RICOH

TECHNICAL BULLETIN

Model: FR6	Date: 31-Oct-97	No: 001	1/35
Subject: New Model FR6 Release		Prepared by: K. Misugi	
From: Technical Service Department		Checked by: S. Fujii	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

The new model FR6 (FAX3800L) has been released as a successor model to the FX6 (FAX2700L).

This technical bulletin contains information on differences between the FR6 and the FX6. They are listed in order of sections that appear in the service manual.

1. OVERALL MACHINE INFORMATION

1.1. SPECIFICATIONS

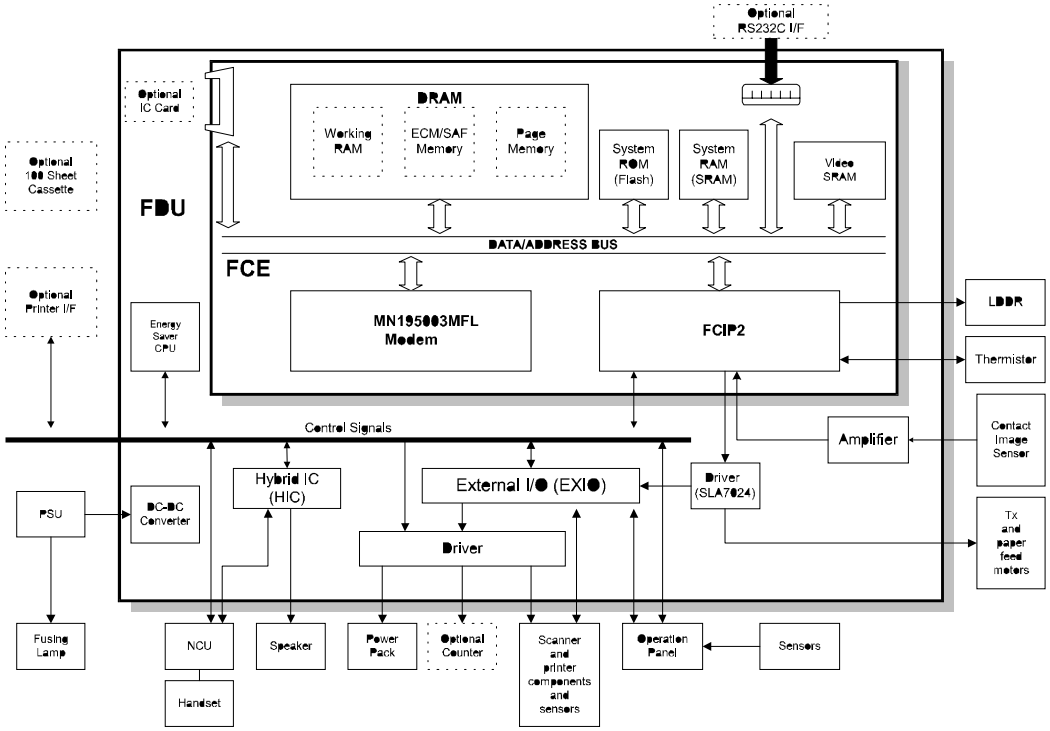
Item	FX6	FR6
Maximum Scan Width	216 mm [8.5 ins] ± 0.25%	256 mm [10 ins] ± 0.25% (Effective Scan Width: 250 mm [9.8 ins])
Memory Capacity (SAF)	244 kbytes (19 pages/ITU-T #1 Chart)	0.5 Mbyte (40 pages/ITU-T #1 Chart) With 1 Mbyte memory card:120 pages With 2 Mbytes memory card: 200 pages With 4 Mbytes memory card: 360 pages
Compression	MH, MR, EFC, MMR, SSC	MH, MR, MMR, SSC
Modulation	V.29, V.27, V.21	V.34, V.17, V.29, V.27ter, V.21
Data Rate	9,600/7,200/4,800/2,400 bps	33,600/31,200/28,800/26,400/ 24,000/21,600/19,200/16,800/ 14,400/12,000/9,600/7,200/4,800/ 2,400 bps Automatically adjusted in accordance with V.34, Automatic fallback to V.17, V.29, V.27ter
Transmission Time	9 s at 9600 bps; G3 ECM, ITU-T # 1 Chart, STD	3 s at 28,800 bps: G3 ECM, ITU-T # 1 Chart, STD
Paper Feed Unit	Not Available	Optional Paper Feed Unit Available (500 sheets, Letter, Legal)

1.2. FEATURES

The following features are available.

Features	FX6	FR6
Confidential Reception	Available with memory card	Standard
Batch Transmission	Available with memory card	Standard
Economy Transmission	Not available	Standard
Forwarding	Available with memory card	Standard
Personal codes with Conf. ID	Available with memory card	Standard
Transmission Deadline (TRD)	Available with memory card	Standard
Two in one	Not available	Available
Checkered mark	Not available	Available
Confidential ID	Available with memory card	Standard
Memory Lock (ID)	Available with memory card	Standard
Multi-Sort Document Reception	Available with memory card	Standard
Reverse Order Printing	Available with memory card	Standard
User Function Keys	Not available	Available (2 keys)
Confidential File Report	Available with memory card	Standard

1.4. OVERALL MACHINE CONTROL



The FCE contains the FCIP2, DRAM, SRAM, System ROM, MN195003MFL modem, and video processing memory. It controls the entire system through the FDU.

The FCIP2 does not contain the modem block. The Panasonic MN195003MFL modem is used for all the communications (V.34, V.17, V.29, V.27ter., and V.21).

The 2 MB DRAM contains the SAF memory, ECM buffer memory, work area, and page memory. The SAF memory can be extended by 1, 2 or 4 Mbytes with an IC card option. A 1 MB (8 Mbit) flash ROM is used for the system ROM.

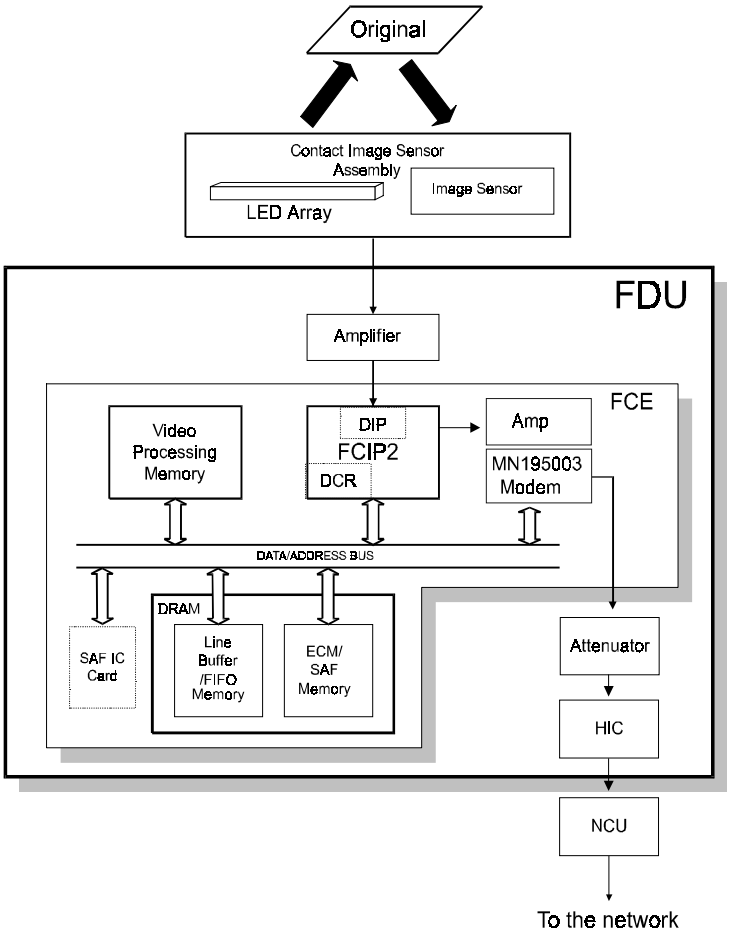
The FR6 uses two CPUs in the same way as the FX6. These are the main CPU in the FCIP2 and the power saver CPU which is used during the 2 W power saver mode.

The main differences in PCB components between the FR6 and the FX6 are listed below.

	FX6	FR6
FCE	FCIP used	FCIP2 used (The FCIP2 is used in common with the LFO.)
	Rockwell R144EFXL modem used.	Panasonic MN195003MFL modem used.
	512 kB (4 Mbit) flash ROM used.	1 MB (8 Mbit) flash ROM used.
	1 MB DRAM used.	2 MB DRAM used.
FDU	FPD motor driver used.	SLA7024M motor driver used.

1.5. VIDEO DATA PATH

1.5.1 Transmission



Immediate Transmission:

Scanned data from the CIS passes to the DIP block in the FCIP2. After analog/digital video processing, the DCR block compresses the data for transmission. The compressed data then passes either to the FIFO memory or to the ECM memory before it is sent through the modem. The MN195003 modem is used for all the communications.

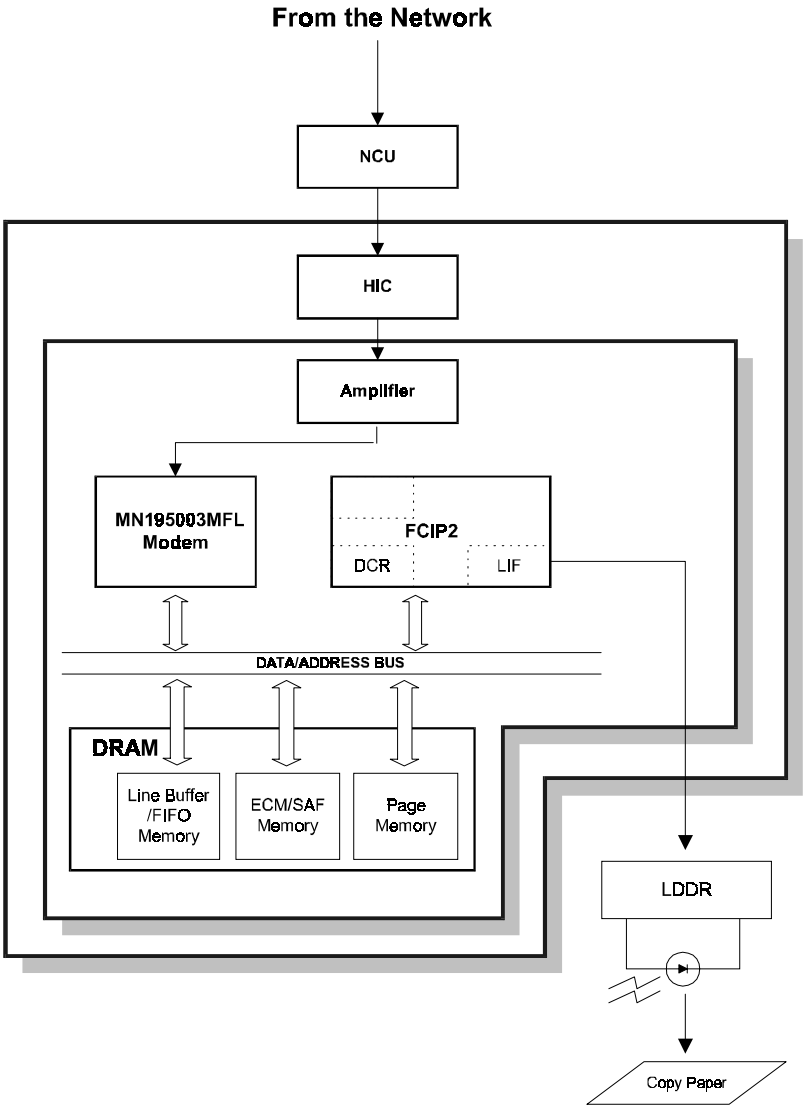
Memory Transmission:

The scanned data is stored in the SAF memory after compression in the DCR block.
At the time for transmission, the DCR block decompresses the data from the SAF memory, then compresses it again after handshaking with the other terminal is done. The compressed data then passes either to the FIFO memory or to the ECM memory, before it is sent.

Parallel Memory Transmission:

This feature allows the machine to scan a document into the SAF memory and send the same document simultaneously.
The machine stores the processed video data in the SAF memory and sends the data through the modem at the same time.

1.5.2. Reception



Data from the line passes to the modem through the NCU and hybrid IC. After the modem demodulates the data, the decompressed data passes to the DCR block, through either the FIFO or the ECM memory, where the data is decompressed to raster image data. At the same time, the compressed data passes to the SAF memory as a backup in case of mechanical problems during printing (substitute reception).

The raster image data is then passed to the page memory for printing. After a page of data has been stored in the page memory, the data is sent to the LDDR through the LIF block.

2. DETAILED SECTION DESCRIPTIONS

2.3. SYSTEM FEATURES

2.3.2. Automatic Service Calls

The following RAM addresses are different from the FX6.

2. Excessive Jam Alarms

Parameters	Address (H)		Initial Settings	Sys. Para. List
	ADF	Printer		
DEC (1 - 255; 0 = Disabled)	8001F5	8001F9	10 (H)	X
CALL (3 - 15; 0 = Disabled)	8001F6	8001FA	06 (H)	Y
CLR **(Low)**	8001F7	8001FB	30 (H)	–
(High)	8001F8	8001FC	00 (H)	

Counters	Address (H)		Sys. Para. List
	ADF	Printer	
JAM: Jam counter used to place a service call	8001EE	8001F2	Z
NO-JAM1: Counter used for JAM counter decrement	8001ED	8001F1	–
NO-JAM2: Counter used for clearing the JAM counter	8001EF (Low)	8001F3 (Low)	–
	8001F0 (High)	8001F4 (High)	

3. Periodic Service Call

Parameters		Address (H)
Call interval: 01 through 15 month(s) (BCD) 00: Periodic Service Call Disabled		800266
Date and time of the next call		
	Year: last two digits of the year (BCD)	800267
	Month: 01 through 12 (BCD)	800268
	Day: 01 through 31 (BCD)	800269
	Hour: 00 through 23 (BCD)	80026A

4. PM Call

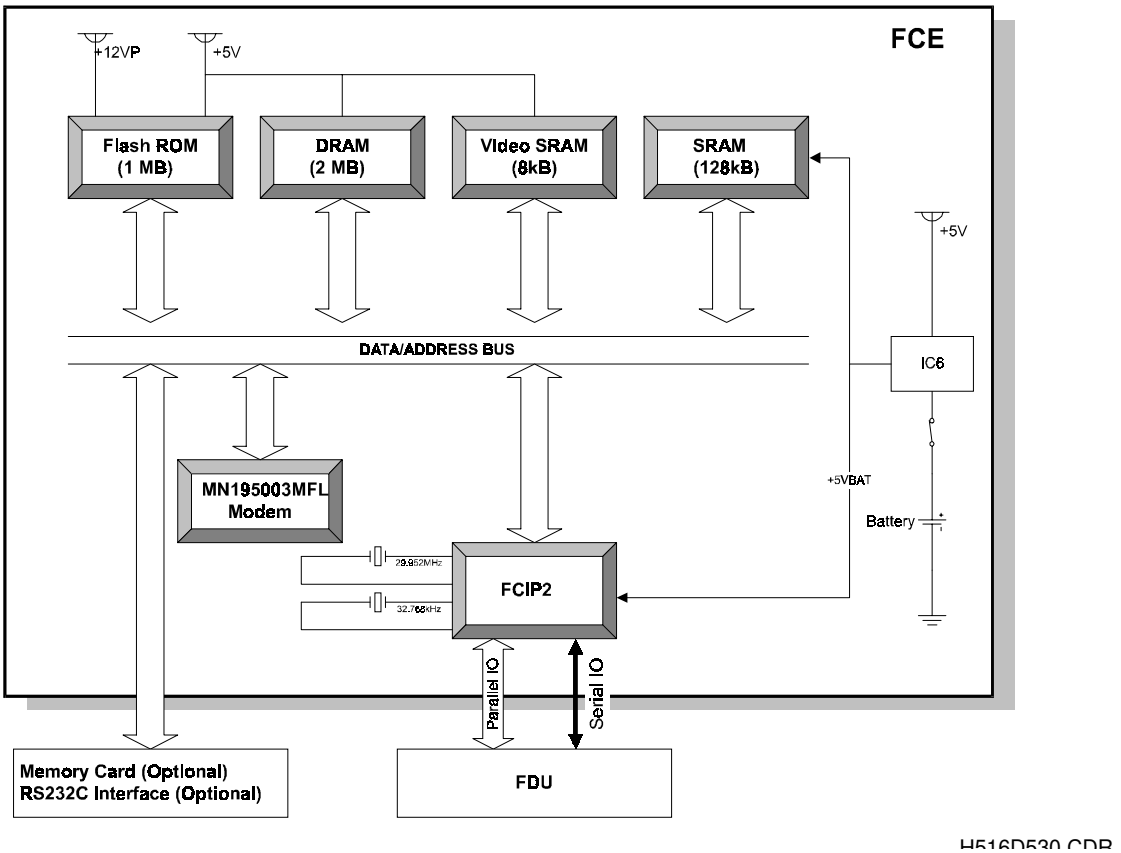
Address (H)	Bits 7 - 4	Bits 3 - 0
80019A	Tens	Units
80019B	Thousands	Hundreds
80019C	Hundred thousands	Ten thousands

5. Effective Term of Service Calls

	Address (H)
Year: last two digits of the year (BCD)	800271
Month: 01 through 12 (BCD)	800272
Day: 01 through 31 (BCD)	800273

2.4. PCBs

2.4.1. FCE



1. **FCIP2 (Facsimile Controller and Image Processor)**
   - CPU
   - Data compression and reconstruction (DCR)
   - Digital image processor (DIP)
   - Laser interface (LIF)
   - DMA controller
   - Clock generation
   - Stepper motor control
   - Serial interface to the FDU
   - DRAM backup control
   - Fusing lamp control

2. **Modem (Panasonic MN195003MFL)**
   - V.34, V.17, V.29, V.27ter, V.21 modem

3. **ROM**
   - 1 MB (8 Mbit) flash ROM for system software storage.

4. DRAM

- 2 MB DRAM shared between the Line Buffer (32 kB), ECM Buffer (128 kB), Page Memory (768 kB), SAF memory (512 kB), and working area.
- Backed up by the battery on the FDU.

5. SRAM

- 128 kB SRAM for system and user parameter storage.
- Backed up by the battery on the FCE.

6. Video SRAM

- 8 kB SRAM for video processing.

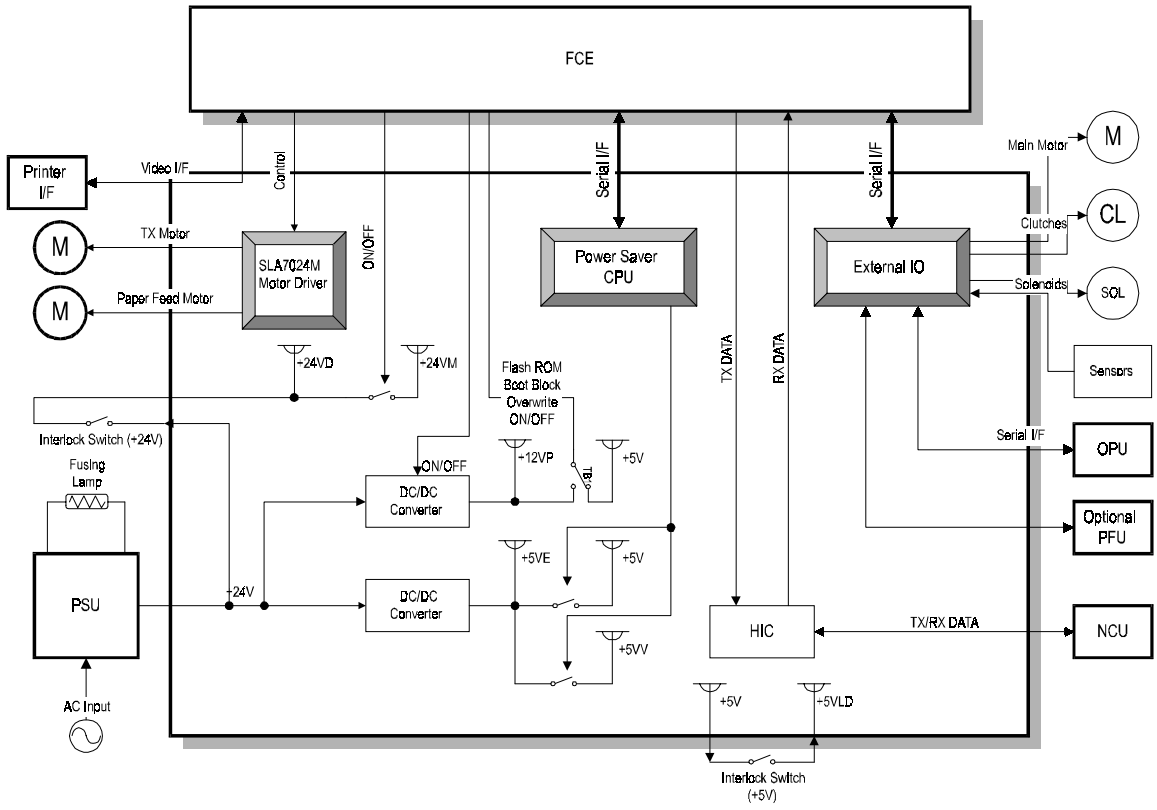
7. Oscillators

- 29.952 MHz oscillator for system clock generation.
- 32.768 MHz oscillator for the real time clock. This is backed up by the battery on the FCE.
- 24.192 MHz oscillator for the MN195003MFL modem.

8. Jumpers, Switches, and Test Points

Item	Description
SW1	Switches the backup battery ON/OFF

2.4.2. FDU



H516D531.CDR

1. **Power Saver CPU**
   - 4-bit CPU for controlling the machine during power saver mode

2. **DC/DC Converters**
   - +5V generation
   - +12V generation

3. **Motor Driver (SLA7024M)**
   - Stepper motor driver

4. **EXIO (External I/O)**
   - Serial interface to the FCE and OPU
   - Serial interface to an optional paper feed unit
   - Parallel interface to the main motor, clutches, and sensors

5. **HIC (Hybrid IC)**
   - 2-4 wire switching
   - Filters and amplifiers
   - Monitor speaker driver

6. Interlock Switches

- The fusing unit interlock switch (+24V) disables the power supply to the drive components and the power pack.
- The fusing unit interlock switch (+5V) disables the laser diode power.

