Network Printer Board-J1

SERVICE MANUAL

REVISION 0

Canon

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 CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

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Prepared by

OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DIVISION

CANON INC.

5-1, Hakusan 7-chome, Toride, Ibaraki 302-8501 Japan

INTRODUCTION

This Service Manual provides facts and figures needed to service the Network Printer Board - J1 package in field, and consists of the following chapters:

Chapter 1 *General Description* provides an outline of the product, introduces its features, specifications, and shows how it may be operated.

Chapter 2 *Operation Overview* describes the construction of the Network Printer Board - J1 package, its system overview, electrical circuit overview, network connection, and how data dealt with by the host copier.

Chapter 3 *Mechanical System* shows how the Network Printer Board - J1 package may be disassembled / assembled with points to note during the work.

Chapter 4 *User software* provides an outline of user software, printer driver, and utilities (including Font manager and NetSpot).

Chapter 5 *Troubleshooting* discusses how to isolate the board and describe the software tool.

Chapter 6 *Parts catalog* provides parts lists.

Appendix provides general circuit diagram and a special tool.

This service manual briefly describes network-related work usually performed by the user's network supervisor and topics related to software. You may obtain a media package, also available as a service parts (Consisting of the document package and the user software CD-ROM). If detail information is needed, refer to the appropriate item of the package.

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 Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine.

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CHAPTER 1

GENERAL DESCRIPTION

 CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

I. FEATURES

1. Accommodates the PCL5e and PCL6 PDL as standard.

The Network Printer Board-J1 package is designed to accommodate the PCL5e and PCL6 PDL (Page Description Language), developed by Hewlett-Packard Company, as standard. The Network Printer Board-J1 package is capable of decoding instructions written in these languages for printing on a digital black-and-white copier.

2. High-speed print processing by a high-performance CPU.

The high-speed CPU (Intel i960: 32-bit RISC type microprocessor.) with an access clock frequency of 33 MHz processes printing information at a very high rate.

3. Multiple memory sizes.

An 4 MB memory comes standard with the Network Printer Board-J1 package for use as a buffer for print data from external devices. Adding a SIMM to the memory will expand the capacity to as high as 20 MB, thereby decreasing memory overflow and enabling smooth processing otherwise occurring when complex data from external devices is processed.

4. Share the Network printer in Multi-Protocol Network Environment.

The Network Printer Board-J1 package fits multiple network operating systems (such as Novell NetWare and Windows NT), It can set up the network printer to service print jobs from one or All platforms.

5. Disable the Energy saving mode.

Energy saver mode does not operate when the network Printer Board-J1 is installed.

II. OUTLINE OF THE PRODUCT

The Network Printer Board-J1 package serves as an interface between a copier and external device (host computer, for example) via Ethernet (10Base-T). Decoding data from the host-computer for generation of video signals for printing on paper.

The package is capable of decoding PCL6 and PCL5e developed by Hewlett - Packard Company.

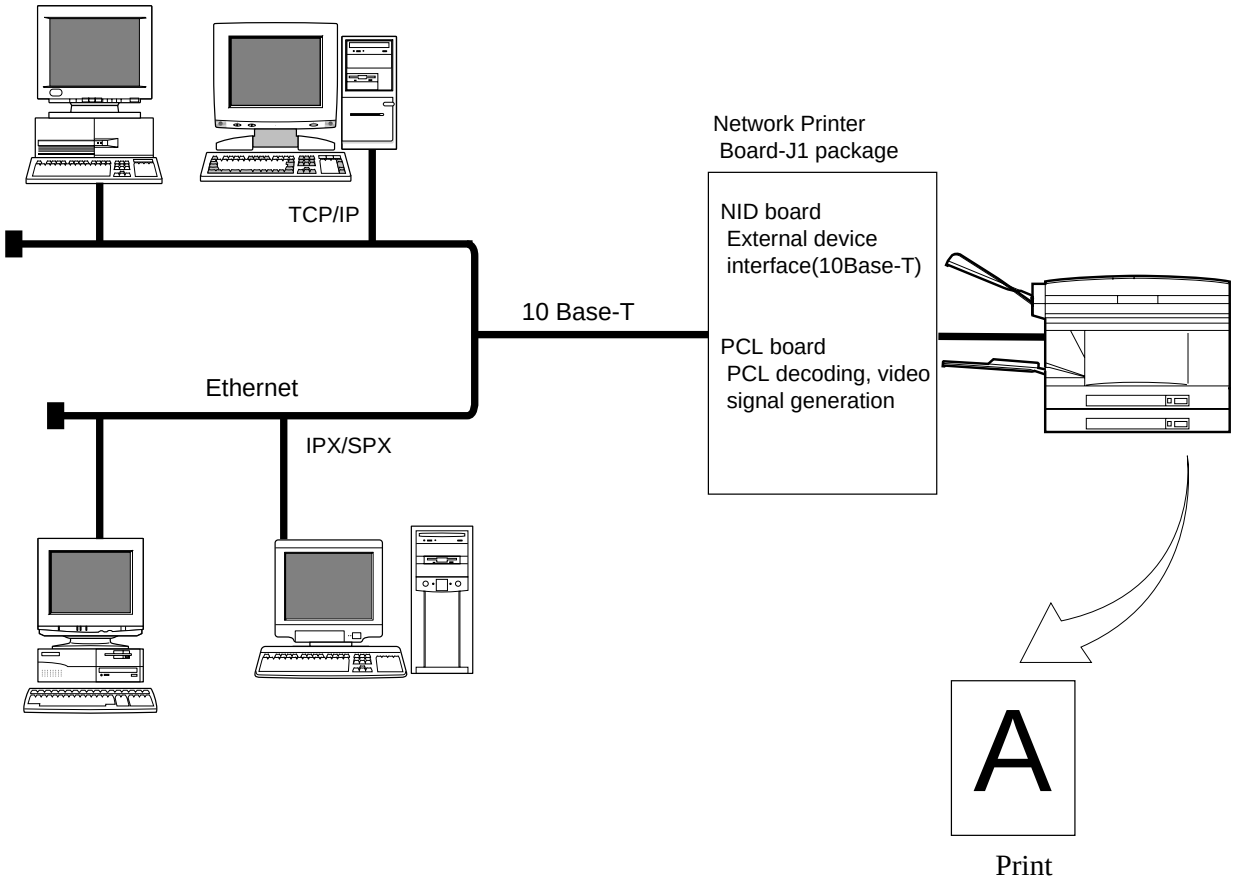

Figure 1-201

III. SPECIFICATIONS

A. PCL Board

Item		Description
CPU	Primary	Intel i960(NG80960JF-33) Microprocessor
	Secondary	Peerless QP1700 Banding Co-processor ASIC at 33MHz (IC2)
ROM		4MB (ROM-DIMM Module) or Mask 8MB (IC10, IC11) Content PCL, PCL fonts
RAM	Standard	DRAM 4MB on board
	Optional	SIMM 16MB + standard 4MB (20MB Max.)
Interface		IEEE1284(ECP) 40pin Page21 style to Network Interface Device FAX BUS & Video I/F to Image Processor PCB
Operation mode		PCL6, PCL5e emulation (PeerlessPrint6)
Resolution		600dpi / 300dpi
Paper size		A3, A4, A4-R, A5, A5-R, B4, B5, B5-R, 11 × 17, Legal, Letter, Letter-R
Font		45 scalable typefaces in 14 families 35 Intellifont format, 10 TrueType format 8 Bitmapped typefaces in Line Printer Typeface Family
Non-image width		Less than 1/6 inches (on all sides)
Operation temperature /humidity		Same as main body

B. NID Board

Item	Description
CPU	AMD SB80C188-20
Flash ROM	512kbit × 8
RAM	DRAM 4Mbit × 2
	SRAM 256kbit
Ethernet controller	NS DP83902A
Interface	IEEE1284(ECP) 40pin Page21 style to PCL board 10Base-T (twisted pair via RJ-45 connector)
LED	TX/RX Green Data packet TX and RX LNK Green Ethernet linking ERR Red Error and Diagnostic
Operation temperature /humidity	Same as main body

C. Supporting Protocol and Print Application

Print server OS and NOS	Print application	Protocol	
		IPX/SPX	TCP/IP
NetWare 3.1x, 4.x (Bindery, NDS)	PServer	Yes	
	NPrinter	Yes	
Windows NT 4.0	LPD		Yes
Windows 95 note.1	LPD		Yes
Windows 98 note.1	LPD		Yes

Note. 1 Windows 95 and Windows 98 does not provide an LPR port as standard. To print using the LPD service, data must be sent by way of a server equipped with an LPR port, or an LPR utility (not available with the Network Printer Board-J1 package) must be installed.

IV. OPERATION

Once the Network Printer is installed the PRINT/SCAN button on operation panel will become enabled.

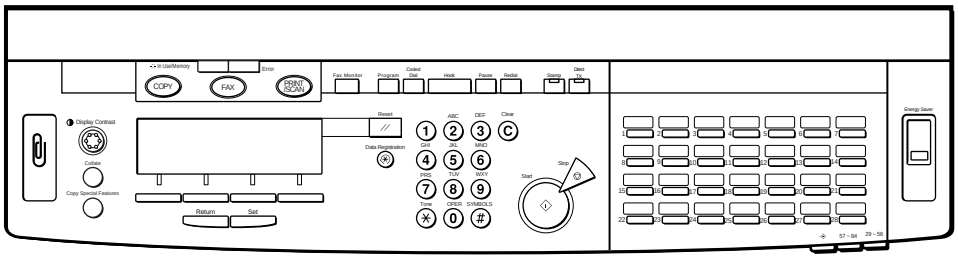

Figure 1-401

When the PRINT/SCAN button is pressed, the following screen is displayed on LCD display panel with ON LINE mode displayed.

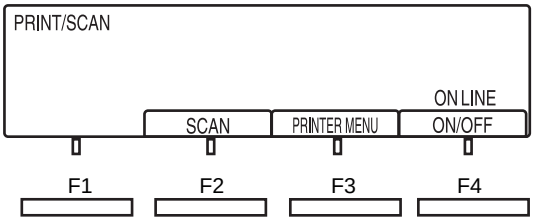

Figure 1-402

ON LINE — Use the ON/OFF button (F4) to switch the printer off line and on line. You have to switch the printer off line before you can open the PRINTER MENU to perform a test print and other procedures.

A. Printer Menu

The following pages describe the Printer settings which can be accessed via the print menu.

To enter the printer menu press ON/OFF button (F4) to take the printer off line.

PRINTER MENU

- 01 CONTINUE
- 02 FORM FEED
- 03 RESET
  - 01 JOB CLEAR
  - 02 PRINTER
  - 03 PCL BOARD
- 04 TEST
  - 01 TEST PRINT
  - 02 FONT LIST

CONTINUE Some error that interrupt printing can be skipped. For example, if the paper size specified by the application software program is not loaded in the paper cassette an error message will ask you have to load the correct paper size in the cassette. To skip this error, all you have to do is select the CONTINUE item in the PRINTER MENU.

FORM FEED This procedure prints data remaining in the receive buffer on the PCL board. This may occure if the application software program does not send form feed (FF) or if the printer is taken off line during a print job.

RESET

JOB CLEAR This procedure is to cancel a print job. After you cancel a print job, the unprinted portion of the printer job is deleted.

PRINTER This procedure is to cancel the current printer settings and restore the defaults.

PCL BOARD This procedure performs a hard reset for the PCL board. Perform a hard reset if the PCL board hangs up.

TEST

TEST PRINT This procedure is to perform a Test print. The Test print performs three important tasks that confirm the printer is operating correctly:*

1. Listing all menu settings.
2. Printing a variety of patterns.
3. Listing other important information like RAM size, version and revision numbers.

FONT LIST This procedure prints a list of the internal fonts.**

* : See figure 1-403 sample test print.
** : See figure 1-404 sample font list.

B. Print Sample

TEST PRINT

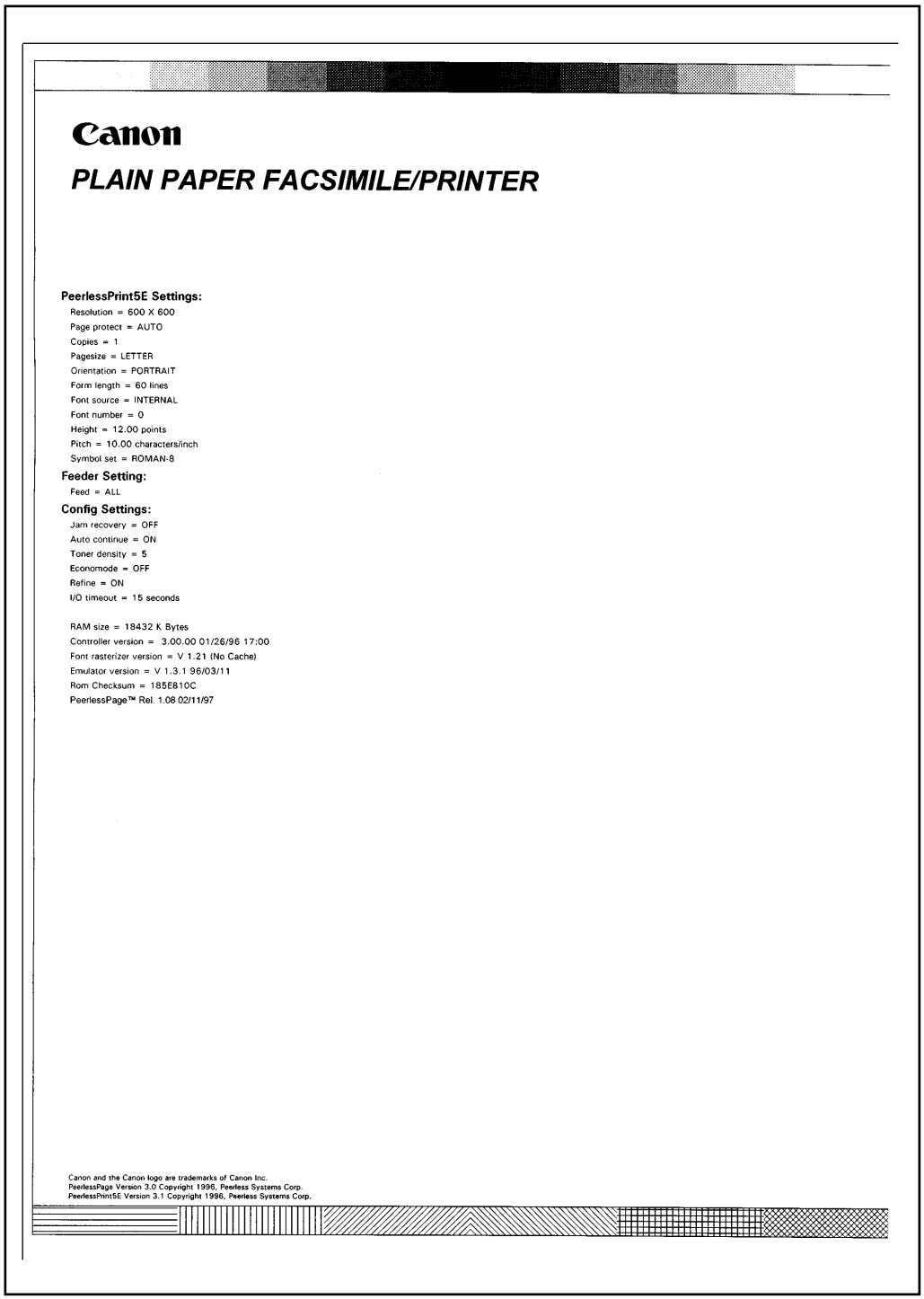

Figure 1-403

1. PeerlessPrint5e Settings:
   These settings can be adjusted in the printer driver.

2. Feeder Setting:
   The settings done with NetSpot. These settings identify the paper supply sources.

3. Config Settings:
   Jam recovery and Auto continue can be set with NetSpot.
   Other configuration settings can be made through in the printer driver.

