

ROCKY – 3703EVR
Celeron™ & Pentium® III with
Dual LAN & ATA100 IDE RAID
Integrated S3 savage4 AGP4X VGA SBC

Ver 1.1

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Introduction

Welcome to the ROCKY-3703EVR Celeron & Pentium® III Single Board Computer. The ROCKY-3703EVR board is an ISA/PCI form factor board, which comes equipped with high performance Pentium® III Processor and advanced high performance multi-mode I/O, designed for the system manufacturers, integrators, or VARs that want to provide all the performance, reliability, and quality at a reasonable price.

In addition, the ROCKY-3703EVR provides S3 Savage4 AGP4X VGA on board. The VGA chip is 3D graphics chipset, which provides up to 1920x1440x16-color resolution. The VGA on board 2 to 32MB frame buffer using system memory.

This board has a built-in DiskOnChip™(DOC) Flash Disk Socket for embedded applications. The DOC Flash Disk is 100% software compatible with hard disks. Users can use any DOS command without any extra software utility. The DOC currently is available from 2MB to 144MB.

An advanced high performance super AT I/O chip – VIA VT82C686B is used in the ROCKY-3703EVR board. Both on-chip UARTs are compatible with the NS16C550. The parallel port and IDE interface are compatible with IBM PC/AT architecture.

The ROCKY-3703EVR uses dual Intel 82559 Fast Ethernet Multifunction PCI Controller as a LAN controller. Which is a fully integrated 10BASE-T/100BASE-TX LAN solution with high performance networking functions and low power features.

The ROCKY-3703EVR uses the advanced VIA PM133/PL133 Chipset which is 100% ISA/PCI software compatible chipset with PCI 2.1 standard.

1.1 Specifications

CPU(PGA370)	Intel Celeron® and Pentium® III (FC-PGA) Processor, supports 66/100/133 MHz FSB
Bus interface	PCI/ISA bus, PICMG compliant
Bus speed	ISA : 8MHz, PCI: 33MHz
DMA channels	7
Interrupt levels	15
Chipset	VIA PM133/PL133
Real-time clock/calendar	VT82C686B
RAM memory	Three 168-pin DIMM sockets support SDRAM and VCM RAM module. The max. Memory is up to 1.5GB.
ATA/100 IDE interface	Up to four PCI Enhanced IDE hard drives. The ATA/100 IDE can handle data transfer up to 100MB/s. Compatible with existing ATA-2 IDE specifications its best advantage, so there is no need to do any changes for users' current accessories.
Floppy disk drive interface	Supports up to two floppy disk drives, 5.25"(360KB and 1.2MB) and/or 3.5" (720KB, 1.44MB, and 2.88MB)
Serial ports	Two RS-232 ports with 16C550 UART (or compatible) with 16-byte FIFO buffer. Support up to 115.2Kbps. Ports can be individually configured to COM1, COM2 or disabled.
Bi-directional parallel port	Configurable to LPT1, LPT2, LPT3 or disabled. Supports EPP/ECP/SPP
Hardware monitor	Built-in to monitor power supply voltage and fan speed status

IrDA port	Supports Serial Infrared(SIR) and Amplitude Shift Keyed IR(ASKIR) interface
USB port	Supports Four USB ports for future expansion
Watch-dog timer	Software Programmable Reset or NMI is generated when CPU does not periodically trigger the timer. You can use I/O Port hex 043 and 443 to control the watchdog and generate a system reset.
VGA controller	Integrated S3 Savage4 AGP4X 3D graphics Core plus Advanced Memory Controller. Screen Resolution: up to 1920x1440x16.
Ethernet	Dual Intel 82559 Fast Ethernet controllers, IEEE 802.3u Auto-Negotiation support for 10BASE-T/100BASE-TX standard. An RJ45 connector is located on the mounting bracket for easy connection.
Ultra ATA/100 IDE RAID	Supports data striping (RAID0), mirroring (RAID1), and striping/mirroring combination (RAID0+1).
Flash disk socket	The DiskOnChip™ compatible 32-pin dip socket is provided for Flash Disk (DiskOnChip™) application which will let users to use the Flash Disk with DOS command, without any extra software utility.
Keyboard and PS/2 mouse connector	A 6-pin mini DIN connector is located on the mounting bracket for easy connection to a keyboard or PS/2 mouse. For alternative application, a keyboard and a PS/2 mouse pin header connector are also available on board.
Power consumption	+5V @ 5.32A (Pentium® III 850MHz,256MB VCM-SDRAM) +12V @ 165mA , -12V @40mA
Operating temperature	0° ~ 55° C (CPU needs Cooler)

1.2 What You Have

In addition to this *User's Manual*, the ROCKY-3703EVR package includes the following items:

- One ROCKY-3703EVR Single Board Computer
- One RS-232 x2 and Printer Cable with bracket
- One FDD cable
- One AUDIO cable.
- Three ATA/100 IDE cables
- One 6-pin Mini-Din converts to two 6-pin mini-Din cables for keyboard and mouse connection.

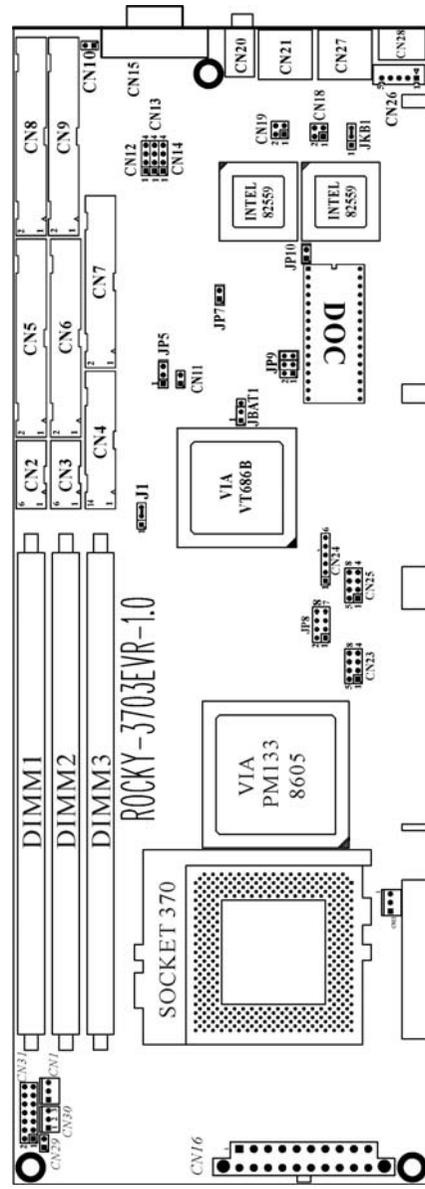
If any of these items are missing or damaged, contact the dealer from whom you purchased this product. Save the shipping materials and carton in case you want to ship or store the product in the future.

2

Installation

This chapter describes how to install the ROCKY-3703EVR. At first, the layout of ROCKY-3703EVR is shown, and the unpacking information that you should be careful is described. The jumpers and switches setting for the ROCKY-3703EVR's configuration, such as CPU clock setting, and watchdog timer, are also included.

2.1 ROCKY – 3703EVR's Layout



2.2 Unpacking Precautions

Some components on ROCKY-3703EVR SBC are very sensitive to static electric charges and can be damaged by a sudden rush of power. To protect it from unintended damage, be sure to follow these precautions:

- ✓ Ground yourself to remove any static charge before touching your ROCKY-3703EVR SBC. You can do it by using a grounded wrist strap at all times or by frequently touching any conducting materials that is connected to the ground.
- ✓ Handle your ROCKY-3703EVR SBC by its edges. Don't touch IC chips, leads or circuitry if not necessary.
- ✓ Do not plug any connector or jumper while the power is on.

Table of Jumpers

LABEL	FUNCTION
JP5	Watch-Dog Active Type Setting
JP7	Onboard LAN1 enable/disable.
JP8	CPU Multiplier Setting, Normal by AUTO detect.
JP9	DiskOnChip Memory Address Setting
JP10	Onboard LAN2 enable/disable.
JBAT1	CMOS state setting

Note: All shaded rows in tables of this manual are the default settings for the ROCKY-3703EVR.

2.3 Setting the CPU of ROCKY-3703EVR

• JP8 : CPU Multiplier Setting

Speed	1-2	3-4	5-6	7-8
3.0 x	CLOSE	OPEN	CLOSE	CLOSE
3.5 x	CLOSE	OPEN	OPEN	CLOSE
4.0 x	OPEN	CLOSE	CLOSE	CLOSE
4.5 x	OPEN	CLOSE	OPEN	CLOSE
5.0 x	OPEN	OPEN	CLOSE	CLOSE
5.5 x	OPEN	OPEN	OPEN	CLOSE
6.0 x	CLOSE	CLOSE	CLOSE	OPEN
6.5 x	CLOSE	CLOSE	OPEN	OPEN
7.0 x	CLOSE	OPEN	CLOSE	OPEN
7.5 x	CLOSE	OPEN	OPEN	OPEN
8.0 x	OPEN	CLOSE	CLOSE	OPEN

PS: If Intel fixes CPU RATIO, the JP8 is no purpose.

2.4 Watch-Dog Timer (JP5)

Reading I/O port 443H enables the Watch-Dog Timer. It should be triggered before the time-out period ends, otherwise it will assume the program operation is abnormal and will issue a reset signal to start again, or activate NMI to CPU. The Watch-Dog Timer is disable by reading I/O port 043H or 843H. Refer to Appendix A for detailed information on Watch-Dog Timer.

• JP5 : Watch-Dog Active Type Setting

JP5	DESCRIPTION
1-2	ACTIVATE NMI TO CPU WHEN WDT TIME-OUT
2-3	RESET WHEN WDT TIME-OUT
OPEN	DISABLE WDT

2.5 DiskOnChip™ Flash Disk (JP9)

The DiskOnChip™ Flash Disk Chip(DOC) is produced by M-Systems. Because the DOC is 100% software compatible to hard disk and DOS, users don't need any extra software utility. It is just "plug and play" easy and reliable. At present the DOC is available from 2MB to 144MB. The DiskOnChip only shares 8KB memory address.

• JP9 : DiskOnChip Memory Address Setting

Address	1-2	3-4	5-6
CE000 – CFFFF	OFF	ON	ON
D6000 – D7FFF	ON	OFF	ON
DE000 – DFFFF	OFF	OFF	ON

2.6 Clear CMOS Setup (JBAT1)

If want to clear the CMOS Setup (for example forgot the password you should clear the setup and then set the password again.), you should close the JBAT1 (1-2) about 3 seconds, then open it again. Set back to normal operation mode, open

JBAT1 : Clear CMOS Setup (Reserve Function)

JBAT1	DESCRIPTION
1-2	Normal Operation
2-3	Clear CMOS Setup

2.7 Onboard LAN1(JP7) / LAN2(JP10) Setting

The onboard LAN controllers can be disabled if you don't want to use then. All the hardware resource will be released. After they are disabled.

JP7/JP10	DESCRIPTION
CLOSE	Enable
OPEN	Disable

3

Connection

This chapter describes how to connect peripherals, switches and indicators to the ROCKY- 3703EVR board.

