

SHB110 Series Intel[®] Core[™] 2 Duo / Core[™] Duo Core[™] Solo / PICMG 1.3 Full-Size Single Board Computer User's Manual



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If you replace wrong batteries, it causes the danger of explosion. It is recommended by the manufacturer that you follow the manufacturer's instructions to only replace the same or equivalent type of battery, and dispose of used ones.

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ESD Precautions

Computer boards have integrated circuits sensitive to static electricity. To prevent chipsets from electrostatic discharge damage, please take care of the following jobs with precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before holding the board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. It discharges static electricity from your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components.

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MEMO

Chapter 1 Introduction



The **SHB110** PICMG 1.3 full-size Single Board Computer supports Intel[®] CoreTM 2 Duo/ CoreTM Duo/CoreTM Solo processors with FSB 533/667 MHz. The board integrates chipsets Intel[®] 945GME and ICH7M-DH that deliver outstanding system performance through highbandwidth interfaces, multiple I/O functions for interactive applications and various embedded computing solutions. There are two DDR2 DIMM sockets for dual channel DDR2 533/667, maximum memory capacity up to 4GB. The board also features Ethernet 10/100/1000Mb, dual PCI-Express LAN, and two serial ATA channels for a tatal of two serial ATA hard drives at maximum transfer rate up to 3Gb/s. Four USB 2.0 Port and built-in high definition audio codec can achieve the best stability and reliability for industrial applications.

Introduction

1.1 Specifications

- CPU: Intel[®] Core[™] 2 Duo/ Core[™] Duo/Core[™] Solo, processors
- System Chipset: Intel[®] 945GME and ICH7M-DH
- CPU Socket: Socket M
- Front-Side Bus: 533/667 MHz
- BIOS
 - Award PnP Flash BIOS
- System Memory
 - Two x 240-pin DDR2 DIMM sockets
 - Maximum up to 4GB DDR2 memory
 - Note The actual maximum capacity will be less depending on system configuration.
 - Support DDR533/667 memory
- L2 Cache: integrated in CPU
- IDE Interface
 - One IDE connector and up to two IDE devices, Ultra DMA ATA33/66/100 supported
- FDD Interface
 - Supports up to two drives
- Compact Flash Socket (optional)
 - One Compact Flash[®] Type II Socket
- Onboard Multi-I/O
 - Parallel Port: one bi-directional with ECP/EPP/SPP support
 - Serial Port: one for RS-232 (COM1) and one port for RS-232/422/485 (COM2)
- USB Interface
 - Four USB ports compliant with USB Spec. Rev. 2.0
- VGA Controller
 - Intel[®] Graphic Media Accelerator 950 integrated on Intel[®]

Introduction

945GME

• Ethernet

- The LAN1/LAN2 is 82573L Ethernet controller support 10/100/1000 Mb
- Dual PCI-Express LAN
- Serial ATA
 - Support Serial ATA/Serial ATA II
 - Two Serial ATA channels for a total of two Serial ATA hard drives
 - Maximum transfer rate could up to 3Gb/s
- Audio
 - Realtek ALC203 Audio Codec onboard
- Hardware Monitoring
 - Detection of CPU temperature, System temperature, Power failure and Fan speed
- Watchdog Timer
 - Reset Support (1-255 level)
- Dimensions: 338x 126mm (8 layer)

NOTE All specifications and images are subject to change without notice.

1.2 Utilities Supported

- Intel[®] 945GME Utility and Drivers
- VGA Drivers
- Ethernet Utility and Drivers
- Audio Utility and Drivers

1.3 Block Diagram



Notice: 4 USB 2.0 Port built-in on Backplane

1.4 I/O Bracket



Introduction

C h a p t e r 2 Jumpers and Connectors

2.1 Board Dimensions



2.2 Board Placement



2.3 Jumper Settings

Proper jumer settings configure the **SHB110** to meet your application purpose.

2.3.1 COM2 Mode Select Jumpers: JP2, JP3, JP4

These jumpers select the COM2 port's communication mode to operate RS-232 or RS-422/485.

Description	Function	Jumper Setting					
COM2	RS-232 (Default)	JP2 7 5 3 1 0 0 0 1 0 8 6 4 2	JP3 1 2 2 3 4 5 6	JP4 1 2 3 4 5 6			
	RS-422	JP2 7 5 3 1 0 0 0 8 6 4 2	JP3 1 1 2 3 1 4 5 1 6	JP4 1 2 3 0 0 4 5 0 0 6			
	RS-485	JP2 7 5 3 1 0 0 0 0 0 8 6 4 2	JP3 1 2 3 2 4 5 2 6	JP4 1 2 3 0 4 5 0 0 6			

2.3.2 LVDS Voltage Setting Jumper: JP1

This Jumper is to select the voltage for LCD interface.

Description	Function	Jumper Setting
LCD Voltage Setting	3.3V (Default)	JP1 3 2 1
	5V	JP1 3 2 1

2.3.3 Compact Flash Setting Jumper: JP6 (Optional)

Use this jumper to set Master/Slave Compact Flash interface.

Description	Function	Jumper Setting
Compact Flash Setting	Master (Default)	JP6 2 1
	Slave	JP6 2 1

2.3.4 CMOS Clear Jumper: JP7 You may need to use this jumper is to clear the CMOS memory if incorrect BIOS settings.

Description	Function	Jumper Setting
CMOS Clear	Normal (Default)	JP7 3 2 1
	Clear CMOS	JP7 3 2 1

2.4 Connectors

Connectors connect this board with other parts of the system. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected.

Function	Connector	Function	Connector
Audio Output	AUDIO1	FDD	FDD1
AUX IN	AUX1	P-ATA IDE	IDE1
Battery Socket	BT1	K/B connector	KB1
ATX 4P 12V IN (Option)	CN1	LAN1 RJ-45	LAN1
LCD Inverter Power	CN2	LAN2 RJ-45	LAN2
LVDS Panel Connector	CN3	M/S connector	MS1
CRT Connector	CN4	Printer Port	PRN1
Axiom Front Panel	CN5	S-ATA Port1	SATA1
COM1	COM1	S-ATA Port2	SATA2
COM2	COM2	CPU Socket	U12
DDR2 DIMM Slot 1	DDR1	USB Port 1	USB1
DDR2 DIMM Slot 2	DDR2	USB Port 2	USB2
System FAN1	FAN1	USB Port 3, 4	USB3
System FAN2	FAN2	CPU FAN	FAN3
CF Slot	CF1		

Here is a summary table shows you all connectors on the board.

2.4.1 Printer Port Connector: PRN1

Print Port Connector [Default]

This board has a multi-mode parallel port to support:

1. Standard Mode:

IBM PC/XT, PC/AT and PS/2TM are compatible with bi-directional parallel port.

2. Enhanced Mode:

Enhance parallel port (EPP) is compatible with EPP 1.7 and EPP 1.9 (IEEE 1284 compliant).

3. High Speed Mode:

Microsoft and Hewlett Packard extended capabilities port (ECP) is IEEE 1284 compliant.

Pin	Signal	Pin	Signal	PRN1		N1	
1	Strobe#	2	Data 0	1			2
3	Data 1	4	Data 2	3			4
5	Data 3	6	Data 4	5			6
7	Data 5	8	Data 6	7			8
9	Data 7	10	Acknowledge #	9			10
11	Busy	12	Paper Empty #	11			12
13	Printer Select	14	Auto Form Feed #	13 15			14 16
15	Error #	16	Initialize #	17			18
17	Printer Select In #	18	GND	19			20
19	GND	20	GND	21			22
21	GND	22	GND	23			24
23	GND	24	GND	25			26
25	GND	26	GND				

2.4.2 Audio Output Connector: AUDIO1

AUDIO1 is a 10-pin connector to support the audio interface.

