POD-6552

5.25” Intel® Celeron® M SBC, with CPU/ VGA/LCD, and Ethernet Interface

User’s Manual

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This manual is for the POD-6552.

Part No.200K655210

1st Edition, June 2005

Packing List

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

- 1 POD-6552 all-in one single board computer
- Mini Jumper(yellow) p/n: 1653300100
- Mini Jumper(black) p/n: 1653302122

Optional

- 1 startup manual
- 1 CD-ROM or disks for utility, drivers, and manual (in PDF format)
- 1 Wiring kit for POD-6552 p/n: POD-10586-K100

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

Model No. List	Description
POD-6552L-M0A1	C-M 600 MHzM(0L2) SBC LAN/VGA/ LCD/TV/AT Eco
POD-6552F-M0A1	Same as POD-6552L-M0A1,w/cable/DSTN/ ATX
POD-6552L-00A1	Same as POD-6552L-M0A1,but with SKT479

Additional Information and Assistance

Visit the Advantech web site 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

CHAPTER 1

General Information

This chapter gives background information on the POD-6552.

Sections include:

- Introduction
- Features
- Specifications
- Board layout and dimensions

Chapter 1 General Information

1.1 Introduction

The POD-6552 is a new Intel® Celeron® M 600 MHz(0L2) 5.25" Biscuit PC with enhanced graphics function. The POD-6552 comes with an embedded high-performance Celeron® M 600 MHz processor on-board, and one socket479 optional for Celeron-M CPU. For maximum performance, the POD-6552 supports one 200pin DDR SODIMM socket that can accept up to 512 MB memory. On-board features include an Ethernet interface, audio interface, socket for Compact Flash Card, Enhanced IDE interface , Floppy interface, one parallel port, four serial ports (three RS-232 ports and one RS-232/422/485 port), six USB 2.0 ports, IrDA interface and a PS/2 keyboard/mouse interface. The best specification of the POD-6552 is its dual display(CRT+LVDS, CRT+TTL, LVDS+TV-Out, CRT+TV-Out). The POD-6552 supports CRT up to 1600 x 1200, and also supports 1 channel 18bit LVDS(2 channel 36bit optional) up to UXGA. If you need any additional functions, the POD-6552 has a PC/104 connector, a 8-bit ISA slot and three PCI slots for future upgrades.

1.2 Features

- Onboard Intel® Celeron® M 600 MHz(0L2) CPU, Socket 479 for Intel® Celeron® M and Pentium® M CPU(Optional)
- Fanless operation at 0~60°C (POD-6552F-M0A1,POD-6552L-M0A1)
- 2 x PCI Slots onboard
- 4 x COM ports
- 1 x DDR SODIMM Socket, support up to 512MB
- 6 x 2.0 USB ports onboard
- Supports Compact Flash Card Type I/II
- Supports Independent Dual Display(CRT+LVDS, CRT+TTL, LVDS+TV-Out, CRT+TV-Out)

1.3 Specifications

1.3.1 Standard SBC Functions

- **CPU:** Intel® Celeron® M 600 MHz w/o L2 cache. Socket479(Optional for Celeron® M and Pentium® M CPU)
- **System chipsets:** Intel® 852GM/ICH4
- **BIOS:** Award 4Mbit Flash memory
- **System memory:**One DDR SODIMM socket, support up to 512MB DRAM
- **2nd cache memory:** N/A
- **Enhanced IDE Interface:** Supports four Enhanced IDE channels with PIO/DMA-33 mode
- **Serial Ports:** Three RS232 ports, One RS232/422/485
  Connection: 1*RS232 and 1*RS232/422/485 are realized by a dual port D-sub, 2*RS232 are realized by two box headers
- **Parallel Ports:** One parallel port, support EPP/ECP mode
- **Keyboard/Mouse Connector:**Support standard PC/AT Keyboard and a PS/2 mouse
- **Power Management:** APM 1.2 power management compliant, support ACPI 1.0b,2.0
- **FDD interface:** Support 360K/1.2M/720K/1.44MB/2.88MB Two FDD devices
- **Watchdog Timer:** 255 levels timer intervals
- **Expansion Interface:** 32-bit PCI Slot, 1*8 bit ISA slot, 1 * PC/104
- **Battery:** Lithium 3V/195 mAH
- **USB:** 6 USB ports, USB 2.0 compliant
- **Audio:**AC'97 version 2.0 compliant
- **IrDA(Optional):**115Kbps SIR, IrDA 1.0 compliant

1.3.2 Display Interface

- **Chipset:** Intel® 852GM chip integrated
- **Memory size:** Shared up to 64MB
- **Interface:** 4X AGP VGA/LCD interface,Support for 9,12,15,18bit TTL TFT (Optional for 16 or 24bit DSTN panel)
- **Display modes:**
  CRT Modes: 1024 x 768 @ 16bpp (85Hz);
  LCD Modes: 1280 x 1024 @ 16bpp(60Hz)
  1024 x 768 @ 16bpp (60Hz)
- **LVDS:** Support one channel 18bit LVDS interface (Optional for 2 channel 2 x 18bit LVDS)
- **Dual Independent Display:** CRT + LVDS, CRT + TV-Out, LVDS + TV-Out

1.3.3 Solid State disk

- Supports **CompactFlash Type I/II** disks

1.3.4 TV-Out

- Chipset: Chrontel CH7009
- Supports TV output
- Supports NTSC and PAL formats
- Supports s-video
- TV output supports graphics resolutions up to 1024x768 pixels

1.3.5 Ethernet interface

- **Chipset:** RealTek 8100BL
- **Connection:** on-board RJ-45
- **Interface:** IEEE 802.3u(100BASE-T) protocol compatible
- **BootROM:** build-in-system
- I/O address switchless setting

1.3.6 Mechanical and Environmental

- **Dimensions (L x W):** 203 x 146 mm(8" x 5.75")
- **Power supply voltage:** +5 V±5%, +12V ±5%
- **Power requirements:**

  Max:(Win2000, Kpower)

  2.8A @+5V (w/Celeron M 600 MHzMHz, 128MB DDR333)

  0.25A @+12V (w/Celeron M 600 MHzMHz, 128MB DDR333)

  Typical:(Win2000, Kpower)

  1.9 A @ +5V(w/Celeron M 600 MHzMHz, 128MB DDR333)

  0.10 A @ +12V(w/Celeron M 600 MHzMHz, 128MB DDR333)
- **Operating temperature:** 0 ~ 60°C (32 ~ 140°F),operation
- **Operating humidity:** 0% ~ 90% Relative Humidity, Non condensing

1.4 Board layout: dimensions

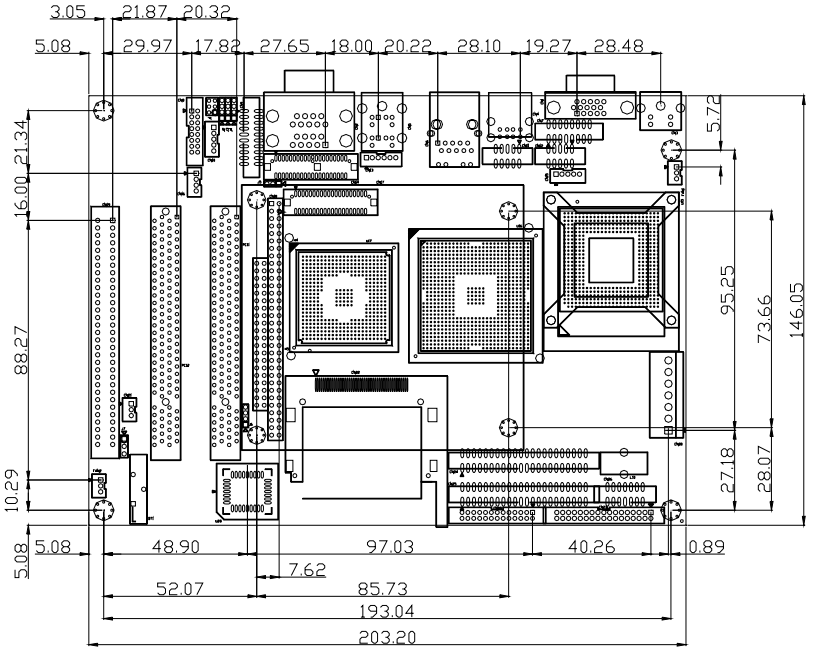


Figure 1.1: Board layout: dimensions (component side)

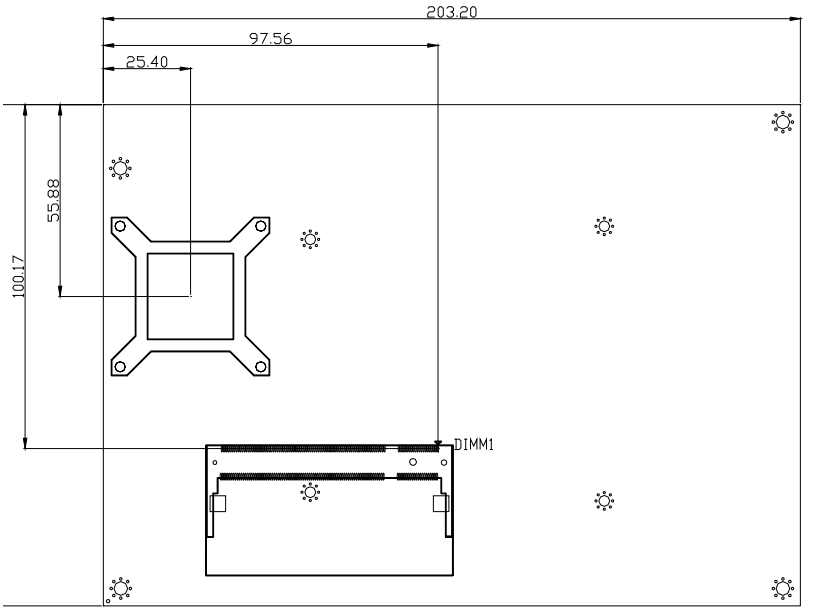


Figure 1.2: Board layout: dimensions (solder side)

