6WMMC7/(-1)/(-2)

USER'S MANUAL

1. **Support Suspend To RAM Function.**
2. **Support Hardware Monitor.**
3. **System power on by PS/2 Mouse: First, enable this function in CMOS Setup, then you can power on the system by double clicking the right or left button of your PS/2 Mouse.**
4. **System power on by Keyboard: If your ATX power supply supports larger than 300 mA 5V Stand-By current (depends on the specification of keyboards), you can power on your system by entering password from the Keyboard after setting the "Keyboard power on" jumper and password in CMOS Setup.**
5. **Support 3 steps ACPI LED selectable.**
6. **Support Modem Ring-On (Include internal Modem and external modem on COM A).**
7. **Support Wake-up On LAN (Your ATX power supply must support larger than 720 mA 5V Stand-By current).**
8. **Built-in AC97-Link software audio.**
9. **Support Audio / Modem Riser (AMR) interface.**
10. **Support TV/DFP(Digital Flat Panel) function by TV/DFP daughter card (Optional).**
11. **Aureal AU8810 Hardware Audio (Optional).**

INTEL â Celeron ™ Socket 370 Processor MAIN BOARD

REV. 1.3 First Edition

The author assumes no responsibility for any errors or omissions that may appear in this document nor does it make a commitment to update the information contained herein.

July 28, 1999 Taipei, Taiwan

I. Quick Installation Guide :

CPU SPEED SETUP

The system bus frequency can be switched between 66MHz and 100MHz by adjusting JP5. 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.**
- **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.**

JP5: Set System Bus Speed (See Figure-1)

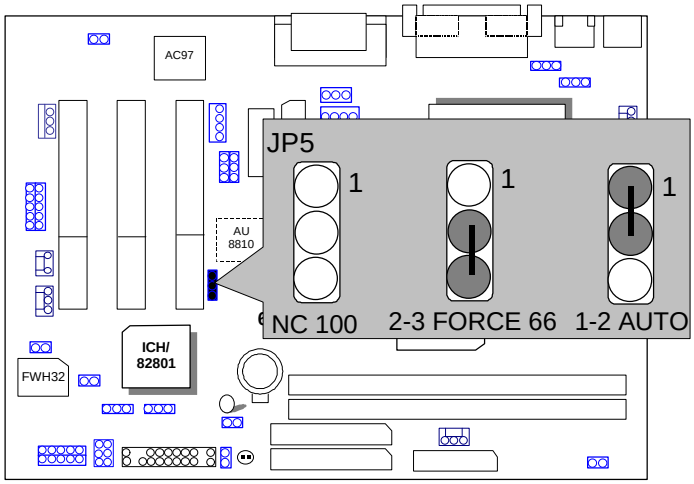
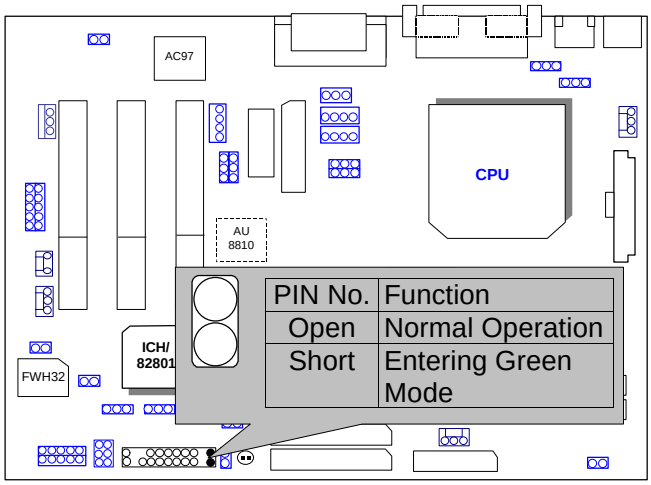


