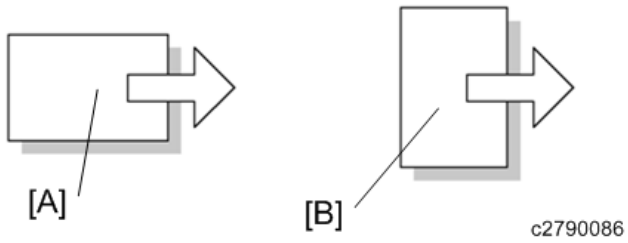
Smart Operation Panel 2nd Generation
Machine Code: D3C917
Field Service Manual
Ver 1.0

Latest Release: Oct, 2016
Initial Release: Oct, 2016

Symbols, Abbreviations and Trademarks

This manual uses several symbols and abbreviations. The meaning of those symbols and abbreviations are as follows:

Symbol	What it means
	Clip ring
	Screw
	Connector
	Clamp
	E-ring
	Flat Flexible Cable
	Timing Belt
SEF	Short Edge Feed
LEF	Long Edge Feed
K	Black
C	Cyan
M	Magenta
Y	Yellow
B/W, BW	Black and White
FC	Full color



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

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Table of Contents

1. Replacement and Adjustment

Smart Operation Panel

Operation Panel Unit

Important

- Turn off the main power switch of the MFP and disconnect the power cord.
- After replacing, make sure that all disconnected harnesses are connected up again and secured in their clamps.

1. Remove the operation panel unit from the MFP.

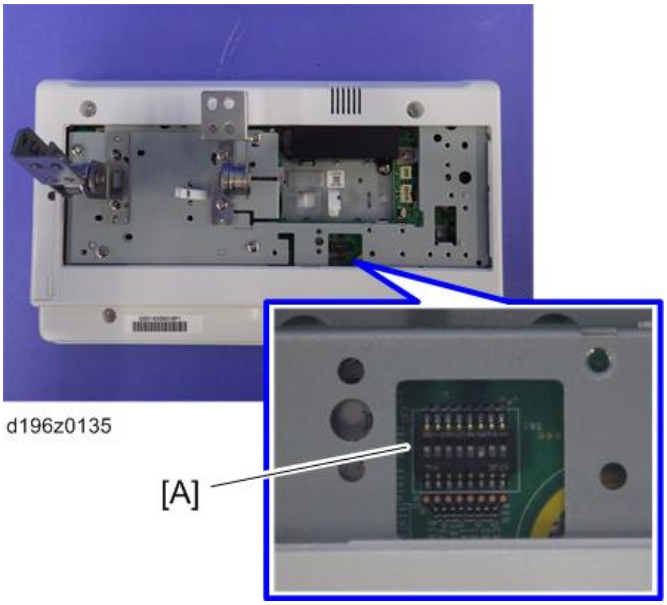
Note

- For details about how to remove the operation panel unit, refer to the service manual for the MFP.

2. Operation panel arm bracket [A] (×4)

Note

- By factory default, switches No.3 and No.7 of the DIP switch [A] on the micro computer board are set to ON. When installing the operation panel unit, make sure that the DIP switch setting is correct for the MFP on which you are installing the panel.



- The correct DIP switch setting depends on the MFP. Note the DIP switch settings of the old operation panel unit before replacing, and apply the same settings to the new Smart Operation Panel. (Below are two examples for DIP switch settings.)
- When No.3 and No.7 are set to ON
  - This is the factory default setting of a service part
  - For Type JX controllers

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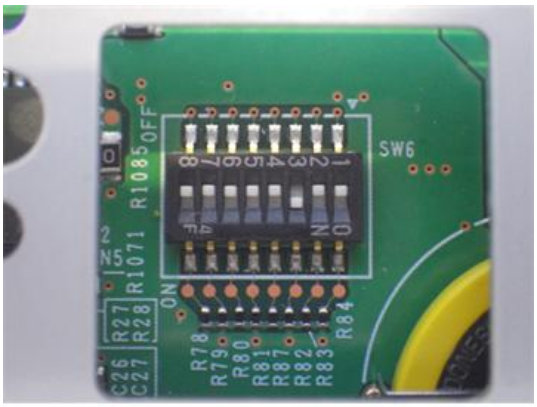
When only No.3 is set to ON

- For Type JL controllers



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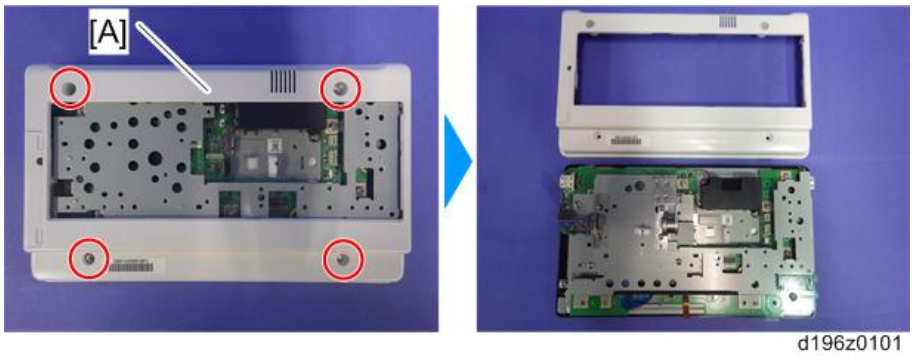
- If the DIP switch setting is wrong, SC672 will be displayed.
- After replacing the operation panel unit, make sure that the latest version of the firmware is installed on the Smart Operation Panel. Update it if necessary (Updating the Smart Operation Panel).

CPU Board

1. Operation panel unit (Operation Panel Unit)

2. Bottom cover [A] (×4)



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Note

- There are four hooks inside the operation panel unit. Before removing the operation panel bottom cover, check the photos below.

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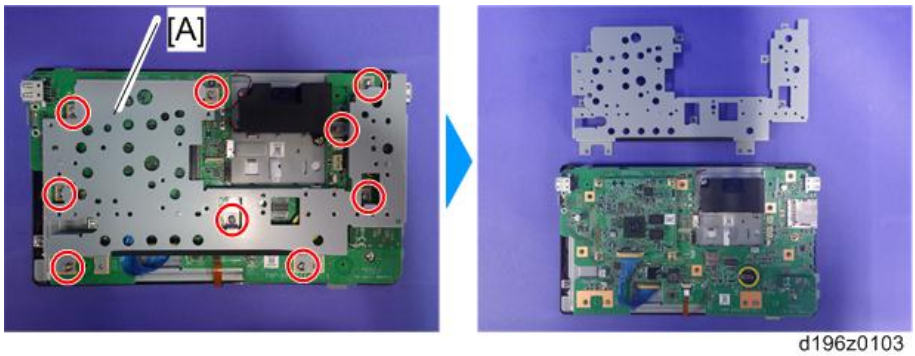
3. Base bracket [A] (×9)



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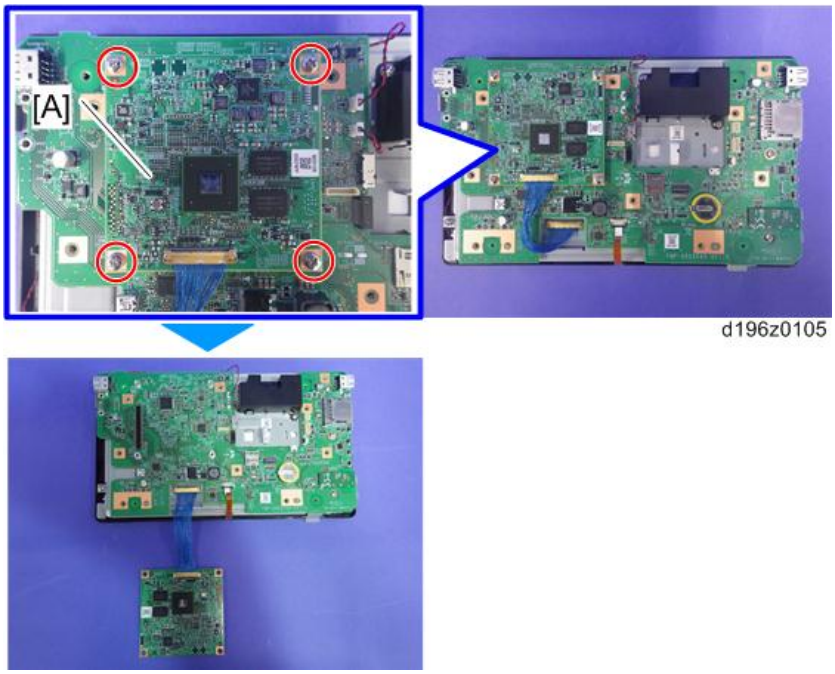
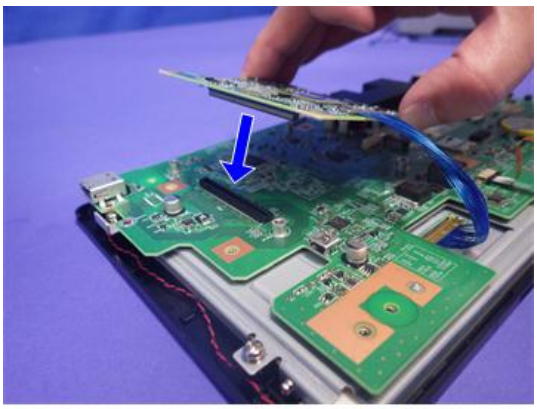
4. Remove the fixing screws (×4) on the CPU board [A], and remove the CPU board from the micro

computer board.

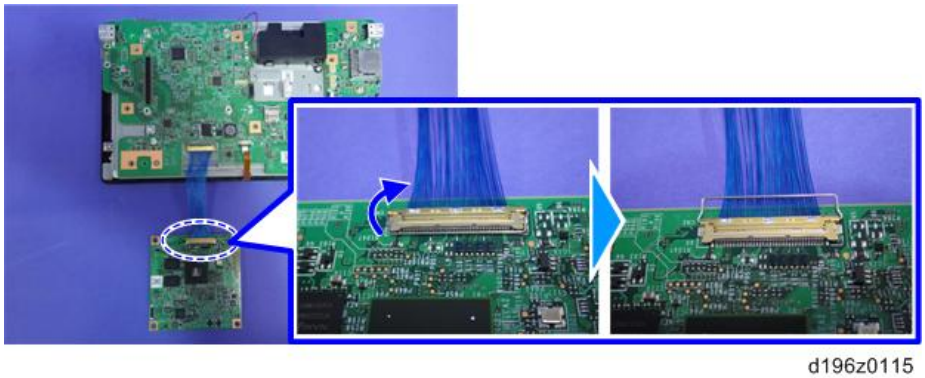


Note

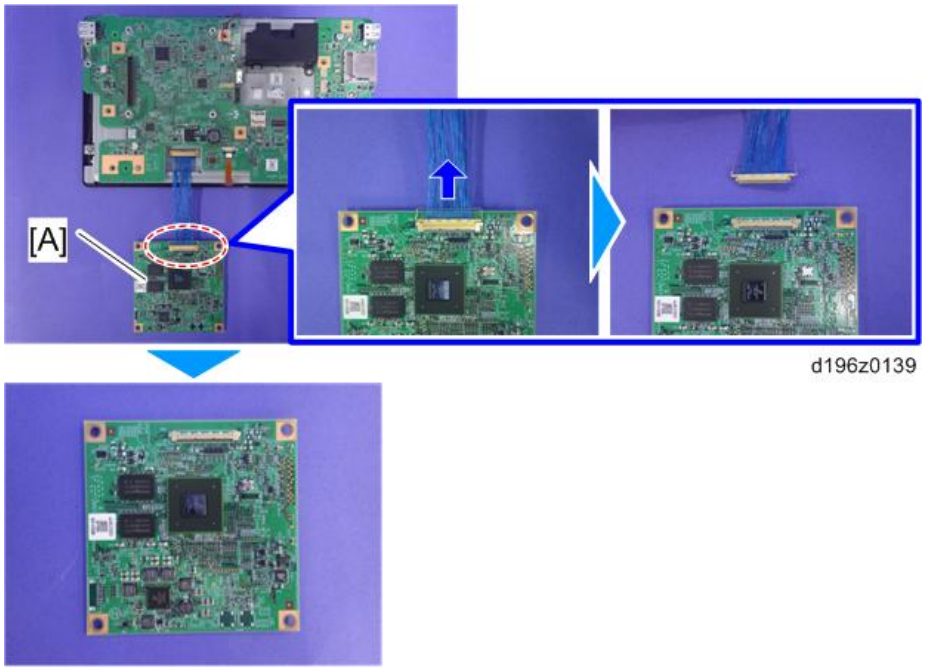
- Make sure that the orientation of the connector is correct when attaching the CPU board.



5. Lift the fastener of the LCD I/F cable on the CPU board side.



6. CPU board [A] (LCD I/F cable ×1)



Note

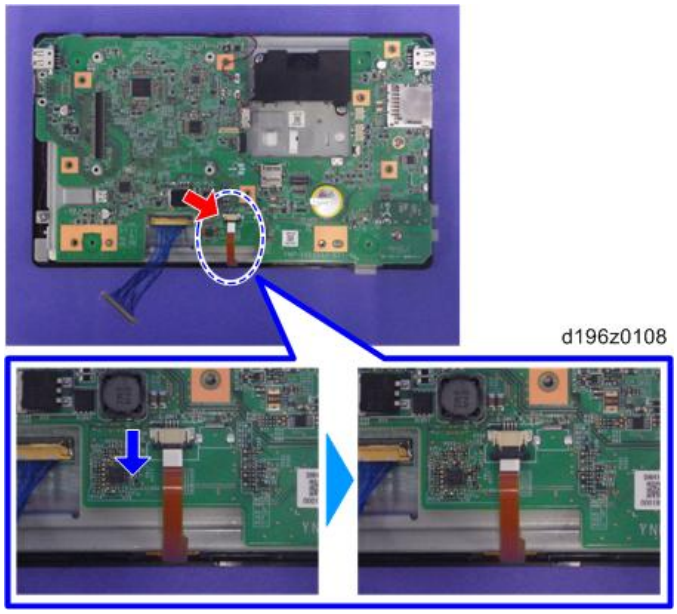
- After replacing the CPU board, make sure that the latest version of the firmware is installed on the Smart Operation Panel. Update it if necessary. (Updating the Smart Operation Panel)

Micro Computer Board

1. Operation panel unit (Operation Panel Unit)

2. CPU board (CPU Board)

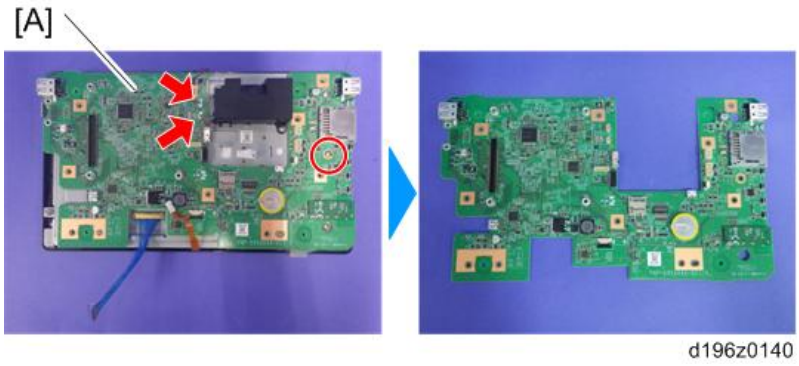
3. Remove the FFC from the micro computer board (×1).



Note

- Pull out the black part to unlock the connector, and then remove the FFC.

