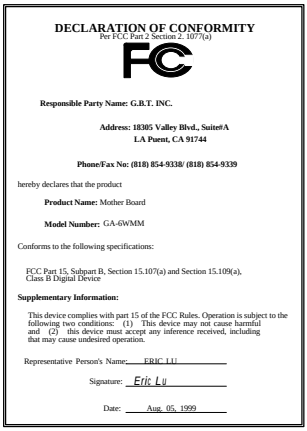
FCC Compliance Statement:



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-6WMM

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: Aug. 05, 1999

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-6WMM

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

Signature : *Rex Lin*

(Stamp)

Date : Aug.05, 1999

Name : Rex Lin

6WMM Series

Pentium® II / III / Celeron ™ Processor Motherboard

USER'S MANUAL

Pentium® II/III/Celeron ™ Processor MAINBOARD
REV. 1.3 Third Edition
R-13-03-091123

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) Suspend to RAM	Instructions STR installation
7) BIOS Setup	Instructions on setting up the BIOS software
8) Appendix	General reference

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Block Diagram	P.30
Suspend to RAM Installation	P.31
Memory Installation	P.37
Page Index for BIOS Setup	P.38
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Revision History

Revision	Revision Note	Date
1.3	Initial release of the 6WMM series motherboard user's manual.	Sep.1999
1.3	Second release of the 6WMM series motherboard user's manual	Oct. 1999
1.3	Third release of the 6WMM series motherboard user's manual	Nov. 1999

The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information contained herein. Third-party brands and names are the property of their respective owners.

Nov. 23 , 1999 Taipei, Taiwan, R.O.C

Item Checklist

☑The 6WMM Series Motherboard

☑Cable for IDE / Floppy device

☑Diskettes or CD (IUCD) for motherboard utilities

☐Internal COMB Cable (Optional)

☐Internal USB Cable (Optional)

☐Cable for SCSI device

☑6WMM Series User's Manual

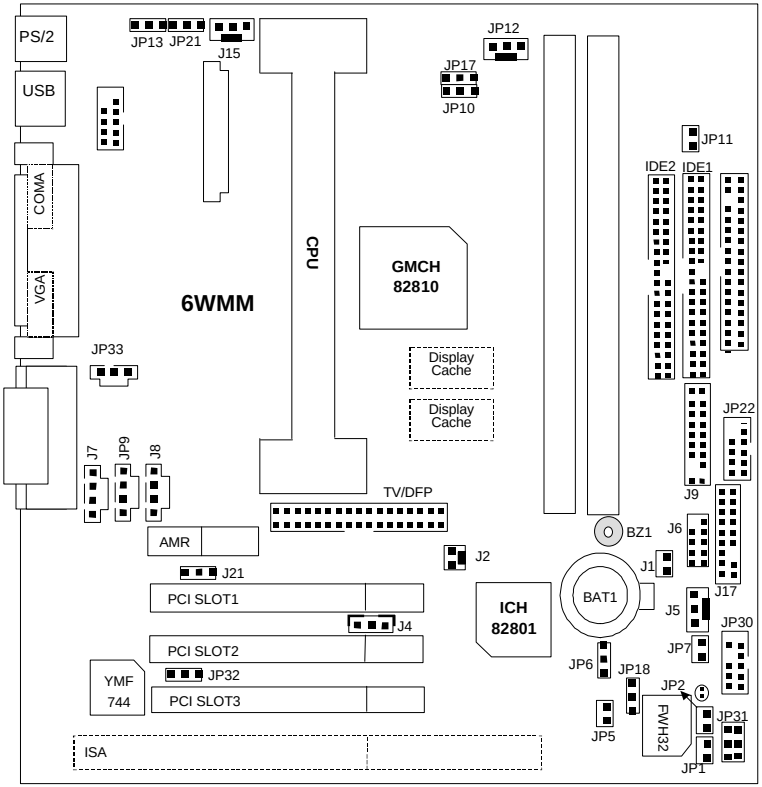
Summary of Features

Form factor	• 24.4 cm x 24.2 cm Micro ATX SIZE form factor, 4 layers PCB.
Motherboard	• 6WMM series includes 6WMM,6WMM-1 and 6WMM-E
CPU	• Pentium® II/III/Celeron ™ Processor • 2nd Cache Depend on CPU
Chipset	Intel® GMCH82810 / 82810-DC100 / 82810E,consisting of: • 82810/82810-DC100/82810E Graphics and memory controller Hub (GMCH) • 82801AA(ICH) I/O Controller Hub
Clock Generator	• Supports 66 / 100 / 133MHz (133Mhz Only GMCH82810E support)
Memory	• 2 168-pin DIMM Sockets • Supports PC-100 SDRAM 16MB~512MB • Supports only 3.3V SDRAM DIMM
I/O Control	• Winbond 83627
Slots	• 1 AMR • 1 TV/DFP • 3 32-bit Master PCI Bus slots • 1 16-bit ISA Bus slot(Optional)
On-Board IDE	• An IDE controller on the Intel® 82801AA (ICH) PCI chipset provides IDE HDD/ CD-ROM with PIO, Bus Master and Ultra DMA/33/66 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 ports supports SPP/EPP/ECP mode • 2 Serial Ports (COMA & COMB) • 2 USB ports • 4MB Display cache RAM (Optional for 82810-DC100, 82810E) • 1 IrDA connector for IR/CIR

