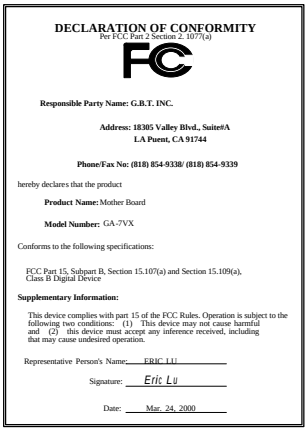
FCC Compliance Statement:



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-7VX

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: Eric Lu

Date: Mar. 24, 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-7VX

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 : Mar. 24, 2000

Signature : *Rex Lin*

Name : Rex Lin

7VX Series

AMD™ Athlon AGP Motherboard

USER'S MANUAL

AMD™ Athlon Processor Motherboard
REV. 1.0 Second Edition
R-10-02-000328

How This Manual Is Organized

This manual is divided into the following sections:

1) Revision List	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) Suspend to RAM & Dual BIOS	Instructions STR installation & 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
1.0	Initial release of the 7VX Series motherboard user's manual.	Mar. 2000
1.0	Second release of the 7VX Series motherboard user's manual.	Mar. 2000

Mar. 28, 2000 Taipei, Taiwan, R.O.C

Item Checklist

☑The 7VX Series Motherboard

☑Cable for IDE / Floppy device

☑Diskettes or CD (TUCD) for motherboard utilities

☐Internal COM 2 Cable (Optional)

☐Internal USB Cable (Optional)

☐Cable for SCSI device

☑7VX Series User's Manual

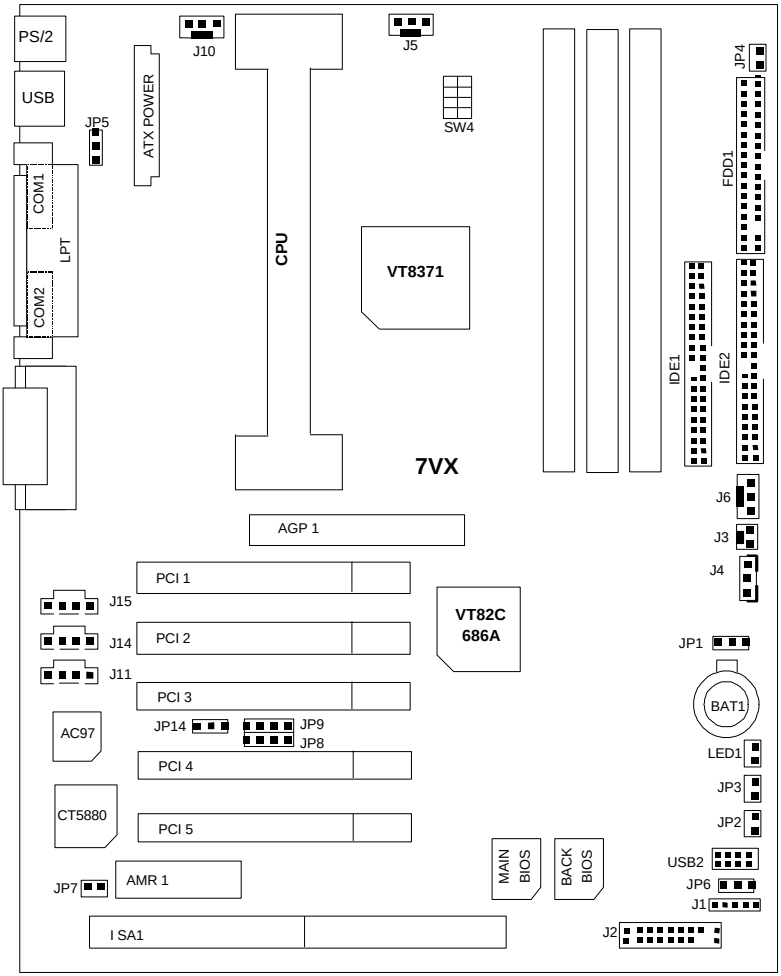
Summary Of Features

Form factor	• 30.6 cm x 22 cm ATX size form factor, 4 layers PCB.
Motherboard	• 7VX series includes 7VX, 7VX-1
CPU	• AMD Athlon (K7) Slot A Processor • 512 KB 2nd cache in CPU Module • Supports 500MHz ~ 1GHz and faster
Chipset	Apollo KX133 ,consisting of: • VIA8371 Memory/AGP/PCI Controller(PAC) • VT82C686A PCI Super-I/O Integrated Peripheral Controller (PSIPC)
Clock Generator	• Supports 100~143MHz
Memory	• 3 168-pin DIMM Sockets • Supports SDRAM up to 1.5GB • Supports only 3.3V SDRAM DIMM, PC-133 supported
I/O Control	• VT82C686A
Slots	• 1 AGP (Accelerated Graphics Port) slot - AGP 66 / 133 MHz, 3.3V/1.5V device support • 5 32-bit Master PCI Bus slots • 1 ISA slot • 1 AMR slot
On-Board IDE	• An IDE controller on the VT82C686A PCI chipset provides IDE HDD/ CD-ROM with PIO, Bus Master , (Ultra DMA/33 ATA 66) Operation modes • Can connect up to four IDE devices
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes • 1 Parallel port supports SPP/EPP/ECP mode • 2 Serial Ports (COM 1 & COM 2) • 4 USB ports • 1 IrDA connector for Fast IR (Optional)
Hardware Monitor (Optional)	• CPU/Power Supply/Panel Fan Revolution detect • System Voltage Detect • CPU Overheat Warning • Display Actual Current Voltage

To be continued...

PS/2 Connector	• PS/2® Keyboard interface and PS/2® Mouse interface
On-Board Sound	• Creative CT5880 sound (Optional) • AC '97 CODEC • Line In/Line Out/Mic In/AUX In/CD In/TEL/Game Port SPDIF/Four Speaker(Optional)
BIOS	• Licensed AMI BIOS, 2M bit FLASH ROM • Support Dual BIOS(Optional)
Additional Features	• Internal/External Modem Wake up • System after AC back

7VX Series Motherboard Layout



CPU Speed Setup

The system bus speed is selectable at 100 ~143MHz. The user can select the system bus speed by DIP switch **SW4** .

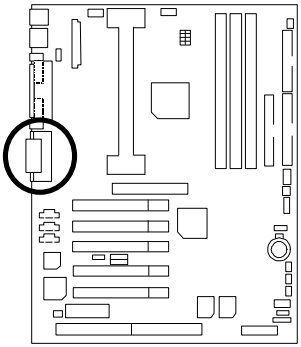
Set System Bus Speed

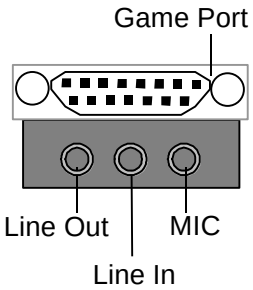
SW4: **O : ON, X : OFF**

4	3	2	1	CPU	PCI	Spectrum
X	X	X	X	133.3	33.3	5%
O	X	X	X	100.2	33.3	5%
X	O	X	O	110	36.7	X
O	X	X	O	115	38.3	X
O	O	X	O	120	30	X
X	X	O	X	133.3	33.3	X
O	X	O	X	100.2	33.3	X
X	X	O	O	124	31	X
X	O	O	O	129	32.3	X
O	X	O	O	138	34.5	X
O	O	O	O	143	35.8	X

Connectors

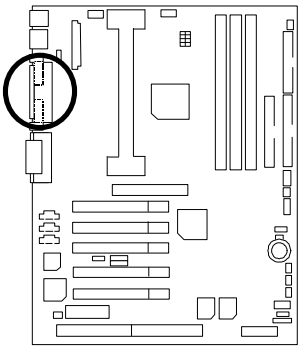
Game & Audio Port

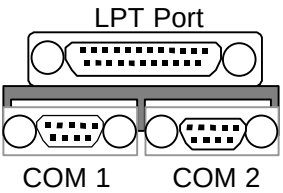




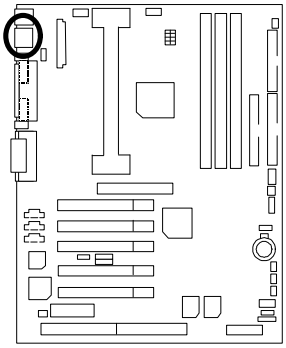
Line Out 1: Line Out or SPDIF (The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder). In general, Line Out 1 is normally Line Out, when it output digital signal, it will be change to SPDIF Out automatically (see page 39 for more information).
Line In: In general, Line In is normally Line In. When you select "Four Speaker" in Creative application (see page 37 for more information), Line In will be change to Line Out 2, then you can plug 2 pairs stereo speaker into Line Out 1 and Line In simultaneously.

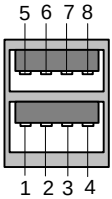
COM 1 / COM 2 / LPT Port





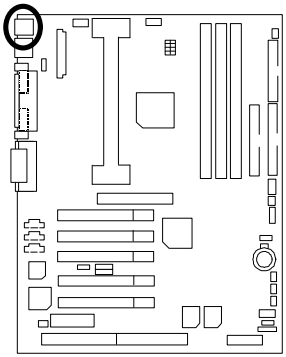
USB Connector

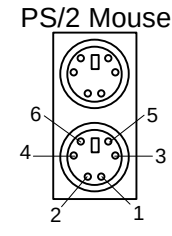




Pin No.	Definition
1	USB V0
2	USB D0-
3	USB D0+
4	GND
5	USB V1
6	USB D1-
7	USB D1+
8	GND

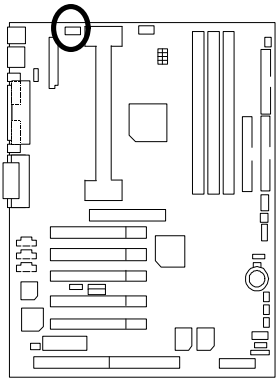
PS/2 Keyboard & PS/2 Mouse Connector

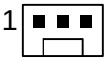




PS/2 Mouse/ Keyboard	
Pin No.	Definition
1	Data
2	NC
3	GND
4	VCC(+5V)
5	Clock
6	NC

