

ROCKY-3705EV-R2

Celeron™ , Pentium® III & Tualatin Processor

With Ethernet , VGA , Audio Board

PCB VER:2.1

[Manual Revision 2.3](#)

[AUG 02, 2002](#)

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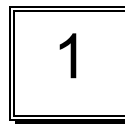
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Introduction

Welcome to the ROCKY-3705EV-R2 Socket 370 Celeron® , Pentium III® (FC-PGA) and Tualatin Processor with 10/100Mbps Ethernet , VGA , Audio Board. It is equipped with high performance Intel® Celeron up to 700MHz(or above) , Pentium III (FC-PGA) 500M-1GHz (or above) and Tualatin 1.26 GHz (or above) 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.

This board has a built-in IDE Interface CompactFlash™ Disk (Type II) for embedded application. The CompactFlash™ Disk is 100% compatible to hard disk. User can use any DOS command without any extra software utility. The Flash Disk currently is available from 128MB to 1GB.

One advanced high performance LPC super I/O chip – ITE (IT8705F) is used in the ROCKY-3705EV-R2 board. The on-chip UARTs are compatible with the NS16C550. The parallel port and FDD interface are compatible with IBM PC/AT architecture.

ROCKY-3705EV-R2 uses the advanced SIS SIS630ET Chipset which is 100% PCI compatible chipset with PCI 2.1 standard. In addition, this board provides two 168-pin sockets for its on-board DRAM. The DIMM module is 3.3V SDRAM and max. 512MB for each module.

The VGA chip (on chip sis300) used on ROCKY-3705EV-R2 supports 3D function .

1.1 Specifications :

- **CPU** : support Intel Celeron® up to 800 MHz or above, Pentium III (FC-PGA) 800M-1G Hz (or above) and Tualatin 1.26GHz(or above) Processor . Supports 66MHz, 100MHz and 133 MHz FSB.
- **Expansion Bus** : PICMG bus, expansion to support PCI and ISA (LPC To ISA bus ,supports only 8-bit IO and Memory cycle. ISA-MASTER mode is also not supported) bus signal
- **DMA channels** : 7
- **Interrupt levels** : 15
- **Chipset** : SIS630ET 66/100/133MHz CPU / DRAM Clock
- **DRAM** : Two 168-pin DIMM sockets ,supports SDRAM RAM module, up to 1GB.
- **AGP VGA Controller** : On chip SIS300 3D (Share memory up to 64MB RAM)
AGP bus speed : 66MHz
VESA Standard Super High Resolution Graphic Mode up to

1600 x 1200 256/32K colors 100 Hz
1280 x 1024 256/32K/64K/16M colors 120 Hz
1024 x 768 256/32K/64K/16M colors 120 Hz
800 x 600 16/256/32K/64K/16M colors 120 Hz
640 x 480 16/256/32K/64K/16M colors 120 Hz
- **10/100Mbps Ethernet Controller** : One Ethernet SIS900 (embedded in SIS630ET chipset), Auto-sensing interface to 10Mbps, 100Mbps Network , RJ45 connector for 10BASE-TX and 100BASE-TX , Full Duplex capability , Full Software driver support
- **Ultra DMA/66 (Enhanced PCI IDE Interface)** : Supports four PCI Enhance IDE hard drives. The Ultra DMA/66 IDE can handle data transfer up to 66MB/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.

- **Multi-I/O Chip** : IT8705F I/O, setup by BIOS
Two 16C550 RS-232C Ports , One EPP/ECP Parallel Port, Floppy Port.
- **Floppy disk drive interface** : Two 2.88 MB, 1.44MB, 1.2MB, 720KB, or 360KB floppy disk drives.
- **Two high speed Serial ports** : NS16C550 compatible UARTs
- **Bi-directional Parallel Port** : One parallel port support , IEEE1284 compatible.
- **IrDA port** : Support Infrared and Amplitude Shift Keyed IR(ASKIR) interface.
- **USB port** : Support Two USB ports for future expansion ,USB 1.2 compatible.
- **Watchdog timer** : Supports resolution of 1 second and period of 1-255 . Reset is generated when CPU does not periodically trigger the timer. You can uses IO port 443H to control the watch-dog and generate a system reset.
- **CompactFlash Disk** – Type II CompactFlash™ Disk. The Flash Disk provides 100% compatibility with IDE hard disk.
- **SIS7018 PCI Audio Chipset**: Sound Blaster compatible and Roland MPU401 compatible (AC97)
- **Support ATX Power function**
- **Mouse & Keyboard Connector** : PS/2 Mouse Port Expansion Keyboard.
- **Power Consumption** : +5V : 7.5A (Pentium III 933MHz, 256MB SDRAM) +12V : 0.3A
- **Operating Humidity** : 5 ~ 95 % , non-condensing
- **Operating Temperature** : 0° ~ 55° C (CPU needs Cooler)

1.2 What You Have

In addition to this *User's Manual*, the ROCKY-3705EV-R2 package includes the following items:

- ROCKY-3705EV-R2 Socket 370 Celeron[®] , Pentium III and Tualatin Processor with Ethernet , VGA , Audio Board
- FDD/HDD (1x2.54mm and 1x2.54mm Support DMA66)Cable
(32200-000017 / 32200-000052)
- Keyboard / Mouse Adapter Y Cable
(32000-000138)
- Printer Cable
(32200-000040)
- Audio (Line In ,Line Out ,Mic In) Serial Port (1x RS232)Cable
(19800-000004)

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.

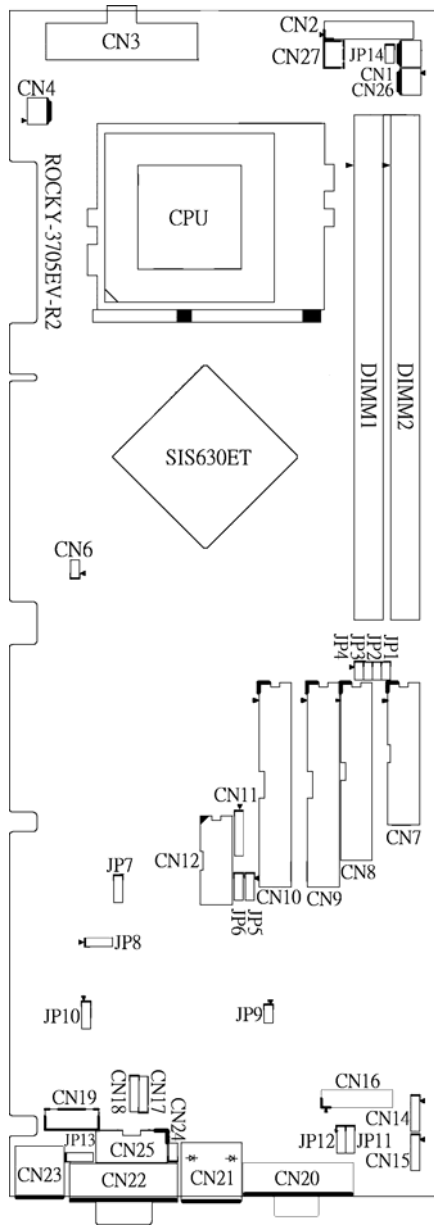
2

Installation

This chapter describes how to install the ROCKY-3705EV-R2. The layout of ROCKY-3705EV-R2 is shown on the next page and the Unpacking Precautions that you should be careful with are described on the following 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.