4. Micro computer board [A] (×1, ×2)



Note

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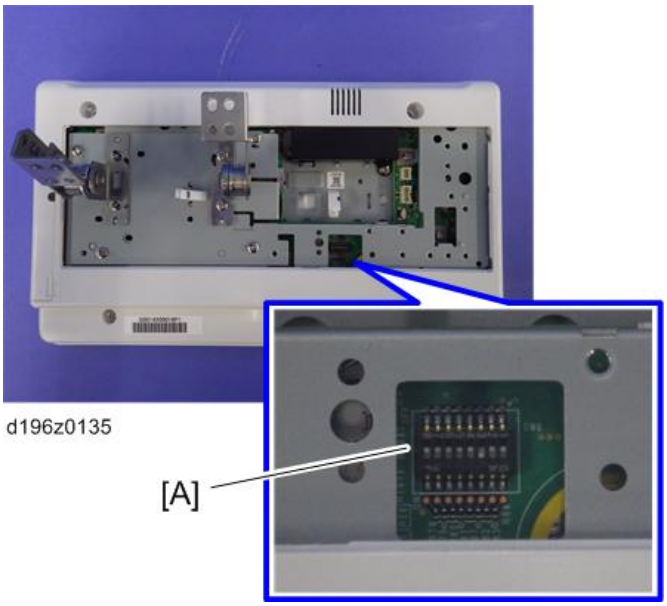

- The correct DIP switch setting depends on the MFP. Note the DIP switch settings of the old operation panel unit before replacing, and apply the same settings to the new Smart Operation Panel. (Below are two examples for DIP switch settings.)
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When only No.3 is set to ON

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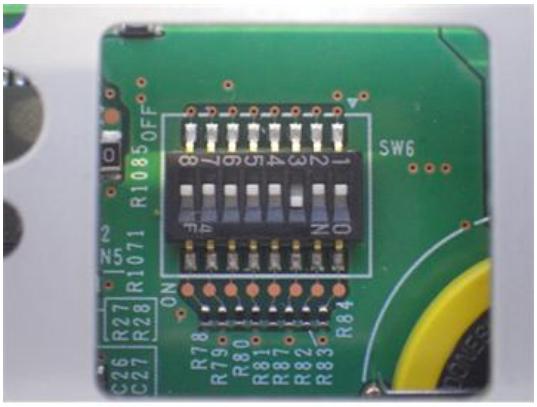

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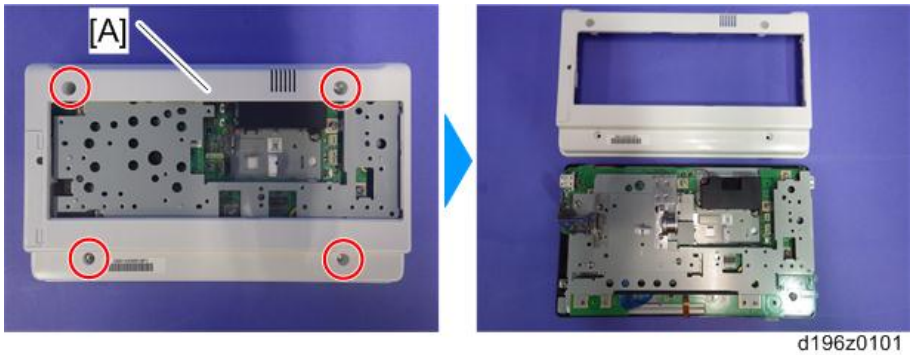
- If the DIP switch setting is wrong, SC672 will be displayed.
- After replacing the micro computer board, perform the following checks:
- LED Check (LED Check)
- Key Check (Key Check)

Wi-Fi Module

1. Operation panel unit (Operation Panel Unit)

2. Bottom cover [A] (×4)



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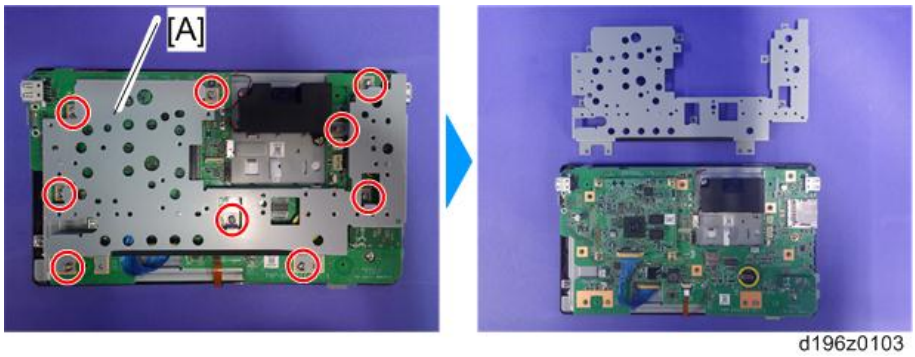
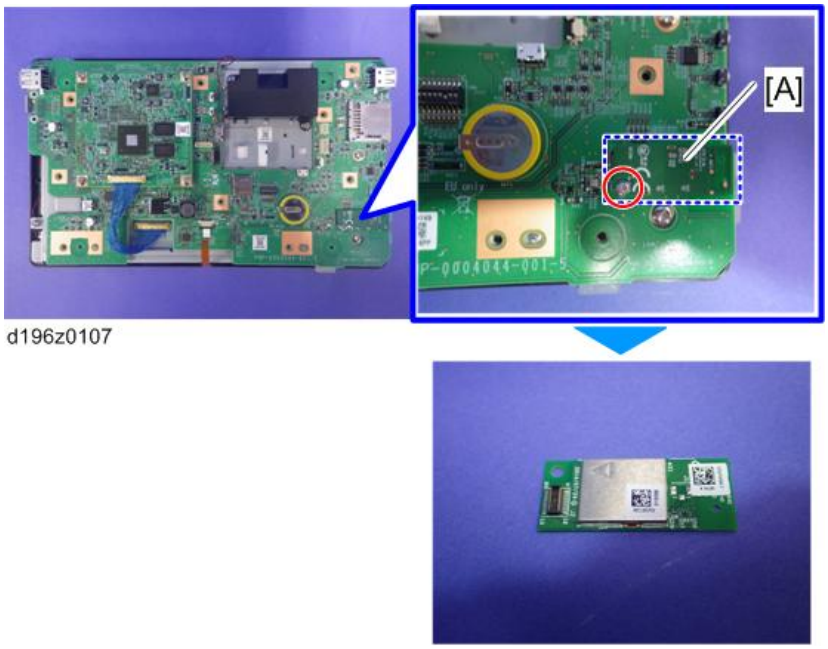
3. Base bracket [A] (×9)



4. Wi-Fi module [A] (×1)



Note

- After replacing the Wi-Fi module, perform the following checks:
- Wireless LAN Check (Wireless LAN Check)
- Bluetooth Check (Bluetooth Check)

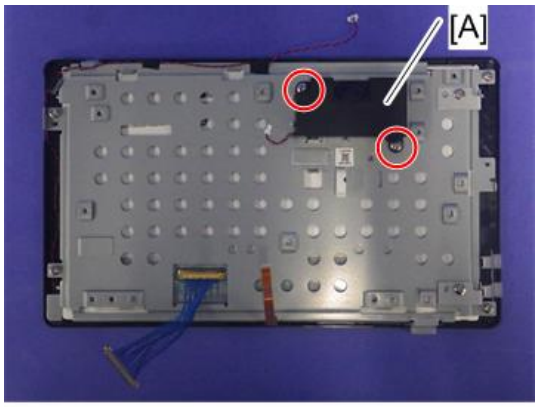
LCD

1. Operation panel unit (Operation Panel Unit)

2. CPU board (CPU Board)

3. Micro computer board (Micro Computer Board)

4. Speaker [A] (×2)



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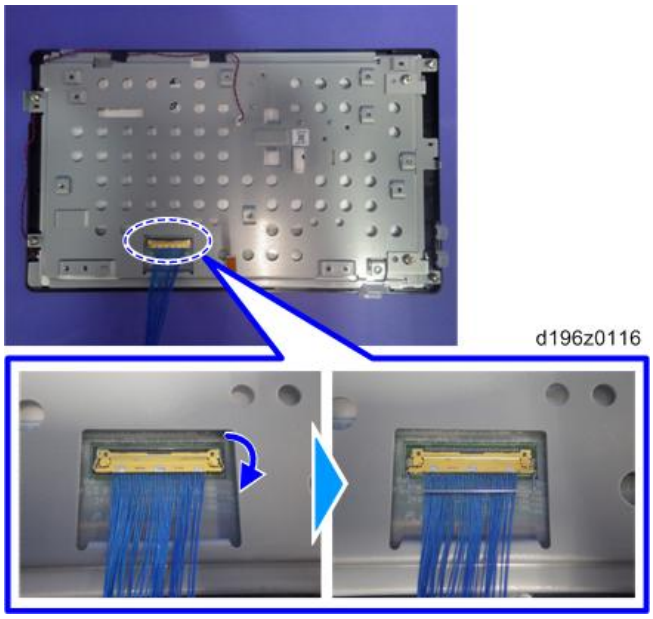
5. Lift the fastener of the LCD I/F cable.



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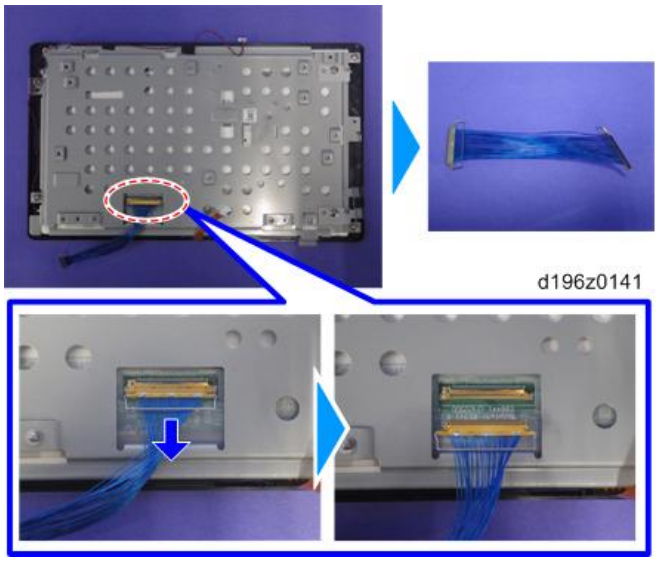
6. LCD I/F cable (cable ×1)



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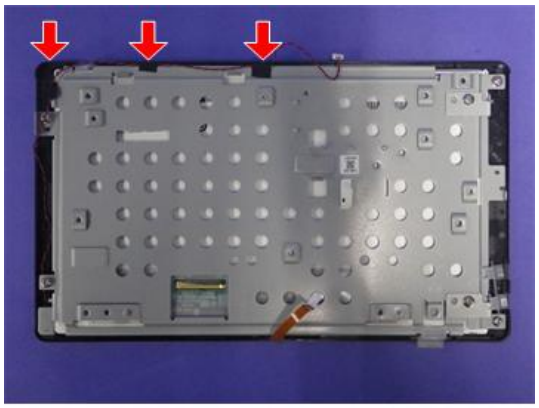
7. Remove the tapes for fixing the microphone harness (tape ×3).



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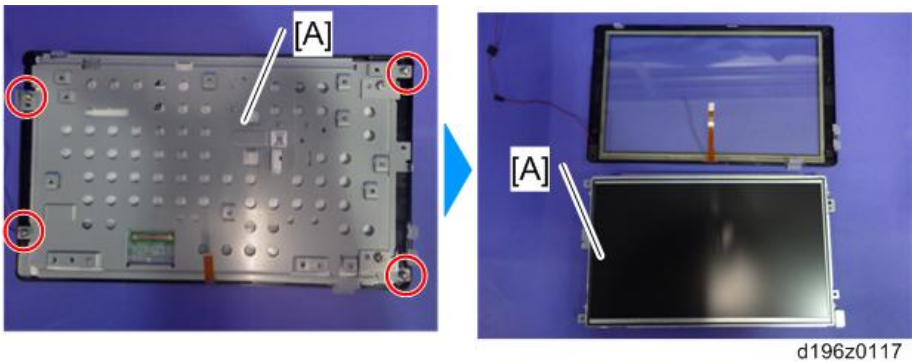
8. LCD [A] (×4)



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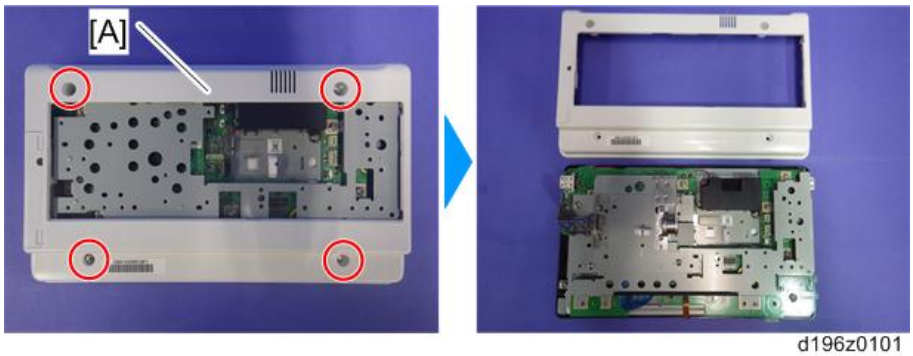
Note

- After replacing the LCD, perform the following checks.
- LCD Check (LCD Check)
- TouchPanel Check (TouchPanel Check)
- Perform "TouchPanel Calibration" (TouchPanel Calibration) and "MultiTouch Calibration" (MultiTouch Calibration) of the Self Check function.

Speaker

1. Operation panel unit (Operation Panel Unit)

2. Bottom cover [A] (×4)



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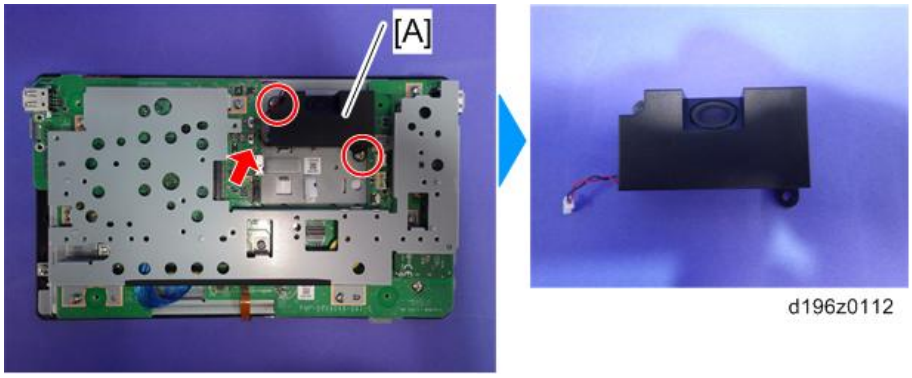
3. Speaker [A] (×2, ×1)



Note

- After replacing the speaker, perform the following check.
- Speaker Check (Speaker Check)

