

ASUS[®] CUW-B

Socket 370 Baby AT
Intel[®] 810 Motherboard

USER'S MANUAL

USER'S NOTICE

No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except documentation kept by the purchaser for backup purposes, without the express written permission of ASUSTeK COMPUTER INC. ("ASUS").

ASUS PROVIDES THIS MANUAL "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ASUS, ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF PROFITS, LOSS OF BUSINESS, LOSS OF USE OR DATA, INTERRUPTION OF BUSINESS AND THE LIKE), EVEN IF ASUS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES ARISING FROM ANY DEFECT OR ERROR IN THIS MANUAL OR PRODUCT.

Product warranty or service will not be extended if: (1) the product is repaired, modified or altered, unless such repair, modification or alteration is authorized in writing by ASUS; or (2) the serial number of the product is defaced or missing.

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

- QuickStart and JumperFree are trademarks of ASUSTeK Computer Inc.
- Intel, LANDesk, and Pentium are registered trademarks of Intel Corporation.
- IBM and OS/2 are registered trademarks of International Business Machines.
- XGstudio and SoftSynthesizer are trademarks of Yamaha Corporation.
- Symbios is a registered trademark of Symbios Logic Corporation.
- Windows and MS-DOS are registered trademarks of Microsoft Corporation.
- Adobe and Acrobat are registered trademarks of Adobe Systems Incorporated.

The product name and revision number are both printed on the product itself. Manual revisions are released for each product design represented by the digit before and after the period of the manual revision number. Manual updates are represented by the third digit in the manual revision number.

For previous or updated manuals, BIOS, drivers, or product release information, contact ASUS at <http://www.asus.com.tw> or through any of the means indicated on the following page.

SPECIFICATIONS AND INFORMATION CONTAINED IN THIS MANUAL ARE FURNISHED FOR INFORMATIONAL USE ONLY, AND ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE, AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY ASUS. ASUS ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS OR INACCURACIES THAT MAY APPEAR IN THIS MANUAL, INCLUDING THE PRODUCTS AND SOFTWARE DESCRIBED IN IT.

Copyright © 1999 ASUSTeK COMPUTER INC. All Rights Reserved.

Product Name:	ASUS CUW-B
Manual Revision:	1.02 E483
Release Date:	December 1999

ASUS CONTACT INFORMATION

ASUSTeK COMPUTER INC. (Asia-Pacific)

Marketing

Address: 150 Li-Te Road, Peitou, Taipei, Taiwan 112
Telephone: +886-2-2894-3447
Fax: +886-2-2894-3449
Email: info@asus.com.tw

Technical Support

MB/Others (Tel): +886-2-2890-7121 (English)
Notebook (Tel): +886-2-2890-7122 (English)
Desktop/Server (Tel): +886-2-2890-7123 (English)
Fax: +886-2-2895-9254
Email: tsd@asus.com.tw
WWW: www.asus.com.tw
FTP: ftp.asus.com.tw/pub/ASUS

ASUS COMPUTER INTERNATIONAL (America)

Marketing

Address: 6737 Mowry Avenue, Mowry Business Center, Building 2
Newark, CA 94560, USA
Fax: +1-510-608-4555
Email: tmd1@asus.com

Technical Support

Fax: +1-510-608-4555
BBS: +1-510-739-3774
Email: tsd@asus.com
WWW: www.asus.com
FTP: ftp.asus.com/Pub/ASUS

ASUS COMPUTER GmbH (Europe)

Marketing

Address: Harkortstr. 25, 40880 Ratingen, BRD, Germany
Fax: +49-2102-442066
Email: sales@asuscom.de (for marketing requests only)

Technical Support

Hotline: MB/Others: +49-2102-9599-0 Notebook: +49-2102-9599-10
Fax: +49-2102-9599-11
Support (Email): www.asuscom.de/de/support (for online support)
WWW: www.asuscom.de
FTP: ftp.asuscom.de/pub/ASUSCOM

CONTENTS

1. INTRODUCTION	7
1.1 How This Manual Is Organized	7
1.2 Item Checklist	7
2. FEATURES	8
2.1 The ASUS CUW-B Motherboard	8
2.1.1 Specifications	8
2.1.2 Optional Components	9
2.1.3 Performance	10
2.1.4 Intelligence	11
2.2 CUW-B Motherboard Components	12
2.3 CUW-B Component Locations	13
3. HARDWARE SETUP	14
3.1 Motherboard Layout	14
3.2 Layout Contents	15
3.3 Hardware Setup Procedure	17
3.4 Motherboard Settings	17
3.5.1 General DIMM Notes	24
3.5 System Memory (DIMM)	24
3.5.2 DIMM Installation	25
3.6 Central Processing Unit (CPU)	26
3.7 Expansion Cards	27
3.7.1 Expansion Card Installation Procedure	27
3.7.2 Assigning IRQs for Expansion Cards	28
3.7.3 Assigning DMA Channels for ISA Cards	30
3.7.4 Audio Modem Riser (AMR) Slot	30
3.8 External Connectors	31
3.9 Starting Up the First Time	43
4. BIOS SETUP	45
4.1 Managing and Updating Your BIOS	45
4.1.1 Upon First Use of the Computer System	45
4.1.2 Updating BIOS Procedures	46
4.2 BIOS Setup Program	49
4.2.1 BIOS Menu Bar	50
4.2.2 Legend Bar	50
4.3 Main Menu	52
4.3.1 Primary & Secondary Master/Slave	53
4.4 Advanced Menu	58
4.4.1 Chip Configuration	62
4.4.2 I/O Device Configuration	64
4.4.3 PCI Configuration	66
4.4.4 Shadow Configuration	69

CONTENTS

4.5	Power Menu	70
4.5.1	Power Up Control	72
4.5.2	Hardware Monitor	74
4.6	Boot Menu	75
4.7	Exit Menu	77
5.1	Operating Systems	79
5.2	Starting Windows For the First Time	79
5.	SOFTWARE SETUP	81
5.3	ASUS Smart Motherboard Support CD	81
5.4	LDCM Local Setup	84
5.5	LDCM Administrator Setup	86
5.6	ASUS PC Probe	89
5.7	ASUS LiveUpdate	90
5.8	Driver	91
5.9	Other	94
5.10	Uninstalling Programs	102
6.	SOFTWARE REFERENCE	103
6.1	Display Properties	103
6.2	ASUS PC Probe	107
6.3	ASUS LiveUpdate	112
6.4	Using Yamaha XGstudio Player	113
6.5	Using Yamaha XGstudio Mixer	114
6.6	Hardware Information	116
7.	APPENDIX	117
7.1	PCI-L101 Fast Ethernet Card	117
INDEX		119

FCC & DOC COMPLIANCE

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits 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 manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

WARNING! Any changes or modifications to this product not expressly approved by the manufacturer could void any assurances of safety or performance and could result in violation of Part 15 of the FCC Rules.

Reprinted from the Code of Federal Regulations #47, part 15.193, 1993. Washington DC: Office of the Federal Register, National Archives and Records Administration, U.S. Government Printing Office.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

1. INTRODUCTION

1.1 How This Manual Is Organized

This manual is divided into the following sections:

- | | |
|------------------------------|--|
| 1) INTRODUCTION | Manual information and checklist |
| 2) FEATURES | Product information and specifications |
| 3) HARDWARE SETUP | Instructions on setting up the motherboard |
| 4) BIOS SETUP | Instructions on setting up the BIOS software |
| 5) SOFTWARE SETUP | Instructions on setting up the included software |
| 6) SOFTWARE REFERENCE | Reference material for the included software |
| 7) APPENDIX | Optional items and general reference |

1.2 Item Checklist

Check that your package is complete. If you discover damaged or missing items, please contact your retailer.

- (1) ASUS Motherboard
- (1) 40-pin 80-conductor ribbon cable for internal UltraDMA/66 or UltraDMA/33 IDE drives
- (1) Ribbon cable for (1) 5.25" and (2) 3.5" floppy disk drives
- (1) Serial port connectors with bracket
- (1) VGA connector with bracket
- (1) Parallel & PS/2 Mouse connector set with bracket
- (1) Connector set for audio input/output and game/MIDI port
- (1) Bag of spare jumper caps
- (1) Support CD with drivers and utilities
- (1) This Motherboard User's Manual

- LCD connector with bracket (for LCD model only)
- ASUS USB/MIR module (optional)
- ASUS IrDA-compliant Infrared module (optional)
- ASUS Consumer Infrared set (optional)
- ASUS PCI-L101 Wake-On-LAN 10/100 ethernet card (optional)

2. FEATURES

2.1 The ASUS CUW-B Motherboard

The CUW-B motherboard from ASUS is carefully designed for the demanding PC user who wants many smart features in a small package. So what's so smart about the ASUS CUW-B motherboard?

2.1.1 Specifications

- **Latest Intel Processor Support!**

Intel Pentium III E	100MHz FSB, Coppermine core	FC-PGA
Intel Celeron	66MHz FSB, Mendocino core	PPGA
- **Intel 810 Chipset!** Features 100/66MHz FSB Intel 810 chipset (GMCH0+ICH) with the Accelerated Hub Architecture, which provides direct connections between the 810 chipset and subsystems such as IDE controllers, USB controllers, and PCI add-on cards.
- **Multi-Cache!** Supports processors with 256, 128, or 0KB Pipelined Burst Level 2 Cache.
- **Integrated Graphics!** Controller supports 3D hyper pipelined architecture, parallel data processing and compression, precise pixel interpolation, full 2D hardware acceleration, and motion video acceleration.
- **ASUS Graphics Driver!** You can gain about 12% performance over that of the standard graphics driver (2D high-end graphics WinMark) using ASUS' custom graphics driver. ASUS custom graphics driver also provides more features and provides selection of higher refresh rates and resolutions.
- **Smart Audio!** Software Audio and Hardware AC'97 V2.1 Codec compliant, Analog Device's 3D sound circuitry, sample rate conversion from 7kHz to 48kHz.
- **3D Positional Audio!** Brings new levels of realism to games with sounds being positioned interactively around the user, making them truly part of the 3D virtual experience. Better music reproduction is possible with MIDI utilizing Wavetable synthesis.
- **Remote PC Management!** Alert-on-LAN allows network administrators to remotely manage PCs by enabling PCs to send alerts through the network interface to the network administrator when there is hardware/operating system failure or evidence of tampering.
- **Versatile Memory Support!** DRAM controller supports asymmetrical addressing and three DIMM sockets support Intel PC100-compliant SDRAMs (16, 32, 64, 128, or 256MB) up to 512MB. (supports a maximum of 4 sides)
- **JumperFree™ Mode!** Allows processor settings and easy overclocking of frequency and Vcore voltage all through BIOS setup when JumperFree™ mode is enabled. Easy-to-use DIP switches instead of jumpers are included in case you want to manually adjust the processor's external frequency.
- **Smart Slots!** Provides four 32-bit PCI (rev 2.2) expansion slots and one 16-bit ISA expansion slot. PCI supports up to 133MB/s maximum throughput. Each PCI slot can support a Bus Master PCI card (such as SCSI or LAN cards).
- **Latest Low Pin Count Multi-I/O:** Provides two high-speed UART compatible serial ports and one parallel port with EPP and ECP capabilities.

2. FEATURES

- **Integrated IDE!** Controller supports UltraDMA/66 up to 66MB/s, UltraDMA/33 up to 33MB/s, and PIO Mode 4 up to 17MB/s.
- **Peripheral Wake-Up!** Supports Wake-On-LAN, Wake-On-Ring, Keyboard Wake-Up, BIOS Wake-Up, and wake-up by infrared remote control.
- **AMR Slot!** Audio Modem Riser slot supports a very affordable audio and/or modem riser card.
- **Around-the-Clock Intrusion Detection!** Chassis intrusion circuitry can log chassis panel open events into LDCM (available in near future for this motherboard). The onboard battery supports detection even when normal power is removed and through a new design, battery drain is even lower than the RTC used for keeping time!
- **Firmware Hub!** Provides security and other latest power computing features.
- **Monitoring for your PC's Health!** Provided ASUS PC Probe or Intel LDCM allows PC health monitoring.
- **Enhanced ACPI & Anti-Boot Virus Protection!** Programmable BIOS (Flash EEPROM), offering enhanced ACPI for Windows 98 compatibility, built-in firmware-based virus protection, and autodetection of most devices for virtually automatic setup.
- **Smart BIOS!** 4Mbit firmware gives a new easy-to-use interface which provides more control and protection over the motherboard. Provides Vcore and CPU/SDRAM frequency adjustments, boot block write protection, and HD/SCSI/MO/ZIP/CD/Floppy boot selection. Hardware random number generator supports new security software for data protection and secured Internet transactions.

2.1.2 Optional Components

The following onboard components are optional at the time of purchase:

- **PCI Audio!** Provides Crystal CS4280 PCI audio chipset with 3D surround and positioning capability. Includes complete online help to guide you through the audio software.
- **Space Savings! Digital Flat Panel (DFP) Interface** gives a direct digital connection for connecting a **digital** flat panel (analog flat panel must be connected to the VGA-out connector) to your PC. This interface transmits sharp, bright images by eliminating digital-to-analog and analog-to-digital conversions, which can accumulate noise and degrade image quality.
- **No Messy Wires!** Integrated Consumer IR and Serial IR supports an optional remote control package for wireless interfacing with external peripherals, personal gadgets, or an optional remote controller.

2. FEATURES

2.1.3 Performance

- **UltraPerformance!** Onboard IDE Bus Master controller with two connectors that support four IDE devices in two channels. Supports UltraDMA/66, UltraDMA/33 (IDE DMA Mode 2), PIO Modes 3 & 4, and supports Enhanced IDE devices, such as Tape Backup, CD-ROM, CD-R/RW, and LS-120 drives.
- **Double or Quadruple the IDE Transfer Speed!** IDE transfers using UltraDMA/33 Bus Master IDE can handle rates up to 33MB/s and up to 66MB/s using UltraDMA/66 technology. The best of all is that these new technology is compatible with existing ATA-2 IDE specifications so there is no need to upgrade current IDE devices or cables.
- **Concurrent PCI!** Concurrent PCI allows multiple PCI transfers from PCI master buses to memory to CPU.
- **SDRAM Optimized Performance!** ASUS smart series motherboards support the new generation memory, Synchronous Dynamic Random Access Memory (SDRAM), which increases the data transfer rate to 800MB/s max using PC100-compliant SDRAM.
- **ACPI Ready!** ACPI (Advanced Configuration and Power Interface) is also implemented on all ASUS smart series motherboards. ACPI provides more Energy Saving Features for future operating systems (OS) supporting OS Direct Power Management (OSPM) functionality. With these features implemented in the OS, PCs can be ready around the clock, yet satisfy all the energy saving standards. To fully utilize the benefits of ACPI, an ACPI-supported OS, such as Windows 98, must be used.
- **Suspend and Go!** Suspend-To-RAM (STR) provides maximum power savings as an alternative to leaving the computer ON and QuickStart™ so that you do not fall asleep waiting for system bootup. (STR requires OS support and does not support ISA cards; ISA cards may fail to work coming out of STR mode.)
- **New Compliant!** Both the BIOS and hardware levels of the motherboard meet PC'99 compliancy. The new PC'99 requirements for systems and components are based on the following high-level goals: Support for Plug and Play compatibility and power management for configuring and managing all system components, and 32-bit device drivers and installation procedures for Windows 95/98/NT. Color-coded connectors and descriptive icons make identification easy as required by PC'99.
- **Highest Audio Quality!** AC'97 DAC/ADC built into the audio CODEC reduces noise to improve audio quality and performance for a SNR (signal to noise ratio) of +90dB. These features greatly improve voice synthesis and recognition.
- **Extreme Graphics!** The integrated motion compensation allows for smooth MPEG1 or MPEG2 video playback. Fast 3D graphics engine allows for an exciting gameplay experience.

2. FEATURES

2.1.4 Intelligence

- **Fan Status Monitoring and Alarm!** To prevent system overheat and system damage, the CPU, power supply, and system fans can be monitored for RPM and failure. All the fans are set for its normal RPM range and alarm thresholds.
- **Temperature Monitoring and Alert!** To prevent system overheat and system damage, this motherboard supports Socket 370 processor thermal sensing and auto-protection.
- **Voltage Monitoring and Alert!** System voltage levels are monitored to ensure stable current to critical motherboard components. Voltage specifications are more critical for future processors, so monitoring is necessary to ensure proper system configuration and management.
- **System Resources Alert!** Today's operating systems such as Windows 98, Windows NT, and OS/2, require much more memory and hard drive space to present enormous user interfaces and run large applications. The system resource monitor will warn the user before the system resources are used up to prevent possible application crashes. Suggestions will give the user information on managing their limited resources more efficiently.
- **Dual Function Power Button!** Through the BIOS, the power button can be defined as the "Standby" (a.k.a. Suspend or Sleep) button or as the Soft-Off (see ATX Power Switch Lead in **3.8 External Connectors** for more information) button. Regardless of the setting, pushing the power button for more than 4 seconds will enter the Soft-Off mode.
- **Remote Ring On (requires modem)!** This allows a computer to be turned on remotely through an internal or external modem. With this benefit on-hand, users can access any information from their computers from anywhere in the world!
- **Message LED (requires ACPI OS support)!** Chassis LEDs now act as information providers. Through the way a particular LED illuminates, the user can determine the stage the computer is in. A simple glimpse provides useful information to the user.
- **Peripheral Power Up!** Keyboard and/or CIR power up can be enabled or disabled through BIOS setup to allow the computer to be powered ON using your keyboard and/or Consumer IR device.

2. FEATURES

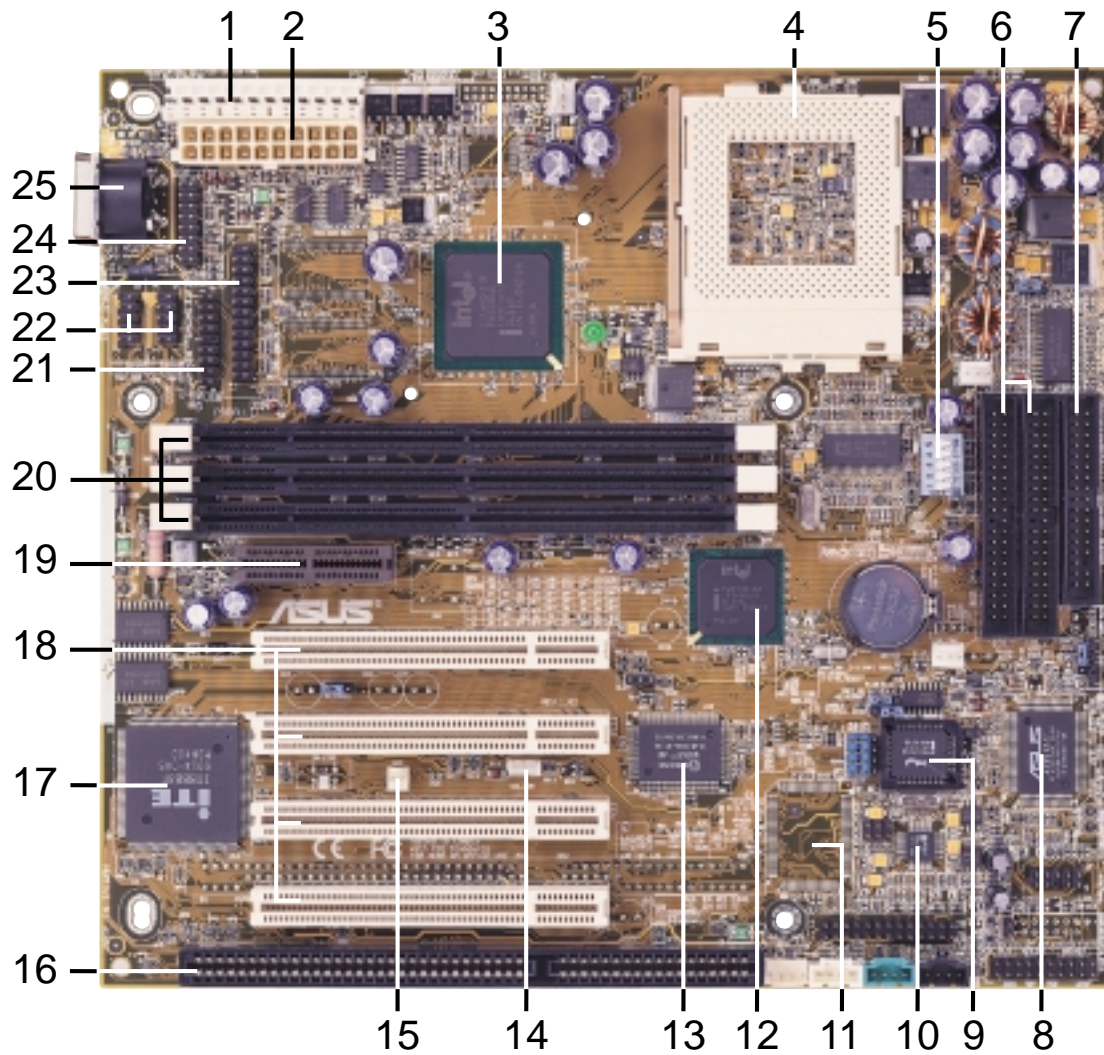
2.2 CUW-B Motherboard Components

See opposite page for locations.

	Location
Processor Support	Socket 370 for Coppermine/Mendocino Processors 4
	Feature Setting DIP Switches 5
	66MHz to 150MHz bus support (32 external clock settings)
	100/66 System Bus support
Chipsets	Intel 810 Integrated Graphics Chipset 3
	Graphics Memory Controller Hub (GMCH0)
	4Mbit Firmware Hub (FWH) 9
	Intel I/O Controller Hub (ICH) 12
	Low Pin Count Multi-I/O Chipset 13
Main Memory	Maximum 512MB support
	3 DIMM Sockets 21
	PC100 SDRAM support
Expansion Slots	1 ISA Slot 16
	PCI to ISA Bridge 17
	4 PCI Slots 18
	1 Audio Modem Riser (AMR) Slot 19
System I/O	2 IDE Connectors (UltraDMA33/66 Support) 6
	1 Floppy Disk Driver Connector 7
	1 PS/2 Mouse/USB/IR Module Connector 21
	2 Serial Port Headers 22
	1 Parallel Connector 23
	1 VGA Header 24
	1 Keyboard Connector 25
3D Graphics	Graphics Memory Controller Hub (GMCH0)
	1 VGA Monitor Output Connector 22
Audio	AC'97 V2.1 Audio Codec 10
	Crystal PCI Audio (optional) 11
Network Features	Wake-On-LAN Connector 14
	Wake-On-Ring Connector 15
Hardware Monitoring	System Voltage Monitoring (integrated in ASUS ASIC) 8
	3 Fan Power and Speed Monitoring Connectors
Power	AT Power Supply Connector 1
	ATX Power Supply Connector 2
Form Factor	Baby AT

2. FEATURES

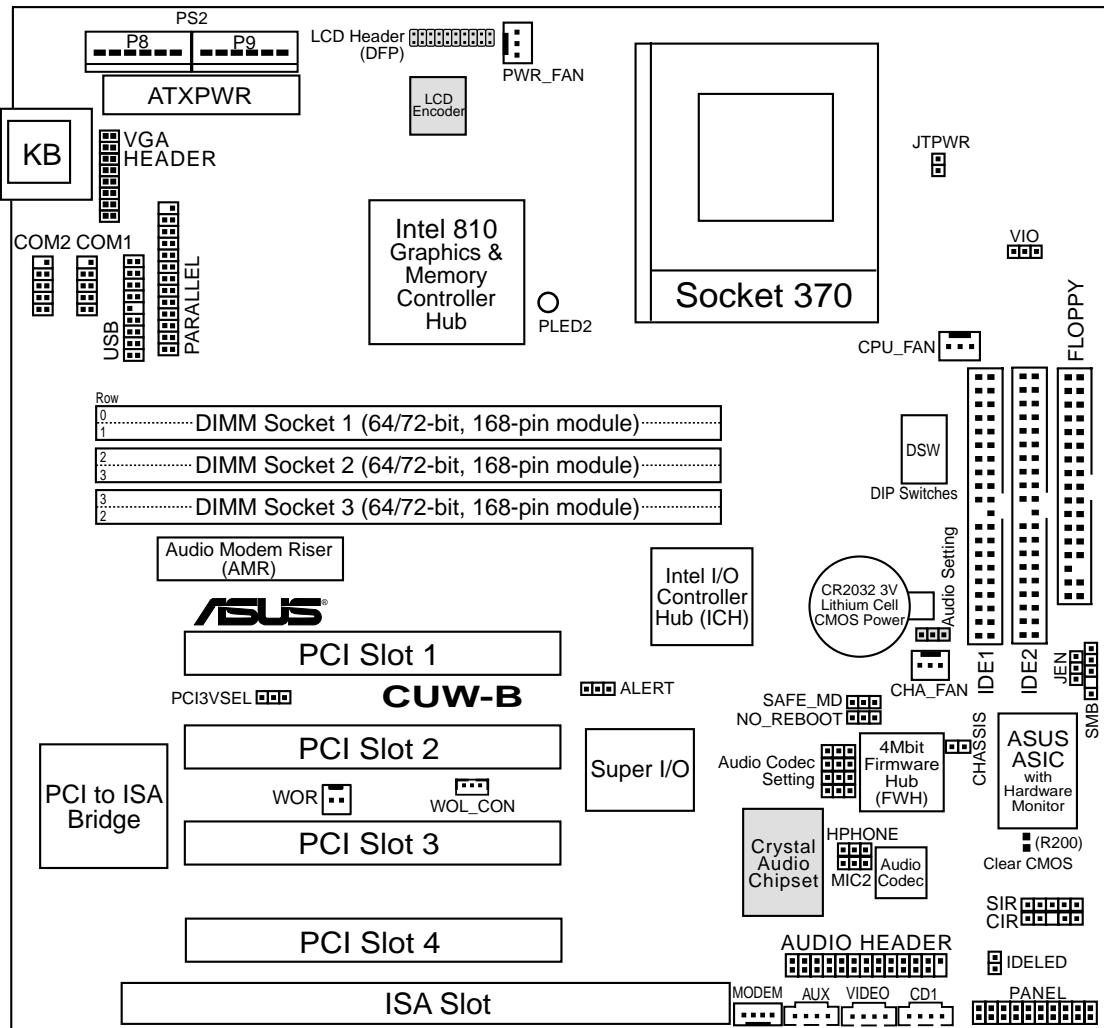
2.3 CUW-B Component Locations



2. FEATURES
Component Locations

3. HARDWARE SETUP

3.1 Motherboard Layout



(Grayed items are optional at the time of purchase.)

