

**NETWORK INTERFACE BOARD**  
**(Machine Code: B307)**

May 31, 1999  
Subject to change

# TABLE OF CONTENTS

<b>1. OVERALL MACHINE INFORMATION .....</b>	<b>1-1</b>
1.1 SPECIFICATIONS .....	1-1
1.2 SOFTWARE ACCESSORIES.....	1-1
1.2.1 UTILITY SOFTWARE .....	1-1
1.2.2 SERVICE TOOLS .....	1-1
1.3 BLOCK DIAGRAM .....	1-2
1.4 COMPONENT LAYOUT .....	1-3
<b>2. INSTALLATION.....</b>	<b>2-1</b>
2.1 HARDWARE INSTALLATION.....	2-1
2.2 UTILITY SOFTWARE SETUP .....	2-1
2.2.1 PRINTER MANAGER FOR ADMIN.....	2-1
2.2.2 WEB STATUS MONITOR.....	2-1
2.3 SETTING UP THE NIB FOR VARIOUS NETWORKS .....	2-2
2.3.1 NETWARE NETWORKS .....	2-2
2.3.2 TCP/IP NETWORKS.....	2-3
Possible Problems with DHCP Parameter Settings .....	2-4
2.3.3 NETBEUI NETWORKS.....	2-4
2.3.4 APPLETTALK (ETHERTALK) NETWORKS .....	2-5
<b>3. SERVICE TABLES AND PROCEDURES .....</b>	<b>3-1</b>
3.1 PRINTING REPORTS .....	3-1
3.1.1 NIB STATUS SHEET .....	3-1
3.1.2 NIB LOG LIST.....	3-1
3.2 NVRAM RESET .....	3-1
<b>4. TROUBLESHOOTING.....</b>	<b>4-1</b>
4.1 LED INDICATIONS.....	4-1

# 1. OVERALL MACHINE INFORMATION

## 1.1 SPECIFICATIONS

Type	Internal network interface board
Network Topology	Ethernet 100BaseTX/10BaseT
Network Interface	RJ45 x 1
Cable	STP (Shielded Twisted-Pair) cable, category/type 5 or better <b>Note:</b> A cable is not enclosed with this option.
Protocol	TCP/IP, IPX/SPX, NetBEUI, AppleTalk
Ethernet Frame Types	Ethernet II, IEEE802.3, IEEE802.2, Ethernet_SNAP
SNMP support	IP and IPX SNMP support of MIB-II
Supported NOS	<ul style="list-style-type: none"> <li>▪ NetWare 3.x, 4.x, (5.0), Intranetware</li> <li>▪ Windows NT4.0</li> <li>▪ Windows 95/98</li> <li>▪ Mac OS 7.1 or later</li> </ul>
Other	<ul style="list-style-type: none"> <li>▪ Built-in web server</li> <li>▪ Built-in Telnet server</li> <li>▪ Built-in LPD daemon</li> <li>▪ Firmware update over IP network</li> </ul>

## 1.2 SOFTWARE ACCESSORIES

Utility software is provided in the Drivers and Utilities CD-ROM that comes with the base printer.

