





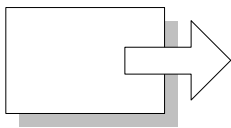


FAX OPTION
(Machine Code: B653)
SERVICE MANUAL

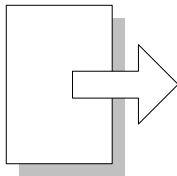
Conventions in this Manual

This manual uses several symbols.

Symbol	What it means
	Refer to section number
	See Core Tech Manual for details
	Screw
	Connector
	E-ring
	Clip ring



Short Edge Feed (SEF)



Long Edge Feed (LEF)

TABLE OF CONTENTS

1. INSTALLATION.....	1-1
1.1 CAUTIONS AND WARNINGS	1-1
1.2 PROCEDURE FLOWCHART	1-2
1.3 FAX OPTION TYPE 2045.....	1-3
1.4 G3 INTERFACE UNIT TYPE 2045	1-9
1.4.1 FAX FUNCTION UPGRADE BOARD A892.....	1-14
3. SERVICE TABLES.....	3-1
3.1 SERVICE PROGRAM MODE	3-1
3.1.1 SERVICE PROGRAM MODE OPERATION	3-1
Entering and Exiting SP mode	3-1
SP2-XXX (RAM Data)	3-3
SP3-XXX (Tel Line Settings).....	3-3
SP4-XXX (ROM Versions)	3-5
SP5-XXX (Initializing).....	3-5
SP6-XXX (Reports).....	3-6
SP7-XXX (Test Modes).....	3-8
3.2 BIT SWITCHES	3-9
3.2.1 SYSTEM SWITCHES	3-9
3.2.2 FAX SWITCHES	3-19
3.2.3 PRINTER SWITCHES	3-23
3.2.4 COMMUNICATION SWITCHES	3-28
3.2.5 G3-1 SWITCHES	3-37
3.2.6 G3-2 SWITCHES	3-45
3.2.7 G3-3 SWITCHES	3-50
3.3 NCU PARAMETERS	3-51
3.4 DEDICATED TRANSMISSION PARAMETERS	3-61
3.4.1 PROGRAMMING PROCEDURE	3-61
3.4.2 PARAMETERS	3-62
3.5 SERVICE RAM ADDRESSES	3-66
4. DETAILED SECTION DESCRIPTIONS.....	4-1
4.1 ADDRESS BOOK	4-1
4.1.1 ADDRESS BOOK BACKUP.....	4-1
Overview of Data Backup.....	4-1
SP Modes.....	4-2
SPECIFICATIONS.....	SPEC-1
1. GENERAL SPECIFICATIONS.....	SPEC-1
2. CAPABILITIES OF PROGRAMMABLE ITEMS	SPEC-2
3. MACHINE CONFIGURATION	SPEC-3

1. INSTALLATION

1.1 CAUTIONS AND WARNINGS

WARNING

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.
5. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be remote risk of electric shock from lightning.
6. Do not use a telephone or cellular phone to report a gas leak in the vicinity of the leak.

CAUTION

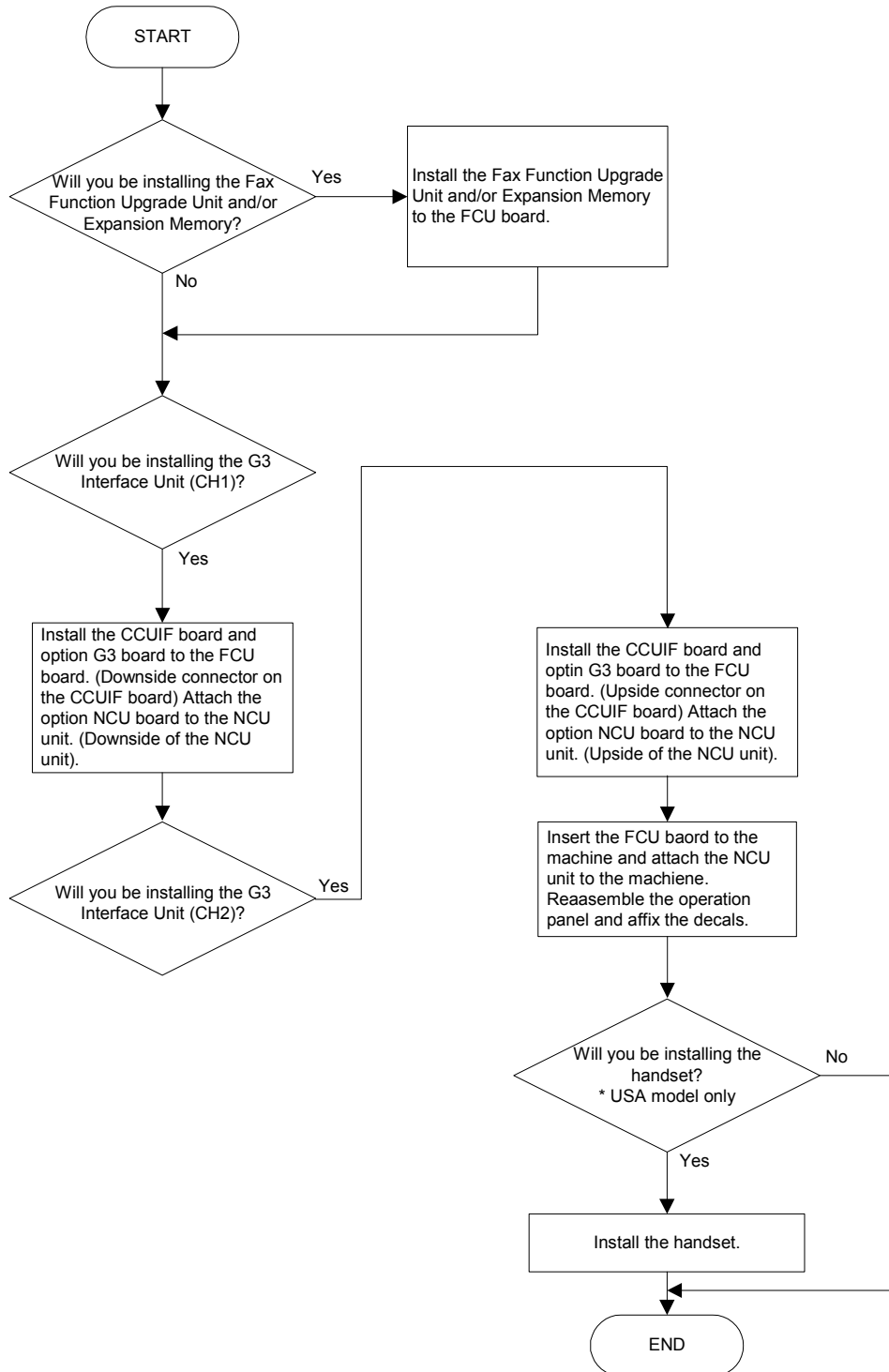
1. Before installing the fax unit, switch off the main switch, and disconnect the power cord.
2. The fax unit contains a lithium battery. The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacture. Discard batteries in accordance with the manufacture's instructions and local regulations.

NOTE FOR AUSTRALIA

Unit must be connected to Telecommunication Network through a line cord which meets the requirements of ACA Technical Standard TS008.

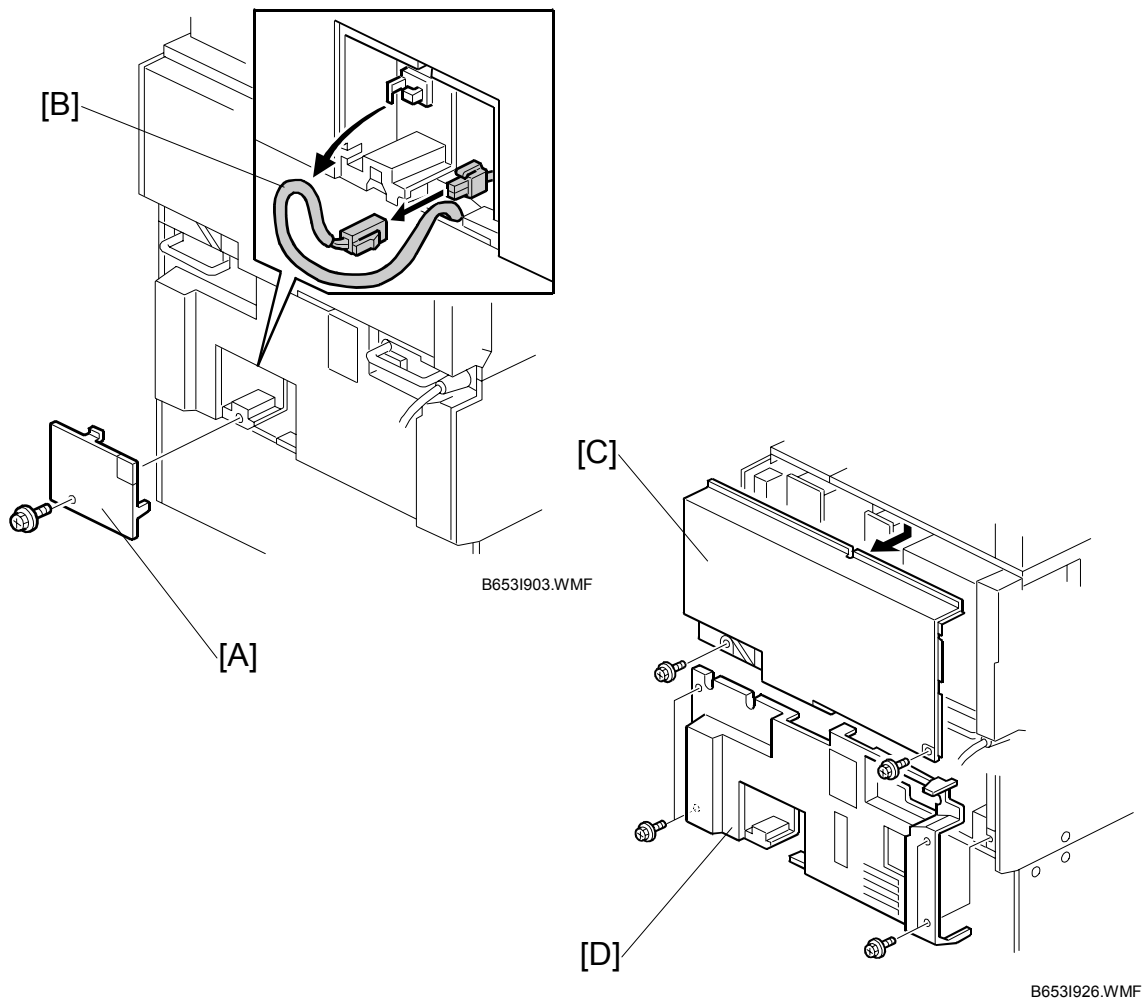
1.2 PROCEDURE FLOWCHART

Before installing the fax unit and/or fax options, refer to the following flow chart.



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1.3 FAX OPTION TYPE 2045

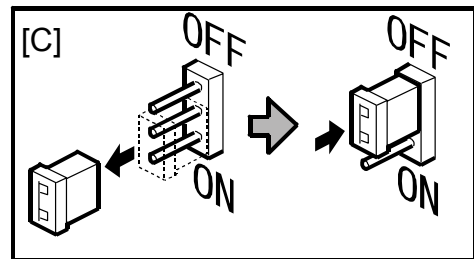
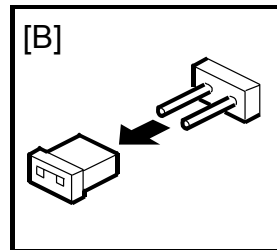
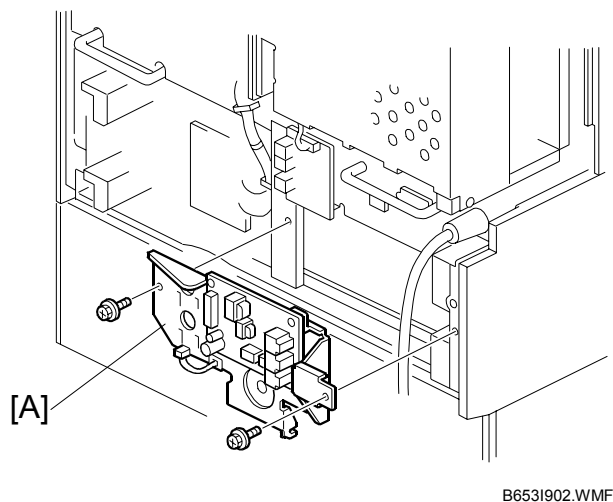


⚠ CAUTION

Before installing this option, do the following:

1. If there is a printer option in the machine, print out all data in the printer buffer.
2. Press the operation switch to be the standby mode. Make sure the power LED is not lit then, turn off the main switch and disconnect the power cord and the network cable.

1. Remove the small cover [A] (⚙ x 1) and connector [B].
2. Remove the rear upper cover [C] (⚙ x 2).
3. Remove the rear lower cover [D] (⚙ x 2).



4. Attach the NCU unit [A] (2 x).

NOTE: If a G3 Interface Unit type 2045 has to been installed, attach the additional NCU boards to the NCU unit before attaching the NCU unit to the machine. Refer to the Installation Procedure for the G3 Interface Unit Type 2045.

5. Set up the jumper switches [B and C] on the NCU.

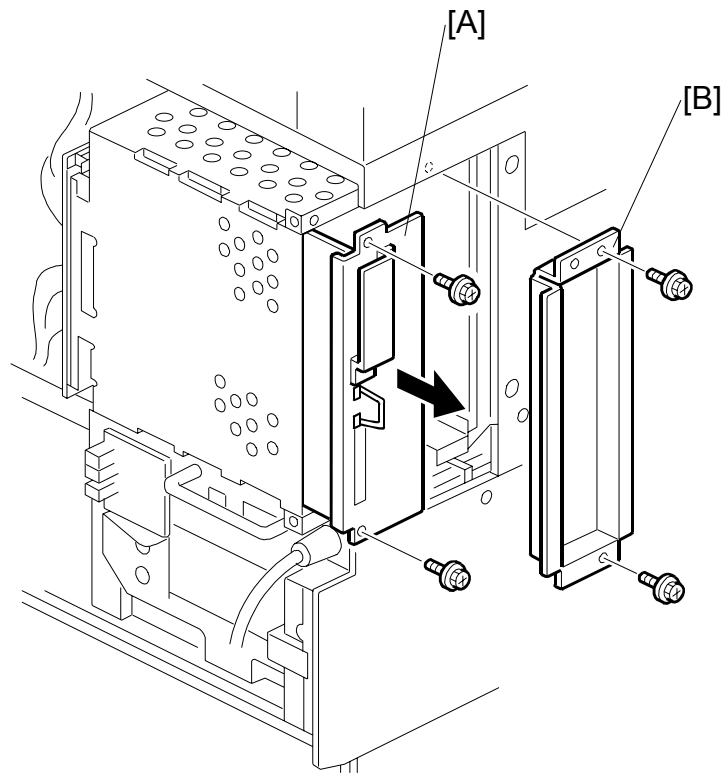
NOTE: European/Asian models only (non-U.S. version: B547-27)

Region/Country	TB1 [B]	TB2 [C]
Hong Kong	OFF	OFF
Hungary	ON	ON
Poland	ON	OFF
Czech Republic	ON	OFF
Israel	ON	ON
South Africa	ON	ON
Regions/countries where the CTR21 standard is valid	ON	ON
Other	ON	OFF

TB1 ON: Keep the jumper attached. OFF: Remove the jumper.

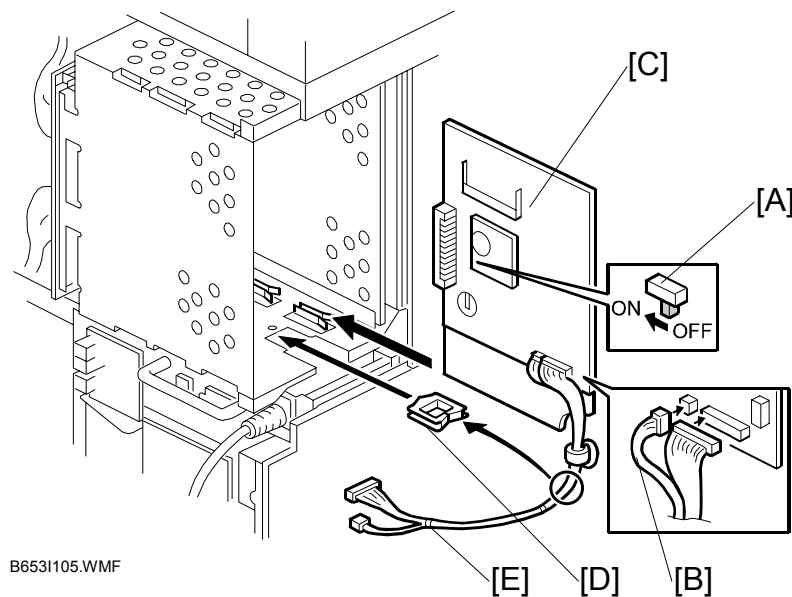
TB2 ON: Keep the jumper at ON. OFF: Move the jumper to OFF.

NOTE: You must change the country code in both system switch 0F and NCU parameter CC (service function 08-0).

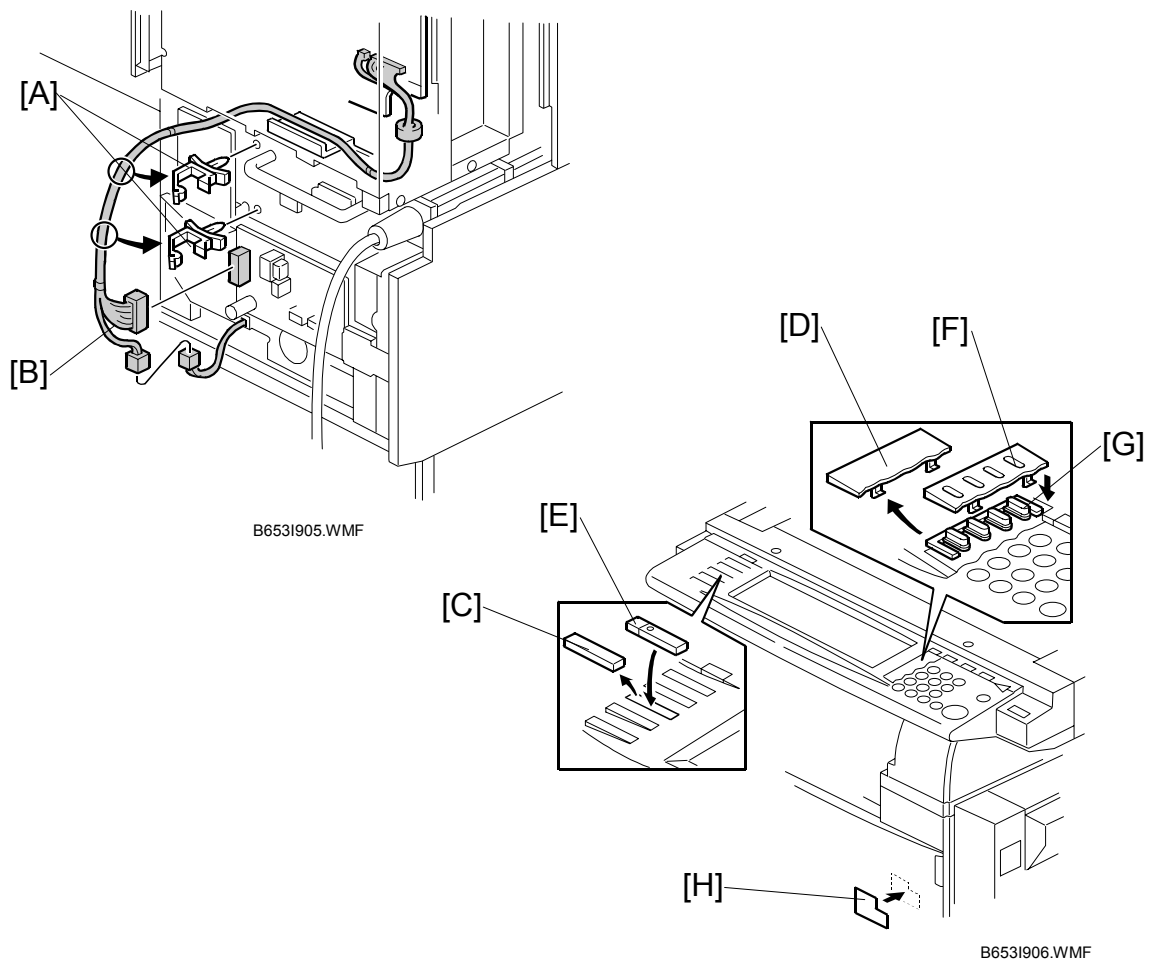


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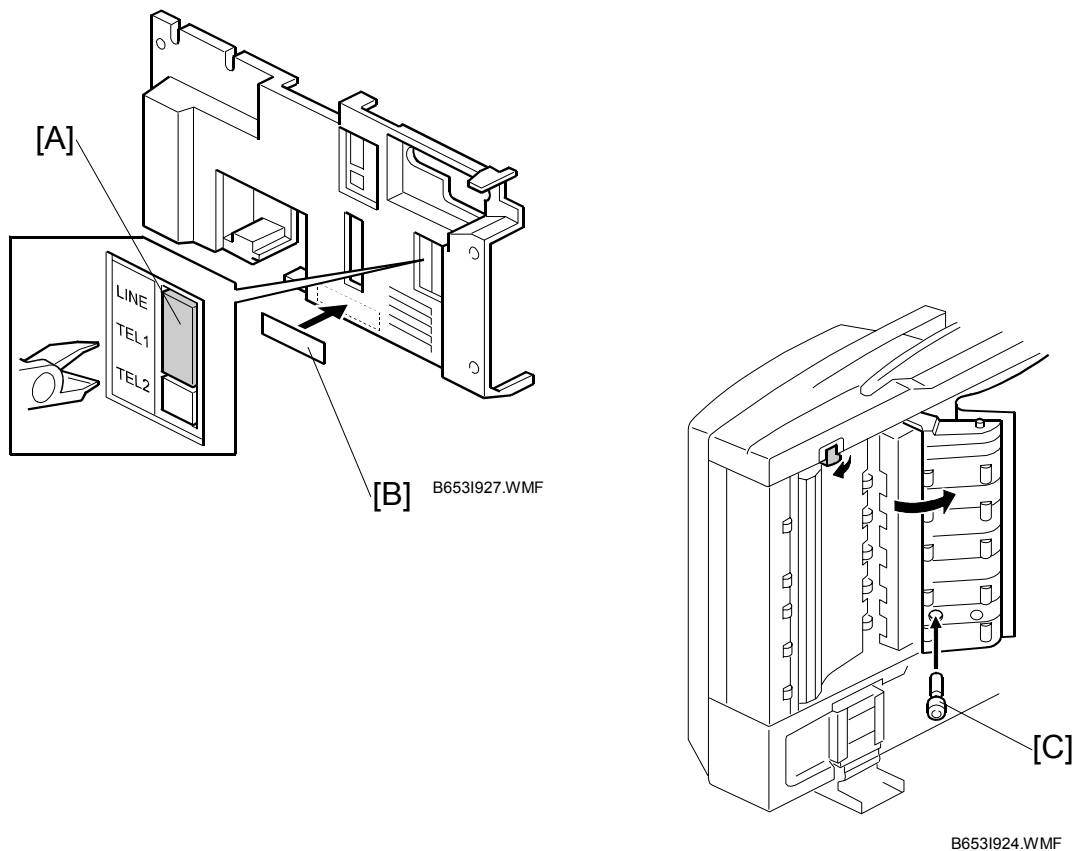
6. Remove the controller unit [A] (⌀ x 2)
7. Remove the FCU cover [B] (⌀ x 2)



8. Turn on the battery switch (SW1) [A] On the MBU board.
9. Connect harness [B] to the FCU board (x 2).
10. Slide the FCU board [C] into the right slot of the expansion box.
If any following options will be installed at the same time, connect the option board to the FCU board before sliding the FCU board into the expansion box. Refer to the Installation Procedure of each option.
 - Fax Function Upgrade Option Type 185 unit.)
 - G3 Interface Unit Type 2045
11. Attach the edge clamp [D] to the bottom of the expansion box, then clamp the FCU harness [E].

