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**USER'S GUIDE**  
**CB61X-LX Main Board**

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**DAEWOO**  
**DAE**

**DAEWOO**

This mainboard requires correct configuration information; otherwise, a malfunction may result.



Static electricity can cause serious damage to integrated circuit mainboards. To avoid building up a static electric charging **on your** body, be sure you discharge any static electricity by grounding yourself before handling the mainboards. If mainboards are handed from one person to another, they should touch hands first, then pass the mainboards.

Information presented in this publication has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies. The information contained in this document is subject to change without notice.

Contact your dealer for warranty details.

#### Trademarks

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## About this Manual

This manual is designed to offer detailed information about the CB61X-LX mainboard. The content includes the main features of the mainboard, the installation, and the BIOS settings. There are three chapters to offer clear and detailed information of CB61X-LX.

- Chapter 1 Introduction  
Describes the main features and major components.
- Chapter 2 Installation  
Describes the installation of hardware including jumpers, cables and connectors.
- Chapter 3 BIOS setup  
Describes the setup of BIOS. Briefly explain each item and show the selection of option.

## Warning Marks

In this manual , **warning marks** are used to stress important parts or notices of text that require users' attention. There are two kinds of warning marks in this manual:



*Stress the important information or instructions that must pay more attentions to and should be noted.*

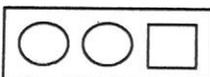


*Avoid the possible system error or damages , and offer detailed information.*

Graphic Descriptions of Jumper Settings



means Pin 1 & Pin 2 are set as short



means Pin 1 & Pin 2 are set as open



Warning :

*If you install or remove the CPU, Memory, particularly clear CMOS, you must pull out AC Power Cord.*

# 1 Introduction

## Main Features

CB61X-LX mainboard intergrates the latest advances in processor, memory, and I/O technologies into mini ATX form factor that combines performance, flexibility, and easy of use into high integrated capable of a variety of price/performance levels.

CB61X-LX mainboard supports Intel Pentium II processor based on the Intel 440LX PCI set(82443LX and 82371AB), ITE IT8679F Super I/O Chip. Three standard 168-pin DIMM with memory size up to 384MB support Fast Page mode, EDO and Synchronous DRAM memory.

The Intel 82371AB PCI/IDE Xcelerator(PIIX 4) provides and integrated Bus Master IDE controller with high performance IDE interfaces for up to four devices.

CB61X-LX **supports** two low cost universal Serial Bus(USB) ports to fit today and tomorrow's requirement.

**Specification**

1. Processor Slot:

One Slot 1 connector supports:

- Pentium II 233/266/300/333 MHz processor.
- L1 32KB, L2 256/512KB cache in Processor card,

2. Chipset:

- Intel 440LX PciSet(2BGA).
- ITE IT8679F(PnP Super I/O Controller).

3. System BIOS:

- Award flash BIOS.
  - ⊗ DMI 2.0
  - ⊗ PnP 1.0a (comply with Intel and Windows 95)
  - ⊗ PCI 2.1
  - ⊗ CD ROM boot
  - ⊗ APM 1.2
  - ⊗ ACPI 1.0
  - ⊗ A.G.P 1.0

4. DIMM Memory Socket:

- 3 pieces of 168-pin DIMM sockets.
- Support up to 8/16/32/64/128 MB unbuffered EDO or synchronous DRAM (SDRAM) Module.
- Compliance with JEDEC specifications for 3.3V unbuffered EDO/SDRAM Module.

5. Expansion Slots: ,

- Three 16-bit ISA slots with 100% ISA compatible function.

- Four 32-bit PCI slots all support PCI master.

⊗ PCI specification version 2.1.

@CPU to PCI memory write posting with 4 Word deep buffers.

@Convert Back-to-Back sequential CPU to PCI memory writes to PCI Burst writes.

- One 32-bit A.G.P slot support up to 528MB/s transfer rate

⊗ A.G.P specification revision 1.0

@Synchronous coupling to the host bus frequency.

6. PS/2 Keyboard and PS/2 Mouse Set:

- Provides Connectors for PS/2 Keyboard & PS/2 mouse connector set.

7. Serial/Parallel Ports:

- One multi-mode parallel port with chip-protect circuitry supports standard, enhanced (EPP), high speed (ECP) mode.
- Two high speed 16C550 UART compatible buffer fast serial port.
- Support IrDA/ASKIR, Fast IR Infrared Interface.

6. PCI IDE Connector:

- Build-in Intel 82371AB chip 32-bit PCI IDE interface with 2 IDE channels.
  - ⊗ Independent Timing of up to 4 drives.
  - ⊗ PIO mode 4 for transfers up to 14MB/s.
  - ⊗ Support "Ultra DMA 33" Synchronous DMA mode transfers up to 33MB/s.
- @Integrated 8x32 bit buffer for IDE PCI Burst transfers,

## Introduction

### 9. FDD Connector:

- Two floppy drive supports 360K/720K/1.2MB/1.44MB/2.88MB or 3 mode floppy drives.

### 10. Power Supply Connector:

- Provides the connectors for ATX PC power supply(20pin).

### 11. USB Connector:

- Provides the two USB channels.
- Support UHDI Design Guide Rev 1.1 interface.

### 12. RTC & Back-up Battery:

- Integrated into PIIX4(82371AB) PCI-to-ISA bridge chipset.
- Provides external Lithium(3.0V 220mAh) battery.

### 13. Keyboard Controller:

- It's function compatible with Intel 8042 Keyboard Controller, which provides enhanced gate A20 switching & PS/2 compatible mouse.
- AMI keyboard BIOS
- Intergrated into Super I/O chipset.

### 14. Thermal sensor(manufacture option)

- Checking the temperature and throttling the CPU clock.

