Advanced Socket 370 Motherboard

RX815ELT

User's Manual

http://www.bcmcom.com

Declaration

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WARNING: Replace your system's CMOS RAM battery only with the identical CR-2032 3V Lithium-Ion coin cell (or equivalent) battery type to avoid risk of personal injury or physical damage to your equipment. Always dispose of used batteries according to the manufacturer's instructions, or as required by the local ordinance (where applicable).

References:

This manual is created and written by BCM Technical Team, but not limited, to the information from the RX815 External Production Specifications, and RX815 Specifications. If any comments, suggestions, or errors for this manual, please write an e-mail to support@bcmcom.com.

Compliance & Certificate

ISO 9001 Certificate:

This device was produced in our plant with advanced quality system certified by DNV QA Ltd. in according to ISO 9001. This Certificate is valid for:
DESIGN & MANUFACTURE OF MOTHERBOARD AND PERSONAL COMPUTERS.

CE Declaration:

CE marking is a visible declaration by the manufacturer or his authorized representatives that the electrical equipment to which it relates satisfies all the provisions of the 1994 Regulations.

FCC Compliance:

FCC stands for **F**ederal **C**ommunications **C**ommission.

This product complies with FCC Rules Part 15 and has been tested, and complied with the EMI rules by a certified body. In normal operation, there shall be no harmful interference caused by this device nor shall this device accept any interference received, including interference that may cause undesired operation of this product.

Year 2000 Compliance:

This product is test to be qualified to bear the NSTL Year 2000 Compliant logo. Year 2000 problem is mainly a problem of computer software (OS), and the hardware issue. With the support of BIOS on motherboard, the Y2K problem can be thoroughly conquered.

Easy Installation

Easy Installation Steps

The following "Easy Installation" steps are for users accustomed to the assembly of a computer system. For those individuals requiring more specific information, please refer to the more detailed descriptions located within the latter chapters of this manual.

Note: You must keep your power cable unplugged until the following installation steps are completed.

Getting Started

Touch a grounded metal surface to release static electricity stored in your body before unpacking your motherboard. For details please refer to Precautio n section in Chapter 3.

Install the CPU by correctly aligning the CPU with the socket 370 as noted in the motherboard diagram. Once aligned, press down on the CPU gently but firmly and lock it. Next, install the 3.3 volt un-buffered SDRAM into the 168 pin DIMM slots . Please see Sec. 3.4.

Plug in any peripheral card(s) that you want to be included in the setup. Please see Sec. 3.5.

Plug in all cables included in the package except for the power cord. Please see Sec. 3.6.

Please recheck all steps to ensure no mistakes have been made and then plug in the power cord and turn on the power to enter the BIOS setup, Chapter 4.

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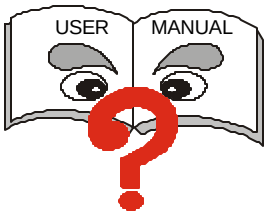
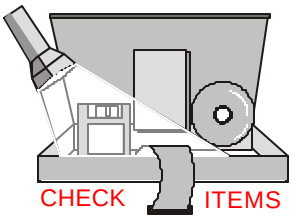
1. Introduction

1.1 How To Use This Manual



This manual provides information necessary for Original Equipment Manufactures (OEMs) and home users to build a ATX compatible system using Intel Socket 370 CPU motherboard. Follow the installation procedure presented on the **Easy Installation Page** and refer to the section number following each step if you require more detailed instructions.

1.2 Check Your Device Items



The standard package should contain the following items. If you find any of these items be missing or damaged, please contact your retailer.

- 1 RX815ELT motherboard
- 1 IDE ribbon cable (80 wire 40-pin)
- 1 floppy ribbon cable
- 1 CD with drivers for RX815ELT Motherboard and user manual on PDF format.

2. Features

2.1 Features Of The Motherboard

This product is based on the Micro ATX form factor. It features the advanced multimedia function and provides support for business PC maker. This motherboard incorporates Intel 815 chipset. Providing features such as integrated 2D/3D AGP VGA controller with AGP In-Line Memory Module, Ultra DMA 33/66/100 IDE interface, ACPI Power Management, 10/100Mbps LAN, USB connectivity, and soft sound support.

Processor

- Single Intel Socket-370 mechanism for Intel Flip -Chip PGA Celeron or Intel Flip - Chip PGA Pentium III Processor (Tualatin)
- Supports 66/100/133 MHz FSB

Core Logic Chipset

- Intel 815 Chipset includes GMCH (Graphics and Memory Controller Hub), ICH2 (I/O Controller Hub) and FWH (Firm Ware Hub)

System Memory

- Three 168-pin DIMM sockets up to 512MB (Memory type support 16x64 module)
- Supports up to 3 double sided DIMMs at 100MHz
- Supports up to 3 single sided DIMMs or 2 double sided DIMMs at 133MHz

Graphics Support

- 230MHz RAMDAC; Integrated Hardware Motion Compensation (30 frames per sec.)
- Desktop display modes up to 1600 x 1200 x 8 @ 75Hz refresh rate
- GMCH with 4MB maximum display cache memory through AIMM (AGP In-Line Memory Module)
- 1 VGA output port
- External (2x/4x) AGP connector (AGP Specification 2.0 compatible)

PCI Bus Master IDE Controller

- Two PCI Busmaster IDE Connectors (up to 4 IDE devices)
- Supports Ultra DMA: 33MB/s, 66MB/s, and 100MB/s

LAN Support

Features

- ICH2 integrated with LAN controller with 82562ET(10/100 Ethernet).

Integrated I/O

- Winbond W83697HF LPC revision 1.0 super I/O controller
- 1 Parallel Port (SPP/ECP/EPP/ECP+EPP)
- 1 Serial Port (16C550 Fast UART Compatible – 115kbps)
- 1 PS/2 Mouse Port
- 1 PS/2 Keyboard Port
- 1 Floppy connector
- 4 Standard USB Ports (2 from the front connector and 2 from the back ports)
- 3 Fan connectors
- Hardware Monitor Capability (optional)

System BIOS

- 4Mb Flash device in FWH
- PC-99 and PnP (Plug 'n Play) compatible
- Supports ACPI (Advanced Configuration and Power Interface), and APM (Advanced Power Management)
- Supports to boot from CD-ROM, SCSI, IDE, FDD, ZIP, and LS-120

Green Features

- Power Management APM version 1.2
- Intelligent Power Management fully supported by Windows 2000 with On-Now and supports all wake-up states (S1 thru S5)
- WOL (Wake On LAN), WOR (Wake On Ring), Keyboard, Mouse, and USB wake-up are supported.