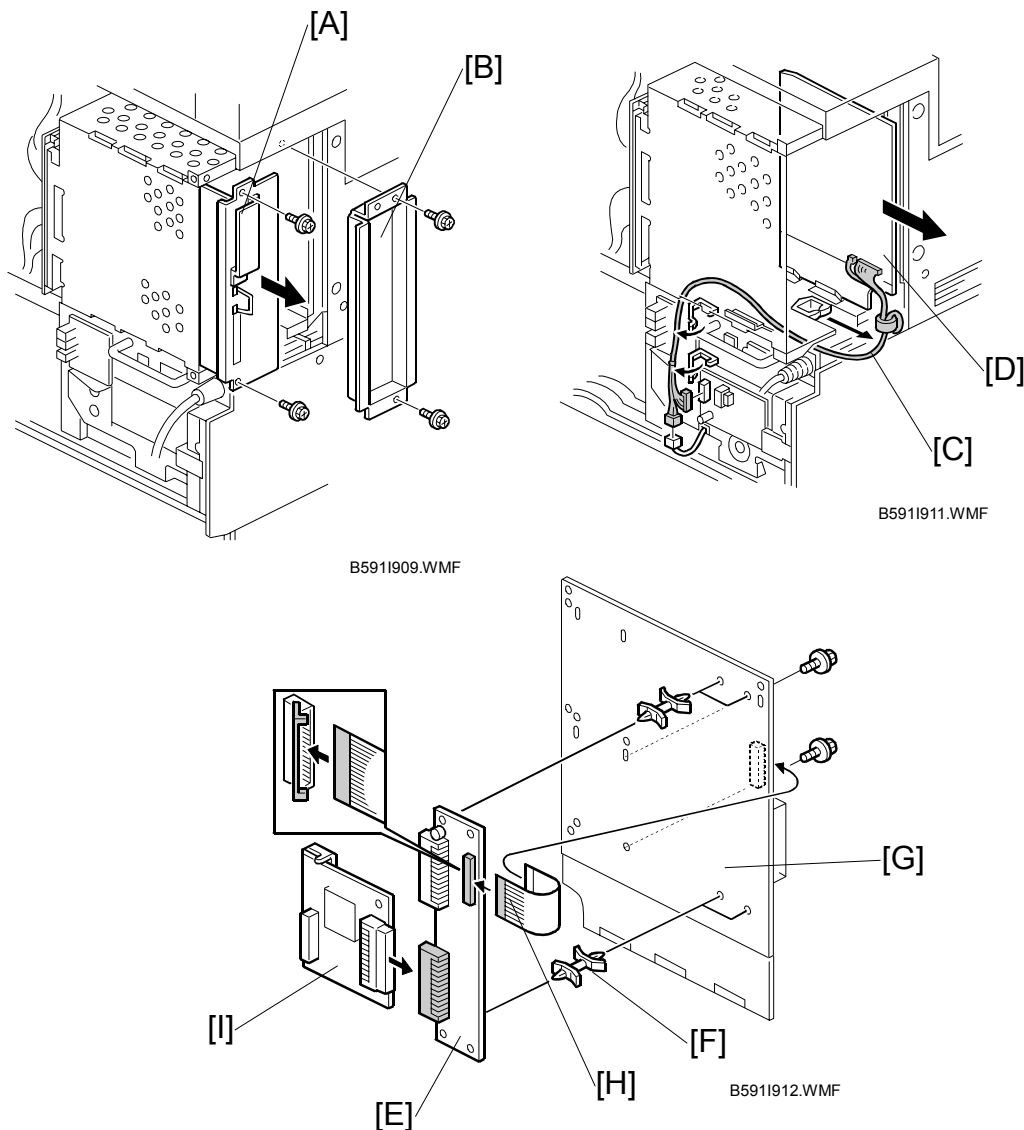


12. Attach the harness clamps [A] and connect the FCU harness [B] to the NCU board. Then clamp the harness as shown.
13. Reattach the FCU cover and the controller unit.
14. Remove parts [C] and [D], then install parts [E], [F] and [G]. Affix the super G3 decal [H] on the front cover as shown.

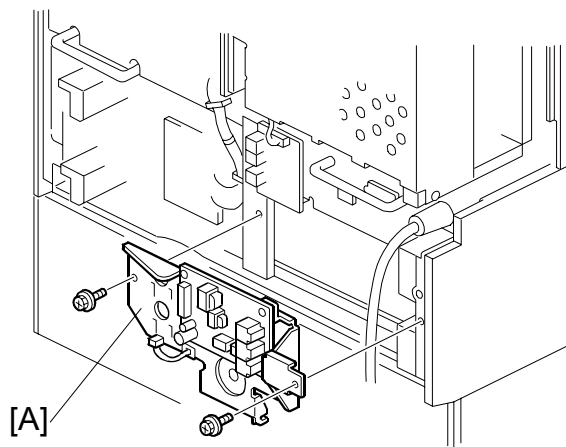


15. Cut away the telephone connector cover [A].
16. Attach the FCC decal and the serial number decal [B] to the rear cover as shown.
17. Reattach the covers.
18. If the ARDF is installed, raise the ARDF and insert the stamp cartridge [C].
19. Connect the telephone line to the "LINE" jack at the rear of the machine.
NOTE: The copier must be connected to a properly - grounded socket outlet.
20. Plug in the machine and turn on the main power switch.
21. When you switch on the machine for the first time with the new fax option installed, a message will tell you that a fax function error has occurred and prompt you to initialize the data. Press "Execute" to initialize the data.
22. Be sure to set the clock (date and time).
23. Enter service mode and program the serial number into the fax unit (SP-3-102-000). The serial number can be found on the serial number label (attached to the machine in step 16).

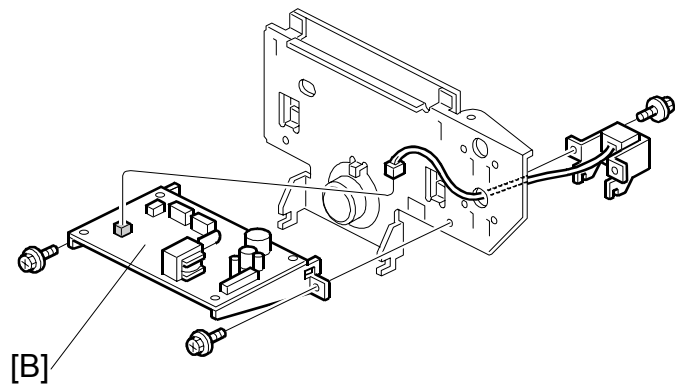
1.4 G3 INTERFACE UNIT TYPE 2045



1. Remove the covers. (☛1.3)
2. Remove the controller unit [A] (☛ x 2).
3. Remove the FCU cover [B] (☛ x 2).
4. Remove the FCU harness [C] and slide out the FCU board [D].
5. Attach the four standoffs [F] to the CCUIF board [E].
6. Attach the CCUIF board to the FCU board [G].
7. Attach the flat cable [H] to the FCU board and the CCUIF board.
8. Attach the option G3 board [I] to the lower connector of the CCUIF board (☛ x 2).

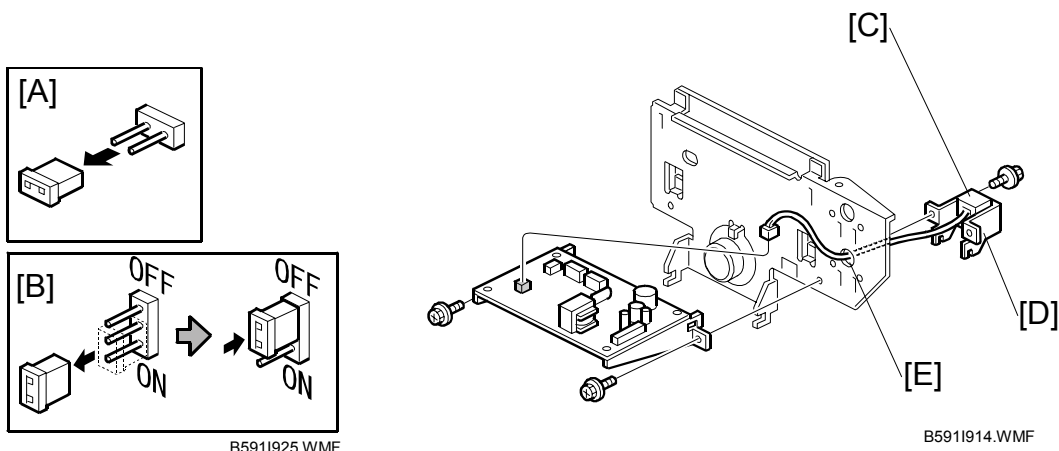


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B591I914.WMF

9. Remove the NCU unit [A] (⚙ x 2).
10. Attach the Option NCU unit [B] to the lower of the reverse side of the NCU unit (⚙ x 2) as shown.



11. Set up the jumper switches [A and B] on the NCU.

NOTE: European/Asian models only (non-U.S. version: B591-27)

Region/Country	TB1 [A]	TB2 [B]
Hong Kong	OFF	OFF
Hungary	ON	ON
Poland	ON	OFF
Czech Republic	ON	OFF
Israel	ON	ON
South Africa	ON	ON
Regions/countries where the CTR21 standard is valid	ON	ON
Other	ON	OFF

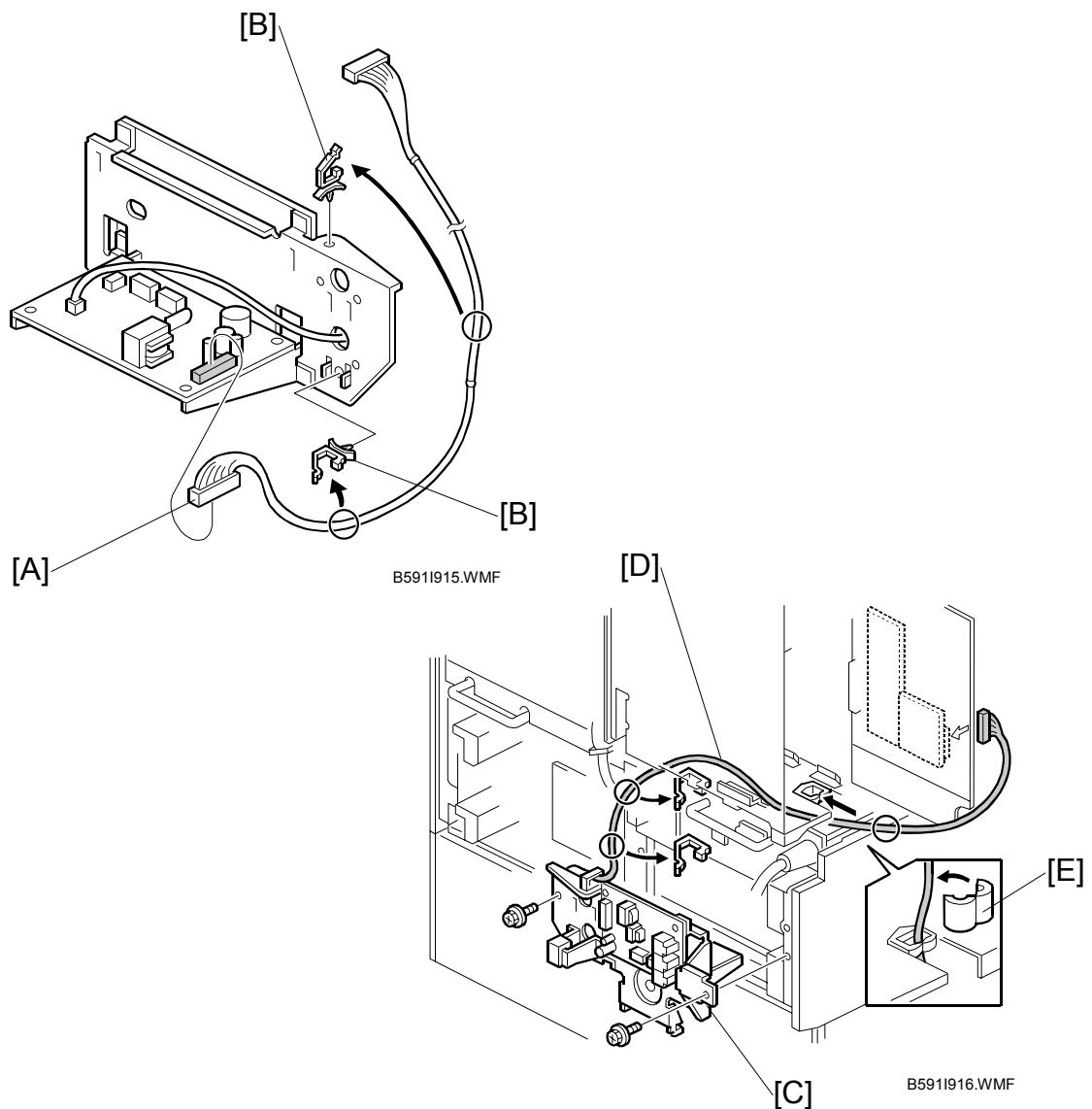
TB1 ON: Keep the jumper attached. OFF: Remove the jumper.

TB2 ON: Keep the jumper at ON. OFF: Move the jumper to OFF.

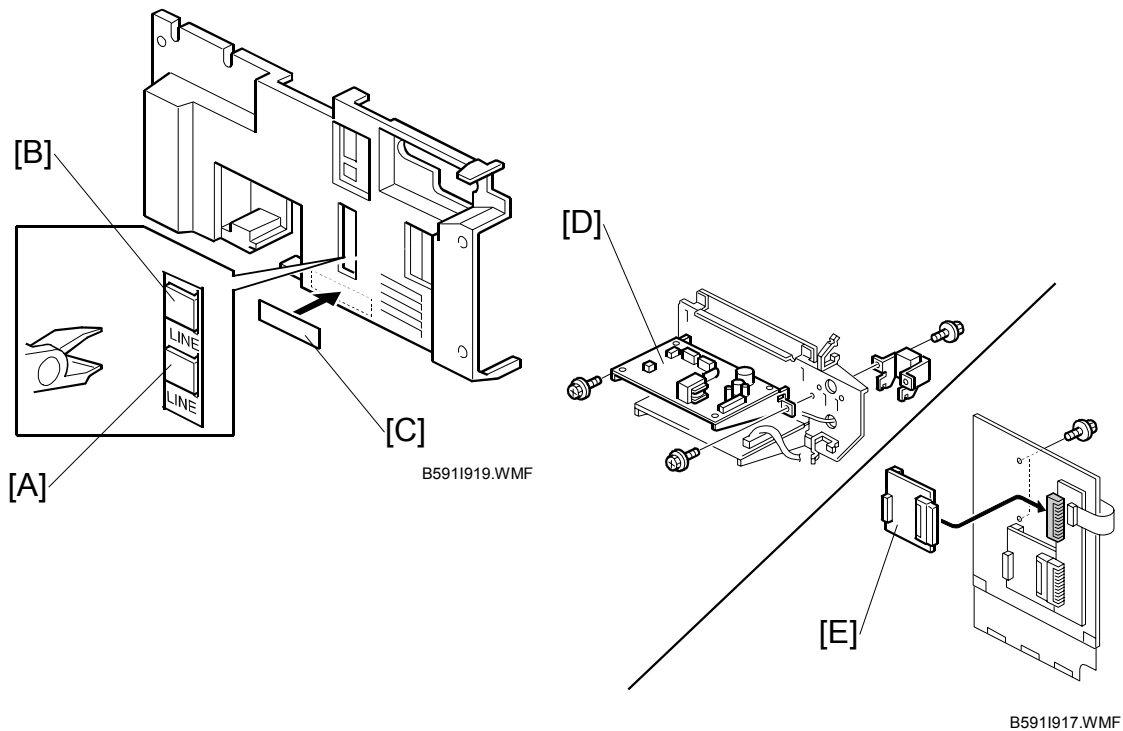
NOTE: You must change the country code in both system switch 0F and NCU parameter CC (service function 08-0).

12. Attach the telephone jack [C] to the bracket [D]

13. Run through the harness through the lower hole [E] in the NCU bracket, then secure the telephone jack bracket to the NCU unit (⌘ x 1).



14. Connect harness [A] to the option NCU board
15. Attach the harness clamps [B] (x2) then clamp the harness.
16. Attach the NCU unit [C] to the machine (⚙ x 2), and slide the FCU board into the machine.
17. Run harness [D] through the holes.
18. Attach the ferrite core [E] to the harness.



19. Cut away the small cover [A] for the first option G3 unit.

NOTE: If there is another G3 option unit, cut away the upper small cover [B].

20. Attach the FCC decal [C] to the rear cover.

21. Reattach the covers.

NOTE: Attach the second option NCU board [D] and the second option G3 board [E] to the upper side as shown.

22. Connect the telephone line to the LINE2 jack, then plug in the machine and turn the main switch on.

NOTE: The copier must be connected to a properly - grounded socket outlet.

23. Enter service mode. Set bit 1 of communication switch 16 to "1" for the first option G3 unit. Set bit 3 of communication switch 16 to "1" for the second option G3 unit. After that turn the main switch off and on.

24. Print the system parameter list and ensure that "SG3-V34" is listed as an option.

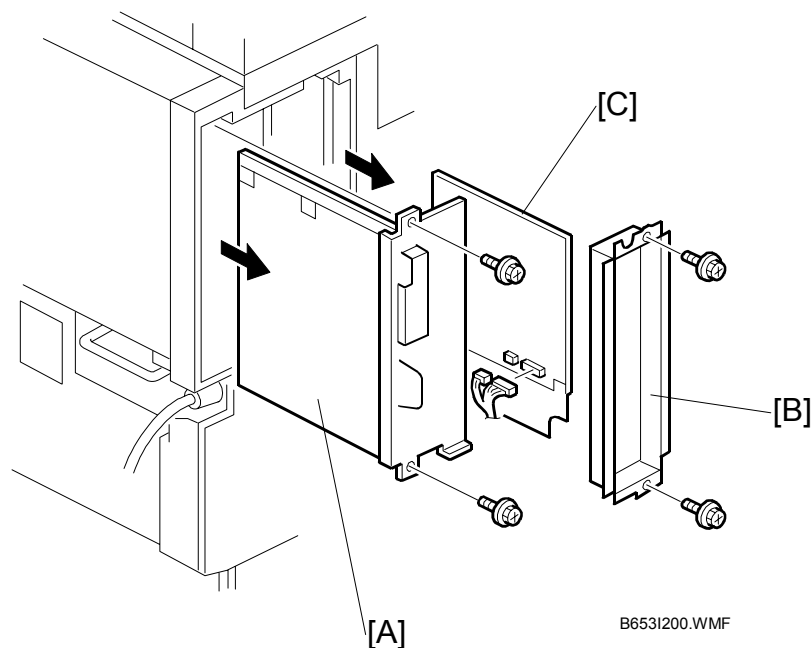
25. Set up and program the items required for PSTN-2 communications.



1.4.1 FAX FUNCTION UPGRADE BOARD A892

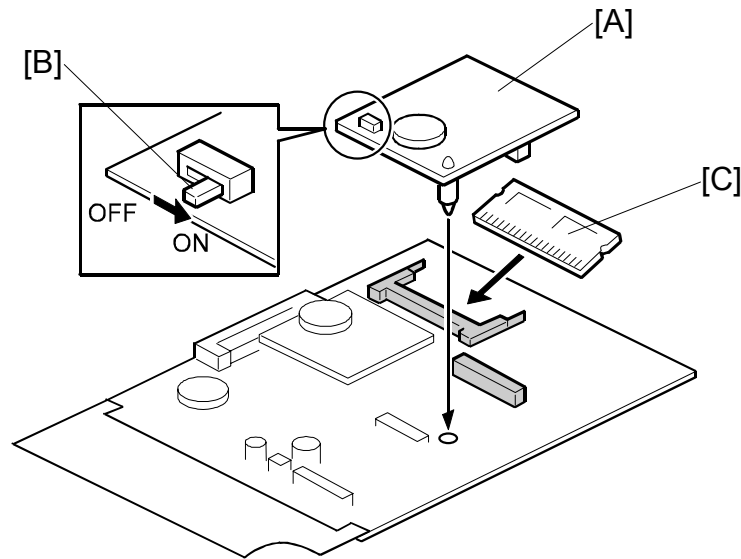
CAUTION

Before installing this option, do the following:

1. Print out all messages stored in the memory, the lists of user-programmed items, and the system parameter list.
2. If there is a printer option in the machine, print out all data in the printer buffer.
3. Turn off the main switch and disconnect the power cord, the telephone line, and the STP cable.



