



6Gb/s SATA RAID Cards

ARC-1203 - 2 ports

(PCIe 2.0 to 6Gb/s SATA RAID Controllers)

Installation Guide

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Use the following instructions below to install a PCIe 2.0 6Gb/s SATA RAID controller.

Step 1. Unpack

Unpack and remove the PCIe 2.0 6Gb/s SATA RAID controller from the package. Inspect it carefully, if anything is missing or damaged, contact your local dealer.

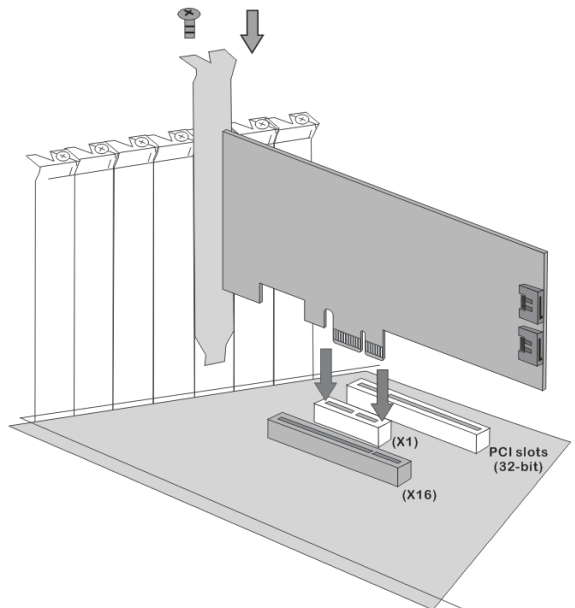
Step 2. Power PC/Server Off

Turn off computer and remove the AC power cord. Remove the system's cover. For the instructions, please see the computer system documentation.

Step 3. Install the PCIe 6Gb/s SATA RAID Cards

To install the 6Gb/s SATA RAID controller, remove the mounting screw and existing bracket from the rear panel behind the selected PCIe 2.0 slot. Align the gold-fingered edge on the card with the selected PCIe 2.0 slot. Press down gently but firmly to ensure that the card is properly seated in the slot, as shown on Figure 2-2. Then, screw the bracket into the computer chassis.

Figure 1, Insert into a PCIe slot



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Step 4. Mount the Drives

You can connect the SATA drives to the controller through direct cable. In the direct connection, SATA drives are directly connected to 6Gb/s SATA RAID controller port with SATA cables. The 6Gb/s SATA RAID controller can support up to 2 ports. Remove the front bezel from the computer chassis and install the cages or SATA drives in the computer chassis. Loading drives to the drive tray if cages are installed. Be sure that the power is connected to the individual drives.

Step 5. Connect the SATA Cable

ARC-1203-2I controller has two SATA internal connectors. If you have not yet connected your SATA cables, use the cables included with your kit to connect the controller to the SATA hard drives.

The cable connectors are all identical, so it does not matter which end you connect to your controller, SATA hard drive, or cage backplane SATA connector.



Figure 2, SATA Cable

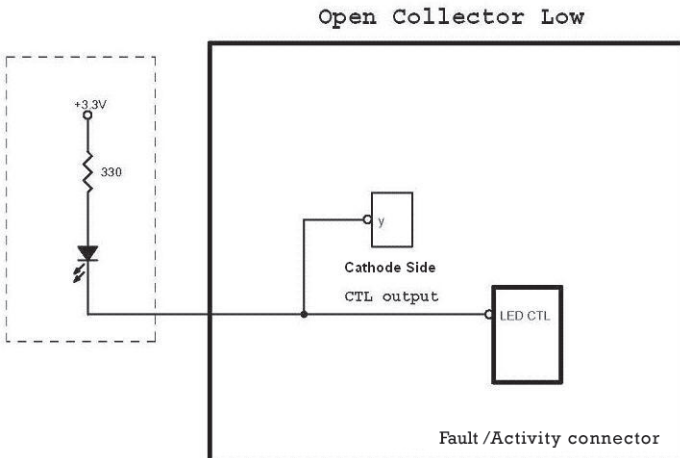
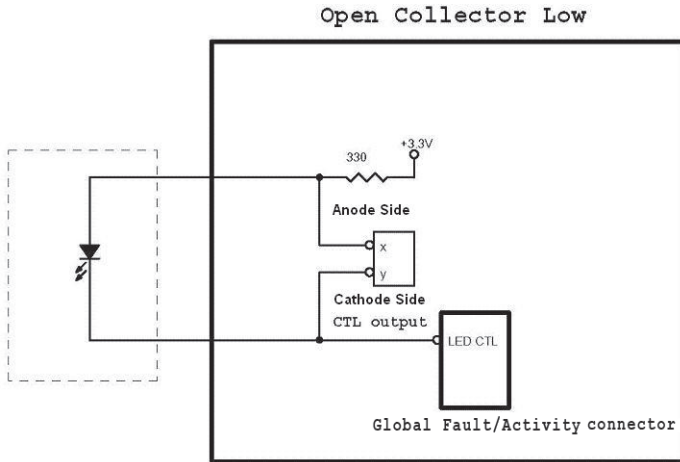
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Step 6. Install the LED Cable (Optional)