To be continued…

Hardware Monitor	• CPU/Power Supply/Chassis Fan Revolution detect • CPU Fan Control • System Voltage Detect • CPU Overheat Warning • Chassis Intrusion Detect • Display Actual Current Voltage
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	• Licensed AWARD BIOS, 4M bit FLASH ROM
Additional Features	• Internal/External Modem Wake up • Keyboard Password Wake up • System after AC back • Supports Wake-on-LAN (WOL), header • USB KB/ mouse wake up from STR • STR Function • Poly fuse for keyboard, USB, VGA, Game port over-current protection
DRIVERS & UTILITIES	• Chipsets/Audio/LAN Driver • Intel® LDCM® • DirectX 6.1 • Adobe® Acrobat Reader • Patch 95/98 Utility

6WMM Series Motherboard Layout



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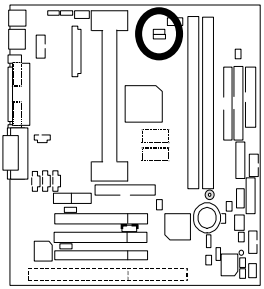
CPU Speed Setup

The system bus frequency can be switched between 66MHz and 133MHz by adjusting JP17 & JP10. The CPU Frequency is control by BIOS.

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.



1 JP17
1 JP10

	JP10	JP17
Auto	1-2close	1-2close
66M	2-3close	2-3close
100M	Open	2-3close
133M	Open	Open

Auto detect CPU Speed

1 JP17
1 JP10

66MHz

1 JP17
1 JP10

100MHz

1 JP17
1 JP10

133MHz
(Only GMCH82810E Support)

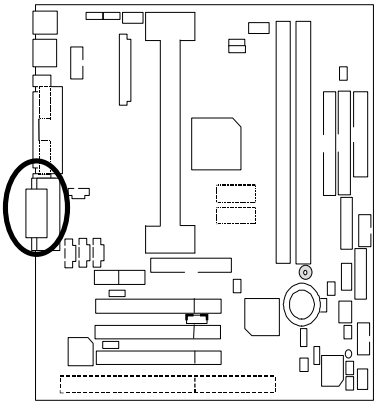
1 JP17
1 JP10

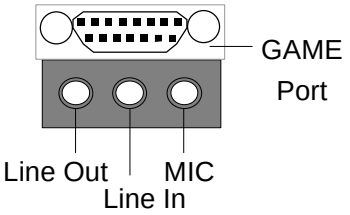
★ **Note: Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets, SDRAM, Cards….etc.**