CHAPTER 2

Installation

This chapter explains the setup procedures of POD-6552 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 POD-6552 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/J2/J3/J4	Setting COM2 RS232/422/485
J5	LCD voltage setting
J6	SM BUS connector
J7	PCI VIO setting
J8	CMOS setting

2.2 Connectors

On-board connectors link the POD-6552 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	VGA D-SUB
CN2	COM port 1,2
CN3	TV-Out connector
CN4	USB port 0,1
CN5	PS/2 Mouse/Keyboard connector
CN6	LAN connector
CN7	VGA connector
CN8	Audio connector
CN9	COM port 3,4
CN10	IrDA connector
CN11	USB port 4,5
CN12	USB port 2,3
CN13	PS/2 connector
CN14	LVDS connector
CN15	LCD Backlight connector
CN16	CD-IN connector
CN17	TTL LCD connector or DSTN connector
CN18	PC/104 connector
CN19	ISA slot
CN20	EBX Power connector
CN21	-5V & -12V connector
CN22	CompactFlash socket
CN23	ATX connector
CN24	Secondary IDE connector
CN25	Primary IDE connector

Table 2.2: Connectors	
CN26	Front Panel connector
CN27	Floppy connector
CN28	Print connector
FAN 1,2	FAN connector
PCI 1,2	PCI slot

2.3 Locating Connectors(component side)

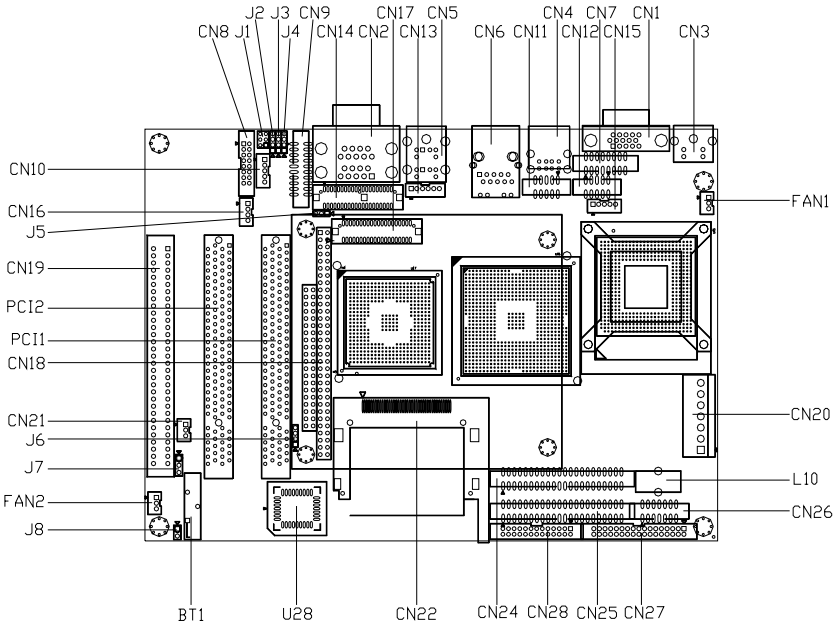


Figure 2.1: Jumper&Connector Locations

2.4 Locating Connectors(solder side)

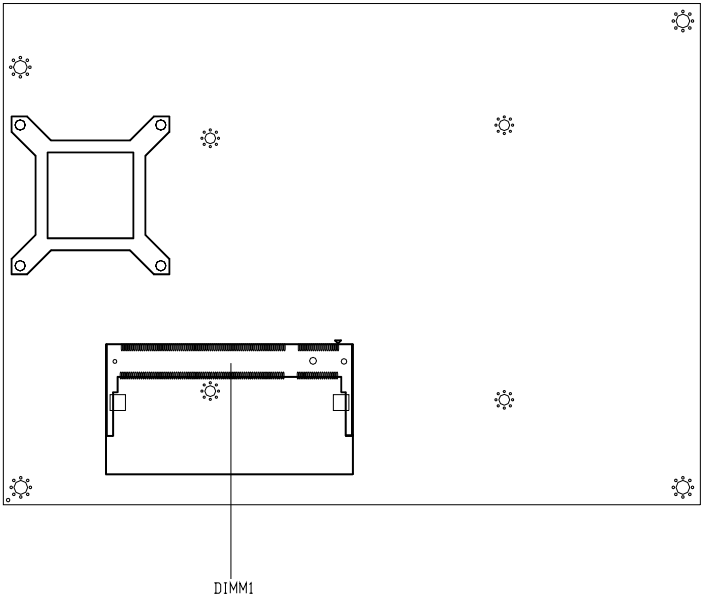
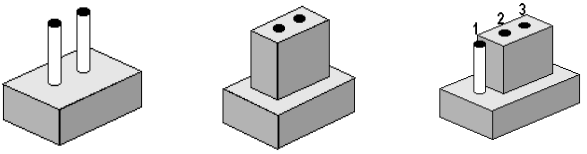


Figure 2.2: Connectors (solder side)

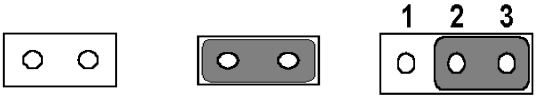
2.5 Setting Jumpers

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 (J8)

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: CMOS clear (J8)

clear CMOS


2.7 COM2 232/422/485 Select(J1/J2/J3/J4)

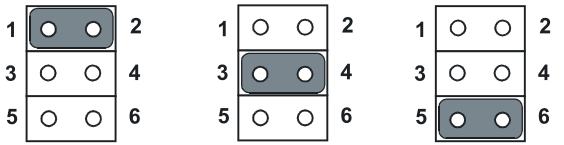


Table 2.4: COM2 232/422/485 Select(J1)

RS232	RS422	RS485
1-2(Default)	3-4	5-6

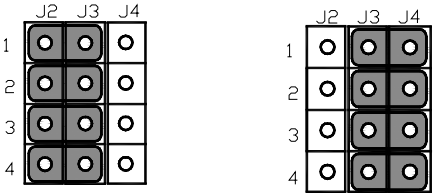


Table 2.5: COM2 232/422/485 Select(J2/J3/J4)

RS232	RS422/RS485
J2(1)-J3(1)	J3(1)-J4(1)
J2(2)-J3(2)	J3(2)-J4(2)
J2(3)-J3(3)	J3(3)-J4(3)
J2(4)-J3(4)	J3(4)-J4(4)

2.8 Setting LCD Voltage(J5)

Table 2.6: Setting LCD Voltage(J5)

Pin	**Function**
1-2	+5V
2-3	+3.3V(Default)

2.9 SM BUS Connector(J6)

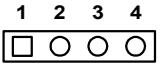


Table 2.7: SM BUS Connector(J6)	
Pin	**Function**
1	+5V
2-	SM_CLOCK
3	SM_DATA
4	GND

2.10 PCI VIO(J7)

Table 2.8: PCI VIO(J7)	
Pin	**Function**
1-2	+5V
2-3	+3.3V

2.11 Installing DDR SODIMMs

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

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

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

2. Install the DDR SODIMM card. Install the DDR SODIMM so that its gold pins

point down into the DDR SODIMM socket.

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

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

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

2.12 Printer port connector (CN28)

Normally, the parallel port is used to connect the card to a printer. The POD-6552 includes a multi-mode (ECP/EPP/SPP) parallel port accessed via CN28 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 DMA channel via BIOS setup.

2.13 CompactFlash Card Socket(CN22)

The POD-6552 provides a 50-pin socket for CompactFlash card type I/II which is defaulted as a master device.

2.13.1 CompactFlash(CN22)

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

2.14 Floppy drive connector (CN27)

You can attach up to two floppy drives to the POD-6552'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 CN27. 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 A.

2.15 IDE connector(CN25, CN24)

The POD-6552 provides two IDE channels to which you can attach up to four Enhanced Integrated Device Electronics hard disk drives or CDROM to the POD-6552’s internal controller. The POD-6552's IDE controller uses a PCI interface. This advanced IDE controller supports faster data transfer, PIO Mode 3 or Mode 4, UDMA 33 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 CN25,CN24. 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 POD-6552'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 (CN1, CN7)

CN1 is a standard 16-pin DESUB connector used for conventional CRT displays. Users can drive a standard progressive scan analog monitor with pixel resolution up to 1600 MHz x 1200 at 85 Hz.

The POD-6552 also provides a box header CN7 which connects CRT display via a cable. Pin assignments for CRT display connector are detailed in Appendix A.

2.16.2 LVDS LCD panel connector(CN14)

POD-6552 uses the Intel 852GM 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 one channel 18-bit LVDS LCD panel displays Users can connector to 18-bit LVDS LCD with CN14. In addtion, CN14 can support 2 channels (2 x 18-bit) LVDS LCD panel (optional).

2.16.3 LCD Backlight connector(CN15)

CN15 provides +5V and +12V for LCD backlight.

2.16.4 TTL LCD/DSTN connector(CN17)

CN17 is a 40-pin connector for TTL LCD or DSTN. It could connect TTL LCD or DSTN freely to meet your need.

2.17 USB connectors (CN4,CN11,CN12)

The POD-6552 board provides up to six 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, CN4(USB0, 1),CN12(USB2, 3),CN11(USB4,5). 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 POD-6552 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 POD-6552 supports 10/100Base-T Ethernet connections with onboard RJ-45 connectors(CN6).

2.18.1 LAN connector (CN6)

10/100 or 1000 Base-T connects to the POD-6552 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 COM port connector (CN2,CN9)

The POD-6552 provides four serial ports (COM1,COM3,COM4: RS-232 and COM2: RS232/RS422/RS485). CN2 supports COM1 and COM2; CN9 supports COM3, COM4. and J1/J2/J3/J4 is for COM2 RS232/ RS422/RS485 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 A.