Table of Connectors

LABEL	FUNCTION
CN1	CPU Fan Connector
CN2,CN3	Serial Port 10-pin Connector
CN4	Parallel Port Connector
CN5	Primary IDE Connector
CN6	Secondary IDE Connector
CN7	FDC Connector
CN8,CN9	Promise IDE RAID Connector
CN10	Promise IDE RAID Active LED Connector
CN12	AUDIO LINE-IN
CN13	AUDIO CD-IN
CN14	AUDIO MIC-IN
CN15	VGA 15-pin Female Connector
CN16	ATX 20-PIN Power Connector
CN18,CN19	LAN State LED Connector
CN21,CN27	LAN RJ45 Connector
CN22	System Fan Connector
CN23,CN25	USB Connector
CN24	IrDA connector
CN26	External 5-pin Header Keyboard Connector
CN28	PS/2 MOUSE & KEYBOARD Connector
CN29	ATX BUTTON (Power ON) Switch
CN30	Backplane to Mainboard Connector
CN31	External Switches and Indicators

3.1 Floppy Disk Drive Connector (CN7)

The ROCKY-3703EVR board is equipped with a 34-pin daisy-chain drive connector cable.

• CN7 : FDC Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	2	REDUCE WRITE
3	GROUND	4	N/C
5	GROUND	6	N/C
7	GROUND	8	INDEX#
9	GROUND	10	MOTOR ENABLE A#
11	GROUND	12	DRIVE SELECT B#
13	GROUND	14	DRIVE SELECT A#
15	GROUND	16	MOTOR ENABLE B#
17	GROUND	18	DIRECTION#
19	GROUND	20	STEP#
21	GROUND	22	WRITE DATA#
23	GROUND	24	WRITE GATE#
25	GROUND	26	TRACK 0#
27	GROUND	28	WRITE PROTECT#
29	GROUND	30	READ DATA#
31	GROUND	32	SIDE 1 SELECT#
33	GROUND	34	DISK CHANGE#

3.2 PCI E-IDE Disk Drive Connector (CN5, CN6)

You can attach four IDE(Integrated Device Electronics) hard disk drives on two channels. These connectors support Ultra-DMA100 IDE devices. Non-DMA100 devices are suggested to be connecting to the secondary IDE connector.

CN5 (IDE 1) : Primary IDE Connector

CN6 (IDE 2) : Secondary IDE Connector

• CN5/CN6 : IDE Interface Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	N/C	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	N/C	28	BALE - DEFAULT
29	N/C	30	GROUND - DEFAULT
31	INTERRUPT	32	IOCS16#-DEFAULT
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND

3.3 Parallel Port (CN4)

This port is usually connected to a printer. The ROCKY-3703EVR includes an on-board parallel port, accessed through a 26-pin flat-cable connector CN4.

• CN4 : Parallel Port Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	STROBE#	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED #
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT LN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	GROUND	24	GROUND
25	GROUND		

3.4 Serial Ports (CN2, CN3)

The ROCKY-3703EVR offers two high speeds NS16C550 compatible UART.

CN2 (COM1) : 10-pin header on board

CN3 (COM2) : 10-pin header on board

Serial port connections (CN2, CN3)

Connector	Ports	Address	Interrupt
CN2	COM1	3F8	IRQ4
CN3	COM2	2F8	IRQ3

• Serial Port 10-pin Connector

PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	RECEIVE DATA (RXD)
3	TRANSMIT DATA (TXD)
4	DATA TERMINAL READY (DTR)
5	GROUND (GND)
6	DATA SET READY (DSR)
7	REQUEST TO SEND (RTS)
8	CLEAR TO SEND (CTS)
9	RING INDICATOR (RI)
10	GROUND (GND)

3.5 Keyboard & PS/2 Mouse Connector (CN28)

A 6-pin mini DIN connector (CN28) is located on the mounting bracket for easy connection to a keyboard or a PS/2 mouse. The card comes with a cable to convert from the 6-pin mini-DIN connector to two 6-pin mini-DIN connectors for keyboard and mouse connection.

• CN28 : 6-pin Mini-DIN Keyboard Connector

PIN NO.	DESCRIPTION
1	KEYBOARD DATA
2	MOUSE DATA
3	GROUND
4	+5V
5	KEYBOARD CLOCK
6	MOUSE CLOCK

For alternative application, a keyboard and a PS/2 mouse pin header connector are also available on board, located on CN26 6 respectively.

• CN26 : 5-pin Header Keyboard Connector

PIN NO.	DESCRIPTION
1	KEYBOARD CLOCK
2	KEYBOARD DATA
3	N/C
4	GROUND
5	+5V

3.6 External Switches and Indicators (CN31)

There are several external switches and indicators for monitoring and controlling your CPU board. All the functions are in the CN31 connector.

CN31 : External Switches and Indicators

	PIN	DESCRIPTION	PIN	DESCRIPTION	
Power LED	1	+5V	2	Speaker	Speaker
	3	N/C	4	N/C	
	5	GND	6	N/C	
	7	N/C	8	+5V	
	9	GND	10	Reset Switch	Reset button
	11	GND	12	GND	
	13	IDE LED+	14	IDE LED-	

• CN29 : 2-pin Header ATX BUTTON Connector

PIN NO.	DESCRIPTION
1	ATX BUTTON
2	GND

• CN30 : Backplane to Mainboard Connector

PIN NO.	DESCRIPTION
1	5VSB
2	ATX-ON
3	GND

★ Power source from Backplane with ATX Connector (Through Power Button & +5VSB)

3.7 USB Port Connector (CN23, CN25)

The ROCKY- 3703EVR provide four built-in USB ports for the future new I/O bus expansion.

CN23 / CN25			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	8	VCC
2	DATA-	7	DATA-
3	DATA+	6	DATA+
4	GROUND	5	GROUND

3.8 IrDA Infrared Interface Port (CN24)

The ROCKY-3703EVR has a built-in IrDA port which supports Serial Infrared (SIR) or Amplitude Shift Keyed IR (ASKIR) interface. If you want to use the IrDA port, you have to configure SIR or ASKIR model in the BIOS under Peripheral Setup COM2. Then the normal RS-232 COM 2 will be disabled.

• CN24: IrDA connector

PIN NO.	DESCRIPTION
1	VCC
2	NC
3	IR-RX
4	Ground
5	IR-TX
6	NC

3.9 CPU & SYSTEM Fan Connector (CN1, CN22)

The ROCKY-3703EVR provides two CPU cooling fan connectors, CN22 as well as a chassis fan connector, CN1. These connectors can supply 12V/500mA to the cooling fan. All connectors have the same pin assignments and provide a "rotation" pin to get rotation signals from fans and notice the system. So the system BIOS can recognize the fan speed. Please note that only specified fan can issue the rotation signals.

• CN1/CN22 : Fan Connector

PIN NO.	DESCRIPTION
1	Rotation Signal
2	12V
3	Ground

3.10 LAN RJ45 & State LED Connector (CN21,CN27)

The ROCKY-3703EVR is equipped with two built-in 10/100Mbps Ethernet controllers. You can connect it to your LAN through RJ45 LAN connectors. There are two LED on the connector indicating the status of LAN. The pin assignments are as following:

- **CN21/CN27: LAN RJ45 Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TX+	5.	N/C
2	TX-	6.	RX-
3.	RX+	7.	N/C
4.	N/C	8.	N/C

- **CN18/CN19: LAN State LED Connector**

PIN NO.	DESCRIPTION
1-2	ACT/LINK
3-4	100TX

3.11 VGA Connector (CN15)

The ROCKY-3703EVR has a built-in 15-pin VGA connector directly connects to your CRT monitor.

- **CN15 : 15-pin Female Connector**

1	RED	2	GREEN
3	BLUE	4	NC
5	GROUND	6	GROUND
7	GROUND	8	GROUND
9	NC	10	GROUND
11	NC	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDCCLK		

3.12 PROMISE ATA-100 IDE RAID & Active LED Connector

The ROCKY-3703EVR provides two IDE RAID connectors --. Each port supports 2 IDE devices at 100Mbps speed. There are also one connector indicating the status of the IDE RAID channels.

- **CN8(Channel 1)/CN9(Channel 2) : ATA-100 IDE RAID Connector, 40-pin**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	N/C	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	N/C	28	BALE - DEFAULT
29	N/C	30	GROUND - DEFAULT
31	INTERRUPT	32	IOCS16#-DEFAULT
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND

- **CN10: ATA-100 IDE RAID active LED connector.**

3.13 AUDIO Headphone (CN20) & Connector

The ROCKY-3703EVR has a built-in AC'97 AUDIO CODEC; connector directly connects to your MIC-IN & CD-IN & LINE-IN.

- **CN20: AUDIO Headphone Jack (Output)**

- **CN12: AUDIO LINE-IN Connector (Input)**

- **CN13: AUDIO CD-IN Connector (Input)**

- **CN14: AUDIO MIC-IN Connector (Input)**

PIN NO.	DESCRIPTION		
	CN12	CN13	CN14
1	LEFT	LEFT	MIC-IN
2	GND	GND	GND
3	GND	GND	GND
4	RIGHT	RIGHT	NC

3.14 ATX 20-PIN Power Connector (CN16)

This connector supports the ATX power, functions such as modem Ring on, wake-up LAN and soft power off are supported by mainboard. (Power source from Mainboard)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	3.3V	2	3.3V
3	GND	4	5V
5	GND	6	5V
7	GND	8	PW_OK
9	5VSB	10	12V
11	3.3V	12	-12V
13	GND	14	ATX-ON
15	GND	16	GND
17	GND	18	-5V
19	5V	20	5V

AMI BIOS Setup

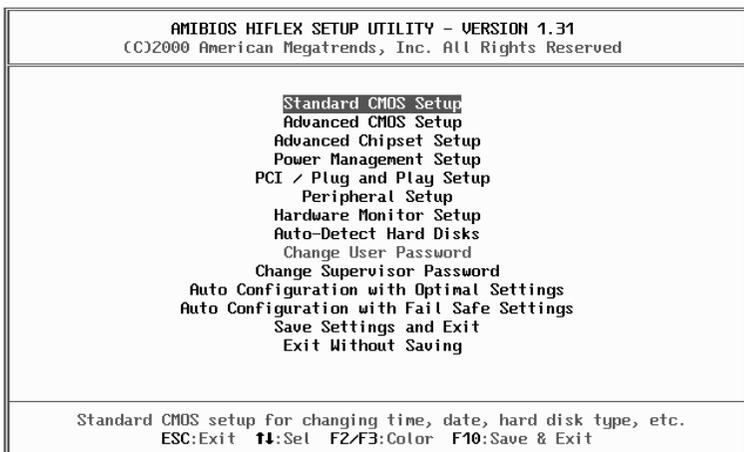
The ROCKY-3703EVR uses the AMI PCI/ISA BIOS for system configuration. The AMI BIOS setup program is designed to provide maximum flexibility in configuring the system by offering various options, which may be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

4.1 Getting Started

When powering on the system, the BIOS will enter the Power-On-Self-Test (POST) routines. These routines will be executed for system test, initialization and system configuration verification. After the POST routines are completed, the following message appears:

" Hit DEL if you want to run SETUP"

To access AMI PCI/ISA BIOS Setup program, press key. The following screen will be displayed at this time.

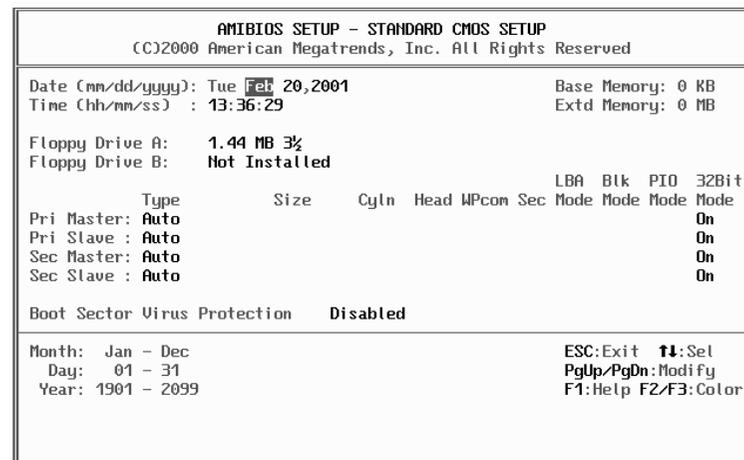


When choose **Auto Configuration with Fail Safe Settings** will load the minimized settings for Troubleshooting. The performance should be very poor when use this setting.

