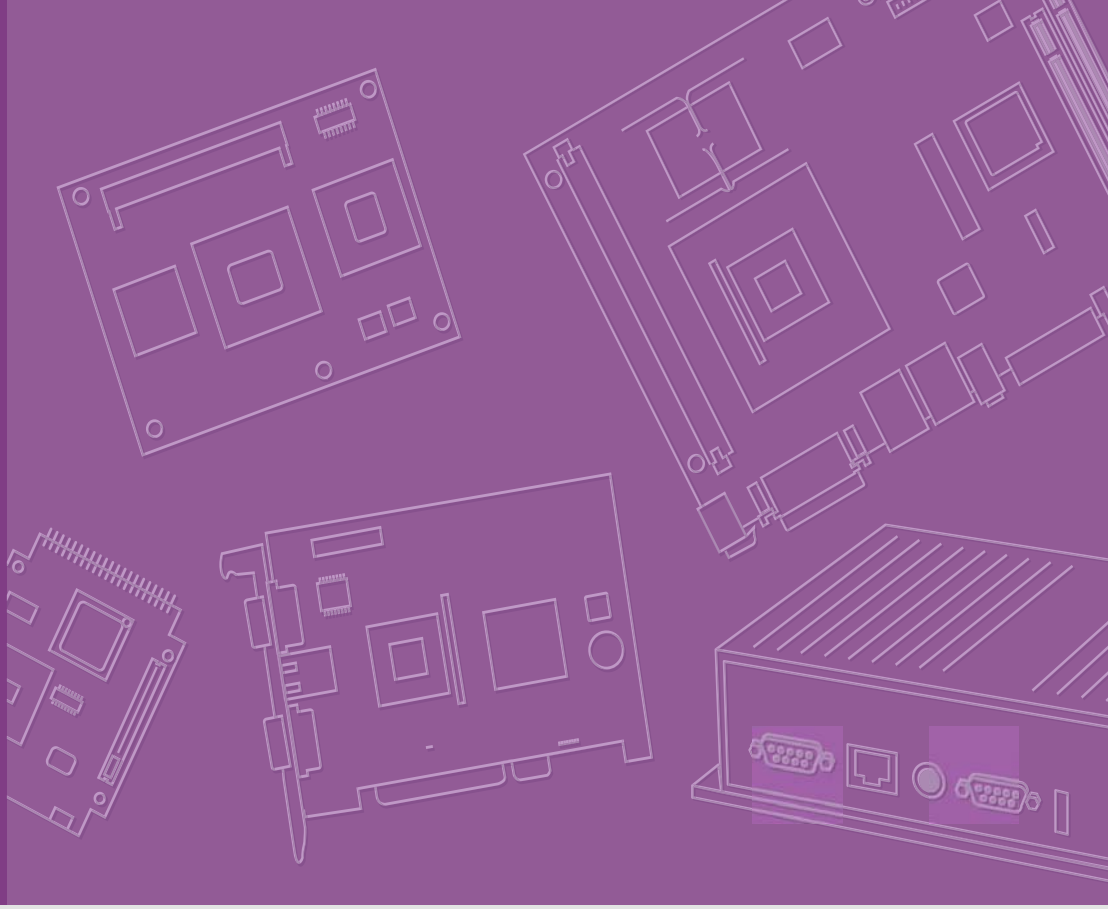

User Manual

PCM-3355

PC/104 SBC w/AMD LX800/ LX600, VGA, LCD, LAN, USB2.0 SATA and CF

Trusted ePlatform Services

ADVANTECH

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http://www.advantech.com/support

This manual is for the PCM-3355.

Part No. 2006335510 Edition 1

Printed in China June 2009

Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 PCM-3355 SBC
- 1 x SATA cable (p/n: 1700008894)
- 1 x Keyboard/Mouse cable (p/n: 1703060053)
- 1 x Y cable for KB/MS extension (p/n: 1700060202)
- 1 x Ethernet RJ-45 Conn. conversion cable (p/n: 1700005158)
- 1 x LPT port cable (p/n: 1700260250)
- 1 x VGA cable (p/n: 1701160150)
- 1 x USB cable (bracket type with two USB ports) (p/n: 1703100121)
- 1 x RS-422/485 COM cable (p/n: 1703040157)
- 1 x RS-232 COM cable (p/n: 1701200220)
- 1 x Startup manual
- 1 x CD-ROM (Manual, Driver, Utility)

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Model No. List	**Description**
PCM-3355F-L0A1E	PC/104 SBC w/AMD LX800, VGA, LVDS, LAN, USB,SATA and CF
PCM-3355L-J0A1E	PC/104 SBC w/AMD LX600, VGA, LVDS, LAN, USB, and CF

Additional Information and Assistance

1. Visit the Advantech web site at www.advantech.com where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

Declaration of Conformity

This device complies with the requirements in part 15 of the FCC rules: Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution! *There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.*

Contents

Chapter 1

General Information

This chapter gives background information on the PCM-3355.

Sections include:

- Introduction
- Features
- Specifications
- Board layout and dimensions

1.1 Introduction

The PCM-3355 is a fanless, cost-effective, small size(96X90mm),and performance PC/104 SBC (Single Board Computer) geared to satisfy the needs for various industrial computing equipment. PCM-3355 is ideal for communication, environment monitoring system, factory automation, military and medical applications that require flat panel support using digital displays with TTL interfaces and single Ethernet ports.

For those who want superior performance for various low-power embedded applications, PCM-3355 uses an AMD LX800/LX600 processor clocked at 500/366 MHz, supporting DDR333 SDRAM up to 1 GB.

PCM-3355 offers convenient connector layout, easy assembly, multiple I/O, and includes single 10/100Mbps Ethernet, two USB (Universal Serial Bus) 2.0one SATA interface, two RS-232 serial ports and one RS-422/485 serial port for easy system expansibility.

1.2 Features

- AMD low power LX800 500MHz and LX600 366MHz Processor
- Supports DDR memory
- Supports 24-bit TFT LCD interface
- Supports 1 X SATA interface
- Supports 1 x 100Base-T Fast Ethernet
- Supports two USB2.0 ports
- Supports threeCOM ports
- PC/104 expansion interface

1.3 Specifications

1.3.1 Standard PC/104 Biscuit SBC Functions

- **CPU:** AMD Geode® LX800/LX600 processor, up to 500/366 MHz
- **System Memory:** supports Double Data Rate (DDR) DDR333 SDRAM up to 1GB
- **2nd Cache Memory:** 128 KB on the processor
- **System Chipset:** AMD Geode LX800/LX600
- **BIOS:** AWARD 4Mbit Flash BIOS
- **Watchdog timer:** 255 levels timer interval
- **Expansion Interface:** PC/104 (ISA bus)
- **Battery:** Lithium 3V/196 mAH
- **Power management:** ACPI supported
- **Serial ATA:** One Serial ATA interface, Speed up to 100MB/s (Transfer from IDE)

Note! *Strongly suggest not to use CF card and SATA device together. Due to limitation of bottleneck of transmitted rate on ARC772, IDE to SATA bridge.*

If you find your CF card cannot be detected when you use SATA device at the same time, please adjust CF card to Slave via SW2 and SATA to Master via SW3 that would have CF card and SATA device detected together, or you select suitable CF card which Advantech had confirmed.

- **Serial ports:** two serial RS-232 ports , one RS-422/485 ports
- **Parallel port:** One parallel port, supports SPP/EPP/ECP mode
- **Keyboard/mouse connector:** Supports one standard PC/AT keyboard and a PS/2 mouse
- **USB:** Two USB 2.0 ports compliant universal serial bus ports
- **CF:** Solid State Disk (SSD) supports one 50-pin socket for CFC type I(type II optional)

1.3.2 VGA/TTL Interface

- **Chipset:** AMD Geode LX800/LX600
- **Memory Size:** Optimized Shared Memory Architecture, supports 64 MB frame buffer using system memory
- **CRT resolutions supported:**
  - Supports up to 1920x1440x32 bpp at 85 Hz
  - Supports up to 1600x1200x32 bpp at 100 Hz
- **TFT resolutions supported:**
  - Supports up to 1024 x 768 x 32 bpp at 60 Hz
- **LCD Interface:** Supports up to 24-bit TFT LCD (TTL signal)
- **Dual Simultaneous Display:** CRT + LCD

1.3.3 Ethernet Interface

- **Chipset supports:** 1 x 10/100 Mbps - Intel 82551QM
- **Interface:** 1 x internal box header
- Standard IEEE 802.3u (100 BASE-T) protocol compatible

1.3.4 OS support

This board supports Win XP, Win CE and Win XPe.

For further information about OS support in your PCM-3355, visit the following web resource Advantech: website: www.advantech.com or please contact technical support center

1.3.5 Mechanical and Environmental

- **Dimensions:** 96 x 90 mm (3.8" x 3.5")Mechanical Drawing (dxf file) is available.
- **Power Supply Type:** AT
- **Power Requirement:** +5 V ± 5%, +12 V ± 5% (Optional), (5V only,12V optional for PC104 add on card and LCD inverter)
- **Power Consumption: (Geode LX800, 512 MB DDR333)**
  - Power on Load: +5 V@ 1.79 A, +12 V@ 0.02 A
  - Max load: +5 V@ 1.74 A, +12 V@ 0.02 A
  - Idle mode: +5 V@ 1.45 A, +12 V@ 0.02 A
- **Power Consumption Conditions:**
  - **Test software:** Hot CPU pro 4.22
  - **Power on - Boot:** Measure the maximum current value of between system power on and boot-up to O.S.
  - **Max. load:** Measure the maximum current value which system under maximum load (CPU: Top speed , RAM &Graphic: Full loading)
  - **Idle mode:** Measure the current value when system in windows mode and without running any program

- **Operating temperature:** 0 ~ 60°C (32 ~ 140°F) (operation humidity: 40°C @ 85% RH Non-Condensing)
- **Weight:** 0.85 kg (reference weight of total package)

1.4 Board layout: dimensions

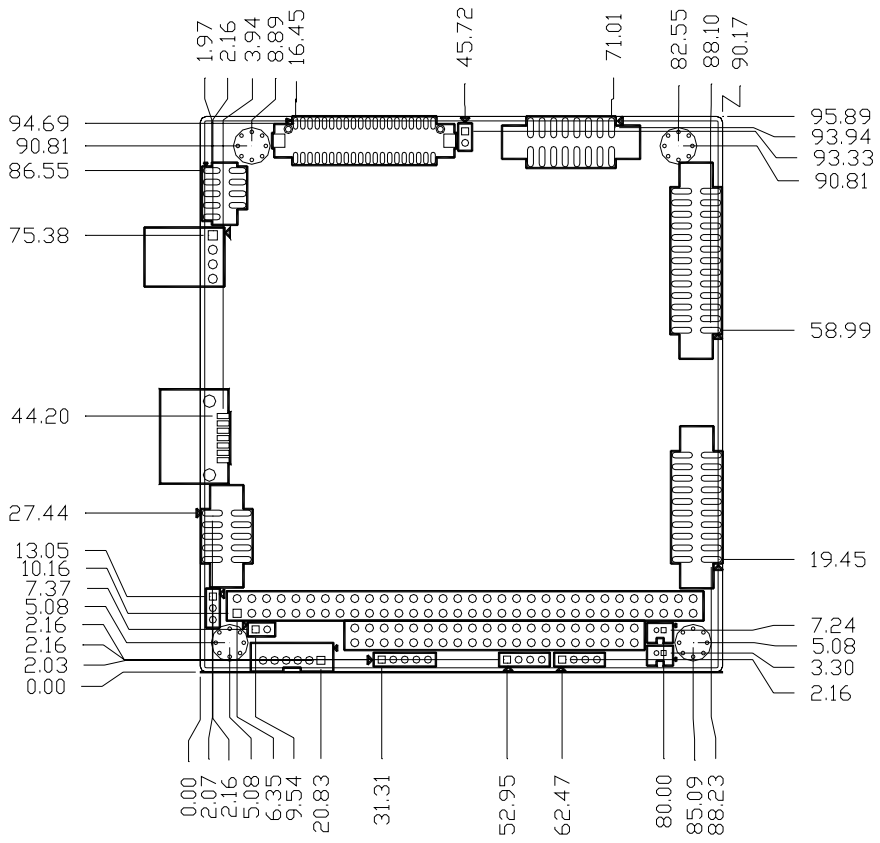


Figure 1.1 Board layout: Dimensions (Component Side)

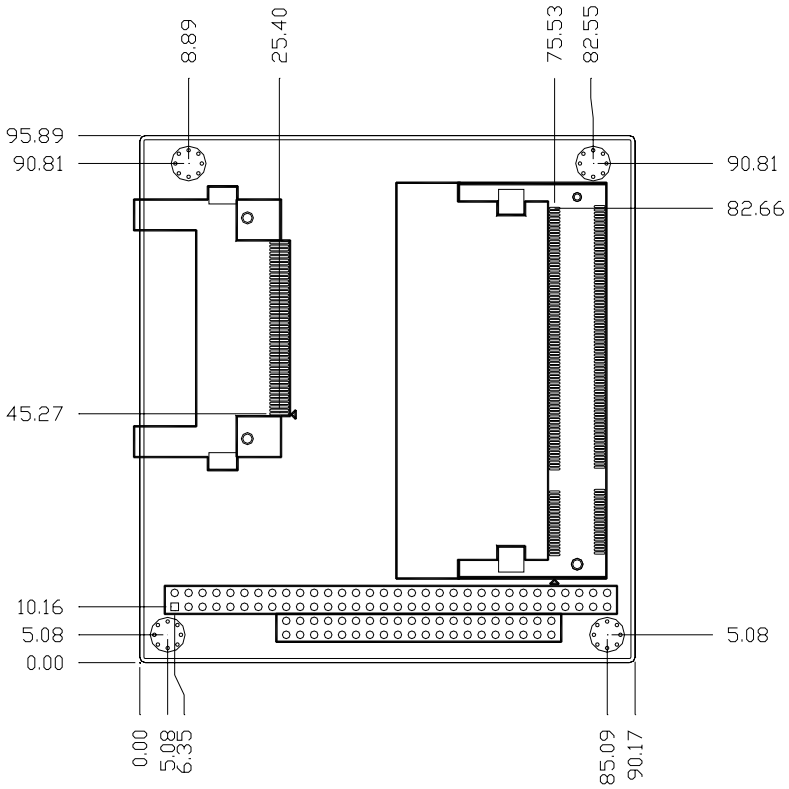


Figure 1.2 Board layout: Dimensions (Solder Side)

Chapter 2

Installation

This chapter explains the setup procedures of the PCM-3355 hardware, including instructions on setting jumpers and connecting peripherals, switches and indicators. Be sure to read all safety precautions before you begin the installation procedure.

