Service Manual

FAX Board
Super G3 FAX Board-T1

Canon

Application

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Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
	Indicates an item intended to provide notes assisting the understanding of the topic in question.
	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:
1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.

   In the diagrams, ▬█▐ █▬ represents the path of mechanical drive; where a signal name accompanies the symbol , the arrow ⟶ indicates the direction of the electric signal.

   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.

   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

Chapter 5 Error Code

Chapter 1 Specifications

Contents

1.1 Product Specifications

1.1.1 Product Specifications

T-1-1

Item	Description
Communication	G3
Applicable lines	PSTN (Public Switched Telephone Network)
Modulation method	<G3 image signal>
	ITU-T V.27ter (2.4Kbps, 4.8Kbps)
	ITU-T V.29 (7.2Kbps, 9.6Kbps)
	ITU-T V.17 (TC 7.2Kbps, TC 9.6Kbps, 12Kbps, 14.4Kbps)
	ITU-T V.34 (2.4Kbps, 4.8Kbps, 7.2Kbps, 9.6Kbps, 12Kbps, 14.4Kbps, 16.8Kbps, 19.2Kbps, 21.6Kbps, 24Kbps, 26.4Kbps, 28.8Kbps, 31.2Kbps, 33.6Kbps)
	<G3 procedure signal>
	ITU-T V.21 No.2 (300bps)
	ITU-T V.8, V.34 (300bps)
Transmission speed	33.6Kbps, 31.2Kbps, 28.8Kbps, 23.4Kbps, 24Kbps, 21.6Kbps, 19.2Kbps, 16.8Kbps, 14.4Kbps, 12Kbps, TC 9.6Kbps, TC7.2Kbps, 9.6Kbps, 7.2Kbps, 4.8Kbps, 2.4Kbps
	auto fallback function
Coding method	JBIG, MMR, MR, MH
G3-specific abridged procedure	no
Dial Tone Detection	yes
Modem IC	CONEXANT FM336 Plus
Error correction	ITU-T ECM
Transmission original size	A3, A4, A4R, A5, A5R, B4, B5, B5R, LTR, LTRR, LGL, 11x17, STMT, STMTR
	ADF: double-sided originals accepted
Scanning line density	Standard (200 x 100 dpi): 8 dots/mm x 3.85 lines/mm
	Fine (200 x 200 dpi):8 dots/mm x 7.7 lines/mm
	Super Fine (300 x 300 dpi): 8 dots/mm x 15.4 lines/mm
	Ultra Fine (400 x 400 dpi): 16 dots/mm x 15.4 lines/mm
Halftone	256 gradations
Recording unit	maximum reception size: A3 (297mm x 420mm)
	scanning line density: 600dpi x 600dpi
Memory	image memory: 1000 prints (Canon Fax Standard Chart No. 1)
	memory type: Super capacitor
	storage: JBIG
	backup time: approx. 1 hour
Extension telephone connection	no
Answering machine connection	no
Fax/Tel switching	no
Divided Transmission	yes
Remote reception	no
Polling (F code)	no
Memory box	no
Password reception	no
Machine telephone No. transmission	yes
User abbreviation transmission	yes
Dual access	64 (maximum number of reservations)
Broadcasting	201 targets (maximum number of targets)
	10 target(maximum number of targets by numeric key dialing)

Chapter 2 Functions

Contents

2.1 Basic Construction

2.1.1 Overview

The board is designed to enable a digital copier to serve as a high-performance multi-functional machine (image processing functions and communication functions over the telephone line).
It is capable of communicating at a maximum rate of 33.6 kbps, thanks to the presence of a V.34-compliant modem (ITU-T).

F-2-1
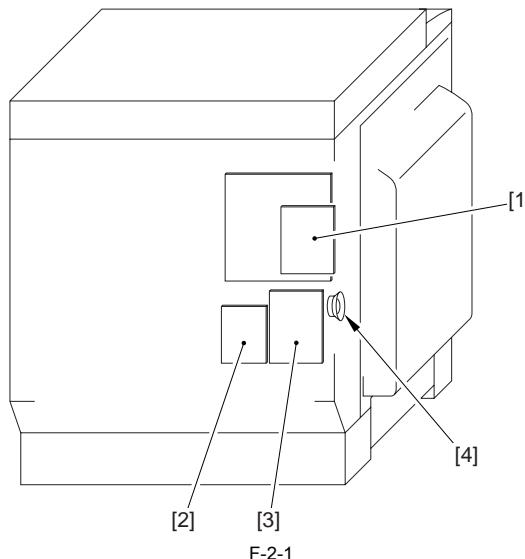
[1] Modem PCB
[2] Modular PCB
[3] NCU PCB
[4] Speaker unit

2.1.2 Modem PCB

F-2-2
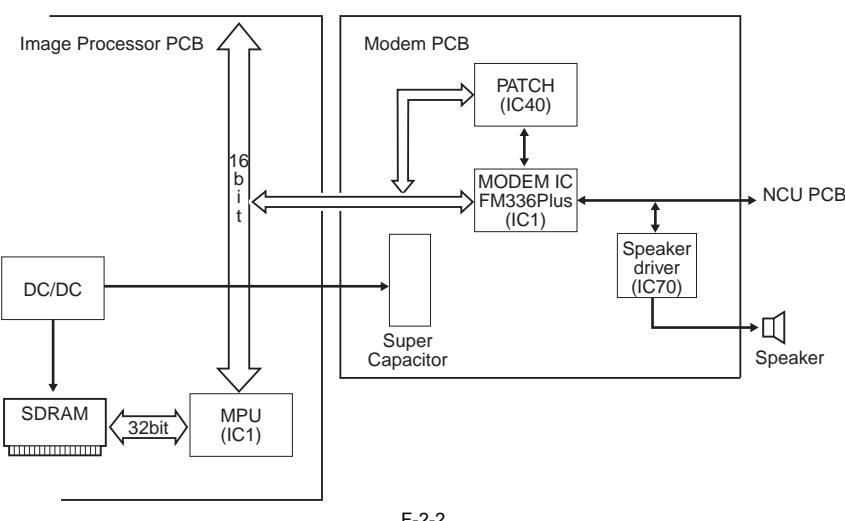
MPU (IC1)
It performs JBIG encoding/decoding and control of line communication and SDRAM. SDRAM is connected with a bus of 32bit.
PATCH (IC40)
It controls ports, such as those in NCU or speaker.
SDRAM
It is used as the memory for encoding/decoding of image data during transmitting/receiving and that for MPU work area.
In addition, it is used for storing the transmitted/received image data.
MODEM IC (IC1)
CONEXTANT FM336Plus modem modulates the transmitted data from MPU via line based on the ITU-T V.17, V.21, V.27ter., V.29 and V.34.
In receiving, it demodulates the received data via line based on the ITU-T V.17, V.21, V.27ter., V.29, and V34.
Super Capacitor
It backups the transmitted/received image data stored in SDRAM.
DC/DC
It generates the voltage to backup SDRAM by raising the voltage of super capacitor when main power is shut down or fails.

