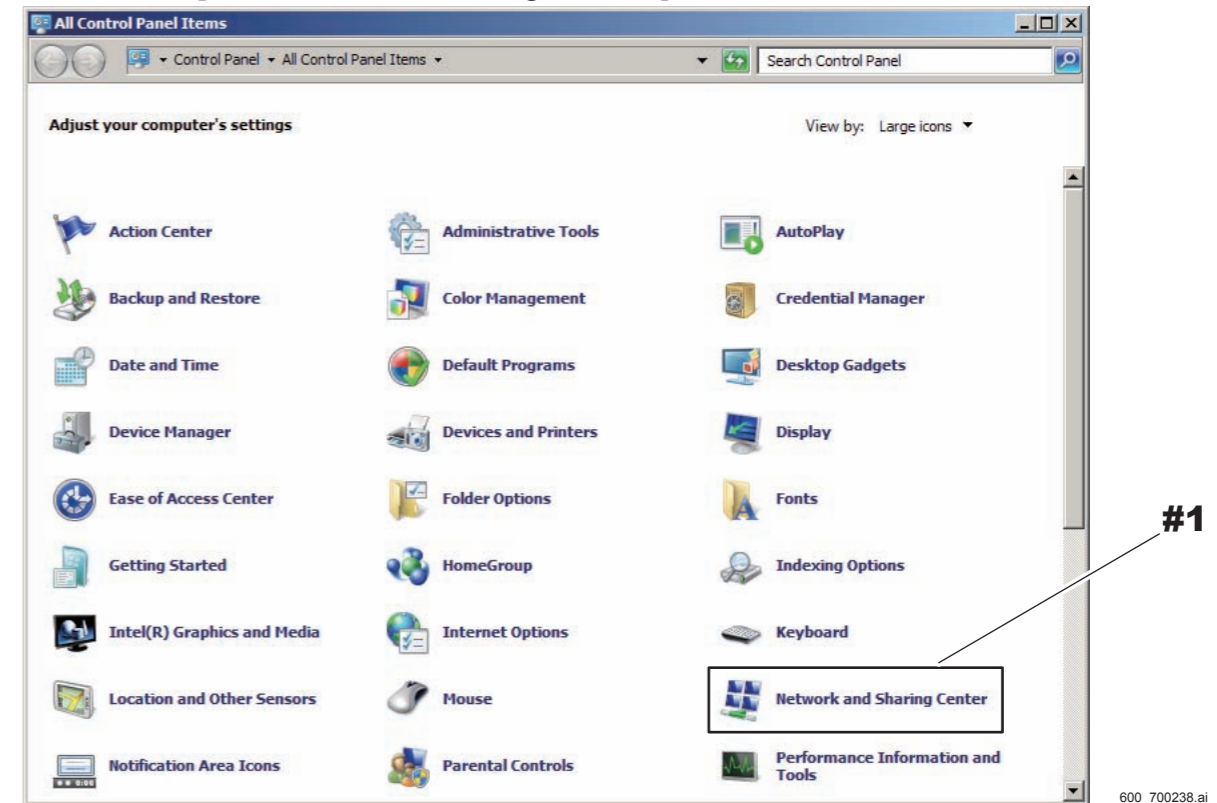
(3) **Click [Change adapter settings].**
The Network Connections window opens.
#1 Click: [Change adapter settings]
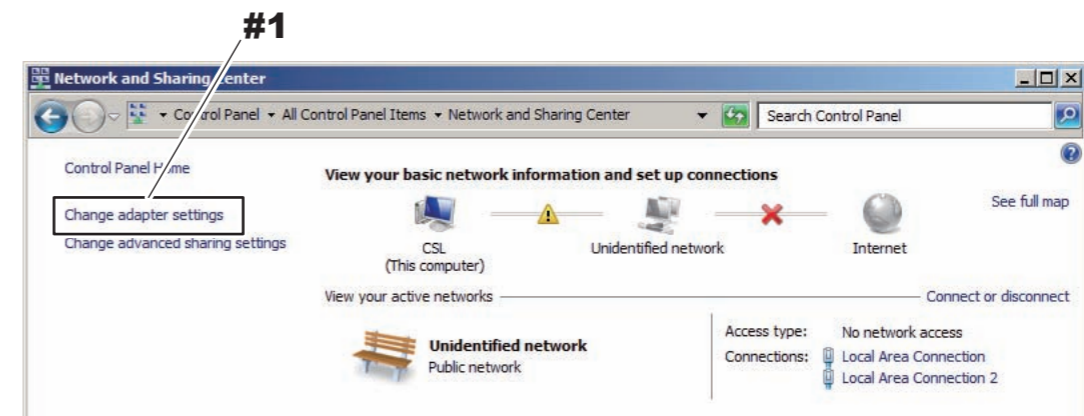
(4) Rename "Local Area Connection" to "Eth0", and "Local Area Connection 2" to "Eth1".

◆ *NOTE* ◆

Be sure to rename the Eth0/Eth1.
Otherwise, errors may occur, for example, software update.

#1 Rename: "Local Area Connection" to "Eth0"
#2 Rename: "Local Area Connection 2" to "Eth1"
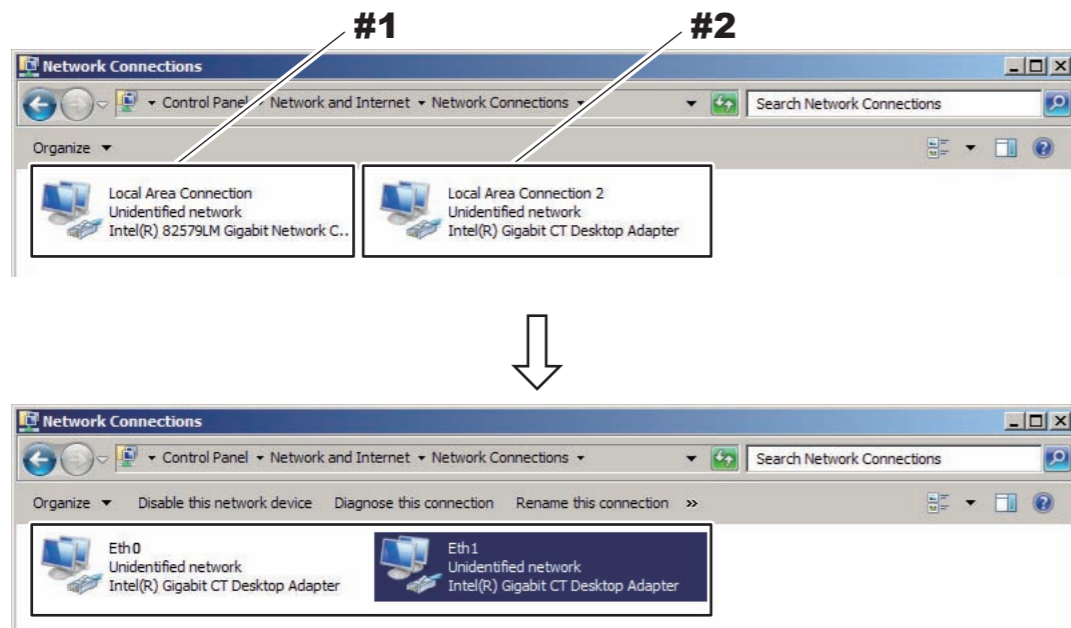
600_700240.ai

(5) Select "Eth1", and then select [Properties] from the right-click menu.

The Network Properties dialog opens.
#1 Right-click: Eth1
#2 Click: [Properties]
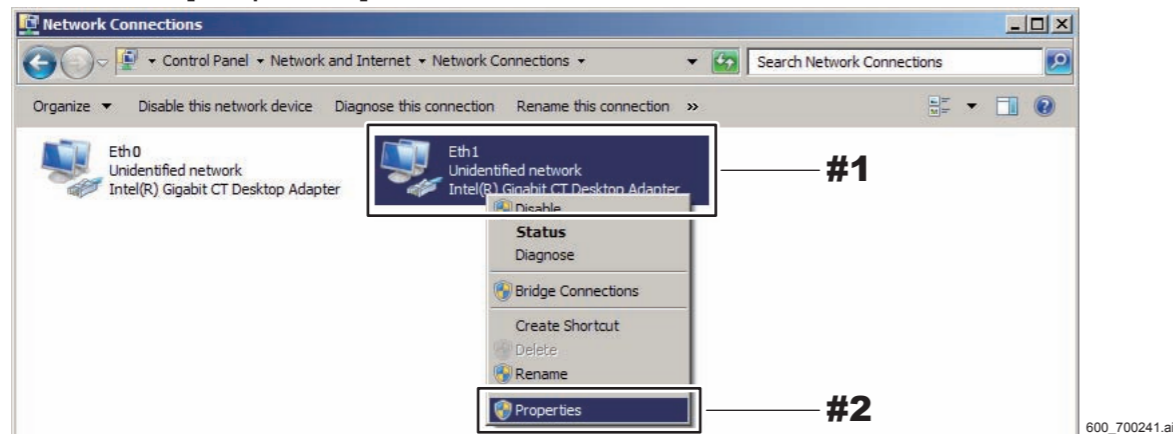
600_700241.ai

(6) Select "Internet Protocol Version 4 (TCP/IPv4)" and click [Properties].

The Internet Protocol Version 4 (TCP/IPv4) Properties dialog opens.
#1 Select: Internet Protocol Version 4 (TCP/IPv4)
#2 Click: [Properties]

600_700242.ai

(7) Click the [Use the following IP address:] radio button, and then input the IP address below.

- IP address: 192.168.0.10
- Subnet mask: 255.255.255.0
#1 Select: Use the following IP address
#2 Input: IP address, Subnet mask

600_700243.ai
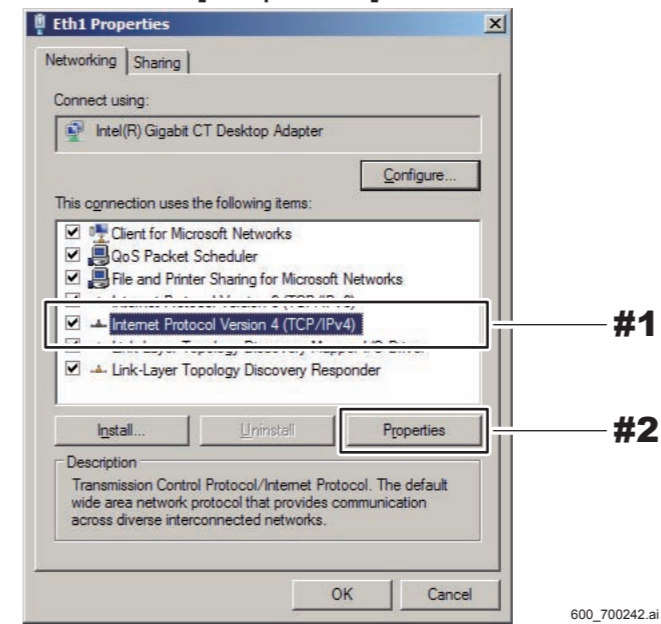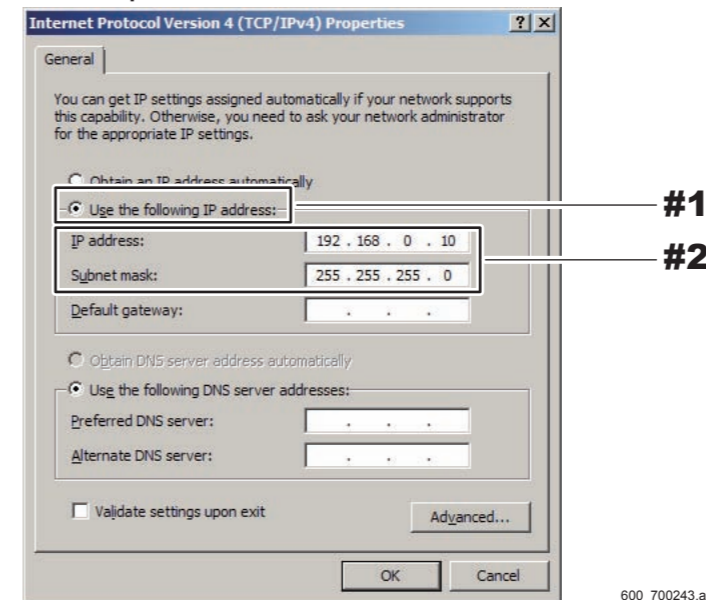
(8) Click [OK].

Return to the Network Properties dialog.

#1　Click: [OK]

600_700244.ai
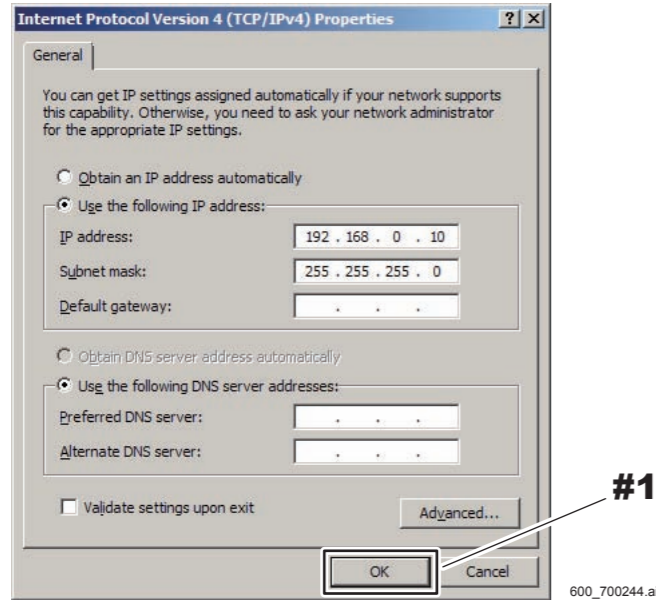
(9) Click [OK].

Return to the Network Connections window.

#1　Click: [OK]

600_700245.ai
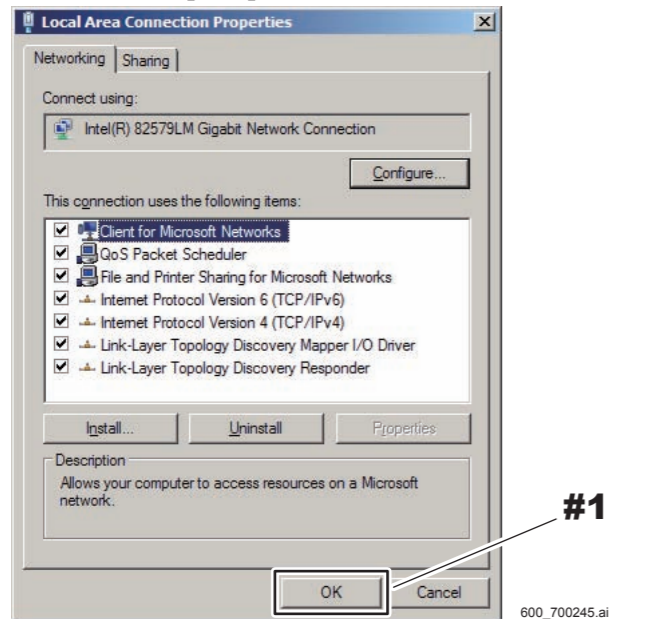
(10) Click [←].

Return to the Network and Sharing Center window.

#1　Click: [←]

600_700246.ai
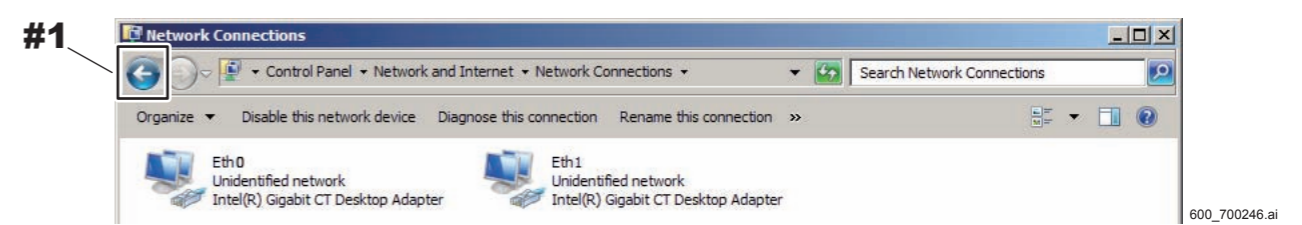
(11) Confirm that "Eth0" and "Eth1" have appeared at "Connections:", and then click [←].

Return to the All Control Panel Items window.

#1　Verify: Eth0 and Eth1

#2　Click: [←]

600_700247.ai
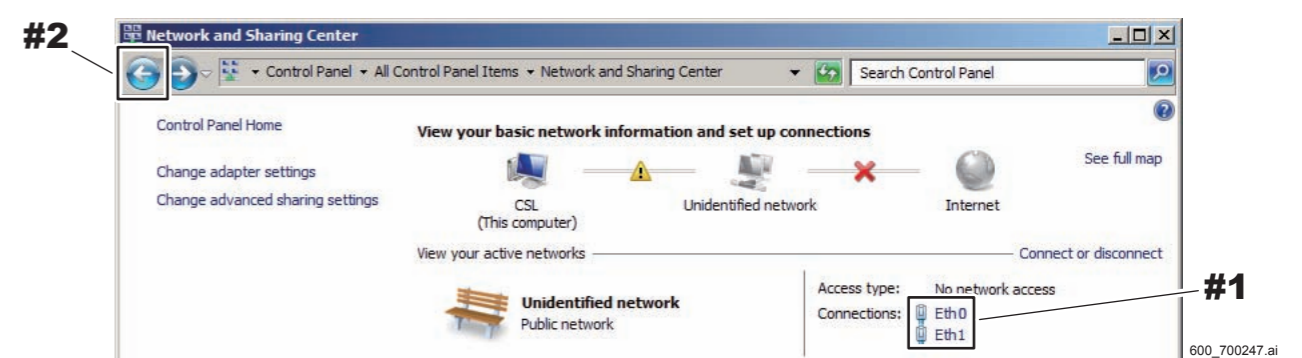
◇ *REFERENCE* ◇

The setting procedure up to here is for NIC, and from here is for Telnet.

(12) Click [Programs and Features].

The Programs and Features window opens.

#1　Click: [Programs and Features]

600_700248.ai
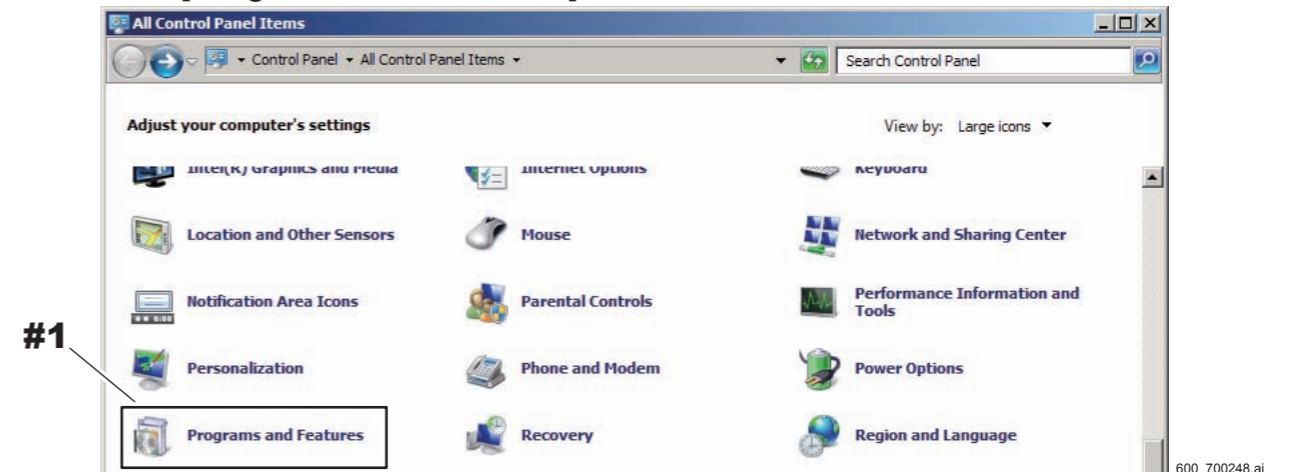
(13) Click [Turn Windows features on or off].

The Windows Features window opens.

#1　Click: [Turn Windows features on or off]

600_700249.ai
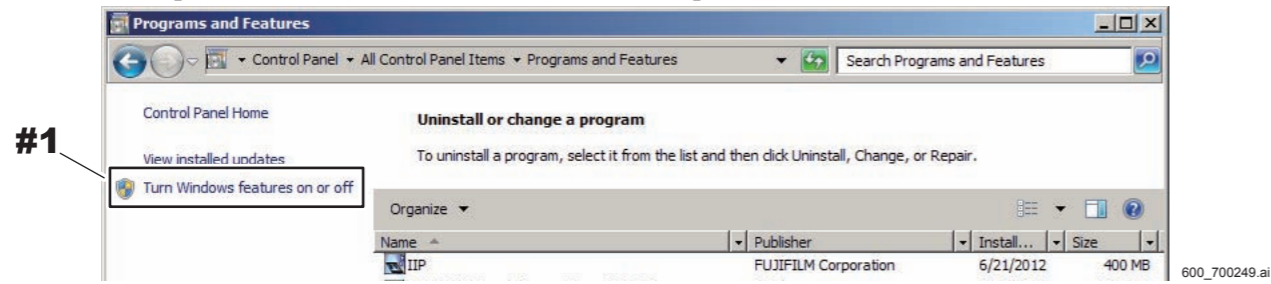
(14) Place a checkmark to "Telnet Client" and "Telnet Server", then click [OK].

Return to the Programs and Features window.

#1　Check ON: "Telnet Client" and "Telnet Server"

#2　Click: [OK]

600_700250.ai
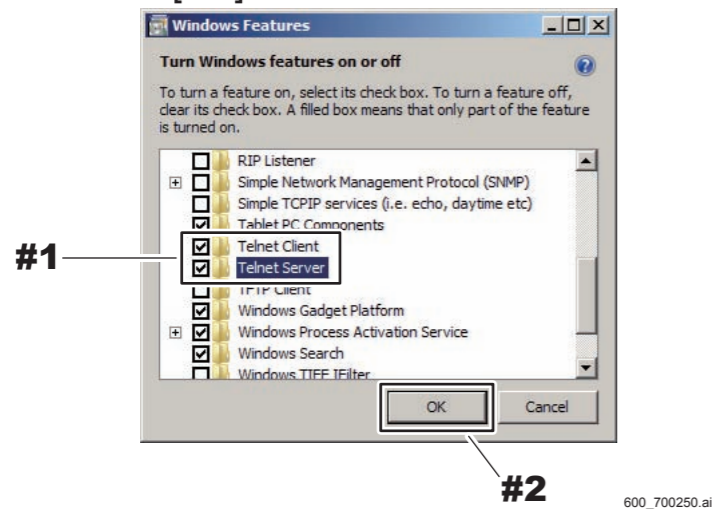
(15) Click [←].

Return to the All Control Panel Items window.

#1　Click: [←]

600_700251.ai
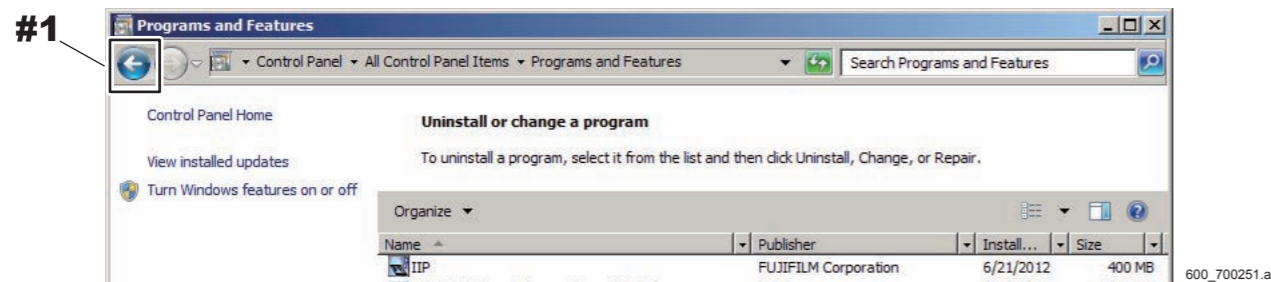
(16) Click [Administrative Tools].

The Administrative Tools window opens.

#1　Click: [Administrative Tools]

600_700252.ai
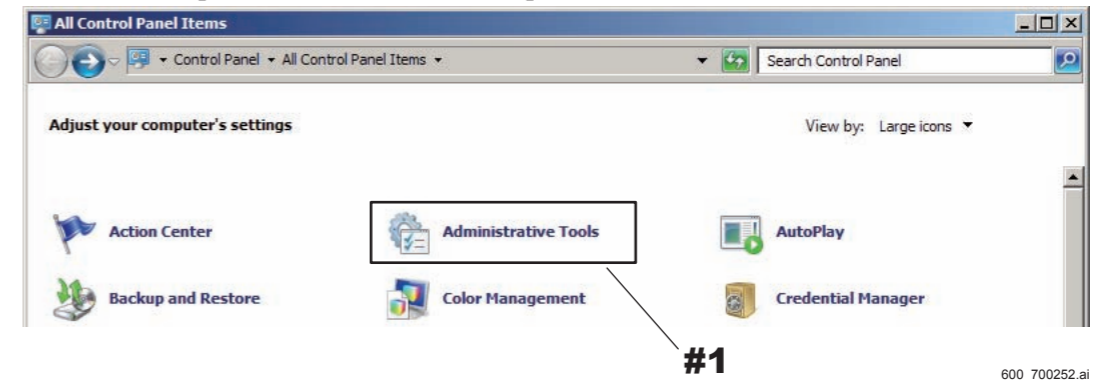
(17) Double-click "Services".

The Services window opens.

#1　Double-click: Services

600_700253.ai
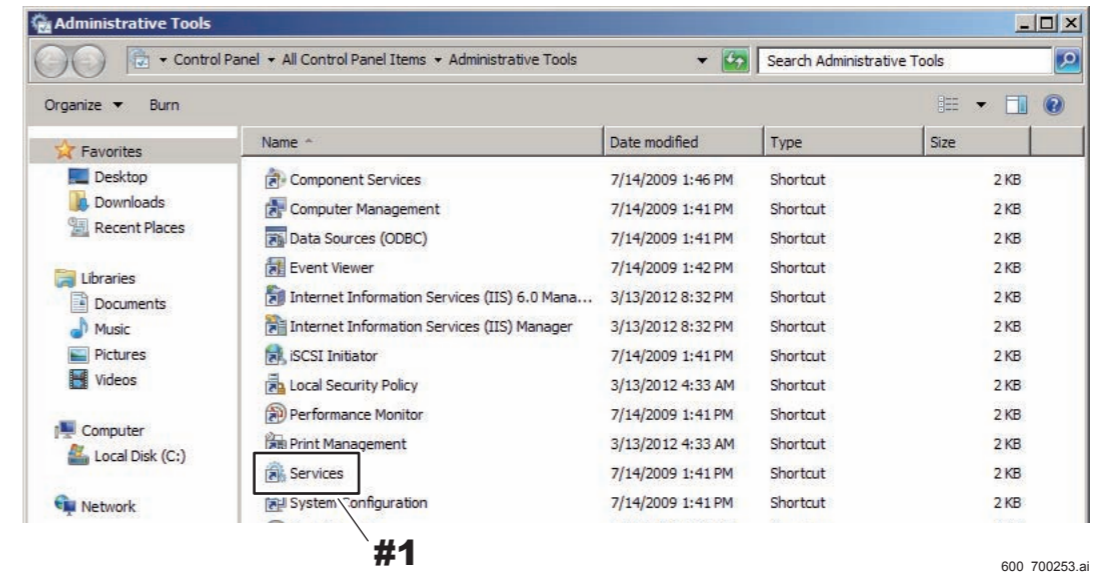
(18) Select "Telnet", and then select [Properties] from the right-click menu.

The Telnet Properties (Local Computer) dialog opens.

#1   Right-click: Telnet

#2   Click: [Properties]

600_700254.ai
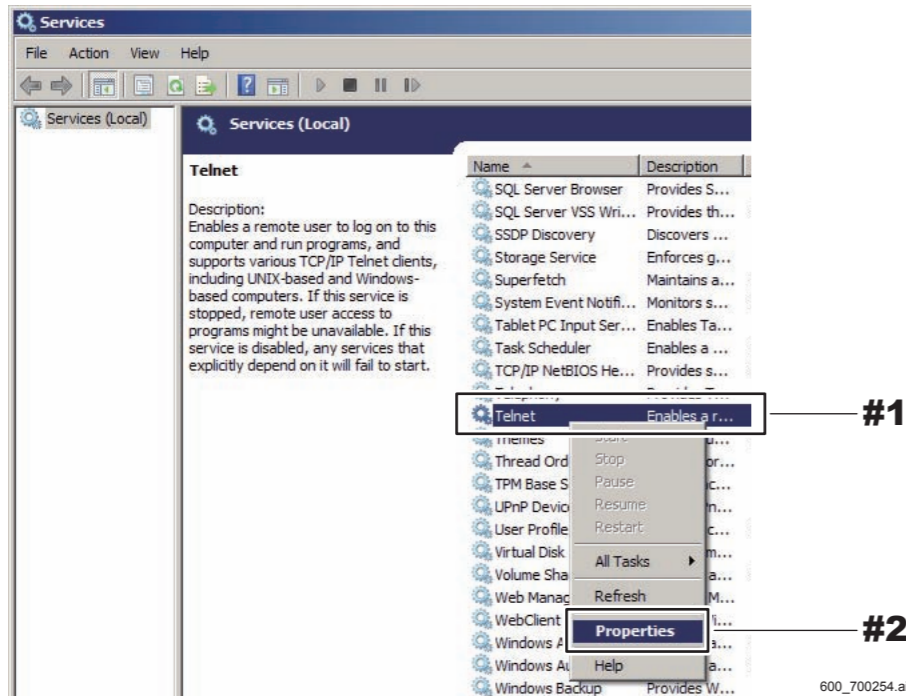
(19) Select "Automatic" from the "Startup type:" pull-down menu and click [OK].

Return to the Services window.

#1   Select: Automatic

#2   Click: [OK]

600_700255.ai
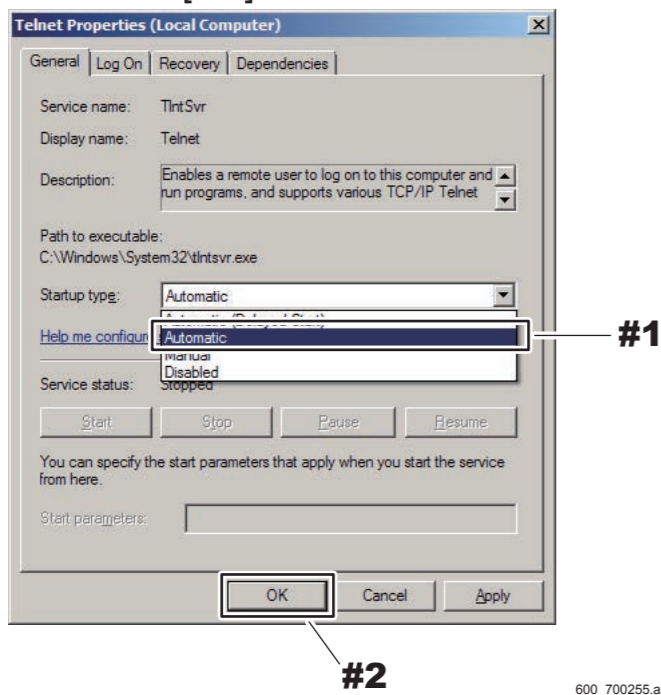
(20) Click [x] on the upper right side of the window.

The Services window closed and return to the Administrative Tools window.

#1   Click: [x]

600_700256.ai
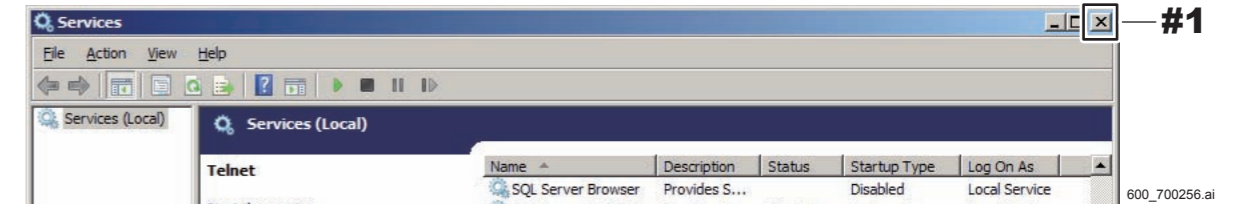
(21) Click [x] on the upper right side of the window.

The Administrative Tools window closed.

#1   Click: [x]

600_700257.ai
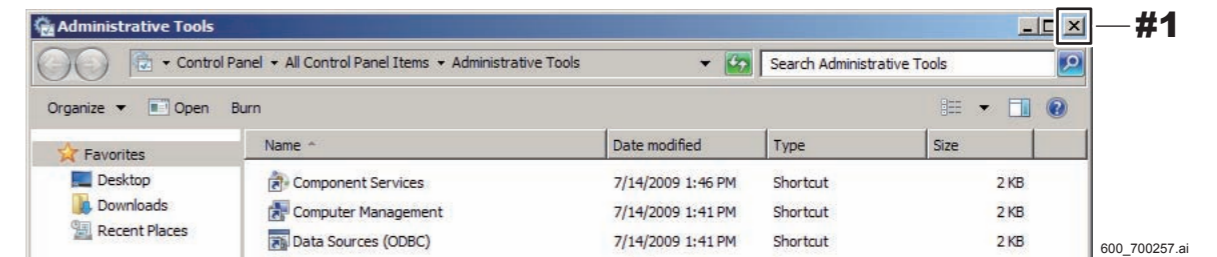
(22) Click [Control Panel] from [Start] menu.

The All Control Panel Items window opens.

#1   Click: [Start] menu

#2   Click: [Control Panel]

600_700237.ai
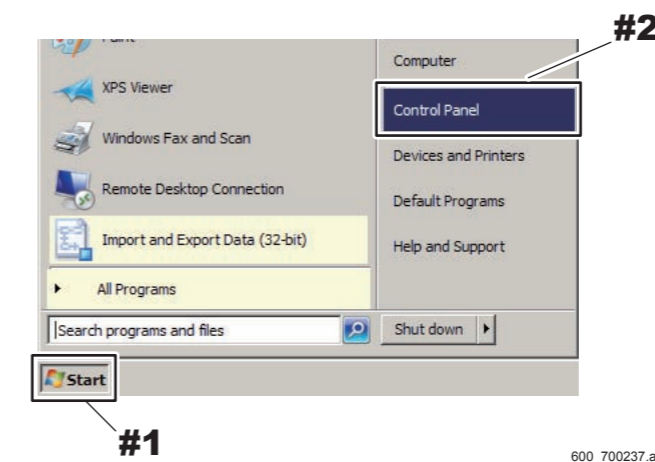
(23) Click [Windows Firewall].

The Windows Firewall window opens.

(24) Select [Advanced settings].

The Windows Firewall with Advanced Security window opens.

#1   Select: Advanced settings

600_700264.ai

(25) Select [Inbound Rules].

#1   Select: Inbound Rules

600_700265.ai

(26) Right-click [FTP Server Passive (FTP Passive Traffic-In)] and select "Enable Rule".

The "Enabled" of [FTP Server Passive (FTP Passive Traffic-In)] changes to "Yes".

#1   Right-click: FTP Server Passive (FTP Passive Traffic-In)

#2   Click: Enable Rule

600_700266.ai

(27) Select [Exit] from [File] menu.

The system returns to the Windows Firewall window.

#1   Click: [File] menu

#2   Click: Exit

600_700267.ai
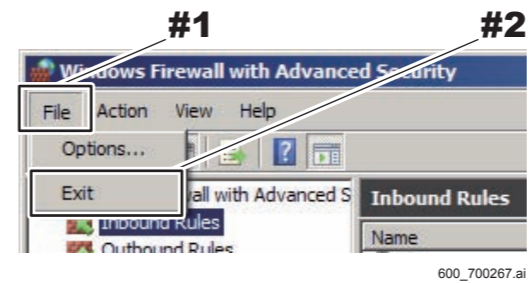
(28) Close the Windows Firewall window.

The system returns to the desktop screen.
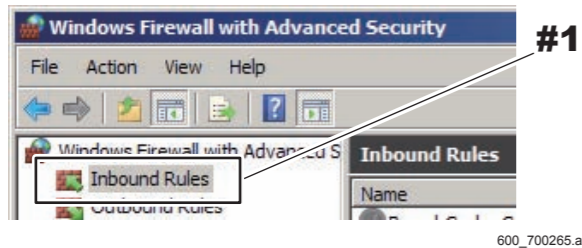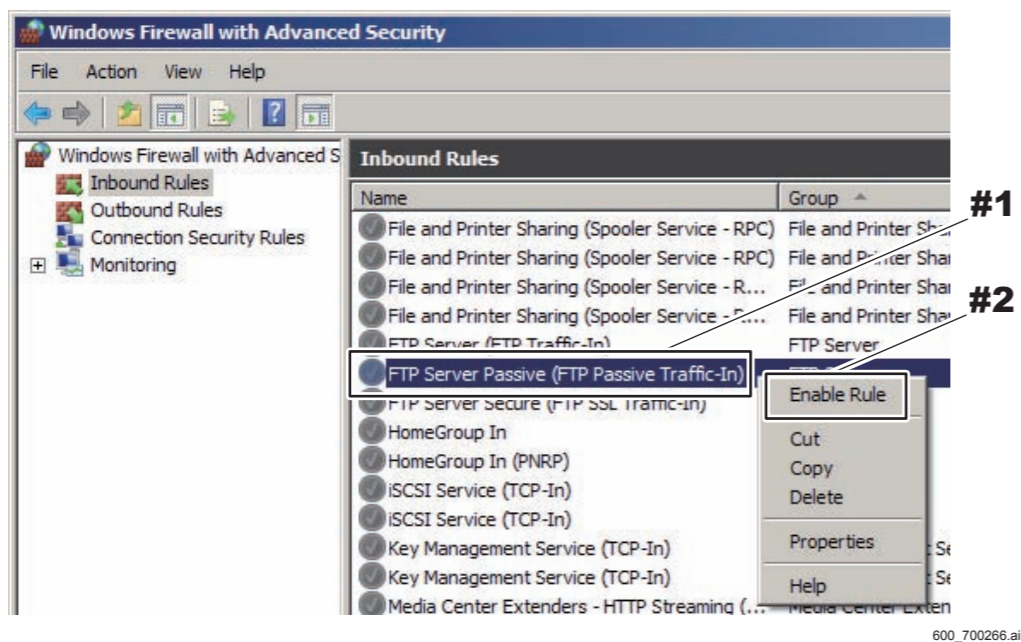
10.2 Installing the RU PC-TOOL

Describe the procedure for MC V11 or later.

◆ NOTE ◆

For MC V3.x or earlier, refer to the following.

■ Installing the MC Manager

(1) Insert the install disk into the DVD drive of the CL.

(2) Double-click "SetupRun.exe" into the drive on the My Computer.

The "Set Up PC-TOOL" window appear.

(3) Select ".\install\local\Install.bat" from "FILE EXECUTION" area, and click [EXECUTE].

#1 Select: .\install\local\Install.bat
#2 Click: [EXECUTE]
Set Up PC-TOOL window
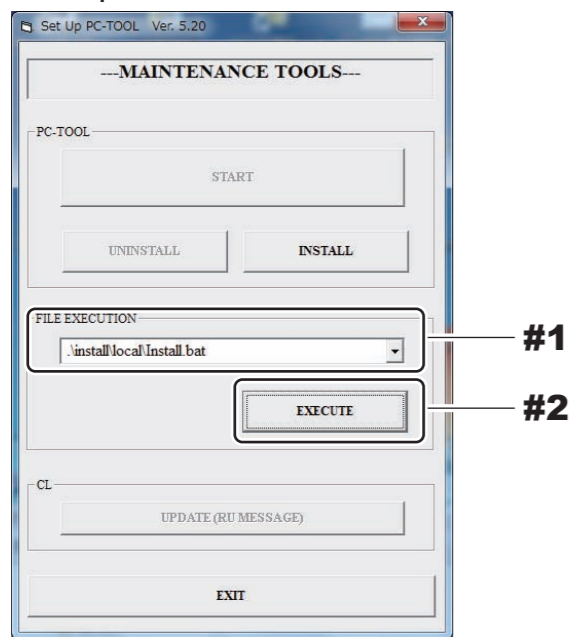
800_700208.ai

The following window opens.
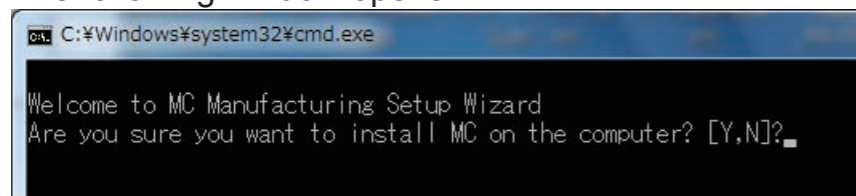
800_700209.ai

(4) Press the <Y> key on the keyboard.

(5) Input "1" as the "Network Configuration" setting.
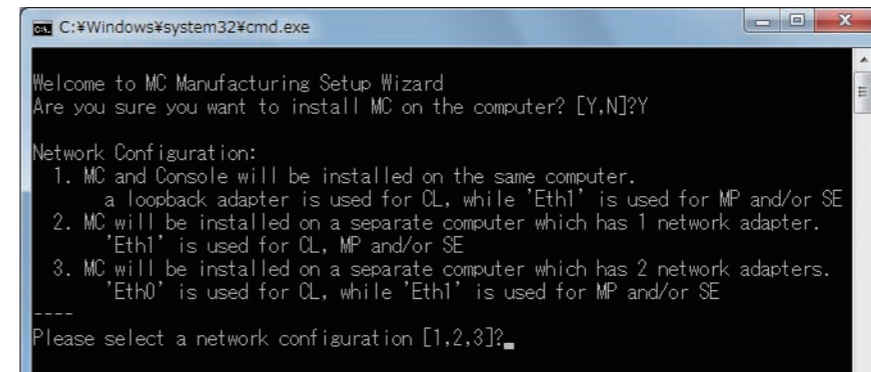
800_700210.ai

The following window opens.
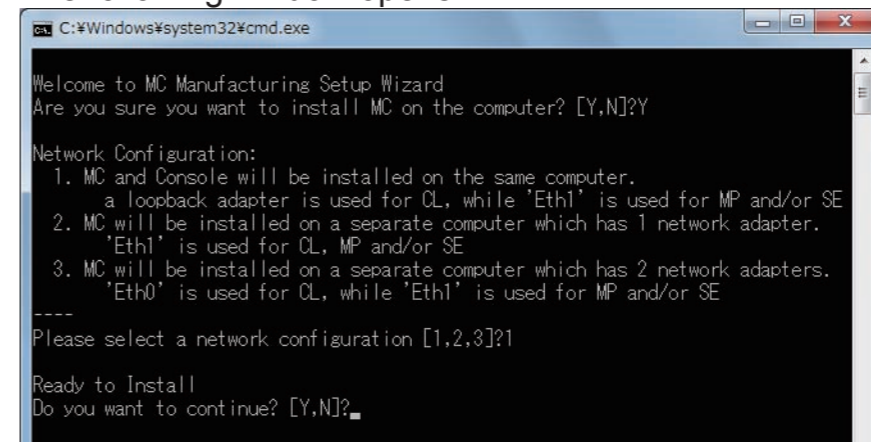
800_700211.ai

(6) Press the <Y> key on the keyboard.

The setup wizard window opens.

(7) Select Repair and click [Next].

#1Select: Repair
#2Click: [Next]

800_700215.ai
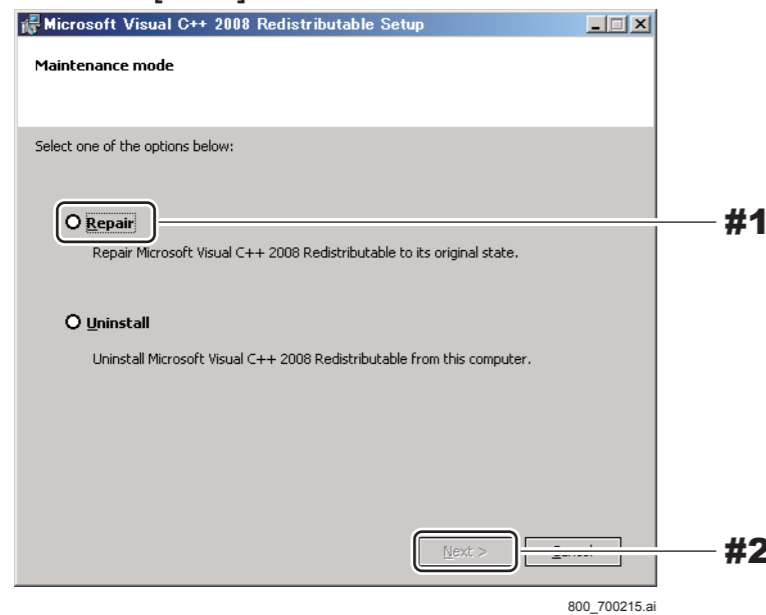
The Setup Complete window opens.

(8) Click [Finish].

