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M921 Series, V1.0A
VT8753/September 2001

Table of Contents

Chapter 1

Introduction

This mainboard has a **Socket 423** for the **Intel Pentium 4** type processors supporting front side bus (FSB) speeds up to **400 MHz**.

This mainboard has the **VIA VT8753** Northbridge and VT8233 Southbridge chipsets that support **AC 97 audio codec**, and provide **Ultra DMA** 33/66/**100** function. This mainboard has three 32-bit PCI slots, a **4xAGP** slot, a **CNR** (Communications and Networking Riser) slot, and an onboard **10BaseT/100BaseTX Network** interface (optional). In addition, this mainboard has a full set of I/O ports including two PS/2 ports for mouse and keyboard, two serial ports, one parallel port, one MIDI/game port and six USB ports (two backpanel ports, onboard USB headers providing four extra ports).
By means of the Extended USB Module connected to the mainboard, you can make four extra USB ports.

This mainboard is a Micro ATX mainboard that uses a 4-layer printed circuit board and measures 244 x 240mm.

Key Features

This mainboard has these key features:

Socket 423 Processor

- The PGA Socket 423
- Accommodates Intel Pentium 4 CPUs
- Supports a front-side bus (FSB) of 400 MHz

Chipset

There are VT8753 Northbridge and VT8233 Southbridge in this chipset in accordance with an innovative and scalable architecture with proven reliability and performance. A few of the chipset's advanced features are:

- An advanced V-Link memory controller architecture that provides the bandwidth up to 266 MB/s and performance necessary for even the most demanding Internet and 3D graphics
- Support for an 4xAGP interface providing vivid 3D graphics and video performance
- An ATA 100 interface on the chipset, which helps boost system performance by providing a high-speed connection to ATA 100 Hard Disk Drives, delivering maximum sustained data transfer rates of 100 MB/sec

Additional key features include support for six USB ports, an AC 97 link for audio and modem, hardware monitoring, and ACPI/OnNow power management.

Memory Support

- The mainboard accommodates three 168 pin, 3.3V DIMM sockets with a total capacity of 3 GB (registered), 1.5 GB (unbuffered).

VGA

- This mainboard includes a 4xAGP slot that provides eight times the bandwidth of the original AGP specification. AGP technology provides a direct connection between the graphics sub-system and memory so that the graphics do not have to compete for processor time with other devices on the PCI bus.

AC 97 Audio Codec

- The AC 97 Audio codec is compliant with the AC 97 2.2 specification, and supports 18-bit ADC (Analog Digital Converter) and DAC (Digital Analog Converter) resolution as well as 18-bit stereo full-duplex codec with independent and variable sampling rates. Further features include support for four analog line-level stereo inputs.

Expansion Options

The mainboard comes with the following expansion options:

- Three 32-bit PCI slots capable of Ultra DMA bus mastering with transfer rates of 33/66/100 MB/sec
- A 4xAGP slot
- A CNR (Communications and Networking Riser) slot

Onboard I/O Ports

The mainboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- Two serial ports
- One parallel port
- One MIDI/game port
- Six USB ports (two backpanel ports, onboard USB headers providing four extra ports)
- Audio jacks for microphone, line-in and line-out

BIOS Firmware

This mainboard uses Award BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters and memory timing
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

Built-in Ethernet LAN

- Built-in **10BaseT/100BaseTX Ethernet LAN**
- LAN controller integrates Fast Ethernet MAC and PHY in compliance with IEEE802.3u 100BASE-TX, 10BASE-T and ANSI X3.263 TP-PMD standards
- In compliance with ACPI 1.0 and the Network Device Class Power Management 1.0
- High Performance achieved by 100Mbps clock generator and data recovery circuit for 100Mbps receiver

Bundled Software

- **PC-Cillin 2000** provides automatic virus protection under Windows 95/98/NT/2000
- **MediaRing Talk** provides PC to PC or PC to Phone internet phone communication
- **3Deep** delivers the precise imagery and displays accurate color in your monitor
- **WinDVD2000** is a DVD playback application (optional)

Dimensions

- Micro ATX form factor of 244 x 240mm

Package Contents

Attention : This mainboard serial has two models, M921LR(LAN Ready) and M921(without LAN). Please contact your local supplier for more information about your purchased model. Each model will support different specification listed as below:

Model	Specification
M921LR	Onboard LAN chip (U12), USB + RJ-45 LAN connector
M921	USB connector only

Your mainboard package contains the following items:

- The mainboard
- The User's Manual
- One diskette drive ribbon cable and bracket
- One IDE drive ribbon cable and bracket
- Software support CD
- Module Retention damp

Optional Accessories

You can purchase the following optional accessories for this mainboard.

- Extended USB module
- CNR v.90 56K Fax/Modem card

Static Electricity Precautions

Static electricity may damage components of this mainboard. Please take the following precautions while unpacking the mainboard and installing it in a system.

1. Keep the mainboard and other components in their original static-proof packaging until you are ready to install them.
2. During installation, wear a grounded wrist strap if possible. If you don't have a wrist strap, you can discharge static electricity by touching the bare metal of the system chassis.
3. Handle the mainboard carefully by the edges. Avoid touching the components unless it is absolutely necessary. During installation, put the mainboard on top of the static-protection packaging that comes in with the component side facing up.

Pre-Installation Inspection

1. Inspect the mainboard whether there are any damanges to the components and connectors on the board.
2. If the mainboard seems damaged to you, please do not connect power to the system. Contact your mainboard vendor and show where the damages are.

Chapter 2

Mainboard Installation

To install this mainboard in a system, please follow the instructions in this chapter:

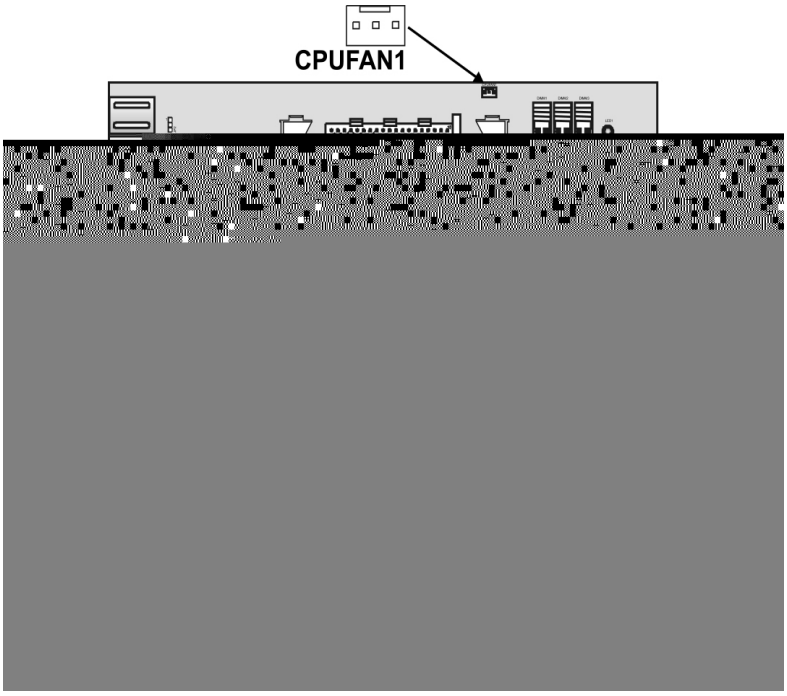
- Identify the mainboard components
- Install a CPU
- Install one or more system memory modules
- Verify that all jumpers or switches are set correctly
- Install the mainboard in a system chassis (case)
- Connect any extension brackets or cables to connecting headers on the mainboard
- Install other devices and make the appropriate connections to the mainboard connecting headers.

