



User Manual

PCM-3342

Trusted ePlatform Services

ADVANTECH

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 - The product has been misused, abused, or subjected to unauthorized disassembly/modification; placed in an unsuitable physical or operating environment; improperly maintained by the customer; or failure caused which ADVANTECH is not responsible whether by accident or other cause. Such conditions will be determined by ADVANTECH at its sole unfettered discretion.
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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! *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.*



Technical Support and Assistance

For more information about this and other Advantech products, please visit our website at:

<http://www.advantech.com/>

<http://www.advantech.com/ePlatform/>

For technical support and service, please visit our support website at:

<http://support.advantech.com.tw/support/>

Additional Information and Assistance

1. Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Packing List

Before installation, please ensure the following items have been shipped:

Item Part Number

- 1 PCM-3342 SBC
- 1 Startup manual
- 1 Utility CD
- 1 mini jumper pack
- Cables

Part Number	Description
1700060202	1 PS/2 Y-Cable
1700260250	1 LPT port cable
1701100202	1 Ethernet RJ45 connector cable
1701160150	1 VGA cable
1701400181	1 Four COM cable
1703040157	1 RS-422/485 cable
1703060053	1 PS/2 connector cable
1703100121	1 USB cable (2USB port)
1700008894	1 SATA cable

Optional Accessories

Model Number Description

1700001531 1 Floppy cable

Ordering Information

Model Number Description

PCM-3342F-64A1E PC104 EVA-X4150, 64 MB, VGA, LCD, PC/104

PCM-3342L-64A1E PC104 EVA-X4150, 64 MB, w/o Graphics, PC/104

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Chapter 1

General Introduction

This chapter gives background information on the PCM-3342

Sections include:

- Introduction
- Specifications

1.1 Introduction

The PCM-3342 is a PC/104 SBC (Single Board Computer) with low power usage based on the Advantech EVA-X4150 SoC (System on Chip). The PCM-3342, in conjunction with the EVA-X4150 SoC and onboard 64MB SDRAM, supports two USB 2.0 compatible ports, one 10/100Mbps Ethernet interface and TTL interface, and one PC/104 expansion connector. The PCM-3342 also supports one SATA (transfer from IDE) and four COM ports.

1.2 Product Specifications

1.3 Chipset

1.3.1 Functional Specifications

1.3.1.1 Processor

	Advantech Em'Core EVA-X4150 SoC
Processor	<ul style="list-style-type: none">■ Embedded 32-bit X86-based SoC■ Build-in PCI, ISA, IDE, Ethernet Mac, USB on Chip■ Operating frequency up to 133 MHz■ Core Voltage: 1.8 V ± 5%■ Power consumption approximates 0.8 Watt
	27 mm * 27 mm * 2.23 mm PBGA 456balls.

1.3.1.2 Others (Chipset)

	SMI SM712 2D graphic Chip
Graphic and Video Controllers	<ul style="list-style-type: none">■ CRT: SMI 2D graphics chip supports 1024 x 768 @ 24 bit true color■ TTL: SMI 2D graphics chip supports 1024 x 768 @ 18 bit TFT LCD Panel
	TTL connector : Hirose DF13 type 40 pin CRT connector : 1 x 8 * 2P 2.0 mm box header
	Realtek RTL 8100CL
LAN	<ul style="list-style-type: none">■ Integrated IEEE 802.3/802.3u compliant■ Support 10 Mbps/100 Mbps
	Connector: 1 x 5 * 2P 2.0 mm box header

	<p>Advantech EVA-X4150 SoC and SMSC SCH 3114 supports (LPC Super I/O)</p> <ul style="list-style-type: none"> ■ 2 full function serial ports by EVA-X4150 SoC ■ 2 full function serial ports by SMSC SCH 3114 ■ High Speed NS16C550A Compatible UARTs with Data rates to 1.5 Mbps ■ Support IRQ Sharing among serial ports <p>Connectors: COM1,3,4: (RS-232) 1x 20 * 2P 2.0 mm box header COM2: (RS-232/422/485) 1 x 4P 2.0 mm wafer box</p>
Serial ports	
	<p>SMSC SCH 3114 supports (LPC Super I/O)</p> <ul style="list-style-type: none"> ■ One Parallel Port ■ SPP/EPP (1.7,1.9) /ECP (IEEE 1284 Compliant) mode <p>Connector: 1 x 13 * 2P 2.0 mm box header</p>
Parallel port	
	<p>SMSC SCH 3114 supports (LPC Super I/O) PS/2 Keyboard and Mouse interface Connector: 1 x 6P 2.0 mm wafer box</p>
Keyboard/Mouse connectors	
	<p>SMSC SCH 3114 supports (LPC Super I/O)</p> <ul style="list-style-type: none"> ■ 8 I/O Pins ■ 5 V tolerance I/Os <p>Connector: 1 x 5 * 2P 2.0 mm pin header</p>
GPIO	
	<p>2-pin wafer box for external Battery on board</p>
Battery backup	

1.3.2 Mechanical Specifications

1.3.2.1 Dimensions (mm)

(L) 90 mm * (W) 96 mm

1.3.2.2 Height on Top (mm)

6.8 mm (AT Power Connector)

1.3.2.3 Height on Bottom (mm)

8.1 mm (CF Socket)

1.3.2.4 Weight (g)

97 g

1.3.3 Electrical Specifications

1.3.3.1 Power Supply Voltage

Voltage requirement with AT Power:

+12 VDC +/-5%

+5 VDC +/-5%

1.3.3.2 Power Supply Current

Supply Current (Typical)

CPU: Advantech Em'Core EVA-X4150

RAM:133 MHz 64 MB SDRAM

	AT		
	5V	12 V	3.3 V
DOS	1.19 A	0 A	0 A

1.3.3.3 RTC Battery

Typical Voltage: 3.0 V

Normal discharge capacity: 300 mAh

1.3.4 Environmental Specifications

1.3.4.1 Operating Temperature

Operating temperature: 0 ~ 60° C (32 ~ 140° F)

1.3.4.2 Operating Humidity

0% ~ 90% Relative Humidity, non-condensing

1.3.4.3 Storage Temperature

Standard products (0 ~ 60° C)

Storage temperature: -20 ~ 70° C

1.3.4.4 Storage Relative Humidity

Standard products (0 ~ 60° C)

Relative Humidity: 95% @ 60° C

Chapter 2

H/W Installation

This chapter explains the setup procedures of the PCM-3342 hardware, including instructions on setting jumpers and connecting peripherals, switches, indicators and mechanical drawings. Be sure to read all safety precautions before you begin the installation procedure.

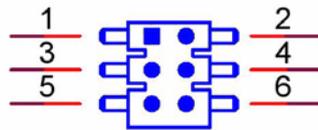
2.1 Jumpers

2.1.1 Jumper List

J1	COM2 Setting
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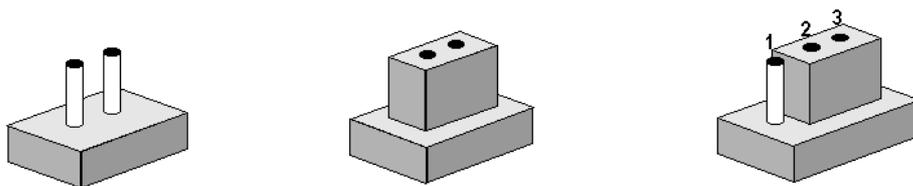
2.1.2 Jumper Settings

J1	COM2 Setting
Part Number	1653003260
Footprint	JH3X2S-2M
Description	PIN HEADER 3 * 2P 180D (M) 2.0 mm SMD SQUARE PIN
Setting	Function
(1-2)	RS-232
(3-4)	RS-485
(5-6)	RS-422

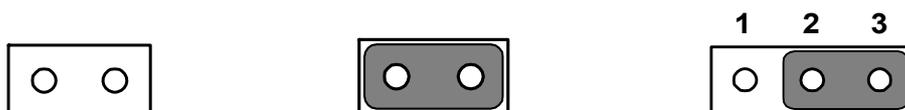


2.1.3 Jumper Description

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.



The jumper settings are schematically depicted in this manual as follows.



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.

Setting	Function
1-2	+5 V
2-3	+3.3 V

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".