2.1.3 NCU PCB
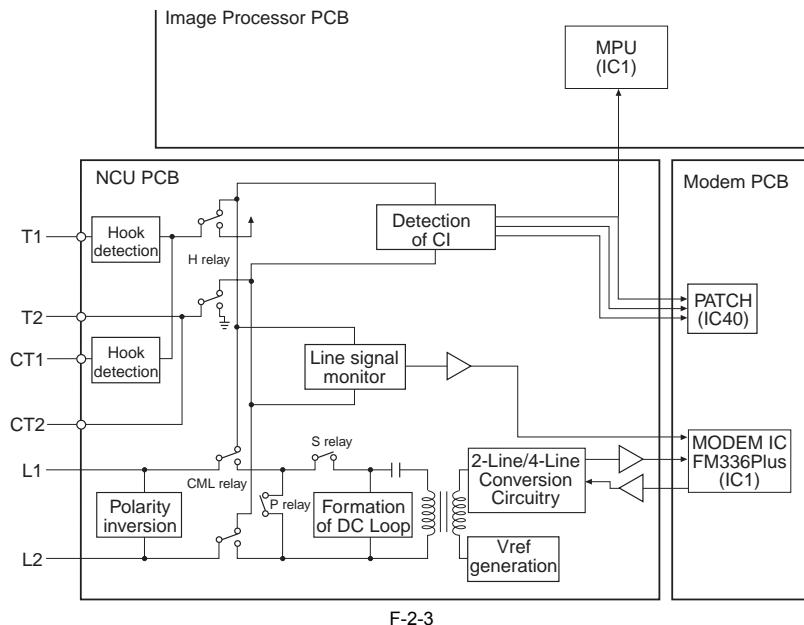
F-2-3

2-Line/4-Line Conversion Circuitry
Signals from a 2-line telephone line are converted into transmission signals and reception signals (4 lines). It also serves to prevent intrusion of signals from the modem into the reception circuit.
Dial Pulse Generator Circuit
It turns on and off the relay within the circuit using the control signal from the Modem PCB to generate dial pulses so that dial signals will be generated by the fax on a dial-pulse line.
Off-Hook Detection Circuit
Detects an off-hook state by monitoring the dirt current flowing in the circuit when the telephone connected to the extension telephone terminal is put off the hook.
Line Voltage Conversion Circuit
The primary side of the NCU PCB is controlled by a line voltage of +48 VDC. The DC component is cut out by the work of a capacitor and, as a result, only audio signals are converted into voltages suited to the level of the modem.

Chapter 3 Parts Replacement Procedure

Contents

3.1 Removing from the Host Machine

3.1.1 FAX Unit

3.1.1.1 Removing of the FAX Unit

1) Turn off the main power switch and remove the line code from the receptacle.
2) Remove the machine's rear cover [1].
   - 4 screws [2]

F-3-1
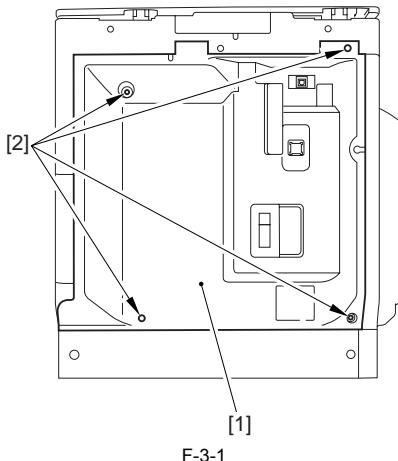
3) Remove the machine's rear left cover [1].
   - 3 screws [2].

F-3-2
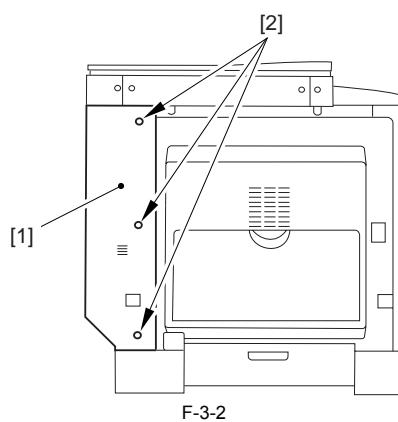
MEMO:
If a LAN cover exits,
1) Remove the LAN cover [1].
   - 4 screws [2].

F-3-3
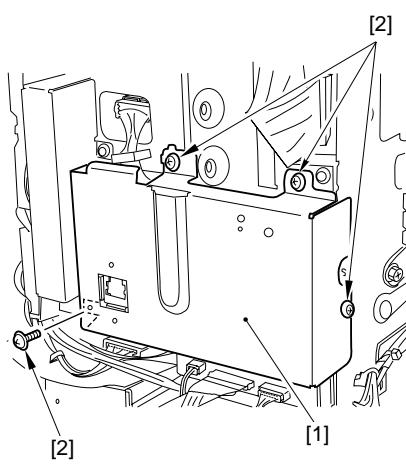
4) Disconnect 4 connectors [1].

F-3-4
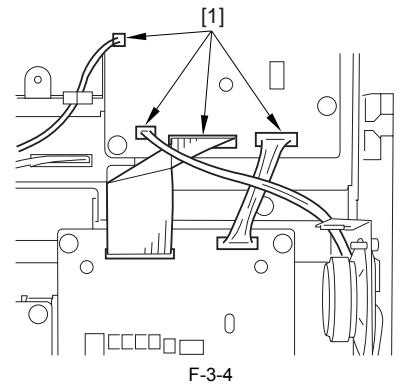
5) Mount the modem PCB [1].
   - 1 connector [2].
   - 3 screws (M3X8) [3]

F-3-5
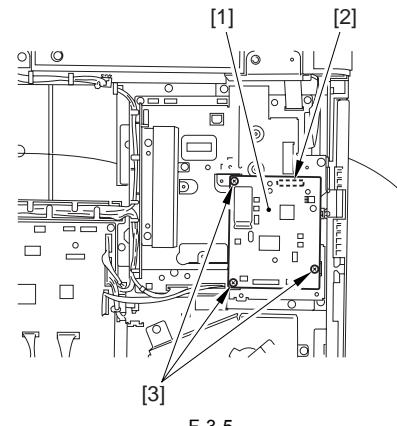
6) Remove the cable [1].
   - 1 connector [2]
   - 4 wire saddles [3]

F-3-6
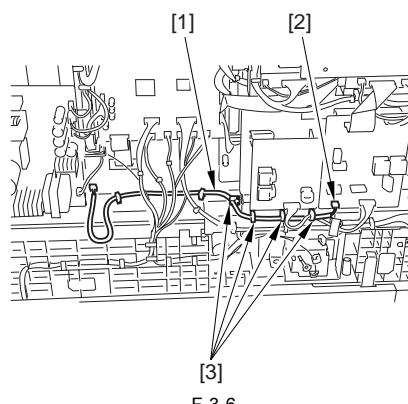
7) Remove the Fax unit [1].
   - 3 screws (M3X8) [2]

F-3-7
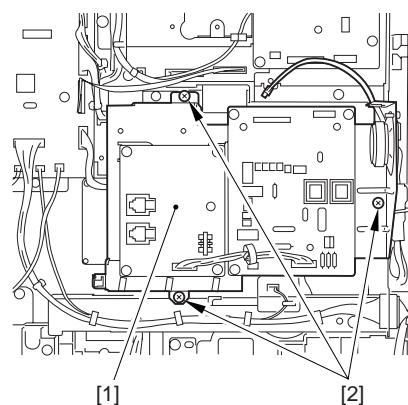
Chapter 4 Service Mode

Contents

4.1 Outline

4.1.1 Service Mode Composition

Service mode has the following service data items. These items can be checked/changed according to the menu on the display.

#SSSW
These setting items are for basic fax service functions such as error management, echo countermeasures, and communication trouble countermeasures.

