5AA

USER'S MANUAL

❋ **Support Intel Pentium, MMX, Cyrix/IBM 6x86MX, MII, AMD K6, K6-2, K6-III, IDT Winchip 2, IDT Winchip 3 & RISE MP6 CPUs.**

❋ **Support parity check or ECC function.**

❋ **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 (COMA¡ B) , Win 95/98 shutdown.**

❋ **Support Wake on Lan (The ATX power supply supports larger than 720 mA 5V Stand-By current).**

❋ **Support keyboard power on function (The ATX power supply supports larger than 300mA 5V Stand-by current).**

❋ **Support Ultra DMA33 and ATA66.**

❋ **Support IrDA function for Fast IrDA.**

Pentium ᵃ Processor PCI - ISA BUS MAINBOARD
REV. 3.2 First Edition
R-32-01-091202

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.

Dec. 2, 1999 Taipei, Taiwan

I. CPU Jumper Setting Table:

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	---	---	---	---	---	---

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
X6	O	X	X

JP2	JP1	JP14	JP16	MHz
2-3	2-3	2-3	X	66M
1-2	2-3	2-3	O	75M
1-2	2-3	2-3	X	83M
1-2	1-2	2-3	O	95M
1-2	1-2	2-3	X	100M
1-2	1-2	1-2	X	105M
1-2	1-2	1-2	O	110M
1-2	2-3	1-2	X	115M
1-2	2-3	1-2	O	120M
2-3	1-2	1-2	X	125M
2-3	1-2	1-2	O	130M
2-3	2-3	1-2	X	135M
2-3	2-3	1-2	O	140M

♦Note: It's strongly recommended that set the system speed according to your hardware configuration: CPU, SDRAM, Cards, etc.

II. Quick Installation Guide:

O : ON   X : OFF

CPU	S1	S2	S3	S4	S5	S6	S7	S8	JP2	JP1	JP14	JP16
1. Pentium[a] 133 MHz	O	X	X	O	O	O	O	X	2-3	2-3	2-3	X
2. Pentium[a] 166 MHz	O	O	X	O	O	O	O	X	2-3	2-3	2-3	X
3. Pentium[a] 200 MHz	X	O	X	O	O	O	O	X	2-3	2-3	2-3	X
4. Intel MMX-166MHz	O	O	X	X	X	X	O	X	2-3	2-3	2-3	X
5. Intel MMX-200MHz	X	O	X	X	X	X	O	X	2-3	2-3	2-3	X
6. Intel MMX-233MHz	X	X	X	X	X	X	O	X	2-3	2-3	2-3	X
7. AMD-K6/166 (2.9V)	O	O	X	O	X	X	O	X	2-3	2-3	2-3	X
8. AMD-K6/200 (2.9V)	X	O	X	O	X	X	O	X	2-3	2-3	2-3	X
9. AMD-K6/233 (3.2V)	X	X	X	X	X	O	O	X	2-3	2-3	2-3	X
10. AMD-K6/233 (66*3.5 2.2V)	X	X	X	X	O	X	X	X	2-3	2-3	2-3	X
11. AMD-K6/266 (66*4 2.2V) AMD-K6-2/266 (66*4 2.2V)	O	X	O	X	O	X	X	X	2-3	2-3	2-3	X
12. AMD-K6/300 (66*4.5 2.2V)	O	O	O	X	O	X	X	X	2-3	2-3	2-3	X
13. AMD-K6/300 (100*3 2.2V) AMD-K6-2/300 (100*3 2.2V)	X	O	X	X	O	X	X	X	1-2	1-2	2-3	X
14. AMD-K6-2/333 (66*5 2.2V)	X	O	O	X	O	X	X	X	2-3	2-3	2-3	X
15. AMD-K6-2/333 (95*3.5 2.2V)	X	X	X	X	O	X	X	X	1-2	1-2	2-3	O
16. AMD-K6-2/350 (100*3.5 2.2V)	X	X	X	X	O	X	X	X	1-2	1-2	2-3	X
17.AMD-K6-2/366 (66*5.5 2.2V) *	X	X	O	X	O	X	X	X	2-3	2-3	2-3	X
18. AMD-K6-2/380 (95*4 2.2V)	O	X	O	X	O	X	X	X	1-2	1-2	2-3	O
19. AMD-K6-2/400 (100*4 2.2V)	O	X	O	X	O	X	X	X	1-2	1-2	2-3	X
20. AMD-K6-2/450 (100*4.5 2.2V) *	O	O	O	X	O	X	X	X	1-2	1-2	2-3	X
21. AMD-K6-2/450 (100*4.5 2.4V)	O	O	O	X	X	O	X	X	1-2	1-2	2-3	X
22. AMD-K6-2/475 (95*5 2.2V) *	X	O	O	X	O	X	X	X	1-2	1-2	2-3	O
23. AMD-K6-2/475 (95*5 2.4V) *	X	O	O	X	X	O	X	X	1-2	1-2	2-3	O
24. AMD-K6-2/500 (100*5 2.2V) *	X	O	O	X	O	X	X	X	1-2	1-2	2-3	X
25. AMD-K6-2/500 (100*5 2.4V) *	X	O	O	X	X	O	X	X	1-2	1-2	2-3	X

CPU	S1	S2	S3	S4	S5	S6	S7	S8	JP2	JP1	JP14	JP16
26. AMD-K6-2/550 (100*5.5 2.2V) *	X	X	O	X	O	X	X	X	1-2	1-2	2-3	X
27. AMD-K6-III/400 (100*4 2.2V) *	O	X	O	X	O	X	X	X	1-2	1-2	2-3	X
CPU	S1	S2	S3	S4	S5	S6	S7	S8	JP2	JP1	JP14	JP16
28. AMD-K6-III/400 (100*4 2.4V)	O	X	O	X	X	O	X	X	1-2	1-2	2-3	X
29.AMD-K6-III/450 (100*4.5 2.2V) *	O	O	O	X	O	X	X	X	1-2	1-2	2-3	X
30.AMD-K6-III/450 (100*4.5 2.4V) *	O	O	O	X	X	O	X	X	1-2	1-2	2-3	X
31. AMD-K6-III/475 (95*5 2.2V) *	X	O	O	X	O	X	X	X	1-2	1-2	2-3	O
32. AMD-K6-III/475 (95*5 2.4V) *	X	O	O	X	X	O	X	X	1-2	1-2	2-3	O
33. AMD-K6-III/500 (100*5 2.2V) *	X	O	O	X	O	X	X	X	1-2	1-2	2-3	X
34. AMD-K6-III/500 (100*5 2.4V) *	X	O	O	X	X	O	X	X	1-2	1-2	2-3	X
35. AMD-K6-III/550 (100*5.5 2.2V) *	X	O	O	X	O	X	X	X	1-2	1-2	2-3	X
36. Cyrix/IBM 6x86MX-PR166 (66*2 2.9V)	O	X	X	O	X	X	O	X	2-3	2-3	2-3	X
37. Cyrix/IBM 6x86MX-PR200 (66*2.5 2.9V)	O	O	X	O	X	X	O	X	2-3	2-3	2-3	X
38. Cyrix/IBM 6x86MX-PR200 (75*2 2.9V)	O	X	X	O	X	X	O	X	1-2	2-3	2-3	O
39. Cyrix/IBM 6x86MX-PR233 (66*3 2.9V)	X	O	X	O	X	X	O	X	2-3	2-3	2-3	X
40. Cyrix/IBM 6x86MX-PR233 (75*2.5 2.9V)	O	O	X	O	X	X	O	X	1-2	2-3	2-3	O
41. Cyrix/IBM 6x86MX-PR233 (83*2 2.9V)	O	X	X	O	X	X	O	X	1-2	2-3	2-3	X
42. Cyrix/IBM 6x86MX-PR266 (66*3.5 2.9V)	X	X	X	O	X	X	O	X	2-3	2-3	2-3	X
43. Cyrix/IBM 6x86MX-PR266 (75*3 2.9V)	X	O	X	O	X	X	O	X	1-2	2-3	2-3	O
44. Cyrix/IBM 6x86MX-PR266 (83*2.5 2.9V)	O	O	X	O	X	X	O	X	1-2	2-3	2-3	X
45. Cyrix MⅡ PR300 (66*3.5 2.9V)	X	X	X	O	X	X	O	X	2-3	2-3	2-3	X
46. Cyrix MⅡ PR333 (66*4 2.9V)	O	X	O	O	X	X	O	X	2-3	2-3	2-3	X
47. Cyrix MⅡ PR333 (83*3 2.9V)	X	O	X	O	X	X	O	X	1-2	2-3	2-3	X

CPU	S1	S2	S3	S4	S5	S6	S7	S8	JP2	JP1	JP14	JP16
48. Cyrix MⅡ PR333 (75*3.5 2.9V)	X	X	X	O	X	X	O	X	1-2	2-3	2-3	O
49. Cyrix MⅡ PR366 * (100*2.5 2.9V)	O	O	X	O	X	X	O	X	1-2	1-2	2-3	X
50. Cyrix MⅡ PR366 * (75*4 2.9V)	O	X	O	O	X	X	O	X	1-2	2-3	2-3	O
CPU	S1	S2	S3	S4	S5	S6	S7	S8	JP2	JP1	JP14	JP16
51. Cyrix MⅡ PR366 * (83*3.5 2.9V)	X	X	X	O	X	X	O	X	1-2	2-3	2-3	X
52. Cyrix MⅡ PR400 * (100*3.5 2.9V)	X	X	X	O	X	X	O	X	1-2	1-2	2-3	X
53. IDT Winchip 2-200 (66*3 3.5V)	X	O	X	O	O	O	O	X	2-3	2-3	2-3	X
54. IDT Winchip 2-200 * (100*2 3.5V)	O	X	X	O	O	O	O	X	1-2	1-2	2-3	X
55. IDT Winchip 2-225 (75*3 3.5V)	X	O	X	O	O	O	O	X	1-2	2-3	2-3	O
56. IDT Winchip 2-233 * (66*3.5 3.5V)	X	X	X	O	O	O	O	X	2-3	2-3	2-3	X
57. IDT Winchip 2-233 * (100*2.33 3.5V)	X	O	O	O	O	O	O	X	1-2	1-2	2-3	X
58. IDT Winchip 2-266 * (66*4 3.5V)	O	X	O	O	O	O	O	X	2-3	2-3	2-3	X
59. IDT Winchip 2-266 * (100*2.66 3.5V)	X	X	O	O	O	O	O	X	1-2	1-2	2-3	X
60. IDT Winchip 2-300 * (100*2.5 3.5V)	O	O	X	O	O	O	O	X	1-2	1-2	2-3	X
61. IDT Winchip 3-266 * (100*2.33 2.8V)	X	O	O	X	X	X	O	X	1-2	1-2	2-3	X
62. RISE MP6-266 * (100*2 2.8V)	O	X	X	X	X	X	O	X	1-2	1-2	2-3	X

✸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	S1	S2	S3	S4	S5	S6	S7	S8	JP2	JP1	JP14	JP16
AMD-K6/300 (100*3 2.2V) AMD-K6-2/300 (100*3 2.2V)	X	O	X	X	O	X	X	X	1-2	1-2	2-3	X

💣 The settings of the processors marked with "*" above are just for your reference, these processors have not been tested yet !

1. Pentium® Processor 133 MHz
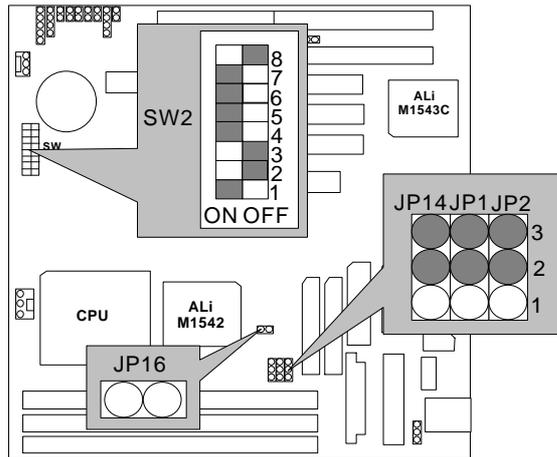

2. Pentium® Processor 166 MHz
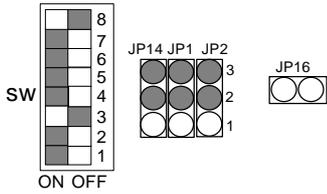

3. Pentium® Processor 200 MHz
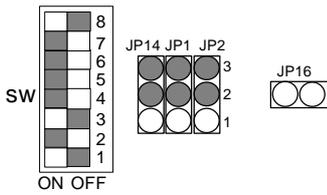
4. Intel MMX-166 MHz
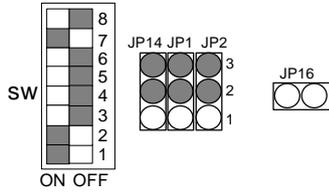

5. Intel MMX-200 MHz
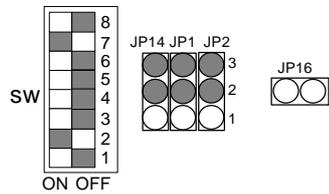

6. Intel MMX-233 MHz
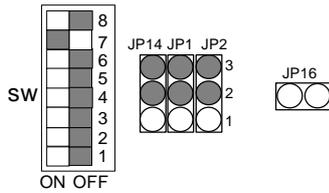
7. AMD-K6/166 (2.9V)
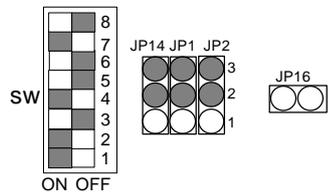
8. AMD-K6/200 (2.9V)
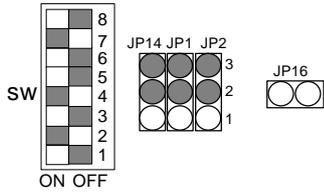
9. AMD-K6/233 (3.2V)
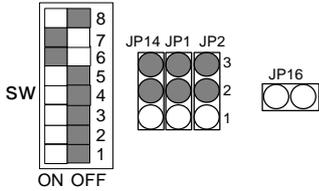
10. AMD-K6/233 (66*3.5 2.2V)
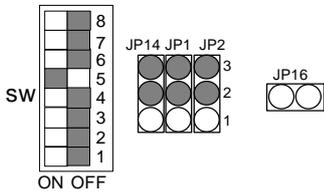

11. AMD-K6/266 (66*4 2.2V); AMD-K6-2/266 (66*4 2.2V)
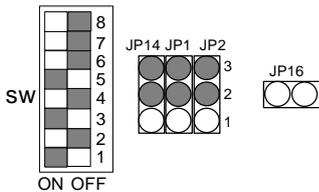

12. AMD-K6/300 (66*4.5 2.2V)
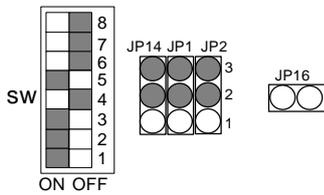
13. AMD-K6/300 (100*3 2.2V); AMD-K6-2/300 (100*3 2.2V)
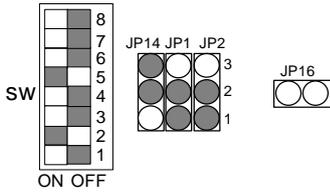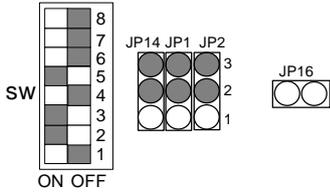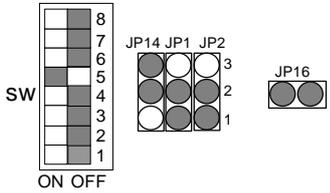
SW 8 7 6 5 4 3 2 1 ON OFF

