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HSB-660S/I

Socket 370 based Pentium® III / Celeron® / VIA C3™ Processor Half-Size CPU Card With LCD, LAN, USB & PC/104

HSB-660S/I Rev. A Manual 4th Ed.
June. 2004

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Packing List

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

- 1 HSB-660S or HSB-660I Half-Size CPU Card
- 1 Jumper Cap
- 1 HDD Cable
- 1 FDD Cable
- 1 Audio and COM Port Cable with bracket
- 1 LPT and COM Port Cable with bracket
- 1 Y-Cable (Keyboard and Mouse)
- 1 USB Cable with bracket
- 1 CFD Cover
- 1 Quick Installation Guide
- 1 CD-ROM for manual (in PDF format) and drivers

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

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Chapter

1

General Information

1.1 Introduction

The all-in-one HSB-660S/I single board computer series is designed for embedded applications where full features and performance are major concerns. The adoption of the various CPU options from Intel® Pentium® III, Celeron® (0.18/0.13 micron up to 1.4GHz) to VIA C3™ processors (up to 1.1GHz), HSB-660S/I series brings with its significant gains in performance. HSB-660S/I series is powered by the VIA Twister T system chipset.

An integrated AGP 4X 2D/3D graphics accelerator is also provided. With Dual channel TTL interface, the HSB-660S/I series supports TFT-DSTN LCD displays and CRT monitor simultaneously. It also provides up to 1600x1200 resolution for CRT and 1024x768 resolution for LCD 18bpp colors with UMA 32MB display memory.

Excellent connectivity is provided by embedded 10/100Mbps or Gigabit Ethernet connection. One DIMM slot for a total of 512MB RAM memory ensures that users have more than enough memory to handle leading applications. Moreover, one CompactFlash™ Type II slot is supported as external storage. The HSB-660S/I series is fully functional, offering comprehensive I/O support, including 4 USB ports for connecting the latest peripherals. The HSB-660S/I series is equipped with the range of legacy ports, including a parallel port, an IrDA port, and an AC-97 SoundBlaster compatible audio.

1.2 Features

- Supports VIA C3™ up to 1.1GHz & Intel® CPU up to 1.4GHz (66/100/133MHz FSB)
- Integrated AGP 4X 2D/3D Graphics Accelerator share memory up to 32MB
- Supports CRT and 36-bit TTL TFT panels
- Integrated AC-97 2.1 / SoundBlaster – compatible legacy audio
- Supports CompactFlash™ Type II Storage
- Supports Dual 10/100Base-T Fast Ethernet or One 10/100Base-T and 10/100/1000Base-Tx Gigabit Ethernet (Single LAN option provided)
- Intel® and Realtek® LAN chipset solution
- Supports Ultra ATA-100 with data transfer rate up to 100 MB/Sec
- 2COMs / 1 Parallel / 4 USB / 1 IrDA Port
- PCISA or ISA interface and PC/104 slot

1.3 Specifications

System

- CPU: Socket 370, support VIA C3 up to 1.1GHz & Intel Tualatin / Pentium III / Celeron 66/100/133MHz FSB, supports up to 1.4GHz
- Memory: 168pin 3.3V SDRAM DIMM Socket x 1, total up to 512MB PC133
- Chipset: VIA VT8606 and VIA VT82C686B
- I/O Chipset: VIA VT82C686B
- BIOS: Award Plug & Play ISA BIOS – 512KB
- Ethernet: **Set One:** Realtek RTL8139D and RTL8100C, 10/100Mbps x 2, use External RJ-45 Connector
  Set Two: Intel i82551ER and RTL8110S, 10/100Mbps x 1, 10/100/1000Mbps x 1, use External RJ-45 Connector
- SSD: Supports CF Type II Slot (used secondary IDE, bootable)
- Expansion Interface: PCISA (HSB-660S) or ISA (HSB-660I), PC/104 interface

- H/W Status Monitoring: Power supply voltages, fan speed, monitoring and temperature monitoring
- Battery: 3V Lithium battery
- Power supply voltage: +5V (4.75V to 5.25V), +12V (11.4V to 12.6V), -5V (-4.75V to -5.25V), -12V (-11.4V to –12.6V), ATX/AT
- Operating temperature: 32 ℉ to 140 ℉ (0 ℃ to 60 ℃)
- Board size: 5.75" (L) x 4" (W) (146mm x 101.6mm)
- Gross Weight: 0.88lb(0.4Kg)

Display

- Chipset VIA VT8606
- Memory size: Shared memory up to 32MB
- Resolution: Up to 1600x1200@16bpp colors for CRT
  Up to 1024x768@18bpp colors for LCD
- LCD Interface: Supports 18/36-bit dual channel TTL TFT Panels
- 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 1, LPT x 1, K/B+Mouse x 1, Internal keyboard pin header x 1, Internal mouse pin header x 1
- IR interface: One IrDA Tx/Rx header
- Audio: Realtek ALC201 AC97 multi-channel codec
- USB: Two 5x2 pin headers support 4 USB 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.

Part No. 2007660012 Printed in Taiwan June 2004

2.1 Safety Precautions

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.

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

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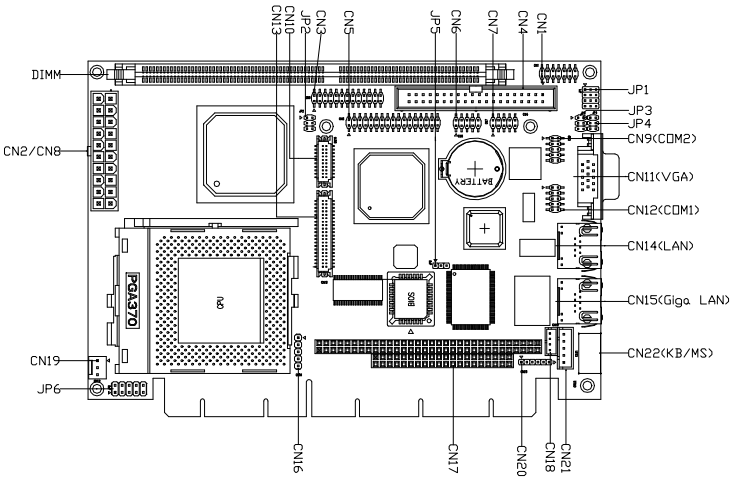