#MENU
These setting items are for communication functions, such as NL equalizer and transmission levels.

#NUMERIC
These setting items are for inputting numeric parameters such as the various conditions for the RTN signal transmission.

#SPECIAL
These setting items are for telephone network control functions.

#NCU
These setting items are for telephone network control functions such as the selection signal transmission conditions and the detection conditions, for the control signals sent from the exchange.

#FAX
Do not use.

#SCAN
These setting items are for image adjustment in scanning.

#PRINT
These setting items are for image adjustment in printer assembly and for special mode for the field-related measures.

#NETWORK
Do not use.
#CODEC
Do not use.

#SYSTEM
These are used for the import/export of user information through USB.

#ACC
These are used for registration of accessories.

#COUNTER
This is used for displaying a guide to be conducted maintenance/parts replacement.

#REPORT
Use it to output reports on various service data.

#DOWNLOAD
This is used for downloading the firmware to the ROM of appropriate board.

#CLEAR
This is used for initializing the data.

#ROM
This is used for displaying the ROM information, such as version number or checksum.

4.1.2 Service Data Entry Method

You can enter the Service Mode with the following operation.

Additional Functions — 2 — 8 — Additional Functions — # SSSW

F-4-1
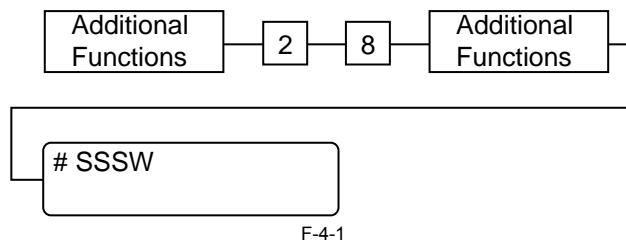
4.2 Setting of Bit Switch (SSSW)

4.2.1 Outline

4.2.1.1 Bit Switch Composition

The items registered and set by each of these switches comprise 8-bit switches. The figure below shows which numbers are assigned to which bits. Each bit has a value of either 0 or 1.
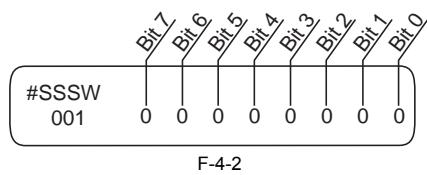
F-4-2

⚠ Do not change service data identified as "not used"; they are set as initial settings.

4.2.2 SSSW-SW01: Error/Copy Management

4.2.2.1 List of Functions

T-4-1

Bit	Function	1	0
0	service error code	output	not output
1	not used	-	-
2	not used	-	-
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

4.2.2.2 Detailed Discussions of Bit 0

Selects whether or not service error codes are output.
When output is selected, service error codes is report.

4.2.3 SSSW-SW03: Setting of Echo Measures

4.2.3.1 List of Functions

T-4-2

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	not used	-	-
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	tonal signal before CED signal transmission	transmit	do not transmit

4.2.3.2 Detailed Discussions of Bit 7

Use it to enable/disable transmission of a 1080-Hz tonal signal before transmission of the CED signal.
Select 'transmit' if errors occur frequently because of an echo when reception is from overseas.

Memo:
Any of the following error code may be indicated because of an echo at time of reception
##0005, ##0101, ##0106, ##0107, ##0114, ##0200, ##0201, ##0790

4.2.4 SSSW-SW04: Setting of Communication Trouble Measures

4.2.4.1 List of Functions

T-4-3

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	the number of final flag sequences of protocol signals	2	1
3	Reception mode after CFR signal transmission	high speed	high speed/low speed
4	the length of the period of ignoring low speed signals after CFR output	1500 ms	700 ms
5	not used	-	-
6	CNG signal for manual transmission	Not transmitted	Transmitted
7	CED signal for manual reception	Not transmitted	Transmitted

4.2.4.2 Detailed Discussions of Bit 2

Use it to select the number of last flag sequences for a protocol signal (transmission speed at 300 bps). Select '2' if the other party fails to receive the protocol signal properly.

Memo:
Any of the following error codes may be indicated at time of transmission

##0100, ##0280, ##0281, ##0750, ##0753, ##0754, ##0755, ##0758, ##0759, ##0760, ##0763 ##0764, ##0765, ##0768, ##0769,##0770, ##0773, ##0775, ##0778, ##0780, ##0783, ##0785, ##0788

4.2.4.3 Detailed Discussions of Bit 3

Use it to select an appropriate reception mode after transmission of the CFR signal.
If errors occur frequently at time of reception because of the condition of the line, select 'high speed' for reception mode and, at the same time, selects 'do not receive' for 'ECM reception.'

Memo:
Any of the following error codes may be indicated at time of reception because of line condition
##0107, ##0114, ##0201
Be sure to change bit 4 before changing this bit; if errors still occur, change this bit.
When 'high speed' is selected, only high-speed signals (images) will be received after transmission of the CFR signal.

4.2.4.4 Detailed Discussions of Bit 4

Use it to select the time length during which low-speed signals are ignored after transmission of the CFR signal.
If the condition of the line is not good and, therefore, the reception of image signals is difficult, select '1500 ms.'

4.2.4.5 Detailed Discussions of Bit 6

Selects whether or not to transmit CNG signal during manual transmission.
In manual transmitting to a fax with the FAX/TEL switching mode, if there are frequent errors due to failure to switch to fax mode, select "Transmitted" for the CNG signal.

4.2.4.6 Detailed Discussions of Bit 7

Selects whether or not to transmit CED signals during manual reception. If the other fax does not transmit even when you start manual reception, select "Transmitted" for the CED signal.

4.2.5 SSSW-SW05: Setting of Standard Functions (DIS signal)

4.2.5.1 List of Functions

T-4-4

Bit	Function	1	0
0	not used	-	-
1	Conversion from mm to inch (text mode)	convert	do not convert
2	Conversion from mm to inch (text/photo mode)	convert	do not convert
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

4.2.5.2 Detailed Discussions of Bit 1

Use it to enable/disable millimeter/inch conversion in sub scanning direction for images read in text mode.
Scanning direction in conversion follows the Bit 2 setting of SW14.

4.2.5.3 Detailed Discussions of Bit 2

Use it to enable/disable millimeter/inch conversion in sub scanning direction for images read in text/photo mode while bit 1 is set to '1'.
Scanning direction in conversion follows the Bit 2 setting of SW14.

4.2.6 SSSW-SW12: Setting of Page Timer

4.2.6.1 List of Functions

T-4-5

Bit	Function	1	0
0	Time-out period for one page upon transmission	1	0
1	Time-out period for one page upon transmission	1	0
2	not used	-	-
3	not used	-	-
4	Time-out period for one page upon reception	1	0
5	Time-out period for one page upon reception	1	0
6	not used	-	-
7	Respective page timer settings for transmission and for reception	enable	do not enable

The machine will stop the ongoing communication if the transmission/reception of a single original page takes 32 min or more. To use the timer for a purpose other than this function, refer to the tables that follow, and select an appropriate time length.
When 'do not enable' is selected using bit 7, the time-out length for a single page for all modes will depend on the setting of bit 0 and bit 1.