1. Remove the controller unit [A] ( x 2).
2. Remove the FCU cover [B] ( x 2).
3. Remove the FCU harness and slide out the FCU board [C]



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1. Attach the FAX function upgrade board [A].
2. Turn on the battery switch [B].
NOTE: If installing the FAX unit at the same time, be sure to turn on the FCU board battery switch.
6. Install the memory [C].
7. Re-install the FCU assembly into the expansion box.
8. Plug in the machine and turn on the main switch.
9. When you switch on the machine for the first time with the new fax option installed, a message will tell you that a fax function error has occurred and prompt you to initialize the data. Press "Execute" to initialize the data.
10. Press the "Fax" key and ensure the Fax LED lights.
 At this time, the following message appears;
 "SC1207 - Adding FAX Feature Expander causes data loss. Turn main power switch off remove it to avoid loss. To continue press "Yes".
11. Press "Yes" to initialize the SRAM.
NOTE: Whenever installing the FAX FUNCTION UPGRADE board at the first time, the machine displays SC1207. Ignore this SC code. This is not a problem.
12. Enter the service mode, and set bit 7 of system switch 1E to "1".
13. Print the system parameter list and make sure that "EXFUNC" is listed as an option.
14. Confirm that the memory indicator shows "100%" in standby mode.
15. Connect the telephone cable.

3. SERVICE TABLES

CAUTION

Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.


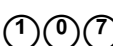

NOTE: The main power LED lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

3.1 SERVICE PROGRAM MODE

3.1.1 SERVICE PROGRAM MODE OPERATION

The service program (SP) mode is used to check electrical data, change modes, and adjust values.

Entering and Exiting SP mode

- | | |
|-------------------------------------------------------------------------------------|--------------------------------------------------|
|  | 1 Press the Clear Mode key. |
| . | . |
|  | 2 Use the keypad to enter "107". |
| . | . |
|  | 3 Hold down Clear/Stop for at least 3 seconds. |
| . | . |
| Fax SP | 4 On the touch-panel, press Fax SP. |
| . | . |
| Exit | 5 Press Exit twice to return to the copy window. |
| . | . |

SP1-XXX (Bit Switches) ➡ Section 3.2 Bit Switches


1	Mode No.		Function
101	System Switch		
	001 – 032	00 – 1F	Change the bit switches for system settings for the fax option ➡ Section 3.2 Bit Switches
103	Printer Switch		
	001 – 016	00 – 0F	Change the bit switches for printer settings for the fax option ➡ Section 3.2 Bit Switches
104	Communication Switch		
	001 – 032	00 – 1F	Change the bit switches for communication settings for the fax option ➡ Section 3.2 Bit Switches
105	G3-1 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the standard G3 board ➡ Section 3.2 Bit Switches
106	G3-2 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the optional G3 board ➡ Section 3.2 Bit Switches
107	G3-3 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the optional G3 board ➡ Section 3.2 Bit Switches
108	G4 Internal Switch		
	001 – 032	00 – 1F	Change the bit switches for the optional ISDN settings ➡ Section 3.2 Bit Switches (Japan Only)
109	G4 Parameter Switch		
	001 – 016	00 – 0F	Change the bit switches for optional ISDN parameters ➡ Section 3.2 Bit Switches (Japan Only)

SP2-XXX (RAM Data)

2	Mode No.		Function
101	RAM Read/Write		
	001		Change RAM data for the fax board directly. ☛ Section 3.5 Service RAM Addresses
102	Memory Dump		
	001	G3-1 Memory Dump	Print out RAM data for the fax board. ☛ Section 3.5 Service RAM Addresses
	002	G3-2 Memory Dump	Print out RAM data for the SG3-1 board.
	003	G3-3 Memory Dump	Print out RAM data for the SG3-2 board.
	004	G4 Memory Dump	Print out RAM data for the SiG4 board. (Japan Only)
103	G3-1 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the standard G3 board. ☛ Section 3.3 NCU Parameters
104	G3-2 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the optional G3 board. ☛ Section 3.3 NCU Parameters
105	G3-3 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the optional G3 board. ☛ Section 3.3 NCU Parameters

SP3-XXX (Tel Line Settings)

3	Mode No.		Function
101	Service Station		
	001	Fax Number	Enter the fax number of the service station.
	002	Select Line	Select the line type.
102	Serial Number		
	000		Enter the fax unit's serial number.
103	PSTN-1 Port Settings		
	001	Select Line	Select the line type setting for the G3-1 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3-1 line.
	003	Memory Lock Disabled	If the customer does not want to receive transmissions using Memory Lock on this line, turn this SP on.
	004	Transmission Disabled	If you turn this SP on, the machine does not send any fax messages on the G3-1 line.
104	PSTN-2 Port Settings		
	001	Select Line	Select the line setting for the G3-2 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3- 2 line.

3	Mode No.		Function
104	003	Memory Lock Disabled	If the customer does not want to receive transmissions using Memory Lock on this line, change this SP to on.
	004	Transmission Disabled	If you turn this SP on, the machine does not send any fax messages on the G3-2 line.
105	PSTN-3 Port settings		
	001	Select Line	Select the line setting for the G3-3 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3-3 line.
	003	Memory Lock Disabled	If the customer does not want to receive transmissions using Memory Lock on this line, change this SP to on
	004	Transmission Disabled	If you turn this SP on, the machine does not send any fax messages on the G3-3 line.
106	ISDN Port Settings		
	001	Select Line	Select the line setting for the ISDN line. If the machine is installed to the PABX line, select "PABX". (Japan Only)
	002	PSTN Access Number	Enter the PSTN access number for ISDN line. (Japan Only)
	003	Memory Lock Disabled	If the customer does not want to receive transmissions using Memory Lock on this line, change this SP to on. (Japan Only)
	004	Transmission Disabled	If you turn this SP on, the machine does not send any fax messages on the ISDN line. (Japan Only)
201	FAX Switches		
	001 – 032	00 – 1F	Change the bit switches for scanner settings for the fax option  Section 3.2.2 Fax Switches

SP4-XXX (ROM Versions)

4	Mode No.		Function
101	001	FCU ROM Version	Displays the FCU ROM version.
102	001	Error Codes	Displays the latest 64 fax error codes.
103	001	G3-1 ROM Version	Displays the G3-1 modem version.
104	001	G3-2 ROM Version	Displays the G3-2 modem version.
105	001	G3-3 ROM Version	Displays the G3-3 modem version.
106	001	G4 ROM Version	Displays the G4 (ISDN) ROM version. (Japan Only)
107	001	Charge ROM Version	Not used.

SP5-XXX (Initializing)

5	Mode No.		Function
101	Initialize SRAM		
	000		Initializes the bit switches and user parameters, user data in the SRAM, files in the SAF memory, and clock.
102	Erase All Files		
	000		Erases all files stored in the SAF memory.
103	Reset Bit Switches		
	000		Resets the bit switches and user parameters.
104	Factory setting		
	000		Resets the bit switches and user parameters, user data in the SRAM and files in the SAF memory.

SP6-XXX (Reports)

6	Mode No.		Function
101	System Parameter List		
	000		Touch the “ON” button to print the system parameter list.
102	Service Monitor Report		
	000		Touch the “ON” button to print the service monitor report.
103	G3 Protocol Dump List		
	001	G3 All Communications	Prints the protocol dump list of all communications for all G3 lines.
	002	G3-1 (All Communications)	Prints the protocol dump list of all communications for the G3-1 line.
	003	G3-1 (1 Communication)	Prints the protocol dump list of the last communication for the G3-1 line.
	004	G3-2 (All Communications)	Prints the protocol dump list of all communications for the G3-2 line.
	005	G3-2 (1 Communication)	Prints the protocol dump list of the last communication for the G3-2 line.
	006	G3-3 (All Communications)	Prints the protocol dump list of all communications for the G3-3 line.
	007	G3-3 (1 Communication)	Prints the protocol dump list of the last communication for the G3-3 line.
104	G4 Protocol Dump List		
	001	Dch + Bch 1	Prints the protocol dump lists for the G4 line. (Japan Only)
	002	Dch	
	003	Bch 1 Link Layer	
	004	Dch Link Layer	
	005	Dch +Bch 2	
	006	Bch 2 Link Layer	
105	All Files print out		
	000		Prints out all the user files in the SAF memory, including confidential messages. NOTE: Do not use this function, unless the customer is having trouble printing confidential messages or recovering files stored using the memory lock feature.
106	Journal Print out		
	001	All Journals	The machine prints all the communication records on the report.
	002	Specified Date	The machine prints all communication records after the specified date.
107	Log List Print out		
	001	All log files	These log print out functions are for designer use only.
	002	APIP	
	003	Mail Box	
	004	Operation	

6	Mode No.		Function
107	005	Printer APIP	These log print out functions are for designer use only.
	006	SC/TRAP Stored	
	007	Scanner	
	008	JOB/SAF	
	009	Decompression	
	010	Reconstruction	
	011	JBIG	
	012	Fax Driver	
	013	G3CCU	
	014	Fax Job	

SP7-XXX (Test Modes)

These are the test modes for PTT approval.

7	Function
101	G3-1 Modem Tests
102	G3-1 DTMF Tests
103	Ringer Test
104	G3-1 V34 (S2400baud)
105	G3-1 V34 (S2800baud)
106	G3-1 V34 (S3000baud)
107	G3-1 V34 (S3200baud)
108	G3-1 V34 (S3429baud)
109	Recorded Message Test
110	G3-2 Modem Tests
111	G3-2 DTMF Tests
112	G3-2 V34 (S2400baud)
113	G3-2 V34 (S2800baud)
114	G3-2 V34 (S3000baud)
115	G3-2 V34 (S3200baud)
116	G3-2 V34 (S3429baud)
117	G3-3 Modem Tests
118	G3-3 DTMF Tests
119	G3-3 V34 (S2400baud)
120	G3-3 V34 (S2800baud)
121	G3-3 V34 (S3000baud)
122	G3-3 V34 (S3200baud)
123	G3-3 V34 (S3429baud)
124	IG3-1 Modem Tests
125	IG3-1 DTMF Tests
126	IG3-1 V34 (S2400baud)
127	IG3-1 V34 (S2800baud)
128	IG3-1 V34 (S3000baud)
129	IG3-1 V34 (S3200baud)
130	IG3-1 V34 (S3429baud)
131	IG3-2 Modem Tests
132	IG3-2 DTMF Tests
133	IG3-2 V34 (S2400baud)
134	IG3-2 V34 (S2800baud)
135	IG3-2 V34 (S3000baud)
136	IG3-2 V34 (S3200baud)
137	IG3-2 V34 (S3429baud)

3.2 BIT SWITCHES

WARNING

Do not adjust a bit switch or use a setting that is described as “Not used”, as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

NOTE: Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

3.2.1 SYSTEM SWITCHES

System Switch 00		SP No. 1-101-001
No	FUNCTION	COMMENTS
0	Dedicated transmission parameter programming 0: Disabled 1: Enabled	Set this bit to 1 before changing any dedicated transmission parameters. Reset this bit to 0 after programming dedicated transmission parameters.
1	Not used	Do not change the setting.
2	Technical data printout on the Journal 0: Disabled 1: Enabled	1: Instead of the personal name, the following data are listed on the Journal for each G3 communication.
e.g. 0000 32V34 288/264 L0100 03 04 (1) (2)(3) (4) (5) (6) (7) (8) (1): EQM value (Line quality data). A larger number means more errors. (2): Symbol rate (V.34 only) (3): Final modem type used (4): Starting data rate (for example, 288 means 28.8 kbps) (5): Final data rate (6): Rx level (refer to the note after this table for how to read the rx level) (7): Total number of error lines that occurred during non-ECM reception. (8): Total number of burst error lines that occurred during non-ECM reception. Note: EQM and rx level are fixed at “FFFF” in tx mode. The seventh and eighth numbers are fixed at “00” for transmission records and ECM reception records.		

System Switch 00		SP No. 1-101-001
No	FUNCTION	COMMENTS
2	Rx level calculation Example: 0000 32 V34 288/264 L 01 00 03 04 The four-digit hexadecimal value (N) after “L” indicates the rx level. The <u>high</u> byte is given first, followed by the <u>low</u> byte. Divide the decimal value of N by -16 to get the rx level. In the above example, the decimal value of N (= 0100 [H]) is 256. So, the actual rx level is 256/-16 = -16 dB	
3	Not used	Do not change the settings.
4	Line error mark on the received page 0: Disabled 1: Enabled	If this bit is 1, a mark will be printed on the left edge of the page at any place where a line error occurred in the data. Such errors are caused by a noisy line for example.
5	G3/G4 communication parameter display 0: Disabled 1: Enabled	This is a fault-finding aid. The LCD shows the key parameters (see below). This is normally disabled because it cancels the CSI display for the user. Be sure to reset this bit to 0 after testing.
6	Protocol dump list output after each communication 0: Off 1: On	This is only used for communication troubleshooting. It shows the content of the transmitted facsimile protocol signals. Always reset this bit to 0 after finishing testing. If system switch 09 bit 6 is at “1”, the list is only printed if there was an error during the communication.
7	Not used	Do not change the setting.

G3 Communication Parameters

Modem rate	336: 33600 bps 168: 16800 bps 312: 31200 bps 144: 14400 bps 288: 28800 bps 120: 12000 bps 264: 26400 bps 96: 9600 bps 240: 24000 bps 72: 7200 bps 216: 21600 bps 48: 4800 bps 192: 19200 bps 24: 2400 bps
Resolution	S: Standard (8 x 3.85 dots/mm) D: Detail (8 x 7.7 dots/mm) F: Fine (8 x 15.4 dots/mm) SF: Superfine (16 x 15.4 dots/mm) 21: Standard (200 x 100 dpi) 22: Detail (200 x 200 dpi) 44: Superfine (400 x 400 dpi)
Compression mode	MMR: MMR compression MR: MR compression MH: MH compression JBO: JBIG compression (Optional mode) JBB: JBIG compression (Basic mode)
Communication mode	ECM: With ECM NML: With no ECM

Width and reduction	A4: A4 (8.3"), no reduction B4: B4 (10.1"), no reduction A3: A3 (11.7"), no reduction	
I/O rate	0: 0 ms/line 25: 2.5 ms/line 5: 5 ms/line	10: 10 ms/line 20: 20 ms/line 40: 40 ms/line
Note: "40" is displayed while receiving a fax message using AI short protocol.		

System Switch 01 - Not used (Do not change the factory settings.)

System Switch 02		SP No. 1-101-003
No	FUNCTION	COMMENTS
0-3	Not used	Do not change the settings.
4	File retention time 0: Depends on User Parameter 24 [18(H)] 1: No limit	1: A file that had a communication error will not be erased unless the communication is successful.
5	Not used	Do not change the setting.
6 to 7	Memory read/write by RDS Bit 7 6 Setting 0 0 Always disabled 0 1 User selectable 1 0 User selectable 1 1 Always enabled	(0,0): All RDS systems are always locked out. (0,1), (1,0): Normally, RDS systems are locked out, but the user can temporarily switch RDS on to allow RDS operations to take place. RDS will automatically be locked out again after a certain time, which is stored in System Switch 03. Note that if an RDS operation takes place, RDS will not switch off until this time limit has expired. (1,1): At any time, an RDS system can access the machine.

Service
Tables

System Switch 03		SP No. 1-101-004
No	FUNCTION	COMMENTS
0 to 7	Length of time that RDS is temporarily switched on when bits 6 and 7 of System Switch 02 are set to "User selectable"	00 - 99 hours (BCD). This setting is only valid if bits 6 and 7 of System Switch 02 are set to "User selectable". The default setting is 24 hours.

System Switch 04		SP No. 1-101-005
No	FUNCTION	COMMENTS
0	Program registration list output key display selection	This setting determines whether the key to print the program registration list is displayed on the screen.
1-2	Not used	Do not change the settings.

System Switch 04		SP No. 1-101-005
No	FUNCTION	COMMENTS
3	Printing dedicated tx parameters on Quick/Speed Dial Lists 0: Disabled 1: Enabled	1: Each Quick/Speed dial number on the list is printed with the dedicated tx parameters (10 bytes each). The first 10 bytes of data are the programmed dedicated tx parameters; 34 bytes of data are printed (the other 24 bytes have no use for service technicians).
4-7	Not used	Do not change the settings.

System Switch 05 - Not used (Do not change the factory settings.)
System Switch 06 - Not used (Do not change the factory settings.)
System Switch 07 - Not used (Do not change the factory settings.)
System Switch 08 - Not used (Do not change the factory settings.)

System Switch 09		SP No. 1-101-010
No	FUNCTION	COMMENTS
0	Addition of image data from confidential transmissions on the transmission result report 0: Disabled 1: Enabled	If this feature is enabled, the top half of the first page of confidential messages will be printed on transmission result reports.
1	Inclusion of communications on the Journal when no image data was exchanged. 0: Disabled 1: Enabled	0: Communications that reached phase C (message tx/rx) of the T.30 protocol are listed on the Journal. 1: Communications that reached phase A (call setup) of T.30 protocol are listed on the Journal. This will include telephone calls.
2	Automatic error report printout 0: Disabled 1: Enabled	0: Error reports will not be printed. 1: Error reports will be printed automatically after failed communications.
3	Printing of the error code on the error report 0: No 1: Yes	1: Error codes are printed on the error reports.
4	Not used	Do not change the setting.
5	Power failure report 0: Disabled 1: Enabled	1: A power failure report will be automatically printed after the power is switched on if a fax message disappeared from the memory when the power was turned off last.
6	Conditions for printing the protocol dump list 0: Print for all communications 1: Print only when there is a communication error	This switch becomes effective only when system switch 00 bit 6 is set to 1. 1: Set this bit to 1 when you wish to print a protocol dump list only for communications with errors.
7	Priority given to various types of remote terminal ID when printing reports 0: RTI > CSI > Dial label > Tel. number 1: Dial label > Tel. number > RTI > CSI	This bit determines which set of priorities the machine uses when listing remote terminal names on reports. Dial Label: The name stored, by the user, for the Quick/Speed Dial number.

System Switch 0A		SP No. 1-101-011
No	FUNCTION	COMMENTS
0-2	Not used	Do not change the settings.
3	Continuous polling reception 0: Disabled 1: Enabled	This feature allows a series of stations to be polled in a continuous cycle. This will continue until the polling reception file is erased. The dialing interval is the same as memory transmission.
4	Dialing on the ten-key pad when the external telephone is off-hook 0: Disabled 1: Enabled	0: Prevents dialing from the ten-key pad while the external telephone is off-hook. Use this setting when the external telephone is not by the machine, or if a wireless telephone is connected as an external telephone. 1: The user can dial on the machine's ten-key pad when the handset is off-hook.
5	On hook dial 0: Disabled 1: Enabled	0: On hook dial is disabled.
6	Not used	Do not change the settings.
7	Line used when the machine falls back to G3 from G4 if the other end is not a G4 machine 0: PSTN 1: ISDN ((Japan Only))	This bit switch has no effect if Communication Switch 07 bit 0 is set to 0.

Service
Tables

System Switch 0B - Not used (Do not change the factory settings.)
System Switch 0C - Not used (Do not change the factory settings.)
System Switch 0D - Not used (Do not change the factory settings.)

System Switch 0E		SP No. 1-101-015
No	FUNCTION	COMMENTS
0-2	Not used	Do not change the settings.
3	Action when the external handset goes off-hook 0: Manual tx and rx operation 1: Memory tx and rx operation (the display remains the same)	0: Manual tx and rx are possible while the external handset is off-hook. However, memory tx is not possible. 1: The display stays in standby mode even when the external handset is used, so that other people can use the machine for memory tx operation. Note that manual tx and rx are not possible with this setting.
4-7	Not used	Do not change the settings.

System Switch 0F		SP No. 1-101-016
No	FUNCTION	COMMENTS
0 to 7	Country/area code for functional settings (Hex) 00: France 11: USA 01: Germany 12: Asia 02: UK 13: Japan 03: Italy 14: Hong Kong 04: Austria 15: South Africa 05: Belgium 16: Australia 06: Denmark 17: New Zealand 07: Finland 18: Singapore 08: Ireland 19: Malaysia 09: Norway 1A: China 0A: Sweden 1B: Taiwan 0B: Switz. 1C: Korea 0C: Portugal 20: Turkey 0D: Holland 21: Greece 0E: Spain 22: Hungary 0F: Israel 23: Czech 10: Canada 24: Poland	This country/area code determines the factory settings of bit switches and RAM addresses. However, it has no effect on the NCU parameter settings and communication parameter RAM addresses. Cross reference NCU country code: Function 06, parameter C.C.

System Switch 10 - Not used (Do not change the factory settings.)

System Switch 11		SP No. 1-101-018
No	FUNCTION	COMMENTS
0	TTI printing position 0 : Superimposed on the page data 1 : Printed before the data leading edge	Change this bit to 1 if the TTI overprints information that the customer considers to be important (G3 transmissions).
1	TSI (G3) or CIL/TID (G4) printing position 0 : Superimposed on the page data 1 : Printed before the data leading edge	Change this bit to 1 if the TSI (G3) or CIL/TID (G4) overprints information that the customer considers to be important. CIL: Command Information Line (Group 4)
2-6	Not used	Do not change the factory setting.
7	Use of parallel memory transmission with G4 transmission 0 : Disabled 1 : Enabled (Japan Only)	This determines whether parallel transmission can be used with a G4 transmission or not. Note that this bit is only effective if Parallel Memory transmission is enabled (User Parameter 07 - bit 2).

