PCA-6775

ISA VIA Mark Half-sized SBC with VGA/LCD/LVDS/10/100 Ethernet/USB and SSD

User Manual

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http://www.advantech.com/eplatform

For technical support and service, please visit our support website at:
http://www.advantech.com/support

This manual is for the PCA-6775.

Part No.200K677511

1st Edition

Oct. 2007

Packing List

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

- 1 PCA-6775 Series Half-sized single board computer
- 1 Startup manual
- 1 CD for utility, drivers, and manual (in PDF format)
- 1 Power cable   p/n:1700000265
- 1 Y cable for PS/2 Keyboard, PS/2 Mouse   p/n:1700060202
- 1 FDD cable (600 mm)   p/n:1701340603
- 1 Printer port cable   p/n:1700260250
- 1 ATX feature cable   p/n:1700001276
- 1 EIDE (HDD) cable   p/n:1701400452
- Mini Jumper   p/n:1653302122

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

Model No. List   Description

Model No. List	Description
PCA-6775F-L0ALE	ISA VIA Mark 533 MHz Slot SBC w/1LAN/128 MB on board Memory/LVDS/CFC
PCA-6775F-Q0A1E	ISA VIA Mark 800 MHz Slot SBC w/1LAN/LVDS/CFC
PCA-67753F-L0A1E	ISA VIA Mark 533 MHz Slot SBC w/3LAN/LVDS/CFC
PCA-67753F-Q0A1E	ISA VIA Mark 800 MHz Slot SBC w/3LAN/LVDS/CFC

Additional Information and Assistance

Visit the Advantech website at **www.advantech.com** where you can find the latest information about the product.

Step 1. 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

FCC

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

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 device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense. The user is advised that any equipment changes or modifications not expressly approved by the party responsible for compliance would void the compliance to FCC regulations and therefore, the user's authority to operate the equipment.

Caution!

Achtung!

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

General Information

This chapter gives background information on the PCA-6775.

Sections include:

- Introduction
- Features
- Specifications
- Board layout and dimensions

Chapter 1 General Information

1.1 Introduction

The PCA-6775 series is a half-sized ISA bus CPU card designed with powerful VIA Mark processor, with VIA Mark and 686B chipset, which supports integrated graphic. For maximum performance, PCA-6775 also supports one 144 Pin SODIMM socket and SDRAM memory up to 512 MB.

Other onboard features include 1 EIDE, 1 FDD, 1 LPT, 4 USB 1.1, 2 COM ports (1 x RS-232 and 1 x RS-232/422/485), PS/2 KeyBoard/ mouse, watchdog, and a DI/O interface. The SSD solution supports Type I/II CompactFlash cards.

This product uses a VIA Mark that supports VGA/LVDS interface, 2 channel (36-bit) LVDS LCD panel. PCA-6775 supports AC97 audio with the addition of the optional PCM-231A-00A1E audio module.

The Ethernet interface supports 10/100Base-T by Realtek 8100C. Its dimension follows standard ISA slot PC, this makes it can match with all half-sized chassis and can operate in high vibration environment.

1.2 Features

- VIA Mark 533/800 MHz processor

- Fanless operation at 0 ~ 60° C

- On-board VGA/LVDS display

- Supports 100Base-T Ethernet on board

- Supports 4 x USB 1.1 ports

- Supports 2 Channel 36-bit LVDS for LCD

- Supports 133 MHz Front Side Bus

- Accepts PC-100/133 SDRAM

1.3 Specifications

1.3.1 Standard SBC Functions
- **CPU:** VIA Mark 533/800 MHz processor
- **System chipsets:** VIA Mark + 686B
- **BIOS:** Award 4Mbit Flash BIOS
- **System memory:** 144 pin SODIMMx1, supports 128 MB to 512 MB, accepts PC-100/133 SDRAM
- **2nd cache memory:** 64 KB
- **Enhanced IDE Interface:** Supports two enhanced IDE channels. Primary channel supports ATA-100 mode; Secondary channel only supports ATA-33 and PIO mode. CFC card occupies secondary IDE master
- **COM Ports:** Two COM ports: COM1: RS-232; COM2: RS-232/422/485
- **Printer Ports:** One printer port, support SPP/EPP/ECP
- **Keyboard/Mouse Connector:** Supports standard PC/AT Keyboard and a PS/2 Mouse
- **Power Management:** Supports Power Saving Mode, including Normal/Standard/Suspend modes. APM 1.2 compliant.
- **FDD interface:** Supports up to one FDD devices
- **DI/O interface:** 8-bit general purpose input/output
- **Watchdog Timer:** 0 ~ 255 Sec. System reset or IRQ11
- **Expansion Interface:** 16-bit ISA Slot
- **Battery:** Lithium 3V/196 mAH
- **USB:** 4 USB ports, USB 1.1 compliant

1.3.2 Display Interface
- **Chipset:** VIA Mark
- **Memory size:** Shared up to 32 MB
- **LVDS Interface:** Supports 2 channel (36-bit) LVDS LCD Panel
- **Display modes:**
    CRT Modes: 1920 x 1440 @ 85 Hz;
    LCD Modes: up to UXGA panel resolution with
                frequency range from 25 MHz to 112 MHz

1.3.3 Solid State disk
- Supports **CompactFlash Card Type I/II**

1.3.4 Ethernet interface
- **Chipset:** Realtek 8100C 10/100Mbps Lan Chip
- **Connection:** on-board RJ-45 connector
- **Interface:** IEEE 802.3u (100Base-T) protocol compatible

- **Built-in Boot ROM:** 8100C
- I/O address switchless setting

1.3.5 Mechanical and Environmental
- **Dimensions (L x W):** 185 x 122 mm (7.3" x 4.8")
- **Power Supply Voltage:**+5 V ± 5%, +12 V ± 5%
- **Power Consumption:**
    Max:
       +5 V @ 2.20 A, +12 V @ 0.04 A
    Typical:
       +5 V @ 1.64 A, +12 V @ 0.01 A
       (VIA Mark 533 MHz with 256 MB SDRAM)
- **Operating temperature:** 0 ~ 60° C (32 ~ 140° F) operation
- **Operating humidity:** 0% ~ 90% Relative Humidity, non-condensing

1.4 Board layout: dimensions
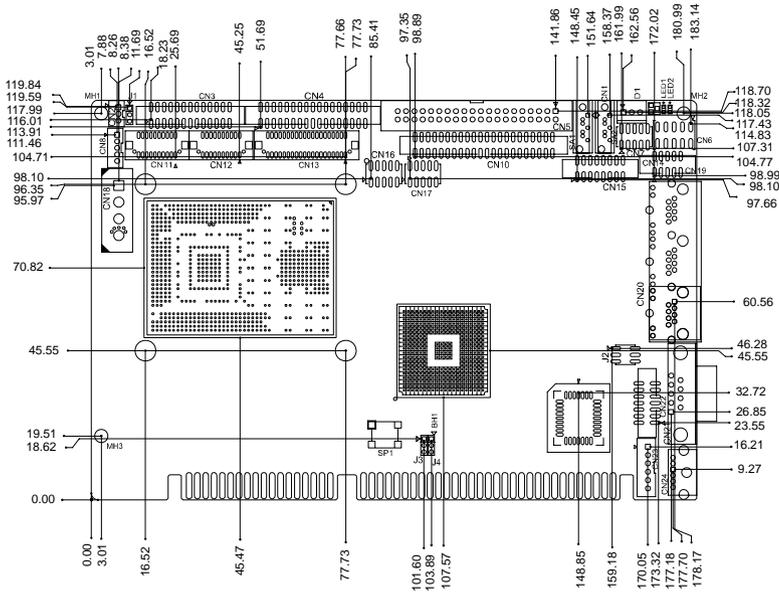
Figure 1.1: Board layout: dimensions (component side)
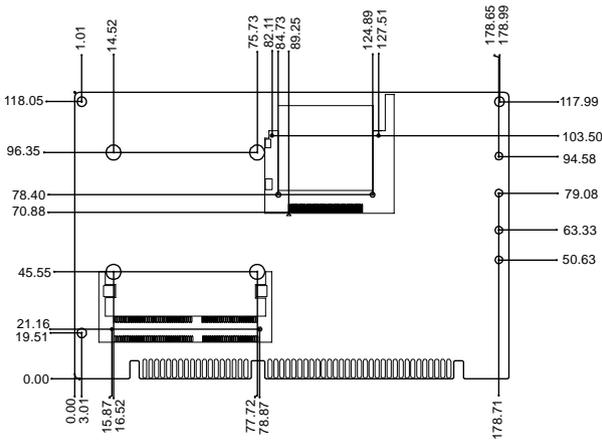
Figure 1.2: Board layout: dimensions (solder side)

Installation

This chapter explains the setup procedures of PCA-6775 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.

Chapter 2 Installation

2.1 Jumpers

The PCA-6775 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**
J1	LVDS Panel Power Select
J2	COM2 function selection
J3	AT power selection
J4	Clear CMOS Jumper

2.2 Connectors

Onboard connectors link the PCA-6775 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.

