OVERVIEW

The MS-6215 is your ultimate home PC experience. It supports everything you need, similar to a desktop computer. With all of the computing capabilities needed are presented in an " all-in-one" platform. The MS-6215 is an all-in-one NetPC solution that support Intel Celeron or Pentium III(FC-PGA) processor. It also have a build-in rich audio, 3D graphics, IEEE 1394, TV-Out Encoder, and 10/100Ethernet controller. Standard Ultimate System Armor II Enhancement utilities software allows you to manage your system with much ease.

This manual will go over the key features of the MS-6215 and the setup instructions.

Chapter 1

MS-6215 CHASSIS INSTALLATION GUIDE

1. Overview

The MS-6215 is a specially designed chassis for MS-6351 mainboard. The chassis can accomodate one Floppy drive, Hard drive, and Standard CD-ROM. The chassis back panel support one VGA, Network(UTP), Speaker,Serial Port, LPT, PS/2® mouse and keyboard, IEEE 1394 ports, USB Ports, S/AV connector for TV-Out.

2. Installation Tools

Tools you need before you start:
- screw driver (phillips cross head type)
- long nose pliers
- anti-static wrist strap or glove
- user's guide.

3. Screw

Two types of screws are provided by the MS-6215: Flat head screw and Screw w/washer.

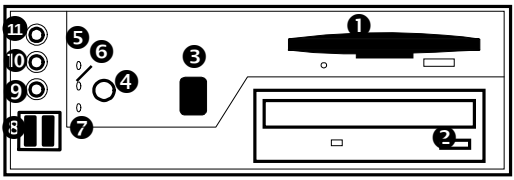
Pan Head

This type of screw is used to mount the mainboard into the Case.

Screw w/ Washer

This type of screw is used to mount the Floppy Drive, CD-ROM Drive, and Hard Drive into the Case.

4. Front Panel Overview



Front Panel

1	3.5” Floppy Drive
2	Standard CD-ROM Drive
3	IR Windows
4	Power Switch
5	Power & Suspend LED
6	Hard Disk LED
7	Network LED
8	USB ports
9	Earphone/Speaker Jack
10	Line-In Jack
11	Microphone Jack

5. Installation Procedures

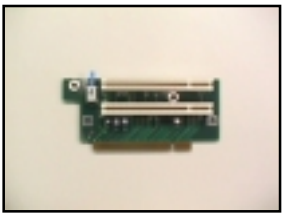
The Cables used

The Mainboard

Front Panel Audio/ USB peripheral with cables

Front Panel IR Peripheral with Cable

Riser Card

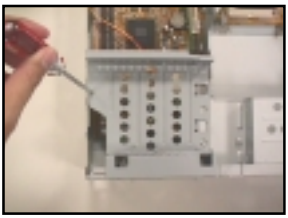


System Fan

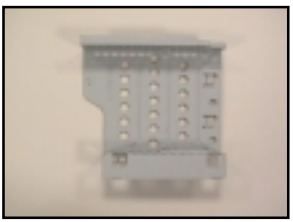
1. **Remove the screws and open the cover.**

2. **Release the lock to remove the Front Panel Bezel.**

3. Remove the HDD Bracket
- Unscrew the screw. Then, slide the HDD bracket to the left side to release.



4. HDD Bracket



5. Unscrew the Rear I/O Shield. Then, remove the Rear I/O Shield.

6. Insert the Motherboard.

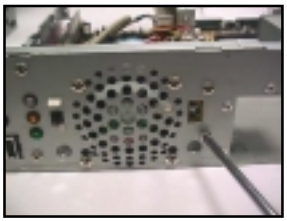
7. Align the Motherboard properly.

8. Secure with screws.

9. Connect the System Fan. Secure with screws. Connect the cable into the motherboard.

10. Connect the Front Panel Audio/USB Peripheral. Secure with screws. Connect the necessary cable into the motherboard.

11. Connect the Front Panel IR Peripheral. Secure with screws. Connect the necessary cable into the motherboard.

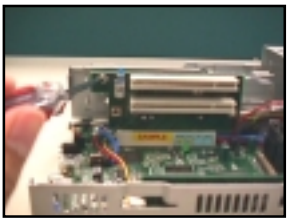


12. Install the Processor. Then, install the Processor Fan.

13. Install the DIMM module.

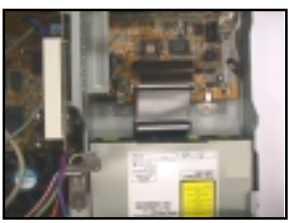
14. Insert the Riser Card.

15. Secure the Riser Card with screws.

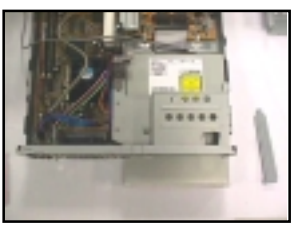


16. Reconnect the Rear I/O Shield. Secure with screws.

17. Insert the CD-ROM Drive. Connect the CD-ROM Cable into the Motherboard.



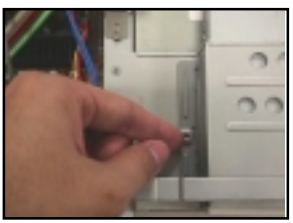
18. Connect the CD-ROM Audio Cable into the Motherboard.



19. Secure the CD-ROM drive with screws.

20. Insert the 3 1/2 Floppy Drive into the Chassis.

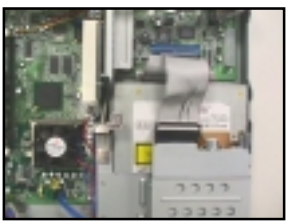
21. Connect the Floppy Drive Ear.



22. Secure the Floppy Drive Ear with screws.

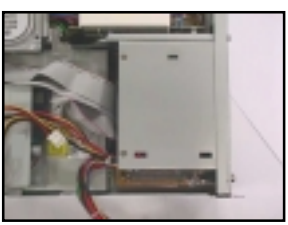
23. Secure the Floppy Drive with screws.

24. Connect the Floppy Drive Cable into the Motherboard.



25. Secure the Hard Disk into the HDD bracket with screws. Reinstall the HDD Bracket.

26. Fit in the Power Supply. Connect the power connector into the Motherboard, CD-ROM, Floppy Drive, and Hard Disk.



27. Secure the Power Supply with screws.

28. Reconnect the Front Panel Bezel.

29. Close the Chassis Cover.
- Secure with screws.

Chapter 2

MAINBOARD INTRODUCTION

The MS-6351 Micro LPX mainboard is a high-performance all-in-one computer mainboard based on Intel® 815 chipset. The MS-6351 is designed for the Intel® Celeron™ processor/Pentium III(FC-PGA) processor for inexpensive business/personal desktop markets.

The Intel® 815 chipset integrates a Display Cache SDRAM controller that supports a 32-bit 133MHz SDRAM array for enhanced integrated 3D graphics performanced. It is a highly-flexible chipset which is designed to extend the basic graphics/multimedia PC platform up to the mainstream performance desktop platform.

The Intel® 815 chipset implements the host address, control, and data bus interfaces within a single device, it takes advantage of the pipelined addressing capability of the processor to improve the overall system performance. In addition, the chipset also integrates a system memory controller that supports a 64-bit 100/133 MHz SDRAM array.

The Intel® 82801BA (ICH2) chipset is a highly integrated multifunctional I/O Controller Hub that provides the interface to the PCI Bus and integrates many of the functions needed in today's PC platforms. It communicates with the host controller over a dedicated hub interface and provides added flexibility in designing cost-effective system solutions.

2.1 Mainboard Features

CPU

- Support Socket370 for Intel® Celeron™/Pentium III(FC-PGA) processor.
- Support 500MHz, 550MHz, 600MHz, 633MHz, 667MHz and up to 866MHz

Chipset

- Intel® Solano chipset. (544 BGA)
  - Support PC100/133 memory bus
  - Support 66/100/133MHz FSB
- Intel® ICH2 chipset. (241 BGA)
  - AC'97 Controller Integrated
  - 2 full IDE channels, up to ATA100
  - Low pin count interface for SIO
  - Integrated 10/100Mbps Ethernet Controller
  - 2 Host USB controller, up to 4 USB ports

Main Memory

- Support two 168-pin DIMM sockets.
- Support a 32 to 512MB using 16/64/128/256Mbit technology.

Slots

- One 32-bit PCI Bus riser slot. (Extend to two PCI slots)
- Supports 3.3v/5v PCI bus Interface.

On-Board IDE

- An IDE controller on the ICH2 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 66/100 operation modes.
- Can connect up to four IDE devices.

Video

- Solano Chip Integrated
- 2D/3D Graphics

Audio

- ICH2 Chip Integrated
- AC'97 2.1 Compliant

Network

- Intel 82562 EM Platform LAN connect for 10Base-T and 100Base-TX
  - support basic AOL function (Alert on LAN)
- ICH2 chip integrated the 10/100Mbps Ethernet Controller

TV-Out

- Chrontel CH7007
  - support S-Out/AV-Out

1394 Controller

- 1394 PHY Controller
  - TI TSB41LV02 PHY Digital-to-Analog Transceiver
  - Support up to two 1394/1394A V2.0 compatible data channels
- 1394 Link Layer Controller
  - TI TSB12LV26 1394 Link Layer Host Controller
  - IEEE 1394, 1394 OHCI V1.0 & 1394A V2.0 compatible
  - Supports 100/200/400 Mbps High Throughput
  - 3.3V & 5V Operation for PCI-to 1394 Interface

On-Board Peripherals

- On-Board Peripherals include:
  - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
  - 1 serial port header (COM1) connected to rear COM port
  - 1 parallel port supports SPP/EPP/ECP mode
  - 2 USB rear port with 1 USB header for front side 2 USB ports
  - 1 IrDA connector for SIR.
  - 1 VGA port
  - 1 S-VIDEO for Video Output
  - 1 AV-composite jacks for video output
  - 1 Audio Port for Rear Panel
  - 3 Audio ports for Front Panel
  - 1 RJ45 LAN port
  - 2 IEEE 1394 ports

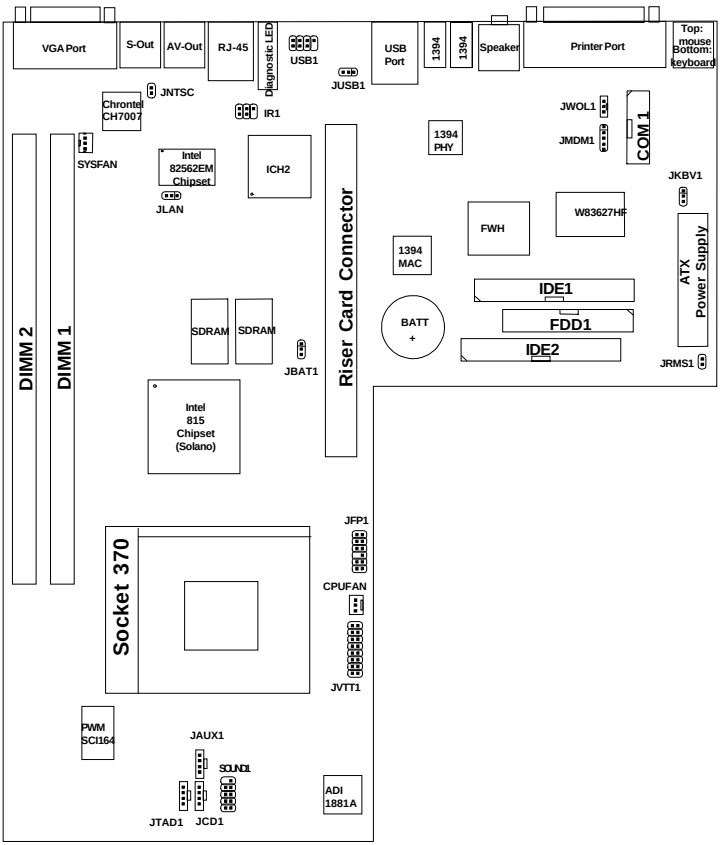
BIOS

- The mainboard BIOS provides "Plug & Play" BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface(DMI) function which records your mainboard specifications.