Pin	Signal	Pin	Signal					
1	MIC-IN	2	GND	2	AU		D1	10
3	Line In L	4	GND	<u>_</u>	<u> </u>	<u> </u>	<u> </u>	
5	Line In R	6	GND					
7	Audio Out L	8	GND	-	<u> </u>	<u> </u>	<u> </u>	<u> </u>
9	Audio Out R	10	GND	I	3	Э	'	9

2.4.3 CD AUX IN Connector: AUX1 (4 pin)

Pin	Signal	Pin	Signal	A 1	
1	Signal- IN(Left)	2	GND	2	
3	GND	4	Signal- IN(Right)	4	

2.4.4 ATX 4 Pin 12V In Connector: CN1

You can connect it to the ATX12V power supply for CPU Core Voltage.

Pin	Signal	CN1
1	GND	L L
2	GND	3 4
3	+12V	
4	+12V	

Serial Port Interface Connectors: COM1, COM2 2.4.5

The serial interface for the board consists of COM1 port (COM1) and COM2 (COM2) supports RS-232/RS422/RS485.

RS232 Pin Assignment

Pin	Signal	Pin	Signal	co	าмว
1	Data Carrier Detect (DCD)	2	Data Set Ready (DSR)	1] 2
3	Receive Data (RXD)	4	Request to Send (RTS)	3	4
5	Transmit Data (TXD)	6	Clear to Send (CTS)	5	6
7	Data Terminal Ready (DTR)	8	Ring Indicator (RI)	7 9	8 10
9	Ground (GND)	10	NC		-

RS422 Pin Assignment

Pin	Signal	Pin	Signal		 ~
1	TXD-	2	NC		2 12
3	TXD+	4	NC	3	4
5	RXD-	6	NC	5	6
7	RXD+	8	NC	9	10
9	Ground (GND)	10	NC		•

RS485 Pin Assignment

Pin	Signal	Pin	Signal	
1	NC	2	NC	
3	NC	4	NC	
5	Data-	6	NC	
7	Data+	8	NC	
9	Ground (GND)	10	NC	

COM2			
1			2
3			4
5			6
7			8
9			10

2.4.6 Floppy Disk Port Connector: FDD1

The board provides a 34-pin header type connector, FDD1, supporting up to two floppy drives. The floppy drives may be any one of the following types: 5.25" 360KB/1.2MB and 3.5" 720KB/1.44MB/2.88MB.

Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	Reduce write current	3	GND
4	N/C	5	GND	6	N/C
7	GND	8	Index #	9	GND
10	Motor enable A #	11	GND	12	Drive select B #
13	GND	14	Drive select A #	15	GND
16	Motor enable B #	17	GND	18	Direction #
19	GND	20	STEP #	21	GND
22	Write data #	23	GND	24	Write gate #
25	GND	26	Track #	27	GND
28	Write protect #	29	GND	30	Read data #
31	GND	32	Side 1 select #	33	GND
34	Disk change #				

FDD1



2.4.7 IDE Interface Connector: IDE1

The board provided one IDE Port to support maximum up to two IDE devices.

Pin	Description	Pin	Description	Pin	Description
1	Reset #	2	GND	3	Data 7
4	Data 8	5	Data 6	6	Data 9
7	Data 5	8	Data 10	9	Data 4
10	Data 11	11	Data 3	12	Data 12

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Pin	Description	Pin	Description	Pin	Description
13	Data 2	14	Data 13	15	Data 1
16	Data 14	17	Data 0	18	Data 16
19	GND	20	N/C	21	N/C
22	GND	23	IOW #	24	GND
25	IOR #	26	GND	27	IOCHRDY
28	N/C	29	N/C	30	GND-Default
31	Interrupt	32	N/C	33	SA1
34	N/C	35	SA0	36	SA2
37	HDC CS0 #	38	HDC CSI #	39	HDD Active #
40	GND				

IDE1

2.4.8 LVDS Panel Connector: CN3

CN3 is a JST 40 pin connector for the LVDS flat panel connection.

Pin	Signal	Pin	Signal
1	VCCM	2	VCCM
3	VCCM	4	VCCM
5	VCCM	6	VCCM
7	NC	8	NC
9	GND	10	GND
11	LVDSB_D3-	12	LVDSB_D0-
13	LVDSB_D3+	14	LVDSB_D0+
15	GND	16	GND
17	LVDSB_CLK-	18	LVDSB_D1-

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Pin	Signal	Pin	Signal
19	LVDSB_CLK+	20	LVDSB_D1+
21	GND	22	GND
23	LVDSA_D0-	24	LVDSB_D2-
25	LVDSA_D0+	26	LVDSB_D2+
27	GND	28	GND
29	LVDSA_D1-	30	LVDSA_D3-
31	LVDSA_D1+	32	LVDSA_D3+
33	GND	34	GND
35	LVDSA_D2-	36	LVDSA_CLK-
37	LVDSA_D2+	38	LVDSA_CLK+
39	GND	40	GND

CN3



2.4.9 LCD Inverter Power Connector: CN2



2.4.10 CRT Connector: CN4

CN14 is D-SUB 15 Pin connector commonly used for the CRT Monitor.

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	2	2 Green		Blue
4	N/A	5	GND	6	AGND
7	AGND	8	AGND	9	N/A
10	GND	11	N/A	12	DDC DAT
13	Horizontal Sync	14	Vertical Sync	15	DDC CLK

CN4



2.4.11 SATA Connectors: SATA1~2

These SATA connectors are for high-speed SATA interface ports and they can be connected to hard disk devices.



2.4.12 Ethernet Connector: LAN1/LAN2

The RJ-45 connectors LAN1 and LAN2 are for Ethernet. To connect the board to 100-Base-T or 1000-Base-T hub, just plug one end of the cable into LAN1 and connect the other end (phone jack) to a 100-Base-T hub or 1000-Base-T hub.

Pin	Signal 10/100	Pin	Signal 1000
1	Tx+ (Data	1	MDI0+
2	Tx- (Data	2	MDI0-
3	Rx+(Data	3	MDI1+
4	RJ-1(For 100	4	MDI2+
5	RJ-1(For 100	5	MDI2-
6	Rx- (Data	6	MDI1-
7	RJ-1(For 100	7	MDI3+
8	RJ-1(For 100	8	MDI3-
А	Link/Active LED	А	Link/Active LED
В	10/100/1000	В	10/100/1000

LAN1/LAN2

A	B

2.4.13 USB Port Connectors: USB1~2

The Universal Serial Bus (USB) port connector on the board is for the installation of peripherals supporting the USB interface. Each USB port consists of two 4-pin standard USB ports.

Pin	Signal
1	USB Vcc
2	USB -
3	USB +
4	USB GND



2.4.14 USB Connector: USB3/USB4

The Universal Serial Bus (USB) connector on this board is for installing versatile USB interface peripherals. This is a 10-pin standard USB connector.

Pin	Signal	Pin	Signal
1	USB POWER	2	USB POWER
3	USB P0-	4	USB P1-
5	USB P0+	6	USB P1+
7	USB GND	8	USB GND
9	NC	10	GND

USB3				
9	7	5	3	1
10	8	6	4	2

2.4.15 Front Panel Connector: CN5



Power LED

Pins 1, 3, 5 connect the system power LED indicator to its respective switch on the case. Pin 1 is +, and pin 5 assigned to -. Pin 3 is defined as NC.