The 6Gb/s SATA controller provides LED cable header to support the fault/activity status. The global indicator connector is used by the server/desktop system global indicator LED.

The following electronics schematic is the 6Gb/s SATA RAID controller logical of fault/activity header. The signal from EPLD CTL output pin is cathode (-) side.

The following diagrams and descriptions describe each type of connector.



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A: Individual Fault LED and Global Activity/Fault Indicator Connector

The 6Gb/s SATA RAID controller provides the connector for fault/activity LED. Connect the cables for the fault/activity LEDs and the respective connector on the 6Gb/s SATA RAID controller.

The following table is the fault/activity LED signal behavior.

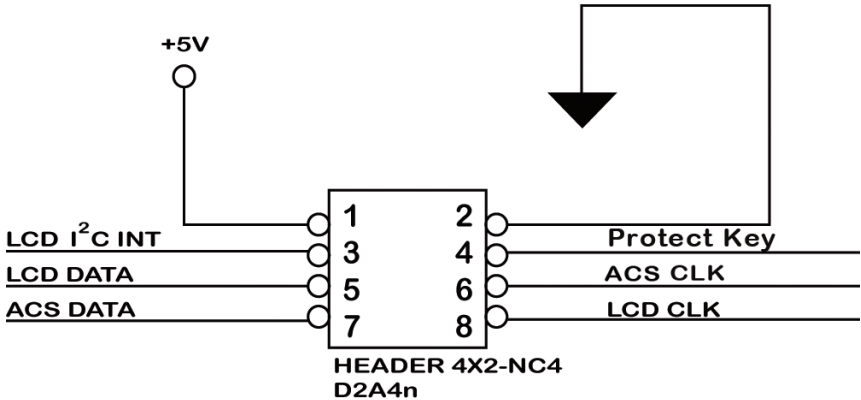
LED	Normal Status	Problem Indication
Activity (HDD) LED	When the activity (HDD) LED is illuminated, there is I/O activity on that disk drive. When the activity LED is dark, there is no activity on that disk drive.	N/A
Fault LED	When the fault LED is solid illuminated, there is no disk present and When the fault LED is off, that disk is present and status is normal. When the "Identify Drive" is selected, the selected drive fault LED will blank.	When the fault LED is slow blinking (2 times/sec), that indicate disk drive has failed and should be hot-swapped immediately. When the activity (HDD) LED is illuminated and fault LED is fast blinking (10 times/sec) that indicate there is rebuilding activity on the disk drive.

If the system will use only a single global indicator, attach the LED to the two pins of the global activity/fault connector. The global fault pin pair connector is the overall activity/fault signal.

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B: Areca Serial Bus Connector

The following picture and table is the serial bus signal name description for the LCD/I²C Module Connector (J4).



PIN	Description	PIN	Description
1	Power (+5V)	2	GND
3	LCD Module Interrupt	4	Protect Key
5	LCD Module Serial Data	6	Fault/Activity Clock
7	Fault/Activity Serial Data	8	LCD Module Clock

You can use one optional LCD front panel and keypad function to simply create the RAID volume. The LCD status panel also informs you the disk array's current operating status at a glance. The LCD configuration is described in a separate manual: RAID Card_LCD manual. The LCD housed in a 5¼-inch half-height or 3.5-inch canister.

Step 7. Adding a Battery Backup Module (Optional)

Please refer to Appendix B Battery Backup Module (ARC-6120BA-T121) of the user manual for installing the BBM in your 6Gb/s SATA RAID controller.

