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American Megatrends

MegaRAID® Enterprise 1200

(Series 428)

Ultra SCSI PCI RAID Controller

Thank you for purchasing the MegaRAID Enterprise 1200 (Series 428) Ultra PCI RAID controller. Please take a few minutes to review this quick guide before beginning the installation process. If you require a further explanation of any item covered in this guide, please refer to the complete hardware manual.

Hardware Installation Requirements

You must have the following items before installing the MegaRAID Enterprise 1200 PCI RAID controller in a server:
· MegaRAID Enterprise 1200 controller
· Host computer with an available PCI expansion slot
· MegaRAID Enterprise 1200 installation CD
· Necessary SCSI cables and terminators
· An Uninterruptible Power Supply (UPS) for the entire system is recommended
· Ultra2 SCSI hard disk drives and other SCSI devices, as desired

Installation Steps

If you need only the basic MegaRAID features and your computer does not use other adapter cards with resource settings that may conflict with the MegaRAID Enterprise 1200 settings, the following steps will make your installation quick and easy. For all other configurations, please refer to the hardware manual.

Check	Step	Action
❑	1	Unpack the controller and inspect for damage.
❑	2	Turn the computer off and remove the cover.
❑	3	Make sure motherboard jumper settings are correct.
❑	4	Install cache memory on the MegaRAID card. *(A minimum of 4MB of cache is required.)*
❑	5	Check the jumper settings on the MegaRAID Enterprise 1200 controller. *(See Hardware Installation (Step 5-Set Jumpers) in the MegaRAID Enterprise 1200 User's Guide for more details.)*
❑	6	Set SCSI termination.
❑	7	Set SCSI terminator power (TermPWR).
❑	8	Install the MegaRAID Enterprise 1200 card.
❑	9	Connect the SCSI cables to the SCSI devices.
❑	10	Set target IDs for the SCSI devices.
❑	11	Replace the computer cover and turn the power on.
❑	12	Run MegaRAID Enterprise 1200 BIOS setup (optional).
❑	13	Install software drivers for desired operating systems.

Contents for the MegaRAID Enterprise 1200

You should have received:
· MegaRAID Enterprise 1200 RAID controller
· Quick Hardware Installation Guide
· MegaRAID Driver, Utilities and Documentation CD, which includes:
  ❑ MegaRAID Enterprise 1200 Hardware Guide
  ❑ MegaRAID Configuration Software Guide
  ❑ MegaRAID Operating System Drivers Guide
· Software License Agreement
· Warranty Registration Card

Technical Support
If you need help installing, configuring, or running the MegaRAID Enterprise 1200, call American Megatrends technical support at 770-246-8645. Before you call, please complete the **MegaRAID Problem Report** in the hardware manual.
Web Site: http://www.ami.com.

Step 1 - Unpack

Unpack and install the hardware in a static-free environment. The MegaRAID Enterprise 1200 controller card is packed inside an antistatic bag between two sponge sheets. Remove the controller card and inspect it for damage. If the card appears damaged, or if any of items listed below are missing, contact American Megatrends Technical Support at 770-246-8645.

Step 2 - Power Down

Turn off the computer and remove the cover. Make sure the computer is disconnected from any networks before installing the controller card.
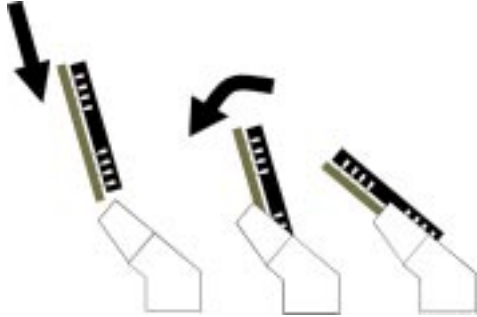
Step 3 - Configure Motherboard

Make sure the motherboard is configured correctly for MegaRAID Enterprise 1200. The MegaRAID Enterprise 1200 is essentially a SCSI controller. Each MegaRAID Ultra card you install will require an available PCI IRQ; make sure an IRQ is available for each controller you install.

