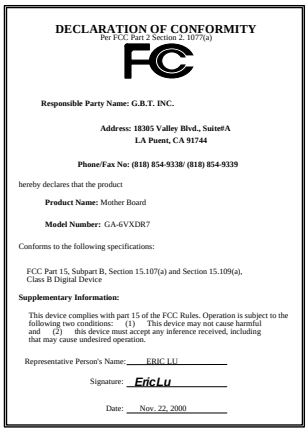
FCC Compliance Statement:



DECLARATION OF CONFORMITY
Per FCC Part 2 Section 2. 1077(a)

Responsible Party Name: G.B.T. INC.

Address: 18305 Valley Blvd., Suite#A
LA Puent, CA 91744

Phone/Fax No: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Mother Board

Model Number: GA-6VXDR7

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a), Class B Digital Device

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any inference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: EricLu

Date: Nov. 22, 2000

This equipment has been tested and found to comply with limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna

-Move the equipment away from the receiver

-Plug the equipment into an outlet on a circuit different from that to which the receiver is connected

-Consult the dealer or an experienced radio/television technician for additional suggestions

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void Your authority to operate such equipment.

This device complies with Part 15 of the FCC Rules. Operation is subjected to the following two conditions 1) this device may not cause harmful interference and 2) this device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology Träding GMbH
Ausschlager Weg 41, 1F, 20537 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Mother Board
GA-6VXDR7

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 EEC-EMC Directive

☐ **EN 55011**	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM high frequency equipment	☐ **EN 61000-3-2*** ☒ **EN60555-2**	Disturbances in supply systems caused by household appliances and similar electrical equipment "Harmonics"
☐ **EN55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ **EN61000-3-3*** ☒ **EN60555-3**	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55014**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ **EN 50081-1**	Generic emission standard Part 1: Residual, commercial and light industry
		☒ **EN 50082-1**	Generic immunity standard Part 1: Residual, commercial and light industry
☐ **EN 55015**	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55081-2**	Generic emission standard Part 2: Industrial environment
☐ **EN 55020**	Immunity from radio interference of broadcast receivers and associated equipment	☐ **EN 55082-2**	Generic immunity standard Part 2: Industrial environment
☒ **EN 55022**	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	☐ **ENV 55104**	Immunity requirements for household appliances tools and similar apparatus
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or **distribution** from sound and television signals	☐ **EN 50091- 2**	EMC requirements for uninterruptible power systems (UPS)
☒ **CE marking**		CE (EC conformity marking)	

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 73/23 EEC

☐ **EN 60065**	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☐ **EN 60950**	Safety for information technology equipment including electrical business equipment
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	General and Safety requirements for uninterruptible power systems (UPS)

Manufacturer/Importer

(Stamp)

Date : Nov. 22, 2000

Signature : Rex Lin

Name : Rex Lin

6VXDR7

Socket 370 Dual Processors Motherboard

USER'S MANUAL

Socket 370 Dual Processors Motherboard
REV. 1.1 Second Edition
R-11-02-001123

How This Manual Is Organized

This manual is divided into the following sections:

1) Revision History	Manual revision information
2) Item Checklist	Product item list
3) Features	Product information & specification
4) Hardware Setup	Instructions on setting up the motherboard
5) Performance & Block Diagram	Product performance & block diagram
6) Dual BIOS	Instruction Dual BIOS
7) BIOS Setup	Instructions on setting up the BIOS software
8) Appendix	General reference

Table Of Content

Revision History

Revision	Revision Note	Date
1.1	Initial release of the 6VXDR7 motherboard user's manual.	Oct. 2000
1.1	Second release of the 6VXDR7 motherboard user's manual.	Nov. 2000

Nov. 23, 200 Taipei, Taiwan, R.O.C

Item Checklist

- ☑ The 6VXDR7 motherboard
- ☑ Cable for IDE / floppy device
- ☑ Diskettes or CD (Driver CD) for motherboard driver & utility
- ☑ 6VXDR7 user's manual

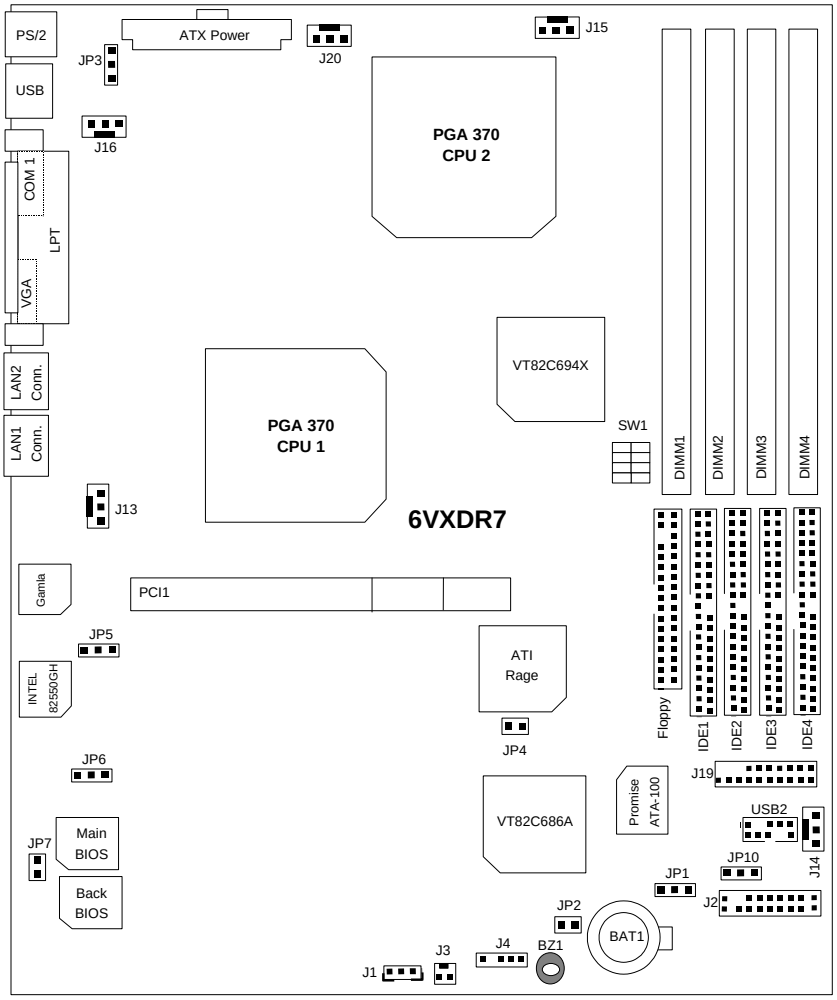
Summary Of Features

Form Factor	• 30.5 cm x 24.8 cm ATX size form factor, 6 layers PCB.
CPU	• 2 Socket 370 processor Intel Pentium® *III* 100/133MHz FSB, FC-PGA • L2 cache in CPU (Depend on CPU)
Chipset	• VT82C694X (VIA Apollo Pro 133A) • VT82C686A
Clock Generator	• ICS 9248AF-63 • 100/133 MHz system bus speeds (PCI 33MHz)
Memory	• 4 168-pin DIMM sockets • Supports PC-100 / PC-133 SDRAM and VCM SDRAM • Supports up to 4GB DRAM (Max) • Supports only 3.3V SDRAM DIMM • Supports 72bit ECC type DRAM integrity mode • Supports registered or un-buttered DRAM
I/O Control	• VT82C686A
Slots	• 1 PCI slot supports 33MHz & PCI 2.2 compliant
On-Board IDE	• IDE 1and IDE 2 Supports PIO mode 3, 4, UDMA 33 / ATA 66 IDE & ATAPI CD-ROM • IDE 3 and IDE 4 Compatible with RAID, Ultra ATA/100, Ultra ATA/66, Ultra ATA/33, EIDE 4 IDE bus master IDE ports for up to 8 ATAPI devices
On-Board Peripherals	• 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes • 1 parallel ports supports Normal/EPP/ECP mode • 1 serial ports (COM 1) • 4 USB ports • 1 IrDA connector for Fast IrDA
On-Board RAID	• Support data striping (RAID 0) or mirroring (RAID 1) . • Supports concurrent dual IDE controller operation. • Supports IDE bus master operation. • Displays status and error checking messages during boot-up. • Mirroring supports automatic background rebuilds • Features LBA and Extended Interrupt13 drive translation in controller onboard BIOS.

To be continued…

Hardware Monitor	• CPU / Power / System fan revolution detect • CPU / Power / System temperature detect • System voltage detect • CPU overheat shutdown detect
PS/2 Connector	• PS/2® Keyboard interface and PS/2® Mouse interface
BIOS	• Licensed AMI BIOS, 2M bits flash ROM • Support Dual BIOS
On-Board VGA	• Onboard AGP ATI RAGE XL 2X
On-Board LAN	• Onboard INTEL 82559 Dual Ethernet
Additional Features	• Support Wake-On-LAN (WOL) • Support Internal / External Modem Ring On • Includes 5 fan power connectors • Poly fuse for keyboard over-current protection

6VXDR7 Motherboard Layout



CPU Speed Setup

The system bus speed is depended on CPU. (Supported 100,133MHz). The user can change the DIP switch (SW1) selection to set up the CPU speed for 500MHz – 1GHz processor.

The CPU speed must match with the frequency ratio. It will cause system hanging up if the frequency ratio is higher than that of CPU.

SW1:

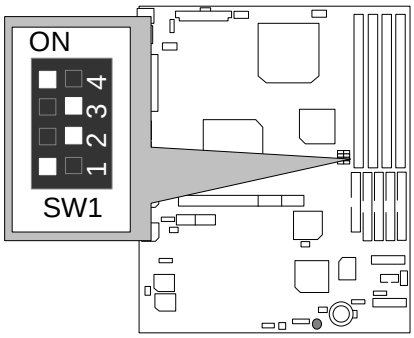
FREQ. RATIO	DIP SWITCH			
	1	2	3	4
X 3	O	X	O	O
X 3.5	X	X	O	O
X 4	O	O	X	O
X 4.5	X	O	X	O
X 5	O	X	X	O
X 5.5	X	X	X	O
X 6	O	O	O	X
X 6.5	X	O	O	X
X 7	O	X	O	X
X 7.5	X	X	O	X
X 8	O	O	X	X
X 8.5	X	O	X	X
X 9	O	X	X	X
X 9.5	X	X	X	X

For double CPU use, the same CPU must be used in CPU socket1 and 2. (The same stepping, FSB, ratio)

Intel Processor all have locked Frequency Multiple, so you can not change the CPU Frequency Multiple.

1. Pentium® *!!!* 500/100MHz FSB

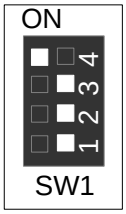
   Pentium® *!!!* 667/133MHz FSB



You can change the DIP switch **(SW1)** selection to set up the CPU Speed.
The CPU frequency RATIO is 5.
The FSB is 100MHz, than CPU speed is 500MHz.
The FSB is 133MHz, than CPU Speed is 667MHz.

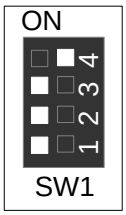
2. Pentium® *!!!* 550/100MHz FSB

   Pentium® *!!!* 733/133MHz FSB

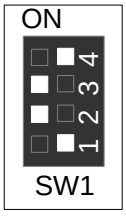


3. Pentium® *!!!* 600/100MHz FSB

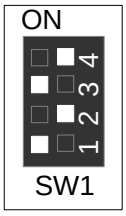
   Pentium® *!!!* 800/133MHz FSB



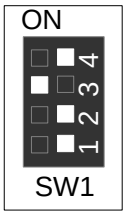
4. Pentium® *!!!* 650/100MHz FSB
   Pentium® *!!!* 866/133MHz FSB



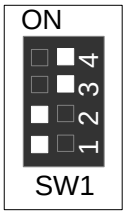
5. Pentium® *!!!* 700/100MHz FSB
   Pentium® *!!!* 933/133MHz FSB



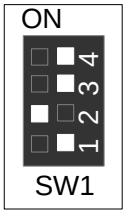
6. Pentium® *!!!* 750/100MHz FSB
   Pentium® *!!!* 1GHz/133MHz FSB



