

TR101

Intel® 810E Motherboard

USER'S MANUAL

**Intel® Celeron®, Coppermine®, Tualatin® Processor Motherboard
Rev. 1.0**

Revision History

Revision	Date	Description
1.0		Initial release of TR101 motherboard user's manual

Item Checklist

- 1 TR101 Motherboard
- 1 Floppy Cable
- 1 ATA Cable 66/100
- 1 I/O Shield
- 1 CD for Motherboard Driver
- TR101 User Manual
- Quick Installation Guide

Safety Instructions

Please follow some precautions when operating your computer.

1. Always unplug the power cord when inserting any add-on card or module inside the system.
2. Use a grounded wrist strap before handling computer components. If one is not available, touch both of your hands to a safely grounded object or to a metal object.
3. Place components on a level grounded antistatic pad or on the packaging that came with the components whenever the components are separated from the system.
4. Keep equipment away from moisture and humidity.
5. Keep this User's Manual for future reference.

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Chapter 1 Introduction

Motherboard Specifications

Form Factor:

- Micro ATX Form Factor
 - Size 9.0" x 8.4", Four Layer Board
-

Processor:

- Support Intel Celeron® / Pentium III® / Tualatin®.
 - Intel Socket-370 mechanism for universal motherboard.
 - 66/100/133MHz Front Side Bus frequency.
-

Cache Memory:

- Processor integrated on-die 32KB level-one (L1) and 128KB/256KB level-two (L2) cache.
-

System Memory:

- 2 DIMM Sockets support up to 512MB memory capacity.
 - Support PC100 SDRAM DIMM module.
 - Un-buffered, Non-ECC DIMM only.
-

Core Logic Chipset:

- Intel 810E GMCH (Graphics and Memory Controller Hub).
 - ICHX (I/O Controller Hub).
-

PCI bus:

- PCI 2.2 compliant.
 - PME# and 3.3V Aux signals to support power management.
-

Audio/Modem:

- AC'97 interface in ICHX.
 - AC'97 CODEC ADI AD1885.
 - Compliant with AC'97 revision 2.1 specification.
 - 3 Audio jacks (Line out, Line In, Mic In).
 - 3 Audio headers (CD In, Modem In, Aux In).
 - Front audio headers (Line In, Mic In)
-

On Board EIDE:

- 2 Bus Master IDE Ports (Up to 4 IDE devices). Support Ultra DMA 33/66 MB/sec integrated in ICHX.
-

On Board I/O:

- LPC revision 1.0 super I/O controller Winbond W83627HF.
 - 1 Floppy connector.
 - Stacked PS/2 keyboard & mouse connector.
 - 4 USB ports, Dual stacked ports at back and 2 at front header (W81181D Option).
 - 1 Parallel port (ECP/EPP).
 - 1 Serial port.
 - 1 Serial port header.
 - Hardware monitor capability by Winbond W83627HF (Option).
 - 3 Fan headers.
-

Integrated Graphics:

- Integrated full 2D/3D/DirectX acceleration. (AGP 2X Mode).
 - Integrated 230MHz RAMDAC and hardware motion compensation (30 frame/sec).
 - Desktop display modes up to 1600x1200x8bit @ 85Hz.
 - 4MB Video Display Cache (Option).
 - 1 VGA output port.
-

