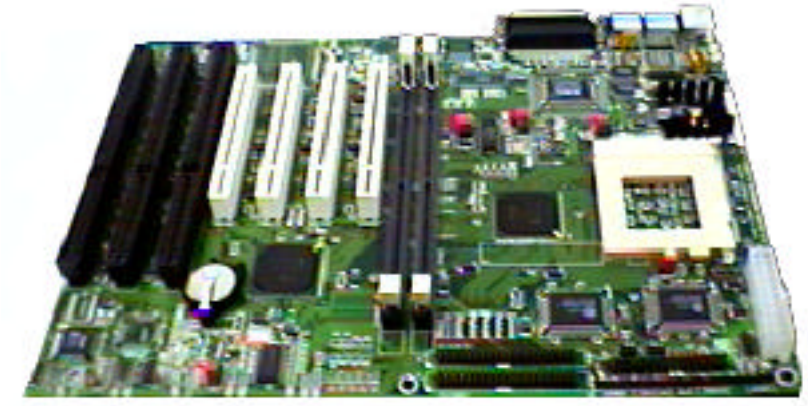
Yukon TX Motherboard



User Manual

Version 2.1

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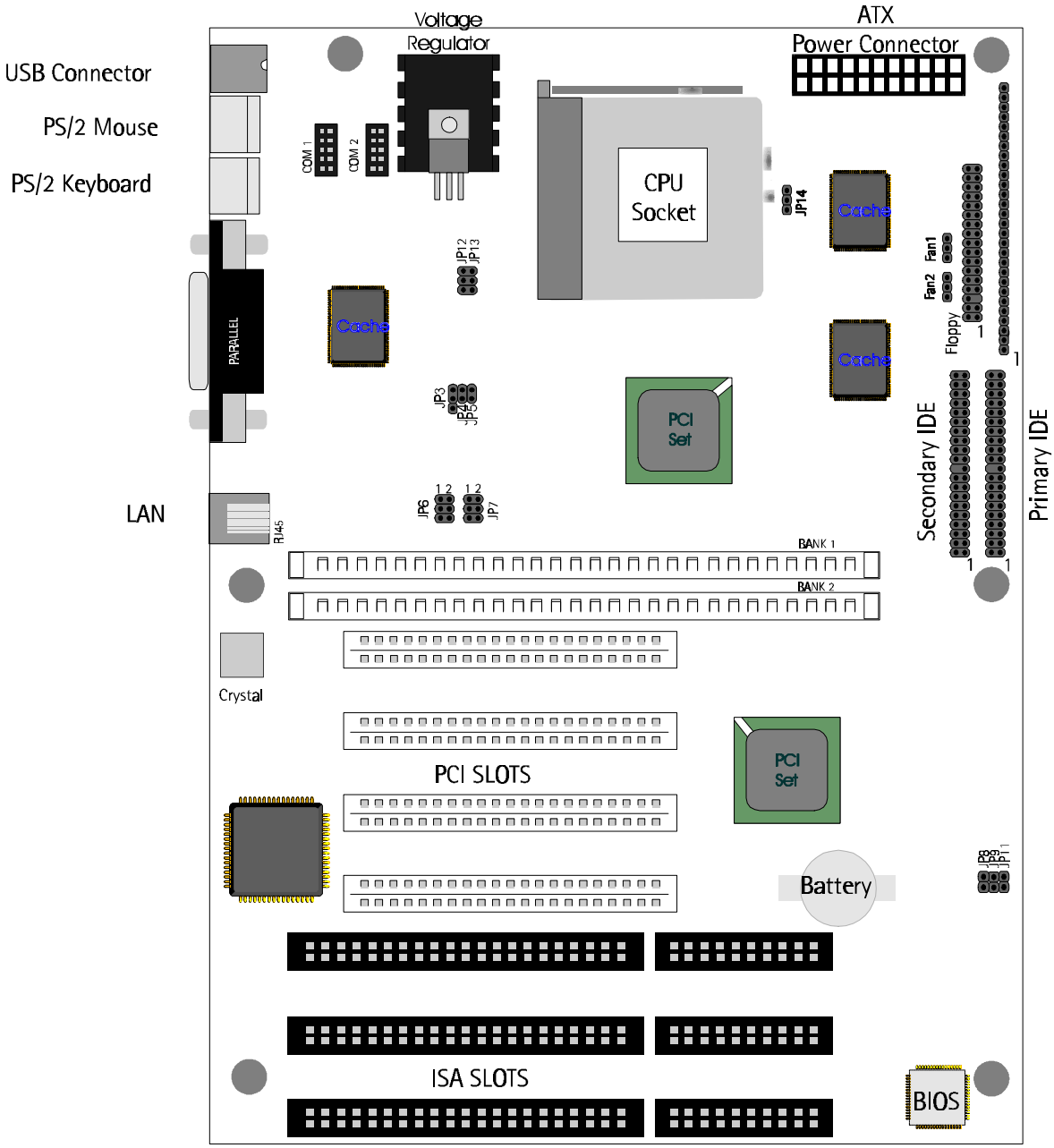
1.Product Description

Congratulations on your purchase of the Yukon TX Motherboard. This motherboard supports Pentium® processors and Pentium® processors with MMX™ technology.

Features of the Yukon TX Motherboard

- Intel Pentium® microprocessor running at 75, 90, 100, 120, 133, 150, 166, and 200MHz.
- Intel Pentium® MMX microprocessor running at 166, 200 and 233 MHz.
- ATX form factor motherboard.
- Intel 82430TX PCI set (2 chips).
- Support for two Dual-in-line memory modules (DIMMs) including Fast Page, EDO, and SDRAM up to 512 MB.
- Supports 256-512K Pipeline Burst SRAM.
- Supports Ultra DMA IDE transfer rate up to 33MB/sec.
- Optional 10/100 Mbps 32-bit PCI LAN onboard, Wake on LAN support.
- AMI BIOS in a flash memory device that supports system setup and PCI auto-configuration.
- Expansion slots for up to six add-in boards
  - Three dedicated PCI-bus slots
  - Two dedicated ISA-bus slots
  - One "shared" slot for either a PCI or an ISA add-in board
- Two High Speed RS-232-compatible serial ports.
- One multimode, Centronics-compatible parallel port (ECP/EPP & Normal SPP).
- USB support.
- PS/2 mouse support.
- PS/2 keyboard.
- Full support ACPI (Advanced Configuration and Power Interface) Rev. 1.0.

Motherboard Layout.



Central Processing Unit

The system is designed to operate with the Intel Pentium® OR Intel Pentium® MMX microprocessors. A Zero Insertion Force (ZIF) socket 7 on the motherboard makes the installation and removal of CPU's an easy task. Please refer to the section on CPU Installation in chapter 2 regarding the precautions necessary for performing this action.

The P54C Pentium® processor, in addition to its expanded data and addressing capabilities, includes the following features:

- Onchip numeric coprocessor (compatible with the Intel486™ DX processor and compliant with ANSI/IEEE standard 754-1985)
- Onchip 16 KB cache (8 KB for data, 8 KB for code)
- Burst-mode bus cycles

The Pentium® MMX processor, in addition to the standard Pentium processor, includes the following features:

- Better performance.
- Onchip 32 KB cache.
- 57 extra instructions enhancing Multimedia operations.

Memory

The Yukon TX motherboard supports base (conventional) and extended memory. Operating systems such as MS-DOS™, Microsoft® Windows®, OS/2, UNIX, and all other application programs using base memory are supported.

The motherboard supports up to 512 MB of RAM memory. RAM is implemented by 5V or 3V 168-pin dual in-line memory modules (DIMMs) in two DIMM sockets.

Cache Memory

The Pentium microprocessor includes 16KB/32KB of level 1 cache within the chip. The 82430TX PCI set includes a cache controller that supports direct-mapped cache memory and supports a second level cache (L2) that uses Synchronous Pipeline Burst SRAM onboard. Your motherboard will be fitted with either 256K or 512K of L2 cache.