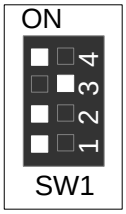
7. Pentium® *!!!* 800/100MHz FSB



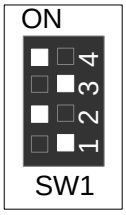
8. Pentium® *!!!* 850/100MHz FSB



9. Pentium® *!!!* 533/133MHz FSB

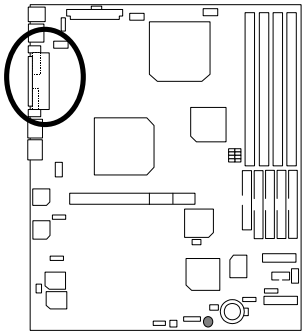


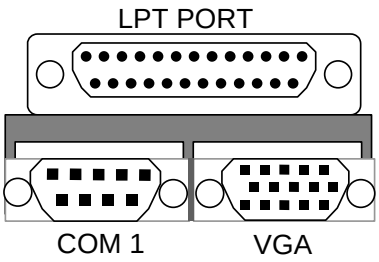
10. Pentium® *!!!* 600/133MHz FSB



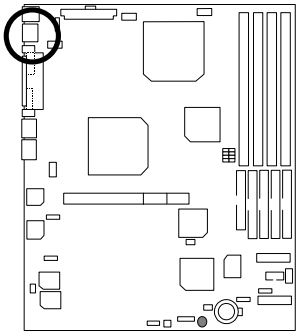
Connectors

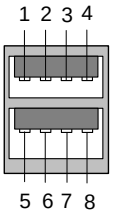
COM 1 / VGA / LPT Port





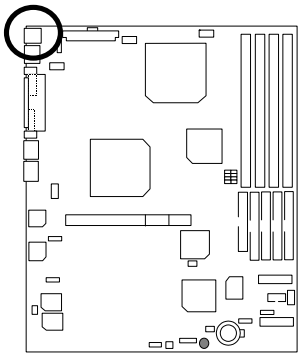
USB 1 Connector

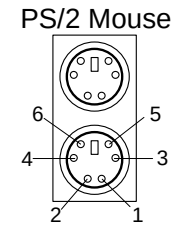




Pin No.	Definition
1	USB V0
2	USB D0-
3	USB D0+
4	GND
5	USB V1
6	USB D1-
7	USB D1+
8	GND

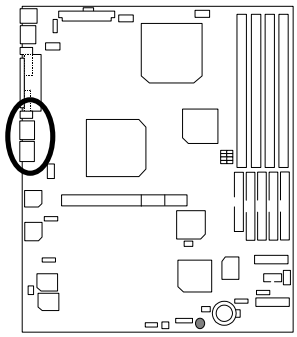
PS/2 Keyboard & PS/2 Mouse Connector

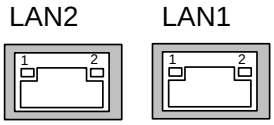




PS/2 Mouse / Keyboard	
Pin No.	Definition
1	Data
2	NC
3	GND
4	VCC(+5V)
5	Clock
6	NC

LAN Connector

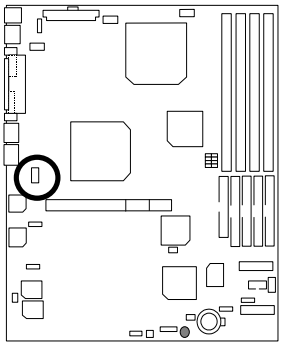




(LAN Active LED)

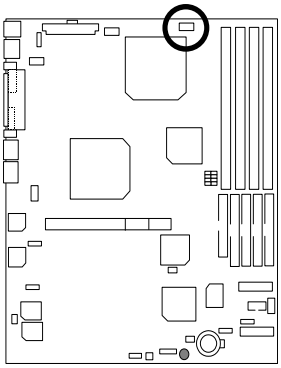
1 – Yellow LED
(LAN Active LED)
2 – Green LED
(LAN Link LED)

J13 : CPU Fan 1



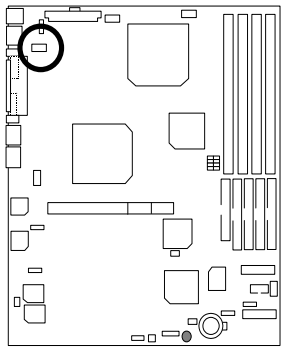
Pin No.	Definition
1	Control
2	+12V
3	SENSE

J15 : CPU Fan 2



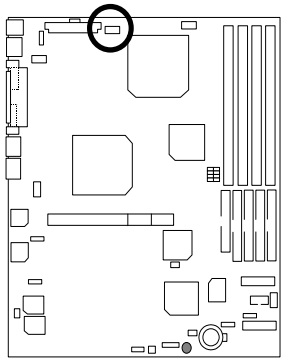
Pin No.	Definition
1	Control
2	+12V
3	SENSE

J16 : Power Fan 1



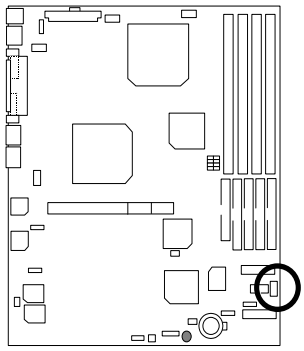
Pin No.	Definition
1	Control
2	+12V
3	NC

J20 : Power Fan 2



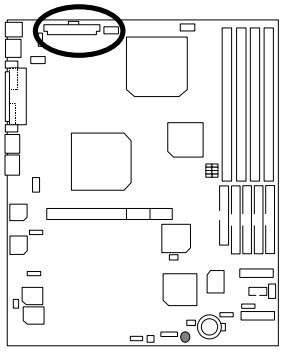
Pin No.	Definition
1	Control
2	+12V
3	NC

J14 : Panel Fan



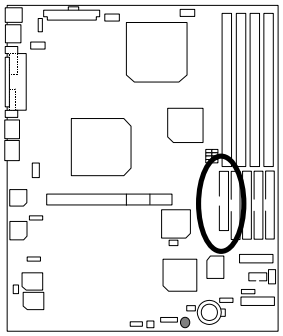
Pin No.	Definition
1	Control
2	+12V
3	NC

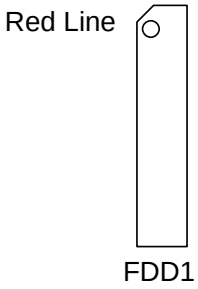
ATX Power



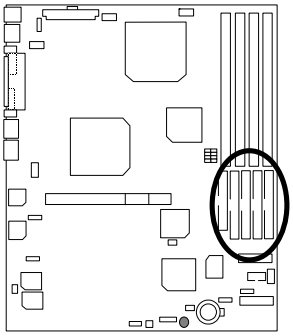
Pin No.	Definition
3,5,7,13, 15-17	GND
1,2,11	3.3V
4,6,19,20	VCC
10	+12V
12	-12V
18	-5V
8	Power Good
9	5V SB stand by+5V
14	PS-ON(Soft On/Off)

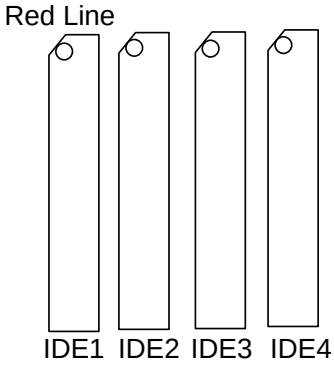
Floppy Port



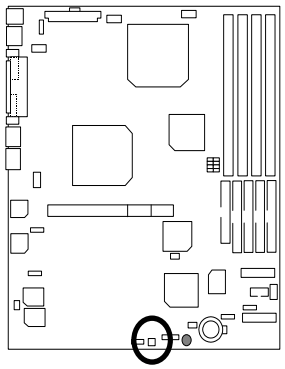


IDE1 (Primary), IDE2 (Secondary), IDE3/IDE4(ATA100 or IDE RAID)



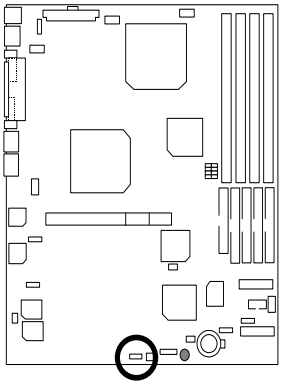


J3 : Ring Power On (Internal Modem Card Wake Up)



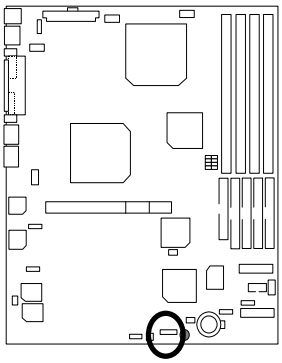
Pin No.	Definition
1	Signal
2	GND

J1 : Wake On LAN



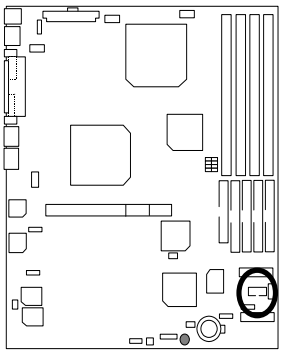
Pin No.	Definition
1	+5V SB
2	GND
3	Signal

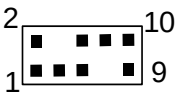
J4 : IR



Pin No.	Definition
1	VCC (+5V)
2	NC
3	IR Data Input
4	GND
5	IR Data Output

USB 2 Connector

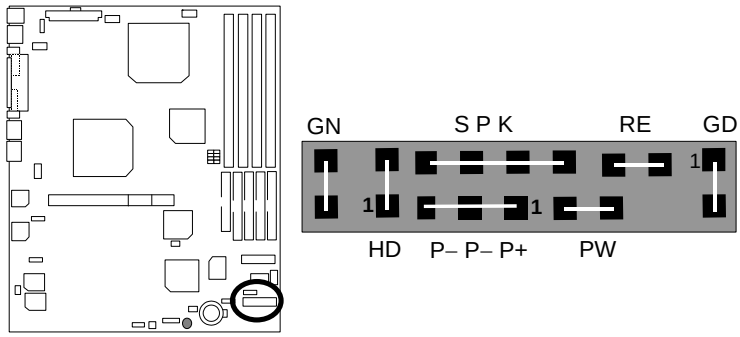




Pin No.	Definition
1,10	+5V
2,9	GND
3	USB D2-
4,7	NC
5	USB D2+
6	USB D3+
8	USB D3-

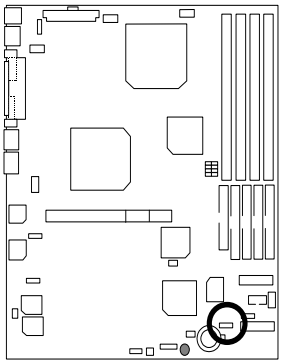
Panel And Jumper Definition

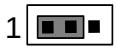
J2 : 2x11 Pins Jumper



GN (Green Switch)	Open: Normal Operation Close: Entering Green Mode
GD (Green LED)	Pin 1: LED anode(+) Pin 2: LED cathode(–)
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(–)
SPK (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(–)
RE (Reset Switch)	Open: Normal Operation Close: Reset Hardware System
P+P–P–(Power LED)	Pin 1: LED anode(+) Pin 2: LED cathode(–) Pin 3: LED cathode(–)
PW (Soft Power Connector)	Open: Normal Operation Close: Power On/Off

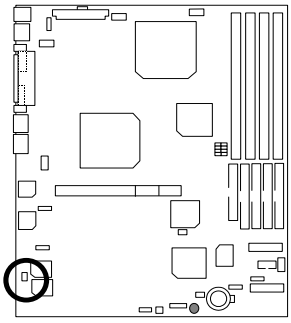
JP1 : Clear CMOS Function





Pin No.	Definition
1-2 Close	Normal (Default)
2-3 Close	Clear CMOS

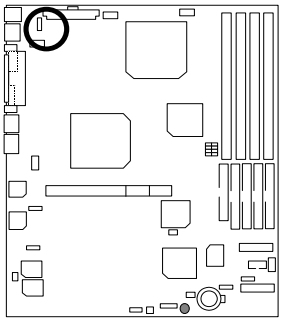
JP7 : BIOS Flash ROM Write Protect (Optional)



Pin No.	Definition
Close	BIOS Write Disabled
Open	Normal (Default)

Please set Jumper JP7 to “Open” to enabled BIOS write function when you update new BIOS or new device.

