

## **SBC-657B / HSB-657I**

VIA C3™ Eden™ CPU

Half-Size CPU Card

With LCD, Ethernet, PC/104 &

CompactFlash™, USB

SBC-657 Rev.B / HSB-657I Rev.A Manual 1<sup>st</sup> Ed.

Nov. 2003

---

## Copyright Notice

This document is copyrighted, 2003. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, AAeon assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

AAeon reserves the right to make changes in the product design without notice to its users.

## Acknowledgments

All other products' name or trademarks are properties of their respective owners.

- Award is a trademark of Award Software International, Inc.
- CompactFlash™ is a trademark of the Compact Flash Association.
- Microsoft Windows® is a registered trademark of Microsoft Corp.
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

## Packing List

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

- 1 SBC-657B & HSB-657I Half-Size CPU Card
- 1 Quick Installation Guide
- 1 CD-ROM for manual (in PDF format) and drivers
- 1 Short copper and support
- 1 Jumper Cap
- 1 Cable Accessory

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

# Contents

## Chapter 1 General Information

1.1 Introduction .....	1-2
1.2 Features .....	1-3
1.3 Specifications .....	1-4

## Chapter 2 Quick Installation Guide

2.1 Safety Precautions .....	2-2
2.2 Location of Connectors and Jumpers .....	2-3
2.3 Mechanical Drawing.....	2-7
2.4 List of Jumpers .....	2-11
2.5 List of Connectors.....	2-12
2.6 Setting Jumpers.....	2-13
2.7 COM2 Ring signal select (JP1).....	2-14
2.8 Clear CMOS (JP2).....	2-14
2.9 RS-232/422/485 Setting (JP4).....	2-14
2.10 RS-232/422/485 Setting (JP5).....	2-15
2.11 LCD Shift Clock Select (JP6).....	2-15
2.12 LCD Voltage Setting (JP7).....	2-15
2.13 Power Connector (ATX Power) (PWR1).....	2-16
2.14 FAN Connector (CN1).....	2-16
2.15 Keyboard and Mouse Connector (CN2).....	2-17
2.16 Parallel Port Connector (CN3).....	2-17
2.17 Floppy Connector (CN4).....	2-18

2.18 IR Connector (CN5) .....	2-18
2.19 Front Panel Connector (CN6) .....	2-19
2.20 Optional PME Connector (CN7) .....	2-19
2.21 IDE Hard Drive Connector (CN8) .....	2-20
2.22 USB Connectors (CN9/CN11) .....	2-21
2.23 CompactFlash™ Disk Connector (CN10) .....	2-22
2.24 10/100Base-T RJ-45 Ethernet Connector (CN12) .....	2-23
2.25 COM1/3/4 RS-232 Serial Port Connector (CN13/CN21/CN22) .....	2-24
2.26 COM2 RS-232/422/485 Serial Port Connector (CN14) .....	2-24
2.27 VGA Display Connector (CN15) .....	2-25
2.28 TTL_LCD Connector (CN16/CN17) .....	2-25
2.29 Channel 1 LVDS Connector (CN18) .....	2-27
2.30 Channel 2 LVDS Connector (CN19) .....	2-27
2.31 Backplane ATX Power Connector (CN24) .....	2-28
2.32 Internal Mouse Connector (CN25) .....	2-28
2.33 Internal Keyboard Connector (CN26) .....	2-28

## Chapter 3 Award BIOS Setup

3.1 System test and initialization .....	3-2
3.2 Award BIOS setup .....	3-3
3.3 Standard CMOS Features .....	3-6
3.4 Advanced BIOS Features .....	3-7
3.5 Advanced Chipset Features .....	3-8
3.6 Integrated Peripherals .....	3-9
3.7 Power Management Setup .....	3-10

3.8 PnP/PCI Configurations.....	3-11
3.9 PC Health Status.....	3-12
3.10 Frequency/Voltage Control .....	3-13
3.11 Load Fail-Safe Defaults .....	3-14
3.12 Load Optimized Defaults.....	3-14
3.13 Set Supervisor/User Password .....	3-14
3.14 Save & Exit setup.....	3-15
3.15 Exit Without Saving.....	3-15

## Chapter 4 Driver Installation

4.1 Installation 1.....	4-3
4.2 Installation 2.....	4-4

## Appendix A Programming the WatchDog Timer

Programming.....	A-2
------------------	-----

Chapter

1

**General  
Information**



## **1.1 Introduction**

---

Half-size CPU Card, SBC-657B / HSB-657I, is powered by VIA C3™ series microprocessor with a maximum of 800MHz high process speed. Featured with CoolStream™ architecture, it performs as a strengthened single board computer with low power consumption while no CPU fan required.

Onboard VIA ProSavage™ PN133 chipset integrates various functions, including excellent display presentation ability. Featured with AGP 4X, the throughput can reach as high as 1.07GB per second. LCD interface is both provided by TTL and LVDS up to 36 bit. Also, supporting CRT and LCD to display at the same time offers wider media applications.

One RJ-45 Ethernet connector comes with a maximum data transfer rate of 100MB per second. The 7.3" x 4.8" computer board is connected to the infinite LAN world. Four serial ports are designed particularly for industry standard applications and offering various devices connection ability. And, four USB ports provide Plug-and-Play pleasant uses.

Implementing 16-bit Industry Standard Architecture (ISA) interface makes it easy to apply onto a wide range of industry fields. Industrial standard Type II CompactFlash™ slot performs as a mobile memory device with utilization freedom. PC/104 socket is reserved for further function expansion interface. Overall, this powerful CPU card is a high-end computer board for implementation.

## 1.2 Features

---

- Supports VIA C3™ Processor up to 800MHz
- Integrated AGP 4X 2D/3D graphic accelerator
- 36-bit TTL/LVDS TFT LCD
- 10/100Mbps Fast Ethernet
- Supports Type II CompacFlash™ Memory
- PC/104 expansion interface
- ISA interface

## 1.3 Specifications

---

### System

- CPU: VIA Eden™ 300/400/667/733/800MHz processor
- Memory: 144-pin SDRAM SODIMM Socket x 1, max. 512MB
- Chipset: VIA VT8606 + VT82C686B
- BIOS: Award 256KB FLASH ROM
- SSD: One Type II CompactFlash Slot
- Watchdog timer: Generate a system reset
- Ethernet: RTL 8139D, 10/100Base-T RJ-45 Ethernet connector x 1
- Expansion Interface: ISA interface, PC/104 socket
- Battery: Lithium battery
- Power supply voltage: +5V, +12V, 5VSB, ATX
- Operating temperature: 32 to 140 °F (0 to 60 °C)
- Board size: 7.3" (L) x 4.8" (W)  
(185 mm x 122 mm)
- Gross Weight: 0.66lb (0.3kg)

### Display

- Chipset: VIA VT8606
- Memory size: Shared system memory up to 32MB
- Resolution: up to 1280 x 1024@ 24bpp colors