IDE Peripheral Interface

The motherboard provides a high speed, 32-bit PCI/IDE interface. The PCI/IDE interface supports:

- Up to four PCI/IDE devices
- Supports PIO Mode 0 to Mode 4

- Logical block addressing (LBA) of hard drives larger than 528 MB
- Extended Cylinder Head Sector (ECHS) translation modes
- ATAPI devices (such as CD-ROMs) on both IDE interfaces
- Ultra DMA/33 IDE support. Data transfer rate up to 33MB/sec.

Super I/O

The Plug and Play Super I/O supports the following logical devices:

1. High performance 2.88MB floppy disk controller with digital data separator, 1.44 MB (3.5") drives and 1.2 MB (5.25") drives.
2. Printer Port with Printer mode, normal SPP mode, EPP mode and ECP mode.
3. Two Serial Ports with high speed 16C550 compatible enhanced UARTs.

These logical devices can be enabled or disabled individually by BIOS setting. The Super I/O uses power saving circuitry to control power consumption. Each time a logical device is disabled, its input gate is inhibited, output is tristated and input clock is disabled. The net result is high performance and low power consumption.

- Plug and Play, Version 1.0a compatible to meet Win 95 logo requirement
  - built-in Resource Data ROM
  - 16-bit address decoding
- 2.88MB floppy disk controller
  - 48mA direct output driver
  - Enhanced digital data separator
  - A and B drive may be swapped
  - supports two 360K, 720K, 1.2M, 1.44M, 2.88M floppy disk drives
- Multi-mode high performance parallel port
  - Standard mode -- bi-directional SPP
  - Enhanced mode -- EPP 1.7 and EPP 1.9 compatible
  - High Speed mode -- ECP, IEEE 1284 compliant
  - Backdrive current protection
  - Printer power-on damage protection
- Two Serial Port
  - Supports two 16C550 compatible enhanced serial ports
- ACPI support

System BIOS

BIOS, an acronym for Basic Input Output System, stands as the first link between hardware and software in coordinating the startup configuration of computers. Plug and play ready, AMIBIOS automatically configures the computer's hard drives, disk drives, processors, chipsets, memory, and boot-up of the operating system.

The system BIOS, from AMI, provides ISA PnP and PCI PnP compatibility. The BIOS is contained in a flash memory device. The BIOS provides the power-on self test (POST), the system Setup program, a PCI and IDE auto-configuration.

The system BIOS is always shadowed. Shadowing allows any BIOS routines to be executed from fast 32-bit onboard DRAM instead of from the slower 8-bit flash device.

1. Plug and Play Rev 1.0A support.
2. Boot Block Protection.
3. Auto detects Pipeline Burst SRAM and Cache size, IDE mode type and size.
4. Supports APM 1.2.
5. Supports DMI 2.0.
6. Supports USB.
7. Supports Booting from a Floppy drive, IDE device, CD-ROM, SCSI, Floptical or Network.
8. 1MB/2MB flash EEPROM for easy BIOS upgrade.

PCI IDE

1. “Ultra DMA/33” Synchronous DMA IDE support.
2. Meets Microsoft requirement for PC97, cable select for master/slave configuration.
3. Fully compatible with PCI spec.V2.1.
4. Supports PCI Bus Mastering.
5. Supports Mode 3 and Mode 4 for Enhanced IDE specification.
6. Supports Multi-word DMA mode 0,1,2.
7. Supports PCI burst Read/Write.
8. Supports Primary and Secondary IDE for a total of 4 drives.
9. IDE CD-ROM support.

PCI Auto-configuration

The PCI auto-configuration works in conjunction with the Setup program to support using PCI add-in boards in the system. When you turn on the system power after installing a PCI board, the BIOS automatically configures interrupts, DMA channels, I/O space, and so on. Since PCI add-in boards use the same interrupt resources as ISA

add-in boards, you must specify the interrupts used by non PnP ISA boards in the Setup program. Chapter 2 tells how to use the Setup program. The PCI auto-configuration program complies with version 2.1 of the PCI BIOS specification.

IDE Auto-configuration

When an IDE drive is installed in the system, the IDE auto-configuration function automatically detects and configures the drive for operation in the system. This function eliminates the need to enter the Setup program after you install an IDE drive.

ISA Plug and Play Capability

This provides auto-configuration of Plug and Play ISA cards and resource management for legacy (non Plug and Play) ISA cards.

Universal Serial Bus (USB) Support

AMIBIOS 97 stands as the first BIOS to offer full support for the Universal Serial Bus (USB) standard. The USB technology enables users to quickly and easily attach and reconfigure a wide range of peripheral devices, from keyboards to printers to telephony devices. With comprehensive support for both USB host controllers and USB devices, AMIBIOS 97 offers the ability to fully utilize USB technology now. Support for Intel's Universal Host Controller Interface (UHCI) and Open Host Controller Interface (OHCI) ensure compatibility and usability well into the future. AMI's USB-WARE serves as a total firmware system solution for anyone using a USB micro-controller.

AMIBIOS 97 offers advanced features for ease-of-use and flexibility: Full Hub Support Full Bus Enumeration Dynamic Hard Attach/Detach Legacy Keyboard and Mouse Support.

The motherboard features two USB ports as a factory installed option. The ports permit the direct connection of two USB peripherals without an external hub. If more devices are required, an external hub can be connected to either of the built-in ports This motherboard fully supports the standard Universal Host Controller Interface (UHCI) and uses standard software drivers that are UHCI compatible. Features of the USB include:

- Self-identifying, hot pluggable peripherals.
- Automatic Mapping of function to driver and configuration.
- Support for Isochronous and Asynchronous transfer types over the same set of wires.
- Support for up to 127 physical devices.
- Guaranteed bandwidth and low latencies appropriate for telephony, audio, and other applications.

Error handling and fault recovery mechanisms built into protocol.

BIOS Upgrades

Because the BIOS is stored in a flash memory device, you can easily upgrade the BIOS without having to disassemble the system. The flash upgrade process can be done by running a utility from a diskette or hard disk, or over a network.

WARNING

For information about the latest BIOS update for Yukon TX, contact your service representative.

Expansion Slots

The board has three 16-bit ISA and four PCI expansion slots. One expansion slot is a "combination" slot and can be used by **either** a PCI **or** an ISA board, enabling you to install a maximum of six add-in boards.

PCI Slots:

At the highest rate using a 32 bit CPU the PCI bus transfers data at 132 MB/second. Part of the reason for high transfer rates is the PCI bus can operate concurrently with the processor bus; it doesn't override it. The CPU can be processing data in an external cache while the PCI bus is busy transferring information between other parts of the system. Another key feature of the PCI bus is it's plug and play capabilities which eliminates the need for jumper and dip switches for configuring a PCI card.

The PCI slots on the Yukon TX motherboard are labeled as:

SLOT 1 – SHARED

SLOT 2 – MASTER

SLOT 3 – MASTER

SLOT 4 – MASTER

******THIS IS INCORRECT BECAUSE SLOT 4 IS ALSO SHARED (see below for an explanation).***

The PCI slots on the Yukon TX motherboard should be labeled as follows:

SLOT 1 – SHARED

SLOT 2 – MASTER

SLOT 3 – MASTER

SLOT 4 – SHARED

Slot 1 – Shared:

This slot is "shared" with the resources used by the integrated LAN card. If the LAN card is integrated then slot 1 is unavailable. This is because there can only be 4 PCI

devices in use per PCI bridge. When integrated LAN is not installed and slot 1 is available the slot functions as a normal bus-mastering PCI slot.

Slot 2 & 3 – Master:

These two slots do not share resources with any other device and are fully functional bus-mastering PCI slots.

Slot 4 – Shared:

This slot shares its resources in two ways: first, you can either use PCI slot 4 or ISA slot 1 but not both at the same time. Second, if you use the PCI slot 4 it shares resources with the USB port resources. USB performs bus mastering and will conflict with a bus mastering PCI card in slot 4. A non-bus-mastering card like a video card will function properly in slot 4 with USB enabled. The only way to use a bus-mastering card effectively in slot 4 is to disable the USB port in the CMOS.

Onboard LAN

The onboard LAN for the TX motherboard is driven by the Digital Semiconductor 21143 10/100 Mb/s Ethernet LAN Controller. It therefore supports 10Base-T and 100Base-TX Fast Ethernet connections.

