PRINTER OPTION

(Machine Code: B548)

1. INSTALLATION

1.1 ACCESSORY CHECK

Check the accessories in the box against the following list:

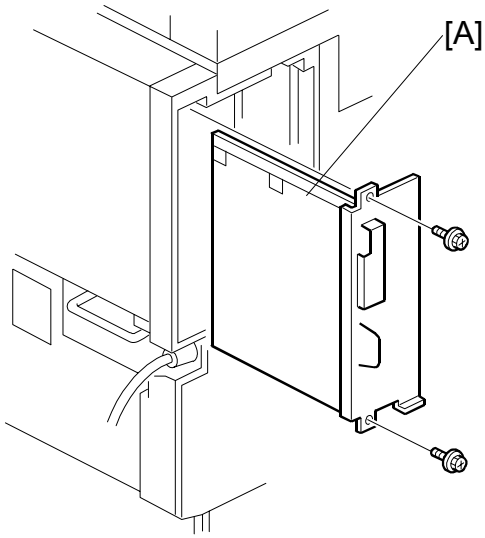
No.	Description	Q'ty	Note
1	Paper Sensor	1	
2	Key Tops - Printer	2	English (1 set), Universal (1 set)
3	Key Tops - Scanner	2	English (1 set), Universal (1 set)
4	Paper Limit Sensor Unit	1	
5	Tapping Screw - M3x8	2	To secure the paper limit sensor unit
6	Pan Head Screw - M3x8	1	To secure the paper sensor
7	NIB	1	Option
8	Printer/Scanner DIMM	1	
9	Ferrite Core	1	For LAN cable

1.2 PRINTER INSTALLATION PROCEDURE

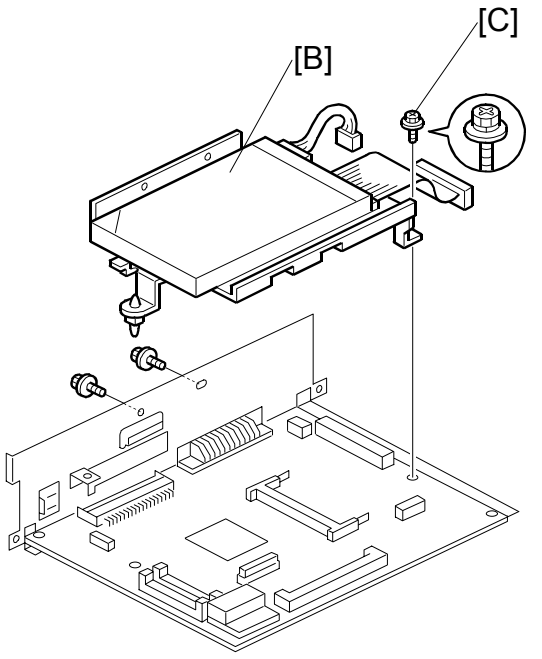
All procedures require removal of the controller board from the machine. Some procedures also require removal of the controller board.

⚠CAUTION
Switch the main machine off and unplug the main machine power cord before starting any procedure described in these instructions.

1.2.1 CONTROLLER BOARD AND HDD REMOVAL



B548I101.WMF



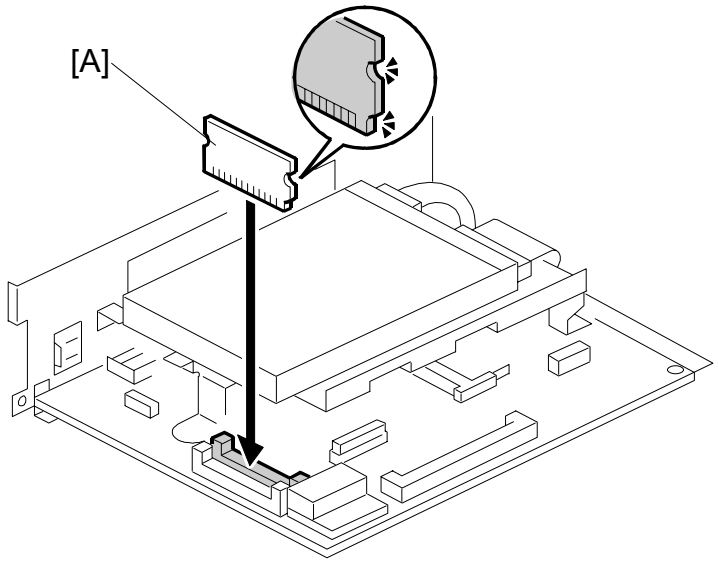
B548I103.WMF

1. Remove the controller board [A] (☞ x 2).
2. Remove the HDD [B] (☞ x 3, ☞ x 2).
   NOTE: Re-attach the screw with the washer at [C].

1.2.2 PRINTER CONTROLLER INSTALLATION

⚠CAUTION

Unplug the main machine power cord before starting the following procedure.



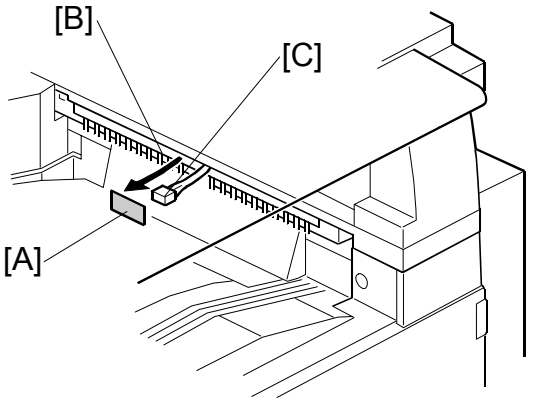
B548I110.WMF

1. Remove the controller board. (☛1.2.1)
2. Install the printer ROM DIMM [A] in the inside slot of the controller board.
3. Install the NIB packed with the printer/scanner option. (☛1.5)

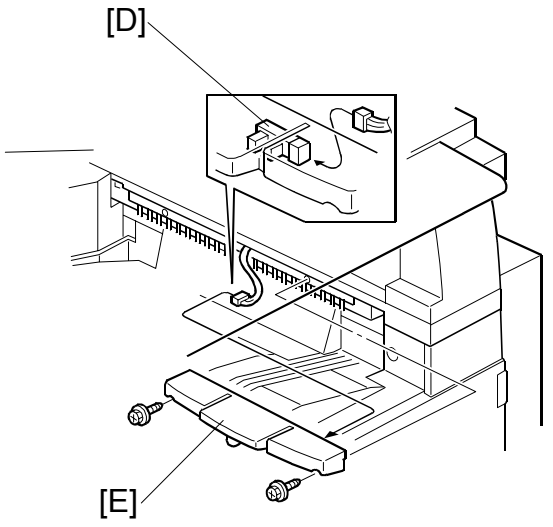
   If one or more of the following options are to be installed, you must remove the HDD and install them before proceeding to the next step:

   - Postscript Kit (G354-17)
   - 128 Memory Card (G331)
   - IEEE 1394 Interface (G336)
   - USB 2.0 (B525-01)
   - IEEE 802.11b Wireless LAN (B515)
   - Bluetooth (G354-04)

Paper Limit Sensor Installation



B548I901.WMF

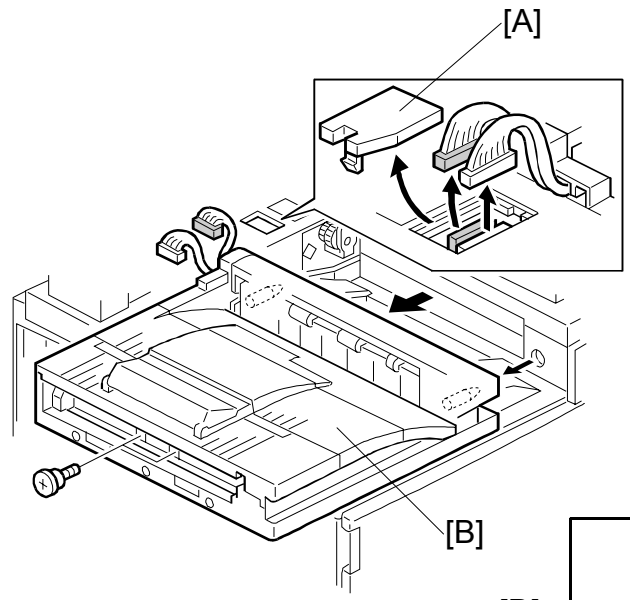


B548I902.WMF

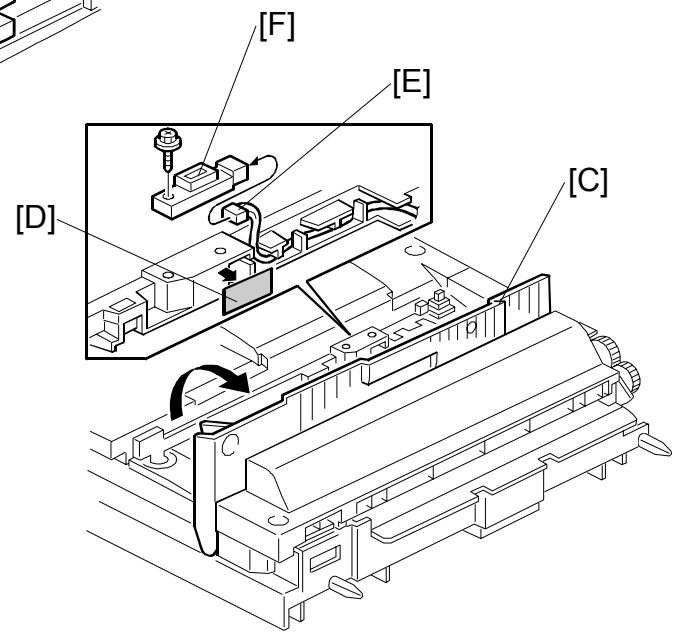
NOTE: If the optional bridge unit is installed, you cannot install the paper limit sensor. Go to the next section.

1. Peel off the black tape [A] from the anti-static brush [B], then pull out the cable [C].
2. Connect the cable to the sensor [D].
   NOTE: Push the connector into the hole so it is not visible.
3. Install the paper limit sensor unit [E] (x 2).