Sound System

- AC97 Revision v. 2.1 integrated in ICH2
- 3 Audio Phone Jacks (Line-Out, Line-In, Mic-In) and 1 MIDI/Game port
- Includes one of each: Modem-In, CD-In, and Aux-In

Expansion Slots

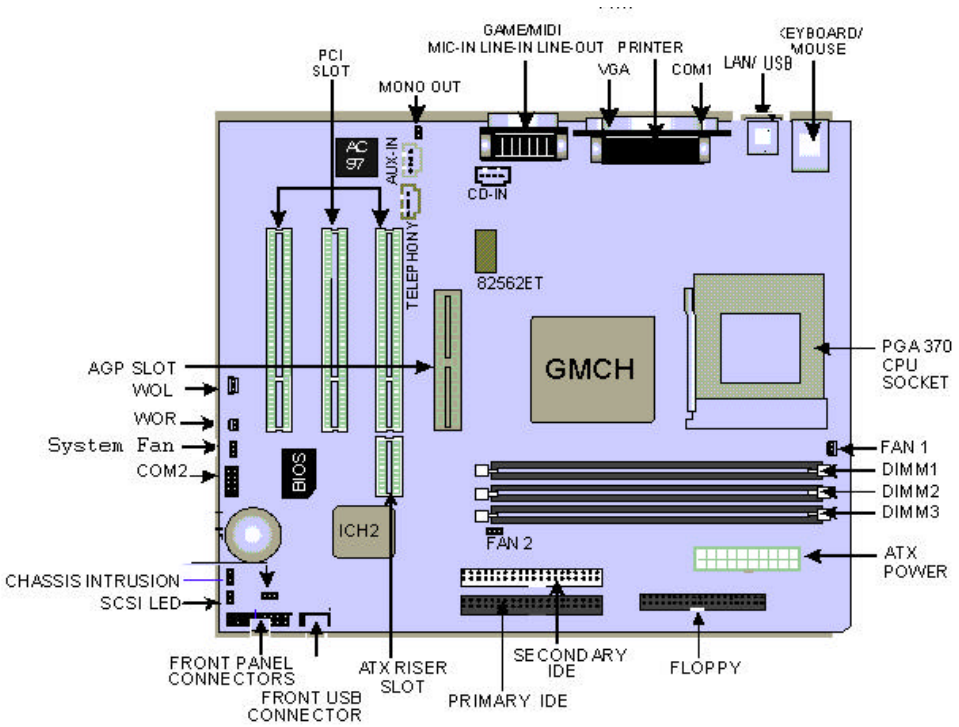
- 1 AGP (2x/4x) slot (shared with AIMM)
- 3 PCI slots (PCI1 supports ATX Riser – optional)
- 1 Shared PCI/CNR slot.

Mechanical

- This motherboard complies with the Micro ATX Form Factor specification, four layers PCB with dimensions of 9.6" x 8.75"

3. Installation

3.1 Motherboard Layout & Main Parts



Significant Parts List

Expansion Slots

CPU Socket	Refer to Sec. 3.3
System Memory	Refer to Sec. 3.4
Expansion Slots	Refer to Sec. 3.5

Front Panel Connectors/Back Panel Ports

IrDA Connector (Part of Front Panel Header)	Refer to Sec. 3.6.5
Sleep Connector (Part of Front Panel Header)	Refer to Sec. 3.6.5
Power Switch Connector (Part of Front Panel Header)	Refer to Sec. 3.6.5
Reset Switch Connector (Part of Front Panel Header)	Refer to Sec. 3.6.5
HDD LED Connector (Part of Front Panel Header)	Refer to Sec. 3.6.5
Power LED Connector (Part of Front Panel Header)	Refer to Sec. 3.6.5
Keyboard/Mouse Ports	Refer to Sec. 3.6.6
USB/LAN Ports	Refer to Sec. 3.6.6
Printer/VGA/Serial Ports	Refer to Sec. 3.6.6
Game/Sound Ports	Refer to Sec. 3.6.6

Connectors

Primary IDE Connector	Refer to Sec. 3.6.1
Secondary IDE Connector	Refer to Sec. 3.6.2
Floppy Connector	Refer to Sec. 3.6.3
Power Connector	Refer to Sec. 3.6.4
CD-In (CD-ROM) Connector	Refer to Sec. 3.6.7
Aux-In (Auxiliary Line-In) Connector	Refer to Sec. 3.6.7
WOL (Wake On LAN) Connector	Refer to Sec. 3.6.7
WOR (Wake On Ring) Connector	Refer to Sec. 3.6.7
SCSI LED Connector	Refer to Sec. 3.6.7
Telephony Connector	Refer to Sec. 3.6.7
CPU Fan Connector	Refer to Sec. 3.6.7
FAN 2 Connector	Refer to Sec. 3.6.7
FAN 3 Connector	Refer to Sec. 3.6.7
Chassis Intrusion Connector	Refer to Sec. 3.6.7
Front USB Connector	Refer to Sec. 3.6.7
Mono Out Connector	Refer to Sec. 3.6.7
Serial Port 2 Connector	Refer to Sec. 3.6.7
Speaker Connection (Optional)	Refer to Sec. 3.6.7

Installation

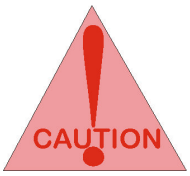
Precaution Before Start

Static Electricity Damage:

Static electricity can easily damage your motherboard. Observing a few basic precautions can help safeguard against damage that could result in expensive repairs. Follow the simple measures below to protect your equipment from static electricity damage.

1. Keep the motherboard and other system components in their anti-static packaging until you are ready to install them.
2. Touch a grounded surface before you remove any system component from its protective anti-static packaging. Unpacking and installation should be done on a grounded, anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same points as the anti-static mat.
3. After removing the motherboard from its original packaging, only place it on a grounded, anti-static surface component side up. Immediately inspect the board for damage. Due to shifting during shipping, it is suggested that the installer press down on the entire socket ICs to ensure they are properly seated. Do this only with the board placed on a firm flat surface.
4. During configuration and installation touch a grounded surface frequently to discharge any static electrical charge that may have built up in your body. The best precaution is to wear a grounded wrist strap. Avoid touching the components when handling the motherboard or a peripheral card. Handle the motherboard and peripheral cards either by the edges or by the peripheral card case-mounting bracket.

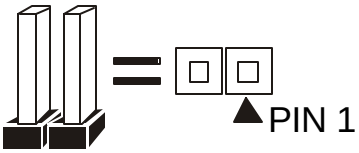
Misplaced Jumper Damage:

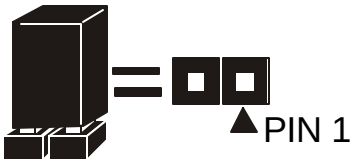


There are critical headers used for connectors or power sources. These are clearly marked separately from the jumpers listed in Motherboard Layout. Incorrect setting jumpers and connectors may lead to damage to your motherboard. Please pay special attention not to connect these headers in wrong directions

3.2 Connectors and Jumpers

This motherboard requires jumper setting for some features. The following graphic shows you how to set a proper jumper setting.





Note: In the following pages, the triangle ● mark stands for pin 1 of the connector or header.