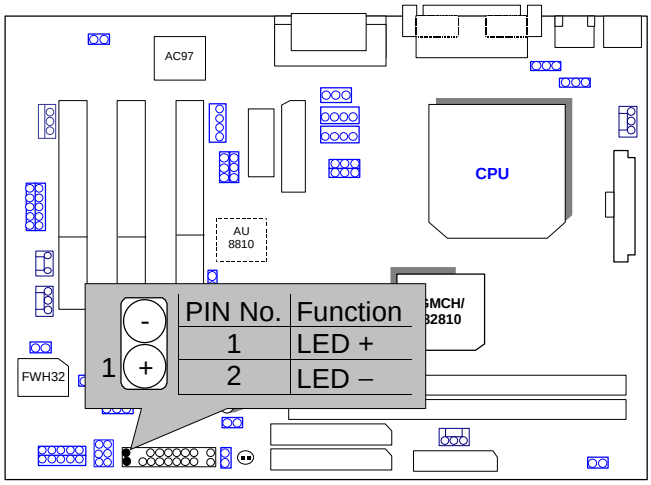
Figure-1

II. Jumper Setting :

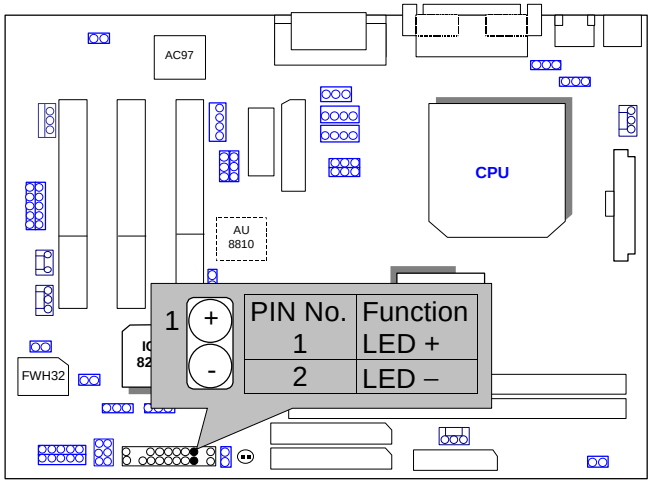
GN : Green Function Switch



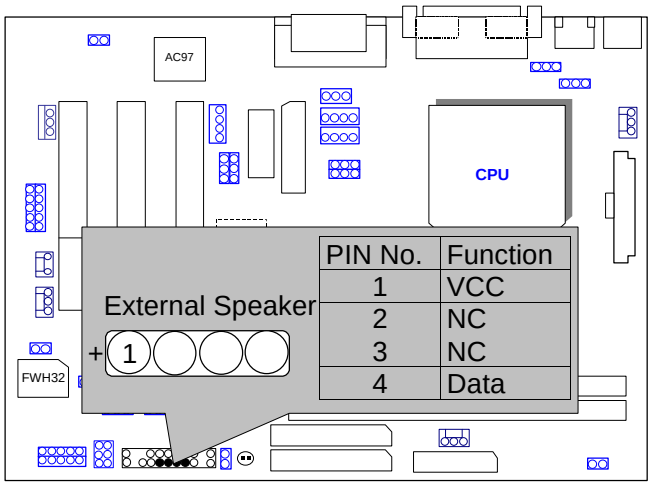
GD : Green Function LED



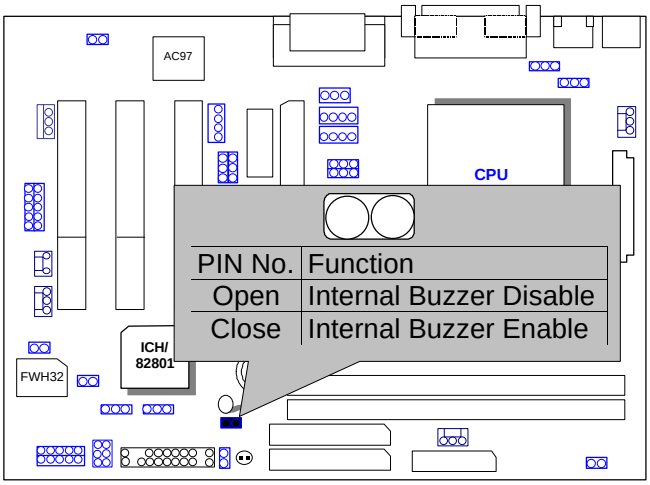
HD : IDE Hard Disk Active LED



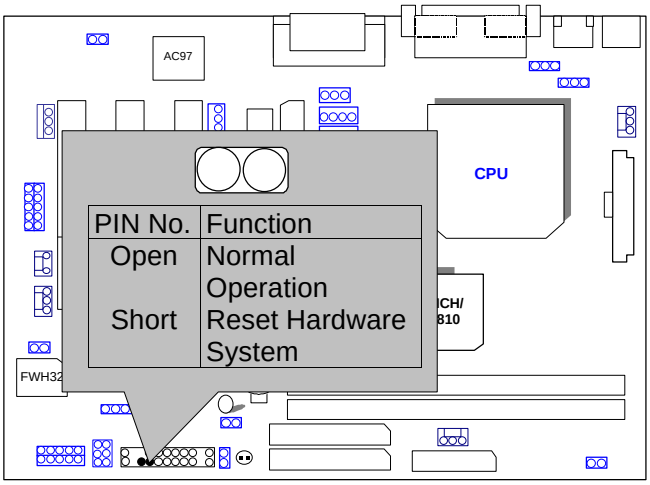
SPKR: External Speaker Connector



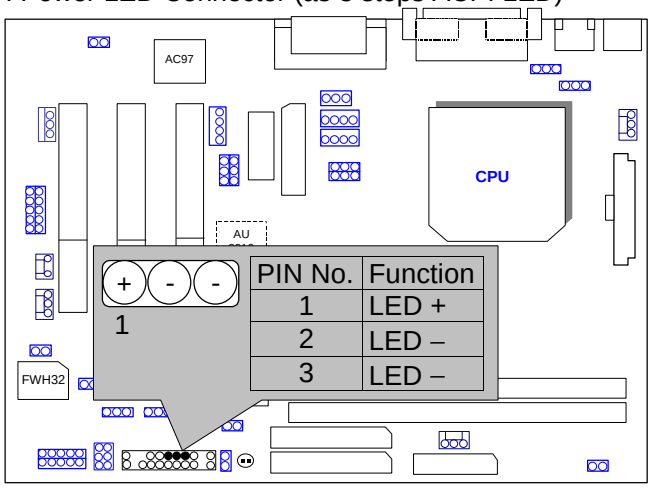
J9: Buzzer Enable



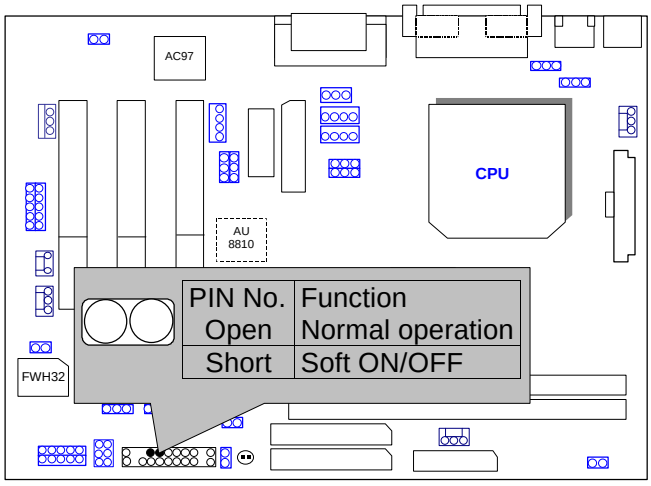
RES : Reset Switch



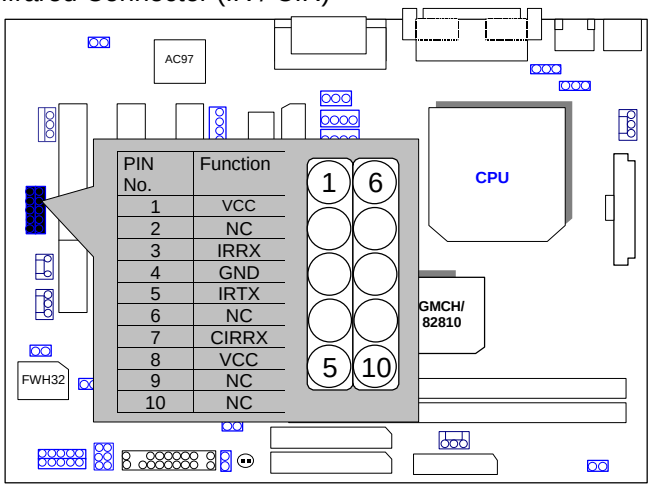
PWR : Power LED Connector (as 3 steps ACPI LED)



PW: Soft Power Connector

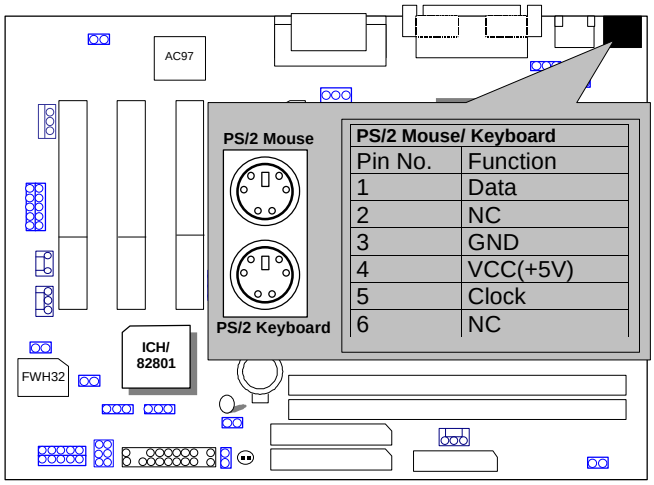


IR : Infrared Connector (IR / CIR)



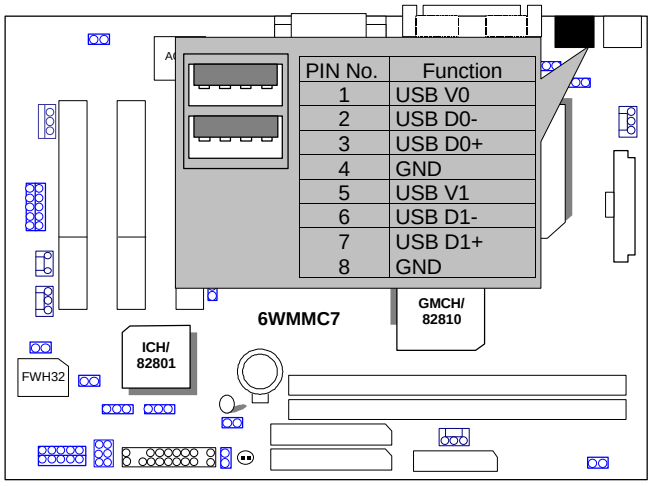
PIN No.	Function
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX
6	NC
7	CIRRX
8	VCC
9	NC
10	NC

