

EC3-1641CLDNA

**3.5"Single Board Computer with
CPU/LCD/CRT/SSD/LAN/AUDIO**

Version: C01

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Before purchasing, please have a detailed understanding of the product performance to see whether it meets your requirements.

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Safety Instructions

1. Before handling your motherboard, read the instructions and safety guidelines on the following pages to prevent damage to the product and to ensure your own personal safety;
2. Any boards or cards not ready to be installed shall be kept in the anti-static packaging;
3. Before taking board or card from anti-static packaging, put your hand on grounded metal object for a while (about 10 seconds) to eliminate static on your body;
4. While fetching a board or card, you should wear static protective gloves; hold a board by its edges or by its metal mounting bracket;
5. Before inserting, removing or re-configuring motherboard or expansion card, first disconnect the computer and peripherals from their power sources;
6. Before removing boards or computer, first turn off all power resources and disconnect the power cord from power source;
7. For whole set, when inserting or removing boards, first disconnect the computer and peripherals from their power sources;
8. Before you connect or unplug any equipment, make sure all power cords are unplugged in advance;
9. To avoid unnecessary damage caused by turning on/off computer frequently, wait at least 30 seconds before re-turning on the computer.

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Chapter 1 Product Introduction

Overview

EC3-1641CLDNA single board computer is based on AMD® LX800 chipset. It is a sort of single board computer with compact structure and high reliability. The features are listed as follows:

- ◆ The standard board configures on-board AMD® LX800, compatible with AMD® LX700;
- ◆ One ATA100 IDE interface, support two sets of IDE devices;
- ◆ Integrates in LX800: VGA & TTL LCD & LVDS;
- ◆ One TYPE I/II Compact Flash Interface;
- ◆ One 10/100Mbps Ethernet Controller;
- ◆ Standard AC'97 on-board Audio;
- ◆ The latest AMI kernel BIOS.

What's more, EC3-1641CLDNA also provides three USB2.0 interfaces (one is on-board and the other two are connected externally), one parallel port, four serial ports (3 x RS232, 1 x RS232/422/485 and hardware switch the direction of RS485 automatically), one PS/2 keyboard/mouse interface and CPU temperature monitor, voltage monitor, fan speed monitor and watchdog timer, etc.

Environment and Dimension

- Dimensions: 146.05mm x 101.60mm
- Operating Temperature: -5°C~60°C
- Operating Humidity: 5%~90% (non-condensing)

Microprocessor

AMD® LX800-500MHz (compatible with AMD® LX700).

System Memory

On board 256MB DDR Memory standard

System Chipset

CS5536

Network Function

The motherboard integrates one 10/100Mbps Ethernet controller to provide users with high-speed and stable LAN platform.

Video Function

Integrate in LX800: VGA & TTL LCD & LVDS interfaces

Audio Function

Integrate on-board AC'97 Audio chip to provide high-quality audio effect.

IDE Function

One ATA100 IDE interface, support two sets of IDE devices.

Solid State Disk Function

One TYPE I/II Compact Flash interface.

USB Function

The motherboard provides three high-speed USB2.0 interfaces (one is on board while the other two are connected externally) for the embedded single board mobile mass memory.

Warning:

- 1) Please use qualified USB devices and make sure it is well grounded, or the system will be damaged.
- 2) Any time when touching the USB device, please touch the chassis first to discharge static on your body.
- 3) When the USB devices need to be removed when power-on, make sure the USB devices is in standby mode (not operating).

BIOS

The latest AMI kernel BIOS

Watchdog Function

- 1~255 levels, programmable time to interrupts
- 1~255 overtime event system reset
- 1 (second/minute) resolution down counter

I/O Function

- One high-speed parallel port; support SPP/EPP/ECP mode;
- There are four serial ports in total (COM2 can select RS-232/422/485 and hardware can switch the direction of RS485 automatically).
- Keyboard and mouse socket.

