MFP OPTIONS

Printer/Scanner Unit
(Machine Code: B659)

IEEE1394 Interface Board (Firewire)
(Machine Code: B581)

USB2.0 Interface Board
(Machine Code: B596)

IEEE802.11B Interface Board (WLAN)
(Machine Code: B582)

Bluetooth Interface Unit
(Machine Code: G377)

File Format Converter (MLB)
(Machine Code: B609)

Data Overwrite Security Unit
(Machine Code: B735)

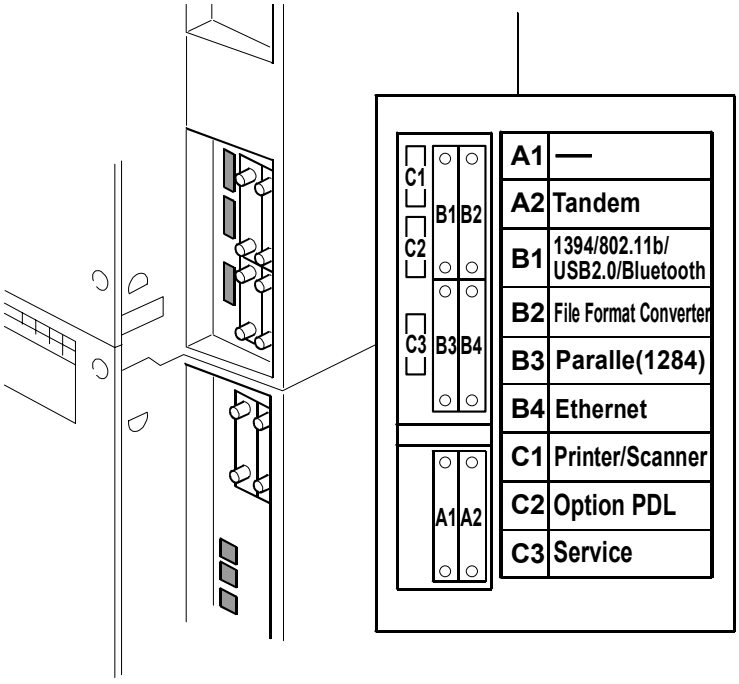
1. DETAILED DESCRIPTIONS

1.1 MFP OPTION SLOT ASSIGNMENT

To make it easy to install MFP options, there are 6 slots (A1, A2, B1 to B4) for boards and 3 slots (C1 to C3) for SD cards on the controller box. Each board or SD card must be put in the correct slot. The correct slots for each option are shown on the decal attached to the controller box cover (shown in the diagram).

NOTE: Only one PCI slot (B1) is available for one of these options. If a card is installed in B1, must be remove it before install above options.

- USB 2.0
- IEEE 802.11b (Wireless LAN)
- IEEE 1394 (FireWire)
- Bluetooth Interface Unit G377



B659D900.WMF

1.2 SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto run installer allows you to select which components to install.

1.2.1 PRINTER

Printer Drivers

Printer language	Windows 9x/Me	Windows NT 4.0	Windows 2000/XP/Server 2003	Macintosh
PCL6	Yes	Yes	Yes	No
PCL5e	Yes	Yes	Yes	No
PS3	Yes	Yes	Yes	Yes
RPCS	Yes	Yes	Yes	No

NOTE: 1) The printer drivers for Windows NT 4.0 are only for the Intel x86 platform. There is no Windows NT 4.0 printer driver for the PowerPC, Alpha, or MIPS platforms.
2) The PS3 drivers are all genuine Adobe PS drivers, except Windows 2000/XP/Server 2003, which uses Microsoft PS.

Printer Utility Software

Software	Description
Agfa Monotype Font Manager 2000 (Windows 95/98/Me, NT4, 2000/XP/Server 2003)	A font management utility with screen fonts for the printer.
SmartDeviceMonitor for Admin (Windows 95/98/Me, NT4, 2000/XP/Server 2003)	A printer management utility for network administrators. NIB setup utilities are also available.
SmartDeviceMonitor for Client (Windows 95/98/Me, NT4, 2000/XP/Server 2003)	A printer management utility for client users. Peer-to-peer printing utility and parallel/recovery printing functions are included.
1394 Utility (Windows 2000/XP/Server 2003)	A utility for remote IEEE 1394 printers.
Printer Utility for Mac	This software provides several convenient functions for printing from Macintosh clients.
USB Printing Support	This utility is for the USB 2.0 Interface Board. Using the USB connection on a computer running Windows 98 SE or Windows Me requires the installation of this utility.

