Portable Manual

MF4600 Series

Canon

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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.
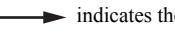
The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.
All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

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Chapter 4 Outline of Components

Chapter 5 System Construction

Chapter 1 Maintenance and Inspection

1.1 Periodically Replaced Parts

1.1.1 Periodically Replaced Parts

i-SENSYS MF4690PL / / i-SENSYS MF4660

There are no periodically replaced parts with this machine.

1.2 Durables and Consumables

1.2.1 Consumable

i-SENSYS MF4690PL / i-SENSYS MF4660

T-1-1

Charge	Consumable	Standard of exchange
User	Toner cartridge FX-10	The toner disappears and.
Field engineer	-	-

1.3 Scheduled Servicing Basic Procedure

1.3.1 Periodically Service Items

i-SENSYS MF4690PL / / i-SENSYS MF4660

There are no periodically service items with this machine.

1.4 Cleaning

1.4.1 Cleaning Items

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-1-2

Responsible by:Cleaning area	Cleaning area	Cleaning timing
User	External covers	When they are smudged
	Copyboard glass	When the image read from the copyboard is smudged
	Backside of copyboard cover	When the image read from the copyboard is smudged
	ADF reading area	When the image read from the ADF has a black line in vertical direction
	Document pickup roller	When document pickup performance drops away
	Scraper	When document separating performance drops away
	Document feed roller	When document feeding performance drops away
	Document delivery roller	When document delivery performance drops away
	Pressure roller (fixing unit)	When there are irregular black lines in vertical direction in the paper
Service Technician	Pickup roller	When paper pickup performance drops away
	Separation pad	When paper separating performance drops away
	Feed roller	When paper feeding performance drops away
	Transfer charging roller	When there is smudge at the back of the paper, or when there are white spots at the constant intervals of approx. 46mm in the image.
	Static eliminator	When there are dot patterns in the image
	Fixing inlet guide	When there is smudge in the paper, when there are irregular black lines in vertical direction, when there is paper jam, when there are wrinkles in the paper

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Make sure to turn off the power and disconnect the power supply plug upon cleaning. It may cause fire/electric shock if failing turning off the power.

1.4.2 Cleaning Method (External Covers)

i-SENSYS MF4690PL / / i-SENSYS MF4660

Wring of the cloth moistened with water or mild detergent, and wipe off the smudges.
In the case of using mild detergent, make sure to wipe off the detergent with the cloth moistened with water afterward.
Once the smudge is removed, dry with the soft dry cloth.

1.4.3 Cleaning Method (Reader Unit)

i-SENSYS MF4690PL / / i-SENSYS MF4660
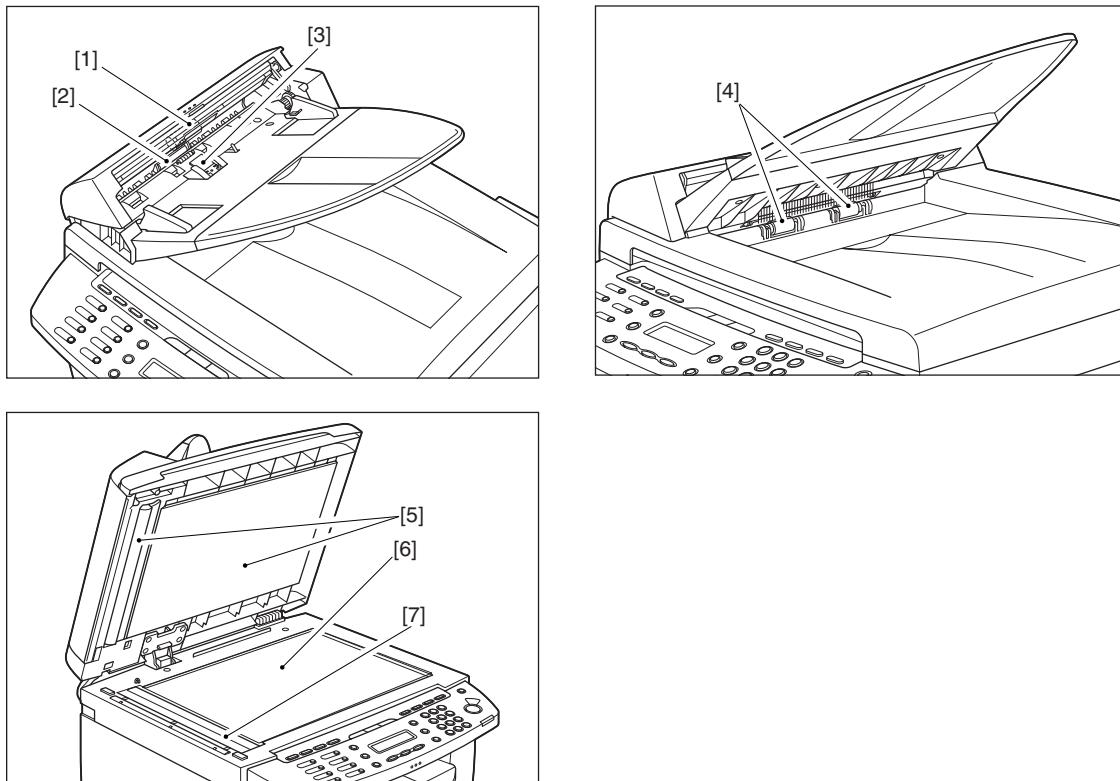
F-1-1

[1] Document pickup roller
Open the ADF and wipe off the smudge with the soft dry cloth.
[2] Document feed roller
Open the ADF and wipe off the smudge with the soft dry cloth.
[3] Scraper
Open the ADF and wipe off the smudge with the soft dry cloth.
[4] Document delivery roller
Wipe off the smudge with the soft dry cloth.
[5] Backside of copyboard cover
Open the copyboard cover and wipe off the smudge with the soft dry cloth.
[6] Copyboard glass
Open the copyboard cover and wipe off the smudge with the soft dry cloth.
[7] ADF reading area
Open the copyboard cover and wipe off the smudge with the soft dry cloth.

1.4.4 Cleaning Method (Pressure Roller)

i-SENSYS MF4690PL / / i-SENSYS MF4660

MEMO:
Cleaning the roller takes approximately 130 seconds.

1) Press [Additional Functions].
2) Press [<-] or [+>] to select <ADJUST./CLEANING>, then press [OK].
3) Load a sheet of blank A4 paper (standard paper) in the multi-purpose tray.
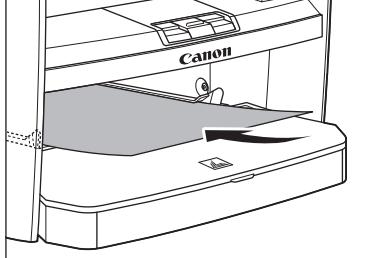
F-1-2

4) Press [<-] or [+>] to select <FIX. UNIT CLEANING>, then press [OK].
    Cleaning starts. When finished, the display returns to standby mode.

Chapter 2 Standards and Adjustments

2.1 Scanning System

2.1.1 Procedure after Replacing the CIS

i-SENSYS MF4690PL / / i-SENSYS MF4660

After replacing the contact image sensor (CIS), go through the following steps to perform inter-channel output correction:

1) Enter the service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".
5) Press the [1] key to display "SHADING".

After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.
After completion of automatic adjustment, "OK" is displayed.

2.1.2 Procedure after Replacing the Copyboard Glass

i-SENSYS MF4690PL / / i-SENSYS MF4660

After replacing the copyboard glass, go through the following steps to perform inter-channel output correction:

1) Enter the service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".
5) Press the [1] key to display "SHADING".

After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.
After completion of automatic adjustment, "OK" is displayed.

2.2 Electrical Adjustment

2.2.1 Procedure after Replacing the SCNT board

i-SENSYS MF4690PL / / i-SENSYS MF4660

If you have replaced the SCNT board with a new one, perform the following operations:
Outputting report
    Before replacing the SCNT board, output and record the report for the information such as the user setting and the setting of the service mode.
    Service mode > REPORT
    Additional functions > Report setting > Report output
    After replacing the SCNT board, enter the user data and the service data according to the report.

Changing the jumper connector
    When replacing the SCNT board, change the position of the jumper connector to ON.
    * The SCNT board is shipped with the jumper connector of the lithium battery OFF.

Make the following adjustments:
- Correction of output between CS channels
1) Enter the service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".
5) Press the [1] key to display "SHADING".
6) Press [OK].
After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.

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If automatic adjustment fails, "NG" appears. Perform the following procedure:
Clean the scanning area of the ADF and the Backside of copyboard cover of the host machine, and then retry auto adjustment.

Chapter 3 Service Mode

3.1 Service Soft Switch Settings (SSSW)

3.1.1 Outline

3.1.1.1 Bit Switch Composition

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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-3-1

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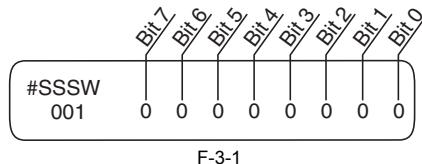
Do not change service data identified as "not used"; they are set as initial settings.

3.1.2 SSSW-SW01

3.1.2.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-1

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	-	-

3.1.2.2 Detailed Discussions of Bit 0

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.1.3 SSSW-SW03

3.1.3.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-2

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

3.1.3.2 Detailed Discussions of Bit 7

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.1.4 SSSW-SW04

3.1.4.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-3

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

3.1.4.2 Detailed Discussions of Bit 2

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.1.4.3 Detailed Discussions of Bit 3

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.4.4 Detailed Discussions of Bit 4

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.'