JP14 JP1 JP2 3 2 1

JP16

14. AMD-K6-2/333 (66*5 2.2V)

SW 8 7 6 5 4 3 2 1 ON OFF

JP14 JP1 JP2 3 2 1

JP16

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

SW 8 7 6 5 4 3 2 1 ON OFF

JP14 JP1 JP2 3 2 1

JP16

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

SW 8 7 6 5 4 3 2 1 ON OFF

JP14 JP1 JP2 3 2 1

JP16

17. AMD-K6-2/366 (66*5.5 2.2V)

SW 8 7 6 5 4 3 2 1 ON OFF

JP14 JP1 JP2 3 2 1

JP16

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

SW | JP14 JP1 JP2 | JP16

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

SW | JP14 JP1 JP2 | JP16

20. AMD-K6-2/450 (100*4.5 2.2V)

SW | JP14 JP1 JP2 | JP16

21. AMD-K6-2/450 (100*4.5 2.4V)

SW | JP14 JP1 JP2 | JP16

22. AMD-K6-2/475 (95*5 2.2V)

SW | JP14 JP1 JP2 | JP16

23. AMD-K6-2/475 (95*5 2.4V)

SW — ON OFF (8,7,6,5,4,3,2,1)
JP14 JP1 JP2 (3,2,1)
JP16

24. AMD-K6-2/500 (100*5 2.2V)

SW — ON OFF (8,7,6,5,4,3,2,1)
JP14 JP1 JP2 (3,2,1)
JP16

25. AMD-K6-2/500 (100*5 2.4V)

SW — ON OFF (8,7,6,5,4,3,2,1)
JP14 JP1 JP2 (3,2,1)
JP16

26. AMD-K6-2/550 (100*5.5 2.2V)

SW — ON OFF (8,7,6,5,4,3,2,1)
JP14 JP1 JP2 (3,2,1)
JP16

27. AMD-K6-III/400 (100*4 2.2V)

SW — ON OFF (8,7,6,5,4,3,2,1)
JP14 JP1 JP2 (3,2,1)
JP16
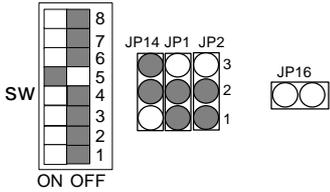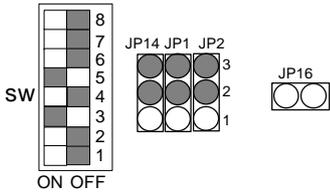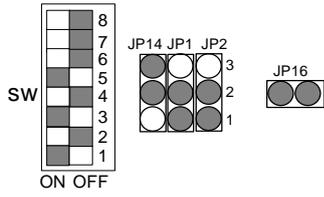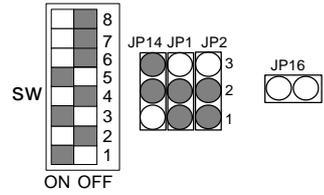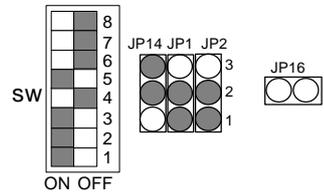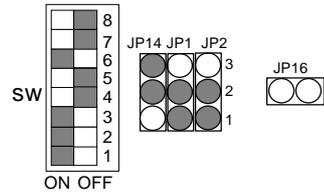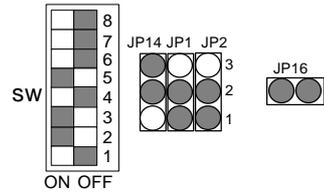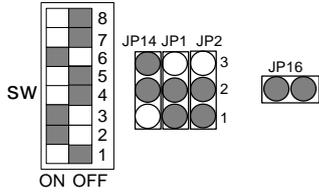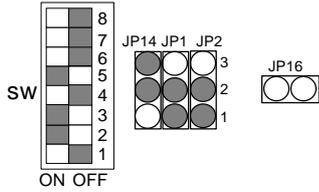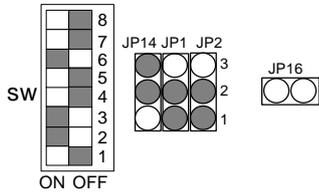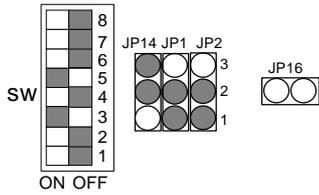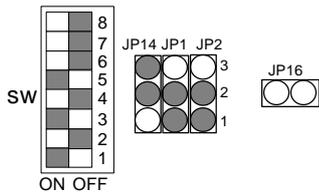
28. AMD-K6-III/400 (100*4 2.4V)
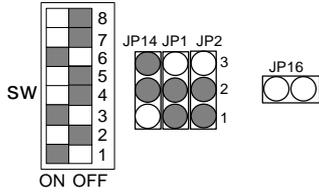
29. AMD-K6-III/450 (100*4.5 2.2V)
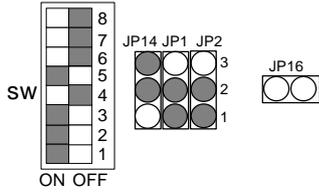
30. AMD-K6-III/450 (100*4.5 2.4V)
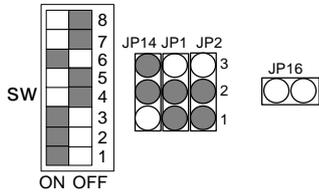
31. AMD-K6-III/475 (95*5 2.2V)
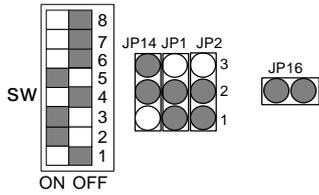
32. AMD-K6-III/475 (95*5 2.4V)
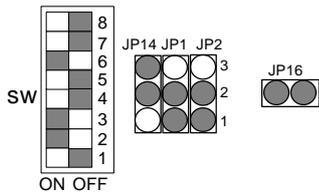
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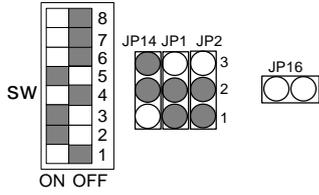
34. AMD-K6-III/500 (100*5 2.4V)
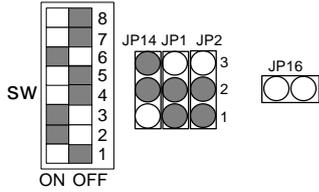
35. AMD-K6-III/550 (100*5.5 2.2V)
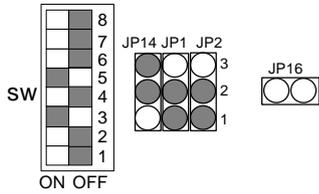
36. Cyrix /IBM 6x86MX-PR166   (66*2 2.9V)
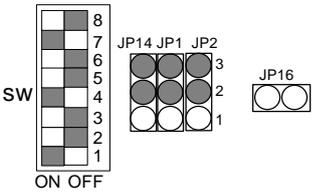
37. Cyrix /IBM 6x86MX-PR200   (66*2.5 2.9V)
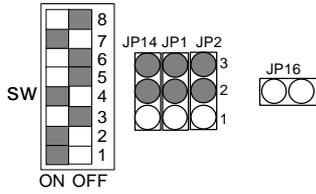
38. Cyrix /IBM 6x86MX-PR200 (75*2 2.9V)
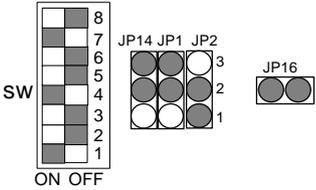
39. Cyrix /IBM 6x86MX-PR233 (66*3 2.9V)
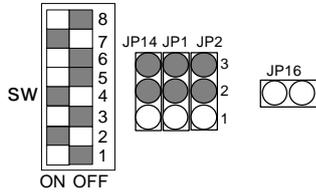
40. Cyrix /IBM 6x86MX-PR233 (75*2.5 2.9V)
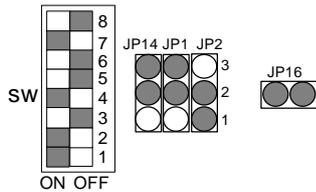
41. Cyrix /IBM 6x86MX-PR233 (83*2 2.9V)
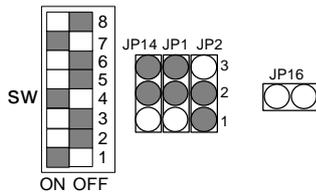
42. Cyrix /IBM 6x86MX-PR266 (66*3.5 2.9V)
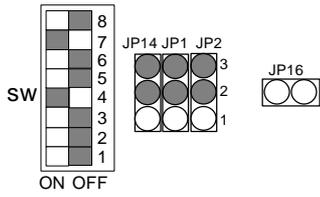
43. Cyrix / IBM 6x86MX-PR266 (75*3 2.9V)
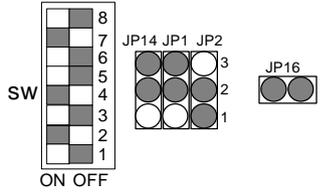
44. Cyrix / IBM 6x86MX-PR266 (83*2.5 2.9V)
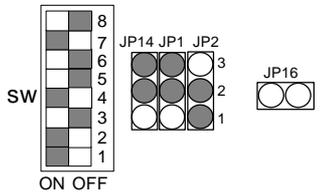
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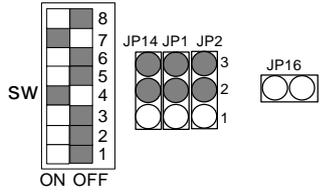
46. Cyrix MII-PR333 (66*4 2.9V)

47. Cyrix MII-PR333 (83*3 2.9V)

SW ON OFF
JP14 JP1 JP2
JP16

48. Cyrix MII-PR333 (75*3.5 2.9V)

SW ON OFF
JP14 JP1 JP2
JP16
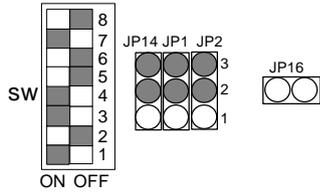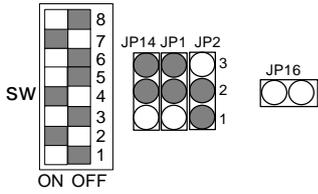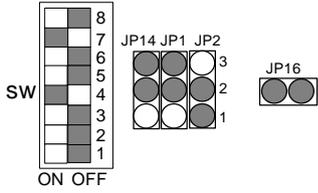
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SW ON OFF
JP14 JP1 JP2
JP16
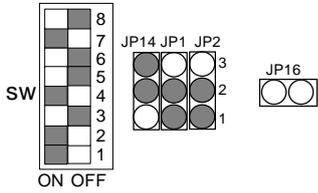
50. Cyrix MII-PR366 (75*4 2.9V)

SW ON OFF
JP14 JP1 JP2
JP16
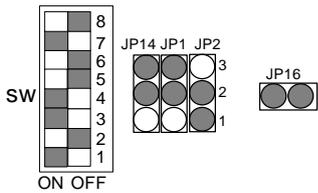
51. Cyrix MII-PR366 (83*3.5 2.9V)

SW ON OFF
JP14 JP1 JP2
JP16
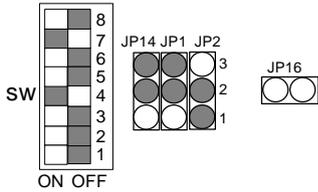
52. Cyrix MII-PR400 (100*3.5 2.9V)
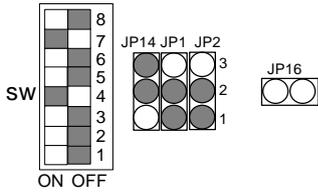
53. IDT Winchip 2-200   (66*3 3.5V)
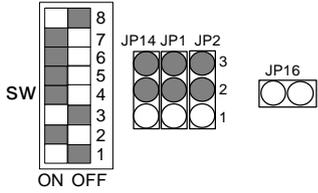
54. IDT Winchip 2-200   (100*2 3.5V)
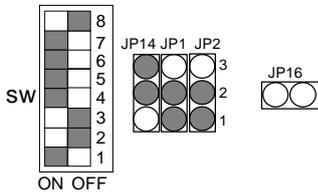
55. IDT Winchip 2-225   (75*3 3.5V)
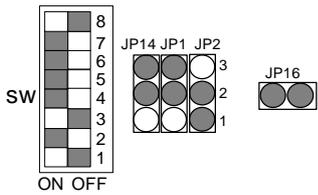
56. IDT Winchip 2-233   (66*3.5 3.5V)
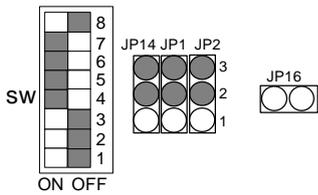
57. IDT Winchip 2-233   (100*2.33 3.5V)
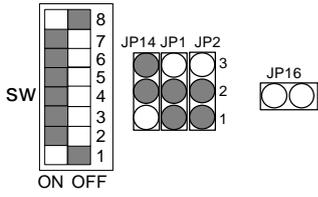
58. IDT Winchip 2-266   (66*4 3.5V)
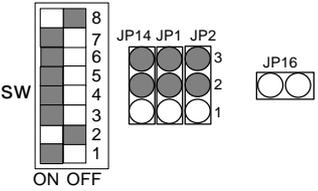
59. IDT Winchip 2-266   (100*2.66 3.5V)
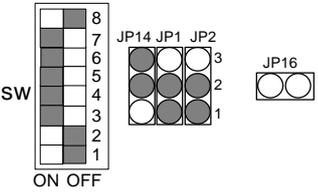
60. IDT Winchip 2-300   (100*2.5 3.5V)
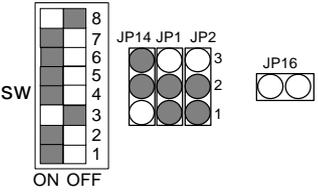
61. IDT Winchip 3-266 (100*2.33 2.8V)
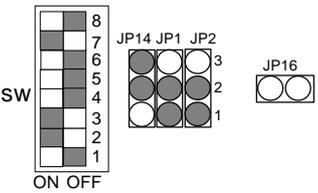
62. RISE MP6-266 (100*2 2.8V)
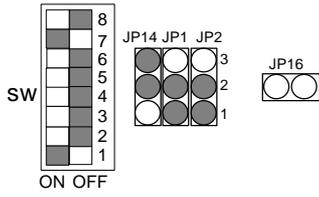
III. Quick Installation Guide of Jumper setting:

