Model K-C2

FAX OPTION TYPE 2018

(Machine Code: B620)

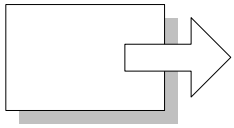
SERVICE MANUAL

December 1st, 2003
Subject to change

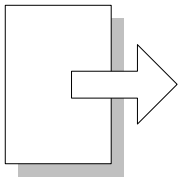
Conventions in this Manual

This manual uses several symbols.

Symbol	What it means
☛	Refer to section number
CT	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 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 manufacturer. Discard batteries in accordance with the manufacturer'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 INSTALLATION

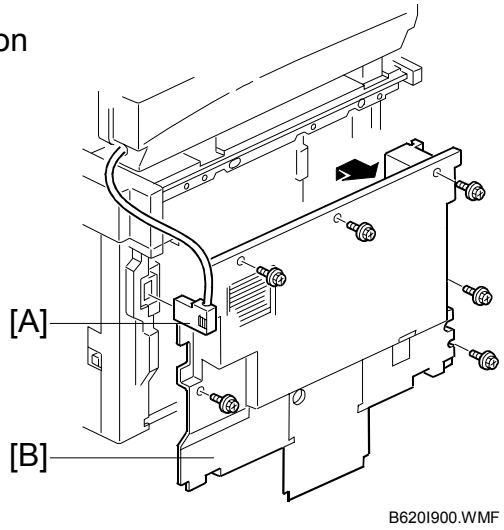
⚠CAUTION

Before installing the fax option:

1. **Print out all data in the printer buffer (if the printer option is installed).**
2. **Turn the main switch off and disconnect the power cord and the network cable.**

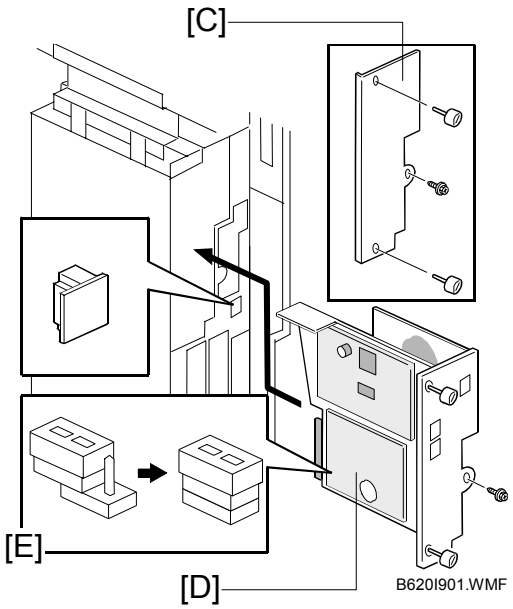
Before installing the optional fax, install the optional controller box and optional operation panel.

1. Unplug the DF cable [A] (if installed).
2. Remove the rear cover [B] (☞ x 6).

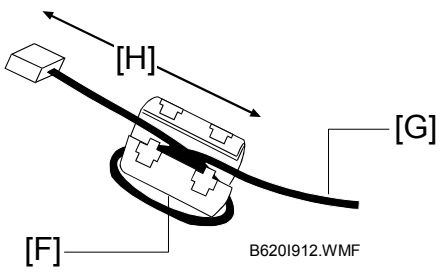


3. Remove the slot cover [C].
4. Install the FCU [D] (☞ x 3).
5. Short the jumper [E].

   NOTE: The jumper works as the battery switch.

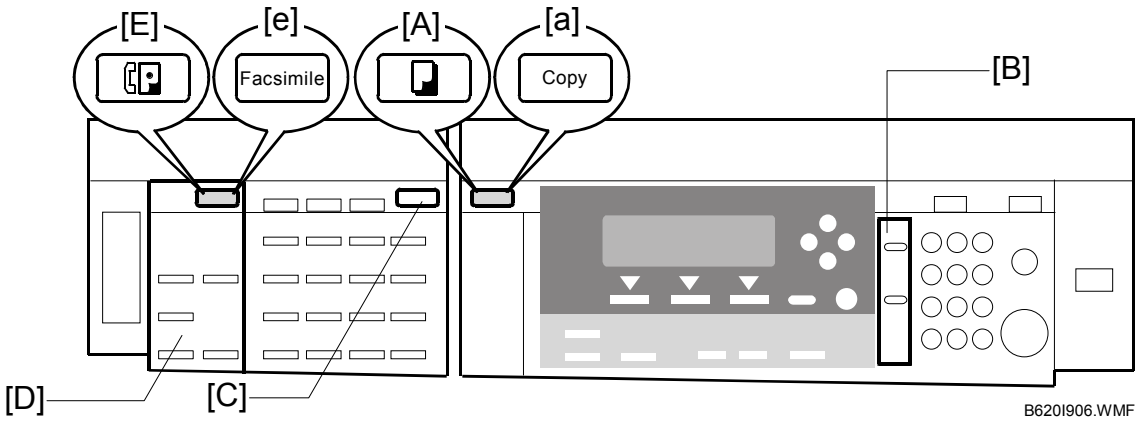


6. Attach the ferrite core [D] to the telephone cable [G]. The end of the ferrite core must be about 5 cm (2") from the end of the cable [H].
7. Reassemble the controller box.
8. Install the rear cover.



9. When installing the optional fax only (not with the optional printer/scanner), install the keys as follows:

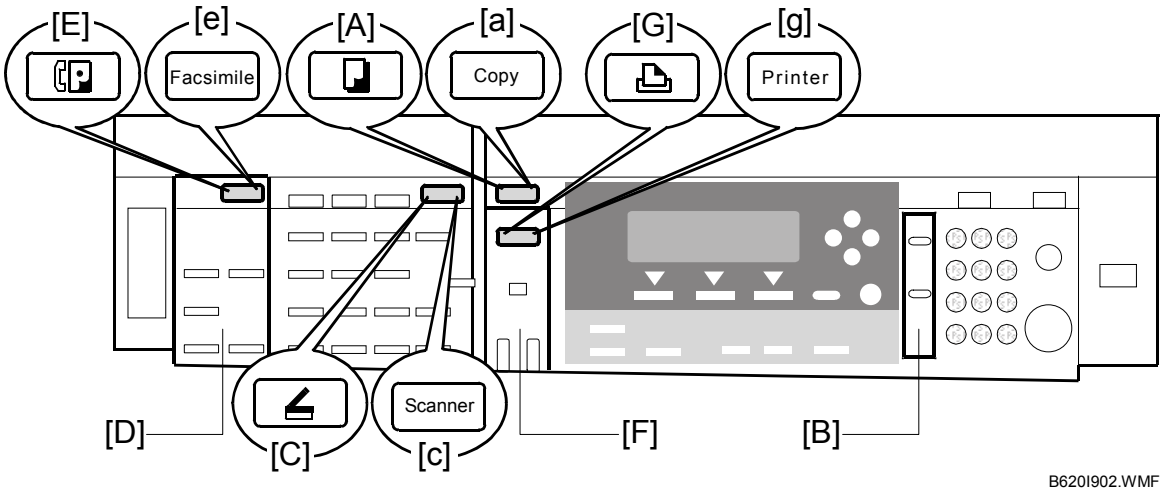
   NOTE: See step 10 when installing the optional fax with the optional printer/scanner.



1) Remove the dummy cover (from the basic operation panel) and install the copy key [A] or [a].
2) Remove the dummy panel (from the basic operation panel) and install the fax panel [B].
3) Install the dummy cover [C] on the optional operation panel.
4) Install the fax panel [D] on the optional operation panel.
5) Install the fax key [E] or [e] on the optional operation panel.

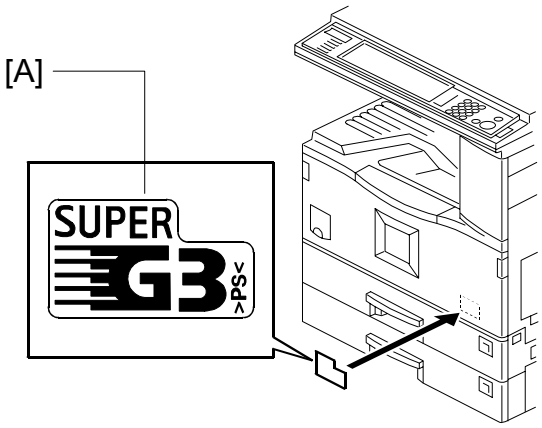
10. When installing the optional fax with the optional printer/scanner, install the keys as follows:

    NOTE: See step 9 when installing the optional fax without the optional printer/scanner.



1) Remove the dummy cover (from the basic operation panel) and install the copy key [A] or [a].
2) Remove the dummy panel (from the basic operation panel) and install the fax panel [B].
3) Install the scanner key [C] or [c] on the optional operation panel.
4) Install the fax panel [D] on the optional operation panel.
5) Install the fax key [E] or [e] on the optional operation panel.
6) Remove the dummy panel (from the basic panel) and install the printer panel [F].
7) Install the printer key [G] or [g] on the basic operation panel.

11. Attach the super G3 decal [A] as shown.

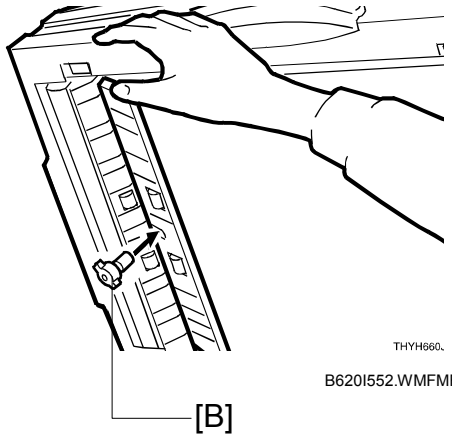


B620I108.WMF

12. Install the stamp cartridge [B] into the ADF as shown (if the ADF is installed).
13. Connect the telephone line to the "LINE" jack.
14. Plug in the machine and turn on the main switch.

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

15. Make sure that the clock (date and time) is set.



B620I552.WMFMFMF

16. Start the SP mode and input the serial number into the fax unit (SP-3-102-000). The serial number can be found on the serial number label.

Initializing the Fax Unit

When you press the Fax key for the first time after installation, an error occurs. This is not a functional problem. Press OK. The fax starts its initialization program.

NOTE: If another error occurs after initialization, this can be a functional problem.

2. TROUBLESHOOTING

2.1 ERROR CODES

If an error code occurs, retry the communication. If the same problem occurs, try to fix the problem as suggested below. Note that some error codes appear only in the error code display and on the service report.

Code	Meaning	Suggested Cause/Action
0-00	DIS/NSF not detected within 40 s of Start being pressed	• Check the line connection. • The machine at the other end may be incompatible. • Replace the FCU. • Check for DIS/NSF with an oscilloscope. • If the rx signal is weak, there may be a bad line.
0-01	DCN received unexpectedly	• The other party is out of paper or has a jammed printer. • The other party pressed Stop during communication.
0-03	Incompatible modem at the other end	• The other terminal is incompatible.
0-04	CFR or FTT not received after modem training	• Check the line connection. • Try changing the tx level and/or cable equalizer settings. • Replace the FCU. • The other terminal may be faulty; try sending to another machine. • If the rx signal is weak or defective, there may be a bad line. **Cross reference** • Tx level - NCU Parameter 01 (PSTN) • Cable equalizer - G3 Switch 07 (PSTN) • Dedicated Tx parameters - Section 4
0-05	Unsuccessful after modem training at 2400 bps	• Check the line connection. • Try adjusting the tx level and/or cable equalizer. • Replace the FCU. • Check for line problems. **Cross reference** • See error code 0-04.
0-06	The other terminal did not reply to DCS	• Check the line connection. • Try adjusting the tx level and/or cable equalizer settings. • Replace the FCU. • The other end may be defective or incompatible; try sending to another machine. • Check for line problems. **Cross reference** • See error code 0-04.

Code	Meaning	Suggested Cause/Action
0-07	No post-message response from the other end after a page was sent	• Check the line connection. • Replace the FCU. • The other end may have jammed or run out of paper. • The other end user may have disconnected the call. • Check for a bad line. • The other end may be defective; try sending to another machine.
0-08	The other end sent RTN or PIN after receiving a page, because there were too many errors	• Check the line connection. • Replace the FCU. • The other end may have jammed, or run out of paper or memory space. • Try adjusting the tx level and/or cable equalizer settings. • The other end may have a defective modem/NCU/FCU; try sending to another machine. • Check for line problems and noise. **Cross reference** • Tx level - NCU Parameter 01 (PSTN) • Cable equalizer - G3 Switch 07 (PSTN) • Dedicated Tx parameters - Section 4
0-14	Non-standard post message response code received	• Incompatible or defective remote terminal; try sending to another machine. • Noisy line: resend. • Try adjusting the tx level and/or cable equalizer settings. • Replace the FCU. **Cross reference** • See error code 0-08.
0-15	The other terminal is not capable of specific functions.	The other terminal is not capable of accepting the following functions, or the other terminal's memory is full. • Confidential rx • Transfer function • SEP/SUB/PWD/SID
0-16	CFR or FTT not detected after modem training in confidential or transfer mode	• Check the line connection. • Replace the FCU. • Try adjusting the tx level and/or cable equalizer settings. • The other end may have disconnected, or it may be defective; try calling another machine. • If the rx signal level is too low, there may be a line problem. **Cross reference** • See error code 0-08.