   Total RAM size on PCL board
   Version and revision numbers

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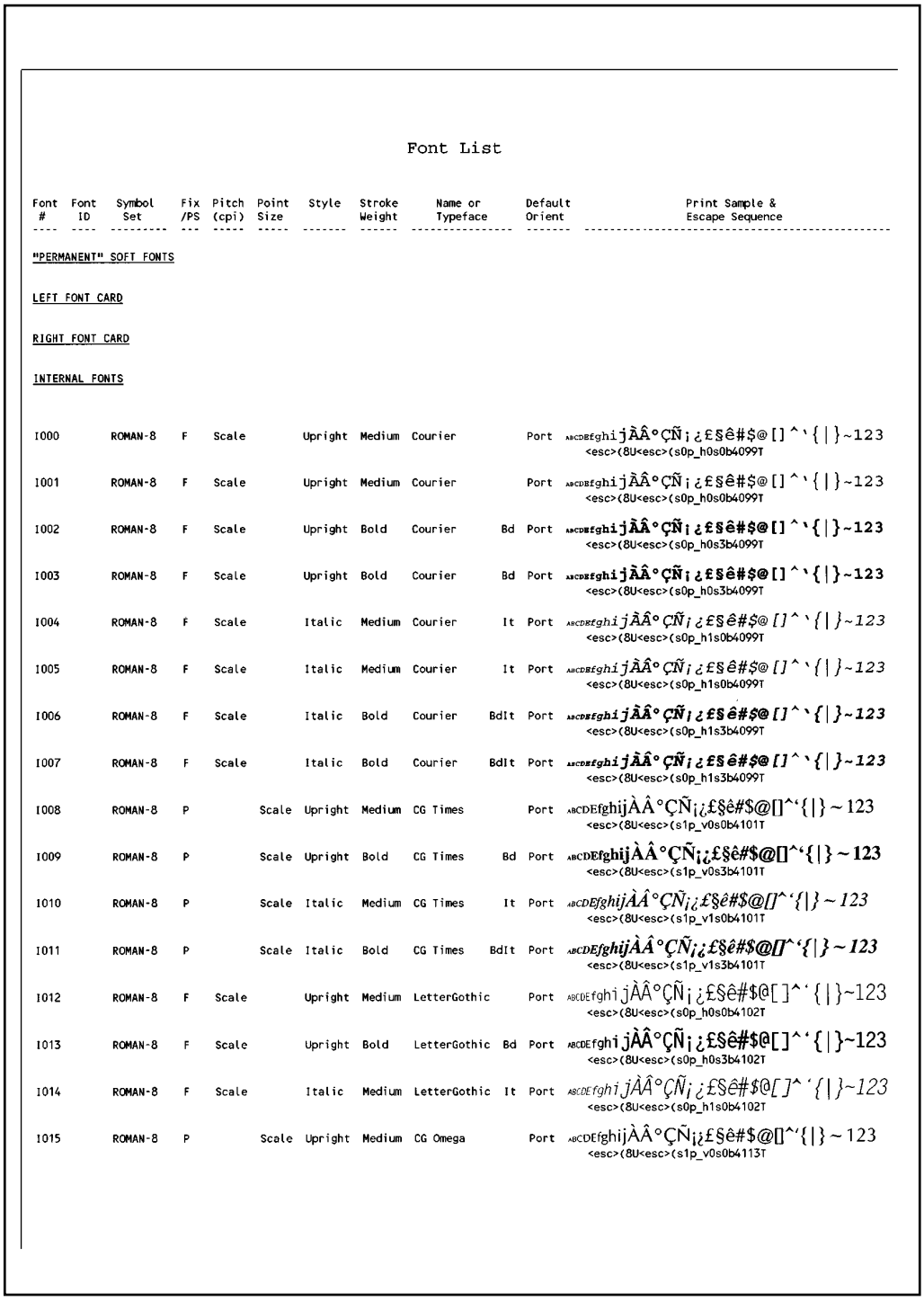
FONT LIST



Font List

Font #	Font ID	Symbol Set	Fix /PS	Pitch (cpi)	Point Size	Style	Stroke Weight	Name or Typeface	Default Orient	Print Sample & Escape Sequence
"PERMANENT" SOFT FONTS										
LEFT FONT CARD										
RIGHT FONT CARD										
INTERNAL FONTS										
I000		ROMAN-8	F	Scale		Upright	Medium	Courier	Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h0s0b4099T
I001		ROMAN-8	F	Scale		Upright	Medium	Courier	Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h0s0b4099T
I002		ROMAN-8	F	Scale		Upright	Bold	Courier	Bd Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h0s3b4099T
I003		ROMAN-8	F	Scale		Upright	Bold	Courier	Bd Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h0s3b4099T
I004		ROMAN-8	F	Scale		Italic	Medium	Courier	It Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h1s0b4099T
I005		ROMAN-8	F	Scale		Italic	Medium	Courier	It Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h1s0b4099T
I006		ROMAN-8	F	Scale		Italic	Bold	Courier	BdIt Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h1s3b4099T
I007		ROMAN-8	F	Scale		Italic	Bold	Courier	BdIt Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h1s3b4099T
I008		ROMAN-8	P		Scale	Upright	Medium	CG Times	Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s1p_v0s0b4101T
I009		ROMAN-8	P		Scale	Upright	Bold	CG Times	Bd Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s1p_v0s3b4101T
I010		ROMAN-8	P		Scale	Italic	Medium	CG Times	It Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s1p_v1s0b4101T
I011		ROMAN-8	P		Scale	Italic	Bold	CG Times	BdIt Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s1p_v1s3b4101T
I012		ROMAN-8	F	Scale		Upright	Medium	LetterGothic	Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h0s0b4102T
I013		ROMAN-8	F	Scale		Upright	Bold	LetterGothic	Bd Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h0s3b4102T
I014		ROMAN-8	F	Scale		Italic	Medium	LetterGothic	It Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s0p_h1s0b4102T
I015		ROMAN-8	P		Scale	Upright	Medium	CG Omega	Port	ABCDEfghijÀÂ°ÇÑ¡¿£§ê#$@[]^`{|}~123 <esc>(8U<esc>(s1p_v0s0b4113T

Figure 1-404

1. Font #	The letter prefix of the number tells you the font source I: Resident (internal) font S: Permanent soft (downloaded) font
2. FONT ID	The user allocated numbers for soft fonts downloaded to the printer.
3. Symbol Set	The name of the Symbol set.
4. Fix/PS	Whether the font is a fixed, non-proportional font (F) or a proportional font (P).
5. Pitch (cpi)	The pitch and point size. For a scaleable font, Scale is display.
6. Point size	The measured vertical distance in point.
7. Style	Upright (straight) characters or italic (slanted) characters.
8. Stroke Weight	The stroke weight of the characters in the font.
9. Name or Typeface	The commercial name of the typeface.
10. Default Orient	The orientation of the print.
11. Print sample and Escape Sequence	Sample font print and the PCL commands used select this font.

CHAPTER 2

OPERATION OVERVIEW

This chapter given a overview description of basic unit operations.

I. SYSTEM OVERVIEW

Host-computer generated data transmitted via the Ethernet interface (10Base-T) are processed by the NID board. The data are then output to the PCL board via the bi-directional parallel interface (IEEE 1284) in response to a Main body (copier) generated transfer command.

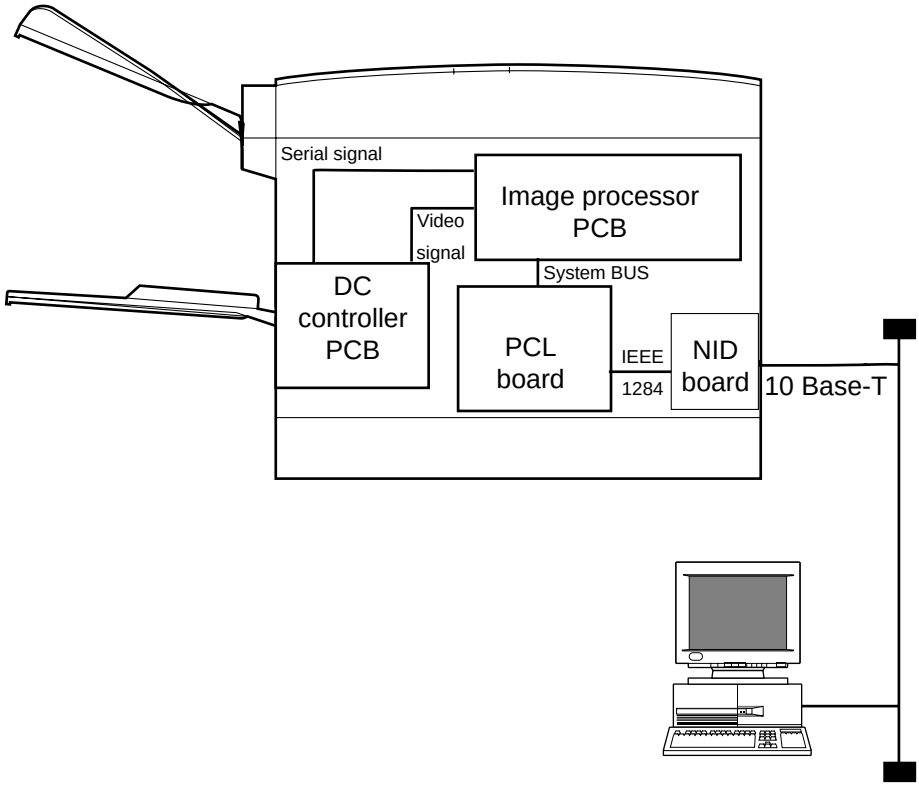


Figure 2-101

II. ELECTRICAL CIRCUIT OVERVIEW

A. Hardware Construction

The figures that follow show the hardware construction of the PCL board and the NID board.

1. PCL Board

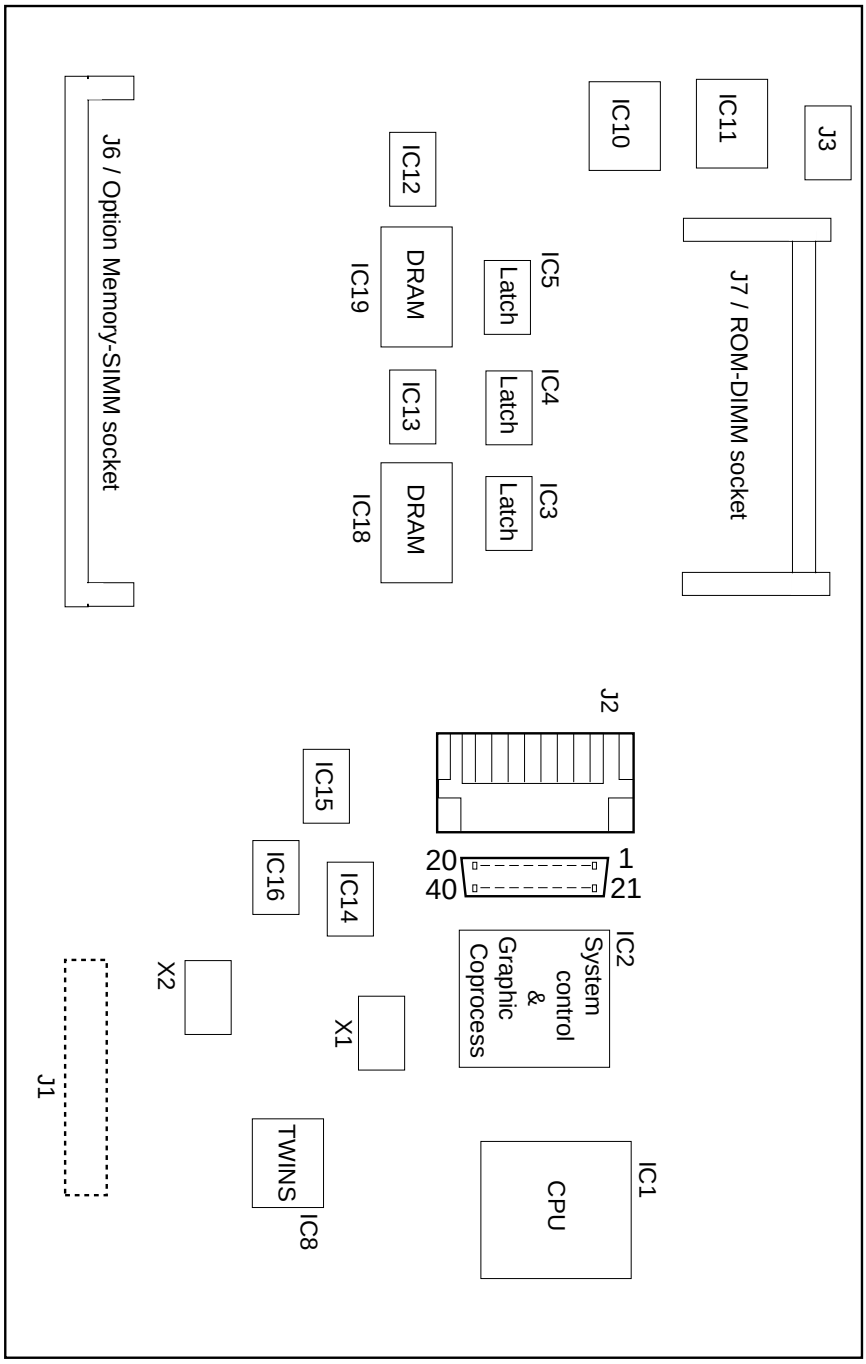


Figure 2-201

CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

1) CPU (IC1)
   Intel NG80960JF processor operating at 33 MHz
   32-bit data bus
   32-bit address bus

2) System control and graphic co-processor (IC2)
   Graphics accelerator
   Compression co-processor
   Interleaved EPROM control
   DRAM control
   Printer video and communication interface
   Interrupt control
   IEEE 1284 Bi-directional parallel port

3) Interface exchange controller TWINS (IC8)
   IEEE 1284 peripheral Bi-directional parallel port
   IEEE 1284 host Bi-directional parallel port
   Video controller interface
   PCL serial communication interface