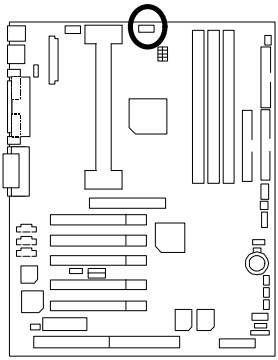
J10 : Power Fan

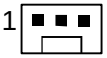




Pin No.	Definition
1	GND
2	+12V
3	SENSE

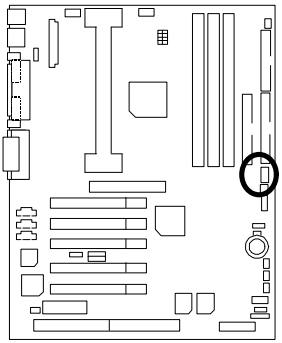
J5 : CPU Fan





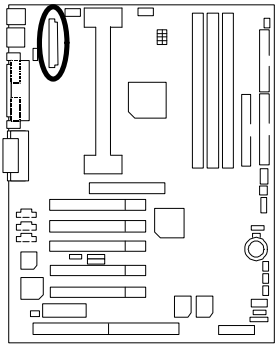
Pin No.	Definition
1	GND
2	+12V
3	SENSE

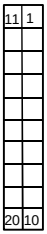
J6 : System Fan



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

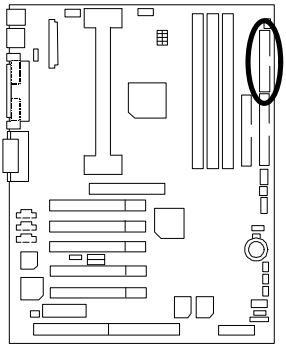
ATX Power

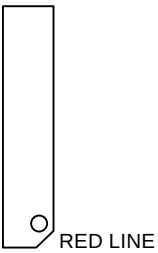




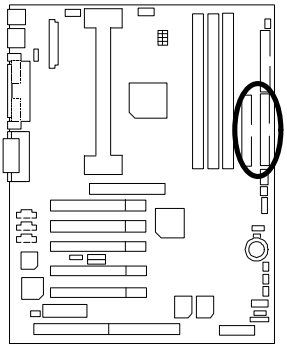
Pin No.	Definition
3,5,7,13,15-17	GND
1,2,11	3.3V
4,6,19,20	VCC
10	+12V
12	-12V
18	-5V
8	Power Good
9	5V SB stand by+5V
14	PS-ON(Soft On/Off)

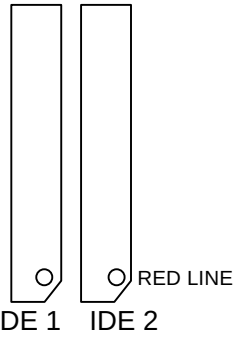
Floppy Port



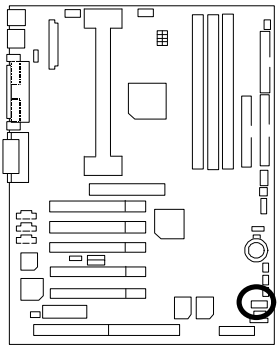


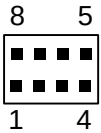
IDE1 (Primary) , IDE2 (Secondary) Port





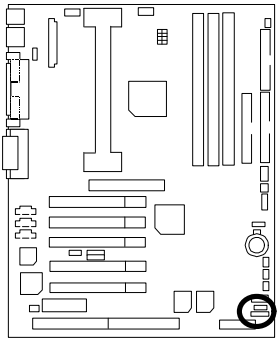
USB2 : USB Port





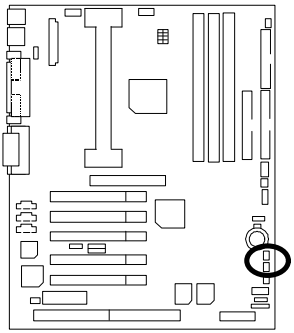
Pin No.	Definition
1	VCC
2	USB D0–
3	USB D0+
4	GND
5	VCC
6	USB D1–
7	USB D1+
8	GND

IR : Infrared Connector (Optional)



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

JP3 : STR LED Connector & LED1 : DIMM LED

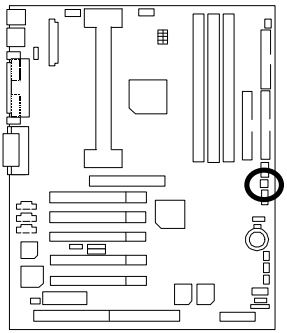


1 DIMM LED

1 JP3

STR LED Connector External.

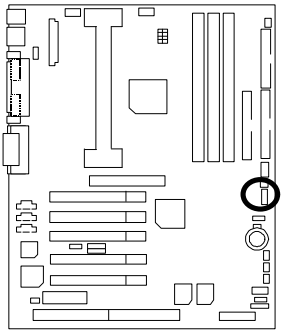
J3 : Modem Wake Up (Internal Modem Card Wake Up)



1

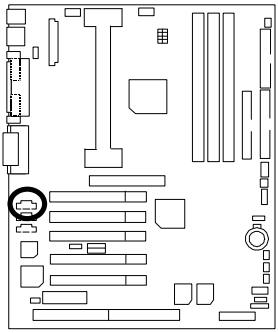
Pin No.	Definition
1	Signal
2	GND

J4 : LAN Wake Up



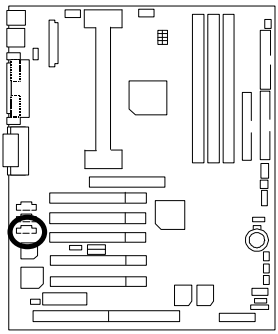
Pin No.	Definition
1	+5V SB
2	GND
3	Signal

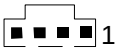
J15: TEL: The connector is for Modem with internal voice connector



Pin No.	Definition
1	Signal-In
2	GND
3	GND
4	Signal-Out

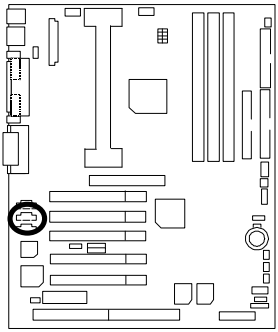
J11:AUX_IN





Pin No.	Definition
1	AUX-L
2	GND
3	GND
4	AUX-R

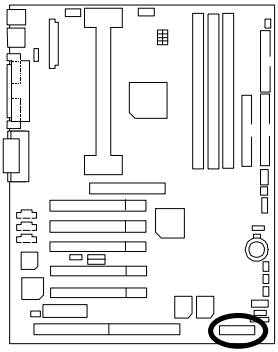
J14 : CD Audio Line In

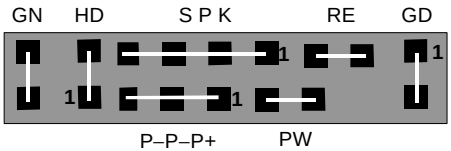


Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

Panel And Jumper Definition

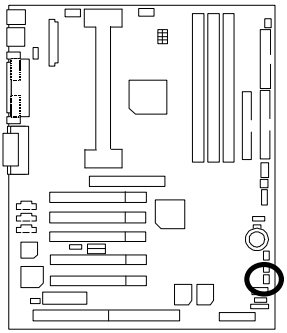
J2 : For 2X11 PINs Jumper





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

JP2 : BIOS Write Protection

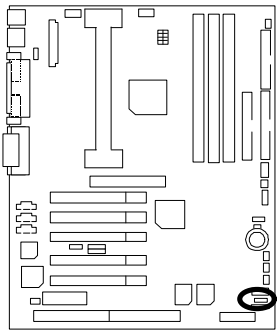


1

Pin No.	Definition
ON	Write Protect Enable
OFF	Write Protect Disable (Default)

☞ Please Set Jumper JP2 to "Open"to enabled BIOS Write Function when you update new BIOS or new device

JP6 : Front Panel USB Device Wake up Selection

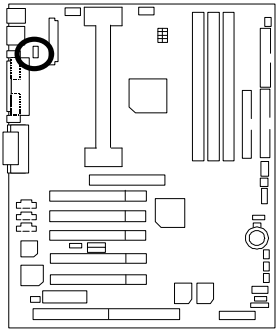


1

Pin No.	Definition
1-2 close	FP USB Wake Up
2-3 close	Normal (Default)

(If you want to use "USB Dev Wakeup From S3" function, you have to set the BIOS setting "USB Dev Wake up From S3" enabled, and the jumper "JP6" enabled).
*(Power on the computer and as soon as memory counting starts, press <Del>. You will enter BIOS Setup. Select the item "POWER MANAGEMENT SETUP", then select "USB Dev Wakeup From S3: Enabled". Remember to save the setting by pressing "ESC" and choose the "SAVE & EXIT SETUP" option.)

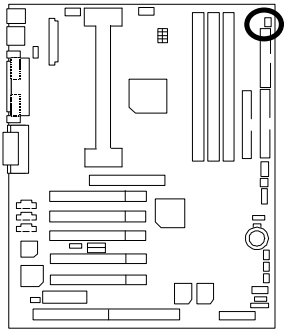
JP5 : Rear Panel USB Device Wake up Selection



Pin No.	Definition
1-2 close	RP USB Wake Up
2-3 close	Normal (Default)

(If you want to use "USB Dev Wakeup From S3" function, you have to set the BIOS setting "USB Dev Wakeup From S3" enabled, and the jumper "JP5" enabled).
*(Power on the computer and as soon as memory counting starts, press <Del>. You will enter BIOS Setup. Select the item "POWER MANAGEMENT SETUP", then select "USB Dev Wakeup From S3: Enabled". Remember to save the setting by pressing "ESC" and choose the "SAVE & EXIT SETUP" option.)

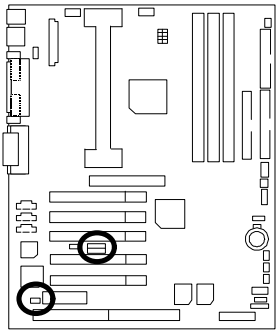
JP4:STR Enable

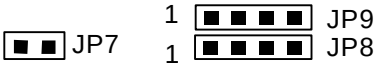


Pin No.	Definition
ON	STR Enabled
OFF	STR Disabled (Default)

JP7/JP8/JP9: Onboard AC97& AMR Select(Optional)

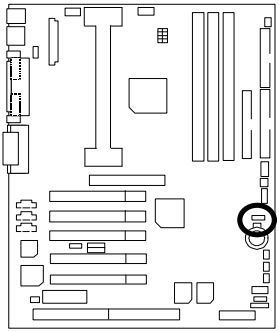
(AMR→ Audio Modem Riser)





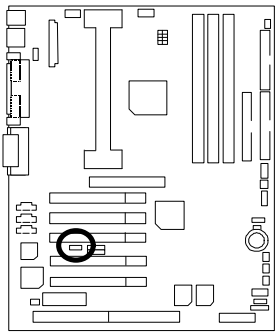
Jumper / Function	JP7	JP8	JP9
Onboard AC97	OFF	1-2	1-2
AMR (Primary)	OFF	3-4	3-4
Onboard AC97+AMR (Secondary)	ON	1-2, 3-4	1-2

JP1 : Clear CMOS Function(Optional)



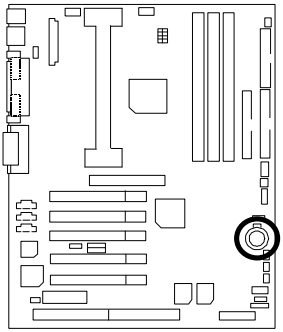
Pin No.	Definition
1-2 close	Normal (Default)
2-3 close	Clear CMOS

JP14 : Onboard Sound Function Selection (Optional)



Pin No.	Definition
1-2 close	Onboard Sound Enable(Default)
2-3 close	Onboard Sound Disable

BAT1 : Battery



- ☞ 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.