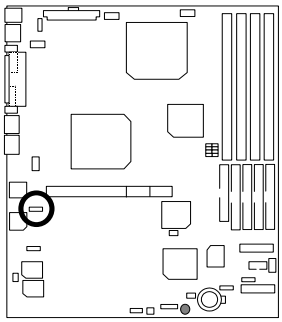
JP3 : USB device Wake up Selection (Optional)



1

Pin No.	Definition
1-2 close	Normal (Default)
2-3 close	Enabled USB Device Wake up

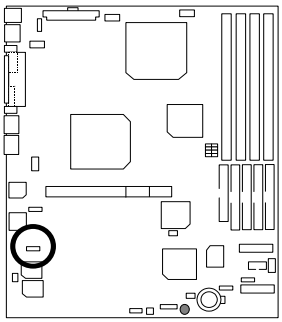
JP5 : Onboard LAN1 Selection (Optional)



1

Pin No.	Definition
1-2 close	Onboard LAN1 Enabled
2-3 close	Onboard LAN1 Disabled

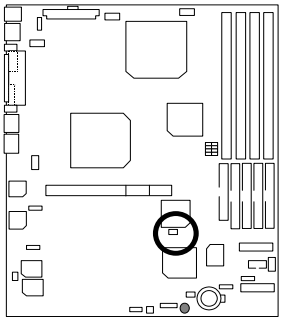
JP6 : Onboard LAN2 Selection (Optional)



1 

Pin No.	Definition
1-2 close	Onboard LAN2 Enabled
2-3 close	Onboard LAN2 Disabled

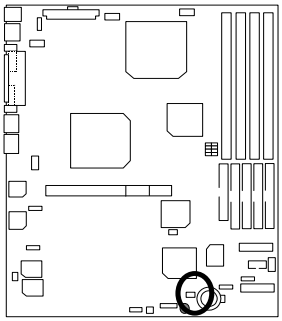
JP4 : Onboard AGP Selection



1 

Pin No.	Definition
Open	Onboard AGP Disabled
Close	Onboard AGP Enabled

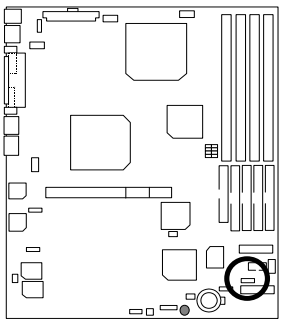
JP2 : Case Open



1 

Pin No.	Definition
Short	Open
Open	Close

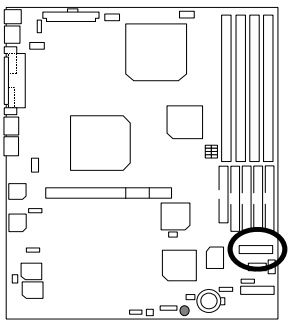
JP10 : IDE RAID Selection

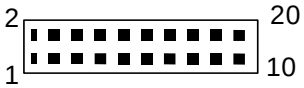


1 

Pin No.	Definition
1-2 close	IDE Raid Disabled
2-3 close	IDE Raid Enabled

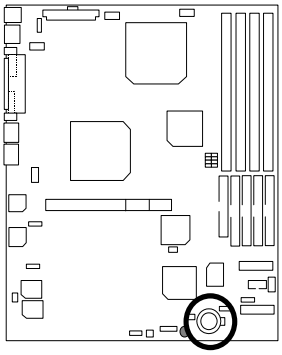
J19 : Panel LED Connector





Pin No.	Definition
1-2	CPU FAN1
3-4	CPU FAN2
5-6	SYSTEM FAN
7-8	SYSTEM EVENT
9	LAN1 Active
10	LAN1 Link
11-12	LAN1 Speed
13	LAN2 Active
14	LAN2 Link
15-16	LAN2 Speed
17-18	Power LED
19-20	Power Button

BAT1 : Battery



CAUTION

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

Performance List

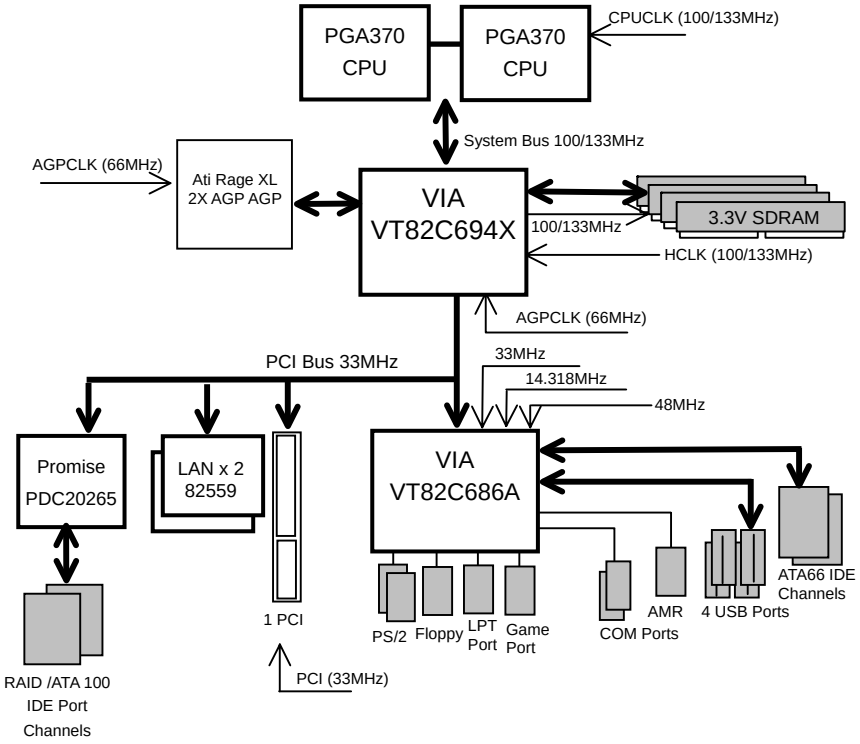
The following performance data list is the testing results of some popular benchmark testing programs.

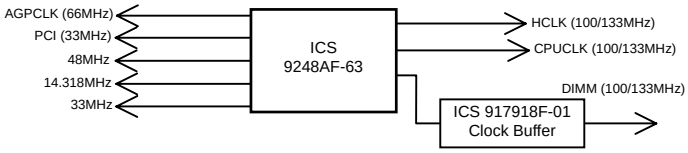
These data are just referred by users, and there is no responsibility for different testing data values gotten by users. (The different Hardware & Software configuration will result in different benchmark testing results.)

- CPU Intel® Pentium III Processor 1000MHz*2
- DRAM 128MB*2 (MT 48LC8M8A2 TG-75B)
- CACHE SIZE 256KB include in CPU
- DISPLAY Onboard ATI Rage XL
- STORAGE Onboard Promise RAID (IBM DTLA 307060)
- O.S. Windows NT™ 4.0 SPK6a
- DRIVER Display Driver at 1024x768x16bitx75MHz

Processor	Intel® Pentium III Processor 1000MHz*2 1000MHz(133x7.5)
Winbench99	
CPU mark 99	89.5
FPU Winmark 99	5320
Business Disk Winmark 99	9550
Hi-End Disk Winmark 99	22800
Business Graphics Winmark 99	157
Hi-End Graphics Winmark 99	540
Winstone99	
Business Winstone 99	42.6
Hi-End Winstone 99	58.7
Dual-Processor Inspection Test	6.97

Block Diagram





Dual BIOS Introduction

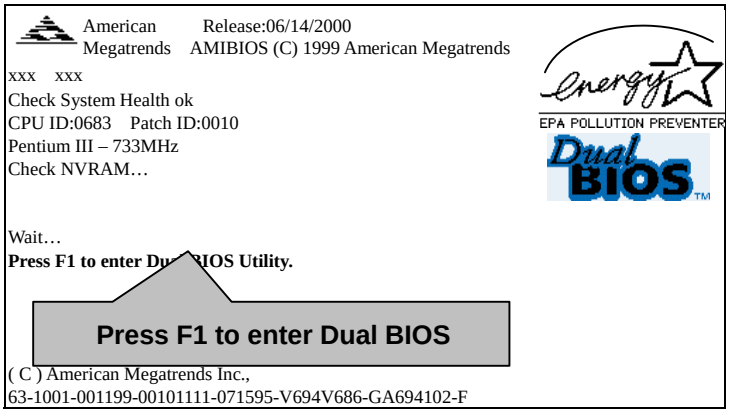
Introduce Dual BIOS

A. What is Dual BIOS Technology?

Dual BIOS means that there are two system BIOS (ROM) on the motherboard, one is the Main BIOS and the other is Backup BIOS. Under the normal circumstances, the system works on the Main BIOS. If the Main BIOS is corrupted or damaged, the Backup BIOS can take over while the system is powered on. This means that your PC will still be able to run stably as if nothing has happened in your BIOS.

B. How to use Dual BIOS?

a. Boot Screen



b. AMI Dual BIOS Flash ROM Programming Utility

AMI Dual BIOS Flash ROM Programming Utility V1.01	
Boot From……..	Main BIOS
Main ROM Type……..	SST 39SF020
Backup ROM Type……..	SST 39SF020
Wide Range Protection	Disable
Boot From	Main BIOS
Auto Recovery	Enable
Halt On Error	Disable
Copy Main ROM Data to Backup	
Load Default Settings	
Save Settings to CMOS	
PgDn/PgUp:Modify ↑↓:Move ESC:Reset F10:Power Off	

c. Dual BIOS Item explanation:

BIOS will auto detect:

Boot From : Main BIOS
Main ROM Type : SST 39SF020
Backup ROM Type : SST 39SF020

Wide Range Protection: Disable(Default), Enable

Status 1:

If any failure (ex. Update ESCD failure, checksum error or reset…) occurs in the Main BIOS , just before the Operating System is loaded and after the power is on, and that the Wide Range Protection is set to “Enable”, the PC will boot from Backup BIOS automatically.

Status 2:

If the ROM BIOS on peripherals cards(ex. SCSI Cards, LAN Cards,..) emits signals to request restart of the system after the user make any alteration on it, the boot up BIOS will not be changed to the Backup BIOS.

Boot From : Main BIOS (Default), Backup BIOS

Status 1:

The user can set to boot from main BIOS or Backup BIOS.

Auto Recovery : Enabled(Default), Disabled

When one of the Main BIOS or Backup BIOS occurs checksum failure, the working BIOS will automatically recover the BIOS of checksum failure.
(In the Power Management Setup of the BIOS Setting, if ACPI Suspend Type is set to Suspend to RAM, the Auto Recovery will be set to Enable automatically.)

(If you want to enter the BIOS setting, please press "Del" key when the boot screen appears.)

Halt On Error : Disable(Default), Enable

If the BIOS occurs a checksum error or the Main BIOS occurs a WIDE RANGE PROTECTION error and Halt On BIOS Defects set to Enable, the PC will show messages on the boot screen, and the system will pause and wait for the user's instruction.

If Auto Recovery :Disable, it will show *<or the other key to continue.>*
If Auto Recovery :Enable, it will show *<or the other key to Auto Recover.>*

Copy Main ROM Data to Backup

Backup message:

Are you sure to copy BIOS?
[Enter] to continue or [Esc] to abort ...

The means that the Main BIOS works normally and could automatically recover the Backup BIOS. Or the means that the Backup BIOS works normally and could automatically recover the Main BIOS.

(This auto recovery utility is set by system automatically and can't be changed by user.)

DualBIOS™ Technology FAQ

GIGABYTE Technology is pleased to introduce DualBIOS technology, a hot spare for your system BIOS. This newness “Value-added” feature, in a long of innovations from GIGABYTE, is available on GA-6VXDR7 motherboard. Future GIGABYTE motherboards will also incorporate this innovation.

What’s DualBIOS™?

On GIGABYTE motherboards with DualBIOS there are physically two BIOS chips. For simplicity we’ll call one your “Main BIOS” and the other we’ll call your “Backup” BIOS (your “hot spare”). If your Main BIOS fails, the Backup BIOS almost automatically takes over on your next system boot. Almost automatically and with virtually zero down time! Whether the problem is a failure in flashing your BIOS or a virus or a catastrophic failure of the Main BIOS chip, the result is the same - the Backup BIOS backs you up, almost automatically.

I. Q: What is DualBIOS™ technology?

Answer:

DualBIOS technology is a patented technology from Giga-Byte Technology. The concept of this technology is based on the redundancy and fault tolerance theory. DualBIOS™ technology simply means there are two system BIOSes (ROM) integrated onto the motherboard. One is a main BIOS, and the other is a backup BIOS. The mainboard will operate normally with the main BIOS, however, if the main BIOS is corrupt or damaged for various reasons, the backup BIOS will be automatically used when the system powered-On. Your PC will operate as before the main BIOS was damaged, and is completely transparent to the user.

II. Q: Why does anyone need a motherboard with DualBIOS™ technology?

Answer:

In today's systems there are more and more BIOS failures. The most common reasons are virus attacks, BIOS upgrade failures, and/or deterioration of the BIOS (ROM) chip itself.

1. New computer viruses are being found that attack and destroy the system BIOS. They may corrupt your BIOS code, causing your PC to be unstable or even not boot normally.
2. BIOS data will be corrupted if a power loss/surge occurs, or if a user resets the system, or if the power button is pressed during the process of performing a system BIOS upgrade.
3. If a user mistakenly updates their mainboard with the incorrect BIOS file, then the system may not be able to boot correctly. This may cause the PC system hang in operation or during boot.
4. A flash ROM's life cycle is limited according to electronic characteristics. The modern PC utilizes the Plug and Play BIOS, and is updated regularly. If a user changes peripherals often, there is a slight chance of damage to the flash ROM.

With Giga-Byte Technology's patented DualBIOS™ technology you can reduce the possibility of hangs during system boot up, and/or loss BIOS data due to above reasons. This new technology will eliminate valuable system down time and costly repair bills cause by BIOS failures.