2. NID (Network Interface Device) Board

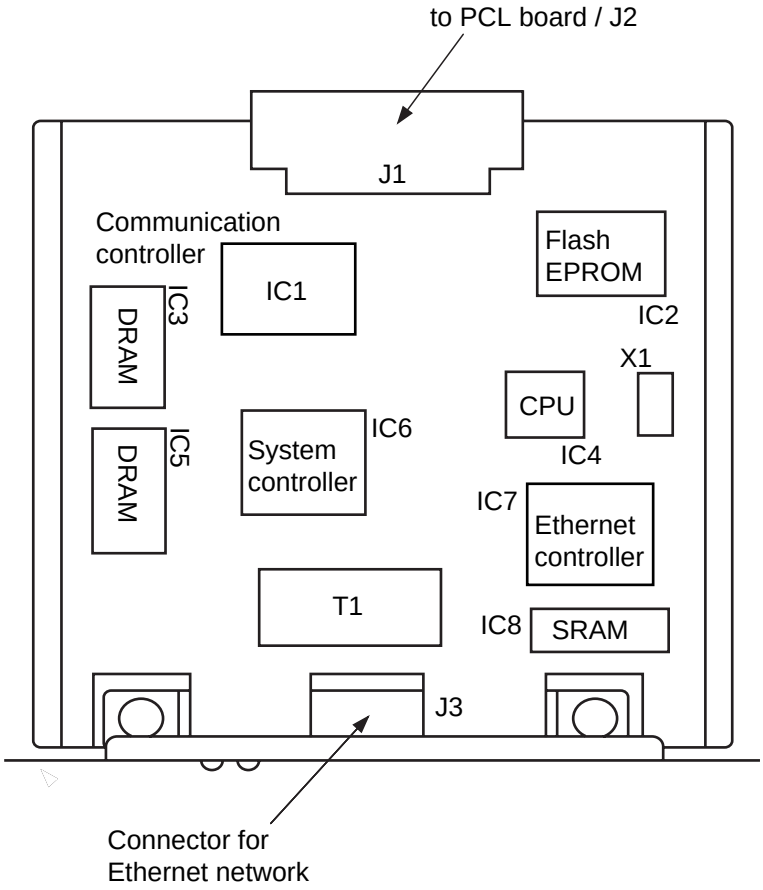


Figure 2-202

CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

1) CPU (IC4)
AMD SB80C188-20 processor operating at 40 MHz
16-bit data bus
20-bit address bus
2 ch DMA controller
3 ch programmable 16 bits timers
Interrupt controller

2) System controller (IC6)
Interface the Ethernet controller, communication controller, CPU, SRAM, DRAM, Flash EPROM

3) Ethernet controller (IC7)
CSMA/CD local area network control
Integrated 10 Base T transceiver

4) Communication controller (IC1)
IEEE 1284 controller

5) DRAMs (IC3,5)
4-Mbit x 2
Code execution and data buffering

6) SRAM (IC8)
256-kbit
Buffering of transmit and receiving Ethernet packet

7) Flash EPROM (IC2)
Board firmware code
Power on self test
NVRAM function for storage configuration data

B. Flow of Image Signals

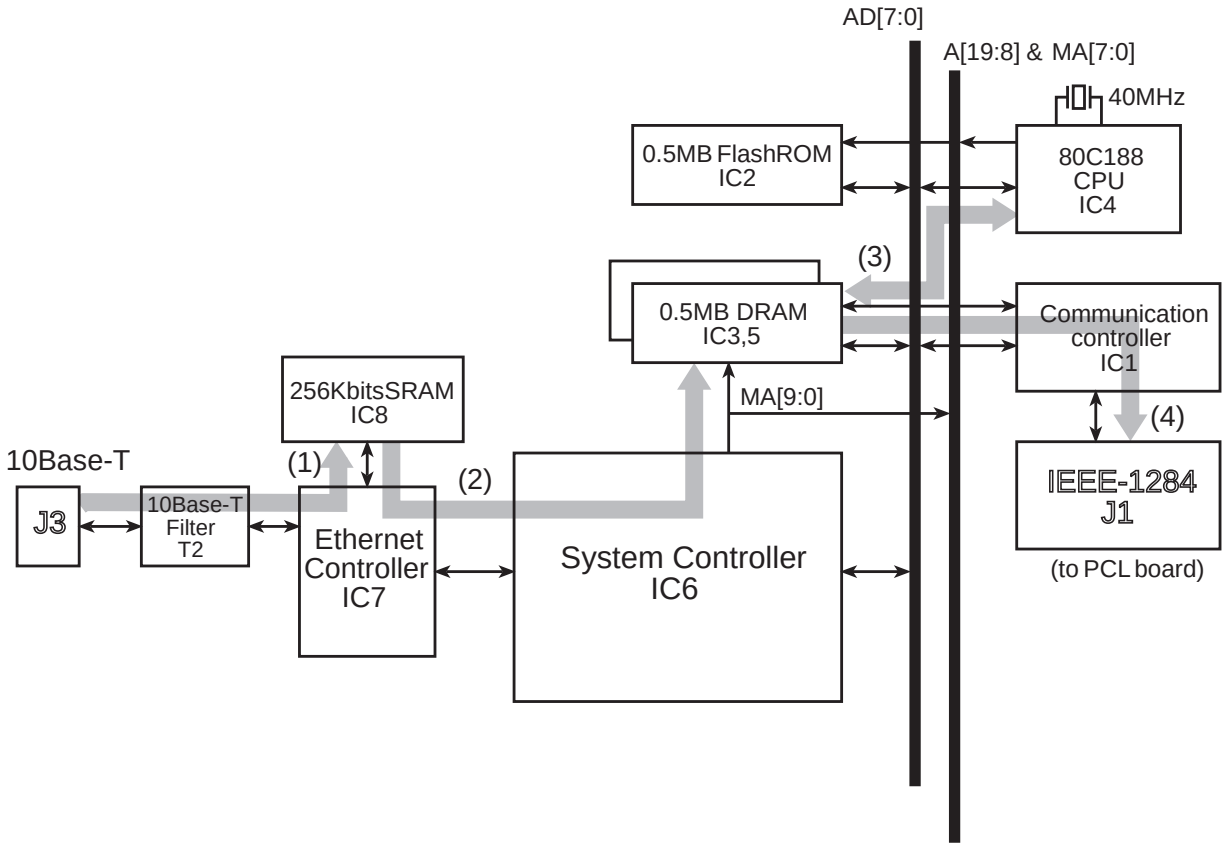


Figure 2-203

(1) The Ethernet controller (IC7) controls host-to-peripheral data transmitted via the Ethernet interface (10Base-T). The data are stored in SRAM (IC8) as a data link layer packet.

(2) In response to a command from the CPU (IC4) the data are transferred from SRAM (IC8) to DRAM (IC3, 5) via DMA transfer.

(3) The CPU (IC4) extracts the application layer data (PCL printer data) from the data stored in DRAM (IC3, 5). The CPU encapsulates the data into the commands, then once again stores the data in DRAM (IC3, 5).

(4) In response to a transfer command from the copier, the print data are output via the bi-directional parallel interface (IEEE 1284).

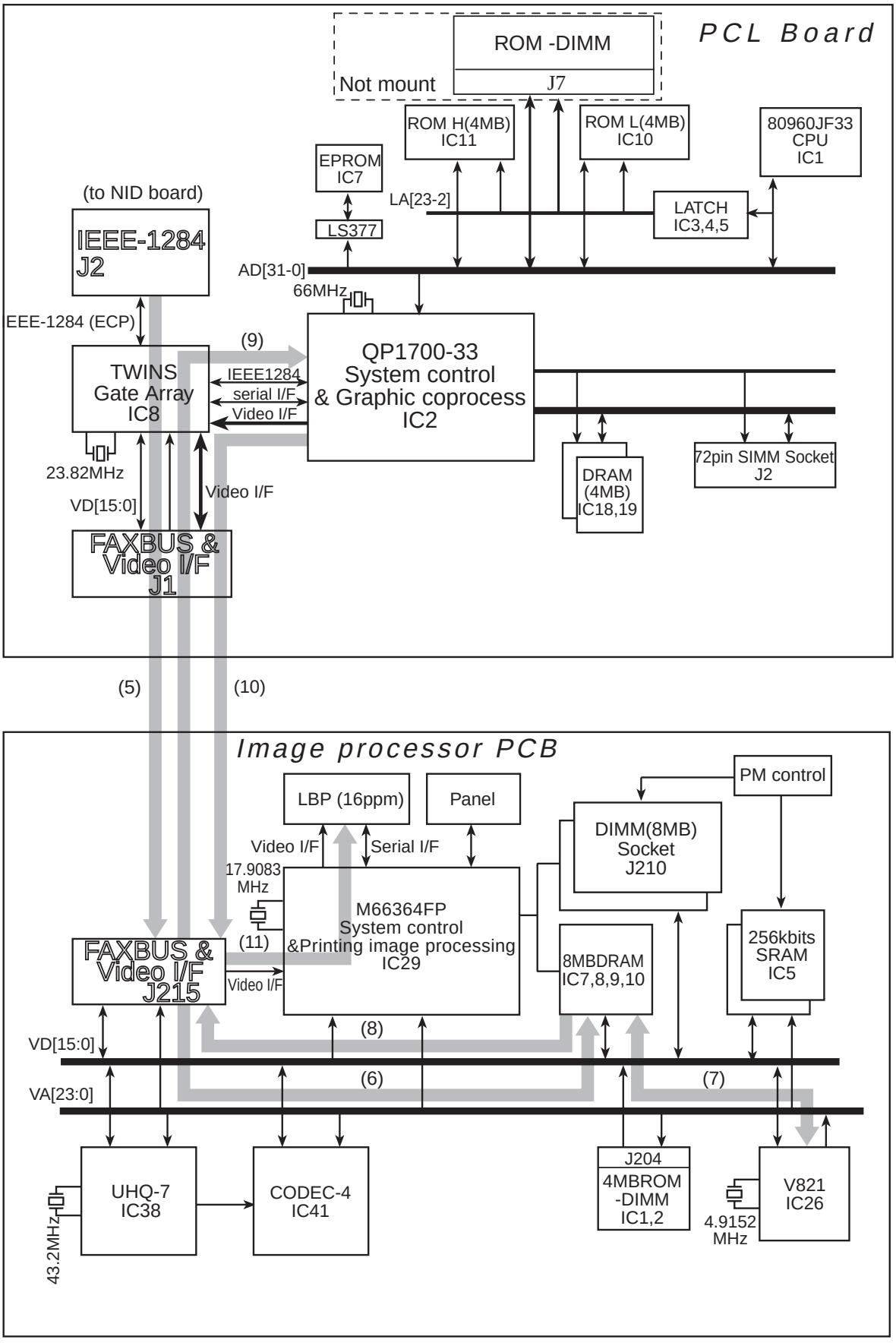

PCL Board
ROM -DIMM
J7
Not mount
ROM H(4MB)
IC11
ROM L(4MB)
IC10
80960JF33
CPU
IC1
EPROM
IC7
LS377
LA[23-2]
LATCH
IC3,4,5
(to NID board)
IEEE-1284
J2
AD[31-0]
66MHz
EEE-1284 (ECP)
(9)
TWINS
Gate Array
IC8
IEEE1284
serial I/F
Video I/F
QP1700-33
System control
& Graphic coprocess
IC2
23.82MHz
VD[15:0]
Video I/F
DRAM
(4MB)
IC18,19
72pin SIMM Socket
J2
FAXBUS &
Video I/F
J1
(5)
(10)
Image processor PCB
LBP (16ppm)
Panel
PM control
Video I/F
Serial I/F
DIMM(8MB)
Socket
J210
17.9083
MHz
M66364FP
System control
&Printing image processing
IC29
(11)
FAXBUS &
Video I/F
J215
Video I/F
8MBDRAM
IC7,8,9,10
256kbits
SRAM
IC5
VD[15:0]
(8)
VA[23:0]
(6)
(7)
UHQ-7
IC38
CODEC-4
IC41
43.2MHz
J204
4MBROM
-DIMM
IC1,2
V821
IC26
4.9152
MHz

Figure 2-204

(5) Data sent from the NID board via the IEEE 1284 interface pass through the gate array (IC8) on the PCL board and are sent on to the image processor PCB.

(6) Data are stored temporarily in DRAM (IC7, 8, 9, 10) on the image processor PCB.

(7) Data are decapsulated by V821 (IC26) and stored in DRAM (IC7, 8, 9, 10).

(8) Data are sent to the PCL board as PCL data.

(9) PCL data sent to the PCL board are converted to video signals by the System Control & Graphic Co-process IC (IC2).

(10) The data are then sent back to the image processor PCB.

(11) Output by the LBP printer.

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III. NETWORK CONNECTION

A. Connection to a Network

1. Outline

The Network Printer Board-J1 comes standard with an interface for an Ethernet network; i.e., it provides an RJ-45 connector for 10Base-T.

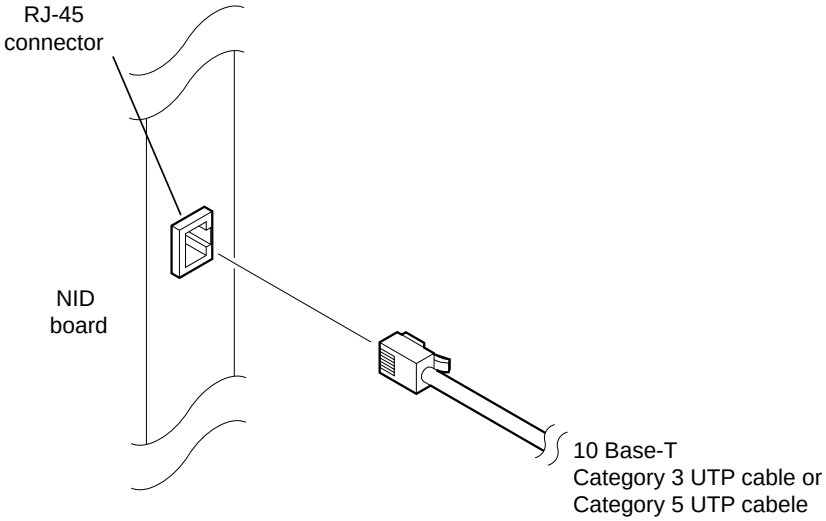


Figure 2-301

2. TCP/IP

TCP/IP is the protocol used in an intranet or internet environment, or on a UNIX. It is also often used on a Windows NT network.

The Network Printer Board-J1 package supports LPD (Line Printer Daemon), which is the standard print service of TCP/IP.

1) Using TCP/IP

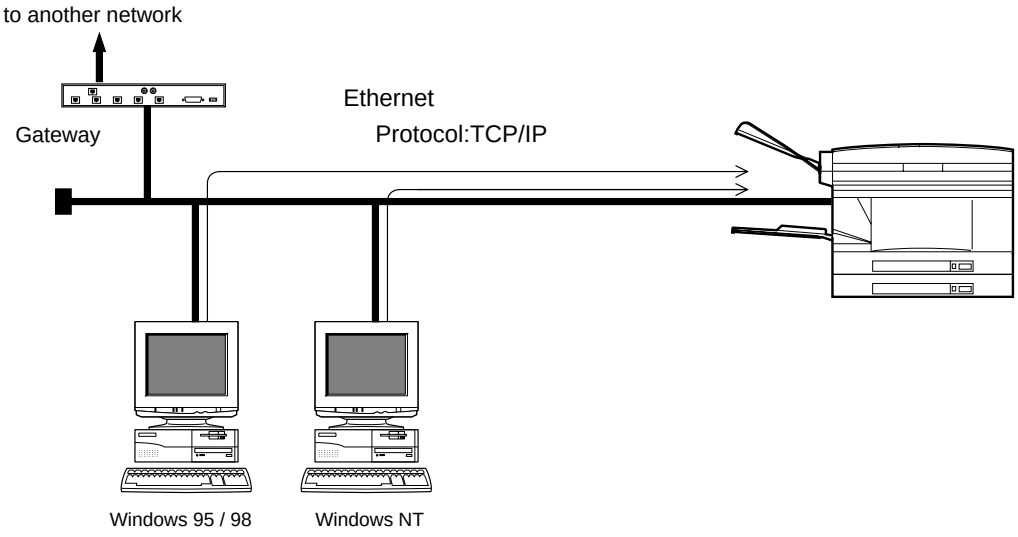


Figure 2-302

2) Using the LPD service

A Windows NT machine is equipped with an LPR port to allow the use of the LPD service, capable of serving as a print server or enabling transmission of print data directly to the printer board.