Mounting

- 3 mounting holes.

2.2 Mainboard Layout



MS-6351 MICRO LPX Mainboard

Chapter 3

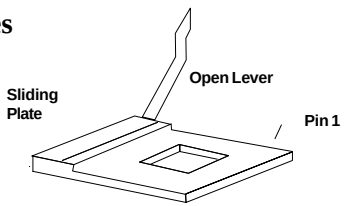
Hardware Installation

3.1 Central Processing Unit: CPU

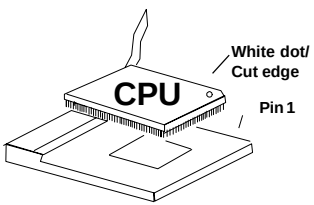
The mainboard operates with **Intel® Celeron™/Pentium III(FC-PGA) processor.** The mainboard uses a CPU socket called Socket 370 for easy CPU installation. The CPU should always have a Heat Sink and a cooling fan attached to prevent overheating.

3.1-1 CPU Installation Procedures

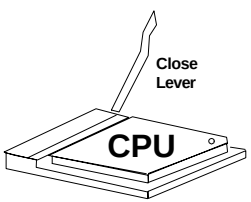
1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.



2. Locate Pin 1 in the socket and look for the white dot or cut edge in the CPU. Match Pin 1 with the white dot/cut edge. Then, insert the CPU. It should insert easily.



3. Press the lever down to complete the installation.



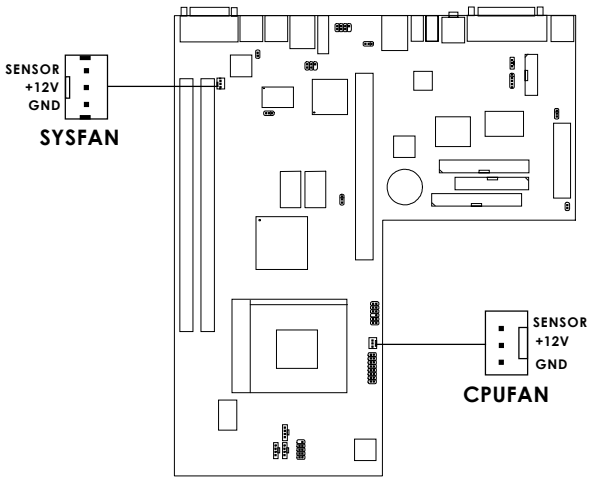
3.1-2 CPU Core Speed Derivation Procedure

The mainboard CPU Bus Frequency can be set through BIOS setup

If	CPU Clock	=	66MHz
	Core/Bus ratio	=	3.5
then	CPU core speed	=	Host Clock x Core/Bus ratio
		=	66MHz x 3.5
		=	233MHz

3.1-3 Fan Power Connectors: CPUFAN & SYSFAN

These connector support system cooling fan with + 12V. It supports three pin head connector. When connecting the wire to the connector, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If your mainboard has System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.

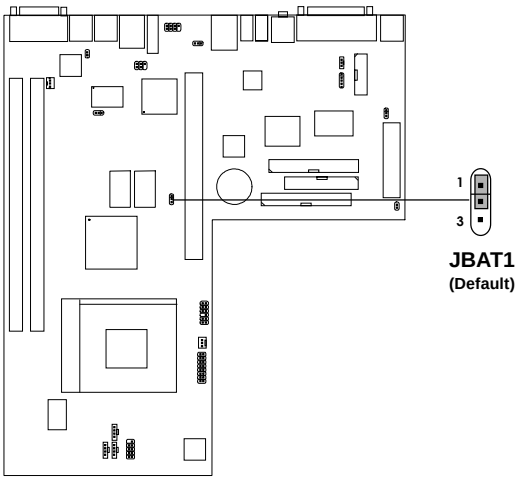


CPUFAN: Processor Fan
SYSFAN: System Fan

For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.

3.2 Clear CMOS Jumper: JBAT1

A battery must be used to retain the mainboard configuration in CMOS RAM. To retain the on-board battery you must always short pins 1-2 of JBAT1.



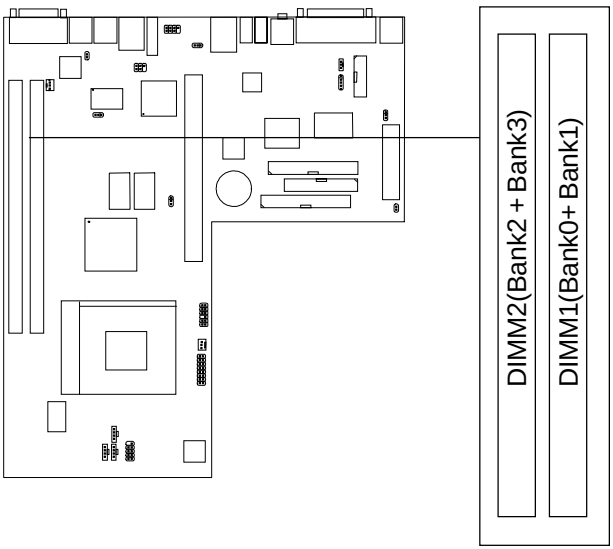
JBAT1	Function
	Keep Data
	Clear Data

Note: You can clear CMOS by shorting 2-3 pin, while the system is off. Leave for about 5 to 10 seconds. Then, return to 1-2 pin position. Avoid clearing the CMOS while the system is on for it will damage the mainboard. Always unplug the power cord from the wall socket.

3.3 Memory Installation

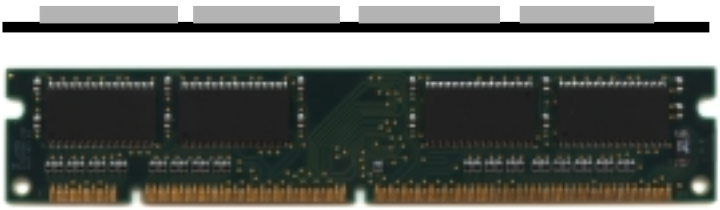
3.3-1 Memory Bank Configuration

The mainboard supports a maximum memory size of 256MB(64-bit technology) or 512MB(128-bit technology for SDRAM: It provides two 168-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets. It supports 8 MB to 128 Mbytes DIMM memory module.

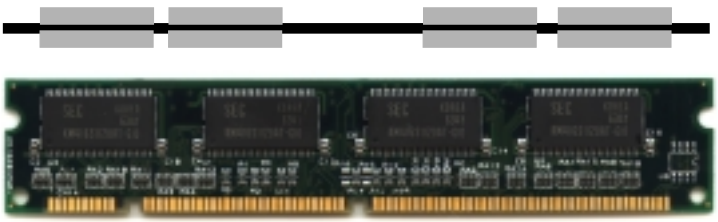


3.3-2 Memory Installation Procedures:

b. How to install a DIMM Module



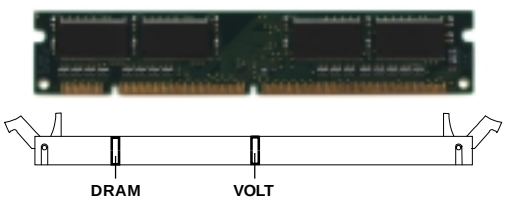
Single Sided DIMM



Double Sided DIMM

1. The DIMM slot has two Notch Key called “VOLT and DRAM”, so the DIMM memory module can only fit in one direction.

2. Insert the DIMM memory module vertically into the DIMM slot. Then, push it in.



3. Close the plastic clip at the side of the DIMM slot.

3.3-3 Memory Population Rules

1. Supports only SDRAM DIMM.

2. To operate properly, at least one 168-pin DIMM module must be installed.

3. This mainboard supports Table Free memory, so memory can be installed on DIMM1 or DIMM 2 in any order.

4. Supports 3.3 volt DIMM.

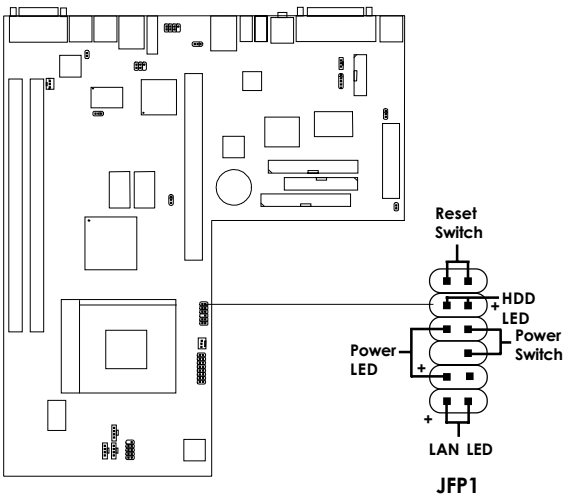
5. The DRAM addressing and the size supported by the mainboard is shown next page:

Table 3.3-1 SDRAM Memory Addressing

DIMM Capacity	# of Devices/ DIMM	# of Sides	Dram Tech.	Front Side Population		Back Side Population		Row	Bank	Column
				Count	Config	Count	Config			
0		N/A		Empty		Empty		N/A	N/A	N/A
32MB	16	DS	16Mb	8-	2Mb x8	8-	2Mb x8	11	1	9
32MB	4	SS	64Mb	4-	4Mb x16			12	2	8
48MB	12	DS	64/16Mb	4-	4Mb x16	8-	2Mb x8	12	2/1	8
64MB	8	DS	64Mb	4-	4Mb x16	4-	4Mb x16	12	2	8
64MB	8	SS	64Mb	8-	8Mb x8			12	2	9
64MB	4	SS	128Mb	4-	8Mb x16			12	2	9
96MB	12	DS	64Mb	8-	8Mb x8	4-	4Mb x16	12	2	9/8
96MB	8	DS	128/64Mb	4-	8Mb x16	4-	4Mb x16	12	2	9/8
128MB	16	DS	64Mb	8-	8Mb x8	8-	8Mb x8	12	2	9
128MB	8	DS	128Mb	4-	8Mb x16	4-	8Mb x16	12	2	9
128MB	8	SS	128Mb	8-	16Mb x8			12	2	10
128MB	4	SS	256Mb	4-	16Mb x16			13	2	9
192MB	12	DS	128Mb	8-	16Mb x8	4-	8Mb x16	12	2	10/9
192MB	16	DS	128/64Mb	8-	16Mb x8	8-	8Mb x8	12	2	10/9
256MB	16	DS	128Mb	8-	16Mb x8	8-	16Mb x8	12	2	10
256MB	8	DS	256Mb	4-	16Mb x16	4-	16Mb x16	13	2	9
256MB	8	SS	256Mb	8-	32Mb x8			13	2	10
512MB	16	DS	256Mb	8-	32Mb x8	8-	32Mb x8	13	2	10

3.4 Case Connector: JFP1

The Power Switch, Reset Switch, Power LED, LAN LED and HDD LED are all connected to the JFP1 connector block.



3.4-1 Power Switch

Connect to a 2-pin push button switch. This switch had the same feature with JRMS1.

3.4-2 Reset Switch

Reset switch is used to reboot the system rather than turning the power ON/ OFF. Avoid rebooting while the HDD LED is lit. You can connect the Reset switch from the system case to this pin.

3.4-3 Power LED

The Power LED is lit while the system power is on. You can connect the Power LED from the system case to this pin. When the system enters suspend mode, the power LED will turn orange.