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Step 8. Power up the System

Thoroughly check the installation, reinstall the computer cover, and reconnect the power cord cables. Turn on the power switch at the rear of the computer (if equipped) and then press the power button at the front of the host computer.

Step 9. Install the Controller Driver

For a new system:

- Driver installation usually takes place as part of operating system installation. Please refer to Chapter 4 “Driver Installation” of the user manual for the detailed installation procedure.

For an existing system:

- To install the controller driver into the existing operating system. For the detailed installation procedure, please refer to the Chapter 4, “Driver Installation” of the user manual.

Step 10. Install ArchHTTP Proxy Server

The ARC-1203-2I firmware has embedded the web-browser McRAID storage manager. ArchHTTP proxy server will launch the web-browser McRAID storage manager. It provides all of the creation, management and monitor ARC-1203-2I RAID controller status. Please refer to the Chapter 5 for the detail “ArchHTTP Proxy Server Installation”. For SNMP agent function, please see the “SNMP Operation & Installation” section in the Appendix C of the user manual.

Step 11. Configure Volume Set

With Areca series RAID cards, there are 4 methods to manage your ARC-1203-2I RAID controller. It can be configured by using the LCD with keypad, McBIOS RAID manager (terminal emulation) or McRAID storage manager (via ArchHTTP proxy utility).

- Method 1: Internal PCIe Connection (McBIOS RAID Manager)
The ARC-1203-2I RAID controller can be configured via a BIOS start up McBIOS manager. The McBIOS RAID manager is firmware-based and is used to configure RAID sets and volume sets. Because the

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utility resides in the ARC-1203-2I RAID controller firmware, operation is independent of any operating systems on your computer. For additional information on using the BIOS on-screen to configure the RAID subsystem see the Chapter 3 "BIOS Configuration" of the user manual.

- **Method 2: Internal PCIe Connection (McRAID Storage Manager)**
You're now ready to use the McRAID storage manager to set up RAID volumes. Your ARC-1203-2I RAID controller can be configured by using McRAID storage manager (launched by ArchHTTP proxy server). ARC-1203-2I RAID controller has embedded the TCP/IP & web browser-based RAID manager in the firmware. User can use the standard web browsers to manage the RAID controller using ArchHTTP proxy server installed. For additional information on using the McRAID storage manager to configure the RAID controller see the Chapter 6 "Web Browser-Based Configuration" of the user manual.
- **Method 3: Front LCD Panel with Keypad (Optional)**
You can use LCD front panel and keypad function to simply create the RAID volume. The LCD status panel also informs you of the disk array's current operating status at a glance. For additional information on using the LCD to configure the RAID controller see the ARC1000_LCD manual on the shipping CD. The LCD provides a system of screens with areas for information, status indication, or menus. The LCD screen displays up to two lines at a time of menu items or other information.

Step 12. Format, Partition and Mount the ARC-1203-2I RAID Controller Volumes

After the volume set is ready for system accesses, it needs to be partitioned, formatted, and mounted by the operating system. There are various steps, depending on what operating system you are using (Windows, Linux, FreeBSD or Mac, etc.). Detailed steps for each operating system are provided on their disk utility. After that, the ARC-1203-2I RAID controller can be fully used.

Board Layout

The RAID controller can supports two internal SATA ports with 6Gb/s capability. This section provides the board layout and connector/jumper for the ARC-1203-2I SATA RAID controller.