External Speaker and Internal Buzzer Connector

Short Pin 4- 6 for Internal Buzzer.

Hardware Reset

Pins 11 and 12 are designed for Hardware Reset.

HDD Activity LED

This connector extends to the hard drive activity LED on the control panel. This LED will flash when the HDD is being accessed. Pins 13 and 14 can be connected to the hard disk drive and front panel HDD LED.

Power Botton

Pins 9 and 10 connect the front panel's ATX power button to the card, which allows users to control ATX power supply on or off.

2.4.16 Mouse/Keyboard Connectors: MS1/KB1

The board provides a keyboard (KB1) and Mouse (MS1) interface with two 5-pin connectors.



2.4.17 System Fan1/Fan 2 Connectors: FAN1/FAN2

You can connect the system cooling fan cable to FAN1/FAN2 for system cooling fan power.

Pin	Signal	FAN1, FAN2
1	GND	1
2	+12V	
3	SENSOR	° _ • _

2.4.18 CPU Fan Connector: FAN3

A CPU fan is always needed for cooling CPU heat. The CPU fan connector FAN3 provides power to the CPU fan.

Pin	Signal	FAN3
1	GND	1 . 0
2	+12V	
3	SENSOR	3

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Chapter 3 Hardware Installation

Before installing the processor, please access $\text{Intel}^{^{(\!R\!)}}$ website for more detailed information <u>http://www.intel.com</u>.

3.1 Installing the Porcessor

Before installing the CPU, please make sure that your CPU belongs to Intel Core2 Duo/Core Duo/Core Solo Mobile Processor



Carefully follow up these steps below to install the CPU:

- **Step 1:** Before installing your CPU, please check and confirm all jumpers are correctly set.
- Step 2: Lift the releasing lever of the socket.

Hardware Installation



Step 3: Align pins of the CPU with pin holes of the socket. Be careful of the CPU's orientation.

Step 4: Push down the CPU into the socket.



Step 5: Push down the releasing lever and lock it onto the key hook.Step 6: Hook the hole in ZIF clip for the CPU cooling fan orientation onto the notch on the socket.

3.2 Installing CPU Cooler

Note1: To install the CPU cooler first time, please follow the procedure step by step.

Note2: For the second or later installation, please start the procedure from the step 2.

Step 1: Install the Back-Plate at the backside of the board.



Step 2: Connect the housing to the Power-Socket.



Removing the CPU:

1. Before removing the CPU, turn off the system power, waiting for about 3 minutes until the heat radiation plate of the cooling fan and the CPU cooled down.

 $\frac{1}{2}$ <u>Note</u> Hot CPU and heat radiation plate might cause burns.

- 2. To remove the CPU, lift the releasing lever of the socket.
- 3. To remove the CPU, reverse the installation steps.

3.3 Installing the Memory

The board supports two 240-pin DDR2 DIMM memory sockets with maximum memory capacity up to 4GB.

Please follow steps below to install the memory modules:

- 1 Push down latches on each side of the DIMM socket.
- 2 Align the memory module with the socket that notches of memory module must match the socket keys for a correct intallation.
- 3 Install the memory module into the socket and push it firmly down until it is fully seated. The socket latches are levered upwards and clipped on to the edges of the DIMM.
- 4 Install any remaining DIMM modules.



Hardware Installation

Chapter 4 Hardware Description

4.1 Microprocessors

The SHB110 Series supports Intel[®] Core[™] 2 Duo/ Core[™] Duo/Core[®] Solo processors, which make your system operated under Windows[®] 2000/XP and Linux environments. The system performance depends on the microprocessor. Make sure all correct settings are arranged for your installed microprocessor to prevent the CPU from damages.

4.2 BIOS

The SHB110 Series uses Award Plug and Play BIOS with a single 4Mbit Flash EPROM.

4.3 System Memory

The SHB110 Series supports two 240-pin DDR2 DIMM sockets for a maximum memory of 4GB DDR2 SDRAMs. The memory module can come in sizes of 64MB, 128MB, 256MB, 512MB, 1GB and 2GB.

4.4 I/O Port Address Map The Intel[®] Core[™] 2 Duo/ Core[™] Duo/Core[™] Solo CPUs can communicate via I/O ports. There are total 1KB port addresses available for assignment to other devices via I/O expansion cards.

Address	Devices
000-01F	DMA controller #1
020-03F	Interrupt controller #1
040-05F	Timer
060-06F	Keyboard controller
070-07F	Real time clock, NMI
080-09F	DMA page register
0A0-0BF	Interrupt controller #2
0F0	Clear math coprocessor busy signal
0C0-0DF	DMA controller #2
0F1	Reset math coprocessor
0F8-0FF	Math processor
120	Disable watchdog timer operation (read)
121	Enable watchdog timer operation (read)
122	Watchdog
1F0-1F8	Fixed disk controller
200-207	Game port
300-31F	Prototype card
360-36F	Reserved
378-37F	Parallel port #1
3B0-3BF	MDA video card (including LPT1)
3C0-3CF	EGA card
3D0-3DF	CGA card
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port #1 (COM1)
2F8-2FF	Serial port #2 (COM2)

Chapter 5 Phoenix-Award BIOS Utility

The Phoenix-Award BIOS provides users with a built-in Setup program to modify basic system configuration. All configured parameters are stored in a battery-backed-up RAM (CMOS RAM) to save the Setup information whenever the power is turned off.

5.1 Entering Setup

There are two ways to enter the Setup program. You may either turn ON the computer and press immediately, or press the and/or <Ctrl>, <Alt>, and <Esc> keys simultaneously when the following message appears at the bottom of the screen during POST (Power on Self Test).

TO ENTER SETUP PRESS DEL KEY

If the message disappears before you respond and you still want to enter Setup, please restart the system to try it again. Turning the system power OFF and ON, pressing the "RESET" button on the system case or simultaneously pressing <Ctrl>, <Alt>, and keys can restart the system. If you do not press keys at the right time and the system doesn't boot, an error message will pop out to prompt you the following information:

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC> OR TO ENTER SETUP

5.2 Control Keys

Up arrow	Move cursor to the previous item	
Down arrow	Move cursor to the next item	
Left arrow	Move cursor to the item on the left hand	
Right arrow	Move to the item in the right hand	
Esc key	Main Menu Quit and delete changes into CMOS Status Page Setup Menu and Option Page Setup Menu Exit current page and return to Main Menu	
PgUp/"+" key	Increase the numeric value or make changes	
PgDn/"–" key	Decrease the numeric value or make changes	
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu	
(Shift) F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward	
F3 key	Reserved	
F4 key	Reserved	
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu	
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu	
F7 key	Load the Setup default, only for Option Page Setup Menu	
F8 key	Reserved	
F9 key	Reserved	
F10 key	Save all the CMOS changes, only for Main Menu	

5.3 Getting Help

Main Menu

The online description of the highlighted setup function is displayed at the bottom of the screen.

• Status Page Setup Menu/Option Page Setup Menu

Press <F1> to pop out a small Help window that provides the description of using appropriate keys and possible selections for highlighted items. Press <F1> or <Esc> to exit the Help Window.
5.4 The Main Menu

Once you enter the Award BIOS CMOS Setup Utility, the Main Menu appears on the screen. In the Main Menu, there are several Setup functions and a couple of Exit options for your selection. Use arrow keys to select the Setup Page you intend to configure then press <Enter> to accept or enter its sub-menu.