PWR : Power LED Connector
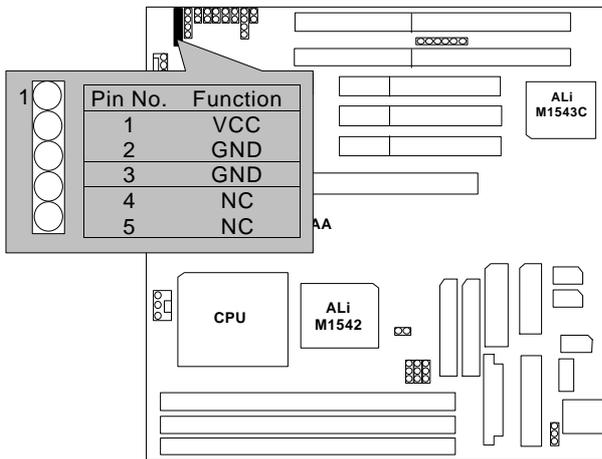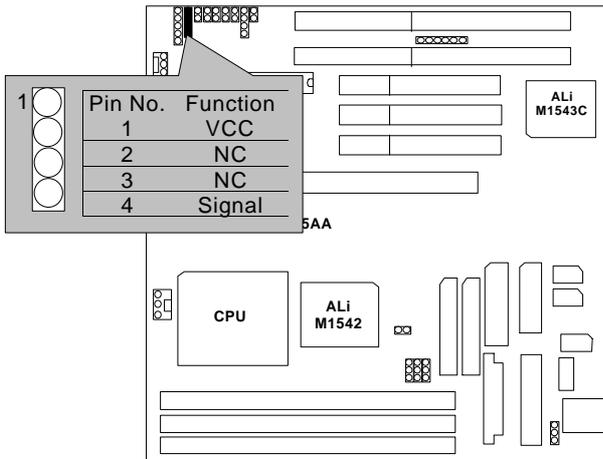
Pin No.	Function
1	VCC
2	GND
3	GND
4	NC
5	NC

SPK : Speaker Connector

Pin No.	Function
1	VCC
2	NC
3	NC
4	Signal

TD : Turbo LED Connector

Pin No.	Function
1	LED anode (+)
2	LED cathode(−)

TB : Turbo Switch Connector

Pin No.	Function
1	Signal
2	GND

5AA

RST : Reset Switch

Open :
Normal operation

Close :
Reset system

5AA

GD : Green LED

Pin No.	Function
1	LED anode (+)
2	LED cathode(−)

5AA
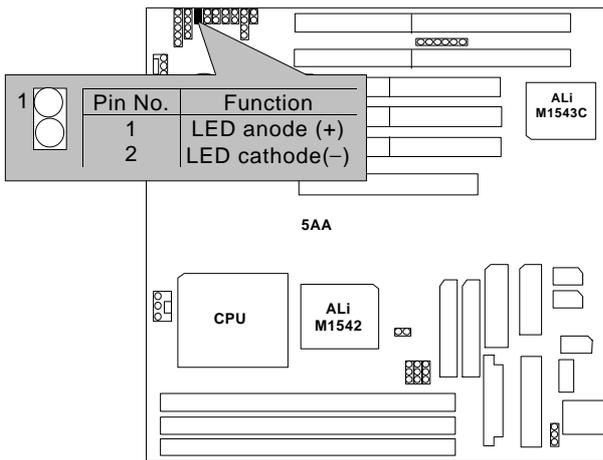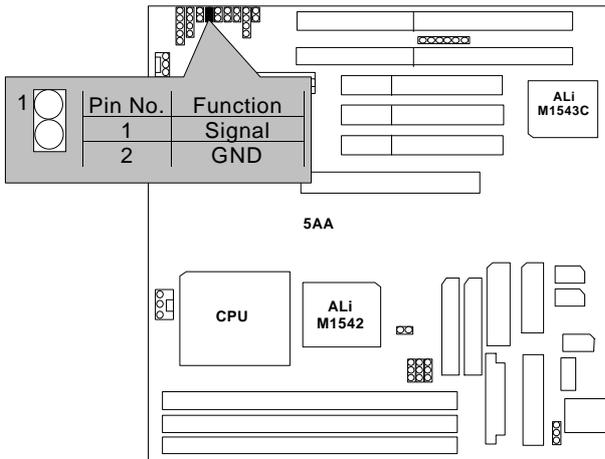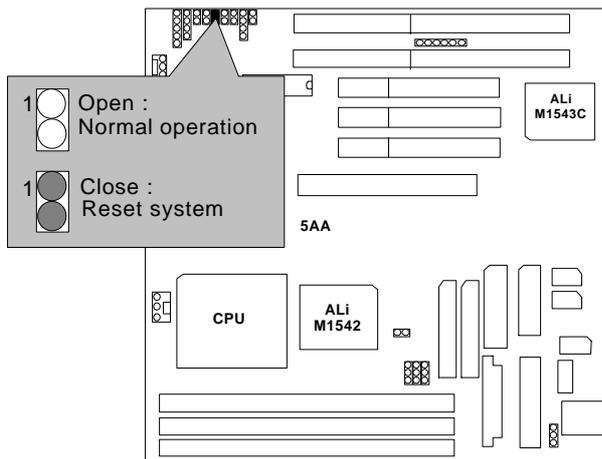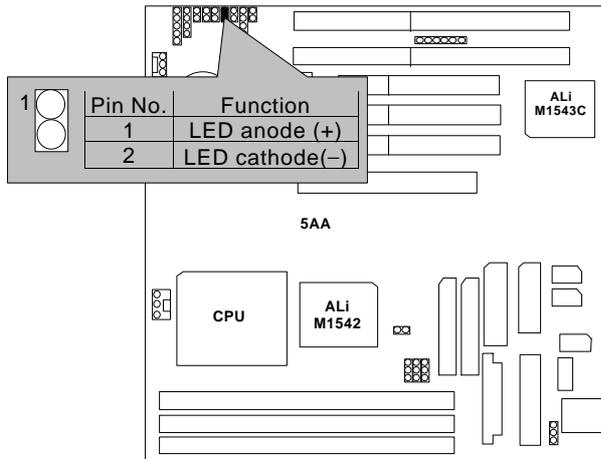
GN : Green Function Switch

Open :
Normal operation

Close :
Entering Green Mode

HD : IDE Hard Disk Active LED

Pin No.	Function
1	LED anode (+)
2	LED cathode(−)
3	LED cathode(−)
4	LED anode (+)
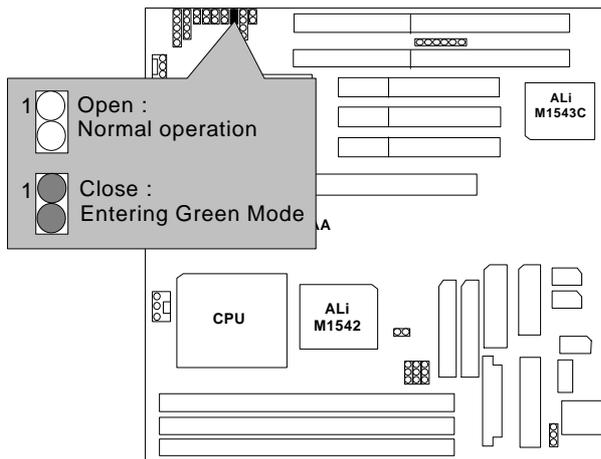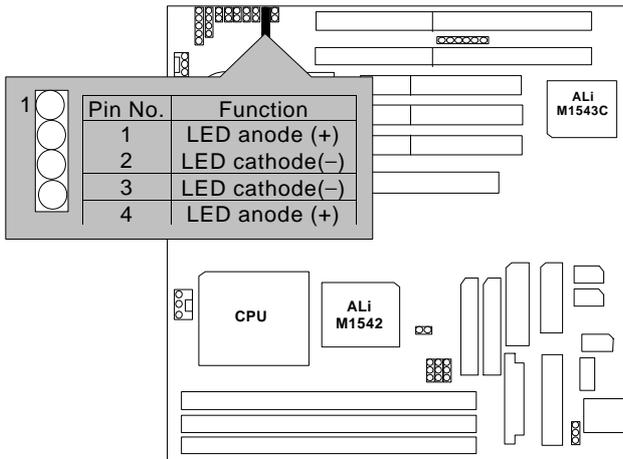
Soft PWR : Soft Power Connector

Open:
Normal Operation

Short:
Power On/Off

JP6: Wake On Lan

Pin No.	Function
1	+5V
2	GND
3	Signal
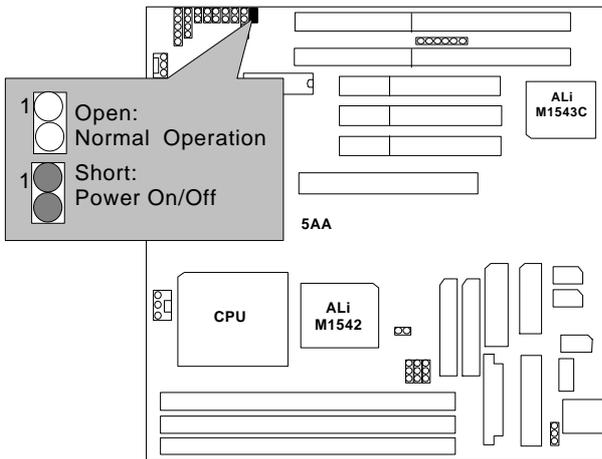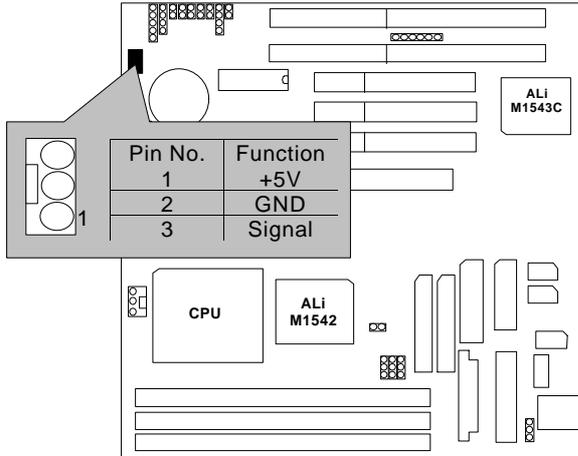
JP7: Keyboard Power On (for ATX Power Supply only)

1-2 Close :
Enable Keyboard Power On

2-3 Close :
Disable Keyboard Power On
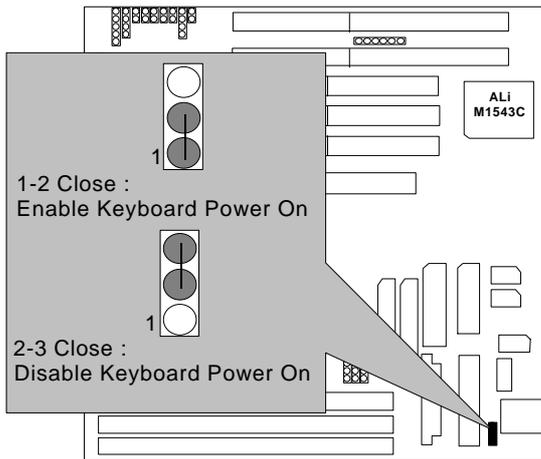
IDE1: Primary IDE Port
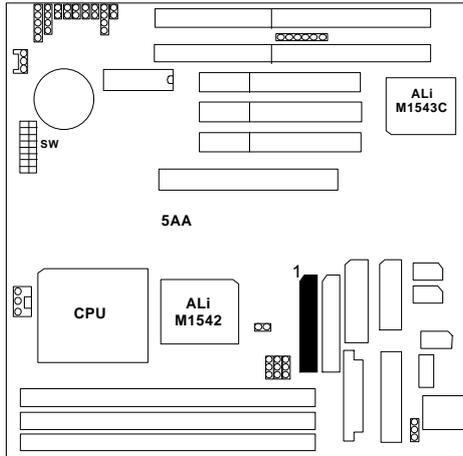
IDE2: Secondary IDE Port
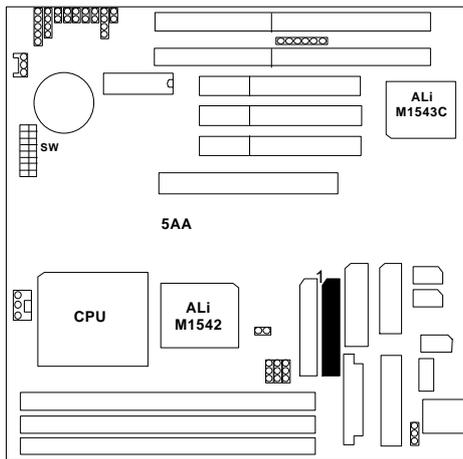
FLOPPY : Floppy Port
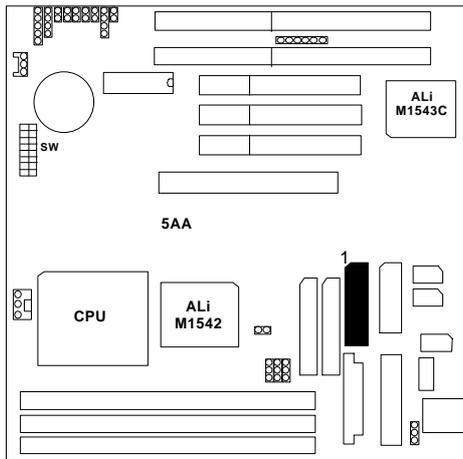
LPT : LPT Port
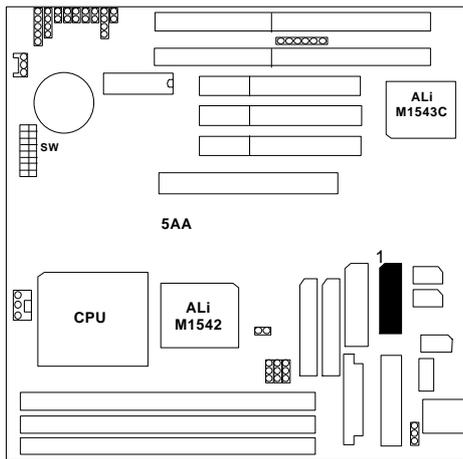
COM A : COM A Port
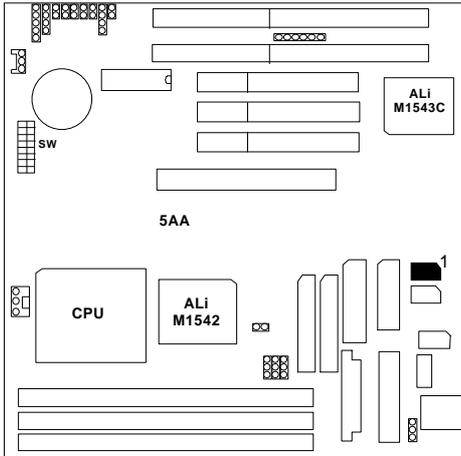
COM B: COM B Port