2.20 PS/2 Mouse/Keyboard connector (CN5)

The POD-6552 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 POD-6552'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.

2.20.1 PS/2 connector(CN13)

CN13 is a 6pin connector for PS/2.

2.21 Front Panel Connector (CN26)

Next is to install external switches to monitor and control the POD-6552. These features are optional: install them only if necessary. CN26 is an 2x7 pin header, 180 degree, male.It provides connections for reset and power & hard disk indicator.

2.21.1 Reset (Pin 13 & Pin14)

If a reset switch is installed, 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.

2.21.2 HDD LED (Pin 1 & Pin2)

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

The HDD LED indicator would light when HDD works.

2.21.3 Power LED (Pin 3 & Pin 4)

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

2.21.4 Suspend LED (Pin 5 & Pin 6)

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

2.21.5 Power Button (Pin 11 & Pin12)

The POD-6552 provides an ATX power input connector. When connected with PIN 9 & PIN 10, it enables power On/Off from the chassis.

2.21.6 Lan Active LED(Pin 7 & Pin 8)

The LED would light when the Lan is active.

2.21.7 Lan Linked LED(Pin 9 & Pin10)

The LED would light when the Lan is linked.

2.22 Audio interface

2.22.1 Audio connector(CN8)

The Audio link is a 2x8 pin connector, the POD-6552can support speaker-out, Line-IN, Line-out with Realtek ALC202, AC97 stereo sound. Detailed pin assignment refer to Appendix A.

2.22.2 CD-In connector(CN16)

The POD-6552 can support CD-In via CN16.

2.23 Printer port connector (CN28)

Normally, the parallel port is used to connect the card to a printer. The POD-6552 includes a multi-mode (ECP/EPP/SPP) 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 DMA channel via BIOS setup.

2.24 TV-out interface(CN3)

The POD-6552 board provides optional TV-out via CN3. This module output supports S-video connectors. TV-out generators use both NTSC and PAL formats with 640 x 480 or 800 x 600 MHz resolution.

To set up your video interface:

Run the appropriate installation program located on the utility disk. That's all there is to it.

2.25 IR Connector(CN10)(Optional)

This connector supports the optional wireless infrared transmitting and receiving module. This module mounts on the system case. You must configure th setting through BIOS setup. Detailed pin definition you will find in Appendix A.

Important *Make sure that J1 DO NOT equipped with any jumper when you use IR connector. J2, J3 and J4 would help to set COM2 RS232/422/485.*

2.26 Power connectors (CN20, CN21,CN23)

2.26.1 EBX power connector, +5 V, +/-12 V (CN20)

Supplies main power to the POD-6552 (+5 V), and to devices that require +12 V. The POD-6552 supports AT power via CN20.

2.26.2 Power supply connector, -5V, -12V (CN21)

Supplies secondary power to devices that require -5 V and -12 V.

2.26.3 ATX power connector (CN23)

The POD-6552 supports ATX power via CN23 and CN20. CN23 supplies main power (5VSB), and it is a 3 x 1 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 (5VSB). If not, you may have difficulty powering on your system.*

CHAPTER 3

Software Configuration

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

Sections include:

- Introduction
- VGA display software configuration

Chapter 3 Software Configuration

3.1 Introduction

The system BIOS and custom drivers are located in a

512 KB, 32-pin (JEDEC spec.) Flash ROM device, designated U28. A single Flash chip holds the system BIOS, VGA BIOS, and network Boot ROM image. The display can be configured via software. This method minimizes the number of chips and eases configuration. You can change the display BIOS simply by reprogramming the Flash chip.

3.2 VGA display firmware configuration

The board's on-board VGA interface supports a wide range of popular LCD, EL, gas plasma flat panel displays and traditional analog CRT monitors. The 852GM chip with optimized Shared Memory Architecture, supports up to 64 MB frame buffer using system memory to provide LVDS mode up to 1280 x 1024 @ 48bpp, the interface can drive CRT displays with resolutions up to 1600 MHz x 1200 @ 24bpp.

The VGA interface is configured completely via the software utility, so you do not have to set any jumpers. Configure the VGA display as follows:

1. Apply power to the board with a color TFT display attached. This is the default setting for this board. Ensure that the AWDFLASH.EXE and *.BIN files are located in the working drive.

NOTE: Ensure that you do not run AWDFLASH.EXE while your system is operating in EMM386 mode.

2. At the prompt, type AWDFLASH.EXE and press <Enter>. The VGA configuration program will then display the following:

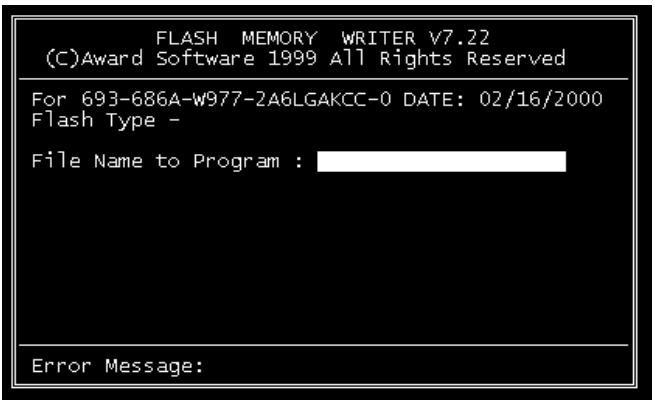


Figure 3.1: VGA setup screen

3. At the prompt, enter the new BIN file which supports your display. When you are sure that you have entered the file name correctly press <Enter>.
4. The screen will ask “Do you want to save BIOS?”. If you change your mind or have made a mistake, press N to abort and end the setup procedure. Press Y if you wish to save the existing configuration before changing it. Then type the name under which you want to save the current configuration.
5. The prompt will then ask “Are you sure to program?”. Press Y if you want the new file to be written into the BIOS. Press N to exit the program.

The new VGA configuration will then write to the ROM BIOS chip. This configuration will remain the same until you run the AWDFLASH.EXE program and change the settings.

3.3 Connectors to Standard LCDs

The following table illustrate typical LCD connection pinouts for the POD-6552.

3.3.1 AU M170EG01(1280 x1024 LVDS LCD)

Table 3.1: Connections to LCD/Flat Pannel (CN14)			
LCD Connector		**Flat Pannel Connector**	
JAE FI-X30C2L		**DF13-40P**	
Pin	**Signal**	**Pin**	**Signal**
1	RxOIN0-	7	OD0-
2	RxOIN0+	9	OD0+
3	RxOIN1-	13	OD1-
4	RxOIN1+	15	OD1+
5	RxOIN2-	19	OD2-
6	RxOIN2+	21	OD2+
7	VSS	23	GND
8	RxOCLKIN-	25	OCK-
9	RxOCLKIN+	27	OCK+
10	RxOIN3-	35	OD3-
11	RxOIN3+	37	OD3+
12	RxEIN0-	8	ED0-
13	RxEIN0+	10	ED0+
14	VSS	4	WP#
15	RxEIN1-	14	ED1-
16	RxEIN1+	16	ED1+
17	VSS	12	GND
18	RxEIN2-	20	ED2-
19	RxEIN2+	22	ED2+
20	RxECLKIN-	26	ECK-
21	RxECLKIN+	28	ECK+
22	RxEIN3-	36	ED3-
23	RxEIN3+	38	ED3+
24	VSS	34	GND
25	VSS	30	GND
26	NC	X	
27	VSS	34	GND
28	+5V	1	VCC_LCD
29	+5V	2	VCC_LCD

CHAPTER 4

Award BIOS Setup

This chapter describes how to set BIOS configuration data.

Chapter 4 Award BIOS Setup

4.1 System test and initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

```
press <F1> to CONTINUE
```

Write down the message and press the F1 key to continue the bootup sequence.

4.1.1 System configuration verification

These routines check the current system configuration against the values stored in the board's CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

The POD-6552 Series' CMOS memory has an integral lithium battery backup. The battery backup should at least three years in normal service, but when it finally runs down, you will need to replace the complete unit.

4.2 Award BIOS setup

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 CMOS RAM so that it retains the Setup information when the power is turned off.

4.2.1 Entering setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.

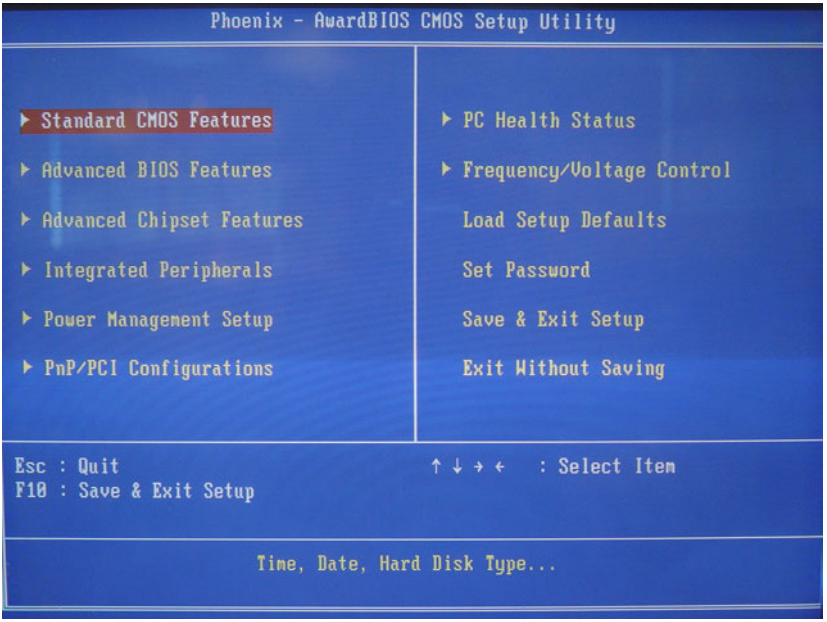


Figure 4.1: BIOS setup program initial screen

4.2.2 Standard CMOS Features setup

When you choose the Standard CMOS Features option from the Initial Setup Screen menu, the screen shown below is displayed. This standard Setup Menu allows users to configure system components such as date, time, hard disk drive, floppy drive and display. Once a field is highlighted, on-line help information is displayed in the right top of the Menu screen.