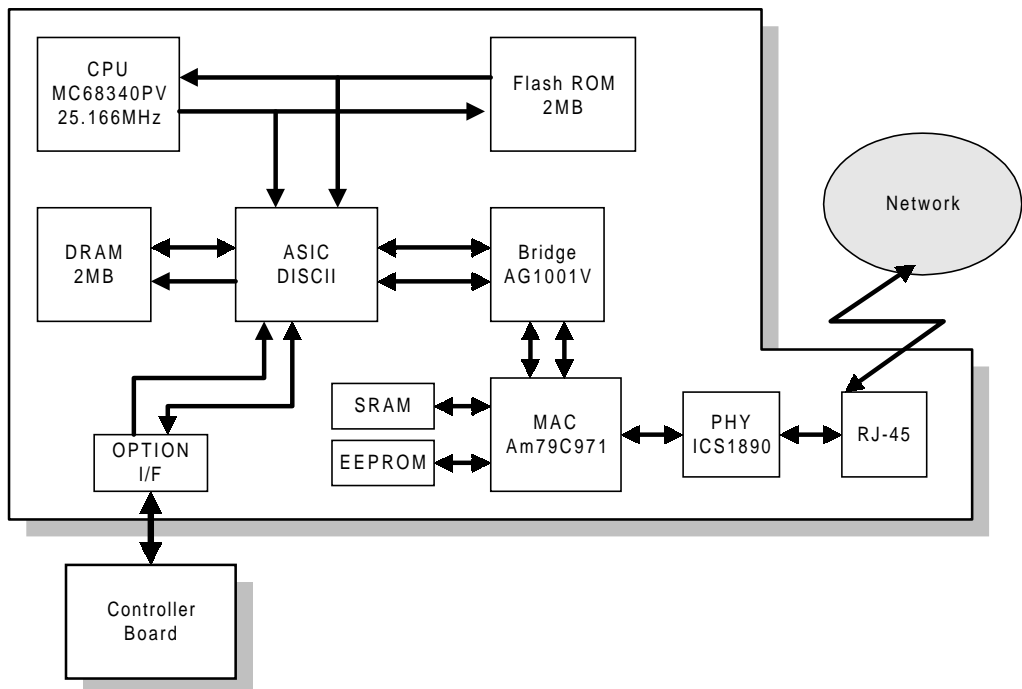
### 1.2.1 UTILITY SOFTWARE

Software	Description
Aficio Manager for Admin (Win 95/98, NT4)	Printer management software for network administrators. NIB setup utilities are also available.
Aficio Manager for Client (Win95/98, NT4)	Printer management software for client users.
Multi-Direct Print (Win95/98, NT4)	A peer-to-peer print utility for NetBEUI or TCP/IP.

### 1.2.2 SERVICE TOOLS

Software	Description
NBTFTP	An NIB firmware update utility for use on a NetBEUI network. This utility is not on the Driver and Utilities CD-ROM; it is issued separately as a service tool.

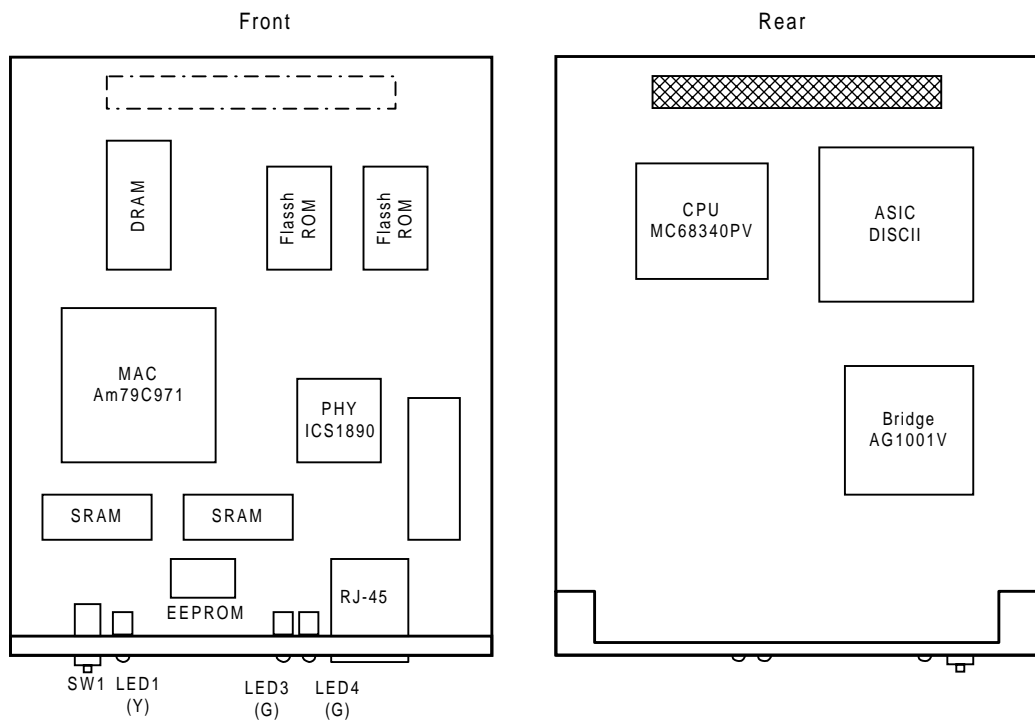
## 1.3 BLOCK DIAGRAM



B307V501.WMF

- The Flash ROM contains NIB firmware. The firmware can be upgraded over the network or from an IC card connected to the controller.
- The EEPROM holds all the NIB settings. Before replacing the NIB, the EEPROM data can be backed up in the controller memory, and restored to the new NIB after replacement.

# 1.4 COMPONENT LAYOUT



B307V502.WMF

- Three LEDs show the status information.
- The push switch (SW1) is used to print reports.

---

## 2. INSTALLATION

### 2.1 HARDWARE INSTALLATION

Refer to the base engine or printer controller installation instructions for how to install the network interface board.

The machine does not print a NIB status sheet automatically. Print the NIB status sheet by pressing the push switch (SW1) on the NIB after installation.

### 2.2 UTILITY SOFTWARE SETUP

One of the following utilities is required to monitor and set up the NIB. The utilities are on the Drivers and Utilities CD-ROM that comes with the base machine or controller.