System Switch 12		SP No. 1-101-019
No	FUNCTION	COMMENTS
0 to 7	TTI/CIL printing position in the main scan direction	TTI/CIL: 08 to 92 (BCD) mm Input even numbers only. This setting determines the print start position for the TTI and CIL from the left edge of the paper. If the TTI is moved too far to the right, it may overwrite the file number which is on the top right of the page. On an A4 page, if the CIL is moved over by more than 50 mm, it may overwrite the page number.

System Switch 13 - Not used (do not change the settings)

System Switch 14 - Not used (do not change the settings)

System Switch 15		SP No. 1-101-022
No	FUNCTION	COMMENTS
0	Not used	Do not change the setting.
1	Going into the Energy Saver mode automatically 0 : Enabled 1 : Disabled	1 : The machine will restart from the Energy Saver mode quickly, because the +5V power supply is active even in the Energy Saver mode.
2-7	Not used	Do not change the settings.

System Switch 16 - Not used (do not change the settings)

System Switch 17 - Not used (do not change the settings)

System Switch 18 - Not used (do not change the settings)

System Switch 19		SP No. 1-101-026
No	FUNCTION	COMMENTS
0-2	Not used	Do not change the settings.
3	Selects a temporary address for the number PC-FAX #.	0 : When prefixed by #, handled only as a stored address. 1 : When prefixed by #, when a digit exists that prevents handling the transaction as a Coded, One-Touch, or Group dialing, handles temporarily.
4	Number of jobs controlled for PC-FAX TX 0 : 64 Jobs 1 : No limitations (but conforms to device limitations)	Sets the number of jobs controlled for PC-FAX transactions. If "1" is selected (no limitations), control is relinquished to the device (standard 400, expandable to 800).
6	Not used	Do not change the settings.
7	Special Original mode 0 : Disabled 1 : Enabled	1 : If the customer frequently wishes to transmit a form or letterhead which has a colored or printed background, change this bit to "1". "Original 1" and "Original 2" can be selected in addition to the "Text", "Text/Photo" and "Photo" modes.

System Switch 1A		SP No. 1-101-026
No	FUNCTION	COMMENTS
0 to 7	LS RX memory remaining refresh value setting	Sets a value of 4K. If the amount of memory remaining falls below 4K, documents received in memory are printed to create more space in memory. Initial value: 0x80 (512K) 00-FF (0-1020 KB: Hex)

System Switch 1B - Not used (do not change the settings)

System Switch 1C - Not used (do not change the settings)

System Switch 1D		SP No. 1-101-030
No	FUNCTION	COMMENTS
0	RTI/CSI/CPS display 0: Disabled 1: Enabled	1: RTI/CSI/CPS is displayed on the top line of the LCD panel during communication.
1-7	Not used	Do not change the settings.

System Switch 1E		SP No. 1-101-031
No	FUNCTION	COMMENTS
0	Communication after the Journal data storage area has become full 0: Impossible 1: Possible	This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper). 0: If the buffer memory of the communication records for the Journal has become full, fax communications will become impossible, to prevent overwriting the communication records before the machine prints them out. 1: If the buffer memory of the communication records for the Journal is full, fax communications are still possible. But the machine will overwrite the oldest communication records. Cross Reference <input type="checkbox"/> Automatic Journal output - User switch 03 bit 7 <input type="checkbox"/> Number of communication records for the Journal: 200 records (standard) 1000 records (with the Function Upgrade unit installed)
1	Action when the SAF memory has become full during scanning 0: The current page is erased. 1: The entire file is erased.	0: If the SAF memory becomes full during scanning, the successfully scanned pages are transmitted. 1: If the SAF memory becomes full during scanning, the file is erased and no pages are transmitted. This bit switch is ignored for parallel memory transmission.

System Switch 1E		SP No. 1-101-031
No	FUNCTION	COMMENTS
2	RTI/CSI display priority 0: RTI 1: CSI	This bit determines which identifier, RTI or CSI, is displayed on the LCD while the machine is communicating in G3 non-standard mode.
3	File No. printing 0: Enabled 1: Disabled	1: File numbers are not printed on any reports.
4	Action when authorized reception is enabled but authorized RTIs/CSIs are not yet programmed 0: All fax reception is disabled 1: Faxes can be received if the sender has an RTI or CSI	If authorized reception is enabled but the user has stored no acceptable sender RTIs or CSIs, the machine will not be able to receive any fax messages. If the customer wishes to receive messages from any sender that includes an RTI or CSI, and to block messages from senders that do not include an RTI or CSI, change this bit to "1", then enable Authorized Reception. Otherwise, keep this bit at "0 (default setting)".
5-6	Not used	Do not change the setting.
7	RAM initialization after the optional Function Upgrade unit is installed or removed 0: Enabled 1: Disabled	When the machine detects that a Function Upgrade unit has been installed or removed, the machine shows the following message on the display for the customer. <i>"Adding/Removing FAX Feature Expander causes data loss. Turn Main Power Switch off and remove/replace it to avoid loss. To continue, press Yes."</i> If Yes is pressed, the machine initializes the RAM to the "with" or "without card" configuration. However, changing this bit to "1" disables this initialization, even if Yes is pressed. Change this bit to 1 after installing the Function Upgrade unit. 0: When the above message is displayed, the machine initializes the RAM if Yes is pressed. The amount of data lost depends on whether the board is in or out. To avoid losing data, the user must switch off immediately and put the Function Upgrade unit back in. 1: When the above message is displayed, the machine does not initialize the RAM even if Yes is pressed. However, the fax unit cannot be used until the user switches off, puts the Function Upgrade unit back in, then switches back on. No data is lost.

System Switch 1F		SP No. 1-101-032
No	FUNCTION	COMMENTS
0	Not used	Do not change the setting.
1	Report printout after an original jam during SAF storage or if the SAF memory fills up 0: Enabled 1: Disabled	0: When an original jams, or the SAF memory overflows during scanning, a report will be printed. Change this bit to "1" if the customer does not want to have a report in these cases. Memory tx – Memory storage report Parallel memory tx – Transmission result report
2	Not used	Do not change the setting.
3	Received fax print start timing (G3 reception) 0: After receiving each page 1: After receiving all pages	0: The machine prints each page immediately after the machine receives it. 1: The machine prints the complete message after the machine receives all the pages in the memory.
4	Received fax print start timing (G4 reception) (Japan Only) 0: After receiving each page 1: After receiving all pages	
5-6	Not used	Do not change the factory settings.
7	Action when a fax SC has occurred 0: Automatic reset 1: Fax unit stops	0: When the fax unit detects a fax SC code other than SC1201 and SC1207, the fax unit automatically resets itself. 1: When the fax unit detects any fax SC code, the fax unit stops. Cross Reference Fax SC codes - See "Troubleshooting"

3.2.2 FAX SWITCHES

FAX Switch 00 - Not used (do not change the settings)

FAX Switch 01		SP No. 3-201-002
No	FUNCTION	COMMENTS
0 to 7	Scan density step value (Text mode)	<p>When scan density is adjusted manually away from the Normal setting, the threshold value for binary picture processing changes for each step from the value specified by Scanner Switch 02, by the amount programmed here.</p> <p>For example, with the default setting (14), the threshold value changes as follows.</p> <p>+3 (Darkest) : 71 (= 85 – 14) +2 : 85 (= 99 – 14) +1 : 99 (= 113 – 14) 0 (Normal) : 113 (Scanner Switch 02 setting) -1 : 127 (= 113 + 14) -2 : 141 (= 127 + 14) -3 (Lightest) : 155 (= 141 + 14)</p> <p>For smaller steps, input a lower value.</p>

Service
Tables

FAX Switch 02		SP No. 3-201-003
No	FUNCTION	COMMENTS
0 to 7	Binary picture processing: Threshold for Text mode - Normal setting (center position)	<p>This setting determines the threshold value for binary picture processing in Text mode (when the scan density setting is at the center).</p> <p>The value can be between 01 and FF. For a darker threshold, input a lower value.</p> <p>Default setting: 71(H) = 113(D)</p>

FAX Switch 03 - Not used (do not change the settings)

FAX Switch 04		SP No. 3-201-005
No	FUNCTION	COMMENTS
0 to 7	Binary picture processing: Threshold for monotone background special original 1 mode - Normal setting (center position)	<p>This setting determines the threshold value for binary picture processing in monotone background special original 1 mode (when the scan density setting is at the center).</p> <p>The value can be between 01 and FF. For a darker threshold, input a lower value.</p> <p>Default setting: A4(H) = 164(D)</p>

FAX Switch 05		SP No. 3-201-006
No	FUNCTION	COMMENTS
0 to 7	Binary picture processing: Threshold for colored background special original 2 mode - Normal setting (center position)	This setting determines the threshold value for binary picture processing in colored background special original 2 mode (when the scan density setting is at the center). The value can be between 01 and FF. For a darker threshold, input a lower value. Default setting: 28(H) = 40(D)

FAX Switch 06		SP No. 3-201-007
No	FUNCTION	COMMENTS
0 to 3	MTF filter level (Text mode) The value can be between 0(Off) and F. For a weaker threshold, input a lower value. Default setting: 7 This setting is independent from the threshold specified by the copier SP modes.	
4 to 7	MTF filter level (Text/Photo mode) The value can be between 0(Off) and F. For a weaker threshold, input a lower value. Default setting: 7 This setting is independent from the threshold specified by the copier SP modes.	

FAX Switch 07		SP No. 3-201-008
No	FUNCTION	COMMENTS
0 to 2	Smoothing filter level (Photo mode)	The value can be between 0(Off) and 7. For a weaker threshold, input a lower value. Default setting: 2 This setting is independent from the threshold setting specified by the copier SP modes.
3-7	Not used	Do not change the settings.



FAX Switch 08 – Not used (do not change the settings)	SP No. 3-201-009
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FAX Switch 09 – Not used (do not change the settings)	SP No. 3-201-010
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FAX Switch 0A		SP No. 3-201-011
No	FUNCTION	COMMENTS
0-3	Not used	Do not change the settings.
4 to 7	MTF filter level (Colored background special original mode) The value can be between 0 (Off) and F. For a weaker threshold, input a lower value. Default setting: 7 This setting is independent from the threshold specified by the copier SP modes.	

FAX Switch 0B		SP No. 3-201-012
No	FUNCTION	COMMENTS
0 to 3	Scan margin setting (right and left margin in book scan ADF mode) The setting can be between 0 and F (H) (unit 0.5 mm). Default setting: 2 mm	
4 to 7	Scan margin setting (top and bottom margin in book scan and ADF mode) The setting can be between 0 and 7 (H) (unit 0.5 mm). Default setting: 3 mm	

Service
Tables

FAX Switch 0C		SP No. 3-201-013
No	FUNCTION	COMMENTS
0	Action when an original jam has occurred while scanning the original into memory for memory tx 0: Continues scanning after recovery 1: Stops scanning and erases all scanned pages for that job	This bit is only effective when parallel memory tx is disabled (user parameter 07 - bit 2). If parallel memory tx is enabled, the machine always erases the scanned pages when an original jam occurs. The machine then asks the user to retry from the first page, even if the parallel memory tx is not actually used. 0: The machine displays a message asking the user to put the jammed page back into the original stack, and continues scanning. The message is displayed for the time period specified by scanner switch 0E, bit 2. 1: The machine erases all the scanned pages and asks the user to retry from the first page.
1 to 2	Setting when an original size cannot be recognized Bit 2 1 Setting 0 0 No original 0 1 A5  1 0 A5  1 1 No original	
3-7	Not used	Do not change the settings.

FAX Switch 0D		SP No. 3-201-014
No	FUNCTION	COMMENTS
0-6	Not used	Do not change the settings.
7	Scan width for A5 lengthwise or B5 lengthwise originals 0: 210 mm (8.5") 1: Original width	0: The machine scans the original as 210 mm (8.5") width. The transmitted image has a blank area on the right. 1: The machine scans 148 mm (A5) or 182 mm (B5) and centers the scanned data on a 216 mm width transmitted image.

FAX Switch 0E		SP No. 3-201-015
No	FUNCTION	COMMENTS
0	Not used	Do not change the settings.
1	Scan resolution unit 0: mm 1: inches	This bit determines which resolution unit will be used for scanning a fax message. Default setting: mm
2-7	Not used	Do not change the settings.

FAX Switch 10 ~ 1F - Not used (do not change the settings)	SP No. 3-201-016
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3.2.3 PRINTER SWITCHES

Printer Switch 00		SP No. 1-103-001
No	FUNCTION	COMMENTS
0	Page separation mark 0: Disabled 1: Enabled	0: No marks are printed. 1: If a received page has to be printed out on two sheets, an asterisk inside square brackets is printed at the bottom right hand corner of the first sheet, and a "2" inside a small box is printed at the top right hand corner of the second sheet. This helps the user to identify pages that have been split.
1	Repetition of data when the received page is longer than the printer paper 0: Disabled 1: Enabled	0: The next page continues from where the previous page left off. 1: The final few mm of the previous page are repeated at the top of the next page. The amount of repeated data depends on printer switch 04, bits 5 and 6.
2	Prints the date and time on received fax messages 0: Disabled 1: Enabled	This switch is only effective when user parameter 02 - bit 2 (printing the received date and time on received fax messages) is enabled. 1: The machine prints the received and printed date and time at the bottom of each received page.
3-7	Not used	Do not change the settings.

Service
Tables

Printer Switch 01		SP No. 1-103-002
No	FUNCTION	COMMENTS
0-2	Not used	Do not change the settings.
3-4	Maximum print width used in the setup protocol Bit 4 3 Setting 0 0 Not used 0 1 A3 1 0 B4 1 1 A4	These bits are only effective when bit 7 of printer switch 01 is "1".
5-6	Not used	Do not change the settings.
7	Received message width restriction in the protocol signal to the sender 0: Disabled 1: Enabled	0: The machine informs the transmitting machine of the print width depending on the paper size available from the paper feed stations. Refer to the table on the next page for how the machine chooses the paper width used in the setup protocol (NSF/DIS). 1: The machine informs the transmitting machine of the fixed paper width which is specified by bits 3 and 4 above.

Relationship between available paper sizes and printer width used in the setup protocol

Available Paper Size	Printer width used in the Protocol (NSF/DIS)
A4 or 8.5" x 11"	297 mm width
B5	256 mm width
A5 or 8.5" x 5.5"	216 mm width
No paper available (Paper end)	216 mm width

Printer Switch 02		SP No. 1-103-003
No	FUNCTION	COMMENTS
0	1st paper feed station usage for fax printing 0: Enabled 1: Disabled	0: The paper feed station can be used to print fax messages and reports. 1: The specified paper feed station will not be used for printing fax messages and reports. Note: Do not disable usage for a paper feed station which has been specified by User Parameter Switch 0F (15), or which is used for the Specified Cassette Selection feature.
1	2nd paper feed station usage for fax printing 0: Enabled 1: Disabled	
2	3rd paper feed station usage for fax printing 0: Enabled 1: Disabled	
3	4th paper feed station usage for fax printing 0: Enabled 1: Disabled	
4	LCT usage for fax printing 0: Enabled 1: Disabled	
5-7	Not used	Do not change the settings.

Printer Switch 03		SP No. 1-103-004
No	FUNCTION	COMMENTS
0	Length reduction of received data 0: Disabled 1: Enabled	0: Incoming pages are printed without length reduction. (Page separation threshold: Printer Switch 03, bits 4 to 7) 1: Incoming page length is reduced when printing. (Maximum reducible length: Printer Switches 04, bits 0 to 4)
1-3	Not used	
		Do not change the settings

Printer Switch 03		SP No. 1-103-004
No	FUNCTION	COMMENTS
4 to 7	Page separation threshold (with reduction disabled with switch 03-0 above)	
	If the incoming page is up to x mm longer than the length of copy paper, the excess portion will not be printed. If the incoming page is more than x mm longer than the length of copy paper, the excess portion will be printed on the next page. The value of x is determined by these four bits.	
	Hex value of bits 4 to 7 x (mm)	
	0	0
	1	1
	and so on until	
	F	15
	Default setting: 6 mm	
Cross reference		
Length reduction On/Off: Printer Switch 03, Bit 0		

Printer Switch 04		SP No. 1-103-005																														
No	FUNCTION	COMMENTS																														
0 to 4	<p>Maximum reducible length when length reduction is enabled with switch 03-0 above. <Maximum reducible length> = <Paper length> + (N x 5mm) “N” is the decimal value of the binary setting of bits 0 to 4.</p> <table><tr><td>Bit 4</td><td>3</td><td>2</td><td>1</td><td>0</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0 mm</td></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>5 mm</td></tr><tr><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>20 mm (default setting)</td></tr><tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>155 mm</td></tr></table> <p>For A5 sideways and B5 sideways paper <Maximum reducible length> = <Paper length> + 0.75 x (N x 5mm)</p>	Bit 4	3	2	1	0	Setting	0	0	0	0	0	0 mm	0	0	0	0	1	5 mm	0	0	1	0	0	20 mm (default setting)	1	1	1	1	1	155 mm	
Bit 4	3	2	1	0	Setting																											
0	0	0	0	0	0 mm																											
0	0	0	0	1	5 mm																											
0	0	1	0	0	20 mm (default setting)																											
1	1	1	1	1	155 mm																											
5 to 6	<p>Length of the duplicated image on the next page, when page separation has taken place.</p> $\begin{pmatrix} 0 \\ 0 \end{pmatrix} = 4\text{ mm} \quad \begin{pmatrix} 1 \\ 0 \end{pmatrix} = 10\text{ mm} \quad \begin{pmatrix} 0 \\ 1 \end{pmatrix} = 15\text{ mm} \quad \begin{pmatrix} 1 \\ 1 \end{pmatrix} = \text{Not used}$																															
7	Not used.	Do not change the setting.																														

Printer Switch 05 - Not used (do not change the settings)

Printer Switch 06		SP No. 1-103-007
No	FUNCTION	COMMENTS
0	Printing while a paper cassette is pulled out, when the Just Size Printing feature is enabled. 0: Printing will not start 1: Printing will start if another cassette has a suitable size of paper, based on the paper size selection priority tables.	Cross reference Just size printing on/off – User switch 05, bit 5
1-7	Not used.	Do not change the settings.

Printer Switch 07		SP No. 1-103-008
No	FUNCTION	COMMENTS
0	Reduction for Journal printing 0: Off 1: On	1: The Journal is reduced to 91% to ensure that there is enough space in the left margin for punch holes or staples.
2-3	Not used.	Do not change the settings.
4	List of destinations in the Communication Failure Report for broadcasting 0: All destinations 1: Only destinations where communication failure occurred	1: Only destinations where communication failure occurred are printed on the Communication Failure Report.
5-7	Not used.	Do not change the settings.

Printer Switch 08 - Not used (do not change the settings)	
Printer Switch 09 - Not used (do not change the settings)	
Printer Switch 0A - Not used (do not change the settings)	
Printer Switch 0B - Not used (do not change the settings)	
Printer Switch 0C - Not used (do not change the settings)	
Printer Switch 0D - Not used (do not change the settings)	

Printer Switch 0E		SP No. 1-103-015
No	FUNCTION	COMMENTS
0	Paper size selection priority 0: Width 1: Length	0: A paper size that has the same width as the received data is selected first. 1: A paper size which has enough length to print all the received lines without reduction is selected first.
1	Paper size selected for printing A4 width fax data 0: 8.5" x 11" size 1: A4 size	This switch determines which paper size is selected for printing A4 width fax data, when the machine has both A4 and 8.5" x 11" size paper.

Printer Switch 0E			SP No. 1-103-015
No	FUNCTION	COMMENTS	
2	Page separation 0: Enabled 1: Disabled	1: If all paper sizes in the machine require page separation to print a received fax message, the machine does not print the message (Substitute Reception is used). After a larger size of paper is set in a cassette, the machine automatically prints the fax message.	
3 to 4	Printing the sample image on reports Bit 4 Bit 3 Setting 0 0 The upper half only 0 1 50% reduction in sub-scan only 1 0 Same size 1 1 Not used	"Same size" means the sample image is printed at 100%, even if page separation occurs. User Parameter Switch 19 (13H) bit 4 must be set to "0" to enable this switch. Refer to Detailed Section Descriptions for more on this feature.	
5-6	Not used	Do not change the settings.	
7	Equalizing the reduction ratio among separated pages (Page Separation) 0: Enabled 1: Disabled	0: When page separation has taken place, all the pages are reduced with the same reduction ratio. 1: Only the last page is reduced to fit the selected paper size when page separation has taken place. Other pages are printed without reduction.	

Printer Switch 0F			SP No. 1-103-016
No	FUNCTION	COMMENTS	
0 to 1	Smoothing feature Bit 1 Bit 0 Setting 0 0 Disabled 0 1 Disabled 1 0 Enabled 1 1 Not used	(0, 0) (0, 1): Disable smoothing if the machine receives halftone images from other manufacturers fax machines frequently.	
2	Duplex printing 0: Disabled 1: Enabled	1: The machine always prints received fax messages in duplex printing mode:	
3	Binding direction for Duplex printing 0: Left binding 1: Top binding		
4	Printing fax messages in user code mode 0: Enabled 1: Disabled	1: The machine holds the received fax messages until the machine exits the restricted access mode (user code or key counter). If the machine enters the restricted access mode again while printing fax messages, the machine stops printing the machine exits the mode again.	
5-7	Not used	Do not change the settings.	

3.2.4 COMMUNICATION SWITCHES

Communication Switch 00		SP No. 1-104-001
No	FUNCTION	COMMENTS
0 to 1	Compression modes available in receive mode Bit 1 0 Modes 0 0 MH only 0 1 MH/MR 1 0 MH/MR/MMR 1 1 MH/MR/MMR/JBIG	These bits determine the compression capabilities to be declared in phase B (handshaking) of the T.30 protocol.
2 to 3	Compression modes available in transmit mode Bit 3 2 Modes 0 0 MH only 0 1 MH/MR 1 0 MH/MR/MMR 1 1 MH/MR/MMR/JBIG	These bits determine the compression capabilities to be used in the transmission and to be declared in phase B (handshaking) of the T.30 protocol.
4	Not used	Do not change the setting.
5	JBIG compression method: Reception 0: Only basic supported 1: Basic and optional both supported	Change the setting when communication problems occur using JBIG compression.
6	JBIG compression method: Transmission 0: Basic mode priority 1: Optional mode priority	Change the setting when communication problems occur using JBIG compression.
7	Closed network (reception) 0: Disabled 1: Enabled	1: Reception will not go ahead if the ID code of the other terminal does not match the ID code of this terminal. This function is only available in NSF/NSS mode.