III. Q: How does DualBIOS™ technology work?

Answer:

1. DualBIOS™ technology provides a wide range of protection during the boot up procedure. It protects your BIOS during system POST, ESCD update, and even all the way to PNP detection/assignment.
2. DualBIOS™ provides automatic recovery for the BIOS. When the first BIOS used during boot up does not complete or if a BIOS checksum error occurs, boot-up is still possible. In the DualBIOS™ utility, the "Auto Recovery" option will guarantee that if either the main BIOS or backup BIOS is corrupted, the DualBIOS™ technology will use the good BIOS and correct the wrong BIOS automatically.
3. DualBIOS™ provides manual recovery for the BIOS. DualBIOS™ technology contains a built-in flash utility, which can flash your system BIOS from backup to main and/or visa versa. There is no need for an OS-dependent flash utility program.
4. DualBIOS™ contains a one-way flash utility. The built-in one-way flash utility will ensure that the corrupt BIOS is not mistaken as the good BIOS during recovery and that the correct BIOS (main vs. backup) will be flashed. This will prevent the good BIOS from being flashed.

IV. Q: Who Needs DualBIOS™ technology?

Answer:

1. Every user should have DualBIOS™ technology due to the advancement of computer viruses.

   Everyday, there are new BIOS-type viruses discovered that will destroy your system BIOS. Most commercial products on the market do not have solutions to guard against this type of virus intrusion. The DualBIOS™ technology will provide a state-of-the-art solution to protect your PC:

   Case I.) Vicious computer viruses may wipe out your entire system BIOS. With a conventional single system BIOS PC, the PC will not be functional until it is sent for repairs.

   Case II.) If the "Auto Recovery" option is enabled in the DualBIOS™ utility, and if a virus corrupts your system BIOS, the backup BIOS will automatically reboot the system and correct the main BIOS.

   Case III.) A user may override booting from the main system BIOS. The DualBIOS™ utility may be entered to manually change the boot sequence to boot from the backup BIOS.

2. During or after a BIOS upgrade, if DualBIOS™ detects that the main BIOS is corrupt, the backup BIOS will take over the boot-up process automatically. Moreover, it will verify the main and backup BIOS checksums when booting-up. DualBIOS™ technology examines the checksum of the main and backup BIOS while the system is powered on to guarantee your BIOS operates properly.

3. Power Users will have the advantage of having two BIOS versions on their mainboard. The benefit is being able to select either version BIOS to suit the performance system needs.

4. Flexibility for high-end desktop PCs and workstation/servers. In the DualBIOS™ utility, the option can be set, "Halt On When BIOS Defects," to be enabled to halt your system with a warning message that the main BIOS has been corrupted. Most workstation/servers require constant operation to guarantee services have not been interrupted. In this situation, the "Halt On When BIOS Defects" message may be disabled to avoid system pauses during normal booting. Another advantage you gain from Giga-Byte's DualBIOS™ technology is the ability to upgrade from dual 2 Mbit BIOS to dual 4 Mbit BIOS in the future if extra BIOS storage is need.

Advanced Networking Services for Windows NT* 4 and Windows 2000 (Teaming)

Please make sure the Intel LAN Adapter teaming driver Install complete.
(☞ refer to page 74)

1. Intel LAN Adapter Teaming

Adapter Teaming Installation Notes for the PRO/100 S Server Adapter Under Windows NT 4.0 and Windows 2000.

Note: Teaming requires Intel® Server Adapters.

1.1 Overview

The PRO/100 S adapter provides several options for increasing throughput and fault tolerance when running Windows NT 4.0 or Windows 2000 :

- Adapter Fault Tolerance (AFT) - provides automatic redundancy for your adapter. If the primary adapter fails, the secondary takes over.
- Adaptive Load Balancing (ALB) - creates a team of 2 - 8 adapters to increase transmission throughput. Also includes the AFT option. Works with any 100BASE-TX switch.
- Fast EtherChannel* (FEC) - creates a team of 2 or 4 adapters to increase transmission and reception throughput. Also includes the AFT option. Requires a Cisco switch with FEC capability.

1.2 Before You Get Started

Before you can configure the PRO/100 S adapter for Adapter Teaming, you need to do the following:

- Install at least two PRO/100+ or PRO/100 S server adapters in a Windows NT 4.0 or Windows 2000 system. When installation is complete make sure you restart Windows.

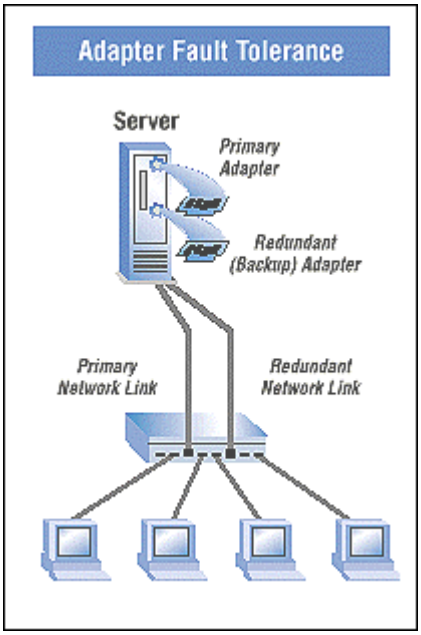
  Note: Windows NT 4.0 Service Pack 5 or later is required for implementing Adapter Teaming properly. Install Service Pack prior to configuring Adapter Teaming.

- If connecting to a hub, each adapter in a team must be connected to a port which is in the same collision domain. If connected to a switch, each adapter in a team must be connected to a port which is in the same network.

2. Adapter Fault Tolerance (AFT)

2.1 OverView

A method of safeguarding the network link to the server switch or network service using transparent backup links. Adapter Fault Tolerance (AFT) requires two adapters and an intelligent software agent that continuously monitors both links. If any component of one link fails, the redundant link takes over within seconds—typically, without users (connected via a hub or switch) even noticing the exchange.



2.2 Performance

To increase server availability, the server communicates with the LAN via a primary adapter. If the primary link fails, traffic is automatically re-routed to the secondary adapter with no interruption of service.

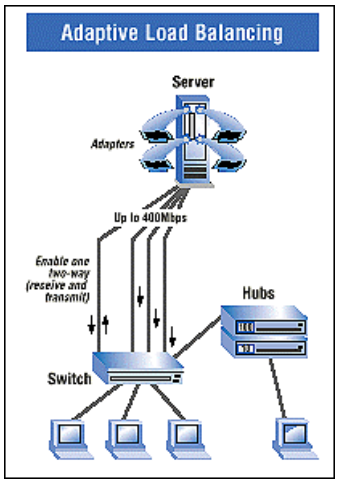
2.3 Manageability

Generates alert when an adapter fails. This allows any problems with links to be fixed promptly. These alerts are operating system-based for compatibility with management applications such as Intel® LANDesk® Server Manager which can detect the alert and trigger an action (email, page, call).

3. Adaptive Load Balancing (ALB)

3.1 Overview

Also known as asymmetric port aggregation—is a method of ensuring consistent high server throughput and transparent backup connections by using multiple network interface cards and balancing the data transmissions across them. As many as four Intel® server adapters, connected to a switch, can be configured to work together as a "team" for an aggregate throughput of up to 400Mbps with Fast Ethernet adapters or 8Gbps with Gigabit Ethernet Adapters.



3.2 Performance

In ALB, an intelligent adaptive agent, provided in the driver, dynamically manages the server adapter team and evenly distributes the load among them by constantly analyzing the traffic flow from the server. In addition, four Fast Ethernet server adapters teamed with a switch can be configured for up to 400 Mbps bandwidth, or 8Gbps with Gigabit Ethernet adapters.

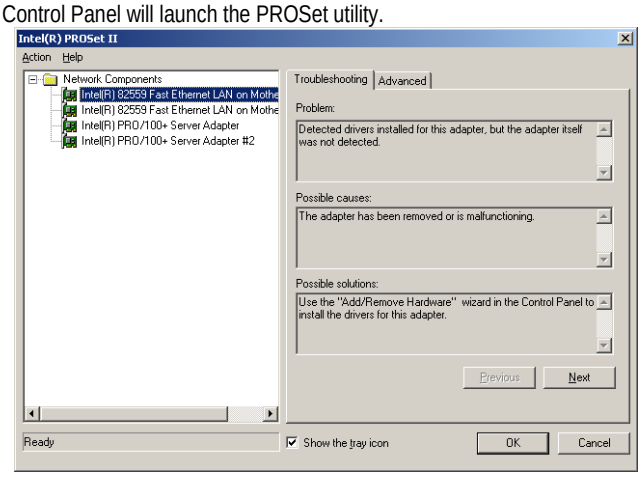
3.3 Manageability

A single network address is assigned to the collection of adapters that constitute the ALB. Aggregation team so that you no longer have to spend time segmenting the network to reduce server bottlenecks.

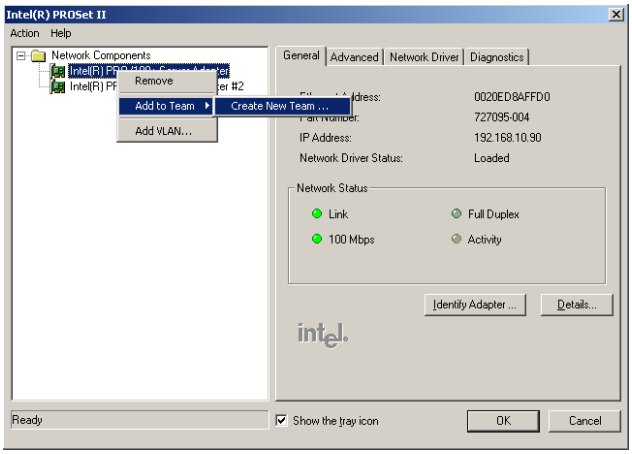
4. General Instructions

4.1 Perform Teaming In Windows NT4.0 Or Windows 2000

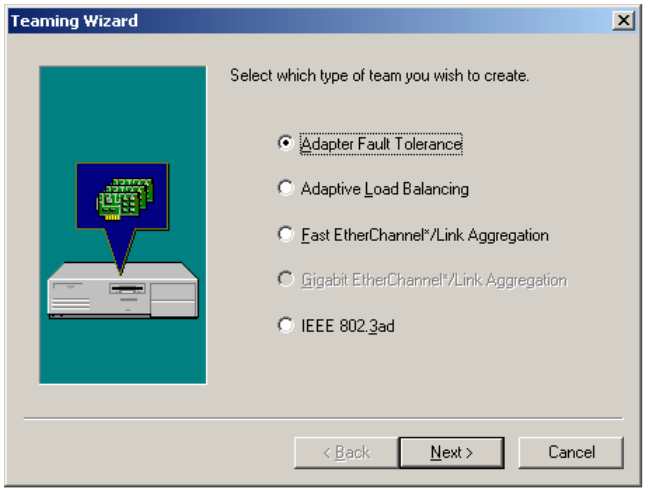
1. Setup Intel PROSet II. Then, double-click on the Intel (R) PROSet II icon in the Control Panel will launch the PROSet utility.



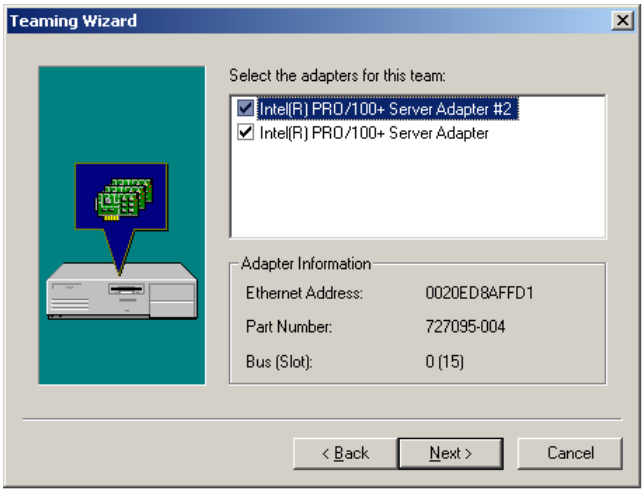
2. Create a new team .



3. At the Teaming Wizard dialog, select the type of team you want to create and click Next.

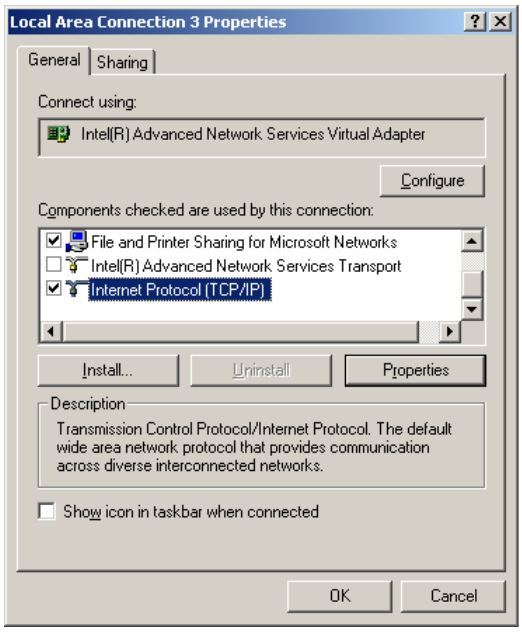


4. Add a check in the checkbox for each adapter you want as a part of the team and click Next.



5. Click OK to close PROSet. II
You should notice a new listing in the Network control panel, which is the team you have created.

6. After the team created, a Intel® Advanced Network Services Virtual Adapter will appear on Network in the Control Panel. Assign a IP for this Virtual Adapter.