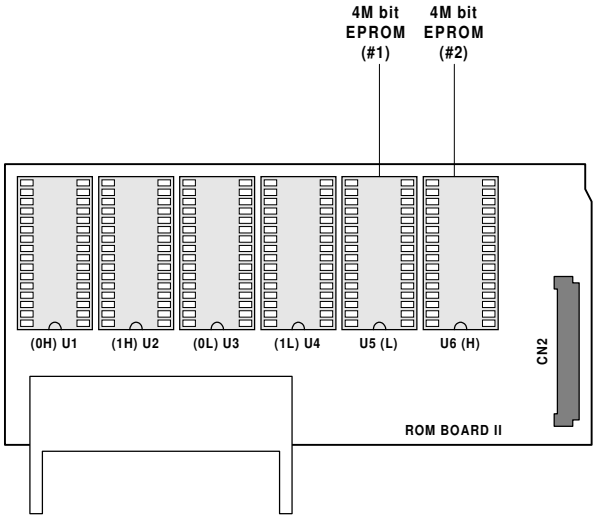
4. SERVICE TABLES AND PROCEDURES

4.1. SERVICE LEVEL FUNCTIONS

4.1.20. Software Download (Function 12)

This function copies software from an external medium to the Flash ROM on the machine's FCE. The procedures to download the software are the same as for the FX6 series.
However, if you are using the EPROM board, you must mount two 4-Mbit EPROMs because this machine uses an 8-Mbit EPROM on the FCE.

NOTE: The Flash/SRAM data copy board which is used in common with the ADAM and LFO (P/N: A1939351) must be used for this procedure.



Data Copy Board P/N: A1939351

Mount the 4-Mbit EPROM #1 in the ROM socket U5 (L) and the 4-Mbit EPROM # 2 in the ROM socket U6 (H) as shown.

It is not necessary to change the jumper at TB1 on the FCU or change system bit switch 02 bit 5 for this machine.

4.2. BIT SWITCHES

RAM Reset Level 1:

The address for RAM reset level 1 has been changed to 800005(H).
Change the data to FF(H), then turn the machine off and on to reset all the system settings.

Communication Parameters

Mode	DCS: ITU-T standard	NSS: Non-standard G3
Modem rate	336: 33,600 bps 312: 31,200 bps 288: 28,800 bps 264: 26,400 bps 240: 24,000 bps 216: 21,600 bps 192: 19,200 bps	168: 16,800 bps 144: 14,400 bps 120: 12,000 bps 96: 9,600 bps 72: 7,200 bps 48: 4,800 bps 24: 2,400 bps
Communication mode	ECM: With ECM SSC: Using SSC NML: With no ECM or SSC	
Compression mode	MMR: MMR compression MR: MR compression MH: MH compression	
Resolution	SSF: Fine, transmitted at 8 x 15.4 dots per mm DTL: Detail, transmitted at 8 x 7.7 dots per mm STD: Standard, transmitted at 8 x 3.85 dots per mm	
I/O rate	0M: 0 ms/line 2/M: 2.5 ms/line 5M: 5 ms/line	10M: 10 ms/line 20M: 20 ms/line 40M: 40 ms/line
Width and reduction	=A4: A4 (8.3"), no reduction =B4: B4 (10.1") no reduction A4: Reduced to A4 (8.3") before transmission	

System Switch 02		
No	**FUNCTION**	**COMMENTS**
5	Not used	Do not change the settings.

System Switch 06		
No	**FUNCTION**	**COMMENTS**
5	PC Fax Expander Function 0: Disabled 1: Enabled	1: Set this bit to 1 when the PC Fax Expander option has been installed.

System Switch 10		
No	**FUNCTION**	**COMMENTS**
0 to 7	Threshold memory level of parallel memory transmission	Threshold memory = N × 64 kbytes + 256 kbytes N can be between 00 - FF(H) Default setting: 04(H) = 512 kbyte

System Switch 11		
No	**FUNCTION**	**COMMENTS**
6	Conditions for memory reception if no RTI or CSI is received 0: Allow memory reception only when RTI or CSI is received 1: Allow memory reception only when RTI or CSI is received and a printer (mechanical) error has occurred	This switch functions in combination with user parameter switch 05 bit 1. User parameter switch 05 bit 1 must be set to 1 to enable this switch. User parameter switch 05 bit 1: Switch to allow memory reception if no RTI or CSI is received. 0: Allow memory reception for all communications 1: Reject if RTI or CSI is not received

System Switch 17		
No	**FUNCTION**	**COMMENTS**
6	Dialing without inserting a document 0: Disabled 1: Enabled	0: Dialing cannot be done without inserting a document in the ADF.

Printer Switch 02		
No	**FUNCTION**	**COMMENTS**
0	Paper Feed Priority **0:** Optional paper feed unit >> 100-sheet cassette >> Standard cassette **1:** Optional paper feed unit >> Standard cassette >> 100-sheet cassette	This bit determines which set of priorities the machine uses for feeding the paper when all the cassettes contain the same paper size.

Communication Switch 01		
No	**FUNCTION**	**COMMENTS**
1	Not used	Do not change the settings.

Communication Switch 17		
No	**FUNCTION**	**COMMENTS**
0	Selective Polling Reception 0: Disabled 1: Enabled	1: Selective polling reception (SEP) is disabled.
1	Subaddress function (RX) 0: Disabled 1: Enabled	1: Subaddress reception is disabled.

G3 Switch 03		
No	**FUNCTION**	**COMMENTS**
2	Use of V.8 protocol 0: Disabled 1: Enabled	1: V.8 protocol is disabled.

G3 Switch 05		
	FUNCTION	**COMMENTS**
0 to 3	Initial Tx modem rate **Bit 3 2 1 0 Setting (bps)** 0 0 0 1 2.4k 0 0 1 0 4.8k 0 0 1 1 7.2k 0 1 0 0 9.6k 0 1 0 1 12.0k 0 1 1 0 14.4k 0 1 1 1 16.8k 1 0 0 0 19.2k 1 0 0 1 21.6k 1 0 1 0 24.0k 1 0 1 1 26.4k 1 1 0 0 28.8k 1 1 0 1 31.2k 1 1 1 0 33.6k 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.
4 to 5	Initial modem type for 9.6k or 7.2kbps (transmission) **Bit 5 Bit 4 Setting** 0 0 V.29 0 1 V.17 1 0 Not used 1 1 Not used	These bits set the initial modem type for 9.6k and 7.2kbps, if the initial modem rate is set at these speeds.

G3 Switch 06		
	FUNCTION	**COMMENTS**
0 to 3	Initial Rx modem rate **Bit 3 2 1 0 Setting (bps)** 0 0 0 1 2.4k 0 0 1 0 4.8k 0 0 1 1 7.2k 0 1 0 0 9.6k 0 1 0 1 12.0k 0 1 1 0 14.4k 0 1 1 1 16.8k 1 0 0 0 19.2k 1 0 0 1 21.6k 1 0 1 0 24.0k 1 0 1 1 26.4k 1 1 0 0 28.8k 1 1 0 1 31.2k 1 1 1 0 33.6k Other settings - Not used	The setting of these bits is used to inform the transmitting terminal of the available modem rate for the machine in receive mode. Use a lower setting if high speeds pose problems during reception.

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 Not used 0 1 0 0 V.27ter, V.29, V.17, 0 1 0 1 V.27ter, V.29, V.17, 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.

4.5. SERVICE RAM ADDRESSES

The complete RAM addresses are listed because there are too many changes from the FX6.

800005(H) - RAM Reset Level 1
Change the data at this address to FF (H), then switch the machine off and on to reset all the system settings.
Caution: Before using this RAM, print the settings of all the system parameters (System Parameter List).

800001 to 800004(H) - ROM version (Read only)
800001(H) - Revision number (BCD)
800002(H) - Year (BCD)
800003(H) - Month (BCD)
800004(H) - Day (BCD)

800006 to 800016(H) - Machine's serial number (17 digits - ASCII)

800018(H) - Total program checksum (low)
800019(H) - Total program checksum (high)

80001A(H) - Boot program checksum (low)
80001B(H) - Boot program checksum (high)

80001C(H) - Main program checksum (low)
80001D(H) - Main program checksum (high)

80001E(H) - RDS program update counter (hex)

800020 to 80003F(H) - System bit switches
800040 to 80004F(H) - Scanner bit switches
800050 to 80005F(H) - Printer bit switches
800060 to 80007F(H) - Communication bit switches
800080 to 80008F(H) - G3 bit switches

8000A0(H) - User parameter switch 00
Bit 0: Stamp home position — 0: Disabled, 1: Enabled
Bits 1 and 2: Scanning contrast home position

Bit 2	1	Setting
0	0	Normal
0	1	Lighten
1	0	Darken

Bit 3: Do not adjust
Bits 4 and 5: Scanning resolution home position

Bit 5	4	Setting
0	0	Standard
0	1	Detail
1	0	Fine

Bit 6: Transmission mode home position — 0: Memory tx, 1: Immediate tx
Bit 7: Halftone home position — 0: Disabled, 1: Enabled

8000A1(H) - User parameter switch 01
Bits 0 to 6: Not used
Bit 7: Settings return to home position after transmission 0: Disabled , 1: Enabled

8000A2(H) - User parameter switch 02
Bit 0: Forwarding mark printing on forwarded messages 0: Disabled, 1: Enabled
Bit 1: Center mark printing on received copies 0: Disabled, 1: Enabled
Bit 2: Reception time printing 0: Disabled, 1: Enabled
Bit 3: TSI included in transmitted messages 0: Disabled, 1: Enabled
Bit 4: Checkered mark printing 0: Disabled, 1: Enabled
Bits 5 to 7: Not used

8000A3(H) - User parameter switch 03 (Automatic report printout)
Bit 0: Transmission result report (memory transmissions) 0: Off, 1: On
Bit 1: Not used
Bit 2: Memory storage report 0: Off, 1: On
Bit 3: Polling reserve report (polling reception) 0: Off, 1: On
Bit 4: Polling result report (polling reception) 0: Off, 1: On
Bit 5: Transmission result report (immediate transmissions) 0: Off, 1: On
Bit 6: Polling clear report 0: Off, 1: On
Bit 7: TCR (Journal) 0: Off, 1: On

8000A4(H) - User parameter switch 04
Bit 0: Automatic confidential reception report output 0: Off, 1: On
Bits 1 to 6: Not used
Bit 7: Inclusion of a sample image on reports 0: Off, 1: On

8000A5(H) - User parameter switch 05
Bit 0: Substitute reception 0: Off, 1: On
Bit 1: Memory reception if no RTI or CSI received 0: Possible, 1: Impossible
Bits 2 and 3: Not used
Bit 4: Restricted Access 0: Off, 1: On
Bit 5: Not used (keep this bit at 0.)
Bit 6: Fusing lamp control during energy saver mode
0: Lamp off, 1: Standby temperature (80 °C)
Bit 7: Not used (keep this bit at 0.)

8000A6(H) - User parameter switch 06
Bit 0: TTI 0: Off, 1: On
Bit 1: Not used
Bit 2: Closed network for transmission 0: Off, 1: On
Bit 3: Not used
Bit 4: Batch transmission 0: Off, 1: On
Bits 5 to 7: Not used

8000A7(H) - User parameter switch 07

Bits 0 to 2: Not used
Bit 3: Automatic reduction (B4 ->> A4) before transmission 0: Off, 1: On
Bits 4 to 7: Not used

8000A8(H) - User parameter switch 08

Bit 0 and 1: Multi-copy reception

Bit 1	0	Setting
X	0	Disabled
0	1	Faxes from senders whose RTIs/CSIs are specified for this feature are multi-copied.
1	1	Faxes from senders whose RTIs/CSIs are not specified for this feature are multicopied.

Bits 2 and 3: Authorized reception

Bit 3	2	Setting
X	0	Disabled
0	1	Faxes from senders whose RTIs/CSIs are specified for this feature are accepted.
1	1	Faxes from senders whose RTIs/CSIs are not specified for this feature are accepted.

Bits 4 and 5: Specified cassette selection (optional PFU required)

Bit 3	2	Setting
X	0	Disabled
0	1	Faxes from senders whose RTIs/CSIs are specified for this feature are printed to the paper in a specified cassette.
1	1	Faxes from senders whose RTIs/CSIs are not specified for this feature are printed to the paper in a specified cassette.

Bits 6 and 7: Forwarding

Bit 1	0	Setting
X	0	Disabled
0	1	Faxes from senders whose RTIs/CSIs are specified for this feature are forwarded.
1	1	Faxes from senders whose RTIs/CSIs are not specified for this feature are forwarded.

8000A9(H) - User parameter switch 09

Bits 0 and 1: Memory lock (optional memory card required)

Bit 1	0	Setting
X	0	Disabled
0	1	Faxes from senders whose RTIs/CSIs are specified are kept in the memory until a memory lock ID is entered.
1	1	Faxes from senders whose RTIs/CSIs are not specified are kept in the memory until a memory lock ID is entered.

Bits 2 to 7: Not used

8000AA(H) - User parameter switch 10

Bit 0: Reverse order printing — 0: Disabled, 1: Enabled

Bit 1: Two in 1 (printing two Half-letter (A5) messages onto one Letter (A4) paper) — 0: Disabled, 1: Enabled

Bits 2 to 6: Not used

Bit 7: Halftone type — 0: Error diffusion, 1: Dither

8000AB(H) - User parameter switch 11

Bits 0 to 5: Not used

Bit 6: Printout of messages received while acting as a forwarding station — 0: Off, 1: On

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

8000AC(H) - User parameter switch 12

Bits 0 and 1: Not used

Bit 2: Toner saving mode — 0: Disabled, 1: Enabled

Bits 3 and 4: Printout image density (Fax mode)

Bit 4	3	Setting
0	0	Normal
0	1	Lighten
1	0	Darken
1	1	Not used

Bits 5 to 7: Not used

8000AD(H) - User parameter switch 13

Bits 0 and 1: PSTN access method from behind PABX

Bit 1	0	Setting
0	0	PSTN
0	1	Loop start
1	0	Ground start
1	1	Flash start

Bits 2 to 7: Not used

8000AE - 8000AF(H) - User parameter 14 to 15

Not used

8000B9(H) - User function 62 settings

Bit 0: Night timer — 0: Disabled, 1: Enabled

Bits 1 to 3: Not used

Bit 4: RDS operation — 0: Not acceptable
1: Acceptable for the limit specified by system switch 03

Bits 5 and 6: Not used

Bit 7: Daylight saving time — 0: Disabled, 1: Enabled

8000BA(H) - User function 62 settings

Bit 0: Not used

Bit 1: Dialing type — 0: Pulse dialing (10 pps), 1: Tone (DTMF) dialing

Bits 2 to 7: Not used

8000BB(H) - PSTN access number for loop start

Access number	Hex value to program (BCD)
0	F0
⇩	⇩
0	F0
00	00
⇩	⇩
99	99

8000C8 to 8000DB(H) - RTI (Max. 20 characters - ASCII) - **Note 1**
8000DC to 8000EF(H) - CSI (Max. 20 characters - ASCII)
8000F0 to 80010F(H) - TTI (Max. 32 characters - ASCII) - **Note 1**
800110(H) - Number of CSI characters (Hex)

Note 1: If the number of characters are less than the maximum (20 for RTI, 32 for TTI), add a stop code (FF[H]) after the last character.

800111 to 80011F(H) - Service station's fax number (Service function 13)

800120 to 80012E(H) - Own fax number (User function 61)

80012F(H) - ID code (low - Hex)
800130(H) - ID code (high - Hex)

800131(H) - Confidential ID (low - BCD)
800132(H) - Confidential ID (high - BCD)

800133(H) - Memory lock ID (low - Hex)
800134(H) - Memory lock ID (high - Hex)

800140 to 800146(H) - Last power off time (Read only)

800140(H) - Year (BCD)
800141(H) - Month (BCD)
800142(H) - Day (BCD)
800143(H) - 00: Monday, 01: Tuesday, 02: Wednesday, ... , 06: Sunday
800144(H) - Hour
800145(H) - Minute
800146(H) - Second

800150(H) - Optional equipment (Read only)

Bit 0: Memory card 0: Not installed, 1: Installed
Bit 1-3: Not used
Bit 4: 100-sheet cassette 0: Not installed, 1: Installed
Bit 5: Paper feed unit 0: Not installed, 1: Installed
Bit 6-7: Not used

800151(H) - Optional equipment (Read only)

Bit 0: Not used
Bit 1: Printer interface 0: Not installed, 1: Installed
Bit 2-7: Not used.

The following counters are listed on the System Parameter List. The names used on the system parameter list are given in brackets

800158 to 80015A(H) - Tx counter (TX)

Address	High	Low
800158(H)	Tens digit	Unit digit
800159(H)	Thousands digit	Hundreds digit
80015A(H)	Millions digit	Ten thousands digit

Note: The following counters have the same data format as above.

80015B to 80015D(H) - Rx counter (RX)

80015E to 800160(H) - Scan counter (SCN)

800161 to 800163(H) - Print counter (PRT)

800164 to 800166(H) - Printer interface output counter (PRN)

800167 to 800169(H) - Paper feed counter: standard cassette (UPPER CASSETTE)

80016A to 80016C(H) - Paper feed counter: optional PFU (CASSETTE 2)

80016D to 80016F(H) - Paper feed counter: optional 100-sheet cassette

800170 to 800172(H) - Paper feed counter: bypass feed (BY-PASS)

800176 to 800178(H) - ADF counter (ADF)

80017C to 80017E(H) - Printer total jam counter (COPY JAM)

80017F to 800181(H) - Paper jam counter: standard cassette (UPPER CST JAM)

800182 to 800184(H) - Paper jam counter: optional PFU (CST 2 JAM)

800185 to 800187(H) - Paper jam counter: optional 100-sheet cassette (OPEN CST JAM)

800188 to 80018A(H) - Paper jam counter: bypass feed (BY-PASS)

80018B to 80018D(H) - Scanner total jam counter (DOC. JAM)

80018E to 800190(H) - Fusing exit jam counter (EJECT JAM)

800191 to 800193(H) - Registration jam counter (PAPER JAM)

800197 to 800199(H) - PM counter (PM)

80019A to 80019C(H) - PM call interval: default 60,000 (PM DEFAULT)

80019D to 80019F(H) - Copy counter (COPY)

8001A0 to 8001A2(H) - OPC (master drum) counter (PCU)

8001A3 to 8001A5(H) - OPC (master drum) replacement interval (default: 30,000 prints) The machine asks the user to replace the drum at this interval, if bit 3 of system bit switch 04 is 0.

8001A6 to 8001A8(H) - CTM counter (TONER)

8001ED to 8001FC(H) - Excessive jam call parameters

800200(H) - Number of copies in multi-sort document reception (User function 83)

800201 to 80022A(H) - Night timer period (User function 71)

800201 to 800203(H) - Setting #1 for Monday
800204 to 800206(H) - Setting #2 for Monday
800207 to 800209(H) - Setting #1 for Tuesday
80020A to 80020C(H) - Setting #2 for Tuesday
80020D to 80020F(H) - Setting #1 for Wednesday
800210 to 800212(H) - Setting #2 for Wednesday
800213 to 800215(H) - Setting #1 for Thursday
800216 to 800218(H) - Setting #2 for Thursday
800219 to 80021B(H) - Setting #1 for Friday
80021C to 80021E(H) - Setting #2 for Friday
80021F to 800221(H) - Setting #1 for Saturday
800222 to 800224(H) - Setting #2 for Saturday
800225 to 800227(H) - Setting #1 for Sunday
800228 to 80022A(H) - Setting #2 for Sunday

Program format
First byte - Hour (BCD)
Second byte - Minute (BCD)
Third byte - 00(H): Timer start time, 01(H): Timer end time

800255 to 80025B(H) - Last RDS operation (Read only)

800255(H) - Year (BCD)
800256(H) - Month (BCD)
800257(H) - Day (BCD)
800258(H) - 00: Monday, 01: Tuesday, 02: Wednesday, ... , 06: Sunday
800259(H) - Hour
80025A(H) - Minute
80025B(H) - Second

80025D(H) - Daylight saving time setting (User function 62)

800260(H) - Transmission monitor volume 00 - 07(H)
800261(H) - Reception monitor volume 00 - 07(H)
800262(H) - On-hook monitor volume 00 - 07(H)
800264(H) - Buzzer volume 00 - 07(H)
800265(H) - Key acknowledgment tone volume 00 - 07(H)

800266 to 80026A(H) - Periodic service call parameters

800271 to 800273(H) - Effective term of automatic service calls

8002B4 to 8002B5(H) - Scanning top margin adjustment
8002B6 to 8002B7 (H) - Scanning bottom margin adjustment

80036F(H) - Details of the service call (hardware error)
01(H) - The fusing lamp temperature stayed above 175 °C while printing.
02(H) - The fusing lamp temperature did not reach 150 °C before starting printing.
03(H) - The fusing lamp temperature did not go down to 100 °C while in standby mode (when fusing lamp OFF was selected for power saver mode)
04(H) - The fusing lamp temperature did not go down to 100 °C while in standby mode (when fusing lamp Standby (100 °C) was selected for power saver mode)
05(H) - The fusing lamp temperature stayed below 100 °C while in standby mode (when fusing lamp Standby (100 °C) was selected for power saver mode)
07(H) - The fusing lamp temperature came below 140 °C while printing
08(H) - The fusing lamp temperature exceeded 250 °C
09(H) - A fusing thermistor error was detected

NOTE: When a service call was caused by a fusing unit failure (codes 01 - 09): After fixing the problem, reset the data at this address to 00(H), then restart the machine to clear the service call. (Refer to address 800371(H) for other hardware failures.)

800370(H) - Excessive jam alarm
Bit 3: Scanner excessive jam alarm 1: An alarm has occurred
Bit 4: Printer excessive jam alarm 1: An alarm has occurred

NOTE: Either or both of these bits will change to 1 when an excessive jam alarm occurs. Reset each bit to 0 when you have solved the problem. The machine will not be able to detect excessive jams in future if you do not reset these bits.