Paper Sensor Installation



B548I903.WMF

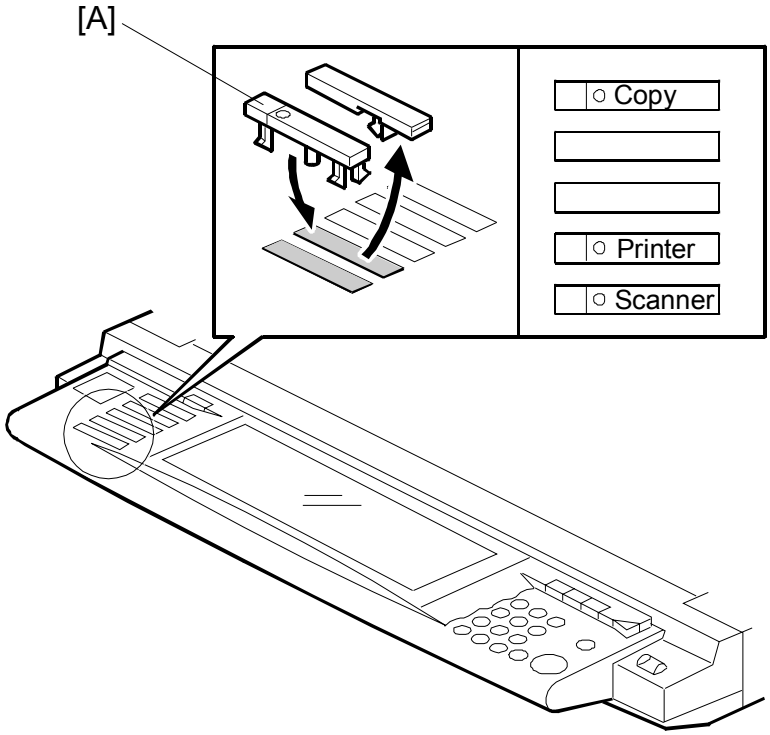


B548I904.WMF

NOTE: Install the paper sensor only if the optional Bridge Unit has been installed. If the bridge unit is not installed, go to the next section.

1. Remove the connector cover [A] and bridge unit [B] (x 2, x 2).
2. Open the right cover [C] of the bridge unit and peel off the black tape [D]
3. Pull out the connector [E].
4. Install the paper sensor [F] (x 1, x 1) then reinstall the bridge unit.

Operation Panel Keytops



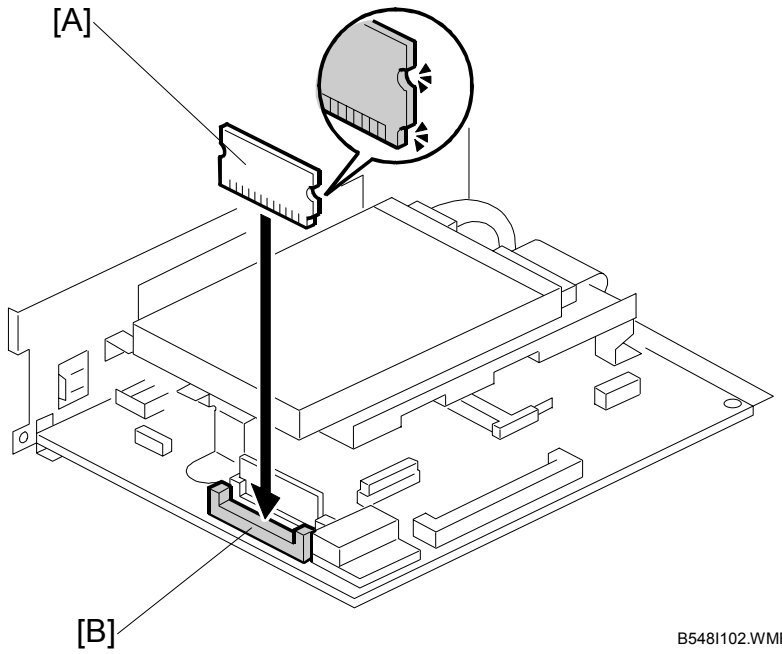
B548I905.WMF

1. Remove the bottom cap [A].
2. Install the “Printer” and “Scanner” keys in the 4th and 5th slots.
   NOTE: Correct order, reading from top to bottom:
   - Copy
   - Document Server
   - Facsimile
   - Printer
   - Scanner
3. Do not connect the parallel cable now. Turn the machine on and check Copier SP mode SP5-907: Plug & Play Name
4. Print out the configuration page to confirm correct installation of the printer controller (User Tools> Printer Settings> List Test Print> Config. Page)
5. To connect the parallel cable, switch the machine off, connect the cable, then switch the machine on again.
6. Execute SP5801 10 (Net File Memory Clear).

1.3 POSTSCRIPT 3 (G354-17)

⚠CAUTION

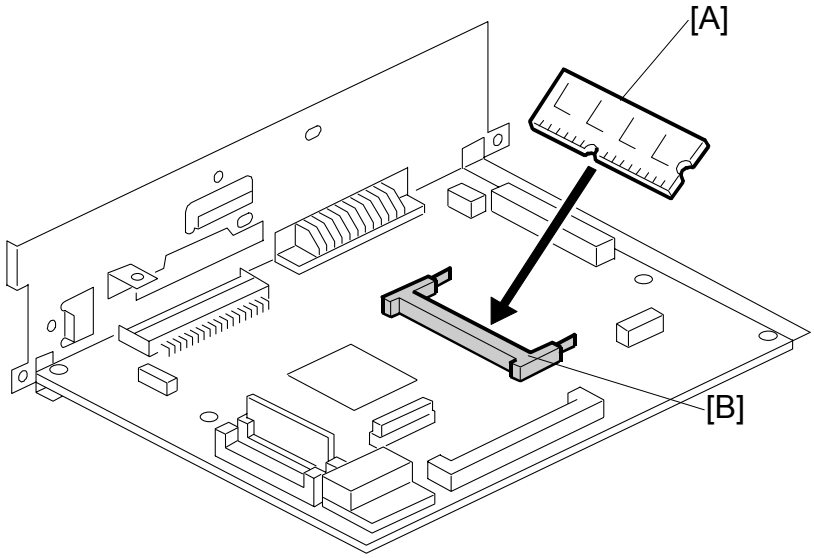
Unplug the main machine power cord before starting the following procedure.



NOTE: To install the Postscript 3 option, the Printer Option must be installed first. (☛1.2.2)

1. Remove the controller board. (☛1.2.1)
2. Install the Postscript DIMM [A] in slot [B] of the controller board.
3. Re-install the controller board in the main machine.

1.4 128 MB MEMORY (G331)



B548I107.WMF

⚠CAUTION

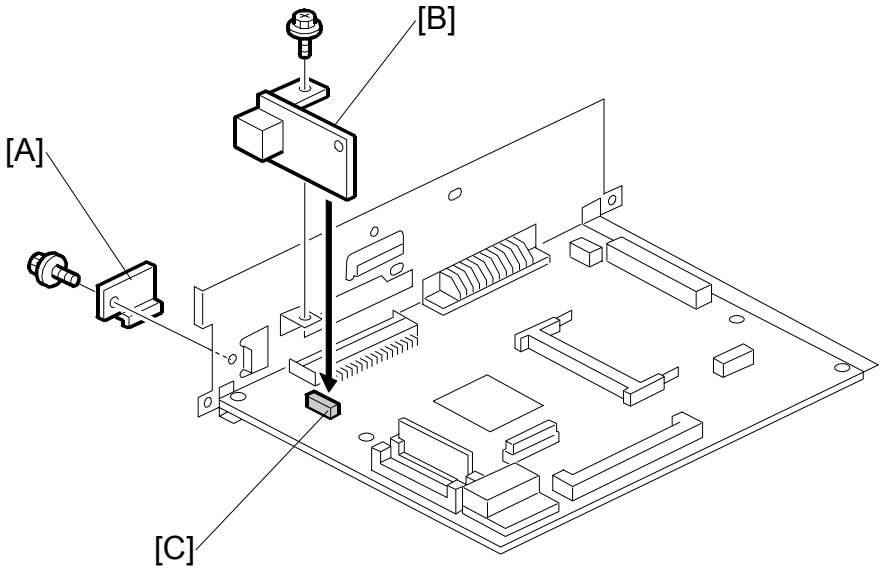
Unplug the main machine power cord before starting the following procedure.

NOTE: Only one optional memory DIMMs are available: 128 MB (G331). It can be installed in the one available slot (only one can be installed).

1. Remove the controller board and HDD unit (☛1.2.1).
2. Install the memory DIMM [A] in the slot [B] of the controller board.
   - Set the edge connector in the slot at a 30 degree angle.
   - Push in slightly until you hear it click.
   - Push down slowly until it snaps in place.

   NOTE: To remove the memory DIMM, pull out the plastic arms on either side of the slot to release it.

1.5 NIB (B525)



B548I106.WMF

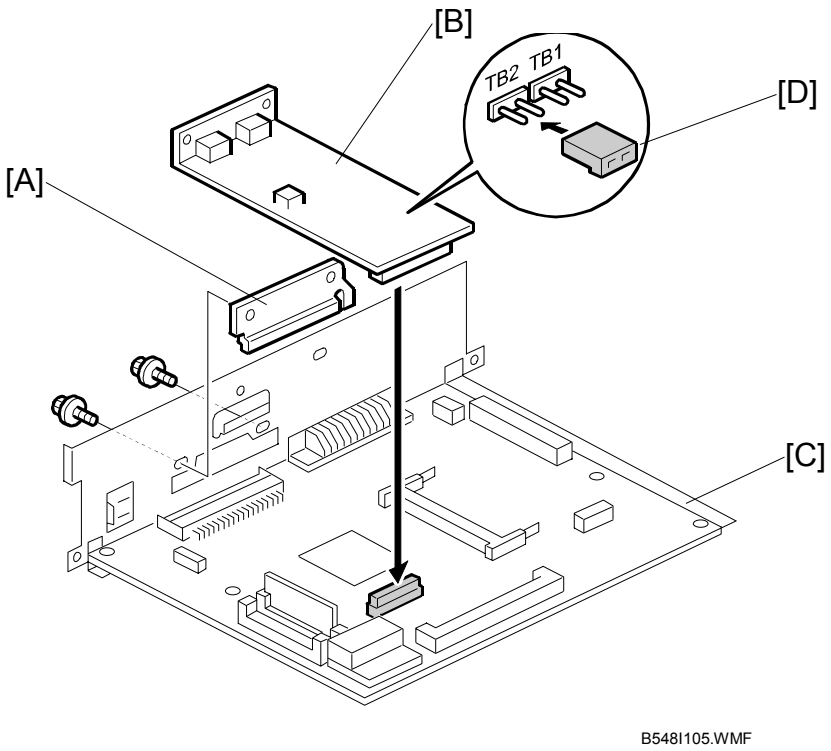
⚠CAUTION

Unplug the main machine power cord before starting the following procedure.

NOTE: To install the NIB option, the Printer Option must be installed first. (☛ **Error! Reference source not found.**)

1. Remove the controller board and HDD unit (☛ 1.2.1).
2. Remove the NIB slot cover [A]. Save this screw.
3. Attach the NIB [B] to the slot [C] on the controller board (🔩 x 2).
   NOTE: Use the screw removed from the NIB slot cover and one provided screw.
4. Re-install the HDD and re-install the controller board.

1.6 IEEE 1394 FIREWIRE (G336)



⚠CAUTION

Unplug the main machine power cord before starting the following procedure.

NOTE: To install the IEEE1394 option, the Printer Option must be installed first. (☛1.2.2) Only one slot is available for the interface option. You can install only one printer interface option at a time: IEEE 1394, USB 2.0, IEEE 802.11b, or Bluetooth.