Connectors/Jumpers List

J1: Front USB Connector	J2: Front Panel Connector
J3: Primary IDE Connector	J4: Floppy Connector
J5: SCSI LED Connector	J6: Secondary IDE Connector
J7: Chassis Intrusion Connector	J8: Power Connector
J9: DIMM 3 Slot	J10: DIMM 2 Slot
J11: DIMM 1 Slot	J12: COM B Header
J13: CPU Fan Connector	J14: System Fan Connector
J15: WOR (Wake On Ring) Connector	J16: Socket 370
J17: WOL (Wake On LAN) Connector	J18: NI
J19: AGP Slot	J20: NI
J21: Chassis Fan Header	J22: PCI Slot 1
J23: PCI Slot 2	J24: PCI Slot 3
J25: Telephony Header (NI)	J26: CD-In Header (Black)
J27: S/PDIF	J28: Mono Out Connector
J29: Parallel Port	J30: MIDI / Game Port
J31: Mic In + Line In + Line Out	J32: AUX Line In
J33: USB 1, USB2, and LAN Ports	J34: COM A
J35: VGA Port	J36: Keyboard/ Mouse Ports
J37: LAN LED Header	J38:

JP1: AC Power On

JP2: Clear CMOS/ Password

JP3: NI

JP4: FWH Protection

3.3 CPU (Central Processing Unit)

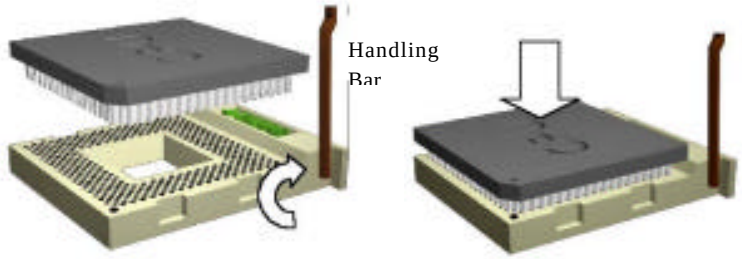
This motherboard supports a Flip -Chip PGA 370 Intel Celeron/Pentium III FC-PGA family processor. To complete CPU installation, please install CPU to socket firmly, presented in Sec. 3.3.1.

3.3.1 Install a CPU

Please follow the below steps to install your CPU.

Step 1: Pull the handling bar of the socket upward to the other end to loosen the socket's openings.

Step 2: Place the CPU on the middle of the socket, orienting its beveled corner to line up with the socket's beveled corner. Make sure the pins of the CPU fit evenly to the socket openings.



Step 1 Step 2

Step 3: Press the handling bar downward to fasten the CPU to the socket.

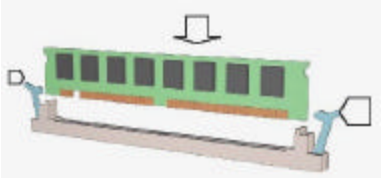
Warning: It is strongly recommended that a heatsink and CPU cooling fan be used to prevent the CPU from overheating. Applying a thermal of jelly between the CPU and the heatsink/fan will further cool the CPU.

3.4 System Memory (DRAM)

3.4.1 DIMM (Dual Inline Memory Module)

The motherboard features three 168-pin DIMM sockets, share memory module. If you have only one DIMM RAM, note that you must insert it into DIMM 1. You can configure the system memory size from 16MB to 512MB/768MB in a variety of ways by using different combinations of the three 168-pin DIMMs.

3.4.2 Installation Procedure



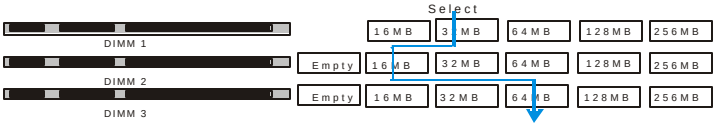
Step1: Make sure Pin 1 of the DIMM match with pin 1 of the DIMM socket.

Step2: Insert the DIMM module into the DIMM socket vertically. After inserting the DIMM module completely into the socket, push up on the socket latches securing the DIMM into place. If the pin 1 of the DIMM module does not line up with pin 1 of the socket, the DIMM module will not be inserted correctly into the socket.

Be careful not to misfit the DIMM into DIMM socket in wrong direction. This module can be inserted into the socket only one way. To release the memory module, push both latches down and carefully rock the module forward and backward while slowly lifting it upward.

3.4.3 DIMM Combinations

Each DIMM socket can be inserted with 8MB, 16MB, 32MB, 64MB, 128MB, and 256MB. For example, the following figure shows you one way to insert your DIMMs.



Select DIMM 1: 32MB
DIMM 2: 16MB
DIMM 3: 64MB

Total
32+16+64=112MB

Select 1 out of 5 Choices (16MB, 32MB, 64MB, 128MB, and 256MB) in DIMM 1.

Then, repeat again in DIMM 2 for 6 choices (Empty, 16 MB, 32 MB, 64 MB, 128MB, and 256MB) and repeat DIMM 3 same ways as DIMM 2 to go through your own path. ***NOTE: If you are using double-sided PC-133 DIMM, you can only use DIMM 1 and DIMM 2.***

3.5 Expansion Slots

This motherboard contains 4 expansion slots. One AGP, one ATX Riser and two 32-bit PCI expansion slots.

AGP Expansion Slot

The Accelerated Graphics Port (AGP) is a high performance interconnect targeted at 3D graphical display applications and is based on a set of performance extensions or enhancements to the PCI bus. (AGP interface specification Rev. 2.0 compliant.)

Note: The motherboard supports AGP 1X/2X/4X mode.

To install expansion cards, please read the expansion card's documentation for instructions and cautions.

PCI Riser Slot

This supports ATX Riser card through the PCI Riser connector. The PCI Riser card specification defines a riser card that can be used with any board form-factor in the ATX family to achieve a low-cost, low profile system design. With the addition of a 2x11 connector to a PCI connector on a standard ATX-family desktop board, the board can be used in multiple system designs or with the riser card as a low-profile desktop. This design reuses saves research and development time as well as inventory costs.

Market trends indicate a continued need for space-constrained systems in corporate application such as business client and point-of-sale as well as new consumer applications. The transition of low-profile designs from the LPX form factor to the NLX form factor confirmed the market need for these low-profile systems. The intent of this specification is to outline one possible approach to a cost-effective, low profile desktop using commonly available form factor building blocks. The riser specification allows the low-profile market to take advantage of the most popular of form factors available: ATX.

PCI Expansion Slots

All PCI expansion slots accept PCI bus master cards and are fully supported by the PCI 2.2 specification.

3.6 Connectors, Headers, and Ports

This motherboard contains IDE, floppy, power connector, front panel, and additional connectors.

3.6.1 Primary IDE Connector (J3, 39-pin block, Black)

This connector supports two primary channel IDE devices as well as the LS120 floppy, Zip, CD-ROM, and DVD-ROM drives via a ribbon cable. When two IDE devices are installed using the primary IDE connector, make sure that the second IDE device is set to slave mode as indicated in the device's manual.

3.6.2 Secondary IDE Connector (J6, 39-pin block, White)

This connector supports two secondary channel IDE devices as well as the LS120 floppy, Zip, CD-ROM, and DVD-ROM drives via a ribbon cable. When two IDE devices are installed using the secondary IDE connector, make sure that the second IDE device is adjusted to slave mode as indicated in the device's manual.