800371(H) - Details of the service call (hardware error)
01(H) - The fusing lamp temperature stayed above 175 °C while printing.
02(H) - The fusing lamp temperature did not reach 150 °C before starting printing.
03(H) - The fusing lamp temperature did not go down to 100 °C while in standby mode (when fusing lamp OFF was selected for power saver mode)
04(H) - The fusing lamp temperature did not go down to 100 °C while in standby mode (when fusing lamp Standby (100 °C) was selected for power saver mode)
05(H) - The fusing lamp temperature stayed below 100 °C while in standby mode (when fusing lamp Standby (100 °C) was selected for power saver mode)
07(H) - The fusing lamp temperature came below 140 °C while printing
08(H) - The fusing lamp temperature exceeded 250 °C
09(H) - A fusing thermistor error was detected
11(H) - Charge leak current was detected while the charge corona unit was activated
12(H) - Charge leak current was detected while the charge corona unit was not activated
21(H) - The laser synchronization signal was not detected during printing
31(H) - Polygonal mirror motor startup error
32(H) - Polygonal mirror motor error during printing
41(H) - Main motor startup error
42(H) - Main motor error during printing

NOTE: When a service call was caused by a fusing lamp failure (codes 01 - 09):
The same code is stored at address 80036F(H).
After fixing the problem, reset the data at address 80036F(H) to 00(H), then restart the machine to clear the service call.

When a service call was caused by another hardware failure (codes 11 - 42):
If the problem remains after restarting the machine (power off/on), fix the hardware problem. The service call condition is cleared after power-up.

800383(H) - Print top margin (standard cassette)
800384(H) - Print top margin (optional PFU)
800385(H) - Print top margin (optional 100-sheet cassette)
800386(H) - Print top margin (bypass feeder)

800388(H) - Print left margin (standard cassette)
800389(H) - Print left margin (optional PFU)
80038A(H) - Print left margin (optional 100-sheet cassette)
80038B(H) - Print left margin (bypass feeder)

80039D(H) - Sensor status (standard cassette and internal printer mechanism)
Bit 0 to 3: Paper size sensor

Bit	3	2	1	0	Setting
	0	0	0	1	Cassette not installed
	0	0	1	0	Cassette not installed
	0	1	0	0	Letter
	0	1	0	1	Cassette not installed
	0	1	1	0	Cassette not installed
	0	1	1	1	Legal
	1	0	0	0	Cassette not installed

Bit 4: Paper end sensor — 1: Paper end
Bit 5: Registration sensor — 1: Paper present
Bit 6: Fusing exit sensor — 1: Paper present
Bit 7: Standard cassette availability — 0: Available, 1: Not available (1: Jam, paper end, etc.)

80039E(H) - Sensor status (optional PFU)
Bit 0 to 3: Paper size sensor - The settings are the same as the standard cassette.
Bit 4: Paper end sensor — 1: Paper end
Bit 5: Registration sensor — 1: Paper present
Bit 6: Not used
Bit 7: Cassette availability — 0: Available, 1: Not available (1: Jam, paper end, etc.)

80039F(H) - Sensor status (optional 100-sheet cassette)
Bit 0 to 3: Paper size sensor - The settings are the same as the standard cassette.
Bit 4: Paper end sensor 1: Paper end
Bit 5: Not used
Bit 6: Not used
Bit 7: Standard cassette availability 0: Available, 1: Not available
(1: Jam, paper end, etc.)

8003A0(H) - Sensor status (bypass feed)
Bit 0 to 3: Not used
Bit 4: Paper in the bypass feed 1: Paper not present
Bit 5: Bypass feed sensor 1: Paper present
Bit 6: Not used
Bit 7: Bypass feed availability 0: Available, 1: Not available
(1: Jam, no paper, etc.)

8003AA(H) - Initial Toner Supply
Bit 3: Initial toner supply 0: Off, 1: On
Whenever the development unit is replaced, do the following procedure.
1. Make sure that a new development unit, drum, and CTM are correctly installed.
2. Turn on the machine and change this bit to 1.
3. Turn off the machine.
4. Turn on the machine. The machine starts filling up the empty development unit hopper with new toner. (This bit is reset to zero automatically.)
5. Make test copies or test patterns to check the print quality.

803540 to 8036BF(H) - Latest 64 error codes (Read only)

One error record consists of 6 bytes of data.

First error record start address - 803540(H)
Second error record start address - 803546(H)
Third error record start address - 80355C(H)
: : :
64th error record start address - 8036BA(H)

The format is as follows:
1st byte - Minute (BCD)
2nd byte - Hour (BCD)
3rd byte - Day (BCD)
4th byte - Month (BCD)
5th byte - Error code (low) [If the error code is 1-23, 23 is stored here.]
6th byte - Error code (high) [If the error code is 1-23, 01 is stored here.]

803D46 to 803F57(H) - Latest 10 error communication records

One error communication record consists of 53 bytes. The format is as follows:

1st byte - Header
Bit 0: Communication result 0: OK, 1: NG
Bit 1: Document jam 1: Occurred
Bits 2 - 3: Not used
Bit 4: Technical data printout instead of personal codes 0: No, 1: Yes
Bit 5: Type of technical data 0: Rx level, 1: Measure of error rate
Bit 6: Error report 0: Not printed, 1: Printed
Bit 7: Data validity 0: Not valid, 1: Valid

2nd to 5th bytes - Date and time when the communication started
2nd byte - Month (BCD)
3rd byte - Day (BCD)
4th byte - Hour (BCD)
5th byte - Minute (BCD)

6th and 7th bytes - Communication time
6th byte - Minutes (BCD)
7th byte - Seconds (BCD)

8th byte - Number of pages transmitted or received (Hex)

9th and 10th bytes - Personal code or number of total/burst error lines
If bit 4 of the 1st byte is 0:
9th byte - Personal code (low - BCD)
10th byte - Personal code (high - BCD)
If bit 4 of the 1st byte is 1:
9th byte - Number of total error lines (Hex)
10th byte - Number of burst error lines (Hex)

11th byte - File number (low - Hex)
12th byte - File number (high - Hex)

13th and 14th bytes - Rx level or measure of error rate
If bit 5 of the 1st byte is 0:
13th byte - Rx level (low - Hex)
14th byte - Rx level (high - Hex)
If bit 4 of the 1st byte is 1:
13th byte - Measure of error rate (low - Hex)
14th byte - Measure of error rate (high - Hex)

15th byte - Final modem rate
Bits 0 to 3: Final modem speed

Bit 3	2	1	0	Setting (bps)
0	0	0	1	2.4k
0	0	1	0	4.8k
0	0	1	1	7.2k
0	1	0	0	9.6k
0	1	0	1	12.0k
0	1	1	0	14.4k
0	1	1	1	16.8k
1	0	0	0	19.2k
1	0	0	1	21.6k
1	0	1	0	24.0k
1	0	1	1	26.4k
1	1	0	0	28.8k
1	1	0	1	31.2k
1	1	1	0	33.6k

Bits 4 to 7: Final modem type

Bit 7	6	5	4	Setting
0	0	0	1	V.27ter
0	0	1	0	V.27ter, V.29
0	0	1	1	Not used
0	1	0	0	V.27ter, V.29, V.17,
0	1	0	1	V.27ter, V.29, V.17, V.34

Other settings - Not used

16th byte to 35th byte - Remote terminal's ID (RTI, TSI or CSI) (ASCII)

36th byte - Communication mode #1
Bits 0 - 1: Resolution used

Bit 1	0	Setting
0	1	Standard
1	0	Detail
1	1	Fine

Bit 2: Not used
Bit 3: ECM 0: Off, 1: On
Bits 4 to 7: Communication mode used

Bit 7	6	5	4	Setting
0	0	0	0	Normal
0	0	0	1	Confidential
0	0	1	0	Polling
0	0	1	1	Transfer
0	1	0	0	Forwarding
0	1	0	1	Automatic Service Call

Other settings - Not used

37th byte - Communication mode #2

Bit 0: Tx or Rx	0: Tx, 1: Rx
Bit 1: Reduction in Tx	0: Not reduced, 1: Reduced
Bit 2: Batch transmission	0: Not used, 1: Used
Bit 3: Send later transmission	0: Not used, 1: Used
Bit 4: Transmission from	0: ADF, 1: Memory

Bits 5 to 7: Not used

38th byte - Number of errors during communication (Hex)

39th to 41st byte - 1st error code and page number where the error occurred
- 39th byte - Page number where the error occurred (Hex)
- 40th byte - Error code (low - BCD)
- 41st byte - Error code (high - BCD)

42nd to 44th byte - 2nd error code and page number where the error occurred
45th to 47th byte - 3rd error code and page number where the error occurred
48th to 50th byte - 4th error code and page number where the error occurred
51tst to 53rd byte - 5th error code and page number where the error occurred

F80006 to 8000F(H) - ROM part number and suffix (ASCII)

5. REPLACEMENT AND ADJUSMENT

5.12. IMAGE ADJUSTMENT

The following RAM addresses are different from the FX6.

5.12.2 Scanner Parameters

Margins

Parameter	Description	RAM address
L1	Scanning top margin	8002B4 to 8002B5(H)
L3	Scanning bottom margin	8002B6 to 8002B7(H)

5.12.3. Printer Parameters

Margins

Parameter	Description	RAM address
W1	Print left margin	800388(H): Standard cassette
		800389(H): Optional PFU
		80038A(H): 100-sheet cassette
		80038B(H): Bypass feeder
L1	Print top margin	800383(H): Standard cassette
		800384(H): Optional PFU
		800385(H): 100-sheet cassette
		800386(H): Bypass feeder
L3	Print bottom margin	800380(H): Only adjustable in bypass feed mode

6. TROUBLESHOOTING

6.4. ERROR CODES

Code	Meaning	Suggested Cause/Action
0-70	V.8 sequence (TX/RX) - modulation mode was not determined after a CM/JM exchange	Check the line connection. Check for line noise.
0-74	V.8 sequence (TX) - fallback to T.30 protocol after transmitting CI	Check the connection between the NCU and the FDU.
0-75	V.8 sequence (RX) - fallback to T.30 protocol after receiving CI	The other terminal may be defective or incompatible.
0-76	V.8 sequence (TX) - JM not detected and fallback to T.30 protocol	Adjust the TX level.
0-77	V.8 sequence (RX) - CJ not detected and fallback to T.30 protocol	
0-79	V.8 sequence (RX) - CI detected while waiting for a V.21 signal	
0-80	V.34 communication - time out during line probing	
0-81	V.34 communication - time out during equalizer training	
0-82	V.34 communication - time out during the control channel start-up sequence (Phase 4)	
0-83	V.34 communication - time out during the phase D control channel start-up sequence	
0-84	V.34 communication - error detected in the phase B control channel	
0-85	V.34 communication - error detected in the phase D control channel	
0-86	V.34 communication - a data rate which cannot be determined from the symbol rate is selected	
0-87	V.34 communication - modem status goes back to the control channel before receiving RCP	
0-88	V.34 ECM - PPR received 9 times (TX) or PPR transmitted 9 times (RX)	

7. Parts Catalog

The following parts for the FR6 are different from the FX6.

Index	FX6	FR6	Description	Used in common
3-2	H5164040	H5264040	Cover - PIF	FX6Mk2
3-3	H5164045	H5264045	Cover - Rear 2	FX6Mk2
3-9	H5272040	H5522042	Laser Plotter Unit	
3-10	H5166122	H5526000	PCB - FCE - FR6 USA	
3-11	H5166083	H5526050	PCB - FDU - FR6 USA	
3-12	54886020	54886030	PCB - NCU - USA	
3-	H5168600	H5528600	Operator's Manual - FR6 - Ricoh	
		H5528630	Operator's Manual - FR6 - Savin	
		H5528620	Operator's Manual - FR6 - NRG	
3-		H5163159	PFU Bracket	FX6Mk2
3-		H5223102	Spacer - FCE	LSO Mk2
7-2	H5164241	H5524220	Operation Panel Ass'y - FR6 - USA	
		H5524300	LCD Decal - Ricoh	
		H5524301	LCD Decal - Savin	
		H5524302	LCD Decal - Gestetner	
		H5524303	LCD Decal - Nashua	
7-4	H5165306	H5525321	Harness - OPU	
7-20	H5151355	H5521355	Separation Pad Ass'y	
7-24	H5164303	H5524309	Operation Panel Sheet	
9-15	H5164066	H5261066	Contact Image Sensor - B4	FX6Mk2
9-23	H5265310	H5525326	Harness - Image Sensor	
11-11	H5165302	H5525322	Harness - LDDR	
11-12	H5215061	H5525040	Polygon Mirror Motor	
11-13	H5215321	H5525310	Harness - Polygon Motor	
11-16	H5152715	H5522715	Laser Diode Unit	
17-16	H5165319	H5515316	Harness - Interlock SW	
19-2	H5163342	H5523342	FDU Base	
19-30	H5155085	H5525320	Harness - 100 sheets cassette	
19-36		H5153693	Positioning Pin (for the PFU)	FX4
21-5	H5163407	H5163401	Cassette Base - Universal	FX6Mk2

21-28		H5163430	Paper Size Indicator - LG	FX6Mk2
21-33	H5163583	H5513584	Decal - Bypass Feed	
21-42	H5163465	H5153465	Support Plate - End Fence (FX4)	FX4
21-		H5153466	Plastic Rivet	FX4
21-		H5164088	Cassette Cover	FX6Mk2
3-33	H5165308	Not used	Driver Harness	
3-34	H5165316	Not used	Harness - Paper Feed Motor	
3-35	H5165309	Not used	Harness - TX Motor	
3-36	H5165313	Not used	Harness - Main Motor	
3-38	H5165322	Not used	Relay Harness - Fusing Unit	
3-39	H5165301	Not used	Harness - Paper Size	
		H5515312	Harness - Main Motor (Quench/Fusing Fan)	
		H5515341	Harness - Paper Feed Unit	
		H5525313	Harness - Drive (Ozone Fan/Thermistor/Speaker)	
		H5525323	Harness - Stepper Motor (ADF Motor/Paper Feed Motor)	
		H5525325	Harness - Fusing Exit (Fusing Exit/Cassette Size SN)	
		H5525327	Harness - Mech. Counter	

8. Product Information

1. Main Frame

Model Code	Model Name	Product Code	Serial #	Note
FR6	FAX 3800L Gestetner 9867 Savin 3685	H552-20	M26 y mm 00001	

2. Options

Items	Model Name	Product Code	Note
100-sheet Cassette	Paper Cassette Type 100	H111-03	Used in common with the current F series
Paper Feed Unit	Paper Feed Unit Type 140F	H110-43	
1 MB Memory Card	Fax Expansion Type 10	H130-80	
2 MB Memory Card	Fax Expansion Type 20	H130-81	
4 MB Memory Card	Fax Expansion Type 40	H130-82	
PCFE	TBA	H144-44	

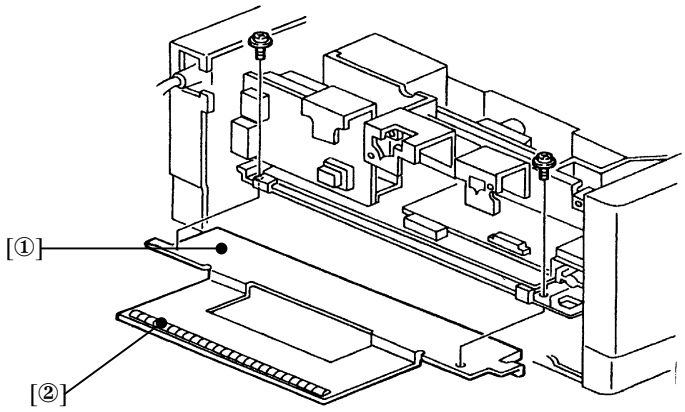
3. Supplies

Items	Model Name	Product Code	Note
Toner (CTM)	Toner Cassette Type 150		
Drum	Photoconductor Type 100		
Stamp	Marker Type 30	H923-02	

Model: F14, F16, F16MK2, LSO, LSO2, FR6			Date: 15-Feb-98	No: Multi - 007
Subject: Printer I/F Type 200			Prepared by: Y.Okunishi	
From: QAC Field Information Dept.				
Classification:	☐ Troubleshooting	☒ Part information	☐ Action required	
	☐ Mechanical	☐ Electrical	☐ Service manual revision	
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information	
	☐ Other ( )			

The following parts have been packed with the PIF since December 1997. They had been packed with the main frame. (No instruction change)

1) Grounding Plate Ass'y
   - ① H515 3185 : Grounding Plate
   - ② H515 3188 : Gasket
2) Two screws



Note: This change is not applied for the Siemens FX770/790 yet.

RC	RE	ASIA	
*	*	*	

Model: FX4, FX6, FX6MK2, FX6CD, FR6	Date: 4-Mar-98	No: 65
Subject: Development Unit (A4)	Prepared by: Y.Okunishi	
From: QAC Field Information Dept.		

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☒ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

The A4 development unit was modified to improve the flow of the toner in the development unit. See page 2.

∗This modification prevents the Kattsumari problem (vertical gray bands on print outs) caused by blocked toner in the middle of the development unit. The blocked toner bends the toner metering blade. The toner enters the drum area through the gap made by the bent blade. Once in the drum area, the toner collects on the drum and causes the gray bands on the print out.
(The toner flow was improved by the modification in MB F/L Series – 91B. This does the job even better.)

Modified parts: (H515 9570 → H515 9571) Development unit

1) The toner entrance becomes smaller to prevent too much toner from dropping into the development unit. [Fig.1]

2) Toner Hopper Film, mentioned in MB no. F/L Series – 91B, has been strengthened to push more toner up to the CTM. [Fig 2]

Note:

Interchangeability is O/O.

You can distinguish the modified development unit by the lot no. printed on the label. See page 3.

Modification schedule:

From the mid-February production run except for the FR4.

(FR4 has the new part from the first production.)

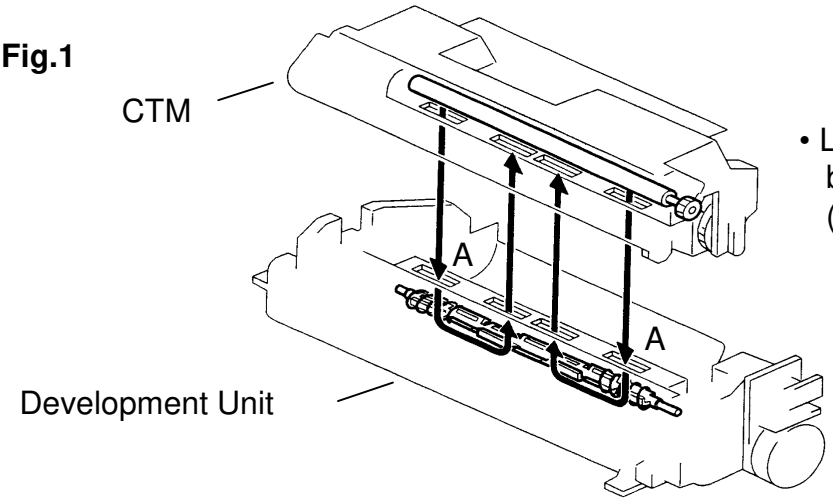
See page 4/4.

RC	RE	ASIA	
✶	✶	✶	

Note : Except Taiwan.

Note: FX4, FX6, FX6MK2, FX6CD, FR6:	Date: 4-Mar-98	No: 065

Fig.1



• Length of the toner entrance (A) becomes smaller.
(30mm → 18mm)

Fig.2

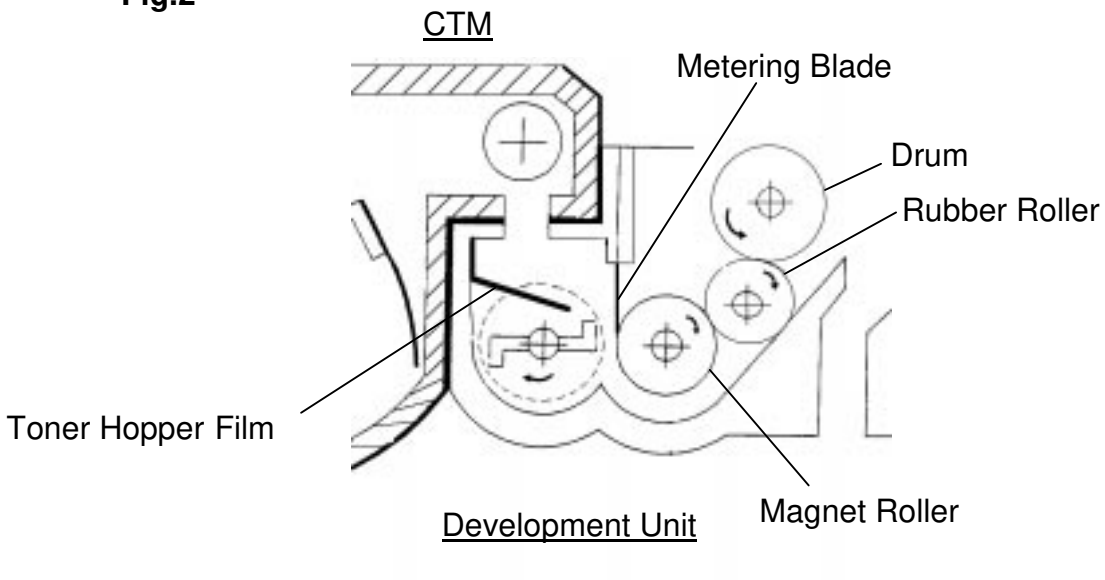
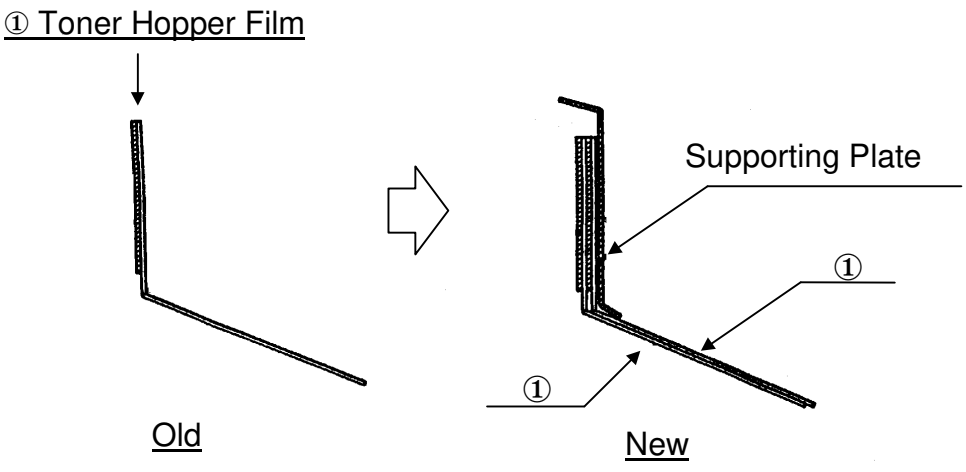