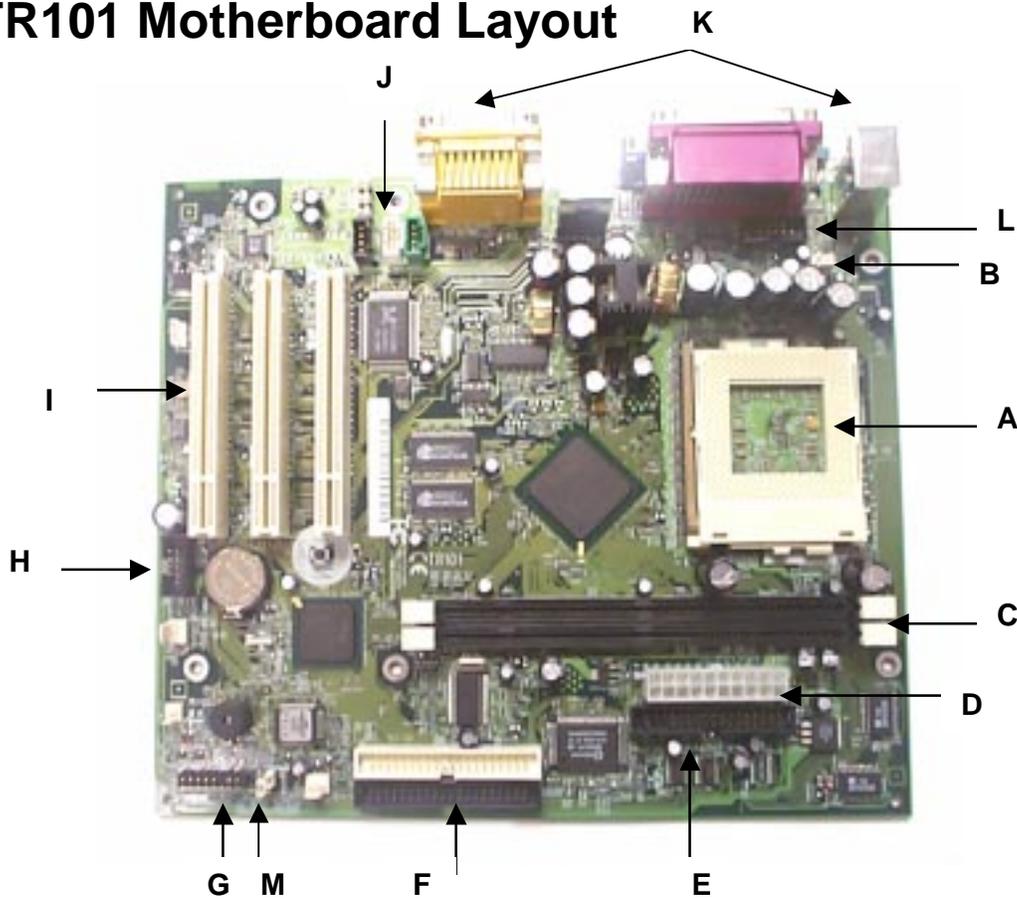
Additional Features:

- Wake-on-LAN function.
 - Wake-on-Ring function.
 - Keyboard/Mouse/USB wake up function.
 - Supports S1, S3, S4 and S5 ACPI states.
-

Expansion Slots:

- 3 PCI slots.
-

TR101 Motherboard Layout



A	CPU Socket	H	Front Side USB
B	CPU Fan Socket	I	Expansion Slots
C	Memory Sockets	J	Audio Connector
D	Power Supply Connector	K	Back Panel Connectors
E	Floppy Connector	L	COM 2 Port
F	IDE Connectors	M	Jumper Connector
G	Front Panel Connector		



Front Panel Connector Pin Definition

Pin	Signal Name	I/O	Description
1	HD_PWR	O	Hard Disk LED pull-up to VCC
2	HDR_BLNK_GRN	O	Front panel Green LED signal
3	HDA*	O	Hard Disk Active LED signal
4	HDR_BLNK_YEL	O	Front panel Yellow LED signal
5	GND	-	Ground
6	FPBUT_IN	I	Front panel On/Off button signal
7	FP_RESET*	I	Front panel Reset button signal
8	GND	-	Ground
9	VCC	O	
10	FPSLP*	I	Front panel sleep button signal
11	IRRX	I	IRDA serial input
12	GND	-	Ground
13	GND	-	Ground
14	KEY	-	KEY
15	IRTX	O	IRDA serial output
16	VCC	O	
17	NC	-	not connected
18	NC	-	not connected

Chapter 2 Hardware Installation Process

Installing the Central Process Unit (CPU)

CPU Installation

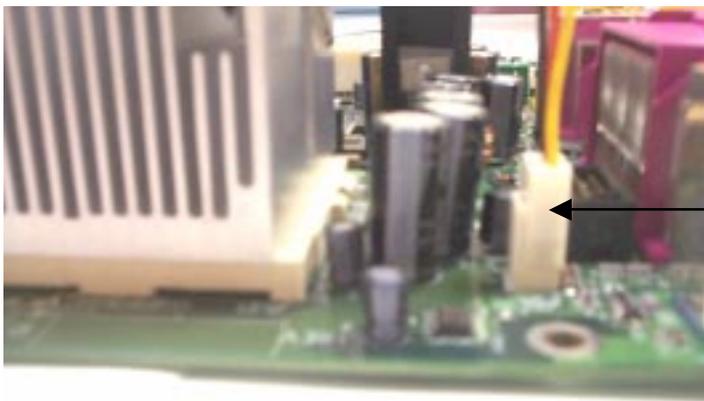
1. Unlock the CPU socket by pulling the lever up to a 90-degree angle.
2. Position the CPU above the socket such that the **marked** corner (pin1) matches the corner near the base of the lever.
3. Place the CPU into the socket. If the CPU is unable to insert properly, check its orientation and attempt to re-install.
Warning! Do not force the CPU into the socket. Doing so will prompt bending of the pins and create damage to the CPU.
4. Close the socket by lowering the lever and locking the lever in place.



