

# 5AX

## USER'S MANUAL

- \* Support Intel Pentium, MMX, Cyrix/IBM, 6x86MX, MII, AMD, K6, K6-2 & IDT C6 CPUs.
- \* Support 3 Steps ACPI LED.
- \* Support Parity check or Ecc Function (at 66, 75 MHz) .
- \* Support Fully AGP 1.0 Specification.
- \* Support switching mode Voltage regulator on Board (1.3V~3.5V) .
- \* Support 66/75/83/95 MHz and 100MHz.
- \* Support Modem Ring On (COM A,COM B).
- \* Support Wake on Lan. (Your ATX power supply must support larger than 720 mA 5V Stand-By current).
- \* Support Keyboard Power ON/OFF function. ( Your ATX power supply supports larger than 100~300 mA 5V Stand-By current (Dependent on the specification of keyboards).
- \* Thermal Protection

Pentium<sup>®</sup> Processor PCI - ISA BUS MAINBOARD  
REV. 4.0 Second Edition

R-40-02-081118



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

\*THIRD-PARTY BRANDS AND NAMES ARE THE PROPERTY OF THEIR RESPECTIVE OWNERS.

November 18, 1998 Taipei, Taiwan

**I. CPU Jumper Setting Table:**

SW: CPU INT./ EXT. FREQ. RATIO

O: ON

X: OFF

| SW   | 4 | 5 | 6 | 7 | 8 | SW   | 4   | 5   | 6   | 7   | 8   |
|------|---|---|---|---|---|------|-----|-----|-----|-----|-----|
| 1.3V | X | X | X | X | O | 2.5V | O   | X   | O   | X   | X   |
| 1.4V | X | O | X | X | O | 2.6V | X   | O   | O   | X   | X   |
| 1.5V | X | X | O | X | O | 2.7V | O   | O   | O   | X   | X   |
| 1.6V | X | O | O | X | O | 2.8V | X   | X   | X   | O   | X   |
| 1.7V | X | X | X | O | O | 2.9V | O   | X   | X   | O   | X   |
| 1.8V | X | O | X | O | O | 3.0V | X   | O   | X   | O   | X   |
| 1.9V | X | X | O | O | O | 3.1V | O   | O   | X   | O   | X   |
| 2.0V | X | O | O | O | O | 3.2V | X   | X   | O   | O   | X   |
| 2.1V | O | X | X | X | X | 3.3V | O   | X   | O   | O   | X   |
| 2.2V | X | O | X | X | X | 3.4V | X   | O   | O   | O   | X   |
| 2.3V | O | O | X | X | X | 3.5V | O   | O   | O   | O   | X   |
| 2.4V | X | X | O | X | X | ---  | --- | --- | --- | --- | --- |

| CPU | AGP | JP7 | JP8 | JP9 | JP10 | CPU | AGP | JP7 | JP8 | JP9 | JP10 |
|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|
| 66  | 66  | 2-3 | 2-3 | 2-3 | 1-2  | 110 | 73  | 1-2 | 1-2 | 1-2 | 2-3  |
| 75  | 60  | 1-2 | 2-3 | 2-3 | 2-3  | 115 | 77  | 1-2 | 2-3 | 1-2 | 1-2  |
| 75  | 75  | 2-3 | 1-2 | 2-3 | 1-2  | 120 | 80  | 1-2 | 2-3 | 1-2 | 2-3  |
| 83  | 66  | 1-2 | 2-3 | 2-3 | 1-2  | 125 | 41  | 2-3 | 1-2 | 1-2 | 1-2  |
| 95  | 63  | 1-2 | 1-2 | 2-3 | 2-3  | 130 | 43  | 2-3 | 1-2 | 1-2 | 2-3  |
| 100 | 66  | 1-2 | 1-2 | 2-3 | 1-2  | 135 | 45  | 2-3 | 2-3 | 1-2 | 1-2  |
| 105 | 70  | 1-2 | 1-2 | 1-2 | 1-2  | 140 | 47  | 2-3 | 2-3 | 1-2 | 2-3  |

| SW   | 1 | 2 | 3 |
|------|---|---|---|
| X1.5 | X | X | X |
| X2   | O | X | X |
| X2.5 | O | O | X |
| X3   | X | O | X |
| X3.5 | X | X | X |
| X4   | O | X | O |
| X4.5 | O | O | O |
| X5   | X | O | O |
| X5.5 | X | X | O |

★ Note: We don't recommend you to setup your system speed to 105 , 110 , 115 , 120 , 125 , 130 , 135 or 140 MHz because these frequencies are not the standard specifications for CPU, Chipset and most of the peripherals. Whether your system can run under 105, 110, 115, 120, 125, 130, 135 or 140 MHz properly will depend on your hardware configurations: CPU, SDRAM,

Cards, etc.