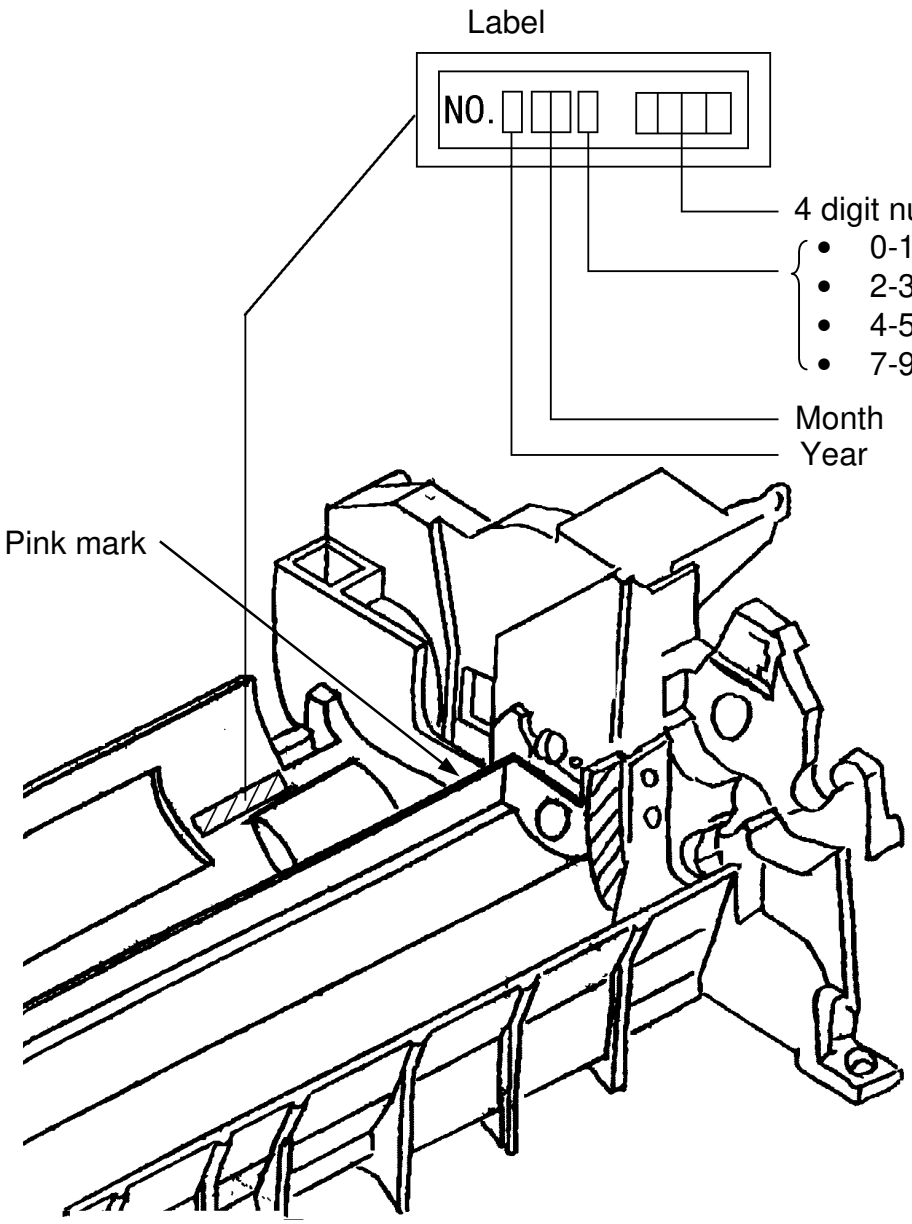
Fig.3



• Two toner hopper films are stuck together.
• A supporting plate is attached to the toner hopper film.

Model: FX4, FX6, FX6MK2, FX6CD, FR6	Date: 4-Mar-98	No: 65

Ex.70810012
=12th Dev. Unit for LS0 Series
made in August, 1997



No. for the new units
(FX4, FX6 Series – A4)

<Unit for the production>
80244374~

<Unit for the service parts>
To be announced
(There is a pink color mark for February and March production run.)

Development Unit

Model: FX4, FX6, FX6MK2, FX6CD, FR6	Date: 4-Mar-98	No: 65

Code no.	Model	Product Code	Area	Serial no. (First machine)	Note
FX4	FAX 4700L	H515-20	U.S.A	M0480300001	Made in Japan
FX4	LANIER FAX 7560	H515-23	U.S.A	L7568037908	Made in Japan
FX4	SAVIN FAX 3690	H515-27	U.S.A	1880300001	Made in Japan
FX4	OMNIFAX L545	H515-28	U.S.A	L5458034128	Made in Japan
FX4	INFOTEC 3675	H515-30	Europe	4830380001	Made in Japan
FX4	FAX 4700L	H515-40	Europe	E0580300001	Made in Japan
FX4	FAX 4700LF	H515-43	Europe	F2486300001	Made in France
FX4	FAX 4700L	H515-51	Asia	A6780300001	Made in Japan
FX4	NRG 9768	H515-60	Europe	X148032194	Made in Japan
FX6	FAX 2700L	H516-40	Asia	U3380200401	Made in Japan
FX6	FAX 2700LF	H516-43	Europe	F2086300072	Made in France
FX6	FAX 2700L	H516-51	Asia	A6380200001	Made in Japan
FX6	NRG 9763	H516-59	Asia	9648024816	Made in Japan
FX6	NRG 9763	H516-60	Europe	9688028768	Made in Japan
FX6	NRG 9763F	H516-63	Europe	9638631381	Made in France
FX6MK2	FAX 3700L	H526-20	U.S.A	M1380200886	Made in Japan
FX6MK2	NRG 9767	H526-21	U.S.A	X028030721	Made in Japan
FX6MK2	SAVINFAX 3680	H526-27	U.S.A	S1580300001	Made in Japan
FX6MK2	OMNIFAX L535	H526-28	U.S.A	L5358031267	Made in Japan
FX6MK2	INFOTEC 3674F	H526-33	Europe	4846389001	Made in France
FX6MK2	INFOTEC 3674	H526-39	Europe	4846380001	Made in France
FX6MK2	FAX 3700LF	H526-43	Europe	F2186300001	Made in France
FX6MK2	FAX 2700L	H526-49	Europe	U3486300001	Made in France
FX6MK2	FAX 3700L	H526-51	Asia	A2080200001	Made in Japan
FX6MK2	NRG 9767	H526-59	Asia	X058021206	Made in Japan
FX6MK2	NRG 9767	H526-60	Europe	X038027700	Made in Japan
FX6MK2	NRG 9767F	H526-63	Europe	X048630001	Made in France
FX6MK2	SIEMENS FAX770	H526-80	Europe	GL/98036449	Made in Japan
FR6	FAX 3800L	H552-20	U.S.A	M2680300001	Made in Japan

The new parts will be installed in the models not listed above from the March or later production runs.

Model: General	Date: 29-May-98	No: 015
Subject: Polarity Detection (Additional Bit Switch)	Prepared by: K. Misugi	
From: Technical Service Department.		

Classification:			
	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

This RTB is to clarify the symptom for the following error code.
Error code 0-52: Polarity change detected during communication.

CAUSE

Polarity change is detected during communication and the machine disconnects the line in the following conditions (error code 0-52).

1. When the machine is at the Rx side (receiving a message) and when G3 bit switch 0B bit 1 (Protocol requirements: Spain) is set to 1 (Enabled).
   The machine immediately disconnects the line when it detects polarity change after receiving DIS/NSF.

2. When the machine is at the Tx side (transmitting a message) and when G3 bit switch 03 bit 7 is set to 1.
   The machine immediately disconnects the line if it detects polarity change twice after receiving DIS/NSF.

NOTE: The following explanation must be added to the service manual.
(All F/L series: FX6, FX6Mk2, FX4, FX7, LX7, LSO, LSOMk2, LFO, FR6, FR4)

G3 Switch 03		
No	**FUNCTION**	**COMMENTS**
7	Polarity detection during communication 0: Disabled 1: Enabled	**1:** The machine disconnects the line when it detects polarity change twice after receiving DIS/NSF. This detection is enabled only when the machine is in Tx mode.

RC	RE	ASIA	
✓	✓	✓	

Model: FR4,FR6 for the USA	Date: 30-Jun-98	No: 006
Subject: PC-Fax Expander for the USA	Prepared by: Y. Okunishi	
From: QAC Field Information Dept.		

Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

A sheet with the following message is packed with the PC-Fax Expander (PCFE) for the FAX3800L and FAX4800L for the first 4 months from the June 1998 production run.
If the PCFE is installed in the machine which has the ROM H5157210A version "98 01 06"(Jan.06,'98), transmission from the PC using a programmed group in the machine cannot be done.

IMPORTANT!!

After installing the PC-Fax Expander, print out the System Parameter List and check the "FCU ROM VER."

If the ROM version is "98 01 06" (Jan.06,'98), please update the ROM software in the machine (Service Function 12).

RC	RE	ASIA	
*			

Model: FR4	Date: 15-Jul-98	No: 002
Subject: Fax On Demand	Prepared by: K. Misugi	
From: Technical Service Department.		

Classification:

☐ Troubleshooting	☐ Part information	☐ Action required
☐ Mechanical	☐ Electrical	☐ Service manual revision
☐ Paper path	☐ Transmit/receive	☐ Retrofit information
☒ Other (Installation Manual)		

The new model FR4 has been released to the FX series line up.
The Fax On Demand option can be used in both the FR4 and FX4, however, the FOD connector differs between these models.
This RTB is to avoid any confusion during installation.

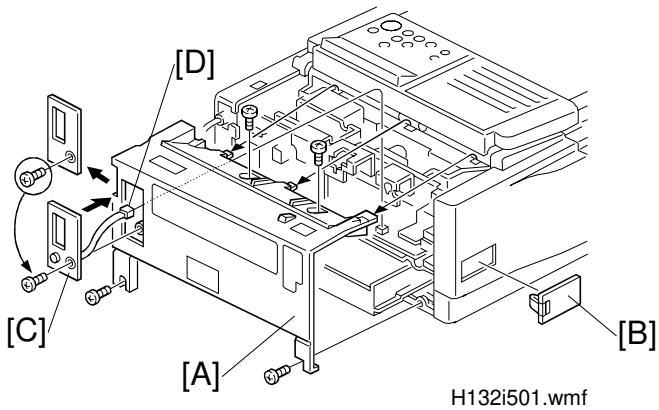
- Connector used in FR4 (H551): **CN7** on the FCE
- Connector used in FX4 (H515): **CN73** on the FDU

NOTE: The installation manual has been modified to contain the information for the FR4 since June, '98.

Please see the instructions below from the latest installation manual.

Installation Procedure

1. Remove the rear cover [A] (4 screws), and the IC card slot cover [B].
2. Remove the NCU cover (1 screw) and replace it with the cover for the Fax on Demand option [C].
   Then, connect the harness [D] to CN7 on the FCE for the H551 model, CN73 on the FDU for the H515 model.
3. Install the battery on the IC card and turn on the battery switch.



H132i501.wmf

(Procedures after this step are the same as the previous installation manual.)

RC	RE	ASIA	
✓	✓	✓	

Model: FR4	Date: 15-Jul-98	No: 003
Subject: PC-Fax Expander	Prepared by: K. Misugi	
From: Technical Service Department.		

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Installation Manual)		

This RTB is to correct information in the installation procedure of the PC-Fax Expander Type 141 and Type 110.

Important:
Turn the main switch off and on to enable the PC-Fax Expander after setting the system bit switch 06 bit 5 to "1."
The machine will not recognize the PC-Fax Expander unless this procedure is done.

The current installation manuals do not contain this information. It will be corrected from the first production of August.

Please see the attachment for the instructions from the latest installation procedure.

- Step 6 in the PC-Fax Expander Type 141
- Step 5 in the PC-Fax Expander Type 110

RC	RE	ASIA	
✓	✓		

INSTALLATION MANUAL

PC-FAX EXPANDER TYPE 141

This option can be installed in the following models:
- H551 series

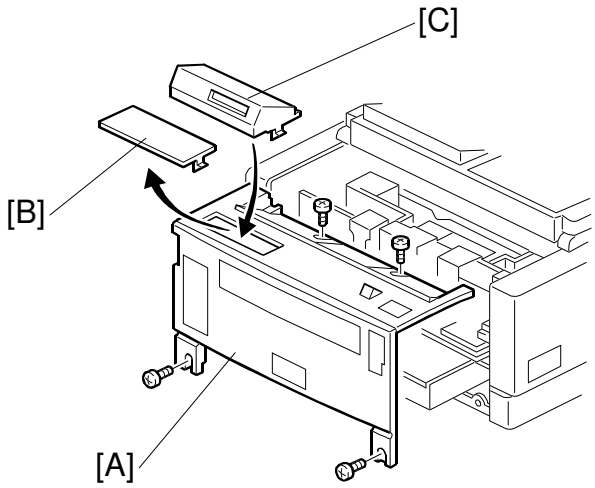
This installation must only be done by qualified service personnel.

⚠CAUTION

Do the following before installing an optional unit:
1. Print out all messages stored in the memory.
2. Print out the lists of user-programmed items and the system parameter list.
3. Turn off the main switch, and disconnect the power plug.

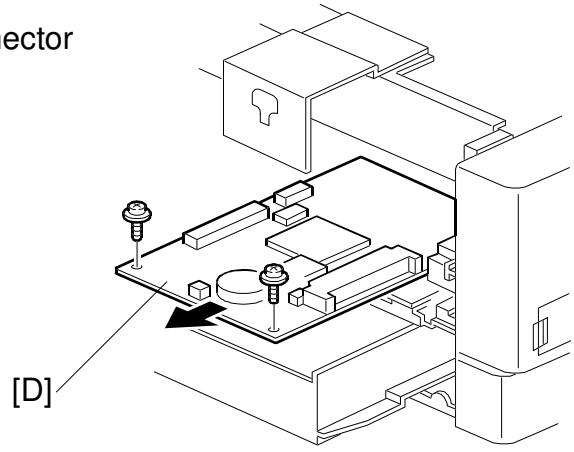
Installation Procedure

1. Remove the rear cover [A] (4 screws). Remove the RS232C cover [B] and replace it with the PCFE cover [C].



H551i500.wmf

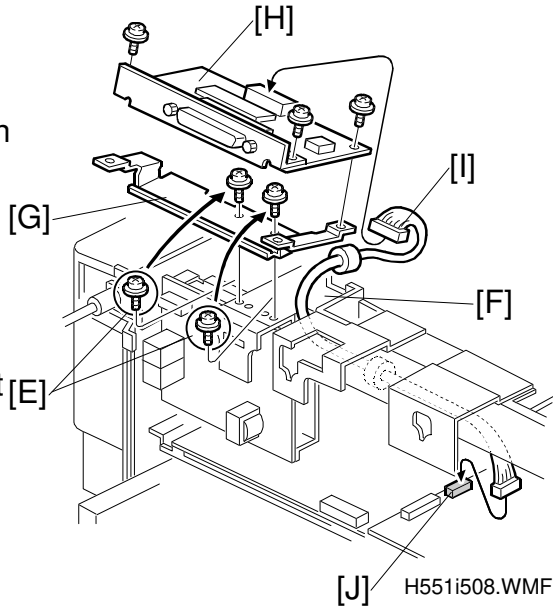
2. Remove two screws, disconnect the FDU connector and pull out the FCE [D] as shown.



H551i501.wmf

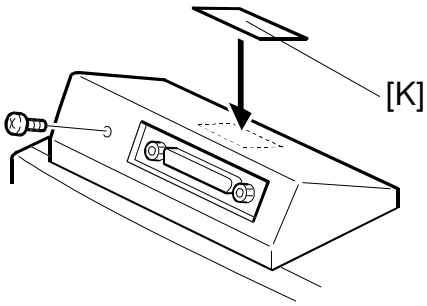
3. Remove two screws [E] on the grounding plate [F], then attach the bracket [G] to the machine.
   NOTE: The grounding plate [F] is not installed in the USA models.

4. Secure the PCFE board [H] (3 screws). Connect the harness [I] to the PCFE board and the FCE (CN5) [J].



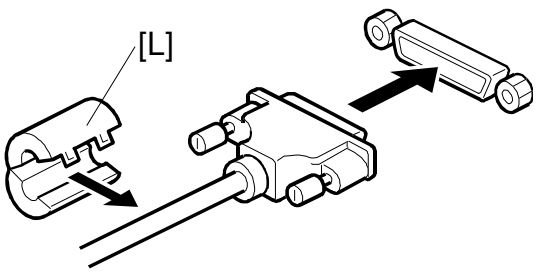
H551i508.WMF

5. Replace the FCE, rear cover, and secure the PCFE cover (1 screw). Attach the “PCFE Port” decal [K] on the PCFE cover.



H551i503.wmf

6. Attach the core [L] to the RS232C cable. Then, connect the PC-Fax Expander port to the PC port using the RS232C cable. Plug in the machine and turn on the main switch. Set System bit switch 06 bit 5 to “1.” **Then turn the main switch off and on to enable the PC-Fax Expander.**
   NOTE: Attach the core so it is placed by the machine when the RS232C cable is connected to the PC-Fax Expander port.



H551I509.WMF

End of Procedure

INSTALLATION MANUAL

PC-FAX EXPANDER TYPE 110

This option can be installed in the following models:
- H552 series

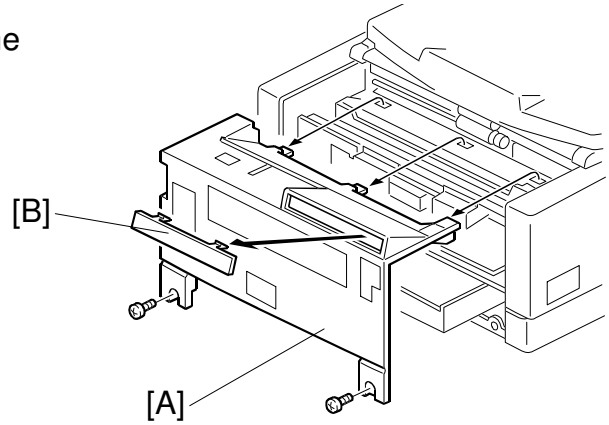
This installation must only be done by qualified service personnel.

⚠CAUTION

Do the following before installing an optional unit:
1. Print out all messages stored in the memory.
2. Print out the lists of user-programmed items and the system parameter list.
3. Turn off the main switch, and disconnect the power plug.

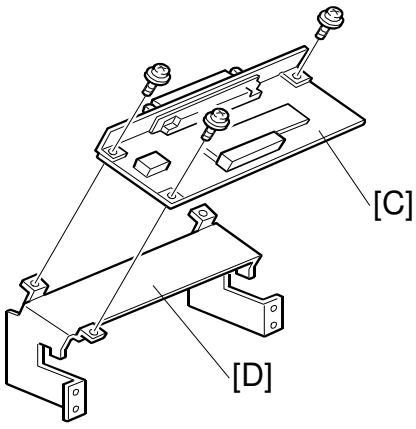
Installation Procedure

1. Remove the rear cover [A] (2 screws) and the RS232C cover [B].



H552i500.wmf

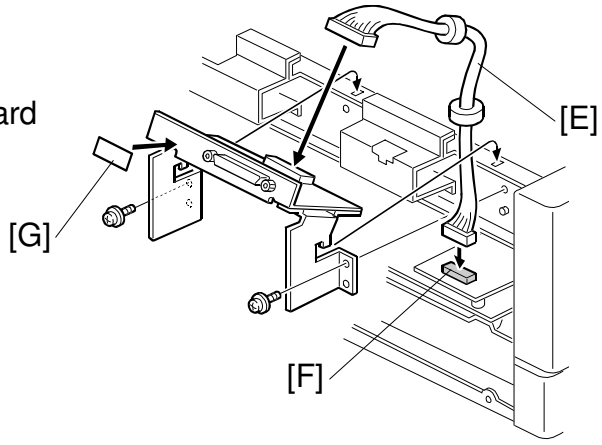
2. Attach the PCFE board [C] to the bracket [D] (3 screws).



H552i501.wmf

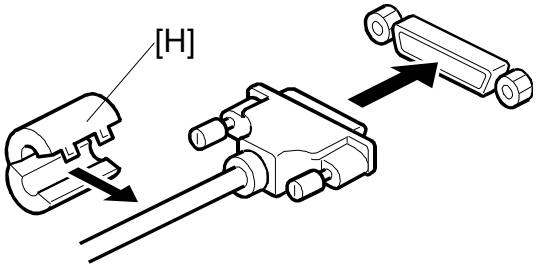
3. Secure the PCFE board and the bracket to the machine (2 crews).
   Then, connect the harness [E] to the PCFE board and the FCE (CN3) [F].

4. Attach the “PCFE Port” decal [G] as shown.



H552i503.wmf

5. Replace the rear cover.
   Attach the core [H] to the RS232C cable. Then, connect the PC-Fax Expander port to the PC port using the RS232C cable. Plug in the machine and turn on the main switch. Set System bit switch 06 bit 5 to “1.” **Then turn the main switch off and on to enable the PC-Fax Expander.**
   NOTE: Attach the core so it is placed by the machine when the RS232C cable is connected to the PC-Fax Expander port.



H551I509.WMF

End of Procedure

Model: FR4	Date: 15-Jul-98	No: 004
Subject: PC-Fax Expander Type 141	Prepared by: K. Misugi	
From: Technical Service Department.		

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

The new PC-Fax Expander Type 141 is an option for the model FR4.
This RTB indicates the differences between this model and the previous PC-Fax Expander Type 100

1. SPECIFICATIONS

Application Programming Interface: TR29, EIA592 Class 2 (Class 1 is not supported)

NOTE: PC fax communication is available through the optional G3 unit.
PC G4 communication is available when the optional G4 unit is installed.

Compatibility
OS: Windows 95, Windows 3.1x
PC: IBM PC/AT
Fax Applications:
The following fax applications have been tested to be compatible.