800_700212.ai
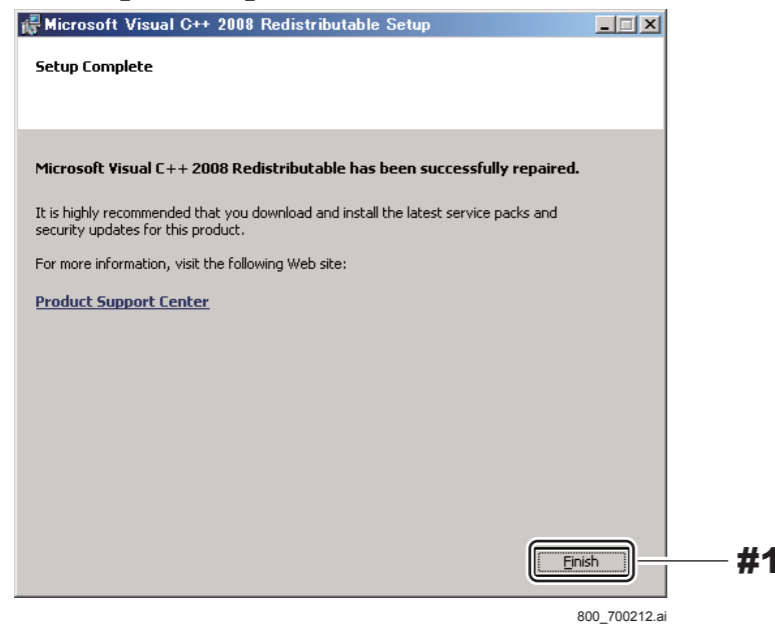
Upon completion of the installation, the WinPcap 4.1.3 Setup window opens.

(9) Click [OK].
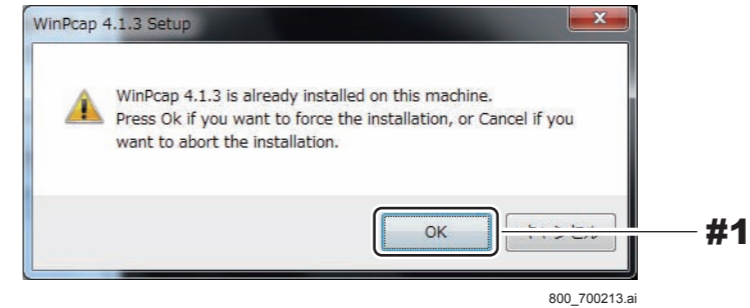
800_700213.ai

The Welcome to the WinPcap 4.1.3 Setup Wizard window opens.

(10) Click [Next].

800_700216.ai

The License Agreement window opens.

(11) Click [I Agree].
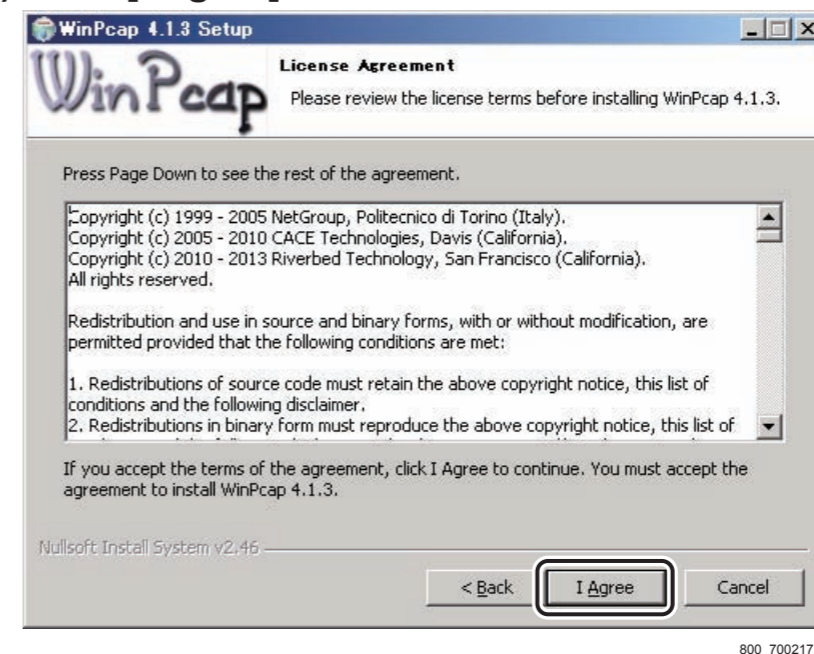
800_700217.ai

The Installation options window opens.

(12) Comfirm that "Automatically start the WinPcap driver at boot time" is checked and click [Install].
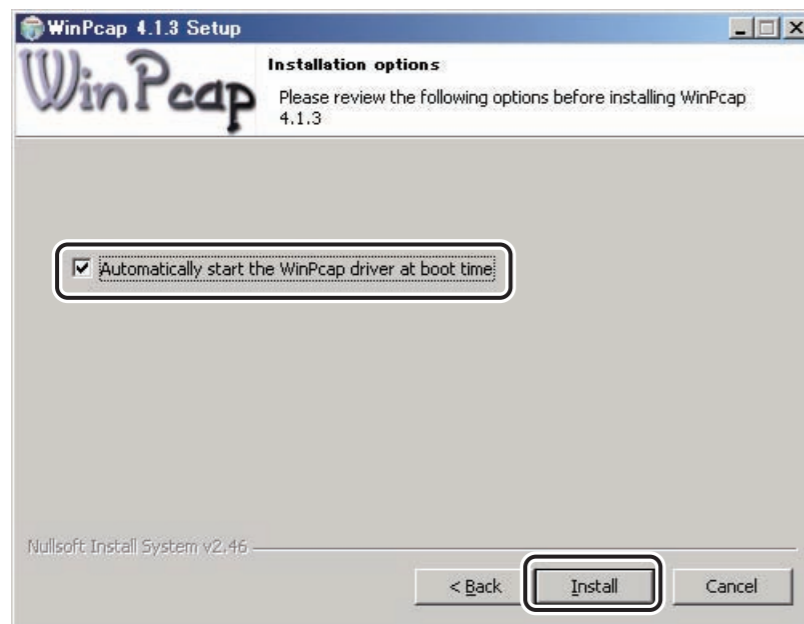
800_700218.ai

The Completing the WinPcap 4.1.3 Setup Wizard window opens.

(13) Click [Finish].

800_700219.ai

Upon completion of the installation, the following window opens.
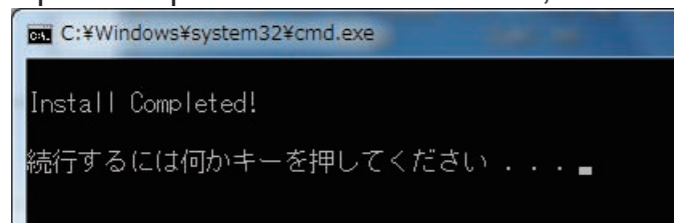
800_700214.ai

(14) Press the <Enter> key.

The installation has been completed.

(15) Restart the PC.

(16) Exit from the CL software, and display the normal Windows screen.

◇ *REFERENCE* ◇

When you click the Shut Down button of the CL software, the pop-up menu appears for prompting to exit from the system. When you click [OK] in the popup menu while pressing the shift key on the keyboard, the CL software terminates and the Windows screen appears.
Keep pressing the shift key until the message of termination processing in progress disappears.

(17) Check that the MC Manager icon has appeared on the task tray.

■ Preparation (for V11.X or later)

Implement the following procedures when newly installing MC V11 or later, or when upgrading the versions on computers which have MC V11 or earlier installed on them to V11.x or later.

(1) Insert the application disk into the CL drive and double-click "SetupRun.exe" into the drive on the My Computer.

The "Set Up PC-TOOL" window appear.

(2) Select "\versionup\local\V11.0.bat" from "FILE EXECUTION" area, and click [EXECUTE].

Set Up PC-TOOL window
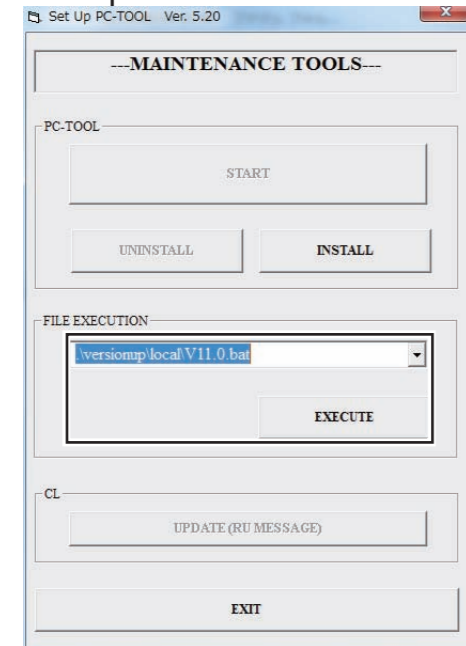
800_700197.ai

The following window opens.
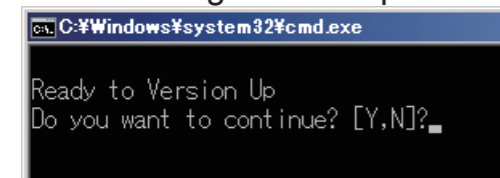
800_700198.ai

(3) Press the <Y> key on the keyboard.

Upon completion of the configuration setting, the "Version Up Completed" opens.

(4) Press the <Enter> key.

■ Setting up the RU Software Version

(1) Double-click "SetupRun.exe" into the drive on the My Computer.

The "Set Up PC-TOOL" window appear.

(2) Select ".\install\remote\MCSetupWizard.bat" from "FILE EXECUTION" area, and click [EXECUTE].

(3) Input the target MC IP address and click [Connect].
#1 Input: MC IP address
#2 Click: [Connect]

800_700200.ai

◆ NOTE ◆

- *If the MC could not be connected to due to the mistaken inputting of the IP address, a connection error occurs. After checking the connection status, re-execute the version upgrade.*
- *If the MC application was not factory-installed, and if the model media being used differs from the model which was installed, then the error will appear. Confirm the MC application installation status and the media model information, and re-execute the version upgrade.*

◆ INSTRUCTION ◆

If the RU registration has been already completed, steps 4 and 5 are not necessary. Proceed to step 6.

(4) **If the RU registration has not been completed, the following window appears. Click [OK].**

#1   Click: [OK]

800_700202.ai

(5) **Input the RU NAMEand click [Register].**

#1   Input: RU NAME
#2   Click: [Register]

800_700203.ai

The version and the media version that are installed on the device appear.

(6) **Check that there are not any problems with the version and the media version that are installed on the device, and click [Upgrade].**

#1   Check: the version and the media version that are installed on the device
#2   Click: [Upgrade]

800_700204.ai

(7) **Click [Yes].**

#1   Click: [Yes]

800_700205.ai

The following window opens during the version-update.

800_700206.ai

(8) **Check that the installation is completed, and click [OK].**

#1   Click: [OK]

800_700207.ai

The system returns to the desktop screen.

(9) **Remove the disk from the DVD drive.**

(10) Restart the PC.

(11) Exit from the CL software, and display the normal Windows screen.

◇ *REFERENCE* ◇

When you click the Shut Down button of the CL software, the pop-up menu appears for prompting to exit from the system. When you click [OK] in the popup menu while pressing the shift key on the keyboard, the CL software terminates and the Windows screen appears.

Keep pressing the shift key until the message of termination processing in progress disappears.

◆ *NOTE* ◆

If any error occurs during installation, reinstall the MC application after uninstalling it. Follow the procedures below to uninstall the MC application.

1. Insert the install disk into the DVD drive.

   The "Set Up PC-TOOL" window starts.

2. Select ".\Initial\apl_initial\install.bat" from the "FILE EXECUTION" pull-down menu, and then click [EXECUTE].

   The "Are you sure you want to uninstall MC application?" dialog appears.

3. Click [OK].

10.3   Installing the RU Software

◆ *NOTE* ◆

Set the following IP address before installing the RU software.

Control Panel\Administrative Tools\Internet Information Services(IIS) Manager\local computer\Edit Bindings\Edit

IP address: All Unassigned
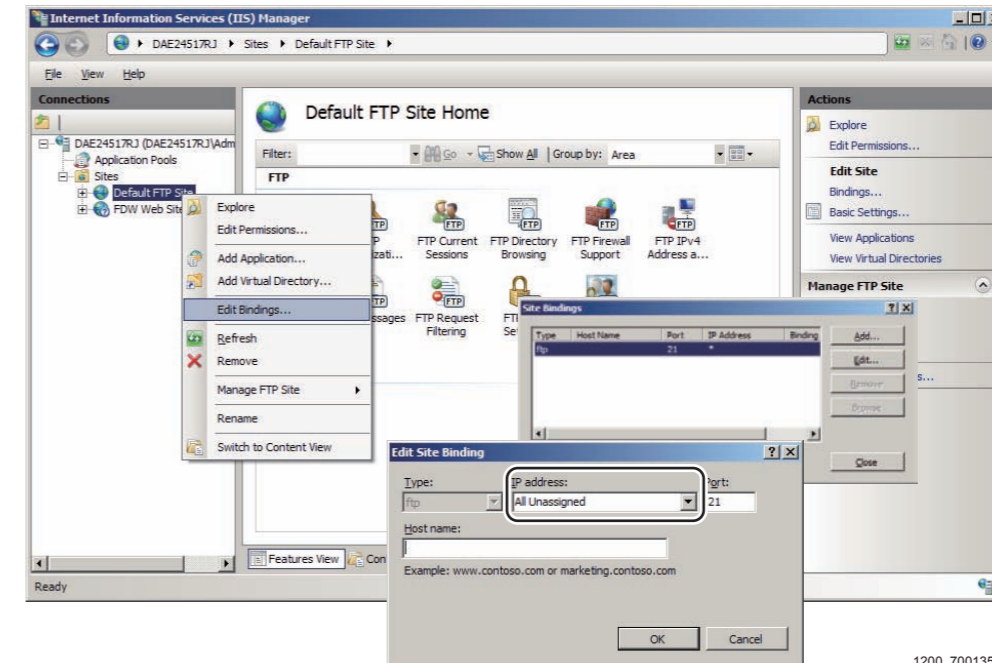
1200_700135.ai

(1) Click [START] in the "Set Up PC-TOOL" window to start the RU PC-TOOL window.

#1 Click: [START]
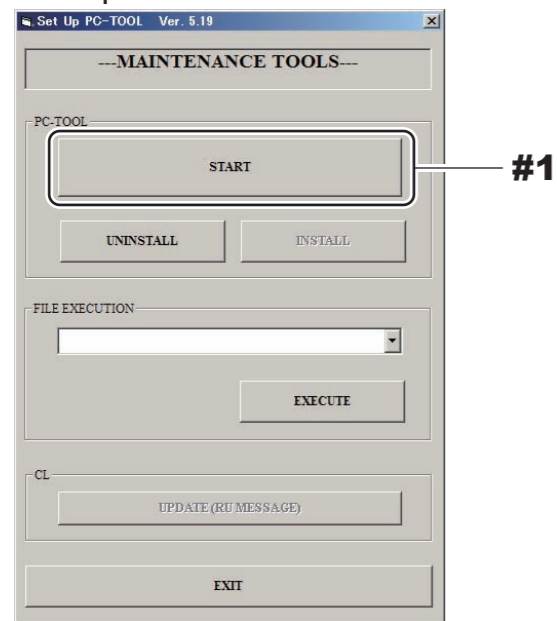
Set Up PC-TOOL window
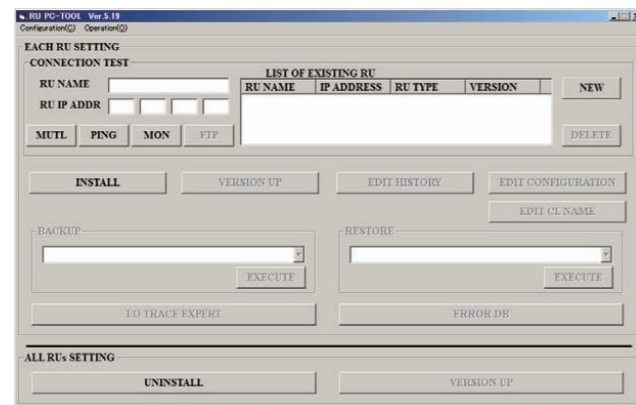
1200_700083.ai

(2) Click [NEW], and input "RU NAME" and "RU IP ADDR".

#1 Click: [NEW]
#2 Input: RU NAME
#3 Input: RU IP ADDR (127.0.0.1)

◆ *NOTE* ◆

The maximum input character count for "RU NAME" is as per the following.
- *MC application V3.4 or earlier: 16 one-byte characters*
- *MC application V11.0 or later: 15 one-byte characters*

RU PC-TOOL window (input example)
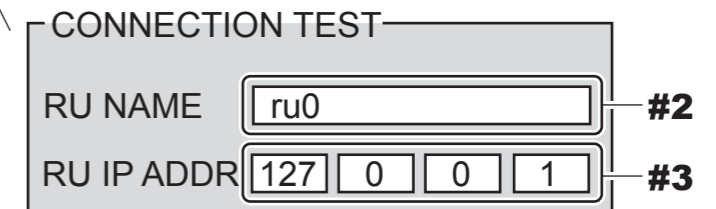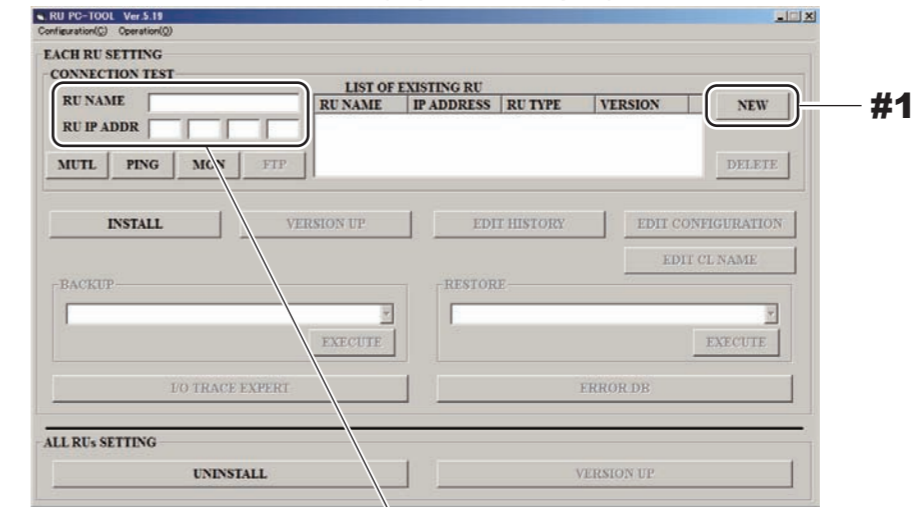
1200_700084E.ai

(3) Click [PING], and check that the input RU address is present and that it is connected.

Check that "Lost=0 (0% loss)" appears on the displayed window. Otherwise, check the RU IP address and the I/F cable connection.

◇ *REFERENCE* ◇

"Lost = 0 (0 % loss)" means that there is no problem as a result of the PING check. If "Lost = 0 (0 % loss)" does not appear, it indicates some problem. Do not take the procedures of (4) and later in this case, but solve the problem.

#1   Click: [PING]
#2   Verify: Lost = 0 (0% loss)
RU PC-TOO window
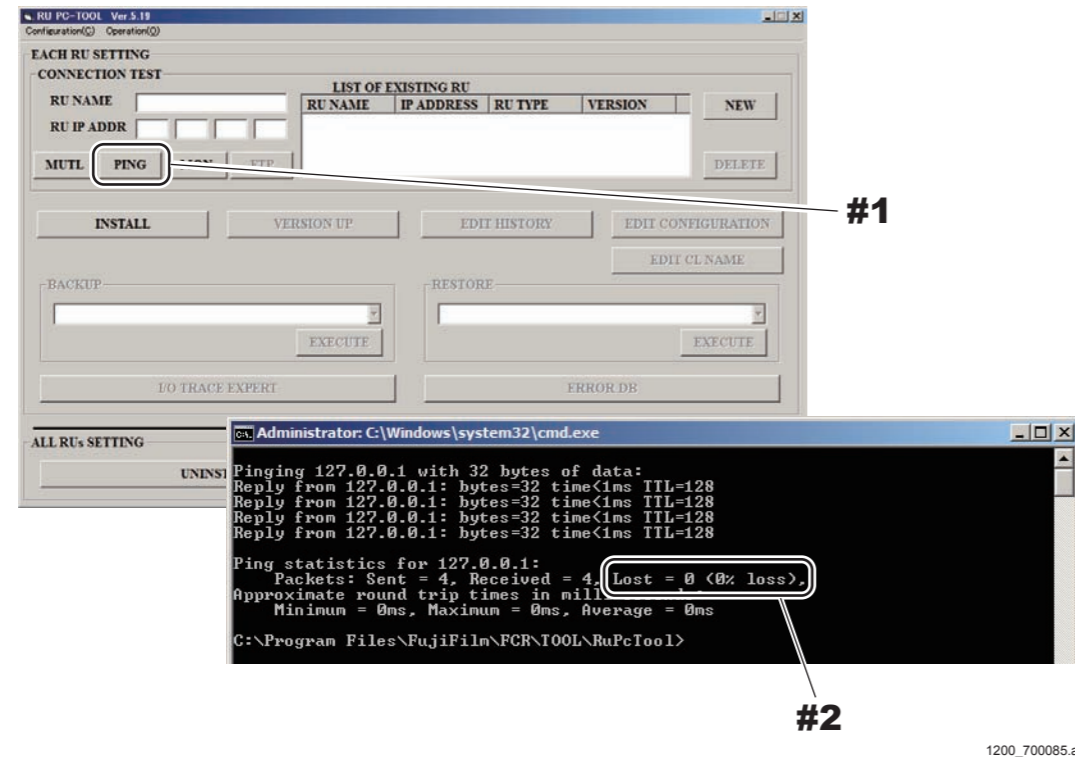
1200_700085.ai

(4) Click [INSTALL].

The "RU INSTALL" window opens.
#1   Click: [INSTALL]
RU PC-TOOL window
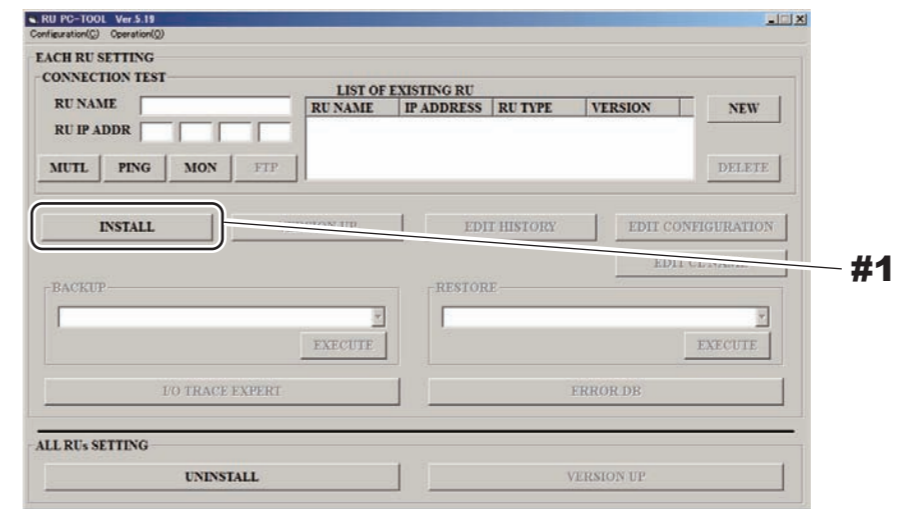
RU INSTALL window
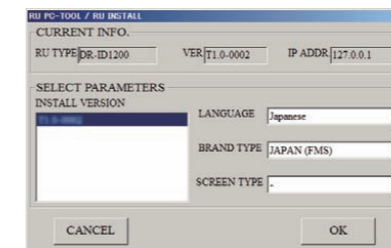
1200_700086.ai

(5) Select the software version "INSTALL VERSION" to be installed.

#1   Select: INSTALL VERSION
RU INSTALL window

INSTALL VERSION
XXX
YYY   ← #1
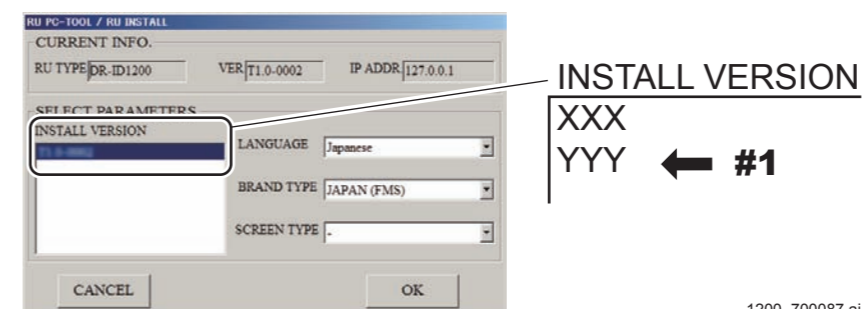
1200_700087.ai

(6) Click [OK].

After a while, the installation will be completed.

(7) Exit from the RU INSTALL window.

The CONFIG window opens.

#1　Click: [OK]

RU INSTALL window

#1
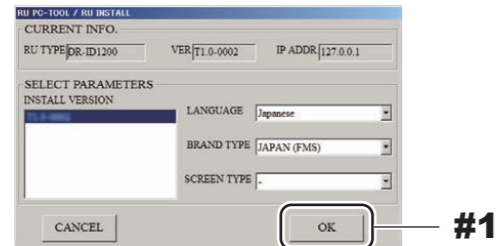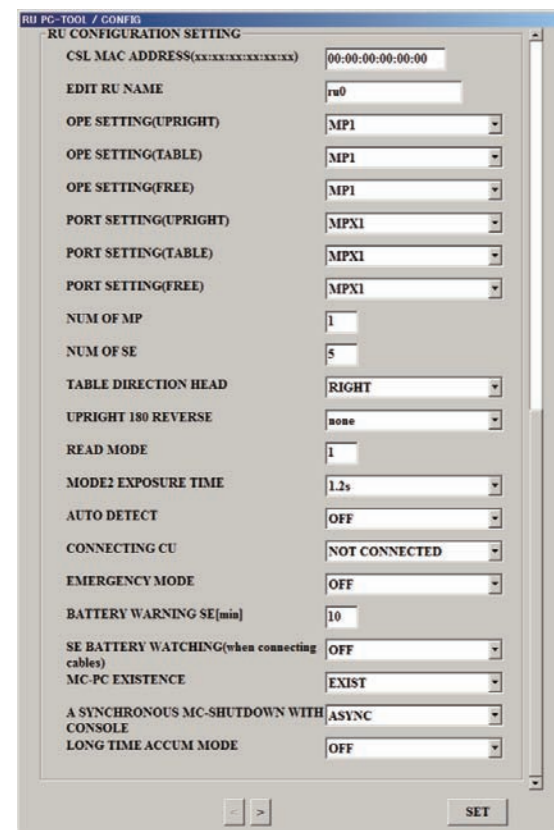
CONFIG window

1200_700088.ai

(8) Select the followings on the CONFIG window.

#1　Select: NOT EXIST

#2　Select: SYNC

#1
#2
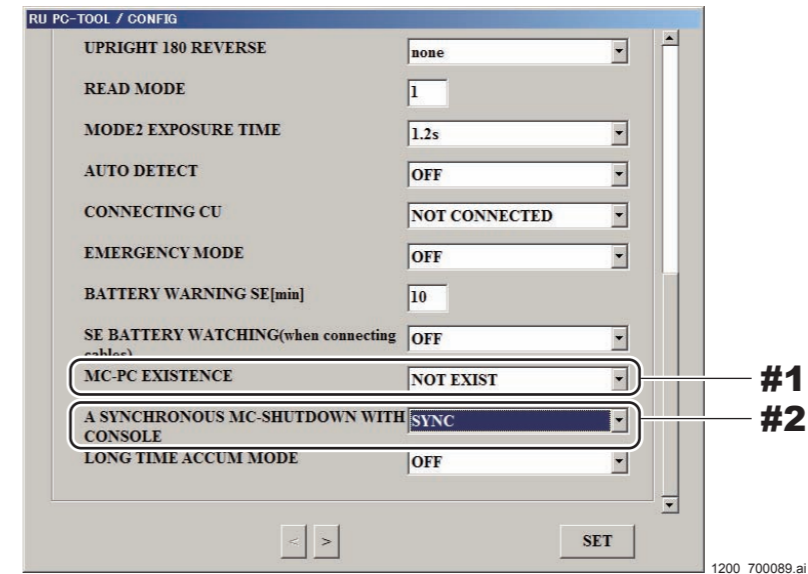
1200_700089.ai

(9) Click [SET].

The CL NAME window opens.

◇ *REFERENCE* ◇

You may make configuration settings.

(10) Click [MODIFY] and change the IP address to "127.0.0.1".

#1　Select: CL0

#2　Click: [MODIFY]

CL NAME window

#1
#2
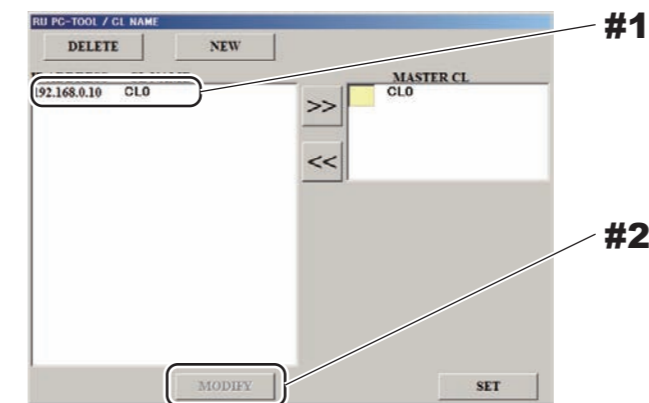
1200_700179E.ai

(11) Click [SET] on the CL NAME window.

Write into the HDD starts.
#1   Click: [SET]

CL NAME window

1200_700090.ai
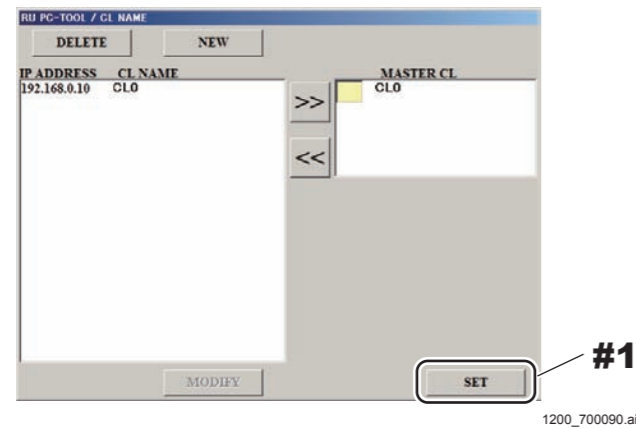
⚠️ *CAUTION*

While write into the HDD is in progress, never turn OFF the CL power and the circuit breaker of the distribution switchboard. If turned OFF, the data on the HDD gets damaged, and the CL cannot boot up as a result.

(12) Make sure that the write into the HDD has completed, and press any key on the keyboard.

#1   Check: "Install is complete"appears on the Command Prompt window
#2   Press: Any key on the keyboard

Command Prompt window
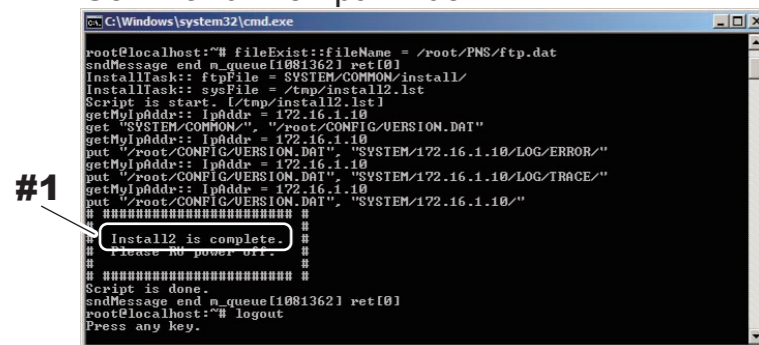
600_700066.ai

(13) Click [OK].

The DX Console restarts automatically.
#1   Click: [OK]

600_700067.ai
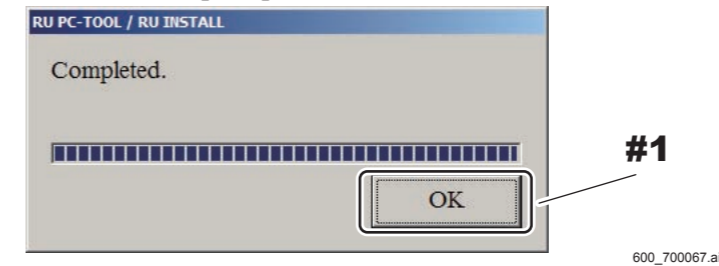
→   Start up the MC Manager from [Start] menu.

10.4 Unlocking the RU PC-TOOL's Security Lock

For MC V14 (PC TOOL V6) or later, the MUTL function is locked. In order to use it, the security lock needs to be unlocked.
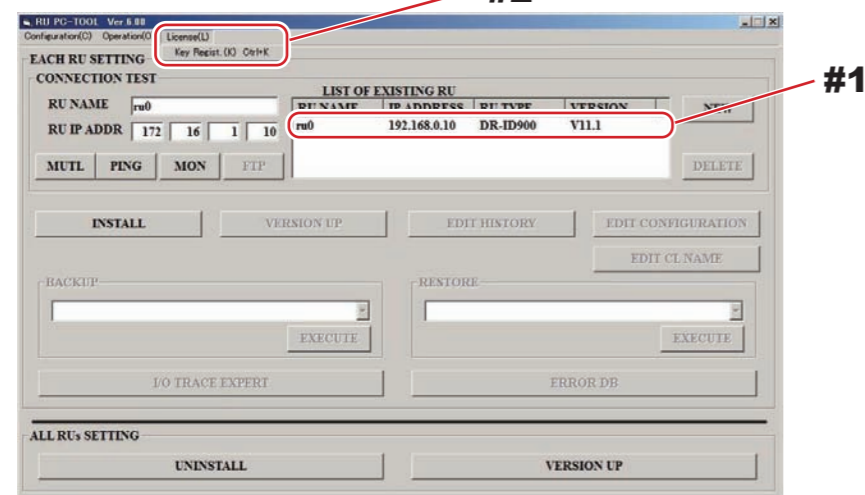
◆ NOTE ◆

An unlocking key file (PCToolSecKey.key) until June 30, 2017 is supplied inside the application disk.
Subsequent valid files are distributed via ECN every year around April.

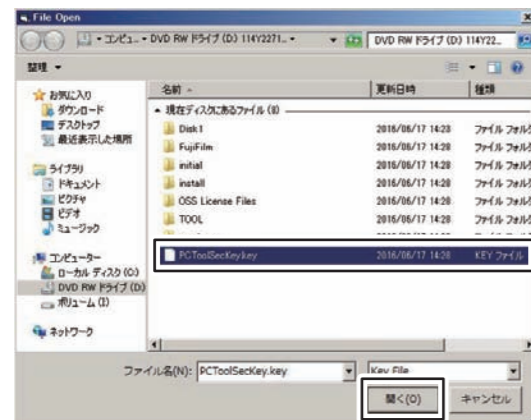**(1) Select "Key Regist" from the RU PC-TOOL "License".**

#1 Select: target RU NAME
#2 Select: "License" – "Key Regist."

RU PC-TOOL window

1200_700482.ai

(2) Select "PCToolSecKeykey" inside the application disk drive, and click [Open].

ID900_J0215.ai

The security lock is unlocked.

◇ *REFERENCE* ◇

The following errors may occur when the MUTL starts up. The reasons and actions for the cases are as shown below.

RU PC-TOOL window
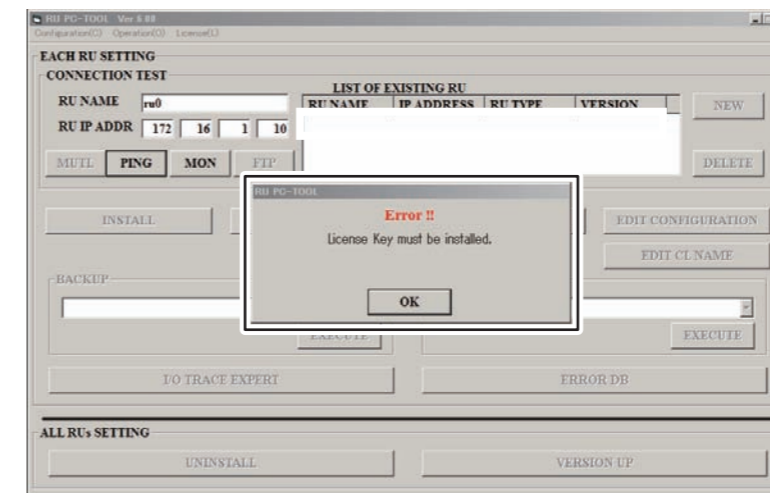
800_700274.ai

- *The security of the RU PC-TOOL is not unlocked.*
  Follow the procedure described here to unlock the security lock.
- *The MUTL is started up without selecting the RU.*
  Follow the procedure described here to select the target RU NAME in the RU PC-TOOL and then unlock the security lock.
- *The RU software is not installed.*
 *Follow the procedure below to install the RU software.*

10.5 Updating MP Application Software Version

10.5.1 Checking the MP Application Software Version

(1) Start up the MUTL.

(2) Click [VERSION CHECK] command, and then click [MP Version >>] and [MP1 Version Check >>].

    #1   Click: [VERSION CHECK]
    #2   Click: [MP Version >>]
   #3   Click: [MP1 Version Check >>]
    VERSION CHECK window

MP Version>>window

MP1 Version Check>>window

1200_700092E.ai
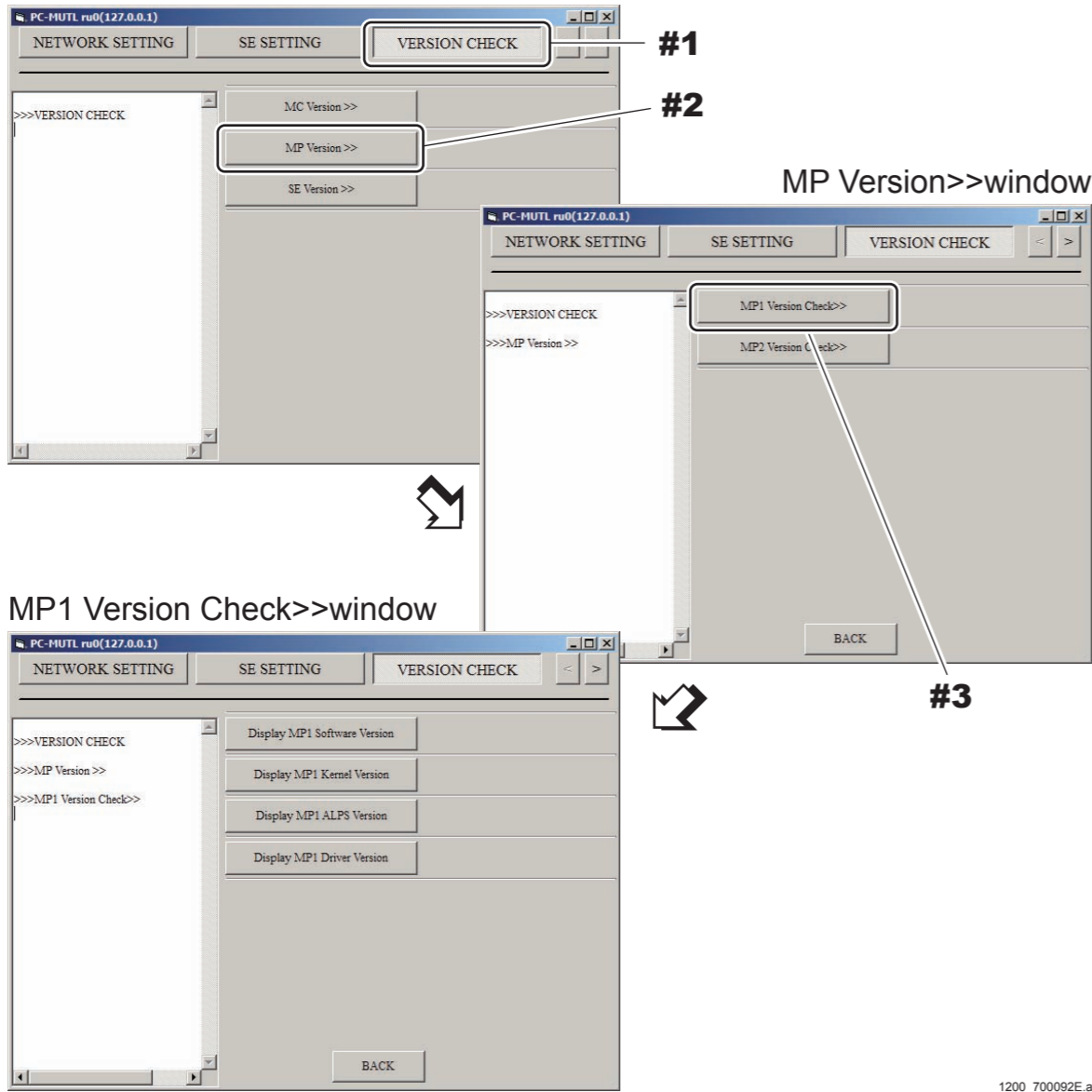
(3) Click [Display MP1 Software Version] on the MP1 Version Check >> window to display the version of the MP application software.

Check that the displayed version coincides with the version indicated in Readme. txt in the MC APL software DVD.

    #1   Click: [Display MP1 Software Version]
    #2   Check: Version
    Display MP1 Software Version   <Display example>
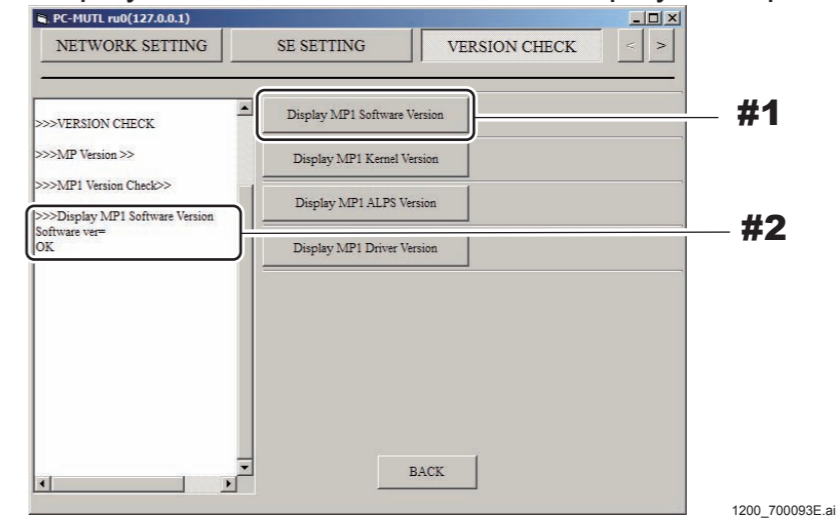
1200_700093E.ai

◆ INSTRUCTION ◆

Follow the procedures below when the version does not coincide with the version indicated in Readme.txt.

☞ *{IN2:10.5.2_Updating MP Application Software Version}*

Follow the procedures below when the version coincides with the version indicated in Readme.txt.

☞ *{IN2:10.6_Configuration Settings}*

◇ REFERENCE ◇

The appropriate version of the MP application software is indicated in Readme.txt in the DR-ID 1300 MC APL software DVD.

    Readme.txt <Display example>

MP Software ver

```
# MP Version
MP Software ver : 00.04.03
Kernel ver       : 2.6.21.7-hrt1-WR2.0bl_small
ALPS ver         : ALPS 13.16.03
DRIVER ver       :
SYS INFO         : 01.00.01
FPGA             : 100
GPIO             : 100
LED              : 01.00.02
SLD              : 01.00.03
BDCTL            : 01.00.01
TIMER            : 01.00.01
REG              : 01.00.01
```

1200_700119.ai

## 10.5.2 Updating MP Application Software Version

◆ *NOTE* ◆

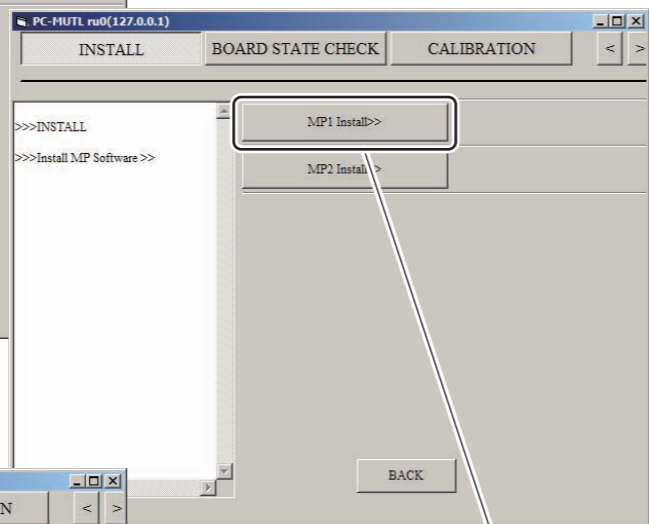*Follow the procedures below only when the version update of the MP application software is necessary.*

(1) Make sure that the install disk is inserted in the DVD drive of the CL.