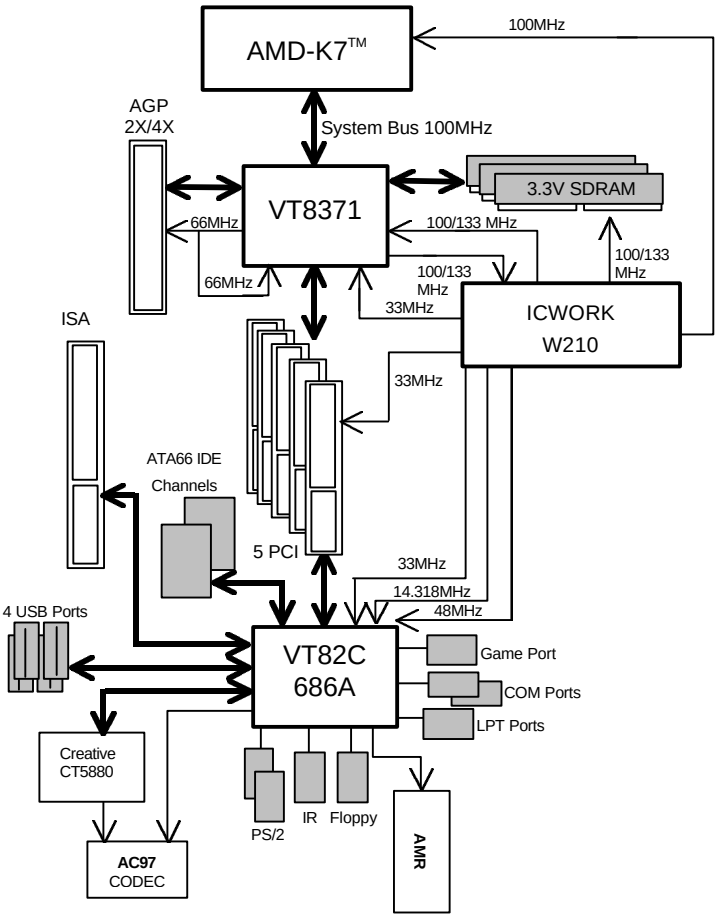
Performance List

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 AMD Athlon™ 800MHz processor
- DRAM (128x1) MB SDRAM (MOSEL 9928PR V54C365804VCT7)
- CACHE SIZE 512 KB included in CPU
- DISPLAY GA-660 PLUS 32 (32MB)
- STORAGE Onboard IDE (Quantum KA13600AT)
- O.S. Windows NT™4.0 SP6
- DRIVER Display Driver at 1024 x 768 x 64k colors x 75Hz.
- BUS MASTER 4 IN 1 Driver (Ver. 4.20)

Processor	AMD Athlon
	800MHz (100x8)
Winbench99	
CPU mark 99	71.8
FPU Winmark 99	4400
Business Disk Winmark 99	5560
Hi-End Disk Winmark 99	12300
Business Graphics Winmark 99	393
Hi-End Graphics Winmark 99	793
Winstone99	
Business Winstone 99	43.8
Hi-End Winstone 99	44.2

Block Diagram



Suspend To RAM Installation

Suspend to RAM Installation

A.1 Introduce STR function:

Suspend-to-RAM (STR) is a Windows 98 ACPI sleep mode function. When recovering from STR (S3) sleep mode, the system is able, in just a few seconds, to retrieve the last "state" of the system before it went to sleep and recover to that state. The "state" is stored in memory (RAM) before the system goes to sleep. During STR sleep mode, your system uses only enough energy to maintain critical information and system functions, primarily the system state and the ability to recognize various "wake up" triggers or signals, respectively.

A.2 STR function Installation

Please use the following steps to complete the STR function installation.

Step-By-Step Setup

Step 1:

To utilize the STR function, the system must be in Windows 98 ACPI mode.

Putting Windows 98 into ACPI mode is fairly easy.

Setup with Windows 98 CD:

A. Insert the Windows 98 CD into your CD-ROM drive, select Start, and then Run.

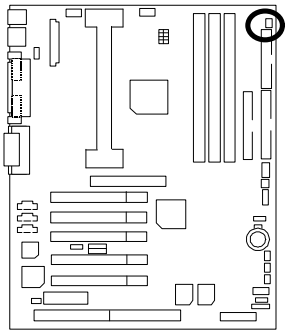
B. Type (without quotes) **"D:\setup /p j"** in the window provided. Hit the enter key or click OK. ¡ In Windows 98 second edition version, all the bios version dated 12/01/99 or later are ACPI compatible. Just type" D:\Setup", the operating system will be installed as ACPI mode. ¡

C. After setup completes, remove the CD, and reboot your system

(This manual assumes that your CD-ROM device drive letter is D:).

Step 2:

(If you want to use STR Function, please set jumper JP4 (ON)



Pin No.	Definition
ON	STR Enabled
OFF	STR Disabled

Step 3:

Power on the computer and as soon as memory counting starts, press <Del>. You will enter BIOS Setup. Select the item **"POWER MANAGEMENT SETUP",** then select **"ACPI Sleep State: S3 /STR"**. Remember to save the settings by pressing "ESC" and choose the **"SAVE & EXIT SETUP"** option.

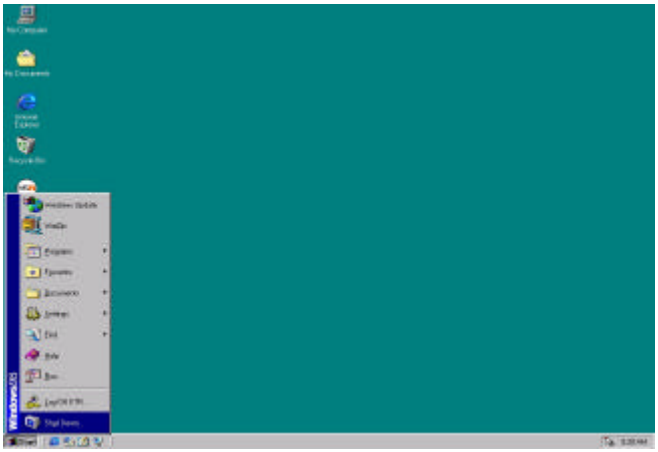
Congratulation! You have completed the installation and now can use the STR function.

A.3 How to put your system into STR mode?

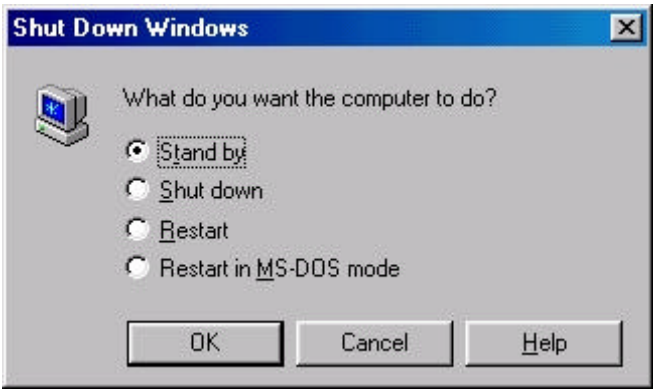
There are two ways to accomplish this:

1. Choose the "Stand by" item in the "Shut Down Windows" area.

   A. Press the "Start" button and then select "Shut Down"

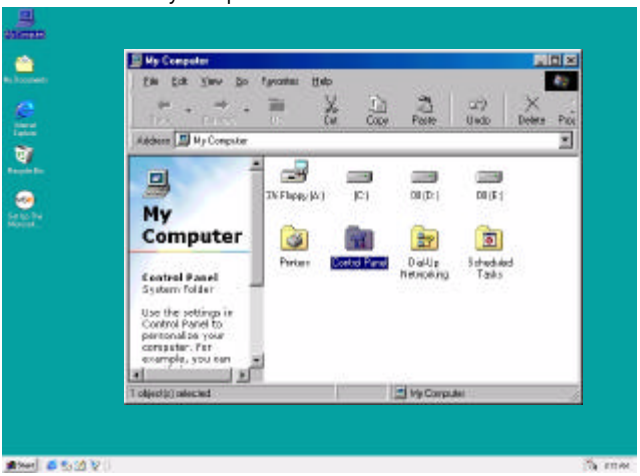


   B. Choose the "Stand by" item and press "OK"

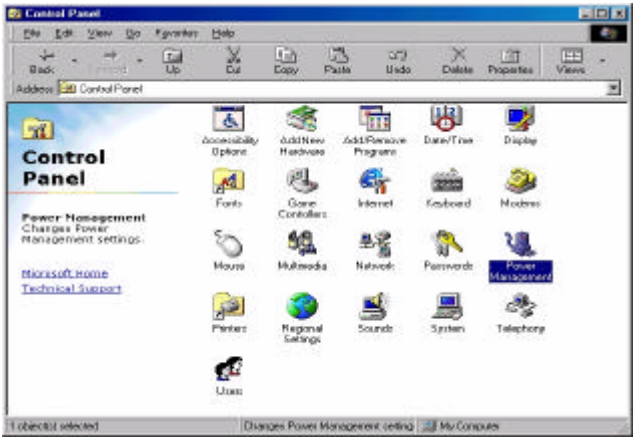


2. Define the system "power on" button to initiate STR sleep mode:

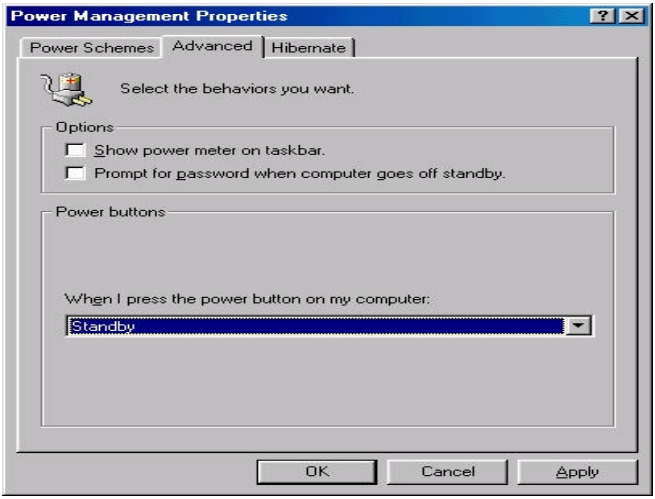
A. Double click "My Computer" and then "Control Panel"



B. Double click the "Power Management" item.



C. Select the "Advanced" tab and "Standby" mode in Power Buttons.



Step 4:

Restart your computer to complete setup.

Now when you want to enter STR sleep mode, just momentarily press the "Power on" button..

A.4 How to recover from the STR sleep mode?

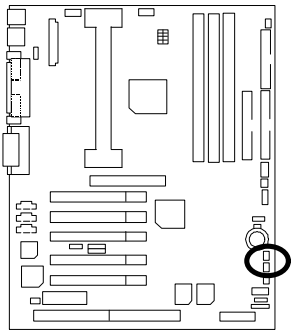
There are five ways to "wake up" the system:

1. Press the "Power On" button.
2. Use the "Resume by Alarm" function.
3. Use the "Modem Ring On" function.
4. Use the "Wake On LAN" function.
5. Use the "USB Device Wake Up" function.