 Standard CMOS Features Advanced BIOS Features Advanced Chipset Features Integrated Peripherals Power Management Setup PnP/PCI Configurations PC Health Status 	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving
Esc : Quit F10 : Save & Exit Setup	∱ ↓ → ← : Select Item



NOTE If your computer can not boot after making and saving system changes with Setup, the Award BIOS will reset your system to the CMOS default settings via its built-in override feature.

It is strongly recommended that you should avoid changing the chipset's defaults. Both Award and your system manufacturer have carefully set up these defaults that provide the best performance and reliability.

5.5 Standard CMOS Setup Menu

The Standard CMOS Setup Menu displays basic information about your system. Use arrow keys to highlight each item, and use <PgUp> or <PgDn> key to select the value you want in each item.

Date (mm:dd:yy) Time (hh:mm:ss)	Tue, <mark>Feb</mark> 6 2007 19 : 3 : 2	Item Help Menu Level ► Change the day, month,
 IDE Channel 0 Master IDE Channel 0 Slave IDE Channel 1 Master IDE Channel 1 Slave Drive A Halt On 	[None] [None] [None] [1.44M, 3.5 in.] [A1, But Keyboard]	year and century.

Date

The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	It is determined by the BIOS and read only, from Sunday to Saturday.
date	It can be keyed with the numerical/ function key, from 1 to 31.
month	It is from January to December.
year	It shows the current year of BIOS.

Time

This item shows current time of your system with the format <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

IDE Channel 0 Master/IDE Channel 0 Slave/IDE Channel 1 Master/IDE Channel 1 Slave

These items identify the types of each IDE channel installed in the computer. There are 45 predefined types (Type 1 to Type 45) and 2 user's definable types (Type User) for Enhanced IDE BIOS. Press <PgUp>/<+> or <PgDn>/<-> to select a numbered hard disk type, or directly type the number and press <Enter>. Please be noted your drive's specifications must match the drive table. The hard disk will not work properly if you enter improper information. If your hard disk drive type does not match or is not listed, you can use Type User to manually define your own drive type. If selecting Type User, you will be asked to enter related information in the following items. Directly key in the information and press <Enter>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the HDD interface controller supports ESDI, select "Type 1". If the HDD interface controller supports SCSI, select "None". If the HDD interface controller supports CD-ROM, select "None".

CYLS.	number of cylinders	LANDZONE	landing zone
HEADS	number of heads	SECTORS	number of sectors
PRECOMP	write precom	MODE	HDD access mode

If there is no hard disk drive installed, select NONE and press <Enter>.

• Dive A type/Drive B type

The item identifies the types of floppy disk installed in the computer, as drive A or drive B.

None	No floppy drive installed
360K, 3.5 in	3.5 inch PC-type standard drive; 360Kb Mini ITXcity
1.2M, 3.5 in	3.5 inch AT-type high-density drive; 1.2MB Mini ITXcity
720K, 3.5 in	3.5 inch double-sided drive; 720Kb Mini ITXcity
1.44M, 3.5 in	3.5 inch double-sided drive; 1.44MB Mini ITXcity
2.88M, 3.5 in	3.5 inch double-sided drive; 2.88MB Mini ITXcity

Halt On

This item determines whether the system will halt or not, if an error is detected while powering up.

No errors	The system booting will halt on any errors detected. (default)
All errors	Whenever BIOS detects a non-fatal error, the system will stop and you will be prompted.
All, But Keyboard	The system booting will not stop for a keyboard error; it will stop for other errors.
All, But Diskette	The system booting will not stop for a disk error; it will stop for other errors.
All, But Disk/Key	The system booting will not stop for a keyboard or disk error; it will stop for other errors.

Press <Esc> to return to the Main Menu page.

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5.6 Advanced BIOS Features

This section allows you to configure and improve your system, to set up some system features according to your preference.

Phoenix - AwardBIOS CMOS Setup Utility Advanced BIOS Features		
 CPU Feature Hard Disk Boot Priority Virus Warning CPU L1 & L2 Cache Quick Power On Shelf Test First Boot Device Second Boot Device Boot Other Device Boot Other Device Boot Up NumLock Status Security Option APIC Mode MPS Version Control For OS OS Select For DRAM>64MB 	[Press Enter] [Disabled] [Enabled] [Enabled] [Floppy] [Hard Disk] [CDROM] [Enabled] [On] [Setup] [Enabled] [1.4] [Non-OS2]	item Help Menu Level ►
† ↓ → ← :Move Enter:Select +/-/F F5:Previous Values F6:Fail-	PU/PD:Value F10:Save -Safe Defaults F7:Optin	ESC:Exit F1:General Help nized Defaults

• CPU Feature

Scroll to this item and press <Enter> to view the CPU Feature sub menu.



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• Hard Disk Boot Priority

Scroll to this item and press <Enter> to view the sub menu to decide the disk boot priority.

1. Bootable Add-in Cards	ltem Help Menu Level ►
	Use <1> or <↓> to select a device, then press <+> to move it up, or <> to move it down the list. Press <esc> to exit this menu.</esc>

Press <Esc> to return to the Advanced BIOS Features page.

• Virus Warning

This option flashes on the screen. During and after the system boot up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system with the following message. You can run an anti-virus program to locate the problem. The default setting is "*Disabled*".

Disk boot sector is to be modified Type "Y" to accept write or "N" to abort write Award Software, Inc.

Enabled	It automatically activates while the system boots up and a warning message appears for an attempt to access the boot sector or hard disk partition table.
Disabled	No warning message will appear for attempts to access the boot sector or hard disk partition table.

NOTE This function is only available with DOS and other operating systems that do not trap INT13.

• CPU L1 & L2 Cache

These two options speed up memory access. However, it depends on the CPU/chipset design. The default setting is *"Enabled"*. CPUs without built-in internal cache will not provide the "CPU Internal Cache" item on the menu.

Enabled	Enable cache
Disabled	Disable cache

• Quick Power On Self Test

This option speeds up Power on Self Test (POST) after you turn on the system power. If set as Enabled, BIOS will shorten or skip some check items during POST. The default setting is *"Enabled"*.

Enabled	Enable Quick POST
Disabled	Normal POST

• First/Second/Third Boot Device

These items let you select the 1st, 2nd, and 3rd devices that the system will search for during its boot-up sequence. The wide range of selection includes Floppy, LS120, ZIP100, HDD0~3, SCSI, and CDROM.

Boot Other Device

This item allows users to enable or disable the boot device not listed in the First/Second/Third boot devices option above. The default setting is "*Enabled*".

Boot Up Floppy Seek

During POST, BIOS will determine the floppy disk drive type, 40 or 80 tracks. The 360Kb type is 40 tracks while 720Kb, 1.2MB and 1.44MB are all 80 tracks. The default value is "*Enabled*".

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Please be noted BIOS can not differentiate 720K, 1.2M or 1.44M drive type as they all are 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. There will be no warning message displayed if the installed drive is 360K.

Boot Up NumLock Status

Set the the Num Lock status when the system is powered on. The default value is "On".

Security Option

This item allows you to limit access to the system and Setup, or just to Setup. The default value is "Setup".

System	If a wrong password is entered at the prompt, the system will not boot, the access to Setup will be denied, either.
Setup	If a wrong password is entered at the prompt, the system will boot, but the access to Setup will be denied.



