

# **ROCKY-568SEV**

## **450MHz K6<sup>®</sup> / Pentium<sup>®</sup>**

### **Processor Full Function SBC**

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## Introduction

Welcome to the **ROCKY-568SEV** 450MHz K6 / Pentium® Processor Full Function Single Board Computer. The ROCKY-568SEV board is an PICMG bus form factor board, which equipped with high performance Pentium® CPU and advanced high performance AGP VGA, Ultra Wide SCSI, 10/100Mbps Ethernet, designed for the system manufacturers, integrators, or VARs that want to provide all the performance, reliability, and quality at a reasonable price.

This board has a built-in **DiskOnChip™ (DOC)** Flash Disk for embedded application. The DOC Flash Disk is 100% compatible to hard disk. User can use any DOS command without any extra software utility. The DOC currently is available from 2MB to 72MB.

An advanced high performance AGP VGA chip – Trident 9850 is used in this board. On-board 4MB SGRAM provides max. 1024x768 16M colors resolution..

In addition, the ROCKY-568SEV provides three 168-pin DIMM sockets for its on-board DRAM. DIMM module is 3.3V SDRAM and max. 256MB for one module.

The board's RTL8139 network chipset provides 10Mbps or 100Mbps Ethernet with auto-sensing function.

ROCKY-568SEV uses the advanced Adaptec 7880 Ultra Wide 40Mbps SCSI interface and also built-in 50-pin SCSI2 connector for 20Mbps SCSI devices. The maximum connection for SCSI devices is 15 pcs.

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## 1.1 Specifications :

The ROCKY-568SEV 450MHz K6® / Pentium® full function SBC provides the following specification:

- **CPU** : Pentium® MMX up to 233Mhz, AMD K6/K6-2/K6-3 up to 450MHz processor, IDT C6 processor
- **Bus** : PICMG bus, meet PCI 2.1 standard
- **DMA channels** : 7
- **Interrupt levels** : 15
- **Chipset** : VIA MVP3
- **VGA** : Trident 9850 AGP VGA  
Resolution : 1024x768,16M color  
Display Memory : 4MB SGRAM
- **Ethernet** : Built-in the RTL8139 Chipset  
IEEE 802.3u 100BASE-TX standard  
Auto-sensing interface to 10MBps or 100MBps networks  
Full duplex capability  
  
More information : **[www.realtek.com.tw](http://www.realtek.com.tw)**
- **Ultra Wide SCSI** : Adaptec 7880 SCSI Controller  
Ultra Wide SCSI transfer rate : 8-bit 20Mbps  
16-bit 40Mbps  
  
up to 15 devices connectivity.
- **Real-time clock / calendar** : backed-up by industrial Li Battery. .
- **RAM memory** : up to 768MB SDRAM
- **Second Cache memory** : 512KB Pipelined Burst SRAM on board

- **Ultra DMA/33 IDE Interface** : up to two PCI Enhance IDE Disk Drives. The Ultra DMA/33 IDE can handle data transfer up to 33MB/s. The best of all is that this new technology is compatible with existing ATA-2 IDE specifications. So, there is no need to do any change for customer' s current accessory.
- **Floppy disk drive interface** : two 2.88MB, 1.44MB, 1.2MB, 720KB, or 360KB floppy disk drives.
- **Two high speed Series ports** : NS16C550 compatible UARTs
- **Standard EPP & ECP Parallel Port**
- **IrDA port : Support Serial Infrared (SIR) and Amplitude Shift Keyed IR (ASKIR) interface.**
- **USB port : Support USB port for future expansion.**
- **Watchdog timer** : can be set by 1, 2, 10, 20, 110 or 220 seconds period. Reset or NMI is generated when CPU does not periodically trigger the timer.
- **Flash Disk – DiskOnChip™** : The Flash Disk provides 100% compatibility with hard disk.
- **Keyboard connector**
- **Mouse** : PS/2 Mouse Port on-board.
- **Power Consumption** : +5V @ 6.5A ( K6-2 350MHz,384MB SDRAM)  
+12V @ 170mA , -12V@60mA
- **Operating Temperature** : 0° ~ 55° C ( CPU needs Cooler)

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## 1.2 What You Have

In addition to this *User's Manual*, the ROCKY-568SEV package includes the following items:

- ROCKY-568SEV 450MHz K6 / Pentium® Processor Full Function SBC
- RS-232 / Printer Cable
- FDD / HDD Cable
- 6-pin Mini-Din to Keyboard and Mouse Adapter Cable
- 50-pin SCSI2 Cable
- 68-pin Ultra Wide SCSI Cable

If any of these items is missing or damaged, contact the dealer from whom you purchased the 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-568SEV. The layout of ROCKY-568SEV is shown on the next page. Also included is the jumpers and switches setting for this board's configuration, such as: CPU type selection, system clock setting and Watchdog timer.