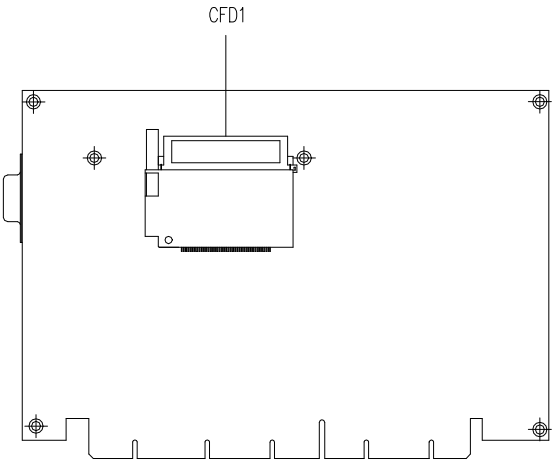

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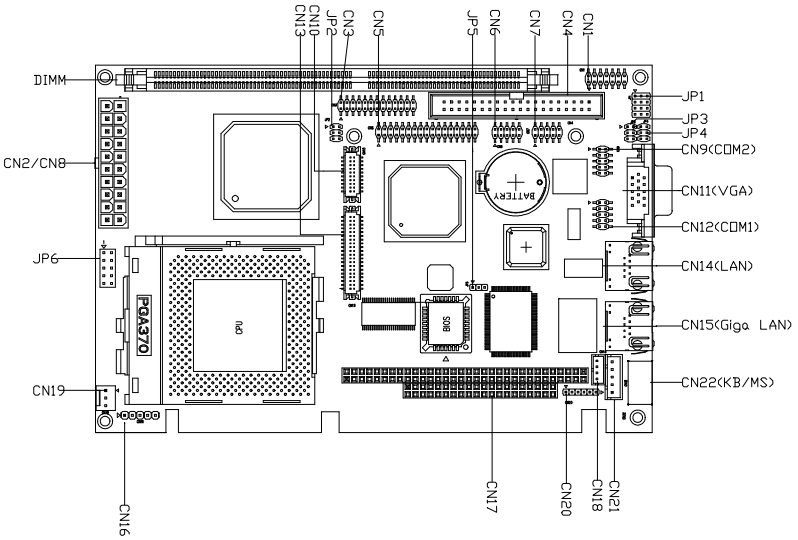
CN13
CN10
JP2
CN3
CN5
JP5
CN6
CN7
CN4
CN1
DIMM
JP1
JP3
JP4
CN9(COM2)
CN2/CN8
CN11(VGA)
CN12(COM1)
JP6
CN14(LAN)
PGA370
CPU
BIOS
BATTERY
CN15(Giga LAN)
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CN22(KB/MS)
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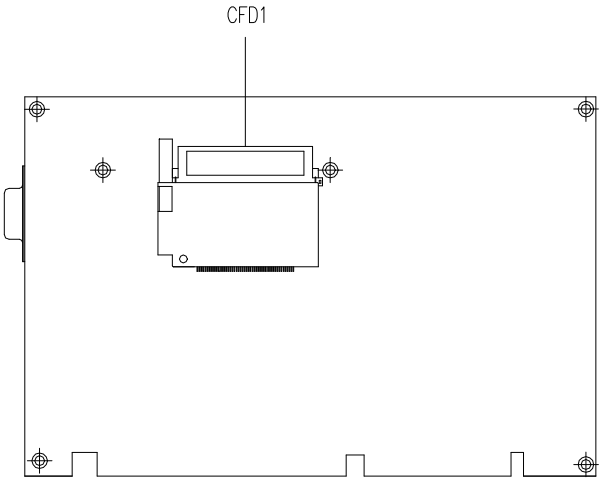
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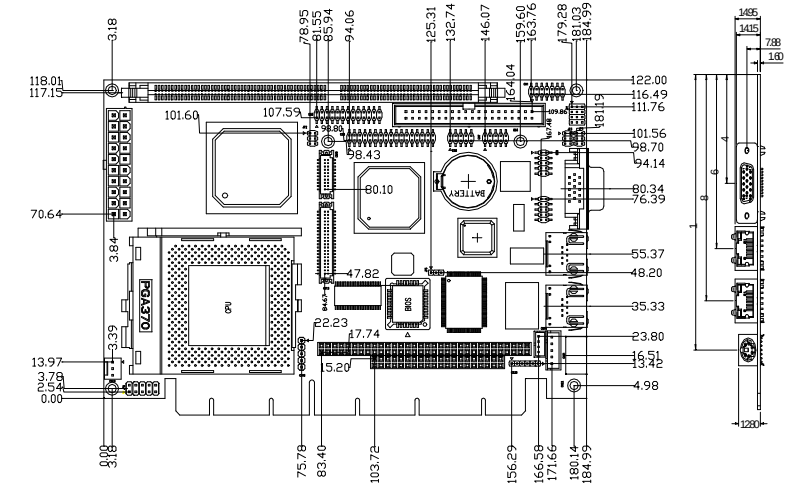
2.3 Mechanical Drawing

HSB-660S



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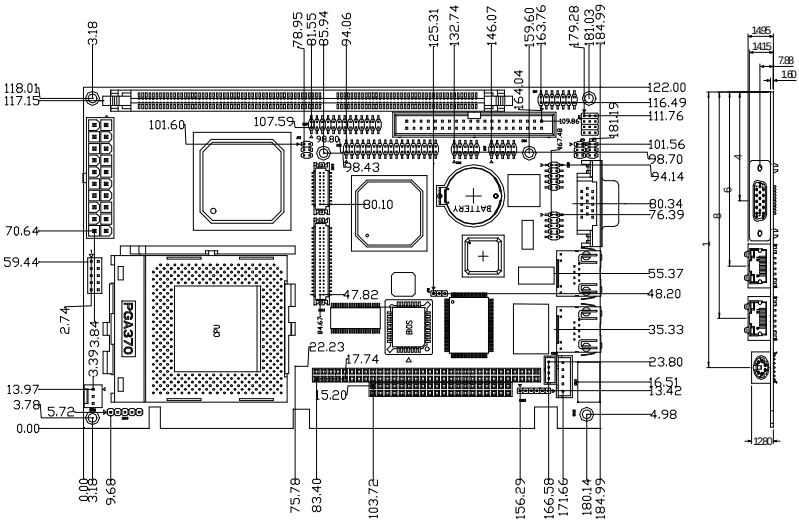
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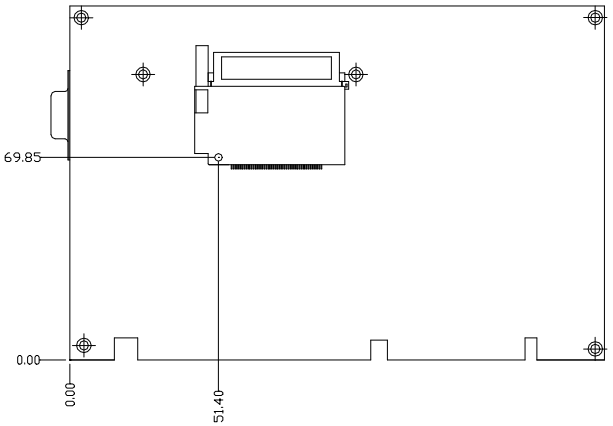
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2.4 List of Jumpers