PS/2 Mouse / Keyboard Connector

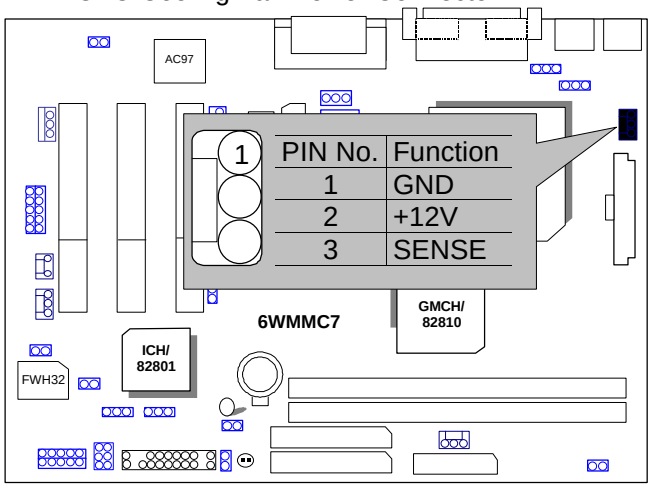


PS/2 Mouse/ Keyboard	
Pin No.	Function
1	Data
2	NC
3	GND
4	VCC(+5V)
5	Clock
6	NC

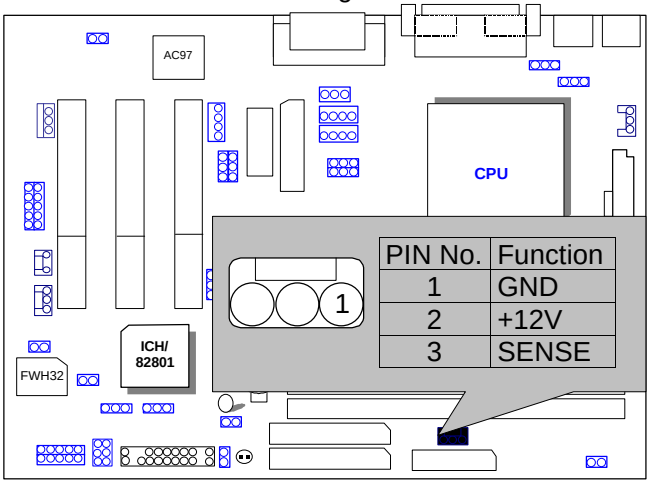
USB : USB Port



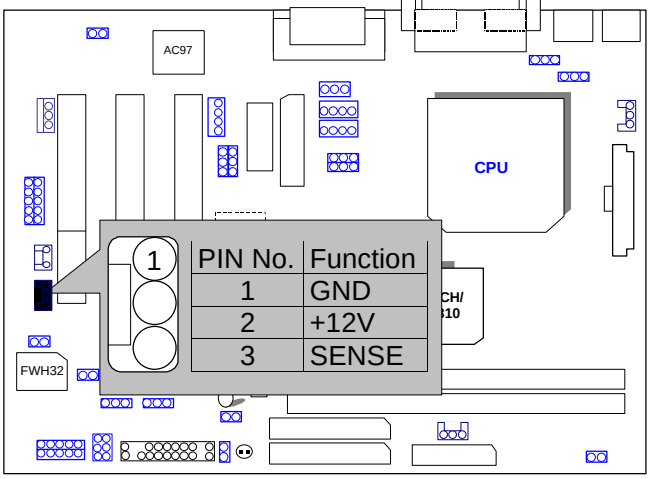
CPU FAN : CPU Cooling Fan Power Connector



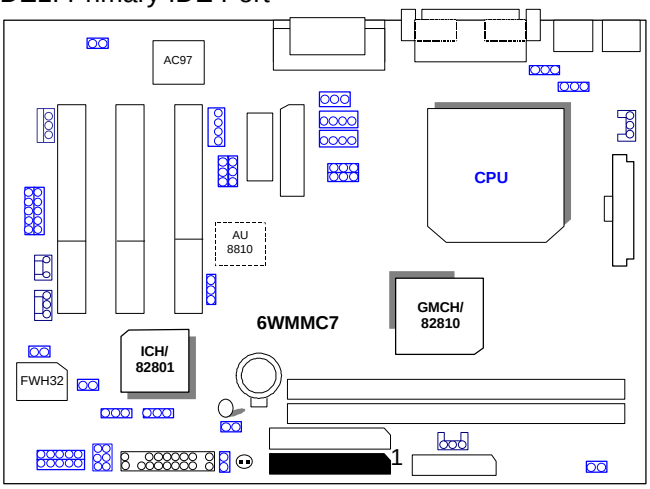
POWER FAN : Power Cooling Fan Power Connector



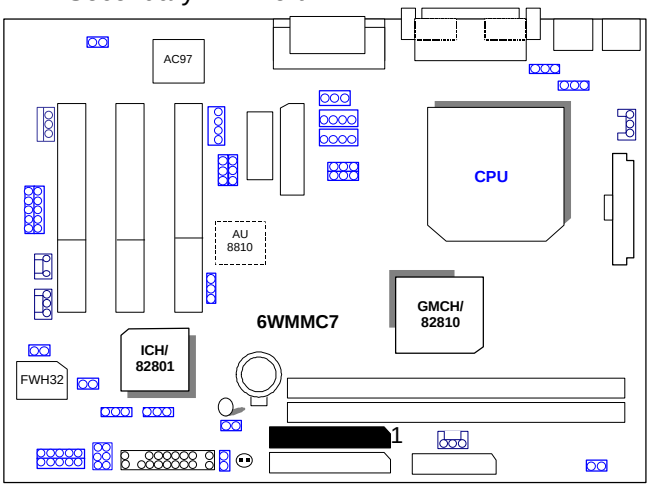
SYSTEM FAN : System Cooling Fan Power Connector



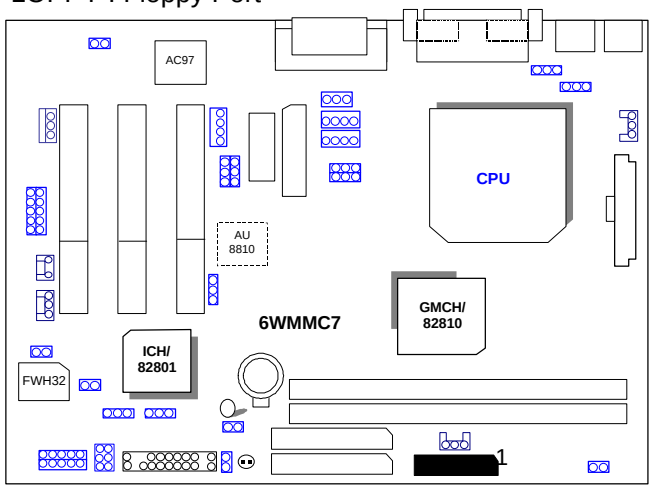
IDE1: Primary IDE Port



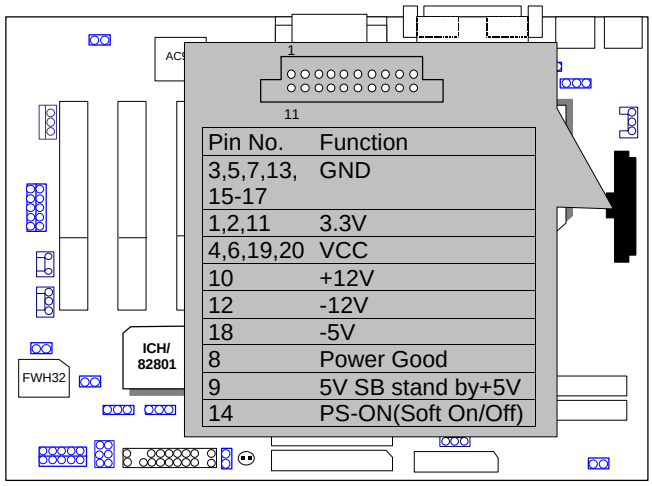
IDE2: Secondary IDE Port



FLOPPY : Floppy Port

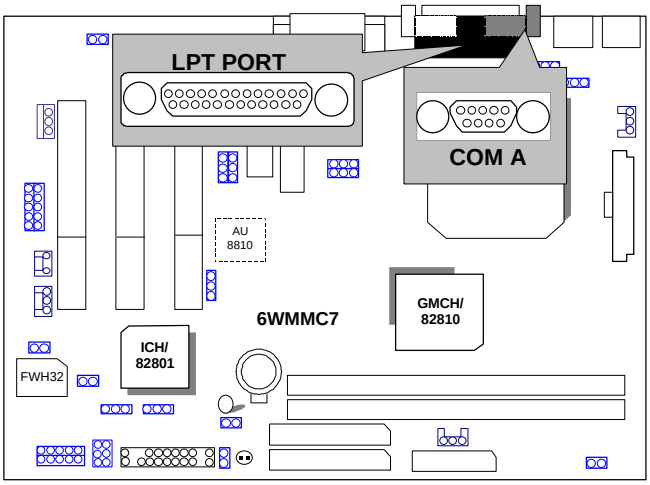


ATX POWER : ATX Power Connector

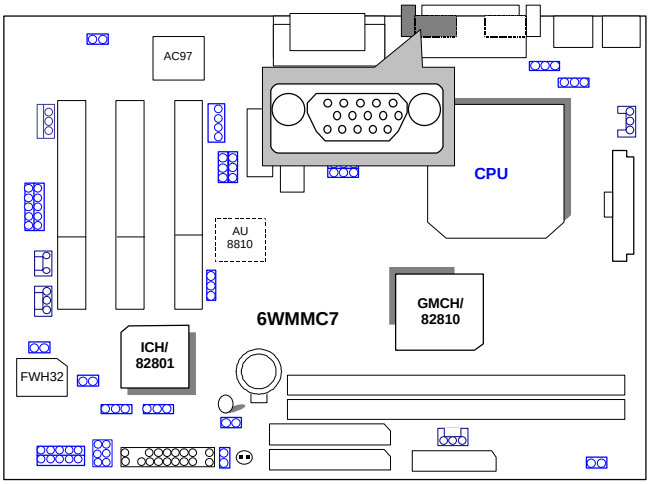


Pin No.	Function
3,5,7,13, 15-17	GND
1,2,11	3.3V
4,6,19,20	VCC
10	+12V
12	-12V
18	-5V
8	Power Good
9	5V SB stand by+5V
14	PS-ON(Soft On/Off)