3. HW SETUP
Motherboard Layout

3. HARDWARE SETUP

3.2 Layout Contents

Motherboard Settings

- | | |
|--------------|--|
| 1) JEN | p.18 JumperFree™ Mode (Enable/Disable) |
| 2) VIO | p.18 I/O Voltage Setting (Normal/+3.6V) |
| 3) AUDIO | p.19 Onboard Audio Setting (Enable/Disable) (optional) |
| 4) CODEC | p.19 Onboard Audio Codec Setting (Enable/Disable) |
| 5) PCI3VSEL | p.20 PCI 3Volt Setting (3 Volt/3 VSB) |
| 6) SAFE_MD | p.20 Safe Mode (Normal/Safe Mode) |
| 7) NO_REBOOT | p.21 Automatic Timeout Reboot (Normal/No Reboot) |
| 8) DSW | p.22 CPU External Clock Frequency Setting |

Expansion Slots

- | | |
|---------------------------|---|
| 1) DIMM1, DIMM2, DIMM3 | p.25 168-Pin DIMM Memory Support |
| 2) Socket 370 | p.26 Central Processing Unit (CPU) Socket |
| 3) PCI1, PCI2, PCI3, PCI4 | p.28 32-bit PCI Bus Expansion Slots |
| 4) ISA | p.29 16-bit ISA Bus Expansion Slot |
| 5) AMR | p.30 Audio Modem Riser Slot |

Connectors

- | | |
|--------------------------|--|
| 1) KB | p.31 Keyboard Connector (6-pin female) |
| 2) FLOPPY | p.31 Floppy Disk Drive Connector (34-1 pins) |
| 3) IDE1/IDE2 | p.32 Primary/Secondary IDE Connectors (Two 40-1 pins) |
| 4) IDELED | p.32 IDE Activity LED Lead (2 pins) |
| 5) PARALLEL | p.33 Parallel Port Connector (25-pin female) |
| 6) WOL_CON | p.33 Wake-On-LAN Connector (3 pins) |
| 7) WOR | p.34 Wake-On-Ring Connector (2 pins) |
| 8) CHA_, CPU_, PWR_FAN | p.34 Chassis, CPU, Power Supply Fan Connectors (Three 3-pin) |
| 9) MODEM,AUX, VIDEO, CD1 | p.35 Internal Audio Connectors (Four 4-pins) |
| 10) AUDIOCON | p.35 Audio Jack Header (26-1 pins) |
| 11) SIR/CIR | p.36 Serial/Consumer IR Module Connectors (10-1 pins) |
| 12) COM1/COM2 | p.36 Serial Port Headers (Two 9-pin male) |
| 13) SMB | p.37 SMBus Connector (5-1 pins) |
| 14) DFP | p.37 Digital LCD Header (20 pins) (optional) |
| 15) VGA | p.38 Monitor (VGA) Output Header (16-pin male) |
| 16) MIC2 | p.38 Internal Microphone Connector (3 pins) |
| 17) HPHONE | p.38 True-Level Line Out Header (3 pins) |
| 18) CHASSIS | p.39 Chassis Intrusion Connector (2 pins) |
| 19) USBMIR | p.39 USB / IR / PS/2 Mouse Module Header (18-1 pins) |
| 20) ALERT | p.40 Alert-On-LAN (3 pins) |

3. HARDWARE SETUP

21) PLED (PANEL)	p.40 System Power LED Lead (3-1 pins)
22) KEYLOCK (PANEL)	p.40 Keyboard Lock Switch Lead (2 pins)
23) SPEAKER (PANEL)	p.40 System Warning Speaker Connector (4 pins)
24) RESET (PANEL)	p.40 Reset Switch Lead (2 pins)
25) PWR SW. (PANEL)	p.41 ATX Power / Soft-Off Switch Lead (2 pins)
26) SMI (PANEL)	p.41 System Management Interrupt Switch Lead (2 pins)
27) TB LED (PANEL)	p.41 System Message LED (2 pins)
28) ATXPWR	p.41 ATX Power Supply Connector (20 pins)
29) PS2	p.42 AT Power Supply Connector (12 pins)
30) JTPWR	p.42 Thermal Sensor Connector (2 pins)

3. HARDWARE SETUP

3.3 Hardware Setup Procedure

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

- **Check Motherboard Settings**
- **Install Memory Modules**
- **Install the Central Processing Unit (CPU)**
- **Install Expansion Cards**
- **Connect Ribbon Cables, Panel Wires, and Power Supply**

3.4 Motherboard Settings

This section explains in detail how to change your motherboard's function settings through the use of switches and/or jumpers.

WARNING! Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling 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 the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the component whenever the components are separated from the system.

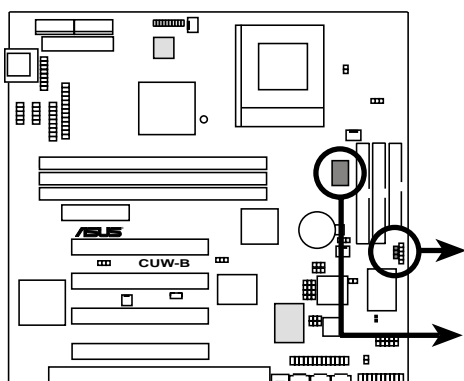
3. HARDWARE SETUP

1) JumperFree™ Mode Setting (JEN)

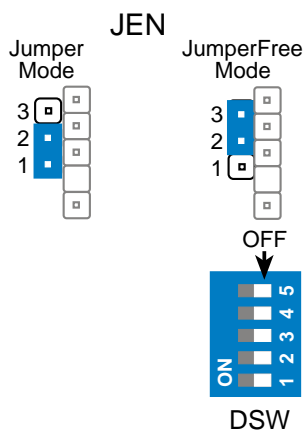
This jumper allows you to enable or disable the JumperFree™ mode. The JumperFree™ mode allows processor settings to be made through the BIOS setup (see 4.4 Advanced Menu).

NOTE: Set all DIP switches (DSW) to OFF for JumperFree™ mode.

Setting	JEN
Disable (Jumper)	[1-2] (default)
Enable (JumperFree)	[2-3]



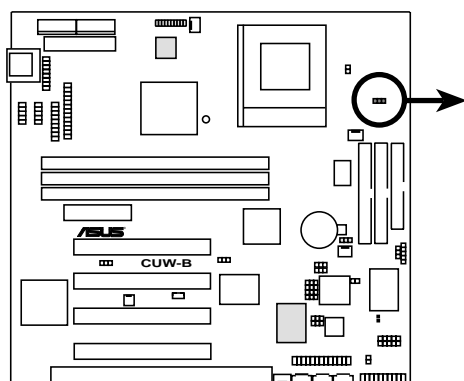
CUW-B JumperFree™ Mode Setting



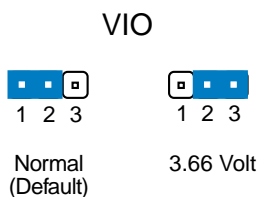
2) I/O Voltage Setting (VIO)

This jumper allows you to select the voltage supplied to the DRAM, chipset, PCI, and the CPU's I/O buffer. The default voltage should be used unless processor overclocking requires a higher voltage.

Setting	VIO
Normal	[1-2] (default)
3.66V	[2-3]



CUW-B I/O Voltage Setting



WARNING! Using a higher voltage may help when overclocking but may result in the shortening of your computer component's life. It is strongly recommended that you leave this setting on its default.

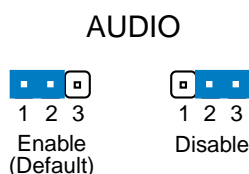
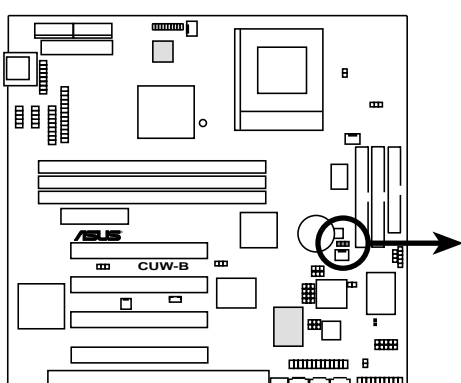
3. HARDWARE SETUP

3) Onboard Audio Setting (AUDIO)

(only with onboard PCI audio)

The onboard 32-bit PCI audio may be enabled or disabled using this jumper. Disable the onboard audio if you are using an ISA or PCI audio card on any of the expansion slots or a primary AMR on the AMR slot (see **3.7.4 Audio Modem Riser (AMR) Slot**). If using an ISA or PCI audio expansion card, **Onboard AC'97 Audio Controller** in **4.4.2 I/O Device Configuration** must also be disabled.

Setting	AUDIO
Enable	[1-2] (default)
Disable	[2-3]

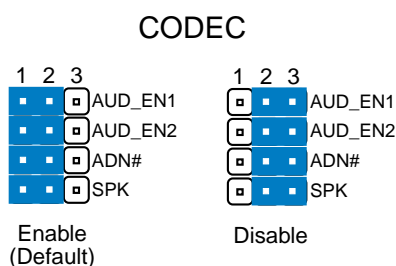
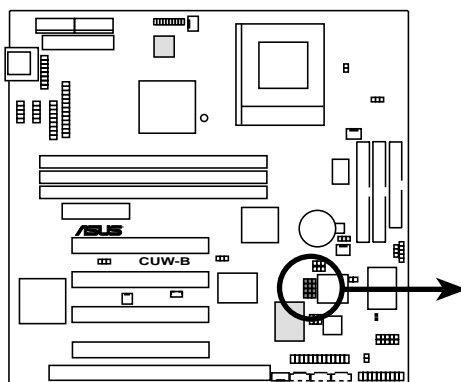


CUW-B Onboard Audio Setting

4) Onboard Audio Codec Setting (CODEC)

The onboard audio CODEC may be enabled or disabled using all of these jumpers. Disable the onboard audio CODEC if you are using an ISA or PCI audio card on any of the expansion slots or a primary AMR on the AMR slot (see AMR Slot later in this section). If using an ISA or PCI audio expansion card, **Onboard AC'97 Audio Controller** in **4.4.2 I/O Device Configuration** must also be disabled.

Setting	CODEC
Enable	[1-2] [1-2] [1-2] [1-2]
Disable	[2-3] [2-3] [2-3] [2-3]



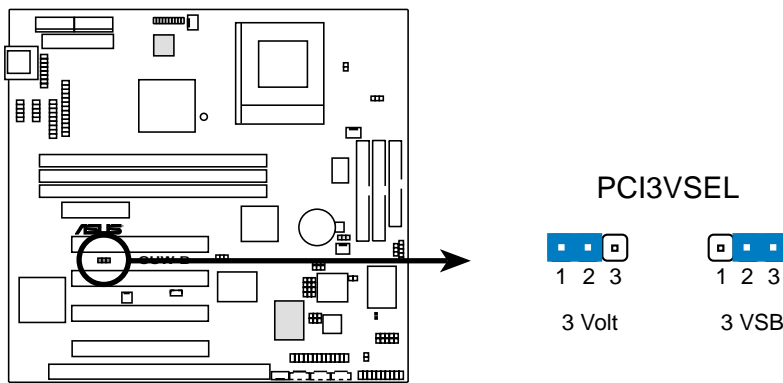
CUW-B Audio Codec Setting

3. HARDWARE SETUP

5) PCI 3Volt Setting (PCI3VSEL)

This jumper allows you to select the voltage supplied to PCI devices. If you have PCI devices that require auxiliary power, set this jumper to 3 VSB.

<u>Setting</u>	<u>PCI3VSEL</u>
3 Volt	[1-2] (default)
3 VSB	[2-3]

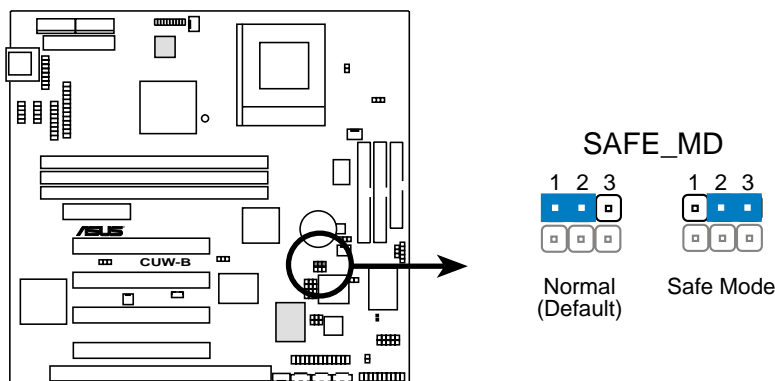


CUW-B PCI 3Volt Selection

6) Safe Mode Setting (SAFE_MD)

Usually socket 370 processors have locked frequency multiples. In this case, there is no way to exceed the specified multiple whether through motherboard settings or BIOS setup. With unlocked socket 370 processors, exceeding the specified multiple is possible through BIOS setup. Exceeding the specified multiple may result in hanging during bootup. If this occurs, enable Safe Mode to force a multiple of 2 in order to enter BIOS setup to correct the problem.

<u>Setting</u>	<u>SAFE_MD</u>
Normal	[1-2] (default)
Safe Mode	[2-3]



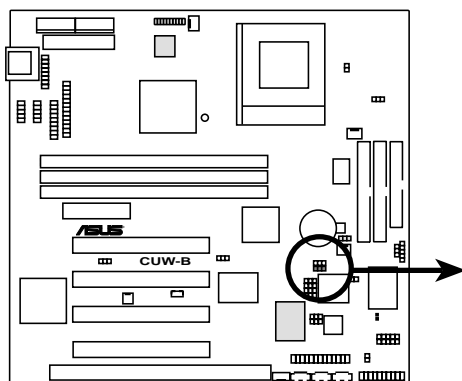
CUW-B Safe Mode Setting

3. HARDWARE SETUP

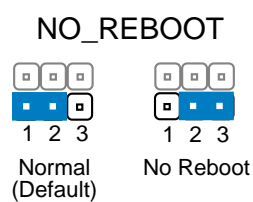
7) Automatic Timeout Reboot Setting (NO_REBOOT)

The motherboard is set so that when the BIOS detects a hang (timeout) during bootup, the motherboard will automatically reboot. If rebooting is repeating ineffectively, set this jumper to *No Reboot* to disable auto-reboot.

Setting	<u>NO_REBOOT</u>
Normal	[1-2] (default)
No Reboot	[2-3]



CUW-B Reboot Setting

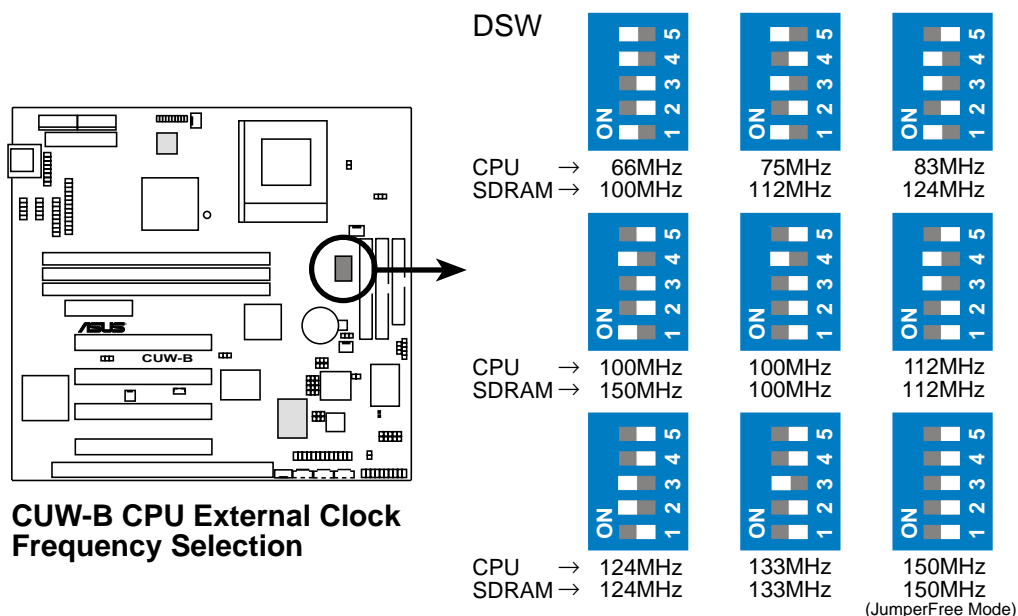


3. HARDWARE SETUP

8) CPU External Frequency Setting (DSW)

This option tells the clock generator what frequency to send to the CPU, DRAM, and the PCI bus. This allows the selection of the CPU's *External* frequency. The CPU External Frequency multiplied by the Frequency Multiple equals the CPU's *Internal* frequency (the advertised CPU speed). **NOTE:** You may set the memory speed independently from the CPU External Frequency. Depending on your memory type PC66 (66MHz) or PC100 (100MHz), select the appropriate "SDRAM" speed along with the appropriate "CPU" speed.

IMPORTANT: Only 66MHz CPU and 100MHz SDRAM should be used on this motherboard with current 66MHz Socket 370 processors. Other settings are for experienced users only. When JumperFree mode is enabled, use BIOS setup in place of these switches (see **CPU Speed** in *4.4 Advanced Menu*). Only selected switches are illustrated, see the next page for a complete frequency listing. **NOTE:** In JumperFree mode, all dip switches (DSW) must be set to OFF.



NOTE: Frequency Multiple settings are not available here because usually Socket 370 processors have locked Frequency Multiples. If your Socket 370 processor does not have a locked Frequency Multiple, you must use **CPU Core:Bus Freq. Multiple** in *4.4 Advanced Menu* of the BIOS setup to set the Frequency Multiple. If the Frequency Multiple is locked, setting the Frequency Multiple in BIOS setup will have no effect.

WARNING! CPU frequencies above 66MHz exceed the specifications for current Celeron processors and are not guaranteed to be stable. For Coppermine processors, CPU frequencies other than the recommended bus frequencies are not guaranteed to be stable. Premature wearing of the processor may result when overclocking. Be sure that the DIMM you use can handle the specified SDRAM MHz or else bootup will not be possible.

3. HARDWARE SETUP

External Frequency Table for Intel Celeron (PPGA) Processors

The following table is for use by experienced motherboard installers only. Overclocking can result in system instability or even shortening the life of the processor. Bold settings are also shown on the previous page.

CPU (MHz)	SDRAM (MHz)	PCI (MHz)	Frequency Selection Switches				
			1	2	3	4	5
67.81	101.71	33.90	[ON]	[ON]	[ON]	[ON]	[ON]
70.00	105.00	35.00	[ON]	[OFF]	[ON]	[ON]	[ON]
72.01	108.01	36.00	[ON]	[ON]	[OFF]	[ON]	[ON]
66.67	100.00	33.33	[ON]	[OFF]	[OFF]	[ON]	[ON]
73.01	109.51	36.50	[ON]	[ON]	[ON]	[OFF]	[ON]
75.00	112.50	37.50	[ON]	[OFF]	[ON]	[OFF]	[ON]
77.00	115.50	38.50	[ON]	[ON]	[OFF]	[OFF]	[ON]
78.01	117.01	39.00	[ON]	[OFF]	[OFF]	[OFF]	[ON]
80.00	120.00	40.00	[ON]	[ON]	[ON]	[ON]	[OFF]
83.00	124.51	41.50	[ON]	[OFF]	[ON]	[ON]	[OFF]
84.49	126.74	42.25	[ON]	[ON]	[OFF]	[ON]	[OFF]
100.00	150.00	50.00	[ON]	[OFF]	[OFF]	[ON]	[OFF]
86.08	129.12	43.04	[ON]	[ON]	[ON]	[OFF]	[OFF]
88.00	132.00	44.00	[ON]	[OFF]	[ON]	[OFF]	[OFF]
90.00	135.00	45.00	[ON]	[ON]	[OFF]	[OFF]	[OFF]
95.00	142.50	47.50	[ON]	[OFF]	[OFF]	[OFF]	[OFF]
49.90	49.90	16.63	[OFF]	[ON]	[ON]	[ON]	[ON]
100.00	100.00	33.33	[OFF]	[OFF]	[ON]	[ON]	[ON]
74.85	74.85	24.95	[OFF]	[ON]	[OFF]	[ON]	[ON]
66.58	66.58	22.19	[OFF]	[OFF]	[OFF]	[ON]	[ON]
82.84	82.84	27.61	[OFF]	[ON]	[ON]	[OFF]	[ON]
89.81	89.81	29.93	[OFF]	[OFF]	[ON]	[OFF]	[ON]
94.80	94.80	31.60	[OFF]	[ON]	[OFF]	[OFF]	[ON]
100.50	100.50	33.50	[OFF]	[OFF]	[OFF]	[OFF]	[ON]
104.78	104.78	34.93	[OFF]	[ON]	[ON]	[ON]	[OFF]
111.77	111.77	37.26	[OFF]	[OFF]	[ON]	[ON]	[OFF]
114.77	114.77	38.26	[OFF]	[ON]	[OFF]	[ON]	[OFF]
100.00	100.00	33.33	[OFF]	[OFF]	[OFF]	[ON]	[OFF]
123.75	123.75	41.25	[OFF]	[ON]	[ON]	[OFF]	[OFF]
132.74	132.74	44.25	[OFF]	[OFF]	[ON]	[OFF]	[OFF]
139.75	139.75	46.58	[OFF]	[ON]	[OFF]	[OFF]	[OFF]
149.69	149.69	49.90	[OFF]	[OFF]	[OFF]	[OFF]	[OFF]

NOTE: The PCI clock is equal to 1/3 the speed of the SDRAM. PCI's specification allows for up to 33MHz, therefore using PC100-compliant DIMM and setting SDRAM to about 100MHz is recommended. For updated processor settings, please visit ASUS' web site (see ASUS CONTACT INFORMATION)

3. HARDWARE SETUP

3.5 System Memory (DIMM)

NOTE: No hardware or BIOS setup is required after adding or removing memory.

This motherboard uses only Dual Inline Memory Modules (DIMMs). Sockets are available for **3.3Volt** (power level) unbuffered Synchronous Dynamic Random Access Memory (SDRAM) of 16, 32, 64, 128MB, or 256MB.

This chipset does not support ECC. However, ECC memory modules may still be used, but the ECC function will not be available.

Memory speed setup is recommended through **SDRAM Configuration** in *4.4.1 Chip Configuration*.

Install memory in any combination as follows:

Location	168-pin DIMM SDRAM		Total Memory
DIMM1 (Rows 0&1)	Single-Sided Double-Sided	x1	
DIMM2 (Rows 2&3)	Single-Sided (must be occupied before DIMM3) Double-Sided (DIMM3 must be empty)	x1	
DIMM3 (Rows 3&2)	Single-Sided (DIMM2 must be single-sided) (Double-Sided DIMM cannot be used here!) (must be same or half DIMM2 memory size)	x1	
	Total System Memory (Max 512MB)	=	

NOTE: At the time this User's Manual was written, 256MB DIMMs are only available as Double-Sided registered memory. Using 2x2x2 SDRAM can greatly improve the onboard graphics' performance.

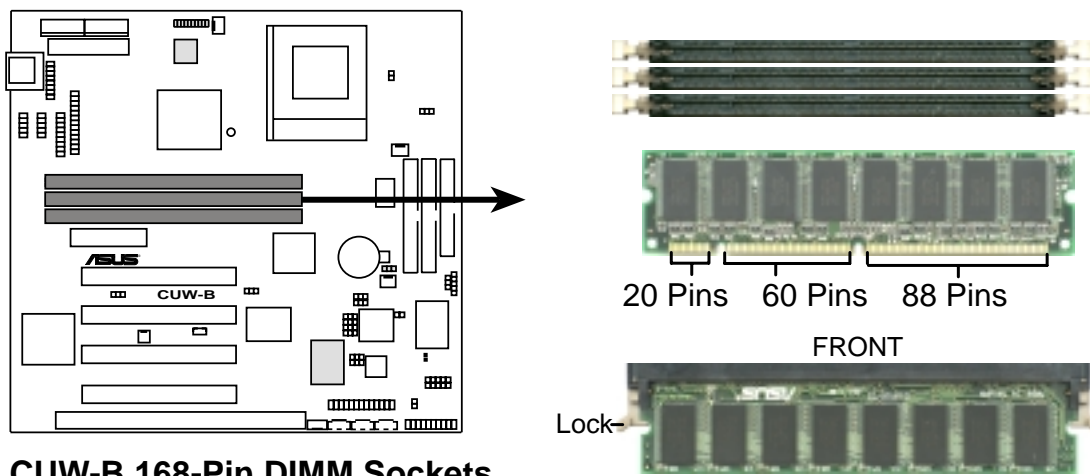
3.5.1 General DIMM Notes

- ASUS motherboards support SPD (Serial Presence Detect) DIMMs. This is the memory of choice for best performance vs. stability.
- SDRAM chips are generally thinner with higher pin density than EDO (Extended Data Output) chips.
- BIOS shows SDRAM memory on bootup screen.
- Single-sided DIMMs come in 16, 32, 64,128MB; double-sided come in 32, 64, 128, 256MB.

3. HARDWARE SETUP

3.5.2 DIMM Installation

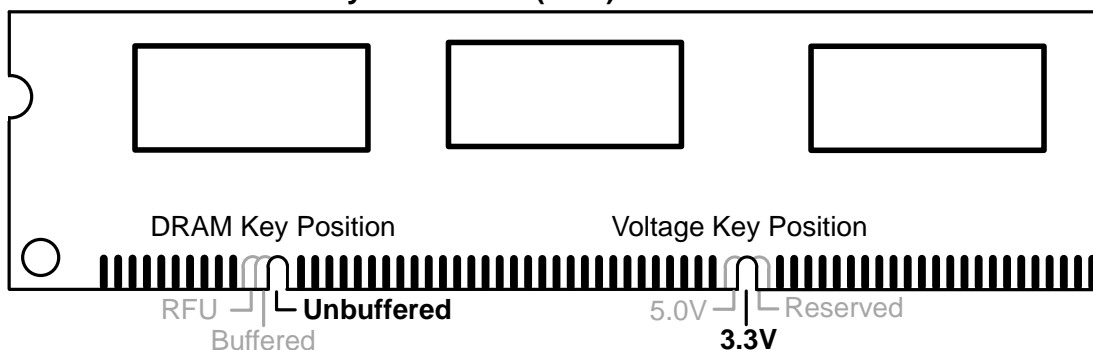
Insert the module(s) as shown. Because the number of pins are different on either side of the breaks, the module will only fit in the orientation shown. DIMMs are longer and have different pin contact on each side and therefore have a higher pin density. SIMMs have the same pin contact on both sides.