## Introduction

### Mainboard Layout

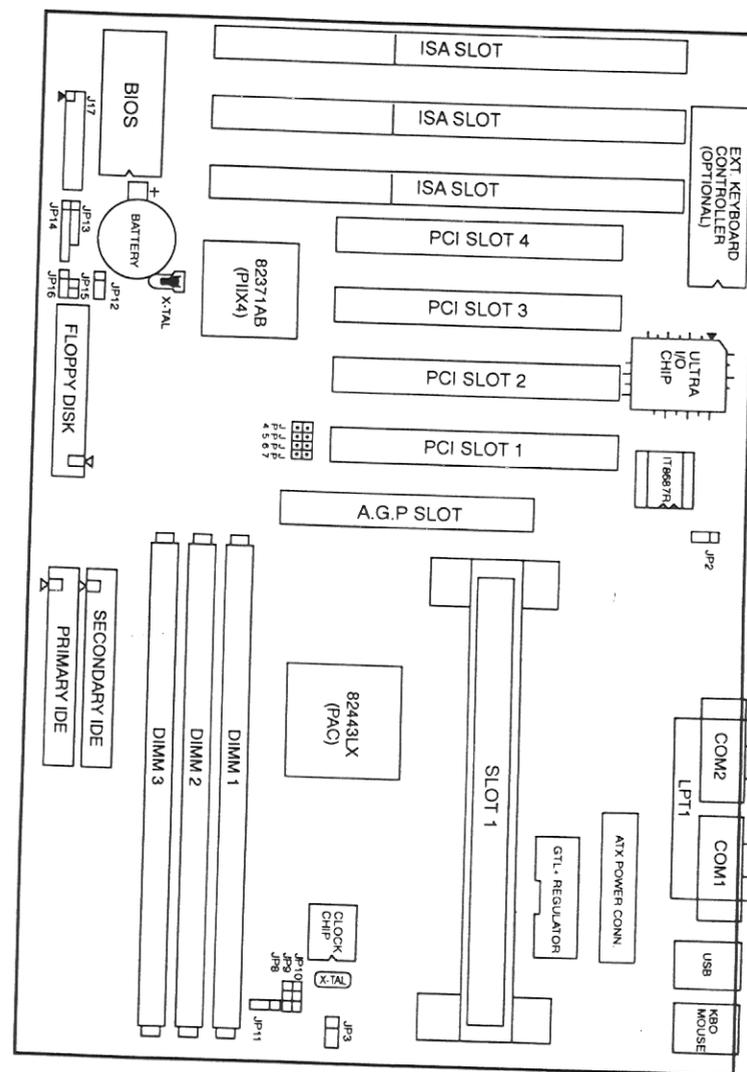


Figure 1-1. CB61X-LX Mainboard Layout

## **2** Installation

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This chapter provides information on how to install and configure CB61X-LX Mainboard.

### **Check List**

The standard packing of CB61X-LX should include:

- CB61X-LX mainboard
- 1 IDE cable
- 1 Floppy cable
- CB61X-LX User' s Manual
- Device driver diskette

### **Install Main Memory**

CB61X-LX accepts a maximum of 384MB memory size with Fast Page Mode or Extended Data Output (EDO) memory or synchronous DRAM(SDRAM). The on-board DRAM is installed with 168-pin DIMM. (Dual-In-line-Memory Module)

CB61X-LX also provides a DIMM plug-and-play support via Serial PD(Presence Detect) mechanism supported via the PIIX4 SMB interface. CB61X-LX provides optional data integrity features including EC or ECC in the memory array.

The DIMM Socket is in compliance with JEDEC specifications for 3.3V unbuffered EDO/SDRAM Module. A DIMM connector is provided to support up to 385MB EDO/Synchronous DRAM.

## Installation

### How to do the Combination ?

Users can install the DIMM module on any bank according to the memory configuration table. The possible combinations will make the total memory size from minimum 8MB to maximum 384MB.

The following table lists a number of possible DRAM combinations

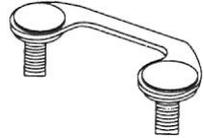
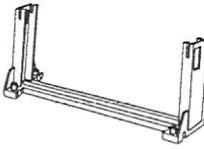
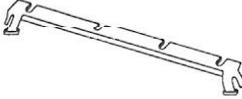
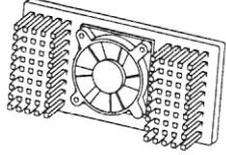
DIMM			TOTAL *
DIMM1	DIMM2	DIMM3	
8MB	8MB	8MB	DIMM1 + DIMM2 + DIMM3 The combination of memory size is from 8MB to maximum 384MB. All DIMM sockets can use either SDRAM or EDO memory.
16MB	16MB	16MB	
32MB	32MB	32MB	
64MB	64MB	64MB	
128MB	128MB	128MB	

Table 2-i. System Memory Configurations

## Installation

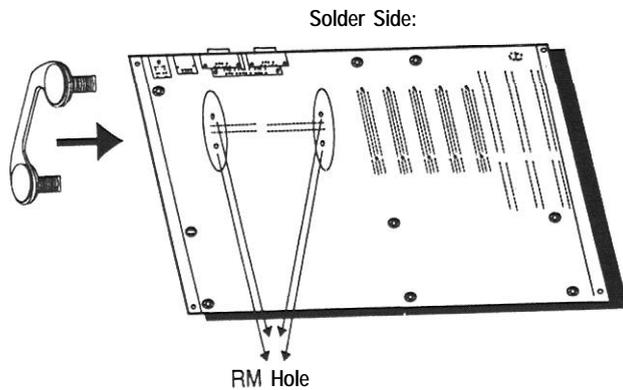
### Install CPU

CB61X-LX provides one slot(slot 1) for installation of Pentium II processor card. To install Pentium II processor card, check the direction of CPU and then put the card onto the slot 1.

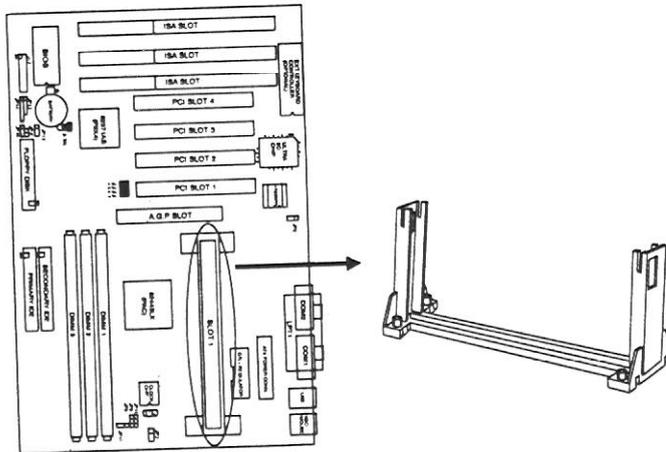
Picture	Title
	Retention Mechanism(RM) attach mount with Baseboard:  Ensure retention module stays on Baseboard.
	Retention Mechanism(RM) over slot 1:  Prevent Pentium II Processor movement.
	Heatsink Support on baseboard: Prevents heatsink movement. Supports heatsink on Thermal Plate. This graphic is only a sample. It may be the different type from Intel Boxed Processor
	Top Bar:  Top bar is snapped into rigid pins after CPU(with heatsink) is inserted into Slot 1 connector
	Pentium II Processor with Heatsink or Fan

## Installation

First Step:  
Pre-install 2pcs of attach mount in motherboard RM hole.

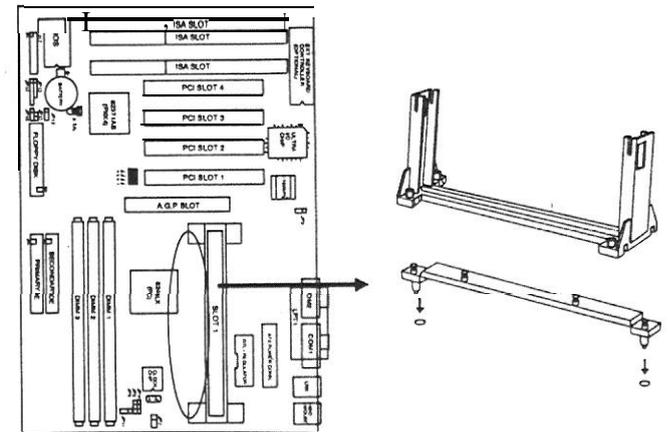


Second Step:  
Place RM over "RM attach studs" on Motherboard.