3.4-4 HDD LED

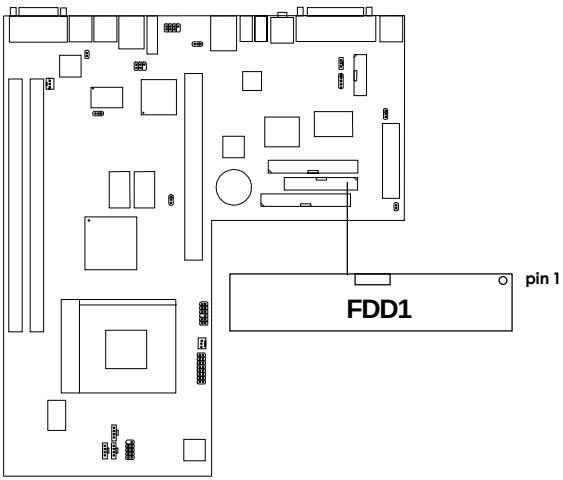
HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

3.4-5 LAN LED

This can be connected with LED that will shows any activity on your network.

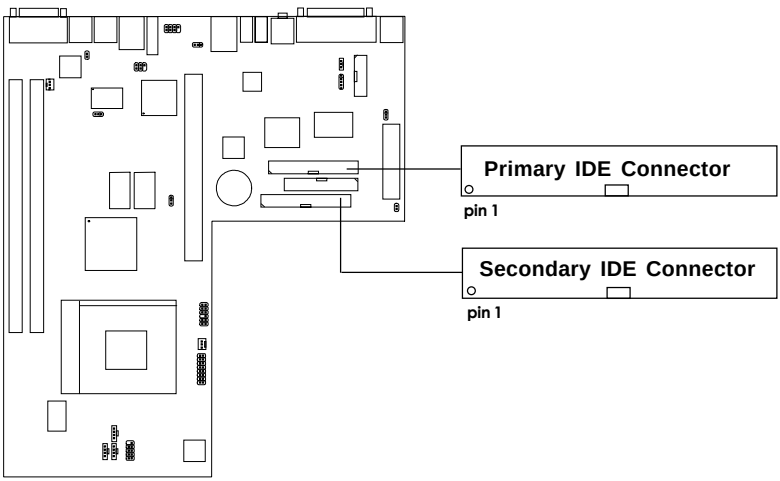
3.5 Floppy Disk Connector: FDD1

The mainboard also provides a standard floppy disk connector FDD1 that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. You can attach a floppy disk cable directly to this connector.



3.6 Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE Controller that provides for two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives, CD-ROM, 120MB Floppy (reserved for future BIOS) and other devices to IDE1 and IDE2.



IDE1(primary IDE connector)

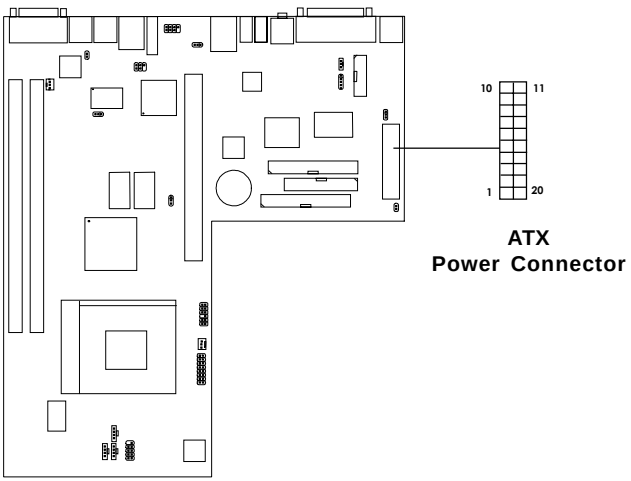
The first hard disk should always be connected to IDE1. IDE1 can connect a Master and a Slave drive.

IDE2(secondary IDE connector)

IDE2 can connect a Master and a Slave drive.

3.7 ATX 20-pin Power Connector

This type of connector already supports the remote ON/OFF function. However, you need to connect the **Remote Power On/OFF switch (JRMS1).**

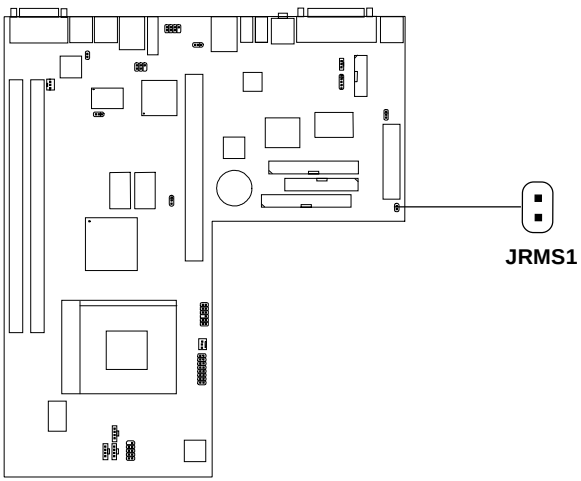


PIN DEFINITION

PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

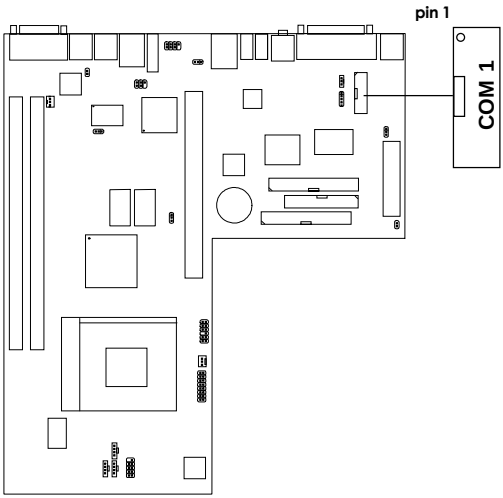
3.7-1 Remote Power On/Off Switch: JRMS1

Connect to a 2-pin push button switch. During OFF state, press once and the system turns on. **During ON stage, push once and the system goes to sleep mode: pushing it more than 4 seconds will change its status from ON to OFF**. If you want to change the setup, you could go to the BIOS Power Management Setup. This is only used for ATX type power supply.



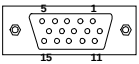
3.8 Serial Port Connector: COM 1

The mainboard provides a serial port (COM 1) connector. This connector is 16550A high speed communication ports that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into these connectors.



3.9 VGA DB 15 Pin Connector

The mainboard provides a DB 15-pin connector to connect to a VGA monitor.

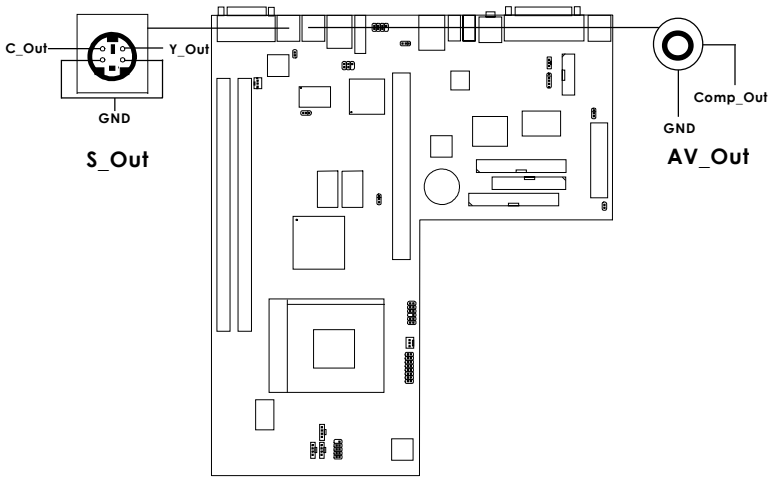


VGA

Analog Video Display Connector(DB15-S)	
Pin	**Signal Description**
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Not used
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

3.10 S-Out and AV-Out Connector

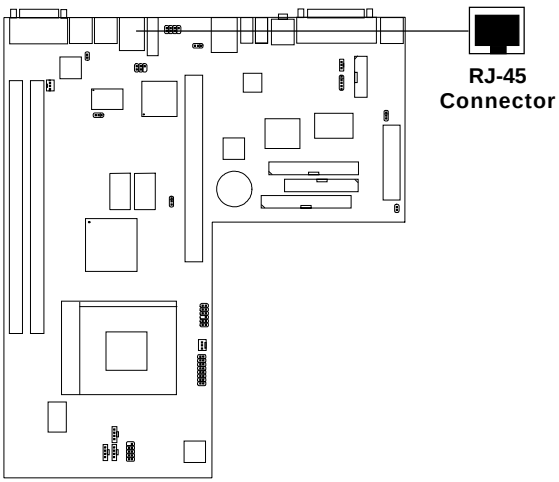
The mainboard provides two TV-Out Connector: S-Out and AV-Out. This mainboard can only support one monitor, either PC monitor or TV-Out at a time, but not at the same time.



Note: If you want to use TV-Out, you need to remove the PC monitor cable and connect the TV before turning on the system. If not, then the PC Monitor will still be your monitor.

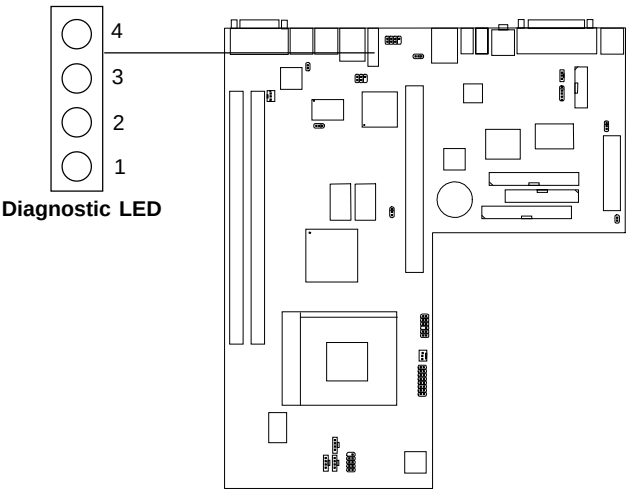
3.11 LAN Connector

The mainboard provides a RJ-45 connector for your network need.



3.12 Diagnostic LED

The mainboard provides a Special Diagnostic LED for users to be aware of their mainboard conditions. The LED helps user determine the problem of the mainboard.



Diagnostic LED Function

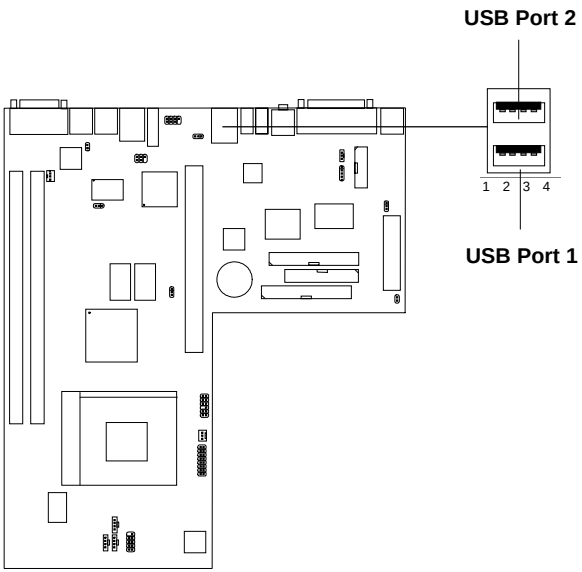
Diagnostic LED 4 3 2 1	Description	Possible Problem/ Solution
0 0 0 0	System Power ON. This will start BIOS Initialization	System D-LED will hang here The Processor might be damage or not installed properly Damage/Discharge Lithium Battery
0 0 0 1	Early Chipset Initialization	***
0 0 1 0	Memory Detection Test Testing Onboard memory size	System D-LED will hang here The Memory module might be damage or not installed properly.
0 0 1 1	Decompressing BIOS image to RAM for fast booting.	***
0 1 0 0	Initializing Keyboard Controller	***
0 1 0 1	Testing VGA BIOS This will start writing VGA sign-on messages to the screen.	System D-LED will produce Beep sound The VGA card might be damage or not inserted properly.
0 1 1 0	Processor Initialization This will show information regarding the processor (like brand name, system bus, etc...)	***
0 1 1 1	Testing RTC (Real Time Clock)	Low Lithium Battery
1 0 0 0	Initializing Video Interface This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter	***
1 0 0 1	BIOS Sign On This will start showing information about Logo, processor brand name, etc.....	***
1 0 1 0	Testing Base and Extended Memory Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.	***
1 0 1 1	Assign Resource to all ISA	***
1 1 0 0	Initializing Hard Drive Controller This will initialize IDE drive and controller	Check IDE cable for proper installation
1 1 0 1	Initializing Floppy Drive Controller This will initialize Floppy Drive and controller	System D-LED will hang here The Floppy Drive Cable might not be installed properly
1 1 1 0	Boot Attempt This will set low stack and boot via INT19h.	***
1 1 1 1	Operating System Booting.	***