NOTE To disable the security, select PASSWORD SETTING at Main Menu and then you will be asked to enter a password. Do not type anything, just press <Enter> and it will disable the security. Once the security is disabled, the system will boot and you can enter Setup freely.

APIC Mode

Use this item to enable or disable APIC (Advanced Programmable Interrupt Controller) mode that provides symmetric multiprocessing (SMP) for systems.

MPS Version Control For OS

This item specifies the version of the Multiprocessor Specification (MPS). Version 1.4 has extended configuration tables to improve support for multiple PCI bus configurations and provide future expandability.

OS Select for DRAM >64MB

This item allows you to access the memory over 64MB in OS/2.

Press <Esc> to return to the Main Menu page.

5.7 Advanced Chipset Features

This section contains completely optimized chipset's features on the board that you are strongly recommended to leave all items on this page at their default values unless you are very familiar with the technical specifications of your system hardware.

PCI Express Port 1	[Enabled]	Item Help
PCI Express Port 2	[Enabled]	Menu Level 🕨
PCI Express Port 3	[Enabled]	
PCI Express Port 4	[Enabled]	
PCI Express Port 5	[Enabled]	
PCI Express Port 6	[Enabled]	
PCI-E Compliancy Mode	[v1.0a]	
PEG/Onchip VGA Control	[Auto]	
On-Chip Frame Buffer Size	[8MB]	
DVMT Mode	[DVMT]	
DVMT/FIXED Memory Size	[128MB]	
Boot Display	[CRT]	
Panel Scaling	[Auto]	
Panel Number	[640 X 480]	

• PCI Express Port 1 ~ 6

There are several PCI Express Ports for your selection.

• PCI-E Compliancy Mode

This item allows you to set the version of the PCI Express base specifications.

** VGA Setting **

PEG/Onchip VGA Control

Use this item to choose the primary display card.

• On-Chip Frame Buffer Size

Use this item to set the VGA frame buffer size.

• DVMT Mode

DVMT (Dynamic Video Memory Technology) helps you select the video mode.

• DVMT/Fixed Memory Size

DVMT (Dynamic Video Memory Technology) allows you to select a maximum size of dynamic amount usage of the video memory. The system would configure the video memory dependent on your application.

• Boot Display

This item is for Intel define ADD card only.

Press <Esc> to return to the Main Menu page.

5.8 Integrated Peripherals

This section allows you to configure your SuperIO Device, IDE Function and Onboard Device.



OnChip IDE Device

Scroll to this item and press <Enter> to view the sub menu OnChip IDE Device.

Phoenix - Awar OnCł	dBIOS CMOS Setup hip IDE Device	Utility
IDE HDD Block Mode IDE DMA transfer access On-Chip Primary PCI IDE IDE Primary Master PIO IDE Primary Slave PIO IDE Primary Slave UMDA On-Chip Secondary PCI IDE IDE Secondary Master PIO IDE Secondary Slave PIO IDE Secondary Slave UMDA IDE Secondary Salve UMDA	[Enabled] [Enabled] [Auto] [Auto] [Auto] [Auto] [Enabled] [Auto] [Auto] [Auto] [Auto] [Auto]	Item Help Menu Level ► If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.
** On-Chip Serial ATA Setting * X SATA Mode. On-Chip Serial ATA X SATA PORT Speed Settings X PATA IDE Mode SATA Port	IDE [Auto] Disabled Secondary P0, P2 is Primary	
† ↓ → ← :Move Enter:Select +/-/P	VU/PD:Value F10:Save E Safe Defaults F7:Optimi	SC:Exit F1:General Help

≻ **IDE HDD Block Mode**

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

IDE DMA transfer access ≻

Automatic data transfer between system memory and IDE device with minimum CPU intervention. This improves data throughput and frees CPU to perform other tasks.

On-Chip Primary/Secondary PCI IDE ≻ The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately. The default value is "Enabled". S)

NOTE Choosing Disabled for these options will

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automatically remove the IDE Primary Master/ Slave PIO and/or IDE Secondary Master/Slave PIO items on the menu.

- IDE Primary/Secondary Master/Slave PIO The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 to 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.
- IDE Primary/Secondary Master/Slave UDMA Select the mode of operation for the IDE drive. Ultra DMA-33/66/100/133 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver. If your hard drive and system software both support Ultra DMA-33/66/100/133, select Auto to enable UDMA mode by BIOS.

** On-Chip Serial ATA Setting **

• SATA Mode

There are these options for you to set up SATA mode: IDE, RAID or AHCI.

• On-Chip Serial ATA

Use this item to enable or disable the built-in on-chip serial ATA.

• SATA PORT Speed Settings

Use this item to select SATA I or SATA II device support forcedly.

• PATA IDE Mode

Use this item to set the PATA IDE mode. When set to Primary, P1 and P3 are Secondary; on the other hand, when set to Secondary, P0 and P2 are Primary.

• SATA Port

If the "PATA IDE Mode" is Primary, it will show "P1, P3 is Secondary" which means SATA 2 and SATA 4 are Secondary. If the "PATA IDE Mode" is Secondary, it will show "P0, P2 is Primary " which means SATA 1 and SATA 3 are Primary.

Press <Esc> to return to the Integrated Peripherals page.

Onboard Device

Scroll to this item and press <Enter> to view the sub menu Onboard Device.

USB Controller	[Enabled]	Item Help
USB 2.0 Controller	[Enabled]	Menu Level 🕨
JSB Keyboard Support	[Enabled]	
AC97 Audio	[Auto]	

> USB Controller

Enable this item if you are using the USB in the system. You should disable this item if a higher-level controller is added.

> USB 2.0 Controller

Enable this item if you are using the EHCI (USB2.0) controller in the system.

- USB Keyboard Support
 Enable this item if the system has a Universal Serial Bus (USB) controller, and you have a USB keyboard.
- AC'97 Audio Use this item to enable or disable the onboard AC'97 Audio function.

Press <Esc> to return to the Integrated Peripherals page.

Super IO Device

Scroll to this item and press <Enter> to view the sub menu Super IO Device.



- ECP Mode Use DMA Select a DMA channel for the parallel port while using the ECP mode.
- PWRON After PWR-Fail This item enables your computer to automatically restart or return to its operating status.

Press <Esc> to return to the Integrated Peripherals page, and press it again to the Main Menu page.

5.9 Power Management Setup

The Power Management Setup allows you to save energy of your system effectively. It will shut down the hard disk and turn OFF video display after a period of inactivity.

Phoenix - Awa Power	ardBIOS CMOS Setu Management Setup	ip Utility
ACPI Function ACPI Suspend Type Run VGABIOS If S3 Resume Power Management Video Off Method Video Off In Suspend Suspend Type Suspend Mode HDD Power Down Soft-Off by PWR-BTTN	[Enabled] [S1(POS)] Auto [User Define] [DPMS] [Yes] [Stop Grant] [Disabled] [Disabled] [Instant-Off]	item Help Menu Level ►

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI). The function is always "*Enabled*".

• ACPI Suspend Type

This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 98SE,

Windows ME and Windows 2000, you can choose to enter the Standby mode in S1 (POS) or S3 (STR) fashion through the setting of this field. Options are:

[S1 (POS)] The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system contexts.
[S3 (STR)] The S3 sleep mode is a lower power state where the information of system configuration and open applications/files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when a "wake up" event occurs.

• Power Management

This option allows you to select the type of power Management. Options: APM, ACPI.

• Video Off Method

This setting determines the manner in which the monitor is blanked.