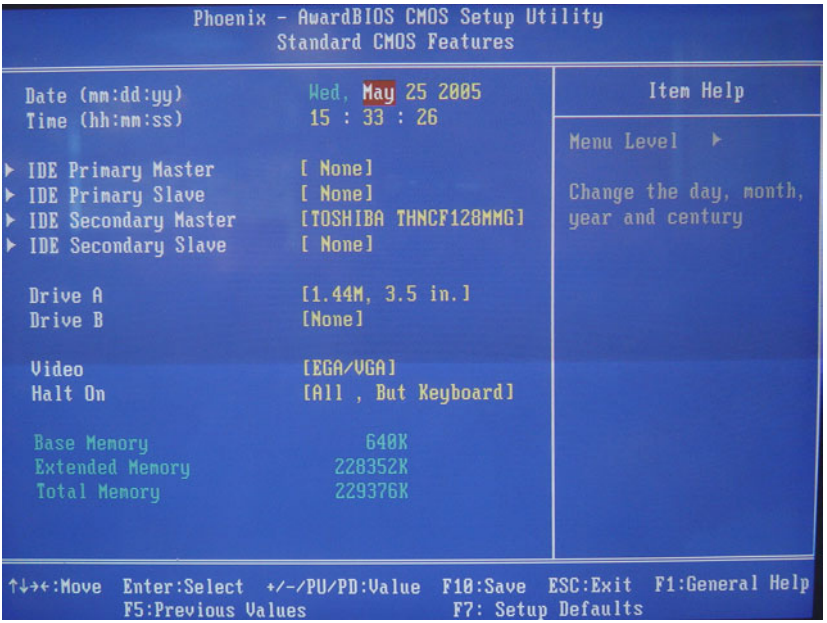


Figure 4.2: Standard CMOS Features setup

4.2.3 Advanced BIOS Features setup

By choosing the Advanced BIOS Features Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the POD-6552 Series.

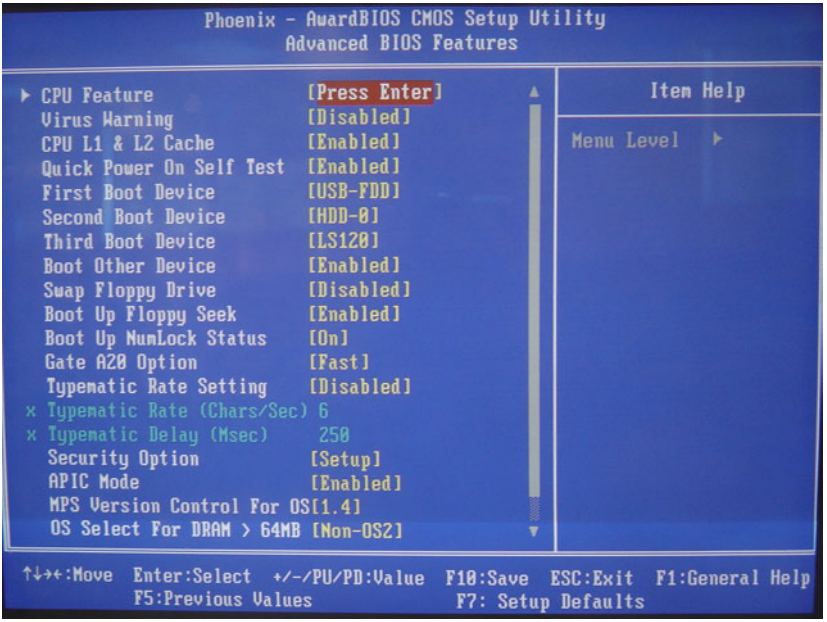


Figure 4.3: Advanced BIOS Features setup

4.2.4 Advanced Chipset Features setup

By choosing the Advanced Chipset Features option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the POD-6552 Series.

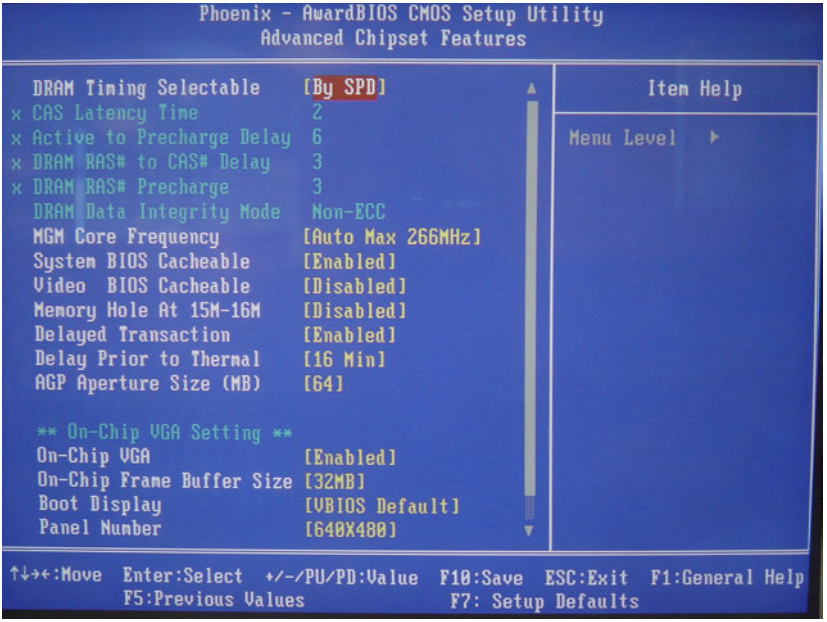


Figure 4.4: Advanced Chipset Features setup

4.2.5 Integrated Peripherals

Choosing the Integrated Peripherals option from the Initial Setup Screen menu should produce the screen below. Here we see the manufacturer's default values for the POD-6552 Series.

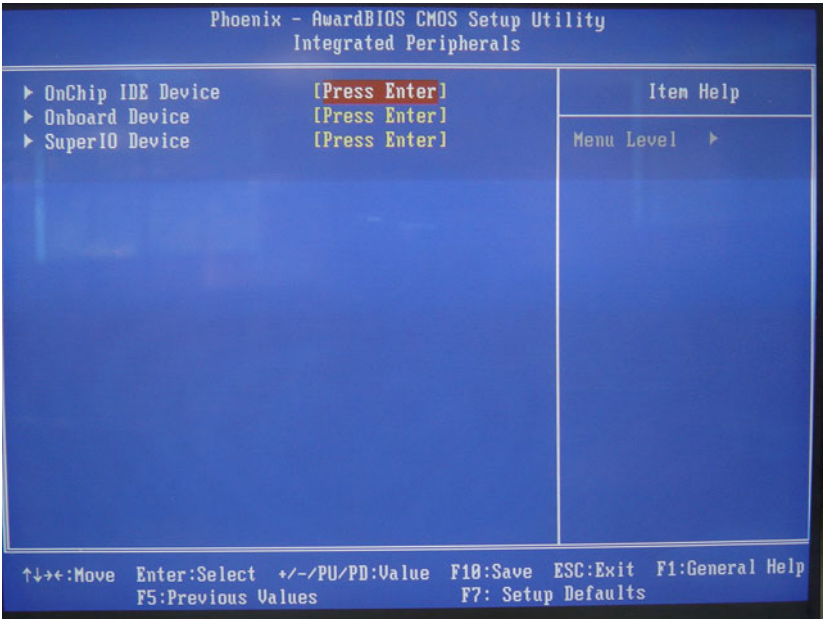


Figure 4.5: Integrated Peripherals

4.2.6 Power Management Setup

By choosing the Power Management Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the POD-6552 Series.

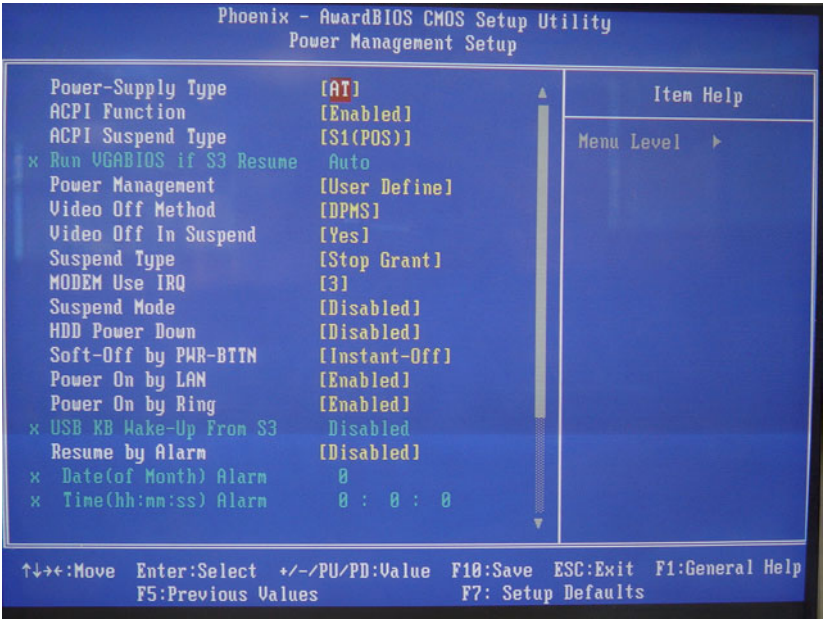


Figure 4.6: Power Management Setup

4.2.7 PnP/PCI Configurations

By choosing the PnP/PCI Configurations option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the POD-6552 Series.