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 RS-232/422-485 Mode Selection – 1
JP2	LCD Clock & Voltage Selection
JP3	COM2 RS-232/422/485 Mode Selection – 2
JP4	COM2 RI/+5V/+12V Selection
JP5	Clear CMOS
JP6	Front Panel

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:

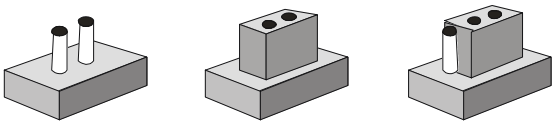
Connectors

Label	Function
CN1	Audio Input/Output Connector
CN2	AT Power Connector
CN3	Parallel Port 1 Connector
CN4	Primary IDE Hard Drive Connector
CN5	Floppy Drive Connector
CN6	USB 1.1 Port 2 Connector
CN7	USB 1.1 Port 1 Connector
CN8	ATX Power Connector
CN9	Serial Port COM 2 Connector
CN10	Flat Panel Connector (for full 36-bit display)
CN11	CRT Display Connector
CN12	Serial Port COM 1 Connector
CN13	Flat Panel Connector
CN14	1st Ethernet 10/100Base-T RJ-45 Connector
CN15	2nd Ethernet 10/100/1000Base-Tx RJ-45 Connector
CN16	IrDA Connector
CN17	PC/104 Socket
CN18	Internal Mouse Connector
CN19	CPU Fan Connector
CN20	External 5VSB/PWRGD Connector
CN21	Internal Keyboard Connector
CN22	PS/2 Keyboard & Mouse Mini-Din
CFD1	CompactFlash™ Disk Connector
DIMM	DIMM Slot

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 RS-232/422/485 Selection - 1 (JP1)

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

JP1	Function
1-2, 4-5, 7-8, 10-11	RS-232 (Default)
2-3, 5-6, 8-9, 11-12	RS-422
2-3, 8-9	RS-485

2.8 LCD Clock & Voltage Selection (JP2)

You can select the LCD clock and voltage situation by setting JP2. The following chart shows the available options.

JP2	Function
1-3	Normal Dot Clock
3-5	Inverse Dot Clock (Default)
2-4	+5 Voltage
4-6	+3.3 Voltage (Default)

2.9 COM2 RS-232/422/485 Selection 2 (JP3)

The COM2 port can be selected as RS-232, RS-422 or RS-485 by setting both JP3. The following chart shows the jumper setting.

JP3	Function
1-2	RS-232 (Default)
3-4	RS-422
5-6	RS-485

2.10 COM2 RI/+5V/+12V Selection (JP4)

JP4	Function
5-6	RI (Default)
3-4	+5V
1-2	+12V

2.11 Clear CMOS (JP5)

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 "Normal."

JP5	Function
1-2	Normal (Default)
2-3	Clear CMOS

2.12 Front Panel (JP6)

Pin	Signal
1	ATX Power-On Button (-)
2	ATX Power-On Button (+)
3	HDD Active LED (-)
4	HDD Active LED (+)
5	External Speaker (-)
6	External Speaker (+)
7	Power LED (-)
8	Power LED (+)
9	System Reset Button (-)
10	System Reset Button (+)

2.13 Audio Input/Output Connector (CN1)

The HSB-660S/I provides all major audio signals on a 14-pin flat-cable connector, CN1. Attach the Mic In, Line In, CD In, and Line Out to the corresponding pins as shown in the following table.

Pin	Signal	Pin	Signal
1	MIC_IN	2	MIC_Vcc
3	Audio Ground	4	CD_GND
5	LINE_IN L	6	CD_L
7	LINE_IN R	8	CD_GND
9	Audio Ground	10	CD_R
11	LINE_OUT L	12	LINE_OUT R
13	Audio Ground	14	Audio Ground

2.14 AT Power Connector (CN2)

Pin	Signal
1	N/A
2	+5V
3	+12V
4	-12V
5	Ground
6	Ground
7	Ground
8	Ground
9	-5V
10	+5V
11	+5V
12	+5V

2.15 Parallel Port 1 Connector (CN3)

Pin	Signal	Pin	Signal
1	STBX	2	AFD#
3	PTD0	4	ERR#
5	PTD1	6	PINIT#
7	PTD2	8	SLIN#
9	PTD3	10	Ground
11	PTD4	12	Ground
13	PTD5	14	Ground
15	PTD6	16	Ground
17	PTD7	18	Ground
19	ACK#	20	Ground
21	BUSY	22	Ground
23	PE	24	Ground
25	SLCT	26	N/C

2.16 Primary IDE Hard Drive Connector (CN4)

You can attach one or two Integrated Device Electronics hard disk drives to the HSB-660S/I internal controller. The HSB-660S/I IDE controller uses a PCI local-bus interface. This advanced interface supports faster data transfer.

Connecting the hard drive

Connecting drives is done in a daisy-chain fashion requires one of two cables, depending on the drive size.

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 CN4, and make sure 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 to the IDE hard drive, with pin 1 on the hard drives. (Please see your hard drive's documentation for the documentation for the location of the connector.)

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 the other as the slave by using jumpers on the drives. If you install just one drive, set it as the master.

Pin	Signal	Pin	Signal
1	PRI_IDERST#	2	Ground
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	Ground	20	N/C
21	PDREQ	22	Ground
23	PDIOW#	24	Ground
25	PDIOR#	26	Ground
27	PIORDY	28	Ground
29	PDDACK#	30	Ground
31	IRQ14	32	N/C
33	PDA1	34	P66DET
35	PDA0	36	PDA2
37	PDCS#1	38	PDCS#3
39	IDEACTP#	40	Ground

2.17 Floppy Drive (CN5)

With support of different types of floppy, you can simply adopt any of the combinations of 5.25" (360 KB and 1.2 MB) and/or 3.5" (720 KB, 1.44 MB, and 2.88 MB) drives onto the mainboard.