Memory Installation

The motherboard has 4 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM Slot .The DIMM module can only fit in one direction due to the two notch. Memory size can vary between sockets.

Install memory in any combination table:

DIMM	168-pin SDRAM DIMM Modules	
DIMM 1	Supports 16 / 32 / 64 / 128 / 256 / 512 MB / 1GHz	X 1 pcs
DIMM 2	Supports 16 / 32 / 64 / 128 / 256 / 512 MB / 1GHz	X 1 pcs
DIMM 3	Supports 16 / 32 / 64 / 128 / 256 / 512 MB / 1GHz	X 1 pcs
DIMM 4	Supports 16 / 32 / 64 / 128 / 256 / 512 MB / 1GHz	X 1 pcs

★Total System Memory (Max 4GB)

BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

Power ON the computer and press <Del> immediately will allow you to enter Setup. If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" bottom on the system case. You may also restart by simultaneously press <Ctrl> – <Alt>– <Del> keys.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
<F7>	Load the Setup Defaults.
<F8>	Reserved
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

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>.

The Main Menu

Once you enter AMI BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from nine setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

AMIBIOS SIMPLE SETUP UTILITY-VERSION 1.23 (C) 1999 American Megatrends, Inc. All Rights Reserved	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP/PCI CONFIGURATION	IDE HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit ↑↓←→ : Select Item (Shift) F2 : Change Color F5 : Old Values F6 : Load BIOS Defaults F7: Load Setup Defaults F10: Save & Exit	
Time, Date, Hard Disk Type, …	

Figure 1: Main Menu

- Standard CMOS Setup

  This setup page includes all the items in standard compatible BIOS.

- BIOS Features Setup

  This setup page includes all the items of AMI special enhanced features.

- Chipset Features Setup

  This setup page includes all the items of chipset special features.

- Power Management Setup

  This setup page includes all the items of Green function features.

- PnP/PCI Configurations

  This setup page includes all the configurations of PCI & PnP ISA resources.

- Load BIOS Defaults

  Bios Defaults indicates the value of the system parameter which the system would be in the safe configuration.

- Load Setup Defaults

  Setup Defaults indicates the value of the system parameter which the system would be in the most appropriate configuration.

- Integrated Peripherals

  This setup page includes all onboard peripherals.

- Hardware Monitor Setup

  This setup page is auto detect fan and temperature status.

- Supervisor password

  Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

- User password

  Change, set, or disable password. It allows you to limit access to the system.

- IDE HDD auto detection

  Automatically configure hard disk parameters.

- Save & Exit Setup

  Save CMOS value settings to CMOS and exit setup.

- Exit Without Saving

  Abandon all CMOS value changes and exit setup.

Standard CMOS Setup

The items in Standard CMOS Features Menu (Figure 2) are divided into 9 categories. Each category includes no, one or more than one setup items. Use the arrows to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

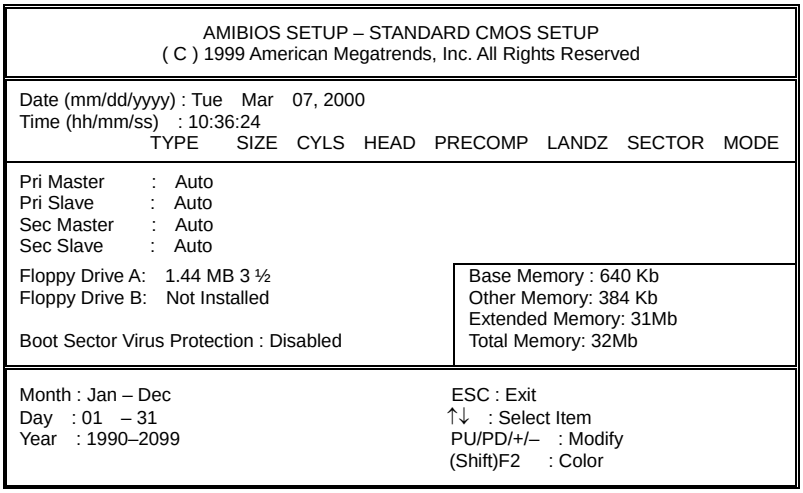


Figure 2: Standard CMOS Setup

- Date

The date format is <Week> <Month> <Day>, <Year>.

Week	The week, from Sun to Sat, determined by the BIOS and is display-only
Month	The month, Jan. Through Dec.
Day	The day, from 1 to 31 (or the maximum allowed in the month)
Year	The year, from 1990 through 2099

- Time

  The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

- Primary Master, Slave / Secondary Master, Slave

  The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and user definable type. User type is user-definable; Auto type which will automatically detect HDD type.

  Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

  If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

CYLS.	Number of cylinders
HEADS	number of heads
PRECOMP	write precomp
LANDZONE	Landing zone
SECTORS	number of sectors

If a hard disk has not been installed select NONE and press <Enter>.

- Floppy Drive A / Floppy Drive B

  The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

None	No floppy drive installed
360K, 5.25 in.	5.25 inch PC-type standard drive; 360K byte capacity.
1.2M, 5.25 in.	5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
720K, 3.5 in.	3.5 inch double-sided drive; 720K byte capacity
1.44M, 3.5 in.	3.5 inch double-sided drive; 1.44M byte capacity.
2.88M, 3.5 in.	3.5 inch double-sided drive; 2.88M byte capacity.

- Boot Sector Virus Protection

If it is set to enable, the category will flash on the screen when there is any attempt to write to the boot sector or partition table of the hard disk drive. The system will halt and the following error message will appear in the mean time. You can run anti-virus program to locate the problem.

Enabled	Activate automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table
Disabled	No warning message to appear when anything attempts to access the boot sector or hard disk partition table. (Default Value)

- Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.
The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1 MB in the CPU's memory address map.

Other Memory

This refers to the memory located in the 640 K to 1024 K address space. This is memory that can be used for different applications.
DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

BIOS Features Setup

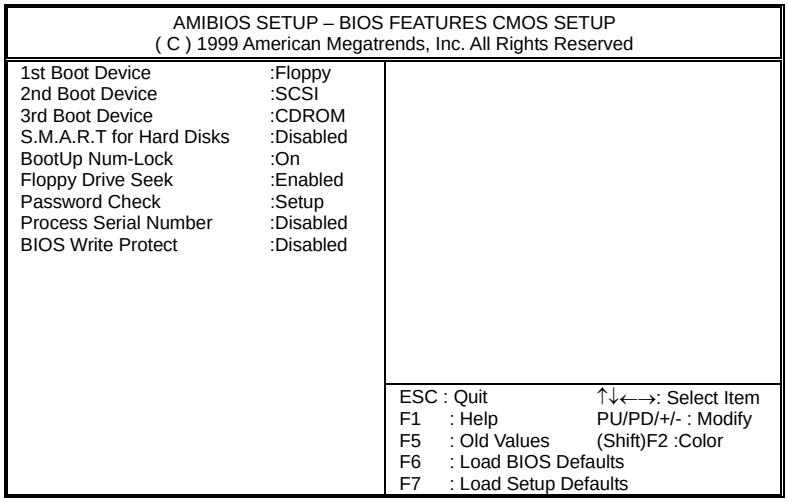


Figure 3: BIOS Features Setup

- 1st / 2nd / 3rd Boot Device

Floppy	Boot Device by Floppy.
LS / ZIP A:	Boot Device by LS / ZIP A:.
CDROM	Boot Device by CDROM.
SCSI	Boot Device by SCSI.
NETWORK	Boot Device by NETWORK.
IDE-0~IDE-3	Boot Device by IDE-0~IDE-3.
Disabled	Boot Device by Disabled.
ATAPI ZIP C:	Boot Device by ATAPI ZIP C:.

- S.M.A.R.T. for Hard Disks

Enabled	Enabled S.M.A.R.T. Hard for Disks.
Disabled	Disabled S.M.A.R.T. Hard for Disks. (Default Value)

- Boot Up Num-Lock

On	Keypad is number keys. (Default Value)
Off	Keypad is arrow keys.

- Floppy Drive Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360 type is 40 tracks while 720 , 1.2 and 1.44 are all 80 tracks.

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720, 1.2 or 1.44 drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360. (Default Value)

- Password Check

Setup	Set Password Check to Setup. (Default Value)
Always	Set Password Check to Always.

- Processor Serial Number

Disabled	Disabled Processor Serial Number. (Default Value)
Enabled	Enabled Processor Serial Number.

- BIOS Write Protect

Disabled	Enabled BIOS Write Function. (Default Value)
Enabled	BIOS Write Protect.

Chipset Features Setup

AMIBIOS SETUP –CHIPSET FEATURE CMOS SETUP (C) 1999 American Megatrends, Inc. All Rights Reserved	
*** DRAM Timing ***	
Top Performance :Disabled	
SDRAM Timing by SPD :Disabled	
SDRAM CAS# Latency :Auto	
CPU/DRAM Frequency :Auto	
C2P Concurrency & Master :Enabled	
DRAM Integrity Mode :Disabled	
AGP Aperture Size :64MB	
USB Controller :All USB Port	
USB Legacy Support :Disabled	
	ESC : Quit ↑↓←→: Select Item F1: Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 :Color F6 : Load BIOS Defaults F7 : Load Setup Defaults

Figure 4: Chipset Features Setup

- Top Performance

  If you wish to maximize the performance of your system, set “Top Performance” as “Enabled”.

Disabled	Disabled this function. (Default Value)
Enabled	Enabled Top Performance function.

- SDRAM Timing by SPD

Disabled	SDRAM Timing by SPD Function Disabled. (Default Value)
Enabled	SDRAM Timing by SPD Function Enabled.

- SDRAM CAS# Latency

3	For Slower SDRAM DIMM module. (Default Value)
2	For Fastest SDRAM DIMM module.
Auto	Detect SDRAM CAS# Latency automatically.

- CPU/DRAM Frequency

  1. System Bus Speed: 100MHz

Auto	Set CPU/DRAM Frequency to Auto. (Default Value)
100/100MHz	Set CPU/DRAM Frequency is 100/100MHz.
100/133MHz	Set CPU/DRAM Frequency is 100/133MHz.

2. System Bus Speed: 133MHz

Auto	Set CPU/DRAM Frequency to Auto. (Default Value)
133/100MHz	Set CPU/DRAM Frequency is 133/100MHz.
133/133MHz	Set CPU/DRAM Frequency is 133/133MHz.

- C2P Concurrency & Master

Enabled	Enabled C2P Concurrency & Master. (Default Value)
Disabled	Disabled C2P Concurrency & Master.

- DRAM Integrity Mode

ECC	For 72 bit ECC type DIMM Modle.
Disabled	Normal Setting. (Default Value)

- AGP Aperture Size

4MB	Set AGP Aperture Size to 4MB.
8MB	Set AGP Aperture Size to 8 MB.
16MB	Set AGP Aperture Size to 16 MB.
32MB	Set AGP Aperture Size to 32 MB.
64MB	Set AGP Aperture Size to 64 MB. (Default Value)
128MB	Set AGP Aperture Size to 128 MB.
256MB	Set AGP Aperture Size to 256 MB.

- USB Controller

USB Port 0&1	USB Controller for USB Port 0&1.
USB Port 2&3	USB Controller for USB Port 2&3.
All USB Port	USB Controller for All USB Port. (Default Value)
Disabled	USB Controller Function Disabled.

- USB Legacy Support

Keyboard	Set USB Legacy Support Keyboard.
Keyb+Mouse	Set USB Legacy Support Keyboard +Mouse.
Disabled	Disabled USB Legacy Support Function. (Default Value)

Power Management Setup

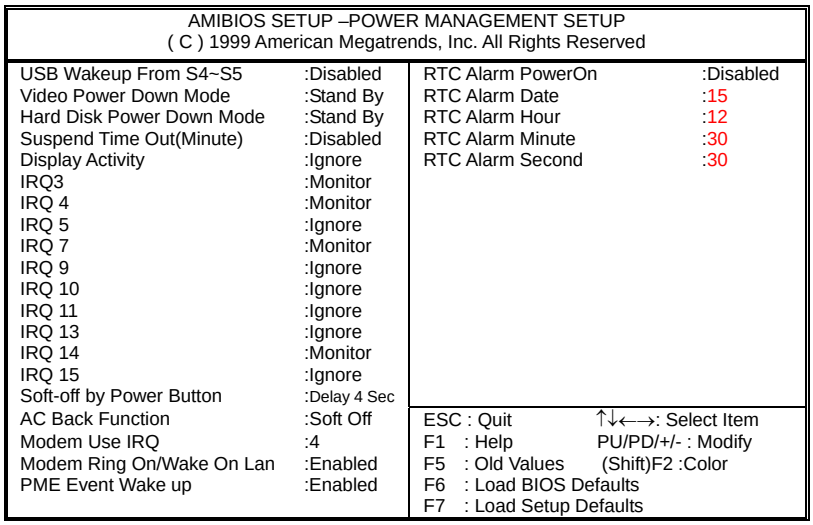


Figure 5: Power Management Setup

- USB Wakeup From S4~S5

Disabled	Disabled USB Device Wakeup From S4~S5 Function. (Default Value)
Enabled	Enabled USB Device Wakeup From S4~S5 Function.