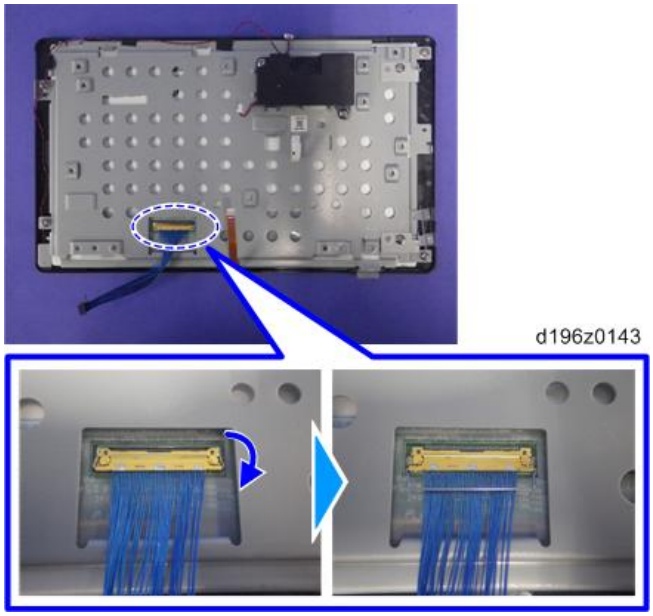
Microphone

1. Operation panel unit (Operation Panel Unit)

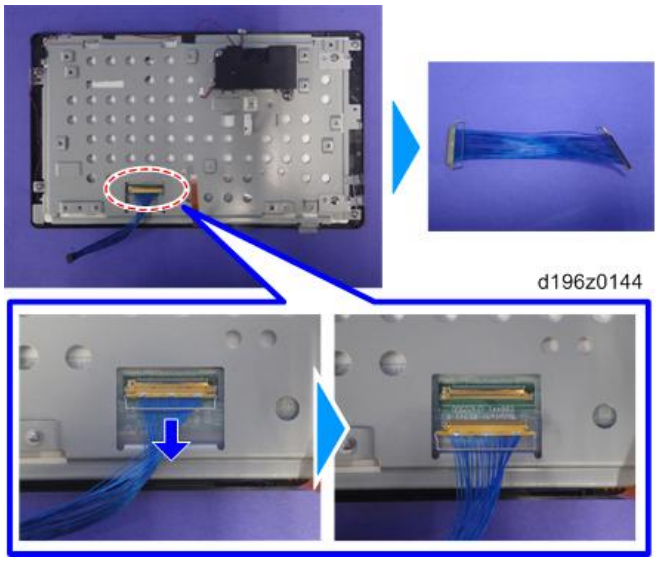
2. CPU board (CPU Board)

3. Micro computer board (Micro Computer Board)

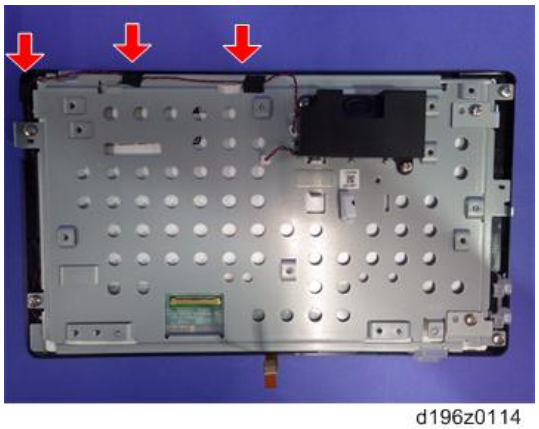
4. Lift up the securing wire of the LCD I/F cable.



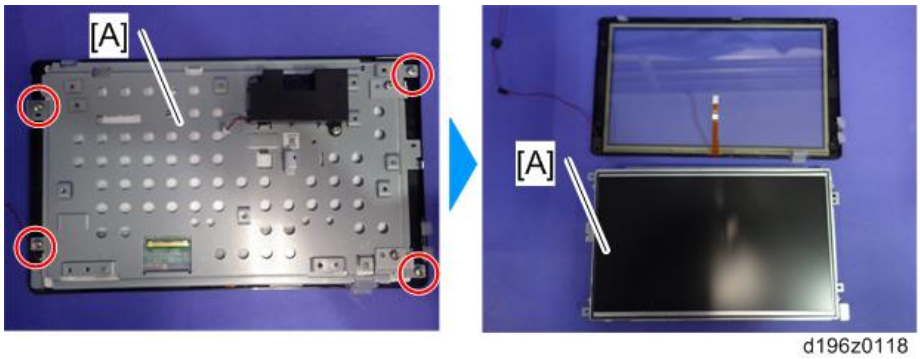
5. LCD I/F cable (cable ×1)



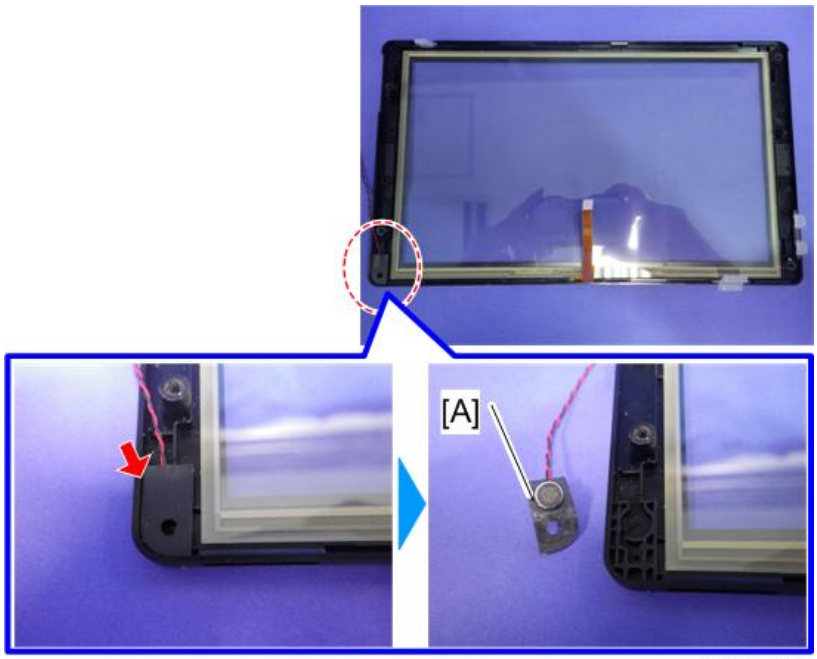
6. Remove the tapes for fixing the microphone harness (tape ×3).



7. LCD [A] (×4)



8. Microphone [A] (cushioning ×1)



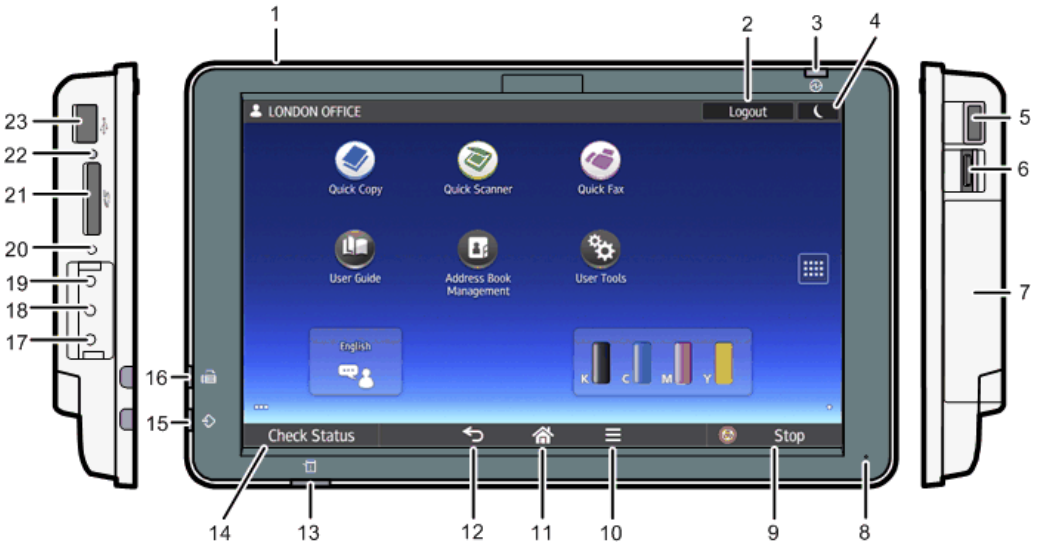
2. Mechanism

Overview

System Components

Hardware Specifications

Components



No.	Name	No.	Name
1	Speaker	13	[Check Status] indicator
2	[Login/Logout] key	14	[Check Status] key
3	Main power indicator	15	Data In indicator (facsimile and printer modes)
4	[Energy Saver] key	16	Fax indicator
5	USB slot for digital cameras	17	Extended Feature key (EX3)
6	HDMI slot	18	Extended Feature key (EX2)
7	USB slot for NFC card readers	19	Extended Feature key (EX1)
8	Microphone	20	Control panel reboot key
9	[Stop] key	21	SD card slot
10	[Menu] key	22	Media access lamp
11	[Home] key	23	USB slot
12	[Back] key		

Basic Specifications

Category	Specification
LCD panel	• Size

Category	Specification
	10.1 inch panel • Resolution WSVGA (1024x600) • Bit width RGB666 (18 bit color) • Brightness 200cd/m^2 (typ.) • Backlight LED Backlight (life: 15,000 hours)
CPU	ARM Cortex-A9 Dual Core 1GHz (SoC: MCIMX6D5EYM10AC)
Touch panel	Low load touch panel (recognizes touches to two points)
Memory	• Volatile Memory RAM (DDR3-1066), 2G • Non-Volatile Memory eMMC NAND, 8GB Note • Uses a 16GB product in SLC Mode. • Program area and data area for the operating system and applications.
External interfaces	• USB Memory USB2.0 Host Type-A • SD Card SD card slot 1ch (SD*^{1}/SDHC*^{2}) *1 Up to 2GB *2 Up to 32GB • USB expansion USB2.0 Host Type-A (for camera, USB keyboard, USB card reader) • USB expansion USB2.0 Host Type-miniB (for NFC expansion) • HDMI HDMI 1.4 (for large screens available as custom order)
Internal interfaces	• Extended Features microSD card slot Note • When a media is inserted in the microSD card slot, its capacity is shown in the control panel service mode (Screen Features > Device > microSD

Category	Specification
	card) and the SMC (in the report for the Smart Operation Panel).
Network	• Wireless LAN 802.11b/g/n • Bluetooth Bluetooth4.0
Audio input/output	Monaural speaker 1ch (output: 1 to 2 W), Microphone
RTC accuracy	±52.56 seconds per month (using external crystal oscillator, 20 ppm)
Hard keys	• Extended Feature keys (EX1, EX2, and EX3) Use for startup in extended mode etc. • Control panel reboot key Use to reboot the control panel when it freezes.
LED types	• Main power indicator (blue) Lights when the power is on. Flashes slowly in Sleep mode. • [Check Status] indicator lamp (red/blue) Lights when an error occurs. • Data In indicator (blue) Flashes when the machine receives data from a printer driver or LAN-Fax driver. • Fax indicator (blue) Flashes while sending or receiving a fax. Lights when there is a received fax document in the fax memory. • Media access lamp (blue) Lights when there is an SD card inserted in the SD card slot.
Maximum power consumption	4 W or less (excluding external interfaces and internal feature expansions)
Power consumption in Sleep mode	0.35 W or less (When in Sleep mode, power is not supplied to USB devices connected to the USB slots.)

Specification comparison with the previous model

Item	This model	Previous model
Appearance	 d196a2016	 d196a2017
Control panel size (Width × Height)	267 × 160 mm	345 × 161 mm
CPU operating frequency	1 GHz	533 MHz
RAM size	2 GB	1 GB

Item	This model	Previous model
LCD panel size	10.1 inch	10.1 inch
Android OS	Version. 4.2	Version. 2.3
Types of the following keys • [Home] key • [Stop] key • [Check Status] key • [Back] key • [Menu] key	Soft keys	Hard keys
LED types	Four types • Main power indicator • [Check Status] indicator • Data In indicator • Media access lamp	Seven types • Main power indicator • [Check Status] indicator • Data In indicator • Media access lamp • [Home] key • [Menu] key • [Back] key
Wireless LAN interface	IEEE802.11bgn	IEEE802.11bgn
Types of external interfaces	• USB port (type A/mini) • USB media slot • SD card slot	• USB port (mini) • USB media slot • SD card slot
Bluetooth	Available	Not available

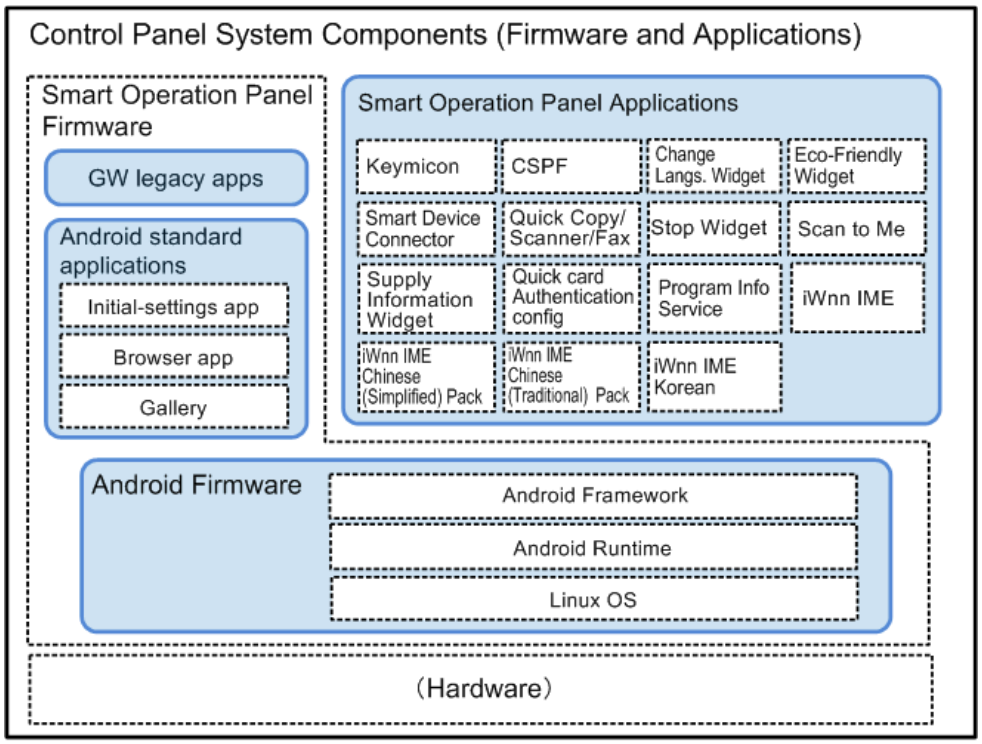
Available languages

Japanese, English, French, German, Italian, Spanish, Dutch, Norwegian, Danish, Swedish, Polish, Portuguese, Hungarian, Czech, Finnish, Simplified Chinese, Traditional Chinese, Russian, Greek, Korean, Catalan, Turkish, Brazilian Portuguese

Software Specifications

A software package consisting of the Android Firmware and the manufacturer’s own pre-installed applications is installed on the Smart Operation Panel.

2.Mechanism



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The following three types of software are installed on the Smart Operation Panel.

1. Android Firmware (Android OS)
2. Pre-installed applications
3. Applications that can be installed additionally

Android Firmware (Android OS)

The Android Firmware (Android OS) consists of the following modules that are called “stacks”.

- Linux kernel
- Android Runtime
- Library
- Application Framework

Pre-installed applications

On the Smart Operation Panel, applications such as the GW applications (Copy/Printer/Document Server/Scanner/Fax), Control Panel Browser, the standard keyboard, Installer, Gallery, Self Check are pre-installed. Unlike those installed on the controller board of the MFP, GW applications that are installed on the Smart Operation Panel are for controlling operation and display of the Smart Operation Panel.
Pre-installed applications are provided as part of the control panel firmware (Cheetah System) together with the Android firmware. When you update the control panel firmware using the recovery mode or another method, the pre-installed applications will also be updated.