Code	Meaning	Suggested Cause/Action
0-17	Communication was interrupted by pressing the Stop key.	If the Stop key was not pressed and this error keeps occurring, replace the operation panel.
0-20	Facsimile data not received within 6 s of retraining	• Check the line connection. • Replace the FCU. • Check for line problems. • Try calling another fax machine. • Try adjusting the reconstruction time for the first line and/or rx cable equalizer setting. **Cross reference** • Reconstruction time - G3 Switch 0A, bit 6 • Rx cable equalizer - G3 Switch 07 (PSTN)
0-21	EOL signal (end-of-line) from the other end not received within 5 s of the previous EOL signal	• Check the connections between the FCU & line. • Check for line noise or other line problems. • Replace the FCU. • The remote machine may be defective or may have disconnected. **Cross reference** • Maximum interval between EOLs and between ECM frames - G3 Bit Switch 0A, bit 4
0-22	The signal from the other end was interrupted for more than the acceptable modem carrier drop time (default: 200 ms)	• Check the line connection. • Replace the FCU. • Defective remote terminal. • Check for line noise or other line problems. • Try adjusting the acceptable modem carrier drop time. **Cross reference** • Acceptable modem carrier drop time - G3 Switch 0A, bits 0 and 1
0-23	Too many errors during reception	• Check the line connection. • Replace the FCU. • Defective remote terminal. • Check for line noise or other line problems. • Try asking the other end to adjust their tx level. • Try adjusting the rx cable equalizer setting and/or rx error criteria. **Cross reference** • Rx cable equalizer - G3 Switch 07 (PSTN) • Rx error criteria - Communication Switch 02, bits 0 and 1
0-30	The other terminal did not reply to NSS(A) in AI short protocol mode	• Check the line connection. • Try adjusting the tx level and/or cable equalizer settings. • The other terminal may not be compatible. **Cross reference** • Dedicated tx parameters - Section 4

Code	Meaning	Suggested Cause/Action
0-32	The other terminal sent a DCS, which contained functions that the receiving machine cannot handle.	• Check the protocol dump list. • Ask the other party to contact the manufacturer.
0-52	Polarity changed during communication	• Check the line connection. Retry communication.
0-70	The communication mode specified in CM/JM was not available (V.8 calling and called terminal)	• The other terminal did not have a compatible communication mode (e.g., the other terminal was a V.34 data modem and not a fax modem.) • A polling tx file was not ready at the other terminal when polling rx was initiated from the calling terminal.
0-74	The calling terminal fell back to T.30 mode, because it could not detect ANSam after sending CI.	• The calling terminal could not detect ANSam due to noise, etc. • ANSam was too short to detect. • Check the line connection and condition. • Try making a call to another V.8/V.34 fax.
0-75	The called terminal fell back to T.30 mode, because it could not detect a CM in response to ANSam (ANSam timeout).	• The terminal could not detect ANSam. • Check the line connection and condition. • Try receiving a call from another V.8/V.34 fax.
0-76	The calling terminal fell back to T.30 mode, because it could not detect a JM in response to a CM (CM timeout).	• The called terminal could not detect a CM due to noise, etc. • Check the line connection and condition. • Try making a call to another V.8/V.34 fax.
0-77	The called terminal fell back to T.30 mode, because it could not detect a CJ in response to JM (JM timeout).	• The calling terminal could not detect a JM due to noise, etc. • A network that has narrow bandwidth cannot pass JM to the other end. • Check the line connection and condition. • Try receiving a call from another V.8/V.34 fax.
0-79	The called terminal detected CI while waiting for a V.21 signal.	Check for line noise or other line problems. If this error occurs, the called terminal falls back to T.30 mode.
0-80	The line was disconnected due to a timeout in V.34 phase 2 – line probing.	• The guard timer expired while starting these phases. Serious noise, narrow bandwidth, or low signal level can cause these errors. If these errors happen at the transmitting terminal: • Try making a call at a later time. • Try using V.17 or a slower modem using dedicated tx parameters. • Try increasing the tx level. • Try adjusting the tx cable equalizer setting.
0-81	The line was disconnected due to a timeout in V.34 phase 3 – equalizer training.	
0-82	The line was disconnected due to a timeout in the V.34 phase 4 – control channel start-up.	

Code	Meaning	Suggested Cause/Action
0-83	The line was disconnected due to a timeout in the V.34 control channel restart sequence.	If these errors happen at the receiving terminal: • Try adjusting the rx cable equalizer setting. • Try increasing the tx level. • Try using V.17 or a slower modem if the same error is frequent when receiving from multiple senders.
0-84	The line was disconnected due to abnormal signaling in V.34 phase 4 – control channel start-up.	• The signal did not stop within 10 s. • Turn off the machine, then turn it back on. • If the same error is frequent, replace the FCU.
0-85	The line was disconnected due to abnormal signaling in V.34 control channel restart.	• The signal did not stop within 10 s. • Turn off the machine, then turn it back on. • If the same error is frequent, replace the FCU.
0-86	The line was disconnected because the other terminal requested a data rate using MPh that was not available in the currently selected symbol rate.	• The other terminal was incompatible. • Ask the other party to contact the manufacturer.
0-87	The control channel started after an unsuccessful primary channel.	• The receiving terminal restarted the control channel because data reception in the primary channel was not successful. • This does not result in an error communication.
0-88	The line was disconnected because PPR was transmitted/received 9 (default) times within the same ECM frame.	• Try using a lower data rate at the start. • Try adjusting the cable equalizer setting.
2-10	The modem cannot enter tx mode	• Replace the FCU.
2-11	Only one V.21 connection flag was received	• Replace the FCU.
2-12	Modem clock irregularity	• Replace the FCU.
2-13	Modem initialization error	• Turn off the machine, then turn it back on. • Replace the FCU.
2-23	JBIG compression or reconstruction error	• Turn off the machine, then turn it back on.
2-24	JBIG ASIC error	• Turn off the machine, then turn it back on.
2-25	JBIG data reconstruction error (BIH error)	• JBIG data error • Check the sender's JBIG function. • Update the MBU ROM.
2-26	JBIG data reconstruction error (Float marker error)	
2-27	JBIG data reconstruction error (End marker error)	
2-28	JBIG data reconstruction error (Timeout)	
2-50	The machine resets itself for a fatal FCU system error	• If this is frequent, update the ROM, or replace the FCU.

Code	Meaning	Suggested Cause/Action
2-51	The machine resets itself because of a fatal communication error	• If this is frequent, update the ROM, or replace the FCU.
4-01	Line current was cut	• Check the line connector. • Check for line problems. • Replace the FCU.
4-10	Communication failed because of an ID Code mismatch (Closed Network) or Tel. No./CSI mismatch (Protection against Wrong Connections)	• Get the ID Codes the same and/or the CSIs programmed correctly, then resend. • The machine at the other end may be defective.
5-00	Data construction not possible	• Replace the FCU.
5-10	DCR timer expired	
5-20	Storage impossible because of a lack of memory	• Temporary memory shortage. • Test the SAF memory. • Replace the FCU or optional EXMEM board
5-21	Memory overflow	
5-23	Print data error when printing a substitute rx or confidential rx message	• Test the SAF memory. • Ask the other end to resend the message. • Replace the FCU.
5-25	SAF file access error	• Replace the FCU.
6-00	G3 ECM - T1 time out during reception of facsimile data	• Try adjusting the rx cable equalizer. • Replace the FCU.
6-01	G3 ECM - no V.21 signal was received	
6-02	G3 ECM - EOR was received	
6-04	G3 ECM - RTC not detected	• Check the line connection. • Check connections from the NCU to the FCU. • Check for a bad line or defective remote terminal. • Replace the FCU.
6-05	G3 ECM - facsimile data frame not received within 18 s of CFR, but there was no line fail	• Check the line connection. • Check for a bad line or defective remote terminal. • Replace the FCU. • Try adjusting the rx cable equalizer **Cross reference** • Rx cable equalizer - G3 Switch 07 (PSTN)
6-06	G3 ECM - coding/decoding error	• Defective FCU. • The other terminal may be defective.
6-08	G3 ECM - PIP/PIN received in reply to PPS.NULL	• The other end pressed Stop during communication. • The other terminal may be defective.
6-09	G3 ECM - ERR received	• Check for a noisy line. • Adjust the tx levels of the communicating machines. • See code 6-05.

Code	Meaning	Suggested Cause/Action
6-10	G3 ECM - error frames still received at the other end after all communication attempts at 2400 bps	• Check for line noise. • Adjust the tx level (use NCU parameter 01 or the dedicated tx parameter for that address). • Check the line connection. • Defective remote terminal.
6-21	V.21 flag detected during high speed modem communication	• The other terminal may be defective or incompatible.
6-22	The machine resets the sequence because of an abnormal handshake in the V.34 control channel	• Check for line noise. • If the same error occurs frequently, replace the FCU. • Defective remote terminal.
6-99	V.21 signal not stopped within 6 s	• Replace the FCU.
22-00	Original length exceeded the maximum scan length	• Divide the original into more than one page. • Check the resolution used for scanning. Lower the scan resolution if possible. • Add optional page memory.
22-01	Memory overflow while receiving	• Wait for the files in the queue to be sent. • Delete unnecessary files from memory. • Transfer the substitute reception files to an another fax machine, if the machine's printer is busy or out of order. • Add an optional SAF memory card or hard disk.
22-02	Tx or rx job stalled due to line disconnection at the other end	• The job started normally but did not finish normally; data may or may not have been received fully. • Restart the machine.
22-04	The machine cannot store received data in the SAF	• Update the ROM • Replace the FCU.
23-00	Data read timeout during construction	• Restart the machine. • Replace the FCU
25-00	The machine software resets itself after a fatal transmission error occurred	• Update the ROM • Replace the FCU.
F0-xx	V.34 modem error	• Replace the FCU.

2.2 FAX SC CODES

2.2.1 OVERVIEW

When the FCU detects a Fax SC Code condition other than SC1201, it resets itself automatically (default setting). This initializes the FCU without erasing files in the SAF memory or resetting the switches.

NOTE: For details on Fax SC Codes 1201, refer to the following sections.

If bit 7 of System Switch 1F is changed to “1”, when the FCU detects a Fax SC Code condition, it displays the code on the display and stops working until the fax unit is initialized using one of the following methods:

- Hold down the “7” and “9” keys for more than 10 s.
- Turn off the main power switch and turn it back on.

2.2.2 SC1201

When the FCU detects an unrecoverable error in the SRAM, which requires a complete SRAM initialization, the fax unit displays this SC Code and stops. There is no way to recover from this error condition without a complete SRAM initialization (all the user and service programmed data will be erased).

The possible causes are:

- SRAM backup battery defect, or CN1 on the MBU is at the “OFF” position
- SRAM on the MBU has a physical defect

2.2.3 FAX SC CODE TABLE

SC Code	Description	Suggested Action	Sys Switch 1F bit 7 = 0	Sys Switch 1F bit 7 = 1
1101	FCU error	Initialize the fax unit. (See section 2.2.1.for the initialization procedure)	Automatic reset	SC Code display
1201	Unrecoverable FCU - SRAM error	Refer to section 2.2.2.	“Service Call” display	
1299	Software error	Initialize the fax unit.	Automatic reset	
1305				
1310				
1311				
1312				
1401				
1405				

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

Clear Mode	1.	Press the Clear Mode key.
1 0 7	2.	Use the keypad to enter “107”.
Clear/Stop	3.	Hold down Clear/Stop for at least 3 seconds.
2 Fax SP	4.	Press the "2" key on the numeric keypad.
Exit	5.	Press the Cancel key twice to return to the copy window.

SP1-XXX (BIT SW) ☛ 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
102	Ifax Switch		
	001 – 016	00 – 0F	Change the bit switches for IFAX settings ☛ 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

SP2-XXX (RAM)

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
103	G3-1 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the standard G3 board. ☛ Section 3.3 NCU Parameters

SP3-XXX (Machine Set)

3	Mode No.		Function
101	Service Station		
	001	Fax Number	Enter the fax number of the service station.
102	Serial Number		
	001		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.
201	FAX Switches		
	001 – 032	00 – 1F	Change the bit switches for scanner settings for the fax option ☛ Section 3.2 Bit Switches

SP4-XXX (ROM Versions)

4	Mode No.		Function
101	001	FCU ROM Version	Displays the FCU ROM version.
	002	FCU ROM Version P/N	
	003	FCU ROM Version Ver.	
	004	FCU ROM Version Area	
	005	FCU ROM Version Date	
	006	FCU ROM Version Drer.	
	007	FCU ROM Version sum.	
102	001	Error Codes	Displays the latest 64 fax error codes.
103	001	G3-1 ROM Version	Displays the G3-1 modem version.
	002	G3-1 ROM Version Parts No.	
	003	G3-1 ROM Version Control	
	004	G3-1 ROM Version DSP	

SP5-XXX (RAM Clear)

5	Mode No.		Function
101	Initialize SRAM		
	001		Initializes the bit switches and user parameters, user data in the SRAM, files in the SAF memory, and clock.
102	Erase All Files		
	001		Erases all files stored in the SAF memory.
103	Reset Bit Switches		
	001		Resets the bit switches and user parameters.
104	Factory setting		
	001		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		
	001		Press the “ON” button to print the system parameter list.
102	Service Monitor Report		
	001		Press the “ON” button to print the service monitor report.
103	G3 Protocol Dump List		
	001	G3-1 (All Communications)	Prints the protocol dump list of all communications for the G3-1 line.
	002	G3-1 (1 Communication)	Prints the protocol dump list of the last communication for the G3-1 line.
105	All Files print out		
	001		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.

6	Mode No.		Function
107	Log List Print out		
	001	All log files	These log print out functions are for designer use only.
	002	Printer	
	003	SC/TRAP Stored	
	004	Decompression	
	005	Scanner	
	006	JOB/SAF	
	007	Reconstruction	
	008	JBIG	
	009	G3 CCU	
	010	Fax Job	
	011	CCU	
	012	Scanner Condition	

SP7-XXX (Tests)

These are the test modes for PTT approval.

7	Function
101	G3-1 Modem Tests
102	G3-1 DTMF Tests
103	Ringer
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	Message Test

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 revel (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 high byte is given first, followed by the low 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 setting.
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 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 10: 10 ms/line 25: 2.5 ms/line 20: 20 ms/line 5: 5 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**
0-1	Not used	Do not change the settings.
2	Communication stall fail safe. 0: Disabled 1: Enabled	If enabled, the machine cuts communication within one hour of a communication error but the connection remains established.
3-4	Not used.	Do not change the settings.
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.

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**
0-2	Not used	Do not change the settings.
3	Printing dedicated tx parameters on Quick Dial Lists **0:** Disabled **1:** Enabled	**1:** Each Quick 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	Not used	Do not change the setting.
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**
0-3	Not used	Do not change the settings.
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.
6-7	Not used	Do not change the settings.

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: SP2-103 parameter C.C.

System Switch 10		
No	**FUNCTION**	**COMMENTS**
0 to 7	Threshold memory level for parallel memory transmission	Threshold = is N x 128 kbytes + 256 kbytes N can be between 00 - FF(H) Default setting: 02(H) = 512 kbytes

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).
1-7	Not used	Do not change the factory settings.

System Switch 12		SP No. 1-101-019
No	**FUNCTION**	**COMMENTS**
0 to 7	TTI printing position in the main scan direction	TTI: 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.

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.
2-3	Not used	Do not change the settings.
4-5	Wait time for post message **00**: 1 minute **01**: 30 minutes **10**: 1 hour **11**: 24 hours	The machine stays in the standby mode for the specified time if it reserves a post message in memory.
6	Shows user codes on reports and lists **0**: Disabled **1**: Enabled	The user codes are printed on reports and lists. The default setting is "Disabled" since the user codes used for authentication should not be seen.
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 Quick, Speed, 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).
5-6	Not used	Do not change the settings.
7	Special original mode 0: Disabled 1: Enabled	Enables the user to select the special original mode from the operation panel. When the user selects this mode, the text-mode LED and the photo-mode LED light at the same time.

