Federal Communications Commission Statement

This equipment has been tested and found to comply with the limits for a Clss B digital device, pursuant to part 15 of the FCC Rules. These limit are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipmentand receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Table of Contents

3. Built-in BIOS Setup Program

4. Audio

1. Introduction

Overview

CB647M-LX/EX motherboard integrates the latest advances in processor, memory, and I/O technologies into a micro ATX form factor(244 x 190mm) that combines performance, flexibility, and easy of use into high integrated capable of meeting a variety of price/performance levels.

CB647M-LX/EX motherboard supports Intel Pentium II processor or celeron processor based on the Intel 440LX/EX PCIsets(82443LX/EX and 82371EB). Two standard 168-pin DIMM Sockets with memory size up to 256MB support EDO and Synchronous DRAM memory.

The Intel 82371EB PCI-to-ISA/IDE Xcelerator(PIIX4) provides an integrated Bus Master IDE controller and Ultra DMA/33 with high performance IDE interfaces for up to four devices.

In addition, the CB647M-LX/EX comes with an AGP(Accelerated Graphics Port) bus slot, a faster than the current 33MHz PCI bus. The AGP bus provides a direct connection between graphics subsystem and system memory.

Caution :
There is the danger of an explosion if the battery is incorrectly replaced. Replace the battery with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the battery manufacturer's instructions.

Main Features

1. Processor :

- Single Intel Slot 1 connector
- Support to Intel Pentium II - 233 / 266 / 300 / 333 MHz processor
- Support to Intel celeron 266 / 300 / 300A / 333MHz processor
- Integrated Voltage Regulator Module

2. Chipsets :

2-1. 82443LX/EX PCI/AGP Controller

- Processor interface control
  - ▶ Processor host bus speed up to 66MHz
- Integrated DRAM controller
  - ▶ Support for EDO or Synchronous DRAM(SDRAM)
  - ▶ Support for 4-, 16-, 64-Mbit DRAM devices
- Accelerated Graphics Port interface
- Fully-synchronous PCI bus interface
- Data Buffering
  - ▶ Host-to-DRAM, PCI-to-DRAM, and AGP-to-DRAM write-data buffering

2-2. 82371EB PCI ISA IDE Xcelerator(PIIX4)

- Multifunction PCI-to-ISA bridge
- USB controller
  - ▶ Two USB ports
  - ▶ Support for UHCI design guide revision 1.1 interface
- Integrated Dual-channel enhanced IDE interface
  - ▶ Support for up to four IDE devices
  - ▶ Support for PIO Mode 4 transfer(up to 16MB / s) and Ultra DMA / 33 synchronous DMA mode transfer(up to 33MB / s)
- Enhanced DMA controller
- Interrupt controller based on 82C59
- Power management logic

- Real-Time Clock
- 16-bit counters / timers based 82C54

2-3. ITE 8671F Super I/O Controller

- Serial ports : Two 16550 compatible UARTs
- Parallel port : Standard / EPP / ECP mode support
- Floppy disk controller
- Keyboard and Mouse controller
- Support an IrDA and Consumer IR-compliant infrared interface
- Support Keyboard Power ON & Password Function

2-4. Trident 4DWAVE-DX Audio Controller

- Advance PCI DirectSound Accelerator
- High Quality Wavetable Synthesizer
- Full Legacy and DOS Games Compatibility
- High Quality Audio and AC97 Support
- Advanced Streaming Architecture
- Microsoft DirectSound, DirectSound 3D Support

2-5. WINBOND W83781D Hardware Monitoring(option)

- 3 Thermal inputs from remote thermistors
- 5 Positive voltage inputs(+12V, +5V, +3.3V, VcoreA, VcoreB)
- 2 OP amps for negative voltage monitoring(-12V, -5V)
- 3 Fan speed monitoring inputs
- WATCHDOG comparison of all monitored values
- Programmable hysteresis and setting points for all monitored items

3. System BIOS :

- Award flash BIOS(4.51PG)

4. DIMM Memory Socket :

- Provide 2 pieces of 168-pin DIMM socket.
- Support to 8 / 16 / 32 / 64 / 128 MB unbuffered EDO or Synchronous DRAM (SDRAM) Module.
- Support the single-or double-sided DIMMs.

5. Expansion Slots :

- Two 16-bit ISA slots with 100% ISA compatible function.(1 shared)
- Two 32-bit PCI slots all support PCI master.
  - ▶ PCI specification version 2.2.
- One 32-bit A.G.P slot support up to 528MB/s transfer rate
  - ▶ A.G.P specification revision 2.0.
  - ▶ Synchronous coupling to the host bus frequency.

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

- PS/2 keyboard & PS/2 mouse connector are located on the back panel. The 5V lines to these connectors are protected with a Fuse circuit.

7. Serial / Parallel Ports :

- One multi-mode parallel port with chip-protect circuitry supports standard, enhanced (EPP), high speed(ECP) mode(25-pin D-Sub).
- Two high speed 16C550 UART compatible buffer fast serial port(9-pin D-Sub).

8. IDE Support :

- Provide two independent bus-mastering PCI IDE interfaces(Primary and Secondary IDE).
- Support PIO Mode 4 transfer(up to 16MB/s) and Ultra DMA/33 synchronous-DMA mode transfers(up to 33MB/s).
- The BIOS automatically detects the IDE device transfer rate and translation mode.

9. FDD Support :

- Provides 34-pin box header.
- Supports 360K/720K/1.2M/1.44M/2.88M floppy drives.

10. Power Supply Connector :

- Provedes the connector for Micro ATX PC power supply(20 pin).

11. USB Connector :

- Provide the 2 channel USB port.
- Fully supports Universal Host Controller Interface(UHCI) and uses UHCI-compatible software drivers.

  The 5V lines to these connectors are protected with a poly switch circuit, that, like a self-healing fuse, reestablishes the connection after over-current condition is removed.

12. RTC & Back-up Battery :

- Integrated into PIIX4(82371EB) chipset.
- An external coin-cell battery powers the real-time clock and CMOS memory
- When the computer is not plugged into a wall socket, the battery has an established life of three years. When the computer is plugged in, the 3.3V standby current from the power supply extends the life of the 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
- Integrated into Super I/O Controller.

Motherboard Layout

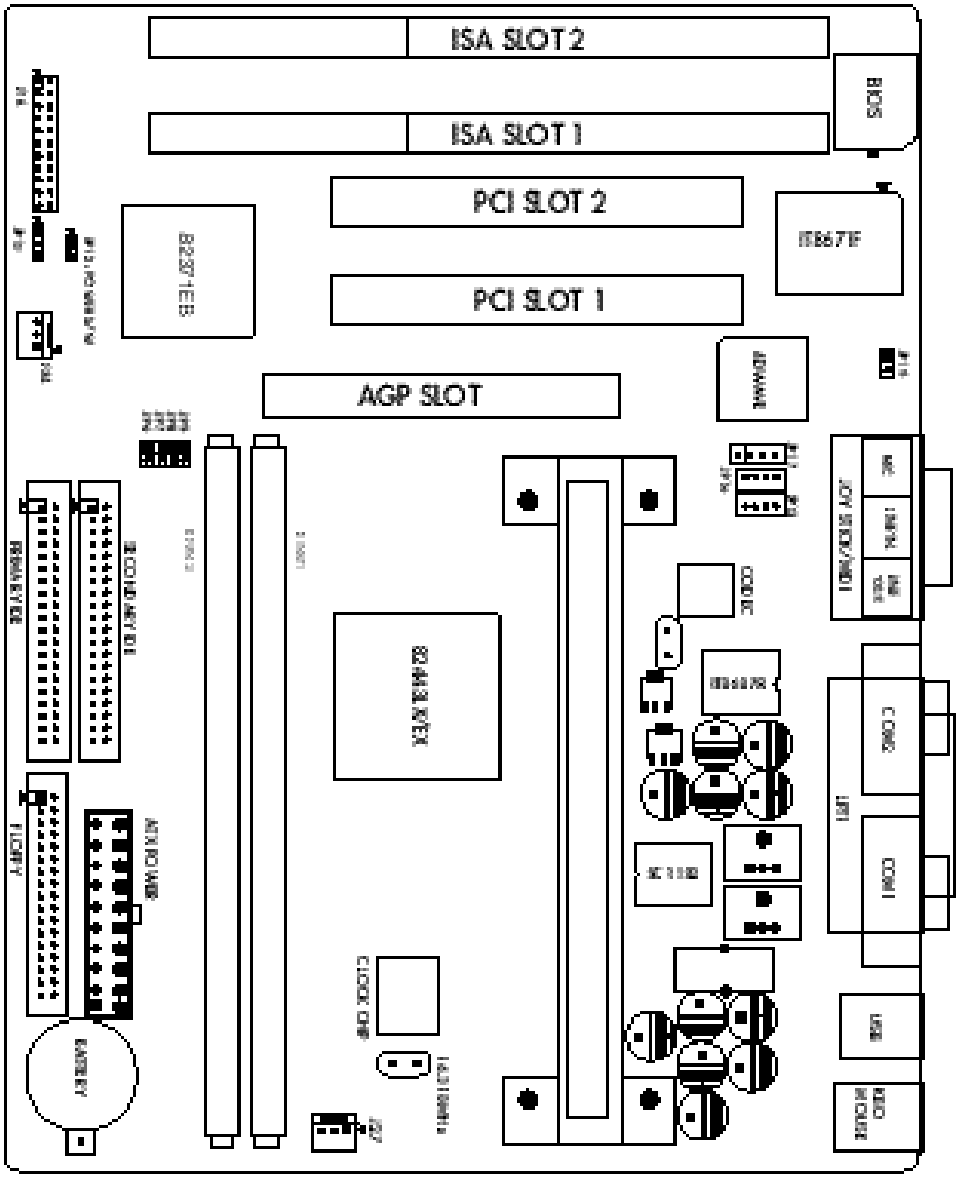


Figure 1-1. CB647M-LX/EX Motherboard Layout

2. Installation

This Chapter provides information on how to install and configure the CB647M-LX/EX motherboard.

Check List

The standard packing of the CB647M-LX/EX should include :

- ☑ CB647M-LX/EX motherboard
- ☑ 1 IDE cable
- ☑ 1 Floppy cable
- ☑ CB647M-LX/EX User's Manual
- ☑ Device driver CD
- ☑ Universial Retention Mechanism (URM) Kit

Installation Steps

Installing of the CB647M-LX/EX motherboard depends on the type of case you use. The CB647M-LX/EX motherboard is designed for the Micro ATX form factor and must be installed in an Micro ATX chassis.

Before using your computer, you must complete the following steps :

1. Set Jumpers
2. Installing the System Memory
3. Installing the CPU
4. Installing Cables

Set Jumpers

Serveral hardware settings are made through the use of jumper cap to connect jumper pins on the motherboard. See motherboard layout on page 1-5 for location of jumpers. The jumper settings will be described numerically such as '1-2', '2-3' or 'On(Short)', 'Off(Open)'.

Warning!

Computer motherboards and Add-on cards contain very delicate IC chips. To protect them against damage from static electricity, you should follow some precaution whenever you work on your computer.

1. *Unplug your computer when working on the inside.*
2. *Use a grounded wrist strap before handing computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.*
3. *Hold components by the edges and try not to touch such the IC chips, leads or connectors, or other components.*
4. *Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.*

1. Clear CMOS RAM(JP10)

The CMOS RAM is powered by the onboard coin-cell battery or power supply. To clear the CMOS Data : (1) Turn off your computer and unplug your AC power, (2) Close pins 2-3, wait five seconds and place the jumper back on pins 1-2. (The jumper must be placed back on pins 1-2 for the system to function properly), (3) Turn on your computer.

2. CPU Core : BUS Frequency Multiple

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

CPU Freq.	Clock Multiplier	Host Clock	JP6	JP7	JP8	JP9
233MHz	3.5	66MHz	Short	Open	Open	Short
266MHz	4	66MHz	Short	Short	Short	Open
300MHz	4.5	66MHz	Short	Open	Short	Open
333MHz	5	66MHz	Short	Short	Open	Open

Table 2-1. Pentium II CPU Frequency

Installing the System Memory

The CB647M-LX/EX motherboard has two 3.3V unbuffered 64/72-bit, 168-pin DIMM socket for maximum of 256MB of EDO and SDRAM memory.

1. Adding Memory

The following is a list of rules to follow when installing DIMMs. If you follow these rules, your upgrade should be trouble-free :

- Use 10ns or faster SDRAM or 60ns or faster EDO DIMMs.
- Single-side and double-side memory module are supported.
- Different memory types and sized in separate banks will cause the performance of the memory to run at the speed of the slowest RAM installed, and/or cause operating system stability problems.