1. Remove the controller board and HDD unit (☛ 1.2.1).
2. Remove the cover [A] (🖉 x 2). Save these screws.
3. Attach the USB 2.0 board [B] to the controller board [C] (🖉 x 2). Use the screws you removed in Step 2.
4. Make sure that the jumper [D] is set on “TB2”.
5. Re-install the HDD and re-install the controller board.

UP Mode Settings for IEEE 1394

Enter the UP mode and follow the procedure below to perform the initial interface settings for IEEE 1394. These settings take effect every time the machine is powered on.

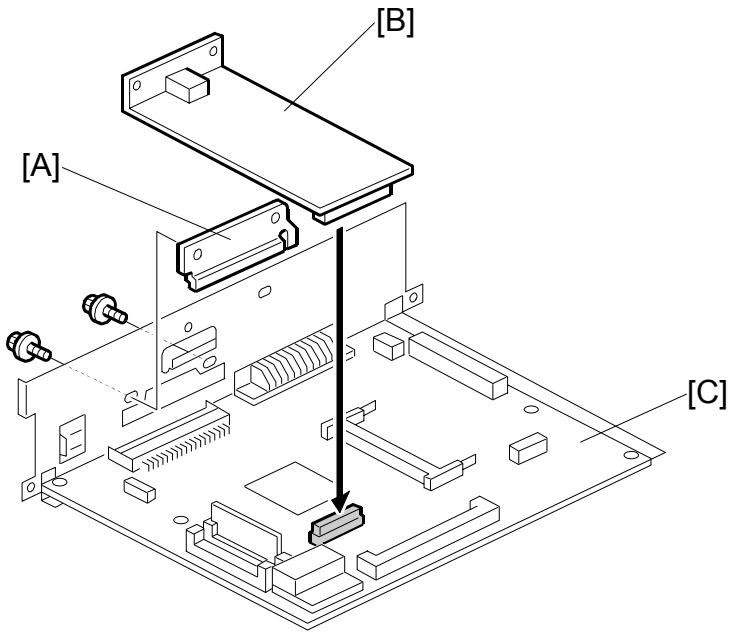
1. Press User Tools/Counter.
2. On the touch panel, press System Settings.
3. Press Interface Settings.
4. Press the key and enter the following settings:
   - IP Address
   - Subnet Mask
   - IP Over 1394. Enable or disable this setting as required. This setting enables IP Over 1394 as the default setting for the printing method.
   - SCSI Print. Enable or disable this setting as required. This setting enables SCSI Print as the default setting for the printing method.
   - SCSI Print Bi-directional. Switch bi-directional printing on or off for SCSI print.

SP Mode Settings for IEEE 1394

The following SP commands can be set for IEEE 1394.

SP No.	Name	Function
5839 004	Device Name	Sets the names for all the physical devices connected ot the the IEEE 1394 firewire network.
5839 007	Cycle Master	Enables or disables cycle master function of the IEEE 1394 standard bus.
5839 008	BCR Mode	Sets the BCR (Broadcast Channel Register) setting for the Auto Node operation for the standard IEEE1394 bus for when IRM is not in use. Three settings are available: 00, 01, 11.
5839 009	IRM 1394a Check	Determines whether an IRM check for IEEE 1394 is conducted for the Auto Node when IRM is not used.
5839 010	Unique ID	Enables the “Node_Unique_Id” setting for enumeration on the standard IEEE 1394 bus.
5839 011	Logout	Determines how successive initiator login in requests are handled during login in for SBP-2.
5839 012	Login	Enables or disables exclusive login for SBP-2.
5839 013	Login MAX	Sets the limit for the number of logins for SBP-2. Range: 1 ~ 62.

1.7 USB 2.0 (B525)



B548I104.WMF

⚠CAUTION

Unplug the main machine power cord before starting the following procedure.

NOTE: To install the USB 2.0 option, the Printer Option must be installed first. (☛1.2.2) Only one slot is available for the interface option. You can install only one printer interface option at a time: IEEE 1394, USB 2.0, IEEE 802.11b, or Bluetooth.

1. Remove the controller board and HDD unit (☛1.2.1).
2. Remove the cover [A] (🔩 x 2). Save these screws.
3. Attach the IEEE 1394 board [B] to the controller board [C] (🔩 x 2). Use the screws you removed in Step 2.
4. Re-install the HDD and re-install the controller board.
5. Execute SP5990 5 to print a Self-Diagnostic Report with the system settings and confirm that the machine correctly recognizes the interface.

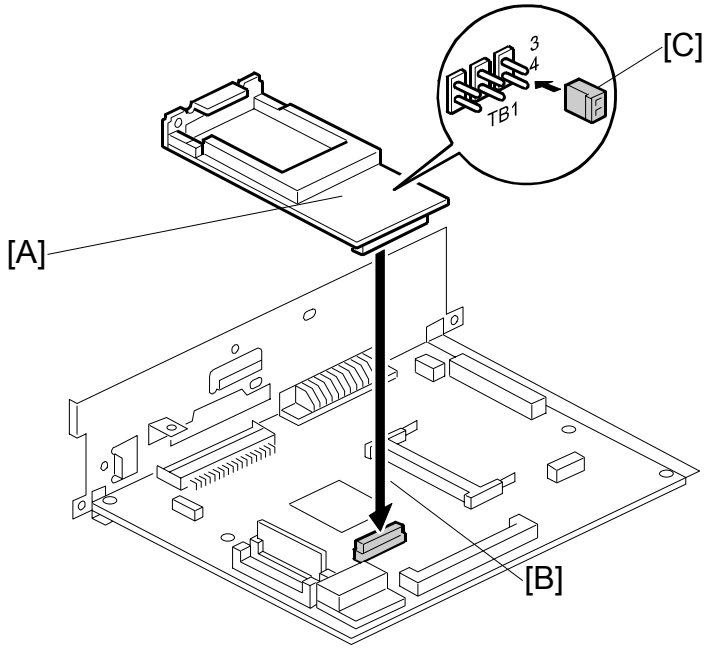
USB SP Settings

The following SP commands are available. However, only one setting may require adjustment and this setting should be performed only if the customer is experiencing USB data transmission errors.

NOTE: Do not change the settings marked “DFU”. These settings are for design and factory use only.

SP No.	Name	Function	
5844 001	Transfer Rate	Adjusts the USB transfer rate. Do not change the setting unless there is a data transfer error using the USB high speed mode.	
		HS/FS:	High speed/Full speed auto adjust (480Mbps/12Mbps)
		FS:	Full speed (12Mbps fixed)
5844 002	Vendor ID	Displays the vendor ID. **DFU**	
5844 003	Product ID	Displays the product ID. **DFU**	
5844 004	Dev. Release Num	Displays the development release version number. **DFU**	

1.8 IEEE 802.11B B515 (WIRELESS LAN)

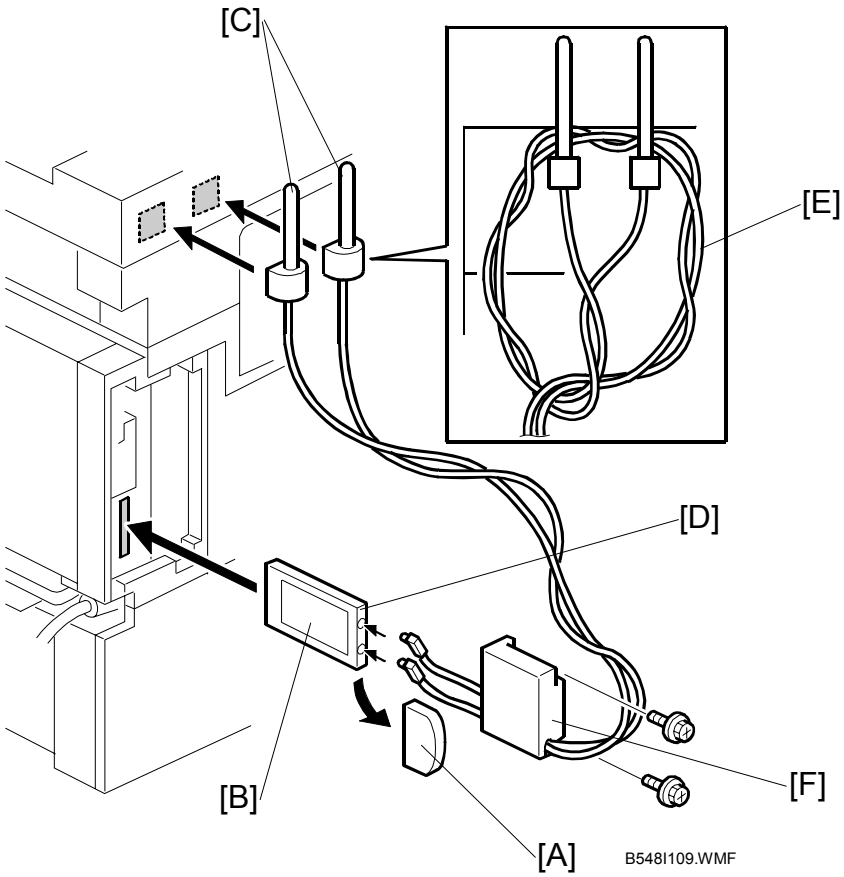


⚠CAUTION

Unplug the main machine power cord before starting the following procedure.

NOTE: To install the IEEE 801.11b option, the Printer Option B548 must be installed first. (☛1.2.2) Only one slot is available for the interface option. You can install only one printer interface option at a time: IEEE 1394, USB 2.0, or IEEE 802.11b.

1. Remove the controller board and HDD unit (☛1.2.1).
2. Remove the slot cover (🔩 x 2). Save these screws.
3. Attach the IEEE 801.11b board [A] to the controller board [B] (🔩 x 2). Use the screws you removed in Step 2.
4. Set the jumper [C] between pins 3 and 4.
5. Re-install the HDD and re-install the controller board.



6. Pull off the edge connector protector [A] off the card and discard it.
7. With the card label facing left, insert the card [B] into the PCI slot.
8. Use the Velcro pads to install the antennas [C] on the left rear corner of the machine.
   NOTE: The antennas should be separated by at least 40 ~ 60 mm (1.5~2.5”). Always detach the antennas from the corners of the machine and disconnect them before moving the machine.
9. Connect the antennas to the terminals [D].
10. Coil the cables [E] and hang them over the antennas as shown.
11. Attach the cover [F] (x2).
12. If reception is poor, you may need to move the machine:
    - Make sure that the machine is not located near an appliance or any type of equipment that can generate a strong magnetic field.
    - Position the machine as close as possible to the access point.

UP Mode Settings for Wireless LAN

Enter the UP mode and follow the procedure below to perform the initial interface settings for IEEE 802.11b. These settings take effect every time the machine is powered on.

NOTE: The wireless LAN cannot be used if Ethernet is being used.