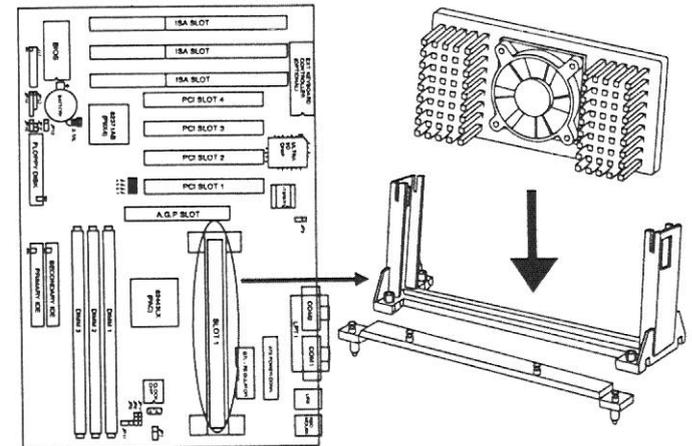


## Installation

Third Step:  
Install Heatsink support on Baseboard. If you used Intel Boxed processor, please skip third step, and follow Intel Boxed processor install guide to install heatsink supporter.



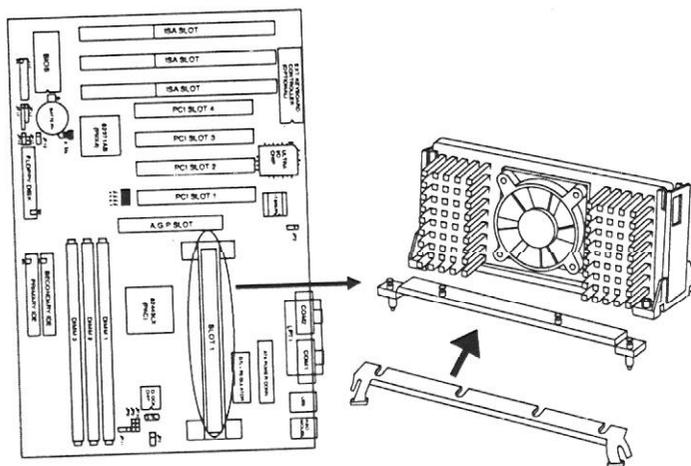
Forth Step:  
Install Pentium II Processor with fan or heatsink on Baseboard.  
Connect CPU Fan connector to power on.



## Installation

### Complete:

Top bar is snapped into rigid pins after CPU(with heatsink) is inserted into Slot 1 connector. After installing step by step, the process is completed.



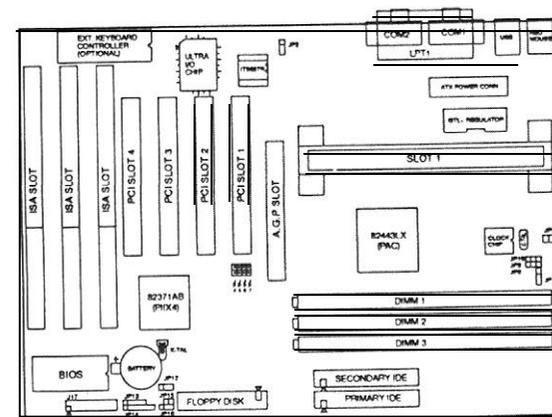
### CPU frequency and Bus frequency :

To install the CPU at its correct frequency, Please refer the following table to set up CPU frequency.

#### Pentium II Processor:

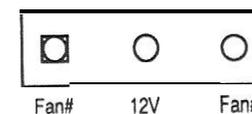
CPU Freq.	Clock Multiplier	Host Clock	JP4	JP5	JP6	JP7
233 MHz	3.5	66 MHz	short	open	open	short
266 MHz	4	66 MHz	short	short	short	open
300 MHz	4.5	66 MHz	short	open	short	open
333 MHz	5	66 MHz	short	short	open	open

Table 2-2. Pentium Series CPU Frequency and Bus Frequency



### CPU Fan(JP3/optional) :

When you should install the boxed processor, you can use this Header to connect processor's fan cable(3pin). If you have the passive heatsink (without fan), this Header is not used.



## Installation

### Install Cables

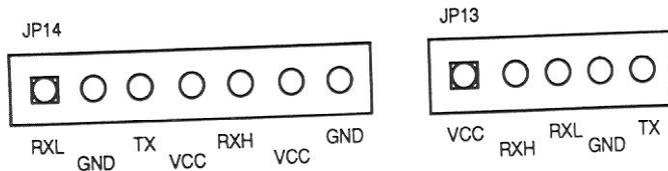
#### IDE & FDD Connector :

CB61X-LX provides 2 PCI IDE connectors(Primary/Secondary IDE) which supports 2 ATAPI IDE devices(for example, Hard Drive and CD-ROM) on each connector. Use 40-pin IDE cable to connect IDE devices and IDE connector.

CB61X-LX provides one floppy drive connector with one 34-pin floppy cable. It can support 2 floppy drivers with type : 360KB/720KB/1.2MB/1.44MB/2.88MB

#### IrDA(JP14 & JP13) :

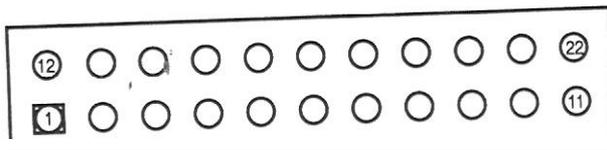
CB61X-LX provide two Headers which can support IrDA(JP13) and Fast IR(JP14) module. It gives users IR wireless data exchange directly from mobile computers, printers and PDAs,.....etc.



The RXH signal is supported Fast IR(optional)

#### Z-pin Front Panel Switch Connector(J17) :

In order to help quick install front panel switch, these headers are integrated in 22-pin header set.



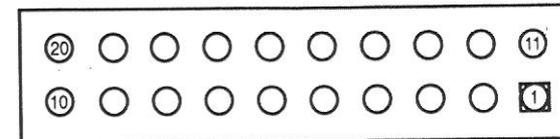
## Installation

Pin Number	Description	Pin Number	Description
pin 1	Power LED	pin 12	Power LED
pin 2	GND	pin 13	N.C
pin 3	Green LED	pin 14	GND
pin 4	External SMI	pin 15	Key Lock
pin 5	GND	pin 16	GND
pin 6	Green LED	pin 17	N.C
pin 7	GND	pin 18	N.C
pin 8	+5V	pin 19	+5V
pin 9	HDD LED	pin 20	GND
pin 10	GND	pin 21	GND
pin 11	H/W Reset	pin 22	Speaker

Table 2-3. Front Panel Switch Connector

#### Power Supply Connector(J6) :

CB61X-LX provides ATX power supply connector.

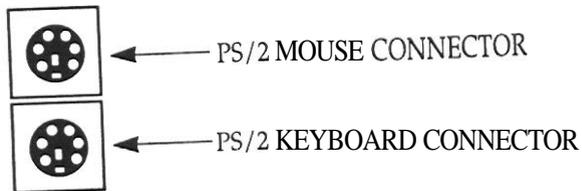


## Installation

Pin Number	Description	Pin Number	Description
pin 1	3.3V	pin 11	3.3V
pin 2	3.3V	pin 12	-12V
pin 3	GND	pin 13	GND
pin 4	5V	pin 14	PS-ON
pin 5	GND	pin 15	GND
pin 6	5v	pin 16	GND
pin 7	GND	pin 17	GND
pin 8	Power Good	pin 18	-5V
pin 9	5VSB	pin 19	5V
pin 10	12V	pin 20	5V

### PS/2 Keyboard & Mouse Connector(J5) :

CB61X-LX provides one PS/2 keyboard and one PS/2 mouse connector. Follow the direction of keyboard(mouse) cable to install on keyboard(mouse) connector.