USB : USB Port

Pin No.	Function
1	VCC
2	USB D0−
3	USB D0+
4	GND
5	VCC
6	USB D1−
7	USB D1+
8	GND
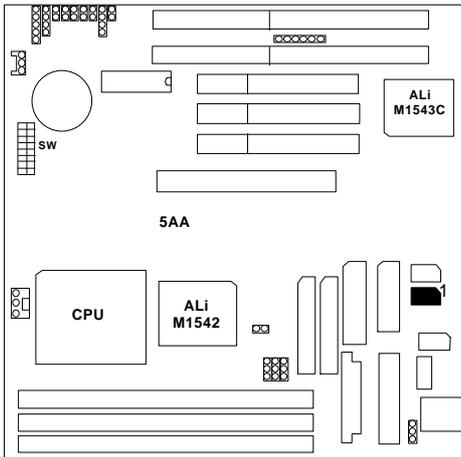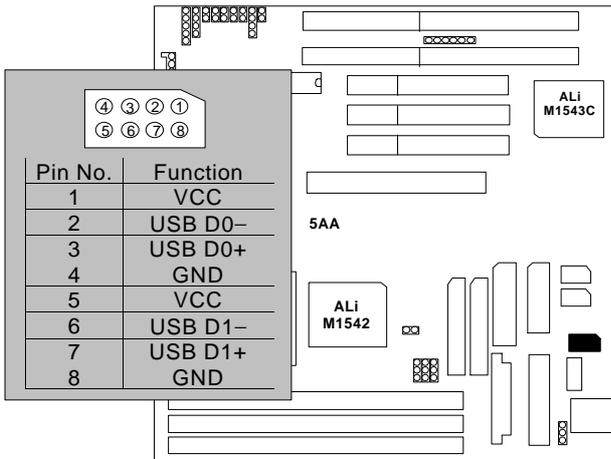
JP9 : PS/2 Mouse Connector

RED LINE
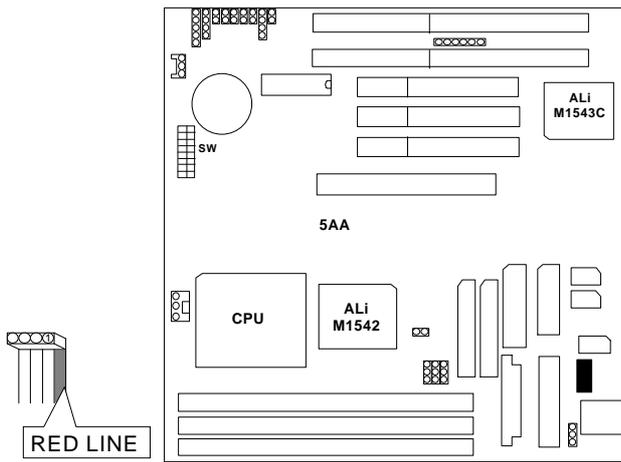
JP9-1 : PS / 2 Mouse Connector (Optional)

PS / 2 MOUSE	
Pin No.	Function
1	Key Data
2	NC
3	GND
4	VCC (+5V)
5	Key Clock
6	NC
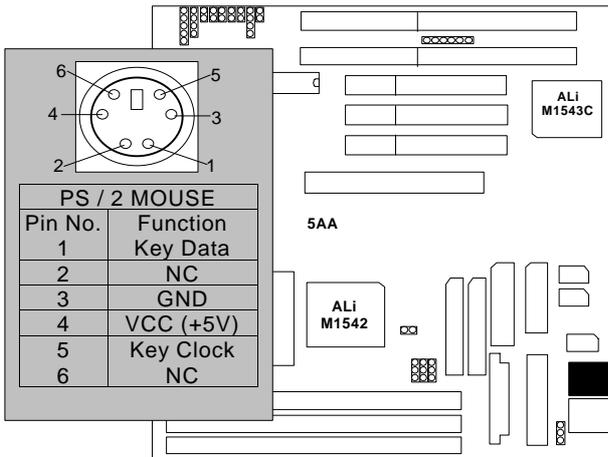
JP10 : AT Keyboard Connector

Keyboard	
Pin No.	Function
1	Key Clock
2	Key Data
3	NC
4	GND
5	VCC
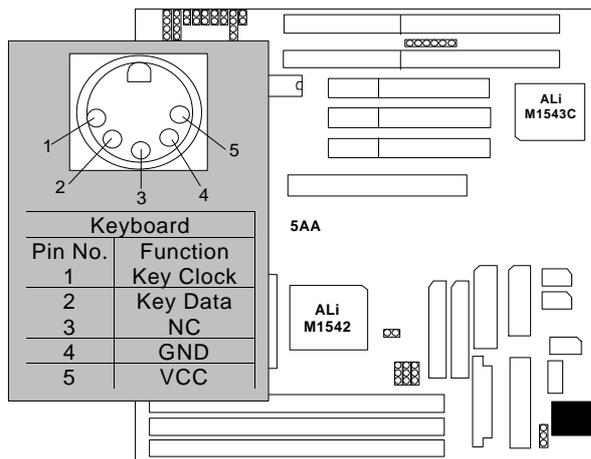
JP10-1 : PS/2 Keyboard Connector (Optional)
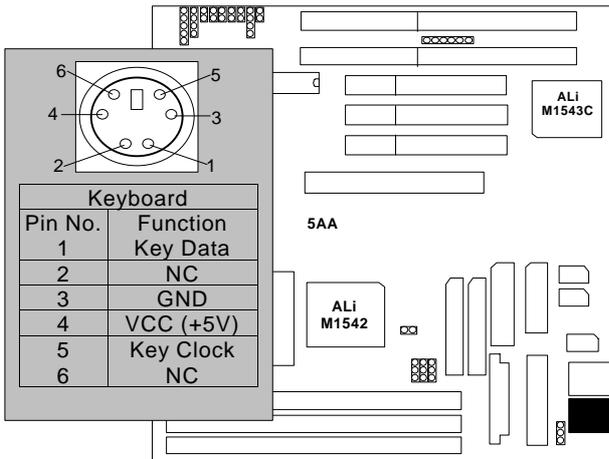
Keyboard	
Pin No.	Function
1	Key Data
2	NC
3	GND
4	VCC (+5V)
5	Key Clock
6	NC

JP5 : AT Power Connector

Pin No.	Function
1	Power Good
2,10,11,12	VCC
3	+12V
4	−12V
5,6,7,8	GND
9	−5V

J1 : ATX Power Connector

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

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JP4:CPU Cooling Fan Power Connector

Pin No.	Function
1	GND
2	+12V
3	Signal

ALi M1543C

CPU

ALi M1542
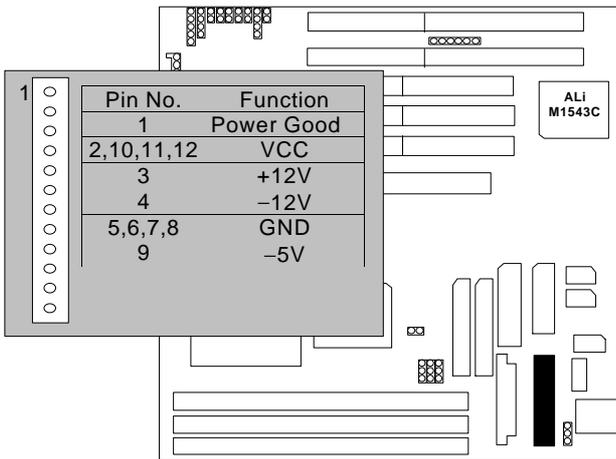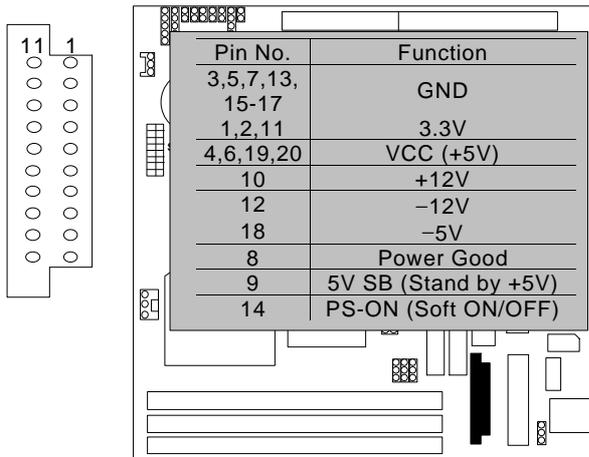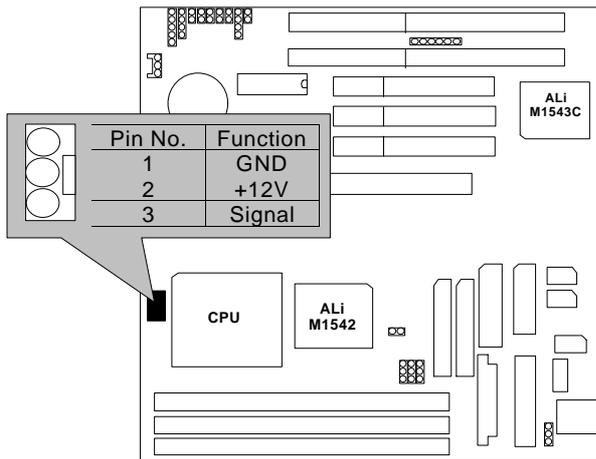
JP17 : Infrared Connector (Support FIR)

Pin No.	Function
1	Power +
2	FIR
3	IR Data Input
4	GND
5	IR Data Output
6	Over Current
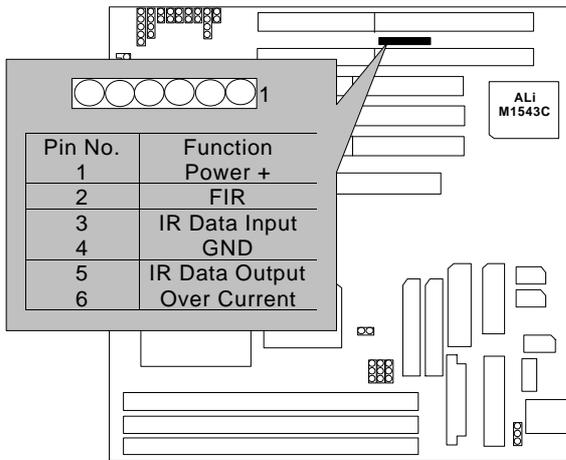
BAT1 : For Battery
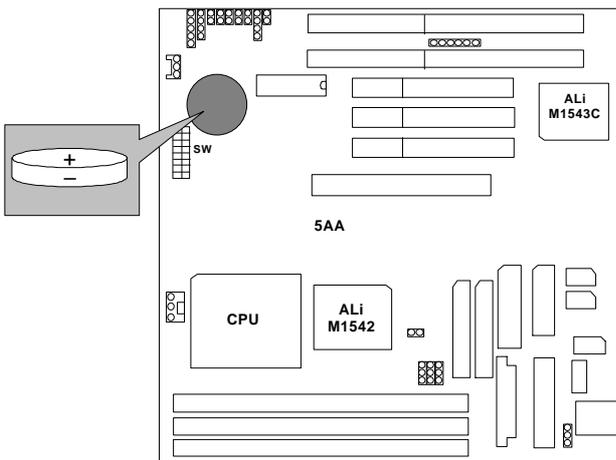
Danger of explosion if battery is incorrectly replaced.

☀Replace only with the same or equivalent type recommended by the manufacturer.
☀Dispose of used batteries according to the manufacturer's instructions.

III. Top Performance Test Setting:

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

```
┌─────────────────────────────────────────────────────────────────────┐
│                 AMIBIOS SETUP - CHIPSET FEATURES SETUP                │
│          (C)1998 American Megatrends, Inc. All Rights Reserved        │
├─────────────────────────────────┬───────────────────────────────────┤
│USB Function             :Enabled │                                   │
│USB Legacy Support       :Disabled│                                   │
│SDRAM CAS Latency        :Auto    │                                   │
│DRAM Data Integrity Mode :Parity  │                                   │
│SDRAM Burst Mode         :Enabled │                                   │
│DRAM Timing              :Normal  │                                   │
│Pipe Function            :Enabled │                                   │
│Gated Clock              :Disabled│                                   │
│Graphic Aperture Size    :64MB    │                                   │
│Primary Frame Buffer     : All    │                                   │
│VGA Frame Buffer         :Enabled │                                   │
│   Data Merge            :Disabled│                                   │
│Passive Release          :Enabled │                                   │
│ISA Line Buffer          :Enabled │                                   │
│Delay Transaction        :Disabled│                                   │
│AT Bus Clock             :Auto    │ ESC : Quit         ↑↓←→ : Select Item │
│AMD K6 Write Allocate    :Disabled│ F1  : Help       PU/PD/+/- : Modify  │
│Spread Spectrum          :Disabled│ F5  : Old Values  (Shift)F2 : Color  │
│                                  │ F6  : Load BIOS Defaults          │
│                                  │ F7  : Load Setup Defaults         │
└─────────────────────────────────┴───────────────────────────────────┘
```

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** 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.

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   AMD K6-2 500, AMD K6-III 450, AMD K6-2+/450
- DRAM   (128×1) MB SDRAM (HYUNDAI HY57V658020A TC-10S)
- CACHE SIZE   512 KB
- DISPLAY   GA-660 (32MB SDRAM)
- STORAGE   Onboard IDE (Quantum KA13600AT)
- O.S.   Windows® NT 4.0+ SPK5
- DRIVER   Display Driver at 1024 x 768 x 256 colors x 75Hz.
                 ALi Bus Master IDE Driver

Processor	AMD K6-2/500 (100x5)	AMD K6-III/450 (100x4.5)	AMD K6-2+/450 (100x4.5)
Winbench98 CPU mark32	23.2	36.2	34.2
FPU Winmark	1610	1520	1520
Business Disk	4630	5060	4620
Hi-End Disk	11700	12300	12600
Business Graphics	134	206	190
Hi-End Graphics	249	346	335
Winstone98 Business	26.7	32	30.1
Hi-End	21.4	24	23.1

TABLE OF CONTENTS

1. INTRODUCTION

1.1. PREFACE

Welcome to use the **5AA** motherboard. The motherboard is a Pipeline 512 KB CACHE Pentium$^{\circledR}$ Processor based PC / AT compatible system with ISA bus and PCI Local Bus, and has been designed to be the fastest PC / AT system. There are some new features allow you to operate the system with the performance you want.

This manual also explains how to install the motherboard for operation, and how to set up your CMOS CONFIGURATION with BIOS SETUP program.

1.2. KEY FEATURES

❑ Pentium$^{\circledR}$ Processor based PC / AT compatible mainboard with PCI / ISA / AGP Bus.

❑ 3 PCI Bus slots, 2 ISA Bus slots, 1 AGP slot.