Note:

1. Before installing this mainboard, make sure jumper JP1 is under Normal setting. See this chapter for information about locating JP1 and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the mainboard.

Mainboard Components

Identify major components on the mainboard via this diagram underneath.



Note: Those jumpers of mainboard not appearing in this illustration are for testing only.

I/O Ports

The illustration below shows a side view of the built-in I/O ports on the mainboard.

1. Use the upper PS/2 port to connect a PS/2 pointing device.
2. Use the lower PS/2 port to connect a PS/2 keyboard.
3. Use the USB ports to connect USB devices.
4. Use LPT1 to connect printers or other parallel communications devices.
5. Use the COM ports to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3. COM2 is identified by the system as COM2/4.
6. Use the game port to connect a joystick or a MIDI device.
7. Use the three audio ports to connect audio devices. The left side jack is for a stereo line-out signal. The middle jack is for a stereo line-in signal. The right side jack is for a microphone.
8. Use this port to connect to the network.

Installing the Processor

This mainboard has a Socket 423 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure

The following illustration shows CPU installation components:

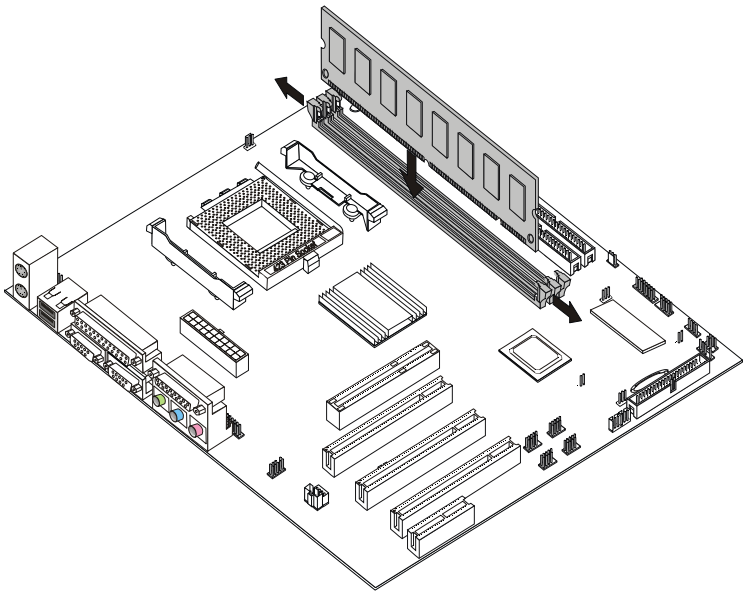
Follow these instructions to install the CPU:

1. Unhook the CPU socket's locking lever by pulling it away from socket and raising it to the upright position.
2. Match the pin 1 corner of CPU socket to the one of processor, and insert the processor into the socket. Do not use force.
3. Push the locking lever down and hook it under the latch on the edge of socket.
4. Apply thermal grease to the top of the CPU.
5. Lower the CPU fan/heatsink unit onto the CPU and CPU socket, and then use the retention module clamps to snap the fan/heatsink into place.
6. Plug the CPU fan power cable into the CPU cooling fan power supply (CPUFAN1) on the mainboard.

Installing Memory Modules

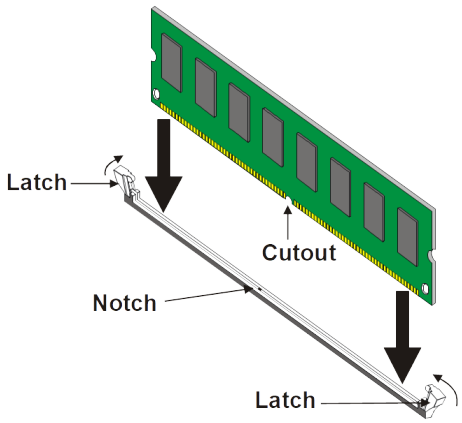
This mainboard accommodates 168-pin 3.3V unbuffered SDRAM memory modules. The memory chips must be standard or registered SDRAM (Synchronous Dynamic Random Access Memory).
The CPU supports 100MHz system bus. The SDRAM DIMMS can synchronously work with 100 MHz or operates over a 133 MHz system bus.

Installation Procedure



The mainboard accommodates three memory modules. You must install at least one module in any of the three slots. Each module can be installed with up to 512 MB of memory; total memory capacity is 1.5 GB.
Refer to the following to install the memory modules.

1. Push the latches on each side of the DIMM slot down.
2. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
3. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot:



4. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
5. Install any remaining DIMM modules.

Jumper Settings

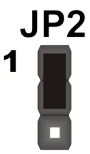
JP1: Clear CMOS Jumper

This jumper enables you to reset BIOS:

1. Turn the system off.
2. Short pins 2 and 3 on JP2.
3. Return the jumper to the normal setting.
4. Turn the system on. The BIOS is returned to the default settings.

Jumper	Type	Description	Setting (*default*)
JP1	3 pin	Clear CMOS Jumper	*1-2: Normal* 2-3: Clear CMOS 

JP2: Wake on Keyboard/USB activity– This jumper enables any USB keyboard activity to power up a system previously in a standby or sleep state.

Jumper	Type	Description	Setting (*default*)
JP2	3 pin	Wake on Keyboard/USB activity	1-2: Enable *2-3: Disable* 

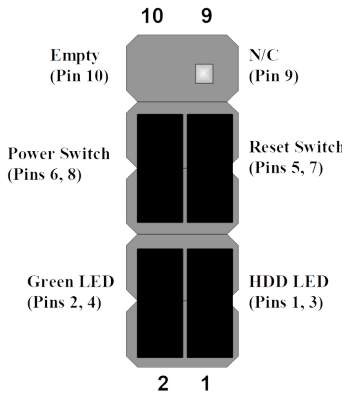
JP3: BIOS Flash Protect Jumper -- This jumper is used to protect the BIOS from being unintentionally flashed. Enable this jumper for protection and disable this jumper when you want to flash the BIOS.