2. Memory Configuration

DIMM memory configuration is auto-banking and therefore does not need to be installed in any particular order. The following table lists a number of possible memory configurations.

DIMM		TOTAL
DIMM1	DIMM2	
8MB	8MB	DIMM1+DIMM2 The combination of memory size is from 8MB to maximum 256MB. All DIMM sockets can use either SDRAM or EDO memory.
16MB	16MB	
32MB	32MB	
64MB	64MB	
128MB	128MB	

Table 2-2. CB647M-LX/EX Memory Configurations

3. Installing and Removing DIMMs

To install the DIMMs, locate the memory banks on the motherboard and perform the following steps :

1. Hold the DIMM so that notched edge is aligned with the notch on the DIMM socket(Figure 2-1).

2. Insert the DIMM at a 90 degree angle.

3. Gently push the DIMM straight down until it locks into place(past the release tabs).

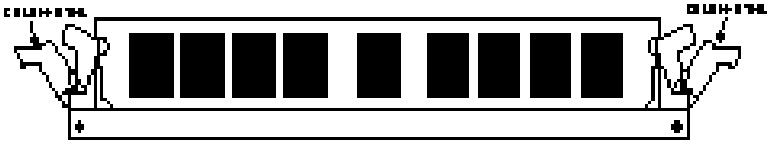


Figure 2-1. Installing a 168-pin DIMM

To remove DIMMs, follow the steps below:

1. With both thumbs (or fingers), press the release tabs away from the socket.
2. With the DIMM free from the release tabs, lift the memory module up and place in the anti-static bag or package.

Installing the CPU

The CB647M-LX/EX is designed to support single Pentium II processor or celeron processor. The Pentium II processor comes installed in a Single Edge Contact Cartridge (SECC) that connects into “Slot 1” on the motherboard. Add the celeron processor comes installed in a Single Edge Processor Package(SEEP) that connects into “Slot 1” on the motherboard.

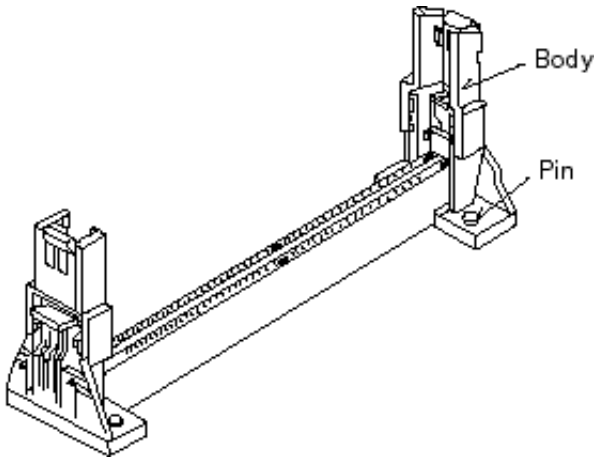
A URM is supplied to anchor the processor to the motherboard. Attach the URM before inserting the processor.

Installing the Pentium II processor

1. Installing the URM

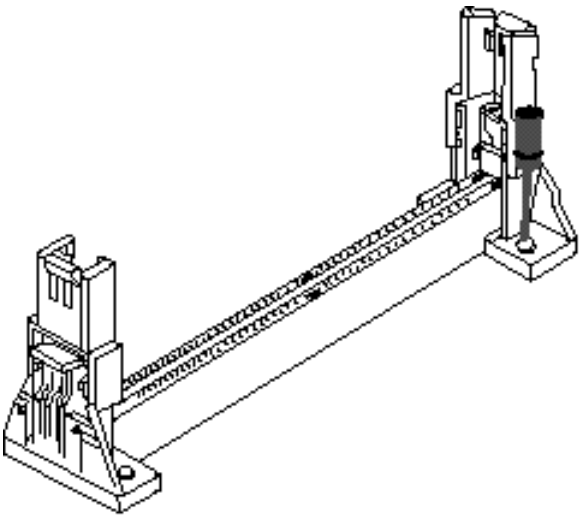
Before you begin, verify that your URM contains the following items:

- Body (black plastic module : require 2 pieces)
- Pin (Require 4 pieces)



Follow the steps below to install the URM :

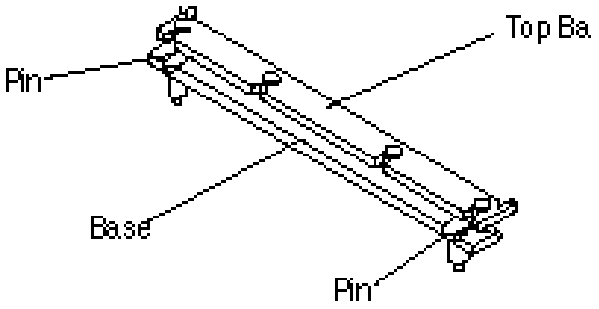
1. Locate the four Retention Base holes (near each end of the Slot 1 socket). Place the URM Body over each end of the Slot 1 connector.
2. Push down on the Pin with thumb or plastic fastener installation tool.



2. Installing a CPU

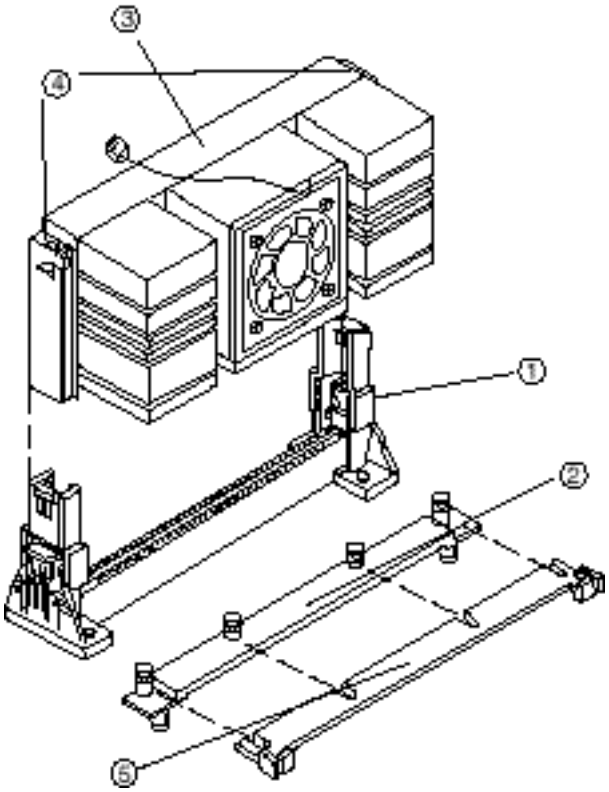
Follow the steps below to install the Pentium II processor:

1. Locate the Slot 1 connector.
2. If you are installing the boxed version of the Pentium II processor, follow the instructions in the section "3. Installing a CPU (Boxed version)"
3. The Heatsink supporters consist of a top bar, base and two pins. Gently insert the Heatsink base into the holes next to the Slot 1 socket. Push down until the base snaps into place.



4. Lock the base into place by inserting a pin down into the base on the both sides.
5. Gently insert the processor cartridge down into the URM, making sure the connector on the processor cartridge and Slot 1 connector are aligned.
6. Push the processor cartridge down until it snaps into place.
7. Lock the processor cartridge into place by pushing outward on the tabs located on both sides of the processor cartridge. The processor cartridge is locked when the tabs snap into the holes on the side of the URM.
8. After the processor cartridge is locked into place, connect the Heatsink's top bar to the base.

CPU Installation Overview

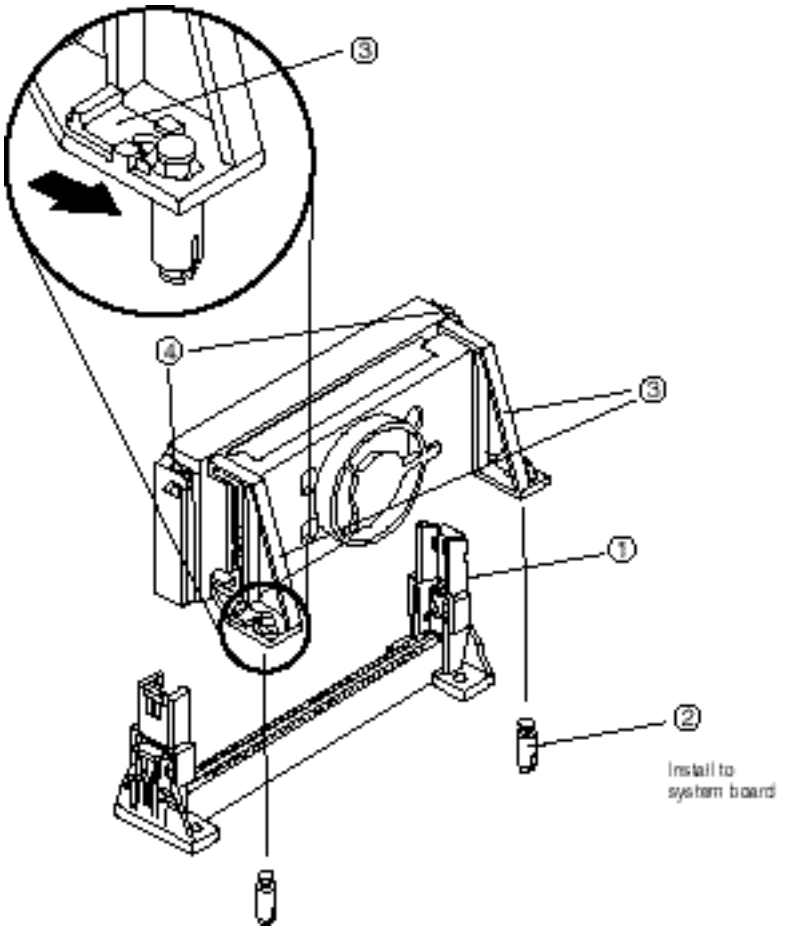


CPU Installation Overview

1. Mount the URM for the CPU.
2. Mount the (optional) heatsink support base onto the system board.
3. Slide the CPU into the URM.
4. Lock the CPU into the URM using the tabs.
5. Slide in the Heatsink Top Bar, then insert the pins to lock it in place.

3. Installing the CPU (Boxed version)

A boxed version of the CPU is offered through Intel. This packing uses an active cooling fan. The mounting hardware is described below. For detailed instructions, please refer to the documentation that is supplied with your CPU.



Installing the celeron processor

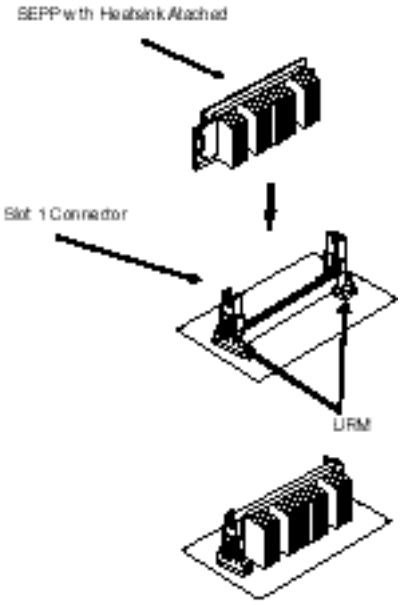
1. Installing the URM

Installing the URM for celeron processor is same as Installing the URM for Pentium-II processor.

2. Installing a CPU

Follow the steps below to install the celeron processor.

1. Locate the Slot 1 connector.
2. If you are installing the boxed version of the celeron processor, follow the instructions in the section "3. Installing a CPU(Boxed version)" <page 2-9>
3. Line up the SEEP / heatsink, ensuring that the substrate key is line up with the Slot 1 connector.
4. Insert SEPP into the guide rails along the URM. Place one hand on the SEPP / heatsink combination and push into the Slot 1 connector.
5. You will hear a click as the URM pops back, thereby firmly locking the processor into the Slot 1 connector.



Installing Cables

1. CPU Fan connector (J27)

If you are installing Pentium-II or celeron processor with fan, you can use this header to connect the CPU's fan cable (3-pin or 2-pin)

2. Primary / Secondary IDE connectors (J18 / J19)

These connectors support the provided 40-pin ribbon cable. After connecting the single end to the motherboard, connect the two plugs at the other end to your hard disk(s).

3. FDD connector (J17)

This connector supports the provided 34-pin ribbon cable. After connecting the single end to the motherboard, connect the two plugs on the other end to the floppy drives.

4. IR connector (J22)

CB647M-LX/EX provides one connector which can support IrDA (J22) receiver module. It gives users IR wireless data exchange directly from mobile computers, printers and PDAs,...etc.

5. Wake on LAN connector (J28)

This connector supports Wake on LAN function. If you use Wake on LAN function, connect 3-pin cable between this connector and your LAN Card.