**II. Quick Installation Guide:****O: ON****X: OFF**

| CPU<br>SW  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | JP7 | JP8 | JP9 | JP10 |
|--|---|---|---|---|---|---|---|---|-----|-----|-----|------|
| 1. Pentium <sup>®</sup> 133 MHz                          | O | X | X | O | O | O | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 2. Pentium <sup>®</sup> 166 MHz                          | O | O | X | O | O | O | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 3. Pentium <sup>®</sup> 200 MHz                          | X | O | X | O | O | O | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 4. Intel MMX-166MHz                                      | O | O | X | X | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 5. Intel MMX-200MHz                                      | X | O | X | X | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 6. Intel MMX-233MHz                                      | X | X | X | X | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 7. AMD-K6/166 (2.9V)                                     | O | O | X | O | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 8. AMD-K6/200 (2.9V)                                     | X | O | X | O | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 9. AMD-K6/233 (3.2V)                                     | X | X | X | X | X | O | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 10. AMD-K6/266 (66*4 2.2V)<br>AMD-K6-2/266 (66*4 2.2V)   | O | X | O | X | O | X | X | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 11. AMD-K6/300 (66*4.5 2.2V)                             | O | O | O | X | O | X | X | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 12. AMD-K6/300 (100*3 2.2V)<br>AMD-K6-2/300 (100*3 2.2V) | X | O | X | X | O | X | X | X | 1-2 | 1-2 | 2-3 | 1-2  |
| 13. AMD-K6-2/333 (95*3.5<br>2.2V)                        | X | X | X | X | O | X | X | X | 1-2 | 1-2 | 2-3 | 2-3  |
| 14. AMD-K6-2/350 (100*3.5<br>2.2V)                       | X | X | X | X | O | X | X | X | 1-2 | 1-2 | 2-3 | 1-2  |
| 15. AMD-K6-2/380 (95*4 2.2V)                             | O | X | O | X | O | X | X | X | 1-2 | 1-2 | 2-3 | 2-3  |
| 16. AMD-K6-2/400 (100*4 2.2V)                            | O | X | O | X | O | X | X | X | 1-2 | 1-2 | 2-3 | 1-2  |
| 17. Cyrix/IBM 6x86MX-PR166<br>(66*2 2.9V)                | O | X | X | O | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 18. Cyrix/IBM 6x86MX-PR200<br>(66*2.5 2.9V)              | O | O | X | O | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 19. Cyrix/IBM 6x86MX-PR200<br>(75*2 2.9V)                | O | X | X | O | X | X | O | X | 1-2 | 2-3 | 2-3 | 2-3  |
| 20. Cyrix/IBM 6x86MX-PR233<br>(66*3 2.9V)                | X | O | X | O | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 21. Cyrix/IBM 6x86MX-PR233<br>(75*2.5 2.9V)              | O | O | X | O | X | X | O | X | 1-2 | 2-3 | 2-3 | 2-3  |

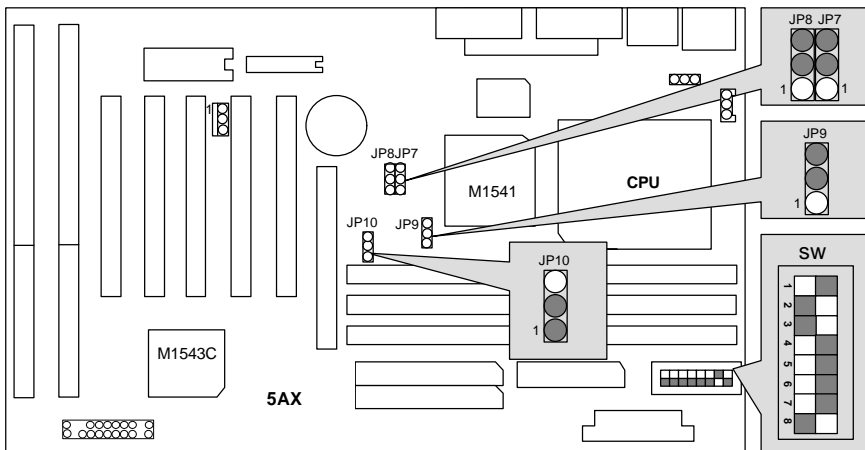
|  |   |   |   |   |   |   |   |   |     |     |     |      |
|--|---|---|---|---|---|---|---|---|-----|-----|-----|------|
| 22. Cyrix/IBM 6x86MX-PR233<br>(83*2 2.9V)        | O | X | X | O | X | X | O | X | 1-2 | 2-3 | 2-3 | 1-2  |
| 23. Cyrix/IBM 6x86MX-PR266<br>(66*3.5 2.9V)      | X | X | X | O | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 24. Cyrix/IBM 6x86MX-PR266<br>(75*3 2.9V)        | X | O | X | O | X | X | O | X | 1-2 | 2-3 | 2-3 | 2-3  |
| CPU<br>SW  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | JP7 | JP8 | JP9 | JP10 |
| 25. Cyrix/IBM 6x86MX-PR266<br>(83*2.5 2.9V)      | O | O | X | O | X | X | O | X | 1-2 | 2-3 | 2-3 | 1-2  |
| 26. Cyrix M <sup>C</sup> 4PR300<br>(66*3.5 2.9V) | X | X | X | O | X | X | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 27. Cyrix M <sup>C</sup> 4PR333<br>(83*3 2.9V)   | X | O | X | O | X | X | O | X | 1-2 | 2-3 | 2-3 | 1-2  |
| 28. Cyrix M <sup>C</sup> 4PR333<br>(75*3.5 2.9V) | X | X | X | O | X | X | O | X | 1-2 | 2-3 | 2-3 | 2-3  |
| 29. IDT C6-200 (66*3 3.52V)                      | X | O | X | O | O | O | O | X | 2-3 | 2-3 | 2-3 | 1-2  |
| 30. IDT C6-225 (75*3 3.52V)                      | X | O | X | O | O | O | O | X | 1-2 | 2-3 | 2-3 | 2-3  |
| 31. IDT C6-266 (66*4 3.52V)                      | O | X | O | O | O | O | O | X | 2-3 | 2-3 | 2-3 | 1-2  |

★ Note: If Cyrix 6x86 is being used, please check the CPU Date Code after 605.