Communication Switch 01				SP No. 1-104-002
No	FUNCTION			COMMENTS
0	ECM 0: Off 1: On			If this bit is set to 0, ECM is switched off for all communications. In addition, V.8 protocol and JBIG compression are switched off automatically.
1	Not used			Do not change the setting.
2 to 3	Wrong connection prevention method			
3	Bit 3	Bit 2	Setting	
	0	0	None	(0,1) - The machine will disconnect the line without sending a fax message, if the last 8 digits of the received CSI do not match the last 8 digits of the dialed telephone number. This does not work when manually dialed. (1,0) - The same as above, except that only the last 4 digits are compared. (1,1) - The machine will disconnect the line without sending a fax message, if the other end does not identify itself with an RTI or CSI. (0,0) - Nothing is checked; transmission will always go ahead. Note: This function does not work when dialing is done from the external telephone.
	0	1	8 digit CSI	
	1	0	4 digit CSI	
	1	1	CSI/RTI	
4-5	Not used			Do not change the settings.
6 to 7	Maximum printable page length available			
7	Bit 7	6	Setting	The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).
	0	0	No limit	
	0	1	B4 (364 mm)	
	1	0	A4 (297 mm)	
	1	1	Not used	

Communication Switch 02			SP No. 1-104-003																
No	FUNCTION	COMMENTS																	
0	Burst error threshold 0: Low 1: High	<p>If there are more consecutive error lines in the received page than the threshold, the machine will send a negative response.</p> <p>The Low and High threshold values depend on the sub-scan resolution, and are as follows.</p> <table> <tr> <th>Resolution</th><th>100 dpi</th><th>200 dpi</th><th>400 dpi</th></tr> <tr> <td></td><td>3.85 l/mm</td><td>7.7 l/mm</td><td>15.4 l/mm</td></tr> <tr> <td>Low settings</td><td>6</td><td>12</td><td>24</td></tr> <tr> <td>High settings</td><td>12</td><td>24</td><td>48</td></tr> </table>		Resolution	100 dpi	200 dpi	400 dpi		3.85 l/mm	7.7 l/mm	15.4 l/mm	Low settings	6	12	24	High settings	12	24	48
Resolution	100 dpi	200 dpi	400 dpi																
	3.85 l/mm	7.7 l/mm	15.4 l/mm																
Low settings	6	12	24																
High settings	12	24	48																
1	Acceptable total error line ratio 0: 5% 1: 10%	If the error line ratio for a page exceeds the acceptable ratio, RTN will be sent to the other end.																	
2	Treatment of pages received with errors during G3 reception 0: Deleted from memory without printing 1: Printed	0: Pages received with errors are not printed.																	

Communication Switch 02		SP No. 1-104-003
No	FUNCTION	COMMENTS
3	Hang-up decision when a negative code (RTN or PIN) is received during G3 immediate transmission 0: No hang-up, 1: Hang-up	0: The next page will be sent even if RTN or PIN is received. 1: The machine will send DCN and hang up if it receives RTN or PIN. This bit is ignored for memory transmissions or if ECM is being used.
4-6	Not used	Do not change the settings.
7	Method of total error rate calculation 0: Normal method 1: French PTT requirement	0: Error rate is calculated by dividing the number of total lines by the number of error lines. 1: Error rate is calculated by dividing the number of total plus error lines by the number of error lines.

Communication Switch 03		SP No. 1-104-004
No	FUNCTION	COMMENTS
0 to 7	Maximum number of page retransmissions in a G3 memory transmission	00 - FF (Hex) times. This setting is not used if ECM is switched on. Default setting - 03(H)

Communication Switch 04 - Not used (do not change the settings)
Communication Switch 05 - Not used (do not change the settings)
Communication Switch 06 - Not used (do not change the settings)

Communication Switch 07		SP No. 1-104-008
No	FUNCTION	COMMENTS
0	Fallback from G4 to G3 if the other terminal is not a G4 terminal 0: Disabled 1: Enabled (Japan Only)	Also see system switch 0A bit 7. Refer to the ISDN G4 option service manual (G4 Internal Switches 17, 18, 1A, 1B, and 1C) for the CPS code set (Cause Value set) that determines G4 to G3 fallback.
1	Not used	Do not change the setting.
2	Not used	Do not change the setting.
3	Fallback from G4 to G3 reflected in programmed Quick/Speed dials 0: Fallback enabled 1: Always start with G4 (Japan Only)	0: If a communication falls back from G4 to G3, the machine will always start transmission with G3 from the next communication. 1: The machine will always start to transmit with G4.
4	Fallback from G4 to G3 when G4 communication fails on the ISDN B-channel 0: Fallback disabled 1: Fallback enabled (Japan Only)	1: Enable this switch only when G4 communication errors occur because the exchanger connects G4 calls to the PSTN. This problem occurs with some types of exchanger.
5	Not used	Do not change the setting.
6	Not used	Do not change the setting.
7	Not used	Do not change the setting.

Communication Switch 08 - Not used (do not change the settings)
Communication Switch 09 - Not used (do not change the settings)

Communication Switch 0A		SP No. 1-104-011
No	FUNCTION	COMMENTS
0	Point of resumption of memory transmission upon redialing 0: From the error page 1: From page 1	0: The transmission begins from the page where transmission failed the previous time. 1: Transmission begins from the first page, using normal memory transmission.
1-6	Not used	Do not change the settings.
7	Emergency calls using 999 0: Enabled 1: Disabled	If this bit is at 1, the machine will not allow you to dial 999 at the auto-dialer. This is a PTT requirement in the Hong Kong.

Communication Switch 0B		SP No. 1-104-012
No	FUNCTION	COMMENTS
0	Use of Economy Transmission during a Transfer operation to end receivers 0: Disabled 1: Enabled	These bits determine whether the machine uses the Economy Transmission feature when it is carrying out a Transfer operation as a Transfer Station.
1	Use of Economy Transmission during a Transfer operation to the Next Transfer Stations 0: Disabled 1: Enabled	
2	Use of Label Insertion for the End Receivers in a Transfer operation 0: Disabled 1: Enabled	This bit determines whether the machine uses the Label Insertion feature when it is carrying out a Transfer operation as a Transfer Station.
3	Conditions required for Transfer Result Report transmission 0: Always transmitted 1: Only transmitted if there was an error	0: When acting as a Transfer Station, the machine will always send a Transfer Result Report back to the Requesting Station after completing the Transfer Request, even if there were no problems. 1: The machine will only send back a Transfer Result Report if there were errors during communication, meaning one or more of the End Receivers could not be contacted.
4	Printout of the message when acting as a Transfer Station 0: Disabled 1: Enabled	When the machine is acting as a Transfer Station, this bit determines whether the machine prints the fax message coming in from the Requesting Terminal.
5	Action when there is no fax number in the programmed Quick/Speed dials which meets the requesting terminal's own fax number 0: Transfer is disabled 1: Transfer is enabled	After the machine receives a transfer request, the machine compares the last N digits of the requesting terminal's own fax number with all the Quick/Speed dials programmed in the machine. (N is the number programmed in communication switch 0C.) 0: If there is no matching number programmed in the machine, the machine rejects the transfer request. 1: Even if there is no matching number programmed in the machine, the machine accepts the transfer request. The result report will be printed at the transfer terminal, but will not be sent back to the requesting terminal.
6-7	Not used	Do not change the settings.

Communication Switch 0C		SP No. 1-104-013
No	FUNCTION	COMMENTS
0 to 4	Number of digits compared to find the requester's fax number from the programmed Quick/Speed Dials when acting as a Transfer Station	<p>00 - 1F (0 to 31 digits)</p> <p>After the machine receives a transfer request, the machine compares the own telephone number sent from the Requesting Terminal with all Quick/Speed Dials programmed in the machine, starting from Quick Dial 01 to the end of the Speed Dials. This number determines how many digits from the end of the telephone numbers the machine compares.</p> <p>If it is set to 00, the machine will send the report to the first Quick/Speed Dial that the machine compared. If Quick Dial 01 is programmed, the machine will send the report to Quick 01. If Quick Dial 01 through 04 are not programmed and Quick Dial 05 is programmed, the machine will send the report to Quick 05.</p> <p>Default setting - 05(H) = 5 digits</p>
5-7	Not used	Do not change the settings.

Communication Switch 0D		SP No. 1-104-014
No	FUNCTION	COMMENTS
0 to 7	The available memory threshold, below which ringing detection (and therefore reception into memory) is disabled	<p>00 to FF (Hex), unit = 4 kbytes (e.g., 06(H) = 24 kbytes)</p> <p>One page is about 24 kbytes.</p> <p>The machine refers to this setting before each fax reception. If the amount of remaining memory is below this threshold, the machine cannot receive any fax messages.</p> <p>If this setting is kept at 0, the machine will detect ringing signals and go into receive mode even if there is no memory available. This will result in communication failure.</p>

Communication Switch 0E		SP No. 1-104-015
No	FUNCTION	COMMENTS
0 to 7	Minimum interval between automatic dialing attempts	<p>06 to FF (Hex), unit = 2 s (e.g., 06(H) = 12 s)</p> <p>This value is the minimum time that the machine waits before it dials the next destination.</p>

Communication Switch 0F - Not used (do not change the settings.)

Communication Switch 10		SP No. 1-104-017
No	FUNCTION	COMMENTS
0 to 7	Memory transmission: Maximum number of dialing attempts to the same destination	01 - FE (Hex) times

Communication Switch 11 - Not used (do not change the settings.)

Communication Switch 12		SP No. 1-104-019
No	FUNCTION	COMMENTS
0 to 7	Memory transmission: Interval between dialing attempts to the same destination	01 - FF (Hex) minutes

Communication Switch 13 - Not used (do not change the settings.)

Communication Switch 14		SP No. 1-104-021															
No	FUNCTION	COMMENTS															
0	Inch-to-mm conversion during transmission 0: Disabled 1: Enabled	0: In immediate transmission, data scanned in inch format are transmitted without conversion. In memory transmission, data stored in the SAF memory in mm format are transmitted without conversion. Note: When storing the scanned data into SAF memory, the fax unit always converts the data into mm format. 1: The machine converts the scanned data or stored data in the SAF memory to the format which was specified in the set-up protocol (DIS/NSF) before transmission.															
1-5	Not used	Do not change the factory settings.															
6 to 7	Available unit of resolution in which fax messages are received <table> <tr> <th>Bit 7</th><th>Bit 6</th><th>Unit</th></tr> <tr> <td>0</td><td>0</td><td>mm</td></tr> <tr> <td>0</td><td>1</td><td>inch</td></tr> <tr> <td>1</td><td>0</td><td>mm and inch (default)</td></tr> <tr> <td>1</td><td>1</td><td>Not used</td></tr> </table>	Bit 7	Bit 6	Unit	0	0	mm	0	1	inch	1	0	mm and inch (default)	1	1	Not used	For the best performance, do not change the factory settings. The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).
Bit 7	Bit 6	Unit															
0	0	mm															
0	1	inch															
1	0	mm and inch (default)															
1	1	Not used															

Communication Switch 15 - Not used (do not change the settings)

Communication Switch 16		SP No. 1-104-023
No	FUNCTION	COMMENTS
0	Standard G3 unit 0: Disabled 1: Enabled (Japan Only)	Set this bit to 0 if the user wants to use only the ISDN line (option G4 unit), even for G3 communications. However, for ISDN on hook dialing, bit 7 of user parameter 30 must be set to 1. Note: If the optional G4 unit is not installed, but this bit is changed to 'disabled', no document can be transmitted.
1	Optional G3 unit (G3-2) 0: Not installed 1: Installed	Change this bit to 1 when installing the first optional G3 unit.
2	Optional ISDN unit 0: Not installed 1: Installed	Change this bit to 1 when installing the optional ISDN unit.
3	Optional G3 unit (G3-3) 0: Not installed 1: Installed	Change this bit to 1 when installing the second optional G3 unit.
4	Not used	Do not change the setting.
5	Not used	Do not change the setting.
6	Use of the I-G3 line 0: Tx or rx 1: Tx only	Change this bit to 1 when the customer requires.
7	G4 Dual communication 0: Enabled 1: Disabled (Japan Only)	1: The machine uses only one B channel for communication. This enables a customer to occupy another B channel for other purposes such as internet communication.

Service
Tables

Communication Switch 17		SP No. 1-104-024
No	FUNCTION	COMMENTS
0	SEP reception 0: Disabled 1: Enabled	0: Polling transmission to another maker's machine using the SEP (Selective Polling) signal is disabled.
1	SUB reception 0: Disabled 1: Enabled	0: Confidential reception to another maker's machine using the SUB (Sub-address) signal is disabled.
2	PWD reception 0: Disabled 1: Enabled	0: Disables features that require PWD (Password) signal reception.
3-6	Not used	Do not change the settings.
7	Action when there is no box with an F-code that matches the received SUB code 0: Disconnect the line 1: Receive the message (using normal reception mode)	Change this setting when the customer requires.

Communication Switch 18 - Not used (do not change the settings)
Communication Switch 19 - Not used (do not change the settings)
Communication Switch 1A - Not used (do not change the settings)

Communication Switch 1B		SP No. 1-104-028
No	FUNCTION	COMMENTS
0 to 7	Extension access code (0 to 7) to turn V.8 protocol On/Off 0: On 1: Off	If the PABX does not support V.8/V.34 protocol procedure, set this bit to "1" to disable V.8. Example: If "0" is the PSTN access code, set bit 0 to 1. When the machine detects "0" as the first dialed number, it automatically disables V.8 protocol. (Alternatively, if "3" is the PSTN access code, set bit 3 to 1.)

Communication Switch 1C		SP No. 1-104-029
No	FUNCTION	COMMENTS
0 to 1	Extension access code (8 and 9) to turn V.8 protocol On/Off 0: On 1: Off	Refer to communication switch 1E. Example: If "8" is the PSTN access code, set bit 0 to 1. When the machine detects "8" as the first dialed number, it automatically disables V.8 protocol. (If "9" is the PSTN access code, use bit 1.)
2-7	Not used	Do not change the settings.

Communication Switch 1D - Not used (do not change the settings)
Communication Switch 1E - Not used (do not change the settings)
Communication Switch 1F - Not used (do not change the settings)

3.2.5 G3-1 SWITCHES

G3-1 Switch 00			SP No. 1-105-001
No	FUNCTION	COMMENTS	
0 to 1	Monitor speaker during communication (tx and rx) Bit 1 Bit 0 Setting 0 0 Disabled 0 1 Up to Phase B 1 0 All the time 1 1 Not used	(0, 0): The monitor speaker is disabled all through the communication. (0, 1): The monitor speaker is on up to phase B in the T.30 protocol. (1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.	
2	Monitor speaker during memory transmission 0: Disabled 1: Enabled	1: The monitor speaker is enabled during memory transmission.	
3-7	Not used	Do not change the settings.	

G3-1 Switch 01			SP No. 1-105-002
No	FUNCTION	COMMENTS	
0-3	Not used	Do not change the settings.	
4	DIS frame length 0: 10 bytes 1: 4 bytes	1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames).	
5	Not used	Do not change the setting.	
6	CED/ANSam transmission 0: Disabled 1: Enabled	Do not change this setting, unless the communication problem is caused by the CED/ANSam transmission.	
7	Not used	Do not change the setting.	

G3-1 Switch 02			SP No. 1-105-003
No	FUNCTION	COMMENTS	
0	G3 protocol mode used 0: Standard and non-standard 1: Standard only	Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only. 1: Disables NSF/NSS signals (these are used in non-standard mode communication)	
1-4	Not used	Do not change the settings.	
5	Use of modem rate history for transmission using Quick/Speed Dials 0: Disabled 1: Enabled	0: Communications using Quick/Speed Dials always start from the highest modem rate. 1: The machine refers to the modem rate history for communications with the same machine when determining the most suitable rate for the current communication.	
6	AI short protocol (transmission and reception) 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about AI Short Protocol.	
7	Short preamble 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble.	

G3-1 Switch 03		SP No. 1-105-004
No	FUNCTION	COMMENTS
0	DIS detection number (Echo countermeasure) 0: 1 1: 2	0: The machine will hang up if it receives the same DIS frame twice. 1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line.
1	V.8 protocol in manual reception 0: Disabled 1: Enabled	0: The machine sends CED instead of ANSam when starting a manual reception. 1: The machine sends ANSam during manual reception.
2	V.8 protocol 0: Disabled 1: Enabled	0: V.8/V.34 communications will not be possible. Note: Do not set to 0 unless the line condition is always bad enough to slow down the data rate to 14.4 kbps or lower.
3	ECM frame size 0: 256 bytes 1: 64 bytes	Keep this bit at "0" in most cases.
4	CTC transmission conditions 0: After one PPR signal received 1: After four PPR signals received (ITU-T standard)	0: When using ECM in non-standard (NSF/NSS) mode, the machine sends a CTC to drop back the modem rate after receiving a PPR, if the following condition is met in communications at 14.4, 12.0, 9.6, and 7.2 kbps. $\sqrt{N_{\text{Transmit}}} \leq N_{\text{Resend}}$ N _{Transmit} - Number of transmitted frames N _{Resend} - Number of frames to be retransmitted 1: When using ECM, the machine sends a CTC to drop back the modem rate after receiving four PPRs. PPR, CTC: These are ECM protocol signals. This bit is not effective in V.34 communications.
5	Modem rate used for the next page after receiving a negative code (RTN or PIN) 0: No change 1: Fallback	1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used.
6	V.8 protocol in manual transmission 0: Disabled 1: Enabled	1: The machine detects either ANSam or CED during manual transmission.
7	Not used	Do not change the setting.

G3-1 Switch 04		SP No. 1-105-005
No	FUNCTION	COMMENTS
0 to 3	Training error detection threshold	0 - F (Hex); 0 - 15 bits If the number of error bits in the received TCF is below this threshold, the machine informs the sender that training has succeeded.
4-7	Not used	Do not change the settings.

G3-1 Switch 05		SP No. 1-105-006
No	FUNCTION	COMMENTS
0 to 3	Initial Tx modem rate Bit 3 2 1 0 Setting (bps) 0 0 0 1 2.4 k 0 0 1 0 4.8 k 0 0 1 1 7.2 k 0 1 0 0 9.6 k 0 1 0 1 12.0 k 0 1 1 0 14.4 k 0 1 1 1 16.8 k 1 0 0 0 19.2 k 1 0 0 1 21.6 k 1 0 1 0 24.0 k 1 0 1 1 26.4 k 1 1 0 0 28.8 k 1 1 0 1 31.2 k 1 1 1 0 33.6 k Other settings - Not used	These bits set the initial starting modem rate for transmission. Use the dedicated transmission parameters if you need to change this for specific receivers. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit2
4 to 5	Initial modem type for 9.6 k or 7.2 kbps. Bit 5 Bit 4 Setting 0 0 V.29 0 1 V.17 1 0 V.34 1 1 Not used	These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.
6-7	Not used	Do not change the settings.

G3-1 Switch 06		SP No. 1-105-007
No	FUNCTION	COMMENTS
0 to 3	<p>Initial Rx modem rate</p> <p>Bit 3 2 1 0 Setting (bps)</p> <p>0 0 0 1 2.4 k</p> <p>0 0 1 0 4.8 k</p> <p>0 0 1 1 7.2 k</p> <p>0 1 0 0 9.6 k</p> <p>0 1 0 1 12.0 k</p> <p>0 1 1 0 14.4 k</p> <p>0 1 1 1 16.8 k</p> <p>1 0 0 0 19.2 k</p> <p>1 0 0 1 21.6 k</p> <p>1 0 1 0 24.0 k</p> <p>1 0 1 1 26.4 k</p> <p>1 1 0 0 28.8 k</p> <p>1 1 0 1 31.2 k</p> <p>1 1 1 0 33.6 k</p> <p>Other settings - Not used</p>	<p>These bits set the initial starting modem rate for reception.</p> <p>Use a lower setting if high speeds pose problems during reception.</p> <p>If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.</p> <p>Cross reference V.8 protocol on/off - G3 switch 03, bit2</p>
4 to 7	<p>Modem types available for reception</p> <p>Bit 7 6 5 4 Setting</p> <p>0 0 0 1 V.27ter</p> <p>0 0 1 0 V.27ter, V.29</p> <p>0 0 1 1 V.27ter, V.29 V.33</p> <p>0 1 0 0 V.27ter, V.29, V.17/V.33</p> <p>0 1 0 1 V.27ter, V.29, V.17/V33, V.34</p> <p>Other settings - Not used</p>	<p>The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode.</p> <p>If V.34 is not selected, V.8 protocol must be disabled manually.</p> <p>Cross reference V.8 protocol on/off - G3 switch 03, bit2</p>

G3-1 Switch 07		SP No. 1-105-008
No	FUNCTION	COMMENTS
0 to 1	<p>PSTN cable equalizer (tx mode: Internal)</p> <p>Bit 1 Bit 0 Setting</p> <p>0 0 None</p> <p>0 1 Low</p> <p>1 0 Medium</p> <p>1 1 High</p>	<p>Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.</p> <p>Use the dedicated transmission parameters for specific receivers.</p> <p>Also, try using the cable equalizer if one or more of the following symptoms occurs.</p> <ul style="list-style-type: none"> • Communication error • Modem rate fallback occurs frequently. <p>Note: This setting is not effective in V.34 communications.</p>

G3-1 Switch 07			SP No. 1-105-008
No	FUNCTION	COMMENTS	
2 to 3	PSTN cable equalizer (rx mode: Internal) Bit 3 Bit 2 Setting 0 0 None 0 1 Low 1 0 Medium 1 1 High	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Also, try using the cable equalizer if one or more of the following symptoms occurs. <ul style="list-style-type: none"> • Communication error with error codes such as 0-20, 0-23, etc. • Modem rate fallback occurs frequently. Note: This setting is not effective in V.34 communications.	
4	PSTN cable equalizer (V.8/V.17 rx mode: External) 0: Disabled 1: Enabled	Keep this bit at "1".	
5	PSTN cable equalizer (V.34 rx mode; External)	Keep this bit at "1".	
6-7	Not used	Do not change the settings.	