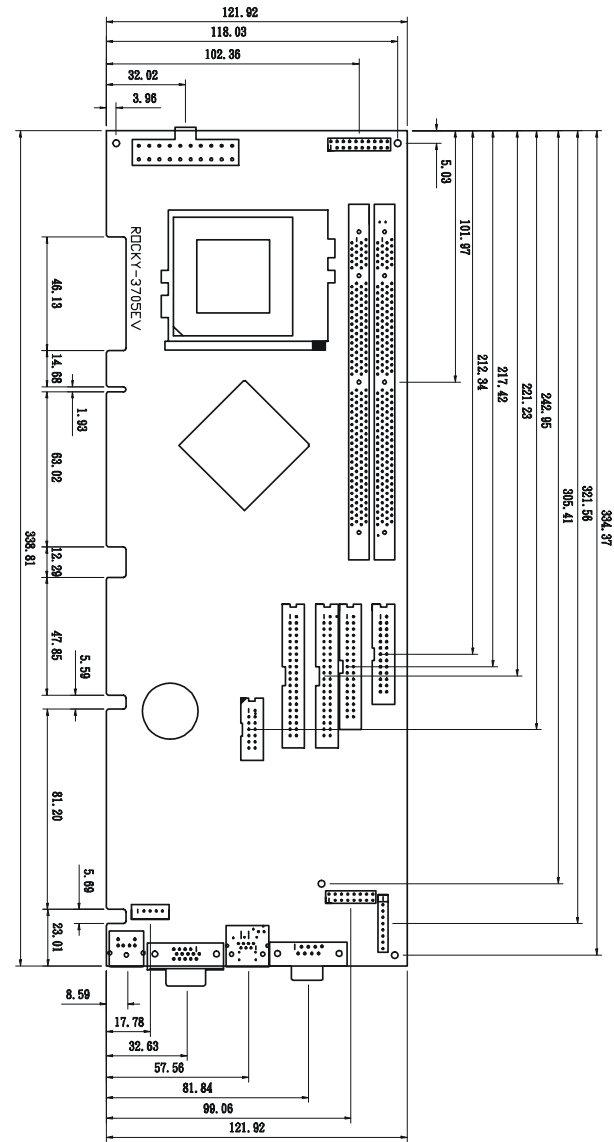
2.1 ROCKY-3705EV-R2 's Layout

< please, refer to the next page >



ROCKY-3705EV-R2 Socket 370 Celeron™, Pentium III® & Tualatin Processor with Ethernet, VGA, Audio Board

2.2 ROCKY-3705EV-R2 's Dimension (Unit : mm)



ROCKY-3705EV-R2 Socket 370 Celeron™, Pentium III® & Tualatin Processor with Ethernet, VGA, Audio Board

2.3 Unpacking Precautions

Some components on ROCKY-3705EV-R2 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-3705EV-R2. 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-3705EV-R2 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.
- ✓ Do not put your ROCKY-3705EV-R2 unprotected on a flat surface because it has components on both sides.

2.4 Setting the CPU of ROCKY-3705EV-R2

- **JP1,2,3,4 : CPU & DRAM FREQUENCY SETTING (H/W)**



| CPU/DRAM | JP1 | JP2 | JP3 | JP4 |
|----------|-----|-----|-----|-----|
| 66/66 | O | O | O | C |
| 100/100 | O | C | O | O |
| 133/133 | C | C | C | O |

O : Open
C : Close

2.5 Clear CMOS Setup

If you forget the CMOS password, you can clear or reset it by closing the **JP8**. After JP8(1-2) is closed, turn on the power for about 3 seconds then turn it off and open the JP8(1-2). Now, the password has been cleared from your CMOS.

- **JP8 : Clear CMOS Setup**



| PIN NO. | DESCRIPTION |
|---------|------------------|
| 2-3 | Normal Operation |
| 1-2 | Clear CMOS Setup |

2.6 COM2 RS-232/422,485 Selection (Option)

- JP7 : COM2 Mode Selection



| JP7 | DESCRIPTION |
|-----|-------------|
| 1-2 | RS232 |
| 2-3 | RS422/RS485 |

** 2-3 RS422 / RS485 (Option)

2.7 COM Port RI and Voltage Selection

- JP6,JP5: Set pin 9 of COM1 as signal RI or voltage source



| JP6 | DESCRIPTION |
|-----|-------------------------|
| 2-3 | COM1 RI Pin Use RI |
| 1-2 | COM1 RI Pin Use Voltage |

| JP5 | DESCRIPTION |
|-----|------------------------------|
| 2-3 | COM1 RI Pin Use Voltage +12V |
| 1-2 | COM1 RI Pin Use Voltage +5V |

* If JP6 Uses (2-3) Don't care JP5

- JP12,JP11: Set pin 9 of COM2 as signal RI or voltage source



| JP12 | DESCRIPTION |
|------|-------------------------|
| 2-3 | COM2 RI Pin Use RI |
| 1-2 | COM2 RI Pin Use Voltage |

| JP11 | DESCRIPTION |
|------|------------------------------|
| 2-3 | COM2 RI Pin Use Voltage +12V |
| 1-2 | COM2 RI Pin Use Voltage +5V |

* If JP12 Uses (2-3) Don't care JP11

2.8 CompactFlash™ Disk Setting

The CompactFlash™ Disk is 100% compatible to IDE hard disk. It is just “plug and play”, easy and reliable. The CompactFlash™ Disk is available from 128MB to 1GB. Besides it can accept type II IBM MicroDriver .

- JP9: CompactFlash™ Disk IDE Master & Slave Setting



* CompactFlash™ Disk Use Secondary IDE Channel

| PIN NO. | DESCRIPTION |
|---------|-------------|
| Open | Slave |
| Short | Master |

2.9 Keyboard Power Selection

- JP13 : Keyboard Power Selection



| JP13 | DESCRIPTION |
|------|-------------|
| 1-2 | VCC |
| 2-3 | 5VSB |

2.10 AT or ATX Power Setting

- JP14 : AT or ATX Power Selection



| PIN NO. | DESCRIPTION |
|---------|---------------|
| Short | For AT Power |
| Open | For ATX Power |

*To use AT power , JP14 must be Short to avoid Keyboard / Mouse fail

*To use ATX power , JP14 must be Open to avoid boot fail

3

Connection

This chapter describes how to connect peripherals, switches and indicators to the ROCKY-3705EV-R2 board.

3.1 Floppy Disk Drive Connector

ROCKY-3705EV-R2 board is equipped with a 34-pin daisy-chain driver connector cable.

- CN8 : 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 | D4IRECTION# |
| 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-3705EV-R2 IDE controller .The maximal data transfer rate is 66MB/s . In this case , Cable total length shall not exceed 0.46 m (18 in).