- LCD Interface: for CRT  
18/36-bit TTL/LVDS TFT/DSTN  
LCD
- Supports CRT and LCD simultaneous display

**I/O**

- MIO: EIDE (UDMA100) x 1, FDD x 1,  
RS-232/422/485 x 1, RS-232 x 3,  
LPT x 1, VGA x 1,  
Keyboard/Mouse Connector x 1
- IrDA: One IrDA Tx/Rx header
- USB: Two 5x2 pin headers support 4 USB  
1.1 ports

## Chapter

# 2

# Quick Installation Guide

*Notice:*

*The Quick Installation Guide is derived from Chapter 2 of user manual. For other chapters and further installation instructions, please refer to the user manual CD-ROM that came with the product.*



## 2.1 Safety Precautions

---

**Warning!**

*Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.*

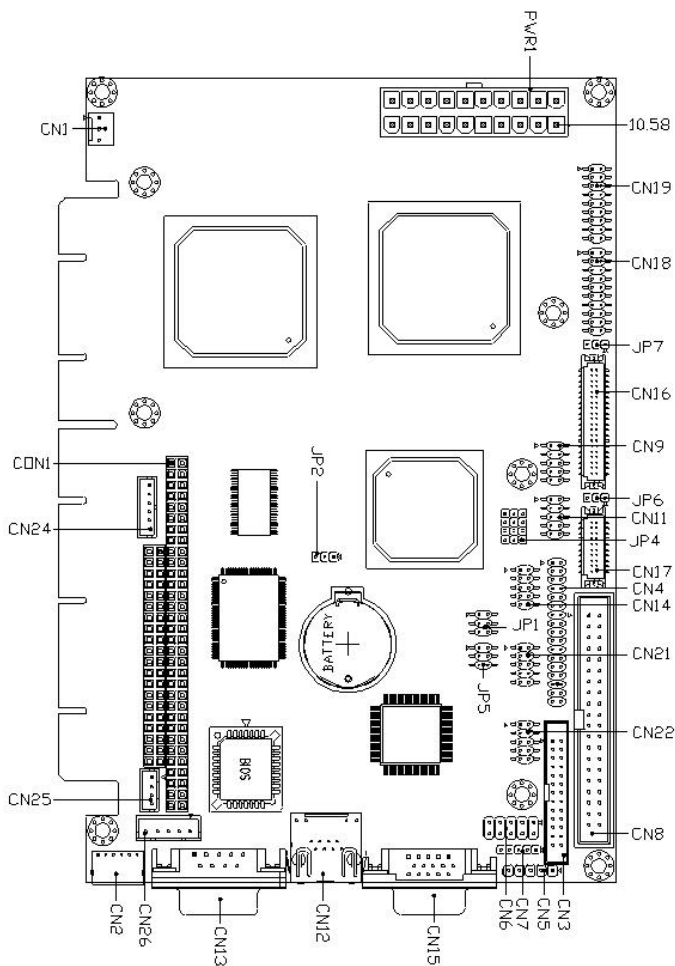
**Caution!**

*Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis*

## 2.2 Location of Connectors and Jumpers

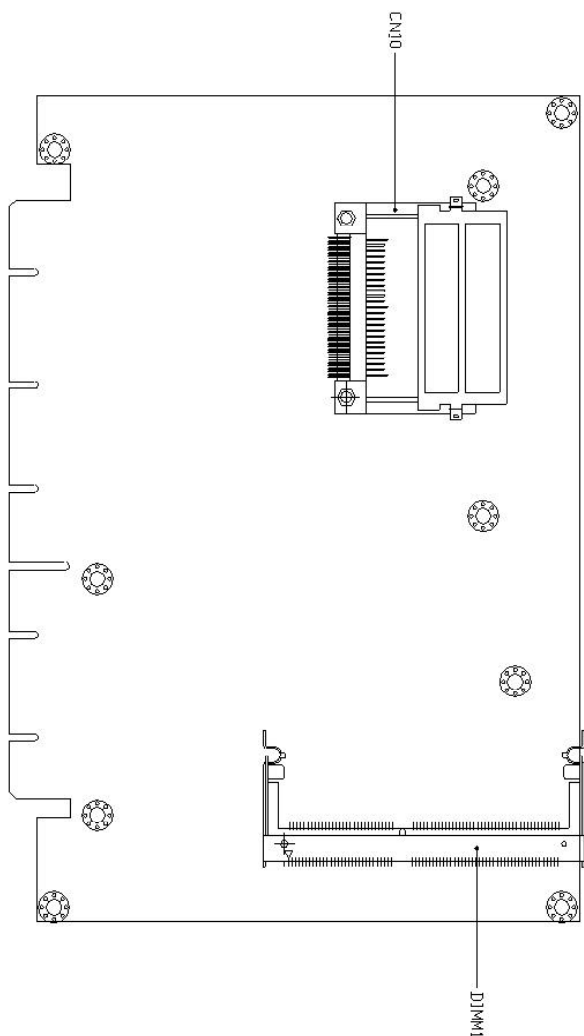
### Locating connectors and jumpers (component side)