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### 2.1 ROCKY-568SEV's Layout

< reference next page >



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## 2.2 Setting the CPU of ROCKY-568SEV

- **Memory Clock Selector**

JP1	JP7	DRAM CLOCK
1-2	2-3	RUN AGP CLOCK
2-3	1-2	RUN CPU CLOCK

- **CPU to Bus Multiplier and AGP Clock Selector**

JP9			JP2	JP3	CPU	AGP
1-2	3-4	5-6				
OFF	OFF	OFF	1-2	2-3	100MHz	66MHz
ON	OFF	OFF	1-2	2-3	95MHz	66MHz
OFF	ON	OFF	1-2	1-2	83MHz	66MHz
OFF	OFF	ON	2-3	2-3	75MHz	75MHz
OFF	ON	ON	2-3	2-3	66MHz	66MHz
ON	ON	ON	2-3	2-3	60MHz	60MHz

- **Power Supply Type Selector (use AT or ATX power supply type)**

JP 5	Description
1-2	ATX
2-3	AT

- **Clear/Reset CMOS**

JP6	Description
1-2	Normal
2-3	Clear/Reset CMOS

- CPU to Bus Multiplier

Multiplier	JP8		
	1-2	3-4	5-6
<b>1.5 x / 3.5 X</b>	OFF	OFF	OFF
<b>2 x</b>	ON	OFF	OFF
<b>2.5 x</b>	ON	ON	OFF
<b>3 x</b>	OFF	ON	OFF
<b>4 x</b>	ON	OFF	ON
<b>4.5 x</b>	ON	ON	ON
<b>5 x</b>	OFF	ON	ON
<b>5.5 x</b>	OFF	OFF	ON

**CPU Frequency = CPU Clock x Multiplier**

for example: AMD K6-2 300MHz = 100MHz CPU Clock x 3

- BIOS Voltage Selector for Flash Memory (SMD)

JP10	Description
1-2	+ 5 V
2-3	+ 12 V

- BIOS Capacity type selector for Flash Memory (SMD)

JP11	Description
1-2	2M
2-3	1M

- Single / Dual Voltage Setting

	JP13		JP14	
	1-2	3-4	1-2	3-4
Pentium (P54C) IDT C6	OFF	OFF	ON	ON
Pentium MMX AMD K6 <b>Dual Voltage</b>	ON	ON	OFF	OFF

• **CPU Core Voltage Selection**

Please check the CPU Core Voltage before you install the CPU. Right now, new Intel MMX CPU is dual voltages for core and I/O; the I/O is 3.3V but the core is 2.8V. This kind of CPU design will enhance the low power consumption capability. As for the general Pentium® CPU is one voltage for I/O and Core - 3.3V,3.4V,or 3.5V

Voltage	JP15			
	1-2	3-4	5-6	7-8
<b>3.5</b>	ON	ON	ON	ON
<b>3.4</b>	OFF	ON	ON	ON
<b>3.3</b>	ON	OFF	ON	ON
<b>3.2</b>	OFF	OFF	ON	ON
<b>3.1</b>	ON	ON	OFF	ON
<b>3.0</b>	OFF	ON	OFF	ON
<b>2.9</b>	ON	OFF	OFF	ON
<b>2.8</b>	OFF	OFF	OFF	ON
<b>2.7</b>	ON	ON	ON	OFF
<b>2.6</b>	OFF	ON	ON	OFF
<b>2.5</b>	ON	OFF	ON	OFF
<b>2.4</b>	OFF	OFF	ON	OFF
<b>2.3</b>	ON	ON	OFF	OFF
<b>2.2</b>	OFF	ON	OFF	OFF
<b>2.1</b>	ON	OFF	OFF	OFF
<b>2.0</b>	OFF	OFF	OFF	OFF

---

## 2.3 Watch-Dog Timer

- **Watch-Dog Timer Type Selector**

The Watch-Dog Timer is enabled by reading port 443H. 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 disabled by reading port 043H.

