

ROCKY-4782E2V

User Manual

Version 1.5

**SOCKET 478 PENTIUM 4 with
Dual LAN & SiS 315 AGP4X VGA SBC**

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Chapter 1 Introduction

Welcome to the ROCKY-4782E2V SOCKET 478 PENTIUM 4 Single Board Computer. The ROCKY-4782E2V board is an ISA/PCI form factor board, which comes with a high performance 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-4782E2V provides the SiS315 AGP4X VGA on board. This VGA chip is a 3D graphics chipset, which provides up to 2048x1536x16-color resolution. The VGA on board has a 32MB SDRAM frame buffer.

An advanced high performance super AT I/O chip – W83627HF is used in the ROCKY-4782E2V board. Both on-chip UARTs are NS16C550-compatible. The parallel port and IDE interface are compatible with IBM PC/AT architecture.

The ROCKY-4782E2V uses dual (ICH2 & INTEL 82559) 10/100 Fast Ethernet LAN controllers. They combine to be a fully integrated 10BASE-T/100BASE-TX LAN solution with high performance networking and low power consumption.

The ROCKY-4782E2V uses the advanced Intel 845 Chipset, which is 100% software compatible chipset with PCI 2.1 standard.

1.1 Specifications

- **CPU**
Intel Pentium 4 Processor, supports 400 MHz FSB (PGA 478)
- **Bus Interface**
PCI/ISA bus, PICMG compliant
- **Bus speed**
ISA: 8MHz, PCI: 33MHz
- **DMA channels**
7
- **Interrupt levels**
15

- **Chipset**
INTEL 845 (MCH)
- **Real-time clock/calendar**
INTEL 82801(ICH2)
- **RAM memory**
TWO 168-pin DIMM sockets supporting SDRAM. Supports up to 2GB of memory
- **ATA/100 IDE Interface**
Up to four PCI Enhanced IDE hard disk drives are supported. The ATA/100 IDE can handle data transfer up to 100MB/s. Compatible with existing ATA-2 IDE specifications
- **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) 16-byte FIFO buffer. Support up to 115.2Kbps. Ports can be individually configured to COM1, COM2 or disabled.
- **Bi-directional parallel port**
Can be set as LPT1, LPT2, LPT3 or disabled. Supports EPP/ECP/SPP.
- **Hardware monitor**
Built-in monitor power supply voltage and fan speed status
- **IrDA port**
Supports Serial Infrared (SIR) and Amplitude Shift Keyed IR(ASKIR) interface
- **USB port**
Supports 4 USB ports for future expansion needs
- **Watch-dog timer**
Software Programmable Reset generated when CPU does not periodically trigger the timer. You can use I/O Port hex 043(843) & 443 to control the timer and generate a system reset.
- **VGA controller**
Built-in SiS 315 AGP4X 256-bit 3D graphics engine with 32MB SDRAM (Driver select AG-32)
Screen Resolution: up to 2048x1536x16.
- **Ethernet**
Dual (ICH2 & INTEL 559) Fast Ethernet controllers, IEEE 802.3u Auto-Negotiation support for 10BASE-T/100BASE-TX standard. Two RJ45 connectors are located on the mounting bracket for easy connection.

- **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 connector are also available on board.

- **Audio**

AC'97 Audio CODEC

- **Compact Flash**

Used with a passive adapter (True IDE Mode) in a Type I/II Socket.

- **Power consumption**

Using a PENTIUM 4: 2GHz, 1GB PC133 SDRAM: +5V @ 4.46A, +12V @ 6.55A

A 350-watt power supply or higher is recommended

- **Operating temperature**

0° ~ 60°C (The CPU requires a cooling system with silicon heat sink paste applied)

WARNING!

1. Never run the processor without the heatsink(Cooler) properly and firmly attached.
2. Please use ATX-12V Power Connector (J2) to provide power to the CPU.

1.2 Package Contents

In addition to this *User's Manual*, the ROCKY-4782E2V package includes the following items:

- One ROCKY-4782E2V Single Board Computer
- One RS-232 x2 and Printer Cable with bracket
- One FDD cable
- One Audio cable
- One ATA/100 IDE cable
- One ATX-12V cable
- 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 immediately. Keep the shipping materials and carton in case you want to ship or store the product in the future.