#### SBC-657B



## Locating connectors (solder side)

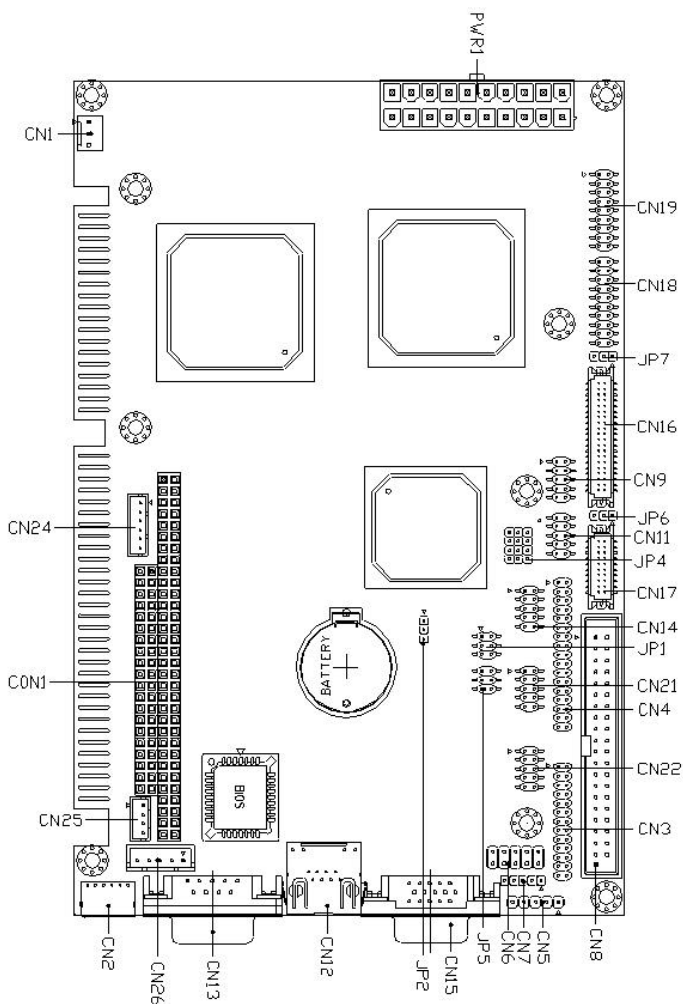
## SBC-657B





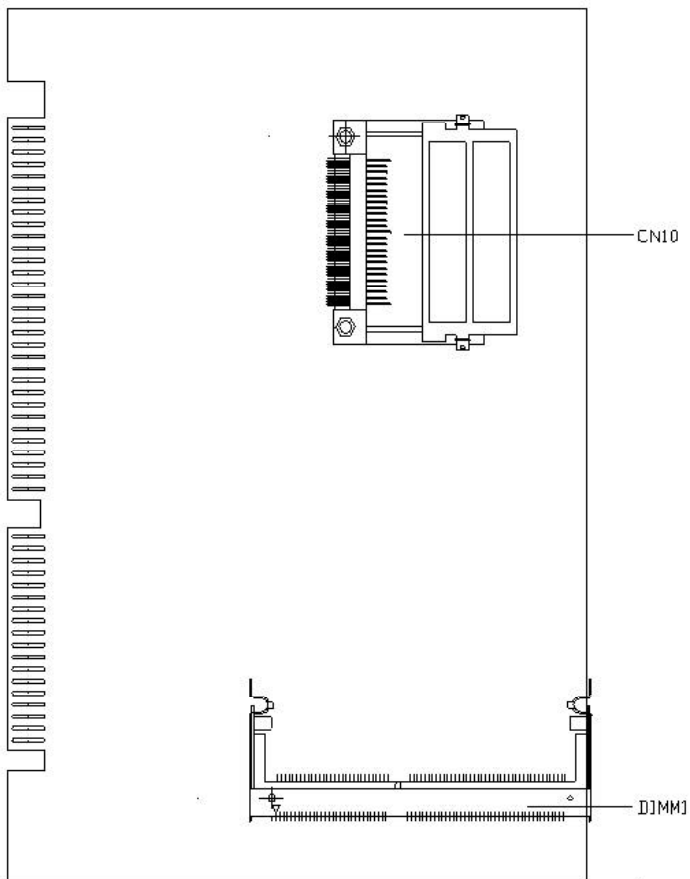
Locating connectors and jumpers (component side)

HSB-657I



Locating connectors (solder side)

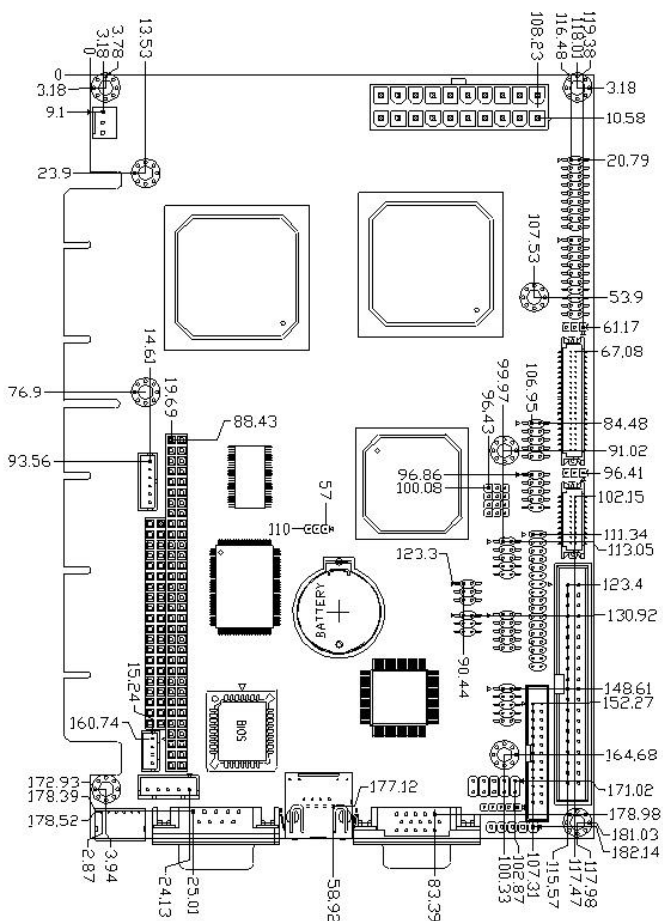
HSB-657I



## 2.3 Mechanical Drawing

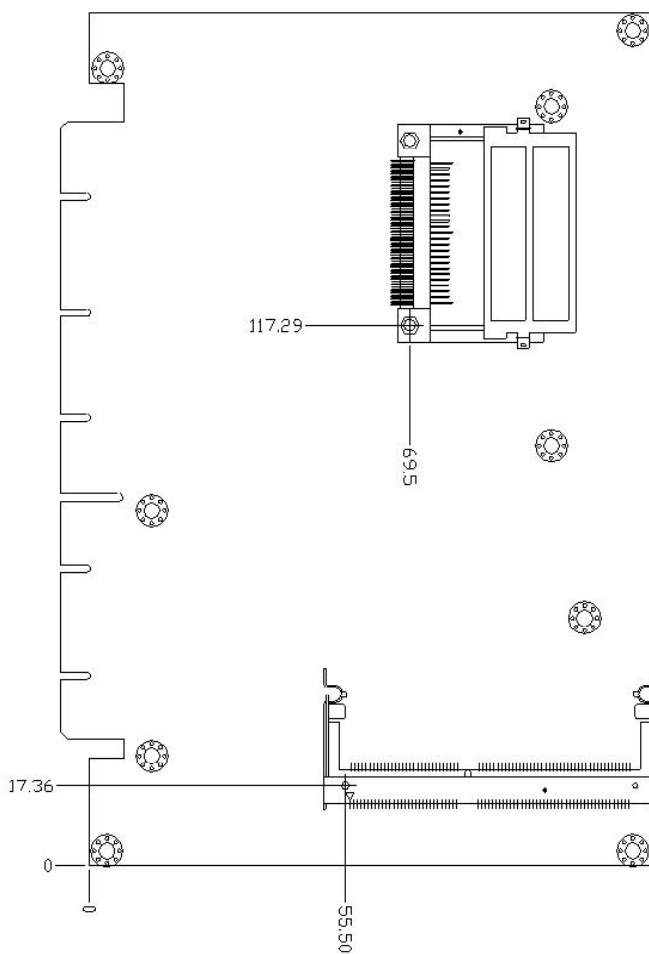
### Mechanical drawing (component side)