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

Connecting the floppy drive

1. Plug the 34-pin flat-cable connector into CN5. Make sure that the red or blue wire corresponds to pin 1 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 A: drive. The set in the middle connects to 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.

When connecting a 3.5" floppy drive, you may have trouble determining which pin is pin number 1. Look for a number printed on the circuit board indicating pin number 1. Also, the connector on the floppy drive connector may have a slot. When the slot is up, pin number 1 should be on the right.
Check the documentation that came with the drive for more information.

Pin	Signal	Pin	Signal
1	Ground	2	DENSEL#
3	Ground	4	N/C
5	Ground	6	N/C
7	Ground	8	INDEX#
9	Ground	10	MTRA#
11	Ground	12	DRVB#
13	Ground	14	DRVA#
15	Ground	16	MTRB#
17	Ground	18	DIR#
19	Ground	20	STEP#
21	Ground	22	WDATA#
23	Ground	24	WGATE#
25	Ground	26	TRK0#
27	Ground	28	WPT#
29	N/C	30	RDATA#
31	Ground	32	HDSEL#
33	N/C	34	DSKCHG#

2.18 USB 1.1 Port 2 Connector (CN6 & CN7)

The USB interfaces are accessed through two 10-pin flat-cable connectors, CN6 & CN7. 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.

CN6

Pin	Signal	Pin	Signal
1	USBVDD2-3	2	USBGND
3	USBD2-	4	USBGND
5	USB2+	6	USB3+
7	USBGND	8	USB3-
9	USBGND	10	USBVDD2-3

CN7

Pin	Signal	Pin	Signal
1	USBVDD0-1	2	USBGND
3	USBD0-	4	USNGND
5	USBD0+	6	USBD1+
7	USBGND	8	USBD1-
9	USBGND	10	USBVDD0-1

2.19 ATX Power Connector (CN8)

Pin	Signal	Pin	Signal
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	Ground	13	Ground
4	5V	14	PS_ON
5	Ground	15	Ground
6	5V	16	Ground
7	Ground	17	Ground
8	ATXPWRGD	18	-5V
9	5V Stand By	19	5V
10	12V	20	5V

2.20 Serial Port COM2 (CN9)

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

RS-232 Mode			
Pin	**Signal**	**Pin**	**Signal**
1	DCDB	2	RXB
3	TXB	4	DTRB
5	Ground	6	DSRB
7	RTSB	8	CTSB
9	RIB	10	N/C

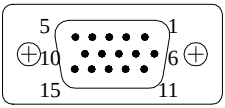
RS-422 Mode			
Pin	**Signal**	**Pin**	**Signal**
1	TXD-	2	RXD+
3	TXD+	4	RXD-
5	N/C	6	N/C
7	N/C	8	N/C
9	Ground	10	N/C

RS-485 Mode			
Pin	**Signal**	**Pin**	**Signal**
1	TXD-	2	N/C
3	TXD+	4	N/C
5	N/C	6	N/C
7	N/C	8	N/C
9	Ground	10	N/C

2.21 Flat Panel Connector for full 36-bit Connector (CN10)

Pin	Signal	Pin	Signal
1	Ground	2	Ground
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

2.22 CRT Display Connector (CN11)



Pin	Signal	Pin	Signal
1	CRT_RED	9	5V
2	CRT_GREEN	10	VGA Ground
3	CRT_BLUE	11	N/C
4	N/C	12	CRT_SDA
5	VGA Ground	13	CRT_HSYNC
6	VGA Ground	14	CRT_VSYNC
7	VGA Ground	15	CRT_SCL
8	VGA Ground		

2.23 Serial Port COM1 (CN12)

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

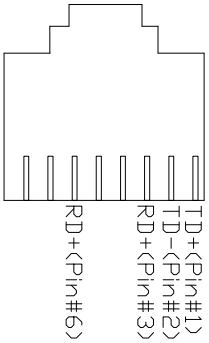
Pin	Signal	Pin	Signal
1	DCDA	2	RXA
3	TXA	4	DTRA
5	Ground	6	DSRA
7	RTSA	8	CTSA
9	RIA	10	N/C

2.24 Flat Panel Connector (CN13)

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	Ground	4	Ground
5	+3.3V	6	+3.3V
7	ENVDD	8	Ground
9	N/A	10	N/A
11	B0	12	B1
13	B2	14	B3
15	B4	16	B5
17	N/A	18	N/A
19	G0	20	G1
21	G2	22	G3
23	G4	24	G5
25	N/A	26	N/A
27	R0	28	R1
29	R2	30	R3
31	R4	32	R5
33	Ground	34	Ground
35	Dot Clock	36	FLM (VSYNC)
37	DE	38	LP (HSYNC)
39	N/A	40	ENABKL

2.25 1st Ethernet 10/100Base-T RJ-45 Connector (CN14)

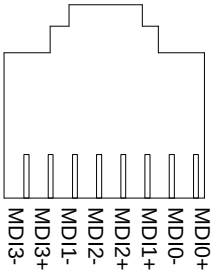
This 10/100Base-T Ethernet connector is a standard RJ-45 connector. The onboard Realtek RTL8139D or Intel 82551ER/QM Fast Ethernet controller supports 10Mbps and 100 Mbps N-way auto-negotiation operations.



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

2.26 2nd Ethernet 10/100/1000Base-Tx Connector (CN15)

This 10/100/1000Base-Tx Ethernet connector is a standard RJ-45 connector. The onboard Realtek RTL8100C or Intel 8110S-32 Fast Ethernet controller supports 10Mbps, 100Mbps and 1000Mbps N-way auto-negotiation operations.