2.1 Jumpers

The PCM-3355 has a number of jumpers that allow you to configure your system to suit your application. The table below lists the functions of the various jumpers.

Table 2.1: Jumpers

Label	Function
SW1	COM3 RS422/485 switch
SW2	CF Master/Slave switch
SW3	SATA Master/Slave switch

2.2 Connectors

Onboard connectors link the PCM-3355 to external devices such as hard disk drives, a keyboard, or floppy drives. The table below lists the function of each of the board's connectors.

Table 2.2: Connectors

Label	Function
CN1	TTL LCD connector
CN2	CRT connector
CN3	USB connector
CN4	Power IN connector
CN5	LPT connector
CN6	PC/104 connector
CN7	SATA connector
CN8	COM1/2 connector
CN9	LAN connector
CN10	ISA -5V connector
CN11	SMBUS connector
CN12	BATTERY connector
CN13	BUZZER connector
CN14	KB/MS connector
CN15	Power/HDD LED connector
CN16	Panel Inverter Power
CN17	COM3 RS422/485 connector
CN18	CF connector
CN19	DDR SODIMM connector

2.3 Locating Connectors

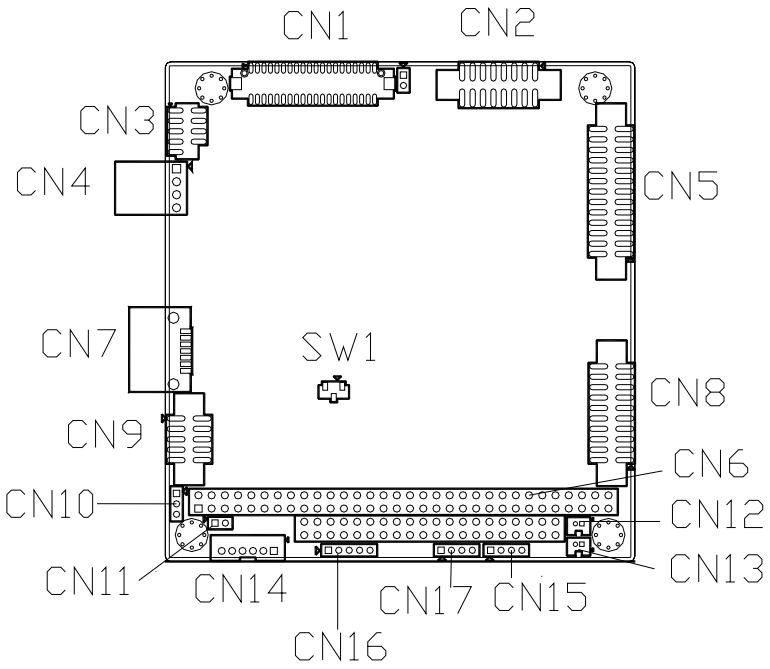


Figure 2.1 Connectors (component side)

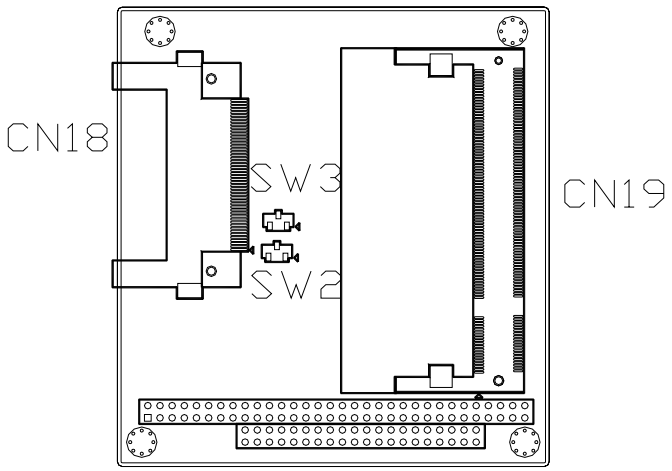


Figure 2.2 Connectors (solder side)

2.4 Installing SO-DIMMs

The procedures for installing SODIMMs are described below. Please follow these steps carefully. You can install SDRAM memory modules using 200-pin SODIMMs (Small Outline Dual In-line Memory Modules).

1. Ensure that all power supplies to the system are switched off.
2. Tilt the SODIMM card just above the board and slide it into the housing card slot.
3. Push the module into the socket until the module gently snaps in. There should only be a slight insertion force to engage the module into the contacts. Make sure that the module and the housing are aligned and locked in place.

2.5 Solid State Disk

The board provides a CompactFlash card type I socket and type II for optional kit.

2.5.1 CompactFlash (CN18)

The CompactFlash card can be enabled/disabled via the BIOS settings. and be selected Master/Slave by SW2.

Note!

Strongly suggest not to use CF card and SATA device together. Due to limitation of bottleneck of transmitted rate on ARC772, IDE to SATA bridge.

If you find your CF card cannot be detected when you use SATA device at the same time, please adjust CF card to Slave via SW2 and SATA to Master via SW3 that would have CF card and SATA device detected together.

2.6 Parallel port connector (CN5)

Normally, the parallel port is used to connect the cable to a printer. The board includes a multi-mode (ECP/EPP) parallel port accessed via CN5 and a 26-pin flat-cable connector. You will need an adapter cable if you use a traditional DB-25 connector. The adapter cable has a 26-pin connector on one end, and a DB-25 connector on the other.

The parallel port is designated as LPT1, and can be disabled or changed to LPT2 or LPT3 in the system BIOS setup.

The parallel port interrupt channel is designated to be IRQ7.

You can select ECP/EPP/ECP DMA channel via BIOS setup.

2.7 Keyboard and PS/2 mouse connector (CN14)

The board provides a keyboard connector that supports both a keyboard and a PS/2 style mouse. In most cases, especially in embedded applications, a keyboard is not used. If the keyboard is not present, the standard PC/AT BIOS will report an error or fail during power-on self-test (POST) after a reset. The PCM 3355's BIOS standard setup menu allows you to select "All, But Keyboard" under the "Halt On" selection. This allows no-keyboard operation in embedded system applications, without the system halting under POST.

2.8 Power Connectors (CN4)

Supplies main power +5 V to the PCM-3355, and to devices that require +12 V.

2.9 Power/HDD LED Connector (CN15)

You may want to install external switches to monitor and control the PCM-3355. These features are optional: install them only if you need them.

POWER LED (Pin1 & Pin2)

+5 V POWER LED indicator would light when the power is on.

HDD LED (Pin3 & Pin4)

The HDD LED indicator for hard disk access is an active low signal (24 mA sink rate).

2.10 COM port connector (CN8,CN17)

The board provides three serial ports: two serial RS-232 ports in one 20 pin connector (CN8:COM1/2), and one serial port RS422/485 in 4 pin connector(CN17: COM3). It provides connections for serial devices or a communication network. You can find the pin assignments for the COM port connector in Appendix.

2.10.1 Serial Port RS-422/485 (CN17)

COM3(CN17) can be configured to operate in RS-422 or RS-485 mode by SW1.

Table 2.3: Serial Port RS-422/485 (SW1)

Setting	Function
1	RS-485
2	RS-422

2.11 VGA/LCD interface connections

The board's PCI SVGA interface can drive conventional CRT displays and is capable of driving a wide range of flat panel displays.

2.11.1 CRT display connector (CN2)

The CRT display connector is a 15-pin D-SUB connector used for conventional CRT displays.

2.11.2 TTL TFT LCD connector (CN1)

For PCM-3355 series, CN1 is a 40-pin connector which can support up to 24-bit LCD panel. Its Hirose’s product no. DF13-40DP-1.25 V

2.11.3 Panel Inverter Power (CN16)

The LCD inverter is connected to CN16 via a 5-pin connector to provide +5 V/+12 V power to the LCD display.

2.12 Ethernet configuration

The board is equipped with one high performance 32-bit PCI-bus Ethernet interface which are fully compliant with IEEE 802.3U 10/100Mbps standards. They are supported by all major network operating systems.

2.12.1 100Base-T connector (CN9)

100Base-T connections are made via one internal 10-pin box header.

2.13 Watchdog timer configuration

An onboard watchdog timer reduces the chance of disruptions which EMP (electromagnetic pulse) interference can cause. This is an invaluable protective device for standalone or unmanned applications. Setup involves one jumper and running the control software (refer to Appendix).

2.14 USB connectors (CN3)

The board provides up to four USB (Universal Serial Bus) ports using Plug and Play. The USB interfaces comply with High Speed USB specification Rev. 2.0 which supports 480 Mbps transfer rate, and are fuse protected.

The USB interface is accessed through two 5 x 2-pin flat-cable connectors. You will need an adapter cable if you use a standard USB connector. The adapter cable has a 5 x 2-pin connector on one end and a USB connector on the other.

The USB interfaces can be disabled in the system BIOS setup.

2.15 SATA Connector (CN7)

PCM-3355 supports Serial ATA via one connector (CN7) by ARC772N, IDE to SATA Bridge, Data transfer rates is up to 100 MB/s and supports DMA operation on one port. You may select SATA device to Master or Slave by SW3.

Note!

Strongly suggest not to use CF card and SATA device together. Due to limitation of bottleneck of transmitted rate on ARC772, IDE to SATA bridge.

If you find your CF card cannot be detected when you use SATA device at the same time, please adjust CF card to Slave via SW2 and SATA to Master via SW3 that would have CF card and SATA device detected together, or you select suitable CF card which Advantech had confirmed.

Chapter 3

Award BIOS Setup

3.1 Introduction

Award's BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed memory (CMOS RAM) so that it retains the setup information when the power is turned off.

3.1.1 CMOS RAM Auto-backup and Restore

The CMOS RAM is powered by an onboard button cell battery. When you finish BIOS setup, the data in CMOS RAM will be automatically backed up to Flash ROM. If operation in harsh industrial environments causes a software error, the BIOS will recheck the data in CMOS RAM and automatically restore the original data in Flash ROM to CMOS RAM for booting.

Note! *If you intend to change the CMOS setting without restoring the previous backup, you have to click on "DEL" within two seconds of the "CMOS checksum error..." display screen message appearing. Then enter the "Setup" screen to modify the data. If the "CMOS checksum error..." message appears again and again, please check to see if you need to replace the battery in your system.*

3.2 Entering Setup

Turn on the computer and check for the "patch code". If there is a number assigned to the patch code, it means that the BIOS supports your CPU.

If there is no number assigned to the patch code, please contact Advantech's applications engineer to obtain an up-to-date patch code file. This will ensure that your CPU's system status is valid. After ensuring that you have a number assigned to the patch code, press <Del> to allow you to enter the setup.