3.1.4.5 Detailed Discussions of Bit 6

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.4.6 Detailed Discussions of Bit 7

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.5 SSSW-SW05

3.1.5.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-4

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	-	-

3.1.5.2 Detailed Discussions of Bit 1

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.5.3 Detailed Discussions of Bit 2

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.6 SSSW-SW12

3.1.6.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-5

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-3-6

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
64 min	0	*	*	*	*	*	1	1

T-3-7

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-3-8

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	*	*	*	*

3.1.7 SSSW-SW13

3.1.7.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-9

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	-	-

3.1.7.2 Detailed Discussions of Bit 2

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.1.8 SSSW-SW14

3.1.8.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-10

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	-	-

3.1.8.2 Detailed Discussions of Bit 2

i-SENSYS MF4690PL / / i-SENSYS MF4660

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'.

3.1.8.3 Detailed Discussions of Bit 4

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.9 SSSW-SW18

3.1.9.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-11

Bit	Function	1	0
0	Detection of carrier disconnection between the DCS signal and the TCF signal	Yes	No*
1	Waiting time for carrier disconnection between the DCS signal and the TCF signal	600 msec	300 msec*
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	Not used	-	-
6	Not used	-	-
7	Not used	-	-

3.1.9.2 Detailed Discussions of Bit 0

i-SENSYS MF4690PL / / i-SENSYS MF4660

It is possible to select whether or not to detect carrieir disconnection between the DCS signal and the TCF signal during reception.
If the receiving machine returns an FTT signal while the other machine (PC-FAX) is transmitting a TCF siganl and a reception error occurs, set this bit to "1".
If thw error still occurs, set bit 1 of #SSSW SW18 to "1".

3.1.9.3 Detailed Discussions of Bit 1

i-SENSYS MF4690PL / / i-SENSYS MF4660

It is possible to select the detection time for caarrier disconnection between the DCS signal and TCF signal during reception.
This bit is available for use when #SSSW SW18 Bit0 is set to "1".
If the symptom is not resolved by setting SW18 Bit 0 to "1," set this bit to "1."

3.1.10 SSSW-SW25

3.1.10.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-12

Bit	Function	1	0
0	Transmission telephone numbers displayed on reports	Other fax number	Called number
1	not used	-	-

Bit	Function	1	0
2	Action when receiving blank CSI	Disregard	Receive
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

3.1.10.2 Detailed Discussions of Bit 0

i-SENSYS MF4690PL / / i-SENSYS MF4660

Selects the transmission telephone number displayed on reports after the completion of transmission.
When "Called number" is selected, the telephone number the fax called is displayed on reports.
When "Other fax number" is selected, the telephone number sent from the other fax (the CSI signal data) is displayed on reports.

3.1.10.3 Detailed Discussions of Bit 2

i-SENSYS MF4690PL / / i-SENSYS MF4660

When "Disregard" is selected, the received blank CSI is disregarded and a dialed number, if any, is displayed on LCD/report.
When "Receive" is selected, LCD/report is blank if the dialed number is known.

3.1.11 SSSW-SW28

3.1.11.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-13

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
5	V.34 transmission fallback	Prohibited	Not prohibited
6	not used	-	-
7	not used	-	-

3.1.11.2 Detailed Discussions of Bit 0

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.11.3 Detailed Discussions of Bit 1

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.11.4 Detailed Discussions of Bit 2

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.11.5 Detailed Discussions of Bit 3

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.1.11.6 Detailed Discussions of Bit 4

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.1.11.7 Detailed Discussions of Bit 5

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.1.12 SSSW-SW30

3.1.12.1 List of Functions

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-14

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	New dial tone detection method	Detect with the new method.	Detect with the existing method.
6	Not used	-	-
7	Not used	-	-

3.1.12.2 Detailed Discussions of Bit 5

i-SENSYS MF4690PL / / i-SENSYS MF4660

When "Detect with the new method" is selected, tone is detected for 3.5 seconds before call origination in order to discriminate between dial tone and voice. If dial tone is detected and the time since line seizure is 3.5 seconds or longer, call origination takes place immediately. If the time since line seizure is less than 3.5 seconds, call origination takes place after waiting for 1 second. (If the time since line seizure reaches 3.5 seconds during the 1-second waiting period, call origination takes place immediately. By default, "Detect with a new method" is assigned for this SW.

3.2 Menu Switch Settings (MENU)

3.2.1 Menu Switch Composition

i-SENSYS MF4690PL / / i-SENSYS MF4660

T-3-15

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, 3:20 Hz

3.2.2 <No.005 NL equalizer>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

Any of the following error codes may be indicated at time of transmission because of the line condition:
##100, ##101, ##102, ##104, ##201, ##281, ##282, ##283, ##750, ##755, ##765, ##774, ##779, ##784, ##789
Any of the following error codes may be indicated at time of transmission because of the line condition:
##103, ##107, ##114, ##201, ##790, ##793

3.2.3 <No.006 telephone line monitor>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Use it to s the telephone line monitor function:
DIAL: generate the monitor sound of the telephone line using the speaker from the start of transmission to DIS.
SERVICEMAN [1]: generate the monitor sound of the telephone line using the speaker from the start of communication to the end of it.
SERVICEMAN [2]: generate the monitor sound of the telephone line2 (Option).
OFF: do not generate the monitor sound of the telephone line using the speaker.

3.2.4 <No.007 ATT transmission level>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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 8)

Any of the following error codes may be indicated at time of transmission because of the line condition:
##100, ##101, ##102, ##104, ##201, ##280, ##281, ##282, ##283, ##284, ##750, ##752, ##754, ##755, ##757, ##759, ##760, ##762, ##764, ##765, ##767, ##769, ##770, ##772, ##774, ##775, ##777, ##779, ##780, ##782, ##784, ##785, ##787, ##789
Any of the following error codes may be indicated at time of reception because of the line condition:
##103, ##106, ##107, ##201, ##793

3.2.5 <No.008 V.34 modulation speed upper limit>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.2.6 <No.009 V.34 data speed upper limit>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Use it 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).

3.2.7 <No.010 Frequency of the pseudo CI signal>

i-SENSYS MF4690PL / / i-SENSYS MF4660

You may select a frequency for the pseudo CI signal.
Some types of external telephones do not ring when the fax/tel switch-over function is ON. To sound the ring, change the pseudo CI signal.

3.3 Numeric Parameter Settings (NUMERIC Param.)

3.3.1 Numerical Parameter Composition

i-SENSYS MF4690PL / / i-SENSYS MF4660

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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)
056	display the type of soft counter 1	101 (Fixed)
057	Display the type of soft counter 2	0 to 999
058	Display the type of soft counter 3	0 to 999
059	Display the type of soft counter 4	0 to 999
060	Display the type of soft counter 5	0 to 999
061	Display the type of soft counter 6	0 to 999

3.3.2 <002: RTN transmission condition (1)><003: RTN transmission condition (2)><004: RTN transmission condition (3)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.3.3 <005: NCC pause length (pre-ID code)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.3.4 <006: NCC pause length (post-ID code)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.3.5 <010: line connection identification length>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.3.6 <011: T.30 T1 timer (for reception)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.3.7 <013: T.30 EOL timer>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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).

3.3.8 <016: time length to first response at time of fax/tel switchover>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.3.9 <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)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.3.10 <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)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.3.11 <023: CNG detention level for fax/tel switchover>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.3.12 <024: pseudo RBT transmission level at time of fax/tel switchover>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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

3.3.13 <025: Answering machine connection function signal detection time>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.3.14 <027: V.21 low-speed flag preamble identification length>

i-SENSYS MF4690PL / / i-SENSYS MF4660

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.

3.3.15 <056 - 061: Count type select >

i-SENSYS MF4690PL / / i-SENSYS MF4660

Use it to confirm the count type indicated on the Counter Check screen, which appears in response to a press on the Counter key.
When '0' is selected, count type will not be indicated.
No.56: Use it to indicate the type of software counter 1 of the control panel. The type of soft counter 1 cannot be changed.
No.57: Use it to change the type of soft counter 2* of the control panel to suit the needs of the user.
No.58: Use it to change the type of soft counter 3* of the control panel to suit the needs of the user.
No.59: Use it to change the type of soft counter 4* of the control panel to suit the needs of the user.
No.60: Use it to change the type of soft counter 5* of the control panel to suit the needs of the user.
No.61: Use it to change the type of soft counter 6* of the control panel to suit the needs of the user.
*:The default type settings of soft counter is different from models.
<Soft Counter Specifications>
The soft counters are classified a follows in terms of input numbers:
100s: total

200s: copy
300s: print
400s: copy + print
500s: scan
700s: received file print
800s: report pint
900s: transmitted scan

Guide to the Table
- 1:Count sheets of all sizes by one.
- 2:Count sheets of the large size by two.
- C:full color
- Bk:black mono
- L:large size (larger than A4/LTR)
- S:small size (A4/LTR or smaller)

MEMO:
To make a change so that B4 papers (for print) will be counted as large-size, use service mode: make the following selections, and change bit 0 to '1': #SSSW>SW33.
To make a change so that B4 papers (for scan) will be counted as large-size, use service mode: make the following selections, and change bit 2 to '1': #SSSW>SW33.

