Capella-NB1e
(Machine Code: G829)

SERVICE MANUAL

IMPORTANT SAFETY NOTICES

1. Before disassembling or assembling parts of the network scanning box, make sure that the network scanning box power cord is unplugged.
2. The wall outlet should be near the network scanning box and easily accessible.
3. The output voltage of the PSU (Power Supply Unit) can be either 100 ~ 240 Vac, without any adjustment. Make sure that the above voltage is used.
4. The power cord should be an approved type, in accordance with the regulations for the country in which the network scanning box is used.
5. When keeping used lithium batteries in order to dispose of them later, do not put more than 100 batteries per sealed box. Storing larger numbers or not sealing them apart may lead to chemical reactions and heat buildup.

Lithium Batteries (Memory Back-up)

CAUTION
The danger of explosion exists if a battery of this type is incorrectly replaced.
Replace only with the same or an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

Maintenance Information

The operating instructions explains how to use and maintain the network scanning Box . Before performing the maintenance, read the operating instructions.

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Notice

The contents of this manual are subject to change without notice.

This manual uses several symbols.

Symbol	What it means
☛	Refer to section number
CT	See Core Tech Manual for details
🪛	Screw
🔌	Connector
ℂ	E-ring
🔗	Clip ring

TABLE OF CONTENTS

1. REPLACEMENT AND ADJUSTMENT

CAUTION
Turn off the main power switch and disconnect the machine's power cord before you do the procedures in this section.

1.1 SPECIAL TOOLS

No special tool required for this model

1.2 REPLACEMENT

1.2.1 REPLACING THE MCBU BOARD (MAIN CONTROLLER BOARD)

1. Remove the three screws from the lower cover.

2. Pull down the lower cover and detach it from the four hooks.

3. Open the upper and lower covers, as shown in the photograph below.
   Important: Be careful not to damage the flat cable.