❑ Supports :

- Pentium$^{\circledR}$ Processor :133/166/200 MHz; MMX (166 / 200 / 233)
- AMD :K6-(166 / 200 / 233 / 266 / 300)
  K6-2(266 / 300 / 333 / 350 / 366 / 380 / 400 / 450 / 475 / 500 / 550)
  K6-III(400 / 450 / 475 / 500 / 550)
- Cyrix/IBM :6x86MX (PR166 / PR200 / PR233 / PR266) ;
  MIIPR300 / PR333 / PR366 / PR400
- IDT :Winchip 2-(200 / 225 / 233 / 266 / 300)
  Winchip 3-(266)
- RISE :MP6-(266)

❑ Supports true 64 bits CACHE and DRAM access mode.

❑ Supports 321 Pins (Socket 7) ZIF white socket on board.

❑ Supports 512 KB Pipeline Burst Sync. 2nd Level Cache.

❑ CPU L1 / L2 Write-Back cache operation.

❑ Supports 16 ~ 256 MB DRAM memory on board.

❑ Supports 3*168 pin 64/72 Bit DIMM module.

❑ Supports 2-channel Enhanced PCI IDE ports for 4 IDE Devices.

❑ Supports 2*COM (16550), 1*LPT (EPP / ECP), 1*1.44MB Floppy port.

❑ Supports Green function, Plug & Play function.

❑ Licensed AMI BIOS, FLASH ROM for BIOS update.

❑ 22cm*21cm, Baby AT Form factor.

❑ Supports USB port & PS/2 Mouse and Keyboard port.

❑ Supports Keyboard Power On.

❑ Support Ultra DMA 33 and ATA 66.

❑ Support IrDA function for Fast IrDA.

1.3. 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   AMD K6-2 500, AMD K6-III 450, AMD K6-2+/450
- DRAM   (128×1) MB SDRAM (HYUNDAI HY57V658020A TC-10S)
- CACHE SIZE   512 KB
- DISPLAY   GA-660 (32MB SDRAM)
- STORAGE   Onboard IDE (Quantum KA13600AT)
- O.S.   Windows® NT 4.0+ SPK5
- DRIVER   Display Driver at 1024 x 768 x 256 colors x 75Hz.
               ALi Bus Master IDE Driver

Processor	AMD K6-2/500 (100x5)	AMD K6-III/450 (100x4.5)	AMD K6-2+/450 (100x4.5)
Winbench98 CPU mark32	23.2	36.2	34.2
FPU Winmark	1610	1520	1520
Business Disk	4630	5060	4620
Hi-End Disk	11700	12300	12600
Business Graphics	134	206	190
Hi-End Graphics	249	346	335
Winstone98 Business	26.7	32	30.1
Hi-End	21.4	24	23.1

1.4. BLOCK DIAGRAM

100MHz

100MHz PBSRAM

CPU

Host

Host Data

100MHz

66MHz

33MHz

100MHz

MD Bus

MA Bus DRAM

100MHz

AGP DEVICE

ALi M1542

66MHz

66MHz

ICS9148
AF-75

14.318Hz

PCI Bus

33MHz

14.318Hz

33MHz

48MHz

ALi M1543C

PCI Device

PCI Device

PCI Device

USB

GPIO

PS/2
Keyboard
Mouse

IR

IDE DEVICE

ISA Device

8MHz

COMA LPT FDD

ISA Bus

COMB

14.318MH

ISA Device
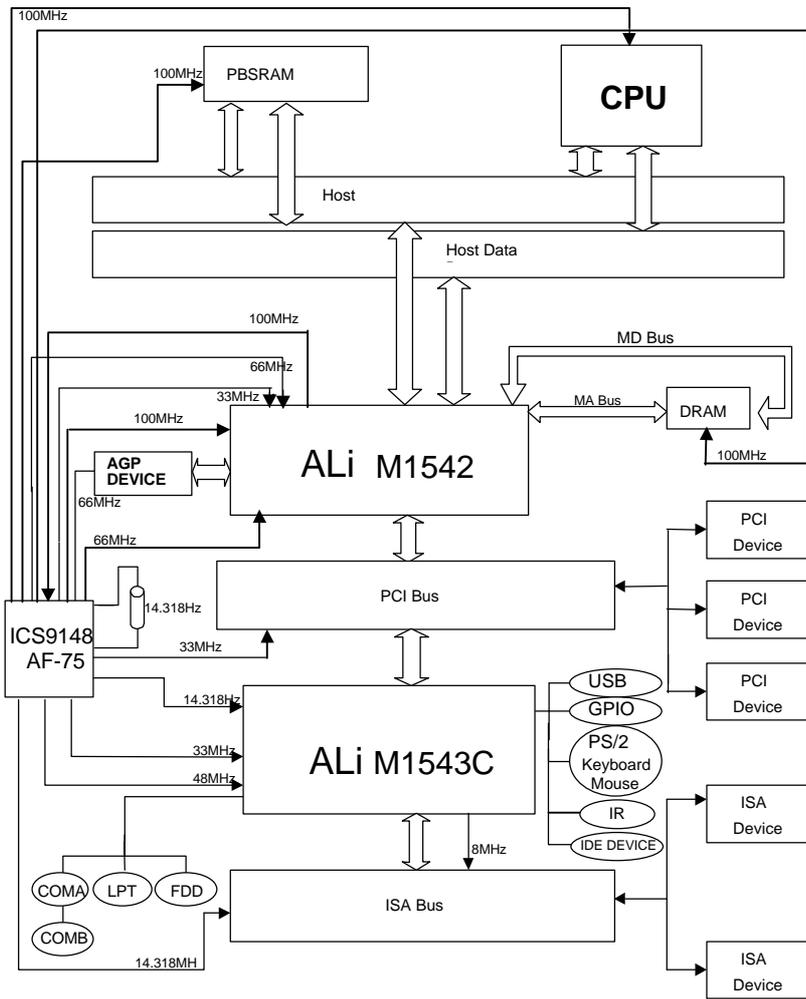
1.5. INTRODUCE THE PCI - BUS

Connecting devices to a CPU local bus can dramatically increase the speed of I/O-bound peripherals with only a slight increase in cost over traditional systems.

This price / Performance point has created a vast market potential for local bus products.

The main barrier to this market has been the lack of an accepted standard for local bus peripherals.

Many mainboard and chipset manufactures developed their own local bus implementations, but they are incompatible with each other.

The VL (Video Electronics Standards Association) local bus and PCI (Peripheral Component Interconnect) bus specification was created to end this confusion.

The PCI - bus standard, under development since Jun. 1992, which is designed to bring workstation-level performance to standard PC platform. The PCI - bus removes many of the bottlenecks that have hampered PC for several years.

On the PCI - bus, peripherals operate at the native speed of the computer system, thus enabling data transfer between peripherals and the system at maximum speed.

This performance is critical for bandwidth-constrained devices such as video, multimedia, mass storage, and networking adapters.

PCI - bus standard provides end-users with a low-cost, extendible and portable local bus design, which will allow system and peripherals from different manufactures to work together.

1.6. FEATURES

- ❑ 32 bits bus transfer mode.
- ❑ Bus Master or Slave access.
- ❑ Memory burst transfer to 132 MB/sec.
- ❑ 33 MHz operation speed.
- ❑ 10 device loading ability.
- ❑ CPU independent.

1.7. What is AGP

The Accelerated Graphics Port (AGP) is a new port on the Host-To-PCI bridge device that supports graphics display interface. The main purpose of the AGP port is to provide fast access to system memory.

The AGP port can be used either as fast PCI port (32-bits at 66MHz vs. 32-bits at 33MHz) or as an AGP port which supports 2x data-rate, a read queue, and side band addressing. When the 2x-data rate is used the port can transmit data at 533Mb/sec (66.6*2*4). The read-queue can be used to pipeline reads – removing the effects of the reads-latency. Side band addressing can be used to transmit the data address on a separate line in order to further speed the transaction.

2. SPECIFICATION

2.1. HARDWARE

- CPU
  - Pentium® Processor
    133 / 166 / 200 MHz ; MMX(166 / 200 / 233)
  - AMD
    K6 (166 / 200 / 233 / 266 / 300)
    K6-2 (266 / 300 / 333 / 350 / 366 / 380 / 400 / 450
        / 475 / 500 / 550)
    K6-III (400 / 450 / 475 / 500 / 550)
  - Cyrix / IBM
    6$_x$86MX (PR166 / PR200 / PR233 / PR266)
    MⅡ PR300 / PR333 / PR366 / PR400
  - IDT
    Winchip 2-(200 / 225 / 233 / 266 / 300)
    Winchip 3-(266)
  - RISE
    MP6-(266)
  - 321 pins (socket 7) ZIF white socket on board.
  - 1.3V-3.5V Dual Power Ready.
- COPROCESSOR
  - Included in processor.
- SPEED
  - 66 / 75 / 83 / 95 /100MHz system speed.
  - 66 MHz AGP-Bus speed.
  - 33 MHz PCI-Bus speed.
  - 8 MHz AT bus speed.
- DRAM MEMORY
  - 3 banks 168 pins DIMM module socket on board.
  - Use 16 / 32 / 64 / 128 / 256 MB 50~60 ns DIMM
    module DRAM.
  - 16 ~ 256 MB DRAM size.
  - Supports 3.3V SDRAM / EDO type DRAM.
  - Supports ECC or Non-ECC type DRAM.
- CACHE MEMORY
  - 16 / 24 / 32 / 64KB L1cache included in CPU.
  - 512 KB 2nd Level cache on board.
  - Supports Write Back cache function for both CPU
    & on board cache.
- I/O BUS SLOTS
  - 3 xMaster / Slave PCI-BUS Slots.
  - 2 x16 bits ISA BUS Slots.
  - 1 xAGP Slot.

- IDE PORTS
  - 2-channel Enhanced IDE port on board.(Using IRQ14,15)
  - Supports Mode 3,4 IDE & ATAPI CD – ROM.
  - Supports Ultra DMA 33 and ATA 66.
- I/O PORTS
  - Supports 2 x16550 COM ports. (Using IRQ4, 3)
  - Supports 1 x SPP/EPP/ECP LPT port. (Using IRQ7 or 5 and DMA3 or 1)
  - Supports 1 x 1.44/2.88 MB Floppy port. (Using DMA2 & IRQ6)
  - Supports PS/2 Mouse. (Using IRQ12)
  - 1 IrDA connector for Fast IrDA
- GREEN FUNCTION
  - Suspend mode support.
  - Green switch .
  - IDE & Display power down support.
  - Monitor all IRQ / DMA / Display / I/O events.
- BIOS
  - 1Mbit FLASH ROM.
  - Supports Plug & Play Function.
- DIMENSION
  - Baby AT Form Factor, 4 layers PCB.

2.2. SOFTWARE

- BIOS
  - Licensed AMI BIOS.
  - AT CMOS Setup, BIOS / Chipset Setup, Green Setup, Hard Disk Utility included.
- O.S.
  - Operation with MS-DOS®, Windows®95, Windows®98, WINDOWS™ NT, OS/2, NOVELL and SCO UNIX.

2.3. ENVIRONMENT

- Ambient Temp.
  - 0°C to +50°C (Operating).
- Relative Hum.
  - 0 to +85% (Operating).
- Altitude
  - 0 to 10,000 feet (Operating).
- Vibration
  - 0 to 1,000 Hz.
- Electricity
  - 4.9 V to 5.2 V.
  - Max. 20A current at 5V.

3. HARDWARE INSTALLATION

3.1. UNPACKING

The mainboard package should contain the following:

- The **5AA** mainboard.

- USER'S MANUAL for mainboard.

- Cable set for IDE ¡ Floppy ¡ I/O Port & PS/2 mouse (Optional).

- CD for Mainboard Drivers and Utilities.

The mainboard contains sensitive electric components which can be easily damaged by static electricity, so the mainboard should be left in its original packing until it is installed.

Unpacking and installation should be done on a grounded anti-static mat.

The operator should be wearing an anti static wristband, grounded at the same point as the anti-static mat.

Inspect the mainboard carton for obvious damage. Shipping and handling may cause damage to your board. Be sure there are no shipping and handling damage on the board before proceeding.

After opening the mainboard carton, extract the system board and place it only on a grounded anti-static surface component side up. Again inspect the board for damage.

Press down on all of the socket IC's to make sure that they are properly seated. Do this only on with the board placed on a firm flat surface.

♠※**DO NOT APPLY POWER TO THE BOARD IF IT HAS BEEN DAMAGED.**

It is assumed that the chassis is designed for a standard AT mainboard mounting. Place the chassis on the anti-static mat and remove the cover.

Take the plastic clips, Nylon stand-off and screws for mounting the system board, and keep them separate.

3.2. MAINBOARD LAYOUT

◄Figure 3.1►

Optional :

◄Figure 3.2►
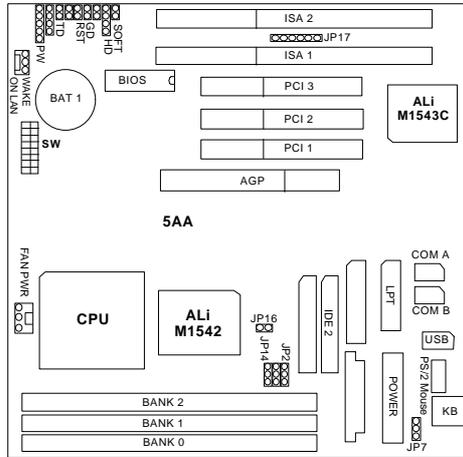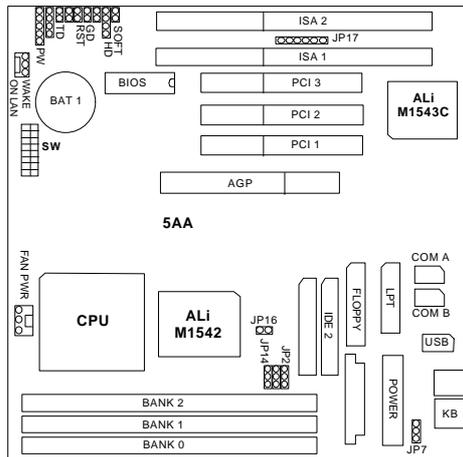
3.3. QUICK REFERENCE FOR JUMPERS & CONNECTORS

♦ I/O Port Connectors	
IDE 1	Primary IDE Port.
IDE 2	Secondary IDE Port.
FLOPPY	Floppy Port.
USB	USB Port.
COM B	Serial Port2 (COM B)
COM A	Serial Port1 (COM A).
LPT	LPT Port.
PS/2	PS/2 Mouse & Keyboard Connector.
Keyboard	Keyboard Connector.
Power	AT Power Connector.
ATX PWR	ATX Power Connector.