System Switch 1A - Not used (Do not change the settings.)

System Switch 1B		SP No. 1-101-030
No	**FUNCTION**	**COMMENTS**
0-1	Image mode when Text is selected **00:** Text 1 **01:** Text 2	**00:** Text 1 is the regular mode. **01:** Text 2 is the sharp mode.
2-3	Image mode when Photo is selected **00:** Photo 1 **01:** Photo 2	**00:** Photo 1 is the error diffusion mode. **01:** Photo 2 is the dithering mode.
4-6	Image mode when Special original is selected **000:** Text 1 **001:** Text 2 **010:** Photo 1 **011:** Photo 2 **100:** Special	**000:** Text 1 is the regular mode. **001:** Text 2 is the sharp mode. **010:** Photo 1 is the error diffusion mode. **011:** Photo 2 is the dithering mode. **100:** Special is the dropout color mode.
7	Not used	Do not change the setting.

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

System Switch 1D		SP No. 1-101-030
No	**FUNCTION**	**COMMENTS**
0	RTI/CSI display **0:** Disabled **1:** Enabled	**1:** RTI/CSI 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** ❑ Automatic Journal output - User switch 03 bit 7 ❑ 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.
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)”.
5-7	Not used	Do not change the setting.

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.
4-6	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, 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 .IFAX SWITCHES

Please refer to the IFAX Service Manual.

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.

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	
4-7	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	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. 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 For A5 sideways and B5 sideways paper <Maximum reducible length> = <Paper length> + 0.75 x (N x 5mm)	
5 to 6	Length of the duplicated image on the next page, when page separation has taken place. $\binom{0}{0}$=4 mm $\binom{1}{0}$=10 mm $\binom{0}{1}$=15 mm $\binom{1}{1}$=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**
0-3	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.
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.
2-3	Not used	Do not change the settings.
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	Not used	Do not change the settings.

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.
1-5	Not used	Do not change the settings.
6 to 7	Maximum printable page length available **Bit 7 6 Setting** 0 0 No limit 0 1 B4 (364 mm) 1 0 A4 (297 mm) 1 1 Not used	The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).

Communication Switch 02		SP No. 1-104-003
No	**FUNCTION**	**COMMENTS**
0	Burst error threshold **0:** Low **1:** High	If there are more consecutive error lines in the received page than the threshold, the machine will send a negative response. The Low and High threshold values depend on the sub-scan resolution, and are as follows. **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.
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.
4-7	Not used	Do not change the settings.

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 - Not used (Do not change the settings.)
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.
1-7	Not used	Do not change the settings.

Communication Switch 0B - Not used (Do not change the settings.)
Communication Switch 0C - 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	00 to FF (Hex), unit = 4 kbytes (e.g., 06(H) = 24 kbytes) One page is about 24 kbytes. 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. 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.

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

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 **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).

Communication Switch 15 - Not used (Do not change the settings.)
Communication Switch 16 - Not used (Do not change the settings.)
Communication Switch 17 - Not used (Do not change the settings.)
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. $\sqrt{N\,Transmit} \leq NResend$ $N_{Transmit}$- 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	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 - G3 switch 03, bit2
4 to 7	Modem types available for reception **Bit 7 6 5 4 Setting** 0 0 0 1 V.27ter 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/V33, V.34 Other settings - Not used	The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode. If V.34 is not selected, V.8 protocol must be disabled manually. **Cross reference** V.8 protocol on/off - G3 switch 03, bit2

G3-1 Switch 07		SP No. 1-105-008
No	**FUNCTION**	**COMMENTS**
0 to 1	PSTN cable equalizer (tx mode: Internal) **Bit 1 Bit 0 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. Use the dedicated transmission parameters for specific receivers. Also, try using the cable equalizer if one or more of the following symptoms occurs. • Communication error • Modem rate fallback occurs frequently. **Note:** This setting is not effective in V.34 communications.
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. • 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.
4-7	Not used	Do not change the settings.

G3-1 Switch 08 - Not used (Do not change the settings.)
G3-1 Switch 09 - Not used (Do not change the settings.)

G3-1 Switch 0A		SP No. 1-105-011
No	**FUNCTION**	**COMMENTS**
0 to 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	Non-ECM Carrier Drop 0: Maintain connection 1: Disconnect	Determines how the machine will respond when it detects a drop in the carrier signal during non-ECM communication.
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.

G3-1 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	Not used	Do not change the setting.
3	Protocol requirements: France **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.
4	PTT requirements: Germany **0:** Disabled **1:** Enabled	
5-7	Not used	Do not change the settings.

G3-1 Switch 0C		SP No. 1-105-013
No	**FUNCTION**	**COMMENTS**
0 to 1	Pulse dialing method **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	P = Number of pulses sent out, N = Number dialed.
2-7	Not used	Do not change the settings.

G3-1 Switch 0D - Not used (Do not change the settings.)

G3-1 Switch 0E		SP No. 1-105-015
No	**FUNCTION**	**COMMENTS**
0 to 7	CNG transmission OFF interval. To input a value more than 3 s, use bits 3 to 0, and keep bits 4 to 7 at 0. 3000 + 50 x N ms To inpu a value less than 3 s, use bits 4 to 7, and keep bits 0 to 3 at 1. 3000 – 50 x N ms	Examples: 3100 ms: 50 x 2 = 100 Bits 4 to 7 must be 0 Bits 0 to 3 must be 2(H) So, enter 02H. 2800 ms: 50 x 4 = 200 Bits 0 to 3 must be F(H) Bits 4 to 7 must be 4(H) So, enter 4FH

Service Tables

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 FAX SWITCHES

FAX Switch 00 - Not used (Do not change the settings.)
:
:
FAX Switch 0A - Not used (Do not change the settings.)

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	

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.

Scanner Switch 0F		SP No. 3-201-016
No	**FUNCTION**	**COMMENTS**
0	Image rotation before transmission (A4/LT sideways) **0:** Disabled **1:** Enabled	This bit determines whether the machine rotates the scanned image by 90 degrees before transmission. If this bit is set at 1, A4 (LT) sideways images (297 mm width in the protocol) will be transmitted as A4 (LT) lengthwise images (216 mm width in the protocol).
1	Not used	Do not change the settings
2	Image rotation before transmission (A5/HLT lengthwise) **0:** Disabled **1:** Enabled	This bit determines whether the machine rotates the scanned image by 90 degrees before transmission. If this bit is set at “1”, A5 (HLT) lengthwise images will be transmitted as A4 (LT) width images (216 mm width in the protocol).
3-7	Not used	Do not change the settings.

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 (SP2-101), but some can be changed using NCU Parameter programming (SP2-103); if SP2-103 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.

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)		
68050F	PSTN ring-back tone detection time	20 ms	Detection is disabled if this contains FF.
680510	PSTN ring-back tone off detection time	20 ms	
680511	PSTN detection time for silent period after ring-back tone detected (LOW)	20 ms	
680512	PSTN detection time for silent period after ring-back tone detected (HIGH)	20 ms	
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)		
680522	PABX ringback tone detection time	20 ms	If both addresses contain FF(H), tone detection is disabled.
680523	PABX ringback tone off detection time	20 ms	
680524	PABX detection time for silent period after ringback tone detected (LOW)	20 ms	If both addresses contain FF(H), tone detection is disabled.
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 (±) **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% Bits 7, 6, 5, 4 - number of cycles required for cadence detection		
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 OHDI relay	1 ms	See Notes 3, 6 and 8. SP2-103-11
68054B	Break time for pulse dialing	1 ms	See Note 3. SP2-103-12
68054C	Make time for pulse dialing	1 ms	See Note 3. SP2-103-13
68054D	Time between final OHDI relay closure and DO relay opening or closing	1 ms	See Notes 3, 6 and 8. SP2-103-14 This parameter is only valid in Europe.
68054E	Minimum pause between dialed digits (pulse dial mode)	20 ms	See Note 3 and 8. SP2-103-15
68054F	Time waited when a pause is entered at the operation panel		SP2-103-16 See Note 3.
680550	DTMF tone on time	1 ms	SP2-103-17
680551	DTMF tone off time		SP2-103-18
680552	Tone attenuation level of DTMF signals while dialing	-N x 0.5 –3.5 dBm	SP2-103-19 See Note 5.
680553	Tone attenuation value difference between high frequency tone and low frequency tone in DTMF signals	-dBm x 0.5	SP2-103-20 The setting must be less than –5dBm, and should not exceed the setting at 680552h above. See Note 5.
680554	PSTN: DTMF tone attenuation level after dialling	-N x 0.5 –3.5 dBm	SP2-103-21 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.

Address	Function	Unit	Remarks
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).	SP2-103-2
680573	Acceptable ringing signal frequency: range 1, lower limit		SP2-103-3
680574	Acceptable ringing signal frequency: range 2, upper limit		SP2-103-4
680575	Acceptable ringing signal frequency: range 2, lower limit		SP2-103-5

Address	Function	Unit	Remarks
680576	Number of rings until a call is detected	1	SP2-103-6 The setting must not be zero.
680577	Minimum required length of the first ring	20 ms	See Note 4. SP2-103-7
680578	Minimum required length of the second and subsequent rings	20 ms	SP2-103-8
680579	Ringing signal detection reset time (LOW)	20 ms	SP2-103-9
68057A	Ringing signal detection reset time (HIGH)		SP2-103-10
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)		
6805A8	Acceptable CNG detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone

Address	Function	Unit	Remarks
6805A9	Acceptable CNG detection frequency lower limit (low byte)		detection is disabled.
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	SP2-103-1
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	- dBm	The setting must be between -12dBm and -15dBm.
6805BB	ISDN: 1100 Hz tone transmission level	- N 6805BA - 0.5N 6805BB (dB)	
6805BC	ISDN: 2100 Hz tone transmission level	- N 6805BA - 0.5N 6805BC (dB)	

Address	Function	Unit	Remarks
6805BD	Modem turn-on level (incoming signal detection level)	-37-0.5N (dBm)	
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.

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 x $N_{680552/680554}$–3.5 dBm
   – 0.5 x N_{680555} dBm
   Low frequency tone: – 0.5 x ($N_{680552/680554}$ + N_{680553}) –3.5 dBm
   – 0.5 x (N_{680555} + N_{680553}) dBm
   NOTE: N_{680552}, 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 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 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 bit 0 of System Bit Switch 00 to 1.
2. Select the menus as follows: User Tools → System Settings → Key Operator Tools → Address Book Management → Program/Change
3. Select the destination key you want to program, then press "OK" two times.
4. Press "Dest." key, then select "Fax Settings."
5. When the programmed dial number is displayed, press "Start." Make sure that the LED of the Start button is lit as green.
6. The Switch numbers are displayed (00 ~ 09). Select the switch number, then Press "OK."
7. The settings for specified switch are displayed. Press the bit number that you wish to change, then press "OK."
8. To select the parameter switches, use the arrow key.
9. To exit, press the "Cancel" key.
10. After finishing, reset bit 0 of System Bit Switch 00 to 0.

3.4.2 PARAMETERS

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

Switch 00
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 01		
No	**FUNCTION**	**COMMENTS**
0 to 4	Tx level **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	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.
5 to 7	Cable equalizer **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	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. • 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.

Switch 02		
No	**FUNCTION**	**COMMENTS**
0 to 3	Initial Tx modem rate **Bit3 2 1 0 Setting (bps)** 0 0 0 0 Not 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	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. 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.
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 03		
No	**FUNCTION**	**COMMENTS**
0 to 1	Inch-mm conversion before tx **Bit 1** **Bit 0** **Setting** 0 0 Inch-mm conversion available 0 1 Inch only 1 0 Not used 1 1 Disabled	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.
2 to 3	DIS/NSF detection method **Bit 3** **Bit 2** **Setting** 0 0 First DIS or NSF 0 1 Second DIS or NSF 1 0 Not used 1 1 Disabled	**(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.
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 04 - Not used (Do not change the settings.)
Switch 05 - Not used (Do not change the settings.)
Switch 06 - Not used (Do not change the settings.)
Switch 07 - Not used (Do not change the settings.)
Switch 08 - Not used (Do not change the settings.)
Switch 09 - 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
680050 to 68005F(H) - Printer bit switches
680060 to 68007F(H) - Communication bit switches
680080 to 68008F(H) - G3 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 to 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: Not used
Bit 4: Not used
Bit 5: Transmission result report (immediate transmissions) 0: Off, 1: On
Bit 6: Not used
Bit 7: Journal 0: Off, 1: On

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

Bits 0 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 and 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): 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: Not used
Bit 2: Blank sheet detection
0: On (Blank sheets are not detected.)
1: Off (The LCD indication alarms the user when a blank sheet is detected.)
Bit 3 to 5: Not used
Bit 6: Printout of messages received while acting as a forwarding station
0: Off, 1: On
Bit 7: Not used

6800DC(H) - User parameter switch 12 (SWUSR_0C): Not used

6800DD(H) - **User parameter switch 13 (SWUSR_0D):** Not used
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	5th paper feed station

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)

Bit 0: Specifies the mode to select the group address for the IFAX function.
0: Priority Select Mode
1: All Select Mode

Bit 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

Bits 4 and 5: TTI selection

Bit 5	4	
0	0	TTI 1
0	1	TTI 2
1	0	TTI off
1	1	Not used

Bit 6 to 7: Not used

6800E3(H) - User parameter switch 19 (SWUSR_13)
Bits 0 - 2: Not used
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: Not used.
Bit 7: PC fax result notification mail, 0: Off, 1: On

6800E5(H) - User parameter switch 21 (SWUSR_15)
Bit 0: Print E-mail Reception Notice, 0: Off, 1: On
Bit 1: Respond to E-mail Reception Acknowledgement Request, 0: Off, 1: On
Bit 2 and 3: Not used.
Bit 4: Transmit Journal by E-Mail, 0: Off, 1: On
Bit 5: Not used.
Bit 6: Network error display, 0: On (Displayed), 1: Off (Not displayed)
Bit 7: Transmit Error Mail Notification, 0: Off, 1: On

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 6800EF(H) - User parameter switch 26 to 31 (SWUSR_1A to 1F),
Not used

6800F0 – User Parameter Switch 32 (SWUSR_20)
Bit 0: Priority destination for transfer, 0: Fax number, 1: E-mail address
Bits 2 to 7: Not used

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)
6801F8 to 68020B(H) - PSTN-1 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.
6802F7 to 68030A(H) - PSTN-1 CSI (Max. 20 characters - ASCII)
680333(H) - Number of PSTN-1 CSI characters (Hex)
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