CN10 (40Pin 2.54mm IDE) : Primary IDE Connector

CN9 (40Pin 2.54mm IDE) : Secondary IDE Connector

• **CN10 , CN9 : IDE Interface Connector**

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1 | RESET# | 2 | GND |
| 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 | GND | 20 | N/C |
| 21 | IDE DRQ | 22 | GND |
| 23 | IOW# | 24 | GND |
| 25 | IOR# | 26 | GND |
| 27 | IDE CHRDY | 28 | GND |
| 29 | IDE DACK | 30 | GND |
| 31 | INTERRUPT | 32 | N/C |
| 33 | SA 1 | 34 | N/C |
| 35 | SA 0 | 36 | SA 2 |
| 37 | HDC CS0# | 38 | HDC CS1# |
| 39 | HDD ACTIVE# | 40 | GND |

3.3 Parallel Port

This port is usually connected to a printer, The ROCKY-3705EV-R2 includes an on-board parallel port, accessed through a 26-pin flat-cable connector CN7.

• **CN7 : (LPT1) Parallel Port Connector**

| Pin | Description | Pin | Description |
|-----|----------------|-----|--------------------|
| 1 | STROBE# | 2 | AUTO FORM FEED # |
| 3 | DATA 0 | 4 | ERROR# |
| 5 | DATA 1 | 6 | INITIALIZE |
| 7 | DATA 2 | 8 | PRINTER SELECT LN# |
| 9 | DATA 3 | 10 | GND |
| 11 | DATA 4 | 12 | GND |
| 13 | DATA 5 | 14 | GND |
| 15 | DATA 6 | 16 | GND |
| 17 | DATA 7 | 18 | GND |
| 19 | ACKNOWLEDGE | 20 | GND |
| 21 | BUSY | 22 | GND |
| 23 | PAPER EMPTY | 24 | GND |
| 25 | PRINTER SELECT | 26 | N/C |

3.4 Serial Ports

The ROCKY-3705EV-R2 offers Two high speed NS16C550 compatible UARTs with Read/Receive 16 byte FIFO serial ports (COM1/COM2).

• **CN20 : Serial Port DB-9 Male Connector (COM1)**

| Pin No. | Description | Pin No. | Description |
|---------|-------------|---------|-------------|
| 1 | DCD | 6 | DSR |
| 2 | RXD | 7 | RTS |
| 3 | TXD | 8 | CTX |
| 4 | DTR | 9 | RI |
| 5 | GND | | |

• **CN12 : Serial Port 2x7 pin header Connector (COM2)**

**COM2 Support Three Mode : RS232, RS422/RS485
(For 2x5 pin header Connector)**

RS232 Mode

| Pin No. | Description | Pin No. | Description |
|---------|-------------|---------|-------------|
| 1 | DCD | 2 | DSR |
| 3 | RXD | 4 | RTS |
| 5 | TXD | 6 | CTX |
| 7 | DTR | 8 | RI |
| 9 | GND | 10 | NC |

**RS422 / RS485 Mode (Option)
(For 2x7 pin header Connector)**

RS422 Mode

| Pin No. | Description | Pin No. | Description |
|---------|-------------|---------|-------------|
| 1 | | 2 | |
| 3 | | 4 | |
| 5 | | 6 | |
| 7 | | 8 | |
| 9 | | 10 | |
| 11 | TX+ | 12 | TX- |
| 13 | RX+ | 14 | RX- |

(For 2x7 pin header Connector)

RS485 Mode

| Pin No. | Description | Pin No. | Description |
|---------|-------------|---------|-------------|
| 1 | | 2 | |
| 3 | | 4 | |
| 5 | | 6 | |
| 7 | | 8 | |
| 9 | | 10 | |
| 11 | | 12 | |
| 13 | RX+ | 14 | RX- |

3.5 Keyboard/Mouse Connector

The ROCKY-3705EV-R2 provides one external keyboard & mouse ,one mouse and one keyboard connectors.

• **CN23 : Extended Keyboard & PS/2 Mouse 6-pin Mini Din Connector**

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1 | KB DATA |
| 2 | MS DATA |
| 3 | GND |
| 4 | VCC |
| 5 | KB CLOCK |
| 6 | MS CLOCK |

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

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1 | KB CLOCK |
| 2 | KB DATA |
| 3 | N/C |
| 4 | GND |
| 5 | +5V |

3.6 External Switches and Indicators

There are several external switches and indicators for monitoring and controlling your CPU board. All the functions are in the CN2 connector.

• **CN2 : Multi Panel**

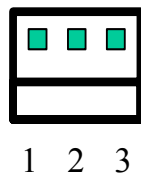
| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------------------|---------|-----------------|
| 1. | SPEAKER | 11 | POWER-LED + |
| 2. | N/C | 12 | N/C |
| 3. | N/C | 13 | POWER-LED - |
| 4. | SPEAKER +5V | 14 | KEYLOCK+ |
| 5. | RESET SW | 15 | KEYLOCK - |
| 6. | RESET SW GND | 16 | GND |
| 7. | IDE LED - | 17 | N/C |
| 8. | IDE LED+ | 18 | ATX POWER PSON# |
| 9. | ATX POWER BUTTON | 19 | ATX 5VSB |
| 10. | ATX POWER BUTTON GND | 20 | ATX 5VSB |

• **CN27 : ATX Power Switch Connector**

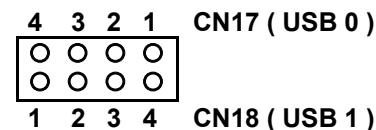
| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1 | PWR_BUTTON+ |
| 2 | Ground |

• **CN26 : ATX Power +5VSB and PSON# Connector**

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1 | Ground |
| 2 | PSON# |
| 3 | +5VSB |



| PIN NO. | Description |
|---------|-------------|
| 1 | VCC |
| 2 | USB0- |
| 3 | USB0+ |
| 4 | GND |



3.8 IrDA Infrared Interface Port

ROCKY-3705EV-R2 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 FIR or ASKIR model in the BIOS's Peripheral Setup's COM2. Then the normal RS-232 COM2 will be disabled.

• **CN11 : IrDA Connector**

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

3.7 USB Port Connector

The ROCKY-3705EV-R2 has two built-in USB ports for the future new I/O bus expansion.

• **CN17,18: Pin Header USB Connectors**

3.9 VGA Connector

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

• **CN22 : 15-pin Female VGA 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 | | |

• **CN25 : 10-pin Header VGA Connector**

| | | | |
|---|--------|----|--------|
| 1 | RED | 2 | SMCLK |
| 3 | GREEN | 4 | SMDATA |
| 5 | BLUE | 6 | GND |
| 7 | H-SYNC | 8 | GND |
| 9 | V-SYNC | 10 | GND |

3.10 LAN RJ45 Connector

ROCKY-3705EV-R2 is equipped with one 10/100Mbps Ethernet Controller. You can connect it to your LAN through RJ45 connector. The pin assignments are as follows.