6. Internal Modem Ring connector (J24)

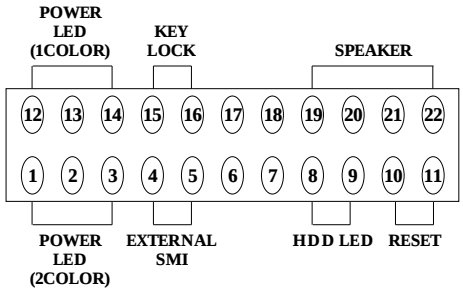
This connector support internal modem ring wake-up function.
If you use this function, connect 3-pin cable between this connector & your modem.

7. Secondary Fan connector (J34)

This connector support additional system fan

8. Front Panel Switch connector (J16)

This connector supports the signals of the Power LED, HDD LED, Reset Switch, Suspend / Resume Switch, Internal Speaker and Key Lock.



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	Pin17	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

9. Modem connector (JP13)

This connector support voice MODEM.

10. CD-Input connector (JP16, JP17)

This connectors support CD-Audio input.

11. Power Switch connector (JP12)

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

> ***<Note>***
> *In order to prevent the system from shut down by mistake, the CB647-LX/EX motherboard provides one optional item of the BIOS setup (refer to "3-4 Power Management Setup").*
> *This item is called "Soft-Off by PWR-BTTN". The function is as follows :*

Delay 4 sec:

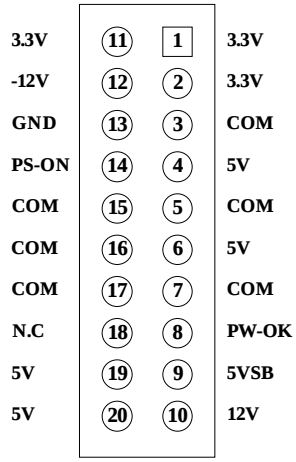
1. Pushing the button one time will change the system from Normal operation mode to Suspend mode. Pushing the button again will wake up the system.
2. Pushing the power button more than 4 seconds will shut down the system.

Instant-Off:

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

12. Micro ATX Power Supply Connector (J6)

This connector connects to an Micro ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole-size. Find the proper orientation and push down firmly but gently making sure that the pins aligned.



鑼 -5V is not provided by Micro ATX power supply

External Connectors

1. PS/2 Keyboard & Mouse Connector (J3)

The CB647M-LX/EX provides one PS/2 keyboard and one PS/2 mouse connector. Refer to the Figure 2-2 for the direction of keyboard (mouse) cable to install on keyboard (mouse) connector.

2. Serial Port COM1 & COM2 (J5 & J1)

The CB647M-LX/EX provides two sets of high speed serial port. Each serial port is 16550 UART compatible.

3. Parallel Port Printer Connector (J2)

The CB647M-LX/EX provides one set of high speed parallel port. The parallel port can support bi-direction / EPP / ECP mode.

4. USB Connector (J4)

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

5. Audio Jack (J29)

CB647M-LX/EX Motherboard provides an Advanced PCI Direct Sound Accelerator (Trident 4DWAVE-DX). It supports 4 ports (Line-in, Line-out, MIC, MIDI/JOYSTICK)

Line-in - Connect this port with cassette recorder, DAT or CD-Player. It can do playback & recording

Line-out - Connect speaker or external AMP

MIC - Mic input port

MIDI/JOY STICK - Connect MIDI Kit or Joy stick

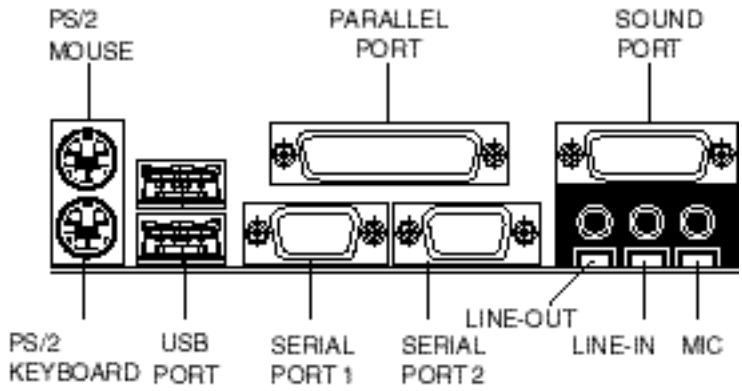


Figure 2-2 External connectors

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 Delete key to activate the SETUP program.

Accessing SETUP When Resetting the System

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

Press <DEL> to enter setup

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

Acessing 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 F1 to continue the boot sequence or Delete 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.

ROM PCI / ISA BIOS(CB647MLX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP / PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
ESC : Quit	↑ ↓ 阮← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk, Type ...	

Figure 3 -1. SETUP Main Menu

The instructions at the bottom of the Main Menu Screen show the items of each option.

■ **POWER MANAGEMENT SETUP**- This option allows users to set the power saving status for reducing the power consumption.

■ **PNP/PCI CONFIGURATION SETUP**- This option is used to set the various system function and internal addresses of the PCI devices. Allows users to configure system IRQ and DMA to PCI / ISA PnP or Legacy ISA .

■ **LOAD BIOS DEFAULTS** - Users can load the BIOS default values to boot the system safely.

■ **LOAD SETUP DEFAULTS** - This option supports the better performance for the system. It is recommended to choose OPTIMUM Setting for the setup.

■ **INTEGRATED PERIPHERALS** - This option allows users to decide how many kinds peripherals need to change their I / O type , mode and used or not . This options also allows user to set the various system function and onboard PCI IDE controller.

■ **SUPERVISOR PASSWORD** - Password is required when entering and changing all of the SETUP option or booting your system. Users can change the current password stored in the CMOS by accessing this option.

■ **USER PASSWORD** - Password is required when booting your system and entering to change only the USER PASSWORD. Users can change the current password stored in the CMOS by accessing the option.

■ **IDE HDD AUTO DETECTION**- This option can automatically detect the hard disk drive type(s) including the number of cylinders and heads, write precompensation time, read / write head landing zone, and number of sectors per track.

■ **HDD LOW LEVEL FORMAT**- This provides a hard disk low level format utility.

■ **SAVE & EXIT** - After saving the changes what you have made in the SETUP program, then exit and reboot the system.

■ **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 (CB647MLX)
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

Video : EGA/VGA
Halt On : All, But Keyboard

Base Memory : 640K
Extended Memory : 31744K
Other Memory : 384K

TOTAL Memory : 32768K

ESC : Quit ↑↓阮← : 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 hours, 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.

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 Features SETUP

ROM PCI/ISA BIOS (CB647MLX)
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		
Gate A20 Option	: FAST		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250	ESC : Quit ↑↓阮← : 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 > 64MB	: Non-OS2	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
LS/ZIP, 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

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

Gate A20 Option - Boots the performance of system with softwrae 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

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, CC000-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).

3.3 Chipset Features Setup

ROM PCI / ISA BIOS (CB647MLX)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Speed Selection	: 60ns	CPU Warring Temperature	: Disabled
MA wait State	: Slow	Current System Temp.	: 42℃ / 109°F
EDO RAS# To CAS# Delay	: 3	Current CPU Temperature	: 42℃ / 107°F
EDO RAS# Precharge Time	: 3		
EDO DRAM Read Burst	: x333		
EDO DRAM Write Burst	: x222		
DRAM Data Integrity mode	: Non-ECC		
CPU-To-PCI IDE Posting	: Enabled		
System BIOS Cacheable	: Enabled		
Video BIOS Cacheable	: Enabled		
8 Bit I / O Recovery Time	: 1		
16 Bit I / O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Disabled	ESC : Quit	↑↓阮← : Select Item
Delayed Transaction	: Disabled	F1 : Help	PU / PD / + / - : Modify
AGP Aperture Size(MB)	: 64	F5 : Old Values	(Shift)F2 : Color
SDRAM RAS-to-CAS Delay	: Fast	F6 : Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 : Load Setup Defaults	

Figure 3 -4 Chipset Features Setup Menu

Auto Configuration - Loads the default values, if "Enabled" (default), for the following DRAM and cache options. Otherwise, "Disabled" allows you to program each option as required.

- Enabled (default) - Disabled

The following items are controlled by Auto Configuration when users select "Enabled". For this reason, their default values will be changed by the speed of CPU. These items are.
"DRAM Speed Selection", "MA Wait State", "EDO RAS# To CAS# Delay", "EDO RAS# Precharge Time", "EDO DRAM Read Burst" and "EDO DRAM Write Burst".

DRAM Speed Selection - Configures the DRAM read / write speed for the maximum performance. The available options are :

- 50ns - 60ns(default)

MA Wait State - select FAST or SLOW Memory Address bus timing. The available options are :

- Slow(default) - Fast

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

- 3(default) - 2

EDO RAS# Precharge Time - DRAM must continually be refreshed or it will lose its data. Normally, DRAM is refreshed entirely as the result of a single request. This option allows you to determine the number of CPU clocks allocated for the Row Address Strobe to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost. The available options are :

- 3 (default) - 4

EDO DRAM Read Burst- Determines the timing for burst read 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 :

- 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 Data Integrity Mode - Provides software configurity of selecting between ECC mode and non-ECC mode of operation of the DRAM interface. The available options are :

- NON-ECC(default) - ECC

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

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:

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

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 - Fast (default)

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 66MHz clock. The availble options are :

- 3(default) - 2

CPU Warring Temperature - when set the temperature, CPU automatically downs the clock for cooling the CPU, if the temperature of CPU meets the predefined temperature.

Current System Temperature - this item shows current system temperature. Note that this item is SHOW-ONLY.

Current CPU Temperature - this item shows current CPU temperature. Note that this item is SHOW-ONLY.

3.4 Power Management Setup

ROM PCI / ISA BIOS (CB647MLX)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define	鐵鐵 Reload Global Timer Events 鐵鐵	
PM Control by APM	: Yes	IRQ [3-7, 9-15], NMI	: Disabled
Video Off Method	: DPMS	Primary IDE 0	: Enabled
Video Off After	: Standby	Primary IDE 1	: Enabled
Modem Use IRQ	: NA	Secondary IDE 0	: Disabled
Doze Mode	: 4 Min	Secondary IDE 1	: Disabled
Standby Mode	: 8 Min	Floppy Disk	: Enabled
Suspend Mode	: 12 Min	Serial Port	: Enabled
HDD Power Down	: Disable	Parallel Port	: Enabled
Throttle Duty Cycle	: 62.5%		
ZZ Active in Suspend	: Disabled		
VGA Active Monitor	: Disabled		
Soft-Off by PWR-BTTN	: Delay 4 Sec.		
CPUFAN off Suspend	: Enabled		
Resume by Ring	: Disabled		
Resume by Alarm	: Disabled	ESC : Quit ↑↓阮← : Select Item	
		F1 : Help PU / PD / + / - : Modify	
Wake up On LAN	: Disabled	F5 : Old Values (Shift)F2 : Color	
IRQ 8 Break Suspend	: Disabled	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 activing. The available options are :

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

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 :

- 4 Min(default)
- 1 / 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 :

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

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

- 12 Min (default)
- 1 / 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 :

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

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

- 62.5%(default)
- 50.0%, 37.5%, 25.0%, 12.5%
  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

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 Supend" is for setting the resume events while system enters the suspend mode.

Wake Up On LAN - sets to turn on the system from power off state. The available options are :

- Enabled
- Disabled(default)

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 0/1, Secondary IDE 0/1 - The available options are :

- Disabled(default of secondary IDE 0/1)
- Enabled(default of Primary IDE 0/1)

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 (CB647MLX)
PNP / PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed	: Yes	PCI IDE IRQ Map To	: PCI-AUTO
Resources Controlled By	: Auto	Primary IDE INT#	: A
Reset Configuration Data	: Disabled	Secondary IDE INT#	: B
		Assign IRQ For VGA	: Enabled
		Assign IRQ For USB	: Enabled
		ESC : Quit	↑↓阮← : Select Item
		F1 : Help	PU / PD / + / - : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load Bios Defaults	
		F7: Load Setup Defaults	

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(default) - 16K / 32K / 64K

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

Assign IRQ For USB - To assign IRQ which will be used by USB device. 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 (CB647MLX)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	OnBoard Parallel Port	:378 / IRQ7
IDE Primary Master PIO	:Auto	Parallel Port Mode	: SPP
IDE Primary Slave PIO	:Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	:Disabled		
POWER ON Function	:BUTTON ONLY		
OnBoard FDC Controller	: Enabled	ESC : Quit	↑↓阮← : Select Item
Onboard Serial Port 1	:3F8 / IRQ4	F1 : Help	PU / PD / + / - : Modify
Onboard Serial Port 2	:2F8 / IRQ3	F5 : Old Values	(Shift) F2 : Color
UR2 Mode	:Standard	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

Power On Function- The item allows you to select a method for power-up. The available options are :

- Button Only(default) : It allows you to power-up the system by the Power Button.
- Password : It allows you to power-up the system by the password that you decided.
- Hot KEY : It allows you to power-up the system by the Hot-Key. (Ctrl-F12 combination OR PC98-KBD Power Button)

Please note that "Password Power On" & "Hot key Power On" are not function with a USB Keyboard.