The RJ45 network connector at the back of your system requires a category 5 (CAT5) unshielded twisted pair (UTP) 2-pair cable for a 100-Mb/s network connection or a category 3 (CAT3), or higher, UTP 2-pair cable for a 10-Mb/s network connection.

The 21143 has the following features:

Contains onchip PCS and scrambler / descrambler for CAT5

Supports full auto detection (NWAY)

Contains large independent receive and transmit FlFO’s

Supports PC! read multiple, read line, and write and invalidate commands

Includes a powerful onchip direct memory access (DMA) with programmable

burst size, providing low CPU utilization

Supports an unlimited PCI burst

Supports early interrupt on transmit and receive

Contains a variety of flexible address filtering modes

Supports PCI clock speed frequency from dc to 33 MHz; network operation with

PCI clock from 20 MHz to 33 MHz

Supports automatic loading of subvendor ID information structure (CIS) pointer from serial ROM to configuration registers

Supports big or little endian byte ordering for buffers and descriptors

Supports full-duplex operation on both MII / SYM and 10BASE-T ports

Implements low-power management with two power-saving modes (sleep and snooze)

Provides internal and external loopback capability on all network ports

Provides LED support for various network activity indications

Supports interrupts from two general-purpose pins

Implements test-access port (JTAG-compatible) with boundary-scan pins

Implements low-power, 3.3-V CMS technology

Takes less than 70 mA of supply current after power-up

Enables automatic detection and correction of 10BASE-T receive polarity

Supports auto detection between 10BASE-T, AUl, and MII / SYM ports

Supports IEEE 802.3 auto negotiation algorithm of full-duplex and half-duplex operation for 10 and 100 Mb/s Implements unique, intelligent arbitration between DMA channels to minimize underflow or overflow

Supports two network ports: 10BASE-T (10 Mb/s) and MII/ SYM (10/100 Mb/s)

Contains a 4-bit, general-purpose programmable register and corresponding I/O pins

Supports IEEE 802.3 and ANSI 8802-3 Ethernet standards

The onboard LAN can be enabled or disabled using JP18 and JP20 jumpers:

JP18 and JP20 ON – LAN onboard enabled.

JP18 and JP20 OFF – LAN onboard disabled.

The drivers for the LAN chipset are available on the Seanix CD supplied with your computer in the following directory: Mthrbrds\Yukon_TX. If you do not have these drivers then contact your dealer for a replacement copy.

Wake on LAN Header

The header, JP19, is used to implement the Wake on LAN feature when the onboard LAN is disabled. Connect this header to a PCI LAN adapter that supports the Wake on LAN feature. The adapter monitors network traffic. When the adapter detects a ‘Magic Packet’, it asserts a signal through the Wake on LAN header to wake up the computer. This signal can wake up the computer only when the AC power cord is still plugged into the socket and the computer is turned off using the Standby Power button.

Keyboard/Mouse Controller

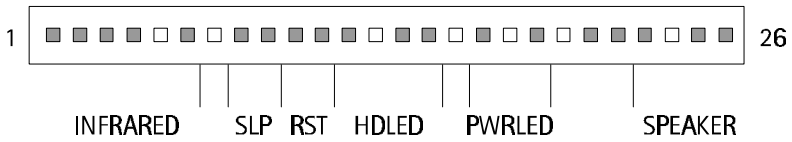
The I/O controller stores the keyboard and mouse controller code.

Real-Time Clock and CMOS RAM

Yukon TX motherboard's real time clock is built into the chipset.

The time for the clock and the CMOS values can be set by using the system BIOS Setup program, described in Chapter 3.

Front Panel Connector (J6)



INFRARED	Pins 1 - 6, not currently used.
SLP	Pins 8 & 9, connected to Standby Power Switch via twisted pair cable (orange/white).
RST	Pins 10 & 11, connected to Reset Switch via twisted pair cable (orange/white).
HDLED	Pins 14 & 15, connected to the HDD LED via twisted pair cable (red/white).
PWRLED	Pins 17 & 19, connected to the Power LED via twisted pair cable (white/green respectively).
SPEAKER	Pins 23, 25 & 26, connected to the case speaker via twisted pair cable (red/black).

Fan Connectors

Two fan connectors, J4 & J7, are provided for connecting either a second case fan or a CPU fan. The pin assignment for these connectors are as follows:

Pin 1 – Ground.

Pin 2 - +12V.

Pin 3 – Sensor

Main Power Connector (J2)

The power supply connector is an ATX style twenty-pin male connector. The connector from the power supply can fit into the socket in only one direction.

Management Extention Component

The optional Management Extension component (National Semiconductor LM78) provides low-cost instrumentation capabilities designed to reduce the total cost of owning a PC when used with LANDesk Client Manager. The hardware implementation is a single-chip ASIC. Feature include:

An integrated ambient temperature sensor

Fan speed sensors.

Power supply voltage monitoring to detect levels above or below acceptable values.

Registers for storing POST hardware test results and error codes.

Remote reset capabilities from a remote peer or server through LANDesk Client Manager, Version 3.0 and service layers (when available)

When suggested ratings for temperature, fan speed, or voltage are exceeded, an interrupt is activated. The Management Extension component (LM78) connects to the ISA bus as an 8-bit I/O mapped device.

LS-120 Support

LS-120 MB Diskette technology enables users to store 120 MB of data on a single, 3.5 Inch removable diskette. LS-120 technology is backward (both read and write) compatible with 1.44 MB and 720 KB DOS-formatted diskettes and is supported by Windows 95 and Windows NT operating systems.

The Yukon TX motherboard allows connection of an LS-120 compatible drive and a standard 3.5-inch diskette drive. The LS-120 drive can be configured as a boot device, if selected in the BIOS setup utility.

System Security

The BIOS provides a password option that you can enable through the Setup program (see Chapter 3).

2.Installation and Settings

CAUTION

Electrostatic discharge (ESD) can damage components. Perform the procedures described in this chapter only at an ESD workstation. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer.

Jumper Settings

The motherboard contains configuration jumpers that make it possible to change the system configuration. Normally, the only time you will ever change a jumper is if you need to:

- Change the system operating speed.
- Change the type of CPU used.
- Change the DRAM voltage.

NOTE

A jumper is a small plastic-encased conductor that slips over jumper pins. To change a jumper setting, use a pair of fine needle-nosed pliers to remove the jumper from its current location and slide it onto the new pins to obtain the desired setting.

CAUTION

Do not squeeze the pliers or other tool you use to remove a jumper, or you might bend or break the pins.

CPU Speed Jumpers

These jumpers set the CPU frequencies and the clock ratio. The jumpers should be changed only when you upgrade the CPU.

	JP3	JP4	JP5	JP8	JP9	JP11
133	2-3	Open	Open	Open	Closed	Open
150	2-3	Closed	Closed	Closed	Open	Open
166	2-3	Closed	Open	Open	Closed	Open
180	1-2	Closed	Closed	Closed	Open	Open
200	1-2	Closed	Open	Open	Closed	Closed
233	1-2	Open	Open	Open	Closed	Open

This table is screen printed on the motherboard.

CPU Type Selection

These jumpers are used to select between standard Intel Pentium CPUs (P54C) and the Intel Pentium MMX CPUs (P55C).

CPU Type	JP12	JP13	JP14
MMX	2-3	2-3	2-3
P54C	1-2	1-2	1-2

This table is screen printed on the motherboard.

DRAM Voltage Selection.

Set these jumpers for 5V if you have a P54C CPU and for 3.3V if you have a P55C CPU.

	JP6	JP7
5V *	Closed	Open
3.3V	Open	Closed

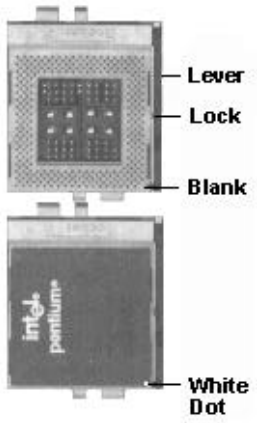
* *Default setting*

CPU Installation

The motherboard provides a 321-pin ZIF Socket 7 that is backwards compatible with ZIF Socket 5 processors. The CPU that came with your system should have a low profile heatsink & fan attached to it to prevent overheating. If this is not the case then purchase a fan before you turn on your system. Apply thermal jelly to the CPU top and then install the heatsink & fan onto the CPU. Some heatsinks with large fins do not require additional fans and may have been used in your system.

WARNING: Without a heatsink & fan the CPU will overheat and cause damage to both the CPU and the motherboard.

To install a CPU remove the case cover, locate the ZIF socket and open it by first pulling the lever sideways away from the socket then upwards to a 90-degree right angle. Insert the CPU into the ZIF socket with the correct orientation as shown. The ZIF socket has a blank area where one hole is missing from that corner of the square array of pin holes, align the notched corner of the CPU (with the white dot as your guide) with this corner. Because the CPU has a corner pin for three of the four corners, the CPU will only fit in the one orientation as shown. (The picture is for reference only; your CPU's face will be covered by the heatsink and fan). With the added weight of the CPU fan, no force is required to insert the CPU. Once completely inserted, press down on the fan and close the socket's lever.



IMPORTANT: You must set the jumpers for "CPU Speed" depending on the CPU that you installed.

System Memory Installation

The system board contains two 168-pin, tin lead DIMM sockets. You can configure the system memory up to 512MB. The sockets are arranged as banks 1 and 2.

When adding memory, follow these guidelines:

- The computer automatically detects the installed memory, so it doesn't matter which bank is used.
- When adding DIMMs, use only tin lead, 168-pin DIMMs, either EDO or SDRAM DIMMs are supported. DIMM modules commonly available include 16MB, 32MB and 64MB. This motherboard also supports a 48MB DIMM specially designed by Seanix.

Battery Replacement

When your computer is turned off, a lithium battery keeps the time-of-day clock and the values in CMOS RAM current. Figure 12 shows the location of the battery.

The battery should last about seven years. When the battery begins to die, it loses voltage; when the voltage drops below a certain level, the Setup program settings stored in CMOS RAM (for example, the date and time) might not be accurate. Replace the battery with an equivalent one.

If your local ordinances permit, you may dispose of individual batteries as normal trash. Do not expose batteries to excessive heat or fire. Keep all batteries away from children.

CAUTION

Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

Expansion Card Installation

The computer system should be switched off and the power cord removed before installing any expansion cards into the system. Failure to do so may cause severe damage to both your motherboard and expansion cards.

Before installing an expansion card, read it’s documentation regarding any hardware or software settings that may be required to set up your specific card.

- Set any necessary jumpers on the expansion card.
- Remove your computer system’s cover.
- Identify the type of slot where the expansion card will be installed and isolate one of the vacant slots for your card.
- Remove the blanking bracket for that slot and retain for possible future use.
- Carefully align the cards edge connector with the motherboard slot and press down firmly to seat the card in the slot, a rocking motion usually makes this easier.
- Secure the cards’ back-plate with the screw you removed earlier.
- Replace the computer system’s cover.
- Plug in the power cord and proceed to install any drivers or software needed for that card.

3.Using the BIOS Setup Program

This chapter tells how to use the Setup program that is built into the BIOS. The Setup program makes it possible to change configuration information (such as the types of peripherals that are installed) and the boot-up sequence for the system. The Setup information is stored in CMOS random access memory (RAM) and is backed up by a battery when power is off.

If the board does not operate as described here, see Chapter 3 for problem descriptions and error messages.

Record the Setup Configuration

To make sure you have a reference to the Setup values for your system, we recommend you to write down the current settings and keep this record up-to-date.

AMI BIOS Setup Menu Overview

The AMI BIOS Setup program is easy to use and can be controlled by the keyboard. Enter the AMI BIOS Setup main menu as follows:

1. Turn on or reboot your system.
2. When the message “Hit <DEL>, if you want to run SETUP” appears, press the <DEL> key to enter the BIOS setup program. The AMI BIOS setup utility (Main Menu) screen, as illustrated on the next page, will appear.

AMIBIOS HIFLEX SETUP UTILITY – VERSION x.xx © 1996 American Megatrends, Inc. All Rights Reserved
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup PCI / Plug and Play Setup Peripheral Setup CPU Configuration Setup Auto-Detect Hard Disks *Change User Password* Change Supervisor Password *Change Language Setting* Auto Configuration with Optimal Settings Auto Configuration with Fail Safe Settings Save Settings and Exit Exit Without Saving
Exit without saving the current settings

Optimal Settings – These settings provide the best performance settings.

Fail-Safe Settings – These settings are more likely to configure a workable computer when something is wrong. If you cannot boot the computer successfully, select the Fail-Safe options and try to diagnose the problem after the computer boots. These settings do not provide optimal performance.

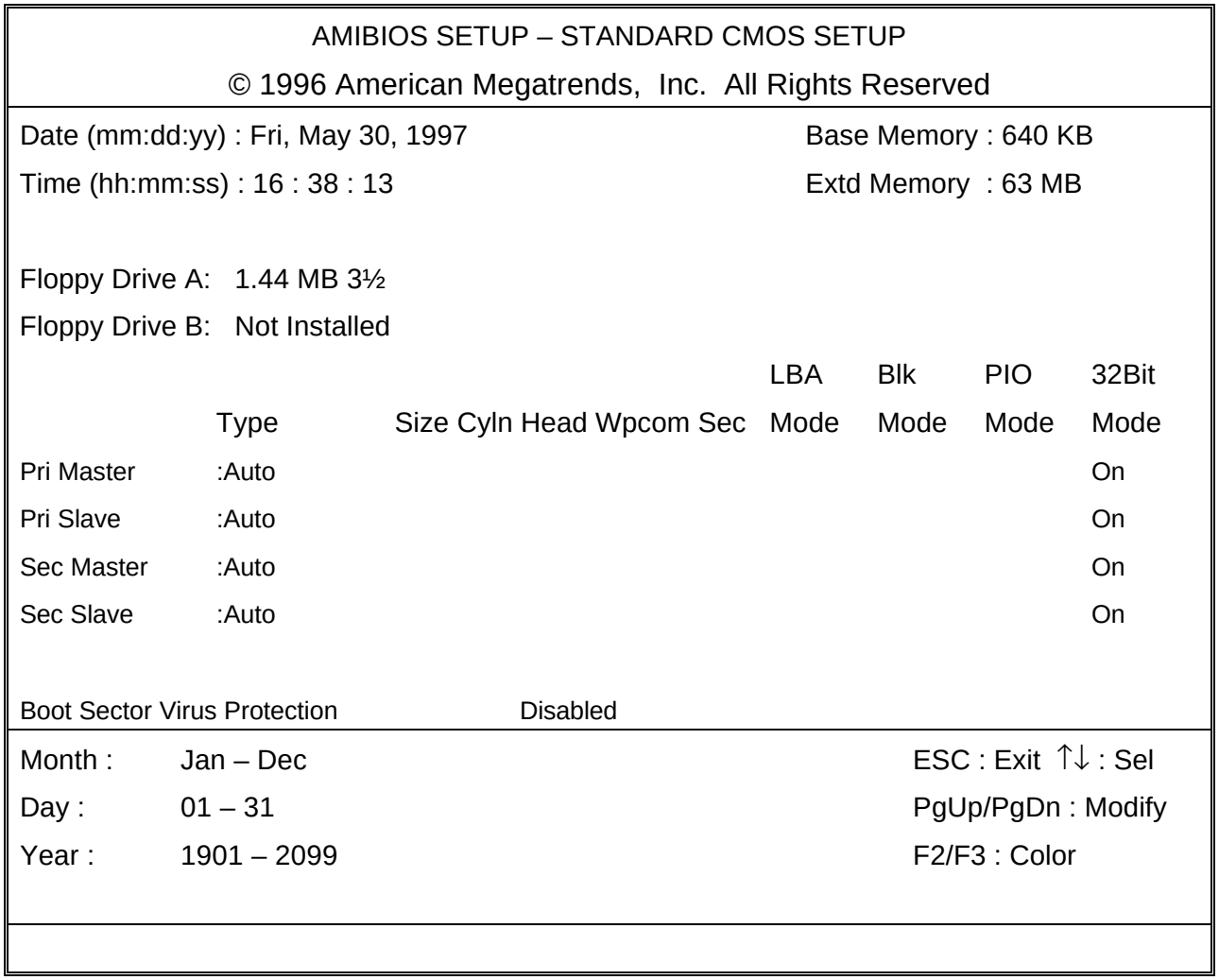
Overview of the Setup Keys

The following keys have special functions in the AMI BIOS Setup Utility.

Setup Key	Description
<Tab>	Move to the next field.
<Esc>	Closes the current operation and return to the previous level.
<Enter>	Selects the current item or option.
+	Increments a value.
-	Decrements a value.
<←> <→> <↑> <↓>	Moves to the next field to the left, right, up and down.
<PgUp> <PgDn>	Modifies the numeric value or makes changes.
<F2> <F3>	Changes screen colour.
<F10>	Saves current CMOS changes at the Main Menu level and exit.
Numeric Keys	0 to 9 are used in the Virtual Keyboard and Numeric Keyboard

The Setup program initially displays the Main menu screen. In each screen there are options for modifying the system configuration. Use the up <↑> or down <↓> arrow keys to highlight items in the BIOS setup screen. Use the <Enter> key to select an item for modification. For certain items, pressing <Enter> brings up a sub-screen. After you have selected an item, use the <+>, <->, <PgUp>, or <PgDn> keys to modify the setting. To exit, press <ESC> until the Main Menu window appears. Choose “Save Settings and Exit” to save your changes and reboot the system, or “Exit without Saving” to ignore your changes and exit the BIOS Setup program.

Standard CMOS Setup



This section describes the Setup options found on the Standard CMOS Setup menu. It is used to set the time and date and to configure the disk drives. If you select certain options from the main screen (e.g., Primary IDE Master), the Setup program switches to a subscreen for the selected option.

Date / Time

Select the Date/Time option to change the date or time. The current date and time are displayed. Enter new values through the displayed window.

Floppy Drive A, B

Choose the Floppy Drive A or B option to specify the floppy drive type. The settings are 360 KB 5.25-inch; 1.2 MB 5.25-inch; 720 KB 3.5-inch; 1.44MB 3.5-inch; and 2.88 MB, 3.5-inch. The default is 1.44MB, 3.5-inch.

Primary IDE Master, Primary IDE Slave, Secondary IDE Master, Secondary IDE Slave

Choose these options to configure the hard disk drive shown in the field. When you select an option, the following parameters are listed: Type, LBA/Large Mode, Block Mode, 32Bit Mode, and PIO Mode. Use the cursor to highlight “Type” and then choose “Auto” or other options. If you choose “Auto”, the BIOS will automatically detect the type of HDD before booting the operating system. You can press <enter> again, then the BIOS will show the complete parameters of HDD type.

AMIBlOS automatically detects the IDE drive parameters (including ATAPI CD-ROM drives) and displays them. Click on the OK button to accept these parameters Or you can set the parameters manually if you are absolutely certain that you know the correct IDE drive parameters.

Click on LBA/Large Mode and choose ‘On’ to enable support for IDE drives with capacities greater than 528 MB.

Click on Block Mode and choose ‘On’ to support IDE drives that use Block Mode.

Click on 32Bit Mode and click on ‘On’ to support IDE drives that permit 32-bit accesses.

Click on PlO Mode to select the IDE Programmed I/O mode. PIO programming also works with ATAPI CD-ROM drives. The settings are Auto, 0, 1, 2, 3, 4, or 5. Click on ‘Auto’ to allow AMIBIOS to automatically find the PIO mode that the IDE drive being configured uses. If you select 0-5 you must make absolutely certain that you are selecting the PIO mode supported by the IDE drive being configured.

Configuring a CD-ROM Drive Select the appropriate drive icon (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the Type parameter and select CDROM. You can boot the computer from a CD-ROM drive. You can also choose Auto and let AMIBIOS automatically set the correct drive parameters.

Advanced CMOS Setup

AMIBIOS SETUP – ADVANCED CMOS SETUP © 1996 American Megatrends, Inc. All Rights Reserved		
1st Boot Device	Floppy	Available Options :
2nd Boot Device	IDE-0	Disabled
3rd Boot Device	CDROM	IDE-0
4th Boot Device	Floptical	IDE-1
Boot from Network Card	Yes	IDE-2
Try Other Boot Devices	Yes	IDE-3
S.M.A.R.T. for Hard Disks	Enabled	FLOPPY
Boot to OS/2	No	FLOPTICAL
External Cache	WriteBack	CDROM
		SCSI
		ESC : Exit ↑↓ : Sel
		PgUp/PgDn : Modify
		F2/F3 : Color

This section describes the Setup options available in the Advanced CMOS Setup menu which are used to configure basic system performance parameters. If you select certain options the Setup program switches to a subscreen for the selected option.

Boot Sequence

Set this option to the sequence of boot drives (floppy drive A:, hard disk drive C:, CD-ROM drive, SCSI hard-drive, Floptical or Network) that the AMI BIOS attempts to boot from after AMI BIOS POST completes. The default setting is “A, C, CDROM”.

Try Other Boot Device

Set this option to ‘Yes’ for the BIOS to try to boot from other devices if all selected boot devices failed to boot. The default setting is ‘Yes’.

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

S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology), is a technology developed to manage the reliability of the hard disk by predicting some, but not all of the future device failures. This feature helps the BIOS warn the user of possible device failures. Thereby giving the user a chance to back up the device and/or replace the device before actual failure occurs. The default setting is set to Disabled.

Boot to OS/2

When using OS/2 as your operating system you need to set this option to Yes. The default setting is “No”.

External Cache

This option specifies the caching algorithm used for L2 secondary (external) cache memory. The available settings are:

Setting	Description
Disabled	L2 secondary cache memory is disabled.
WriteBack	Use the write-back. Caching algorithm for L2.

Caching allows better performance.

Advanced Chipset Setup

AMIBIOS SETUP – ADVANCED CHIPSET SETUP © 1996 American Megatrends, Inc. All Rights Reserved		
DRAM Speed	Manual	Available Options :
DRAM Read Burst Timing	x2EDO x3FPM	Disabled
DRAM Write Burst Timing	x2EDO x2FPM	Enabled
DRAM Lead Off Timing	10 / 6 / 3	
Memory Address Drive Strength	10mA, 16mA	
SDRAM CAS Latency / RAS to CAS	2 / 2	
Fast EDO Read Cycle Timing	Enabled	
Speculative Lead Off Timing	Enabled	
DRAM Page Idle Timeout (HCLK's)	2	
Enhanced Paging	Disabled	
DRAM Refresh RAS Cycles (HCLK's)	4	
USB Function	Enabled	
USB Keyboard / Mouse Support	Disabled	ESC : Exit ↑↓ : Sel
		PgUp/PgDn : Modify
		F2/F3 : Color

This section describes the Setup options available in the Advanced Chipset Setup menu which are used to configure the features specific to the chipset used on this motherboard. If you select certain options the Setup program switches to a sub-screen for the selected option.

USB Function

This motherboard supports Universal Serial Bus devices. The default setting is set to Disabled, until USB devices become available.

USB Keyboard/Mouse Support

This option is automatically greyed-out if the USB function is set to Disabled. When Enabling the USB Function this may be set to Enabled or Disabled. The default setting is set to Disabled.

Power Management Setup

AMIBIOS SETUP – POWER MANAGEMENT SETUP

Power Management / APM	Enabled	Available Options :
Green PC Monitor Power State	Suspend	Disabled
Video Power Down Mode	Suspend	Enabled
Hard Disk Power Down Mode	Suspend	
Hard Disk Time Out (Minute)	15	
Standby Time Out (Minute)	60	
Suspend Time Out (Minute)	40	
Slow Clock Ratio	37.5 – 50 %	
Display Activity	Ignore	
Serial Port 1	Monitor	
Serial Port 2	Monitor	
Parallel Port	Ignore	
Floppy Disk	Ignore	
Primary IDE 0	Monitor	
Primary IDE 1	Monitor	
Secondary IDE 0	Monitor	
Secondary IDE 1	Monitor	
Resume on Ring	Disabled	
Modem Use I/O Port	N/A	
Modem Use IRQ	N/A	
RTC Alarm Resume From Soft Off	Disabled	
RTC Alarm Date	N/A	
RTC Alarm Hour	N/A	
RTC Alarm Minute	N/A	
RTC Alarm Second	N/A	ESC : Exit ↑↓ : Sel
Soft-Off by PWR-BTTN	Delay 4 sec	PgUp/PgDn : Modify
		F2/F3 : Color

This section describes the Setup options available in the Power Management Setup menu used to configure the power conservation features. If you select certain options the Setup program switches to a sub-screen for the selected option.

Power Management

Power Management allows the user to reduce power consumption. Set this option to “Enabled” to enable the power management and APM (Advanced Power Management) features. The default setting is “Disabled”.

Green PC Monitor Power State

This option specifies the power management state that the Green-PC compliant video monitor enters after the specified period of display inactivity has expired. The settings are “Disabled, Off, Standby or Suspend”. The default setting is “Suspend”.

Video Power Down Mode

This option specifies the power management state that the video subsystem enters after the specified period of display inactivity has expired. The settings are “Disabled”, “Standby”, and “Suspend”. The default setting is “Suspend”.

Hard Disk Power Down Mode

This option specifies the power management state that the hard disk drive enters after the specified period of inactivity has expired. The settings are “Disable”, “Standby”, and “Suspend”. The default setting is “Suspend”.

Hard Disk Time Out (Minute)

This setting defines the duration of inactivity before the Hard drive enters one of the above modes. Options are “Disabled” and from “1-14” minutes. The default setting is “Disable”.

Standby Time Out

Choose the inactive time between 1 and 60 minutes before the system enters the Suspend mode. The default setting is “Disable”.

Suspend Time Out

Choose the inactive time between 1 and 60 minutes before the system enters the Suspend mode. Default is Disable.

Slow Clock Ratio

This option specifies the speed at which the system clock runs in power saving modes. The settings are expressed as a ratio between the normal clock speed and the power

down clock speed. The settings are 1:], I:2 (half as fast as normal), 1:4 (the normal clock speedy, 1. S, 1. 16, 1:32,]. 64, or 1. 128. The default setting is .37.5-50%.

Display Inactivity

This option specifies if AMIBIOS is to monitor activity on the display monitor for power conservation purposes. When this options set to Monitor and there is no display activity for the length of time specified in the value in the Full-On to Standby Timeout (Min) option, the computer enters a power saving state. The settings are Monitor or Ignore. The default settings is “Ignore”.

Serial Port 1 to Secondary IDE 1

These options enable event monitoring. When the computer is in a power saving mode, activity on the named device is monitored by AMIBIOS. When any activity occurs' the computer enters Full On mode. Each of these options can be set to Monitor or Ignore. The default setting for all options is “Ignore”.

PCI / Plug and Play Setup

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP

Plug and Play Aware O/S	Yes	Available Options :
PCI Latency Timer (PCI clocks)	64	No
PCI VGA Palette Snoop	Disabled	Yes
PCI IDE BusMaster	Disabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	Disabled	
OffBoard PCI IDE Secondary IRQ	Disabled	
Assign IRQ to PCI VGA Card	No	
PCI Slot1 IRQ Priority	Auto	
PCI Slot2 IRQ Priority	Auto	
PCI Slot3 IRQ Priority	Auto	
PCI Slot4 IRQ Priority	Auto	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ 3	PCI / PnP	
IRQ 4	PCI / PnP	
IRQ 5	PCI / PnP	
IRQ 7	PCI / PnP	
IRQ 9	PCI / PnP	
IRQ 10	PCI / PnP	
IRQ 11	PCI / PnP	
IRQ 14	PCI / PnP	
IRQ 15	PCI / PnP	ESC : Exit ↑↓ : Sel
Reserved Memory size	Disabled	PgUp/PgDn : Modify
Reserved Memory Address	C8000	F2/F3 : Color

This section describes the Setup options available in the PCI/Plug and Play Setup menu to configure the PCI and Plug & Play features. If you select certain options the Setup program switches to a sub-screen for the selected option.

Plug and Play Aware OS

Set this option to “Yes” if the operating system installed in the computer is Plug and Play-aware. AMI BIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP aware. Set this option to “No” if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP. You must set this option correctly or PnP-aware adapter cards installed in your computer will not be configured properly. The default setting for Optimal setting is “No”.

PCI VGA Palette Snoop

This option must be set to Enabled if any ISA adapter card installed in the computer requires VGA palette snooping. The settings are Disabled or Enabled. The Optimal and Fail-Safe default settings are Disabled.

PCI IDE BusMaster

Set this option to Enabled to specify that the IDE controller on the PCI local bus has bus mastering capability. The settings are Disabled or Enabled. The Optimal and Fail-Safe default setting is **“**Disabled**”**.

OffBoard PCI IDE Card

This option specifies if an offboard PCI IDE controller adapter card is used in the computer. You must also specify the PCI expansion sIot on the motherboard where the offboard PCI IDE controller card is installed. If an offboard PCI IDE controller is used the onboard IDE controller on the motherboard is automatically disabled. The settings are Disabled, Auto, SIot1, SIot2, SIot3, or SIot4. **Default setting is “Auto”.**

OffBoard PCI IDE Primary IRQ

This option specifies the PCI interrupt used by the primary IDE channel on the offboard PCI IDE controller. The settings are Disabled, INTA' INTB, INTC, or INTD. The Optimal and Fail-Safe default setting **is “**Disabled**”**.

OffBoard PCI IDE Secondary IRQ

This option specifies the PCI interrupt used by the secondary IDE channel on the offboard PCI IDE controller. The settings are Disabled, INTA, INTB, INTC, or INTD. The Optimal and Fail-Safe default setting**s are “**Disabled**”**.

On Board LAN

This option is set to enabled when your motherboard has the manufacturing option of on board LAN installed. The default setting is set to “Disabled”.

DMA Channel 0 to DMA Channel 7

This option can be used to reserve a DMA channel for use by legacy ISA adapter cards. The settings are Disabled, DMA ChI, DMA Ch 3 DMA Ch 5, DMA Ch 6, or DMA Ch 7. The Optimal and Fail-Safe default settings are Disabled.

IRQ3 to IRQ15

These options specify the bus that the named interrupt request lines (IRQs) are used on. These options allow you to specify IRQs for use by legacy ISA adapter cards.

These options determine if AMIBIOS should remove an IRQ from the pool of available IRQs passed to BIOS configurable devices. The available IRQ pool is determined by readling the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these PCI/PnP Setup options to remove the IRQ by assigning the option to the ISA/ElSA setting. Onboard I/O is configurable by AMIBIOS. The IRQs used by onboard I/O are configured as PCi/PnP.

The settings are PCI/PnP or ISA/EISA. The Optimal and Fail-Safe default settings are “PCI/PnP”.

Reserved Memory Size

This option specifies the size of the memory area reserved for legacy ISA adapter cards. The settings are Disabled, 16K, 32K, or 64K. The Optimal and Fail-Safe default settings are Disabled.

Reserved Memory Address

This option specifies the beginning address (in hex) of the reserved memory area. The specified ROM memory area is reserved for use by legacy ISA adapter cards.

The settings are COOOO, C4000, CS000, CC000, D0000, D4000, DS000, or DCOOO. The Optimal and Fail-Safe default settings are C8000.

Peripheral Setup

AMIBIOS SETUP – PERIPHERAL SETUP © 1996 American Megatrends, Inc. All Rights Reserved		
OnBoard FDC	Auto	Available Options :
OnBoard Serial Port 1	Auto	Auto
OnBoard Serial Port 2	Auto	Disabled
Serial Port 2 Mode	Standard	Enabled
IR Transmission Mode	N/A	
Receiver Polarity	N/A	
Transmitter Quality	N/A	
OnBoard Parallel Port	Auto	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port IRQ	Auto	
Parallel Port DMA Channel	N/A	
OnBoard IDE	Both	ESC : Exit ↑↓ : Sel
		PgUp/PgDn : Modify
		F2/F3 : Color

This section describes the Setup options available in the Peripheral Setup menu to configure the I/O support. If you select certain options the Setup program switches to a subscreen for the selected option.

OnBoard FDC

This option enables the floppy drive controller on the motherboard. The settings are “Auto”, “Enabled” and “Disabled”. The default setting is Auto.

OnBoard Serial Port1

This option enables Serial Port 1 on the motherboard and specifies the base I/O port address for serial port 1. The settings are “3F8h”, “3E8h”, “2F8h”, “2E8h”, “Auto”, and “Disabled”. The Optimal and Fail-Safe default settings are both “Auto”.

OnBoard Serial Port2

This option enables serial port 2 on the motherboard and specifies the base I/O port address for serial port 2. The settings are “2F8h”, “2E8h”, “3F8h”, “3E8h”, “Auto”, and “Disabled”. The Optimal and Fail-Safe default settings are both “Auto”.

OnBoard Parallel Port

This option enables the parallel port on the motherboard and specifies the parallel port base I/O port address. The settings are “378h”, “278h”, “3BCh”, “Auto”, and “Disabled”. The default setting for Optimal and Fail-Safe is “Auto”.

Parallel Port Mode

This option specifies the parallel port mode. ECP (Extended Capabilities Port) and EPP (Enhanced Parallel Port) are both bi-directional data transfer schemes that adhere to the IEEE P1284 specifications. The settings are “Normal” (SPP), “EPP”, and “ECP”. The default setting is “Normal”.

EPP – EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device.

ECP – ECP uses the DMA protocol to achieve transfer rates of approximately 2.5 Mbs. ECP provides symmetric bi-directional communications.

Parallel Port DMA Channel

This option is only available if the setting for the Parallel Port Mode is ECP.0

OnBoard IDE

This option enables or disables the onboard IDE controller channels. Available options are “Disabled”, “Primary”, “Secondary” or “Both”. The default setting is “Both”.

CPU Configuration Setup

AMIBIOS SETUP – CPU CONFIGURATION SETUP

Jumper Less Function	Disabled	Available Options :
CPU Brand	N/A	Disabled
CPU Speed	N/A	Enabled
H/W Monitor BIOS Support	Enabled	
H/W Monitor information Display	Disabled	
Vcore Voltage	4.080	
I/O Voltage	4.080	
3.3 Voltage	4.080	
+5 Voltage	6.854	
+12 Voltage	16.320	
-12 Voltage	-14.235	
-5 Voltage	-6.136	
Chassis Fan Rate	0 RPM	
CPU Current Temperature	1°C/33°F	
MB Current Temperature	255°C/122°F	
Basic Critical Temperature (BCT)	50°C/122°F	
Basic System Protection	SlowDown	
Suspend if Exceed BCT	+10°C/50°F	
H/W Monitor information Display	Disabled	
Basic Critical Temperature (BCT)	Disabled	ESC : Exit ↑↓ : Sel
Basic System Protection	SlowDown	PgUp/PgDn : Modify
Suspend if Exceed BCT	+15°C/59°F	F2/F3 : Color

This section describes the Setup options available in the Hardware Monitor Setup menu to configure the Hardware monitoring features. If you select certain options the Setup program switches to a sub- screen for the selected option.

H/W Monitor BIOS Support

This function is responsible for monitoring certain Voltages, Fan rates and Temperatures of components on the motherboard. The only options that are selectable to the User are the 'Basic Critical Temperature', 'Basic System Protection' and 'Suspend if exceed BCT'. The default setting for this option is Disabled

Auto-Detect Hard Disks

This "Auto-Detect Hard Disks" option detects the parameters of IDE hard disk drives, and automatically enters them into the standard CMOS setup screen.

Change User Password & Change Supervisor Password

AMI BIOS has two optional password features. "Supervisor Password" sets a password that will be used to protect the system and the setup utility; "User Password" sets a password that will be used exclusively on the system. The system can be configured so that all users must enter a password every time the system boots or when the BIOS Setup is executed. The password is stored in CMOS RAM. When you select Supervisor or User, AMI BIOS prompts for a password. You must set the Supervisor password before you can set the User password. Enter a 1-6 character password. The password does not appear on the screen when typed. Make sure you write it down. If you forget it, you must drain CMOS RAM and reconfigure the system.

Auto Configuration with Optimal Settings

You can load the Optimal default settings. The Optimal default settings are best-case values that should optimize system performance. If CMOS RAM is corrupted, the Optimal settings are loaded automatically.

Auto Configuration with Fail Safe Settings

You can load the Fail-Safe Setting by pressing <enter> at the Fail-Safe Setting. The Fail-Safe settings provide far from optimal system performance, but are the most stable settings. Use this option as a diagnostic aid if the system is behaving erratically.

Save Settings and Exit

Saves the changes to CMOS RAM and exits the Setup program. You can also press the <F10> key anywhere in the BIOS Setup program (main menu) to do this.

Exit Without Saving

Exits the Setup program without saving any changes. This means that any changes made while in the Setup program are discarded and **NOT SAVED**. Pressing the <ESC> key in BIOS Setup program (main menu) will do this.

Upgrading The BIOS

The system BIOS resides on a flash component. You can upgrade a flash BIOS through software, without taking the system apart or replacing the flash component. This appendix tells how to upgrade your system BIOS from a diskette in particular for your Yukon TX motherboard. Your service representative can provide you with the latest BIOS upgrade for your system.

WARNING

Upgrading BIOS other than the one provided by the Yukon TX manufacturer will automatically have the product warranty voided. Using the incorrect BIOS for upgrade might cause permanent unrecoverable damage to the motherboard.

Reflash BIOS

1. Insert the BIOS diskette into your floppy drive. At A:\, type

   "AMIflash <*BIOS filename*>" and hit <enter>

2. A Flash EPROM Programming Utility screen pops up. Make sure the version of the AMIFLASH Utility is 5.23 or above. Press "Y" to continue.

WARNING

System must NOT be turned off during the Programming operation. System will ReBoot if Programming is successfully complete.

3. Please wait for the programming operation to complete. Once completed, take the BIOS diskette out from the floppy drive and press any key to restart the computer.
4. Once reboot, go into the CMOS Setup main menu (refer to Chapter 2). Select "Auto Configuration with Optional Settings" and then "Load high performance setting". You can change your CMOS setting again.
5. Save and exit BIOS Setup Program.

4.Error and Information Messages

This chapter describes the following:

- Jumper block locations and functions
- Procedures to remove and install optional components
- Information about replacing the battery

Before You Begin

- Be sure to do each procedure in the correct order.
- Set up an equipment log to record the system model and serial numbers, all installed options, and other information about the system. If you need this information, it will be easier to consult the log than to open up and examine the system.
- You will need a medium flat-bladed screwdriver and a jumper removal tool, such as a pair of fine needle-nosed pliers. We recommend that you use an antistatic wrist strap and a conductive foam pad when working on the board.

WARNING

The procedures in this chapter assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.

Disconnect the system from its power source and from any telecommunications links, networks or modems before doing any of the procedures described in this chapter. Failure to disconnect power, telecommunications links, networks or modems before you open the system or do any procedures can result in personal injury or equipment damage. Some circuitry on the system board may continue to operate even though the front panel power button is off.

CAUTION

Electrostatic discharge (ESD) can damage components. Do the procedures described in this chapter only at an ESD workstation. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis.

Add-in boards can be extremely sensitive to ESD and always require careful handling. After removing the board from its protective wrapper or from the system, place the board flat on a grounded, static-free surface, component-side up. Use a conductive foam pad if available, but not the board wrapper. Do not slide the board over any surface.

Beep Codes

Fatal errors, which halt the boot process, are communicated through a series of audible beeps. IF AMI BIOS POST can initialize the system video display, it displays the error messages. Displayed error messages, in most cases, allow the system to continue to boot.

Beeps	Error Message	Description
1	Refresh Failure	The memory refresh circuitry on the motherboard is faulty.
2	Parity Error	Parity error in the base memory (the first 64 KB block) of memory.
3	Base 64 KB Memory Failure	Memory failure in the first 64 KB.
4	Timer Not Operational	A memory failure in the first 64 KB of memory, or Timer 1 on the motherboard is not functioning.
5	Processor Error	The CPU generated an error.
6	8042 - Gate A20 Failure	The BIOS cannot switch to protected mode.
7	Processor Exception Interrupt Error	The CPU on the CPU card generated an exception interrupt.
8	Display Memory Read/Write Error	The system video adapter is either missing or its memory is faulty. This is not a fatal error.
9	ROM Checksum Error	The ROM checksum value does not match the value encoded in the BIOS.
10	CMOS Shutdown Register Read/Write Error	The shutdown register for CMOS RAM has failed.
11	Cache Memory Bad-Do Not Enable Cache	The cache memory test failed. Cache memory is disabled. Do not press <Ctrl> <Alt> <Shift> <+> to enable cache memory.