Installing the Central Process Unit (CPU) *cont.*

CPU Heat Sink Installation

1. Read the related CPU heat sink user's manual for more detailed installation procedures.
2. Connect CPU fan power cable into the CPU fan connector on the motherboard.



← CPU Fan Connector

Installing Memory Modules

1. Push the white retaining clips on each of the memory socket outwards.
2. Match the notches on the contact edge of the memory module to the ridges in the memory socket.
3. Insert the memory module vertically into place. When properly inserted, the white retaining clips will move inward to lock in the module.
4. Repeat installation process when adding additional modules.



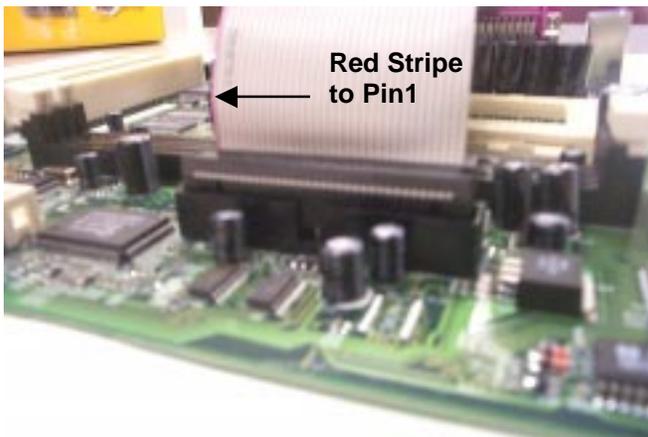
Total Memory Sizes With SDRAM DIMM

Devices used on DIMM	1 DIMMx64/x72	2 DIMMsx64/x72
64 Mbit (2Mx8x4 banks)	128 MBytes	256 MBytes
64 Mbit (1Mx16x4 banks)	64 MBytes	128 MBytes
128 Mbit (4Mx8x4 banks)	256 MBytes	512 MBytes
128 Mbit (2Mx16x4 banks)	128 MBytes	256 MBytes
256 Mbit (4Mx16x4 banks)	256 MBytes	512 MBytes

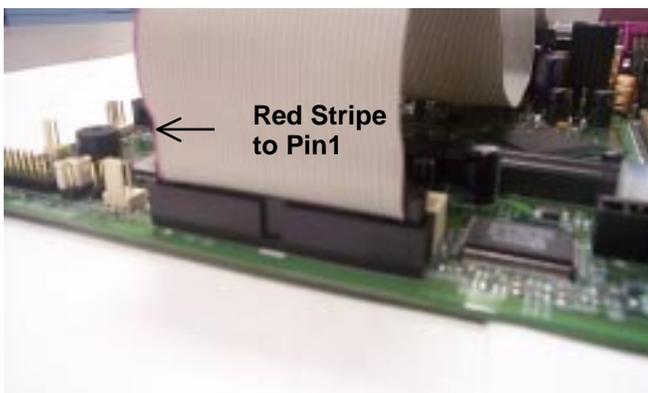
Connecting IDE and Floppy Disk Cables

1. **Connecting the floppy disk ribbon cable into the motherboard.** The side of the cable with the red stripe needs to be inserted into the Pin1 side of the floppy disk connector.
2. **Connecting the IDE ribbon cable into the motherboard.** The side of the cable with the red stripe should be inserted into Pin1 side of the IDE connector.