A.5 Notices :

1. In order for STR to function properly, several hardware and software requirements must be satisfied:
   A. Your ATX power supply must comply with the ATX 2.01 specification (provide more than 720 mA 5V Stand-By current).
   B. Your SDRAM must be PC-100 compliant.

2. Jumper JP3 is provided to connect to the STR LED in your system chassis. [Your chassis may not provide this feature.] The STR LED will be illuminated when your system is in STR sleep mode.



STR LED Connector External.

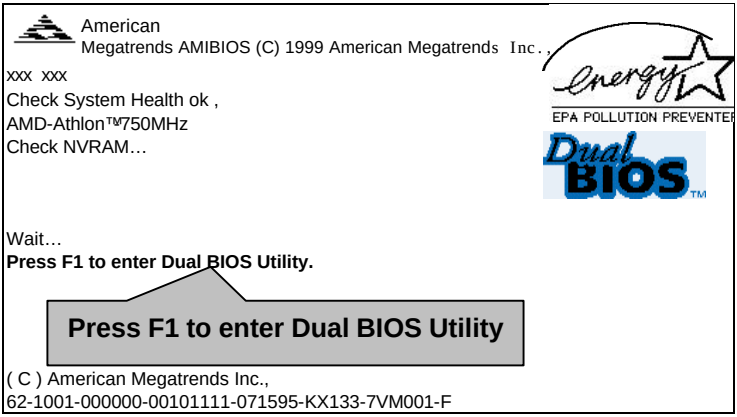
Dual BIOS Introduction (Optional)

A. What is Dual BIOS Technology?

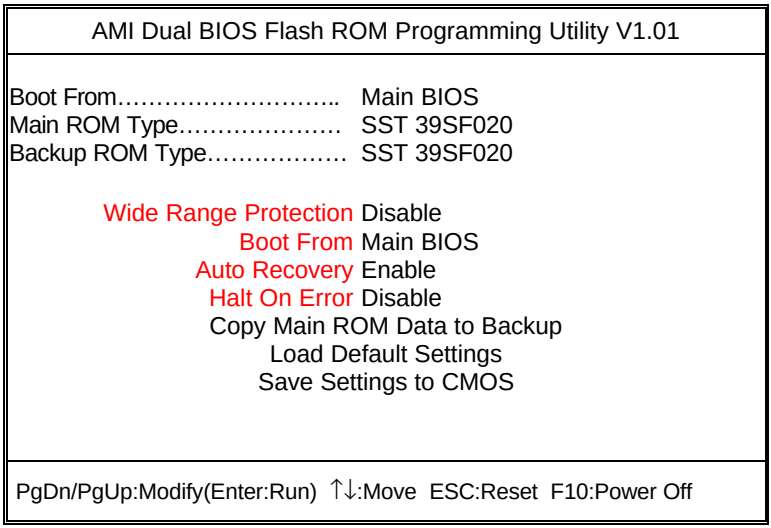
Dual BIOS means that there are two system BIOS (ROM) on the motherboard, one is the Main BIOS and the other is Backup BIOS. Under the normal circumstances, the system works on the Main BIOS. If the Main BIOS is corrupted or damaged, the Backup BIOS can take over while the system is powered on. This means 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



c. Dual BIOS Item explanation:

BIOS will auto detect:

Boot From : Main BIOS
Main ROM Type : SSTR 39SF020
Backup ROM Type : SSTR 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 newest "Value-added" feature, in a long series of innovations from GIGABYTE, is available on GA-7VX Series 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 is 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.

Four Speaker & SPDIF Introduction (Optional)

Four Speaker Introduction

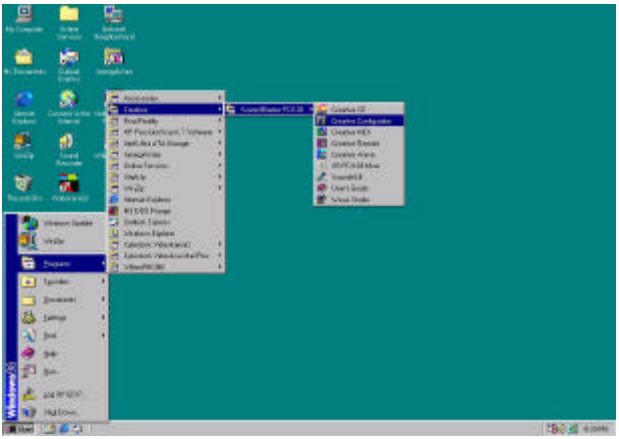
A. What is Four Speaker?

The Creative CT5880 audio chip can support 4 speaker output, if you select "Four speaker" out,

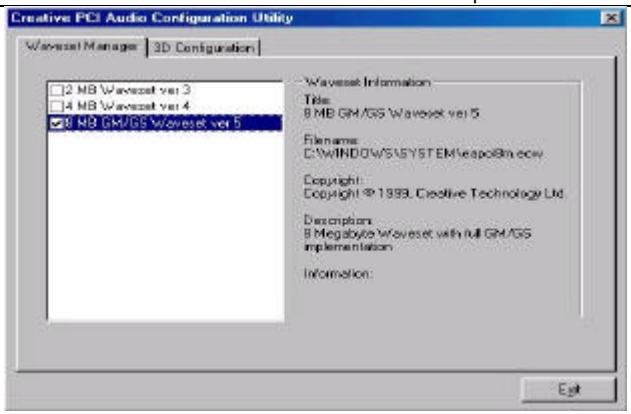
Line in will be change to another line out.

B. How to use Four Speaker?

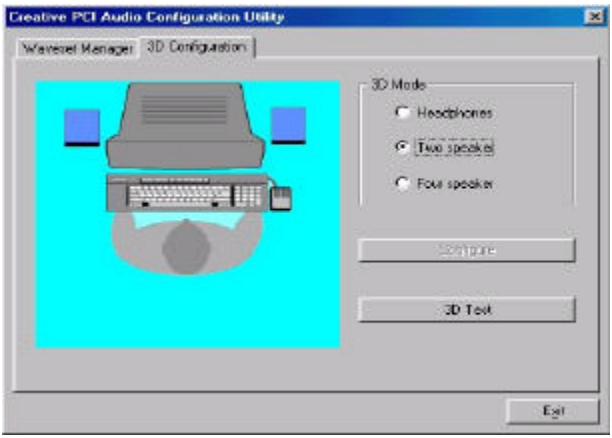
a. Press the "Start" button and then select "Creative"→ "Sound Blaster PCI128" → "Creative Configurator".



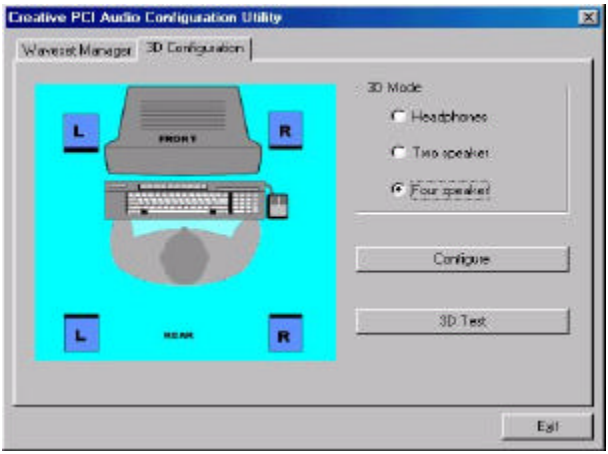
b. Click "3D Configuration" item.


Creative PCI Audio Configuration Utility
Wavesset Manager
3D Configuration
2 MB Wavesset ver 3
4 MB Wavesset ver 4
8 MB GM/GS Wavesset ver 5
Wavesset Information
Title:
8 MB GM/GS Wavesset ver 5
Filename:
C:\WINDOWS\SYSTEM\eapc8m.ecw
Copyright:
Copyright ® 1999, Creative Technology Ltd.
Description:
8 Megabyte Wavesset with full GM/GS implementation
Information:
Exit

c. Two speaker (Default)



d. Click "Four speaker" item.



C. Four Speaker Application

The four speaker function will only support in application software that use Microsoft DirectX and Creative EAX. For example, the game titles, software DVD player and MP3 player. Those software support Microsoft DirectX, so they can support four speaker output.

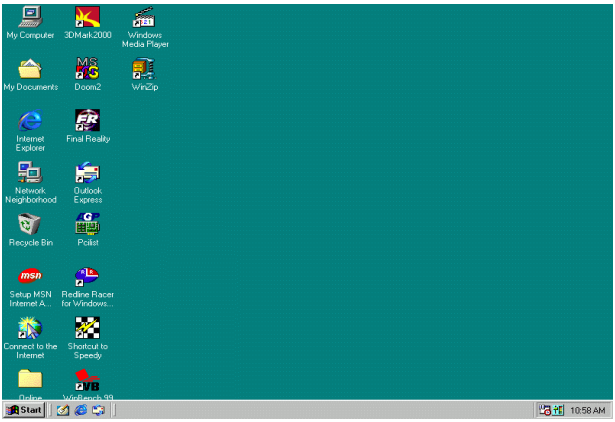
SPDIF Introduction

A. What is SPDIF?

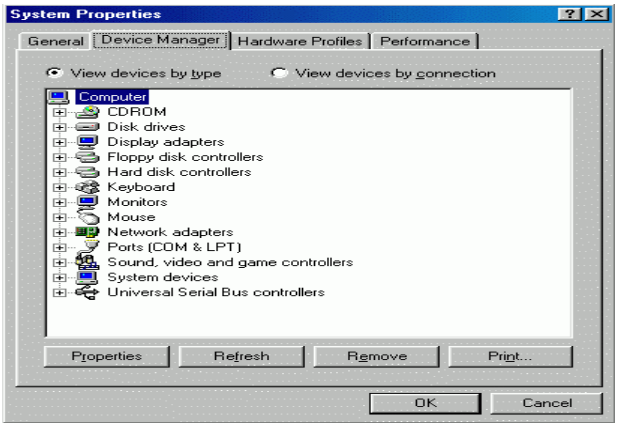
The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder.

B. How to use SPDIF?

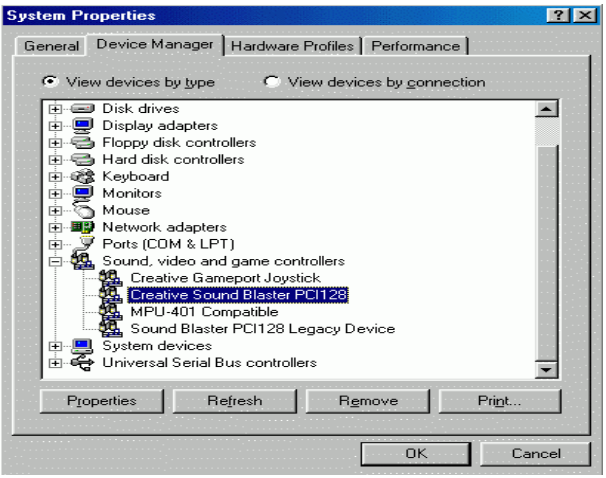
a. Press your mouse right button in "My Computer" and then select the "Properties" item.