★ **Note: JP17 is only available when the mother board use 82810E chipset.**

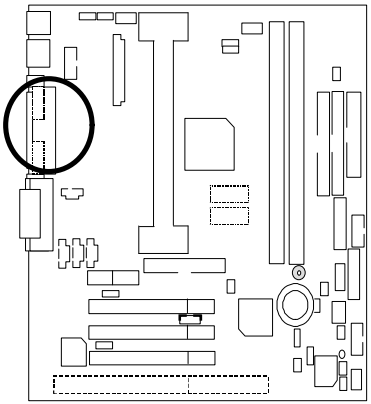
Connectors

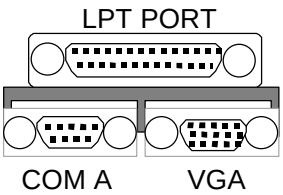
Game & Audio Port



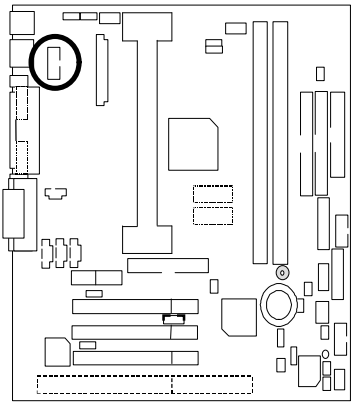


COM A / VGA / LPT Port



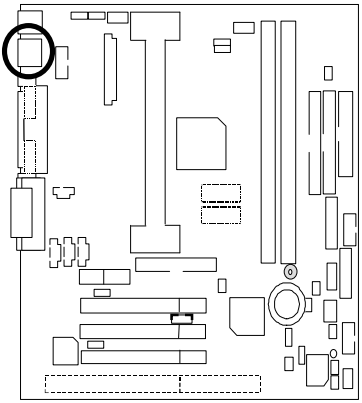


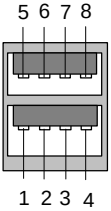
COM B Port



COM B

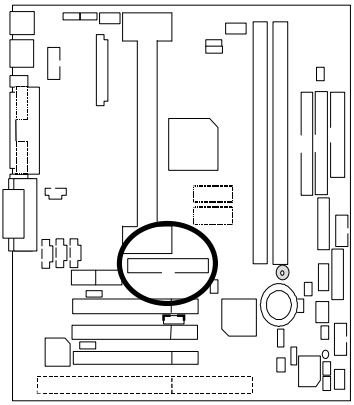
USB Connector





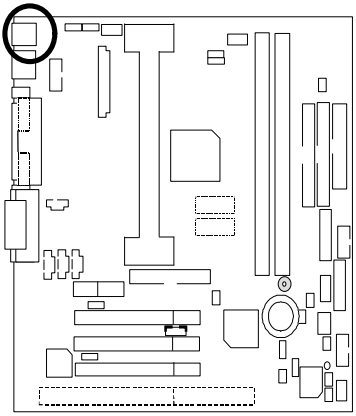
Pin No.	Definition
1	USB V0
2	USB D0-
3	USB D0+
4	GND
5	USB V1
6	USB D1-
7	USB D1+
8	GND

TV/DFP : TV-Out / Digital Flat Panel Daughter card connector.

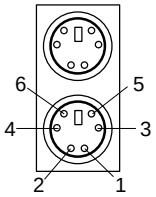


RED LINE

PS/2 Keyboard & PS/2 Mouse Connector



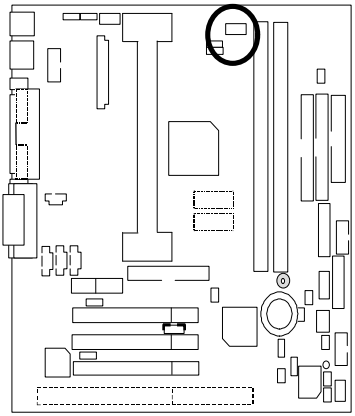
PS/2 Mouse



PS/2 Keyboard

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

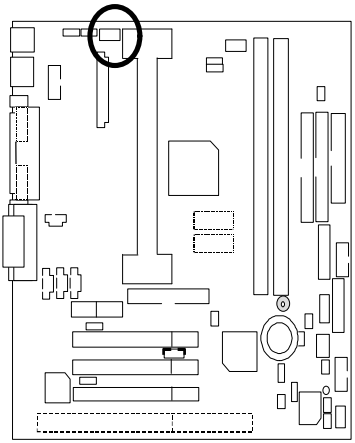
CPU Cooling FAN Power Connector



1

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

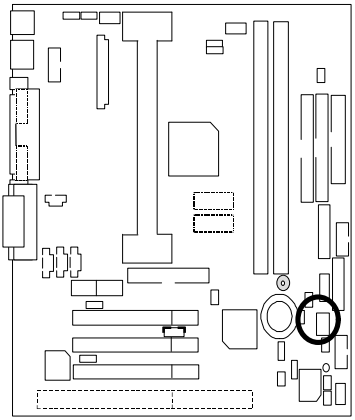
Power Cooling FAN Power Connector



1

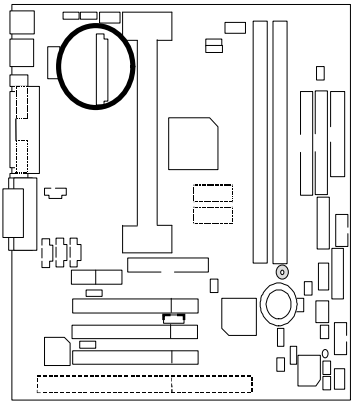
Pin No.	Definition
1	GND
2	+12V
3	SENSE

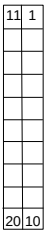
System Cooling FAN Power Connector



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

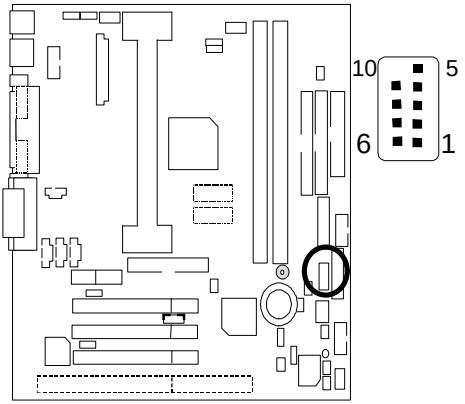
ATX Power





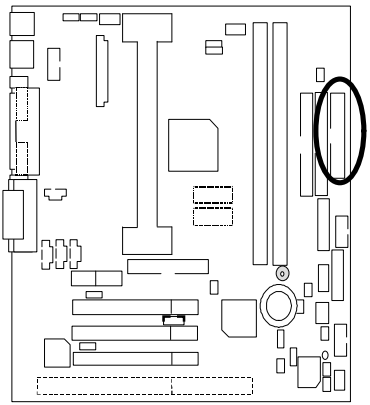
Pin No.	Definition
3,5,7,13, 15-17	GND
1,2,11	3.3V
4,6,19,20	VCC
10	+12V
12	-12V
18	-5V
8	Power Good
9	5V SB stand by+5V
14	PS-ON(Soft On/Off)