When choose **Auto Configuration with Optimal Settings** will load optimized defaults for regular use. Choosing this setting will modify all applicable settings.

4.2 Standard CMOS Setup

The Standard CMOS Setup is used for basic hardware system configuration. The main function is for Date/Time setting and Floppy/Hard Disk Drive setting. Please refer to the following screen for this setup.



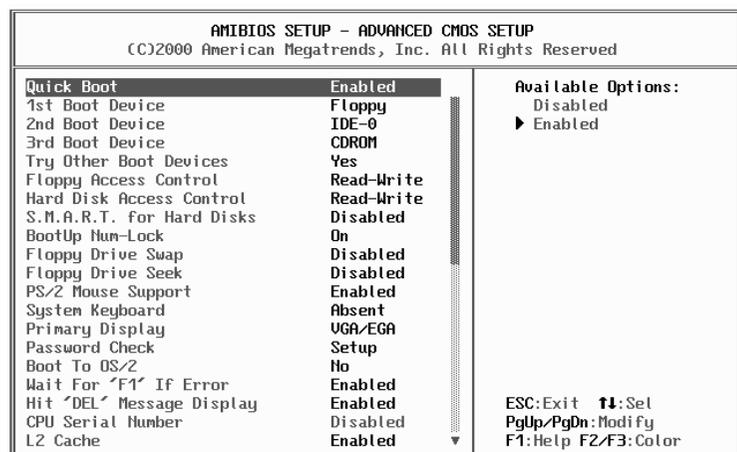
For IDE hard disk drive setup, please check the following possible setup procedure,

1. Use the Auto setting for detection during boot up.
2. Use the IDE HDD AUTO DETECTION in the main menu to automatically enter the drive specifications.
3. Manually enter the specifications by yourself from the "User" option.

4.3 Advanced CMOS Setup

The Advanced CMOS Setup is designed for the user's tuning best performance of the ROCKY-3703EVR board. As for normal operation, users don't have to change any default setting. The default setting is pre-set for most reliable operation.

Users can set "System Keyboard" to "Absent" for the application which don't need keyboard and display.



You can change the value of each option by using <PgUp> and <PgDn> key. The available values are shown on the right screen.

Quick Boot > Enabled: this will enable the BIOS to boot quickly when you turn on your computer. The BIOS will only check the first 1MB of the system memory.

Quick Boot > Disabled: the BIOS will test all system memory when it boots up. It will spend about 40 seconds until it receives a Ready signal from the HDD. It will also wait for you to press the key or not.

1st, 2nd, 3rd Boot Device > to define the sequence of boot drives after the routines check up completes. If the 1st Boot Device fails, the BIOS will attempt to boot from the 2nd or the 3rd device.

Try Other Boot Devices > the BIOS will try to boot from any other available device in the system if the 1st, 2nd and 3rd device fails to boot.

Floppy Access Control > to define the read/write access which is set when booting from a floppy drive.

Hard Disk Access Control > to define the read/write access which is set when booting from a HDD.

S.M.A.R.T. for Hard Disks > to allow BIOS to use the **System Management and Reporting Technologies** protocol for reporting server system information on a network

BootUp Num-Lock > to turn on/off the Num-Lock option on an enhanced keyboard when you boot. If you turn it off, the arrow keys on the numeric keypad can be used just as the other set of arrow keys on the keyboard and vice versa.

Floppy Drive Swap > this function enables you to swap the floppy disk drives via software or without moving the hardware.

Floppy Drive Seek > when this option is turned Enabled, BIOS will perform a Seek command on floppy drive A: before boot-up.

PS/2 Mouse Support > to testify whether or not a PS/2 mouse is supported.

System Keyboard > to configure the keyboard. If you set it Absent, BIOS will not report keyboard errors.

Password Check > to define if a password is necessary or not for access to the BIOS setup.

Boot to OS/2 > if you run the OS/2 operating system, this option must be set to yes. It means you permit BIOS to run properly if OS/2 or any other OS that does not support Plug and Play is found in your computer.

CPU Serial Number > this option is available only if you use Pentium® III processor.

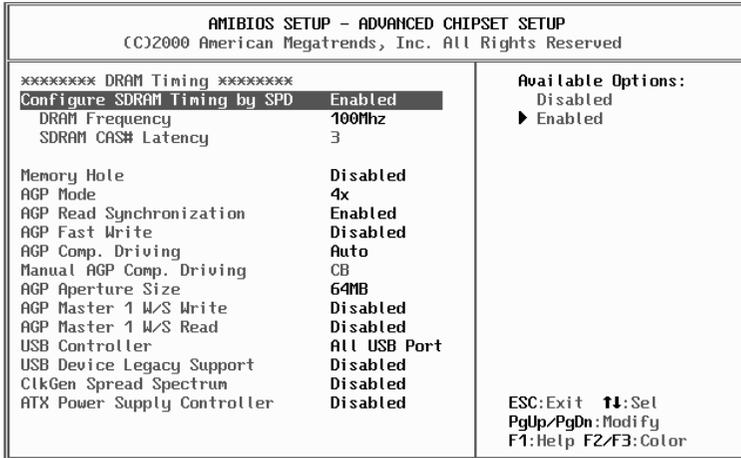
Cache Bus ECC > this option is available only if you use Pentium® III processor.

System BIOS Cacheable > to define whether or not the memory segment F000H can be read from or written to cache memory. Setting it Enabled will give faster execution in your system.

4.4 Advanced Chipset Setup

These setup functions mainly working for Chipset (Intel 440BX). These options are used to change the Chipset's registers.

Please carefully change any default setting, otherwise the system may become unstable.



Configure SDRAM Timing by SPD > The Serial Presence Detect is a 2048bits EEPROM which contains of the data of the chip module, capacity, timing, voltage, etc. The system will configure the SDRAM timing according to the data in the SPD when it is set enabled.

SDRAM CAS# Latency > to specify the CAS latency timing form SDRAM DRAM.

Memory Hole > to specify the location of a memory hole in the CMOS RAM. This setting reserves 15MB to 16MB memory address space for ISA expansion cards that specifically require this setting. Memory from 15MB and up will be unavailable to the system because expansion cards can only access memory up to 16MB.

AGP Mode > *Enabled 4X* will give you better system performance.

AGP Fast Write > The setting can adjust AGP driving of signal, AGP will have the best performance and compatibility.

AGP Aperture Size > to define the size of Graphics Aperture.

AGP Master 1 W/S Write>System will run single wait state delay before write data from buffer, if user set to "Disable" system will run twice wait states, so system can stable

AGP Master 1 W/S Read> System will run single wait state delay before read data from buffer, if user set to "Disable" system will run twice wait states, so system can stable

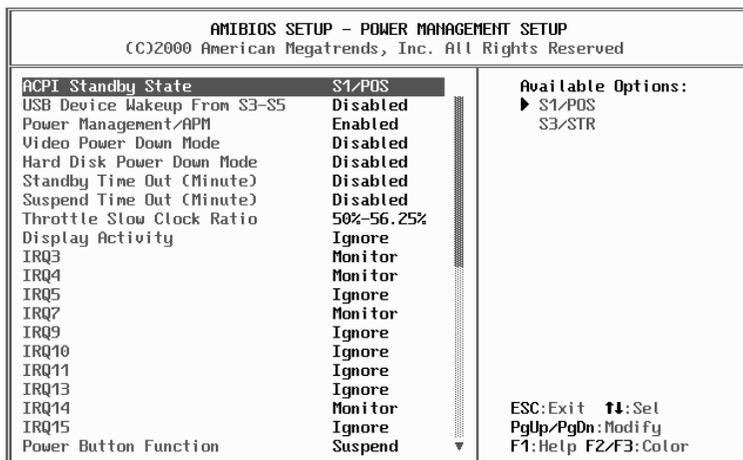
USB Passive Release > to specify whether or not PIIX4 is allowed to use Passive Release while transferring control data for USB transactions.

USB Function > to enable or disable the USB (Universal Serial Bus) functions.

ATX Power Supply Controller > to Enable or Disable ATX Power Supply

4.5 Power Management Setup

Power Management Setup helps user handle the ROCKY-3703EVR board's "green" function. The features could shut down the video display and hard disk to save energy for example. The power management setup screen is as following:



ACPI Standby State: S1/POS, S3/STR

This item allows you to select power Management ACPI mode.

Power Management/APM: Disable, Max Saving, Min Saving, or User Defined > Max Saving puts the system into power saving mode after a brief inactivity period. Min Saving is almost the same as Max Saving except that the inactivity period is longer. User Defined allows you to set power saving options according to your requirement.

Note: Advanced Power Management (APM) has to be installed to keep the system time updated when the computer enters suspend mode activated by the Power Management.

Under DOS environment, you need to add

DEVICE=C:\DOS\POWER.EXE in your CONFIG.SYS

Under Windows 3.x and Windows 95, you have to install Windows with APM feature. A battery and power cord icon labeled "Power" will appear in the "Control Panel"

Power Management/APM > to enable or disable the Advanced Power Management feature.

Video Power Down Mode > to specify the power state of the VESA VGA video subsystem after the specified period of display-idle has ended.

Hard Disk Power Down Mode > to specify the power state of the hard disk after the specified period of hard drive-idle has ended.

Standby Time Out (Minute) > to specify the length of the system-idle period while the system is in full power on state. After this period of time has ended, the system will go into Standby state.

Suspend Time Out (Minute) > to specify the length of the system-idle period while the system is in Standby state. After this period of time has ended, the system will go into Suspend state.

Throttle Slow Clock Ratio > to specify the speed of system clock under power saving state. The figure is a ratio between power conserving and normal state CPU clock.

Modem Use IO Port > to assign a port for modem.

Modem Use IRQ > to assign an IRQ for modem

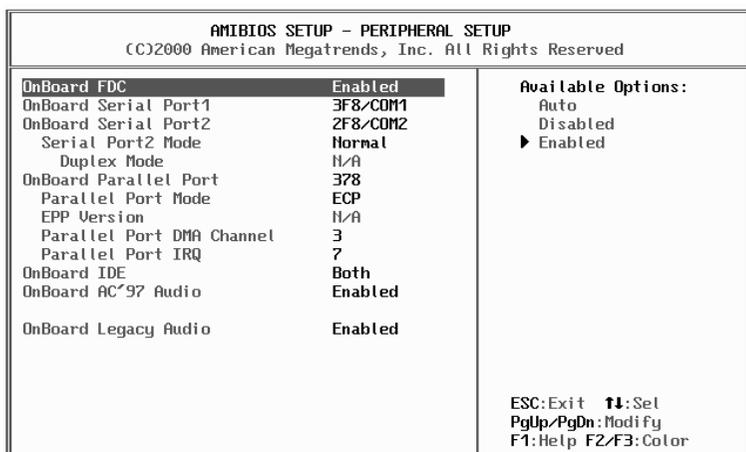
Display Activity > to specify if BIOS has to monitor display activity or not.

Device X > to monitor specified device IRQ or Ignore.

Power Button Function > to specify how the powers button on the chassis is operated.