System Monitor Function:

Monitor CPU temperature, system chassis temperature monitor, and system operating voltage;

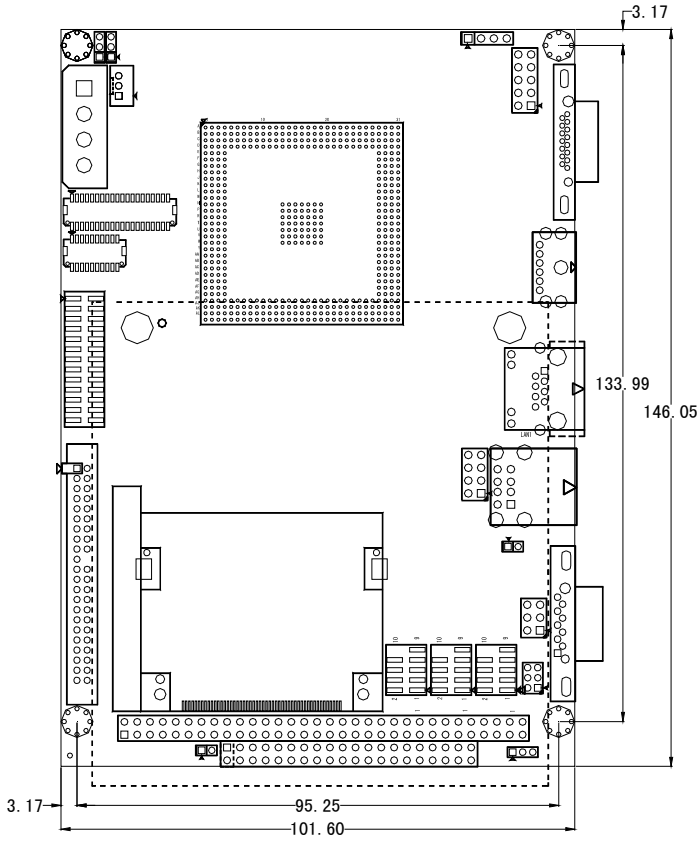
Operating System

WinXP and Linux supported; Win98 unsupported; provides with WinXPE as well.

When installing Linux9.0, please disable the USB function in BIOS first. (Note: when installing redhat9.0 system via USB CD-ROM, please disable USB2.0 in USB function only; it might unable to get the CD-ROM if other USB functions are disabled.)

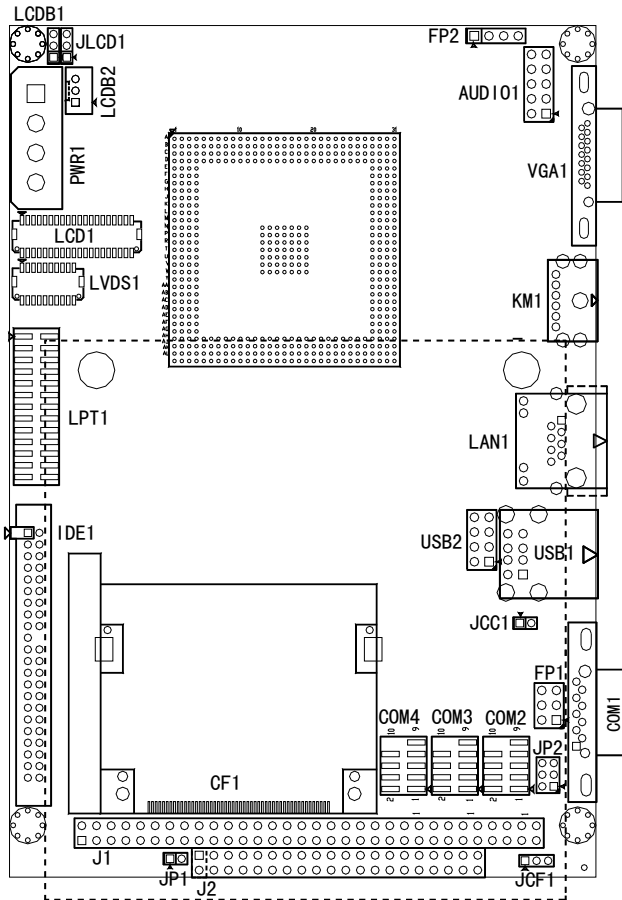
Chapter 2 Installation

Product Outline



Unit: mm

The Locations of Interfaces



Tip: How to identify the first pin of the jumpers and interfaces?