(2) Click [INSTALL] command, and then click [Install MP Software >>] and [MP1 Install >>].
  #1 Click: [INSTALL]
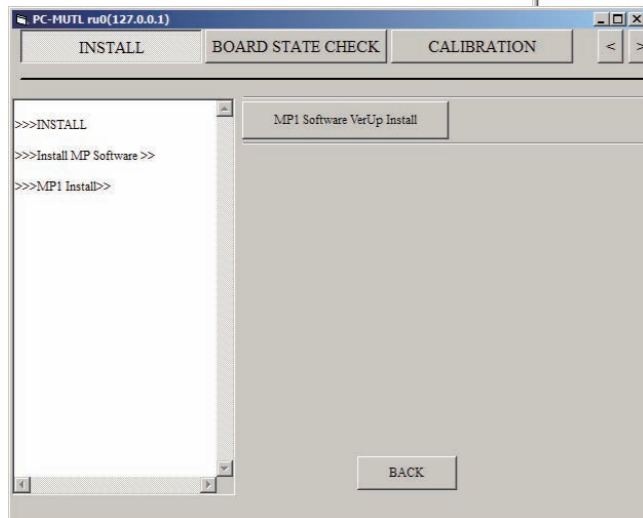 #2 Click: [Install MP Software >>]
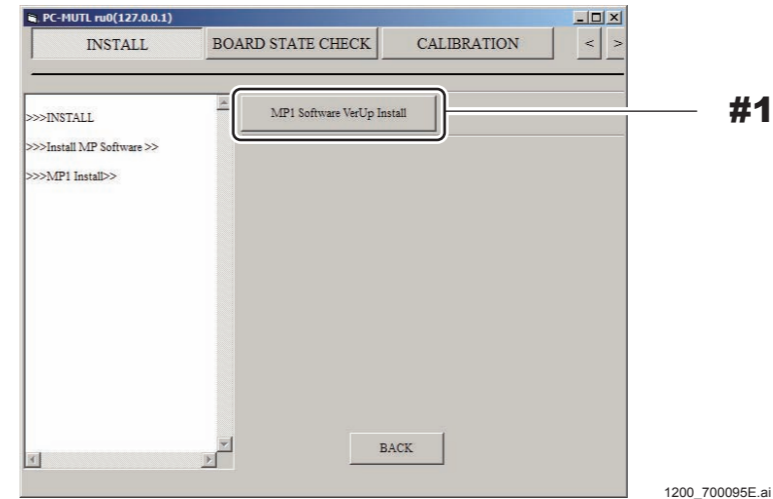 #3 Click: [MP1 Install >>]
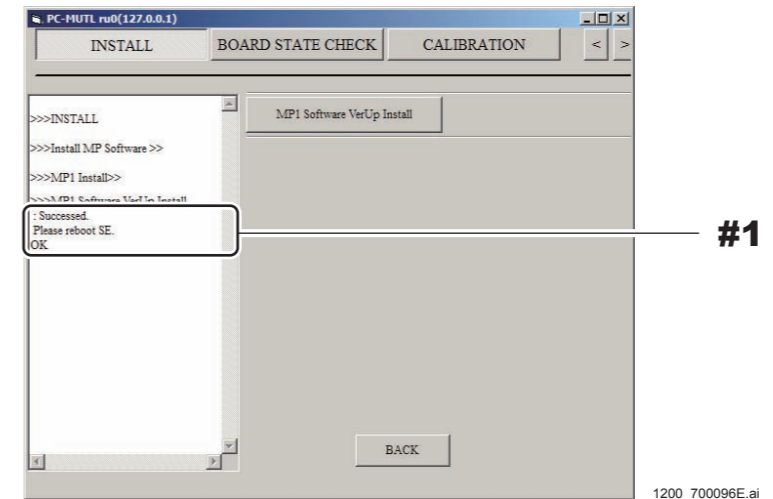 INSTALL window
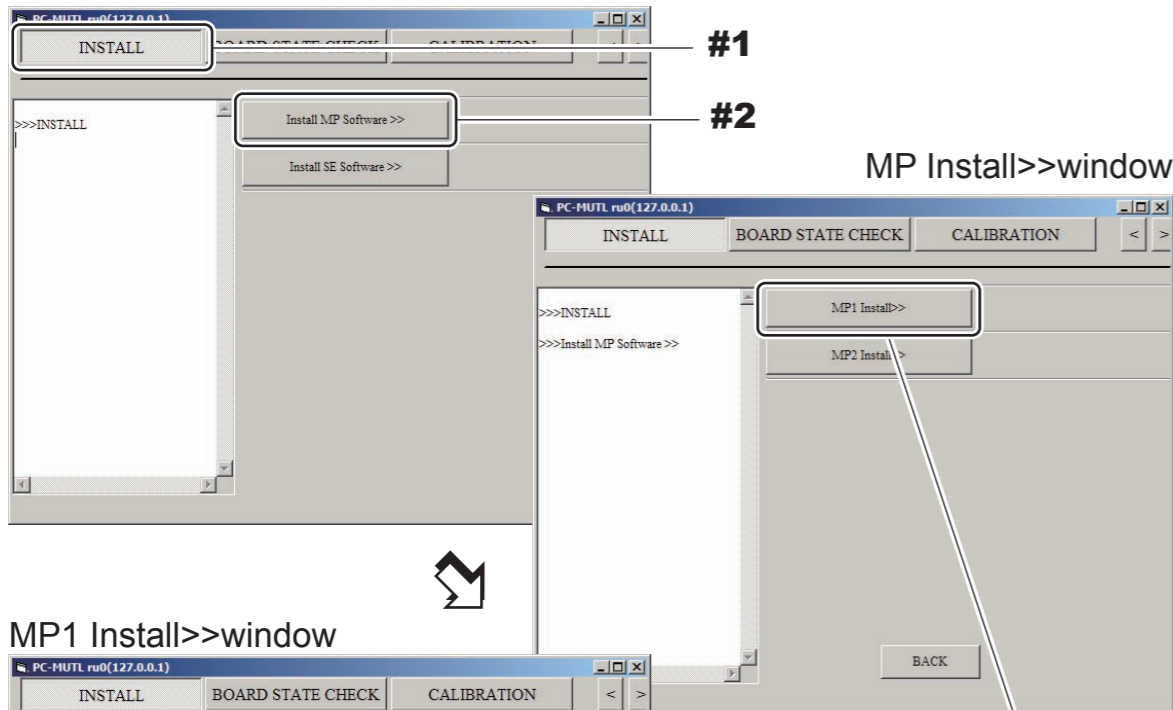
MP Install>>window

MP1 Install>>window

1200_700094E.ai

(3) Click [MP1 Software VerUp Install] on the MP1 Install >> window.
  #1 Click: [MP1 Software VerUp Install]
  MP1 Install>>window

1200_700095E.ai

(4) Click [OK] when the confirmation window opens.

(5) Check that the installation is completed, and again start up the MP.
  #1 Check: OK
  MP1 Install>>window

1200_700096E.ai

(6) Check the MP application software version.

☞ *{IN2:10.5.1_Checking the MP Application Software Version}*

10.6 Configuration Settings

(1) Make configuration settings.

☞ {MU2:1.11_EDIT CONFIGURATION}

10.7 Setting the DX Console

(1) Turn ON the DX Console power.

(2) Within a period of 3 seconds after the initial window opens, sequentially click the upper left and upper right corners of the window.

The "IIP Service Utility" window opens.

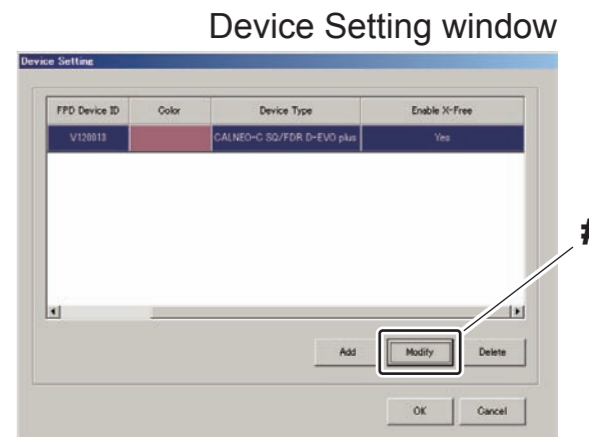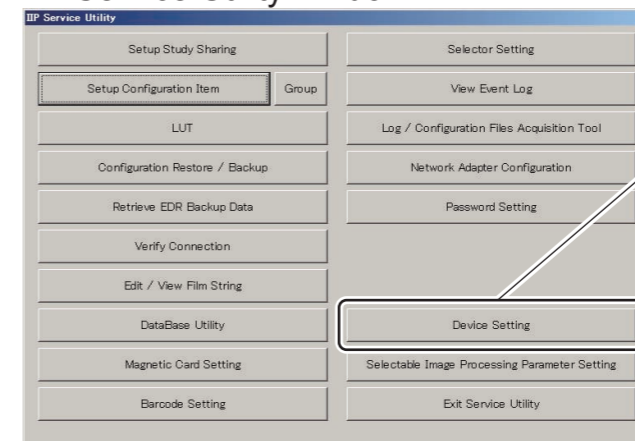Click the upper left corner and then the upper right corner.

DXL04010001.ai

(3) Click [Device Setting] and click [Modify].

#1 Click: [Device Setting]

#2 Click: [Modify]

IIP Service Utility window

Device Setting window

1200_700136.ai

(4) Input "FPD Device ID" and click [OK].

◆ *NOTE* ◆

- ***Be sure to set [FPD Device ID] set to coincide with [SE Serial ID] of the CENTER panel unit displayed in the MUTL "Install SE Software >>" window.***
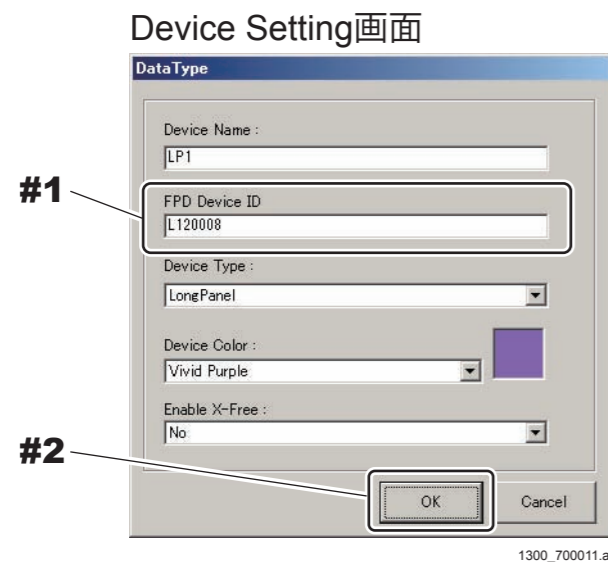
  ☞ *{MU2:[4.2] Install SE Software >>}*

- *Be sure to make [Device Color] set in [IIP Service Utility] – [Device Setting] coincide with the color of the color labels (machine identification label) applied to the SE.*

The system returns to the IIP Service Utility window.

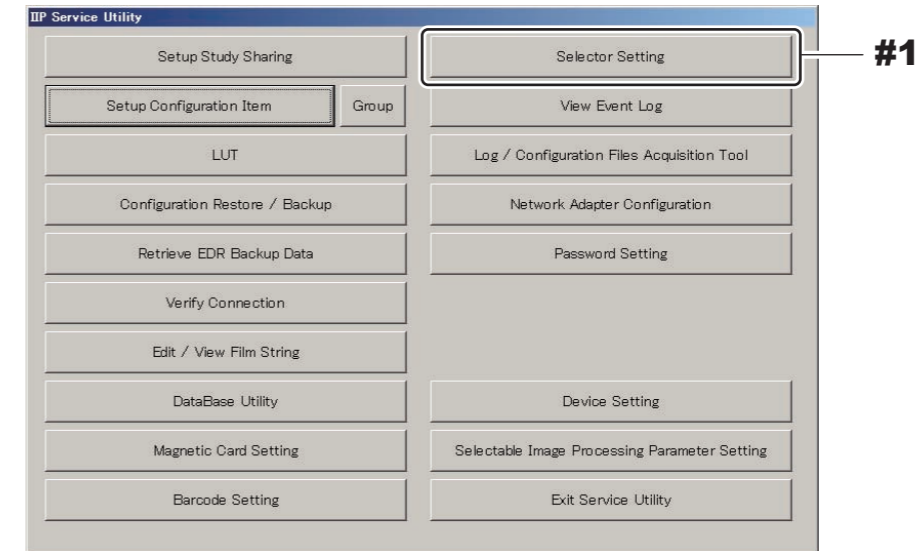#1 Input: FPD Device ID **(= SE serial ID for CENTER panel unit)**

#2 Click: [OK]

Device Setting画面

1300_700011.ai

(5) Click [Selector Setting].

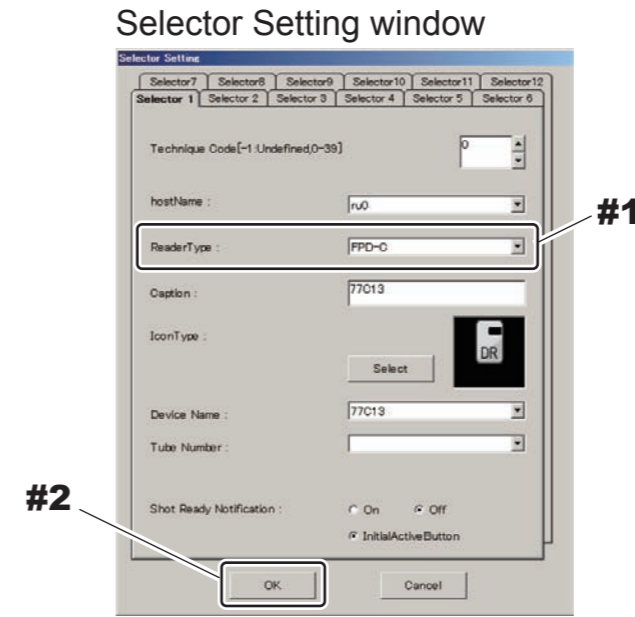#1 Click: [Selector Setting]

IIP Service Utility window

1200_700138.ai

(6) Set "Reader Type" and click [OK].

The system returns to the IIP Service Utility window.

#1 Set: Reader Type

#2 Click: [OK]
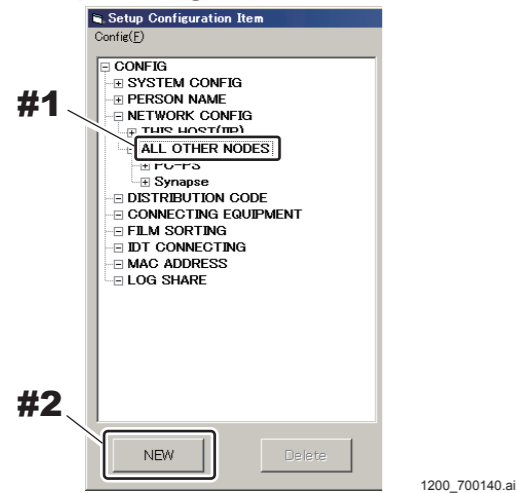
Selector Setting window

1200_700139.ai

◆ *NOTE* ◆

Correspond with the Edit Configuration settings.

(7) Click [Setup Configuration Item].

(8) Select "CONFIG - NETWORK CONFIG - ALL OTHER NODES" and click [NEW].

The New Node window opens.
#1 Select: ALL OTHER NODES
#2 Click: [NEW]
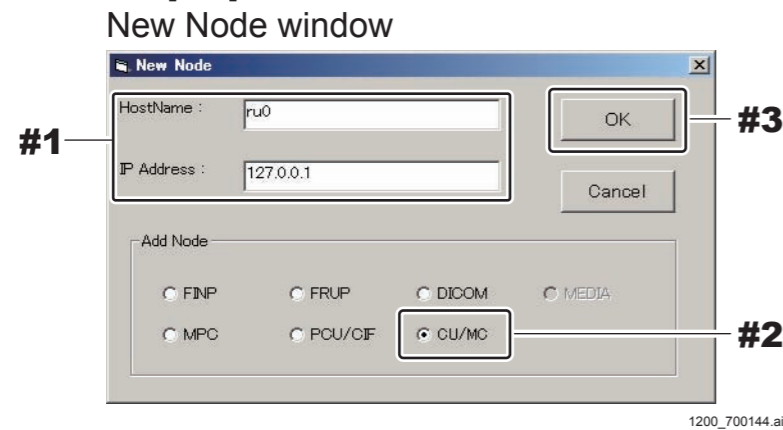Setup Configuration Item window

1200_700140.ai

(9) Make the following settings and click [OK].

◆ **NOTE** ◆

The IP address to be entered in "IP Address" depends on the installation destination of the MC application.
- To install in the DX Console: 127.0.0.1

#1 Input: HostName and IP Address (127.0.0.1)
#2 Select: CU/MC
#3 Click: [OK]
New Node window

1200_700144.ai

10.8   Setting the Serial ID of the SE

◆ *INSTRUCTION* ◆

- Take the procedures from "10.7 Setting the Serial ID of the SE" to "10.10 Setting the IP Address of the SE" with connecting only one SE.
- For making the setting of the second SE, replace the SE after the setting of the first SE is completed.

◆ *NOTE* ◆

*- If two SE's are connected, set the serial ID after one of them is removed. The default IP address (IP address when shipped out from the factory) which is registered in the SE is the same (192.168.0.90 to 92) for all SE's. If two SE's are connected therefore, the SE cannot be identified due to the duplicate address, resulting in an error.*
- Always turn OFF the MP power before installing/removing the SE.

(1) **Start up the MUTL.**

(2) **Click [SE SETTING] command, and then click [SE Registration >>] and [SE1-10 >>].**

    #1   Click: [SE SETTING]
    #2   Click: [SE Registration >>]
    #3   Click: [SE1-10 >>]
    SE SETTING window
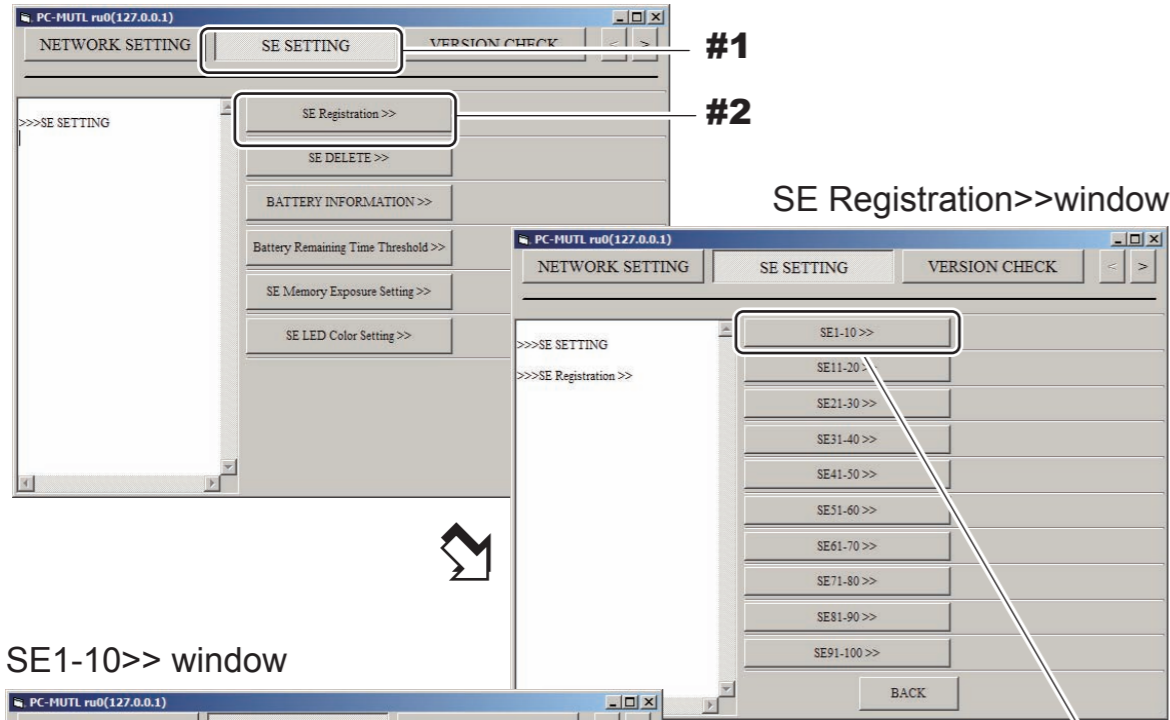
SE Registration>>window
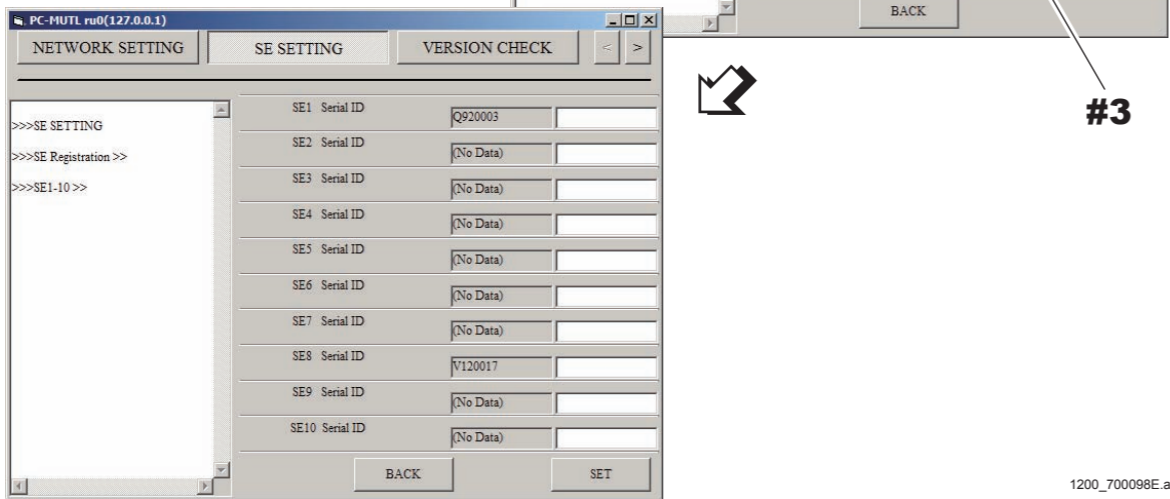
SE1-10>> window

1200_700098E.ai

(3) **Input the serial ID of the SE (for three panel units) to be registered, and click [SET].**

◆ *NOTE* ◆

The first letter of the serial ID must be entered as a capital letter.
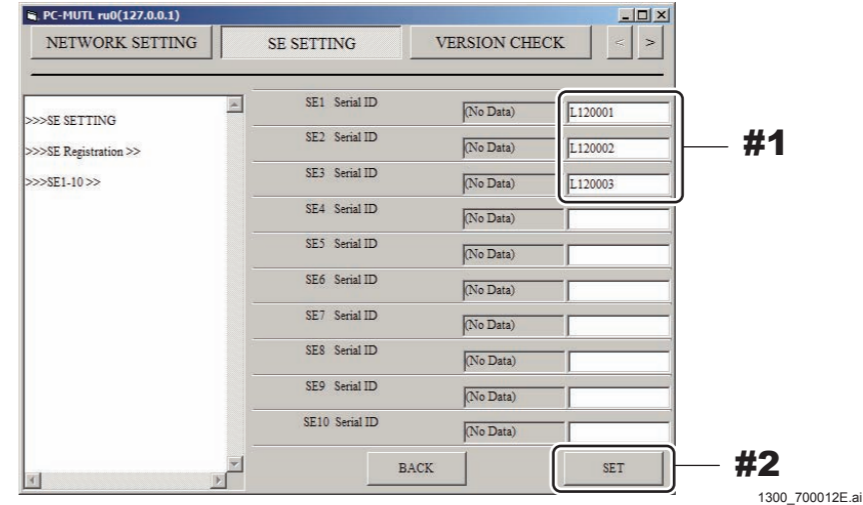
◇ *REFERENCE* ◇

The SE serial ID is contained in the folder name which is in the route for the machine-specific CD-ROM. (Eg: L120001(TOP))
- *<Serial ID for the TOP panel unit> (TOP) folder*
- *<Serial ID for the CENTER panel unit> (CENTER) folder*
- *<Serial ID for the BOTTOM panel unit> (BOTTOM) folder*

    #1   Input: Serial ID
    #2   Click: [SET]
    SE1-10>> window

1300_700012E.ai

(4) **Check that the serial ID appears in the registration frame.**

    #1   Check: Serial ID
    SE1-10>> window   <Display example>

1300_700013E.ai
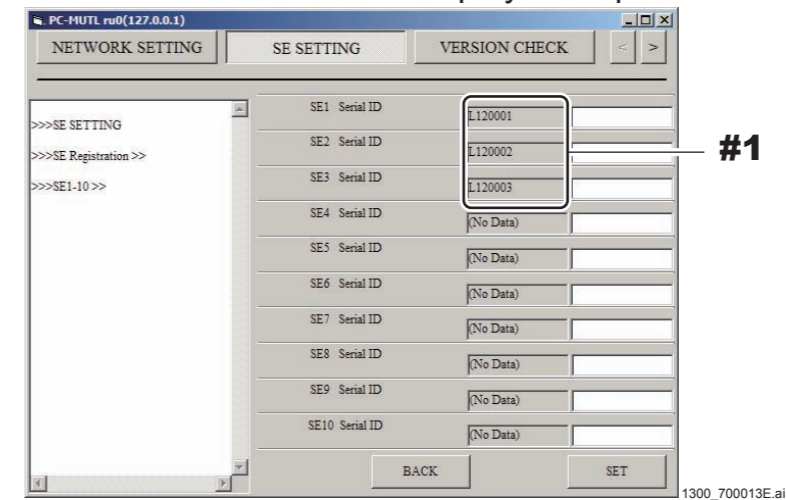
10.9   Setting the Serial ID of the Long Panel

For the serial IDs of a long panel, set the serial IDs of the three panel units that have been registered for the SE.

(1) Start up the MUTL.

(2) Click [SE SETTING] command, [LongPanel Registration >>] and [LongPanel1 >>].

#1   Click: [SE SETTING]
#2   Click: [LongPanel Registration >>]
#3   Click: [LongPanel1 >>]
SE SETTING window

LongPanel Registration>> window

LongPanel1 window

1300_700014E.ai

(3) Input the serial ID of the SE (for three panel units) to be registered, and click [SET].

◆ *NOTE* ◆

The first letter of the serial ID must be entered as a capital letter.

◇ *REFERENCE* ◇

The SE serial ID is contained in the folder name which is in the route for the machine-specific CD-ROM. (Eg: L120001(TOP))
- *<Serial ID for the TOP panel unit> (TOP) folder*
- *<Serial ID for the CENTER panel unit> (CENTER) folder*
- *<Serial ID for the BOTTOM panel unit> (BOTTOM) folder*
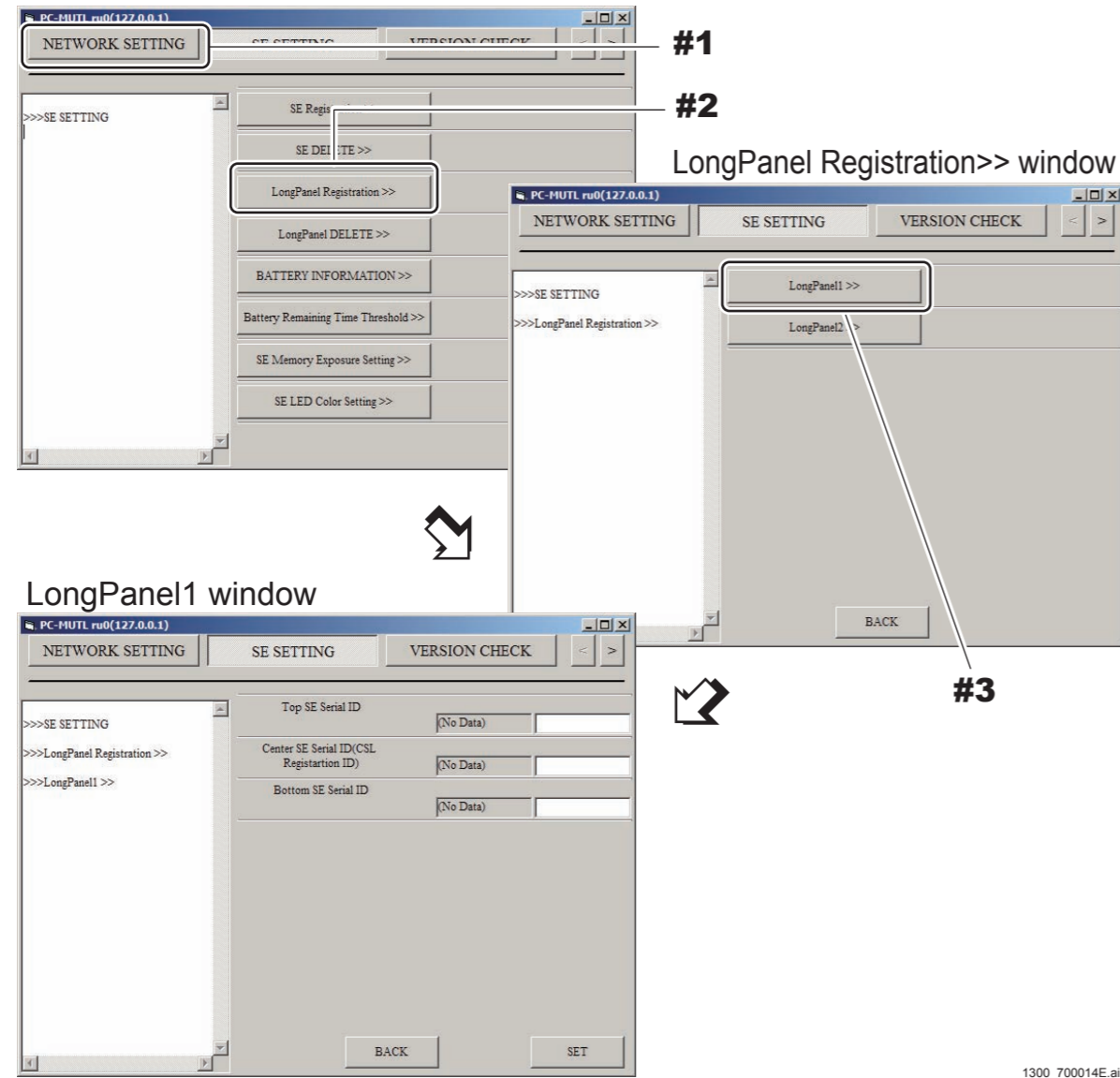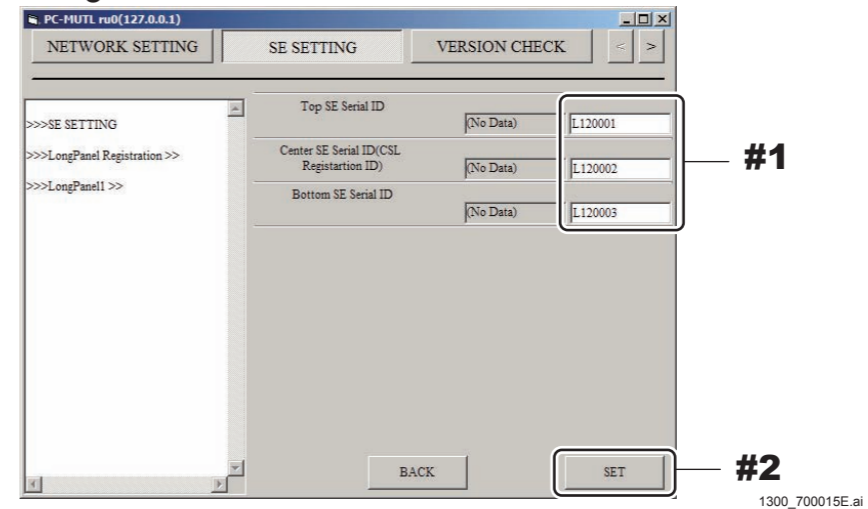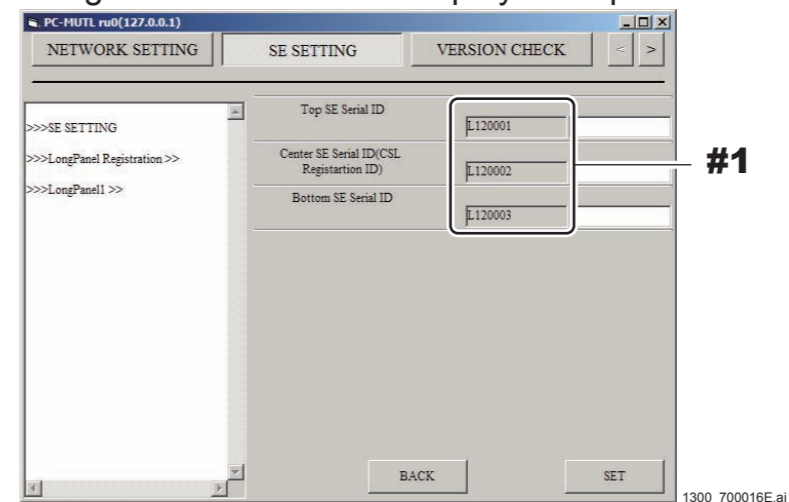
#1   Input: Serial ID
#2   Click: [SET]
LongPanel1 window

1300_700015E.ai

(4) Check that the serial ID appears in the registration frame.

#1   Check: Serial ID
LongPanel1 window   <Display example>

1300_700016E.ai

(5) Left-click the MC Manager from the task tray and execute "EXIT".

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

10.10 Updating SE Application Software Version

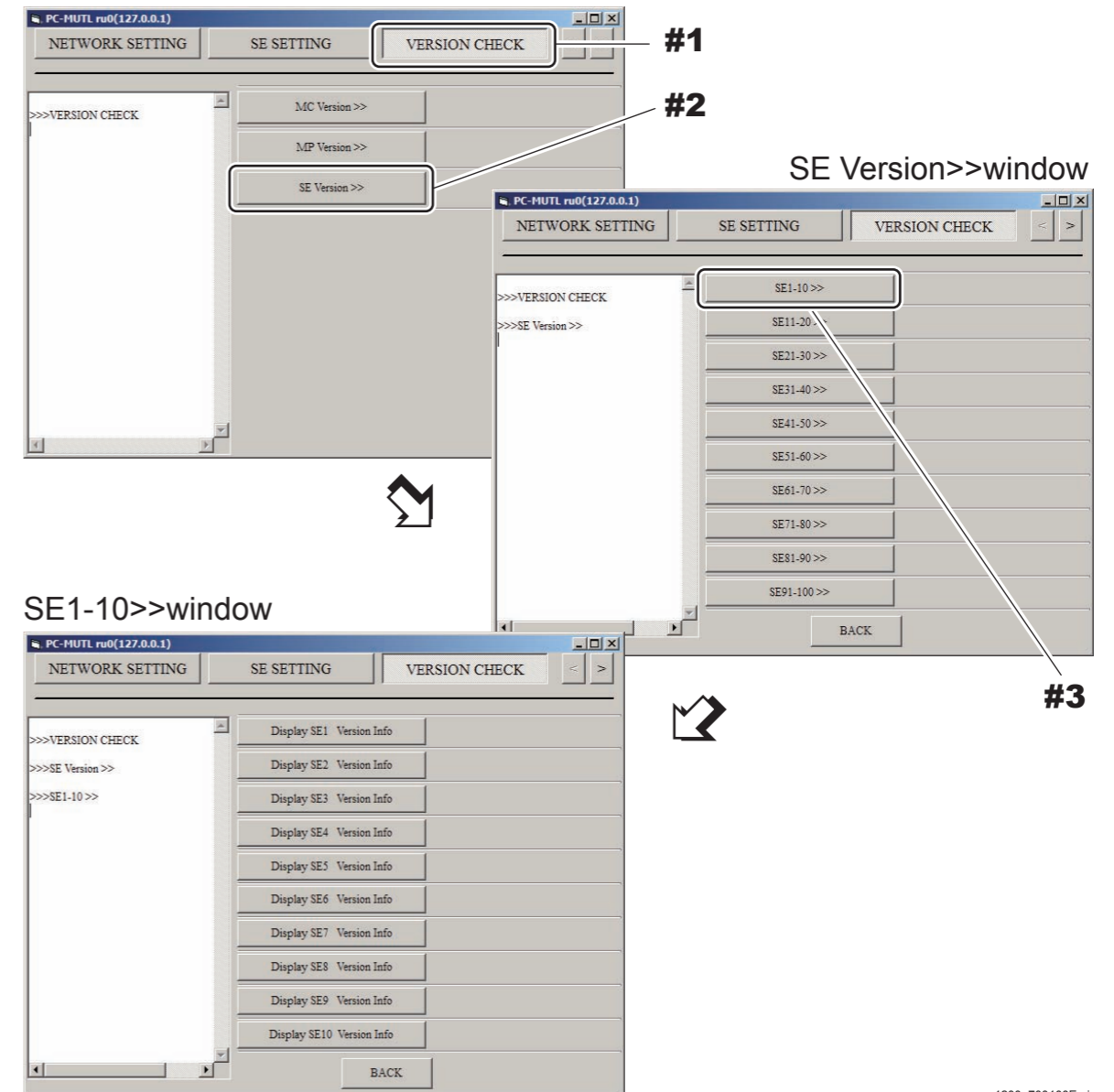### 10.10.1 Checking the SE Application Software Version

(1) Start up the MUTL.

(2) Click [VERSION CHECK] command, and then click [SE Version >>] and [SE1-10 >>].

#1   Click: [VERSION CHECK]
#2   Click: [SE Version >>]
#3   Click: [SE1-10 >>]

VERSION CHECK window

SE Version>>window

SE1-10>>window

1200_700100E.ai

(3) **Click [Display SE1 Version Info] to [Display SE3 Version Info] and check the SE application software version.**

Check that the displayed version coincides with the version indicated in Readme.txt in the MC APL software DVD. Check the version in three subjects of "aplWlan ver", "fpgaRmv ver", and "mcu ver".

#1   Click: [Display SE1 Version Info]
#2   Check: aplWlan ver
#3   Check: fpgaRmv ver
#4   Check: mcu ver
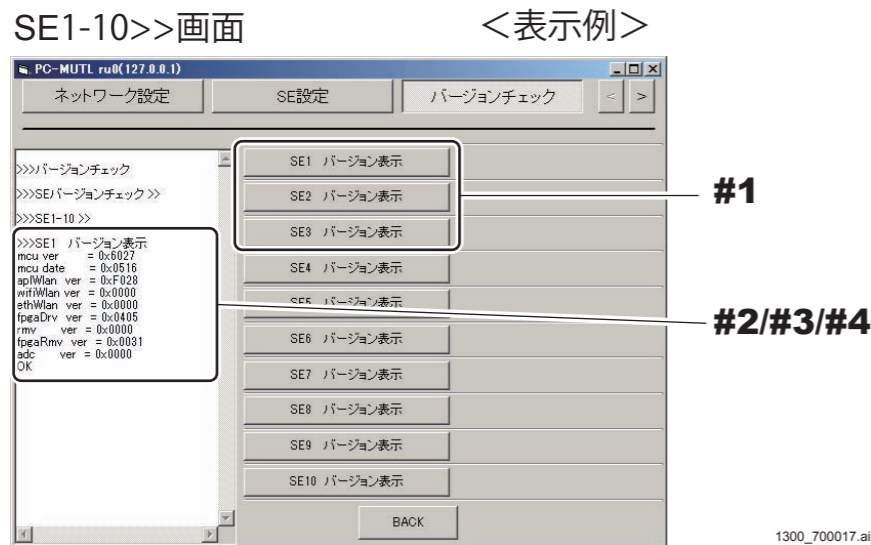
SE1-10>>画面   <表示例>

1300_700017.ai

◆ *INSTRUCTION* ◆

Follow the procedures below when the version does not coincide with the version indicated in Readme.txt.

☞ *{IN2:10.10.2_Updating SE Application Software Version}*

Follow the procedures below when the version coincides with the version indicated in Readme.txt.

☞ *{IN2:10.11_Setting the IP Address of the SE}*

◇ *REFERENCE* ◇

The appropriate version of the SE application software is indicated in Readme.txt in the DR-ID 1300 MC APL software DVD.

Readme.txt <Display example>

aplWlan ver

fpgaRmv ver

mcu ver

1300_700018.ai

DR-ID 1300 / DR-ID 1300PU Service Manual

10.10.2 Updating SE Application Software Version

◆ NOTE ◆

Follow the procedures below only when the version update of the SE application software is necessary.

(1) **Make sure that the install disk is inserted in the DVD drive of the CL.**

(2) **Click [INSTALL] command, click [Install SE Software >>] and input the target SE No.**
   #1 Click: INSTALL
   #2 Click: Install SE Software >>
   #3 Input: SE No.
   INSTALL window

1200_700120E.ai
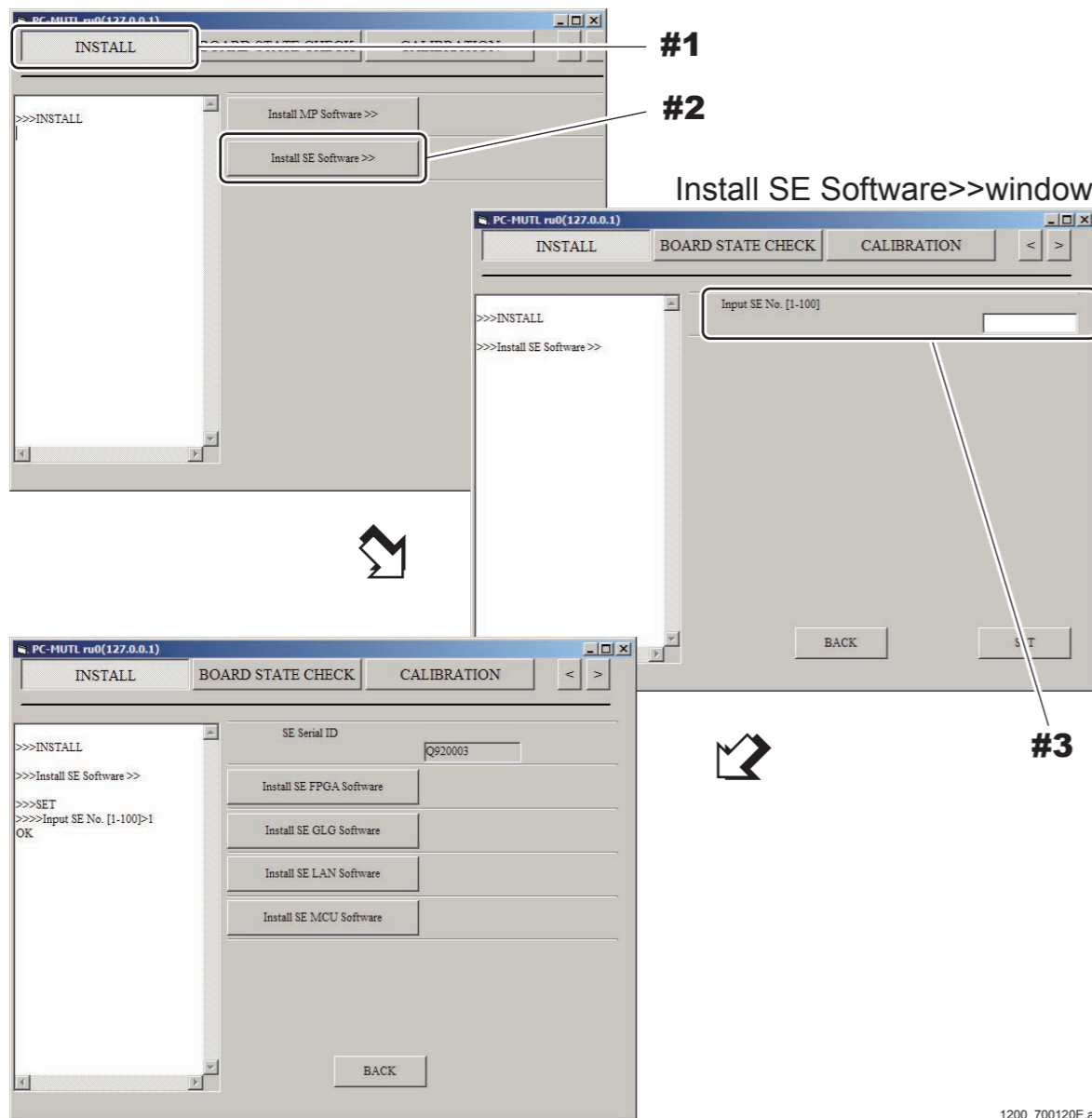
(3) **Click [Install SE FPGA Software].**
   #1 Click: [Install SE FPGA Software]
   Install SE1 Software>>window
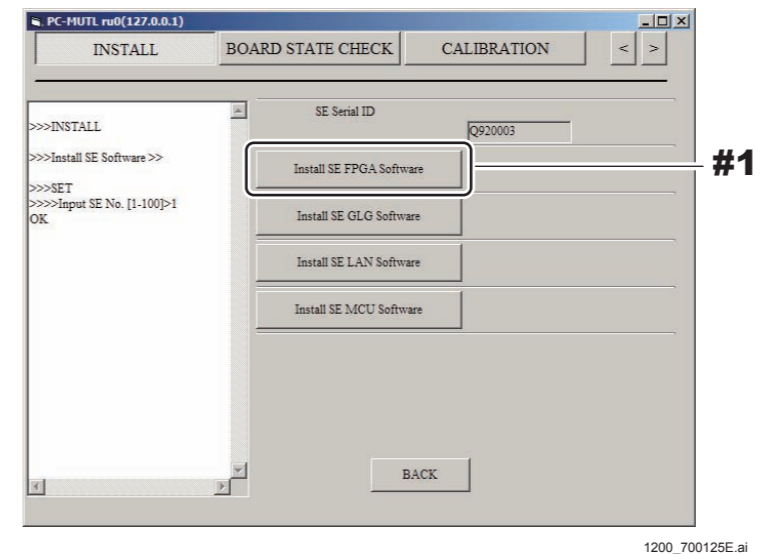
1200_700125E.ai

(4) **Click [OK] when the confirmation window opens.**

(5) **Check that the installation is completed, and click [Install SE LAN Software].**
   #1 Check: OK
   #2 Click: [Install SE LAN Software]
   Install SE1 Software>>window

1200_700122E.ai
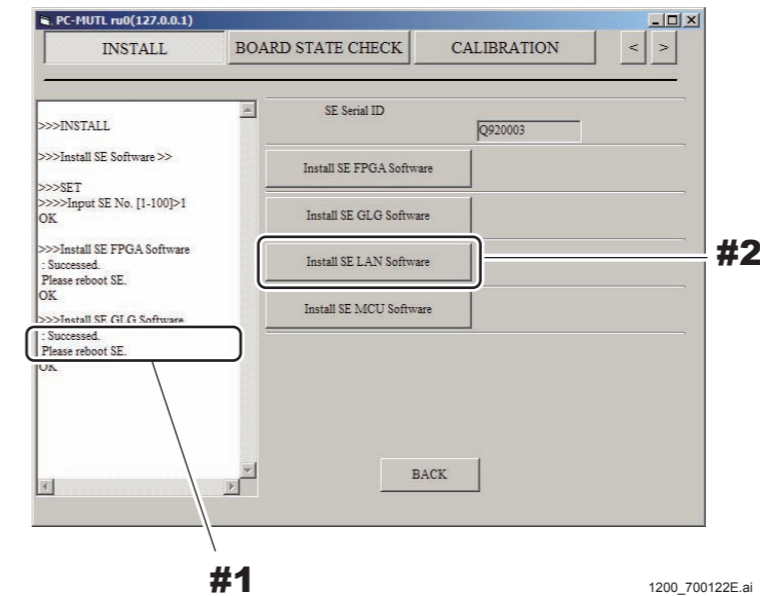
(6) **Click [OK] when the confirmation window opens.**

(7) Check that the installation is completed, and click [Install SE MCU Software].