Floppy Connector



IDE Connectors

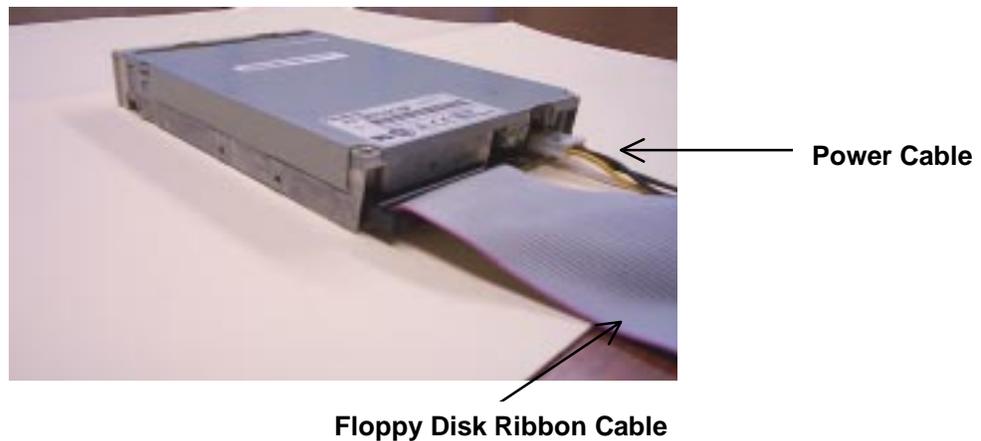


Connect Floppy and IDE Drives

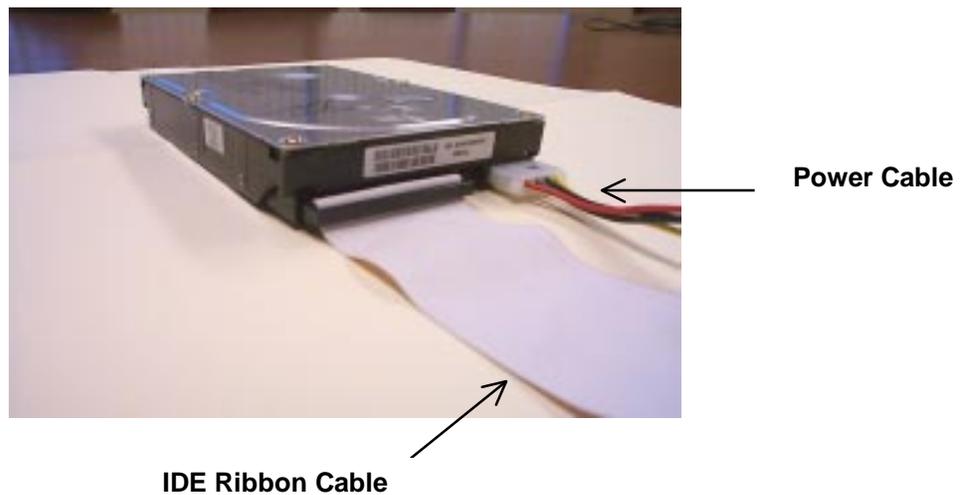
NOTE: If installing two IDE devices on the same ribbon cable, one device is to be set as “master” and the second as “slave”. Please refer to IDE device manuals for master and slave settings.

1. Mount the desired drives into the chassis case.
2. Connect the floppy disk ribbon cable and power cable into the device. The side of the cable with the red stripe must be inserted to Pin1 of the floppy disk drive.
3. Connect the IDE ribbon cable and power cable into the device. The side of the cable with the red stripe must be inserted to Pin1 of the hard drive.

Floppy Disk Drive



Hard Disk Drive



Installing Expansion Cards

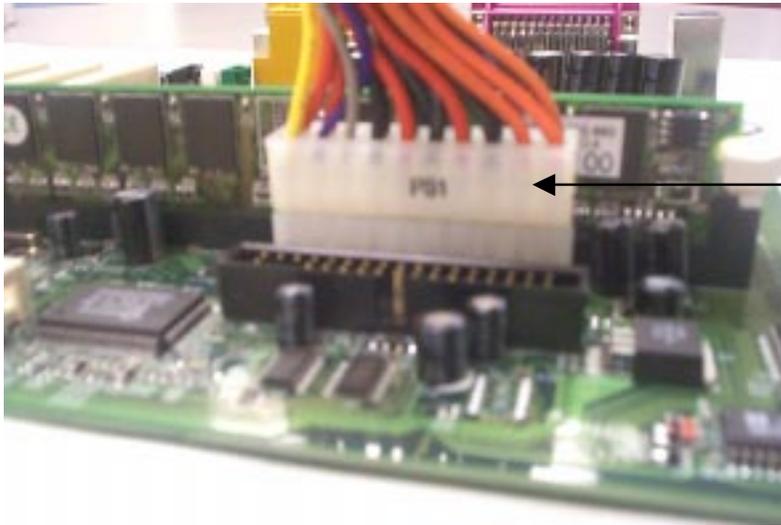
1. Read the related expansion card's installation instructions before inserting the expansion card into the motherboard.
2. Remove the slot covers from the chassis case where the expansion cards will be placed.
3. Press the expansion card firmly into the expansion slot of the motherboard.
4. Secure the card with the screw provided.
5. Repeat same procedure when adding additional expansion cards.