Jumper	Type	Description	Setting (*default*)
JP3	3 pin	BIOS flash protection jumper	*1-2: Unprotected* 2-3: Protected 

The Panel Connector

The panel connector provide a set of switch and LED connectors found on ATX or Micro ATX cases. Refer to the table below for information.

Device	Pins
Empty	10
N/C	9
Power ON/OFF	6, 8
Reset Switch	5, 7
Green LED Indicator	2, 4
HDD LED	+1, -3



Note: The plus sign (+) indicates a pin which must be connected to a positive voltage.

Other Devices Installation

Floppy Diskette Drive Installation

The mainboard has a floppy diskette drive (FDD) interface and ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch drive and a 3.5-inch drive with various capacities. The floppy diskette drive cable has one type of connector for a 5.25-inch drive and another type of connector for a 3.5-inch drive.

IDE Devices

Your mainboard has a primary and secondary IDE channel interface (IDE1 and IDE2). An IDE ribbon cable supporting two IDE devices is bundled with the mainboard.

If you want to install more than two IDE devices, get a second IDE cable and you can add two more devices to the secondary IDE channel.

IDE devices have jumpers or switches to set the IDE device as MASTER or SLAVE. When installing two IDE devices on one cable, ensure that one device is set to MASTER and the other one to SLAVE.

This mainboard supports Ultra DMA 66/100. UDMA is a technology to accelerate devices' performance in the IDE channel. To maximize performance, install IDE devices that support UDMA and use 80-pin IDE cables supporting UDMA 66/100.

Expansion Slots Installation

This mainboard has three 32-bit PCI (Peripheral Components Interconnect) expansion slots, one 4xAGP slot, and one CNR slot.

PCI Slots

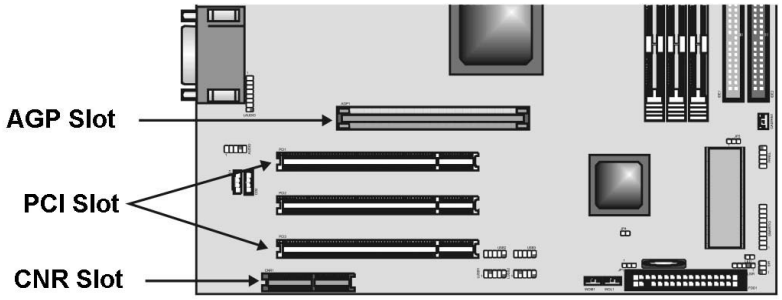
PCI slots are used to install expansion cards that have the 32-bit PCI interface.

4 x AGP Slot

The 4xAGP slot is used to install a graphics adapter that supports the 4xAGP specification and has a 4xAGP edge connector.

CNR Slot

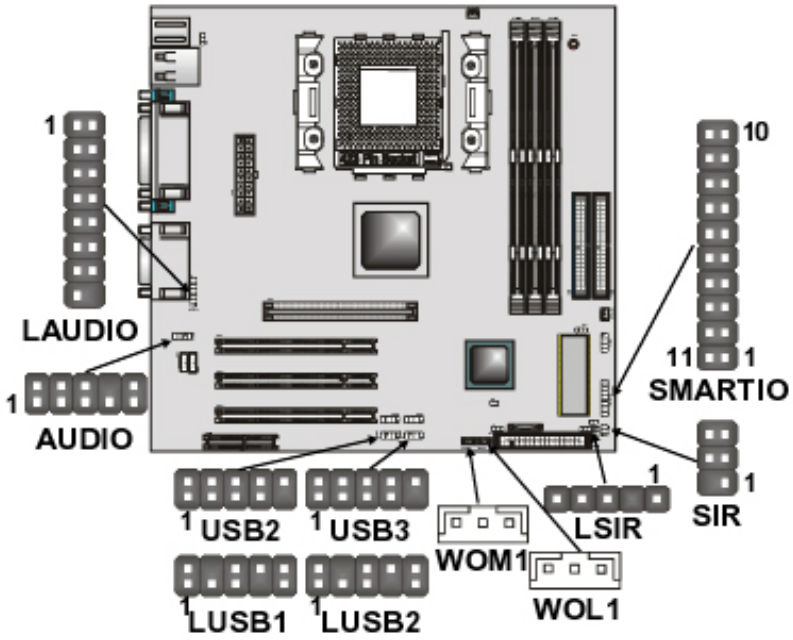
The Communications Networking Riser (CNR) slot can be used to insert a CNR card.



1. Remove a blanking plate from the system case corresponding to the slot you are going to use.
2. Install the edge connector of the expansion card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3. Secure the metal bracket of the card to the system case with a screw.

Connecting Optional Devices

Refer to the following for information on connecting the mainboard's optional devices:



LAUDIO: Mic/Speaker Out header

Pin	Signal Name	Pin	Signal Name
1	Active LINE Out (R)	2	Active LINE Out (L)
3	GND (aLO)	4	GND (aLO)
5	GND (+12)	6	GND (+12)
7	+12V (1A)	8	(Cut away)
9	MIC	10	GND (MIC)
11	Front LINE Out(R)	12	LINE Next (R)
13	Front LINE Out (L)	14	LINE Next (L)
15	GND (tLO)	16	No pin

AUDIO: Front panel MIC/Speaker Out header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	MICIN	2	AGND
3	MICBIAS	4	5V
5	SPKOUTR	6	XSPKOUTR
7	Empty	8	KEY
9	SPKOUTL	10	XSPKOUTL

JP4: External SMI connector

The SMI (System Management Interrupt) is a hardware interrupt in Intel SL Enhanced 486 and Pentium CPUs used for power management. This interrupt is also used for virus checking.

Pin	Signal Name
1	EXTSMI
2	GND

USB2/USB3: Front panel USB headers

The mainboard has USB ports installed on the rear edge I/O port array. Some computer cases have a special module that mounts USB ports at the front of the case. If you have this kind of case, use auxiliary USB connectors USB2 and USB3 to connect the front-mounted ports to the mainboard.

Pin	Signal Name	Pin	Signal Name
1	VCC (+5V)	2	VCC (+5V)
3	USBP2-N (port 2 -)	4	USBP3-N (port 3 +)
5	USBP2-P (port 2 +)	6	USBP3-P (port 3 -)
7	GND	8	GND
9	Key pin	10	OC# (over current detect)

LUSB1/LUSB2: Front panel USB headers

This mainboard has two additional USB ports installed on the board that serve the same function as USB2/USB3 but has different pinouts. If your USB connector match the pinouts below, use USB1 or USB4.