1. Observe the letter beside the socket, it would be marked with "1" or thickened lines or triangular symbols;
2. The square pad on the rear is the first pin;
3. The red line on the cable or other marks shows that they should be connected with the first pin of the socket.

Jumper Settings

1. COMS Setup

If the system fails to boot due to improper BIOS settings, try to clear CMOS to recover the default settings of all the system parameters manually, and then reboot system.



JCC1

| Setting | Function |
|-------------|---|
| [1-2] open | Normal (default) |
| [1-2] short | clear CMOS, all BIOS settings are restored to factory |

2. JCF1: Select Operating Voltage of CF Card



JCF1

| Setting | Function |
|-------------|---------------|
| [1-2] short | +3V |
| [2-3] short | +5V (Default) |

3. JP1: Select Master/Slave CF Card



JP1

| Setting | Function |
|-------------|-----------------|
| [1-2] short | Master |
| [1-2] open | Slave (default) |

4. JP2: RS-232/RS-422/RS-485 Mode Selection of COM2



JP2

| JP2 Selection | Pin | | |
|-----------------|-----|-----|-----|
| | 1-2 | 3-4 | 5-6 |
| RS-232(Default) | ON | OFF | OFF |
| RS-422 | OFF | ON | OFF |
| RS-485 | OFF | OFF | ON |

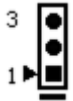
Part of the pin definitions of COM2:

| Pin | RS-232 | RS-422 | RS-485 |
|-----|--------|--------|--------|
| 1 | DCD | TX- | RTX- |
| 2 | RXD | TX+ | RTX+ |
| 8 | CTS | RX+ | X |
| 9 | RI | RX- | X |

Note: data transmission direction is controlled by TXDx at RS-485 mode.

5. JLCD1: Voltage Selection

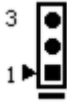
Different LCD screens have different voltages; the board provides two voltage options, 3.3V and 5V. Only when the selected LCD voltage is in accord with the LCD voltage in use, the LCD screen could display normally.



JLCD1

| Setting | Function |
|------------|----------------|
| [1-2]short | +3.3V(Default) |
| [2-3]short | +5V |

6. LCDB1/ LCDB2: LVDS Backlight Power Control



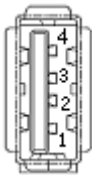
LCDB1/LCDB2

| Pin | Signal Name |
|-----|-------------|
| 1 | LVDS_BKLTEN |
| 2 | +12V |
| 3 | GND |

USB Interface

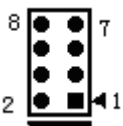
The motherboard provides one standard USB interface and a set of 2×4-Pin USB interface. Transfer cable is needed to connect USB signals with standard USB socket.

The pin definitions are listed as follows:



USB1

| Pin | Signal Name |
|-----|-------------|
| 1 | +5V |
| 2 | USB Data- |
| 3 | USB Data+ |
| 4 | GND |



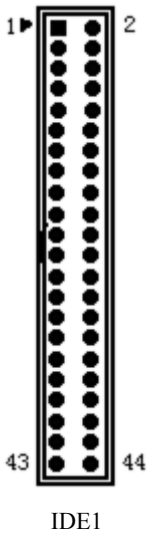
USB2

| Pin | Signal Name | Pin | Signal Name |
|-----|--------------|-----|--------------|
| 1 | +5V | 2 | +5V |
| 3 | USB1/3 Data- | 4 | USB2/4 Data- |
| 5 | USB1/3 Data+ | 6 | USB2/4 Data+ |
| 7 | GND | 8 | GND |

IDE Interface

The motherboard provides a set of 44-pin IDE interface, please pay attention as follows when installing IDE device:

IDE interface can connect with two sets of IDE devices, a Master and a Slave. The method of connecting the devices: connect the Master to the end of the cable while connecting the Slave to the middle (the one with the red mark is the first pin of IDE cable).