JP17	Description
1-2	NMI
2-3	RESET

- **Watch-Dog Timer Time-Out Period (JP18)**

PERIOD	1-2	3-4	5-6	7-8
1 sec.	OFF	OFF	ON	OFF
2 sec.	OFF	OFF	ON	ON
10 sec.	OFF	ON	OFF	OFF
20 sec.	OFF	ON	OFF	ON
110 sec.	ON	OFF	OFF	OFF
220 sec.	ON	OFF	OFF	ON

---

## 2.4 DiskOnChip™Flash Disk

The DiskOnChip™Flash Disk Chip(DOC) is produced by M-Systems. Customers don't need any extra software utility because the DOC is 100% compatible to hard disk and DOC. It is just "plug and play", easy and reliable. Right now, the DOC is available from 2MB to 72MB. **The MD-2200-xMB series DOC will share only 8KB memory address.**

- **DiskOnChip Memory Address Settings**

JP19	Description
1-2	CE00H
3-4	D600H
5-6	DE00H

---

## 2.5 SCSI Terminator Setting

There are two SCSI HDD Connectors on the ROCKY-586SEV 450MHz K6 / Pentium® Processor Full Function SBC :

CN2: SCSI 2 HDD CON; it is a 50-pin 8-bit 20Mbps connector  
CN3: Ultra Wide SCSI HDD CON; 68-pin 16-bit 40Mbps connector

Close the pins 1-2 if you use both CN2 and CN3.

Close the pins 2-3 if you use only one of them; this is the default setting.

- **On-board Terminator Settings (SCSI Devices)**

JP20	Description
1-2	Disable
2-3	Enable

# 3

## Connection

This chapter describes how to connect peripherals, switches and indicators to the ROCKY-568SEV board.

### 3.1 Floppy Disk Drive Connector

ROCKY-568SEV board is equipped with a 34-pin daisy-chain driver connector cable.

#### • CN7 : FDD 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

You can attach four IDE (Integrated Device Electronics) hard disk drives to the ROCKY-568SEV IDE controller.

Please note the IDE support Ultra DMA/33 high performance interface.

- **CN5 : Primary IDE Interface Connector**  
**CN6 : Secondary 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	IDE DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	IDE CHRDY	28	GROUND
29	IDE DACK	30	GROUND - <i>Default</i>
31	INTERRUPT	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDD CS0#	38	HDD CS1#
39	HDD ACTIVE#	40	GROUND

---

### 3.3 Parallel Port

ROCKY-568SEV includes an on-board parallel port, accessed through a 26-pin flat-cable connector CN8. This port is usually connected to a printer.

- **CN8 : Parallel (Printer) 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	26	N/C

---

### 3.4 Serial Ports

ROCKY-568SEV offers two high speed NS16C550 compatible UARTs with Read/Receive 16 byte FIFO serial ports. These ports can be connected to pointing devices or other serial devices.

- **CN11 : Serial Port DB-9 Connector (COMA); male 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)

- **CN12 : Serial Port 10-pin Header (COMB)**

Pin No.	Description	Pin No.	Description
1	DCD	6.	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND	10	N/C

---

### 3.5 Keyboard/Mouse Connector

ROCKY-568SEV provides keyboard and mouse connectors on the bracket and board each.

- **CN18 : 5-pin Header Keyboard Connector**

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

- **CN13 : 6-pin Mini-DIN Keyboard / Mouse Connector**

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

---

### 3.6 External Switches and Indicators

There are many external switches and indicators for monitoring and controlling your CPU board.

• **CN1 : General Connectors**

2	5V	1.	Speaker Signal
4.	N/C	3.	N/C
6	GND	5	N/C
8.	KEY LOCK	7.	5V
10.	GND	9.	RESET
12.	GND	11.	GND
14.	N/C	13.	HDD LED
16.	Power ON	15.	5V
18.	5V Standby	17.	Power Button
20.	5V Standby	19.	GND

---

### 3.7 USB Port Connector

The USB Connector supports two Universal Serial Ports for the future new I/O bus expansion.