4.6 Peripheral Setup

These setup mainly works for Multi-I/O Chip (W83977TF). These options are used to change the Chipset's registers. Please carefully change any default setting to meet your application need perfectly. The only special concern is Onboard Serial Port B. if you are using the IrDA port; you have to set this port accordingly.



Onboard FDC > to enable the FDC on your board. If you set it Auto, the BIOS will decide if the FDC should be enabled, automatically).

Onboard Serial Port A (/B) > to specify the I/O port address of the serial port A (/B). If you set it Auto, the BIOS will decide the correct I/O port address, automatically.

Serial Port B Mode > to specify the mode of serial port B.

IR Duplex Mode > to specify the mode of IR device that is connected to the IR port.

IrDA Protocol > to specify the function mode if an IrDA mode is selected.

Onboard Parallel Port > to specify the I/O port address of the parallel port.

Parallel Port Mode > to specify the mode of parallel port. The options are:

Normal (normal parallel port mode),

Bi-Dir (supports bi-directional transfer),

EPP (supports devices that comply with the Enhanced Parallel Port specification),

ECP (supports devices that comply with the Extended Capabilities Port).

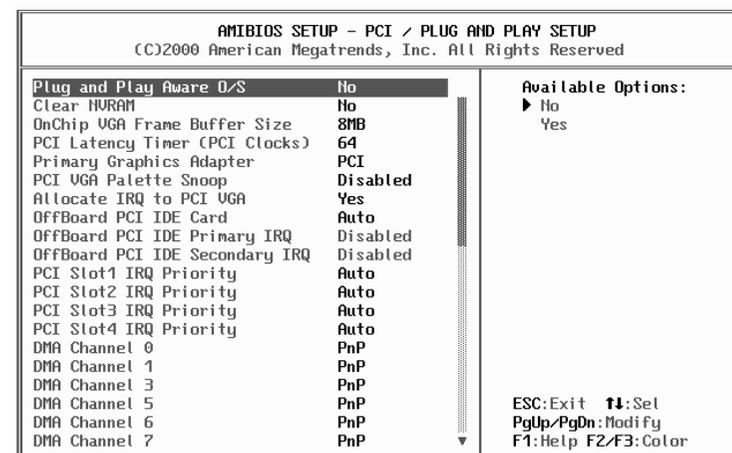
Parallel Port IRQ > to assign certain IRQ to the parallel port. The optimal and fail-safe settings are 7.

Parallel Port DMA Channel > available only if the parallel port mode is ECP. The optimal and fail-safe settings are 3.

Onboard IDE > to define which on-board IDE controller channel(s) to be used. Available options are primary, Secondary, Both and Disabled.

4.7 PCI / PLUG AND PLAY SETUP

The setup helps users handle the ROCKY-3703EVR board's "PCI" function. All PCI bus slots on the system use INTA#, thus all installed PCI slots must be set to this value.



Plug and Play Aware O/S > Yes or No

When PnP OS is installed, the OS may reassign interrupts when the setting is "Yes". When a non-PnP OS is installed or to prevent reassigning of interrupt settings, select setting to "No".

Plug and Play Aware O/S > Yes or No

When PnP OS is installed, the OS will reassign interrupts when the setting is "Yes". When a non-PNP OS is installed or to prevent reassigning of interrupt settings, select setting to "No".

Clear NVRAM > if yes, BIOS will auto-clear NVRAM on every boot.

On Board PCI SCSI Controller > to enable and disable the on board PCI SCSI Controller

PCI Latency Timer (PCI Clocks) > to define the latency timing (PCI clock) for all PCI devices on the PCI bus.

PCI VGA Palette Snoop > this option is useful only for system with more than one VGA devices connected to it through different bus (one PCI and one ISA). To enable those various VGA devices to handle signal from the CPU on each set of palette registers of every video devices, it must be set *Enabled*.

Allocate IRQ to PCI VGA > to allocate IRQ to PCI VGA, answer Yes and vice versa.

Offboard PCI IDE Card > to specify if an off board PCI IDE card is installed in your computer or not. You must specify the slot number on the board, which will be used for the card.

Offboard PCI IDE Primary (/Secondary) IRQ > to specify the PCI interrupt that is assigned to the Primary (/Secondary) IDE channel on the offboard PCI IDE controller.

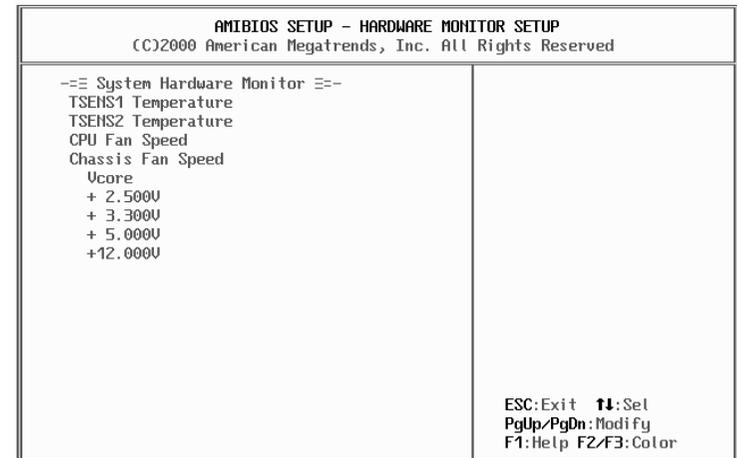
PCI Slot (1,2,3,4) IRQ Priority > to specify the IRQ priority to be used by the PCI devices on slot 1 to 4.

DMA Channel (0,1,3,5,6,7) > to indicate whether or not the DMA channel is assigned for a PnP or ISA card.

IRQ (3,4,5,7,9,10,11,14,15) > to assign the displayed IRQ to be used by a legacy ISA adapter card. The settings are ISA/EISA or PCI/PnP.

4.8 Hardware Monitor Setup

This setup helps users monitor the ROCKY-3703EVR boards on board system voltage and fan speed. The function is implemented by on board VIA686 chip. The voltage monitoring will cover +5V, +12V,-12V,and -5V. And there are three fan connectors for chassis and CPU fans.



Note: normal CPU Fan RPM is over than 5000 RPM. If your CPU Fan RPM is less than that figure, something is wrong and the CPU will be in overheat condition. Make sure that the connection at CN1/CN22 is correct.

Appendix A. Watch-Dog Timer

The WatchDog Timer is a device to ensure that standalone systems can always recover from abnormal conditions that cause the system to crash. These conditions may result from an external EMI or a software bug. When the system stops working, hardware on the board will perform hardware reset (cold boot) to bring the system back to a known state. The I/O ports control the operation of WatchDog Timer.

443 (hex)	Write	Set WatchDog Time period
443 (hex)	Read	Enable the refresh the WatchDog Timer.
043/843 (hex)	Read	Disable the WatchDog Timer.

Prior to enable the WatchDog Timer, user has to set the time-out period. The resolution of the timer is 1 second and the range of the timer is from 1 sec to 255 sec. You need to send the time-out value to the I/O port – 443H, and then enable it by reading data from the same I/O port – 443H. This will activate the timer that will eventually time out and reset the CPU board. To ensure that this reset condition won't occur, the WatchDog Timer must be periodically refreshed by reading the same I/O port 443H. This must be done within the time-out period that is set by the software, please refer to the example program. Finally, we have to disable the WatchDog timer by reading the I/O port -- 843H or 043H. Otherwise the system could reset unconditionally.

A tolerance of at least 5% must be maintained to avoid unknown routines in the operating system (DOS), such as disk I/O that can be very time-consuming. Therefore if the time-out period has been set to 10 seconds, the I/O port 443H must be read within 7 seconds.

Example assembly program:

```
TIMER_PORT = 443H
```

```
TIMER_START = 443H
```

```
TIMER_STOP = 843H
```

```
;;INITIAL TIMER COUNTER
```

```
MOV DX, TIMER_PORT
```

```
MOV AL, 8 ;;8 seconds
```

```
OUT DX, AL
```

```
MOV DX, TIMER_START
```

```
IN AL, DX. ;;START COUNTER
```

```
W_LOOP:
```

```
MOV DX, TIMER_STOP
```

```
IN AL, DX
```

```
MOV DX, TIMER_START
```

```
IN AL, DX ;;RESTART COUNTER
```

```
;;ADD YOUR APPLICATION HERE
```

```
CMP EXIT_AP, 0
```

```
JNE W_LOOP
```

```
MOV DX, TIMER_STOP
```

```
IN AL, DX
```

```
;;EXIT AP
```

Appendix B. I/O Address Map

• I/O Address Map

I/O Address Map	Description
000-01F	DMA Controller #1
020-021	Interrupt Controller # 1, Master
040-05F	System Timer
060-06F	Standard 101/102 keyboard Controller
070-07F	Real time Clock, NMI Controller
080-0BF	DMA Page Register
0A0-0BF	Interrupt Controller # 2
0C0-0DF	DMA Controller # 2
0F0-0F0	Clear Math Coprocessor Busy
0F1-0F1	Reset Math Coprocessor
0F8-0FF	Math Coprocessor
170-1F7	BUS Master PCI IDE Controller
278-27F	Parallel Printer Port 2
2F8-2FF	Serial Port 2
294-297	PCI bus
376-376	BUS Master PCI IDE Controller
378-37F	Parallel Printer Port 1
3B0-3DF	Standard AGP Graphic Adapter
3F0-3F7	Floppy Disk Controller
3F8-3FF	Serial Port 1
443	Watch dog timer enable
843/043	Watch dog timer disable

1 st MB Memory Address Map

Memory address	Description
00000-9FFFF	SYSTEM MEMORY
A0000-BFFFF	VGA BUFFER
C0000-C7FFF	VGA BIOS
C8000-CFFFF	NO USE
D6000-D7FFF	DEFAULT DOC2000 ADDRESS
E0000-FFFFFF	SYSTEM BIOS
100000	EXTEND MEMORY

IRQ Mapping Chart

IRQ0	System Timer	IRQ8	RTC clock
IRQ1	Keyboard	IRQ9	SCSI PORT A
IRQ2	IRQ Controller	IRQ10	LAN
IRQ3	COM2	IRQ11	IDE RAID
IRQ4	COM1	IRQ12	PS/2 mouse
IRQ5	LAN	IRQ13	FPU
IRQ6	FDC	IRQ14	Primary IDE
IRQ7	Printer	IRQ15	Secondary IDE

DMA Channel Assignment

Channel	Function
0	Available
1	Available
2	Floppy disk
3	Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

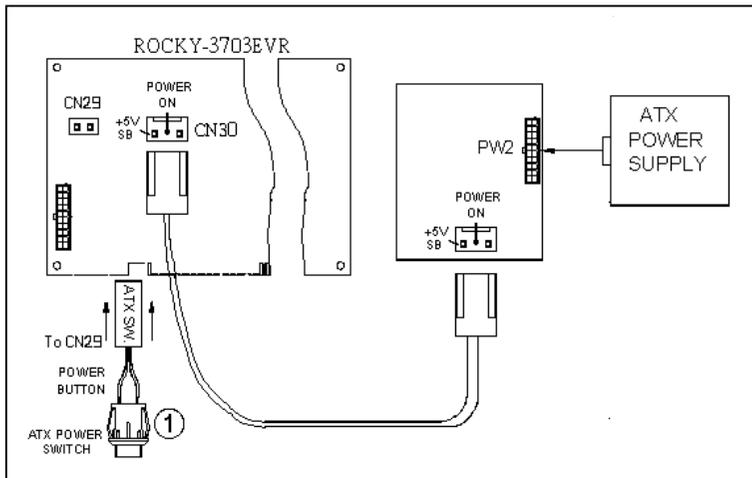
Appendix C. ATX Power Supply

The following notes show how to connect ATX Power Supply to the backplanes and / or the ISBC card.