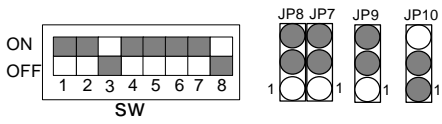
⚙ The default setting is 100\*3 at 2.2V for AMD K6/300 and AMD K6-2/300

|  |   |   |   |   |   |   |   |   |     |     |     |      |
|--|---|---|---|---|---|---|---|---|-----|-----|-----|------|
| CPU<br>SW  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | JP7 | JP8 | JP9 | JP10 |
| AMD-K6/300 (100*3 2.2V)<br>AMD-K6-2/300 (100*3 2.2V) | X | O | X | X | O | X | X | X | 1-2 | 1-2 | 2-3 | 1-2  |

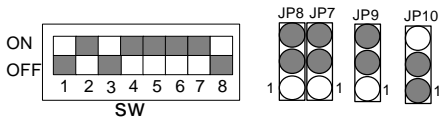
1. Pentium<sup>®</sup> 133 MHz



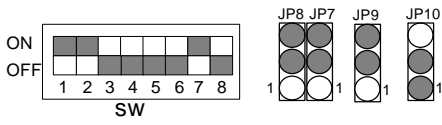
2. Pentium<sup>®</sup> 166MHz



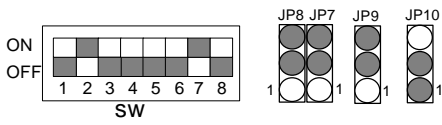
3. Pentium<sup>®</sup> 200 MHz



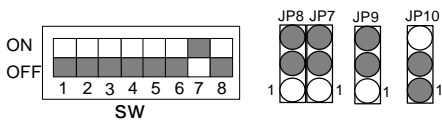
4. Intel MMX-166 MHz



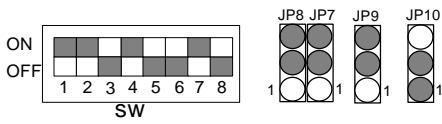
5. Intel MMX-200 MHz



6. Intel MMX-233 MHz

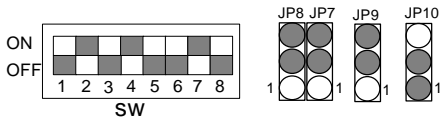


7. AMD-K6/166 (2.9V)

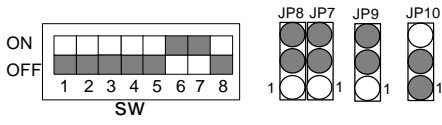


8. AMD-K6/200 (2.9V)

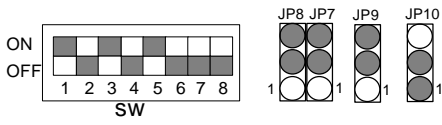




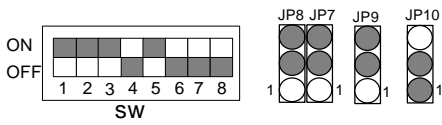
9. AMD-K6/233 (3.2V)



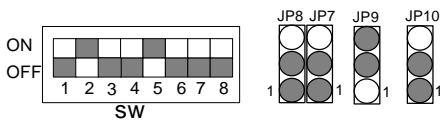
10. AMD-K6/266 (2.2V 66\*4); AMD-K6-2/266 (2.2V 66\*4)



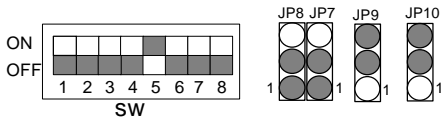
11. AMD-K6/300 (2.2V 66\*4.5)



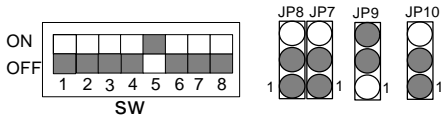
12. AMD-K6/300 (2.2V 100\*3); AMD-K6-2/300 (2.2V 100\*3)



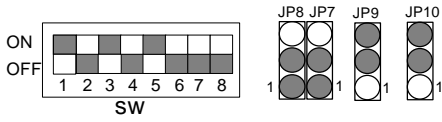
13. AMD-K6-2/333 (2.2V 95\*3.5)



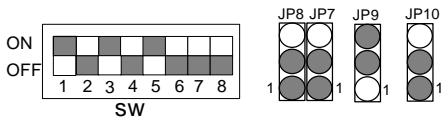
14. AMD-K6-2/350 (2.2V 100\*3.5)



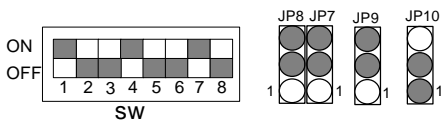
15. AMD-K6-2/380 (2.2V 95\*4)



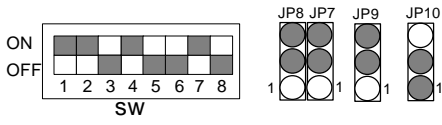
16. AMD-K6-2/400 (2.2V 100\*4)



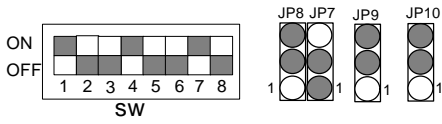
17. Cyrix / IBM 6x86MX-PR166 (2.9V 66x2)



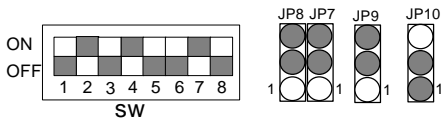
18. Cyrix / IBM 6x86MX-PR200 (2.9V 66x2.5)



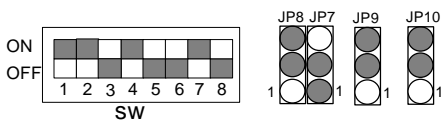
19. Cyrix / IBM 6x86MX-PR200 (2.9V 75x2)