• **CN17 : USB Connector**

1	5V	5.	GND
2.	SBD0-	6.	SBD1+
3.	SBD0+	7.	SBD1-
4.	GND	8.	5V

---

### 3.8 IrDA Infrared Interface Port

ROCKY-568SEV built-in IrDA port supports Serial Infrared (SIR) or Amplitude Shift Keyed IR (ASKIR) interface. If you want to use the IrDA port, you have to configure the SIR or ASKIR model in the BIOS' s Peripheral Setup' s COM2. Then the normal RS-232 COM2 will be disabled.

- **CN14 : IrDA connector**

PIN NO.	DESCRIPTION
1	VCC
2	N/C
3	IR-RX
4	GND
5	IR-TX

---

### 3.9 VGA Connector

The built-in 15-pin VGA connector can be connected directly to your monochrome CRT monitor as well as high resolution color CRT monitor.

- **CN9 : 15-pin Female Connector**

1	RED	2	GREEN
3	BLUE	4	N/C
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	N/C	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDC CLK		

---

### 3.10 LAN RJ45 Connector

ROCKY-568SEV is equipped with a built-in 10/100Mbps Ethernet Controller. You can connect it to your LAN through RJ45 LAN connector. The pin assignments are as following:

- **CN10 : LAN RJ45 Connector**

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

- **CN4 : LED Connector (2-pin header) for LAN**

PIN NO.	Description
1-2	LINK 10
3-4	LINK 100
5-6	TX / RX

---

### 3.11 CPU FAN Connector

ROCKY-568SEV provides two connectors for CPU cooling fan with pin assignments as following:

- **CN15, CN16 : CPU FAN Connector**

1.	GROUND
2.	+12V
3.	FAN SENSOR

**Note:**

*The pin configuration is always like this (looked from above):*

*If it is connected in reverse direction, it will cause the fan's rpm smaller and your CPU will be in **overheated** condition.*



*Normal CPU Fan rpm is > 5000 rpm.*

# 4

## AWARD BIOS Setup

ROCKY-568SEV uses the AWARD PCI/ISA BIOS for system configuration. The AWARD BIOS setup program is designed to provide maximum flexibility in configuring the system by offering various options which may be selected to meet end-user requirements. This chapter is written to assist you in the proper usage of these features.

### 4.1 Getting Start

When you turn on the power button, the BIOS will enter the Power-On-Self-Test routines. These routines will be executed for system test and 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 AWARD BIOS SETUP UTILITY, press <Del> key. The following screen will be displayed at this time:

```
ROM PCI/ISA BIOS (2A5LEI9A)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.
```

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	+   - < : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

---

## 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 the following screen for this setup.

```
ROM PCI/ISA BIOS (2A5LEI9A)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.
```

Date (mm:dd:yy) : Wed, Mar 24 1999								
Time (hh:mm:ss) : 13 : 40 : 20								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	:	0	0	0	0	0	0	0 AUTO
Primary Slave	:	0	0	0	0	0	0	0 AUTO
Secondary Master	:	0	0	0	0	0	0	0 AUTO
Secondary Slave	:	0	0	0	0	0	0	0 AUTO
Drive A : 1.44M, 3.5 in.								
Drive B : None								
Video : EGA/VGA								
Halt On : All,But Keyboard								
ESC : Quit		↑ ↓ → ← : Select Item			PU/PD/+/- : Modify			
F1 : Help		(Shift)F2 : Change Color						

**To set the Date**, for example, press either the arrow or <Enter> button on your keyboard to select one of the fields (Month, Date or Year) then press either <PgUp> or <PgDn> to increase or decrease the value of that field. Do the same steps for Time setting.

**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, the computer will automatically detect the HDD specifications.
3. Manually enter the specifications by yourself from the "User" option.

*Note:*

*If you need more information on any particular field, just highlight it then press <F1> button. A pop-up windows will come out to give you more information on that field.*

---

### 4.3 BIOS Features Setup

This BIOS Features Setup is designed for the 'fine tuning' of your system in order to improve its performance. As for normal operation, you don't have to change any default setting. The default setting is pre-set for most reliable operation.