2.2 Connectors

2.2.1 Connector List

CN1	AT Power Input
CN2	Reset
CN3	Battery
CN4	CF
CN5	VGA
CN6	24 bits TTL Panel
CN7	Inverter Power Output
CN8	Internal USB
CN9	SATA
CN10	HDD & PWR LED
CN11	LAN
CN12	COM
CN13	RS-422/485
CN14	GPIO
CN15	LPT
CN16	PS2
CN17	PC104
CN18	ISA -5 V & -12 V Input

2.2.2 Connector Settings

2.2.2.1 Power Connector (CN1, CN2)

Main power connector, +5 V, +12 V (CN1)

Supplies main power to the PCM-3342 (+5 V), and to devices that require +12 V.

Reset connector (CN2)

Momentarily pressing the reset button connected to reset connector will activate a reset.

2.2.2.2 Solid State Disk (CN4)

The board provides a CompactFlash card type I/II socket.

CompactFlash (CN4)

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

The CompactFlash setting is fix master mode.

2.2.2.3 VGA LCD Interface Connector (CN5, CN6)

VGA/LCD/LVDS interface connections

The board's PCI VGA interface can drive conventional CRT displays and is capable of driving a wide range of flat panel displays, including passive LCD and active LCD displays. The board has connectors to support these displays: one for standard CRT VGA monitors and one for flat panel displays

CRT display connector (CN5)

The CRT display connector is a box h connector used for conventional CRT displays.

TTL LCD panel connector (CN6)

The board supports 24-bit TTL LCD panel displays.

Users can connect to an 24-bit TTL LCD on it.

2.2.2.4 USB Connector (CN8)

The board provides up to two USB (Universal Serial Bus) ports. This gives complete plug and play capability. The USB interfaces comply with USB specification Rev. 2.0 which supports 480 Mbps transfer rate, and are fuse protected 5 x 2 pin 180D (M) connectors for internal 2 x USB connectors at CN8. You will need an adapter cable if you use a standard USB connector. The adapter cable has a 5 x2-pin connector with foolproof protection for incorrect plug-in on one end and a USB connector on the other.

2.2.2.5 SATA Connector (CN9)

PCM-3342 supports Serial ATA via one connector (CN9). Data transfer rates up to 100 MB/s are possible, enabling very fast data and file transfer, and DMA operation on one port.

2.2.2.6 Power & HDD LED Indicator (CN10)

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

2.2.2.7 LAN Connector (CN11)

Ethernet configuration

The board is equipped with 1 high performance 32-bit PCI-bus Ethernet interface which is fully compliant with IEEE 802.3 10/100Mbps. It is supported by all major network operating systems.

100 Mbps connector (CN11)

100 Mbps connections are made via the internal 5 * 2P box header.

2.2.2.8 COM Port Connector (CN12, CN13)

The board provides four serial ports: Four serial RS-232 ports in one 40-pin connector (CN12: COM1/2/3/4). It provides connections for serial devices or a communication network. You can find the pin assignments for the COM port connector in Appendix A.

Serial Port RS-422/485 (CN13)

Serial ports can be configured to operate in RS-422 and RS-485 mode. RS-422 and RS-485 are in one pin header (CN13) and can be configured via J1 connector.

J1	COM2 Setting
Setting	Function
(1-2)	RS232
(3-4)	RS485
(5-6)	RS422

2.2.2.9 GPIO (General Purpose Input Output) (CN14)

The board supports 8-bit GPIO through the GPIO connector. The 8 digital in and outputs can be programmed to read or control devices, with input or output defined. The default setting is 4 bits input and 4 bits output.

2.2.2.10 Parallel Port Connector (CN15)

Normally, the parallel port is used to connect the card to a printer. The board includes a multi-mode (ECP/EPP/SPP) parallel port accessed via CN15 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 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.

2.2.2.11 Keyboard and PS/2 Mouse Connector (CN16)

The board provides a keyboard connector that supports both a keyboard and a PS/2 style mouse. In most cases, especially in embedded applications, a keyboard is not used. If the keyboard is not present, the standard PC/AT BIOS will report an error or fail during power-on self-test (POST) after a reset. The product'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.

2.2.2.12 PC/104 Connector (CN17)

PCM-3342 supports full ISA compatible functions via PC/104 connector (CN17).

20 x 2 (F) 2.54 mm 51.86 mm x 5.01 mm x 11.45 mm p = 3.40 mm

32 x 2 (F) 2.54 mm 82.34 mm x 5.01 mm x 11.45 mm p = 3.40 mm

PC/104 negative voltage: One 3 * 1P pin header (CN18) supports -5 V/-12 V power input for ISA devices.

2.3 Mechanical

2.3.1 Jumper and Connector Location

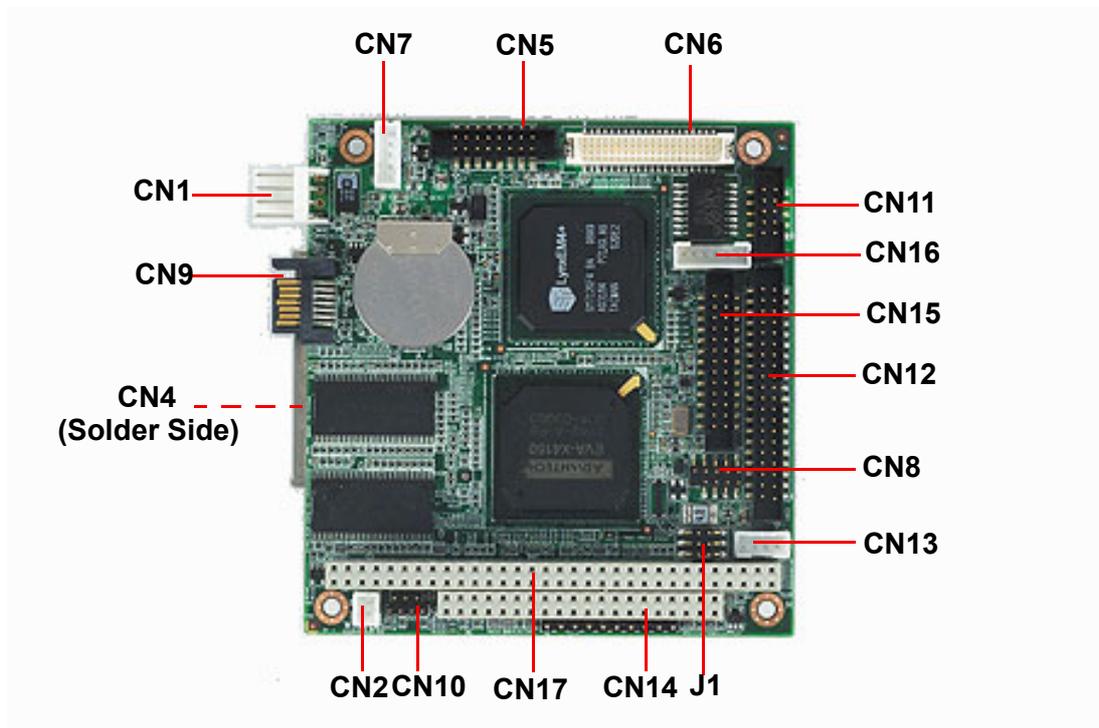


Figure 2.1 Jumper and Connector Layout (Component Side)