#### 2.2.1 PRINTER MANAGER FOR ADMIN

Printer Manager for Admin comes with NIB Setup Tool.

1. Install Printer Manager for Admin from the CD-ROM. (Use Custom Setup when installing the software from the Autorun installation program.)
2. Start the NIB Setup Tool from the menu.

**NOTE:** Do not use the MAP utility for this type of NIB.

#### 2.2.2 WEB STATUS MONITOR

The built-in web server provides an interface to monitor and manage the NIB from a remote host.

1. Assign an IP address to the NIB.
2. Access “http:// <IP address of the NIB> /” from a web browser.

**NOTE:** 1) Use Printer User Tools at the machine’s operation panel to assign an IP address.  
2) Help for the Web Status Monitor is on the Drivers and Utilities CD-ROM. After you can access the NIB web server, set up the “Help URL” parameter in the [Network Config.] – [General] page as follows:

<CD-ROM drive letter>:\HELP\WSHELP\EN\index.htm

## 2.3 SETTING UP THE NIB FOR VARIOUS NETWORKS

This section gives a summary of how to set up the NIB in various network environments.

**NOTE:** It is not recommended for service technicians to program network and protocol parameters. Ask the customer's network administrator to program and manage these parameters.

### 2.3.1 NETWARE NETWORKS

The following parameters are required for NetWare networks.

Parameter	Novell 2.x/3.x/4.x/ (5.0) Bindery Network	Novell 4.x / (5.0) NDS Network
Protocol (Default = Enabled)	Yes	Yes
Operation Mode (Default = Print Server)	Yes (Print Server or Remote Printer)	Yes (Print Server or Remote Printer)
Remote Printer No. (Default = 0)	Yes (Note 1)	Yes (Note 1)
Print Server Name	Yes (Note 2)	Yes (Note 2)
Print Server Password	Cannot be programmed	Cannot be programmed
File Server Name	Yes	No
NDS Context Name	No	Yes
Preferred NDS Tree	No	Yes (Note 3)
Print Queue Scan Rate	Cannot be programmed	Cannot be programmed
Frame Type (Default = Auto-Select)	Yes	Yes
Job Timeout (Default = 15 s)	Yes	Yes
Disable Bindery	Cannot be programmed	Cannot be programmed

- NOTE:**
- 1) 'Remote printer number' is necessary only when the "Operation Mode" is "Remote Printer".
  - 2) 'Print server name' is necessary only when the "Operation Mode" is "Print Server". The default name is "RNPxxxxxx" (xxxxxx is the lower 6 digits of the MAC address).
  - 3) The preferred NDS context must be typed in without a starting dot ( . ).
    - OU=Development.O=Corp [OK]
    - .OU=Development.O=Corp [NG]
    - Development.Corp [OK]
    - .Development.Corp [NG]
  - 4) The following utilities can be used to change the settings.
    - Printer Manager for Admin
    - Web Status Monitor
    - (Telnet)

## 2.3.2 TCP/IP NETWORKS

The following parameters are available for TCP/IP network printing.

Parameter	Description
Protocol (Default = Enabled)	Disable this if TCP/IP is not used.
IP Address (Default = 11.22.33.44)	IP address of the NIB (required)
Subnet Mask (Default = 0.0.0.0)	Subnet mask for the subnet (required)
Default Gateway (Default = 0.0.0.0)	Default gateway of the subnet. This is required when the NIB is accessed from a host in a different subnet.
Access Control Address Access Control Mask	<p>These two parameters are used to allow access to the NIB only to the hosts in the specified subnet.</p> <p>For example, if the Access Control Address is set to "128.1.2.3", access to the NIB is restricted as follows:</p> <ul style="list-style-type: none"> <li>• When Access Control Mask is "255.0.0.0", hosts in the 128.0.0.0 subnet can access the NIB.</li> <li>• When Access Control Mask is "255.255.0.0", hosts in the 128.1.0.0 subnet can access the NIB.</li> <li>• When Access Control Mask is "255.255.255.0", hosts in the 128.1.2.0 subnet can access the NIB.</li> <li>• When Access Control Mask is "255.255.255.255", only the host that has the IP address 128.1.2.3 can access the NIB.</li> </ul>
Network Boot	<p>Use "NONE" when an IP address is specified manually (default), or use "DHCP" if the NIB receives an IP address from a DHCP server.</p> <p>All the other settings may not be used, unless the NIB is installed in, for example, a UNIX network.</p> <ul style="list-style-type: none"> <li>• RARP + TFTP</li> <li>• BOOTP</li> <li>• RARP + BOOTP</li> <li>• ARP + PING</li> <li>• ARP &amp; RARP</li> <li>• ARP &amp; BOOTP</li> <li>• ARP &amp; RARP &amp; BOOTP</li> </ul>
Frame Type	Ethernet II is always used.