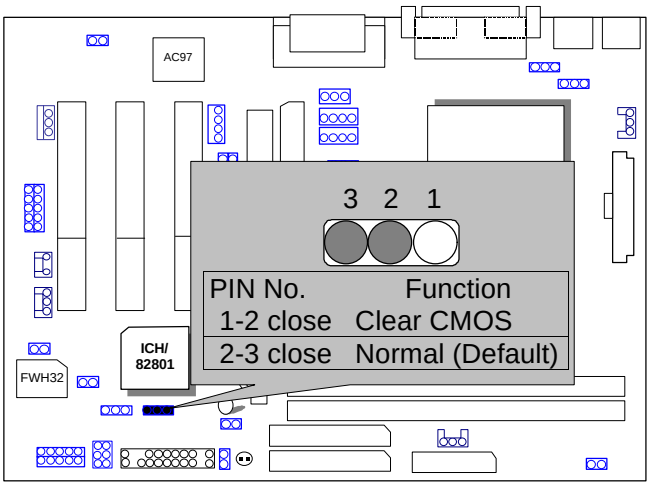
COM A / LPT Port



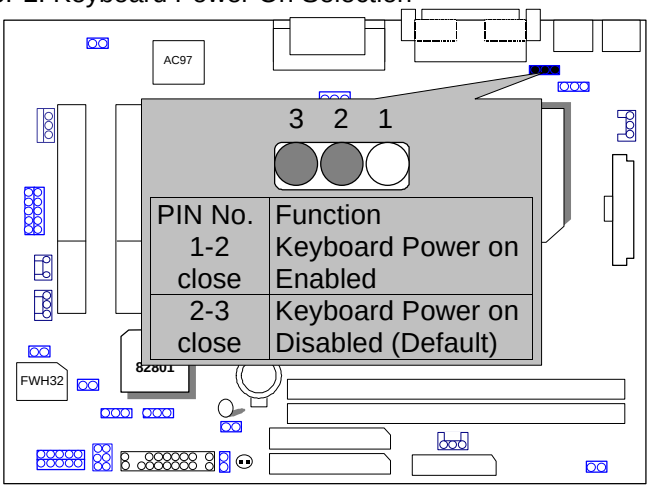
VGA : VGA Port



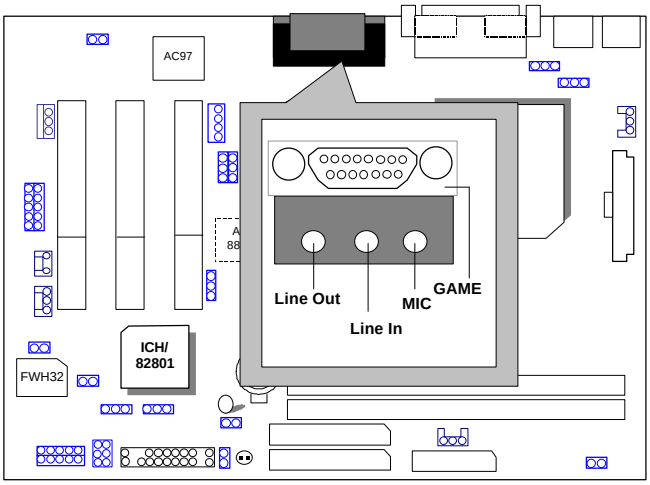
JP12:Clear CMOS Function



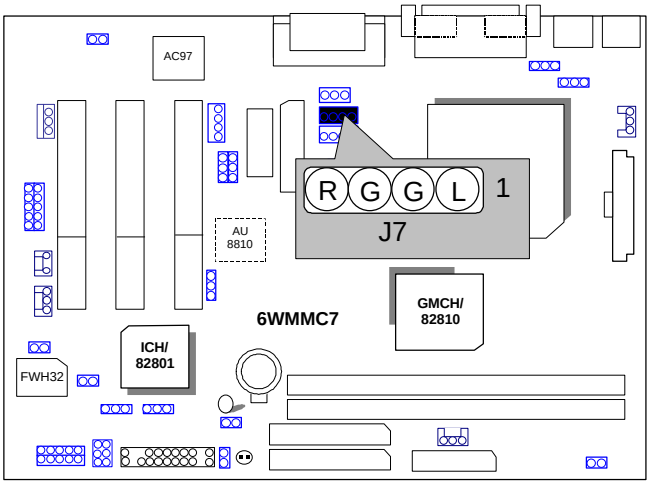
JP2: Keyboard Power On Selection



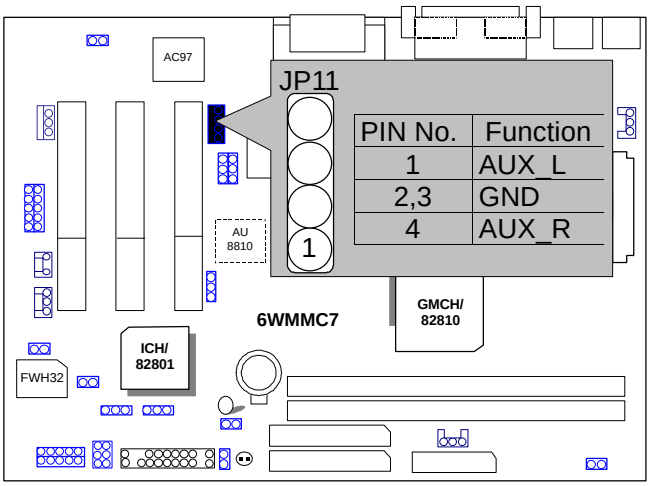
J8:Game & Audio Port



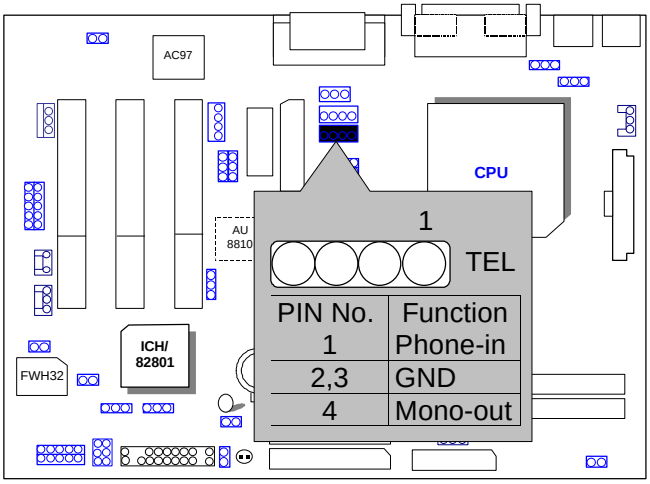
J7:CD Audio Line In



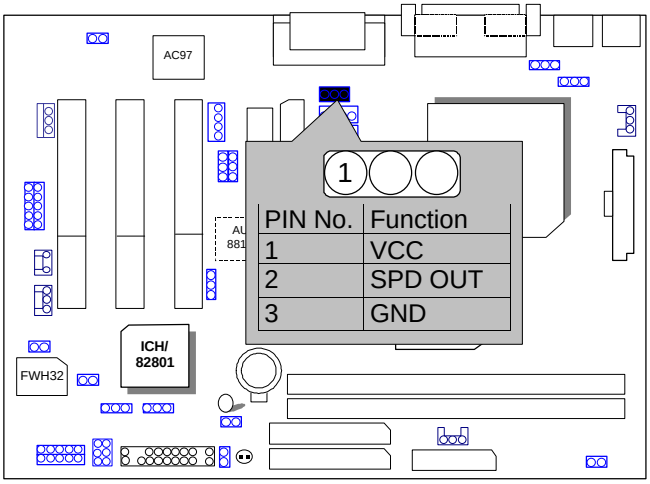
JP11:AUX_IN



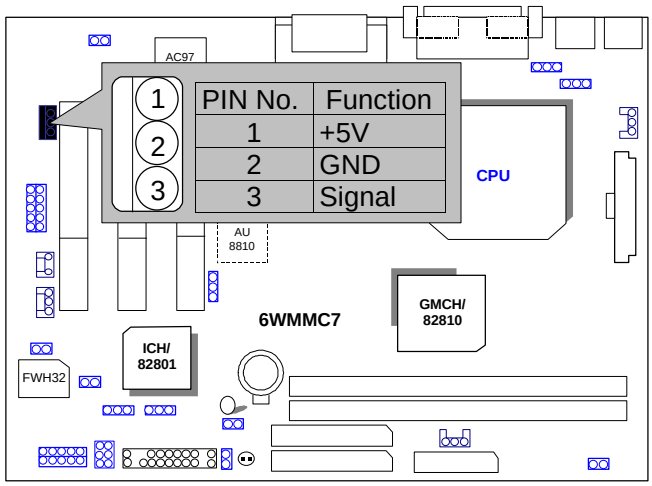
JP3 TEL :The connector is for Modem with internal voice connector.