680360(H) – Polling ID Code (Low – Hex)
680361(H) – Polling 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)

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

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)

680466(H) - Time for economy transmission (hour in 24h clock format - BCD)
680467(H) - Time for economy transmission (minute - BCD)

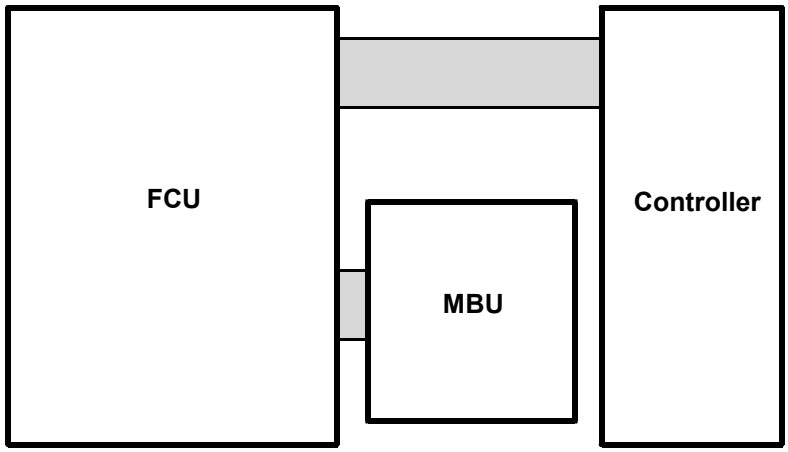
680482(H) - Transmission monitor volume 00 - 07(H)
680483(H) - Reception monitor volume 00 - 07(H)
680484(H) - On-hook monitor volume 00 - 07(H)
680485(H) - Dialing monitor volume 00 - 07(H)
680486(H) - Buzzer volume 00 - 07(H)

69B000 – 6BA1FF(H) – Latest 64 error codes (Read only)

69EEFC – 69FEA3(H) – Latest 20 error communication records

4. DETAILED SECTION DESCRIPTIONS

4.1 OVERVIEW



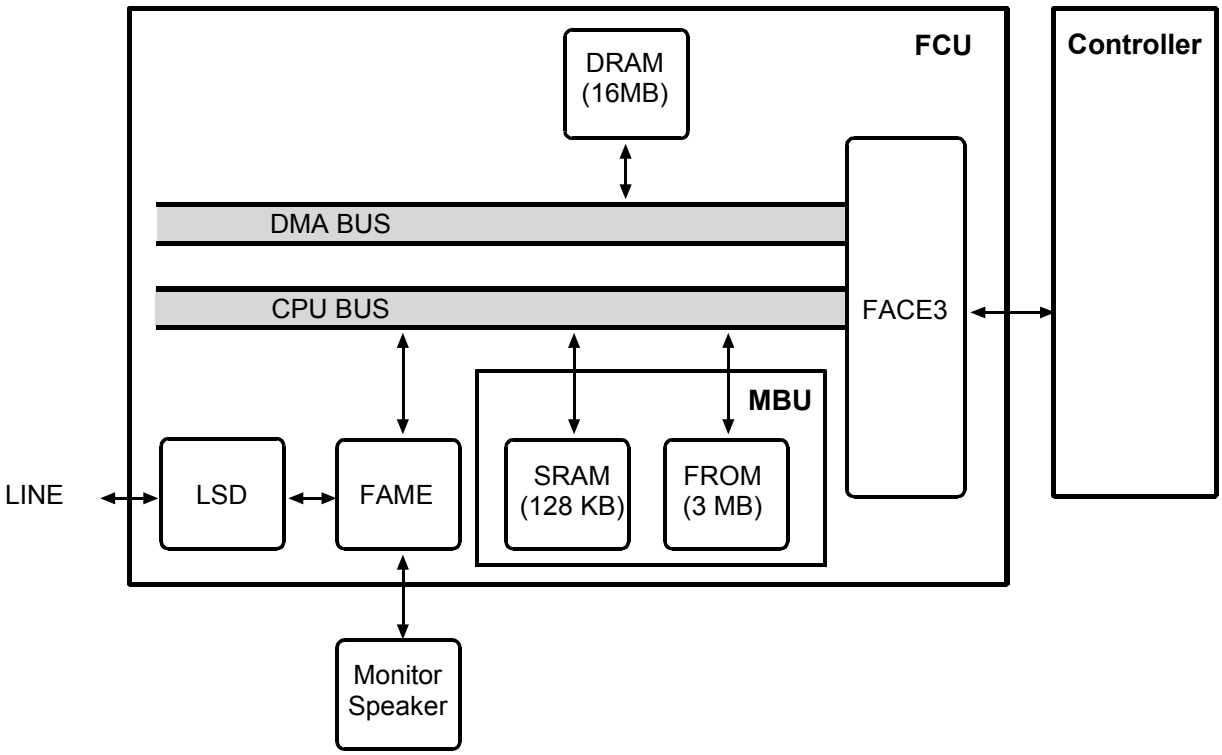
B620D902.WMF

The basic fax unit consists of two PCBs: an FCU and an MBU.

The FCU controls all the fax communications and fax features, in cooperation with the controller board. The MBU contains the ROM and SRAM.

4.2 BOARDS

4.2.1 FCU



B620D901.WMF

The FCU (Facsimile Control Unit) controls fax communications, the video interface to the base copier's engine, and all the fax options.

FACE3 (Fax Application Control Engine)

- CPU
- Data compression and reconstruction (DCR)
- DMA control
- Clock generation
- DRAM backup control
- Ringing signal/tone detection

FAME (Ricoh Modem)

- V.34, V.33, V.17, V.29, V.27ter, V.21, and V.8

LSD (Line Side Device)

- Data transfer
- Line control

DRAM

- The 8 MB of DRAM is shared as follows.
  SAF memory : 2 MB
  Working memory : 3 MB
  Page memory : 3 MB

Memory back-up

- A rechargeable battery backs up the SAF memory (DRAM) for 1 hour.

4.2.2 MBU

On this board, the flash ROM contains the FCU firmware, and the SRAM contains the system data and user parameters. Even if the FCU is changed, the system data and user parameters are kept on the MBU board.

ROM

- 3MB flash ROMs for system software storage
  2MB (16bit x 1MB) + 1MB (16bit x 512K)

SRAM

- The 128 KB SRAM for system and user parameter storage is backed up by a lithium battery.

Memory back-up

- A lithium battery backs up the system parameters and programmed items in the SRAM, in case the base copier's main switch is turned off.

Switches

Item	Description
CN1	Switches the SRAM backup battery on/off.

SPECIFICATIONS

1. GENERAL SPECIFICATIONS

Type:	Desktop type transceiver
Circuit:	PSTN 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) 200 x 100 dpi (Standard) 200 x 200 dpi (Detail)
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
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: 2 MB
Page Memory: 3 MB (Print: 2 MB + Scanner: 1 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	
Quick Dial	32
Groups	10
Destination per Group	150
Destinations dialed from the ten-key pad overall	100
Communication records for Journal stored in the memory	200

3. MACHINE CONFIGURATION

Item	Machine Code	Remarks
Fax Option Type 2018	B620	
Handset Type 1018	B433	USA only
Marker Type 30	H903	Refill ink for stamp

Model K-C2

INTERNET FAX (IFAX)

SERVICE MANUAL

December 1st, 2003
Subject to change

TABLE OF CONTENTS

1. INSTALLATION

1.1 IFAX INSTALLATION

IFAX requires the installation of the Fax Unit and the Printer/Scanner Controllers. For details about installation, please refer to the Fax Unit and the Printer/Scanner option manuals for the machine.

1.2 INITIAL SETTINGS

Users can set the IFAX initial settings. Please refer to the Network Guide Operating Instructions.

Make sure that the following items are registered in the mail server before machine installation.

- IP address
- Host name
- Mail account and the password

CAUTION: The initial settings include items related to user security, such as the login password and IP addresses. So, please ask the user to input the initial settings of the IFAX. If the user asks you to input the initial settings, be sure to keep the settings confidential.

To enable IFAX functions, do the following procedure in the User Tools mode:

User Tools>Fax Features> E-Mail Settings> Internet Fax Settings> Internet Fax> OFF → ON

2. TROUBLESHOOTING

2.1 ERROR CODES FOR LAN COMMUNICATION

If an error code occurs, retry the communication. If the same problem occurs, try to solve the problem as suggested below.

Code	Meaning	Cause	Action
14-00	SMTP Send Error	Error occurred during sending to the SMTP server. Occurs for any error other than 14-01 to 16. For example, the mail address of the system administrator is not registered.	• Register the address of the system administrator. • Set the User Parameter Switch 21 (15[H]) Bit 4 to “Off”.
14-01	SMTP Connection Failed	Failed to connect to the SMTP server (timeout) because the server could not be found. • The IP address for the SMTP server is not stored in the machine. • The DNS IP address is not registered. • Network not operating correctly.	• Check the IP address of the SMTP/DNS server. • Check the traffic on the LAN. • Check the machine settings such as the SMTP port setting, DNS server setting, and so on.
14-02	No Service by SMTP Service (421)	SMTP server operating incorrectly.	Contact the network administrator. Confirm correct SMTP server settings and operation.
14-03	Access to SMTP Server Denied (450)	SMTP server operating incorrectly	Contact the network administrator. Confirm correct SMTP server settings and operation.
14-04	Access to SMTP Server Denied (550)	SMTP server operating incorrectly	Contact the network administrator. Confirm correct SMTP server settings and operation.
14-05	SMTP Server HDD Full (452)	SMTP Server hard disk full.	Contact the network administrator. Free space on the HDD of the SMTP server.
14-06	User Not Found on SMTP Server (551)	The user does not exist locally.	• Check that the mail address is correct. • Contact the network administrator. Check that the e-mail the user intended to send exists on the SMTP server.
14-07	Data Send to SMTP Server Failed (4XX)	SMTP server operating incorrectly	Contact the network administrator. Confirm correct SMTP server settings and operation.
14-08	Data Send to SMTP Server Failed (5XX)	SMTP server operating incorrectly	Contact the network administrator. Confirm correct SMTP server settings and operation.

Code	Meaning	Cause	Action
14-09	Authorization Failed for Sending to SMTP Server	POP-Before-SMTP or SMTP authorization failed.	POP-Before-SMTP: • Check the IFAX user name and password. • Check that POP server is set correctly. • Check the SMTP server settings. SMTP Authorization: • Check the SMTP server user name and password. • Check the encryption settings. • Check the SMTP server settings.
14-10	Addresses Exceeded	Number of broadcast addresses exceeded the limit for the SMTP server.	The maximum number of addresses depends on the SMTP server.
14-11	Buffer Full	The send buffer is full so the transmission could not be completed. Buffer is full due to using Scan-to-Email while the buffer is being used send mail at the same time.	No action required. The transmission will be recalled and sent as soon as buffer space is available.
14-12	Data Size Too Large	Transmission was cancelled because the detected size of the file was too large.	• Divide the original into sections and send as separate files. • Use G3 to send the original. • Reduce the TX mail size.
14-13	Send Cancelled	Processing is interrupted because the user pressed Stop.	No action required.
14-30	MCS File Creation Failed	Failed to create the MCS file because: • The number of files created with other applications on the Document Server has exceeded the limit. • Software error.	• Delete unneeded files from the Document Server. • Update the software.
14-31	UFS File Creation Failed	UFS file could not be created: • Not enough space in UFS area to handle both Scan-to-Email and IFAX transmission. • Software error.	No action required. Once the job currently using the UFS area is finished sufficient space will become available. If this does not solve the problem: • Update the software.
14-32	Cancelled the Mail Due to Error Detected by NFAX	Error detected with NFAX and send was cancelled due to a software error.	Update the software.
14-33	No Mail Address For the Machine	Neither the mail address of the machine nor the mail address of the network administrator is registered.	Contact the network administrator. Check that these e-mail addresses are registered correctly.
14-50	Mail Job Task Error	Due to an FCU mail job task error, the send was cancelled: • Address book was being edited during creation of the notification mail. • Software error.	No action required. If the problem persists, update the firmware.

Code	Meaning	Cause	Action
14-51	UCS Destination Download Error	Not even one return notification can be downloaded: • The address book was being edited. • The number for the specified destination does not exist (it was deleted or edited after the job was created).	Check the address in the address book.
14-60	Send Cancel Failed	The cancel operation by the user failed to cancel the send operation.	No action required.
14-61	Notification Mail Send Failed for All Destinations	All addresses for return notification mail failed.	• Correct the mail address for the PC. • Contact the network administrator. Check the other error codes to determine if other errors occur at the same time.
15-01	POP3/IMAP4 Server Not Registered	At startup, the system detected that the IP address of the POP3/IMAP4 server has not been registered in the machine.	Register the name of the POP3/IMAP4 server.
15-02	POP3/IMAP4 Mail Account Information Not Registered	The POP3/IMAP4 mail account has not been registered.	Register the e-mail account, user name, and password.
15-03	Mail Address Not Registered	The mail address has not been registered.	Register the e-mail account and e-mail address.
15-10	DCS Mail Receive Error	Error other than 15-11 to 15-18.	Update the firmware, update the server software.
15-11	Connection Error	The DNS or POP3/IMAP4 server could not be found: • The IP address for DNS or POP3/IMAP4 server is not stored in the machine. • The DNS IP address is not registered. • Network not operating correctly.	Contact the network administrator. • Check that the DNS address is correct. • Check that the POP3/IMAP4 IP addresses are correct. • Confirm correct operation of the network.
15-12	Authorization Error	POP3/IMAP4 send authorization failed: • Incorrect IFAX user name or password. • Access was attempted by another device, such as the PC. • POP3/IMAP4 settings incorrect.	Contact the network administrator: • Check that the IFAX user name and password are correct. • Determine whether another device of the same account attempted access at same time. • Check that the POP/IMAP4 settings are correct.
15-13	Receive Buffer Full	Occurs only during manual reception. Transmission cannot be received due to insufficient buffer space. The buffer is being used for mail send or Scan-to-Email.	No action required. The next transmission can be received as soon as the other application releases the buffer area.
15-14	Mail Header Format Error	The mail header is not standard format. For example, the Date line description is incorrect.	Advise the sender to send e-mails in the standard format.
15-15	Mail Divide Error	The e-mail is not in standard format. There is no boundary between parts of the e-mail, including the header.	Advise the sender to send e-mails in the standard format.