### USB Connector(J4) :

Universal Serial Bus (USB) is a new industry standard interface for ease use of PC peripheral expansion.

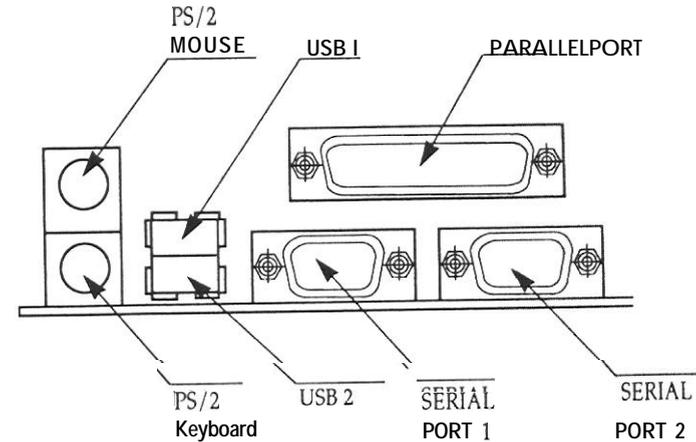
### Serial Port COM1 and COM2(J3 & J1) :

CB61X-LX provides two sets of high speed serial port. Each serial port is 16550 UART compatible.

## Installation

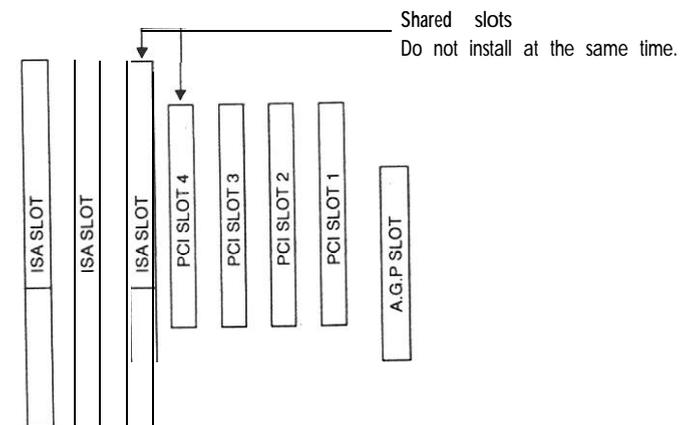
### Parallel Port Printer Connector(J2) :

CB61X-LX provides one set of high speed parallel port. The parallel port can support bidirection/EPP/ECP mode.



### Install Add-on Card

CB61X-LX provides three ISA slots, four PCI slots and one A.G.P slot. ISA and PCI 4 slots are shared and can not be installed at the same time.



**Other Jumpers**

**Clear CMOS (JP12)**

BIOS setting values and password are stored in CMOS RAM. To clear CMOS Data of your computer, please open the computer chassis;short Z-3 of JP12 with short jumper during 1-2 seconds, then CMOS data will be cleared. For normal operation, please short 1-2 of JP12 and close your computer chassis.

**Power ON Switch(JP15)**

This Header is used to provide a way of the user to. turn the system on. Connecting it to the power on push button on the front panel.

Note :

In order to prevent the system from shut down by mistake, the CB61X-LX provides one optional item on the “Power Management Setup” manual of the BIOS setup.

This item is called “Soft-Off by PWR-BTTN”. The function is as follows:

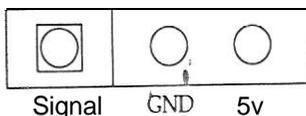
Delay 4 sec :

1. Pushing the button one time will change the system from normal operation to suspend state. Pushing the button again will wake up the system.
2. Pushing the power button more than 4 seconds will shut down the system.

Instant-Off:

Pushing the power button one time will turn the system on, pushing again will torn the system off.

**Standby 5V Supply Connector (JP16)**



Please don't insert power switch connector in JP16

**Summary**

**Jumper Setting :**

Jumper Block	Function	Configuration(Jumper short)
JP11	IOQ Depth	1-2 : 1 2-3 : Max. (Default)
JP12	Clear CMOS	1-2 : Normal Operation 2-3 : Clear CMOS

Table 2-4. Jumper Settings

**Connector Table:**

Connector	Function
J1	COM2 Port Connector
J2	Printer Port Connector
J3	COM1 Port Connector
J4	USB Port 1 & Port 2 Connector
J5	P/S2 Keyboard & Mouse Connector
J6	ATX Power Connector
J7-J9	ISA slots
J10-J13	PCI Slots
J14	Slot 1 connector
J15	A.G.P Connector
J16	Secondary Hard Disk Connector
J17	Front Panel LED & Switch Connector
J18	Floppy Disk Connector
J19	Primary Hard Disk Connector
JP3	CPU Cooling FAN Connector
JP13	Infrared (IR) Connector for HP
JP14	Infrared (IR) Connector for FIR
JP15	Power Switch Connector

Table 2-5. Connectors

## **3** Built-In BIOS Setup Program

---

This chapter contains information about:

- How the SETUP program allows you to configure the functions and devices of your computer
  
- How to configure each item on the SETUP Menus

Before the computer can operate, it must know what devices are installed in it. These devices include floppy and fixed-disk drives, video, and so forth. Taken together, the presence or absence of these devices comprise the system configuration. Use the SETUP program to verify or change the system configuration.

Ordinarily, there should be no need to run SETUP the time you start your system, since your computer comes from the factory ready to use. You must, however, run the SETUP program each time you make any changes to your computer's configuration, such as adding drives, and so forth. You can also run it to verify the system configuration.

## Starting SETUP

The SETUP program is permanently stored in a "Flash EEPROM" and not contained on disk. The SETUP program can be accessed :

- When powering up the system
- When resetting the system
- When the system detects an error and prompts for the SETUP program

### Accessing SETUP When Powering Up the System

TO access the SETUP program when powering up the system, turn the computer power on. The system BIOS will first test the system components and then display a message similar to the following:

Press <DEL> to enter setup

Before the above message disappears, press the  key to activate the SETUP program.

### Accessing SETUP When Resetting the System

Reset the system by either pressing the reset button or the    key combination. The system will display the following message :

Press <DEL> to enter setup

Before the above message disappears, press  key to activate the SETUP program. You can prevent the system displaying this message using the SETUP prompt setting, described below.

### Accessing SETUP When the System Prompts for the SETUP Program

If the system BIOS detects a software or hardware error during the self-testing process, the system displays the following message :

Press <F1> to continue, <DEL> to Enter SETUP

Press  to continue the boot sequence or  to run SETUP

### Accessing SETUP Menus

SETUP provides access to primary menus from which you modify the system configuration. SETUP always displays the Main Menu when you start the program. Primary menus include :

- STANDARD CMOS SETUP This option allows users to check or modify the basic system configuration.
- BIOS FEATURES SETUP - This option is used to set the various system options for the users, including the virus warning, external cache, security option, boot operations, and video BIOS shadow, etc..
- CHIPSET FEATURES SETUP - This option allows users to control the features of chipset.