• **CN21 : LAN RJ45 Connector**

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

CN21 : On chip SIS 300 LAN

• **CN24 : Active LED Connector For on chip SIS900 LAN**

| Pin No. | Description | Pin No. | Description |
|---------|-------------|---------|-------------|
| 1 | VCC | 2 | LAN ACT. |

• **On Chip SIS900 LAN Support Active LED Only**

3.11 Fan Connector

The ROCKY-3705EV-R2 provides two CPU cooling fan connector and one system fan connectors. These connectors can supply 12V/500mA to the cooling fan.

• **CN1,CN4 : CPU Fan Connector**

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1 | GND |
| 2 | +12V |
| 3 | Fan Sensor |

3.12 Temperature Sensor Connector

You can connect external temperature sensor to this connector.

• **CN6 : Temperature Sensor Connector**

** Use 10K Ohm Temperature register sensor

| Pin No. | Description | Pin No. | Description |
|---------|-------------|---------|-------------|
| 1 | THER-DA | 2 | GND |

3.13 Audio CD IN

This is used to connect to the CD-Out from CD-ROM player.

• **CN14 : Audio CD IN (2.54mm)**

| Pin No. | Description | Pin No. | Description |
|---------|-------------|---------|-------------|
| 1 | CD IN_R | 2 | GND |
| 3 | GND | 4 | CD IN_L |

3.14 Speaker OUT (Reserved)

- CN15 : Optional Speaker out .
(Two 6W stereo power amplifiers)

| | |
|----|--------------|
| 1. | RIGHT SIGNAL |
| 2. | GND |
| 3. | GND |
| 4. | LEFT SIGNAL |

3.15 Audio Panel

One line-out (2 different pin assignments),one line-in and one mic-in are supported . All these output are from audio chip without amplifier .

- CN16 : Audio Panel

| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | Line Out R | 2 | GND |
| 3 | Line Out L | 4 | GND |
| 5 | Line Out R | 6 | Line Out L |
| 7 | GND | 8 | GND |
| 9 | Line In R | 10 | Line In L |
| 11 | GND | 12 | GND |
| 13 | NC | 14 | NC |
| 15 | MIC In | 16 | GND |

3.16 CompactFlash Storage Card Socket

The ROCKY-3705EV-R2 configures CompactFlash™ Disk Storage Card in IDE Mode.
It will use IDE Secondary / Slave channel when CompactFlash™ Disk card is plugged in.

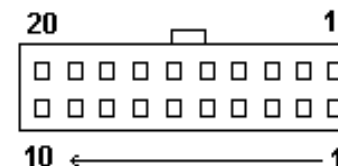
• CN13 : CompactFlash Storage Card Socket pin assignment

| PIN NO | DESCRIPTION | PIN NO | DESCRIPTION |
|--------|--------------|--------|-------------------------|
| 1 | GROUND | 26 | CARD DETECT1 |
| 2 | D3 | 27 | D11 |
| 3 | D4 | 28 | D12 |
| 4 | D5 | 29 | D13 |
| 5 | D6 | 30 | D14 |
| 6 | D7 | 31 | D15 |
| 7 | CS1# | 32 | CS3# |
| 8 | N/C | 33 | N/C |
| 9 | GROUND | 34 | IOR# |
| 10 | N/C | 35 | IOW# |
| 11 | N/C | 36 | OBLIGATORY TO PULL HIGH |
| 12 | N/C | 37 | IRQ15 |
| 13 | VCC | 38 | VCC |
| 14 | N/C | 39 | MASTER/SLAVE |
| 15 | N/C | 40 | N/C |
| 16 | N/C | 41 | RESET# |
| 17 | N/C | 42 | IORDY |
| 18 | A2 | 43 | N/C |
| 19 | A1 | 44 | OBLIGATORY TO PULL HIGH |
| 20 | A0 | 45 | ACTIVE# |
| 21 | D0 | 46 | PDIAG# |
| 22 | D1 | 47 | D8 |
| 23 | D2 | 48 | D9 |
| 24 | N/C | 49 | D10 |
| 25 | CARD DETECT2 | 50 | GROUND |

3.17 ATX Power Connector

The ROCKY-3705EV-R2 can work without backplane, while attaching external power to this ATX power connector.

- CN3: ATX Power Supply Connector



CN3 is a 20-pin ATX Power Supply Connector. Please refer to the following table for the pin assignments.

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



AWARD BIOS SETUP

4.1 Introduction

This manual discusses Award's Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

4.2 Starting Setup

The Award BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

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 you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

4.3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

| | |
|---------------|--|
| Up arrow | Move to previous item |
| Down arrow | Move to next item |
| Left arrow | Move to the item in the left hand |
| Right arrow | Move to the item in the right hand |
| Esc key | Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu |
| PgUp key | Increase the numeric value or make changes |
| PgDn 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, 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 |
| F7 key | Load the default |
| F8 key | Reserved |
| F9 key | Reserved |
| F10 key | Save all the CMOS changes, only for Main Menu |

4.4 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the **F1** key again.

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the Award BIOS supports an override to the CMOS settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

4.5 Main Menu

Once you enter the AwardBIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

CMOS Setup Utility - Copyright (C) 1984-1998

| | |
|------------------------------------|---------------------------|
| Standard CMOS Feature | Frequency/Voltage Control |
| Advanced BIOS Feature | Load Fail-Safe Defaults |
| Advanced Chipset Feature | Load Optimized Defaults |
| Integrated Peripherals | Set Supervisor Password |
| Power Management Setup | Set User Password |
| PnP/PCI Configurations | Save & Exit Setup |
| PC Health Status | Exit Without Saving |
| Esc : Quit ↑ ↓ ← → : Select Item | |
| F10 : Save & Exit Setup | |
| Time, Date, Hard Disk Type.... | |

Note that a brief description of each highlighted selection appears at the bottom of the screen.

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Features

Use this menu for basic system configuration. See Section 4.6 for the details.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system. See Section 4.7 for the details.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance. See section 4.8 for the details.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. See section 4.9 for the details.

Power Management Setup

Use this menu to specify your settings for power management. See section 4.10 for the details.

PnP / PCI Configuration

This entry appears if your system supports PnP / PCI. See section 4.11 for the details.

PC Health Status

Use this menu to monitor your hardware. See section 4.12 for the details.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control. See section 4.13 for the 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 4.14 for the 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 4.14 for the details.

Supervisor / User Password

Use this menu to set User and Supervisor Passwords. See section 4.15 for the details.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup. See section 4.16 for the details.

Exit Without Save

Abandon all CMOS value changes and exit setup. See section 4.16 for the details.

4.6 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 <PgUp> or <PgDn> keys to select the value you want in each item.

| Standard CMOS Features | | Item Help |
|---|-----------------|---|
| Date: | Mon, Feb 8 1999 | Menu Level > Change the day, month, year and century |
| Time: | 16:19:20 | |
| > IDE Primary Master | 2557 MB | |
| > IDE Primary Slave | None | |
| > IDE Secondary Master | None | |
| > IDE Secondary Slave | None | |
| Drive A | 1.44M, 3.5 in. | |
| Drive B | None | |
| Halt On | All Errors | |
| 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 | | |

Figure 1: The Main Menu

Main Menu Selections

| 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 Master | Options are in its sub menu (described in Table 3) | Press <Enter> to enter the sub menu of detailed options |
| IDE Secondary Master | 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 |
| 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 |

Table 2 Main Menu Selections

IDE Adapters

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

Figure 2 shows the IDE primary master sub menu.