Code	Meaning	Cause	Action
15-16	Mail Size Receive Error	The mail cannot be received because it is too large.	• Increase the setting that limits the size of e-mail that can be received (in the User Tools> System Settings> File Transfer menu). • Ask the sender to break the e-mail into smaller parts and send them separately.
15-17	Receive Timeout	May occur during manual receiving only because the network is not operating correctly.	Contact the network administrator and check that the network is operating correctly.
15-18	Incomplete Mail Received	Only one portion of the mail was received.	Ask the sender to send as one transmission.
15-31	Final Destination for Transfer Request Reception Format Error	The format of the final destination for the transfer request was incorrect.	Ask the sender to check the final destination.
15-39	Send/Delivery Destination Error	The transmission cannot be delivered to the final destination: • Destination file format is incorrect. • Could not create the destination for the file transmission.	• Delete the destination file to enable receiving. • Ask the sender to check the transfer destination and final destination.
15-41	SMTP Receive Error	Reception rejected because the transaction exceeded the limit for the “Auth. E-mail RX” setting.	• Check the content of the “From” entry in the mail header. • Check the “Auth. E-mail RX” setting.
15-42	Off Ramp Gateway Error	The delivery destination address was specified with Off Ramp Gateway OFF.	• Enable the Off Ramp Gateway function. • Ask the sender not to specify the Off Ramp Gateway address.
15-43	Address Format Error	Format error in the address of the Off Ramp Gateway.	Ask the sender to check the mail destination.
15-44	Addresses Over	The number of addresses for the Off Ramp Gateway exceeded the limit of 30.	Ask the sender to check the mail destination.
15-61	Attachment File Format Error	The attached file is not TIFF format.	Try to check the format of the sent mail, then ask the user to use TIFF format.
15-62	TIFF File Compatibility Error	Could not receive transmission due to: Resolution error • Image of resolution greater than 200 dpi without extended memory. • Resolution is not supported. Page size error • The page size was larger than A3. Compression error • File was compressed with other than MH, MR, or MMR.	Ask the sender to check the following: • File was sent in TIFF format. • Compatibility of the resolution setting. • Size of the page. • Method used to compress the file.
15-63	TIFF Parameter Error	The TIFF file sent as the attachment could not be received because the TIFF header is incorrect: • The TIFF file attachment is a type not supported. • The TIFF file attachment is corrupted. • Software error.	• Ask the sender to check that the attachment was sent in correctTIFF format. • If the problem persists, update the software.

Code	Meaning	Cause	Action
15-64	TIFF Decompression Error	The file received as an attachment caused the TIFF decompression error: • The TIFF format of the attachment is corrupted. • Software error.	• Ask the sender to check that the attachment was sent in correct TIFF format. • If the problem persists, update the software.
15-71	Not Binary Image Data	The file could not be received because the attachment was not binary image data.	Ask the sender to check the content of the attachment.
15-73	MDN Status Error	Could not find the Disposition line in the header of the Return Receipt, or there is a problem with the firmware.	Ask the sender to resend the mail. If the problem persists, update the firmware.
15-74	MSDN Message ID Error	Could not find the Original Message ID line in the header of the Return Receipt, or there is a problem with the firmware.	Ask the sender to resend the mail. If the problem persists, update the firmware.
15-80	Mail Job Task Read Error	Could not receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).	No action required. When destinations are used and a space opens in the buffer, the transmission will be received.
15-81	Repeated Destination Registration Error	Could not repeat receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).	No action required. When destinations are used and a space opens in the buffer, the transmission will be received.
15-91	Send Registration Error	Could not receive the file for transfer to the final destination: • The format of the final destination or the transfer destination is incorrect. • Destinations are full so the final and transfer destinations could not be created.	• As the send to check both the transfer destination and the final destination. • When destinations open, the transmission will be received.
15-92	Memory Overflow	Transmission could not be received because memory overflowed during the transaction.	• Expand SAF memory. • Ask the sender to break up the file and send the parts separately.
15-93	Memory Access Error	Transaction could not complete due to a malfunction of SAF memory.	Initialize memory. If the problem persists, replace the MBU.
15-94	Incorrect ID Code	The machine rejected an incoming e-mail for transfer request, because the ID code in the incoming e-mail did not match the ID code registered in the machine.	• Ask the sender to correct the ID code. • Set IFAX SW03 Bit 3 to “1”.
15-95	Transfer Station Function	The machine rejected an incoming e-mail for transfer because the transfer function was unavailable.	Inform the transfer requester that this machine does not support the transfer station function.

2.2 TROUBLESHOOTING PROCEDURES

Use the following procedures to determine whether the machine or another part of the network is causing the problem.

Communication Route	Item	Action	Remarks
General LAN	1. Connection with the LAN	• Check that the LAN cable is connected to the machine. • Check that the LEDs on the hub are lit.	
	2. LAN activity	• Check that other devices connected to the LAN can communicate through the LAN.	
Between IFAX and PC	1. Network settings on the PC	• Check the network settings on the PC.	• Is the IP address registered in the TCP/IP properties in the network setup correct? Check the IP address with the administrator of the network.
	2. Check that PC can connect with the machine	• Use the “ping” command on the PC to contact the machine.	• At the MS-DOS prompt, type ping then the IP address of the machine, then press Enter.
	3. LAN settings in the machine	• Check the LAN parameters • Check if there is an IP address conflict with other PCs.	• Use the “Network” function in the User Tools. • If there is an IP address conflict, inform the administrator.
Between machine and e-mail server	1. LAN settings in the machine	• Check the LAN parameters • Check if there is an IP address conflict with other PCs.	• Use the “Network” function in the User Tools. • If there is an IP address conflict, inform the administrator.
	2. E-mail account on the server	• Make sure that the machine can log into the e-mail server. • Check that the account and password stored in the server are the same as in the machine.	• Ask the administrator to check.
Between machine and e-mail server	3. E-mail server	• Make sure that the client devices which have an account in the server can send/receive e-mail.	• Ask the administrator to check. • Send a test e-mail with the machine’s own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.
Between e-mail server and internet	1. E-mail account on the Server	• Make sure that the PC can log into the e-mail server. • Check that the account and password stored in the server are the same as in the machine.	• Ask the administrator to check.

Communication Route	Item	Action	Remarks
	2. E-mail server	• Make sure that the client devices which have an account in the server can send/receive e-mail.	• Ask the administrator to check. • Send a test e-mail with the machine's own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.
	3. Destination e-mail address	Make sure that the e-mail address is actually used. Check that the e-mail address contains no incorrect characters such as spaces.	
	4. Router settings	Use the "ping" command to contact the router. Check that other devices connected to the router can sent data over the router.	• Ask the administrator of the server to check.
Between e-mail server and internet	1. Error message by e-mail from the network of the destination.	• Check whether e-mail can be sent to another address on the same network, using the application e-mail software. • Check the error e-mail message.	• Inform the administrator of the LAN.

3. SERVICE TABLES AND PROCEDURES

3.1 ACCESSING IFAX BIT SWITCHES

1. Ensure that the machine is in standby mode.
2. Press ⌨, enter ① ⓪ ⑦ with the 10-key pad, then hold down C/⊘ for more than 3 seconds. The SP mode main menu opens.
3. Press the ② key on the numeric keypad to start the fax service mode.
4. Use SP1102 1~16 to set the bit switches for IFAX. For details, refer to the Service Tables on the following pages.

⚠WARNING

Never adjust a bit switched marked "DFU" or "Japan Only," 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 print out.

3.2 SP1102 IFAX SWITCH

Only one SP number is used to access IFAX bit switches. These bit switches are described in the tables below.

<table>
<tr><th>SP</th><th colspan="7">IFAX SW</th></tr>
<tr><td rowspan="6">1102 1</td><td colspan="7">00</td></tr>
<tr><td colspan="7">Bits 0~6: Original Width of TX Attachment File</td></tr>
<tr><td colspan="7">This setting sets the maximum size of the original that the destination can receive. (Bits 3~7 are reserved for future use or not used.)
0: On
1: Off
Note: If more than one of these three bits is set to “1”, the larger size has priority. For example, if both Bit 2 and Bit 1 are set to “1” then the maximum size is “A3” (Bit 2).</td></tr>
<tr><td>Bit 6</td><td>Bit 5</td><td>Bit 4</td><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td></tr>
<tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>A3</td><td>B4</td><td>A4</td></tr>
<tr><td colspan="7">When mail is sent, there is no negotiation with the receiving machine at the destination, so the sending machine cannot make a selection for the receiving capabilities (original width setting) of the receiving machine. The original width selected with this switch is used as the RX machine’s original width setting, and the original is reduced to this size before sending. The default is A4.
If the width selected with this switch is higher than the receiving machine can accept, the machine detects this and this causes an error.</td></tr>
<tr><td colspan="7">Bit 7: Not Used.</td></tr>
</table>

SP	IFAX SW
1102 2	01

Bits 0~ 6: Original Line Resolution of TX Attachment File

This setting sets the maximum resolution of the original that the destination can receive.

0: Not selected

1: Selected

Note: If more than one of these three bits is set to "1", the higher resolution has priority. For example, if both Bit 3 and Bit 2 are set to "1" then the resolution is set for "300 x 300" (Bit 3).

Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Reserved	Reserved	400 x 400 Super Fine	Reserved	200x400 Fine	200x200 Detail	200x100 Standard

When mail is sent, there is no negotiation with the receiving machine at the destination, so the sending machine cannot make a selection for the receiving capabilities (resolution setting) of the receiving machine.

The resolution selected with this switch is used as the RX machine's resolution setting, and the original resolution is converted before sending.

The default is both 200 x 100 and 200 x 200 are selected.

If the resolution set with this switch is higher than the receiving fax can accept, the machine detects this and this causes an error.

Bit 7: mm/inch

This setting selects mm/inch conversion for mail transmission.

0: Off (No conversion)

1: On (Conversion)

When on (set to "1"), the machine converts millimeters to inches for sending mail. There is no switch for converting inches to millimeters.

Note: Unlike G3 fax transmissions which can negotiate between sender and receiver to determine the setting, mail cannot negotiate between terminals; the mm/inch selection is determined by the sender fax.

Only two choices are available for transmission: inch statements and inch images, or inch statements and mm images.

When this switch is Off (0):

- Images scanned in inches are sent in inches.
- Images scanned in mm are sent in mm.
- Images received in inches are transmitted in inches.
- Images received in mm are transmitted in mm.

When this switch is On (1):

- Images scanned in inches are sent in inches.
- *Images scanned in mm are converted to inches.*
- *Images received in inches are transmitted in inches.*
- *Images received in mm are converted to inches.*

SP	IFAX SW
1102 3	02
	Bit 0: RX Text Mail Header Processing
	This setting determines whether the header information is printed with text e-mails when they are received. 0: Prints only text mail. 1: Prints mail header information attached to text mail. • When a text mail is received with this switch On (1), the "From" address and "Subject" address are printed as header information. • When a mail with only binary data is received (a TIFF-F file, for example), this setting is ignored and no header is printed.
	Bit 1: Output from Attached Document at E-mail TX Error
	This setting determines whether only the first page or all pages of an e-mail attachment are printed at the sending station when a transmission error occurs. This allows the customer to see which documents have not reached their intended destinations if sent to the wrong e-mail addresses, for example. 0: Prints 1st page only. 1: Prints all pages.
	Bits 2~3: Text String for Return Receipt
	This setting determines the text string output for the Return Receipt that confirms the transmission was received normally at the destination. 00: "Dispatched" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "dispatched" in the 2nd part: **Disposition: Automatic-action/MDN-send automatically; dispatched** The "dispatched" string is included in the Subject string. 01: "Displayed" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "displayed" in the 2nd part: **Disposition: Automatic-action/MDN-send automatically; displayed** The "displayed" string is included in the Subject string. 10: Reserved 11: Reserved **Note**: A mail requesting a Return Receipt sent from an IFAX with this switch set to "00" (for "dispatched") received by Microsoft Outlook 2000 may cause an error. If any setting other than "displayed" (01) causes a problem, change the setting to "01" to enable normal sending of the Return Receipt.
	Bits 4~6: Not Used.
	Bit 7: Image Resolution of RX Text Mail
	This setting determines the image resolution of the received mail. 0: 200 x 200 1: 400 x 400 **Note**: The "1" setting requires installation of the Function Upgrade Card in order to have enough SAF (Store and Forward) memory to receive images at 400 x 400 resolution.

SP	IFAX SW
1102 4	03
	Not Used

SP	IFAX SW
1102 5	04
	Bit 0: Subject for Delivery TX/Memory Transfer
	This setting determines whether the RTI/CSI registered on this machine or the RTI/CSI of the originator is used in the subject lines of transferred documents. 0: Puts the RTI/CSI of the originator in the Subject line. If this is used, either the RTI or CSI is used. Only one of these can be received for use in the subject line. 1: Puts the RTI/CSI registered on this machine in the Subject line. When this switch is used to transfer and deliver mail to a PC, the information in the Subject line that indicates where the transmission originated can be used to determine automatically the destination folder for each e-mail.
	Bits 1~7: Not Used

SP	IFAX SW
1102 6	05
	Bit 0: Mail Addresses of SMTP Broadcast Recipients
	Determines whether the e-mail addresses of the destinations that receive transmissions broadcasted using SMTP protocol are recorded in the Journal. For example: '1st destination + Total number of destinations: 9' in the Journal indicates a broadcast to 9 destinations. 0: Not recorded 1: Recorded
	Bits 1~7: Not Used

SP	IFAX SW
1102 7	06
	Not Used

SP	IFAX SW
1102 8	07
	Not Used

SP	IFAX SW
1102 9	08
	Bits 0~7: Memory Threshold for POP Mail Reception
	This setting determines the amount of SAF (Store and Forward) memory. (SAF stores fax messages to send later for transmission to more than one location, and also holds incoming messages if they cannot be printed.) When the amount of SAF memory available falls below this setting, mail can no longer be received; received mail is then stored on the mail server. 00-FF (0 to 1024 KB: HEX) **Note**: The hexadecimal number you enter is multiplied by 4 KB to determine the amount of memory.

SP	IFAX SW
1102 10	09
	Bits 0~3: Not Used
	Bits 4~7: Restrict TX Retries
	This setting determines the number of retries when connection and transmission fails due to errors. 01-F (1-15 Hex)

SP	IFAX SW
1102 11	0A
	Not Used.

SP	IFAX SW
1102 12	0B
	Not Used.

SP	IFAX SW
1102 13	0C
	Not Used.

SP	IFAX SW
1102 14	0D
	Not Used

SP	IFAX SW
1102 15	0E
	Not Used

SP	IFAX SW
1102 16	0F
	Bit 0: Delivery Method for SMTP RX Files
	This setting determines whether files received with SMTP protocol are delivered or output immediately. 0: Off. Files received via SMTP are output immediately without delivery. 1: On. Files received via SMTP are delivered immediately to their destinations.
	Bits 1~7: Not Used

3.3 FIRMWARE UPDATE PROCEDURE

When you need to update the firmware for IFAX, follow the firmware update procedures described in the main machine Service Manual.