J6 : IR/CIR



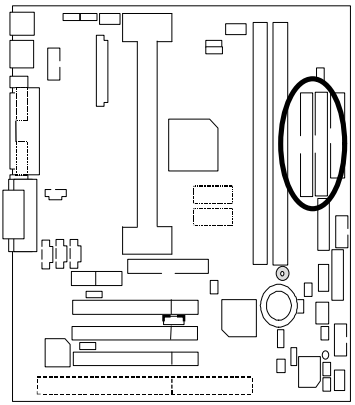
Pin No.	Definition
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX
6	NC
7	CIRRX
8	VCC
9	NC
10	NC

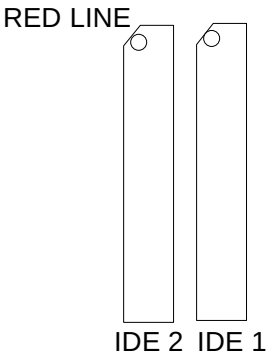
Floppy Port



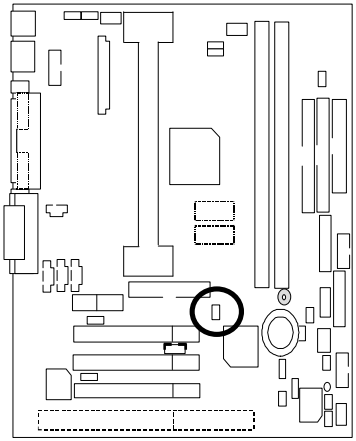
RED LINE

IDE1(Primary) , IDE2 (Secondary) Port



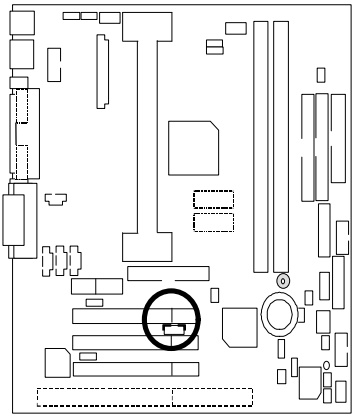


J2 : Ring Power On (Internal Modem Card Wake Up)



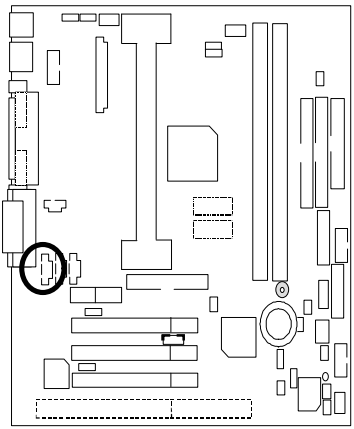
Pin No.	Definition
1	Signal
2	GND

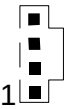
J4 : Wake on LAN



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

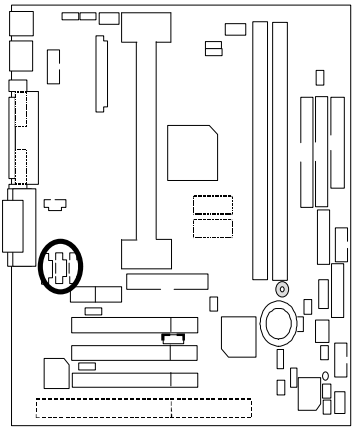
J7 : CD Audio Line In

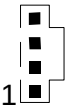




Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

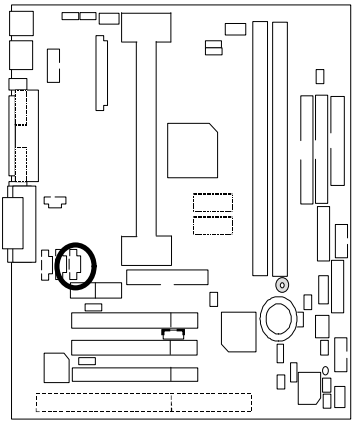
JP9 : TEL: The connector is for Modem with internal voice connector

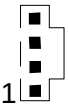




Pin No.	Definition
1	Signal-In
2	GND
3	GND
4	Signal-Out

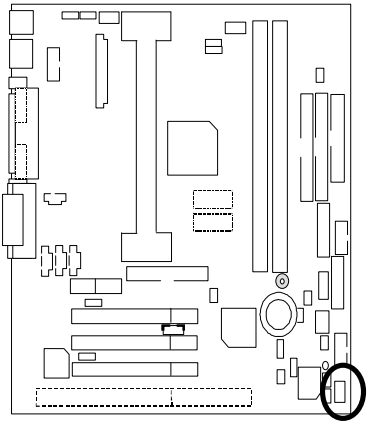
J8 : AUXIN

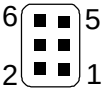




Pin No.	Definition
1	AUX-L
2	GND
3	GND
4	AUX-R

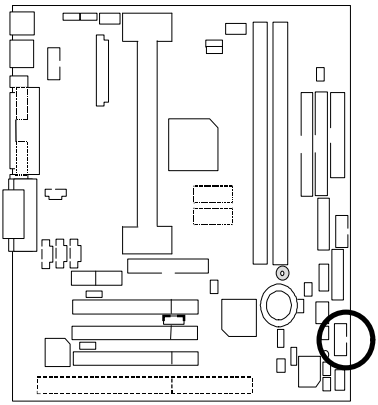
JP31 : USB Port Selection

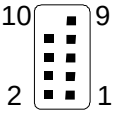




Front Panel USB Enable	Back Panel USB Enable
FPUSB(Default)	BPUSB
1-3close	3-5close
2-4close	4-6close