CUW-B 168-Pin DIMM Sockets

The DIMMs must be **3.3V Unbuffered** for this motherboard. To determine the DIMM type, check the notches on the DIMMs (see figure below).

168-Pin DIMM Notch Key Definitions (3.3V)



The notches on the DIMM will shift between left, center, or right to identify the type and also to prevent the wrong type from being inserted into the DIMM slot on the motherboard. You must ask your retailer the correct DIMM type before purchasing. This motherboard supports four clock signals per DIMM slot.

3. HARDWARE SETUP

3.6 Central Processing Unit (CPU)

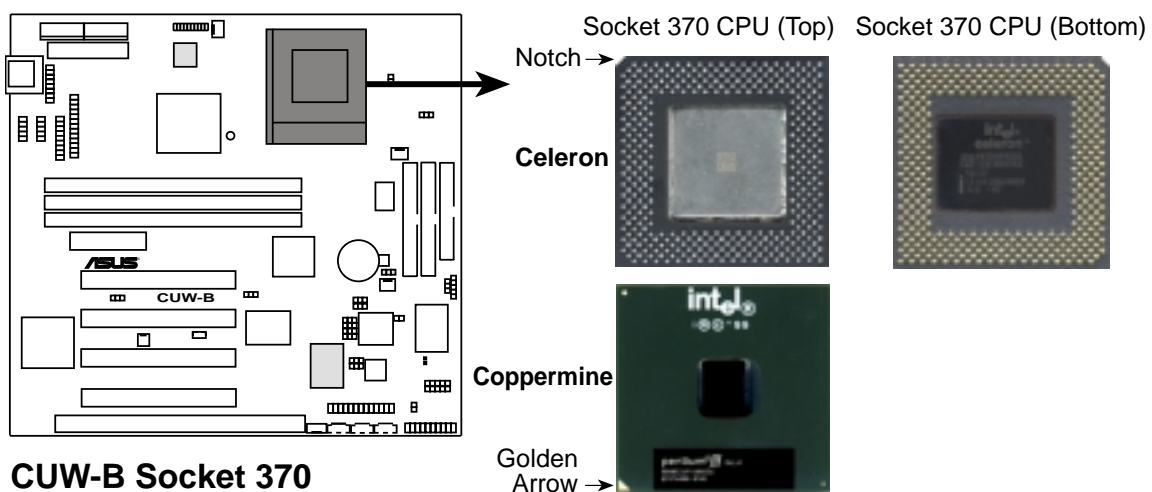
The motherboard provides a ZIF Socket 370. The CPU that came with the motherboard should have a fan attached to it to prevent overheating. If this is not the case, then purchase a fan before you turn on your system.

WARNING! Be sure that there is sufficient air circulation across the processor's heatsink by regularly checking that your CPU fan is working. Without sufficient circulation, the processor could overheat and damage both the processor and the motherboard. You may install an auxiliary fan, if necessary.

To install a CPU, first turn off your system and remove its cover. Locate the ZIF socket and open it by first pulling the lever sideways away from the socket then upwards to a 90-degree angle. Insert the CPU with the correct orientation as shown. The notched corner (or corner with gold arrow) should point towards the end of the lever. Because the CPU has a corner pin for two of the four corners, the CPU will only fit in the orientation as shown. The picture is for reference only; you should have a CPU fan that covers the face of the CPU. With the added weight of the CPU fan, no force is required to insert the CPU. Once completely inserted, close the socket's lever while holding down the CPU.

NOTE: Do not forget to set the correct Bus Frequency and Multiple (frequency multiple setting is available only on unlocked processors) for your Socket 370 processor or else boot-up may not be possible. Socket 370 processors provide internal thermal sensing so that a socket mounted thermal resistor is not needed.

CAUTION! Be careful not to scrape the motherboard when mounting a clamp-style processor fan or else damage may occur to the motherboard.



3. HARDWARE SETUP

3.7 Expansion Cards

WARNING! Make sure that you unplug your power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.

3.7.1 Expansion Card Installation Procedure

1. Read the documentation for your expansion card and make any necessary hardware or software settings for your expansion card, such as jumpers or switches.
2. Remove your computer system's cover and the bracket plate with screw on the slot you intend to use. Keep the bracket for possible future use.
3. Carefully align the card's connectors and press firmly.
4. Secure the card on the slot with the screw you removed above.
5. Replace the computer system's cover.
6. Set up the BIOS if necessary
(such as *IRQ xx Used By ISA: Yes* in PNP AND PCI SETUP)
7. Install the necessary software drivers for your expansion card.

3. HARDWARE SETUP

3.7.2 Assigning IRQs for Expansion Cards

Some expansion cards need an IRQ to operate. Generally, an IRQ must be exclusively assigned to one use. In a standard design, there are 16 IRQs available but most of them are already in use, leaving 6 IRQs free for expansion cards. If your motherboard has **PCI** audio onboard, an additional IRQ will be used. If your motherboard also has **MIDI** enabled, another IRQ will be used, leaving 4 IRQs free.

The following table lists the default IRQ assignments for standard PC devices. Use this table when configuring your system and for resolving IRQ conflicts.

Standard Interrupt Assignments

IRQ	Priority	Standard Function
0	1	System Timer
1	2	Keyboard Controller
2	N/A	Programmable Interrupt
3*	11	Communications Port (COM2)
4*	12	Communications Port (COM1)
5*	13	
6	14	Floppy Disk Controller
7*	15	Printer Port (LPT1)
8	3	System CMOS/Real Time Clock
9*	4	ACPI Mode when used
10*	5	IRQ Holder for PCI Steering
11*	6	IRQ Holder for PCI Steering
12*	7	PS/2 Compatible Mouse Port
13	8	Numeric Data Processor
14*	9	Primary IDE Channel
15*	10	Secondary IDE Channel

*These IRQs are usually available for ISA or PCI devices.

3. HARDWARE SETUP

Interrupt Request Table

	INT-A	INT-B	INT-C	INT-D
PCI slot 1	shared	--	--	--
PCI slot 2	--	shared	--	--
PCI slot 3	--	--	--	--
PCI slot 4	--	--	--	shared
Onboard Audio/AMR/SMBus	--	shared	--	--
Onboard VGA	shared	----	--	
USB	--	--	--	shared

IMPORTANT: If using PCI cards on shared slots, make sure that the drivers support “Share IRQ” or that the cards do not need IRQ assignments. Conflicts will arise between the two PCI groups that will make the system unstable or cards inoperable. Both ISA and PCI expansion cards may require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Currently, there are two types of ISA cards.

The original ISA expansion card design, now referred to as “Legacy” ISA cards, requires that you configure the card’s jumpers manually and then install it in any available slot on the ISA bus. To see a map of your used and free IRQs in Windows 98, the **Control Panel** icon in **My Computer**, contains a **System** icon, which gives you a **Device Manager** tab. Double-clicking on a specific hardware device gives you the **Resources** tab which shows the Interrupt number and address. Double-click **Computer** to see all the interrupts and addresses for your system. Make sure that no two devices use the same IRQ or your computer will experience problems when those two devices are in use at the same time.

To simplify this process, this motherboard complies with the Plug and Play (PnP) specification which was developed to allow automatic system configuration whenever a PnP-compliant card is added to the system. For PnP cards, IRQs are assigned automatically from those available.

If the system has both Legacy and PnP ISA cards installed, IRQs are assigned to PNP cards from those not used by Legacy cards. The PCI and PNP configuration of the BIOS setup utility can be used to indicate which IRQs are being used by Legacy cards. For older Legacy cards that does not work with the BIOS, you can contact your vendor for an ISA Configuration Utility.

An IRQ number is automatically assigned to PCI expansion cards after those used by Legacy and PnP ISA cards. In the PCI bus design, the BIOS automatically assigns an IRQ to a PCI slot that has a card in it that requires an IRQ. To install a PCI card, you need to set something called the INT (interrupt) assignment. Since all the PCI slots on this motherboard use an INTA #, be sure that the jumpers on your PCI cards are set to INT A.

3. HARDWARE SETUP

3.7.3 Assigning DMA Channels for ISA Cards

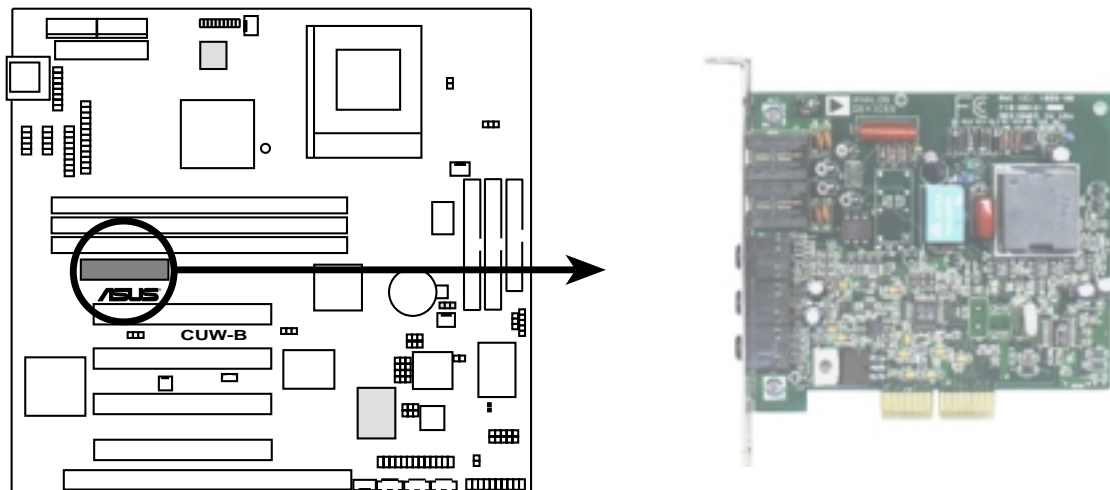
Some ISA cards, both legacy and PnP, may also need to use a DMA (Direct Memory Access) channel. DMA assignments for this motherboard are handled the same way as the IRQ assignment process described earlier. To select a DMA channel, see **PCI/PNP ISA DMA Resource Exclusion** in *4.4.3 PCI Configuration*. **NOTE:** The on-board audio by default uses DMA1.

IMPORTANT: To avoid conflicts, reserve the necessary IRQs and DMAs for legacy ISA cards (see **PCI/PNP ISA IRQ Resource Exclusion** and **PCI/PNP DMA IRQ Resource Exclusion** in *4.4.3 PCI Configuration*). Choose *Yes* in **IRQ xx Used By ISA** and **DMA x Used By ISA** for those IRQs and DMAs you want to reserve).

3.7.4 Audio Modem Riser (AMR) Slot

This connector supports a specially designed audio and/or modem card called an AMR. Main processing is done through software and controlled by the motherboard's Intel I/O Controller Hub (ICH). This provides an upgradeable audio and/or modem solution at an incredibly low cost. There are two types of AMR, one defined as primary and another defined as secondary. This motherboard uses the primary channel so that a secondary AMR can coexist without the need to disable the onboard CODEC. The motherboard's onboard CODEC must be disabled when using a primary AMR.

NOTE: An AMR is not included with this motherboard.



CUW-B Audio Modem Riser (AMR) Connector

3. HARDWARE SETUP

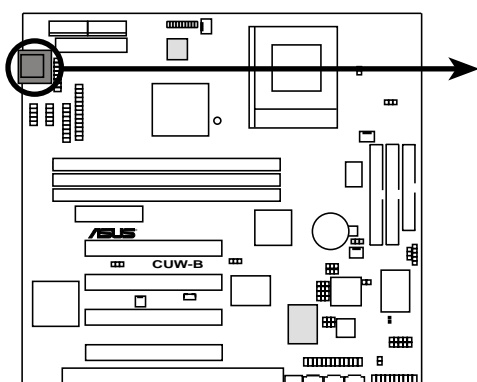
3.8 External Connectors

WARNING! Some pins are used for connectors or power sources. These are clearly distinguished from jumpers in the Motherboard Layout. Placing jumper caps over these connector pins will cause damage to your motherboard.

IMPORTANT: Ribbon cables should always be connected with the red stripe to Pin 1 on the connectors. Pin 1 is usually on the side closest to the power connector on hard drives and CD-ROM drives, but may be on the opposite side on floppy disk drives. Check the connectors before installation because there may be exceptions. The IDE ribbon cable must be less than 46 cm (18 in.), with the second drive connector no more than 15 cm (6 in.) from the first connector.

1) Keyboard Connector (5-pin KB)

This connector supports either a standard IBM-compatible, 101/102-key, or 104-key keyboard (Windows 9x-compatible). Use a PS/2 keyboard adapter in order to connect a PS/2 keyboard to this AT connector.



Keyboard Connector (5-pin female)

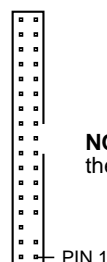
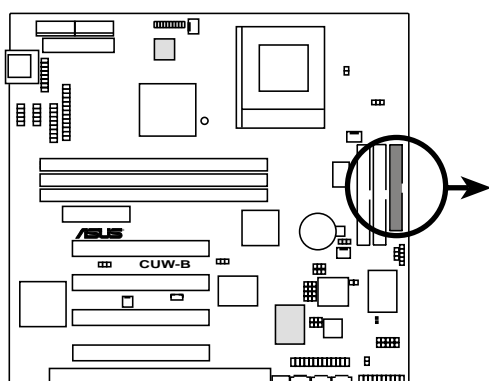


This motherboard accepts an AT Keyboard Connector Plug as shown here.

CUW-B Keyboard Connector

2) Floppy Disk Drive Connector (34-1 pin FLOPPY)

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives. (**Pin 5 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 5 plugged**).



NOTE: Orient the red markings on the floppy ribbon cable to PIN 1

CUW-B Floppy Disk Drive Connector

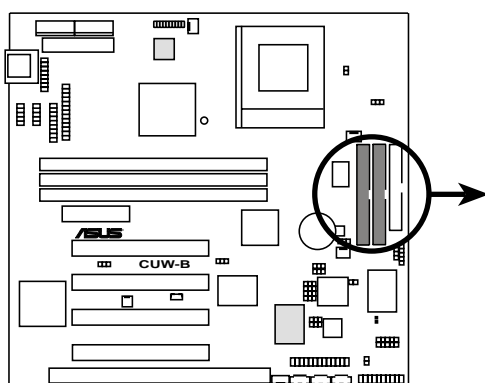
3. HARDWARE SETUP

3) Primary / Secondary IDE Connectors (40-1 pin IDE1/IDE2)

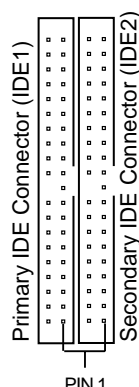
These connectors support the provided IDE hard disk ribbon cable. After connecting the single end to the board, connect the two plugs at the other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Refer to your hard disk documentation for the jumper settings. BIOS now supports specific device bootup (see **Boot Sequence** in *4.6 Boot Menu*). **(Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged).**

TIP: You may configure two hard disks to be both Masters with two ribbon cables – one for the primary IDE connector and another for the secondary IDE connector. You may install one operating system on an IDE drive and another on a SCSI drive and select the boot disk through **Boot Sequence** in *4.6 Boot Menu*.

IMPORTANT: UltraDMA/66 IDE devices must use an 80-conductor IDE cable.



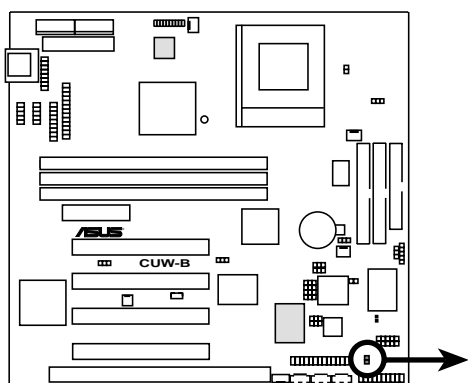
CUW-B IDE Connectors



NOTE: Orient the red markings (usually zigzag) on the IDE ribbon cable to PIN 1

4) IDE Activity LED Lead (2-pin IDELED)

This connector supplies power to the cabinet's IDE activity LED. Read and write activity by devices connected to the Primary and/or Secondary IDE connectors will cause the LED to light up.



CUW-B IDE Activity LED

TIP: If the case-mounted LED does not light, try reversing the 2-pin plug.

IDELED

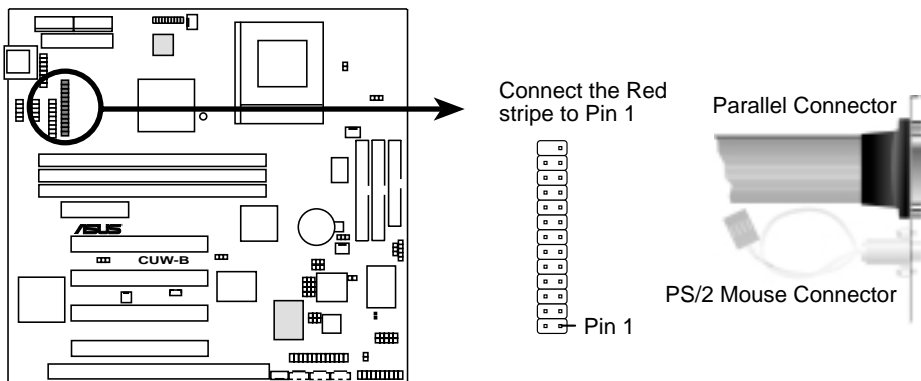


3. HARDWARE SETUP

5) Parallel Port Connector (26-1 pin PARALLEL)

This connector supports the included parallel port ribbon cable with mounting bracket. Connect the ribbon cable to this connection and mount the bracket to the case on an open slot. A PS/2 mouse/parallel connector is included if the optional USB/MIR connector is not used. You can make available the parallel port and choose the IRQ through **Onboard Parallel Port** in **4.4.2 I/O Device Configuration**. (**Pin 26 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 26 plugged**).

NOTE: Serial printers must be connected to the serial port.

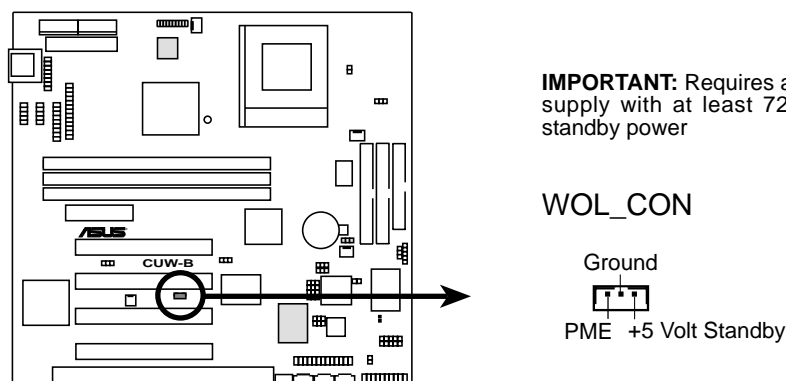


CUW-B Parallel Connector

6) Wake-On-LAN Connector (3-pin WOL_CON)

This connector connects to a LAN card with a Wake-On-LAN output, such as the ASUS PCI-L101 Ethernet card (not required for onboard LAN model). The connector powers up the system when a wakeup packet or signal is received through the LAN card.

IMPORTANT: This feature requires that **Wake On LAN** is set to *Enabled* (see **4.5.1 Power Up Control**) and that your system has an ATX power supply with at least 720mA +5V standby power.



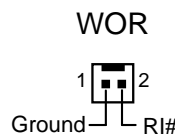
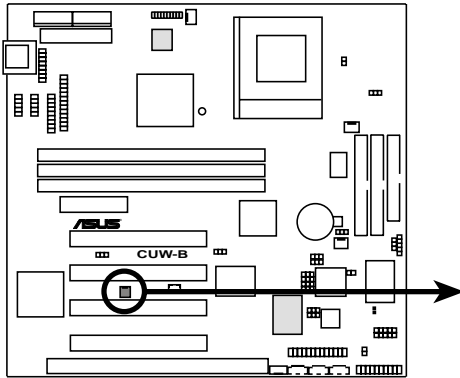
CUW-B Wake-On-LAN Connector

3. HARDWARE SETUP

7) Wake-On-Ring Connector (2-pin WOR)

This connector connects to internal modem cards with a Wake-On-Ring output. The connector powers up the system when a ringup packet or signal is received through the internal modem card. **NOTE:** For external modems, Wake-On-Ring is detected through the COM port.

IMPORTANT: This feature requires that **PWR Up On Modem Act** is set to *Enabled* (see 4.5.1 Power Up Control).



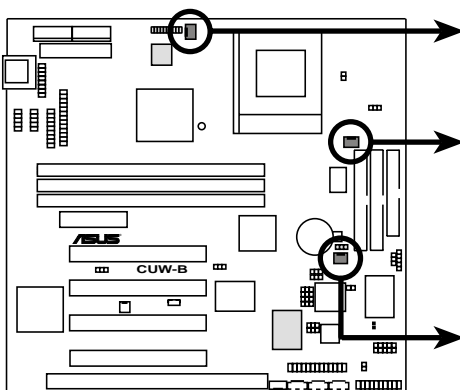
CUW-B Wake-On-Ring Connector

8) Chassis, CPU, & Power Supply Fan Connectors (3-pin CHA_, CPU_, PWR_FAN)

These connectors support cooling fans of 350mA (4.2 Watts) or less. Orientate the fans so that the heat sink fins allow airflow to go across the onboard heat sink(s) instead of the expansion slots. Depending on the fan manufacturer, the wiring and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of the connector.

NOTE: The "Rotation" signal is to be used only by a specially designed fan with rotation signal. The Rotations per Minute (RPM) can be monitored using ASUS PC Probe Utility or Intel LDCM Utility (see 6. SOFTWARE REFERENCE).

WARNING! The CPU and/or motherboard will overheat if there is no airflow across the CPU and onboard heatsinks. Damage may occur to the motherboard and/or the CPU fan if these pins are incorrectly used. **These are not jumpers, do not place jumper caps over these pins.**



CUW-B 12-Volt Cooling Fan Power

Power Supply Fan



CPU Fan Power



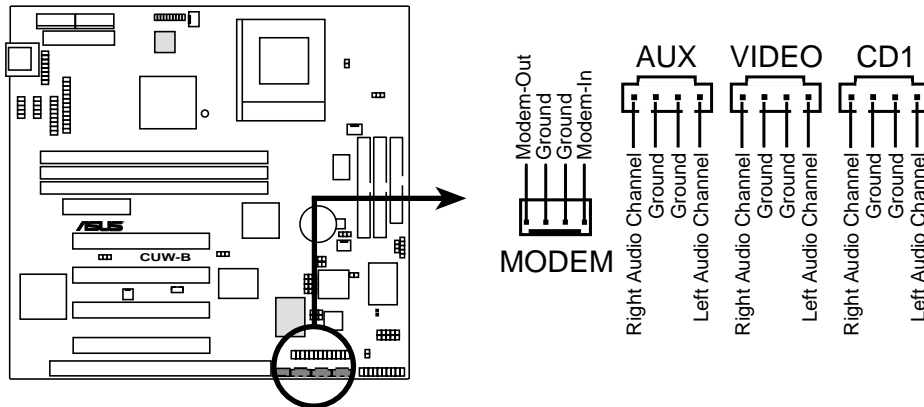
Chassis Fan Power



3. HARDWARE SETUP

9) Internal Audio Connectors (4-pin MODEM, AUX, VIDEO, CD1)

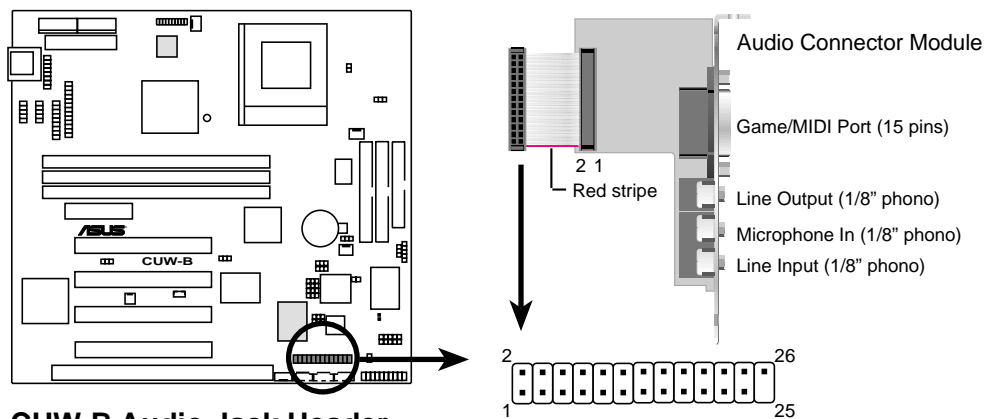
These connectors allow you to receive stereo audio input from such sound sources as a CD-ROM, TV tuner, or MPEG card. The MODEM connector allows the onboard audio to interface with a voice modem card with a similar connector. It also allows the sharing of mono_in (such as a phone) and mono_out (such as a speaker) between the onboard audio and the voice modem card.



CUW-B Internal Audio Connectors

10) Audio Jack Header (26-1 pin AUDIOCON)

This header supports the optional connector set for audio input/output and game/MIDI port. This connector set connects to the 26-pin block and mounts to an open slot on your computer's chassis. **NOTE:** This connector is available only on motherboards with optional onboard audio support.