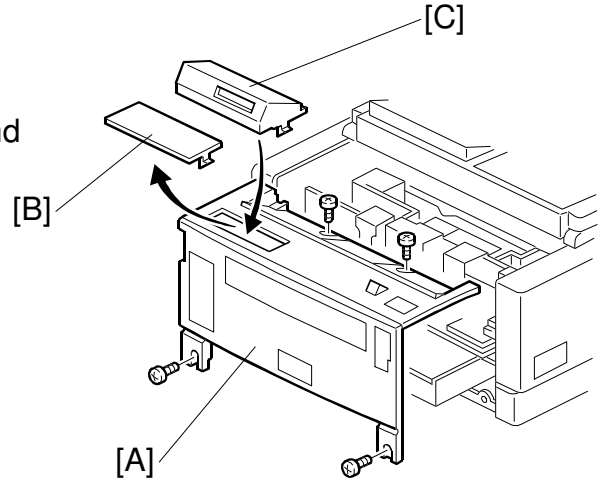
- Cheyenne Bitware
- MS-Fax (Windows 95 fax application)
- WinFax Pro 4.0/7.0
- Wordcraft LaserFax 3.1 -

2. INSTALLATION

Important: The ROM software does not require upgrading for this model.

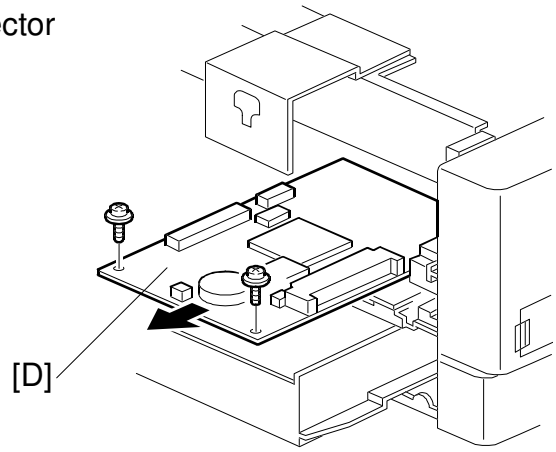
2.1. Installation Procedure

1. Remove the rear cover [A] (4 screws).Remove the RS232C cover [B] and replace it with the PCFE cover [C].



H551i500.wmf

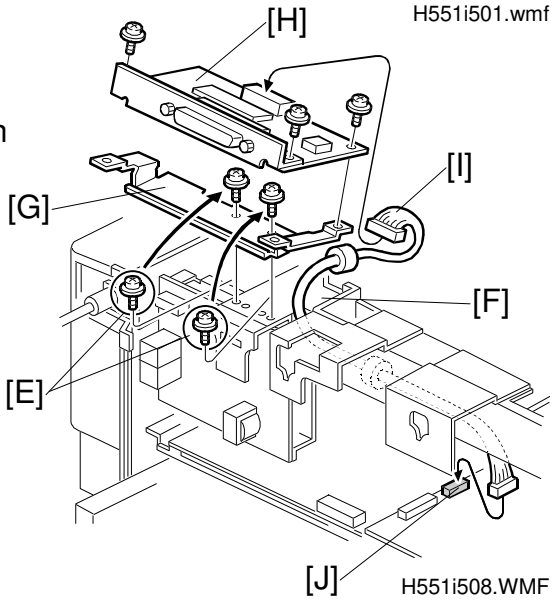
2. Remove two screws, disconnect the FDU connector and pull out the FCE [D] as shown.



H551i501.wmf

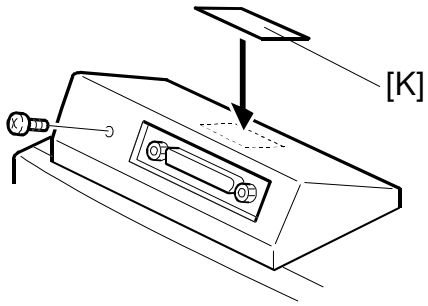
3. Remove two screws [E] on the grounding plate [F], then attach the bracket [G] to the machine.
   NOTE: The grounding plate [F] is not installed in the USA models.

4. Secure the PCFE board [H] (3 screws). Connect the harness [I] to the PCFE board and the FCE (CN5) [J].



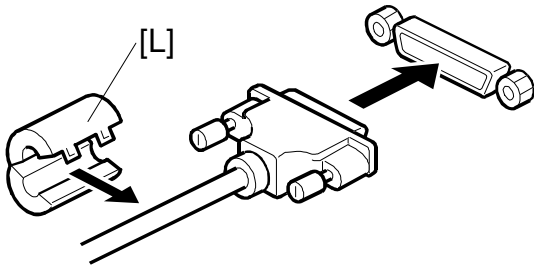
H551i508.WMF

5. Replace the FCE, rear cover, and secure the PCFE cover (1 screw). Attach the “PCFE Port” decal [K] on the PCFE cover.



H551i503.wmf

6. Attach the core [L] to the RS232C cable. Then, connect the PC-Fax Expander port to the PC port using the RS232C cable. Plug in the machine and turn on the main switch. Set System bit switch 06 bit 5 to “1.” Then turn the main switch off and on to enable the PC-Fax Expander.
   NOTE: Attach the core so it is placed by the machine when the RS232C cable is connected to the PC-Fax Expander port.



H551I509.WMF

2.2. User Mode Setting

Select the type of fax application with user parameter switch 14, bits 5 and 6.
Please refer to the next section for details.

Important:
If the customer is using Delrina WinFax Pro 7.0, change the communication port from TAPI to COM X (X: port number this option is connected to) from the application's Setup menu to avoid operation failure.
(Select "Modem", "Properties", then COM port from the list of communication ports.)
The operation manual describes this procedure in more detail.

3. SERVICE TABLES

3.1. User Level Functions

User parameter switch 14 (SWUSR_0E): RAM address - 4800CE(H)
Bit 0: Transmission method 0: Direct 1: Memory
Bit 1: Not used
Bit 2: TTI included in memory transmission (when bit 0 is set to "1")
0: Disabled 1: Enabled
Bit 3 and 4: Destination for reception

Bit 4	3	Destination
0	0	Print from the machine (normal fax reception)
0	1	PC direct reception
1	0	PC memory reception
1	1	PC memory reception and print from the machine

Bit 5 and 6: PC Fax application type

Bit 6	5	Application type
0	0	Bitware/ MS Fax (Win 95)
0	1	WinFax 4.0/ WinFax 7.0
1	0	Not used
1	1	Sopwith/ WinFax (BVRP)

Bit 7: Not used

NOTE: Sopwith and WinFax (BVRP) are PC-Fax application software packages for the European market.

3.2. Service Level Functions

Communication Switch 18		
No	**FUNCTION**	**COMMENTS**
0 to 7	Wait time between PC fax reception (with an optional PC Fax Expander)	00 to FF (H) (x 2 s: 00 to 510 s) This setting determines the machine's wait time between PC fax receptions. This setting is to avoid PC fax reception failure. It lets the host computer process its previous message and re-initialize the modem. Default setting 06(H) = 12 s

Communication Switch 19		
No	**FUNCTION**	**COMMENTS**
0 **1**	Communication line used for PC direct transmission **Bit 1 Bit 0 Setting** 0 0 PSTN 1 or PSTN 2 0 1 PSTN 1 (Standard G3) 1 0 PSTN 2 (Optional G3 unit) 1 1 Not used	These bits determine the machine's default transmission line for PC direct transmission if an optional G3 unit has been installed.
2-5	Not used	Do not change the settings.
6 **7**	Communication mode for PC memory transmission when destination numbers are programmed manually (when the Quick or Speed dials are not used) **Bit 7 Bit 6 Setting** 0 0 G3 0 1 Not used 1 0 G4 1 1 Not used	These bits determine the communication mode for PC memory transmission.

RC	RE	ASIA	
✓	✓		

Model: FR6	Date: 15-Jul-98	No: 005
Subject: PC-Fax Expander Type 110	Prepared by: K. Misugi	
From: Technical Service Department.		

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

The new PC-Fax Expander Type 110 is an option for the model FR6.
This RTB indicates the differences between this model and the previous PC-Fax Expander Type 100
Please note that some specifications and functions are different between the PC-Fax Expander Type 141 (for FR4) and Type 110 (FR6).

1. Specifications

Application Programming Interface: TR29, EIA592: Class 2 (Class 1 is not supported)

Compatibility
OS: Windows 95, Windows 3.1x
PC: IBM PC/AT
Fax Applications:
The following fax applications have been tested to be compatible.

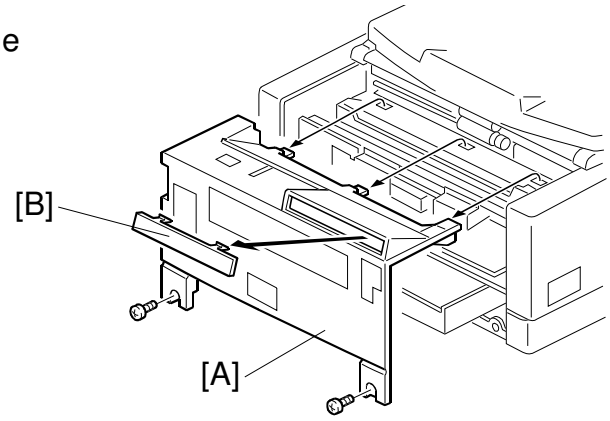
- Cheyenne Bitware
- MS-Fax (Windows 95 fax application)
- WinFax Pro 4.0/7.0
- Wordcraft LaserFax 3.1 -

2. INSTALLATION

Important: The ROM software does not require upgrading for this model.

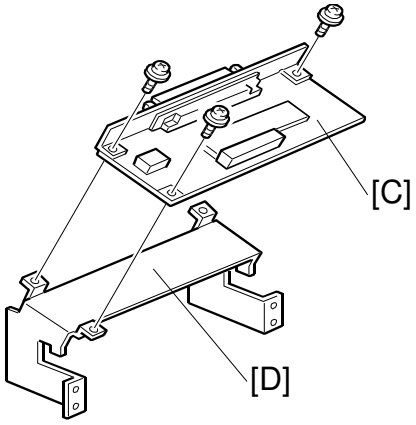
2.1. Installation Procedure

1. Remove the rear cover [A] (2 screws) and the RS232C cover [B].



H552i500.wmf

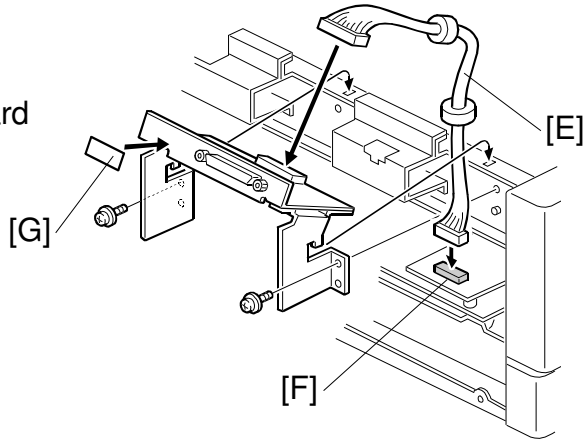
2. Attach the PCFE board [C] to the bracket [D] (3 screws).



H552i501.wmf

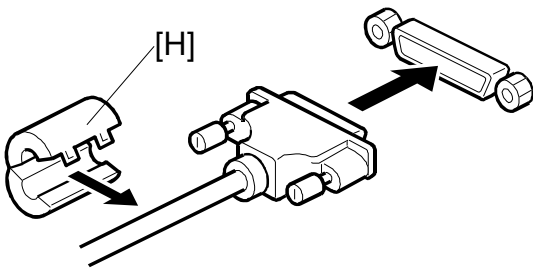
3. Secure the PCFE board and the bracket to the machine (2 screws).
   Then, connect the harness [E] to the PCFE board and the FCE (CN3) [F].

4. Attach the “PCFE Port” decal [G] as shown.



H552i503.wmf

5. Replace the rear cover.
   Attach the core [H] to the RS232C cable. Then, connect the PC-Fax Expander port to the PC port using the RS232C cable. Plug in the machine and turn on the main switch. Set System bit switch 06 bit 5 to “1.” Then turn the main switch off and on to enable the PC-Fax Expander.
   NOTE: Attach the core so it is placed by the machine when the RS232C cable is connected to the PC-Fax Expander port.



H551I509.WMF

3. SERVICE TABLES

3.1. User Level Functions

User parameter switch 14 (SWUSR_0E): RAM address - 8000AE(H)
Bit 0: Transmission method 0: Direct 1: Memory
Bit 1: Not used
Bit 2: TTI included in memory transmission (when bit 0 is set to "1")
0: Disabled 1: Enabled
Bit 3 and 4: Output destination for reception

Bit 4	3	Destination
0	0	Print from the machine (normal fax reception)
0	1	PC direct reception
1	0	PC memory reception
1	1	PC memory reception and print from the machine

Bit 5 to 7: Not used

3.2. Service Level Functions

Communication Switch 18		
No	**FUNCTION**	**COMMENTS**
0 to 7	Wait time between PC fax reception (with an optional PC Fax Expander)	00 to FF (H) (x 2 s: 00 to 510 s) This setting determines the machine's wait time between PC fax reception. This setting is to avoid PC fax reception failure. It lets the host computer process its previous message and re-initialize the modem. Default setting 06(H) = 12 s

Communication Switch 19		
No	**FUNCTION**	**COMMENTS**
0 1	Communication line used for PC direct (immediate) transmission **Bit 1 Bit 0 Setting** 0 0 PSTN 1 or PSTN 2 0 1 PSTN 1 (Standard G3) 1 0 PSTN 2 (Optional G3 unit) 1 1 Not used	These bits determine the machine's default transmission line for PC direct transmission if an optional G3 unit has been installed.
2-5	Not used	Do not change the settings.
6 7	Communication mode for PC memory transmission when destination numbers are programmed manually (when the Quick or Speed dials are not used) **Bit 7 Bit 6 Setting** 0 0 G3 0 1 Not used 1 0 G4 1 1 Not used	These bits determine the communication mode for PC memory transmission.

RC	RE	ASIA	
✓			

Model: FR6	Date: 15-Oct-98	No: 007
Subject: Initial Toner Supply Mode (Service Manual)	Prepared by: K. Misugi	
From: Technical Service Department.		

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

This RTB is to correct information in the FR6 (FAX3800L) RTB No. 001.

Initial Toner Supply (Page 27: RTB - FR6 No.001)
Please correct the following descriptions.
8003AA(H) - Initial Toner Supply
Wrong
Bit 3: Initial toner supply 0: Off, 1: On

Correct
Set this bit to **FF**(H) to cycle toner to the development unit.

Do the following procedure whenever the development unit is replaced.
1. Make sure that a new development unit, drum, and CTM are correctly installed.
2. Turn on the machine and change this address to FF(H).
3. Turn off the machine.
4. Then turn the machine back on.
   The machine automatically starts to fill up the empty development unit with the new toner. (This bit is reset to zero automatically.)
5. Make test copies or test patterns to check the print quality.

RC	RE	ASIA	
✓			

Model: FR4	Date: 15-Oct-98	No: 008
Subject: Service Manual Correction	Prepared by: K. Misugi	
From: Technical Service Department.		

Classification:

☐ Troubleshooting	☐ Part information	☐ Action required
☐ Mechanical	☐ Electrical	☒ Service manual revision
☐ Paper path	☐ Transmit/receive	☐ Retrofit information
☐ Other ( )		

This RTB is to correct information in the FR4 (FAX4800L) service manual.

1. OVERALL MACHINE INFORMATION

1.2 FEATURES

Items	Wrong	Correct
Communication Features - User Selectable		
Action as a transfer broadcaster	A or B	O
Batch Transmission	A or B	O
Confidential Reception	A or B	O
Economy Transmission	A or B	O
Forwarding	A or B	O
Group Transfer Station	A or B	O
Multi-Step Transfer	A or B	O
Personal Codes with Confidential ID	A or B	O
Remote Transfer	A or B	O
Transmission Deadline (TRD)	A or B	O
Other User Features		
Confidential ID	A or B	O
File Retransmission	B, C	O
Memory Lock (ID)	A or B	O
Multi Sort Document Reception	A or B	O
Remote ID	A, B, or D	O
Reverse Order Printing	A or B	O
Reports/Lists		
Confidential File Report	A or B	O
Transfer Result Report	A or B	O
Forwarding List	A or B	O

O: Used (standard for the model FR4)
A: With optional memory card 2M/4M
B: With optional memory 80M (HDD)

2. DETAILED SECTION DESCRIPTIONS

2.1 SEP/SUB CODING

Please correct the descriptions in section 2.1 as follows.

SEP (Selective Polling): This signal informs the other terminal of the polling ID to enable secured (ID) polling.
Up to 20 digits or characters can be sent in a SEP frame.

PWD (Password): This signal informs the other terminal of the password to enable extra security.
Up to 20 digits or characters can be sent in a PWD frame.

SUB (Sub-address): This signal informs a sub-address of a destination. Some fax servers use this information to route a received fax message to a specific address in the local network.
Up to 20 digits or characters can be sent in a SUB frame.

SID (Sender ID): This signal informs the other terminal of the sender ID to identify the transmitter.
Up to 20 digits or characters can be sent in a SID frame.

The ITU-T recommendation only clarifies the requirements for the transmitting terminal, and does not specify the requirements for the receiving terminal. How the receiving terminal treats these signals varies with receiver terminal and manufacturer.

LINE TYPE CHANGE
Please add the following descriptions to the manual.

When the machine is initially used only with the PSTN, the line type programmed with phone numbers in Quick Dials and Speed Dials is stored as PSTN G3.
Later, if the line connection is changed so that G3 is to be used only with the ISDN, the communication port for all stored Quick and Speed Dials must be changed to ISDN G3.
This feature allows the communication mode and port to be changed for all stored numbers at once.

Procedure:

1) Change the data in the following RAM addresses.
   4B5846(H) - Current line type setting.
   4B5847(H) - Line type to be used after this procedure.
   CAUTION: The default setting for the above addresses are FF(H).
2) Turn the main switch off and on.
   Then, the machine checks all phone numbers stored in Quick Dials, Speed Dials, AI Redial, and Forwarding Stations. If the communication mode and the port setting for a number is the same as specified for the "current setting" in the above address, the machine changes these to the new setting.
3) After this procedure, the data programmed automatically returns to FF(H).

Setting:

Bit 0 and 1: Communication mode

Bit	1	0	Setting
	0	0	G3
	0	1	G4
	1	0	Not used

Bit 2 to 4: Communication port

Bit	4	3	2	Setting
	0	0	0	PSTN1 (Standard G3)
	0	0	1	PSTN2 (Optional G3 unit)
	0	1	1	ISDN
	1	0	0	Any available port

(This setting can be used only when an optional G3 or G4 unit is installed in the machine.)
Other settings - Not used

Bit 5 to 7: Not used

Example:

If you wish to change the port setting from PSTN G3 to ISDN G3,
change address 4B5846(H) to 00(H) (0000 0000) and
change address 4B5847(H) to 0C(H) (00001100).

NOTE: Do not use this procedure if there are any files stored in the memory awaiting transmission.

4. SERVICE TABLES AND PROCEDURES

4.2 BIT SWITCHES

Please add the following descriptions to the manual.

System Switch 13		
No	**FUNCTION**	**COMMENTS**
3 **4**	Files that can be stored in the hard disk filing system **Bit 1** **Bit 0** **Files** 0 0 All files 0 1 Received files only 1 0 Transmitted files only 1 1 Not used	The default setting is (0 0). Change the settings to limit the files that can be stored in the hard disk filing system.

Communication Switch 07		
No	**FUNCTION**	**COMMENTS**
3	Fallback from G4 to G3 reflected in programmed Quick/Speed dials **0:** Fallback enabled (Default) **1:** Always start with G4	**0:** If a communication falls back from G4 to G3, the machine will always start transmission with G3 from the next communication. **1:** The machine will always start to transmit with G4.
4	Fallback from G4 to G3 when G4 communication fails on the ISDN B-channel **0:** Fallback disabled (Default) **1:** Fallback enabled	**1:** Enable this switch only when G4 communication errors occur because the exchanger connects G4 calls to the PSTN. This problem only occurs with some types of exchanger in Europe. **Important:** Do not enable this switch if the above switch (Com Switch 07 bit 3) is also set to “1”, because the fallback to G3 would never happen.

Please correct the following description.

G3 Switch 01			
	FUNCTION		**COMMENTS**
No	**Wrong**	**Correct**	
6	CED/ANSam emission **0:** Disabled **1:** Enabled	CED/ANSam emission **0:** Enabled (Default) **1:** Disabled	Do not change this setting unless any communication problem is caused by the CED/ANSam (V.34) transmission.

4.3 NCU PARAMETERS
Please add the following descriptions to the manual.

Address	Function/Remarks
4806C7	Protocol dump list format (standard NCU) Bit 0 to 3: Not used Bit 4: Protocol dump list format 0: Simplified list 1: Complete list Bit 5 to 7: Not used
4807C7	Protocol dump list format (optional G3 unit) Bit 0 to 3: Not used Bit 4: Protocol dump list format 0: Simplified list 1: Complete list Bit 5 to 7: Not used

4.5 SERVICE RAM ADDRESSES
Please add the following descriptions to the manual.

4B5846 to 4B5847(H) - Line type change
4B5846(H) - Current line type setting
4B5847(H) - Line type to be used after the procedure

6. TROUBLE SHOOTING

Please add the following descriptions to the manual.

6.3 MODEM STATUS CODES IN V.34 PROTOCOL DUMP

The following sections explain the meaning of modem status codes which appear on the G3 protocol dump list after V.34 communications.

NOTE: The machine sometimes does not print all the status codes.
In polling, the signals are exchanged in the opposite direction after phase 2.