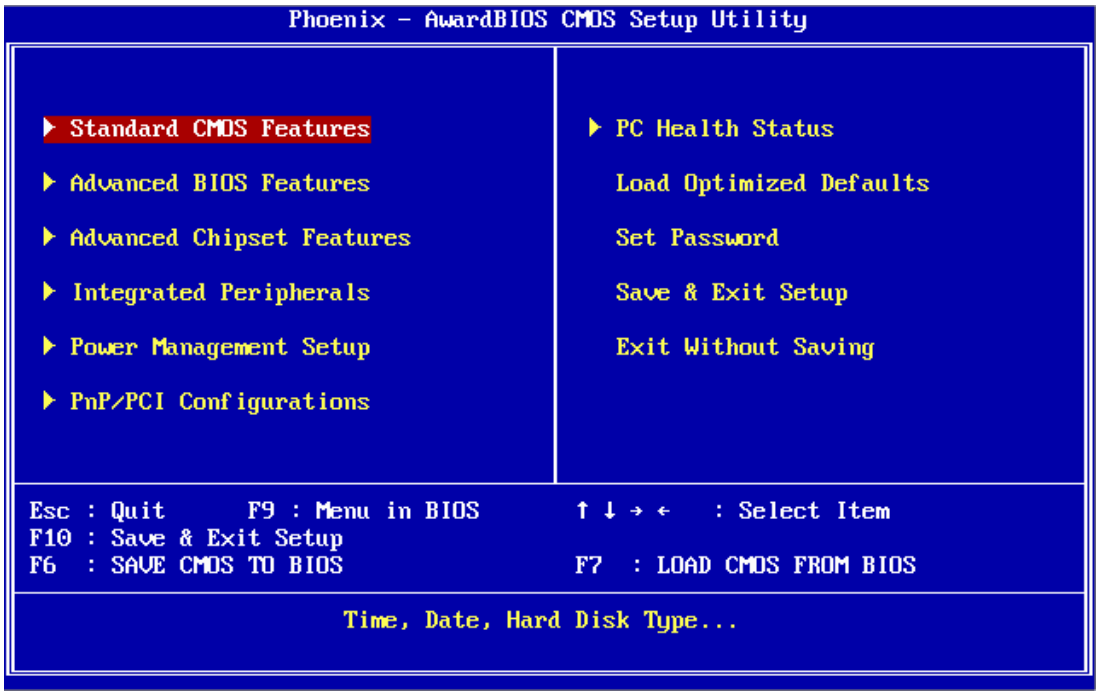
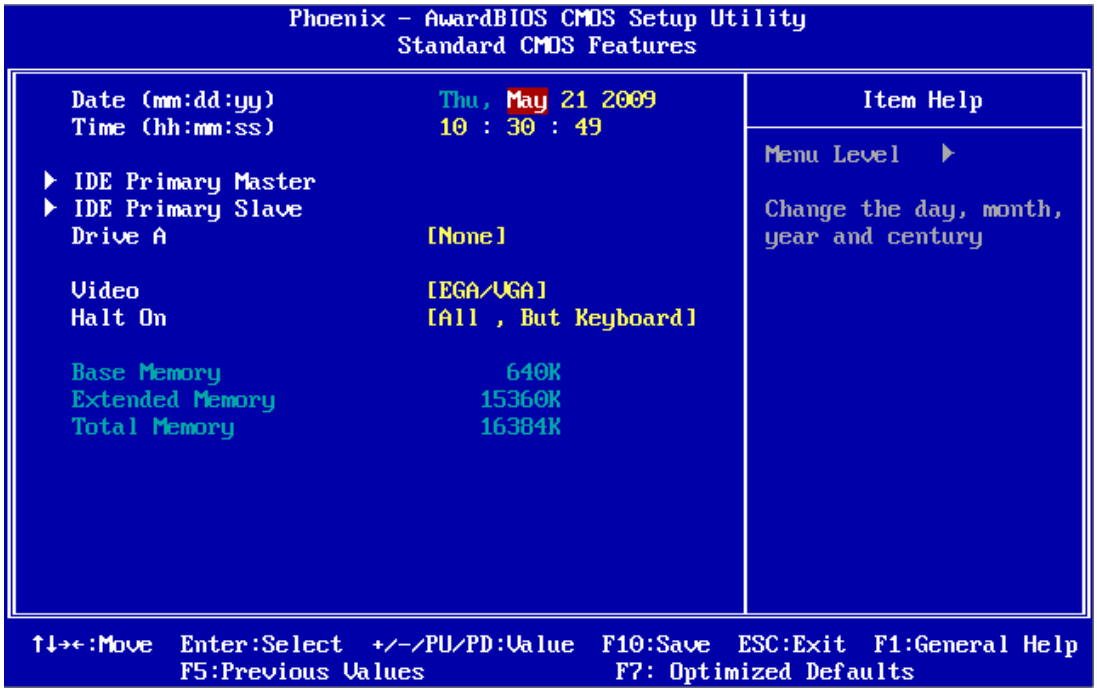


Figure 3.1 Award BIOS Setup initial screen

3.3 Standard CMOS Setup

Choose the “Standard CMOS Features” option from the “Initial Setup Screen” menu, and the screen below will be displayed. This menu allows users to configure system components such as date, time, hard disk drive, Video, Halt On, display, and memory.

3.4 Standard CMOS Setup



3.4.1 Date

The date format is <Weekday>, <Month>, <Day>, <Year>.

Week	From Sun to Sat, determined and display by BIOS only
Month	From Jan to Dec.
Day	From 1 to 31
Year	From 1999 through 2098

3.4.2 Time

The time format is in <hours> : <minutes> : <seconds>, based on 24-hour time.

3.4.3 IDE Primary Master/Slave

IDE HDD Auto-Detection. Press "Enter" for automatic device detection.

3.4.4 Drive A

The Item identifies the types of floppy disk drives occupying A

None	No floppy drive installed
1.44M, 3.5"	3.5 inch double-sided drive; 1.44M byte capacity
2.88M, 3.5"	3.5 inch double-sided drive; 2.88M byte capacity

3.4.5 Halt on

The item determines whether the computer will stop if an error is detected during power up.

No Errors	The system boot will not stop for any error.
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for al other errors.

3.4.6 Base Memory

The BIOS POST displays the amount of base (or conventional) memory installed in the system.

3.4.7 Extended Memory

The BIOS POST displays the amount of extended memory (above 1MB in the CPU's memory address map) installed in the system.

3.4.8 Total Memory

This item displays the total system memory size.

3.5 Advanced BIOS Features

The “Advanced BIOS Features” screen appears when choosing the “Advanced BIOS Features” item from the “Initial Setup Screen” menu. It allows the user to configure the board according to his particular requirements. Below are some major items that are provided in the Advanced BIOS Features screen. A quick booting function is provided for your convenience. Simply enable the Quick Booting item to save yourself valuable time.

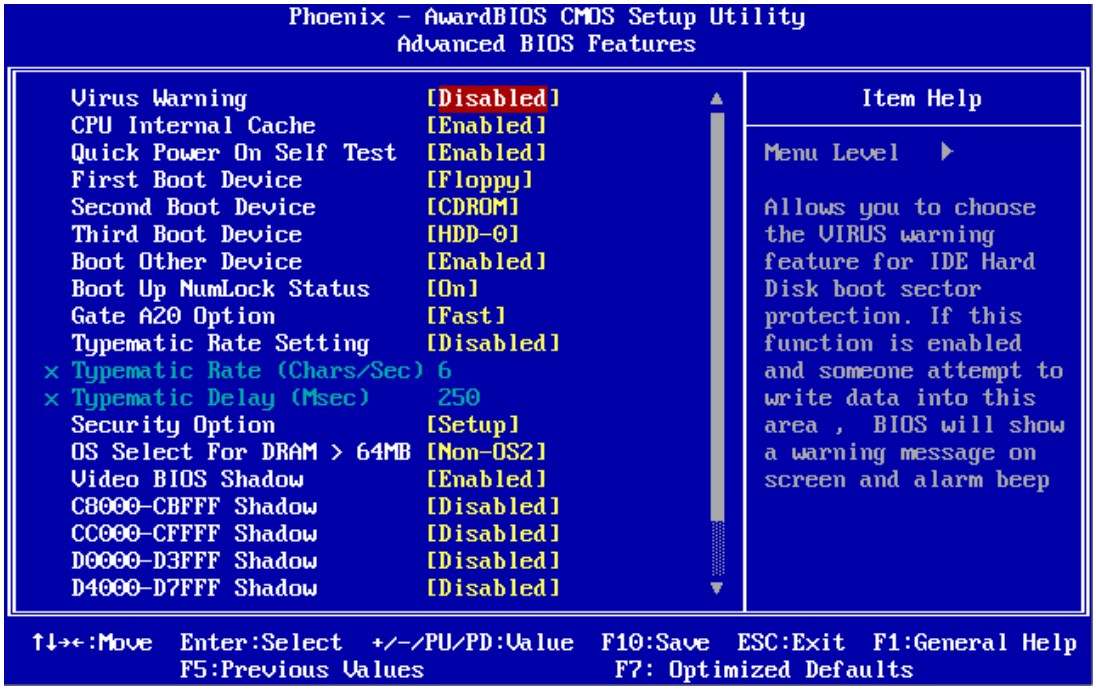


Figure 3.2 Advanced BIOS features screen

3.5.1 Virus Warning

If enabled, a warning message and alarm beep activates if someone attempts to write here. The commands are “Enabled” or “Disabled.”

3.5.2 CPU Internal Cache

This item allows user to enable CPU internal cache. (Disable is sometimes useful for troubleshooting.)

3.5.3 Quick Power On Self Test

This BIOS feature allows you to decrease the time it takes to boot up the computer by shortening or skipping certain standard booting procedures.

If enabled, the BIOS will shorten the booting process by skipping some tests and shortening others.

If disabled, the BIOS will run the whole gamut of boot-up tests

3.5.4 First/Second/Third/Other Boot Device

Floppy	Assign this boot device priority to Floppy.
HDD	Assign this boot device priority to Hard Disk.
CDROM	Assign this boot device priority to CDROM.
USB-FDD	Assign this boot device priority to USB-FDD.
USB-CDROM	Assign this boot device priority to USB-CDROM.
USB-HDD	Assign this boot device priority to USB-HDD.
LAN	Assign this boot device priority to LAN.
Disabled	Do not assign this boot priority.

3.5.5 Boot Up NumLock Status [On]

When enabled, the keyboard keypad boots up in number mode. When disabled, the keypad boots up in cursor control mode (arrow mode).

3.5.6 Gate A20 Option [Fast]

This item enables users to switch A20 control by port 92 or not.

3.5.7 Typematic Rate Setting [Disabled]

This item enables users to enable or disable typematic action. When enabled, they can set the two typematic controls items, controlling the speeds of:

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

This item controls the speed at which the system registers repeated keystrokes.The eight settings are 6, 8, 10, 12, 15, 20, 24 and 30 characters/second.

- **Typematic Delay (Msec)**

This item sets the keypress delay before typematic repetition kicks in. The four delay options are 250, 500, 750 and 1000 milliseconds.

Note! *These typematic settings apply to systems that communicate with thekeyboard via BIOS. For Windows systems, typematic settings are controlled by keyboard driver settings in Windows Control Panel.*

3.5.8 Security Option [Setup]

System	System can not boot and can not access to Setup page if the correct password is not entered at the prompt.
Setup	System will boot, but access to Setup if the correct password is not entered at the prompt. (Default value)

Note! *To disable security, select PASSWORD SETTING in the main menu. Then, you will be asked to enter a password. Simply press <Enter> to disable security. When security is disabled, the system will boot and you can enter Setup freely.*

3.5.9 OS Select For DRAM > 64M [Non-OS2]

Select OS2 only if system is running OS/2 operation system with greater than 64 MB of RAM on the system.

3.5.10 Video BIOS Shadow [Enabled]

For copying of video BIOS to shadow RAM--sometimes improves performance.

C8000-CBFFF Shadow [Disabled]

Control copying of this block to shadow RAM.

CC000-CFFFF Shadow [Disabled]

Control copying of this block to shadow RAM.

D0000-D3FFF Shadow [Disabled]

Control copying of this block to shadow RAM.

D4000-D7FFF Shadow [Disabled]

Control copying of this block to shadow RAM.

D8000-DBFFF Shadow [Disabled]

Control copying of this block to shadow RAM.

DC000-DFFFF Shadow [Disabled]

Control copying of this block to shadow RAM.

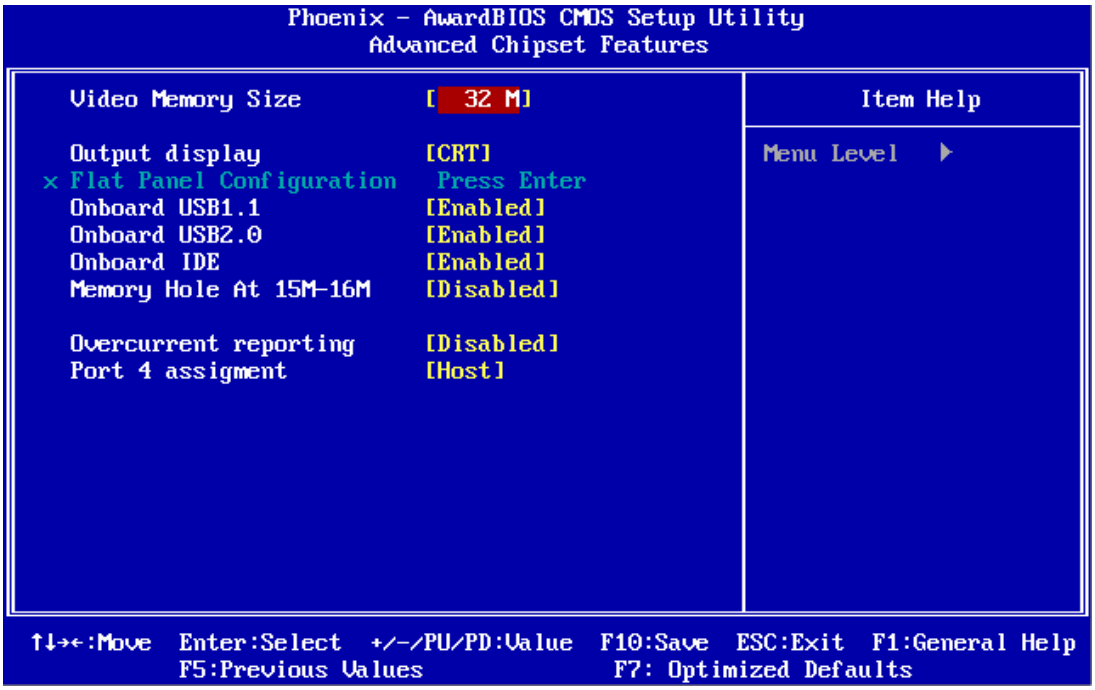
3.5.11 Small Logo (EPA) Show [Disabled]

Show EPA logo during system post stage.

3.5.12 Cyrix 6X86/MII CPUID [Enabled]

This item allows user to control BIOS enabled or disabled CPUID for CPU Cyrix/MII.

3.6 Advanced Chipset Features



Note! *This Advanced Chipset Features screen controls the configuration of the board's chipset for fine-tuning system performance. Screen options depend on the specific chipset. It is strongly recommended that only technical users make changes to the default settings.*

3.6.1 Video Memory Size [32 M]

This item allows user to adjust VGA shared memory size.

3.6.2 Output Display [CRT]

This item allows the user to choose screen display type: "Flat Panel", "CRT" and "Panel & CRT". BIOS default value is set to "CRT".