Label	Function
Table 2.2: Connectors	
Label	Function
CN1	System FAN connector
CN2	ATX Power Connector
CN3	Printer port Connector
CN4	Floppy disk device Connector
CN5	Primary IDE Connector
CN6	Front panel Connector
CN7	Digital I/O Connector
CN8	LCD inverter board Connector
CN9	ATX Power Connector
CN10	Secondary IDE Connector
CN11	LVDS Connector
CN12	LCD (24~35-bit) Connector
CN13	LCD (0~23-bit) Connector
CN14	AC97 Connector
CN15	VGA Connector
CN16	Universal Series Bus Connector1/2
CN17	Universal Series Bus Connector3/4
CN18	Power input Connector
CN19	LAN * 3 Connector
CN21	COM1 Connector
CN22	COM2 Connector (share with RS422 , RS485)
CN23	Extend Keyboard and Mouse Connector
CN24	Keyboard and Mouse Connector
CN25	Compact Flash Card Connector
CN26	Memory Connector SODIMM

2.3 Locating Connectors (component side)
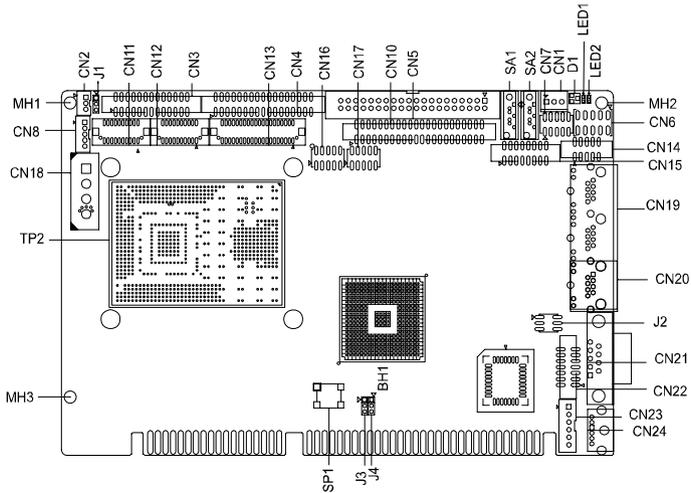
Figure 2.1: Jumper & Connector Locations

2.4 Locating Connectors (solder side)
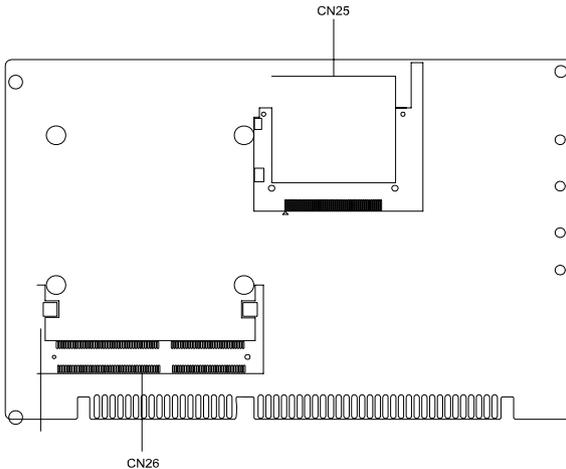
Figure 2.2: Connectors (component side)

2.5 Setting Jumpers

You may configure your card to match the needs of your application by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper, you connect the pins with the clip. To "open" a jumper, you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2, or 2 and 3.
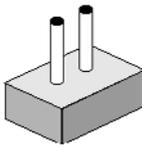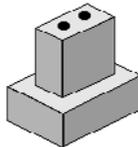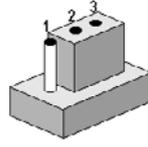
open   closed   closed 2-3

The jumper settings are schematically depicted in this manual as follows:.
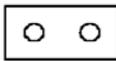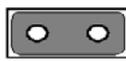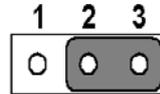
open   closed   closed 2-3

A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes. Generally, you simply need a standard cable to make most connections.

2.6 Clear CMOS (J4)

Warning! *To avoid damaging the computer, always turn off the power supply before setting "Clear CMOS." Before turning on the power supply, set the jumper back to "3.0 V Battery On."*

This jumper is used to erase CMOS data and reset system BIOS information.

The procedure for clearing CMOS is:

1.   Turn off the system.
2.   Short pin 1 and pin 2.
3.   Turn on the system. The BIOS is now reset to its default setting

Table 2.3:   Clear CMOS (JP1)

Clear CMOS

2.7 COM2 RS-232/422/485 Select (J2)
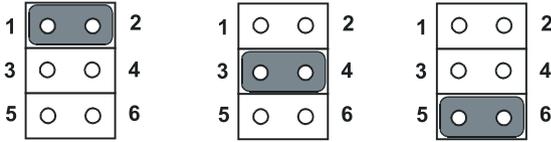
Table 2.4: COM2 RS-232/422/485 Select	
1-2 (default)	RS-232
3-4	RS-422
5-6	RS-485

2.8 AT Power select (J3)

Table 2.5: AT Power select	
Pin	**Function**
1-2 (default)	AT power
2-3	No Active

2.9 LVDS Panel Power Select (J1)

Table 2.6: LVDS Panel Power Select	
Pin	**Function**
1-2 (default)	+5 V
2-3	+3.3 V

2.10 Installing SODIMMs

Notes   *The modules can only fit into a socket one way. The gold pins must point down into the SODIMM socket.*

The procedure for installing SODIMMs appears below. Please follow these steps carefully.

1. Make sure that all power supplies to the system are switched off

2. Install the SODIMM card. Install the SODIMM so that its gold pins point down into the SODIMM socket.

3. Slip the SODIMM into the socket at a 45 degree angle and carefully fit the bottom of the card against the connectors.

4. Gently push the SODIMM into a perpendicular position until the clips on the ends of the SODIMM sockets snap into place.

5. Check to ensure that the SODIMM is correctly seated and all connector contacts touch. The SODIMM should not move around in its socket.

2.11 ATX power control Connector (CN5)

The PCA-6775 supports ATX power. CN5 supplies main power (+5 V , +12 V , 5 VSB), and it is a 6 x 2 pins power connector, w/Fixed Lock 4200-WS-A1.

Important   *Make sure that the ATX power supply can take at least a 10 mA load on the 5 V standby lead (5 VSB). If not, you may have difficulty powering on your system.*

2.12 Printer port Connector (CN3)

Normally, the printer port is used to connect the card to a printer. The PCA-6775 includes a multi-mode (SPP/EPP/ECP) printer port accessed via CN3 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 printer port is designated as LPT1, and can be disabled or changed to LPT2 or LPT3 in the system BIOS setup.

The printer port interrupt channel is designated to be IRQ7.

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

2.13 CompactFlash Socket

The PCA-6775 provides a 50-pin socket for CompactFlash card type I/II.

2.13.1 CompactFlash (CN23)
The CompactFlash card occupies a secondary IDE channel which can be enabled/disabled via the BIOS settings.

2.14 Floppy Connector (CN4)

You can attach up to two floppy drives to the PCA-6775's on-board controller. You can use any combination of 5.25" (360 KB and 1.2 MB) and/ or 3.5" (720 KB, 1.44 MB, and 2.88 MB) drives.

A 34-pin daisy-chain drive connector cable is required for a dual-drive system. On one end of the cable is a 34-pin flat-cable connector. On the other end are two sets of floppy disk drive connectors. Each set consists of a 34-pin flat-cable connector (usually used for 3.5" drives) and a printed-circuit board connector (usually used for 5.25" drives).

2.14.1 Connecting the floppy drive

1.   Plug the 34-pin flat-cable connector into CN4. Make sure that the red wire corresponds to pin one on the connector.

2.   Attach the appropriate connector on the other end of the cable to the floppy drive(s). You can use only one connector in the set. The set on the end (after the twist in the cable) connects to the A: drive. The set in the middle connects to the B: drive.

3.   If you are connecting a 5.25" floppy drive, line up the slot in the printed circuit board with the blocked-off part of the cable connector.

If you are connecting a 3.5" floppy drive, you may have trouble determining which pin is number one. Look for a number printed on the circuit board indicating pin number one. In addition, the connector on the floppy drive may have a slot. When the slot is up, pin number one should be on the right. Check the documentation that came with the drive for more information.

If you desire, connect the B: drive to the connectors in the middle of the cable as described above.

In case you need to make your own cable, you can find the pin assignments for the board's connector in Appendix B.

2.15 IDE Connector (CN5,CN10)

The PCA-6775 provides two IDE channels to which you can attach up to four Enhanced Integrated Device Electronics hard disk drives or CDROM to the PCA-6775's internal controller. The PCA-6775's IDE controller uses a PCI interface. This advanced IDE controller supports faster data transfer, PIO Mode 3 or Mode 4, UDMA 33/66/100 mode.

2.15.1 Connecting the hard drive

Connecting drives is done in a daisy-chain fashion. It requires one of two cables (not included in this package), depending on the drive size. 1.8" and 2.5" drives need a 1 x 44-pin to 2 x 44-pin flat-cable connector. 3.5" drives use a 1 x 44-pin to 2 x 40-pin connector.

Wire number 1 on the cable is red or blue, and the other wires are gray.

1.   Connect one end of the cable to CN5,CN10. Make sure that the red (or blue) wire corresponds to pin 1 on the connector, which is labeled on the board (on the right side).

2.   Plug the other end of the cable into the Enhanced IDE hard drive, with pin 1 on the cable corresponding to pin 1 on the hard drive. (See your hard drive's documentation for the location of the connector.)

If desired, connect a second drive as described above.

Unlike floppy drives, IDE hard drives can connect to either end of the cable. If you install two drives, you will need to set one as the master and one as the slave by using jumpers on the drives. If you install only one drive, set it as the master.

2.16 VGA/LVDS interface connections

The PCA-6775's display interface can drive conventional CRT displays and is capable of driving a wide range of LVDS flat panel displays as well. The board has two display connectors: one for standard CRT VGA monitors, and one for LVDS flat panel displays.

2.16.1 CRT display Connector (CN15)

CN10 is a standard 15-pin D-SUB connector used for conventional CRT displays. Users can drive a standard progressive scan analog monitor with pixel resolution up to 2048 x 1536 at 75 Hz. Pin assignments for CRT display connector CN10 are detailed in Appendix B.

2.16.2 LCD panel Connector (CN11,12,13)

PCA-6775 uses the VIA Mark to supports single or dual-channel LVDS panels up to UXGA panel resolution with frequency range from 25MHz to 112MHz.

The display mode can be 2 channels (2 x 18 bits) LVDS LCD panel displays Users can connect to either an 18, 24 or 36 bits LVDS LCD with CN11 and connect to TTL LCD with CN12,13.

2.16.3 LCD Inverter Connector (CN8)

The LCD inverter is connected to CN8 via a 5-pin connector to provide +5 V/+12 V power to the LCD display.

2.17 USB Connectors (CN16,CN17)

The PCA-6775 board provides up to four USB (Universal Serial Bus) ports. This gives complete Plug and Play, and hot attach/detach for up to **127** external devices. The USB interfaces comply with USB specification Rev. 2.0, and are fuse protected.

The USB interface is accessed through the 5 x 2-pin flat-cable connector, CN16 (USB1, 2),CN17 (USB3, 4). 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.