G3-1 Switch 08 - Not used (do not change the settings)

G3-1 Switch 09			SP No. 1-105-010
No	FUNCTION	COMMENTS	
0 to 1	ISDN cable equalizer (tx mode: Internal) Bit 1 Bit 0 Setting 0 0 None 0 1 Low 1 0 Medium 1 1 High (Japan Only)	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Use the dedicated transmission parameters for specific receivers. Also, try using the cable equalizer if one or more of the following symptoms occurs. <ul style="list-style-type: none"> • Communication error • Modem rate fallback occurs frequently. Note: This setting is not effective in V.34 communications.	

G3-1 Switch 09			SP No. 1-105-010
No	FUNCTION	COMMENTS	
2 to 3	ISDN cable equalizer (rx mode: Internal) Bit 3 Bit 2 Setting 0 0 None 0 1 Low 1 0 Medium 1 1 High (Japan Only)	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Also, try using the cable equalizer if one or more of the following symptoms occurs. <ul style="list-style-type: none"> • Communication error with error codes such as 0-20, 0-23, etc. • Modem rate fallback occurs frequently. Note: This setting is not effective in V.34 communications.	
4	ISDN cable equalizer (V.8/V.17 rx mode: External) 0: Disabled 1: Enabled (Japan Only)	Keep this bit at "0" in most cases.	
5	ISDN cable equalizer (V.34 rx mode: External) 0: Disabled 1: Enabled (Japan Only)	Keep this bit at "0" in most cases.	
6-7	Not used	Do not change the settings.	

G3-1 Switch 0A			SP No. 1-105-011
No	FUNCTION	COMMENTS	
0 1	Maximum allowable carrier drop during image data reception Bit 1 Bit 0 Value (ms) 0 0 200 0 1 400 1 0 800 1 1 Not used	These bits set the acceptable modem carrier drop time. Try using a longer setting if error code 0-22 is frequent.	
2-3	Not used	Do not change the settings.	
4	Maximum allowable frame interval during image data reception. 0: 5 s 1: 13 s	This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end. Try using a longer setting if error code 0-21 is frequent.	
5	Not used	Do not change the setting.	
6	Reconstruction time for the first line in receive mode 0: 6 s 1: 12 s	When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20. ITU-T T.30 recommendation: The first line should come within 5 s of CFR.	

7	Not used	Do not change the setting.
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G3-1 Switch 0B		SP No. 1-105-012
No	FUNCTION	COMMENTS
0	Protocol requirements: Europe 0: Disabled 1: Enabled	The machine does not automatically reset these bits for each country after a country code (System Switch 0F) is programmed. Change the required bits manually at installation.
1	Protocol requirements: Spain 0: Disabled 1: Enabled	
2	Protocol requirements: Germany 0: Disabled 1: Enabled	
3	Protocol requirements: France 0: Disabled 1: Enabled	
4	PTT requirements: Germany 0: Disabled 1: Enabled	
5	PTT requirements: France 0: Disabled 1: Enabled	
6	Not used	Do not change the setting.
7	DTS requirements : Germany 0: Disabled 1: Enabled	Change this bit manually if required.

G3-1 Switch 0C		SP No. 1-105-013
No	FUNCTION	COMMENTS
0	Pulse dialing method	P = Number of pulses sent out, N = Number dialed.
1	Bit 1 Bit 0 Setting	
	0 0 Normal(P=N)	
	0 1 Oslo (P=10 - N)	
	1 0 Sweden (N+1)	
	1 1 Not used	
2-7	Not used	Do not change the settings.

G3-1 Switch 0D		SP No. 1-105-014
No	FUNCTION	COMMENTS
0-1	Not used	Do not change the settings.
2 to 5	Data rate threshold during V.34 reception Bit 5 4 3 2 Setting	The machine changes the modulation parameters in the MPh signal to lower the initial modem rate during V.34 reception. If this switch is set to "0111", the machine lowers the initial speed one step, for example, from 28,800 to 26,400 bps. This switch reduces transmission time if the machine frequently sends PPR signals during V.34 reception.
	0 0 0 0 Normal	
	0 1 1 1 Lower by one step	
	1 1 1 1 Lower by two steps	
6	Not used	Do not change the setting.
7	B signal detection time for V.34 polling transmission 0: 75 ms (default setting) 1: 65 ms	Change this switch only when there are communication errors during V.34 polling transmission to a machine with a Panasonic modem.

G3-1 Switch 0E - Not used (do not change the settings)

G3-1 Switch 0F		SP No. 1-105-016
No	FUNCTION	COMMENTS
0	Alarm when an error occurred in Phase C or later 0 : Disabled 1 : Enabled	If the customer wants to hear an alarm after each error communication, change this bit to "1".
1	Alarm when the handset is off-hook at the end of communication 0 : Disabled 1 : Enabled	If the customer wants to hear an alarm if the handset is off-hook at the end of fax communication, change this bit to "1".
2-7	Not used	Do not change the settings.

3.2.6 G3-2 SWITCHES

These switches require an optional G3 interface unit.

G3-2 Switch 00			SP No. 1-106-001
No	FUNCTION	COMMENTS	
0-1	Monitor speaker during communication (tx and rx)	(0, 0): The monitor speaker is disabled all through the communication.	
	Bit 1 Bit 0 Setting	(0, 1): The monitor speaker is on up to phase B in the T.30 protocol.	
	0 0 Disabled	(1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.	
	0 1 Up to Phase B		
	1 0 All the time		
	1 1 Not used		
2	Monitor speaker during memory transmission 0: Disabled 1: Enabled	1: The monitor speaker is enabled during memory transmission.	
3-6	Not used	Do not change the settings.	

Service
Tables

G3-2 Switch 01			SP No. 1-106-002
No	FUNCTION	COMMENTS	
0-3	Not used	Do not change the settings.	
4	DIS frame length 0: 10 bytes 1: 4 bytes	1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames).	
5	Not used	Do not change the setting.	
6	CED/ANSam transmission 0: Disabled 1: Enabled	Do not change this setting, unless the communication problem is caused by the CED/ANSam transmission.	
7	Not used	Do not change the setting.	

G3-2 Switch 02			SP No. 1-106-003
No	FUNCTION	COMMENTS	
0	G3 protocol mode used 0: Standard and non-standard 1: Standard only	Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only. 1: Disables NSF/NSS signals (these are used in non-standard mode communication)	
1-4	Not used	Do not change the settings.	
5	Use of modem rate history for transmission using Quick/Speed Dials 0: Disabled 1: Enabled	0: Communications using Quick/Speed Dials always start from the highest modem rate. 1: The machine refers to the modem rate history for communications with the same machine when determining the most suitable rate for the current communication.	
6	AI short protocol (transmission and reception) 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about AI Short Protocol.	
7	Short preamble 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble.	

G3-2 Switch 03		SP No. 1-106-004
No	FUNCTION	COMMENTS
0	DIS detection number (Echo countermeasure) 0: 1 1: 2	0: The machine will hang up if it receives the same DIS frame twice. 1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line.
1	Not used	Do not change the setting.
2	V.8 protocol 0: Disabled 1: Enabled	0: V.8/V.34 communications will not be possible. Note: Do not set to 0 unless the line condition is always bad enough to slow down the data rate to 14.4 kbps or lower.
3	ECM frame size 0: 256 bytes 1: 64 bytes	Keep this bit at "0" in most cases.
4	CTC transmission conditions 0: After one PPR signal received 1: After four PPR signals received (ITU-T standard)	0: When using ECM in non-standard (NSF/NSS) mode, the machine sends a CTC to drop back the modem rate after receiving a PPR, if the following condition is met in communications at 14.4, 12.0, 9.6, and 7.2 kbps. $\sqrt{N_{\text{Transmit}} \leq N_{\text{Resend}}}$ NTransmit- Number of transmitted frames NResend- Number of frames to be retransmitted 1: When using ECM, the machine sends a CTC to drop back the modem rate after receiving four PPRs. PPR, CTC: These are ECM protocol signals. This bit is not effective in V.34 communications.
5	Modem rate used for the next page after receiving a negative code (RTN or PIN) 0: No change 1: Fallback	1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used.
6	Not used	Do not change the setting.
7	Not used	Do not change the setting.

G3-2 Switch 04		SP No. 1-106-005
No	FUNCTION	COMMENTS
0 to 3	Training error detection threshold	0 - F (Hex); 0 - 15 bits If the number of error bits in the received TCF is below this threshold, the machine informs the sender that training has succeeded.
4-7	Not used	Do not change the settings.

G3-2 Switch 05		SP No. 1-106-006
No	FUNCTION	COMMENTS
0 to 3	Initial Tx modem rate Bit 3 2 1 0 Setting (bps) 0 0 0 1 2.4 k 0 0 1 0 4.8 k 0 0 1 1 7.2 k 0 1 0 0 9.6 k 0 1 0 1 12.0 k 0 1 1 0 14.4 k 0 1 1 1 16.8 k 1 0 0 0 19.2 k 1 0 0 1 21.6 k 1 0 1 0 24.0 k 1 0 1 1 26.4 k 1 1 0 0 28.8 k 1 1 0 1 31.2 k 1 1 1 0 33.6 k Other settings - Not used	These bits set the initial starting modem rate for transmission. Use the dedicated transmission parameters if you need to change this for specific receivers. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - SG3 switch 03, bit 2
4 to 5	Initial modem type for 9.6 k or 7.2 kbps. Bit 5 Bit 4 Setting 0 0 V.29 0 1 V.17 1 0 V.34 1 1 Not used	These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.
6-7	Not used	Do not change the settings.

G3-2 Switch 06		SP No. 1-106-007
No	FUNCTION	COMMENTS
0 to 3	Initial Rx modem rate Bit 3 2 1 0 Setting (bps) 0 0 0 1 2.4 k 0 0 1 0 4.8 k 0 0 1 1 7.2 k 0 1 0 0 9.6 k 0 1 0 1 12.0 k 0 1 1 0 14.4 k 0 1 1 1 16.8 k 1 0 0 0 19.2 k 1 0 0 1 21.6 k 1 0 1 0 24.0 k 1 0 1 1 26.4 k 1 1 0 0 28.8 k 1 1 0 1 31.2 k 1 1 1 0 33.6 k Other settings - Not used	These bits set the initial starting modem rate for reception. Use a lower setting if high speeds pose problems during reception. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - SG3 switch 03, bit 2

G3-2 Switch 06					SP No. 1-106-007	
No	FUNCTION				COMMENTS	
4 to 7	Modem types available for reception				The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode.	
	Bit 7 6 5 4 Setting					
	0 0 0 1 V.27ter				If V.34 is not selected, V.8 protocol must be disabled manually.	
	0 0 1 0 V.27ter, V.29					
	0 0 1 1 V.27ter, V.29					
	V.33					
	0 1 0 0 V.27ter, V.29, V.17/V.33					
	0 1 0 1 V.27ter, V.29, V.17/V.33, V.34				Cross reference V.8 protocol on/off - SG3 switch 03, bit 2	
Other settings - Not used						

G3-2 Switch 07		SP No. 1-106-008															
No	FUNCTION	COMMENTS															
0 to 1	<p>PSTN cable equalizer (tx mode: Internal)</p> <table> <tr> <th>Bit 1</th><th>Bit 0</th><th>Setting</th></tr> <tr> <td>0</td><td>0</td><td>None</td></tr> <tr> <td>0</td><td>1</td><td>Low</td></tr> <tr> <td>1</td><td>0</td><td>Medium</td></tr> <tr> <td>1</td><td>1</td><td>High</td></tr> </table>	Bit 1	Bit 0	Setting	0	0	None	0	1	Low	1	0	Medium	1	1	High	<p>Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.</p> <p>Use the dedicated transmission parameters for specific receivers.</p> <p>Also, try using the cable equalizer if one or more of the following symptoms occurs.</p> <ul style="list-style-type: none"> • Communication error • Modem rate fallback occurs frequently. <p>Note: This setting is not effective in V.34 communications.</p>
Bit 1	Bit 0	Setting															
0	0	None															
0	1	Low															
1	0	Medium															
1	1	High															
2 to 3	<p>PSTN cable equalizer (rx mode: Internal)</p> <table> <tr> <th>Bit 3</th><th>Bit 2</th><th>Setting</th></tr> <tr> <td>0</td><td>0</td><td>None</td></tr> <tr> <td>0</td><td>1</td><td>Low</td></tr> <tr> <td>1</td><td>0</td><td>Medium</td></tr> <tr> <td>1</td><td>1</td><td>High</td></tr> </table>	Bit 3	Bit 2	Setting	0	0	None	0	1	Low	1	0	Medium	1	1	High	<p>Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.</p> <p>Also, try using the cable equalizer if one or more of the following symptoms occurs.</p> <ul style="list-style-type: none"> • Communication error with error codes such as 0-20, 0-23, etc. • Modem rate fallback occurs frequently. <p>Note: This setting is not effective in V.34 communications.</p>
Bit 3	Bit 2	Setting															
0	0	None															
0	1	Low															
1	0	Medium															
1	1	High															
4	<p>PSTN cable equalizer (V.8/V.17 rx mode: External)</p> <p>0: Disabled 1: Enabled</p>	Keep this bit at "1".															
5	PSTN cable equalizer (V.34 rx mode: External)	Keep this bit at "1".															
6-7	Not used	Do not change the settings.															

G3-2 Switch 08 - Not used (do not change the settings)
G3-2 Switch 09 - Not used (do not change the settings)

G3-2 Switch 0A				SP No. 1-106-011
No	FUNCTION			COMMENTS
0 1	Maximum allowable carrier drop during image data reception			These bits set the acceptable modem carrier drop time. Try using a longer setting if error code 0-22 is frequent.
	Bit 1	Bit 0	Value (ms)	
	0	0	200	
	0	1	400	
	1	0	800	
	1	1	Not used	
2-3	Not used			Do not change the settings.
4	Maximum allowable frame interval during image data reception. 0: 5 s 1: 13 s			This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end. Try using a longer setting if error code 0-21 is frequent.
5	Not used			Do not change the setting.
6	Reconstruction time for the first line in receive mode 0: 6 s 1: 12 s			When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20. ITU-T T.30 recommendation: The first line should come within 5 s of CFR.
7	Not used			Do not change the setting.

G3-2 Switch 0B		SP No. 1-106-012
No	FUNCTION	COMMENTS
0	Protocol requirements: Europe 0: Disabled 1: Enabled	The machine does not automatically reset these bits for each country after a country code (System Switch 0F) is programmed. Change the required bits manually at installation.
1	Protocol requirements: Spain 0: Disabled 1: Enabled	
2	Protocol requirements: Germany 0: Disabled 1: Enabled	
3	Protocol requirements: France 0: Disabled 1: Enabled	
4	PTT requirements: Germany 0: Disabled 1: Enabled	
5	PTT requirements: France 0: Disabled 1: Enabled	
6	Not used	Do not change the setting.
7	Not used	Do not change the setting.

G3-2 Switch 0C				SP No. 1-106-013
No	FUNCTION			COMMENTS
0	Pulse dialing method			P = Number of pulses sent out, N = Number dialed.
1	Bit 1	Bit 0	Setting	
	0	0	Normal(P=N)	
	0	1	Oslo (P=10 - N)	
	1	0	Sweden (N+1)	
	1	1	Not used	
2-7	Not used			Do not change the settings.

G3-2 Switch 0D - Not used (do not change the settings)
G3-2 Switch 0E - Not used (do not change the settings)
G3-2 Switch 0F - Not used (do not change the settings)

3.2.7 G3-3 SWITCHES

These switches require the second optional G3 interface unit.

The contents of the G3-3 switches are similar to the G3-2.

3.3 NCU PARAMETERS

The following tables give the RAM addresses and the parameter calculation units that the machine uses for ringing signal detection and automatic dialing. The factory settings for each country are also given. Most of these must be changed by RAM read/write (SP2-102), but some can be changed using NCU Parameter programming (SP2-103, 104 and 105); if SP2-103, 104 and 105 can be used, this will be indicated in the Remarks column. The RAM is programmed in hex code unless (BCD) is included in the Unit column.

NOTE: The following addresses describe settings for the standard NCU.

Change the fourth digit from “5” to “6” (e.g. 680500 to 680600) for the settings for the first optional G3 interface unit.

Change the fourth digit from “5” to “7” (e.g. 680500 to 680700) for the settings for the second optional G3 interface unit.

Address	Function	Unit	Remarks		
680500	Country/Area code for NCU parameters	Use the Hex value to program the country/area code directly into this address, or use the decimal value to program it using SP2-103-001			
		Country/Area	Decimal Hex		
		France	00 00		
		Germany	01 01		
		UK	02 02		
		Italy	03 03		
		Austria	04 04		
		Belgium	05 05		
		Denmark	06 06		
		Finland	07 07		
		Ireland	08 08		
		Norway	09 09		
		Sweden	10 0A		
		Switzerland	11 0B		
		Portugal	12 0C		
		Holland	13 0D		
		Spain	14 0E		
		Israel	15 0F		
		USA	17 11		
		Asia	18 12		
		Hong Kong	20 14		
		South Africa	21 15		
		Australia	22 16		
		New Zealand	23 17		
		Singapore	24 18		
		Malaysia	25 19		
		China	26 1A		
		Taiwan	27 1B		
		Korea	28 1C		
		Greece	33 21		
		Hungary	34 22		
		Czech	35 23		
		Poland	36 24		
		680501	Line current detection time	20 ms	Line current detection is disabled. Line current is not detected if 680501 contains FF.
		680502	Line current wait time		
		680503	Line current drop detect time		
680504	PSTN dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.		
680505	PSTN dial tone frequency upper limit (low byte)				
680506	PSTN dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.		
680507	PSTN dial tone frequency lower limit (low byte)				

Address	Function	Unit	Remarks
680508	PSTN dial tone detection time	20 ms	If 680508 contains FF(H), the machine pauses for the pause time (address 68050D / 68050E). Italy: See Note 2.
680509	PSTN dial tone reset time (LOW)		
68050A	PSTN dial tone reset time (HIGH)		
68050B	PSTN dial tone continuous tone time		
68050C	PSTN dial tone permissible drop time		
68050D	PSTN wait interval (LOW)		
68050E	PSTN wait interval (HIGH)	20 ms	Detection is disabled if this contains FF.
68050F	PSTN ring-back tone detection time		
680510	PSTN ring-back tone off detection time		
680511	PSTN detection time for silent period after ring-back tone detected (LOW)		
680512	PSTN detection time for silent period after ring-back tone detected (HIGH)		
680513	PSTN busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680514	PSTN busy tone frequency upper limit (low byte)		
680515	PSTN busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680516	PSTN busy tone frequency lower limit (low byte)		
680517	PABX dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680518	PABX dial tone frequency upper limit (low byte)		
680519	PABX dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
68051A	PABX dial tone frequency lower limit (low byte)		
68051B	PABX dial tone detection time	20 ms	If 68051B contains FF, the machine pauses for the pause time (680520 / 680521).
68051C	PABX dial tone reset time (LOW)		
68051D	PABX dial tone reset time (HIGH)		
68051E	PABX dial tone continuous tone time		
68051F	PABX dial tone permissible drop time		
680520	PABX wait interval (LOW)		
680521	PABX wait interval (HIGH)	20 ms	If both addresses contain FF(H), tone detection is disabled.
680522	PABX ringback tone detection time		
680523	PABX ringback tone off detection time	20 ms	If both addresses contain FF(H), tone detection is disabled.
680524	PABX detection time for silent period after ringback tone detected (LOW)		
680525	PABX detection time for silent period after ringback tone detected (HIGH)	20 ms	

Address	Function	Unit	Remarks																				
680526	PABX busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.																				
680527	PABX busy tone frequency upper limit (low byte)																						
680528	PABX busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.																				
680529	PABX busy tone frequency lower limit (low byte)																						
68052A	Busy tone ON time: range 1	20 ms																					
68052B	Busy tone OFF time: range 1																						
68052C	Busy tone ON time: range 2																						
68052D	Busy tone OFF time: range 2																						
68052E	Busy tone ON time: range 3																						
68052F	Busy tone OFF time: range 3																						
680530	Busy tone ON time: range 4																						
680531	Busy tone OFF time: range 4																						
680532	Busy tone continuous tone detection time																						
680533	Busy tone signal state time tolerance for all ranges, and number of cycles required for detection (a setting of 4 cycles means that ON-OFF-ON or OFF-ON-OFF must be detected twice). Tolerance (±) <table><tr><td>Bit</td><td>1</td><td>0</td><td></td></tr><tr><td>0</td><td>0</td><td>75%</td><td>Bits 2 and 3 must always</td></tr><tr><td>0</td><td>1</td><td>50%</td><td>be kept at 0.</td></tr><tr><td>1</td><td>0</td><td>25%</td><td></td></tr><tr><td>1</td><td>1</td><td>12.5%</td><td></td></tr></table> Bits 7, 6, 5, 4 - number of cycles required for cadence detection			Bit	1	0		0	0	75%	Bits 2 and 3 must always	0	1	50%	be kept at 0.	1	0	25%		1	1	12.5%	
Bit	1	0																					
0	0	75%	Bits 2 and 3 must always																				
0	1	50%	be kept at 0.																				
1	0	25%																					
1	1	12.5%																					
680534	International dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.																				
680535	International dial tone frequency upper limit (low byte)																						
680536	International dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.																				
680537	International dial tone frequency lower limit (low byte)																						
680538	International dial tone detection time	20 ms	If 680538 contains FF, the machine pauses for the pause time (68053D / 68053E). Belgium: See Note 2.																				
680539	International dial tone reset time (LOW)																						
68053A	International dial tone reset time (HIGH)																						
68053B	International dial tone continuous tone time																						
68053C	International dial tone permissible drop time																						
68053D	International dial wait interval (LOW)																						
68053E	International dial wait interval (HIGH)																						

Address	Function	Unit	Remarks
68053F	Country dial tone upper frequency limit (HIGH)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680540	Country dial tone upper frequency limit (LOW)		
680541	Country dial tone lower frequency limit (HIGH)		If both addresses contain FF(H), tone detection is disabled.
680542	Country dial tone lower frequency limit (LOW)		
680543	Country dial tone detection time	20 ms	If 680543 contains FF, the machine pauses for the pause time (680548 / 680549).
680544	Country dial tone reset time (LOW)		
680545	Country dial tone reset time (HIGH)		
680546	Country dial tone continuous tone time		
680547	Country dial tone permissible drop time		
680548	Country dial wait interval (LOW)		
680549	Country dial wait interval (HIGH)		
68054A	Time between opening or closing the DO relay and opening the OHDl relay	1 ms	See Notes 3, 6 and 8. Function 06-2 (parameter 11).
68054B	Break time for pulse dialing	1 ms	See Note 3. Function 06-2 (parameter 12).
68054C	Make time for pulse dialing	1 ms	See Note 3. Function 06-2 (parameter 13).
68054D	Time between final OHDl relay closure and DO relay opening or closing	1 ms	See Notes 3, 6 and 8. Function 06-2 (parameter 14). This parameter is only valid in Europe.
68054E	Minimum pause between dialed digits (pulse dial mode)	20 ms	See Note 3 and 8. Function 06-2 (parameter 15).
68054F	Time waited when a pause is entered at the operation panel		Function 06-2 (parameter 16). See Note 3.
680550	DTMF tone on time	1 ms	Function 06-2 (parameter 17).
680551	DTMF tone off time		Function 06-2 (parameter 18).
680552	Tone attenuation level of DTMF signals while dialing	-N x 0.5 -3.5 dBm	Function 06-2 (parameter 19). See Note 5.
680553	Tone attenuation value difference between high frequency tone and low frequency tone in DTMF signals	-dBm x 0.5	Function 06-2 (parameter 20). The setting must be less than -5dBm, and should not exceed the setting at 680552h above. See Note 5.