CMOS Setup Utility – Copyright © 1984-1998 Award Software
IDE Primary Master

| | | |
|--|----------------------|---|
| IDE HDD Auto-Detection | Press Enter | Item Help |
| IDE Primary Master Access Mode | Auto 2557 MB Auto | Menu Level >> |
| Cylinder | 4956 | To auto-detect the HDD's size, head... on this channel |
| 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 | | |

Figure 2 IDE Primary Master sub menu

Use the legend keys to navigate through this menu and exit to the main menu. Use Table 3 to configure the hard disk.

| Item | Options | Description |
|---|---|--|
| IDE HDD Auto-detection | 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 | Normal 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 |

Table 3 Hard disk selections

4.7 Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

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Advanced BIOS Features

| | | |
|---|----------|--------------|
| Virus Warning | Enabled | Item Help |
| CPU Internal Cache | Enabled | |
| External Cache | Enabled | |
| CPU L2 Cache ECC Checking | Enabled | |
| Quick Power On Self Test | Disabled | Menu Level > |
| First Boot device | Floppy | |
| Second Boot device | HDD-0 | |
| Third Boot device | Floppy | |
| Boot other device | Disabled | |
| Swap Floppy Drive | Disabled | |
| Boot Up Floppy Seek | Disabled | |
| Boot Up NumLock Status | Off | |
| Gate A20 Option | Normal | |
| Typematic Rate Setting | Disabled | |
| Typematic Rate (Chars/Sec) | 6 | |
| Typematic Delay (Msec) | 250 | |
| Security Option | Setup | |
| OS Select For DRAM > 64MB | Non-OS2 | |
| Report NO FDD For Win 95 | No | |
| ↑↓←→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

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.

| | |
|----------|---|
| 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 Internal Cache/External Cache

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

| | |
|----------|---------------|
| Enabled | Enable cache |
| Disabled | Disable cache |

CPU L2 Cache ECC Checking

This item allows you to enable/disable CPU L2 Cache ECC checking. The choice: Enabled, Disabled.

Processor Number Feature

Some of the new generation of socket-370 processors are installed with a unique processor number. This number may be used for verification in internet transactions and e-commerce. If you prefer not to use or distribute the unique processor number, use this item to suppress the processor number. The Choice : Enable, Disable.

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.

| | |
|----------|-------------------|
| Enabled | Enable quick POST |
| Disabled | Normal POST |

First/Second/Third/Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: Floppy, LS/ZIP, HDD, SCSI, CDROM, Disabled.

Swap Floppy Drive

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

The choice: Enabled/Disabled.

Boot Up Floppy Seek

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

The choice: Enabled/Disabled.

Boot Up NumLock Status

Select power on state for NumLock.

The choice: Enabled/Disabled.

Gate A20 Option

Select if chipset or keyboard controller should control GateA20.

| | |
|--------|---|
| Normal | A pin in the keyboard controller controls GateA20 |
| Fast | Lets chipset control GateA20 |

Typematic Rate Setting

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

The choice: Enabled/Disabled.

Typematic Rate (Chars/Sec)

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

The choice: 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.

The choice: 250, 500, 750, 1000.

Security Option

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

| | |
|--------|---|
| 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.

The choice: Non-OS2, OS2.

Report No FDD For Win 95

Whether report no FDD for Win 95 or not.

The choice: Yes, No.

Video BIOS Shadow

This item allows the video BIOS to be copied to system memory for faster performance.

The Choice : Enable , Disable.

4.8 Advanced Chipset Features

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Advanced Chipset Features

| Advanced DRAM Control 1 | Press Enter | Item Help |
|-----------------------------|-------------|--------------|
| Advanced DRAM Control 2 | Press Enter | |
| System BIOS Cacheable | Disabled | Menu Level ➤ |
| Video BIOS Cacheable | Disabled | |
| Memory Hole At 15M-16M | Enabled | |
| AGP Aperture Size | 64MB | |
| Graphic Window WR Combin | Enable | |
| Concurrent function (MEM) | Enabled | |
| Concurrent function (PCI) | Enabled | |
| CPU Pipeline Control | Enabled | |
| PCI Delay Transaction | Enabled | |
| Power-supply Type | AT | |
| Memory Parity Check | Enabled | |

↑↓←→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 have been chosen because they provide the best operating conditions for your system.

Advanced DRAM Control 1 / 2 Settings

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

Auto Configuration

This item will automatically configure the chipset timing. . You may select 'manual' to set up following gray items by your specific need.

The choice: Manual, Auto, 100MHZ, 133MHZ.

SDRAM RAS Active Time

This item defines SDRAM ACT to PRE command period.

The Choice: 6T, 7T, 5T, 4T.

SDRAM RAS Precharge Time

This item defines SDRAM PRE to ACT command period.

The Choice: 3T, 2T, 4T, Reserved.

RAS to CAS Delay

This item defines SDRAM ACT to Read/Write command period.

The choice: 3T, 2T, 4T, Reserved.

Dram Background Command

This item is lead-off time control for DRAM background command. When select 'Delay 1T' , background commands are issued 1 clock behind memory address (MA) been issued. When select 'Normal', background command and MA are issued at the same time.

The choice: Delay 1T, Normal.

LD-Off Dram RD/WR Cycles

The item is lead-off time control for DRAM Read/Write Cycles. When select 'Delay 1T' , memory read/write command is issued 1 clock behind memory address (MA) been issued. When select 'Normal', read/write command and MA are issued at the same time.

The choice: Delay 1T, Normal.

Write Recovery Time

This item defines the Data-in to PRE command period.

The choice: 1T, 2T

VCM REF To ACT/REF Delay

This item defines VCM REF to REF/ACT command period.

The choice: 10T, 9T.

VCM ACCT To ACT/REF Delay

This item defines VCM ACT to ACT/REF command period.

The choice: 10T, 9T, 8T, Reserved.

Early CKE Delay 1T Cntrl

When this item is enabled, CKE is driven out from flip-flop. It is used when system operates under low frequency and CKE delay adjustment method defined in the 'Early CKE Delay Adjustment' which can not meet setup time and hold time requirement.

The choice: Normal, Delay 1T.

Early CKE Delay Adjust

This item controls the timing for CKE. Various delay options are provided to ensure that CKE can meet SDRAM setup time and hold time specification when CKE is driven out.

The Choice: 1ns, 2ns, 3ns, 4ns, 5ns, 6ns, 7ns, 8ns.

Mem Command Output Time

This item is to control the timing to drive memory command onto memory bus.

The choice: Normal, Delay 1T.

SDRAM/VCM CAS Latency

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

The Choice: 2, 3 , SPD

SDRCLK Control

This item controls the phase of SDRCLK that lags behind SDCLK.

The choice: Enabled, Disabled.

SDWCLK Control CS#/CKE

This item controls the phase of SDWCLK used for chip set select signals pin that lags ahead SDCLK.

The choice: Enabled, Disabled.

SDWCLK Control MA/SRAS

This item controls the phase of SDWCLK used for MA/ SRAS signals that lags ahead SDCLK.

The choice: +5.0ns~-2.5ns (Default 0.0ns)

SDWCLK Control DQM/MD

This item controls the phase of SDWCLK used for DQM/MD signals that lags ahead SDCLK.

The choice: +5.0ns~-2.5ns (Default 0.0ns)

EGMRCLK Control

This item controls the phase of EGMRCLK that lags behind SDCLK.

The choice: -1.0ns~+6.5ns (Default 0.0ns)

EGMWCLK Control

This item controls the phase of EGMWCLK that lags ahead SDCLK.

The choice: +5.0ns~-2.5ns (Default 0.0ns)

System BIOS Cacheable

Selecting *Enabled* allows caching of the system BIOS ROM at F0000h-FFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

The choice: Enabled, Disabled.

Vedio RAM Cacheable

Select Enabled 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.

The choice: 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.

The Choice: 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.

The Choice: 4M, 8M, 16M, 32M, 64M, 128M, 256M.

Graphic Window WR Combin

Use this item to enable or disable CPU support for WR Combin.

The Choice : Enable , Disable .

Concurrent Function (MEM)

This item is CPU & PCI Masters Concurrently Access Memory Function. Select enabled allows CPU access memory cycles and PCI masters access memory cycles concurrently issued onto host bus and PCI bus, respectively, and then the memory access cycles will be rearranged by SiS630ET to memory sequentially.

The choice: Enabled, Disabled

Concurrent Function (PCI)

This item is CPU & PCI Masters Concurrently Access PCI Bus Function. Select enabled allows CPU access PCI bus cycle and PCI masters access memory cycles concurrently issued onto host bus and PCI bus, respectively.

The choice: Enabled, Disabled.

CPU Pipeline Control

When enabled this item, only one pending cycle is allowed at one time. When disabled, there might be more than two pending cycles at one time depends on the CPU behaviour.

The choice: Enabled, Disabled.

PCI Delay Transaction

If the chipset has an embedded 32-bit write buffer to support delay transaction cycles, you can enable this item to provide compliance with PCI Ver.2.1 specifications. We recommend that you leave this item at the default value.

The choice : Enable, Disable.

Power-Supply Type

This item controls the power-supply type to AT or ATX.

The choice: AT,ATX.

Memory Parity Check

Enabled this item to test the boot-up memory. .

The choice: Enabled, Disabled.

4.9 Integrated Peripherals

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Integrated Peripherals

| | Item Help |
|---------------------------------------|---|
| SIS 630 OnChip IDE Device Press Enter | |
| SIS 630 OnChip PCI Device Press Enter | |
| Super I/O Device Press Enter | Menu Level ➤ |
| USB Controller Enabled | If your IDE hard drive supports block mode select |
| USB Keyboard Support Enabled | Enabled for automatic detection of the optimal |
| Init Display First PCI Slot | number of block read/write per sector the drive can support |
| IDE HDD Block Mode Enabled | |
| System Share Memory 8MB | |

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

SIS 630 OnChip IDE Device

Internal PCI / IDE

This chipset contains an internal PCI IDE interface with support for two IDE channels. The choice: Primary, Secondary, Both.

IDE Primary 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.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, and Mode 4.

Primary Master/Slave UltraDMA

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 66 MB/s. When you select *Auto* in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.

The choice: Auto, Disabled.

IDE Burst Mode

Selecting *Enabled* reduces latency between each drive read/write cycle, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to *Disabled*. This field does not appear when the Internal PCI/IDE field, above, is *Disabled*.

The choice: Enabled, Disabled.

SIS 630 OnChip PCI Device

SIS-7018 AC97 AUDIO

Select *Enabled* to support AC97 Audio.

The choice: Enabled, Disabled.

SIS-900 10/100M ETHERNET

This item provides a total communication solution including 10/100Mb Fast Ethernet for Office requirement and 1Mb HomePNA for Home Networking. The choice: Enabled, Disabled.

Super I/O Device

Onboard FDC Controller

Select Enabled 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, select Disabled in this field.

The choice: Enabled, Disabled.

Onboard Serial Port 1/ Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART Mode Select

This item allows you to select UART mode.

The choice: Enabled, Disabled.

UR2 Duplex Mode

This item allows you to select the IR half/full duplex function.

The choice: Half, Full.

Onboard Parallel Port 1

This item allows you to determine access onboard parallel port controller with which I/O address.

The choice: 3BC/IRQ7, 378/IRQ7, 278/IRQ5, 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.

The choice: SPP, EPP, ECP, ECP+EPP.

ECP Mode Use DMA

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

The choice: 3, 1.

USB Controller

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

Choices are: Enabled, Disabled.

USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

Choices are: Enabled, Disabled.

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), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

The choice: Enabled, Disabled.

Init Display First

This item allows you to decide to active which bus first (PCI Slot or AGP first).

The choice: PCI Slot, AGP.

System Share Memory Size

This item defines the System Share Memory Size for video.

The choice: 2MB, 4MB, 8MB, 16MB, 32MB, 64MB

4.10 Power Management Setup

The Power Management Setup allows you to configure you 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 | Enabled | Item Help |
| ACPI Suspend Type | S1(POS) | |
| Video Off Option | Susp,Stby -> Off | |
| Video Off Method | V/H SYNC_Blank | Menu Level > |
| Switch Function | Break/Wake | |
| Hot Key Function As | Power Off | |
| HDD Off After | Disable | |
| Power Button Override | Instant Off | |
| KB Power On Password | Disable | |
| PM Wake Up Events | Press Enter | |
| Power Up by Alarm | Press Enter | |
| ↑↓←→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).

The choice: Enabled, Disabled.

ACPI Suspend Type

This item allows you to S1(Power ON Suspend) the Advanced Configuration and Power Management (ACPI).

The choice: S1(POS).

Video Off Option

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

| | |
|-------------------|---|
| Always On | Monitor will remain on during power saving modes. |
| Suspend --> Off | Monitor blanked when the systems enters the Suspend mode. |
| Susp,Stby --> Off | Monitor blanked when the system enters either Suspend or Standby modes. |
| All Modes --> Off | Monitor blanked when the system enters any power saving mode. |

Video Off Method

This determines the manner in which the monitor is blanked.

| | |
|----------------|--|
| 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 | 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. |

Switch Function

You can choose whether or not to permit your system to enter complete Suspend mode. Suspend mode offers greater power savings, with a correspondingly longer awakening period..

The choice: Break/Wake, Disabled.

Hot Key Function As

Select *Enabled* if your system has a hot key for soft power off.

The choice: Enabled, Disabled.

HDD Off After

By default, this item is Disabled, meaning that no matter the mode the rest of the system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes or Suspend. This means that you can elect to have your hard disk drive be turned off after a selected number of minutes or when the rest of the system goes into a Suspend mode.

Power Button Over Ride

You could press the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung."

The choice: Soft-Off, Delay 4 Sec.

PM Wake Up Events

IRQ [3-7,9-15],NMI

The following is a list of IRQ's, Interrupt **Re**Quests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

As above, the choices are *On* and *Off*.