Pin	Signal	Pin	Signal
1	MDI_0+/TX	2	MDI_0-TXD-
3	MDI 1+/RXI	4	MDI 2+
5	MDI 2-	6	MDI 1-/RXIN-
7	MDI 3+	8	MDI 3-
9	MDI_0-	10	MDI_0+
11	Ground	12	Ground
13	+3.3V	14	ACT LED
15	+3.3V	16	LINK LED

2.27 IrDA Connector (CN16)

Pin	Signal
1	+5V
2	N/C
3	RX
4	Ground
5	TX

2.28 PC/104 Socket (CN17)

J2/P2		
Pin	D	C
1	GND	GND
2	MEMCS16*	SBHE*
3	IOCS16*	LA23
4	IRQ10	LA22
5	IRQ11	LS21
6	IRQ12	LS20
7	IRQ15	LS19
8	IRQ14	LA18
9	DACK0*	LA17
10	DRQ0	MEMR*
11	DACK5*	MEMW*
12	DRQ5	SD8
13	DACK6*	SD9
14	DRQ6	SD10
15	DACK7*	SD11
16	DRQ7	SD12
17	+5V	SD13
18	MASTER*	SD14
19	GND	SD15
20	GND	GND/KEY

J1/P1		
Pin	A	B
1	IOCHCK*	GND
2	D7	RSTDRV
3	D6	+5V
4	D5	IRQ9
5	D4	-5V
6	D3	DRQ2
7	D2	-12V
8	D1	ENDXFR*
9	D0	+12V
10	IOCHRDY	GND/KEY
11	AEN	SMEMW*
12	A19	SMEMR*
13	A18	IOW*
14	A17	IOR*
15	A16	DACK3*
16	A15	DRQ3
17	A14	DACK1*
18	A13	DRQ1
19	A12	REFRESH*
20	A11	SYSCLK
21	A10	IRQ7
22	A9	IRQ6
23	A8	IRQ5
24	A7	IRQ4
25	A6	IRQ3
26	A5	DACK2*
27	A4	TC
28	A3	BALE
29	A2	+5V
30	A1	OSC
31	A0	GND
32	GND	GND

2.29 Internal Mouse Connector (CN18)

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

2.30 CPU Fan Connector (CN19)

Pin	Signal
1	Ground
2	+12V
3	FAN Sense

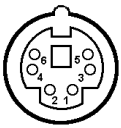
2.31 External 5VSB/PWRGD Connector (CN20)

Pin	Signal
1	N/C
2	Ground
3	N/C
4	Ground
5	PS_ON
6	+5V Standby

2.32 Internal Keyboard Connector (CN21)

Pin	Signal
1	Keyboard Clock
2	Keyboard Data
3	N/C
4	Ground
5	+5 Volt.

2.33 PS/2 Keyboard & Mouse Mini-Din (CN22)



Pin	Signal	Pin	Signal
1	Mouse Clock	2	Keyboard Clock
3	+5V	4	Ground
5	Keyboard Data	6	Mouse Data

2.34 CompactFlashÔ Disk Connector (CFD1)

The HSB-660S/I is equipped with a CompactFlash™ slot on the solder side, which supports the IDE interface type 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.

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	SIOW#
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

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.

When you should encounter fatal errors, please contact your distributor or sales representative.

System configuration verification

These routines check the current system configuration the values stored in the CMOS memory of the board. 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:

You are starting your system for the first time

You have changed the hardware attached to your system

The CMOS memory has lost power and the configuration information has been erased.

The HSB-660S/I 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 CMOS 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 memory so that it retains the Setup information when the power is turned off.

Some items in the BIOS are programmed to auto detect your system. The presence or the values of these items vary with the corresponding hardware specification of your system.

- **Entering setup**

Power on the computer and press <Del> immediately. This will allow you to enter Setup. The top menu offers users various functions to configure the system. The default page after entering the BIOS setup is [Main – Standard CMOS setup].

- **Major Setup Features:**

  ✧ **Main – Standard CMOS Features**

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

- **Advanced Features Setup**

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

  ✧ **Advanced BIOS Features**

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

✧ **Advanced Chipset Features**

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

✧ **Integrated Peripherals**

Use this menu to specify your settings for integrated peripherals. (USB, Serial port, Parallel port, keyboard, mouse etc.)

✧ **Power Management Setup**

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

✧ **PnP/PCI Configurations**

This entry appears if your system supports PnP/PCI.

- **Default – 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.

- **Security – Set/Change Password**

Use this menu to set Supervisor/User Passwords.

- **PC Health Setup**

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

- **Clk/Voltage Setup**

Use this menu to specify your settings for auto detect DIMM/PCI clock and spread spectrum.

- **Exit**

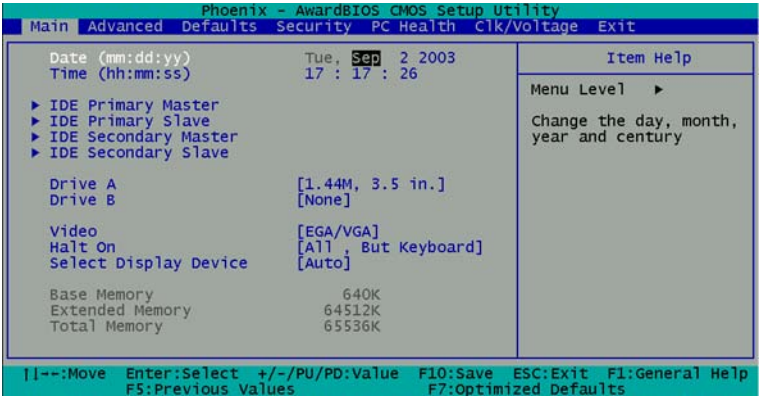
Save & Exit Setup -- Save CMOS value changes to CMOS and exit setup.

Exit Without Saving -- Abandon all CMOS value changes and exit setup.

3.3 Main Setup

Standard CMOS setup

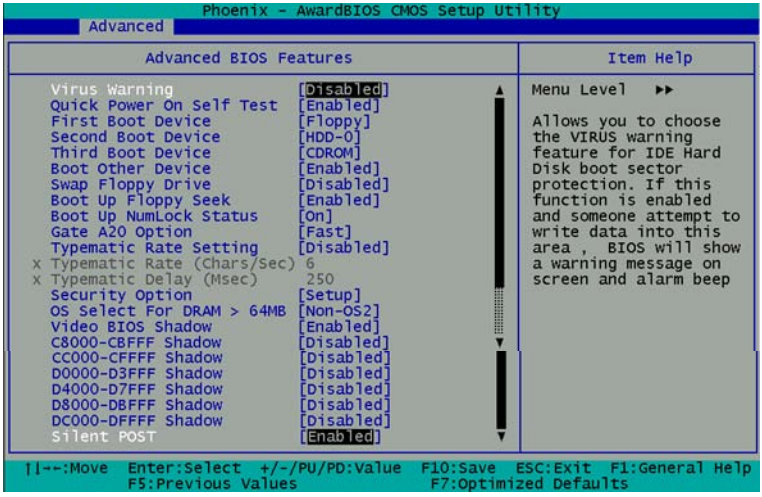
Select [Main] for STANDARD CMOS SETUP option from the top menu, the screen shown below is displayed. This standard Setup Menu allows users to configure system components such as date, time, hard disk drive, floppy drive and display. Once a field is highlighted, on-line help information is displayed in the right box of the Menu screen.