#### SBC-657B



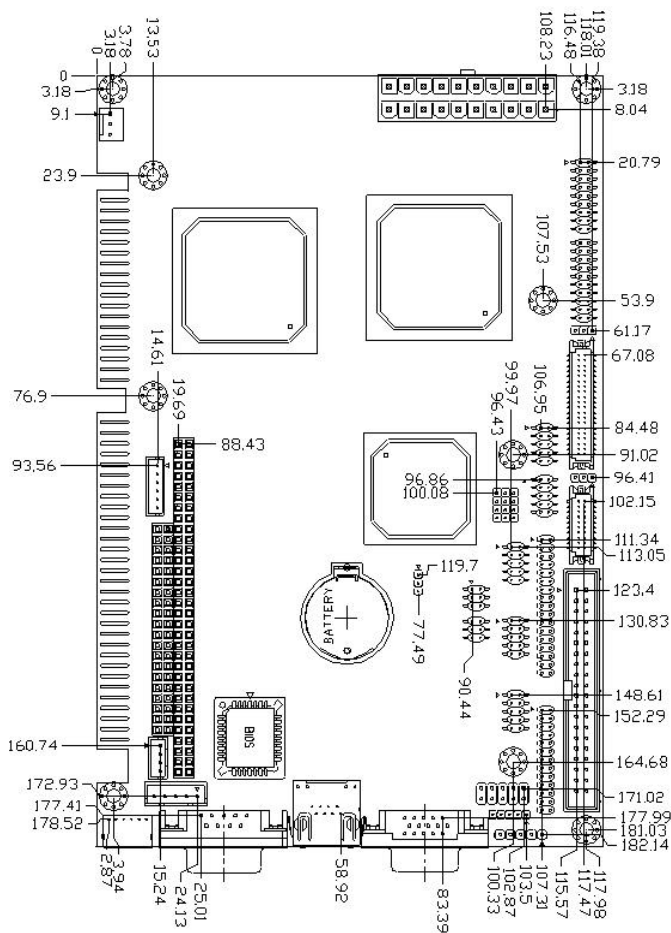
## Mechanical drawing (solder side)

## SBC-657B



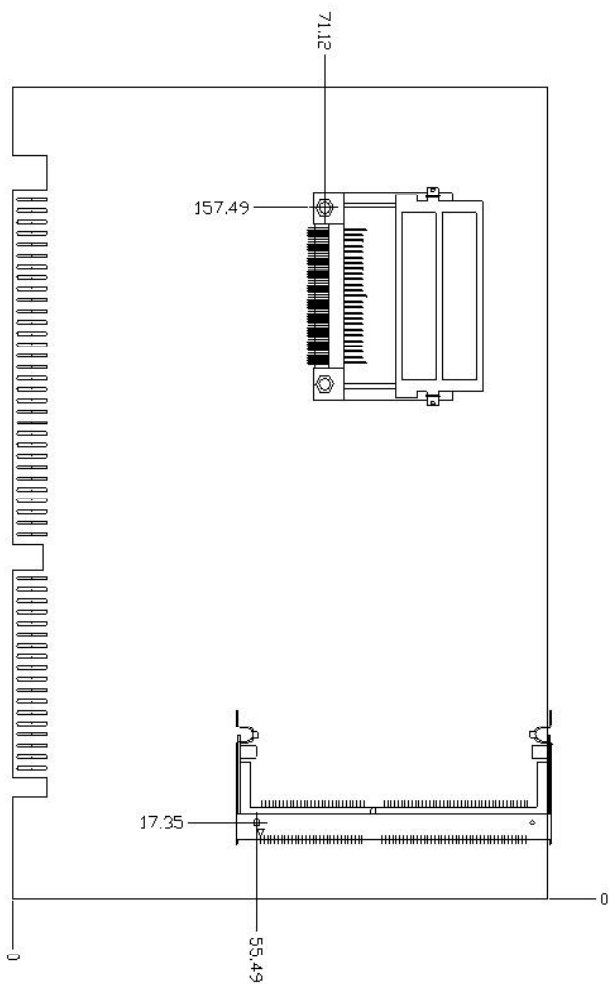
Mechanical drawing (component side)

HSB-657I



Mechanical Drawing (solder side)

HSB-657I



## 2.4 List of Jumpers

---

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below shows the function of each of the board's jumpers:

### Jumpers

Label	Function
JP1	COM2 Ring signal select
JP2	Clear CMOS
JP4	RS-232/422/485 setting
JP5	RS-232/422/485 setting
JP6	LCD shift clock setting
JP7	LCD voltage setting

## 2.5 List of Connectors

The board has a number of connectors that allow you to configure your system to suit your application.

The table below shows the function of each of the board's connectors:

### Connectors

Label	Function
PWR1	Power Connector (ATX Power)
CN1	FAN Connector
CN2	Keyboard and Mouse Connector
CN3	Printer Port Connector
CN4	Floppy Connector
CN5	IR Connector
CN6	Front Panel Connector
CN7	Option EXT PME
CN8	IDE Connector
CN9 & CN11	USB Connector
CN10	CompactFlash™ Socket
CN12	LAN Connector
CN13 & CN21 & CN22	COM1 / COM3 / COM4 Connector
CN14	COM2 Connector
CN15	VGA Connector
CN16 & CN17	LCD Connector
CN18	Channel 1 LVDS LCD Connector
CN19	Channel 2 LVDS LCD Connector
CN24	Backplane ATX Power Connector
CN25	Internal Mouse Connector
CN26	Internal Keyboard Connector
CON1	PC/104 Connector

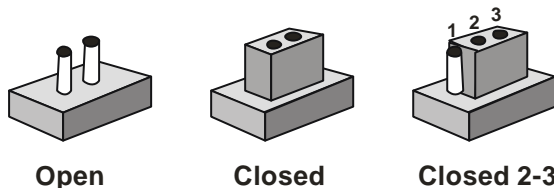


## 2.6 Setting Jumpers

---

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. 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.



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 change.

Generally, you simply need a standard cable to make most connections.

## 2.7 COM2 Ring signal select (JP1)

---

The COM2 port can be selected as RS-232, RS-422 or RS-485 by setting both JP1 and JP2. The following chart shows the jumper setting.

JP1	Function
1-2	Ring (Default)
3-4	5V
5-6	12V

## 2.8 Clear CMOS (JP2)

---

JP2 is used when CMOS data needs to be reset. To reset, cap 2-3 closed for few seconds, then move the jumper back to 1-2 closed.

JP2	Function
1-2	Normal (Default)
2-3	Clear

## 2.9 RS-232/422/485 Setting (JP4)

---

JP4	Function
1-2, 4-5, 7-8, 10-11	RS-232 (Default)
2-3, 5-6, 8-9, 11-12	RS-422/485

## 2.10 RS-232/422/485 Setting (JP5)

---

JP5	Function
1-2	RS-232 (Default)
3-4	RS-422
5-6	RS-485

## 2.11 LCD Shift Clock Select (JP6)

---

JP6	Function
1-2	SHFCLK (Default)
2-3	ASHCLK

## 2.12 LCD Voltage Setting (JP7)

---

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

### 2.13 Power Connector (ATX Power) (PWR1)

---

The ATX power supply uses 20-pin connector and the AT power supply uses 6-pin connector as shown in the table. Please work according to the pin assignments and ensure they are plugged in the right direction.