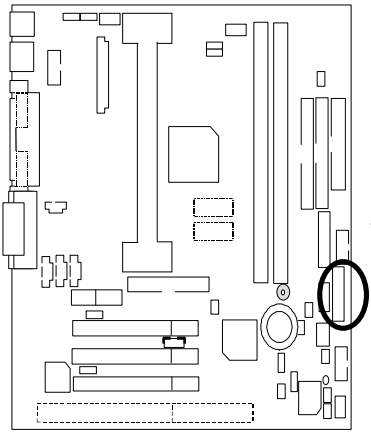
JP30 : Front Panel USB Port

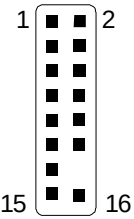




Pin No.	Definition
1,4,5,10	NC
2	+5V
3,7,9	GND
6	USBP0+
8	USBP0-

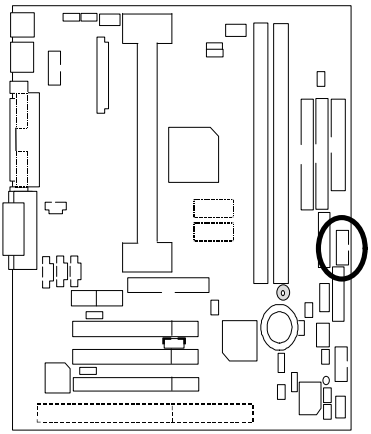
J17 : Front Panel Jumper (Optional)

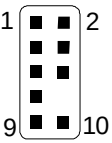




Pin No.	Definition
1	HD LED+
2	GN LED+
3	HD LED-
4	PWR LED+
5,7	RESET SW
6,8	Soft ON/OFF
10,12	Green SW
9	+5V
11	IR RX
13	GND
15	IRTX
14	NC
16	IR Power

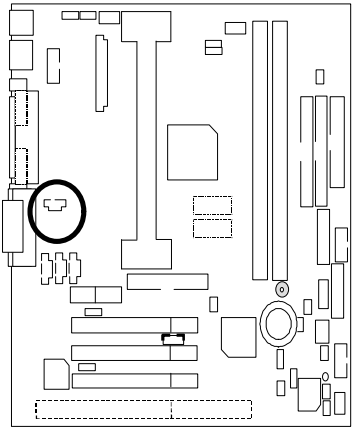
J22 : Front Audio Jumper (Optional)





Pin No.	Definition
1	LINE-OUT–L
3	LINE-OUT–R
5	AUX-L
7	AUX-R
9	MIC-IN
10	MIC
8	NC
2,4,6	GND

JP33 : SPDIF(The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dobly Digital decoder.)

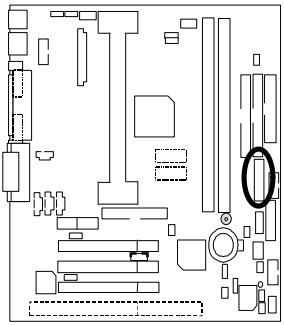


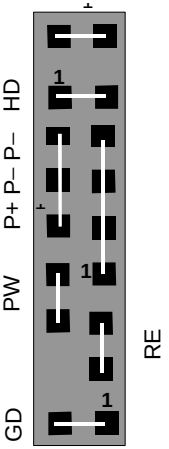
1

Pin No.	Definition
1	VCC
2	SPD OUT
3	GND

Panel and Jumper Definition

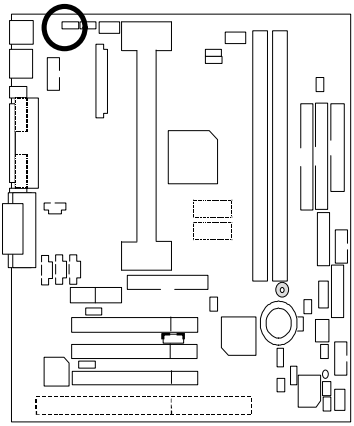
Panel Jumper





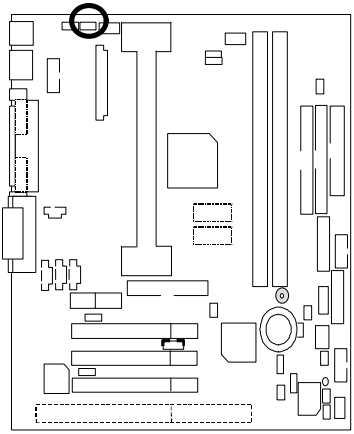
GN (Green Switch)	Open: Normal Operation Close: Entering Green Mode
GD (Green LED)	Pin 1: LED anode(+) Pin 2: LED cathode(–)
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(–)
SPKR (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(–)
RE (Reset Switch)	Open: Normal Operation 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