1.3 PAPER SIZE SUPPORTED BY THE PRINTER

Paper		Size (W x L)	Paper Trays Main Unit/Option		By-pass Tray	LCT	Duplex
			US	Eur/Asia			
A3	SEF	297 x 420 mm	$Y^{\#}/Y^{\#}$	Y/Y	$Y^{\#}$	N	Y
B4	SEF	257 x 364 mm	$Y^{\#}/Y^{\#}$	$Y^{\#}/Y^{\#}$	$Y^{\#}$	Option	Y
A4	SEF	210 x 297 mm	$Y^{\#}/Y^{\#}$	$Y/Y^{\#}$	$Y^{\#}$	Option	Y
A4	LEF	297 x 210 mm	$Y^{\#}/Y^{\#}$	$Y/Y^{\#}$	$Y^{\#}$	Y	Y
B5	SEF	182 x 257 mm	$Y^{\#}$/N	$Y^{\#}$/N	$Y^{\#}$	N	Y
B5	LEF	257 x 182 mm	$Y^{\#}$/N	$Y^{\#}$/N	$Y^{\#}$	N	Y
A5	SEF	148 x 210 mm	$Y^{\#}$/N	$Y^{\#}$/N	$Y^{\#}$	N	Y
A5	LEF	210 x 148 mm	$Y^{\#}$/N	$Y^{\#}$/N	$Y^{\#}$	N	Y
B6	SEF	128 x 182 mm	N	N	$Y^{\#}$	N	N
A6	SEF	105 x 148 mm	N	N	$Y^{\#}$	N	N
Ledger	SEF	11 x 17"	Y/Y	$Y^{\#}/Y^{\#}$	$Y^{\#}$	N	Y
Legal	SEF	8.5 x 14"	$Y/Y^{\#}$	$Y^{\#}/Y^{\#}$	$Y^{\#}$	Option	Y
Letter	SEF	8.5 x 11"	$Y/Y^{\#}$	$Y^{\#}/Y^{\#}$	$Y^{\#}$	Option	Y
Letter	LEF	11 x 8.5"	$Y/Y^{\#}$	$Y^{\#}/Y^{\#}$	$Y^{\#}$	Y	Y
Half Letter	SEF	5.5 x 8.5"	$Y^{\#}$/N	$Y^{\#}$/N	$Y^{\#}$	N	Y
Half Letter	LEF	8.5 x 5.5"	$Y^{\#}$/N	$Y^{\#}$/N	N	N	Y
Executive	SEF	7.25 x 10.5"	$Y^{\#}/Y^{\#}$	$Y^{\#}/Y^{\#}$	Y^{C}	N	Y
Executive	LEF	10.5 x 7.25"	N/Y^{C}	N/Y^{C}	Y^{C}	N	Y
F	SEF	8 x 13"	$Y^{\#}/Y^{\#}$	$Y^{\#}/Y^{\#}$	Y^{C}	N	Y
Foolscap	SEF	8.5 x 13"	$Y^{\#}/Y^{\#}$	$Y^{\#}/Y^{\#}$	Y^{C}	N	Y
Folio	SEF	8.25 x 13"	$Y^{\#}/Y^{\#}$	$Y^{\#}/Y^{\#}$	Y^{C}	N	Y
Com10 Env.	SEF	4.125 x 9.5"	N	N	Y^{C}	N	N
C6 Env.	SEF	114 x 162 mm	N	N	Y^{C}	N	N
C5 Env.	SEF	162 x 229 mm	Y^{C}/N	Y^{C}/N	Y^{C}	N	N
C5 Env.	LEF	229 x 162 mm	Y^{C}/N	Y^{C} /N	Y^{C}	N	N
DL Env.	SEF	110 x 220 mm	N	N	Y^{C}	N	N
8K	SEF	267 x 390 mm	$Y^{\#}$/N	$Y^{\#}$/N	Y^{C}	N	Y
16K	SEF	195 x 267 mm	$Y^{\#}$/N	$Y^{\#}$/N	Y^{C}	N	Y
16K	LEF	267 x 195 mm	$N^{\#}$/N	$Y^{\#}$/N	Y^{C}	N	Y
Custom		Minimum: 100 x 297 mm Maximum: 148 x 600 mm	N	N	Y^{C}	N	N