#### ATX Power Connector Pin Assignment (PWR1)

Pin	Signal	Pin	Signal
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PWRONX
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWROK	18	-5V
9	+5VSB	19	+5V
10	+12V	20	+5V

### 2.14 FAN Connector (CN1)

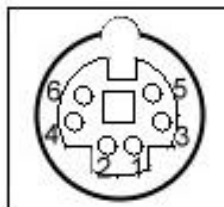
---

Pin	Signal
1	GND
2	FAN VCC
3	CPU FAN

## 2.15 Keyboard and Mouse Connector (CN2)

The mainboard BIOS Advanced setup menu allows you to select “Present” or “Absent” under the “System Keyboard” section, allows no-keyboard operation in embedded system applications without the system halting under POST (power-on-self-test).

Pin	Signal
1	KB_DATA
2	MS-DATA
3	GND
4	+5VSB
5	KB_CLK
6	MS_CLK



## 2.16 Parallel Port Connector (CN3)

Pin	Signal	Pin	Signal
1	#STROBE	2	#AFD
3	DATA0	4	#ERROR
5	DATA1	6	#INIT
7	DATA2	8	#SLIN
9	DATA3	10	GND
11	DATA4	12	GND
13	DATA5	14	GND
15	DATA6	16	GND
17	DATA7	18	GND
19	#ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SELECT	26	N.C

## 2.17 Floppy Connector (CN4)

Pin	Signal	Pin	Signal
1	GND	2	#REDWC
3	GND	4	N.C
5	GND	6	#DS1
7	GND	8	#INDEX
9	GND	10	#MOTOR A
11	GND	12	#DRIVE SELECT B
13	GND	14	#DRIVE SELECT A
15	GND	16	#MOTOR B
17	GND	18	#DIR
19	GND	20	#STEP
21	GND	22	#WRITE DATA
23	GND	24	#WRITE GATE
25	GND	26	#TRACK0
27	GND	28	#WRITE PROTECT
29	GND	30	#READ DATA
31	GND	32	#SIDE1
33	GND	34	#DISK CHANGE

## 2.18 IR Connector (CN5)

Pin	Signal
1	+5V
2	NA
3	CIRRX
4	GND
5	CIRTX

## 2.19 Front Panel Connector (CN6)

---

Pin	Signal	Pin	Signal
1	Power On Button(-)	2	Power On Button(+)
3	IDE LED(-)	4	IDE LED(+)
5	External Buzzer(-)	6	External Buzzer(+)
7	Power LED(-)	8	Power LED(+)
9	Reset Switch(-)	10	Reset Switch(+)

---

## 2.20 Optional PME Connector (CN7)

---

Pin	Signal
1	VCC
2	GND
3	PME#
4	SMBDATA
5	SMBCLK

---

## 2.21 IDE Hard Drive Connector (CN8)

You can attach up to two Enhanced Integrated Device Electronics hard disk drives to CN8. The IDE controller of HSB-657I uses a PCI local bus interface. This advanced interface supports faster data transfer.

### Connecting the hard drive

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

1. Connect one end of the cable to CN8. Make sure that the red wire corresponds to pin 1 on the connector.
2. Plug the other end of the cable to the Enhanced IDE hard drive, with pin 1 on the cable corresponding to pin 1 on the hard drives. (See your hard drive's documentation for the location of the connector).

Connect a second drive with another connector on the cable as described above.

Pin	Signal	Pin	Signal
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	N.C
21	REQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND



27	IO READY	28	GND
29	DACK	30	GND
31	IRQ	32	N.C
33	ADDR1	34	UDMA DETECT
35	ADDR0	36	ADDR2
37	CS#1	38	CS#3
39	LED	40	GND

## 2.22 USB Connectors (CN9/CN11)

The HSB-657I board provides four USB (Universal Serial Bus) interfaces, which give complete plug and play and also hot attach/detach for up to 127 external devices. The USB interfaces comply with USB specification rev. 1.1 and are fuse protected.

The USB interfaces are accessed through two 10-pin flat-cable connectors, CN6 & CN8. The adapter cable has a 10-pin connector on one end and two USB connectors on the bracket on the other end.

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

### USB1 Connector (CN9)

Pin	Signal	Pin	Signal
1	+5V	2	GND
3	USBD0-	4	GND
5	USBD0+	6	USBD1+
7	GND	8	USBD1-
9	GND	10	+5V

## USB2 Connector (CN11)

Pin	Signal	Pin	Signal
1	+5V	2	GND
3	USBD2-	4	GND
5	USBD2+	6	USBD3+
7	GND	8	USBD3-
9	GND	10	+5V

## 2.23 CompactFlash ä Disk Connector (CN10)

The HSB-657I is equipped with a CompactFlash™ slot on the solder side, which supports the IDE interface type I/II CompactFlash card. The slot itself is specially designed to prevent any incorrect installation of the CompactFlash™ card. When installing or removing the CompactFlash™ card, please make sure that the system power is off.

The CompactFlash™ card is defaulted as the secondary master drive in your PC system. To fit the AAeon CompactFlash™ card into the HSB-657I, simply plug it into the designated connector (do NOT use excessive force).

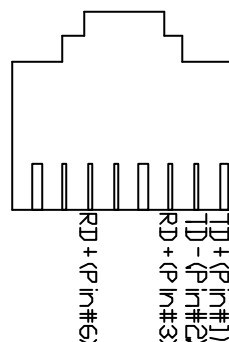
Pin	Signal	Pin	Signal
1	Ground	26	Ground
2	SDD3	27	SDD11
3	SDD4	28	SDD12
4	SDD5	29	SDD13
5	SDD6	30	SDD14
6	SDD7	31	SDD15
7	SDCS#1	32	SDCS#3
8	Ground	33	Ground
9	Ground	34	SDIOR#
10	Ground	35	SDIOW#
11	Ground	36	+5V

12	Ground	37	IRQ15
13	+5V	38	+5V
14	Ground	39	CSEL#
15	Ground	40	N.C
16	Ground	41	SEC_IDERST#
17	Ground	42	SIORDY
18	SDA2	43	N.C
19	SDA1	44	+5V
20	SDA0	45	DASP#
21	SDD0	46	PDIAG#
22	SDD1	47	SDD8
23	SDD2	48	SDD9
24	N.C	49	SDD10
25	Ground	50	Ground

## 2.24 10/100Base-T RJ-45 Ethernet Connector (CN12)

This 10/100Base-T Ethernet connector is a standard RJ-45 connector. The onboard Fast Ethernet controller supports 10/100 Mbs N-way auto-negotiation operations.

