TI6BX-S & TD6BX-S

Pentium II PCI/ISA System Board

User's Manual

MAN-200
Jan., 1999

PREFACE:

Thank you for purchasing the MEGASTAR TD6BX-S/TI6BX-S system board. This document will aid you to properly configure and install this system board into your computer system. This document is accurate to the best of our knowledge; however, we make no representation or warranty concerning the contents or use of this manual, and specifically disclaim any expressly implied warranties or merchantability or fitness for any particular purpose. The information in this document is subject to change without notice.

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TRADEMARKS

TECHNICAL REFERENCES

. Pentium II Microprocessor Family User's Manual
. Intel 82443BX chip-set, PCI/AGP Controller
. Intel 82371EB(PIIX4) PCI/ISA IDE Xcelerator
. National LM79CCVF System Monitor Controller
. National LM75CIM-5 Temperature Sensor
. Adaptec AIC-7895 Dual Ultra Fast & Wide SCSI ***(for TD6BX-S only)***
. Adaptec AIC-7880 PCI Ultra Wide SCSI Controller ***(for TI6BX-S only)***
. The Winbond W83977TF Ultra I/O Controller
. Built-in Intel 82558 10/100Mbit/s Ethernet Controller ***(for TD6BX-S only)***
. The Peripheral Component Interconnect (PCI) Specification

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PRODUCT OVERVIEW

The Pentium II TD6BX-S/TI6BX-S system board integrates the latest advances in processor, memory, I/O technologies into an ATX form factor. It is the combination of the highest in performance, flexibility, and ease of use that meets a variety of price/performance levels. The TD6BX-S/TI6BX-S is an **ideal** platform for the increasing requirements of today's and tomorrow's desktop applications.

The flexible system board design will accept Intel Pentium II (66/100MHz) processors at speeds from 266MHz up to 400MHz. It has the scalability to accept faster Pentium II upgrades in the future, using the Slot 1 socket. The processor is complemented by a second level write-back cache of either 512KB, or 1MBytes which is implemented inside the Pentium II processor.

The memory subsystem supports up to 512MByte SDRAM of non-buffered 3.3V using standard 168-pin DIMM sockets. *For TI6BX-S, it also supports 1Gbyte of EDO memory (at 66MHz-bus speed).* The features designed into the TD6BX-S/TI6BX-S along with the ATX form factor provide a new level of I/O integration. Intel's 82440BX PCI/AGP set provides increased integration and improved performance over other chip-set designs.

TD6BX-S/TI6BX-S system board also has a built in System Hardware Monitor (SHM) logic to detect variation of voltage supplies to CPU, system logic, system temperature Sensors detection. The Winbond W83977TF high performance Ultra I/O Controller is built in with fully Plug 'N' Play device which is able to support 2.88MB Floppy, Dual 16550 Compatible (with 16 bytes FIFO, support up to 460K baud rate) Serial Port, ECP (Enhanced Capabilities Port), EPP (Enhanced Parallel Port) parallel port, Infrared IRDA (HPSIR), and Amplitude Shift Keyed IR (ASKIR) port.

The TD6BX-S/TI6BX-S supports four PCI Bus Mastering slots for highest performance I/O add-on adapter cards. All four slots support full-length PCI Adapter Cards. The system board supports Matrix Independent PCI Interrupt Routing for optimal multiple PCI adapters operation up to 133MB/s data transfer rate on PCI bus compared to 33MB/s on EISA bus, synchronized operation CPU to PCI Interface for best graphical performance, 120MB/s PCI to system DRAM bandwidth utilizing Snoop Ahead Features, and support back to back sequential CPU to PCI Memory writes to PCI Burst Write for full PCI through put.

In addition to superior hardware capabilities, a full set of software drivers and utilities are available to allow advanced operating systems such as Microsoft Windows 95 and Windows NT to take full advantage of the hardware capabilities. There are Features such as Bus-Mastering, Windows 95 ready Plug 'N' Play, Advanced Power Management (APM).

(for TD6BX-S only) Adaptec AIC7895 Dual Channel Ultra Wide SCSI Controller supports Fast, Wide (20MB/s) and Ultra Wide SCSI (40MB/s), (80MB/s for two channels)

Onboard Integrated Intel Fast Ethernet Controller 10/100Mb/s with chipset 82558 support WOL (Wake up on LAN)

Intel APIC 82093 (Advanced Programmable Interrupt Controller) is responsible for multi-processors

Power Management Wake up Event as WOL (Wake up on LAN), Modem ring and Entering password by using keyboard is the powerful technology to enable PCs to be turned on over the network or modem and the key benefits in PC maintenance, asset management, new system setup and power conservation.

PRODUCT SPECIFICATIONS

Electrical *(TD6BX-S)*

Typical Power Supply

+5V	± 5%	22 Amperes
+3.3V	± 5%	3 Amperes
+12V	±10%	800 mA
-5V	±5%	150 mA
-12V	±10%	100 mA
5V Trickle Voltage		750 mA (to support WOL)

Electrical *(TI6BX-S)*

Typical Power Supply

+5V	± 5%	18 Amperes
+3.3V	± 5%	5 Amperes
+12V	±10%	800 mA
-5V	±5%	150 mA
-12V	±10%	100 mA

Power Supply Regulation

Built in switching voltage that support appropriate power to the CPU and future upgrade CPUs

Environmental Standards

Operating temperature: (ambient)	O°C/32°F to 55°C/131°F
Storage temperature:	-40°C/-4°F to 70°C/158°F
Relative Humidity:	92% RH at 36°C (non-condensing)
Storage Humidity:	5% to 95% (non-condensing)
Operating Altitude:	10,000 feet (3048 meters)
Non-Operating Altitude:	50,000 feet (15,240 meters)

Dimensions *(TD6BX-S)*

Width:	10.35 inches
Length:	12.0 inches
Form factor:	ATX
PCB:	4 Layers

Dimensions *(TI6BX-S)*

Width:	8.7 inches
Length:	12.0 inches
Form factor:	ATX
PCB:	4 Layers

PRODUCT FEATURES

CPU Support

TD6BX-S/TI6BX-S supports Pentium II Dual (66/100MHz) of speeds from 266 MHz up to 400MHz with build-in 32 KB level 1 cache and 512KB level 2 cache.

SYSTEM MEMORY

SDRAM Memory

SDRAM memory can be used at both 66/100MHz bus

speed and the maximum memory support is 512MB.

Four Banks DIMM of Non-buffered 3.3V.
Support 1Mx64, 2Mx64, 4Mx64, 8Mx64, 16Mx64
DIM and ECC (Error Checking & Correction) memory.

EDO Memory (for TI6BX-S only)

EDO memory can be used at 66MHz-bus speed and the maximum memory support is 1GB.

System Chip-set

Intel 82440BX PCI/AGP Set.

Intel 82371EB is PIIX4 PCI/ISA bridge with build in PCI Ultra DMA/33.

National LM79CCVF, System Monitor Controller and National LM75CIM-5, Temperature Sensor are built-in System Hardware Monitoring (SHM) logic to detect variation of Voltage supplied to CPU and system logic, system temperature sensors, case intrusion detection. The LM79CCVF is a highly integrated DATA Acquisition system for hardware monitoring of servers, personal computer, or virtually any microprocessor based system. And the LM75CIM-5 is a temperature sensor.

(for TD6BX-S only) *Adaptec AIC7895 Dual Channel Ultra Wide SCSI Controller supports Fast, Wide (20MB/s) and Ultra Wide SCSI (40MB/s), (80MB/s for two channels)*

Onboard Integrated Intel Fast Ethernet Controller 10/100Mb/s: Full IEEE compliance: 802.2 & 802.3, Bus master DMA, Intel 82558 processor, Power requirement: 3.5Watt @+5VDC and support WOL (Wake up on LAN)

Intel APIC 82093 (Advanced Programmable Interrupt Controller) is responsible for multi-processors

(for TI6BX-S only) *Adaptec AIC7880 is PCI Ultra Wide SCSI Controller*

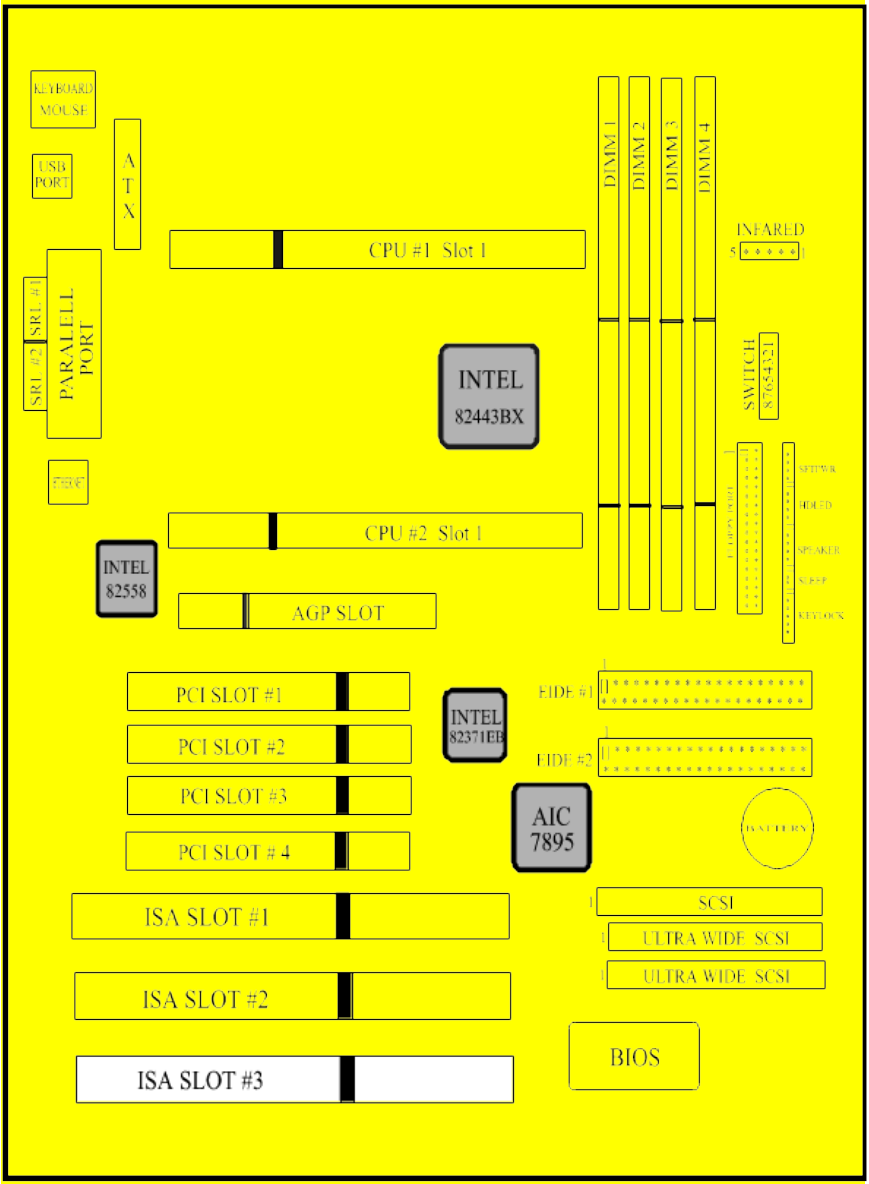
Winbond W83977TF is Ultra I/O Controller. The Real Time Clock is built into the System Board has a complete time of day clock alarm and one hundred year calendar, a programmable periodic interrupt, and a programmable square wave generator.