2.18 Ethernet Configuration

The PCA-6775 is equipped with a high performance 32-bit PCI-bus Ethernet interface which is fully compliant with IEEE 802.3u 10/100Mbps CSMA/CD standards. It is supported by all major network operating systems.

The PCA-6775 supports 10/100Base-T Ethernet connections with onboard RJ-45 connectors (CN19).

2.18.1 LAN Connector (CN19)
10/100Base-T or 1000Base-T connects to the PCA-6775 via a cable to a standard RJ-45 connector.

2.18.2 Network boot
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 included in the system BIOS, which is on the utility CD disc.

2.19 HDD LED/Reset/Power Button (CN6)

Next, you may want to install external switches to monitor and control the PCA-6775. These features are optional: install them only if you need them. CN6 is an 2 x 5 pin header, 180 degree, male. It provides connections for reset and power & hard disk indicator.

2.19.1 Reset (Pin7&Pin8)
If you install a reset switch, it should be an open single pole switch. Momentarily pressing the switch will activate a reset. The switch should be rated for 10 mA, 5 V.

2.19.2 HDD LED (Pin1&Pin2,Pin3&Pin4,Pin5&Pin6)
The HDD LED indicator for hard disk access is an active low signal (24 mA sink rate).

Pin3&Pin4

The HDD LED indicator would light when the power is on.

Pin5&Pin6

The HDD LED indicator would light when the computer is suspend.

2.19.3 Power Button (Pin9&Pin10)
PCA-6775 also supports power on/off button.

2.20 COM port Connector (CN21, CN22)

The PCA-6775 provides two COM ports (COM1: RS-232 and COM2: RS-232/422/485). CN21 supports COM1, CN22 supports COM2. And J2 is for COM2 RS-232/422/485 selection. It provides connections for serial devices (a mouse, etc.) or a communication network. You can find the pin assignments for the COM port connector in Appendix B.

2.21 MINI Keyboard Connector (CN24)

The PCA-6775 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 PCA-6775'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.

2.22 External Keyboard Connector (CN23)

In addition to the Mini keyboard connector on the PCA-6775's rear plate, there is an additional onboard external keyboard connector, allowing for greater flexibility in system design.

2.23 Audio Interface Connector (CN14)

The Audio Interface link is a 10 pin connector, the PCA-6775 can support Audio with the addition of optional PCM-231A-00A1. Detailed pin assignment refer to Appendix B.

2.24 DI/O Connector (CN7)

The PCA-6775 supports DI/O interface by CN7, which is a 7 x 2 dual line pin header, supply 8-bit general purpose input or output ports.

BIOS Operation

This chapter describes how to set BIOS configuration data.

Chapter 3 BIOS Operation

3.1 BIOS Introduction

Advantech provide full-featured AwardBIOS 6.0 and delivers the superior performance, compatibility and functionality that manufactures of Industry PC and Embedded boards, it's many options and extensions let you customize your products to a wide range of designs and target markets.

The modular, adaptable AwardBIOS 6.0 supports the broadest range of third-party peripherals and all popular chipsets, plus Intel, AMD, nVidia, VIA, and compatible CPUs from 386 through Pentium and AMD Geode, K7 and K8 (including multiple processor platforms), and VIA Eden C3 and C7 CPU.

You can use Advantech's utilities to select and install features to suit your designs for customers need.

3.2 BIOS Setup

The PCA-6775 Series system has build-in AwardBIOS with a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.

The CMOS SETUP saves the configuration in the CMOS RAM of the motherboard. When the power is turned off, the battery on the board supplies the necessary power to the CMOS RAM.

When the power is turned on, press the <Del> button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen.

CONTROL KEYS

< ↑ >< ↓ > < ← >< → >	Move to select item
<Enter>	Select Item
<Esc>	Main Menu - Quit and not save changes into CMOS Sub Menu - Exit current page and return to Main Menu
<Page Up/+>	Increase the numeric value or make changes
<Page Down/->	Decrease the numeric value or make changes
<F1>	General help, for Setup Sub Menu
<F2>	Item Help

<F5>	Load Previous Values
<F7>	Load Optimized Default
<F10>	Save all CMOS changes

3.2.1 Main Menu

Press <Del> to enter AwardBIOS CMOS Setup Utility, the Main Menu
will appear on the screen. Use arrow keys to select among the items and
press <Enter> to accept or enter the sub-menu.

```
              Phoenix - AwardBIOS CMOS Setup Utility

  ▶ Standard CMOS Features            ▶ PC Health Status
  ▶ Advanced BIOS Features              Load Setup Defaults
  ▶ Advanced Chipset Features           Set Password
  ▶ Integrated Peripherals              Save & Exit Setup
  ▶ Power Management Setup              Exit Without Saving
  ▶ PnP/PCI Configurations


  Esc : Quit       F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

                  Time, Date, Hard Disk Type...
```
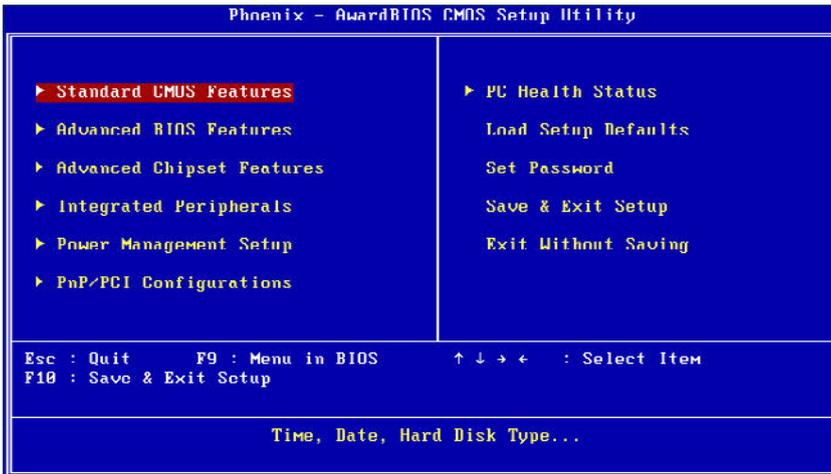
• **Standard CMOS Features**

This setup page includes all the items in standard compatible BIOS.

• **Advanced BIOS Features**

This setup page includes all the items of Award BIOS enhanced fea-
tures.

• **Advanced Chipset Features**

This setup page includes all the items of Chipset configuration features.

• **Integrated Peripherals**

This setup page includes all onboard peripheral devices.

• **Power Management Setup**

This setup page includes all the items of Power Management features.

- **PnP/PCI Configurations**

    This setup page includes PnP OS and PCI device configuration.

- **PC Health Status**

    This setup page includes the system auto detect CPU and system temperature, voltage, fan speed.

- **Load Setup Defaults**

    This setup page includes Load system optimized value, and the system would be in best performance configuration.

- **Set Password**

    Establish, change or disable password.

- **Save & Exit Setup**

    Save CMOS value settings to CMOS and exit BIOS setup.

- **Exit Without Saving**

    Abandon all CMOS value changes and exit BIOS setup.

3.2.2 Standard CMOS Features
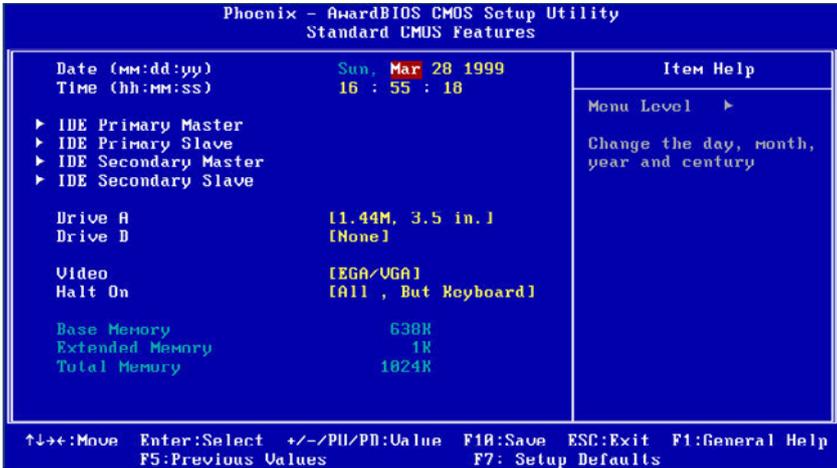
• **Date**

The date format is <week>, <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

• **Time**

The times format in <hour> <minute> <second>, base on the 24-hour time

• **IDE Primary Master**

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

• **IDE Primary Slave**

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

• **IDE Secondary Master**

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

• **IDE Secondary Slave**

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

- **Drive A / Drive B**

  The Item identifies the types of floppy disk drive A or drive B

  None   No floppy drive installed

  360K, 5.25"   5.25 inch PC-type standard drive; 360K byte capacity

  1.2M, 5.25"   5.25 inch AT-type high-density drive; 1.2M byte capacity

  720K, 3.5"   3.5 inch double-sided drive; 720K byte capacity

  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

- **Video**

  The item determines that VGA display support type.

  EGA/VGASupport VGA color mode.

  CGA 40   Support VGA color mode.

  CGA 80   Support VGA color mode.

  MONO   Support VGA mono mode.

- **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.

- **Base Memory**

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

- **Extended Memory**

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

• **Total Memory**

This item displays the total system memory size.

3.2.3 Advanced BIOS Features
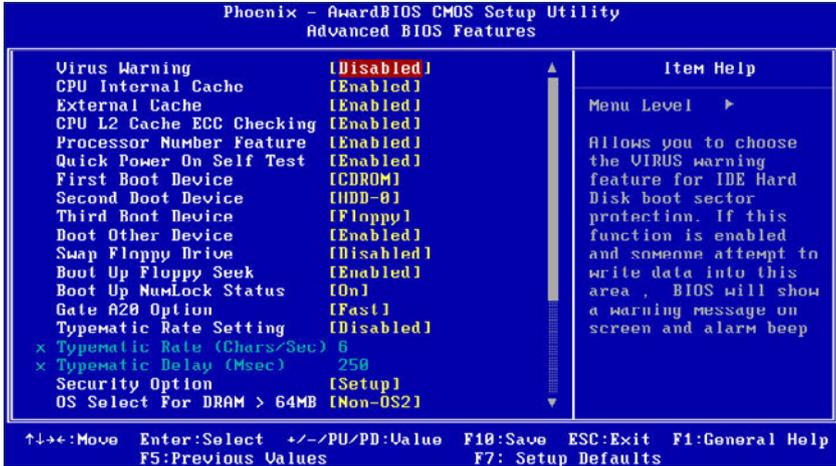
• **Virus Warning   [Disabled]**

This item allows user to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection.