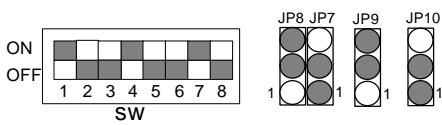
20. Cyrix / IBM 6x86MX-PR233 (2.9V 66x3)



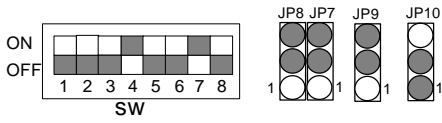
21. Cyrix / IBM 6x86MX-PR233 (2.9V 75x2.5)



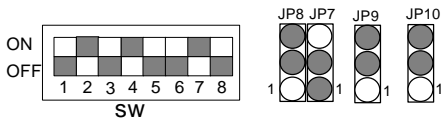
22. Cyrix / IBM 6x86MX-PR233 (2.9V 83x2)



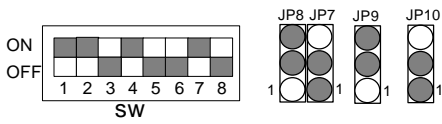
23. Cyrix / IBM 6x86MX-PR266 (2.9V 66x3.5)



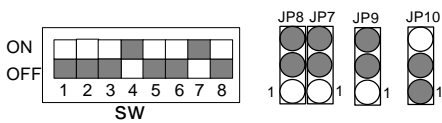
24. Cyrix / IBM 6x86MX-PR266 (2.9V 75x3)



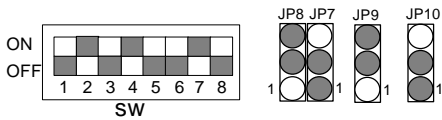
25. Cyrix / IBM 6x86MX-PR266 (2.9V 83x2.5)



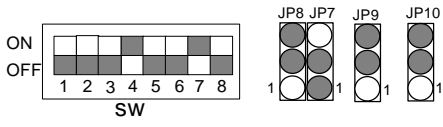
26. Cyrix MC PR300 (2.9V 66x3.5)



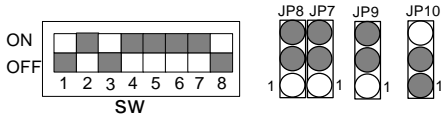
27. Cyrix MC PR333 (2.9V 83\*3)



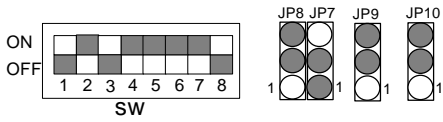
28. Cyrix MC PR333 (2.9V 75\*3.5)



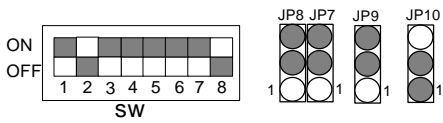
29. IDT C6-200 (3.52V 66x3)



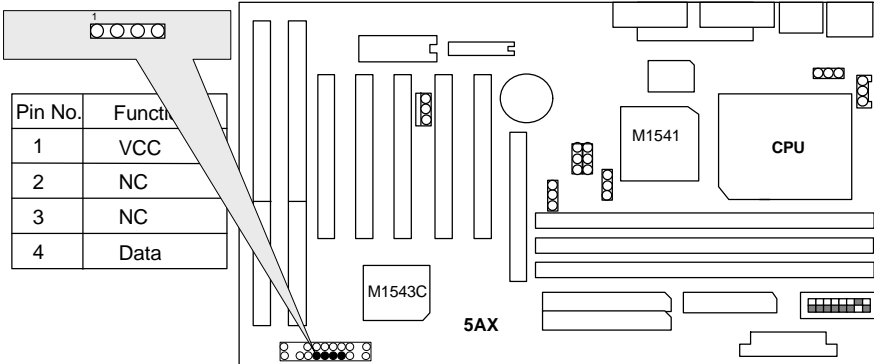
30. IDT C6-225 (3.52V 75x3)



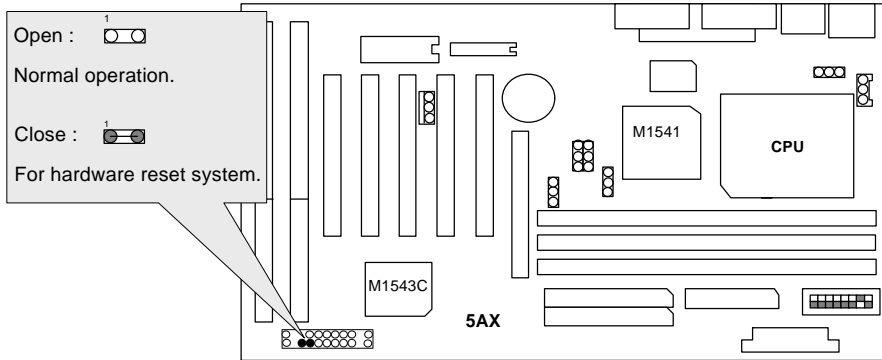
31. IDT C6-266 (3.52V 66x4)