- Video Power Down Mode

Disabled	Disabled Video Power Down Mode Function.
Suspend	Set Video Power Down Mode to Suspend.
Stand By	Set Video Power Down Mode to Stand By. (Default Value)

- Hard Disk Power Down Mode

Disabled	Disabled Hard Disk Power Down Mode Function.
Suspend	Set Hard Disk Power Down Mode to Suspend
Stand By	Set Hard Disk Power Down Mode to Stand By. (Default Value)

- Suspend Time Out (Minute.)

Disabled	Disabled Suspend Time Out Function. (Default Value)
1	Enabled Suspend Time Out after 1min.
2	Enabled Suspend Time Out after 2min.
4	Enabled Suspend Time Out after 4min.
8	Enabled Suspend Time Out after 8min.
10	Enabled Suspend Time Out after 10min.
20	Enabled Suspend Time Out after 20min.
30	Enabled Suspend Time Out after 30min.
40	Enabled Suspend Time Out after 40min.
50	Enabled Suspend Time Out after 50min.
60	Enabled Suspend Time Out after 60min.

- Display Activity

Ignore	Ignore Display Activity. (Default Value)
Monitor	Monitor Display Activity.

- IRQ 3~IRQ15

Ignore	Ignore IRQ3 ~IRQ15.
Monitor	Monitor IRQ3~IRQ15.

- Soft-off by Power Button

Instant off	Soft switch ON/OFF for Power Button.
Delay-4Sec	Soft switch ON 4 Sec for Power off. (Default Value)

- AC Back Function

Memory	This function depends on computer status.
Soft-Off	Set System Soft-Off Status. (Default value)
Full-On	Set System Full-On Status.

- Modem Use IRQ

NA	Set MODEM Use IRQ to NA.
3	Set MODEM Use IRQ to 3.
4	Set MODEM Use IRQ to 4. (Default Value)
5	Set MODEM Use IRQ to 5.
7	Set MODEM Use IRQ to 7.

- Modem Ring On/Wake On Lan

Disabled	Disabled Modem Ring On/Wake On Lan.
Enabled	Enabled Modem Ring On/Wake On Lan. (Default Value)

- PME Event Wake up

Disabled	Disabled PME Event Wake up function.
Enabled	Enabled PME Event Wake up function. (Default Value)

- RTC Alarm PowerOn

You can set “RTC Alarm PowerOn” item to Enabled and key in date/time to power on system.

Disabled	Disable this function. (Default Value)
Enabled	Enable alarm function to POWER ON system.

If the “RTC Alarm PowerOn” is Enabled.

RTC Alarm Date :	Every Day,1~31
RTC Alarm Hour:	0~23
RTC Alarm Minute :	0~59
RTC Alarm Second :	0~59

PnP/PCI Configuration

AMIBIOS SETUP –PNP/PCI CONFIGURATION SETUP (C) 1999 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	:No	
Reset Configuration Data	:No	
VGA Boot From	:AGP	
PCI VGA Palette Snoop	:Disabled	
DMA Channel 0	:PnP	
DMA Channel 1	:PnP	
DMA Channel 3	:PnP	
DMA Channel 5	:PnP	
DMA Channel 6	:PnP	
DMA Channel 7	:PnP	
IRQ 3	:PCI/PnP	
IRQ 4	:PCI/PnP	
IRQ 5	:PCI/PnP	
IRQ 7	:PCI/PnP	
IRQ 9	:PCI/PnP	ESC : Quit ↑↓←→: Select Item
IRQ 10	:PCI/PnP	F1 : Help PU/PD/+/- : Modify
IRQ 11	:PCI/PnP	F5 : Old Values (Shift)F2 :Color
IRQ 14	:PCI/PnP	F6 : Load BIOS Defaults
IRQ 15	:PCI/PnP	F7 : Load Setup Defaults

Figure 6: PnP/PCI Configuration

- Plug and Play Aware O/S

Yes	Enable Plug and Play Aware O/S function.
No	Disable Plug and Play Aware O/S function (Default Value)

- Reset Configuration Data

Yes	Clear PnP information in ESCD & update DMI data.
No	Disabled this function. (Default Value)

- VGA Boot From

AGP	Primary Graphics Adapter From AGP. (Default Value)
PCI	Primary Graphics Adapter From PCI.

- PCI VGA Palette Snoop

Enabled	For having Video Card on ISA Bus and VGA Card on PCI Bus.
Disabled	For VGA Card only. (Default Value)

- DMA Channel (0,1,3,5,6,7)

PnP	The resource is used by PnP device.
ISA/EISA	The resource is used by ISA / EISA device (PCI or ISA).

- IRQ (3,4,5,7, 9,10,11,14,15)

PCI/PnP	The resource is used by PCI/PnP device.
ISA/EISA	The resource is used by ISA / EISA device (PCI or ISA).

Load BIOS Defaults

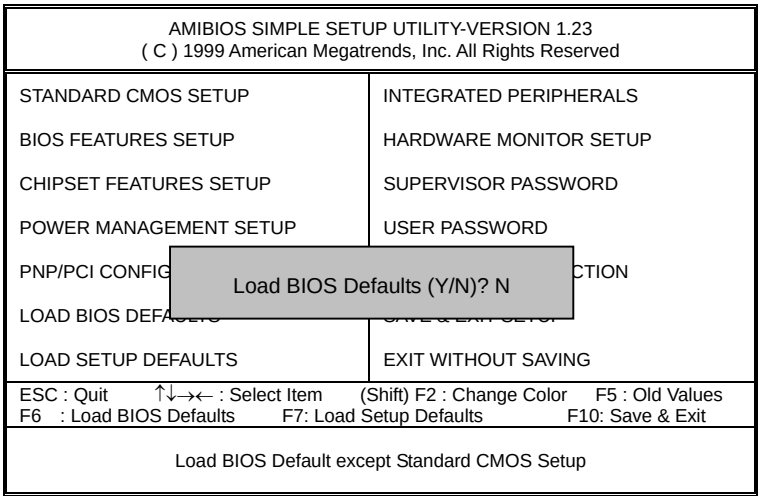


Figure 7: Load BIOS Defaults

- Load BIOS Defaults

  BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance.

Load Setup Defaults

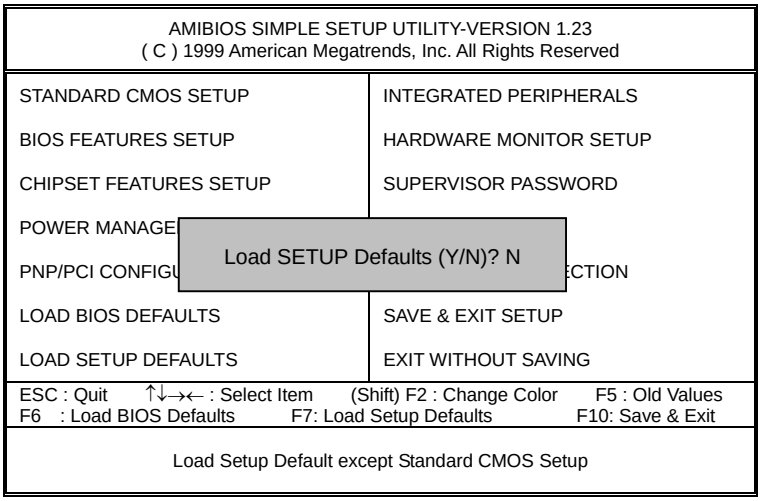


Figure 8: Load Setup Defaults

- Load Setup Defaults

  Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

Integrated Peripherals

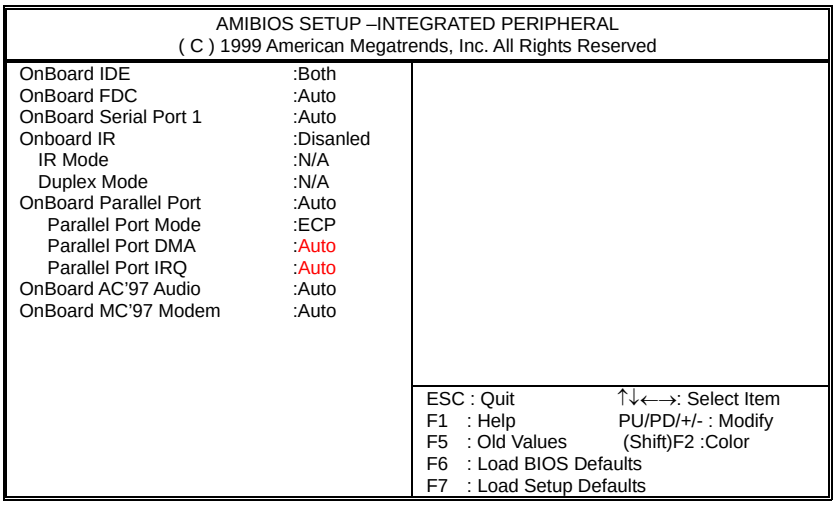


Figure 9: Integrated Peripherals

- OnBoard IDE

Disabled	Disabled OnBoard IDE
Both	Set OnBoard IDE is Both. (Default Value)
Primary	Set OnBoard IDE is Primary.
Secondary	Set OnBoard IDE is Secondary.

- OnBoard FDC

Auto	Set OnBoard FDC is Auto. (Default Value)
Disabled	Disabled OnBoard FDC.
Enabled	Enabled OnBoard FDC.

- OnBoard Serial Port 1

Auto	BIOS will automatically setup the port 1 address. (Default Value)
3F8/COM1	Enable onBoard Serial port 1 and address is 3F8.
2F8/COM2	Enable onBoard Serial port 1 and address is 2F8.
3E8/COM3	Enable onBoard Serial port 1 and address is 3E8.
2E8/COM4	Enable onBoard Serial port 1 and address is 2E8.
Disabled	Disable onBoard Serial port 1.

- Onboard IR

(This item allows you to determine which Serial Port 2 Mode of onboard I/O chip)

Disabled	Disable onboard IR function. (Default Value)
Enabled	Enable onboard IR function.

- IR Mode

(This item allows you to determine which Serial Port 2 Mode of onboard I/O chip)

ASK IR	Set onboard I/O chip Serial Port 2 to ASK IR Mode.
IrDA	Set onboard I/O chip Serial Port 2 to IrDA Mode.
N/A	Disable this function. (Default Value)

- Duplex Mode

Half Duplex	IR Function Duplex Half.
N/A	Disable this function. (Default Value)
Full Duplex	IR Function Duplex Full.

- OnBoard Parallel port

378	Enable On Board LPT port and address is 378.
278	Enable On Board LPT port and address is 278.
3BC	Enable On Board LPT port and address is 3BC.
Auto	Set On Board LPT port is Auto. (Default Value)
Disabled	Disable On Board LPT port.

- Parallel Port Mode

EPP	Using Parallel port as Enhanced Parallel Port.
ECP	Using Parallel port as Extended Capabilities Port. (Default Value)
Normal	Normal Operation.

- Parallel Port DMA

Auto	Set Auto to parallel port mode DMA Channel. (Default Value)
3	Set Parallel Port DMA is 3.
1	Set Parallel Port DMA is 1.
0	Set Parallel Port DMA is 0.

- Parallel Port IRQ

7	Set Parallel Port IRQ is 7.
Auto	Set Auto to parallel Port IRQ DMA Channel. (Default Value)
5	Set Parallel Port IRQ is 5.

- OnBoard AC'97 Audio

Auto	Set OnBoard AC'97 Audio to Auto. (Default Value)
Disabled	Disabled OnBoard AC'97 Audio.

- OnBoard MC'97 Modem

Auto	Set OnBoard MC'97 Modem to Auto. (Default Value)
Disabled	Disabled OnBoard MC'97 Modem.

Hardware Monitor

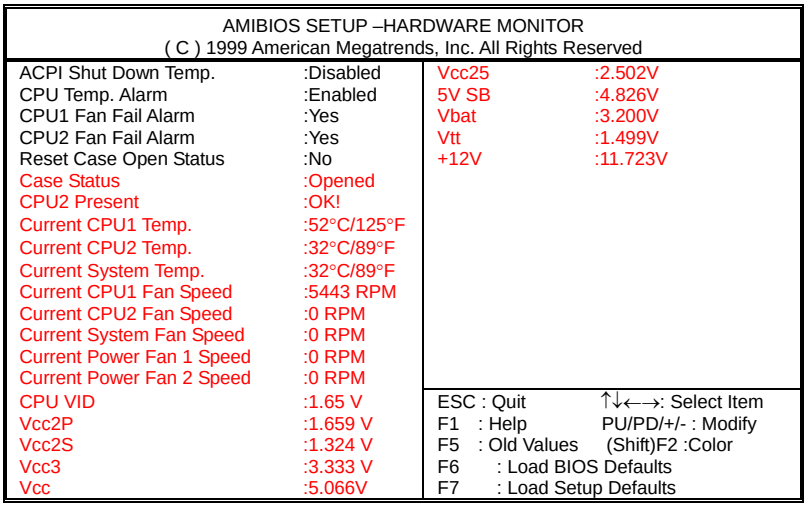


Figure 10: Hardware Monitor

- ACPI Shutdown Temp. (°C / °F)

(This function will be effective only for the operating systems that support ACPI Function.)