A. For backplanes with ATX Connector

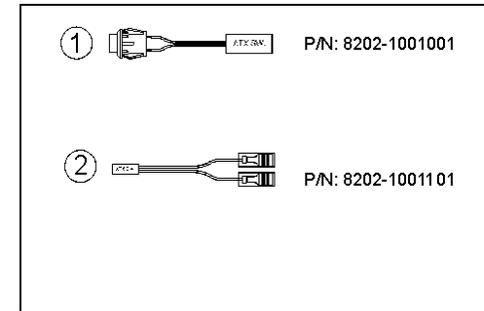
1. Please, disconnect the AC cord of the Power Supply from the AC source to prevent sudden electric surge to the board.
2. Please, check the type of your CPU board. All CPU board listed on the next page support ATX power supply but has two types of power switch connection:

2.1. ROCKY-3703EVR (through Power Button & GND):



Connect the ATX power button switch to the CN29 (power button). And connect the power cable from Backplane to CN30 of CPU card.

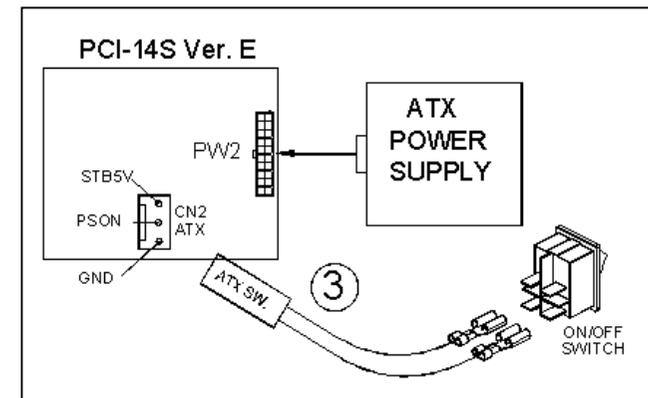
If you want to turn ON the system, just press the button once. And if you want to turn off the power supply, please press the ATX power switch button for about 4 seconds.



B. For the backplanes with ATX power supply connector

For some SBC without ATX power ON/OFF function, then you can control the ATX power supply through backplane's PS ON connector. Refer to the figure below: for the backplanes with ATX connector, the connection can be made simply as following:

1. Connect the ON/OFF (ordinary one) switch to Pin 2 (PS ON) and Pin 3 (GND) of connector CN2
2. You may now turn the power ON/OFF by the power switch



Appendix D. How to use Wake-Up Function

The ROCKY-3703EVR provides two kind of Wake up Function. This page describes how to use Modem Wake-Up and LAN Wake-Up function.

Wake-Up function is working while you use ATX power supply,

Wake-Up By Ring:

You must set the option **Power On By Ring** of CMOS SETUP to be enabled. The ATX power supply will be switched on when there is a ring signal detected on pin "RI" of serial port.

Wake-Up On LAN:

When your computer is in power-down status, you can see LAN Link/Active LED is flashing. This status indicates that the LAN chip has entered standby mode and waits for Wake-Up signal. You can use other computers to wake up your computer by sending ID to it.

ID: ID is the address of your system LAN. Every LAN chip has a factory-set ID, which you can find it from network information in WINDOWS.

ID's format is xxxxxxxxxxxx

Example ID: 009027388320

Appendix E. RAID FastTrak100

1. Introduction

Promise designed its FastTrak100 to provide a cost-effective, high performance RAID that adds performance and/or reliability to PC desktops and/or servers using Ultra ATA/100, Ultra ATA/66, or EIDE drives.

FastTrak100 supports striping (RAID 0), mirroring (RAID 1), striping/mirroring (RAID 0+1), or spanning (JBOD) operation, respectively.

With striping, identical drives can read and write data in parallel to increase performance. Mirroring increases read performance through load balancing and elevator sorting while creating a complete backup of your files. Striping with mirroring offers both high read/write performance and error tolerance. Spanning uses the full capacity of all attached drives without requiring identical drive size, but offers no other RAID functionality.

A FastTrak100 striped array can double the sustained data transfer rate of Ultra ATA/66 drives. FastTrak100 fully supports Ultra ATA/100 specification of up to 100 MB/sec per drive, depending on individual drive specifications.

FastTrak100 also offers fault tolerant, data redundancy for entry-level network file servers or simply for desktop PC users wanting to continually protect valuable data on their PC. FastTrak100 offers RAID 1 mirroring (for two drives) and RAID 0+1 mirroring and striping (for four drives) to protect data. Should a drive that is part of a mirrored array fail, FastTrak100 uses the mirrored drive (which contains identical data) to assume all data handling. When a new replacement drive is later installed, FastTrak100 rebuilds data to the new drive from the mirrored drive to restore fault tolerance.

FastTrak100's bootable BIOS supports individual drives larger than 8.4GB. With FAT32 and NTFS partitioning, the array can be addressed as one large *single* volume.

The FastTrak100 controller provides two IDE hard drive connectors that support Ultra ATA/100 protocols, perfect for such demanding applications as real-time video, multimedia, and high-performance operating systems. FastTrak100's two IDE connectors each support a master/slave combination of any IDE devices, including IDE, EIDE, Fast-ATA, and Ultra-ATA standards. Devices of different standards can be connected to FastTrak100 without performance degradation, due to the independent programmable timing registers in the controller's design.

2. Software Installation

This section details the FastTrak100 driver installation procedure when used with various operating systems as follows:

- Windows 2000
- Microsoft Millenium
- Windows 98
- Windows NT 4.x
- Linux

You can install from CDROM drive or **copy it to disk from CDROM**.

2-1 Windows 2000

2-1-1 Installing Driver during New Windows 2000 Installation

1a. Floppy Install: Boot the computer with the Windows 2000 installation diskettes.

1b. Floppyless Install: Boot from floppy and type "WINNT". After files have been copied, the system will reboot. On the reboot, press <F6> after the message "Setup is inspecting your computer's hardware configuration..." appears.

1c. CD-ROM Install: Boot from the CD-ROM. Press <F6> after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.

2. When the "Windows 2000 Setup" window is generated, press "S" to Specify an Additional Device(s)

3. Press "O" to select "Other" and press the "Enter" key.

4. Insert the Promise Technology driver diskette into drive A:

and press "Enter" key.

5. Choose "Win2000 Promise FastTrak100 Controller" from the list that appears on screen, and then press the "Enter" key.

6. The Windows 2000 Setup screen will appear again saying, "Setup will load support for the following mass storage devices:" The list will include "Win2000 Promise FastTrak100 controller".

NOTE: *If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, Continue to step 6.*

7. From the Windows 2000 Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows 2000 installation.

2-1-2 Installing Driver in Existing Windows 2000 System

WARNING: *If you will be moving the boot drive containing the existing Windows 2000 operating system to the FastTrak100 card, the Ultra100 driver MUST be loaded on to this hard drive while it is still attached to your existing hard drive controller. Do not attach this drive or any other hard drive to the FastTrak100 controller card before completing this step.* After installing the FastTrak100 card and rebooting your system, Windows 2000 setup will show a "New Hardware Found" dialog box.

1. In the dialog box, choose "Driver from disk provided by hardware manufacturer" button.

2. In the A: drive, insert the FastTrak100 driver diskette.

3. Type "A:\WIN2000" in the text box. Press "Enter".

4. Choose "Win2000 Promise FastTrak100 IDE Controller" from the list that appears on screen, and then press the "Enter" key.

5. The Windows 2000 Setup screen will appear again saying, "Setup will load support for the following mass storage devices: Win2000 Promise FastTrak100 IDE controller". The FastTrak100 driver will now be copied on to the system and entered into the Windows 2000 driver database.

6. When the "System Settings Change" dialog box appears, remove the floppy diskette and click on "Yes" to restart the system. Windows 2000 will then restart for the driver installation to take effect.

7. Power off your system, then attach your hard drive to the FastTrak100 controller.

Confirming Windows 2000 Installation

1. From Windows 2000, open the Control Panel from "My

Computer” followed by the System icon.

2. Choose the “Hardware” tab, and then click the “Device Manager” tab.
3. Click the “+” in front of “SCSI controllers.” “Promise Technology, Inc. FASTTRAK100 IDE controller” should appear.

2-2 Microsoft Millennium

2-2-1 Installing Drivers during Millennium Installation

The following details the installation of the FastTrak100 drivers while installing Microsoft’s Millennium (with the FastTrak100 controller card already in place). If you’re installing the FastTrak100 drivers on a system with Millennium already installed, see “Installing Drivers with Existing Millennium System.”

1. Install Microsoft Millennium fully.
2. After installation, go the “Start” menu and choose “Settings.”
3. From the “Settings” menu, choose “Control Panel.”
4. In the “Control Panel” window, double-click on the “System” icon.
5. In the “System” window, choose the “Device Manager” tab.
6. In the hierarchical display under “Other Devices” is a listing for

“PCI Mass Storage Controller.” Choose it and then press the “Properties” button.

7. Choose the “Driver” tab in the “Properties” window, choose “Update Driver,” and then press “Next.”
8. Choose “Search for a better driver than the one your device is using now (recommended),” then press “Next.”
9. Choose “Specify Location,” then type “A:\WINMILL” in the text box.
10. Insert the “FastTrak100 Driver” diskette into drive A:.
11. Press the “Next” button. A message informing you that Millennium has found “Windows Millennium Promise FASTTRAK100 (tm) IDE Controller” should appear.
12. Press “Next,” then “Finish,” then “Yes” when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

2-2-2 Installing Drivers with Existing Millennium System

The following section details the installation of FastTrak100 drivers on a system that has Millennium already installed and

running. If you’re installing the FastTrak100 drivers on a system during an installation of Millennium, see “Installing Drivers During Millennium Installation.”

1. After installing the FastTrak100 controller card and configuring the hard drives, power up the system and boot.
2. The “Add New Hardware Wizard” will appear, informing you that it has found a “PCI Mass Storage Controller.”
3. Click on “Next,” and from the generated list box, choose “Search for a better driver than the one your device is using now.”
4. Click on “Next,” and from the generated choices, choose “Specify a location.”
5. Insert the “FastTrak100 Driver” diskette in drive A:.
6. Type “A:\WINMILL” in the text box that appears.
7. Click on “Next.” A message informing you that Millennium has found “Windows Millennium Promise FASTTRAK100 (tm) IDE Controller” should appear.
8. Click on “Next” and then on “Finish”.
9. Choose “Yes” when asked if you want to restart your computer.

Confirming Driver Installation in Millennium

To confirm that the driver has been properly loaded in Millennium,

perform the following steps:

1. Choose “Settings” from the “Start” menu.
2. Choose “Control Panel,” and then double-click on the “System” icon. Choose the “Device Manager” tab, and then click the “+” in front of “SCSI controllers.” “Windows Millennium Promise FASTTRAK100 (tm) IDE controller” should appear.

2-3 Windows 98

5.2-3-1 Installing Drivers During Windows 98 Installation

The following details the installation of the FastTrak100 drivers while installing Windows 98 (with the FastTrak100 controller card already in place). If you’re installing the FastTrak100 drivers on a system with Windows 98 already installed, see “Installing Drivers with Existing Windows 98.”

1. After installing the FastTrak100 controller card and configuring the hard drive(s) partition and format your hard drive(s), if necessary.