- EXIT WITHOUT SAVING - Abandon all previous settings, then exit and reboot the system.

After choosing an menu item from the SETUP main menu, move the cursor by using the **↑**, **↓**, **→**, **←** Arrow keys and press **Enter**. To modify the setting of an option, simply press the **Page Up** or **+** and the **Page Down** or **-** keys. Press the **F2** key when changing the color setting. **F1** for a context sensitive help function, and the **Esc** key when quitting SETUP.

### 3-1 Standard CMOS Setup

ROM PCI/ISA BIOS (CB61X-LX)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC

Data (mm:dd:yy) : Thu, Jun 12 1997	
Time (hh:mm:ss) : 17 : 58 : 42	
HARD DISKS	TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master :	Auto 0 0 0 0 0 0 Auto
Primary Slave :	Auto 0 0 0 0 0 0 Auto
Secondary Master:	Auto 0 0 0 0 0 0 Auto
Secondary Slave :	Auto 0 0 0 0 0 0 Auto
Drive A :	1.44M, 3.5 in.
Drive B :	None
Floppy 3 Mode Support :	Disabled
Video :	EGA/VGA
Halt On :	All But Keyboard
Base Memory : 640K	
Extended Memory : 31744K	
Other Memory : 384K	
TOTAL Memory : 32768K	
ESC : Quit	↑ ↓ → ← : Select Item PU/PD/+/- : Modify
F1 : Help	(Shift)F2 : Change Color

Figure 3 -2 STANDARD CMOS Setup Menu

Date - Allows manual setting of the electronic calendar on the mainboard

Time - Sets the system's internal clock which includes hour, minutes, and seconds.

Primary Master/Slave, Secondary Master/Slave - Specifies the physical and electronic properties of the standard hard disk drives installed. Relevant specifications include the type, number of cylinders (CYLS), heads (HEAD), write pre-compensation time (PRECOMP), read/write head landing zone (LANDZ), number of sectors per track (SECTOR), and HDD mode (MODE). Selecting "AUTO" in the hard disk type item avoids the necessity of loading the HDD specifications and the function of the IDE HDD Auto Detection option in the main menu. The system BIOS will automatically detect the hard drive installed on the system upon bootup.

Drive A:/ B: - Specifies the capacity and format of the floppy drive installed in your system.

Floppy 3 Mode Support-If 3 mode floppy is installed, enable this item and make floppy diskette only compatible to the Floppy Diskette Format of Japan Spec.:1.2MB, 3.5inch. Otherwise, it is compatible to Floppy Diskette Format of IBM PC.

Video -Specifies the display adapter installed.

Halt On - Enables the system to halt on several conditions/options. The default value is set at "All, But Keyboard."

Base / Extended / Other Memory - A small section in the lower right corner of the screen displays important information about your system which includes the base, extended, and other memory sizes. They are updated automatically by the SETUP program according to the status detected by the BIOS self-test. This section of the Standard CMOS SETUP screen is for viewing purpose only and manual modifications are not allowed.

**3-2 BIOS Feature SETUP**

ROM PCI/ISA BIOS (CB61X-LX)  
 BIOS FEATURES SETUP  
 AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D4000-D7FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled		
Boot Up NumLock Status	: On		
Boot Up System Speed	: High		
GATE A20 Option	: FAST		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6'		
Typematic Delay (Msec)	: 250	ESC : Quit	↑ ↓ → ← : Select Item
security Option	: setup	F1 : Help	PU/PD/+/-: Modify
PCI/VGA Palette Snoop	: Disabled	F5 : Old Values (Shift)	F2 : Color
OS Select For DRAM > 64MBi Non-OS	: 2	F6 : Load BIOS Defaults	
Report No FDD For WIN 95	: No	F7 : Load Setup Defaults	

Figure 3 -3. BIOS Features Setup Menu

Virus Warning - Allows the virus warning feature for the hard disk boot sector to display a warning message and produce a beep sound whenever an attempt is made to write on the hard disk's boot sector. The default value for this option is "Disabled."

CPU Internal Cache - Enables the internal code/data cache of CPU when set to "Enabled" (default).

External Cache - Enables the on-board secondary cache when set to "Enabled" (default).

CPU L2 Cache ECC Checking - Enables the ECC(Error Checking & Correction) Checking of Pentium II L2 Cache when set to "Enabled"(default).

Quick Power On Self Test - Allows the power on self test to run at either a fast or a normal speed. The available options are:  
 -Enabled (default) -Disabled

Boot Sequence - Selects the drive where the system would search for the operating system to run with. The available options are:  
 A, C, SCSI (default) C, A, SCSI  
 C, CDROM, A CDROM, C, A  
 D, A, SCSI E, A, SCSI  
 F, A, SCSI SCSI, A, C  
 SCSI, C, A c only  
 LS120, c

Swap Floppy Drive - "Enabled" will effectively change the A: drive to B: and the B: to A: drive. "Disabled" (default) sets the floppy drives in their default states.

- Disabled(default) - Enabled

## Built-h BIOS Setup Program

**Boot Up Floppy Seek** - Check if the floppy drives installed on the system are correct or not. This option's operation usually occurs when the magnetic heads of the floppy drives produce a sound during power on self test. The available options are :

- Enabled(default)      -Disabled

**Boot Up NumLock Status** -This allows users to determine the default state of the numeric keypad. By default, the system boots up with NumLock on.

- On (default)      - Off

**Boot Up System Speed** - Sets the speed of the system during power on self test sequence. The available options are :

- High (default)      -Low

**Gate A20 Option** - Boots the performance of system with software using the 80286 protected mode such as OS/2 UNIX. This option determines the accessibility of the extended memory. The available options are:

- FAST (default)      - Normal

**Typematic Rate Setting** - Defines the setting of the keyboard's typematic rate. The available options are :

- Disabled (default)      -Enabled

**Typematic Rate <Char/Sec>** -Specifies the key repeat rate, in seconds, of keyboard character. The available options are :

- 6 (default)      :      - 8/10/12/15/20/24/30

**Typematic Delay <Msec>** Select the delay, in milliseconds, before a key repeat. The available Options are :

- 250 (default)      - 500/750/1000

## Built-h BIOS Setup Program

**Security Option** -Determines whether the password will be asked for in every boot (System), or when entering into the SETUP program (Setup - default). Refer to the section entitled SUPERVISOR PASSWORD for the password setting.

**PCI/VGA Palette Snoop** -Selects "Enabled" to solve the abnormal color in Windows while using ISA MPEG and PCI VGA card. The available options are:

- Disabled (default)      -Enabled

**OS Select For DRAM > 64MB** - Selects the OS if DRAM > 64MB. The available options are:

- Non-OSR2 (default)      - OS2

**Report No FDD For WIN 95** -Enables to release IRQ6 under when the floppy drive in CMOS Setup is set to NONE, When we select "Yes". BIOS reports the information to Windows 95 when no floppy drive is installed.

- No(default)      - Yes

**Video BIOS Shadow** - Enables the system shadowing and achieve the best performance of the system. The available options are:

- Enabled (default)      -Disabled

**C8000-CBFFF, CCOOO-CFFFF, D0000-D3FFF, D4000-D7FFF, D8000-DBFFF, DC000-DFFFF Shadow** - If you have a shadowing of the BIOS at any of the above segments, you may set the appropriate memory cacheable function to "Enabled". Otherwise, select "Disabled" (default).