Disabled	Disabled ACPI Shutdown function. (Default Value)
60°C / 140°F	Monitor CPU Temp. at 60°C / 140°F, if Temp. > 60°C / 140°F system will automatically power off.
70°C / 158°F	Monitor CPU Temp. at 70°C / 158°F, if Temp. > 70°C / 158°F system will automatically power off.
80°C / 176°F	Monitor CPU Temp. at 80°C / 176°F, if Temp. > 80°C / 176°F system will automatically power off.
90°C / 194°F	Monitor CPU Temp. at 90°C / 194°F, if Temp. > 90°C / 194°F system will automatically power off.

- Fan Fail Alarm

CPU 1/ CPU 2

Disabled	Fan Fail Alarm Function Disabled.
Enabled	Fan Fail Alarm Function Enabled. (Default value)

- Reset Case Open Status
- Case Status

  If the case is closed, “Case Status” will show “Closed”.
  If the case have been opened, “Case Status” will show “Closed”.
  If you want to reset “Case Status” value, set “Reset Case Open Status” to “Yes” and save CMOS, your computer will restart.

- CPU 2 Present.

  Detect CPU 2 Status automatically.

- Current Temp. (°C / °F)

  Detect CPU 1 / CPU 2 / System Temperature automatically.

- Current Fan Speed

  Detect CPU 1 / CPU 2 / System / Power 1 / Power 2 Fan speed status automatically.

- Current Voltage (V)

  CPU VID / Vcc2P / Vcc2S / Vcc3/ Vcc / Vcc25 / 5V SB / Vbat / Vtt / +12 V

  Detect system’s voltage status automatically.

Set Supervisor / User Password

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

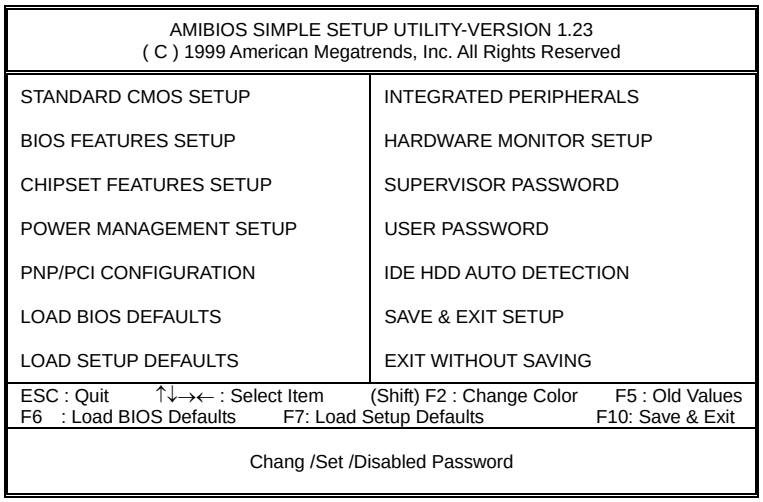


Figure 11: Password Setting

Type the password, up to six characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

The BIOS Setup program allows you to specify two separate passwords: a SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "Always" at "Password Check" in BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

If you select "Setup" at "Password Check" in BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

IDE HDD AUTO Detection

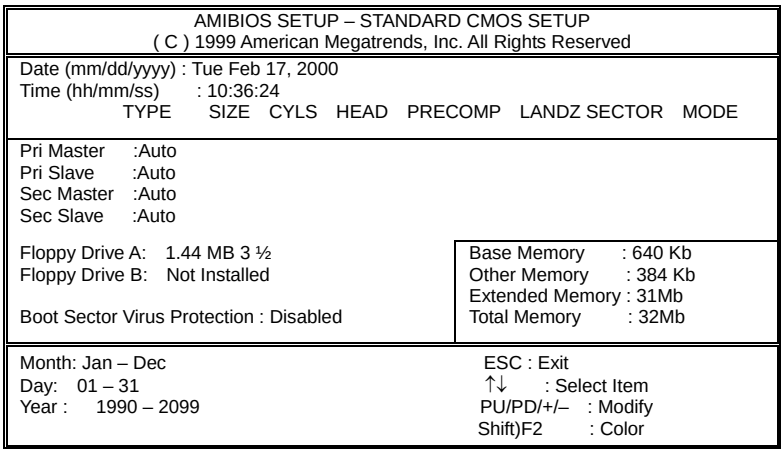


Figure 12: IDE HDD Auto Detection

Type "Y" will accept the H.D.D. parameter reported by BIOS.

Type "N" will keep the old H.D.D. parameter setup. If the hard disk cylinder number is over 1024, then the user can select LBA mode or LARGER mode for DOS partition larger than 528 MB.

Save & Exit Setup

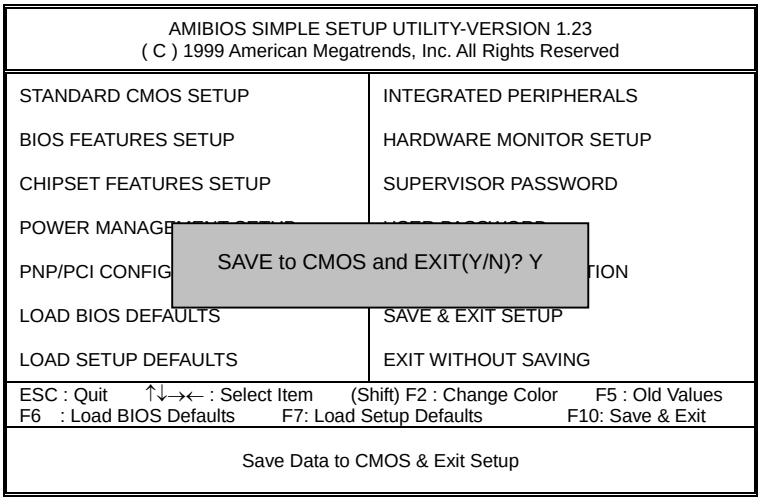


Figure 13: Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS.

Type "N" will return to Setup Utility.

Exit Without Saving

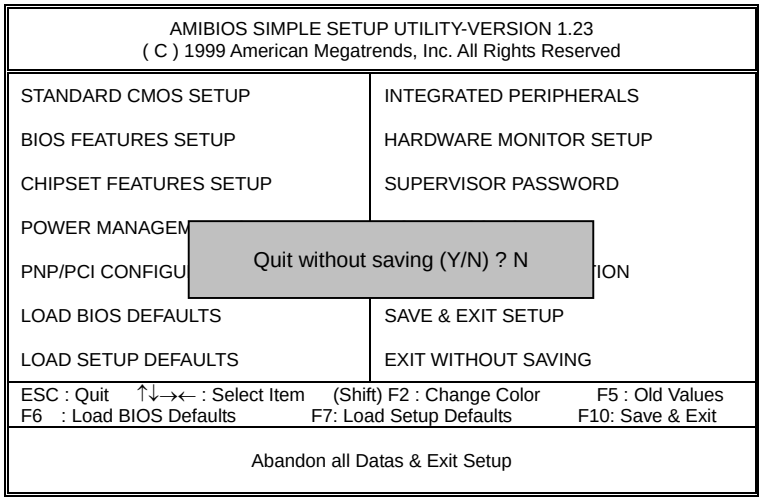


Figure 14: Exit Without Saving

Type "Y" will quit the Setup Utility without saving to RTC CMOS.

Type "N" will return to Setup Utility.

Appendix

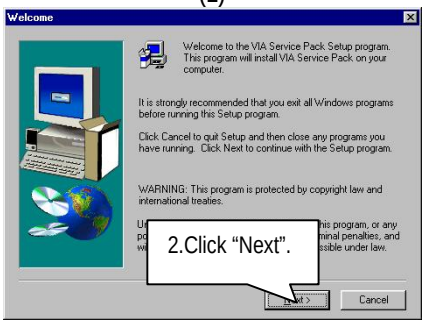
Appendix A : VIA Chipsets Driver Installation

A.VIA 4 in 1 Service Pack Utility:

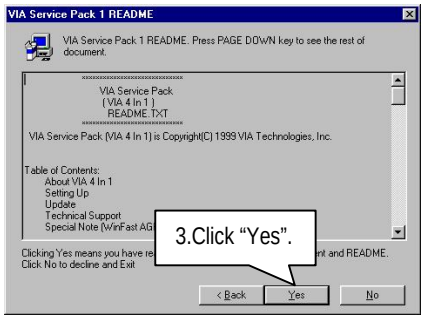
Insert the support CD that came with your motherboard into your CD-ROM driver or double –click the CD driver icon in My Computer to bring up the screen.

(1)

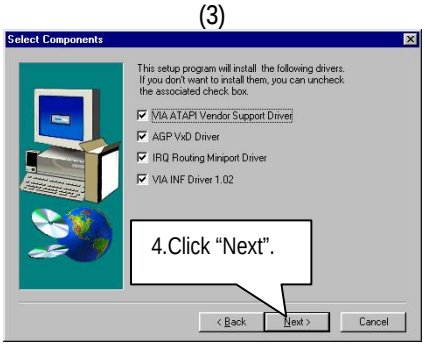
(2)



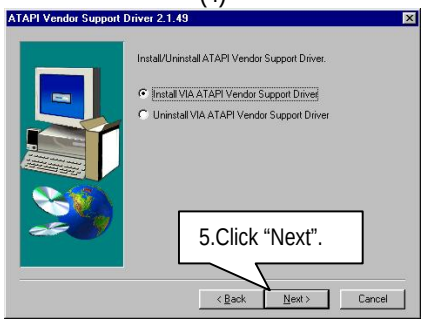
(3)



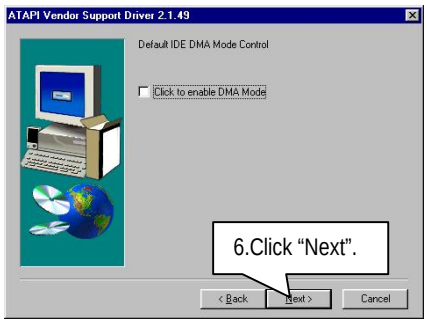
(4)



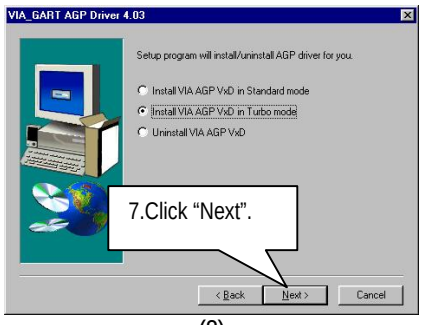
(5)



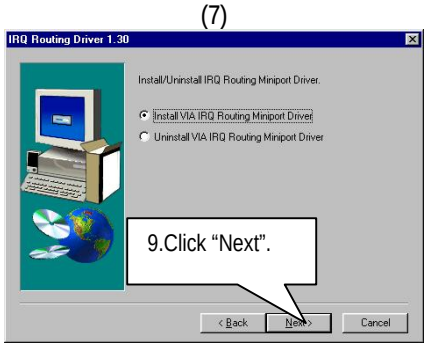
(6)


ATAPI Vendor Support Driver 2.1.49
Default IDE DMA Mode Control
Click to enable DMA Mode
6.Click “Next”.
< Back
Next >
Cancel

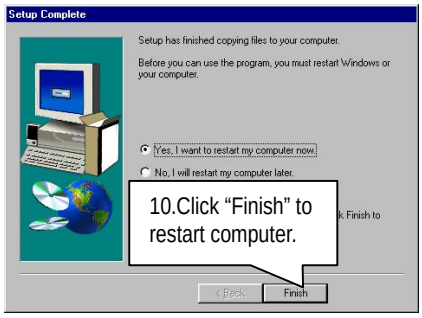
(7)


VIA_GART AGP Driver 4.03
Setup program will install/uninstall AGP driver for you.
Install VIA AGP VxD in Standard mode
Install VIA AGP VxD in Turbo mode
Uninstall VIA AGP VxD
7.Click “Next”.
< Back
Next >
Cancel

(8)


IRQ Routing Driver 1.30
Install/Uninstall IRQ Routing Miniport Driver.
Install VIA IRQ Routing Miniport Driver
Uninstall VIA IRQ Routing Miniport Driver
9.Click “Next”.
< Back
Next >
Cancel

(9)

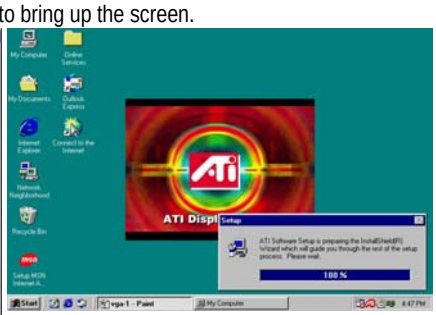

Setup Complete
Setup has finished copying files to your computer.
Before you can use the program, you must restart Windows or your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
10.Click “Finish” to restart computer.
< Back
Finish

(10)

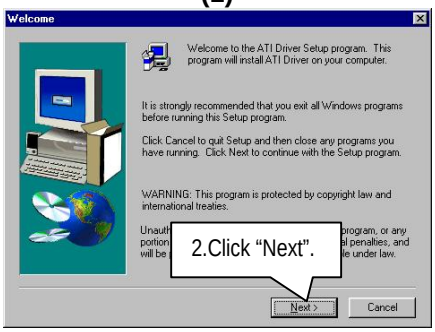
Appendix B : ATi VGA Driver Installation

Insert the support CD that came with your motherboard into your CD-ROM driver or double –click the CD driver icon in My Computer to bring up the screen.