1. Press the User Tools/Counter key.
2. On the touch panel, press System Settings.
   NOTE: The Network I/F (default: Ethernet) must be set for either Ethernet or wireless LAN.
3. Select Interface Settings ➔ Network (tab) ➔ Network I/F Settting
4. Select either “Ethernet” or “IEEE 802.11b”.
5. Press IEEE 802.11b. Only the wireless LAN options are displayed.
6. **Transmission Mode**. Select either “Ad Hoc Mode” or “Infrastructure Mode”.
7. **SSID Setting**. Enter the SSID setting. (The setting is case sensitive.)
8. **Channel**. This setting is required when Ad Hoc Mode is selected.
   Range: 1 ~ 14 (default: 11)
   NOTE: The allowed range for the channel settings may vary for different countries.
9. **WEP (Privacy) Setting**. The WEP (Wired Equivalent Privacy) setting is designed to protect wireless data transmission. In order to unlock encoded data, the same WEP key is required on the receiving side. There are 64 bit and 128 bit WEP keys.

   Range of Allowed Settings:

64 bit	10 characters
128 bit	26 characters

10. **Bandwidth Status**. This setting is enabled only for the Infrastructure Mode. Press here to display the current status of the bandwidth. One of the following is displayed to reflect the reception status of the wireless LAN:

Good	76 ~ 100%
Fair	41 ~ 75%
Poor	21 ~ 40%
Unavailable	0 ~ 20%

11. **Transmission Speed**. Press the Next button to display more settings, then select the transmission speed for the mode: Auto, 11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps (default: Auto). This setting should match the distance between the closest machine or access point, depending on which mode is selected.
    NOTE: For the Ad Hoc Mode, this is the distance between the machine and the closest PC in the network. For the Infrastructure Mode, this is the distance between the machine and the closest access point.

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.)

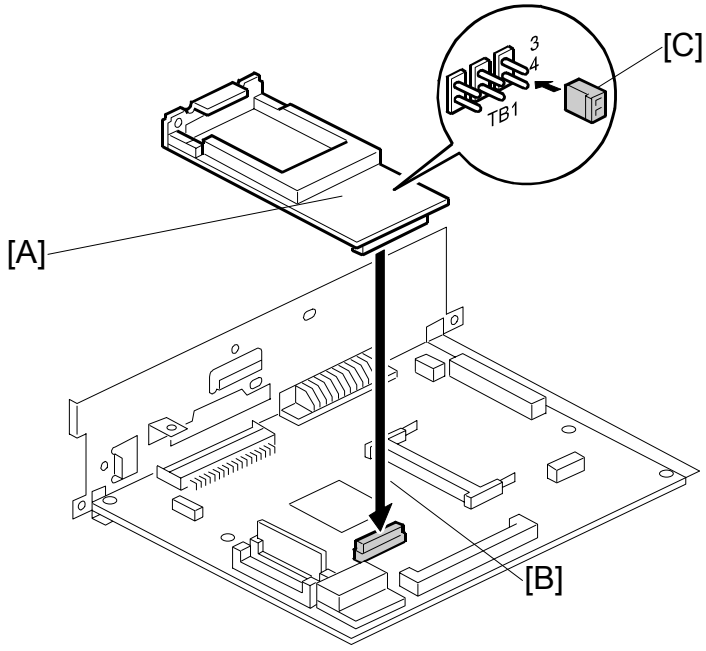
12. To initialize the wireless LAN settings, use page 2/2. Press Execute to initialize the following settings:
    - Transmission mode
    - Channel
    - Transmission Speed
    - WEP
    - SSID
    - WEP Key

SP Mode Settings for IEEE 802.11b Wireless LAN

The following SP commands can be set for IEEE 802.11b

SP No.	Name	Function
5840 004	SSID	Used to confirm the current SSID setting.
5840 006	Channel MAX	Sets the maximum range of the channel settings for the country.
5840 007	Channel MIN	Sets the minimum range of the channels settings allowed for your country.
5840 010	WEP Key	Used to confirm the current WEP key setting.
5840 011	WEP Key Select	Used to select the WEP key (Default: 00).
5840 020	WEP Mode	Used to display the maximum length of the string that can be used for the WEP Key entry.

1.9 BLUETOOTH (G354-04)



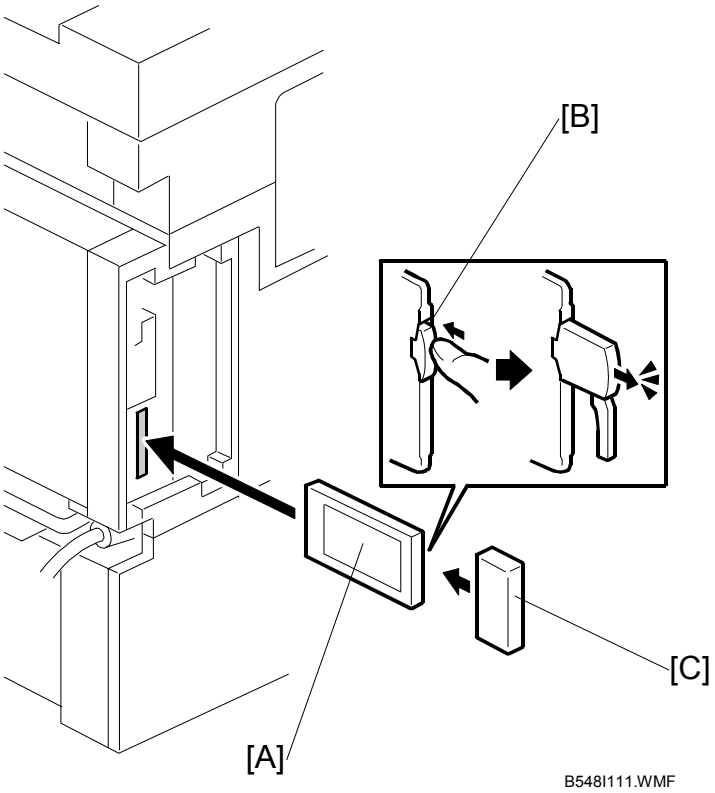
B548I108.WMF

⚠CAUTION

Unplug the main machine power cord before starting the following procedure.

NOTE: To install the Bluetooth option, the Printer Option B548 must be installed first. (☛1.2.2) Only one slot is available for the interface option. You can install only one printer interface option at a time: IEEE 1394, USB 2.0, or IEEE 802.11b, or Bluetooth.

1. Remove the controller board and HDD unit (☛1.2.1).
2. Remove the slot cover (🔩 x 2). Save these screws.
3. Attach the Bluetooth board [A] to the controller board [B] (🔩 x 2). Use the screws you removed in Step 2.
4. Set the jumper [C] between pins 3 and 4.
5. Re-install the HDD and re-install the controller board.



6. Insert the Bluetooth card [A] into the slot.
7. Press the antenna [B] to extend it.
8. Attach the antenna cap [C].

1.10 CHECK ALL CONNECTIONS

1. Plug in the power cord and turn on the main switch.
2. Enter the printer user mode and print the configuration page.

   User Tools> Printer Settings> List Test Print> Config. Page

   NOTE: The same data can also be printed by executing SP1-004 – Print Summary. All installed options are listed in the “System Reference” column.

3. SERVICE TABLES

3.1 SCANNER SERVICE MODE

3.1.1 SCANNER PROGRAM MODE TABLE

Service Table Key

Notation:	What it means
[range / **default** / step]:	Example: [-9 ~ +9 / **+3.0** / 0.1 mm step]. The setting can be adjusted in the range ±9, value reset to +3.0 after an NVRAM reset, and the value can be changed in 0.1 mm steps with each key press.
Italics:	Comments added for your reference.
*:	This value is stored in NVRAM. After a RAM reset, the default value (factory setting) is restored.
DFU:	Denotes "Design or Factory Use". Do not change this value.

SP1	Mode Number		Function and [Setting]
1001	1	Model Name	Displays the model name.
	2	Scanner Firmware Version	Displays the scanner firmware version.
	3	Scanner Firmware Number	Displays the firmware's part number.
	4	Detail Model Name	Displays the detail model name.
1002		Error Log Display	Displays the error log data.
1004*		Compression Type	Selects the compression type for binary picture processing. [1: **MH**, 2: MR, 3: MMR]
1005*		Erase Margin	Creates an erase margin for all edges of the scanned image. *If the machine has scanned the edge of the original, create a margin.* [0 – 5 / **0mm** / 1mm step]
1006*		Auto Reset Timer	Adjusts the auto reset timer for the scanner function. *If this is "0", the auto reset function is disabled.* [0, 10 – 999 / **60s** / 1s step]
1007		Store Priority	**1: Send** 2:Store Only 3: Send & Store

SP2	Mode Number		Function and [Setting]
2002	**[Text (Print) Mode Settings]**		
	1*	MTF Filter Coefficient (Main scan)	Selects the MTF filter coefficient in the main scan direction for Text mode. *Select a higher number for a stronger filter.* *If this is "0", the MTF filter is not applied.* [0-13 / **8** / 1 step]
	2*	MTF Filter Coefficient (Sub scan)	As above, for sub scan [0-13 / **8** / 1 step]
	3*	MTF Filter Strength (Main scan)	Selects the MTF filter strength in the main scan direction for Text mode. *Select a higher number for a stronger filter.* [0-7 / **3** / 1 step]
	4*	MTF Filter Strength (Sub scan)	As above, for sub scan [0-7 / **3** / 1 step]
	5*	Smoothing Filter	Selects the smoothing pattern for Text mode when using binary picture processing mode. *A larger value could cause moiré to appear in the image.* [0-7 / **0** / 1 step]
	6*	Scanner Gamma	Selects the scanner gamma type for Text mode when using binary picture processing mode. [0-11 / **4** / 1 step]
	7*	Brightness – Notch 7	Adjusts the image density for each image density level for Text mode when using binary picture processing mode. [0-255 / **128** / 1 step]
	8*	Contrast – Notch 7	[0-255 / **128** / 1 step]
	9*	Threshold Level – Notch 7	[0-255 / **128** / 1 step]
	10*	Brightness – Notch 6	[0-255 / **128** / 1 step]
	11*	Contrast – Notch 6	[0-255 / **128** / 1 step]
	12*	Threshold Level – Notch 6	[0-255 / **128** / 1 step]
	13*	Brightness – Notch 5	[0-255 / **128** / 1 step]
	14*	Contrast – Notch 5	[0-255 / **128** / 1 step]
	15*	Threshold Level – Notch 5	[0-255 / **128** / 1 step]
	16*	Brightness – Notch 4	[0-255 / **128** / 1 step]
	17*	Contrast – Notch 4	[0-255 / **128** / 1 step]
	18*	Threshold Level – Notch 4	[0-255 / **128** / 1 step]
	19*	Brightness – Notch 3	[0-255 / **128** / 1 step]
	20*	Contrast – Notch 3	Adjusts the image density for each image density level for Text mode when using binary picture processing mode. [0-255 / **128** / 1 step]
	21*	Threshold Level – Notch 3	[0-255 / **128** / 1 step]
	22*	Brightness – Notch 2	[0-255 / **128** / 1 step]
	23*	Contrast – Notch 2	[0-255 / **128** / 1 step]
	24*	Threshold Level – Notch 2	[0-255 / **128** / 1 step]
	25*	Brightness – Notch 1	[0-255 / **128** / 1 step]
	26*	Contrast – Notch 1	[0-255 / **128** / 1 step]
	27*	Threshold Level – Notch 1	[0-255 / **128** / 1 step]