Warning: When you connect a ribbon cable to these ports, you must orient the cable connector so that the PIN 1 edge of the cable is at the PIN 1 edge of the on-board connector.

3.6.3 Floppy Drive Connector (J4, 33-pin block)

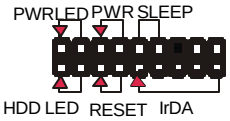
The FDC sub-system can control three types of floppy drives (1.2, 1.44, and 2.88 MB) and/or compatible tape drives. The floppy disk interface includes 48mA current support and inputs on the drive interface.

3.6.4 ATX Power Connector (J8, 20-pin block)

This connector supports one standard ATX power supply. When connecting, make sure the lock key matches the hook attached on a power supply cable. The power cord should be unplugged when you connect it.

3.6.5 Front Panel Connectors (J2, 17-pin block)

Front Panel includes connectors for the following six I/O connectors: Power Switch, Power LED, Reset, Sleep, IrDA, and HDD LED.



IrDA Connector (Pins 9, 11, 13, 15, and 17)

The motherboard offers an IrDA infrared connector that supports third party infrared modules. The case must reserve space for the IR module if you want to use the IrDA function. This option supports wireless transmission and reception of infrared data.

The module mounts in a small opening on the system case that supports this feature. The efficient distance is 100cm and the transfer rate is 115,200 bits/s.

Reset Switch Connector (Pins 5, and 7)

This connector supports the front panel case-mounted reset button. It is advised that the reset switch be used for rebooting the system in order to extend the life of the system's power supply.

HDD LED Connector (Pins 1, and 3)

The motherboard supports one 2-pin connector for connecting to front Panel Hard Disk activity LED indicator.

Sleep Switch Connector (Pins 10, and 12)

When the APM (Advanced Power Management) feature is enabled in the system BIOS and the operating system's APM driver is loaded, the system can enter the sleep (standby) mode in one of the following ways:

- Optional front panel sleep/resume button
- Prolonged system inactivity using the BIOS inactivity timer feature

The 2-pin connector supports a front panel sleep/resume switch, which must be a momentary SPST type that is normally open

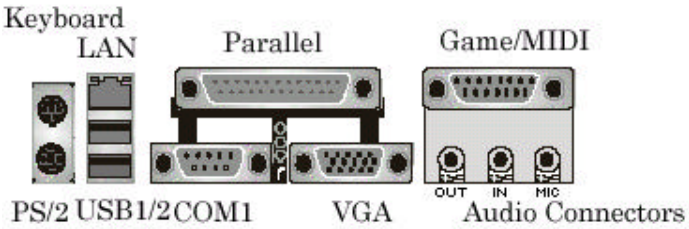
Power Switch Connector (Pins 6, and 8)

This connector supports the ATX case-mounted Power Switch, which in turn supports System Suspend function. When the BIOS sets the Power Button function to "Suspend", the system can be set to the suspended mode once you push the power switch for no longer than 4 seconds. If the power switch is pushed down for over 4 seconds, the system will be totally powered off. When this BIOS setting sets to "Instant-off", then Power Switch function work as a regular power switch.

Power LED Connector (Pins 2, and 4)

This connector can be connected to a 2-color LED that will light yellow or green when the computer is in "Suspend" or "Normal" operation.

3.6.6 Back Panel Connectors



PS/2 Keyboard and Mouse Ports (J36)

The motherboard offers 1 PS/2 Keyboard Port and 1 PS/2 Mouse Port.

USB (Universal Serial Bus) Ports and LAN (Local Area Network) Port (J33) The motherboard has two USB ports and a LAN port (optional). USB devices provide a more convenient operating environment and improve data transferring capacity. True Plug & Play. This new bus technology will support over 127 different peripherals through a hub. This also supports combination of both low and high speed devices (version 1.1) The LAN port (optional) (using RJ-45) provided to hook the system up on a local network or with a DSL (Digital Subscriber Line), or a Cable modem internet boxes.

Parallel Port (J29)

The motherboard includes a parallel port (SPP, EPP, and ECP compatible). The parallel port is capable of being disabled or remapped to either the secondary LPT address or the primary LPT address through BIOS if another parallel port is installed.

Serial Port (J34)

The motherboard has one serial port. The electrical characteristics are compliant with the EIA-232-D Serial Communications Specifications. The serial port may be disabled through the BIOS.

Sound Ports (J31)

The motherboard also provides external sound system through an user accessible stereo jack connector soldered to the PWA. This jack allow the connection of self-amplified speakers, Line-In voice input and Mic-In voice input.

VGA Port (J35)

This product integrates the AGP function via a VGA port. The monitor hooks up here.

Game/MIDI Port (J30)

The motherboard integrates a Game/MIDI port. This port can let you plug a joystick or a MIDI device.

3.6.7 Additional Connectors and Headers

Front USB Connector (J1, 9-pin)

The motherboard offers you to hook up front USB ports via chassis. It is always enabled.

Clear Password Header (JP2, 3-pin)

To clear CMOS. By closing JP6, pins 1 and 2 will clear the CMOS. Under the normal operation, leave JP6, pins 2 and 3 closed.

WOR (Wake On Ring) Connector (J15, 2-pin)

This connector is used for resuming from either the APM sleep mode or the ACPI S1 state. It requires only one call to access the computer. In addition, it detects incoming call similarly for external and internal modems. It also requires modem interrupt to be unmasked for correct operation.

WOL (Wake On LAN) Connector (J17, 3-pin)

This connector is used for remote wakeup of the computer through a network. WOL requires a PCI add-in network interface card (NIC) with remote wakeup capabilities. The remote wakeup connector on the NIC must be connected to the onboard WOL connector. For Wake on LAN, the 5-V standby line for the power supply must be capable of delivering 5V at 720mA.

Chassis Intrusion Connector (J7, 2-pin)

This connector is for a chassis designed for chassis intrusion detection. After-market toggle switches may also be installed to the chassis panel or on any removable components. Two wires should be available from the chassis to connect to this connector. When any chassis component is removed, the contact should open and the motherboard will record a chassis intrusion event. The event can then be processed by software such as LDCM.

FAN 2 Connector (J21, 3-pin)

This connector is used for chassis fan or power fan if needed.

FAN 3 Connector (J14, 3-pin)

This connector is used for chassis fan or power fan if needed.

Serial Port 2 Connector (J12, 9-pin)

This connector is for second serial port.

CPU Fan Connector (J13, 3-pin)

The CPU may have an attached heatsink and fan; connect the CPU fan assembly power to this connector.

CD-In Connector (J26, 4-pin, Black)

A connector is available for audio input from CD-ROM drives.

Aux-In Connector (J32, 4-pin, White)

Access the Aux-In connection for audio input from the auxiliary devices.

Telephony Connector (J25, 4-pin, Green)

Access the Telephony connection for audio input from the modem.

BIOS Lock Header (JP4, 3-pin)

When enabled, the BIOS will be locked.

Safe Speed Header (JP3, 3-pin)

Forces the CPU to run at slowest speed in case of bad configuratio n preventing a boot-up.