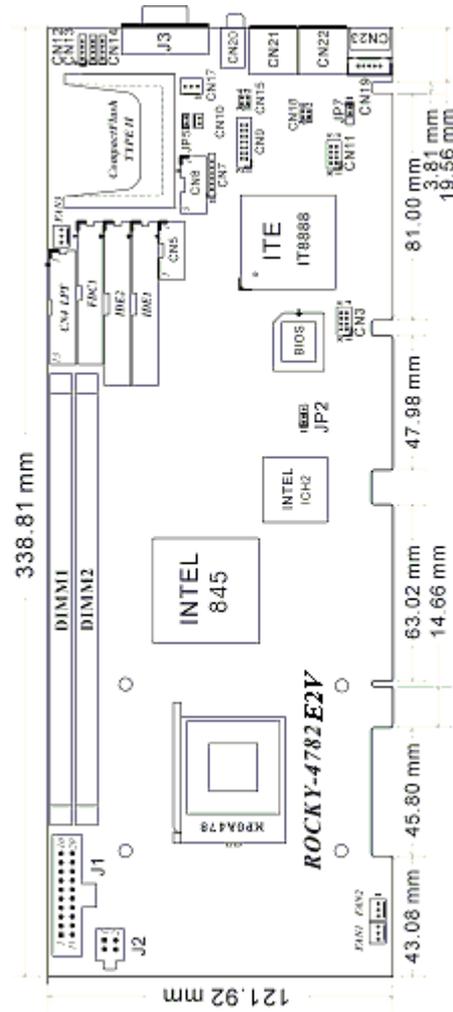
Chapter 2 Installation

This chapter describes how to install the ROCKY-4782E2V. These instructions include the layout and dimensions of the board and the unpacking precautions, which we recommend you to read carefully before you install the product. The instructions for jumper and switch settings for the ROCKY-4782E2V's configuration, such as CPU type selection, system clock setting, and Watchdog Timer, are also included. Below is a table of jumpers that are found on the ROCKY-4782E2V board.

JUMPER	FUNCTION
JP2	CMOS state setting
JP5	CompactFlash Master (short)/Slave (open) Setting.
JP7	Keyboard/Mouse power source Setting

Note: All shaded rows in tables of this manual are the default settings for the ROCKY-4782E2V.

2.1 Board Layout and Dimensions



2.2 Unpacking Precautions

Some components of ROCKY-4782E2V 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 note these precautions:

- Ground yourself to remove any static charge before touching the ROCKY-4782E2V 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-4782E2V SBC by its edges. Do not touch its IC chips, leads or circuitry unless necessary.
- Do not plug any connectors or set any jumpers while the power is on.

2.3 Clear CMOS Setup (JP2)

If you have to clear the CMOS Setup (for example, if you forget your BIOS password, you should clear the CMOS and then set the password again.), you should short JP2 (Pin2 and Pin3) for about 3 seconds, then open it again. Setting the jumper on JP2 back onto pins 1-2 will set the system for normal operation.

- **JP2 Clear CMOS Setup (Reserved Function)**

JP3	DESCRIPTION
1-2	Normal Operation
2-3	Clear CMOS Setup

WARNING

When you change power between ATX to AT, be sure to clear CMOS (Power ON) first. Otherwise, the CPU Board may not start up.

2.4 Compact Flash Master/Slave Setting (JP5)

JP5	DESCRIPTION
Open	Slave
Short	Master

2.5

Onboard Keyboard/Mouse Source Setting (JP7)

JP7	DESCRIPTION
1-2	Vcc (+5V)
2-3	5VSB

Chapter 3 Connectors

This chapter describes how to connect peripherals, switches and indicators to the ROCKY-4782E2V board. A listing of the connectors on the board is shown in the following table.

Table of Connectors

CONNECTOR	DESCRIPTION
FAN1 ~FAN3	Fan Connectors
J1	ATX 20-PIN Power Connector
J2	ATX-12V CPU Power Source
J3	VGA 15-pin Female Connector
CN7	IrDA connector
CN10	ATX BUTTON (Power ON) Switch
CN3, CN11	USB Connectors
CN4	Parallel Port Connector
CN8, CN5	Serial Port 10-pin Connectors
CN9	External Switches and Indicators
CN12	AUDIO LINE-IN
CN13	AUDIO CD-IN
CN14	AUDIO MIC-IN
CN15, CN18	LAN State LED Connectors
CN21, CN22	LAN RJ45 Connectors
CN17	Backplane to Mainboard Connectors
CN19	External 5-pin Header Keyboard Connector
CN23	PS/2 MOUSE & KEYBOARD Connector
FDC1	FDC Connector
IDE2	Secondary IDE Connector
IDE1	Primary IDE Connector

3.1 Floppy Drive Connectors (FDC1)

The ROCKY-4782E2V board is equipped with a 34-pin daisy-chain drive connector cable.

- **FDC1: FDC Connector**

PIN	DESCRIPTION	PIN	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 (IDE1, IDE2)

You can attach four IDE (Integrated Device Electronics) hard disk drives on these two channels, which support Ultra-DMA100 IDE devices. We recommend the non-DMA100 devices be connected to the secondary IDE connector.