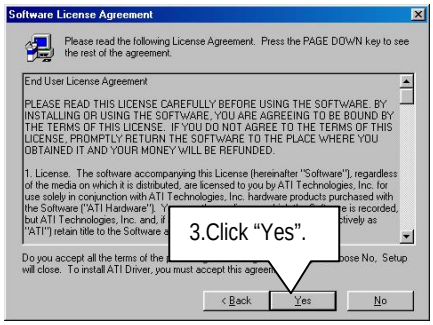
(1)



(2)

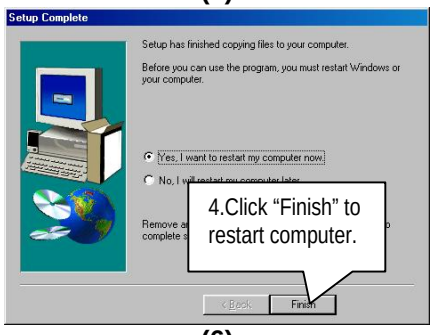


(3)



(4)

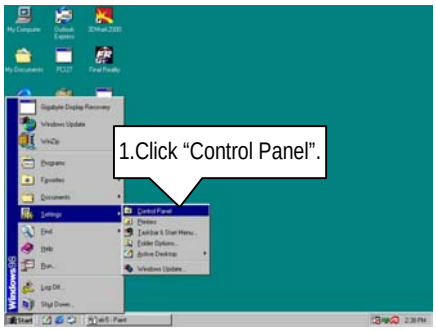
(5)



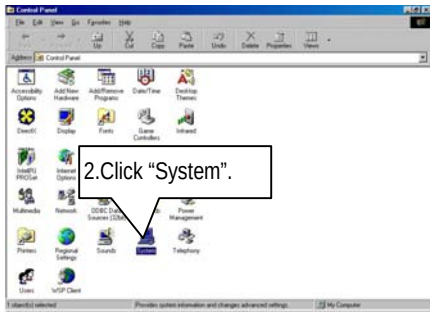
(6)

Appendix C : Intel 82559 LAN Driver Installation

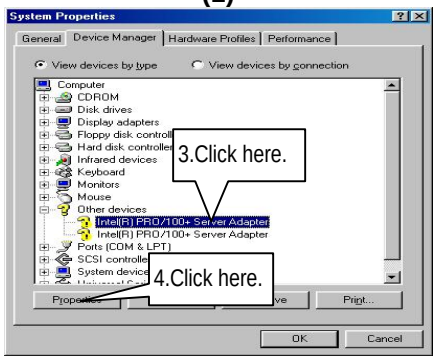
Insert the support CD that came with your motherboard into your CD-ROM driver or double –click the CD driver icon in My Computer to bring up the screen.



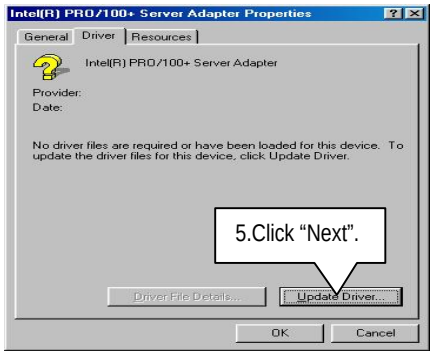
(1)



(2)

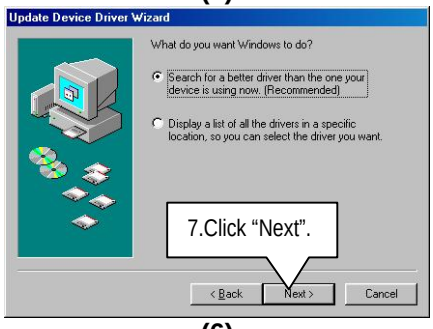


(3)

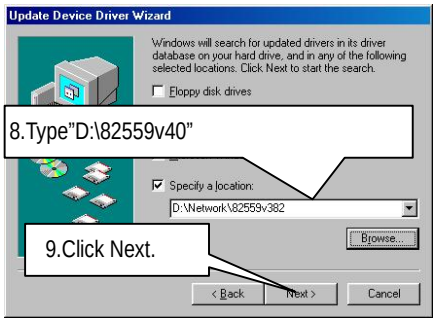


(4)

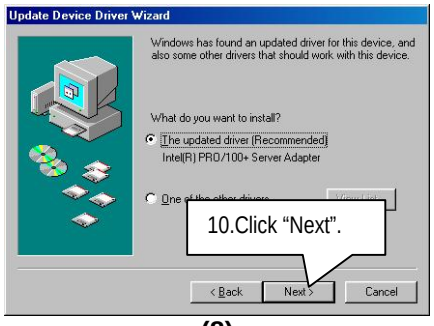
(5)



(6)


Update Device Driver Wizard
Windows will search for updated drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
8.Type"D:\82559v40"
Specify a location:
D:\Network\82559v382
Browse...
9.Click Next.
< Back
Next >
Cancel

(7)


Update Device Driver Wizard
Windows has found an updated driver for this device, and also some other drivers that should work with this device.
What do you want to install?
The updated driver (Recommended)
Intel(R) PRO/100+ Server Adapter
10.Click "Next".
< Back
Next >
Cancel

(8)


Update Device Driver Wizard
Windows driver file search for the device:
Intel(R) PRO/100+ Server Adapter
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
D:\NETWORK\82559V~5\NET82557.INF
11.Click "Next".
< Back
Next >
Cancel

(9)


Update Device Driver Wizard
Intel(R) PRO/100+ Server Adapter
Windows will continue using your current driver.
12.Click "Finish" to restart computer.
< Back
Finish
Cancel

(10)

Appendix D: Promise PCI Device Installation

A. FastTrak Utility Installation:

Insert the support CD that came with your motherboard into your CD-ROM driver or double –click the CD driver icon in My Computer to bring up the screen.

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

B. Promise RAID Driver Installation:

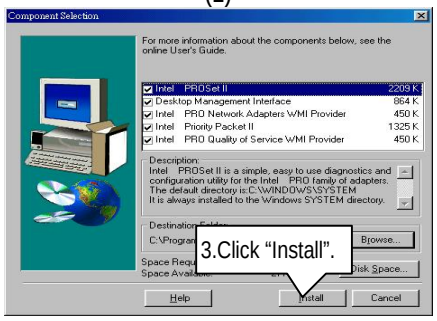
If you want to realize the setup information in detail, please refer to the **“Installing Drivers section of the RAID Manual” for setting your system completely.**

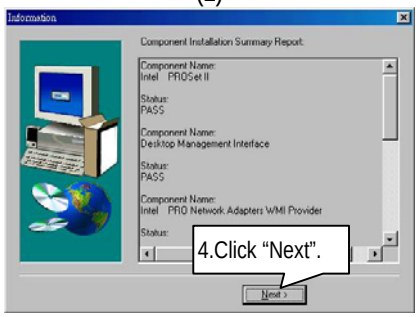
Appendix E: Intel 82559 LAN Utility Installation

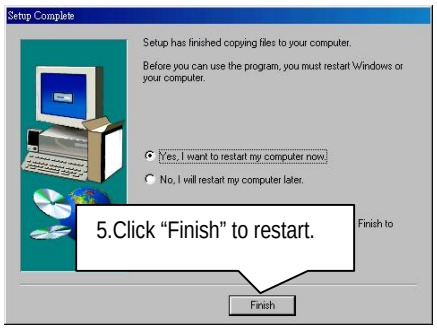
Insert the support CD that came with your motherboard into your CD-ROM driver or double –click the CD driver icon in My Computer to bring up the screen.

(1)

(2)



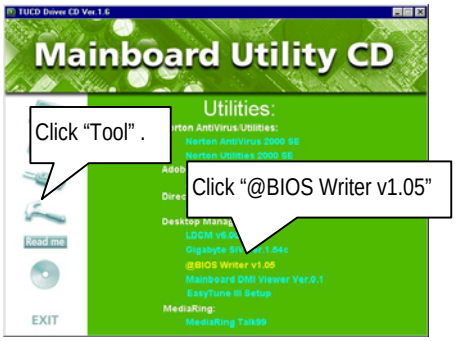


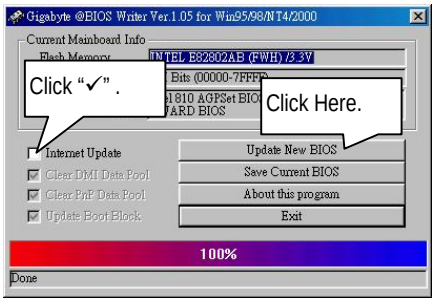


Appendix F: BIOS Flash Procedure

BIOS update procedure:

If your OS is Win9X, we recommend that you used Gigabyte @BIOS Program to flash BIOS.





Methods and steps :

I. Update BIOS through Internet

a. Click "Internet Update" icon

b. Click "Update New BIOS" icon

c. Select @BIOS sever ("Gigabyte @BIOS sever 1 in Taiwan" and "Gigabyte @BIOS sever 2 in Taiwan" are available for now, the others will be completed soon)

d. Select the exact model name on your motherboard

e. System will automatically download and update the BIOS.

II. Update BIOS NOT through Internet :

a. Do not click "Internet Update" icon

b. Click "Update New BIOS"

c. Please select "All Files" in dialog box while opening the old file.

d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: 6OXM7E.F1).

e. Complete update process following the instruction.

III. Save BIOS

In the very beginning, there is "Save Current BIOS" icon shown in dialog box. It means to save the current BIOS version.

IV. Check out supported motherboard and Flash ROM :

In the very beginning, there is "About this program" icon shown in dialog box. It can help you check out which kind of motherboard and which brand of Flash ROM are supported.

Note :

a. In method I, if it shows two or more motherboard's model names to be selected, please make sure your motherboard's model name again. Sellecting name will cause the system unbooted.

b. In method II, be sure that motherboard's model name in BIOS unzip file are the same as your motherboard's. Otherwise, your system won't boot.

c. In method I, if the BIOS file you need cannot be found in @BIOS server, please go onto Gigabyte's web site for downloading and updating it according to method II.

d. Please note that any intercorruption during updating will cause system unbooted

Or else you can select flash BIOS in DOS mode.

- Please check your BIOS vendor (AMI or AWARD), your motherboard name and PCB version on the motherboard.

1. Format a bootable system floppy diskette by the command "format a:/s" in command mode.
2. Visit the Gigabyte website at http:// www.gigabyte.com.tw ,Select the BIOS file you need and download it to your bootable floppy diskette.
3. Insert the bootable diskette containing the BIOS file into the floppy diskette driver.
4. Assuming that the floppy diskette driver is A, reboot the system by using the A: driver. At the A: > prompt, run the BIOS upgraded file by executing the Flash BIOS utility and the BIOS file with its appropriate extension.

   Example: *(AMI tool) (Where 6VXDR7.f1 is name of the BIOS file name)*

   A:>flashxxx.exe 6VXDR7.f1 ↵

   Example: *(Award tool) (Where 6VXDR7.f1 is name of the BIOS file name)*

   A:>wdflash.exe 6VXDR7.f1 ↵
5. Upon pressing the <Enter> key, a flash memory writer menu will appear on screen. Enter the new BIOS file name with its extension filename into the text box after file name to program.
6. If you want to save the old BIOS file(perform as soon as system is operational, this is recommended), select Y to DO YOU WANT TO SAVE BIOS, then type the old BIOS filename and the extension after filename to save: This option allows you to copy the contents of the flash memory chip onto a diskette, giving you a backup copy of the original motherboard BIOS in case you need to re-install it. Select N to DO YOU WANT TO SAVE BIOS, if you don't want to save the old BIOS file.
7. After the decision to save the old BIOS file or not is made, select Y to ARE YOU SURE TO PROGRAM when the next menu appear; wait until a message showing Power Off or Reset the system appears. Then turn off your system.
8. Remove the diskette and restart your system.
9. Hold down <Delete> key to enter BIOS setup. You must select "Load Setup BIOS Default" to activate the new BIOS, then you may set other item from the main menu.

Appendix G: Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Audio Communication Riser
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Interface Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System

To be continued…

Acronyms	Meaning
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID