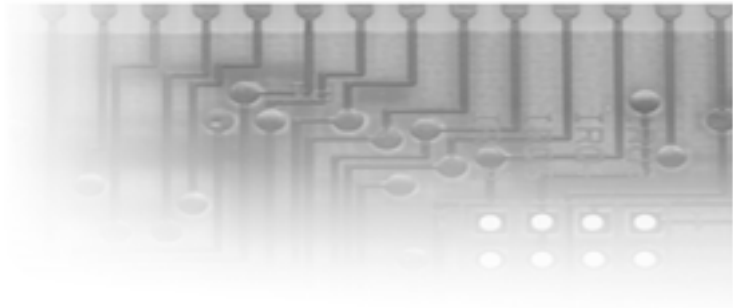


Addendum 1



BIOS Configuration (Text Mode)

The AMIBIOS Setup screen is shown below.

<p>AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.18 (c)1998 American Megatrends, Inc. All Rights Reserved</p>
<p>Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup PCI / Plug and Play Setup Peripheral 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</p>
<p>Standard CMOS setup for changing time, date, hard disk type, etc. ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit</p>

You can select a Setup option by using the following keyboard keys:

Key	Function
Tab	Moves from one box to the next
Arrow keys	Changes selections within a box
Enter	Opens highlighted selection

The pages which follow contain the settings for the AMIBIOS Setup menus. Drawings have been included for ease of reference. Overall, the AMIBIOS Setup program is easy to use, and fairly intuitive. Note that the graphics in the manual are simpler than those that appear on your screen.

1. Standard CMOS Setup

Select the AMIBIOS Setup options below by choosing Main Setup from the AMIBIOS Setup main menu. The Standard Setup menu screen is shown below.

AMIBIOS SETUP - STANDARD CMOS SETUP
(c)1998 American Megatrends, Inc. All Rights Reserved

Date (mm/dd/yyyy):Thurs Jan 1, 1998

Base Memory: 640 KB

Time (hh/mm/ss):12:00:00

Extd Memory: 127 MB

Floppy Drive A:1.44 MB 3½

Floppy Drive B:Not Installed

LBA Blk PIO 32Bit

TypeSize Cyln Head WPcom Sec Mode Mod Mode Mode

Pri Master : AutoOn

Pri Slave : AutoOn

Sec Master : AutoOn

Sec Slave : AutoOn

Boot Sector Virus ProtectionDisabled

Month:Jan - Dec

Day:01 - 31

Year:1901 - 2099

ESC:Exit ↑↓:Sel
PgUp/PgDn:Modify
F2/F3:Color

System Date/Time

You can type the date and time in directly, or select the portion of the date or time that you want to modify using the $\uparrow \downarrow$ cursor keys. Use the PgUp/PgDn keys to Modify the settings. The clock runs on a 24-hour cycle (i.e. 1:00 PM is 13:00).

Floppy Drive A: and B:

Move the cursor to these fields via the arrow keys and select the floppy type. The settings are 360KB 5¼ inch, 1.2 MB 5¼ inch, 720KB 3½ inch, 1.44MB 3½ inch, or 2.88MB 3½ inch. If you are not sure what type of floppy drive you have, consult the documentation that came with your drive.

Primary Master, Primary Slave, Secondary Master, Secondary Slave

Select these options to configure the various drives. A screen with a list of drive parameters appears.

AMIBIOS SETUP - STANDARD CMOS SETUP									
(c)1998 American Megatrends, Inc. All Rights Reserved									
Date (mm/dd/yyyy):	Thurs	Jan	1, 1998	Base Memory: 640 KB					
Time (hh/mm/ss):	12:00:00				Extd Memory: 127 MB				
Floppy Drive A:	1.44 MB 3½								
Floppy Drive B:	Not Installed								
	Type	Size	Cyln	Head	WPcom	Sec	Mode	Mod	Mode Mode
Pri Master :	Auto								On
Pri Slave :	Auto								On
Sec Master :	Auto								On
Sec Slave :	Auto								On
Boot Sector Virus Protection				Disabled					
1-46	: Predefined types						ESC:Exit $\uparrow \downarrow$:Sel		
USER	: Enter parameters manually						PgUp/PgDn:Modify		
AUTO	: Set parameters automatically on each boot						F2/F3:Color		
CDROM	: Use for ATAPI CDROM drives								
ARMD	: Use for LS120, MO, Iomega Zip Drives								
Or press ENTER to autodetect									