Connect the Power Supply Cables

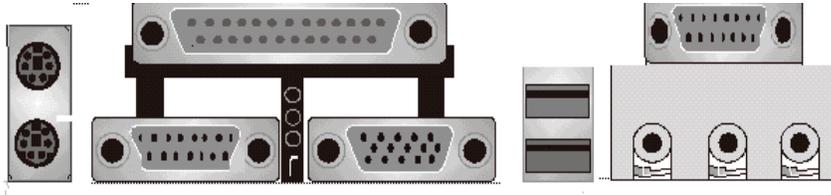
NOTE: The ATX power connector is keyed for proper insertion.

1. Place the plastic clip of the power connector over the plastic tab on the motherboard power connector. The plastic clip should lock into the plastic tab.

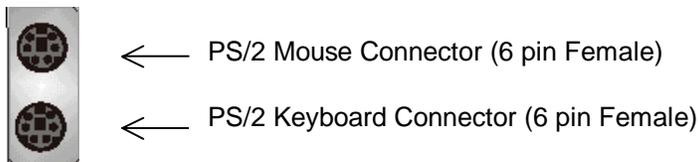


Power Supply Connector

I/O Back Panel Introduction

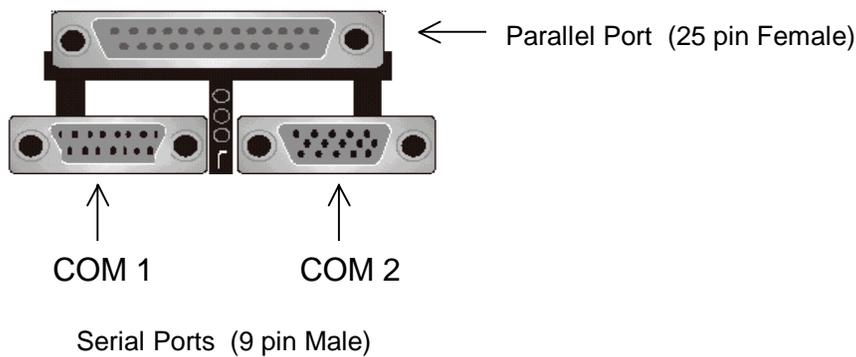


(1) PS/2 Keyboard and PS/2 Mouse Connector



 This connector supports standard PS/2 keyboard and PS/2 mouse.

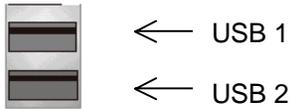
(2) Parallel Port and Serial Ports (COM1/COM2)



-  This connector supports 2 standard COM ports and 1 Parallel port.
-  Devices (i.e. printer) can be connected into the Parallel port.
-  Devices (i.e. mouse, modem, monitor etc. can be connected into the Serial ports.)

I/O Back Panel Introduction *cont....*

(3) USB Connector



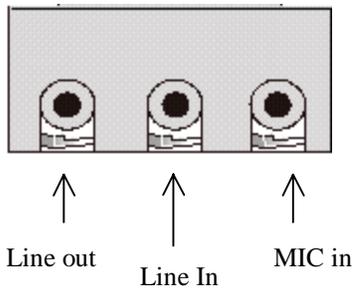
- ✚ Before connecting device(s) into the USB connections, determine if devices have a standard interface.
- ✚ Make sure your computer Operating System (OS) supports the USB controller. If not, contact your OS or device(s) vendors for more information.

(4) Game Port



- ✚ This connector supports joystick, MIDI keyboard and other related audio devices.

(5) Audio Connectors

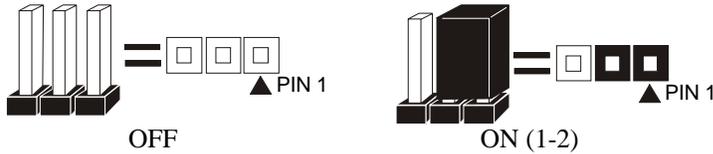


- ✚ Once onboard audio driver has been installed, the speakers may be connected into the Line out jack, audio devices such as CD-ROM etc., and a microphone into the MIC in jack.

Jumper Introduction

Jumper Settings

The following graphic shows the meaning of the jumper with cover and without cover.



FWH Lock

This jumper allows you to set FWH lock.

Reference: JP1
 Connector Type: 1 x 3

JP1		Description	Jumper Placement
1-2		FWH Lock	Put the jumper cover on pin1 and pin2.
2-3		FWH Unlock (Default)	Put the jumper cover on pin2 and pin3.