| Serial No. on counter check screen | Counter type | Print system | | | | | | | | | | | | | | | |
| | | Bk 1-sided L | | | | Bk 1-sided S | | | | Bk 2-sided L | | | | Bk 2-sided S | | | |
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
101	Total1	1	1	1	1	1	1	1	1								
102	Total2	2	2	2	2	1	1	1	1								
103	Total (L)	1	1	1	1												
104	Total (S)					1	1	1	1								
108	Total (Bk1)	1	1	1	1	1	1	1	1								
109	Total (Bk2)	2	2	2	2	1	1	1	1								
112	Total (Bk/L)	1	1	1	1												
113	Total (Bk/S)					1	1	1	1								
114	Total1 (2-sided)									1	1	1	1	1	1	1	1
115	Total2 (2-sided)									2	2	2	2	1	1	1	1
116	L (2-sided)									1	1	1	1				
117	S (2-sided)													1	1	1	1
126	TotalA1		1	1	1		1	1	1								
127	TotalA2		2	2	2		1	1	1								
128	TotalA (L)		1	1	1												
129	TotalA (S)						1	1	1								
132	TotalA (Bk1)		1	1	1		1	1	1								
133	TotalA (Bk2)		2	2	2		1	1	1								
136	TotalA (Bk/L)		1	1	1												
137	TotalA (Bk/S)						1	1	1								
138	TotalA1 (2-sided)										1	1	1		1	1	1
139	TotalA2 (2-sided)										2	2	2		1	1	1
140	L A (2-sided)										1	1	1				
141	S A (2-sided)														1	1	1
150	TotalB1		1	1	1		1	1	1								
151	TotalB2		2	2	2		1	1	1								
152	TotalB (L)		1	1	1												
153	TotalB (S)						1	1	1								
156	TotalB (Bk1)		1	1	1		1	1	1								
157	TotalB (Bk2)		2	2	2		1	1	1								
160	TotalB (Bk/L)		1	1	1												
161	TotalB (Bk/S)						1	1	1								
162	TotalB1 (2-sided)										1	1	1		1	1	1
163	TotalB2 (2-sided)										2	2	2		1	1	1
164	LB (2-sided)										1	1	1				
165	SB (2-sided)														1	1	1
201	Copy(Total1)	1				1											
202	Copy(Total2)	2				1											
203	Copy(L)	1															
204	Copy(S)					1											
205	CopyA (Total1)	1				1											
206	CopyA (Total2)	2				1											
207	CopyA (L)	1															
208	CopyA (S)					1											

Serial No. on counter check screen	Counter type	Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
	Print system	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
209	Local copy(Total1)	1				1											
210	Local copy(Total2)	2				1											
211	Local copy(L)	1															
212	Local copy(S)					1											
221	Copy(Bk1)	1				1											
222	Copy(Bk2)	2				1											
227	Copy(Bk/L)	1															
228	Copy(Bk/S)					1											
237	Copy(Bk/L/2-sided)									1							
238	Copy(Bk/S/2-sided)													1			
249	CopyA (Bk1)	1				1											
250	CopyA (Bk2)	2				1											
255	CopyA (Bk/L)	1															
256	CopyA (Bk/S)					1											
265	CopyA (Bk/L/2-sided)									1							
266	CopyA (Bk/S/2-sided)													1			
277	Local copy(Bk1)	1				1											
278	Local copy(Bk2)	2				1											
283	Local copy(Bk/L)	1															
284	Local copy(Bk/S)					1											
293	Local copy(Bk/L/2-sided)									1							
294	Local copy(Bk/S/2-sided)													1			
301	Print (Total1)		1		1		1		1								
302	Print (Total2)		2		2		1		1								
303	Print (L)		1		1												
304	Print (S)						1		1								
305	PrintA (Total1)		1		1		1		1								
306	PrintA (Total2)		2		2		1		1								
307	PrintA (L)		1		1												
308	PrintA (S)						1		1								
313	Print (Bk1)		1		1		1		1								
314	Print (Bk2)		2		2		1		1								
319	Print (Bk/L)		1		1												
320	Print (Bk/S)						1		1								
329	Print (Bk/L										1		1				
330	Print (Bk/S/2-sided)														1		1
331	PDL print (Total1)		1				1										
332	PDL print (Total2)		2				1										
333	PDL print (L)		1														
334	PDL print (S)						1										
339	PDL print (Bk1)		1				1										
340	PDL print (Bk2)		2				1										
345	PDL print (Bk/L)		1														
346	PDL print (Bk/S)						1										
355	PDL print (Bk/L/2-sided)										1						
356	PDL print (Bk/S)														1		
403	Copy+Print (Bk/L)	1	1		1												
404	Copy+Print (Bk/S)					1	1		1								
405	Copy+Print (Bk2)	2	2		2	1	1		1								
406	Copy+Print (Bk1)	1	1		1	1	1		1								
411	Copy+Print (L)	1	1		1												
412	Copy+Print (S)					1	1		1								
413	Copy+Print (2)	2	2		2	1	1		1								
414	Copy+Print (1)	1	1		1	1	1		1								
421	Copy+Print (Bk/L)									1	1		1				
422	Copy+Print (Bk/S)													1	1		1
701	Recieved print (Total1)																
702	Recieved print (Total2)																
703	Recieved print (L)																

Serial No. on counter check screen	Counter type	Print system															
		Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
704	Recieved print (S)																
709	Recieved print (Bk1)																
710	Recieved print (Bk2)																
715	Recieved print (Bk/L)																
716	Recieved print (Bk/S)																
725	Recieved print (Bk/L/2-sided)												1					
726	Recieved print (Bk/S/2-sided)																1	
801	Report print (Total1)																
802	Report print (Total2)																
803	Report print (L)																
804	Report print (S)																
809	Report print (Bk1)																
810	Report print (Bk2)																
815	Report print (Bk/L)																
816	Report print (Bk/S)																
825	Report print (Bk/L)													1				
826	Report print (Bk/S)																	1

Serial No. on counter check screen	Counter type	Scan system													
		Bk 1-sided L				Bk 1-sided S			Bk 2-sided L				Bk 2-sided S		
		Total scan	E-mail scan	FileShare DBscan	E-mail FileShare DB scan	FileShare DB BoxFscan	E-mail FileShare DB Box	Total scan	Total scan	E-mail scan	FileShare DB scan	E-mail FileShare DB scan	FileShare DB scan	E-mail FileShare DB BOX scan	Total scan
501	Scan (Total1)	1							1						
505	Bk scan (Total1)	1						1							
506	Bk scan (Total2)	2						1							
507	Bk scan (L)	1													
508	Bk scan (S)							1							
509	C scanTotal (1)								1						1
510	C scanTotal (2)								2						1
511	C scan (L)								1						
512	C scan (S)														1
915	Transmission scan total2 (C)													1	
916	Transmission scan total2 (Bk)						1								
917	Transmission scan total3 (C)												1		
918	Transmission scanTotal3 (Bk)					1									
921	Transmission scanTotal5 (C)											1			
922	Transmission scanTotal5 (Bk)				1										
929	Transmission scanTotal6 (C)										1				
930	Transmission scanTotal6 (Bk)			1											
945	Transmission scan/E-mail (C)									1					
946	Transmission scan/E-mail (Bk)		1												

3.4 Scanner Function Settings (SCANNER)

3.4.1 Numeric Parameter Functional configuration

i-SENSYS MF4690PL / / i-SENSYS MF4660

No.	Function	Default	Setting range	Unit
001: - 025:	Not used			
026:	Distance from the standby position of CIS to the shading start point.	10	6-48	one unit=0.1mm
027: - 030:	Not used			
031:	Vertical scan start position adjustment	0	0-70	one unit=0.1mm
032:	Not used			

No.	Function	Default	Setting range	Unit
033:	Vertical scan magnification correction	32	0-64	one unit=0.1%
034:	Not used			
035: - 036:	Reader motor speed adjustment	423		
037: - 040:	Not used			
041:	Vertical scan start position adjustment (scanning on ADF)	0	0-70	one unit=0.1mm
042: - 046:	Not used			
047:	Vertical scan magnification correction (scanning on ADF)	32	0-64	one unit=0.1%
048:	Horizontal scan magnification correction (scanning on ADF)	32	0-64	one unit=0.1%
049: - 053:	Not used			
054:	Pickup motor speed correction (when the ADF is used)	32	0-64	one unit=0.1%
055: - 350:	Not used			

⚠

If any operation error occurs after changing the setting value, change the setting value to the original one.

3.4.2 <031Vertical scan start position adjustment>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the position at which vertical scanning of a book starts. The larger the adjustment value, the narrower the left-side margin of the image becomes.

3.4.3 <033Vertical scan magnification correction>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Correct the magnification of vertical scanning of a book. The larger the adjustment value, the more the image stretches in the vertical scanning direction.

3.4.4 <035: - 036:Reader motor speed change>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Though no market adjustment work needs to be carried out, enter factory defaults at image processor PCB replacement.

3.4.5 <041: Vertical scan start position adjustment (when scanning on a document fed from ADF)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the position at which vertical scanning of a document fed from the ADF starts. The larger the adjustment value, the narrower the left-side margin of the image becomes.

3.4.6 <047: Vertical scan magnification correction (when scanning on a document fed from ADF)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Correct the magnification of vertical scanning of a document fed from the ADF. The larger the adjustment value, the more the image stretches in the vertical scanning direction.

3.4.7 <048: Horizontal scan magnification correction (when scanning on a document fed from ADF)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Correct the magnification of horizontal scanning of a document fed from the ADF. The smaller the adjustment value, the more the image stretches in the horizontal scanning direction.
This menu is used to adjust the ADF feed motor speed. If you changed the adjustment value in this mode, the adjustment value selected for SCAN NUMERIC>54 must also be incremented/decremented by the same amount.

⚠Do not change the adjustment value extremely.

3.5 Printer Function Settings (PRINTER)

3.5.1 Service Soft Switch Settings (SSSW)

3.5.1.1 SSSW-SW15

3.5.1.1.1 List of Function

0016-2090

i-SENSYS MF4690PL /

T-3-17

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	IFAX Permission of split recording of text data	Enable	Disable

Bit	Function	1	0
4	Not used	-	-
5	Not used	-	-
6	Not used	-	-
7	Not used	-	-

3.5.1.1.2 Detailed Discussions of Bit 3

i-SENSYS MF4690PL /

Select whether split recording is to be enabled when text data such as a header and body text is recorded. Selecting "Set" may split text data when a small paper size such as A5 is selected. In this case, a page may be split in the middle of a character string.

3.5.2 Numeric Parameter Settings (NUMERIC Param.)

3.5.2.1 <034: Left-end registration adjustment (malti-purpose tray)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the left-end registration margin of paper picked from a multi-purpose tray. The larger the adjustment value, the wider the left-end margin of the image becomes.

3.5.2.2 <035: Left-end registration adjustment (cassette)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the left-end registration margin of paper picked from cassette. The larger the adjustment value, the wider the left-end margin of the image becomes.

3.5.2.3 <039: Left-end registration adjustment (duplex unit)>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the left-end registration margin of paper picked from a duplex unit. The larger the adjustment value, the wider the left-end margin of the image becomes.

3.5.2.4 <053: Margin adjustment at the leading edge of the copy>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the margin at the leading edge of the copy. Increasing the value makes the margin at the leading edge larger.

3.5.2.5 <054: Margin adjustment at the trailing edge of the copy>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the margin at the trailing edge of the copy. Increasing the value makes the margin at the trailing edge larger.

3.5.2.6 <055: Margin adjustment at the right edge of the copy>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the margin at the right edge of the copy. Increasing the value makes the margin at the right edge larger.

3.5.2.7 <056: Margin adjustment at the left edge of the copy>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Adjust the margin at the left edge of the copy. Increasing the value makes the margin at the left edge larger.

3.6 Setting of System Functions (SYSTEM)

3.6.1 Bit Switch Settings

i-SENSYS MF4690PL / / i-SENSYS MF4660

SSSW-SW03 functional configuration

T-3-18

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	Not used	-	-
6	Imports and exports user information via USB.	Enable	Disable
7	Not used	-	-

Bit 6 details
Select whether to enable the host machine to work as a USB storage device or not. If the host machine is plugged into a PC with this setting enabled, it allows user registration data (user data and telephone registration data) to be imported and exported to and from the PC, except for the data embedded in the department management information and user management IDs in the system management information.

3.7 Counter Indication (COUNTER)

3.7.1 Counters

i-SENSYS MF4690PL / / i-SENSYS MF4660

This copier is furnished with a maintenance/supplies counter set (DRBL-1), which can be used to gain rough measures of when to replace supplies. The counter set increments by one on counting each sheet of small-sized paper (up to A4/LTR) and by two on counting each sheet of large-sized paper (larger than A4/LTR).

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Maintenance counter list		
Item	**Counter**	**Explanation**
TOTAL (Total counter)	SERVICE1	Service total counter 1
	SERVICE2	Service total counter 2
	TTL	Total counter
	COPY	Total copy counter
	PDL-PRT	PDL print counter
	FAX-PRT	Fax print counter
	RPT-PRT	Report print counter
	2-SIDE	Double-sided copy/print counter
	SCAN	Scan counter
PICK-UP (Paper pickup counter)	C1	Cassette jam counter
	C2	Not used
	C3	Not used
	C4	Not used
	MF	Multi-purpose tray pickup total counter
	2-SIDE	Double-sided paper pickup total counter
FEEDER (Feeder related counters)	FEED	ADF pickup total counter
	DFOP-CNT	Not used
JAM (Jam counters)	TTL	Unit total jam count
	FEEDER	ADF total jam count
	SORTER	Not used
	2-SIDE	Duplex unit jam counter
	MF	Multi-purpose tray jam counter
	C1	Cassette jam counter
	C2	Not used
	C3	Not used
	C4	Not used
MISC (Other required counter)	WST-TNR	Not used

3.7.2 Clearing Counters

i-SENSYS MF4690PL / / i-SENSYS MF4660

- Maintenance counter all clear
Execute service mode > CLEAR > COUNTER to clear all maintenance counters.

3.8 Report Output (REPORT)

3.8.1 Report Output

i-SENSYS MF4690PL / / i-SENSYS MF4660

The table below lists the kinds of reports that are supported.

Item	Explanation
SERVICE DATA LIST	Service mode service soft switch output (SSSW, MENU, NUMERIC Param., SPECIAL, NCU, SCAN, PRINT, SYSTEM, ROM, start date)
SYSTEM DATA LIST	Service mode service soft switch output (SSSW, MENU, NUMERIC Param., SPECIAL, NCU, SCAN, PRINT, SYSTEM, ROM, start date) System dump list output
SYSTEM DUMP LIST	Transmission count, reception count, record chart count, error count and other outputs
COUNTER REPORT	Counter output
ERROR LOG LIST	Not used
SPEC LIST	Type setting, print speed, memory size, ROM indication, adjustment data and other outputs
SERVICE LABEL	Not used

3.8.2 System Data List

i-SENSYS MF4690PL / / i-SENSYS MF4660

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
```

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3.8.3 System Dump List

i-SENSYS MF4690PL / / i-SENSYS MF4660

- 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  /   51
       READ     SCAN  =    43  /   43

       #000           0       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       0
```

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*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

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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
```

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*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.

3.8.4 Counter List

i-SENSYS MF4690PL / / i-SENSYS MF4660

Explanation: Maintenance counter output.
(For more detailed information about the maintenance counter output, execute service mode > Display counter information > Counters.)

3.8.5 Spec List

i-SENSYS MF4690PL / / i-SENSYS MF4660

```
07/12/2005 13:07 FAX                                                           001

[1]                  *****************************
[2]                  ***  SPEC REPORT  ***
[3]                  *****************************