3.6.3 Flat Panel Configuration [Press Enter] (Show Only)

This item provides flat panel adjustments.

3.6.4 Onboard USB1.1 [Enabled]

This item enables or disables motherboard USB1.1 device.

3.6.5 Onboard USB2.0 [Enabled]

This item enables or disables motherboard USB2.0 device.

3.6.6 Onboard IDE [Enabled]

This item enables or disables motherboard IDE device.

3.6.7 Memory Hole At 15 M-16 M [Disabled]

This item reserves 15 MB-16 MB memory address space to ISA expansion cards that specifically require the setting. Memory from 15 MB-16 MB will be unavailable to the system because only expansion cards can access memory in this area.

3.6.8 Overcurrent Reporting [Disabled]

This item enables or disables USB overcurrent reporting function. Suggest leaving on default setting (Disabled).

3.6.9 Port 4 assignment [Host]

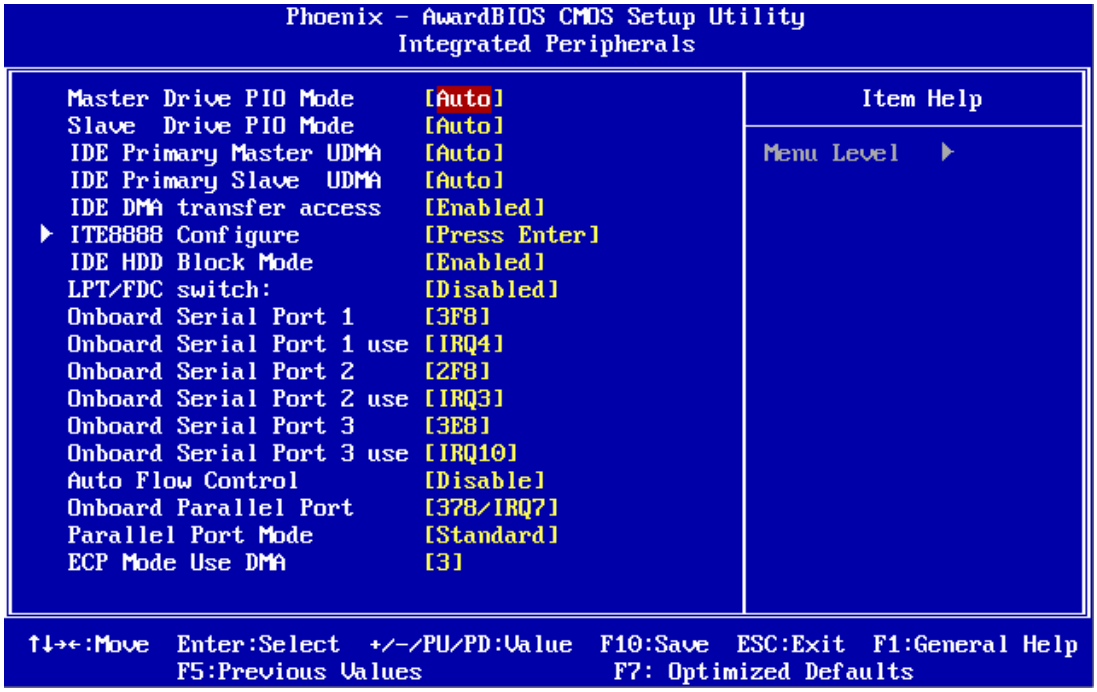
This item allows user to change mode of USB port 4. The selections are "Host", "Device., or .Not Used..

3.7 Integrated Peripherals

3.7.1 IDE Master/Slave PIO/UDMA Mode,

IDE Master/Slave PIO/UDMA Mode (Auto) has a master and a slave, making two IDE devices possible. Because each IDE device may have a different Mode timing (0, 1, 2, 3, 4), it is necessary for these to be independent. The default setting “Auto” will allow auto detection to ensure optimal performance.

3.7.2 Integrated peripherals screen



3.7.3 Master Drive PIO Mode [Auto]

This item allows user to adjust master IDE mode of type for modification purpose. Bios default value suggest to "Auto".

3.7.4 Slave Drive PIO Mode [Auto]

This item allows user to adjust slave IDE mode of type for modification purpose. Bios default value suggest to "Auto".

3.7.5 IDE Primary Master UDMA [Auto]

This item allows user to adjust primary master IDE mode of type for modification purpose. Bios default value suggest to "Auto".

3.7.6 IDE Primary Slave UDMA [Auto]

This item allows user to adjust primary slave IDE mode of type for modification purpose. Bios default value suggest to "Auto".

3.7.7 IDE DMA transfer access [Enabled]

This item allows user to adjust IDE DMA mode. It will increase IDE Data transfer of speed. Bios default value suggest to "Enabled".

3.7.8 ITE8888 Configure [Press Enter]

This item allows user to changed ITE8888 of detail adjust.

3.7.9 IDE HDD Block Mode [Enabled]

This item allows enabled or disabled that IDE block data transfer mode. It will speed up HDD data transfer of efficiency. Bios default value suggest to "Enabled".

3.7.10 LPT/FDC switch: [Disabled]

This item is switch LPT/FDC port by item. It will changed from LPT to FDC port. Bios default value suggest to "Disabled".

3.7.11 Onboard Serial Port 1 [3F8]

This item allows user to change com 1 of address. Bios default value suggest to "3F8".

3.7.12 Onboard Serial Port 1 use [IRQ4]

This item allows user to change com 1 of IRQ. Bios default value suggest to "IRQ4".

3.7.13 Onboard Serial Port 2 [2F8]

This item allows user to change com 2 of address. Bios default value suggest to "2F8".

3.7.14 Onboard Serial Port 2 use [IRQ3]

This item allows user to change com 2 of IRQ. Bios default value suggest to "IRQ3".

3.7.15 Onboard Serial Port 3 [3E8]

This item allows user to change com 3 of address. Bios default value suggest to "3E8".

3.7.16 Onboard Serial Port 3 use [IRQ10]

This item allows user to change com 3 of IRQ. Bios default value suggest to "IRQ10".

3.7.17 Auto Flow Control [Disabled]

This item allows user to control com port of auto flow transfer. Bios default value suggest to "Disabled".

3.7.18 Onboard Parallel Port [378/IRQ7]

This item allows user to change parallel port of address. Bios default value suggest to "378/IRQ7".

3.7.19 Parallel Port Mode [Standard]

This item allows user to change parallel port of mode. User can choose "SPP","EPP", "ECP" and "ECP+EPP". SPP (Standard Parallel Port).ECP(Extended Capabilities Port). EPP(Enhanced Parallel Port). Bios default value suggest to "Normal".

3.7.20 ECP Mode Use DMA [3]

This selection is available only if you select °×ECP°± or °×ECP + EPP°± in the Parallel Port Mode field. In ECP Mode Use DMA, you can select DMA channel 1, DMA channel 3, or Disable. Leave this field on the default setting.

3.8 Power Management Setup

The power management setup controls the CPU card's "green" features to save power. The following screen shows the manufacturer's defaults:

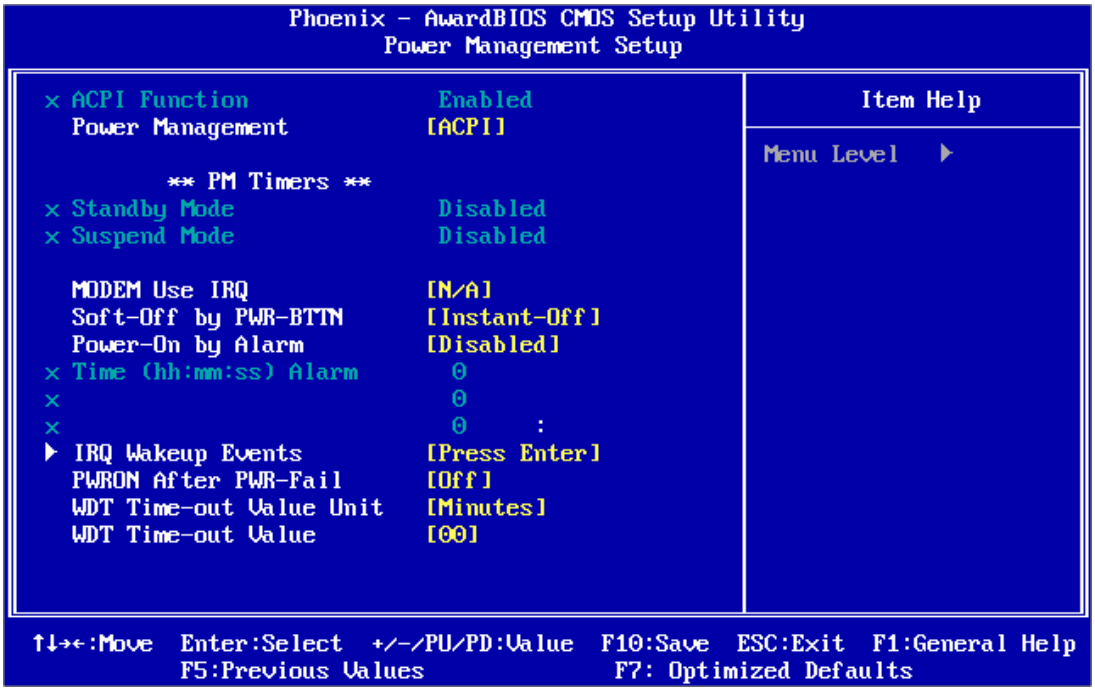


Figure 3.3 Power management setup screen

3.8.1 ACPI function

The choice: Enabled, Disabled.

3.8.2 Power Management

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

1. HDD Power Down
2. Suspend Mode

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

Min. Power Saving	Minimum power management., Suspend Mode = 1 hr., and HDD Power Down = 15 min.

Max. Power Saving	Maximum power management., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined (Default)	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

3.8.3 Modem Use IRQ

This determines the IRQ which the MODEM can use. The choices: 3, 4,5, 7, 9, 10, 11, NA.

3.8.4 Soft-Off by PWR-BTTN [Instant-Off]

This item allows user to define power button function.

Instant-Off	Press power button to power off instantly.
Delay 4 Sec	Press power button 4 secs. to power off.

3.8.5 Power-On by Alarm [Disabled]

This item allows users to power on the system at a specified date and time.

Disabled	Disables this function.
Enabled	Enables alarm function to power on system
Day (of the month) Alarm	1-31
Time (HH:MM:SS) Alarm	(0-23) : (0-59) : 0-59)

3.8.6 IRQ Wakeup Events [Press Enter]

This item allows user to control wakeup from an IRQ event.

3.8.7 PWRON After PWR-Fail [off]

This item allows control of response after a power failure.

3.8.8 WDT Time-out Value Unit [Minutes]

This item allows user to choose watch dog timer of unit.

3.8.9 WDT Time-out Value [00]

This item determines delay count time for the watch dog timer.

3.9 PnP/PCI Configurations

3.9.1 PnP OS Installed

Select Yes if you are using a plug and play capable operating system. Select No if you need the BIOS to configure non-boot device

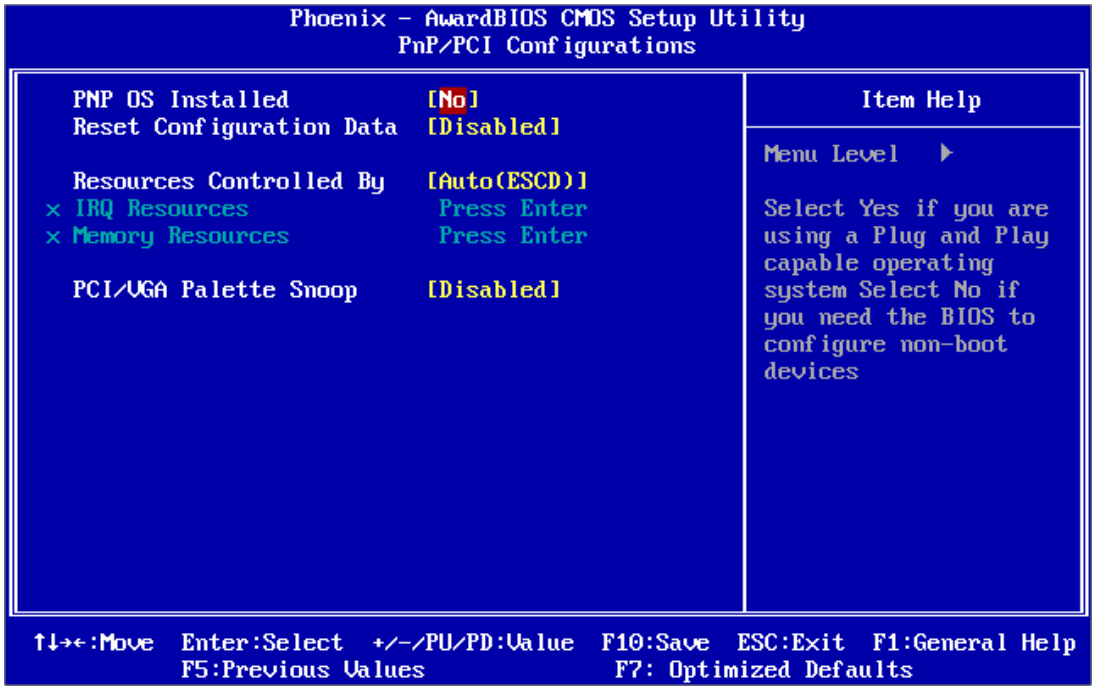


Figure 3.4 PnP/PCI configurations screen

3.9.2 PNP OS Installed [No]

Usually best set to No. Some rare cases may need to set to Yes.

3.9.3 Reset Configuration Data [Disabled]

This item allows user to clear any PnP configuration data stored in the BIOS.

3.9.4 Resources Controlled By [Auto (ESCD)]

- **IRQ Resources**

This item allows you respectively to assign interrupt types for IRQ-3, 4, 5, 7, 9,10, 11, 12, 14, and 15.

- **Memory Resources**

This item allows you respectively to assign memory blocks from N/A to DC00.

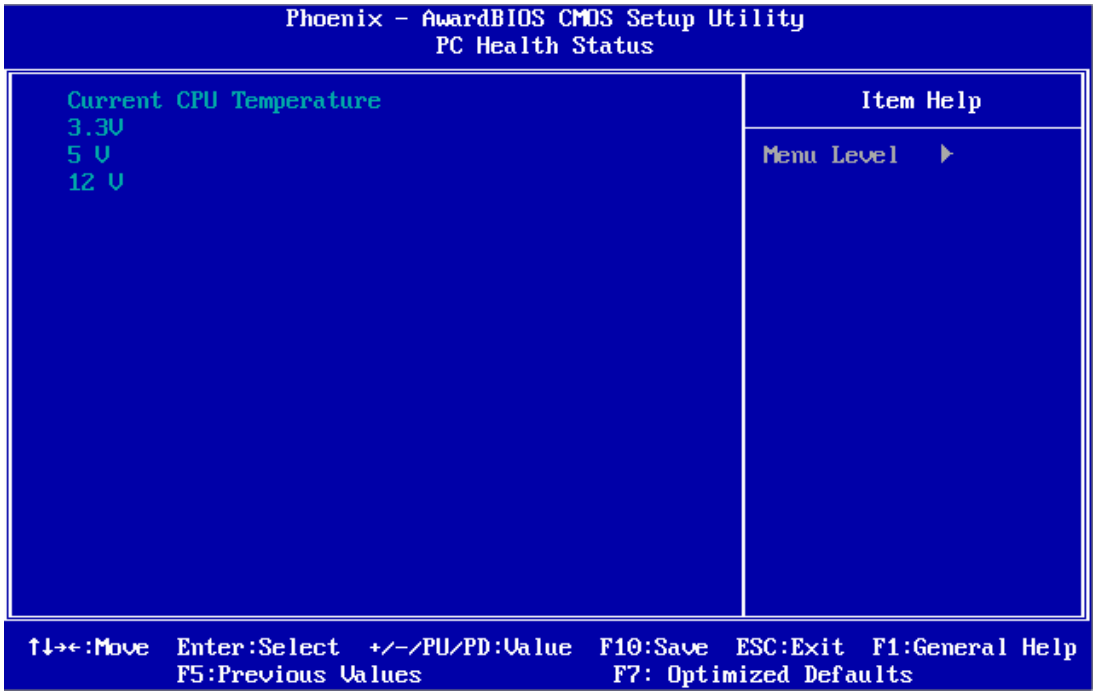
3.9.5 PCI VGA Palette Snoop [Disabled]

The item is designed to solve problems caused by some non-standard VGA cards. A built-in VGA system does not need this function.

3.10 PC Health Status

This is to check the PC health, e.g.: current CPU temperature.

3.10.1 PC Health Status Screen



3.10.2 Current CPU Temp [Show Only]

This item displays current system and CPU temperature.

3.10.3 3.3V / 5V / 12V [Show Only]

This item displays current CPU and system Voltage.

3.11 Password Setting

To change the password:

1. Choose the "Set Password" option from the "Initial Setup Screen" menu and press <Enter>.

   The screen will display the following message

   Please Enter Your Password

   Press <Enter>.

2. If the CMOS is good or if this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen will display the following message:

   Please Confirm Your Password

   Enter the current password and press <Enter>.

3. After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password must be no longer than eight (8) characters.

Remember, to enable the password setting feature, you must first select either "Setup" or "System" from the "Advanced BIOS Features" menu.

3.12 Save & Exit Setup

If you select this and press <Enter>, the values entered in the setup utilities will be recorded in the CMOS memory of the chipset. The microprocessor will check this every time you turn your system on and compare this to what it finds as it checks the system. This record is required for the system to operate.

3.13 Exit Without Saving

Selecting this option and pressing <Enter> lets you exit the setup program without recording any new values or changing old ones.

Chapter 4

PCI SVGA/LCD Setup

This chapter details the software configuration information. It shows you how to configure the card to match your application requirements. The AWARD System BIOS is covered in Chapter 4.

Sections include:

- Installation of SVGA drivers
  - for Window XP
- Connections for standard LCDs
- Further information

4.1 Introduction

The board has an onboard AMD Geode LX800 chipset for its AGP/SVGA controller. It supports TFT LCD displays and conventional analog CRT monitors with 64 MB frame buffer shared with system memory. The VGA controller can drive CRT displays with resolutions up to 1600 x 1200 x 16 bpp at 100 Hz and up to 1024 x 768 x 32 bpp at 60 Hz for TFT LCD.

4.1.1 Display type

The board can be set in one of three configurations: on a CRT, on a flat panel display, or dual simultaneous display. The system is initially set to dual display mode. If you want to enable the CRT display only or the flat panel display only, please set them up from the BIOS screen, or contact Advantech's technical support center.

4.1.2 Dual Simultaneous Display

The board uses an AMD LX800 controller that is capable of providing multiple views and simultaneous display with mixed video and graphics on a flat panel and CRT. The Dual display can be set up by CMOS setting.

4.1.3 CMOS setting for panel type

The board system BIOS and custom drivers are located in a 512 KB, Flash ROM device. A single Flash chip holds the system BIOS, VGA BIOS and network Boot ROM image. The display can be configured via CMOS settings, please choose "panel type" from the "Advanced Chipset Features" menu in the CMOS settings.

4.2 Connections to Two Standard LCDs

Connector Table of 12.1" TTL Sharp LQ121S1DG31 800 x 600 5/3.3 V (18 Bit) for PCM-9375 AMD Geode LX.

4.2.1 AMD Geode LX

Table 4.1: Connections to Sharp LQ121S1DG31 / PCM-3355

Sharp LQ121S1DG31		**PCM-3355**	
DF9MA-41P-1V		**DF-13 4OP-1.25V**	
Pin	**Function**	**Pin**	**Function**
1	GND	3	GND
2	CK	35	DOTCLK
3	GND	4	GND
4	Hsync	38	HS
5	Vsync	36	VS
6	GND		
7	GND		
8	GND	8	GND
9	R0	27	D18
10	R1	28	D19
11	R2	29	D20
12	GND		
13	R3	30	D21

Table 4.1: Connections to Sharp LQ121S1DG31 / PCM-3355			
14	R4	31	D22
15	R5	32	D23
16	GND		
17	GND		
18	GND		
19	G0	19	D10
20	G1	20	D11
21	G2	21	D12
22	GND		
23	G3	22	D13
24	G4	23	D14
25	G5	24	D15
26	GND	33	GND
27	GND		
28	GND	33	GND
29	B0	11	D2
30	B1	12	D3
31	B2	13	D4
32	GND	34	GND
33	B3	14	D5
34	B4	15	D6
35	B5	16	D7
36	GND	34	GND
37	ENAB	37	DE
38	NC		
39	VCC	5	+3.3 V
40	VCC	6	+3.3 V
41	NC		

* The polarity of both synchronous signals are negative.

4.3 Installation of the SVGA Driver

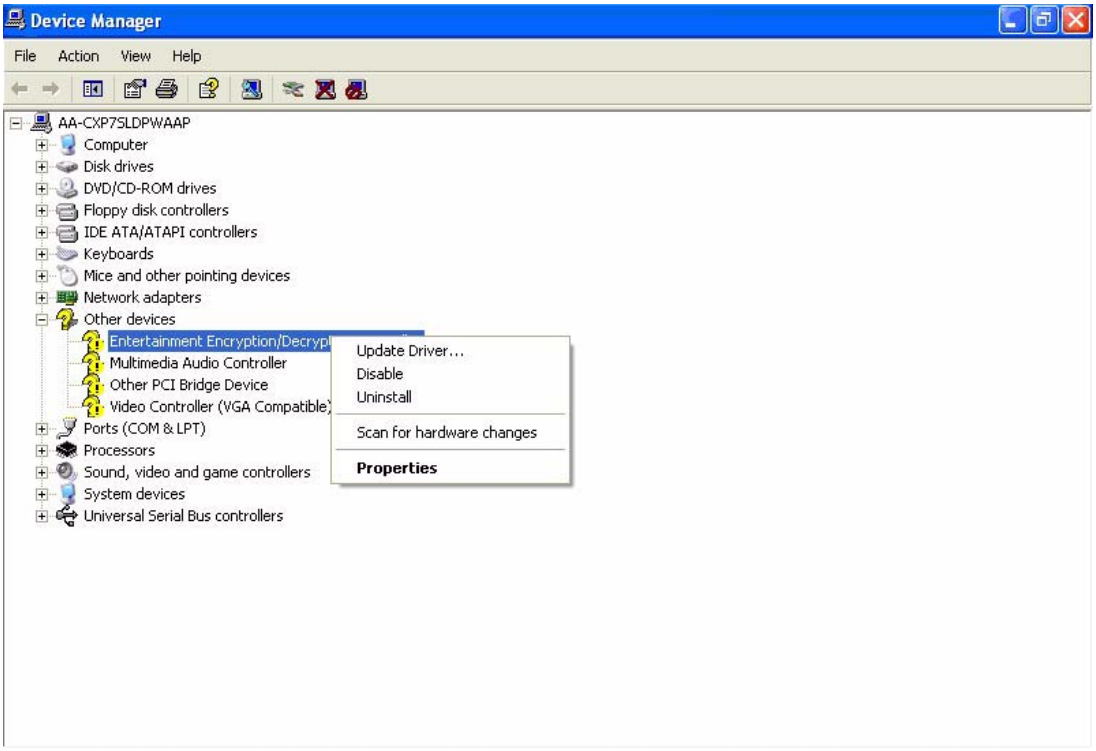
Complete the following steps to install the SVGA driver. Follow the procedures in the flow chart that apply to the operating system that you are using within your board.

Note!

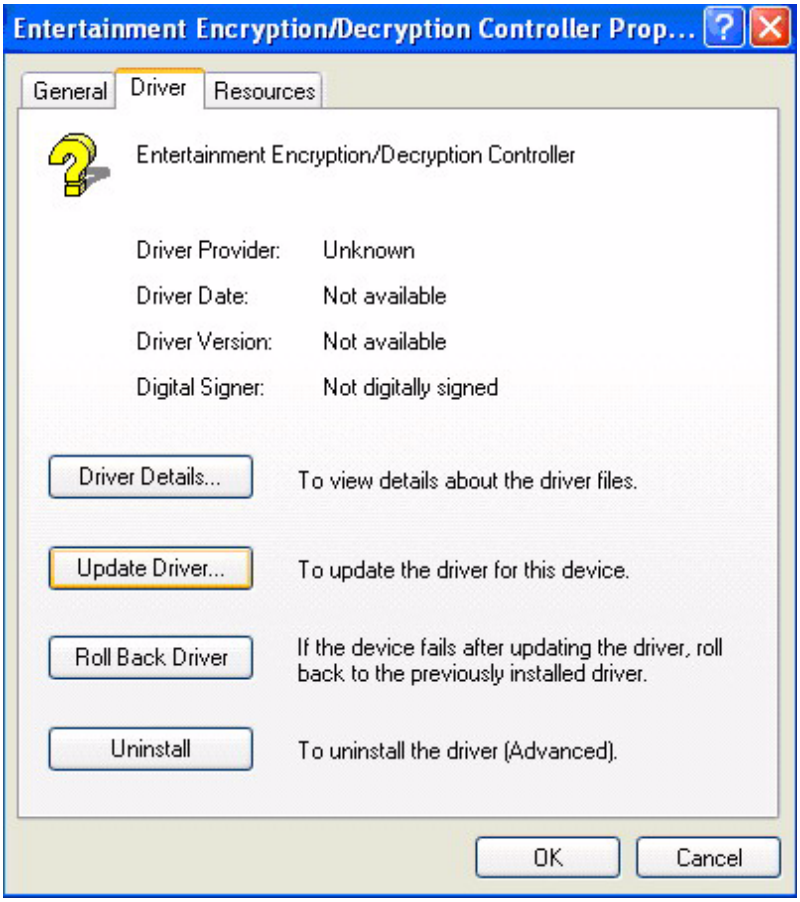
1. *The windows illustrations in this chapter are intended as examples only. Please follow the listed steps, and pay attention to the instructions which appear on your screen.*
2. *For convenience, the CD-ROM drive is designated as "D" throughout this chapter.*

4.3.1 Installation chipset AES driver

1. Open device manager, right click on entertainment then, click on properties



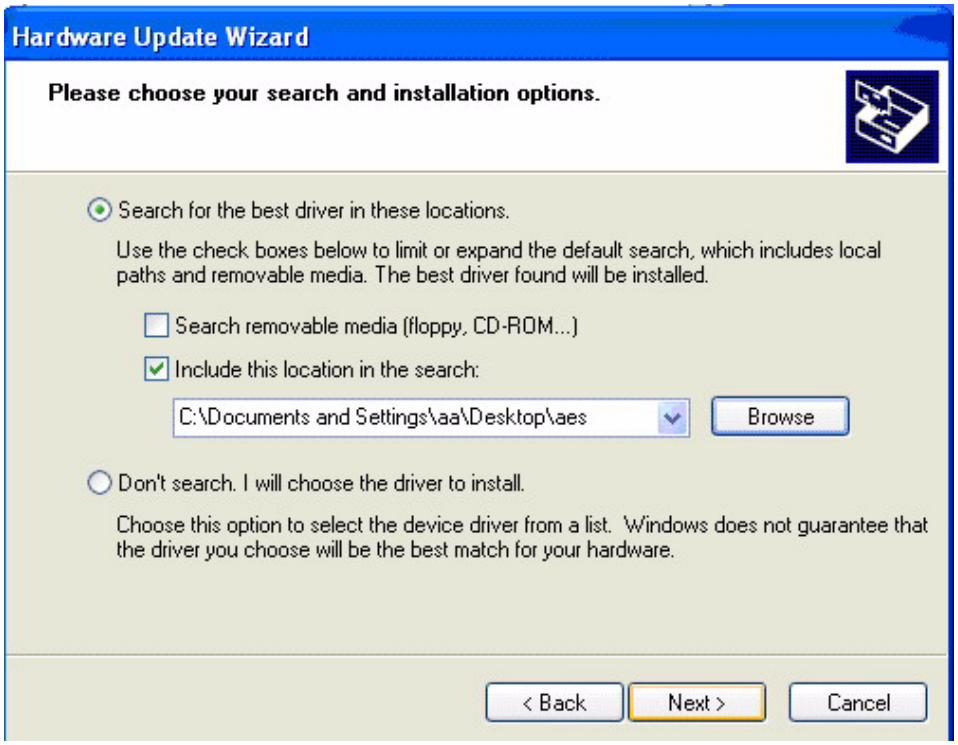
2. Go to driver page and click on update driver.