Safe Speed

This jumper allows you to set safe speed.

Reference: JP2
 Connector Type: 1 x 3 male straight 0.100

JP2		Description	Jumper Placement
2-3		Safe Speed	Put the jumper cover on pin1 and pin2.
1-2		Normal Mode(Default)	Put the jumper cover on pin2 and pin3.

Jumper Introduction *cont.*

Clear CMOS (Optional)

This jumper allows you to clear the content of the CMOS.

Reference: JP1
 Connector Type: 1 x 3

JP1		Description	Jumper Placement
1-2		Normal	Put the jumper cover on pin1 and pin2.
2-3		Clear content of CMOS	Put the jumper cover on pin2 and pin3.

Clear Password

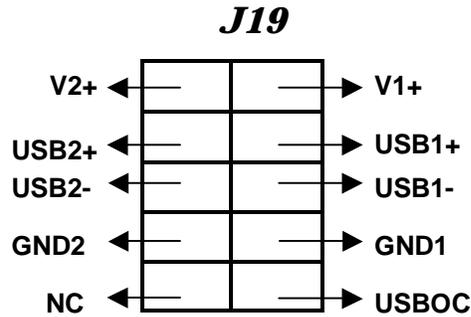
This jumper allows you to clear the password of the BIOS.

Reference: JP4
 Connector Type: 1 x 3

JP4		Description	Jumper Placement
1-2		Normal (Default)	Put the jumper cover on pin1 and pin2.
2-3		Clear BIOS password	Put the jumper cover on pin2 and pin3.

Jumper Introduction *cont.*

The following table shows the Front Side USB Connector Pin Definition.



Front Side USB Connector Pin Definition

Pin	Signal Name	Description
1	V2+	Front Side USB Port2 VCC
2	V1+	Front Side USB Port1 VCC
3	USB2+	Front Side USB Port2 Signal+
4	USB1+	Front Side USB Port1 Signal+
5	USB2-	Front Side USB Port2 Signal-
6	USB1-	Front Side USB Port1 Signal-
7	GND2	Front Side USB Port2 GND
8	GND1	Front Side USB Port1 GND
9	NC	No Connect
10	USBOC	USB Over-Current Detect

AMI® BIOS Setup

Entering Setup

To enter the setup menu, first power up the computer and press <Delete> key to enter the CMOS setup.

The Main Menu

When you enter the AMI® HIFLEX Setup Utility, the below Main Menu will appear. The Main menu allows you to select and modify your computer system. To navigate through the menu, simply use the arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

```

                AMI HIFLEX SETUP UTILITY - VERSION 1.37
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                TR101 BIOS Rev: 1.00

                Standard CMOS Features
                Advanced CMOS Features
                Advanced Chipset Features
                Power Management Setup
                PCI / Plug and Play Setup
                Peripheral Setup
                Hardware Monitor Setup
                Auto-Detect Hard Disks
                Change User Password
                Change Supervisor Password
                Auto Configuration with Optimal Setting
                Auto Configuration with Fail Safe Settings
                Save Settings and Exit
                Exit without Saving

                Standard CMOS setup for changing time, date, hard disk type, etc.
                ESC: Exit   ↑↓: Sel   F2/F3: Color   F10: Save & Exit
```


Advanced Chipset Setup

The items listed in the Advanced Chipset Setup Menu may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP ©2001 AMERICAN MEGATRENDS, INC. ALL RIGHTS RESERVED		
CPU Ratio Selection	Locked	
System Memory Frequency	Auto	
DRAM Refresh	15.6uS	
DRAM Cycle time (SCLKs)	6/8	
CAS# Latency (SCLKs)	3	
RAS to CAS delay (SCLKs)	3	
SDRAM RAS# Precharge (SCLKs)	3	
AGP Aperture Size	64MB	
CPU Latency Timer	Enabled	
USB Controller	All USB Port	
USB Device Legacy Support	All Device	
Local Memory Frequency	133Mhz	
Initialize Display Cache Memory	Enabled	
Paging Mode Control	Open	
RAS-to-CAS	Default	
CAS Latency	Slow	
RAS Timing	Slow	ESC: Exit ↑↓: Sel
RAS Precharge Timing	Slow	PgUp/PgDn: Modify
		F1: Help F2/F3: Color

Hardware Monitor Setup

The items listed in the Hardware Monitor Setup may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.