System BIOS is 2048KB of Award BIOS with Built-in Window CMOS Setup and Configuration Utilities and firmware for Plug and Play. The TD6BX-S provides 2Mbit Flash BIOS with built-in CMOS setup and Utility to improve user's ease of use. It supports Desktop Management Interface (DMI). The Flash allows the user to update the content of the BIOS without opening the cover of the chassis. **PCI/ISA Bus** supports four PCI bus mastering slots and three ISA slots for Standard Compatible ISA Adapters. This is to support existing well proven reliable industrial adapter market.
One slot is fully supports (AGP) Accelerated Graphic Port Interface Specifications.

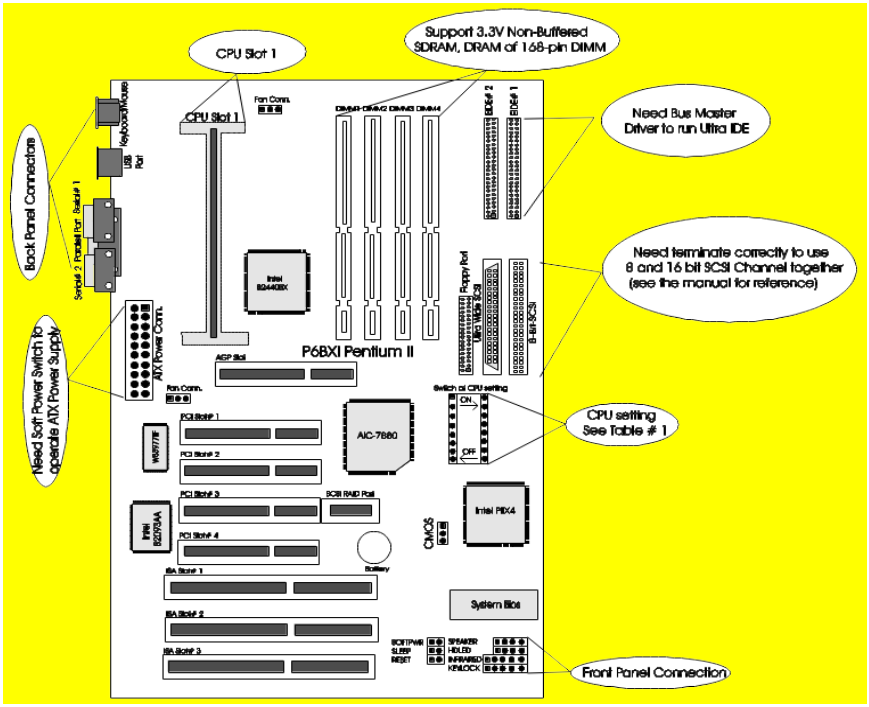
Interface Connectors

- Infrared supports IRDA compliant infrared interface through the Ultra I/O with data transfer rates of up to 115 Kbaud
- Keyboard/Mouse, PS/2 style
- Dual USB (Universal Serial Bus) connector
- Dual Serial Ports
- Parallel Port
- Floppy, supports two 3.5-inch or 5.25-inch floppy disk drives
- Dual PCI IDE, support four Ultra DMA IDE drives
- SCSI interface, support Ultra SCSI up to 15 hard drives

TD6BX-S SYSTEM BOARD LAYOUT



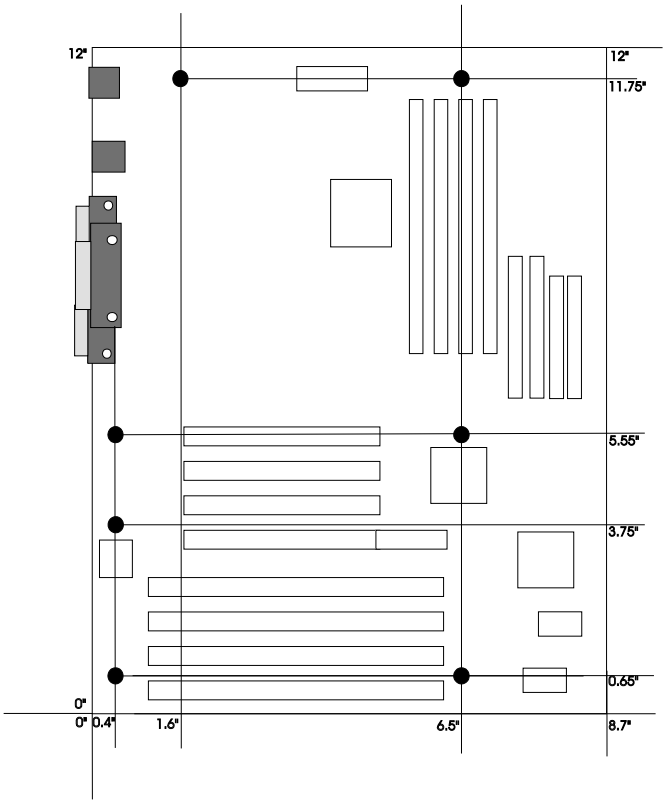
TI6BX-S SYSTEM BOARD LAYOUT



Remark: *The Default jumper setting for TI6BX-S is 350 MHz.*

ATX FORM FACTOR

ATX Form Factor Dimensions



ATX Power Connector

ATX Power Supply connector ATX1 is a standard defined 20-pin connector that usually comes with ATX case. The ATX power supply allows the use of the Soft Power On momentary switch that connected on the front panel switch to the 2-pin PWRON jumper pole on the motherboard. Once the power switch on the back of the ATX power supply is turned on, the full power will not come into the system board until the front

panel switch is momentarily pressed. Pressing this switch again will turn off the power to the system board.

ATX Feature

The Pentium II TD6BX-S/TI6BX-S system board is designed to fit into an ATX form factor chassis. The ATX dimensions are part of a new specification called the ATX Motherboard Specification.

The ATX form factor has been defined to address four major areas of improvement required of today's predominant form factors.

1) Enhance PC ease-of-use with all built-in I/O connectors
2) Better support for current and future I/O
3) Reduce total system cost
4) Better support for future processor technology

ATX is an evolution of the popular Baby-AT form factor. By mounting the power supply on its side, the processor is relocated away from the expansion slots, and the longer side of the board is used to host more on-board I/O connectors; this placing of I/O on the board reduces cabling inside the box, lowers cost, and improves reliability and ease-of-use. A flexible I/O panel allows ATX to support all current and future I/O requirements. The ATX power supply will directly suck the air out of chassis that will save the cost of a secondary fan in the system. System cost is further reduced by the higher integration of PC components onto the system board itself, saving material, inventory holding, and assembly costs.

MICROPROCESSOR SUPPORT

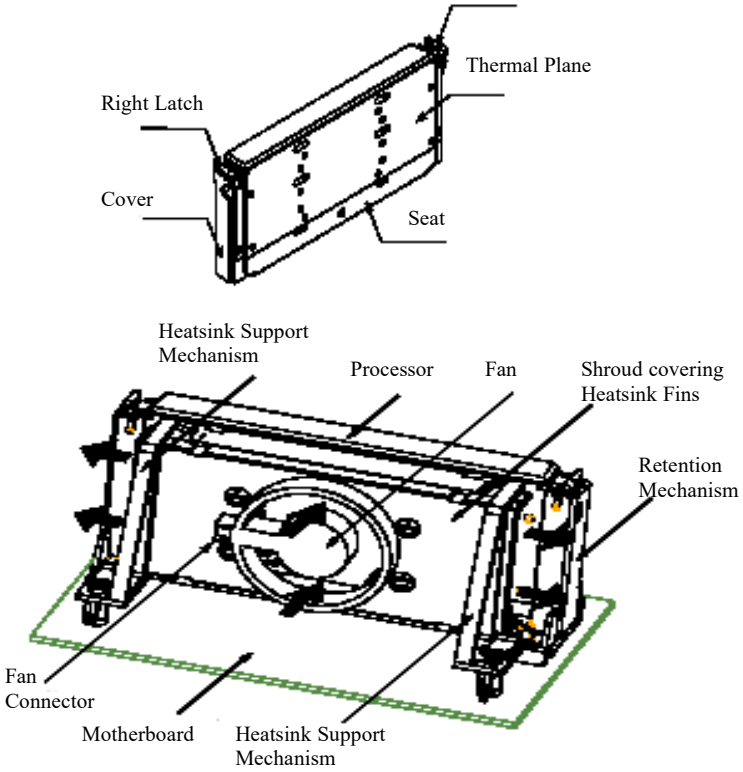
Intel Pentium II CPU

The TD6BX-S/TI6BX-S support Intel Pentium II microprocessors. The Pentium II delivers more performance than previous generation processors (such as Pentium, Pentium MMX, etc.) through an innovation called Dynamic Execution Architecture. This is the next step beyond the super-scalar architecture implemented in the Pentium Processor. This makes advanced 3D visualization and interactive capabilities required by today's high-end commercial and technical applications and tomorrow's emerging applications possible. Besides, the Pentium II processor also includes 32KB/32KB separate data and instruction, non-blocking, level one cache and 256KB, or 512KB, or 1MB, non-blocking, second level very fast cache memory, and provides the highest processing performance, advanced data integrity, reliability, and serviceability features for mission critical applications.

CPU Installation *(for TD6BX-S only)*

The TD6BX-S uses two Slot 1 S.E.C. Cartridge compatible 242 pin edge connectors. For installing first/single cpu, use slot 1 connector at location U11. For installing second cpu or terminator card (in case of single cpu config.), use slot 1 connector at location U3. The Pentium II processor is packaged in a Single Edge Contact (S.E.C.) cartridge. The cartridge includes the processor core, second-level cache, thermal plate, and back cover. The Pentium II CPU comes with cooling kit (fan and a heat sink on top of the CPU) plus the heat sink support.

Left Latch



The TD6BX-S uses two Slot 1 S.E.C. Cartridge compatible 242 pin edge connectors. To install CPU, lift the two sliding brackets to a vertical position and the slide the CPU until it firmly locks into place. If a single CPU is used insert the terminator card supplied with the motherboard in the second CPU slot.

Connect the CPU Fan to FAN connector on the motherboard. There are two connectors provided, viz. FAN1 and FAN2. If the fan provides tachometer signal, the system can read its RPM speed.

Pin	Description
1	Ground
2	+12 V
3	Fan Tachometer

CPU Performance Upgrade *(for TI6BX-S only)*

The socket Slot 1 used on the TI6BX-S is a 242-pin for S.E.C. (Single Edge Contact cartridge), along with a programmable voltage regulator for the CPU core, which provides users with a performance upgrade path to future Pentium technology. The voltage regulator programming is automatic and controlled by the VID pins of the processor.

CPU Installation *(for TI6BX-S only)*

The cooling kit with fan and a heat sink on top of the CPU will come with the CPU package, plus heat sink support.

The TI6BX-S System Board supports Intel Pentium II from 233MHz to 400MHz and beyond microprocessors. Carefully install the Pentium II processor into the Slot 1 socket at location U7.

The TI6BX-S uses a Slot 1 socket for Pentium II CPU. To install CPU, install the CPU's retention (complete set of CPU holder) first following the steps below:

1. Insert two base attach mount screws from solder side.

2. Insert the CPU holder "retention mechanism" and screw down to the base attach mount.

3. Slide the CPU into retention mechanism straight from top side.

CPU Jumper Setting

The **TD6BX-S** System board supports different CPU speeds (internal speed), ranging from 266MHz to 400MHz. The default setting from manufacturing will be 350MHz.