3.4 Advanced Features Setup

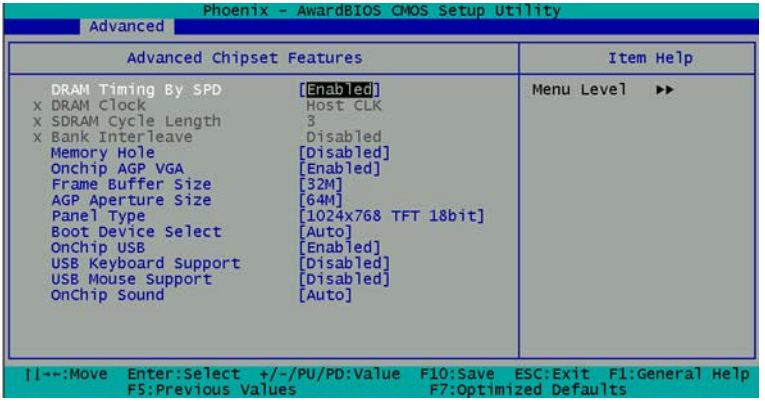
- **Advanced BIOS Features**

By choosing the [Advanced BIOS Feature] option from the initial setup menu, the screen below is displayed.



- **Advanced Chipset Features Setup**

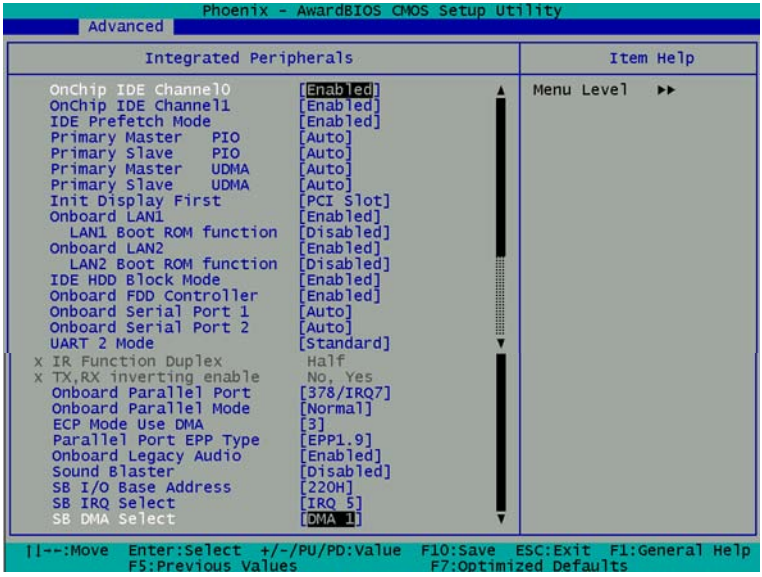
By choosing the [Advanced Chipset Features Setup] option from the INITIAL SETUP SCREEN menu, the screen below is displayed.



- **Integrated Peripherals**

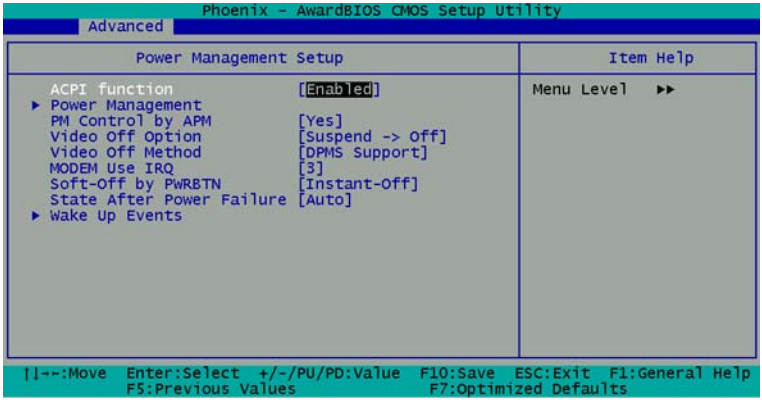
By choosing the [Integrated Peripherals] option from the INITIAL SETUP SCREEN menu, the screen below is displayed.

Note: When LAN2 is fitted with RTL8110S, "LAN2 Boot ROM function" supports PXE mode only.



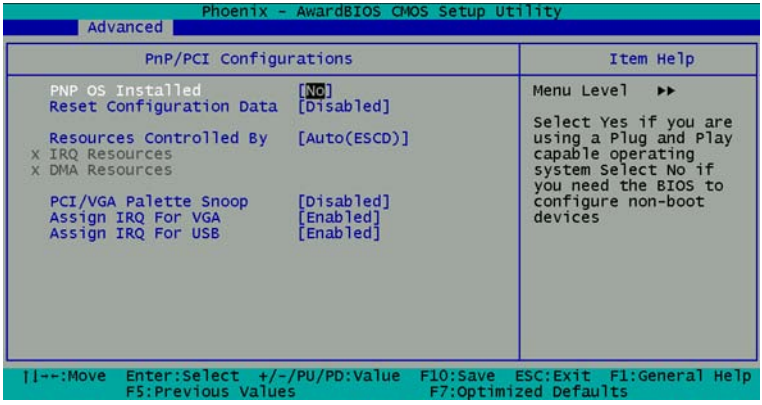
- **Power Management Setup**

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



- **PnP/PCI Configuration**

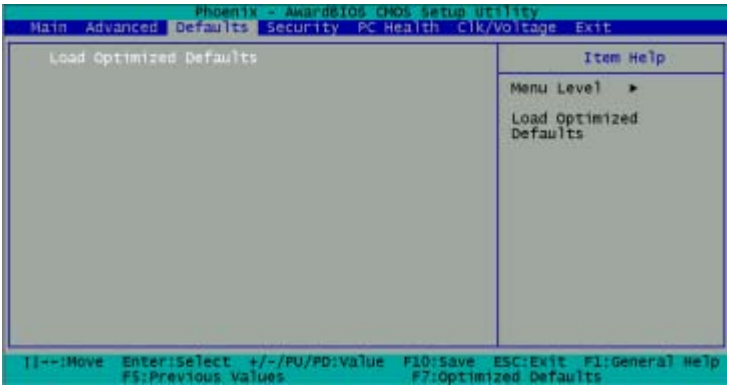
By choosing the PnP/PCI Configuration option from the INITIAL SETUP SCREEN menu, the screen below is displayed.