SCSI LED Connector (J5, 2-pin)

This header is used for a front panel LED to give SCSI HDD Busy Signal (this will work only if SCSI adapter card and at least one SCSI drive is installed.)

Speaker Connector (, 4-pin, Optional)

For external system speaker connection.

Mono Out Connector (J28, 2-pin)

For mono out connection.

Installation

Are You Ready To Turn On The System?

Check Again

1. Is the CPU installed exactly and firmly into the socket (Sec. 3.3)?
2. Are all the DRAM modules installed properly (Sec. 3.4)?
3. Are all the add-in peripheral seated and configured properly (Sec. 3.5)?
4. Are you sure that all the connectors (described in Sec. 3.6) have been connected to their related devices (Sec. 3.6)?

Yes, I have checked and assured the above steps!

Now get ready to turn on your device by following the steps below.

1. Mount your motherboard to the chassis frame and close the case cover.
2. Connect the power supply cord into inlet of the system case.
3. Connect the power supply cord into an outlet of power supply.
4. Connect Monitor signal cable to the system VGA port and the monitor power cord to power outlet.
5. Now turn on the monitor and system power.

After Power On, the power LED on the front panel of the system case will light. For ATX power supplies, the system LED will light when the ATX power switch is pressed.

The system will then do a power-on-self-test, and additional messages will appear on screen. If the screen blinks or the tests stop more than 30 seconds, the system may have failed the power-on-self-test. If so, please recheck the above steps or call your retailer for assistance.

If the power-on-self-test goes well, hold down <F2> key on the keyboard to enter BIOS Setup. Next, follow the instructions in the next chapter: **BIOS SETUP.**

4. BIOS Setup

The moth erboard uses Whizpro BIOS, stored in a flash EEPROM. All of the configuration information stored in the CMOS.

4.1 BIOS Setup

The Whizpro 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 the system and configuring it through the Power-On-Self-Test (POST). When these preliminaries are finished, the BIOS seek an operation system on the data storage devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and hands over control of system operation to it.

To start Setup, press the <F2> key during boot-up before or while a message similar to this appears briefly at the bottom of the screen during the POST: **Press <F2> key if you want to enter SETUP**

If the above message disappears before you have responded and you still wish to enter Setup, reboot the system to try again by pressing the "RESET" button on the system case. You may also restart by simultaneously pressing the <CTRL>, <ALT> and <DEL> keys.

4.1.1 Setup Keys

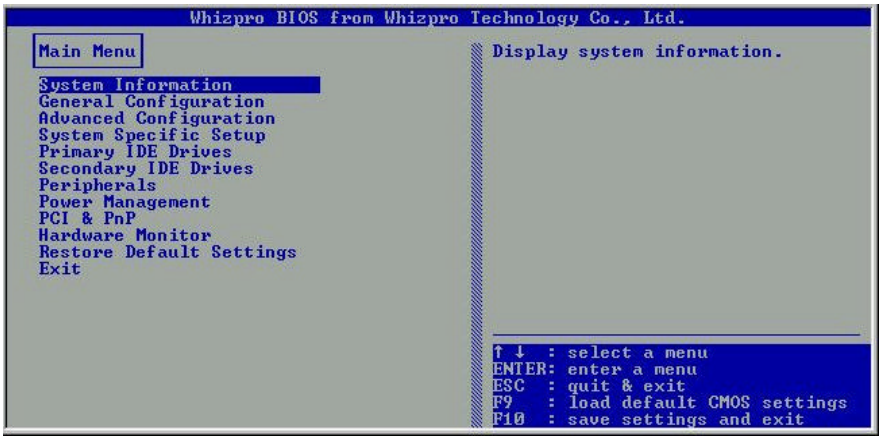
The keys below help you navigate in Setup.

<↑> , <↓>	Move to previous or next item.
<←> , <→>	Change selection.
<ESC>	Main Menu – Quit and Exit CMOS.
<ESC>	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.
<Enter>	Enter to the selected Manu.
<F9>	Load default CMOS settings.
<F10>	Save all the CMOS changes, only for Main Menu.

4.2 Main Setup Menu

When you enter the Whizpro 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> key to 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.

System Information	System Device Information
General Configuration	Options in the original PC AT-compatible BIOS.
Advanced Configuration	Options specific to system onboard chipset and devices.
System Specific Setup	Select PCI and DIMM clock Signals
Primary IDE Drivers	Setup IDE Device & Hard Disk Geometry Data.
Secondary IDE Drives	Setup IDE Device & Hard Disk Geometry Data.
Peripherals	Enable or Disable On-board peripherals devices.
Power Management Setup	Display the fan speed and voltage for your system.
PCI & PnP	PnP OS flag, PnP configure date, ISA memory & IRQ reservation.
Hardware Monitor	Display the voltage & temperature of your CPU and system

Restore Default Settings	Setup defaults that are factory settings for optimal performance system operations.
Exit	Save CMOS settings & Exit, Discard changes & Exit.

4.3 General Configuration Menu

In the Standard CMOS Menu, you can set the system clock and calendar, record disk drive parameters and the video subsystem type, and select the type of errors that stop the BIOS POST.

4.3.1 Date

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 <PgUp> or <PgDn> key to increment the setting, or type the desired value into the field.

4.3.2 Time

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.

4.3.3 Drive A/B type

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 AT-type standard drive; 360 kilobyte capacity.
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity.
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity.

1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity.
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity.

4.3.4 First Boot Device

This option sets the type of device for the first boot drives that the BIOS attempts to boot from after BIOS Post completes.

4.3.5 Second Boot Device

This option sets the type of device for the second boot drives that the BIOS attempts to boot from after BIOS Post completes.

4.3.6 Third Boot Device

This option sets the type of device for the third boot drives that the BIOS attempts to boot from after BIOS Post completes.

4.3.7 Fourth Boot Device

This option sets the type of device for the third boot drives that the BIOS attempts to boot from after BIOS Post completes.

4.3.8 Power Up NumLock

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.

4.3.9 Select Primary VGA

Select Primary display type.

4.3.10 Boot Sector Protection

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 the boot sector, not the entire hard drive.

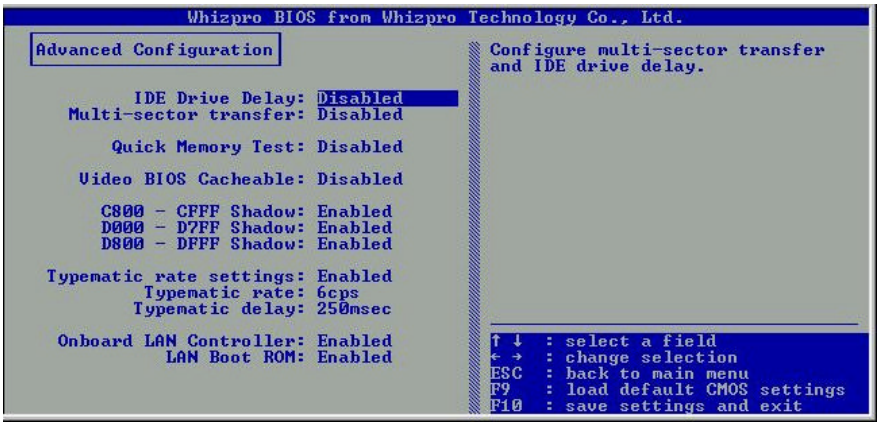
NOTE: Many disk diagnostic programs that access the boot sector table can trigger the virus-warning message. If you plan to run such a program, we recommend that you first disable the virus warning.