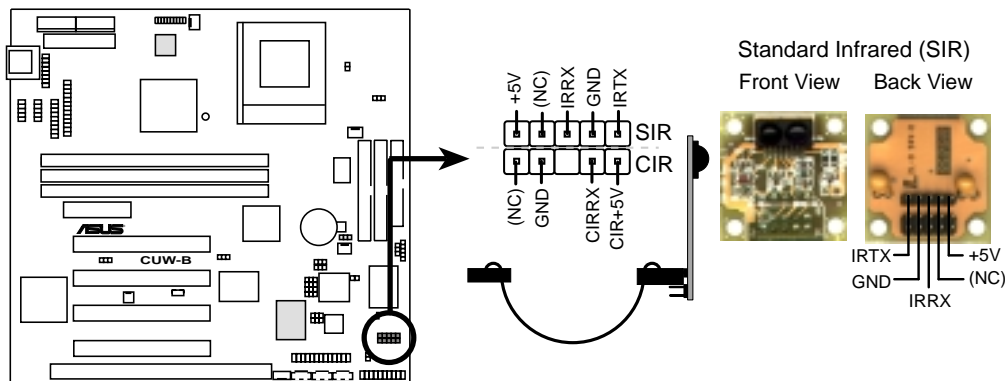


CUW-B Audio Jack Header

3. HARDWARE SETUP

11) Serial IR (SIR) (5-1 pin) and Consumer IR (CIR) (5-pin) Connectors

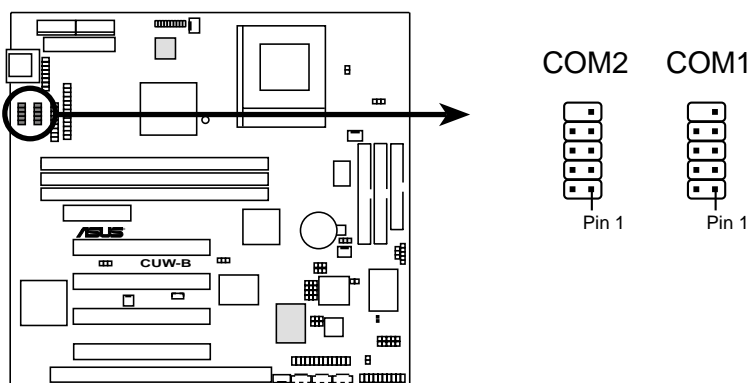
This connector supports an optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system cases that support this feature. You must also configure the setting through **UART2 Use Infrared** (see **4.4.2 I/O Device Configuration**) to select whether UART2 is directed for use with COM2 or IrDA. Use the five pins as shown in Back View and connect a ribbon cable from the module to the motherboard's SIR connector according to the pin definitions. An optional consumer infrared (CIR) set connects to the CIR and SIR connectors simultaneously for both wireless transmitting and remote control functions through one external infrared module. **Wake On PS2 KB/CIR in 4.5.1 Power Up Control** must be enabled in order to use Consumer Infrared (CIR) power up.



CUW-B Infrared Module Connector

12) Serial Port Headers (10-1 pin COM1/COM2)

The optional serial port bracket can be used to add an additional serial port for additional serial devices. The connector with bracket shown here is for the non-LCD model.

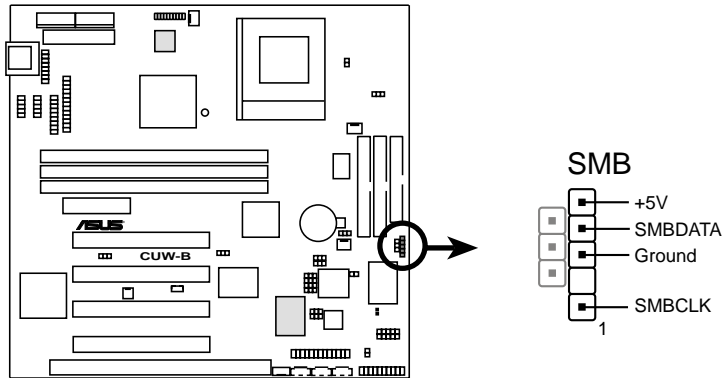


CUW-B Serial Port Headers

3. HARDWARE SETUP

13) SMBus Connector (5-1 pin SMB)

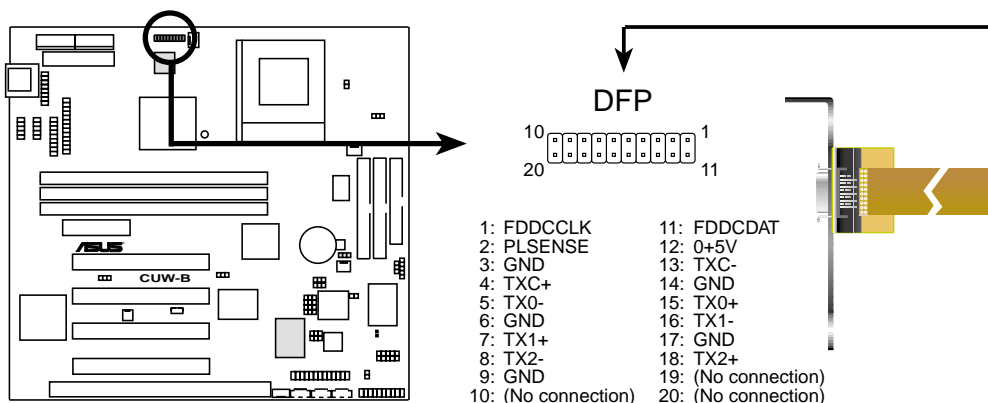
This connector allows you to connect SMBus (System Management Bus) devices. SMBus devices communicate by means of the SMBus with an SMBus host and/or other SMBus devices. SMBus is a specific implementation of an I²C bus, which is a multi-device bus; that is, multiple chips can be connected to the same bus and each one can act as a master by initiating data transfer.



CUW-B SMBus Connector

14) Digital LCD Header (20-pin DFP)

This optional header requires a digital LCD cable connector. Connect the digital LCD cable to this header and mount the bracket to the chassis on a free expansion slot. **NOTE:** If both CRT and digital LCD monitors are used, the CRT will take precedence. This connector is for a digital LCD panel; an analog LCD panel comes with a 15-pin VGA cable connector to be used on the monitor connector. The connector with bracket shown here is provided with the LCD model.

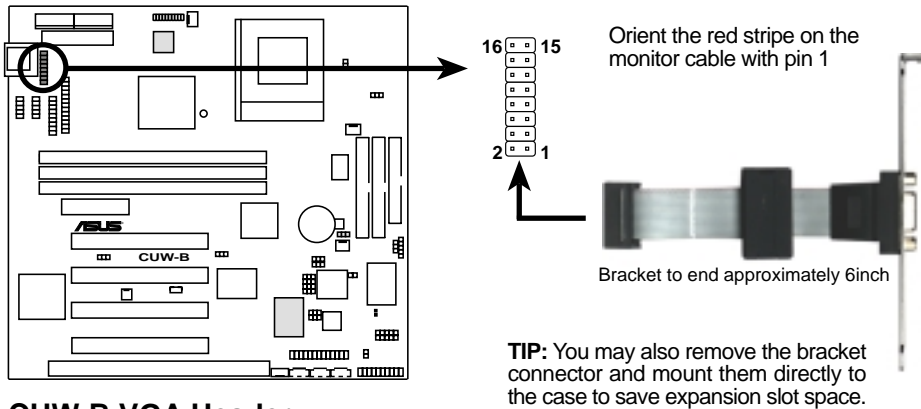


CUW-B LCD Header

3. HARDWARE SETUP

15) VGA Header (16-pin VGA)

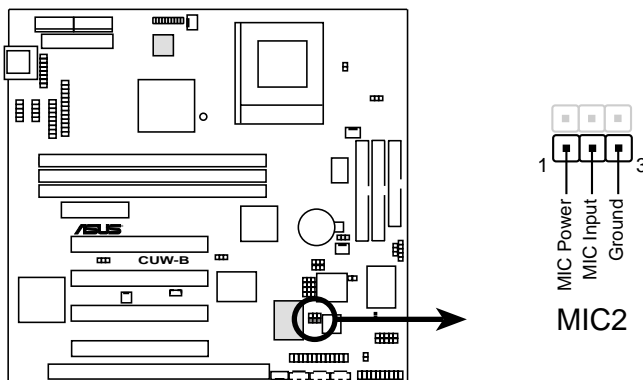
The VGA header allows you to connect a standard (CRT) monitor through the provided VGA cable with mounting bracket. Connect the cable to this header and mount the bracket to the case on a free expansion slot.



CUW-B VGA Header

16) Internal Microphone Connector (3 pin MIC2)

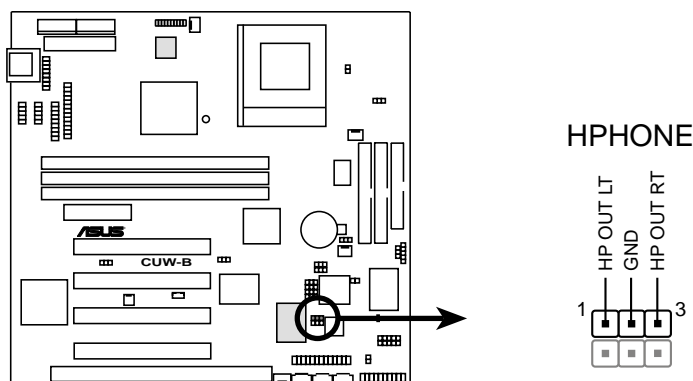
This connector allows you to connect a chassis mounted microphone to the motherboard instead of having to attach an external microphone.



CUW-B Internal Microphone Connector

17) True-Level Line Out Header (3 pin HPHONE)

This header allows you to connect a chassis mounted line-out jack for convenient access when connecting to amplified speakers.

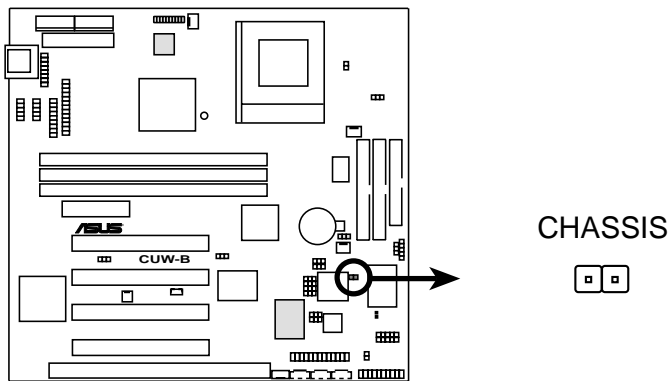


CUW-B True-Level Line Out Header

3. HARDWARE SETUP

18) Chassis Intrusion Lead (2 pin CHASSIS)

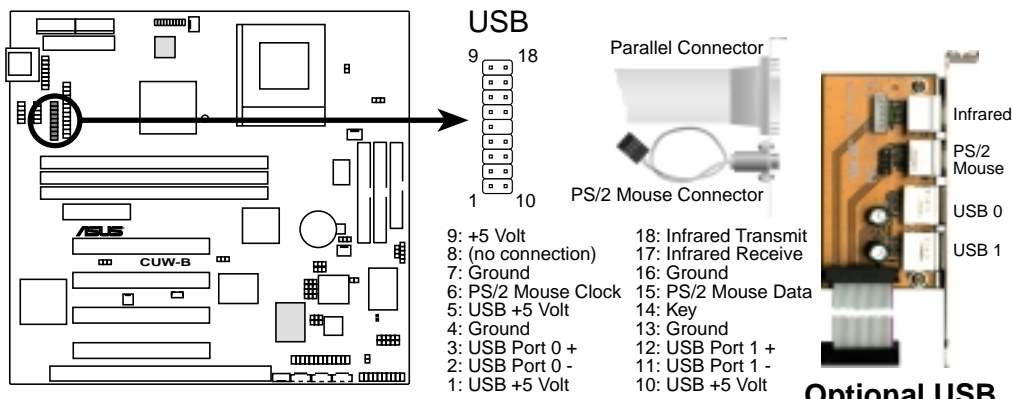
This lead is for a chassis designed for chassis intrusion detection. After-market toggle switches may also be installed to the chassis panel or on any removable components. Two wires should be available from the chassis to connect to this lead. When any chassis component is removed, the contact should open and the motherboard will record a chassis intrusion event. The event can then be processed by software such as LDCM. If the chassis intrusion lead is not used, a jumper cap must be placed over the pins to prevent unnecessary power loss.



CUW-B Chassis Open Alarm Lead

19) USB, PS/2 Mouse, Infrared Module Connector (USBMIR, 18-1 pin block)

If you want to use PS/2 mouse, USB, or infrared (IrDA) devices, you need to purchase an optional USB/MIR connector set. You may use the bundled PS/2 mouse/parallel port connector set if you just want to use a PS/2 mouse. Either connector set connects to the 18-pin block and mounts to an open slot on your computer's chassis. The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, expansion cards can use IRQ12. See **PS/2 Mouse Control** in *4.4 Advanced Menu* and **USB Function** in *4.4.3 PCI Configuration*. See *Serial IR and Consumer IR Connectors* for details on the infrared connector.

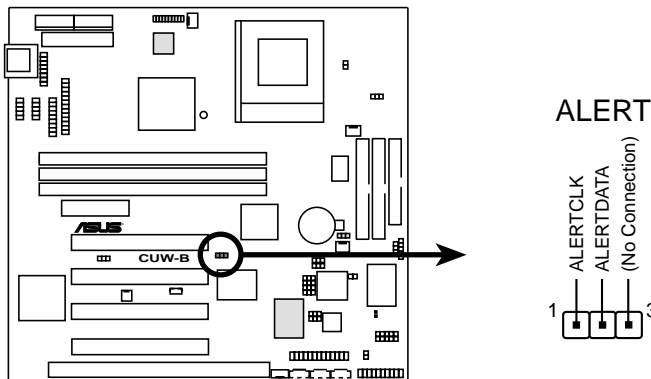


CUW-B PS/2 Mouse, USB, IrDA Module Connector

3. HARDWARE SETUP

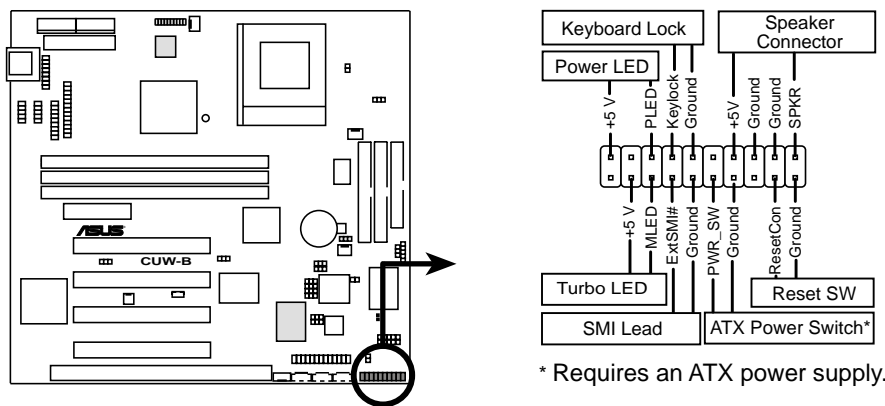
20) Alert-on-LAN Connector (3 pin ALERT)

This connects to a network card with Alert-on-LAN support. Alert-on-LAN allows remote management of PCs through the network interface by generating alerts to the network administrator when there is hardware/operating system failure or evidence of tampering.



CUW-B Alert-on-LAN Connector

The following PANEL illustration is used for items 21-27



CUW-B System Panel Connectors

21) System Power LED Lead (3-1 pin PLED)

This 3-1 pin connector connects the system power LED, which lights when the system is powered on and blinks when it is in sleep mode.

22) Keyboard Lock Switch Lead (2-pin KEYLOCK)

This 2-pin connector connects to the case-mounted key switch to allow keyboard locking.

23) System Warning Speaker Connector (4-pin SPEAKER)

This 4-pin connector connects to the case-mounted speaker. You may leave this disconnected if you connect the chassis speaker to the INT_SPKA. All three sources (LINE_OUT, INT_SPKA, SPEAKER) will allow you to here system beeps and warnings. Only LINE_OUT will allow you to hear system beeps before the integrated audio has been properly initialized.

24) Reset Switch Lead (2-pin RESET)

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting to prolong the life of the system's power supply.

3. HARDWARE SETUP

25) ATX Power Switch Lead (2-pin PWR SW.)

The system power is controlled by a momentary switch connected to this lead. Pressing the button once will switch the system between ON and SOFT OFF. Pushing the switch while in the ON mode for more than 4 seconds will turn the system off. The system power LED shows the status of the system's power.

26) System Management Interrupt Lead (2-pin SMI)

This allows the user to manually place the system into a suspend mode or "Green" mode, where system activity is decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector connects to the case-mounted suspend switch. Wake-up can be controlled by settings in the BIOS but the keyboard will always allow wake-up (the SMI lead cannot wake up the system).

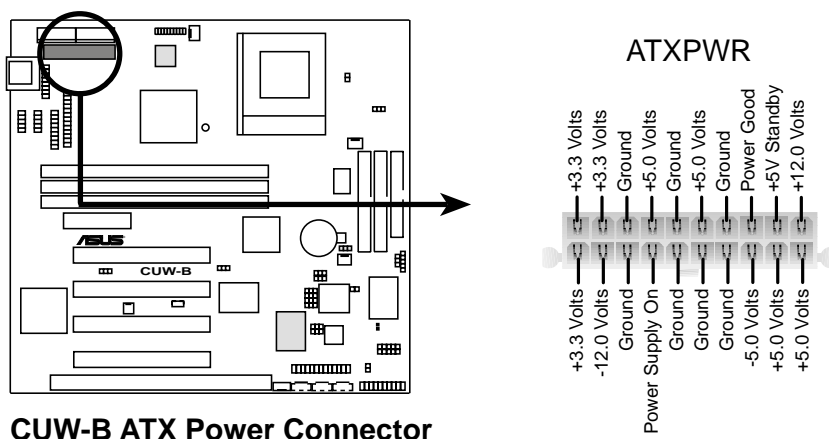
27) Message LED Lead (2-pin TB LED)

This indicates whether a message has been received from a fax/modem. The LED will remain lit when there is no signal and blink when there is data transfer or waiting in the inbox. This function requires ACPI OS and driver support.

28) ATX Power Supply Connector (20-pin block ATXPWR)

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

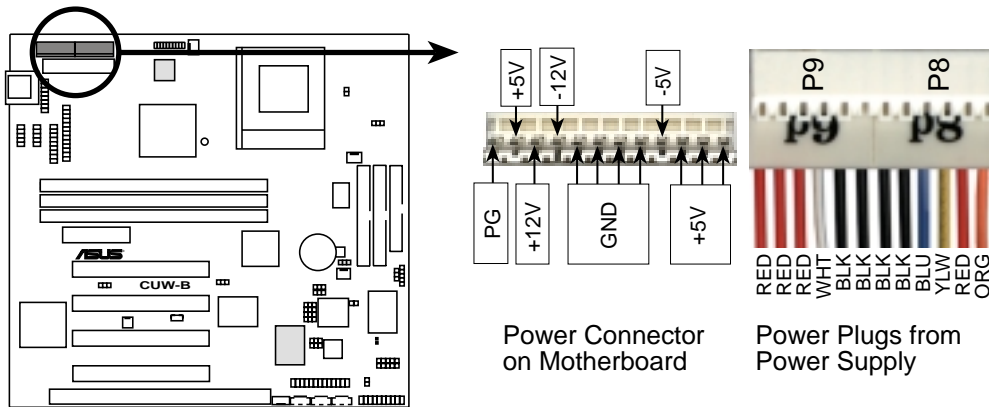
IMPORTANT: Make sure that your ATX power supply can supply at least 10mA on the +5-volt standby lead (+5VSB). You may experience difficulty in powering ON your system if your power supply cannot support the load. For Wake-On-LAN support, your ATX power supply must supply at least 720mA +5VSB.



3. HARDWARE SETUP

29) AT Power Supply Connector (12-pin block PS2)

This connector connects to a standard 5 Volt power supply. To connect the leads from the power supply, ensure first that the power supply is not plugged. Most power supplies provide two plugs (P8 and P9), each containing six wires, two of which are black. Orient the connectors so that the black wires are together.

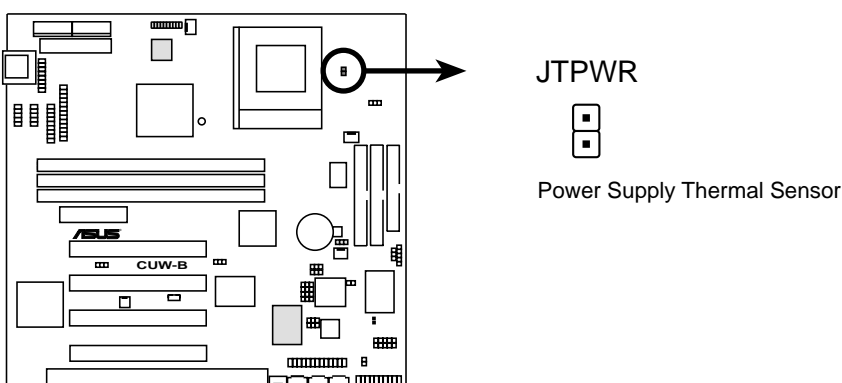


CUW-B AT Power Connector

At a slight angle, align the plastic guide pins on the lead to their receptacles on the connector. Once aligned, press the lead onto the connector until the lead locks into place.

30) Thermal Sensor Connector (2-pin JTPWR)

If you have a power supply with thermal monitoring, connect its thermal sensor cable to this connector.



CUW-B Thermal Sensor Connector

5. SOFTWARE SETUP

5.1 Operating Systems

Although ASUS motherboards passed testing on several operating systems, the operating system shown in these sections will be that of Microsoft's Windows 98. You should always use the latest operating system and updates when using new hardware to ensure full compliancy. For Windows 95, you must use OSR 2.0 or later. For Windows NT 4.0, you must use Service Pack 3.0 or later.

5.2 Starting Windows For the First Time

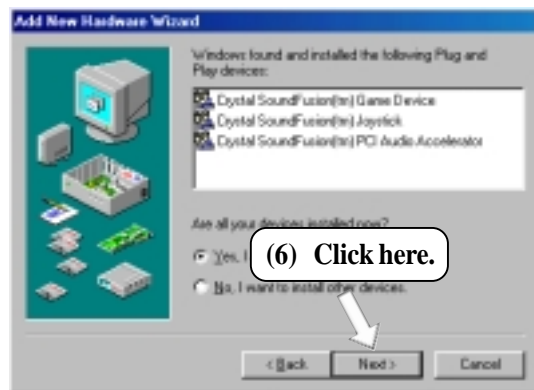
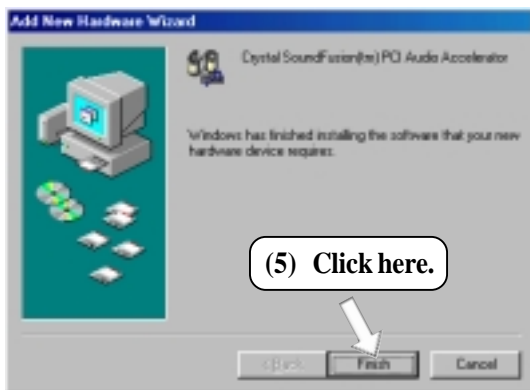
When you start Windows 98 for the first time after installing your motherboard, Windows will detect all plug-and-play devices. You can either follow the Add New Hardware Wizard to install the device drivers or click **Cancel**. When prompted to restart, select **No** and then follow the normal setup procedures later in this section.

IMPORTANT: Selecting **No** for the initial restart prompt is a necessary step because Windows may load an older display driver that is incompatible with the integrated VGA. Always use the driver available on the ASUS Support CD or an applicable driver update from your ASUS vendor or from the ASUS web site.

NOTE: Because there are various motherboard settings, options, and expansion cards, the following can only be used as a general reference and not an exact reflection of your system.

5. SOFTWARE SETUP

5.2.1 PCI Multimedia Audio Device Found



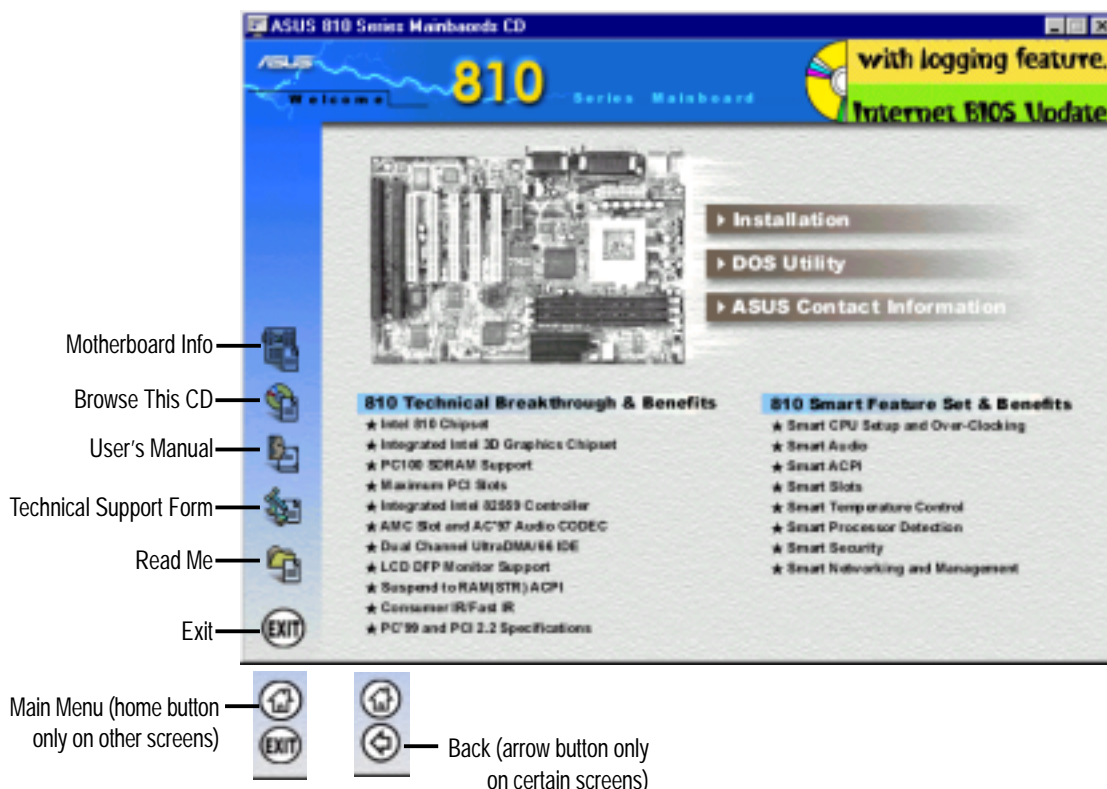
5. SOFTWARE SETUP

5.3 ASUS Smart Motherboard Support CD

NOTE: The support CD contents are subject to change at any time without notice.