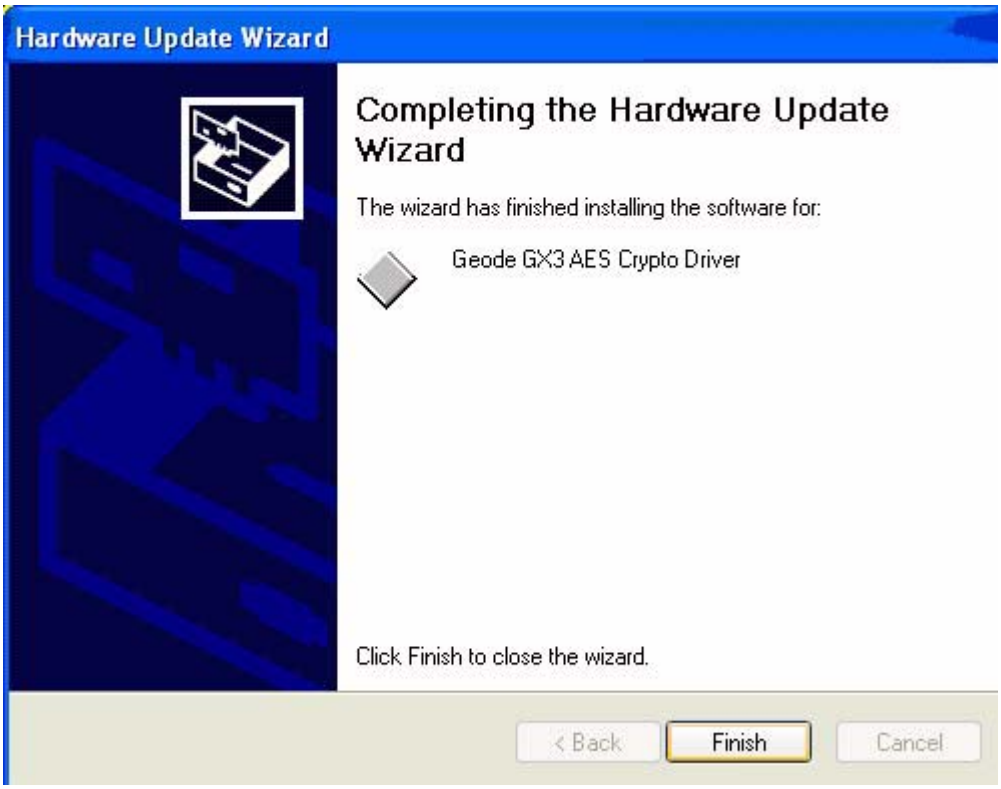
3. Click on install from specific folder and click on next.

4. Click on browse and select target folder, then, click OK.

5. Click on next.

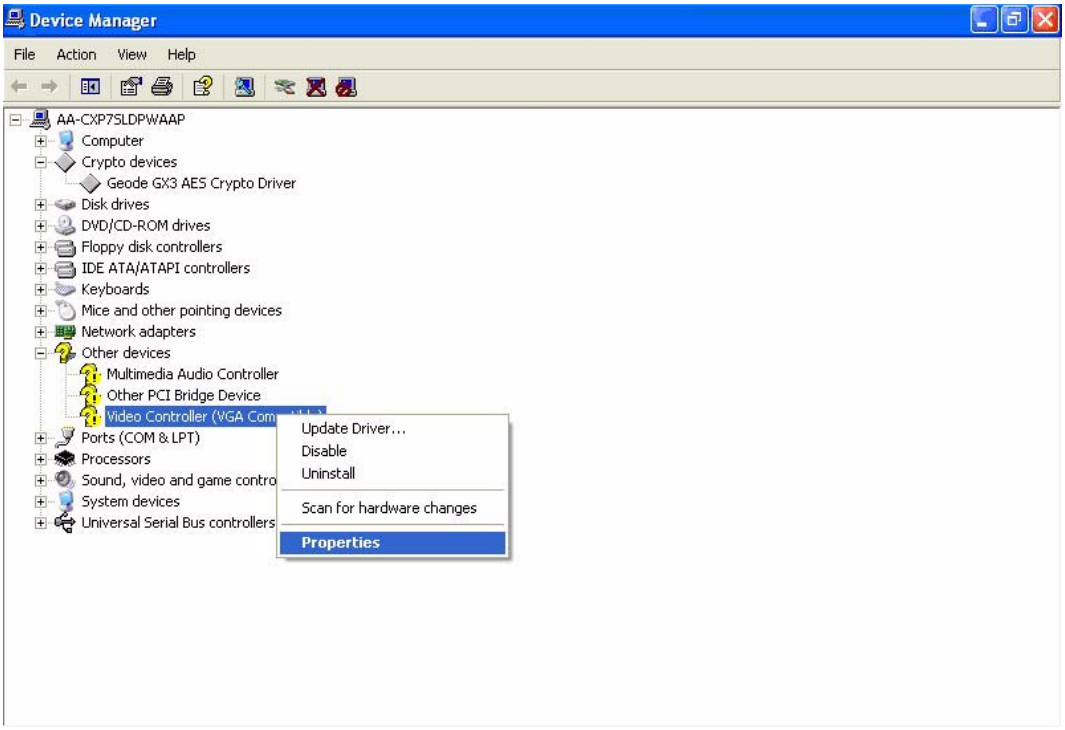


6. Click on finish.

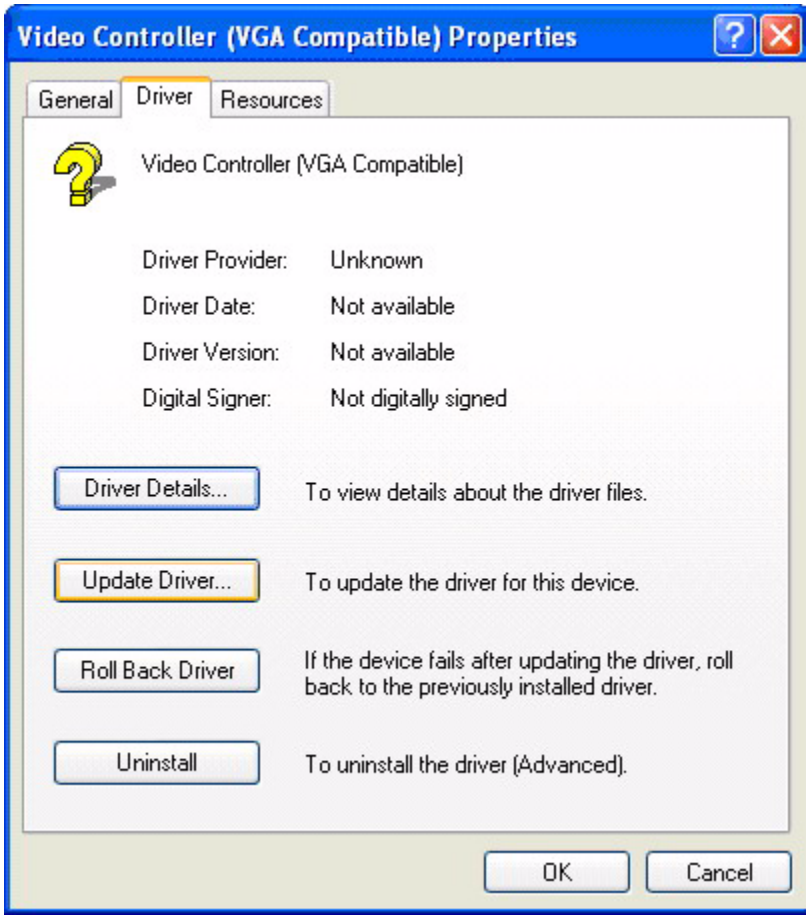


4.3.2 Installation of VGA driver

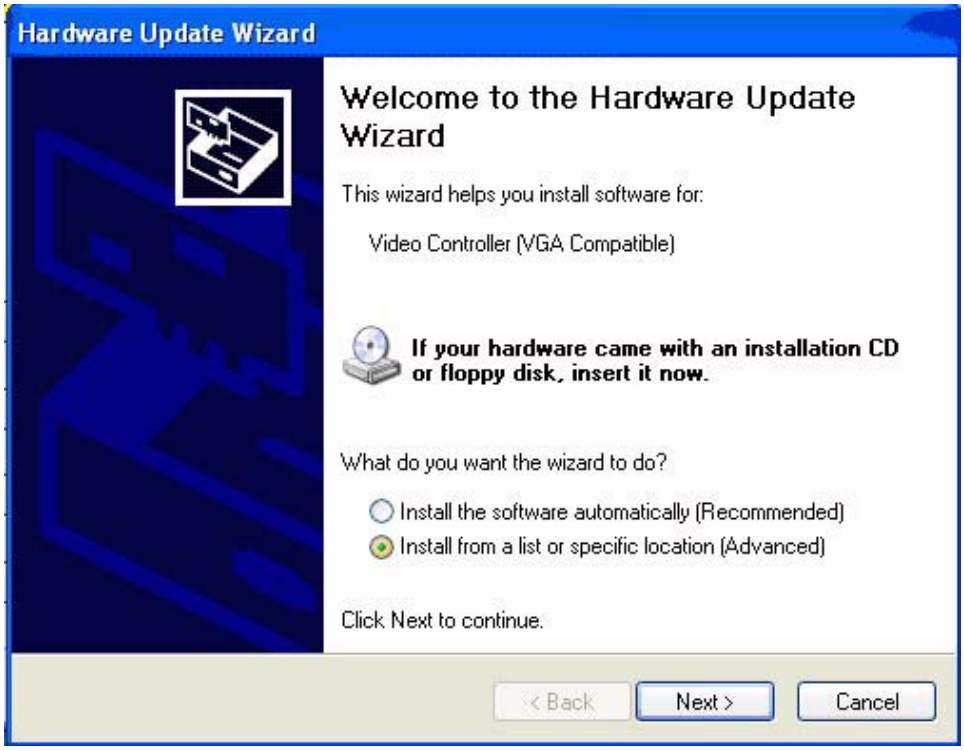
1. Right click on video, and click “ Properties”.