4.3.11 Password Required on

Enable Password protection to system setup.

4.4 Advanced Configuration Menu

These screens contain industry-standard options additional to the core PC AT BIOS. This section describes all fields offered by Whizpro Software in this screen. Some fields may vary from those in your Setup program. Your system builder may omit or modify some fields.



4.4.1 IDE Drive Delay

Configure IDE drive delay. Default Disable

4.4.2 Multi-sector Transfer

Configure Multi-sector transfer. Default Disable.

4.4.3 Quick Memory Test

Select enable allow system to skip extensive memory test during POST.

4.4.4 Video BIOS 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.

4.4.5 C800-CFFF Shadow

These options specify how the ROM at C000h copy to RAM, enable will allow the ROM area from C800-CFFF copy to RAM.

4.4.6 D000-D7FF Shadow

These options specify how the ROM at D000h copy to RAM, enable will allow the ROM area from D000-D7FF copy to RAM.

4.4.11 D800-DFFF Shadow

These options specify how the ROM at D800h copy to RAM, enable will allow the ROM area from D000-DFFF copy to RAM.

4.4.12 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.

4.4.13 Typematic Rate (Chars/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.

4.4.14 Typematic Delay (Msec)

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

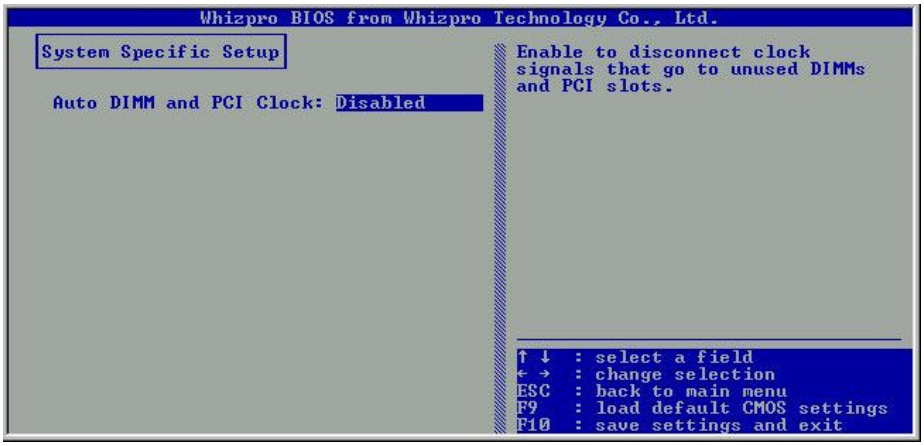
4.4.15 Onboard LAN Controller

Enable allow Onboard LAN function to be enable.

4.4.16 LAN Boot ROM

Enable allow a Boot on LAN ROM to be enable.

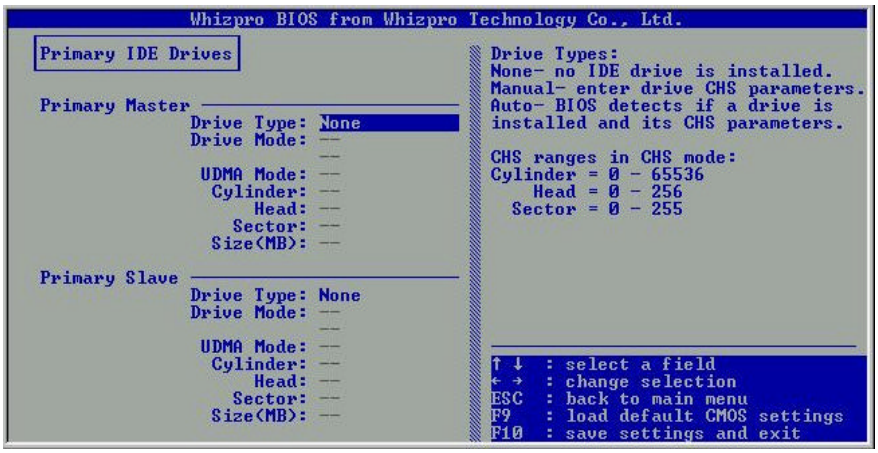
4.5 System Specific Setup



4.5.1 Auto DIMM and PCI Clock

Enable will disconnect clock signals that go to unused DIMMs and PCI slots.

4.6 Primary IDE Drives



4.6.1 Primary Master

Select Auto BIOS will detects if a drive is installed and its CHS parameters. If Manual is select, CHS parameters needs to be insert manually. Select None for no IDE drive installed.

Drive Type:

None	No IDE drive is installed
Manual	Enter drive CHS parameters
Auto	BIOS detects if a drive is installed and its CHS parameters

Mode:

Auto	BIOS check if the drive supports LBA mode, if so LBA mode is enable and used, otherwise CHS mode is use
CHS	Enter drive Cylinder , Head, Sector manually.

UDMA:

Configure PIO or UDMA modes of the IDE device.

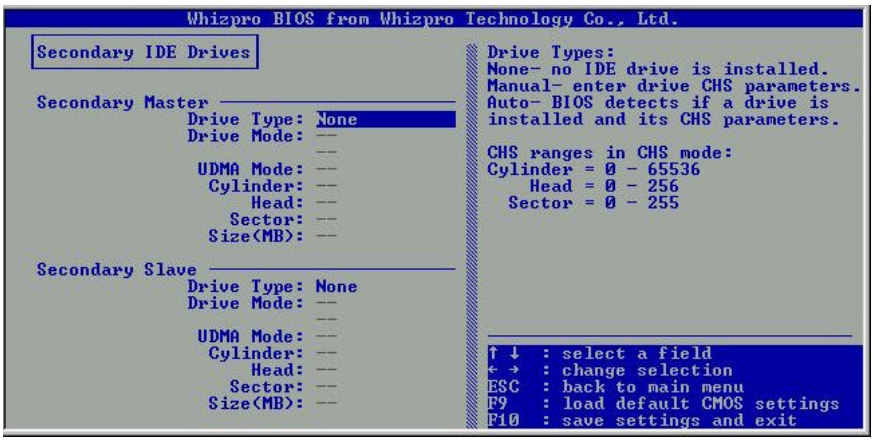
4.6.2 Primary Slave

Select Auto BIOS will detects if a drive is installed and its CHS parameters. If Manual is select, CHS parameters needs to be insert manually. Select None for no IDE drive

installed.

See description above for available options.