KB Power On Password - This option will be shown only when the option "Power On Function" is set to 'Password'. You'll be asked to input a password that you want to use as a password.

When the power code is disconnected abruptly or power source is disappeared, you should press the Power Button before enter a password that you decide to power-up the system. When you press the Power Button, the screen shows you the following message :

Warning!!! Power cord is out.
System will shutdown.

and then system will be shutdown. After that, you can power-up the system with your password.

Hot KEY Power On - This option will be shown only when the option "Power On Function" is set to 'HOT-KEY'. This item asks you to select a hot-key by which power-up the system. The available options are :

- Ctrl-F12
- PC98 KBD

PC98-KBD is available only when you are using PC98 Keyboard.

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
- 3F8 / IRQ4 (default of port 1)
- 2F8 / IRQ3(default of port 2)
- 3E8 / IRQ4
- 2E8 / IRQ3
- Disabled

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 :
- 378 / IRQ7 (default)
- Disabled
- 278 / IRQ5
- 3BC / IRQ7

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

Parallel Port Mode - Selects the working mode of parallel port. The available options are :
- SPP (default)
- ECP + EPP
- EPP
- ECP

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

ROM PCI / ISA BIOS(CB647MLX)
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-UNIX) must use "NORMAL" for Installation

ESC : Skip

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.

3.13 Qutting 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 exitiong the SETUP program. Once the <Y> key in pressed, the system will automatically exit the program and reboot.
However, if you want 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 change made.

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

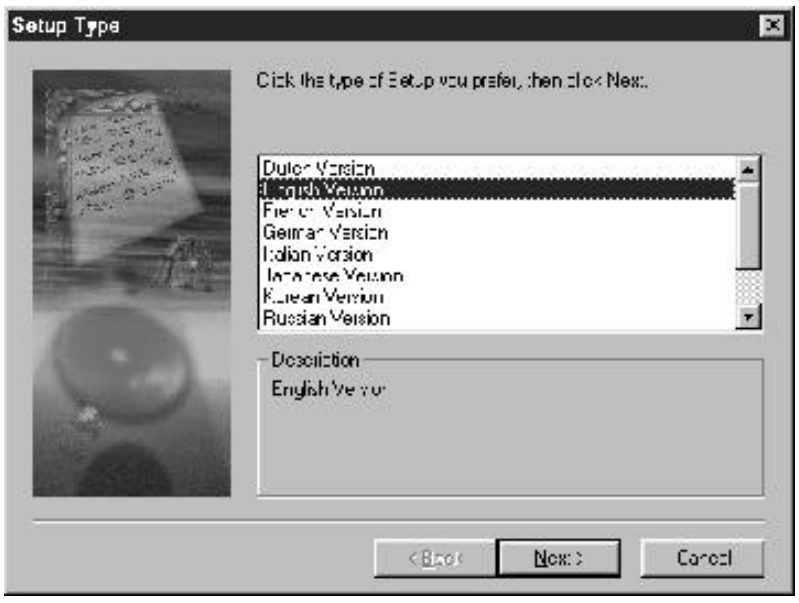
4. Audio

Overview

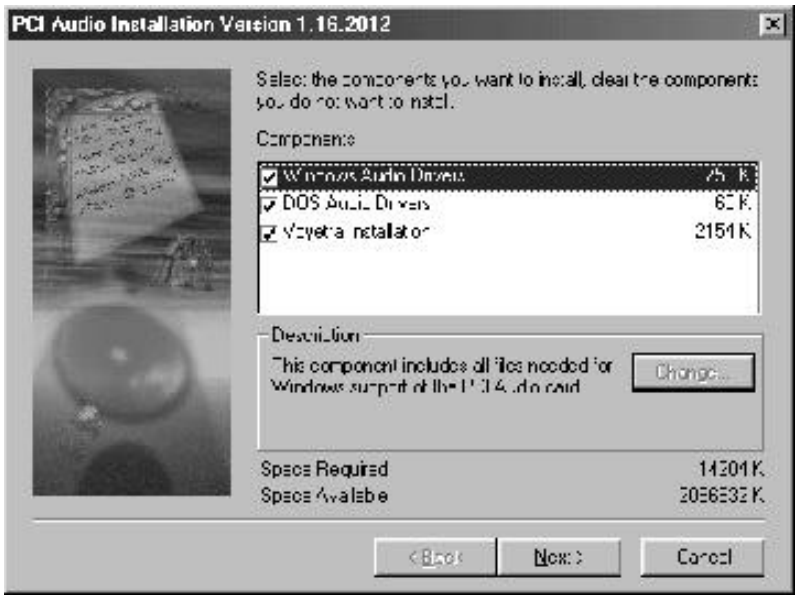
CB647M-LX/EX motherboard uses Trident 4DWAVE-DX chipset for PCI audio. This PCI audio controller support 64 voice wavetable synthesizer with DLS, AC'97 CODEC, direct music, direct sound, and direct sound 3D. It is compatible with fully dos game, sound blaster, sound blaster pro, windows sound system, and MPU 401.

Driver Installation

1. When you start your system, new hardware found wizard appears, then click cancel or press ESC button.
2. Insert the driver CD into CD-ROM drive, then open the sound folder in the CD.
3. Run the setup in the sound foler.
4. Setup Type wizard window appears. Select the language of your windows, then click next.



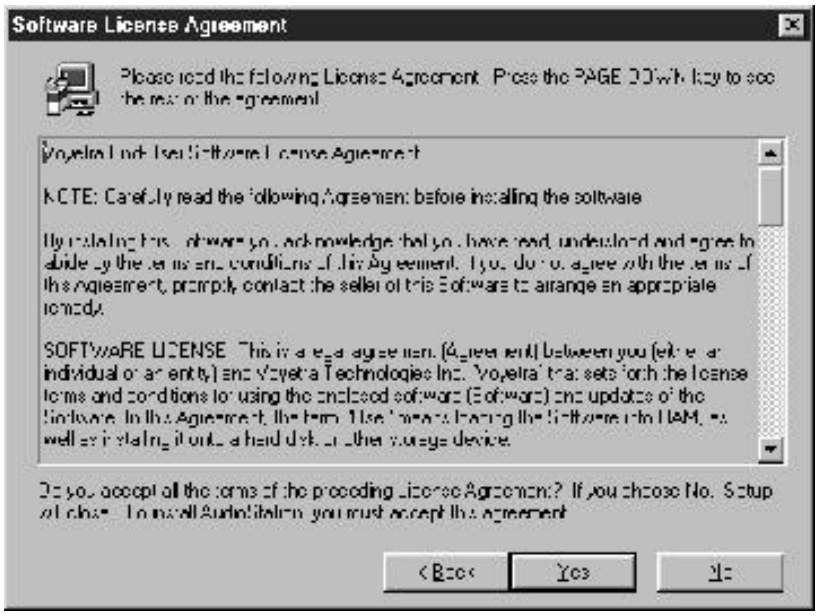
5. Select the type of driver to install then click next.



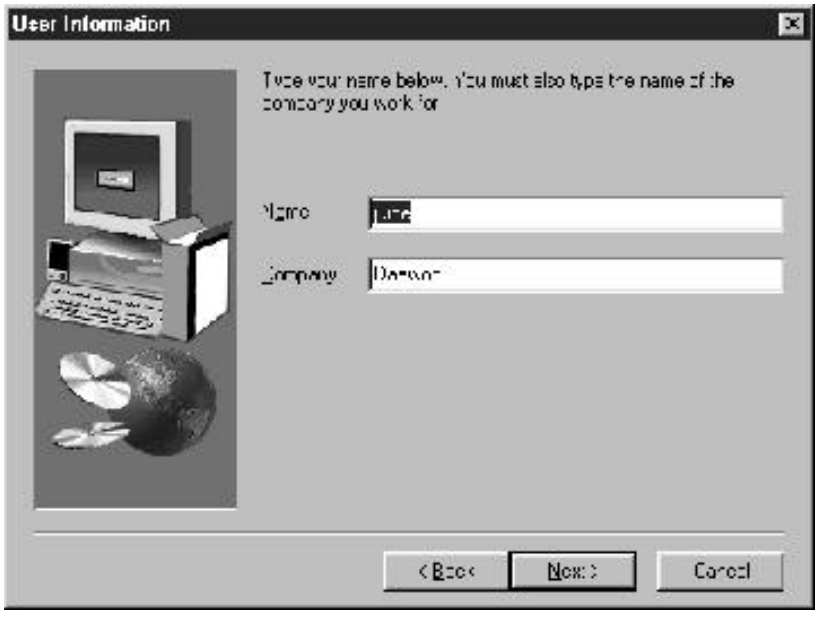
6. Then the setup program will install the Audio Station.

1) Click Next button.

2) Click Yes button.

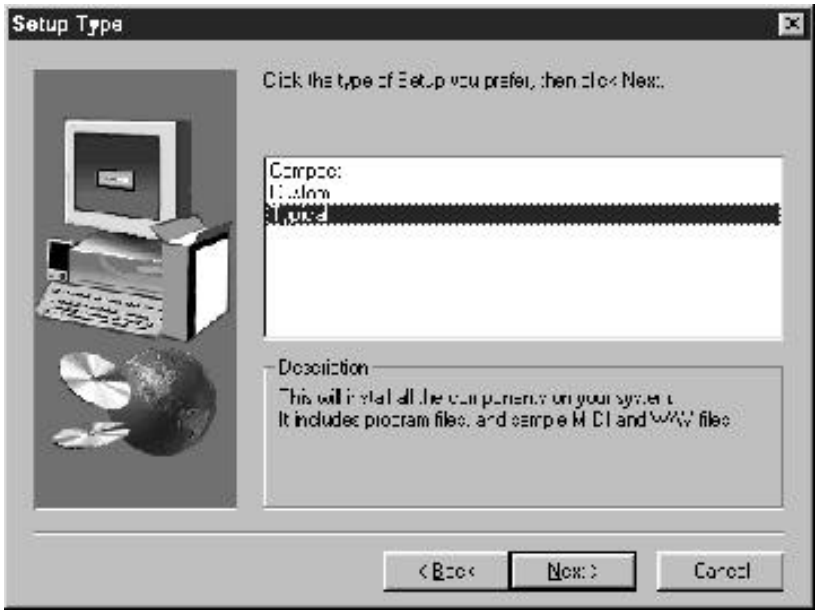


3) Click Next button



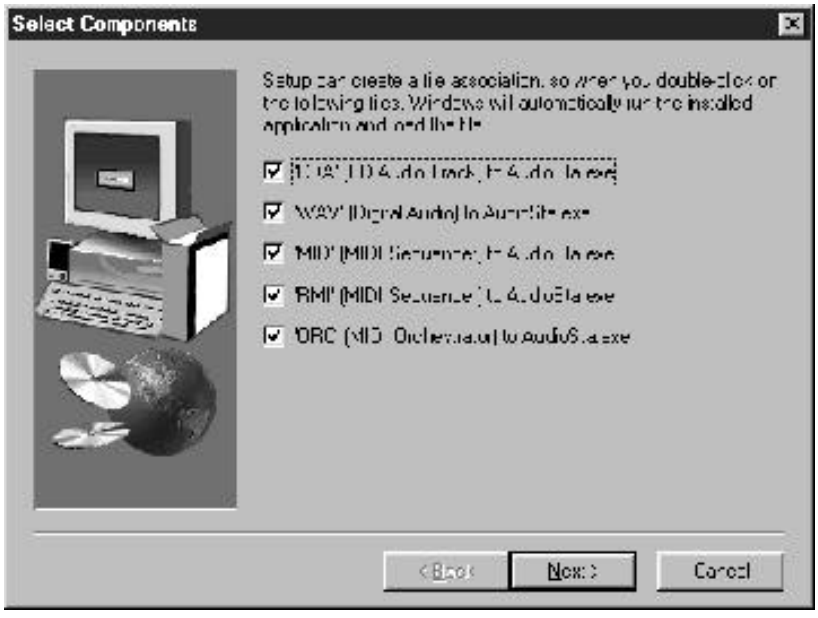
4) Click Next button.

5) Click Next button.



6) Click Next button.

7) Click Next button.



8) Click Finish button

7. After installing Audio Station your system will detect PCI multimedia device, legacy audio, and direct input driver.
8. Click Finish button to complete setup.