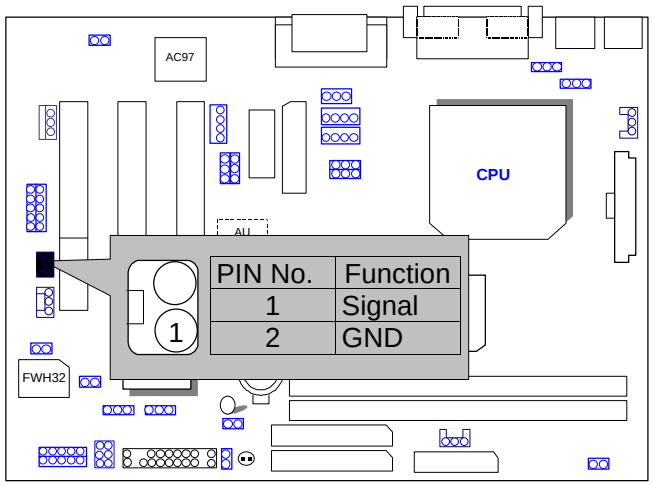
JP18 SPDIF:(Optional for the SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external DoblyDigital decoder.)



J14 : Wake on LAN

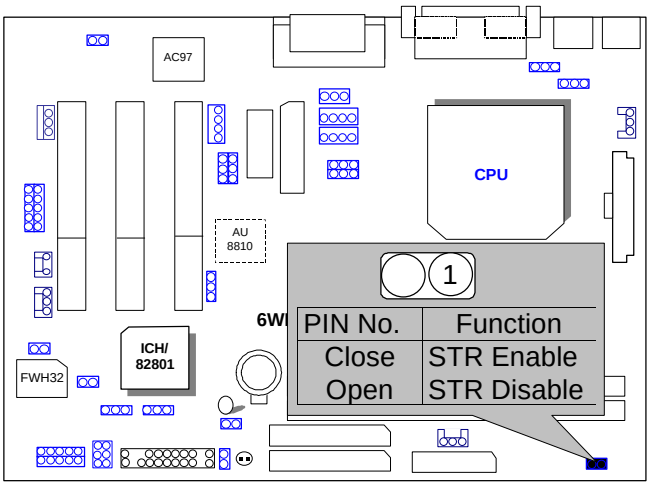


J17 RING PWR ON: Internal Modem Card Ring PWR On

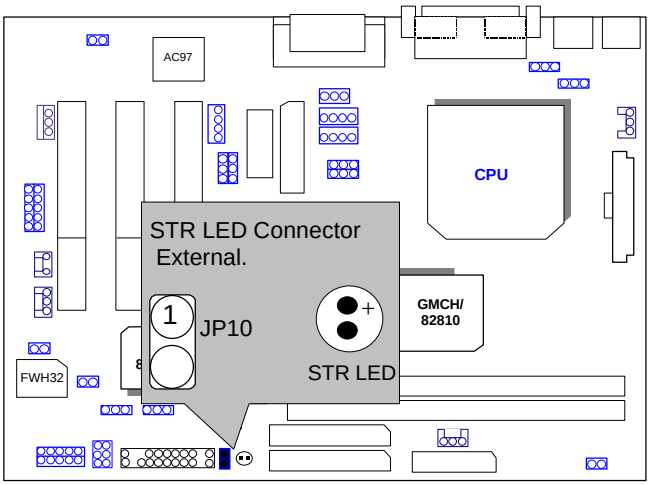


JP1 Close : STR Enable

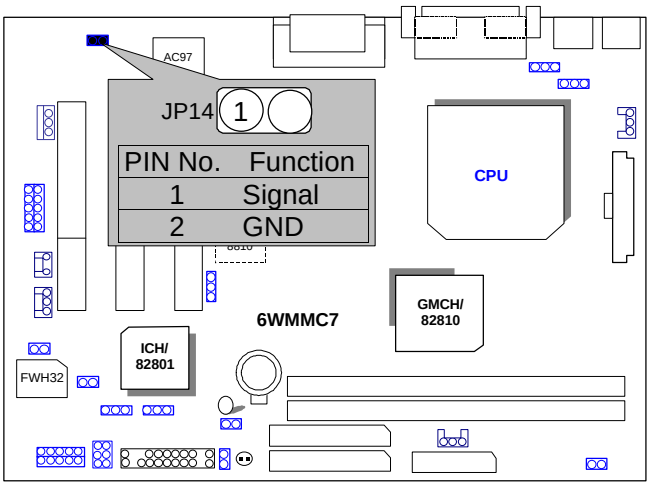
(If you want to use STR Function, please set jumper JP1 Closed.)



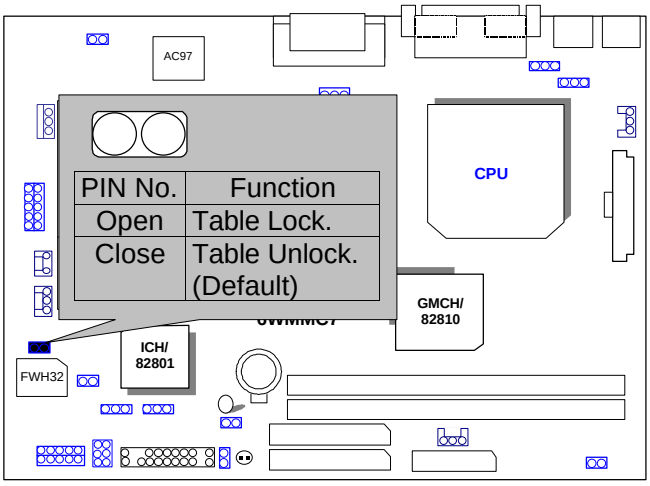
JP10 : STR LED Connector



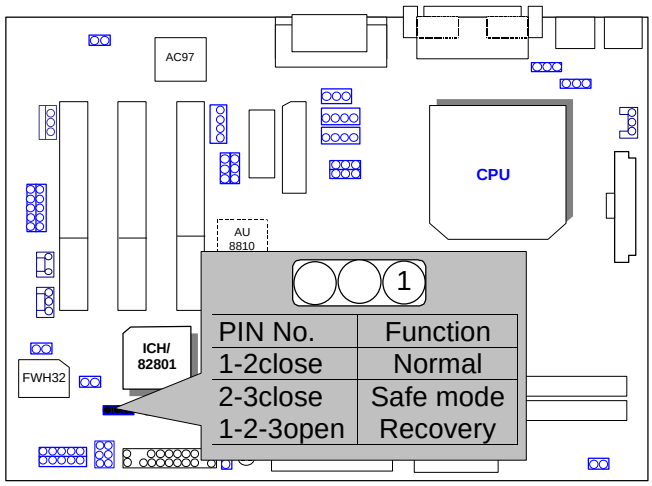
JP14 : Case Open



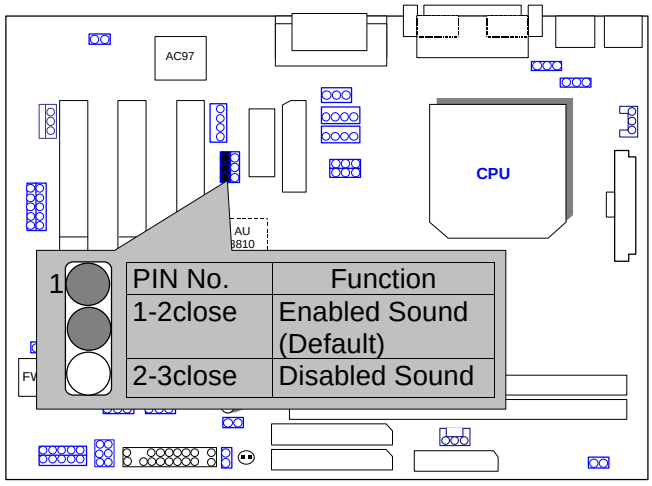
JP16: Table Lock



JP13 :System Boot Option

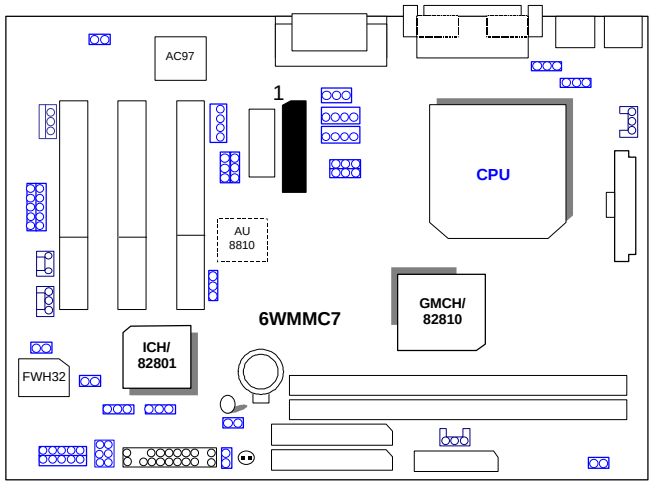


JP17: Onboard Sound Function (Optional)