Pin	Signal	Pin	Signal
1	TX+	2	TX-
3	RX+	4	N/C
5	N/C	6	RX-
7	N/C	8	N/C
9	N/C	10	N/C
11	Ground	12	Ground
13	ACT_LED	14	LINK_LED
15	+3.3 V	16	SPEED_LED



## 2.25 COM1/3/4 RS-232 Serial Port Connector(CN13/CN21/CN22)

---

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C

## 2.26 COM2 RS-232/422/485 Serial Port Connector (CN14)

---

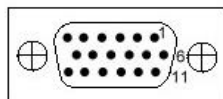
Different devices implement the RS-232/422/485 standard in different ways. If you have problems with a serial device, be sure to check the pin assignments below for the connector.

Pin	Signal	Pin	Signal
1	DCD (422TXD-/485DATA-)	2	RXD(422RXD+)
3	TXD(422TXD+/485DATA )	4	DTR(422RXD-)
5	GND	6	DSR
7	RTS	8	CTS
9	RI/+12V	10	N.C

## 2.27 VGA Display Connector (CN15)

---

Pin	Signal	Pin	Signal
1	RED	2	GREEN
3	BLUE	4	N.C
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	N.C	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK	16	GND



## 2.28 TTL\_LCD Connector (CN16/CN17)

---

### TTL\_LCD Connector (CN16)

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	GND	4	GND
5	+3.3V	6	+3.3V
7	ENBKL	8	GND
9	N.C	10	N.C
11	B00	12	B01
13	B02	14	B03
15	B04	16	B05
17	N.C	18	N.C
19	G00	20	G01
21	G02	22	G03

23	G04	24	G05
25	N.C	26	N.C
27	R00	28	R01
29	R02	30	R03
31	R04	32	R05
33	GND	34	GND
35	DOT_CLOCK	36	VSYNC
37	DE	38	HSYNC
39	N.C	40	ENAVEE

### TTL\_LCD Connector (CN17)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	B10	4	B11
5	B12	6	B13
7	B14	8	B15
9	G10	10	G11
11	G12	12	G13
13	G14	14	G15
15	R10	16	R11
17	R12	18	R13
19	R14	20	R15

**2.29 Channel 1 LVDS Connector (CN18)**

Pin	Signal	Pin	Signal
1	LVDS_TX1OUT1+	2	LVDS_TX1OUT1-
3	GND	4	GND
5	LVDS_TX1CLK+	6	LVDS_TX1CLK-
7	GND	8	PPVCC
9	PPVCC	10	PPVCC
11	LVDS_TX1OUT2+	12	LVDS_TX1OUT2-
13	GND	14	GND
15	LVDS_TX1OUT0+	16	LVDS_TX1OUT0-
17	N.C	18	N.C
19	ENVDD	20	N.C

**2.30 Channel 2 LVDS Connector (CN19)**

Pin	Signal	Pin	Signal
1	LVDS_TX2OUT1+	2	LVDS_TX2OUT1-
3	GND	4	GND
5	LVDS_TX2CLK+	6	LVDS_TX2CLK-
7	GND	8	PPVCC
9	PPVCC	10	PPVCC
11	LVDS_TX2OUT2+	12	LVDS_TX2OUT2-
13	GND	14	GND
15	LVDS_TX2OUT0+	16	LVDS_TX2OUT0-
17	N.C	18	N.C

### 2.31 Backplane ATX Power Connector (CN24)

---

Pin	Signal
1	N.C
2	GND
3	N.C
4	GND
5	PS-ON
6	+5VSB

### 2.32 Internal Mouse Connector (CN25)

---

Pin	Signal
1	Mouse Clock
2	Mouse Data
3	Ground
4	+5VSB

### 2.33 Internal Keyboard Connector (CN26)

---

Pin	Signal
1	Keyboard Clock
2	Keyboard Data
3	NC
4	Ground
5	+5VSB



Chapter

3

**Award  
BIOS Setup**

### 3.1 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 RESUME

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

#### **System configuration verification**

These routines check the current system configuration against the values stored in the 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 SBC-657B / HSB-657I CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

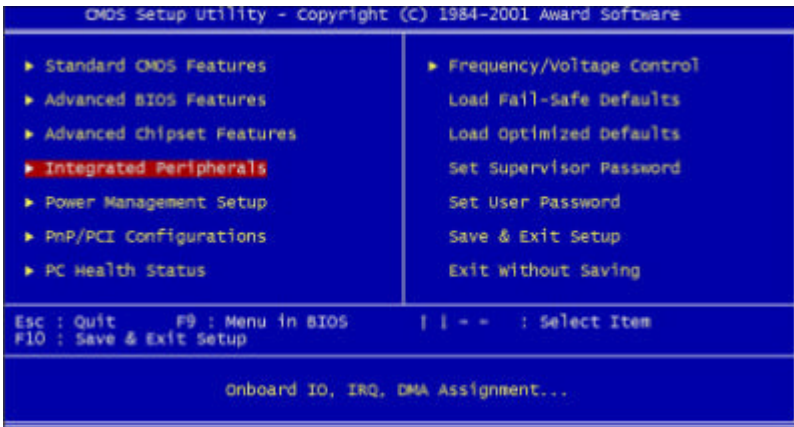
## 3.2 Award BIOS setup

---

Awards 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.

### Entering setup

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



### Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

### Advanced BIOS Features

Use this menu to set the BIOS features available on your system.

### Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system performance.

## **Integrated Peripherals**

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

## **Power Management Setup**

Use this menu to specify your settings for power management. (HDD power down, power on by ring, KB wake up, etc.)

## **PnP/PCI Configurations**

This entry appears if your system supports PnP/PCI.

## **PC Health Status**

This menu allows you to set the shutdown temperature for your system.

## **Frequency/Voltage Control**

Use this menu to specify your settings for frequency/ voltage control.

## **Load Fail-Safe Defaults**

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

## **Load Optimized Defaults**

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

**Set Supervisor/User Password**

Use this menu to set Supervisor/User Passwords.

**Save & Exit Setup**

Save CMOS value changes to CMOS and exit setup.

**Exit Without Saving**

Abandon all CMOS value changes and exit setup.