• **CPU Internal Cache   [Enabled]**

This item allows user to enable CPU internal cache.

• **CPU L2 Cache ECC Checking   [Enabled]**

This item allows user to enable CPU L2 cache and ECC checking function.

• **Quick Power On Self Test   [Enabled]**

This field speeds up the Power-On Self Test (POST) routine by skipping retesting a second, third and forth time. Setup setting default is "enabled".

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

  Floppy　　　　　Select boot device priority by Floppy.

  LS120　　　　　Select boot device priority by LS120.

  Hard Disk　　　Select boot device priority by Hard Disk.

  CDROM　　　　Select boot device priority by CDROM.

  ZIP　　　　　　Select boot device priority by ZIP.

  USB-FDD　　　Select boot device priority by USB-FDD.

  USB-ZIP　　　　Select boot device priority by USB-ZIP.

  USB-CDROM　Select boot device priority by USB-CDROM.

  USB-HDD　　　Select boot device priority by USB-HDD.

  LAN　　　　　　Select boot device priority by LAN.

  Disabled　　　　Disable this boot function.

- **Swap Floppy Drive　　[Disabled]**

  This item enables users to swap floppy "A" and "B" identified without change hardware cable connection.

- **Boot Up Floppy Seek　　[Enabled]**

  When enabled, the BIOS will seek the floppy "A" drive one time

- **Boot Up NumLock Status　　[On]**

  This item enables users to activate the Number Lock function upon system boot

- **Typematic Rate Setting　　[Disabled]**

  This item enables users to set the two typematic controls items.

  This field controls the speed at

  - Typematic Rate (Chars/Sec)

    This item controls the speed at system registers repeated keystrokes.

    Eight settings are 6, 8, 10, 12, 15, 20, 24 and 30.

  - Typematic Delay (Msec)

    This item sets the time interval for displaying the first and second

    characters. Four delay rate options are 250, 500, 750 and 1000.

- **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)

- **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.

- **Video BIOS Shadow[Enabled]**

  Enabled copies Video BIOS to shadow RAM improves performance.

  - C8000-CBFFF Shadow   [Disabled]

    It's for shadow control of item.

  - CC000-CFFFF Shadow   [Disabled]

    It's for shadow control of item.

  - D0000-D3FFF Shadow   [Disabled]

    It's for shadow control of item.

  - D4000-D7FFF Shadow   [Disabled]

    It's for shadow control of item.

  - D8000-DBFFF Shadow[Disabled]

    It's for shadow control of item.

  - DC000-DFFFF Shadow   [Disabled]

- **Small Logo (EPA) Show   [Enabled]**

  Show EPA logo during system post stage.

3.2.4 Advanced Chipset Features

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                          Advanced Chipset Features

      DRAM Timing By SPD           [Enabled]          ▲        Item Help
   x  DRAM Clock                   Host CLK
   x  SDRAM Cycle Length           3                        Menu Level   ▶
   x  Bank Interleave              Disabled
      Memory Hole                  [Disabled]
      P2C/C2P Concurrency          [Enabled]
      System BIOS Cacheable        [Disabled]
      Video RAM Cacheable          [Disabled]
      Frame Buffer Size            [16M]
      AGP Aperture Size            [64M]
      AGP-4X Mode                  [Enabled]
      AGP Driving Control          [Auto]
   x  AGP Driving Value            DA
      Select Display Device        [Auto]
      Panel Type                   [TFT   800x600 18bit]
      Onboard Lan1                 [Enabled]
      Onboard Lan2                 [Enabled]
      Onboard Lan3                 [Enabled]
      OnChip USB                   [Enabled]          ▼

  ↑↓→←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save   ESC:Exit  F1:General Help
              F5:Previous Values               F7: Setup Defaults
```

> *Note: This "Advanced Chipset Features" option controls
> the configuration of the board's chipset, this page is
> developed by Chipset independent, for control
> chipset register setting and fine tune system perfor-
> mance. It is strongly recommended only technical
> users make changes to the default settings.*

- **DRAM Timing By SPD   [Enabled]**

    This item is use DRAM of default setting or not. User can choose dis-
    abled to modify different of DRAM setting.

- **DRAM Clock   [Host CLK]**

    This item is standard DRAM clock or not. User could use different set-
    ting to modify DRAM clock.

- **SDRAM Cycle Length   [3]**

    This item is control DRAM clock cycle of length, User can use it to
    changed different clock cycle length.

- **Bank Interleave   [Disabled]**

    This item is support DRAM interleaving technology. Enabled bank
    interleave can save time and improvement data transmission rate.

- **Memory Hole [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 of the expansion cards can only access memory at this area.

- **P2C/C2P Concurrency [Enabled]**

   This item is enable PCI bus access speed, P2C/C2P menus that PCI to CPU/CPU to PCI. BIOS default suggest to enabled.

- **System BIOS Cacheable   [Enabled]**

   This item allows the system BIOS to be cached to allow faster execution and better performance.

- **Video BIOS Cacheable   [Disabled]**

   This item allows the video BIOS to be cached to allow faster execution and better performance.

- **Frame Buffer Size   [16M]**

   This item enables users to set Video Memory size, system default is setting to "32 MB" to reference value.

- **AGP Aperture Size   [64M]**

   This item enables users to select size of system memory to support AGP graphic usage, system default is setting to "64 MB" to reference value.

- **AGP-4X Mode   [Enabled]**

   This item is supports the AGP 4X transfer protocol, The AGP 4X protocol must be supported by both the motherboard and graphics card for this feature to work.

- **AGP Driving Control   [Enabled]**

This item is supports the AGP Driving force, BIOS default setting is enable to automatic pick one value for booting. If you have troubleshooting or overclocking purpose, You can chose option by Manual.

- **AGP Driving Value   [DA]**

This item could to adjust AGP Driving force for troubleshooting or overclocking purpose. User set value range from "00" to "FF".

- **Select Display Device   [Auto]**

This item is provided output screen type selection. BIOS default value suggest to "Auto".

- **Panel Type   [TFT 800*600 18 bit]**

  This item is provided LCD panel resolution type selection. BIOS default value suggest to "TFT 800*600 18 bit".

- **Onboard Lan1   [Enabled]**

This item is controller to enabled or disabled motherboard of Lan1 device.

- **Onboard Lan2   [Enabled]**

This item is controller to enabled or disabled motherboard of Lan2 device.

- **Onboard Lan3   [Enabled]**

This item is controller to enabled or disabled motherboard of Lan3 device.

- **OnChip USB   [Enabled]**

This item is controller to enabled or disabled motherboard of USB controller.

- **USBKeyboard Support   [Disabled]**

This item is controller to enabled or disabled of USB keyboard under DOS/Legacy environment.

- **OnChip Sound   [Auto]**

This item is controller to enabled or disabled motherboard of sound device.

- **OnChip Modem   [Auto]**

This item is controller to enabled or disabled motherboard of modem device.

- **CPU to PCI Write Buffer   [Enabled]**

This item is enabled or disabled PCI write buffer for CPU, If disable buffer, It will directly write data from CPU to PCI, Although look like the faster, But CPU bus is fast than the PCI bus, CPU bus must to waiting for PCI bus ready for receive next data. So BIOS default value suggest to "Enabled".

- **PCI Dynamic Bursting[Enabled]**

This item is enabled or disabled PCI write buffer of bandwidth, If enabled this item, PCI bus will used 32-bit data write access. For good efficiency, BIOS default value suggest to "Enabled".

- **PCI Master 0 WS Write   [Enabled]**

   This item is enabled or disabled PCI master wait state, PCI bus will write immediately when set to enable. For good efficiency, BIOS default value suggest to "Enabled".

- **PCI Delay Transaction   [Disabled]**

   This item is enabled or disabled PCI Data Delay Transaction. The PCI device must to meet the PCI 2.1 compliant of target latency rule. BIOS default value suggest to "Disabled".

- **PCI#2 Access #1 Retry   [Enabled]**

   This item allows enabled or disabled that CPU to PCI write buffer. It will reattempt to write to PCI bus until successful. BIOS default value suggest to "Enabled".

- **AGP master 1 WS Write   [Enabled]**

   This item allows enabled or disabled that single delay write form AGP bus. BIOS default value suggest to "Enabled".

- **AGP master 1 WS read   [Enabled]**

   This item allows enabled or disabled that single delay read form AGP bus. BIOS default value suggest to "Enabled".

3.2.5 Integrated Peripherals

```
            Phoenix - AwardBIOS CMOS Setup Utility
                    Integrated Peripherals

   OnChip IDE Channel0        [Enabled]        ▲        Item Help
   OnChip IDE Channel1        [Enabled]
   IDE Prefetch Mode          [Enabled]              Menu Level   ►
   Primary Master    PIO      [Auto]
   Primary Slave     PIO      [Auto]
   Secondary Master PIO       [Auto]
   Secondary Slave  PIO       [Auto]
   Primary Master    UDMA     [Disable]
   Primary Slave     UDMA     [Auto]
   Secondary Master UDMA      [Auto]
   Secondary Slave  UDMA      [Auto]
   Init Display First         [PCI Slot]
   SATA Mode                  [BASE(non-RAID)]
   IDE HDD Block Mode         [Enabled]
   Onboard FDD Controller     [Enabled]
   Onboard Serial Port 1      [3F8/IRQ4]
   Onboard Serial Port 2      [2F0/IRQ3]
   UART 2 Mode                [Standard]
 × IR Function Duplex          Half             ▼

↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
           F5:Previous Values               F7: Setup Defaults
```

> *Note: This "Integrated Peripherals" option controls the con-
> figuration of the board's chipset, includes IDE, ATA,
> SATA, USB, AC97, MC97 and Super IO and Sensor
> devices, this page is developed by Chipset indepen-
> dent.*

- **OnChip IDE Channel0**

   This item enables chipset IDE device 0 of controller.

- **OnChip IDE Channel1**

   This item enables chipset IDE device 1 of controller.

- **IDE Prefetch Mode[Enabled]**

   This item allows enabled or disabled that IDE controller prefetch data
   from the IDE driver. BIOS default value suggest to "Enabled".

- **Primary Master PIO[Auto]**

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

- **Primary Slave PIO[Auto]**

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

- **Secondary Master PIO[Auto]**

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

- **Secondary Slave PIO[Auto]**

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

- **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".

- **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".

- **Secondary Master UDMA[Auto]**

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

- **Secondary Slave UDMA[Auto]**

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

- **Init Display First[PCI]**

  This item allows user to changed display card of adapter. BIOS default value suggest to "PCI".

- **SATA Mode   [BASE(non-RAID)]**

  This item allows user to changed SATA mode. BIOS default value suggest to "BASE(non-RAID)".

- **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".

- **Onboard FDD Controller   [Enabled]**

  This item allows user to enabled or disabled chipset FDD controller. BIOS default value suggest to "Enabled".

- **Onboard Serial Port 1   [3F8/IRQ4]**

  This item allows user to change com1 port of address. BIOS default value suggest to "3F8/IRQ4".

- **Onboard Serial Port 2   [2F8/IRQ3]**

  This item allows user to change COM2 port of address. BIOS default value suggest to "2F8/IRQ3".

- **UART 2 Mode   [Standard]**

  This item allows user to change COM2 port of transmission protocol. BIOS default value suggest to "Standard".

- **IR Function Duplex   [Half]**

  This item is default to show only. Except user to change item "UART 2 Mode" with another mode. BIOS default value suggest to "Half".

- **TX,RX Inverting Enable   [No, Yes]**

  This item is default to show only. Except user to change item "UART 2 Mode" with another mode. BIOS default value suggest to "No, Yes".

- **Onboard Parallel Port   [378/IRQ7]**

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

- **Onboard Parallel Mode   [Normal]**

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

- **ECP Mode Use DMA   [3]**

  This item allows user to change DMA channel for parallel port. BIOS default value suggest to "3".

- **Parallel Port EPP Type   [EPP1.9]**

  This item allows user to change EPP mode of version. BIOS default value suggest to "EPP1.9".

- **Onboard Legacy Audio   [Enabled]**

  This item is enabled or disabled that onboard of audio controller. BIOS default value suggest to "Enabled".

- **Sound Blaster   [Disable]**

  This item is enabled or disabled that onboard of sound blaster controller. BIOS default value suggest to"Disabled".

- **SB I/O Base Address   [220H]**

  This item allows user to change different address for sound blaster. BIOS default value suggest to "220H".

- **SB IRQ Select   [IRQ 5]**

  This item allows user to change different IRQ for sound blaster. BIOS default value suggest to "IRQ 5".

- **SB DMA Select   [DMA 1]**

  This item allows user to change different DMA for sound blaster. BIOS default value suggest to "DMA 1".

- **MPU-401   [Disable]**

  This item allows user to control that compatible MIDI interface. BIOS default value suggest to "Disabled".

- **MPU-401 I/O Address   [330-333H]**

  This item allows user to change that compatible MIDI interface address. BIOS default value suggest to "330-333H".

- **Game Port (200-207H)   [Enabled]**

  This item allows user to enabled or disabled that decode game port address. BIOS default value suggest to "Enabled".

3.2.6 Power Management Setup
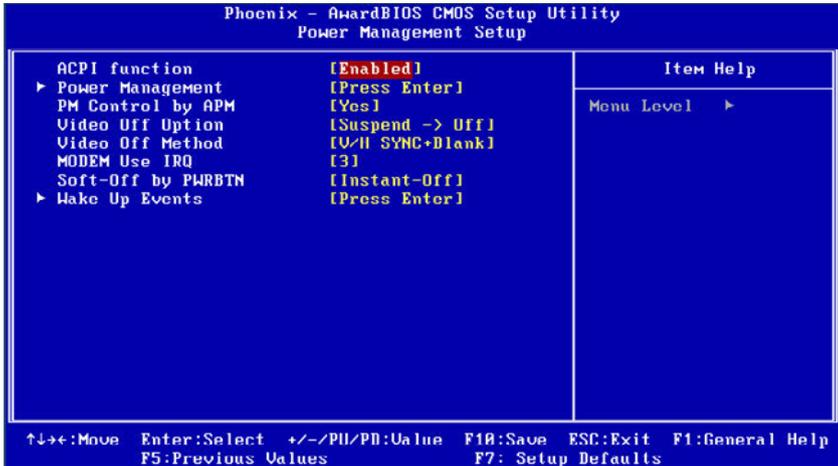
Note: *This "Power management Setup" option configure system to most effectively saving energy while operating in a manner consistent with your computer use style.*

- **ACPI Function   [Enabled]**

  This item defines the ACPI (Advanced Configuration and Power Management) feature that makes hardware status information available to the operating system, and communicate PC and system devices for improving the power management.

- **Power Management   [Press Enter[**

  This item allows user to select system power saving mode.

  Power management   **[User Define]**

  User Define   Allows user to set each mode individually. Suspend Mode= Disabled or 1 min ~ 1 hr.

  Min Saving   Minimum power management. Suspend Mode = 1 hr.

  Max Saving   Maximum power management. Suspend Mode = 1 min.

  HDD Power Down   **[Disable]**

It could change HDD power down suspend range from 1 Min to 15 Min.

Doze Mode **[Disable]**

It could change system Doze mode range from 1 Min to 1hour.

Suspend Mode **[Disable]**

It could change system suspend mode range from 1 Min to 1hour.

- **PM Control by APM [YES]**

  This item allows user to determine power management control by APM function or not.

- **Video Off Option [Suspend -> off]**

  This item allows user to turn off Video during system enter suspend mode.

- **Video Off Method [DPMS]**

  This item allows user to determine the manner is which the monitor is blanked.

  V/H SYNC+Blank This option will cause system to turn off vertical and horizontal synchronization ports and write blanks to the video buffer.

  Blank Screen This option only writes blanks to the video buffer.

  DPMS Initial display power management signaling.

- **Modem use IRQ [3]**

  This item allows user to determine the IRQ which the MODEM can use.

- **Soft-Off by PWR-BTTN [Enabled]**

  This item allows user to define function of power button.

  Instant-Off Press power button then Power off instantly.

  Delay 4 Sec Press power button 4 sec. to Power off.

- **Wake-Up Events [Press Enter]**

  This item is include wake up event by different device, Example: VGA, LPT, COM, HDD, FDD, PCI Master, PowerOn by PCI Card, Modem Ring Resume, RTC Alarm Resume, Primary INTR, IRQs Activity Monitoring.

3.2.7 PnP/PCI Configurations

```
                Phoenix - AwardBIOS CMOS Setup Utility
                        PnP/PCI Configurations
┌─────────────────────────────────────────────┬──────────────────────┐
│  PNP OS Installed         [No]               │      Item Help       │
│  Reset Configuration Data [Disabled]         ├──────────────────────┤
│                                              │ Menu Level   ►       │
│  Resources Controlled By  [Auto(ESCD)]       │                      │
│ x IRQ Resources            Press Enter       │ Select Yes if you are│
│ x DMA Resources            Press Enter       │ using a Plug and Play│
│                                              │ capable operating    │
│  PCI/VGA Palette Snoop    [Disabled]         │ system Select No if  │
│  Assign IRQ For VGA       [Enabled]          │ you need the BIOS to │
│  Assign IRQ For USB       [Enabled]          │ configure non-boot   │
│                                              │ devices              │
│                                              │                      │
│                                              │                      │
│                                              │                      │
│                                              │                      │
│                                              │                      │
├──────────────────────────────────────────────────────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│           F5:Previous Values              F7: Setup Defaults           │
└──────────────────────────────────────────────────────────────────────┘
```

> *Note: This "PnP/PCI Configurations" option is setting up
>   the IRQ and DMA (both PnP and PCI bus assign-
>   ments.*

• **PNP OS Installed   [No]**

This item allows user to determine PNP function install or not.

• **Reset Configuration Data   [Disabled]**

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

• **Resources Controlled By   [Auto (ESCD)]**

IRQ Resources

This item allows you respectively assign an interruptive type for IRQ-3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

- DMA Resources

This item allows you respectively assign an interruptive type for DMA, 0, 1, 2, 3, 4, 5, 6, and 7.

• **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.

• **Assign IRQ For VGA   [Enabled]**

This item allows user to determine whether assign VGA IRQ.

• **Assign IRQ For USB   [Enabled]**

This item allows user to determine whether assign USB IRQ.

3.2.8 PC Health Status

```
         Phoenix - AwardBIOS CMOS Setup Utility
                    PC Health Status

 Current System Temp.                    ┌─────────────────┐
 Current CPU Temp.                       │    Item Help    │
 Current CPUFAN1 Speed                   ├─────────────────┤
 Vcore                                   │ Menu Level   ▶  │
  3.3V                                   │                 │
   5V                                    │                 │
  12V                                    │                 │

 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values               F7: Setup Defaults
```
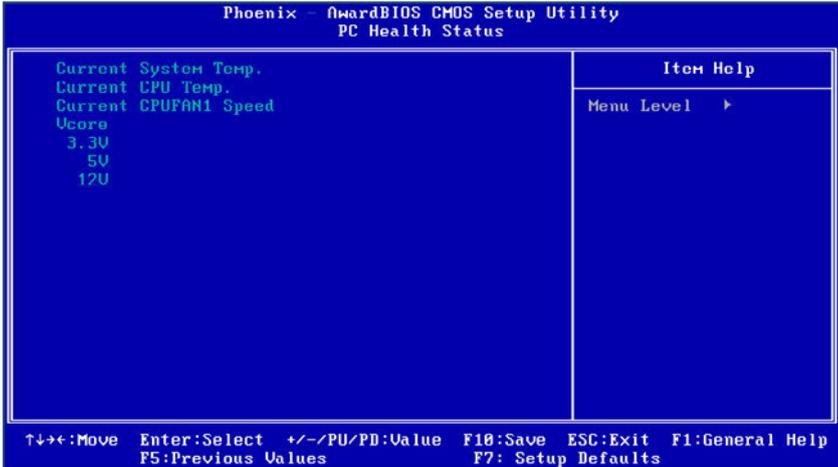
*Note: This "PC Health Status" option controls the Thermal,
           FAN and Voltage status of the board. this page is
           developed by Chipset independent.*

• **Current System Temp   [Show Only]**

 This item displays current system temperature.

• **Current CPU Temp   [Show Only]**

 This item displays current CPU temperature.

• **Current CPUFAN1 Speed   [Show Only]**

 This item displays current CPU/FAN1 Speed.

• **3.3V / 5V / 12V and VCore   [Show Only]**

 This item displays current CPU and system Voltage.

3.2.9 Load Setup Defaults