1 = GREEN 0 = RED

***** Check local Vendor for possible internal mainboard problem.**

3.13 USB Connectors

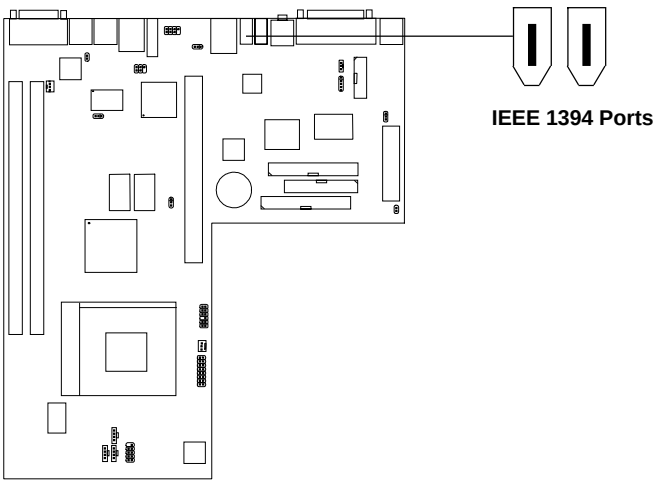
The mainboard provides a **UHCI(Universal Host Controller Interface) Universal Serial Bus root** for attaching USB devices like: keyboard, mouse and other USB devices. You can plug the USB device directly to this connector.



PIN	SIGNAL
1	VCC
2	-Data0
3	GND
4	+Data0

3.14 IEEE 1394 port

The IEEE 1394 high-speed serial bus complements USB by providing enhanced PC connectivity for a wide range of devices, including consumer electronics audio/video (A/V) appliances, storage peripherals, other PCs, and portable devices.

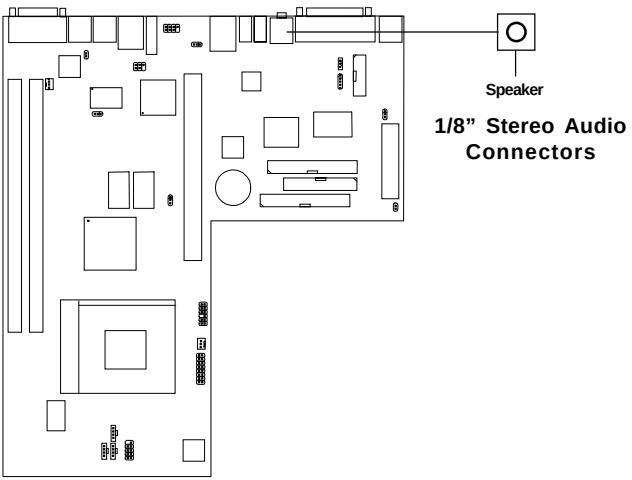


A. Software Support

IEEE 1394 Driver is provided by Windows® 98 SE and Windows® 2000. Just plug in the IEEE 1394 connector into the port. These Operating System will install the driver for IEEE 1394.

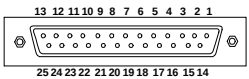
3.15 Speaker Out

Speaker is a connector for Speakers or Headphones.



3.16 Parallel Port Connector: LPT

The mainboard provides a 25 pin female centronic connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port(EPP) and Extended capabilities Parallel Port(ECP). See connector and pin definition below:



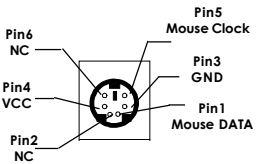
LPT

PIN DEFINITION

PIN	SIGNAL	PIN	SIGNAL
1	STROBE	14	AUTO FEED#
2	DATA0	15	ERR#
3	DATA1	16	INIT#
4	DATA2	17	SLIN#
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT		

3.17 Mouse Connector: JKBMS1

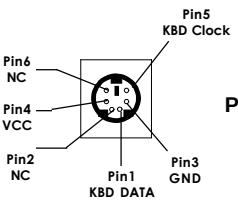
The mainboard provides a standard PS/2® mouse mini DIN connector for attaching a PS/2® mouse. You can plug a PS/2® mouse directly into this connector. The connector location and pin definition are shown below:



PS/2® Mouse (6-pin Female)

3.18 Keyboard Connector: JKBMS1

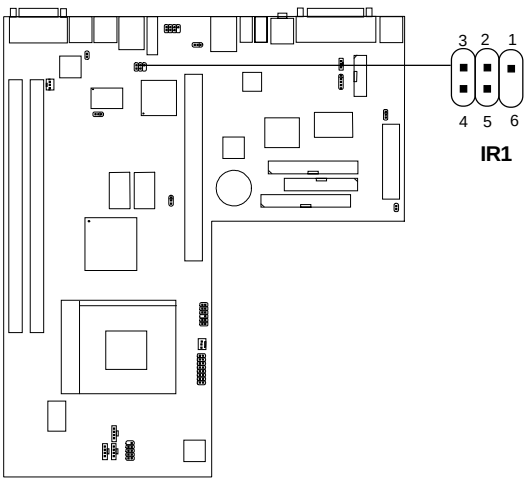
The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.



PS/2® Keyboard (6-pin Female)

3.19 Infrared Module Connector: IR1

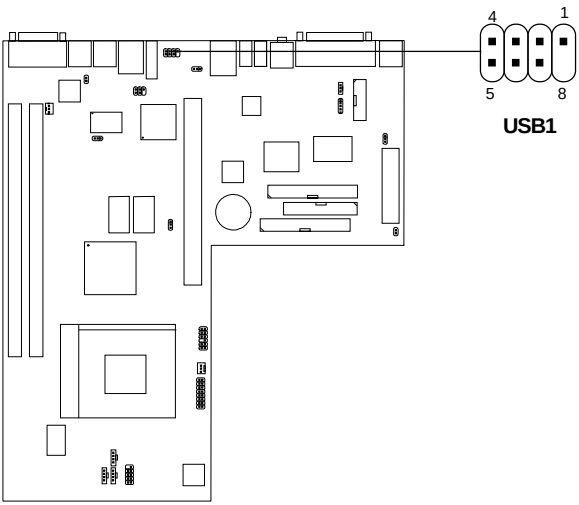
The mainboard provides a 5-pin infrared connector(IR1) for IR module. This connector is for optional wireless transmitting and receiving infrared module. If you want to use this function, you must configure the setting through BIOS setup.



PIN	SIGNAL	DESCRIPTION
1	NC	No Connection
2	IRRX	IRRX
3	GND	Ground
4	VCC	5V
5	IRTX	IRTX
6	NC	No Connection

3.20 USB Connector: USB1

Connect a USB cable to support USB device, such as keyboard and mouse.



PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data0	Negative Data Channel 0
3	+Data 0	Positive Data Channel 0
4	GND	Ground
5	GND	Ground
6	+Data 1	Positive Data Channel 1
7	-Data 1	Negative Data Channel 1
8	NC	No Connection

USB Port Description

3.21 Wake-Up on LAN Connector: JWOL1

The JWOL1 connector is for use with LAN add-on cards that supports Wake Up on LAN function.

PIN	SIGNAL
1	5VSB
2	GND
3	MP_WAKEUP

Note: LAN wake-up signal is active “high”.

Note: To be able to use this function, you need a power supply that provide enough power for this feature.
(power supply with 750 mA 5V Stand-by)

3.22 Modem Wake Up Connector: JMDM1

The JMDM1 connector is for use with Modem add-on card that supports the Modem Wake Up function.

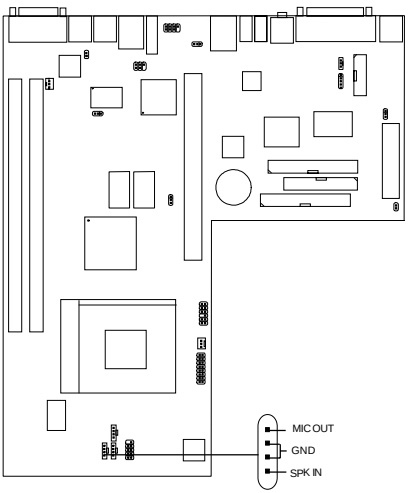
PIN	SIGNAL
1	NC
2	GND
3	MDM_WAKEUP
4	NC
5	5VSB

Note: Modem wake-up signal is active "low".

Note: To be able to use this function, you need a power supply that provide enough power for this feature.
(power supply with 750mA 5V Stand-by)

3.23 Modem-In: JTAD1

The connector is for Modem with internal voice connector.

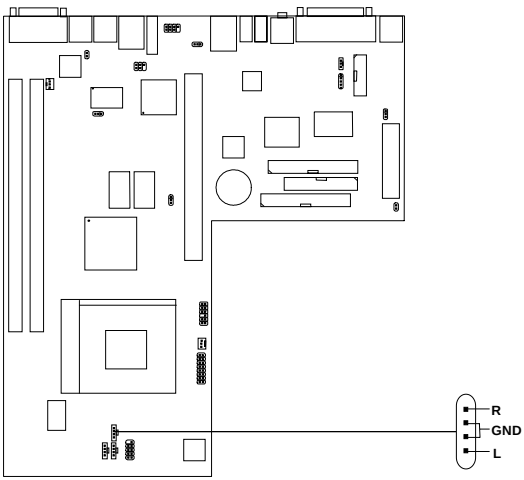


JTAD1

SPK_IN is connected to the Modem Speaker Out connector.
MIC_OUT is connected to the Modem Microphone In connector.

3.24 AUX Line In Connector: JAUX1

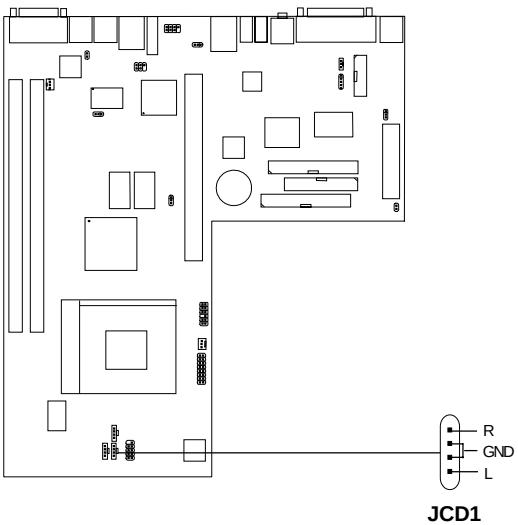
This connector is used for DVD Add on Card with Line In connector.



JAUX1

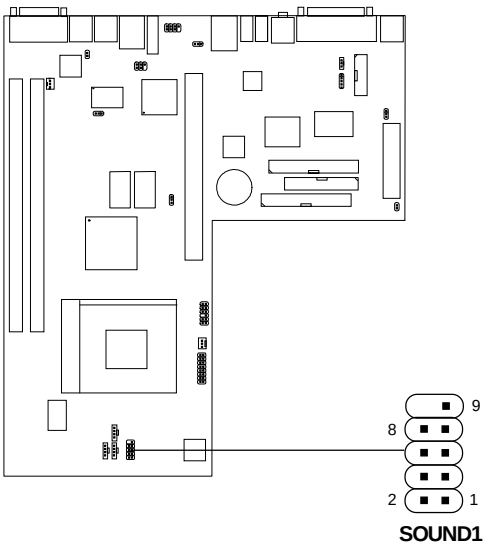
3.25 CD-In Audio Connector: JCD1

This connector is for CD-ROM with internal voice connector.