♦ PW : Power On LED (PW-LED)	
Pin No.	Function
1	VCC
2	GND
3	GND
4	NC
5	NC

♦ SPK : Speaker Connector	
Pin No.	Function
1	VCC
2	NC.
3	NC.
4	Signal

♦ TD : Turbo LED Connector	
Pin No.	Function
1	LED POWER (+)
2	LED POWER (−)

♦ TB : Turbo Switch Connector	
Pin No.	Function
1	Signal
2	GND

♦ RST : Reset Switch	
Open	Normal operation
Close	Reset system

♦ GD : Green LED Connector	
Pin No.	Function
1	LED anode (+)
2	LED cathode (−)

♦ GN : Green Switch	
Open	Normal operation
Close	Enter Green Mode

♦ HD : Hard Disk Active LED (HD-LED)	
Pin No.	Function
1	LED anode (+)
2	LED cathode (−)
3	LED cathode (−)
4	LED anode (+)

♦ Soft PWR : Soft Power Switch	
Open	Normal operation
Close	Power On/Off

♦ JP6: Wake On Lan	
Pin No.	Function
1	+5V SB
2	GND
3	Signal

♦ FAN Power : CPU Cooling FAN Power Connector	
Pin No.	Function
1	GND
2	+12V
3	Signal

♦ JP7: Keyboard Power On Connector	
Pin No.	Function
1,2 Close	Enabled Keyboard power on.
2,3 Close	Disabled Keyboard power on.

♦ JP17: Infrared Connector	
Pin No.	Function
1	Power +
2	FIR
3	IR Data Input
4	GND
5	IR Data Output
6	Over Current

3.4. SRAM INSTALLATION

Sync. SRAM (Pipeline Burst SRAM)

If Sync SRAM Chip is installed, it consists of Pipeline Burst 1 Pc 64 K x 64 512KByte.

3.5. DRAM INSTALLATION

The mainboard can be installed with 16 / 32 / 64 / 128 / 256 MB 168 pins DIMM module DRAM, and the DRAM speed must be 67~100 MHz for SDRAM. The DRAM memory system on mainboard consists of bank 0, 1 & bank 2.

Because the 168 pins DIMM module is 64 bits width, using 1 PCS which can match a 64 bits system. The total memory size is 16 MB ~ 256 MB DRAM. The DRAM installation position refer to Figure 3.1, and notice the Pin 1 of DIMM module must match with the Pin 1 of DIMM socket. Insert the DRAM DIMM module into the DIMM

socket at Vertical angle. If there is a wrong direction of Pin 1, the DRAM DIMM module couldn't be inserted into socket completely.

3.6. CPU INSTALLATION AND JUMPERS SETUP

The system speed depends on the frequency of CLOCK GENERATOR. The user can change SW selection to set up the system speed to 66 / 75 /83 /95 100MHz for 3.3V/2.5V Pentium® Processor (133 / 166 / 200 MHz) ;MMX(166 / 200 / 233 MHZ) , AMD K6-(166 / 200 / 233 / 266 / 300 ; K6-2(266 / 300 / 333 / 350 / 366 / 380 / 400 / 450 / 475 / 500 / 550) ; K6-III(400 / 450 / 475 / 500 / 550) , Cyrix / IBM 6x86MX (PR166 / PR200 / PR233 / PR266) ; Mᴄ ⸰PR300 / PR333 / PR366 / PR400 ; IDT Winchip 2-(200 / 225 / 233 / 266 / 300) ; IDT Winchip 3-(266) ; RISE MP6-(266). The mainboard can use Pentium® Processor, MMX , AMD-K6, AMD-K6-2, AMD-K6-III, Cyrix / IBM 6x86MX, Cyrix Mᴄ ⸰IDT Winchip 2, IDT Winchip 3, RISE MP6 CPU, and the CPU speed must match with the frequency of CLOCK GEN. It will cause system hanging up if the CLOCK GEN.'S frequency is faster than CPU's.

- ☙ **The CPU is a sensitive electric component and it can be easily damaged by static electricity, so users must keep it away from metal surface when the CPU is installed onto mainboard.**
- ☙ **When the user installs the CPU on socket, please notice that the PIN 1 of CPU is in the same corner as the PIN 1 of socket!**
- ☙ **Before the CPU is installed, the mainboard must be placed on a flat plane in order to avoid being broken by the pressure of CPU installation.**

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	---	---	---	---	---	---

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
X6	O	X	X

JP2	JP1	JP14	JP16	MHz
2-3	2-3	2-3	X	66M
1-2	2-3	2-3	O	75M
1-2	2-3	2-3	X	83M
1-2	1-2	2-3	O	95M
1-2	1-2	2-3	X	100M
1-2	1-2	1-2	X	105M
1-2	1-2	1-2	O	110M
1-2	2-3	1-2	X	115M
1-2	2-3	1-2	O	120M
2-3	1-2	1-2	X	125M
2-3	1-2	1-2	O	130M
2-3	2-3	1-2	X	135M
2-3	2-3	1-2	O	140M

♦Note: It's strongly recommended that set the system speed according to your hardware configuration: CPU, SDRAM, Cards, etc.

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

3.7. CMOS RTC & ISA CFG CMOS SRAM

Built-in Real Time Clock (RTC) With 256B CMOS SRAM in M5819.

3.8. SPEAKER CONNECTOR INSTALLATION

There is a speaker in AT system for sound purpose. The 4 - Pins connector **SPK** is

used to connect speaker. The speaker can work well in both direction of connector when it is installed to the connector **SPK** on mainboard.

3.9. ACPI LED CONNECTOR INSTALLATION

This mainboard uses the existing power LED as ACPI LED .The ACPI LED will light on when system is power-on .The ACPI LED is off when the system is power-off. The ACPI LED will blink when system is in Green mode.This connector should be installed to ACPI LED jumper of the mainboard in correct direction.

3.10. HARDWARE RESET SWITCH CONNECTOR INSTALLATION

The RESET switch on panel provides users with HARDWARE RESET function which is almost the same as power-on/off. The system will do a cold start after the RESET switch is pushed and released by user. The RESET switch is a 2 PIN connector and should be installed to **RES** on mainboard.

3.11. GREEN FUNCTION INSTALLATION

There is one jumper for the purpose of power saving, **GN**, to indicate the power saving function . This mainboard uses the existing power LED as ACPI LED . If the ACPI LED is blinking, the system is in green mode. The **GN** switch will force the system into green mode .

3.12. PERIPHERAL DEVICE INSTALLATION

After installation of the device and setup of the jumpers, the mainboard can be mounted into the case and fixed by screw. To complete the mainboard installation, the peripheral devices could be installed now. The basic system needs a display interface card and a storage device.

If a PCI - Bus device is to be installed in the system, any one of three PCI - Bus slots can be used for Slave or Master PCI - Bus device.

After installing the peripheral device, the user should check everything again and prepare to power-on the system.

4. BIOS CONFIGURATION

AMI's BIOS ROM has a built-in Setup 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.

4.1. ENTERING SETUP

Power ON the computer and press <Del> immediately will allow you to enter Setup.

The other way to enter Setup is to power on the computer, when the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> Key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

- **Press DEL 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>, and <Del> keys.

4.2. CONTROL KEYS

Up arrow	Move to previous item.
Down arrow	Move to next item.
Left arrow	Move to the item in the left hand.
Right arrow	Move to the item in the right hand.
Esc key	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 key /+	Increase the numeric value or make changes.
PgDn key /–	Decrease the numeric value or make changes.
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu.
F2 key	Change color from total 16 colors.
F3 key	Reserved.
F4 key	Reserved.
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu.
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu.
F7 key	Load the default.
F8 key	Reserved.
F9 key	Reserved.
F10 key	Save all the CMOS changes, only for Main Menu.

4.3. GETTING HELP

4.3.1. Main Menu

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

4.3.2. 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>.

4.4. THE MAIN MENU

Once you enter AMI BIOS CMOS Setup Utility, the Main Menu (Figure 4.1) will appear on the screen.

The Main Menu allows you to select setup functions and exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

```
           AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.19
           (C)1998 American Megatrends, Inc. All Rights Reserved

  STANDARD CMOS SETUP              INTEGRATED PERIPHERALS

  BIOS FEATURES SETUP             SUPERVISOR PASSWORD

  CHIPSET FEATURES SETUP          USER PASSWORD

  POWER MANAGEMENT SETUP          IDE HDD AUTO DETECTION

  PNP/PCI CONFIGURATION           SAVE & EXIT SETUP

  LOAD BIOS DEFAULTS              EXIT WITHOUT SAVING

  LOAD SETUP DEFAULTS

  ESC : Quit  ↑ ↓ ← → : Select Item (Shift)F2 : Change Color  F5  : Old Values
  F6  : Load BIOS Defaults     F7  : Load Setup Defaults      F10 : Save & Exit

                    Time, Date, Hard Disk Type, ...
```

Figure 4.1: Main Menu

- Standard CMOS setup

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

- BIOS features setup

  This setup page includes all the items of Award 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 configuration

  This setup page includes all the items of PNP/PCI configuration features.

- Load BIOS defaults

  BIOS defaults indicates the most appropriate value of the system parameter which the system would be in safe configuration.

- Load setup defaults

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

- Integrated Peripherals

  This setup page includes all the items of peripherals features.

- 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 parameter.

- Save & exit setup

  Save CMOS value changes to CMOS and exit setup.

- Exit without save

  Abandon all CMOS value changes and exit setup.

4.5. STANDARD CMOS SETUP MENU

The items in Standard CMOS Setup Menu (Figure 4.2) 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.

```
                    AMIBIOS SETUP - STANDARD CMOS SETUP
               (C)1998 American Megatrends, Inc. All Rights Reserved

Date (mm/dd/yyyy): Fri Oct 23,1998
Time (hh/mm/ss)  : 16:14:01
                  TYPE       SIZE  CYLS  HEAD  PRECOMP  LANDZ  SECTOR  MODE

Pri Master :  Auto           0     0     0      0       0      0      Auto
Pri Slave  :  Auto           0     0     0      0       0      0      Auto
Sec Master :  Auto           0     0     0      0       0      0      Auto
Sec Slave  :  Auto           0     0     0      0       0      0      Auto

Floppy Drive A:  1.44M,3.5 in.                Base Memory : 640 Kb
Floppy Drive B:  Not Install                 Other Memory : 384 Kb
                                          Extended Memory : 128 Mb
Boot Sector Virus Protection  Disabled       Total Memory : 127 Mb

Month:  Jan - Dec                            ESC : Exit
  Day:   01 - 31                             ↑↓  : Select Item
 Year: 1901 - 2099                           PU/PD/+/- : Modify
                                             (Shift)F2 : Color
```

Figure 4.2: Standard CMOS Setup Menu

- Date

  The date format is <week>, <month> <day> <year>. Press <F3> to show the calendar.

Week	The day, from Sun to Sat, determined by the BIOS and is display-only
Month	The month, Jan. through Dec.
Day	The date, from 1 to 31 (or the maximum allowed in the month)
Year	The year, from 1994 through 2079

- Time

  The time format in <hour> <minute> <second>.

  The time is calculated base on the 24-hour military-time clock.

  For example, 1 p.m. is 13:00:00.

- Primary HDDs / Secondary HDDs

  The category identify the types of hard disk from drive C to drive F

  4 devices that has been installed in the computer.

  There are three options for definable type; User, Auto and None .

  Type User is user-definable; and type Auto means automatically detecting HDD's type and None means No IDE HDD installed.

  If you select Type User, related information is asked to be entered to the following items.

  Enter the information directly from the keyboard and press <Enter>.

  Those information should be provided in the documentation from 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 identify 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.	5-1/4 inch PC-type standard drive; 360 kilobyte capacity.
1.2M, 5.25 in.	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity (3-1/2 inch when 3 Mode is Enabled).
720K, 3.5 in.	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in.	3-1/2 inch double-sided drive; 1.44 megabyte capacity.
2.88M, 3.5 in.	3-1/2 inch double-sided drive; 2.88 megabyte capacity.

- Memory

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

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

Expanded Memory

Expanded Memory in memory defined by the Lotus / Intel / Microsoft (LIM) standard as EMS.

Many standard DOS applications can not utilize memory above 640, the Expanded Memory Specification (EMS) swaps memory which not utilized by DOS with a section, or frame, so these applications can access all of the system memory.

Memory can be swapped by EMS is usually 64K   within 1 MB or memory above 1 MB, depends on the chipset design.

Expanded memory device driver is required to use memory as Expanded Memory.

Other Memory

This refers to the memory located in the 640 to 1024 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.

4.6. BIOS FEATURES SETUP

```
                  AMIBIOS SETUP - BIOS FEATURES SETUP
            (C)1998 American Megatrends, Inc. All Rights Reserved

1st Boot Device           :Floppy      C800,16k Shadow        :Disabled
2nd Boot Device           :IDE-0       CC00,16k Shadow        :Disabled
3rd Boot Device           :SCSI        D000,16k Shadow        :Disabled
4th Boot Device           :Disabled    D400,16k Shadow        :Disabled
Try Other Boot Devices    :Yes         D800,16k Shadow        :Disabled
Quick Boot                :Disabled    DC00,16k Shadow        :Disabled
BootUp Num-Lock           :On
Floppy Drive Swap         :Disabled
Floppy Drive Seek         :Enabled
Floppy Access Control     :Normal
HDD Access Control        :Normal
PS/2 Mouse Support        :Enabled
Primary Display           :VGA/EGA
Password Check            :Setup
Parity Check              :Disabled
Boot To OS/2              :No          ESC : Quit          ↑↓←→ : Select Item
Internal Cache            :Enabled     F1  : Help          PU/PD/+/- : Modify
External Cache            :Enabled     F5  : Old Values  (Shift)F2 : Color
System BIOS Cacheable     :Disabled    F6  : Load BIOS Defaults
Video BIOS Shadow         :Enabled     F7  : Load Setup Defaults
```

Figure 4.3: BIOS Features Setup

- 1st / 2nd / 3rd / 4th Boot Device

   The default value is Floppy or LS/ZIP A: or ATAPI ZIP C: or CDROM or SCSI or NETWORK or IDE-0~IDE-3 or Disabled.

Floppy	Boot Device by Floppy.
LS/ZIP A:	Boot Device by LS/ZIP A:.
ATAPI ZIP C:	Boot Device by ATAPI ZIP C:.
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.

- Try Other Boot Devices

   The default value is Yes.

Yes	Enable Try Other Boot Devices function.
No	Disable Try Other Boot Devices function.

● Quick Boot

The default value is Disabled.

Enabled	Enabled Quick Boot Function.
Disabled	Disabled Quick Boot Function.

● Bootup Num-Lock

Default value is On.

On	Keypad is number keys.
Off	Keypad is arrow keys.

● Floppy Drive Swap

The default value is Disabled.

Enabled	Floppy A & B will be swapped under DOS.
Disabled	Floppy A & B will be normal definition.

● 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.

The default value is Enabled.

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 .

● Floppy Access Control

The default value is Normal.

Normal	Set Floppy Access Control : Normal.
Read Only	Set Floppy Access Control : Read Only.

- HDD Access Control

  The default value is Normal.

Normal	Set HDD Access Control : Normal.
Read Only	Set HDD Access Control : Read Only.

- PS/2 Mouse Support

  The default value is Enabled.

Enabled	Enabled PS/2 Mouse Support Function.
Disabled	Disabled PS/2 Mouse Support Function.

- Primary Display

  The default value is VGA / EGA.