4. Disconnect the flat cable from the MCBU board connector.
   Note: In the photograph below, the MCBU board is on the left side.
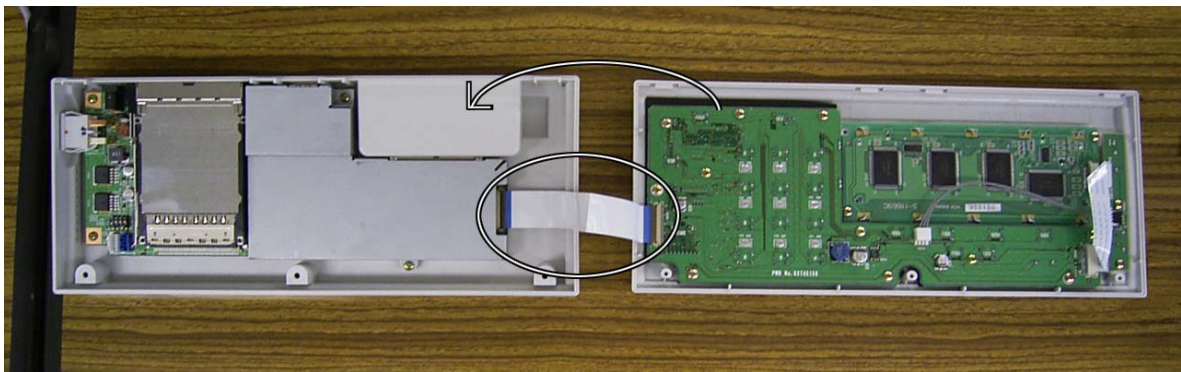
5. Remove the bracket (🔩 x 2).
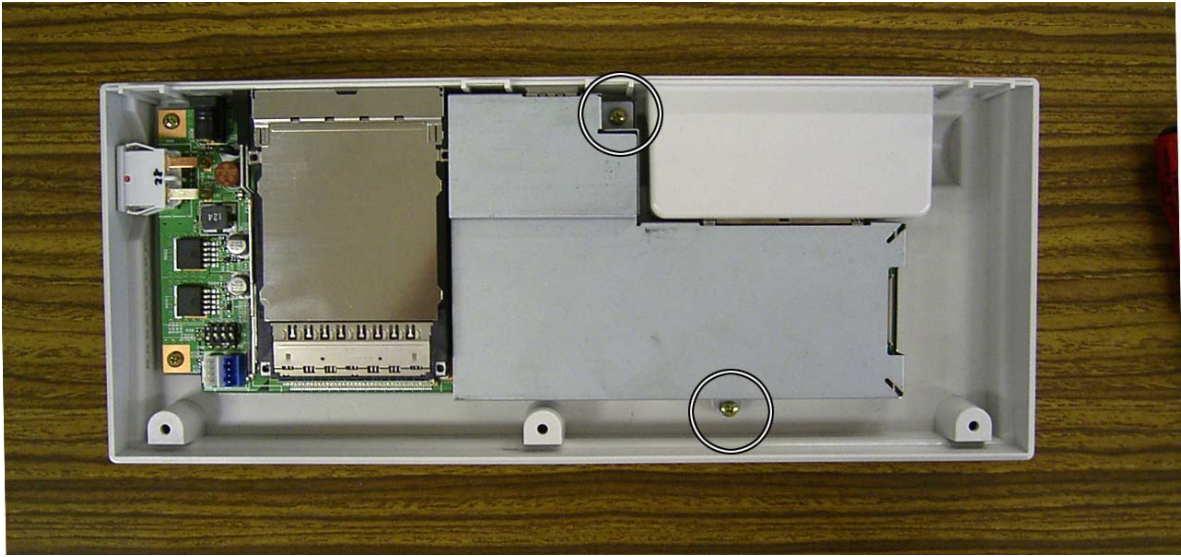
6. Remove the MCBU board (🔩 x 4).
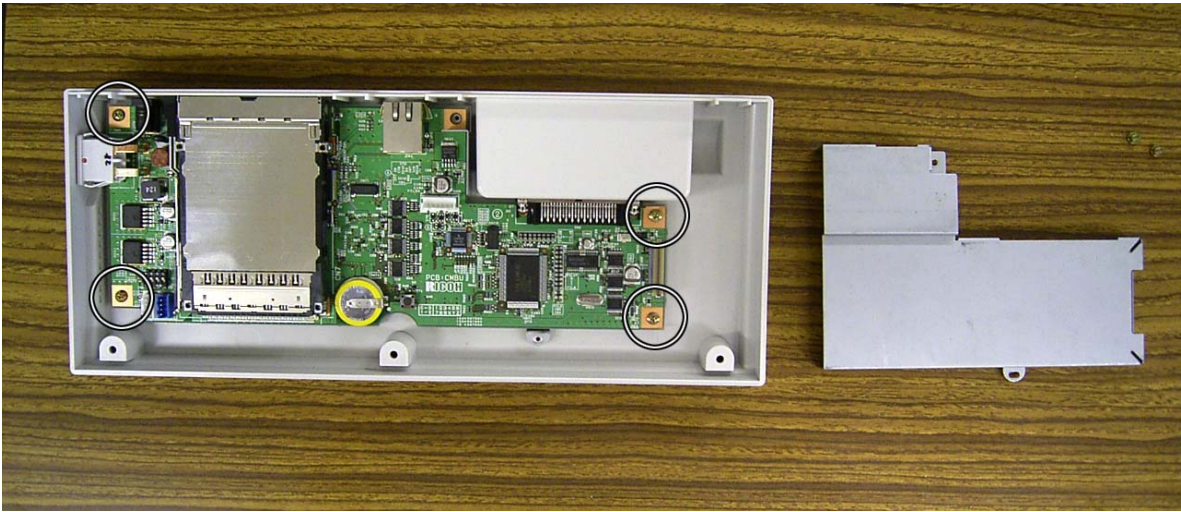
1.2.2 REMOVING THE OPERATION PANEL BOARD, KEY TOP, LCD BOARD AND LED CONTROL BOARD