Windows NT provides the LPR service as part of system software, but it is not installed unless a network is used.

Windows 95 / 98 dose not provide an LPR port. To print using the LPD service, data must be sent by way of a server equipped with an LPR port, or an LPR utility (not available with the Network Printer Board-J1 package) must be installed.

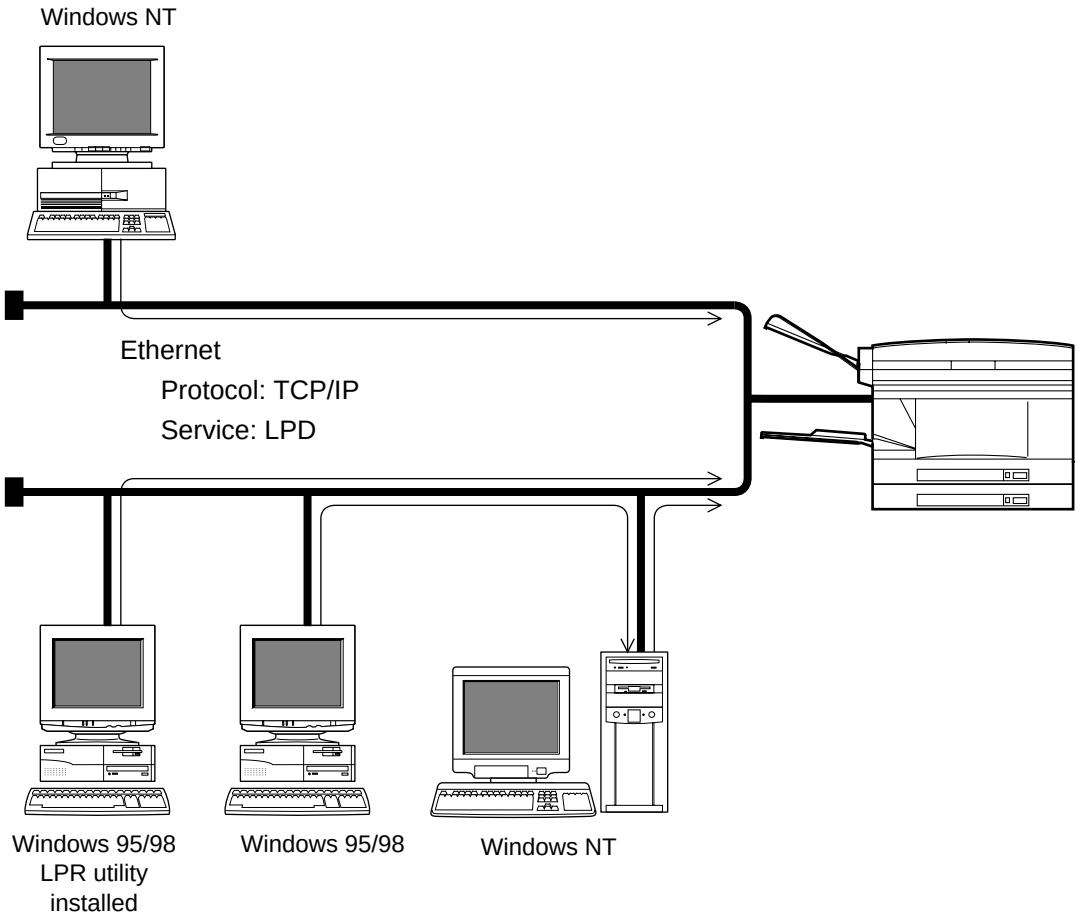


Figure 2-303

3. IPX

A network running on Novell Netware uses IPX as protocol for print data. The Network Printer Board-J1 package supports network configuration operating in bindery mode (including bindery emulation mode of NetWare 4.X) used in NetWare 3.12 or NDS (NetWare Directory Service) used in NetWare 4.X.

When printing by IPX, all print jobs are queued on the print server within the Novell file server, and are then sent to the Network Printer Board-J1 package.

The Network Printer Board-J1 package checks the presence / absence of a job in the print job queue of the print server at specific time intervals. If a print job exists, it requests the print server to send it; upon arrival, the Network Printer Board-J1 package starts to print the print job.

For IPX settings, see the Setup Guide. NDS settings write over the bindery mode settings. If the Network Printer Board-J1 package is to be connected to an environment in witch both network configurations exist, advise the user's supervisor to make NDS settings first.

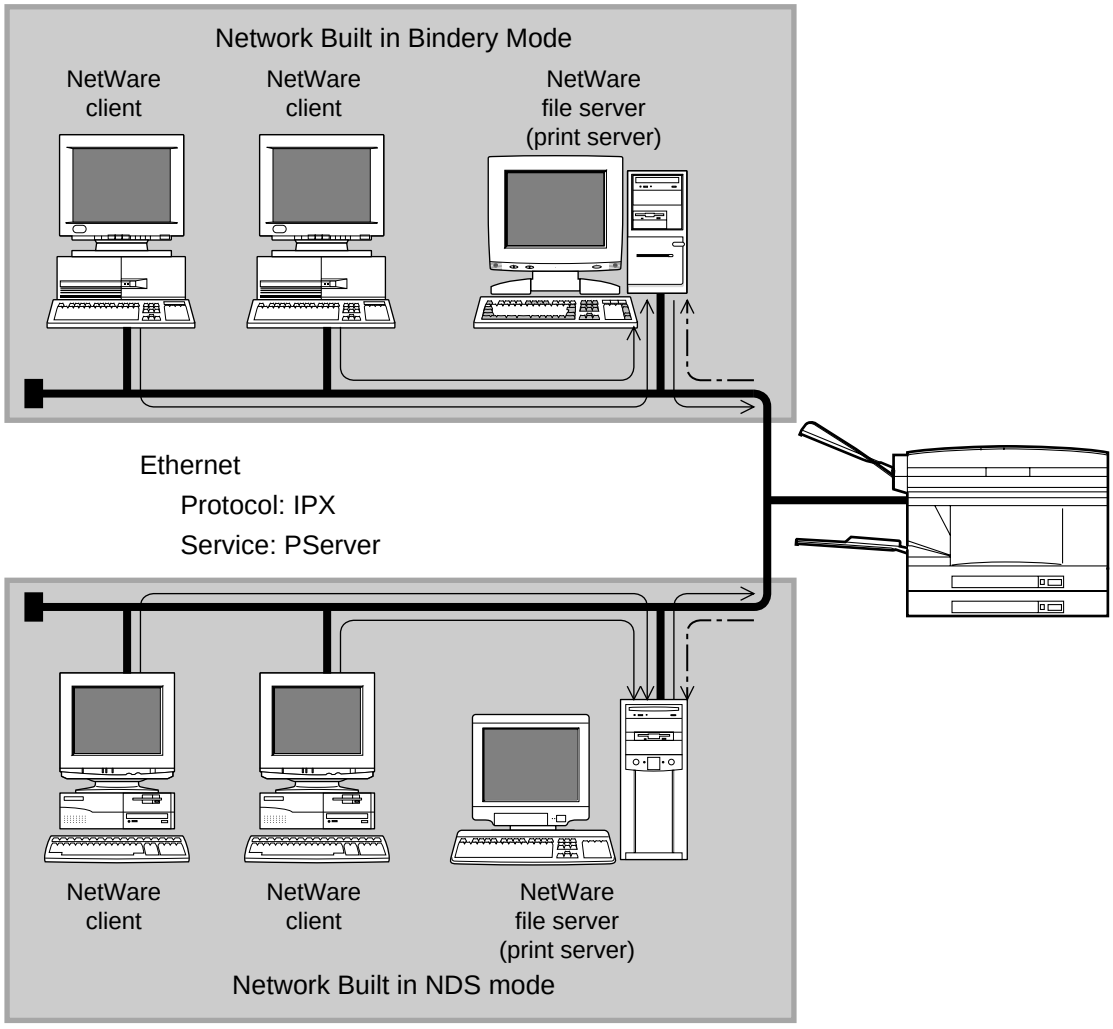


Figure 2-304

CHAPTER 3

MECHANICAL SYSTEM

This chapter describes mechanical features and operation as well as disassembly and assembly procedures.

The following precautions must be observed during disassembly and assembly work.

1. Note : For the sake of safety, disconnect the power plug before performing any disassembly and assembly work.
2. Unless otherwise specified, assembly work is performed in the reverse order of the disassembly operations.
3. Be sure to use the right type (diameter and length) of screws in the right places.
4. An inner-clip washer is used with the securing screws in the ground wire and Varistors to ensure electric conductivity. Make sure to use these washers during assembly work.
5. In principal, the copier must not be operated when parts have been removed.
6. Screws that have been paint locked must not be removed during disassembly.

I. PREPARATORY WORK/PRECAUTION

A. Turning Off Main Power Switch

Turn off the main power switch on the unit and disconnect the power plug before starting assembly and disassembly work.

Note:

When installing the Network Printer Board-J1 package check to make sure the ROM version of the copier.(on Image Processor PCB)

1) Installing the PCL board and NID board to the copier.
↓
2) Check operations in off-line mode.
↓
3) Connecting the network to the NID board.
↓
4) Making settings for the PCL board and the NID board. (from NetSpot)
↓
5) Making settings for the clients and Installing the printer driver.
↓
6) Generating test prints from clients.

Work by the service person.

Work by the user's supervisor.

After executing all-clear operation, turn off and on the power supply so that the PCL board will enter ready state.

II. DISASSEMBLY/ ASSEMBLY

A. Installing PCL Board

1. Installation

1) Remove the four securing screws, and detach the rear cover of the unit.
2) Fit the PCL board to connector (J215) on the image processor PCB.
3) Fasten the PCL board in place with four screws.

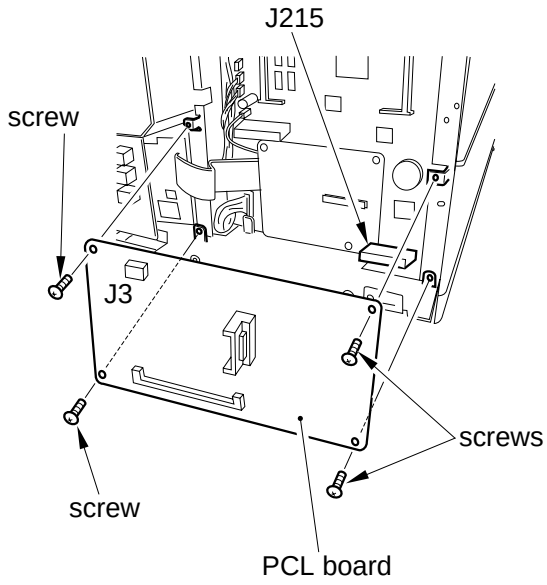


Figure 3-201

4) Fit the power cable to connector (J108) on the power supply unit, and connector (J3) on the PCL Board.
5) Extended option memory SIMM on PCL board, refer to C. Installing option memory.

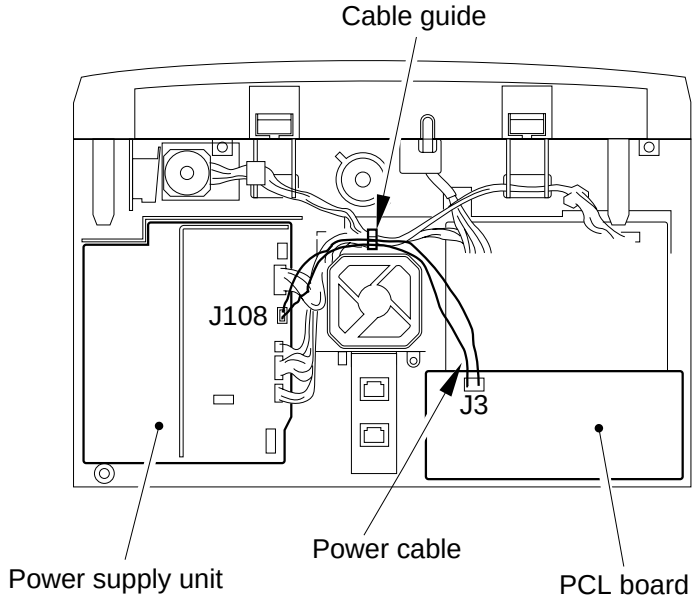


Figure 3-202

B. Installing the NID Board

1. Installation

1) Remove the two screws, and detach the left cover. The left cover must be slightly pulled away from the machine using handles and then shift it to the right slightly, then removed it.
2) Working from the inside of the left cover, use a pair of sharp nippers to cut the fasteners holding the rectangular knockout. This provides an opening for the NID board.

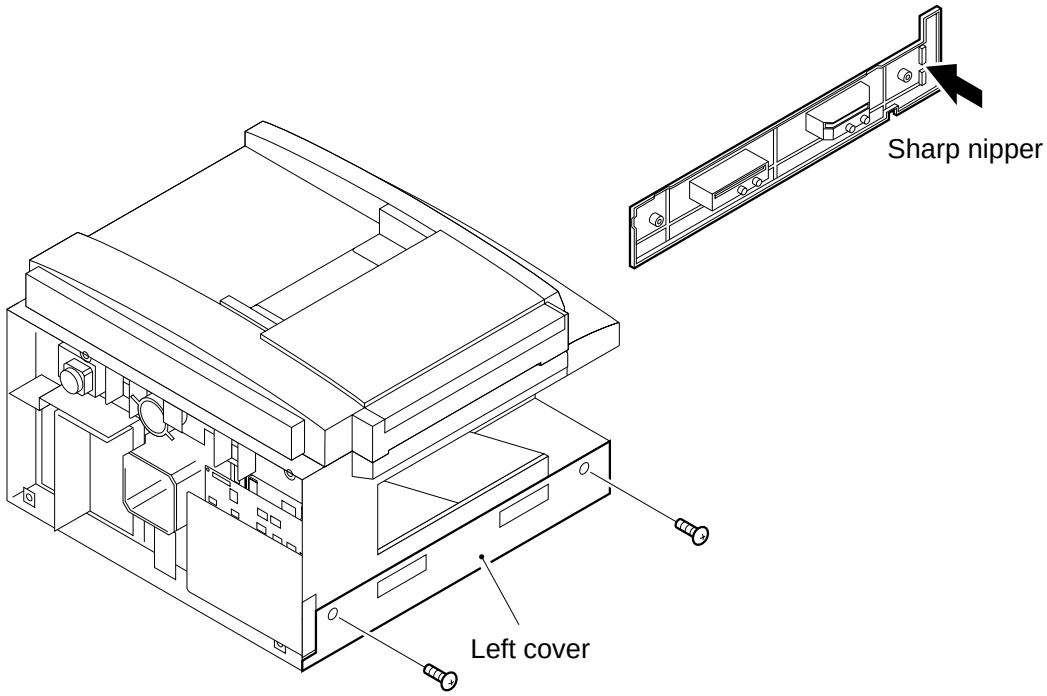


Figure 3-203

3) Replace the left cover and fasten the two screws.
4) Slide the NID Board into the slot. Make sure it connects to connector (J2) on PCL Board. Fasten the NID board in place with two screws.