VGA / EGA	Set Primary Display to VGA / EGA.
CGA 40x25	Set Primary Display to CGA 40x25.
CGA 80x25	Set Primary Display to CGA 80x25.
Mono	Set Primary Display to Mono.
Absent	Set Primary Display to Absent.

- Password Check

  The default value is Setup.

Setup	Set Password Check to Setup.
Always	Set Password Check to Always.

- Parity Check

  The default value is Disabled.

Enabled	Enabled Parity Check Function.
Disabled	Disabled Parity Check Function.

- Boot To OS/2

  The default value is No.

Yes	Enabled Boot To OS/2.
No	Disabled Boot To OS/2.

- Internal Cache

  The default value is Enabled.

Enabled	Enabled Internal Cache Function.
Disabled	Disabled Internal Cache Function.

- External Cache

  The default value is Enabled.

Enabled	Enabled External Cache Function.
Disabled	Disabled External Cache Function.

- System BIOS Cacheable

  The default value is Disabled.

Enabled	Enabled System BIOS Cacheable.
Disabled	Disabled System BIOS Cacheable.

- Video BIOS Shadow

  It determines whether video BIOS will copied to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

  The default value is Enabled.

Enabled	Video shadow is enabled.
Disabled	Video shadow is disabled.
Cached	Video shadow is cached.

- C800 , 16k Shadow / D000 , 16k Shadow

  These categories determine whether optional ROM will be copied to RAM by 16 byte. The default value are Disabled.

Enabled	Optional shadow is enabled.
Disabled	Optional shadow is disabled.
Cached	Optional shadow is cached.

4.7. CHIPSET FEATURES SETUP

```
        AMIBIOS SETUP - CHIPSET FEATURES SETUP
      (C)1998 American Megatrends, Inc. All Rights Reserved

USB Function            :Enabled
USB Legacy Support      :Disabled
SDRAM CAS Latency       :Auto
DRAM Data Integrity Mode :Parity
SDRAM Burst Mode        :Enabled
DRAM Timing             :Normal
Pipe Function           :Enabled
Gated Clock             :Disabled
Graphic Aperture Size   :64MB
Primary Frame Buffer    : All
VGA Frame Buffer        :Enabled
   Data Merge           :Disabled
Passive Release         :Enabled
ISA Line Buffer         :Enabled
Delay Transaction       :Disabled       ESC : Quit        ↑↓←→ : Select Item
AT Bus Clock            : Auto          F1  : Help         PU/PD/+/- : Modify
AMD K6 Write Allocate   :Disabled       F5  : Old Values  (Shift)F2 : Color
Spread Spectrum         :Disabled       F6  : Load BIOS Defaults
                                        F7  : Load Setup Defaults
```

Figure 4.4: Chipset Features Setup

- USB Function

  The default value is Enabled.

Enabled	Enabled USB Function.
Disabled	Disabled USB Function.

- USB Legacy Support.

  The default value is Disabled.

Enabled	Enabled USB Legacy Support Function.
Disabled	Disabled USB Legacy Support Function.

- SDRAM CAS Latency

  The default value is Auto.

3	For Slower SDRAM DIMM module.
2	For Fastest SDRAM DIMM module.
Auto	CAS latency time will be set automatically if you have SPD on SDRAM.

4-13

- DRAM Data Integrity Mode

  The default value is Parity.

ECC	Set DRAM Data Integrity Mode to ECCMode.
Parity	Set DRAM Data Integrity Mode to ParityMode.

- SDRAM Burst Mode

  The default value is Enabled.

Enabled	Enabled SDRAM Burst X-1-1-1-1-1-1-1.
Disabled	Disabled SDRAM Burst X-1-1-1-1-1-1-1.

- DRAM Timing

  The default value is Normal.

Normal	For normal DRAM timing operation.
Fast	For Fastest DRAM timing operation.
Slow	For Slower DRAM timing operation.

- Pipe Function

  The default value is Enabled.

Enabled	Enabled Pipe Function.
Disabled	Disabled Pipe Function.

- Gated Clock

  The default value is Disabled.

Enabled	Enabled Gated Clock Function.
Disabled	Disabled Gated Clock Function.

- Graphics Aperture Size

  The default value is 64MB.

4M	Set Graphics Aperture Size to 4MB.
8M	Set Graphics Aperture Size to 8MB.
16MB	Set Graphics Aperture Size to 16MB.
32MB	Set Graphics Aperture Size to 32MB.
64MB	Set Graphics Aperture Size to 64MB.
128MB	Set Graphics Aperture Size to 128MB.
256MB	Set Graphics Aperture Size to 256MB.

- Primary Frame Buffer

  The default value is All.

All	Set Primary Frame Buffer to All.
1MB	Set Primary Frame Buffer to 1MB.
2MB	Set Primary Frame Buffer to 2MB.
4MB	Set Primary Frame Buffer to 4MB.
8MB	Set Primary Frame Buffer to 8MB.
16MB	Set Primary Frame Buffer to 16MB.
Disabled	Disabled Primary Frame Buffer.

- VGA Frame Buffer

  The default value is Enabled.

Enabled	Enable VGA Frame Buffer.
Disabled	Disable VGA Frame Buffer.

- Data Merge

  The default value is Disabled.

Enabled	Enable Data Merge.
Disabled	Disable Data Merge.

- Passive Release

  The default value is Enabled.

Enabled	Enable Passive Release.
Disabled	Disable Passive Release.

- ISA Line Buffer

  The default value is Enabled.

Enabled	Enable ISA Line Buffer.
Disabled	Disable ISA Line Buffer.

- Delay Transaction

  The default value is Disabled.

Enabled	Enable Delay Transaction.
Disabled	Disable Delay Transaction.

- AT Bus Clock

  The default value is Auto.

7.19MHz	Set AT Bus Clock to 7.19MHz.
PCICLK/2	Set AT Bus Clock to PCICLK/2.
PCICLK/3	Set AT Bus Clock to PCICLK/3.
PCICLK/4	Set AT Bus Clock to PCICLK/4.
PCICLK/5	Set AT Bus Clock to PCICLK/5.
PCICLK/6	Set AT Bus Clock to PCICLK/6.
Auto	Set AT Bus Clock to Auto.

- AMD K6 Write Allocate

  The default value is Disabled.

Enabled	Enabled AMD K6 Write Allocate.
Disabled	Disabled AMD K6 Write Allocate.

● Spread Spectrum

The default value is Disabled.

Disabled	Normal.
0.6%(CNTR)	Set Spread Spectrum 0.6%(Center Spread).

4.8. POWER MANAGEMENT SETUP

```
         AMIBIOS SETUP - POWER MANAGEMENT SETUP
      (C)1998 American Megatrends, Inc. All Rights Reserved

Power Management/APM      :Enabled    *RTC Alarm Minute      :30
Green Monitor Power State:Off         *RTC Alarm Second      :30
Video Power Down Mode     :Stand By
Hard Disk Power Down Mode:Disabled
Standby Time Out          :Disabled
Suspend Time Out          :Disabled
  Monitor Parallel Port   :Yes
  Monitor Serial Port     :Yes
  Monitor Floppy          :Yes
  Monitor VGA             :No
  Monitor Audio           :No
  Monitor Pri-HDD         :Yes
  Monitor Sec-HDD         :No
Power Button Function     :Soft Off
MODEM Use IRQ             :3
LAN Modem Ring On         :Disabled   ESC : Quit        ↑↓←→ : Select Item
RTC Alarm Resume          :Disabled   F1  : Help        PU/PD/+/- : Modify
 *RTC Alarm Date          :Every Day  F5  : Old Values  (Shift)F2 : Color
 *RTC Alarm Hour          :12         F6  : Load BIOS Defaults
                                      F7  : Load Setup Defaults
```

Figure 4.5: Power Management Setup

*These four items will be available when RTC Alarm Resume is set to
 Enabled.

● Power Management / APM

The default value is Enabled.

Enabled	Enable Green function.
Disabled	Disable Green function.

● Green Monitor Power State

The default value is Off.

Off	Set Green Monitor Power State to Off.
Stand By	Set Green Monitor Power State to Stand By.
Suspend	Set Green Monitor Power State to Suspend.

- Video Power Down Mode

  The default value is Stand By.

Disabled	Disabled Video Power Down Mode Function.
Stand By	Set Video Power Down Mode to Stand By.
Suspend	Set Video Power Down Mode to Suspend.

- Hard Disk Power Down Mode

  The default value is Disabled.

Disabled	Disabled Hard Disk Power Down Mode Function .
Stand By	Set Hard Disk Power Down Mode to Stand By.
Suspend	Set Hard Disk Power Down Mode to Suspend.

- Standby Time Out

  The default value is Disabled.

Disabled	Disabled Standby Time Out Function .
1min	Enabled Standby Time Out between 1min.
5min	Enabled Standby Time Out between 5min.
10min	Enabled Standby Time Out between 10min.
30min	Enabled Standby Time Out between 30min.
1hr	Enabled Standby Time Out between 1hr.
2hr	Enabled Standby Time Out between 2hr.
4hr	Enabled Standby Time Out between 4hr.

- Suspend Time Out

  The default value is Disabled.

Disabled	Disabled Suspend Time Out Function .
1min	Enabled Suspend Time Out between 1min.
5min	Enabled Suspend Time Out between 5min.
10min	Enabled Suspend Time Out between 10min.
30min	Enabled Suspend Time Out between 30min.
1hr	Enabled Suspend Time Out between 1hr.
2hr	Enabled Suspend Time Out between 2hr.
4hr	Enabled Suspend Time Out between 4hr.

- Monitor Parallel Port

  The default value is Yes.

Yes	Enabled Monitor Parallel Port Function.
No	Disabled Monitor Parallel Port Function.

- Monitor Serial Port

  The default value is Yes.

Yes	Enabled Monitor Serial Port Function.
No	Disabled Monitor Serial Port Function.

- Monitor Floppy

  The default value is Yes.

Yes	Enabled Monitor Floppy Function.
No	Disabled Monitor Floppy Function.

- Monitor VGA

  The default value is No.

Yes	Enabled Monitor VGA Function.
No	Disabled Monitor VGA Function.

- Monitor Audio

  The default value is No.

Yes	Enabled Monitor Audio Function.
No	Disabled Monitor Audio Function.

- Monitor Pri-HDD

  The default value is Yes.

Yes	Enabled Monitor Pri-HDD Function.
No	Disabled Monitor Pri-HDD Function.

- Monitor Sec-HDD

  The default value is No.

Yes	Enabled Monitor Sec-HDD Function.
No	Disabled Monitor Sec-HDD Function.

- Power Button Function

  The default value is Soft Off.

Soft Off	Set Power Button Function to Soft Off.
Suspend	Set Power Button Function to Delay 4 sec.

- MODEM Use IRQ

  The default value is 3.

NA	Set MODEM Use IRQ to NA.
3	Set MODEM Use IRQ to 3.
4	Set MODEM Use IRQ to 4.
5	Set MODEM Use IRQ to 5.
7	Set MODEM Use IRQ to 7.
9	Set MODEM Use IRQ to 9.
10	Set MODEM Use IRQ to 10.
11	Set MODEM Use IRQ to 11.

- LAN / Modem Ring On

  The default value is Disabled.

Enabled	Enable Ring Resume From Soft Off function.
Disabled	Disable Ring Resume From Soft Off function.

- RTC Alarm Resume

The default value is Disabled.

Enabled	Enable RTC Alarm Resume function.
Disabled	Disable RTC Alarm Resume function.

If RTC Alarm Resume is Enabled.

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

4.9. PNP/PCI CONFIGURATION

```
            AMIBIOS SETUP - PNP/PCI CONFIGURATION
        (C)1998 American Megatrends, Inc. All Rights Reserved

 Plug and Play Aware O/S   :No      IRQ5              :PCI/PnP
 Clear NVRAM               :No      IRQ7              :ISA/EISA
 PCI Latency Timer         :64      IRQ9              :PCI/PnP
 Primary Graphics Adapter  :PCI     IRQ10             :PCI/PnP
 PCI VGA Palette Snoop     :Disabled IRQ11            :PCI/PnP
 OffBoard PCI IDE Card     :Auto    IRQ12             :PCI/PnP
*OffBoard PCI IDE Pri.IRQ  :Disabled IRQ14            :PCI/PnP
*OffBoard PCI IDE Sec.IRQ  :Disabled IRQ15            :PCI/PnP
 Assign IRQ to PCI VGA     :Yes
 PCI Slot1 IRQ Priority    :Auto
 PCI Slot2 IRQ Priority    :Auto
 PCI Slot3 IRQ Priority    :Auto
 DMA Channel 0             :PnP
 DMA Channel 1             :PnP
 DMA Channel 3             :PnP
 DMA Channel 5             :PnP    ESC : Quit       ↑↓↔ : Select Item
 DMA Channel 6             :PnP    F1  : Help       PU/PD/+/- : Modify
 DMA Channel 7             :PnP    F5  : Old Values  (Shift)F2 : Color
 IRQ3                      :ISA/EISA F6 : Load BIOS Defaults
 IRQ4                      :ISA/EISA F7 : Load Setup Defaults
```

Figure 4.6: PCI Slot Configuration

*These two items will be available when OffBoard PCI IDE Card is set to
Slot 1.

- Plug and Play Aware O/S

  The default value is No.

Yes	Enable Plug and Play Aware O/S function.
No	Disable Plug and Play Aware O/S function.

- Clear NVRAM

  The default value is No.

Yes	Enable Clear NVRAM function.
No	Disable Clear NCRAM function.

● PCI Latency Timer

The default value is 64.

32	Set PCI Latency Timer to 32.
64	Set PCI Latency Timer to 64.
96	Set PCI Latency Timer to 96.
128	Set PCI Latency Timer to 128.
160	Set PCI Latency Timer to 160.
192	Set PCI Latency Timer to 190.
224	Set PCI Latency Timer to 224.
248	Set PCI Latency Timer to 248.

● Primary Graphics Adapter

The default value is PCI.

PCI	Set Primary Graphics Adapter to PCI.
AGP	Set Primary Graphics Adapter to AGP.

● PCI VGA Palette Snoop

The default value is Disabled.

Enabled	Enabled PCI VGA Palette Snoop Function.
Disabled	Disabled PCI VGA Palette Snoop Function.

● OffBoard PCI IDE Card

The default value is Auto.

Auto	Set OffBoard PCI IDE Card to Auto.
Slot 1	Set OffBoard PCI IDE Card to Slot 1.
Slot 2	Set OffBoard PCI IDE Card to Slot 2.
Slot 3	Set OffBoard PCI IDE Card to Slot 3.

- OffBoard PCI IDE Pri.IRQ

    The default value is Disabled.

Disabled	Disabled OffBoard PCI IDE Pri.IRQ .
INTA	Set OffBoard PCI IDE Pri.IRQ to INTA.
INTB	Set OffBoard PCI IDE Pri.IRQ to INTB.
INTC	Set OffBoard PCI IDE Pri.IRQ to INTC.
INTD	Set OffBoard PCI IDE Pri.IRQ to INTD.
Hardwired	Set OffBoard PCI IDE Pri.IRQ to Hard wired.

- OffBoard PCI IDE Sec.IRQ

    The default value is Disabled.