#1 Check: OK
#2 Click: [Install SE MCU Software]
Install SE1 Software>>window

#1

1200_700123E.ai
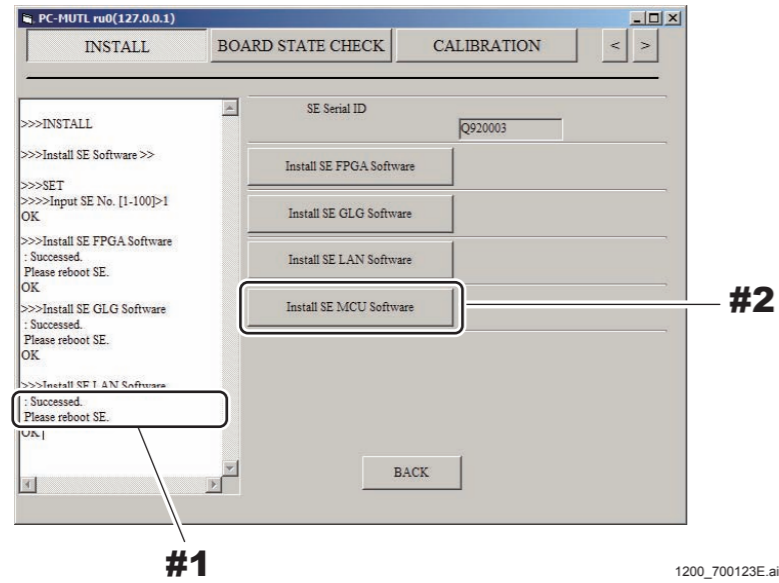
◆ **NOTE** ◆

When the SE MCU software is updated successfully, "Successed Please Reboot SE OK" appears after about 80 seconds. In this case, this procedure is completed successfully. Updating the SE application software version is completed after restarting the SE.

In addition, if about 40 seconds elapse after "OK" appears, "Make sure if MCU software is latest version." appears. Ignore this message if "Successed" has already appeared.

If "Successed" has not appeared and only "Make sure if MCU software is latest version." is displayed, restart the SE and check the SE application software version.

If the update is not performed, update the SE MCU software version once again.

(8) For the other panel units, perform steps (2) to (7) as required.

(9) Check that the installation is completed, and restart the MP.

#1 Check: OK
Install SE1 Software>>window

#1

1200_700124E.ai
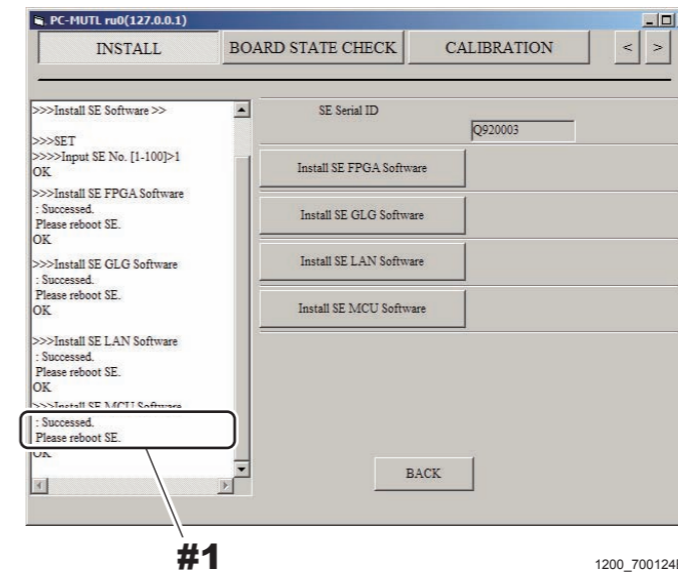
(10) Check the SE application software version.

☞ *{IN2:10.10.1_Checking the SE Application Software Version}*

10.11 Setting the IP Address of the SE

(1) Start up the MUTL.

(2) Click [NETWORK SETTING] command, and then click [SE Network Setting >>].

#1 Click: [NETWORK SETTING]
#2 Click: [SE Network Setting >>]

NETWORK SETTING window

1200_700126E.ai
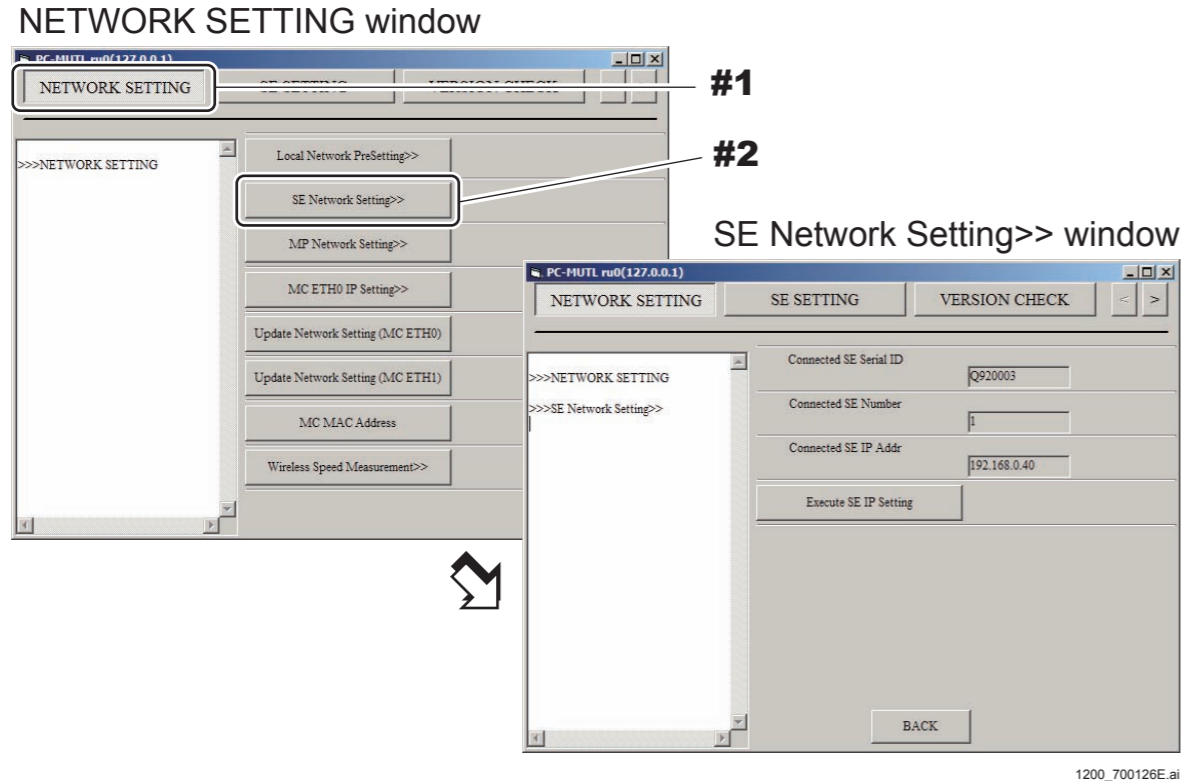
(3) Click [Execute SE IP Setting].

◇ *REFERENCE* ◇

If an error occurs on the following display, again click [Execute SE IP Setting] several minutes later.

The error occurs while the SE is being initialized.

<Error indication>
System Status is not IDLE. Please retry after returning System Status "IDLE" Error!!

(4) Click [OK] when the confirmation window opens.

(5) Check the IP address which is set.

◇ *REFERENCE* ◇

The default IP addresses are as follows.

SE	IP address
1305SE (TOP)	192.168.0.90
1305SE (CENTER)	192.168.0.91
1305SE (BOTTOM)	192.168.0.92

#1 Check: IP address
SE Network Setting>> window

1200_700127E.ai
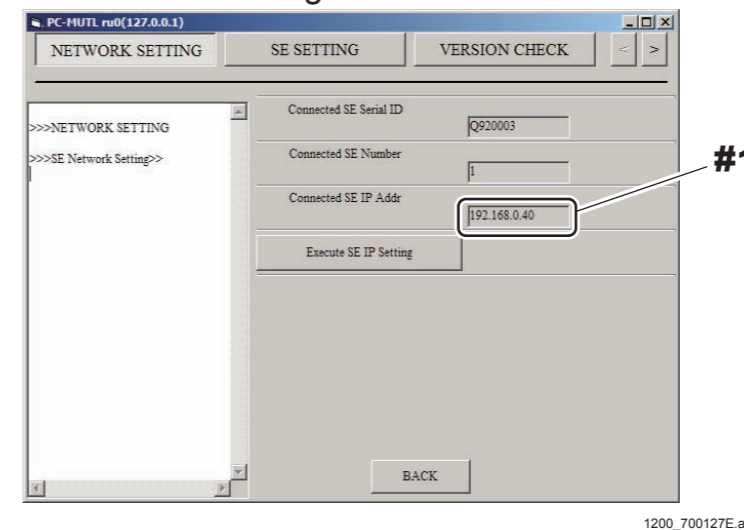
(6) Restart the MP.

◆ *INSTRUCTION* ◆

Take the procedures from "10.7_Setting the Serial ID of the SE" to "10.10_Setting the IP Address of the SE" at an installation site where two or more SE's are connected.

☞ *{IN2:10.8_Setting the Serial ID of the SE}*

10.12 Installing the Machine-Specific Data

◆ **INSTRUCTION** ◆

As DR-ID 1305SE has three panel units: TOP, CENTER and BOTTOM, select and install the machine-specific data corresponding to the panel units in the machine-specific data CD-R.

Unless the machine-specific data corresponding to the panel units are not installed, you cannot obtain the correct result.

(1) Insert the machine-specific data CD into the DVD drive of the CL.

(2) Select the RU whose machine-specific data is to be installed from the "LIST OF EXISTING RU" of the RU PC-TOOL.

   #1   Select: RU

RU PC-TOOL window
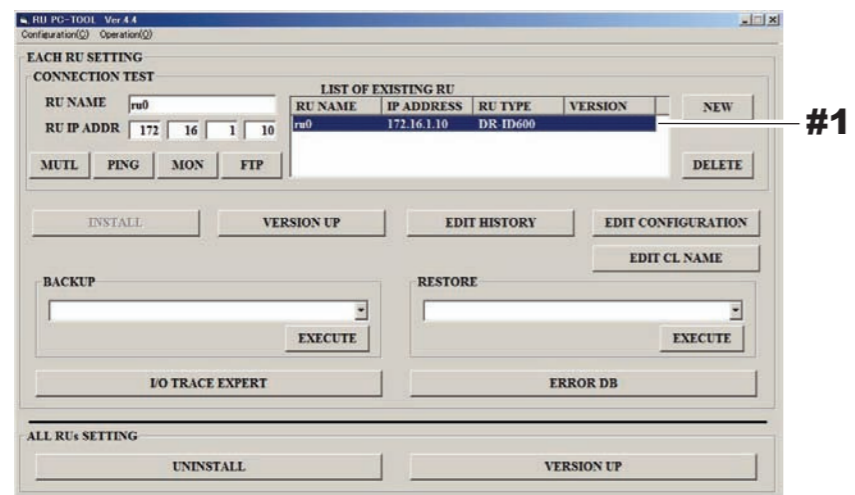
600_700090.ai

(3) Select the menu corresponding to the panel type from the RESTORE pull-down menu and click [EXECUTE].

   #1   Click: Pull-down button
   #2   Select: "CORRECT PANEL DATA"
   #3   Click: [EXECUTE]

RU PC-TOOL window
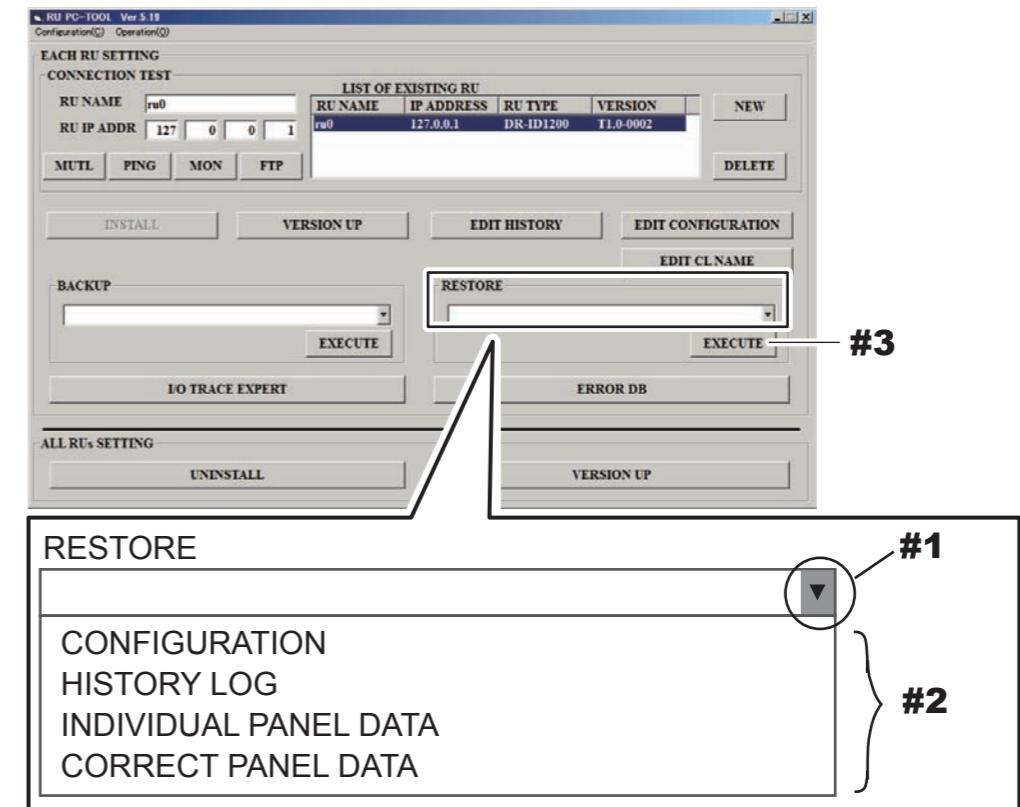
1200_700177.ai

(4) Select the target panel number and the "CORRECTH" folder in the DVD drive.

   #1   Select: Panel number
   #2   Click: [...]
   #3   Select: Following panel unit serial ID folder into the DVD drive

IMAGE READING MODE	
High-Speed Mode	**Standard Mode**
CORRECTH	CORRECTS

   #4   Click: [OK]

◆ *NOTE* ◆

- *Select the folder corresponding with the IMAGE READING MODE settings in Edit Configuration.*

☞ *{MU2:1.11_EDIT CONFIGURATION}*

- *The folders suitable for IMAGE READING MODE are stored in the folders by the serial ID of the panel unit in the root of the machine-specific data CD-ROM. Select the folder in the serial ID of the panel unit corresponding to the panel number.*

```
CD-ROM
└<Serial ID for TOP panel unit> (TOP) folder
        └CORRECTH folder
        └CORRECTS folder
└<Serial ID for CENTER panel unit> (CENTER) folder
        └CORRECTH folder
        └CORRECTS folder
└<Serial ID for BOTTOM panel unit> (BOTTOM) folder
        └CORRECTH folder
        └CORRECTS folder
```

Directory selection window
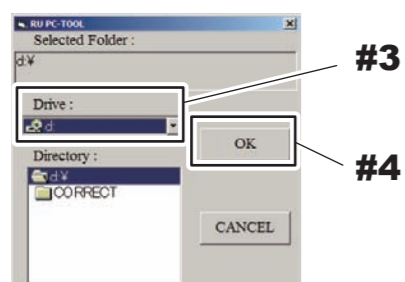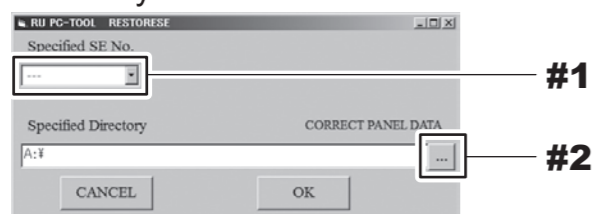
1200_700190.ai

◇ *REFERENCE* ◇

Select the "CORRECTH" folder nomally.
However, if in the acceptance check the noise was generated in the image whereas physical phantoms such as mesh, etc. are used to expose, select the "CORRECTS" folder. For the procedure for changing the folder selection, refer to "RU IMAGE FLAG window_IMAGE READING MODE" of "MU1.11_EDIT CONFIGURATION".

☞ *{MU2:1.11_EDIT CONFIGURATION}*

(5) Click [OK].

#1   Click: [OK]

Directory selection window
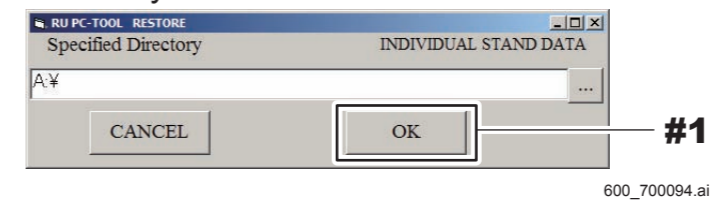
600_700094.ai

(6) Click [OK] when "Completed" appears.

#1   Click: [OK]

Completed window
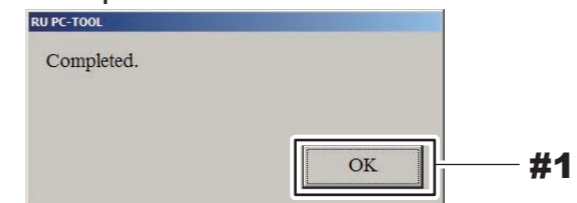
600_700095.ai

(7) For the other two panel units, perform steps (4) to (6).

(8) Remove the machine-specific data CD from the CL.

(9) Left-click the MC Manager from the task tray and execute "EXIT".

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

(10) Complete the CL and confirm that the background calibration is performed.

◇ *REFERENCE* ◇

Defect correction data is generated according to the background calibration during the CL termination.

(11) Check that the machine-specific data is restored.

I.   **Back up the CORRECT DATA on the RU-PC TOOL.**

☞ {MU2:1.13_BACKUP}

II. **Open the LagData.txt with the Word Pad.**

Check that the value does not remain the same, but that it gradually gets smaller.

◇ *REFERENCE* ◇

Defect calibration results are written to "LagData.txt". Since they do not attenuate in default, the values do not change, but if the installing of machine-specific data succeeds, the values will gradually get smaller because the machine-specific data that is attenuated will be replaced.

10.13 Forced Transfer of the SE Correct Data

◆ *NOTE* ◆

After the machine-specific data is installed, make sure to transfer the correct data to the panel unit where the machine-specific data have been installed. If the correct data are not transferred, correction is not properly made, causing an artifact.

10.13.1 Forced Transfer of the SE Correct Data

(1) Start up the MUTL.

(2) Click [CALIBRATION] command and [SE Correct Data Transfer >>], input the target SE number, and then click [SET].

#1   Click: [CALIBRATION]
#2   Click: [SE Correct Data Transfer >>]
#3   Input: Target SE number
#4   Click: [SET]

CALIBRATION window

SE Correct Data Transfer >> window

1200_700185E.ai
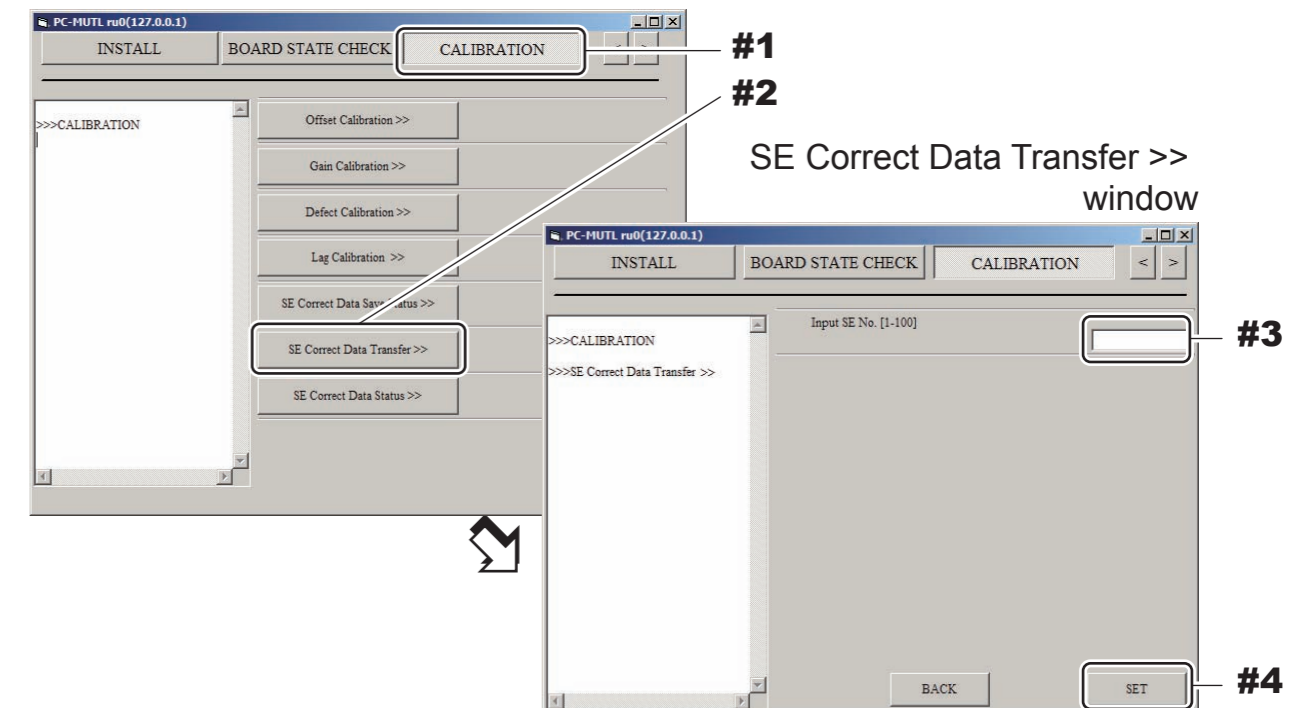
The SE correct data stored in the MC is transferred to the SE.

◆ *NOTE* ◆

Make sure that "COMPLETE_DATASAVE" is displayed in the SE Correct Data Status >> window. "STILL_DATASAVE" is displayed during transfers.

(3) For the other two panel units, perform step (2).

(4) Click [BACK].

10.13.2 Checking the SE Correct Data Save Status

(1) Click [SE Correct Data Save Status >>] and input the target SE number, then click [SET].

#1 Click: [SE Correct Data Save Status >>]

#2 Input: Target SE number

#3 Click: [SET]

CALIBRATION window

SE Correct Data Save Status >> window

1200_700186E.ai
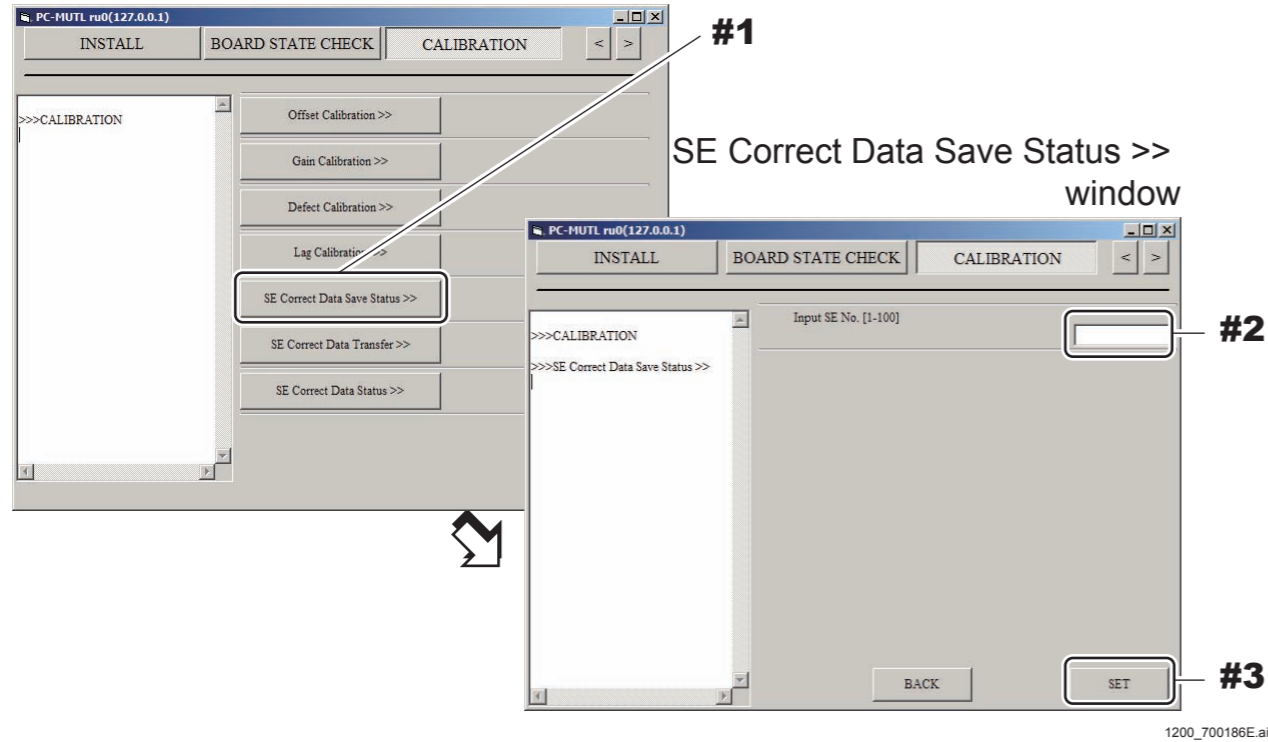
(2) Check that saving of the SE correct data is completed.

#1 Check: Save result

SE Correct Data Save Status >> window

1200_700187E.ai
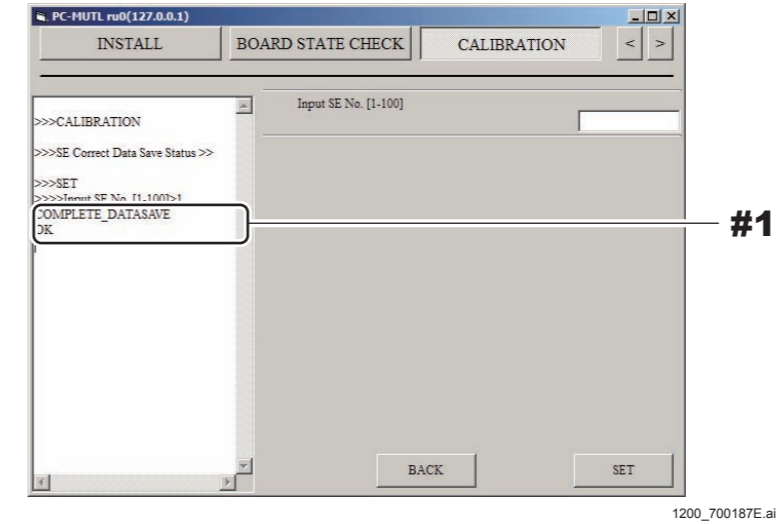
◆ INSTRUCTION ◆

Mode3 is not used for DR-ID 1300 and thus "NG" is displayed, but you can ignore this judgment.

(3) For other two panel units, perform steps (1) and (2).

10.14 Changing the IP Address of the SE/MP/MC

◆ *NOTE* ◆

Take the following procedures only when the IP address of the SE/MP/MC is to be changed from the default value.

(1) **Change the IP address of the SE/MP/MC from the default value.**

☞ {IN:Appendix 3._Replacement Procedure of the Local Network}

◆ *INSTRUCTIONS* ◆

- *The segment No. of the network address must be set to the same value among the MC, MP, SE and AP. If different network address values are set, the network among the machines might get disconnected. Initialization of the machines might be needed in such a case.*
  How far in the IP address the network address indicates depends on the setting of the subnet mask. As the default value of the subnet mask of the machine is 255.255.255.0, and locations assigned by 255 (mask value areas) indicate the network address.

Segment No.

192.168.0.0

Network address

Host address

600_700206.ai

- *If the segment No. of the network address is changed, the network address of the access point (AP) must be changed to include the same segment No. If the network address of the access point differs, wireless connection of the SE cannot be made.*

◆ *INSTRUCTION* ◆

If the IP address of the MP or the SE is lost by mistake during the operation procedures, restore the IP address.

☞ {IN:Appendix 2._Restoring the IP Address of the MP/SE}

11. Image Calibration

◆ INSTRUCTION ◆

- *Check that background calibration automatically executed upon startup of the machine is completed before carrying out calibration.*
- *Keep the CL software running. If the software is terminated, the MC power will be automatically turned OFF, and calibration might result in failure.*
- *Perform the offset calibration and gain calibration only for the CENTER panel unit. Perform the full calibration only when a problem occurs due to artifacts or other factors.*
  Refer to the following for the defect calibration and lag calibration procedures.

  ☞ *{IN:Appendix 5._Defect Calibration and Lag Calibration}*

◇ REFERENCE ◇

Messages of "Calibrating" and "Urgent use is possible" alternately appear on the DX Console status indication area.

#1   Check: Status indication

1200_700172E.ai

◇ REFERENCE ◇

Refer to the table below for the kinds of calibration to be executed.

Calibration type		Exposure conditions	Grid
		1305SE	
Offset	For reading mode 0	No exposure	Can be kept mounted.
	For reading mode 1		
	For reading mode 2		
Gain	-	Exposure conditions: - Tube voltage of 75 kV - Dose of 10 mR (*) Number of exposures: 16	Cannot be mounted.

*: Set the exposure time to 200 msec or less.

■ Preparations

(1) Open the exposure stand and remove the grid.

> ◆ *NOTE* ◆
>
> *Make sure that an X-ray is directly irradiated to DR-ID 1305SE with the exposure stand open.*

(2) Clean the SE exposure plane with a dry cloth.

(3) Adjust the position of the X-ray tube so that SID becomes 215 cm or longer.

> ◆ *NOTE* ◆
>
> *At the time of calibration, set the SID sufficiently large. If not large enough, the EI and S values between the TOP, CENTER and BOTTOM deviate due to the sensitivity correction of the panel unit affected by the heel effect, resulting in the change in the apparent sensitivity.*

(4) Adjust the irradiation field to cover the entire exposure plane.

(5) Start up the MUTL.

(6) Click [Calibration].

The Calibration window opens.

11.1 Offset Calibration

◆ *INSTRUCTION* ◆

- *In the case where the machine-specific data is installed into a fresh installation of the MC software V12.0 or later, perform the offset calibration on the CENTER panel unit.*
- *In the case where the machine-specific data is installed into a fresh installation of the MC software V11.0 or earlier, perform the offset calibration on all of the panel units (TOP, CENTER and BOTTOM).*
- *In the case where the MC software is upgraded from V11.0 or earlier to V12.0 or later, the gain calibration has been performed under the MC software V11.0 or earlier. Therefore, perform the offset calibration on all of the panel units (TOP, CENTER and BOTTOM).*

(1) Click [Offset Calibration >>] on the calibration window.

The Offset Calibration >> window opens.

(2) Click [Start].

Images for offset correction data generation (16 frames) are read from the SE (FPD).

"OK" appears in the result display area when the processing is completed normally.

> ◆ *NOTE* ◆
>
> *If you click [Start] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [Start] again after an interval of approx. 30 seconds, in this case.*

(3) Click [Create an Offset Data].

The confirmation dialogue box of "Are you sure?" opens.

(4) Click [OK].

When the offset correction data is generated and stored in the HDD, [OK] appears in the result display area.

(5) After operations are completed, click [BACK] to return to the Calibration window.

11.2 Gain Calibration

⚠️ *CAUTION*

Keep to the exposure interval defined in the Operation Manual of the X-ray high voltage generator when making continuous exposures. An interval of 1 minute or longer normally needs to be taken.

◆ INSTRUCTION ◆

- *In the case where the machine-specific data is installed into a fresh installation of the MC software V12.0 or later, perform the gain calibration on the CENTER panel unit.*
- *In the case where the machine-specific data is installed into a fresh installation of the MC software V11.0 or earlier, perform the gain calibration on all of the panel units (TOP, CENTER and BOTTOM).*
- *In the case where the MC software is upgraded from V11.0 or earlier to V12.0 or later, the gain calibration has been performed under the MC software V11.0 or earlier. Therefore, perform the gain calibration on all of the panel units (TOP, CENTER and BOTTOM).*

◆ NOTE ◆

- *Do not change the tube position in the gain calibration. If the tube position is changed, a line defect is wrongly detected at the upper and lower ends of the CENTER panel unit. This may cause an artifact or a defective at the boundary of the panel unit.*
- *If an artifact has occurred, take the following measure.*
  - *For TOP panel unit or BOTTOM panel unit*
    Perform the full calibration for the target panel unit.
  - *For CENTER panel unit*
    Perform the full calibration and marker calibration.

◇ REFERENCE ◇

The focal size of the X-ray high voltage generator may be either large or small.

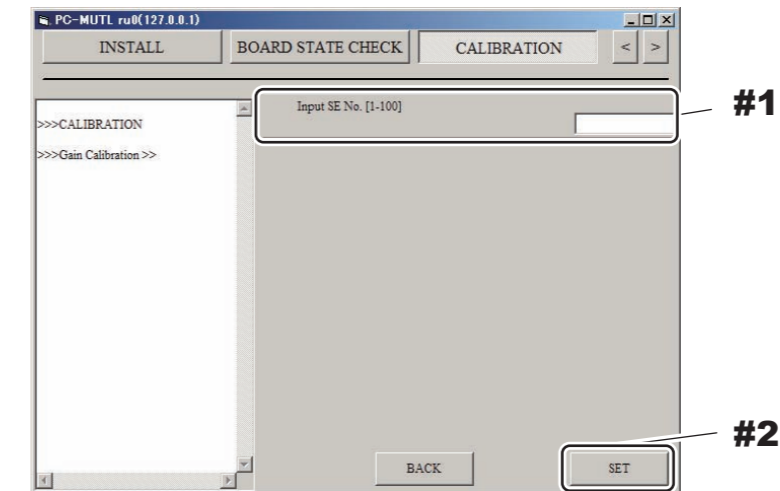(1) **Click [Gain Calibration >>] on the Calibration window.**

The Gain Calibration >> window opens.

(2) **Input the SE No. for calibration into [Input SE No.] and click [SET].**

#1   Input: SE No.
#2   Click: [SET]

Gain Calibration >> window
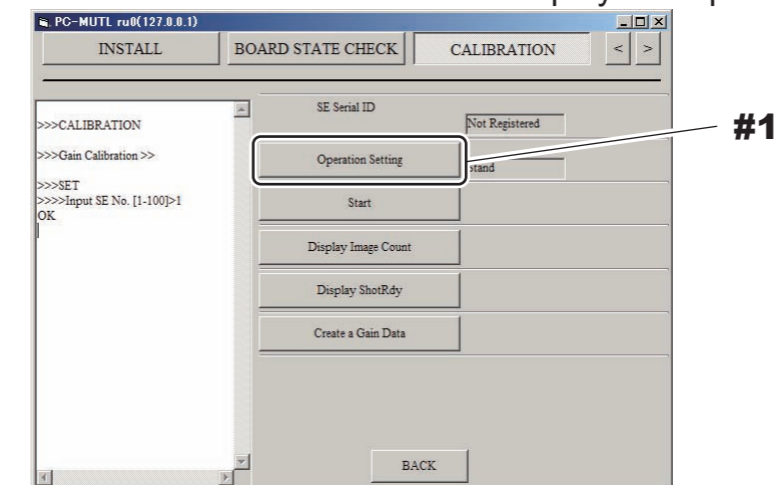

600_700273.ai

(3) **Click [Operation Setting] and set the operative method.**

#1   Click: [Operation Setting]

Gain Calibration >> window   <Display example>

600_700178E.ai

(4) Click [Start].

"OK" appears in the result display area upon completion of the preparation for exposure.

◆ *NOTE* ◆

If you click [Start] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [Start] again after an interval of approx. 30 seconds, in this case.

(5) Click [Display ShotRdy] and confirm display of "SHOT_READY" in the result indication column.

◆ *NOTE* ◆

If "NOT_READY" is indicated, wait for approx. 5 seconds, try again, and proceed to the next step (exposure) after "SHOT_READY" is indicated.
When exposure is executed in "NOT_READY" status, the calibration fails and an abnormal image is generated.

(6) Expose 16 times with the following condition. Click [Display ShotRdy] at each exposure and confirm display of "SHOT_READY" in the result indication column.

◇ *REFERENCE* ◇

Clicking [Display Image Count], you can know the number of exposures.
The count is displayed in the format of "n/16" in the result display area after n-times of exposures.

- 1305SE : Tube voltage of 75 kV, Dose of 10 mR
Images for gain correction data generation (16 frames) are read from the SE (FPD).

◆ *INSTRUCTION* ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◇ *REFERENCE* ◇

Exposure condition examples for exposing an IP to a dose of 10 mR are shown below. (1305SE)

SID:	*215 cm*
Voltage:	*75 kV*
Amperage:	*100 mA*
Time:	*90 msec*

(7) Click [Create a Gain Data].

The confirmation dialogue box of "Are you sure?" opens.

◇ *REFERENCE* ◇

If you click [Create a Gain Data] when less than sixteen exposures have been made, "Error!!" appears in the result display area. Continue to make exposures until sixteen exposures are made, and click [Create a Gain Data], in this case.

(8) Click [OK].

When the defect correction data is generated and stored in the HDD, [OK] appears in the result display area.

(9) Click [BACK] to return to the Calibration window.

◆ *NOTE* ◆

If the calibration freezes in the above procedure (5) or (6), left-click the MC Manager from the task tray and execute "EXIT". Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

(10) Select "Shut Down" in the menu of the DX Console.

(11) Check that the READY LED (green) of the SE flashes and becomes unlit, and the calibration has been completed when the system terminates. Then, wait for the DX Console being powered OFF.

(12) Turn OFF the power of the SE.

(13) Turn ON the power of the SE, then turn ON the power of the DX Console.

11.3 Checking the Calibration Results

The calibration results can be checked after the calibration.

(1) Start up the RU PC-TOOL and back up the CORRECT DATA.

☞ {MU2:1.13_BACKUP}

(2) Open the files written below with the Word Pad.

- Gain calibration: PanelCorrectSensitivity.txt
  In the case of 150,8000, the restoration of the machine-specific data failed.
  Restore the machine-specific data again.

◆ *INSTRUCTION* ◆

Perform the procedures from "11.1_Offset Calibration" to "11.3_Checking the Calibration Results" at an installation site where two or more SEs are connected.

☞ *{IN2:11.1_Offset Calibration}*

12. Marker Calibration

DR-ID 1305SE has the structure where three panel units are connected, each of which outputs an image - three images in total. To output these three images as one long-length image, perform the marker calibration to synthesize an image from these three images without being misaligned with each other.

Perform the maker calibration for the two boundaries: one between the TOP and the CENTER panel units, and the other between the CENTER and BOTTOM panel units.

◆ *NOTE* ◆

When performing the full calibration for the CENTER panel unit, make sure to also perform the marker calibration. If the marker calibration is not performed, an image cannot be correctly synthesized and an artifact occurs.

■ Preparing for Calibration

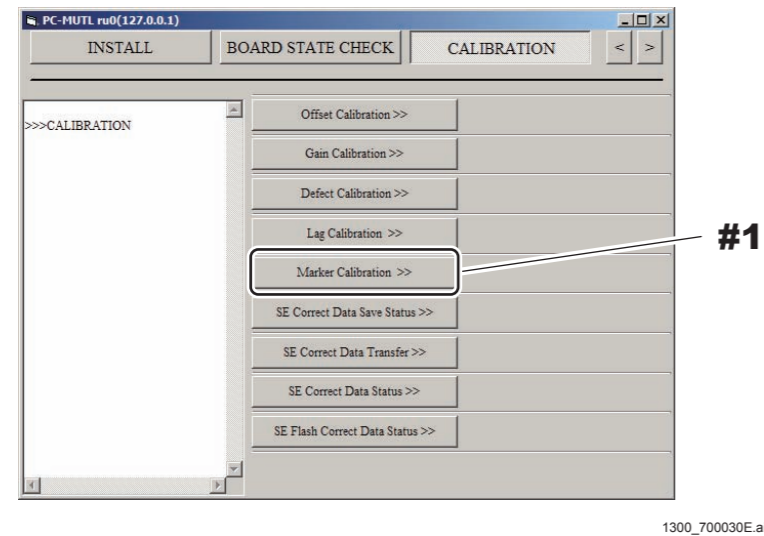(1) **Start up the MUTL.**

(2) **Click [Calibration].**

The Calibration window opens.

(1) **Click [Marker Calibration >>] on the calibration window.**

The Marker Calibration >> window opens.
#1   Click: [Marker Calibration >>]
Calibration window

1300_700030E.ai

(4) **Input the SE No. of CENTER panel unit for calibration into [Input SE No.] and click [SET].**

#1   Input: SE No. of CENTER panel unit
#2   Click: [SET]
Marker Calibration >> window

1300_700002E.ai
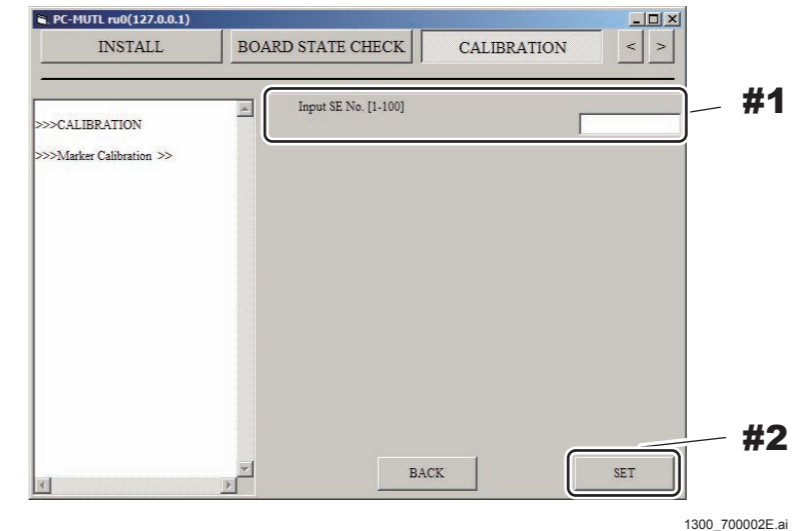
(5) **Click [Operation Setting] and set the operative method.**

#1   Click: [Operation Setting]

◇ *REFERENCE* ◇

Select an operative method from Stand / Table / Free.

Marker Calibration >> window <Display example>

1300_700001E.ai

(6) **Click [Calib Position] and select "Top_Center".**

(7) Click [Start].

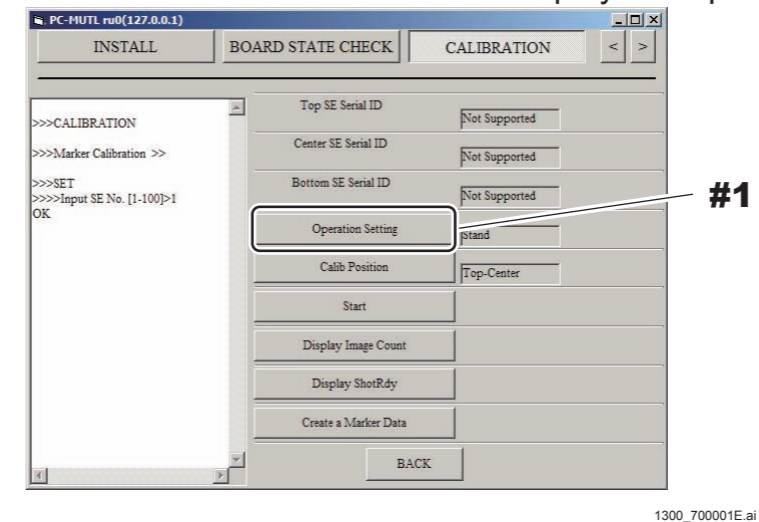"OK" appears in the result display area upon completion of the preparation for exposure.

◆ *NOTE* ◆

If you click [Start] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [Start] again after an interval of approx. 30 seconds, in this case.

(8) Click [Display ShotRdy] and confirm display of "SHOT_READY" in the result indication column.