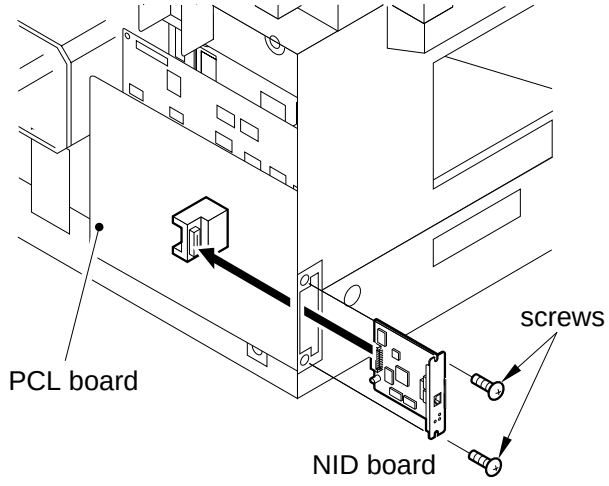


Figure 3-204

5) Mount the rear cover using the screws removed previously.
6) Attach the network cable to NID board.
7) When all is done, turn the power switch. ERR LED lights red a few seconds to perform a self-test.

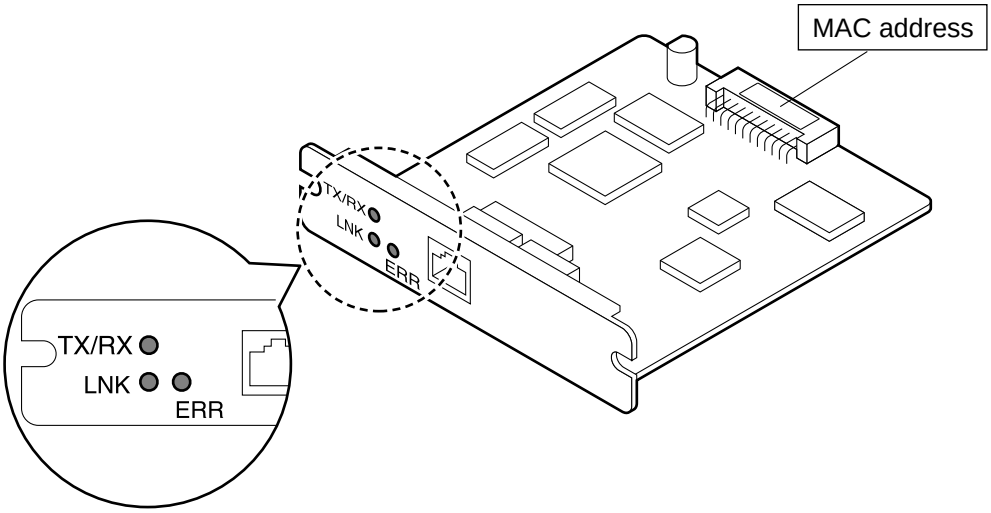


Figure 3-205

Name of LED	Color	Meaning
TX/RX LED	Green	Data packet TX and RX.
LNK LED	Green	Ether net linking.
ERR LED	Red	Error and Diagnostic.

C. Installing the Option Memory

1. Installation

Follow steps 3) of Chapter 3, A. Installing PCL board PCB, then install SIMM as shown below.

1) Holding the memory SIMM horizontally by the ends with the notched end pointing left, insert the edge connector of the memory SIMM into the slot at a 45 degree angel.

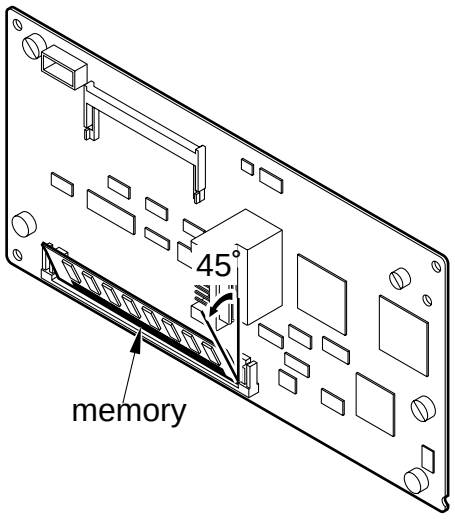


Figure 3-206

2) Slowly press down and in on the memory SIMM to the top. The memory SIMM should snap into the slot and come to rest parallel to the PCL board. Make sure the memory slot is straight and securely locked in place.

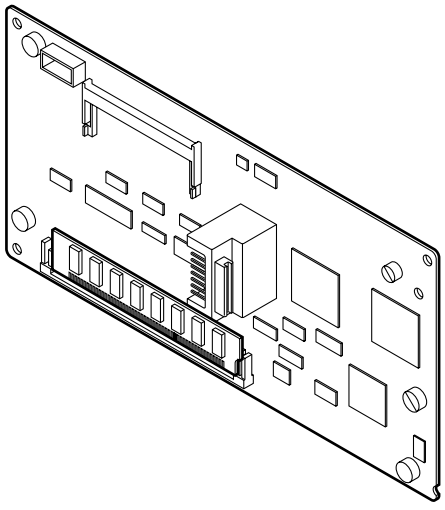


Figure 3-207

CHAPTER 4

USER SOFTWARE

I. OUTLINE

The Network Printer Board-JI includes two user software CD-ROMs containing printer drivers and utility programs.

For detailed information on how to install user software, descriptions on functions, and how to use the functions, see the Setup Guide.

II. PRINTER DRIVER

When a printer command is executed using an application program, the printer driver converts the image data received by the operating system from the application program into commands written in a page description language. At the same time, setting selected on the Property screen of the printer are sent to the PCL board after conversion into commands.

A printer driver appropriate to the type of page description language used is needed. In General, deferent operating systems use different protocols to exchange data with printer drivers, requiring that there be a printer driver for each operating system. The user software CD-ROMs that comes with the Network Printer Board-J1 includes the following printer drivers suited to various types of PCL languages used by individual operating system,

Windows 3.1x (For PCL5e, NetWare only)
Windows 95/98
Windows NT 4.0

To provide the application program and the printer driver with such information as specific to each printer (e.g. number of internal font, number of paper cassettes). Figure 4-201 shows part of the screen appearing when the Properties item of Windows 95 printer driver has been selected.