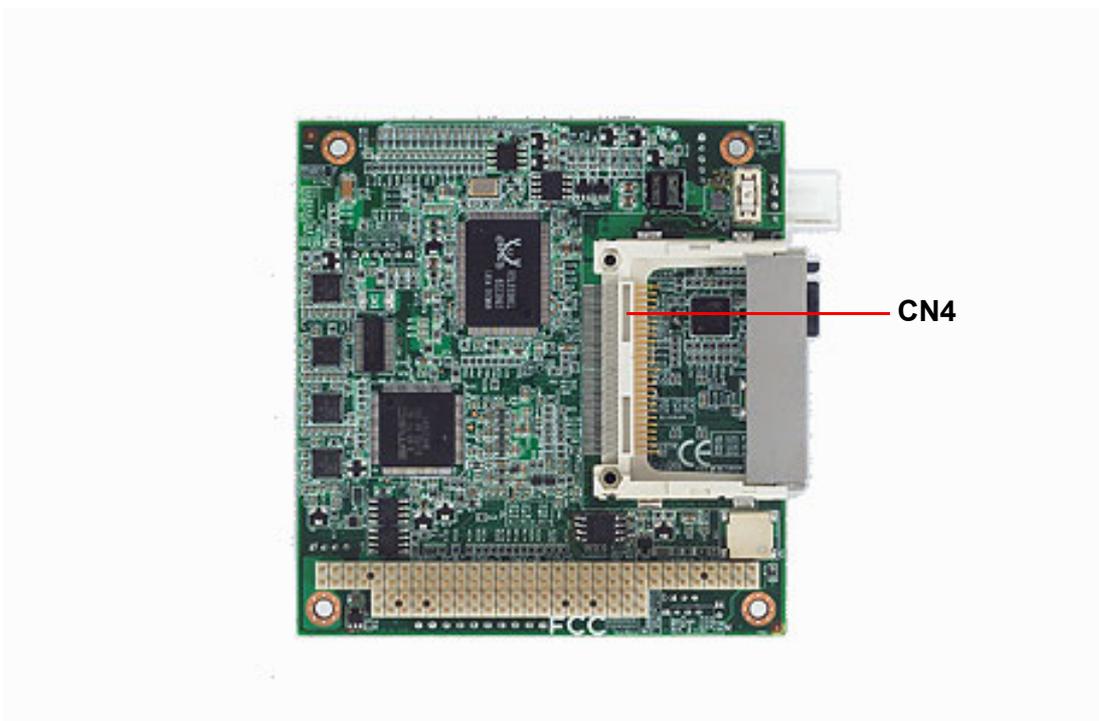


Figure 2.2 Jumper and Connector Layout (Solder Side)

2.3.2 Board Dimensions

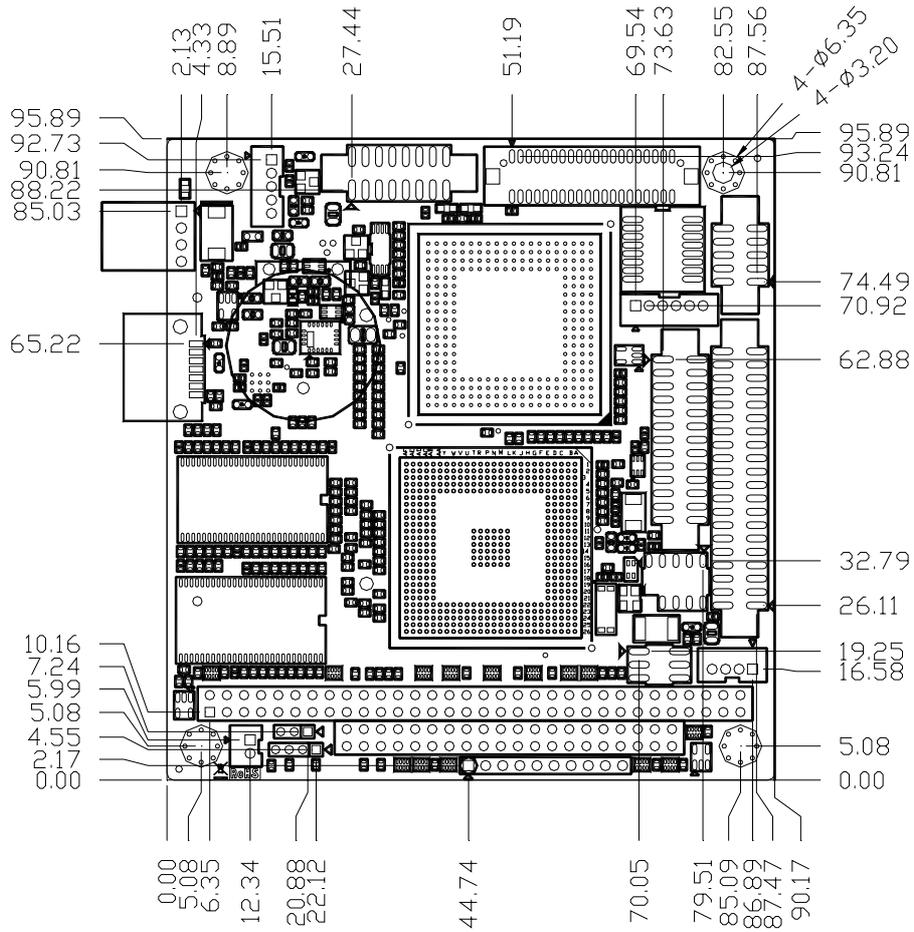


Figure 2.3 Board Dimensions Layout (Component Side)

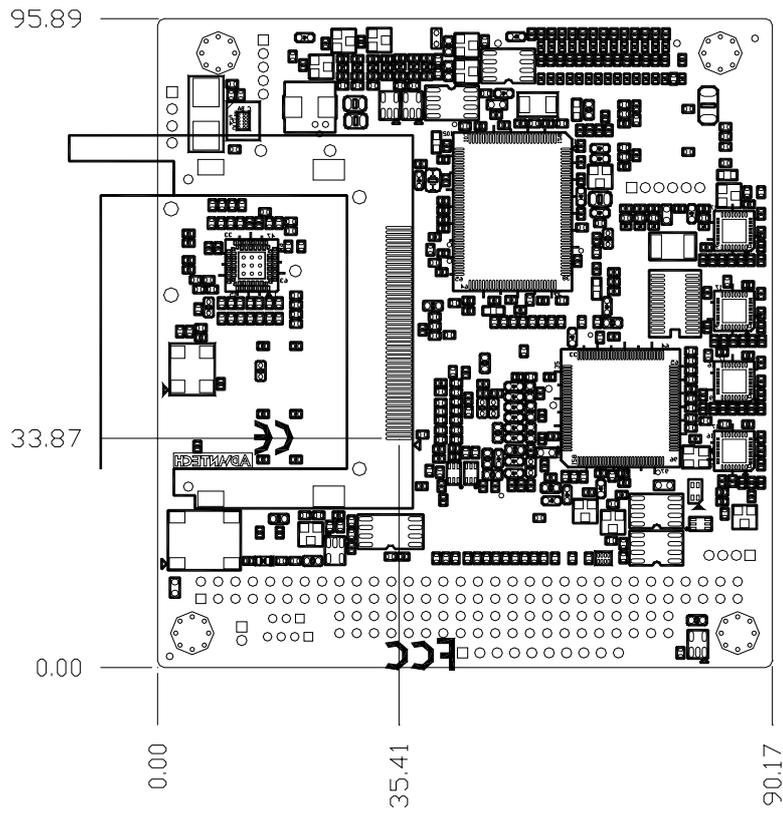


Figure 2.4 Board Dimensions Layout (Solder Side)

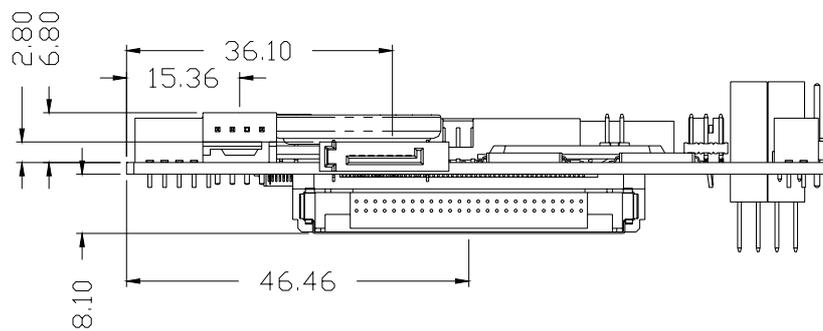


Figure 2.5 Board Dimensions Layout (Coastline)

Chapter 3

BIOS Operation

Sections include:

- BIOS Introduction
- BIOS Setup

3.1 BIOS Introduction

Advantech provides the full-featured AwardBIOS 6.0 and delivers the superior performance, compatibility and functionality that manufacturers of Industry PC and Embedded boards demand. 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 PCM-3342 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 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