4.7 Secondary IDE Drives



4.7.1 Secondary Master

Select Auto BIOS will detects if a drive is installed and its CHS parameters. If Manual is select, CHS parameters needs to be manually insert. Select None for no IDE drive installed

Drive Type:

None	No IDE drive is installed
Manual	Enter drive CHS parameters
Auto	BIOS detects if a drive is installed and its CHS parameters

Mode:

Auto	BIOS check if the drive supports LBA mode, if so LBA mode is enable and used, otherwise CHS mode is use
CHS	Enter drive Cylinder, Head, Sector manually.

UDMA:

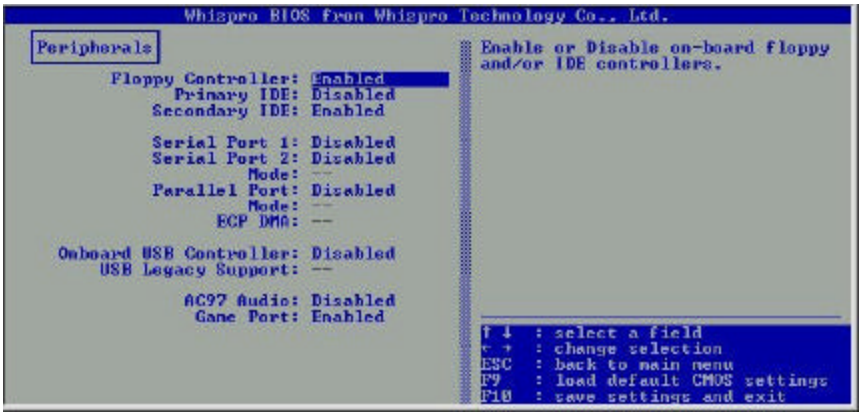
Configure PIO or UDMA modes of the IDE device.

4.7.2 Secondary Slave

Select Auto BIOS will detects if a drive is installed and its CHS parameters. If Manual

is select, CHS parameters needs to be manually insert. Select None for no IDE drive installed.
See description above for available options.

4.8 Peripherals Setup Menu



4.8.1 Floppy Controller

Set this option to enable to invoke the floppy drive controller on the motherboard.

4.8.2 Primary IDE

Set this option to enable to invoke the Primary IDE channel on the motherboard.

4.8.3 Secondary IDE

Set this option to enable to invoke the Secondary IDE channel on the motherboard.

4.8.4 Serial Port 1

This option allows to set serial port configuration.

Auto	Automatic configuration
COM1	Set to I/O address 3F8 IRQ4
COM2	Set to I/O address 2F8 IRQ3
COM3	Set to I/O address 3E8 IRQ4
COM4	Set to I/O address 2E8 IRQ3

4.8.5 Serial Port 2

This option allows to set serial port configuration.

Auto	Automatic configuration
COM1	Set to I/O address 3F8 IRQ4
COM2	Set to I/O address 2F8 IRQ3
COM3	Set to I/O address 3E8 IRQ4

COM4	Set to I/O address 2E8 IRQ3

Mode

Select allow to set UART mode or IRDA mode.

4.8.6 Parallel Port

This option allows to set parallel port configuration.

3BC	Set to I/O address 3BC IRQ5
278	Set to I/O address 278 IRQ5
378	Set to I/O address 378 IRQ5
3BC	Set to I/O address 3BC IRQ7

Mode

The parallel port can be used with devices that adhere to Standard (SPP) or Enhanced Parallel port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device. It also can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rates up to 2.5 megabits per second. ECP provides symmetric bi-directional communication.

DMA

This option is only available if the setting for the parallel port option is ECP. This option sets the DMA channel used by the parallel port, option available are 1 or 3.

4.8.7 Onboard USB Controller

This option allows enabling Rear USB, Font USB or Both.

4.8.8 USB Legacy Support

This option allows enable or disable USB legacy device support.

4.8.9 AC97 Audio

This option allows enable or disable onboard AC97 audio device.

4.9 Power Management Setup Menu

The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.

4.9.1 Power Management

Disable	No power management.
APM	Allows operating system to use APM (Advanced Power Management) mode for power management.
ACPI	ACPI (Advanced Configuration and Power Interface) evolves the existing motherboard configuration interfaces to support these advanced architectures in a more robust, and potentially more efficient manner.
APM+ACPI	Allows operating system to use either APM or ACPI mode for power management

4.9.2 Suspend Type

Set ACPI Suspend type to S1 or S3. The choices are: S1 (POS), and S3 (STR).

4.9.3 S3 Video Init

Perform S3 initialization during S3 (STR) resume.

4.9.4 Stand- by Timer

Set system inactivity time period before BIOS enters the system into stand-by state in APM mode.

4.9.5 Suspend Timer

Set system inactivity time period before BIOS enters the system into suspend state in APM mode.

4.9.6 Hard Disk Power Down

Set system inactivity time period before BIOS shutdown IDE drive in APM mode.

4.9.7 Video Off

Set system inactivity time period before BIOS turn off video in APM mode.

4.9.8 Power Button

In case of computer being “hung”: Instant-Off allows the power button to shut down the system instantly by the push of the button; Delay 4 Sec. allows the power button to shut down the system after holding the button for 4 seconds.

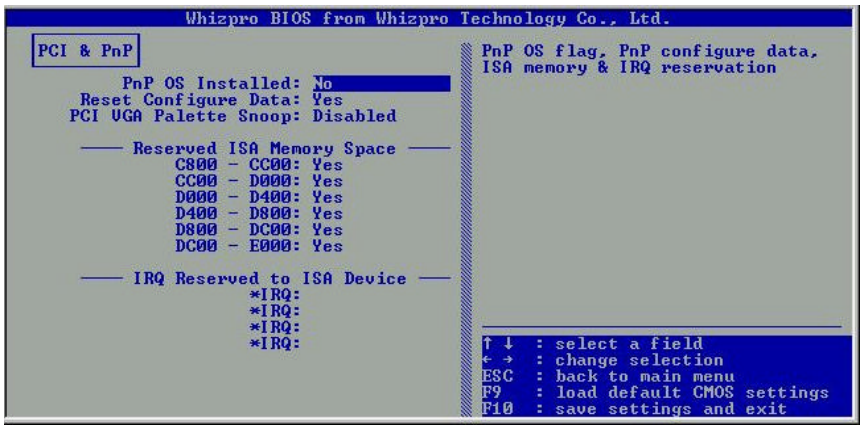
4.9.9 MODEM Uses IRQ

Determines which IRQ the MODEM can use. The choices are: 3, 4, 5, 7, 9, 10, 11, and N/A.

4.9.10 PWRON After PWR-Fail

Sets PWRON After PWR-Fail as Last State, on, or off.

4.10 PCI /PnP Configurations Menu



4.10.1 PnP OS Installed

Set this option to “Yes” to inform BIOS the operating system can handle plug and play (PnP) devices.

4.10.2 Reset Configure Data

Select Enabled to reset Extended System Configuration Date (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.

4.10.3 PCI/VGA Palette Snoop

Some display cards that are not standard VGA card such as graphics accelerators or MPEG cards may not show the correct colors. This setting can correct this problem once you set it to enable. To default setting, leaves at Disabled.