IDE 1: Primary IDE Connector

IDE 2: Secondary IDE Connector

● **IDE1/IDE2 Interface Connector**

PIN	DESCRIPTION	PIN	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-4782E2V includes an on-board parallel port (CN4), accessed through a 26-pin flat-cable connector.

- **CN4: Parallel Port Connector**

PIN	DESCRIPTION	PIN	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	26	N/C

3.4 Serial Ports (CN5, CN8)

The ROCKY-4782E2V offers two high-speed NS16C550 compatible UARTs.

- **CN8 (COM1): 10-pin connector on board**
- **CN5 (COM2): 10-pin connector on board**

CONNECTOR	PORT	ADDRESS	INTERRUPT
CN8	COM1	3F8	IRQ4
CN5	COM2	2F8	IRQ3

- **CN5, CN8: Serial Port 10-pin Connector**

PIN	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 (CN19, CN23)

A 6-pin mini DIN connector (CN23) is located on the mounting bracket for easy connection to a keyboard or PS/2 mouse. The card comes with a cable to convert the 6-pin mini-DIN connector to two 6-pin mini-DIN connectors for keyboard and mouse connection

- **CN23: 6-pin Mini-DIN Keyboard & Mouse Connector**

PIN	DESCRIPTION
1	KEYBOARD DATA
2	MOUSE DATA
3	GROUND
4	+5V
5	KEYBOARD CLOCK
6	MOUSE CLOCK

For alternative application, a keyboard connector is also available on board, located on CN19.

- **CN19: 5-pin Header Keyboard Connector**

PIN	DESCRIPTION
1	KEYBOARD CLOCK
2	KEYBOARD DATA
3	N/C
4	GROUND
5	+5V

3.6 External Switches and Indicators (CN9, CN10, CN17)

There are several external switches and indicators for monitoring and controlling your CPU board. These are accessed through the connectors CN9, CN10 and CN17.

- **CN9: External Switches and Indicators**

	PIN	DESCRIPTION		PIN	DESCRIPTION
Power LED	1	+5V	Speaker	2	Speaker +
	3	N/C		4	N/C
	5	GND		6	N/C
KEYLOCK	7	KEYLOCK PIN1	Reset Button	8	Speaker -
	9	KEYLOCK PIN2		10	Reset PIN1
	11	GND		12	Reset PIN2
HDD LED	13	HDD LED+	HDD LED	14	HDD LED-

- **CN10: 2-pin ATX POWER BUTTON Connector**

PIN	DESCRIPTION
1	BUTTON PIN1
2	BUTTON PIN2

- **CN17: Backplane to Mainboard Connector**

PIN	DESCRIPTION
1	5VSB
2	ATX-ON
3	GND

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

3.7 USB Port Connectors (CN3, CN11)

The ROCKY- 4782EV provide 4 built-in USB ports for the future expansion needs.

- **CN3, CN11: USB Port Connectors**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC	8	GROUND
2	DATA-	7	DATA+
3	DATA+	6	DATA-
4	GROUND	5	VCC

3.8 IrDA Infrared Interface Port (CN7)

The ROCKY-4782E2V's built-in IrDA port supports the Serial Infrared (SIR) and the Amplitude Shift Keyed IR (ASKIR) interfaces. To use the IrDA port, SIR or ASKIR must be set in the COM2 settings of Peripheral Setup in BIOS Setup. The standard RS-232 COM2 will be disabled.

- **CN7: IrDA Connector**

PIN	DESCRIPTION
1	VCC
2	NC
3	IR-RX
4	Ground
5	IR-TX
6	NC

3.9 Fan Connectors (FAN1-FAN3)

The ROCKY-4782E2V provides two CPU cooling fan connectors, which can supply 12V/500mA to the cooling fan. All connectors have the same pin assignments and there is a "rotation" pin in fan connector to transmit the fan's rotation signal to system for the BIOS to detect the fan speed. This feature is only supported with certain cooling fans.

- **FAN1-FAN3: Fan Connectors**

PIN	DESCRIPTION
1	Rotation Signal
2	+12V
3	Ground

3.10 LAN RJ45 & State LED Connectors (CN15, CN18, CN21, CN22)

The ROCKY-4782E2V is equipped with two built-in 10/100Mbps Ethernet controllers. You can connect it to your LAN through the RJ45 LAN connectors. There are two LED on the connector indicating the status of LAN. The pin assignments are as follows:

- **CN21 (ICH2), CN22 (i82559): LAN RJ45 Connector**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	TX+	5	N/C
2	TX-	6	RX-
3	RX+	7	N/C
4	N/C	8	N/C

- **CN15 (ICH2), CN18 (i82559): LAN State LED Connector**

PIN	DESCRIPTION
1-2	ACT/LINK
3-4	100TX

3.11 VGA Connector (J3)

The ROCKY-4782E2V has a built-in 15-pin VGA connector directly connects to your CRT monitor.