The following example is for 100MHz bus speed:

CPU SPEED	SW1 #3	SW1 #4	SW1 #5	SW1 #6
350MHZ	OFF	OFF	ON	ON
400MHZ	ON	ON	OFF	ON

The **TI6BX-S** System board supports different CPU speeds (internal speed), ranging from 233MHz to 400MHz. The default setting from manufacturing will be 350MHz.

The following example is for 100MHz bus speed:

CPU SPEED	SW1 #4	SW1 #5	SW1 #6	SW1 #7
300MHZ	ON	OFF	ON	ON
350MHZ	OFF	OFF	ON	ON
400MHZ	ON	ON	OFF	ON

Advanced User CPU Jumper Setting

The speed of CPU will equal the external clock multiplied by different ratios. The ratios will be determined by the switch setting. CPU speed is equal to External Clock to multiple by CPU Multiplier.

Example: (400MHZ CPU = 100MHZ (External Clock) x 4(CPU multiplier))

TD6BX-S CPU Multiplier (Switch #1)

CPU Multiplier	#3	#4	#5	#6

3.0	ON	OFF	ON	ON
3.5	OFF	OFF	ON	ON
4.0	ON	ON	OFF	ON
4.5	OFF	ON	OFF	ON
5.0	ON	OFF	OFF	ON
5.5	OFF	OFF	OFF	ON

Default DIP SWITCH SETTING
SW1.1, SW1.2, SW1.7, SW1.8 are set to OFF position

TI6BX-S CPU Multiplier (Switch #1)

CPU Multiplier	#4	#5	#6	#7
2.0	ON	ON	ON	ON
2.5	OFF	ON	ON	ON
3.0	ON	OFF	ON	ON
3.5	OFF	OFF	ON	ON
4.0	ON	ON	OFF	ON
4.5	OFF	ON	OFF	ON

TI6BX-S External Clock (Switch #1)

CPU External Clock	#1	#2	#2
	OFF	OFF	OFF

Note: The motherboard manufacturing sets the external clock SW1.1, SW1.2, SW1.3 OFF to match the real CPU External speed you use (66/100MHz). The set-up is out of specification that will be on your own risk. The manufacturing will not respond.

TI6BX-S Keyboard Wake up Jumper JP4 & JP5

The two jumper pole JP4 and JP5 are to support wake up from keyboard (when entering preprogrammed password, system will wake up from soft power off)

Function	Jumper JP5
Do not support wake up from keyboard	1-2
Support wake up from keyboard	2-3

The function of JP4 only is valid when JP5 = 2-3

Function	Jumper JP4
Wake up from front panel switch as normal	1-2
Wake up from keyboard when entering password	2-3

Clear Content of CMOS JP5

Short the CMOS jumper to the position 1-2 and return back to the normal position at 2-3.

Function	CMOS Jumper
Clear Content of CMOS	1-2
Normal	2-3

SYSTEM MEMORY

Memory Support/Feature

The on-board DRAM memory sub-system has 4 module mounting sockets which are divided into “banks”. Socket labeled DIMM1 constitutes bank 1. Socket labeled DIMM2 constitutes bank 2. Socket label DIMM3 constitute bank 3. Socket label DIMM4 constitutes bank 4. They support SDRAM, (*TI6BX-S also support EDO*), Non-ECC, and ECC. 1Mx64/72, 2Mx64/72 4Mx64/72, 8Mx64/72, 16Mx64/72, and 32Mx64/72 DRAM/SDRAM 3.3V Un-buffered DIMM, and support up to 512MB. DRAM speed must be 8ns (100 MHz) and 10ns (66 MHz), and can have single DIMM. That can configure the memory of theTD6BX-S/TI6BX-S in a variety of ways.

*The TI6BX-S will support up to 512MB for SDRAM and 1GB for EDO in full banks on both sides of DIMM.

Memory Configuration Table

168-pin DIMM configuration

Bank # 1 DIMM1	Bank # 2 DIMM2	Bank # 3 DIMM3	Bank # 4 DIMM4	Total Support
1Mx64/72	None	None	None	8Mbyte
1Mx64/72	1Mx64/72	None	None	16Mbyte
1Mx64/72	1Mx64/72	1Mx64/72	None	24Mbyte
1Mx64/72	1Mx64/72	1Mx64/72	1Mx64/72	32Mbyte
2Mx64/72	None	None	None	16Mbyte
2Mx64/72	2Mx64/72	None	None	32Mbyte
2Mx64/72	2Mx64/72	2Mx64/72	None	48Mbyte
2Mx64/72	2Mx64/72	2Mx64/72	2Mx64/72	64Mbyte
4Mx64/72	None	None	None	32Mbyte
4Mx64/72	4Mx64/72	None	None	64Mbyte
4Mx64/72	4Mx64/72	4Mx64/72	None	96Mbyte
4Mx64/72	4Mx64/72	4Mx64/72	4Mx64/72	128Mbyte
8Mx64/72	None	None	None	64Mbyte
8Mx64/72	8Mx64/72	None	None	128Mbyte
8Mx64/72	8Mx64/72	8Mx64/72	None	192Mbyte
8Mx64/72	8Mx64/72	8Mx64/72	8Mx64/72	256Mbyte
16Mx64/72	None	None	None	128Mbyte
16Mx64/72	16Mx64/72	None	None	256Mbyte
16Mx64/72	16Mx64/72	16Mx64/72	None	384Mbyte
16Mx64/72	16Mx64/72	16Mx64/72	16Mx64/72	512Mbyte
32Mx64/72	None	None	None	256Mbyte
32Mx64/72	32Mx64/72	None	None	512Mbyte
64Mx64/72	None	None	None	512Mbyte

Memory Installation

When working with DRAM DIMM, it is extremely important that you should avoid Electrical Static Discharge (ESD). Always ground yourself by wearing a grounded wristband or ankle strap.

1. Power must be off while installing DIMM.

2. The 168-pin DIMM module should have the notches to define 3.3V Non-Buffer sockets.
3. Insert the DIMM at 180 degree from top to bottom, until the DIMM snaps in position correctly.
4. Repeat above steps until the entire bank is filled.

INTERFACE I/O PERIPHERAL

Front Panel

1. The soft power on connector is a 2-pin Berg strip. It is used to connect to the push button power-on switch located on the front panel. System power can be turned on or off by momentarily pressing the front panel switch (note that for computer cases without Soft Power On switch, a jumper block should be installed to short these two pins together).

2. The Power LED and Keyboard Lock connector (KEYLOCK) is 5-pin keyed Berg strip. It is used to connect to +5 VDC power to the power indicator LED on the front panel and connect security keyboard lock to the keyboard controller. This allows you to switch off the keyboard which provides limited security against casual intruders. The pin assignments are indicated below.

3. The Hard Disk activity LED connector (HDLED) is a 4-pin keyed Berg strip. It is used to connect to front panel hard disk LED.

4. The Speaker connector (SPEAKER) is a 4-pin keyed Berg strip. It is used to connect an external 2-inch, 8-ohm speaker to the system board to provide sound capability. The pin assignments are defined below.

5. The system Reset connector (RESET) is a 2-pin Berg strip. It is used to connect to the push button reset switch located on the front panel. System reset can be done by shorting pin 1 to pin 2 with the same effect as turning the power off and then on again.

6. The Sleep connector (SLEEP) is a 2-pin Berg strip. It is used to connect to the push button Sleep switch located on the front panel (if exist). The system can be forced to Sleep mode by pressing the Sleep Switch.

7. The Winbond WD83977TF Ultra I/O Controller supports IRDA compliant infrared interface through the Ultra I/O with data transfer rates of up to 115 Kbaud. It also supports half-duplex and full-duplex operation. For full-duplex operation both the transmitter and receiver are enabled simultaneously for higher throughput. Additional support for Consumer Infra Red has been added for ASK-IR & DASK-IR options for SHARP-IR.

Back Panel

1. The bottom part is Keyboard connector (KEYBOARD). The Shielded Miniature Circular DIN Receptacle connector. It takes 6-Position Stacked Receptacles to connect the motherboard keyboard interface to any standard keyboard (84 or 101 -key type keyboards) with PS/2 style keyboard connector. The top part is Mouse connector (MOUSE), the Shielded Miniature Circular DIN Receptacle connector. It takes 6-Position Stacked Receptacles to connect the motherboard mouse interface to any standard key PS/2 style mouse connector.

2. USB PORT, supports dual channel Universal Serial Bus such as keyboard or mouse to access the system.

3. The Serial Port 1 and 2 connectors (SERIAL1 & SERIAL2) are the 9-pin D-subminiature male connector SRL1 and SRL2. The On-board Serial Ports can be disabled through BIOS setup. Please refer to Chapter 4 “Peripheral Management Setup” section for more detailed information.

4. The Parallel port can be configured in the BIOS setup output only compatible mode, bi-directional mode, ECP or EPP modes. The highly flexible parallel port can also be assigned to I/0 addresses 278H, 378H, or 3BCH and IRQ's 5 or 7. Furthermore, a routable DMA scheme allows Plug 'N' Play operating systems such as Windows 95 to route either DMA

channels 1 or 3 to the parallel port for ECP mode. EPP BIOS support must be provided by a device driver or TSR.

PCI Slots

The TD6BX-S/TI6BX-S supports **Four PCI Bus Mastering Slots** for high performance I/O add-on adapter cards. Four slots are available for full-length adapter cards. Supports **Matrix Independent PCI Interrupt Routing** for optimal multiple PCI adapter operations.

133MB/s data transfer rate on PCI bus can be compared to 33MB/s on EISA bus or 8MB/s on ISA bus. Synchronize Operation CPU to PCI Interface for best graphic performance.

It supports 133MB/s PCI to system DRAM bandwidth utilize Snoop Ahead Features.

Supports back to back sequential CPU to PCI Memory writes to PCI Burst Write for full PCI throughput.

ISA Slots

The TD6BX-S/TI6BX-S also supports three standard ISA 32-bit slots for standard AT compatible add-on cards. All slots are bus mastering.

AGP Slot

AGP (Accelerated Graphic Port) is the new bus standard that allows the bus speed to run at 66MHz with up to 133MHz data transfer capabilities. This is four times as fast as that of the PCI bus. At this speed, the AGP graphic cards can transfer data at a speed up to 532MB/second. This high data transfer rate enables 3D graphic applications, multiple media applications, uncompressed to run smoothly and display in broadcasting quality.

Adaptec AIC-7895 PCI/Ultra Wide SCSI *(for TD6BX-S only)*

AIC-7895 PCI to Dual Channel Ultra Wide Controller. This is the fastest and most reliable PCI to Ultra Wide SCSI controller on the market. Ultra Wide SCSI allows multiple high performance device support, such as hard drives, tape backup, CD-ROM, scanner, printer, plotter, etc. with data transfer rate up to 40MB/s for Ultra Wide SCSI and up to 80MB/s for two channels

Adaptec AIC-7880 PCI/Ultra Wide SCSI *(for TI6BX-S only)*

AIC-7880 PCI to SCSI Ultra Fast and Wide controller (160-pin). This is the fastest and most reliable PCI to Ultra Wide SCSI controller on the market. Ultra Wide SCSI allows multiple high performance device support, such as hard drives, tape backup, CD-ROM, scanner, printer, plotter, etc. with data transfer rate up to 40MB/s for Ultra Wide SCSI.