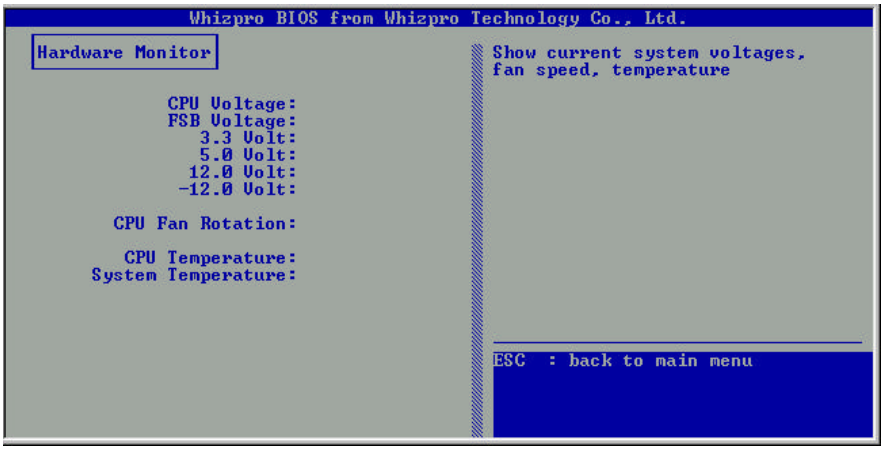
4.10.4 Reserved ISA Memory Device

Select “Yes” will enable that ISA memory address space reserved.

4.10.5 Reserved IRQ To ISA Space

Select “Yes” will enable that IRQ to ISA space reserved.

4.11 Hardware Monitor



4.11.1 CPU Voltage
Display current CPU Vcore voltage.

4.11.2 FSB Voltage
Display current FSB voltage.

4.11.3 3.3 Volt
Display current 3.3 volt.

4.11.4 5.0 Volt
Display current 5 volt.

4.11.5 12 Volt
Display current 12 volt.

4.11.6 -12 Volt
Display current -12 volt.

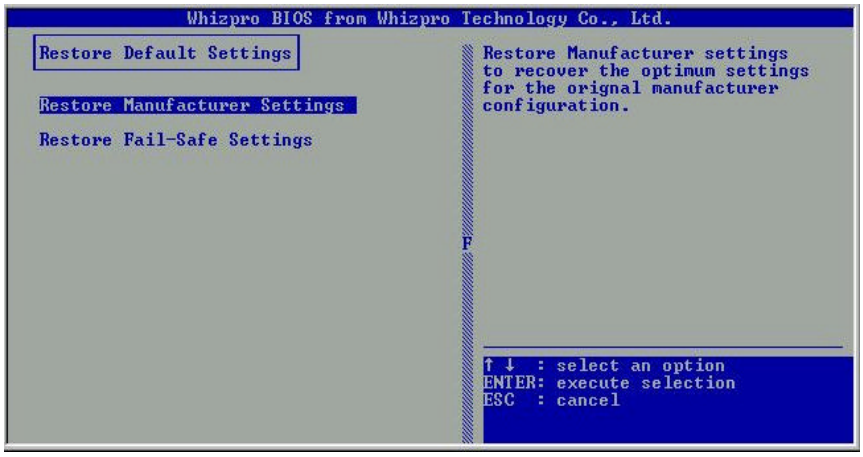
4.11.7 CPU FAN Rotation
Display current CPU FAN speed on Rotations per minutes (RPM).

4.11.8 CPU Temperature
Display current CPU temperature.

4.11.9 System Temperature

Display current system temperature.

4.12 Restore Default Settings



4.12.1 Restore Manufacture Settings

Restore manufacture settings to recover the optimum settings for the original manufacture configuration.

4.11.2 Restore Fail-Safe Settings

Load Fail-Safe settings when you can not boot the system to operating system after change/ add/ remove hardware parts or peripherals.

4.13 Exit

Options are Save CMOS and Exit, Discard Change and Exit, Back to Setup.

5. Troubleshooting

5.1 General Troubleshooting Tips

1) Is your system properly assembled and configured?
    a. Make sure the BIOS setup is set to default/optimal settings. Pressing <F2> or <DEL> key to enter the setup, select Default or Optimal settings, then save and exit the setup.
    b. For Windows 2000, that requires ACPI support, make sure your BIOS is of the latest revision (Some EOL boards will not support it at all).
    c. Is your board jumper are set according to the manual/"Jumpers" in the website?
    d. Is all or any of your peripherals seated properly, that includes CPU, memory, video card, etc… You may even want to try re-seating them.
    e. Is your power supply switched on for those have an on/off switch on the back of the power supply and plugged in. Is your power supply set for proper voltage (115 or 120 for US, 220 or 230 for Europe)? For Europe, if your power supply is set at 115 or 120 and accidentally plugged with 220 or 230 volt power outlet, your system may be already damaged, in that case, consult your vendor.
    f. Some problems and/or conflict can be resolved as simple as by flashing the BIOS with the latest version downloadable from our website.
2) Is there any conflict with hardware and/or drivers?
    a. Make sure your BIOS setup is in default settings.
    b. Make sure the drivers for the installed peripherals that you have are the latest version.
    c. Windows may have some old lingering drivers from an old setup and/or an old motherboard you upgraded from. These older drivers may be causing problems and/or conflicts in your system. The best step is to back up your data and re-install Windows on clean drive. WARNING: Only experienced people should do this as data loss may be possible.
3) Have you verified all of your system components for functionality?
    a. If you have problem running your system, and unsure of which component is at fault, please do a component inspection:
        i. CPU
        ii. Memory
        iii. Hard Drive
        iv. Video Card (if the motherboard does not equip with onboard video)

v. Sound Card (if the motherboard does not equip with onboard sound)
vi. Network Card (if the motherboard does not equip with onboard network)
vii. Modem Card and/or AMR
viii. SCSI Card (if the motherboard does not equip with onboard SCSI)
ix. Any other peripherals

b. If you have extra peripherals or components, please do some swapping at a bare setup to narrow down the fault.

c. If the fault is the motherboard and you are certain of it and with all exhaustive attempts to get it to work even at bare minimum and with slowest speed setup, then it may require a repair or a replacement. You can get it repaired or replaced for free if within warranty of your reseller and/or BCM's. Check your reseller for the warranty and exchange policies. Please note that BCM DO NOT BACK reseller's warranty if it EXCEEDS BCM's current warranty policy which is one year from the date of manufacture and the board is PAST BCM's warranty period. If your reseller is out of business or no longer in service, then the BCM's warranty policy applies. Please also note that if the reseller is still in the business, BCM will IGNORE ALL RMA requests associated with this reseller. First: To determine how old your board is: Look for the label matches to this 14 digits barcode. The break-up of 14 digits barcode is: First Set – 5 digits = Part Number; Second Set – 2 digits = Year (98 = 1998, 00 = 2000, and so forth); Third Set – 2 digits = Week (45 = 45th week of that year); Forth Set – 5 digits = Serial Number. You will need to determine the age of the board yourself.

You may wish to go into discussion board to submit your statement or request and/or to read other people's input that may be of some help to you, please go to:

www.bcmcom.com >> Support >> Discussion Board