Pin	Signal Name	Pin	Signal Name
1	+5V	2	GND
3	USB0-	4	No pin
5	USB0+	6	USB1+
7	EMPTY	8	USB1-
9	GND	10	+5V

WOL1/WOM1: Wake On LAN/Wake On Modem

If you have installed a LAN card, use the cable provided with the card to plug into the mainboard WOL1 connector. This enables the Wake On LAN (WOL) feature. When your system is in a power-saving mode, any LAN signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility.

Pin	Signal Name
1	5VSB
2	Ground
3	SENSE

If you have installed a modem, use the cable provided with the modem to plug into the mainboard WOM1 connector. This enables the Wake On Modem (WOM1) feature. When your system is in a power-saving mode, any modem signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility. See Chapter 3 for more information.

LED: Single color LED

This connector is used to attach to devices that need a single color LED indicator.

SMART IO: Smart I/O

This connector is for use with media storage devices using the LPC interface.

Pin	Signal Name	Pin	Signal Name
1	PCICLK	11	VCC3
2	SERIRQ	12	VCC3
3	LFRAME#	13	GND
4	LDRQ#	14	GND
5	LAD0	15	5VSB
6	LAD1	16	GND
7	LAD2	17	GND
8	LAD3	18	RESERVED(GND)
9	PCIRST#	19	VCC5
10	PME#	20	VCC5

LSIR: Serial infrared port 2

The mainboard supports a Serial Infrared (SIR) data port. Infrared ports allow the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

Pin	Signal Name
1	VCC
2	No pin
3	IRRX
4	GND
5	IRTX

SIR: Serial infrared port 1

The mainboard supports a Serial Infrared (SIR) data port. Infrared ports allow the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

Pin	Signal Name	Pin	Signal Name
1	NC	2	Key pin
3	VCC	4	Ground
5	IRTX	6	IRRX

Note: For SIR and LSIR , select one from the two types of Serial infrared port supported by this mainboard.

Chapter 3

BIOS Setup Utility

Introduction

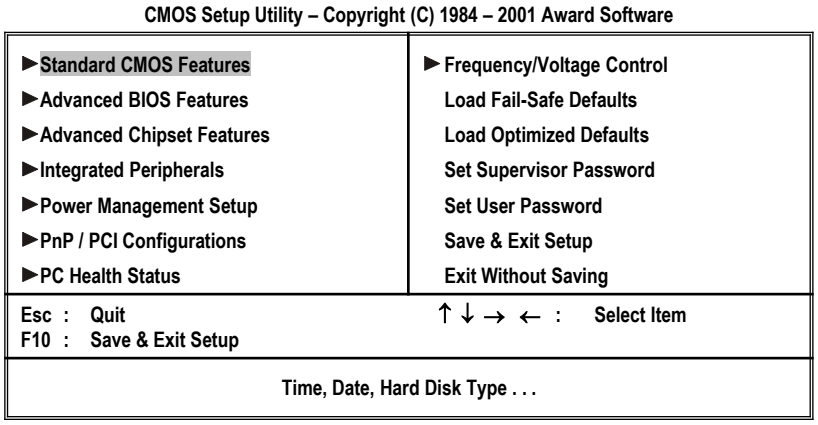
The BIOS Setup Utility records computer's settings and information, such as date and time, type of installed hardware, and various configuration settings. Your computer applies the information to initialize all the components when booting up, and basic functions of overall coordination between system components.

If the Setup Utility configuration is incorrect, it may cause system's malfunction. It can even keep your computer from booting properly. If it happens, you can use the clear CMOS jumper to clear the CMOS memory that has stored the configuration information.

You can run the setup utility and manually make changes to the configuration. You might need to do this to configure some of the hardware that you install on or connect to the mainboard, such as the CPU, system memory, disk drives, etc.

Running the Setup Utility

Each time your computer starts, before the operating system loads, a message appears on the screen that prompts you to "*Hit <DEL> if you want to run SETUP*". When you see this message, press the **Delete** key and the Main menu page of the Setup Utility appears on your monitor.



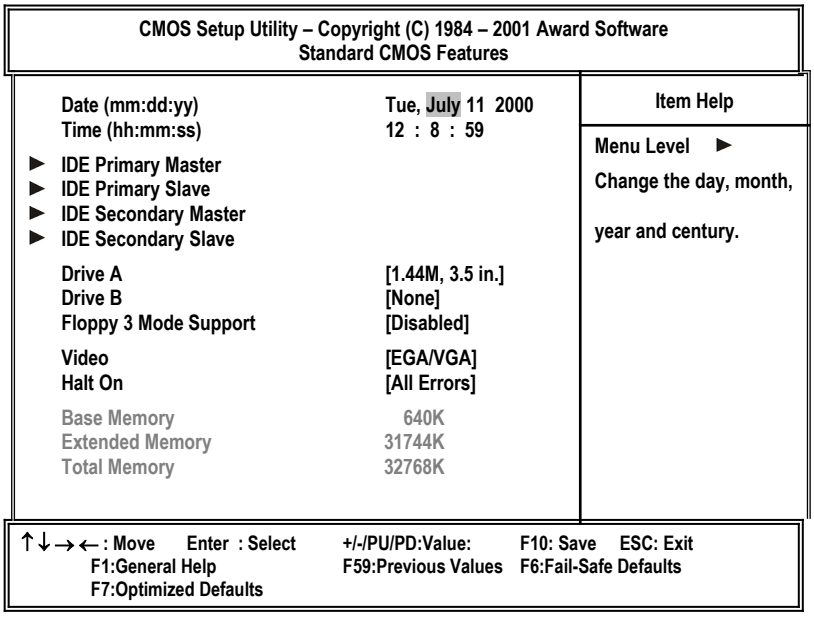
You can use the cursor arrow keys to highlight any of the options on the main menu page. Press **Enter** to select the highlighted option. To leave the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes hold down the **Shift** key and press **F2**.

Some of the options on the main menu page lead to tables of items with installed values. In these pages, use the cursor arrow keys to highlight the items, and then use the **PgUp** and **PgDn** keys to cycle through the alternate values for each of the items. Other options on the main menu page lead to dialog boxes which require you to answer Yes or No by hitting the **Y** or **N** keys.

If you have already made changes to the setup utility, press **F10** to save those changes and exit the utility. Press **F5** to reset the changes to the original values. Press **F6** to install the setup utility with a set of default values. Press **F7** to install the setup utility with a set of high-performance values.