2. Install Windows 98 normally.
3. After installation, go the "Start" menu and choose "Settings."
4. From the "Settings" menu, choose "Control Panel."
5. In the "Control Panel" window, double-click on the "System" icon.
6. In the "System" window, choose the "Device Manager" tab.
7. In the hierarchical display under "Other Devices" is a listing for

"PCI Mass Storage Controller." Choose it and then press the "Properties" button.

8. Choose the "Driver" tab in the "Properties" window, choose "Update Driver" and then press "Next".
9. Choose "Search for a better driver than the one your device is using now (recommended)," then press "Next."
10. Choose "Specify Location," and then type "A:\WIN95-98" in the text box.
11. Insert the "FastTrak100 Driver" diskette into the drive A:.
12. Press the "Next" button. A message informing you that Windows has found "Win95-98 Promise FASTTRAK100 (tm) IDE Controller" should appear.
13. Press "Next," then "Finish," then "Yes" when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

2-3-2 Installing Drivers with Existing Windows 98

The following section details the installation of FastTrak100 drivers on a system that has Windows 98 already installed. If you're installing the FastTrak100 drivers on a system during a Windows 98 installation, see "Installing Drivers During Windows 98 Installation."

1. After installing the FastTrak100 controller card and configuring the hard drives, power up the system and boot Windows.
2. The "Add New Hardware Wizard" will appear, informing you that it has found a "PCI Mass Storage Controller."
3. Click on "Next," and from the generated list box, choose "Search for a better driver than the one your device is using now."
4. Click on "Next," and from the generated choices, choose "Specify a location."
5. Type "A:\WIN95-98" in the text box that appears.
6. Insert the "FastTrak100 Driver" diskette in drive A:.

7. Click on "Next." A message informing you that Windows has found "Win95-98 Promise FASTTRAK100 (tm) IDE Controller" should appear.

8. Click on "Next" and then on "Finish".

9. Choose "Yes" when asked if you want to restart your computer. Be sure to eject the diskette from drive A:.

Confirming Driver Installation in Windows 98

To confirm that the driver has been properly loaded in Windows 98, perform the following steps:

1. Choose "Settings" from the "Start" menu.
2. Choose "Control Panel," and then double-click on the "System" icon.
3. Choose the "Device Manager" tab, and then click the "+" in front of "SCSI controllers." "Win95-98 Promise FASTTRAK100 (tm) IDE controller" should appear.

2-4 Windows NT 4.x

2-4-1 Installing Drivers During New Windows NT 4.0 Installation

1. Start the system installation by booting from the Windows NT disk:
 - a) Floppy install: boot the system with the Windows NT installation diskettes.
 - b) Floppyless install: boot from floppy and type "WinNT /B". After files have been copied, the system will reboot. On the reboot, press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
 - c) CD-ROM disk install: boot from the CD-ROM disk and press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
2. When the "Windows NT Setup" window is generated, press "S" to Specify an Additional Device(s).
3. Press "O" to select "Other" and press the "Enter" key.
4. Insert the Promise Technology driver diskette into drive A: and press the "Enter" key.
5. Choose "WinNT Promise FastTrak100 (tm) Controller" from the list that appears on screen, and then press the "Enter" key.
6. The Windows NT Setup screen will appear again saying, "Setup will load support for the following mass storage devices:"

The list will include “Win2000 Promise FastTrak100 (tm) controller”.

NOTE: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 6.

7. From the Windows NT Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows NT installation.

8. After a successful installation, the “SCSI Adapter Setup” box will show that the “WinNT Promise FastTrak100 (tm) Controller” driver has been installed.

2-4-2 Installing Drivers with Existing Windows NT 4.0

WARNING: If you wish to use your current bootable drive with the

Windows NT4 operating system on the FastTrak100, perform the steps below while the boot drive is still attached to your existing onboard IDE controller. Do not attach any drives to your FastTrak100 until the steps below are complete.

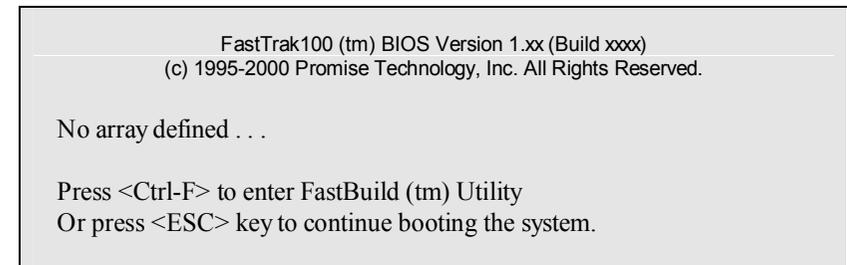
1. Choose “Settings” from the “Start” menu.
2. Choose “Control Panel” from the “Settings” menu.
3. Double-click on the “SCSI Adapters” icon, which generates the “SCSI Adapters” dialog box.
4. Choose “Drivers,” and then press “Add.”
5. In the “Install Drivers” dialog box, press “Have Disk...”
6. When the “Install from Disk” appears, insert the “FastTrak100 Driver” diskette in drive A:.
7. Type “A:\NT4” in the text box, and then choose “OK.”
8. When the “Install Driver” dialog box appears, select “WinNT Promise FastTrak100 (tm) Controller” and then press “OK.”
9. When the “Select SCSI Adapter Option” dialog box appears, press “Install.”
10. After a successful installation, the “SCSI Adapter Setup” box will show that the “WinNT Promise FastTrak100 (tm) Controller” driver has been installed.
11. Power off your system, and then attach your hard drive(s) to the FastTrak100 controller.

3. FastTrack100 BIOS Utility

Creating Your Disk Array

You will now use the onboard FastBuild BIOS utility to create your array using the attached drives. There are three different scenarios in creating this array. You can create an array for performance, you can create a Security array using new hard drives (recommended), or you can create a Security array using an existed hard drive and a new hard drive.

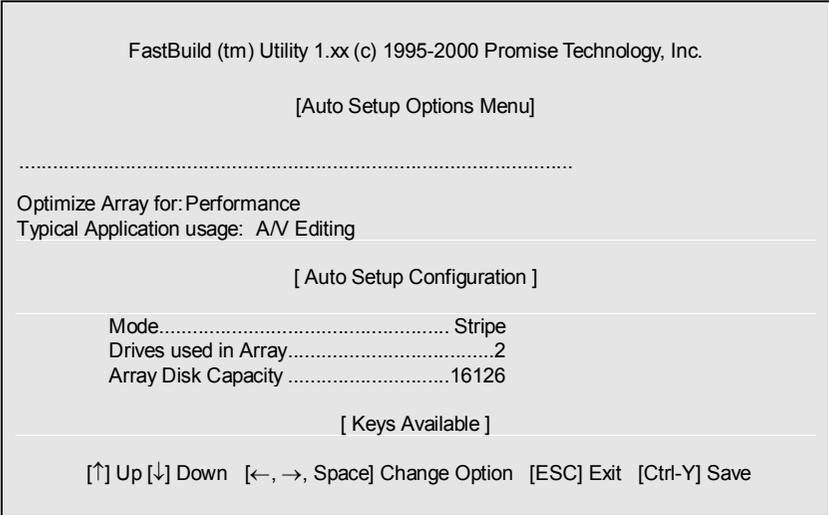
1. Boot your system. If this is the first time you have booted with the FastTrak100 card and drives installed, the Promise onboard BIOS will display the following screen.



2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu
3. Press “1” to display the Auto Setup Menu below. This is the fastest and easiest method to creating your first array.

Creating an Array for Performance

NOTE: FastTrak100 allows users to create striped arrays with 1, 2, 3, or 4 drives.



NOTE: If you wish to customize certain settings at a later time, you may do so by manually creating your array (see page70 in Using FastBuild Configuration Utility).

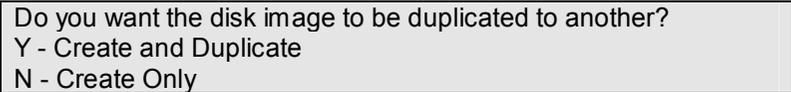
To create an array for best performance, follow these steps:

1. Using the Spacebar, choose "Performance" under the **Optimize Array for** section.
2. Select how you will use your PC most under the **Typical Application usage** section the choices are A/V Editing, Server, and Desktop (the default).
3. Press <Ctrl-Y> keys to Save and create the array.
4. Reboot your system.
5. Once the array has been created, you will need to FDISK and format the array as if it were a new single hard drive.
6. Proceed to Installing Drivers section of the manual Creating a Security Array With New Drives

NOTE: FastTrak100 permits only two drives to be used for a single Mirrored array in Auto Setup. If more drives are physically attached to the card, the Mirroring option will not be available at all in Auto Setup.

To create an array for data protection using new hard drives, follow these steps:

1. Using the Spacebar, choose "Security" under the **Optimize Array for** section.
2. Press <Ctrl-Y> keys to save your selection.
3. The window below will appear.



4. Press "N" for the Create Only option.
5. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system

Array has been created.
<Press Any Key to Reboot>

6. Proceed with normal FDISK and format procedures as if you had just installed a new hard drive.
7. Once the arrayed drives have been formatted proceed to the **Installing Driver** chapter on page 46 to install your operating system and/or FastTrak100 driver.

Creating a Security Array with an Existing Data Drive

NOTE: *FastTrak100 permits only two drives to be used for a single Mirrored array in Auto Setup. If more drives are physically attached to the card, the Mirroring option will not be available.*

You would use this method if you wish to use a drive that already contains data and/or is the bootable system drive in your system. You will need another drive of identical or larger storage capacity.



WARNING: *Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.*



WARNING: *If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on your FastTrak100, do NOT connect the hard drive to the FastTrak100 controller yet. You MUST install the Windows NT4 or 2000 driver software first (see page 46) to this drive while it is still attached to your existing hard drive controller. For all other Operating Systems, proceed here.*

Follow these steps:

1. Using the Spacebar, choose "Security" under the **Optimize Array for** section.
2. Press <Ctrl-Y> keys to save your selection. The window below will appear.

Do you want the disk image to be duplicated to another?
Y - Create and Duplicate
N - Create Only

- Press “Y” for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.

Source Disk		
Channel:ID	Drive Model	Capacity (MB)
Target Disk		
Channel:ID	Drive Model	Capacity (MB)
[Please Select A Source Disk]		
Channel:ID	Drive Model	Capacity (MB)
1	:MasterQUANTUMCR8.4A	8063
2	:MasterQUANTUMCR8.4A	8063
[↑] Up [↓] [ESC] Exit [Ctrl-Y] Save		

- Use the arrow keys to choose which drive contains the existing data to be copied.
- Press [Ctrl-Y] keys to Save selection and start duplication. The following progress screen will appear.

```
Start to duplicate the image . . .
Do you want to continue? (Yes/No)
Y - Continue N - Abort
```

- Select “Y” to continue. If you choose “N”, you will be returned to step 1.
- Once complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system

```
Array has been created.
<Press Any Key to Reboot>
```

4. Using FastBuild™ Configuration Utility

The FastBuild™ Configuration Utility offers several menu choices to create and manage the drive array on the Promise FastTrak100 adapter. For purposes of this manual, it is assumed you have already created an array in the previous chapter and now wish to make a change to the array or view other options.