<F6> Save all CMOS changes to BIOS

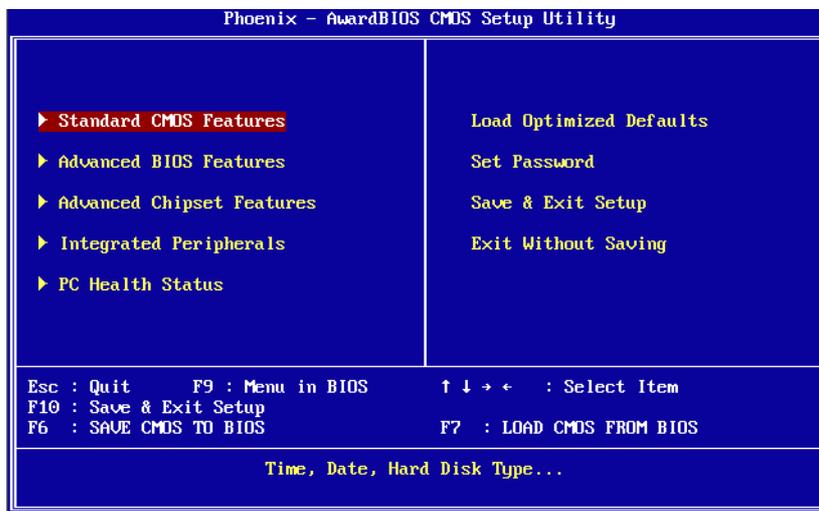
<F7> Load Optimized Default

<F9> Menu in BIOS

<F10> Save all CMOS changes

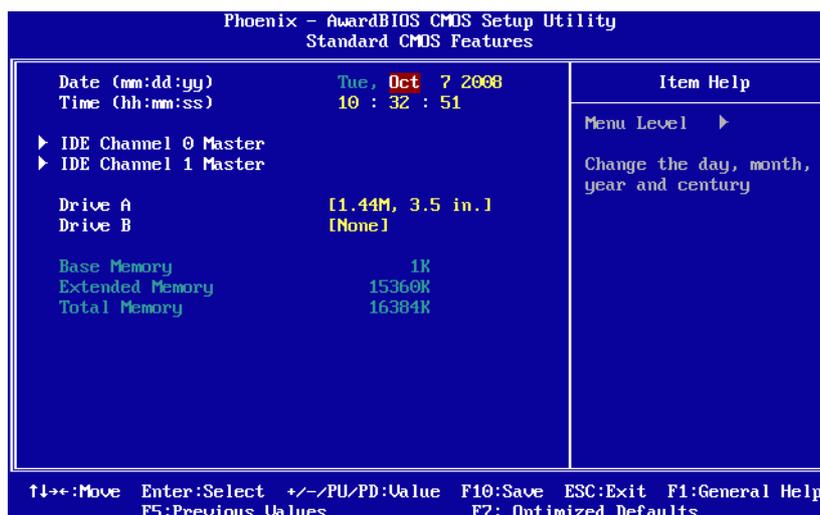
3.2.1 Main Menu

Press 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.



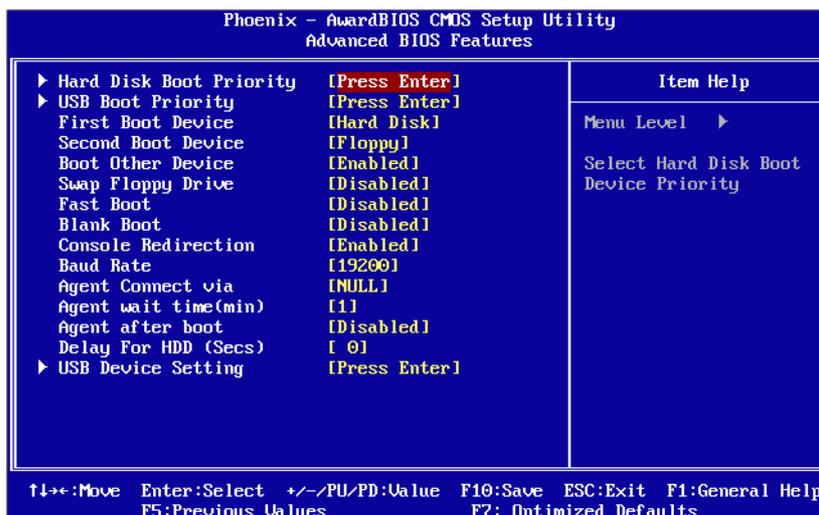
- **Standard CMOS Features**
This setup page includes all the items in standard compatible BIOS.
- **Advanced BIOS Features**
This setup page includes all the items of Award BIOS enhanced features.
- **Advanced Chipset Features**
This setup page includes all the items of Chipset configuration features.
- **Integrated Peripherals**
This setup page includes all onboard peripheral devices.
- **PC Health Status**
This entry displays the current system temperature and voltage.
- **Load Optimized Defaults**
This setup page includes options to load system optimized values resulting in the system's 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 <weekday>, <month>, <day>, <year>.
 - Week From Sun to Sat, determined and display by BIOS only
 - Month From Jan to Dec
 - Day From 1 to 31
 - Year From 1999 through 2098
- **Time**
The times format in <hours> <minutes> <seconds>, based on the 24-hour time
- **IDE Channel 0 Master/Slave**
Press "Enter" for automatic IDE HDD Auto-Detection device detection.
- **IDE Channel 1 Master/Slave**
Press "Enter" for automatic IDE HDD Auto-Detection device detection.
- **Drive A [1.44 m, 3.5 in.]**
Select the type of floppy disk drive installed in your system.
- **Drive B [None]**
Select the type of floppy disk drive installed in your system.
- **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



- **Hard Disk Boot Priority**

This item allows a user to select the boot sequence for system devices: HDD, SCSI, RAID.

- **USB Boot Priority**

This item allows a user to select USB Boot Device Priority.

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

Floppy	Select boot device priority for Floppy
LS120	Select boot device priority for LS120
Hard Disk	Select boot device priority for Hard Disk
CDROM	Select boot device priority for CDROM
USB Device	Select boot device priority for USB Device
ZIP100	Select boot device priority for ZIP100
USB-FDD	Select boot device priority for USB-FDD
USB-ZIP	Select boot device priority for USB-ZIP
USB-CDROM	Select boot device priority for USB-CDROM
LAN	Select boot device priority for LAN
Disabled	Disable this boot function

- **Swap Floppy Drive [Disabled]**

This item allows user to swap drive A and driver B sequence.

- **Fast Boot [Disabled]**

This item enable/disable Fast Boot feature.

- **Blank Boot [Disabled]**

This item enable/disable Blank Boot feature.

- **Console Redirection [Enabled]**

This item allows a user to enable / disable console redirection mode.

- **Baud Rate [19200]**

This item allows a user to set baud rate modes.

- **Agent Connect via [NULL]**

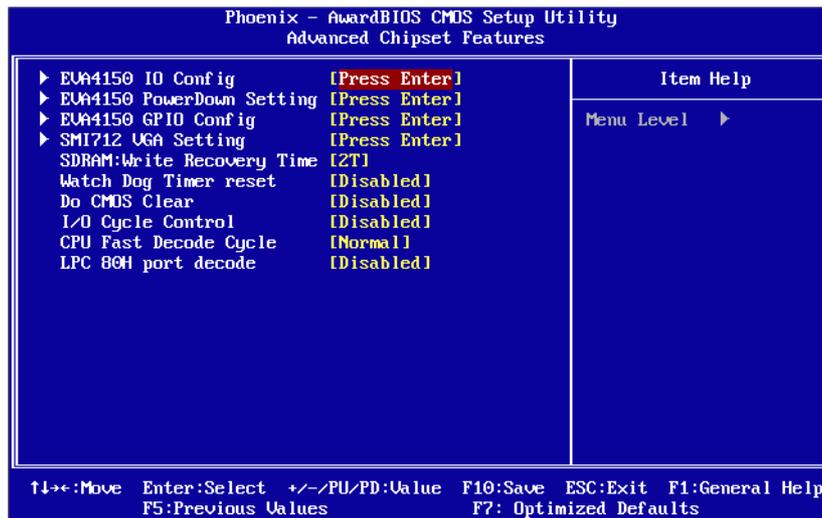
This item allows a user to set agent connect modes.

- **Agent Wait Time(min) [1]**

This item allows a user to set agent wait time (min).