3.26 Front Panel Sound Connector: SOUND1

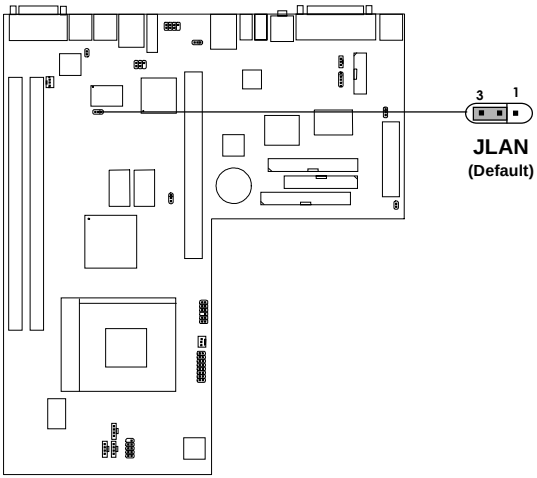
Connect the Front Panel Bezel audio into this connector.



PIN	SIGNAL	DESCRIPTION
1	Line-In L	Line-In Left side
2	MIC_In	Microphone In
3	Line-In R	LIne-In Right side
4	NC	No Connection
5	Line-Out L	LIne-Out Left side
6	NC	No Connection
7	Line-Out R	Line-Out Right side
8	NC	No Connection
9	GND	Ground

3.27 LAN Enable/Disable Jumper: JLAN(optional)

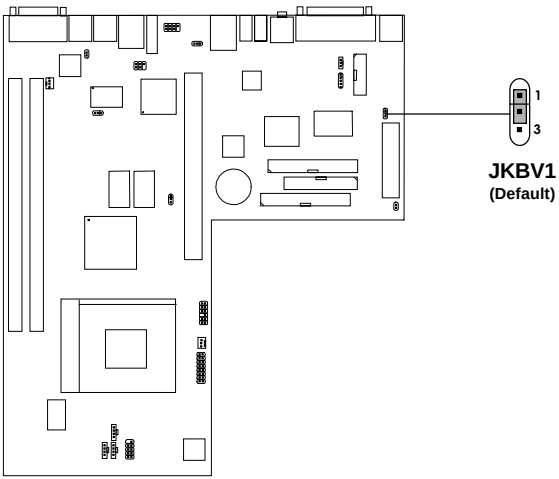
This jumper is used to Enabled/Disabled the onboard LAN.



JLAN	Function
	LAN Disabled
	LAN Enabled (default)

3.28 Keyboard Power On Function: JKBV1

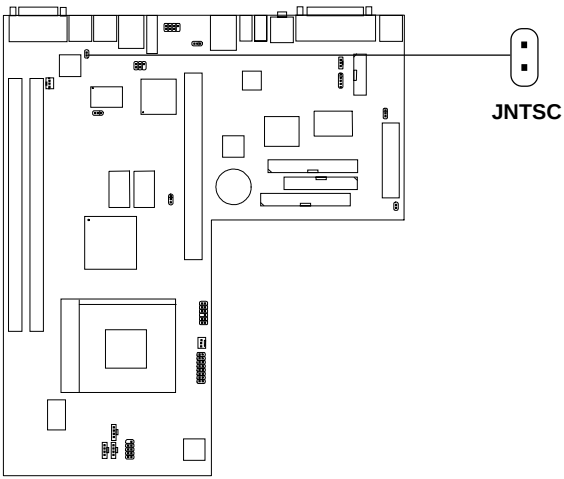
The JKBV1 jumper is used for setting Keyboard Power on Feature. This function should be set through BIOS Keyboard and PS/2 mouse Wake-up function.



JKBV1	Function
	5V (default) Disable keyboard power on function
	5V Standby Enable Keyboard Power on function

3.29 TV NTSC/PAL Jumper: JNTSC

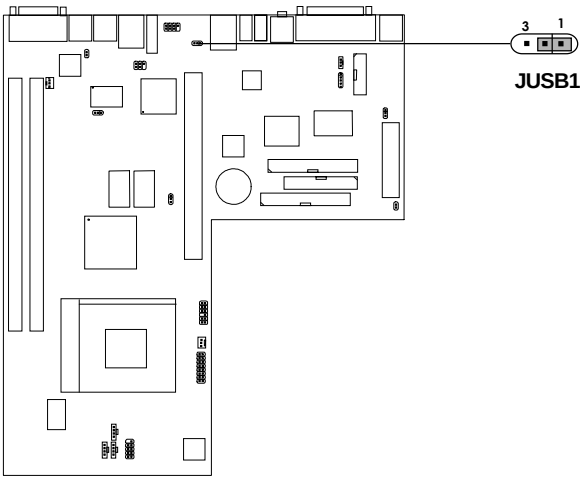
This jumper is used to set the AV to NTSC or PAL.



JNTSC	Function
	NTSC
	PAL

3.30 USB WakeUp Function Jumper: JUSB1

This jumper is used to Enabled/Disabled the USB wake up function.



JUSB	Function
	Default
	Support Wake-Up from USB device

Chapter 4

AMI® BIOS USER'S GUIDE

The system configuration information and chipset register information is stored in the CMOS RAM. This information is retained by a battery when the power is off. Enter the BIOS setup (if needed) to modify this information.

The following pages will describe how to enter BIOS setup, and all about options.

4.1 Enter BIOS Setup

Enter the AMI® setup Program's Main Menu as follows:

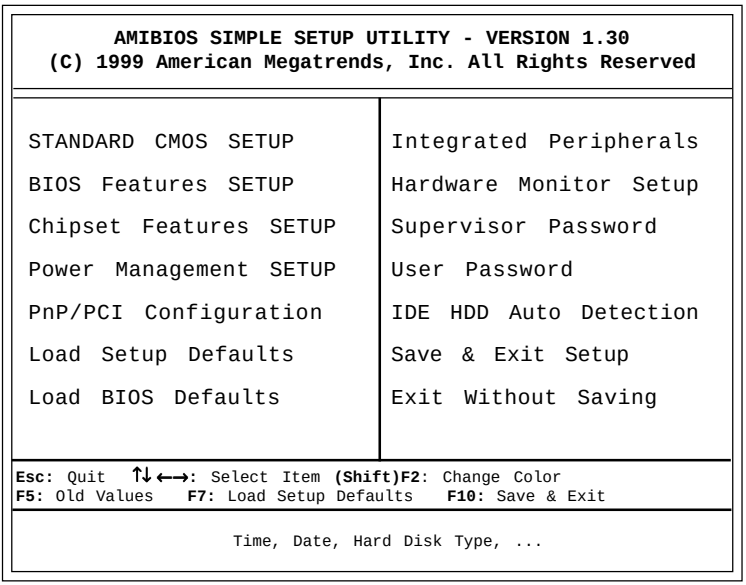
1. Turn on or reboot the system. The following screen appears with a series of diagnostic check.

```
AMIBIOS (C) 1999 American Megatrends Inc.
AGIOMS VXXX XXXXXX

Hit <DEL> if you want to run setup









(C) American Megatrends Inc.
61-XXXX-001169-00111111-071592-i82440FX-H
```

2. When the "Hit <DEL>" message appears, press <DEL> key to enter the BIOS setup screen.

3. After pressing <DEL> key, the BIOS setup screen will appear.

Note: *If you don't want to modify CMOS original setting, then don't press any key during the system boot.*



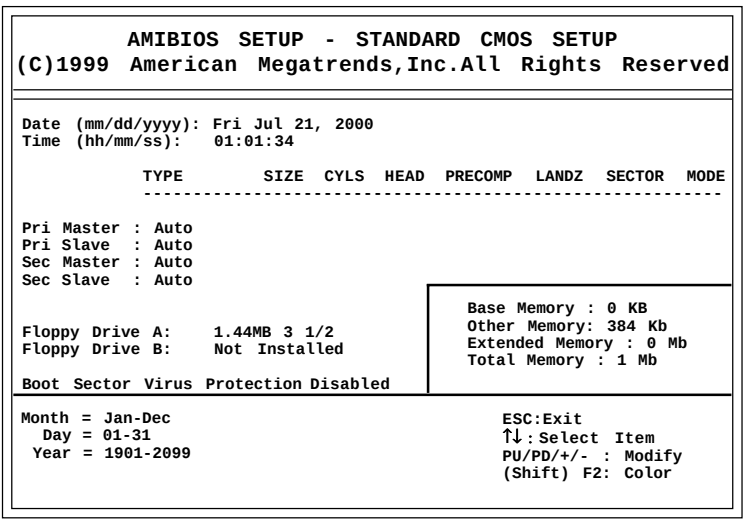
4. Use the <Up> and <Down> key to move the highlight scroll up or down.

5. Use the <ENTER> key to select the option.

6. To exit, press <ESC>. To save and exit, press <F10>.

4.2 Standard CMOS Setup

1. Press <ENTER> on "Standard CMOS Setup" of the main menu screen .

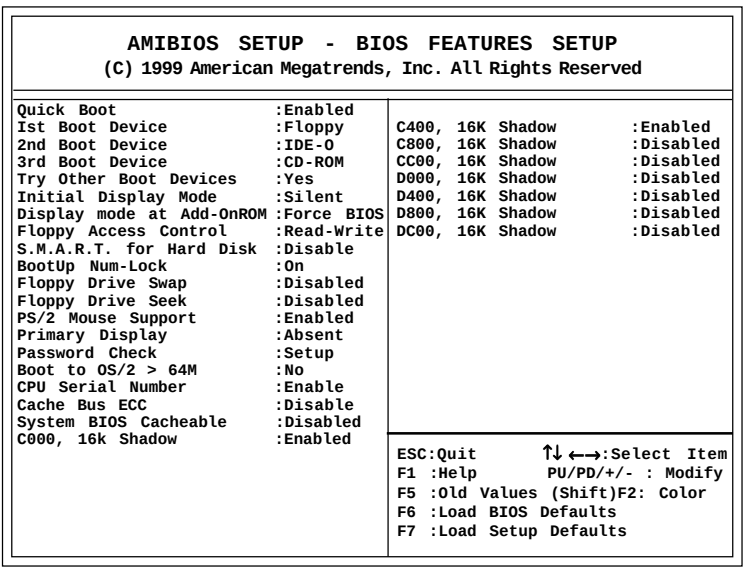


2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the Standard CMOS Setup, press <ESC> to go back to the main menu.

4.3 BIOS Features Setup

1. Press <ENTER> on "BIOS Features Setup" of the main menu screen.



2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the BIOS Features Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

Quick Boot

Set this option to Enabled to permit AMI® BIOS to boot within 5 seconds. This option replaces the old ABOVE 1 MB Memory Test option.

1st Boot Device/2nd Boot Device/3rd Boot Device

This option sets the sequence of boot drives.

The settings are:

IDE0	The system will boot from the first HDD.
IDE1	The system will boot from the Second HDD.
IDE2	The system will boot from the Third HDD.
IDE3	The system will boot from the Fourth HDD.
LS-120/ZIP	The system will boot from LS-120(120M Floppy).
SCSI	The system will boot from the SCSI.
Network	The system will boot from the Network drive.
CD-ROM	The system will boot from the CD-ROM.
ATAPI ZIP	The system will boot from ATAPI ZIP.
Disabled	Disable this sequence.

Try other Boot Devices

This option sets the device boot, if all the Four Boot Devices failed.

Initial Display Mode

This option sets to display the Micro-Star International (MSI) logo.

Display Mode at Add-On ROM

This option sets the display from the Add-On ROM.

Floppy Access Control

This option sets the Floppy to Read-only or Read-Write.

S.M.A.R.T. for Hard Disks

This option sets the SMART function for the hard disk. The hard disk need to have SMART function for this feature to work.