The termination on the board should be enabled if the controller card is in one end of the SCSI configuration chain. It should be disabled if the controller is in the middle of the chain (Termination of the two ends of the chain must be enabled. All other termination of device hook up to the middle of the chain must be disabled).

The built-in SCSI has active termination where termination can be enabled or disabled by software by running utility setup. (By pressing Control-A during boot system up, if utility is imbedded inside the system BIOS, or Boot up the system floppy disk and run the utility provided with the board, if Utility is not imbedded inside the system BIOS).

Installing Windows NT v4.0 and Adaptec AIC-7895

The following instructions explain how to install the Adaptec 7800 Family Manager Set v3.00, while installing Windows NT v4.0.

Please don't install Windows NT v4.0 from CD-ROM

Start your system with the Windows NT Boot Diskette in the floppy drive.

Insert diskette #2 when prompted. After a few moments you will see a blue screen. To setup Windows NT now, press ENTER.

Press S to skip Windows NT Setup's auto detection of your SCSI adapter.

Press S again to specify an additional device.

Press ENTER to select Others, and insert the Adaptec 7800 Family Manager Set v3.00 diskette.

Select the "Adaptec AHA290x/291x/294x/394x/4944/AIC78xx PCI SCSI Controller (NT 4.0)".

Press ENTER to continue with the Windows NT operating system set up. Following the instructions given on screen and in the Windows NT installation documentation.

TI6BX-S SCSI Termination Set-up (SW1.8)

The SCSI channel has both Low and High Bytes. 8-bit devices use only Low byte. 16-bit devices use both Low and High Bytes.

If Dip Switch SW1 location 8 is set to ON position, the termination of both low and high bytes are controlled by the SCSI set up menu. Please refer to SCSI cable and termination information. However, in this case both 8-bit devices and 16-bit devices are used such as CD-ROM is connected to 8-bit connector and 16-bit hard drive is connected to Wide SCSI connector, typically the onboard termination must be disabled. Since the 8-bit device does not have termination for High byte. In this case, the high byte termination on the motherboard must be enabled and the low bytes is disabled. The high byte termination can be always enabled by setting the dip-switch of SW1 location 8 to position OFF.

SCSI Termination	SW1 #8
Always Enable	OFF
High/Low Byte Enable	ON

CHAPTER 3: SYSTEM BOARD HARDWARE

CONNECTOR DESCRIPTIONS

When working with the TD6BX-S, it is extremely important that you should avoid Electrical Static Discharge (ESD). Always ground yourself by wearing a grounded wristband or ankle strap.

The figures on the previous page shows the component layout of the TD6BX-S system board with locations of the system board jumpers, and connectors. Note that most jumpers, switch, and connectors on the system board are labeled with proper names with pin 1 marked as '**1**'.

Following is the list of TD6BX-S system board connectors required to be installed for proper system operation. For detailed descriptions of these components, please refer to the next section. To avoid damaging the board and to have proper

operation, caution should be taken when connecting these components.

- Soft Power On (PWRON)
- Sleep Connector (SLEEP)
- Reset Connector (RESET)
- Speaker Connector (SPEAKER)
- Hard Disk Activity LED Connector (HDLED)
- Infrared Connector (INFRARED)
- Power LED and Keyboard Lock Connector (KEYLOCK)
- Keyboard/Mouse Connector (KEYBOARD)
- USB (Universal Serial Bus) Connector (USB)
- Serial Port Connector (SERIAL1, SERIAL2)
- Parallel Port Connector (PARALLEL)
- ATX Power Connector (ATX1)
- CPU Fan (FAN1, FAN2)
- Floppy Interface Connector (FLOPPY PORT)
- IDE Interface Connector (EIDE1, EIDE2)
- SCSI Interface Connector (Wide SCSI, SCSI2)

Soft-power On Connector (PWRON)

Pin	Description
1	ATX Power Controller
2	Soft Power On

Sleep Connector

Pin	Description
1	Sleep
2	Ground

Reset Connector

Pin	Description
1	Reset Input
2	Ground

Speaker Connector

Pin	Description
1	Speaker Data Out
2	Key (N/C)
3	Ground

Pin	Description
4	+5 VDC

Hard Disk Activity LED Connector

Pin	Description
1	LED Anode (+)
2	Key (N/C)
3	LED Cathode (-)
4	LED Anode (+)

Infrared Connector

Pin	Description
1	VCC
2	Mode3
3	Received Data signal
4	Ground
5	Transmitted Data signal

Power LED and Keyboard Lock Connector

Pin	Description
1	LED Power
2	Key (N/C)
3	Ground
4	Keyboard Lock
5	Ground

Keyboard/Mouse Connector

Pin	Description
1	Data Signal
2	Reserved (N/C)
3	Ground
4	+5Volt DC
5	Clock signal
6	N/C

Universal Serial Bus Connector

Pin	Descriptions	Pin	Description
5	Vcc1	1	Vcc0
6	DATA1-	2	DATA0-
7	DATA1+	3	DATA0+
8	Ground	4	Ground
10	Ground	9	Ground
12	Ground	11	Ground

Serial Port 1 & 2 Connectors

Pin	Description	Pin	Description
1	Carrier Detect (CD)	2	Receive Data (RXD)
3	Transmit Data (TXD)	4	Data Terminal Ready (DTR)
5	Signal Ground	6	Data Set Ready (DSR)
7	Request To Send (RTS)	8	Clear To Send (CTS)
9	Ring Indicator (RI)		

Parallel Port Connector

Pin	Description	Pin	Description
1	STROBE	14	AUTO FEED XT
2	Data Bit 0	15	ERROR
3	Data Bit 1	16	INIT
4	Data Bit 2	17	SLCT IN
5	Data Bit 3	18	Ground
6	Data Bit 4	19	Ground
7	Data Bit 5	20	Ground
8	Data Bit 6	21	Ground
9	Data Bit 7	22	Ground
10	ACK	23	Ground
11	BUSY	24	Ground
12	PE	25	Ground
13	SLCT		

ATX power connector

Pin	Row 1	Pin	Row 2
1	3.3Volt	2	3.3Volt
3	3.3Volt	4	-12Volt
5	Ground	6	Ground
7	5Volt	8	Soft-Power On
9	Ground	10	Ground
11	5Volt	12	Ground
13	Ground	14	Ground
15	RAWPOWER	16	-5Volt
17	5V(Soft-Logic)	18	5Volt
19	+12Volt	20	5Volt

TD6BX-S CPU Fan Connector JP2, JP4, JP8

Pin	Description
1	Ground
2	+12 V
3	Fan Tachometer

TI6BX-S CPU Fan Connector (FAN1, FAN2)

Pin	Description
1	Ground
2	+12 V
3	Fan Tachometer

Wake on LAN Connector JP3

To provide Trickle voltage for Wake on LAN add on card
(Required power supply with at least 750mA at 5volt trickle voltage)

Pin	Description
1	5 Volt trickle voltage
2	Ground
3	PME signal

Floppy Interface Connector

Pin	Description	Pin	Description
2	RPM	1	Ground
4	No Connection	3	Ground
6	No Connection	5	Key (N/C)
8	Index	7	Ground
10	Motor 1	9	Ground
12	Drive 2	11	Ground
14	Drive 1	13	Ground
16	Motor 2	15	Ground
18	Direction	17	Ground
20	Step	19	Ground
22	Write Data	21	Ground
24	Write Enable	23	Ground
26	Track0	25	Ground
28	Write Protect	27	Ground
30	Read Data	29	Ground
32	Head Select	31	Ground
34	Disk Change	33	Ground

Dual EIDE Interface Connector

Pin	Description	Pin	Description
2	Ground	1	IDE Reset/
4	Data 8	3	Data 7
6	Data 9	5	Data 6
8	Data 10	7	Data 5
10	Data 11	9	Data 4
12	Data 12	11	Data 3
14	Data 13	13	Data 2
16	Data 14	15	Data 1
18	Data 15	17	Data 0
20	Key (N/C)	19	Ground
22	Ground	21	PDREQ
24	Ground	23	I/O Write/
26	Ground	25	I/O Read/
28	ALE	27	No Connection

Pin	Description	Pin	Description
30	Ground	29	No Connection
32	IOCS16/	31	IDE IRQ 14
34	No Connection	33	Address A1
36	Address A2	35	Address A0
38	IDE Chip Select 1/	37	IDE Chip Select 0/
40	Ground	39	IDE Active/

SCSI Interface Connector (50 pin)

Pin	Description	Pin	Description
2	Data 0	1	Ground
4	Data 1	3	Ground
6	Data 2	5	Ground
8	Data 3	7	Ground
10	Data 4	9	Ground
12	Data 5	11	Ground
14	Data 6	13	Ground
16	Data 7	15	Ground
18	Data Parity	17	Ground
20	Ground	19	Ground
22	Ground	21	Ground
24	Ground	23	Ground
26	Terminator Power	25	Key (N/C)
28	Ground	27	Ground
30	Ground	29	Ground
32	Attention	31	Ground
34	Ground	33	Ground
36	Busy	35	Ground
38	Acknowledge	37	Ground
40	Reset	39	Ground

Pin	Description	Pin	Description
42	Message	41	Ground
44	Select	43	Ground
46	Command/Data	45	Ground
48	Request	47	Ground
50	In/Out	49	Ground

SCSI Interface Connector (68 pin)

Pin	Description	Pin	Description
35	Data12	1	Ground
36	Data13	2	Ground
37	Data14	3	Ground
38	Data15	4	Ground
39	Data Parity(8-15)	5	Ground
40	Data0	6	Ground
41	Data 1	7	Ground
42	Data 2	8	Ground
43	Data 3	9	Ground
44	Data 4	10	Ground
45	Data 5	11	Ground
46	Data 6	12	Ground
47	Data 7	13	Open
48	Data Parity(0-7)	14	Ground
49	Ground	15	Ground
50	Ground	16	Ground
51	Terminator Power	17	Terminator Power
52	Terminator Power	18	Terminator Power
53	Reserved	19	Reserved
54	Ground	20	Ground
55	Attention	21	Ground
56	Ground	22	Ground
57	Busy	23	Ground

Pin	Description	Pin	Description
58	Acknowledge	24	Ground
59	Reset	25	Ground
60	Message	26	Ground
61	Select	27	Ground
62	Command/Data	28	Ground
63	Request	29	Ground
64	In/Out	30	Ground
65	Data8	31	Ground
66	Data9	32	Ground
67	Data10	33	Ground
68	Data11	34	Ground

AWARD BIOS SETUP

This manual describes the Award BIOS Setup program. The Setup program lets you modify basic system configuration settings. The settings are then stored in a dedicated battery-backed memory, called CMOS RAM, that retains the information when the power is turned off.

The Award BIOS in your computer is a customized version of an industry-standard BIOS for IBM PC AT-compatible personal computers. It supports Intel x86 and compatible processors. The BIOS provides critical low-level support for the system central processing, memory, and I/O subsystems.

The Award BIOS has been customized by adding important, but nonstandard, features such as virus and password protection, power management, and detailed fine-tuning of the chipset controlling the system.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

Starting Setup

The Award BIOS is immediately activated when you first turn on the computer. The BIOS reads system configuration information in CMOS RAM and begins the process of checking out the system and configuring it through the power-on self test (POST).

When these preliminaries are finished, the BIOS seeks an operating system on one of the data storage devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and hands control of system operations to it.