Step 4 - Install Cache Memory

Important - **A minimum of 4 MB of cache memory is required. The cache memory must be installed before MegaRAID Enterprise 1200 is operational. Call AMI technical support at (770) 246-8600 for the latest list of approved memory vendors.**

Fast Page Mode (FPM) Memory Specifications

Voltage	Speed	Parity	Type	BBU Support	Bank I	Bank 2	Total Memory
5 V	60ns	Yes	Single-sided	Yes	1M x 36	Not Used	4MB
5 V	60ns	Yes	Single-sided	Yes	1M x 36	1M x 36	8MB
5 V	60ns	Yes	Single-sided	Yes	4M x 36	Not Used	16MB
5 V	60ns	Yes	Single-sided	Yes	4M x 36	4M x 36	32MB
5 V	60ns	Yes	Single-sided	Yes	16M x 36	Not Used	64MB
5 V	60ns	Yes	Single-sided	Yes	16M x 36	16M x 36	128MB

Lay the controller card component-side up on a clean static-free surface and install the SIMMs. The SIMMs click into place, indicating proper seating in the socket, as shown above.

Universal Operating System Software Drivers

All MegaRAID controllers include configuration utilities and drivers for:
· Novell® NetWare® 3.1x, 4.x and 5.0
    - HAM
· Windows NT™ 3.5x & 4.0
    - Miniport Driver
· SCO® OpenServer 5.0
    - MSCSI Driver
· UnixWare® & SMP 2.x, 7.0
    - PDI Driver
· DOS 5.0 and Above
    - ASPI driver
· Linux Redhat
· Solaris 2.6 and 7
· OS/2 Warp

NOTE: The DOS drivers for the MegaRAID Express are contained in the firmware, except the DOS ASPI and CD-ROM drivers.

Step 5 - Set Jumpers

Make sure the jumper settings on the MegaRAID Enterprise 1200 card are correct. The jumpers and connectors are:

Connector	Description	Type
J2	PCI Expansion BIOS Enable. The factory setting is Enabled (Jumpered).	2-pin header
J3	Auxiliary TermPWR for SCSI channels	four-pin connector
J4	Channel 1 Wide (16-bit) SCSI	68-pin connector
J5	Channel 2 Wide (16-bit) SCSI	68-pin connector
J6	Channel 3 Wide (16-bit) SCSI; *3-Channel Version Only*	68-pin connector
J7	Channel 3 TermPWR source. The factory setting is the PCI Bus (short Pins 1-2); *3-Channel Version Only*	3-pin header
J8	Channel 1 (8-bit) SCSI	50-pin connector
J9	Channel 3 (8-bit) SCSI; *3-Channel Version Only*	50-pin connector
J10	Disk Activity LED	4-pin connector
J11	Channel 2 (8-bit) SCSI	50-pin connector
J12	Dirty cache LED	two-pin connector
J13	Fault bus connector	26-pin connector
J15	Serial port connector	9-pin connector
J26	External 68-pin high-density SCSI channel 2	68-pin connector
J27	External 68-pin high-density SCSI channel 1	68-pin connector
J17	Channel 2 TermPWR source. The factory setting is the PCI Bus (short Pins 1-2).	3-pin header
J18	Bank 1 (odd) SIMM socket	72-pin ($\times$ 36) socket
J19	Cache battery backup connector	8-pin connector
J20	Channel 1 TermPWR source. The factory setting is the PCI Bus (short Pins 1-2).	3-pin header
J21	Cache battery backup connector	20-pin connector
J22	Bank 0 (even) SIMM socket	72-pin (x36) socket
J28	Chipset Selector	3-pin berg

Step 9 - Connect SCSI Cables

Connect the SCSI cables to the SCSI devices. The MegaRAID Enterprise 1200 controller provides two types of connectors: three internal high-density 68-pin SCSI connectors and three external ultra high-density 68-pin SCSI connectors.