Standard CMOS Features Page

This option displays a table of items defining basic information about your system.

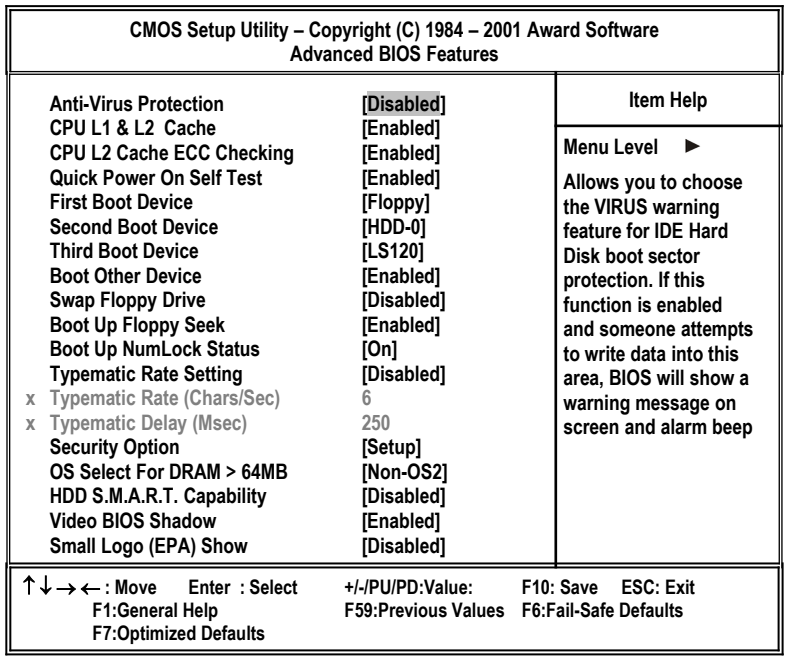


Date & Time	Use these items to set up system date and time
IDE Pri Master **Pri Slave** **Sec Master** **Sec Slave**	Use these items to configure devices connected to the Primary and Secondary IDE channels. To configure an IDE hard disk drive, choose *Auto*. If the *Auto* setting fails to find a hard disk drive, set it to *User*, and then fill in the hard disk characteristics (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting *CDROM*. If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120), select *Floptical*.
Floppy Drive A **Floppy Drive B**	Use these items to set up size and capacity of the floppy diskette drive(s) installed in the system.

Video	This item defines the video mode of the system. This mainboard has a built-in VGA graphics system; you must leave this item at the default value.
Halt On	This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt the system.
Base/Extended/ Total Memory	These items are automatically detected by the system at start up time. These are display-only fields. You cannot make changes to these fields.

Advanced BIOS Features Page

This page sets up more advanced information about your system. Be more careful to this page. Any changes can affect the operation of your computer.



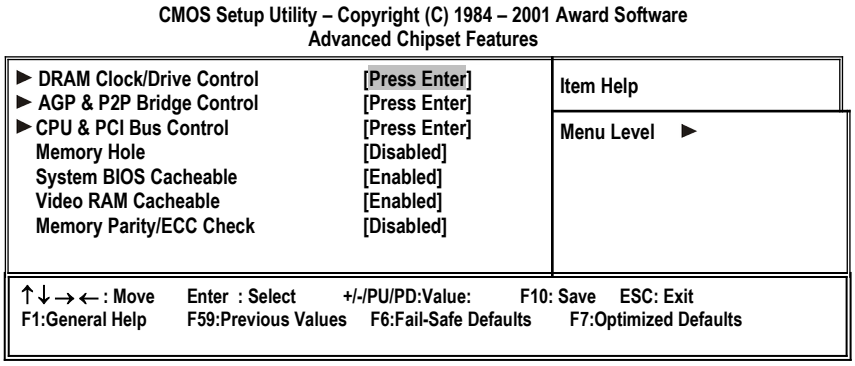
Anti-Virus Protection	When enabled, this item provides protection against viruses that try to write to the boot sector and partition table of your hard disk drive. You need to disable this item when installing an operating system. We recommend that you enable this item as soon as you have installed an operating system.

CPU L1&L2 Cache	All processors that can be installed in this mainboard use internal level 1 (L1) cache and level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.
CPU L2 Cache ECC Checking	This item enables or disables ECC (Error Correction Code) error checking on the CPU cache memory. We recommend that you leave this item at the default value.
Quick Power On Self Test	Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.
1st Boot Device **2nd Boot Device** **3rd Boot Device**	These items determine the device order for the computer's application of looking for an operating system to load at start-up time.
Boot Other Device	If you enable this item, the system will search for other booting devices if it fails to find one in those devices specified under the First, Second, and Third boot devices.
Swap Floppy Drive	If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.
Boot Up Floppy Seek	If this item is enabled, it checks the size of the floppy disk drives at start-up time. You don't need to enable this item unless you have a legacy diskette drive with 360K capacity.
BootUp Num-Lock Status	This item defines if the keyboard Num Lock key is active when your system is started.
Typematic Rate Setting	If this item is enabled, you can use the following two items to set the typematic rate and the typematic delay settings for your keyboard.

Typematic Rate (Chars/Sec)	Use this item to define how many characters per second are generated when a key is held down.
Delay (Msec)	Use this item to define how many milliseconds must elapse before a held-down key begins generating repeat characters.
Security Option	If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the Setup Utility.
O/S Select For DRAM>64MB	This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default.
HDD S.M.A.R.T. Capability	The S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer. The disk drive software monitors the internal performance of the motors, media, heads, and electronics of the drive. The host software monitors the overall reliability status of the drive. If a device failure is predicted, the host software, through the Client WORKS S.M.A.R.T applet, warns the user of the impending condition and advises appropriate action to protect the data.
Video BIOS Shadow	This function, when enabled allows VGA BIOS to be copied to the system DRAM for enhanced performance.
Small Logo (EPA) Show	Determines whether or not the EPA logo appears during boot up.

Advanced Chipset Features Page

This page sets some of the parameters of the mainboard components including the memory, and the system logic.