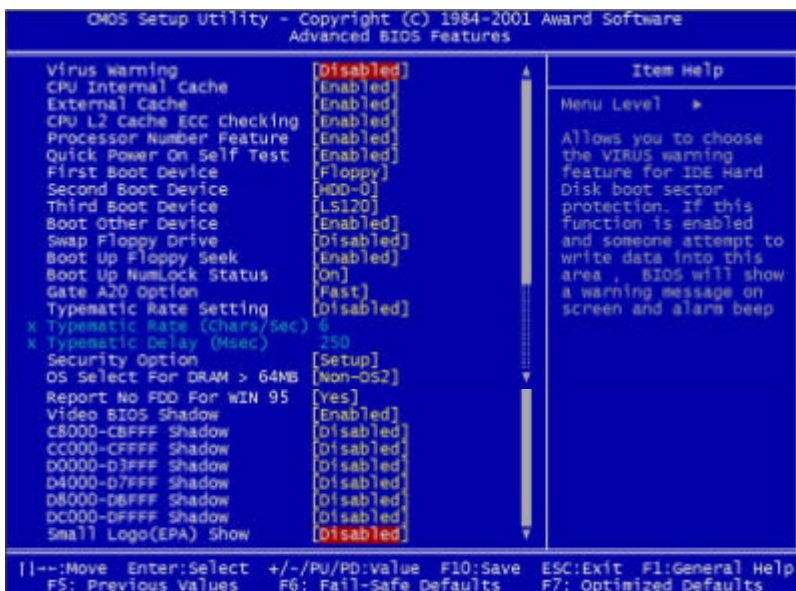
### 3.3 Standard CMOS Features

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.



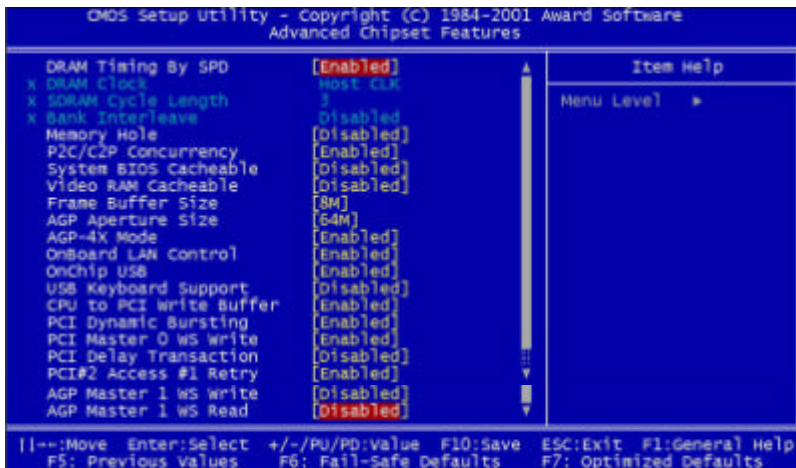
### 3.4 Advanced BIOS Features

By choosing the Advanced BIOS Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed.



### 3.5 Advanced Chipset Features

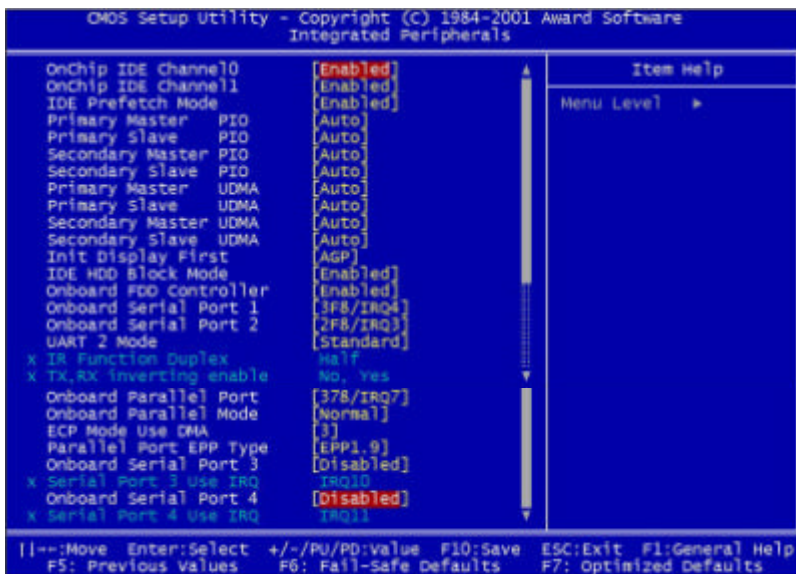
By choosing the Advanced Chipset Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed.





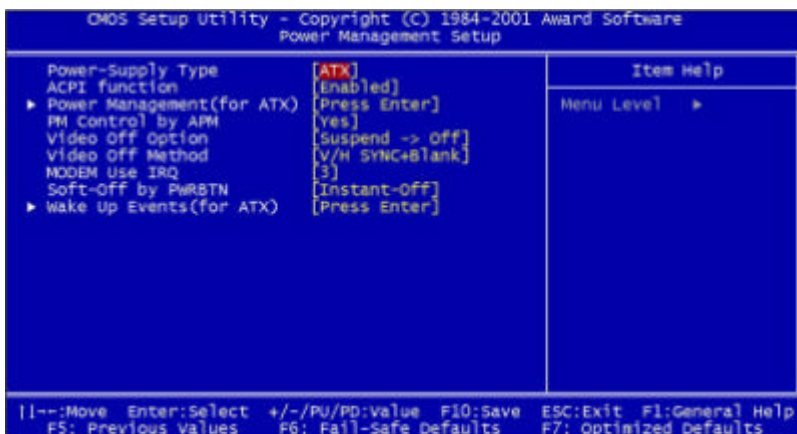
### 3.6 Integrated Peripherals

By choosing the Integrated Peripherals from the INITIAL SETUP SCREEN menu, the screen below is displayed.



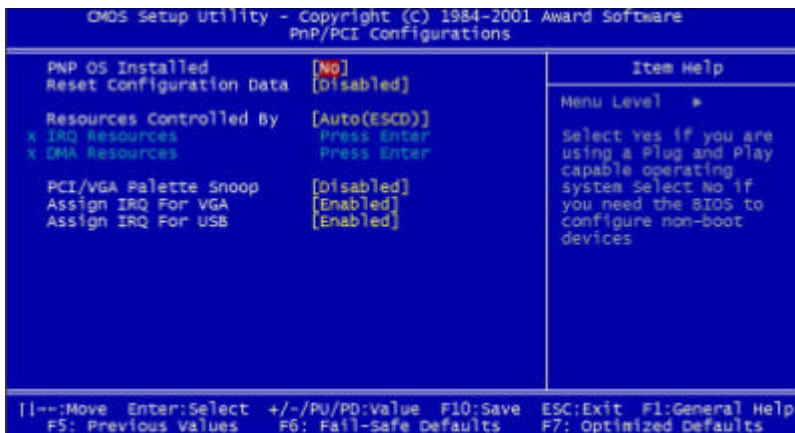
### 3.7 Power Management Setup

By choosing the Power Management Setup from the INITIAL SETUP SCREEN menu, the screen below is displayed.