6.3.1 Calling Side

Phase 1 (V.8)

FIF	Description
0010	Idle
0110	Idle
0111	ANSam reception
0011	CM transmission
0112	JM reception
0012	CJ transmission
0013	Phase 1 end

Phase 2 (Line Probing)

FIF	Description
0020	Idle
0021	75 ms interval
0121	Waiting for INFO0a
0022	INFO0c transmission
0122	INFO0a reception
0123	A reception
0023	INFO0c retransmission due to missing INFO0a
0024	INFO0c retransmission due to the second INFO0a reception
0031	B transmission
0032	B bar transmission
0033	L1 transmission
0034	L2 transmission
0041	B transmission during INFOh reception.
0127	INFOh reception
0042	Phase 2 end
0043	Waiting for A due to recovery from phase 3 (control channel)

Phase 3 (Equalizer Training)

FIF	Description
0050	Idle
0051	70 ms interval
0130	Phase 3
0052	S transmission
0053	S bar transmission
0054	PP transmission
0055	TRN transmission
0056	Phase 3 end

Phase 4 and 5 (Control Channel)

FIF	Description
0060	Idle
0141	Waiting for PPh
0061	70 ms interval
0062	PPh transmission
0142	PPh reception
0063	ALT transmission
0143	ALT reception
0064	MPh transmission
0144	MPh reception
0065	E transmission
0145	E reception
0066	T.30 control signal transmission (e.g., NSS or DCS)
0151	Flag reception
0152	T.30 control signal reception (e.g., NSF, DIS or CFR)
0067	Phase 5 end

Phase 6 (Primary Channel)

FIF	Description
00A0	Idle
00A1	70 ms interval
0160	Phase 6
00A2	S transmission
00A3	S bar transmission
00A4	PP transmission
00A5	B1 transmission
00A6	Image data transmission
00A7	Phase 6 end

Control Channel (Post Message - Sh)

FIF	Description
0070	Idle
0071	70 ms interval
0141	Waiting for Sh or PPh
0072	Sh transmission
0073	Sh bar transmission
0146	Sh/Sh bar reception
0074	ALT transmission
0143	ALT reception
0075	E transmission
0076	T.30 control signal transmission (e.g., PPS-EOP)
0151	Flag reception
0152	T.30 control signal reception (e.g., MCF)
0077	End

Control Channel (Post Message – PPh)

FIF	Description
0080	Idle
0081	PPh transmission
0142	PPh reception
0082	ALT transmission
0143	ALT reception
0083	MPh transmission
0144	MPh reception
0084	E transmission
0085	T.30 control signal transmission (e.g., PPS-MPS)
0151	Flag reception
0152	T.30 control signal reception (e.g., MCF)
0086	End

Control Channel Recovery (AC)

FIF	Description
0090	Idle
0091	AC transmission
0092	PPh transmission
0142	PPh reception
0093	ALT transmission
0143	ALT reception
0094	MPh transmission
0144	MPh reception
0095	E transmission
0096	T.30 control signal transmission (e.g., PPS-EOP)
0151	Flag reception
0152	T.30 control signal reception (e.g., MCF)
0097	End

V.34 End

FIF	Description
00B0	Modem idle

6.3.2 Called Side

Phase 1 (V.8)

FIF	Description
0010	Idle
0110	Idle
0111	CM reception
0012	JM transmission
0112	CI reception
0113	CJ reception
0013	Phase 1 end

Phase 2 (Line Probing)

FIF	Description
0020	Idle
0121	Waiting for INFO0c
0021	75 ms interval
0122	INFO0c reception
0022	INFO0a transmission
0023	INFO0a retransmission due to missing INFO0c
0024	INFO0a retransmission due to the second INFO0c reception
0123	B reception
0124	B bar reception
0031	A transmission
0032	A bar transmission
0033	No signal. Waiting for L1/L2
0125	L1/L2 reception
0126	B reception
0041	A transmission
0042	INFOh transmission
0043	Phase 2 end
0044	Waiting for B due to recovery from phase 3 (control channel)

OTHER REMARKS

SBU ADJUSTMENT

The SBU adjustment procedure is not included in the FR4 service manual because it is the same as the FX4. However, the connector used (FCE) is different for the FR4.

Connect the SBU adjustment test lead to **CN8** on the FCE.

RC	RE	ASIA	
✓			

Model: FR4	Date: 15-Oct-98	No: 009
Subject: G3 Bit Switch (Service Manual Corrrection)	Prepared by: K. Misugi	
From: Technical Service Department.		

Classification:

☐ Troubleshooting	☐ Part information	☐ Action required
☐ Mechanical	☐ Electrical	☒ Service manual revision
☐ Paper path	☐ Transmit/receive	☐ Retrofit information
☐ Other ( )		

This RTB is to notify corrections to the FR4 service manual.

1. G3 Bit Switch 01 bit 6

Wrong:

G3 Switch 01		
No	**FUNCTION**	**COMMENTS**
6	CED/ANSam emission 0: Disabled 1: Enabled	Do not change this setting unless a communication problem is caused by the CED/ANSam (V.34) transmission.

Correct:

G3 Switch 01		
No	**FUNCTION**	**COMMENTS**
6	CED/ANSam emission 0: Enabled (Default) 1: Disabled	Do not change this setting unless a communication problem is caused by the CED/ANSam (V.34) transmission.

2. SBU ADJUSTMENT

The SBU adjustment procedure is not included in the FR4 service manual because it is the same as for the FX4. However, the connector used (FCE) is different for the FR4.
Connect the SBU adjustment test lead to **CN8** on the FCE.

RC	RE	ASIA	
	✓	✓	

Model: FR4	Date: 31-Jan-99	No.: FR4/6-011

Subject: LD Error 2-21	Prepared by: Y. Okunishi
From: GTSS Field Information Dept.	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

LD error (code 2-21) occurrs when the power is turned on after installation.

CAUSE

The optical fiber cable connector to the FDU is connected loosely or disconnected.
It is connected at the connecting part of the assembly line. But, in some cases, the cable is pinched between NCU bracket and scanner base at the next part of the assembly line.
The cable was pinched but the assembled machine could pass the QA check because the connector still contacted the FDU side and the signal (light) could reach the FDU when the machine was inspected at the QA check.
During transportation to the customer site, the connection loosens or separates from the FDU. As a result, the problem was found just after the installation.

Action required in the field

If this problem happens, please check the cable connector and connect it to the FDU properly. See the following procedure.

1) Remove the rear cover (4 screws).
2) Look for a gray cable over the FDU.
3) Pull it gently to feel the condition of the connection.
   If it is removed easily, the connection is loose.
   If it is connected properly, you need more force to remove it.
4) Set the connector completely and assemble the cover.
   (You can feel clicking if it is being set correctly. If you turn the connector 90 degrees horizontally you cannot feel the clicking and it cannot be set completely.)

Affected machines

August and September production in 1998

The other models do not have this problem because related components or layout is not same as the FR4.

RC	REBV	ASIA	
*	*	*	

Model: FR4	Date: 31-Jan-99	No.: 12

Subject: NIC ROM	Prepared by: K. Moriizumi
From: GTSS Field Information Dept.	

Classification:			
	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

The NIC board cannot work when the new EPROM is installed on the NIC board. This problem will occur even if the check sum value is correct.

CAUSE

The CPU on the NIC board is different from the CPU for the fax machine.
(Intel 86 series CPU and Motorola 68 series CPU) The bit order is different.

SOLUTION

Please check your EPROM writer. If your EPROM writer has a “Swap” or “Exchange” mode, please use this function when downloading the data to the EPROM. Or, if you have a software utility for editing hex data on the hex code dump list, please swap the data by using the utility as follows, Then, please write the data to the EPROM in the normal way.

ADD : DATA

0000 : 00 12 34 21 FF CD 00 AB 00 00 11 FF 00 00 42 41

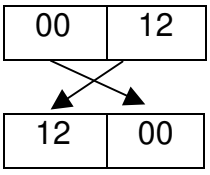
0010 : 52 00 01 DE AO 12 20 42 52 00 3E 77 00 00 00 00

⇓

ADD : DATA

0000 : 12 00 21 34 CD FF AB 00 00 00 FF 11 00 00 41 42

0010 : 00 52 OE 01 12 AO 42 20 00 52 77 3E 00 00 00 00



Model: FR4	Date: 31-Jan-99	No.: 12

For your reference:

Recommended EPROMs for the NIC board

- AM27C4096-120DC (AMD)
- M27C4002-12F1 (SGS-Thomson)
- TMS27C240-12JL (TI)

RC	REBV	ASIA	
*	*	*	

Model: General	Date: 31-Mar-99	No.: 3

Subject: File Dividing Utility Program	Prepared by: K. Moriizumi
From: GTSS Field Information Dept.	

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☒ Retrofit information
	☐ Other ( )		

SYMPTOM

It is impossible to use the utility program HEXDIV.EXE for the Schmidt1 and F66 in the normal way. However, using this program, the firmware file can be divided into 2 or 4 files so that it can be written to the EPROM.

SOLUTION

If some options are added to the command line, the firmware files for the Schmidt1 and F66 can be divided.

Options

– b start address
– e end address
– M offset
– s : The source file is the Motorola S format
– S: The output file is the Motorola S format
– O file name: The output file name

For example, the file for the Schmidt1 can be divided into 2 files as follows.

C:\> hexdiv -bf00000 -ef7ffff -Mf00000 -s -S -O H5457200.LOW H5457200.MS

C:\> hexdiv -bf80000 -effffff -Mf80000 -s -S -O H5457200.HIG H5457200.MS

H5457200.LOW (or HIG) is the output file name, H5457200.MS is the source file name.

RC	REBV	ASIA	
*	*	*	

Model: FR4 G4 Option (France)	Date: 31-May-99	No.: RH551013

Subject: Country Code for France	Prepared by: Y. Okunishi
From: GTSS Field Information Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Please set the G4 switch at the code for the UK instead of the code for France when you install the G4 option in France. (However, the G3 NCU parameter must be set at the code for France.)

Reason:
The G4 PCB in the G4 option for FR4 passed two sets of regulations, the regulations for France and regulations for Europe (CE), and both had previously been effective in France. The G4 country code for France is applied to meet the French regulations and the G4 country code for the UK is applied to meet the CE regulations.
However, the French regulations are no longer effective; only the CE regulations are effective now.
So, the G4 country code for the UK must be set now when you install the G4 option.

RC	REBV	ASIA	
	*		

Model: ISDN Option (FX4/FR4)	Date: 31-May-99	No.: RH551014

Subject: ISDN Option Component List	Prepared by: Y. Okunishi
From: GTSS Field Information Dept.	

Classification:
☐ Troubleshooting ☐ Part information ☐ Action required
☐ Mechanical ☐ Electrical ☐ Service manual revision
☐ Paper path ☐ Transmit/receive ☐ Retrofit information
☒ Other ( )

Components of the ISDN Option for FX4 and FR4

P/N	Description	FX4		FR4		Parts Catalog	
		Eur/Asia	US	Eur/Asia	US	Index	Page
H0826035	PCB - CIG4	O	X	O	X	1	33
H0826034	PCB - CIG4	X	O	X	O	1	33
H1434313	Installation Manual	O	O	X	X	N	
H1434314	Installation Manual	X	X	O	O	N	
H1435701	ISDN Harness	O	O	O	O	3	33
H5134102	Decal – ISDN	O	O	O	O	2	33
H5153149	Board Bracket	O	O	O	O	5	33
H5153183	Bracket – 1	O	X	O	O	N	
H5153184	Bracket – 2	O	X	O	X	N	
H5153186	Ground Plate	O	X	O	O	N	
H5155014	Grounding Harness	O	O	O	O	4	33
H5155203	PCB – G4 IF	O	O	O	O	6	33
H5158675	Decal – CE	O	X	O	X	N	
04523012Z	Cramp	O	O	O	O	A	
09513006B	Screw – M3x6	O	O	O	O	N	
H1433333	Bracket – 3	X	X	O	O	N	
H1433335	Grounding Clip	X	X	O	O	N	
H1435300	Flat Cable	X	X	O	O	A	
H5155014	Grounding Cord	X	X	O	X	N	
H5516020	PCB – OPIF	X	X	O	O	A	

O: Used, **X**: Not used,
A: The part is registered in the SPC system but not in the catalog,
N: The part is not available.

Note: H0826036 in the catalog is not correct. It should be H0826034.

RC	REBV	ASIA	
*	*	*	

Model: FR4	Date: 15-Aug-99	No.: RH551015

Subject: History of Software Changes	Prepared by: K. Moriizumi
From: Technical Service Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☒ Retrofit information
	☐ Other ( )		

The following table is the history of software changes of the F64G NIC board (H1327120)

#	Reason / Problem	Suffix
1	When the F64G receives mail from Metainfo Sendmail for Windows NT, a 10-61 error occurred (error code 10-61: Pop server cannot be found). As a result, the mail could not be received. The cause of this problem is the F64G not being able to recognize the protocol information when mail is received from SendMail for Windows NT (in which the +OK command is divided into two sockets for transmission).	E
2	Error mail is returned from the mail server (for reasons such as incorrect mail addresses), but error code 10-00 (NIC stall) is triggered and receipt is not possible. Also, as the error messages cannot be deleted, the 10-00 error is repeatedly output whenever an attempt to collect mail is made. This is a fault with the mail-receiving program. Although this problem does not occur under normal circumstances, it is not uncommon in remote locations where the response from the mail server can be delayed.	E
3	Mail transmission is not possible. The 10-85 error is always triggered (Error code 10-85: Unexpected response from the SMTP server.) A problem exists with the protocol information transactions between the F64G mail transmission program and the mail server. The chances of this problem occurring are high under such conditions described above (i.e. mail server located in a remote area, causing delayed response).	E

4	A fail-safe has been added for when mail transmissions fail.	E
5	When using WinFax Pro 8.0, PC FAX transmissions fail if the number of digits in the destination number exceeds 35. WinFax Pro 8.0 divides the telephone number into two parts and sends the ATD command to the F64G if the number of digits exceeds 35.	F
6	When receiving a mail message, if there is a comment in parentheses before the mail address (“From” field), the F64G cannot send back the Error Notice Mail to the sender.	F
7	When the F64G receives mail from Interstar Technologies Inc., error 10-64 (MIME decoding error) occurs. The MIME of Interstar Technologies Inc. mail does not satisfy the RFC1521 standard. The F64G has been modified so that the error 10-64 does not occur if the MIME does not satisfy the RFC1521 standard.	F
8	When the F64G receives error mail from Netscape Messaging Server V3.01 (Japanese), error 10-65 occurs (E-mail with unsupported type of header was received). The mail header of error mail from Netscape Messaging Server V3.01 (Japanese) is “text/plain charset=iso-2022-jp”. The F64G does not recognize this error mail, but does recognize the un-received mail.	G
9	When over 5 PC clients simultaneously request editing using the IC FAX Monitor, a time out error will most likely occur.	G
10	When the data being sent contains the end flag only, error 10-82 occurs (connection with the SMTP server has been broken).	G

Model: FR4	Date: 15-Aug-99	No.: RH551016

Subject: History of Software Changes	Prepared by: K. Moriizumi
From: Technical Service Dept., GTS Division	

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☒ Retrofit information
	☐ Other ( )		

The following table is the history of software changes for the F64G.

North America: H1327135

Europe: H1327145

#	Reason / Problem	Suffix
1	Software modification for the new flash ROM chips (to be applied to future production runs).	NA:C EU:B
2	The error codes 10-20 and 10-21 are not printed on the Service Monitor Report. Error Code 10-20: The F64G rejected an incoming e-mail for auto-routing because the ID code in the incoming e-mail did not match the personal code registered in the machine. Error Code 10-21: The F64G rejected an incoming e-mail for auto-routing because an incorrect address has been registered with the personal code.	NA:C EU:B
3	The description of the communication modes is not printed on the error report.	NA:C EU:B
4	Telephone numbers programmed in speed dials no.35 to 99 could not be cleared by RDS.	NA:C EU:B
5	Data cannot be input from either the ten-key or the quick dial key pads while another key is being pushed. (However, data of the key being pushed could be input while other keys were being pushed.)	NA:C EU:B
6	Malfunctions may occur when the value of the country code is 35 (or higher).	NA: - EU:B
7	To comply with the regulations of the Netherlands. Dial tone detection is no longer necessary.	NA: - EU:B

8	To comply with the regulations of Denmark.	NA: - EU:B
9	To comply with the regulations of Switzerland.	NA: - EU:B
10	The NCU parameters are not initialized even if RAM reset level 2 is performed.	NA:C EU: -

Model: FR4	Date: 31-Dec-99	No.: RH551017

Subject: Problem in HD Option	Prepared by: Y. Okunichi
From: Technical Service Dept., GTS Division	

Classification:			
	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptoms

Memory transmission is not possible.
After the HD option is installed, data stored in the HD cannot be loaded.
Memory transmission is possible if the HD is removed.

Cause

When the control signals between the FCU and the HD are affected by electromagnetic noise from the data bus between the FCU and the HD, there are cases where the data in the HD cannot be loaded correctly.
The data bus and signal lines should not be fixed in parallel and should not be placed close to each other.

Action taken

1) Tentative solution
   Remove all cores from the HD harness and set the harness back in the machine.
   Place only the data bus (central group of wires in the harness) inside the metal plate in the backside.
   Note
   This condition does not satisfy the FCC standard but it does not affect the performance of the machine.
2) Permanent solution
   A modification will be carried out as follows:
   H1303012 → H1303014 : HDD Kit
   H5515370 → H5515372 : Harness – HDD – 44P
   (The new part numbers above will be registered in the SPC system later.)
   See the attached new installation procedure.

RC	REBV	ASIA	
*	*	*	

INSTALLATION MANUAL

FEATURE EXPANDER TYPE 140 80M III

This option can be installed in the following models:
- H551 series

This installation must only be done by qualified service personnel.

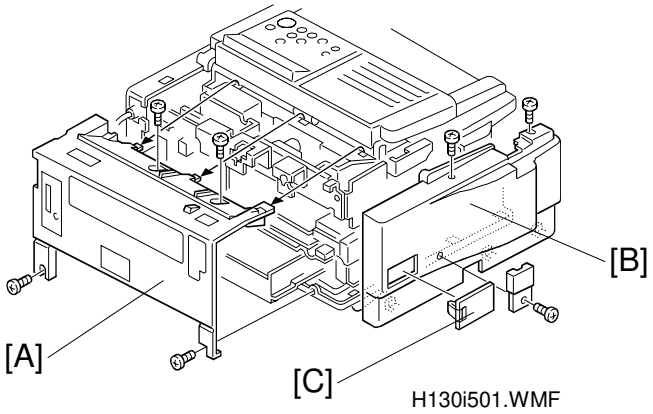
NOTE: If the optional G3 unit (G3 Interface Unit Type 140) is also to be installed, install this option before installing the G3 unit.

⚠CAUTION

Do the following before installing an optional unit:
1. Print out all messages stored in the memory.
2. Print out the lists of user-programmed items and the system parameter list.
3. Turn off the main switch, and disconnect the power plug.

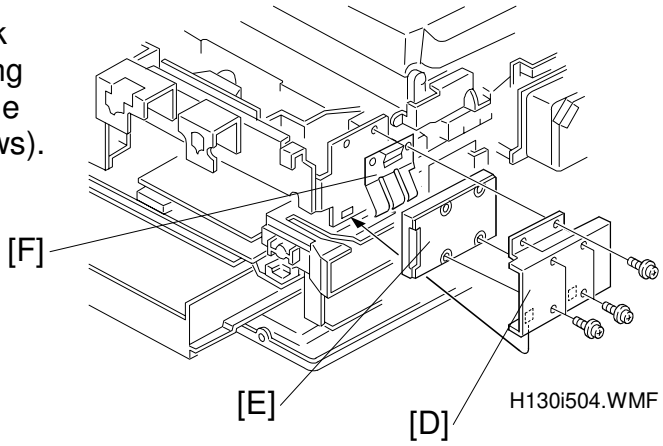
Installation Procedure

1. Remove the rear cover [A] (4 screws), left cover [B] (3 screws and the connector cover), and the IC card slot cover [C].



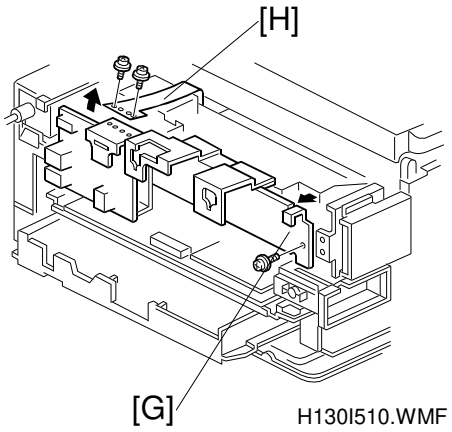
H130i501.WMF

2. Attach the bracket [D] to the hard disk unit [E] (4 screws). Hook the grounding plate [F] on the bracket and secure the hard disk unit to the machine (2 screws).



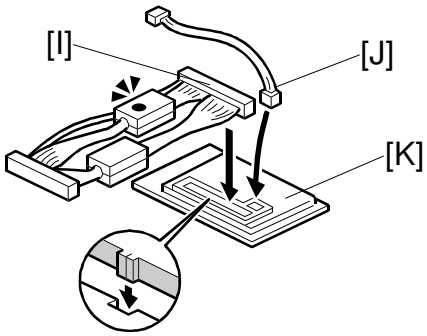
H130i504.WMF

3. Remove three screws to loosen the NCU bracket [G]. (3 screws for Europe/Asia models, 1 screw for USA model.)
   NOTE: The grounding plate [H] is not installed in the USA models.



H130I510.WMF

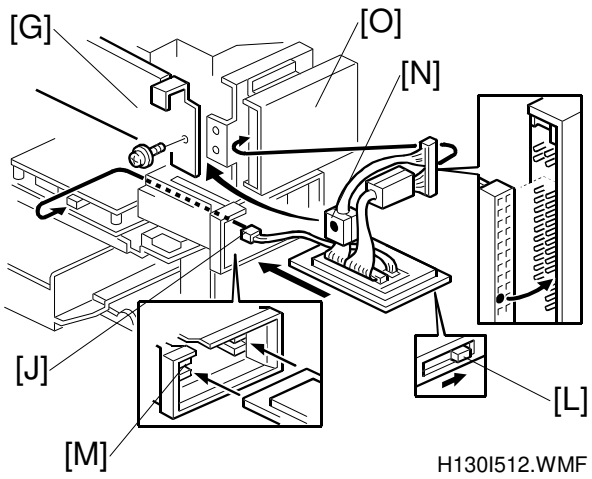
4. Connect the HDD harness [I] and the harness [J] to the hard disk interface card [K].



H130I511.WMF

5. Turn on the battery switch [L] on the hard disk interface card. Then insert the hard disk interface card into the upper card slot [M].
   NOTE: Do not connect the 2-pin harness [J] to the FDU at this time.

6. Lead the harness containing the core with the black marking [N] behind the NCU bracket [G].



H130I512.WMF

   Important:
   This is to avoid the hard disk data bus from interfered by the hard disk drive signal.