3.4 IFAX RAM ADDRESSES

Parameter	Function	Data Format	Address	Comments
Mail Address	Mail address of the fax account.	ASC: 128 bytes	69FEAE	128 x 3 area provided, but only the first is used.
User Name	User name of the fax account.	ASC: 64 bytes	6A002E	64 x 3 area provided, but only the first is used.
Password	Password of the fax account.	ASC: 64 bytes	6A00EE	64 x 3 area provided, but only the first is used.
RX Mail Capacity	---	4 Bytes	6A01AE	64-1024 Kbytes
SMTP RX Permission Address	Address or partial address that is used to limit access to mail delivery (see pg. 4-11, “Auth E-Mail Rx”).	ASC: 128 bytes	6A01B2	
Doc. Svr. RX Notification No	Number of RX Notification Mails that have been sent in order to notify receipt of a fax message on the document server.	2 bytes	6A0232	

4. DETAILED SECTION DESCRIPTIONS

4.1 INTERNET FAX

4.1.1 INTERNET FAX FEATURES

The Internet fax produced by Ricoh is also known as IFAX.

An Internet fax converts fax hard copy document data to e-mail format and transmits the data over the Internet. Another IFAX or a PC can receive the e-mail sent by an IFAX. Rather than inputting the telephone number of the destination, the user inputs the applicable e-mail address.

Documents are sent as e-mail messages with an attached TIFF-F image (the scanned original), so a MIME-compatible e-mail reader is required in order to view documents received on a PC. To view an attached image, software capable of displaying TIFF-F formatted images is required.

NOTE: The IFAX must be connected to a LAN and set up correctly in order to use its Internet fax functions.

The main IFAX features are:

- TCP/IP communication protocols that support connection to a LAN with e-mail.
- Easy-to-master operations that are identical to those of a standard fax machine.
- Fax transmission and reception over a telephone line.
- Using a browser (such as Netscape or Internet Explorer) to check the settings and status of an IFAX from a PC This uses the Web Status Monitor application built into the machine.
- Transferring or mailing received faxes directly to a PC.
- Using the Internet to reduce communication costs.
- Reducing paper expenses by eliminating the use of paper for fax transmission and reception.
- The IFAX communicates with a server over a LAN (it does not communicate directly with another party).
- If an error occurs, a mail error report is sent back to the sender.

Some minor restrictions of IFAX are:

- If an Internet related error occurs, the sender might not receive an error report.
- The level of security for Internet communications is low. The use of standard subscriber lines is recommended for confidential communication.
- Voice communications are not supported over a LAN.
- Internet fax delivery might be delayed due to network congestion. Use standard fax communication whenever time is a crucial factor.

The following functions are supported with standard fax transmission, but not with Internet faxing.

These functions are not supported by e-mail transmission:

- Immediate Transmission
- Chain Dial
- On Hook Dial
- Manual Dial
- JBIG Transmission
- Batch Transmission
- ECM (Error Correction Mode)

These functions are not supported by e-mail reception:

- Memory Lock Reception
- Preventing nuisance faxes by destination

4.1.2 DNS SERVICE

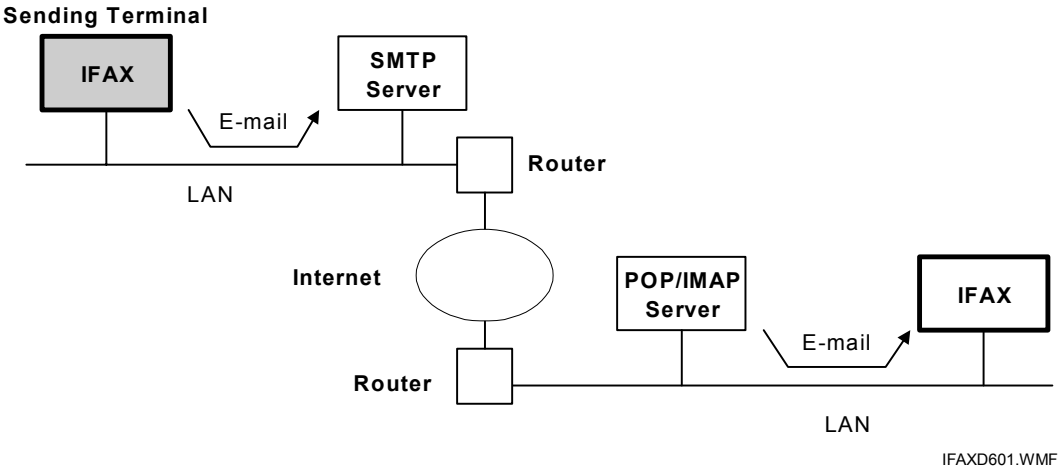
IFAX supports DNS (Domain Name System). See the Core Technology Manual for more details (Facsimile Processes – Faxing From a PC – Internet/LAN Fax Boards – E-mail Basics).

The IFAX can use the Domain Names for the SMTP and POP3/IMAP4 server instead of the actual IP addresses, if there is a DNS server on the same LAN as the SMTP server, POP3/IMAP4 server, and the IFAX.

With models that do not support DNS, the user has to input the actual IP addresses of the SMTP server and the POP3/IMAP4 server.

4.2 INTERNET MAIL COMMUNICATION

4.2.1 MAIL TRANSMISSION



Procedure

Scanned documents are sent as electronic mail (e-mail).

All messages are sent using memory transmission.

All e-mail transmissions are controlled using Simple Mail Transfer Protocol (SMTP) procedures. There must be an SMTP server on the same LAN as the sending machine, or the machine will not be able to send e-mail (it is not necessary to set up an SMTP account).

Data Formats

The scanned data is converted into a TIFF-F formatted file (only MH compression can be used).

The fields of the e-mail and their contents are as follows:

Field	Content
From	Mail address of the sender
Reply To	Destination requested for reply
To	Mail address of the destination
Bcc	Backup mail address
Subject	From CSI or RTI (Fax Message No. xxxx)
Content Type	Multipart/mixed Attached files: image/tiff
Content Transfer Encoding	Base 64, 7-bit, 8-bit, Quoted Printable
Message Body	MIME-converted TIFF-F (MIME standards specify how files are attached to e-mail messages)

Errors

An error report is generated if an error occurs during communication between the machine and the SMTP server. However, it is possible that the sender will not receive reports of errors that occurred between the SMTP server and the receiving terminal.

The interval between attempts to resend mail to the same destination when an SMTP error occurs is the same as for G3 fax transmission.

To view what happens when an error occurs when the machine is receiving, refer to the Mail Reception section.

Results

The transmission result is listed in the Journal. The file list for e-mail transmissions is created in the same way as for G3 memory transmissions. The TTI for the mail message includes the word “Mail” at the head of the information in the TTI column.

Selectable Options

These options are available for selection:

- With the default settings, the scan resolution can be either standard or detail. Inch-mm conversion before TX depends on IFAX SW01 Bit 7. Detail resolution will be used if Super Fine resolution is selected, unless Fine resolution is enabled with IFAX SW01.
- The requirements for originals (document size, scan width, and memory capacity) are the same as for G3 fax memory tx.
- The default compression is TIFF-F format.
- IFAX SW00: Acceptable paper widths for sending
- IFAX SW09: Maximum number of attempts to the same destination

Secure Internet Transmission

To transmit e-mail via the Internet more securely, use SMTP authentication, and POP before SMTP for IFAX.

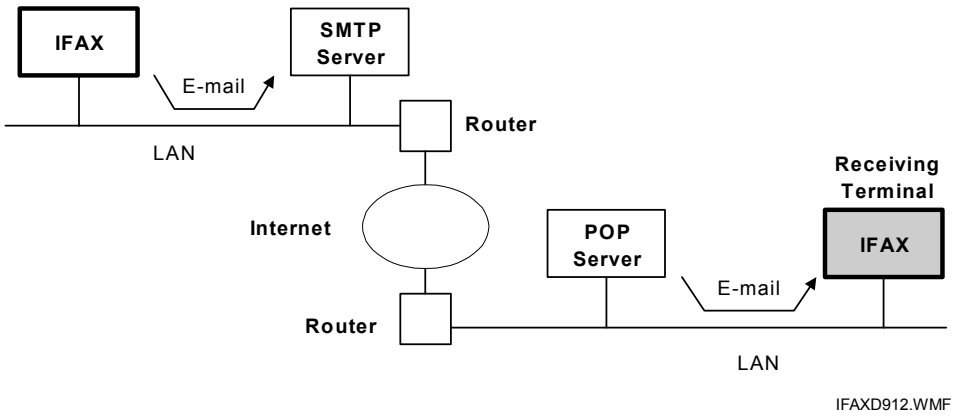
- **SMTP Authentication:**
  SMTP Authentication requires user authentication before they can access the server. This prevents unauthorized access to the server. To use SMTP authentication, your server must support CRAM-MD5, PLAIN, or LOGIN. The account name and password specified in the “Mail Server” settings are used for SMTP authentication. Other account names and passwords cannot be specified.
  To set up SMTP Authentication:

  User Tools> System Settings> File Transfer> SMTP Authentication

- **POP Before SMTP:**
  Prevents unauthorized access to the SMTP server and requires users to access and log onto the POP3 server before sending e-mail.
  To set up POP Before SMTP:

  User Tools> System Settings> File Transfer> POP Before SMTP

4.2.2 MAIL RECEPTION



This machine supports three types of e-mail reception:

- POP3 (Post Office Protocol Ver. 3.)
- IMAP4 (Internet Messaging Access Protocol)
- SMTP (Simple Mail Transfer Protocol)

POP3/IMAP4 Mail Reception Procedure

In order for the fax machine to receive e-mail, 1) there must be a POP3/IMAP4 server on the same LAN as the IFAX, and 2) an account must be set up for the fax machine.

The machine automatically picks up e-mail from the server at an interval which is adjustable in the range 2 to 1440 min. in 1-minute steps:
User Tools> System Settings> File Transfer> E-mail Reception Interval

When the arrival of new e-mail is detected, the IFAX receives the mail.

If the POP3/IMAP4 server is holding several e-mails for the IFAX, the machine picks up the e-mails one at a time, in the order of arrival at the server.

After POP3 has picked up the mail from a POP3 server, it deletes it from the server. IMAP4 also picks up the mail from a server, but it does not delete the mail from the server.

- However, the server setting is given higher priority than the machine setting.

E-mail reception conforms to POP3 (Post Office Protocol version 3.0) procedures or IMAP4 (Internet Message Access Protocol).

Characteristics of POP3/IMAP4 Reception

Here are some general characteristics of POP3/IMAP4 receiving:

- **No MX record registration:**
  There is no need to register the machine in the MX record of the DNS server.
- **Power can be switched off:**
  As long as the machine is not receiving mail, mail stored in the mail server is not lost when the power is switched off. With SMTP reception, if the machine is switched off, the SMTP server sends an error report back to the sender, and the machine will not receive the mail unless the sender sends it again after the machine is switched on.
- **Dial-up compliance:**
  POP3/IMAP4 can be accessed spontaneously, making it ideal for dial-up operation.

SMTP Reception

SMTP Mail Reception Procedure

By registering the IFAX as an SMTP server in the MX record of the DNS server, you can enable direct receiving of mail from the SMTP server.

When mail is sent to the mail address specified for the IFAX, it is received immediately without checking the server for the arrival of new mail (as is done in the POP/IMAP protocol). Also, with SMTP, the received mail can be routed to another fax (this is known as “delivery”).

Setting Method

The following settings are required for SMTP receiving:

- The IFAX must be registered as an SMTP server in the MX record of the DNS server, and the address of the received mail must specify the IFAX.
- Enable SMTP reception:

  User Tools> System Settings> File Transfer> Reception Protocol

  Even if the MX record on the DNS server includes the IFAX, mail cannot be received with SMTP until SMTP reception is enabled:

  However, if SMTP reception is selected and the machine is not registered in the MX record of the DNS server, then either IMAP4 or POP3 is used, depending on the setting:

  User Tools> System Settings> File Transfer> Reception Protocol

SMTP Reception Characteristics

- **Expanded RX mail delivery:**
  The Off Ramp Gateway feature allows expansion for RX mail delivery to a G3 fax. The machine transfers incoming mail is sent to the G3 fax specified by the local part. For example, in a destination address specified as:

  `fax=0454778907@cl01.dom1.ricoh.co.jp`

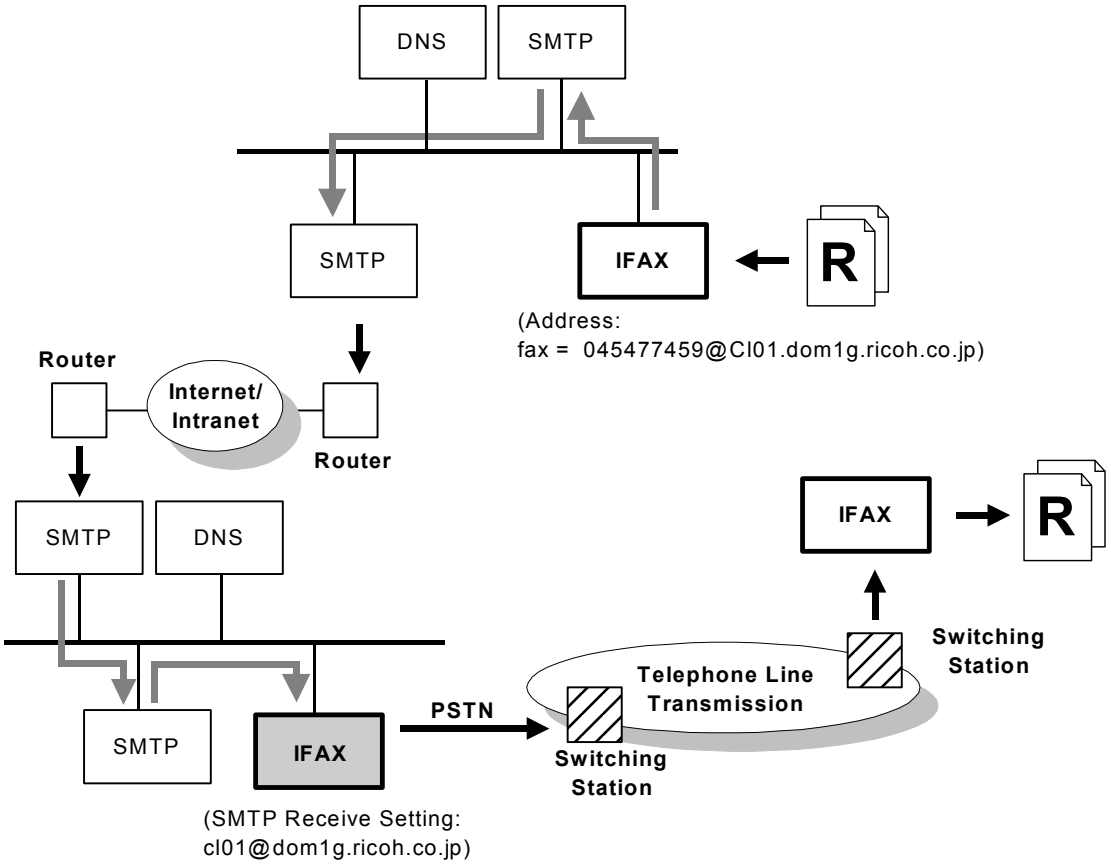
  the "local part" is **0454778907**.
- **A POP3/IMAP4 server is not required:**
  For example, in an environment where there is only a UNIX server or in an intranet environment where Notes is used for mail, mail received from outside is handled via the SMTP gateway.
- **Immediacy of response is slightly better:**
  There is no interval in the acquisition of mail as with POP3/IMAP4, thus slightly improving the response time.
- **Easier error handling:**
  When an error occurs with POP3/IMAP4, the receiving terminal sends an error mail back to the sender in order to inform them that an error has occurred. With SMTP mail reception, however, in almost all cases the SMTP server sends the error mail to the sender.