V/H SYNC+Blank	It turns OFF vertical and horizontal synchronization ports and writes blanks to the video buffer.
DPMS	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the supplied software for your video subsystem to select video power management values.
Blank Screen	The System only writes blanks to the video buffer.

• Video Off In Suspend

This item defines if the video is powered down when the system is put into suspend mode.

• Suspend Type

If this item is set to the default Stop Grant, the CPU will go into Idle Mode during power saving mode.

• Suspend Mode

After a selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off. The default value is *"Disabled"*.

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Disabled	The System will never enter the SUSPEND mode.
1/2/4/6/8/10/2 0/30/40 Min/1 Hr	It defines continuous idle time before the system entering the SUSPEND mode. If any item defined in (J) is enabled and active, the SUSPEND timer will be reloaded.

• HDD Power Down

If HDD activity is not detected for a specified length of time in this field, the hard disk drive will be powered down while other devices remain active.

• Soft-Off by PWR-BTTN

This option only works with systems using an ATX power supply. It also allows users to define which type of soft power OFF sequence the system will follow. The default value is *"Instant-Off"*.

Instant-Off	This option follows the conventional manner of system performance when turning the power to OFF. Instant- Off is a software power OFF sequence requiring the power supply button is switched to OFF.
Delay 4 Sec.	Upon the system's turning OFF through the power switch, this option will delay the complete system power OFF sequence approximately 4 seconds. Within this delay period, the system will temporarily enter into the Suspend Mode enabling you to restart the system at once.

Press <Esc> to return to the Main Menu page.

5.10 PnP/PCI Configuration Setup

This section describes the configuration of PCI (Personal Computer Interconnect) bus system, which allows I/O devices to operate at speeds close to the CPU speed while communicating with other important components. This section covers very technical items that only experienced users could change default settings.

Phoenix - AwardBIOS CMOS Setup Utility PnP/PCI Configurations		
[PCI Slot] [Disabled]	ltem Help Menu Level ►	
[Auto(ESCD)]		
[Disabled]		
[128]		
	ardBIOS CMOS Setu CI Configurations [PCI Slot] [Disabled] [Auto(ESCD)] Press Enter [Disabled]	

• Init Display First

This item allows you to decide whether PCI Slot or AGP to be the first primary display card.

• Reset Configuration Data

Normally, you leave this item Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup or if installing a new add-on cause the system reconfiguration a serious conflict that the operating system can not boot. Options: Enabled, Disabled.

Resources Controlled By

The Award Plug and Play BIOS can automatically configure all boot and Plug and Play-compatible devices. If you select Auto, all interrupt request (IRQ), DMA assignment, and Used DMA fields disappear, as the BIOS automatically assigns them. The default value is *"Manual"*.

• IRQ Resources

When resources are controlled manually, assign each system interrupt to one of the following types in accordance with the type of devices using the interrupt:

- Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).
- 2. PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

The default value is "PCI/ISA PnP".

PCI/VGA Palette Snoop

Some non-standard VGA display cards may not show colors properly. This item allows you to set whether MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. When enabled, a PCI/VGA can work with a MPEG ISA/VESA VGA card; when disabled, a PCI/VGA cannot work with a MPEG ISA/VESA Card.

** PCI Express relative items **

Maximum Payload Size

When using DDR SDRAM and Buffer size selection, another consideration in designing a payload memory is the size of the buffer for data storage. Maximum Payload Size defines the maximum TLP (Transaction Layer Packet) data payload size for the device.

5.11 PC Health Status

This section supports hardware monitering that lets you monitor those parameters for critical voltages, temperatures and fan speed of the board.

PCT	icalul Status	Here Hole
		item Heip
		Menu Level 🕨

• Current CPU Temperature

The current system CPU temperature will be automatically detected by the system.

- Current SYSTEM Temperature Show you the current system1 temperature.
- Current FAN1 Speed Show you the current system fan1 temperature.
- Current FAN2 Speed Show you the current system fan2 temperature.
- Current FAN3 Speed Show you the current system fan3 temperature.
- Vcore +3.3V/+5V/+12V/VBAT(V)/5VSB
 Show you the voltage of +3.3V/+5V/+12V.

5.12 Load Fail-Safe Defaults

When you press <Enter> on this item, a confirmation dialog box pops out to show you such a message:



Please press "Y" to load default values that will be factory settings for accomplishing the optimal performance of system operations.

5.13 Load Optimized Defaults

This option allows you to load your system configuration with default values. These default settings are optimized to enable high performance features.

Phoenix - AwardB	OS CMOS Setup Utility	
 Standard CMOS Features Advanced BIOS Features Advanced Chipset Features Integrated Peripherals Power Man PnP/PCI Co PC Health 	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password ed Defaults (Y/N)?	
Esc : Quit F10 : Save & Exit Setup	† ↓: Select Item	
Time, Date, Hard Disk Type		

To load CMOS SRAM with SETUP default values, please enter "Y". If not, please enter "N".

5.14 Set Supervisor/User Password

You can set a supervisor or user password, or both of them. The differences between them are:

- 1. **Supervisor password:** You can enter and change the options on the setup menu.
- 2. **User password:** You can just enter, but have no right to change the options on the setup menu.

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type a maximum eight-character password, and press <Enter>. This typed password will clear previously entered password from the CMOS memory. You will be asked to confirm this password. Type this password again and press <Enter>. You may also press <Esc> to

abort this selection and not enter a password.

To disable the password, just press <Enter> when you are prompted to enter a password. A message will confirm the password is getting disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED

When a password is enabled, you have to type it every time you enter the Setup. It prevents any unauthorized persons from changing your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time the system reboots. This would prevent unauthorized use of your computer.

You decide when the password is required for the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password is required during booting up and entry into the Setup; if it is set as "Setup", a prompt will only appear before entering the Setup.

5.15 Save & Exit Setup

This section allows you to determine whether or not to accept your modifications. Type "Y" to quit the setup utility and save all changes into the CMOS memory. Type "N" to bring you back to the Setup utility.



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5.16 Exit Without Saving

Select this option to exit the Setup utility without saving changes you have made in this session. Type "Y", and it will quit the Setup utility without saving your modifications. Type "N" to return to the Setup utility.

 Standard CMOS Features Advanced BIOS Features Advanced Chipset Features Integrated Peripherals 	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password	
 Powe PnP/F PC Ht 	g (Y/N)?	
Esc : Quit F10 : Save & Exit Setup	↑ ↓ → ← : Select Item	

Chapter 6 Installation of Drivers

The device drivers are located on the Product Information CD-ROM that comes with the SHB110 Series package. The auto-run function of drivers will guide you to install the utilities and device drivers under a Windows system. You can follow the onscreen instructions to install these devices:

- Chipset
- VGA
- LAN
- Audio

6.1 Installing Chipset Driver

1. Run the SETUP.EXE program from the driver directory in your driver CD. Click "Next" to next step.



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2. An Intel[®] License Agreement appears to show you the important information. Click "Yes" to next step.



3. Please wait while running the following setup operations.



Instalation of Drivers

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4. Click "Finish" to complete the setup process.



Installation of Drivers

 You will be asked to reboot your computer when the installation is completed. Please click "Yes, I want to restart my computer now" if you don't need to install any other drivers. Otherwise, please click "No, I will restart my computer later", and go on next step.

6.2 Installing VGA Driver

1. Run the SETUP.EXE program from the driver directory in your driver CD. Click "Next" to next step.



2. An Intel[®] License Agreement appears to show you the important information. Click "Yes" to next step.



 The message of Readme File Information appears to show you the system requirements and installation information. Please click "Next".