Remarks:

Y	Supported. The paper size sensor detects the paper size.
$Y^{\#}$	Supported. The user has to select the correct paper size for the tray.
Y^{C}	Supported. The user has to enter the width and length of the paper.
N	Not supported.

1.4 NETWORK INTERFACE BOARD (NIB) (B594)

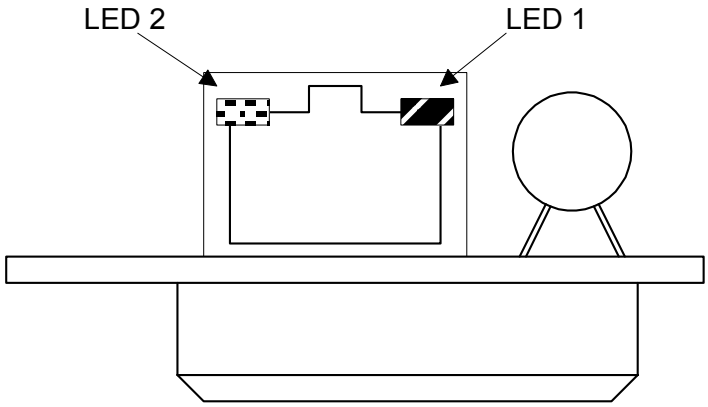
The Ethernet board is provided as a standard feature of this machine.

Function Blocks	Description
PHY (Physical Layer Device)	Completely standardized physical layer device for the functions of each device in the network.
EEPROM	Stores the MAC address.

The physical layer device, the lowest layer of the OSI reference model, refers to the physical components of the network: cables, connectors, and so on. OSI, the *Operating Standard Interface*, is a framework upon which networking standards are arranged. It is commonly diagramed as a layered cake.

Operation

The NIB is a standard IEEE802.3u type which implements 10/100Mbps auto negotiation. System initialization sets the network for 10Mbps/100Mbps.



LED 1 (Green)	Indicates the link status: ON Link Safe OFF Link Fail
LED 2 (Orange)	Indicates the operation mode: ON 100 Mbps mode OFF 10 Mbps mode

1.5 USB 2.0 INTERFACE BOARD (B596)

Remarks about USB

- The machine does not print reports specifically for USB.
- Only one host computer is allowed for the USB connection.
- After starting a job using USB, do not switch the printer off until the job has been completed. When a user cancels a print job, if data transmitted to the printer has not been printed at the time of cancellation, the job will continue to print up to the page where the print job was cancelled
- When the controller board is replaced, the host computer will recognize the machine as a different device.

Related SP Mode

“USB Settings” in the printer engine service mode. Data rates can be adjusted to full speed fixed (12 Mbps). This switch may be used for troubleshooting if there is a data transfer error using the high speed mode (480Mbps).

Data rates can also be adjusted using the UP mode “USB Setting” in the Host Interface in the System menu. This mode can be accessed only when the “Enter”, “Escape”, then “Menu” keys are pressed to enter the UP mode.

1.6 IEEE802.11B INTERFACE BOARD (WIRELESS LAN) (B582)

The IEEE802.11b interface board (Wireless LAN) provides same functions as network interface board's (NIB), and can be used for printing and scanning.

1.6.1 LED INDICATORS

LED	Description	On	Off
LED1 (Green)	Link status	Link success	Link failure
LED2 (Orange)	Power distribution	Power on	Power off

1.6.2 TRANSMISSION MODES

To switch between ad hoc and infrastructure modes, use the following user tool: Host Interface Menu - IEEE802.11b - Comm Mode.

1.6.3 TROUBLESHOOTING NOTES

Communication Status

Wireless LAN communication status can be checked with the UP mode "W.LAN Signal" in the Maintenance menu. This can also be checked using the Web Status Monitor or Telnet.
The status is described on a simple number scale.

Status Display	Communication Status
Good	76 ~ 100
Fair	41 ~ 75
Poor	21 ~ 40
Unavailable	0 ~ 20

NOTE: Communication status can be measured only when the infrastructure mode is being used.

Troubleshooting Procedure

If there are problems using the wireless LAN, check the following.

1) Check the LED indicator on the wireless LAN card.
2) Check if “IEEE802.11b” is selected in the following user tool:
   System Setting> Interface Setting> IEEE 801.11b

NOTE: The “IEEE 801.11b” tab is available only after the IEEE 801.11b card has been installed.

3) Check if the channel settings are correct.
4) Check if the SSID and WEP are correctly set.

If infrastructure mode is being used,

1) Check if the MAC address is properly set.
2) Check the communication status.
   If the communication status is poor, bring the machine closer to the access point, or check for any obstructions between the machine and the access point.
   If the problem cannot be solved, try changing the channel setting.

1.7 FILE FORMAT CONVERTER (MLB) (B609)

Copy and print jobs are stored on the document server (on the copier's hard disk) in a Ricoh proprietary file format.

In previous models (such as A-C2, R-C2), DeskTopBinder could retrieve copy and print jobs from the document server and convert them to TIFF. However, this software-based conversion was slow for many users.

So, for the B070/B071, this conversion has been made hardware-based, using the optional Media Link Board. Without the Media Link Board, copy and print jobs cannot be downloaded to a PC from the document server.

Two common target formats are provided for conversion to files that can be viewed on a computer: JPEG and TIFF.

NOTE: If the printer/scanner controller is not installed, the optional standalone NIB must be installed in the copier.

SP5847 (Net File Mag. Rate) is provided for use with this feature. For more details about these settings, see Section "5. Service Tables" in the main Service Manual.

NOTE: These SP commands are enabled for use only after the MLB has been installed. For details about installing the MLB, see Section "1. Installation" of the main Service Manual.

5847	002	Copy : Text	Changes the default settings of image data transferred externally by the Desk Top Binder page reference function via the MLB (Media Link Board).
5847	003	Copy: Others	
5847	005	Print: Binary	
5847	006	Print: Dither(1200 dpi)	Sets the default for dithered image size sent to the Document Server via the MLB (Media Link Board).
5847	021	NetFile Page Quality Default for JPEG	Sets the default for JPEG image quality of image files handled by Desk Top Binder sent via the MLB (Media Link Board).

1.8 DATA OVERWRITE SECURITY UNIT (B735)

1.8.1 AUTO ERASE MEMORY

A document scanned in the copier or scanner mode, or data sent from a printer driver for printing, is stored temporarily on the hard disk of the machine. Even after the copy or print job is completed, it remains in the hard disk as temporary data. Auto Erase Memory erases the temporary data on the hard disk by writing over it.

Types of Data Overwritten and Not Overwritten

The following table shows the types of data that can or cannot be overwritten by Auto Erase Memory.

Data overwritten by Auto Erase Memory	Copier	Copy jobs
	Printer	1) Print jobs 2) Sample Print/Locked Print jobs(*1) 3) Spool Printing jobs
	Scanner(*2)	1) Scanned files sent by e-mail 2) Files sent by Scan to Folder 3) Documents sent or retrieved by using Web Image Monitor, Desk Top Binder, Scan Router
	Document Server	Temporary data that still remains in the Document Server even after user erases the data in the Document Server.
Data not overwritten by Auto Erase Memory	1) Documents stored by the user in the Document Server using the Copier, Printer or Scanner functions 2) Information registered in the Address Book (*3) 3) Counters stored under each user code 4) Network setting	

NOTE: *1: A Sample Print or Locked Print job can only be overwritten after it has been executed.
*2: Temporary data via TWAIN scanner function are not originally stored in HDD, so TWAIN scanner functions can be used together with DOS unit.
*3: Data stored in the Address Book can be encrypted for security.