Default Settings

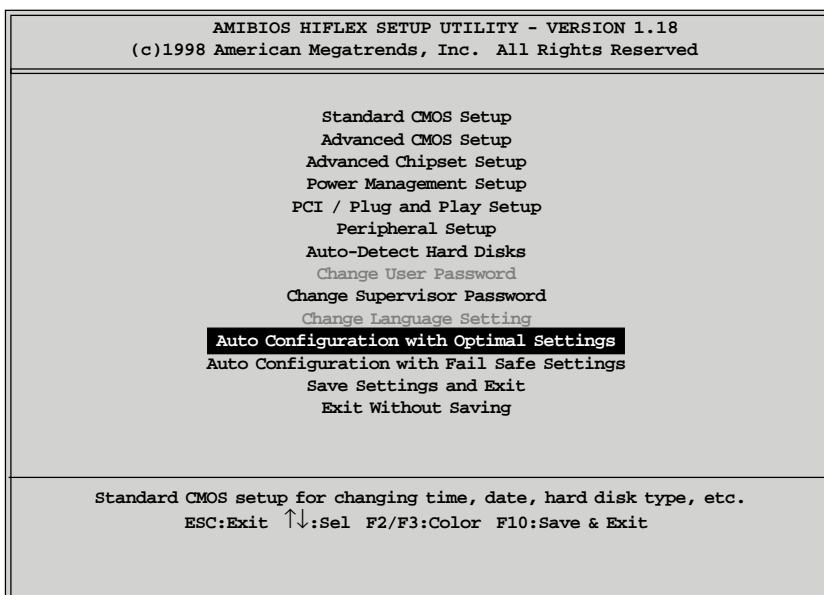
Every option in AMIBIOS Setup contains two default values: a Fail-Safe default and the Optimal default value. You can also choose to restore the original BIOS settings (i.e. those that your board came with) at any time. These options can be found in the 'Exit' menu.

Optimal Defaults

The Optimal default values provide optimum performance settings for all devices and system features.

Fail-Safe Defaults

The Fail-Safe default settings consist of the safest set of parameters. Use them if the system is behaving erratically. They should always work but do not provide optimal system performance characteristics.



2. Advanced CMOS Setup

The Advanced Setup options included in the AMIBIOS Setup for the Thunder X are described in this chapter. Select Advanced Setup from the AMIBIOS Setup main menu to display the Advanced Setup options.

AMIBIOS SETUP - ADVANCED CMOS SETUP (c)1998 American Megatrends, Inc. All Rights Reserved		
Quick Boot	Disabled	Available Options: Disabled Enabled
Primary Master ARMD Emulated as	Auto	
Primary Slave ARMD Emulated as	Auto	
Secondary Master ARMD Emulated as	Auto	
Secondary Slave ARMD Emulated as	Auto	
1st Boot Device	Floppy	
2nd Boot Device	1st IDE-HDD	
3rd Boot Device	ATAPI CDROM	
Try Other Boot Devices	Yes	
Floppy Access Control	Read-Write	
Hard Disk Access Control	Read-Write	
S.M.A.R.T. for Hard Disks	Disabled	
Boot Up Num-Lock	On	
PS/2 Mouse Support	Enabled	
Primary Display	VGA/EGA	
Password Check	Setup	
Boot To OS/2	No	
Internal Cache	WriteBack	ESC:Exit ↑↓:Sel
System BIOS Cacheable	Enabled	PgUp/PgDn:Modify
Cache Bus ECC	Enabled	F2/F3:Color

Advanced CMOS Setup Default Settings Chart

Setting Option	Optimal Default	Fail-Safe Default
Quick Boot	Disabled	Disabled
Primary Master ARMD Emulated as	Auto	Auto
Primary Slave ARMD Emulated as	Auto	Auto
Secondary Master ARMD Emulated as	Auto	Auto
Secondary Slave ARMD Emulated as	Auto	Auto
1st Boot Device	Floppy	Floppy
2nd Boot Device	1st IDE-HDD	1st IDE-HDD
3rd Boot Device	ATAPI CDROM	ATAPI CDROM
Try Other Boot Devices	Yes	Yes
Floppy Access Control	Read-Write	Read-Write
Hard Disk Access Control	Read-Write	Read-Write