When set *On*, activity will neither prevent the system from going into a power management mode nor awaken it.

- **IRQ [3-7, 9-15], NMI**
- **IRQ 8 Break Suspend** : You can *Enable* or *Disable* monitoring of IRQ8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

Ring / PCIPME Power Up Control

When you select *Enabled*, a signal from ring / PCIPME returns the system to Full On state.

The choice: Enabled, Disabled.

KB Power On Password

This item can be used to prompt the used for a password when the system power is resumed by keyboard action .

The choice: Disable , Enable.

Power Up by Alarm

When you select *Enabled*, the following fields appear. They let you set the alarm that returns the system to Full On state.

Date (of Month) Alarm lets you select a day from 1 to 31 . Time Alarm lets you select a time for the alarm in hours , minutes , and seconds .

The choice: Enabled, Disabled.

4.11 PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **Personal Computer Interconnect**, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

CMOS Setup Utility – Copyright © 1984-1998 Award Software
PnP/PCI Configurations

| | Item Help |
|--|---|
| Reset Configuration Data Disabled | ----- Menu Level ➤ |
| Resources Controlled By Auto(ESCD) ➤ IRQ Resources Press Enter | Default is 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 OS cannot boot |
| PCI/VGA Palette Snoop Disabled | |
| ↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults | |

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 can not boot.

The choice: 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 "➤").

The choice: 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

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. "Reserved" for devices compliant with the original PC AT bus specification, "PCI device" for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

The Choice: *Reserved* and *PCI device* .

PCI/VGA Palette Snoop

Leave this field at *Disabled*.

Choices are Enabled, Disabled.

4.12 PC Health Status

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact with your motherboard supplier to get proper value about your setting of the CPU temperature.

CMOS Setup Utility – Copyright © 1984-1998 Award Software
PC Health Status

| | | |
|--|----------|--------------|
| Vcore | 1.65V | Item Help |
| +2.5V | 2.49V | ----- |
| +3.3V | 3.37V | Menu Level ➤ |
| +5V | 4.97V | |
| +12V | 11.96V | |
| +3VSB | 3.29V | |
| +5VSB | 4.65V | |
| | | |
| Temperature1 | - 55°C | |
| Temperature2 | 79°C | |
| | | |
| FAN 1 Speed | 4153 RPM | |
| ↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults | | |

Voltage Monitoring

The chipset reserves 7 inputs for monitoring working voltages from various sources in the system. These voltages may includes CPU voltage, power pins of the ATX power (+/-12V, +/-5V, 3.3V...) and others.

Generic names (Voltage Name) are given to these items because where these pins are connected depends on different platforms you are using.

Temperature 1/2/3

The chipset reserves 2 inputs for monitoring temperatures that are typically the CPU & system temperatures.
Temperature1: Temperature from system , but CN6 must be connected to external sensor
Temperature2: Temperature from CPU

Generic names are given for the same reason as Voltage 0-7.

Fan 1 Speed

The chipset reserves 1 inputs for monitoring FAN speeds in the system. Usually, one FAN is applied to cool down the CPU and the other one is applied by different purpose.

Generic names are given for the same reason as Voltage monitoring.

4.13 Frequency/Voltage Control

CMOS Setup Utility – Copyright © 1984-1998 Award Software
Frequency/Voltage Control

| | | |
|--------------------------|----------|--------------|
| Auto Detect DIMM/PCI Clk | Disabled | Item Help |
| Spread Spectrum | Disabled | ----- |
| CPU HOST/SDRAM/PCI Clock | Default | Menu Level > |
| CPU Clock Ratio | By H/W | |

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

Auto Detect DIMM/PCI CLK

This item allows you to enable/disable auto detect DIMM/PCI Clock.
The choice: Enabled, Disabled.

Spread Spectrum

This item allows you to enable/disable the spread spectrum modulate.
The choice: Enabled, Disabled.

CPU Host/DRAM/PCI Clock

This item allows you to select CPU/PCI frequency.
The choice: Default, 66/66/33MHz, 133/133/33MHz, 100/100/33MHz.

CPU Clock Ratio

This item allows you to select CPU clock ratio.
The choice: By H/W 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8.

4.14 Defaults Menu

Selecting “Defaults” from the main menu shows you two options which 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 performance system operations.

4.15 Supervisor/User Password Setting

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

supervisor password :

can enter and change the options of the setup menus.

user password :

just can only enter but do not have the right to change the options of the setup menus. 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 typed now will clear 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 selection and not enter a password.

To disable a 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 require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 3). If the Security option is set to password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

4.16 Exit Selecting

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

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)? Y

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

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.

Three I/O ports control the operation of Watch-Dog Timer.

| | | |
|---------------|-------|--|
| 443 (hex) | Write | Set Watchdog Time period |
| 443 (hex) | Read | Enable the refresh the Watchdog Timer. |
| 043/843 (hex) | Read | Disable the Watch-Dog Timer. |

Prior to enable the Watch-Dog 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 Watch-Dog Timer must be periodically refreshed by reading the same I/O port 443H. This must be done within the time-out period, please refer to the example program. Finally, we have to disable the Watch-Dog 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. POST Messages

POST Messages

During the Power On Self Test (POST), if the BIOS detects an error requiring you to do something to fix, it will either sound a beep code or display a message.

If a message is displayed, it will be accompanied by:

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

POST Beep

Currently there are two kinds of beep codes in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by three short beeps. The other code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list includes messages for both the ISA and the EISA BIOS.

CMOS BATTERY HAS FAILED

CMOS battery is no longer functional. It should be replaced.

CMOS CHECKSUM ERROR

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER

No boot device was found. This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. Insert a system disk into Drive A: and press <Enter>. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached. Also be sure the disk is formatted as a boot device. Then reboot the system.

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP

Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.

DISPLAY SWITCH IS SET INCORRECTLY

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

DISPLAY TYPE HAS CHANGED SINCE LAST BOOT

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

EISA Configuration Checksum Error PLEASE RUN EISA CONFIGURATION UTILITY

The EISA non-volatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is installed firmly in the slot.

EISA Configuration Is Not Complete PLEASE RUN EISA CONFIGURATION UTILITY

The slot configuration information stored in the EISA non-volatile memory is incomplete.

Note: When either of these errors appear, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

ERROR ENCOUNTERED INITIALIZING HARD DRIVE

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.

ERROR INITIALIZING HARD DISK CONTROLLER

Cannot initialize controller. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard drive type is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.

FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT

Cannot find or initialize the floppy drive controller. make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

Invalid EISA Configuration PLEASE RUN EISA CONFIGURATION UTILITY

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

KEYBOARD ERROR OR NO KEYBOARD PRESENT

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot. If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

Memory Address Error at ...

Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

Memory parity Error at ...

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY SIZE HAS CHANGED SINCE LAST BOOT

Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

Memory Verify Error at ...

Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

OFFENDING ADDRESS NOT FOUND

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

OFFENDING SEGMENT:

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

PRESS A KEY TO REBOOT

This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

PRESS F1 TO DISABLE NMI, F2 TO REBOOT

When BIOS detects a Non-maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

RAM PARITY ERROR - CHECKING FOR SEGMENT ...