	Readme File Information
(intel)	Refer to the Readme file below to view the system requirements and installation information. Press the Page Down key to view the rest of the file.
	Production Version Releases Microsoft Windows* 2000 Microsoft Windows* XP Driver Revision: Production Version 14.29 Package: 35162 Graphics: 6.14.10.4820 HDMI Audio: 5.10.0.1026
	< <u>Back</u> <u>Cancel</u> Intel(R) Installation Framework

Installation of Drivers

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4. Please wait while running the following setup operations.

Intel(R) Graphics	Media Accelerator Driver
(intel)	Setup Progress Please wait while the following components are installed:
	Copying file: igxpun.exe Copying file: JgxRapi.dl Copying file: SorNBR.bmp Copying file: SorNBR.bmp Copying file: SorNBR.bmp Copying file: HSufNystem/CurrentControlSet/Control/Windows/SystemDirecto Creating key: HKLM/System/CurrentControlSet/Services/sialm/Device1/System Creating key: HKLM/System/CurrentControlSet/Services/sialm/Device1/System Creating key: HKLM/System/CurrentControlSet/Services/sialm/Device1/System Creating key: HKLM/System/CurrentControlSet/Services/sialm/Device1/System Creating key: HKLM/SOFTWARE/Microsoft/Windows/Current/version/Uninstall/ Installing Driver. Intel[R] 9g65/2g963 Express Chipset Family Version: 6:14.10.4820
	Next

5. When this message appears, please click "Next".

Intel(R) Graphics	Media Accelerator Driver
(intel)	Setup Progress Please wait while the following components are installed:
	Copying file: igxpun.exe Copying file: GrNB.bmp Copying file: ScNB.bmp Copying file: ScNB.bmp Copying file: HDMIENU.dll Creating key: HKLM\System\CurrentControlSet\Control\Windows\SystemDirecto Creating key: HKLM\System\CurrentControlSet\Services\ialm\DeviceU\SystemC Creating key: HKLM\System\CurrentControlSet\Services\ialm\DeviceU\SystemC Creating key: HKLM\System\CurrentControlSet\Services\ialm\DeviceU\SystemC Creating key: HKLM\SDFTWARE\Microsoft\Windows\CurrentVersion\Uninstall' Creating key: HKLM\SDFTWARE\Microsoft\Windows\CurrentVersion\Uninstall' Installing Driver: Intel(R) Q965/Q963 Express Chipset Family Version: 6.14.10.4820
	Installation has completed. Click Next to continue.
	Intel(R) Installation Framework

6. You will be asked to reboot your computer when the installation is completed. Please click "Yes, I want to restart my computer now" if you don't need to install any other drivers. Otherwise, please click "No, I will restart my computer later", and click "Finish" to complete the installation.

Intel(R) Graphics	Media Accelerator Driver
(intel)	The setup of the Intel(R) Graphics Media Accelerator Driver is complete.
	You must restart this computer for the changes to take effect. Would you like to restart the computer now?
	 Yes, I want to restart this computer now. No, I will restart this computer later.
	Click Finish, then remove any installation media from the drives.
	Intel(R) Installation Framework

6.3 Installing LAN Driver

1. Run the InstallShield Wizard for Ethernet from the driver directory in your driver CD. Click "Next" to next step.



2. Click "Install" to start the installation.



3. Please wait while running the following installation operation.



4. Click "Finish" to complete the installation.



Installation of Drivers

6.4 Installing Audio Driver

1. Run the InstallShield Wizard program from the driver directory in your driver CD. Please wait while running the following operation.

oporation			
🛃 Realtek HD Audio - InstallShield Wiza	ar d		
Extracting Files The contents of this package are being ex	tracted.		
Please wait while the InstallShield Wizard e HD Audio on your computer. This may take	xtracts the files e a few moment:	needed to install Re s.	altek
Reading contents of package			
InstallShield	< Back	Next >	Cancel

2. When this message appears, please click "Next".



Instalation of Drivers

3. You will be asked to reboot your computer when the InstallShield Wizard is installed. Please click "Yes, I want to restart my computer now" or "No, I will restart my computer later", and next click "Finish" to complete the installation.

	efinition Audio Driver K1.00 Nilite felia (2.30) it 4
	formatifield World Complete The instituted Vocation recently, ended fields field States and Complete States are carried the program pair and an interpret compose
	 True I work to model up computer view. Text I will restor by computer later Hences any data true that draw, and then data Frank to computer view.
1997-1-	right free terms

SHB110 Socket M Full-Size SBC User's Manual

МЕМО
A p p e n d i x A Watchdog Timer

Watchdog Timer Setting

After the system stops working for a while, it can be auto-reset by the Watchdog Timer. The integrated Watchdog Timer can be set up in the system reset mode by program.

Using the Watchdog Function

Start		
\downarrow		
Un-Lock WDT:		
	O 2E 87	: Un-lock super I/O
	0 2F 87	: Un-lock super I/O
.l.	0 22 01	
• Salast Logis doviso:		
Select Logic device.	0 25 07	
	0 2E 07	
1	O 2F 08	
↓		
Activate WDT:		
	O 2E 30	
	O 2F 01	
\downarrow		
Set Second or Minute :		
	O 2E F5	
	0 2F N	N=00 or 08(See below table)
.L.	• ··	
* Sot base timer :		
Set base timer.		
	0 2F M=00	J,01,02,FF(Hex) ,value=0 to 255
\checkmark		
WDT counting re-set tin	ner:	
	O 2E F6	
	O 2F M ; N	I=00,01,02,FF(See below table)

Watchdog Timer

; IF to disable WDT:

O 2E 30 O 2F 00 ; Can be disable at any time

- Timeout Value Range
 - 1 to 255
 - Minute / Second
- Program Sample
- •

2E, 87	
2E, 87	
2E, 07	
2F, 08	Logical Device 8
2E, 30	Activate
2F, 01	
2E, F5	
2F, N	Set Minute or Second
	N=08 (Min),00(Sec)
2E, F6	
2F, M	Set Value
	M = 00 ~ FF

Watchdog Timer

A p p e n d i x B Configuring SATA for RAID Function

Configuring SATA Hard Drive(s) for RAID Function (Controller: Intel[®] ICH7-M DH only)

Please follow up the steps below to configure SATA hard drive(s):

- (1) Install SATA hard drive(s) in your system.
- (2) Enter the BIOS Setup to configure SATA controller mode and boot sequence.
- (3) Configure RAID by the RAID BIOS.
- (4) Create a floppy disk for the SATA controller driver.
- (5) Install the SATA controller driver during the OS installation.

Before you begin the SATA configuration, please prepare:

- (a) Two SATA hard drives (to ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity).
- (b) An empty formatted floppy disk
- (c) Windows XP setup disk

(1) Installing SATA hard drive(s) in your system

Connect one end of the SATA signal cable to the rear of the SATA hard drive, and the other end to available SATA port(s) on the board. Then, connect the power connector of power supply to the hard drive.

(2) Configuring SATA controller mode and boot sequence by the BIOS Setup

You have to make sure whether the SATA controller is configured correctly by system BIOS Setup and set up BIOS boot sequence for the SATA hard drive(s).

(2)-1 Turn on your system and press the Del button to enter BIOS Setup during running POST (Power-On Self Test). If you want to create RAID, just select **RAID** for **SATA Mode** (default **IDE**) under the **Integrated Peripherals** menu.

Phoenix - Awar OnCl	dBIOS CMOS Setup	Utility
IDE HDD Block Mode IDE DMA transfer access On-Chip Primary PCI IDE IDE Primary Master PIO IDE Primary Slave PIO IDE Primary Master UMDA IDE Primary Slave UMDA On-Chip Secondary PCI IDE IDE Secondary Master PIO IDE Secondary Slave PIO IDE Secondary Master UMDA IDE Secondary Salve UMDA	[Enabled] [Enabled] [Auto] [Auto] [Auto] [Auto] [Enabled] [Auto] [Auto] [Auto] [Auto]	Item Help Menu Level ►►
** On-Chip Serial ATA Setting * SATA Mode X On-Chip Serial ATA SATA PORT Speed Settings X PATA IDE Mode SATA Port	(RAID) Enhance Mode [Disabled] Secondary P0, P2 is Primary	
↑ ↓ → ← :Move Enter:Select +/-/P F5:Previous Value	PU/PD:Value F10:Save E s F7:Optimize	SC:Exit F1:General Help

Figure 1

(2)-2 Set CDROM for First Boot Device under the Advanced BIOS Features menu to boot CD-ROM after system restarts (Figure 2).

► CPU Feature	[Press Enter]	Item Help
Hard Disk Boot Priority	[Press Enter]	Menu Level 🕨
CPU L1 & L2 Cache	[Enabled]	
Quick Power On Shelf Test	[Enabled]	Select Your Boot
First Boot Device	[CDROM]	Device Priority
Second Boot Device	[Hard Disk]	
Third Boot Device	[LS120]	
Boot Other Device	[Enabled]	
Onboard Lan Boot ROM	[Disabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Disabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
X Typematic Delay (Msec)		
× Security Option	[Setup]	
APIC Mode	[Enabled]	
MPS Version Control For OS	[1.4]	

Figure 2

(2)-3 Save and exit the BIOS Setup.

(3) Configuring RAID by the RAID BIOS

Enter the RAID BIOS setup utility to configure a RAID array.

(3)-1 After the POST memory testing and before the operating system booting, a message "*Press <Ctrl-I> to enter Configuration Utility*" (as Figure 3) shows up, accordingly, press <CTRL+ I> to enter the RAID BIOS setup utility.

	ingin (0) 200	3-03 II		on. An	Nighta Ne	serveu.	
RAID	Volumes:						
ID	Name	Leve	J.	Strip	Size	Status	Bootable
0	Volume0	RAID	1(Mirror)	N/A	74.5GB	Degraded	Yes
Phys	ical Disks:						
Port	Drive Mode	al 👘	Serial #		Size	Type/Status	s(Vol ID)
0	ST380815A	S	6Q221RYL		74.5GB	Member Di	sk(0)
2	ST3808110	AS	4I R15469		74 5GB	Non-RAID	Disk



(3)-2 After you press <CTRL+ I>, the **Create RAID Volume** screen will appear (as Figure 4). If you want to create a RAID array, select the **Create RAID Volume** option in the Main Menu and press ENTER.



(3)-3 After entering the CREAT VOLUME MENU screen, you can type the disk array name with 1~16 letters (letters cannot be special characters) in the item "Name". When finished, press ENTER to select a RAID level (as Figure 5). There are two RAID levels, RAID0 and RAID1. Select a RAID level and press ENTER.



Figure 5

(3)-4 Set the stripe block size (as Figure 6). The *KB* is the standard unit of stripe block size. The stripe block size can be 4KB to 128KB. After the setting, press ENTER for the array capacity.



Configuring SATA for RAID Function

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(3)-5 After setting all the items on the menu, select **Create Volume** and press ENTER (as Figure 7) to start creating the RAID array.



Figure 7

(3)-6 When prompting the confirmation, press "Y" to create this volume, or "N" to cancel the creation.



Figure 8

After the creation is completed, you can see detailed information about the RAID Array in the DISK/VOLUME INFORMATION section, including RAID mode, disk block size, disk name, and disk capacity, etc.



Figure 9

Delete RAID Volume

If you want to delete a RAID volume, select the **Delete RAID Volume** option in Main Menu. Press ENTER and follow on-screen instructions.



Figure 10

Please press [ESC] to exit the ICH7MR RAID BIOS utility.

Now, you can proceed to install a SATA controller and the operating system.

(4) Making a SATA Driver Disk

To install the operating system onto a serial ATA hard disk successfully, you need to install the SATA controller driver during the OS installation. Without the driver, the hard disk may not be recognized during the Windows setup process. First of all, please format a blank floppy disk. Secondly, follow up these steps below to produce a SATA driver disk.

- (4)-1 Users can insert the Driver CD and the formatted blank floppy disk in another system. And then, please execute the f6flpy32.exe file in the folder of the Driver CD.
 - <u>Note</u> Please execute the f6flpy64.exe file, if installing 64bit Windows Operating System.



(4)-2 When this screen pops out, please click the "CONFIRM" button.



(4)-3 When the Driver is written to the floppy disk, the SATA driver disk is completed.

Formatting and writing disk	\times
Drive A:	
Formatting	
Writing	
Venty	
50 %	
30 70	
Cancel	

(5) Installing the SATA controller driver during the OS installation

Now, the SATA driver disk is ready, and BIOS settings configured, you can proceed to install Windows XP onto your SATA hard drive using the SATA driver. Here is an example for Windows XP installation.

(5)-1 Restart your system to boot the Windows XP Setup disk, and press F6 button as soon as you see the message "*Press F6 if you need to install a 3rd party SCSI or RAID driver*" (as Figure 11). After pressing the F6 button, there will be a few moments for some files being loaded before next screen appears.



Figure 11



Configuring SATA for RAID Function

(5)-3 If the Setup correctly recognizes the driver of the floppy disk, a controller menu (as Figure 13) will appear below. Use the ARROW keys to select Intel(R) 82801 GHM SATA RAID Controller (Mobile ICH7MDH) and press ENTER. Then it will begin to load the SATA driver from the floppy disk.

You have chosen to configure a SCSI Adapter for use with Windows, using a device support disk provided by an adapter manufacturer. Select the SCSI Adapter you want from the following list, or press ESC to return to the previous screen. Intel(R) 631xESB/632xESB SATA RAID Controller (Server/Workstation ESB2) Intel(R) 631xESB/632xESB SATA AHCI Controller (Server/Workstation ESB2) Intel(R) 82801GHM SATA RAID Controller (Mobile ICH7MDH) Intel(R) 82801GR/GH SATA RAID Controller (Desktop ICH7R/DH)

ENTER=Continue F3=Exit

Figure 13

<u>Note</u> If a message on the screen saying that one or some file(s) cannot be found, please check the floppy disk or copy the correct SATA driver again from the driver CD.

(5)-4	When the screen appears as below, press ENTER to continue installing the SATA driver through the floppy disk. It will take about one minute to finish the driver installation.					
	Windows Setup					
	Setup will load support for the following mass storage device(s):					
	Intel(R) 82801GHM SATA RAID Controller (Mobile ICH7MDH) * To specify additional SCSI adapters, CD-ROM drives, or special					
	disk controllers for use with Wiindows, including those for					
	which you have a device support disk from a mass storage device manufacturer, press S. * If you do not have any device support disks from a mass storage device manufacturer, or do not want to specify additional mass storage devices for use with Windows, press ENTER.					
	S=Specify Additional Device ENTER=Continue F3=Exit					
	Figure 14					

rigule 14

After the SATA controller driver installation is completed, you can proceed to install the Windows XP.