◆ *NOTE* ◆

If "NOT_READY" is indicated, wait for approx. 5 seconds, try again, and proceed to the next step (exposure) after "SHOT_READY" is indicated.
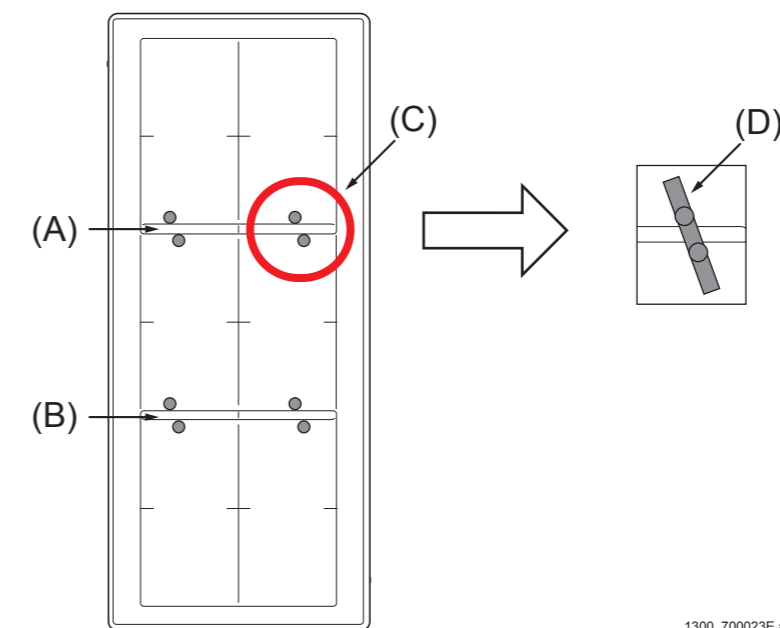
When exposure is executed in "NOT_READY" status, the calibration fails and an abnormal image is generated.

■ **Installing the Calibration Phantom**

(1) Install the included calibration phantom at the boundary between the TOP and the CENTER panel units when selecting "Top_Center" for [Calib Position], and when selecting "Center_Bottom", at the boundary between the CENTER and the BOTTOM panel units.

◆ *INSTRUCTION* ◆

The following illustrates an example of the included calibration phantom installed at the boundary between the TOP and the CENTER panel units. Align the calibration phantom with the points designating the installation position printed on the panel surface. For the panel placed vertically, attach the calibration phantom with curing tape or other adhesives.

1300_700023E.ai

(A) Boundary between the TOP and the CENTER panel units
(B) Boundary between the CENTER and the BOTTOM panel units
(C) Installation positions for the calibration phantom
(D) Align two calibration phantoms on the specific installation position for each boundary.

◇ *REFERENCE* ◇

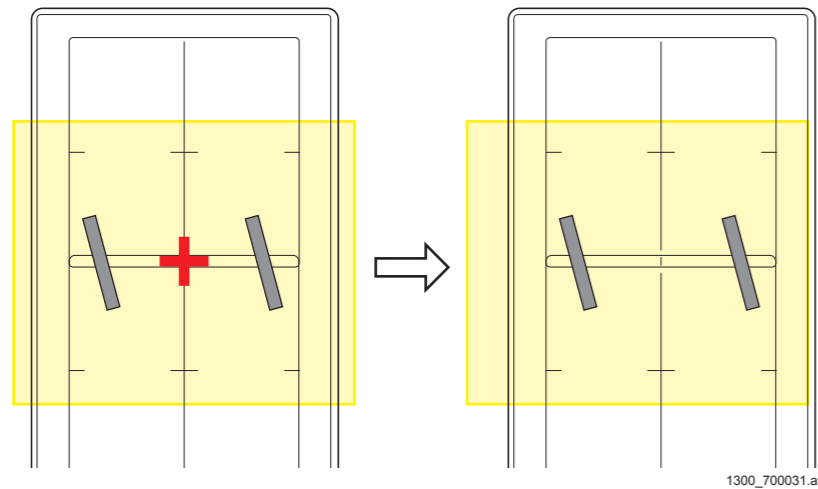*The calibration phantom is the metal stick that is included with the MP.*

1300_700057.ai

■ Exposing Calibration

(1) Perform positioning under the following conditions:
- Move the irradiation field center of the tube to the position that matches the center (red cross) of the overlapping part of the panels.
- Make the distance 120 cm from the panel surface to the focal spot of the tube.
- Maximize the irradiation field of the collimator.
- Move the tube in the short direction of the panel up to the position where the right end of the light irradiation field overlaps with the inside of the panel frame.
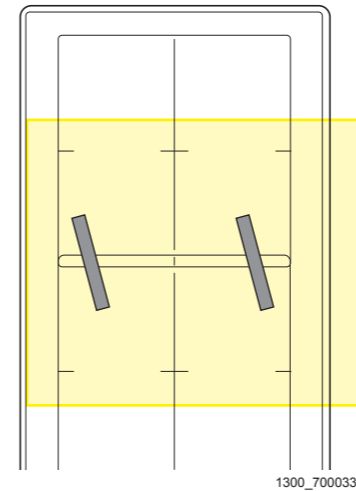

1300_700031.ai

(2) Expose the 1st shot with the following conditions. Click [Display Image Count] and check that exposures were counted.
- Tube voltage of 80 kV, Amperage: 100 mA, Time: 20 msec, SID: 120 cm

Marker Calibration >> window

1300_700032E.ai

(3) Move the irradiation field in the opposite direction as shown below.

1300_700033.ai
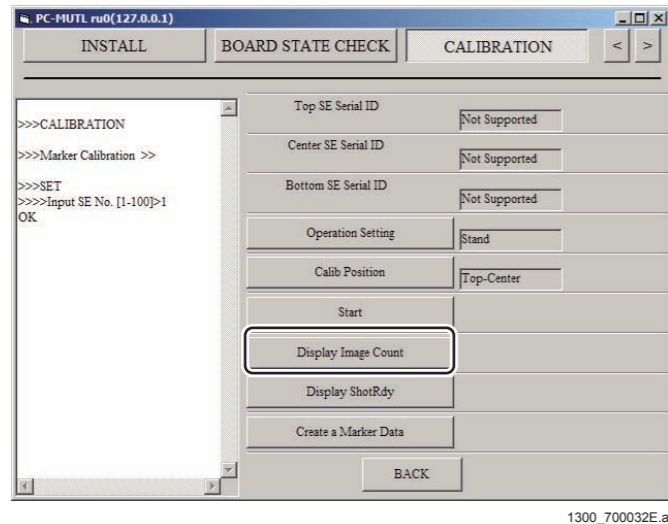
(4) After clicking [Display ShotRdy] and confirming the display of "SHOT_ READY" in the result indication column, expose the 2nd shot with the following conditions. Click [Display Image Count] and check that exposures were counted.
- Tube voltage of 80 kV, Amperage: 100 mA, Time: 20 msec, SID: 120 cm

(5) After clicking [Display ShotRdy] and confirming the display of "SHOT_ READY" in the result indication column, expose the 3rd shot with the following conditions. Click [Display Image Count] and check that exposures were counted.
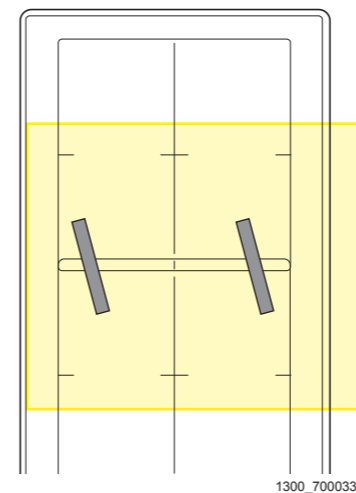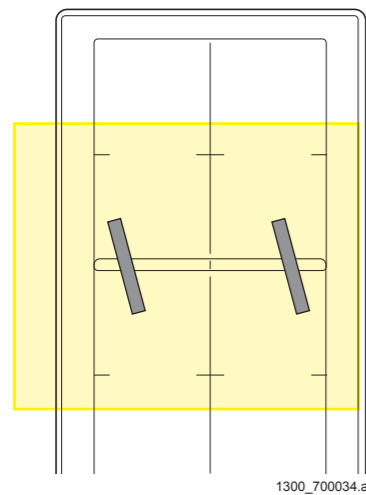- Tube voltage of 80 kV, Amperage: 100 mA, Time: 20 msec, SID: 120 cm

◆ NOTE ◆

Do not move the irradiation field.

1300_700033.ai

(6) Return the irradiation field to the position of the first shot as shown below.


1300_700034.ai

(7) After clicking [Display ShotRdy] and confirming the display of "SHOT_ READY" in the result indication column, expose the 4th shot with the following conditions. Click [Display Image Count] and check that the exposure count turned to "4/4" .

- Tube voltage of 80 kV, Amperage: 100 mA, Time: 20 msec, SID: 120 cm

■ Creating Calibration Data and Checking Result

(1) Click [Create a Marker Data].

The confirmation dialogue box of "Are you sure?" opens.
Marker Calibration >> window

1300_700035E.ai
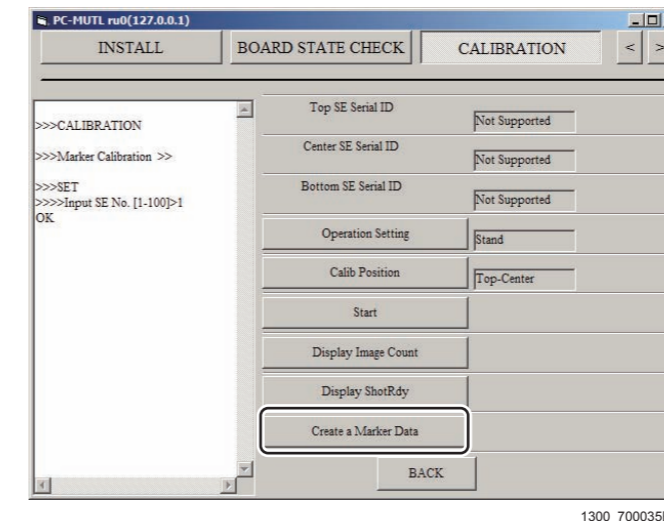
(2) Click [OK].

When the marker correction data is generated and stored in the HDD, [OK] appears in the result display area.

◆ NOTE ◆

If the data generation failed, an error number appears on the status screen.
In that case, check the position of the calibration phantom and the irradiation field, and then perform again the "■ Exposing Calibration". If an error still occurs, obtain the following data and report the failure.
- LogAll (IMO.log / Calib.log)

(3) Check that the calibration data have been generated.

◇ REFERENCE ◇

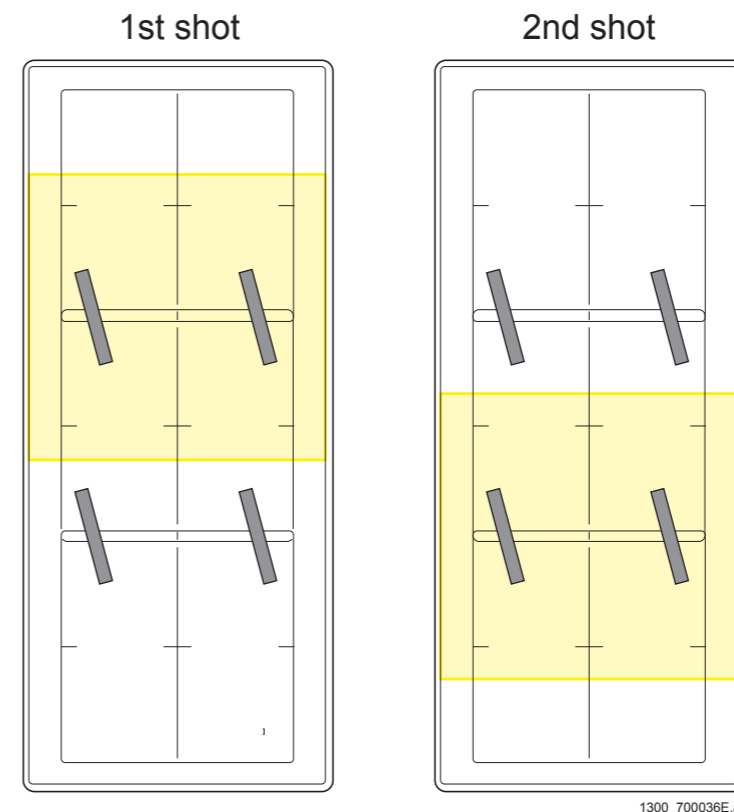*The data are stored in the following location. Check the time stamp of the file generated.*
- C:\Program Files\FujiFilm\MC\opt\config\machine\correct\PANEL2\ LPMarkerData.txt

■ **Changing the Calibration Position and Exposing Calibration**

(1) **Change the setting of [Calib Position] from the value selected in the step (6) of "■ Preparing for Calibration" to "Center_Bottom". Then, perform "■ Preparing for Calibration", "■ Installing Calibration Phantom", "■ Exposing Calibration", and "■ Creating Calibration Data and Checking Result".**

■ **Checking the Image Composition Accuracy**

(1) **Left-click the MC Manager from the task tray and execute "EXIT".**
Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

(2) **Create the confirmation menu.**
Start the User Utility and copy the "Finger" menu (MPM code: 0607), and then edit the following items as shown below. With the other settings left unchanged, exit the User Utility.
- Menu name: Synthesized calibration checking test
- Function: Leave the setting as "RT"

(3) **Start up the application for the DX Console.**

(4) **Select the check menu created in step (2), and perform exposure at the two positions shown below with the calibration phantom left placed. Visually check the connection of the calibration phantom for misalignment.**
- Tube voltage of 80 kV, Amperage: 50 mA, Time: 13 msec, SID: 180 cm

1st shot   2nd shot

1300_700036E.ai

◆ *NOTE* ◆

If a misalignment is found, perform the full calibration and marker calibration for the CENTER panel unit again.

13. Checking for Image Problems

13.1 Checking for Irregularities, Density Problems, White Blank Portion, and Sensitivity Problems in the Images

In the QC menu, select the panel units of TOP, CENTER and BOTTOM, and check that there is no problem with the images.

◆ INSTRUCTION◆

Check for the irregularities and the density problems respectively with the grid removed and with the grid mounted.
If the grid is not to be used, you only need to check with the grid removed.

(1) From the CL, register the following exposure menu:
- "QC-Test" - "IMAGE-FORMAT" (size: 17 inches x 17 inches)

(2) Expose an IP.
- When the automatic X-ray detection function is used, expose an IP to a tube voltage of 55 kV and a dose of 1.5 mR.

◆ INSTRUCTION ◆

When exposing an IP, position the tube directly above the center of the panel unit for each panel unit that is to be acquired, then take exposures.

◇ REFERENCE ◇

Exposure condition examples for exposing an IP to a tube voltage of 55 kV and a dose of 1.5 mR are shown below.

Distance:	*180 cm*
Voltage:	*55 kV*
Amperage and time:	*1.6 mAs*
(When the amperage and the time can be specified, minimize the amperage.)	

◆ NOTE ◆

- *If the exposure is performed with the exposure menu other than the specified ones or with the exposure condition other than the referred one, abnormal images, such as horizontal streak, may be found despite no error in the SE since the study conditions are tight.*
When an abnormal image occurred, perform the exposure with the specified exposure menu and exposure condition, and check the images.
- *When exposure is performed for the CENTER panel unit with the QC menu (exposure menu when the third digit of the MPM code is 9), the upper and lower ends of the image is blackened. Also, in other exposures, the left and right ends of the image are blackened. At the boundary of blackening treatment, an artifact may occur due to image processing.*

- When the automatic X-ray detection function is not used, expose an IP to a dose of 1 mR.

◇ REFERENCE ◇

Exposure condition examples for exposing an IP to a dose of 1 mR are shown below.

Distance:	*180 cm*
Voltage:	*80 kV*
Amperage:	*50 mA*
Time:	*13 msec*

(3) Output the film in the one-image format to the printer.

(4) Check the output film for irregularities, partial density problems, and white blank portions.

If moiré is determined to occur on the image, identify the cause and deal with the problem according to the procedures mentioned in the Troubleshooting manual. The image problems might be possibly caused by the movable grid.

☞ {MT:4.1_Analyzing Moiré}

(5) Check for sensitivity and density problems.

Check to make sure that the system sensitivity value and the film density value appearing on the output film are approximately 200 and 1.2, respectively.

◆ *NOTE* ◆

If the S value is more than 300 or less than 100, the Machine-Specific Data may not be correctly installed. In such a case, reinstall the Machine-Specific Data and perform "11. Calibration".

☞ {IN2:10.12_Installing the Machine-Specific Data}

◇ *REFERENCE* ◇

If the gain calibration is not performed with SID = 215 cm or more, the S value of the TOP/BOTTOM panel unit may deviate from the S value of the CENTER panel unit.

◆ *INSTRUCTION* ◆

If the images have any problems, perform "11.1 Offset Calibration", "11.2 Gain Calibration", "Appendix 5.1 Defect Calibration", and "Appendix 5.2 Lag Calibration" in this order, and then perform "13.1 Checking for Irregularities, Density Problems, White Blank Portion, and Sensitivity Problems in the Images" again. If the images of the CENTER panel unit have problems, "Appendix 5.1 Defect Calibration" is not required to be performed.

☞ {IN2:11._Image Calibration}

☞ {IN:Appendix 5._Defect Calibration and Lag Calibration}

If the problems still remain in the images after the countermeasures above, obtain the data below and request troubleshooting.

- *The capture image of the DX Console screen*

  Indicate abnormal images and portions of the images by using circles and arrows.
- *Information on the facility and miscellaneous*
    - *Frequency*
    - *Repeatability*
    - *Whether the problem occurs with other panels.*
    - *Exposure conditions (kV, mA, msec, SID, grid, irradiation fields)*
    - *Software version (MC and DX Console)*
    - *Something you found*
- *Log (LOG ALL)*

  Secure and collect corresponding logs as soon as quickly before carelessly eliminating them. Immediately after the problem occurs, check that the log includes the time of the problem (the log has been updated).
- *Calibration data (CORRECT)*

  Even if, for example, only the TOP panel is abnormal, the CENTER and/or the BOTTOM panel units may relate in part to the problem. Collect all calibration data for the three panel units.
- *Input images to the MC software (a total of three images each for TOP, CENTER and BOTTOM)*

  In the case where the raw image saving mode is OFF, the latest 50 exposures of images before the stitching area correction are saved by the procedures below. Collect corresponding one exposure (three images).
    1. *Use the LOG ALL of the PC TOOL to save the log.*

       A "LP_IMAGE" folder is newly created in the folder saved with the LOG ALL.
    2. *Perform "BackupLPImage.bat" in the "LP IMAGE" folder.*

       The latest 50 exposures of raw images are saved in the "LP IMAGE" folder.
- *Routine files (a total of four images each for TOP, CENTER, BOTTOM and Synthesis)*

  Obtain complete set of the Routine files having extensions other than "inf" that includes personal information.

14. Checking the Error Log

    (1) **Start up the RU PC-TOOL.**

    (2) **Click [ERROR DB].**
        → The ERROR-DB window opens.

    (3) **Check the error log.**

    (4) **Click [CLEAR] to clear the error log.**

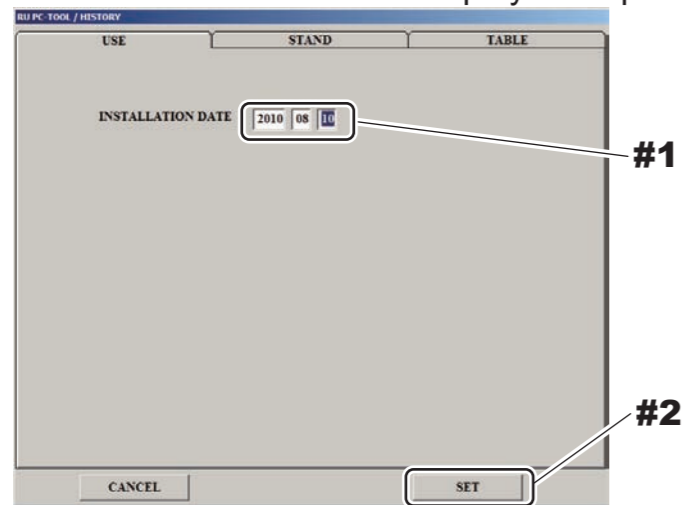   **(5)** **Exit the RU PC-TOOL.**

15. Clearing the EDIT HISTORY

◆ *INSTRUCTION* ◆

After exiting the DX Console application, perform the following procedure.

(1) Start up the RU PC-TOOL.

(2) Click [EDIT HISTORY].

→ The EDIT HISTORY window opens.

(3) Input the installation date.

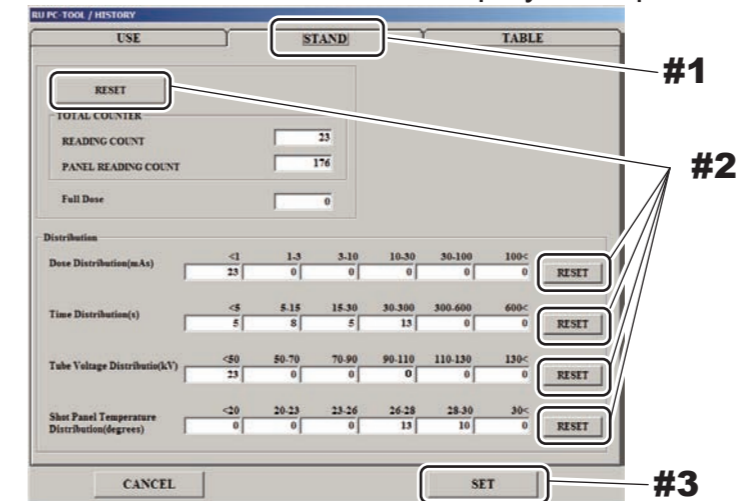#1 Input: Installation date
#2 Click : [SET]

EDIT HISTORY window <Display example>

600_700139.ai

(4) Click the [STAND] tab, and reset the counts.

#1 Click : [STAND] tab
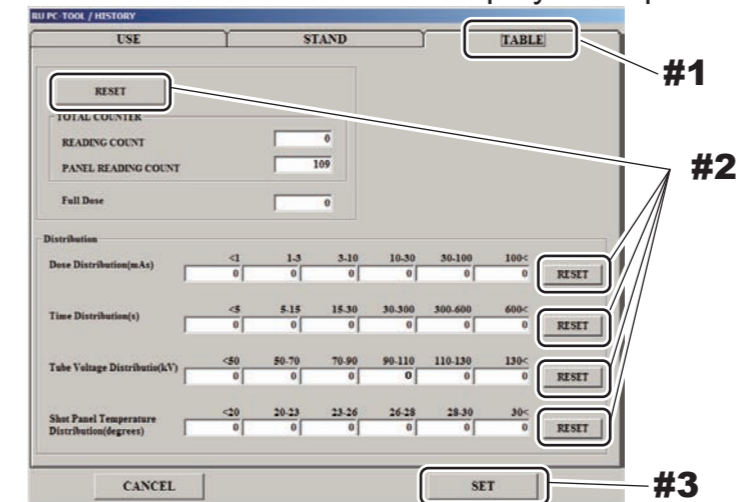#2 Click : [RESET]
#3 Click : [SET]

EDIT HISTORY window <Display example>

600_700140.ai

(5) Click the [TABLE] tab, and reset the counts.

#1 Click : [TABLE] tab
#2 Click : [RESET]
#3 Click : [SET]

EDIT HISTORY window <Display example>

600_700141.ai

(6) Exit the RU PC-TOOL.

16. Backing Up the Data

(1) **Start up the RU PC-TOOL.**

(2) **Back up "LOG ALL" and "CORRECT ALL DATA".**

(3) **Exit the RU PC-TOOL.**

17. Final Checks

17.1   Checking the SE

(1)   **Check that the SE is not damaged.**

17.2   Checking the Status of Boards

(1)   **Start up the MUTL.**

(2)   **Click [MP Board State Check] and check the following board status.**
Make sure that the board is free from errors on the Board State display.
- MP board status
☞   {MU2:[5.1]_MP Board State >>}
- SE board status
☞   {MU2:[5.2]_SE Board State >>}

18. Visual Inspection and Cleaning of the Machine

Visually check the units for damage.
If contaminated, wipe off with a dry cloth.

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

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DR-ID 1300 / DR-ID 1300PU Service Manual

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

DR-ID 1300 / DR-ID 1300PU
Service Manual

Installation (AppxIN)

Appendix 1. Requirements Regarding Locally Obtained Parts

For some parts, such as network cables, locally obtained parts may be used. In this case, parts that meet the requirements set forth below should be obtained locally.

■ **Locally Obtained Parts and Their Requirements**

● **Network cable and Network HUB**

☞ **{Product Specifications:6._Electrical Specifications_■ I/F Cable}**

● **PU power cable**

☞ **{Product Specifications:6._Electrical Specifications_■ PU Power Cable}**

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Appendix 2. Restoring the IP Address of the MP/SE

If the IP address of the MP or the SE is lost by mistake during the operation procedures of PC-Tool/MUTL, you can restore the IP address to the default value (as shipped from the factory).
Described below are the procedures for restoring the IP address of the MP or the SE to the default value (as shipped from the factory).

<IP address of the MP (default value)>
   192.168.0.20
<IP address of the SE (default value)>

| SE	IP address
1305SE (TOP)	192.168.0.90
1305SE (CENTER)	192.168.0.91
1305SE (BOTTOM)	192.168.0.92

Appendix 2.1 Restoring the IP Address of the MP

⚠ **WARNING**

You must never work on the MP with the power supplied in any situation for servicing the MP. Always turn OFF the power of the MP before servicing.
If you work with the power supplied, an accident such as electric shock hazard, burn or short-circuiting might occur, resulting in death or serious injury.
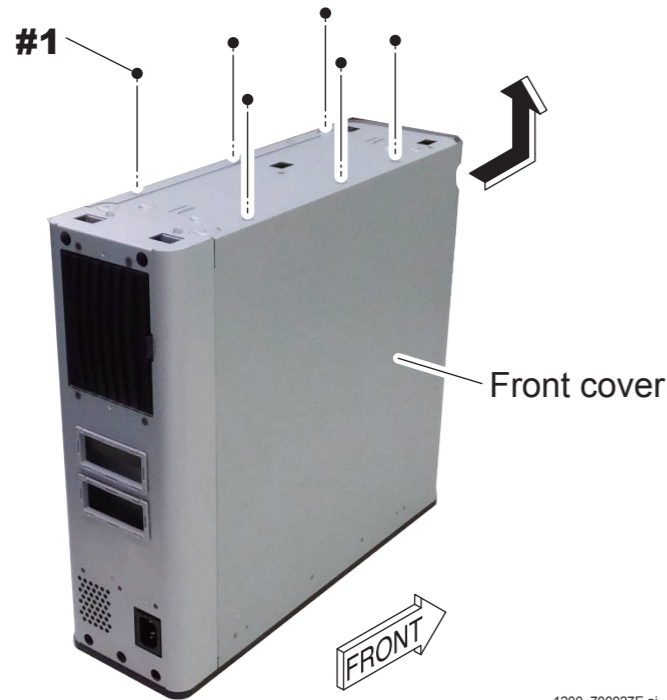
(1) **Turn OFF the power of the MP.**

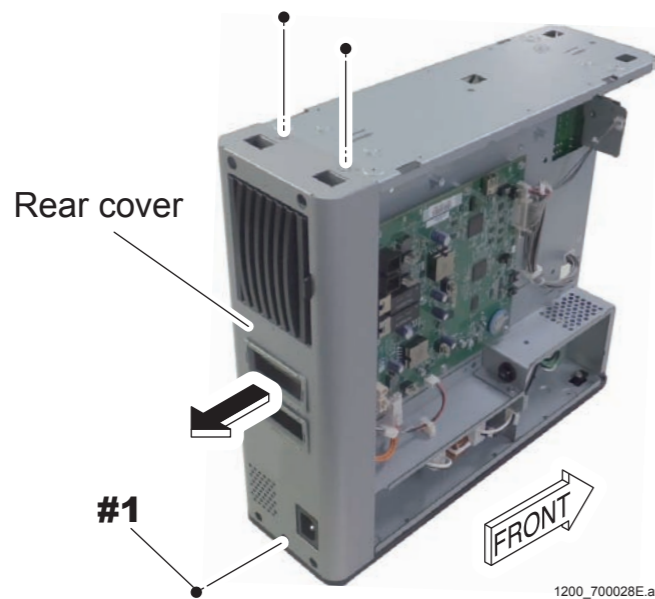(2) **Remove the MP top cover.**
   #1   Loosen: T3x6 (x2)

Top cover
#1
FRONT
1200_700026E.ai
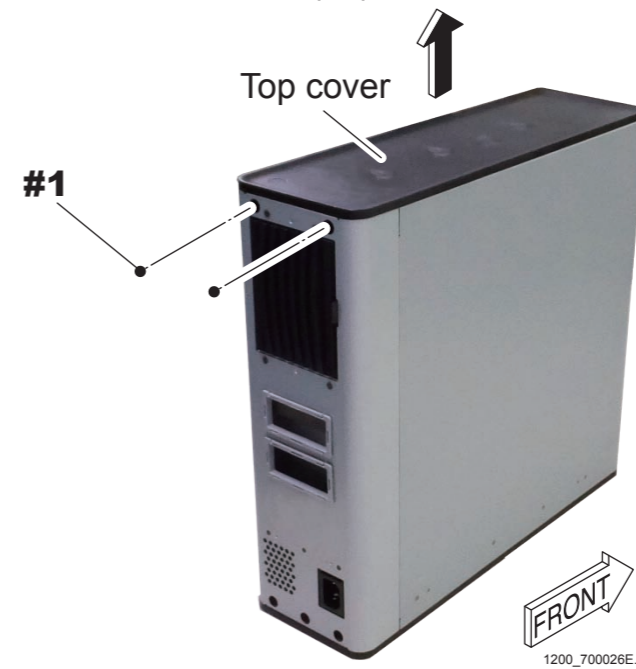
(3) Remove the MP front cover.

#1 Remove: T3x6 (x6)

#1

Front cover

FRONT

1200_700027E.ai

(4) Remove the MP rear cover.

#1 Remove: T3x6 (x3)

Rear cover

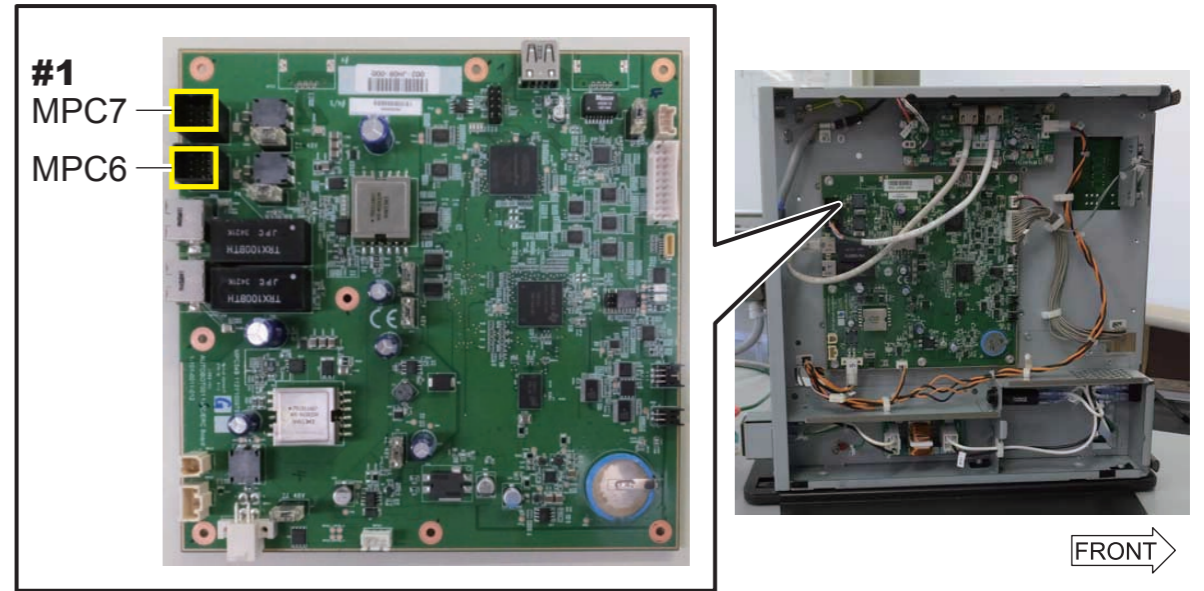#1

FRONT

1200_700028E.ai

(5) Disconnect all connectors of the SE cable from the MPC54B board.

#1 Disconnect: Cable connectors (MPC6, 7)
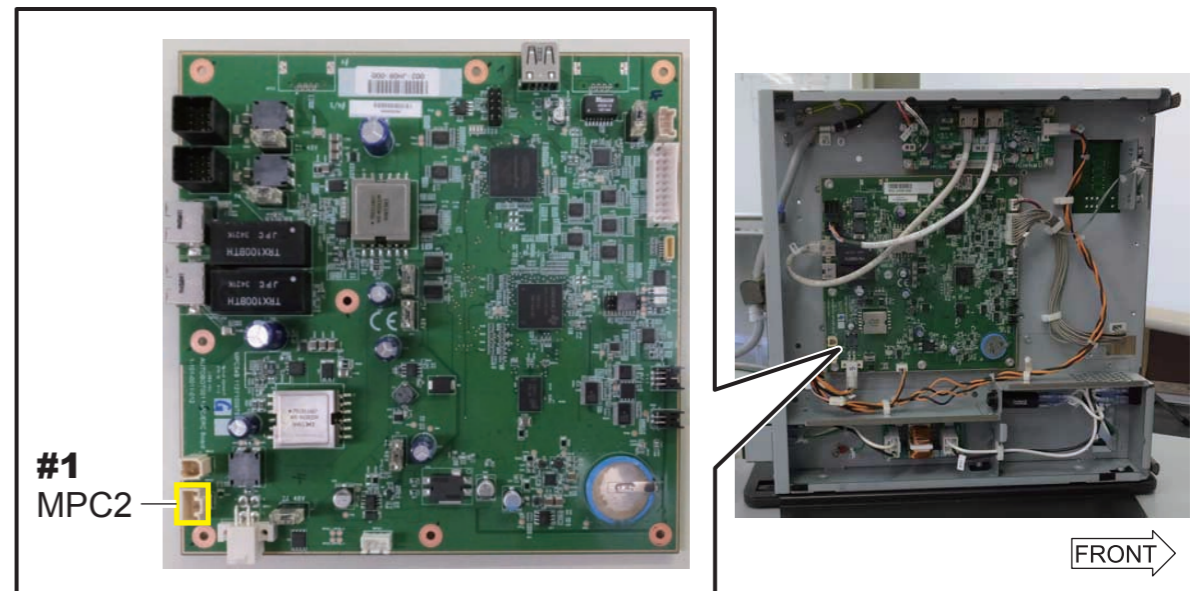
#1
MPC7
MPC6

FRONT

1300_700027.ai

(6) Connect the jig cable <supplied accessory> to the connector (MPC2) of the MPC54B board.

◆ *NOTE* ◆

Connect the jig cable after disconnecting the cable connector of the remote switch if the remote switch (optional item) is connected.

#1 Connect: Jig cable <supplied accessory>

#1
MPC2

FRONT

1300_700028.ai

(7) Reinstall the MP rear cover, front cover and the top cover.

Reverse the removal procedures for reinstallation.

(8) Turn ON the power of the MP.

The IP address of the MP is changed to the default value.

(9) Turn OFF the power of the MP approx. 30 seconds later.

(10) Remove the MP top cover, front cover and the rear cover.

(11) Disconnect the jig cable.

(12) Connect all connectors of the SE cable.

(13) Reinstall the MP rear cover, front cover and the top cover.

Reverse the removal procedures for reinstallation.

Appendix 2.2 Restoring the IP Address of the SE

⚠ *WARNING*

You must never work on the SE with the power supplied in any situation for servicing the SE. Always disconnect the SE cable from the SE, and remove the battery pack from the SE.
If you work with the power supplied, an accident such as electric shock hazard, burn or short-circuiting might occur, resulting in death or serious injury.

◆ *NOTE* ◆

*To reset the IP address of DR-ID 1305SE, recover the IP address for each incorporated panel unit. If the IP addresses of two or more panel units are simultaneously recovered, these panel unit will have the same IP address, causing DR-ID 1305SE to malfunction.*

(1) Turn OFF the power of the MP.

(2) Disconnect the SE cable from the SE.

(3) Remove the SE rear cover.

☞ {MC:3.1.1_SE Rear Cover}

(4) Connect the jig cable <supplied accessory> to the connector of the RMV board.

#1   Disconnect: Connector cable (RMV16)
#2   Connect: Jig cable <supplied accessory>
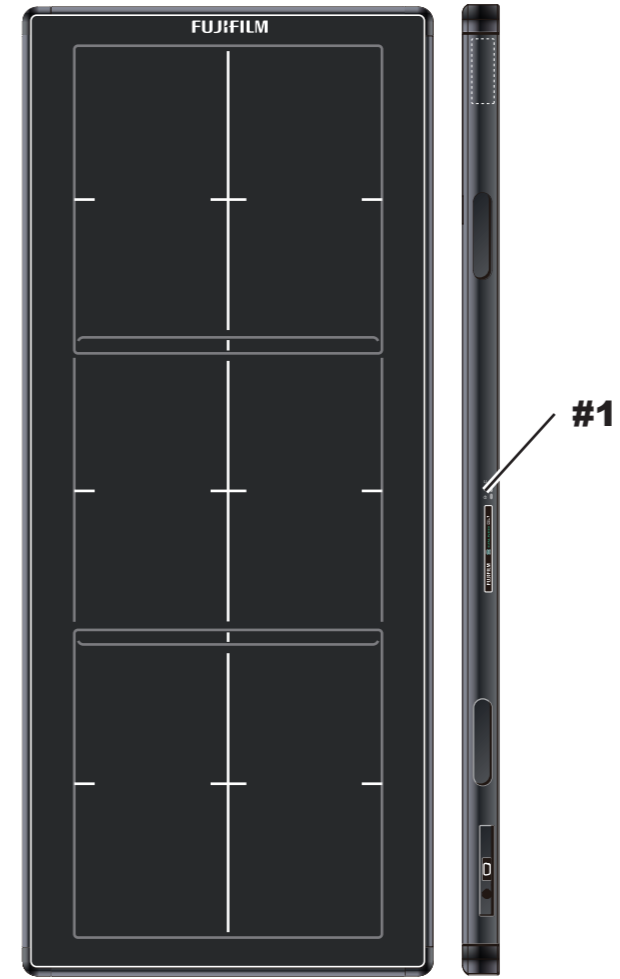

TOP

SE

RMV16
#1#2
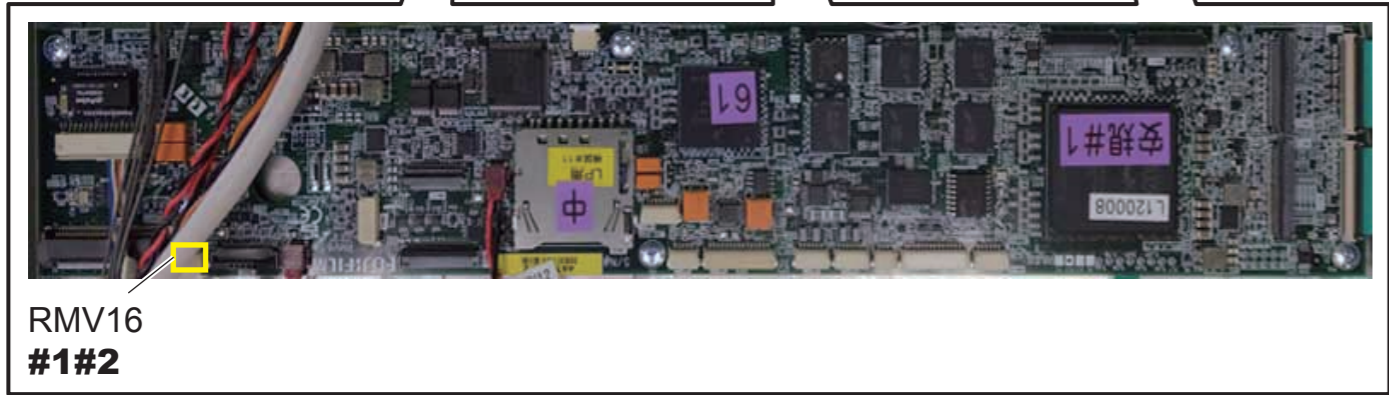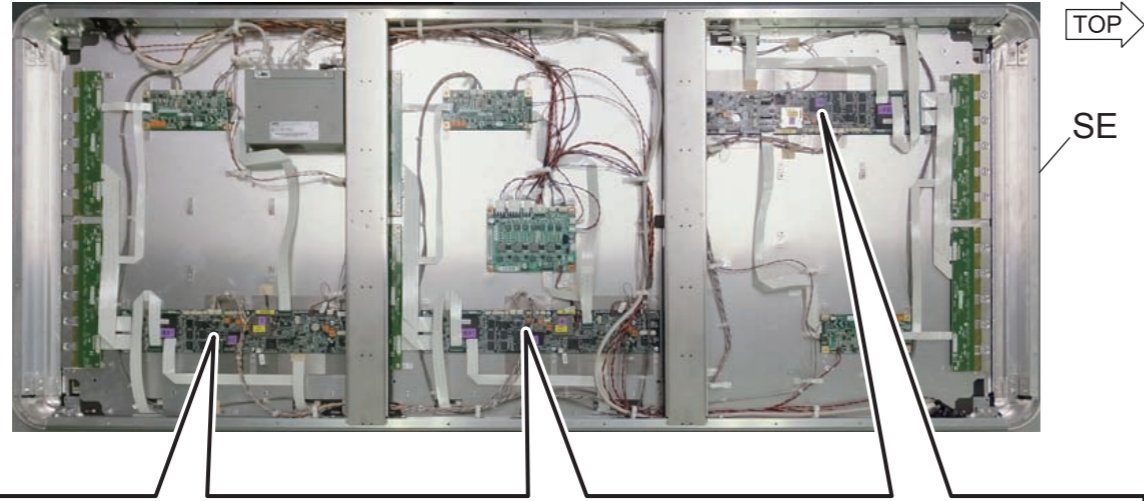
1300_700021.ai

(5) Connect the SE cable and turn ON the power of the MP.

(6) Check to make sure that two external positions of the status lamp (LED) of the SE flash three times successively.

You can know that the IP address of the SE is changed to the default value if the LED flashes three times successively.
#1   Check: LED

FUJIFILM

#1

1300_700022.ai

(7) Turn OFF the power of the MP and disconnect the SE cable.

(8) Disconnect the jig cable you connect in the procedure (4) and connect the connector cable (RMV16).

(9) Put on the SE rear cover.

☞ {MC:3.1.1_SE Rear Cover}

(10) Set the COUNTRY CODE in "WIRELESS SETTING" window of EDIT CONFIGURATION.

☞ {MU2:1.11_EDIT CONFIGURATION}

Appendix 3. Replacement Procedure of the Local Network

■ **Inputting the IP addresses**

◆ *NOTE* ◆

These procedures are for when the RU PC-TOOL is going to be used. If the DR Maintenance Software is going to be used, refer to the following, and execute the Local network changes.

☞ **{MU1:1.5.1_Local Network}**

Appendix 3.1   Local Network PreSetting >>

Change the following IP address.
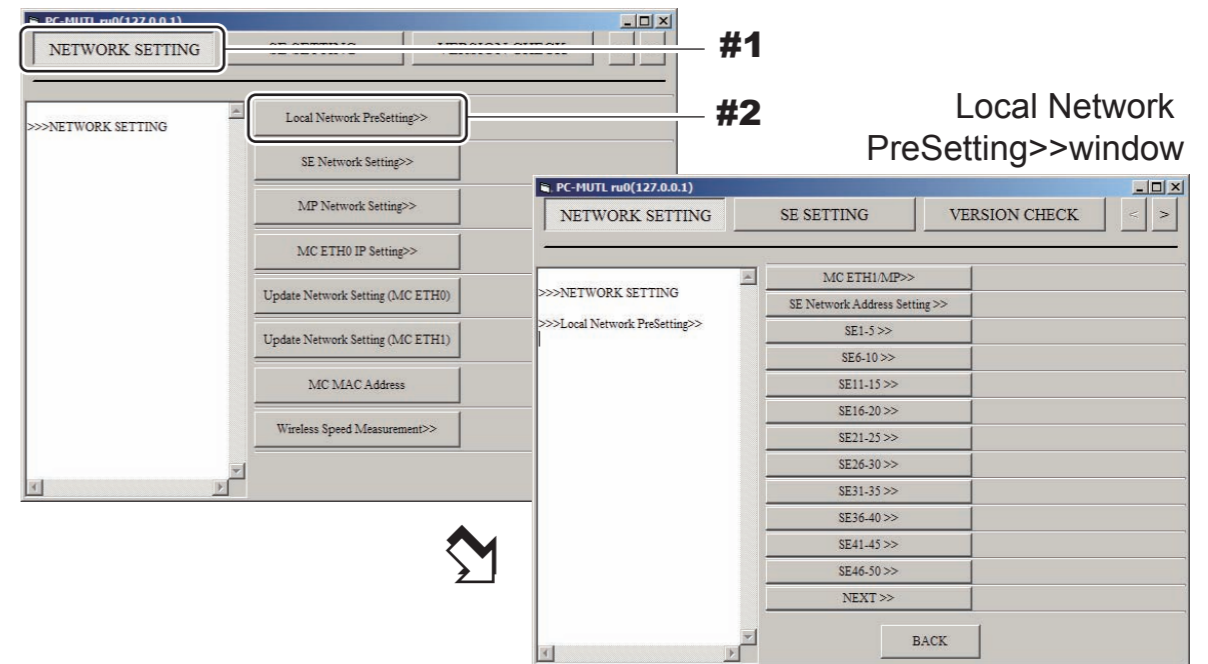- MC ETH1 IP
- MP1
- SE1 WIRED
- SE1 WIRELESS

To make the changed set value effective, the set value needs to be enabled (setting executed) respectively for the SE, MP and MC.