Delivery: Transferring Mail Received With SMTP (Off Ramp Gateway)

Overview

If the address of the mail received with SMTP contains the following information, it can be delivered to another G3 fax:

Fax = " Delivery Number"@"IFAX Host Name.Domain"



IFAXD901.WMF

How to Set Up Mail Delivery

The sender must set the mail address in the following format:

1) When dialing using a fax number

fax=<Delivery Destination Fax Number>@<IFAX Host Name>.<Domain Name>
Example:
fax=0454771459@cl01.dom1g.ricoh.co.jp → Delivers to fax number 0454771459

2) When dialing using a Quick dial destination

fax=<# Quick Dial Number>@<IFAX Host Name>.<Domain Name>
Example:
fax=#001@cl01.dom1g.ricoh.co.jp → Delivers to the number registered for Quick Dial key 001.

3) When dialing using a Group destination

fax=<#Group Dial Number>@<IFAX Host Name>.<Domain Name>**
Example:
fax=#**05@cl01.dom1g.ricoh.co.jp → Delivers to numbers registered for Group dial key 05.

Mail Delivery Conditions

1) The machine must be set up for SMTP mail delivery:
   User Tools> Facsimile Features> E-mail Settings> SMTP RX File Delivery Settings
2) If the user wishes to limit this feature so that the machine will only deliver mail from designated senders, the machine's "Auth. E-mail RX" feature must be selected (User Tools> Facsimile Features> E-mail Settings> SMTP RX File Delivery Settings).
3) If the "SMTP RX File Delivery Setting" is set to 0 to prohibit SMTP receiving, and if there is mail designated for delivery, then the machine responds with an error. (User Tools> Facsimile Features> E-mail Settings> SMTP RX File Delivery Settings)
4) The "fax=" setting does not distinguish between upper and lower case letters.
5) More than one destination cannot be specified in the mail address. A Group counts as 1 destination.
6) If the quick dial, speed dial, or group dial entry is incorrect, the mail transmission is lost, and the IFAX issues an error to the SMTP server and outputs an error report.

Auth. E-mail RX

In order to limit access to mail delivery with IFAX, the addresses of senders must be limited using the Access Limit Entry. Only one entry can be registered.

1) Access Limit Entry
For example, to limit access to @IFAX.ricoh.co.jp:

gts@IFAX.ricoh.co.jp	Matches and is delivered.
gts@IFAX.abcde.co.jp	Does not match and is not delivered.
IFAX@ricoh.co.jp	Does not match and is not delivered.

2) Conditions
- The length of the Access Limit Entry is limited to 127 characters.
- If the Access Limit Entry address and the mail address of the incoming mail do not match, the incoming mail is discarded and not delivered, and the SMTP server responds with an error. However, in this case an error report is not output.
- If the Access Limit Entry address is not registered, and if the incoming mail specifies a delivery destination, then the mail is delivered unconditionally.

Handling Mail Reception Errors

Errors during POP3/IMAP4 procedures

When an error of this type occurs, the machine stops receiving and the message stays in the server. An error report is output. After a prescribed interval, the machine calls the server and starts to receive, starting with the interrupted message. If there is an incomplete received message in memory, it will be erased.

Abnormal files

When an error of this type occurs, the machine stops receiving and commands the server to erase the message. Then the machine prints an error report and sends information about the error by e-mail to the sender address (specified in the “From” or “Reply-to” field of the message). If there is an incomplete received message in the machine memory, it will be erased.

The machine prints an error message when it fails to send the receive error notification after a certain number of attempts.

The following types of files are judged to be abnormal if one or more of the following are detected:

1. Unsupported MIME headers.

   Supported types of MIME header

Header	Supported Types
Content-Type	Multipart/mixed, text/plain, message/rfc822 Image/tiff
Charset	US-ASCII, ISO 8859 X. Other types cannot be handled, and some garbage may appear in the data.
Content-Transfer-Encoding	Base 64, 7-bit, 8-bit, Quoted Printable

2. MIME decoding errors
3. File format not recognized as TIFF-F format
4. Resolution, document size, or compression type cannot be accepted

Remaining SAF capacity error

The machine calls the server but does not receive e-mail if the remaining SAF capacity is less than a certain value (the value depends on IFAX Switch 08. The e-mail will be received when the SAF capacity increases (for example, after substitute reception files have been printed). The error handling method for this type of error is the same as for “Abnormal files”.

If the capacity of the SAF memory drops to zero during reception, the machine operates in the same way as when receiving an abnormal file (refer to “Abnormal files” above).

Printing Received Mail

To print received e-mail:

- The machine detects whether it has received a TIFF-F format image, then prints it.
- Text in US ASCII or ISO 8859 X format can also be printed. When a line of text is longer than the paper width, the excess data will be truncated and lost.

Multi-part Messages

When a multi-part e-mail message contains several text parts and binary files, the message will be divided by boundaries, and each portion will be printed separately. If the machine cannot determine where the boundary is, it will print an error report, and then send error information e-mail back to the sender.

Manual e-mail reception

The manual e-mail reception function can be stored in a Quick Operation Key. When the key is pressed, the machine calls the POP3/IMAP4 server immediately.

The timer for automatic e-mail reception is not reset when the machine calls the POP3/IMAP4 server manually.

Here is an example of the sequence

- Automatic e-mail reception interval: 30 minutes.
- The machine calls the POP3 server (automatic e-mail reception)
- 10 minutes later, the user calls the POP3 server (manual e-mail reception)
- The machine will call the POP3 server again automatically after 20 minutes.

Secure Internet Reception

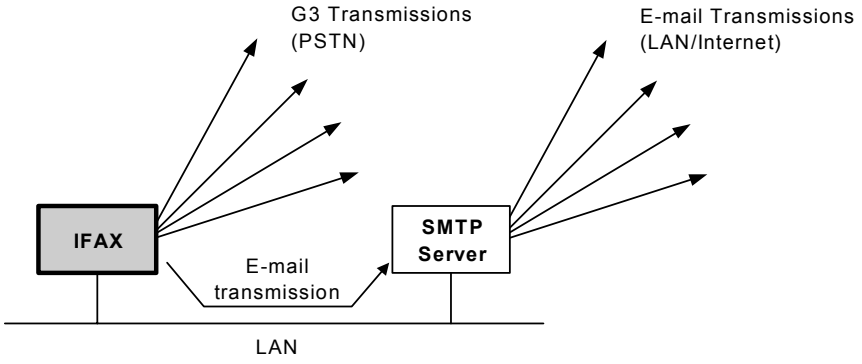
APOP. Passwords are encrypted when e-mail is received, making it safer than POP3 authentication (clear text), which is not encrypted. APOP requires a POP server that supports APOP.

IMAP-AUTH (Mail Reception). If the IMAP Server supports the AUTHENTICATE command (CRAM-MD5, PLAIN, or LOGIN confirmation), then higher-level security confirmation can be implemented for users logging in.

To enable password encryption and higher level security:

User Tools> System Settings> File Transfer> POP3/IMAP4 Settings> Encryption (set to “On”)

4.2.3 MAIL BROADCASTING (E-MAIL AND G3 FAX ARE COMBINED)



IFAXD913.WMF

The machine can send the same message to several destinations in one operation. Some destinations can be G3 faxes and others can be e-mail. For the G3 fax transmissions, each address has to be dialed separately. However, all e-mail addresses can be sent with the message to the SMTP server in one transmission. The SMTP server then sends the message to each destination.

The following example for broadcasting to three e-mail destinations and two G3 fax destinations shows how G3 fax messages are each sent individually. However, the e-mail destinations are all sent to the server at the same time.

- Order of inputting the addresses at the operation panel
  G3 fax (1) - mail (1) - G3 fax (2) - mail (2) - mail (3)
- Order of transmission
  G3 fax (1) - mail (1), (2), (3) - G3 fax (2)

The SMTP server cannot broadcast the message if the message contents included individual information for each terminal in the transmitted data (such as a label insertion). If this type of feature is used, the machine sends the e-mails to the server one by one.

With the default settings, up to 500 destinations (including both e-mail and G3 fax) can be dialed for one broadcast. The maximum number of e-mail destinations in a broadcast depends on the limitations of the mail server.

4.3 E-MAIL OPTIONS (SUB TX MODE)

The following features are available as options for mail sending: entering a subject, designating the level of importance, confirming reception of the mail.

4.3.1 SUBJECT AND LEVEL OF IMPORTANCE

You can enter a subject message with: TX Mode> E-mail Options (see next page)

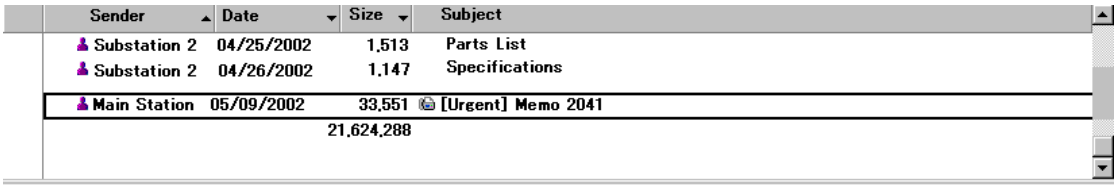
The Subject entry for the mail being sent is limited to 64 characters. The subject can also be prefixed with an “Urgent” or “High” notation.

How the Subject Differs According to Mail Type

<table>
<tr><th>Mail Type</th><th>①</th><th colspan="2">②</th><th>③</th></tr>
<tr><td>Subject Entry</td><td>---</td><td colspan="2">Entry Condition</td><td rowspan="5">Fax Message No.
+
File No.</td></tr>
<tr><td rowspan="4">No Subject Entry</td><td rowspan="4"></td><td colspan="2">1. “CSI” (“RTI”)</td></tr>
<tr><td>2. “RTI”</td><td>CSI not registered</td></tr>
<tr><td>3. “CSI”</td><td>RTI not registered</td></tr>
<tr><td>4. None</td><td>CSI, RTI not registered</td></tr>
<tr><td rowspan="4">Confirmation of Reception</td><td rowspan="4">From</td><td colspan="2">1. “CSI” (“RTI”)</td><td rowspan="2">Normal:
Return Receipt (dispatched).
You can select “displayed” with IFAX SW02 Bits 2 and 3.</td></tr>
<tr><td>2. “RTI”</td><td>CSI not registered</td></tr>
<tr><td>3. “CSI”</td><td>RTI not registered</td><td rowspan="2">Error:
Return Receipt (processed/error)</td></tr>
<tr><td>4. None</td><td>CSI, RTI not registered</td></tr>
<tr><td rowspan="4">Mail delivery, memory transfer, SMTP receiving and delivery</td><td rowspan="4">From</td><td>RTI or CSI of the station designated for delivery</td><td>Mail delivery</td><td rowspan="4">Fax Message No. + File Number</td></tr>
<tr><td>RTI or CSI of sender</td><td>Mail sending from G3 memory</td></tr>
<tr><td>Mail address of sender</td><td>Memory sending</td></tr>
<tr><td>Mail address of sender</td><td>SMTP receiving and delivery (Off Ramp Gateway)</td></tr>
<tr><td>Mail error notification</td><td>---</td><td colspan="3">Error Message No. xxxx From CSI (RTI)</td></tr>
</table>

Items ① ② ③ of the table above are in the Subject.

Subjects Displayed on the PC



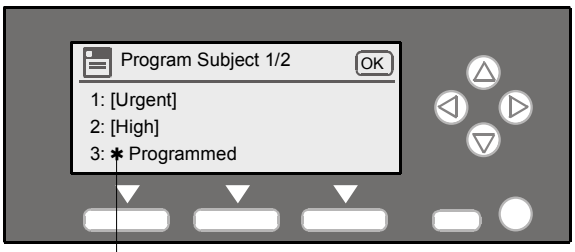
IFAXD919.WMF

4.3.2 SELECT/PROGRAM SUBJECT

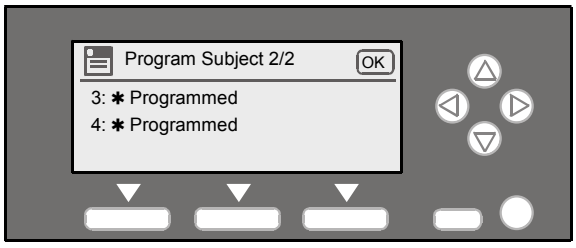
Program/Change Menu

You can specify the subject. Select the Program/Change menu as follows:

User Tools> System Settings> File Transfer> Prog./Chane/Del. Subject> Program/Change



IFAXD922.WMF



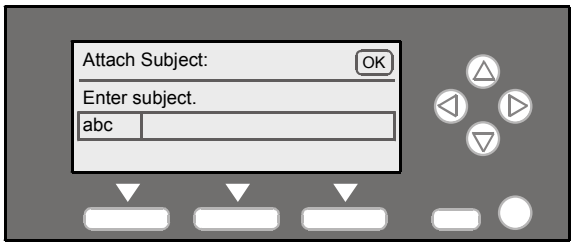
IFAXD923.WMF

The asterisk (✱) [A] indicates that the entry is not specified.