T-4-6

Time-Out Length for Transmission/Reception	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	0	*	*	*	*	*	0	0
16 min	0	*	*	*	*	*	0	1
32 min	0	*	*	*	*	*	1	0

Time-Out Length for Transmission/Reception	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
64 min	0	*	*	*	*	*	1	1

T-4-7

Time-Out Length for Transmission (in text mode)	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	1	*	*	*	*	*	0	0
16 min	1	*	*	*	*	*	0	1
32 min	1	*	*	*	*	*	1	0
64 min	1	*	*	*	*	*	1	1

T-4-8

Time-Out Length for Reception	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	1	*	0	0	*	*	*	*
16 min	1	*	0	1	*	*	*	*
32 min	1	*	1	0	*	*	*	*
64 min	1	*	1	1	*	*	*	*

4.2.7 SSSW-SW13

4.2.7.1 List of Functions

T-4-9

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	Convert "inch" into "mm" when transmitting the received image data	convert	do not convert
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

4.2.7.2 Detailed Discussions of Bit 2

It converts "inch" into "mm" when transmitting the received image data.
Scanning direction in conversion follows the Bit 2 setting of SW14.

4.2.8 SSSW-SW14: Setting of Inch/Millimeter-base Resolution

4.2.8.1 List of Functions

T-4-10

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	direction of scanning for inch/mm conversion	both main and sub scanning directions	sub scanning direction only
3	not used	-	-
4	inch-configuration resolution declaration	declare	do not declare
5	not used	-	-
6	not used	-	-
7	not used	-	-

4.2.8.2 Detailed Discussions of Bit 2

Use it to specify whether to convert or not convert an inch-configuration resolution into a millimeter-configuration resolution for image read in G3 transmission: either in sub scanning direction only or in both main and sub scanning directions. The setting is valid only when bit 1 of SW05 of #SSSW is set to '1'.

4.2.8.3 Detailed Discussions of Bit 4

Use it to specify whether to declare or not declare an inch-configuration resolution to the other machine for G3 communication: if 'declare' is selected, the machine will indicate that it reads and records at an inch-configuration resolution using the DIS, DCS, or DTC signal.

4.2.9 SSSW-SW28: Procedure Setting for V.8/V.34

4.2.9.1 List of Functions

T-4-11

Bit	Function	1	0
0	Caller V.8 protocol	NO	YES
1	Called party V.8 protocol	NO	YES
2	Caller V.8 protocol late start	NO	YES
3	Called party V.8 protocol late start	NO	YES
4	V.34 reception fallback	Prohibited	Not prohibited

Bit	Function	1	0
5	V.34 transmission fallback	Prohibited	Not prohibited
6	not used	-	-
7	not used	-	-

4.2.9.2 Detailed Discussions of Bit 0

Select whether to use the V.8 protocol when calling. If NO is selected, the V.8 protocol is inhibited at calling and the V.21 protocol is used.

4.2.9.3 Detailed Discussions of Bit 1

Select whether to use the V.8 protocol when called. If NO is selected, the V8 protocol is inhibited when called and the V.21 protocol is used.

4.2.9.4 Detailed Discussions of Bit 2

If ANSam signal is not received during transmission, select whether to use the V.8 protocol when the other fax machine declares the V.8 protocol in DIS signal. If NO is selected, the CI signal is not transmitted and the V.8 protocol is not used even if the DIS that specifies the V.8 protocol is received.
The V.8 late start is not executed during manual transmission regardless of this setting.

4.2.9.5 Detailed Discussions of Bit 3

Select whether to declare the V.8 protocol in DIS signal for reception. If NO is selected, the V.8 protocol cannot be used because it is not declared in DIS signal.
The V.8 late start is not executed during manual reception regardless of this setting.

4.2.9.6 Detailed Discussions of Bit 4

Select whether the receiver falls back during V.34 reception. If 'Prohibit' is selected, the receiver does not fall back.

4.2.9.7 Detailed Discussions of Bit 5

Select whether the transmitter falls beck during V.34 transmission. If 'Prohibit' is selected, teh transmitter does not fall back.

4.3 Setting of Menu Switch (MENU)

4.3.1 Menu Switch Composition

T-4-12

No.	Function	Range of settings
005	NL equalizer	1: ON, 0: OFF
006	telephone line monitor	0:DIAL, 1:SERVICEMAN1, 2:SERVICEMAN2, 3:OFF
007	transmission level (ATT)	from 0 to 15 (ex: 15= -15 dBm)
008	V.34 modulation speed upper limit	0:3429, 1:3200, 2:3000, 3:2800, 4:2743, 5:2400
009	V34 data speed upper limit	0:33.6 kbps, 1:31.2 kbps, 2:28.8 kbps, 3:26.4 kbps, 4:24.0 kbps, 5:21.6 kbps, 6:19.2 kbps, 7:16.8 kbps, 8:14.4 kbps, 9:12.0 kbps, 10:9.6 kbps, 11:7.2 kbps, 12:4.8 kbps, 13:2.4 kbps
010	Frequency of pseudoring signal	0:50 Hz, 1:25 Hz, 2:17 Hz

4.3.2 <005: NL Equalizer>

Use it to enable-disable the NL equalizer.
If errors occur often during communication because of the condition of the line, enable (ON) the NL equalizer.

Memo:
Any of the following error codes may be indicated at time of transmission because of the line condition
##0100, ##0101, ##0102, ##0104, ##0201, ##0281, ##0282, ##0283,
##0750, ##0755, ##0765, ##0774, ##0779, ##0784, ##0789
Any of the following error codes may be indicated at time of transmission because of the line condition
##0103, ##0107, ##0114, ##0201, ##0790, ##0793

4.3.3 <006: Telephone Line Monitor>

Use it to the telephone line monitor function:

T-4-13

0(DIAL):	generate the monitor sound of the telephone line using the speaker from the start of transmission to DIS.
1(SERVICEMAN1):	generate the monitor sound of the telephone line using the speaker from the start of communication to the end of it.
2(SERVICEMAN2):	not used
3(OFF):	do not generate the monitor sound of the telephone line usng the speaker.

4.3.4 <007: ATT Transmission Level>

Use it to set the transmission level (ATT).
Raise the transmission level if errors occur frequently at time of communication because of the condition of the line. (It means close to 0)

Memo:
Any of the following error codes may be indicated at time of transmission because of the line condition
##0100, ##0101, ##0102, ##0104, ##0201, ##0280, ##0281, ##0282,
##0283, ##0284, ##0750, ##0752, ##0754, ##0755, ##0757, ##0759,
##0760, ##0762, ##0764, ##0765, ##0767, ##0769, ##0770, ##0772,
##0774, ##0775, ##0777, ##0779, ##0780, ##0782, ##0784, ##0785,
##0787, ##0789
Any of the following error codes may be indicated at time of reception because of the line condition
##0103, ##0106, ##0107, ##0201, ##0793

4.3.5 <008: V.34 Modulation Speed Upper Limit>

Use it to set an upper limit to the modulation speed (baud rate) for the V.34 primary channel.

4.3.6 <009: V.34 Data Speed Upper Limit>

Use to set an upper limit to the data transmission speed for the V.34 primary channel between 2.4K and 33.6K bps in increments of 2400 bps. (0: 2.4K to 13: 33.6K bps).