To begin using your support CD disc, just insert it into your CD-ROM drive and the support CD installation menu should appear. If the menu does not appear, double click or run **D:\ASSETUP.EXE** (assuming that your CD-ROM drive is drive **D:**).

5.3.1 Support CD Main Menu



Navigation Button Descriptions

Motherboard Info displays information on your motherboard, BIOS, and CPU.

Browse This CD allows you to see the contents of the ASUS Support CD.

User's Manual displays the motherboard user's manual in pdf format.

Technical Support Form opens up a blank Technical Support Request Form for you to fill and print out when you run into technical difficulties and need technical assistance.

Read Me opens up a file containing additional notes.

Home returns you to the main menu of the support CD. (only on other screens)

Exit allows you to close the support CD.

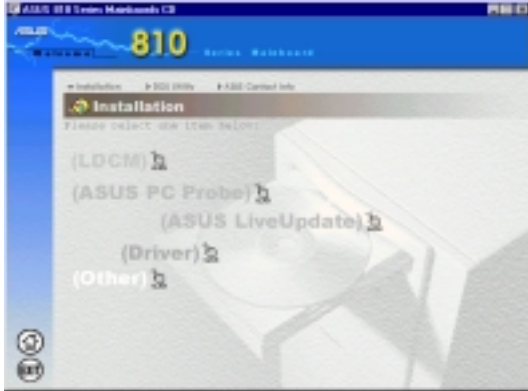
Back returns you one screen back on the support CD.

5. SOFTWARE SETUP

5.3.2 Support CD Submenus

NOTE: The support CD contents are subject to change at any time without notice.

Installation Submenu



LDCM: Installs software to monitor PC system(s).

ASUS Probe: Installs a simple utility to monitor your computer's fan, temperature, and voltages.

ASUS LiveUpdate: Installs a program to help you update your BIOS or download a BIOS image file.

Driver: Installs the necessary drivers for your on-board components to work properly.

Other: Allows you to install additional software and utilities to help you make better use of your new motherboard.

Driver



Network Driver Setup: Not available on this motherboard.

VGA Driver Setup: Intel's 810 System and Graphics Controller Driver.

Audio Driver Setup: See 5.2.1 *PCI Multimedia Audio Device Found*.

Other



INF Update Utility for 810 Chipset: This utility installs INF files in Windows for the following items: System and Graphics, LPC Interface, SM Bus, PCI Bridge, Bus Master IDE, USB Host, Controllers

Intel Security Driver: Installs a security controller for your Windows 95/98. Read the Release Notes during installation and the Readme file at the end of the installation for more information.

YAMAHA S-YXG50: Installs Yamaha's software synthesizer for playing MIDI files on a personal computer through software alone without using a hardware sound

source such as a sound card. (YAMAHA, Soft Synthesizer, S-YXG50, Midplug, and XG studio are all trademarks of Yamaha Corp. Copyright 1996-1999 Yamaha Corporation, All Rights Reserved)

YAMAHA XGStudio: Installs Yamaha's XGStudio Mixer.

Microsoft DirectX 6.0 Driver: Installs Microsoft's DirectX 6.0 driver for Windows 95/98. Microsoft's DirectX is necessary for most multimedia applications to run.

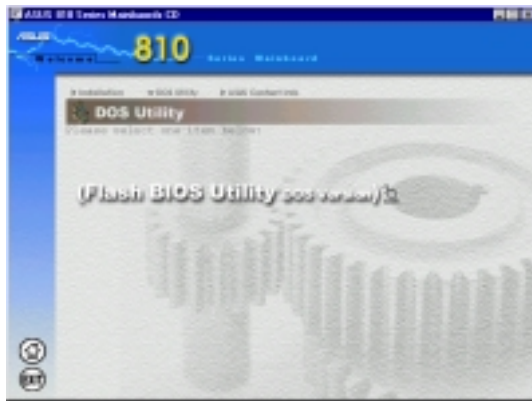
PC-cillin 98: Installs Trend's PC-cillin virus protection software. View the online help for more information.

Adobe Acrobat Reader: Installs the Adobe Acrobat Reader software necessary to view user's manuals saved in PDF format. Updated or other language versions of this motherboard's manual is available in PDF format at any of our web sites.

Exit: Returns to the Installation menu.

5. SOFTWARE SETUP

DOS Utility Submenu



Flash BIOS Utility (DOS Version): Provides information on the Flash BIOS utility (AFLASH.EXE). Choose "Restart in MS-DOS mode" then type "aflash" from the AFLASH folder on the support CD.

ASUS Contact Information Submenu



This page gives Marketing and Technical Support contact information which is similar to the one in the beginning of this User's Manual.

5. SOFTWARE SETUP

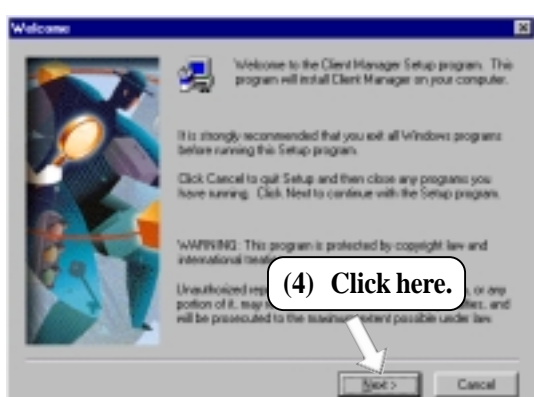
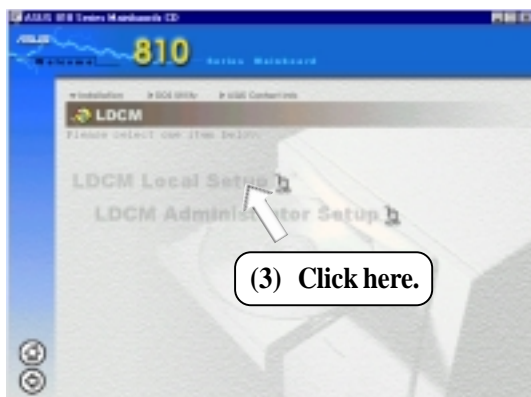
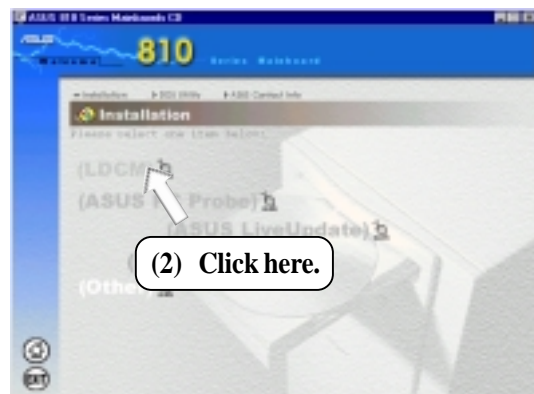
5.4 LDCM Local Setup

System Requirements

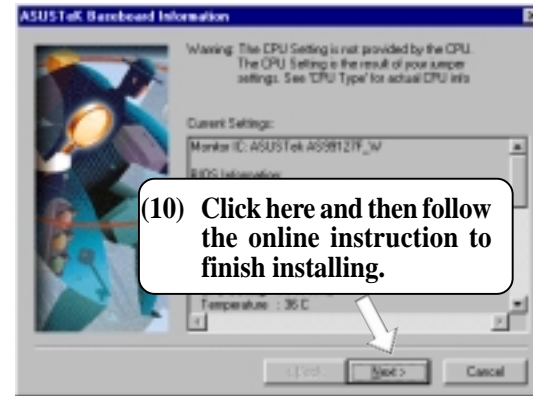
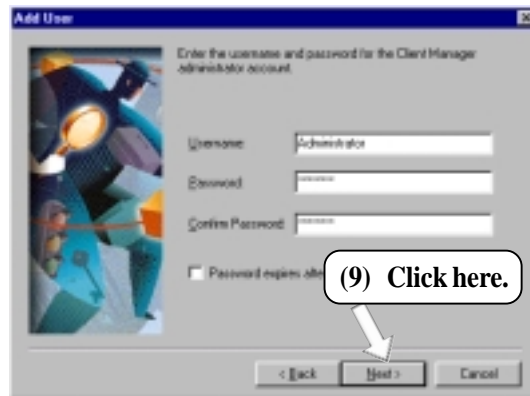
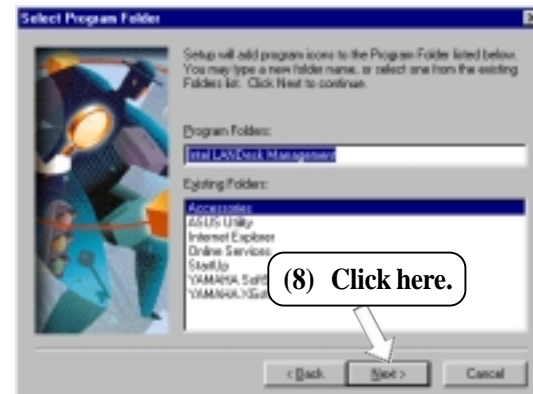
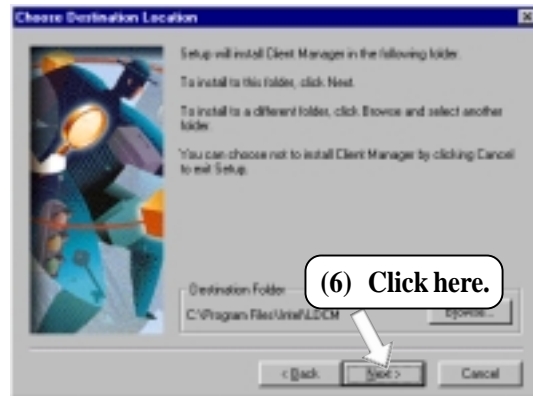
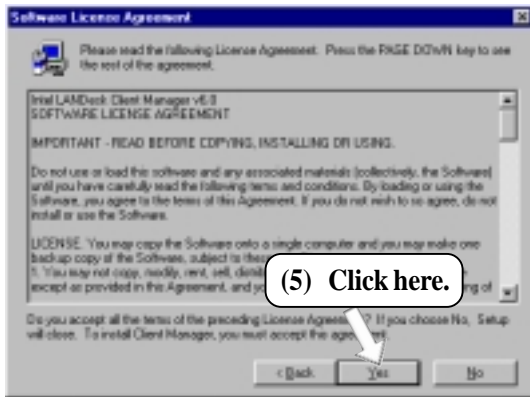
- Intel® Pentium® microprocessor or higher.
- Operating system: Microsoft Windows 95 (can be OEM Service Release 2), or Windows 98, or Windows NT 4.0 (Service Pack 4 or later).
- Microsoft Internet Explorer 4.01 or higher.
- Memory: 16 MB of RAM for Windows 95/98; 24 MB of RAM for Windows NT (32 MB recommended).
- Disk storage space: 100 MB of available hard disk space to install; 40-100 MB of available hard disk space to run (depending on cluster size).
- Hardware system: DM or SM BIOS is required for full LDCM functionality.
- Protocols: IP (Winsock-enabled) communication protocol loaded on the client. An IP stack is required on the client, regardless of whether the client accesses the network.
- Monitor resolution of 600x800, 256 colors or greater.

Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.

NOTE: LDCM will not run if another hardware monitoring utility, such as ASUS PC Probe, is installed. To uninstall any program, see **5.10 Uninstalling Programs**.



5. SOFTWARE SETUP



5. SOFTWARE SETUP

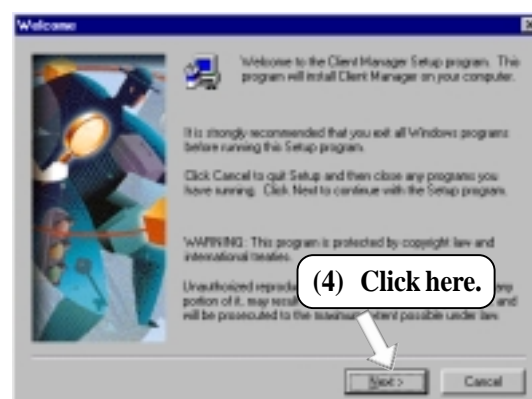
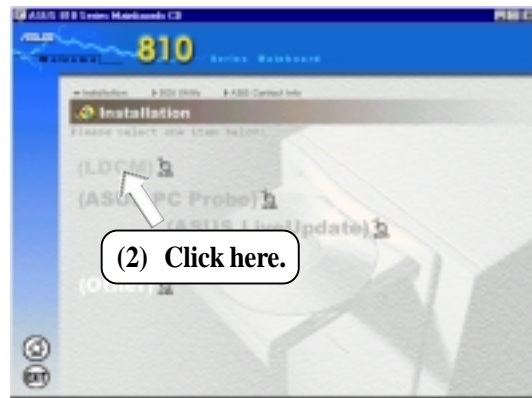
5.5 LDCM Administrator Setup

System Requirements

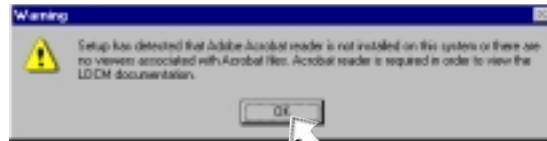
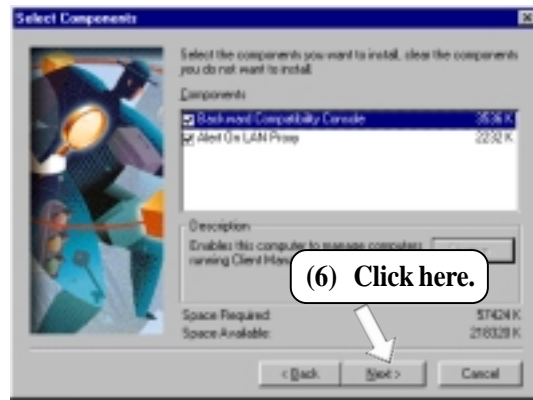
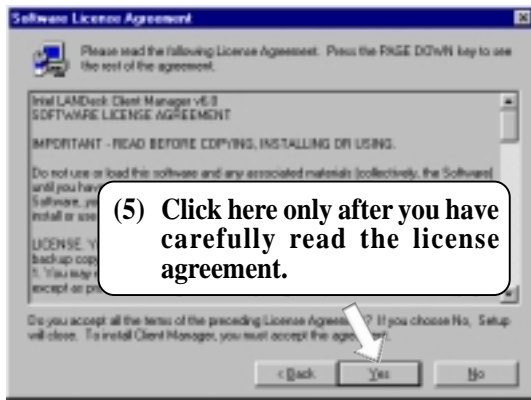
- Intel® Pentium® microprocessor or higher.
- Operating system: Microsoft Windows 95 (can be OEM Service Release 2), or Windows 98, or Windows NT 4.0 (Service Pack 4 or later).
- Microsoft Internet Explorer 4.01 or higher.
- Memory: 16 MB of RAM for Windows 95/98; 24 MB of RAM for Windows NT (32 MB recommended).
- Disk storage space: 100 MB of available hard disk space to install; 40-100 MB of available hard disk space to run (depending on cluster size).
- Hardware system: DM or SM BIOS is required for full LDCM functionality.
- Protocols: IP (Winsock-enabled) communication protocol loaded on the client. An IP stack is required on the client, regardless of whether the client accesses the network.
- Monitor resolution of 600x800, 256 colors or greater.

Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.

NOTE: LDCM will not run if another hardware monitoring utility, such as ASUS PC Probe, is installed. To uninstall any program, see **5.10 Uninstalling Programs**.



5. SOFTWARE SETUP

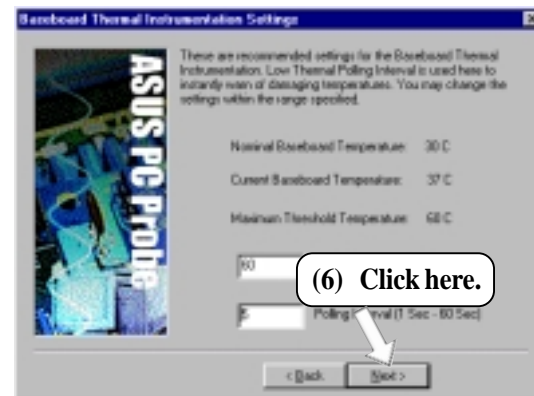
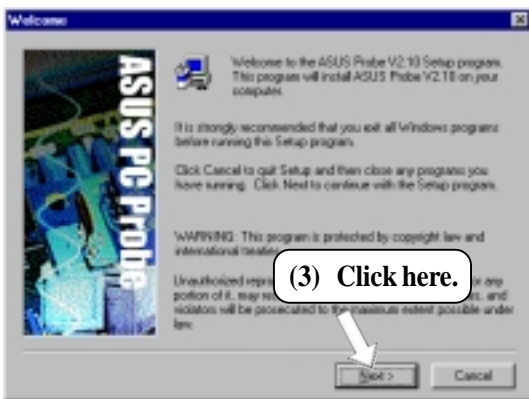
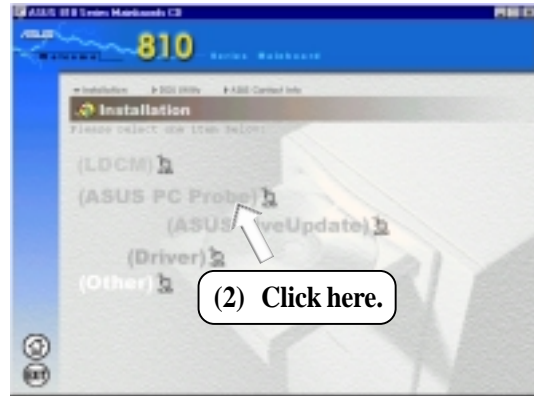
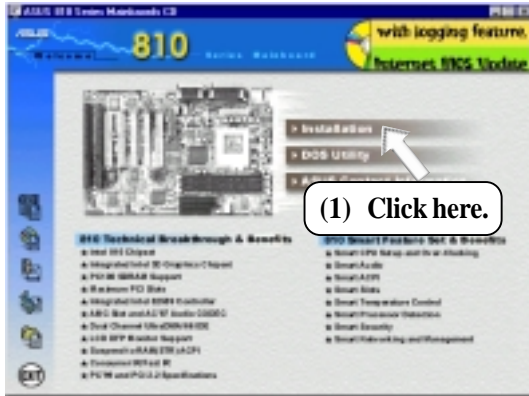


5. SOFTWARE SETUP

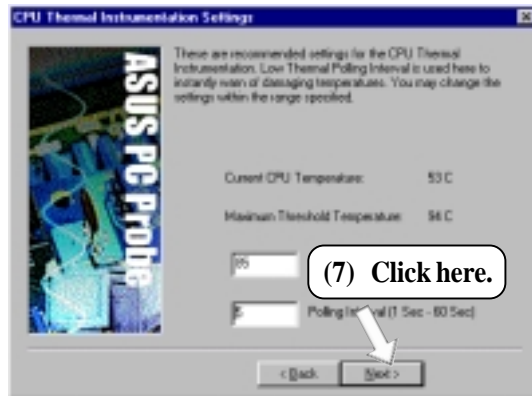
5.6 ASUS PC Probe

Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.

NOTE: ASUS PC Probe will not run if another hardware monitoring utility, such as LDCM, is installed. To uninstall any program, see **5.10 Uninstalling Programs**.



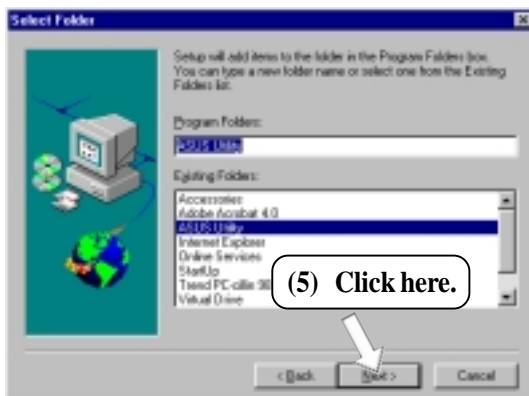
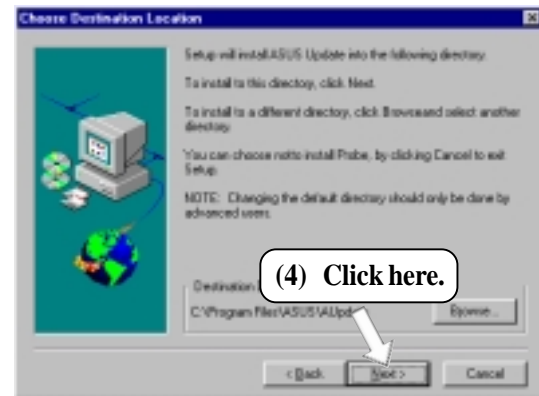
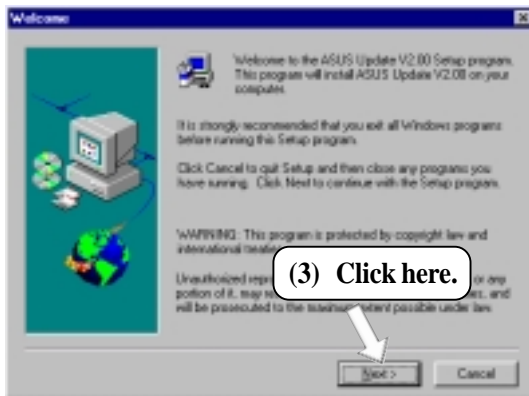
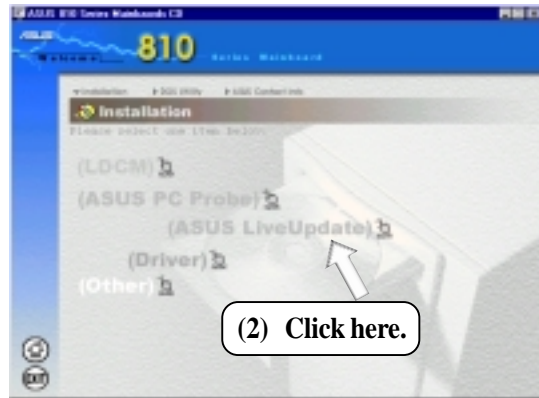
5. SOFTWARE SETUP



5. SOFTWARE SETUP

5.7 ASUS LiveUpdate

Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.

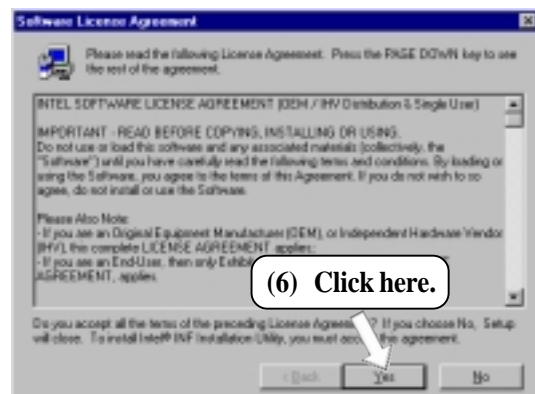
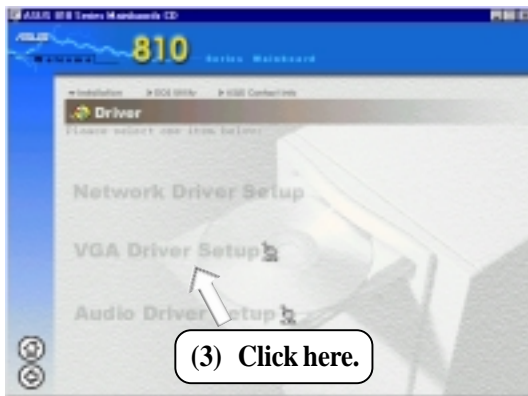
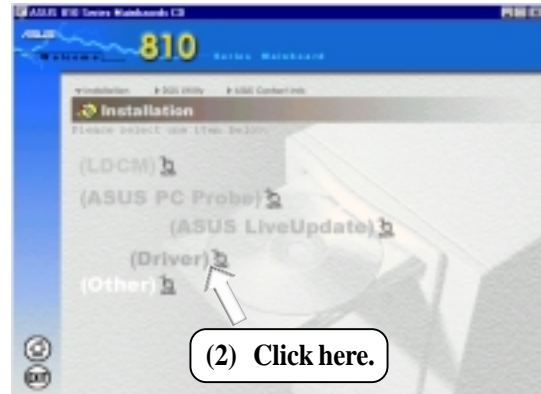
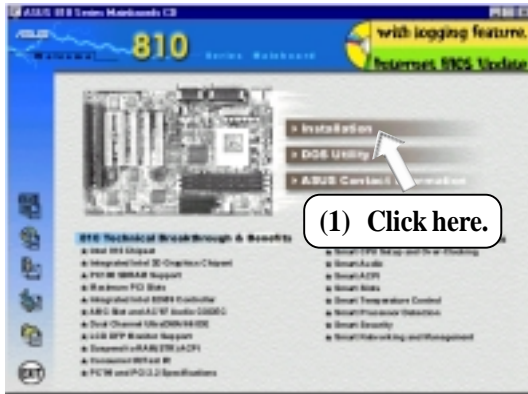


5. SOFTWARE SETUP

5.8 Driver

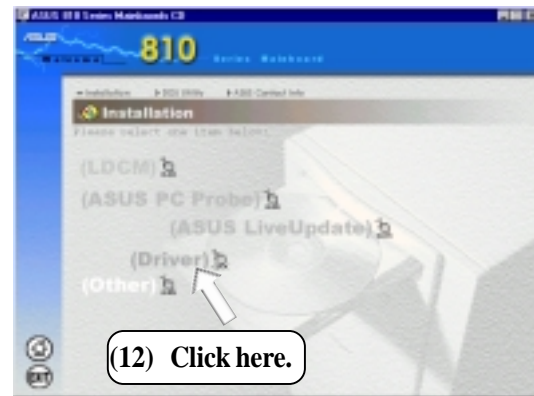
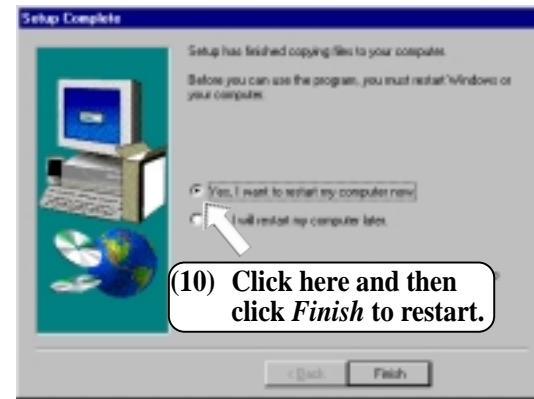
5.8.1 VGA Driver Setup

Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.