JP13 : Keyboard Power On



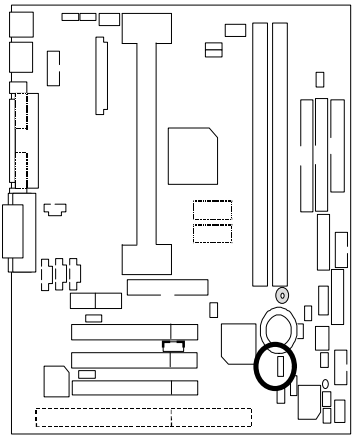
Pin No.	Definition
1-2 close	Keyboard Power on Enabled
2-3 close	Keyboard Power on Disabled (Default)

JP21 : USB KB/Mouse Wake up Selection



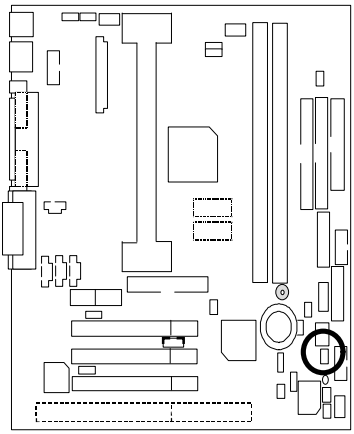
Pin No.	Definition
1-2 close	Enable USB KB / Mouse Wake up
2-3 close	Disable USB KB /Mouse Wake up(Default)

JP6 : Clear CMOS Function



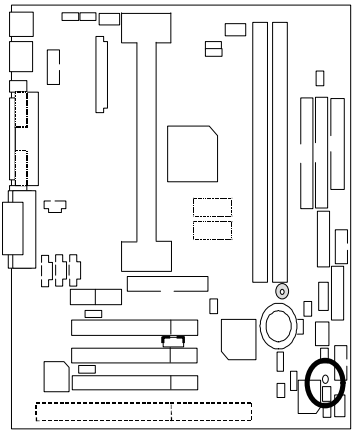
Pin No.	Definition
1-2 close	Clear CMOS
2-3 close	Normal (Default)

JP7 : Case Open



Pin No.	Definition
1	Signal
2	GND

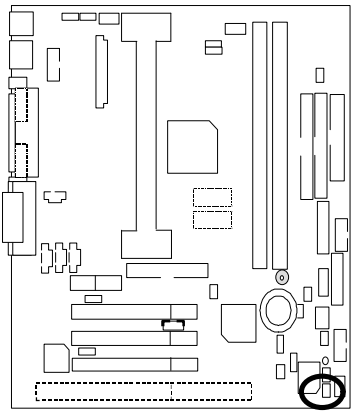
JP2 : STR LED Connector



STR LED Connector External.

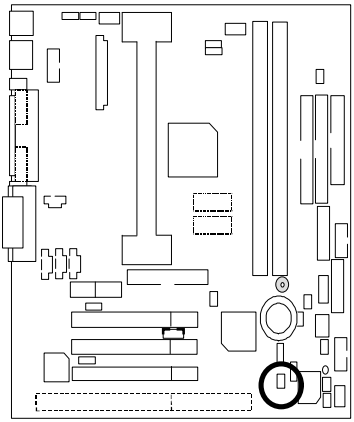
RAM Indicator LED1

JP1 : Top Block Lock



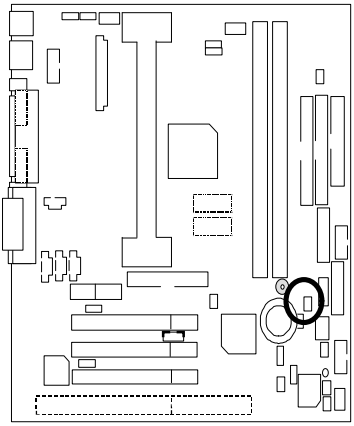
Pin No.	Definition
Open	TBL Lock
Close	UN Lock

JP5 : Timeout Reboot Function



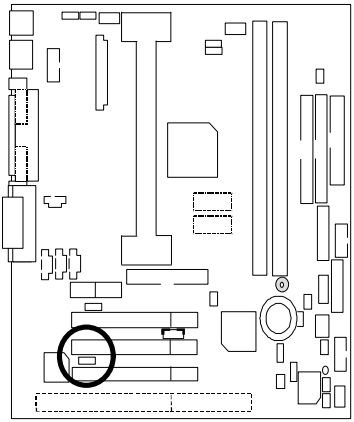
Pin No.	Definition
Open	Timeout reboot
Close	No Reboot on timeout

J1 : Buzzer Enable



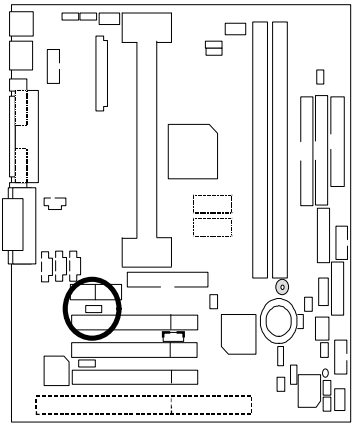
Pin No.	Definition
Open	Internal Buzzer Disable
Close	Internal Buzzer Enable (Default)