- **J3: 15-pin Female Connector**

PIN	DESCRIPTION	PIN	DESCRIPTION
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 Audio Connectors (CN12-CN14, CN20)

The ROCKY-4782E2V has a built-in AC'97 AUDIO CODEC connected directly 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	DESCRIPTION		
	CN12	CN13	CN14
1	LEFT	LEFT	MIC-IN
2	GND	GND	GND
3	GND	GND	GND
4	RIGHT	RIGHT	NC

3.13

ATX 20-Pin & ATX-12V Power Connector (J1, J2)

This connector supports the ATX power functions such as Modem Ring-on, Wake-up on LAN and soft power off are supported by the ROCKY-4782E2V board. (Power sourced from the ROCKY-4782E2V board)

- **J1: System**

PIN	DESCRIPTION	PIN	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

- **J2: CPU**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

Note: The power from J2 should support at least a 6.5A current for the use of the P4 CPU. If there is not enough power, the operation of CPU could be abnormal. Be sure the power from power supply is enough, and ensure the power is not shared with other devices, such as hard disks. You can use IEI's special cable for connection if your power supply does not have a suitable cable.

Chapter 4 **AWARD BIOS Setup**

This chapter discusses the AWARD Setup program built into the BIOS. The Setup program allows the user to configure the system, which is then stored in battery-backed CMOS RAM so that the Setup information is retained after the power is turned off.

4.1 Getting Started

The BIOS is immediately active when the system is turned on. While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing immediately after switching the system on, or
2. By pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

Press DEL to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and a prompt like the following appears

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

In general, you can use the arrow keys to highlight items, press <Enter> to select, use the <Page Up> and <Page Down> keys to change entries, press <F1> for help and press <Esc> to quit. The table on the next page gives more details about how to navigate in the Setup program using the keyboard.

KEY	FUNCTION
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item on the left (menu bar)
Right Arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
Page Up key	Increase the numeric value or make changes
Page Down key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help on Setup navigation keys- only for Status Page Setup Menu and Option Page Setup Menu
(Shift) F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Calendar, only for Status Page Setup Menu
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes and exit

- **Standard CMOS Features**
Use this menu for basic system configuration. See Section 4.4 for details.
- **Advanced BIOS Features**
Use this menu to set the Advanced Features available on your system. See Section 4.5 for details.
- **Advanced Chipset Features**
Use this menu to change the values in the chipset registers and optimize your system's performance. See section 4.6 for the details.
- **Integrated Peripherals**
Use this menu to specify your settings for integrated peripherals. See section 4.7 for the details.
- **Power Management Setup**
Use this menu to specify your settings for power management. See section 4.8 for details.
- **PnP / PCI Configurations**
This entry appears if your system supports PnP / PCI. See section 4.9 for details.
- **PC Health Status**
Use this menu to monitor your hardware. See section 4.10 for more details.
- **Frequency/Voltage Control**
Use this menu to specify your settings for frequency/voltage control. See section 4.11 for details.
- **Load Fail-Safe Defaults**
Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate. See section 4.12 for details.
- **Load Optimized Defaults**
Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs. See section 4.12 for the details.
- **Supervisor / User Password**
Use this menu to set User and Supervisor Passwords. See section 4.13 for details.
- **Save & Exit Setup**
Save CMOS value changes to CMOS and exit setup. See section 4.14 for details.
- **Exit Without Save**
Abandon all CMOS value changes and exit setup. See section 4.14 for details.

4.4 Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <Page Up> or <Page Down> keys to select the value you want in each item.

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
Standard CMOS Features

		Item Help
Date: (mm:dd:yy)	Mon, Jan 1 2001	
Time: (mm:dd:yy)	16:19:20	
➤ IDE Primary Master	Press Enter 2557 MB	Menu Level ➤
➤ IDE Primary Slave	Press Enter None	
➤ IDE Secondary Master	Press Enter None	
➤ IDE Secondary Slave	Press Enter None	Change the day, month, year and century
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All,But Keyboard	
Based Memory	640K	
Extended Memory	64512K	
Total Memory	65536K	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

ITEM	OPTIONS	DESCRIPTION
Date	MM DD YYYY	Set the system date.
Time	HH : MM : SS	Set the system time
IDE Primary Master	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary Slave	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

- **IDE Adapters**

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive.