Overwrite timing

Overwriting starts automatically once a copy, print and scanner job is completed. Copier, printer and scanner functions take priority over the Data Overwrite function. If a copier, printer or scanner job comes while a previous job is beign overwritten, the overwrite process is automatically interrupted until the next job is completed.

1.8.2 ERASE ALL MEMORY

Users can erase all the data on the hard disk by writing over it. This is useful before you remove or dispose of the machine. The following items can be erased with this function.

- Documents stored by the user in the Document Server with the Copier, Printer or Scanner function
- Information registered in the Address Book
- User codes and the counters under each user code
- Network settings
- User stamps
- Printer fonts downloaded by the user

1.8.3 OVERWRITE METHOD

In the DOS option, customers can select one of the three overwrite methods for "Auto Erase Memory" and "Erase All Memory":

- ***NSA (National Security Agency, U.S.A) Standard (Default)***
  Temporary data is overwritten twice with random numbers and once with zeros.
- ***DoD (Department of Defense, U.S.A) Standard***
  Temporary data is overwritten with a fixed value, the complement of the fixed value, and random numbers, followed by verification.
- ***Random Data Overwrite***
  Temporary data is overwritten multiple times with random numbers. The number of overwrites can be set in the range from 1 to 9 times. The default is three times.

2. SPECIFICATIONS

2.1 CONTROLLER BOARD

CPU:	Duron 800 MHz
BIOS ROM:	1 MB (512 K x 2)
OS Copy Flash ROM:	16 MB
NVRAM:	128 KB
SDRAM:	128 MB
DDR-SDRAM:	Slot #1 (Standard): BASIC 128 MB Slot #2 (Option): 256 MB
PCI Option:	4 Slots (B1 to B4)
SD Card:	3 Slots (C1 to C3)
RAPI Option:	2 Slots (A1, A2)
Power Supply Voltage:	DC 5VE ± 3% DC 12VE ± 5%

2.2 PRINTER/SCANNER UNIT (B659)

Printer

Printing Speed	B140/B142 model		Max. 60 ppm (A4/LT LEF)
	B141/B143 model		Max. 75 ppm (A4/LT LEF)
	B163/B228 model		Max. 51 ppm (A4/LT LEF)
Printer Languages	PCL5e/PCL6		
	PostScript 3 (option)		
	RPCS (Refined Printing Command Stream)		
Resolution	1200 dpi (PCL6/PCL5e/PS3/RPCS)		
	600 dpi (PCL 6/PCL5e/PS3/RPCS)		
	300 dpi (PCL5e)		
Resident Fonts	PCL	35 Intellifonts	
		10 TrueType Fonts	
		1 bitmap font	
	PS3	136 fonts (24 Type 2 fonts, 112 Type 14 fonts)	
Host Interfaces	Standard	IEEE 1284 parallel x 1	
		Ethernet 100Base-TX/10Base-T	
	Option	IEEE 802.11b Wireless LAN	
		IEEE 1394 with SCSI Print and IP Over 1394	
		Bluetooth	
		USB 2.0	
Network Protocols	TCP/IP, IPX/SPX, NetBEUI, AppleTalk, SMB (Auto Switching)		
Memory	384 MB (Standard 128 MB + Option 256 MB)		

Scanner

Scanning method	Front side main scan	Scanned by CCD.
	Platen (original on exposure glass)	
	Back side main scan	Scanned by CIS.
	Back side sub scan	
Scanning Area	Main scan	Max. 297 mm
	Sub scan	Max. 432 mm
Resolution	Main scan	600 dpi
	Sub scan	600 dpi
Main Scan Line Range of Precision	100 ~ 1200 dpi (digital black and white)	
Grayscale	8-bit graduation or 2-digit per pixel, 2-digit halftone also possible.	
Scanning Speed	0.8 seconds (1 A4 page at 200 dpi in 2-digit black and white with no compression.	
Interface	Ethernet 100Base-TX/10Base-T	
	IEEE 802.11b Wireless LAN (option)	
	IEEE 1394 with IP Over 1394 only (option)	
Network Protocols	TCP/IP only	
Scan-to-Email	Compatible	
TWAIN driver	Compatible	

The scanner driver and utility software are provided on one CD-ROM.