              TYPE                          _ _ _ _ _    U. S. A
              LBP SPEED                     _ _ _ _ _    22cpm
              TOTAL MEMORY                  _ _ _ _ _    128MB
          ┌   MAIN                          _ _ _ _ _    WLaa-03-13
          │   OPTION                        _ _ _ _ _    WLaa-03-13
[4]       │   BOOT                          _ _ _ _ _    WLaa-03-13
          │   ECONT                         _ _ _ _ _    0509
          │   OPT-CAS 1                     _ _ _ _ _    0000
          │   OPT-CAS 2                     _ _ _ _ _    0000
          │   OPT-CAS 3                     _ _ _ _ _    0000
          │   OPT-DUP                       _ _ _ _ _    0000
          └   OPT-FIN                       _ _ _ _ _    0000
          ┌   ACTIBAT FUNCTION
          │   BDL-IMAGE (1200)              _ _ _ _ _    OFF
[5]       │   FAX                           _ _ _ _ _    ON
          │   NETWORK                       _ _ _ _ _    ON
          │   PCL                           _ _ _ _ _    ON
          │   PC-SCAN                       _ _ _ _ _    ON
          │   BW-SEND                       _ _ _ _ _    OFF
          │   CL-SEND                       _ _ _ _ _    OFF
          │   PAF                           _ _ _ _ _    OFF
          └   BDL-IMAGE (600)               _ _ _ _ _    ON
          ┌   SOFT-ID PRM
          │   TYPE                          _ _ _ _ _    0 : NONE
          │   OPTION/ENABLE SW
          │     BIT 00: BDL-IMAGE (1200)    _ _ _ _ _    ON   / OFF
          │     BIT 01: FAX                 _ _ _ _ _    ON   / OFF
[6]       │     BIT 02: NETWORK             _ _ _ _ _    ON   / OFF
          │     BIT 03: PCL                 _ _ _ _ _    ON   / OFF
          │     BIT 04: PC-SCAN             _ _ _ _ _    OFF  / OFF
          │     BIT 05: BW-SEND             _ _ _ _ _    OFF  / OFF
          │     BIT 06: CL-SEND             _ _ _ _ _    OFF  / OFF
          │     BIT 07: PAF                 _ _ _ _ _    OFF  / OFF
          │     BIT 08: BDSS                _ _ _ _ _    ON   / OFF
          │     BIT 09: BDL-IMAGE (600)     _ _ _ _ _    ON   / OFF
          │     BIT 10: COUNTER             _ _ _ _ _    ON   / OFF
          │   BODY No.                      _ _ _ _ _    BFDxxxxx
          │   ENGINE CODE                   _ _ _ _ _    20000016
          └   SIZE TYPE                     _ _ _ _ _    0 : NONE
          ┌   TOTAL
          │   TTL                           _ _ _ _ _    000688
[7]       │   COPY                          _ _ _ _ _    000685
          │   FAX-PRT                       _ _ _ _ _    000000
          │   PDL-PRT                       _ _ _ _ _    000000
          └   RPT-PRT                       _ _ _ _ _    000000
          ┌   READ ADJ PRM
          │   026:                          _ _ _ _ _    0022
          │   031:                          _ _ _ _ _    0000
          │   032:                          _ _ _ _ _    0115
          │   033:                          _ _ _ _ _    0032
          │   034:                          _ _ _ _ _    0032
          │   041:                          _ _ _ _ _    0000
          │   042:                          _ _ _ _ _    0219
          │   043:                          _ _ _ _ _    0075
[8]       │   044:                          _ _ _ _ _    0075
          │   045:                          _ _ _ _ _    0075
          │   046:                          _ _ _ _ _    0075
          │   047:                          _ _ _ _ _    0032
          │   048:                          _ _ _ _ _    0032
          │   054:                          _ _ _ _ _    0032
          │   213:                          _ _ _ _ _    0000
          │   214:                          _ _ _ _ _    0000
          │   215:                          _ _ _ _ _    0000
              WRITE ADJ PRM
              031:                          _ _ _ _ _    0050
              032:                          _ _ _ _ _    0050
              033:                          _ _ _ _ _    0050
              034:                          _ _ _ _ _    0100
              035:                          _ _ _ _ _    0100
              036:                          _ _ _ _ _    0100
              037:                          _ _ _ _ _    0100
              038:[                          _ _ _ _ _    0100
[9]           039:                          _ _ _ _ _    0100
[10]          OPTYION ROM                   _ _ _ _ _    16MB
[11]          USB MEMORY                    _ _ _ _ _    OFF
          ┌   DELIVERY FULL SENSOR 1        _ _ _ _ _    ON
[12]      └   DELIVERY FULL SENSOR 2        _ _ _ _ _    OFF
              USB SERIAL No.                _ _ _ _ _    0051J9AE904
[13]          MAC ADDRESS                   _ _ _ _ _    00 00 85 51 60 1C
[14]          BACKUP BATTERY                _ _ _ _ _    OFF
              LUGIA                         _ _ _ _ _    2
[15]
```

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[1] Type setting
[2] Print speed
[3] Memory size
[4] ROM version (MAIN/BOOT/ECONT/option cassette/duplex unit/finisher)
[5] Activation function ON/OFF
[6] Soft ID information
[7] Total counter (TOTAL/COPY/FAX/PDL/REPORT record counts)
[8] Adjustment data (factory scan/record adjustment values)
[9] Option ROM availability
[10] USB memory availability
[11] No. 1/No. 2 paper full sensor sensor availability
[12] USB serial number
[13] MAC address
[14] Backup battery availability
[15] Anlog purocessor PCB version

3.9 Data Initialization Mode (CLEAR)

3.9.1 Clear

i-SENSYS MF4690PL / / i-SENSYS MF4660

Group	Item	Explanation
TEL & USER DATA		Clears all user-registered and -set areas of telephone registration data and user data. (Telephone registration refers to the registration of codes on one-touch dialing, abbreviated dialing, and group dialing.)
SERVICE DATA		Clears the system dump list, except for counters and clear dates.
COUNTER		Clears the maintenance counter, parts counter and mode-specific counters. Initializes the counter (numerator) in the system dump list.
TYPE		Initializes user data and service data to suit specified destination settings.
SOFT-CNT		Not used
HST	ACTIVITY	Initializes the activity report
	ACCOUNT	Not used
	JAM	Not used
	ERR	Not used
	ALARM	Not used
CARD		Not used
ERR	E355	Not used
	E719	Not used
PWD		Clears the system administrator's password.
FILE SYSTEM		Not used
FORMAT	USB MEMORY	Format the USB memory. (This mode is used when the USB memory error is damaged and E744 occurs.)
	LICENSE DRIVE	Not used
ERDS-DAT		Not used
ALL		Clears user and service data (except for some scan parameters and print parameters), and the counter setting/registration data in the system dump list, except for the print count.

3.10 Test Mode (TEST)

3.10.1 Overview

3.10.1.1 Outline

i-SENSYS MF4690PL / / i-SENSYS MF4660

Test mode must be executed by keeping track the flow of menu items appearing on the LCD. Menu items in test mode are organized into seven blocks as described below. Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.

1. D-RAM test ((1) D-RAM)
Checks to see if data can be correctly written to and read from D-RAM.

2. Scan test ((2) SCAN TEST)
Used to adjust contact sensor output and the position at which a document fed from the ADF is scanned.

3. Print test ((3) PRINT TEST)
Used to generate service test patterns.

4. Modem test ((4) MODEM TEST)
Performs relay actuation, modem DTMF and tonal signal transmission/reception tests.

5. Aging test ((5) AGING TEST)
Not used.

6. Function test ((6) FUNCTION TEST)
Used to verify the operations of microswitches, sensors, speakers and ADF functions.

7. Roller cleaning mode ((0) ROLLER CLEAN)
Used to clean the delivery roller or ADF pickup roller by idling them.

3.10.1.2 Test Mode Menu List

i-SENSYS MF4690PL / / i-SENSYS MF4660

Test mode menu list
To invoke test mode, follow these steps:

1) Enter service mode.
Press the operation panel Additional functions key, 2 key, 8 key and Additional functions key in this order.
2) Press the operation panel arrow keys to show "TEST MODE."
3) Press the OK key.

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Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.

Group	Subgroup	Item 1	Item 2	Item 3	Explanation
TEST MODE [1] - [9], [#]					
(1) DRAM [1] - [2]					D-RAM data check
	(1) D-RAM TEST				Write/read check
	(2) D-RAM TEST				Read check
(2) SCAN TEST [1] - [8]					
	(1) SHADING				Automatic gain adjustment
	(3) SHEET POS ADJ				Not used
	(4) TRASH DETECT				Not used
	(5), (6), (9), (*)				Not used
(3) PRINT TEST [1] - [9]					
	(1)				Not used
	(2)				All-black output
	(3)				Not used
	(4)				Back belt output
	(5), (6), (7), (8), (9), (*)				Not used
(4) MODEM TEST [1] - [9]					
	(1) RELAY TEST [1] - [2]				
		(1) RELAY TEST 1			NCU relay (and switch) ON/OFF test
		(2) RELAY TEST 2			230 V common NCU test
	(2) FREQ TEST [0] - [6]				Frequency test
		(0) FREQ TEST 462Hz			
		(1) FREQ TEST 1100Hz			
		(2) FREQ TEST 1300Hz			
		(3) FREQ TEST 1500Hz			
		(4) FREQ TSST 1650Hz			
		(5) FREQ TEST 1850Hz			
		(6) FREQ TEST 2100Hz			
	(4) G3 SIGNAL TX TEST [0] - [8]				G3 signal transmission test
		(0) G3 SIGNAL TX TEST 300bps			
		(1) G3 SIGNAL TX TEST 2400bps			
		(2) G3 SIGNAL TX TEST 4800bps			
		(3) G3 SIGNAL TX TEST 7200bps			
		(4) G3 SIGNAL TX TEST 9600bps			
		(5) G3 SIGNAL TX TEST TC7200bps			
		(6) G3 SIGNAL TX TEST TC9600bps			
		(7) G3 SIGNAL TX TEST 12000bps			
		(8) G3 SIGNAL TX TEST 14400bps			
	(5) DTMF TEST [0] - [9], * , #				DTMF transmission test
		(0) G3 SIGNAL TX TEST 300bps			
		(1) G3 SIGNAL TX TEST 2400bps			
		(2) G3 SIGNAL TX TEST 4800bps			
		(3) G3 SIGNAL TX TEST 7200bps			
		(4) G3 SIGNAL TX TEST 9600bps			
		(5) G3 SIGNAL TX TEST TC7200bps			
		(6) G3 SIGNAL TX TEST TC9600bps			
		(7) G3 SIGNAL TX TEST 12000bps			
		(8) G3 SIGNAL TX TEST 14400bps			
		(9) G3 SIGNAL TX TEST TC9600bps			
		(*) G3 SIGNAL TX TEST 12000bps			
		(#) G3 SIGNAL TX TEST 14400bps			
	(6) MODEM TEST				Tonal sign reception test
	(8) G3 V.34 Tx TEST				V34 G3 signal transmission test
	(9)				Not used
(5) AGING TEST					Not used
(6) FUNCTION TEST [1] - [9]					

Group	Subgroup	Item 1	Item 2	Item 3	Explanation
Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.
	(1) FUNCTION TEST G3 4800bps				G3 4800 bps signal transmission test
	(3) 6-3 SENSOR [1] - [8]				Sensor checks
		(1) CRG ON FCV ON ALS [of of of]			
		(2) PW of PW2 of			
		(3) DS of DES of HPS of			
		(4) TN Value 125 USB memory of			
		(5) CRG ON FCV ON ALS [of of of]			
		(6), (7), (8)			Not used
	(4) ADF FEED TEST				ADF delivery operation test
	(5) BOOK FEED TEST				Book copy operation test
	(6) 6-6 SPEAKER FREQ:[1] VOL:[2]				Speaker volume and buzzer frequency test
	(7) Operation Panel				Operation panel key, LCD and LED test
	(8) FUNCTION TEST LAMP TEST ALL				Lamp test
	(9) LINE TEST [1] - [3]				Line signal reception test
(0) ROLLER CLEAN 0:PRT 1:ADF					Printer and ADF roller cleaning
	(0) PRT ROL CLEAN Press start key				Not used
	(1) ADF ROL CLEAN Press start key				

3.10.2 DRAM Test

3.10.2.1 D-RAM Test<(1) D-RAM TEST>

i-SENSYS MF4690PL / / i-SENSYS MF4660

D-RAM Test((1) D-RAM)
Press the numeric keypad key 1 on the test mode menu to select the D-DRAM test.
Press numeric keypad keys 1 and 2 during the D-DRAM test to carry out the individual tests described below.

Numeric keypad key 1
Checks to see if data can be correctly written to and read from all areas of D-RAM (SDRAM). If an error occurs making this check, the test is aborted, with an error appearing on the touch panel (LCD).

Numeric keypad key 2
Checks to see if data can be correctly read from all areas of D-RAM (SDRAM). If an error occurs making this check, the test is aborted, with an error appearing on the touch panel (LCD).
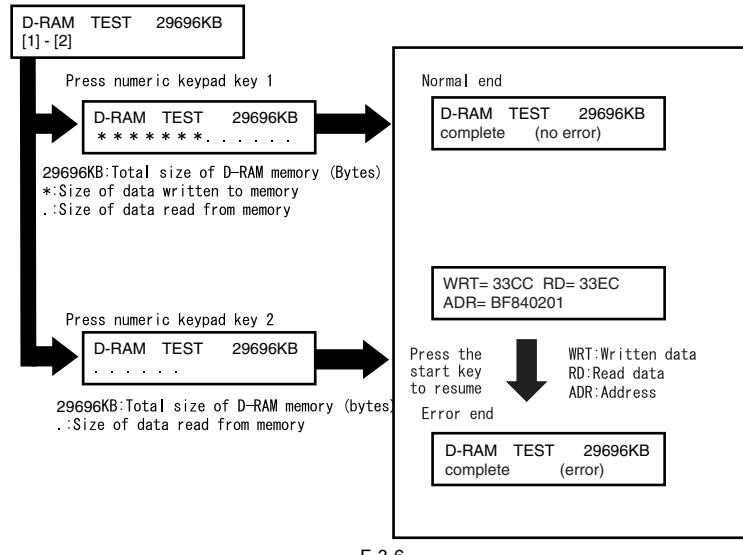
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3.10.3 Scan Test

3.10.3.1 Scan Test ((2) SCAN TEST)

i-SENSYS MF4690PL / / i-SENSYS MF4660

Scan test ((2) SCAN TEST)

Press the numeric keypad key 2 on the test mode menu to select the SCAN test.
Press numeric keypad keys 1 during the SCAN test to carry out the individual tests described below.

Numeric keypad key 1
Corrects the LED output of the contact sensor and sets its parameters automatically. (AGC adjustment)

## 3.10.4 Print Test

3.10.4.1 Print Test ((3) PRINT TEST)

i-SENSYS MF4690PL / / i-SENSYS MF4660

Print test ((3) PRINT TEST)
Press the numeric keypad key 3 on the test mode menu to select the print test.
Press numeric keypad keys 2 and 4 during the print test to generate test patterns as described below. Two kinds of service test patterns are available. Other test patterns are reserved for factory/development purposes.

Numeric keypad key 2
(2) BLACK: All-black output
Numeric keypad key 4
(4) ENDURANCE: Black belt output

To cancel test printing, press the stop key.
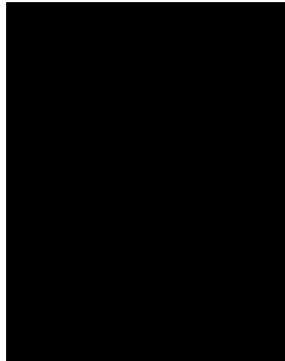
Use it to make sure that the print pattern does not have white lines or uneven image.
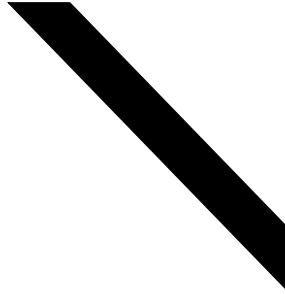
Use it to make sure that the print pattern does not have contraction/ elongation of an image or dirt/black line.s

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3.10.5 Modem Test

3.10.5.1 MODEM Test ((4) MODEM TEST)

i-SENSYS MF4690PL / / i-SENSYS MF4660

MODEM test((4) MODEM TEST)
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.

Keypad	Type	Description
1	Relay test	Use it to turn on/off a selected relay to execute a switch-over test
2	Frequency test	The modem sends tonal signals from the modular jack and the speaker.
4	G3 signal transmission test	The modem sends G3 signals from the modular jack and the speaker.
5	DTMF signal reception test	Use it to generate the DTMF signal coming from the modem using the telephone line terminal and the speaker.
6	Tonal signal reception test	Use it to monitor a specific frequency and the DTMF signal received from the telephone line terminal by causing them to be indicated on the LCD (i.e., the presence/absence as detected). The reception signal is generated by the speaker.
8	V.34 G3 signal transmission test	The modem sends V.34 G3 signals from the modular jack and the speaker.

Relay Test
Press '1'or '2' on the keypad on the Modem test menu to select relay test mode. Use the keypad to operate the various relays of the NCU. '2' on the keypad is used for 230V machine.
Numeric keypad key 1
The input key and relay are shown below:
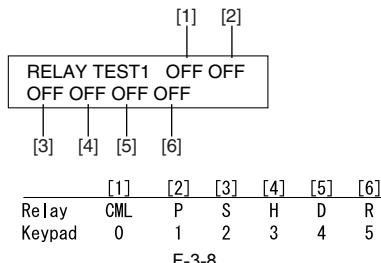
```
                              [1]   [2]
        ┌──────────────────────┤     ┤──┐
        │  RELAY TEST1  OFF OFF         │
        │  OFF OFF OFF OFF              │
        └──┬────┬────┬────┬────────────┘
          [3]  [4]  [5]  [6]