## Built-In BIOS Setup Program

The available options are :

-x333(default)                      - x222

**EDO DRAM Write Burst** - Determines the timing for burst write to the cache. If your DRAM type is EDO DRAM, we suggest you select x222 (EDO) timing to get a better performance.

The available options are :

x222(default)                      -x333

**DRAM ECC/PARITY Select** - The selection of the EDO fast path for read cycles. The available options are :

- Disabled(default)                -Enabled

**CPU-To-PCI IDE Posting** - When disabled, the Read/Write cycles are treated as normal I/O write transactions. The available options are :

Enabled(default)                    -Disabled

**DRAM Read Around Write** - When this option is enabled, it enables the read-around-write capability for the DRAM Global Write Buffers.

The available options are :

- Enabled(default)                -Disabled

**Burst Write Combining** - When this option is enabled, the PAC is allowed to combine back-to-back sequential CPU-to-PCI writes into a single PCI write burst. The available options are :

Enabled(default)                    -Disabled

**PCI-To-DRAM Pipeline** - The selection of complete or restricted PCI-to-DRAM pipelining. The available options are :

- Enabled(default)                -Disabled

## Built-In BIOS Setup Program

**System BIOS Cacheable** - Allows caching of the different segments where there is system BIOS shadowing. The available options are :

-Enabled (default)                -Disabled

**Video BIOS Cacheable** - Allows caching of the different segments where there is video BIOS shadowing. The available options are :

-Enabled (default)                -Disabled

**8 Bit I/O Recovery Time** -Defines the 8-bit I/O recovery time with one of the following system clock options. The available options are :

- 1 (default)                        - 2/3/4/5/6/7/NA/8

**16 Bit I/O Recovery Time** -Defines the 16-bit I/O recovery time with one of the following system clock options. The available options are :

- 1 (default)                        - 2/3/NA/4

**Memory Hole At 15M-16M** - Enables this option to reserve the certain space in memory for ISA cards. The available options are:

-Disabled (default)                -Enabled

**Passive Release** - Enable or disables the passive release mechanism encoded on the PHOLD# Signal when "PCI to ISA/IDE Xecelerator" is a PCI master. The available options are:

-Enabled                              -Disabled(default)

**Delayed Transaction** - Enable or disables the delayed transaction mechanism when "PCI to ISA/IDE Xecelerator" is the target of a PCI transaction. The available options are:

- Enabled                              - Disabled(default)

AGP Aperture Size(MB) - sets to the effective size of the Graphics Aperture used in the particular PAC configuration. The 256MB aperture size is not practical for most applications and therefore the size must be set to a smaller practical value. The available options are:

- 256(default)
- 4/8/16/32/64/128

SDRAM RAS-to-CAS Delay - sets the delay in assertion of CAS# from the assertion of RAS# in 66MHz clocks. The available options are:

- Slow (default)
- Fast

SDRAM RAS Precharge Time - sets the RAS precharge requirements for the SDRAM memory type in 66MHz clocks.

The available options are:

- Slow(default)
- Fast

SDRAM CAS latency Time - sets the CLT timing parameter of SDRAM expressed in 66 MHz clock. The available options are:

- 3(default)
- 2

CPU Warning Temperature -When the temperature of CPU meets the preset warning temperature 63°C, CPU automatically downs the clock for cooling CPU. It is recommended that “Enabled” should be set for proper operations of the system.

- Enabled(default)
- Disabled

Current CPU Temperature - This field only displays the current CPU temperature.



“Current CPU Temperature” and “CPU Warning temperature” will be shown only when the thermal detection circuits are installed.

**3-4 Power Management Setup**

ROM PCI/ISA BIOS (CB61X-LX)  
POWER MANAGEMENT SETUP  
AWARDSOFTWARE, INC.

Power Management	: Max Saving	** Reload Global Timer Events **
FM Control by APM	: Yes	IRQ [3-7, 9-15], NMI
Video Off Method	: DPMS	: Disabled
Video Off After	: Standby	Primary IDE 0
Modem Use IRQ	: NA	: Enabled
		Primary IDE 1
Doze Mode	: 1 Min	: Enabled
Standby Mode	: 1 Min	Secondary WE 0
Suspend Mode	: 1 Min	: Enabled
HDD Power Down	: 1 Min	Secondary JDE 1
Throttle Duty Cycle	: 62.5%	: Enabled
ZZ Active in Suspend	: Disabled	Floppy Disk
VGA Active Monitor	: Enabled	: Enabled
Soft-Off by PWR-BTTN	: Delay 4 Sec.	Serial Port
CPUFAN off Suspend	: Enabled	: Enabled
Resume by Ring	: Disabled	Parallel Port
Resume by Alarm	: Disabled	
IRQ 8 Break Suspend	: Disabled	
		ESC : Quit    ↑ ↓ → ← : Select Iter
		F1 : Help    PU/PD/+/- : Modify
		F5 : Old Values (Shipt) F2 : Color
		F6 : Load Bios Defaults
		F7 : Load Setup Defaults

Figure 3 -5 Power Management Setup Screen

Power Management - Allows user determine how often the Power Saving activating The available options are :

- Disable
- Max Saving(default)
- Min Saving
- User Define

## Built-h BIOS Setup Program

PM Control by APM - Sets the power management (PM) control by the APM. The available options are :

- Yes (default)
- No

Video Off Method -Sets the video power green method. The available options are :

- V/H SYNC+Blank
- DPMS(default)
- Blank Screen

Video Off After - Turns off screen after selected standby or suspend mode. The available options are :

- suspend
- Standby(default)
- Doze
- N/A

Modem Use IRQ - In order to support resume on ring and to be compliant with APM 1.2, this option is required to be set same IRQ as the modem add-in-card used. The available options are :

- 3
- 4/5/7/9/10/11
- N/A(default)

Doze Mode - Sets the time interval after system inactivity when the system enters Doze mode. The available options are :

- 1 Min(default)
- 2/4/8/12/20/30/40 Min/1 Hour/Disable

Standby Mode. Sets the time interval after system inactivity when the system enters STANDBY mode. The available options are :

- 1 Min (default)
- 2/4/8/12/20/30/40 Min/1 Hour/Disable

## Built-In BIOS Setup Program

Suspend Mode -Sets the timer interval after system inactivity when the system enters SUSPEND mode. The available options are :

- 1 Min (default)
- 2/4/8/12/20/30/40 Min/1 Hour/Disable

HDD Power Down - Sets the interval time to power down HDD.

The available options are :

- 1 Min(default)
- 1....15 Min/disable

Throttle Duty Cycle - Selects the percentage of time the STPCLK# signal is asserted which the throttle mode. The available options are :

- 62.5%(default)
- 50.5%, 37.5%, 25.0%, 12.5%
- 87.5%, 75.0%

ZZ Active in Suspend - Determines whether to assert the ZZ signal while in suspend mode or not. The available options are :

- Disabled(default)
- Enabled

VGA Active Monitor-Determines whether to reload burst timer while PCI accesses to VGA I/O addresses or the A and B segment video memory ranges or not. The available options are :

- Enabled(default)
- Disabled

Soft-Off by PWR-BTTN - Sets power button override function. It needs to press power button for over 4 seconds to power off a system if this option is set by "Delay 4 Sec." The available options are :

- Delay 4 Sec(default)
- Instant-Off

CPUFAN Off In Suspend - Turns off CPU fan while in suspend mode.