(1) **Click [NETWORK SETTING], and click [Local Network PreSetting >>].**

#1 Click: [[NETWORK SETTING]]
#2 Click: [Local Network PreSetting >>]
NETWORK SETTING window

Local Network PreSetting>>window

1200_700163E.ai

(2) Click [MC ETH1/MP>>] and input the MC/MP network address, then click [SET].

#1 Click: [MC ETH1/MP>>]
#2 Input: MC/MP network address
#3 Click: [SET]
Local Network PreSetting >> window

MC ETH1/MP>>window

1200_700164E.ai
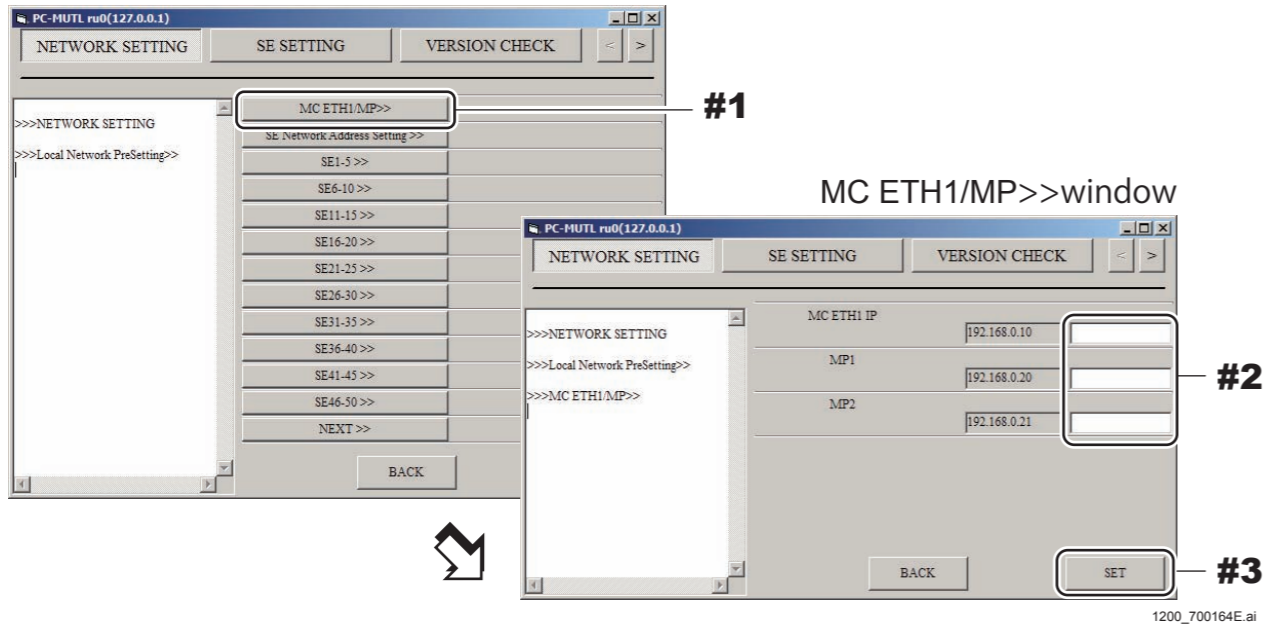
(3) Click the target SE, input the SE network address and click [SET].

#1 Click: Target SE
#2 Input: SE network address
#3 Click: [SET]
Local Network PreSetting>>window

SE1-5>>window

1200_700166E.ai

(4) Click [BACK] to return to the NETWORK SETTING window.

■ Enabling the set value

Enable the network address input in the Local Network PreSetting>> window.

⚠ CAUTION

Enable the set value in the order of the SE, MP and MC to make them effective. If a wrong order is taken, the setting does not get effective, and might result in need of initializing the machine.

<Enabling the set value (SE)>

◆ INSTRUCTION ◆

Connect only one SE when enabling the set value (SE). Otherwise, the SE whose IP address is changed cannot be identified, and might result in need of initializing the SE.

(1) **Click [SE Network Setting >>] on the NETWORK SETTING window.**
The SE Network Setting >> window appears.

(2) **Input the target SE No. and click [SET].**

(3) **Click [Execute SE IP Setting].**
The confirmation dialogue box of "Are you sure?" appears.

(4) **Click [OK].**

(5) **Check that the set value is effective.**
The IP addresses of the SE and the MC are rewritten, and the IP addresses are reflected after restarting the SE and the MC.

◆ NOTE ◆

Restart only the SE in this procedure.

#1 Check: OK indication
SE Network Setting>>window <Display example>


```
1200_700167E.ai
```

(6) **Click [BACK] to return to the NETWORK SETTING window.**

(7) **Disconnect the SE cable from the SE.**

(8) **If an unspecified SE exists, repeat procedures (1) to (7).**

(9) **Connect the SE cable to the specified SE.**

\<Enabling set value (MP)\>

(1) Click [MP Network Setting >>] on the NETWORK SETTING window.

The MP Network Setting window >> appears.

(2) Click [MP1 Network Setting >>] on the MP Network Setting window >>.

The MP1 Network Setting >> window appears.

(3) Click [Setting for MP1].

The confirmation dialogue box of "Are you sure?" appears.

(4) Click [OK].

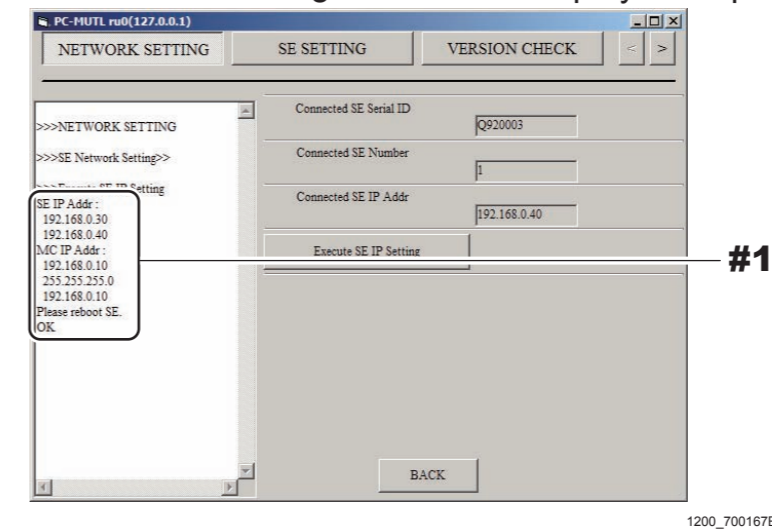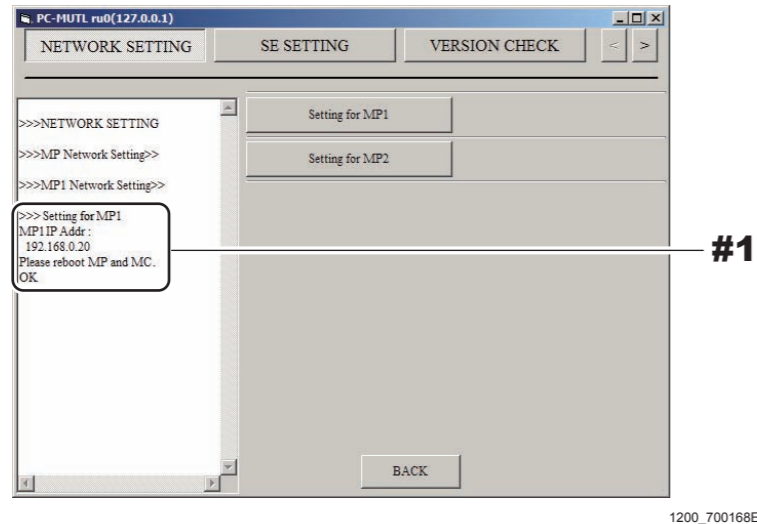**(5) Check that the set value is effective.**

The IP address of the MP is rewritten, and the IP address is reflected after restarting the MP.
#1 Check: OK indication
MP Network Setting>>window \<Display example\>

1200_700168E.ai

(6) Click [BACK] to return to the MP Network Setting >> window.

(7) Click [BACK] to return to the NETWORK SETTING window.

(8) Turn OFF the power of the MP, and then turn it ON again.

(9) Left-click the MC Manager from the task tray and excute "EXIT".

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

\<Enabling set value (MC)\>

(1) Click [Update Network Setting (MC ETH1)] on the NETWORK SETTING window.

The confirmation dialogue box of "Are you sure?" appears.

(2) Click [OK].

(3) Check that the set value is effective.

The IP address of the MC is rewritten, and the IP address is reflected after restarting the MC.
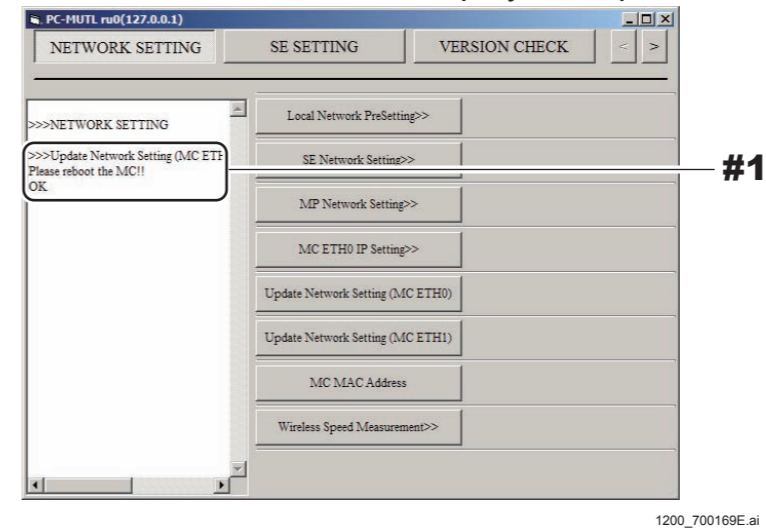#1 Check: OK indication
Update Network Setting
(MC ETH1)   \<Display example\>

1200_700169E.ai

(4) Left-click the MC Manager from the task tray and excute "EXIT".

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

<Restarting the machine and checking the setting effected>

(1) **Turn OFF the power in the order named of the CL, MC and MP.**

◆ *NOTE* ◆

For the MC application, left-click the MC Manager from the task tray and excute "EXIT".

(2) **Turn ON the power in the order named of the MP, CL and MC.**

◆ *NOTE* ◆

For the MC application, check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

(3) **Start up the MUTL.**

(4) **Click [NETWORK SETTING], [SE Network Setting >>] and the target SE button.**

Check that the IP address of the SE has been changed.

Appendix 3.2   MC ETH0 IP Setting >>

■ Inputting the IP addresses

Input the following IP address.
- MC IP Address (Default value: 172.16.1.10)
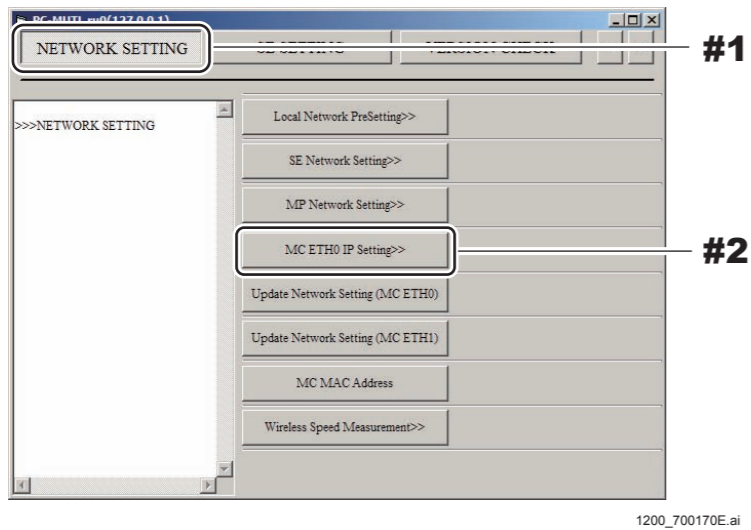- FTP IP Address (Default value: 172.16.1.20)

The set value gets effective by clicking [Update Network Setting (MC ETH0)] on the "NETWORK SETTING" window. That is, by just clicking [SET], the input value does not get effective.

(1) Click [NETWORK SETTING], and click [MC ETH0 IP Setting >>].

#1 Click: [NETWORK SETTING]
#2 Click: [MC ETH0 IP Setting >>]
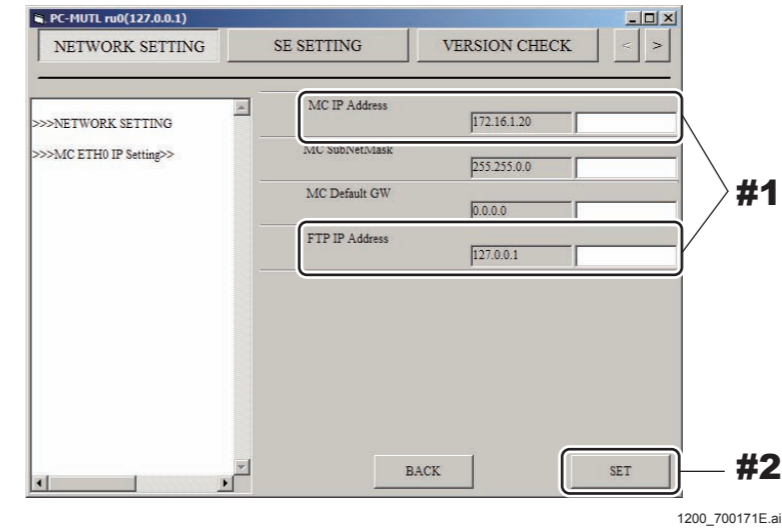 NETWORK SETTING window

1200_700170E.ai

(2) Input the network address values, and click [SET].

#1 Input: Set value
#2 Click: [SET]
MC ETH0 IP Setting>>window

1200_700171E.ai

■ Enabling the set value

Enable the network address input in the MC ETH0 IP Setting >> window.

(1) Click [Update Network Setting (MC ETH0)] on the NETWORK SETTING window.

The confirmation dialogue box of "Are you sure?" appears.

(2) Click [OK].

(3) Check that the network address input in the MC ETH0 IP Setting >> window gets effective.

(4) Left-click the MC Manager from the task tray and excute "EXIT".

Check that the MC Manager icon has disappeared from the task tray, and then start the MC Manager from "Start menu" → "Start-up".

(5) Exit the RU PC-TOOL.

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

Appendix 4. Precaution before using the DR-ID 1300

The DR-ID 1300 is provided with three internal panel units, and the overlapping portions which cause unevenness in the image.

Although, in general, the unevenness is decreased with a correction function so as to be hard to see, the unevenness sometimes may be visible at, for example, stitched portions of the CR long panel images and portions with image quality coarsely degraded, which depends on the object, the exposure condition, or the image processing condition.

■ Mechanism to generate the unevenness in the DR-ID 1300

● Technical key issue at the stitching area: correction of the absorbency and scattering of X-ray

In the figure below, the X-ray at the pink part is absorbed by the top panel's scintillator and the total X-ray dose reaching the center panel is reduced to around one fifth (lack of X-ray).

The green part is affected by the X-ray scattered around depending on the exposure conditions (such as body thickness and radiation quality).
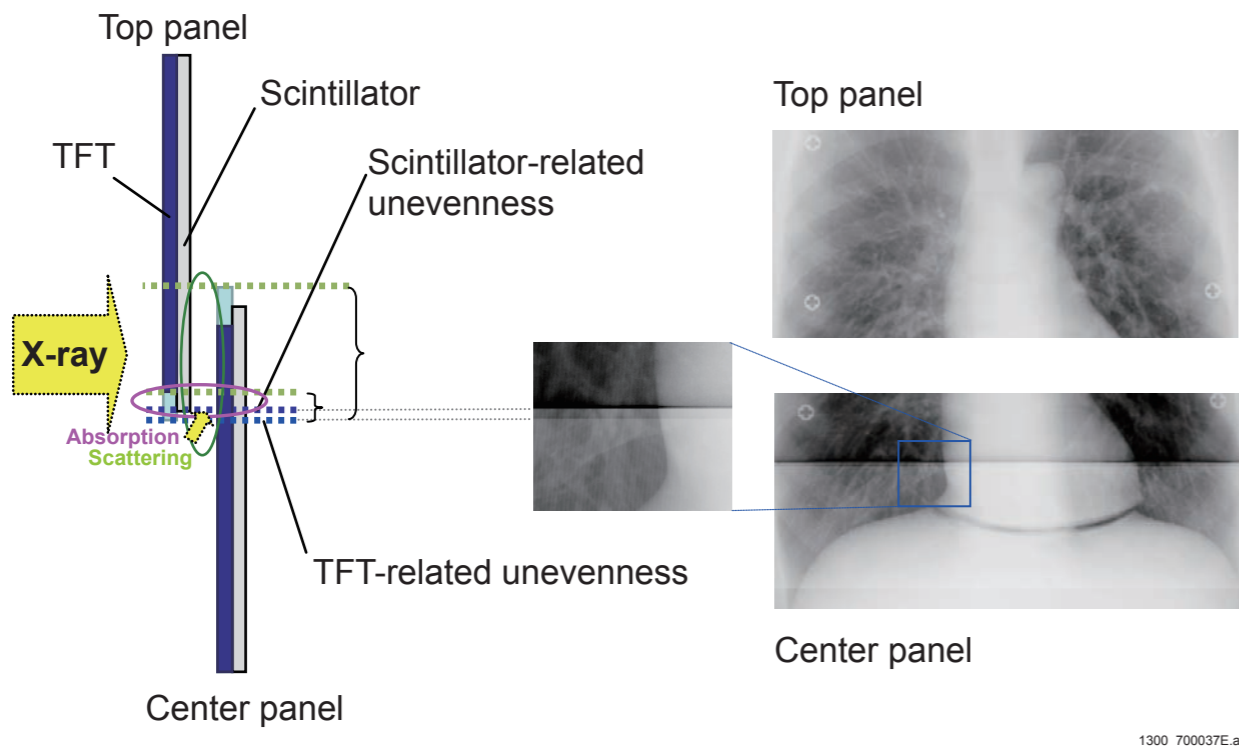
● Image stitching at the stitching area

Markers are provided at the gap between the panels. These markers are used to stitch the images (positioning and zooming). No marker remains in the stitched image.
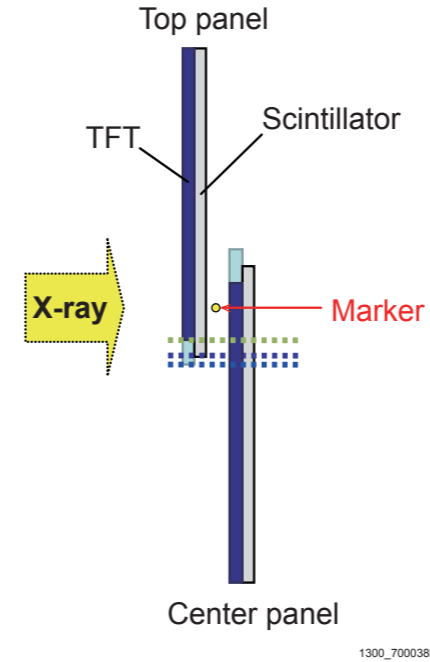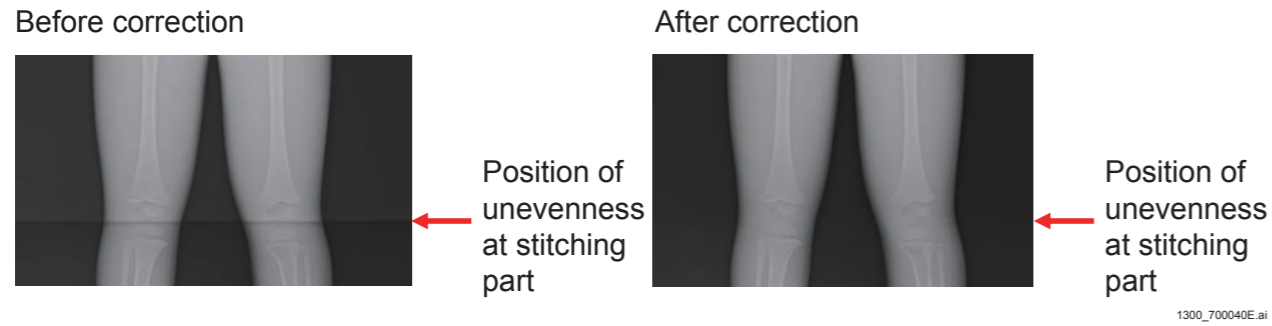

● Reference: Example CR long panel image

The CR long panel image has unevenness due to IPs overlapping each other.
The DR-ID 1300 also generates visible unevenness in the image but the pattern of unevenness is different.
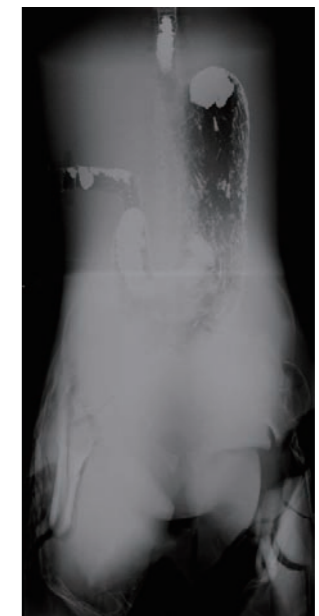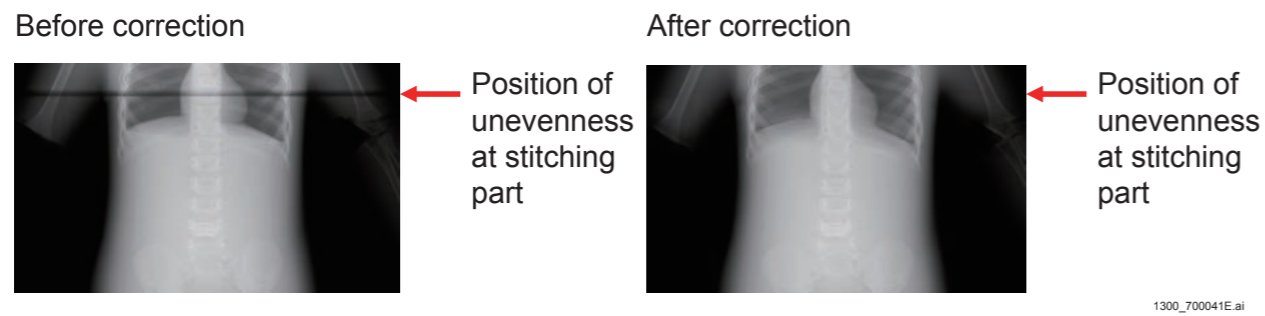
■ Images before and after the correction of the unevenness at the stitching part

● Example 1

Before correction

After correction

← Position of unevenness at stitching part

← Position of unevenness at stitching part

1300_700040E.ai

● Example 2

Before correction

After correction

← Position of unevenness at stitching part

← Position of unevenness at stitching part

1300_700041E.ai

■ Example images of stitching part

● Discontinuous grained pattern

A coarsely-grained band-like area appears near the stitching area with low dose due to panels overlapping each other.

← The image quality in this part is coarsely grained more than the upper and lower parts.

← Position of unevenness at stitching part

1300_700042E.ai
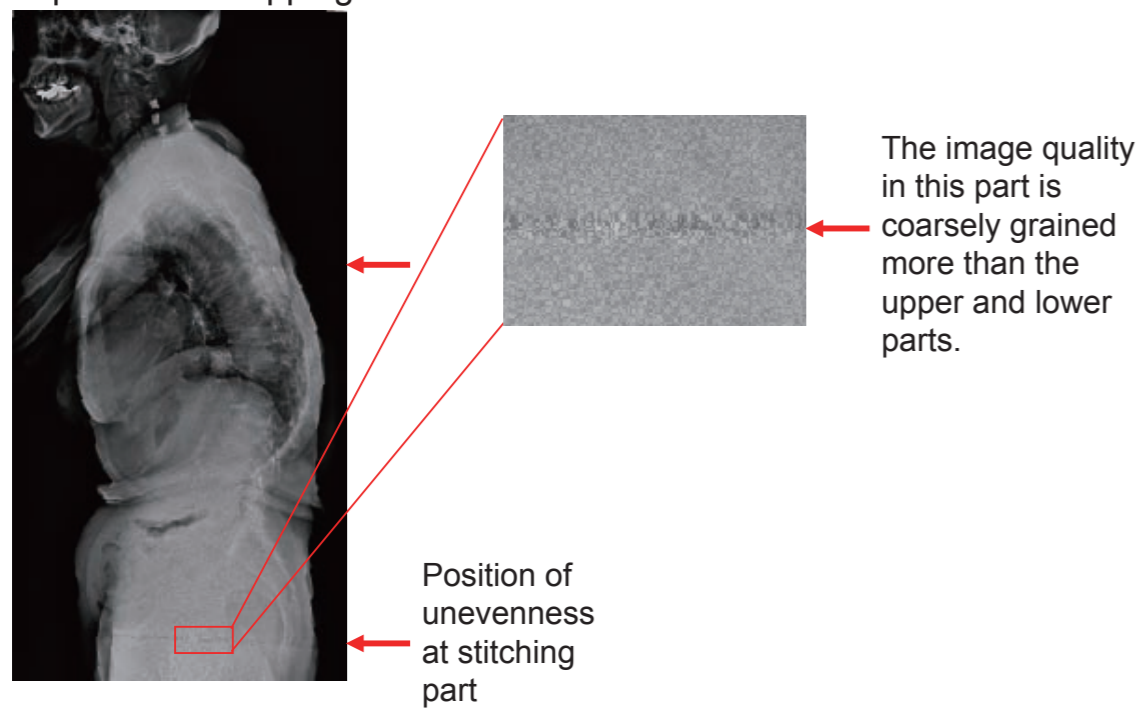
● Difference in image density between panels (first example)

The image density may change at the stitching part of the panels when the structure of the object is flat and has little pattern

}- Little whitish

}- Little blackish

← Position of unevenness at stitching part

1300_700043E.ai
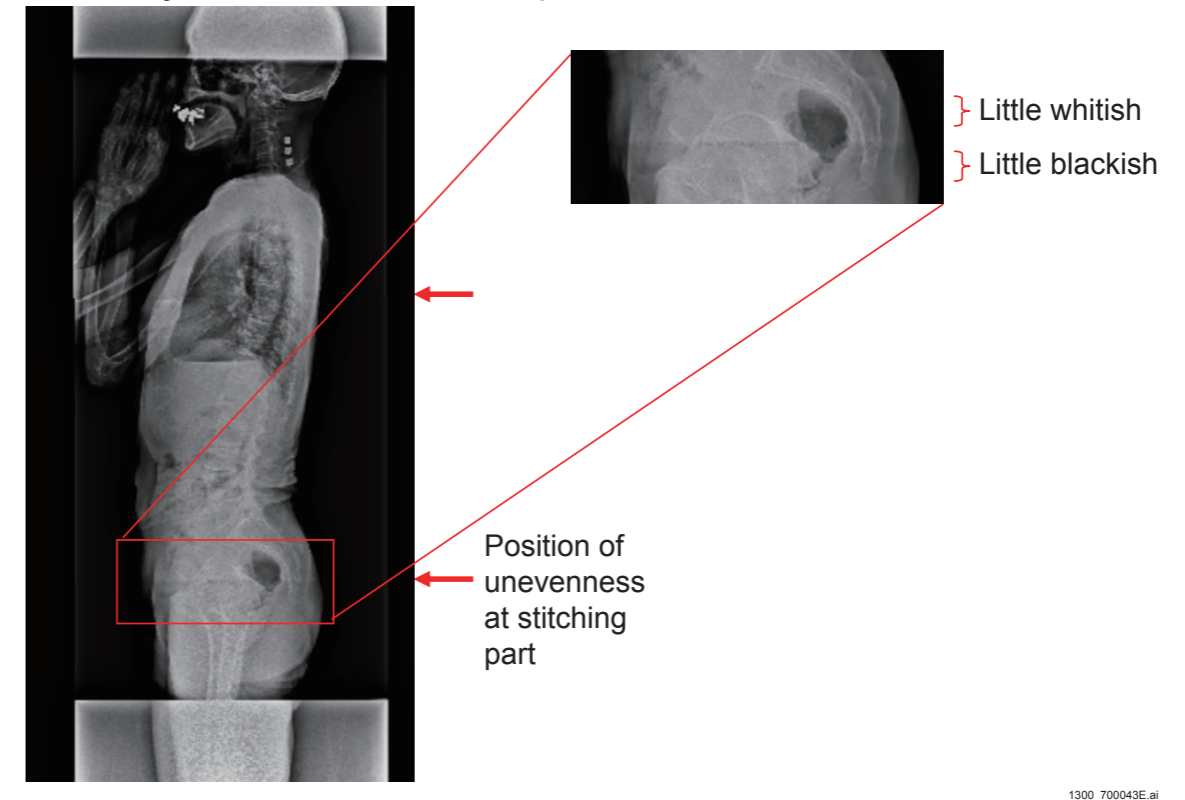
● **Difference in image density between panels (second example): MC V12.0 or later**

Precautions for the Virtual Grid:

The image density may change at the stitching part of the panels. Especially when the Virtual Grid processing is applied to a thick object, the difference in density is more clearly visible.

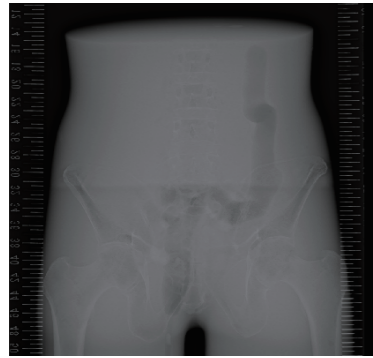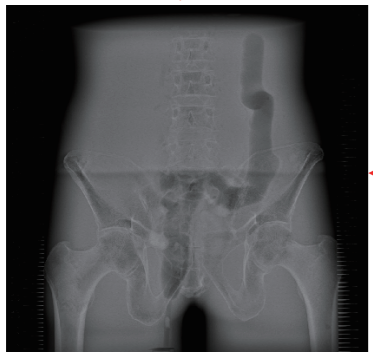Anterior lumbar + Acrylic 5 cm (no grid)

← Position of unevenness at stitching part

Virtual Grid processing

← Position of unevenness at stitching part

1300_700045E.ai

● **Difference in image density between panels (third example)**

The difference in the image density may be visible not entirely but partly in the horizontal direction along the stitching area.

No difference in density is visible.
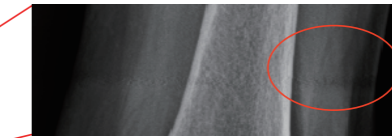
Little whitish
Little blackish

← Position of unevenness at stitching part

1300_700044E.ai

● **White band and black band (first example)**

Especially for a thick object, band-like artifacts may appear.
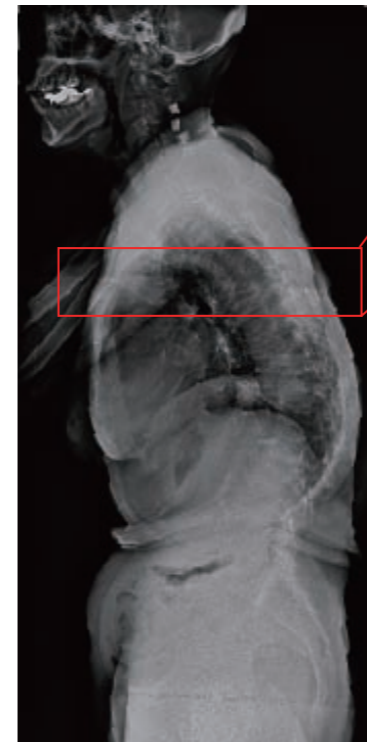
Black band
White band

← Position of unevenness at stitching part

Position of unevenness at stitching part

1300_700046E.ai

● **White band and black band (second example): MC V12.0 or later**

Precautions for the Virtual Grid:
The white band and the black band may appear near the stitching part of the scintillator. Especially when the Virtual Grid processing is applied to a thick object, the white band and the black band may be visible more clearly.

Anterior lumbar + Acrylic 5 cm (no grid)

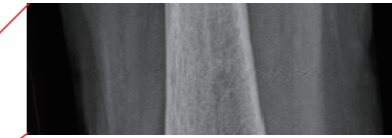Position of unevenness at stitching part

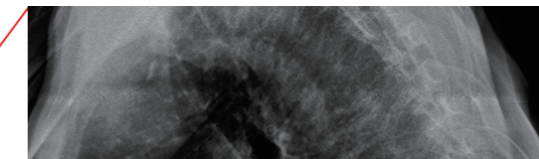Virtual Grid processing

Position of unevenness at stitching part

Object
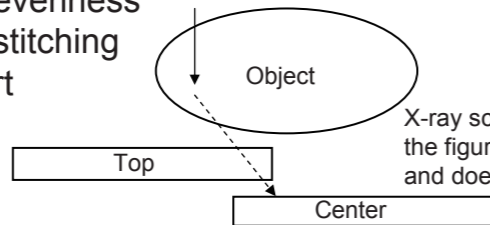
X-ray scattering forward as shown in the figure is blocked by the top panel and does not reach the center panel.

Top

Center

1300_700047E.ai

● **White band and black band (third example)**

The unevenness correction uses information on the image in the vertical and horizontal directions, and a band-like artifact that looks like a hollow may appear near the skin line.

Position of unevenness at stitching part
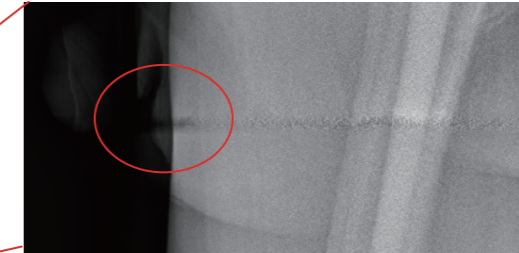
Position of unevenness at stitching part

1300_700048E.ai

● **White band and black band in the band-like image (first example): MC V11.0 or earlier**

The unevenness correction uses information on the image in the vertical and horizontal directions, and a band-like artifact may appear especially in a pattern that changes in image density largely in the horizontal direction.

Position of unevenness at stitching part

Position of unevenness at stitching part
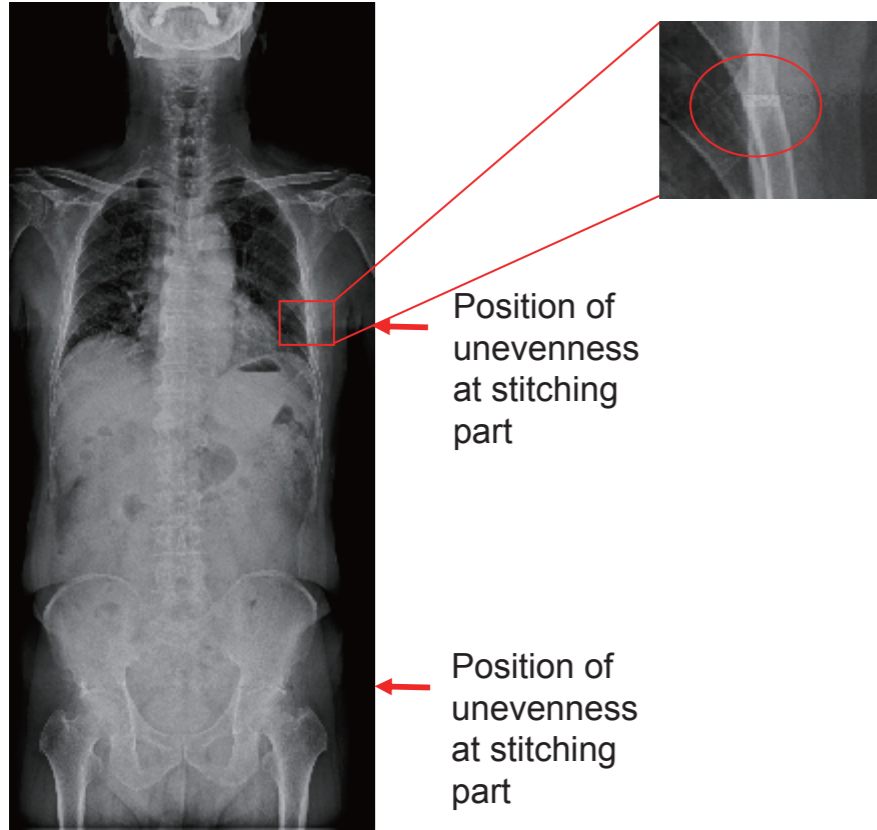
1300_700049E.ai

● **White band and black band in the band-like image (second example): MC V11.0 or earlier**

For a high-contrast and horizontally-long object, such as steel, disposed in the center panel away from the stitching part of the panels*, an artifact like a long tail may appear horizontally.

Center panel

Position of unevenness at stitching part

Bottom panel
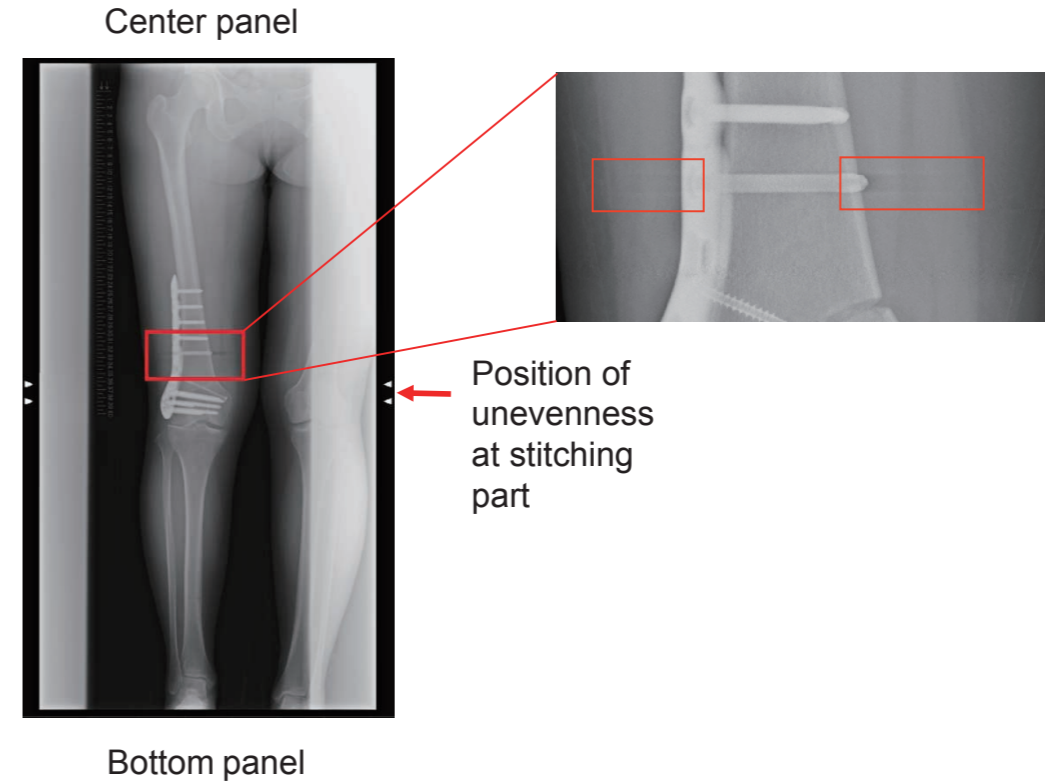
1300_700050E.ai

* The area where the artifact is visible depends on the thickness of the object. For the thin object and the thick object, the areas are around 2 cm and 6 cm inwardly from the mark indicating the overlapping part of the panels on the exposure stand, respectively.

Around 2 cm (thin object)   Around 6 cm (thick object)
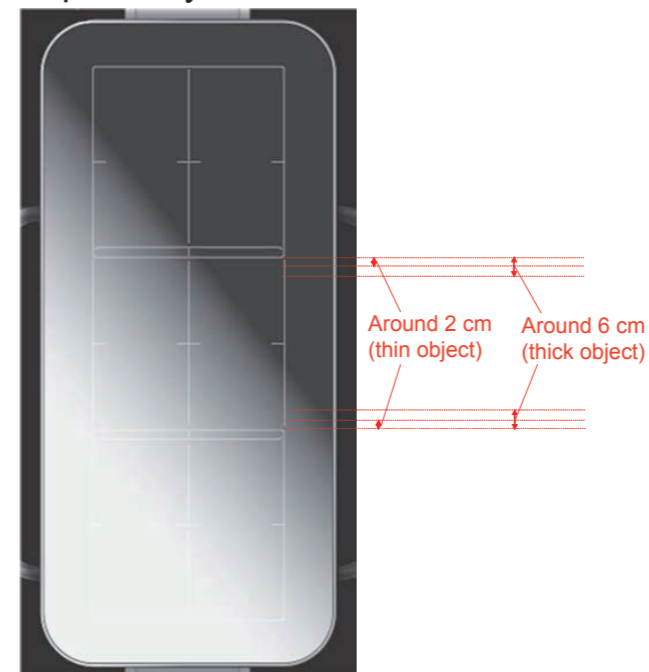
1300_700051E.ai

● **Connecting area of the long grids**

The currently available grid is up to 48 cm x 48 cm in size. Longer grids than that are manufactured by connecting the 48 cm x 48 cm grids. The connecting area of the grids, therefore, may be visible (similar to the CR long panel).

The grid pattern remains at the boundary.

Other example: Dotted pattern remains.
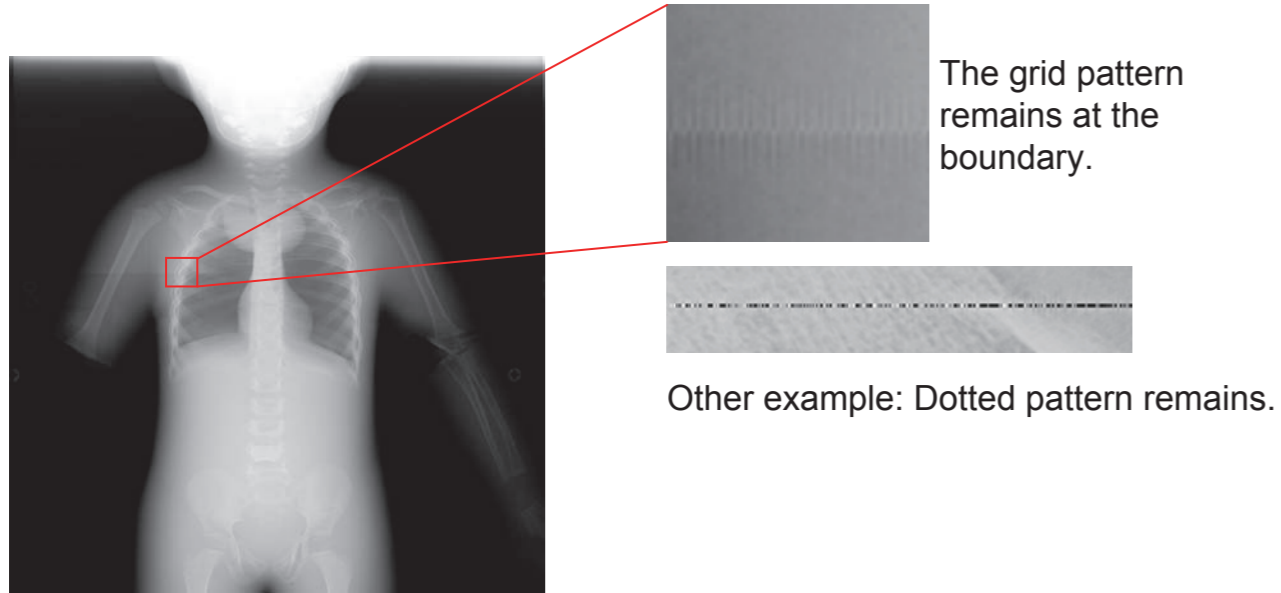
1300_700052E.ai

● **Lead scale**

The scale marks of the lead scale (X-ray measure) disposed on the connecting part may be paled out or invisible.
This does not affect on accuracy of the entire length and angle. Explain this, therefore, to the users and ask them to use the product as it is.

Position of unevenness at stitching part

Position of unevenness at stitching part

Actual lead scale
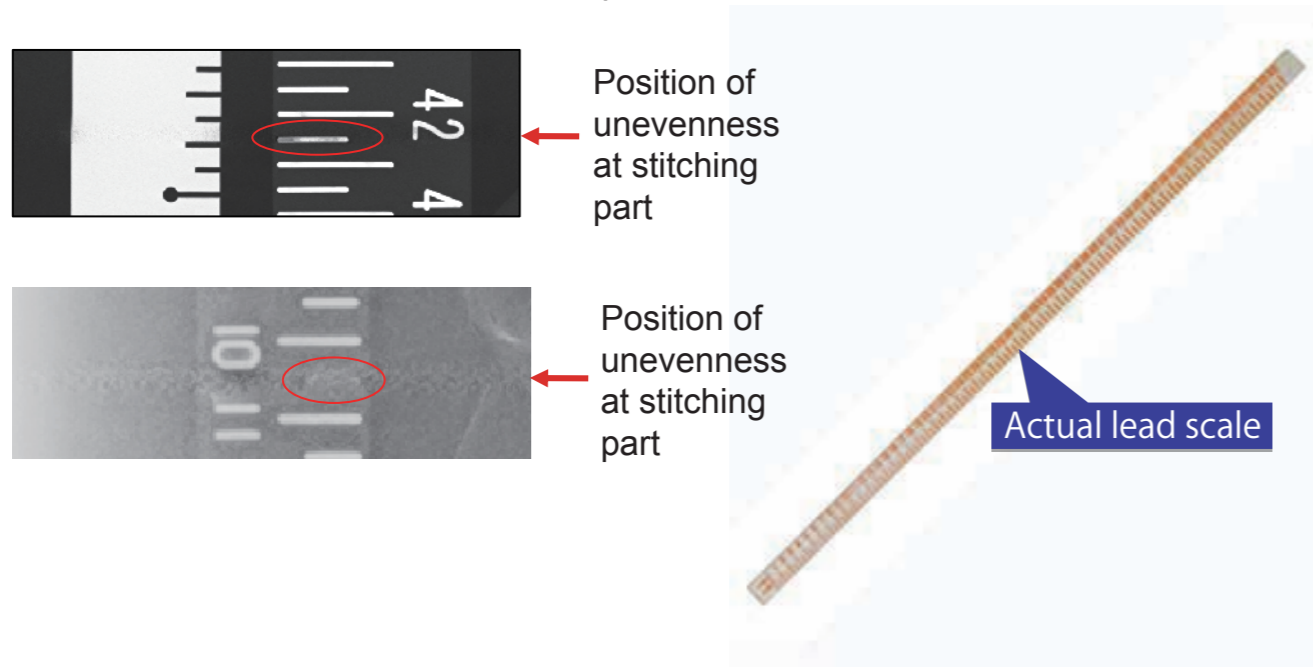
1300_700055E.ai

■ **Precaution on the grid and the SID**

Always use the grid and the SID within about ±10% of the focusing distance.
Example: For the focusing distance it is 220 cm, the SID is 200 to 240 cm.
If the SID is used out of the range above, be sure to check the images before use.