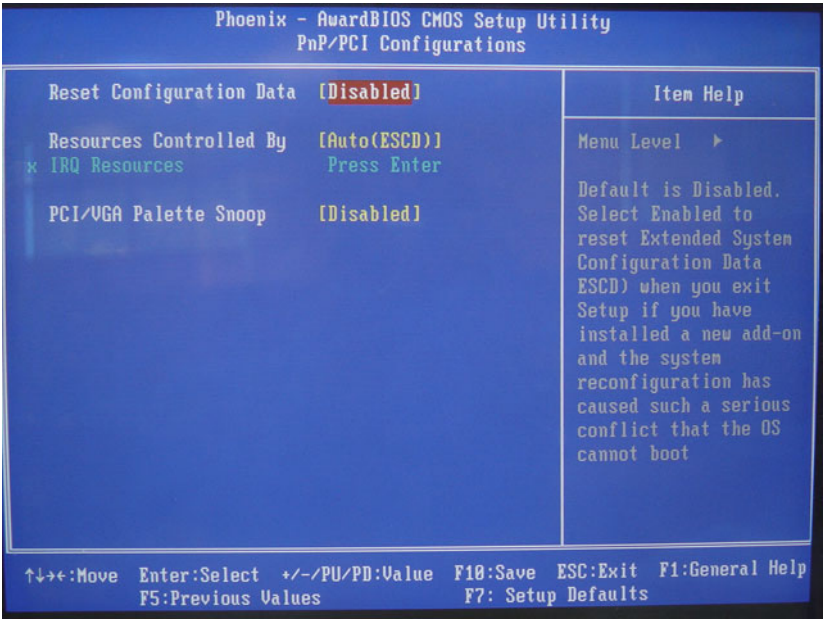


Figure 4.7: PnP/PCI Configurations

4.2.8 Frequency/Voltage Control

By choosing the Frequency/Voltage Control option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the POD-6552

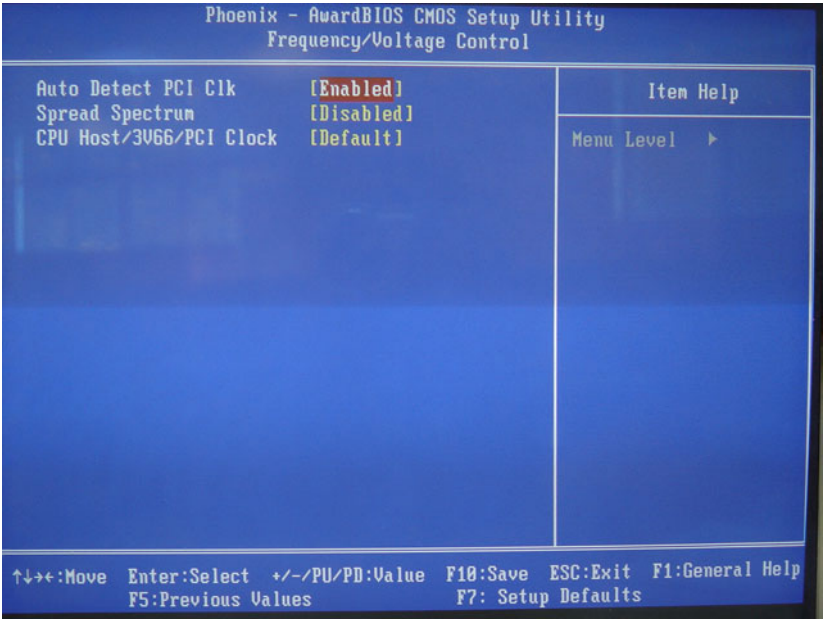


Figure 4.8: Frequency/Voltage Control

Caution *Incorrect settings in Frequency/Voltage Control may damage the system CPU, video adapter, or other hardware.*

4.2.9 Load Optimized Defaults

Load Optimized Defaults loads the default system values directly from ROM. If the stored record created by the Setup program should ever become corrupted (and therefore unusable), these defaults will load automatically when you turn the POD-6552 Series system on.

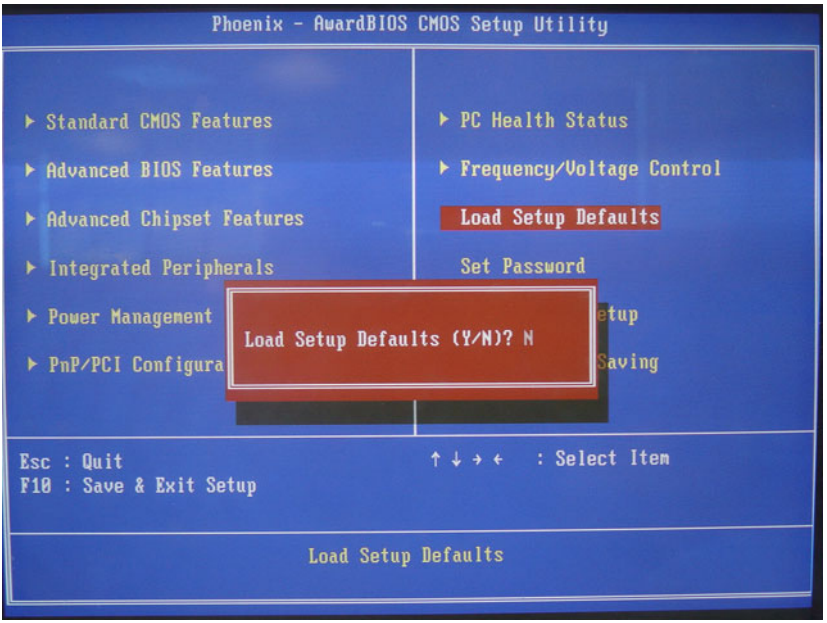


Figure 4.9: Load BIOS defaults screen

4.2.10 Set 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>.

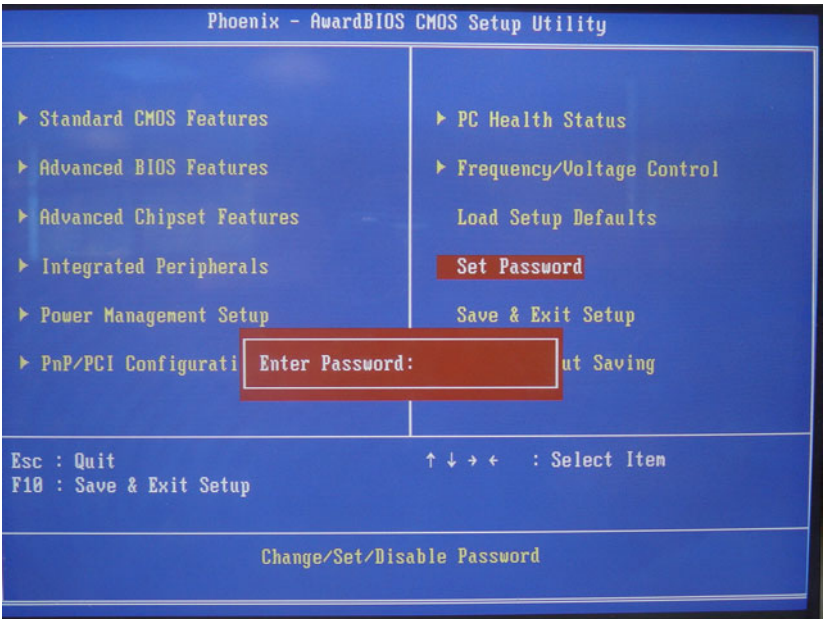


Figure 4.10: Set password

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, 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>.

4.2.11 Save & Exit Setup

Figure 4.11: Save & Exit Setup

If you select this option and press <Y> then <Enter>, the values entered in the setup utilities will be recorded in the chipset's CMOS memory. The microprocessor will check this every time you turn your system on and use the settings to configure the system. This record is required for the system to operate.

4.2.12 Exit Without Saving

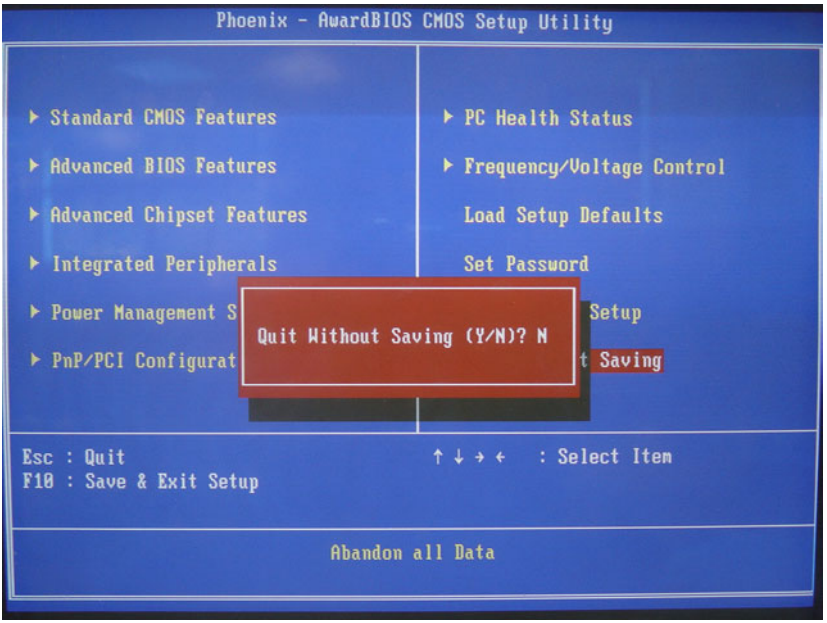


Figure 4.12: Exit without saving

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

CHAPTER 5

PCI SVGA Setup

Introduction

Installation of SVGA drivers

-for Windows XP

Further information

Chapter 5 PCI SVGA Setup

5.1 Introduction

The board has an onboard interface. The specifications and features are described as follows:

5.1.1 Chipset

The POD-6552 uses a Intel 852GM + ICH4 chipset for its graphic controller. It supports LVDS LCD displays, conventional CRT monitors.