The available options are :

- Enabled(default)
- Disabled

*Built-h BIOS Setup Program*

Resume by Ring - Sets to wake up/resume from suspend-off state by alarm interrupt. "Disabled" is a default. Selects "Enabled" to enter resume/wake up date, and times. The available options are :

- Disabled(default)
- Enabled

Resume by Alarm - Sets to wake up/resume from suspend-off state by alarm interrupt. "Disabled" is a default. Selects "Enabled" to enter resume/wake up date, and times. The available options are :

- Disabled(default)
- Enabled

⚡ , , , If users set the option to "Disabled", "Date(of Month) Alarm" and "Time(hh:mm:ss) Alarm" options below will not be shown on the screen.

Date(of Month) Alarm / Time(hh:mm:ss) Alarm - Set the alarm interrupt date and time.

⚡ The item "Break Event From Suspend" is for setting the resume events while system enters the suspend mode.

IRQ 8 Break Suspend -The available options are :

- Disabled(default)
- Enabled

⚡ The item "Reload Global Timer Events" is for setting the wakeup events while system enters the standby mode.

IRQ[3-7, 9-15], NMI -The available options are :

- Disabled(default)
- Enabled

Primary IDE O/1, Secondary IDE O/1 -The available options are :

- Disabled
- Enabled(default)

*Built-In BIOS Setup Program*

Floppy Disk - The available options are :

- Disabled
- Enabled(default)

Serial Port-The available options are :

- Disabled
- Enabled(default)

Parallel Port - The available options are :

- Disabled
- Enabled(default)

**3-5 PNP/PCI Configuration Setup**

ROM PCI/ISA BIOS (CB61X-LX)  
PNP/PCI CONFIGURATION  
AWARD SOFTWARE, INC

PNP OS Installed : Yes	PCI IDE IRQ Map To : PCI-AUTO
Resources Controlled By : Auto	Primary WE INT# : A
Reset Configuration Data : Disabled	Secondary IDE INT# : B
	Assign IRQ For VGA : Enabled
<p>ESC : Quit      ↑ ↓ → ← : Select Item                  F1 : Help      UP/DN/+/- : Modify                  F5 : Old Values (Ship!) F2 : Color                  F6 : Load Bios Defaults                  F7 : Load Setup Defaults</p>	

Figure 3-6 PNP/PCI Configuration Setup Screen

PNP OS Installed - Tells if PnP OS is installed. The available options are :

- NO
- Yes(default)

Resources Controlled By - Allows user what kind IRQs assignment to be used. The available options are :

- Auto(default)
- Manual



The default of "Resources Controlled By" is Auto. If users set to "Manual", the option for the setting "IRQ-3/IRQ-5/IRQ-7/IRQ-9/IRQ-10/IRQ-11/IRQ-12/IRQ-14/IRQ-15/DMA-0/DMA-1/DMA-3/DMA-5/DMA-6/DMA-7 assigned to" will be shown on the screen.

Reset Configuration Data - To clear the ESCD data which is stored in flash ROM, please set "Enable". This is a one short switch. After clearing the ESCD, the BIOS will change the value back to "Disabled".

The available option are :

- Disabled(default)
- Enabled

PCI IDE IRQ Map To Most of PCI IDE cards are non-PCI compliant, Defines the IRQ Routing to make them work properly.

The available options are :

- PCI-AUTO(default)
- ISA
- PCI-SLOT 1
- PCI-SLOT 2
- PCI-SLOT 3
- PCI-SLOT 4



If user sets this option to "ISA", both the "Primary IDE INT#" and "Secondary IDE INT#" options below will not be shown on the screen.

Primary IDE INT# . Selects a PCI Interrupt pin which will be used by the primary channel of a PCI IDE card. The available options are :

- A (default)
- B/C/D

Secondary IDE INT# - Selects a PCI Interrupt pin which will be used by the secondary channel of a PCI IDE card. The available options are :

- B (default)
- A/C/D

Used MEM base addr - This option will be shown only when "Resources Controlled By" option is set to "Manual".

The available options are :

- N/A (default)
- C800/CC00/D000/D400/D800/DC00

Used MEM Length - If the option "Used MEM base addr" is set to "N/A", this option will not be shown on the screen.

The available options are :

- 8K
- 16K/32K/64K

Assign IRQ For VGA - To assign IRQ which will be used by Video card. The available options are :

- Enabled(default)
- Disabled

### 3-6 Load BIOS Defaults

In the event of a loss in memory on the configuration SETUP, the user can restore the information on the BIOS by default values. Loading the BIOS defaults provides safety booting of the system.

### 3-7 Load SETUP Defaults

SETUP defaults are considered default values with which the system will be enabled to perform better. This due to the enabling of some options within the SETUP program. However, if problems are encountered after loading the Optimum Setting, reboot the system and load the BIOS defaults instead.

**3-8 INTEGRATED PERIPHERALS**

ROM PCI/ISA BIOS (CB61X-LX)  
 INTEGRATED PERIPHERALS  
 AWARD SOFTWARE, INC.

WE HDD Block Mode	:Disable	
WE Primary Master PIO	: Auto	
WE Primary Slave PIO	: Auto	
WE Secondary Master PIO	: Auto	
WE Secondary Slave PIO	: Auto	
WE Primary Master UDMA	: Auto	
WE Primary Slave UDMA	: Auto	
WE Secondary Master UDMA	: Auto	
WE Secondary Slave UDMA	: Auto	
On-Chip Primary PCI WE	: Enabled	
On-Chip Secondary PCI WE	: Enabled	
USB Keyboard Support	:Disabled	
OnBoard FDC Controller	: Enabled	
Onboard Serial Port 1	: Auto	
Onboard Serial Port 2	: Auto	ESC : Quit        →← : Select Item
UR2 Mode	: Standard	F1 : Help    UP/DN/+/- : Modify
OnBoard Parallel Mode	: 378/IRQ7	F5 : Old Values (Shipt) F2 : Color
Parallel Port Mode	: SPP	F6 : Load Bios Defaults
		F7 : Load Setup Defaults

Figure 3 -7 Integrated Peripheral Setup Screen

IDE HDD Block Mode - Determines whether block transfer mode want to use or not. The available options are :

- Enabled(default)
- Disabled

IDE Primary/Secondary Master/Slave PIO - Sets the advanced hard disk PIO transfer mode which effects your hard disk transfer rate. The program will auto detect the mode of this option you select "Auto". Otherwise, you must set this option by yourself.

The available options are :

- Auto (default)
- Mode 0
- Mode 1
- Mode 2
- Mode 3
- Mode 4

IDE Primary/Secondary Master/Slave UDMA - Sets the advanced hard disk Ultra DMA/33 transfer mode. The available options are :

- Auto (default)
- Disabled

On-Chip Primary/Secondary PCI IDE - Enables or Disables the primary/secondary PCI IDE of IDE controller. The available options are :

- Enabled (default)
- Disabled

USB Keyboard Support -Determines whether to support legacy USB keyboard or not. The available options are :

- Disabled (default)
- Enabled

Onboard FDC Controller - Enables or Disables the FDD on-board controller. The available options are :

- Enabled (default)
- Disabled

OnBoard Serial Port 1/2-Sets the I/O address for serial port 1/2.