- **Agent after Boot [Disabled]**
This item allows user to set agent running after boot mode.
- **Delay For HDD (Secs) [0]**
This item allows user to set delay for HDD (secs).
- **USB Device Setting [Press Enter] (Show Only)**
This item allows users to set USB related features.

3.2.4 Advanced Chipset Features



Note!  The "Advanced Chipset Features" screen controls the configuration of the board's chipset register settings and performance tuning - the options on this screen may vary depending on the chipset type. It is strongly recommended that only technical users make changes to the default settings.

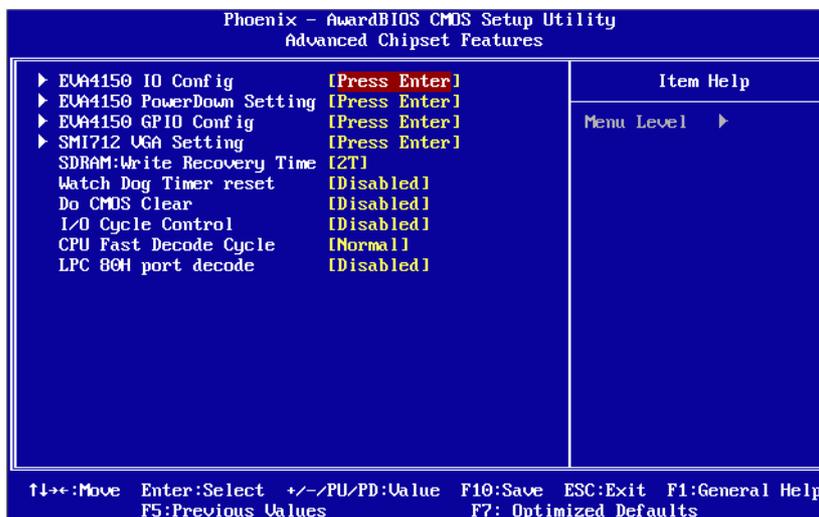
- **EVA4150 IO Config [Press Enter] (Show Only)**
This item allows a user to set EVA4150 UART, LPT resources.
- **EVA4150 PowerDown Setting [Press Enter] (Show Only)**
This item allows a user to set IDE, USB2.0, COM1 ,COM2 powerdown function.
- **EVA4150 GPIO Config [Press Enter] (Show Only)**
This item allows a user to set all of the GPIO resources.
- **SMI712 VGA Setting [Press Enter] (Show Only)**
This item allows a user to set VGA related features.
- **SDRAM: Write Recovery Time [2T]**
This item allows a user to set the DRAM Write Recovery Time.
- **Watch Dog Timer reset [Disabled]**
This item allows a user to set watch dog timer.
- **Do CMOS Clear [Disabled]**
This item allows a user to clear CMOS.
- **I/O Cycle Control [Disabled]**
This item allows a user to set I/O cycle control mode.
- **CPU Fast Decode Cycle [Normal]**

This item allows a user to set CPU of decode cycle mode.

- **LPC 80H Port Decode [Disabled]**

This item allows a user to set LPC of 80H port decode function.

3.2.5 Integrated Peripherals



Note!  This "Integrated Peripherals" option controls the configuration of the board's chipset, includes IDE, ATA. the options on this screen may vary depending on the chipset type.

- **ADVSOC IDE Legacy Mode [Enabled]**

This item enables ADVSOC IDE as legacy IDE controller or PCI IDE controller.

- **On-Chip Primary IDE / On-Chip Secondary IDE [Enabled]**

This item enables chipset IDE device 1 or 2 of controller.

- **Master PIO [Auto]**

This item allows user to adjust master IDE mode of type for modification purpose. The Bios default setting is set to "Auto".

- **Slave PIO [Auto]**

This item allows user to adjust slave IDE mode. The Bios default value is set to "Auto".

- **Master Ultra DMA [Auto]**

This item allows a user to enable/disable primary master IDE ultra DMA mode. The Bios default value is set to "Enabled".

- **Slave Ultra DMA [Auto]**

This item allows a user to enable/disable primary slave IDE ultra DMA mode. The Bios default value is set to "Enabled".

- **Master UDMA [Auto]**

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

- **Slave UDMA [Auto]**

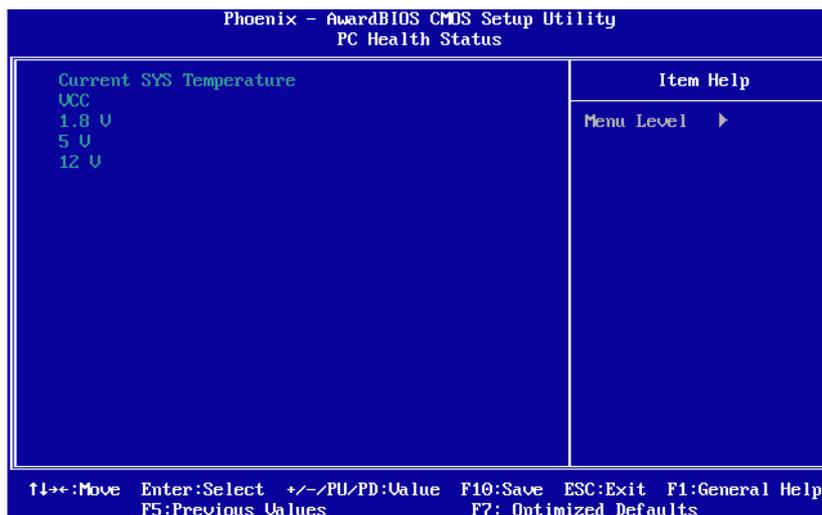
This item allows user to adjust primary slave IDE mode. The Bios default value is set to "Auto".

- **IDE HDD Block Mode [Enabled]**

This item allows IDE block data transfer mode to be enabled or disabled. This setting will speed up HDD data transfer efficiency. The Bios default value is set to “Enabled”.

- **Onboard FDC Controller [Enabled]**
This item specifies an onboard floppy disk drive controller.
- **Onboard Serial Port 3 [3E8]**
This option is used to assign the I/O address and IRQ for the onboard serial port.
- **Serial Port 3 Use IRQ [IRQ10]**
This option is used to assign the Serial Port 3 Use IRQ.
- **Onboard Serial Port 4 [2E8]**
This option is used to assign the I/O address and IRQ for the onboard serial port.
- **Serial Port 4 Use IRQ [IRQ5]**
This option is used to assign the Serial Port 4 Use IRQ.
- **Onboard Parallel Port [378/IRQ7]**
This item allows you to determine onboard parallel port controller I/O address and IRQ.
- **Parallel Port Mode [Standard]**
Select an operating mode for the onboard parallel port.
- **ECP Mode Use DMA [3]**
When the onboard parallel is set to ECP mode, the parallel port can use DMA3 or DMA1.

3.2.6 PC Health Status

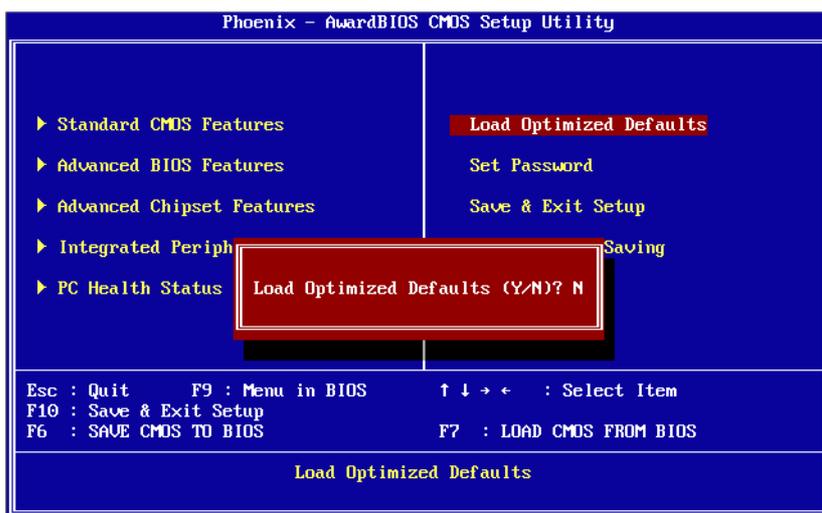


Note! This entry displays the current system temperature, and voltage.