SP2	Mode Number		Function and [Setting]
2002	28*	Independent Dot Erase	Selects the independent dot erase level. *With a larger SP setting, more dots are detected as independent dots and erased.* *If this is "0", independent dot erase is disabled.* [0-7 / **0** / 1 step]
	29*	Unevenness correction	Selects whether the unevenness correction is done. *This function is like an FCI function. If this is "1", the edges of characters in scanned images will be smoothed.* [**0: OFF**, 1: ON]
2003	**[Text (OCR) Mode Settings]**		
	1*	MTF Filter Coefficient (Main scan)	Selects the MTF filter coefficient in the main scan direction for Text (OCR) mode. *Select a higher number for a stronger filter.* *If this is "0", the MTF filter is not applied.* [0-13 / **3** / 1 step]
	2*	MTF Filter Coefficient (Sub scan)	As above, for sub scan [0-13 / **3** / 1 step]
	3*	MTF Filter Strength (Main scan)	Selects the MTF filter strength in the main scan direction for Text (OCR) mode. *Select a higher number for a stronger filter.* [0-7 / **0** / 1 step]
	4*	MTF Filter Strength (Sub scan)	As above, for sub scan [0-7 / **4** / 1 step]
	5*	Smoothing Filter	Selects the smoothing pattern for Text (OCR) mode when using binary picture processing mode. *A larger value could cause moiré to appear in the image.* [0-7 / **0** / 1 step]
	6*	Scanner Gamma	Selects the scanner gamma type for Text (OCR) mode when using binary picture processing mode. [0-11 / **5** / 1 step]
	7*	Brightness – Notch 7	Adjusts the image density for each image density level for Text (OCR) mode when using binary picture processing mode. [0-255 / **128** / 1 step]
	8*	Contrast – Notch 7	[0-255 / **128** / 1 step]
	9*	Threshold Level – Notch 7	[0-255 / **240** / 1 step]
	10*	Brightness – Notch 6	[0-255 / **128** / 1 step]
	11*	Contrast – Notch 6	[0-255 / **128** / 1 step]
	12*	Threshold Level – Notch 6	[0-255 / **150** / 1 step]
	13*	Brightness – Notch 5	[0-255 / **128** / 1 step]
	14*	Contrast – Notch 5	[0-255 / **128** / 1 step]
	15*	Threshold Level – Notch 5	[0-255 / **65** / 1 step]
	16*	Brightness – Notch 4	[0-255 / **128** / 1 step]
	17*	Contrast – Notch 4	[0-255 / **128** / 1 step]
	18*	Threshold Level – Notch 4	[0-255 / **30** / 1 step]

SP2	Mode Number		Function and [Setting]
2003	19*	Brightness – Notch 3	[0-255 / **128** / 1 step]
	20*	Contrast – Notch 3	Adjusts the image density for each image density level for Text (OCR) mode when using binary picture processing mode. [0-255 / **128** / 1 step]
	21*	Threshold Level – Notch 3	[0-255 / **17** / 1 step]
	22*	Brightness – Notch 2	[0-255 / **128** / 1 step]
	23*	Contrast – Notch 2	[0-255 / **10** / 1 step]
	24*	Threshold Level – Notch 2	[0-255 / **128** / 1 step]
	25*	Brightness – Notch 1	[0-255 / **128** / 1 step]
	26*	Contrast – Notch 1	[0-255 / **128** / 1 step]
	27*	Threshold Level – Notch 1	[0-255 / **2** / 1 step]
	28*	Independent Dot Erase	Selects the independent dot erase level. *With a larger SP setting, more dots are detected as independent dots and erased.* *If this is "0", independent dot erase is disabled.* [0-7 / **4** / 1 step]
	29*	Unevenness correction	Selects whether the unevenness correction is done. *This function is like an FCI function. If this is "1", the edges of characters in scanned images will be smoothed.* [**0: OFF**, 1: ON]
2004	**[Text/Photo Mode Settings]**		
	1*	MTF Filter Coefficient (Main Scan)	Selects the MTF filter coefficient in the main scan direction for Text/Photo mode. *Select a higher number for a stronger filter.* *If this is "0", the MTF filter is not applied.* [0-13 / **2** / 1 step]
	2*	MTF Filter Coefficient (Sub Scan)	As above, for sub scan [0-13 / **2** / 1 step]
	3*	MTF Filter Strength (Main Scan)	Selects the MTF filter strength in the main scan direction for Text/Photo mode. *Select a higher number for a stronger filter.* [0-7 / **4** / 1 step]
	4*	MTF Filter Strength (Sub Scan)	As above, for sub scan [0-7 / **4** / 1 step]
	5*	Smoothing Filter	Selects the smoothing pattern for Text/Photo mode when using binary picture processing mode. *A larger value could cause moiré to appear in the image.* [0-7 / **0** / 1 step]
	6*	Scanner Gamma	Selects the scanner gamma type for Text/Photo mode when using binary picture processing mode. [0-11 / **6** / 1 step]
	7*	Brightness – Notch 7	Adjusts the image density for each image density level for Text/Photo mode when using binary picture processing mode. [0-255 / **128** / 1 step]

SP2	Mode Number		Function and [Setting]
2004	8*	Contrast – Notch 7	[0-255 / **128** / 1 step]
	9*	Threshold Level – Notch 7	[0-255 / **128** / 1 step]
	10*	Brightness – Notch 6	[0-255 / **128** / 1 step]
	11*	Contrast – Notch 6	[0-255 / **128** / 1 step]
	12*	Threshold Level – Notch 6	[0-255 / **128** / 1 step]
	13*	Brightness – Notch 5	[0-255 / **128** / 1 step]
	14*	Contrast – Notch 5	[0-255 / **128** / 1 step]
	15*	Threshold Level – Notch 5	[0-255 / **128** / 1 step]
	16*	Brightness – Notch 4	[0-255 / **128** / 1 step]
	17*	Contrast – Notch 4	[0-255 / **128** / 1 step]
	18*	Threshold Level – Notch 4	[0-255 / **128** / 1 step]
	19*	Brightness – Notch 3	[0-255 / **128** / 1 step]
	20*	Contrast – Notch 3	[0-255 / **128** / 1 step]
	21*	Threshold Level – Notch 3	[0-255 / **128** / 1 step]
	22*	Brightness – Notch 2	[0-255 / **128** / 1 step]
	23*	Contrast – Notch 2	[0-255 / **128** / 1 step]
	24*	Threshold Level – Notch 2	[0-255 / **128** / 1 step]
	25*	Brightness – Notch 1	[0-255 / **128** / 1 step]
	26*	Contrast – Notch 1	[0-255 / **128** / 1 step]
	27*	Threshold Level – Notch 1	[0-255 / **128** / 1 step]
2005	**[Photo Mode Settings]**		
	1*	MTF Filter Coefficient (Main Scan)	Selects the MTF filter coefficient in the main scan direction for Photo mode. *Select a higher number for a stronger filter.* *If this is "0", the MTF filter is not applied.* [0-13 / **0** / 1 step]
	2*	MTF Filter Coefficient (Sub Scan)	As above, for sub scan [0-13 / **0** / 1 step]
	3*	MTF Filter Strength (Main Scan)	Selects the MTF filter strength in the main scan direction for Photo mode. *Select a higher number for a stronger filter.* [0-7 / **0** / 1 step]
	4*	MTF Filter Strength (Sub Scan)	As above, for sub scan [0-7 / **0** / 1 step]
	5*	Smoothing Filter	Selects the smoothing pattern for Photo mode when using binary picture processing mode. *A larger value could cause moiré to appear in the image.* [0-7 / **7** / 1 step]
	6*	Scanner Gamma	Selects the scanner gamma type for Photo mode when using binary picture processing mode. [0-11 / **7** / 1 step]
	7*	Dither Matrix Filter	Selects the dither matrix type for Photo mode when using binary picture processing mode. [1-11 / **5** / 1 step]
	8*	Brightness – Notch 7	Adjusts the image density for each image density level for Photo mode when using binary picture processing mode. [0-255 / **128** / 1 step]

SP2	Mode Number		Function and [Setting]
2005	9*	Contrast – Notch 7	[0-255 / **128** / 1 step]
	10*	Threshold Level – Notch 7	[0-255 / **128** / 1 step]
	11*	Brightness – Notch 6	[0-255 / **128** / 1 step]
	12*	Contrast – Notch 6	[0-255 / **128** / 1 step]
	13*	Threshold Level – Notch 6	[0-255 / **128** / 1 step]
	14*	Brightness – Notch 5	[0-255 / **128** / 1 step]
	15*	Contrast – Notch 5	[0-255 / **128** / 1 step]
	16*	Threshold Level – Notch	**Not available.** [0-255 / **128** / 1 step]
	17*	Brightness – Notch 4	[0-255 / **128** / 1 step]
	18*	Contrast – Notch 4	Adjusts the image density for each image density level for Photo mode when using binary picture processing mode. [0-255 / **128** / 1 step]
	19*	Threshold Level – Notch 4	[0-255 / **128** / 1 step]
	20*	Brightness – Notch 3	[0-255 / **128** / 1 step]
	21*	Contrast – Notch 3	[0-255 / **128** / 1 step]
	22*	Threshold Level – Notch 3	[0-255 / **128** / 1 step]
	23*	Brightness – Notch 2	[0-255 / **128** / 1 step]
	24*	Contrast – Notch 2	[0-255 / **128** / 1 step]
	25*	Threshold Level – Notch 2	[0-255 / **128** / 1 step]
	26*	Brightness – Notch 1	[0-255 / **128** / 1 step]
	27*	Contrast – Notch 1	[0-255 / **128** / 1 step]
	28*	Threshold Level – Notch 1	[0-255 / **128** / 1 step]
2006	**[Grayscale Mode Settings]**		
	1*	MTF Filter Coefficient	Selects the MTF filter coefficient in the main scan direction when using grayscale processing mode. *Select a higher number for a stronger filter.* *If this is "0", the MTF filter is not applied* [0-15 / **0** / 1 step]
	2*	MTF Filter Coefficient	As above, for sub scan [0-13 / **0** / 1 step]
	3*	MTF Filter Strength (Main Scan)	Selects the MTF filter strength in the main scan direction when using grayscale processing mode. *Select a higher number for a stronger filter.* [0-7 / **0** / 1 step]
	4*	MTF Filter Strength (Sub scan)	As above, for sub scan [0-7 / **0** / 1 step]
	5*	Smoothing Filter	Selects the smoothing pattern when using grayscale processing mode. *A larger value could cause moiré to appear in the image.* [0-7 / **0** / 1 step]
	6*	Scanner Gamma	Selects the scanner gamma type when using grayscale processing mode. [0-6 / **3** / 1 step]