Boot up Num Lock

When this option is set to Off, AMI® BIOS turns off the Num Lock key when the system is powered on. The end user can then use the arrow keys on both the numeric keypad and the keyboard. The settings are On or Off. The optimal default and Fail-Safe default settings are On.

Floppy Drive Swap

Set this option to Enabled to specify that floppy drives A: and B: are swapped. The setting are Enabled and Disabled. The Optimal and Fail-Safe default settings are Disabled.

Floppy Drive Seek

When this option is set to Enabled, AMI® BIOS performs a Seek command on floppy drive A: before booting the system. The settings are Enabled and Disabled. The Optimal and Fail-Safe default settings are Disabled.

PS/2® Mouse Support

When this option is set to Enabled, AMI® BIOS supports a PS/2® mouse. The settings are Enabled and Disabled. The Optimal and Fail-Safe default settings are Enabled.

Primary Display

This option configures the primary display subsytem in the computer.

Password Check

This option specifies the type of AMI® BIOS password protection that is implemented. The Optimal and Fail-Safe default settings are Setup.

Boot To OS/2® > 64MB

Set this option to Enabled to permit the BIOS to run properly, if OS/2® is to be used with > 64MB of DRAM.

CPU Serial Number

This option is for Pentium III processor. During Enabled, this will check the CPU serial number. Disabled this option if you don't want the system to know the serial number.

Cache Bus ECC

This option is for Pentium III processor. During Enabled, this will affect the system performance. Disabled this option if you don't want to affect the system performance.

System BIOS Cacheable

AMI® BIOS always copies the system BIOS from ROM to RAM for faster execution. Set this option to Enabled to permit the contents of the F0000h RAM memory segment to be written to and read from cache memory. The settings are Enabled or Disabled. The Optimal default setting is Enabled. The Fail-Safe default setting is Disabled.

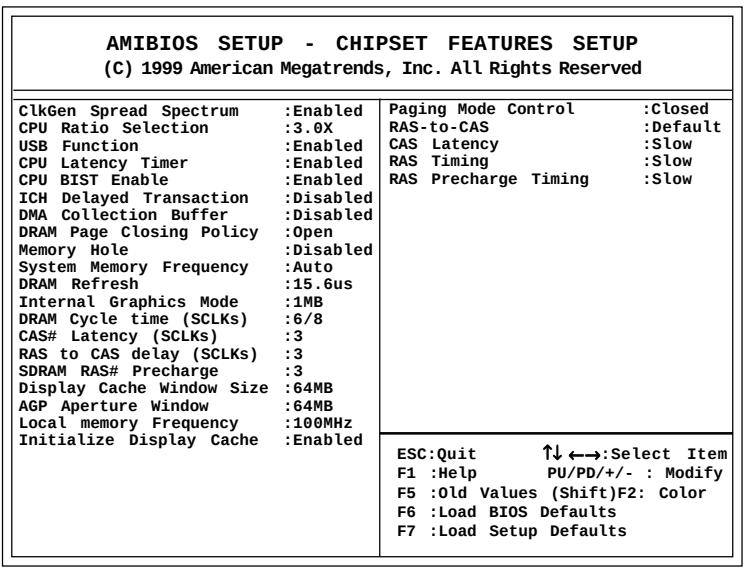
C000, 16K Shadow/C400, 16K Shadow/C800, 16K Shadow/ CC00, 16K Shadow/D000, 16k Shadow/ D400, 16K Shadow/ D800, 16K Shadow/DC00, 16K Shadow

These options specify how the contents of the adaptor ROM named in the option title are handled. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards. The settings are:

Disabled	The specified ROM is not copied to RAM.
Cache	The contents of the ROM for faster execution, it can also be written to or read from the cache memory.
Enabled	The contents of the ROM area are copied from ROM to RAM for faster execution.

4.4 Chipset Features Setup

1. Press <ENTER> on "Chipset Features Setup" of the main menu screen.



2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the Chipset Features Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

CLKGen Spread Spectrum

This item allows you to select the clock generator Spread Spectrum function for EMI. The default is enabled. Set this to Disabled, if you're gonna overclock the processor.

CPU Ratio Selection

This item allows you to set the CPU ratio.

USB Function

Set this option to Enabled or Disabled the on-chip USB controller.

CPU Latency Timer

During Enabled, A deferrable CPU cycle will only be Deferred after it has been in a Snoop Stall for 31 clocks and another ADS# has arrived. During Disabled, A deferrable CPU cycle will be Deferred immediately after the GMCH receives another ADS#.

CPU BIST Enable

Set this option to Enabled the CPU BIST.

ICH Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

DRAM Page Closing Policy

This options controls whether the chipset will precharge bank or precharge all, during the service of a page miss.

Memory Hole

This option allows the end user to specify the location of a memory hole. The cycle matching the selected memory hole will be passed to the ISA bus. If Enabled, the selected hole is not remapped.

System Memory Frquency

Select the onboard display cache frequency. The settings are 100MHz, 133MHz, or Auto.

DRAM Refresh

This option is use to set the DRAM refresh.

Internal Graphics Mode

This option is used to set the internal graphics device and select the amount of system memory that is used to support the internal graphics device.

DRAM Cycle Time (SCLKs)

This option controls the number of SCLKs for an access cycle.

CAS# Latency (SCLKs)

This option determines the CAS latency time parameter of SDRAM. The settings are 2 clks or 3 clks. Under 66MHz CPU bus, set this option to either 2 or 3 but for 100MHz CPU, it is recommended that this be set to 3.

RAS# to CAS# Delay (SCLKs)

This operation decide the delay in assertion of CAS#(SCAS#) from assertion of RAS#(SRAS#) in 66MHz. Under 66MHz CPU bus, set this option to either 2 or 3 but for 100MHz CPU, it is recommended that this be set to 3.

SDRAM RAS# Precharge

This option defines the RAS# precharge requirements for the SDRAM memory type in 66MHz clocks. Under 66MHz CPU bus, set this option to either 2 or 3 but for 100MHz CPU, it is recommended that this be set to 3.

Display Cache Window Size

This option determines the display cache window size. The settings are 64MB or 32MB.

AGP Aperture Window Size

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated fpr graphics memory address space. Host cycled that hit the aperture range are forwarded to the AGP without any translation.

Local Memory Frequency

This option determines the local memory frequency. The settings are 100MHz or 133MHz.

Initialize Display Cache Memory

This option allows you to insert an AIMM display cache memory to AGP slot.

Paging Mode Control

This option decide if the GMCH memory controller will leave pages open or closed.

RAS-to-CAS

This option determine the display cache RAS#-toCAS# delay.

CAS# Latency

This option decide the display cache CAS latency.

RAS# Timing

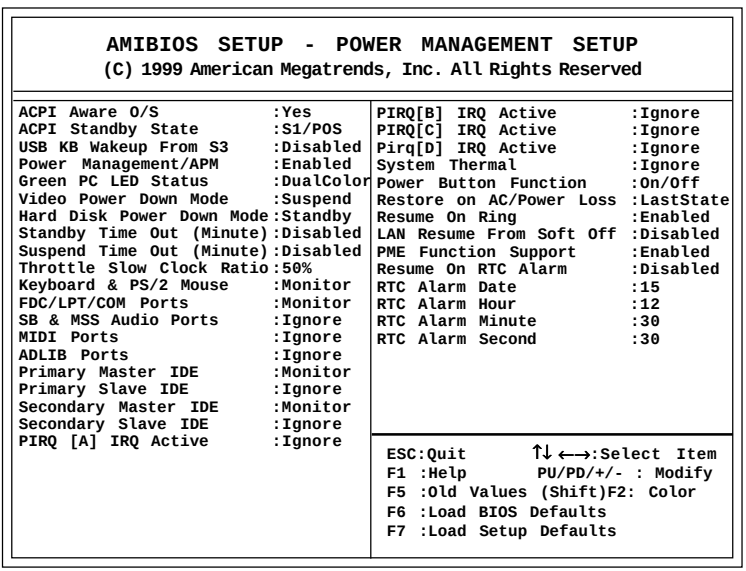
This option controls RAS# active to precharge, and refresh to RAS# active delay.

RAS# Precharge Timing

This option controls RAS# precharge clocks.

4.5 Power Management Setup

1. Press <ENTER> on "Power Management Setup" of the main menu screen.



AMIBIOS SETUP - POWER MANAGEMENT SETUP
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ACPI Aware O/S	:Yes	PIRQ[B] IRQ Active	:Ignore
ACPI Standby State	:S1/POS	PIRQ[C] IRQ Active	:Ignore
USB KB Wakeup From S3	:Disabled	Pirq[D] IRQ Active	:Ignore
Power Management/APM	:Enabled	System Thermal	:Ignore
Green PC LED Status	:DualColor	Power Button Function	:On/Off
Video Power Down Mode	:Suspend	Restore on AC/Power Loss	:LastState
Hard Disk Power Down Mode	:Standby	Resume On Ring	:Enabled
Standby Time Out (Minute)	:Disabled	LAN Resume From Soft Off	:Disabled
Suspend Time Out (Minute)	:Disabled	PME Function Support	:Enabled
Throttle Slow Clock Ratio	:50%	Resume On RTC Alarm	:Disabled
Keyboard & PS/2 Mouse	:Monitor	RTC Alarm Date	:15
FDC/LPT/COM Ports	:Monitor	RTC Alarm Hour	:12
SB & MSS Audio Ports	:Ignore	RTC Alarm Minute	:30
MIDI Ports	:Ignore	RTC Alarm Second	:30
ADLIB Ports	:Ignore		
Primary Master IDE	:Monitor		
Primary Slave IDE	:Ignore		
Secondary Master IDE	:Monitor		
Secondary Slave IDE	:Ignore		
PIRQ [A] IRQ Active	:Ignore		

ESC:Quit ↑↓ ←→:Select Item
F1 :Help PU/PD/+/- : Modify
F5 :Old Values (Shift)F2: Color
F6 :Load BIOS Defaults
F7 :Load Setup Defaults

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the Power Management Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

ACPI Aware O/S

This option sets the ACPI Power Management to be active or not. The settings are yes or no.

ACPI Standby State

This option sets the ACPI Power Management Standby State.

USB KB Wake-Up From S3

This option is used to Enabled/Disabled USB keyboard wake up with suspend to RAM.

Power Management/APM

Set this option to Enabled to enable the chipset's power management features and APM(Advanced Power Management). The settings are Enabled, Inst-On(instant-on) or Disabled.

Green PC LED Status

This item determines which state the Power LED will use. The settings are Blinking, Dual and Single. During blinking, the power LED will blink when the system enters the suspend mode. When the mode is in Dual, the power LED will change its color. Choose the single and the power LED will always remain lit.

Video Power Down Mode

This option specifies the power conserving state that the VESA VGA video subsystem enters after the specified period of display inactivity has expired. The settings are Disabled, Standby or Suspend.

Hard Disk Power Down Mode

This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired. The settings are Disabled, Standby or Suspend.

Standby Time Out (Minute)

This option specifies the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state. The settings are Disabled, 1 min, 2 min, 3 min, 4 min, 5 min, 6 min, 7 min, 8 min, 9 min, 10 min, 11 min, 12 min, 13 min, 14 min or 15 min.

Suspend Time Out (Minute)

This option specifies the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state. The settings are Disabled, 1 min, 2 min, 3 min, 4 min, 5 min, 6 min, 7 min, 8 min, 9 min, 10 min, 11 min, 12 min, 13 min, 14 min or 15 min.

Throttle Slow Clock Ratio

This option specifies the speed at which the system clock runs in power saving states. The settings are expressed as a ratio between the normal CPU clock speed and the CPU clock speed when the computer is in the power-conserving state.

