

CONFIGURATION METHOD

| Panel LED | Normal Status | Problem Indication |
|-------------------|--|--|
| Power LED | Bright Green | This LED does not light up after power switched on |
| Host Access LED | Blink green during host computer accessing the RAID subsystem. | LED never flickers |
| Disk Activity LED | This LED blinks during hard drive read and write activity | LED not light up |

For additional information on using the LCD panel and keypad to configure the RAID controller see "LCD Configuration" on Chapter 4.

3.2 VT100 terminal (Using the controller's serial port)

The serial port on the controller's back panel can be used in VT100 mode. The provided interface cable converts the RS232 signal of the 10-pin header connector on the RAID subsystem into a 9-pin D-Sub male connector. The firmware-based terminal array management interface can access the array through this RS-232 port. You can attach a VT-100 compatible terminal or a PC running a VT-100 terminal emulation program to the serial port for accessing the text-based Setup Menu.

3.2.1 RAID Subsystem RS-232C Port Pin Assignment

To ensure proper communications between the RAID subsystem and the VT-100 Terminal Emulation, Please configure the VT100 terminal emulation settings to the values shown below:

| Terminal requirment | |
|---------------------|------------------|
| Connection | Null-modem cable |
| Baud Rate | 115,200 |
| Data bits | 8 |
| Stop | 1 |
| Flow Control | None |

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The controller 10-pin header assignments are defined as below.

| Action | | | |
|--------|-------------|-----|-------------|
| Pin | Description | Pin | Description |
| 1 | N/C | 6 | TXD |
| 2 | TXD | 7 | CTS |
| 3 | RXD | 8 | RTS |
| 4 | DSR | 9 | N/C |
| 5 | GND | 10 | N/C |

Keyboard Navigation

The following definition is the VT-100 RAID configuration utility keyboard navigation.

| Key | Function |
|-----------|---------------------------|
| Arrow Key | Move cursor |
| Enter Key | Submit selection function |
| ESC Key | Return to previous screen |
| L Key | Line draw |
| X Key | Redraw |

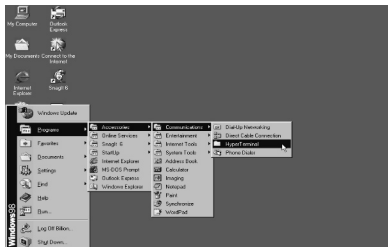
3.2.2 Start-up VT100 Screen

By connecting a VT100 compatible terminal, or a PC operating in an equivalent terminal emulation mode, all RAID subsystem monitoring, configuration and administration functions can be exercised from the VT100 terminal.

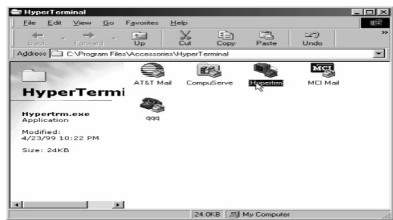
There are a wide variety of Terminal Emulation packages, but for the most part they should be very similar. The following setup procedure is an example Setup VT100 Terminal in Windows system using Hyper Terminal use Version 3.0 or higher.

Step 1. From the Desktop open the Start menu. Pick Programs, Accessories, Communications and Hyper Terminal. Open Hyper Terminal (requires version 3.0 or higher)

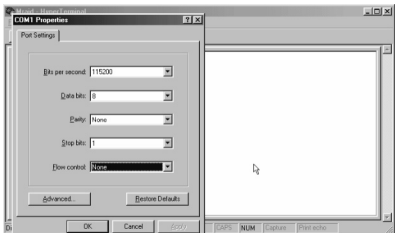
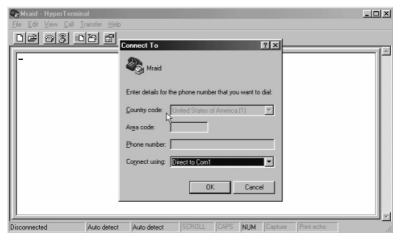
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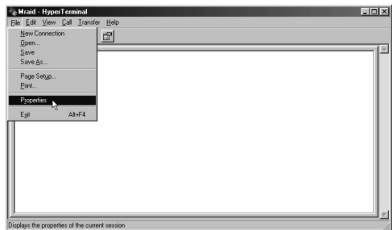
Step 2. Open **HYPERTRM.EXE** and Enter a name for your Terminal. Click **OK**.