1. Do Steps 1-4 of section 2.2.1.

2. Remove the operation panel board from the upper cover (🖉 x 11, 🗐x2).
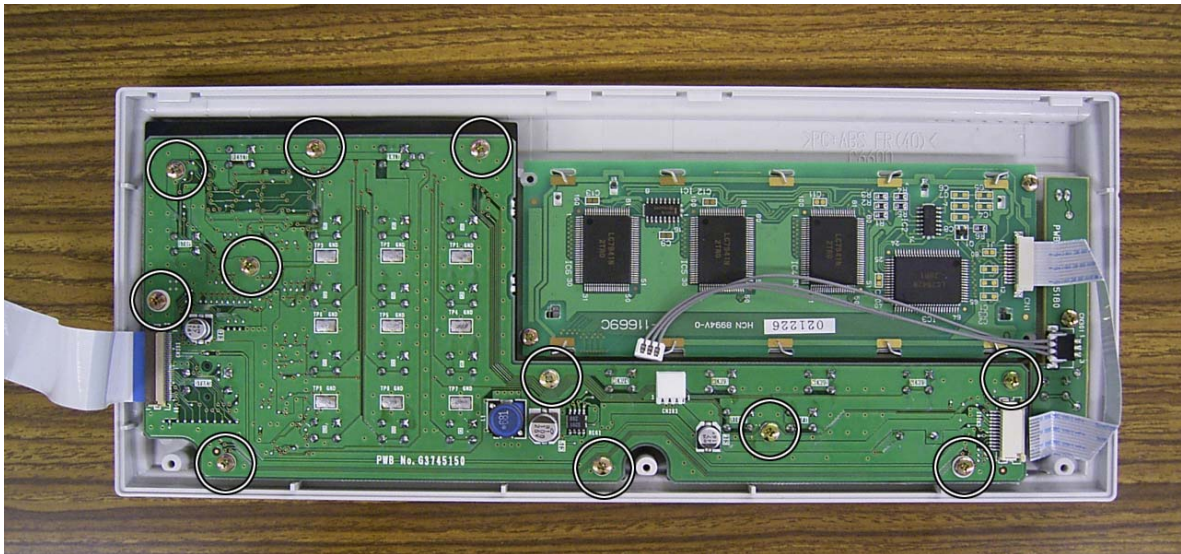