Keyboard & PS/2 Mouse / FDC/LPT/COM Ports / SB & MSS Auto Ports / MIDI Ports / ADLIB Ports / Primary Master IDE / Primary Slave IDE / Secondary Master IDE / Secondary Slave IDE / PIRQ[A] IRQ Active / PIRQ[B] IRQ Active / PIRQ[C] IRQ Active / PIRQ[D] IRQ Active / System Thermal

When set to Monitor, these options enabled event monitoring on the specified hardware interrupt request line. If set to Monitor and the computer is in a power saving state, AMI® BIOS watches for activity on the specified IRQ line. The computer enters the full on power state if any activity occurs.

AMI® BIOS reloads the Standby and Suspend timeout timers if activity occurs on the specified IRQ line.

Power Button Function

During Suspend, if you push the switch once, the system goes into suspend mode and if you push it more than 4 seconds, the system will be turned off. During On/Off, the system will turn off once you push the switch.

Restore on AC/Power Loss

The settings are power on or last status. During power on, after every AC power loss, the system will be turned on. During last status, after every AC power loss, whatever the system status, it will be the same when the AC power returns.

Note: If you set this option to last status, the Power Button Function must be set to On/Off, or this function will not work.

Resume On Ring

During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on.

LAN Resume from Soft-Off

During Disabled, the system will ignore any incoming signal from the LAN network card. During Enabled, the system will boot up if there's an incoming signal from the LAN network card.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on. incoming signal from the LAN network card.

PME Function Support

During Disabled, the system will ignore any event on PME (Power Management Event). During Enabled, the system will boot up if there's an event on PME.

Resume on RTC Alarm

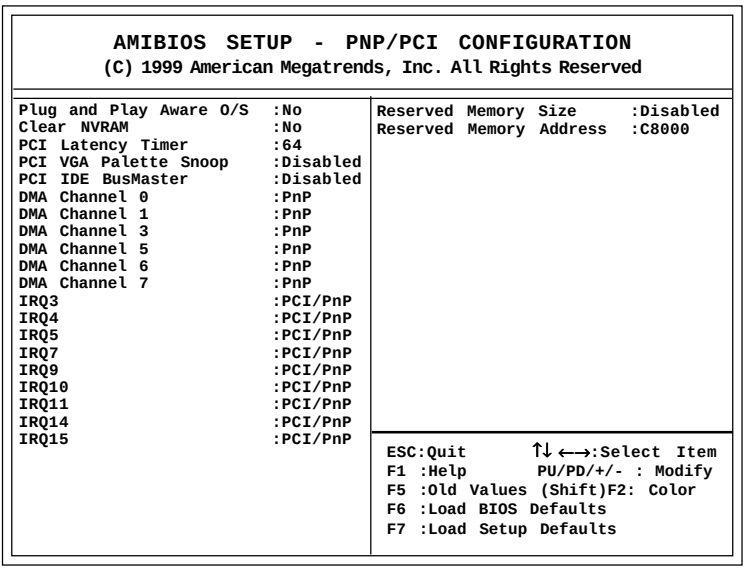
This function is for setting the Date, Hour, Minute, and Second for your computer to boot up.

RTC Alarm Date	Choose which day the system will boot up.
RTC Alarm Hour	Choose which hour the system will boot up.
RTC Alarm Minute	Choose which minute the system will boot up.
RTC Alarm Second	Choose which second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on.

4.6 PNP/PCI Configuration

1. Press <ENTER> on "PNP/PCI Configuration" of the main menu screen.



2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the PNP/PCI Configuration, press <ESC> to go back to the main menu.

Description of the item on screen follows:

Plug and Play Aware O/S

Set this option to Yes, if the operating system in this computer is aware of and follows the Plug and Play specification. Currently, only Windows 95/98 is PnP-Aware. The settings are Yes or No. The optimal fail-safe default settings is No.

Clear NVRAM

During Yes, this will clear NVRAM data on every boot.

PCI Latency Timer (PCI Clocks)

This option specifies the latency timings (in PCI clocks) for all PCI devices on the PCI bus. The settings are 32, 64, 96, 128, 160, 192, 224 or 248. The Optimal and Fail-Safe default setting is 64.

PCI VGA Palette Snoop

When this option is set to Enabled, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit (0 is disabled). For example, if there are two VGA devices in the computer (one PCI and ISA) and the Bit settings are:

Disabled-Data read and written by the CPU is only directed to the PCI VGA device's palette registers.

Enabled - Data read and written by the CPU is directed to both the PCI VGA device's palette registers and the ISA VGA device palette registers, permitting the palette registers of both devices to be identical.

This option must be set to Enabled if an ISA adapter card requires VGA palette snooping. The settings are Enabled or Disabled.

PCI IDE BusMaster

This options is used to Enabled/Disabled the PCI IDE BusMaster.

DMA Channel 0/1/3/5/6/7

These options specify the bus that the specified DMA channel is used. These options allow you to reserve DMAs for legacy ISA adapter cards.

These options determine if AMI® BIOS should remove a DMA from the available DMAs passed to devices that are configurable by the system BIOS. The available DMA pool is determined by reading the ESCD NVRAM. If more DMAs must be removed from the pool, the end user can use these options to reserve the DMA by assigning an ISA/EISA setting to it.

IRQ3/IRQ4/IRQ5/RQ7/IRQ9/IRQ10/IRQ11/IRQ14/IRQ15

These options specify the bus that the specified IRQ line is used on. These options allow you to reserve IRQs for legacy ISA adapter cards.

These options determine if AMI® BIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these options to reserve the IRQ by assigning an ISA/EISA setting to it. Onboard I/O is configured by AMI® BIOS. All IRQs used by onboard I/O are configured as PCI/PnP. If all IRQs are set to ISA/EISA and IRQ14 and 15 are allocated to the onboard PCI IDE, IRQ9 will still be available for PCI and PnP devices, because at least one IRQ must be available for PCI and PnP devices. The settings are ISA/EISA or PCI/PnP. The Optimal and Fail-Safe default settings are IRQ3 through 7 are ISA/EISA. The Optimal and Fail-Safe default settings PCI/PnP.

Reserved Memory Size

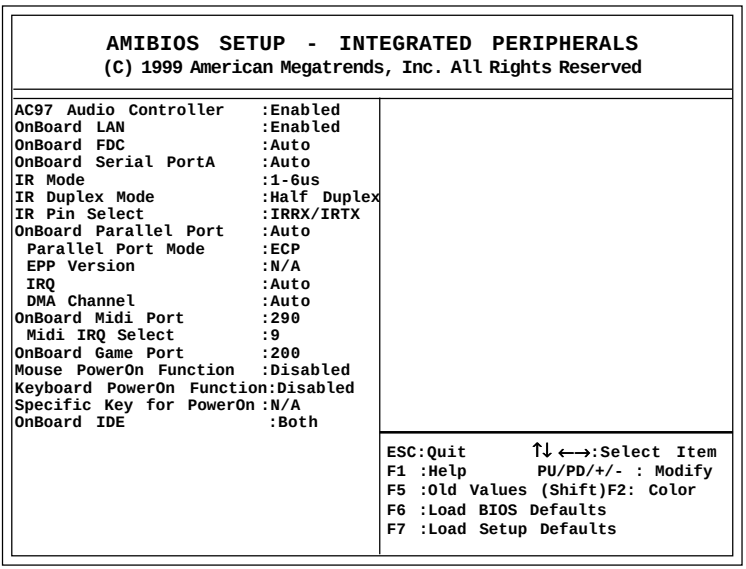
This options allows the user to reserved the memory size for old add-on card. The settings are 16K/23K/64K/Disabled.

Reserved Memory Address

This options allows the user to reserved the memory size of the old add-on card in the reserved memory address. The default setting is C8000.

4.7 Integrated Peripherals

1. Press <ENTER> on "Integrated Peripherals" of the main menu screen.



2. Use <up> and <down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the Integrated Peripherals, press <ESC> to go back to the main menu.

Description of the item on screen follows:

AC97 Audio Controller

This item allows you to decide to enable/disable the 815 chipset family to support AC97 Audio. The settings are Enabled, Disabled.

Onboard LAN

This item allows you to decide to enable/disable the onboard LAN chipset. The settings are Enabled, Disabled.

Onboard FDC

Choose Auto, for the BIOS to automatically detect the device

If the ISA add-on card has	Onboard FDC to be set at
FDC exist	Disabled
none FDC exist	Enabled

Choose Enabled to enable the onboard FDC.
Choose Disabled to disable the onboard FDC.

Onboard Serial Port A

Choose 3F8, for the BIOS to automatically detect the device.

If the ISA add-on card has				Onboard Serial port to be set at			
COM1 (I/O:3F8H)	COM2 (I/O:3F8H)	COM3 (I/O:3E8H)	COM4 (I/O:2E8H)	PORT1	IRQ ASSIGNED	PORT2	IRQ ASSIGNED
✓	✓	✓	✓	DISABLED	X	DISABLED	X
✓	✓	X	X	COM3	4	COM4	3
X	X	✓	✓	COM1	4	COM2	3
✓	X	X	✓	COM2	3	COM3	4
X	✓	✓	X	COM1	4	COM4	3
✓	✓	✓	X	COM4	3	DISABLED	X
✓	✓	X	✓	COM3	4	DISABLED	X
✓	X	✓	✓	COM2	3	DISABLED	X
X	✓	✓	✓	COM1	4	DISABLED	X
X	X	X	X	COM1	4	COM2	3
✓	X	X	X	COM2	3	COM3	4
X	✓	X	X	COM1	4	COM3	4
X	X	✓	X	COM1	4	COM2	3
X	X	X	✓	COM1	4	COM2	3

Note: *If the onboard serial port interrupt and ISA add-on card interrupt are in conflict, the serial port will not work properly. Please disable one of the devices.*

IR Duplex Mode

Can be set as either Half or Full duplex.

IR Pin Select

Set this option to IRRX/IRTX when using an internal IR device which is connected to IR1 connector.

Onboard Parallel Port

Choose Auto, the BIOS automatically assigned onboard parallel port to the available parallel port or disabled.

If the ISA add-on card has			Onboard parallel port to be set as	
LPT1 I/O:378H	LPT2 I/O:278H	LPT3 I/O:3BCH	PORT ASSIGNED	IRQ ASSIGNED
✓	✓	✓	Disabled	X
✓	✓	X	LPT3	5
✓	X	✓	LPT2	5
X	✓	✓	LPT1	7
✓	X	X	LPT2	5
X	✓	X	LPT1	7
X	X	✓	LPT1	7
X	X	X	LPT1	7

Note: *If the onboard parallel port interrupt and ISA add-on card interrupt are in conflict, the parallel port will not work properly. Please disable one of the devices.*

Parallel Port Mode

This option allows user to choose the operating mode of the onbaord parallel port. The settings are Normal, SPP/EPP or ECP mode.

EPP Version

This option is for setting which EPP version will be used. The settings are 1.7 and 1.9.

IRQ

If the onboard parallel mode is not on auto mode, the user can select the interrupt line for onboard parallel port. We suggest that the user select the interrupt for the onboard parallel port as shown below:

Onboard parallel port set at	Parallel Port IRQ
LPT1(378H)	7
LPT2(278H)	5
LPT3(3BCH)	5

DMA Channel

This option allows user to choose DMA channel 1 to 3 for the onboard parallel port on ECP mode.

OnBoard MIDI Port

Choose 290H, 292H, 300H, 330H to support MIDI devices.

MIDI IRQ Select

Choose 5, 7, 9, 10 to support MIDI device interrupt.

OnBoard Game Port

Choose 200H, 208H to support Joystick device.

Note: If Hardware Audio is onboard, the three items above in the peripheral setup will not be shown.

Mouse PowerOn Function

This function allows you to Disabled, Left-button or Right-button the Mouse PowerOn. The default setting is Disabled.

Keyboard PowerOn Function

This function allows you to Enabled or Disabled the Keyboard PowerOn.