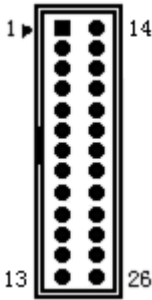


| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1 | Reset IDE | 2 | GND |
| 3 | PDD7 | 4 | PDD8 |
| 5 | PDD6 | 6 | PDD9 |
| 7 | PDD5 | 8 | PDD10 |
| 9 | PDD4 | 10 | PDD11 |
| 11 | PDD3 | 12 | PDD12 |
| 13 | PDD2 | 14 | PDD13 |
| 15 | PDD1 | 16 | PDD14 |
| 17 | PDD0 | 18 | PDD15 |
| 19 | GND | 20 | NC |
| 21 | PDREQ | 22 | GND |
| 23 | PDIOV | 24 | GND |
| 25 | PDIOR | 26 | GND |
| 27 | PIORDY | 28 | Host ALE |
| 29 | PDDACK | 30 | GND |
| 31 | IRQ14 | 32 | NC |
| 33 | PDA1 | 34 | P66DET |
| 35 | PDA0 | 36 | PDA2 |
| 37 | PDCS | 38 | PDCS |
| 39 | IDEACTP | 40 | GND |
| 41 | VCC | 42 | VCC |
| 43 | GND | 44 | NC |

Parallel Port and Serial Port

1) Parallel Port

Standard 26pin parallel port, it can connect to the peripheral devices according to requirements.

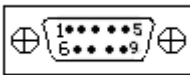


LPT1

| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1 | STB# | 2 | AFD# |
| 3 | PD0 | 4 | ERR# |
| 5 | PD1 | 6 | INIT# |
| 7 | PD2 | 8 | SLIN# |
| 9 | PD3 | 10 | GND |
| 11 | PD4 | 12 | GND |
| 13 | PD5 | 14 | GND |
| 15 | PD6 | 16 | GND |
| 17 | PD7 | 18 | GND |
| 19 | ACK# | 20 | GND |
| 21 | BUSY | 22 | GND |
| 23 | PE | 24 | GND |
| 25 | SLCT | 26 | NC |

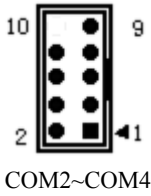
2) Serial Port

The motherboard provides four standard serial ports. COM2 can select RS232, RS422 or RS485 operating modes via jumper. COM1, COM2, COM3 and COM4 can be connected with the devices such as mouse, modem, numeral camera which has RS-232 standard interface.



COM1

| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1 | DCD# | 6 | DSR# |
| 2 | RXD | 7 | RTS# |
| 3 | TXD | 8 | CTS# |
| 4 | DTR# | 9 | RI# |
| 5 | GND | | |



| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1 | DCD# | 2 | RXD |
| 3 | TXD | 4 | DTR# |
| 5 | GND | 6 | DSR# |
| 7 | RTS# | 8 | CTS# |
| 9 | RI# | 10 | NA |

Note: please refer to the introduction about JP2 for the jumper setup of COM2.

Video Interface

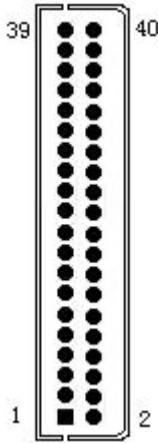
1) VGA Output Interface



VGA1

| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1 | Red | 2 | Green |
| 3 | Blue | 4 | N.C. |
| 5 | GND | 6 | GND |
| 7 | GND | 8 | GND |
| 9 | N.C | 10 | GND |
| 11 | N.C. | 12 | DDCDATA |
| 13 | HSYNC | 14 | VSYSN |
| 15 | DDCCLK | | |