■ **Precaution on the direction of the tube**

Dispose the tube so as to align the anode-to-cathode line of the tube with the longitudinal direction of the DR-ID1305SE.
If the line of the tube aligns with the transverse direction, unevenness of image density may appear in the horizontal direction between the panels.

Transverse direction

Longitudinal direction

Position of unevenness at stitching part

Position of unevenness at stitching part
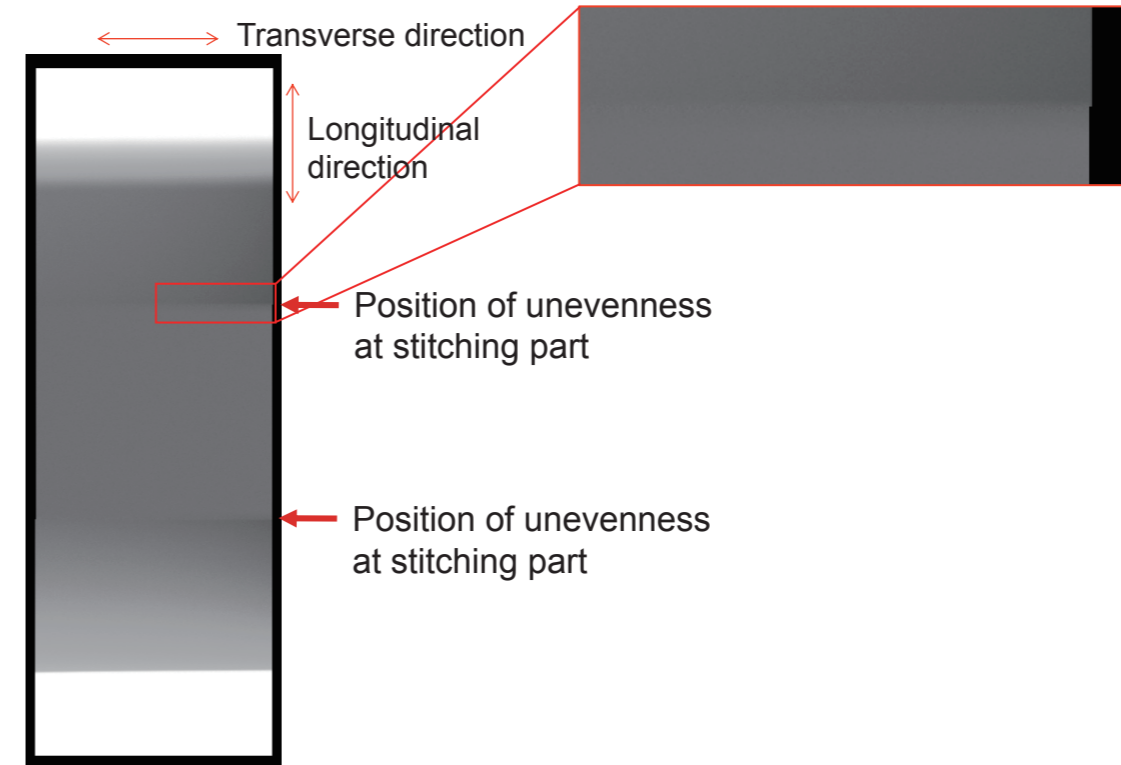
1300_700053E.ai

■ Calculation of the S value

The S value of the DR-ID1300 is calculated from the stitched image with three panel units.

In the BENEO and the CR long panel, the S value is calculated from the image from one panel and there was a restriction in the exposure position. In the DR-ID1300, however, an appropriate S value can be calculated from the image captured at any place on the panel unit.

BENEO long panel image

← Image boundary

← Image boundary

A thin part of the object is blackened.

1300_700054E.ai
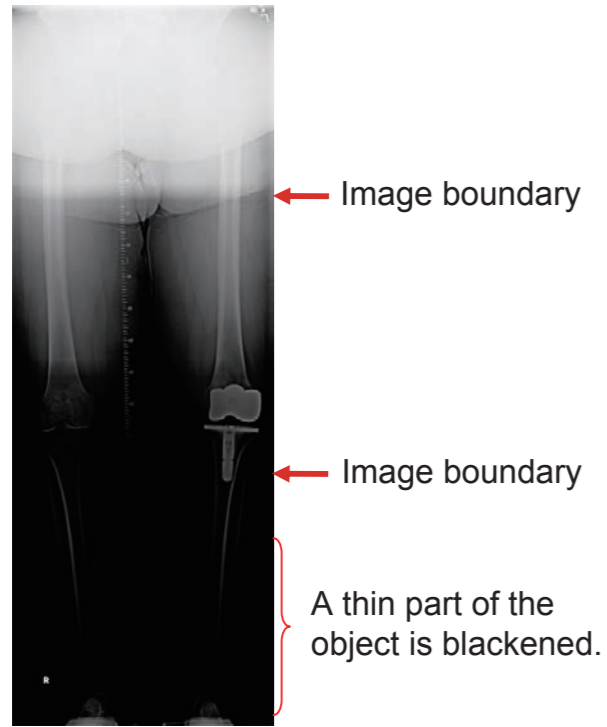
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Appendix 5. Defect Calibration and Lag Calibration

Perform the defect calibration and the lag calibration only when a problem occurs due to artifacts or other factors.

◆ INSTRUCTION ◆

- *Check that background calibration automatically executed upon startup of the machine is completed before carrying out calibration.*
- *Keep the CL software running. If the software is terminated, the MC power will be automatically turned OFF, and calibration might result in failure.*

◇ REFERENCE ◇

Messages of "Calibrating" and "Urgent use is possible" alternately appear on the DX Console status indication area.

#1 Check: Status indication

1200_700172E.ai

◇ REFERENCE ◇

Refer to the table below for the kinds of calibration to be executed.

Calibration type		Exposure conditions	Grid
		1305SE	
Defect correction	-	Exposure conditions: - Tube voltage of 75 kV - Dose of 5 mR (*) Number of exposures: 5	Cannot be mounted.
Lag correction	-	Exposure conditions: - Tube voltage of 80 kV - Dose of 100 mR (*) Number of exposures: 1	

: Set the exposure time to 200 msec or less.

Appendix 5.1 DR Maintenance Software

Appendix 5.1.1 Defect Calibration

⚠ *CAUTION*

Keep to the exposure interval defined in the Operation Manual of the X-ray high voltage generator when making continuous exposures. An interval of 1 minute or longer normally needs to be taken.

◆ *NOTE* ◆

- *When performing the defect calibration after the gain calibration, do not move the tube. Keep the same position of the tube as when the gain calibration was performed. If the tube position is changed, a line defect is wrongly detected at the upper and lower ends of the CENTER panel unit. This may cause an artifact or a defective at the boundary of the panel unit.*
- *If an artifact has occurred, take the following measure.*
  - *For TOP panel unit or BOTTOM panel unit*
    Perform the full calibration for the target panel unit.
  - *For CENTER panel unit*
    Perform the full calibration and marker calibration.

◇ *REFERENCE* ◇

The focal size of the X-ray high voltage generator may be either large or small.

(1) **Select a SE to be calibrated and set an operation with "Operation Setting", and then click [START] of "Defect Calibration".**
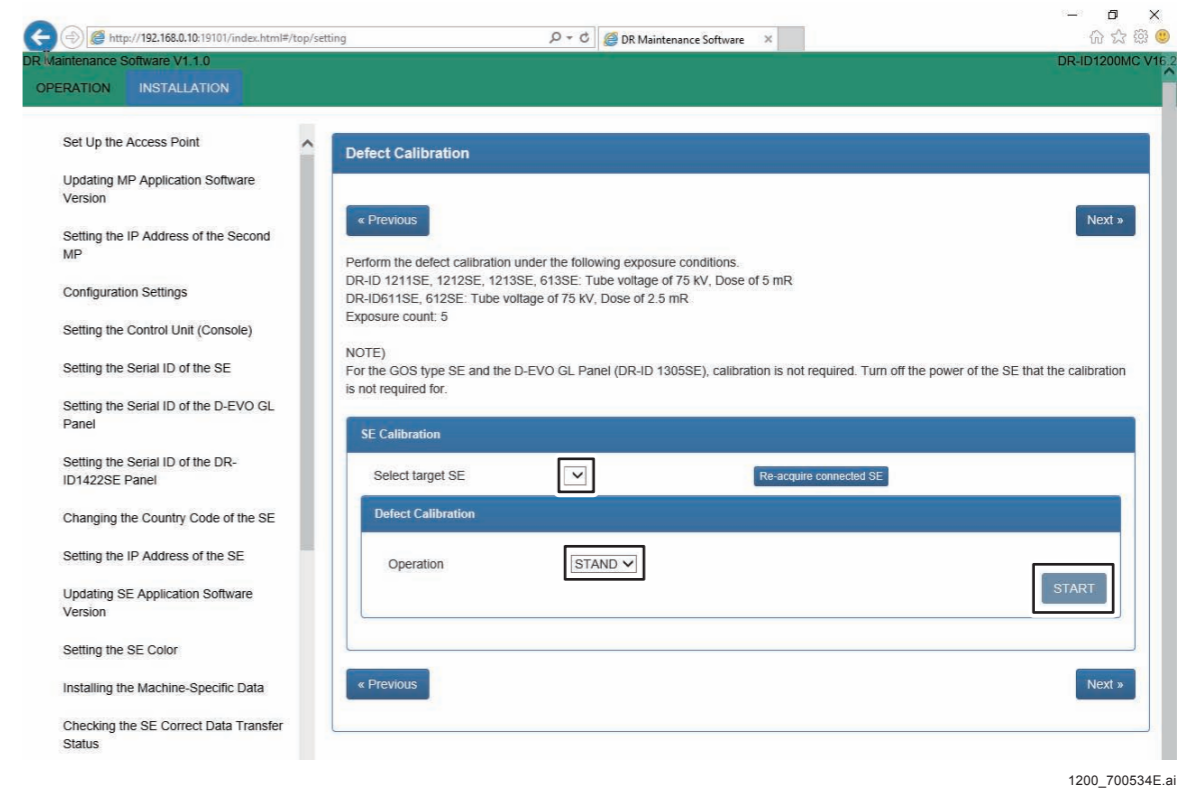
1200_700534E.ai

◆ *NOTE* ◆

If you click [START] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [START] again after an interval of approx. 30 seconds, in this case.

◇ *REFERENCE* ◇

Whether the calibration is successfully completed appears after completion. An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

If exposing preparations are completed, the [Ready] button will be displayed in green in the pop up window.

Defect Calibration [N120053]

Ready

Cancel   OK

1200_700549E.ai
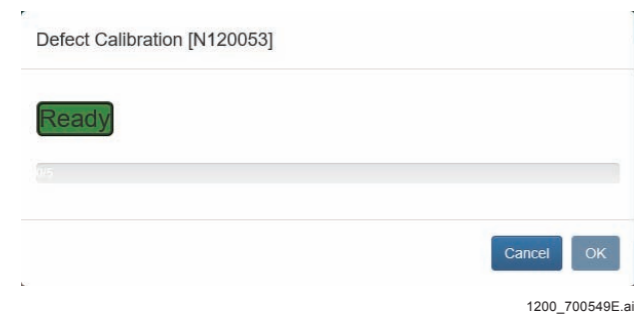
◆ NOTE ◆

If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

(2) Expose 5 times with the following condition.

◆ NOTE ◆

Perform the next exposure every time after [Ready] is lit up with the green button because the [Ready] disappears every exposure.

- 1305SE : Tube voltage of 75 kV, Dose of 5 mR

Images for defect correction data generation (5 frames) are read from the SE (FPD).

◆ INSTRUCTION ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◆ NOTE ◆

When performing defect calibration, make sure to have the exposure conditions such as the correct dose setting (kV, mA, msec, SID) for defect correction calibration.

If defect correction calibration is performed by using the exposure conditions for gain correction, a defect is expanded and its size cannot be detected correctly. As a result, because the number of the defects becomes an erroneous value and the defect size is increased more than expected, a calibration error may occur.

◇ REFERENCE ◇

Exposure condition examples for exposing an IP to a dose of 5 mR are shown below. (1305SE)

SID:	*215 cm*
Voltage:	*75 kV*
Amperage:	*50 mA*
Time:	*90 msec*

When the defect correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.

◆ NOTE ◆

If "NG" appeared, check the following.
- *Exposure condition*
- *Exposure field is the entire SE.*

◆ NOTE ◆

If the calibration failed, restart the SE and retry from connection check.

(3) Click [OK].

Defect Calibration [N120053]

Ready

5/5

Suceeded

Cancel   OK

1200_700550E.ai

(4) Click [Next].

Appendix 5.1.2   Lag Calibration

◇ *REFERENCE* ◇

The focal size of the X-ray high voltage generator may be either large or small.

(1)   Select a SE to be calibrated and set an operation with "Operation Setting", and then click [START] of "Lag Calibration".
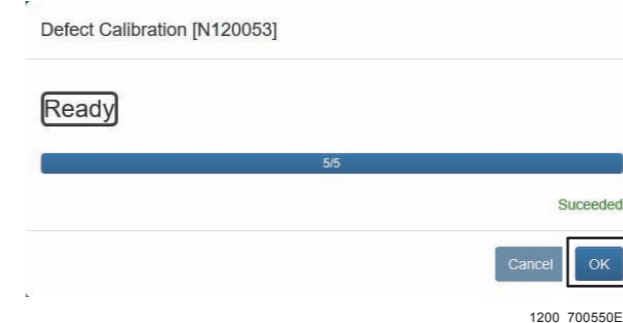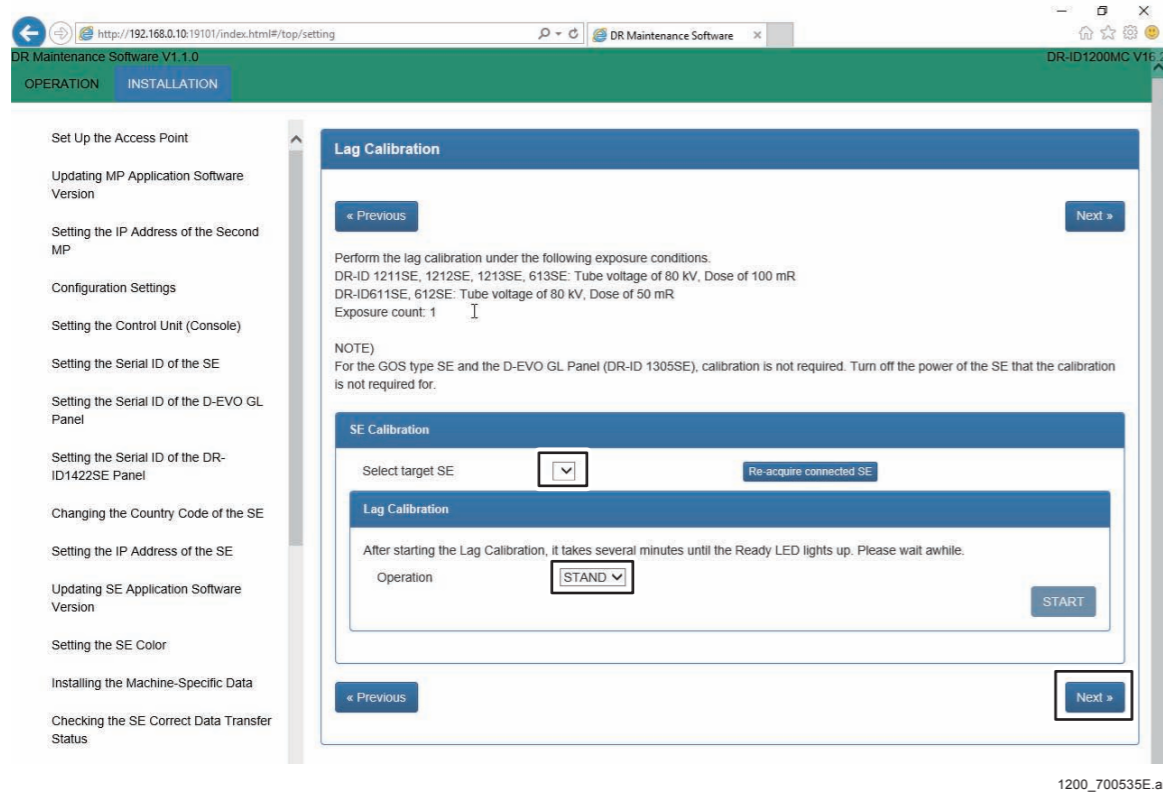

1200_700535E.ai

◆ *NOTE* ◆

If you click [START] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [START] again after an interval of approx. 30 seconds, in this case.

◇ *REFERENCE* ◇

Whether the calibration is successfully completed appears after completion.
An error code is displayed in some cases. Refer to the Troubleshooting manual and take appropriate countermeasures.

After about 2 minutes, the [Ready] button will be displayed in green in the pop up window.

1200_700551E.ai

◆ *NOTE* ◆

If you perform exposure before [Ready] is lit up with the green button, calibration will fail and create an abnormal image.

(2)   Expose 1 time with the following condition.

-   1305SE : Tube voltage of 80 kV, Dose of 100 mR

Images for lag correction data generation (7 frames) are read from the SE (FPD). Images of seven frames are read with a predetermined interval for one exposure. The number of image reads is displayed in the format of "n/7".

1200_700552E.ai

◆ *INSTRUCTION* ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◆ *NOTE* ◆

- *Record the exposure conditions when lag calibration is executed for the first time, and subsequently, always make exposures under the same conditions.*
  This is to compare the lag amounts serially and analyze deterioration of the SE (FPD).
- *If irradiation of 100 kV or over cannot be performed with the condition of the tube voltage of 80 kV and the maximum exposure time of 200 msec, move the X-ray tube and the panel close to each other as much as possible (to the limit which the whole panel is irradiated with X-ray).*
  If irradiation of 100 kV or over still cannot be performed with this condition, increase the tube voltage to 100 kV.
  If the irradiation does not become 20 mR or over with the aforementioned condition, you have to perform the lag calibration by using another X-ray equipment.

◇ *REFERENCES* ◇

- *Exposure condition examples for exposing an IP to a dose of 100 mR are shown below. (1305SE)*
    SID: *215 cm*
    Voltage: *80 kV*
    Amperage: *500 mA*
    Time: *180 msec*
- *If the mA is not 500 for the X-ray system, exposure condition examples for exposing an IP are shown below.*
    SID: *180 cm*
    Voltage: *80 kV*
    Amperage: *320 mA*
    Time: *200 msec*

When the log correction data is automatically generated and stored in the HDD, "Succeeded" appears after completion.

◆ *NOTE* ◆

If "NG" appeared, check the following.
- *Exposure condition*
- *Exposure field is the entire SE.*

◆ *NOTE* ◆

If the calibration failed, restart the SE and retry from connection check.

(3) Click [OK].

Lag Calibration [N120053]

Ready

7/7

Suceeded

Cancel   OK

1200_700553E.ai
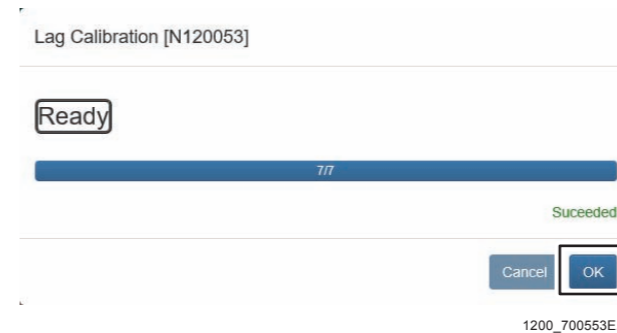
(4) Click [Next].

(5) Select "Shut Down" in the menu of the DX Console.

(6) Check that the READY LED (green) of the SE flashes and becomes unlit, and the calibration has been completed when the system terminates. Then, wait for the DX Console being powered OFF.

(7) Remove the battery and SE cable from the SE, and turn OFF the power of the SE.

(8) Connect the battery and SE cable to the SE, and turn ON the power of the DX Console.

Appendix 5.1.3 Checking the Calibration Results

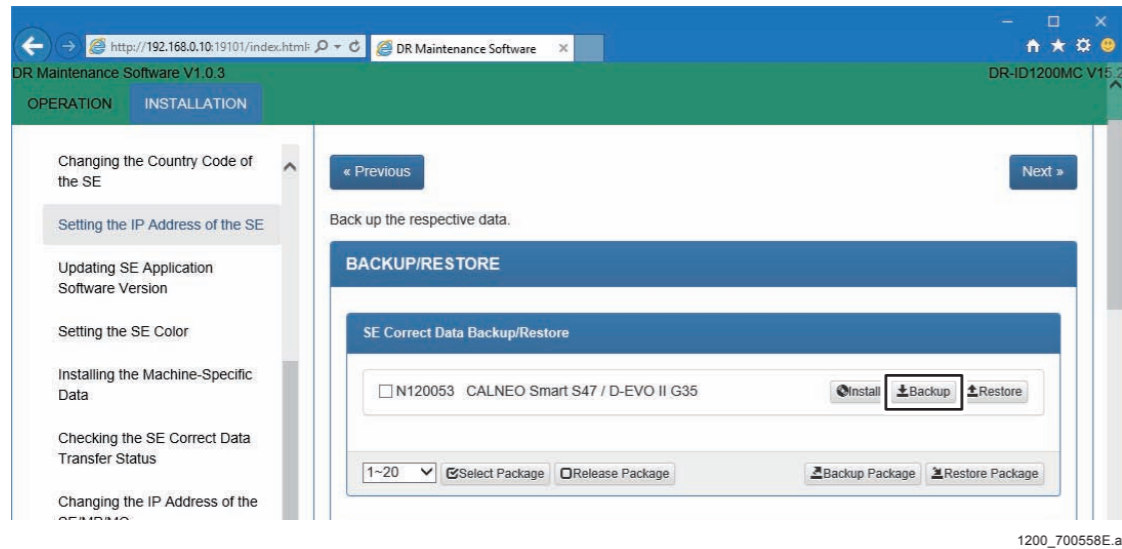The calibration results can be checked after the calibration.

(1) Click [Backup] in the "SE Correct Data Backup/Restore" in the "BACKUP/RESTORE", and back up the SE correction data.

1200_700558E.ai

◇ *REFERENCE* ◇

To backup correct data of multiple SEs together, click [Backup Package].

(2) Open the files written below with the Word Pad.

- Defect calibration: DV.txt

  If the data do not line more than or equal to 19 lines for the 14 x 17 inch SE or 23 lines for the 17 x 17 inch SE, the restoration of the machine-specific data or the defect calibration failed.

Check that the time stamp of LagData.txt is newer than the time stamp of GAIN00.xxx in the opt/config/machine/correct/panel folder.**

When the time stamp of LagData.txt is older, the lag calibration has not been performed.

◇ *REFERENCE* ◇

The description of the defect calibration is an example of the IMAGE READING MODE in DR Maintenance Software that is "High-speed Mode".
If two lines appeared for "Standard Mode", there is no problem.

Appendix 5.2 RU PC-TOOL

Appendix 5.2.1 Defect Calibration

⚠ *CAUTION*

Keep to the exposure interval defined in the Operation Manual of the X-ray high voltage generator when making continuous exposures. An interval of 1 minute or longer normally needs to be taken.

◆ *NOTE* ◆

- *When performing the defect calibration after the gain calibration, do not move the tube. Keep the same position of the tube as when the gain calibration was performed. If the tube position is changed, a line defect is wrongly detected at the upper and lower ends of the CENTER panel unit. This may cause an artifact or a defective at the boundary of the panel unit.*
- *If an artifact has occurred, take the following measure.*
  - *For TOP panel unit or BOTTOM panel unit*
    Perform the full calibration for the target panel unit.
  - *For CENTER panel unit*
    Perform the full calibration and marker calibration.

◇ *REFERENCE* ◇

The focal size of the X-ray high voltage generator may be either large or small.
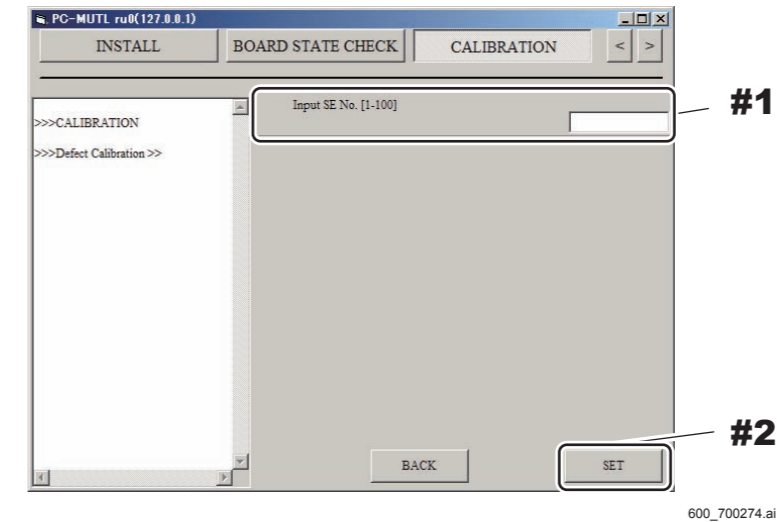
(1) Click [Defect Calibration >>] on the Calibration window.

The Defect Calibration >> window opens.

(2) Input the SE No. for calibration into [Input SE No.] and click [SET].

#1 Input: SE No.
#2 Click: [SET]

Defect Calibration >> window

600_700274.ai

(3) Click [Operation Setting] and set the operative method.

#1 Click: [Operation Setting]

Defect Calibration >> window <Display example>

600_700179E.ai

(4) Click [Start].

"OK" appears in the result display area upon completion of the preparation for exposure.

◆ *NOTE* ◆

If you click [Start] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [Start] again after an interval of approx. 30 seconds, in this case.

(5) Click [Display ShotRdy] and confirm display of "SHOT_READY" in the result indication column.

◆ *NOTE* ◆

If "NOT_READY" is indicated, wait for approx. 5 seconds, try again, and proceed to the next step (exposure) after "SHOT_READY" is indicated.
When exposure is executed in "NOT_READY" status, the calibration fails and an abnormal image is generated.

(6) Expose 5 times with the following condition.
- 1305SE : Tube voltage of 75 kV, Dose of 5 mR

Images for defect correction data generation (5 frames) are read from the SE (FPD).

◆ *INSTRUCTION* ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◇ *REFERENCE* ◇

Exposure condition examples for exposing an IP to a dose of 5 mR are shown below. (1305SE)

SID:	*215 cm*
Voltage:	*75 kV*
Amperage:	*50 mA*
Time:	*90 msec*

◇ *REFERENCE* ◇

Clicking [Progress Indicator], you can know the number of exposures.
The count is displayed in the format of "n/5" in the result display area after n-times of exposures.

(7) Click [Create a Defect Data].

The confirmation dialogue box of "Are you sure?" opens.

◇ *REFERENCE* ◇

If you click [Create a Defect Data] when less than five exposures have been made, "Error!!" appears in the result display area. Continue to make exposures until five exposures are made, and click [Create a Defect Data], in this case.

(8) Click [OK].

When the defect correction data is generated and stored in the HDD, [OK] appears in the result display area.

(9) Click [BACK] to return to the Calibration window.

Appendix 5.2.2   Lag Calibration

◇ *REFERENCE* ◇

The focal size of the X-ray high voltage generator may be either large or small.

(1)   Click [Lag Calibration >>] on the Calibration window.

The Lag Calibration >> window opens.

(2)   Input the SE No. for calibration into [Input SE No.] and click [SET].
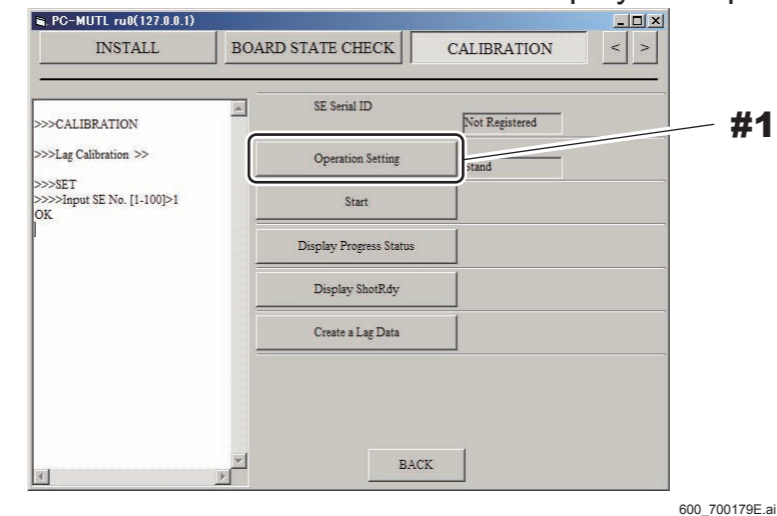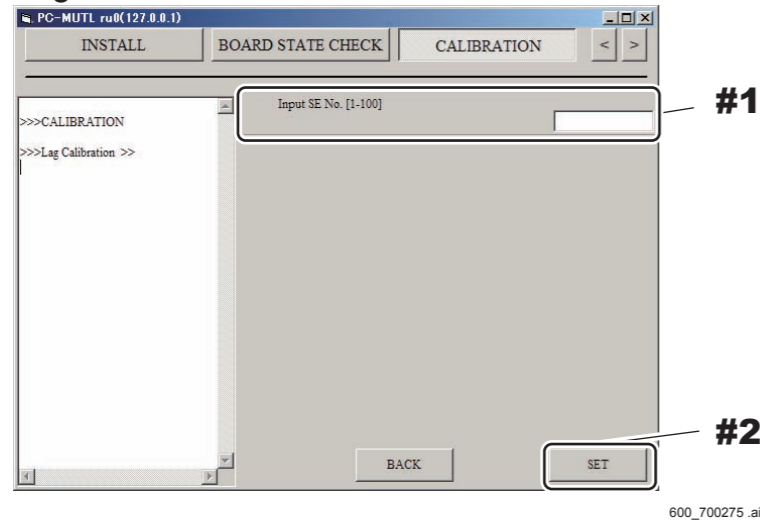
#1   Input: SE No.
#2   Click: [SET]
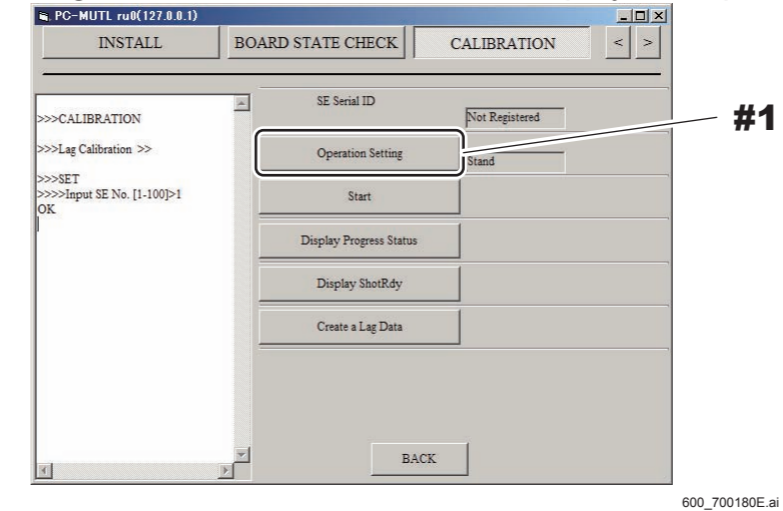
Lag Calibration >> window

600_700275 .ai

(3)   Click [Operation Setting] and set the operative method.

#1   Click: [Operation Setting]

Lag Calibration >> window   <Display example>

600_700180E.ai

(4)   Click [Start].

"Please wait for a few minutes" appears.

◆ *NOTE* ◆

If you click [Start] during automatic offset update (for 30 seconds every approx. 10 minutes), "Error 12700 currently unavailable" appears. Click [Start] again after an interval of approx. 30 seconds, in this case.

(5)   Click [OK].

"OK" appears in the result display area approx. 2 minutes later.

(6)   Click [Display ShotRdy] and confirm display of "SHOT_READY" in the result indication column.

◆ *NOTE* ◆

If "NOT_READY" is indicated, wait for approx. 5 seconds, try again, and proceed to the next step (exposure) after "SHOT_READY" is indicated.

When exposure is executed in "NOT_READY" status, the calibration fails and an abnormal image is generated.

(7)   Expose 1 time with the following condition.

-   1305SE : Tube voltage of 80 kV, Dose of 100 mR

Images for lag correction data generation (7 frames) are read from the SE (FPD). Images of seven frames are read with a predetermined interval for one exposure. Clicking [Display Progress Status], you can know the number of image reads. The count is displayed in the format of "n/7" in the result display area after n-times of reads.

◆ *INSTRUCTION* ◆

Set the exposure time to 200 msec or less. Exposure for longer than 200 msec cannot be made, since the maximum exposure time is inherently specified as 200 msec.

◆ *NOTE* ◆

- *Record the exposure conditions when lag calibration is executed for the first time, and subsequently, always make exposures under the same conditions.*
  This is to compare the lag amounts serially and analyze deterioration of the SE (FPD).
- *If irradiation of 100 kV or over cannot be performed with the condition of the tube voltage of 80 kV and the maximum exposure time of 200 msec, move the X-ray tube and the panel close to each other as much as possible (to the limit which the whole panel is irradiated with X-ray).*
  If irradiation of 100 kV or over still cannot be performed with this condition, increase the tube voltage to 100 kV.
  If the irradiation does not become 20 mR or over with the aforementioned condition, you have to perform the lag calibration by using another X-ray equipment.

◇ *REFERENCES* ◇

Exposure condition examples for exposing an IP to a dose of 100 mR are shown below. (1305SE)

SID:	*215 cm*
Voltage:	*80 kV*
Amperage:	*500 mA*
Time:	*180 msec*

The following shows an example of the exposure conditions for the X-ray system where mA is not 500.

SID:	*180 cm*
Voltage:	*80 kV*
Amperage:	*320 mA*
Time:	*200 msec*

(8) Click [Create a Lag Data].

The confirmation dialogue box of "Are you sure?" opens.

(9) Click [OK].

When the lag correction data is generated and stored in the HDD, [OK] appears in the result display area.

(10) Select "Shut Down" in the menu of the DX Console.

(11) Check that the READY LED (green) of the SE flashes and becomes unlit, and the calibration has been completed when the system terminates. Then, wait for the DX Console being powered OFF.

(12) Turn OFF the power of the SE.

(13) Turn ON the power of the SE, then turn ON the power of the DX Console.

Appendix 5.2.3 Checking the Calibration Results

The calibration results can be checked after the calibration.

(1) Start up the RU PC-TOOL and back up the CORRECT DATA.

☞ {MU:1.13_BACKUP}

(2) Open the files written below with the Word Pad.

- Defect calibration: DV.txt

  If the data do not line more than or equal to 23 lines for the 17 x 17 inch panel unit, the restoration of the machine-specific data or the defect calibration failed. Restore the machine-specific data or perform the defect calibration again.

◇ *REFERENCE* ◇

The description of the defect calibration is an example of the IMAGE READING MODE in EDIT CONFIGURATION that is "High-speed Mode".

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DR-ID 1300 / DR-ID 1300PU *Service Manual*

Appendix 6. Lattice

◇ *REFERENCE* ◇

*The lattice is not included in the machine components.*

The distributors locally select and purchase the lattices which comply with the following specifications.
The distributors are responsible for the quality of the lattice they select and their connectivity to the DR-ID 1300 system.
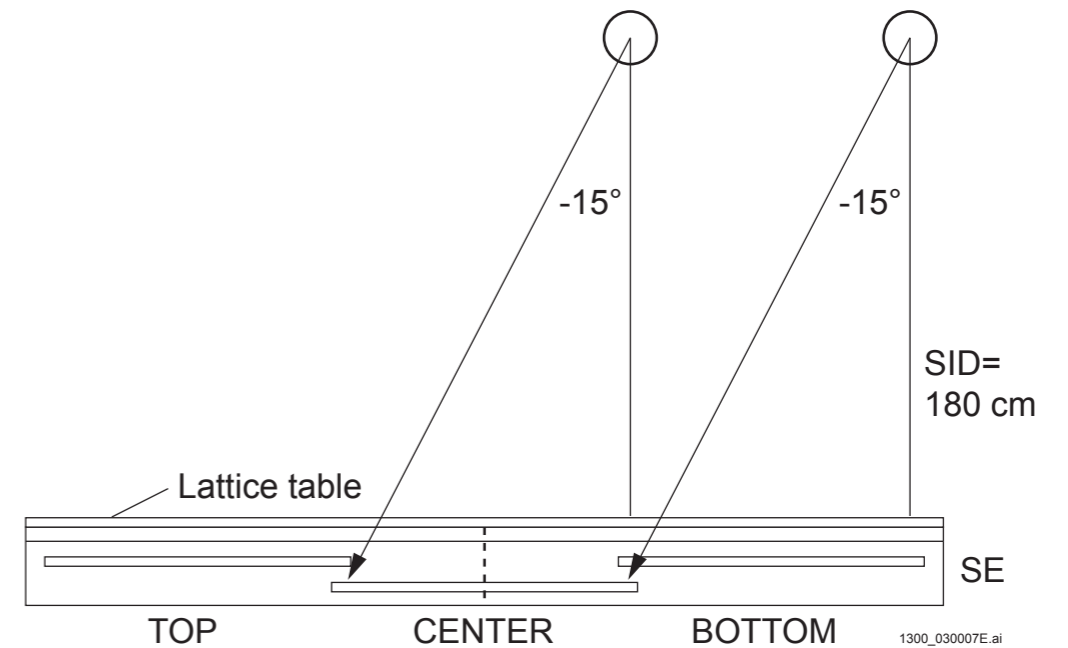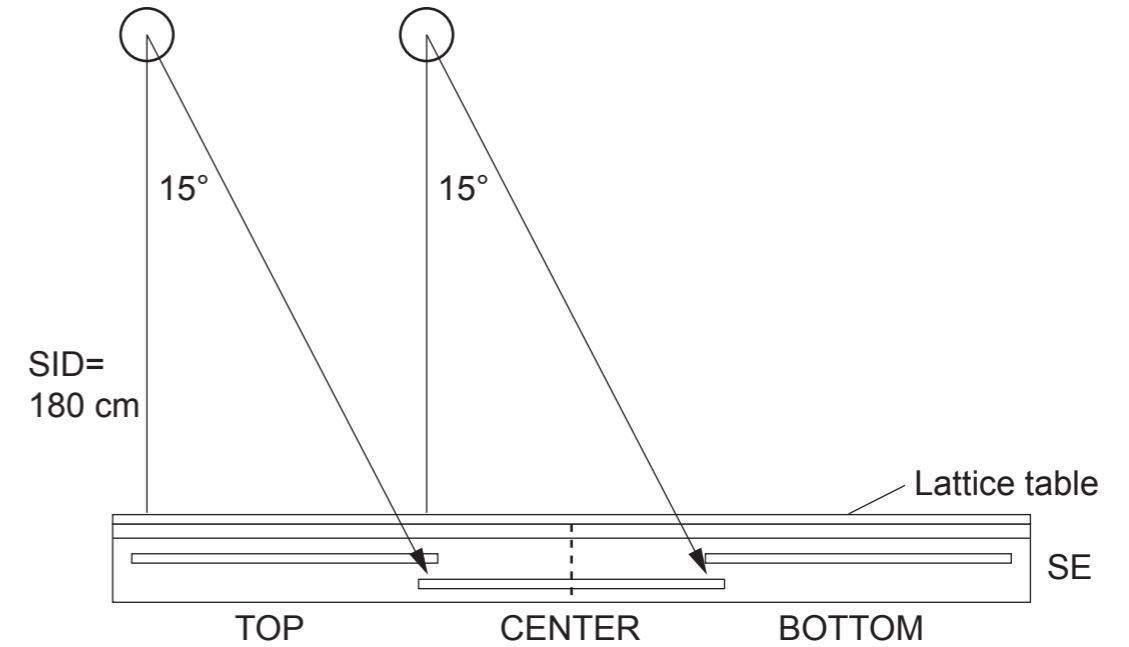- Lattice interval: 50 mm ± 1 mm
- Lattice member diameter: 1 mm ± 0.2 mm
- Oblique direction angle of X-ray: 15 degrees or less

■ Procedure for the quality of the lattice

(1) **Set the position between the lines of the lattice scale so that they are positioned within ±5 mm from the longitudinal center of the long panel.**


5 mm   5 mm

Lattice scale

1300_030006E.ai
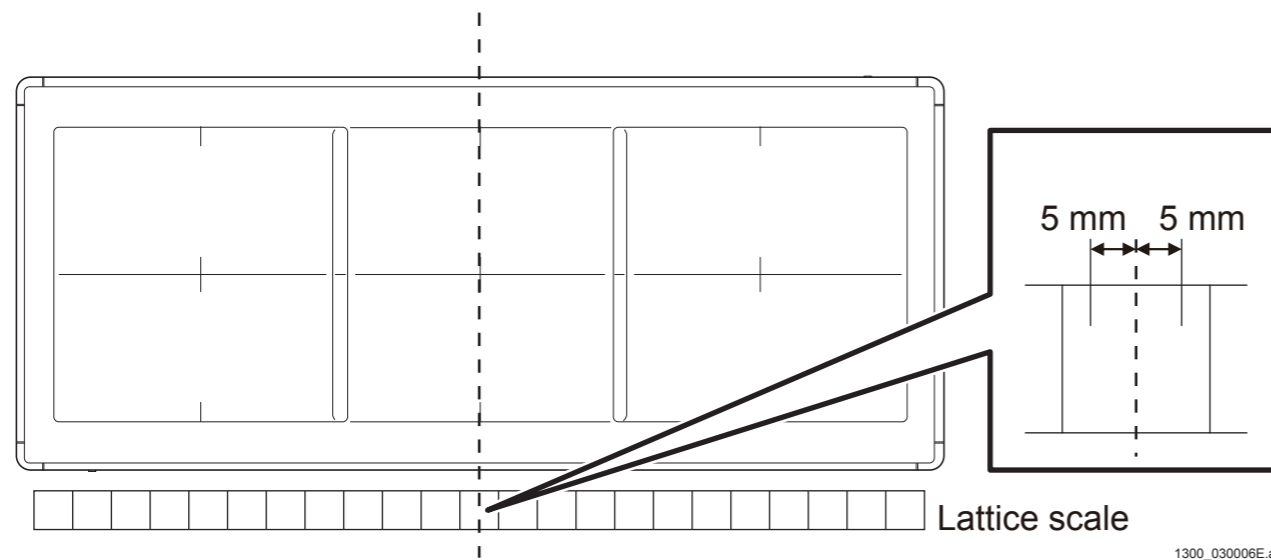
(2) **Set the X-ray irradiation angles to +15° and -15° in relation to two respective seams on the panel to take an overall exposure (four times of exposure in total).**
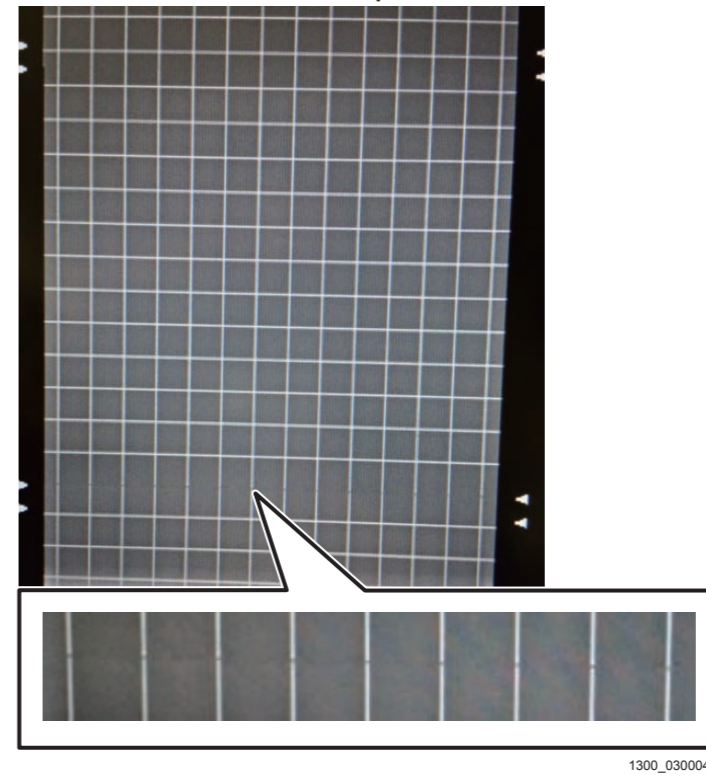

15°   15°

SID= 180 cm

Lattice table

SE

TOP   CENTER   BOTTOM

-15°   -15°

SID= 180 cm

Lattice table

SE

TOP   CENTER   BOTTOM

1300_030007E.ai

(3) Check that the image of the entire exposure area contains all the lines of the lattice and no blurring in the vertical direction.
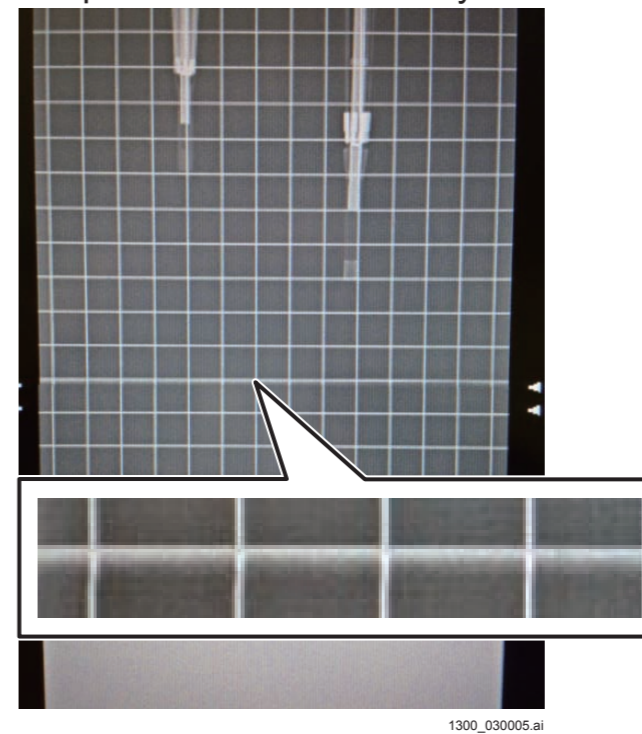
- The lattice is imaged correctly

1300_030003.ai
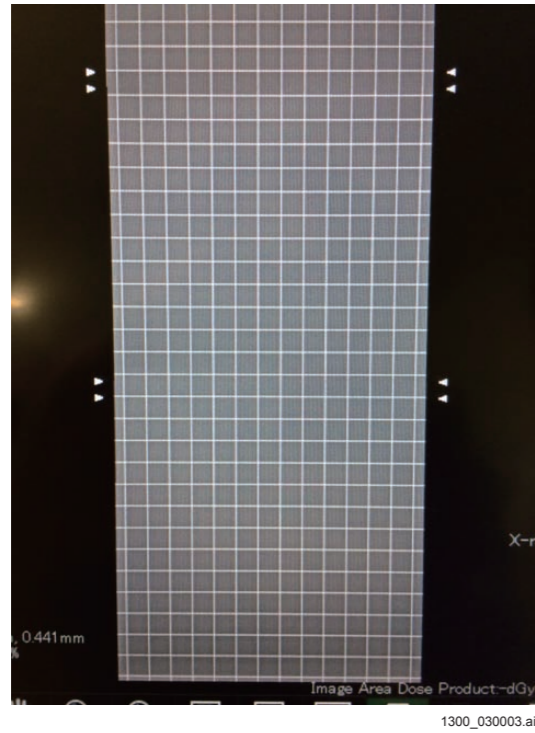
- Some lattices overlap each other and disappear

1300_030004.ai

- A part of lattice is vertically blurred

1300_030005.ai

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Appendix 7. Installing the RU PC-TOOL (MC V3.x or Earlier)

■ Installing the RU PC-TOOL

(1) Turn ON the power of the machine.