To start Setup, press the DEL key some time before or while a message similar to this appears briefly at the bottom of the screen during POST:

TO ENTER SETUP PRESS DEL KEY

If the message disappears before you press DEL and if you wish to enter Setup, reboot the system.

Setup Keys

These keys help you navigate in Setup:

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc	Main Menu: Quit and not save changes into CMOS RAM. Other pages: Exit current page and return to Main Menu
PgUp	Increase the numeric value or make changes
PgDn	Decrease the numeric value or make changes
+	Increase the numeric value or make changes
-	Decrease the numeric value or make changes
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2	Change color from total 16 colors. F2 to select Shift-F2 color forward, Shift-F2 to select color backward
F3	Calendar, only for Status Page Setup Menu
F5	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6	Load the default CMOS RAM value from BIOS default table, only for Option Page Setup Menu
F7	Load the default
F10	Save all the CMOS changes, only for Main Menu

Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press Esc or the F1 key again.

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the Award BIOS supports an override to the CMOS settings that resets your system to its default configuration.

You can invoke this override by immediately pressing Insert when you restart your computer. You can restart by either using the ON/OFF switch, the RESET button or by pressing Ctrl-Alt-Delete.

The best advice is to alter only settings that you thoroughly understand. In particular, do not change settings in the Chipset

screen without a good reason. The Chipset defaults have been carefully chosen by Award or your system manufacturer for the best performance and reliability. Even a seemingly small change to the Chipset setup may cause the system to become unstable.

Setup Variations

Not all systems have the same Setup. While the basic look and function of the Setup program remains the same for all systems, your Setup screens may differ from the screens described here. Each system design and chipset combination requires custom configurations. In addition, the final appearance of the Setup program depends on your system designer. Your system designer can decide that certain items should not be available for user configuration and remove them from the Setup program.

When you enter the Award BIOS CMOS Setup Utility, a Main Menu appears on the screen. The Main Menu allows you to select from several Setup functions and two exit choices. Use the arrow keys to select among the items and press Enter to accept and enter the sub-menu.

A brief description of each highlighted selection appears at the bottom of the screen.

Following is a brief summary of each Setup category.

Standard CMOS	Options in the original PC AT-compatible BIOS.
BIOS Features	Award enhanced BIOS options.
Chipset Features	Options specific to your system chipset.
Power Management	Advanced Power Management (APM) options.
PnP/PCI Configuration	Plug and Play standard and PCI Local Bus configuration options.
Integrated Peripherals	I/O subsystems that depend on the integrated peripherals controller in your system.
Supervisor/User Password Setting	Change, set, or disable a password. In BIOS versions that allow separate user and supervisor passwords, only the supervisor password permits access to Setup. The user password generally allows only power-on access.
IDE HDD Auto Detection	Automatically detect and configure IDE hard disk parameters.
HDD Low Level Format	This option does not appear in many BIOS versions. Most manufacturers of IDE hard drives strongly recommend that you do not run a low-level format on their drives, because of the danger that the bad-track table may be over-written. Award supplies this utility

	for service personnel only. If you feel that you need to run a low-level format on your hard drive, contact your drive manufacturer for instructions!
Load BIOS Defaults	BIOS defaults are factory settings for the most stable, minimal-performance system operations.
Load Setup Defaults	Setup defaults are factory settings for optimal-performance system operations.
Save & Exit Setup	Save settings in nonvolatile CMOS RAM and exit Setup.
Exit Without Save	Abandon all changes and exit Setup.

The 82443BX mother board comes with the Award BIOS from Award Software Inc. Enter the Award BIOS program Main Menu as follows:

1. Turn on or reboot the system. After a series of diagnostic checks, the following message appear: Press <DEL> to enter setup
2. Press the <DEL> key and the main program screen will appear as follows:

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

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

3. Use the arrow key to select an option and press <ENTER> to modify the system parameters to reflect the option installed in the system.
4. Return to the Main Menu anytime by pressing <ESC> key.
5. In the Main Menu, the " SAVE AND EXIT SETUP " will save the changes and " EXIT WITHOUT SAVING " will not save the change.

I. STANDARD CMOS SETUP

Standard CMOS Setup allows the user to record the basic system hardware configuration and set the system clock and error handling. Modify the configuration values of this option is necessary only when changing the system hardware, or when the configuration stored in CMOS memory has been lost or damaged.

1. Choose " STANDARD CMOS SETUP " from the Main Menu and screen will display the options following:

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

Date (mm:dd:yy) : Wed, April. 8 1998
Time(hh:mm:ss) : 00:00:00

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDE	SECTOR	MODE
Primary Master:	Auto	0	0	0	0	0	0	Auto
Primary Slave:	Auto	0	0	0	0	0	0	Auto
Secondary Master:	Auto	0	0	0	0	0	0	Auto
Secondary Slave:	Auto	0	0	0	0	0	0	Auto

Drive A : 1.44M , 3.5in.
Drive B : None
Video : EGA / VGA
Halt On : All Errors

Base Memory : 640K
Extended Memory : 15360K
Other Memory : 384K
Total Memory : 16384K

ESC : Quit ↑↓→← : Select Item PU / PD / + / - : Modify
F1 : Help (Shift) F2 : Change Color

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/- keys.

Date (mm:dd:yy) / Time (hh:mm:ss)

The BIOS determines the day of the week from the other date information. This field is for information only.

Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the left or right arrow key to move to the desired field. Press the PgUp or PgDn key to increment the setting, or type the desired value into the field. Set the current date and time.

Primary / Secondary of Master / Slave

The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard drive types, such as SCSI drives.

NOTE: We recommend that you select type AUTO for all drives.

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detects its specifications during POST, every time the system boots.

If you do not want to select drive type AUTO, other methods of selecting the drive type are available:

1. Match the specifications of your installed IDE hard drive with the preprogrammed values for drive types 1 - 45.
2. Select USER and enter values into each drive parameter field.
3. Use the IDE HDD AUTO DECTECTION function in setup. Here is a brief explanation of drive specifications:

Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any pre-defined type are classified as type USER. Size: Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.

Cyls: Number of cylinders

Head: Number of heads

Precomp: Write precompensation cylinder

Landz: Landing zone

Sector: Number of sectors

Mode: Auto, Normal, large, or LBA

Auto: The BIOS automatically determines the optimal mode.

Normal: Maximum number of cylinders, heads, and sectors supported are 1024, 16, and 63.

Large: For drives that do not support LBA and have more than 1024 cylinders.

LBA (Logical Block Addressing): During drive accesses, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders. This field records the specification for all non-SCSI hard disk drives install in your system. Refer to the respective documentation on how to install the drives.

Drive A/B

Set this field to the types of floppy disk drives installed in the system. Such as 1.44MB, 3.5in or 2.88MB, 3.5in.

Select the correct specifications for the diskette drive(s) installed in the computer.

None	No diskette drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 KB capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive;1.2 MB capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 KB capacity 1.44M, 3.5 in
1.44M, 5.25 in	3-1/2 inch double-sided drive; 1.44 MB capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 MB capacity

Video

Select the type of primary video subsystem in your computer. The BIOS usually detects the correct video type automatically.

The BIOS supports a secondary video subsystem, but you do not select it in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode.
CGA 80	Color Graphics Adapter, power up in 80 column mode.
MONO	Monochrome adapter, includes high resolution monochrome adapters.

During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections:

Halt On

During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections:

No errors	POST does not stop for any errors.
All errors	If the BIOS detects any non-fatal error, POST stops and prompts you to take corrective action.
All,But Keyboard	POST does not stop for a keyboard error, but stops for all other errors.
All,But Diskette	POST does not stop for diskette drive errors, but stops for all other errors.
All,But Disk/Key	POST does not stop for a keyboard or disk error, but stops for all other errors. Set this field to the type of video display card installed in the system.

Memory

You cannot change any values in the Memory fields; they are only for your information. The fields show the total installed random access memory (RAM) and amounts allocated to base memory, extended memory, and other (high) memory. RAM is counted in kilobytes (KB: approximately one thousand bytes) and megabytes (MB: approximately one million bytes).

RAM is the computer's working memory, where the computer stores programs and data currently being used, so they are accessible to the CPU. Modern personal computers may contain up to 64 MB, 128 MB, or more.

Base Memory:

Typically 640 KB. Also called conventional memory. The DOS operating system and conventional applications use this area.

Extended Memory:
Above the 1-MB boundary. Early IBM personal computers could not use memory above 1 MB, but current PCs and their software can use extended memory.

Other Memory:
Between 640 KB and 1 MB; often called High memory. DOS may load terminate-and-stay-resident (TSR) programs, such as device drivers, in this area, to free as much conventional memory as possible for applications. Lines in your CONFIG.SYS file that starts with LOADHIGH load programs into high memory.

II. BIOS features setup

This screen contains industry-standard options additional to the core PC AT BIOS. This section describes all fields offered by Award Software in this screen. Some fields may vary from those in your Setup program. Your system board designer may omit or modify some fields. The BIOS features set-up allows the user to improve the system performance or set-up some system features according to user preference.

ROM PCI/ISA BIOS
BIOS FEATUREE SET-UP
AWARD SOFTWARE, INC.

Virus Warning	:	Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	:	Enabled	C8000-CBFFF Shadow	: Enabled
External Cache	:	Enabled	CC000-CFFFF Shadow	: Enabled
CPU L2 Cache ECC	:	Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power On Self Test	:	Disabled	D4000-D7FFF Shadow	: Disabled
Boot Sequence	:	A,C,SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	:	Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up Floppy Seek	:	Enabled		
Boot Up NumLock Status	:	On		
Gate A20 Option	:	Fast		
Typematic Rate Setting	:	Disabled		
Typematic Rate (Chars/Sec)	:	6		
Typematic Delay (Msec)	:	250		
Security Option	:	Setup		
PCI/VGA Palette Snoop	:	Disabled		
MPS Version Control	:	1.4		
forOS	:	Non-OS2		
OS Select for DRAM>64M				
Report No FDD for Win95	:	No		

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

Virus Warning

When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an anti-virus program. Keep in mind that this feature protects only his boot sector, not the entire hard drive.

NOTE: Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to

run such a program, we recommend that you first disable the virus warning.

The option will activated automatically when the system boots up causing a warning message to appear if there are anything attempts to access the boot sector or hard disk partition table.

CPU Internal & External Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU.

The External Cache field may not appear if your system does not have external cache memory.

Two options allow the user to enable or disable the external and internal.

Quick Power On Self Test

Select Enabled to reduce the amount of time required to run the power-on self-test (POST). A quick POST skips certain steps. We recommend that you normally disable quick POST. Better to find a problem during POST than lose data during your work.

The option allows the user to speed up the power on self-test routine.

Boot Sequence

The original IBM PCs loaded the DOS operating system from drive A (floppy disk), so IBM PC-compatible systems are designed to search for an operating system first on drive A, and then on drive C (hard disk). However, the BIOS now offers 10 different boot sequence options of three drives each. In addition to the traditional drives A and C, options include IDE hard drives D, E, and F; plus a SCSI hard drive and a CD-ROM drive.

The option is allowed the user to set which device priority to boot.

Swap Floppy Drive

This field is effective only in systems with two floppy drives. Selecting Enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

This option allows the user to boot the floppy ” instead of boot A by the default setting.

Boot Up Floppy Seek

When Enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks; drives with 720KB, 1.2MB, and 1.44MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, it is recommended that you set this field to Disabled to save time.

Enabled: During POST, BIOS checks the track number of the floppy disk drive to see it is 40 or 80 tracks.