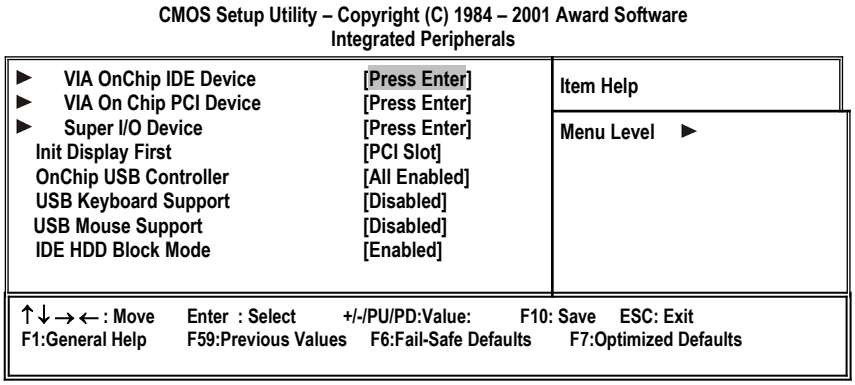


DRAM Clock/Drive Control	This item has several sub-items: **Current FSB Frequency** displays front-side bus (FSB) frequency; **Current DRAM Frequency** displays memory (DRAM) frequency; **DRAM Clock** enables you to manually set the DRAM Clock; **DRAM Timing** enables the system to automatically set the SDRAM timing by SPD (Serial Presence Detect) when being set to default value. **SDRAM CAS Latency** enables you to select the CAS latency time in HCLKs of 2/2 or 3/3. When enabling the **Bank Interleave**, memory speed is increased; **Precharge to Active** can designate the minimum Row Precharge time of the SDRAM devices on the module; **Active to Precharge** specifies the number of clock cycles; **Active to CMD** specifies the minimum required delay between activation of different rows; **DRAM Burst LEN** describes which burst lengths are supported by the devices on the mainboard.

AGP & P2P Bridge Control	This item has several sub-items: **AGP Aperture Size** defines the size of the aperture if you use an AGP graphics adapter; **AGP Mode** allows you to enable or disable the caching of display data for the processor video memory; **AGP Driving Control** signals driving current on AGP cards to auto or manual; **AGP Fast Write** enables or disables the caching of display data for the video memory of the processor; **AGP Master 1 WS Write/ Read** implements a single delay when writing/ reading to the AGP Bus.
CPU & PCI Bus Control	This item has several sub-items: writes from the CPU to PCU bus are buffered when **CPU to PCI Write Buffer** is enabled, or aren't when disabled; When **PCI Master 0 WS Write** is enabled, writes to the PCI bus are executed with zero wait states; Enable **PCI Delay Transaction** to support compliance with PCI specification version 2.1.
Memory Hole	This item is used to reserve memory space for ISA expansion cards that require it.
System BIOS Cacheable/Video RAM Cacheable	These items allow the video and system to be cached in memory for faster execution. Leave these items at the default value for better performance.
Memory Parity/ECC Check	If this item is enabled it allows the system to use parity checking and ECC (Error Correcting Code) to catch errors in the system memory. Enabling this item might have an impact on overall system performance.

Integrated Peripherals Page

This page sets some of the parameters for peripheral devices connected to the system.



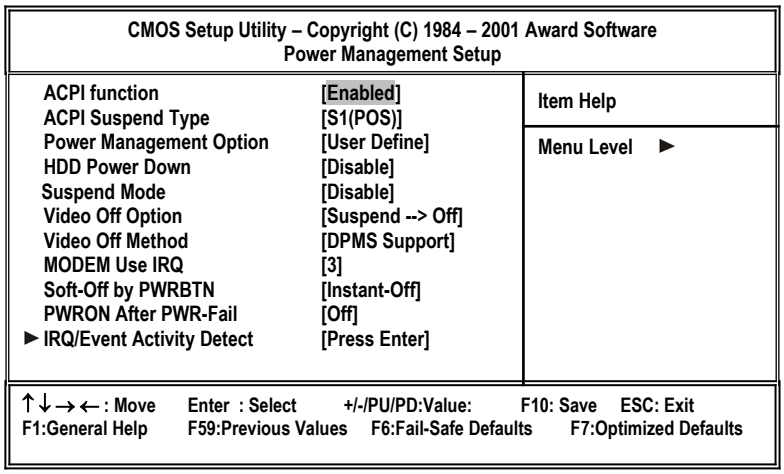
VIA OnChip IDE Device	This item has several sub-items: **On-Chip IDE Channel 0/1** enables or disables the PCI IDE channel; **IDE Prefetch Mode** supports IDE prefetching for faster drive access; **IDE Primary/Secondary Master/Slave PIO** can assign which kind of PIO (Programmed Input/ Output) is used by IDE devices; **IDE Primary/ Secondary Master/Slave UDMA** provides faster access to IDE devices.
VIA On Chip PCI Device	VIA-3058 AC97 Audio enables the onboard audio chip, or disable if you're going to install a PCI audio expansion card. VIA-3068 MC97 Modem enables the onboard modem, or disable if you're going to install an external modem. Onboard LAN Device enables and disables the onboard LAN.

Super I/O Device	This item has several sub-items: **Hot Key Power ON** enables you to select a hot key to turn on the computer; **Onboard FDC Controller** enables the onboard floppy disk drive controller; **Onboard Serial Port 1/2** assigns the I/O address and address and interrupt request (IRQ) for onboard serial port 1 (COM1)/ 2 (COM2); **UART Mode Select** enables you to select the infrared communication protocol-Normal (default), IrDA, or ASKIR; **UR2 Duplex Mode** enables you to determine the infrared (IR) function of the onboard infrared chip; **Onboard Parallel Port** assigns the I/O address and interrupt request (IRQ) for the onboard parallel port; **Parallel Port Mode** enables you to set the data transfer protocol for your parallel port; **ECP Mode Use DMA--** parallel port uses DMA 3 or DMA 1 when onboard parallel port is ECP mode; **Game Port Address** sets the I/O address for the game port; **Midi Port Address** sets the I/O address for the Midi function; **Midi Port IRQ** sets the interrupt request for the Midi function.
Init Display First	This item to specify whether your graphics adapter is installed in one of the PCI slots or is integrated on the mainboard.
OnChip USB Controller	Enable this item if you plan to use the Universal Serial Bus ports on this mainboard.

USB Keyboard Support	Enable this item if you plan to use a keyboard connected through the USB port in a legacy operating system (such as DOS) that does not support Plug and Play.
USB Mouse Support	Enable this item if you plan to use a USB mouse.
IDE HDD Block Mode	Enable this field if your IDE hard drive supports block mode. Block mode enables BIOS to automatically detect the optimal number of block read and writes per sector that the drive can support and improves the speed of access to IDE devices.

Power Management Setup Page

This page sets some of the parameters for system power management operation.