```
          Phoenix - AwardBIOS CMOS Setup Utility

 ▶ Standard CMOS Features          ▶ PC Health Status

 ▶ Advanced BIOS Features            Load Setup Defaults

 ▶ Advanced Chipset Features         Set Password

 ▶ Integrated Peripherals            Save & Exit Setup

 ▶ Power Management        ┌─────────────────────────────┐ Saving
                          │ Load Setup Defaults (Y/N)? N │
 ▶ PnP/PCI Configura      └─────────────────────────────┘


 Esc : Quit       F9 : Menu in BIOS        ↑ ↓ → ←    : Select Item
 F10 : Save & Exit Setup

                        Load Setup Defaults
```
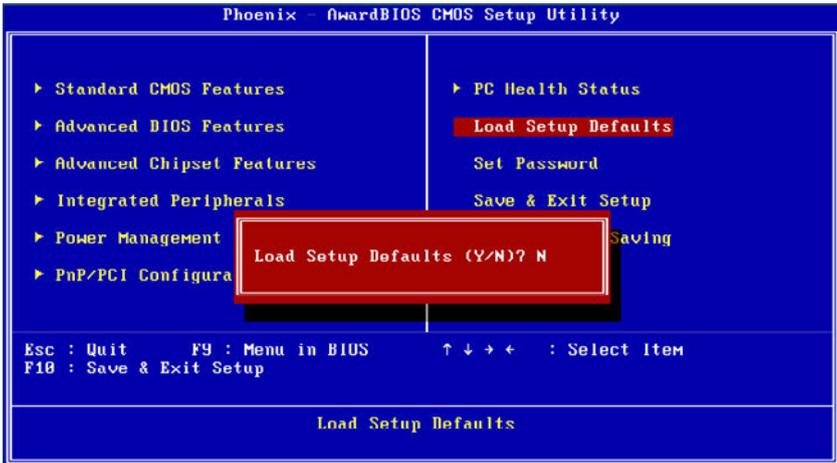
Note: *"Load Setup Defaults" loads the default system val-*
            ues directly from ROM. If the stored record created
            by the Setup program should ever become cor-
            rupted (and therefore unusable).

These defaults will load automatically when you turn the PCA-6775
Series system on.

3.2.10 Set Password

```
              Phoenix - AwardBIOS CMOS Setup Utility

  ┌──────────────────────────────────┬──────────────────────────────┐
  │                                  │                              │
  │  ▶ Standard CMOS Features        │  ▶ PC Health Status          │
  │                                  │                              │
  │  ▶ Advanced BIOS Features        │     Load Setup Defaults       │
  │                                  │                              │
  │  ▶ Advanced Chipset Features     │     Set Password              │
  │                                  │                              │
  │  ▶ Integrated Peripherals        │     Save & Exit Setup         │
  │                                  │                              │
  │  ▶ Power Management Setup        │     Exit Without Saving       │
  │                                  │                              │
  │  ▶ PnP/PCI Configurati │ Enter Password:     *****  │
  │                                                              │
  ├──────────────────────────────────┴──────────────────────────────┤
  │  Esc : Quit      F9 : Menu in BIOS    ↑ ↓ → ←   : Select Item   │
  │  F10 : Save & Exit Setup                                         │
  ├──────────────────────────────────────────────────────────────────┤
  │                  Change/Set/Disable Password                     │
  └──────────────────────────────────────────────────────────────────┘
```

Note: *To enable this feature, you should first go to the Advanced BIOS Features menu, choose the Security Option, and select either Setup or System, depending on which aspect you want password protected. Setup requires a password only to enter Setup. System requires the password either to enter Setup or to boot the system. A password may be at most 8 characters long.*

To Establish Password

1. Choose the "Set Password" option from the CMOS Setup Utility main menu and press <Enter>.

2. When you see "Enter Password", enter the desired password and press <Enter>.

3. At the "Confirm Password" prompt, retype the desired password, then press <Enter>.

4. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

To Change Password

1. Choose the "Set Password" option from the CMOS Setup Utility main menu and press <Enter>.

2. When you see "Enter Password", enter the existing password and press <Enter>.

3. You will see "Confirm Password". Type it again, and press <Enter>.

4. Select Set Password again, and at the "Enter Password" prompt, enter the new password and press <Enter>.

5. At the "Confirm Password" prompt, retype the new password, and press <Enter>.

6. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

To Disable Password

1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.

2. When you see "Enter Password"±, enter the existing password and press <Enter>.

3. You will see "Confirm Password". Type it again, and press <Enter>.

4. Select Set Password again, and at the "Enter Password" prompt, please don't enter anything; just press <Enter>.

5. At the "Confirm Password" prompt, again, don't type in anything; just press <Enter>.

6. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

3.2.11 Save & Exit Setup

```
┌──────────────────────────────────────────────────────────────┐
│           Phoenix - AwardBIOS CMOS Setup Utility             │
├──────────────────────────────────────────────────────────────┤
│                                                              │
│  ▶ Standard CMOS Features        ▶ PC Health Status          │
│                                                              │
│  ▶ Advanced BIOS Features          Load Setup Defaults       │
│                                                              │
│  ▶ Advanced Chipset Features       Set Password              │
│                                                              │
│  ▶ Integrated Peripherals          Save & Exit Setup         │
│                                                              │
│  ▶ Power Management  ┌─────────────────────────┐  Saving     │
│                      │ SAVE to CMOS and EXIT (Y/N)? Y         │
│  ▶ PnP/PCI Configura └─────────────────────────┘             │
│                                                              │
├──────────────────────────────────────────────────────────────┤
│  Esc : Quit      F9 : Menu in BIOS    ↑ ↓ → ←  : Select Item │
│  F10 : Save & Exit Setup                                     │
├──────────────────────────────────────────────────────────────┤
│                    Save Data to CMOS                          │
└──────────────────────────────────────────────────────────────┘
```
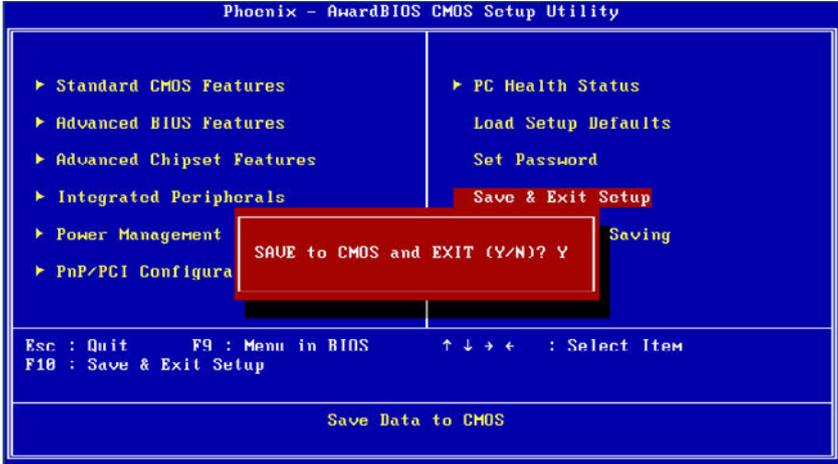
Note: *Type "Y" will quit the BIOS Setup Utility and save user setup value to CMOS.*

Type "N" will return to BIOS Setup Utility.

3.2.12 Quit Without Saving

```
         Phoenix - AwardBIOS CMOS Setup Utility

  ▶ Standard CMOS Features        ▶ PC Health Status

  ▶ Advanced BIOS Features          Load Setup Defaults

  ▶ Advanced Chipset Features       Set Password

  ▶ Integrated Peripherals          Save & Exit Setup

  ▶ Power Management S┌─────────────────────┐t Saving
                      │ Quit Without Saving (Y/N)? N │
  ▶ PnP/PCI Configurat└─────────────────────┘