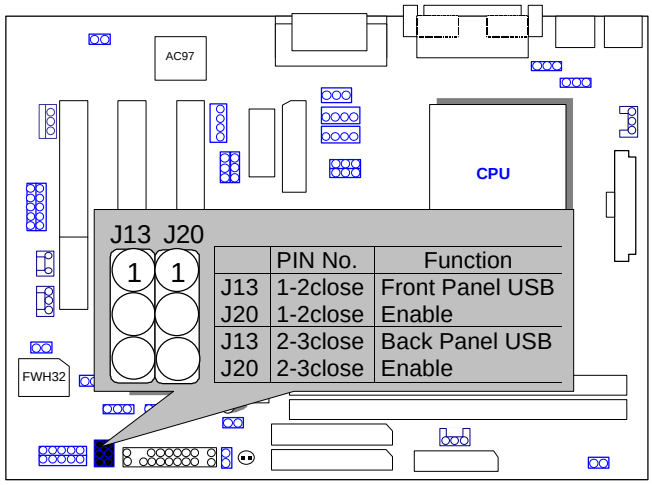


TV/DFP :TV-Out / Digital Flat Panel Daughter Card

Connector(Optional).

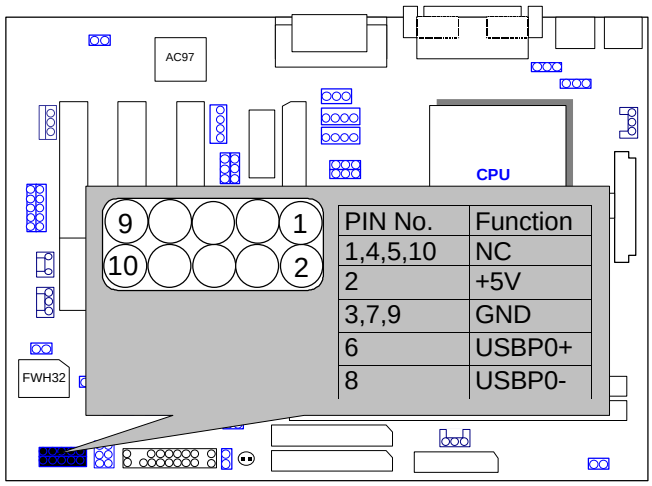


J13/J20 : USB Port Selection (Optional)

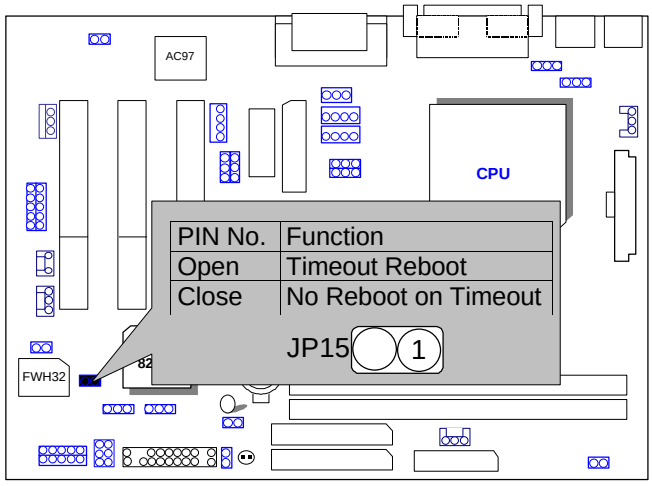


	PIN No.	Function
J13	1-2close	Front Panel USB
J20	1-2close	Enable
J13	2-3close	Back Panel USB
J20	2-3close	Enable

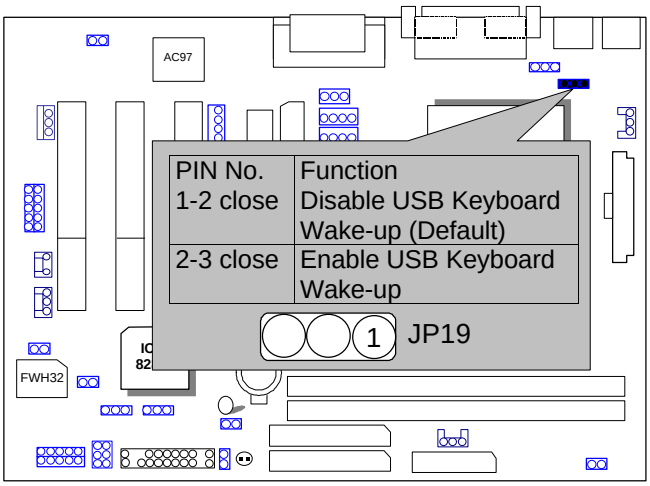
J19 : Front Panel USB Port (Optional)



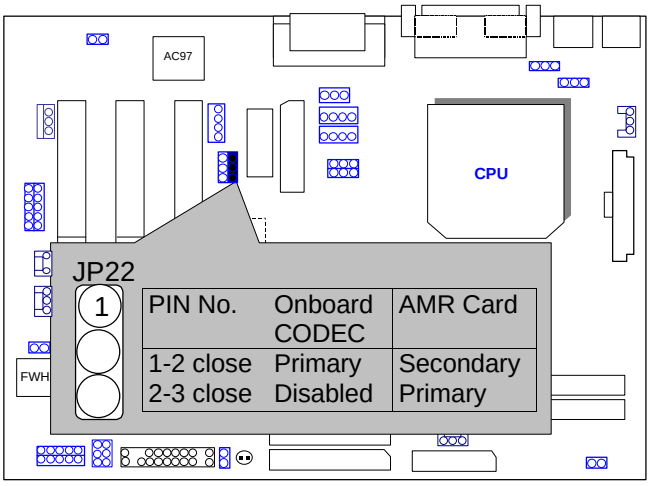
JP15: Timeout Reboot Function



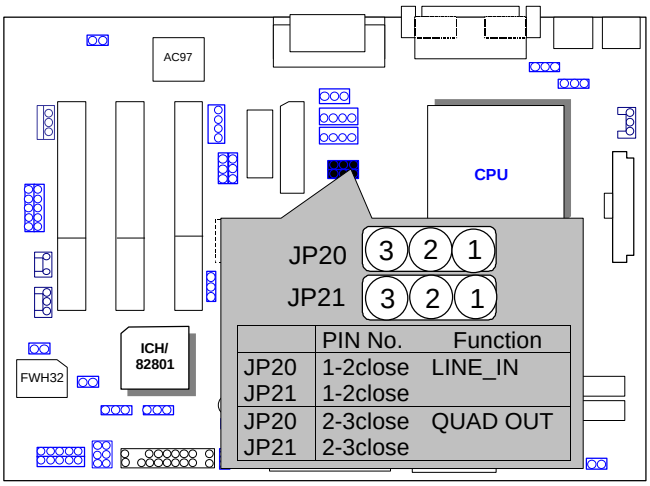
JP19: USB Keyboard Wake-up Function



JP22 : AMR Function Select (Optional)

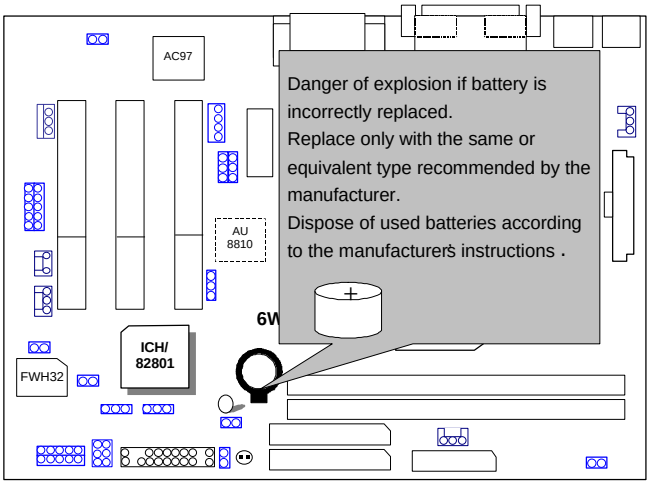


JP20/JP21:Quad Speaker (Optional)



	PIN No.	Function
JP20 JP21	1-2close 1-2close	LINE_IN
JP20 JP21	2-3close 2-3close	QUAD OUT

BAT1: Battery



III. Top Performance Test Setting:

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

Users have to modify the value for each item in chipset features as follow

CMOS Setup Utility-Copyright(C) 1984-1999 Award Software
Advanced Chipset Features

SDRAM CAS Latency Time	2	Item Help
SDRAM Cycle Time Tras/Trc	5/7	
SDRAM RAS-to-CAS Delay	2	Menu Level ▸
SDRAM RAS Precharge Time	2	
DRAM Page Closing Pollacy	Precharge Bank	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Enabled	
Delayed Transaction	Disabled	
On-Chip Video Window Size	64MB	

↑↓→ ←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

for top performance setting.