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IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto 2557MB	Menu Level >>
Access Mode	Auto	To auto-detect the HDD's size, head... on this channel
Cylinder	4956	
Head	16	
Precomp	0	
Landing Zone	4955	
Sector	63	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Use the legend keys to navigate through this menu and exit to the main menu, and use the table on the following page to configure your hard disk.

ITEM	OPTIONS	DESCRIPTION
IDE HDD Autodetection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Primary Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.
Access Mode	CHS LBA Large Auto	Choose the access mode for this hard disk
The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

4.5 Advanced BIOS Features

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Advanced BIOS Features

Virus Warning	[Disabled]	Item Help
CPU L1 & L2 Cache	[Enabled]	
Quick Power On Self Test	[Enabled]	Menu Level >
First Boot device	[Floppy]	
Second Boot device	[HDD-0]	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Third Boot device	[SCSI]	
Boot other device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Enabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
Typematic Rate (Chars/Sec)	[6]	
Typematic Delay (Msec)	[250]	
Security Option	[Setup]	
OS Select For DRAM > 64MB	[Non-OS2]	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

- **Virus Warning**

Allow you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and some program attempts to write data into this area, BIOS will show a warning message on screen and the alarm is triggered.

OPTION	DESCRIPTION
Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

- **CPU L1 & L2 Cache**

These two categories speed up memory access. However, the performance increase depends on CPU/chipset design.

OPTION	DESCRIPTION
Enabled	Enable cache
Disabled	Disable cache

- **Quick Power On Self Test**

This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Options: Enabled, Disabled.

- **First/Second/Third/Other Boot Device**

The BIOS will attempt to load the operating system from the devices in the specified sequence.

Options: Floppy, LS120, HDD0-3, SCSI, CDROM, ZIP100, LAN, Disabled.

- **Swap Floppy Drive**

If the system has two floppy drives, you can swap the logical drive name assignments.

Options: Enabled, Disabled.

- **Boot Up Floppy Seek**

Seeks disk drives during boot up. Disabling speeds boot up.

Options: Enabled, Disabled.

- **Boot Up NumLock Status**

Select power on state for NumLock.

Options: On/Off.

- **Gate A20 Option**

Select if chipset or keyboard controller should control GateA20.

OPTION	DESCRIPTION
Normal	A pin in the keyboard controller controls GateA20
Fast	Lets chipset control GateA20

- **Typematic Rate Setting**

Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

Options: Enabled, Disabled.

- **Typematic Rate (Chars/Sec)**

Sets the number of times a second to repeat a keystroke when you hold the key down.

Options: 6, 8, 10, 12, 15, 20, 24, 30.

- **Typematic Delay (Msec)**

Sets the delay time after the key is held down before it begins to repeat the keystroke.

Options: 250, 500, 750, 1000.

- **Security Option**

Select whether the password is required every time the system boots or only when you enter setup.

OPTION	DESCRIPTION
System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

- **OS Select For DRAM > 64MB**

Select the operating system that is running with greater than 64MB of RAM on the system.

Options: Non-OS2, OS2.

4.6 Advanced Chipset Features

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Advanced Chipset Features

	SPD	Item Help
DRAM Timing Selectable	SPD	
CAS Latency Time	3	
Active to Precharge Delay	6	Menu Level >
DRAM RAS# TO CAS# Delay	3	
DRAM RAS# Precharge	3	
Memory Frequency For	Auto	
Dram Read Thermal Mgmt	Disabled	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
Delayed Transaction	Enabled	
AGP Aperture Size	64	
Flash BIOS	Disabled	
Power-supply Type	AT	

↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
 F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings are designed for the best operating conditions for your system.

- **DRAM Timing Selectable**

This item allows you to select the value in this field, depending on whether the board has paged DRAMs or EDO (extended data output) DRAMs.

Options: SPD, Manual.

- **CAS Latency Time**

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not set this field different from the default value specified by the system designer.

Options: 2, 3.

- **Memory Frequency For**

Auto: Auto-detection based on hardware.

PC100/133: 100MHz/133MHz

- **System BIOS Cacheable**
 Selecting *Enabled* allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.
 Options: Enabled, Disabled.
- **Video BIOS Cacheable**
 Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result.
 Options: Enabled, Disabled.
- **Video RAM Cacheable**
 Enabling this allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.
 Options: Enabled, Disabled.
- **Memory Hole At 15M-16M**
 You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.
 Options: Enabled, Disabled.
- **AGP Aperture Size**
 Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.
 Options: 8M-32M
- **Flash BIOS**
 When enabled, you can update BIOS by software (flash utility).
 Options: Enabled,Disabled.
- **Power-Supply Type**
 This item sets the power supply type to AT or ATX.