2. Go to driver page and click on update driver.

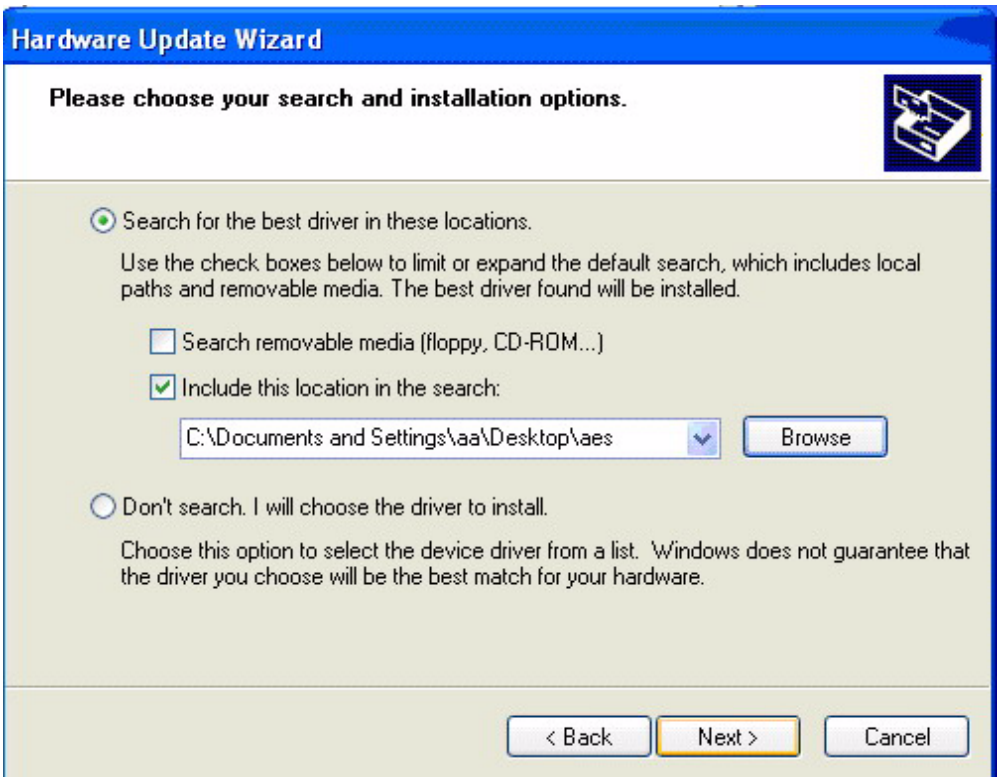


3. Click on install from specific folder and click on next.



4. Click on browse and select target folder, then click OK.

5. Click on next, then click on finish.



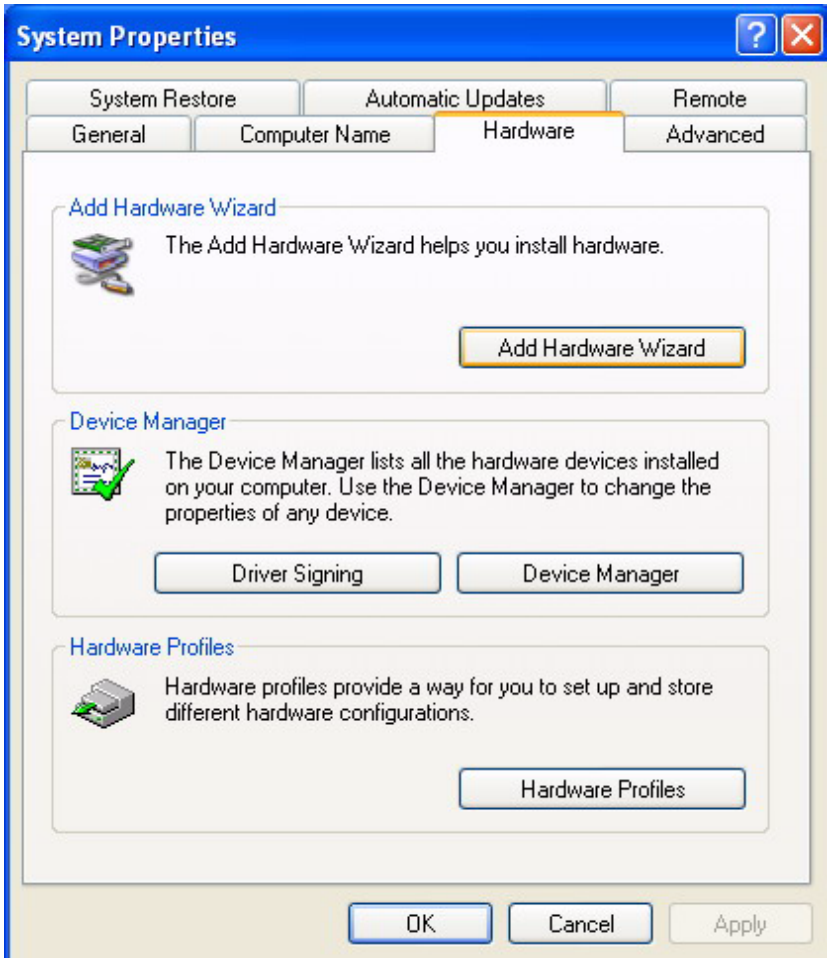
6. Then click on continue anyway.

7. Click on finish.

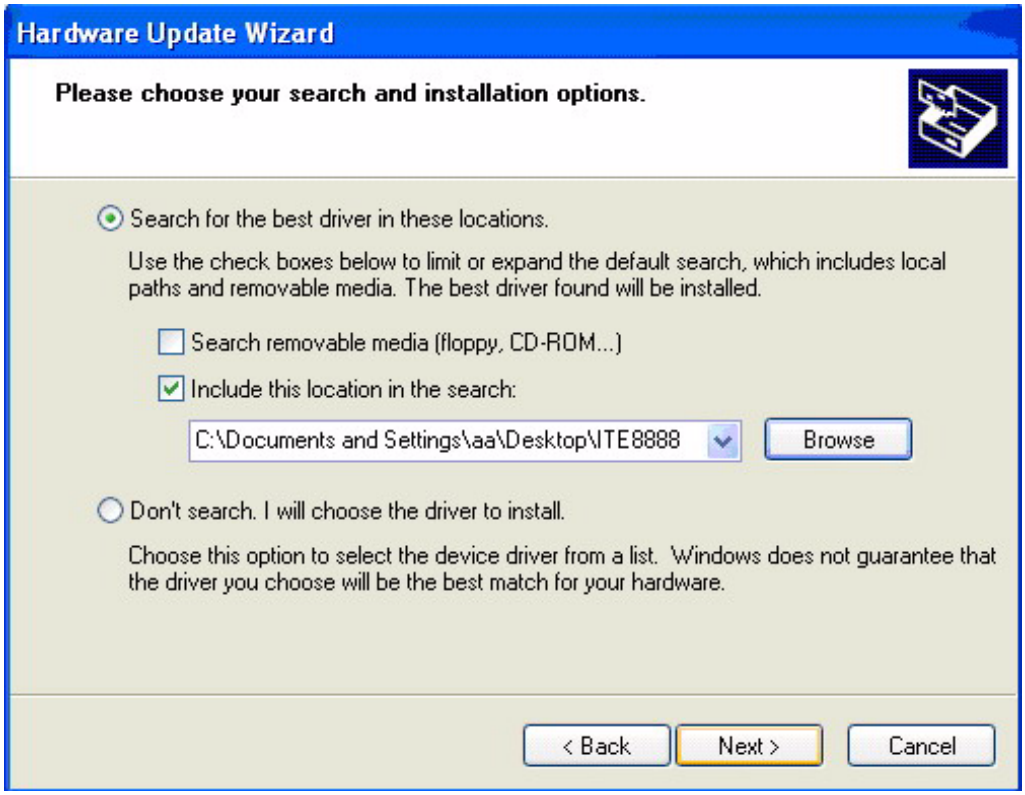
4.3.3 PCI Bridge

The system may detect the PCI bridge automatically. If the question mark is shown on device manager, please install the driver as below:

1. Click “Add Hardware Wizard” and add new hardware wizard



2. Search the right directory of PCI bridge for IT8888G driver.



3. Installation finished.

4.4 Further Information

For further information about the AGP/VGA installation of your PCM-3355, including driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

Intel website: *www.intel.com*

Advantech websites: *www.advantech.com*

www.advantech.com.tw

Chapter 5

Ethernet Interface

This chapter provides information on Ethernet configuration.

Sections include:

- Introduction
- Installation of Ethernet drivers for Windows XP
- Further information

5.1 Introduction

The board is equipped with a high performance 32-bit Ethernet chipset which is fully compliant with IEEE 802.3 100 Mbps CSMA/CD standards. It is supported by major network operating systems. With 100Base-T compatible. The network boot feature can be utilized by incorporating the boot ROM image files for the appropriate network operating system. The boot ROM BIOS files are combined with system BIOS, which can be enabled/disabled in the BIOS setup.

5.2 Installation of Ethernet driver

1. Click on the .LAN. folder and double click the .*.exe. file.
2. Follow the instructions that the driver installation wizard shows.
3. The system will help you to complete the driver installation.

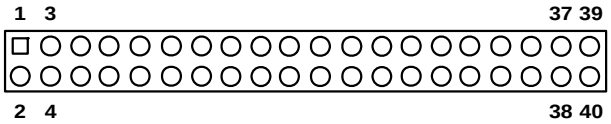
Appendix A

Pin Assignments

This appendix contains information of a detailed or specialized nature. It includes:

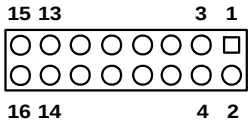
A.1 Jumper and Connector Tables

Table A.1: CN1: TTL LCD Connector



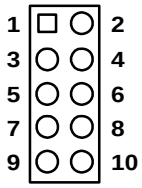
Part Number	1653920200
Footprint	SPH20X2
Description	*CONN. 40P 90D 1.25mm SMD WO/Pb DF13-40DP-1.25V
Pin	**Pin Name**
1	+5V
2	+5V
3	GND
4	GND
5	+3.3V
6	+3.3V
7	NC
8	GND
9	PD0
10	PD1
11	PD2
12	PD3
13	PD4
14	PD5
15	PD6
16	PD7
17	PD8
18	PD9
19	PD10
20	PD11
21	PD12
22	PD13
23	PD14
24	PD15
25	PD16
26	PD17

Table A.2: CN2: CRT connector



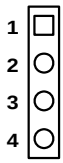
Part Number	1653208260		
Footprint	BH8X2SV		
Description	BOX HEADER 8*2P 180D(M) 2.00mm		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	VGA_z_R	OUT	Analog
2	NC		
3	VGA_z_G	OUT	Analog
4	GND	GND	
5	VGA_z_B	OUT	Analog
6	NC		
7	NC		
8	VGA_y_DDAT	OUT	+5V
9	GND	GND	
10	VGA_y_HS	OUT	+5V
11	GND		
12	VGA_y_VS	OUT	+5V
13	GND	GND	
14	VGA_y_DCLK	OUT	+5V
15	GND	GND	
16	NC		

Table A.3: CN3: USB connector



Part Number	1653005260		
Footprint	HD_5x2P_79_N10		
Description	PIN HEADER 2*5P 180D(M) 2.0mm SMD IDIOT-PROOF		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	+V5_USB0	PWR	+5V
2	+V5_USB0	PWR	+5V
3	USB0_z_P-	I/O	
4	USB0_z_P+	I/O	
5	USB1_z_P-	I/O	
6	USB1_z_P+	I/O	
7	GND		
8	GND		
9	GND		
10	NC		

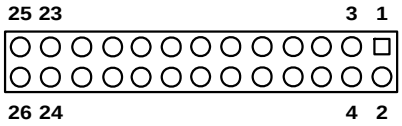
Table A.4: CN4: Power IN connector



Part Number	1655004110
Footprint	WF_4P_98_A2544WR2-4P_R1_D
Description	WAFER 2.54mm 4P 90D(M) DIP W/LOCK W/O Pb

Pin	Pin Name	Signal Type	Signal Level
1	+12V	PWR	+12V
2	GND		
3	GND		
4	+5V	PWR	+5V

Table A.5: CN5:LPT connector



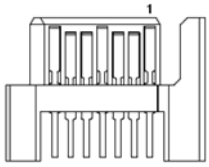
Part Number	1653213260
Footprint	BH13X2SV
Description	BOX HEADER 13*2P 180D(M) 2.0mm SMD

Pin	Pin Name	Signal Type	Signal Level
1	LPT_z_STB#	OUT	+5V
2	LPT_z_AFD#	OUT	+5V
3	LPT_z_PD0	I/O	+5V
4	LPT_z_ERR#	IN	+5V
5	LPT_z_PD1	I/O	+5V
6	LPT_z_INIT#	OUT	+5V
7	LPT_z_PD2	I/O	+5V
8	LPT_z_SLIN#	OUT	+5V
9	LPT_z_PD3	I/O	+5V
10	GND		
11	LPT_z_PD4	I/O	+5V
12	GND		
13	LPT_z_PD5	I/O	+5V
14	GND		
15	LPT_z_PD6	I/O	+5V
16	GND		
17	LPT_z_PD7	I/O	+5V
18	GND		
19	LPT_ACK#	IN	+5V
20	GND		
21	LPT_BUSY	IN	+5V
22	GND		
23	LPT_PE	IN	+5V
24	GND		
25	LPT_SLCT	I/O	+5V
26	NC		

Table A.6: CN6: PC/104 connector

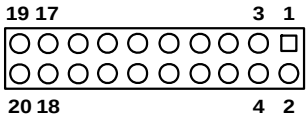
Part Number	1653130428
Footprint	PC104
Description	PC104(ISA)

Table A.7: CN7:SATA connector



Part Number	1654000128		
Footprint	SATA-LD11071S02		
Description	Serial ATA 7P 90D(M) SMD 15u Reverse		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	GND	GND	
2	SATA0_TX+	I/O	Analog
3	SATA0_TX-	I/O	Analog
4	GND	GND	
5	SATA0_RX-	I/O	Analog
6	SATA0_RX+	I/O	Analog
7	GND	GND	

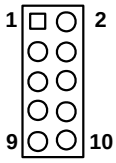
Table A.8: CN8: COM1/2 connector



Part Number	1653210260		
Footprint	HD_10x2P_79_BOX_JVE		
Description	BOX HEADER 10*2P 180D(M) 2.0mm SMD W/O Pb		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	COM1_DCD#	IN	+5V
2	COM1_DSR#	IN	+5V
3	COM1_RXD	IN	+5V
4	COM1_RTS#	I/O	+5V
5	COM1_TXD	OUT	+5V
6	COM1_CTS#	IN	+5V
7	COM1_DTR#	I/O	+5V
8	COM1_RI#	IN	+5V
9	GND		
10	GND		
11	COM2_DCD#	IN	+5V
12	COM2_DSR#	IN	+5V
13	COM2_RXD	IN	+5V
14	COM2_RTS#	I/O	+5V
15	COM2_TXD	OUT	+5V

Table A.8: CN8: COM1/2 connector			
16	COM2_CTS#	IN	+5V
17	COM2_DTR#	I/O	+5V
18	COM2_RI#	IN	+5V
19	GND		
20	GND		

Table A.9: CN9:LAN Connector			



Part Number	1653205260		
Footprint	BH5X2SV		
Description	BOX HEADER SMD 5*2 180D (M) 2.0mm		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	+V3.3_LAN0	PWR	+3.3V
2	LAN0_ACTLED	OUT	+3.3V
3	LAN0_RX+	I/O	+3.3V
4	LAN0_RX-	I/O	+3.3V
5	LAN0_LILED	OUT	+3.3V
6	GND		
7	NC		
8	GND		
9	LAN0_TX+	I/O	+3.3V
10	LAN0_TX-	I/O	+3.3V