  Esc : Quit      F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

                         Abandon all Data
```
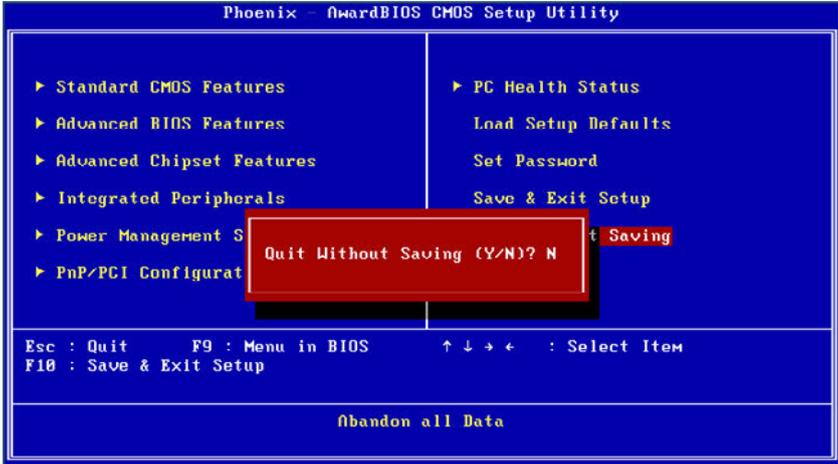
Note: Type "Y" will quit the BIOS Setup Utility without sav-
          ing to CMOS.

          Type "N" will return to BIOS Setup Utility.

CHAPTER

4

Driver Installation

This chapter gives you the driver installation information on the PCA-6775 Half-size CPU card.

Sections include:

• Driver Infroduction

• Driver Installation

Chapter 4 Driver Installation

4.1 Driver Introduction

The CD shipped with PCA-6775 should contain below drivers, please follow below sequence to complete the driver installation.

Step1   Install VIA INF Update Driver for Windows XP/2000.

Step2   Install VIA Graphic Driver for Windows XP/2000.

Step3   Install Realtek Ethernet Driver for Windows XP/2000.

Note: *For Windows XP Embedded, Windows CE 5.0 and Linux support, please contact sales representative or technical person.*

Note: *Downloading the update for Windows XP or Windows 2000 may be required for enabling USB 2.0 function. Details information please refers to below web link.*
http://www.microsoft.com/whdc/system/bus/USB/ USB2support.mspx

4.2 Driver Installation

Insert the PCA-6775 CD into the CD-ROM device, and follow below installation process from Step 1 to Step 4

4.2.1 Step 1- Install VIA INF Update Driver for Windows XP/2000

1.   Click on the "**Chipset**" 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.

4.2.2 Step 2- Install VIA Graphic Driver for Windows XP/ 2000

1. Click on the "**VGA**" 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.

4.2.3 Step 3- Install Realtek Ethernet Driver for Windows XP/2000

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.

.

Programming GPIO & Watchdog Timer

The board is equipped with a watchdog timer that resets the CPU or generates an interrupt if processing comes to a standstill for any reason. This feature ensures system reliability in industrial standalone or unmanned environments.

Appendix A Programming GPIO & Watchdog Timer

A.1 Supported GPIO Register

Below are detailed description of the GPIO addresses and programming sample.

A.1.1 GPIO Registers

CRF0 (GP10-GP17 I/O selection register. Default 0xFF)

When set to a '1', respective GPIO port is programmed as an input port.

When set to a '0', respective GPIO port is programmed as an output port.

CRF1 (GP10-GP17 data register. Default 0x00)

If a port is programmed to be an output port, then its respective bit can be read/written.

If a port is programmed to be an input port, then its respective bit can only be read.

CRF2 (GP10-GP17 inversion register. Default 0x00)

When set to a '1', the incoming/outgoing port value is inverted.

When set to a '0', the incoming/outgoing port value is the same as in data register.

Extended Function Index Registers (EFIRs)

The EFIRs are write-only registers with port address 2Eh or 4Eh on PC/AT systems.

Extended Function Data Registers (EFDRs)

the EFDRs are read/write registers with port address 2Fh or 4Fh on PC/AT systems.

A.1.2 GPIO Example program-1

 Enter the extended function mode, interruptible double-write

----

MOV DX,2EH

MOV AL,87H

OUT DX,AL

OUT DX,AL

Configure logical device 7(GP10~GP17), configuration register
CRF0,CRF1,CRF2

MOV DX,2EH

MOV AL,07H ; point to Logical Device Number Reg.

OUT DX,AL

MOV DX,2FH

MOV AL,07H ; select logical device 7

OUT DX,AL ;

MOV DX,2EH

MOV AL,F0

OUT DX,AL

MOV DX,2FH

MOV AL,00H ; 01:Input 00:output for GP10~GP17

OUT DX,AL

MOV DX,2EH

MOV AL,F2H ;

OUT DX,AL

MOV DX,2FH

MOV AL,00H   ;Set GPIO is normal not inverter

OUT DX,AL;

MOV DX,2EH

MOV AL,F1H

OUT DX,AL

MOV DX,2FH

MOV AL,??H ; Put the output value into AL

OUT DX,AL

 Exit extended function mode |

MOV DX,2EH

MOV AL,AAH

OUT DX,AL

A.2 Watchdog programming

Watchdog: (Index Port:300H , Data Port:301)

1, Enable Watchdog

Outportb (0x4e,0x77);

Outportb (0x4e,0x77); //Entry Configuration Mode

Outportb (0x4e,0x07); //Select Register Index 0x07

Outportb (0x4f,0x08); //Select LDN 8

Outportb (0x4e,0x30); //Select LDN 8 Register Index 0x30

Outportb (0x4f,0x01); //Enable Watchdog Timer Device

Outportb (0x4e,0xaa); //Exit Configuration Mode

2, Set Watchdog Timer to 20 Second Used Base Address 0x300~0x301

Outportb (0x300,0x03); Select Unit to One Second and clear Time out Status

; If 0x03 Change to 0x00 that Unit is 10 mini Second

; Or if change to 0x05 that unit is one minute

Outportb(0x301,0x14);

Outportb(0x301,0x14); //Set Timer to 20 Second and Enable Timer

3, Disable Watchdog