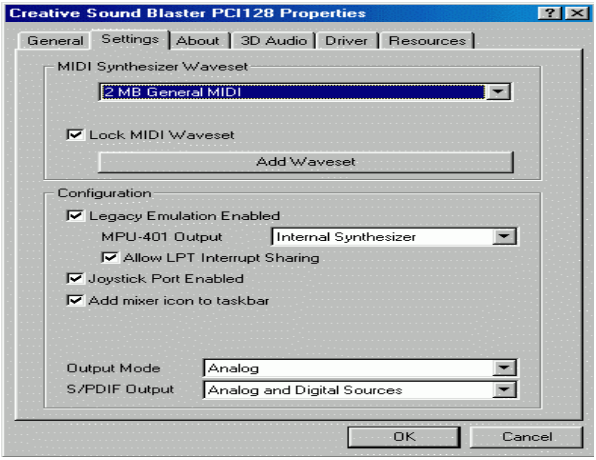
b. Click "Device Manager" item.



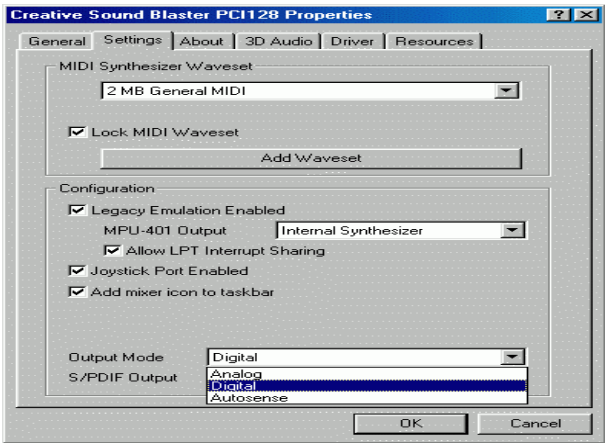
c. Press "Sound, video and game controllers" item and then select the "Creative Sound Blaster PCI128" item.



d. Press "Settings" item and then select the "Output Mode" item.



e. Click "Digital" item, Line Out will be change to SPDIF Out.



f. Recommend you to select "Autosense", it will auto detect the audio jack you plug in to Line Out is mono or stereo, and then change to SPDIF Out or Speaker out automatically.

Memory Installation

The motherboard has 3 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	
DIMM1	Supports 8 / 16 / 32 / 64 / 128 / 256 / 512 MB	X 1 pcs
DIMM2	Supports 8 / 16 / 32 / 64 / 128 / 256 / 512 MB	X 1 pcs
DIMM3	Supports 8 / 16 / 32 / 64 / 128 / 256 / 512 MB	X 1 pcs

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.

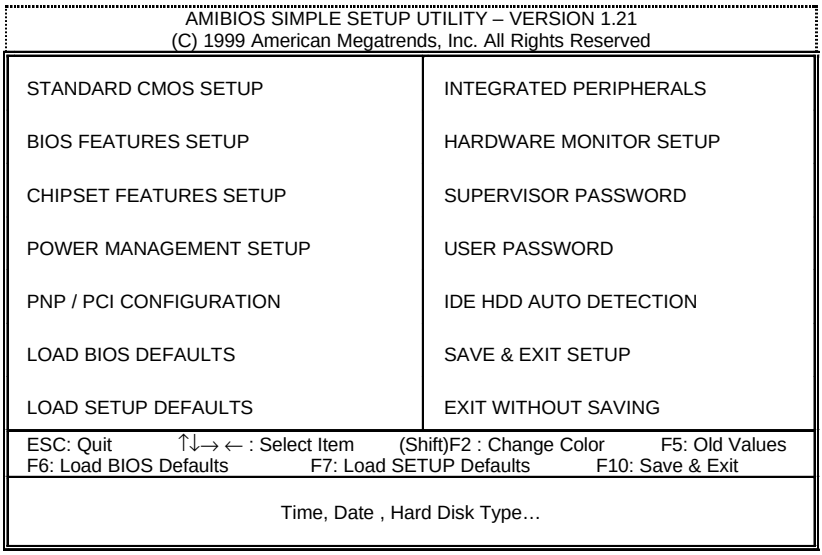


Figure 1: Main Menu

- **Standard CMOS Features**

  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 parameters which the system would be in safe configuration.

- **Load Setup Defaults**

  Setup Defaults indicates the value of the system parameters which the system would be in best performance configuration.

- **Integrated Peripherals**

  This setup page includes all onboard peripherals.

- **Hardware Monitor Setup**

  This setup page is the System auto detect Temperature, voltage , fan, speed.

- **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 Features

The items in Standard CMOS Setup 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.

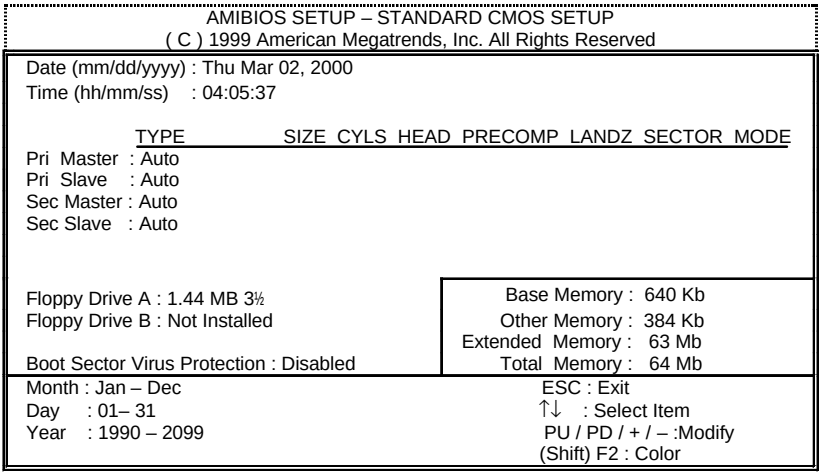


Figure 2: Standard CMOS Features

- **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.

- **IDE 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 manual type. Manual 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>.

- **Drive A type / Drive B type**

  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.

- **Floppy 3 Mode Support (for Japan Area)**

Disabled	Normal Floppy Drive.
Drive A	Drive A is 3 mode Floppy Drive.
Drive B	Drive B is 3 mode Floppy Drive.
Both	Drive A & B are 3 mode Floppy Drives.

- **Video**

The category detects the type of adapter used for the primary system monitor that must match your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in setup.

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

- **Halt on**

The category determines whether the computer will stop if an error is detected during power up.

NO Errors	The system boot will not stop for any error that may be detected and you will be prompted.
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped .
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

- **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.

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.

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.

BIOS Features Setup

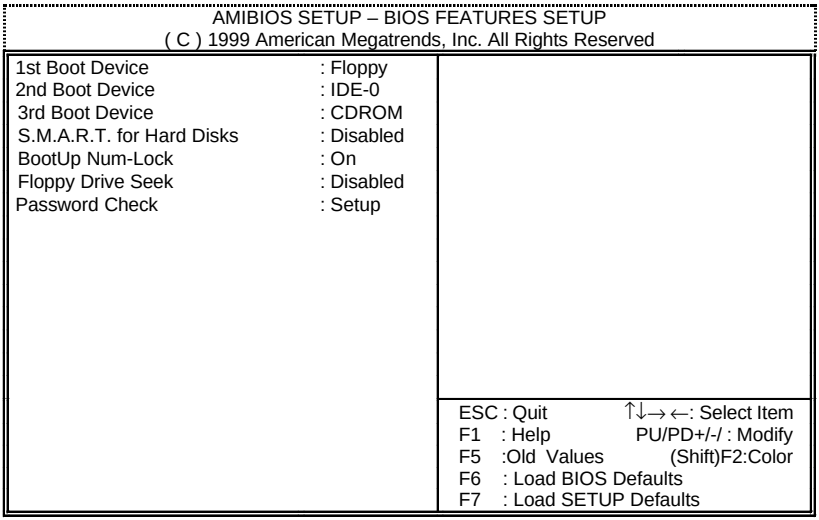


Figure 3: BIOS Features Setup

- **1st / 2nd / 3rd Boot Device**

Floppy	Boot Device by Floppy.
ZIP A:/LS120	Boot Device by ZIP A:/LS120
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:.
USB FDD	Boot Device by USB FDD.

· **S.M.A.R.T. for Hard Disks**

Enabled	Enabled HDD S.M.A.R.T. Capability.
Disabled	Disabled HDD S.M.A.R.T. Capability. **(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**

This category allows you to limit access to the Always and Setup, or just to Setup.

Always	The system can not boot and can not access to Setup page will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. **(Default Value)**

Chipset Features Setup

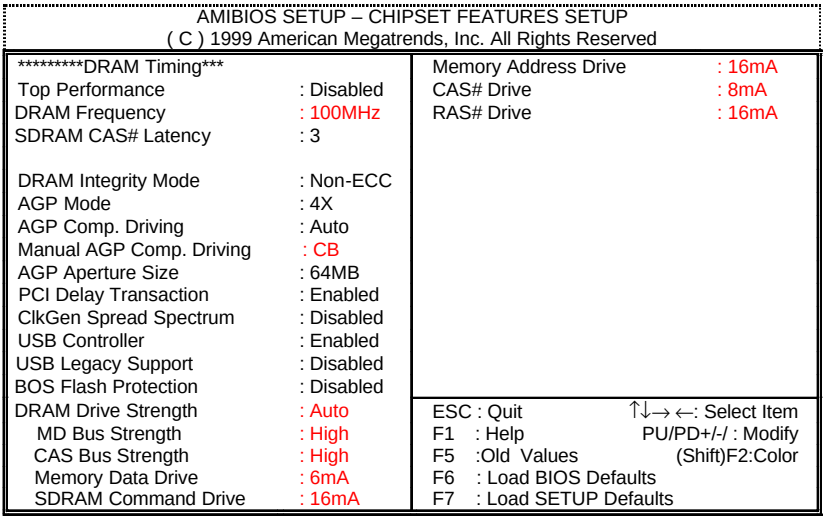


Figure 4: Chipset Features Setup

- **Top Performance**

Disabled	Top Performance Disabled. **(Default Value)**
Enabled	Top Performance Enabled.

- **DRAM Frequency**

100MHz	Set DRAM Frequency is 100MHz. **(Default Value)**.
133MHz	Set DRAM Frequency is 133MHz.

**If you want to set DRAM Frequency to "133MHz", you must set Top Performance as "Enabled" at first.

- **SDRAM CAS# Latency**

3	For Slower SDRAM DIMM module. **(Default Value)**.
2	For Fastest SDRAM DIMM module.
Auto	Set SDRAM CAS Latency Time to Auto.