4.7 Integrated Peripherals

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Integrated Peripherals

On-Chip Primary PCI IDE	[Enabled]	Item Help
IDE Primary Master PIO	[Auto]	
IDE Primary Slave PIO	[Auto]	Menu Level >
IDE Primary Master UDMA	[Auto]	If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support
IDE Primary Slave UDMA	[Auto]	
On-Chip Secondary PCI IDE	[Enabled]	
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Secondary Master UDMA	[Auto]	
IDE Secondary Slave UDMA	[Auto]	
USB Controller	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	
Onboard LAN(82559)	[Enabled]	
Onboard VGA Device	[Enabled]	
Init Display First	[PCI Slot]	
IDE HDD Block Mode	[Enabled]	
POWER ON Function	[BUTTON ONLY]	
Onboard FDC Controller	[Enabled]	
Onboard Serial Port 1	[Auto]	
Onboard Serial Port 2	[Auto]	
UART 2 Mode	[Standard]	
IR Function Duplex	[Half]	
TX,RX inverting enable	[No, Yes]	
Onboard Parallel Port	[378/IRQ7]	
Onboard Parallel Mode	[Normal]	
Parallel Port EPP Type	[EPP1.7]	
ECP Mode Use DMA	[3]	
PWRON After PWR-Fail	[Off]	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults		

- **On-Chip Primary PCI IDE**

The chipset contains a PCI IDE interface with support for two IDE channels. Enable this to activate the primary IDE interface. Select Disabled to deactivate this interface

Options: Enabled, Disabled.

- **Primary/Secondary Master/Slave PIO**

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

Options: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

- **Primary/Secondary Master/Slave UDMA**

Ultra DMA-33/66/100 implementation is possible only if the IDE hard drives support it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software support Ultra DMA-33/66/100, select Auto to enable BIOS support.

Options: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

- **Init Display First**
This item allows you to decide to activate the PCI Slot or AGP for a VGA card first.
Options: PCI Slot,AGP
- **IDE HDD Block Mode**
Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), enable this for automatic detection of the optimal number of block read/writes per sector the drive can support.
Options: Enabled, Disabled
- **Onboard FDC Controller**
Enable this if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, disable this option.
- **OnChip USB**
This should be enabled if your system has a USB installed on the system board and you want to use it. If you are using an add-on USB controller, this needs to be disabled.
Options: Enabled, Disabled.
- **Onboard Serial Port 1/Port 2**
Select an address and corresponding interrupt for the first and second serial ports.
Options: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.
- **UART 2 Mode**
This item allows you to select which mode for the Onboard Serial Port 2.
Options: Standard, HPSIR, ASKIR.
- **IR Function Duplex**
This item allows you to select the IR half/full duplex function.
Options: Half, Full.
- **TX, RX inverting enable**
This item allows you to enable the TX, RX inverting for different hardware requirements. We do not recommend changing this option as system errors may result if the setting is incorrect.
Options: No, No/ No, Yes(Default)/ Yes, No/ Yes, Yes.
- **Onboard Parallel Port**
This item allows you to determine onboard parallel port controller I/O address setting.
Options: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, Disabled

- **Parallel Port Mode**

Select an operating mode for the onboard parallel (printer) port. Select *Normal*, *Compatible*, or *SPP* unless you are certain your hardware and software both support one of the other available modes.

Options: Normal, EPP, ECP, ECP/EPP

- **ECP Mode Use DMA**

Select a DMA channel for the parallel port for use during ECP mode.

Options: 3, 1.

- **Parallel Port EPP Type**

Select EPP port type 1.7 or 1.9.

Options: EPP1.7, EPP1.9

4.8 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.

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Power Management Setup

ACPI function	[Disabled]	Item Help
ACPI Suspend Type	[S1(POS)]	
Power Management	[User Define]	Menu Level ➤
Video Off Method	[V/H SYNC+Blank]	
Video Off In Suspend	[Yes]	
MODEM Use IRQ	[3]	
Suspend Mode	[Disabled]	
HDD Power Down	[Disabled]	
Soft-Off by PWR-BTTN	[Instant-Off]	
Power On by Ring	[Enabled]	
Resume by Alarm	[Disabled]	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

- **ACPI Function**

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

Options: Enabled, Disabled.

- **Power Management**

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. **HDD Power Down** : When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.
2. **Doze Mode**: When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.
3. **Suspend Mode**: When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

There are four selections for Power Management, three of which have fixed mode settings.

OPTION	DESCRIPTION
Disabled (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- ONLY AVAILABLE FOR SL CPU's . Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

- **Video Off In Suspend**

When enabled, this feature allows the VGA adapter to operate in power saving mode.