Settings Chart (Continued)

Setting Option	Optimal Default	Fail-Safe Default
S.M.A.R.T. for Hard Disks	Disabled	Disabled
Boot Up Num-Lock	On	On
PS/2 Mouse Support	Enabled	Enabled
Primary Display	VGA/EGA	VGA/EGA
Password Check	Setup	Setup
Boot To OS/2	No	No
Internal Cache	WriteBack	WriteBack
System BIOS Cacheable	Enabled	Disabled
Cache Bus ECC	Enabled	Enabled
Default Primary Video	AGP	AGP
C000,16K Shadow	Cached	Cached
C400,16K Shadow	Cached	Cached
C800,16K Shadow	Disabled	Disabled
CC00,16K Shadow	Disabled	Disabled
D000,16K Shadow	Disabled	Disabled
D400,16K Shadow	Disabled	Disabled
D800,16K Shadow	Disabled	Disabled
DC00,16K Shadow	Disabled	Disabled

3. Advanced Chipset Setup

Choose Chipset Setup on the AMIBIOS Setup main menu. All Chipset Setup options are then displayed. AMIBIOS Setup can be customized. AMIBIOS Setup can be customized via AMIBCP. See the AMIBIOS Utilities Guide for additional information.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP (c)1998 American Megatrends, Inc. All Rights Reserved		
USB Function	Disabled	Available Options: Disabled Enabled
USB KB/Mouse Legacy Support	Disabled	
Port 64/60 Emulation	Disabled	
SERR#	Disabled	
PERR#	Disabled	
WSC# Handshake	Enabled	
USWC Write Post	Enabled	
Master Latency Timer (Clks)	64	
Multi-Trans Timer (Clks)	32	
PCI1 to PCI0 Access	Disabled	
Method of Memory Detection	Auto & SPD	
DRAM Integrity Mode	N/A	
DRAM Refresh Rate	15.6us	
Memory Hole	Disabled	
SDRAM RAS# to CAS# Delay	3SClKs	
SDRAM RAS# Precharge	3SClKs	
Power Down SDRAM	Disabled	
ACPI Control Register	Disabled	ESC:Exit ↑↓:Sel
Gated Clock	Disabled	PgUp/PgDn:Modify
Graphics Aperture Size	64 MB	F2/F3:Color

Advanced Chipset Setup Default Settings Chart

Setting Option	Optimal Default	Fail-Safe Default
USB Function	Disabled	Disabled
* USB KB/Mouse Legacy Support	Disabled	Disabled
* Port 64/60 Emulation	Disabled	Disabled
SERR#	Disabled	Disabled
PERR#	Disabled	Disabled
WSC# Handshake	Enabled	Enabled
USWC Write Post	Enabled	Enabled
Master Latency Timer (Clks)	64	64
Multi-Trans Timer (Clks)	32	32
PCI1 to PCI0 Access	Disabled	Disabled
Method of Memory Detection	Auto & SPD	Auto & SPD
DRAM Integrity Mode	* N/A	* N/A

Settings Chart (continued)

Setting Option	Optimal Default	Fail-Safe Default
DRAM Refresh Rate	15.6 us	15.6 us
Memory Hole	Disabled	Disabled
SDRAM RAS# to CAS# Delay	3SCLKs	3SCLKs
SDRAM RAS# Precharge	3SCLKs	3SCLKs
Power Down SDRAM	Disabled	Disabled
ACPI Control Register	Disabled	Disabled
Gated Clock	Disabled	Disabled
Graphics Aperture Size	64 M B	64 M B
Search for MDA Resources	Yes	Yes
AGP Multi-Trans Timer (AGP Clks)	32	Disabled
AGP Low-Priority Timer (Clks)	16	Disabled
AGP SERR	Disabled	Disabled
AGP Parity Error Response	Disabled	Disabled
8bit I/O Recovery Time	Disabled	Disabled
16bit I/O Recovery Time	Disabled	Disabled
PIIX4 SERR#	Disabled	Disabled
USB Passive Release	Enabled	Enabled
PIIX4 Passive Release	Enabled	Enabled
PIIX4 Delayed Transaction	Disabled	Disabled
Type F DMA Buffer Control1	Disabled	Disabled
Type F DMA Buffer Control2	Disabled	Disabled
DMA-0 Type	Normal ISA	Normal ISA
DMA-1 Type	Normal ISA	Normal ISA
DMA-2 Type	Normal ISA	Normal ISA
DMA-3 Type	Normal ISA	Normal ISA
DMA-5 Type	Normal ISA	Normal ISA
DMA-6 Type	Normal ISA	Normal ISA
DMA-7 Type	Normal ISA	Normal ISA
CPU Bus Frequency	Auto	Auto