- Current SYS Temperature
- VCC
- 1.8 V
- 5 V
- 12 V

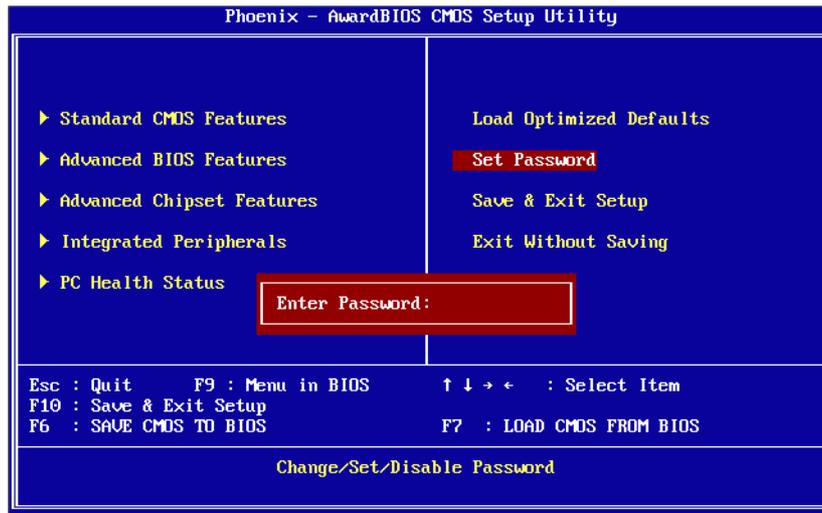
3.2.7 Load Optimized Defaults



Note! *Load Optimized Defaults loads the default system values directly from ROM, for use 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 PCM-3342 system on.*



3.2.8 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>.

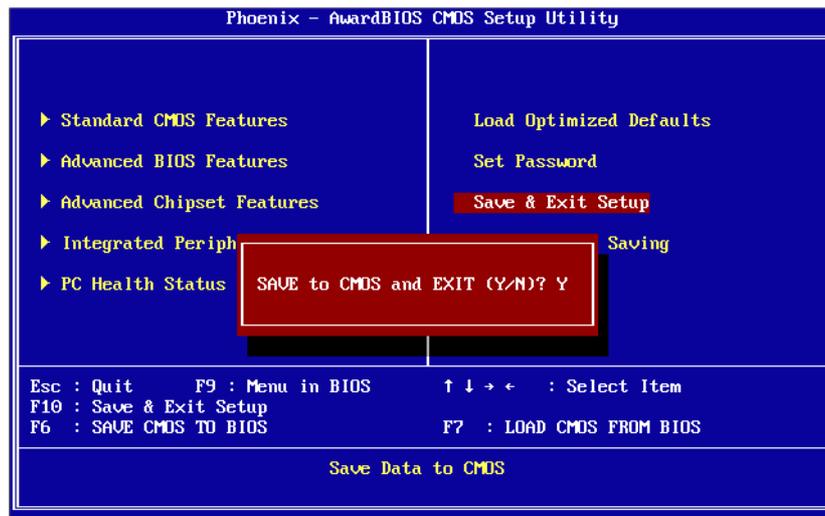
To Change Password

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>.

3.2.9 Save & Exit Setup

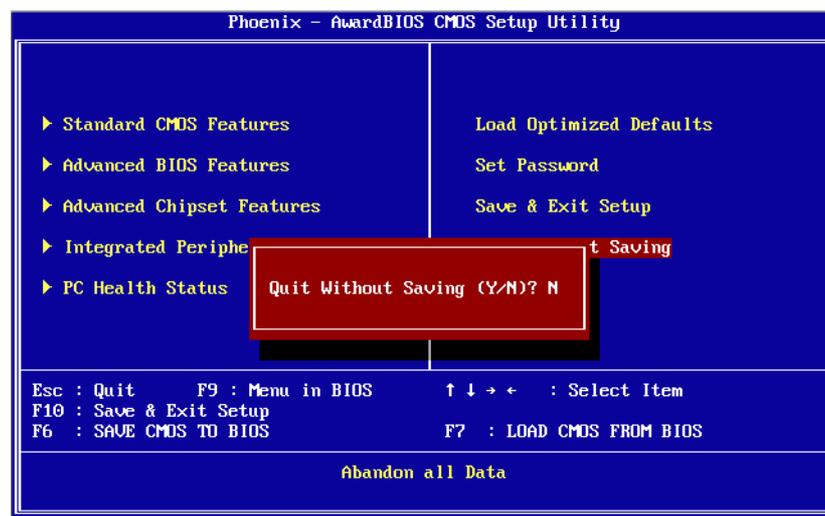


Note! Typing "Y" will quit the BIOS Setup Utility and save user setup value to CMOS.



Typing "N" will return to the BIOS Setup Utility.

3.2.10 Quit Without Saving



Note! Typing "Y" will quit the BIOS Setup Utility without saving to CMOS.

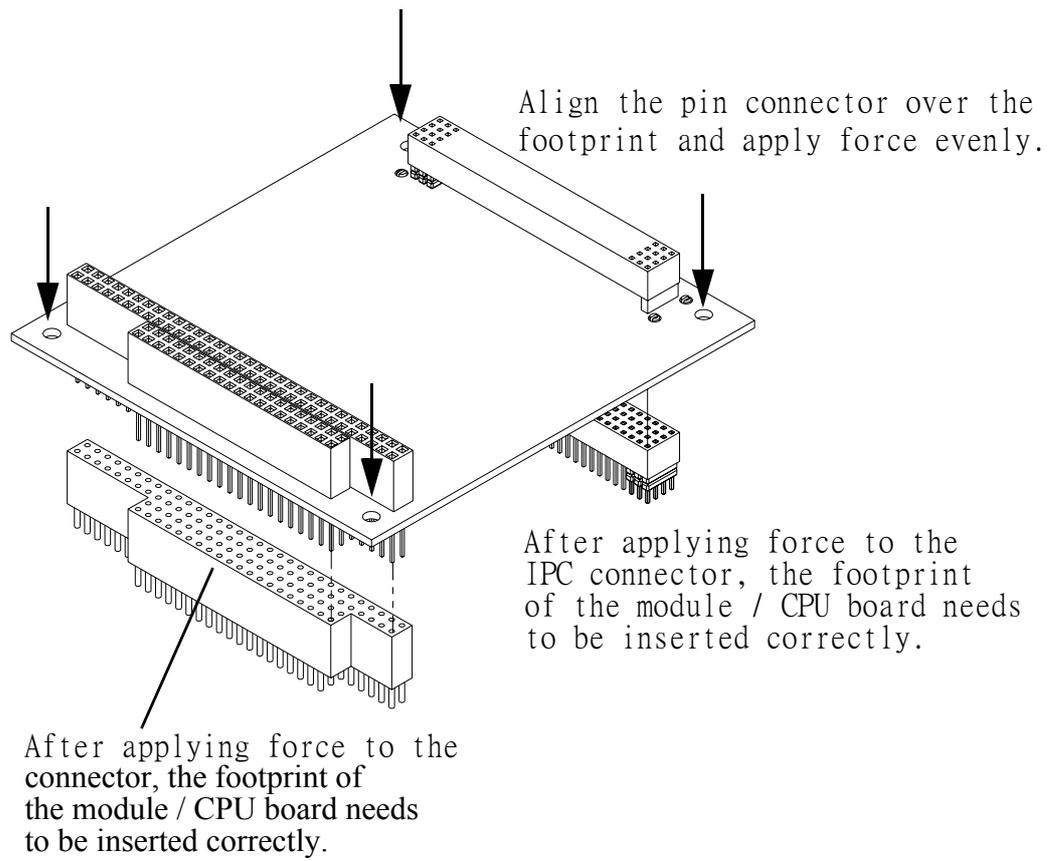


Typing "N" will return to the BIOS Setup Utility.

Chapter 4

Extension I/O
Installation

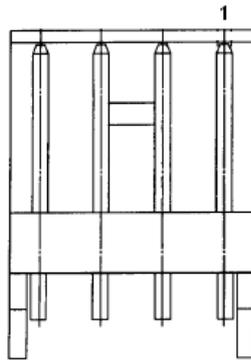
4.1 PC104



Appendix **A**

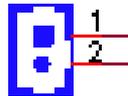
Pin Assignments

A.1 AT Power Input (CN1)



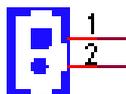
CN1	AT Power Input
Part Number	1655004110
Footprint	WF_4P_98_A2544WR2-4P_R1_D
Description	WAFER 2.54 mm 4P 90D MALEW/LOCK
Pin	Pin Name
1	+12 V
2	GND
3	GND
4	+5 V

A.2 Reset (CN2)



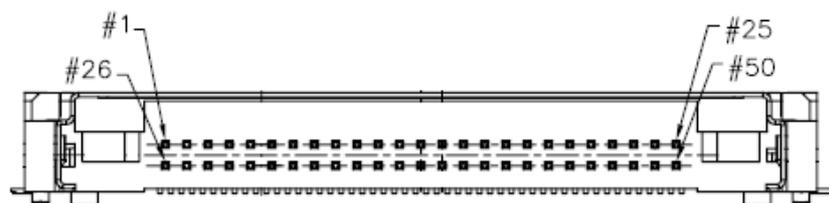
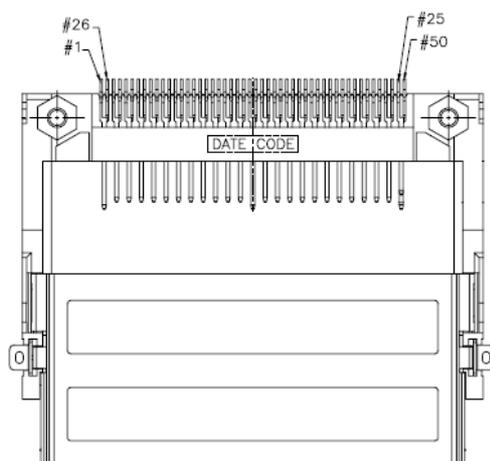
CN2	Reset
Part Number	1655302020
Footprint	WHL2V-2M
Description	WAFER BOX 2P 180D (M) 2.0 mm W/Lock
Pin	Pin Name
1	RESET#
2	GND

A.3 Battery (CN3)



CN3	Battery
Part Number	1655902032
Footprint	WHL2V-125
Description	WAFER 2P 180D (M) 1.25 mm DIP 53047-0210
Pin	Pin Name
1	+3 V
2	GND

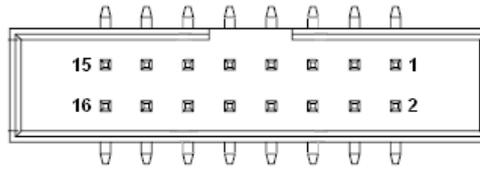
A.4 CF (CN4)



CN4	CF
Part Number	1653000106
Footprint	COMPACT-T12
Description	CF HEADER 50P 90D (M)SMD typeII N7E50-H516RA-50
Pin	Pin Name
1	GND
2	D03
3	D04
4	D05
5	D06
6	D07
7	CS0#
8	GND
9	GND
10	GND
11	GND
12	GND
13	+5 V
14	GND
15	GND
16	GND
17	GND
18	A02
19	A01
20	A00
21	D00
22	D01
23	D02
24	NC
25	CD2#
26	CD1#

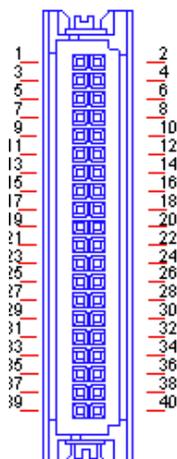
CN4	CF
Part Number	1653000106
Footprint	COMPACT-T12
Description	CF HEADER 50P 90D (M) SMD typeII N7E50-H516RA-50
Pin	Pin Name
27	D11
28	D12
29	D13
30	D14
31	D15
32	CS1#
33	VS1#
34	IORD#
35	IOWR#
36	WE#
37	IREQ
38	+5 V
39	CSEL#
40	VS2#
41	RESET
42	IORDY
43	INPACK#
44	REG#
45	DASP#
46	PDIAG#
47	D08
48	D09
49	D10
50	GND

A.5 VGA (CN5)



CN5	VGA
Part Number	1653208260
Footprint	BH8X2SV
Description	BOX HEADER 8 * 2P 180D (M) 2.00 mm
Pin	Pin Name
1	RED
2	NC
3	GREEN
4	GND
5	BLUE
6	NC
7	NC
8	DDAT
9	GND
10	HSYNC
11	GND
12	VSYNC
13	GND
14	DCLK
15	GND
16	NC

A.6 24-bit TTL Panel



CN6	24-bit TTL Panel
Part Number	1653920200
Footprint	SPH20X2
Description	*CONN. 40P 90D 1.25 mm SMD WO/Pb DF13-40DP-1.25 V
Pin	Pin Name
1	+5 V
2	+5 V
3	GND
4	GND
5	+3.3 V
6	+3.3 V
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

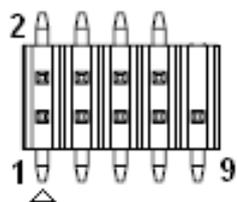
CN6	24-bit TTL Panel
Part Number	1653920200
Footprint	SPH20X2
Description	*CONN. 40P 90D 1.25 mm SMD WO/Pb DF13-40DP-1.25 V
Pin	Pin Name
27	PD18
28	PD19
29	PD20
30	PD21
31	PD22
32	PD23
33	GND
34	GND
35	SHFCLK
36	FLM (V-SYNC)
37	M/DE
38	LP (H-SYNC)
39	NC
40	ENVEE

A.7 Inverter Power Output (CN7)



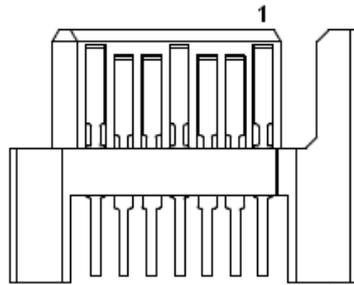
CN7	Inverter Power Output
Part Number	1655305020
Footprint	WHL5V-2M
Description	WAFER BOX 2.0 mm 5P 180D (M) W/LOCK
Pin	Pin Name
1	+12 V
2	GND
3	ENABKL
4	VBR
5	+5 V

A.8 Internal USB



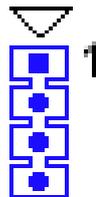
CN8	Internal USB
Part Number	1653005260
Footprint	HD_5x2P_79_N10
Description	PIN HEADER 5 * 2P 180D (M) 2.0 mm SMD FOOLPROOF
Pin	Pin Name
1	+5 V
2	+5 V
3	A_D-
4	B_D-
5	A_D+
6	B_D+
7	GND
8	GND
9	GND

A.9 SATA (CN9)



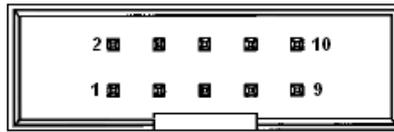
CN9	SATA
Part Number	1654000128
Footprint	SATA-LD11071S02
Description	Serial ATA 7P 90D (M) SMD 15u Reverse
Pin	Pin Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

A.10 HDD & PWR LED (CN10)



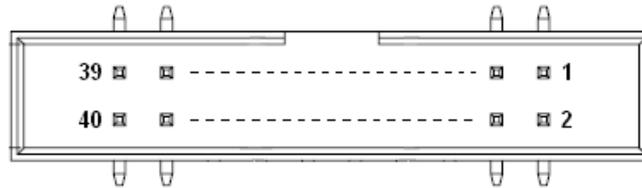
CN10	HDD & PWR LED
Part Number	1653004101
Footprint	JH4X1V-2M
Description	PIN HEADER 4 * 1P 180D (M) 2.0 mm DIP WO/Pb
Pin	Pin Name
1	Power LED+
2	Power LED-
3	HDD LED+
4	HDD LED-

A.11 LAN (CN11)



CN11	LAN
Part Number	1653205260
Footprint	BH5X2SV
Description	BOX HEADER SMD 5 * 2 180D (M) 2.0 mm
Pin	Pin Name
1	+3.3V
2	ACT#
3	RX+
4	RX-
5	LINK#
6	RXCT
7	NC
8	TXCT
9	TX+
10	TX-