- **DRAM Integrity Mode**

ECC	For 72 bit ECC type DIMM Model.
Non-ECC	Normal Setting. **(Default Value)**

· **AGP Mode**

4X	Set AGP Mode is 4X. **(Default Value)**
1X	Set AGP Mode is 1X.
2X	Set AGP Mode is 2X.

· **AGP Comp. Driving**

Auto	Set AGP Comp. Driving is Auto. **(Default Value)**
Manual	Set AGP Comp. Driving is Manual.

If AGP Comp. Driving is Manual.

Manual AGP Comp. Driving :	00~FF

· **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.

· **PCI Delay Transaction**

Enabled	Enabled Delay Transaction. **(Default Value)**
Disabled	Disabled Delay Transaction.

- **ClkGen Spread Spectrum**

Disabled	Disabled ClkGen Spread Spectrum. **(Default Value)**
Enabled	Enabled ClkGen Spread Spectrum.

· **USB Controller**

Enabled	USB Controller Function Enabled. **(Default Value)**
Disabled	USB Controller Function Disabled.

· **USB Legacy Support**

Keyboard/FDD	Set USB Legacy Support Keyboard / Floppy.
KB/Mouse/FDD	Set USB Legacy Support Keyboard / Mouse /Floppy.
Disabled	Disabled USB Legacy Support Function. **(Default Value)**

- **BIOS Flash Protection**

Enabled	BIOS Flash Protection Enabled.
Disabled	BIOS Flash Protection Disabled. **(Default Value)**

- **DRAM Drive Strength**

Auto	Detect DRAM Drive Strength automatically.
Manual	Set DRAM Drive Strength manually.

- **MD Bus Strength**

High	Set MD Bus Strength is High.
Low	Set MD Bus Strength is Low.

- **CAS Bus Strength**

High	Set CAS Bus Strength is High.
Low	Set CAS Bus Strength is Low.

- **Memory Data Drive**

6mA	Set Memory Data Drive is 6mA.
8mA	Set Memory Data Drive is 8mA..

- **SDRAM Command Drive**

16mA	Set SDRAM Command Drive is 16mA.
24mA	Set SDRAM Command Drive is 24mA..

- **Memory Address Drive**

16mA	Set Memory Address Drive is 16mA.
24mA	Set Memory Address Drive is 24mA..

- **CAS# Drive**

8mA	Set CAS# Drive is 8mA.
12mA	Set CAS# Drive is 12mA..

- **RAS# Drive**

16mA	Set RAS# Drive is 16mA.
24mA	Set RAS# Drive is 24mA..

Power Management Setup

AMIBIOS SETUP – POWER MANAGEMENT SETUP
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ACPI Sleep State	: S1/POS	RTC Alarm Date	: Every Day
USB Dev Wakeup From S3	: Disabled	RTC Alarm Hour	: 00
Suspend Time Out(Minute)	: Disabled	RTC Alarm Minute	: 00
Display Activity	: Ignore	RTC Alarm Second	: 00
IRQ3	: Monitor		
IRQ4	: Monitor		
IRQ5	: Ignore		
IRQ7	: Monitor		
IRQ9	: Ignore		
IRQ10	: Ignore		
IRQ11	: Ignore		
IRQ13	: Ignore		
IRQ14	: Monitor		
IRQ15	: Ignore		
Soft-Off by Power Button	: Instant Off		
System after AC Back	: Soft Off	ESC : Quit	↑↓→ ←: Select Item
Modem Use IRQ	: 4	F1 : Help	PU/PD+/-/ : Modify
Resume On Ring/LAN	: Enabled	F5 :Old Values	(Shift)F2:Color
PME Event Wake Up	: Enabled	F6 : Load BIOS Defaults	
Resume On RTC Alarm	: Disabled	F7 : Load SETUP Defaults	

Figure 6: Power Management Setup

- **ACPI Sleep State**

S1/POS	Set ACPI Sleep State is S1. **(Default Value)**
S3/STR	Set ACPI Sleep State is S3.

- **USB Dev Wakeup From S3**

USB Dev Wakeup From S3 can be set when ACPI Sleep Type set to S3/STR.

Enabled	Enable USB Dev Wakeup From S3.
Disabled	Disable USB Dev Wakeup From S3. **(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 ON/OFF. **(Default Value)**
Delay 4 Sec.	Soft switch ON 4sec. for POWER OFF.

- **System after 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**

3, 4, **(Default Value)** 5, 7, N/A

- **Resume On Ring / LAN**

Disabled	Disabled Resume On Ring / Lan.
Enabled	Enabled Resume On Ring / Lan. **(Default Value)**

- **PME Event Wake Up**

Disabled	Disable PME Event Wake Up.
Enabled	Enabled PME Event Wake Up. **(Default Value)**

- **Resume On RTC Alarm**

You can set "Resume On RTC Alarm" 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 default value is Enabled.

RTC Alarm Date :	0~31
RTC Alarm Hour :	0~23
RTC Alarm Minute :	0~59
RTC Alarm Second :	0~59

PnP/PCI Configuration

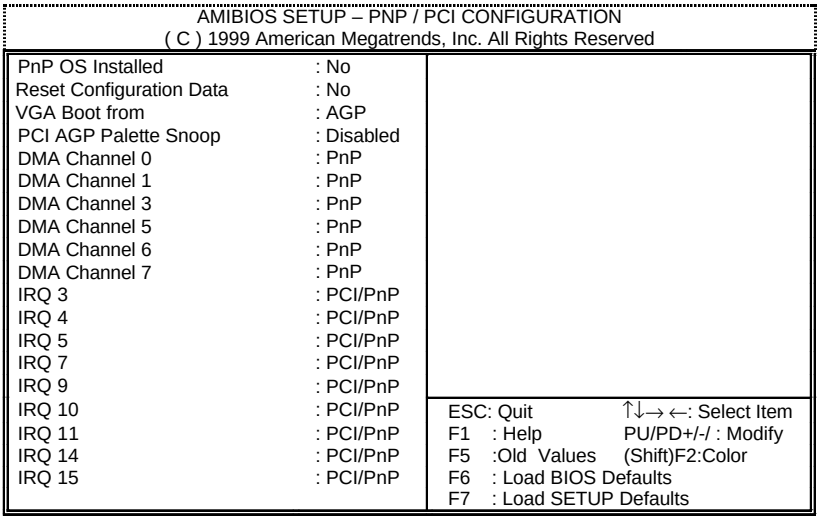


Figure 7: PnP/PCI Configuration

- **PnP OS Installed**

Yes	Enable PNP OS Installed function.
No	Disable PNP OS Installed function. **(Default value)**

- **Reset Configuration Data**

No	Disable this function. **(Default value)**
Yes	Clear PnP information in ESCD & update DMI data.

- **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)**

ISA/ EISA	The resource is used by Legacy ISA device.
PnP	The resource is used by PnP device. **(Default Value)**

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

ISA/ EISA	The resource is used by Legacy ISA device.
PCI/PnP	The resource is used by PCI/ PnP device. **(Default Value)**

Load BIOS Defaults

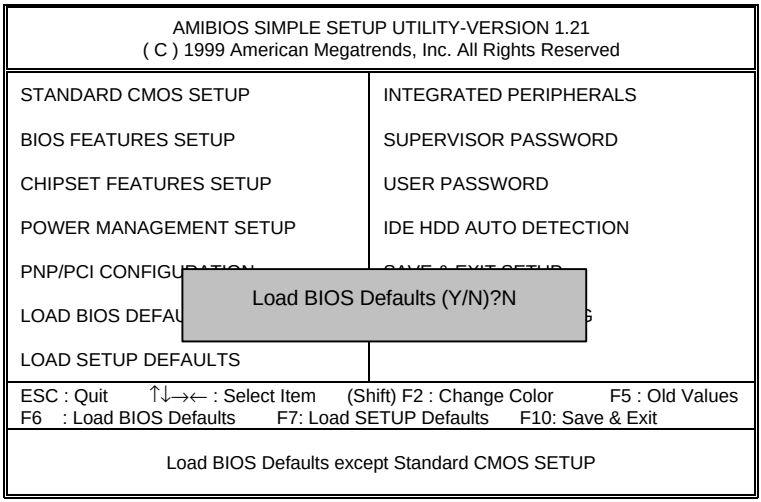


Figure 9: Load BIOS Defaults

- **Load BIOS Defaults**

  To load BIOS defaults value to CMOS, enter "Y". If not, enter "N".

Load Setup Defaults

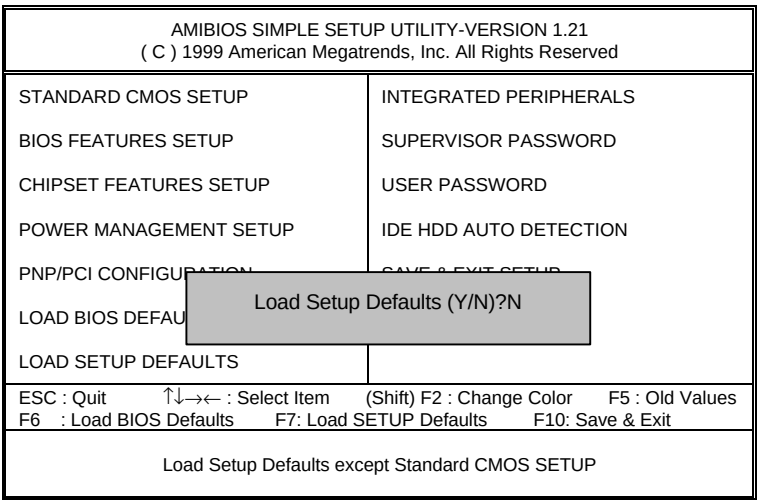


Figure 10: Load Setup Defaults

- **Load SETUP Defaults**

  To load SETUP defaults value to CMOS, enter "Y". If not, enter "N".

Integrated Peripherals

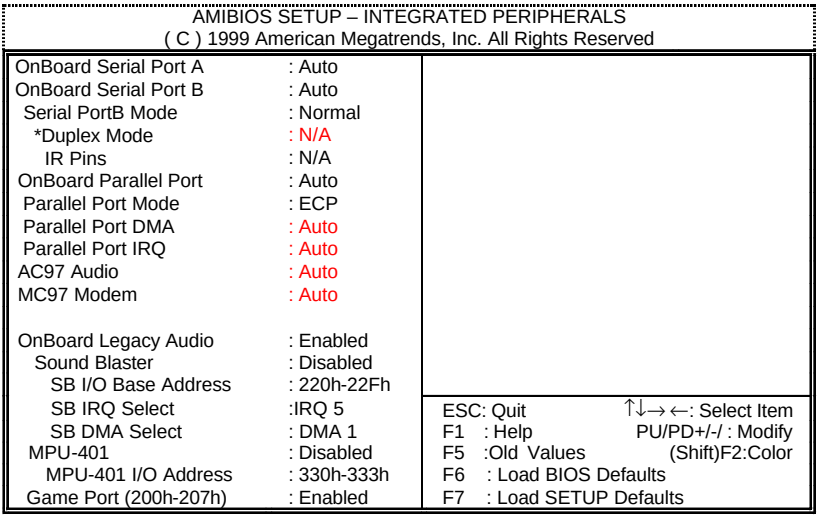


Figure 5: Integrated Peripherals

- **On Board Serial Port A**

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

- **On Board Serial Port B**

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

- **Serial Port B Mode**

Normal	Set onboard I/O chip Serial PortB to Noraml Mode. **(Default Value)**
IrDA	Set onboard I/O chip Serial PortB to IrDA Mode.
ASK IR	Set onboard I/O chip Serial PortB to ASKIR Mode.