Step 10 - Set Target IDs

Set target identifiers (TIDs) on the SCSI devices. Each device in a specific SCSI channel must have a unique TID in that channel. Non-disk devices, such as CD-ROM or tape drives, should have unique SCSI IDs regardless of the channel to which they are connected.
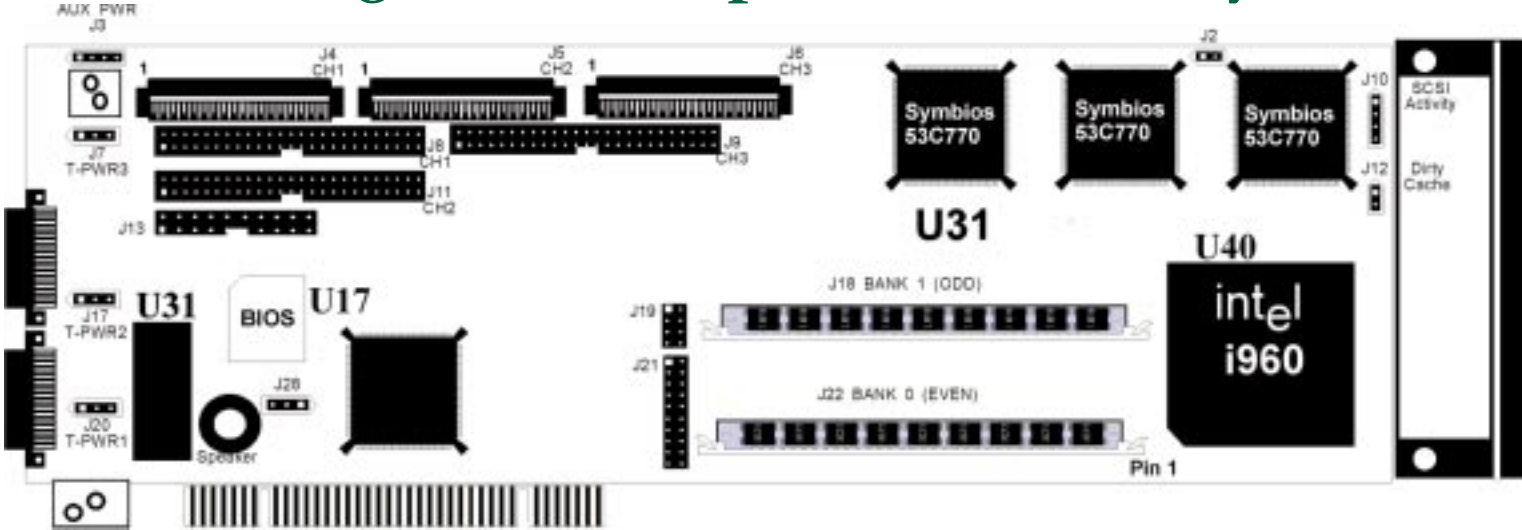
Step 11 - Power up

Replace the computer cover and reconnect the AC power cords. Turn power on to the host computer. Set up the power supplies so that the SCSI devices are powered up at the same time as or before the host computer. If the computer is powered up before a SCSI device, the device might not be recognized.

During boot, the MegaRAID Enterprise 1200 BIOS message appears:
MegaRAID Ultra Disk Array Adapter BIOS Version *x.xx date*
Copyright (C) American Megatrends, Inc.
Firmware Initializing . . . [Scanning SCSI Device ...(etc)...]

The firmware takes several seconds to initialize. During this time the adapter will scan each SCSI channel. When it is ready, the following lines will appear:
Host Adapter-1 Firmware Version *x.xx date* DRAM Size 4MB
0 Logical Drives found on the Host Adapter
0 Logical Drives handled by BIOS
Press <Ctrl><M> to run MegaRAID Enterprise 1200 BIOS Configuration Utility

The <Ctrl> <M> prompt times out after several seconds.
The MegaRAID Enterprise 1200 host adapter (controller) number, firmware version and cache DRAM size are displayed in the second portion of the BIOS message. The numbering of the controllers follows the PCI slot scanning order used by the host motherboard.