Step 3. Select an appropriate connecting port in your Terminal. Click OK. Configure the port parameter settings. Bits per second: **"115200"**, Data bits: **"8"**, Parity: **"None"**, Stop bits: **"1"**, Flow control: **"None"**. Click **OK**

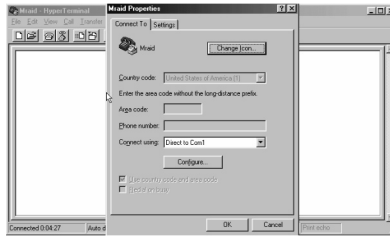


Step 4. Open the File menu, and then open Properties.

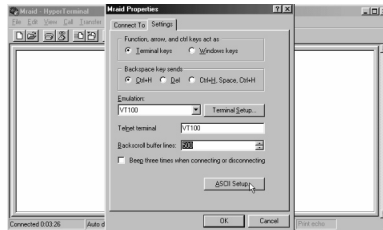


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Step 5. Open the Settings Tab.



Step 6. Open the Settings Tab. Function, arrow and ctrl keys act as: Terminal Keys, Backspace key sends: **Ctrl+H**, Emulation: VT100, Telnet terminal: VT100, Back scroll buffer lines: 500. Click **OK**.



Now, the VT100 is ready to use.

After you have finished the VT100 Terminal setup, you may press "X" key (in your Terminal) to link the RAID subsystem and Terminal together.

Press "X" key to display the disk array Monitor Utility screen on your VT100 Terminal.

3.3 Bootable CD VT100 utility (Using the controller's serial port)

RAID subsystem now offers an alternative means of communication for the internal RAID Subsystem - Bootable CD VT-100 emulation program. The traditional RS-232C way configures the controller via a dedicated VT-100 terminal or system starting up running the Hyper Terminal utilities. With the Bootable CD VT-100 emulation has more flexibility. User can access the built-in configuration without needing VT-100 terminal or system starting up running the Hyper Terminal. The Bootable CD VT-100 emulation program is an X86-based system utility used to configure RAID volumes prior to OS installation without needing a front panel touch-control keypad.

Appendix B

Upgrading Flash Firmware Programming Utility

Since the RAID subsystem controller features flash firmware, it is not necessary to change the hardware flash chip in order to upgrade the RAID firmware. The user can simply re-program the old firmware through the RS-232 port. New releases of the firmware are available in the form of a DOS file at OEM's FTP. The file available at the FTP site is usually a self-extracting file that contains the following:

XXXXVVV.BIN Firmware Binary (where "XXXX" refers to the model name and "VVV" refers to the firmware version)

README.TXT It contains the history information of the firmware change. Read this file first before upgrading the firmware. These files must be extracted from the compressed file and copied to one directory in drive A or C.

Establishing the Connection for the RS-232

The firmware can be downloaded to the RAID subsystem controller by using an ANSI/VT-100 compatible terminal emulation program or HTTP web browser management. You must complete the appropriate installation procedure before proceeding with this firmware upgrade. Please refer to chapter 4.3, "VT100 terminal (Using the controller's serial port)" for details on establishing the connection. Whichever terminal emulation program is used must support the ZMODEM file transfer protocol.

Configuration of the internal RAID subsystem web browser-based RAID management is an HTTP based application, which utilizes the browser installed on your operating system. Web browser-based RAID management can be used to update the firmware. You must complete the appropriate installation procedure before proceeding with this firmware upgrade. Please refer to chapter 6.1, "Web browser-based RAID management via HTTP Proxy (Using the controller's serial port)" for details on establishing the connection.

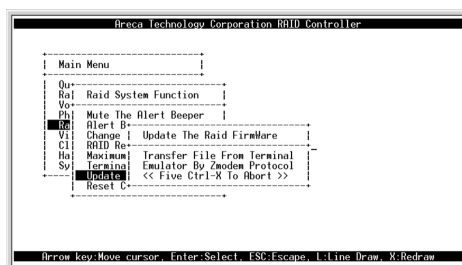
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Note: CD-ROM bootable VT-100 utility cannot support the update firmware function.

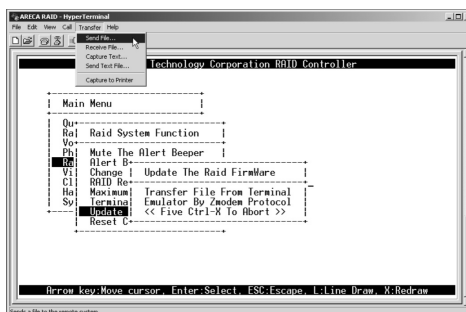
Upgrade Firmware Through ANSI/VT-100 Terminal Emulation

Get the new version firmware for your RAID subsystem controller. For Example, download the bin file from your OEM's web site onto the c:

1. From the Main Menu, scroll down to "Raid System Function"
2. Choose the "Update Firmware", The Update The Raid Firmware dialog box appears.