4.4 Setting of Numeric Parameter (NUMERIC Param.)

4.4.1 Numerical Parameter Composition

T-4-14

No.	Item	Range of settings
002	RTN transmission condition(1)	1% to 99%
003	RTN transmission condition (2)	2 to 99 item
004	RTN transmission condition (3)	1 to 99 lines
005	NCC pause time length (pre-ID code)	1 to 60 sec
006	NCC pause time length (post-ID code)	1 to 60 sec
010	line condition identification time length	0 to 9999 (10 msec)
011	T.30T1 timer (for reception)	0 to 9999 (10 msec)
013	T.30 EOL timer	500 to 3000 (10 msec)
015	hooking detection time length	0 to 999
016	time length to first response at time of fax/tel switchover	0 to 9
017	pseudo RBT signal pattern ON time length	0 to 999
018	pseudo RBT signal pattern OFF time length (short)	0 to 999
019	pseudo RBT signal pattern OFF time length (long)	0 to 999
020	pseudo CI signal pattern ON time length	0 to 999
021	pseudo CI signal pattern OFF time length (short)	0 to 999
022	pseudo CI signal pattern OFF time length (long)	0 to 999
023	CNG detection level at time of fax/tel switchover	0 to 7
024	pseudo RBT transmission level at time of fax/tel switchover	10 to 20 / 0 to 20 (120/230V)
025	Answering machine connection function signal detection time	0 to 999
027	preamble detection time length for V21 low-speed flag	20 (x 10ms)

4.4.2 <002: RTN transmission condition (1)><003: RTN transmission condition (2)><004: RTN transmission condition (3)>

Use it to set RTN signal transmission conditions. Raise these parameters for more lenient conditions if errors occur frequently at time of reception because of transmission of the RTN signal.

Memo:
Any of the following error codes may be indicated at time of reception because of RTN signal transmission
##0104, ##0107, ##0114, ##0201

RTN signal transmission condition (1) affects the ratio of error lines to the total number of lines per single page of received images.
RTN signal transmission condition (2) affects the standard value (*2) of burst errors (*1).
RTN signal condition (3) affects the number of errors not reaching the standard value of burst errors.

*1: transmission error occurring cover several lines.
*2: for instance, if '15' is set, a single burst error will represent an error occurring continuously cover 15 lines.

If any of these lines is detected while an image signal is being received, the RTN signal will be transmitted after receiving the protocol signal of the transmitting party. Higher parameters restrict the transmission of the RTN signal.

4.4.3 <005: NCC pause length (pre-ID code)>

Use it to set the length of the pause automatically entered between access code and ID code when the NCC (New Common Carrier) line is used for dialing.

4.4.4 <006: NCC pause length (post-ID code)>

Use it to set the length of the pause automatically entered between ID code and telephone number of the other party when the NCC (New Common Carrier) line is used for dialing.

4.4.5 <010: line connection identification length>

Use it to set the time for identifying the line connection. Raise this parameter if errors occur frequently at time of communication because of the condition of the line.

Memo:
Any of the following error codes may be indicated because of the condition of the line
##0005, ##0018
The line condition identification time is between when the dial signal is transmitted and when the line condition is cut for the transmitting party, while it is between when the DIS signal is transmitted and when the line is cut for the receiving party.

4.4.6 <011: T.30 T1 timer (for reception)>

Set the T1 timer for the receiver (wait time after DIS transmission starts until a significant signal is received).

4.4.7 <013: T.30 EOL timer>

Set it so that the 1-line transmission time is longer for reception to prevent reception errors caused by a long data length per line (e.g., computer FAX).

4.4.8 <016: time length to first response at time of fax/tel switchover>

Allows setting of the time from seizing the line till pseudo RBT is sent, when the Fax/ Tel switching function is operating.

4.4.9 <017: pseudo RBT signal pattern ON time length><018: pseudo RBT signal pattern OFF time length (short)><019: pseudo RBT signal pattern OFF time length (long)>

Use it to set the pattern of the pseudo RBT signal transmitted at time of a fax/tel switchover.

4.4.10 <020: pseudo CI signal pattern ON time length><021: pseudo CI signal pattern OFF time length (short)><022: pseudo CI signal pattern OFF time length (long)>

Use it to set the pseudo CI signal pattern transmitted at time of a fax/tel switchover.

4.4.11 <023: CNG detention level for fax/tel switchover>

Use it to set the CNG detention level for a fax/tel switchover.

4.4.12 <024: pseudo RBT transmission level at time of fax/tel switchover>

Use it to set the pseudo transmission level for a fax/tel switchover.

4.4.13 <025: Answering machine connection function signal detection time>

Sets the signal detection time for the answering machine connection function operation. When the answering machine connection function is operating, if the function does not operate normally because the fax does not detect CNG signal sent from the line, raise this parameter to increase the signal detection time.

4.4.14 <027: V.21 low-speed flag preamble identification length>

Use it to detect the time of detection after which command analysis is started after detecting V.21 low-speed command preambles continuously for a specific period of time.

4.5 Setting of Destination (TYPE)

4.5.1 Overview

#NCU data is automatically set to be in compliance with the communication standard in each country/region depending on TYPE settings.

Memo:
#CLEAR has items of TYPE setting.

4.6 Setting of Printer Functions (PRINTER)

4.6.1 Setting of Bit Switch (SSSW)

4.6.1.1 SSSW-SW05: Setting of Reduction/Cassette Selection

4.6.1.1.1 List of Functions

0011-0082

T-4-15

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	not used	-	-
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	priority on recording in sub scanning direction	place	do not place

4.6.1.1.2 Detailed Discussions of Bit 7

0011-0083

Use it to enable/disable placement of priority on recording in sub scanning direction.

T-4-16

place:	if B4 recording paper and A4 recording paper are set and an A4 extra-long image (*) is received, printing will be on the B4 recording paper.
do not place:	if B5 horizontal recording paper and A4 recording paper are set and a B4 image is received, printing will be by division and on B5 horizontal recording paper.

*: Image B4 or shorter and that cannot be printed by division and on A4 recording paper.

4.7 Initialization of Set Value (CLEAR)

4.7.1 Overview

Data is to be initialized by selecting any of the following items.
If the figures, such as those of setting items or parameters, are cleared, they will become the factory setting.

T-4-17

Item		Data to be initialized
TEL & USER DATA		User data and registered telephone number data SSSW is not cleared.
SERVICE DATA		Counters other than those (denominator, numerator) on the system dump list and cleared date are cleared.
COUNTER		Counter data of maintenance/part counter and those by mode are cleared. Counters (numerator) on the system dump list are cleared.
TYPE		Initialize user data and service data conformed to each country/region.
HST		
	ACTIVITY	The content of activity report is cleared.
	ACCOUNT	The printing history is cleared.
	JAM	The jam history is cleared.
	ERR	The error (E-code) history is cleared.
	ALARM	The alarm history is cleared.
CARD		Connecting information in the card reader is cleared.
ERR		
	E355	Clear E355.
	E719	Clear E719.
PWD		Clear the password for system administrator.
ALL		Counters (denominator, numerator) on the system dump list and all setting/ registration data other than counters are cleared. (*1)

*1: If "ALL" is conducted, Type setting of #CLEAR items will become that for U.S.A, therefore, Type setting is necessary to be changed so as to suit the communication standard of each country/region.

4.8 Test Mode (TEST)

4.8.1 Outline

4.8.1.1 Test Mode Construction

Test mode can be operated by following the menu items to be displayed on LCD.
The items enabled when the FAX Unit is installed are shown below.

MODEM Test
Frequency test, G3 signal transmission test, DTMF signal receiving test and V.34 G3 signal transmission test can be conducted.

FACULTY Test
Function test of operation panel can be done.