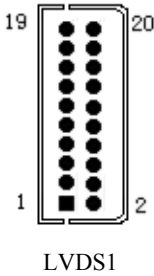
2) LCD Output Interface



LCD1

| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------------|
| 1 | VDD | 2 | VDD |
| 3 | GND | 4 | VCC |
| 5 | GND | 6 | GND |
| 7 | TFT_B1 | 8 | TFT_B0 |
| 9 | TFT_B3 | 10 | TFT_B2 |
| 11 | TFT_B5 | 12 | TFT_B4 |
| 13 | TFT_B7 | 14 | TFT_B6 |
| 15 | TFT_G1 | 16 | TFT_G0 |
| 17 | TFT_G3 | 18 | TFT_G2 |
| 19 | TFT_G5 | 20 | TFT_G4 |
| 21 | TFT_G7 | 22 | TFT_G6 |
| 23 | TFT_R1 | 24 | TFT_R0 |
| 25 | TFT_R3 | 26 | TFT_R2 |
| 27 | TFT_R5 | 28 | TFT_R4 |
| 29 | TFT_R7 | 30 | TFT_R6 |
| 31 | GND | 32 | GND |
| 33 | VSYNC_C | 34 | TFTCLK |
| 35 | HSYNC_C | 36 | LEDMOD_HSIP_VSYNC |
| 37 | DISPEN | 38 | HSIP_HSYNC |
| 39 | GND | 40 | VCON |

3) LVDS Output Interface



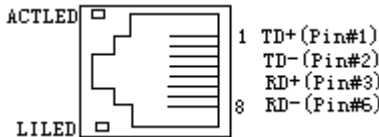
| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1 | LVDS0+ | 2 | LVDS0- |
| 3 | GND | 4 | GND |
| 5 | LVDS1+ | 6 | LVDS1- |
| 7 | GND | 8 | GND |
| 9 | LVDS2+ | 10 | LVDS2- |
| 11 | GND | 12 | GND |
| 13 | LVDSCLK+ | 14 | LVDSCLK- |
| 15 | GND | 16 | GND |
| 17 | LVDS3+ | 18 | LVDS3- |
| 19 | VDD | 20 | VDD |

LAN Interface

This is a 10/100 Mbps Ethernet port on the motherboard. LILED and ACTLED are LEDs beside the Ethernet port, they respectively show the LAN activity and transmission state of LAN. The state description for each LED is shown as follows:

TD+,TD-: positive/negative TXD signal RD+,RD-: positive/negative RXD signal

ACTLED: indicator of network activity LILED: indicator of network links

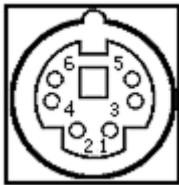


| LILED | Indicator Status | ACTLED | Indicator Status |
|-------|--|--------|-------------------------|
| On | 100M LAN link is available | Blink | Data receiving/sending |
| Off | 10M LAN link is available or LAN link is unavailable | OFF | No data to receive/send |

Keyboard and Mouse Interface

KM1 is a 6-pin mini DIN socket used by both of keyboard and mouse; it can be connected with PS/2 keyboard directly. But 1-to-2 PS/2 keyboard and mouse cable equipped with the single board computer is needed when users want to connect keyboard and mouse at the same time.

If you use PS/2 mouse, system self-test will begin and assign IRQ12 to PS/2 mouse, or IRQ12 will be assigned to expansion card.

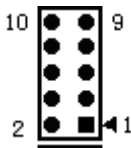


KM1

| Pin | Signal Name |
|-----|----------------|
| 1 | Keyboard data |
| 2 | Mouse data |
| 3 | GND |
| 4 | +5V |
| 5 | Keyboard clock |
| 6 | Mouse clock |

Audio Interface

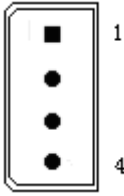
Audio_out can be connected to a headset or more suitable power loudspeakers via the cable attached to the motherboard. Line in is for the record for computer tape or other audio source, or play via Audio Out. Mic is for connecting the sound input of microphone.



AUDIO1

| Pin | Signal Name | Pin | Signal Name |
|-----|-----------------|-----|----------------|
| 1 | Audio Out Right | 2 | Audio Out Left |
| 3 | GND | 4 | GND |
| 5 | Line in Right | 6 | Line in Left |
| 7 | GND | 8 | GND |
| 9 | Mic Phone in | 10 | Mic Phone P |

Power Supply Interface



PWR1

| Pin | Signal Name |
|-----|-------------|
| 1 | +12V |
| 2 | GND |
| 3 | GND |
| 4 | +5V |

Status Indicator Interface

FP1 and FP2 are used to connect with the functional buttons and indicators on the front panel of chassis.