ROM PCI/ISA BIOS (2A5LE19A)  
BIOS FEATURES SETUP  
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DEFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Gate A20 Option	: Normal		
Memory Parity/ECC Check	: Enabled		
Typeomatic Rate Setting	: Disabled		
Typeomatic Rate (Chars/Sec)	: 6		
Typeomatic Delay (Msec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled		
OS Select For DRAM > 64MB	: Non-OS2		
Report No FDD For MIN 95	: No		
		ESC : Quit	↑↓←→ : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

---

### 4.4 Chipset Features Setup

This setup function works mostly on board's chipset. This option is used to change the chipset's configuration. Please, carefully change any default setting, otherwise the system will run unstable.

ROM PCI/ISA BIOS (2A5LE19A)  
CHIPSET FEATURES SETUP  
AWARD SOFTWARE, INC.

Bank 0/1 DRAM Timing	: FP/E00 70ns	OnChip USB	: Disabled
Bank 2/3 DRAM Timing	: FP/E00 70ns		
Bank 4/5 DRAM Timing	: FP/E00 70ns		
SDRAM Cycle Length	: 2		
DRAM Read Pipeline	: Disabled		
Sustained 3T Write	: Disabled		
Cache Rd+CPU Mt Pipeline	: Disabled		
Cache Timing	: Fast		
Video BIOS Cacheable	: Disabled		
System BIOS Cacheable	: Disabled		
Memory Hole At 15Mb Addr.	: Disabled		
AGP Aperture Size	: 64M		
		ESC : Quit	↑↓←→ : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

## 4.5 Power Management Setup

Power Management Setup helps user to handle the ROCKY-568SEV board's "green" function. This feature can shut down the video display and hard disk to save energy, for example. The power management setup screen is as following:

### Power Management : Maximum Saving, User Define, Minimum Saving

*Maximum Saving* mode will put the system into *power saving mode* after a brief inactivity period.

*Minimum Saving* mode is almost the same as Maximum Saving mode but the period is longer.

*User Define* mode allows you to define power saving options as you prefer.

**Note :** *Advanced Power Management(APM)* must be installed in order to keep your system time updated when the computer goes into suspend mode activated by the Power Management. Under DOS environment, 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". Choose 'advanced' in the PM field.

ROM PCI/ISA BIOS (2A5LEI9A)  
POWER MANAGEMENT SETUP  
AWARD SOFTWARE, INC.

Power Management	: User Define	Primary INTR	: ON
PM Control by APM	: Yes	IRQ3 (COM 2)	: Primary
Video Off Option	: Suspend -> Off	IRQ4 (COM 1)	: Primary
Video Off Method	: V/H SYNC+Blank	IRQ5 (LPT 2)	: Primary
MODEM Use IRQ	: 3	IRQ6 (Floppy Disk)	: Primary
Soft-Off by PWRBTN	: Delay 4 Sec	IRQ7 (LPT 1)	: Primary
** PM Timers **		IRQ8 (RTC Alarm)	: Disabled
HDD Power Down	: Disable	IRQ9 (IRQ2 Redir)	: Secondary
Doze Mode	: Disable	IRQ10 (Reserved)	: Secondary
Suspend Mode	: Disable	IRQ11 (Reserved)	: Secondary
** PM Events **		IRQ12 (PS/2 Mouse)	: Primary
VGA	: OFF	IRQ13 (Coprocessor)	: Disabled
LPT & COM	: LPT/COM	IRQ14 (Hard Disk)	: Primary
HDD & FDD	: ON	IRQ15 (Reserved)	: Disabled
DMA/master	: OFF		
		ESC : Quit	↑↓ : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	{Shift}F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

---

## 4.6 PNP / PCI CONFIGURATION

ROM PCI/ISA BIOS (285LEI9A)  
PNP/PCI CONFIGURATION  
AWARD SOFTWARE, INC.

PNP OS Installed : No	CPU to PCI Write Buffer : Enabled
Resources Controlled By : Auto	PCI Dynamic Bursting : Disabled
Reset Configuration Data : Disabled	PCI Master 0 WS Write : Enabled
	PCI Delay Transaction : Disabled
	PCI Master Read Prefetch : Disabled
	PCI#2 Access #1 Retry : Disabled
	AGP Master 1 WS Write : Disabled
	AGP Master 1 WS Read : Disabled
	PCI IRQ Activated By : Level
	Onboard PCI SCSI Chip : Enabled
	Assign IRQ For USB : Enabled
	Assign IRQ For VGA : Disabled
	ESC : Quit           ↑↓←→ : Select Item
	F1 : Help            P0/PD/-/+ : Modify
	F5 : Old Values   (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

This menu is used to assign certain IRQ to your PNP/PCI devices manually.