TEST MODE   '*' indicates that these items are not used in the field.

```
├─[4] MODEM TEST ──────── * [1] RELAY TEST
│                         ─  [2] FREQ TEST
│                         ─  [4] G3 SIGNAL Tx TEST
│                         * [5] DTMF TEST
│                         * [6] MODEM TEST
│                         ─  [8] G3 V34 Tx TEST
│
└─[6] FUNCTION TEST────── * [1] G3 4800bps TEST
                          * [6] SPEAKER
                          ─  [7] OPERATION PANEL
                          ─  [9] LINE TEST
```

F-4-3
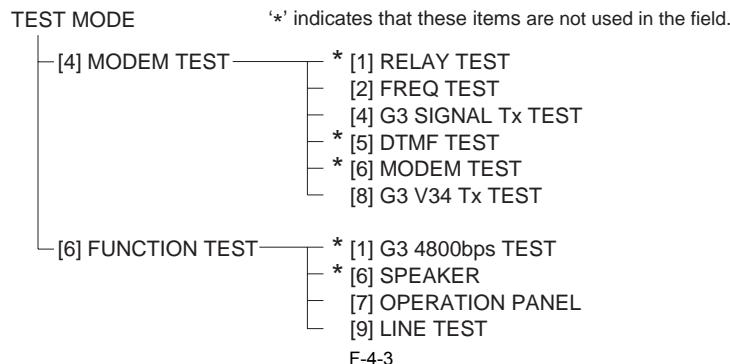
4.8.2 MODEM Test

4.8.2.1 Modem Tests

The Modem Test menu is selected by pressing the numeric key 4 from the test mode menu.
These tests test modem and NCU transmission and reception. The modem tests check whether signals are sent correctly from the modem by comparing the sound of the signals from the speaker with the sounds from a normal modem.
End this test by pressing the Stop key.

T-4-18

Modem test type	Overview
Frequency test	The modem sends tonal signals from the modular jack and the speaker.
G3 signal transmission test	The modem sends G3 signals from the modular jack and the speaker.
V.34 G3 signal transmission test	The modem sends V.34 G3 signals from the modular jack and the speaker.

4.8.2.2 Frequency Test

The frequency test menu is selected by pressing the numeric button 2 from the MODEM test menu.
Signals of the frequencies below are sent from the modem using the modular jack and the speaker. The frequency can be changed with the numeric buttons.

T-4-19

Numeric button	Frequency
0	462 Hz
1	1100 Hz
2	1300 Hz
3	1500 Hz
4	1650 Hz
5	1850 Hz
6	2100 Hz

4.8.2.3 G3 Signal Transmission Test

The G3 signal transmission test menu is selected by pressing the numeric button 4 from the MODEM test menu.
The G3 signals below are sent from the modem using the modular jack and the speaker. The Speed can be changed with the numeric buttons.

T-4-20

Numeric button	Speed
0	300 bps
1	2400 bps
2	4800 bps
3	7200 bps
4	9600 bps
5	TC7200 bps
6	TC9600 bps
7	12000 bps

Numeric button	Speed
8	14400 bps

Memo:
The transmission level for each frequency follows the service data.

4.8.2.4 V.34 G3 Signal Transmission Test

The V.34 G3 signal transmission test menu is selected by pressing the numeric button 8 from the MODEM test menu.
The V.34 G3 signals below are sent from the modem using the modular jack and the speaker by pressing the Start button. The Baud rate can be changed with the numeric buttons, and the Speed can be changed with the cursor buttons.

T-4-21

Numeric button	Baud rate
0	3429 baud
1	3200 baud
2	3000 baud
3	2800 baud
4	2743 baud
5	2400 baud

T-4-22

Cursor button	Speed
	33.6 kbps
	31.2 kbps
	28.8 kbps
< >	26.4 kbps
	24.0 kbps
	21.6 kbps
	19.2 kbps
	16.8 kbps
	14.4 kbps
	12.0 kbps
	9.6 kbps
	7.2 kbps
	4.8 kbps
	2.4 kbps

Memo:
The transmission level for each baud rate and speed follows the service data.

4.8.3 Function Test

4.8.3.1 FACULTY Tests

The faculty tests are selected by pressing the numeric key 6 from the test mode menu.
These tests test the following faculties of this fax.

T-4-23

Test type	Overview
Operation panel test	Tests whether the button switches on the control panel are operating correctly.
Line signal reception test	Tests whether the NCU board signal sensor and frequency counter are operating correctly.

4.8.3.2 Operation Panel Tests

The operation panel test is selected by pressing the numeric key 7 from the faculty test menu.
In this test, check that the display, LED lamps and buttons on the operation panel are operating correctly.

Display test
Pressing the Start key from the operation panel menu, "H" is displayed 20 characters by 2 lines. The next time the Start key is pressed, all the LCD dots are displayed. Check for any LCD dots in the display that are not displayed.

LED lamp test
All the lamps on the operation panel light by pressing the Start key after the display test. Check for any LED that does not blink during the test.

Operation Key Test
The operation key test is selected with the Start key after the LED lamp test is done. In this test, a character disappears when its operation key is pressed. The list of characters and their operation keys is as follows. Check to make sure at this time that all characters properly disappear when their operation keys are pressed.

T-4-24

Character	Operation key	Character	Operation key
0-9,*,#	Numeric key	K	System Monitor key
A	Enlarge/Reduce key	L	Paper Select key

Character	Operation key	Character	Operation key
B	Two-Sided key	M	Cursor (-) key
C	Two-Page Separation key	N	Cursor (+) key
D	Frame Erase key	O	OK key
E	2 on 1 key	P	Additional Function key
F	Different Size Original key	Q	Exposure key
G	Counter Check key	R	Collate/Staple key
H	ON/OFF key	S	Image Quality key
I	Clear key	T	Reset key
J	ID key	U	Setting Confirmation key

One-Touch Dial Key Test

The one-touch dial key test starts once all characters disappear in the operation key test.

The characters A to T corresponding to 01 to 20 are displayed, and a character disappears when its one-touch key is pressed. Check to make sure at this time that all characters properly disappear when their one-touch keys are pressed.

T-4-25

Character	Operation key	Character	Operation key
A-T	One-touch dial key	4	Address Book key
0	FAX key	5	Coded Dial key
1	COPY key	6	Stamp key
2	Hook key	7	Delayed key
3	Redial key	8	Direct key

6-3: OPERATION PANEL

↓ Press Start key

HHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHH — H pattern displayed

↓ Press Start key

▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ — All LCD dots displayed

↓ Press Start key

▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ — The LED lamp lights

↓ Press Start key

0123456789*#ABCDEFGH
IJKLMNOPQRSTU — When a key is pressed, the corresponding character goes out.

↓ When the entire display has gone out

012345678
ABCDEFGHIJKLMNOPQRST — When a one-touch speed dialing key is pressed, the corresponding letter goes out.

↓ When the entire display has gone out

OK

Press the Stop key to end the test

F-4-4

4.8.3.3 Line signal reception test

The line signal reception test menu is selected by pressing the 9 key from the faculty test menu. This test checks the operation of the NCU signal sensor and frequency counter. In Menu 1 the CI status can be detected and in Menu 3 the frequency can be detectet.

Test Menu 1

Test Menu 1 is selected by pressing the 1 key from the Line Detect menu. When CI is detected from the modular jack, the display changes from OFF to ON and the received frequency is displayed. The on-hook/off-hook state of the handset and the external telephone is also displayed.

Test Menu 2

Test Menu 2 is selected by pressing the 2 key from the Line Detect menu. When CNG is detected from the modular jack, the display changes from OFF to ON.