*The above settings have to modify according to different kinds of CPU, SDRAM, and peripherals for your system to work properly.

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

- CPU Intel® Celeron™ 466MHz Socket 370 processor
- DRAM (128x 1) MB SDRAM (SEC KM48S8030CT-GA)
- CACHE SIZE 128 KB included in CPU
- DISPLAY Onboard Intel Corporation 810 Graphics Controller Hub)
- STORAGE Onboard IDE (IBM DTNA-371800)
- O.S. Windows NT™4.0 SPK5
- DRIVER Display Driver at 1024 x 768 x 64k colors x 75Hz.

Processor	350MHz (100x3.5)	500MHz (66x7.5)
Winbench99 (Ver1.1)		
CPU mark99	30	37.2
FPU Winmark	1880	2680
Business Disk	3380	3140
Hi-End Disk	5890	5350
Business Graphics	125	139
Hi-End Graphics	286	364
Winstone99 (Ver1.0)		
Business	24.8	27.2
Hi-End	19.7	21.9

- CPU Celeron 433 OC 450 (100*4.5)
- DRAM (64x 2) MB SDRAM (MITSUBISHI M2V64S40BTP)
- STORAGE Onboard IDE (IBM DJNA-352030) (ATA66)

Windows98 SE2 English Ver(FAT32), DirectX 6.1, Driver 4.11.01 1185 PV 1.1 1024*768*16 bit (75Hz)		
Motherboard	**6WMMC7**	**6WMMC7-1/ 6WMMC7-2**
ICH **GMCH**	**82810DC100** **82801AA**	**82810** **82801AB**
WINBENCH 99		
CPU mark32	878	878
FPU Winmark	2410	2400
Business Disk	4010	2950
Hi-End Disk	14100	7690
Business Graphics	141	145
Hi-End Graphics	392	394
3D WINBENCH 99 3D WINMARK	386	292
Final Reallity		
AGP	137.09	134.52
OVERALL	4.17	3.99
3D MARK99 Max		
3D MARKS	2811	2298
CPU 3DMARK	4229	4271
WINDOWS NT4.0+ SPK5 4.11.01.1185 PV1.1 1024*768 65536 colors(75Hz)		
WINSTONE 99		
BUSINESS	27.7	26.6
HI-END	22.9	22.1

IV. 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.

There are two ways to accomplish this:

1. 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

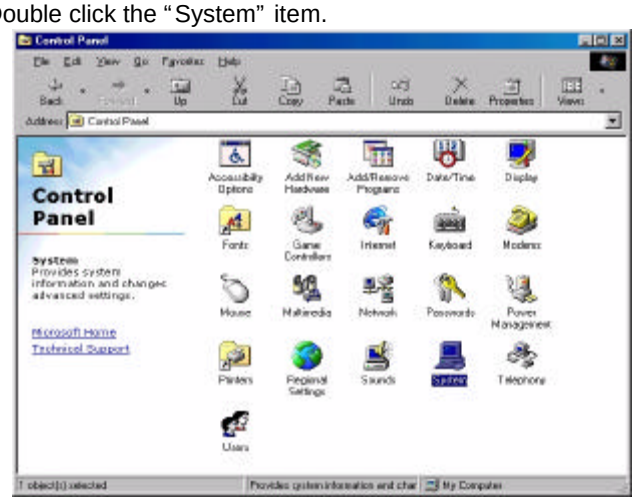
(This manual assumes that your CD-ROM device drive letter is D:).

2. Update from Windows98 APM mode:

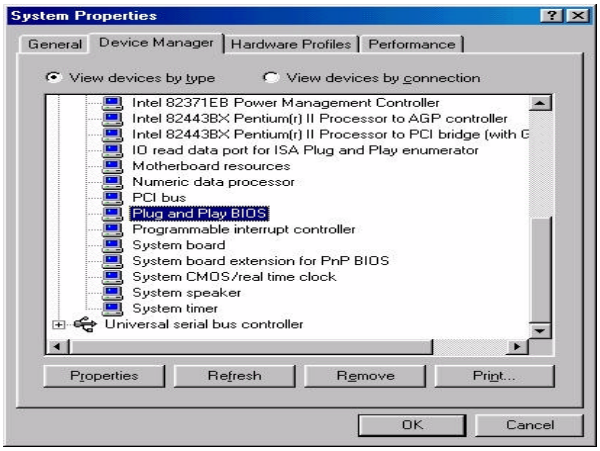
If your Windows 98 system is in APM mode, use the following steps to update your system to ACPI mode.

1. When Windows 98 finishes loading, open the "Control Panel" in Windows 98 "My Computer" area.

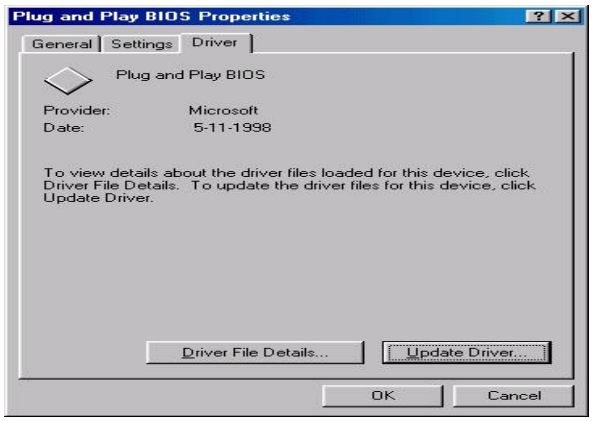
2. Double click the "System" item.



3. Select the "Device Manager" tab and then the "System Devices" item. Double click the "Plug and Play BIOS" item or select "Properties"

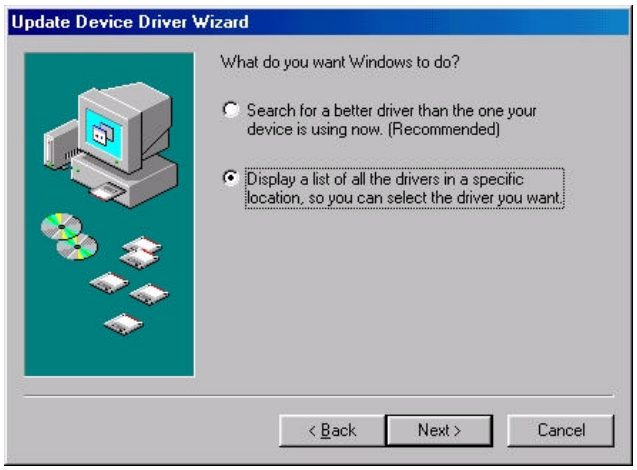


4. Select the "Driver" item and "Update Driver"

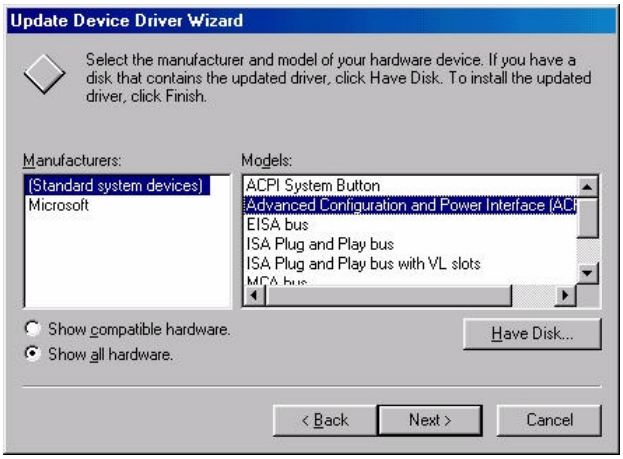


5. The “Update Device Driver Wizard” will appear. Press the “Next” button

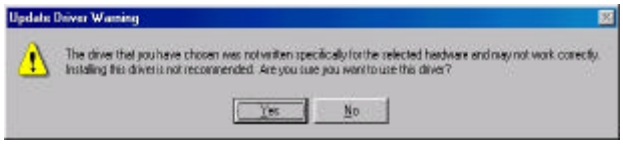
6. In the “Update Device Driver Wizard” window, select the “Display a list of all the drivers in a specific location, so you can select the driver you want.” Then press the “Next” button “



7. Select the "Show all hardware" item → then select the "Advance Configuration and Power Interface (ACPI) BIOS" and press the "Next" button.