Disabled	Disabled OffBoard PCI IDE Sec.IRQ .
INTA	Set OffBoard PCI IDE Sec.IRQ to INTA.
INTB	Set OffBoard PCI IDE Sec.IRQ to INTB.
INTC	Set OffBoard PCI IDE Sec.IRQ to INTC.
INTD	Set OffBoard PCI IDE Sec.IRQ to INTD.
Hardwired	Set OffBoard PCI IDE Sec.IRQ to Hard wired.

- Assign IRQ to PCI VGA

    The default value is Yes.

Yes	Enabled Assign IRQ to PCI VGA Function.
No	Disabled Assign IRQ to PCI VGA Function.

- PCI Slot1 / Slot2 / Slot3 IRQ Priority

    The default value is Auto.

3~12	Set PCI Slot1 / Slot2 / Slot3 IRQ Priority between 3 to 12.
Auto	Set PCI Slot1 / Slot2 / Slot3 IRQ Priority to Auto.

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

    The default value is PnP.

ISA/EISA	The resource is used by ISA/EISA device.
PnP	The resource is used by PnP device.

- IRQ (3,4,5,7,9,10,11,12,14,15)

  The default value is "ISA/EISA" or "PCI/PnP".

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

4.10. LOAD BIOS DEFAULTS

```
           AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.19
           (C)1998 American Megatrends, Inc. All Rights Reserved

   STANDARD CMOS SETUP                INTEGRATED PERIPHERALS

   BIOS FEATURES SETUP                SUPERVISOR PASSWORD

   CHIPSET FEATURES SETUP             USER PASSWORD

   POWER MANAGEMENT SE┌──────────────────────────┐O DETECTION
                      │                          │
   PNP/PCI CONFIGURATI│ Load BIOS Defaults (Y/N) ? N │ SETUP
                      │                          │
   LOAD BIOS DEFAULTS └──────────────────────────┘T SAVING

   LOAD SETUP DEFAULTS

ESC : Quit  ↑↓←→ : Select Item (Shift)F2 : Change Color  F5  : Old Values
F6  : Load BIOS Defaults    F7  : Load Setup Defaults      F10 : Save & Exit

          Load BIOS Defaults except Standard CMOS SETUP
```

Figure 4.7: Load BIOS Defaults

- Load BIOS Defaults

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

4.11. LOAD SETUP DEFAULTS

```
┌─────────────────────────────────────────────────────────────────┐
│           AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.19            │
│          (C)1998 American Megatrends, Inc. All Rights Reserved   │
├─────────────────────────────────────────────────────────────────┤
│  STANDARD CMOS SETUP              INTEGRATED PERIPHERALS         │
│                                                                 │
│  BIOS FEATURES SETUP              SUPERVISOR PASSWORD            │
│                                                                 │
│  CHIPSET FEATURES SETUP           USER PASSWORD                  │
│                                                                 │
│  POWER MANAGEMENT SE┌──────────────────────────┐O DETECTION     │
│                     │                          │                │
│  PNP/PCI CONFIGURATI│ Load SETUP Defaults (Y/N) ? N │ SETUP      │
│                     │                          │                │
│  LOAD BIOS DEFAULTS  └──────────────────────────┘T SAVING       │
│                                                                 │
│  LOAD SETUP DEFAULTS                                            │
├─────────────────────────────────────────────────────────────────┤
│ ESC : Quit  ↑ ↓ ← → : Select Item (Shift)F2 : Change Color  F5  : Old Values │
│ F6  : Load BIOS Defaults    F7  : Load Setup Defaults       F10 : Save & Exit │
├─────────────────────────────────────────────────────────────────┤
│           Load SETUP Defaults except Standard CMOS SETUP        │
└─────────────────────────────────────────────────────────────────┘
```

Figure 4.8: Load Setup Defaults

- Load SETUP Defaults

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

💣 **If there is any problem occurred, loading BIOS DEFAULTS step is recommended.**

4.12. INTEGRATED PERIPHERALS

```
              AMIBIOS SETUP - INTEGRATED PERIPHERALS
            (C)1998 American Megatrends, Inc. All Rights Reserved

    OnBoard FDC              :Enabled
    OnBoard Serial Port1     :3F8h/COM1
    OnBoard Serial Port2     :2F8h/COM2
    OnBoard Serial Port3     :Disabled
  * Serial Port3  Mode       : N/A
  * Serial Port3  IRQ        : N/A
  * Serial Port3  DMA        : N/A
    OnBoard Parallel Port    :378h
    Parallel Port Mode       :SPP
    Parallel Port IRQ        :7
 ** Parallel Port DMAChannel: N/A
    KeyBoard PowerOn         :Disabled
  # PowerOn Select           : N/A
  # HotKey Select            : N/A
    OnBoard IDE              :Both

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

Figure 4.9: Integrated peripherals

∗ These two items will Enabled when OnBoard Serial Port3 is set to
  Enabled.
∗∗The item will Enable when Parallel Port Mode is set to ECP
\# These two items will show up when KeyBoard PowerOn is set to Enabled

- OnBoard FDC

    The default value is Enabled.

Enabled	Enabled OnBoard FDC Function.
Disabled	Disabled OnBoard FDC Function.
Auto	Set OnBoard FDC Function is Auto.

- OnBoard Serial Port 1

  The default value is 3F8h/COM1.

Auto	BIOS will automatically setup the port 1 address.
3F8h/COM1	Enable OnBoard Serial port 1 and address is 3F8h.
2F8h/COM2	Enable OnBoard Serial port 1 and address is 2F8h.
3E8h/COM3	Enable OnBoard Serial port 1 and address is 3E8h.
2E8h/COM4	Enable OnBoard Serial port 1 and address is 2E8h.
Disabled	Disable OnBoard Serial port 1.

- OnBoard Serial Port 2

  The default value is 2F8h/COM2.

Auto	BIOS will automatically setup the port 2 address.
3F8h/COM1	Enable OnBoard Serial port 2 and address is 3F8h.
2F8h/COM2	Enable OnBoard Serial port 2 and address is 2F8h.
3E8h/COM3	Enable OnBoard Serial port 2 and address is 3E8h.
2E8h/COM4	Enable OnBoard Serial port 2 and address is 2E8h.
Disabled	Disable OnBoard Serial port 2.

- OnBoard Serial Port 3

  The default value is Disabled.

Auto	BIOS will automatically setup the port 3 address.
3F8h/COM1	Enable OnBoard Serial port 3 and address is 3F8h.
2F8h/COM2	Enable OnBoard Serial port 3 and address is 2F8h.
3E8h/COM3	Enable OnBoard Serial port 3 and address is 3E8h.
2E8h/COM4	Enable OnBoard Serial port 3 and address is 2E8h.
Disabled	Disable OnBoard Serial port 3.

- Serial Port 3 Mode

  The default value is N/A.

FIR	Onboard I/O chip supports FIR.
IrDA	Onboard I/O chip supports IrDA.
ASKIR	Onboard I/O chip supports ASKIR.

- Serial Port 3 IRQ

  The default value is N/A.

3	Set Serial Port 3 IRQ to 3.
4	Set Serial Port 3 IRQ to 4.
5	Set Serial Port 3 IRQ to 5.
9	Set Serial Port 3 IRQ to 9.
10	Set Serial Port 3 IRQ to 10.
11	Set Serial Port 3 IRQ to 11.

- Serial Port 3 DMA

  The default value is N/A.

1	Set Serial Port 3 DMA to 1.
3	Set Serial Port 3 DMA to 3.

- OnBoard Parallel port

  The default value is 378h.

378h	Enable onBoard LPT port and address is 378h.
278h	Enable onBoard LPT port and address is 278h.
3BCh	Enable onBoard LPT port and address is 3BCh.
Auto	Set OnBoard LPT port is Auto.
Disabled	Disable onBoard LPT port.

- Parallel Port Mode

  The default value is SPP.

SPP	Using Parallel port as Standard Parallel Port.
ECP	Using Parallel port as Extended Capabilities Port.
EPP	Using Parallel port as Enhanced Parallel Port.
ECP+EPP	Using Parallel port as ECP & EPP mode.

- Parallel Port IRQ

  The default value is 7.

7	Set Parallel Port IRQ to 7.
5	Set Parallel Port IRQ to 5.

- Parallel Port DMA Channel

  The default value is N/A.

1	Set Parallel Port DMA Channel to 1.
3	Set Parallel Port DMA Channel to 3.

- KeyBoard PowerOn

  The default value is Disabled.

Enabled	Enabled KeyBoard PowerOn.
Disabled	Disabled KeyBoard PowerOn.

- PowerOn Select

  The default value is N/A.

Hot Key	KB PWR ON/OFF Function Set Enabled, KB PWR ON/OFF Password : Enter will show up. When users enabled KB PWR ON/OFF Function, please set password with three different characters, and press the three different characters password at the same time. For example, if users set "abc"as password , then he would press"a" "b" "c" at the same time. (a-b-c is hot key) .
Pass Word	You can power on your system by entering the keyboard power on password. If your password consists of more than one character, you have to press the ENTER key after entering the password.

- HotKey Select

  The default value is N/A.

Ctrl-Alt-F1~F12	Set HotKey Select Function to Ctrl-Alt-F1~F12.
Ctrl-Alt-Ins	Set HotKey Select Function to Ctrl-Alt-Ins.
Ctrl-Alt-Del	Set HotKey Select Function to Ctrl-Alt-Del.
Ctrl-Alt-LShift	Set HotKey Select Function to Ctrl-Alt-LShift.
Ctrl-Alt-RShift	Set HotKey Select Function to Ctrl-Alt-RShift.

- OnBoard IDE

  The default value is Both.

Both	Set OnBoard IDE is Both.
Disabled	Disabled OnBoard IDE Function.
Primary	Set OnBoard IDE is Primary.
Secondary	Set OnBoard IDE is Secondary.

4.13.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.

```
AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.19
(C)1998 American Megatrends, Inc. All Rights Reserved

STANDARD CMOS SETUP              INTEGRATED PERIPHERALS

BIOS FEATURES SETUP              SUPERVISOR PASSWORD

CHIPSET FEATURES SETUP           USER PASSWORD

POWER MANAGEMENT SE                              O DETECTION

PNP/PCI CONFIGURATI   Enter new supervisor password:   SETUP

LOAD BIOS DEFAULTS                               T SAVING

LOAD SETUP DEFAULTS

ESC : Quit   ↑ ↓ ← → : Select Item (Shift)F2 : Change Color  F5  : Old Values
F6  : Load BIOS Defaults      F7  : Load Setup Defaults      F10 : Save & Exit

Change / Set / Disable Password
```

Figure 4.10: Password Setting

Type the password, up to eight characters, and press <Enter>. The password typed now will clear 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 will confirm the password being disabled.

Once the password is disabled, the system will boot and you can enter Setup freely.

    PASSWORD DISABLED

If you select System at Security Option of 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.

If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

4.14. IDE HDD AUTO DETECTION

```
                AMIBIOS SETUP - STANDARD CMOS SETUP
          (C)1998 American Megatrends, Inc. All Rights Reserved

Date (mm/dd/yyyy): Fri Oct 23,1998
Time (hh/mm/ss)  : 16:14:01
              TYPE        SIZE  CYLS  HEAD  PRECOMP  LANDZ  SECTOR  MODE

Pri Master : Auto          0     0     0      0       0       0     Auto
Pri Slave  : Auto          0     0     0      0       0       0     Auto
Sec Master : Auto          0     0     0      0       0       0     Auto
Sec Slave  : Auto          0     0     0      0       0       0     Auto

Floppy Drive A:  1.44M,3.5 in.            Base Memory : 640 Kb
Floppy Drive B:  Not Install             Other Memory : 384 Kb
                                      Extended Memory : 128 Mb
Boot Sector Virus Protection  Disabled    Total Memory : 127 Mb

Month:  Jan - Dec                       ESC : Exit
  Day:   01 - 31                        ↑↓  : Select Item
 Year: 1901 - 2099                      PU/PD/+/- : Modify
                                        (Shift)F2 : Color
```

Figure 4.11: IDE HDD Auto Detection

The screen will display the¡ Standard CMOS Setup¡ önce you enter the menu.

User won' t need to make any changes to items in the menu. The system will auto detect the HDD and save it in the CMOS setup menu.

4.15. SAVE & EXIT SETUP

```
            AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.19
            (C)1998 American Megatrends, Inc. All Rights Reserved

   STANDARD CMOS SETUP                INTEGRATED PERIPHERALS

   BIOS FEATURES SETUP                SUPERVISOR PASSWORD

   CHIPSET FEATURES SETUP             USER PASSWORD

   POWER MANAGEMENT SE                             O DETECTION

   PNP/PCI CONFIGURATI    SAVE to CMOS and EXIT (Y/N) ? N    SETUP

   LOAD BIOS DEFAULTS                             T SAVING

   LOAD SETUP DEFAULTS

   ESC : Quit  ↑ ↓ ← → : Select Item  (Shift)F2 : Change Color  F5  : Old Values
   F6  : Load BIOS Defaults     F7  : Load Setup Defaults      F10 : Save & Exit

                        Save Date to CMOS & Exit SETUP
```

Figure 4.12: Save & Exit Setup

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

Type "N" will return to Setup Utility.

4.16. EXIT WITHOUT SAVING

```
        AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.19
          (C)1998 American Megatrends, Inc. All Rights Reserved

   STANDARD CMOS SETUP                 INTEGRATED PERIPHERALS

   BIOS FEATURES SETUP                 SUPERVISOR PASSWORD

   CHIPSET FEATURES SETUP              USER PASSWORD

   POWER MANAGEMENT SE┌─────────────────────────┐ O DETECTION
                      │                         │
   PNP/PCI CONFIGURATI│ Quit without saving (Y / N) ? N │ SETUP
                      │                         │
   LOAD BIOS DEFAULTS  └─────────────────────────┘ T SAVING

   LOAD SETUP DEFAULTS

   ESC : Quit  ↑ ↓ ← → : Select Item  (Shift)F2 : Change Color  F5  : Old Values
   F6  : Load BIOS Defaults     F7  : Load Setup Defaults      F10 : Save & Exit

                      Abandon all Datas & Exit SETUP
```

Figure 4.13: Exit Without Saving

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

Type "N" will return to Setup Utility.

5. Troubleshooting

How to remove *"?PCI Universal Serial Bus"* under the Windows 95 ?

Method 1:

1.Please Install Windows 95 OSR2.1 attached file "USBSUPP.EXE"

2.Run this file and then system will restart.

3.Please go to the Device Manager , and remove "?PCI Universal Serial Bus".

4.Please press "Refresh" buttom.

5.System will request your USB Driver under the directory c:\windows\system\openhci.sys

6.Choose this directory and press "OK", System will find Open HCI's USB Driver.

7.Restart your system.

Method 2:

1. Go to the web site of ALi (http://www.ali.com.tw/eframes.htm)

2. Download ALi USB Host Controller Supplement.

3. Install the file according to readme.

FCC Compliance Statement:

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-5AA

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 : NOV. 25, 1998   Name   : _Rex Lin_