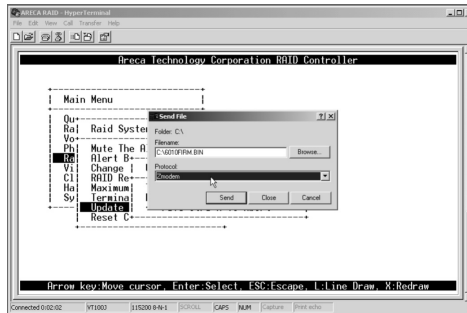
3. Go to the tool bar and select Transfer. Open Send File.



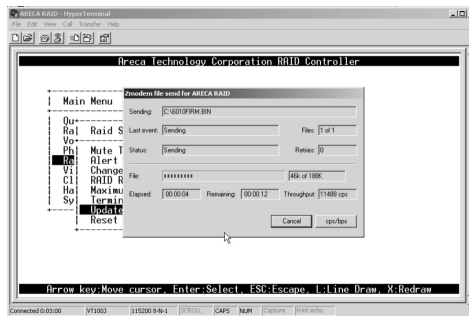
4. Select "ZMODEM modem" under Protocol. ZMODEM as the file transfer protocol of your terminal emulation software.

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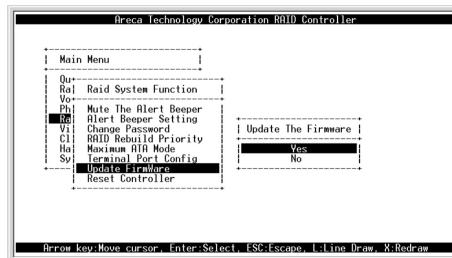
5. Click Browse. Look in the location where the Firmware upgrade software is located. Select the File name:



6. Click Send. Send the Firmware Binary to the controller.

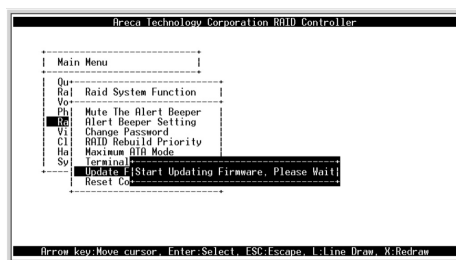


7. When the Firmware completes downloading, the confirmation screen appears. Press Yes to start program the flash ROM.



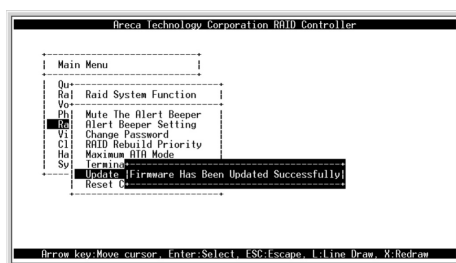
8. When the Flash programming starts, a bar indicator will show "Start Updating Firmware. Please Wait:".

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9. The Firmware upgrade will take approximately thirty seconds to complete.

10. After the Firmware upgrade is complete, a bar indicator will show "Firmware Has Been Updated Successfully".



NOTE: The user has to reconfigure all of the settings after the firmware upgrade is complete, because all of the settings will default to the original default values.

Upgrade Firmware Through HTTP Proxy Web Browser Manager

Get the new version firmware for your RAID subsystem controller. For Example, download the bin file from your OEM's web site onto the c:

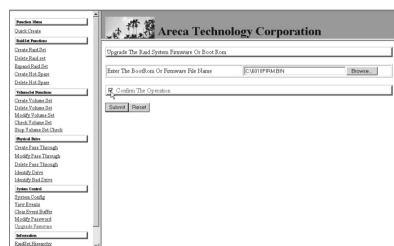
1. To upgrade the RAID subsystem firmware, move the mouse cursor to Upgrade Firmware link. The Upgrade The Raid System Firmware screen appears.

2. Click Browse. Look in the location where the Firmware upgrade

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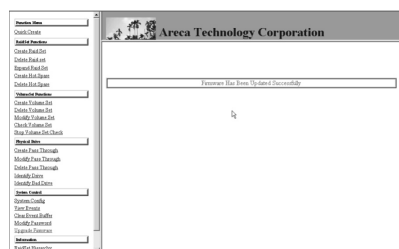
software is located. Select the File name: "6010FIRM.BIN" and click open.

3. Click the Confirm The Operation and press the Submit button.



4. The Web Browser begins to download the firmware binary to the controller and start to update the flash ROM.

5. After the firmware upgrade is complete, a bar indicator will show "Firmware Has Been Updated Successfully"



NOTE: The user has to reconfigure all of the settings after the firmware upgrade is complete, because all of the settings will default to the original default values.