- **Duplex Mode**

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

- **IR Pins**

IRRX,IRTX	IR Pin Select is IRRX/IRTX.
N/A	Disabled this function **(Default Value)**.
From COM 2.	IR Pin Select is From COM 2.

- **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.
EPP+ECP	Using Parallel port as Enhanced Parallel Port & Extended Capabilities Port.

·

Auto	Set Auto to parallel port mode DMA Channel. . **(Default Value** .
N/A	**.**
3	Set Parallel Port DMA is 3.
1	Set Parallel Port DMA is 1.
0	

· **Parallel Port IRQ**

Auto	Set Auto to parallel Port IRQ DMA Channel. . **(Default Value)**.
N/A	Disabled this function .
	Set Parallel Port IRQ is 7.
5	Set Parallel Port IRQ is 5.

· **AC97 Audio**

Auto	Enabled On Board AC 97 Audio. **(Default Value)**
Disabled	Disabled On Board AC 97 Audio.

· **MC97 Modem**

Auto	**(Default Value)**
Disabled	

· **OnBorard Legacy Audio**

Enabled	Enabled OnBoard Legacy Audio. **(Default Value)**
Disabled	Disabled OnBoard Legacy Audio.

·

Enabled	Enabled Sound Blaster.
Disabled	Disabled Sound Blaster. **(Default Value)**

· **SB I/O Base Address**

220h-22Fh	Set SB I/O Base Address is 220h-22Fh. **(Default Value)**.
280h 28Fh	SB I/O Base Address is 280h 28Fh.
260h-26Fh	Set SB I/O Base Address is 260h-26Fh.
240h-24Fh	Set SB I/O Base Address is 240h-24Fh.

· **SB IRQ Select**

IRQ 9 / 5 / 7/ 10 .

- **SB DMA Select**

DMA 0 / 1 / 2/ 3**(Default Value: 1)**.

- **MPU-**

Enabled	Enabled MPU-
Disabled	-401. .

- **MUP-401 I/O Address**

330h-333h	Set MUP-401 I/O Address is 330h-333h. **(Default Value)**.
300h-303h	Set MUP-401 I/O Address is 300h-303h.
310h 313h	-401 I/O Address is 310h 313h.
320h-323h	Set MUP-401 I/O Address is 320h-323h.

- **-207h)**

Disabled	Disabled Game Port (200h-
	Enabled Game Port (200h 207h) **(Default Value)**

Hardware Monitor Setup

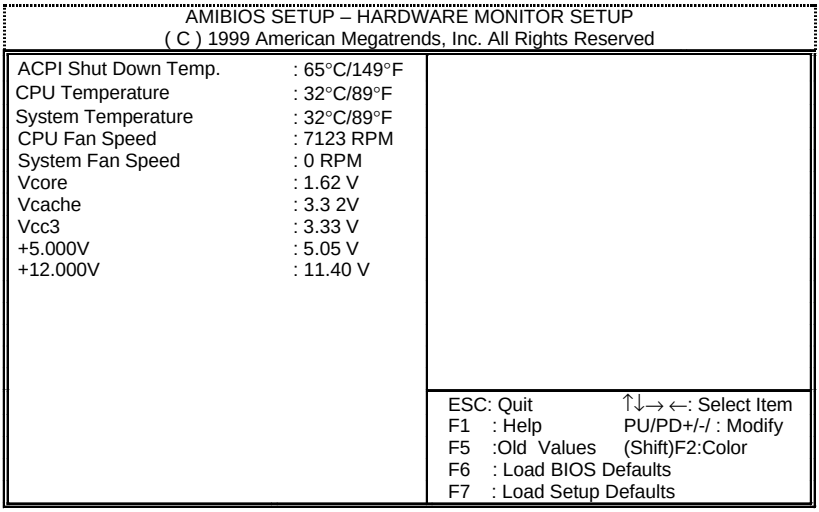


Figure 10: Hardware Monitor Setup

- **ACPI Shutdown Temp.**

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

Disabled	Normal Operation.
60°C / 140°F	Monitor CPU Temp. at 60°C / 140°F, if Temp. > 60°C / 140°F system will automatically power off .
65°C / 149°F	Monitor CPU Temp. at 65°C / 149°F, if Temp. > 65°C / 149°F system will automatically power off . **(Default Value)**
70°C / 158°F	Monitor CPU Temp. at 70°C / 158°F, if Temp. > 70°C / 158°F system will automatically power off .
75°C / 167°F	Monitor CPU Temp. at 75°C / 167°F, if Temp. > 75°C / 167°F system will automatically power off.

- **CPU Temperature**

Detect CPU Temperature automatically.

- **System Temperature**

Detect System Temperature automatically.

- **CPU FAN / System FAN Speed (RPM)**

  Detect Fan speed status automatically.

- **Current CPU Vcore / Vcache / Vcc3 / +12V / +5V**

  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.

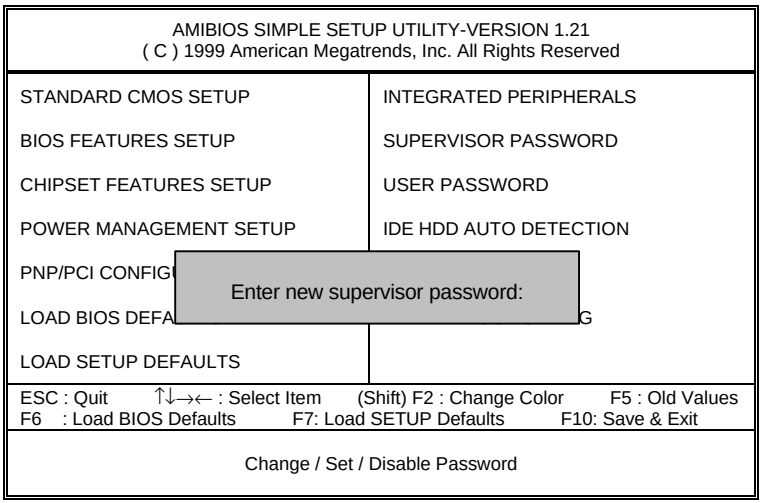


Figure 11: Password Setting

Type the password, up to eight characters, and press <Enter>. The password typed now will clear the previously entered password from CMOS memory. 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.

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

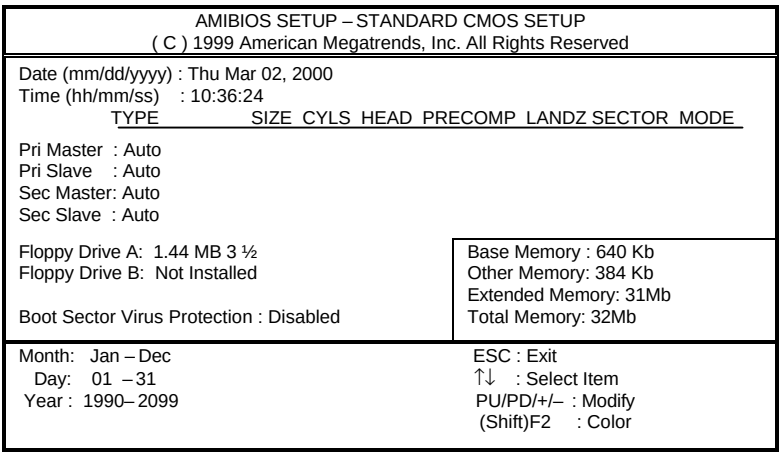


Figure 12: IDE HDD Auto Detection

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

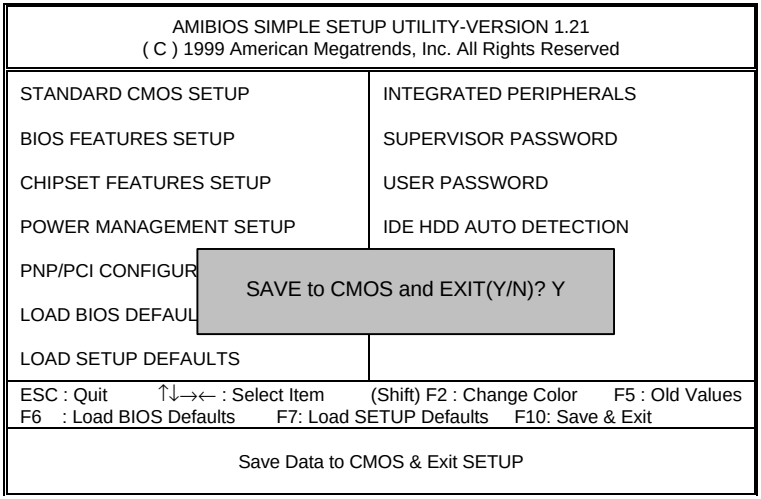


Figure 13: Save & Exit Setup

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

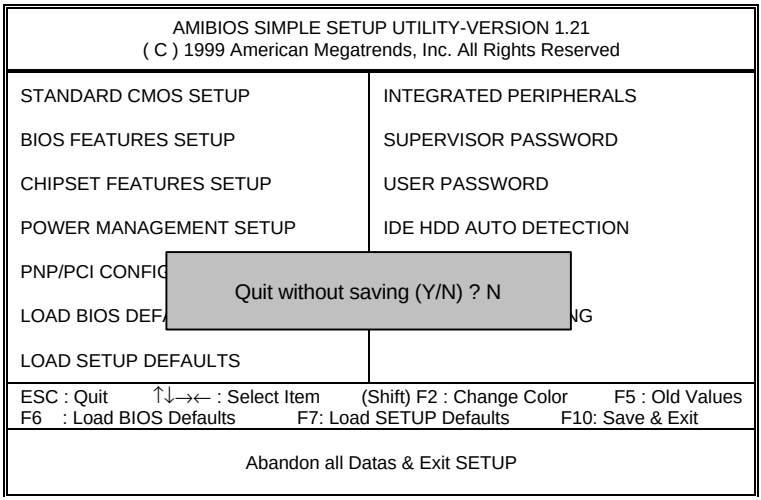


Figure 14: Exit Without Saving

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

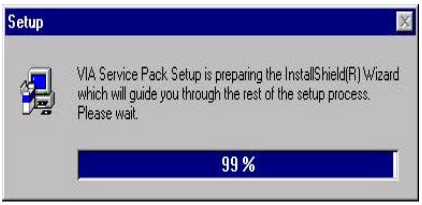
Type "N" will return to Setup Utility.