Federal Communications Commission Statement

This equipment has been tested and found to comply with the limits for a Clss B digital device, pursuant to part 15 of the FCC Rules. These limit are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipmentand receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Table of Contents

3. Built-in BIOS Setup Program

4. Audio

1. Introduction

Overview

CB647M-LX/EX motherboard integrates the latest advances in processor, memory, and I/O technologies into a micro ATX form factor(244 x 190mm) that combines performance, flexibility, and easy of use into high integrated capable of meeting a variety of price/performance levels.

CB647M-LX/EX motherboard supports Intel Pentium II processor or celeron processor based on the Intel 440LX/EX PCIsets(82443LX/EX and 82371EB). Two standard 168-pin DIMM Sockets with memory size up to 256MB support EDO and Synchronous DRAM memory.

The Intel 82371EB PCI-to-ISA/IDE Xcelerator(PIIX4) provides an integrated Bus Master IDE controller and Ultra DMA/33 with high performance IDE interfaces for up to four devices.

In addition, the CB647M-LX/EX comes with an AGP(Accelerated Graphics Port) bus slot, a faster than the current 33MHz PCI bus. The AGP bus provides a direct connection between graphics subsystem and system memory.

Caution :
There is the danger of an explosion if the battery is incorrectly replaced. Replace the battery with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the battery manufacturer's instructions.

Main Features

1. Processor :

- Single Intel Slot 1 connector
- Support to Intel Pentium II - 233 / 266 / 300 / 333 MHz processor
- Support to Intel celeron 266 / 300 / 300A / 333MHz processor
- Integrated Voltage Regulator Module

2. Chipsets :

2-1. 82443LX/EX PCI/AGP Controller

- Processor interface control
  - ▶ Processor host bus speed up to 66MHz
- Integrated DRAM controller
  - ▶ Support for EDO or Synchronous DRAM(SDRAM)
  - ▶ Support for 4-, 16-, 64-Mbit DRAM devices
- Accelerated Graphics Port interface
- Fully-synchronous PCI bus interface
- Data Buffering
  - ▶ Host-to-DRAM, PCI-to-DRAM, and AGP-to-DRAM write-data buffering

2-2. 82371EB PCI ISA IDE Xcelerator(PIIX4)

- Multifunction PCI-to-ISA bridge
- USB controller
  - ▶ Two USB ports
  - ▶ Support for UHCI design guide revision 1.1 interface
- Integrated Dual-channel enhanced IDE interface
  - ▶ Support for up to four IDE devices
  - ▶ Support for PIO Mode 4 transfer(up to 16MB / s) and Ultra DMA / 33 synchronous DMA mode transfer(up to 33MB / s)
- Enhanced DMA controller
- Interrupt controller based on 82C59
- Power management logic

- Real-Time Clock
- 16-bit counters / timers based 82C54

2-3. ITE 8671F Super I/O Controller

- Serial ports : Two 16550 compatible UARTs
- Parallel port : Standard / EPP / ECP mode support
- Floppy disk controller
- Keyboard and Mouse controller
- Support an IrDA and Consumer IR-compliant infrared interface
- Support Keyboard Power ON & Password Function

2-4. Trident 4DWAVE-DX Audio Controller

- Advance PCI DirectSound Accelerator
- High Quality Wavetable Synthesizer
- Full Legacy and DOS Games Compatibility
- High Quality Audio and AC97 Support
- Advanced Streaming Architecture
- Microsoft DirectSound, DirectSound 3D Support

2-5. WINBOND W83781D Hardware Monitoring(option)

- 3 Thermal inputs from remote thermistors
- 5 Positive voltage inputs(+12V, +5V, +3.3V, VcoreA, VcoreB)
- 2 OP amps for negative voltage monitoring(-12V, -5V)
- 3 Fan speed monitoring inputs
- WATCHDOG comparison of all monitored values
- Programmable hysteresis and setting points for all monitored items

3. System BIOS :

- Award flash BIOS(4.51PG)

4. DIMM Memory Socket :

- Provide 2 pieces of 168-pin DIMM socket.
- Support to 8 / 16 / 32 / 64 / 128 MB unbuffered EDO or Synchronous DRAM (SDRAM) Module.
- Support the single-or double-sided DIMMs.

5. Expansion Slots :

- Two 16-bit ISA slots with 100% ISA compatible function.(1 shared)
- Two 32-bit PCI slots all support PCI master.
  - ▶ PCI specification version 2.2.
- One 32-bit A.G.P slot support up to 528MB/s transfer rate
  - ▶ A.G.P specification revision 2.0.
  - ▶ Synchronous coupling to the host bus frequency.

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

- PS/2 keyboard & PS/2 mouse connector are located on the back panel. The 5V lines to these connectors are protected with a Fuse circuit.

7. Serial / Parallel Ports :

- One multi-mode parallel port with chip-protect circuitry supports standard, enhanced (EPP), high speed(ECP) mode(25-pin D-Sub).
- Two high speed 16C550 UART compatible buffer fast serial port(9-pin D-Sub).

8. IDE Support :

- Provide two independent bus-mastering PCI IDE interfaces(Primary and Secondary IDE).
- Support PIO Mode 4 transfer(up to 16MB/s) and Ultra DMA/33 synchronous-DMA mode transfers(up to 33MB/s).
- The BIOS automatically detects the IDE device transfer rate and translation mode.

9. FDD Support :

- Provides 34-pin box header.
- Supports 360K/720K/1.2M/1.44M/2.88M floppy drives.

10. Power Supply Connector :

- Provedes the connector for Micro ATX PC power supply(20 pin).

11. USB Connector :

- Provide the 2 channel USB port.
- Fully supports Universal Host Controller Interface(UHCI) and uses UHCI-compatible software drivers.

  The 5V lines to these connectors are protected with a poly switch circuit, that, like a self-healing fuse, reestablishes the connection after over-current condition is removed.

12. RTC & Back-up Battery :

- Integrated into PIIX4(82371EB) chipset.
- An external coin-cell battery powers the real-time clock and CMOS memory
- When the computer is not plugged into a wall socket, the battery has an established life of three years. When the computer is plugged in, the 3.3V standby current from the power supply extends the life of the 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
- Integrated into Super I/O Controller.

Motherboard Layout

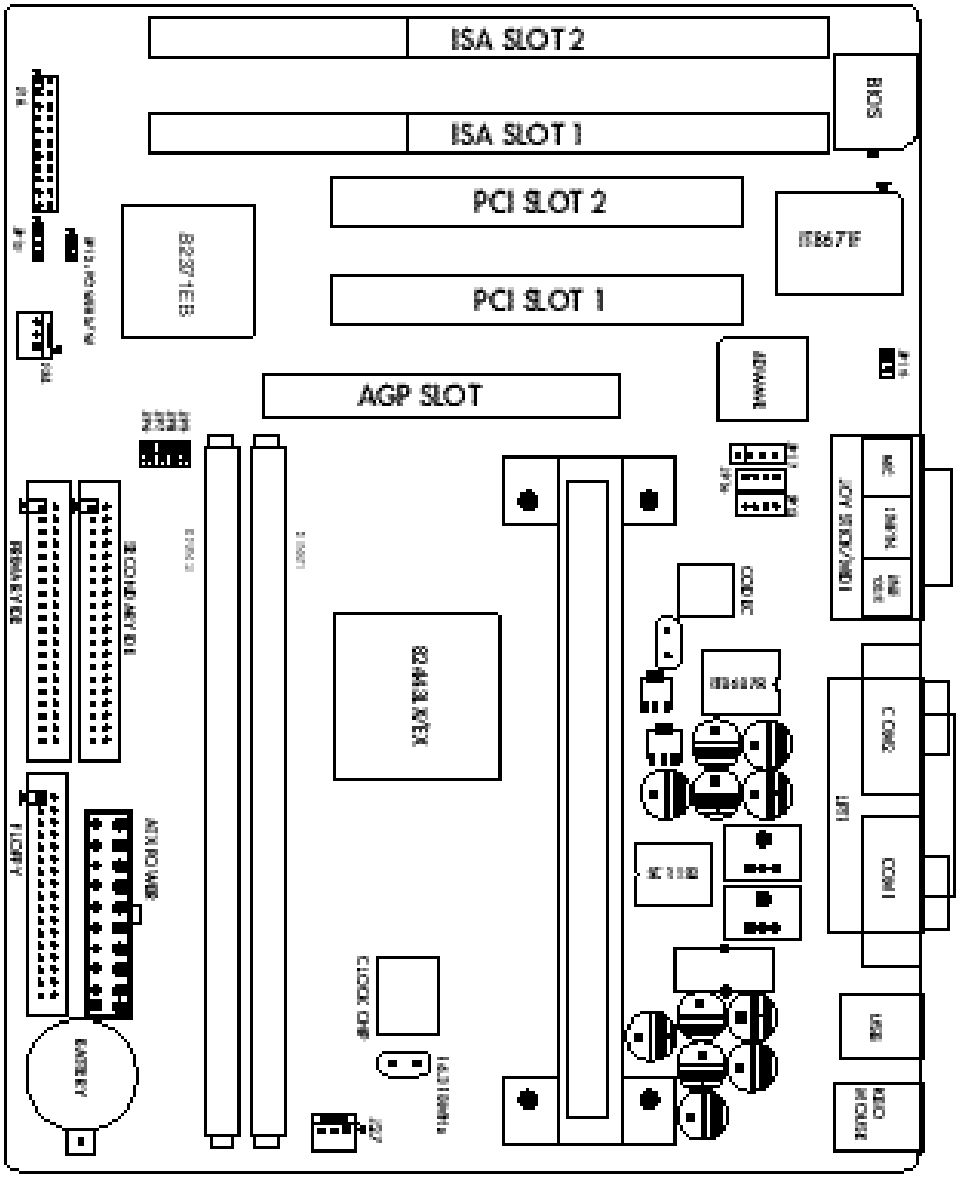


Figure 1-1. CB647M-LX/EX Motherboard Layout

2. Installation

This Chapter provides information on how to install and configure the CB647M-LX/EX motherboard.

Check List

The standard packing of the CB647M-LX/EX should include :

- ☑ CB647M-LX/EX motherboard
- ☑ 1 IDE cable
- ☑ 1 Floppy cable
- ☑ CB647M-LX/EX User's Manual
- ☑ Device driver CD
- ☑ Universial Retention Mechanism (URM) Kit

Installation Steps

Installing of the CB647M-LX/EX motherboard depends on the type of case you use. The CB647M-LX/EX motherboard is designed for the Micro ATX form factor and must be installed in an Micro ATX chassis.

Before using your computer, you must complete the following steps :

1. Set Jumpers
2. Installing the System Memory
3. Installing the CPU
4. Installing Cables

Set Jumpers

Serveral hardware settings are made through the use of jumper cap to connect jumper pins on the motherboard. See motherboard layout on page 1-5 for location of jumpers. The jumper settings will be described numerically such as '1-2', '2-3' or 'On(Short)', 'Off(Open)'.

Warning!

Computer motherboards and Add-on cards contain very delicate IC chips. To protect them against damage from static electricity, you should follow some precaution whenever you work on your computer.

1. *Unplug your computer when working on the inside.*
2. *Use a grounded wrist strap before handing computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.*
3. *Hold components by the edges and try not to touch such the IC chips, leads or connectors, or other components.*
4. *Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.*

1. Clear CMOS RAM(JP10)

The CMOS RAM is powered by the onboard coin-cell battery or power supply. To clear the CMOS Data : (1) Turn off your computer and unplug your AC power, (2) Close pins 2-3, wait five seconds and place the jumper back on pins 1-2. (The jumper must be placed back on pins 1-2 for the system to function properly), (3) Turn on your computer.

2. CPU Core : BUS Frequency Multiple

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

CPU Freq.	Clock Multiplier	Host Clock	JP6	JP7	JP8	JP9
233MHz	3.5	66MHz	Short	Open	Open	Short
266MHz	4	66MHz	Short	Short	Short	Open
300MHz	4.5	66MHz	Short	Open	Short	Open
333MHz	5	66MHz	Short	Short	Open	Open

Table 2-1. Pentium II CPU Frequency

Installing the System Memory

The CB647M-LX/EX motherboard has two 3.3V unbuffered 64/72-bit, 168-pin DIMM socket for maximum of 256MB of EDO and SDRAM memory.

1. Adding Memory

The following is a list of rules to follow when installing DIMMs. If you follow these rules, your upgrade should be trouble-free :

- Use 10ns or faster SDRAM or 60ns or faster EDO DIMMs.
- Single-side and double-side memory module are supported.
- Different memory types and sized in separate banks will cause the performance of the memory to run at the speed of the slowest RAM installed, and/or cause operating system stability problems.