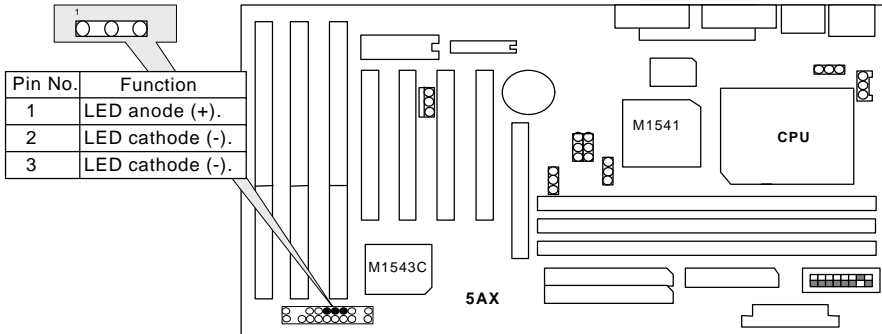
**III. Quick Installation Guide of Jumper setting:**  
SPK : Speaker Connector



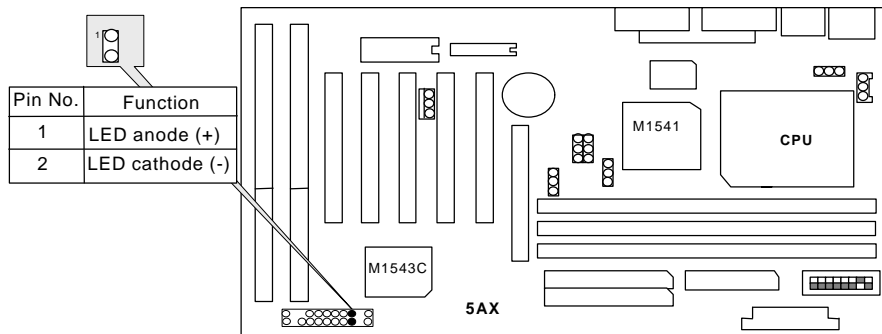
RST : Reset Switch



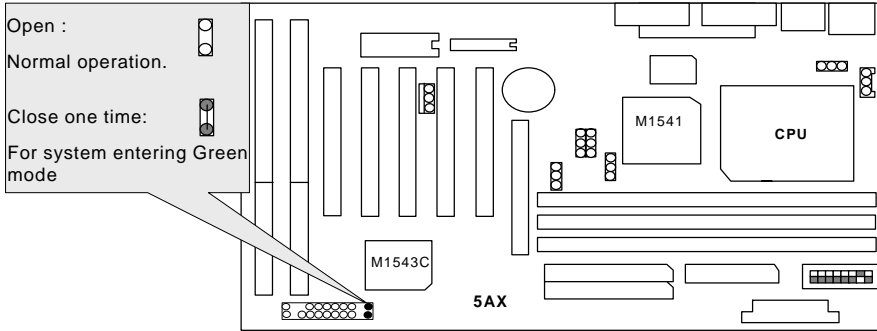
**PWR LED : Power LED (As a 3 steps ACPI LED)**