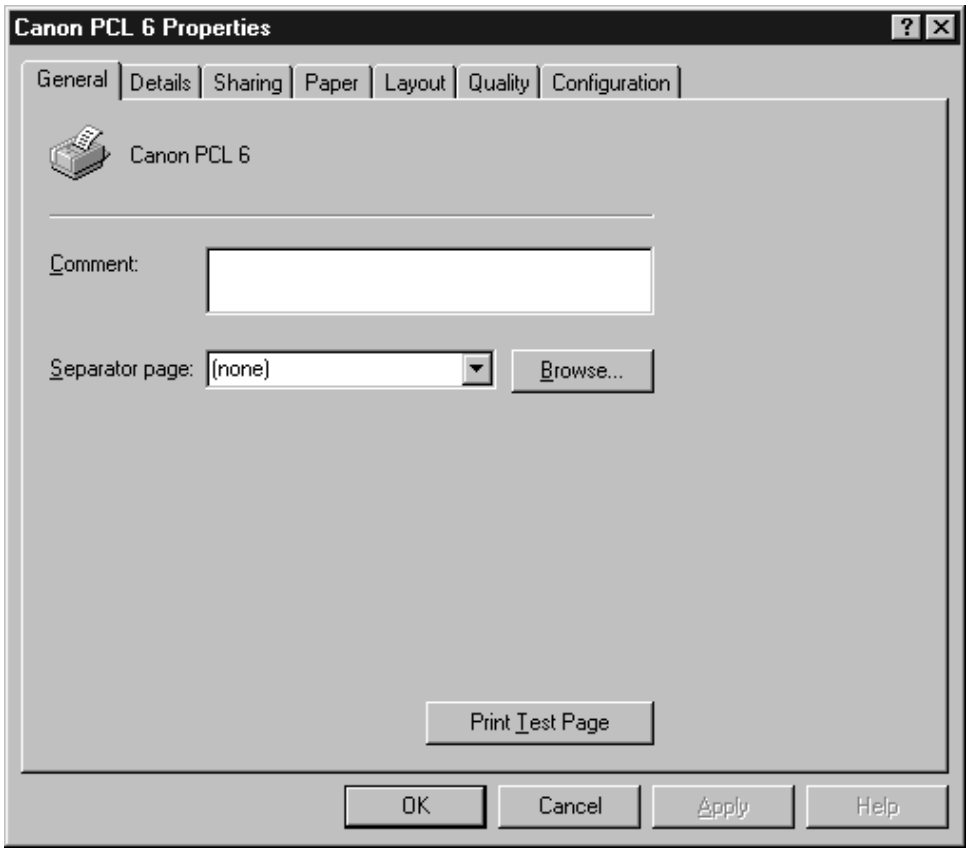


Figure 4-201

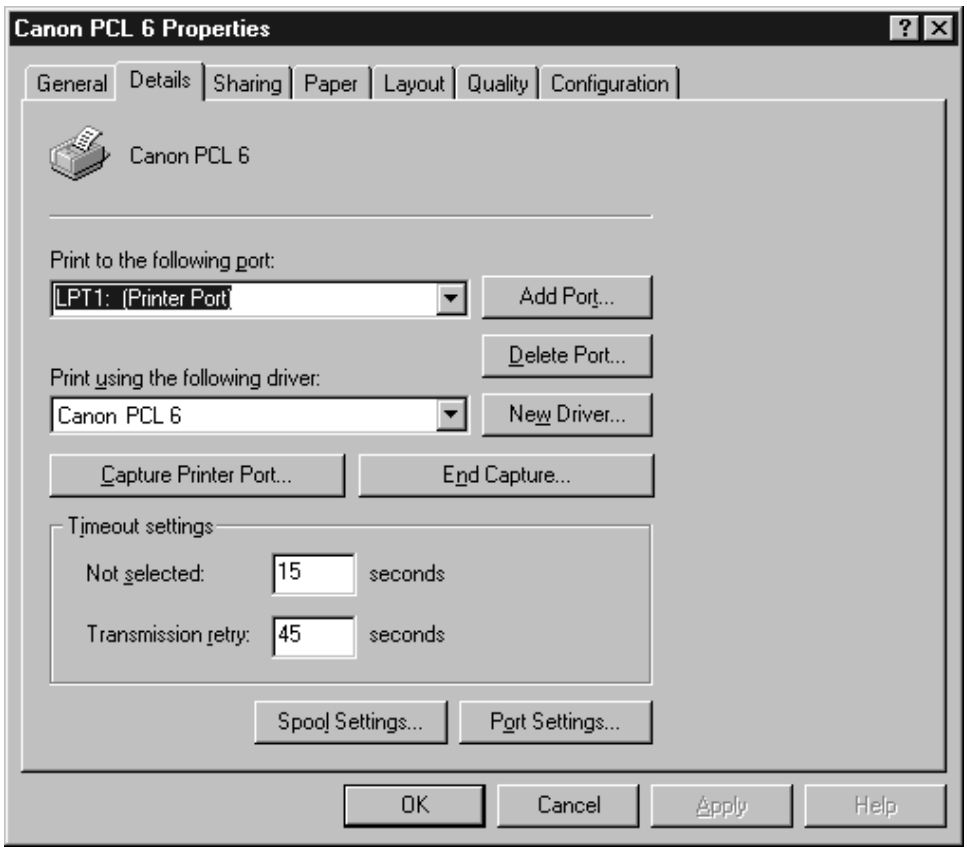


Figure 4-202

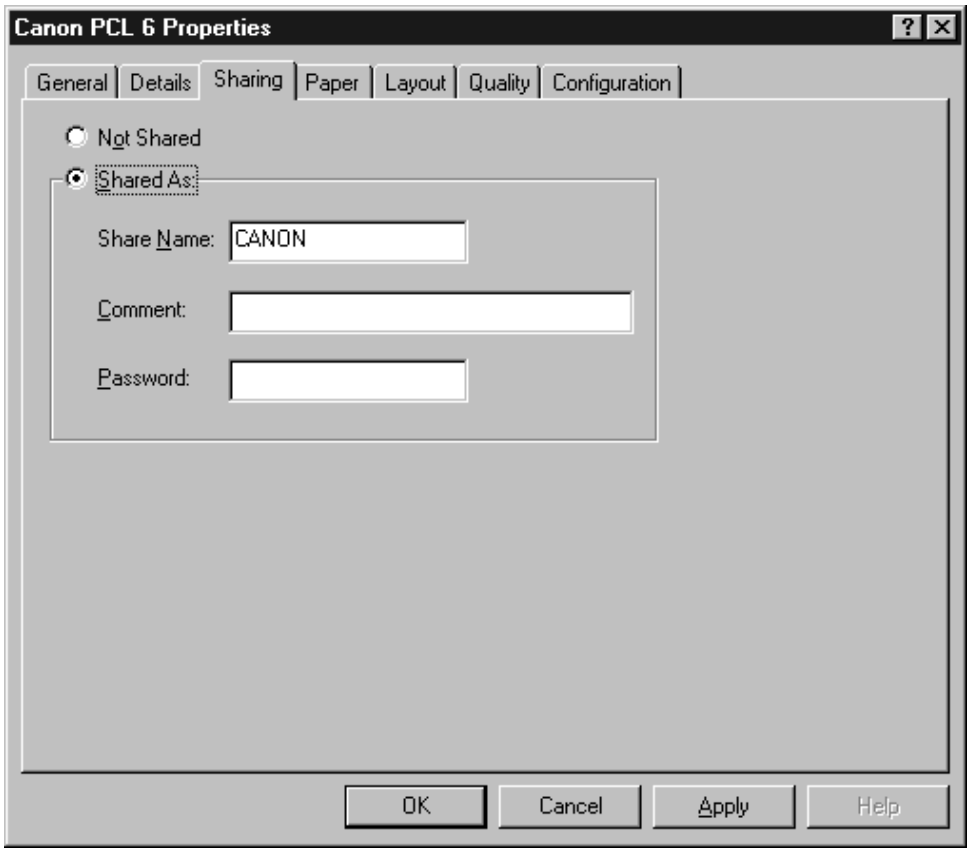


Figure 4-203

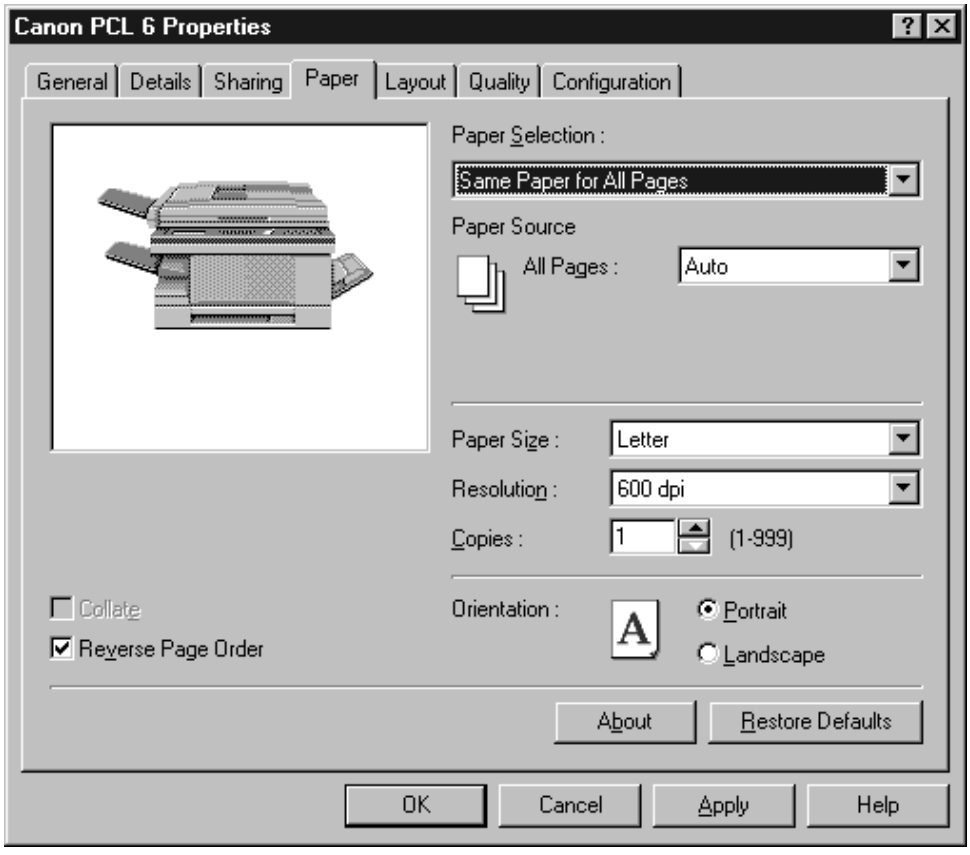


Figure 4-204

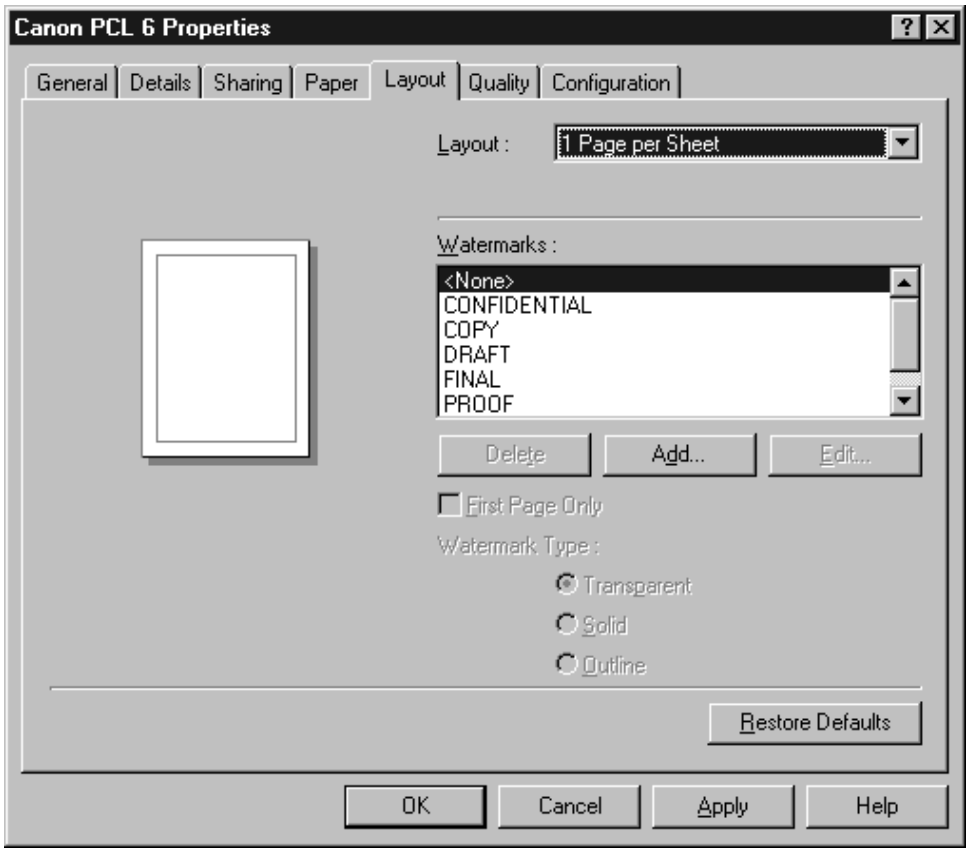


Figure 4-205

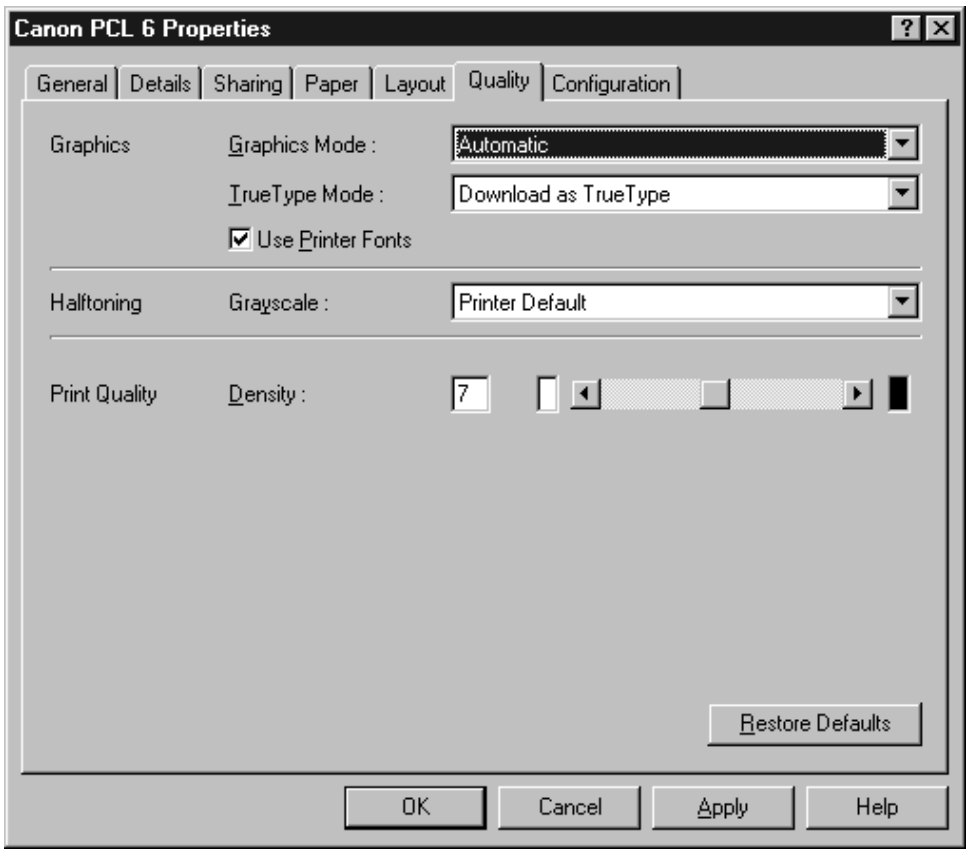


Figure 4-206

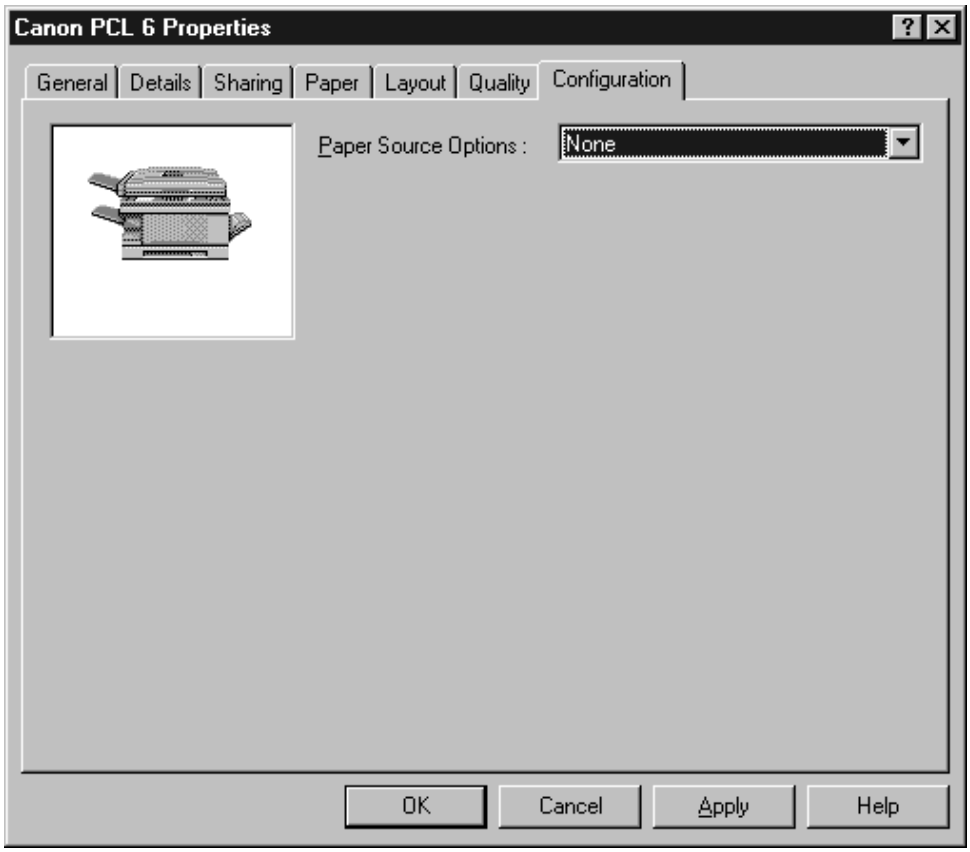

Canon PCL 6 Properties
General
Details
Sharing
Paper
Layout
Quality
Configuration
Paper Source Options :
None
OK
Cancel
Apply
Help

Figure 4-207

III. UTILITIES

A. Outline

Programs providing various useful function for the Network Printer Board-J1 are stored on the user software CD-ROM as utilities. (Font manager is part of the Network Printer Board-J1 package.)

B. Font Manager

Font manager provides the following functions:
Checking the font stored on your PC's hard disk drive.
(Previewing Fonts, Searching for Fonts, Sorting Font list and Print Font samples)
Installing and un-installing fonts on your PC's hard disk drive.

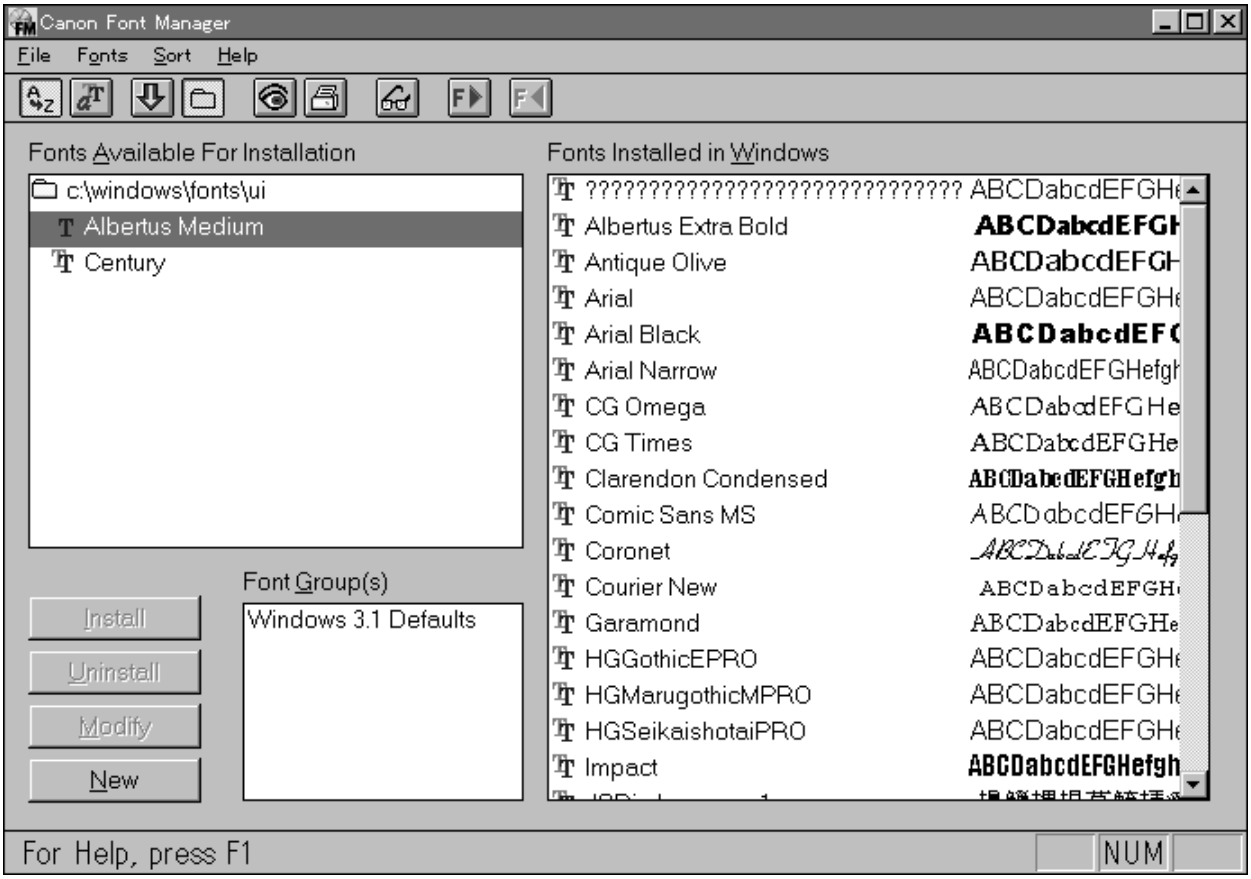


Figure 4-301

C. NetSpot

NetSpot is a printer management utility program which may be used on a TCP/IP or IPX network. (To use utilities, the host copier must be connected to a network so that the Network Printer Board-J1 may communication with computers.)

A printer supporting NetSpot possesses a built-in data base for information management called “MIB” (Management Information Base), and NetSpot installed to the supervisor’s computer access the database to obtain or set control information.

The communication protocol used by NetSpot is SNMP (Simple Network Management Protocol). Since all printer supporting NetSpot are existing on the network may be accessed from any computer possessing NetSpot, all such printers may be managed by a single supervising individual.

The computer used for management must be able to use the TCP/IP protocol or IPX protocol.

Figure 4-302

CHAPTER 5

TROUBLESHOOTING

 CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

I. ERRORS SHOWN ON THE DISPLAY

Refer to the User's guide for information on error messages other than those Shown below.