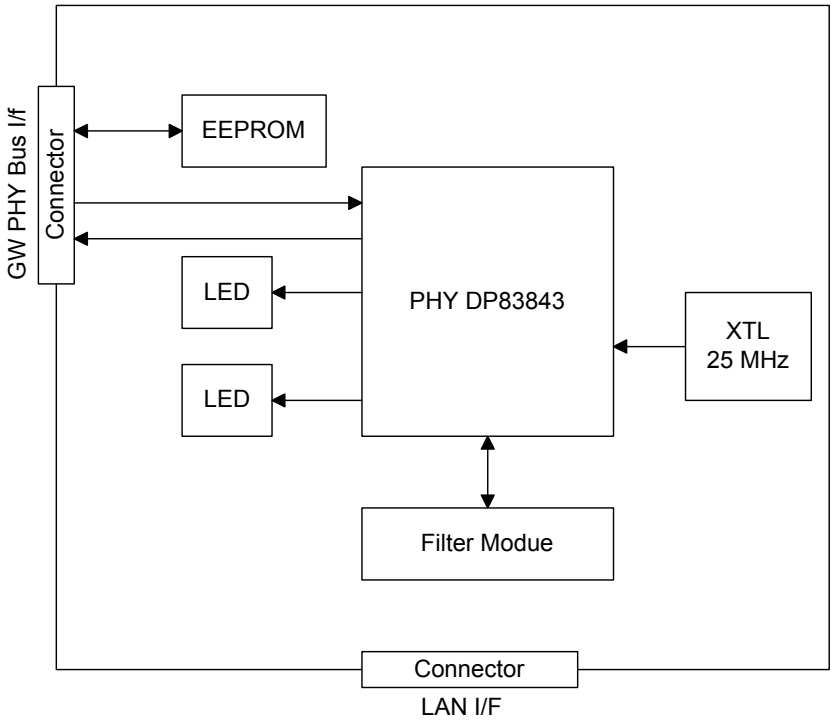
SP2	Mode Number		Function and [Setting]
2006	7*	Brightness – Notch 7	Adjusts the image density for each image density level when using the grayscale processing mode. [0-255 / **98** / 1 step]
	8*	Contrast – Notch 7	[0-255 / **98** / 1 step]
	9*	Threshold Level – Notch 7	**Not available.** [0-255 / **98** / 1 step]
	10*	Brightness – Notch 6	[0-255 / **108** / 1 step]
	11*	Contrast – Notch 6	[0-255 / **108** / 1 step]
	12*	Threshold Level – Notch 6	**Not available.** [0-255 / **108** / 1 step]
	13*	Brightness – Notch 5	[0-255 / **118** / 1 step]
	14*	Contrast – Notch 5	[0-255 / **118** / 1 step]
	15*	Threshold Level – Notch 5	**Not available.** [0-255 / **118** / 1 step]
	16*	Brightness – Notch 4	[0-255 / **128** / 1 step]
	17*	Contrast – Notch 4	[0-255 / **128** / 1 step]
	18*	Threshold Level – Notch 4	**Not available.** [0-255 / **128** / 1 step]
	19*	Brightness – Notch 3	[0-255 / **138** / 1 step]
	20*	Contrast – Notch 3	[0-255 / **138** / 1 step]
	21*	Threshold Level – Notch 3	**Not available.** [0-255 / **138** / 1 step]
	22*	Brightness – Notch 2	[0-255 / **148** / 1 step]
	23*	Contrast – Notch 2	[0-255 / **148** / 1 step]
	24*	Threshold Level – Notch 2	**Not available.** [0-255 / **148** / 1 step]
	25*	Brightness – Notch 1	[0-255 / **158** / 1 step]
	26*	Contrast – Notch 1	[0-255 / **158** / 1 step]
	27*	Threshold Level – Notch 1	**Not available.** [0-255 / **158** / 1 step]
2007	1*	Compression Ratio (Normal image)	Selects the compression ratio for grayscale processing mode. *For a lower compression rate, input a smaller value.* [5-95 / **50** / 1 step]
	2*	Compression Ratio (High Quality image)	[5-95 / **60** / 1 step]
	3*	Compression Ratio (Low Quality image)	[5-95 / **40** / 1 step]

SP9	Mode Number		Function and [Setting]
9001	1	Sysop	Bit switches for debugging. **DFU**
	2	Dapp	
	3	Rapp	
	4	Ui	
	5	Nas	
	6	Miw	
	7	Djm	
	8	Hpim	
	9	mib	

4. DETAILS

4.1 ETHERNET BOARD

4.1.1 ETHERNET BOARD LAYOUT



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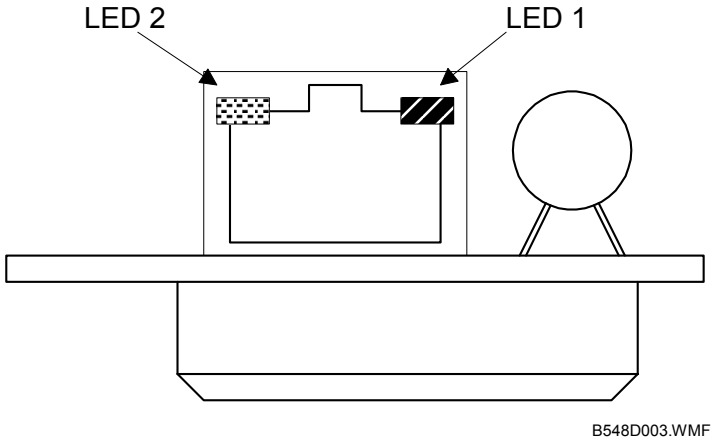
The Ethernet board is provided as a standard feature of this machine.

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.

4.1.2 ETHERNET BOARD 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

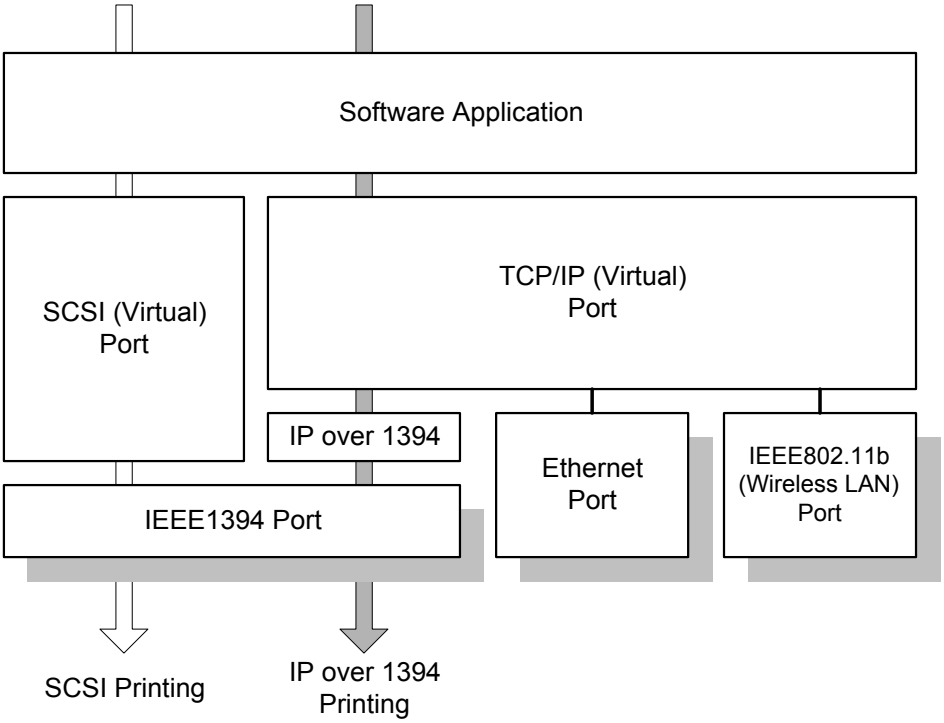
4.2 IEEE1394 BOARD (FIREWIRE)

4.2.1 OVERVIEW

An IEEE1394 interface board is available as an option for this machine to provide high speed connectivity through what is commonly called Firewire or i.LINK (Sony). Some important advantages of Firewire are:

- High speed data transmission at 400 Mbps.
- Easier connectivity (many devices can be connected without a host).
- Devices in a computer can be connected to external devices on a shared bus.

IEEE1394 supports two printing methods: 1) SCSI Print, and 2) IP Over 1394. IP Over 1394 supports printing by setting an IP address, and SCSI supports printing without an IP address.



B548D902.WMF

NOTE: 1) Windows Me and Windows XP support IP over 1394.
2) Windows XP and 2000 support IEEE1394 SCSI printing.

When the host computer powers up, it queries all the devices connected to the bus and assigns each one an address, a process called enumeration. Here are some general features of Firewire:

- Firewire is Plug-and-Play.
- Firewire devices are hot pluggable (they can be plugged while the system is operating).
- Firewire uses 64-bit fixed addressing, based on the IEEE 1212 standard. There are three parts to each packet of information sent by a device over FireWire:
  - 10-bit Bus ID. Used to determine the Firewire bus where the data came from.
  - 6-bit Physical ID. Used to identify the device that sent the data.
  - 48-bit Storage Area. Capable of addressing 256 terabytes of information for each node
- The Bus ID and Physical ID comprise the 16-bit Node ID. 64,000 nodes are allowed on each system.
- Up to 16 hops are allowed (4.5 m/hop) for a total of 72 meters devices are daisy-chained.
- Firewire allows its devices to draw power from the Firewire connection. Two power connectors in the cable can supply power (8 to 40 V, 1.5 amp max.)
- An important element of Firewire is its support of isochronous devices. When isochronous devices are in the isochronous mode, data streams between the device and the host in real time with guaranteed bandwidth and no error correction. Essentially, this means that a device like a digital camcorder can request that the host computer allocate enough bandwidth for the camcorder to send uncompressed video in real time to the computer. The camera can sent data via the Firewire connection in a steady flow to the computer without anything disrupting the process. This is one of the main reasons why 1394 has been widely adopted by the consumer electronics industry.

4.3 USB

4.3.1 SPECIFICATIONS

USB connectivity is provided as an option for this machine.

Interface:	USB 1.1, USB 2.0
Data rates:	480 Mbps (high speed), 12 Mbps (full speed), 1.5 Mbps (low speed) High speed mode is only supported by USB 2.0.

4.3.2 USB 1.1/2.0

USB (Universal Serial Bus) offers simple connectivity for computers, printers, keyboards, and other peripherals. In a USB environment, terminators, device IDs (like SCSI), and DIP switch settings are not necessary.