**PNP OS Installed:** if you install Plug and Play operating system (OS), the OS will reassign the interrupt if you select *Yes* in this field. If you install a non-Plug and Play OS or if you want to prevent reassigning of interrupt settings, select *No* in this field.

**Resources Controlled By:** select *Auto* if you want the computer to assign the IRQs automatically and vice versa.

**Reset Configuration Data:** *Enabling* this field means you allow the configuration data to be reset.

**IRQ-xx assigned to:** these fields show whether certain IRQ is used by a PCI/ISA card.

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## 4.7 LOAD BIOS DEFAULTS

ROM PCI/ISA BIOS (2A5LEI9A)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURA	FORMAT
LOAD BIOS DEFAULT	ETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

If you select 'Y' to this field, the BIOS Defaults will be loaded except Standard CMOS SETUP. The default settings are not optimal and turning all high performance into disable condition. Select 'N' to abort.

*Suggestion: for the first time or for our primary user, we suggest you to use LOAD SETUP DEFAULTS because it is the most safe mode for your system.*

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## 4.8 LOAD SETUP DEFAULTS

ROM PCI/ISA BIOS (2A5LEI9A)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURA	FORMAT
LOAD BIOS DEFAULT	ETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

If you select 'Y' to this field, the Setup Defaults will be loaded except Standard CMOS SETUP. The default settings are optimal configuration settings for your system.

## 4.9 INTEGRATED PERIPHERALS

ROM PCI/ISA BIOS (2#5LEI9A) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
OnChip IDE First Channel : Enabled	Onboard Parallel Port : 378/IRQ7
OnChip IDE Second Channel: Enabled	Onboard Parallel Mode : SPP
IDE Prefetch Mode : Disabled	
IDE HDD Block Mode : Disabled	
IDE Primary Master PIO : Auto	
IDE Primary Slave PIO : Auto	
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
IDE Primary Master UDMA : Disabled	
IDE Primary Slave UDMA : Disabled	
IDE Secondary Master UDMA: Disabled	
IDE Secondary Slave UDMA: Disabled	
Init Display First : PCI Slot	
Onboard FDD Controller : Enabled	ESC : Quit
Onboard Serial Port 1 : 3F8/IRQ4	F1 : Help
Onboard Serial Port 2 : 2F8/IRQ3	F5 : Old Values (Shift)F2 : Color
UART 2 Mode : Standard	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults
	F10 : Select Item
	PU/PD/+/- : Modify

This option is used to assign Onboard I/O, IRQ, DMA etc. If you don't know how to configure them, just press <F7> to load Setup Defaults.

## 4.10 SUPERVISOR PASSWORD AND USER PASSWORD

Supervisor Password sets a password that is used to protect your system and Setup Utility. Supervisor Password has higher priority than User Password. Once you setup the password, the system will always ask you to key-in password every time you enter the BIOS SETUP. If you enter the BIOS SETUP with Supervisor Password, you can choose every setup/option on the main menu but with User Password, you can only choose three setup/options (USER PASSWORD, SAVE & EXIT SETUP and EXIT WITHOUT SAVING). To disable these passwords, enter the BIOS SETUP room with Supervisor Password and then just press the <Enter> key instead of entering a new password when the 'Enter Password' prompt pop-up.

*N.B. : if you forget the password, do the Clear/Reset CMOS procedure (see Part2.2 Setting the CPU of ROCKY-568SEV >> **Clear/Reset CMOS**)*

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## 4.11 IDE HDD AUTODETECTION

This option detects the parameters of an IDE hard disk drive (HDD sector, cylinder, head, etc) automatically and will put the parameters into the Standard CMOS Setup screen. Up to 4 IDE drives can be detected and the parameters will be listed in the box. Press <Y> if you accept these parameters. Press <N> to skip the next IDE drives.