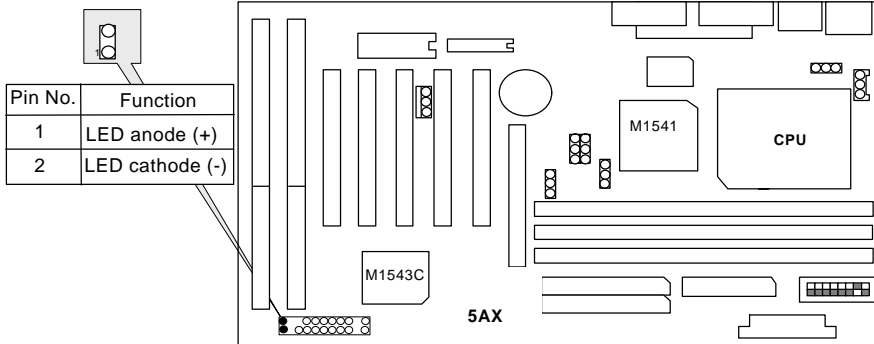
**HD : IDE Hard Disk Active LED**



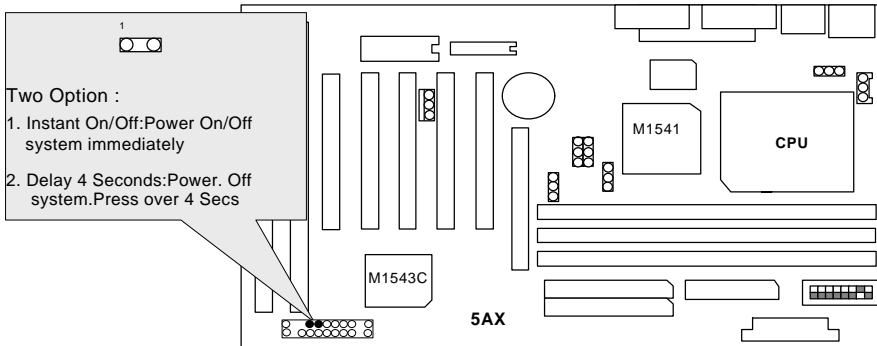
**GN : Green Function Switch**



**GD : Green LED**

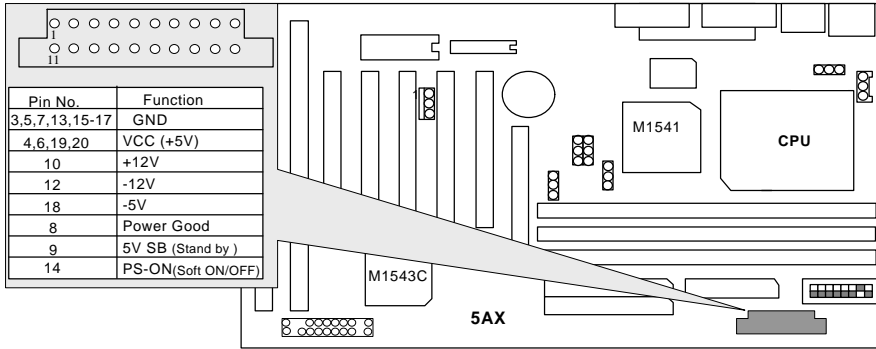


**SOFT PWR : Power On/Off Switch**

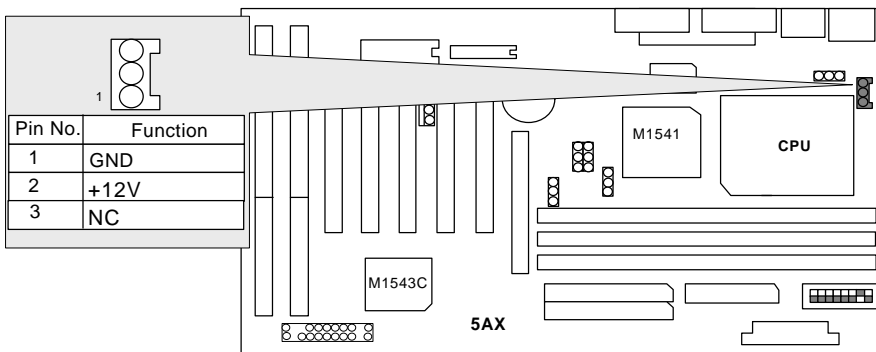




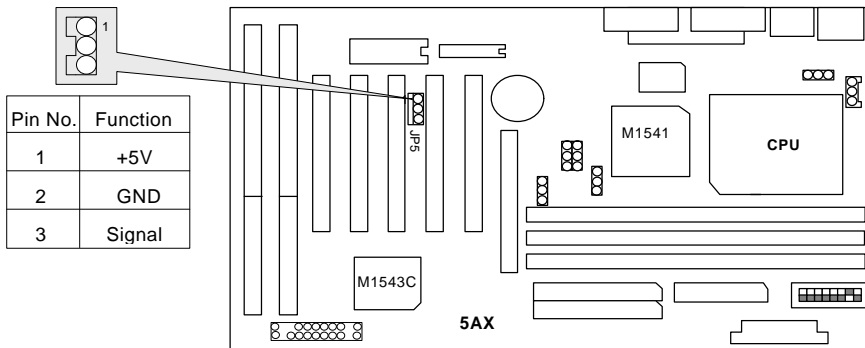
ATX Power Connector



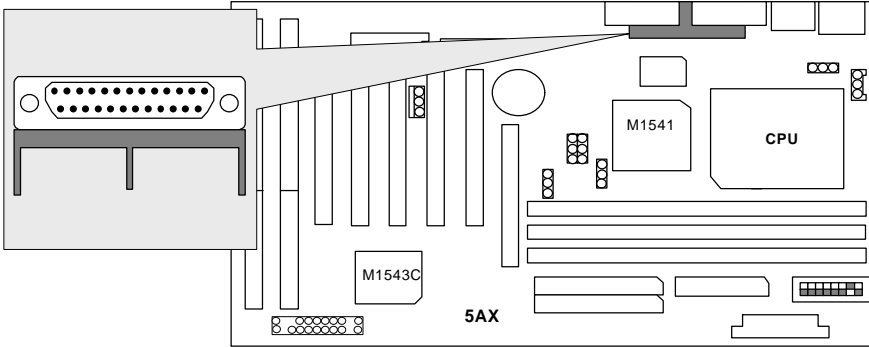