Table A.10: CN10: ISA -5V Connector			
Part Number	1653003101		
Footprint	HD_3x1P_79_D		
Description	PIN HEADER 3*1P 180D(M) 2.0mm DIP SQUARE W/O Pb		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	-V12	PWR	-12V
2	-V5	PWR	-5V
3	GND		

Table A.11: CN11:SMBUS connector			
Part Number	1653002101		
Footprint	JH2X1V-2M		
Description	Pin header BOX 2.0mm 2P 180D MALE W/LOCK		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	SMB_CLK	Out	+3.3V
2	SMB_DAT	I/O	+3.3V

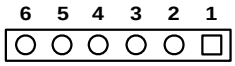
Table A.12: CN12: BATTERY connector

Part Number	1655902032		
Footprint	WHL2V-125		
Description	WAFER 2P 180D(M) 1.25mm 53047-0210		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	+VBAT	PWR	+3.3V
2	GND	GND	

Table A.13: CN13: BUZZER connector

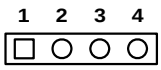
Part Number	1655902032		
Footprint	WHL2V-125		
Description	WAFER 2P 180D(M) 1.25mm 53047-0210		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	+V5_BUZZER	PWR	+5V
2	GND	GND	

Table A.14: CN14: KB/MS connector



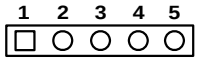
Part Number	1655306020		
Footprint	WHL6V-2M		
Description	WAFER BOX 2.0mm 6P 180D(M) W/LOCK		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	KB_z_CLK	I/O	+5V
2	KB_z_DAT	I/O	+5V
3	MS_z_CLK	I/O	+5V
4	GND		
5	+V5_PS2	PWR	+5V
6	MS_z_DAT	I/O	+5V

Table A.15: CN15: Power/HDD LED connector



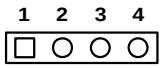
Part Number	1653004101		
Footprint	JH4X1V-2M		
Description	PIN HEADER 4*1P 180D(M) 2.0mm DIP WO/Pb		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	+VCC_PW_LED	Out	+5V
2	GND		
3	+VCC_HD_LED	OUT	+5V
4	HDD_LED	OUT	+5V

Table A.16: CN16: Panel Inverter Power



Part Number	1653000849		
Footprint	JH5X1V-51462805		
Description	PIN HEADER 1*5P 180D(M£©2.54 DIP 5-146280-5 TYC		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	+V12_LCD	PWR	+12V
2	GND	GND	
3	FP_ENABKL	OUT	+3.3V
4	FP_VBR	OD	+3.3V
5	+V5	PWR	+5V

Table A.17: CN17: COM3 RS-422/485 connector



Part Number	1653004101		
Footprint	HD_4x1P_79_D		
Description	PIN HEADER 4*1P 180D(M) 2.0mm DIP WO/Pb		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	RS422_RXD-	IN	+5V
2	RS422_RXD+	IN	+5V
3	RS485-422_TXD+	OUT	+5V
4	RS485-422_TXD-	OUT	+5V

Table A.18: CN18: Compact Flash connector

Part Number	1653525260
Footprint	3M_N7E50-D516PK-30
Description	CF HEADER 50P 90D(M) SMD type I N7E50-D516PK-30

Table A.19: CN19: DDR SODIMM connector

Part Number	1651000051
Footprint	DDR-SODIMM-RVS65
Description	SODIMM 200P DDR RVS 0.6mm H=6.5 SMD WO/Pb Tyco

Table A.20: SW1: COM3 RS-422/485 switch (Default RS-485)		
Part Number	1600000071	
Footprint	SW_3P_CJS-1201TA1	
Description	SW SMD 3P SPDT P=6.0mm W=2.5mm CJS-1201TA1 COPAL	
Pin	**Pin Name**	**Setting**
1	COM2_485_RXD	Default set
2	UART2_RXD	
3	COM2_422_RXD	

Table A.21: SW2: Compact Flash Master/Slave switch (Default Slave)		
Part Number	1600000071	
Footprint	SW_3P_CJS-1201TA1	
Description	SW SMD 3P SPDT P=6.0mm W=2.5mm CJS-1201TA1 COPAL	
Pin	**Pin Name**	**Setting**
1	CF_CSEL#_L	Master
2	CF_CSEL#	-
3	CF_CSEL#_H	Slave

Table A.22: SW3: SATA Master/Slave switch (Default Master)		
Part Number	1600000071	
Footprint	SW_3P_CJS-1201TA1	
Description	SW SMD 3P SPDT P=6.0mm W=2.5mm CJS-1201TA1 COPAL	
Pin	**Pin Name**	**Setting**
1	MSSEL_H	Slave
2	MSSEL	-
3	MSSEL_L	Master

Appendix B

System Assignments

This appendix contains information of a detailed nature. It includes:

- System I/O ports
- 1st MB memory map
- DMA channel assignments
- Interrupt assignments

B.1 System I/O Ports

Table B.1: System I/O ports

Addr. range (Hex)	Device
000-01F	DMA controller
020-021	Interrupt controller 1, master
040-05F	8254 timer
060-06F	8042 (keyboard controller)
070-071	Real-time clock, non-maskable interrupt (NMI) mask
87-8A	DMA page register
0A0-0A1	Interrupt controller 2
0C0-0DF	DMA controller
1F0-1F8	Fixed disk
278-27F	Reserved (Parallel port 2,LTP3)
2E8-2EF	Reserved (Series port 4)
2F8-2FF	Serial port 2
378-37F	Parallel printer port 1 (LPT 2)
3B0-3BF	Monochrome display and printer adapter (LPT1)
3D0-3DF	Color/graphics monitor adapter
3E8-3EF	Series port 3
3F0-3F7	Diskette controller
3F8-3FF	Serial port 1

* PNP audio I/O map range from 220 ~ 250H (16 bytes)
  MPU-401 select from 300 ~ 330H (2 bytes)

B.2 1st MB memory map

Table B.2: 1st MB memory map

Addr. range (Hex)	Device
F0000h - FFFFFh	System ROM
*CC000h - EFFFFh	Unused (reserved for Ethernet ROM)
C0000h - CBFFFh	Expansion ROM (for VGA BIOS)
B8000h - BFFFFh	CGA/EGA/VGA text
B0000h - B7FFFh	Unused
A0000h - AFFFFh	EGA/VGA graphics
00000h - 9FFFFh	Base memory

* If Ethernet boot ROM is disabled (Ethernet ROM occupies about 16 KB)
* E0000 - EFFFF is reserved for BIOS POST

B.3 DMA channel assignments

Table B.3: DMA channel assignments

Channel	Function
0	Available
1	Available (audio)
2	Floppy disk (8-bit transfer)
3	Available (parallel port)
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

* Audio DMA select 1, 3, or 5

** Parallel port DMA select 1 (LPT2) or 3 (LPT1)

B.4 Interrupt assignments

Table B.4: Interrupt assignments

Interrupt#	Interrupt source
IRQ 0	Interval timer
IRQ 1	Keyboard
IRQ 2	Interrupt from controller 2 (cascade)
IRQ 3	COM2
IRQ 4	COM1
IRQ 5	Reserved (COM4)
IRQ 6	FDD
IRQ 7	LPT1
IRQ 8	RTC
IRQ 9	Reserved (audio)
IRQ 10	Reserved (COM3)
IRQ 11	Reserved
IRQ 12	PS/2 mouse
IRQ 13	INT from co-processor
IRQ 14	Primary IDE

Appendix C

Mechanical Drawings

C.1 Mechanical Drawings

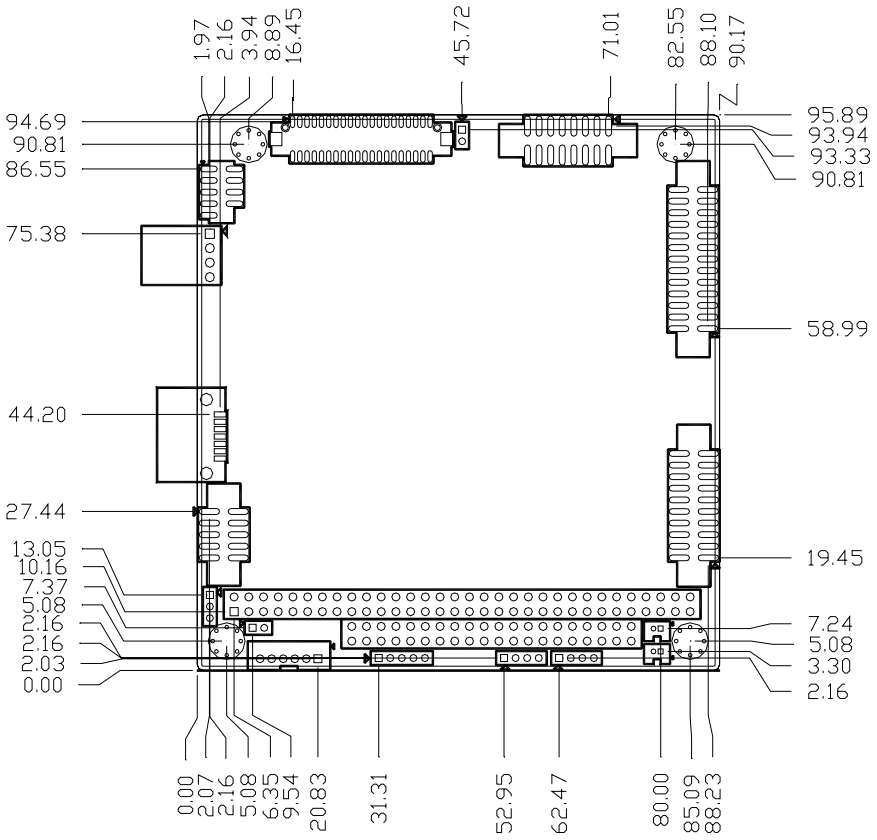


Figure C.1 PCM-3355 Mechanical Drawing (Componnent Side)

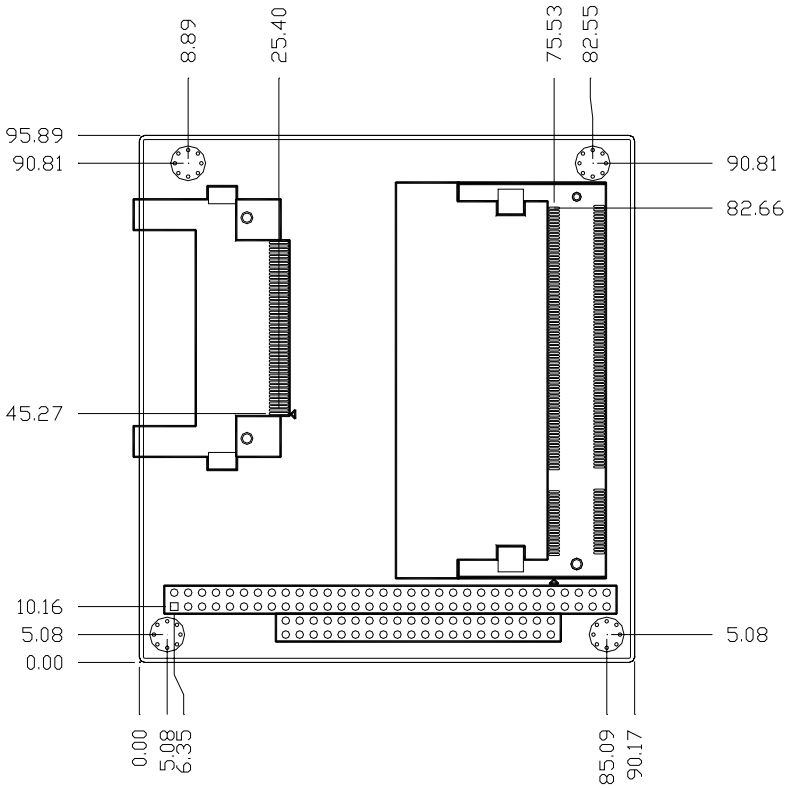


Figure C.2 PCM-3355 Mechanical Drawing (Solder Side)

Appendix D

Watchdog Timer

D.1 Watchdog Timer sample code

1. Watchdog function:

```
;The SCH3114 Runtime base I/O address is 800h
;Setting WatchDog time value location at offset 66h
;If set value "0", it is mean disable WatchDog function.
Superio_GPIO_Port = 800h
mov dx,Superio_GPIO_Port + 66h
mov al,00h
out dx,al
.model small
.486p
.stack 256
.data
SCH3114_IO EQU 800h
.code
org 100h
.STARTup
;================================================
;90H
;enable WDT function bit [0]=01h
;================================================
mov dx,SCH3114_IO + 90h
mov al,01h
out dx,al
;================================================
;65H
;bit [1:0]=Reserved
;bit [6:2]Reserve=00000
;bit [7] WDT time-out Value Units Select
;Minutes=0 (default) Seconds=1
;================================================
mov dx,SCH3114_IO + 65h ;
mov al,080h
out dx,al
;================================================
;66H
;WDT timer time-out value
;bit[7:0]=0~255
;================================================
mov dx,SCH3114_IO + 66h
mov al,01h
out dx,al
;================================================
;bit[0] status bit R/W
;WD timeout occurred =1
```

```
;WD timer counting = 0
;======================================================
mov dx,SCH3114_IO + 68h
mov al,01h
out dx,al
.exit
END
```

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