Viewing FastTrak100 BIOS Screen

When you boot your system with the FastTrak100 card and drive installed the Promise onboard BIOS will detect the drives attached and show the following screen.

```
FastTrak100 (tm) BIOS Version 1.xx (Build xxxx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

Scanning IDE drives . . . . .
```

If an array exists already, the BIOS will display the following screen showing the BIOS version and status of the array.

```
FastTrak100 (tm) BIOS Version 1.xx (Build xxxx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

ID      MODE SIZETRACK-MAPPING  STATUS
-----
1 *    2+0 Stripe16126M   611/128/32  Functional

Press <Ctrl-F> to enter FastBuild (tm) Utility....
```

The array status consists of three possible conditions: *Functional*, *Critical*, and *Offline*.

Functional - The array is operational.

Critical - A mirrored array contains a drive that has failed or disconnected. The remaining drive member in the array is functional. However, the array has temporarily lost its ability to provide fault tolerance. The user should identify the failed drive through the FastBuild™ Setup utility, and then replace the problem drive.

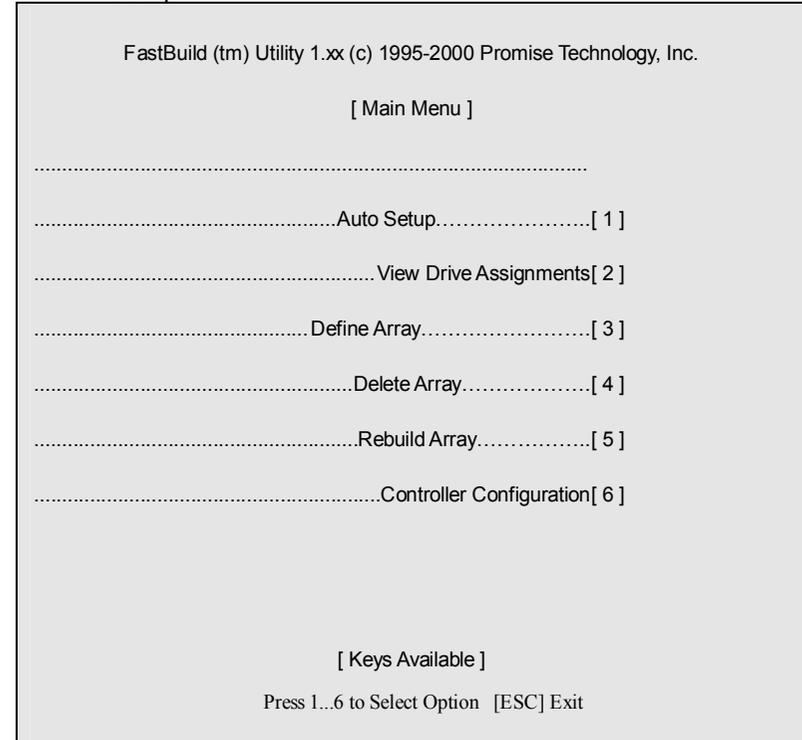
Offline - A mirrored array has 2 drives that have failed/disconnected or a striped array has 1 drive that has failed or been disconnected. When the array condition is “offline,” the user must replace the failed drive(s), then restore data from a backup source.

Navigating the FastBuild™ Setup Menu

When using the menus, these are some of the basic navigation tips: Arrow keys highlights through choices; [Space] bar key allows cycling through options; [Enter] key selects an option; [ESC] key is used to abort or exit the current menu.

Using the Main Menu

This is the first option screen when entering the FastBuild™ Setup.



To create a new array automatically, follow the steps under “Creating Arrays Automatically” on page 65. Promise recommends this option for most users.

To manually create an array or define an array as bootable, follow the steps under “Manually Creating Arrays” on page 69. You will need to manually create an array if you wish to modify block size.

To view drives assigned to arrays, see “Viewing Drive Assignments” on

page 68.

To delete an array (but not delete the data contained on the array), select “Deleting An Array” on page 77.

To rebuild a mirrored array, see “Rebuilding an Array” on page 79.

To view controller settings, see “Viewing Controller Configuration” on page 81

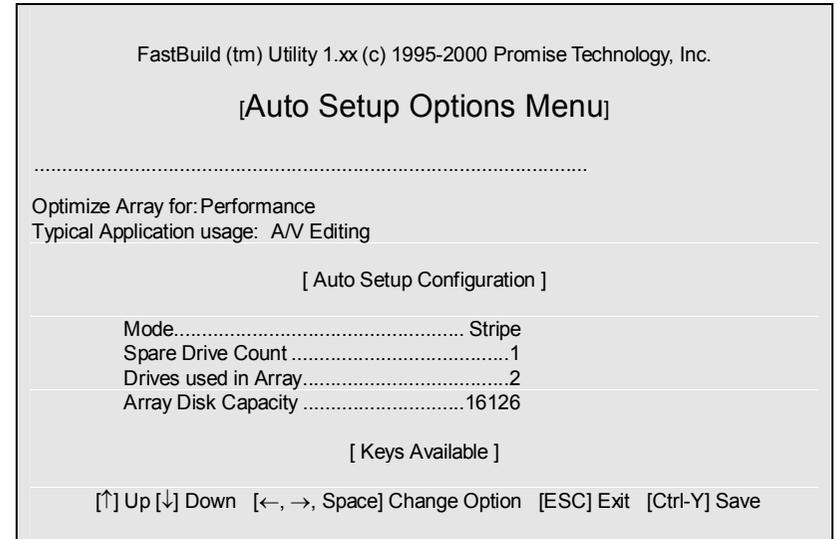


NOTE: After installing the FastTrak100 card and configuring an array using FastBuild, you should FDISK and format the arrayed drive(s) if you are using new, blank drives. Depending on the type of array you

are using.

Creating Arrays Automatically

The Auto Setup <1> selection from the Main Menu can intuitively help create your disk array. It will assign all available drives appropriate for the disk array you are creating. After making all selections, use Ctrl-Y to save selections. FastBuild will automatically build the array.



Optimize Array For

Select whether you want Performance (RAID 0), Security (RAID 1 or RAID 0+1), or Capacity (Spanning) under the “Optimize Array for” setting.

Performance (RAID 0 Striping)

Supports the maximum performance. The storage capacity equals the number of drives times the capacity of the smallest drive in the disk array.

NOTE: FastTrak100 permits striped arrays using 1, 2, 3, or 4 drives

attached in Auto Setup mode.

Security (RAID 1 Mirroring, or RAID 0+1 Striping/Mirroring)

Creates a mirrored (or fault tolerant) array for data security.

NOTE: Under the Security setting, FastTrak100 permits two drives to be used for a single Mirrored array or four drives to be used for a Mirrored/Striped array in Auto Setup.

Capacity (Spanning)

Achieves the maximum amount of capacity by adding the sum of all attached drives. The Stripe Block option does not apply.

Defining Typical Application Usage

Allows the user to choose the type of PC usage that will be performed in order to optimize how FastTrak100 handles data blocks to enhance performance. Your choice will determine the block size used. You may choose from: A/V Editing (for audio/video applications, or any similar application that requires large file transfers), Server (for numerous small file transfers), or Desktop (a combination of large and small file sizes).

Using a “Hot” Spare Drive

If a third drive is attached as a “Slave” and is not assigned to a mirrored two-drive disk array (one optimized for “Security”), it will be recognized as a Spare Drive. Such a drive is immediately used as a “standby” replacement. It is automatically added to an array once a disk member of the array has been detected as “failed.” To restore fault tolerance as quickly as possible, FastTrak100 begins to perform an automatic data rebuild on the “spare” drive in the background without the need to restart the system. At a later time, the failed drive can be physically removed from the FastTrak100 card and an extra drive added in its place to function as the “spare” drive.

Creating Multiple Disk Arrays

1. If you plan to create multiple arrays, attach only the drives necessary to create the first disk array and complete the <1> Auto Setup.
2. Install the additional drives needed for the second array and again use the <1> Auto Setup.

NOTE: If you wish to customize the settings of individual disk arrays (such as block size), you must manually create disk arrays with the Define Array <3> option from the Main Menu.

Viewing Drive Assignments

The View Drive Assignments <2> option in the Main Menu displays whether drives are assigned to a disk arrays or are unassigned.

Under the “Assignment” column, drives are labeled with their assigned disk array or shown as “Free” if unassigned. Such “Free” drives can be used for a future array or used as a spare drive when a drive fails in a mirrored array. Unassigned drives are not accessible by the OS. The menu also displays the data transfer mode that relates to speed used by each drive (U5 refers to 100MB/sec transfers, U4 refers to 66MB/sec transfers, etc...)

```

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.

[ View Drive Assignments ]

Channel:ID Drive Model Capacity(MB) Assignment Mode
1 : Master QUANTUMCR8.4A 8063 Array 1 U5
1 : Slave QUANTUMCR8.4A 8063 Free U5
2 : Master QUANTUMCR8.4A 8063 Array 1 U5

[ Keys Available ]

[↑] Up [↓] Down [ESC] Exit Mode (U=UDMA, P=PIO, D=DMA)
    
```

Manually Creating an Array

The Define Array <3> option from the Main Menu allows users to begin the process of manually defining the drive elements and RAID levels for one or multiple disk arrays attached to FastTrak100. Users will commonly create one or two drive arrays with FastTrak100, though the card will support a maximum of four arrays¹.

NOTE: For most installations, Promise recommends the <1> Auto Setup for easy disk array creation.

```

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.

[Define Array Menu]

Array No RAID Mode Total Drv Capacity(MB) Status
Array 1 Stripe 2 16126 Functional
Array 2 _____
Array 3 _____
Array 4 _____

[ Keys Available ]

Note: * — Bootable Array

[↑] Up [↓] Down [ESC] Exit [Enter] Select [Space] Change Boot Drive
    
```

1. To manually create an array from the Define Array Menu, use the arrow keys to highlight the array number you wish to define, and press [Enter] to select.
2. The Define Array Definition Menu will next appear that allows drive assignments to the disk array (see next page).

¹ Users may use a single drive in either striping or spanning mode with FastTrak100. In this rare scenario, the card will create an individual array ID but will offer conventional controller performance, depending on the drive type. At a later time, a second drive can be added to the array and the array re-created to support RAID 1 mirroring.

Selecting Array Type

Under the Definition section of this menu, highlight the Array # for which you want to assign a RAID level.

Use the [Space] key to cycle through three array types: Performance (RAID 0 Striping), Security (RAID 1 Mirroring, RAID 0+1 Striping/Mirroring (for 4 drives), or Capacity (Spanning). See page xx about RAID levels.

```

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.

[ Define Array Definition Menu ]

Array No  RAID Mode Total Drv  Capacity(MB)  Status
Array 1   Stripe    2         16126         Functional

Stripe Block: 64 KB
[ Drive Assignments ]

Channel:ID  Drive Model  Capacity (MB)  Assignment
1 : MasterQUANTUMCR8.4A  8063  Y
1 : SlaveQUANTUMCR8.4A  8063  N
2 : MasterQUANTUMCR8.4A  8063  Y

[ Keys Available ]

[↑] Up [↓] Down [ESC] Exit [Space] Select [Ctrl-Y] Save
    
```

Selecting Stripe Block

For RAID 0 Striped arrays only, you may manually select the "stripe block size." Use the Spacebar to scroll through choices progressing as follows (1, 2, 4, 8, 16 . . . 1024).

The size selected affects how FastTrak100 sends and retrieves data blocks from the drives. You will need to perform your own testing to determine how the data block size is affecting your particular use of the array. In general, a larger block size is better when handling large data transfers (such as in A/V editing or graphics) while a smaller block size is better when handling e-mail and other common server data. The default is 64K.