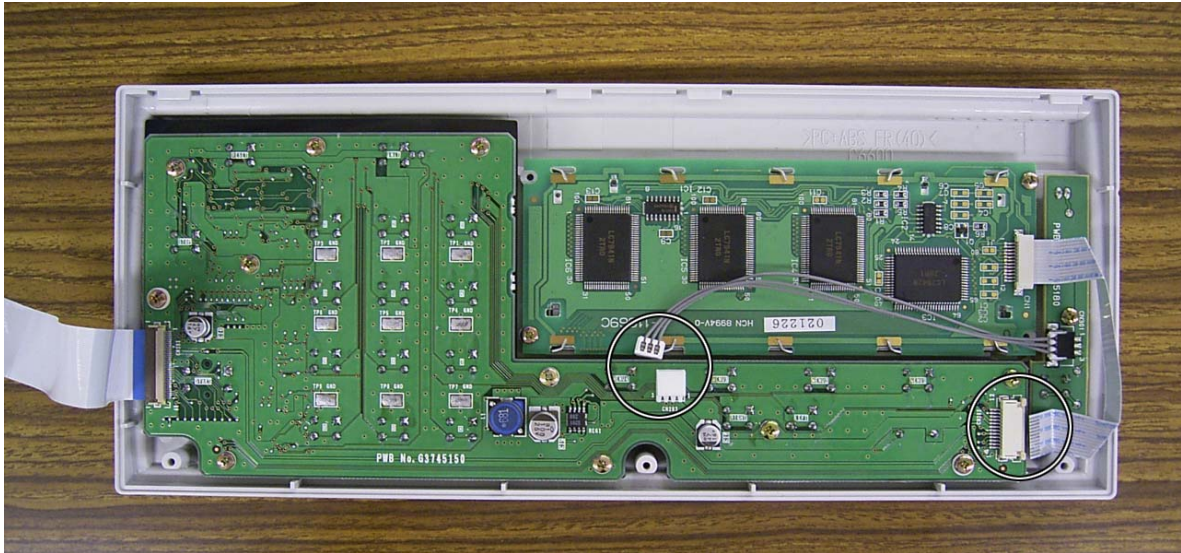
3. Remove the key top.
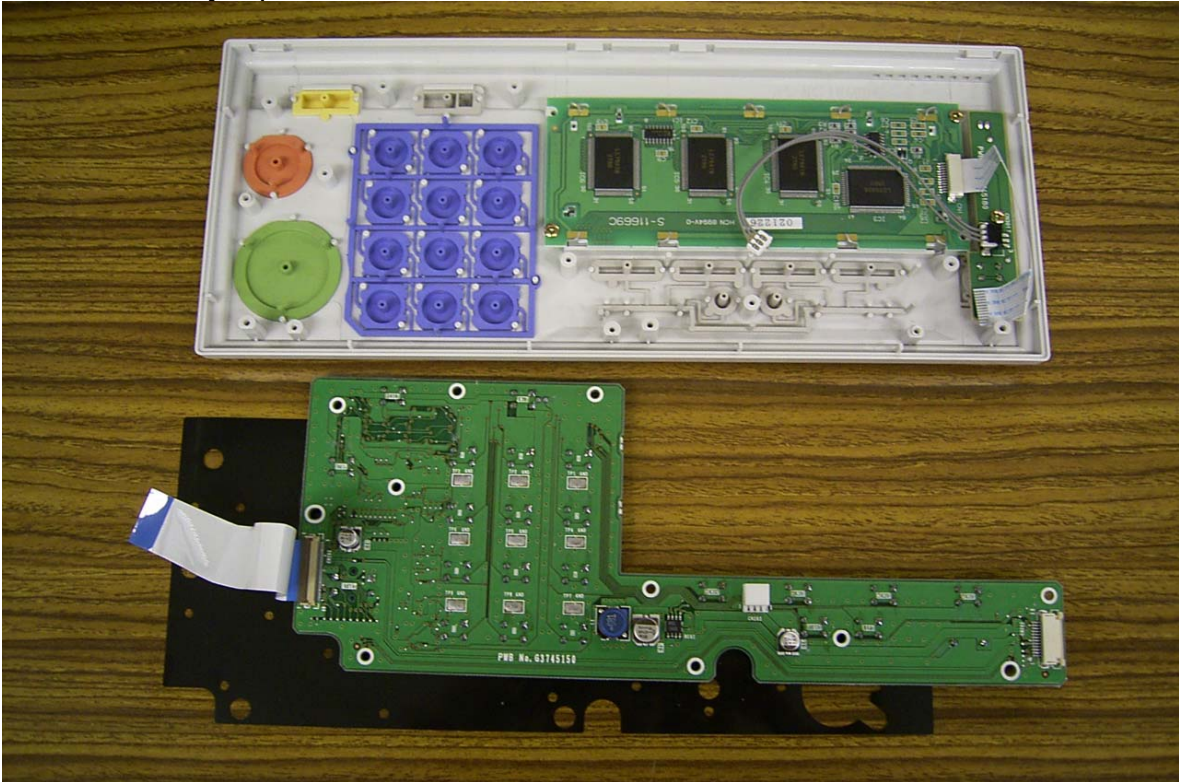
4. Remove the LCD board.