5.1.2 Display memory

The 852GM chip with optimized Shared Memory Architecture, supports up to 64 MB frame buffer using system memory to provide LVDS mode up to 1280 x 1024 @ 36bpp with frequency range from 25-MHz to 112-MHz. the interface can drive CRT displays with resolutions up to 1600 MHz x 1200 @ 24 bpp 75 Hz.

5.1.3 Display types

CRT and panel displays can be used simultaneously. The board can be set in one of three configurations: on a CRT, on a flat panel display, or on both simultaneously. The system is initially set to simultaneous display mode. If you want to enable the CRT display only or the flat panel display only, please contact Intel Corporation LTD., or our sales representative for detailed information.

5.2 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.

Notes:

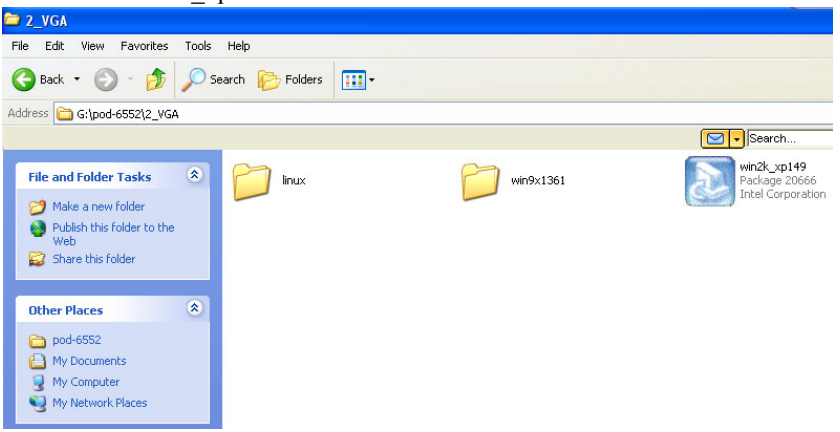
1. The windows illustrations in this chapter are intended as examples only. Please follow the listed steps, and pay attention to the instructions which appear on your screen.

2. For convenience, the CD-ROM drive is designated as "D" throughout this chapter.

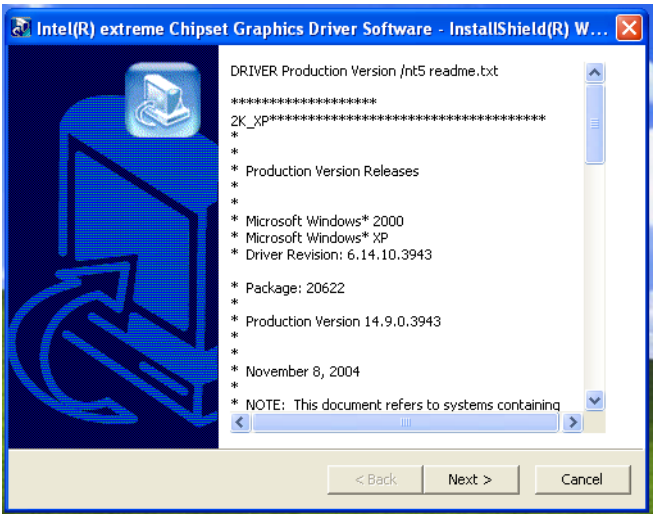
5.2.1 Installation for Windows 2000/XP

To install SVGA driver for Window 2000/XP, please run the setup wizard "Intel Extreme Graphic 2" in CD-ROM. Example of installation is shown as bellow:

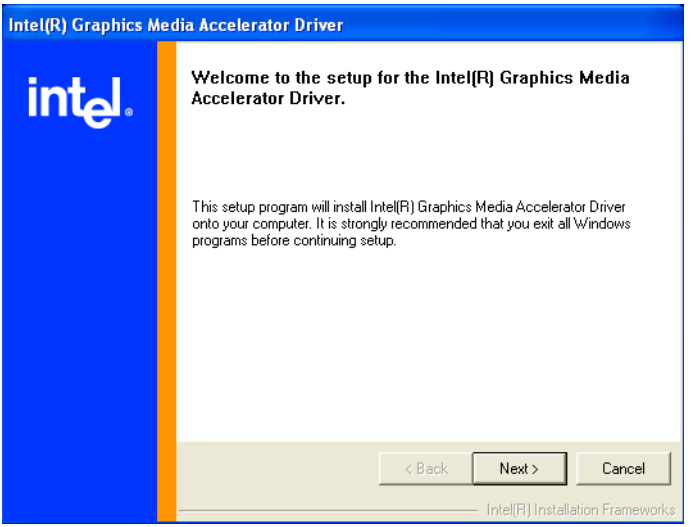
1. Select the path: G:\POD-6552\2_VGA, then double click "win2k_xp169" to run "Install Shield Wizard".



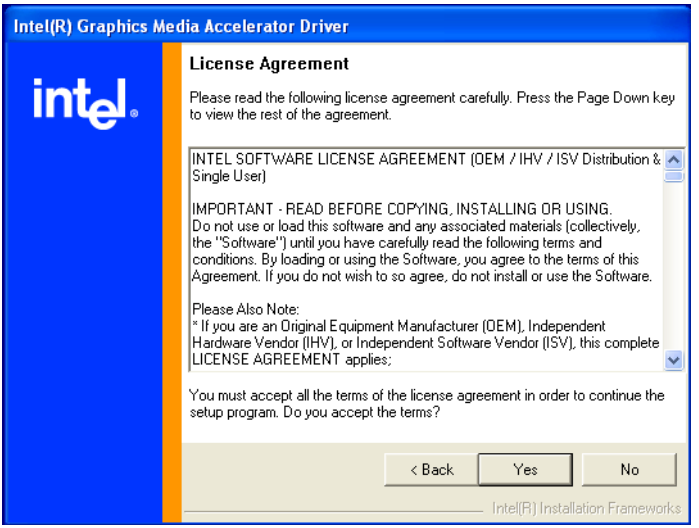
2. Press the "Next" button.



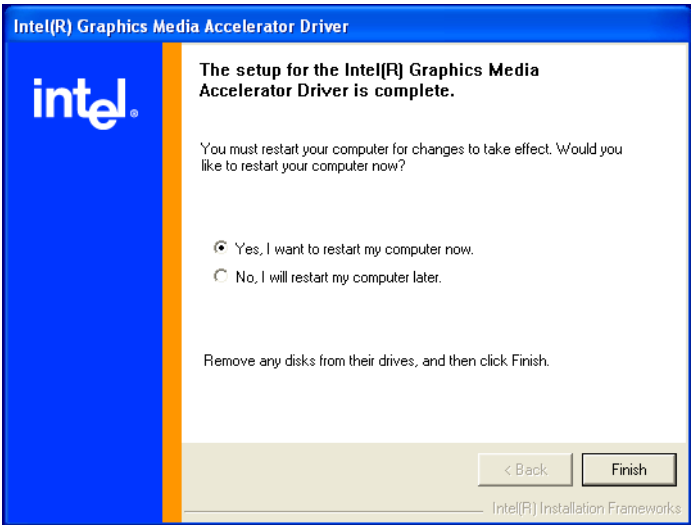
3. Press the "Next" button.



4. In order to continue setup, you must accept the agreement, press the "Yes" button and wait a minute.



5. Choose the option "Yes, I want to restart my computer now." and press the "Finish" button.



5.3 Further Information

For further information about the AGP/VGA installation in your POD-6552, 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 6

Audio Setup

- Introduction
- Installation of audio driver for Windows XP

Chapter 6 Audio Setup

6.1 Introduction

The POD-6552 supports AC97 stereo sound without Amplifier and supports speaker-out, CD-input, Line-in, Line-out and Microphone..

6.2 Driver installation

6.2.1 Before you begin

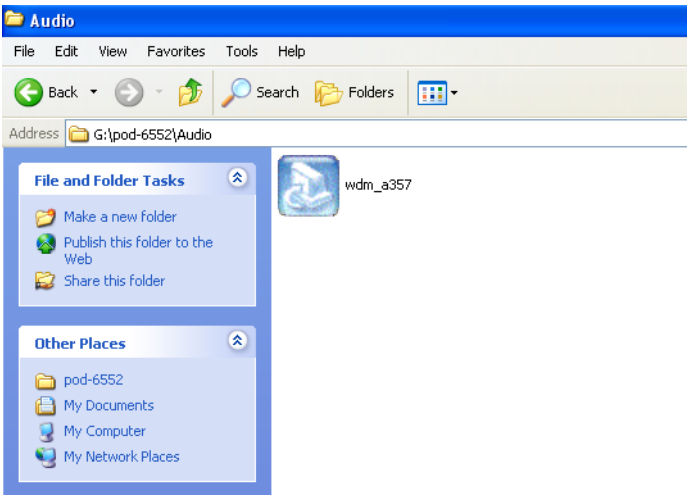
Please read the instructions in this chapter carefully before you attempt installation. The audio drivers for the POD-6552 board are located on the audio driver CD. Run the supplied SETUP program to install the drivers; don't copy the files manually.

Note: The files on the software installation diskette are compressed. Do not attempt to install the drivers by copying the files manually. You must use the supplied SETUP program to install the drivers.