JP1 : CPU Cooling Fan Power Connector



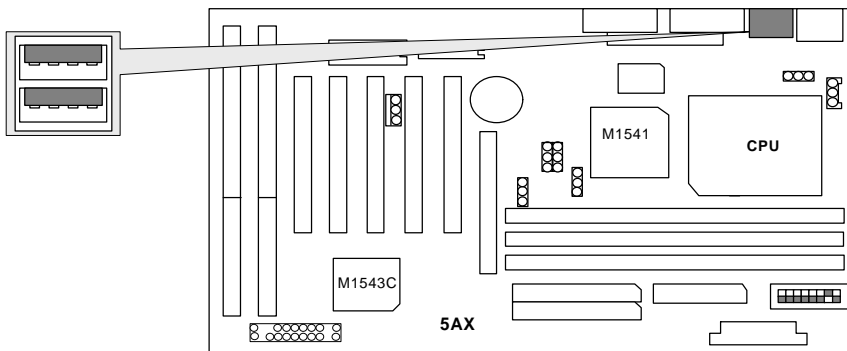
JP5: Wake On Lan



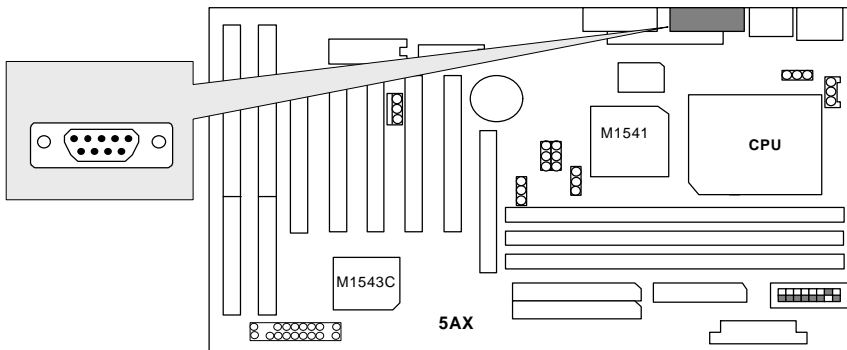
LPT : LPT PORT



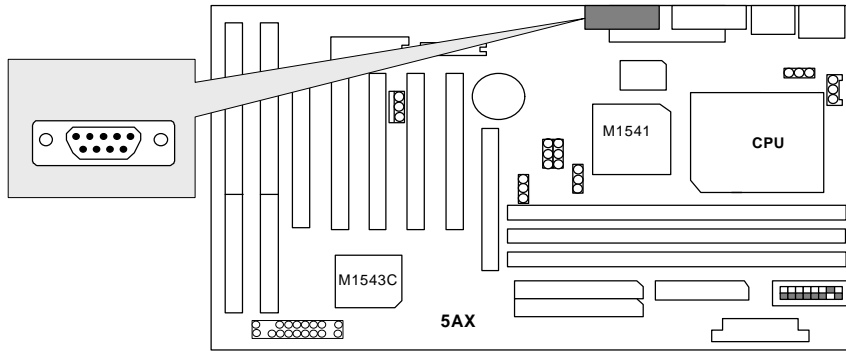
USB: USB Port



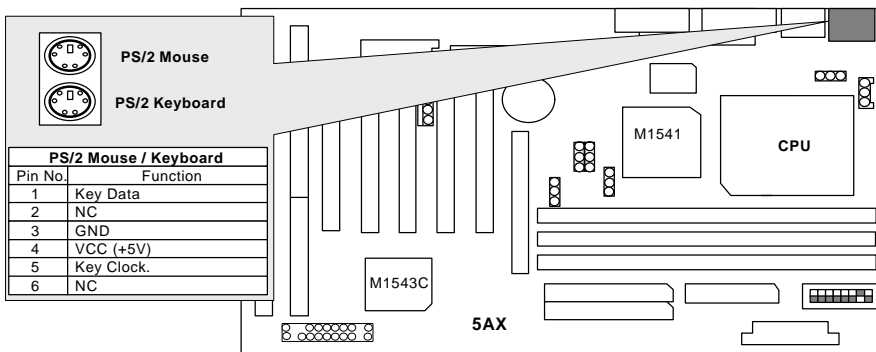
COM B : COM B PORT



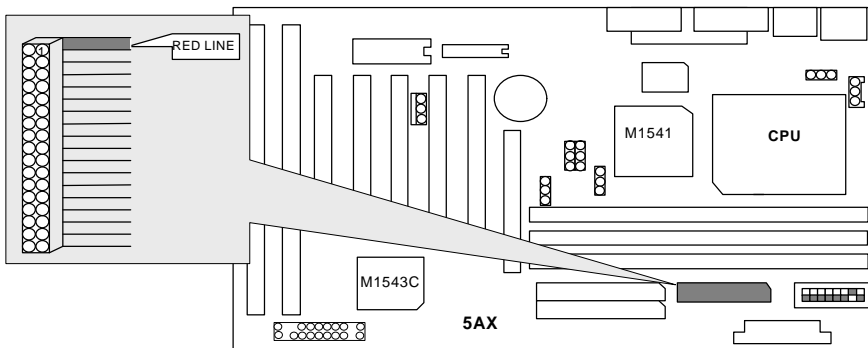
COM A : COM A PORT



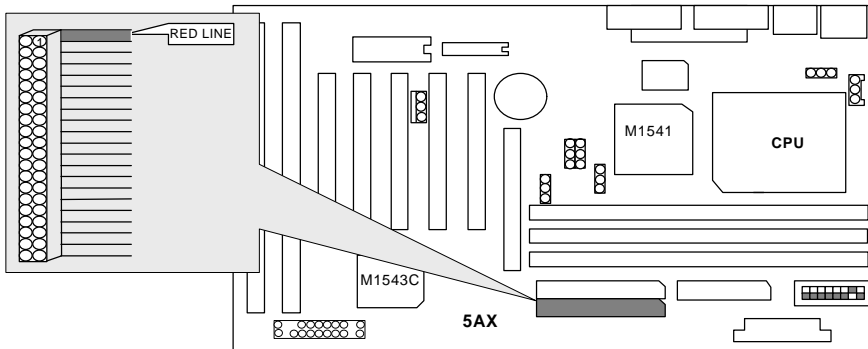
M.S. / K.B. : PS/2 Mouse / Keyboard Connector