Appendix

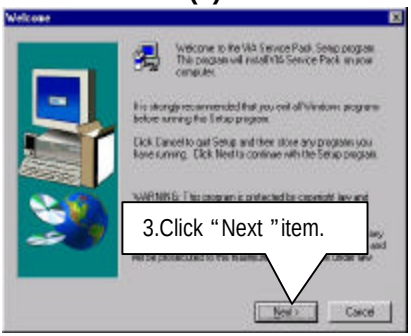
Appendix A: VIA Series VT82C686A Chipsets Driver Installation

A. VIA 4 in 1 Service Pack Utility:

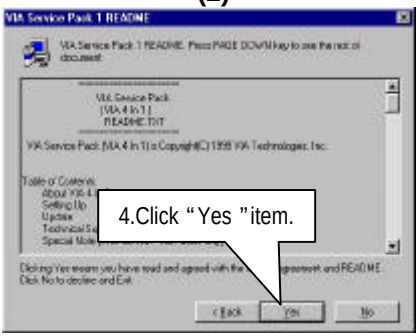
Insert the support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in My Computer to bring up the setup screen.



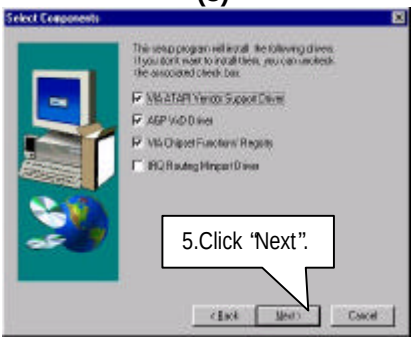
(1)



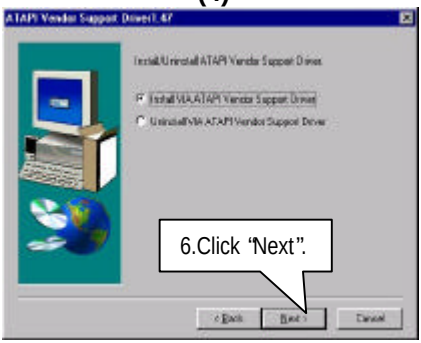
(2)



(3)

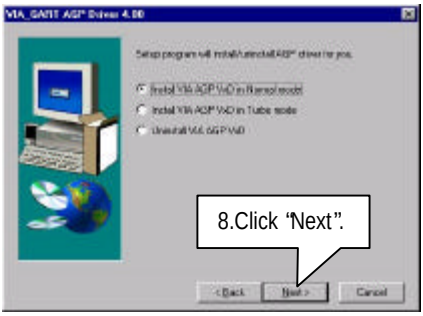


(4)



(5) **(6)**

(7)



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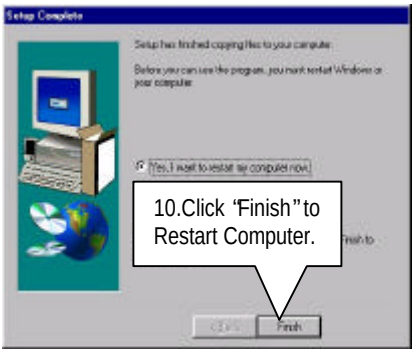
(9)

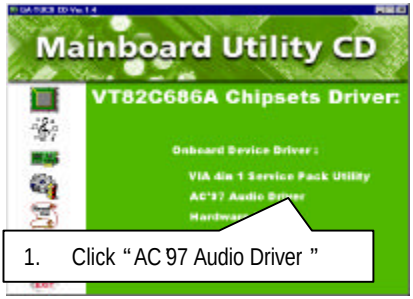


(10)

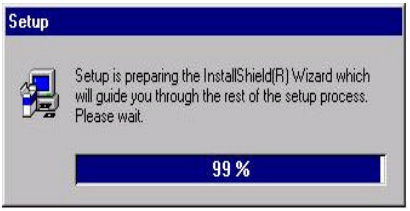
PS. This driver version doesn't support STR function, If you select "Click to enable DMA Mode" item.

B. AC97 Audio Driver :

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.

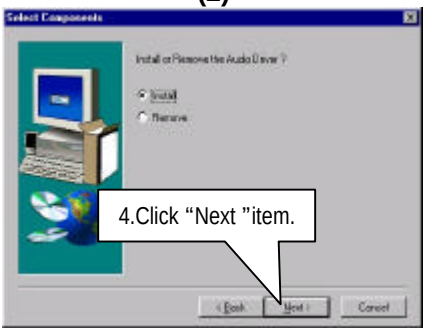


(1)



(2)

(3)

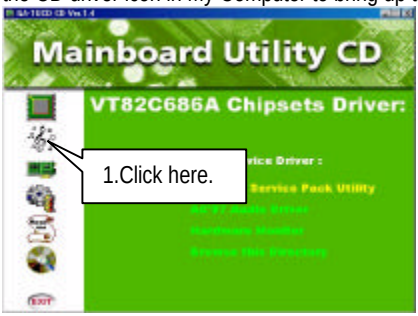


(4)

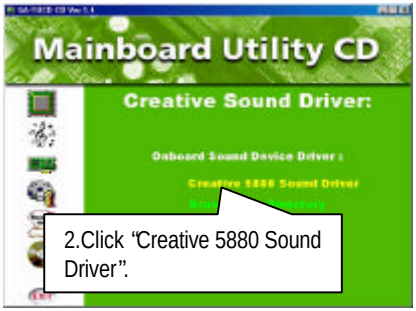
(5)

Appendix B: Creative Sound 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.

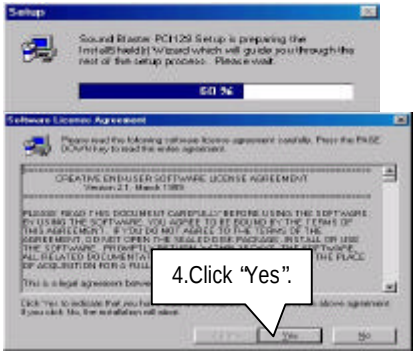


(1)

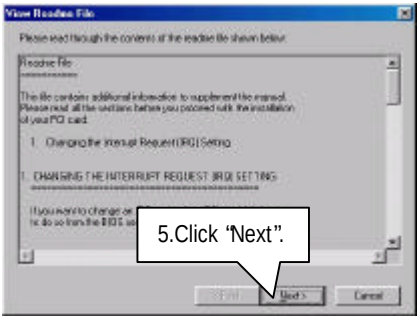


(2)

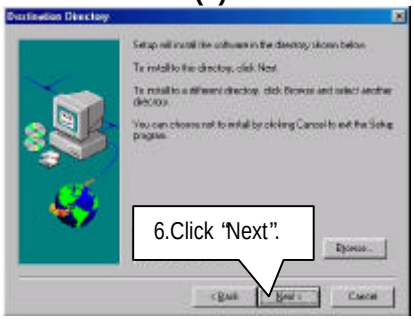
(3)



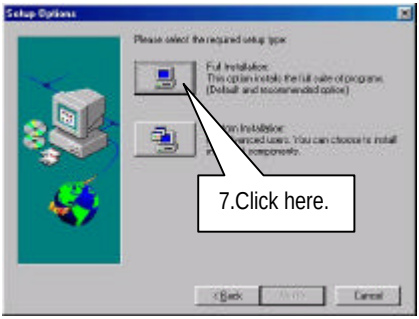
(4)



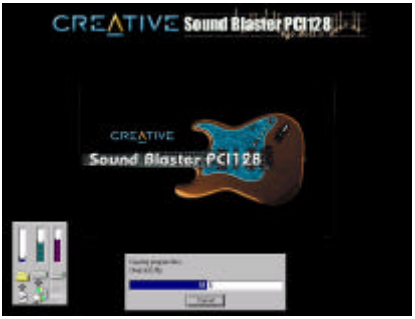
(5)



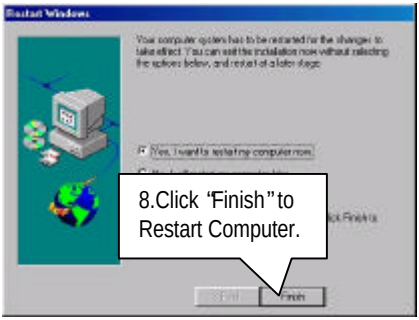
(6)


7.Click here.

(7)


CREATIVE Sound Blaster PCI128
CREATIVE
Sound Blaster PCI128

(8)


8.Click "Finish" to
Restart Computer.

(9)

Appendix C: BIOS Flash Procedure

BIOS update procedure:

- ✓ Please check your BIOS vendor (AMI or AWARD) on the motherboard.
- ✓ It is recommended you copy the AWDFlash.exe or AMIFlash.exe in driver CD (D:\>Utility\BIOSFlash) and the BIOS binary files into the directory you made in your hard disk. ¡ ie:C:\>Utility\ (C:\>Utility : denotes the driver and the directory where you put the flash utilities and BIOS file in.) ¡ j
- ✓ Restart your computer into MS-DOS mode or command prompt only for Win95/98, go into the directory where the new BIOS file are located use the utility AWDFlash.exe or AMIFlash.exe to update the BIOS.
- ✓ Type the following command once you have enter the directory where all the files are located
  C:\utility\ AWDFlash or AMIFlash <filename of the BIOS binary file intended for flashing>
- ✓ Once the process is finished, reboot the system

Note: Please download the newest BIOS from our website (www.gigabyte.com.tw) or contact your local dealer for the file.

Appendix D: Acronyms

Acor.	Meaning
ACPI	Advanced Configuration and Power Interface
POST	Power-On Self Test
LAN	Local Area Network
ECP	Extended Capabilities Port
APM	Advanced Power Management
DMA	Direct Memory Access
MHz	Megahertz
ESCD	Extended System Configuration Data
CPU	Central Processing Unit
SMP	Symmetric Multi-Processing
USB	Universal Serial Bus
OS	Operating System
ECC	Error Checking and Correcting
IDE	Integrated Dual Channel Enhanced
SCI	Special Circumstance Instructions
LBA	Logical Block Addressing
EMC	Electromagnetic Compatibility
BIOS	Basic Input / Output System
SMI	System Management Interrupt
IRQ	Interrupt Request
NIC	Network Interface Card
A.G.P.	Accelerated Graphics Port
S.E.C.C.	Single Edge Contact Cartridge
LED	Light Emitting Diode
EPP	Enhanced Parallel Port
CMOS	Complementary Metal Oxide Semiconductor
I/O	Input / Output
ESD	Electrostatic Discharge
OEM	Original Equipment Manufacturer
SRAM	Static Random Access Memory
VID	Voltage ID
DMI	Desktop Management Interface
MIDI	Musical Interface Digital Interface
IOAPIC	Input Output Advanced Programmable Input Controller
DIMM	Dual Inline Memory Module
DRAM	Dynamic Random Access Memory
PAC	PCI A.G.P. Controller
AMR	Audio Modem Riser

To be continued...

Acor.	Meaning
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
DRM	Dual Retention Mechanism
ISA	Industry Standard Architecture
MTH	Memory Translator Hub
CRIMM	Continuity RIMM