Boot Up Numlock Status

Toggle between On or Off to control the state of the NumLock key when the system boots. When toggled On, the numeric keypad generates numbers instead of controlling cursor operations.

This option allows the user to activate the number lock function while booting.

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 MB. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset to provide support for gate A20.

Normal: keyboard

Fast: chipset

Typematic Rate Setting

When Disabled, the following two items (Typematic Rate and Typematic Delay) are irrelevant. Keystrokes repeat at a rate determined by the keyboard controller in your system.

When Enabled, you can select a typematic rate and typematic delay. This option adjusts the keystroke repeat rate.

Typematic (Chard/Sec)

When the typematic rate setting is enabled, you can select a typematic rate (the rate at which character repeats when you hold down a key) of 6, 8, 10,12, 15, 20, 24 or 30 characters per second.

Range between 6 to 30 characters per second. This option controls the speed of keystroke.

Typematic Delay (Msec)

When the typematic rate setting is enabled, you can select a typematic delay (the delay before key strokes begin to repeat) of 250, 500, 750 or 1000 milliseconds.

This option sets the time interval for displaying the first and the second characters.

Security Option

If you set a password, select whether the password is required every time the System boots, or only when you enter Setup.

This option prevents unauthorized system boot up or use of the BIOS set up.

PCI/VGA Palette Snoop

Your BIOS Setup many not contain this field. If the field is present, leave at Disabled.

It determines whether the NOEG USA card can work with PCI / VGA or not.

MPS Version Control for OS *(for TD6BX-S only)*

MPS (Multi-Processor Specification) is a specification of architecture systems with two or more processors.

MPS version 1.4 added extend configuration tables to improve support for multiple PCI bus configurations and improve future expandability.

For instance, both Novell IntranetWare 4.11 and Microsoft Windows NT Server 4.0 support the MPS 1.4 specification.

BIOS Setup from the default of 1.1 to 1.4 if your operating system supports the 1.4 version.

OS Select for DRAM > 64

This option special supports the operating system OS/2 to use the DRAM over 64MB. For the other operating systems as win95 or NT etc. you don't need to select this field

Report No FDD for Win95

Video BIOS Shadow

Software that resides in a read-only memory (ROM) chip on a device is called firmware. The Award BIOS permits shadowing of firmware such as the system BIOS, video BIOS, and similar operating instructions that come with some expansion peripherals, such as, for example, a SCSI adaptor.

Shadowing copies firmware from ROM into system RAM, where the CPU can read it through the 16-bit or 32-bit DRAM bus. Firmware not shadowed must be read by the system through the 8-bit system bus. Shadowing improves the performance of the system BIOS and similar ROM firmware for expansion peripherals, but it also reduces the amount of high memory (640 KB to 1 MB) available for loading device drivers, etc.

Enable shadowing into each section of memory separately. Many system designers hardwire shadowing of the system BIOS and eliminate a System BIOS Shadow option.

Video BIOS shadows into memory area C0000-C7FFF. The remaining areas shown on the BIOS Features Setup screen may be occupied by other expansion card firmware. If an expansion

peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it into the correct area of RAM.

This option maps the VGA BIOS to the system RAM location.

C8000-DBFFF to DC000-DFFFF Shadow

This option is used to shadow other expension card ROMs.

III. CHIPSET FEATURES SETUP

This section describes features of the Intel 82440BX PCI set. If your system contains a different chipset, this section will bear little resemblance to what you see on your screen.

ADVANCED OPTIONS. The parameters in this screen are for system designers, service personnel, and technically competent users only. Do not reset these values unless you understand the consequences of your changes.

NOTE: This chapter describes all fields offered by Award Software in this screen. Your system board designer may omit or modify some fields.

Chip-set Features Set-up is changing the values of the chip-set registers. Those features allow advanced users to optimize the system to get maximum performance.

ROM PCI/ISA BIOS
CHIP-SET FEATUREE SET-UP
AWARD SOFTWARE, INC.

Auto Configuration	:	Enabled	Auto Detect DIMM/PCI clk	: Enabled
EDO DRAM Speed Selection	:	60ns	Spread Spectrum Modulated	: Enabled
EDO CASx# MA Wait State	:	2	CPU Host Clock	: 66/100
EDO RASx# Wait State	:	2	Current System Temperature	: 39C/98F
SDRAM RAS-to-CAS Delay	:	3	Current CPU FAN 1 Speed	: 4115RPM
SDRAM RAS Percharge Time	:	3	Current CPU FAN 2 Speed	: 4115RPM
SDRAM CAS latency Time	:	2	Current CPU FAN 3 Speed	: 4115RPM
DRAM Data Integrity Mode	:	Non-ECC	INO(V) : 2 - 2.8V	IN1(V) : 1.5 V
System BIOS Cacheable	:	Enabled	IN2(V) : 3.3V	IN3(V) : 5 V
Video BIOS Cacheable	:	Enabled	IN4(V) : 12 V	IN5(V) : -12 V
			IN6(V) : -5 V	
Video RAM Cacheable	:	Enabled		
8 Bit I/O Recovery Time	:	1		
16 Bit I/O Recovery Time	:	1		
Memory Hole At 15M-16M	:	Disabled	ESC: Quit	↑ ↓ → ←: Select Item
Passive Release	:	Enabled	F1 : Help	PU/PD/+/- : Modify
Delay Transaction	:	Enabled	F5 : Old Values (Shift) F2	: Color
AGP Aperture Size (MB)	:	64	F6 : Load BIOS Defaults	
			F7 : Load Setup Defaults	

(for TD6BX-S only)

ROM PCI/ISA BIOS
CHIP-SET FEATUREE SET-UP

Auto Configuration	:	Enabled	Auto Detect DIMM/PCI clk	: Enabled
EDO DRAM Speed Selection	:	60ns	Spread Spectrum Modulated	: Enabled
EDO CASx# MA Wait State	:	2	CPU Host Clock	: 66/100
EDO RASx# Wait State	:	2	Current System Temperature	: 39C/98F
SDRAM RAS-to-CAS Delay	:	3	Current CPU FAN 1 Speed	: 4115RPM
SDRAM RAS Percharge Time	:	3	INO(V) : 2 - 2.8V	IN1(V) : 1.5 V
SDRAM CAS latency Time	:	2	IN2(V) : 3.3V	IN3(V) : 5 V
DRAM Data Integrity Mode	:	Non-ECC	IN4(V) : 12 V	IN5(V) : -12 V
System BIOS Cacheable	:	Enabled	IN6(V) : -5 V	
Video BIOS Cacheable	:	Enabled		
Video RAM Cacheable	:	Enabled		
8 Bit I/O Recovery Time	:	1		
16 Bit I/O Recovery Time	:	1		
Memory Hole At 15M-16M	:	Disabled	ESC: Quit	↑↓→←: Select Item
Passive Release	:	Enabled	F1 : Help	PU/PD/+/- : Modify
Delay Transaction	:	Enabled	F5 : Old Values (Shift) F2	: Color
AGP Aperture Size (MB)	:	64	F6 : Load BIOS Defaults	
			F7 : Load Setup Defaults	

(for TD6BX-S only)

Auto Configuration

Auto Configuration selects predetermined optimal values of chipset parameters. When Disabled, chipset parameters revert to setup information stored in CMOS. Many fields in this screen are not available when Auto Configuration is Enabled.

Auto Configuration selects predetermined optimal values of chip-set parameters. When Disabled, chip-set parameters revert to set up information stored in CMOS. Many fields in this screen are not available when Auto Configuration is Enabled.

EDO DRAM Speed Selection

The value in this field depends on performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

The DRAM timing is controlled by the DRAM Timing Registers. The timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.

50ns	DRAM Timing Type
60ns	DRAM Timing Type

EDO CASx# MA Wait State

You could select the timing control type of EDO DRAM CAS MA.

EDO RASx# Waite State

You could select the timing control type of EDO DRAM RAS MA.

SDRAM RAS-to-CAS Delay

You can select RAS to CAS Delay time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

SDRAM RAS Precharge Time

Defines the length of time for Row Address Strobe is allowed to precharge

SDRAM CAS latency Time

You can select CAS latency time in HCLKs of 2/2or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

DRAM Data Integrity Mode

Set Parity, ECC, or Disabled, depending on the type of DRAM installed in the system.

System BIOS Cacheable

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Enabled	BIOS access cached
Disabled	BIOS access not cached

Video BIOS Cacheable

Select Enabled allows caching of the video BIOS ROM at C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

Enabled	Video BIOS access cached
Disabled	Video BIOS access not cached

Video RAM Cacheable

Select Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

8 Bit I/O Recovery Time

The recovery time is the length of time, measured in CPU clocks, which the system will delay after the completion of an input/output request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed to allow for the completion of the I/O.

This item allows you to determine the recovery time allowed for 8 bit I/O. Choices are from NA, 1 to 8 CPU clocks.

16 Bit I/O Recovery Time

This item allows you to determine the recovery time allowed for 16 bit I/O. Choices are from NA, 1 to 4 CPU clocks.

Memory Hole At 15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

Enabled	Memory hole supported.
Disabled	Memory hole not supported.

Passive Release

When Enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM..

Delayed Transaction

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

AGP Aperture Size (MB)

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

Auto Detect DIMM/PCI clk

Select Enabled for this option, so the system will detect automatic the DIMM/PCI.

Spread Spectrum Modulated

Select Enabled for this option to take the advance of spread spectrum of system

CPU Host Clock

This option allows you to set up host bus with different value:

66MHz: 66, 68, 75 and 83

100MHz: 100, 103, 112, 133, default

Current System Temperature

This option monitor the temperature of the system including the CPU.

Current CPU FAN 1-3 Speed *(for TD6BX-S only)*

These options are reading the current RPM of the fan and control the speed of the fan's RPM that depend on the system or CPU temperature condition.

Current CPU FAN 1 Speed *(for TI6BX-S only)*

These options are reading the current RPM of the fan and control the speed of the fan's RPM that depend on the system or CPU temperature condition.

IN0(V) to IN6(V)

These options are reading the current voltage of the power supply that provided the input into the system.

IV.POWER MANAGEMENT SETUP

The Power Management Set-up allows the user to configure the system to most effectively save energy while operating in a manner consistent with your own style of computer use.

ROM PCI/ISA BIOS
POWER MANAGEMENT SET-UP
AWARD SOFTWARE, INC.

ACPI Function	:	Enabled	** Reload Global Timer Events **
Power Management	:	Disable	IRQ [3-7,9-15], NMI : Enabled
PM Control by APM	:	Yes	Primary IDE 0 : Disabled
Video Off Method	:	V/H Sync+Blank	Primary IDE 1 : Disabled
Video Off After	:	Standby	Secondary IDE 0 : Disabled
Modem Use IRQ	:	3	Secondary IDE 1 : Disabled
Doze Mode	:	Disable	Floppy Disk : Disabled
Standby Mode	:	Disable	Serial Port : Enabled
Suspend Mode	:	Disable	Parallel Port : Disabled
HDD Power Down	:	Disable	
Throttle Duty Cycle	:	62.5%	
VGA Active Monitor	:	Enabled	ESC: Quit ↑↓→←: Select Item
Soft-off by PWR-BTTN	:	Instant-Off	F1 : Help PU/PD/+/- : Modify
Resume by Ring	:	Enable	F5 : Old Values (Shift) F2 : Color
Resume by Alarm	:	Enable	F6 : Load BIOS Defaults
Date (of Month) Alarm	:	1-31	F7 : Load Setup Defaults
Time (hh:mm:ss) Alarm	:	12:00:00	
Wake up on LAN	:	Enabled	
IRQ8 Break Suspend	:	Disabled	

(for TD6BX-S only)

ROM PCI/ISA BIOS
POWER MANAGEMENT SET-UP
AWARD SOFTWARE, INC.