Address	Function	Unit	Remarks
680554	PSTN: DTMF tone attenuation level after dialling	-N x 0.5 -3.5 dBm	Function 06-2 (parameter 21). See Note 5.
680555	ISDN: DTMF tone attenuation level after dialling	-dBm x 0.5	See Note 5
680556	Not used		Do not change the settings.
680557	Time between 68054Dh (NCU parameter 14) and 68054Eh (NCU parameter 15)	1 ms	This parameter takes effect when the country code is set to France.
680558	Not used		Do not change the setting.
680559	Grounding time (ground start mode)	20 ms	The Gs relay is closed for this interval.
68055A	Break time (flash start mode)	1 ms	The OHDI relay is open for this interval.
68055B	International dial access code (High)	BCD	For a code of 100: 68055B - F1 68055C - 00
68055C	International dial access code (Low)		
68055D	PSTN access pause time	20 ms	This time is waited for each pause input after the PSTN access code. If this address contains FF[H], the pause time stored in address 68054F is used. Do not set a number more than 7 in the UK.
68055E	Progress tone detection level, and cadence detection enable flags	Bit 7 Bit 6 Bit 5 dBm 0 0 0 -25.0 0 0 1 -35.0 0 1 0 -30.0 1 0 0 -40.0 1 1 0 -49.0 Bits 2, 0 - See Note 2.	
68055F to 680564	Not used		Do not change the settings.
680565	Long distance call prefix (HIGH)	BCD	For a code of 0: 680565 - FF 680566 - F0
680566	Long distance call prefix (LOW)	BCD	
680567 to 680571	Not used		Do not change the settings.
680572	Acceptable ringing signal frequency: range 1, upper limit	1000/ N (Hz).	Function 06-2 (parameter 02).
680573	Acceptable ringing signal frequency: range 1, lower limit		Function 06-2 (parameter 03).
680574	Acceptable ringing signal frequency: range 2, upper limit		Function 06-2 (parameter 04).
680575	Acceptable ringing signal frequency: range 2, lower limit		Function 06-2 (parameter 05).

Address	Function	Unit	Remarks
680576	Number of rings until a call is detected	1	Function 06-2 (parameter 06). The setting must not be zero.
680577	Minimum required length of the first ring	20 ms	See Note 4. Function 06-2 (parameter 07).
680578	Minimum required length of the second and subsequent rings	20 ms	Function 06-2 (parameter 06-2).
680579	Ringing signal detection reset time (LOW)	20 ms	Function 06-2 (parameter 09).
68057A	Ringing signal detection reset time (HIGH)		Function 06-2 (parameter 10).
68057B to 680580	Not used		Do not change the settings.
680581	Interval between dialing the last digit and switching the Oh relay over to the external telephone when dialing from the operation panel in handset mode.	20 ms	Factory setting: 500 ms
680582	Bits 0 and 1 - Handset off-hook detection time Bit 1 0 Setting 0 0 200 ms 0 1 800 ms Other Not used Bits 2 and 3 - Handset on-hook detection time Bit 3 2 Setting 0 0 200 ms 0 1 800 ms Other Not used Bits 4 to 7 - Not used		
680583 to 6805A0	Not used		Do not change the settings.
6805A1	Acceptable CED detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A2	Acceptable CED detection frequency upper limit (low byte)		
6805A3	Acceptable CED detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A4	Acceptable CED detection frequency lower limit (low byte)		
6805A5	CED detection time	20 ms ± 20 ms	Factory setting: 200 ms
6805A6	Acceptable CNG detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A7	Acceptable CNG detection frequency upper limit (low byte)		

Address	Function	Unit	Remarks
6805A8	Acceptable CNG detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A9	Acceptable CNG detection frequency lower limit (low byte)		
6805AA	Not used		Do not change the setting.
6805AB	CNG on time	20 ms	Factory setting: 500 ms
6805AC	CNG off time	20 ms	Factory setting: 200 ms
6805AD	Number of CNG cycles required for detection		The data is coded in the same way as address 680533.
6805AE	Not used		Do not change the settings.
6805AF	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
6805B0	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (low byte)		
6805B1	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (high byte)	Hz(BCD)	If both addresses contain FF(H), tone detection is disabled.
6805B2	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (low byte)		
6805B3	Detection time for 800 Hz AI short protocol tone	20 ms	Factory setting: 360 ms
6805B4	PSTN: Tx level from the modem	-N – 3 dBm	Function 06-2 (parameter 01).
6805B5	PSTN: 1100 Hz tone transmission level	- N 6805B4 - 0.5N 6805B5 –3.5 (dB) See Note 7.	
6805B6	PSTN: 2100 Hz tone transmission level	- N6805B4 - 0.5N 6805B6 –3 (dB) See Note 7.	
6805B7	PABX: Tx level from the modem	- dBm	
6805B8	PABX: 1100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B8 (dB)	
6805B9	PABX: 2100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B9 (dB)	
6805BA	ISDN: Tx level from the modem (Japan Only)	- dBm	The setting must be between -12dBm and -15dBm.
6805BB	ISDN: 1100 Hz tone transmission level (Japan Only)	- N 6805BA - 0.5N 6805BB (dB)	
6805BC	ISDN: 2100 Hz tone transmission level (Japan Only)	- N 6805BA - 0.5N 6805BC (dB)	
6805BD	Modem turn-on level (incoming signal detection level)	-37-0.5N (dBm)	

Address	Function	Unit	Remarks
6805BE to 6805C6	Not used		Do not change the settings.
6805C7	Bits 0 to 3 – Not used. Bit 4 – V.34 protocol dump 0 : Simple, 1 : Detailed (default) Bits 5 to 7 – Not used.		
6805C8 to 6805D9	Not used		Do not change the settings.
6805DA	T.30 T1 timer	1 s	
6805E0 bit 3	Maximum wait time for post message	0 : 12 s 1 : 30 s	1 : Maximum wait time for post message (EOP/EOM/MPS) can be changed to 30 s. Change this bit to “1” if communication errors occur frequently during V.17 reception.

Service Tables

NOTES:

1. If a setting is not required, store FF in the address.
2. Italy and Belgium only

RAM address 68055E: the lower four bits have the following meaning.

Bit 2 - 1: International dial tone cadence detection enabled (Belgium)

Bit 1 - Not used

Bit 0 - 1: PSTN dial tone cadence detection enabled (Italy)

If bit 0 or bit 2 is set to 1, the functions of the following RAM addresses are changed.

680508 (if bit 0 = 1) or 680538 (if bit 2 = 1): tolerance for on or off state duration (%), and number of cycles required for detection, coded as in address 680533.

68050B (if bit 0 = 1) or 68053B (if bit 2 = 1): on time, hex code (unit = 20 ms)

68050C (if bit 0 = 1) or 68053C (if bit 2 = 1): off time, hex code (unit = 20 ms)

3. Pulse dial parameters (addresses 68054A to 68054F) are the values for 10 pps. If 20 pps is used, the machine automatically compensates.
4. The first ring may not be detected until 1 to 2.5 wavelengths after the time specified by this parameter.
5. The calculated level must be between 0 and 10.
The attenuation levels calculated from RAM data are:
High frequency tone: $-0.5 \times N_{680552/680554} - 3.5$ dBm
 $-0.5 \times N_{680555}$ dBm
Low frequency tone: $-0.5 \times (N_{680552/680554} + N_{680553}) - 3.5$ dBm
 $-0.5 \times (N_{680555} + N_{680553})$ dBm

NOTE: N₆₈₀₅₅₂, for example, means the value stored in address 680552(H)

6. 68054A: Europe - Between Ds opening and Di opening, France - Between Ds closing and Di opening
68054D: Europe - Between Ds closing and Di closing, France - Between Ds opening and Di closing
7. Tone signals which frequency is lower than 1500Hz (e.g., 800Hz tone for AI short protocol) refer to the setting at 6805B5h. Tones which frequency is higher than 1500Hz refer to the setting at 6805B6h.
8. 68054A, 68054D, 68054E: The actual inter-digit pause (pulse dial mode) is the sum of the period specified by the RAM addresses 68054A, 68054D, and 68054E.

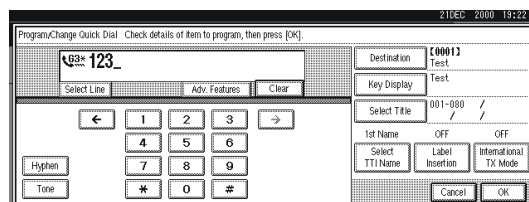
3.4 DEDICATED TRANSMISSION PARAMETERS

Each Quick Dial Key and Speed Dial Code has eight bytes of programmable parameters allocated to it. If transmissions to a particular machine often experience problems, store that terminal's fax number as a Quick Dial or Speed Dial, and adjust the parameters allocated to that number.

The programming procedure will be explained first. Then, the eight bytes will be described.

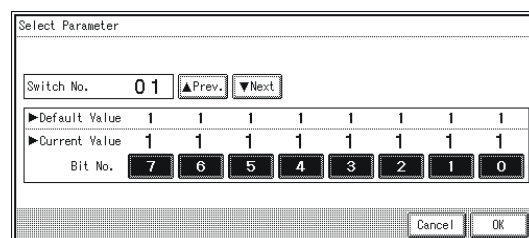
3.4.1 PROGRAMMING PROCEDURE

1. Set the bit 0 of System Bit Switch 00 to 1.
2. Press "Dest. Management" in the facsimile standby mode.
3. Press "Program/Change/Delete Quick Dial".
4. Select the destination key you want to program.
5. When the programmed dial number is displayed, press "Start".
Make sure that the LED of the Start button is lit as green.



B653S901.WMF

6. The settings for the switch 01 are now displayed. Press the bit number that you wish to change.
7. To scroll through the parameter switches, either:
8. Select the next switch: press "Next"
or
Select the previous switch: "Prev." until the correct switch is displayed.
Then go back to step 6.
9. After the setting is changed, press "OK".
10. After finishing, reset bit 0 of System Bit Switch 00 to 0.



B653S902.WMF

3.4.2 PARAMETERS

The initial settings of the following parameters are all FF(H) - all the parameters are disabled.

Switch 01	
FUNCTION AND COMMENTS	
ITU-T T1 time (for PSTN G3 mode)	
If the connection time to a particular terminal is longer than the NCU parameter setting, adjust this byte. The T1 time is the value stored in this byte (in hex code), multiplied by 1 second.	
Range:	
0 to 120 s (00h to 78h)	
FFh - The local NCU parameter factory setting is used.	
Do not program a value between 79h and FEh.	

Switch 02		
No	FUNCTION	COMMENTS
0 to 4	Tx level	If communication with a particular remote terminal often contains errors, the signal level may be inappropriate. Adjust the Tx level for communications with that terminal until the results are better. If the setting is "Disabled", the NCU parameter 01 setting is used. Note: Do not use settings other than listed on the left.
	Bit 4 3 2 1 0 Setting	
	0 0 0 0 0 0	
	0 0 0 0 1 -1	
	0 0 0 1 0 -2	
	0 0 0 1 1 -3	
	0 0 1 0 0 -4	
	:	
	:	
	0 1 1 1 1 -15	
	1 1 1 1 1 Disabled	
5 to 7	Cable equalizer	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange when calling the number stored in this Quick/Speed Dial. Also, try using the cable equalizer if one or more of the following symptoms occurs. <ul style="list-style-type: none"> • Communication error with error codes such as 0-20, 0-23, etc. • Modem rate fallback occurs frequently. Note: Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.
	Bit 7 6 5 Setting	
	0 0 0 None	
	0 0 1 Low	
	0 1 0 Medium	
	0 1 1 High	
	1 1 1 Disabled	

Switch 03						
No	FUNCTION				COMMENTS	
0 to 3	Initial Tx modem rate				If training with a particular remote terminal always takes too long, the initial modem rate may be too high. Reduce the initial Tx modem rate using these bits.	
	Bit3	2	1	0		Setting (bps)
	0	0	0	0	Not used	For the settings 14.4 or kbps slower, Switch 04 bit 4 must be changed to 0. Note: Do not use settings other than listed on the left. If the setting is “Disabled”, the bit switch setting is used.
	0	0	0	1	2,400	
	0	0	1	0	4,800	
	0	0	1	1	7,200	
	0	1	0	0	9,600	
	0	1	0	1	12,000	
	0	1	1	0	14,400	
	0	1	1	1	16,800	
	1	0	0	0	19,200	
	1	0	0	1	21,600	
	1	0	1	0	24,000	
	1	0	1	1	26,400	
	1	1	0	0	28,800	
	1	1	0	1	31,200	
	1	1	1	0	33,600	
	1	1	1	1	Disabled	
Other settings: Not used						
4-5	Not used				Do not change the settings.	
6	AI short protocol 0: Off 1: Disabled				Refer to Appendix B in the Group 3 Facsimile Manual for details about AI Short Protocol. If the setting is “Disabled”, the bit switch setting is used.	
7	Not used				Do not change the settings.	

Switch 04				
No	FUNCTION			COMMENTS
0 to 1	Inch-mm conversion before tx			The machine uses inch-based resolutions for scanning. If “inch only” is selected, the printed copy may be slightly distorted at the other end if that machine uses mm-based resolutions. If the setting is “Disabled”, the bit switch setting is used.
	Bit 1	Bit 0	Setting	
	0	0	Inch-mm conversion available	
	0	1	Inch only	
	1	0	Not used	
1	1	Disabled		
2 to 3	DIS/NSF detection method			(0, 1): Use this setting if echoes on the line are interfering with the set-up protocol at the start of transmission. The machine will then wait for the second DIS or NSF before sending DCS or NSS. If the setting is “Disabled”, the bit switch setting is used.
	Bit 3	Bit 2	Setting	
	0	0	First DIS or NSF	
	0	1	Second DIS or NSF	
	1	0	Not used	
1	1	Disabled		

Switch 04			
No	FUNCTION	COMMENTS	
4	V.8 protocol 0: Off 1: Disabled	If transmissions to a specific destination always end at a lower modem rate (14,400 bps or lower), disable V.8 protocol so as not to use V.34 protocol. 0: V.34 communication will not be possible. If the setting is "Disabled", the bit switch setting is used.	
5	Compression modes available in transmit mode 0: MH only 1: Disabled	This bit determines the capabilities that are informed to the other terminal during transmission. If the setting is "Disabled", the bit switch setting is used.	
6 to 7	ECM during transmission Bit 7 Bit 6 Setting 0 0 Off 0 1 On 1 0 Not used 1 1 Disabled	For example, if ECM is switched on but is not wanted when sending to a particular terminal, use the (0, 0) setting. Note that V.8/V.34 protocol and JBIG compression are automatically disabled if ECM is disabled. If the setting is "Disabled", the bit switch setting is used.	

Switch 05 - Not used (do not change the settings)

Switch 06 - Not used (do not change the settings)

Switch 07 - Optional ISDN G4 kit required - (Japan Only)			
No	FUNCTION	COMMENTS	
0 to 3	Data rate Bits 3 2 1 0 Setting 0 0 0 0 64 kbps 0 0 0 1 56 kbps 1 1 1 1 Disabled	If the setting is "Disabled", the current setting of G4 parameter switch 2 (bits 0 and 1) is used.	
4-7	Not used	Do not change the settings.	

Switch 08 - Not used

Switch 09 - Optional ISDN G4 kit required - (Japan Only)		
No	FUNCTION	COMMENTS
0 to 3	Layer 3 protocol Bits 3 2 1 0 Setting 0 0 0 0 ISO 8208 0 0 0 1 T.70 NULL 1 1 1 1 Disabled	If the setting is "Disabled", the current setting of G4 parameter switch 6 (bit 0) is used.
4 to 7	Packet modulus Bits 3 2 1 0 Setting 0 0 0 0 Modulo 8 0 0 0 1 Modulo 128 1 1 1 1 Disabled	If the setting is "Disabled", the current setting of G4 parameter switch 6 (bit 4) is used.

Switch 10 - Optional ISDN G4 kit required - (Japan Only)		
No	FUNCTION	COMMENTS
0	Attachment of the Higher Layer Capabilities	This bit determines whether Higher Layer Capabilities are informed in the [SETUP] signal or not.
1	Not used	Do not change the setting.
2	ISDN G3 information transfer capability 0: 3.1 kHz audio 1: Speech	In tx mode, this determines the information transfer capability informed in the [SETUP] messages. In rx mode, this determines the information transfer capability that the machine can use to receive a call. Set this bit to 1 if the ISDN does not support 3.1 kHz audio.
3-7	Not used	Do not change the settings.

3.5 SERVICE RAM ADDRESSES

⚠ CAUTION

Do not change the settings which are marked as "Not used" or "Read only."

680001 to 680004(H) - ROM version (Read only)

680001(H) - Revision number (BCD)

680002(H) - Year (BCD)

680003(H) - Month (BCD)

680004(H) - Day (BCD)

680006 to 680015(H) - Machine's serial number (16 digits - ASCII)

680018(H) - Total program checksum (low)

680019(H) - Total program checksum (high)

680020 to 68003F(H) - System bit switches

680040 to 68004F(H) - Scanner bit switches

680050 to 68005F(H) - Printer bit switches

680060 to 68007F(H) - Communication bit switches

680080 to 68008F(H) - G3 bit switches

680090 to 68009F(H) - G3-2 bit switches

6800A0 to 6800AF(H) - G3-3 bit switches

6800D0(H) - User parameter switch 00 (SWUER_00) : Not used

6800D1(H) - User parameter switch 01 (SWUSR_01) : Not used

6800D2(H) - User parameter switch 02 (SWUSR_02)

Bit 0: Forwarding mark printing on forwarded messages 0: Disabled, 1: Enabled

Bit 1: Center mark printing on received copies

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 2: Reception time printing

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 3: TSI print on received messages 0: Disabled, 1: Enabled

Bit 4: Checkered mark printing

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 5: CIL printing (G4) 0: Disabled, 1: Enabled **(Japan Only)**

Bit 6: TID printing (G4) 0: Disabled, 1: Enabled **(Japan Only)**

Bit 7: Not used

6800D3(H) - User parameter switch 03 (SWUSR_03: Automatic report printout)

Bit 0: Transmission result report (memory transmissions) 0: Off, 1: On

Bit 1: Not used

Bit 2: Memory storage report 0: Off, 1: On

Bit 3: Polling reserve report (polling reception) 0: Off, 1: On

Bit 4: Polling result report (polling reception) 0: Off, 1: On

Bit 5: Transmission result report (immediate transmissions) 0: Off, 1: On

Bit 6: Polling clear report 0: Off, 1: On

Bit 7: Journal 0: Off, 1: On

6800D4(H) - User parameter switch 04 (SWUSR_04: Automatic report printout)

Bit 0: Automatic confidential reception report output 0: Off, 1: On

Bits 1 to 6: Not used

Bit 7: Inclusion of a sample image on reports 0: Off, 1: On

6800D5(H) - User parameter switch 05 (SWUSR_05)

Bit 0: Substitute reception when the base copier is in an SC condition

0: Enabled, 1: Disabled

Bits 1 and 2: Condition for substitute rx when the machine cannot print messages (Paper end, toner end, jam, and during night mode)

Bit 2 1 Setting

0 0 The machine receives all the fax messages.

0 1 The machine receives the fax messages with RTI or CSI.

1 0 The machine receives the fax messages with the same ID code.

1 1 The machine does not receive anything.

Bit 3: Not used

Bit 4: Not used

Bit 5: Just size printing 0: Off, 1: On

Bit 6: Not used

Bit 7: Add paper display when a cassette is empty 0: Off, 1: On

6800D6(H) - User parameter switch 06 (SWUSR_06)

Bits 0 to 5: Not used

Bit 6: Scan sequence in Book transmission

0: Left page then right page, 1: Right page then left page

Bit 7: Not used

6800D7(H) - User parameter switch 07 (SWUSR_07)

Bits 0 and 1: Not used

Bit 2: Parallel memory transmission 0: Off, 1: On

Bits 3 to 7: Not used

6800D8(H) - User parameter switch 08 (SWUSR_08)

Bits 0 and 1: Not used.

Bit 2: Authorized reception

0: Only faxes from senders whose RTIs/CSIs are specified for this feature are accepted.