5
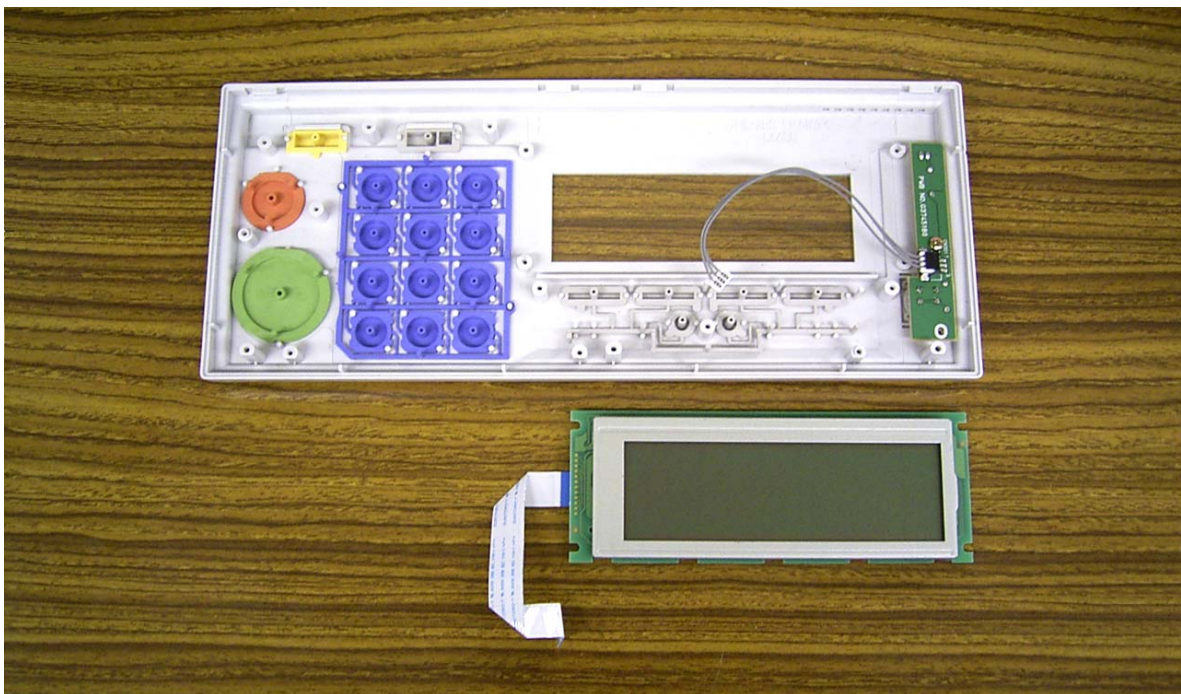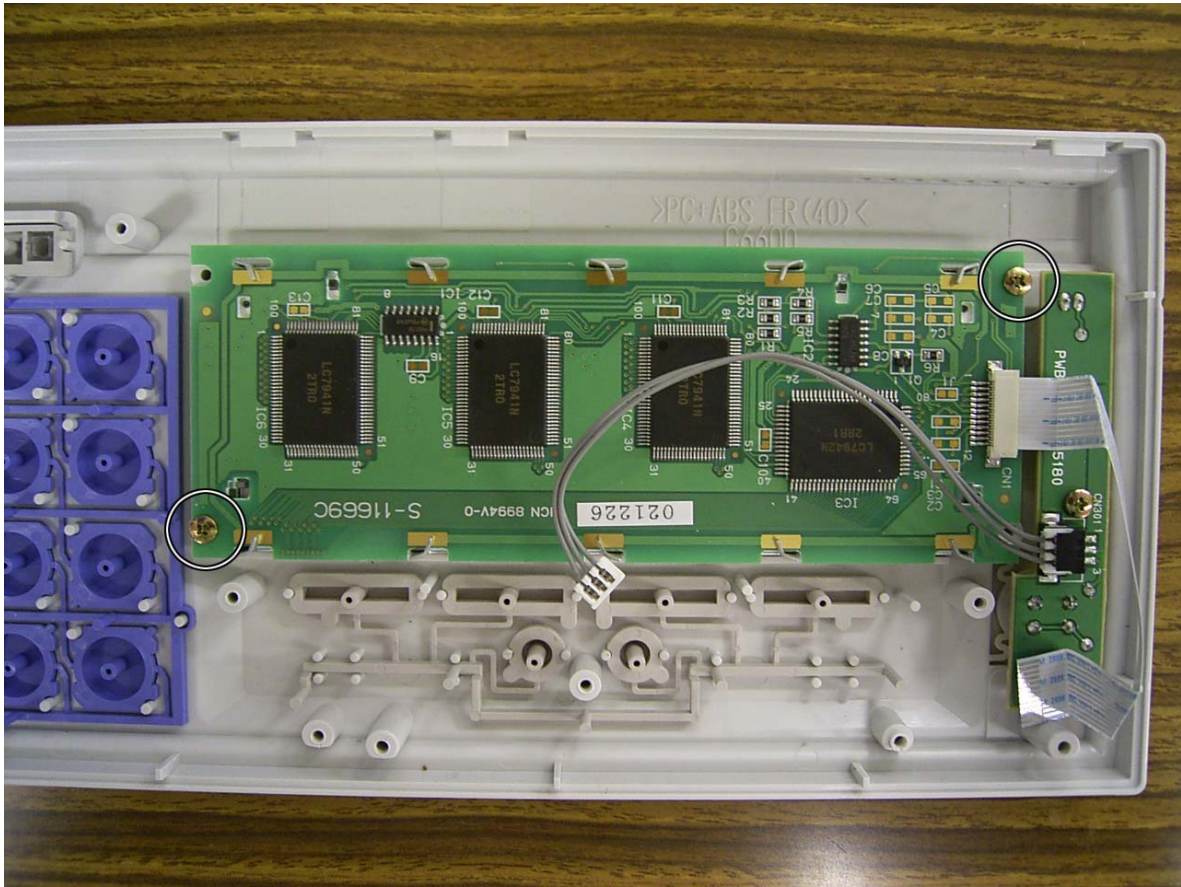
5. Remove the LED