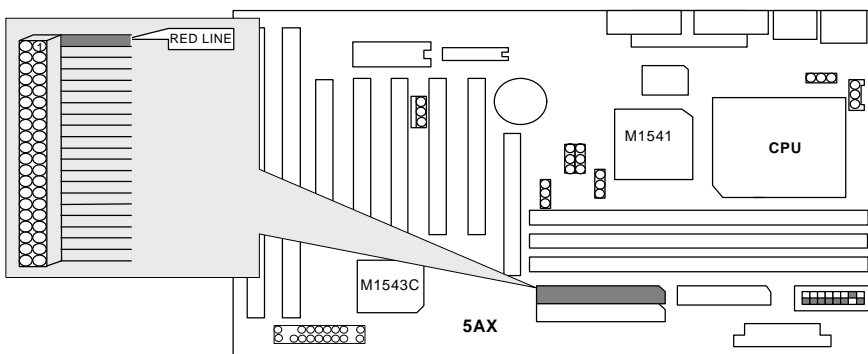
FLOPPY : FLOPPY PORT



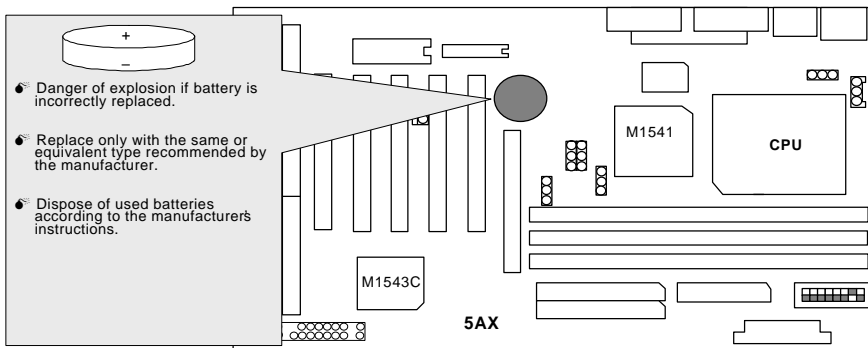
IDE1 : For Primary IDE port



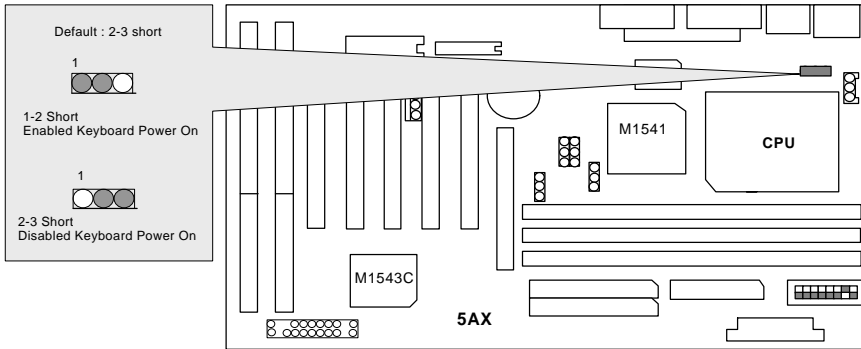
IDE2 : For Secondary IDE port



BT1 : For Battery

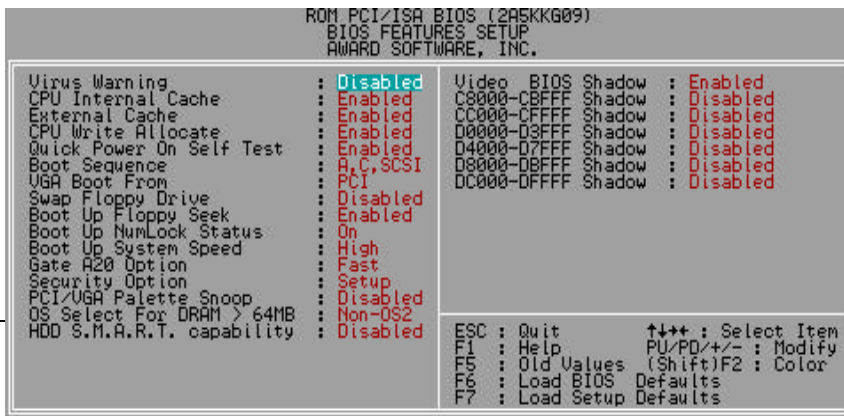


JP3 : Keyboard Power On/Off



III. Top Performance Test Setting:

Users have to modify the value for each item in chipset features as follow for top performance setting.



- \*\* Each value of items as above depends on your hardware configuration : CPU , SDRAM , Cards , etc.  
Please modify each value of items If your system does not work properly.

```
ROM PCI/ISA BIOS (2A5KKG09)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration      : Enabled
Host Read DRAM Command Mode : Bypass
AT Bus Clock           : CLK/2/4
DRAM Timing            : Fast
SDRAM CAS Latency      : 2
Pipelined Function     : Enabled
Graphics Aperture Size : 64 MB
DRAM Data Integrity Mode : Disabled
Memory Hole At 15-16M  : Disabled
ISA Line Buffer         : Enabled
Passive Release        : Enabled
Delay Transaction      : Disabled
Primary Frame Buffer    : 2 MB
VGA Frame Buffer        : Enabled
Data Merge             : Enabled
IO Recovery Period     : 1 us

Auto Detect DIMM/PCI Clk : Enabled
Spread Spectrum         : Disabled

ESC : Quit      ↑↓↓ : Select Item
F1  : Help      PU/PD/+/- : Modify
F5  : Old Values (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

**PERFORMANCE LIST**

The following list of performance data 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® Processor MMX-233 MHz , Cyrix 6x86MII-PR333 , AMD K6-2 400
- DRAM (128 x 1) MB SDRAM (LGS GM72N66841CT7J)
- CACHE SIZE 512 KB
- DISPLAY GA-600 (4MB SGRAM)
- STORAGE Onboard IDE (IBM DHEA-36481)
- O.S. Windows® NT 4.0
- DRIVER Display Driver at 1024 x 768 x 256 colors x 75Hz.  
ALi Bus Master IDE Driver

| Processor                | Intel-MMX 233MHz<br>(66x3.5) | AMD K6-2 400<br>(100x4) | Cyrix M-II PR333<br>(83x3) |
|--------------------------|------------------------------|-------------------------|----------------------------|
| Winbench98<br>CPU mark32 | 465                          | 885                     | 616                        |
| FPU Winmark              | 916                          | 1300                    | 573                        |
| Business Disk            | 1780                         | 1880                    | 1860                       |
| Hi-End Disk              | 4160                         | 4470                    | 4520                       |
| Business Graphics        | 107                          | 168                     | 154                        |
| Hi-End Graphics          | 111                          | 173                     | 172                        |
| Winstone98<br>Business   | 22.7                         | 31.4                    | 27.8                       |
| Hi-End                   | 23.5                         | 32.2                    | 28.6                       |