                  [1]    [2]   [3]   [4]   [5]   [6]
        Relay     CML    P     S     H     D     R
        Keypad    0      1     2     3     4     5
                          F-3-8
```

Numeric keypad key 2
The input key and relay are shown below:

```
                                    [1]    [2]
                    ┌─────────────────┴──────┴──┐
                    │ RELAY TEST2   OFF OFF       │
                    │ OFF OFF OFF OFF OFF         │
                    └──┬────┬───┬───┬───┬─────────┘
                      [3]  [4] [5] [6] [7]

                          [1]     [2]   [3]   [4]    [5]    [6]    [7]
               Relay    CITS2    C1   NORG  DCSEL  DCLIM  IPSEL1 IPSEL2
               Keypad   0   1     2     3     4      5      6
```

F-3-9

⚠
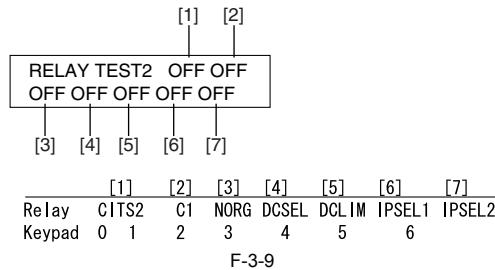
The touch panel (LCD) is turned on or off in relation to the transmission of the relay operation signal as is operated on the keypad; for this reason, you cannot use the touch panel (LCD) to check a fault on a single relay.

Frequency Test
A press on '2' on the keypad from the MODEM test menu selects the frequency test.
In this test, signals of the following frequencies from the modem are transmitted using the telephone line terminal and the speaker. To select a different frequency, use the keypad.

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

MEMO:
The frequency and the output level of individual frequencies are in keeping with the output level set in service mode.

G3 Signal Transmission Test
A press on '4' on the keypad from the MODEM test menu selects the G3 signal transmission test. In this test, the following G3 signals from the modem are transmitted using the telephone line terminal and the speaker. To select a different transmission speed, use the keypad.

Keypad	Transmission speed
0	300bps
1	2400bps
2	4800bps
3	7200bps
4	9600bps
5	TC7200bps
6	TC9600bps
7	12000bps
8	14400bps

MEMO:
The output level of individual signals is in keeping with the setting made in service mode.

DTMF Signal Transmission Test
A press on '5' on the MODEM test menu selects the DTMF signal transmission test. In the test, the following DTMF signals from the modem are transmitted using the telephone line terminal and the speaker. The number pressed on the keypad selects a specific DTMF signal.

MEMO:
The output level of individual signals is in keeping with the setting made in service mode.

Tonal/DTMF Signal Reception Test
A press on '6' on the keypad from the MODEM test menu selects the tonal signal/DTMF signal reception 0 test. In this signal, the tonal signal/DTMF signal received from the telephone line terminal can be checked to find out if it was detected by the modem.

Tonal signal reception test

```
┌─────────────────────┐
│ MODEM TEST          │
│ OFF OFF OFF         │
└─────────────────────┘
```

OFF OFF OFF
  └── changes from '0' to '1' in response to detection of a signal of 462 ± 25 Hz.
  └── changes from '0' to '1' in response to detection of a signal of 1100 ± 30 Hz.
  └── changes from '0' to '1' in response to detection of a signal of 2100 ± 25 Hz.

DTMF signal reception test

```
┌─────────────────────┐
│ MODEM TEST          │
│ OFF OFF OFF   5     │
└─────────────────────┘
```

The received DTMF signals are indicated starting
from the right using the 2nd character of the display.

F-3-10

V.34 G3 Signal Transmission Test
A press on '8' on the keypad from the MODEM test menu selects the V.34 G3 signal transmission test. The V.34 G3 signals below are sent from the modem using the modular jack and the speaker by pressing the start key. The Baud rate can be changed with the keypad, and the Speed can be changed with the left/right arrow key.

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

Left/right arrow key	Transmission speed
	2400bps
	4800bps
	7200bps
	9600bps
<	12000bps
	14400bps
	16800bps
	19200bps
	21600bps
>	24000bps
	26400bps
	28800bps
	31200bps
	33600bps

3.10.6 Faculty Test

3.10.6.1 FUNCTION TEST <(6) FUNCTION TEST>

i-SENSYS MF4690PL / / i-SENSYS MF4660

Function test ((6) FUNCTION TEST)
Press the numeric keypad key 6 on the test mode menu to select the function test.
Press numeric keypad keys 1 and 3 to 9 during the function test to enter the menus listed below.

T-3-22

| Keypad	Item	Explanation
1	G3 signal transmission test	Transmits 4800-bps G3 signals to a telephone line and speaker.
2	Not used	
3	Sensor test	Sensor actuation test
4	ADF test	ADF operation test
5	Book test	Host machine operation test
6	Speaker test	Speaker operation test
7	Operation panel test	LCD, LED and control key operation test
8	Lamp test	Contact sensor illumination test
9	Line signal reception test	NCU board signal sensor and frequency counter operation test

G3 signal transmission test (6-1: G3 480 bps Tx)
Press numeric keypad key 1 on the FUNCTION TEST menu to select the G3 signal transmission test. This test transmits 4800-bps G3 signals from the telephone line connection terminal and speaker.

Sensor test (6-3: SENSOR)
This mode is used to verify the status of the unit sensors from LCD indications. Press numeric keypad key 3 on the FUNCTION TEST menu to select the sensor

test. LCD indications change as the associated sensors turn on and off.

```
┌─────────────────────┐
│ 6-3:SENOR           │
│ [1] - [8]           │
└─────────────────────┘
```

Press '1' on the numeric pad.

```
┌─────────────────────┐
│ CRG ON    FCV ON    │
│ ALS [of  of  of]    │
└─────────────────────┘
```

CRG:Toner cartridge sensor: on/of
FCV:Toner cartridge cover: on/of
ALS:Multi-purpass paper sensor/Paper width sensor
    /Delivery sensor: on/of

Press '2' on the numeric pad.

```
┌─────────────────────┐
│ PW of    PW2 of     │
│                     │
└─────────────────────┘
```

PW:Paper leading edge sensor: on/of
PW2:Delivery paper width sensor: on/of

Press '3' on the numeric pad.

```
┌─────────────────────┐
│ DS of  DES of  HPS of │
│                     │
└─────────────────────┘
```

DS:Document sensor: on/of
DES:Document edge sensor: on/of
HPS:CS HP sensor: on/of

Press '4' on the numeric pad.