Test Menu 3

Test Menu 2 is selected by pressing the 2 key from the Line Detect menu. When CNG is detected from the modular jack, the display changes from OFF to ON.

4.9 Service Report (REPORT)

4.9.1 System Data List

Use it to check the settings associated with the service soft switch and service parameters.

```
06/30/2005  12:00  FAX                                                    001

                        *****************************
                        ***   SYSTEM DATA LIST   ***
                        *****************************


            #SSSW
                SW01            ------        00000000
                SW02            ------        10000000
                SW03            ------        00000000
                SW04            ------        10000000
                SW05            ------        00000000
                SW06            ------        10000000
                SW07            ------        00000000
                SW08            ------        00000000
                SW09            ------        00000000
                SW10            ------        00000000
                SW11            ------        00000000
                SW12            ------        00000011
                SW13            ------        00000000
                SW14            ------        00000000
                SW15            ------        00000000
                SW16            ------        00000000
                SW17            ------        00000000
                SW18            ------        00000000
                SW19            ------        00011000
                SW20            ------        00000000
                SW21            ------        00000000
                SW22            ------        00000000
                SW23            ------        00000000
                SW24            ------        00000000
                SW25            ------        00000000
                SW26            ------        00100000
                SW27            ------        00000000
                SW28            ------        00000000
                SW29            ------        00000000
                SW30            ------        00000000
                SW31            ------        00000000
                SW32            ------        00000000
                SW33            ------        00000000
                SW34            ------        00000000
                SW35            ------        00000000
                SW36            ------        00000000
                SW37            ------        00000000
                SW38            ------        00000000
                SW39            ------        00000000
                SW40            ------        00000000
                SW41            ------        00000000
                SW42            ------        00000000
                SW43            ------        00000000
                SW44            ------        00000000
                SW45            ------        00000000
                SW46            ------        00000000
                SW47            ------        00000000
                SW48            ------        00000000
                SW49            ------        00000000
                SW50            ------        00000000


            #MENU
                01:             ------            0
                02:             ------            0
                03:             ------            0
                04:             ------            0
                05:             ------            0
```

F-4-5

4.9.2 System Dump List

- System Dump List
Use it to check the history of communications, both successful and error.

```
 06/30 2005  19:18                                                    ☑ 001


      CLEAR DATE                          06/18 2005
[1]
      TX    =    7
[3]   A4    =    0     B4    =    0    A3    =    0
[2]   RX    =    0
[3]   A4    =    7     B4    =    0    A3    =    0    LTR  =    0    LGL  =    0
      33600 =    0     31200 =    0    28800 =    0    26400 =    0    24000 =    0
      21600 =    0     19200 =    0    16800 =    0    14400 =    0    12000 =    0
[4]   9600  =    0     7200  =    0    4800  =    0    2400  =    0
      14400 =    0     12000 =    0    TC9600 =   0    TC7200 =   0
      14400 =    0     12000 =    0
[5]   9600  =    7     7200  =    0    4800  =    0    2400  =    0
      STD   =    2     FINE  =    5    SUPER =    0    ULTRA =    0
[6]   MH    =    0     MR    =    0    MMR   =    7    JBIG  =    0    JPEG  =    0
[7]   G3    =    0     ECM   =    7

      PRINT   TTL   =   63  /   63
              C-S-TTL =   0  /   0
[8]           K-S-TTL =  51  /                                           0
      READ    SCAN  =   43  /   43                                      0
                                 51                                      0

      #000              0        0       0       0       0       0       0
[9]                     0        0       0       0       0       0       0
                        0        0       0       0       0       0       0
                                         0       0       0       0       0    0
                                         0       0       0       0       0    0
                                                 0       0       0       0    0
                                                 0       0       0       0    0
                                                         0       0
                                                         0       0
```

F-4-6

*1: TX, number of total pages transmission.
*2: Total number of pages transmitted/received according to original size.
*3: RX, number of total pages reception.
*4: Total number of pages transmitted and received for each modem speed
*5: Total number of pages transmitted/received in connection with different modem speeds (Standard, Fine, Super Fine, Ultra Fine).
*6: Total number of pages transmitted and received for each coding method
*7: Total number of pages transmitted and received in each mode
*8: Total number of pages printed/scanned
*9: Total number of occurrences for error code

T-4-26

Indication sample					
##280	1	7	3	0	0
	##280 number of errors	##281 number of errors	##282 number of errors		

It provides error information on the 3 most recent communications.

2003 09/02 TUE 12:00 FAX   ▣001

*1 ——————— #1 LATEST   #000

*2 ———————————— START TIME   09/02 10:00
*3 ———————————— OTHER PARTY   12345678
*4 ———————————— MAKER CODE   10001000
*5 ———————————— MACHINE CODE   0100001 00000000
                 RCV V.8 FRAME   E0 81 85 D4 90 7E 00 00
                 SYMBOL RATE   3429 baud
                 DATA RATE   28800 bps [V. 34]
                 TX LVL REDUCTION   0
                 ERR ABCODE   00
                 ERR SECTXB   00
                 ERR SECRXB   00

*6 ——————————— Rx :（bit 1）   00000100 01110111 01011111 00100011 00000001 10101001 00000001（bit 56）
                 （bit 57）   00000001 00000001 00000100 00000000 00000000   （bit 96）
*7 ——————————— Tx :（bit 1）   00000000 01000010 00011111 00100001 00000001 00000001 00000001（bit 56）
                 （bit 57）   00000001 00000001 00000100 00000000 00000000   （bit 96）

*8 ——————— Rx : NSF CSI DIS   CFR   MCF   MCF

*8 ——————— Tx :   NSS TSI DCS   PIX-288 PPS-NUL   PIX-288 PPS-NUL   PIX-288 PPS-NUL

          Rx : MCF   MCF   MCF

          Tx :   PIX-288 PPS-NUL   PIX-288 PPS-EOP   DCN

          #2   #000
                 START TIME   09/02 09:30
                 OTHER PARTY   12345678
                 MAKER CODE   10001000
                 MACHINE CODE   0100001 00000000
                 RCV V.8 FRAME   E0 81 85 D4 90 7E 00 00
                 SYMBOL RATE   3429 baud
                 DATA RATE   28800 bps [V. 34]
                 TX LVL REDUCTION   0
                 ERR ABCODE   00
                 ERR SECTXB   00
                 ERR SECRXB   00

                 Rx :（bit 1）   00000100 01110111 01011111 00100011 00000001 10101001 00000001（bit 56）
                 （bit 57）   00000001 00000001 00000100 00000000 00000000   （bit 96）
                 Tx :（bit 1）   00000000 01000010 00011111 00100001 00000001 00000001 00000001（bit 56）
                 （bit 57）   00000001 00000001 00000100 00000000 00000000   （bit 96）

          Rx : NSF CSI DIS   CFR   MCF   MCF

          Tx :   NSS TSI DCS   PIX-288 PPS-NUL   PIX-288 PPS-NUL   PIX-288 PPS-NUL

          Rx : MCF   MCF   MCF

          Tx :   PIX-288 PPS-NUL   PIX-288 PPS-EOP   DCN

          #3 OLDEST   #000
                 START TIME   09/02 09:00
                 OTHER PARTY   12345678
                 MAKER CODE   10001000
                 MACHINE CODE   0100001 00000000
                 RCV V.8 FRAME   E0 81 85 D4 90 7E 00 00
                 SYMBOL RATE   3429 baud
                 DATA RATE   28800 bps [V. 34]
                 TX LVL REDUCTION   0
                 ERR ABCODE   00
                 ERR SECTXB   00
                 ERR SECRXB   00

F-4-7

*1: service error code.
*2: START TIME, date and time (in 24-hr notation).
*3: OTHER PARTY, telephone number sent by the other party.
*4: MAKER CODE, manufacturer code.
*5: MACHINE CODE, model code.
*6: bit 1 through bit 96 of DIS, DCS, or DTC that has been received.
*7: bit 1 through bit 96 of DIS, DCS, or DTC that has been transmitted.
*8: RX, procedural signal received; TX, procedural signal transmitted.