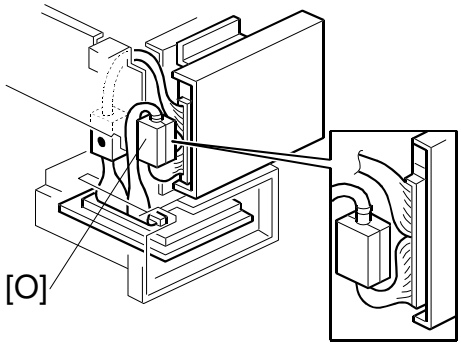
7. Connect the HDD harness to the hard disk unit [O].

8. Turn on the main switch and enter the service mode. Then do the following:
   - Set system bit switch 05 bit 4 to "1", system bit switch 00 bit 1 to “1”, then exit the service mode. The machine then does the RAM reset level 3.
   - Enter service function 16 and select “0” (INITIALIZE) to initialize the hard disk. If “OK” is displayed, exit the service mode and turn off the main switch.

9. Connect the harness [J] (2 pins) from the hard disk interface card to CN73 on the FDU.

10. Replace the screws which were removed in step 3.
    (3 screws for Europe/Asia models, 1 screw for USA model.)

11. Keep the core [O] and the harness as shown and put back the rear cover and the left cover.



H130I513.WMF

12. Turn on the main switch and enter the service mode.
    Print the memory dump list (service function 06) of the following addresses and data.

70001E(H) - 50(H)	700022(H) - 00(H)
70001F(H) - 00(H)	700023(H) - 00(H)
700020(H) - FF(H)	700024(H) - 00(H)
700021(H) - FF(H)	700025(H) - 80(H)

    If any of these addresses contain a different value, format the hard disk (service function 16).

End of Procedure

⚠CAUTION

The hard disk interface card 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 used batteries in accordance with the manufacturer's instructions.

Part Number: H1304357A
Printed in Japan

Model: FR4	Date: 15-Jan-00	No.: RH551018

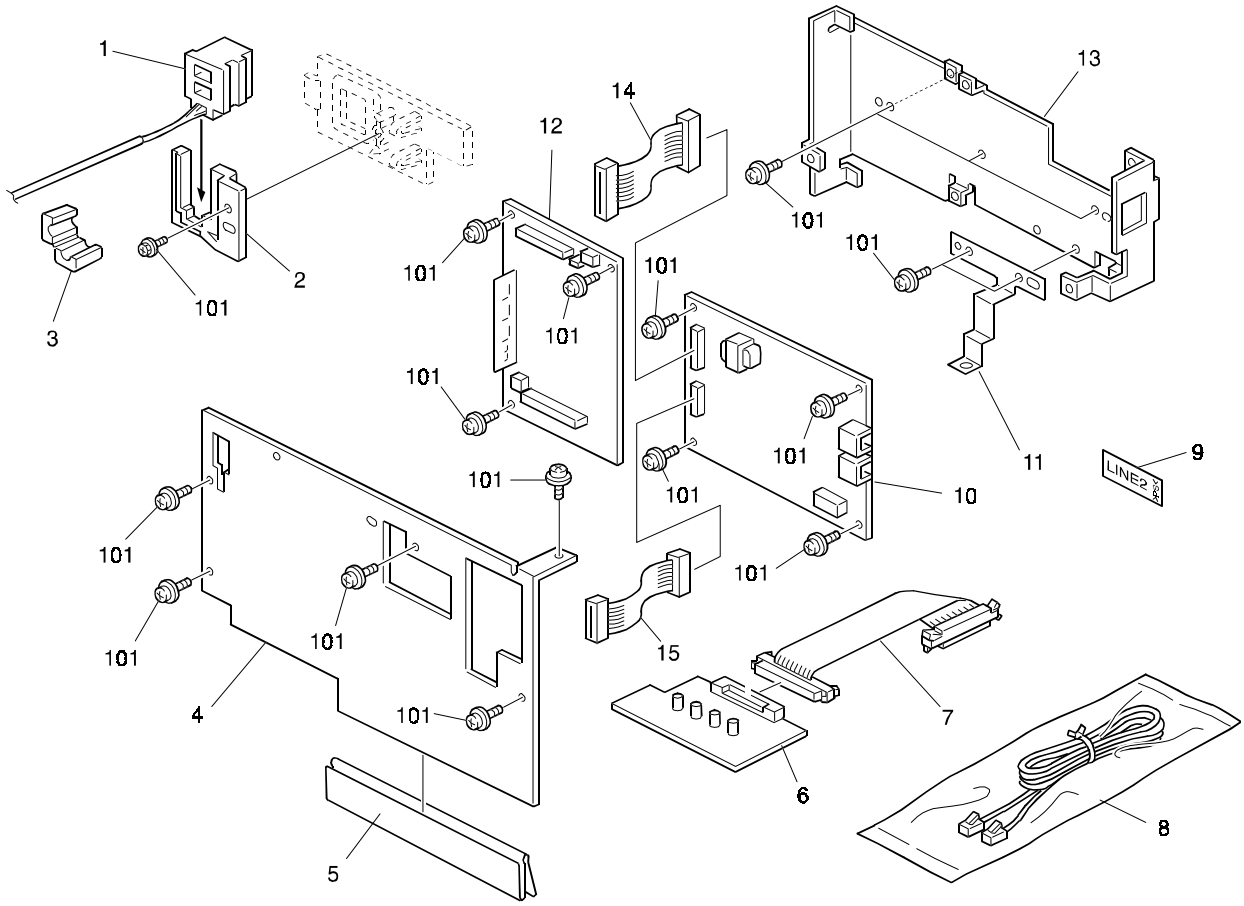
Subject: Service Parts for FR4 G3 Option / ISDN Unit	Prepared by: K. Misugi
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☒ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

This RTB informs parts information for the model FR4 (H551 model) optional G3 unit and ISDN unit.

Listed items are available as service parts.

1. G3 INTERFACE UNIT (H133-03/04/06)

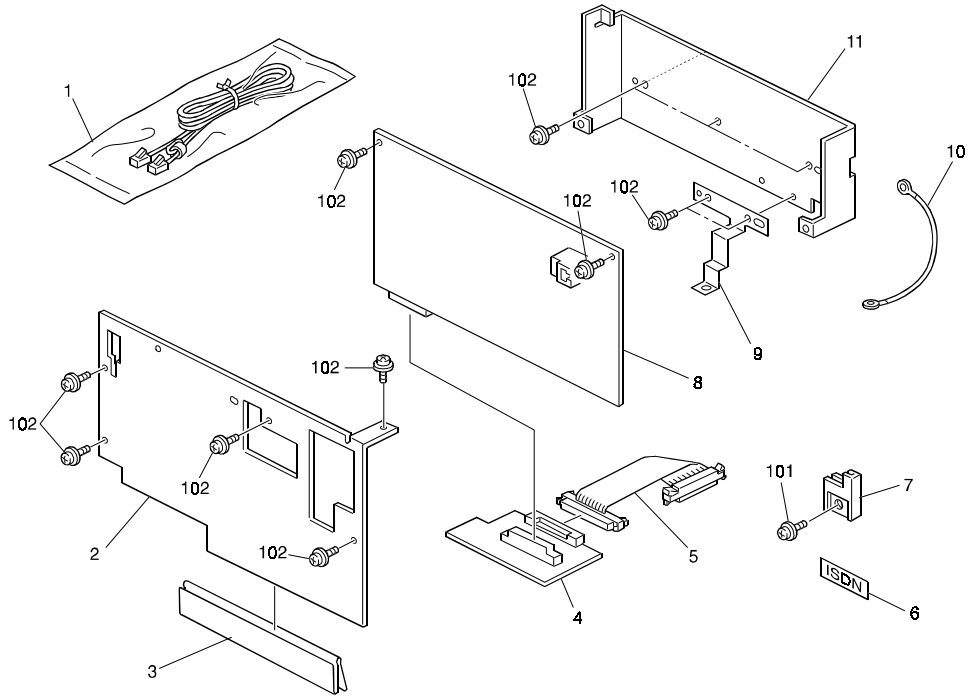


Parts List

INDEX	PARTS NO.	Description	Note
1	H5515319	Harness - Connector	
2	H1334011	Bracket - Connector	
3	16070576	Sleeve Core - SFC - 8	
4	H5153183	Stay - G4	
5	H1433335	Earth Clip	
6	H5516022	PCB - OPIF - SG3	
7	H1335300	Flat Cable - OPIF G3	
8	H5235350	Telehpone Cable (USA model only)	
9	H1333184	Decal - Line 2	
10	54886032	PCB - NCU G3 Option - USA	
	54886052	PCB - NCU G3 Option - EUR/Asia	
	54886072	PCB - NCU G3 Option - FRA	
11	H5153186	Ground Plate - G4	
12	H1336030	PCB - SG3 V34 - USA	
	H1336032	PCB - SG3 V34 - EUR/FRA/Asia	
13	H1333182	Stay SG3 V34	
14	H5215309	Harness - NCU 1 (15 pin) - USA	
	H5215339	Harness - NCU 1 (15 pin) - EUR/FRA/Asia	
15	H5515362	Harness - NCU 2 (5 pin) (Not used in the USA model.)	
101	09513006B	Philips Screw with Flat Washer - M3 x 6	

NOTE: EUR: Europe model, FRA: French model

2. ISDN UNIT (H143-17/18)



Parts List

INDEX	PARTS NO.	Description	Note
1	H1435701	ISDN Harness	
2	H5153183	Stay - G4	
3	H1433335	Earth Clip	
4	H5516020	PCB - OPIF	
5	H1435300	Flat Cable - OPIF G4	
6	H5134102	Decal - ISDN	
7	H5153149	Board Bracket	
8	H0826034	G4 Board - USA	
	H0826035	G4 Board - EUR/FRA/Asia	
9	H5153186	Ground Plate - G4	
10	H5155014	Ground Harness	
11	H1433333	Board Stay - G4	
*	H5155203	Interface Board - G4 (Used only when installing this option on the FX4.)	
*	H5153184	Stay - G4 - 2 (Used only when installing this option on the FX4.)	
101	04523012Z	Bind Tapping Screw - 3 x 12	
102	09513006B	Philips Screw with Flat Washer - M3 x 6	

Model: FR6	Date: 29-Feb-00	No.: RH551019

Subject: Firmware modification history	Prepared by: Y. Okunishi
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

FAX3800L firmware modification history

H5527220H
PCB-FCU: H5526000W
Schedule: Dec. production run in 1999
Reasons for the change:
1) For the new FCC standard
- Redial number: 4 → 1

H5527220G
PCB: H5526000S
Reasons for the change:
1. Correction of the following software bugs(Minor problem):
1) When the time shown on the LCD is changed to the next day while the memory report is being printed after the document is scanned for a memory transmission, the transmission is done 24 hours later.
2) The switch which makes RDS effective becomes OFF every time after the machine comes back from the energy saver mode (2W mode).
2. The following condition is added for the stamp.
∗ No stamping in the PC scan mode

H5527220F
Applied from the 1st lot of mass production of machines for US.

Model: FR4	Date: 29-Feb-00	No.: RH551020

Subject: Firmware modification history	Prepared by: Y. Okunishi
From: Technical Services Dept., GTS Division	

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

FAX4800L firmware modification history

H5517210D US
H5517240E Europe / **Asia**
PCB: H5516120K, H5516140G
Applied unit: Dec. production run in 1999
Reasons for the change:
1) Quality improvement of the dial tone detection
2) For the new FCC (See RTB no. RGENF – 017) : US only

H5517210C US
H5517240D Europe / **Asia**
PCB: H5516120G, H5516140D
Reasons for the change:
1. Correction of the following software bugs (Minor problems):
   1) RDS
      Programmed telephone dials at Speed Dial no. 35 to 99 could not be cleared by RDS.
   2) NCU parameters (US only)
      NCU parameters could not be initialized by Level 2 RAM clear mode.
   3) G4 mode
      Type of network (e.g. CiG4) was not printed on the service monitor report if an error occurred before starting the transmission of the first image data.
   4) G4 mode
      Polling transmission was not successful when the ID was not matched but OK was printed and the symbol of polling mode did not appear on the TCR.
   5) PCFE
      When PC memory reception was set and over 64 kbytes of data per page was received, the received data could not be sent from the FR4 to the PC (with Win98 / Winphone).
   6) PCFE
      In the PC memory transmission mode, transmission was not done if the number of dial digits is over 35. (with WinFAXPRO8.0)
   7) G4 mode
      When the transfer request with department code was done, name of the department was not sent with the transmitted documents.
   8) G4 mode
      The system was reset when the communication lasted over one hour.
   9) G4 mode
      The machine's own CIL clock information was printed on the received pages when the year 2000 was set at the transmission terminal.

2. Upgrade:
   1) For the new flash ROM chips which will be installed for future production runs. (The schedule for the new chips is not fixed yet.)
   2) Data cannot be input from the ten-key and quick dial key pads while some other key is being pushed. (Data of the key being pushed could be input while the other keys were being pushed.)

3) The following condition is added for the stamp.
*No stamping in the PC scan mode
4) To meet the regulations for Denmark
5) To meet the regulations for Switzerland
To meet the regulations for the Netherlands
Dial tone detection becomes ineffective. (This function was effective according to the Regulations for the Netherlands.)

H5517210B US
H5517240C Europe / **Asia**
PCB: H5516120E, H5516140B
Reasons for the change:
1) Correction for Swedish
2) When only the name was registered in a Group, it could not be erased (US only).
3) Memory Tx through PCFAX could not be done when a programmed quick dial in the FR4 was used by PC (US only).

Model: FR6	Date: 21-Mar-00	No.: RH551021

Subject: Dedicated Tx Parameters (FR6)	Prepared by: K. Misugi
From: Technical Services Dept., GTS Division	

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

This RTB is to inform of the dedicated transmission parameters for the model FR6 (FAX3800L).

Please refer to the following pages for detailed descriptions.

Section 4.4 Dedicated Transmission Parameters
Section 4.4.2 Parameters

Switch 1
FUNCTION AND COMMENTS
ITU-T T1 time 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:**1 to 127 s (01H to 7FH) 00H or FFH - The local NCU parameter factory setting is used. Do not program a value between 80H and FEH.

Switch 2		
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. When 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.

Switch 3		
No	**FUNCTION**	**COMMENTS**
0 to 3	Initial Tx modem rate **Bit 3 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. **Note:** Do not use settings other than listed on the left.
4-7	Not used	Do not change the settings.

Switch 4		
No	**FUNCTION**	**COMMENTS**
0-1	Not used	Do not change the settings.
2 3	DIS/NSF detection method **Bit 3 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.
4	V.8 protocol **0**: Disabled **1**: Enabled	If transmissions to a specific destination always end at a lower modem rate (lower than 14,400 bps), disable V.8 protocol so as not to use V.34 protocol. **0:** V.34 communication will not be possible.
5	Compression modes available in transmit mode **0:** MH only **1:** All available compression modes	This bit determines the capabilities that are informed to the other terminal during transmission.
6 7	ECM during transmission **Bit 7 Bit 6 Setting** 0 0 Disabled 0 1 Enabled 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 is automatically disabled if ECM is disabled.

Model: General	Date: 31-Jan-00	No.: RGenF018

Subject: CiG4 Switches and Software Version	Prepared by: K. Misugi
From: Technical Service Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

New software will be released for the CiG4 unit to provide new functions for ISDN comunication. This RTB clarifies the new switches and their software version.

Please note that the CiG4 unit is being used in the FX4 and FR4 fax machines, and in the Adam, NAD, Stinger-C , and Russian-C copiers.

NOTE:
The software versions which enable each switch are listed in the “NOTE” column. Otherwise, functions are available from the first production of the G4 unit for the above machines.

Release date:
Version 0B: ’97. November (at the same time as the fax FR4 release)
Version 0F: ’00. March

⚠WARNING
Do not adjust a bit switch 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.

Important:
In the CiG4 unit, after changing any of the bit switches, turn off the machine, wait for 5 seconds or more, and turn it back on, so that the new settings take effect.

1. G4 Internal Switches

Bit Switch 00

	FUNCTION	COMMENTS	NOTE
0 to 7	Country code Bit 4 3 2 1 0 Country 0 0 0 0 1 Germany (1TR6 mode) 0 0 0 1 0 Universal (Europe Euro ISDN) 1 0 0 0 1 USA 1 1 0 1 1 Taiwan **Note:** In Germany, use the Universal setting for the Euro ISDN lines. In Taiwan, use the Taiwan setting for firmware version 0D or later.		

Bit switches 01 and 02 are not used. Do not change the settings.

Bit Switch 03			
	FUNCTION	**COMMENTS**	**NOTE**
0	Amount of protocol dump data in one protocol dump list **0:** Last communication only **1:** Up to the limit of the memory area for protocol dumping	Change this bit to 0 if you want to have a protocol dump list of the last communication only. This bit is only effective for the dump list D + Bch1.	
1-7	Not used	Do not change the settings.	

Bit Switch 04			
	FUNCTION	**COMMENTS**	**NOTE**
0-2	Not used	Do not change the settings.	
3	Auto data rate change for transmission (64 kbps to 56 kbps) **0:** On **1:** Off	**0:** The machine automatically changes the transmission data rate from 64 kbps to 56 kbps after 3 s if the other end did not accept the call. This is to cope with 56 kbps networks in the USA. Normally, keep this bit at 0.	
4	Auto data rate change for reception (64 kbps to 56 kbps) **0:** Off **1:** On	**1:** The machine automatically changes the reception data after 6 s. Change this bit to 1 only when there is a communication error where the other terminal informs 64 kbps in the SETUP signal although it is actually 56 kbps.	
5	RCBCTR **0:** Not valid **1:** Valid	This bit is used in Germany; set it to 1 for German FTZ approval tests. **1:** RCBCTR counts consecutive R:RNR signals. If the counter reaches the value of N2, the link is disconnected.	
6-7	Not used	Do not change the settings.	

Bit Switch 05			
	FUNCTION	**COMMENTS**	**NOTE**
0	Not used	Do not change the settings.	
1	Logical channel number (LCN) **0:** Not controlled **1:** Fixed at 01	Keep this bit normally at 0. However, some networks may require a fixed LCN. In such cases, this bit should be 1, and you may have to set a different value for the LCN using G4 Parameter Switch A.	
2	Protocol ID check **0:** Yes **1:** No	The Protocol ID is in the CR packet.	
3-7	Not used	Do not change the settings.	

Bit Switch 06			
	FUNCTION	**COMMENTS**	**NOTE**
0	Inclusion of the DTE address in the S:CR packet **0:** No **1:** Yes	Normally, do not change the setting. When the CR packet format matches ISO8208 protocol, some networks may require this bit to be set at 1. This bit is only effective if bit 0 of G4 Parameter switch 6 is at 0.	
1	Calling and called DTE addresses **0:** Not used **1:** Used	Normally, do not change the setting. This is only for packet networks. The CR packet should contain the rx side's DTE address, but does not have to include the tx side's; it can include it as an option.	
2-7	Not used	Do not change the settings.	

Bit switch 07 and 08 are not used.

Bit Switch 09			
	FUNCTION	**COMMENTS**	**NOTE**
0	Not used	Do not change the settings.	
1	New session within the same call **0:** Not accepted **1:** Accepted	**0:** If a new R:CSS is received, the machine sends back S:RSSN. **1:** If a new R:CSS is received, the machine sends back S:RSSP. Set this bit to 1 for German PTT (FTZ) approval tests.	
2-7	Not used	Do not change the settings.	

Bit switches 0A to 0F are not used. Do not change the settings.

Bit Switch 10			
	FUNCTION	**COMMENTS**	**NOTE**
0	Not used	Do not change the settings.	
1 **2**	Layer 1 T3 timer **Bit 2 1 Time** 0 0 5 s 0 1 29 s 1 0 10 s 1 1 Not used	This should be kept at 5 s (both bits at 0) for normal operation.	
3	Layer 1 T4 timer **0:** Not used **1:** Used	Set this bit to 1 for French PTT approval tests.	
4-5	Not used	Do not change the settings.	
6	INFO1 signal resend 0: Resend 1: No resend	0: Some DSUs may not reply to the INFO1 signal with INFO2, if there is noise in the INFO1 signal accidentally. Try changing this bit to 0, to resend INFO1 before the machine displays “CHECK INTERFACE”.	
7	Loop back 4 mode **0:** Disabled **1:** Enabled	Normally, keep this bit at 0.	

Bit Switch 11			
	FUNCTION	**COMMENTS**	**NOTE**
0	Not used	Do not change the settings.	
1	Type of TEI used **0:** Dynamic TEI **1:** Static TEI	This is normally fixed at 0. However, some networks such as the Northern Telecom ISDN may require this bit to be set at 1 (see below). In this case, you may have to change the values of bits 2 to 7.	
2 **7**	Static TEI value	This is used in the USA with the DMS100 (Northern Telecom ISDN) exchanger. Store the lowest bit of the TEI at bit 7 and the highest bit of the TEI at bit 2. **Example:** If the static TEI is 011000, set bits 3 and 4 to 1 and bits 2, 5, 6, and 7 to 0.	

Bit switch 12 is not used. Do not change the settings.

Bit Switch 13			
	FUNCTION	**COMMENTS**	**NOTE**
0-1	Not used	Do not change the settings.	
2	Attachment of calling ID **0:** No **1:** Yes	Normally, this bit should be at 0, because most networks add the calling ID to the SETUP signal to the receiver. However, some networks may require the machine to add this ID. Only in this case should this bit be at 1.	
3	Attachment of the Lower Layer Capabilities **0:** No **1:** Yes	This bit determines whether Lower Layer Capabilities are informed in the [SETUP] signal. Keep this bit at 0 in most cases.	
4	Attachment of the Higher Layer Capabilities **0:** Yes **1:** No	This bit determines whether Higher Layer Capabilities are informed in the [SETUP] signal or not. Keep this bit at 0 in most cases.	
5	Attachment of the channel information element (CONN) **0:** No **1:** Yes	Keep this bit at 0 in most cases.	
6	Attachment of the Higher Layer Capabilities for ISDN G3 transmission **0:** Same as the bit 4 setting **1:** Not attached	This bit determines whether Higher Layer Capabilities are informed in the [SETUP] signal for ISDN G3 transmission. This switch is effective in coping with communication problems with some types of T/A and PBX which do not respond to Higher Layer Capability “G3.” When this bit is set to 0, the setting depends on the setting of bit 4.	Ver. 0B
7	Condition for fallback from G4 to G3 **0:** Refer to the CPS code setting **1:** Fallback in response to any CPS code	**0:** Fallback occurs when a CPS code is the same as the CPS code settings specified by G4 internal switches 17, 18, 1A, 1B, and 1C. If you wish to enable fallback when any CPS code is detected, set this bit to “1.” This switch is effective in coping with fallback problems where the CPS code does not match those specified in the ITU-T recommendation.	Ver. 0F

NOTE: CiG4 software version 0F will be released from ’00. March production.