```
┌─────────────────────┐
│ TN Volue   xxx      │
│ USB memory  of      │
└─────────────────────┘
```

xxx:Toner voltage
USB memory:Detection: on/of

F-3-11

ADF feed test (ADF FEED TEST)
ADF operation verification mode. Press numeric keypad key 4 on the FUNCTION TEST menu to select the ADF feed test. Place a document on the document platen and press the start key to transfer the document at the speed matched to the scan resolution setting. In this test, enter a transfer speed between 500 and 2000 (mm/s) from the numeric keypad and verify the transfer speed. Select between the ON and OFF states with the left and right cursor keys to select between single-sided document feed (OFF) and double-sided document feed (ON).

Book feed test (6-5: BOOK FEED TEST)
Performs a book feed operation with a specified magnification and in a specified size.

Speaker test (6-6: SPEAKER)
Speaker operation verification mode. Press numeric keypad key 6 on the FUNCTION TEST menu to select the speaker test. In this test, the speaker generates tonal signals at 100 Hz intervals, from 200 Hz to 5 kHz, in varying sound volumes. Signal output from the speaker is thus verified.

```
┌─────────────────────┐
│ 6-6: SPEAKER        │
│ FREQ [1]    VOL [2] │
└─────────────────────┘
```

Press numeric   Press numeric
keypad key 1.   keypad key 2.

```
┌─────────────────────┐      ┌──────────────────────┐
│ SPEAKER             │      │ SPEAKER              │
│ FREQ  TEST          │      │ VOL[*] :MIN  [#]:MAX │
└─────────────────────┘      └──────────────────────┘
```

Press the start key   Signal tone volume adjustment.
to change the   * denotes the minimum, #, the maximum.
transmission frequency   The volume is adjustable level by level
                             using the start key.
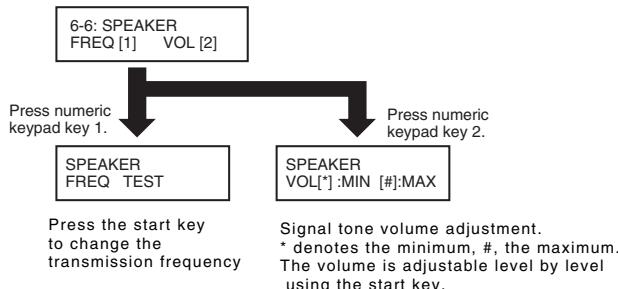
F-3-12

Operation panel test (6-7: OPERATION PANEL)
Operation panel operation verification mode. Press numeric keypad key 7 on the FUNCTION TEST menu to select the OPERATION PANEL test menu. Functions that can be verified from this menu are listed below.

- LCD test
Start the OPERATION PANEL test by pressing the start key. The LCD test is carried out first, displaying all-H characters. Press the start key once again to produce a total black display.
- LED lamp test
Press the start key after the LCD test to select the LCD lamp test, turning on all lamps on the operation panel.
- Operation key test
Press the start key after the LCD lamp test to select operation key test (1). The test succeeds if the characters appearing in the LCD are erased when the corresponding keys are pressed.
When the entire character display is erased, operation key test (2) launches (only on models with the FAX feature installed). As in (1), the test succeeds if the characters appearing in the LCD are erased when the corresponding keys are pressed.
Operation key test (1) correspondence diagram

T-3-23

Character	Operation key	Character	Operation key
0-9,*,#	Numeric key	I	Density key
A	Cursor key (+)	L	View settings key
B	Cursor key (-)	M	Toner Gauge key
C	OK key	N	2-Sided key
D	Additional Functions key	O	Enagy Saver key

Character	Operation key	Character	Operation key
E	Status Monitor key	P	Clear key
F	Collate/2 on 1 key	R	COPY key
G	Image Quality key	S	SCAN key
H	Enlarge/Reduce key	U	ID key

Operation key test (2) correspondence diagram

T-3-24

Character	Operation key	Character	Operation key
0	SEND/FAX key	5	Coded key
3	Recall/Pause key	8	Hook key
4	Address Book key	A - H	One-touch key

The flow of operation panel testing is shown below.