OPTION	DESCRIPTION
NO	Monitor will remain on during power saving modes.
YES	Monitor blanked when the systems enters the Suspend mode.

- **Video Off Method**

This determines the manner in which the monitor is blanked.

OPTION	DESCRIPTION
V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS Support	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards to select video power management values.

- **MODEM Use IRQ**

This determines the IRQ in which the MODEM can use.

Options: 3, 4, 5, 7, 9, 10, 11, NA.

- **Soft-Off by PWR-BTTN**

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has become unresponsive

Options: Delay 4 Sec, Instant-Off.

- **Reset Configuration Data**

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot startup.

Options: Enabled, Disabled.

- **Resource controlled by**

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a "✓").

Options: Auto (ESCD), Manual.

- **IRQ Resources**

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

- ✓ **IRQ3/4/5/7/9/10/11/12/14/15 assigned to**

Legacy ISA devices are ISA devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

PCI/ISA PnP Devices are ISA and PCI devices supporting Plug and Play.

Options: PCI/ISA PnP, Legacy ISA.

- **DMA Resource**

When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DMA channel.

- ✓ **DMA 0/1/3/5/6/7 assigned to**

Legacy ISA devices are ISA devices compliant with the original PC AT bus specification. PCI/ISA PnP Devices are ISA and PCI devices supporting

Plug and Play.

Options: PCI/ISA PnP, Legacy ISA.

- **PCI/VGA Palette Snoop**

Please leave this field disabled.

Options: Enabled, Disabled.

- **Assign IRQ For USB**

Enable or disable IRQ assignment for USB devices.

Options: Enabled, Disabled.

4.10 PC Health Status

This screen displays some statistics on your system's state, like temperature, fan speed and voltage.

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PC Health Status

Current System1 Temp.	28	Item Help
Current System2 Temp.	32	-----
Current CPU Temp	32	Menu Level ➤
Current FAN1 Speed	5336RPM	
Current FAN2 Speed	5353RPM	
Current FAN3 Speed	5353RPM	
Vcore	1.75V	
+3.3V	3.32V	
+5V	5.01V	
+12V	12.05V	
-12V	-12.19V	
-5V	-5.04V	
5VSB(V)	5.02V	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults		

4.11 Frequency/Voltage Control

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Frequency/Voltage Control

CPU Clock Ratio	[8X]	Item Help
Auto Detect DIMM/PCI Clk	[Disabled]	-----
Spread Spectrum	[Disabled]	-----
CPU HOST/SDRAM/PCI Clock [Default]		Menu Level ➤
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults		

- **CPU Clock Ratio**

This item allows you to select CPU clock ratio. (This item will not be useful if the CPU clock ratio is permanently fixed)

- **Auto Detect DIMM/PCI CLK**

This item allows you to enable/disable DIMM/PCI Clock auto-detection.

Options: Enabled, Disabled.

- **Spread Spectrum**

This item allows you to enable/disable the spread spectrum modulate.

Options: Enabled, Disabled.

- **CPU Host/DRAM/PCI Clock**

This item allows you to select CPU/DRAM/PCI frequency.

Options: Default, 133/33MHz, 136/34MHz.....

4.12 Default Menus

Selecting "Defaults" from the main menu shows you two options that are described below

- **Load Fail-Safe Defaults**

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal-performance system operations.

- **Load Optimized Defaults**

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory settings for optimal system performance.

4.13 Supervisor/User Password

You can set either supervisor or user password, or both of them. The differences between are:

- **Supervisor password:**

You can enter and change the options of the setup menus.

- **User password:**

You can only enter the setup menus, but cannot change any settings except the user password

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password entered replaces any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the operation and not enter a password.

To disable the password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also set the BIOS in the Security option (see Section 3) of the BIOS Features Setup Menu to prompt for a password every time your system is rebooted. If the Security option is set to "system", the password will be required both at boot and at entry to Setup. If it is set to "Setup", a password is only prompted when you enter BIOS Setup.

4.14 Exiting Selections

- **Save & Exit Setup**

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)?

Pressing “Y” stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

- **Exit Without Saving**

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)?

This allows you to exit Setup without storing any changes in CMOS. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

Appendix A Watchdog 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 have resulted from an external EMI or a software bug. When the system stops working, hardware on the board will perform a hardware reset (cold boot) to bring the system back to a known state.

Three I/O ports control the operation of Watchdog Timer, which is described in the following table.

I/O PORT	ACTION	DESCRIPTION
443 (hex)	Write	Set time-out period
443 (hex)	Read	Enable the refreshing of the Watchdog Timer.
043/843 (hex)	Read	Disable the Watchdog Timer.