* Setting option not selectable.

4. Power Management Setup

The AMIBIOS Setup options described in this section are selected by choosing Power Management Setup from the AMIBIOS Setup main menu.

AMIBIOS SETUP - POWER MANAGEMENT SETUP		
(c)1998 American Megatrends, Inc. All Rights Reserved		
ACPI Aware O/S	No	Available Options: No Yes
Power Management / APM	Enabled	
Power Button Function	On/Off	
Green PC Monitor Power State	Suspend	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Suspend	
Hard Disk Time Out (Minute)	Disabled	
Power Saving Type	Sleep	
Standby / Suspend Timer Unit	4 min	
Standby Time Out	Disabled	
Suspend Time Out	Disabled	
Slow Clock Ratio	50% - 62.5%	
Display Activity	Ignore	
Device 6 (Serial port 1)	Monitor	
Device 7 (Serial port 2)	Monitor	
Device 8 (Parallel port)	Monitor	
Device 5 (Floppy Disk)	Monitor	
Device 0 (Primary master IDE)	Monitor	
Device 1 (Primary slave IDE)	Monitor	
Device 2 (Secondary master IDE)	Monitor	

ESC:Exit ↑↓:Sel
PgUp/PgDn:Modify
F2/F3:Color

Power Management Setup Default Settings Chart

Setting Option	Optimal Default	Fail-Safe Default
ACPI Aware O/S	No	No
Power Management / APM	Enabled	Enabled
Power Button Function	On/Off	On/Off
Green PC Monitor Power State	Suspend	Stand By
Video Power Down Mode	Suspend	Disabled
Hard Disk Power Down Mode	Suspend	Disabled
Hard Disk Time Out (Minute)	Disabled	Disabled
Power Saving Type	Sleep	Sleep
Standby / Suspend Timer Unit	4 min	4 min
Standby Time Out	Disabled	Disabled
Suspend Time Out	Disabled	Disabled
Slow Clock Ratio	50% - 62.5%	50% - 62.5%
Display Activity	Ignore	Ignore

Setting Option	Optimal Default	Fail-Safe Default
Device 6 (Serial port 1)	M o n i t o r	M o n i t o r
Device 7 (Serial port 2)	M o n i t o r	M o n i t o r
Device 8 (Parallel port)	M o n i t o r	M o n i t o r
Device 5 (Floppy disk)	M o n i t o r	M o n i t o r
Device 0 (Primary master IDE)	M o n i t o r	M o n i t o r
Device 1 (Primary slave IDE)	M o n i t o r	M o n i t o r
Device 2 (Secondary master IDE)	M o n i t o r	M o n i t o r
Device 3 (Secondary slave IDE)	M o n i t o r	M o n i t o r
LAN Wake-up	D i s a b l e d	D i s a b l e d
P C 98 Power LED	D i s a b l e d	D i s a b l e d
Fan OFF at Suspend	E n a b l e d	E n a b l e d
RTC Wake-up	D i s a b l e d	D i s a b l e d
*Hour	N / A	N / A
*M inute	N / A	N / A

* Setting option not selectable.

5. PCI / Plug and Play Setup

Choose PCI/Plug and Play Setup from the AMIBIOS Setup screen to display the PCI and Plug and Play Setup options, described below.