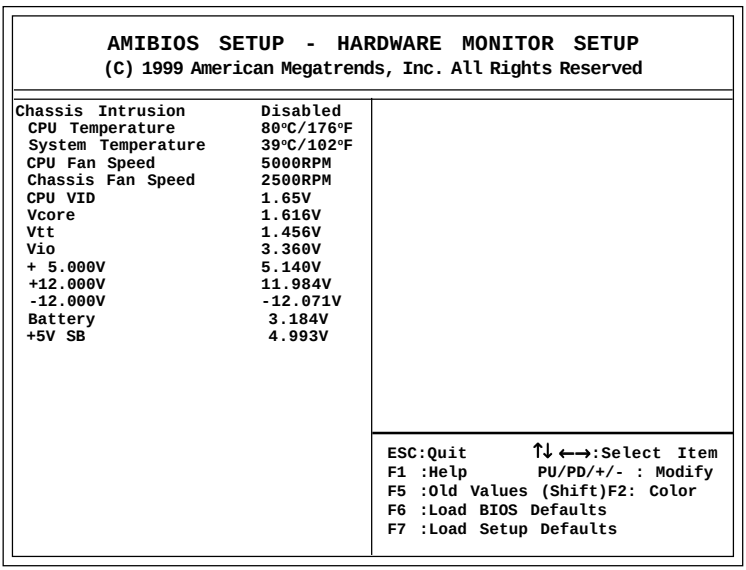
OnBoard IDE

Set this option to Enabled or Disabled the OnBoard IDE controller.

4.8 Hardware Monitor Setup

The Hardware Monitor Setup is used to set the CPU speed and monitor the current CPU Temperature, CPU Fan speed, Chassis Fan Speed, Power fan speed, Vcore, etc. This is only available if there is Hardware Monitor onboard.

1. Press <ENTER> on "Hardware Monitor Setup" of the main menu screen.



2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the Hardware Monitor Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

Chassis Intrusion

Set this option to Enabled, Reset, or Disabled the chassis intrusion detector. During Enabled, any intrusion on the system chassis will be recorded. The next time you turn on the system, it will show a warning message. To be able to clear those warning, choose reset. After clearing the message it will go back to Enabled.

CPU/System Temperature

This items shows current CPU and System temperature.

CPU Fan/Chassis Fan Speed

This items shows current CPU Fan speed and Chassis Fan speed.

CPU VID/Vcore/Vtt/Vio/+5.000V/+12.000V/-12.000V/Battery/ +5VSB

This items shows current system voltages.

4.9 Supervisor/User Password

This Main Menu item lets you configure the system so that a password is required each time the system boots or an attempt is made to enter the Setup program. Supervisor Password allows you to change all CMOS settings but the User Password setting doesn't have this function. The way to set up the passwords for both Supervisor and User are as follow:

1. Choose "Supervisor/User Password" in the Main Menu and press <Enter>. The following message appears:

   "Enter New Supervisor/User Password:"

2. The first time you run this option, enter your password up to 6 characters only and press <Enter>. The screen will not display the entered characters. For no password, just press <Enter>.

3. After you enter the password, the following message appears prompting you to confirm the password:

   "Retype New Supervisor/User Password:"

4. Enter exactly the same password you just typed in to confirm the password and press <Enter>.

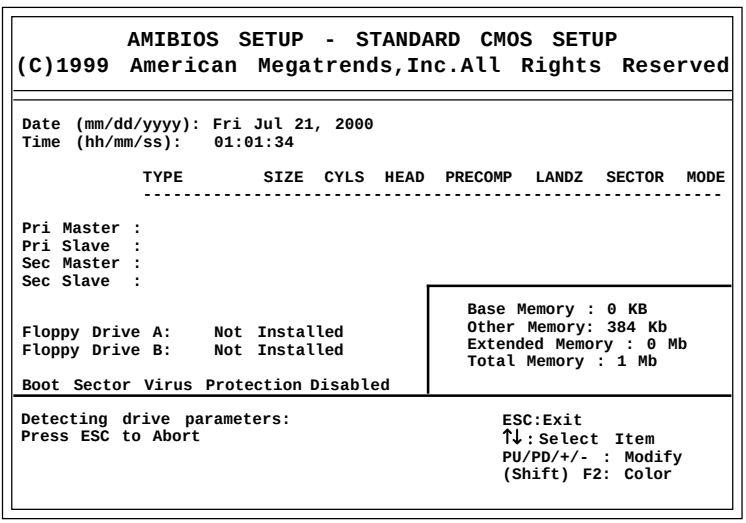
5. Move the cursor to Save and Exit Setup to save the password.

6. If you need to delete the password you entered before, choose the Supervisor/User Password and press <Enter>. It will delete the password that you had before.

7. Move the cursor to Save and Exit Setup to save the option you did. Otherwise, the old password will still be there when you turn on your machine next time.

4.10 IDE HDD Auto Detection

You can use this utility to automatically detect the characteristics of most hard drives.



Chapter 5

INTEL® 815 INTEGRATED GRAPHICS CONTROLLER

1. Overview

The Intel® 815 Chipset extends Intel's graphics capabilities into the value PC segment by incorporating 2D and 3D capabilities with the memory controller, to provide the industry with complete graphics offerings for every computing segment.

1.1 Intel® 815 Chipset

- Support 4MB Display Cache (optional)
- Support AGP 2X/4X BUS
- 2D & 3D Graphics Accelerator

1.2 System Requirements

This section describes system requirements for the VGA Driver installation and Usage.

Computer	Intel® Celeron™/ Pentium® III (FC-PGA) processor or higher
Monitor	VGA Support, mimimum 640x480 resolution
Operating system	DOS 5.0 or higher, Windows® 95/98, Windows® NT 3.51 or 4.0, or OS/2®
CD-ROM	Double Speed or Higher
Chipset	Intel® 815 chipset
VGA BIOS	Version 00.23 or Higher

2. Intel® 815 VGA Driver Setup & Usage Procedures

Insert the CD-title into your CD-ROM drive. This CD will auto-run. This will display installation for VGA driver and sound driver, Intel 815/820 INF Update (only for Windows 95/98) and Trend PC-cillin 98. Just click the button for automatic installation for VGA driver.

2.1 Windows® 95/98

If you start Windows® 95/98, this will automatically detect this hardware onboard "Standard PCI Graphics Adapter (VGA)". You need to click "Next", then "Finish". Do not click on the "Cancel". The driver need these ID.

Note: Before installing the Intel 815 VGA Driver, you need to install the Intel 815/820 INF update first.

2.1-1 Display Driver Installation Procedure:

Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.
Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.
Step 3: Click on "Intel 815 VGA Driver" icon.
Step 4: This will show an installation menu.
Step 5: Click on "Display Drivers".
Step 6: Click "OK".
Step 7: This will copy the VGA drivers into the hard drive.
Step 8: A message will appear stating you must restart the Windows® 95/98 system, select **yes** to restart.
Step 9: After restarting, Windows® 95/98 will show a new display setting.

2.2 Windows® NT 4.0

You need to install Windows® NT "Service Pack 3" or higher, before you install Windows® NT driver.

2.2-1 Display Driver Installation Procedure:

Step 1: Click **Start** menu and select **Control Panel** from **Settings** group.
Step 2: Select **Display** icon.
Step 3: Select **Settings** on the Display Properties.
Step 4: Select **Display Type**.
Step 5: Select **Change** from the **Adapter Type** Area.
Step 6: Select **Have Disk** of Change Display.
Step 7: Insert the **CD-Title Disk** into CD-ROM Drive.
Step 8: When the Install from Disk dialog box appears, look for your CD-ROM drive :**\SVGA\Intel\815\NT4\WINNT4**
Step 9: When the **Change Display** dialog box appears, click **OK**.
Step 10: When the Third-party Drivers dialog box appears, click **Yes.**
A message will appear stating that the drivers were succesfully installed. Click OK. You must now restart Windows® NT 4.0.

Note: You can also use CD autorun to install the VGA NT driver.

2.2-2 Changing resolution, color depth, and refresh rate:

Step 1: Click **Start** menu and select **Control Panel** from **Settings** group.

Step 2: Select **Display** icon.

Step 3: Select **Settings**.

Step 4: Select Color Palette to change between 256 color, 65536 colors, and 16777216 colors.

Step 5: To select desktop resolution size, go to the Desktop area and use the slide bar to change resolution from 640x480, 800x600, 1024x768, 1152x864, 1280x1024, to 1600x1200.

Step 6: Select Test to test the resolution. If the display test screen was good, then select Yes when the Testing Mode dialog box appears. If the display test screen was bad, then select No. Windows® NT will give you an error message.

Step 7: Click OK. If the display test screen was good and you select Yes, Windows® NT 4.0 will change the mode without restarting the system.

2.3 AutoCAD, OS/2 and other application. Please refer to "On-Line Manual" in the CD-ROM. You need to install the "Acrobat Reader 3.01" program first.

Chapter 6

ICH AUDIO DRIVER

1. Overview

The ICH AC' 97 digital controller provides the next generation of audio performance to the PC market.

1.1 Features

- PCI Bus Master for fast DMA.
- Fully Compliant with PC97 Power Management Specification.

1.2 System Requirements

This section describes system requirements for the Audio Driver installation and Usage.

Computer	Intel® Celeron™ processor or higher
Operating system	DOS 5.0 or higher, Windows® 95/98, Windows® NT 3.51 or 4.0, or OS/2®
CD-ROM	Double Speed or Higher
Chipset	ICH

2. Audio Driver Setup & Usage Procedures

Insert the CD-title into your CD-ROM drive. This CD will auto-run. This will display installation for VGA driver and sound driver, Intel 810/820 INF Update (only for Windows 95/98) and Trend PC-cillin 98. Just click the button for automatic installation for audio driver.

2.1 Windows® 95/98

If you start Windows® 95/98, this will automatically detect this hardware onboard "PCI Multimedia Audio Device" and "Gameport Joystick". You need to click "Next", then "Finish". Do not click on the "Cancel". The driver need these ID.

2.1-1 Audio Driver Installation Procedure:

Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.

Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.

Step 3: Click on "ADI SoundMax Drivers" icon.

Step 4: This will copy the audio drivers into the hard drive.

Step 5: A message will appear stating you must restart the Windows® 95/98 system, select **yes** to restart.

2.2 Windows® NT 4.0

2.2-1 Audio Driver Installation Procedure:

Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.

Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.

Step 3: Click on "ADI SoundMax Drivers" icon.

Step 4: This will copy the audio drivers into the hard drive.

Step 5: A message will appear stating you must restart the Windows® NT system, select **yes** to restart.

Chapter 7

INTEL® 82562EM FAST ETHERNET LAN DRIVER

1. Overview

The integrated Intel 82562EM is a Platform LAN Connect device designed for 10 or 100 Mpbs Ethernet systems. It is based on the IEEE 10BASE-T and 100BASE-TX standards. The IEEE 802.3u standard for 100BASE-TX defines networking over two pairs of Category 5 unshielded twisted pair cable or Type 1 shielded twisted pair cable.

1.1 Features

- IEEE 802.3 10BASE-T and 100BASE-TX compliant physical layer interface
- IEEE 802.3u Auto-Negotiation support
- Digital Adaptive Equalization control
- Link status interrupt capability
- Baseline Wander correction
- Or Scan support
- 3-Port LED support (speed, link and activity)
- 10BASE-T auto-polarity correction
- Diagnostic loopback mode
- 1:1 transmit transformer ratio support
- Low power(less than 250mW in active transmit mode)
- Reduced power in “Unplugged mode” (less than 50mW)
- Automatic detection of “Unplugged Mode”
- 3.3V device
- 48-pin Shrink Small Outline Package
- Platform LAN connect interface support

2. LAN Driver Setup

2.1 Windows® 95/98

To install the driver, just insert the provided CD-ROM into the CD-ROM drive. The CD-ROM will autorun. Press the button for installing the LAN driver.

2.2 Other OS driver

To install the driver for other operating system, just insert the provided CD-ROM into the CD-ROM drive.
Type:

CD-ROM Path:\E100B\Setup/readme

This will show different procedure for the installation of LAN driver for different kind of operating system. Just follow the procedures given.