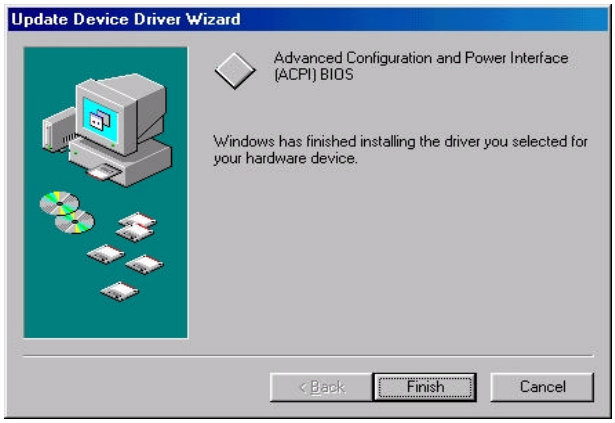


8. "Update Driver Warning" will show up and ask "Are you sure you want to use this driver?" Select the "Yes" button.



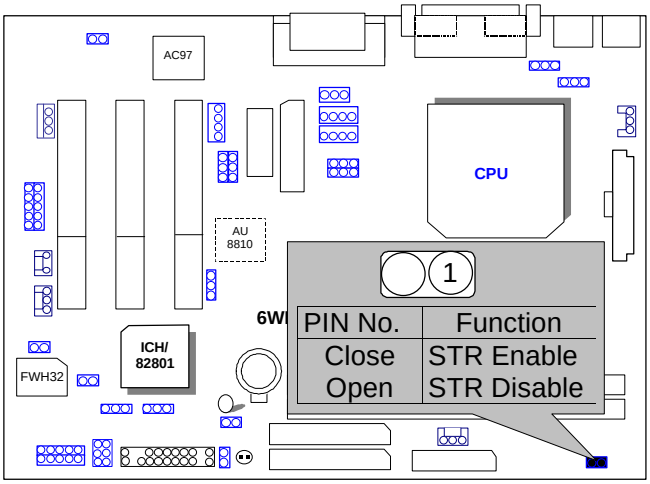
9. "Update Device Driver Wizard" will show up again. Select the "Next" button and start copying files to the system.

10. When complete, press the "Finish" button.



11. Restart your computer. Your system will start up using the ACPI mode.

Step 2:
(If you want to use STR function, please set jumper JP1 Closed.)



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.

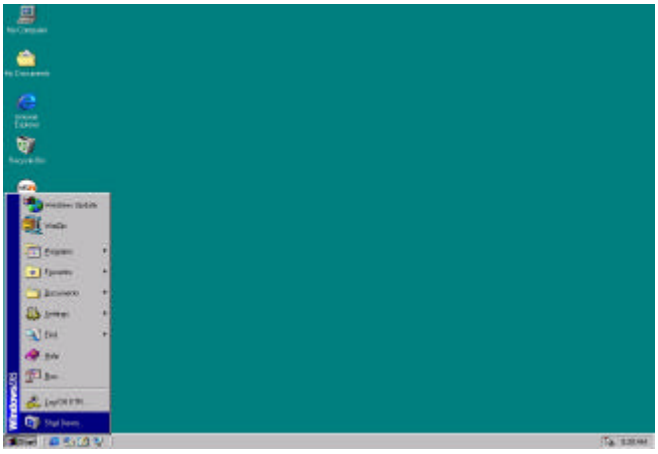
Congratulation! You have completed the installation and now can use the STR function.

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

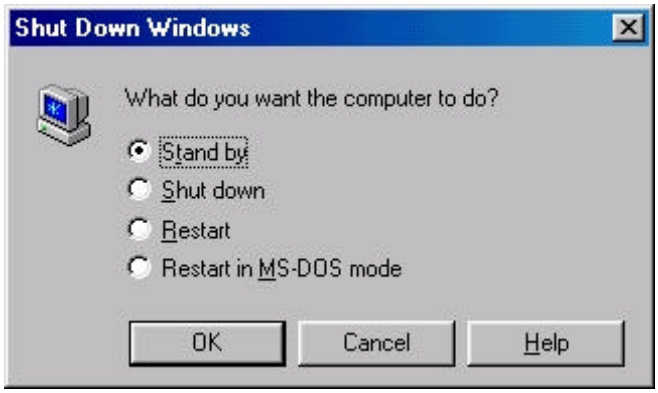
There are two ways to accomplish this:

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

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

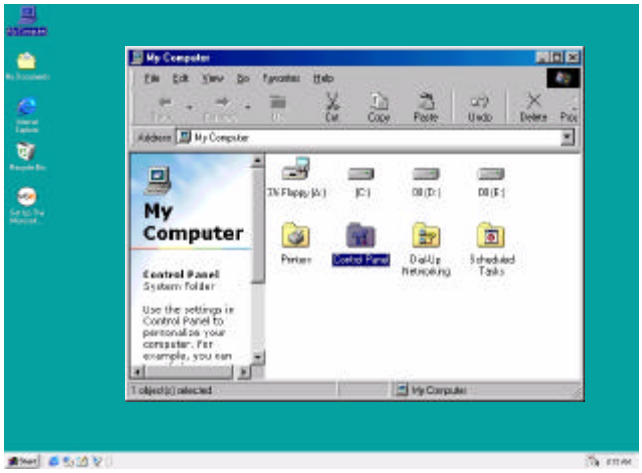


   B. Choose the "Stand by" item and press "OK"

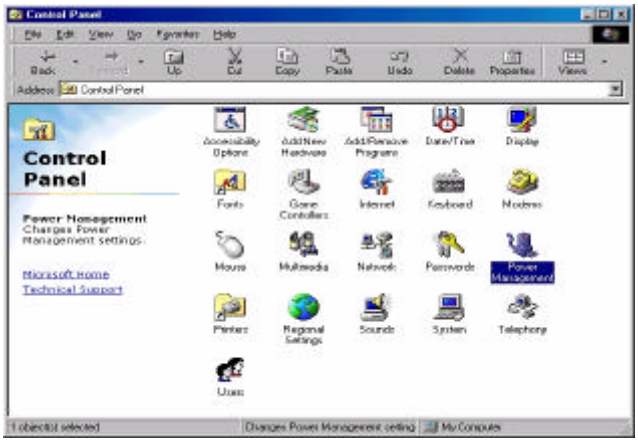


2. Define the system "power on" button to initiate STR sleep mode:

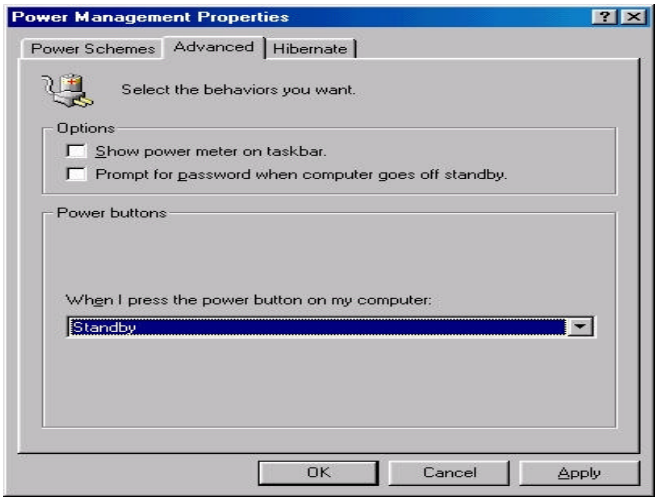
A. Double click "My Computer" and then "Control Panel"



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 JP10 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.