AMIBIOS SETUP - HARDWARE MONITOR SETUP		©2001 AMERICAN MEGATRENDS, INC. ALL RIGHTS RESERVED	
-- System Hardware Monitor --		Available Options:	
CPU Temperature	40°C/104°F		
System Temperature	30°C/86°F		
CPU Fan Speed	3613 RPM		
Chassis Fan Speed	0 RPM		
Vccp (Processor)	1.717V		
+12.0V	12.422V		
+1.85V	1.872V		
+5.0V	4.911V		
+3.3V	3.233V		
+2.5V	2.492V		
+1.5V	1.509V		
FAN Speed Control	Disabled		
Chassis Intrusion	Disabled		
		ESC: Exit ↑↓: Sel	
		PgUp/PgDn: Modify	
		F1: Help F2/F3: Color	

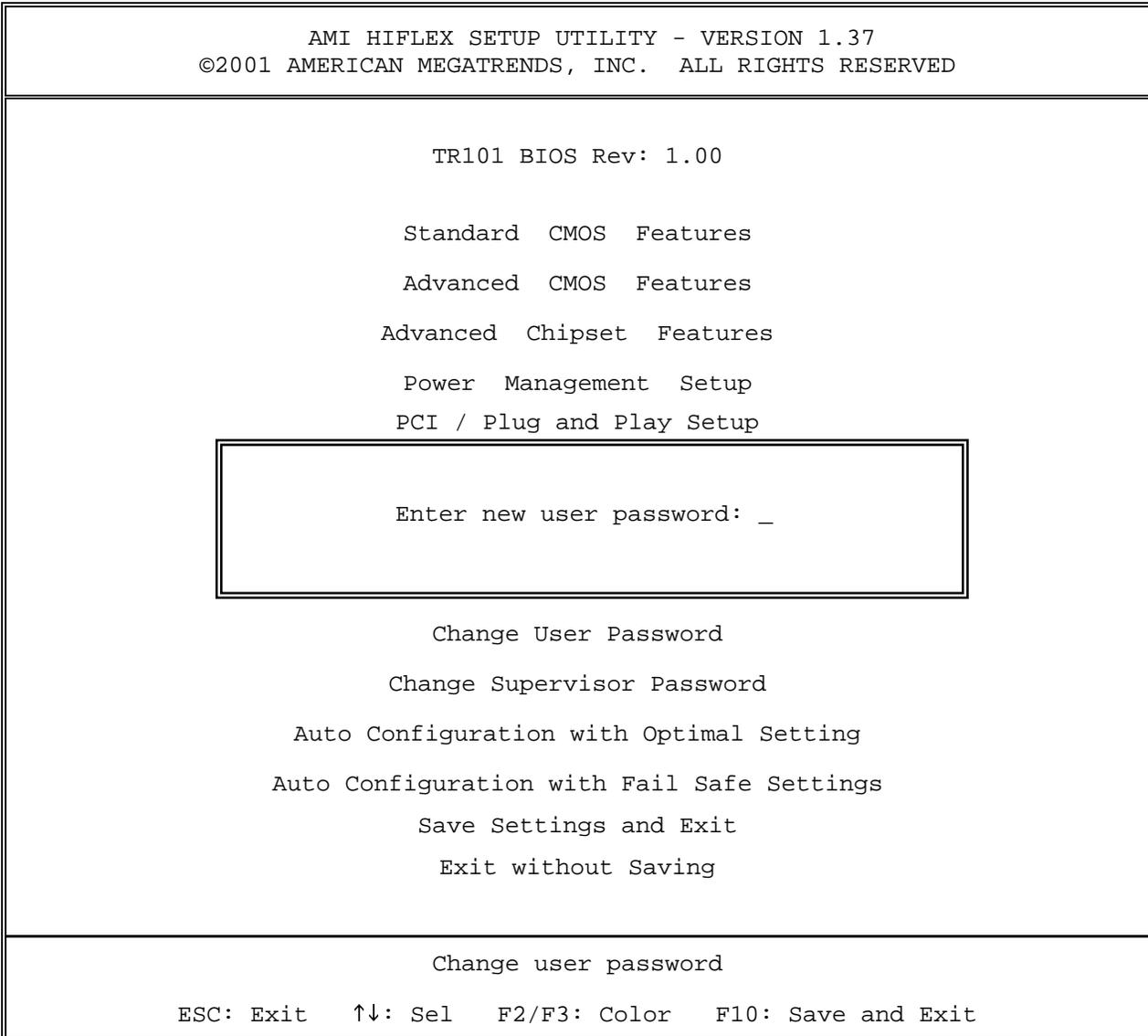
Auto-Detect Hard Disk

The items listed in the Auto-Detect Hard Disk Menu may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.