AMIBIOS SETUP - POWER MANAGEMENT SETUP (c)1998 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	Yes	Available Options: No Yes
PCI Latency Timer (PCI Clocks)	64	
PCI VGA Palette Snoop	Disabled	
Allocate IRQ to PCI VGA	Yes	
PCI IDE BusMaster	Disabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	Disabled	
OffBoard PCI IDE Secondary IRQ	Disabled	
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	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
		ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F2/F3:Color

Plug and Play Setup Default Settings Chart

Setting Option	Optimal Default	Fail-Safe Default
Plug and Play Aware O/S	Yes	Yes
P C I Latency Timer (P C I Clocks)	64	64
P C I V G A Palette Snoop	Disabled	Disabled
A llocate I R Q to P C I V G A	Yes	Yes
P C I I D E BusMaster	Disabled	Disabled
OffB oard P C I I D E Card	Auto	Auto
*OffB oard P C I I D E Primary I R Q	Disabled	Disabled
*OffB oard P C I I D E Secondary I R Q	Disabled	Disabled
P C I Slot1 I R Q Priority	Auto	Auto
P C I Slot2 I R Q Priority	Auto	Auto
P C I Slot3 I R Q Priority	Auto	Auto
P C I Slot4 I R Q Priority	Auto	Auto
D M A Channel 0	P nP	P nP
D M A Channel 1	P nP	P nP
D M A Channel 3	P nP	P nP
D M A Channel 5	P nP	P nP
D M A Channel 6	P nP	P nP
D M A Channel 7	P nP	P nP
I R Q 3	P C I / P nP	P C I / P nP
I R Q 4	P C I / P nP	P C I / P nP
I R Q 5	P C I / P nP	P C I / P nP
I R Q 7	P C I / P nP	P C I / P nP
I R Q 9	P C I / P nP	P C I / P nP
I R Q 10	P C I / P nP	P C I / P nP
I R Q 11	P C I / P nP	P C I / P nP
I R Q 12	P C I / P nP	P C I / P nP
I R Q 14	P C I / P nP	P C I / P nP
I R Q 15	P C I / P nP	P C I / P nP
Reserved M emory Size	Disabled	Disabled
*Reserved M emory Address	C 8000	C 8000
P C I Device Search Order	First-Last	First-Last
B I O S Devnode for Shadow R A M	Disabled	Disabled

* Setting option is not selectable

6. Peripheral Setup

Peripheral Setup options are displayed by choosing Peripheral Setup from the AMIBIOS Setup main menu. All Peripheral Setup options are described here.

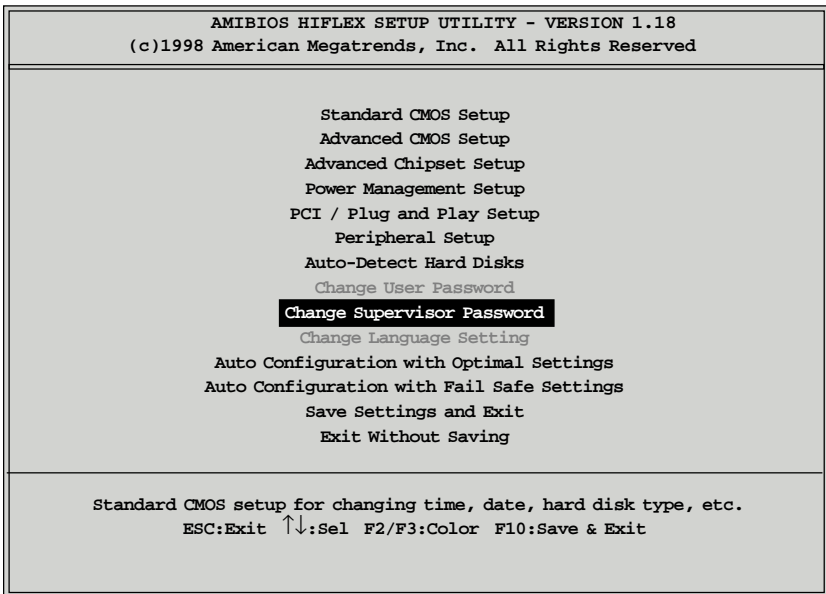
AMIBIOS SETUP - PERIPHERAL SETUP		
(c)1998 American Megatrends, Inc. All Rights Reserved		
Power Interruption	Disabled	Available Options:
Onboard FDC	Auto	Disabled
Onboard Serial Port1	3F8h	Enabled
Onboard Serial Port2	2F8h	
Serial Port2 Mode	Normal	
IR Duplex Mode	N/A	
IR Receiver Pin	IRRx1	
Onboard Parallel Port	378	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port IRQ	7	
Parallel Port DMA Channel	N/A	
Onboard IDE		
		ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F2/F3:Color