1: Only faxes from senders whose RTIs/CSIs are not specified for this feature are accepted.

Bits 3 to 7: Not used.

6800D9(H) - User parameter switch 09 (SWUSR_09) : Not used**6800DA(H) - User parameter switch 10 (SWUSR_0A)**

Bit 0: Not used

Bit 1: 2 into 1 0: Off, 1: On

Bit 2: Not used

Bit 3: Page reduction 0: Off, 1: On

Bits 4 to 7: Not used

6800DB(H) - User parameter switch 11 (SWUSR_0B)

Bit 0: Not used

Bit 1: Method of transmitting numbers after the "Tone" mark over an ISDN line

0: UUI, 1: Tone (**Japan Only**)

Bits 2 to 5: Not used

Bit 6: Printout of messages received while acting as a forwarding station

0: Off, 1: On

Bit 7: Polling Standby duration 0: Once, 1: No limit

6800DC(H) - User parameter switch 12 (SWUSR_0C): Not used**6800DD(H) - User parameter switch 13 (SWUSR_0D) (Japan Only)**

(This switch is not printed on the user parameter list.)

Bits 0 to 4: Not used

Bit 5: Action when receiving a SETUP signal containing no called number and the G4 subscriber number was programmed in this machine.

0: Respond to the call, 1: Do not respond to the call

Bit 6: Action when the received HLC (Higher Level Capabilities) is Tel or BC (Bearer Capabilities) is Speech.

0: Do not respond to the call, 1: Respond to the call

This switch determines which information transfer capabilities the machine can accept when receiving a call.

1: When the received HLC is Tel (digital telephone) or BC is Speech (voice), the machine responds to the call. In short, the machine receives every call.

This switch is useful for communication problems when the other terminal informs the above transfer capabilities although it is a fax machine.

Bit 7: ISDN SPID programming (used only in the USA)

6800DE(H) - User parameter switch 14 (SWUSR_0E)

Bit 0: Message printout while the machine is in Night Printing mode 0: On, 1: Off

Bit 1: Maximum document length detection

0: Double letter, 1: Longer than double-letter (well log) – up to 1,200 mm

Bit 2: Batch transmission 0: Off, 1: On

Bit 3: Fax mode settings, such as resolution, before a mode key (Copy/Fax/Printer/Scanner) is pressed

0: Not cleared, 1: Cleared

Bits 4 to 6: Not used

Bit 7: Manual service call (sends the system parameter list to the service station)

0: Off, 1: On

6800DF(H) - User parameter switch 15 (SWUSR_0F)

Bits 0, 1 and 2: Cassette for fax printout

Bit 2	1	0	Setting
0	0	1	1st paper feed station
0	1	0	2nd paper feed station
0	1	1	3rd paper feed station
1	0	0	4th paper feed station
1	0	1	LCT

Other settings Not used

Bits 3 and 4: Not used

Bit 5: Using the cassette specified by bits 0, 1 and 2 above only 0: On, 1: Off

Bits 6 and 7: Not used

6800E0(H) – User parameter switch 16 (SWUSR_10)

(This switch is not printed on the user parameter list.)

Bits 0 and 1: Not used

Bit 2: Paper size selection priority for an A4 size fax message when A4/LT size paper is not available.

0: A3 has priority, 1: B4 has priority

Bits 3 to 7: Not used

6800E1(H) – User parameter switch 17 (SWUSR_11)

Bits 0 and 1: Not used

Bit 2: Inclusion of the “Add” button when a sequence of Quick/Speed dials is selected for broadcasting

0: Not needed, 1: Needed

Bits 3 to 6: Not used

Bit 7: Press “Start” key without an original when using the on hook dial or the external telephone,

0: displays “Cannot detect original size”.

1: Receives fax messages.

6800E2(H) - User parameter switch 18 (SWUSR_12)

Bit 0: TTI date 0: Off, 1: On

Bit 1: TTI sender 0: Off, 1: On

Bit 2: TTI file number 0: Off, 1: On

Bit 3: TTI page number 0: Off, 1: On

Bit 4 to 7: Not used

6800E3(H) - User parameter switch 19 (SWUSR_13)

Bit 0: Offset sort function for the fax (only using the shift tray on the 1,000 sheet finisher)

0: Disabled, 1: Enabled

Bit 1: Journal format

0: The Journal is separated into transmissions and receptions

1: The Journal is separated into G3-1, G3-2, and G3-3 communications

Bit 2: Action when the paper cassette that was selected by the specified cassette selection feature becomes empty.

(This switch is not printed on the user parameter list.)

0: The machine will not print any received files until paper is added.

1: The machine will use other cassettes to print received files that are not specified by this feature.

Bit 3: 90° image rotation during B5 portrait Tx

(This switch is not printed on the user parameter list.)

0: Off, 1: On

Bit 4: Reduction of sample images on reports to 50% in the main scan and sub-scan directions. (This switch is not printed on the user parameter list.)

0: Technician adjustment (printer switch 0E bits 3 and 4), 1: 50% reduction

Bit 5: Use of A5 size paper for reports

(This switch is not printed on the user parameter list.)

0: Off, 1: On

Bits 6 and 7: Not used

6800E4(H) - User parameter switch 20 (SWUSR_14)

Bit 0: Automatic printing of the PC FAX error report

0: Off, 1: On

Bit 1: Reprint the documents fail to print from PC Fax driver

0: Off, 1: On

Bits 2 to 5: Store documents in memory which could not be printed from PC Fax driver

Bit	5	4	3	2	Setting
	0	0	0	0	0 min.
	0	0	0	1	1 min.
			↓		↓
	1	1	1	0	14 min.
	1	1	1	1	15 min.

Bits 6 and 7: Not used.

6800E5(H) - User parameter switch 21 (SWUSR_15) : Not used

6800E6(H) - User parameter switch 22 (SWUSR_16): Not used

6800E7(H) - User Parameter switch 23 (SWUSR_17) : Not used

6800E8(H) - User parameter switch 24 (SWUSR_18)

Bits 0 and 1: File retention time (Cross reference: System switch 02 bit 4)

Bit	1	0	Setting
	0	0	File retention impossible
	0	1	24 hours
	1	0	File retention impossible
	1	1	72 hours

Bits 2 to 7: Not used

6800E9(H) - User parameter switch 25 (SWUSR_19)

Bits 0 to 3: Not used

Bit 4: RDS operation

0: Not acceptable

1: Acceptable for the limit specified by system switch 03

Note: This bit is only effective when RDS operation can be selected by the user (see system switch 02).

Bits 5 to 7: Not used

6800EA to 6800ED(H) - User parameter switch 26 to 29 (SWUSR_1A to 1D)

: Not used

680EE(H) - User parameter switch 30 (SWUSR_1E)

Bits 0 to 6: Not used

Bit7: On hook dialing

0: PSTN, 1: ISDN (**Japan Only**)

NOTE: **Note:** If this bit set to 1, the on hook dialing is available on the ISDN line. But, the machine cannot use the G3 standard analog line for detecting the ringing and on hook dialing.

6800F0 to 6800FF(H) - G4 Parameter Switches (Japan Only**)****680100 to 68011F(H) - G4 Internal Switches (**Japan Only**)****680180 to 68019F(H) - Service station's fax number (SP3-101)**

See 68036C(H) for the type of network used for this number.

6801A0 to 6801A3(H) - Own fax PABX extension number**6801AA to 6801B3(H) - Own fax number (PSTN)****6801B4 to 6801C7(H) - Own fax number (ISDN G4) (**Japan Only**)****6801C8 to 6801D3(H) - The first subscriber number (ISDN G3) (**Japan Only**)****6801D4 to 6801DF(H) - The second subscriber number (ISDN G3) (**Japan Only**)****6801E0 to 6801EB(H) - The first subscriber number (ISDN G4) (**Japan Only**)****6801EC to 6801F7(H) - The second subscriber number (ISDN G4) (**Japan Only**)****6801F8 to 68020B(H) - PSTN-1 RTI (Max. 20 characters - ASCII) - See the following note.****68020C to 68021F(H) - PSTN-2 RTI (Max. 20 characters - ASCII) - See the following note.****680220 to 680233(H) - PSTN-3 RTI (Max. 20 characters - ASCII) - See the following note.****680237 to 680276(H) - TTI 1 (Max. 64 characters - ASCII) - See the following note.****680277 to 6802B6(H) - TTI 2 (Max. 64 characters - ASCII) - See the following**

note.

6802B7 to 6802F6(H) - TTI 3 (Max. 64 characters - ASCII) - See the following

6802F7 to 68030A(H) - PSTN-1 CSI (Max. 20 characters - ASCII)

68030B to 68031E(H) - PSTN-2 CSI (Max. 20 characters - ASCII)

68031F to 680332(H) - PSTN-3 CSI (Max. 20 characters - ASCII)

680333(H) - Number of PSTN-1 CSI characters (Hex)

680334(H) - Number of PSTN-2 CSI characters (Hex)

680335(H) - Number of PSTN-3 CSI characters (Hex)

NOTE: If the number of characters is less than the maximum (20 for RTI, 64 for TTI), add a stop code (FF[H]) after the last character.

680340 to 680342(H) - PSTN-1 line settings

680340

Bits 0 and 1: PSTN access method from behind a PABX.

Bit	1	0	Setting
	0	0	Loop start
	0	1	Ground start
	1	0	Flash start
	1	1	Not used

Bit 2: Telephone line type.

0: PSTN, 1: PABX

Bits 3 and 4: Dialing type.

Bit	4	3	Setting
	0	0	Pulse dialing
	0	1	Not used
	1	0	Tone dialing
	1	1	Not used

Bits 4 to 7: Not used

680341: PSTN access number for loop start

Access number Hex value to program (BCD)

0	F0
↓	↓
9	F9
00	00
↓	↓
99	99

680342

Bit 0: Transmission disabled

0: Tx and Rx, 1: Rx only

Bit 1: Memory Lock reception

0: Enabled, 1: Disabled

Bits 2 to 7: Not used

680348 to 68034A(H) - PSTN-2 line settings

680350 to 680352(H) - PSTN-3 line settings

680358 to 68035A(H) - ISDN line settings (**Japan Only**)

680360(H) - ID code (low - Hex)

680361(H) - ID code (high - Hex)

680362(H) - Confidential ID (low - BCD)

680363(H) - Confidential ID (high - BCD)

680364(H) - Memory Lock ID (low - BCD)

680365(H) - Memory Lock ID (high - BCD)

68036C(H) - Network type used for the service station number

0 1 (H) - PSTN-1

0 2 (H) - PSTN-2

0 3 (H) - PSTN-3

1 0 (H) - G4

0 7 (H) - G3 auto selection

680370 to 680377(H) - Last power off time (Read only)

680370(H) - 01(H) - 24-hour clock, 00(H) - 12-hour clock (AM),

02(H) - 12-hour clock (PM)

680371(H) - Year (BCD)

680372(H) - Month (BCD)

680373(H) - Day (BCD)

680374(H) - Hour

680375(H) - Minute

680376(H) - Second

680377(H) - 00: Monday, 01: Tuesday, 02: Wednesday, , 06: Sunday

680384(H) - Optional equipment (Read only – Do not change the settings)

Bit 0 to 3: Not used

Bit 4: Function Upgrade unit 0: Not installed, 1: Installed

Bit 5 to 7: Not used

680385(H) - Optional equipment (Read only – Do not change the settings)

Bit 0: Function Upgrade unit 0: Not installed, 1: Installed

Bit 1 to 3: Not used

Bit 4: G3-2 0: Not installed, 1: Installed

Bit 5: G3-3 0: Not installed, 1: Installed

Bit 6: ISDN unit 0: Not installed, 1: Installed **(Japan Only)**

Bit 7: Not used

6803B8 to 6803CF(H) - G4 terminal ID (ASCII - Max. 24 characters) **(Japan Only)**

6803D0 to 6803E3(H) - ISDN CSI **(Japan Only)**

6803E4(H) - Number of ISDN CSI characters (Hex) **(Japan Only)**

6803E9 to 6803EC(H) - ISDN G3 sub-address **(Japan Only)**

6803ED to 6803F0(H) - ISDN G4 sub-address **(Japan Only)**

6803F1 to 6803F5(H) - SiG4 board ROM information (Read only) **(Japan Only)**

6803F1(H) - Suffix

6803F2(H) - Version (BCD)

6803F3(H) - Year (BCD)

6803F4(H) - Month (BCD)

6803F5(H) - Day (BCD)

6803F6 to 6803FA(H) – Option G3 board (G3-2) ROM information (Read only)

6803F6(H) - Suffix (BCD)

6803F7(H) - Version (BCD)

6803F8(H) - Year (BCD)

6803F9(H) - Month (BCD)

6803FA(H) - Day (BCD)

6803FB to 6803FF(H) – Option G3 board (G3-3) ROM information (Read only)

6803FB(H) - Suffix (BCD)

6803FC(H) - Version (BCD)

6803FD(H) - Year (BCD)

6803FE(H) - Month (BCD)

6803FF(H) - Day (BCD)

680402(H) - Option G3 board (G3-2) modem ROM version (Read only)

680404(H) - Option G3 board (G3-3) modem ROM version (Read only)

680406 to 68040B(H) - Modem ROM version (Read only)

680406(H) - Part number (low)

680407(H) - Part number (high)

680408(H) - Control (low)

680409(H) - Control (high)

68040A(H) - DSP (low)

68040B(H) - DSP (high)

680464(H) - Time for economy transmission (hour in 24h clock format - BCD)

680465(H) - Time for economy transmission (minute - BCD)

680482(H) - Transmission monitor volume 00 - 07(H)

680483(H) - Reception monitor volume 00 - 07(H)

680484(H) - On-hook monitor volume 00 - 07(H)

680485(H) - Dialing monitor volume 00 - 07(H)

680486(H) - Buzzer volume 00 - 07(H)

6BA000 – 6BA1FF(H) – Latest 64 error codes (Read only)

6BE988 – 6BF35F(H) – Latest 20 error communication records

4. DETAILED SECTION DESCRIPTIONS

4.1 ADDRESS BOOK

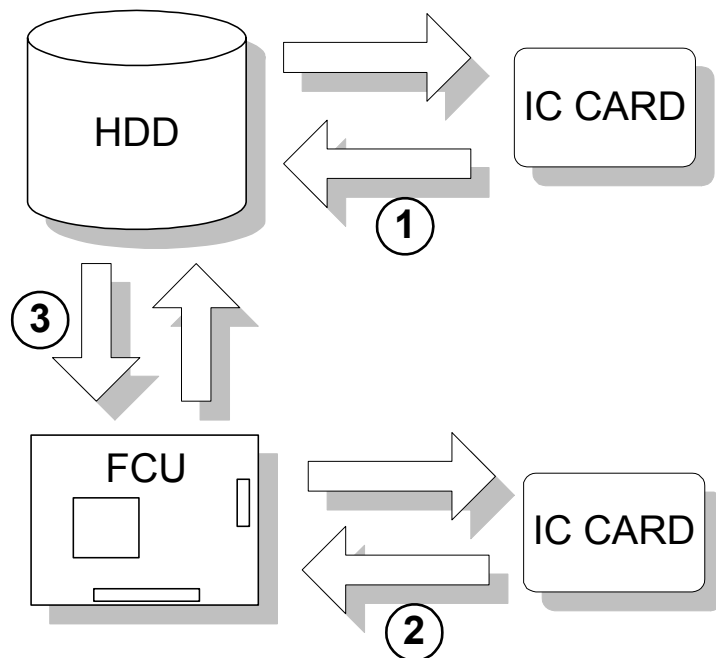
The address book (directory) for this machine combines under one user name the fax address and mail address.

All the address data is stored on the HDD. Up to a maximum of 2,000 items can be stored for addresses.

4.1.1 ADDRESS BOOK BACKUP

The address data can be backed up, and frequently backing up the address book data is recommended. If for any reason data can no longer be read from the HDD, you can use the backed up data to restore the address book.

Overview of Data Backup



B653D501.WMF

There are three methods you can use to back up address book data:

- HDD \longleftrightarrow IC Card
- FCU (MBU) \longleftrightarrow IC Card
- HDD \longleftrightarrow FCU

Each is described below.

1. HDD \longleftrightarrow IC Card

Address data stored on the HDD can be uploaded to an IC card with SP5846 51 (UCS Settings - All Directory Info. Upload), or address data backed up on the IC card can be downloaded to the HDD with SP5846 52 (UCS Settings – All Directory Info. Download).

2. FCU (MBU) \longleftrightarrow IC Card

Address data stored in the FCU (MBU) can be uploaded to an IC card with SP5846 51 (UCS Settings - All Directory Info. Upload), or address data backed up on the IC card can be downloaded to the FCU with SP5846 52 (UCS Settings – All Directory Info. Download).

3. HDD \longleftrightarrow FCU

Address data stored on the HDD can be uploaded to the FCU (MBU) with SP5846 80 (UCS Settings - FCU Backup), or when there is address data in the FCU and the HDD has just been replaced, this data is downloaded automatically to the new HDD.

SP Modes

1. SP5846 051 UCS Settings - All Directory Info. Upload

This SP mode is used to upload address data to an IC card. The machine automatically detects where the address data is stored. If there is address data on the HDD, the address data from the HDD is uploaded to the IC card. If the HDD is not present, then the address data from the FCU is uploaded. If one IC card is not large enough to hold all the address data, as many IC cards as needed can be used to hold all of the address data.

2. SP5846 052 UCS Settings – All Directory Info. Download

This SP mode downloads address data from an IC card. The machine automatically determines where to store the address data. If there is address data on the HDD, then the data is downloaded to the HDD. If HDD is not present, then the address data is downloaded to the FCU.

3. SP5846 080 UCS Settings - FCU Backup

This SP mode is used to take fax address data from among the address data on the HDD and upload it to the FCU. However, the FCU is capable of holding only up to 500 items for address data, so if more than 500 address items are stored on the HDD, only the first and oldest 500 address on the HDD are backed up. If FAX Function Upgrade Unit (Option) is installed, up to 1200 address items can be backed up.

NOTE: In preparation for the possibility that data can no longer be read from the HDD, we recommend that the CE back up the address data to the FCU when visiting the customer. However, when address data is backed up to the FCU, only the fax data in the address book is backed up, and the other data (e-mail address, etc.) are not backed up. For this reason, the customer should be instructed about how to frequently back up the address book data using SmartNet – Monitor Admin.

SPECIFICATIONS

1. GENERAL SPECIFICATIONS

Type:	Desktop type transceiver
Circuit:	PSTN (max. 3ch.) PABX
Connection:	Direct couple
Original Size:	Book (Face down) Maximum Length: 432 mm [17 ins] Maximum Width: 297 mm [11.7 ins] ARDF (Face up) (single sided document) Length: 128 - 1200 mm [5.0 - 47.2 ins] Width: 105 - 297 mm [4.1 - 11.7 inch] (double sided document) Length: 128 - 432 mm [5.0 - 17 inch] Width: 105 - 297 mm [4.1 - 11.7 inch]
Scanning Method:	Flat bed, with CCD
Resolution:	G3 8 x 3.85 lines/mm (Standard) 8 x 7.7 lines/mm (Detail) 8 x 15.4 line/mm (Fine) Note1 16 x 15.4 line/mm (Super Fine) See Note 1 200 x 100 dpi (Standard) 200 x 200 dpi (Detail) 400 x 400 dpi (Super Fine) See Note 1 NOTE: 1. Optional Expansion Memory required
Transmission Time:	G3: 3 s at 28800 bps; Measured with G3 ECM using memory for an ITU-T #1 test document (Slerexe letter) at standard resolution
Data Compression:	MH, MR, MMR JBIG (optional Fax Function Upgrade Unit required)
Protocol:	Group 3 with ECM
Modulation:	V.34, V.33, V.17 (TCM), V.29 (QAM), V.27ter (PHM), V.8, V.21 (FM)
Data Rate:	G3: 33600/31200/28800/26400/24000/21600/ 19200/16800/14400/12000/9600/7200/4800/2400 bps Automatic fallback
I/O Rate:	With ECM: 0 ms/line Without ECM: 2.5, 5, 10, 20, or 40 ms/line

Memory Capacity: ECM: 128 KB

SAF

Standard: 4 MB

With optional Expansion Memory: 32 MB (4 MB+ 28 MB)

Page Memory

Standard: 4 MB (Print: 2 MB + Scanner: 2 MB)

With optional Expansion Memory: 12 MB (4 MB + 8 MB)
(Print 8 MB + Scanner: 4 MB)

2. CAPABILITIES OF PROGRAMMABLE ITEMS

The following table shows how the capabilities of each programmable item will change after the optional Fax Function Upgrade Unit is installed.

Item	Standard	With Fax Function Upgrade Unit
Quick Dial	500	1200 (2000*)
Groups	64	64
Destination per Group	500	500
Boxes (Information/Personal/Transfer)	150	400
Destinations dialed from the ten-key pad overall	100	1000
Programs	100	200
Auto Document	6	18
Communication records for Journal stored in the memory	200	1000
Specific Senders	30	50

*: With the Printer/Scanner Option

The following table shows how the capabilities of the document memory will change after the optional Fax Function Upgrade Unit and the Expansion Memory are installed.

		Without the Expansion Memory	With the Expansion Memory
Memory Transmission file	Without the Fax Function Upgrade Unit	320	400
Maximum number of page for memory transmission		400	1000
Memory capacity for memory transmission (Note1)		160	1000
Memory Transmission file	With the Fax Function Upgrade Unit	800	800
Maximum number of page for memory transmission		400	3000
Memory capacity for memory transmission (Note1)		160	2080

NOTE: 1) Measured using an ITU-T #1 test document (Slerexe letter) at the standard resolution, the auto image density mode and the Text mode.

Spec.

3. MACHINE CONFIGURATION

Item	Machine Code	Remarks
Fax Option Type 2045	B653	
G3 Interface Unit Type 2045	B591	Up to two options can be installed. You can install either two optional G3 units or one optional G3 and one optional G4 unit.
Fax Function Upgrade Type 185	A892	Used in common with Stinger-C
Handset Type 450	A646	USA only
Marker Type 30	H903	Refill ink for stamp
Expansion Memory	-	Used in common with Stinger-C and Russian-C.