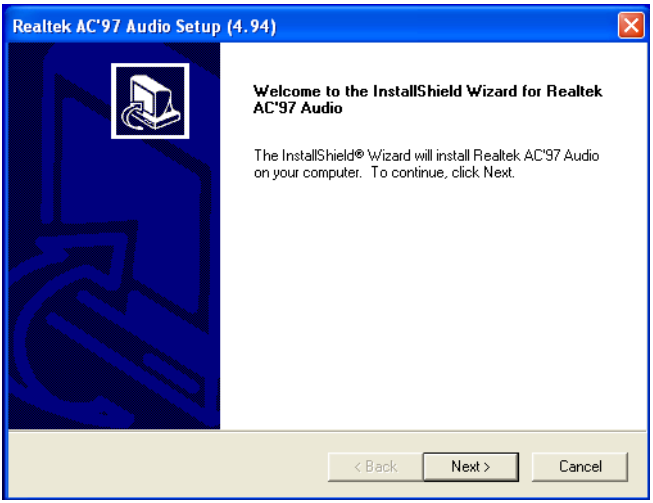
6.2.2 Windows XP driver

To install audio driver for Window XP, please run the setup wizard in CD-ROM. Example of installation is shown as bellow:

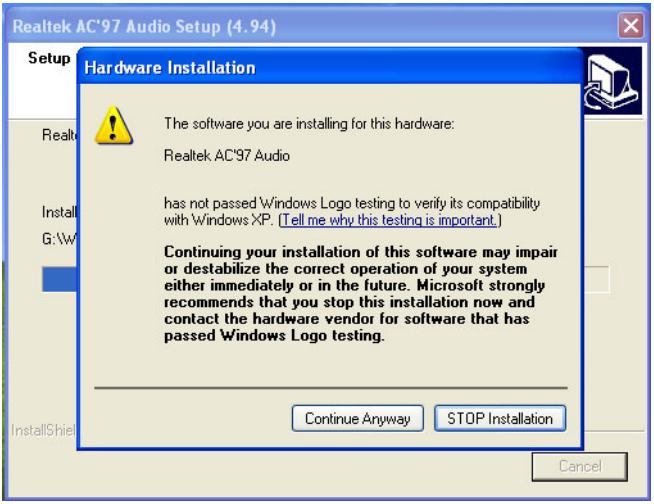
1. Select the path: G:\POD-6552\wdm_a357, then double click to run "Install Shield Wizard".



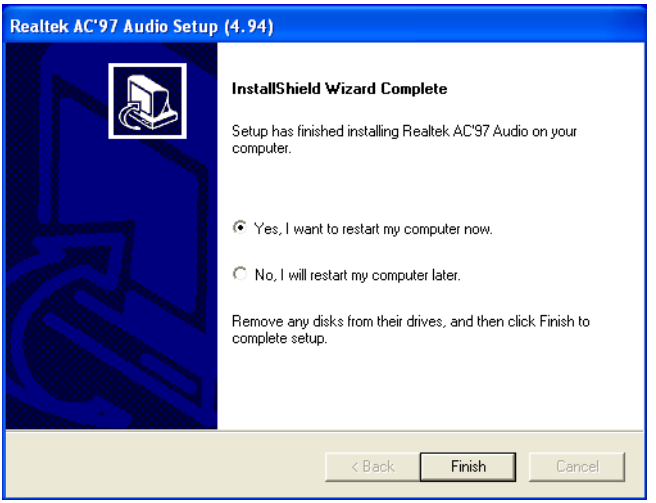
2. Press the "Next" button and wait for a moment.



3. Choose the option "Continue Anyway".



4. Choose the option "Yes, I want to restart my computer now", then click "Finish" button to reboot your computer.



Appendix A

Pin Assignments

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

- Floppy Drive Connector
- Primary IDE Connector
- LPT Connector
- Secondary IDE(Slave) Connector
- ATX Power Connector
- COM3/COM4 output
- USB0, 1 Connector
- USB2, 3Connector
- USB4, 5Connector
- D-SUB VGA Connector
- LAN, RJ45 Connector
- COM1 Connector
- COM2 Connector
- TTL LCD/DSTN Connector
- LVDS Connector
- Audio I/F Connector
- IR Connector
- PS/2 Mouse/KB Connector
- PC/104 Connector
- ISA Slot
- CompactFlash card Connector
- CD-IN Connector

Appendix A Pin Assignments

A.1 ATX power connector (CN23)

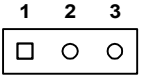


Table A.1: ATX power connector(CN23)

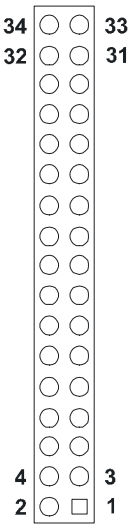
Pin	Signal
1	5VSB
2	NC
3	PS_ON

A.2 Floppy connector (CN27)

Table A.2: Floppy Connector (CN27)

Pin	Signal	Pin	Signal
1	GND	2	RWC#
3	GND	4	NC
5	GND	6	DS
7	GND	8	Index#
9	GND	10	MOA#
11	GND	12	DSB#
13	GND	14	DSA#
14	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	HEAD#
33	GND	34	DSKCHG#

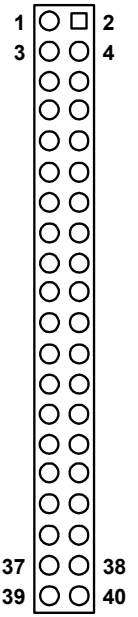
*low active



A.3 Primary IDE Connector (CN25)

Table A.3: Primary IDE connector (CN25)

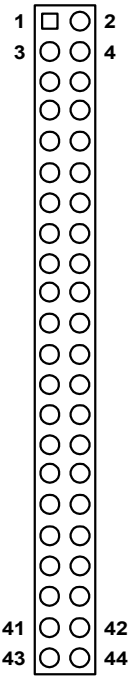
Pin	Signal	Pin	Signal
1	IDE RESET	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	NC
21	REQ	22	GND
23	IOW	24	GND
25	IOR	26	GND
27	READY	28	Cable Select
29	DACK	30	GND
31	IRQ14	32	NC
33	A1	34	ATA check
35	A0	36	A2
37	CS1#	38	CS3#
39	Active	40	GND



A.4 Secondary IDE Connector (CN24)

Table A.4: Secondary IDE connector (CN24)

Pin	Signal	Pin	Signal
1	IDE RESET	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	NC
21	REQ	22	GND
23	IOW	24	GND
25	IOR	26	GND
27	READY	28	Cable Select
29	DACK	30	GND
31	IRQ14	32	NC
33	A1	34	ATA check
35	A0	36	A2
37	CS1#	38	CS3#
39	Active	40	GND
41	+5V	42	+5V
43	GND	44	NC



A.5 CompactFlash socket(CN22)

Table A.5: CompactFlash socket (CN22)

Pin	Signal	Pin	Signal
1	GND	26	#CD1
2	D3	27	D11
3	D4	28	D12
4	D5	29	D13
5	D6	30	D14
6	D7	31	D15
7	#CE	32	#CE2
8	A10	33	#VS14
9	#OE	34	#IORD
10	A9	35	#IOWR
11	A8	36	#WE
12	A7	37	#IRQ
13	+5V	38	+5V
14	A6	39	#CSEL
15	A5	40	#VS2
16	A4	41	RESET
17	A3	42	#WAIT
18	A2	43	#INPACK
19	A1	44	#REG
20	A0	45	BVD2
21	D0	46	BVD1
22	D1	47	D8
23	D2	48	D9
24	IOCS16	49	D10
25	#CD2	50	GND

A.6 LAN,RJ45 connector(CN6)

Table A.6: LAN,RJ45 connector(CN6)			
	10/100M		
Pin	**Signal**	**Pin**	**Signal**
1	TX+	5	NC
2	TX-	6	RX-
3	RX+	7	NC
4	NC	8	NC

A.7 USB port 0, 1(CN4)

Table A.7: USB 0, 1 connector(CN4)			
Pin	**Signal**	**Pin**	**Signal**
1	+5V	2	+5V
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	USB GND	8	USB GND
9	GND	10	NC

A.8 USB port 2, 3(CN12)

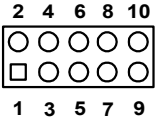


Table A.8: USB 2, 3 connector(CN12)			
Pin	**Signal**	**Pin**	**Signal**
1	+5V	2	+5V
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	USB GND	8	USB GND
9	GND	10	NC

A.9 USB port 4, 5(CN11)

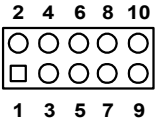


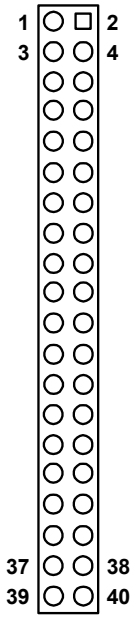
Table A.9: USB 4, 5 connector(CN11)

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	USB GND	8	USB GND
9	GND	10	NC

A.10 LVDS connector(CN14)

Table A.10: LVDS connector (CN14)

Pin	Signal	Pin	Signal
1	VCC_LCD	2	VCC_LCD
3	GND	4	GND
5	LVDS0_N0	6	LVDS0_P0
7	GND	8	LVDS0_N1
9	LVDS0_P1	10	GND
11	LVDS0_N2	12	LVDS0_P2
13	GND	14	LVDS0_CLK0N
15	LVDS0_CLK0P	16	GND
17	LVDS0_N3	18	LVDS1_N2
19	GND	20	GND
21	LVDS0_P3	22	LVDS1_P2
23	GND	24	GND
25	LVDS1_N0	26	LVDS1_CLK0N
27	LVDS1_P0	28	LVDS1_CLK0P
29	GND	30	GND
31	LVDS_CLK	32	LVDS_DATA
33	GND	34	GND
35	LVDS1_N1	36	LVDS1_N3
37	LVDS1_P1	38	LVDS1_P3
39	NC	40	VCON



A.11 Print port connector(CN28)

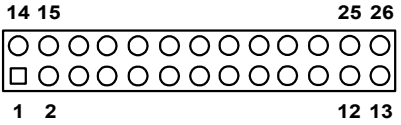


Table A.11: Print port connector(CN28)

Pin	Signal	Pin	Signal
1	STB#	2	AFD#
3	D0	4	ERR
5	D1	6	INIT#
7	D2	8	SLIN
9	D3	10	GND
11	D4	12	GND
13	D5	14	GND
15	D6	16	GND
17	D7	18	GND
19	ACK#	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