2. Memory Configuration

DIMM memory configuration is auto-banking and therefore does not need to be installed in any particular order. The following table lists a number of possible memory configurations.

DIMM		TOTAL
DIMM1	DIMM2	
8MB	8MB	DIMM1+DIMM2 The combination of memory size is from 8MB to maximum 256MB. All DIMM sockets can use either SDRAM or EDO memory.
16MB	16MB	
32MB	32MB	
64MB	64MB	
128MB	128MB	

Table 2-2. CB647M-LX/EX Memory Configurations

3. Installing and Removing DIMMs

To install the DIMMs, locate the memory banks on the motherboard and perform the following steps :

1. Hold the DIMM so that notched edge is aligned with the notch on the DIMM socket(Figure 2-1).

2. Insert the DIMM at a 90 degree angle.

3. Gently push the DIMM straight down until it locks into place(past the release tabs).

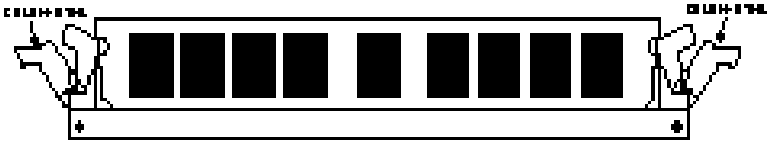


Figure 2-1. Installing a 168-pin DIMM

To remove DIMMs, follow the steps below:

1. With both thumbs (or fingers), press the release tabs away from the socket.
2. With the DIMM free from the release tabs, lift the memory module up and place in the anti-static bag or package.

Installing the CPU

The CB647M-LX/EX is designed to support single Pentium II processor or celeron processor. The Pentium II processor comes installed in a Single Edge Contact Cartridge (SECC) that connects into “Slot 1” on the motherboard. Add the celeron processor comes installed in a Single Edge Processor Package(SEEP) that connects into “Slot 1” on the motherboard.

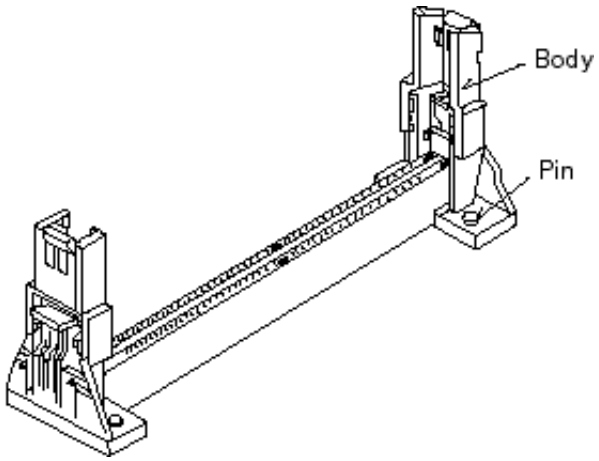
A URM is supplied to anchor the processor to the motherboard. Attach the URM before inserting the processor.

Installing the Pentium II processor

1. Installing the URM

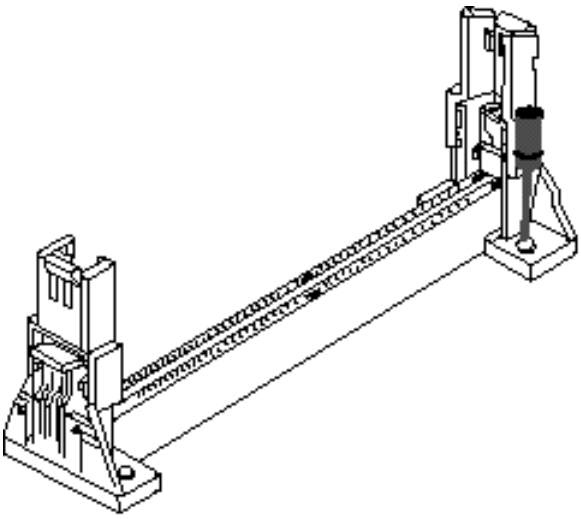
Before you begin, verify that your URM contains the following items:

- Body (black plastic module : require 2 pieces)
- Pin (Require 4 pieces)



Follow the steps below to install the URM :

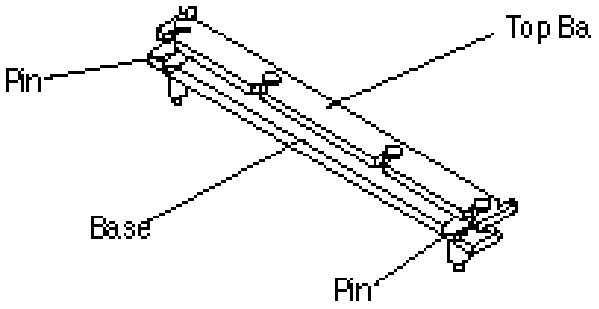
1. Locate the four Retention Base holes (near each end of the Slot 1 socket). Place the URM Body over each end of the Slot 1 connector.
2. Push down on the Pin with thumb or plastic fastener installation tool.



2. Installing a CPU

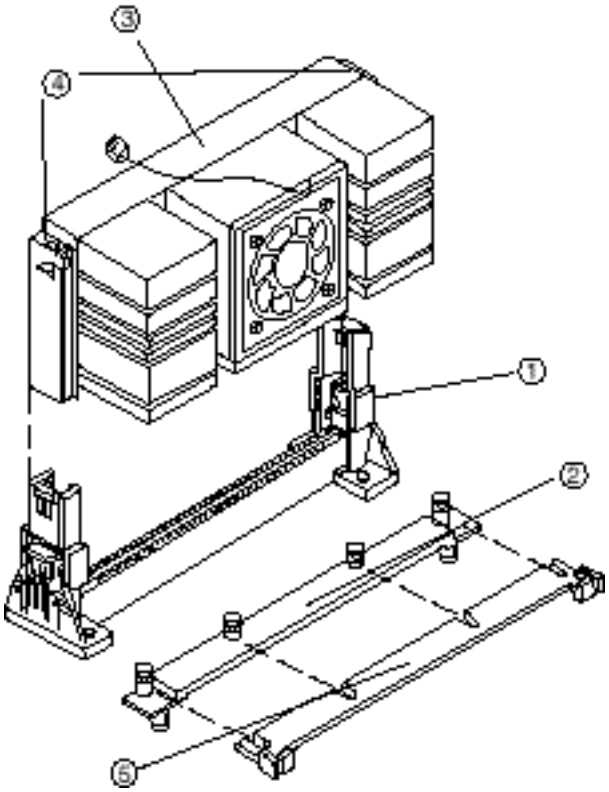
Follow the steps below to install the Pentium II processor:

1. Locate the Slot 1 connector.
2. If you are installing the boxed version of the Pentium II processor, follow the instructions in the section "3. Installing a CPU (Boxed version)"
3. The Heatsink supporters consist of a top bar, base and two pins. Gently insert the Heatsink base into the holes next to the Slot 1 socket. Push down until the base snaps into place.



4. Lock the base into place by inserting a pin down into the base on the both sides.
5. Gently insert the processor cartridge down into the URM, making sure the connector on the processor cartridge and Slot 1 connector are aligned.
6. Push the processor cartridge down until it snaps into place.
7. Lock the processor cartridge into place by pushing outward on the tabs located on both sides of the processor cartridge. The processor cartridge is locked when the tabs snap into the holes on the side of the URM.
8. After the processor cartridge is locked into place, connect the Heatsink's top bar to the base.

CPU Installation Overview

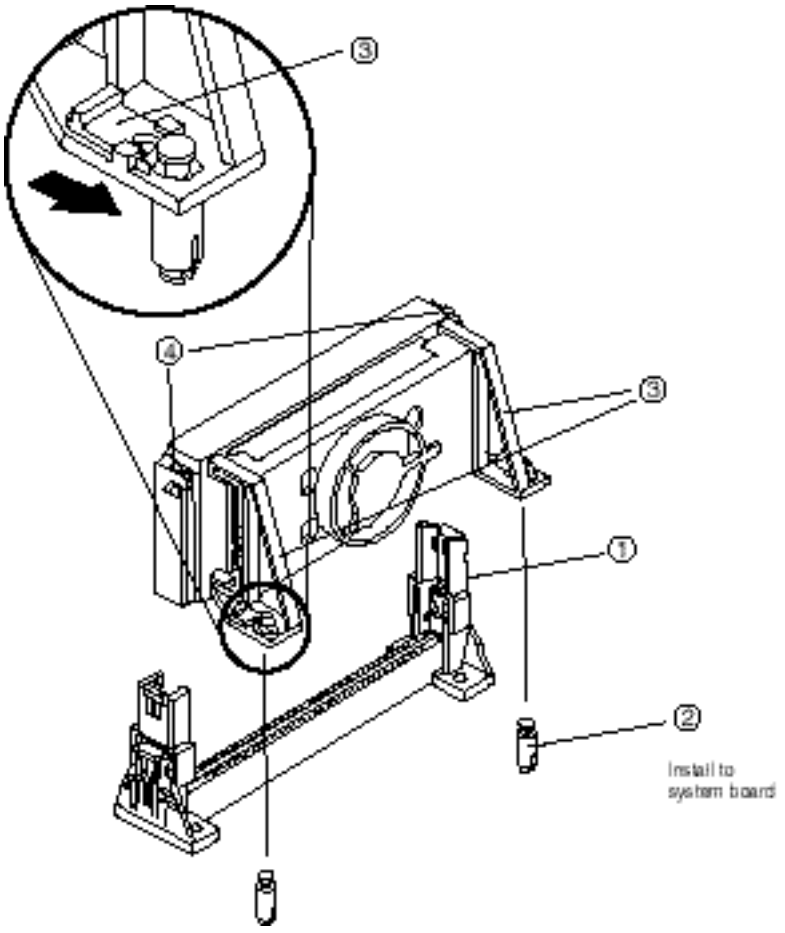


CPU Installation Overview

1. Mount the URM for the CPU.
2. Mount the (optional) heatsink support base onto the system board.
3. Slide the CPU into the URM.
4. Lock the CPU into the URM using the tabs.
5. Slide in the Heatsink Top Bar, then insert the pins to lock it in place.

3. Installing the CPU (Boxed version)

A boxed version of the CPU is offered through Intel. This packing uses an active cooling fan. The mounting hardware is described below. For detailed instructions, please refer to the documentation that is supplied with your CPU.



Installing the celeron processor

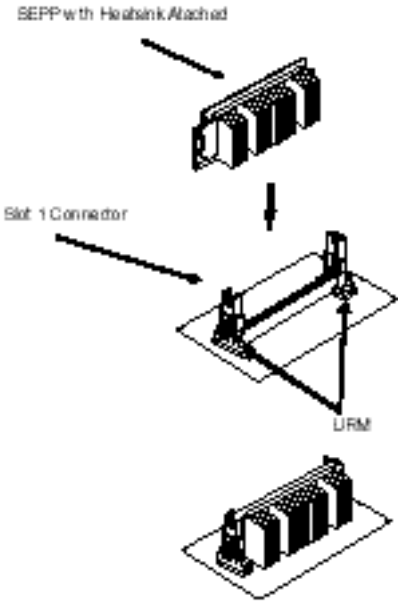
1. Installing the URM

Installing the URM for celeron processor is same as Installing the URM for Pentium-II processor.

2. Installing a CPU

Follow the steps below to install the celeron processor.

1. Locate the Slot 1 connector.
2. If you are installing the boxed version of the celeron processor, follow the instructions in the section "3. Installing a CPU(Boxed version)" <page 2-9>
3. Line up the SEEP / heatsink, ensuring that the substrate key is line up with the Slot 1 connector.
4. Insert SEPP into the guide rails along the URM. Place one hand on the SEPP / heatsink combination and push into the Slot 1 connector.
5. You will hear a click as the URM pops back, thereby firmly locking the processor into the Slot 1 connector.



Installing Cables

1. CPU Fan connector (J27)

If you are installing Pentium-II or celeron processor with fan, you can use this header to connect the CPU's fan cable (3-pin or 2-pin)

2. Primary / Secondary IDE connectors (J18 / J19)

These connectors support the provided 40-pin ribbon cable. After connecting the single end to the motherboard, connect the two plugs at the other end to your hard disk(s).

3. FDD connector (J17)

This connector supports the provided 34-pin ribbon cable. After connecting the single end to the motherboard, connect the two plugs on the other end to the floppy drives.

4. IR connector (J22)

CB647M-LX/EX provides one connector which can support IrDA (J22) receiver module. It gives users IR wireless data exchange directly from mobile computers, printers and PDAs,...etc.

5. Wake on LAN connector (J28)

This connector supports Wake on LAN function. If you use Wake on LAN function, connect 3-pin cable between this connector and your LAN Card.