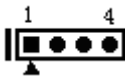
Pin Definitions of FP1:



FP1

| Pin | Signal Name |
|-----|-------------|
| 1 | PWR LED |
| 2 | VCC |
| 3 | EXT-RST |
| 4 | GND |
| 5 | IDE LED |
| 6 | VCC |

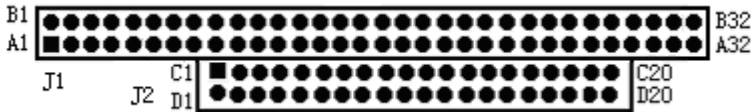
Pin Definitions of FP2:



FP2

| Pin | Signal Name |
|-----|-------------|
| 1 | Speaker out |
| 2 | NC |
| 3 | GND |
| 4 | +5V |

PC104 Interface



Pin Definitions are listed as follows:

| J1 | | | | J2 | | | |
|------|-------------|-----|-------------|-----|-------------|-----|-------------|
| Pin | Signal Name | Pin | Signal Name | Pin | Signal Name | Pin | Signal Name |
| A1 | IOCHK | B1 | GND | C1 | GND | D1 | GND |
| A2 | D7 | B2 | REST | C2 | SBHE | D2 | MEMCS16 |
| A3 | D6 | B3 | VCC | C3 | LA23 | D3 | IOCS16 |
| A4 | D5 | B4 | IRQ9 | C4 | LA22 | D4 | IRQ10 |
| A5 | D4 | B5 | -5V | C5 | LA21 | D5 | IRQ11 |
| A6 | D3 | B6 | DRQ2 | C6 | LA20 | D6 | IRQ12 |
| A7 | D2 | B7 | -12V | C7 | LA19 | D7 | IRQ15 |
| A8 | D1 | B8 | OWS | C8 | LA18 | D8 | IRQ14 |
| A9 | D0 | B9 | +12V | C9 | LA17 | D9 | DACK0 |
| A10 | IOCHRDY | B10 | GND | C10 | MEMR | D10 | DRQ0 |
| A11 | AEN | B11 | SMEMW | C11 | MEMW | D11 | DACK5 |
| A12 | A19 | B12 | SMEMR | C12 | D8 | D12 | DRQ5 |
| A13 | A18 | B13 | IOW | C13 | D9 | D13 | DACK6 |
| A14 | A17 | B14 | IOR | C14 | D10 | D14 | DRQ6 |
| ZA15 | A16 | B15 | DACK3 | C15 | D11 | D15 | DACK7 |
| A16 | A15 | B16 | DRQ3 | C16 | D12 | D16 | DRQ7 |
| A17 | A14 | B17 | DACK1 | C17 | D13 | D17 | VCC |
| A18 | A13 | B18 | DRQ1 | C18 | D14 | D18 | MASTER |
| A19 | A12 | B19 | REFRESH | C19 | D15 | D19 | GND |
| A20 | A11 | B20 | CLK | C20 | KEY | D20 | GND |
| A21 | A10 | B21 | IRQ7 | | | | |
| A22 | A9 | B22 | IRQ6 | | | | |
| A23 | A8 | B23 | IRQ5 | | | | |
| A24 | A7 | B24 | IRQ4 | | | | |
| A25 | A6 | B25 | IRQ3 | | | | |
| A26 | A5 | B26 | DACK2 | | | | |
| A27 | A4 | B27 | TC | | | | |
| A28 | A3 | B28 | BALE | | | | |
| A29 | A2 | B29 | VCC | | | | |
| A30 | A1 | B30 | OSC | | | | |
| A31 | A0 | B31 | GND | | | | |
| A32 | GND | B32 | GND | | | | |