control board ($\mathscr{F}$ x 2).
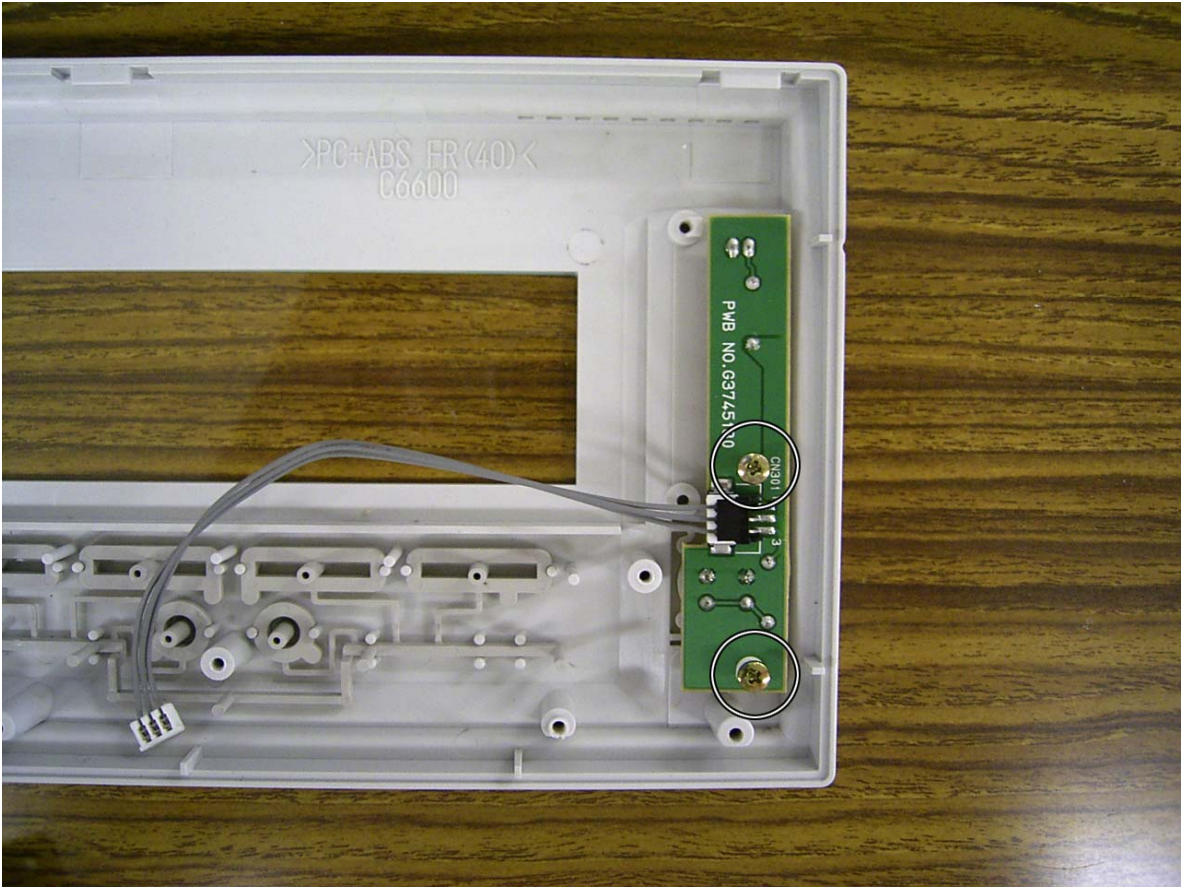
2.   TROUBLESHOOTING