USB 1.1 provides the following features:

- Plug & Play. As soon as a new device is connected via USB, the operating system recognizes it, and the appropriate driver is installed for it automatically if the driver is available. If the driver is not available, a message prompts the user for the driver disk for immediate installation.
- Hot swapping (cables can be connected and disconnected while the computer and other devices are switched on)
- No terminator or device ID required
- Data rates of 12 Mbps (full speed), and 1.5 Mbps (low speed)
- Common connectors for different devices
- Bi-directional data communication between device and host computer via a 4-byte header and DEVICE ID.

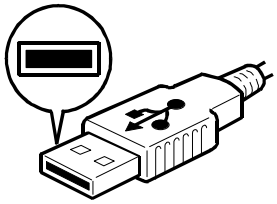
USB 2.0 is an evolution of the USB 1.1 specification. It uses the same cables, connectors, and software interfaces so the user will see no change. It provides an easy-to-use connection to a wide range of products with a maximum data rate of 480Mbps (high speed).

Up to 127 devices can be connected and 6 cascade connections are allowed. Power is supplied from the computer and the maximum cable length is 5 m.

4.3.3 USB CONNECTORS

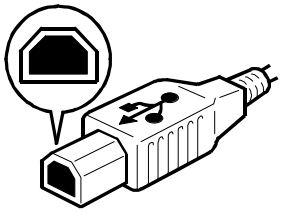
USB is a serial protocol and a physical link, which transmits all data on a single pair of wires. Another pair provides power to downstream peripherals. The USB standard specifies two types of connectors, type “A” connectors for upstream connection to the host system, and type “B” connectors for downstream connection to the USB device.

Type “A” connector



B548D904.WMF

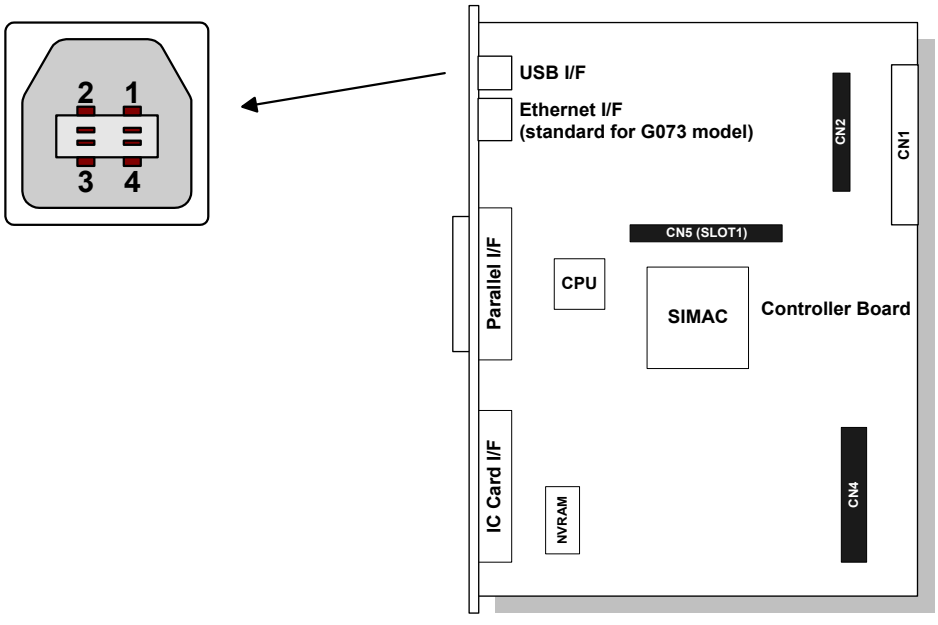
Type “A” connector



B548D905.WMF

4.3.4 PIN ASSIGNMENT

The controller has a type “B” receptacle (CN10).



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Pin No.	Signal Description	Wiring Assignment
1	Power	Red
2	Data –	White
3	Data +	Green
4	Power GND	White

4.3.5 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.

4.4 IEEE 802.11B (WIRELESS LAN)

4.4.1 SPECIFICATIONS

The IEEE 802.11b wireless LAN interface card is available as an option for this machine.

A wireless LAN is a flexible data communication system used to extend or replace a wired LAN. Wireless LAN employs radio frequency technology to transmit and receive data over the air and minimize the need for wired connections.

- With wireless LANs, users can access information on a network without looking for a place to plug into the network.
- Network managers can set up or expand networks without installing or moving wires.
- Most wireless LANs can be integrated into existing wired networks. Once installed, the network treats wireless nodes like any other physically wired network component.
- Flexibility and mobility make wireless LANs both effective extensions of and attractive alternatives to wired networks.

Standard applied:	IEEE802.11b	
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.)
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.

LED Indicators

LED	Description	ON	OFF
LED 1 (Green)	Link Status	Linked	No Link
LED 2 (Orange)	Power Distribution	Power On	Power Off

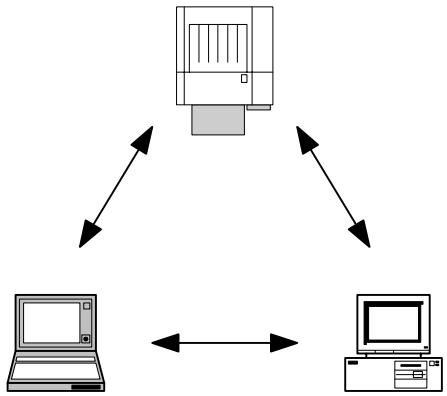
4.4.2 TRANSMISSION MODES

Wireless communication has two modes: 1) ad hoc mode, and 2) infrastructure mode.

Ad Hoc Mode

The ad hoc mode allows communication between each device (station) in a simple peer-to-peer network. In this mode, all devices must use the same channel to communicate. In this machine, the default transmission mode is ad hoc mode and the default channel is 11. First, set up the machine in ad hoc mode and program the necessary settings, even if the machine will be used in the infrastructure mode.

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



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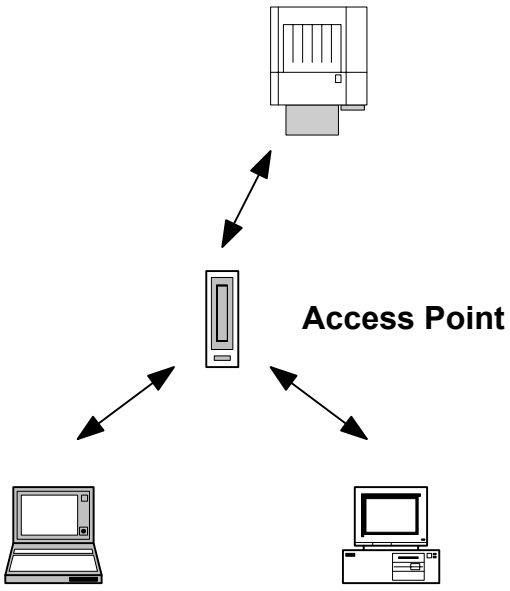
Infrastructure Mode

The infrastructure mode allows communication between each computer and the printer via an access point equipped with an antenna and wired into the network. This arrangement is used in more complex topologies. The wireless LAN client must use the same SSID (Service Set ID) as the access point in order to communicate.



B548D908.WMF

4.4.3 SECURITY FEATURES

SSID (Service Set ID)
The SSID is used by the access point to recognize the client and allow access to the network. Only clients that share the same SSID with the access point can access the network.

NOTE: 1) If the SSID is not set, clients connect to the nearest access point.
2) The SSID can be set using the web status monitor or telnet.

Using the SSID in Ad hoc mode

When the SSID is used in ad hoc mode and nothing is set, the machine automatically uses “ASSID” as the SSID. In such a case, “ASSID” must also be set at the client.

NOTE: SSID in ad hoc mode is sometimes called “Network Name.”

Some devices automatically change from ad hoc mode to infrastructure mode when the same SSID is used in ad hoc mode and infrastructure mode. In such a case, to use the device in ad hoc mode, use a specified SSID in infrastructure mode and use “ASSID” in the ad hoc mode.

WEP (Wired Equivalent Privacy)
WEP is a coding system designed to protect wireless data transmission. In order to unlock encoded data, the same WEP key is required on the receiving side. There are 64 bit and 128 bit WEP keys. However, this machine supports only 64 bit WEP.

NOTE: The WEP key can be set using the Web Status Monitor or Telnet.

MAC Address
When the infrastructure mode is used, access to the network can also be limited at the access points using the MAC address. This setting may not be available with some types of access points.

4.4.4 WIRELESS LAN 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.

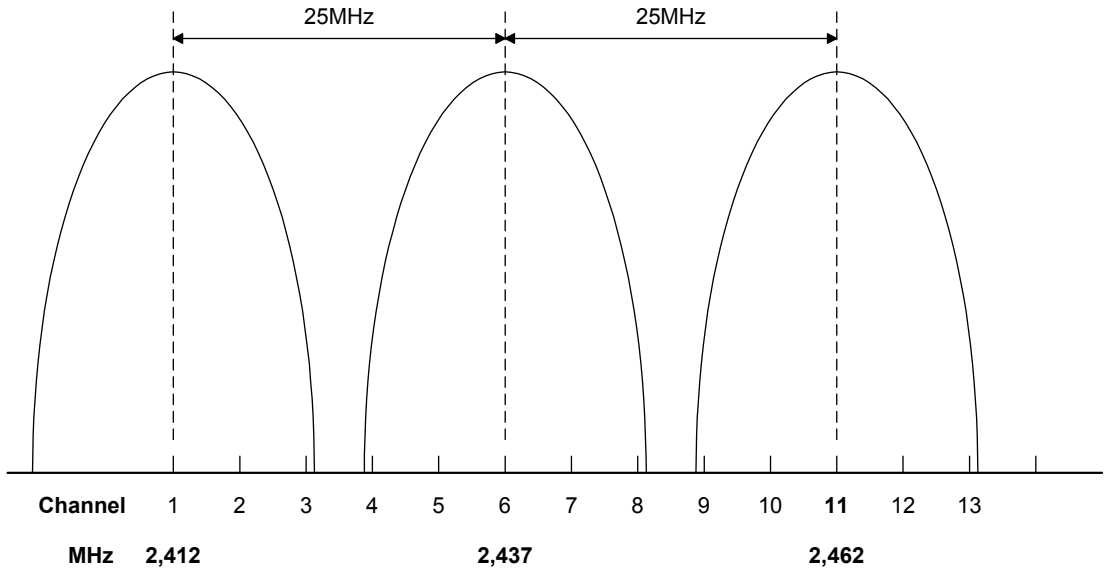
Status Display	Communication Status
Good	76 ~ 100
Fair	41 ~ 75
Poor	21 ~ 40
Unavailable	0 ~ 20

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

Channel Settings

If a communication error occurs because of electrical noise, interference with other electrical devices, etc., you may have to change the channel settings.

To avoid interference with neighboring channels, it is recommended to change by 3 channels. For example, if there are problems using channel 11 (default), try using channel 8.



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: Host Interface menu - Network Setup - LAN Type.
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.