Chapter 5 Error Code

Contents

5.1 Overview

5.1.1 Error Code Outline

An error code is used to indicate a fault in a machine, and is indicated in the machine's LCD or reports, showing the nature (symptoms) of the fault. Using the error code, the user or the service man can readily find out how to correct the fault by simply referring to the User's Manual or service manual.
An error code may be either of the following two types:

    User Error Codes
        A fault indicated as a user error code is one that can easily be corrected by the user, as by operating the machine. It takes the form of "#+number."
    Service Error Codes
        If a fault calls for a service man for correction, it is indicated as a service man error code in the form of "##+number" or "SYSTEM ERROR E+number."

    Memo
        A service error code expressed in the form of "##+number" will not appear on the LCD, Error Tx Report, or Activity Report while the machine remains in factory default state. To check a service error code, shift bit 0 of service soft switch #1 SSSW SW01 to '1'.

    Memo
        Display only the error codes which are newly incorporated in this machine as well as which require remedies unique to the product. For the causes and countermeasures of other error codes, refer to the separate G3/G4 Facsimile Error Code List (Rev. 2).

5.2 User Error Code

5.2.1 User Error Code

T-5-1

No.	Tx/Rx	Description
#0001	[Tx]	an original has jammed.
#0003	[Tx/Rx]	tine-out for copying or sending/receiving a single page has occurred.
#0005	[Tx/Rx]	time-out for initial identification (T0/T1) has occurred.
#0009	[Rx]	recording paper has jammed or is absent.
#0012	[Tx]	recording paper is absent at the other party.
#0018	[Tx/Rx]	auto call initiation has failed.
#0037	[Rx]	image memory overflow at time of reception has occurred.
#0059	[Tx]	The number you dial and connected number (CSI) does not match.
#0995/0099	[Tx/Rx]	a memory communication reservation has been cancelled.

5.3 Service Error Code

5.3.1 Service Error Code

T-5-2

No.	Tx/Rx	Description
##0100	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0101	[Tx/Rx]	the modem speed does not match that of the other party.
##0102	[Tx]	at time of transmission, fall-back cannot be used.
##0103	[Rx]	at time of reception, EOL cannot be detected for 5 sec (15 sec if CBT).
##0104	[Tx]	at time of transmission, RTN or PIN is received.
##0106	[Rx]	at time of reception, the procedural signal is received for 6 sec while in wait for the signal.
##0107	[Rx]	at time of reception, the transmitting party cannot use fall-back.
##0109	[Tx]	at time of transmission, a signal other than DIS, DTC, FTT, CFR, or CRP is received, and the procedural signal has been sent more than specified.
##0111	[Tx/Rx]	memory error has occurred.
##0114	[Rx]	at time of reception, RTN is transmitted.
##0200	[Rx]	at time of reception, no image carrier is detected for 5 sec.
##0201	[Tx/Rx]	DCN is received outside the normal parity procedure.
##0220	[Tx/Rx]	system error (main program out of control) has occurred.
##0232	[Tx]	encoding error has occurred.
##0237	[Rx]	decoding error has occurred.
##0261	[Tx/Rx]	system error has occurred.
##0280	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0281	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0282	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0283	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0284	[Tx]	at time of transmission, DCN is received after transmission of TCF.
##0285	[Tx]	at time of transmission, DCN is received after transmission of EOP.
##0286	[Tx]	at time of transmission, DCN is received after transmission of EOM.

No.	Tx/Rx	Description
##0287	[Tx]	at time of transmission DCN is received after transmission of MPS.
##0288	[Tx]	after transmission of EOP, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0289	[Tx]	after transmission of EOM, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0290	[Tx]	after transmission of MPS, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0670	[Tx]	at time of V.8 late start, the V.8 ability of DIS front the receiving party is expected to be detected, and the CI signal is expected to be transmitted in response; however, the procedure fails to advance, and the line is released because of T1 time-out.
##0671	[Rx]	at time of V.8 arrival, procedure fails to move to phase 2 after detection of CM signal from caller, causing T1 time-out and releasing line
##0672	[Tx]	at time of V.34 transmission, a shift in procedure from phase 2 to phase 3 and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0673	[Rx]	at time of V.34 reception, a shift in procedure from phase 2 to phase 3 and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0674	[Tx]	at time of V.34 transmission, a shift in procedure from phase 3 and phase 4 to the control channel and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0675	[Rx]	at time of V.34 reception, a shift in procedure from phase 3 and phase 4 to the control channel and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0750	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-NULL, causing the procedural signal to be transmitted more than specified.
##0752	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-NULL.
##0753	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-NULL, or T5 time-out (60 sec) has occurred.
##0754	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-NULL.
##0755	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-MPS, causing the procedural signal to be transmitted more than specified.
##0757	[Tx]	at time of ECM transmission, DCN is received after retransmission of PPS-MPS.
##0758	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS, or T5 time-out (60 sec) has occurred.
##0759	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS.
##0760	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-EOM, causing the procedural signal to be transmitted more than specified.
##0762	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-EOM.
##0763	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS, or T5 time-out (60 sec) has occurred.
##0764	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-EOM.
##0765	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-EOP, causing the procedural signal to be transmitted more than specified.
##0767	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-EOP.
##0768	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-EOP, or T5 time-out (60 sec) has occurred.
##0769	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-EOP.
##0770	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-NULL, causing the procedural signal to be transmitted more than specified.
##0772	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-NULL.
##0773	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EOR-NULL, or T5 time-out (60 sec) has occurred.
##0774	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-NULL.
##0775	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-MPS, causing the procedural signal to be transmitted more than specified.
##0777	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-MPS.
##0778	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission EOR-MPS, or T5 time-out (60 sec) has occurred.
##0779	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-MPS.
##0780	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-EOM, causing the procedural signal to be transmitted more than specified.
##0782	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-EOM.
##0783	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EOR-EOM, or T5 time-out (60 sec) has occurred.
##0784	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-EOM.
##0785	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-EOP, causing the procedural signal to be transmitted more than specified.
##0787	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-EOP.
##0788	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EOR-EOP, or T5 time-out (60 sec) has occurred.
##0789	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-EOP.
##0790	[Rx]	at time of ECM reception, ERR is transmitted after transmission of EOR-Q.

No.	Tx/Rx	Description
##0791	[Tx/Rx]	while ECM mode procedure is under way, a signal other than a meaningful signal is received.
##0792	[Rx]	at time of ECM reception, PPS-NULL cannot be detected over partial page processing.
##0793	[Rx]	at time of ECM reception, no effective frame is received while high-speed signal reception is under way, thus causing time-out.
##0794	[Tx]	at time of ECM reception, PPR with all 0s is received.
##0795	[Tx/Rx]	a fault has occurred in code processing for communication.

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