2.1   SC CODES

SC Code	Item	Definition	Possible cause / Trouble shooting
SC4020	Functional problems	When the machine detects an impossible recovery error.	• System does not work correctly. (e.g. firmware error) 1. Turn the main power on/off. 2. Replace the MCB.
SC4030	Battery voltage error	When the battery voltage is not enough.	• Insufficient battery voltage 1. Turn the main power on/off. 2. Replace the network board.

Spec.

3. SERVICE TABLES

3.1 DIP SWITCH FUNCTION

These switches are on the MCB inside the mainframe. Normally, these are not used in the field.

SW No.	Function	Setting	Default
1	Boot Mode	DFU	OFF
2	PCB Production Type	DFU	OFF
3	Not Used	–	OFF
4	RTC Backup Battery	ON: Uses Battery OFF: Does Not Use Battery	ON

3.2 SERVICE PROGRAM MODE

3.2.1 SP MODE DESCRIPTION

Entering the service mode

Push the ✐ button.

Push the ① button.

Push the ⓪ button.

Push the ⑦ button.

Hold the Ⓒ/⊘ button down for three seconds.

Class	SP number	Description	Function
1	001	FTP port	Sets the FTP port number.
	002	Version	Displays the network firmware version. **NOTE:** To check the scanner firmware version with "Web Status Monitor" or "Web Image Monitor".
	003	Lot No.	Displays the machine lot number.
	004	Error log	Displays the service call number (SC).
	005	Initialize SCAN-data	Initializes all SP mode data except for the network data.
	006	Initialize all data	Initializes all SP mode data (this SP has the same effect as 1-005 and 1-007 combined).
	007	Initialize SCAN-NIC Data	Data related to the network is initialized.
	008	Density Setup 1	Adjusts Density 1. [0-255/**40**/1]
	009	Density Setup 2	Adjusts Density 2. [0-255/**70**/1]
	010	Density Setup 3	Adjusts Density 3. [0-255/**100**/1]
	011	Density Setup 4	Adjusts Density 4. [0-255/**130**/1]
	012	Density Setup 5	Adjusts Density 5. [0-255/**160**/1]

1	013	Density Setup 6	Adjusts Density 6. [0-255/**190**/1]
	014	Density Setup 7	Adjusts Density 7. [0-255/**220**/1]
	015	Flash ROM disc format	Formats the flash ROM
	016	Binary color	Selects binary color [Yes or No/**No**]
	017	Backup SD Card	Downloads the following settings to the SD Card. • Basic settings • File send settings • Email settings • Delivery settings • Print scan settings
	018	Restore SD Card	Uploads the above settings from the SD Card to the machine.
	019	JAM Information	Displays the jam location and counter. For example: "Code:0x04 Total:38" means that jams have been detected 38 times at the registration sensor. **NOTE:** The following codes are displayed on the operation panel. 0x01: ADF cover open 0x02: ADF open 0x03: Pick-up jam 0x04: Registration sensor (paper did not come) 0x84: Registration sensor (paper stayed) 0x05: Read sensor (paper did not come) 0x85: Read sensor (paper stayed) 0x06: Exit sensor (paper did not come) 0x86: Exit sensor (paper stayed)
	020	Firmware Update	Updates the firmware
	021	Scanner Test (ADF)	Executes the scanner test for ADF mode (simplex mode only)
	022	Scanner Test (Scanner)	Executes the scanner test for Flat Bed mode

Spec.