Bit Switch 14			
	FUNCTION	**COMMENTS**	**NOTE**
0	ISDN G3 information transfer capability **0:** 3.1 kHz audio **1:** Speech	In tx mode, this determines the information transfer capability informed in the [SETUP] message. In rx mode, this determines the information transfer capability that the machine can use to receive a call. Set this bit to 1 if the ISDN does not support 3.1 kHz audio.	
1-2	Not used	Do not change the settings.	
3 **4**	Channel selection in [SETUP] in tx mode Bit 4 3 Setting 0 0 Any channel 0 1 B1 channel 1 0 B2 channel 1 1 Not used	**Any channel:** When this is informed to the exchanger, the exchanger will select either B1 or B2.	
5	Called ID mapping **0:** Called party number **1:** Keypad facility	**0:** Called ID is mapped to the called party number. **1:** Called ID is mapped to the keypad facility. On the 5ESS network (USA), set it to 1.	
6	Numbering plan for the called party number **0:** Unknown **1:** E.164	**E.164:** This may be used in Sweden if an AXE10 exchanger is fitted with old software, and in Australia. **Unknown:** This is the normal setting.	
7	Subaddress coding type **0:** IA5 (NSAP) **1:** BCD (ISO8348)	This is normally kept at 0. However, some networks require this bit to be at 1.	

Bit Switch 15			
	FUNCTION	**COMMENTS**	**NOTE**
0	Action when receiving a [SETUP] signal containing no called subaddress, if the subaddress was programmed in the dialed number **0:** A reply is sent **1:** No reply is sent	This bit depends on user requirements. If it is at 1, communication will be halted if the other terminal has not input the subaddress.	
1-3	Not used	Do not change the settings	
4	Action when the received Higher Layer Capabilities is Tel or Bearer Capabilities is Speech **0:** Do not respond to the call **1:** Respond to the call	**1:** This switch is effective in coping with communication problems when received Higher Layer Capabilities is Tel or Bearer Capabilities is Speech for ISDN G3 communication.	Ver. 0B
5	Global call reference **0:** Ignored **1:** Global call number is used	Global call reference means 'call reference value = 0'. This bit determines how to deal with such an incoming call if received from the network. Keep this bit at 1 for Germany 1TR6.	
6-7	Not used	Do not change the settings.	

Bit Switch 16			
	FUNCTION	**COMMENTS**	**NOTE**
0 **1**	Answer delay time Bit 1 0 Setting 0 0 No delay 0 1 1.0 s delayed (1TR6) 1 0 0.5 s delayed 1 1 Not used	For Germany 1TR6, a time delay for answering calls is required. In other countries, use this switch as follows: If the machine is connected to the same bus from the DSU as a model K200 is connected, the machine receives most of the calls because the response time to a call is faster than the K200. If the customer wants the K200 to receive most of the calls, adjust the response time using these bits. If the customer does not want one machine to receive most of the calls, use subaddresses to identify each terminal.	
2	Action when receiving a [SETUP] signal containing a user-specific called party subaddress **0:** Ignores the call **1:** Receives the call	Normally, the 3rd octet of called party subaddress information in the [SETUP] signal is set to NSAP. However, some networks may add a “user-specific” subaddress to the [SETUP] signal, and as a result the machine won't answer the call if a subaddress is specified. So, change this bit to 1 to let the machine receive the call if the machine is connected to such a network.	
3-4	Not used	Do not change the settings.	
5	Indicated bearer capabilities **0:** 56 kbps **1:** 64 kbps	**1:** 64 kbps calling is indicated in the Bearer Capabilities, but communication is at 56 k. Use this bit if the machine is connected to a network which does not accept a 56 kbps data transfer rate as a bearer capability.	
6	Not used	Do not change the settings.	
7	Transfer capabilities (SI) informed in 1TR6 ISDN G3 transmission **0:** G3 Fax **1:** Analog	This bit determines the transfer capabilities informed in the Service Indicator for 1TR6 ISDN G3 transmission. This switch is effective in coping with communication problems with some types of T/A and PBX.	

Bit Switch 16			
	FUNCTION	**COMMENTS**	**NOTE**
0-6	Condition for fallback from G4 to G3 Bits 0 to 6 of bit switch 17 contain a CPS code, and bits 0 to 6 of bit switch 18 contain another CPS code. If a CPS code is received which is the same as either of these, communication will fall back from ISDN G4 mode to ISDN G3 mode. The CPS codes must be the same as those specified in table 4-13 of CCITT recommendation Q.931. Examples: Bit 6 5 4 3 2 1 0 1 0 0 0 0 0 1 CPS code 65 1 0 1 1 0 0 0 CPS code 88 For the codes in bits 0 to 6 of bit switches 17 and 18 to be recognized, bit 7 of bit switch 17 must be 1. Also, bit 0 of Communication Switch 07 must be at 0, or Fallback from G4 to G3 will be disabled.		
7	This bit determines whether fallback from G4 to G3 occurs on receipt of one of the CPS codes programmed in bit switch 17 or 18, or on receipt of a certain standard code. **0:** Fallback occurs on receipt of any of the following CPS codes: Universal (Euro ISDN) - #3, #18, #57, #58, # 63, # 65, #79, #88, and #127 Germany 1TR6 mode - #3, #53, #58, and #90 Others - #3, #65, and #88 **1:** Fallback from G4 to G3 occurs on receipt any of above CPS codes or one of the CPS codes programmed in bit switch 17, 18, 1A, 1B, or 1C		

Bit Switch 18			
	FUNCTION	**COMMENTS**	**NOTE**
0-6	Condition for fallback from G4 to G3 See the explanation for bits 0 to 6 of bit switch 17		
7	This bit helps to choose the CPS code set for G4 to G3 fallback. **0:** Fallback occurs on receipt of the CPS code set which is specified by the country code setting. **1:** Fallback occurs on receipt of the Universal CPS code set (#3, #18, #57, #58, # 63, # 65, #79, #88, and #127) even if another country code is programmed. If bit switch 17 bit 7 is “1”, fallback occurs on receipt of the Universal CPS code set or one of the CPS codes programmed in bit switches 17, 18, 1A, 1B, or 1C.		

G4 to G3 fallback

Bit 0 of Communication Switch 07 must be at 0, or fallback from G4 to G3 will be disabled.

The CPS codes for which fallback occurs are decided as follows.

- G4 bit switch 17, bit 7 - If set to “0”, fallback occurs on receipt of a code from a set that depends on the country code. If set to ”1”, fallback occurs for the 5 CPS codes programmed in bits 0 to 6 of G4 bit switches 17, 18, 1A, 1B, and 1C, in addition to the country code set.

Bit Switch 19			
	FUNCTION	**COMMENTS**	**NOTE**
0	Permanence of the link **0:** Set/released each LAPD call **1:** Permanent	Keep this at 1 in the USA. In other areas, this bit is normally 0, depending on network requirements.	
1	Channel used in ISDN L2 (64k) mode **0:** B1 **1:** B2	When making an IDSN L2 back-to-back test, you can select either the B1 or B2 channel with this bit switch.	
2-7	Not used	Do not change the factory settings.	

Bit Switch 1A: CPS Code Used for G4 to G3 Fallback - 3			
	FUNCTION	**COMMENTS**	**NOTE**
0-6	Condition for fallback from G4 to G3 See the explanation for bits 0 to 6 of bit switch 17.		
7	Not used	Do not change the factory settings.	

Bit Switch 1B: CPS Code Used for G4 to G3 Fallback - 4			
	FUNCTION	**COMMENTS**	**NOTE**
0-6	Condition for fallback from G4 to G3 See the explanation for bits 0 to 6 of bit switch 17.		
7	Not used	Do not change the factory settings.	

Bit Switch 1C: CPS Code Used for G4 to G3 Fallback - 5			
	FUNCTION	**COMMENTS**	**NOTE**
0-6	Condition for fallback from G4 to G3 See the explanation for bits 0 to 6 of bit switch 17.		
7	Not used	Do not change the factory settings.	

Bit switches 1D to 1F are not used. Do not change any of the settings.

2. G4 Parameter Switches

Parameter Switch 00			
	FUNCTION	**COMMENTS**	**NOTE**
0 **1** **2**	Network type Bit 2 1 0 Type x 0 0 Circuit switched ISDN Other settings: Not used	Do not change the default settings.	
3-7	Not used	Do not change the default settings.	

Parameter Switch 01			
	FUNCTION	**COMMENTS**	**NOTE**
0	Voice coding **0:** μ law **1:** A law	**0:** This setting is used in USA. **1:** This setting is used in Europe and Asia.	
1	Action when a [SETUP] signal without HLC is received **0:** Respond to the call **1:** Not respond to the call	If there are several TEs on the same bus and the machine responds to calls for another TE, the call may be without HLC information. Identify the type of calling terminal and change this bit to 1 if the caller is not a fax machine.	
2-3	Not used	Do not change the default settings.	
4 **5** **6**	Signal attenuation level for G3 fax signals received from the ISDN line. If an analog signal comes over an digital line, the signal level after decoding by the TE is theorically the same as the level at the entrance to the digital line. However, this sometimes causes the received signal level to be too high. In this case, adjust the decoded signal's attenuation level using these switches. The values in the “Codec” column below show the attenuation level at the G4 interface board. The values in the “Modem” column show the actual attenuation level at the modem, because the signal is attenuated again on the MFCE by -6dB. Bit 6 5 4 Codec Modem (Actual attenuation level) 0 0 0 -4.5dB -10.5dB 0 0 1 -2.5dB -8.5dB 0 1 0 -0.5dB -6.5dB 0 1 1 +1.5dB -4.5dB (default setting) 1 0 0 +3.5dB -2.5dB 1 0 1 +5.5dB -0.5dB 1 1 0 +7.5dB +1.5dB 1 1 1 +9.5dB +3.5dB		
7	Not used	Do not change the default settings.	

Parameter Switch 02			
	FUNCTION	**COMMENTS**	**NOTE**
0 **1**	Data rate (kbps) Bit 1 0 Setting 0 0 64 kbps 0 1 56 kbps	Other settings: Not used	
2-3	Not used	Do not change the default settings.	
4 **5**	Transmission mode Bit 5 4 Mode 0 0 CS	Normally, do not change the seting.	
6-7	Not used	Do not change the default settings.	

Parameter Switch 03			
	FUNCTION	**COMMENTS**	**NOTE**
0	Link modulus **0:** 8 **1:** 128	Keep this bit at 0 in most cases. This setting determines whether protocol frame numbering is done using 3 bits (0 to 7 then start again at 0) or 7 bits (0 to 127 then start again at 0). Set this bit switch to match the network's specifications.	
1-7	Not used	Do not change the default settings.	

Parameter Switch 04 is not used. Do not change any of the settings.

Parameter Switch 05			
	FUNCTION	**COMMENTS**	**NOTE**
0 **1** **2** **3**	Link timer (D-channel layer 2 T1 timer) Bit 3 2 1 0 Value 0 0 0 0 0 s 0 0 0 1 1 s 0 0 1 0 2 s and so on until 1 0 1 0 10 s	Normally, do not change the setting. The link timer is the maximum allowable time between sending a protocol frame and receiving a response frame from the remote terminal.	
4	B-channel T3 timer **0:** 30s **1:** 57s	**1:** This switch is useful when used in combination with the Communication Switch 07 bit 4. This is to cope with communication problems where G4 communication fails on the ISDN B-channel.	Ver. 0F
5-7	Not used	Do not change the default settings.	

Parameter Switch 06			
	FUNCTION	**COMMENTS**	**NOTE**
0	Layer 3 protocol **0:** ISO8208 **1:** T.70NULL	Set this bit to match the type of layer 3 signalling used by the ISDN. This setting can be changed for specific destinations with the dedicated transmission parameters.	
1-3	Not used	Do not change the settings.	
4	Packet modulus **0:** 8 **1:** 128	Do not change the default setting, unless the machine is experiencing compatibility problems.	
5-7	Not used	Do not change the settings.	

Parameter Switch 07			
	FUNCTION	**COMMENTS**	**NOTE**
0 **1** **2** **3**	Packet size Bit 3 2 1 0 Value 0 1 1 1 128 1 0 0 0 256 1 0 0 1 512 1 0 1 0 1024 1 0 1 1 2048	This value is sent in the CR packet. This value must match the value stored in the other terminal, or communication will stop (CI will be returned). If the other end returns CI, check the value of the packet window size with the other party. Note that this value must be the same as the value programmed for the transport block size (G4 Parameter Switch 0B, bits 0 to 3). Normally, do not change the default setting.	
4-7	Not used	Do not change the settings.	

Parameter Switch 08			
	FUNCTION	**COMMENTS**	**NOTE**
0 **1** **2** **3**	Packet window size Bit 3 2 1 0 Value 0 0 0 1 1 0 0 1 0 2 and so on until 1 1 1 1 15	This is the maximum number of unacknowledged packets that the machine can send out before having to pause and wait for an acknowledgement from the other end. Normally this should be kept at 7.	
4-7	Not used	Do not change the settings.	

Parameter Switch 09			
	FUNCTION	**COMMENTS**	**NOTE**
0 **1** **2** **3**	LCGN Bit 3 2 1 0 Value 0 0 0 0 0 0 0 0 1 1 0 0 1 0 2 and so on until 1 1 1 1 15	Keep the value of the LCGN at 0.	
4-7	Not used	Do not change the settings.	

Parameter Switch 0A			
	FUNCTION	**COMMENTS**	**NOTE**
0-7	LCN Bit 7 6 5 4 3 2 1 0 Value 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 1 0 2 0 0 0 0 0 0 1 1 3 and so on until 1 1 1 1 1 1 1 1 255	Keep at the value of the LCN at 1.	

Parameter Switch 0B			
	FUNCTION	**COMMENTS**	**NOTE**
0 1 2 3	Transport block size Bit 3 2 1 0 Value 0 1 1 1 128 1 0 0 0 256 1 0 0 1 512 1 0 1 0 1024 1 0 1 1 2048	This value must match the value set in the other terminal. Note that this value must be the same as the value programmed for the packet size (G4 Parameter Switch 7, bits 0 to 3). Also, the transport block size is limited by the amount of memory in the remote terminal.	
4-7	Not used	Do not change the settings.	

Parameter Switch 0C is not used. Do not change any of the settings.

Parameter Switch 0D			
	FUNCTION	**COMMENTS**	**NOTE**
0 1	Back-to-back test mode Bit 1 0 Setting 0 0 Off 1 0 ISDN L2 test mode (TE mode) Other settings - Not used	When doing a back-to-back test or doing a demonstration without a line simulator, use these bits to set up one of the machines in TE mode, and the other in NT mode Please note that this machine can only be set to TE mode. After the test, return both bits to 0. See "Back-to-back Testing" in the Troubleshooting section of the service manual for full details.	
2-7	Not used	Do not change the settings.	

Parameter Switch 0E			
	FUNCTION	**COMMENTS**	**NOTE**
0	Troubleshooing mode - real time status codes display **0:** Off **1:** On	If this is switched on, the status codes will be displayed in the lower two lines of the LCD. These codes are explained in the Troubleshooting section of the service manual (G4CCU Status Codes). Change this bit back to 0 after testing.	
1	Saving frames to the protocol dump list **0:** Off **1:** On	Keep this bit at 1 normally.	
2-7	Not used	Do not change the settings.	

Parameter Switch 0F is not used. Do not change any of the settings.

3. DEDICATED TRANSMISSION PARAMETERS

The following G4 communication parameter bytes have been added for each Quick Dial and Speed Dial.

Switch 07		
	FUNCTION	**NOTE**
0 **1** **2** **3**	Data rate Bit 3 2 1 0 Setting 0 0 0 0 64 kbps 0 0 0 1 56 kbps 1 1 1 1 As in Parameter Switch 2, bits 0 and 1 Other settings: Not used	
4-7	Not used. Do not change the settings.	

Switch 08		
	FUNCTION	**NOTE**
0 **1** **2** **3**	Link modulus Bit 3 2 1 0 Setting 0 0 0 0 Modulo 8 0 0 0 1 Modulo 128 1 1 1 1 As in Parameter Switch 3, bit 0 Other settings: Not used	
4-7	Not used. Do not change the settings.	

Switch 09		
	FUNCTION	**NOTE**
0 **1** **2** **3**	Layer 3 protocol Bit 3 2 1 0 Setting 0 0 0 0 IS.8208 0 0 0 1 T.70 NULL 1 1 1 1 As in Parameter Switch 6, bit 0 Other settings: Not used	
4-7	Not used. Do not change the settings.	

4. OTHER RELATED SWITCHES

The following switches have been added to the mainframe switches (or fax board switches for MFPs), in relation to ISDN G4 communication.

Communication Switch 07			
	FUNCTION	**COMMENTS**	**NOTE**
3	Fallback from G4 to G3 reflected in programmed Quick/Speed dials **0:** Fallback enabled (Default) **1:** Always start with G4	**0:** If a communication falls back from G4 to G3, the machine will always start transmission with G3 from the next communication. **1:** The machine will always start to transmit with G4.	See the following table
4	Fallback from G4 to G3 when G4 communication fails on the ISDN B-channel **0:** Fallback disabled (Default) **1:** Fallback enabled	**1:** Enable this switch only when G4 communication errors occur because the exchanger connects G4 calls to the PSTN. This problem only occurs with some types of exchanger.	

Software versions for each machine

Communication Switch 07							
	FUNCTION	**FX4**	**FR4**	**Adam**	**NAD**	**Stinger**	**Russian**
3	Fallback from G4 to G3 reflected in programmed Quick/Speed dials **0:** Fallback enabled (Default) **1:** Always start with G4	N/A	Availa-ble	N/A	N/A	Available	Available
4	Fallback from G4 to G3 when G4 communication fails on the ISDN B-channel **0:** Fallback disabled (Default) **1:** Fallback enabled	N/A	Availa-ble	Ver. 1.75 or later	Ver. 5.01 or later	Available	Available

N/A: Function is not available

Model: Kaiser1, Schmidt1/3, FR4/6, FX4/6, FX7, LSO, LFO, LX7	Date: 11-Jul-00	No.: RGenF021

Subject: Modem turn-on level (NCU Parameter)	Prepared by: Y.Okunishi
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Technical Information)		

Please note the following points when setting the modem turn-on level:

1) Schmidt 3 Service Manual, pg. 4-49:
The maximum value at the address (NCU Parameter) for the modem turn-on level (incoming signal detection level) is 1F(h).

Of the 8 bits, only the first 5 are used.
Therefore, if the input were 20(h), the 5 bits would be 00000.

2) The level is calculated by the following equations:

Kaiser1, Schmidt1/3:
Modem carrier on: = (-33dB) – (0.5 x N)
off: = (-33dB) – (0.5 x N) – (3dB)

FX4/6, LSO, FX7, LSO, LFO, LX7:
Modem carrier on: = (-37dB) – (0.5 x N)
off: = (-37dB) – (0.5 x N) – (3dB)

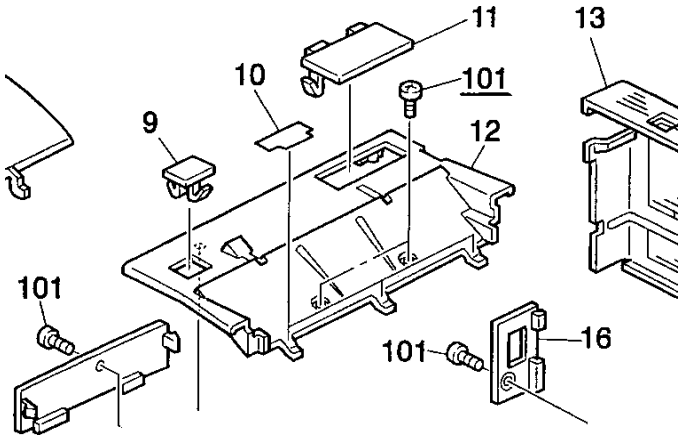
FR4/6:
Modem carrier on: = -33dB (N= 00h)
= -38dB (N= 01h – 0Ah)
= -43dB (N= 0Bh – 14h)
= -48dB (N= 15h – 1Fh)
off: = (above value – 3dB)

Model: FR4 (Europe)	Date: 07-Aug-00	No.: RH551022

Subject: Rear Cover – Upper	Prepared by: Y. Okunishi
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☒ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (CE Marking)		

Two small seals have been attached to the Upper Rear Cover since April 2000 production.
These seals must be peeled off when the screws are removed (Parts Catalog, Pg. 1-2, index 101).



Model: FR Series (H551/H552)	Date: 15-Jul-03	No.: RH551023

Subject: Laser Unit	Prepared by: A. Ishiyama
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☒ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom

Polygon Mirror Motor error: SC 3-31.

Cause

The edge of the Polygon Mirror Motor shaft can sometimes contact the Mylar affixed to the underside of the laser unit (H5522042), causing a reaction between the Mylar's adhesive and the oil inside the shaft, triggering SC3-31.

Action

Production line:

The shape of the Mylar has been changed to ensure a gap between the Mylar and motor shaft. In addition, the adhesive is not applied to the center of the Mylar (the area just below the shaft).

In the field:

Replace with the modified Polygon Mirror Motor, which includes the modified Mylar.
See MB MH551022 for details.

Old part number	New part number	Description	Q'ty	Int
H5522042	H5522045	Laser Plotter Unit	1→1	X/O
H5525040	H5529100	Polygon Mirror Motor	1→1	X/O

Note:

1. When installing for the first time, be sure to replace the new motor and Mylar **together as a set**.
2. The Polygon Mirror Motor itself has not been changed. The new P/N (H5529100) consists of the same motor plus the new Mylar.
3. This symptom does not occur with laser units used on other F/L series products (e.g. FX6/FX4/LSO/LFO), because the motor shaft and Mylar do not contact one another.