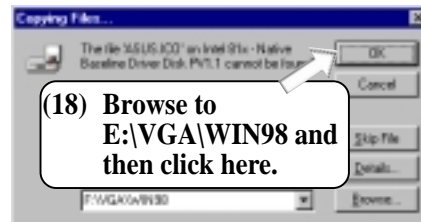
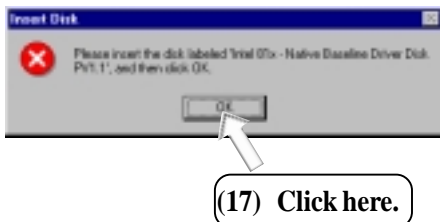
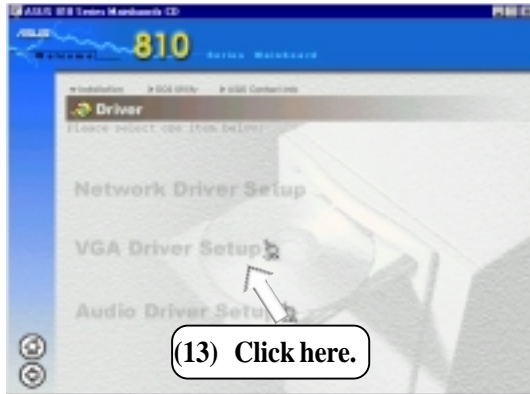


5. S/W SETUP
Windows 98

5. SOFTWARE SETUP



5. SOFTWARE SETUP



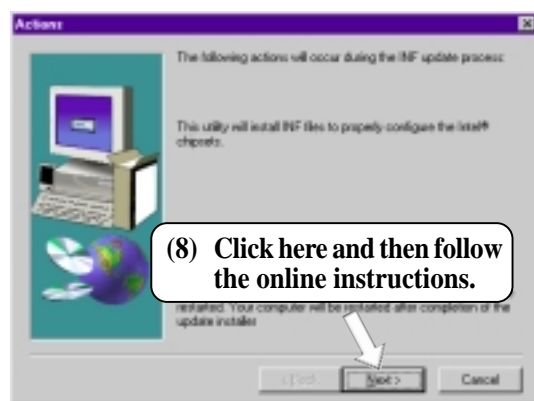
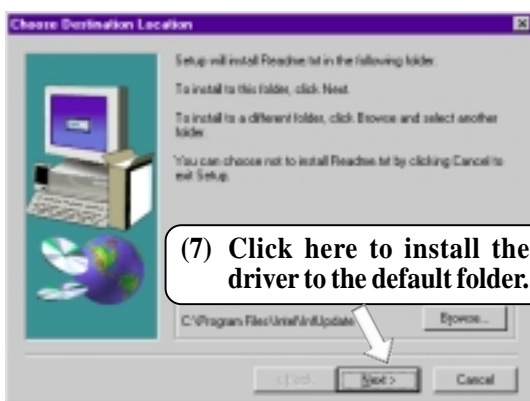
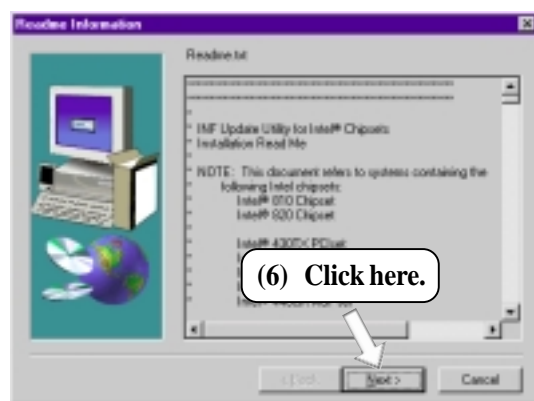
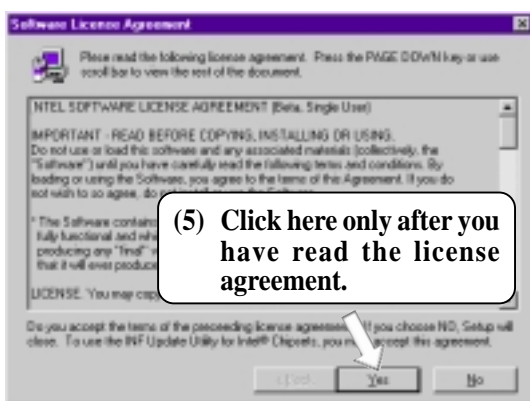
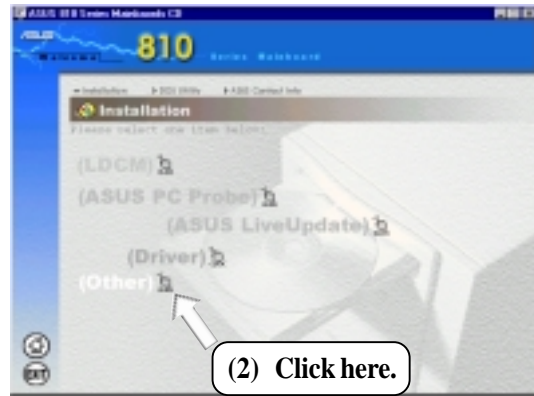
5. SW SETUP
Windows 98

5. SOFTWARE SETUP

5.9 Other

5.9.1 INF Update Utility for 810 Chipset

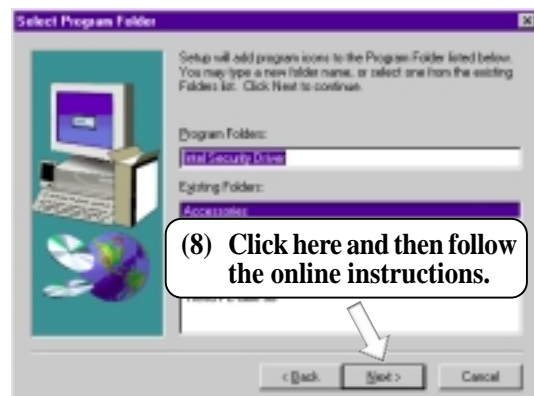
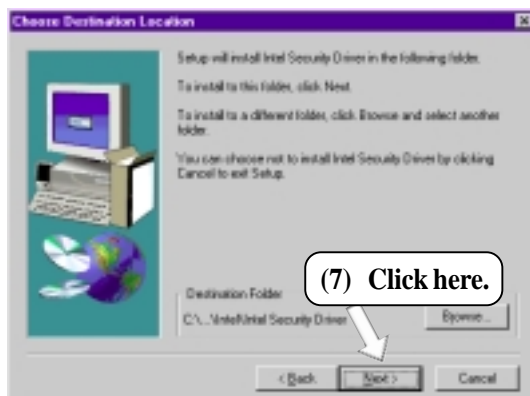
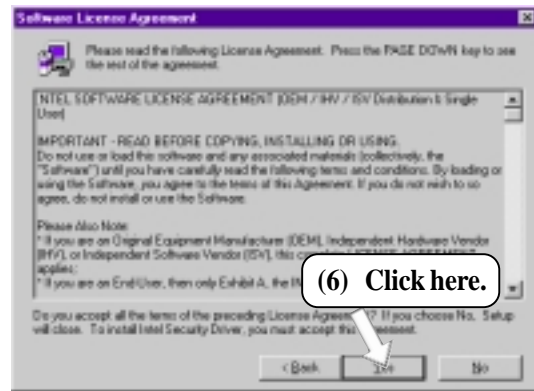
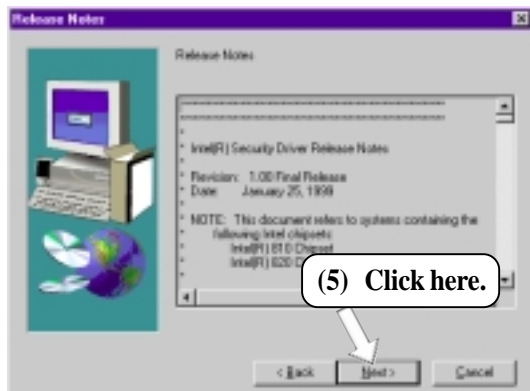
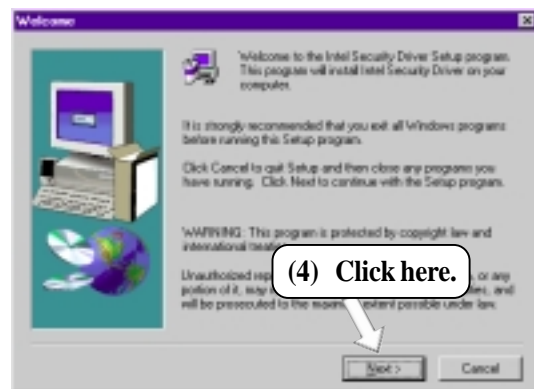
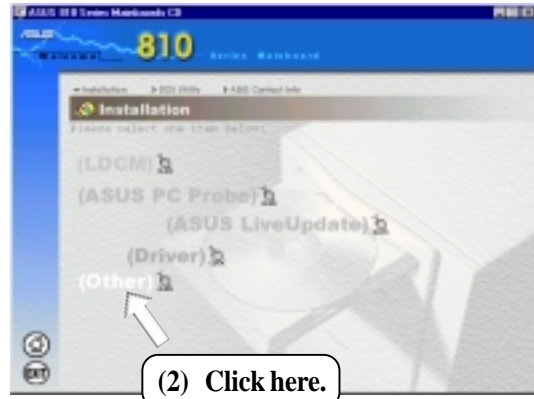
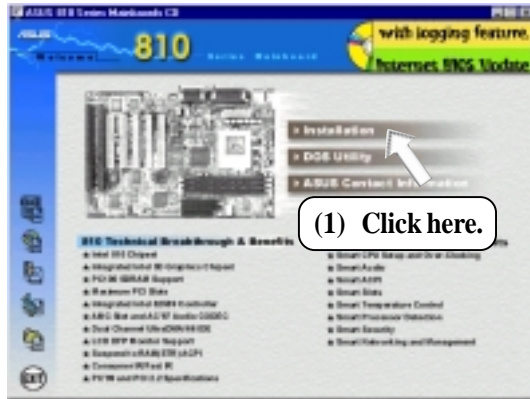
Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



5. SOFTWARE SETUP

5.9.2 Intel Security Driver

Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.

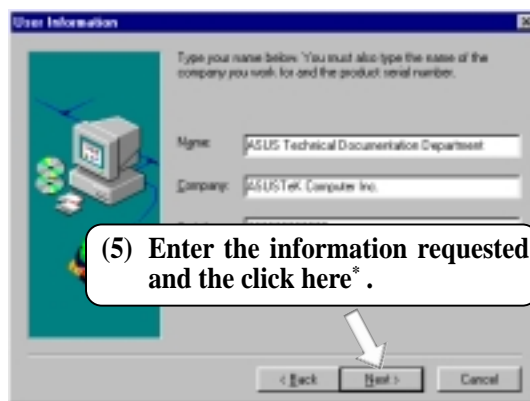
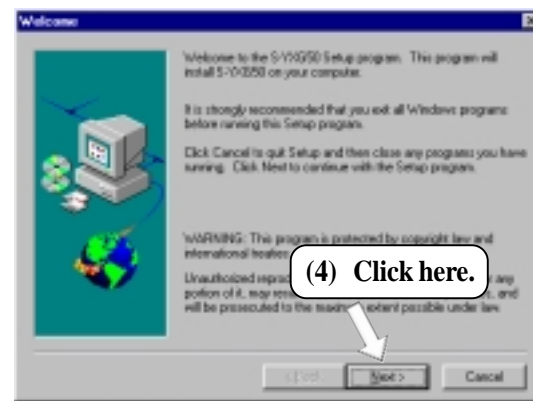
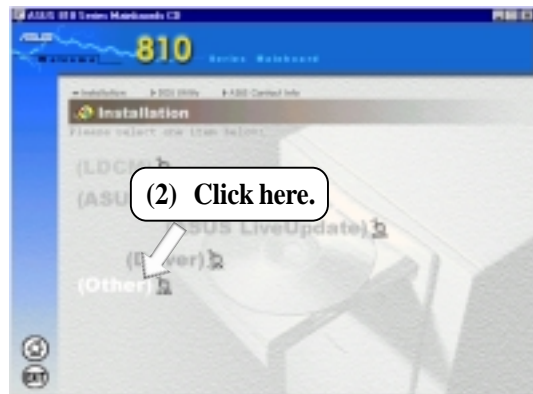
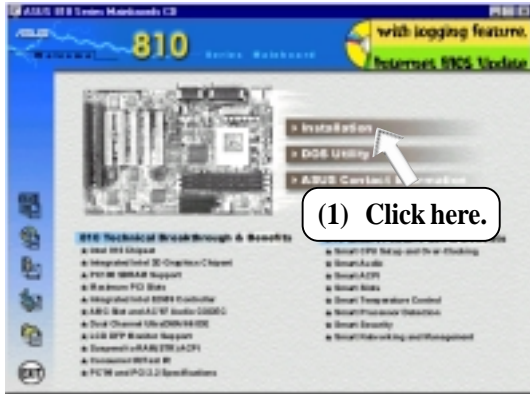


5. SW SETUP
Windows 98

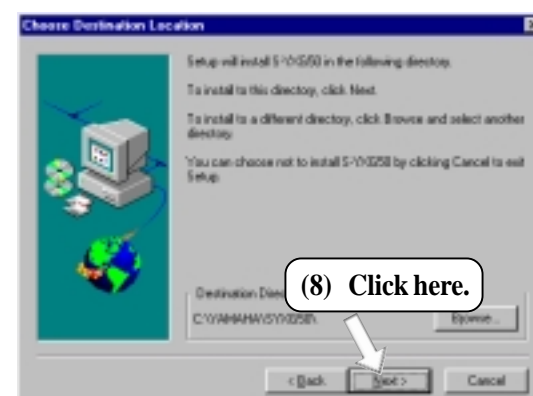
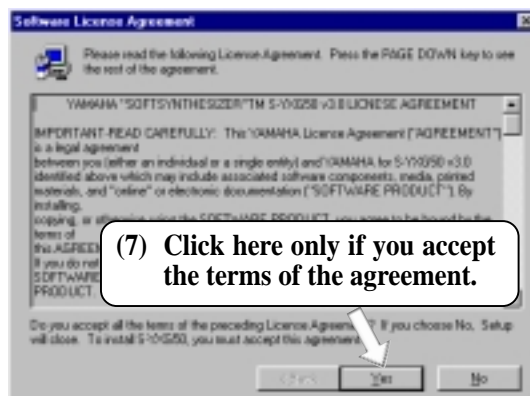
5. SOFTWARE SETUP

5.9.3 YAMAHA S-YXG50

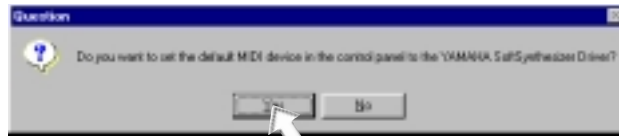
Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



* The serial number can be found on the software license agreement card.



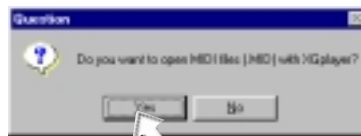
5. SOFTWARE SETUP



(9) Click here.



(10) Click here.

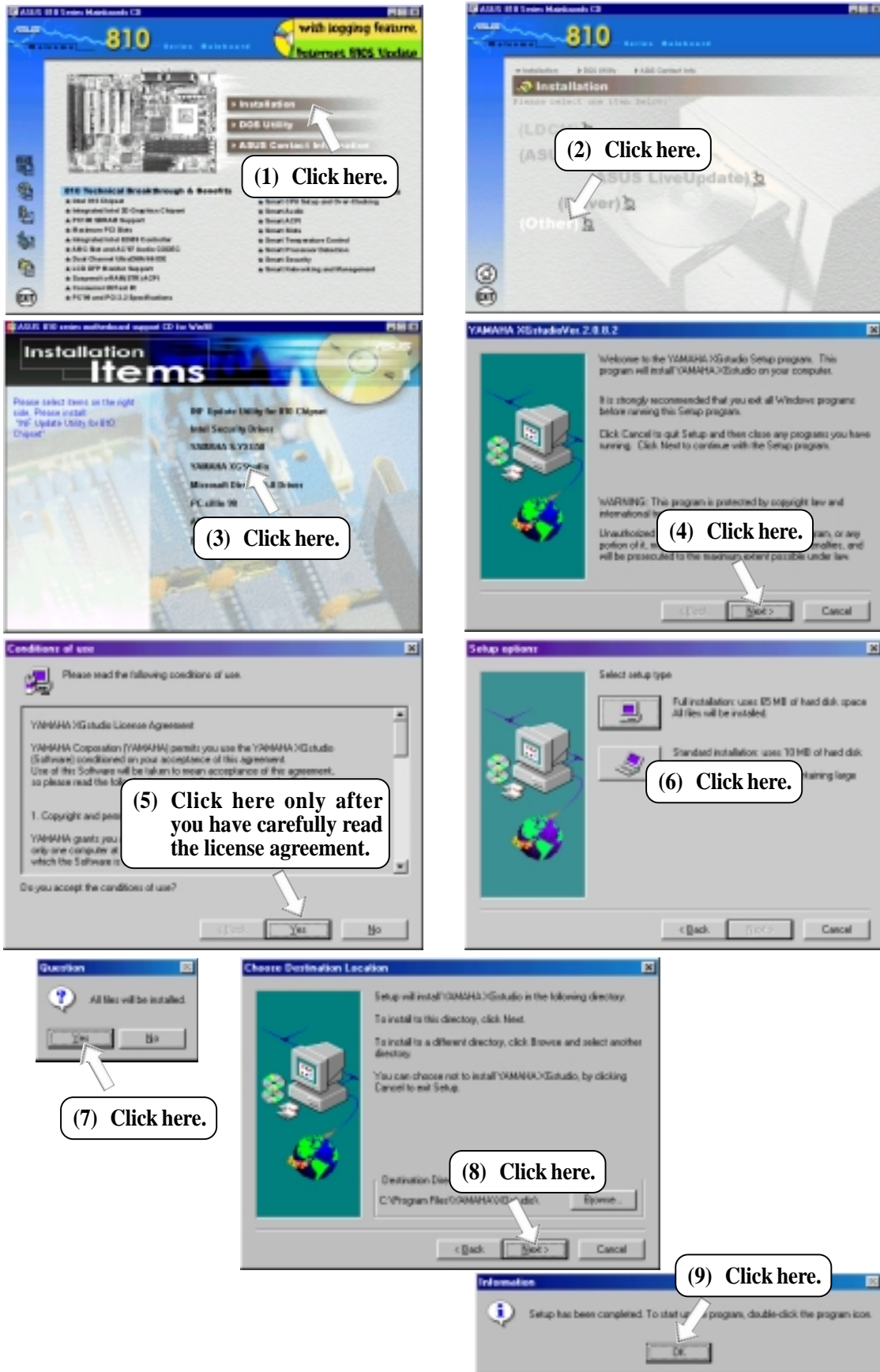


(11) Click here.

5. SOFTWARE SETUP

5.9.4 YAMAHA XGStudio

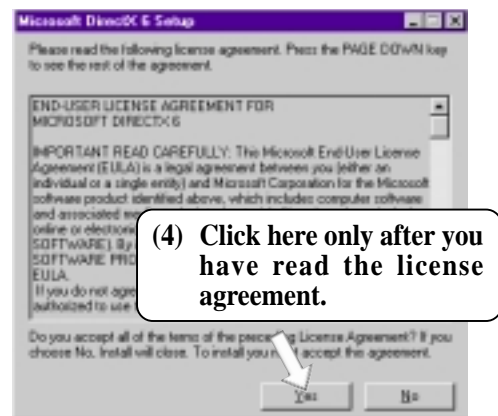
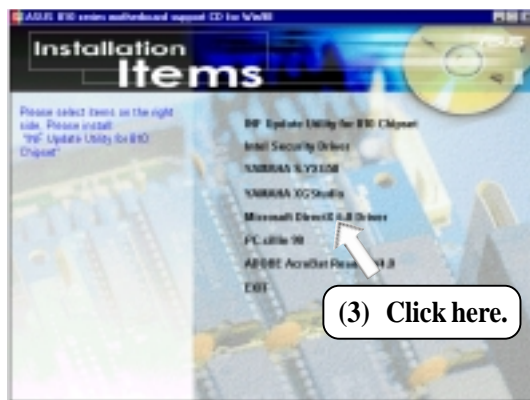
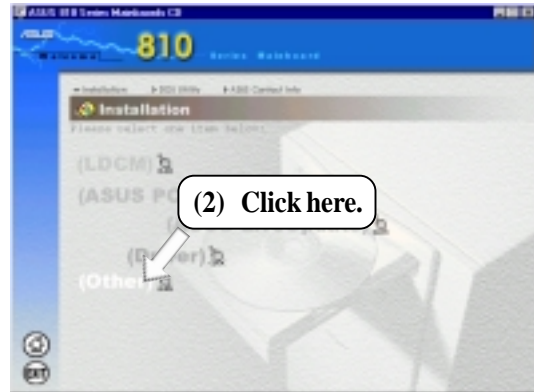
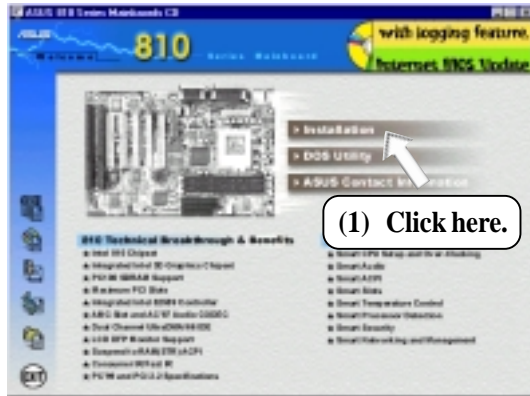
Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



5. SOFTWARE SETUP

5.9.5 Microsoft DirectX 6.0 Driver

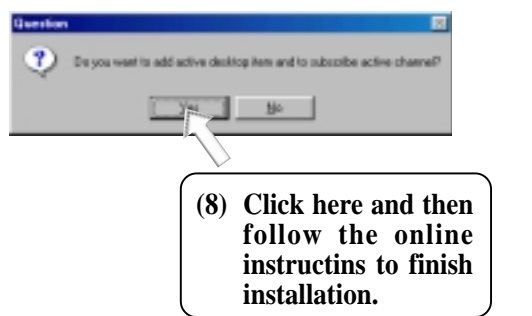
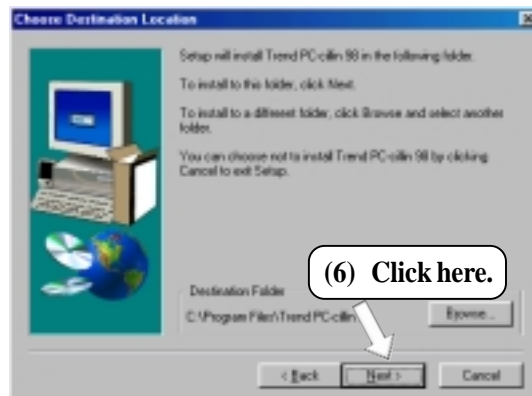
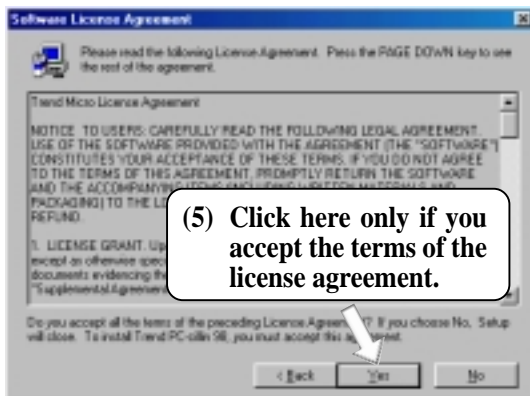
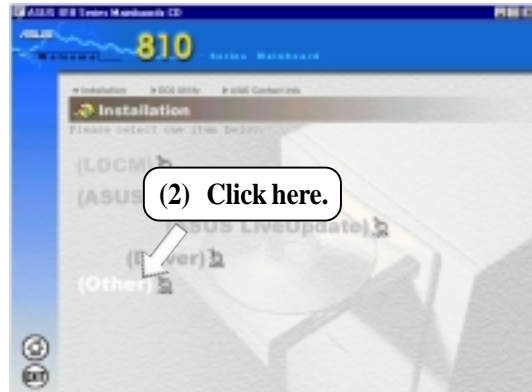
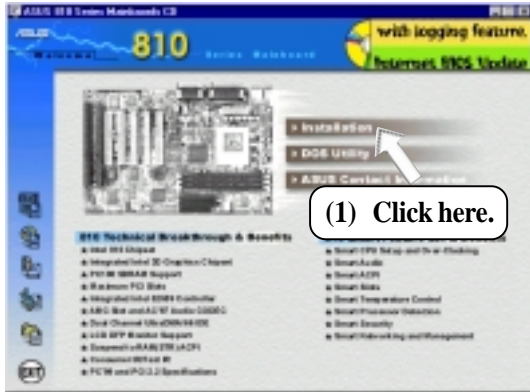
Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



5. SOFTWARE SETUP

5.9.6 PC-cillin 98

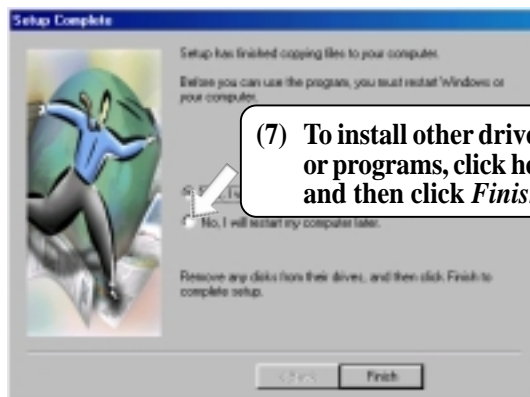
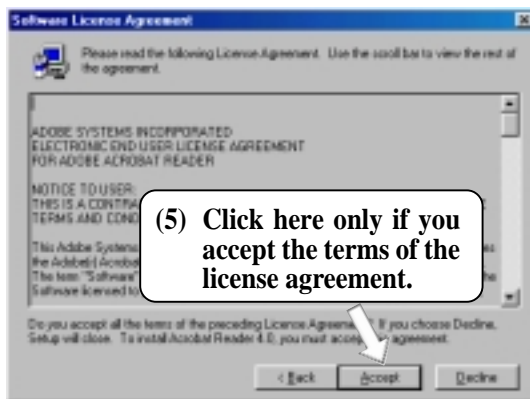
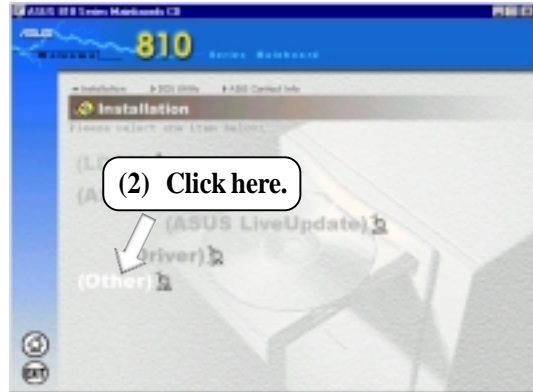
Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



5. SOFTWARE SETUP

5.9.7 Adobe Acrobat Reader V4.0

Insert the Support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



5. S/W SETUP
Windows 98

5. SOFTWARE SETUP

5.10 Uninstalling Programs

Add/Remove Programs is a basic component within Windows. You may use this function if a program does not provide its own uninstall program.

(1) Double-click here to open the Add/Remove Programs Properties dialog box.

(2) Select the program to remove and click here.

(3) Click here.

6. SOFTWARE REFERENCE

6.1 Display Properties

The motherboard's built-in 2D/3D AGP VGA supports professional graphics design, gaming, learning, and business applications.

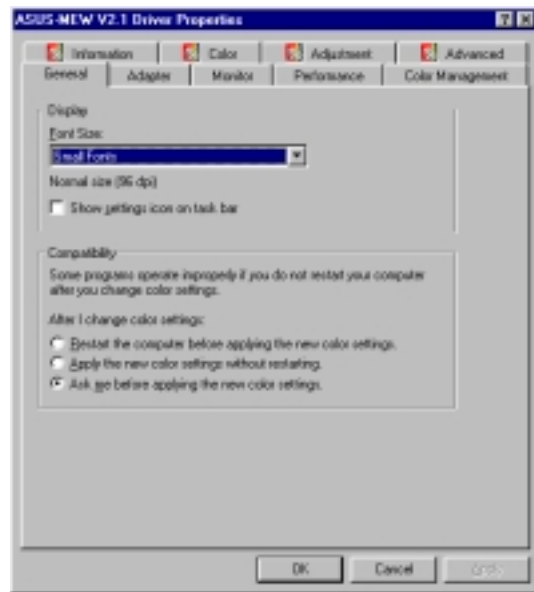
NOTE: Depending on your system configuration, components, and options, your system may not show all of the settings displayed in the following pictures.

To open the Properties dialog box, right-click the desktop and select **Properties**, the **Settings** tab, and then the **Advanced** button.

General

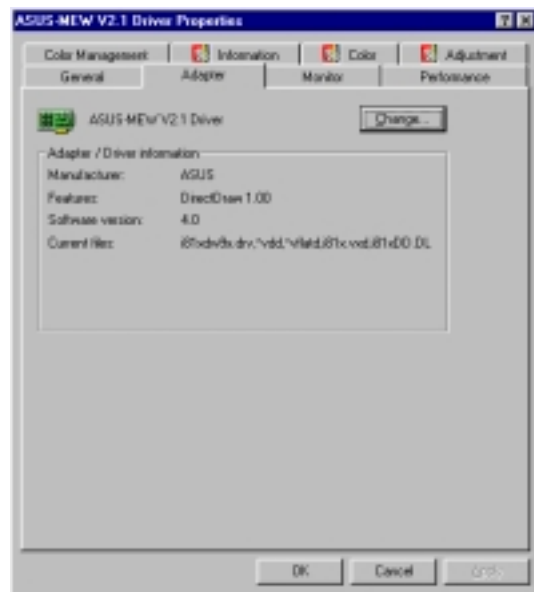
The **Display** box displays the current font size of the selected monitor. To use a different font size, click the arrow, and then click the font size you want.

The **Compatibility** box allows you to specify when to apply changes to system color settings. **NOTE:** Some programs might not display colors correctly without being restarted after you make changes. To avoid this problem, close the program, change the color settings, and then open the program again.



Adapter

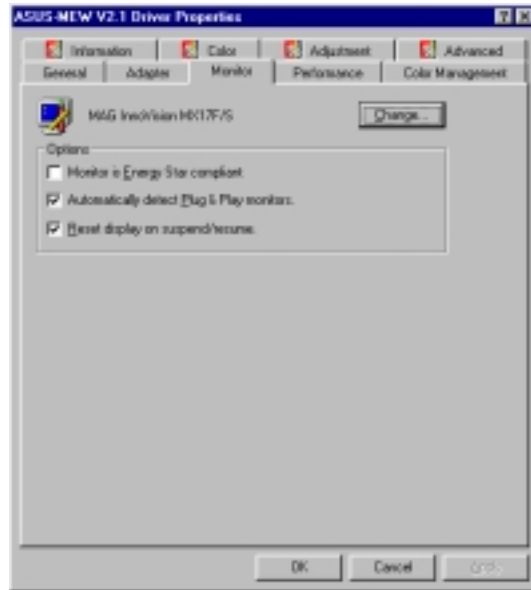
Shows what type of display adapter you are currently using. To install the software for a new display adapter, click **Change**.



6. SOFTWARE REFERENCE

Monitor

Shows what type of monitor you are currently using. To install the software for a new monitor, click **Change**.



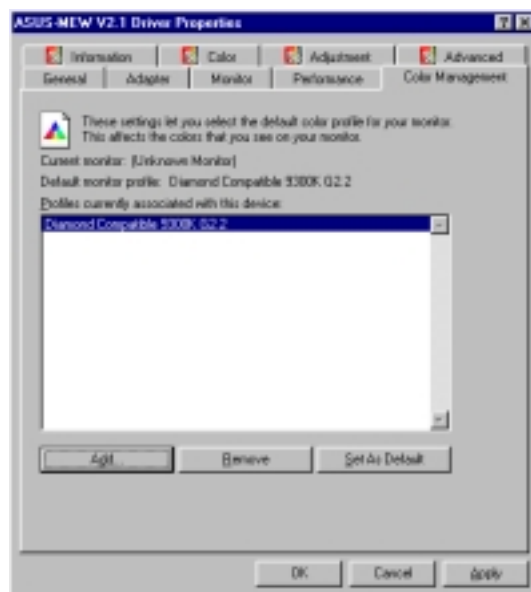
Performance

Specifies the degree of acceleration you want for your graphics hardware. Full acceleration is the fastest and is recommended for most computers. If your computer is having problems and you suspect graphics acceleration to be the cause, use the highest setting at which you do not have problems.



Color Management

Lists all the color profile currently associated with your monitor. Click a profile to make it the active profile. Otherwise, the default profile is the active profile.



6. SOFTWARE REFERENCE

Information

Gives information on your graphics device such as chipset, memory, BIOS, and drivers. Internet links are also available for easy access to the ASUS Web page for new updated drivers and notices.



Color (Desktop)

Allows you to adjust the quality of your display according to your preference. Gamma correction is available only in 16-bit color and 24-bit color (true color, 16.7M-color) modes. In 16-color and 8-bit color (standard color, 256-color) modes, the gamma correction function is not supported.



Color (Direct3D/Game)

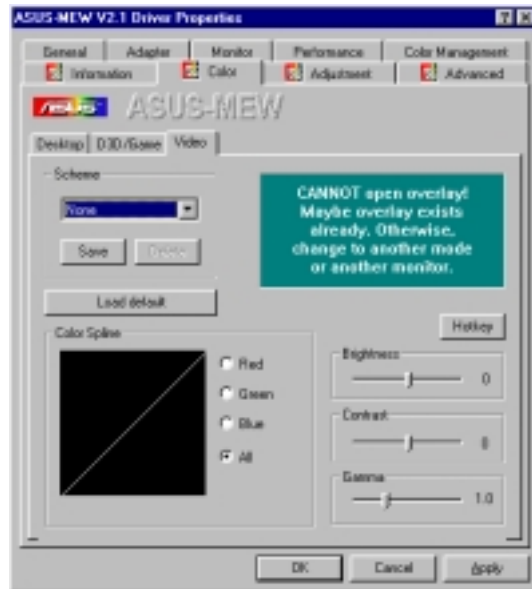
This is the same as the color adjustments for the desktop but this applies to direct3D applications and games.



6. SOFTWARE REFERENCE

Color (Video)

Lets you make color settings for videos.



Adjustment

Allows you to adjust the display position, size, and refresh rate.

Change refresh rate

Allows you to adjust the default refresh rates for each resolution and color settings.

Change current refresh rate

Allows you to adjust the currently displayed resolution refresh rate.



Advanced

Allows you to assign hot keys to enable the **OnScreen Display (OSD)**. To use this function, select **Enable OSD**. You may want to change the default hot key (CTRL+ALT+O) if it conflicts with the hot keys of other games, video players, or Windows programs.



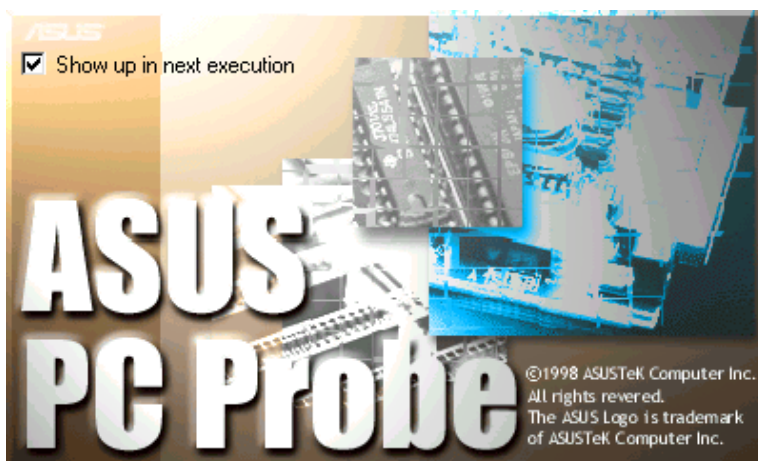
6. SOFTWARE REFERENCE

6.2 ASUS PC Probe


ASUS PC Probe is a convenient utility to continuously monitor your computer system's vital components, such as fan rotations, Voltages, and temperatures. It also has a utility that lets you review useful information about your computer, such as hard disk space, memory usage, and CPU type, CPU speed, and internal/external frequencies through the DMI Explorer.

6.2.1 Starting ASUS PC Probe

When ASUS PC Probe starts, a splash screen appears allowing you to select whether to show the screen again when you open PC Probe or not. To bypass this startup screen, clear the **Show up in next execution** check box.



To open **ASUS PC Probe**, click the Windows **Start** button, point to **Programs**, and then **ASUS Utility**, and then click **Probe Vx.xx**.

The PC Probe icon  will appear on the taskbar's system tray indicating that ASUS PC Probe is running. Clicking the icon will allow you to see the status of your PC.

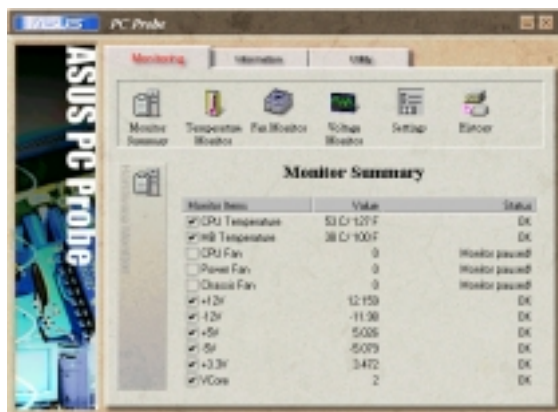


6. SOFTWARE REFERENCE

6.2.2 Using ASUS PC Probe Monitoring

Monitor Summary

Shows a summary of the items being monitored.



Temperature Monitor

Shows the PC's temperature.

Temperature Warning threshold adjustment
(Move the slider up to increase the threshold level or down to decrease the threshold level)



Fan Monitor

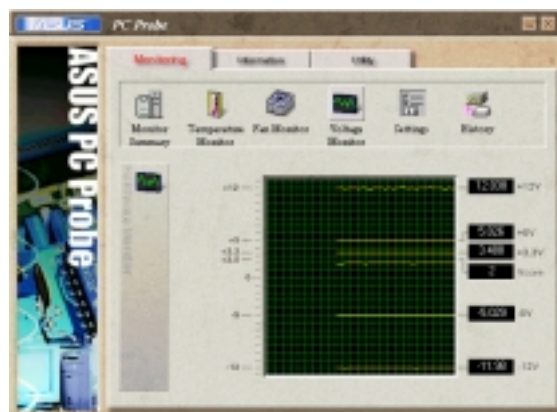
Shows the PC's fan rotation.

Fan Warning threshold adjustment
(Move the slider up to increase the threshold level or down to decrease the threshold level)



Voltage Monitor

Shows the PC's voltages.



6. SOFTWARE REFERENCE

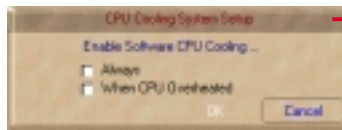
Settings

Lets you set threshold levels and polling intervals or refresh times of the PC's temperature, fan rotation, and voltages.



CPU Cooling System Setup

Lets you select when to enable software CPU cooling. When **When CPU Overheated** is selected, the CPU cooling system is enabled whenever the CPU temperature reaches the threshold value.



History

Lets you record the current monitoring activity of a certain component of your PC for future reference.



Information

Hard Drives

Shows the used and free space of the PC's hard disk drives and the file allocation table or file system used.



6. SOFTWARE REFERENCE

Memory

Shows the PC's memory load, memory usage, and paging file usage.



Device Summary

Shows a summary of devices in your PC.



DMI Explorer

Shows information pertinent to the PC, such as CPU type, CPU speed, and internal/external frequencies, and memory size.



Utility

Lets you run programs outside of the ASUS Probe modules. To run a program, click **Execute Program**.



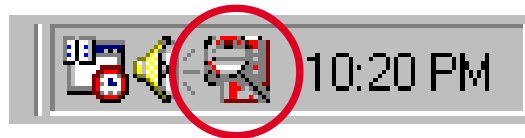
6. SOFTWARE REFERENCE

6.2.3 ASUS PC Probe Task Bar Icon

Right-clicking the PC Probe icon will bring up a menu to open or exit ASUS PC Probe and pause or resume all system monitoring.



When the ASUS PC Probe senses a problem with your PC, portions of the ASUS PC Probe icon changes to red, the PC speaker beeps, and the ASUS PC Probe monitor is displayed.



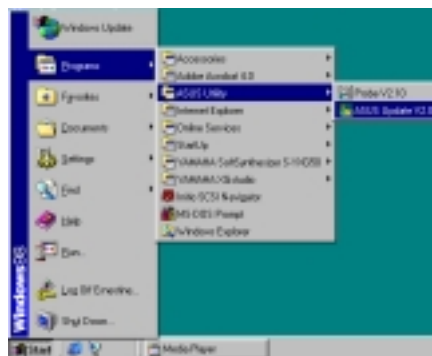
6. SOFTWARE REFERENCE

6.3 ASUS LiveUpdate

ASUS LiveUpdate is a utility that allows you to update your motherboard's BIOS and drivers. The use of this utility requires that you are properly connected to the Internet through an **Internet Service Provider (ISP)**.

1. Start ASUS Update V2.00.

Launch the utility from **Start | Programs | ASUS Utility | ASUS LiveUpdate V1.00**.



2. Select an update method.



3. If you selected updating/downloading from the Internet, you will need to select an Internet site. Choose the site that is closest to you or click **Auto Select**.



If you selected **Update from a file**, you will be prompted to locate the file.



6. SOFTWARE REFERENCE

6.4 Using Yamaha XGstudio Player

To start the Yamaha XGstudio, click **Start**, point to **Programs**, point to **YAMAHA XGstudio**, and then click **XGstudio Player**.

6.4.1 Yamaha XGstudio Player Control Panel



Closes the player. **NOTE:** You can also close the player by pressing <Alt>+<F4>.



Minimizes the player to an icon.




Displays the *Set Play List* dialog box where you can create a list of songs to play automatically. **NOTE:** You can also display the *Set Play List* dialog box by pressing <Ctrl>+<O>.



Loads and plays the MIDO file currently selected in *Play List*. When all the songs in the *Play List* have finished, playing stops automatically and the song at the beginning of the list is designated as the current-play song.



Pauses the playing of a song. Click this button again or click  to resume playing.



Stops the playing of a song and returns the start-play location to the beginning of the song.



Designates the first song in the *Play List* as the new current-play song.



Designates the song just before the currently playing song as the new current-play song.



Designates the song after the song currently playing as the new current-play song.



Designates the last song in the *Play List* as the new current-play song.



Displays the control panel for the *Soft Synthesizer* features.



Speeds up the tempo of the song being played.



Slows down the tempo of the song being played.

NOTE: The tempo is reset to 0 for each new song.



Displays the *Set Sound Source* dialog box.



Displays *Help*. **NOTE:** You can also display *Help* by pressing <F1>.



Increases/decreases the volume level of the song being played by dragging the slider up/down.

For detailed instructions and references to software and utilities, use the programs' online help and electronic documentations.

6. SOFTWARE REFERENCE

6.5 Using Yamaha XGstudio Mixer

To start the Yamaha XGstudio, click **Start**, point to **Programs**, point to **YAMAHA XGstudio**, and then click **XGstudio Mixer**.

6.5.1 Yamaha XGstudio Mixer Control Panel

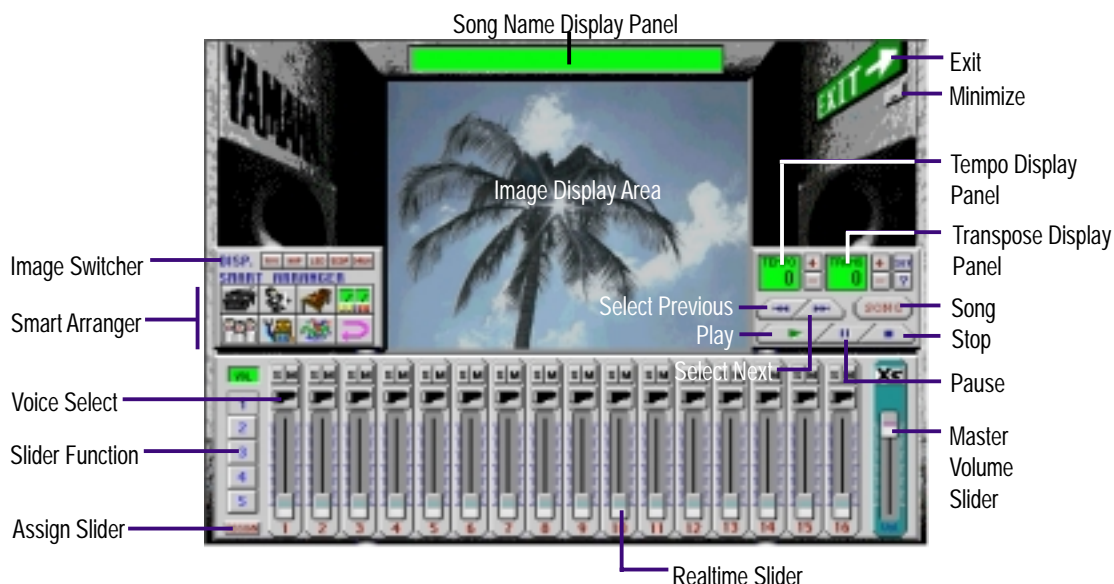
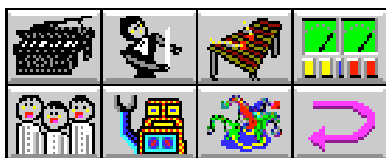



Image Switcher

- AVI** (AVI file): **Video image**
Displays the AVI file with the same name as the MIDI file being played. If one is not available, the preset **DEFAULT.AVI** file is played.
- BMP** (BMP file): **Still image**
Displays the BMP file with the same name as the MIDI file being played. If one is not available, the preset **DEFAULT.BMP** file is played.
- LED** (LED velocity meter): **Animation**
Displays the volume (amount of velocity) of each MIDI channel.
- SCOP** (SCOPE velocity meter): **Animation**
Displays the volume (amount of velocity) of each MIDI channel graphically in a radio chart.
- DRUM** (drum and percussion): **Animation**
Displays animation with lights that match the drums and percussion used in the drum channel (10ch).

6. SOFTWARE REFERENCE

Smart Arranger

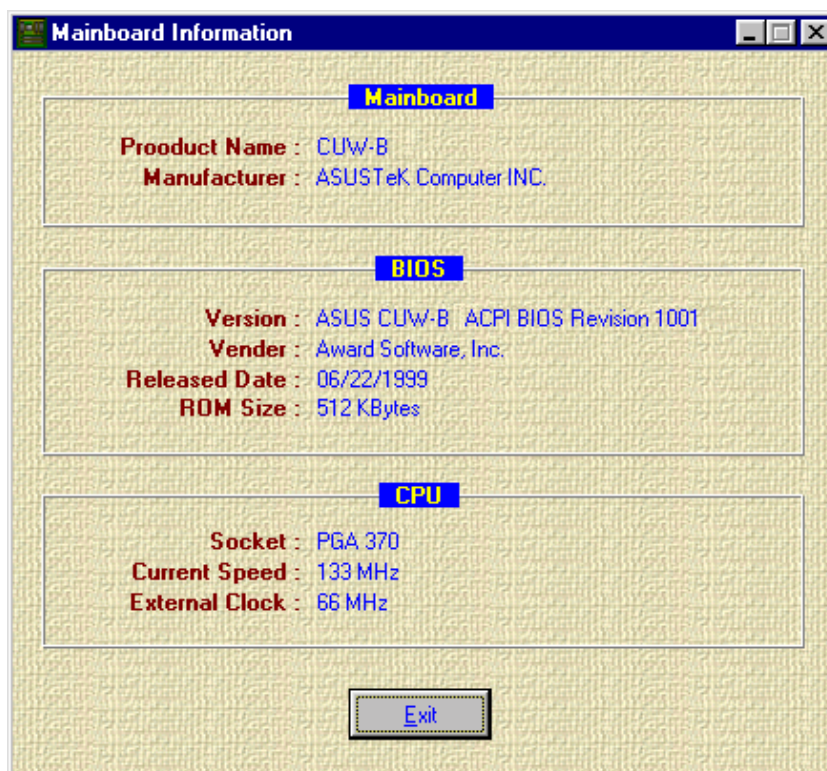


The Smart Arranger allows you to easily change the mood of a song. You can switch between seven ensemble voice sets with these buttons. To return to the original voice set, click .



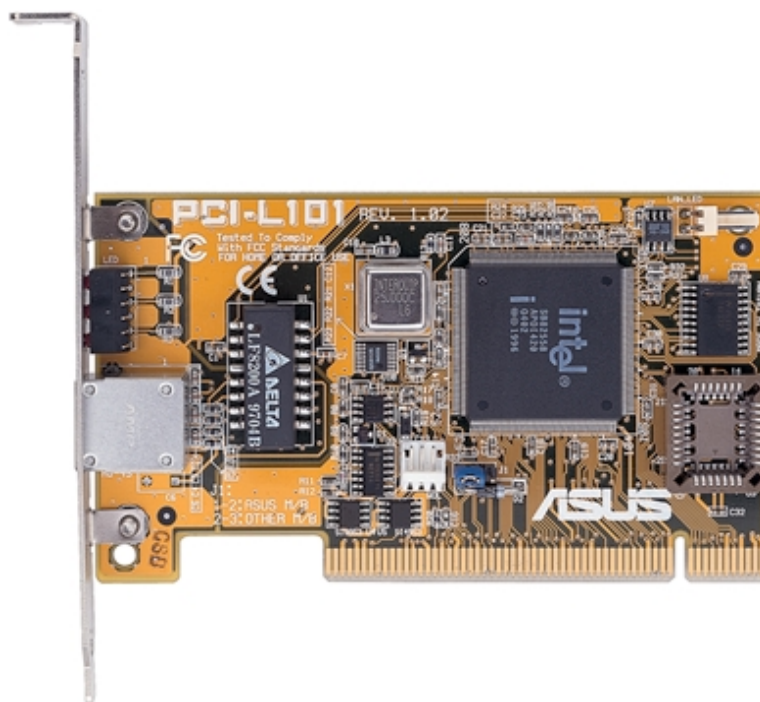
6. SOFTWARE REFERENCE

6.6 Hardware Information

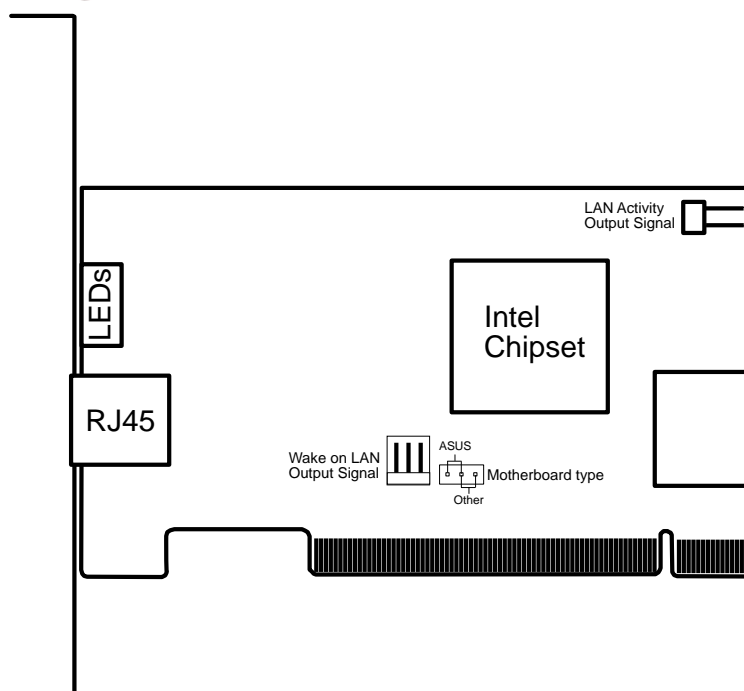


7. APPENDIX

7.1 PCI-L101 Fast Ethernet Card



7. APPENDIX
ASUS LAN Card



If you are using the ASUS PCI-L101 on an ASUS motherboard, leave the jumper on its default setting of “ASUS.” If you are using another brand of motherboard, set the jumper to “Other.” Connect the Wake on LAN (WOL) output signal to the motherboard’s WOL_CON in order to utilize the wake on LAN feature of the motherboard. Connect the LAN activity output signal (LAN_LED) to the system cabinet’s front panel LAN_LED in order to display the LAN data activity.

7. APPENDIX

7.1.1 Features

- Intel 82558 Ethernet LAN Controller (Fully integrated 10BASE-T/100BASE-TX)
- Wake-On-LAN Remote Control Function Supported
- PCI Bus Master Complies to PCI Local Bus Rev. 2.1 specifications
- Consists of MAC & PHY (10/100Mbps) interfaces
- Complies to IEEE 802.3 10BASE-T and IEEE 802.3u 100BASE-TX interfaces
- Fully supports 10BASE-T & 100BASE-TX operations through a single RJ45 port
- Supports 32-bit Bus Master Technology / PCI Rev. 2.1
- Enhancements on ACPI & APM
- Adheres to PCI Bus Power Management Interface Rev. 1.0, ACPI Rev. 1.0, and Device Class Power Management Rev. 1.0
- IEEE 802.3u auto-negotiation for 10Mbps/100Mbps Network Data Transfer Rates.
- Provides LED indicators for monitoring network conditions
- Plug and Play

7.1.2 Software Driver Support

- **NetWare ODI Drivers** - Novell Netware 3.x, 4.x, DOS, OS/2 Client
- **NDIS 2.01 Drivers** - Microsoft LAN Manager, Microsoft Windows 3.11, IBM LAN Server
- **NDIS 3.0 Drivers** - Microsoft Windows NT, Microsoft Windows 95, Microsoft Windows 3.11

7.1.3 Question and Answer

Q: What is Wake-On-LAN ?

A: The Wake-On-LAN feature provides the capability to remotely power on systems supporting Wake-On-LAN by simply sending a wake-up frame. With this feature, remotely uploading/downloading data to/from systems during off-peak hours will be feasible.

Q: What can Wake-On-LAN do for you ?

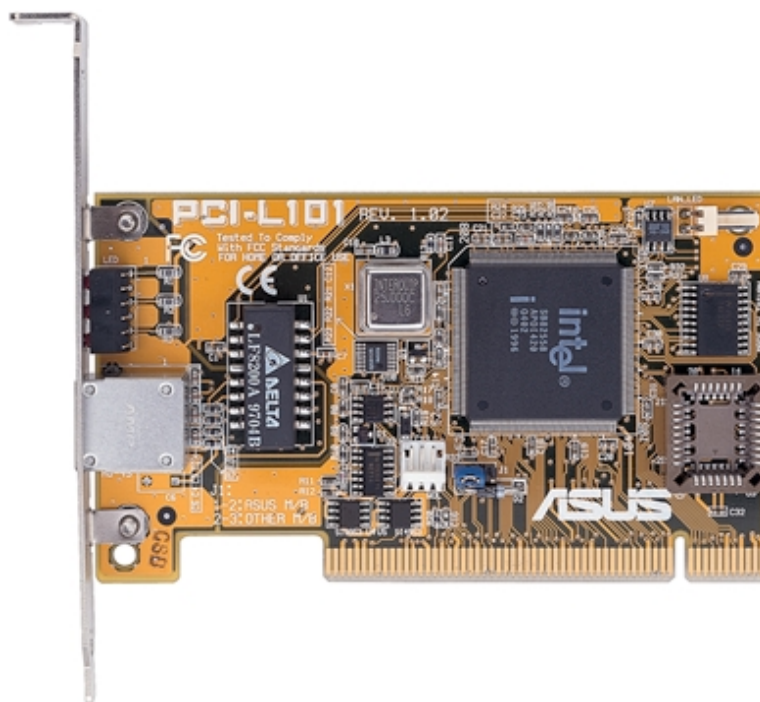
A: Wake-On-LAN is a remote management tool with advantages that can reduce system management workload, provide flexibility to the system administrator's job, and then of course save you time-consuming efforts and costs.

Q: What components does Wake-On-LAN require to be enable?

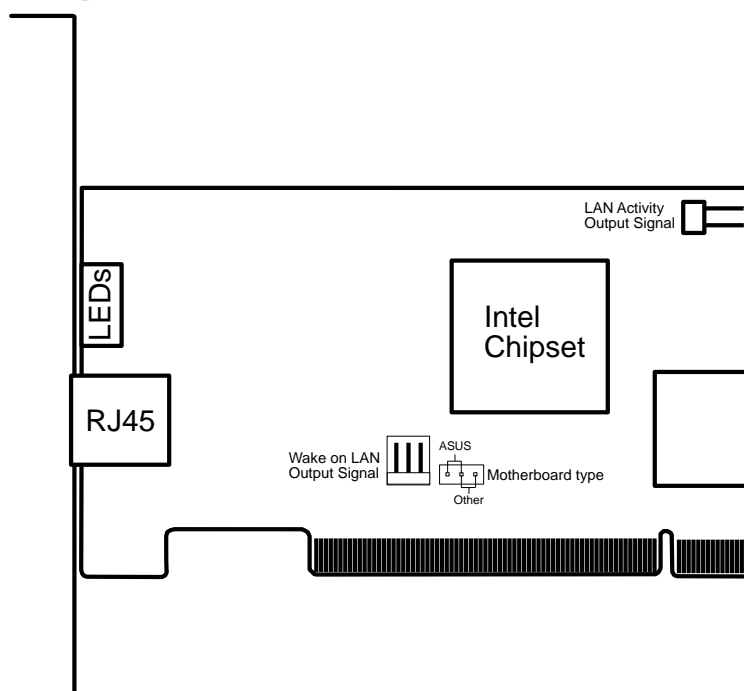
A: To enable Wake-On-LAN function, your system requires Ethernet LAN adapter card that can activate Wake-On-LAN function, a client with Wake-On-LAN capability, and software such as LDCM Rev. 3.10 or up that can trigger wake-up frame.

7. APPENDIX

7.1 PCI-L101 Fast Ethernet Card



7. APPENDIX
ASUS LAN Card



If you are using the ASUS PCI-L101 on an ASUS motherboard, leave the jumper on its default setting of “ASUS.” If you are using another brand of motherboard, set the jumper to “Other.” Connect the Wake on LAN (WOL) output signal to the motherboard’s WOL_CON in order to utilize the wake on LAN feature of the motherboard. Connect the LAN activity output signal (LAN_LED) to the system cabinet’s front panel LAN_LED in order to display the LAN data activity.

7. APPENDIX

7.1.1 Features

- Intel 82558 Ethernet LAN Controller (Fully integrated 10BASE-T/100BASE-TX)
- Wake-On-LAN Remote Control Function Supported
- PCI Bus Master Complies to PCI Local Bus Rev. 2.1 specifications
- Consists of MAC & PHY (10/100Mbps) interfaces
- Complies to IEEE 802.3 10BASE-T and IEEE 802.3u 100BASE-TX interfaces
- Fully supports 10BASE-T & 100BASE-TX operations through a single RJ45 port
- Supports 32-bit Bus Master Technology / PCI Rev. 2.1
- Enhancements on ACPI & APM
- Adheres to PCI Bus Power Management Interface Rev. 1.0, ACPI Rev. 1.0, and Device Class Power Management Rev. 1.0
- IEEE 802.3u auto-negotiation for 10Mbps/100Mbps Network Data Transfer Rates.
- Provides LED indicators for monitoring network conditions
- Plug and Play

7.1.2 Software Driver Support

- **NetWare ODI Drivers** - Novell Netware 3.x, 4.x, DOS, OS/2 Client
- **NDIS 2.01 Drivers** - Microsoft LAN Manager, Microsoft Windows 3.11, IBM LAN Server
- **NDIS 3.0 Drivers** - Microsoft Windows NT, Microsoft Windows 95, Microsoft Windows 3.11

7.1.3 Question and Answer

Q: What is Wake-On-LAN ?

A: The Wake-On-LAN feature provides the capability to remotely power on systems supporting Wake-On-LAN by simply sending a wake-up frame. With this feature, remotely uploading/downloading data to/from systems during off-peak hours will be feasible.

Q: What can Wake-On-LAN do for you ?

A: Wake-On-LAN is a remote management tool with advantages that can reduce system management workload, provide flexibility to the system administrator's job, and then of course save you time-consuming efforts and costs.

Q: What components does Wake-On-LAN require to be enable?

A: To enable Wake-On-LAN function, your system requires Ethernet LAN adapter card that can activate Wake-On-LAN function, a client with Wake-On-LAN capability, and software such as LDCM Rev. 3.10 or up that can trigger wake-up frame.

7. APPENDIX

7.2 Modem Riser

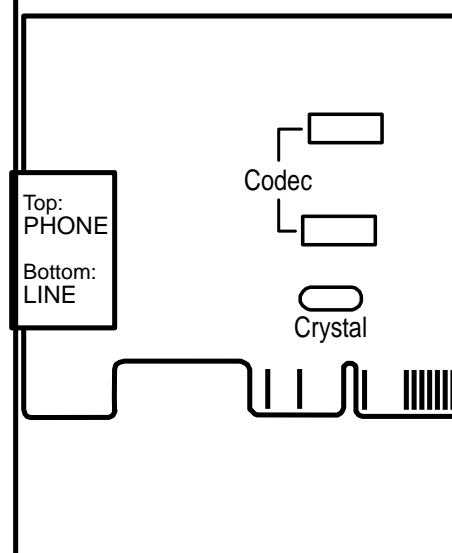
7.2.1 56K Software Modem

The Modem Riser (MR) is a high-speed PC communication peripheral which works with AMC'97/MC'97 compliant codecs. With this software modem, you can connect your computer to a remote location, receiving data at up to 56 Kbps in V.90 or K56flex modes.

7.2.2 Primary/Secondary MR

There are two types of modem risers: primary MR and secondary MR. In appearance, the primary MR has a crystal onboard but the secondary does not. If your motherboard has an audio codec and no PCI audio chipset onboard, you may use the secondary MR; otherwise, you should use the primary MR.

Layout of Primary MR



7. APPENDIX
Modem Riser

7.2.3 Hardware Installation Procedure




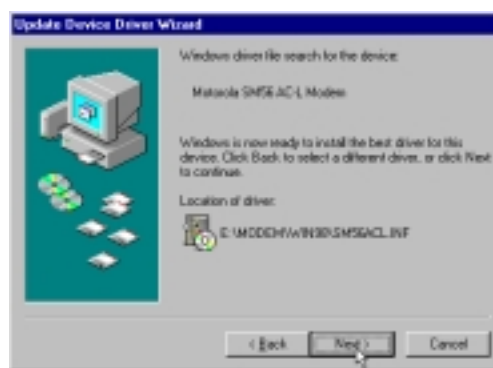
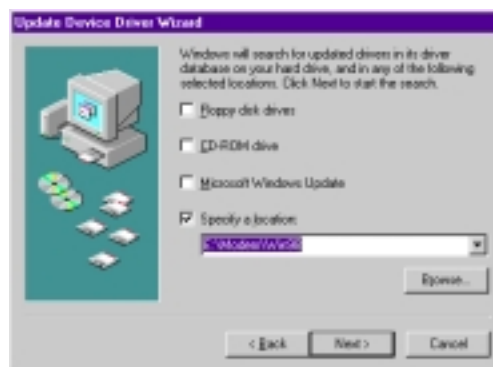
1. Power OFF your computer.
2. Open the computer chassis and remove the metal plate on the AMR expansion slot.
3. Carefully align the MR card's connector to the AMR slot and press firmly.
4. Secure the MR card onto the chassis with the screw removed in step 2.
5. Connect the MR card's **LINE** connector to a telephone wall jack. Connect the **PHONE** connector to a telephone (optional).
6. Replace the computer chassis.

7. APPENDIX

7.2.4 Software Setup in Windows 98

The Modem Riser supports the Plug and Play feature. It allows your computer to automatically set the optimal configurations for the MR and communication software. Follow the procedure below to install the modem driver.

1. Power ON the computer after the hardware installation is completed.
2. Windows 98 will automatically detect the modem and display a “PCI Card” message under “Add New Hardware Found”.
3. Select **Search for the best driver for your device** and click **Next**.
4. Insert the Support CD that came with your motherboard into your CD-ROM drive. Enter the path **E:\Modem\Win98** (assuming that your CD-ROM drive is drive E:) for the MR driver.
5. After the driver is located, click **Next** and then click **Finish**.
6. Restart your computer. Double click the modem icon at the bottom-right corner of the window. 
7. Click the **Settings** tab. Select your country and language. Click **OK**.
8. Click **Start**, point to **Settings**, click **Control Panel**, double click **Modems**, click the **General** tab, and click **Motorola SM56 AC-L Modem**.
9. Click **Diagnostic** and then click the designated COM port as shown.
10. Click **More Info...**. If the computer system successfully communicates with the modem, responses will be displayed as shown.



INDEX

A

AC PWR Loss Restart 72
Adobe Acrobat Reader
 Setup 101
Alert-on-LAN
 Connector 40
 Support 8
ASUS LiveUpdate 90
 Setup 90
 Using 112
ASUS PC Probe
 Setup 89
 Using 107
AT Power Supply Connector 42
ATAPI CD-ROM 75
ATX Power Supply Connector 41
ATX Power Switch Lead 41
Audio
 PCI 9
 Software 8
Audio Controller 64
Audio Jack Header 35
Automatic Power Up 73

B

BIOS Beep Codes 43
BIOS Update 59
Boot Sequence 75
Boot Up Floppy Seek 76
Boot Up NumLock Status 76
Boot Virus Detection 76

C

Central Processing Unit 26
Chassis Fan
 Connector 34
Chassis Fan Speed 74
Chassis Intrusion Lead 39
CHS Capacity 55
Connectors
 Alert-on-LAN 40
 AT Power Supply 42
 ATX Power Supply 41
 Audio Jack 35

Chassis Fan 34
Chassis Intrusion 39
Consumer IR 36
CPU Fan 34
Digital LCD 37
Floppy Disk Drive 31
IDE Activity LED Lead 32
Infrared 39
Internal Audio 35
Internal Microphone 38
Keyboard 31
Parallel Port 33
Power Fan 34
Primary / Secondary IDE 32
PS/2 Mouse 39
Serial Port 36
SMBus 37
Standard IR 36
Thermal Sensor 42
True-Level Line Out 38
USB 39
VGA 38
Wake-On-LAN 33
Wake-On-Ring 34
Consumer IR Connector 36
CPU Bus Frequency (MHz) 59
CPU Fan Connector 34
CPU Fan Speed 74
CPU Latency Timer 63
CPU Level 1 Cache 59
CPU Level 2 Cache 59
CPU Level 2 Cache ECC Check 59
CPU Speed 58
CPU Temperature 74
CPU Vcore 59
CPU/SDRAM/HL/PCI Freq. Rati 58
Cylinders 54

D

D0000-DFFFF Shadow 69
Digital LCD Header 37
Discard Changes 78
Display Cache CAS Latency 63
Display Cache Window Size 63
DMA x Used By ISA 68

INDEX

- Driver Setup 91
 - Intel Security 95
 - Microsoft DirectX 99
 - PCI Audio 81
 - VGA 91
- E**
- ECP DMA Select 65
- Exit Discarding Changes 77
- Exit Saving Changes 77
- Expansion Cards 27
 - Assigning IRQs 28
 - Audio Modem Riser 30
 - Installation Procedure 27
- External Connectors 31
- F**
- Fast Ethernet Card 117
- Floppy 3 Mode Support 52
- Floppy Disk Access Control 64
- Floppy Disk Drive Connector 31
- Full Screen Logo 76
- H**
- Halt On 57
- Hardware Information 116
- HDD Power Down 71
- Head 55
- High Priority PCI Mode 63
- I**
- IDE Activity LED Lead 32
- IDE Hard Drive 75
- INF Update Utility for 810 Chipset 94
- Installation
 - Expansion Card 27
 - Memory 25
- Installed Memory 57
- Intel Security Driver 95
- Internal Audio Connectors 35
- Internal Microphone Connector 38
- Interrupts
 - Request Table 29
 - Standard Assignments 28
- IRQ XX Used By ISA 67
- ISA Cards
 - Assigning DMA Channels 30
- ISA MEM Block BASE 69
- Item Checklist 7
- K**
- Keyboard Connector 31
- Keyboard Lock Switch Lead 40
- L**
- Language 56
- LDCM Administrator Setup 86
- LDCM Client Setup 84
- Legacy Diskette A 52
- Legacy Diskette B 52
- LiveUpdate
 - Setup 90
 - Using 112
- Load Setup Defaults 78
- M**
- Maximum LBA Capacity 55
- MB Temperature 74
- Memory Hole At 15M-16M 63
- Message LED Lea 41
- Microsoft DirectX
 - Driver Setup 99
- Motherboard
 - Layout 14
 - Settings 17
- Multi-Sector Transfers 55
- O**
- ONB VGA BIOS First 67
- Onboard AC97 Modem Controlle 64
- Onboard CIR I/O 65
- Onboard CIR IRQ 65
- Onboard FDC Swap A & B 64
- Onboard Game Port 65
- Onboard MIDI I/O 65
- Onboard MIDI IRQ 65
- Onboard Parallel Port 65
- Onboard PCI IDE Enable 63
- Onboard Serial Port 1 64
- Onboard Serial Port 2 64
- Onboard VGA 63

INDEX

Operating Systems 79
OS/2 Onboard Memory > 64M 59
Other Boot Device Select 75

P

Panel Connector
 ATX Power Switch Lead 41
 Keyboard Lock Switch Lead 40
 Message LED Lead 41
 Reset Switch Lead 40
 SMI 41
 Speaker 40
Parallel Port Connector 33
Parallel Port Mode 65
PC Probe
 Setup 89
 Using 107
PC-cillin 98 Setup 100
PCI Audio 9
PCI Latency Timer 66
PCI-L101 Fast Ethernet Card 117
PCI/VGA Palette Snoop 66
PIO Mode 55
Plug & Play O/S 76
Power Fan Speed 74
Power Management 70
Power Supply Connector 34
Power Supply Fan Connector 34
Primary IDE Connector 32
Procedures
 Hardware Setup 17
 Updating BIOS 46
Programs
 Uninstalling 102
PS/2 Mouse Function Control 59
PWR Button < 4 Secs 71
PWR Up On Modem Act 72

Q

Quick Power On Self Test 76

R

Removable Device 75
Reset Switch Lead 40

S

Save Changes 78
SDRAM CAS Latency 62
SDRAM Configuration 62
SDRAM Cycle Time (Tras, Trc) 62
SDRAM RAS Precharge Time 62
SDRAM RAS to CAS Delay 62
Secondary IDE Connector 32
Sector 55
Serial IR Connector 36
Serial Port Headers 36
Settings
 Automatic Timeout Reboot 21
 CPU External Frequency 22
 I/O Voltage 18, 20
 JumperFree™ Mode 18
 Motherboard 17
 Onboard Audio 19
 Safe Mode 20
SMART Monitoring 55
SMBus Connector 37
Software Audio 8
Software Setup
 Adobe Acrobat Reader 101
 LDCM Administrator 86
 LDCM Client 84
 LiveUpdate 90
 PC Probe 89
 PC-cillin 98 100
 Yamaha S-YXG50 96
 Yamaha XGStudio 98
Specifications 8
Starting Up 43
Supervisor Password 56
Support CD
 Main Menu 81
 Navigation Button 81
 Submenus 82
Suspend Mode 71
Suspend-to-RAM
 Support 10
Suspend-to-RAM Capability 71
SYMBIOS SCSI BIOS 66
System Date 52

INDEX

- System Management Interrupt Lead 41
- System Memory 24
- System Power LED Lead 40
- System Time 52
- System Warning Speaker Connector 40
- T**
- Thermal Sensor Connector 42
- Translation Method 54
- True-Level Line Out Header 38
- Type 53
- U**
- UART2 Use Standard Infrared 65
- Ultra DMA Mode 55
- Uninstalling Programs 102
- Updating Your BIOS 45
- USB Function 67
- USB Legacy Support 59
- USB, PS/2 Mouse, Infrared Module Connector 39
- User Password 56
- Using
 - LiveUpdate 112
 - PC Probe 107
 - Yamaha XGstudio Mixer 114
 - Yamaha XGstudio Player 113
- V**
- VCORE Voltage 74
- VGA Driver Setup 91
- VGA Header 38
- Video Off Method 71
- Video Off Option 71
- Video ROM BIOS Shadow 69
- Voltage
 - +12 74
 - +3.3 74
 - +5 74
 - 12 74
 - 5 74
 - VCORE 74
- W**
- Wake On LAN 72
- Wake On PS2 KB/PS2 Mouse/CIR 73
- Wake Up By Keyboard 73
- Wake-On-LAN Connector 33
- Wake-On-Ring Connector 34
- Y**
- Yamaha S-YXG50 96
- Yamaha XGStudio 98
- Yamaha XGstudio Mixer 114
- Yamaha XGstudio Player 113



Goes Mobile!

M8300/8200 Series

Thin & Light Convertible Notebook PC

13.3" or 12.1" TFT Color Display
233/266/300/333/366/400+MHz



F7400 Series

Professional Notebook PC

14.1" TFT Color Display
300/333/366/400+MHz
Built-in DVD/MPEG2 Decoder

L7300/7200 Series

All-in-One Compact Notebook PC

13.3" or 12.1" TFT Color Display
300/333/366/400+MHz



ASUS® Ultra-Fast CD-ROM



- Supports high speed CD-Audio playback
- Supports high speed digital audio extraction
- Supports UltraDMA/33 transfer mode
- Compatible with all CD formats
- Supports multi-read function (CD-R/CD-RW)



Drive Interface Type:	ATAPI/Enhanced IDE supporting PIO mode 4, multi-word DMA mode 2, UltraDMA/33
Disc Formats:	Audio CD, CD-ROM (mode 1 & mode 2), Mixed mode, CD-ROM/XA (mode 2, form 1 & form 2), Video CD, CD-I, Photo CD (single & multi-session), Karaoke CD, CD Extra, I-Trax, CD-R, CD-RW
Disk Size:	8 cm and 12 cm
OS Compatibility:	DOS 6.xx, Windows 3.x/95/98, OS/2 Warp, Netware, SCO UNIX
Cache Buffer Size:	128KB
Data Transfer Rate:	CD-S500 7500 KBps maximum CD-S450 6750 KBps maximum CD-S400 6000 KBps maximum
Access Time:	75ms

ASUS® Barebone Servers

	Pentium® III Pentium® II Support	PC100 ECC Max. Memory (GB)	Ultra2 SCSI Onboard (Channels)	5.25" Fixed Storage Devices	Hot-Swap Trays
AP100	1	1	1	3	0
AP200	2	1	1	3	0
AP2000	2	1	1	4	3 or 5*
AP2500	2	1	1	4	3 or 5*
AP3000	2 Xeon™	2	2	4	3 or 5*
AP6000	2	1	1	4	8**
AP7500	2	1	1	4	8**
AP8000	2 Xeon™	2	2	4	8**

* Three 1.6-inch or five 1-inch SCA-2 SCSI hard drives

** Eight 1.6-inch or 1-inch SCSI hard drives

Mid-Range Servers

AP6000
AP7500
AP8000

Value Servers

AP2000
AP2500
AP3000

Group Servers

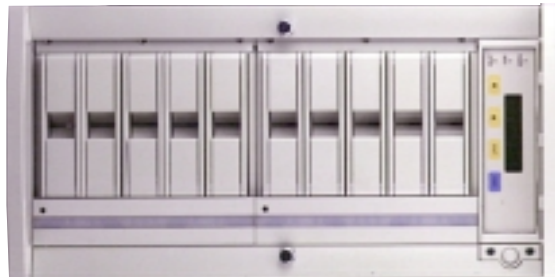
AP100
AP200



Rack Mountable

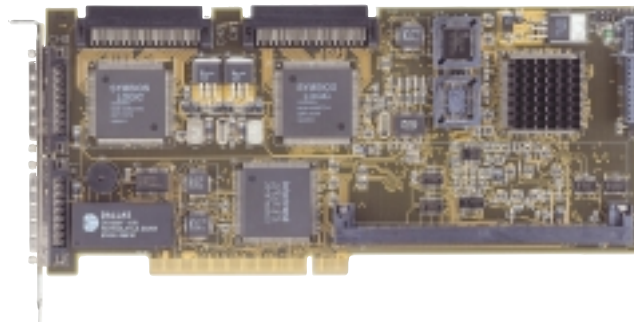
ASUS AR1000 RAID Sub-system with DA3000 SCSI-to-SCSI RAID Controller

- Supports 5x86 RAID processor and two 72-pin SIMM sockets for up to 128MB cache memory
- Supports three Ultra2 SCSI channels; up to 80MB/sec data transfer rate
- Supports multiple Host/Drive channel capacity
- Redundant controller capacity
- Supports non-RAID, RAID levels 0, 1, 0+1, 3, 5
- On-line failure drive rebuilding
- Automatic rebuilding — supports local/global spare drive
- On-line expansion capacity
- Supports SAF-TE (SCSI Accessed Fault-Tolerant Enclosure) feature
- Provides LCD panel and RS-232 port to configure RAID
- Ten 1.0" or six 1.6" Ultra2 SCSI SCA-2 hot-swappable drive bays
- 19" rack mountable (height: 5U)
- LED for hard disk power and working status
- Two 8cm system fans and four 6cm drive fans
- Aluminum disk arrays for easy heat dissipation
- 350W redundant power supply



ASUS PCI-DA2100/2200 Series SCSI RAID Card

- PCI-DA2100 series support 4x86 DX4-100 processor
- PCI-DA2200 series support 5x86-133 processor
- One 72-pin SIMM socket supports up to 128MB cache memory
- RAID levels 0, 0+1, 3, 5, non-RAID
- PCI-DA2100A supports Ultra Wide SCSI interface and dual channels
- PCI-DA2200A supports Ultra2 SCSI interface and single channel
- PCI-DA2200B supports Ultra2 SCSI interface and dual channels
- Automatic bad sector reassignment
- Supports both global and local spare drive operation
- Background rebuilding
- PCI rev. 2.1 compliant
- Up to 8 logical drives and 8 partitions per logical drive; number of drives for each logical drive has no limitation



(This page was intentionally left blank.)

(This page was intentionally left blank.)