"PCL BOARD FAILURE"

Cause: (1) The PCL board is not connected properly.
(2) The Power cable is not connected properly.
(3) The PCL board is defective.

Solution: (1) Check the PCL board - Image processor PCB connection
(2) Check the PCL board - Power supply Unit connection
(3) Replace the PCL board.

"PRINT NVRAM FAILURE"

Cause: (1) The PCL board's RAM data containing the printer settings are damaged.
(2) The PCL board's NVRAM, or nearby circuit, is malfunctioning.

Solution: (1) From the PRINTER MENU, select PCL BOARD RESET, and reset the board
(2) Replace the PCL board.

II. ISOLATING THE BOARD

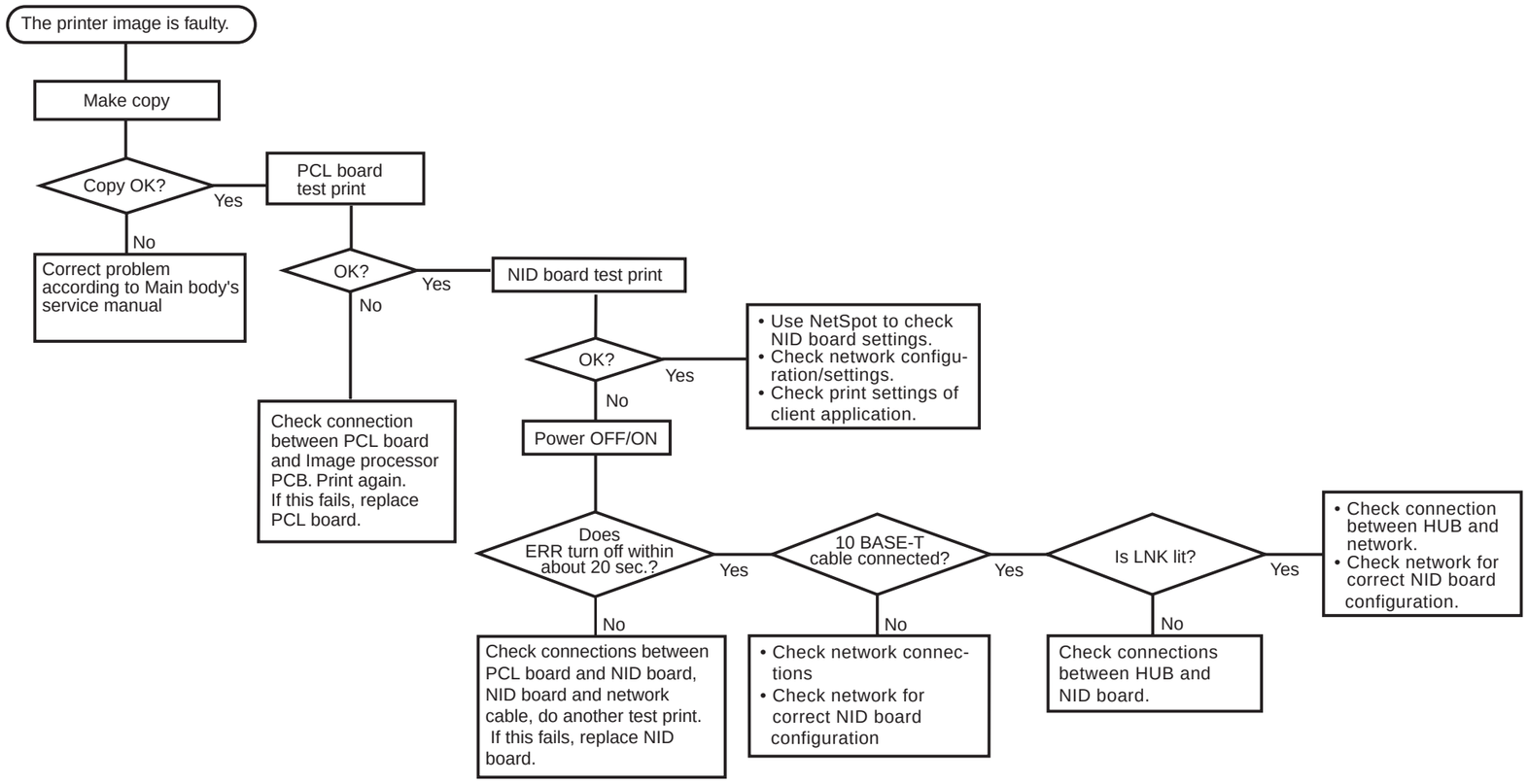


Figure 5-201

III. STANDARD AND ADJUSTMENT

The PCL board and NID board have no adjustment item.

IV. SOFTWARE TOOL

A. Update the NID Board Firmware

The NetSpot (Administrator) allows you to update the firmware on the NID board. To update NID board firmware:

1. Select the appropriate device from the device list.
2. From the Device menu, choose “Flash Network Board....”

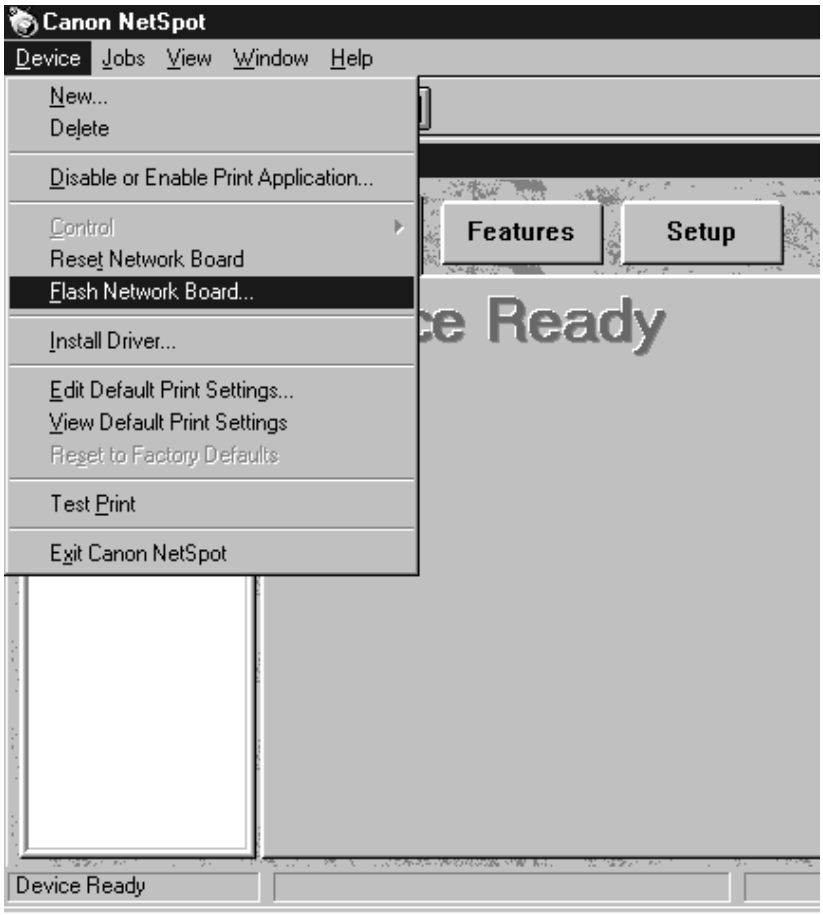


Figure 5-401

CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

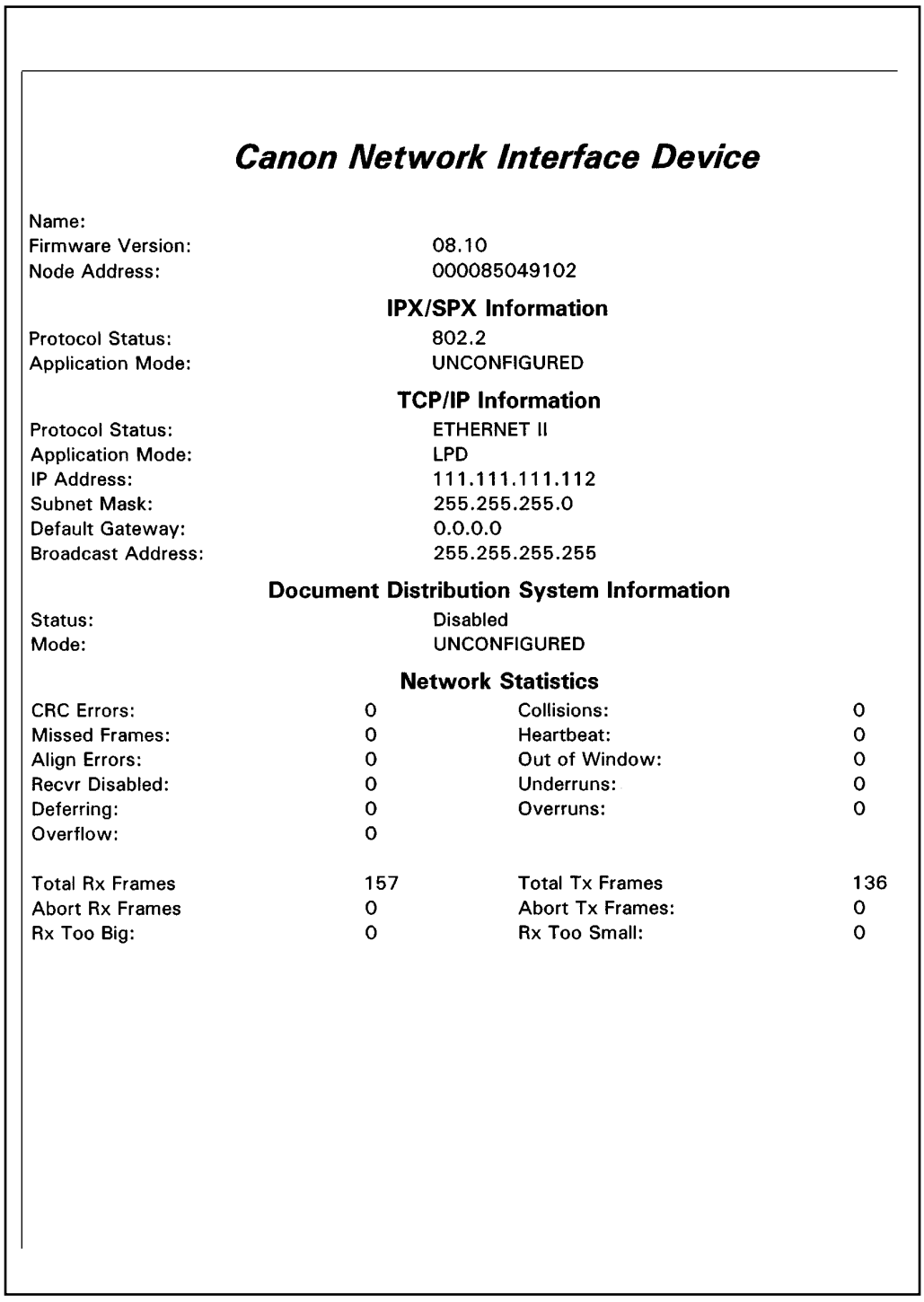
Figure 5-402

3. Do one of the following:
   under New Firmware Data, select the file containing the desired firmware image. choose “Browse...”, and locate and select the name of the file containing the new firmware image.

4. Choose Flash.
   Initiate the flash operation during a period of low network activity. If NetSpot indicates that the flash operation did not complete successfully, power cycle the printer before restarting the flash operation.

B. Printout Configuration of the NID Board

1. Select the appropriate device from the device list.
2. From the Device menu, choose “Test Print”



Canon Network Interface Device

Name:	
Firmware Version:	08.10
Node Address:	000085049102

IPX/SPX Information

Protocol Status:	802.2
Application Mode:	UNCONFIGURED

TCP/IP Information

Protocol Status:	ETHERNET II
Application Mode:	LPD
IP Address:	111.111.111.112
Subnet Mask:	255.255.255.0
Default Gateway:	0.0.0.0
Broadcast Address:	255.255.255.255

Document Distribution System Information

Status:	Disabled
Mode:	UNCONFIGURED

Network Statistics

CRC Errors:	0	Collisions:	0
Missed Frames:	0	Heartbeat:	0
Align Errors:	0	Out of Window:	0
Recvr Disabled:	0	Underruns:	0
Deferring:	0	Overruns:	0
Overflow:	0		
Total Rx Frames	157	Total Tx Frames	136
Abort Rx Frames	0	Abort Tx Frames:	0
Rx Too Big:	0	Rx Too Small:	0