NOTE: The setting range is in brackets and the default setting is in bold.

SP 1-008 to 014: Density setup examples

These values control the image density for the 7 settings on the operation panel. Here are three examples

Case 1: There is a relatively small difference between the minimum and maximum settings

Case 2: The higher values in this example make the image lighter.

Case 3: The lower values in this example make the image darker.

Case	Density setup 1	Density setup 2	Density setup 3	Density setup 4	Density setup 5	Density setup 6	Density setup 7
1	85	100	115	130	145	160	175
2	70	100	130	160	190	220	250
3	10	40	70	100	130	160	190

These are reference values. Adjust them to get the best results.

3.2.2 FIRMWARE UPDATE

This machine has one firmware type:

- Network firmware

NOTE: 1) You can keep both firmware programs on the same SD card.
2) Do not put firmware programs from another machine on the SD card you will use for this machine. You cannot mix multiple machine firmware programs on the same SD card.
3) You do not need to create a root directory when you update the firmware for this machine.

Network firmware update

Before you do this procedure, prepare an SD card that contains the required firmware.

1. Turn off the main power of the machine.

2. Do the "Backup SD card" procedure. (☛ 3.2.3 Backup SD card procedure)

3. Install the SD card, which contains the required firmware, into the SD card slot [A].

4. Turn on the main power of the mainframe while holding down the ⓪, ① and ⑦ keys together.

5. When "START" is displayed, press the Start button.

6. Follow the procedure displayed on the operation panel to update the network firmware.
   NOTE: "Upgrading complete" is displayed after completing this update correctly.

7. Turn off the main power, and then remove the SD card.

8. Do the "Restore SD card" procedure. (☛ 3.2.3 Restore SD card procedure)

3.2.3 BACKUP AND RESTORE SD CARD

Backup SD card procedure

1. Turn off the main power.

2. Install an SD card, which does not have any data, into the SD card slot [A].

3. Turn on the main power.

4. Enter the SP mode (☛ 3.2.1), and then select SP1-017 (Backup SD Card).

5. Press ① three times consecutively to download the setting data from the mainframe to the SD card.

6. After completing the setting data backup, turn off the main power, and then remove the SD card from the SD card slot.

Spec.

Restore SD card procedure

1. Turn on the main power.

2. Install the SD card, which was used in "Backup SD card", into the SD card slot [A] again.

3. Turn on the main power.

4. Enter the SP mode (☛ 3.2.1), and then select SP1-018 (Restore SD Card)

5. Press ① three times consecutively to upload the setting data from the SD card to the mainframe.

6. After completing the setting data restore, turn off the main power, and then remove the SD card from the SD card slot.

Specifications

Type:		External Box
Interface	Image input	SCSI interface × 1 (50-pin half pitch female)
	Image output	Ethernet interface × 1 (10BASE-T or 100BASE-TX)
	Function expansion	Type II PC card slot × 2
Control	Display panel	240×64 pixels, STN liquid crystal (4-line monochrome display)
	Operation keys	Number keys, 4 function keys, cursor keys (left/right), Start, Clear/Stop, Scanner Features, Reset, #, *
	Display language	English, German, French, Spanish, Portuguese, Dutch, Italian
Memory		RAM: 128MB (64 MB is used for image processing)
Main features		• Supports network TWAIN driver • Scan to Print • Scan to E-mail • Scan to Folder (SMB) • Scan to FTP • Delivery Server
Operating environment		Temperature: 10-32 °C (50-89.6 °F), humidity 15-80%
Power		120V, 60Hz
Power consumption		Under 8W (Without an option)
Warm-up time		Max. 40 seconds
Dimensions		290 × 120 × 60mm (11.4″ × 4.7″ × 2.3″)(W×D×H)
Weight		Less than 1kg (3.08lbs) (AC Adapter excluded)