4.5 BLUETOOTH

4.5.1 SPECIFICATIONS

Bluetooth wireless provides radio links between mobile computers, mobile phones and other portable handheld devices.

Bluetooth contains the following features.

- Cheaper compared to the IEEE802.11b wireless LAN.
- Many protocols for infrared transmission (IrDA) can be used with Bluetooth.
- A Bluetooth device can connect to other Bluetooth devices without any settings.

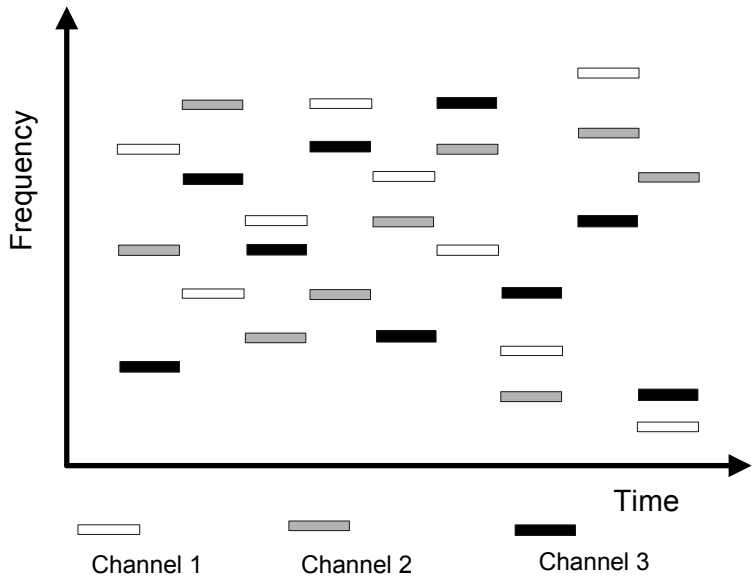
Standard applied: Bluetooth 1.1 (Bluetooth Special Interest Group)
Data transfer rates: 1 Mbps
Bandwidth: 2.4GHz Frequency Hopping Spread Spectrum (FHSS)

Piconet. Bluetooth devices communicate with each other device in the ad hoc mode. This network is called a "Piconet". A Piconet may contain a maximum of 8 Bluetooth devices.

There is one master device and seven slave devices in a Piconet. The master device controls the hopping frequency and timing, as well as storing the ID codes of the slave devices. The master and slave devices can be swapped. Once the master device leaves the Piconet, a slave device becomes the new master.

Machines with the Bluetooth option become potential slave devices to connect to the PC.

FHSS (Frequency Hopping Spread Spectrum). The Bluetooth device divides 2402 to 2480 MHz into 79 channels of 1 MHz width, and changes the channel 1600 times per second. If other devices in the LAN are using the same radio band, Bluetooth can avoid interference from the other devices.



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4.5.2 BLUETOOTH PROFILES

A Bluetooth device will not operate if it is located to close another Bluetooth device. However, the Bluetooth device should support the protocols to communicate with each other. There are many types of Bluetooth and service protocols. These are listed below.

Here are 14 profiles for Bluetooth as follows.

- Generic Access Profile
- Service Discovery Profile
- Cordless Telephony Profile
- Intercom Profile
- Serial Port Profile
- Headset Profile
- Dial-up Networking Profile
- Fax Profile
- LAN Access Profile
- Generic Object Exchange Profile
- Object Push Profile
- File Transfer Profile
- Synchronization Profile
- Hardcopy Cable Replacement Profile

Serial Port Profile (SPP) and Hardcopy Cable Replacement Profile (HCRP) are used for the printer products.

SPP is used is place of the serial port, while HCRP is used in place of the parallel port.

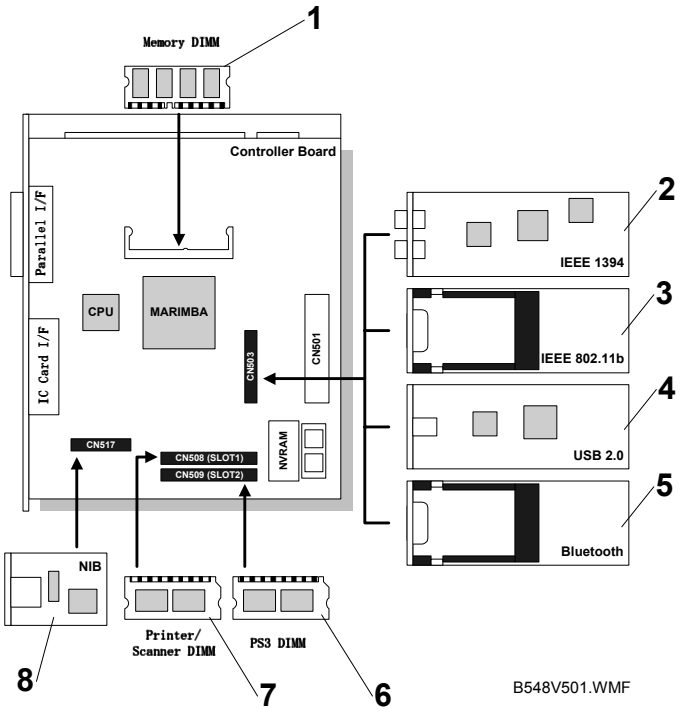
4.5.3 BLUETOOTH SECURITY FEATURES

Public and Private Mode. The PC can browse Bluetooth devices. The machine's default is public mode. The PC cannot browse the machine if it has been changed to private mode.

PIN Code (Personal Identification Number). When the PIN code is used, the PC connects to the device that sent the PIN code. The PIN code is a 4 digit number. This machine uses the last four digits of the machine's serial number. It cannot be changed.

SPECIFICATIONS

1. SYSTEM COMPONENTS



No.	Item	Machine Code	Remarks
1	Memory 128 MB	G331	
2	IEEE 1394	G336	Used in common with Model-MT
3	IEEE 802.11b Wireless LAN	B515	Used in common with the Model-MT
4	USB 2.0	B525-01	
5	Bluetooth	G354-04	Used in common with Model-MT
6	PostScript3	G354-17	
7	Printer/Scanner Module (ROM DIMM)	B548	Provided with NIB
8	NIB	B525-03	

NOTE: Of the optional host interface cards (2, 3, 4, and 5) only one can be installed.

2. LED INDICATORS

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

Spec.

3. PRINTER SPECIFICATIONS

Printing Speed:	Maximum 35 ppm (A4/LT LEF): B079 model Maximum 45 ppm (A4/LT LEF): B082 model
Printer Languages:	PCL6/PCL5e PostScript 3 (option) RPCS (Refined Printing Command Stream) - an original Ricoh PDL)
Resolution:	600 dpi (PCL 6/PCL5e/PS3/RPCS) 300 dpi (PCL5e/PS3/RPCS) 200 dpi (RPCS)
Resident Fonts:	PCL: 35 Intellifonts 10 True Type fonts PS3: 136 fonts (24 Type 2 fonts, 112 Type 14 fonts)
Host Interfaces:	Bi-directional IEEE1284 parallel x 1 (Standard) Ethernet (100 Base-TX/10 Base-T) (Option) IEEE1394 with SCSI Print and IP Over 1394 (Option) IEEE 802.11b Wireless LAN (Option) Bluetooth (Option) USB 2.0 (Option)
Network Protocols:	TCP/IP, IPX/SPX, NetBEUI, Apple Talk
Memory:	Maximum 192 MB (Standard 64 MB + 128 MB optional DIMM)

4. USB SPECIFICATIONS

USB connectivity is provided as an option for this machine.

Interface	USB 1.1, USB 2.0
Data rates	480 Mbps (high speed), 12 Mbps (full speed), 1.5 Mbps (low speed)
	High speed mode is only supported by USB 2.0.

5. IEEE 802.11B SPECIFICATIONS

Standard applied	IEEE802.11b	
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.)
Network protocols	TCP/IP, Apple Talk, NetBEUI, IPX/SPX	
Bandwidth	2.4GHz (divided over 14 channels, 2400 to 2497 MHz for each channel)	

6. SCANNER SPECIFICATIONS

Standard Scanner Resolution:	Main scan/Sub scan 600 dpi	
Available scanning Resolution Range:	100 ~ 1200 dpi;	When used as a Network TWAIN scanner.
	100, 200, 300, 400, 600 dpi;	When used as a network delivery scanner or for sending e-mail
Grayscales:	8 bits/pixel	
Scanning Speed Throughput:	0.8 sec./sheet (A4 LEF, 200 dpi without binary compression) 49 spm (A4 LEF, 200 dpi binary, MH)	
Interface:	Ethernet (100 Base-TX/10 Base-T for TCP/IP) IEEE 1394/IP Over IEEE 802.11b Wireless LAN	
Compression Method:	MH, MR, MMR (Binary Picture Processing) JPEG (Grayscale Processing)	
Video Memory Capacity:	36.6 MB	
Image Storage Capacity:	Number of originals per file: Maximum 2,000 pages Maximum of files: 3000 files	

7. SOFTWARE ACCESSORIES

7.1 PRINTER

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

PRINTER DRIVERS

Printer Language	Windows 95/98/ME	Windows NT4.0	Windows 2000	Windows XP	Macintosh
PCL 6	Yes	Yes	Yes	Yes	No
PCL 5e	Yes	Yes	Yes	Yes	No
PS3	Yes	Yes	Yes	Yes	Yes
RPCS	Yes	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 AdobePS drivers, except for Windows 2000, which uses Microsoft PS. A PPD file for each operating system is provided with the driver.

UTILITY SOFTWARE

Software	Description
Agfa Monotype Font Manager 2000 (Win 95/98/ME, NT4, 2000)	A font management utility with screen fonts for the printer.
SmartNetMonitor for Admin (Win 95/98/ME, NT4, 2000, XP)	A printer management utility for network administrators. NIB setup utilities are also available.
SmartNetMonitor for Client (Win 95/98/ME, NT4, 2000, XP)	A printer management utility for client users. Peer-to-peer printing utility and parallel/recovery printing functions are included.
1394 Utility (Win 2000)	A utility for removal IEEE 1394 printers.
LAN-Fax Driver (Win 95/98/ME, NT4, 2000, XP)	This driver allows use of the LAN-Fax functions by installing the LAN-Fax driver, Address Book, and LAN-Fax Cover Sheet Editor.
Printer Utility for Mac	This software provides several convenient functions for printing from Macintosh clients.
USB Printing Support	A utility for the USB 2.0 board. A computer running Windows 98 SE or Windows ME requires installation of this utility.
Acrobat Reader	A utility that allows reading PDF files.

7.2 SCANNER

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

SCANNER DRIVER

- Network Twain Driver for Win95/98/ME/NT3.51/NT4.0/2000/XP

SCANNER UTILITIES

- Scan Router V2 Lite for Win95/98/ME/NT4.0/2000/XP
- Desk Top Binder V2 Lite for Win95/98/ME/NT4.0/2000/XP