### 3.8 PnP/PCI Configurations

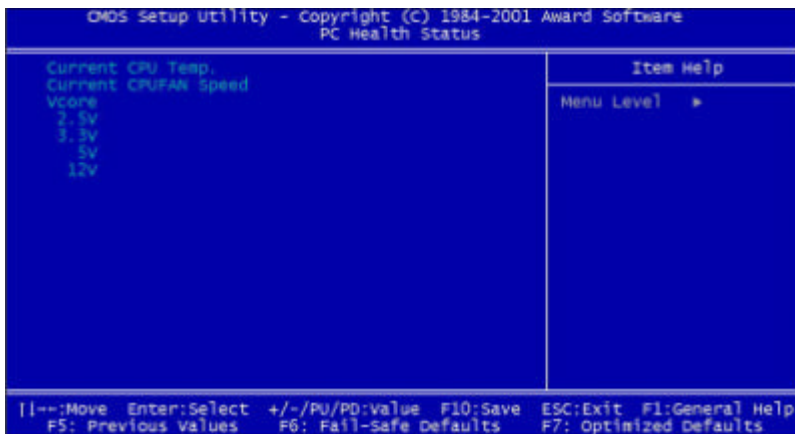
By choosing the PnP/PCI Configurations from the INITIAL SETUP SCREEN menu, the screen below is displayed.



### 3.9 PC Health Status

---

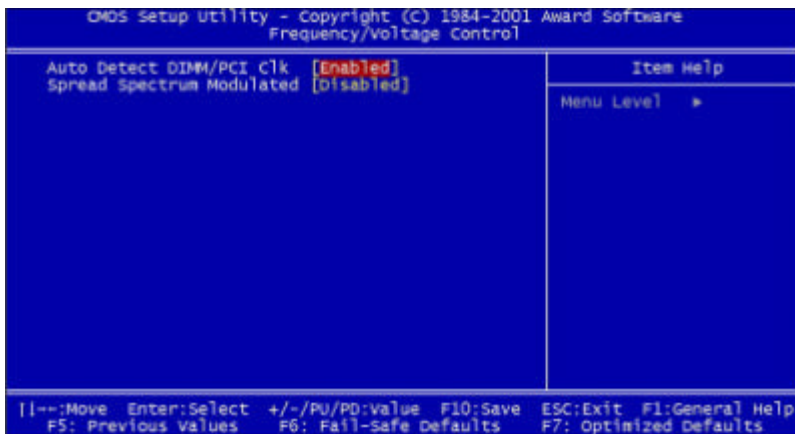
By choosing the PC Health Status from the INITIAL SETUP SCREEN menu, the screen below is displayed.



### 3.10 Frequency/Voltage Control

---

By choosing the Frequency/Voltage Control from the INITIAL SETUP SCREEN menu, the screen below is displayed.



### 3.11 Load Fail-Safe Defaults

---

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Default (Y/N)?

Pressing "Y" loads the BIOS default values for the most stable, minimal performance system operations.

### 3.12 Load Optimized Defaults

---

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)?

Pressing "Y" loads the default values that are manufacturer's settings for optimal performance system operations.

### 3.13 Set Supervisor/User Password

---

You can set either SUPERVISOR or USER PASSWORD, or both of them. The difference between the two is that the supervisor password allows unrestricted access to enter and change the options of the setup menus, while the user password only allows entry to the program, but not modify options.

To abort the process at any time, press Esc.

In the Security Option item in the BIOS Features Setup screen, select System or Setup:

**System** Enter a password each time the system boots and whenever you enter Setup.

**Setup** Enter a password whenever you enter Setup.

*NOTE: To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.*

### **3.14 Save & Exit setup**

---

If you select this option and press <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 on your system and compare this to what it finds as it checks the system. This record is required for the system to operate.

### **3.15 Exit Without Saving**

---

Selecting this option and pressing <Enter> allows you to exit the Setup program without recording any new value or changing old one.

Chapter

4

**Driver  
Installation**



The SBC-657B / HSB-657I comes with a CD-ROM that contains most of drivers and utilities of your needs.

There are several installation ways depending on the driver package under different Operating System application.

***Please follow the sequence below to install the drivers:***

Step 1 – Install System Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

For installation procedures of each driver, you may refer to section 4.1-4.2.

## 4.1 Installation 1:

---

### Applicable for Windows 2000/98/XP

1. Insert the SBC-657B / HSB-657I CD-ROM into the CD-ROM Drive.
2. From the CD-ROM, select the desired component Driver folder, and then select the desired Operation System folder to double click on the Setup.exe icon. A driver installation screen will appear.  
***(Notice: take VGA driver installation under Windows 98 for example, choose the corresponding folder depending on your OS)***
3. A driver installation screen will appear, please follow the onscreen instructions to install the driver in sequence and click on the Next button.  
***(Notice: In some cases the system will ask you to insert Windows 98 CD ROM and key in its path. Then click on the OK button to key in path.)***
4. Click on the **Finish** button to finish installation process. And allow the system to reboot.

## 4.2 Installation 2:

---

### Applicable for Windows 2000/ 98/XP

1. Insert the **SBC-657B / HSB-657I CD-ROM** into the CD-ROM Drive.
2. Click on **Start** button, select the **Settings**, and then click on the **Control Panel** icon.
3. Double click on the **Add/Remove Hardware** icon and **Add New Hardware Wizard** will appear. Click on the **Next** button.
4. Select **Search for the best driver for your device (Recommended)** and click on the **Next** button.
5. Select **Specify a location**, click on **Have Disk** button then key in the CD-ROM path and specify component drivers and OS folders. Then click on the **Next** button.
6. The Wizard shows that Windows driver file search for the device. Click on the **Next** button.
7. The system will ask you to insert Windows 98 CD ROM. Click on the **OK** button to insert CD-ROM and key in path.
8. Click on the **OK** button.
9. Click on the **Finish** button to finish installation process. And allow the system to reboot.

Appendix

A

# Programming the Watchdog Timer

## Programming

---

An onboard watchdog timer reduces the chance of disruptions which CPLD (Compact Programmable Logical Device) interface can cause. This is an invaluable protective device for standalone or punmanned applications. When the watchdog timer activates (CPU processing has come to a halt), it can reset the system, or generate an interrupt on IRQ10, IRQ11, IRQ15, and NM1. This can be set via I/O Port 444, the function as following:

- 0: RESET
- 1: NM1
- 2: IRQ10
- 3: IRQ11
- 4: IRQ15

If you decide to program the watchdog timer, you must write data to I/O port 443 (hex). The output data is a value timer. You can write form 01 (hex) to FF (hex) while simultaneously setting it. When you want to disable the watchdog timer, your program should read a Hex value from I/O port 80 (hex).

The following procesude is a sample program for the watchdog timer:

- Type C:\DOS\Debug <ENTER>
- To start watchdog timer and set function "Reset" type;
  - o 444 0<Enter>; out 444h data 0
- To input Watchdog timers time-out interval of 5 seconds type; o 443 05<Enter>; out 443h data 05
- To disable the watch timer type; i80 <Enter>

The time interval data of the watchdog timer is shown in binary code (8 bits).

Sample 2: 5 seconds

0	0	0	0	0	1	0	1
---	---	---	---	---	---	---	---