Compact Flash Interface

Pin definitions of Compact Flash Slot (CF1) are listed as follows:

| Signal Name | Pin | Pin | Signal Name |
|---------------|-----|-----|---------------|
| Ground | 1 | 26 | Ground |
| Data 3 | 2 | 27 | Data 11 |
| Data 4 | 3 | 28 | Data 12 |
| Data 5 | 4 | 29 | Data 13 |
| Data 6 | 5 | 30 | Data 14 |
| Data 7 | 6 | 31 | Data 15 |
| HDC_CS0# | 7 | 32 | HDC_CS1# |
| Ground | 8 | 33 | N/C |
| Ground | 9 | 34 | IORD# |
| Ground | 10 | 35 | IOWR# |
| Ground | 11 | 36 | +3.3V pull-up |
| Ground | 12 | 37 | IRQ15 |
| +3.3V | 13 | 38 | +3.3V |
| Ground | 14 | 39 | CSEL |
| Ground | 15 | 40 | N/C |
| Ground | 16 | 41 | RESET# |
| Ground | 17 | 42 | IORDY |
| SA2 | 18 | 43 | N/C |
| SA1 | 19 | 44 | +3.3V pull-up |
| SA0 | 20 | 45 | HDD_ACTIVE |
| Data 0 | 21 | 46 | PDIAG |
| Data 1 | 22 | 47 | Data 8 |
| Data 2 | 23 | 48 | Data 9 |
| GND pull-down | 24 | 49 | Data 10 |
| N/C | 25 | 50 | Ground |

Chapter 3 BIOS Setup

Please refer to the *AMI BIOS Setup Guide* edited by EVOC Company for more information about BIOS setup.

Wherein, there are differences in 3.2.7, please refer to the following content:

3.2.7 USB Configuration

| BIOS SETUP UTILITY | |
|---|--|
| USB Configuration | |
| USB Devices Enabled : | |
| 1 Drive | |
| USB 1.1 Controller | [Enabled] |
| USB 2.0 Controller | [Enabled] |
| Legacy USB Support | [Auto] |
| Port 4 Assignment | [Host Controller] |
| ▶ USB Mass Storage Device Configuration | |
| | ←→ Select Screen ↑↓ Select Item + - Change Field Tab Select Field F1 General Help F10 Save and Exit ESC Exit |
| V02.57 (c)Copyright 1985-2004,American Megatrends, Inc. | |

1. USB 1.1 Controller

The switch option of USB 1.1 controller;

2. USB 2.0 Controller

The switch option of USB 2.0 controller;

3. Legacy USB Support

This option is used to support traditional USB device (keyboard, mouse and storage device, etc.). When this option is set to Enabled, USB device can be used even in the OS that does not support USB, such as DOS.

4. Port 4 Assignment

This option is used to configure the USB controller type of Port 4.

5. USB Mass Storage Device Configuration

This menu will appear when detecting out USB Mass storage device.

1) USB Mass Storage Reset Delay

This option is used to set the reset delay of USB mass storage device.

2) Emulation Type

This option is used to set the emulation type of USB mass storage device.

Appendix

Watchdog Programming Guide

The board provides a programmable watchdog timer (WDT) up to 255 levels and time by minute or second. Watchdog timeout event can be programmed to reset system or generate maskable interrupts.

The available IRQ numbers for this board are: 3, 4, 5, 7, 9, 10 and 11. Please modify the corresponding IRQ number in PCIPnP of BIOS Setup interface into “Reserved” before using.

The following describes WDT program in C language. The steps to program WDT are listed as follows:

- Enter WDT programming mode;
- Set WDT operating mode/enable WDT/disable WDT.

(1) Enter WDT Programming Mode

```
#define INDEX_PORT 0x4E
#define DATA_PORT 0x4F
unsigned int tmp_reg;
unsigned int pm_base;

outportb(INDEX_PORT, 0x55);
outportb(INDEX_PORT, 0x07);
outportb(DATA_PORT, 0x0A);
outportb(INDEX_PORT, 0x30);
outportb(DATA_PORT, 0x01);
outportb(INDEX_PORT, 0x60);
tmp_reg = inportb(DATA_PORT);
pm_base = tmp_reg;
outportb(INDEX_PORT, 0x61);
tmp_reg = inportb(DATA_PORT);
```

```
pm_base = pmbase<<8+tmp_reg; /*Get the variable pm_base for later  
use*/
```

(2) Configure WDT operating mode, reset mode or interrupt mode:

a. Configure WDT to reset mode

```
outportb(pm_base+0x47, 0x0C);
```

b. Configure WDT to interrupt mode

```
unsigned int irq;
```

irq = IRQ_NO; /*Please replace the constant IRQ_NO with the interrupt number need to be used, evaluate the variable irq. The available range of the interrupt number has been listed in the beginning of this chapter*/

```
irq = irq<<4;
```

```
outportb(pm_base+0x47, 0x80);
```

```
outportb(pm_base+0x67, irq);
```