A.12 COM (CN12)



CN12	COM
Part Number	1653220260
Footprint	BH20X2SV
Description	BOX HEADER 20 * 2P 180D (M) 2.0 mm SMD W/O Pb
Pin	Pin Name
1	DCD1#
2	DSR1#
3	RXD1
4	RTS1#
5	TXD1
6	CTS1#
7	DTR1#
8	RI1#
9	GND
10	GND
11	DCD2#
12	DSR2#
13	RXD2
14	RTS2#
15	TXD2
16	CTS2#
17	DTR2#
18	RI2#
19	GND
20	GND
21	DCD3#
22	DSR3#
23	RXD3
24	RTS3#
25	TXD3
26	CTS3#

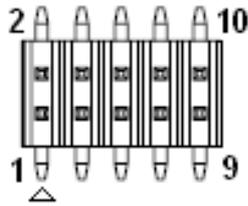
CN12	COM
Part Number	1653220260
Footprint	BH20X2SV
Description	BOX HEADER 20 * 2P 180D (M) 2.0 mm SMD W/O Pb
Pin	Pin Name
27	DTR3#
28	RI3#
29	GND
30	GND
31	DCD4#
32	DSR4#
33	RXD4
34	RTS4#
35	TXD4
36	CTS4#
37	DTR4#
38	RI4#
39	GND

A.13 RS-422/485 (CN13)



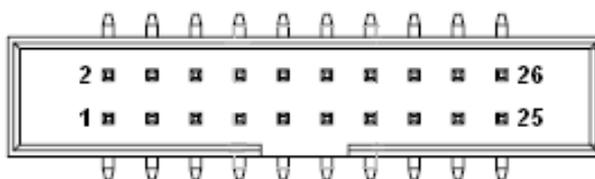
CN13	RS-422/485
Part Number	1655304020
Footprint	WHL4V-2M
Description	WAFER BOX 2.0 mm 4P 180D MALE W/LOCK 2001-WS-4
Pin	Pin Name
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-

A.14 GPIO (CN14)



CN14	GPIO
Part Number	1653005261
Footprint	HD_5x2P_79_BOX
Description	PIN HEADER SMD 5 * 2P 180D (M) 2.0 mm
Pin	Pin Name
1	+5 V
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6
7	GPIO2
8	GPIO7
9	GPIO3
10	GND

A.15 LPT (CN15)



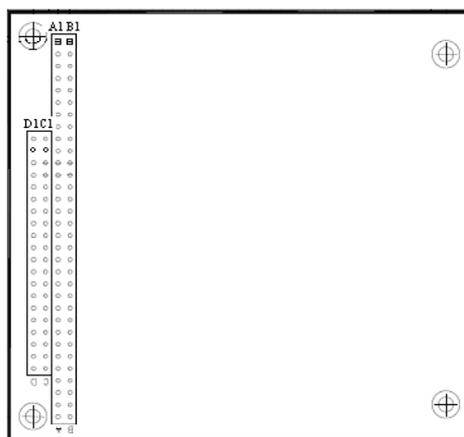
CN15	LPT
Part Number	1653213260
Footprint	BH13X2SV
Description	BOX HEADER 13 * 2P 180D (M) 2.0 mm SMD
Pin	Pin Name
1	STROBE#
2	AUTOFEED#
3	D0
4	ERROR#
5	D1
6	INIT#
7	D2
8	SLCT IN#
9	D3
10	GND
11	D4
12	GND
13	D5
14	GND
15	D6
16	GND
17	D7
18	GND
19	ACK#
20	GND
21	BUSY
22	GND
23	PE
24	GND
25	SLCT
26	NC

A.16 PS2 (CN16)



CN16	PS2
Part Number	1655306020
Footprint	WHL6V-2M
Description	WAFER BOX 2.0 mm 6P 180D (M) W/LOCK
Pin	Pin Name
1	KBCLK
2	KBDAT
3	MSCLK
4	GND
5	+5 V
6	MSDAT

A.17 PC104 (CN17)



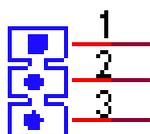
CN17	PC104
Part Number	00A000005 165312022B 165313222B
Footprint	PC104
Description	
Pin	Pin Name
A1	IOCHCK
A2	SD7
A3	SD6
A4	SD5
A5	SD4
A6	SD3
A7	SD2
A8	SD1
A9	SD0
A10	IOCHRDY
A11	AEN
A12	SA19
A13	SA18
A14	SA17
A15	SA16
A16	SA15
A17	SA14
A18	SA13
A19	SA12
A20	SA11
A21	SA10
A22	SA9
A23	SA8
A24	SA7
A25	SA6
A26	SA5

CN17	PC104
Part Number	00A0000005 165312022B 165313222B
Footprint	PC104
Description	
Pin	Pin Name
A27	SA4
A28	SA3
A29	SA2
A30	SA1
A31	SA0
A32	GND
B1	GND
B2	RSTDRV
B3	+5 V
B4	IRQ9
B5	-5V
B6	DRQ2
B7	-12V
B8	0WS#
B9	+12 V
B10	GND
B11	SMEMW#
B12	SMEMR#
B13	IOW#
B14	IOR#
B15	DACK3#
B16	DRQ3
B17	DACK1#
B18	DRQ1
B19	REFRESH#
B20	SYSCLK

CN17	PC104
Part Number	00A0000005 165312022B 165313222B
Footprint	PC104
Description	
Pin	Pin Name
B21	IRQ7
B22	IRQ6
B23	IRQ5
B24	IRQ4
B25	IRQ3
B26	DACK2#
B27	TC
B28	ALE#
B29	+5V
B30	OSC
B31	GND
B32	GND
C1	GND
C2	BHE#
C3	LA23
C4	LA22
C5	LA21
C6	LA20
C7	LA19
C8	LA18
C9	LA17
C10	MEMR#
C11	MEMW#
C12	SD8
C13	SD9
C14	SD10

CN17	PC104
Part Number	00A0000005 165312022B 165313222B
Footprint	PC104
Description	
Pin	Pin Name
C15	SD11
C16	SD12
C17	SD13
C18	SD14
C19	SD15
C20	NC
D1	GND
D2	MEMCS16#
D3	IOCS16#
D4	IRQ10
D5	IRQ11
D6	IRQ12
D7	IRQ15
D8	IRQ14
D9	DACK0#
D10	DRQ0
D11	DACK5#
D12	DRQ5
D13	DACK6#
D14	DRQ6
D15	DACK7#
D16	DRQ7
D17	+5 V
D18	MASTER#
D19	GND
D20	GND

A.18 ISA -5 V & -12 V Input (CN18)



CN18	ISA -5 V & -12 V Input
Part Number	1653003101
Footprint	JH3X1V-2M
Description	PIN HEADER 3 * 1P 180D (M) 2.0 mm DIP SQUARE W/O Pb
Pin	Pin Name
1	-12 V
2	-5 V
3	GND

Appendix **B**

Watchdog Timer

B.1 Watchdog Timer Sample Code

```
;The SCH3114 Runtime base I/O address is 800h
;Setting WatchDog time value location at offset 66h
;If set value "0", it is mean disable WatchDog function.
Superio_GPIO_Port = 800h
mov dx,Superio_GPIO_Port + 66h
mov al,00h
out dx,al
.model small
.486p
.stack 256
.data
SCH3114_IO EQU 800h
.code
org 100h
.STARTUp
;=====
;47H
;enable WDT function bit [3:2]=11
;=====
mov dx,SCH3114_IO + 47h
mov al,0ch
out dx,al
;=====
;65H
;bit [1:0]=Reserved
;bit [6:2]Reserve=00000
;bit [7] WDT time-out Value Units Select
;Minutes=0 (default) Seconds=1
;=====
mov dx,SCH3114_IO + 65h ;
mov al,080h
out dx,al
;=====
;66H
;WDT timer time-out value
;bit[7:0]=0~255
;=====
mov dx,SCH3114_IO + 66h
mov al,01h
out dx,al
;=====
;bit[0] status bit R/W
;WD timeout occurred =1
;WD timer counting = 0
```

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

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