Error Messages

An error can occur after the system display has been initialized.

Error Message	Explanation
8042 Gate-A20 Error	Gate A20 on the keyboard controller (8042) is not working. Replace the 8042.
Address Line Short!	Error in the address decoding circuitry on the motherboard.
C: Drive Error	No response from drive C:. Run the AMIDiag Hard Disk Utility. Check the C: hard drive type in Standard Setup.
C: Drive Failure	No response from hard drive C:. Replace the drive.
Cache Memory Failure, Do Not Enable Cache!	Cache memory is defective. Run AMIDiag.
CH-2 Timer Error	An AT system has two timers. There is an error in timer 2.
CMOS Battery State Low	CMOS RAM is powered by a battery. The battery power is low. Replace the battery.
CMOS Checksum Failure	CMOS RAM checksum is different than the previous value. Run BIOS Setup.
CMOS System Options Not Set	The values stored in CMOS RAM have been destroyed. Run BIOS Setup.
CMOS Display Type Mismatch	The video type in CMOS RAM does not match the type detected. Run BIOS Setup.
CMOS Memory Size Mismatch	The amount of memory found by AMIBIOS is different than the amount in CMOS RAM. Run BIOS Setup.
CMOS Time and Date Not Set	Run Standard Setup to set the date and time.
D: Drive Error	No response from drive D:. Run the AMIDiag Hard Disk Utility. Check the hard disk type in Standard Setup.
D: drive failure	No response from hard disk drive D: Replace the drive.
Diskette Boot Failure	The boot disk in floppy drive A: is corrupt. It cannot be used to boot the system. Use another boot disk and follow the screen instructions.
Display Switch Not Proper	Some systems require a video switch be set to either colour or monochrome. Turn the system off, set the switch properly, then power on.
DMA Error	Error in the DMA Controller.

Error Message	Explanation
DMA 1 Error	Error in the first DMA channel.
DMA 2 Error	Error in the second DMA channel.
FDD Controller Failure	AMIBIOS cannot communicate with the floppy disk drive controller. Check all appropriate connections after the system is powered down.
HDD Controller Failure	AMIBIOS cannot communicate with the hard disk drive controller. Check all appropriate connections after the system is powered down.
INTR1 Error	Interrupt channel 1 failed POST.
INTR2 Error	Interrupt channel 2 failed POST>
Invalid Boot Diskette	The BIOS can read the disk in floppy drive A:, but cannot boot the system with it. Use another boot disk and follow the screen instructions.
Keyboard is Locked...Unlock It	The keyboard lock on the system is engaged. The system must be unlocked to continue to boot.
Keyboard / Interface Error	There is an error in the keyboard connector.
No ROM BASIC	Cannot find a proper bootable sector on either drive A: or C: AMIBIOS cannot find ROM Basic.
Off Board parity Error	Parity error in memory installed on an adapter card in an expansion slot. The format is: *OFF BOARD PARITY ERROR ADDR = (XXXX)* XXXX is the hex address where the error occurred. Run AMIDiag to find and correct memory problems.
On Board Parity Error	Parity error in motherboard memory. The format is: *ON BOARD PARITY ERROR ADDR = (XXXX)* XXXX is the hex address where the error occurred. Run AMIDiag to find and correct memory problems.
Parity Error ????`	Parity error in system memory at an unknown address. Run AMIDiag to find and correct memory problems.

5.Glossary

ADDRESS:

Specific location in the memory of the computer where information about programs, data and software drivers is stored. Peripheral devices such as mouse, modems, etc. require a specific I/0 port address and interrupt in order to function properly.

BIOS:(BASIC INPUT OUTPUT SYSTEM)

That part of a ROM that is the interface between the system hardware and the operating system. The ROM BIOS is a group of low level programs responsible for interfacing the computer to peripheral devices, such as disk drives, serial and parallel ports, keyboard, and video display. Low-level BIOS routines are common to all operating systems and are generally resident in ROM. High-level BIOS routines are specific to the particular operating system in use and are therefore generally stored on disk, and loaded only when the operating system is booted.

BIT:

A binary digit that is the most reducible element of computer information. Eight bits make one byte.

BOOT or BOOTSTRAP:

A small ROM-based program which is automatically loaded when the system is first powered up (or "booted), in order to load and execute an operating system or other large program from disk. Also, the process of starting the computer, either by turning on the power, pressing the Reset switch or by pressing the CTRL + ALT + DEL keys simultaneously. The latter is known as a "warm boot"

BYTE:

Smallest unit of storage required to hold a character of information in memory or on a disk.

BUS CLOCK:

The speed at which data is transferred between the microprocessor and the I/O channel.

CMOS:

Acronym for Complementary Metal Oxide Semiconductor. CMOS integrated circuitry uses very little electrical power. Hence CMOS RAM is ideal for storing system configuration information that cannot be stored permanently in ROM.

COM PORT:

Communication port where devices such as a mouse or an external modem are attached.

CONFIG.SYS:

A file usually located in the root directory of the boot disk that contains information required to load installable device drivers and other system configuration parameters.

CONVENTIONAL MEMORY:

System main memory from 0 to 640KB. Many programs run in this area.

COPROCESSOR:

An auxiliary processor that reduces microprocessor overhead and increases system speed by executing certain math related functions. In Pentium systems the math coprocessor is built into the microprocessor.

CPU:(CENTRAL PROCESSING UNIT)

Also called the microprocessor. The “brain" of the computer, where program instructions and arithmetic operations are executed.

CPU CLOCK:

The speed at which the microprocessor executes its instructions.

DOS:(DISK OPERATING SYSTEM)

Software that controls the activities performed by the computer. DOS sets up an environment under which application software can load and function. It is an interface between the system and application software.

DRAM:(DYNAMIC RANDOM ACCESS MEMORY)

A type of RAM that requires a refresh cycle to keep information valid. Main system memory uses DRAM.

EXPANSION SLOT:

A connector on the system board into which an adapter card can be inserted.

EXTENDED MEMORY:

Memory beyond the 1 MB limit that is accessed by programs such as Windows.

HERTZ:

A unit of frequency which is equivalent to one cycle per second.

INTERFACE:

The connection between the system board and a peripheral.

INTERLEAVING:

A technique for improving system performance by speeding up memory access. Successive memory locations are assigned to different memory banks. Then, when the system requires the information, it accesses both banks simultaneously rather than having to access a single bank sequentially.

INTERRUPT:

Special operation used by hardware peripheral devices to allow them to communicate with the Central Processing Unit. Each peripheral device is allocated a unique interrupt number which the CPU recognizes when talking to the device.

ISA:

Industry Standard Architecture.

JUMPER:

A patch cable, wire or other such device used to establish a circuit.

MEMORY:

RAM and ROM are devices used to hold information and programs while they are being accessed by the system.

MICROPROCESSOR:

Also known as the CPU. The "brain" of the system, which contains the circuitry used for calculation and communication with the rest of the system.

PAGE MODE:

Special function in DRAM that saves cycle time by not re-loading the “Row Address strobe bits”.

PARALLEL PORT:

Also called "printer port", or LPT 1:, the parallel port is used to attach a printer or other peripheral using a Centronics parallel cable.

PARITY BIT:

An additional non-informational bit appended to a group of 8 bits to make the number of ones in the group of bits either even or odd. This is an elementary error correction mechanism. Example: During a subsequent read from a memory location, and using odd parity, the system will check the sum of ones. If the sum of ones is NOT still odd then the system knows that the information at that location has been corrupted.

SERIAL PORT:

Communication port used by the computer to communicate with the outside world. An IBM PC compatible normally recognizes four standard serial ports: COM1, COM2, COM3 and COM4 which are used to attach a mouse, modems, serial printers, plotters and other serial devices

SHADOW RAM:

Refers to the technique of copying BIOS routines from slower ROM chips to faster RAM, thereby increasing system performance