JP32 : Onboard Sound Function Selection



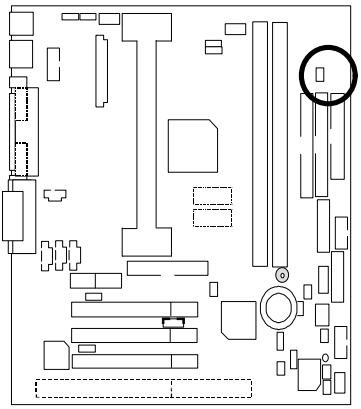
Pin No.	Definition
1-2 close	Disable Onboard sound
2-3 close	Enable Onboard sound (Default)

J21 : AMR Selection



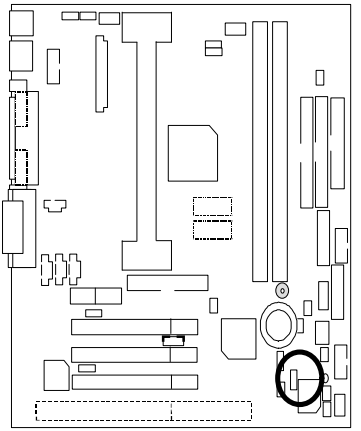
Pin No.	Definition
1-2close	Secondary AMR
2-3close	Disable CODEC

JP11 : STR Enable



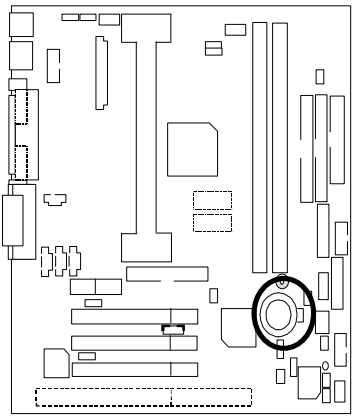
Pin No.	Definition
Open	STR Disabled (Default)
Close	STR Enabled

JP18 : Normal / Safe mode / Recovery



Pin No.	Definition
1-2close	Normal(Default)
2-3close	Safe mode
1-2-3open	Recovery

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

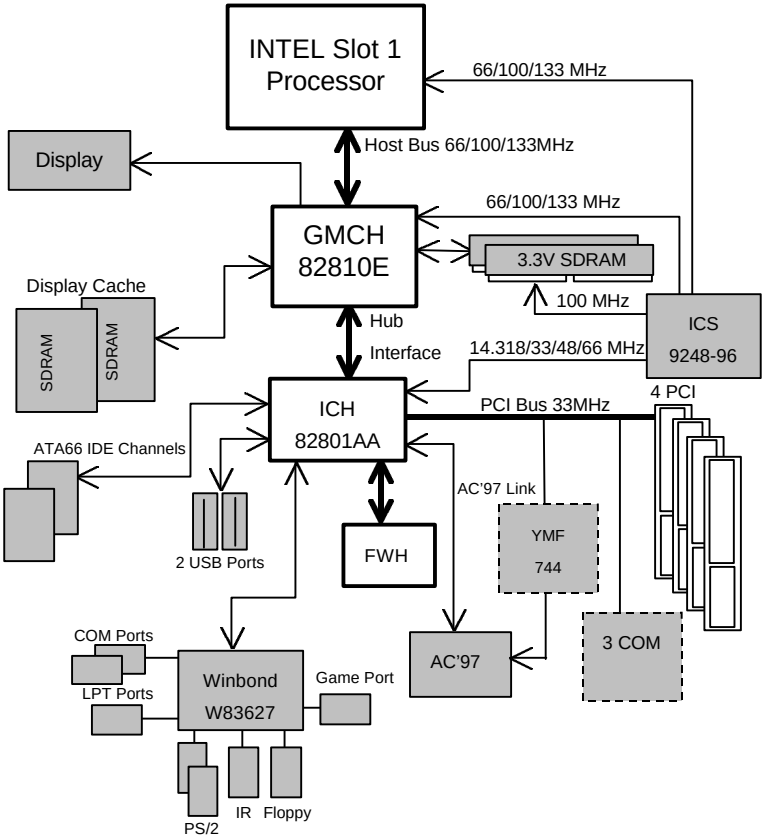
The following performance data list is the testing results of some popular benchmark testing programs.

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 Pentium® III 500MHz processor
- DRAM (128x1)MB SDRAM (Winbond 902WB 986408BH-8H)
- CACHE SIZE 512 KB included in CPU
- DISPLAY Onboard Intel Corporation 810 Graphics and Memory Controller Hub (4MB SDRAM)
- STORAGE Onboard IDE (IBM DJNA-371800)
- O.S. Windows NT™4.0 SPK5
- DRIVER Display Driver at 1024 x 768 x 16bit colors x 75Hz.