Applications that can be installed

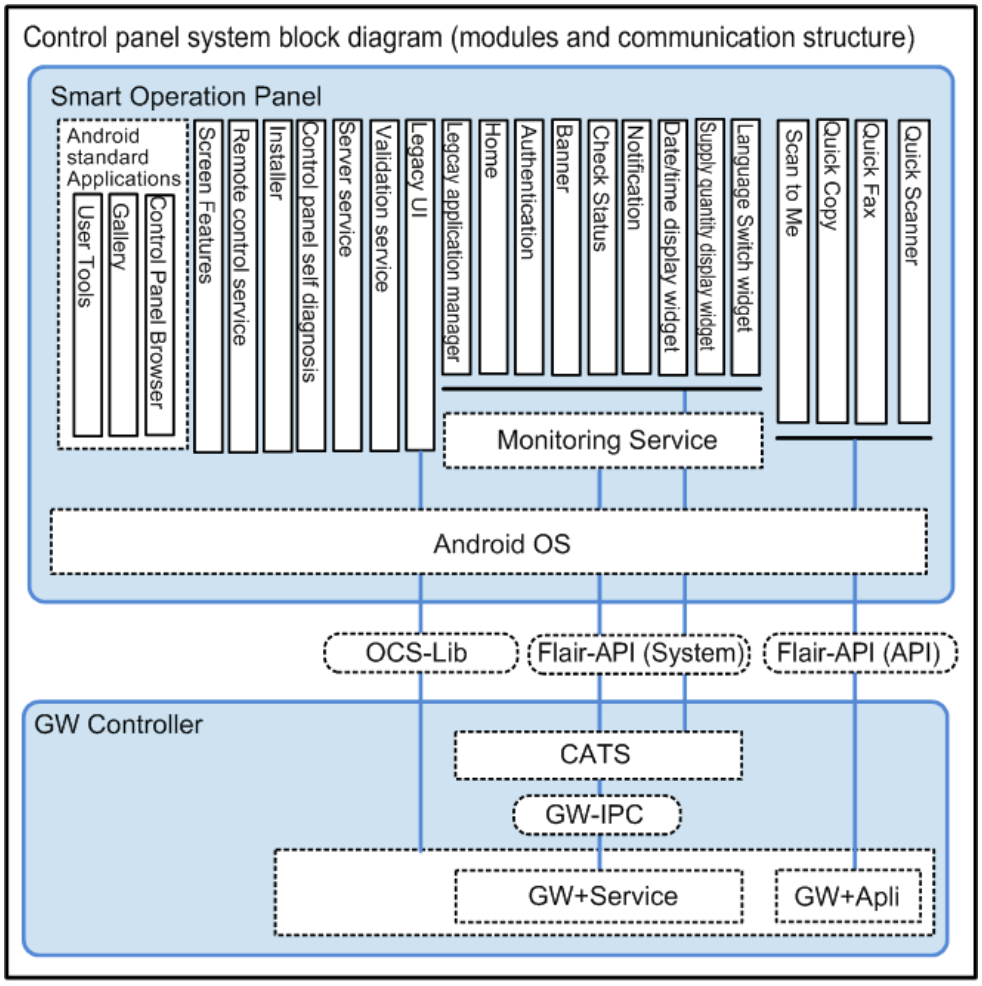
On the Smart Operation Panel, applications can be installed in addition to the pre-installed applications. Applications that can be installed include optional applications that customers can purchase, applications that are

installed only on machines sold in specific regions, and custom-made applications.
On an MFP, applications such as Simple UI applications (Quick Copy, Quick Fax, and Quick Scanner) and Scan to Me are installed.

Communication specifications

The Smart Operation Panel and the GW controller are connected by a USB 2.0 cable. They communicate with each other via the Android OS on the Smart Operation Panel, using protocols called “OCS Library” and “Flair-API (System/Application)”.

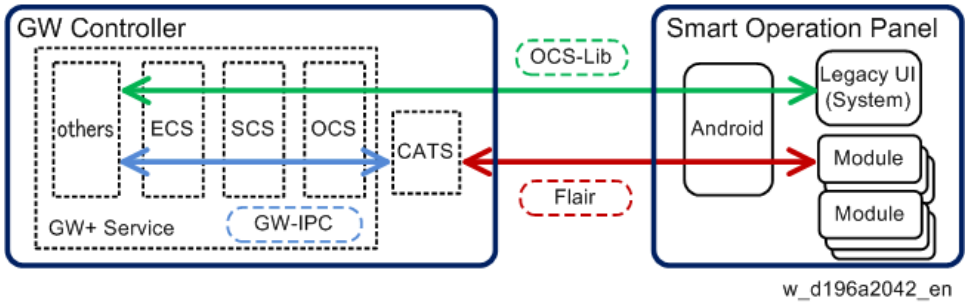
System block diagram



Overview of Components

Communication module/signal name	Details
OCS Library	OSC stands for Operating Control Service. It is a module that controls the control panel. The set of signals used by this module to control the control panel are called the OCS Library. It is used during communication between the Legacy UI (system) module on the Smart Operation Panel and the GW module for the following processes.

Communication module/signal name	Details
	• Deciding on the display format suitable for a particular model of the control panel, so that the intended image data can be converted to actual image data. • Converting touch panel operations to commands.
Flair-API (System/Application)	Flair is the manufacturer's own communication interface between software modules. The interface uses a generic WebAPI. It is divided into two parts: a part that communicates directly with applications such as the application manager, Home, Authentication, Banner, Check Status, and Widgets, and a part that monitors applications. It communicates with the GW controller via the CATS module.
CATS	CATS stands for Cheetah Application Total System. It is a module in the GW controller. Because the Smart Operation Panel uses the Android OS, the contents and protocols of communication are not the same as those of the conventional control panel. CATS serves as an intermediary between the GW controller and the Smart Operation Panel. It also controls the power status of the control panel. CATS communicates with the Smart Operation Panel using the Flair-API, and communicates with the GW module using the GW-API.
GW-IPC	The name of the interface used among modules in the GW controller. The role is the same as that of the Flair-API.



Note

- API stands for Application Programming Interface. An API is an interface that software modules use in order to communicate with each other.

Application Specifications

The pre-installed applications and applications that can be additionally installed on the Smart Operation Panel can be classified into the following 3 categories.

- System applications
  Applications that operate in conjunction with multiple functions (operating regardless of the application)
- Program applications

Applications that provide a single additional function

- Widget applications

  Applications that provide a widget

The following table explains the function of each application.

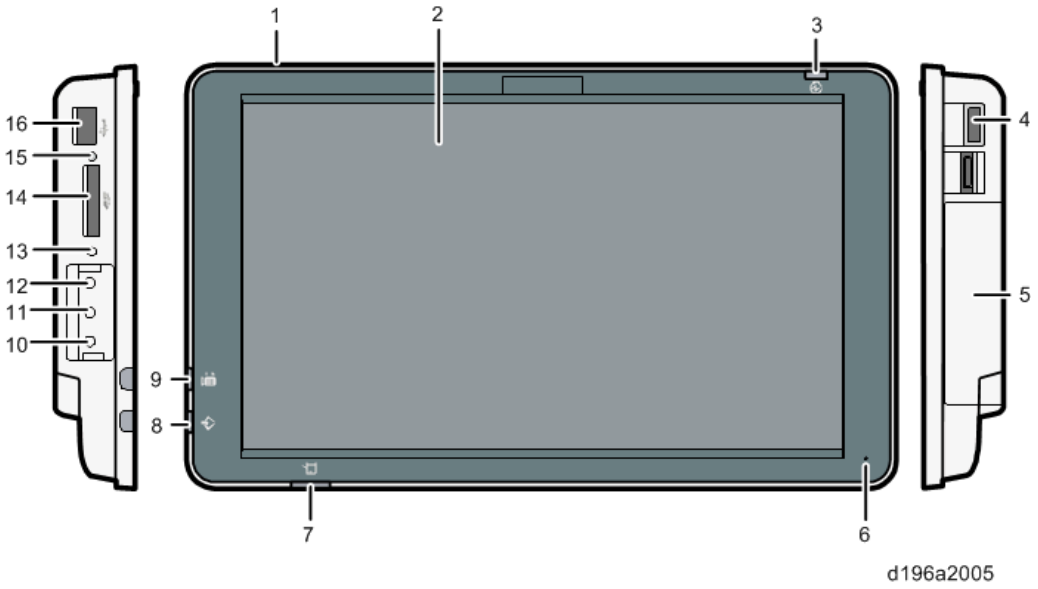
Application	Functions
Settings	Provides the Android OS's standard settings.
Screen Features	Provides the manufacturer's own settings.
Authentication	Monitors login to/logout from the MFP, and transmits authentication information to other services and applications.
Monitoring service	Monitors the status of the MFP. This service is used by widgets and applications including Banner, Check Status, Authentication, and Home.
Launcher (Legacy Application Manager)	This application provides an application switching function when there is no Home application.
Installer	Provides the installer UI. Internal operation is controlled by the Package Installer application.
Server service	Provides server functions for application installation.
Remote control	Works together with the server service and provides the functions and displays of RFU and import/export of settings, including the UI.
Manual	Provides connection to the server where manuals are stored (HTTP server). Manuals are displayed using the Web Browser application.
Splash screen	Provides the image that is displayed immediately after the MFP is turned ON.
Startup animation	Provides the startup animation for the operation screen.
Validation	Performs validation when the machine is started in CC certified mode. * CC stands for Common Criteria. It is the evaluation criteria for IT security (ISO15408).
LUI system	LUI stands for Legacy User Interface. The conventional control panel display is displayed by this application. Model-specific settings are included in this application
Package Installer	Provides installation and update functions for applications. Also provides the screen for uninstallation.
Self Check	Provides a self-check function for the control panel hardware. See Panel Self Check for contents of the self-check.
Initialization	Initializes settings of the MFP or the control panel.
Web Browser	Android OS's standard Browser application
Gallery	Reads images from SD cards or other media, and sets them as wallpaper or live wallpaper.
Standard keyboard	Android OS's standard operation panel that is called up when the user enters characters or numbers.

Application	Functions
Home screen	Provides the Home screen. Also provides screen customization and application switching.
Banner	Displays balloon messages in the banner area at the bottom of the panel display.
OCS emulator	This application serves as an intermediary between the control panel and the controller board. (The emulator allows the controller board to work the same way regardless of the type of control panel.)
Simple UI applications	Simple (Quick) applications. • Quick Copy Provides the Quick Copy function. • Quick Fax Provides the Quick Fax function. • Quick Scanner Provides the Quick Scanner function.
Widgets	Resident applications that display information on the screen as configured. • Date/time indicator Displays the date and time. • Supply information Displays toner status. • Change Languages Provides the language switching function. • Eco-friendly Displays detailed information about the eco functions. • Fax Received File Displays the fax reception status. • Stop Provides a [Stop] key on the application screen. Used by functions such as Quick Copy and Scan to Me. • System Message Displays system messages.
IME (excluding the standard keyboard)	Multiple settings can be configured (the user can select one when using the keyboard). • iWnn IME Chinese (Simplified) Pack Chinese (simplified) language pack for iWnnIME • iWnn IME Chinese (Traditional) Pack Chinese (traditional) language pack for iWnnIME • iWnn IME Korean Pack Korean language pack for iWnnIME
ICCardDispatcher	Host application for NFC (Near Field Communication). Transmits card

Application	Functions
	information to authentication applications.
Quick Card Authentication	Provides simple authentication using an IC card.
Standard IC card plugin	A plugin for using IC cards. Examples of IC cards are the FeliCa (Lite) and Mifare card systems.
Bluetooth Service	Provides configurations for standard Bluetooth on the Android OS.
Bluetooth Authentication Plugin	This plugin is required to use Bluetooth authentication.
Copy	Copy application with a new UI. This application is not available for MP C 306Z/406Z series.
Fax	Fax application with a new UI. This application is not available for MP C 306Z/406Z series.
Scan	Scan application with a new UI. This application is not available for MP C 306Z/406Z series.
Printer	Printer application with a new UI. This application is not available for MP C 306Z/406Z series.
Quick Print Release	Ability to view and print stored documents. This application is not available for MP C 306Z/406Z series.
Print/Scan (Memory Storage Device)	"Media Print" and "Scan to Media" have been integrated into this application. This application is not available for MP C 306Z/406Z series.
Web Browser NX	Provides an operating environment for solution applications' functions and configuration.
Proximity Card Reader Support Plugin	Provides support for USB card readers.

Panel Components/Screen Layout

Components of the Control Panel

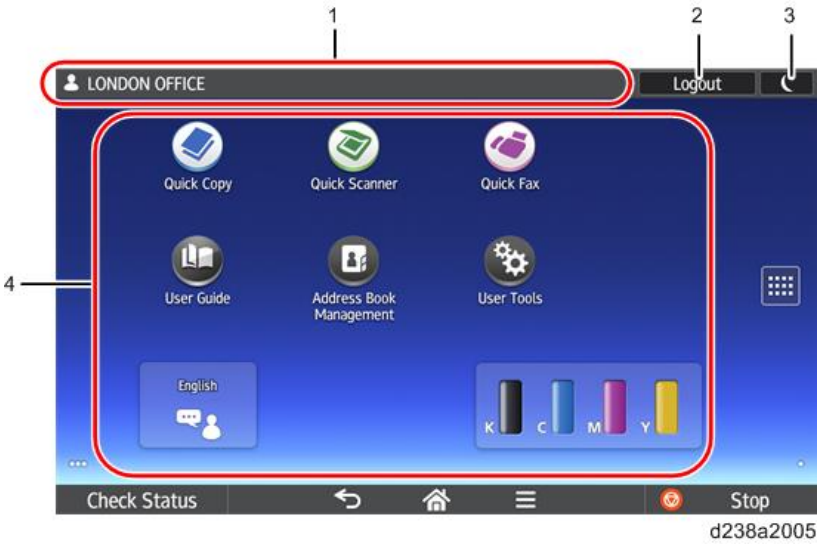


No.	Name	Description
1	Speaker	There is currently no function that uses this.
2	Display panel	Displays icons for functions and applications. Displays the operation screens, operation keys and other information.
3	Main power indicator	Indicates power OFF/ON status.
4	USB slot for digital cameras	A digital camera can be connected here.
5	USB slot for NFC card readers	A near field communication (NFC) device can be connected here.
6	Microphone	There is currently no function that uses this.
7	[Check Status] indicator	Indicates system status.
8	Data In indicator	Flashes when the machine receives data from a printer driver or LAN-Fax driver.
9	Fax indicator	Indicates fax status. • During communication: Flashes • When fax documents have been received using Substitute Reception: Lights • When the machine has received a confidential fax document: Lights
10	Extended Feature key (EX3)	Used for system maintenance, such as control panel self-check.
11	Extended Feature key	Used for system maintenance, such as control panel self-check.

No.	Name	Description
	(EX2)	
12	Extended Feature key (EX1)	Used for system maintenance, such as control panel self-check.
13	Control panel reboot key	Used when rebooting the control panel.
14	SD card slot	Insert an SD card here.
15	Media access lamp	Lights when an external media is inserted into the SD card slot or the USB slot.
16	USB slot	Insert a USB memory device here.

Panel display

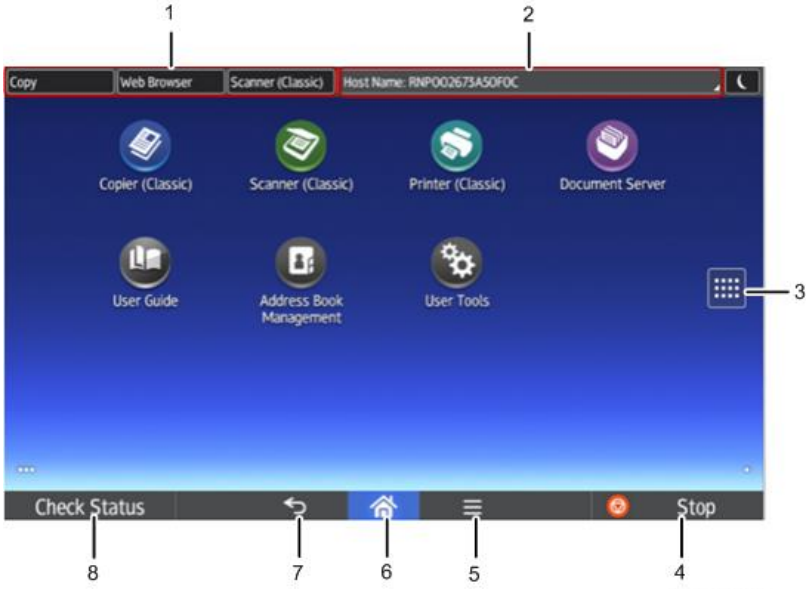
Screen Layout



No.	Name	Description
1	Login information area	Login information is displayed.
2	[Login/Logout] key	Displayed when authentication is enabled. The login screen appears if you press [Login]. [Logout] is displayed if you have already logged in. You will be logged out when you press [Logout].
3	[Energy Saver] key	Enters Sleep mode.
4	Icon display area	Application icons, widgets, and system messages are displayed.

Soft keys displayed on the screen

2.Mechanism



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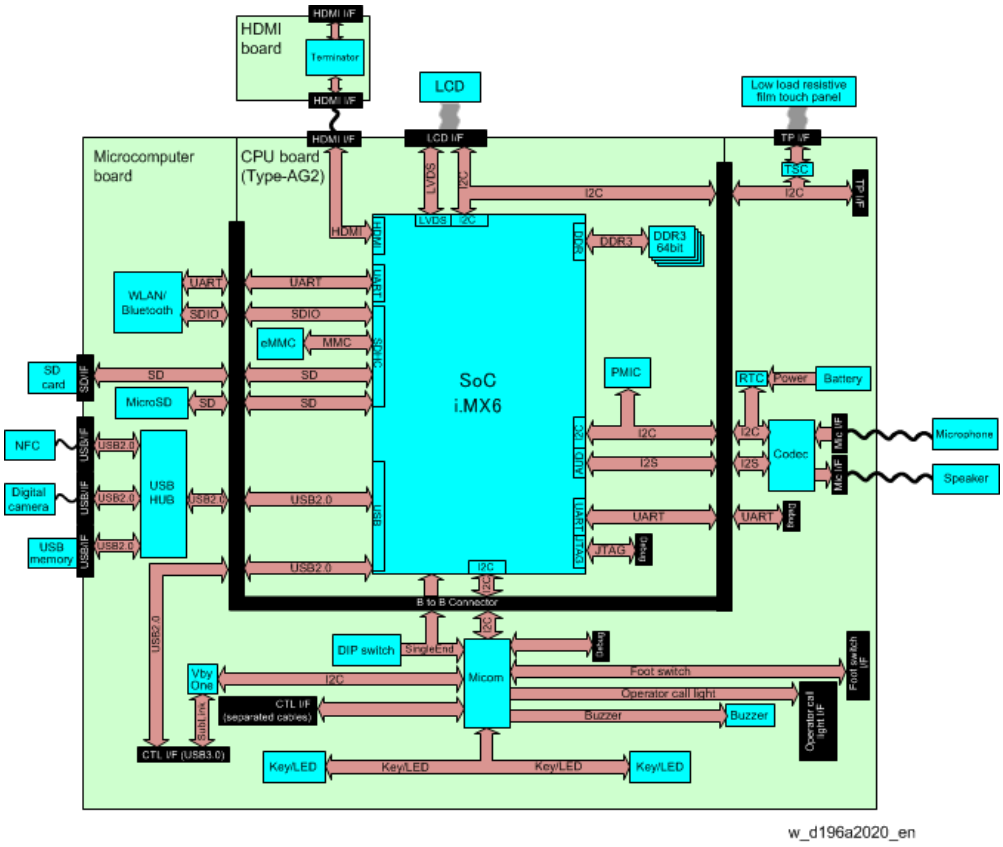
No.	Name	Description
1	Function keys	Users can assign shortcuts for each application. Up to three applications can be assigned as shortcuts. When an application is assigned as a function key, users can call the application from any screen. The function keys are disabled by default. Users must enable this function to be able to allocate applications to function keys.
2	System messages key	System messages are displayed in this area. If there are multiple messages to be displayed, they are displayed in rotation. Tapping the message opens a dialog which shows all the messages.
3	[Application List] key	Displays the list of installed applications.
4	[Stop] key	Stops the scanning of a document, fax transmission, or printing to paper.
5	[Menu] key	Displays the menu screen of the application in use. May not be available depending on the application.
6	[Home] key	Displays the Home screen.
7	[Back] key	Use this to go back to the previous screen when the Screen Features screen or the screen of an application is displayed.
8	[Check Status] key	You can check the status of the MFP, each function, and the current job. You can also check the job history and maintenance information of the MFP.

Electrical Components



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Note

- The CPU board has a CPU, memory, and a flash drive.
- The Microcomputer board has various interfaces, Wi-Fi module and other devices.

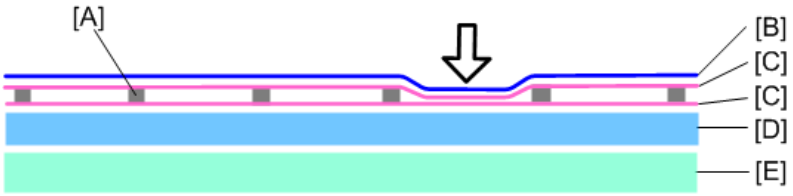
Touch panel

The touch panel of this machine uses a 4-wire resistive film method (low load resistive film analog 4-wire method). It can detect two points for flick/drag/pinch-in/pinch-out operations. Resistive touch panel has been adopted in order to allow operation with a prosthetic hand.

Basic Structure

An analog 4-wire resistive film touch panel has 2 layers. Two materials (mainly film or glass) with transparent conductive film (ITO) are attached such that the transparent conductive film layers face each other.
When the film is pressed with a finger or a pen, the transparent conductive films contact each other and the touch panel operation is recognized.
Insulators (spacing dots) secure space between the two transparent conductive film layers to prevent short-circuiting.
Because the transparent conductive film has a uniform resistance characteristic, the resistance value reflects the distance of contact.

2.Mechanism



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[A]: Spacing dot

[B]: PET film

[C]: Transparent conductive film

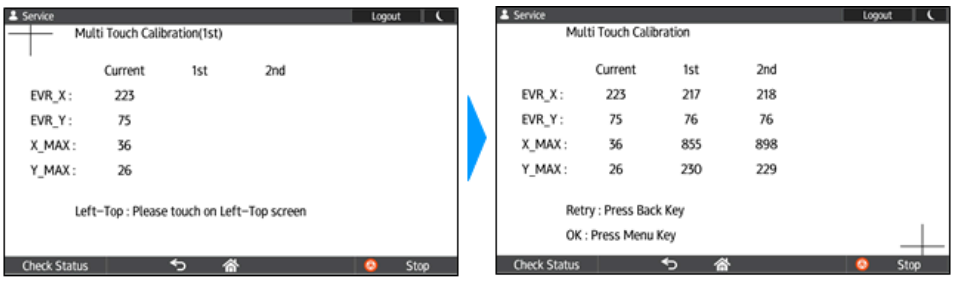
[D]: Base glass

[E]: LCD panel

Self-Check (multi-touch calibration) mechanism

With the Multi-touch calibration in the self-check function, the touch panel is automatically calibrated using the results of touches to the top left and bottom right positions.

The values of “EVR_X”, “EVR_Y”, “X_MAX”, and “Y_MAX” are used for internal processing. They do not indicate the positions or distance of the touched points. There is no problem unless there is a huge difference between the values of the first calibration and the second calibration.



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Controlling the Power Supply

Exiting Energy Saving Modes

Because this model of Smart Operation Panel has no hardware keys, the MFP exits from energy saving mode when the user does one of the following:

- Touches the display panel
- Lifts the ADF
- Sets an original in the ADF

Screen Startup Mode

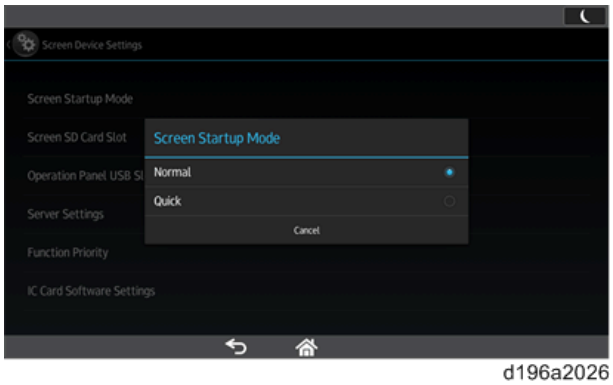
Startup Modes

There are two screen startup modes. The factory default setting is Normal.

1. Normal
   This is the standard startup mode. When the main power of the MFP is turned ON, the control panel starts up using less power compared to Quick mode.
2. Quick
   By preparing for the next startup when the machine shuts down, the control panel starts up faster than in Normal mode.

Changing the Screen Startup Mode

Screen Startup Mode can be changed in Screen Features.
Select [Screen Features] > [SYSTEM] > [Screen Device Settings] > [Screen Startup Mode], and then select [Normal] or [Quick].



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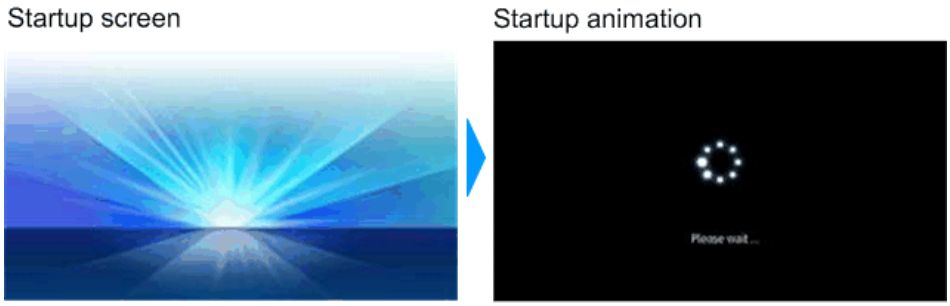
Note

- In the following cases, the control panel starts up in Normal mode even if [Quick] is selected.
- The power cord has been disconnected from the power outlet after the last shutdown.
- The MFP is turned ON after being turned OFF due to reasons such as a power failure.
- The MFP was not properly shut down the last time it was turned OFF.

How the Control Panel Starts Up

In Normal mode

The startup screen is displayed on the display panel, followed by the startup animation.



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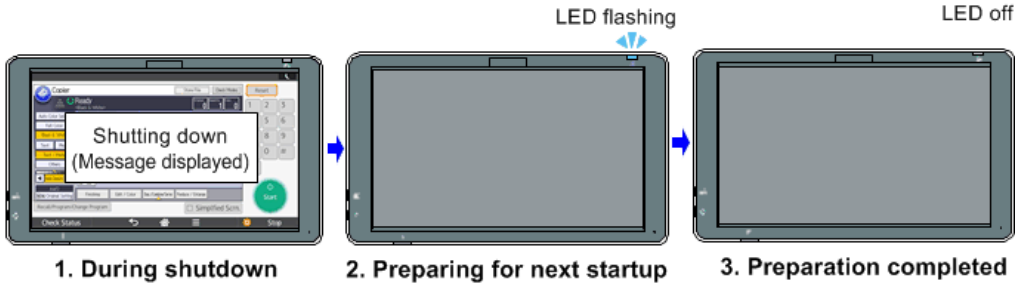
In Quick mode

The [Home] screen is displayed immediately after the main power of the MFP is turned ON. The startup screen displayed when starting in Normal mode is not displayed.

How the Screen Shuts Down When Quick mode Is Selected

When Quick mode is selected, the MFP prepares for the next startup when it shuts down The main power indicator flashes during preparation for the next startup. The indicator turns off when preparation is completed.



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If the MFP is turned ON during shutdown, the preparation for the next startup continues. When preparation for the next startup is completed, the control panel starts up in Quick mode.

Note

- When Quick mode is selected, the control panel starts up faster than in Normal mode but shutdown takes longer than in Normal mode.

Shutdown Functions

The shutdown functions and their uses are as follows.

Shutdown mode	Use	Operation
Normal Shutdown	Same as shutdown by users.	Turn the main power switch off.
Forced shutdown	When normal shutdown does not complete even though you waited a long time.	Hold the main power switch 6 seconds or

		longer.
Shutdown for parts replacement	• When you have to disconnect the power cord from the power outlet, such as when replacing parts. • When you want to start the machine normally and then enter recovery mode, without changing the Startup mode in Screen Features. (For updating control panel firmware)	Turn the main power switch off while holding down [Stop].
Shutdown for software update	When you are going to turn on the MFP within 5 minutes for updating the MFP firmware or package. (Use shutdown for parts replacement if you are updating the control panel firmware.)	Turn the main power switch off while holding down the [EX1] key.

Normal Shutdown

The MFP is equipped with a function to shut down safely in order to:

- Prevent damage to the file systems in the HDD and the NAND flash memory.
- Prevent paper from being left inside the body of the MFP (except when paper is jammed).

If the main power switch is a rocker switch, the shutdown process begins when the rocker switch is moved to the OFF position.

If the main power switch is a push switch, the shutdown process begins when the switch is pressed. To make a forced shutdown, press and hold the push switch for 6 seconds. However, if you force a shutdown during the shutdown process, data being processed may be lost. Forced shutdown is to be used to shut down the MFP without disconnecting the power cord when the shutdown process cannot be completed.

Other Shutdown Functions

This MFP has two additional shutdown functions to facilitate maintenance.

Shutting down the MFP for parts replacement (Starting up in Normal mode when Quick mode is selected)

When Quick mode is selected, the MFP prepares for the next startup when it shuts down. This causes the shutdown process to take longer than when Normal mode is selected.

If you need to disconnect the power cord after shutdown in order to replace parts or for other reasons, you can use the following procedure to shut down the MFP just like you do in Normal mode. This shortens the time it takes to shut down the MFP.

- Procedure
  Turn the main power switch OFF while holding down the [Stop] key on the control panel. Continue to hold down the [Stop] key until the shutdown screen is displayed.

Shutting down the MFP for software updates (Shutting down the MFP with the control panel in Sleep mode)

If you are going to turn ON the MFP within 5 minutes, you can use the following procedure to shut down the MFP

with the control panel in Sleep mode.

- Procedure

  Turn the main power switch OFF while holding down the [EX1] key. Continue to hold down the [EX1] key until the shutdown screen is displayed.

Note

- You must turn ON the MFP within 5 minutes.
- If more than 5 minutes has elapsed after shutting down the MFP using the above procedure, the machine starts up in Normal mode even if Quick mode is selected.

3. System Maintenance

System Maintenance

Maintenance Modes

Service program (SP) modes for the Smart Operation Panel are as follows:

Mode	Use	Notes
SP Mode (MFP)	SP modes for the MFP (controller, engine)	The numeric keys are required to enter this mode. Display the soft keys of the GW application or of the SP mode.
Service mode (control panel)	SP modes for the Smart Operation Panel. • Changing SP mode settings in the Screen Features menu. • Installing and updating applications that can be installed	Same as above
Recovery mode	Maintenance modes for the Android OS • Updating firmware • Initializing all data	-

Login to/Logout from Control Panel Service Mode

Login

In the same way as you log in to the SP Mode on the MFP, you use the soft keys to enter a combination of numbers in order to login to the service mode of the control panel.

Note

- You cannot log in to the service mode of the control panel when one of the following screens is displayed.
- Stop All Jobs
- User Tools
- Address Book Management

Use the numeric keys on one of the following screens.

- Soft keys on the GW application screen
- Soft keys for the control panel's service mode (displayed by pressing both the [EX3] key and [Check Status] at the same time)

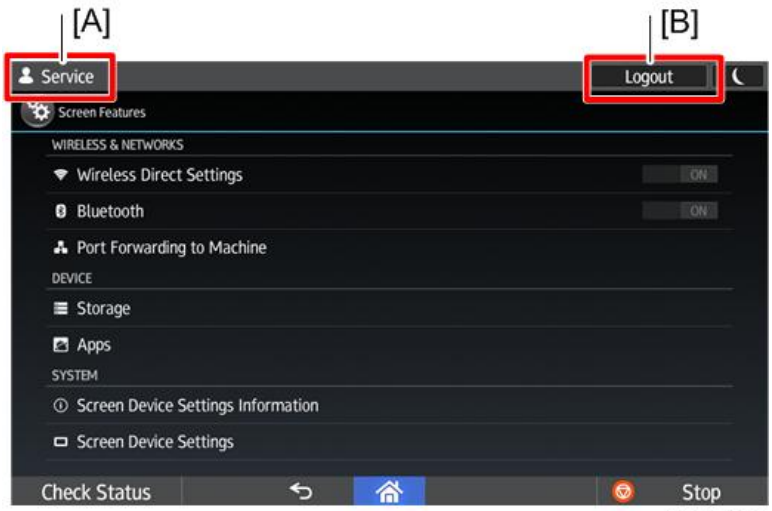
Note

- To exit the soft keys, press [EXIT] on the screen.

Login Status Indicator

When you log in to the control panel's service mode, the Screen Features screen is displayed.

- "Service" is displayed in the login information area [A].
- [Logout] is displayed in the Login key area [B] to allow logout from the service mode.



Logout

Press [Logout] to log out from the control panel's service mode.

Note

- You need to logout manually because the Auto Logout function does not work.

Depending on the authentication settings of the MFP, the following screen is displayed after you log out.

Authentication settings		
Administrator authentication: OFF User authentication: OFF	Administrator authentication: ON User authentication: OFF	Administrator authentication: ON User authentication: ON
Screen of the function selected in [Function Priority]	Screen of the function selected in [Function Priority]	[Home] screen

When Entry to Service Mode Is Prohibited by the Administrator

The administrator of the MFP can prohibit entry into the control panel's service mode by enabling [Service Mode Lock] in [System Settings].

When [Service Mode Lock] is enabled, the machine does not enter the service mode even if you enter the number combination for the control panel's service mode. There will be no error messages or beeping sounds to indicate login failure.

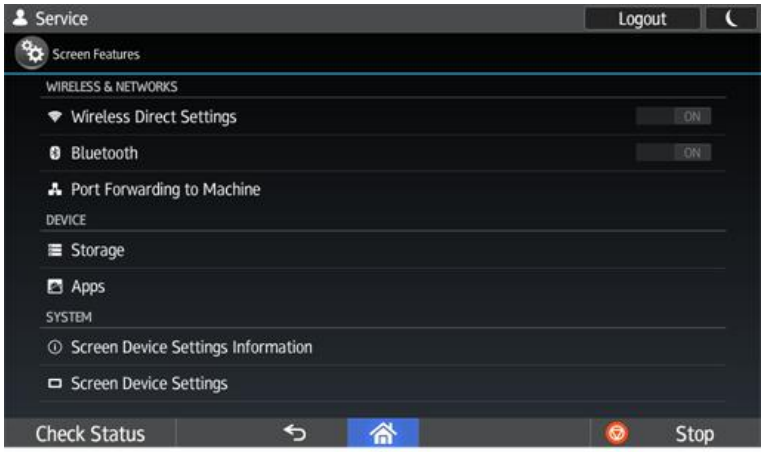
Note

- The machine can enter the recovery mode even if [Service Mode Lock] is enabled.

Service Mode Menu

There are three menus of settings.

- WIRELESS & NETWORKS
- DEVICE
- SYSTEM



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WIRELESS & NETWORKS

Menu level			Description
1st level	2nd level	3rd level	
Wireless Direct Settings	Group Owner Mode		You can only view the setting.
	Connection Password		You can only view the setting.
	DHCP Server IP Address		You can only view the setting.
	DHCP IP Address Range		You can only view the setting.
	Select Channel		You can only view the setting.
	PEER DEVICES		View and configure devices that can be connected.
	REMEMBERED GROUPS		Displays groups that have been previously connected.
Bluetooth	ON/OFF		You can only view the setting.
	SEARCH FOR DEVICES		Scans for Bluetooth devices in the vicinity.
	(name of this device)		You can only view the setting.
	PAIRED DEVICES		View and configure paired devices.
	AVAILABLE DEVICES		View and configure available devices.
Port Forwarding to Machine	Port Forwarding Settings	Port Forwarding Cinfig 1-20	Requests sent to the wireless LAN unit of the Smart Operation Panel can be forwarded to the controller of the MFP. You can enable or

Menu level			Description
1st level	2nd level	3rd level	
			disable ports to forward these requests.
MTU Settings	PathMTU(Enable/Disable)		Enables/disables the PathMTU size set in [MTU Size]. When you change this setting, the control panel restarts.
	MTU Size		Sets the size of PathMTU. Default: 1500.

DEVICE

Menu level			Description
1st level	2nd level	3rd level	
Storage	INTERNAL STORAGE	Total space	Displays the total size of the internal storage.
		Available	Displays the available space of the internal storage.
		Apps (app data & media content)	Displays the size of applications in the internal storage.
	SD CARD *1	Total space	Displays the total size of the SD card.
		Available	Displays the available space of the SD card.
		Apps (app data & media content)	Displays the size of applications in the SD card.
		Erase SD card	Erase data written to the SD card.
Apps	Install	Install from SD Card	Install or update applications from an SD card.
		Install from Server	Enter a product key to install or update applications from the server.
		Activate Applications	Activate applications that have been installed from the server.
		Update Applications	Update applications that have been installed.
		Uninstall	Uninstall applications.
		Check Server Connect	Check if you can connect to the Server.

*1 Displayed only when an SD card is inserted into the SD card slot of the control panel.

SYSTEM

Menu level			Description
1st level	2nd level	3rd level	
Screen Device Settings Information	Status		Displays the following: • Wi-Fi MAC address • Bluetooth address

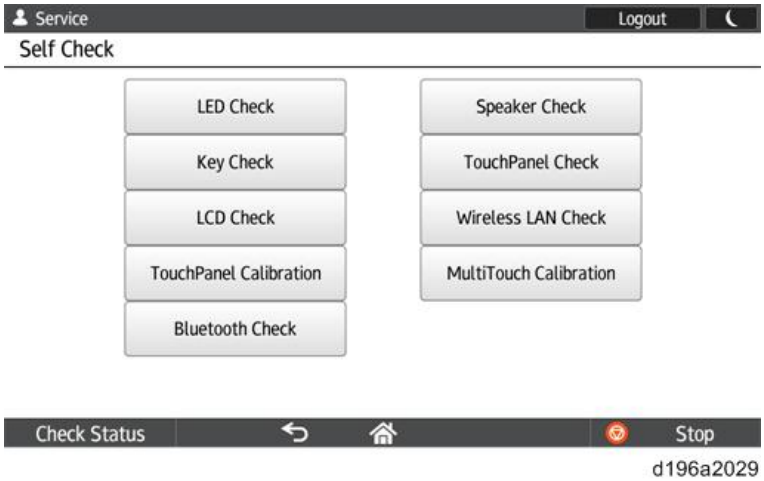
Menu level			Description
1st level	2nd level	3rd level	
			• Interface Settings • Wi-Fi settings (ON/OFF)
	Legal information	Open source licenses	Displays the open source license information.
	Software Version List		Displays the versions of control panel firmware and installed applications. When saving the software version list on an SD card, insert an SD card into the SD card slot of the control panel, and then press [Save to SD Card].
Screen Device Settings	Server Settings	Port number	Input a port number for communication with the import/export and RFU server. The input number is used for both HTTP and HTTPS connections. (Normally, input a number within 55101-55111.)
	Application Settings		Displays a list of installed applications. If you press [Settings] for an application, the setting screen for the CE is displayed. The screen does not change if the application has no setting items.
	Authentication priority mode	Authentication priority mode	This setting gives priority to the recovery time from energy saving modes when an IC card authentication device is connected. When this setting is selected, the MFP does not enter Engine OFF mode, and always recovers from Silent mode.
		Start time(hhmm)	You can specify the start time of Authentication priority mode. Note: This can be changed only when [Authentication priority mode] is deselected.
		Expiration time(hours)	You can specify the period of validity of Authentication priority mode. Note: This can be changed only when [Authentication priority mode] is deselected.
	Screen device always-connection		This setting prevents the control panel from entering Sleep mode, so that Bluetooth and

Menu level			Description
1st level	2nd level	3rd level	
	Setting		other communication devices remain connected. When this setting is selected, the control panel does not enter Sleep mode. Only the LCD (display panel) turns OFF.
	Panel Self Check		Starts self-diagnosis of the control panel. (Panel Self Check)

Panel Self Check

The following are available as self-diagnostics functions of the control panel:

- LED Check
- Key Check
- LCD Check
- Speaker Check
- TouchPanel Check
- TouchPanel Calibration
- MultiTouch Calibration
- Wireless LAN Check
- Bluetooth Check



Note

- The [Self Check] menu is displayed in either English or Japanese. The language can be changed using [Change Language] in the Home screen.
- If an unavailable language is selected, English will be displayed.

- With some diagnostic items, press [Back] [A] at the bottom of the screen to return to the top menu of [Self Check].

LED Check

Select the [All Light On] check box, and make sure the following LEDs light:

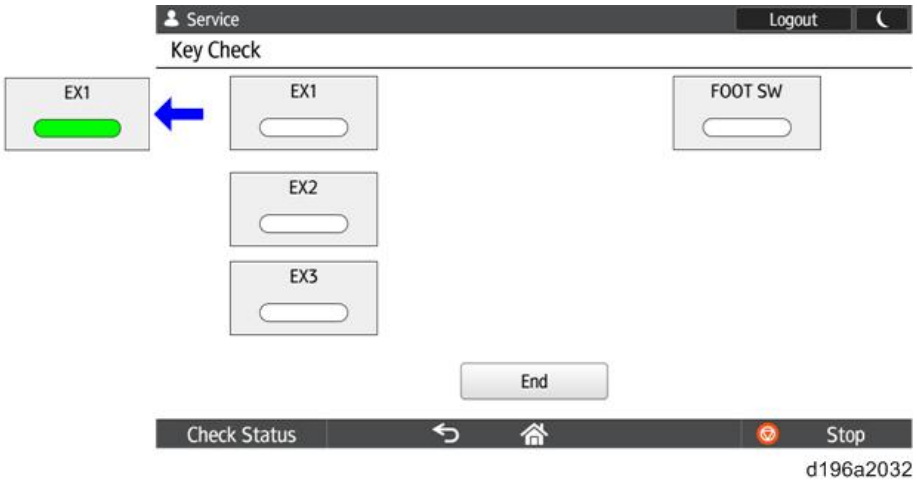
- Data In indicator (facsimile and printer modes)
- Fax indicator
- [Check Status] indicator (flashes in red and orange alternately)

When the check is completed, press [Back] to return to the top menu of [Self Check].

Key Check

Check if the Extended Feature keys on the left side of the control panel (EX1, EX2, EX3 from top to bottom) are functioning normally. If they are functioning normally, the key will turn green when pressed.

[FOOT SW] is not used.



When the check is completed, press [End] to return to the top menu of [Self Check].

LCD Check

Visually inspect the color of the LCD. The displayed colors are white/black/red/green/blue. The LCD changes to the next color when you press it.

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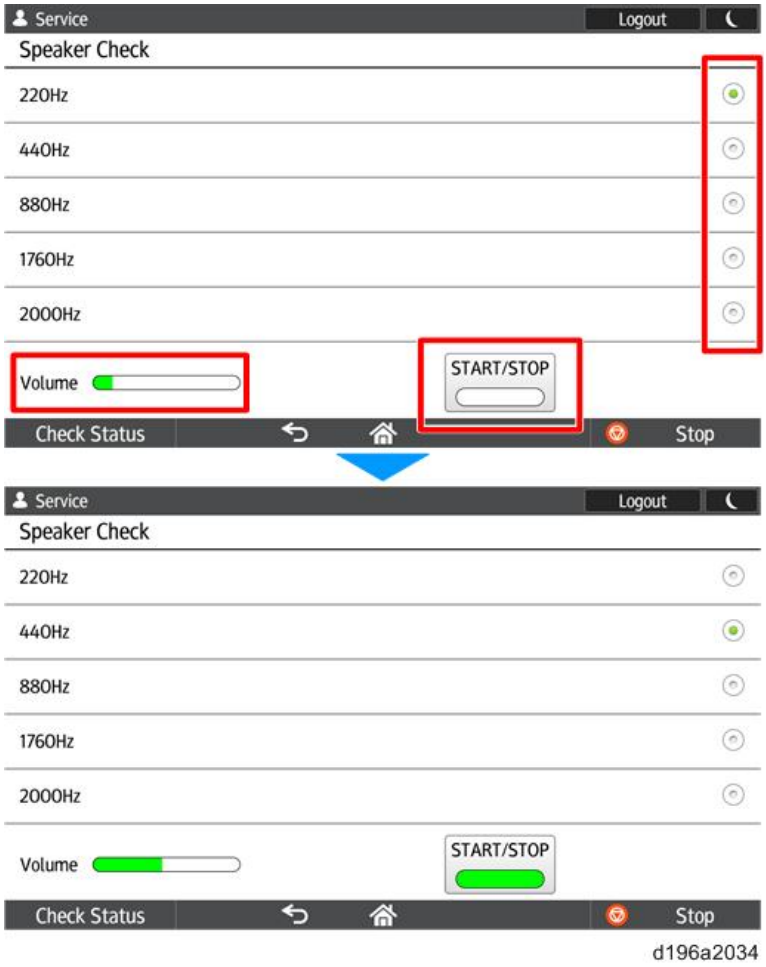
The check is completed when all colors have been displayed. The screen returns to the top menu of [Self Check].

Speaker Check

Tests the speaker by playing the reference sound.

1. Select the frequency (220Hz, 440Hz, 880Hz, 1760Hz, or 2000Hz).
2. Press [START/STOP] to play the sound.
3. Touch the volume bar, and play the sound at minimum and maximum volumes.
4. Press [START/STOP] to stop the sound.



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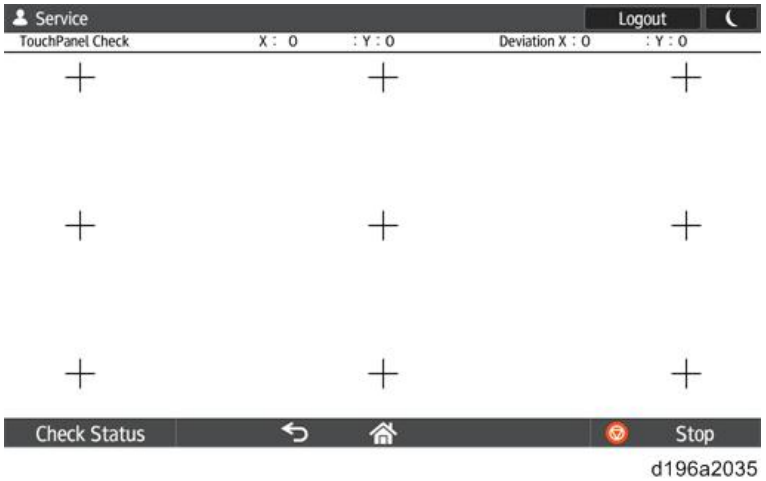
When the check is completed, press [Back] to return to the top menu of [Self Check].

TouchPanel Check

For each of the nine reference points on the screen, the distance between the detected position and the nearest reference point is displayed.



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When the check is completed, press [Back] to return to the top menu of [Self Check].

TouchPanel Calibration

Calibrate the touch panel by touching the center of each of the five “+” signs.

The five “+” signs are displayed in the order of top left, bottom right, bottom left, center, and top right.

After you have touched the five “+” signs, the display switches to the [Retry/OK] screen.

- If you want to calibrate again, press [EX1].
- If you want to confirm that the calibration results are OK, press the [EX3] key to return to the top menu of [Self Check].

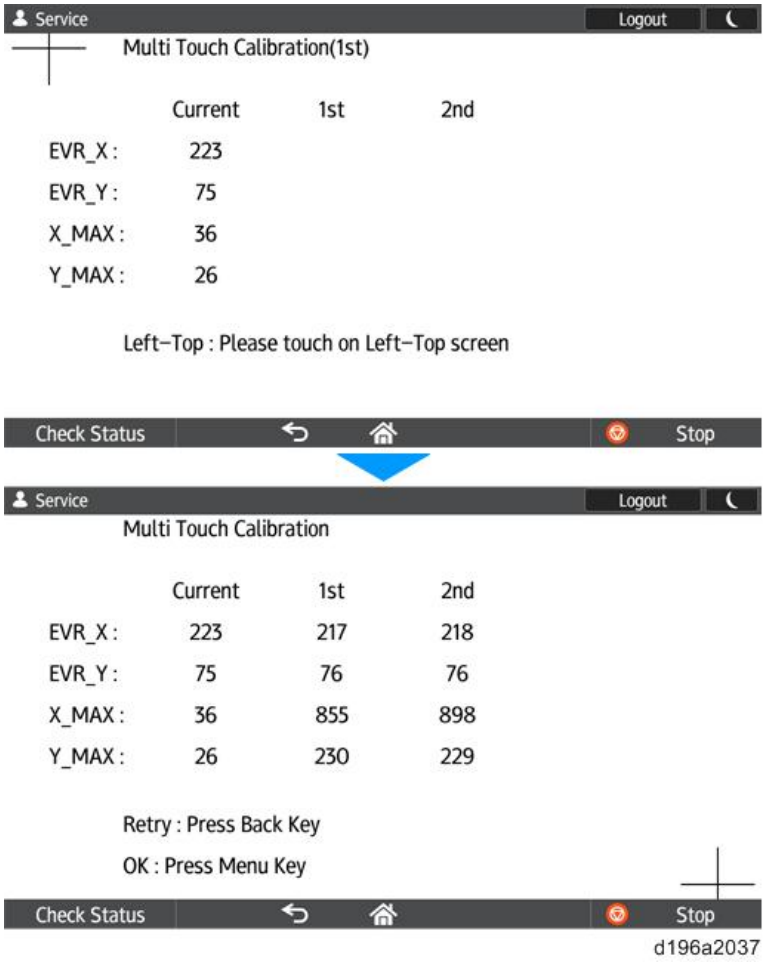
MultiTouch Calibration

Calibrate the touch panel for multi-tap input methods such as pinch-in/pinch-out.

Touch the center of both “+” signs. The two “+” signs are displayed in the order of top left and bottom right.

Repeat the procedure. The touch panel will be calibrated.

- If you want to adjust it again, press the [EX1] key.
- If you want to confirm that the calibration results are OK, press the [EX3] key to return to the top menu of [Self Check].



The “Back Key” in the message is actually the [EX1] key and the “Menu Key” in the message is actually the [EX3] key.

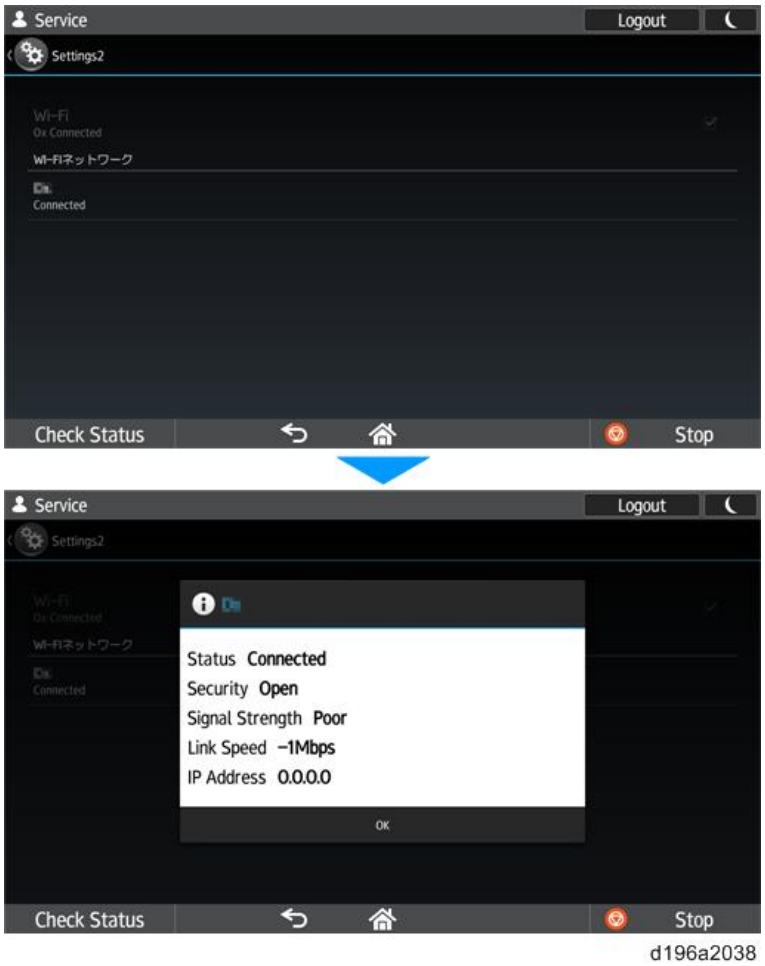
Note

- The values of “EVR_X”, “EVR_Y”, “X_MAX”, and “Y_MAX” are for internal processing and do not indicate the positions or distance of the points touched. There is no problem unless there is a huge difference between the values of the first calibration and the second calibration.

Wireless LAN Check

Checks the condition of the wireless LAN connection.

When you select the connected access point, the signal strength, IP address and other information are displayed.



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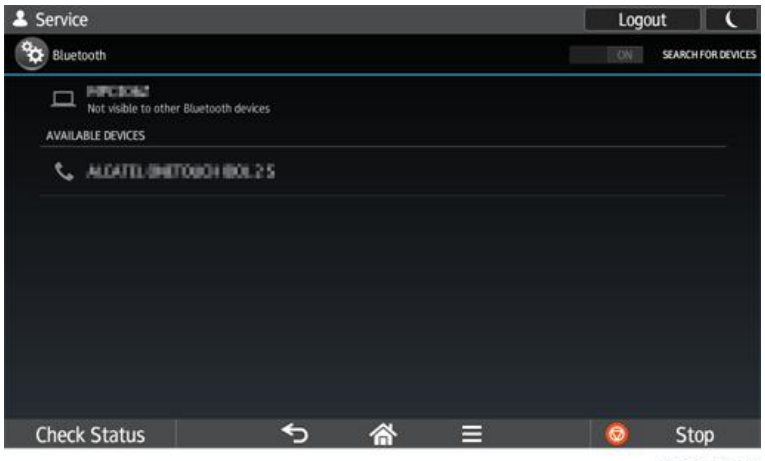
When the check is completed, press [Back] to return to the top menu of [Self Check].

Bluetooth Check

Check and configure the Bluetooth device connection.



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When the check is completed, press [Back] to return to the top menu of [Self Check].

Note

- You cannot switch Bluetooth to [ON] or [OFF] from the [Self Check] menu. Before checking the Bluetooth device connection, specify [ON] for [Bluetooth] in [Screen Features] > [WIRELESS & NETWORKS] > [Bluetooth].

Recovery Mode

The recovery mode menu is as follows. Ask your manager for details on how to enter Recovery mode.

Menu	Description
reboot system now	Reboots the Android OS.
apply update from sdcard	Updates the Cheetah System firmware by specifying the folder path.
wipe data/factory reset	Deletes all installed applications and all settings on the Cheetah.
wipe cache partition	Deletes all data that is stored on the cache partition. Currently, Cheetah does not use the cache partition, so nothing happens when this menu item is accessed.
wipe free area partition	Deletes all data that is stored on the free partition. Cheetah stores the version history on the free partition. When this menu item is selected, it will then disappear.
wipe LegacyUI area	Deletes Legacy UI.
micon update from sdcard	Updates Keymicon by specifying the folder path.

Note

- If [Update Firmware] is set to [Prohibit] in [System Settings] of the MFP, the control panel cannot enter the recovery mode.
- Ask your manager for information on how to enter the recovery Mode.

Special Key Combinations

This section describes special key combinations for operations which required combinations of hardware keys on the previous models.

Function	Operation for previous models	Operation for Smart Operation Panel
SSP (Super Service) mode login	Login to SP mode, and then press an SP mode item while holding down the [#] key.	Login to SP mode, and then press an SP mode item while holding down the EX3 key.
Resetting User Tools	In the User Tools screen, press a User Tools category while holding down the [#] key. Available for: System Settings, Copier/Document Server Features, and Scanner Features.	In the User Tools screen, press a User Tools category while holding down the EX3 key. Available for: System Settings, Copier/Document Server Features, and Scanner Features.
System Reset	Hold down the [*] and [#] keys simultaneously for 10 seconds. Resets the controller software.	Hold down the EX3 key and [#] simultaneously for 10 seconds. Resets the controller software of the main

Function	Operation for previous models	Operation for Smart Operation Panel
		machine.
Application Reset	Hold down the [7] and [9] keys simultaneously for 10 seconds. Resets a single application.	Hold down the EX3 key and [9] simultaneously for 10 seconds. Resets a single application.
Resetting User Code Authentication	Press the [Reset] key and [Clear] key simultaneously. Returns to the User Code entry screen.	Hold down [Reset] for 2 seconds. Returns to the User Code entry screen.

Software Update

Updating the Smart Operation Panel

There are four methods to update the Smart Operation Panel. The method is different depending on what you want to update.

1. Installation/update from an SD card
2. Package update
3. Installation/update from the eDC Server
4. Installation/update from Application Site

Update method	Features	Control panel firmware	Applications
Installation/update from an SD card	Update using an SD card. • This is the only method to install an older version of currently installed software. • Enter the recovery mode to update the control panel firmware. • Use the installation screen in the control panel's service mode to update applications. • You can install or update multiple applications at once. • You can also uninstall an application.	Yes	Yes
Package update	Uses the Package update function of the GW+ controller to update the software. • The software is updated in the following order: controller firmware, applications, and then the control panel firmware. • The procedure for updating the control panel firmware is the same as when updating from an SD card using Recovery mode.	Yes	Yes
Installation/update from the eDC Server	Downloads applications from the eDC Server for installation or update. This method is mainly for paid applications. A product key is required when an application is installed for the	No	Yes

Update method	Features	Control panel firmware	Applications
	first time.		
Installation/update from Application Site	Installation and Updating of applications and firmware update can be done from Application Site. When administrator authentication is enabled, an administrator privilege is required to start Application Site. If you log in to the operation panel service mode, however, you can use it with CE privilege.	Yes*1	Yes

*1 Update can only be done by using a package file.

The following three methods can be used for updating the firmware.

- Update from an SD card (recovery mode)
- Package update
- Installation/update from Application Site

The following four methods can be used for updating an application.

- Installation/update from an SD card
- Package update
- Installation/update from the eDC Server
- Installation/update from Application Site

Installation/update from an SD card

Updating the Smart Operation Panel Firmware

Enter the recovery mode to update the firmware of the Smart Operation Panel.

Note

- When [Quick] is selected for [Screen Startup Mode], the control panel cannot enter the recovery mode. Change the startup mode to [Normal]. When update is completed, restore the startup mode setting because the setting affects startup time.
- Shut down the MFP with [Normal] selected for [Screen Startup Mode], or shut it down using the special shutdown procedure used for maintenance.
- If [Prohibit] is selected for [Update Firmware] in [System Settings], the machine cannot enter Recovery mode. Ask the administrator of the MFP to change the setting.

Creating an SD card for firmware update

1. Download the update module “Cheetah System” from the Firmware Download Center.
2. Execute the downloaded file.
   A file named “part number + suffix.zip” will be created.

Note

- Do not unzip the created file.

3. Copy the “part number + suffix.zip” file to the root directory of the SD card.

Updating the firmware (for the Cheetah System)

1. Turn OFF the MFP.

Note

- Shut down the MFP with [Normal] selected for [Screen Startup Mode], or shut it down using the special shutdown procedure used for maintenance.

2. Insert the SD card into the SD card slot of the control panel and start up the MFP in Recovery mode.

Note

- Ask your manager for details on how to enter the recovery mode.
- In the recovery mode, key functions are shown on the screen. However, the key functions for moving/selecting directories are different for executing an update. Check the key functions while operating.
- Keys

  When moving/selecting directories

  When executing an update

  [EX1]

  Moves the cursor up.

  Executes updating.

  [EX2]

  Moves the cursor down.

  Cancels updating.

  [EX3]

  Selects the item.

3. Select “apply update from sdcard” in the “Android system recovery” screen, and then press the [EX3] key.

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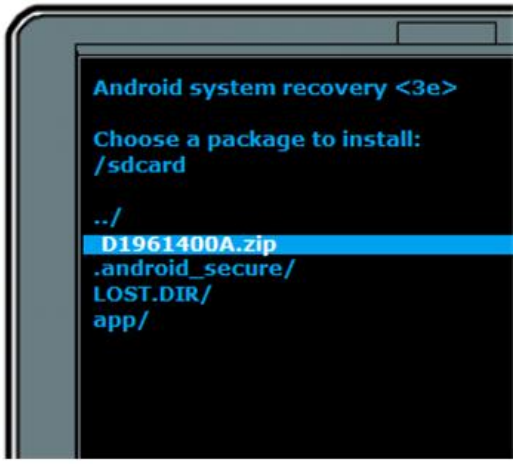
4. The contents of the SD card is displayed. Select “part number + suffix.zip” with the [EX1] or [EX2] key, and then press the [EX3] key.

Example: “D1961400A.zip”



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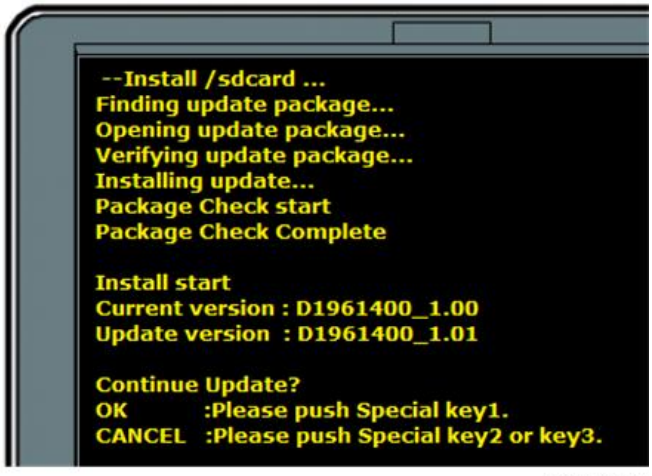
5. The installation screen is displayed.



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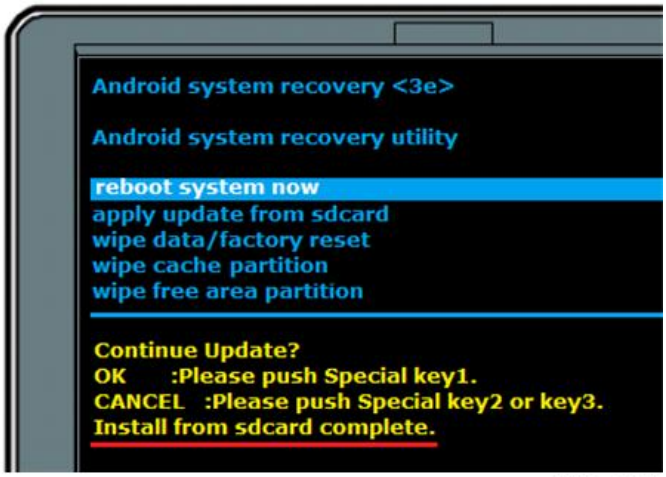
6. The version of the firmware installed in the control panel is displayed as “Current version” and the version of the firmware saved on the SD card is displayed as “Update version”. Make sure that you have the correct version.
7. When “Continue Update?” is displayed, press [OK] ([EX1] key).

The update process starts.

Note

- To cancel the firmware update, press the [EX2] or [EX3] key.

8. When “Install from sdcard complete.” is displayed, select “reboot system now” and then press the [EX1] key to reboot the system.



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Installing/Updating an Application

Creating an SD card for update

1. Download the update modules from the Firmware Download Center.
2. Unzip the downloaded file.
3. Create a folder named “romdata” in the root directory of the SD card.
4. Put the unzipped file in the “romdata” folder.

Update procedure

1. Log in to the control panel in service mode.
2. Insert the SD card into the SD card slot of the control panel.
3. Select [Apps] > [Install] > [Install from SD Card].
4. Select the application you want to install or update, and then press [Install]
5. The installation or update results are displayed.
6. Check that the application is correctly installed or updated, and then press [reboot operation panel].

Package Update

This method uses the package update function to update the control panel firmware and/or applications. The

package update function is provided by the controller.

Update is done in the following order:

1. Controller firmware
2. Applications
3. Control panel firmware

If the control panel firmware has to be updated, the control panel starts in the recovery mode and the firmware is automatically updated.

The control panel restarts when updating is completed. The result notification is processed after the control panel restarts.

When Installation/Update Is Prohibited

If [Prohibit] is selected for [Update Firmware] in [System Settings], the execution key is grayed out and installation/update cannot be executed.

When trying to update from a PC, updating fails and the result is recorded as “Failed”.

Installation/update from the eDC Server

Downloads applications from the eDC Server, and installs or updates them.

This method is mainly for paid applications. A product key is required when an application is installed for the first time.

Note

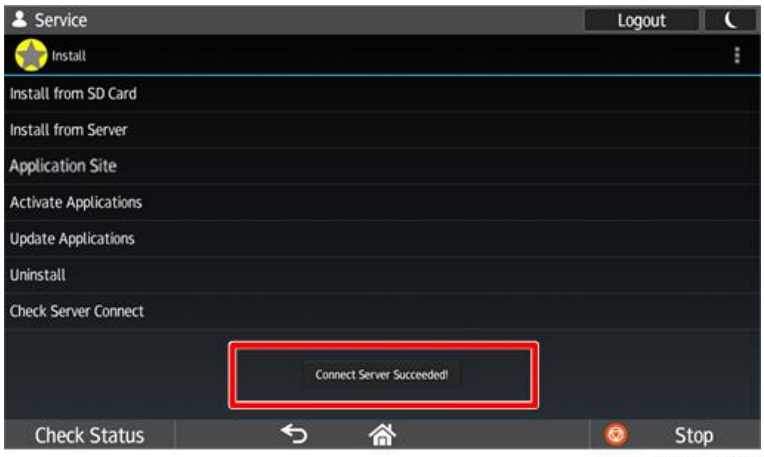
- Installation/activation/update of applications from the server can only be done in the service mode.

Check Server Connect

1. Log in to the control panel’s service mode.

2. Select [Apps] > [Install].

3. Press [Check Server Connect] and make sure that “Connect Server Succeeded!” is displayed.



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Note

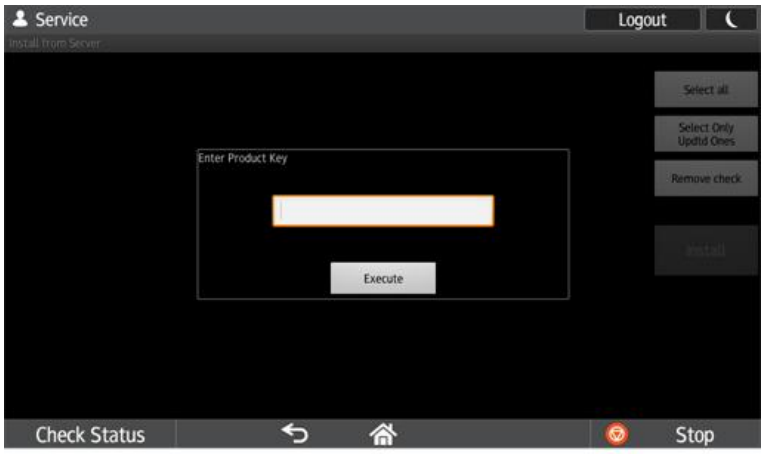
- The server address is stored in the firmware of the Smart Operation Panel.
- To connect to the server, the network settings of the MFP must be configured correctly. For the

required configuration, see the Field Service Manual of the MFP.

- If server connection fails, see Troubleshooting for error codes.

Installation

1. Log in to the control panel's service mode.
2. Select [Apps] > [Install].
3. Select [Install from Server].
4. Enter the product key and press [Execute].



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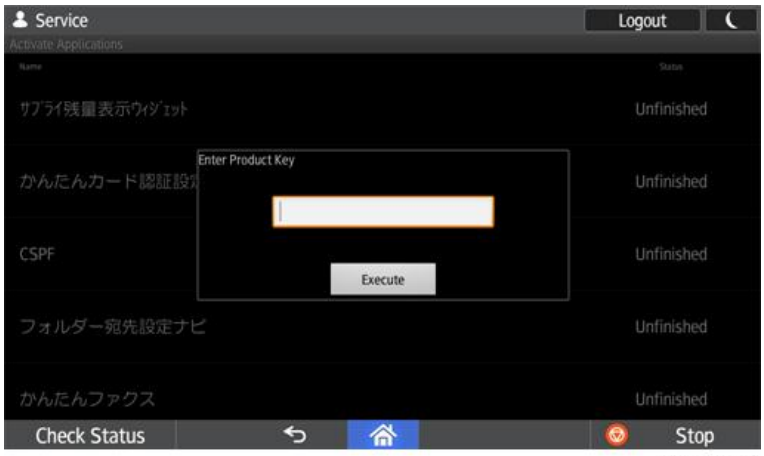
5. Follow the instructions shown on the screen.

Note

- An application cannot be installed unless it is digitally signed by Ricoh.

Activation

1. Log in to the control panel's service mode.
2. Select [Apps] > [Install].
3. Select [Activate Applications].
4. Select the application to be activated, and then enter the activation key and press [Execute].



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5. Follow the instructions shown on the screen.

Note

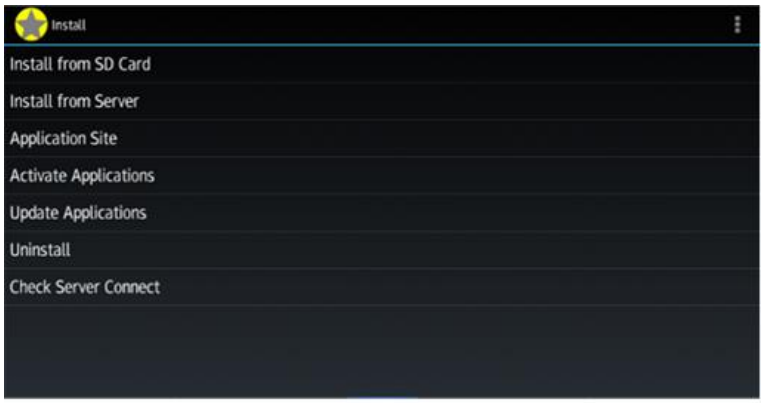
- Only charged applications have to be activated.

Update

1. Log in to the control panel's service mode.
2. Select [Apps] > [Install].
3. Select [Update Applications].
4. Select the application to be updated, and then press [Check Update Status].
5. Follow the instructions shown on the screen.

Application Site

"Application Site" has been added to Screen Service mode. Field engineers can start up Application Site to install or update applications or firmware without needing user administrator credentials.



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This menu item opens Application Site by using the Web Browser NX app.

4. Troubleshooting

Troubleshooting

Software Update Errors

Errors that occur during application update from an SD card

Error message / screen display	Explanation	Solution
Insert a correct SD card.	-	• Remove the SD card and insert it again. • Make sure that the directory of the SD card is correct. You must create the "app" folder in the root directory of the SD card and put the zip file in the "app" folder.
You are trying to install the same application with a different part number. Is it OK to continue?	Displayed when you attempt to update an application that is the same but has a different part number.	Check the file, and select [OK] or [Cancel].
Some applications could not be installed.	Displayed in the following cases. • You attempted to update a module (application) in use. • The application is corrupted.	Restart the control panel and repeat the update procedure.
- (The application you want to update is not displayed in the list of applications.)	-	• Make sure that the directory of the SD card is correct. You must create the "app" folder in the root directory of the SD card and put the zip file in the "app" folder. • Check the application file in the SD card.

Errors that occur during update from the eDC Server

Error code	Explanation
101	Server connection error
102	Signature verification error

Error code	Explanation
103	License error (for example, the product key was keyed in wrongly)
215	Dependency check error Displayed when the control panel firmware version does not meet the installation requirement of the application. Example: The firmware version of the control panel is 1.02 and you attempted to install an application that requires firmware version 1.03.
20X	Other errors

Example of an error code display

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Note

- An additional 3-digit code may be displayed to indicate the details.
  Example: 101-805

Errors that occur during remote (batch file) update

When the update is completed, a result report file (install_result_yyyymmddhhmm.txt) is created in the same folder as the batch file.

The result report file shows the IP address of the MFP and whether the update process was successful or not.

“yyyymmddhhmm” shows the date and time according to the clock of the MFP.

Result	Explanation
Succeed	Updated the machine successfully.
Failed	Failed to update the machine. An error code follows.
Not connected	Failed to connect to the machine.
Can't get result	Failed to obtain the result (occurs only with firmware updates).

Example of a result report file

- Name: install_result_201512041005.txt
- Contents:
  192.168.0.100: Successful

192.168.0.102: Failed error:XX (XX indicates an error code.)

192.168.0.103: Not connected

Error codes

The meanings of error codes recorded after "error:" in the result file are as follows:

Error codes recorded during firmware update

Error code	Explanation	Access Log
-2	Invalid file	Recorded
-3	The target application cannot be found.	Recorded
-501	Installation has already been requested.	Recorded (*1)
-602	Invalid signature	Recorded
-603	Updating is prohibited.	Recorded
-604	Failed to put the application offline.	Not recorded
-610	Authentication failed.	Not recorded
-699	Unknown error	Recorded (*2)
-701	Version of the micro computer firmware is invalid.	Recorded
-709	File structure error (invalid file)	Recorded
-710	Writing failure	Recorded

Error codes recorded during application update

Error code	Explanation	Access Log
-2	Invalid file	Recorded
-3	The target application cannot be found.	Recorded
-4	The storage capacity is not enough.	Recorded
-12	The version of the Android application cannot be installed.	Recorded
-602	Invalid signature	Recorded
-603	Updating is prohibited.	Recorded
-604	Failed to put the application offline.	Not recorded
-610	Authentication failed.	Not recorded
-699	Unknown error	Recorded (*2)

*1 The error code recorded in the Access Log will be "223: machine-busy".

*2 If the error occurs during preparation for configuration change, it will not be recorded in the Access Log.

Note

- If the preparation for configuration change (putting the application offline, authentication, file size check) cannot be carried out, an error code is displayed on the screen. However, it is not recorded in the Access Log as a firmware update/installation error.

Error codes recorded in the Access Log

Error code	Error name	Explanation	Solution
49	fwu-prohibit	Firmware update is prohibited.	Enable firmware update, and repeat the procedure.
60	other:E60	The HDD cannot be used.	• Turn the main power OFF and ON, and then repeat the procedure. • If the HDD is damaged, replace it.
62	other:E62	The structure of the application or control panel firmware in the package is invalid.	Prepare a valid package file.
221	terminate-fail	Failed to terminate an application when attempting to update or uninstall it.	• If a job is under way in the target application, wait until the job is finished, and then repeat the procedure. • Turn the main power OFF and ON, and then repeat the procedure.
222	signature-invalid	Failed to verify the signature attached to the application or firmware.	Repeat the procedure using a valid signature.
223	machine-busy	Failed to execute installation because another function was being used on the MFP.	• Wait a while and repeat the procedure. • Turn the main power OFF and ON, and then repeat the procedure.
224	capacity-lack	The storage capacity is not enough.	• Reduce the number of applications to be installed. • Uninstall unnecessary applications.
225	download-fail	The product ID is incorrect.	Use a correct product key.
226	dependency-check-fail	The control panel does not meet the installation requirements of the application.	Check the installation requirements of the application. Update the control panel as necessary.
227	license-invalid	There are no remaining licenses. The product key that you are trying to use has already been activated for another device.	Use an unused product key to activate the application.
		An invalid product key was used to issue the license.	Update the application using an activated product key.
		The number of licenses issued has exceeded the limit.	Deactivate the application, and then activate it again.

Error code	Error name	Explanation	Solution
		The license has expired. The product key being used is no longer valid.	Use an unused product key to activate the application.
		The license contract is invalid.	Use a valid product key to activate the application.
228	file-not-found *	The target firmware file cannot be found.	• Turn the main power OFF and ON, and then repeat the procedure. • Check the file in the SD card. • Check the SD card slot. If there is a problem with the hardware, replace the control panel PCB.
229	file-invalid *	The target update file is invalid. Occurs in the following cases. • Failed to decompress the file. • Failed to obtain application information. • Failed to read the public key for signature verification.	Repeat the procedure using a valid file.
230	wrong-folder-structure *	The folder directory of the control panel firmware is invalid.	Repeat the procedure using a valid directory.
231	write-fail *	• Failed to write data when updating the control panel firmware. • There is a problem with the hardware.	Turn the main power OFF and ON, and then repeat the procedure. If updating fails again, replace the control panel.
232	deactivate-fail	The application could not be uninstalled because deactivation failed. • Failed to connect to the server. • The license has not been issued.	• Check whether the network is configured correctly. • If the server is under maintenance, wait a while and repeat the procedure. • Check the activation status of the application. If it has not been activated, activate it.
233	uninstall-fail	Failed to uninstall an application.	Turn the main power OFF and ON, and then repeat the procedure. If updating fails again, replace the control panel.
234	fixed-app	You attempted to uninstall an application that cannot be uninstalled.	Cancel uninstallation.
235	install-fail	The target file is invalid, and the Android	• Repeat the procedure using a valid

Error code	Error name	Explanation	Solution
		OS returns an error.	file. • If the same application has already been installed, uninstall it and then repeat the procedure.
236	sdk-incompatible	The Android SDK version required by the application is not installed on the control panel.	Check that the Android SDK version required by the application is installed on the control panel.
237	server-disconnect	Failed to connect to the eDC server.	• Check the network connection (SSL) settings. • Check the proxy settings. • If the server is under maintenance, wait a while and repeat the procedure.
255	panel-system *	Software malfunction.	Turn the main power OFF and ON, and then repeat the procedure.

* These errors are not expected to occur.

Errors That Occur When the Control Panel Downloads Data from the Controller at Startup

Some of the graphic data used in the control panel display is model-specific. Model-specific components are stored in the controller board of the MFP.
During startup, the control panel checks if it is necessary to update the model-specific data. If it is necessary, the control panel downloads the data from the MFP controller board and installs it in the control panel.
During update, a dialog appears to inform you that the settings are being changed. When the update process is completed, a dialog indicates whether update was successful or not.

Error code	Explanation
E1	An error has occurred when downloading data from the controller board of the MFP.
E2	An error has occurred when installing data on the control panel. An additional error code is displayed after "E2".