Scanner Driver	Network TWAIN Driver for Windows 95/98/Me/ NT 4.0/2000/XP
Scanner Utilities	Scan Router V2 Lite (Cherry Lite) for Windows 95/98/Me/NT4.0/2000/XP Desk Top Binder V2 Lite (Plumeria Lite) for Windows 95/98/Me/NT4.0/XP

2.3 IEEE1394 INTERFACE BOARD (B581)

Hardware Specification

Number of ports	2 ports (6 pin)
Data Transmission speed	400Mbps / 200Mbps / 100Mbps
Bundled cables	1 x 6pin-4pin cable 1 x 6pin-6pin cable Length of cable; 2.0m (78.74inch).

System requirement

Connectable devices	PCs 2. IEEE1394 Repeaters
Number of Hops	16 hops (Max.)
Length of cable	4.5m between devices (Max.)

2.4 USB 2.0 INTERFACE BOARD (B596)

Number of ports	1 ports (B connector)
Data Transmission speed	High Speed: 480 MB bps Full Speed: 12 MB bps
Supported OS	WinXP/Win2000/WinMe/Win98SE MacOS9.x and X Classic mode

NOTE: 1) Microsoft “USB printer support” is required for Win98SE. In that case, transmission speed is Full Speed.
2) Macintosh supports only the standard USB port.
3) When printing from Macintosh, PDL emulation is not switched automatically. Please change the setting of PDL emulation of mainframe.
4) Low Speed 1.5Mbps is not supported.

2.5 IEEE802.11B INTERFACE BOARD (B582)

Data transmission rates:	Speed	Distance
	11 Mbps	140 m (153 yd.)
	5.5 Mbps	200 m (219 yd.)
	2 Mbps	270 m (295 yd.)
	1 Mbps	400 m (437 yd.)
Channel	For NA (FCC): 1 ~ 11 For EU (ETSI): 1 ~ 13 (Default: 11channel)*	
Network protocols:	TCP/IP, Apple Talk, NetBEUI, IPX/SPX	
Bandwidth:	2.4GHz (divided over 14 channels, 2400 to 2497 MHz for each channel)	

NOTE: The wireless LAN cannot be active at the same time as the Ethernet LAN. The following user tool setting determines which LAN is active: System Settings – Interface Settings – Network - LAN Type.

2.6 BLUETOOTH INTERFACE UNIT (G377)

System requirement

Supported OS	Win XP, 2000, 98 SE, Me (It will also depend upon the support OS of the Bluetooth Card)
Connectable PCs	- Host PC with PCMCIA card slots "3COM Wireless Bluetooth PC Card 3CRWB6096" or "3COM Wireless Bluetooth USB Adaptor 3CREB96" is required. - Toshiba PC with Bluetooth Software Ver1.02.18 or later

Hardware Specifications

Transmission spec	Based on Bluetooth V1.1
Data Transfer Speed	1Mbps
Profile	Hardcopy Cable Replacement Profile (HCRP) Serial Port Profile (SPP) Basic Imaging Profile (BIP)
Distance between devices	10 m The above is the max distance when using in the open air, and these depend on office environment.

2.7 MFP OPTI0N CONFIGURATION

Item	Machine Code	Remarks
Printer/Scanner unit Type 2075	B659	The printer/scanner unit includes the Centronics I/F, NIB and 256 MB memory DIMM.
IEEE 1394 Interface Board Type B	B581	Firewire
USB 2.0 Interface Board Type B	B596	
IEEE 802.11b Interface Board Type C	B582	Wireless LAN
Bluetooth Interface Unit Type 2238	G377	
File Format Converter Type B	B609	Media Link Board (MLB)
Network Interface Board Type 2105	B594	NIB
PS3 Type 2075	B525	PostScript 3
Memory Unit Type D (256MB)	B585	256 MB memory DIMM.
Data Overwrite Security Unit Type C	B735	SD Card