### ***Possible Problems with DHCP Parameter Settings***

#### 1. IP address conflicts with an another host

If the IP address conflicts with an another host, the NIB does not show any errors. However, the NIB cannot receive any print jobs, because the IP protocol is disabled automatically at startup.

In this case, the other host in conflict with the NIB must have a manually assigned IP address. Find the host using the **PING** and **ARP** commands for example, and assign a suitable address.

#### 2. IP address changes after restarting the machine

The DHCP server may lease a different IP address to the NIB if available IP addresses become in short supply. As a result, the NIB cannot receive any print jobs, because the jobs are sent to the previously assigned IP address.

To solve this problem, reserve an IP address at the DHCP server by allocating an address to the NIB's Ethernet (MAC) Address.

## **2.3.3 NETBEUI NETWORKS**

The following parameters are available for NetBEUI network printing.

In a Microsoft Windows network, the NIB appears like a computer host with a printer connected.

<b>Parameter</b>	<b>Description</b>
Protocol (Default = Enabled)	Disable this if NetBEUI is not used.
Workgroup Name (Default = WORKGROUP)	The name of the workgroup to which the NIB belongs in the Microsoft Windows network.
Computer Name	This appears in, for example, the Network Neighborhood" window to which the printer is connected.
Comment	Comment for the host.
Share Name	The Plug&Play name specified with SP5-907 appears here. This cannot be changed with the utility software.
Notify Print Completion (Default = Disabled)	Enable this if notification is needed after printing (the controller notifies the NIB, then the NIB notifies the client PC).

### 2.3.4 APPLE TALK (ETHER TALK) NETWORKS

The following parameters are available for AppleTalk network printing.

Parameter	Description
Protocol (Default = Enabled)	Disable this if AppleTalk is not used.
Network No.	The network number of the AppleTalk network to which the NIB is connected is displayed.
Printer Name	The Plug&Play name specified with SP5-907 appears here. This can be changed using the Apple Printer Utility.
Printer Type	"LaserWriter" is always displayed.
AppleTalk Zone	The default AppleTalk zone name of the network is displayed. This can be changed by sending the ZoneName PS file to the NIB.

---

## 3. SERVICE TABLES AND PROCEDURES

### 3.1 PRINTING REPORTS

#### 3.1.1 NIB STATUS SHEET

The NIB status sheet has all the current settings for the NIB parameters, as well as the firmware version information.

1. Turn on the machine.
2. Hold down the push switch (SW1) on the NIB for 2 seconds. The NIB status sheet is printed.

#### 3.1.2 NIB LOG LIST

The NIB log list has all the system log information.

1. Turn on the machine.
2. Hold down the push switch (SW1) on the NIB for 5 seconds. The NIB log sheet is printed.

### 3.2 NVRAM RESET

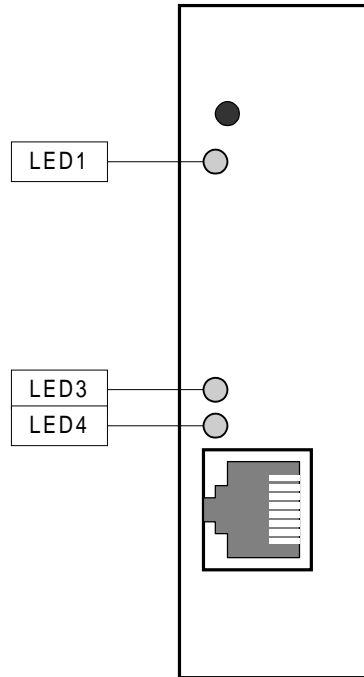
The NIB NVRAM can be reset to the factory defaults using the printer controller's SP modes, or using the following procedure. Refer to the controller service manual for how to use the printer SP mode.

This resets NVRAM (EEPROM) to the factory defaults. All the NIB parameters are initialized to the default settings.

1. Hold down the push switch (SW1) on the NIB while turning on the machine, and keep holding down the switch for 15 seconds.
2. Release the switch for 3 seconds, press it for 3 seconds, and then release it.
3. Turn the main switch off/on to reset the NVRAM.  
**NOTE:** There is a margin of less than 1 second for error. Use a watch to measure the time periods as accurately as possible.
4. Print out the configuration page, and then check the settings. If the procedure failed, the previous settings remain. Repeat the above procedure until the old settings have been cleared.

# 4. TROUBLESHOOTING

## 4.1 LED INDICATIONS



B307T501.WMF

Trouble-  
shooting

LED	Description	On	Off
LED1	Operating status	Ready	Not ready
LED2	Not used		
LED3	Topology	100BaseTX	10BaseT
LED4	Link status	Link success	Link failure