ACPI Function	:	Enabled	** Reload Global Timer Events **
Power Management	:	Disable	IRQ [3-7,9-15], NMI : Enabled
PM Control by APM	:	Yes	Primary IDE 0 : Disabled
Video Off Method	:	V/H Sync+Blank	Primary IDE 1 : Disabled
Video Off After	:	Standby	Secondary IDE 0 : Disabled
Modem Use IRQ	:	3	Secondary IDE 1 : Disabled
Doze Mode	:	Disable	Floppy Disk : Disabled
Standby Mode	:	Disable	Serial Port : Enabled
Suspend Mode	:	Disable	Parallel Port : Disabled
HDD Power Down	:	Disable	
Throttle Duty Cycle	:	62.5%	
VGA Active Monitor	:	Enabled	ESC: Quit ↑↓→←: Select Item

Soft-off by PWR-BTTN : Instant-Off Resume by Ring : Enable Wake up on LAN : Enabled IRQ8 Break Suspend : Disabled	F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults

(for TI6BX-S only)

ACPI (Advanced Configuration and Power Management Interface)

ACPI has three runtime components:

1.ACPI Tables - Describe the interfaces to the hardware. These descriptions allow the hardware to be built in flexible ways and can describe arbitrary operation sequences needed to make the hardware function. ACPI Tables may contain p-code language, the interpretation of which is performed by the OS.

2.ACPI Registers - The constrained part of the hardware interface, described (at least in location) by the ACPI Tables.

3.ACPI BIOS - The portion of the firmware that is compatible with the ACPI Specification requirements. Typically, this is the code that boots the machine (as legacy BIOSs have done) and implements interfaces for suspend, resume and some restart operations. The ACPI Description Tables are also provided by the ACPI BIOS.

Power Management

This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes. See the section PM Timers for a brief description of each mode.

This table describes each power management mode:

Max Saving	Maximum power savings. Only Available for SL CPUs. Inactivity period is 1 minute in each mode.
User Define	Set each mode individually. Select time-out periods in the PM Timers section, following.
Min Saving	Minimum power savings. Inactivity period is 1 hour in each mode (except the hard drive).

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Doze Mode
2. Standby Mode
3. Suspend Mode
4. HDD Power Down

There are four selections for Power Management, three of which have fixed mode settings.

Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- **ONLY AVAILABLE FOR SL CPU'S**. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

PM Control by APM

If Advanced Power Management (APM) is installed on your system, selecting Yes gives better power savings.

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock.

If the Max. Power Saving is not enabled, it will be preset to *No*.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC + Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video

	buffer.
DPMS	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the software supplied for your video subsystem to select video power management values. Initial display power management signaling.

Video Off After

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

N/A	Monitor will remain on during power saving modes.
Suspend	Monitor blanked when the systems entered the Suspend mode.
Standby	Monitor blanked when the system enters Standby mode.
Doze	Monitor blanked when the system enters any power saving mode.

Modem Use IRQ

This option allows you to select the IRQ for your modem

Doze Mode

After the selected period of system inactivity (1 minute to 1 hour), the CPU clock runs at slower speed while all other devices still operate at full speed.

When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Standby Mode

After the selected period of system inactivity (1 minute to 1 hour), the fixed disk drive and the video shut off while all other devices still operate at full speed.

When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode

After the selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off.

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off

HDD Power Down

After the selected period of drive inactivity (1 to 15 minutes), the hard disk drive powers down while all other devices remain active.

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Throttle Duty Cycle

When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.
When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

VGA Active Monitor

When Enabled, any video activity restarts the global timer for Standby mode.

Soft-Off by PWR-BTTN

This option allows the user to set the soft off power button to instant off the system or set to 4 second of time to hole the power but to shut down the system.

Resume by Ring

This option allows the user to wake up the system by the modem access from the suspend mode.

Resume by Alarm *(for TD6BX-S only)*

This option allows the user to wake up the system by Date of month and time

Wake up on LAN

This option is allowed to wake up the system by the network add-on card with new version of Intel EtherExpress PRO/100+ Management adapter to fully support the benefits of remote PC management. Wake up on LAN technology enables PCs to be turned on over the network.

IRQ8 Break Suspend

You can turn On or Off monitoring of IRQ 8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

Reload Global Timer Events

When Enabled, an event occurring on each device listed below restarts the global time for Standby mode.

IRQ [3-7, 9-15], NMI

Primary IDE0

Primary IDE1

Secondary IDE0

Secondary IDE1

Floppy Disk

Serial Port

Parallel Port

V. PNP/PCI CONFIGURATION

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make changes to the default settings.

ROM PCI/ISA BIOS
PNP / PCI CONFIGURATION SET-UP
AWARD SOFTWARE, INC.

PNP OS Installed	: No	Slot 1 use IRQ No.	: A
Resources Control By	: Manual	Slot 2 use IRQ No.	: A
Reset Conf. Data	: Disabled	Slot 3 use IRQ No.	: A
IRQ-3 assigned to	: PCI/ISA PnP	Slot 4 use IRQ No.	: A
IRQ-4 assigned to	: PCI/ISA PnP	Used MEM base addr	: N/A
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: PCI/ISA PnP		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP	ESC: Quit	↑↓→←: Select Item
IRQ-14 assigned to	: PCI/ISA PnP	F1 : Help	PU/PD/+/- : Modify
IRQ-15 assigned to	: PCI/ISA PnP	F5 : Old Values (Shift) F2	: Color
DMA-0 assigned to	: PCI/ISA PnP	F6 : Load BIOS Defaults	
DMA-1 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults	
DMA-3 assigned to	: PCI/ISA PnP		
DMA-5 assigned to	: PCI/ISA PnP		
DMA-6 assigned to	: PCI/ISA PnP		
DMA-7 assigned to	: PCI/ISA PnP		

PNP OS Installed

Select Yes if the system operating environment is Plug-and-Play aware (e.g., Windows 95).

Resources Control By

The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play-compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

Reset Conf. Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system

reconfiguration has caused such a serious conflict that the operating system cannot boot.

IRQ n Assigned To

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

DMA n Assigned To

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel.

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

Slot n Use IRQ No.

This option allows you to select the IRQ for each slot, but it is recommended that the user selects (A) for automatic to avoid the IRQ conflict.

Used Mem base addr:

Select a base address for the memory area used by any peripheral that requires high memory.

VI. INTEGRATED PERIPHERALS SET-UP

The integrated Peripherals uses to configure the add on the peripheral devices.

ROM PCI/ISA BIOS
INTEGRATED PERIPHERALS SET-UP
AWARD SOFTWARE, INC.

IDE HDD Block Mode : Enabled	TxD, RxD Active : Hi, Hi
IDE Primary Master PIO : Auto	IR Transmission delay : Enabled
IDE Primary Slave PIO : Auto	Onboard Parallel Port : 378/IRQ7
IDE Secondary Master PIO : Auto	Parallel Port Mode : SPP
IDE Secondary Slave PIO : Auto	ECP Mode Use DMA : 3
IDE Primary Master UDMA : Auto	EPP Mode Select : EPP1.9
IDE Primary Slave UDMA : Auto	
IDE Secondary Master UDMA: Auto	
IDE Secondary Slave UDMA : Auto	
On-Chip Primary PCI IDE : Enabled	
On-Chip Secondary PCI IDE : Enabled	
On-Board PCI SCSI Chip : Enabled	
USB Keyboard Support : Disabled	
Init AGP Display First : Disabled	
KBC Input Clock : 8 MHZ	ESC: Quit ↑↓→←: Select Item
On-Board FDC Controller : Enabled	F1 : Help PU/PD/+/- : Modify
On-Board Serial Port 1 :3F8 / IRQ4	F5 : Old Values (Shift) F2 : Color
On-Board Serial Port 2 : 2F8 / IRQ3	F6 : Load BIOS Defaults
UART Mode Select : Normal	F7 : Load Setup Defaults

(for TD6BX-S only)

ROM PCI/ISA BIOS
INTEGRATED PERIPHERALS SET-UP
AWARD SOFTWARE, INC.

IDE HDD Block Mode : Enabled	Onboard Parallel Port : 378/IRQ7
IDE Primary Master PIO : Auto	Parallel Port Mode : SPP
IDE Primary Slave PIO : Auto	
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
IDE Primary Master UDMA : Auto	
IDE Primary Slave UDMA : Auto	
IDE Secondary Master UDMA: Auto	
IDE Secondary Slave UDMA : Auto	
On-Chip Primary PCI IDE : Enabled	
On-Chip Secondary PCI IDE : Enabled	
On-Board PCI SCSI Chip : Enabled	
USB Keyboard Support : Disabled	
Init AGP Display First : Disabled	ESC: Quit ↑↓→←: Select Item
KBC Input Clock : 8 MHZ	F1 : Help PU/PD/+/- : Modify
On-Board FDC Controller : Enabled	F5 : Old Values (Shift) F2 : Color
On-Board Serial Port 1 :3F8 / IRQ4	F6 : Load BIOS Defaults
On-Board Serial Port 2 : 2F8 / IRQ3	F7 : Load Setup Defaults
UART Mode Select : Normal	
TxD, RxD Active : Hi, Hi	

(for TI6BX-S only)

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

This allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD).

Enabled	IDE controller uses block mode.
Disabled	IDE controller uses standard mode.

IDE Primary / Secondary Master / Slave PIO

The four IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

IDE Primary / Secondary Master / Slave PIO UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

On-Chip Primary / Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

On-Board PCI SCSI Chip

This option allows the user to enable the on board SCSI.

USB Keyboard Support

This option supports the USB keyboard to access the system.

KBC Input Clock

Keyboard control input clock.

On-Board FDC Controller

This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

On-Board Serial Port 1 & 2

This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address.

UART Mode Select

This item allows you to determine which Infra Red (IR) function of onboard I/O Chip

RxD, TxD Active

This item allows you to determine the active of RxD, TxD.

IR Transmission delay

ECP Mode Use DMA

EPP Mode Select

Load BIOS Defaults

Load BIOS Defaults option loads the default BIOS values from Award manufacturing. The BIOS will display all the values of the configuration fields.

Load Set Up Defaults

Load Set-Up option the defaults system values to the system configuration fields. If the CMOS is corrupted the defaults are loaded automatically.

Supervisor / User Password

These two options allow the user to set the password. If there have more than two users to access into the system. The supervisor has the right to change the CMOS set up. The user can not set up the CMOS.

IDE Hard Drive Auto Detection

This option detects the IDE hard drive installed into the system. That is automatically detect the hard drive and set to the user needs.

Hard Drive Low Level Format

This option allows the user to low level format the IDE hard drive as need.

Save & Exit Set Up

This option saves the change in the CMOS set up before exit or use F10 to save.

Exit Without Save

This option will not save the change in the CMOS set up before exit or use Esc key.

Programming Flash BIOS

The BIOS can be reprogrammed or updated instead of replacing the BIOS EPROM. The Utility has been shipped with the board and the BIOS ROM file will be obtain from A.I.R/U.H.C's BBS. The contact address is at the end of manual. Following is the procedure to update the BIOS.