AMIBIOS SETUP - STANDARD CMOS SETUP											
©2001 AMERICAN MEGATRENDS, INC. ALL RIGHTS RESERVED											
Date (mm/dd/yyyy) : Wed Nov 28,2001						Base Memory: 639KB					
Time (hh/mm/ss) :						Extd Memory: 126MB					
Floppy Drive A:											
Floppy Drive B:											
							LBA	BLK	PIO	32Bit	
	Type	Size	Cyln	Head	Wpcom	Sec	Mode	Mode	Mode	Mode	
Pri Master:											
Pri Slave:											
Sec Master:											
Sec Slave:											
Boot Sector Virus Protection: Disabled											
Month: Jan-Dec						ESC: Exit ↑↓: Sel					
Day: 01-31						PgUp/PgDn: Modify					
Year: 1980-2099						F1: Help F2/F3: Color					

Change User Password

The items listed in the Auto-Detect Hard Disk Menu may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.



Change Supervisor Password

The items listed in the Change Supervisor Password Menu may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.

AMI HIFLEX SETUP UTILITY - VERSION 1.37 ©2001 AMERICAN MEGATRENDS, INC. ALL RIGHTS RESERVED
TR101 BIOS Rev: 1.00
Standard CMOS Features
Advanced CMOS Features
Advanced Chipset Features
Power Management Setup
PCI / Plug and Play Setup
Enter new supervisor password: _
Change User Password
Change Supervisor Password
Auto Configuration with Optimal Setting
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit without Saving
Change the supervisor password
ESC: Exit ↑↓: Sel F2/F3: Color F10: Save and Exit

Auto Configuration with Optimal Setting

The items listed in the Auto Configuration with Optimal Setting Menu may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.

AMI HIFLEX SETUP UTILITY - VERSION 1.37 ©2001 AMERICAN MEGATRENDS, INC. ALL RIGHTS RESERVED
TR101 BIOS Rev: 1.00 Standard CMOS Features Advanced CMOS Features Advanced Chipset Features Power Management Setup PCI / Plug and Play Setup
Load high performing setting (Y/N)? <u>N</u>
Change User Password Change Supervisor Password Auto Configuration with Optimal Setting Auto Configuration with Fail Safe Settings Save Settings and Exit Exit without Saving
Load configuration settings giving highest performance ESC: Exit ↑↓: Sel F2/F3: Color F10: Save and Exit

Auto Configuration with Fail Safe Settings

The items listed in the Auto Configuration with Fail Safe Settings Menu may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.

```
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TR101 BIOS Rev: 1.00

Standard CMOS Features
Advanced CMOS Features
Advanced Chipset Features
Power Management Setup
PCI / Plug and Play Setup

Load failsafe settings (Y/N)? N

Change Supervisor Password
Change Supervisor Password
Auto Configuration with Optimal Setting
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit without Saving

Load failsafe configuration settings
ESC: Exit  ↑↓: Sel  F2/F3: Color  F10: Save and Exit
```

Save Settings and Exit

The items listed in the Save Settings and Exit Menu may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.

AMI HIFLEX SETUP UTILITY - VERSION 1.37 ©2001 AMERICAN MEGATRENDS, INC. ALL RIGHTS RESERVED
TR101 BIOS Rev: 1.00 Standard CMOS Features Advanced CMOS Features Advanced Chipset Features Power Management Setup
Save current settings and exit (Y/N)? <u>Y</u>
Change User Password Change Supervisor Password Auto Configuration with Optimal Setting Auto Configuration with Fail Safe Settings Save Settings and Exit Exit without Saving
Write the current settings to CMOS and exit ESC: Exit ↑↓: Sel F2/F3: Color F10: Save and Exit

Exit without Saving

The items listed in the Exit without Saving Features Menu may include no or more than one setup items. Use the arrow keys to navigate through the menu and use the <PgUp> or <PgDn> keys to select the desired option for each item.

```

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                TR101 BIOS Rev: 1.00

                Standard CMOS Features
                Advanced CMOS Features
                Advanced Chipset Features
                Power Management Setup
                PCI / Plug and Play Setup

                Quit without saving (Y/N)? N

                Change User Password
                Change Supervisor Password
                Auto Configuration with Optimal Setting
                Auto Configuration with Fail Safe Settings
                Save Settings and Exit
                Exit without Saving

                Exit without saving the current settings
                ESC: Exit   ↑↓: Sel   F2/F3: Color   F10: Save and Exit
```

NOTES