Figure 5-403

CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

CHAPTER 6

PARTS CATALOG

 CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

PARTS CATALOG

 CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

FIGURE VA

ASSEMBLY LOCATION DIAGRAM

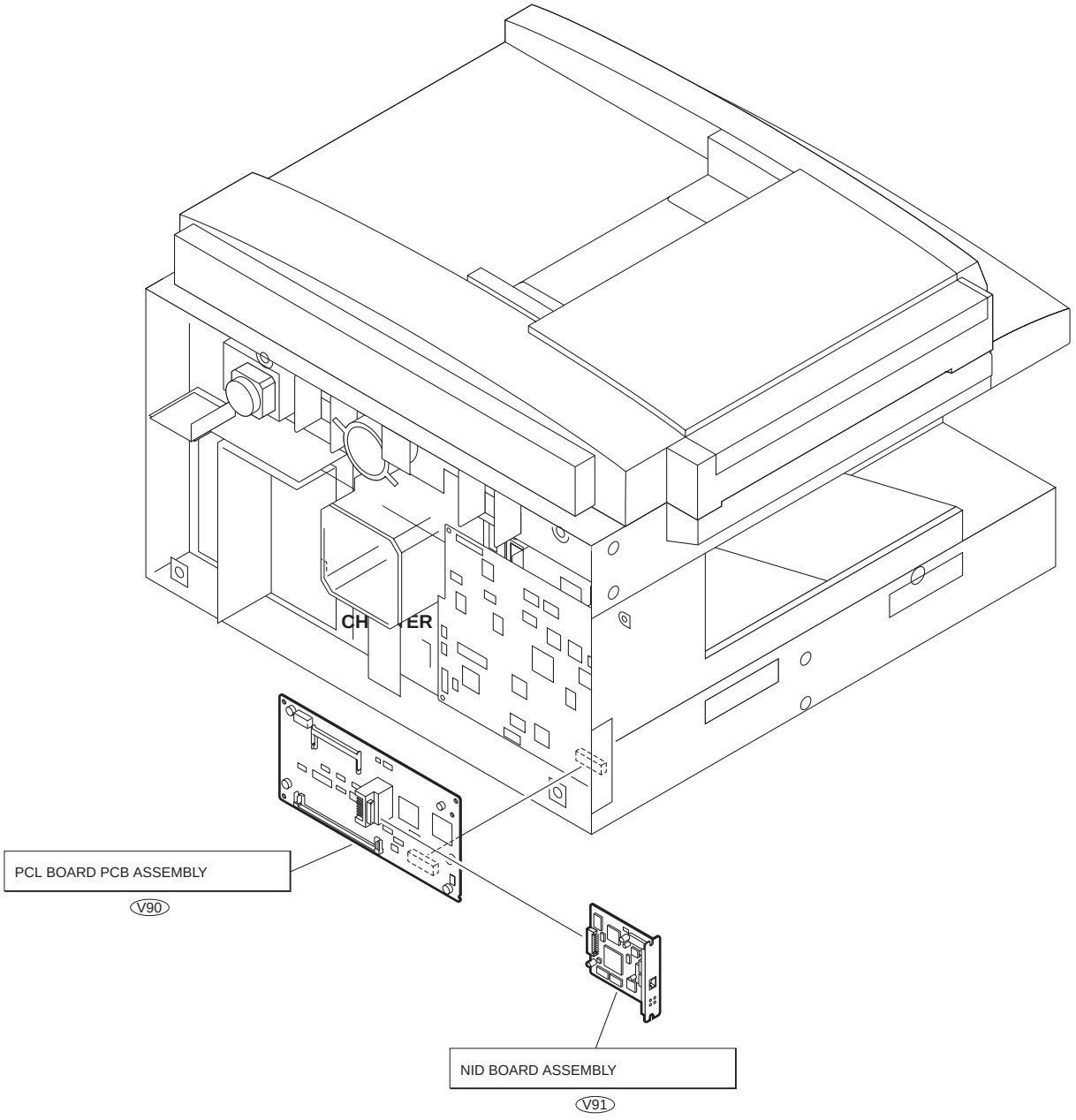


FIGURE V11 PCL BOARD ASSEMBLY

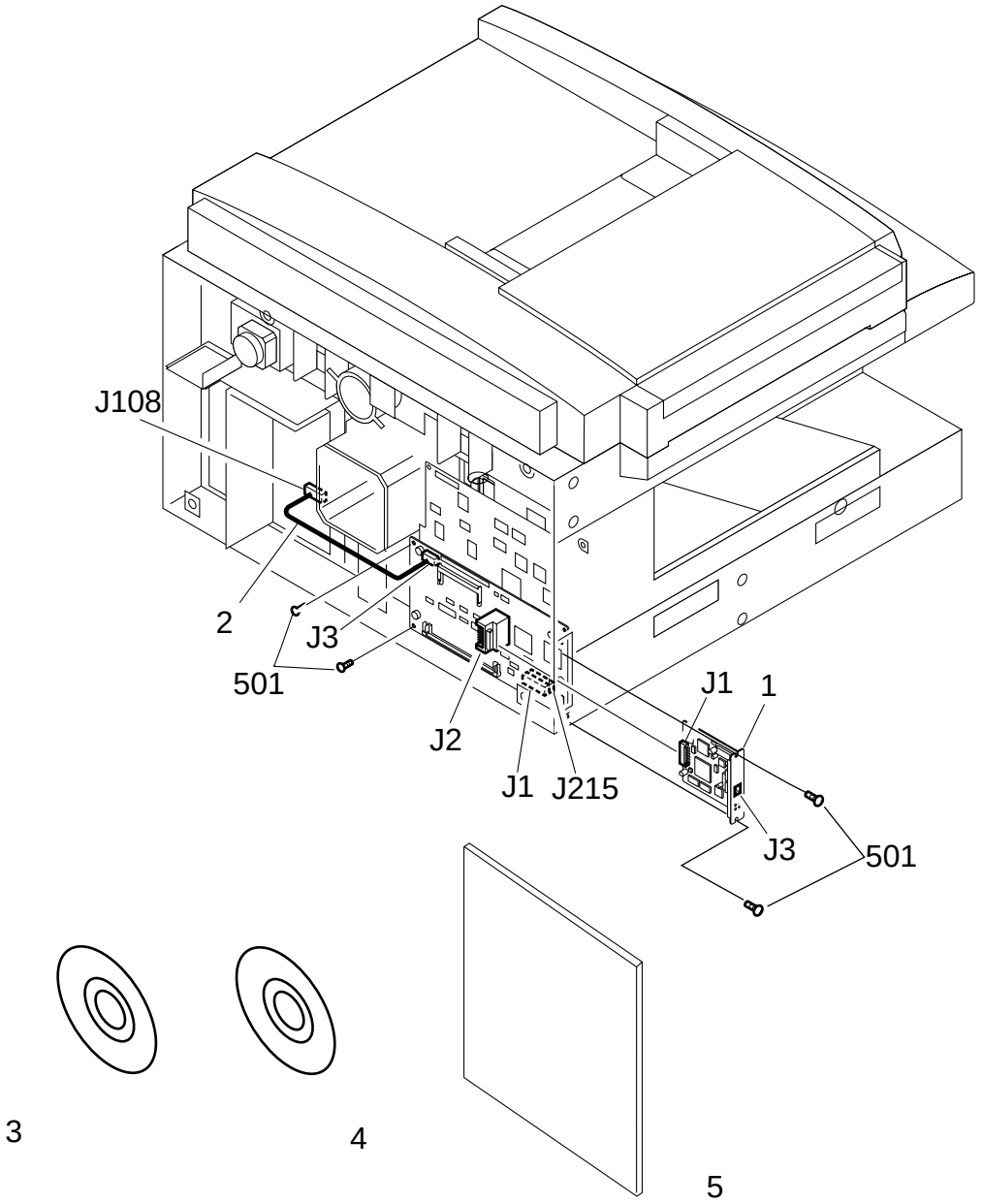


FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	SERIAL NUMBER / REMARKS
V11 -	NPN		RF	PCL BOARD ASSEMBLY	
1	FG3-0854-000		1	NID BOARD ASSEMBLY	
2	FH2-6682-000		1	DC CABLE	
3	FG2-9776-000		1	PRINT DRIVER CD-ROM	120V
	FG2-9778-000		1	PRINT DRIVER CD-ROM	230V
4	FG2-9777-000		1	NETSPOTCD-ROM	120V
	FG2-9779-000		1	NETSPOTCD-ROM	230V
5	HT1-2128-000		1	SETUPGUIDE ENGLISH	120V
	HT1-2136-000		1	SETUPGUIDE ENGLISH	230V
	HT1-0014-000		1	SETUPGUIDE ITALIAN	230V
	HT1-3086-000		1	SETUPGUIDE FRENCH	230V
	HT1-5062-000		1	SETUPGUIDE GERMAN	230V
501	XB1-2300-607		6	SCREW,MACH.,TRUSSHEAD, M3X6	

FIGURE V90 PCL BOARD PCB ASSEMBLY

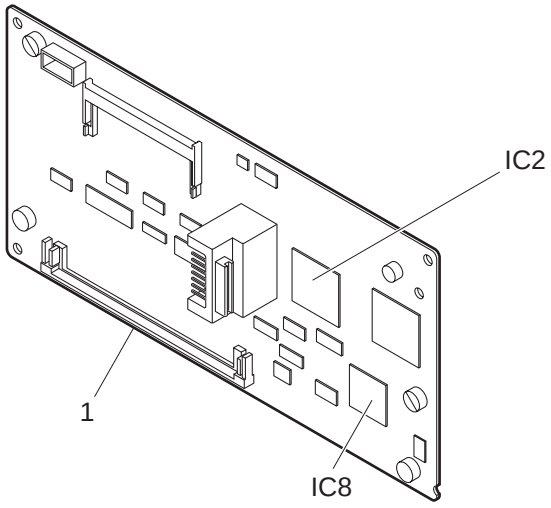


FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	SERIAL NUMBER / REMARKS
V90 - 1	FG2-9774-000		1	PCL BOARD PCB ASSEMBLY	
2	RH4-5328-000		1	IC, SC414322FT,MPU	
3	HH4-2688-000		1	IC, UPD65802GJ-117-3EN	

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FIGURE V91 NID BOARD ASSEMBLY

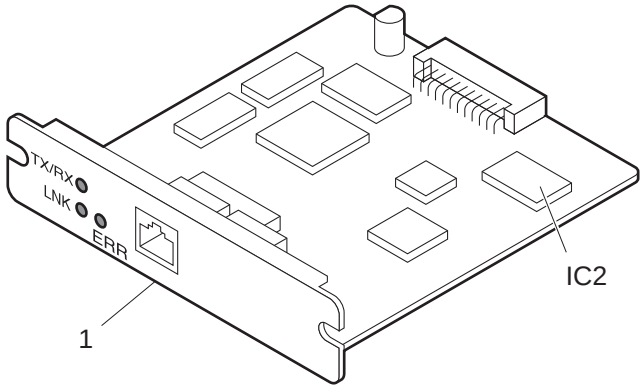
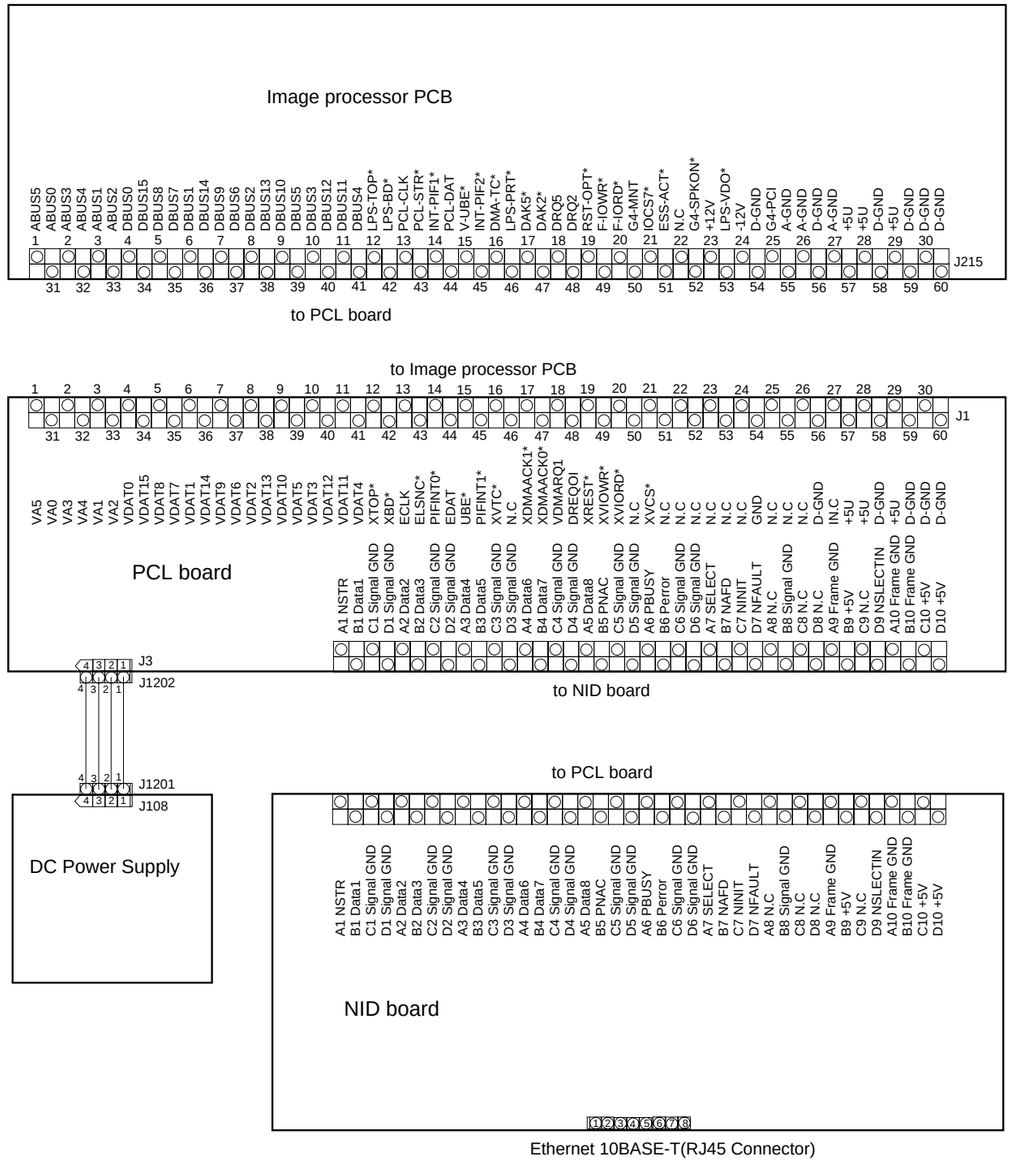


FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	SERIAL NUMBER / REMARKS
V91 - 1	FG3-0854-000		1	NID BOARD ASSEMBLY	
IC 2	FH4-3742-000		1	IC, AT29C040A-12TC,FLASH ROM	

APPENDIX

 CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

A. GENERAL CIRCUIT DIAGRAM



 CANON Network Printer Board-J1 REV.0 MAR. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

B. PROTOCOL FORMAT

OSI 7 layer model

TCP/IP Protocol

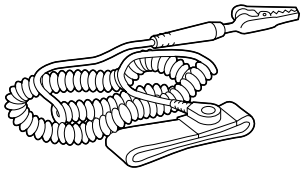
OSI 7 layer model	TCP/IP Protocol																					
Apprication layer Presentation layer Session layer																					Data	FCS
Tansport layer											TCP Header (20 or 24 byte)											
											2 byte	2byte	4byte	4byte	4bit	4bit	1byte	2byte	2byte	2byte	4byte	
											Origination Port number	Destination Port number	Origination Sequence number	Acknowledge number	Header length	Reserve	Session Flag	Window size	Checksum	urgent data Pointer	Option	PAD
											TCP: Transmission Control Protocol											
Network layer				IP Heder (20byte)																		
				4bit	4bit	1byte	2byte	2byte	2byte	1byte	1byte	2byte	4byte	4byte								
				Version	Header length	Service type	IP packet length	Datagram ID number	Flagment field	Time to live	Protocol type	Header checksum	Origination IP address	Destination IP address								
				IP: Internet Protocol																		
Link layer	Ethernet Header (14byte)																					
	6 byte	6byte	2byte																			
	Origination MAC address	Destination MAC address	Protocol type																			
	MAC: Media Access Control																					
Physical layer	10 Base-T																					

IPX/SPX Protocol

OSI 7 layer model	IPX/SPX Protocol																					
Apprication layer Presentation layer Session layer																					Data	FCS
Tansport layer													SPX Header (12 byte)									
													1 byte	1byte	2byte	2byte	2byte	2byte	2byte			
													Connection control	Data stream type	Source connection ID	Destination connection ID	Sequence number	Acknowledgement number	Allocation number			
													SPX: Sequenced Packet eXchange									
Network layer				IPX Heder (30byte)																		
				2byte	2byte	1byte	1byte	6byte	4byte	2byte	6byte	4byte	2byte									
				Check-sum	IPX packet length	transport control	Packet type	Destination Node address	Destination Network address	Distination socket	Source Node address	Source Network address	Source socket									
				IPX: Internetwork Packet eXchange																		
Link layer	Ethernet Header (14byte)																					
	6 byte	6byte	2byte																			
	Origination MAC address	Destination MAC address	Protocol type																			
	MAC: Media Access Control																					
Physical layer	10 Base-T																					

C. LIST OF SPECIAL TOOL

You will need the following tool in addition to special tools set.

No.	Special tool	Tool No.	Shape	Rank*	Remarks
1	Wrist strap	CK-0534-000		A	

*See Note.

Note:
A: Each service person is expected to carry one.
B: Each group of five service persons is expected to carry one.
C: Each workshop is expected to carry one.

Prepared by
Office Imaging Products Technical Support Department 4
Office Imaging Products Quality Assurance Center
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