MegaRAID Enterprise 1200 Card Layout
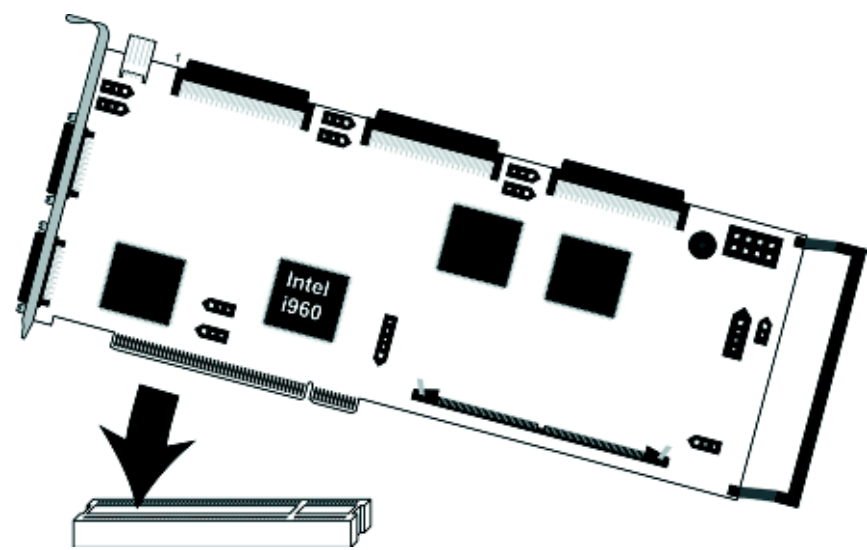

Step 6 - Set Termination

You must terminate the SCSI bus properly. Set termination at both ends of the SCSI cable. The SCSI bus is an electrical transmission line and must be terminated properly to minimize reflections and losses. Termination should be set at each end of the SCSI cable(s), as shown below. Termination is always enabled, regardless of the configuration. However, you can override this setting by setting another state.

Step 7 - Set Terminator Power (TermPWR)

Important - **Both MegaRAID Enterprise 1200 SCSI channels need TermPWR to operate. If a channel is not being used and no auxiliary power source is connected, change the jumper setting for that channel to supply TermPWR from the PCI bus.**
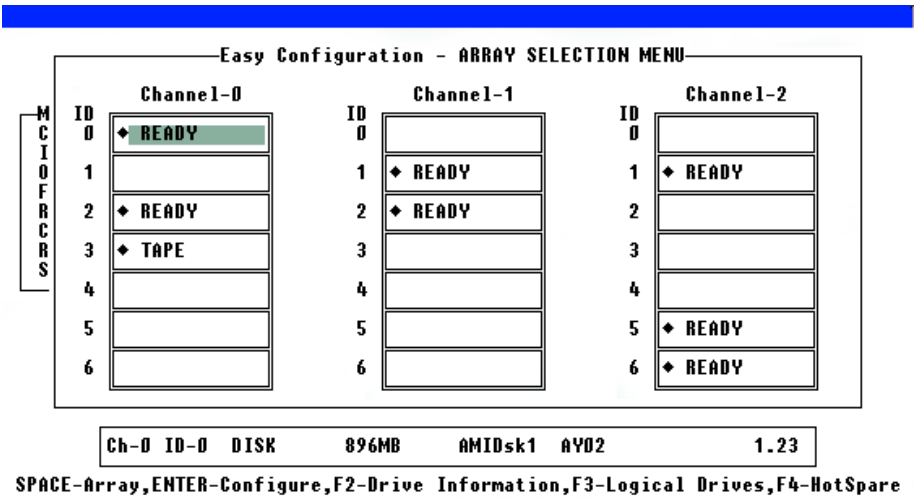
Step 8 - Installing the MegaRAID Enterprise 1200

Choose a 5 V PCI slot and align the MegaRAID Enterprise 1200 controller card bus connector to the slot. Press down gently but firmly to make sure that the card is properly seated in the slot. The bottom edge of the controller card should be flush with the slot.

Step 12 - Running the MegaRAID Enterprise 1200 BIOS Setup

Press <Ctrl><M> to run the MegaRAID Enterprise 1200 BIOS setup utility. See the *MegaRAID Configuration Software Guide* for information about running MegaRAID Enterprise 1200 BIOS setup.

Step 13 - Installing Operating System Drivers

The MegaRAID Enterprise 1200 ASPI driver can be used in the DOS, Windows 3.x and Windows 95 environments. The DOS ASPI driver supports:
1. Up to six non-disk SCSI devices (each SCSI device must use a unique SCSI ID regardless of the SCSI channel it resides on. SCSI IDs 1 through 6 are valid
2. Up to 12 MegaRAID Ultra adapters
3. Virtual DMA services (VDS) for up to eight logical drives.

For more information, please refer to the complete software manual or visit the American Megatrends Inc. website at **www.ami.com**.