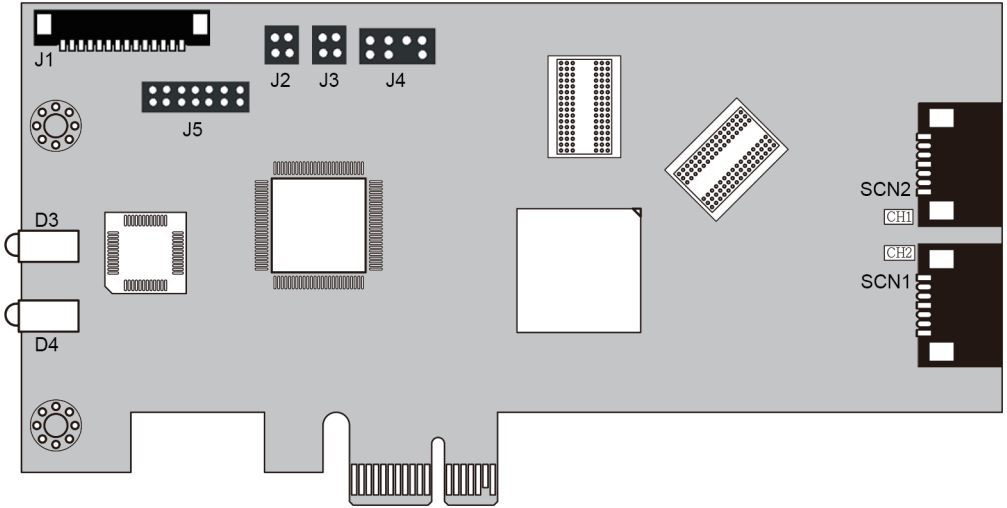


Figure 3, ARC-1203-2i 6Gb/s SATA RAID controller

Connector	Type	Description
1. (J1)	Battery Backup Module Connector	14-pin wafer connector
2. (J2)	Global Fault/Activity LED Header	4-pin header
3. (J3)	Individual Fault/Activity LED Header	4-pin header
4. (J4)	I ² C/LCD Connector	7-pin header
5. (J5)	Manufacture Purpose Port	14-pin header
6. (SCN1)	SATA Port 1 (CH2)	SATA III
7. (SCN2)	SATA Port 0 (CH1)	SATA III
8. (D3)	Fault/Activity LED (for CH1)	Bi-color DIP
9. (D4)	Fault/Activity LED (for CH2)	Bi-color DIP

Table 1, ARC-1203-2i connectors

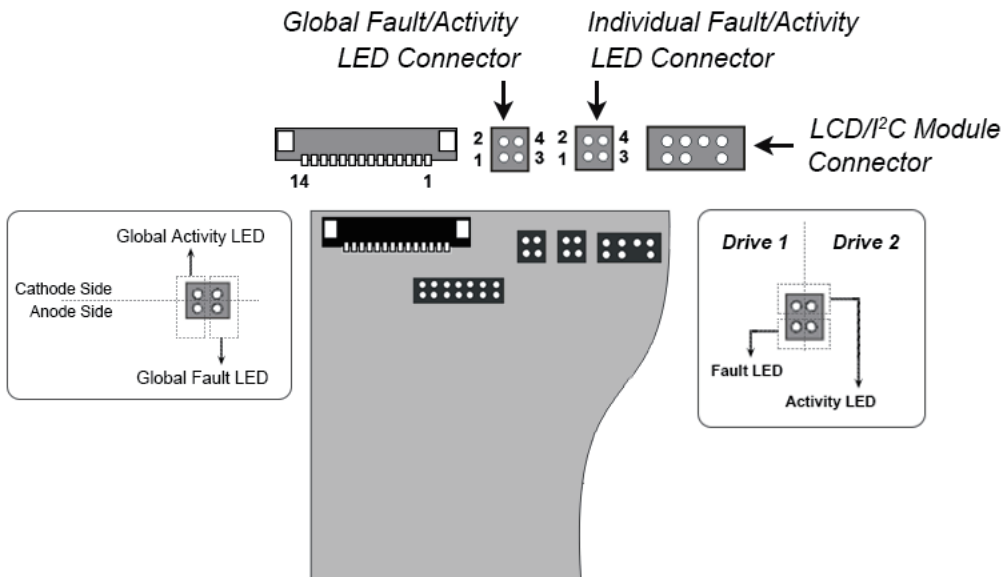


Figure 4, ARC-1203-2i individual Fault/Activity LED for each channel drive and global indicator connector for computer case.

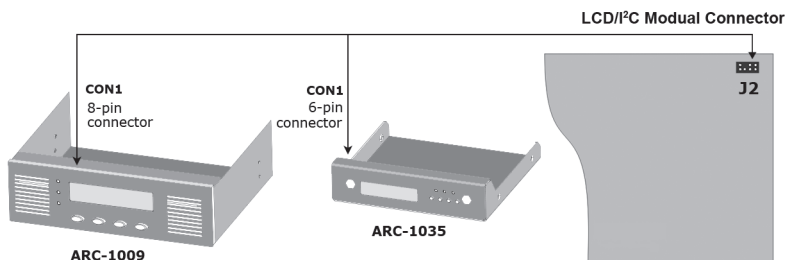


Figure 5, Connect to LCD Status Panel