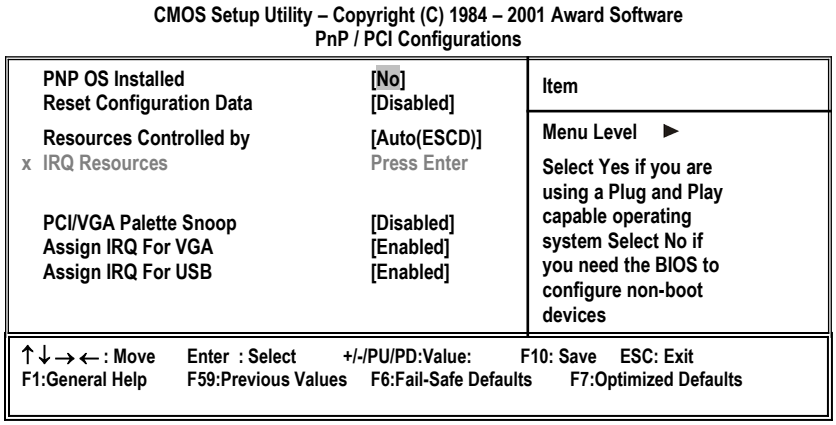
ACPI function	This mainboard supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.
ACPI Suspend Type	Use this item to define how your system suspends. In the default, S1(POS), the suspend mode is equivalent to a software power down. If you select S3 (STR), the suspend mode is a suspend to RAM - the system shuts down with the exception of a refresh current to the system memory.
Power Management Option	This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, power-saving modes occur after a short timeout. If this item is set to Min Saving, power-saving modes occur after a longer timeout. If the item is set to User Define, you can insert your own timeouts for the power-saving modes.
HDD Power Down	The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from 1 Min to 15 Min and Disable.
Suspend Mode	The CPU clock will be stopped and the video signal will be suspended if no Power Management events occur for a specified length of time. Full power function will return when a Power Management event is detected. Options are from 1 Min to 1 Hour and Disable.
Video Off Option	This option defines if the video is powered down when the system is put into suspend mode.

Video Off Method	This item defines how the video is powered down to save power. This item is set to DPMS (Display Power Management Software) by default.
MODEM Use IRQ	If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the mainboard Wake On Modem connector for this feature to work.
Soft-Off by PWRBTN	Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause a software power down.
PWRON After PWR-Fail	This item enables your computer to automatically restart or return to its last operating status after power returns from a power failure.
IRQ/Event Activity Detect	This item has several sub-items: When enabling **USB Resume from S3**, the system power will resume the system from a power saving mode if there is any USB port activity; When **VGA** is set to ON, the system power will resume the system from a power saving mode if there is any VGA activity; When **LPT & COM** is enabled, the system will restart the power-saving timeout counters when any activity is detected on the serial ports, or the parallel port; When **HDD & FDD** is enabled, the system will restart the power-

	saving timeout counters when any activity is detected on the hard disk drive or the floppy diskette drive; When **PCI Master** is set to Off, any PCI device set as the Master will not power on the system; **PowerOn by PCI Card** enables PCI activity to wakeup the system from a power saving mode; **Wake Up On LAN/Ring** enables LAN or modem activity to wakeup the system from a power saving mode; **RTC Alarm Resume** can set date, hour, minute and second to turn on your system. **IRQs Activity Monitoring** enables you to set IRQs that will resume the system from a power saving mode.

PnP / PCI Configurations Page

This page sets some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.

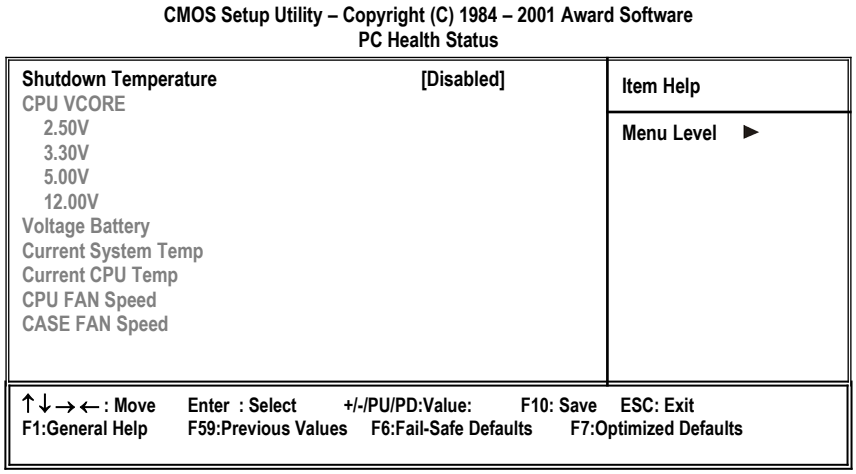


PNP OS Installed	Setting this option to Yes allows the PnP OS (instead of BIOS) to assign the system resources such as IRQ and I/O address to the ISA PnP device. The default setting is No.
Reset Configuration Data	If you enable this item and restart the system, any Plug and Play configuration data stored in the BIOS setup is cleared from memory. New updated data is created.
Resources Controlled by	Under default Auto(ESCD) setting, the system dynamically allocates resources to Plug and Play devices as they are required. If "Manual" option is selected, the prompt on the following line, "IRQ Resources" will become available. If you can't get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the IRQ Resources and Memory Resources submenus.

IRQ Resources	This item allows you to individually assign an interrupt type for interrupts IRQ-3 to IRQ-15.
PCI/VGA Palette Snoop	This item is designed to overcome problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.
Assign IRQ For VGA/USB	Names the interrupt request (IRQ) line assigned to the USB/VGA (if any) on your system. Activity of the selected IRQ always awakens the system.

PC Health Status

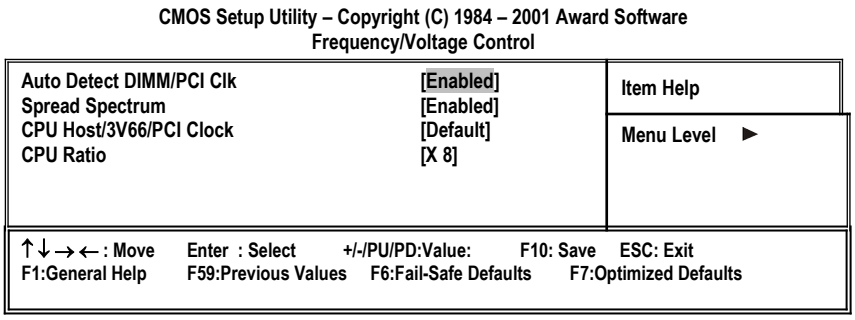
On mainboards that support hardware monitoring, this item lets you monitor the parameters for critical voltages, critical temperatures, and fan speeds:



Shutdown Temperature	Enables you to set the maximum temperature the system can reach before powering down.
System Component Characteristics	These fields provide you with information about the systems current operating status. You cannot make changes to these fields.

Frequency/Voltage Control

This item enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.