```
Outportb (0x4e,0x77);
Outportb (0x4e,0x77); //Entry Configuration Mode
Outportb (0x4e,0x07); //Select Register Index 0x07
Outportb (0x4f,0x08); //Select LDN 8
Outportb (0x4e,0x30); //Select LDN 8 Register Index 0x30
Outportb (0x4f,0x00); //Disable Watchdog Timer Device
Outportb (0x4e,0xaa); //Exit Configuration Mode
```

Pin Assignments

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

- Primary IDE Connector
- Floppy Connector
- Printer port Connector
- Secondary IDE (Slave) Connector
- ATX Power Connector
- COM port 3,4
- USB port 1, 2
- USB port 3, 4
- HDD LED/Reset/Power Button
- D-SUB VGA Connector
- LAN RJ45 Connector
- COM port 1, 2
- LVDS Connector
- AC'97 Interface Connector
- DI/O Connector
- MINI Keyboard Connector
- External Keyboard Connector
- LCD Inverter Power Connector
- CompactFlash Socket
- ATX Feature Connector
- -12V Power Connector

Appendix B Pin Assignments

Connector and Jumper Table

Table B.1: Connector and Jumper Table	
Label	**Function**
CN1	System FAN connector
CN2	ATX Power Connector
CN3	Printer port Connector
CN4	Floppy disk device Connector
CN5	Primary IDE Connector
CN6	Front panel Connector
CN7	Digital I/O Connector
CN8	LCD inverter board Connector
CN9	ATX Power Connector
CN10	Secondary IDE Connector
CN11	LVDS Connector
CN12	LCD (24~35-bit) Connector
CN13	LCD (0~23-bit) Connector
CN14	AC97 Connector
CN15	VGA Connector
CN16	Universal Series Bus Connector1/2
CN17	Universal Series Bus Connector3/4
CN18	Power input Connector
CN19	LAN * 3 Connector
CN21	COM1 Connector
CN22	COM2 Connector (share with RS422 , RS485)
CN23	Extend Keyboard and Mouse Connector
CN24	Keyboard and Mouse Connector
CN25	Compact Flash Card Connector
CN26	Memory Connector SODIMM

Table B.1: Connector and Jumper Table	
J1	LVDS Panel Power Select
J2	COM2 function selection
J3	AT power selectionl
J4	Clear CMOS Jumper

Connector and Jumper Pin Assignment

CN1	System FAN Connector	Type: Wafer 3 Pin
Pin	Pin name	
1	GND	
2	V+12 V	
3	FANSPEED	

CN2	ATX Power Connector	Type: Wafer Box 3 Pin
Pin	Pin name	
1	VCC5SB	
2	+5 V	
3	PS_ON#	

CN3	Printer Port Connector		Type: Box Header 26 Pin	
Pin	Pin name	Pin	Pin name	#: Low active
1	STB_O	2	PRN_AFD#	
3	LPD0_O	4	PRN_ERR#	
5	LPD1_O	6	PRN_INIT#	
7	LPD2_O	8	PRN_SLIN#	
9	LPD3_O	10	GND	
11	LPD4_O	12	GND	
13	LPD5_O	14	GND	
15	LPD6_O	16	GND	
17	LPD7_O	18	GND	

19	PRN_ACK#	20	GND
21	PRN_BUSY	22	GND
23	PRN_PE	24	GND
25	PRN_SLCT	26	GND

CN4	FDD Connector		Type: Box Header 34 Pin	
Pin	Pin name	Pin	Pin name	#: Low active
1	GND	2	RWC#	
3	GND	4	NC	
5	GND	6	NC	
7	GND	8	INDEX#	
9	GND	10	MOA#	
11	GND	12	DSB#	
13	GND	14	DSA#	
15	GND	16	MOB#	
17	GND	18	DIR#	
19	GND	20	STEP#	
21	GND	22	WD#	
23	GND	24	WE#	
25	GND	26	TRACK0#	
27	GND	28	WP#	
29	GND	30	RDATA#	
31	GND	32	NC	
33	GND	34	DSKCHG#	

CN5	Primary IDE Connector		Type: Box Header 2.54 40 Pin	
Pin	Pin name	Pin	Pin name	#: Low active
1	PIDERST#	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	KEY	
21	PDDREQX	22	GND	
23	PDIOWX#	24	WE#	
25	PDIORX#	26	GND	
27	PDRDYX	28	GND	
29	PDDACKX#	30	GND	
31	IIRQ	32	NC	
33	PDA1	34	IDE_CABLE	
35	PDA0	36	PDA2	
37	CS0P#	38	CS1P#	
39	PIDEACT#	40	GND	

CN6	Front Panel Connector		Type: Box Header 2.54 10 Pin
Pin	Pin name	Pin	Pin name
1	VCC	2	HDD_LED
3	VCC	4	GND
5	VCC_DUAL	6	SUS_LED
7	GND	8	SWIN_RST#
9	GND	10	PWRBTN#

CN7	DIO Connector	Type: PIN Header 10 Pin	
Pin	Pin name	Pin	Pin name
1	DIO0	2	DIO4
3	DIO1	4	DIO5
5	DIO2	6	DIO6
7	DIO3	8	DIO7
9	VCC	10	GND

CN8	LCD inverter Connector	Type: Wafer Box 5 Pin
Pin	Pin name	
1	V12_INVERTER	
2	GND	
3	ENABLE	
4	VBR	
5	VCC	

CN9	ATX Power Connector	Type: Wafer 3 Pin
Pin	Pin name	
1	PS_ON#	
2	NC	
3	VCC5SB	

CN10	Secondary IDE Connector		Type: Box Heade 44 Pin	
Pin	Pin name	Pin	Pin name	#: Low active
1	SIDERST#	2	GND	
3	SDD7	4	SDD8	
5	SDD6	6	SDD9	
7	SDD5	8	SDD10	
9	SDD4	10	SDD11	
11	SDD3	12	SDD12	
13	SDD2	14	SDD13	
15	SDD1	16	SDD14	
17	SDD0	18	SDD15	
19	GND	20	NC	
21	SDDREQX	22	GND	
23	SDIOWX#	24	GND	
25	SDIORX#	26	GND	
27	SDRDYX	28	GND	
29	SDDACKX#	30	GND	
31	IIRQ15	32	NC	
33	SDA1	34	INC	
35	SDA0	36	SDA2	
37	SDCS0#	38	SDCS1#	
39	SDDACT#	40	GND	
41	VCC	42	VCC	
43	GND	44	NC	

CN11	FPD (LVDS) Connector		Type: DF13-20 Pin	
Pin	Pin name	Pin	Pin name
1	GND	2	GND
3	LVDS0_D0+	4	LVDS1_D0+
5	LVDS0_D0-	6	LVDS1_D0-
7	LVDS0_D1+	8	LVDS1_D1+
9	LVDS0_D1-	10	LVDS1_D1-
11	LVDS0_D2+	12	LVDS1_D2+
13	LVDS0_D2-	14	LVDS1_D2-
15	LVDS0_CLK+	16	LVDS1_CLK+
17	LVDS0_CLK-	18	LVDS1_CLK-
19	VCC_LVDS	20	VCC_LVDS

CN12	FPD (LCD) Connector		Type: DF13-20 Pin	
Pin	Pin name	Pin	Pin name
1	GND	2	GND
3	FP_z_D24	4	FP_z_D25
5	FP_z_D26	6	FP_z_D27
7	FP_z_D28	8	FP_z_D29
9	FP_z_D30	10	FP_z_D31
11	FP_z_D32	12	FP_z_D33
13	FP_z_D34	14	FP_z_D35
15	GND	16	GND
17	NC	18	NC
19	NC	20	NC

CN13	FPD (LCD) Connector		Type: DF13-40 Pin
Pin	Pin name	Pin	Pin name
1	VCC_LCD	2	VCC_LCD
3	GND	4	GND
5	VCC3_LCD	6	VCC3_LCD
7	NC	8	GND
9	FP_z_D0	10	FP_z_D1
11	FP_z_D2	12	FP_z_D3
13	FP_z_D4	14	FP_z_D5
15	FP_z_D6	16	FP_z_D7
17	FP_z_D8	18	FP_z_D9
19	FP_z_D10	20	FP_z_D11
21	FP_z_D12	22	FP_z_D13
23	FP_z_D14	24	FP_z_D15
25	FP_z_D16	26	FP_z_D17
27	FP_z_D18	28	FP_z_D19
29	FP_z_D20	30	FP_z_D21
31	FP_z_D22	32	FP_z_D23
33	GND	34	GND
35	FP_z_CLK	36	FP_z_VS
37	FP_z_DE	38	FP_z_HS
39	NC	40	FP_ENVEE

CN14	AC97 Audio Connector		Type: PIN Header 10 Pin
Pin	Pin name	Pin	Pin name
1	VCC	2	AC_CLKBIT
3	AC_SDATIN	4	GND
5	GND	6	AC_SYNC
7	AC_SDATOUT	8	AC_RST#
9	VCC	10	PCBEEP

CN15	VGA Connector		Type: Box Header 16 Pin
Pin	**Pin name**	**Pin**	**Pin name**
1	VGA_z_R	2	VCC_VGA
3	VGA_z_G	4	GND
5	VGA_z_B	6	NC
7	NC	8	VGA_y_DDAT
9	GND	10	VGA_y_HS
11	GND	12	VGA_y_VS
13	GND	14	VGA_y_DCLK
15	GND	16	GND

CN16	USB Port 1/2 Connector		Type: Box Header 9 Pin
Pin	**Pin name**	**Pin**	**Pin name**
1	VCC_USB1	2	VCC_USB2
3	USB1N	4	USB2N
5	USB1P	6	USB2P
7	GND	8	GND
9	GND	10	

CN17	USB Port 3/4 Connector		Type: Box Header 9 Pin
Pin	**Pin name**	**Pin**	**Pin name**
1	VCC_USB3	2	VCC_USB4
3	USB3N	4	USB4N
5	USB3P	6	USB4P
7	GND	8	GND
9	GND	10	

CN18	Power Input Connector	Type: Big4 4 Pin
Pin	Pin name	
1	V+12V	
2	GND	
3	GND	
4	VCCIN	

CN19	LAN * 3 Connector	Type: RJ45	
Pin	Pin name	Pin	Pin name
A1	TXD0+	A2	TXD0-
A3	RXIN0+	A4	A0GND
A5	A0GND	A6	RXIN0-
A7	A0GND	A8	A0GND
A9	LAN0_2	A10	LAN0_LED0
A11	LAN0_1	A12	LAN0_LED1
B1	TXD1+	B2	TXD1-
B3	RXIN1+	B4	A1GND
B5	A1GND	B6	RXIN1-
B7	A10GND	B8	A1GND
B9	LAN1_2	B10	LAN1_LED0
B11	LAN1_1	B12	LAN1_LED1
C1	TXD2+	C2	TXD2-
C3	RXIN2+	C4	A2GND
C5	A2GND	C6	RXIN2-
C7	A2GND	C8	A2GND
C9	LAN2_2	C10	LAN2_LED0
C11	LAN2_1	C12	LAN2_LED1

CN21	COM1 Connector	Type: DB9 9 Pin
Pin	Pin name	
1	DCDA#	
2	RXA	
3	TXA	
4	DTRA#	
5	GND	
6	DSRA#	
7	RTSA#	
8	CTSA#	
9	RIA#	

CN22	COM2 Connector	Type: Box Header 14 Pin	
Pin	Pin name	Pin	Pin name
1	DCDB#	2	DSRB#
3	RXB	4	RTSB#
5	TXB	6	CTSB#
7	DTRB#	8	RIB#
9	GND	10	GND
11	TXD485+	12	TXD485-
13	RXD485+	14	RXD485-

CN23	Ext KB/MS Connector	Type: Wafer BOX 6 Pin
Pin	Pin name	
1	KCK	
2	KDT	
3	MDT	
4	GND	
5	KBVCC	
6	MCK	

CN24	PS2 KB/MS Connector	Type: PS2 6Pin
Pin	Pin name	
1	KDT	
2	MDT	
3	GND	
4	KBVCC	
5	KCK	
6	MCK	

CN25	Compact Flash Connector		Type: Type I / II	
Pin	Pin name	Pin	Pin name	#: Low active
1	GND	26	GND	
2	SDD3	27	SDD11	
3	SDD4	28	SDD12	
4	SDD5	29	SDD13	
5	SDD6	30	SDD14	
6	SDD7	31	SDD15	
7	SDCS1#	32	SDCS3#	
8	GND	33	NC	
9	GND	34	SDIOR#	
10	GND	35	SDIOW#	
11	GND	36	VCC	
12	GND	37	IIRQ15	
13	VCC	38	VCC	
14	GND	39	GND	
15	GND	40	NC	
16	GND	41	SIDERST#	
17	GND	42	SDRDY	
18	SDA2	43	SDDREQ	
19	SDA1	44	SDDACK#	
20	SDA0	45	SDDACT#	

21	SDD0	46	PDIAG#
22	SDD1	47	SDD8
23	SDD2	48	SDD9
24	NC	49	SDD10
25	GND	50	GND

Jumper Setting

J1	LVDS Power	* : Default value (1-2)
Close Pins	**Result**	
1-2	+5V	
2-3	3.3V *	

J2	COM2 function	* : Default value (1-2)
Close Pins	**Result**	
1-2	RS232 *	
3-4	RS422	
5-6	RS485	

J3	AT PWR	* : Default value (1-2)
Close Pins	**Result**	
1-2	AT Power	
2-3	No Active *	

J4	Clear CMOS	* : Default value (1-2)
Close Pins	**Result**	
1-2	NORMAL *	
2-3	CLEAR CMOS	

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

Appendix C System Assignments

C.1 System I/O Ports

Table C.1: System I/O ports

Addr. range (Hex)	Device
00-0F	Master DMA controller
20-21F	Master Interrupt controller
40-5F	Timer/Counter
60-6F	Keyboard controller
(60h)	KBC Data
(61h)	Misc Functions & Spkr Ctrl
(64h)	KBC Command/Status
70-77	RTC/COMS/NMI-Disable
78-7F	-available for system use-
80	-reserved-(debug port)
81-8F	DMA Page Registers
90-91	-available for system use-
92	System Control
93-9F	-available for system use-
A0-A1H	Slave Interrupt Controller
C0-DF	Slave DMA Controller
E0-FF	-available for system use-
100-CF7	-available for system use-
CF8-CFB	PCI Configuration Address
CFC-CFF	PCI Configuration Data
D00-FFFF	-available for system use-
200-20F	Game Port
2F8-2FF	COM2
378-37F	Printer Port (Standard & AFF)
3F0-3F1	Configuration Index/Data
3F0-3F7	Floppy Controller
3F8-3FF	COM1

Table C.1: System I/O ports

Addr. range (Hex)	Device
778-77A	Printer Port (ECP Extensions)(Port 378+400)
MPU-401 select from 300 ~ 330H (2 bytes)	

C.2 1st MB memory map

Table C.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

C.3 DMA channel assignments

Table C.3: DMA channel assignments

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

* Audio DMA select 1, 3, or 5

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

C.4 Interrupt assignments

Table C.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	Unused
IRQ 6	FDD
IRQ 7	LPT1
IRQ 8	RTC
IRQ 9	Reserved (audio)
IRQ 10	Unused
IRQ 11	Reserved for watchdog timer
IRQ 12	PS/2 mouse
IRQ 13	INT from co-processor
IRQ 14	Primary IDE
IRQ 15	Secondary IDE for CFC

* Ethernet interface IRQ select: 9, 11, 15
* PNP audio IRQ select: 9, 11, 15
* PNP USB IRQ select: 9, 11, 15
* PNP ACPI IRQ select: 9, 11, 15