Assigning Drive(s) to Array

1. Under the [Drive Assignments] section, highlight a drive using the [↑] Up [↓] keys.
2. With the [Space] bar key, change assignment option to "Y" to add the drive to the disk array.
3. Press <Ctrl-Y> to save the disk array information. Depending on the array type selected, the following scenarios will take place:

(a) If choosing a Striping, Spanning, or Mirroring/Striping array, the initial Define Array Menu screen will appear with the arrays defined. From there you may ESC to exit and return to the Main Menu of FastBuild.

(b) If you selected a Mirroring array for two drives, there is an additional window that appears as described in order to create the array. To do this you will use either two brand new drives, or one drive that contains existing data that you wish to mirror.

Creating A Mirrored Array Using New Drives

As described in the Drive Assignments Option section above, if you selected a mirroring array and wish to use two new assigned drives, follow the directions here.

1. After assigning new drives to a Mirroring array and saving the information with <Ctrl-Y>, the window below will appear.

```

Do you want the disk image to be duplicated to another?
Y - Create and Duplicate
N - Create Only
    
```

2. Press "N" for the Create Only option.
3. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system

```

Array has been created.
<Press Any Key to Reboot>
    
```

Adding Fault Tolerance to an Existing Drive

FastTrak100 will create a mirrored array using an existing system drive with data. You must assign the existing drive and another drive of same or larger capacity to the Mirroring array. The BIOS will send the existing data to the new blank drive.



WARNING: Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.



WARNING: If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on your FastTrak100, do NOT connect the hard drive to the FastTrak100 controller yet. You MUST install the Windows NT4 or 2000 driver software first (see page xx) to this drive while it is still attached to your existing hard drive controller. For all other Operating Systems, proceed here.

1. After assigning the drives to a Mirroring array, press <Ctrl-Y> keys to save your selection. The window below will appear.

```
Do you want the disk image to be duplicated to another?
Y - Create and Duplicate
N - Create Only
```

2. Press “Y” for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.

Source Disk		
Channel:ID	Drive Model	Capacity (MB)
Target Disk		
Channel:ID	Drive Model	Capacity (MB)
[Please Select A Source Disk]		
Channel:ID	Drive Model	Capacity (MB)
1 :Master	QUANTUMCR8.4A	8063
2 :Master	QUANTUMCR8.4A	8063
[↑] Up [↓] [ESC] Exit [Ctrl-Y] Save		

3. Use the arrow keys to choose which drive contains the existing data to be copied.



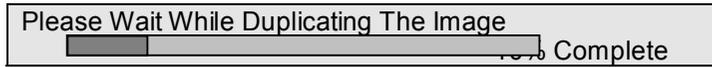
WARNING: All target drive data will be erased. Make sure you choose the correct drive.

4. Press [Ctrl-Y] keys to Save selection and start duplication. The following confirmation screen will appear.

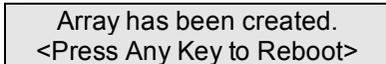
```
Start to duplicate the image . . .
Do you want to continue? (Yes/No)
Y - Continue N - Abort
```

5. Select “Y” to continue. If you choose “N”, you will be returned to step 1.

- Once "Y" is selected, the following progress screen will appear. The process will take a few minutes.



- Once mirroring is complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system

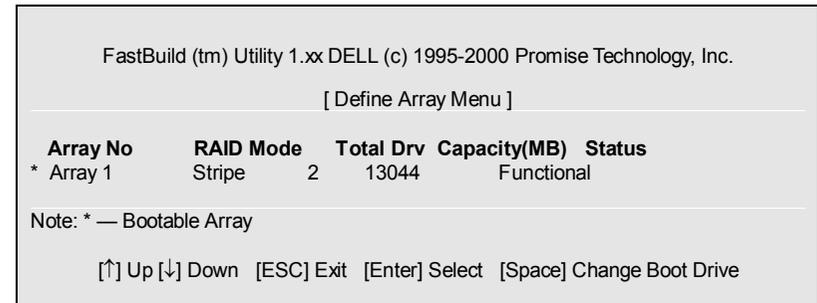


Making a FastTrak100 Disk Array Bootable



WARNING: In order for you to boot from an array on the FastTrak100, your PC or server must be configured in the CMOS Setup to use the FastTrak100 as a bootable device (versus the onboard controller or another add-in card). This option is not available if the FastTrak100 is being used as a secondary controller.

- Once you have returned to the Define Array Menu window (below), you will see the array(s) you have created. You now may use the menu to select which previously defined array will be used as the bootable array.



- Highlight the array which you want to boot from using the [↑] Up [↓] Down keys.
- Press the [Space] bar key.
- An * asterisk will appear next to the array number indicating it as bootable. The system will now recognize this array as the first array seen
- The system will then use this bootable array as the (fixed) boot C: drive.

NOTE: The bootable array must contain your configured operating system.

Creating a “Hot” Spare Drive for Mirrored Arrays

For automatic rebuilds of a mirrored array, attach an extra “spare” drive to the FastTrak100. Drives that are not assigned to an array and are the same size or larger than the original will be used for the automatic rebuild. This is performed in the background under all supported operating systems, except DOS. At a later time, the system can be turned off and the failed drive can be physically removed.

How FastTrak100 Orders Arrays

During startup, the disk arrays on the FastTrak100 are recognized in this order: 1) The array set to bootable in the FastBuild™ Setup, and 2) the Array number (i.e. Array 0, Array 1...). This would be involved in determining which drive letters will be assigned to each disk array.

How FastTrak100 Saves Array Information

All disk array data is saved into the reserved sector on each array member. Promise suggests that users record their disk array information for future reference.

Another feature of the FastTrak100 disk array system is to recognize drive members even if drives are moved between different FastTrak100 card connectors. Since each drive’s array data identifies itself to the array, it is possible to move or swap drives without modifying the array setup. This is valuable when adding drives, or during a rebuild.

Deleting An Array

The Delete Array <4> Menu option allows for deletion of disk array assignments. This is not the same as deleting data from the drives themselves. If you delete an array by accident (and before it has been used again), the array can normally be recovered by defining the array identically as the deleted array.



WARNING: *Deleting an existing disk array could result in its data loss. Make sure to record all array information including the array type, the disk members, and stripe block size in case you wish to*

undo a deletion.

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[ Delete Array Menu ]

Array No RAID Mode Total Drv Capacity(MB) Status
Array 1 Stripe 2 16126 Functional
Array 2 Mirror 2 8063 Functional
Array 3 _____
Array 4 _____
[ Keys Available ]

[↑] Up [↓] Down [ESC] Exit [Del] Delete
```

1. To delete an array, highlight the Array you wish to delete and press the [Del] key.

The View Array Definition menu will appear (see below) showing which drives are assigned to this array.

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[ Define Array Menu ]
```

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Stripe	2	16126	Functional

Stripe Block: 64 KB
[Drive Assignments]

Channel:ID	Drive Model	Capacity (MB)	Assignment
1 : Master	QUANTUMCR8.4A	8063 Y	
2 : Master	QUANTUMCR8.4A	8063 Y	

- Confirm yes to the following warning message with the <Ctrl-Y> key to continue array deletion:

Are you sure you want to delete this array?
Press Ctrl-Y to Delete, others to Abort

- After deleting the array, you should create a new array using Auto Setup or the Define Array menu from the FastBuild Main Menu.

Rebuilding A Mirrored Array

The Rebuild Array <5> Menu option is necessary to recover from an error in a mirrored disk array. You will receive an error message when booting your system from the FastTrak BIOS.

NOTE: Drives *MUST* be replaced if they contain any physical errors.

Follow these steps BEFORE using the Rebuild Array menu option:

- On bootup, the FastTrak100 Startup BIOS will display an error message identifying which drive has failed.
- Press <Ctrl-F> keys to enter FastBuild Main Menu.
- Select submenu Define Array <3>.
- Select the failed array and identify the Channel and ID of the failed drive.
- Power off and physically remove the failed drive.
- Replace the drive with an identical model.
- Reboot the system and enter the FastBuild Main Menu.
- Select the <5> Rebuild Array option. The following screen will appear.

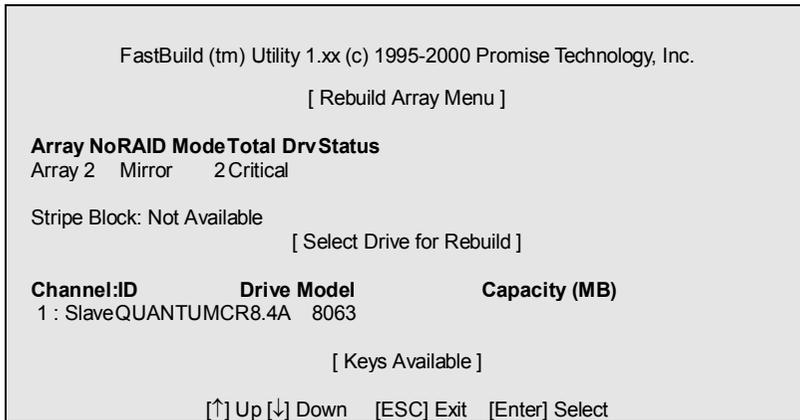
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[Rebuild Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Stripe	2 16126	Functional	
Array 2	Mirror	2 8063	Critical	
Array 3	---	---	---	---
Array 4	---	---	---	---

[Keys Available]

[↑] Up [↓] Down [ESC] Exit [Enter] Select

9. Highlight the array whose Status is "Critical".
10. Press [Enter]. The following screen will then appear (see next page).



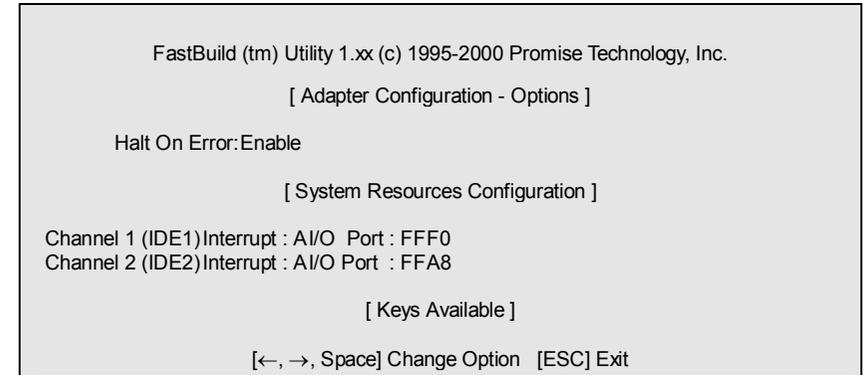
11. Under [Select Drive for Rebuild], highlight the replacement drive.
12. Press [Enter] and confirm that the data will be copied on to the selected drive. All data on the replacement drive will be written over with mirrored information from the array drive. A progress bar will appear as below.

Please Wait While Duplicating The Image
[Progress Bar] Complete

13. Once the rebuild process is complete, the user will be asked to reboot the system.

Viewing Controller Settings

The Controller Configuration <6> menu selection allows you to enable or disable the FastTrak100 BIOS from halting (the default) if it detects an error on boot up. You may also view the system resources (Interrupt and I/O port address) of FastTrak's data channels.



Halting FastTrak BIOS On Bootup Errors

The [Adapter Configuration – Options] section allows you to enable or disable FastTrak100 to Halt operation at the BIOS startup screen should an error be detected. This is the only option that can be changed on this screen.

Viewing FastTrak System Resources

The [System Resources Configuration] section of this submenu displays the PCI slot interrupt and port address used by the FastTrak100. The resources used are determined by the Mainboard PCI PnP BIOS for the PCI slot in which the FastTrak100 resides.

In the rare case that there is a resource conflict, refer to the Mainboard BIOS documentation on changes on resources allocated to the FastTrak100 PCI slot.