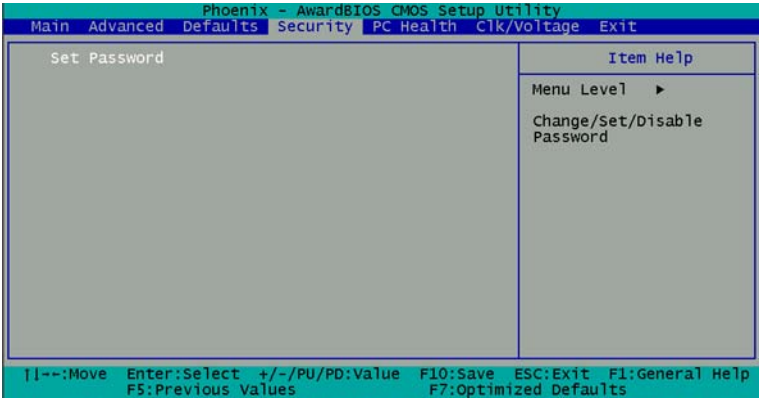
3.5 Default Setup

- **Load Optimized Defaults**

  Select [Defaults] to Load Optimized Defaults setting from the top menu, the screen shown below is displayed.



3.6 Security Setup



- **Set/Change password**

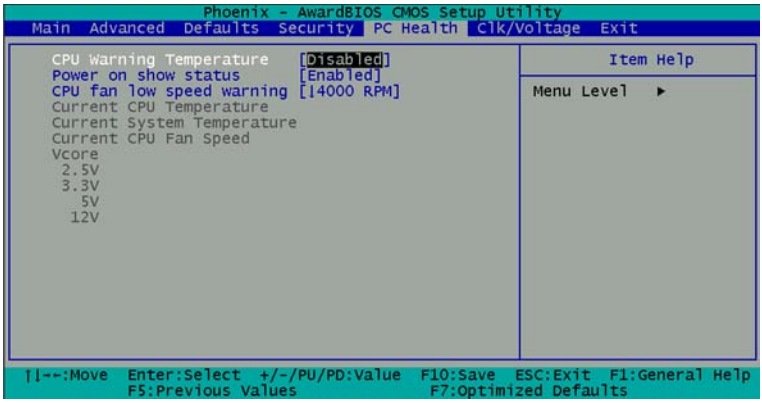
  You can set the password to restrict unauthorized access to enter or change the options of the setup menus.

  To abort the process at any time, press Esc.

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

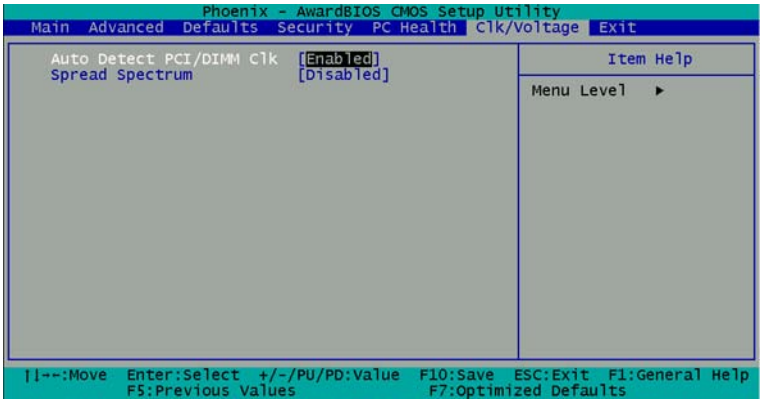
3.7 PC Health Setup

By choosing the [PC Health] option from the top menu, the screen below is displayed.

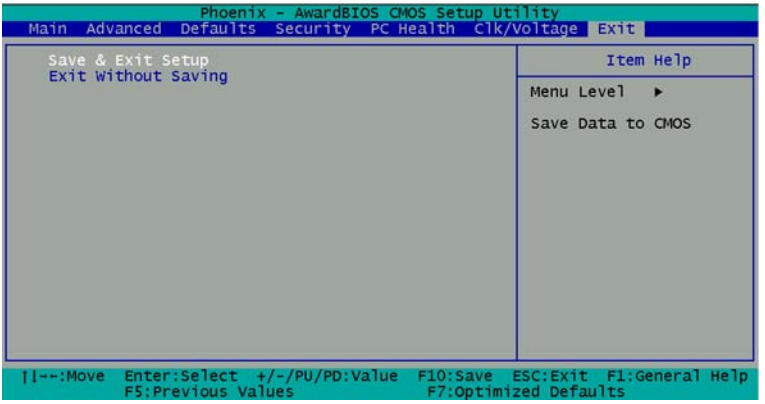


3.8 Clk/Voltage Setup

By choosing the [Clk/Voltage] option from the top menu, the screen below is displayed.



3.9 Exit Setup



- **Save & Exit Setup**

If you select this option and press <Enter> from the top menu, 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 compare this to what it finds as it checks the system. This record is required for the system to operate.

- **Exit without saving**

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

Chapter

4

Driver Installation

The HSB-660S/I comes with a CD-ROM which 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

Step 4 – Install Audio 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

1. Insert the HSB-660S/I 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 1 : For LAN Driver, please first find the corresponding chip code folder according to your onboard chip code, then follow the instruction 2.)

   (Notice 2 : 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.

Note: For Gigabit Ethernet driver, please always refer to the latest driver on our website. (www.emacinc.com)

4.2 Installation 2:

Applicable for Windows 2000 / 98

1. Insert the **HSB-660S/I 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

CompactFlash® Cover Installation Guide

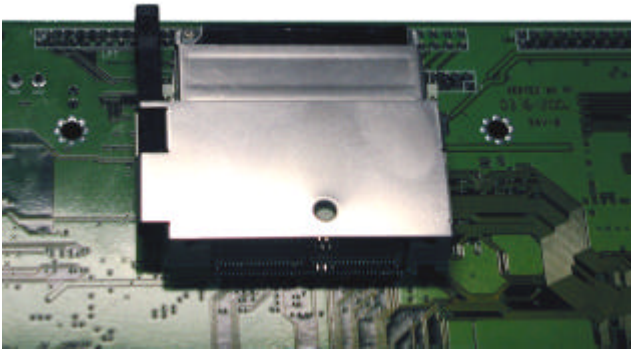
A.1 How to install the CompactFlash card cover

HSB-660S/I is given a CompactFlash Card cover with the product. The purpose for the CompactFlash Card cover is to prevent users from dropping the CompactFlash Card under the condition of the delivery and system operation.