Indicates a parity error in Random Access Memory.

Should Be Empty But EISA Board Found PLEASE RUN EISA CONFIGURATION UTILITY

A valid board ID was found in a slot that was configured as having no board ID.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Should Have EISA Board But Not Found PLEASE RUN EISA CONFIGURATION UTILITY

The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Slot Not Empty

Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

SYSTEM HALTED, (CTRL-ALT-DEL) TO REBOOT ...

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.

Wrong Board In Slot PLEASE RUN EISA CONFIGURATION UTILITY

The board ID does not match the ID stored in the EISA non-volatile memory.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

FLOPPY DISK(S) fail (80) → Unable to reset floppy subsystem.

FLOPPY DISK(S) fail (40) → Floppy Type mismatch.

Hard Disk(s) fail (80) → HDD reset failed

Hard Disk(s) fail (40) → HDD controller diagnostics failed.

Hard Disk(s) fail (20) → HDD initialization error.

Hard Disk(s) fail (10) → Unable to recalibrate fixed disk.

Hard Disk(s) fail (08) → Sector Verify failed.

Keyboard is locked out - Unlock the key.

BIOS detect the keyboard is locked. P17 of keyboard controller is pulled low.

Keyboard error or no keyboard present.

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

Manufacturing POST loop.

System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.

BIOS ROM checksum error - System halted.

The checksum of ROM address F0000H-FFFFFFH is bad.

Memory test fail.

BIOS reports the memory test fail if the onboard memory is tested error.

Appendix C.

DMA, IRQ and 1st MB Memory

I/O Address Map

DMA Channel Assignments:

| DMA Channel # | Description |
|---------------|------------------------------|
| 0 | Available |
| 1 | Available |
| 2 | Floppy Disk (8-bit transfer) |
| 3 | Available |
| 4 | Cascade for DMA controller 1 |
| 5 | Sound |
| 6 | Available |
| 7 | Available |

IRQ Mapping Chart

| | | | |
|------|---------------------------|-------|---------------|
| IRQ0 | System Timer | IRQ8 | RTC Clock |
| IRQ1 | Keyboard | IRQ9 | USB |
| IRQ2 | Cascade to IRQ Controller | IRQ10 | LAN1 |
| IRQ3 | (COM2) | IRQ11 | Free |
| IRQ4 | (COM1) | IRQ12 | PS/2 Mouse |
| IRQ5 | Sound | IRQ13 | FPU |
| IRQ6 | FDC | IRQ14 | Primary IDE |
| IRQ7 | LPT1 | IRQ15 | Secondary IDE |

Note: All IRQs have been assigned to the listed devices, so if you want to add any additional device, you must free the unused IRQ first. For example, if you don't use USB K/B or Mouse, then IRQ9 may be set free.

1st MB Memory Address Map

| Memory Address | Description |
|----------------|--------------------------------------|
| 00000-9FFFF | System Board extension for ACPI BIOS |
| A0000-CFFFF | SIS630ET |
| D0000-DFFFF | Free |
| F0000-FFFFF | System Board extension for ACPI BIOS |

I/O Address Map

| I/O Address Range | Description |
|-------------------|---------------------------------|
| 000-01F | DMA Controller #1 |
| 020-021 | Interrupt Controller #1, Master |
| 040-05F | 8254 Timer |
| 060-06F | 8042 (Keyboard Controller) |
| 070-07F | Real Time Clock, NMI Mask |
| 080-09F | DMA Page Register |
| 0A0-0BF | Interrupt Controller #2 |
| 0C0-0DF | DMA Controller #2 |
| 0F0 | Clear Math Coprocessor Busy |
| 0F1 | Reset Math Coprocessor |
| 0F8-0FF | Math Coprocessor |
| 170-177 | Fixed Disk |
| 1F0-1F7 | |
| 2F8-2FF | Serial Port 2 (COM2) |
| 378-37F | Parallel Printer Port 1 (LPT1) |
| 380-38F | SDLC, Bisynchronous 2 |
| 3A0-3AF | Bisynchronous 1 |
| 3B0-3BB | SIS 630ET |
| 3C0-3DF | SIS 630ET |
| 3F0-3F7 | Diskette Controller |
| 3F8-3FF | Serial Port 1 (COM1) |
| 443, 843 | Watch-dog timer |

Appendix D.

How to Upgrade a New BIOS

You can install an upgrade BIOS for the ROCKY-3705EV-R2 that you can download from the manufacturer's web site (www.e-icp.com.tw). New BIOS may provide support for new peripherals ,improvements in performance or fixes to addressed known bugs.

BIOS Update Procedure:

1. Make a boot disk. Go to the DOS command prompt in MS-DOS or Windows 9x and, with an available floppy disk in "A", type "format A: /s" That will format the floppy and transfer the needed system files to it.

NOTES:

- A. This procedure will erase any prior data on that floppy, so please Proceed accordingly.
 - B. Typically four files will be transferred, only COMMAND.COM being visible when running a simple directory listing.
 - C. Please leave the diskette UN-write protected for the balance of this procedure.
2. Download the BIOS upgrade file and awdfash.exe utility from a ICP web site to a temp directory on your hard drive, or directly to the floppy you made in step 1..
 3. Copy (BIOS file and awdfash.exe)two files to the boot floppy.
 4. Reboot the system to the DOS command prompt using the boot diskette you just made.

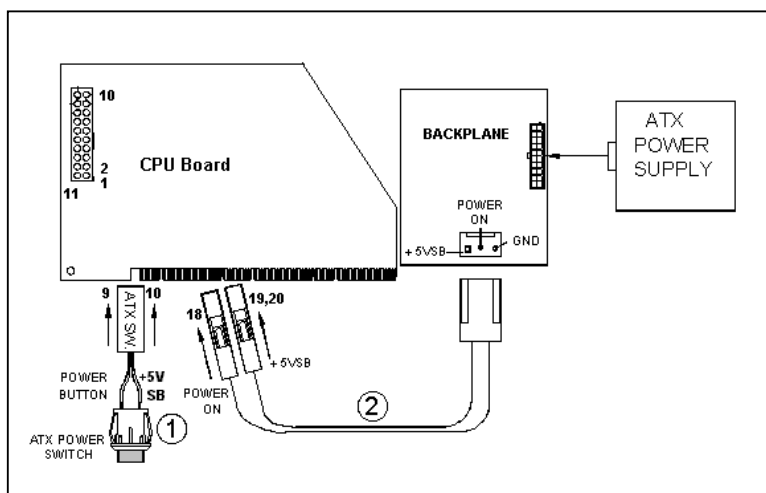
Appendix E. ATX Power Supply

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-3705EV-R2 (through Power Button & +5VSB):



Connect the ATX power supply switch to the pin 9 (power button) and pin 19,20 (+5VSB) of CN2 on the board.

If you wish to turn off the power supply, please push the ATX power switch button for about 4 sec. And to turn ON the system, simply push the button once.

- ① P/N: 8202-1001001
- ② P/N: 8202-1001301
- ③ P/N: 8202-1001101

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 ATX
2. You may now turn the power ON/OFF by the power switch