*Note: If your IDE HDD was formatted in previous older system, incorrect parameters may be detected. In this case, you need to enter the correct parameters manually or low-level format the disk.*

## 4.12 SAVE AND EXIT SETUP

Select this option when you finish setting all the parameters and want to save them into the CMOS. Just simply press <Enter> key and all the configuration changes will be saved.

ROM PCI/ISA BIOS (2A5LEI9A)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PNP/PCI CONFIGURA LOAD BIOS DEFAULT LOAD SETUP DEFAULTS	INTEGRATED PERIPHERALS SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION FORMAT ETUP EXIT WITHOUT SAVING
SAVE to CMOS and EXIT (Y/N)? Y	
Esc : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	

## 4.13 EXIT WITHOUT SAVING

Select this option if you want to exit the Setup without saving the changes that you made. Just simply press <Enter> key and you will exit the BIOS SETUP without saving the changes.

ROM PCI/ISA BIOS (2A5LEI9A)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PNP/PCI CONFIGURA LOAD BIOS DEFAULT LOAD SETUP DEFAULTS	INTEGRATED PERIPHERALS SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION FORMAT ETUP EXIT WITHOUT SAVING
Quit Without Saving (Y/N)? Y	
Esc : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	

# 5

## E<sup>2</sup> Key™ Function

The ROCKY-568SEV provides an outstanding E<sup>2</sup>KEY™ function for system integrator. Based on the E<sup>2</sup>KEY™, you can free to store the ID Code, Password or Critical Data in the 1Kbit EEPROM. Because the EEPROM is nonvolatile memory, you don't have to worry for losing very important data.

Basically the E<sup>2</sup>KEY™ is based on a 1Kbit EEPROM which is configured to 64 words (from 0 to 63). You could access (read or write) each word at any time.

When you start to use the E<sup>2</sup>KEY™, you should have the utility in the package. The software utility will include four files as follows,

**README.DOC**  
**E2KEY.OBJ**  
**EKEYDEMO.C**  
**EKEYDEMO.EXE.**

The E2KEY.OBJ provides two library functions for user to integrate their application with E<sup>2</sup>KEY™ function. These library (**read\_e2key** and **write\_e2key**) are written and compiled in C language. Please check the following statement, then you will know how to implement it easily.

**unsigned int read\_e2key(unsigned int address)**

/\* This function will return the E<sup>2</sup>KEY™s data at address. The address range is from 0 to 63. Return data is one word, 16 bits

```
*/void write_e2key(unsigned int address,unsigned data)  
/* This function will write the given data to E2KEY™ at certain  
address. The address range is from 0 to 63. The data value is  
from 0 to 0xffff. */
```

To easily start to use the function, please refer to the included EKEYDEMO.C code at first.

Please note that the E<sup>2</sup>KEY™ function is based on the working of parallel port. So you should enable the ROCKY-568SEV' s parallel port, otherwise it will not work.

# Appendix A. WatchDog Timer

The WatchDog Timer is provided to ensure that standalone systems can always recover from catastrophic conditions that cause the CPU to crash. This condition may have occurred by external EMI or a software bug. When the CPU stops working correctly, hardware on the board will either perform a hardware reset (cold boot) or a Non-Maskable Interrupt (NMI) to bring the system back to a known state.

Two I/O ports control the WatchDog Timer .:

443 (hex)	Read	Enable to refresh the WatchDog Timer.
043 (hex)	Read	Disable the WatchDog Timer.

To enable the WatchDog Timer, a read from I/O port 443H must be performed. This will enable and activate the countdown timer which will eventually time-out and either reset the CPU or cause a NMI, depending on the setting of JP17. To ensure that this reset condition does not occur, the WatchDog Timer must be periodically refreshed by reading the same I/O port 433H. This must be done within the time-out period that is selected by jumper group JP18.

A tolerance of at least 30% must be maintained to avoid unknown routines within 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.

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*Note: when exiting a program it is necessary to disable the WatchDog Timer, otherwise the system will reset.*

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# Appendix B. Notes on : PCI Master

1. VIA VT82C598MVP Chips have 5 PCI Master control  
i.e. GNT0~GNT4, REQ0~4
2. Onboard Ethernet use GNT4 and REQ4
3. Onboard SCSI use GNT3 and REQ3  
i.e. BackPlane mark "PCI4"
4. Explain : Model PCI-14S