◆ *INSTRUCTION* ◆

When the CL power is turned ON for the first time, do so after one of two SE's, if connected, is removed.
This is because the default IP address (IP address when shipped out from the factory) which is registered in the SE is the same (192.168.0.30) for all SE's.
If two SE's are connected therefore, the SE cannot be identified due to the duplicate address, resulting in an error.

◇ *REFERENCES* ◇

If the Wake on LAN setting is not completed, turn ON the power in the following order:
(1) Turn ON the MP power.
(2) Turn ON the CL power.

1200_700143E.ai

(2) Exit from the CL software, and display the normal Windows screen.

◇ *REFERENCE* ◇

When you click the Shut Down button of the CL software, the pop-up menu appears for prompting to exit from the system. When you click [OK] in the pop-up menu while pressing the shift key on the keyboard, the CL software terminates and the Windows screen opens.
Keep pressing the shift key until the message of termination processing in progress disappears.

#1   Click: [Shut Down]
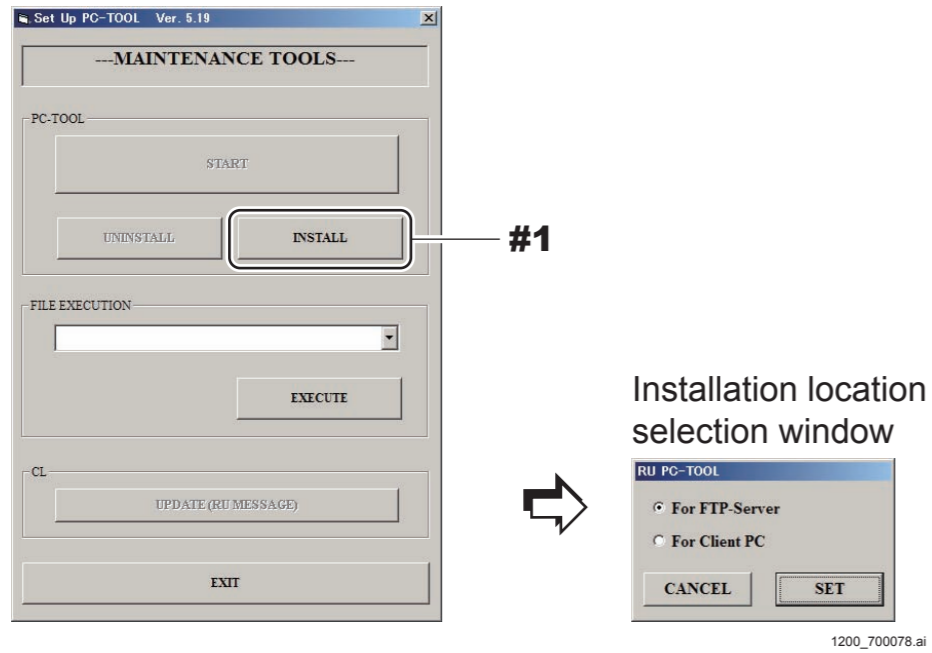#2   Click: [OK] (click while pressing the shift key on the keyboard)
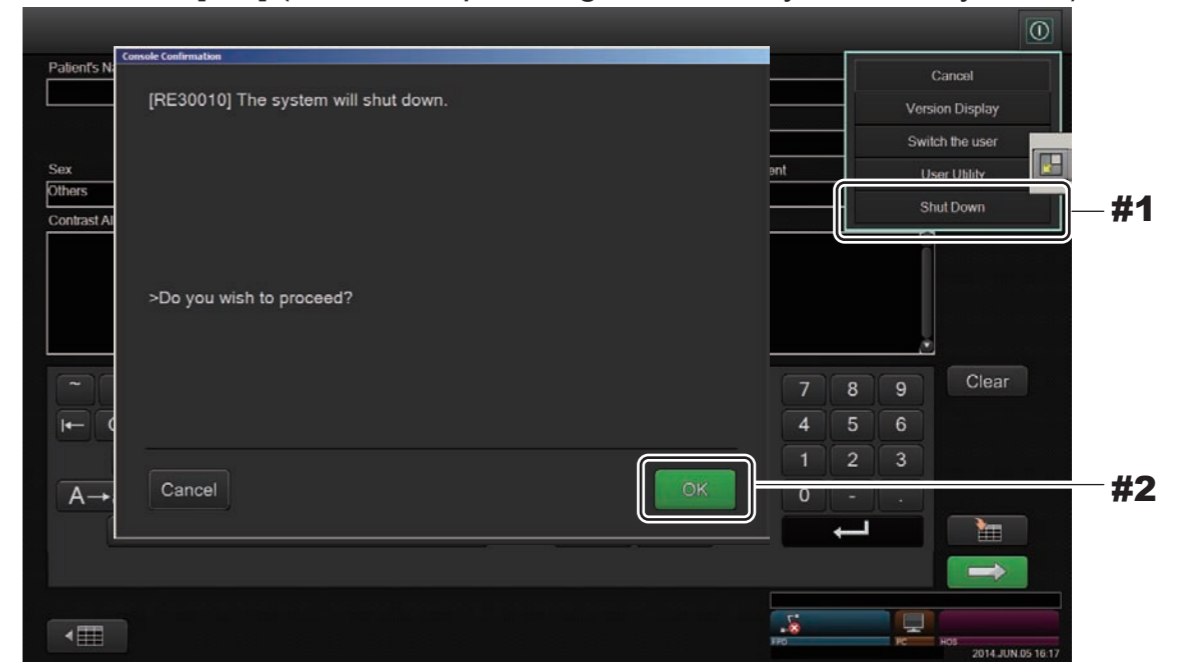
(3) Insert the install disk into the DVD drive of the CL.

Upon inserting the install disk into the DVD drive, the "Set Up PC-TOOL" window automatically starts.

(4) Click [INSTALL].

A window for selecting the installation location opens.
#1   Click: [INSTALL]
Set Up PC-TOOL window

Installation location
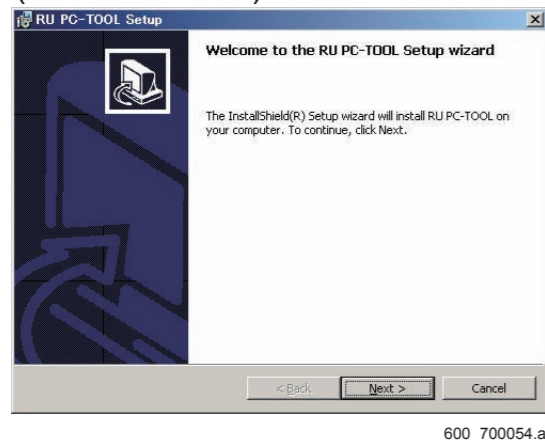selection window

1200_700078.ai

(5) Check that the installation location is "For FTP-Server", and click [SET].

RU PC-TOOL Setup start window (wizard window) opens.
#1   Verify: For FTP-Server
#2   Click: [SET]

Installation location
selection window

RU PC-TOOL Set Up start window
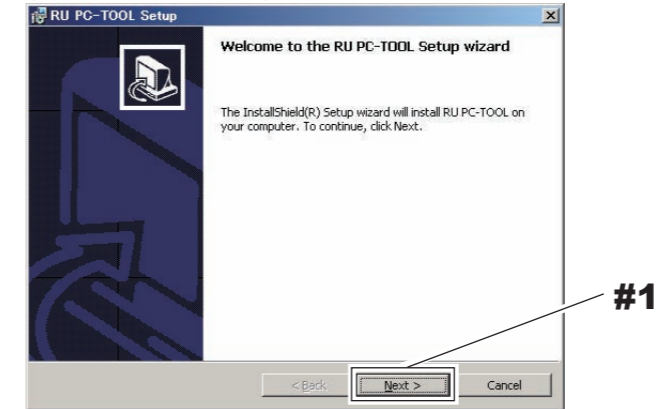(wizard window)

600_700054.ai
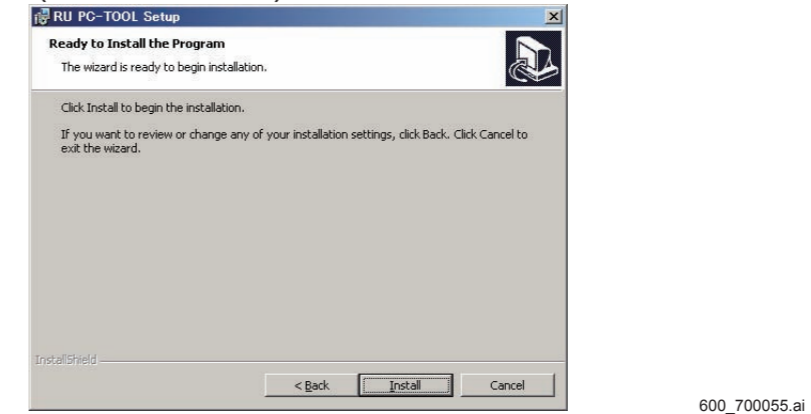
(6) Click [Next].

The window appears, prompting to start the installation (wizard window).
#1   Click: [Next]

RU PC-TOOL Set Up start window
(wizard window)

Window prompting to install
(wizard window)

600_700055.ai

(7) Click [Install] and start installation.

Upon completion of the installation, the RU PC-TOOL Set Up window (wizard window) opens.

(8) Click [Finish].

Upon clicking [Finish], the Command Prompt window opens. When the Command Prompt window appears, press any key on the keyboard.

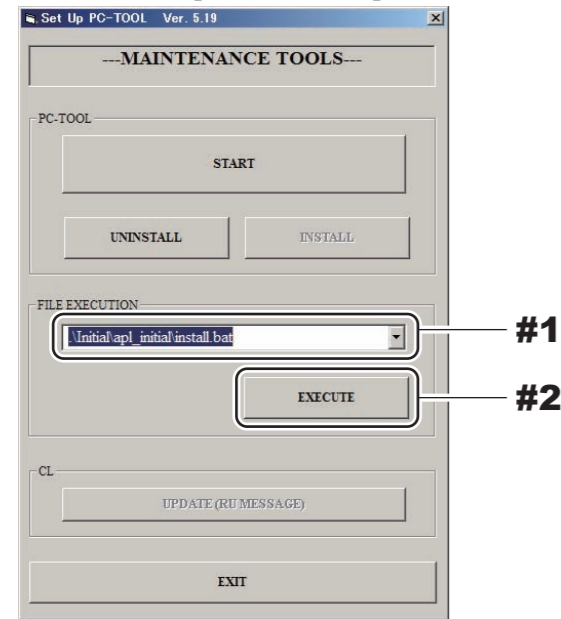The Command Prompt window appears three times.

■ Install the MC Application

(1) Select ".\Initial\apl_initial\install.bat" from the "FILE EXECUTION" pull-down menu on the "Set Up PC-TOOL" window , and then click [EXECUTE].

The MC Installer dialog opens.
#1 Select: .\Initial\apl_initial\install.bat
#2 Click: [EXECUTE]

(2) Click [OK].

The MC application is installed and the dialog to confirm the installation opens.
#1 Click: [OK]
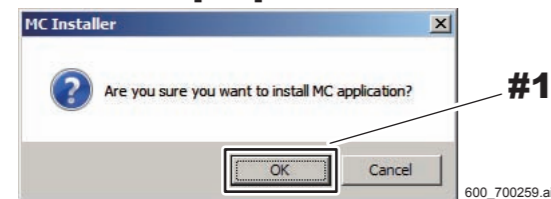
(3) Click [OK].

#1 Click: [OK]

(4) Click [OK].

The "Welcome to the WinPcap 4.1.3 Setup Wizard" window opens.
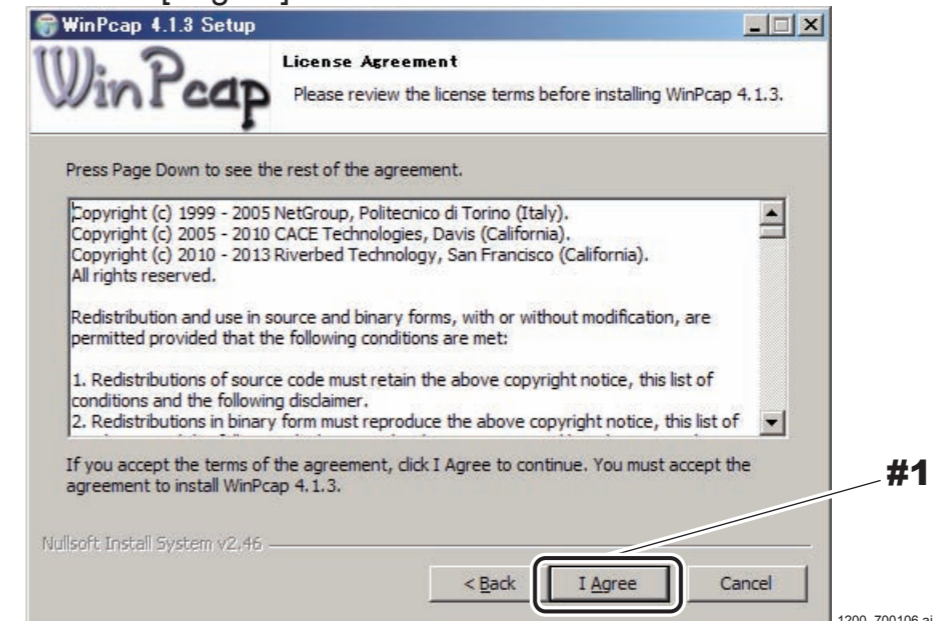
(5) Click [Next].

#1 Click: [Next]

The "License Agreement" window opens.

(6) Click [I Agree].

#1 Click: [I Agree]
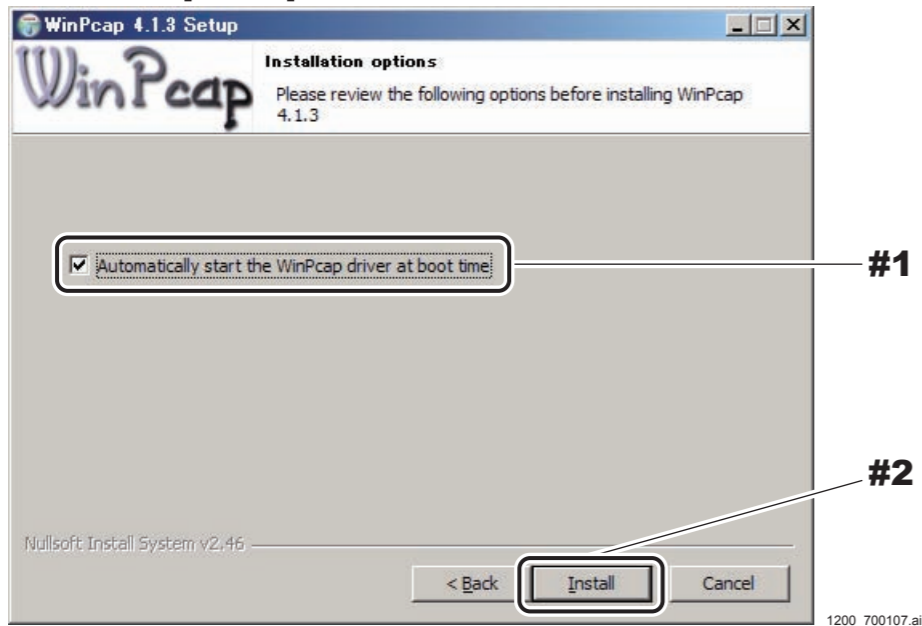
The "Installation options" window opens.

(7) Confirm that the "Automatically start the WinPcap driver at boot timecheck box is checked, and then click [Install].
#1 Verify: utomatically start the WinPcap driver at boot time
#2 Click: [Install]

1200_700107.ai

The "Completing the WinPcap 4.1.3 Setup Wizard" window opens.

(8) Click [Finish].
#1 Click: [Finish]

1200_700108.ai

(9) Click [OK].
Return to the desktop screen.
#1 Click: [OK]

600_700260.ai
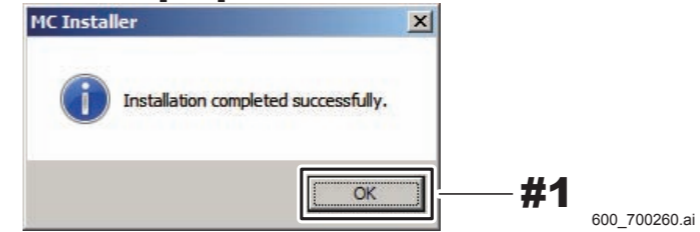
(10) Remove the install disk from the DVD drive.

(11) Restart the CL.

◆ *NOTE* ◆

If any error occurs during installation, reinstall the MC application after uninstalling it. Follow the procedures below to uninstall the MC application.

1. Insert the install disk into the DVD drive.
 The "Set Up PC-TOOL" window starts.
2. Select ".\Initial\apl_initial\install.bat" from the "FILE EXECUTION" pull-down menu, and then click [EXECUTE].
 The "Are you sure you want to uninstall MC application?" dialog appears.
3. Click [OK].

Appendix 8. Installing the Internet Explorer 11

To use the DR Maintenance Software in Windows 7, Internet Explorer 11 needs to be installed.

■ Preparations

Installing the MC application.

☞ **{IN1:10.2_Installing the MC Application/DR Maintenance Software}**

■ Installing the Internet Explorer 11

(1) Turn ON the CSL-PC power.

(2) Within a period of 3 seconds after the initial window opens, sequentially click the upper left and upper right corners of the window.

The "IIP Service Utility" window opens.

Click the upper left corner and then the upper right corner.

DXL04010001.ai

(3) Insert the install disk into the DVD drive of the CSL-PC.

◆ INSTRUCTION ◆

Use the following installation media.
Internet Explorer 11 installation media: 114Y2312721A00

(4) When the following window opens, press any key on the keyboard.
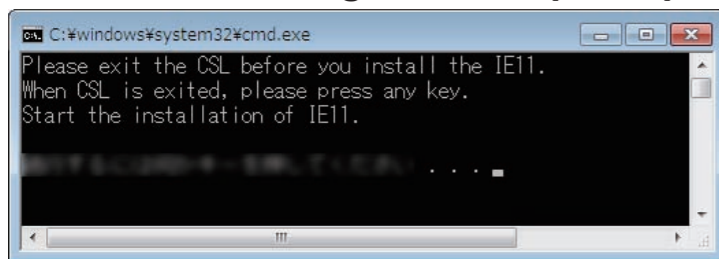
1200_7C0014.ai

(5) Confirm the display contents on the following window, and press the <1> key.
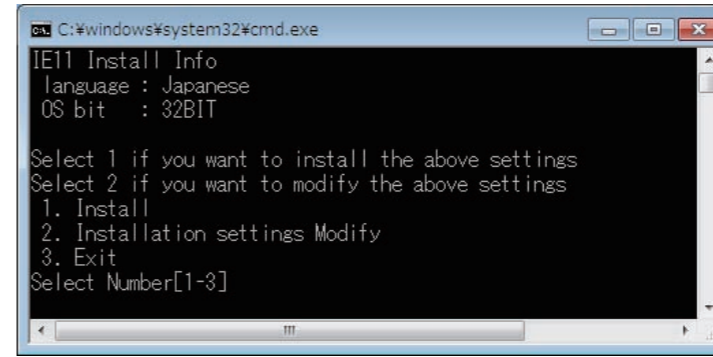
1200_7C0015.ai

◆ INSTRUCTION ◆

To change the installation contents, press the <2> key, and change the OS bit count and OS language.

- OS bit count selection window

1200_7C0016.ai

- OS bit count selection window

1200_7C0017.ai

The installation processing starts.

◆ *INSTRUCTION* ◆

Restarting might be generated a maximum of three times during the installing.
After restarting, execute steps 2 and 4.

The "E11 Install Success" appears.

(6) End End installation, and press any key on the keyboard.

```
IE11 Install step03 Start
IE11_Install_Step03 Success.


==============================
=                            =
=    IE11 Install Success.    =
=                            =
==============================
```
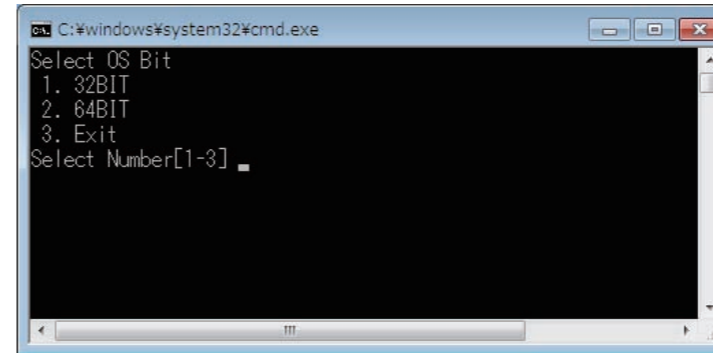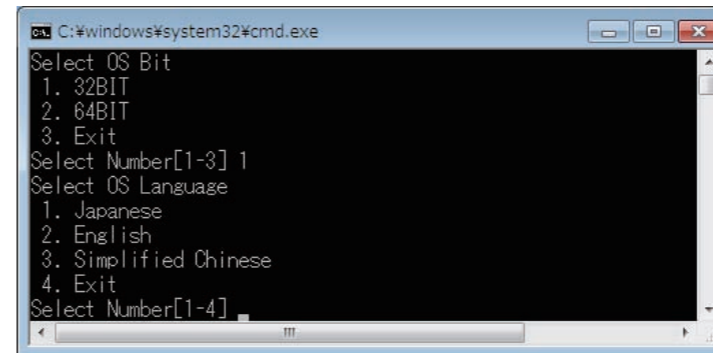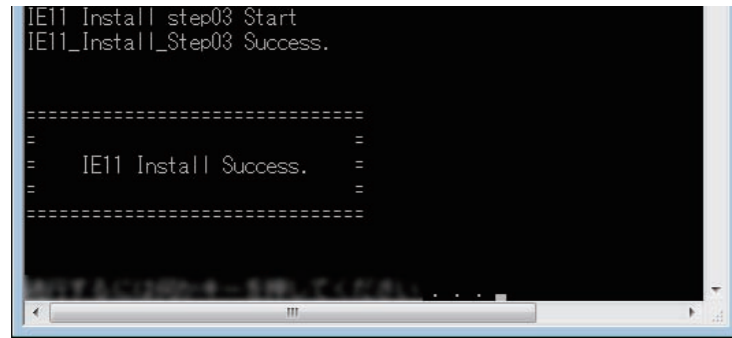
1200_7C0018.ai

(7) Restart the PC.

■ **Errors and workaround methods when installing**

● **If an 1058 error is generated by the installing (Step 01) of a compulsory update program before the installing of IE11.**

```
C:\windows\system32\cmd.exe
IE11 Install Info
language : Japanese
OS bit   : 32BIT

Select 1 if you want to install the above settings
Select 2 if you want to modify the above settings
1. Install
2. Installation settings Modify
3. Exit
Select Number[1-3] 1
IE11 Install step01 Start
Windows6.1-KB2533623-x86.msu install start
Windows6.1-KB2533623-x86.msu install Failure err=1058
Windows6.1-KB2670838-x86.msu install start
Windows6.1-KB2670838-x86.msu install Failure err=1058
Windows6.1-KB2729094-v2-x86.msu install start
Windows6.1-KB2729094-v2-x86.msu install Failure err=1058
Windows6.1-KB2731771-x86.msu install start
Windows6.1-KB2731771-x86.msu install Failure err=1058
Windows6.1-KB2786081-x86.msu install start
Windows6.1-KB2786081-x86.msu install Failure err=1058
Windows6.1-KB2834140-v2-x86.msu install start
Windows6.1-KB2834140-v2-x86.msu install Failure err=1058
IE11_Install_Step01 Failure.
Press any key to continue . . .
```

1200_7C0024.ai

If a Windows service "Windows Update(wuauserv)" required for applying a security patch is not started up, the 1058 error will occur, failing in installation. Move to "Control panel" - "Management tool" - "Service" to check if the "Windows Update" has started up.

● **If an error is generated by the installing (Step 01) of a compulsory update program before the installing of IE11.**

1200_7C0019.ai

Check the following Windows Update error code list, and do a workaround.
- Windows Update error code list
  https://support.microsoft.com/ja-jp/kb/938205

● **If an error is generated by the IE11 Install (Step02)**

1200_7C0020.ai

If the installing of IE11 has failed as per the following, verify the troubleshooting, and do a workaround.
- Troubleshooting for when the installing of IE11 has failed
  https://support.microsoft.com/ja-jp/kb/2872074

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● **If an error is generated by the installing (Step 03) of a compulsory update program after the installing of IE11.**

```
C:\windows\system32\cmd.exe
IE11 Install Info
 language : Japanese
 OS bit  : 32BIT

Select 1 if you want to install the above settings
Select 2 if you want to modify the above settings
 1. Install
 2. Installation settings Modify
 3. Exit
Select Number[1-3] 1
IE11 Install step01 Start
Windows6.1-KB2533623-x86.msu install start
Windows6.1-KB2533623-x86.msu install Success
Windows6.1-KB2670838-x86.msu install start
Windows6.1-KB2670838-x86.msu install Success
Windows6.1-KB2729094-v2-x86.msu install start
Windows6.1-KB2729094-v2-x86.msu install Success
Windows6.1-KB2731771-x86.msu install start
Windows6.1-KB2731771-x86.msu install Success
Windows6.1-KB2786081-x86.msu install start
Windows6.1-KB2786081-x86.msu install Success
Windows6.1-KB2834140-v2-x86.msu install start
Windows6.1-KB2834140-v2-x86.msu install Success
IE11_Install_Step01 Success.
IE11 Install step02 Start
IE11 Install Start
IE11-Windows6.1-x86-ja-jp.exe install start
IE11-Windows6.1-x86-ja-jp.exe Install Success.
IE11 Install step02 Success
IE11 Install step03 Start
Windows6.1-KBXXXXXXX-x86.msu install start
Windows6.1-KBXXXXXXX-x86.msu install Failure err=55555
IE11_Install_Step03 Failure.
```
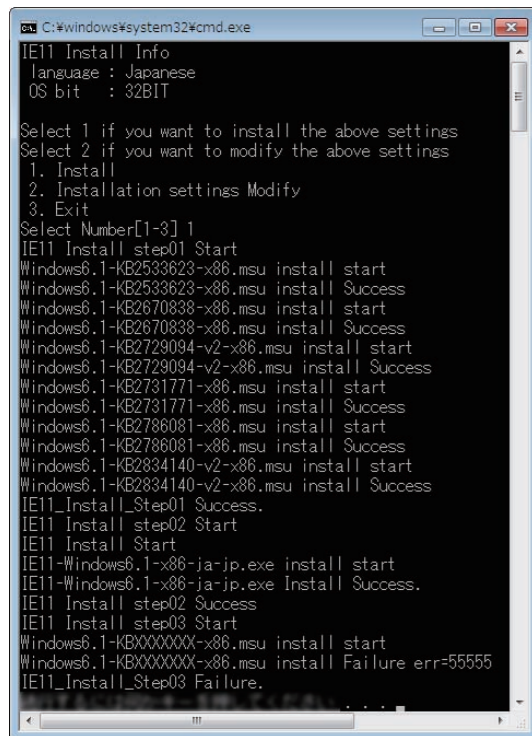
1200_7C0021.ai

Check the following Windows Update error code list, and do a workaround.
- Windows Update error code list
  https://support.microsoft.com/ja-jp/kb/938205

Appendix 9. Installing FPGA onto the New FPGA Memory Equipped SE

In SEs equipped with new FPGA memories, the FPGA software cannot be installed from MCs with MC V17.1 or earlier.
Therefore, the jig software (FlashUpdate.zip) which can install the FPGA into older MC compatible versions is provided for setting up the target SEs in older MC software environments.

■ Target OS

Windows7 and Windows10

■ FPGA version of target SE

Panel	FPGA Software
DR-ID 1201SE	0x0085 or later
DR-ID 1202SE	0x00A5 or later
DR-ID 1211SE	0x0095 or later
DR-ID 1212SE	0x00B5 or later
DR-ID 1213SE	0x00BD or later
DR-ID 1214SE	0x00CD or later
DR-ID 1305SE	0x00A5 or later

■ Target part

Service part numbers for RMV equipped with the new FPGA memory are shown in the table below.

Part	Current part number	New part number (New FPGA memory equipped part)
RMV65A service part for DR-ID 1200	857Y120057	857Y200090
RMV66A service part for DR-ID 1200	857Y120105	857Y200091
RMV65A service part for DR-ID 1300	857Y120005	857Y200089

■ Confirm the resolution details

● Confirm the timing

- When the target SE is connected to the MC
- When the SE's internal board is replaced with a board in the target service parts

● Confirm the MC software version

Check the installed MC software version. Then, perform the appropriate action explained in the table below.

MC Software	Action
V17.1 or later	No action is needed.
V16.7	Upgrade the MC to V17.1 or later. If version upgrade is impossible, no action is needed.
V15.1 to V16.6	Upgrade the MC to V17.1 or later. If version upgrade is impossible, install the FPGA by using the jig software.
V15.1 or earlier	Upgrade the MC to V17.1 or later. The jig software cannot be used for MC earlier than V15.1.

■ Installing FPGA software by using the jig software

● Preparations

If the FPGA needs to be installed by the jig software as a result of the "■ Confirm the resolution details", install the FPGA software as per the following procedures.

◆ NOTE ◆

When replacing the board with the new FPGA memory equipped service part, perform the board replacement procedure up to the step for "inputting the SE serial ID" as usual.

☞ **{MC:3.1.3_RMV65A Board}**

(1) Prepare jig software.

Decompress FlashUpdate.zip and copy the "FPGAUpdate" folder to the desktop.

(2) Make sure that the MC Manager has not started up.

(3) Connect the SE cable to the target SE.

● Install via the jig software

(1) Double-click on the jig software execution file FlashUpdate.exe.

◆ NOTE ◆

When the above file is executed, the firewall block message may appear. Place a checkmark to "Permission" and click [Allow access].

The startup window appears.
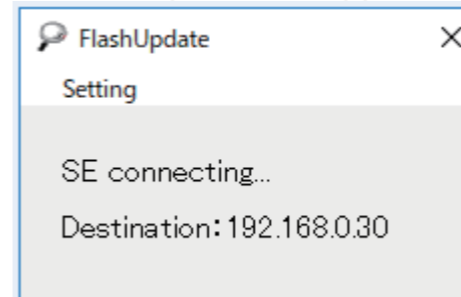
1300_70J001.ai

(2) When the SE's IP address is the default (192.168.0.30), the jig software is automatically connected to the panel and the next window appears.

◆ NOTE ◆

If the SE's IP address is not the default, select "IP Address" from "Setting".
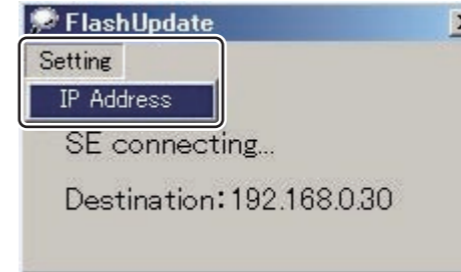
1300_70J002.ai

In the "IP Address Setting" window, enter the SE's IP address and click [Close].

1300_70J003.ai

When the jig software is connected to the SE, the next window automatically appears.

(3) Check the Serial ID (panel ID) and Version (current FPGA version), select the target MC version, and click [FPGA UPGRADE].
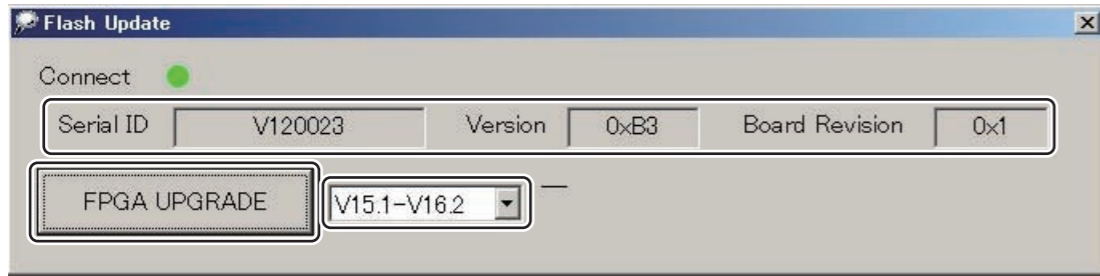
1300_70J004.ai

The progress status is displayed at the bottom right.
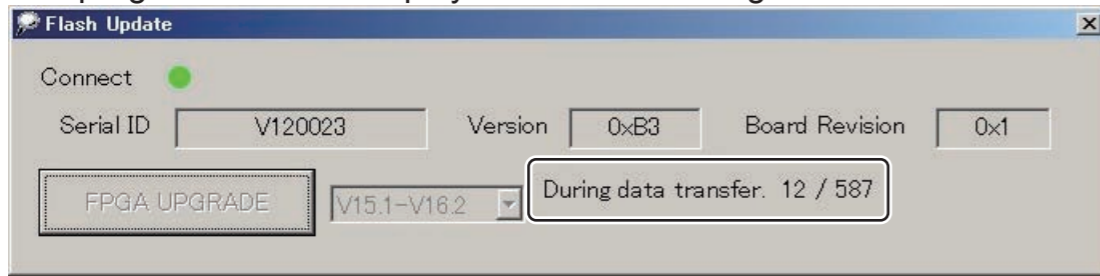
1300_70J005.ai

After about seven minutes, the installation is completed with the information below appearing.
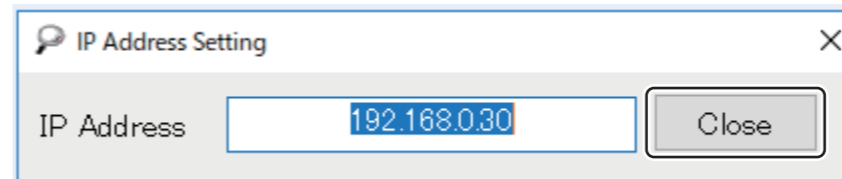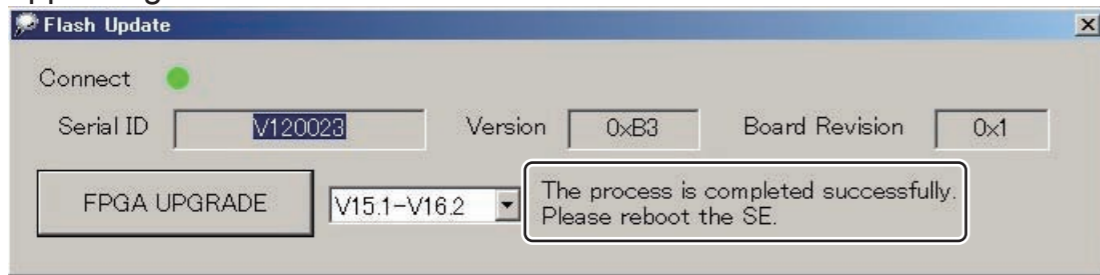

1300_70J006.ai

(7) Click the "X" on the upper right of the screen, and exit the jig software.

● **Confirm the FPGA version**

(1) Restart the target SE.

(2) Start the MC Manager.

(3) Make sure that the version displayed in the SE software version upgrade window of DR Maintenance Software is the same as the version of the installed FPGA.

☞ **{MU1:1.1.2_Update SE}**

Upgrade other software versions (CPU, GLG, MCU, PIC) as needed.

(4) Perform "Checking for Image Problems".

☞ **{IN1:13._Checking for Image Problems}**

If an artifact is found in the image check process, perform the calibration and then procedure in "Checking for Image Problems" again.

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Performance Check (PC)

DR-ID 1300 Performance Check List

The purpose of this performance check list is used at the time of DR-ID 1300 installation to record the steps performed, measured values, and settings, which are based on the instructions set forth in the Service Manual. This checklist is not supposed to replace the installation steps set forth in the DR-ID 1300 / DR-ID 1300PU Service Manual but is to be followed concurrently.

Verify the proper equipment operations at installation and after servicing by checking the system connection and output image quality, and then pass the equipment over to the customer.

■ Installation Information

Site Name: _____   Installed by: _____

Site Number: _____   Signature: _____

Room Name: _____   Installation Date/Servicing Date: _____

DR-ID 1200MC Pharmaceutical S/N: _____
☞ {Safety Precaution:2.1.3_MC}_MC system label

MP DR-ID 1300MP Pharmaceutical S/N: _____
☞ {Safety Precaution:2.1.2_MP}_PU rating indication label

DR-ID 1305SE Pharmaceutical S/N: _____
☞ {Safety Precaution:2.1.1_SE}_SE system label

(DR-ID 300CL Pharmaceutical S/N: _____)
* Record the CL S/N which is to be connected.

■ Settings

● Housing network settings

MC IP address: _____

FTP server address: _____

● Software version

MC APL ver: _____

MP Software ver: _____

SE aplWlan ver: _____
☐ Identical for each SE panel for the TOP/CENTER/BOTTOM

SE fpgaRmv ver: _____
☐ Identical for each SE panel for the TOP/CENTER/BOTTOM

SE mcu ver: _____
☐ Identical for each SE panel for the TOP/CENTER/BOTTOM

■ Checklist

1. Preparation for Installation
☞ {IN1:2._Installation Preparations}

- Pre-installation check(s)   ☐ OK ☐ NG

2. Checking the Items Supplied   ☐ OK ☐ NG
☞ {IN1:5._Checking the Items Supplied}

Machine main body ☐   Accessories ☐

- Main body
  ☐ DR-ID 1305SE   ☐ N/A ☐ OK ☐ NG

- Optional item
  - ☐ SE cable   ☐ N/A ☐ OK ☐ NG
    - ☐ 10m   ☐ 20m
  - ☐ X-Ray Shot Cable   ☐ N/A ☐ OK ☐ NG
    - ☐ 3-code / 5m   ☐ 3-code / 15m   ☐ 9-code / 5m   ☐ 9-code / 15m
  - ☐ AC Bucky Relay Unit   ☐ N/A ☐ OK ☐ NG
    - ☐ 100-110V   ☐ 110-120V   ☐ 200-220V   ☐ 220-240V
  - ☐ MP anchor retaining bracket   ☐ N/A ☐ OK ☐ NG
    - ☐ I/F box   ☐ Hand switches (2 buttons)
  - ☐ I/F box cable (Used to connect between the I/F box and the MP)
                       ☐ N/A ☐ OK ☐ NG
    - ☐ 10m   ☐ 15m
  - ☐ I/F box cable (Used to connect between the I/F box and the X-ray equipment)
                       ☐ N/A ☐ OK ☐ NG
    - ☐ 110-3 wire   ☐ 110-4 wire   ☐ GE1   ☐ GE2
    - ☐ Shimadzu   ☐ Siemens   ☐ Toshiba   ☐ CPI
    - ☐ DelMedical   ☐ DelMedical (round terminal)   ☐ GENDEX
    - ☐ Philips

3. Checking for short-circuiting of the power supply voltage/machine power source

☞ {IN1:6._Installing the MP}

☐ Single-phase two-wire   ☐ Single-phase three-wire
- Power supply voltage: _____V   ☐ OK ☐ NG
  Specified value (Japan): 100 VAC ±10%
  Specified value (Outside Japan): 100-240 VAC ±10%
- Power cable:
  Resistance value measured between E and FG:
           (specified value: with continuity)   ☐ OK ☐ NG
  Resistance value measured between N and FG: _____Ω
           (specified value: ∞)   ☐ OK ☐ NG
  Resistance value measured between L and FG: _____Ω
           (specified value: ∞)   ☐ OK ☐ NG
  Resistance value measured between L and N: _____Ω
           (specified value: 100 kΩ or higher)   ☐ OK ☐ NG

4. Checking the SE

TOP SE panel serial ID: _____

CENTER SE panel serial ID: _____

BOTTOM SE panel serial ID: _____

4.1 Checking connection with X-ray high voltage generator   ☐ OK ☐ NG
☞ {IN1:6.5_Connecting the X-Ray Shot Cable}

- Manufacturer of the connected X-ray high voltage generator: _____
- Model: _____
- Tube No.: _____
☐ Exposure stand   Manufacturer of the incorporated : _____
          Model: _____
☐ Grid:
   ☐ Steady grid type   ☐ Bucky contact type   ☐ Bucky AC type

4.2 Terminal block having the X-Ray Shot Cable connected   ☐ OK ☐ NG
- MP [_____]
☐ MPX0   ☐ MPX1

4.3 Changing the local IP address   ☐ N/A ☐ OK ☐ NG
☞ {IN1:10.13_Changing the IP Address of the SE/MP/MC and the FTP Server}
☞ {IN2:10.14_Changing the IP Address of the SE/MP/MC}

- MP IP address: _____
- TOP SE panel IP address: _____
- CENTER SE panel IP address: _____
- BOTTOM SE panel IP address: _____

4.4 Use of AUTO DETECT   ☐ N/A ☐ OK ☐ NG
☐ No   ☐ Yes

4.5 Calibration   ☐ OK ☐ NG
☞ {IN1:11._Image Calibration}
☞ {IN2:11._Image Calibration}

4.6 Marker Calibration   ☐ OK ☐ NG
☞ {IN1:12._Marker Calibration}
☞ {IN2:12._Marker Calibration}

5. Checking for image problems

☞ {IN1:13._Checking for Image Problems}

☞ {IN2:13._Checking for Image Problems}

☐ Check for image nonuniformity   ☐ OK ☐ NG

☐ Check for white blank portion   ☐ OK ☐ NG

5.1 Calibration   **☐ OK ☐ NG**

- TOP SE panel

   X-ray dose: _____mR   S value: _____   Tube voltage: _____kV

   Tube current: _____mA   Time: _____msec   Distance: _____cm

- CENTER SE panel

   X-ray dose: _____mR   S value: _____   Tube voltage: _____kV

   Tube current: _____mA   Time: _____msec   Distance: _____cm

- BOTTOM SE panel

   X-ray dose: _____mR   S value: _____   Tube voltage: _____kV

   Tube current: _____mA   Time: _____msec   Distance: _____cm

5.2 Additional filter   **☐ OK ☐ NG**

☐ Yes (If Yes, AL: ____mm, Cu: ____mm) ☐ No

6. Backing up the machine-specific data

☞ {IN1:16._Backing Up the Data}

☞ {IN2:16._Backing Up the Data}

                                                                    ☐ OK ☐ NG

7. Keep output films as the record of performance check

                                                                    ☐ OK ☐ NG

8. Test equipment used for the check

   Test equipment: _____   Model: _____   S/N: _____

   Test equipment: _____   Model: _____   S/N: _____

   Test equipment: _____   Model: _____   S/N: _____