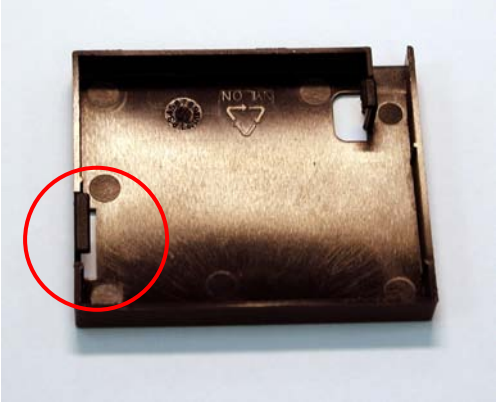
Please follow the steps below to install the CompactFlash Card cover. The instructions are simply for your reference which mean you may install the CompactFlash Card cover in the way you prefer.

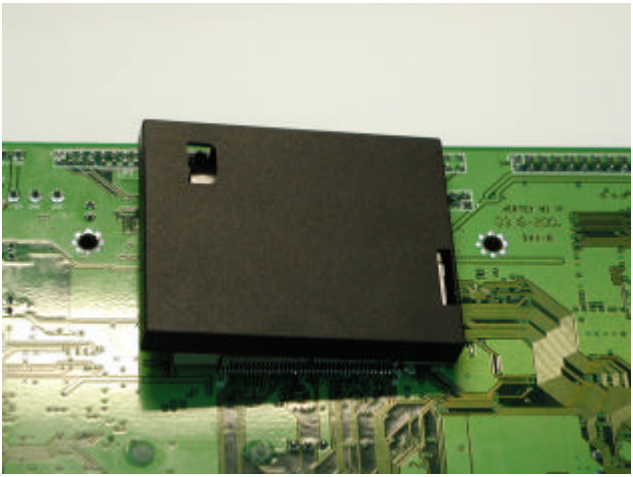
Step 1: Plug in CompactFlash Card

Step 2: Push the CompactFlash Card forward until the end.

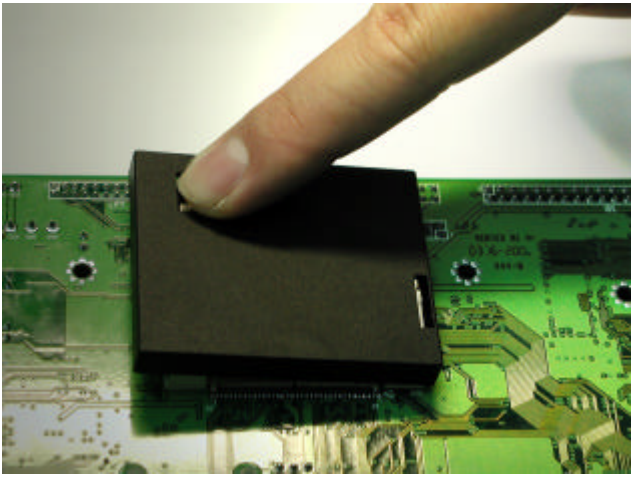


Step 3: Put the cover on from the right to left and hook up the CompactFlash Card white base with the crook on the cover.

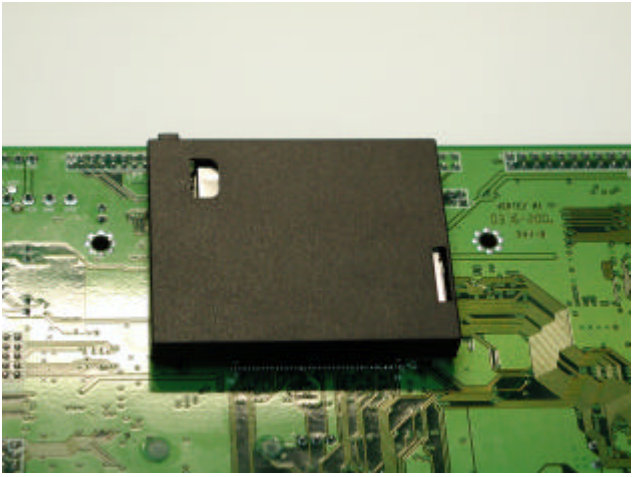




Step 4: Press a little bit with the finger on the hole of the cover.



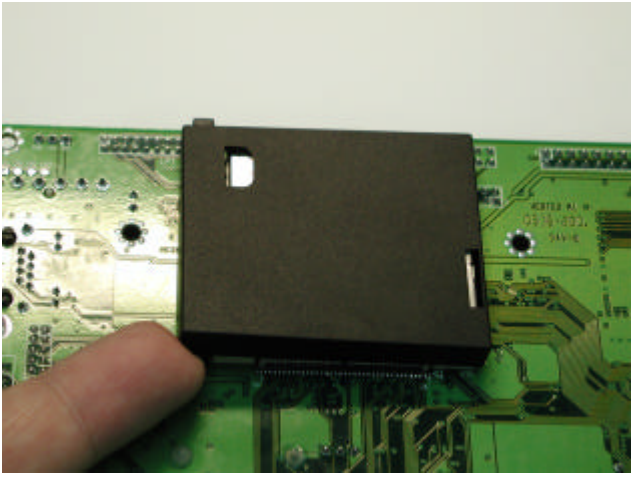
Step 5: Done



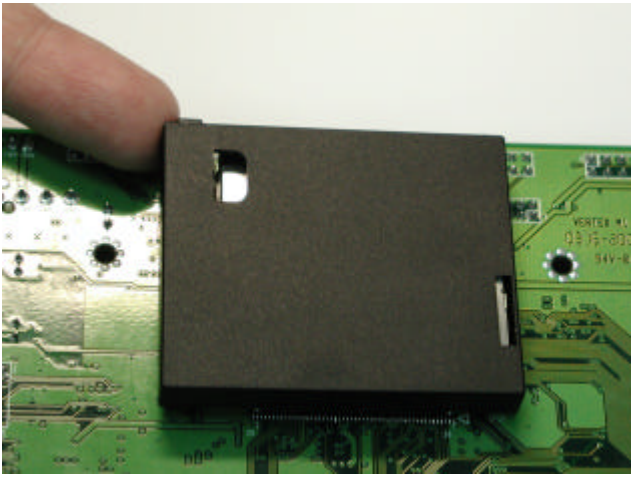
A.2 How to disassemble the CompactFlash card cover

If you would like disassemble the CompactFlash Card, please follow the steps below. If you don't follow the regular steps to disassemble, the cover may suffer the permanent damage.

Step 1: Pull the cover a little bit from the corner indicated.



Step 2: Pull the cover hard from the reverse corner indicated.



In this way, the cover can be disassembled as easy as possible.