Prior to enabling the Watchdog Timer, set the time-out period. The range of the timer is 1 to 255 sec, set in increments of 1 second. Send the time-out value to the I/O port 443H, and then enable it by reading data from the same I/O port. This will activate the timer, which will eventually time out and check and monitor the CPU board. This must be done within the time-out period that is set by the software. For additional help, please refer to the example program. Finally, disable the Watchdog timer by reading the I/O port 843H or 043H, otherwise the system will reset unconditionally. Please refer to the sample assembly program on the next page for more details.

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

Sample assembly program:

TIMER_PORT = 443H

TIMER_START = 443H

TIMER_STOP = 843H

;; Initialize Timer

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/Implementation Here

CMP EXIT_AP, 0

JNE W_LOOP

MOV DX, TIMER_STOP

IN AL, DX

;;Exit the application

Appendix B I/O Mappings

- I/O Address Mappings

I/O ADDRESS	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
376-376	BUS Master PCI IDE Controller
378-37F	Parallel Printer Port 1
3B0-3DF	SiS 315 AGP Graphic Adapter
3F0-3F7	Floppy Disk Controller
3F8-3FF	Serial Port 1
443	Watch dog timer enable
480-48F	PCI BUS
843/043	Watch dog timer disable

- **1st MB Memory Address Mappings**

MEMORY ADDRESS	DESCRIPTION
00000-9FFFF	SYSTEM MEMORY
A0000-BFFFF	VGA BUFFER
C0000-CFFFF	VGA BIOS
E0000-FFFFF	SYSTEM BIOS
100000	EXTENDED MEMORY

- **IRQ Mappings**

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

- **DMA Channel Assignments**

CHANNEL	DESCRIPTION
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

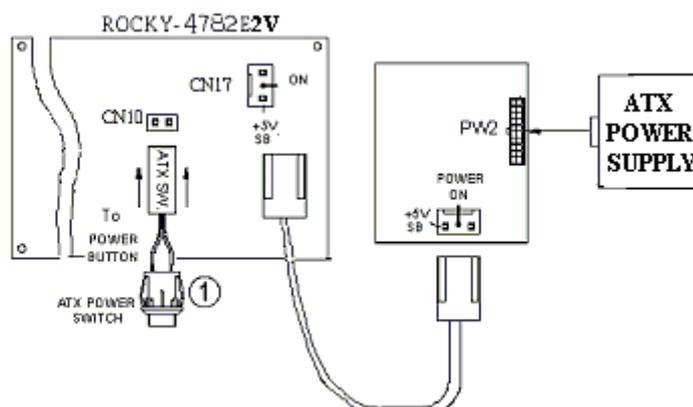
The following notes show how to connect ATX Power Supply to the backplanes and/or the ISBC card. The cables used here are shown below:



- **For backplanes with ATX Connector**

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

ROCKY-4782E2V (through Power Button & GND)



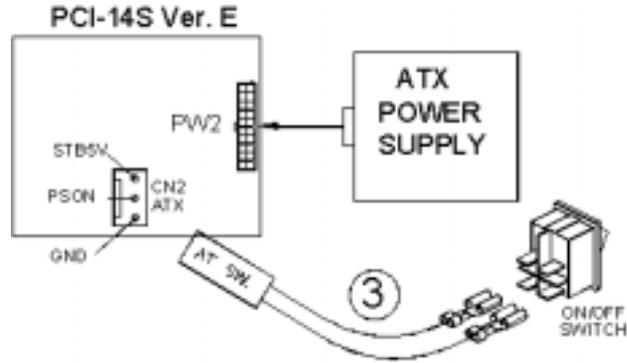
Connect the ATX power button switch to the CN10 (power button) and connect the power cable from Backplane to CN17 of CPU card as shown in the above diagram.

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.

- **For the backplanes with ATX power supply connector**

For some SBC without ATX power ON/OFF function, you can control the ATX power supply through backplane's PS ON connector. Please refer to the figure below:



For the backplanes with ATX connector, simply doing the following can make the connection:

1. Connect the ON/OFF (ordinary one) switch to Pin 2 (PS ON) and Pin 3 (GND) of connector CN2

You may now turn the power ON/OFF by the power switch

Appendix D

How to Use the Wake-up Function

The ROCKY-4782E2V provides two types of Wake Up functions.

This page describes how to use the Modem Wake-Up and LAN Wake-Up.

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

- **Wake-Up By Modem Ring On:**

You must enable *Wake Up On LAN/Ring* in CMOS SETUP. 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:**

You must enable *Wake Up On LAN/Ring* in CMOS SETUP. 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 that you can find from network information in Microsoft Windows in the format xx-xx-xx-xx-xx-xx, like 00905C21D4.