A.12 COM port 1, 2 Connector (CN2)

Table A.12: COM port 1, 2 Connector(CN2)

	Com1	Com2		
	Rs232	Rs232	Rs422	Rs485
1	DCD	DCD	TXD-	DATA-
2	SINA	SINA	TXD+	DATA+
3	SOUT	SOUT	RXD-	NC
4	DTR	DTR	RXD+	NC
5	GND	GND	GND	GND
6	DSR	DSR	NC	NC
7	RTS	RTS	NC	NC
8	CTS	CTS	NC	NC
9	RI	RI	NC	

A.13 COM port 3, 4 Connector (CN9)

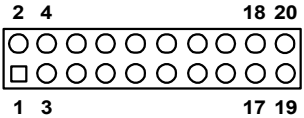


Table A.13: COM port 3,4 Connector(CN9)

Pin	Signal	Pin	Signal
1	DCD3	2	DSR3
3	SIN3	4	RTS3
5	SOUT3	6	CTS3
7	DTR3	8	RI3
9	GND	10	GND
11	DCD4	12	DSR4
13	SIN4	14	RTS4
15	SOUT4	16	CTS4
17	DTR4	18	RI4
19	GND	20	GND

A.14 Audio connector(CN8)

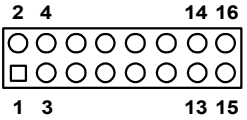


Table A.14: Audio connector(CN8)

Pin	Signal	Pin	Signal
1	Right Speak out+	2	Right speak out-
3	Left speak out+	4	Left speak out-
5	Right Line out	6	Left line out
7	Ground	8	Ground
9	Right line in	10	Left line in
11	Ground	12	Ground
13	NC	14	NC
15	MIC IN	16	Ground

A.15 D-SUB VGA connector(CN1)

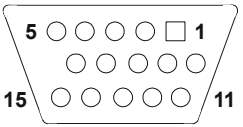


Table A.15: D-SUB VGA connector(CN1)

Pin	Signal	Pin	Signal
1	R	9	+5V
2	G	10	GND
3	B	11	NC
4	NC	12	S-DATA
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	S-CLK
8	GND		

A.16 VGA connector(CN7)

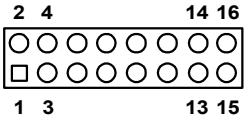


Table A.16: VGA connector(CN7)

Pin	Signal	Pin	Signal
1	R	2	+5V
3	G	4	GND
5	B	6	NC
7	NC	8	D2_DATA
9	GND	10	HS
11	GND	12	VS
13	GND	14	D2_ CLOCK
15	GND	16	NC

A.17 IrDA connector(CN10)

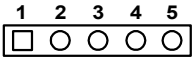


Table A.17: IrDA connector(CN10)

Pin	Signal	Pin	Signal
1	+5V	2	NC
3	IRRX	4	GND
5	IRTX		

A.18 LCD Backlight connector(CN15)

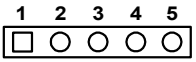


Table A.18: LCD Backlight connector(CN15)

Pin	Signal	Pin	Signal
1	+12V	2	GND
3	BACKLIGHT ENABLE	4	NC
5	+5V		

A.19 PS/2 connector(CN13)

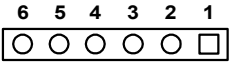


Table A.19: PS/2 connector(CN13)

Pin	Signal	Pin	Signal
1	PS/2 KB CLOCK	2	PS/2 KB DATA
3	PS/2 MOUSE CLOCK	4	GND
5	+5V	6	PS/2 MOUSE DATA

A.20 CD-In connector(CN16)

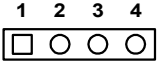


Table A.20: CD-In connector(CN16)

Pin	Signal	Pin	Signal
1	CD in left	2	GND
3	GND	4	CD in right

A.21 PS/2 Mouse/Keyboard connector(CN5)

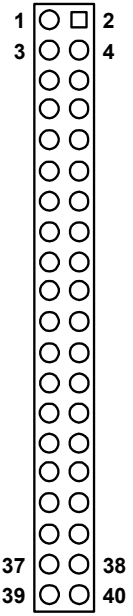
Table A.21: PS/2 Mouse/Keyboard connector(CN5)

Pin	Signal	Pin	Signal
1	KDATA	7	MDATA
2	NC	8	NC
3	NC	9	NC
4	+5V	10	+5V
5	KCLOCK	11	MCLOCK
6	NC	12	NC

A.22 TTL LCD or DSTN connector(CN17)

Table A.22: TTL LCD or DSTN connector (CN17)

Pin	Signal	Pin	Signal
1	VCC_LCD	2	VCC_LCD
3	GND	4	GND
5	VCC_LCD	6	VCC_LCD
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
27	PD18	28	PD19
29	PD20	30	PD21
31	PD22	32	PD23
33	GND	34	GND
35	SFCLK	36	FLM
37	M	38	LP
39	GND	40	ENABL



A.23 ISA slot(CN19)

Table A.23: ISA slot Connector (CN19)

Pin	Signal	Pin	Signal
A1	IOCHECK	B1	GND
A2	SD7	B2	RESETDRV
A3	SD6	B3	+5V
A4	SD5	B4	IRQ9
A5	SD4	B5	-5V
A6	SD3	B6	DRQ2
A7	SD2	B7	-12V
A8	SD1	B8	ENDFXR
A9	SD0	B9	+12V
A10	IOCHRDY	B10	GND
A11	AEN	B11	SMEMW
A12	SA19	B12	SMEMR
A13	SA18	B13	IOW
A14	SA17	B14	IOR
A15	SA16	B15	DACK3
A16	SA15	B16	DRQ3
A17	SA14	B17	DACK1
A18	SA13	B18	DRQ1
A19	SA12	B19	REFRESH
A20	SA11	B20	SYSCLK
A21	SA10	B21	IRQ7
A22	SA9	B22	IRQ6
A23	SA8	B23	IRQ5
A24	SA7	B24	IRQ4
A25	SA6	B25	IRQ3
A26	SA5	B26	DACK2
A27	SA4	B27	TC
A28	SA3	B28	ALE
A29	SA2	B29	+5V
A30	SA1	B30	OSC
A31	SA0	B31	GND

A.24 EBX Power connector(CN20)

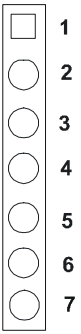


Table A.24: EBX connector(CN20)

Pin	Signal	Pin	Signal
1	+5V	2	GND
3	GND	4	+12V
5	-12V	6	GND
7	+5V		

A.25 -5V and -12V connector(CN21)

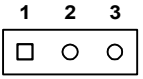


Table A.25: -5V and -12V connector(CN21)

Pin	Signal	Pin	Signal
1	-5V	2	GND
3	-12V		

A.26 Front Panel connector(CN26)

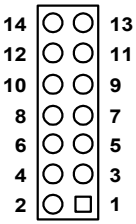


Table A.26: Front Panel connector(CN26)

Pin	Signal	Pin	Signal
1	+5V	2	HDD_LED
3	+5V	4	GND
5	SUSLED	6	GND
7	3.3V	8	LAN_ACT
9	3.3V	10	LAN_LINK
11	POWER BUTTON	12	GND
13	GND	14	RESET

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

Appendix B System Assignments

B.1 System I/O Ports

Table B.1: System I/O ports	
Addr. range (Hex)	**Device**
00-0F	Master DMA controller
20-21F	Master Interrupt controller
2E-2F	Configuration Index/Data
40-5F	Timer/Counter
60-6F	Keyboard controller
(60h)	KBC Data
(61h)	Misc Funtions & 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-
100-1EF	-available for system use-
170-178	Secondary IDE Control
1F0-1F8	Primary IDE Control
200-20F	Game Port
2E8-2EF	COM4
2F8-2FF	COM2
378-37F	Parallel Port(Standard & AFF)
3C0-3CF	EGA
3D0-3DF	VGA
3E8-3EF	COM3
3F0-3F7	Floppy Controller
3F8-3FF	COM1
778-77A	Parallel Port(ECP Extensions)(Port 378+400)
870-871	Hardware Monitor

Table B.1: System I/O ports	
Addr. range (Hex)	**Device**
CF8-CFB	PCI Configuration Address
CFC-CFF	PCI Configuration Data
D00-FFFF	-available for system use-

B.2 1st MB memory map

Table B.2: 1st MB memory map	
Addr. range (Hex)	**Device**
F0000h - FFFFFh	System ROM
*D0000h - EFFFFh	Unused (reserved for Ethernet ROM)
C0000h - CFFFFh	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

* Parallel port ECP mode DMA select 1 or 3

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	COM4
IRQ 6	FDD
IRQ 7	LPT1
IRQ 8	RTC
IRQ 9	Reserved (audio)
IRQ 10	COM3
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

Appendix C

Programming the 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 C Programming the Watchdog Timer

C.1 Supported Input Timing Modes

In order to program the watchdog timer, you must write a program which writes I/O port address 866 (hex). The output data is a value of time interval. The value range is from 01 (hex) to FF (hex), and the related time interval is 1 sec. to 255 sec.

Data	Time Interval
00	Disable
01	1 sec.
02	2 sec.
03	3 sec.
04	4 sec.
	.
	.
	.
FF	255 sec.

After data entry, your program must refresh the watchdog timer by rewriting the I/O port 866 (hex) while simultaneously setting it. When you want to disable the watchdog timer, your program should write I/O port 866 (hex) to 00.

The following example shows how you might program the watchdog timer in ASSEMBLY:

```
;Watchdog timer example program
       MOV DX, 865H  ; set the time unit as second
       MOV AL, 80H
       OUT DX, AL
       MOV DX,866H
       MOV AL, data  ; data=1~255 Second
       OUT DX, AL
```