- Auto (default of both serial ports)
- 2F8 / IRQ3
- 3F8 / IRQ4
- 3E8 / IRQ4
- 2E8 / IRQ3
- Disabled

## Built-in BIOS Setup Program

UR2 Mode -Determines which type IR module want to use.

The available options are :

- standard (default)      - IrDA 1.0
- ASK IR

 If users set this options to “Standard”, the “UR2 Duplex Mode” option below will not be shown on the screen.

UR2 Duplex Mode - Allows users to control the infrared communication duplex mode. The available options are :

- Half (default)      - Full

OnBoard Parallel Port - Sets the I/O address for the parallel port

The available options are :

- 378h / IRQ7 (default)      -Disabled
- 278h / IRQ5      - 3BCh / IRQ7

Parallel Port Mode-Sets the I/O address for the parallel port.

The available options are :

- 378h/IRQ7 (default)      -Disabled
- 278h/IRQ5      - 3BCh/IRQ7

 If users set this options to “Disabled”, the “Onboard Parallel Mode” option below will not be shown on the screen.

Onboard Parallel Mode - Selects the working mode of parallel port,

The available options are :

- SPP (default)      - ECP + EPP
- EPP      - ECP

## Built-In BIOS Setup Program

 If users set this options to “SPP” or “EPP”, the “ECP Mode Use DMA” option below will not be shown on the screen.

ECP Mode Use DMA - Selects the DMA channel of ECP Mode to Transfer your data. The available options are :

- 3 (default)      -1

### 3-9 SUPERVISOR PASSWORD

The SUPER VISOR PASSWORD utility allows you to set, change, and disable the password which is stored in the BIOS. To change the password setting, press <Enter> on the SUPERVISOR PASSWORD option of the main menu and then type the new password.

Configure the Security Option within the BIOS Features Setup corresponding to the setting in this utility. SUPERVISOR PASSWORD access right is higher then USER PASSWORD.

The password can be at most 8 characters long. The program will require you to confirm the new password before it exits and enables the utility. To disable the SUPERVISOR PASSWORD, press the <F1> when the program asks you to enter the new password.

### 3-10 USER PASSWORD

USER PASSWORD only can be used when the system is booting. Users only can enter SETUP screen to change the USER PASSWORD.

## Built-h BIOS Setup Program

The password can be at most 8 characters long. The program will require you to confirm the new password before it exits and enables the utility. To disable the USER PASSWORD, press the <F1> as the program asks you to enter the new password.

### 3-11 IDE HDD Auto Detection

The IDE HDD Auto Detection provides auto configuration of the hard drive installed in the system. It supports LDA, Large, and Normal modes. If the system's hard disk drive has a capacity of over 528MB and supports LBA functions, you may enable either the LBA mode or the Large mode. On the other hand, if the hard disk drive's capacity is over 528MB but does not support LBA functions, you may enable the Large mode in order to use over 528MB.



- a The LBA and Large modes will only appear on the screen when the installed hard disk drive is specified to support the LBA mode.
- b. In the case when a hard disk drive's cylinder specification exceeds 1024, and does not support the LBA function, only the Large mode will be displayed on the screen.
- c. With a hard disk drive supporting cylinders below 1024, only the Normal mode will be appear on the screen. The Normal mode will also be shown on the screen under conditions a & b above.
- d. Hard disk drives with less than 528MB total capacity must be set to Normal mode when combined with either old BIOS versions or the Award BIOS. LBA and Large modes are new specifications which may not be fully supported by all operating systems. An example of which is the current

## Built-h BIOS Setup Program

version of UNIX System (R3.2.4) which is still unable to support the LBA function. Therefore, determine the specifications of your hard disk drive and operating system before selecting the drive's mode

ROMPCI/ISABIOS  
HDD AUTO DETECTION  
AWARD SOFTWARE. INC

HDD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE  
Primary Master :

Select Primary Master Option (N=Skip) : N

OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
2(Y)	1674	811	64	0	3243	63	LBA
1	1674	3244	16	65535	3243	63	NORMAL
3	1674	811	64	65535	3243	63	LARGE

Note : Some OSes (like SCO-UNIT) must use "NORMAL" for Installation  
ESC : Skip I

Figure 3-8 IDE HDD Auto Detection Screen

After pressing the <Enter> key on this item of the main menu, the display screen will show the following screen.

Once the program detects the type of hard disk installed, it will display the relative information such as the type, cylinders, heads, write pre-compensation, landing zone, number of sectors per track, size and mode. A message asking you to accept the IDE HDD detected will also be flashed on the screen.

**3-12 HDD Low Level Format**

Use the Up and Down key to move around the selections displayed on the Setup Main Menu Screen.  
 Press Enter to accept the selection. Press ESC to abort the selection or exit this menu.

Hard Disk Low Level Format		NO. CYLS HEAD	
SELECTDRIVE BAD TRACK LIST PERFORMANCE			
Current select drive : C			
Drive : C CYLINDER : 0 HEAD : 0			
	SIZE	CYLS	HEAD PRECOMP LANDZ SECTOR MODE
Primary Master	1674	3244	16 65536 3243 63 Auto
Primary Slave	0	0	0 0 0 0 Auto
Secondary Master	0	0	0 0 0 0 Auto
Secondary Slave	0	0	0 0 0 0 Auto
UP/Down-S&d item		Enter-Accept ESC-Exit/Abort	
Copyright(c) Award Software, Inc. 1992-97 All Right Reserved			

Figure 3-9 HDD Low Level Format menu Screen

- A. Select Drive -Select from installed hard disk drive C or D. Listed at the bottom of the screen is the drive automatically detected by the utility.
- B. Auto Scan Bad Track - Automatically scan bad tracks and list the bad tracks in the window at the right side of the screen.

- C. Add bad Track -Directly type in any information about known bad tracks in the window at the right side of the screen.

- D. Modify Bad Track - Modify information about the bad tracks in the window at the right side of the screen.

- E. Delete Bad Track -Delete the added bad tracks in the windows at the right side of the screen.

- F. Clear Bad Track Table-Clear the whole bad track list in the windows at the right side of the screen.

- G. Interleave - Select the interleave number of the hard disk drive you wish to perform low level format. You may select from 1 to 8. Check the documentation that came with the drive for the correct interleave number, or select 0 for utility automatic detection.

- H. Auto Scan Bad Track This allow the utility to scan for bad sector first then by each track.

### **3-13 Quitting SETUP**

After making all modifications in the SETUP program, go to the option "Save & Exit SETUP" then press the <Enter> key. The program will display the following screen.

Press <Y> to confirm the changes made, and the <N> or the <Esc> keys if further modifications are still necessary before exiting the SETUP program. Once the <Y> key is pressed, the system will automatically exit the program and reboot.

However, if you want to cancel all changes made under the SETUP program, go to the options "Exit Without Saving"

Press <Y> and the system will exit the SETUP program then reboot without saving any of the changes made.



You may also use the <F10> key to save the new settings.