6. Internal Modem Ring connector (J24)

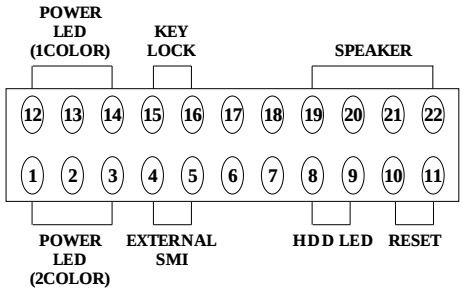
This connector support internal modem ring wake-up function.
If you use this function, connect 3-pin cable between this connector & your modem.

7. Secondary Fan connector (J34)

This connector support additional system fan

8. Front Panel Switch connector (J16)

This connector supports the signals of the Power LED, HDD LED, Reset Switch, Suspend / Resume Switch, Internal Speaker and Key Lock.



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	Pin17	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

9. Modem connector (JP13)

This connector support voice MODEM.

10. CD-Input connector (JP16, JP17)

This connectors support CD-Audio input.

11. Power Switch connector (JP12)

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

> ***<Note>***
> *In order to prevent the system from shut down by mistake, the CB647-LX/EX motherboard provides one optional item of the BIOS setup (refer to "3-4 Power Management Setup").*
> *This item is called "Soft-Off by PWR-BTTN". The function is as follows :*

Delay 4 sec:

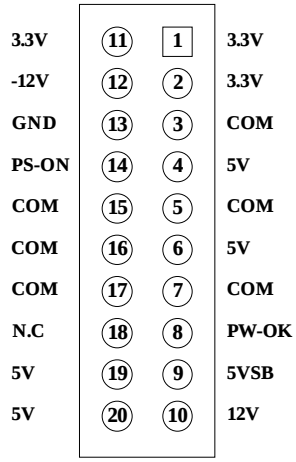
1. Pushing the button one time will change the system from Normal operation mode to Suspend mode. Pushing the button again will wake up the system.
2. Pushing the power button more than 4 seconds will shut down the system.

Instant-Off:

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

12. Micro ATX Power Supply Connector (J6)

This connector connects to an Micro ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole-size. Find the proper orientation and push down firmly but gently making sure that the pins aligned.



鑼 -5V is not provided by Micro ATX power supply

External Connectors

1. PS/2 Keyboard & Mouse Connector (J3)

The CB647M-LX/EX provides one PS/2 keyboard and one PS/2 mouse connector. Refer to the Figure 2-2 for the direction of keyboard (mouse) cable to install on keyboard (mouse) connector.

2. Serial Port COM1 & COM2 (J5 & J1)

The CB647M-LX/EX provides two sets of high speed serial port. Each serial port is 16550 UART compatible.

3. Parallel Port Printer Connector (J2)

The CB647M-LX/EX provides one set of high speed parallel port. The parallel port can support bi-direction / EPP / ECP mode.

4. USB Connector (J4)

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

5. Audio Jack (J29)

CB647M-LX/EX Motherboard provides an Advanced PCI Direct Sound Accelerator (Trident 4DWAVE-DX). It supports 4 ports (Line-in, Line-out, MIC, MIDI/JOYSTICK)

Line-in - Connect this port with cassette recorder, DAT or CD-Player. It can do playback & recording

Line-out - Connect speaker or external AMP

MIC - Mic input port

MIDI/JOY STICK - Connect MIDI Kit or Joy stick

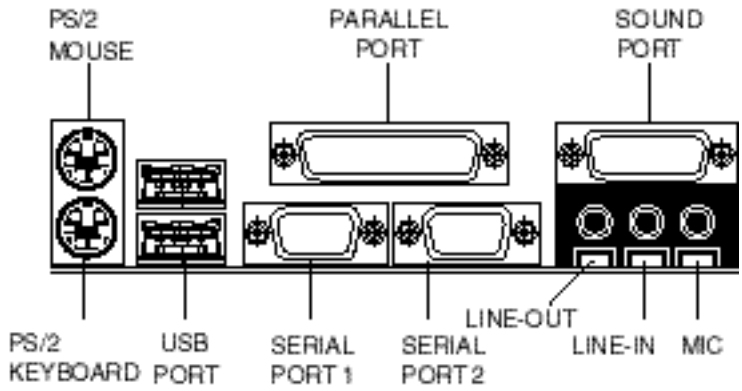


Figure 2-2 External connectors

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 Delete key to activate the SETUP program.

Accessing SETUP When Resetting the System

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

Press <DEL> to enter setup

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

Acessing 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 F1 to continue the boot sequence or Delete 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.

ROM PCI / ISA BIOS(CB647MLX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP / PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
ESC : Quit	↑ ↓ 阮← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk, Type ...	

Figure 3 -1. SETUP Main Menu

The instructions at the bottom of the Main Menu Screen show the items of each option.

■ **POWER MANAGEMENT SETUP**- This option allows users to set the power saving status for reducing the power consumption.

■ **PNP/PCI CONFIGURATION SETUP**- This option is used to set the various system function and internal addresses of the PCI devices. Allows users to configure system IRQ and DMA to PCI / ISA PnP or Legacy ISA .

■ **LOAD BIOS DEFAULTS** - Users can load the BIOS default values to boot the system safely.

■ **LOAD SETUP DEFAULTS** - This option supports the better performance for the system. It is recommended to choose OPTIMUM Setting for the setup.

■ **INTEGRATED PERIPHERALS** - This option allows users to decide how many kinds peripherals need to change their I / O type , mode and used or not . This options also allows user to set the various system function and onboard PCI IDE controller.

■ **SUPERVISOR PASSWORD** - Password is required when entering and changing all of the SETUP option or booting your system. Users can change the current password stored in the CMOS by accessing this option.

■ **USER PASSWORD** - Password is required when booting your system and entering to change only the USER PASSWORD. Users can change the current password stored in the CMOS by accessing the option.

■ **IDE HDD AUTO DETECTION**- This option can automatically detect the hard disk drive type(s) including the number of cylinders and heads, write precompensation time, read / write head landing zone, and number of sectors per track.

■ **HDD LOW LEVEL FORMAT**- This provides a hard disk low level format utility.

■ **SAVE & EXIT** - After saving the changes what you have made in the SETUP program, then exit and reboot the system.

■ **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 (CB647MLX)
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

Video : EGA/VGA
Halt On : All, But Keyboard

Base Memory : 640K
Extended Memory : 31744K
Other Memory : 384K

TOTAL Memory : 32768K

ESC : Quit ↑↓阮← : 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 hours, 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.

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 Features SETUP

ROM PCI/ISA BIOS (CB647MLX)
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		
Gate A20 Option	: FAST		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250	ESC : Quit ↑↓阮← : 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 > 64MB	: Non-OS2	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
LS/ZIP, 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

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

Gate A20 Option - Boots the performance of system with softwrae 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

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, CC000-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).

3.3 Chipset Features Setup

ROM PCI / ISA BIOS (CB647MLX)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Speed Selection	: 60ns	CPU Warring Temperature	: Disabled
MA wait State	: Slow	Current System Temp.	: 42℃ / 109°F
EDO RAS# To CAS# Delay	: 3	Current CPU Temperature	: 42℃ / 107°F
EDO RAS# Precharge Time	: 3		
EDO DRAM Read Burst	: x333		
EDO DRAM Write Burst	: x222		
DRAM Data Integrity mode	: Non-ECC		
CPU-To-PCI IDE Posting	: Enabled		
System BIOS Cacheable	: Enabled		
Video BIOS Cacheable	: Enabled		
8 Bit I / O Recovery Time	: 1		
16 Bit I / O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Disabled	ESC : Quit	↑↓阮← : Select Item
Delayed Transaction	: Disabled	F1 : Help	PU / PD / + / - : Modify
AGP Aperture Size(MB)	: 64	F5 : Old Values	(Shift)F2 : Color
SDRAM RAS-to-CAS Delay	: Fast	F6 : Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 : Load Setup Defaults	

Figure 3 -4 Chipset Features Setup Menu

Auto Configuration - Loads the default values, if "Enabled" (default), for the following DRAM and cache options. Otherwise, "Disabled" allows you to program each option as required.

- Enabled (default) - Disabled

The following items are controlled by Auto Configuration when users select "Enabled". For this reason, their default values will be changed by the speed of CPU. These items are.
"DRAM Speed Selection", "MA Wait State", "EDO RAS# To CAS# Delay", "EDO RAS# Precharge Time", "EDO DRAM Read Burst" and "EDO DRAM Write Burst".

DRAM Speed Selection - Configures the DRAM read / write speed for the maximum performance. The available options are :

- 50ns - 60ns(default)

MA Wait State - select FAST or SLOW Memory Address bus timing. The available options are :

- Slow(default) - Fast

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

- 3(default) - 2

EDO RAS# Precharge Time - DRAM must continually be refreshed or it will lose its data. Normally, DRAM is refreshed entirely as the result of a single request. This option allows you to determine the number of CPU clocks allocated for the Row Address Strobe to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost. The available options are :

- 3 (default) - 4

EDO DRAM Read Burst- Determines the timing for burst read 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 :

- 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 Data Integrity Mode - Provides software configurity of selecting between ECC mode and non-ECC mode of operation of the DRAM interface. The available options are :

- NON-ECC(default) - ECC

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

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:

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

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 - Fast (default)

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 66MHz clock. The availble options are :

- 3(default) - 2

CPU Warring Temperature - when set the temperature, CPU automatically downs the clock for cooling the CPU, if the temperature of CPU meets the predefined temperature.

Current System Temperature - this item shows current system temperature. Note that this item is SHOW-ONLY.

Current CPU Temperature - this item shows current CPU temperature. Note that this item is SHOW-ONLY.

3.4 Power Management Setup

ROM PCI / ISA BIOS (CB647MLX)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define	鐵鐵 Reload Global Timer Events 鐵鐵	
PM Control by APM	: Yes	IRQ [3-7, 9-15], NMI	: Disabled
Video Off Method	: DPMS	Primary IDE 0	: Enabled
Video Off After	: Standby	Primary IDE 1	: Enabled
Modem Use IRQ	: NA	Secondary IDE 0	: Disabled
Doze Mode	: 4 Min	Secondary IDE 1	: Disabled
Standby Mode	: 8 Min	Floppy Disk	: Enabled
Suspend Mode	: 12 Min	Serial Port	: Enabled
HDD Power Down	: Disable	Parallel Port	: Enabled
Throttle Duty Cycle	: 62.5%		
ZZ Active in Suspend	: Disabled		
VGA Active Monitor	: Disabled		
Soft-Off by PWR-BTTN	: Delay 4 Sec.		
CPUFAN off Suspend	: Enabled		
Resume by Ring	: Disabled		
Resume by Alarm	: Disabled	ESC : Quit ↑↓阮← : Select Item	
		F1 : Help PU / PD / + / - : Modify	
Wake up On LAN	: Disabled	F5 : Old Values (Shift)F2 : Color	
IRQ 8 Break Suspend	: Disabled	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 activing. The available options are :

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

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 :

- 4 Min(default)
- 1 / 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 :

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

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

- 12 Min (default)
- 1 / 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 :

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

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

- 62.5%(default)
- 50.0%, 37.5%, 25.0%, 12.5%
  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

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 Supend" is for setting the resume events while system enters the suspend mode.

Wake Up On LAN - sets to turn on the system from power off state. The available options are :

- Enabled
- Disabled(default)

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 0/1, Secondary IDE 0/1 - The available options are :

- Disabled(default of secondary IDE 0/1)
- Enabled(default of Primary IDE 0/1)

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 (CB647MLX)
PNP / PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed	: Yes	PCI IDE IRQ Map To	: PCI-AUTO
Resources Controlled By	: Auto	Primary IDE INT#	: A
Reset Configuration Data	: Disabled	Secondary IDE INT#	: B
		Assign IRQ For VGA	: Enabled
		Assign IRQ For USB	: Enabled
		ESC : Quit	↑↓阮← : Select Item
		F1 : Help	PU / PD / + / - : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load Bios Defaults	
		F7: Load Setup Defaults	

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(default) - 16K / 32K / 64K

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

Assign IRQ For USB - To assign IRQ which will be used by USB device. 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 (CB647MLX)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	OnBoard Parallel Port	:378 / IRQ7
IDE Primary Master PIO	:Auto	Parallel Port Mode	: SPP
IDE Primary Slave PIO	:Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	:Disabled		
POWER ON Function	:BUTTON ONLY		
OnBoard FDC Controller	: Enabled	ESC : Quit	↑↓阮← : Select Item
Onboard Serial Port 1	:3F8 / IRQ4	F1 : Help	PU / PD / + / - : Modify
Onboard Serial Port 2	:2F8 / IRQ3	F5 : Old Values	(Shift) F2 : Color
UR2 Mode	:Standard	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

Power On Function- The item allows you to select a method for power-up. The available options are :

- Button Only(default) : It allows you to power-up the system by the Power Button.
- Password : It allows you to power-up the system by the password that you decided.
- Hot KEY : It allows you to power-up the system by the Hot-Key. (Ctrl-F12 combination OR PC98-KBD Power Button)

Please note that "Password Power On" & "Hot key Power On" are not function with a USB Keyboard.