1. Prepare a diskette with clean boot and use that diskette to boot the system.
2. Prepare a BIOS ROM file on the diskette that is ready to use.
3. Insert the utility diskette into drive A: and type the name of the utility. The system will request the BIOS ROM file after running the utility.

4. Insert a diskette with BIOS ROM file into drive A: and follow the instruction to operate the flash utility.

!!WARNING!!

We suggest not updating the BIOS unless there have the problem. The manufacturing will not responsible for the system by flashing incorrect procedure.

APPENDIX A: AWARD ERROR MESSAGES AND BEEP CODES

Error Messages

During the power-on self test (POST), the BIOS either sounds a beep code or displays a message when it detects a correctable error.

Following is a list of POST messages for the ISA BIOS kernel. Specific chipset ports and BIOS extensions may include additional messages. An error message may be followed by a prompt to press F1 to continue or press DEL to enter Setup.

Beep

Currently the only beep code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps. Any other beeps are probably a RAM problem.

BIOS ROM checksum error - System halted

The checksum of the BIOS code in the BIOS chip is incorrect, indicating the BIOS code may have become corrupt. Contact your system dealer to replace the BIOS.

CMOS battery failed

CMOS battery is no longer functional. Contact your system dealer for a replacement battery.

CMOS checksum error - Defaults loaded

Checksum of CMOS is incorrect, so the system loads the default equipment configuration. A checksum error may indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

CPU at nnnn

Displays the running speed of the CPU.

Display switch is set incorrectly.

The display switch on the motherboard can be set to either monochrome or color. This message indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

Press ESC to skip memory test

The user may press Esc to skip the full memory test.

Floppy disk(s) fail

Cannot find or initialize the floppy drive controller or the drive. Make sure the controller is installed correctly. If no floppy drives are installed, be sure the Diskette Drive selection in Setup is set to NONE or AUTO.

HARD DISK initializing Please wait a moment...

Some hard drives require extra time to initialize.

HARD DISK INSTALL FAILURE

Cannot find or initialize the hard drive controller or the drive. Make sure the controller is installed correctly. If no hard drives are installed, be sure the Hard Drive selection in Setup is set to NONE.

Hard disk(s) diagnosis fail

The system may run specific disk diagnostic routines. This message appears if one or more hard disks return an error when the diagnostics run.

Keyboard error or no keyboard present

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are pressed during POST. To purposely configure the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. The BIOS then ignores the missing keyboard during POST.

Keyboard is locked out - Unlock the key

This message usually indicates that one or more keys have been pressed during the keyboard tests. Be sure no objects are resting on the keyboard.

Memory Test :

This message displays during a full memory test, counting down the memory areas being tested.

Memory test fail

If POST detects an error during memory testing, additional information appears giving specifics about the type and location of the memory error.

Override enabled - Defaults loaded

If the system cannot boot using the current CMOS configuration, the BIOS can override the current configuration is a set of BIOS defaults designed for the most stable, minimal-performance system operations.

Press TAB to show POST screen

System OEMs may replace the Award BIOS POST display with their own proprietary display. Including this message in the OEM display permits the operator to switch between the OEM display and the default POST display.

Primary master hard disk fail

POST detects an error in the primary master IDE hard drive.

Primary slave hard disk fail

POST detects an error in the secondary master IDE hard drive.

Resuming from disk, Press TAB to show POST screen

Award offers a save-to-disk feature for notebook computers. This message may appear when the operator re-starts the system after a

save-to-disk shutdown. See the Press TAB ... message above for a description of this feature.

Secondary master hard disk fail

POST detects an error in the primary slave IDE hard drive.

Secondary slave hard disk fail

POST detects an error in the secondary slave IDE hard drive.

Proprietary Notice and Disclaimer

APPENDIX B: AWARD BIOS HARD DISK TYPE

Type	Cylinder	Heads	Write Pre-comp	Landing Zone	Sectors	Size
1	306	4	128	305	17	10MB
2	615	4	300	615	17	21MB
3	615	6	300	615	17	32MB
4	940	8	512	940	17	65MB
5	940	6	512	940	17	49MB
6	615	4	65535	615	17	21MB
7	462	8	256	511	17	32MB
8	733	5	65535	733	17	31MB
9	900	15	65535	901	17	117MB
10	820	3	65535	820	17	21MB
11	855	5	65535	855	17	37MB
12	855	7	65535	855	17	52MB
13	306	8	128	319	17	21MB
14	733	7	65535	733	17	44MB
16	612	4	0	663	17	21MB
17	977	5	300	977	17	42MB
18	977	7	65535	977	17	59MB
19	1024	7	512	1023	17	62MB
20	733	5	300	732	17	31MB
21	733	7	300	732	17	44MB
22	733	5	300	733	17	31MB
23	306	4	0	336	17	10MB
24	977	5	0	925	17	42MB
25	1024	9	65535	925	17	80MB
26	1224	7	65535	754	17	74MB
27	1224	11	65535	754	17	117MB
28	1224	15	65535	699	17	159MB
29	1024	8	65535	823	17	71MB
30	1024	11	65535	1023	17	98MB
31	918	11	65535	1023	17	87MB

Type	Cylinder	Heads	Write Pre-comp	Landing Zone	Sectors	Size
32	925	9	65535	926	17	72MB
33	1024	10	65535	1023	17	89MB
34	1024	12	65535	1023	17	106MB
35	1024	13	65535	1023	17	115MB
36	1024	14	65535	1023	17	124MB
37	1024	2	65535	1023	17	17MB
38	1024	16	65535	1023	17	142MB
39	918	15	65535	1023	17	119MB
40	820	6	65535	820	17	42MB
41	1024	5	65535	1023	17	44MB
42	1024	8	65535	1023	17	68MB
43	809	6	65535	852	17	42MB
44	809	9	65535	852	17	64MB
45	776	8	65535	775	17	104MB
46	AUTO	0	0	0	0	
47	USER'S	TYPE				

APPENDIX C: ISA I/O ADDRESS MAP

I/O ADDRESS (HEX)	I/O DEVICE
000 - 01F	DMA Controller 1, 8237A-5
020 - 03F	Interrupt Controller 1, 8259A
040 - 05F	System Timer, 8254-2
060 - 06F	8742 Keyboard Controller
070 - 07F	real-time Clock/CMOS and NMI Mask
080 - 09F	DMA Page Register, 74LS612
0A0 - 0BF	Interrupt Controller 2, 8259A
0C0 - 0DF	DMA Controller 2, 8237A-5
0F0 - 0FF	i486 Math Coprocessor
1F0 - 1F8	Fixed Disk Drive Adapter
200 - 207	Game I/O
20C - 20D	Reserved
21F	Reserved
278 - 27F	Parallel Printer Port 2
2B0 - 2DF	Alternate Enhanced Graphic Adapter
2E1	GPIB Adapter 0
2E2 - 2E3	Data Acquisition Adapter 0
2F8 - 2FF	Serial Port 2 (RS-232-C)
300 - 31F	Prototype Card
360 - 363	PC Network (Low Address)
364 - 367	Reserved
368 - 36B	PC Network (High Address)
36C - 36F	Reserved
378 - 37F	Parallel Printer Port 1
380 - 38F	SDLC, Bisynchronous 2
390 - 393	Cluster
3A0 - 3AF	Bisynchronous 1
3B0 - 3BF	Monochrome Display and Printer Adapter
3C0 - 3CF	Enhanced Graphics Adapter
3D0 - 3DF	Color/Graphics Monitor Adapter

I/O ADDRESS (HEX)	I/O DEVICE
3F0 - 3F7	Diskette Drive Controller
3F8 - 3FF	Serial Port 1 (RS-232-C)
6E2 - 6E3	Data Acquisition Adapter 1
790 - 793	Cluster Adapter 1
AE2 - AE3	Data Acquisition Adapter 2
B90 - B93	Cluster Adapter 2
EE2 - EE3	Data Acquisition Adapter 3
1390 - 1393	Cluster Adapter 3
22E1	GPIB Adapter 1
2390 - 2393	Cluster Adapter 4
42E1	GPIB Adapter 2
62E1	GPIB Adapter 3
82E1	GPIB Adapter 4
A2E1	GPIB Adapter 5
C2E1	GPIB Adapter 6
E2E1	GPIB Adapter 7

APPENDIX D: INTERRUPT LEVEL ASSIGNMENTS

LEVEL on SYSTEM	LEVEL on IO BUS	TYPICAL INTERRUPT SOURCE
NMI	None	Parity, ISA/EISA Channel Check, Bus Time Out, Fail Safe Timer Time-out
IRQ0	None	Interval Timer 1, Counter 0 Out
IRQ1	None	Keyboard Controller
IRQ2	None	Cascade Interrupts from IRQ8 to IRQ15
IRQ3	IRQ3	Serial Port 2
IRQ4	IRQ4	Serial Port 1
IRQ5	IRQ5	Parallel Port 2
IRQ6	IRQ6	Diskette Controller
IRQ7	IRQ7	Parallel Port 1
IRQ8	None	Real Time Clock
IRQ9	IRQ2	Expansion Bus Pin
IRQ10	IRQ10	Expansion Bus Pin
IRQ11	IRQ11	Expansion Bus Pin
IRQ12	IRQ12	Expansion Bus Pin
IRQ13	None	Coprocessor Error, DMA Chaining
IRQ14	IRQ14	Fixed Disk Drive Controller Expansion Bus Pin
IRQ15	IRQ15	Expansion Bus Pin

APPENDIX E: MEMORY MAP

Address (hex)	Function	Comments
00000000-0007FFFF	512K System RAM	Cached
00080000-0009FFFF	128K System RAM	Cached
000A0000-000BFFFF	128K Video RAM	Not Cached
000C0000-000C7FFF	32K Video BIOS	Cached
000C8000-000CFFFF	32K I/O ROM	Not Cached
000D0000-000DFFFF	64K I/O ROM	Not Cached
000E0000-000EFFFF	64K Extended BIOS	Not Cached
000F0000-000FFFFF	64K On-Board BIOS ROM	Cached
00100000-00BFFFFF	System Memory (RAM)	Cached
00C00000-00FFFFFF	System Memory (RAM)	Cached
01000000-BFFFFFFF	System Memory (RAM)	Cached
C0000000-C1FFFFFF	System Memory (RAM)	Cached
C2000000-FFFDFFFF	System Memory	Cached
FFFE0000-FFFFFFFF	128K On-Board BIOS ROM	Not cached

PRODUCT INFORMATION RECORD

Record all the information as you receive the product and provide to your supplier in writing in the event that you should need technical support assistance. This will help to speed up the response and get your problem solved.

System Board

Date Purchased or Received: _____

Purchased From: _____

Product Name: _____PCB VER:_____ Rev: _____

Serial Number: _____

CPU Processor Speed: _____Memory Size: _____

BIOS Version: _____ Software Driver REL #:

_____

PCI Add-on Cards:

Model #_____ Interrupt:_____ Slot #:_____

Model #_____ Interrupt:_____ Slot #:_____

Model #_____ Interrupt:_____ Slot #:_____

ISA Add-on Cards:

Model #_____Interrupt:____ DMA: ____ Slot #:_____

Model #_____Interrupt:____ DMA: ____ Slot #:_____

Model #_____Interrupt:____ DMA: ____ Slot #:_____

Model #_____Interrupt:____ DMA: ____ Slot #:_____

For More Information .

Please visit : http://megastar.kamtronic.com