Processor	Intel Pentium® III 500MHz(100x5)
Winbench99	
CPU mark99	38.2
FPU Winmark 99	2560
Business Disk Winmark 99	3650
Hi-End Disk Winmark 99	6370
Business Graphics Winmark 99	149
Hi-End Graphics Winmark 99	344
Winstone99	
Business Winstone99	30
Hi-End Winstone99	24.7

Block Diagram



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.

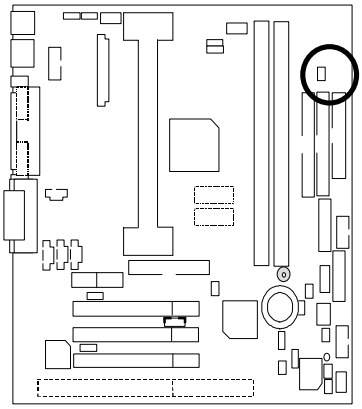
B. Type (without quotes) **"D:\setup /p j"** in the window provided. Hit the enter key or click OK.

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 JP11 (Closed.)



Pin No.	Definition
Open	STR Disabled (Default)
Close	STR Enabled

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 Suspend Type: S3 (Suspend to RAM)"**. 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.

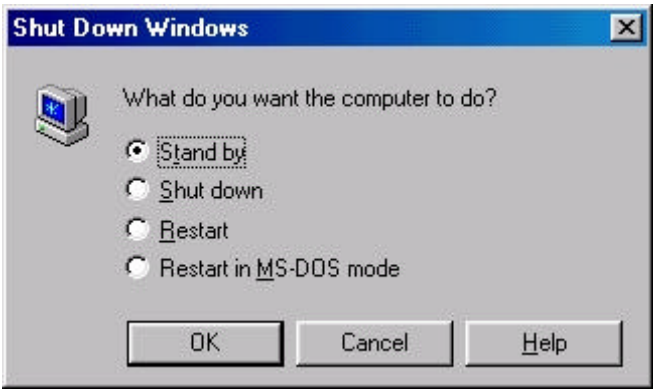
A.3 How to put your system into STR mode?

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”

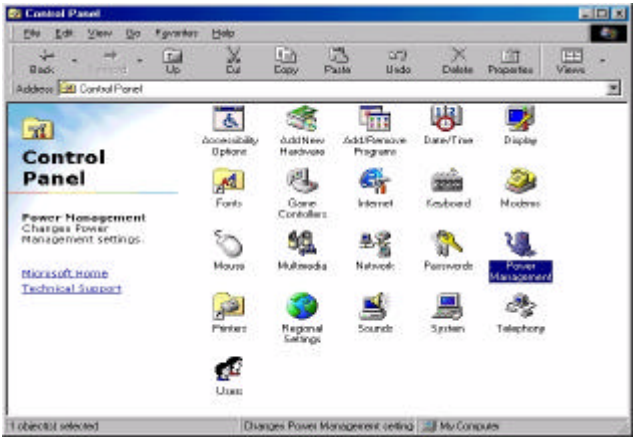
   B. Choose the “Stand by” item and press “OK”



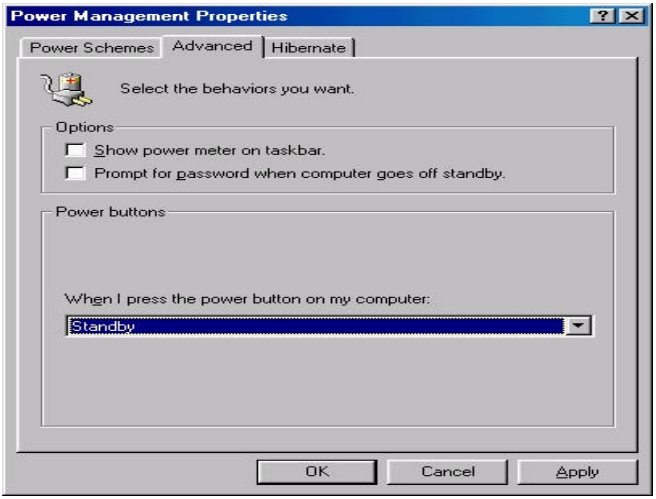
2. Define the system ”power on” button to initiate STR sleep mode:

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 six ways to “wake up” the system:

1. Press the “Power On” button.
2. Use the “Keyboard Power On” function.
3. Use the “Mouse Power On” function.
4. Use the “Resume by Alarm” function.
5. Use the “Modem Ring On” function.
6. Use the “Wake On LAN” function.

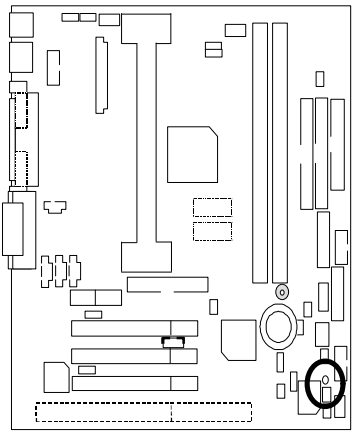
A.5 Notices :

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 JP2 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.

RAM Indicator LED1

Memory Installation

The motherboard has 2 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	X 1 pcs
DIMM 2	Supports 16 / 32 / 64 / 128 / 256 / 512 MB	X 1 pcs