Auto Detect DIMM/PCI Clk	When this item is enabled, BIOS will disable the clock signal of free DIMM and PCI slots.
Spread Spectrum	If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.
CPU Host/3V66/PCI Clock	Use the CPU Host Clock to set the frontside bus frequency for the installed processor (usually 133 MHz, 100 MHz or 66 MHz).
CPU Ratio	Use this item to select a multiplier for the system frontside bus (FSB) frequency.

Load Fail-Safe Defaults Option

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility:
Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

Load Optimized Defaults Option

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press <F7>.

Set Supervisor and User Password Option

These items can be used to install a password. A Supervisor password takes precedence over a User password, and the Supervisor can limit the activities of a User. To install a password, follow these steps:

1. Highlight the item Set Supervisor/User Password on the main menu and press <Enter>.
2. The password dialog box appears.
3. If you are installing a new password, type in the password. You cannot use more than eight characters or numbers. The Set Supervisor/User Password item differentiates between upper and lower case characters. Press <Enter> after you have typed in the password. If you are deleting a password that is already installed, press <Enter> when the password dialog box appears. You see a message that indicates that the password has been disabled.
4. Press any key. You are prompted to confirm the password.
5. Type the password again and press <Enter>, or press <Enter> if you are deleting a password that is already installed.
6. If you typed the password correctly, the password will be installed.

Save & Exit Setup Option

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press <Y> to save and exit, or press <N> to return to the main menu:

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, press <Y> to discard changes and exit, or press <N> to return to the main menu.

Chapter 4

Software & Applications

Introduction

The support software CD-ROM that is included in the mainboard package contains all the drivers and utility programs needed to properly run our products. Below you can find a brief description of each software program, and the location for your mainboard version. More information on some programs is available in a README file, located in the same directory as the software.
If the operating system used in your system is Windows 98, it will automatically install all the drivers and utilities for your board. See the Auto-Installing under Windows 98 section.

Installing Support Software

The software on the support CD-ROM is for Windows 95/NT/2000 and Windows 98. The installation procedure differs depending on which Operating System you have, but the automatic installation is now for Win98 only.

Installing under Windows 95/NT/2000

To install support software for Windows 95/NT/2000 follow this general procedure:
1. Insert the support CD-ROM disc in the CD-ROM drive.
(The system might get an error message from the PnP function. Don't care the message. You don't really need that file to install the drivers)
2. Use My Computer or Windows Explorer to look at the directory structure. You must use the Open command in the right-button menu. Double-clicking on the drive icon will result in an error message because the disc's AutoRun feature doesn't work in Windows 95/NT/2000.
3. Execute the EXE file name given in the description below.

Note: *The correct path name for each software driver is provided, where* ***D:*** *identifies the CD-ROM drive letter – modify if necessary*
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Bus Master IDE Driver

The IDE Bus Master Drivers allows the system to properly manage the IDE channels on the mainboard. You need to install two drivers if you are running Windows 9x.

- Windows 9x – D:\M921LR\IDE\

USB Driver

The USB Driver allows the system to recognize the USB ports on the mainboard. You need to install this driver if you are running Windows 95. Windows 95 OSR2 does not require this driver. This driver is available for:

- Win95 – D:\USB\EUSBSUPP\USBSUPP.EXE
- Win95 (Chinese) – D:\USB\CUSBSUPP\CUSBSUPP.EXE

3Deep Software

Find the software here:

- D:\3Deep\3Deep 3.3\Setup.EXE

Sound Driver

Find the software here:

- D:\M921LR\Sound

BIOS Update Utility

The BIOS Update utility allows you to update the BIOS file on the mainboard to a newer version. You can download the latest version of the BIOS setup available for your mainboard from the website.

- D:\UTILITY\AWDFLXXX.EXE

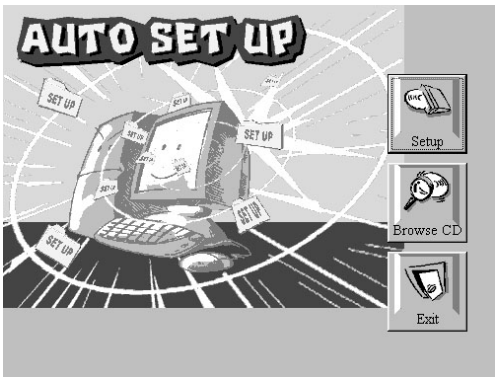
PC-Cillin Software

The PC-cillin software program provides anti-virus protection for your system.
This program is available for:

- Win9x – D:\PC-CILLIN\

Auto-installing under Windows 98

The support software CD-ROM disc loads automatically under Windows 98. When you insert the CD-ROM disc in the system CD-ROM drive the Autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit. See the following screen illustration.



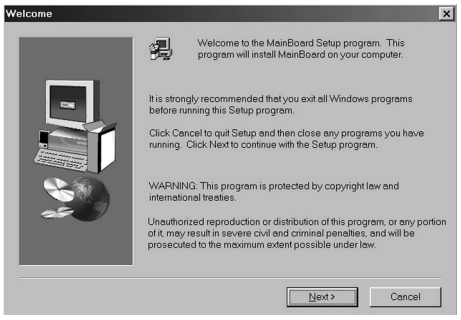
When you click on the **Setup** button the software installation program will run and you can select what kind of installation you want to do, as explained later in this section.
The **Browse CD** button is the standard Windows command that allows you to examine the contents of the disc using the Windows 98 file browsing interface.

The **Exit** button closes the Auto Setup window. To run the program again, reinsert the CD-ROM disc in the drive or click on AutoRun in the context sensitive menu for the CD-ROM drive icon in a file browser window.

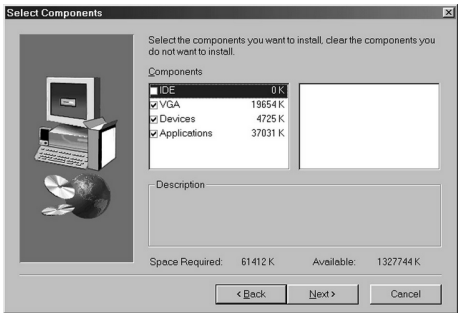
Installing Software with Auto Setup

To install support software for the system board follow this procedure:

1. Click on the **Setup** button. The install program will load and display the following screen. Click the **Next** button.



2. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.



3. The support software will automatically install.
   Once any of the installation procedures start, software is automatically installed in sequence. You will need to follow the onscreen instructions, confirm commands and allow the computer to restart as few times as is needed to complete installing whatever software you selected to install. When the process is finished, all the support software will be installed and working.
   There are some utilities that you have to manually install if you need, check to the above section.