(3) Configure WDT to time by minute or second:

a. Time by minute:

```
outportb(pm_base+0x65, 0x00);
```

b. Time by second:

```
outportb(pm_base+0x65, 0x80);
```

(4) Enable/Disable WDT

a. Enable WDT:

```
outportb(pm_base+0x66, TIME_OUT_VALUE); /*Please replace the  
constant TIME_OUT_VALUE with the unit number of timeout value (0x01 ~  
0xFF)*/
```

b. Disable WDT:

```
outportb(pm_base+0x66, 0x00);
```

I/O Address Map

There is 64K for the system I/O address space. Each external device will occupy portion of the space. The table below shows parts of the distribution of the I/O address. As the address of PCI device (e.g. PCI network card) is configured by software, it is not listed in this table.

| Address | Device Description |
|---------------|--|
| 020h - 021h | Programmable Interrupts Controller #1 |
| 040h - 043h | System Timer |
| 060h - 060h | Standard 101/102 Key or Microsoft Keyboard |
| 064h - 064h | Standard 101/102 Key or Microsoft Keyboard |
| 070h - 071h | System CMOS/Real Time Clock |
| 081h - 083h | DMA Controller #1 |
| 087h - 087h | DMA Controller #2 |
| 089h - 08Bh | DMA Controller #3 |
| 08Fh - 08Fh | DMA Controller #4 |
| 0A0h - 0A1h | Programmable Interrupts Controller #2 |
| 0C0h - 0DFh | DMA Controller #5 |
| 0F0h - 0FFh | Numerical Data Processor |
| 170h - 177h | Primary IDE Channel |
| 1F0h - 1F7h | Master IDE Channel |
| 2E8h - 2EFh | Serial Port #4(COM4) |
| 2F8h - 2FFh | Serial Port #2(COM2) |
| 376h - 376h | Primary IDE Channel |
| 378h - 37Fh | Parallel Port #1(LPT1) |
| 3B0h - 3BAh | Advanced Micro Devices Win 2K/XP Graphics Controller |
| 3C0h - 3DFh | Advanced Micro Devices Win 2K/XP Graphics Controller |
| 3E8h - 3EFh | Serial Port #3(COM3) |
| 3F6h - 3F6h | Master IDE Channel |
| 3F8h - 3FFh | Serial Port#1(COM1) |
| 480h - 48Fh | DMA Controller #6 |
| EE00h - EEEFh | Realtek RTL8139(A) PCI Fast Ethernet Adapter |
| EF00h - EF7Fh | GeodeLX Audio Driver(WDM) |
| FFE0h - FFEFh | Standard dual-channel PCI IDE Controller |

IRQ Interrupts Assignment

There are interrupt sources as follows in WinXP system. Some has been exclusively occupied by system device. Only those interrupt sources which is not exclusively occupied can be assigned to other devices. ISA device requests exclusive use of its interrupt; only interrupts of PnP ISA device can be assigned by BIOS or operating system. While multiple PCI devices can share the same interrupt, and assigned by BIOS or operating system.

| Level | Function |
|-------|--|
| IRQ0 | System Timer |
| IRQ1 | Standard 101/102 key or Microsoft Keyboard |
| IRQ3 | Communication Port (COM2) |
| IRQ4 | Communication Port (COM1) |
| IRQ5 | Realtek RTL8139 Family PCI Fast Ethernet NIC |
| IRQ5 | GeodeLX Audio Driver(WDM) |
| IRQ6 | Standard floppy disk controller |
| IRQ8 | System CMOS/Real Time Clock |
| IRQ9 | ACPI-Compliant System |
| IRQ10 | Communication Port (COM3) |
| IRQ11 | Communication Port (COM4) |
| IRQ12 | Compatible PS/2 Mouse Port |
| IRQ13 | Numerical Data Processing |
| IRQ14 | Primary IDE channel |

For more information, please visit our website: <http://www.evoc.com>.