Manual Input Menu

You can create the subject. Select the Manual Input menu as follows:

User Tools> Tx Mode> E-mail Options> Attach Subject> Manual Input



IFAXD924.WMF

4.3.3 MESSAGE DISPOSITION NOTIFICATION (MDN)

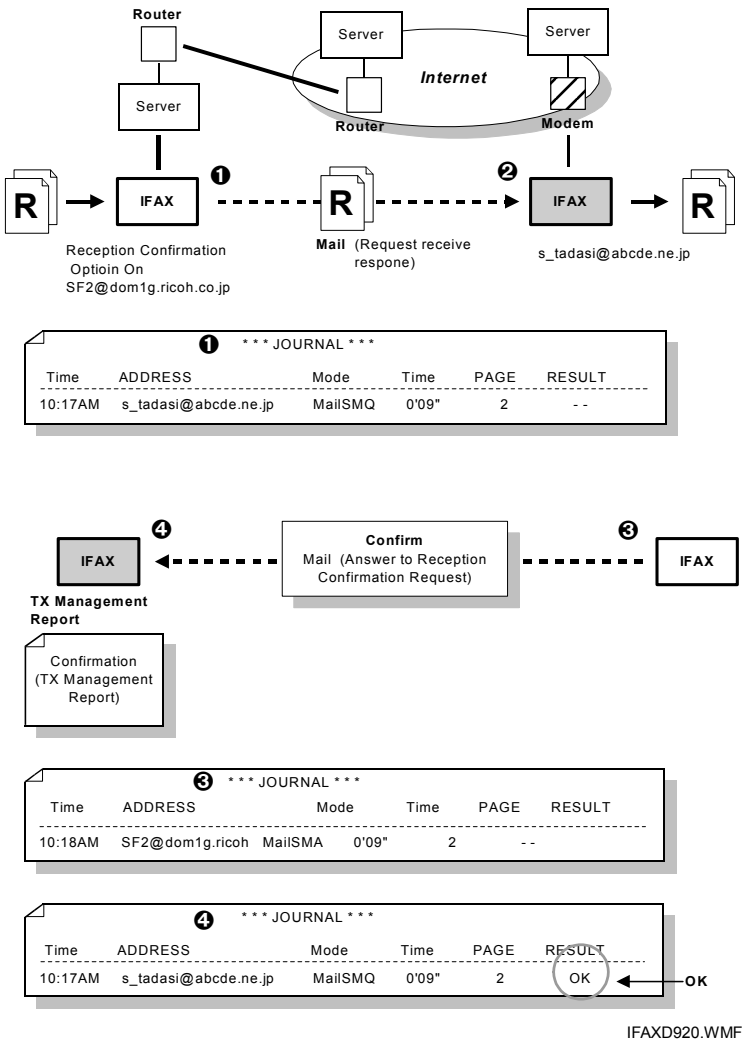
The network system administrator can confirm whether a sent mail has been received correctly or not. This confirmation is done in four steps.

1. Send request for confirmation of mail reception. To enable or disable this request (known as MDN):

   TX Mode> E-mail Options> Return Receipt (Set “On.”)
2. Mail reception (receive confirmation request)
3. Send confirmation of mail reception
4. Receive confirmation of mail reception

The other party’s machine will not respond to the request unless the two conditions below are met:

- The other party’s machine must be set up to respond to the confirmation request.
- The other party’s machine must support MDN (Message Disposition Notification).



IFAXD920.WMF

Handling Mail

Handling Mail on the Send Side

When mail is sent, a “Disposition Notification To” notation is included in the header as a request for confirmation that the mail was received.

```
X-Mozilla Status              :  0001
X-Mozilla Status2             :  00000000
Message-ID                    :  <3A23379A.81BE0ABD@dom1g.ricoh.co.jp>
Disposition-Notification-To   :  T.Suzuki <s_tadashi@dom1g.ricoh.co.jp>
Date                          :  Tue, 28 Nov 2000 13:4203 +0900
From                          :  T.Suzuki <s_tadashi@dom1g.ricoh.co.jp>
X-Mailer                      :  Mozilla 4.73 [ja]C-CCK-MCD BDP jm-Sony 3
                                 (Win95: U)
X-Accept-Language             :  ja
MIME-Version                  :  1.0
To                            :  fuser_01@dom1g.ricoh.co.jp
Subject                       :  Mail Request for Reception Confirmation
Content-Type                  :  text/plain: charset=iso-2022-jp
Content-Transfer-Encoding     :  7bit
```


Handling Mail on the Receive Side

```
   Return Path: <>
Received              :    From fuser_01 ([133.139.157.20]) by dom1g.ricoh.co.jp (post
                           office MTA V1.9.3 ID# 0100110-37392) with SMTP id AAA163
                           for<S_tadasi@dom1g.ricoh.co.jp>
Date                  :    28 Nov 2000 13:4236 +0900
X-Mailer              :    ICFAX Version 1.0
MIME-Version          :    1.0
Content-Type          :    multipart/report: report-type=disposition-notification:
                           boundary="—ICFAX_000000EF48—"
To                    :    T.Suzuki <s_tadashi@dom1g.ricoh.co.jp>
Message-ID            :    <20001128133423664.ICFAX-XFC9BE-X26986@133.139.157.20]>
From                  :    fuser_01@dom1g.ricoh.co.jp
Subject               :    From @81454771459"("RICOH GTS)(Return Receipt)(dispatched)
X-Mozilla-status      :    8001
X-Mozilla-Status2     :    00000000
X-UIDL                :    20001128044713447.AAA163@fuser_01

This is a Return Receipt for the mail that you sent to "fuser_01@dom1g.ricoh.co.jp"
Final Receipt: rfc822:fuser_01#dom1g.ricoh.co.jp
Original Message ID: <3A23379A.81BE0ABD@dom1g.ricoh.co.jp
Disposition: automatic action/MDN-send-automatically: dispatched       Respond Mail Text
```

Setting up the Receiving Party

The receiving party will respond to the confirmation request if:

1) The “Disposition Notification To” field is in the received mail header (automatically inserted in the 4th line in the upper table on the previous page, if MDN is enabled), and
2) Sending the disposition notification must be enabled (User Parameter Setting SW21 (15 [H]) Bit 1 for this model). The content of the response is as follows:

Normal reception:	“Return Receipt (dispatched)” in the Subject line
IFAX SW02 (Bit 2, 3)	“Return Receipt (displayed)” in the Subject line
Error:	“Return Receipt (processed/error)” in the Subject line

Handling Reports

1. Sending a Request for a Return Receipt by Mail

   After the mail sender transmits a request for a return receipt, the mail sender’s journal is annotated with two hyphens (--) in the Result column and a “Q” in the Mode column.

2. Mail Receipt (Request for Receipt Confirmation) and Sending Mail Receipt Response

   After the mail receiver sends a response to the request for a return receipt, the mail receiver’s journal is annotated with two hyphens (--) in the Result column and an “A” in the Mode column.

3. Receiving the Return Receipt Mail
   - After the mail sender receives a return receipt, the information in the mail sender’s journal about the receipt request is replaced, i.e. the journal is annotated with “OK” in the Result column.
   - When the return receipt reports an error, the journal is annotated with an “E” in the Result column.
   - The arrival of the return receipt is not recorded in the journal as a separate communication. Its arrival is only reported by the presence of “OK” or “E” in the Result column.
   - If the mail address used by the sender specifies a mailing list (i.e., a Group destination; the machine sends the mail to more than one location. See “How to set up Mail Delivery”), the Result column of the Journal is updated every time a return receipt is received. For example, if the mailing list was to 5 destinations, the Result column indicates the result of the communication with the 5th destination only. The results of the communications to the first 4 destinations are not shown.
     Exceptions:
     If one of the communications had an error, the Result column will indicate E, even if subsequent communications were OK.
     If two of the communications had an error, the Journal will indicate the destination for the first error only.

Report Sample

DATE	TIME	ADDRESS	MODE	TIME	PAGE	RESULT
MAY. 5	10:15	fuser_01@dom1g. ricoh. co.	Mail SM	0'09"	2	--
	10:16	fuser_01@dom1g. ricoh. co.	Mail SMQ	0'05"	1	--
	10:17	s_tadashi@dom1g. ricoh. co.	Mail SMQ	0'09"	2	OK
	10:19	m_masataka@dom1g. ricoh. co.	Mail SMA	0'05"	1	--

IFAXD921.WMF

4.4 T.37 FULL MODE

4.4.1 OVERVIEW

Model K-C2 supports the T.37 Full Mode. The T.37 Full Mode provides the following functions:

- The local machine registers the features of remote machines to the address book. (☛ 4.4.2)
- The local machine, referencing the registered features, sends appropriate data to remote machines. The "appropriate data" here includes the request for receipt notification. (☛ 4.4.3)
- The local machine sends the receipt notification that includes the feature report of the local machine. (☛ 4.4.4)
- The local machine receives receipt notifications (from remote machines) that include the feature reports of the remote machines. The local machine interprets the feature reports and registers the features to the address book. (☛ 4.4.5)

4.4.2 REGISTERING REMOTE MACHINE FEATURE

The local machine registers the following features of remote machines:

- Paper width: A4/B4/A3
- Resolution: 200 x 100/200 x 200/200 x 400
- Data compression: MH/MR/MMR

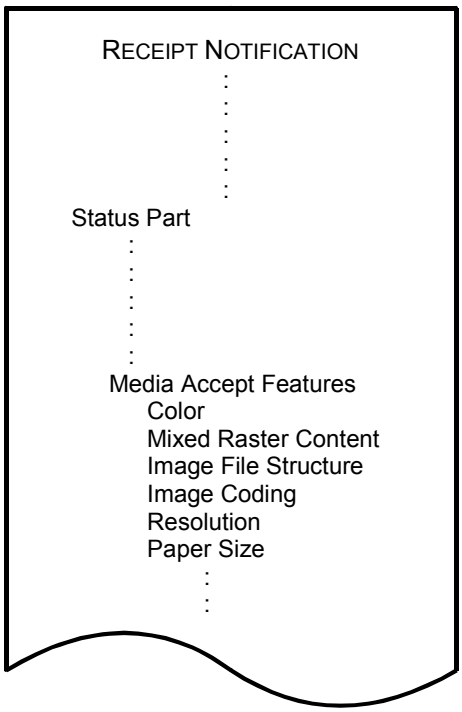
As default, the features of remote machines are registered as follows: A4, 200 x 100/200 x 200, MH. You cannot manually register any feature that is inconsistent with the default (☛ "Error Handling" in section 4.4.5).

4.4.3 SENDING DATA AND REQUEST

The local machine, before sending data, references the registered feature of the remote machine and converts the data into an appropriate format. The local machine sends the request for receipt notification with the data.

4.4.4 SENDING RECEIPT NOTIFICATION AND FEATURE REPORT

Remote machines can send (to the local machine) data with the request for receipt notification. When receiving a request, the local machine sends receipt notification. The receipt notification includes the Status Part that contains the Media Accept Features field. The Media Accept Features field describes the feature of the local machine as follows:



1. Color: Black-and-white data is supported. Color data is not supported.
2. Mixed Raster Content (MRC): MRC is not supported.
3. Image File Structure: TIFF-minimal data is supported. Other structures are not supported.
4. Image Coding: The MH (Modified Huffman), MR (Modified Read), and MMR (Modified MR) methods are supported. The JBIG (Joint Bi-Level Image Expert Group) method is not supported.
5. Resolution: 200 x 100, 200, 200 x 400, and 400 dpi are supported. (200 x 400 and 400 dpi can be restricted by environment.)
6. Paper Size: A4, B4, A3, Letter, and Legal are supported. (Paper size can be affected by status of paper trays.)
7. User Agent Media: Availability of cut paper is indicated.

Shown below is an example of the Media Accept Features field.

```
(&(image-file-structure=TIFF-minimal)
  (MRC-mode=0)
  (color=Binary)
  (image-coding=[MH,MR,MMR])
  (|  (&  (dpi=200) (dpi-xyratio=[200/100,1,200/400])  )
      (&  (dpi=400) (dpi-xyratio=1)  )  )
  (size-x<=2970/254)
  (paper-size=[A4,B4,A3,letter,legal])
  (ua-media=stationery)
)
```

4.4.5 INTERPRETING FEATURE REPORT

Error Handling

When receiving a feature report, the local machine interprets the seven entries of the Media Accept Features field (☛4.4.4). The local machine, if having detected an error in an entry, registers the error code. The data in this entry is ignored. Some examples of errors are as follows:

- A syntax error is detected.
- An unknown parameter (including typographic errors) is detected.
- Image Coding, Resolution, and Paper Size are not defined.
- The entries inconsistent with the default (☛ 4.4.2) are regarded as errors.

Exception Handling

If one or two of Image Coding, Resolution, and Paper Size are not defined (if only one or two of them are defined), the local machine registers the defined parameters. Undefined parameters are set to the default (☛ 4.4.2).

If multiple combinations are defined for Image Coding, Resolution, and Paper Size (for example, "200/400 dpi for A4" and "200 dpi for A3"), the local machine interprets them in the following order:

1) Paper Size: The local machine regards all paper sizes as supported.
2) Resolution: The local machine regards the common parameters as supported. In the case of the above example ("200/400 dpi for A4" and "200 dpi for A3"), "200 dpi" is regarded as supported.
3) Image Coding: The local machine regards the common parameters as supported.

SPECIFICATIONS

1. IFAX SPECIFICATIONS

Type
Fax Unit and Printer/Scanner Unit

Connectivity
Local area network
Ethernet 100base-Tx/10base-T

Connection
100base-Tx/10base-T direct connection

Resolution
Main scan: 200 dpi
Sub scan: 400 dpi, 200 dpi, 100 dpi

NOTE: To use 200 x 400 dpi, IFAX SW01 Bit 2 must be set to "1."

Transmission Time
1 s (through a LAN to the server)
Condition: ITU-T #1 test document (Selerexe Letter)
MTF correction: OFF
TTI: None
Resolution: 200 x 100 dpi
Communication speed: 10 Mbps
Correspondent device: E-mail server
Line conditions: No terminal access

Document Size
Maximum message width is A4/LT.
Note: To use B4 and A3 width, IFAX SW00 Bit 1 (B4) and/or Bit 2 (A3) must be set to “1”.

E-mail File Format
Single/multi-part
MIME conversion
Image: TIFF-F (MH) format only

Protocol
(Supported by TCP/IP protocol)
Transmission:
IETF RFC821 SMTP procedure
Reception:
IETF RFC1725 POP3 procedure
IETF RFC2026 IMAP4 procedure

Data rate
100 Mbps(100base-Tx)
10 Mbps (10base-T)