KB Power On Password - This option will be shown only when the option "Power On Function" is set to 'Password'. You'll be asked to input a password that you want to use as a password.

When the power code is disconnected abruptly or power source is disappeared, you should press the Power Button before enter a password that you decide to power-up the system. When you press the Power Button, the screen shows you the following message :

Warning!!! Power cord is out.
System will shutdown.

and then system will be shutdown. After that, you can power-up the system with your password.

Hot KEY Power On - This option will be shown only when the option "Power On Function" is set to 'HOT-KEY'. This item asks you to select a hot-key by which power-up the system. The available options are :

- Ctrl-F12
- PC98 KBD

PC98-KBD is available only when you are using PC98 Keyboard.

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
- 3F8 / IRQ4 (default of port 1)
- 2F8 / IRQ3(default of port 2)
- 3E8 / IRQ4
- 2E8 / IRQ3
- Disabled

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 :
- 378 / IRQ7 (default)
- Disabled
- 278 / IRQ5
- 3BC / IRQ7

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

Parallel Port Mode - Selects the working mode of parallel port. The available options are :
- SPP (default)
- ECP + EPP
- EPP
- ECP

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

ROM PCI / ISA BIOS(CB647MLX)
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-UNIX) must use "NORMAL" for Installation

ESC : Skip

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.

3.13 Qutting 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 exitiong the SETUP program. Once the <Y> key in pressed, the system will automatically exit the program and reboot.
However, if you want 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 change made.

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

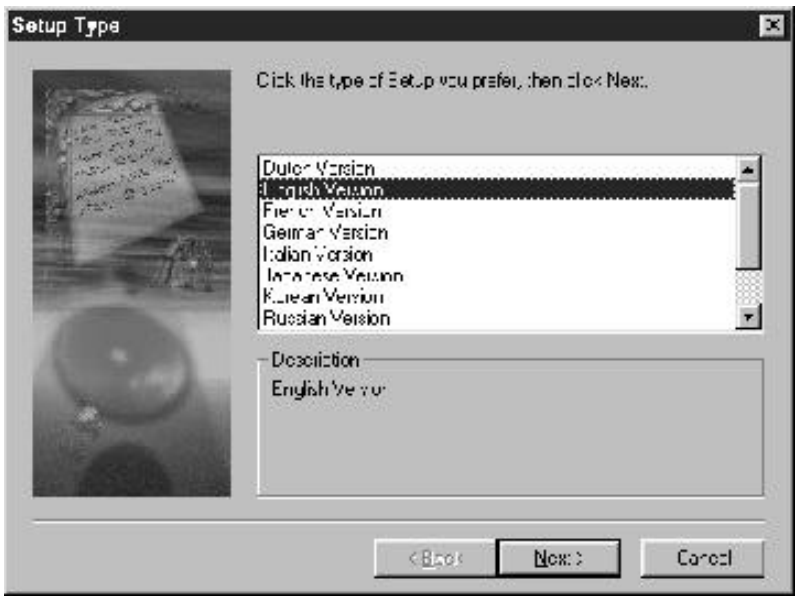
4. Audio

Overview

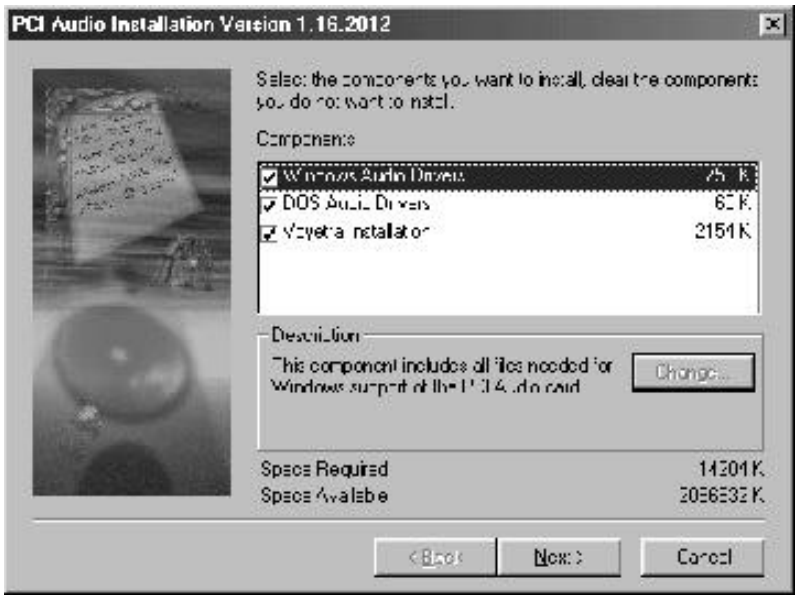
CB647M-LX/EX motherboard uses Trident 4DWAVE-DX chipset for PCI audio. This PCI audio controller support 64 voice wavetable synthesizer with DLS, AC'97 CODEC, direct music, direct sound, and direct sound 3D. It is compatible with fully dos game, sound blaster, sound blaster pro, windows sound system, and MPU 401.

Driver Installation

1. When you start your system, new hardware found wizard appears, then click cancel or press ESC button.
2. Insert the driver CD into CD-ROM drive, then open the sound folder in the CD.
3. Run the setup in the sound foler.
4. Setup Type wizard window appears. Select the language of your windows, then click next.



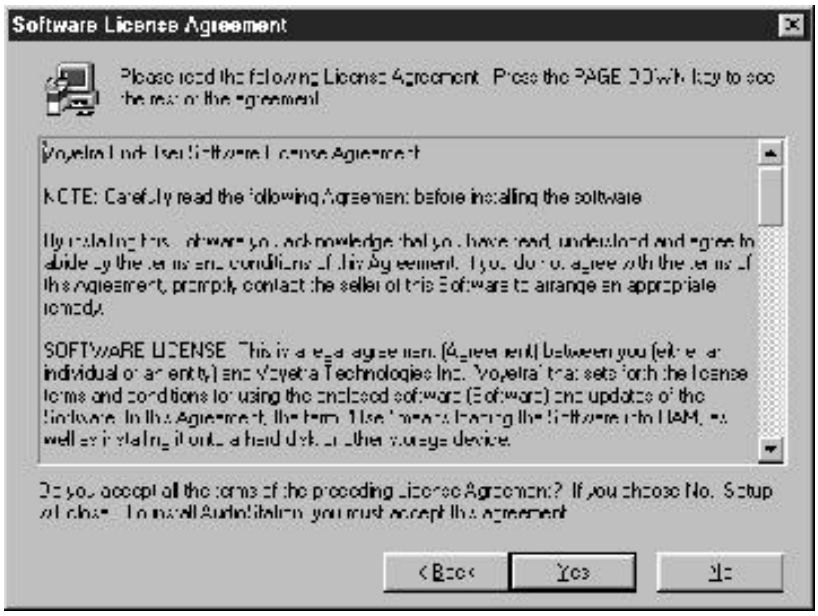
5. Select the type of driver to install then click next.



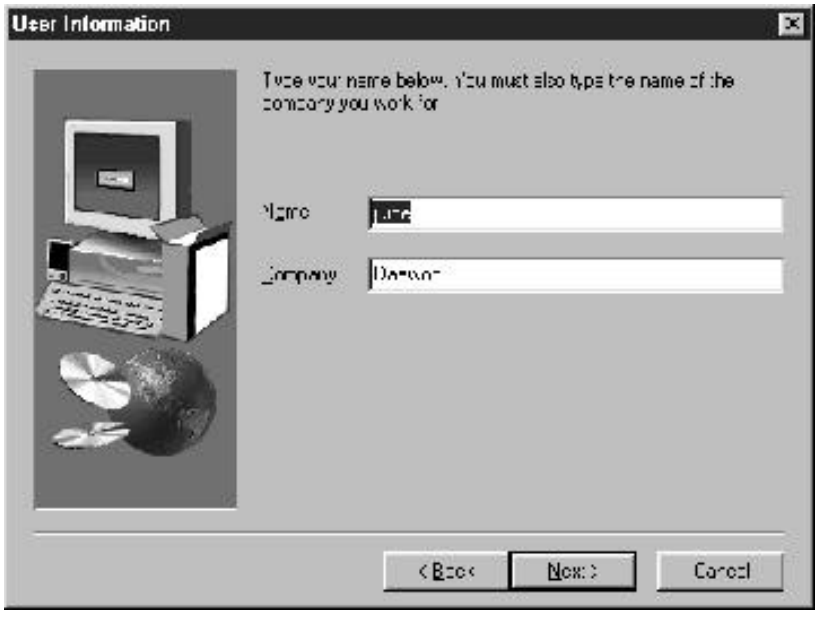
6. Then the setup program will install the Audio Station.

1) Click Next button.

2) Click Yes button.

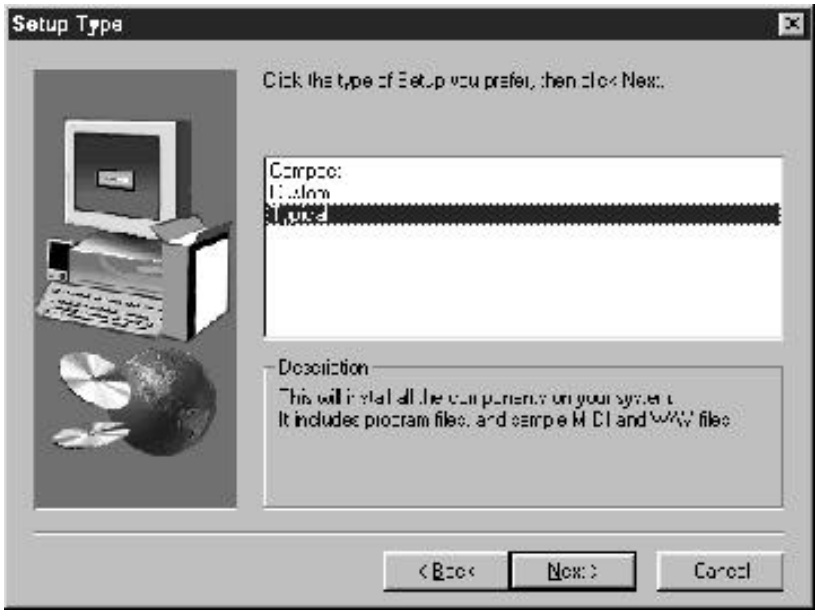


3) Click Next button



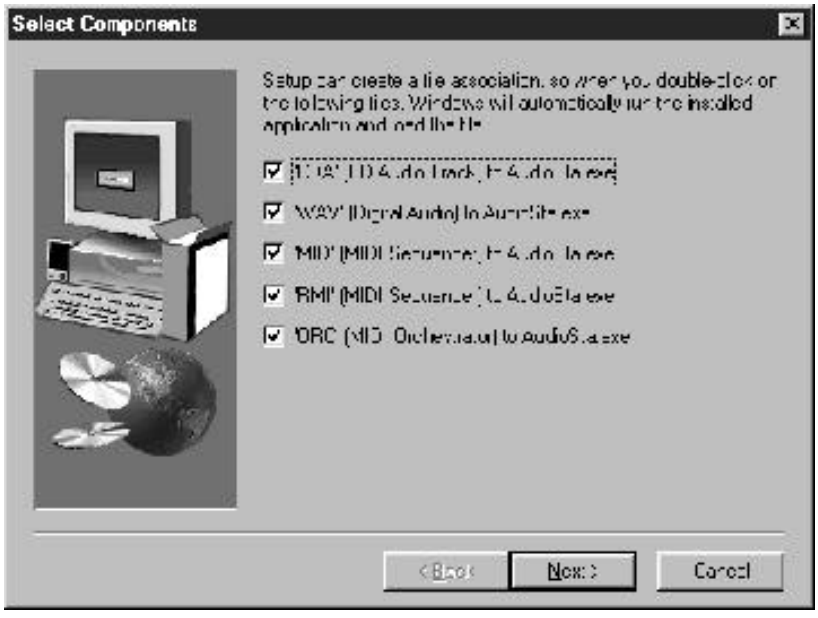
4) Click Next button.

5) Click Next button.



6) Click Next button.

7) Click Next button.



8) Click Finish button

7. After installing Audio Station your system will detect PCI multimedia device, legacy audio, and direct input driver.
8. Click Finish button to complete setup.