Peripheral Setup Default Settings Chart

Setting Option	Optimal Default	Fail-Safe Default
Power Interruption	Disabled	Disabled
Onboard FDC	Auto	Auto
Onboard Serial Port 1	3F 8h	3F 8h
Onboard Serial Port 2	2F 8h	2F 8h
Serial Port 2 Mode	Normal	Normal
*IR Duplex Mode	N/A	N/A
*IR Receiver Pin	IRRX1	IRRX1
Onboard Parallel Port	378	378
Parallel Port Mode	Normal	Normal
*EPP Version	N/A	N/A
Parallel Port IRQ	7	7
*Parallel Port DMA Channel	N/A	N/A
Onboard IDE	Both	Both

7. Supervisor and User Security

You can limit access to the Setup Program or to the system using the Supervisor and User password options (the Supervisor password gives you access to the Setup Program and the system; the User password, only to the system). Note that you must create a supervisor password before you create a user password.



When you select the Supervisor Security option, a dialog box (shown below) will appear, allowing you to enter a password. You may either type the password in, or click on the onscreen buttons. Your password must be between one and six characters long.

To enter a new Supervisor password, select the Supervisor Security option. You will be asked to enter the current password. After you do so, you will be prompted to enter the new password.

8. Language Utility

Currently, the BIOS Setup program is available only in English.

9. Flash Writer Utility

The AMI Flash Writer Utility is now included in the AMIBIOS, and so it is simpler to upgrade the BIOS of your mainboard. The system BIOS is stored on a flash EEPROM ROM chip on the mainboard which can be erased and reprogrammed by following the directions on the following page.

1. From the DOS prompt, rename the BIOS file that you have downloaded to “amiboot.rom” and copy it on to a floppy disk.
2. Insert the floppy disk with the BIOS upgrade into the A: drive.
3. Turn the power off.
4. While holding the <Ctrl> and <Home> keys, turn the power on. The system will begin to read from the A: drive, and write the BIOS information contained on the floppy disk in that drive to the EEPROM ROM chip. When the BIOS has been totally reprogrammed, the system will reboot with the new BIOS in operation.
5. If the system does not reboot in three minutes, power down the system wait a few seconds, and then turn the power back on again. You will be prompted to press <F1> to run Setup. You may check your settings at this time, or simply save and exit the program.

Addendum 2

CPU Retention Module Options

Tyan offers two different options for securing Intel's Pentium II CPUs onto the motherboard. Each option provides retention for both older Pentium II's as well as newer Pentium II's (including Celeron).

OPTION 1:

Two different types of retention modules are included in the motherboard package. For older versions of Pentium II, use the retention module shown in Figure 1. For newer versions of Pentium II CPUs (including Celeron), use the retention module shown in Figure 2. (Screws for the retention modules are provided.)

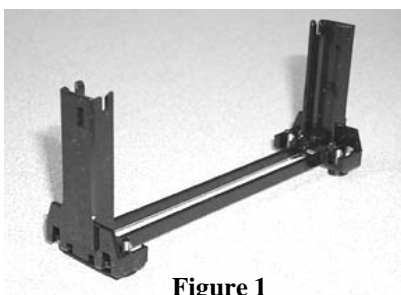


Figure 1

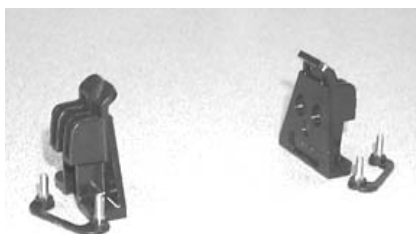


Figure 2

OPTION 2:

One universal retention module is included in the motherboard package. This type of retention module adapts to both old and new Pentium II CPUs - see Figure 3. (Screws for the retention modules are provided)



Figure 3