```
6-7 : Operation  Panel
```
Press the start key

LCD test
```
HHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHH
```
All H characters are displayed

Press the start key

All black dots are displayed

Press the start key

LED lamp test

All LED dots are displayed

Press the start key

Operation key test (1)
```
0123456789*#ABCDEFGH
I    LMNOP  RS U
```
A character disappears when
the corresponding key is pressed

Operation key test (2)
```
0   345   8
ABCDEFGH
```
A character disappears when the
corresponding one-touch dial key is pressed.

The test is finished when the stop key
is pressed after deleting all characters

F-3-13

Lamp test (6-8: LAMP TEST)
Press numeric keypad key 8 on the FACULTY menu to select the scan lamp illumination mode. The test checks to see if the scan lamp is on or not.
Numeric keypad key 1 selects LAMP TEST ALL. Press the start key to turn on all scan lamps. LAMP TEST AGC is not used.
Line signal reception test (9: LINE DETECT)
Press numeric keypad key 9 on the FACULTY menu to select the line signal reception test. In this test, verify the successful operations of the NCU signal sensor and the frequency counter. Menu 1 detects the CI state, while menu 3 detects the CNG signal.
    Test menu 1
    Press numeric keypad key 1 on the LINE DETECT menu to select test menu 1. When CI is detected on the telephone line connection terminal, the LCD display changes from OFF to ON, indicating the received frequency. The LCD also displays the on-hook or off-hook state of an external telephone set as detected. The LCD displays, from left to right, CI, CI frequency, hook port and FC with indications of 1:ON and 0:OFF.
    Test menu 2
    Press numeric keypad key 2 on the LINE DETECT menu to select test menu 2. When the CNG signal is detected on the telephone line connection terminal, the LCD display changes from OFF to ON, indicating the received frequency. The LCD displays the status of CML, CNG and FED detection, from left to right, with ON/OFF indications. Numeric keypad key 2 turns on the CML relay to detect CNG.
    Test menu 3
    Press numeric keypad key 3 on the LINE DETECT menu to select test menu 3. When the CNG signal is detected on the telephone line connection terminal, the LCD display changes from OFF to ON, indicating the received frequency. The LCD displays the status of CML, CNG and FED detection, from left to right, with ON/OFF indications. Numeric keypad key 3 turns off the CML relay to detect CNG.

3.10.7 Cleaning Mode

3.10.7.1 Roller cleaning mode ((0) ROLLER CLEAN)

i-SENSYS MF4690PL / / i-SENSYS MF4660

Roller cleaning mode ((0) ROLLER CLEAN)
Press numeric keypad key 0 in test mode to select roller cleaning mode. Press numeric keypad keys 0 and 1 during this test to enter the following menus:

Numeric keypad key 1
Not used.

Numeric keypad key 2
Press the start key clean the unit transfer rollers by idling.
Press the stop key to exit this mode.

Chapter 4 Outline of Components

4.1 Sensor

### 4.1.1 List of Sensors

i-SENSYS MF4690PL / / i-SENSYS MF4660
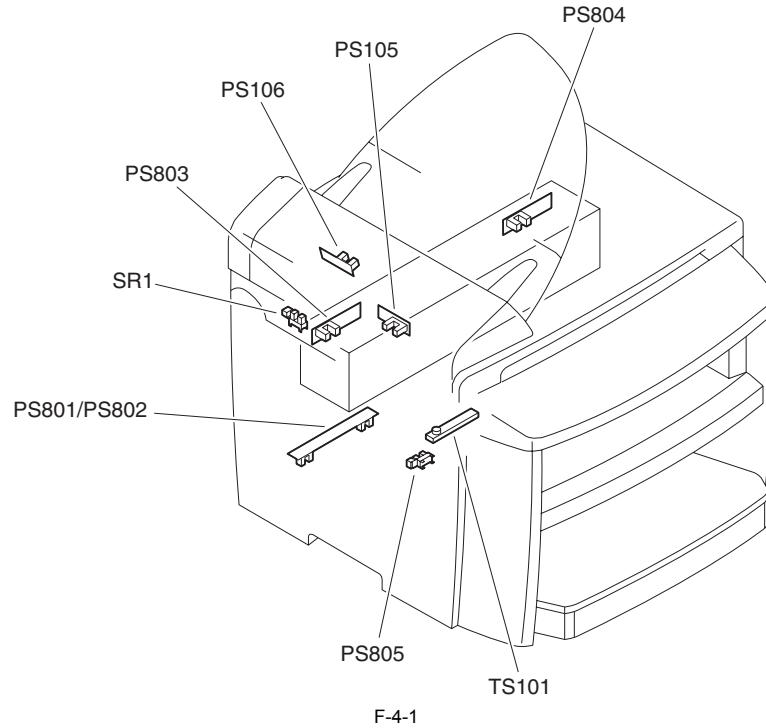
F-4-1

Symbol	Name
PS105	DES sensor
PS106	DS sensor
PS801/PS802	leading edge/paper width sensor
PS803	delivery sensor
PS804	delivery paper width sensor
PS805	Multi-purpose pickup sensor
SR1	CS home position sensor
TS101	Toner level sensor

4.2 PCBs

4.2.1 List of PCBs

i-SENSYS MF4690PL / / i-SENSYS MF4660
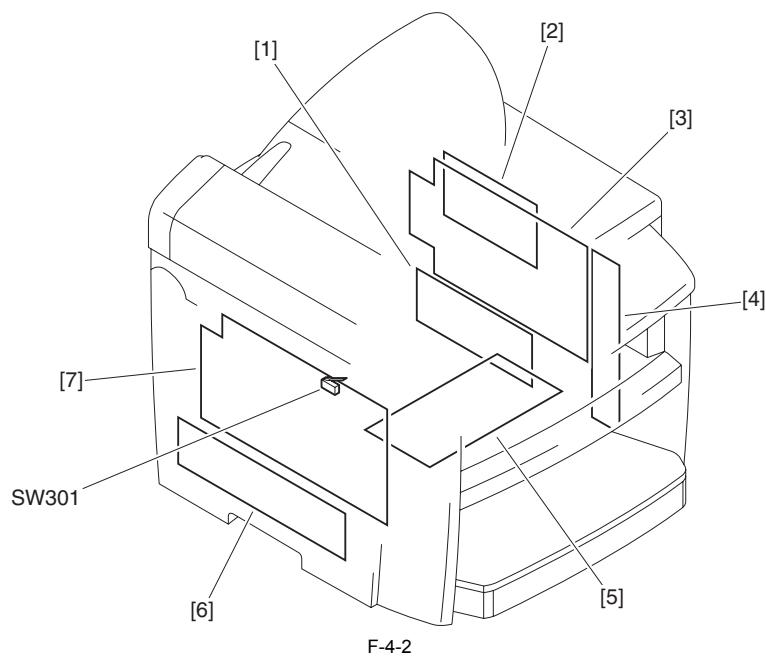
F-4-2

Symbol	Name
[1}	NCU board
[2}	Analog processor PCB
[3}	SCNT board
[4]	Motor driver PCB
[5]	DCNT board
[6}	Power supply PCB
[7}	High voltage PCB
SW301	Door switch

Chapter 5 System Construction

5.1 Construction

5.1.1 Function Configuration

i-SENSYS MF4690PL / / i-SENSYS MF4660

The functions of this host machine are mainly composed of the 7 blocks: System
Control System, Scanning Control System, Printer Control System, Laser Scanner System, Image Formation System, Fixing System, Pickup/Feeding System.
Below is the block diagram.
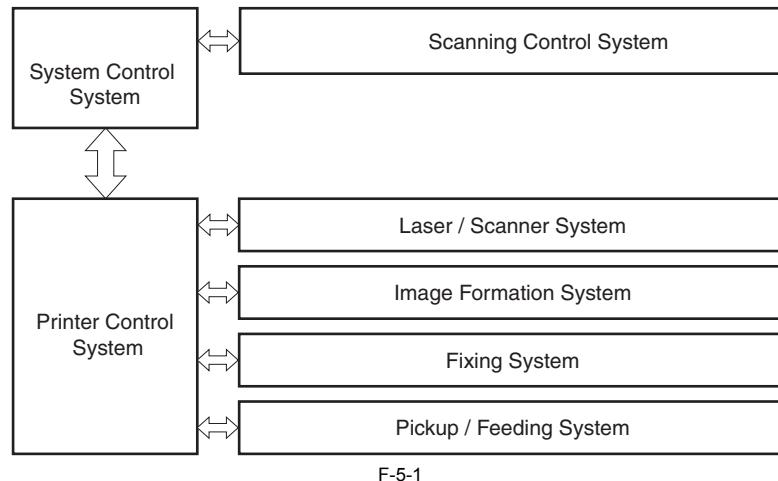
F-5-1

5.2 Product Specifications

5.2.1 Host Machine Specifications

i-SENSYS MF4690PL / i-SENSYS MF4660

Copyboard	Fixed
Body	Desktop (ADF standard type)
Light source type	LED
Image reading method	Contact Sensor Reading Method
Photosensitive medium	OPC drum
Reproduction method	Indirect electrostatic copying method
Exposure method	Semiconductor laser
Charging method	Roller contact charging method
Development method	Dry system - element jumping development method
Transfer method	Roller transfer method
Separation method	Electrostatic separation (neutralizing needle) and curvature separation
Pickup method	Cassette pick-up: 1 cassette Multi manual feeding pick-up
Cassette pickup method	Pad separation method
Multifeeder pickup method	Pad separation method
Drum cleaning method	Rubber blade
Fixing method	On-demand fixing
Toner supply type	By drum style toner cartridge
Toner type	Magnetic negative toner
Toner save mode	Yes
Original type	Sheets, books, solids (up to 2 kg)
Maximum original size	Fixed: 216mm x 297mm ADF: 216mm x 356mm
Reproduction ratio	1 to 1 + / - 1.0 %, 1 to 2.00, 1 to 1.29, 1 to 0.78, 1 to 0.64, 1 to 0.50 Zoom: 0.50 to 2.00 (specified by the percent)
Reading resolution	<TEXT/PHOTO>: 300 dpi x 300 dpi <TEXT>, <PHOTO>, <TEXT/PHOTO+>: 600 dpi x 600 dpi
Printing resolution	600 x 600 dpi

Warm-up time	9.0 seconds or less* (temperature: 20 deg C, humidity: 65%. From when turning on the main power of this product until the standby screen is displayed) *Warm-up time may vary according to use condition of this product and environment)
First print time	8.5 seconds or less (A4/LTR)
Print speed	Approximately 20 sheets / minute (A4) Approximately 21 sheets / minute (LTR) Double-sided: Approximately 5 sheets / minutes
Cassette paper size	LTR, LGL, A4, B5, A5, Executive, Envelope (COM10, Monarch, DL,ISO-C5), Oficio, Brazil-Oficio, Mexico-Oficio, Folio, Government-LTR, Government-LGL, Foolscap (76 x 127 to 216 x 356 mm)
Multifeeder paper size	LTR, LGL, A4, B5, A5, Executive, Envelope (COM10, Monarch, DL,ISO-C5), Oficio, Brazil-Oficio, Mexico-Oficio, Folio, Government-LTR, Government-LGL, Foolscap (76 x 127 to 216 x 356 mm) *For 2-sided prints, only for 64 to 80g/m2-A4/LTR
Cassette paper type	Plain paper (64 to 90g / m2), thick paper (105 to 128g / m2), recycled paper (64 to 80g / m2), transparency, label, envelop, and postcard
Multifeeder tray paper type	Plain paper (64 to 90g / m2), thick paper (105 to 128g / m2), recycled paper (64 to 80g / m2), transparency, label, envelop, and postcard
Cassette capacity	250 sheets (80g / m2 paper)
Multifeeder tray capacity	10 sheets (plain paper: 80g / m2 paper) 1 sheet (transparency, envelop)
Delivery tray stack	100 sheets (plain paper: 80g / m2 paper) 50 sheets (thick paper: 91 to 105g / m2 paper) 30 sheets (thick paper: 106 to 128g / m2 paper) 10 sheets (label, transparency, envelop, postcard)
Continuous reproduction	1 to 99 sheets
Energy save mode	Yes. (Manual ON / OFF, automatically OFF after a set period of time, automatically ON when receiving facsimile / print data)
Network	Yes
PDL	UFRII LT, PCL5 / PCLXL
SEND	MF4660: No MF4690: Yes
Operating environment (temperature range)	15 to 30 degrees C
Operating environment (humidity range)	10 to 80 %
Operating environment (atmospheric pressure)	0.16 to 1.01 hPa (0. 6 to 1 bar)
Power supply rating	220V-240V (50/60Hz)
Power consumption (maximum)	Maximum consumption: less than 730W
Power consumption	During operation: approximately 340W or less (reference value) At standby: approximately 12W (referenve velue)In sleep mode: approximately 3W (reference value)
Ozone	Maximum: less than 0.05 ppm, average: less than 0.02 ppm
Dimensions	390mm (W) x 442mm (D) x 470mm (H) (with original pick-up tray)
Weight	Approximately 13.4kg (including toner cartridges)

5.2.2 ADF Specifications

i-SENSYS MF4690PL / / i-SENSYS MF4660

Original orientation	Face-up method
Original position	center reference
Original processing mode	1-sided to 1-sided copy, 1-sided to 2-sided copy
Original reading	stream reading method
Stack	35 sheets (80 g/m2 or less) 15 sheets (LGL size)
Mixed original sizes	No
Original AE detection	No
Original size recognition	No
Stamp	No
Operating environment	pursuant to the host machine

5.2.3 FAX Specifications

i-SENSYS MF4690PL /

Applicable lines	Analog line (single line) - Telephone subscriber line (PSTN)

Transmission method	Half-duplex communication
Modulation method	\<G3 image signal\> ITU-T V.27 ter (2.4Kbps, 4.8Kbps) ITU-T V.29 (7.2Kbps, 9.6Kbps) ITU-T V.17 (TC7.2Kbps, TC9.6Kbps, 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 (1200bps)
Transmission speed	33.6Kbps, 31.2Kbps, 28.8Kbps, 26.4Kbps, 24Kbps, 21.6Kbps, 19.2Kbps, 16.8Kbps, 14.4Kbps, 12Kbps, TC9.6Kbps, TC7.2Kbps, 9.6Kbps, 7.2Kbps, 4.8Kbps, 2.4Kbps With automatic fallback function
Coding	MMR, MR, MH, JBIG
Error correction	ITU-T ECM
Minimum receive input level	V.17, V.27ter, V.29: -6 to -43 dBm V.34: -10 to -43 dBm
Modem IC	CONEXANT DFX336
Scanning line density	Standard: 8 dots / mm x 3.85 lines / mm Fine: 8 dots / mm x 7.7 lines / mm Super fine: 8 dots / mm X 15.4 lines / mm Ultra fine: 16 dots / mm X 15.4 lines / mm
Half tone	256 gradation sequence
Printing resolution	600 dpi x 600 dpi
Reduction for reception	Fixed reduction: 90%, 95%, 97%, 75% Automatic reduction: 75 to 100%
FAX/TEL switching	Yes
Answering machine connection	Yes
Remote reception	ID entry method ID: 2 digits (default is 25)
Auto dialing	One-touch dial: 8 Speed dial: 192 Group dial: Maximum 199
Delayed transmission	No
Broadcast transmission	Number of Destination: Maximum 201
Dual access	Number of reservations: 70 max.
Image data backup	backup particulars: memory reception, memory transmission, broadcast image data backup IC: 128 MB (SDARAM) Backup battery: rechargeable capacity backup length: about 1 hour

Feb 26 2007