



ALi-DEEP GREEN

486WB

user's manual

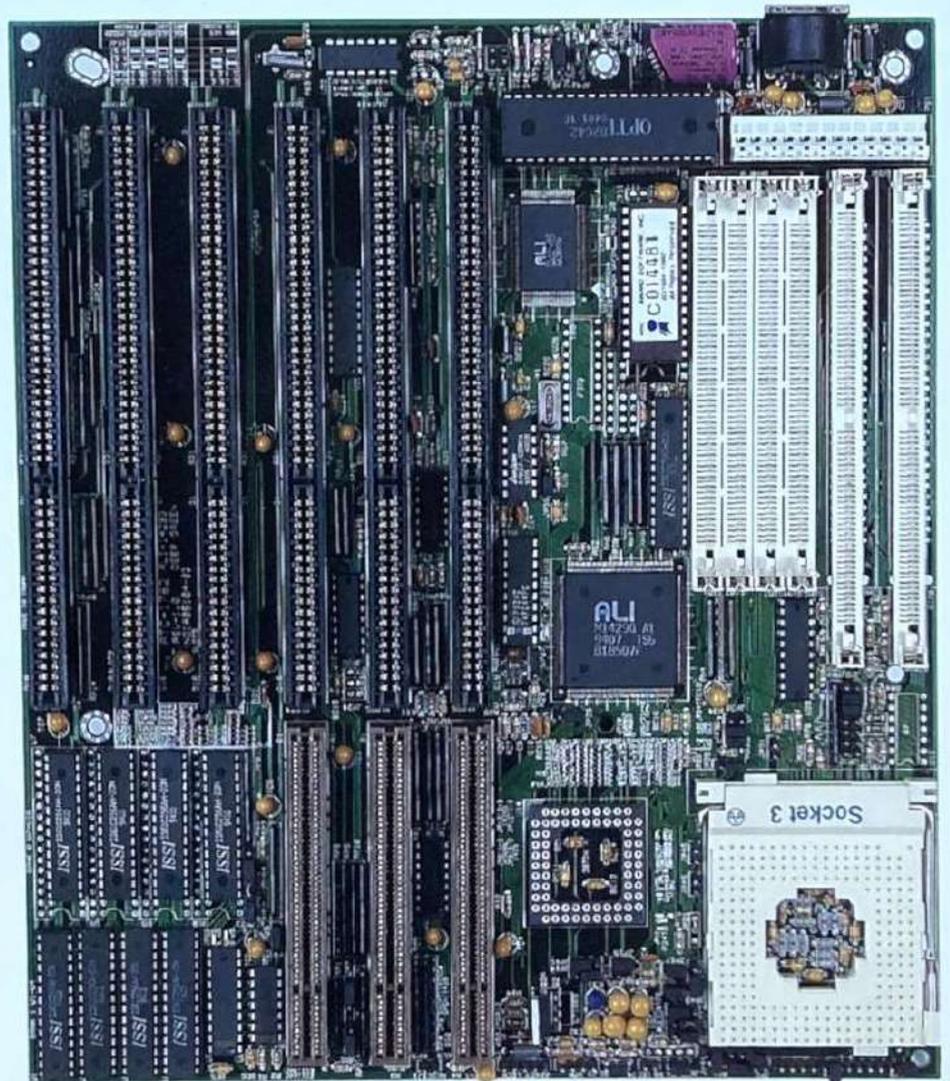


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CHAPTER 1 INTRODUCTION

1-1 INTRODUCTION

Overview

We are very appreciate for your purchase our new product again. In this time we offer the ALI-1429G 486 Green motherboard. It's a new, more integration single chips and also support SMI CPU and Green complete specification so it will be easy to join in 1994 market requirement. In addition, it supports intel 486 P24T/P24D and 486DX4 highest performance CPU. It's only 11 TTL on board to reduce maintenance burden.

System features

- ☛ Supports INTEL 486SX/DX/DX2, 486DX4, S-Serial, P24T.
AMD DX/DX2, DXL (SMI) CPU.
CYRIX M6, M7, Ti 486SXL/SXL2
- ☛ Supports 4 stage power saving:
ON/DOZE/STANDBY/SUSPEND
- ☛ Supports 7 timer form 1 second ~ 320 minutes to individually monitor the system states.
- ☛ Support L1/L2 Write back/Write through cache feature.
- ☛ Support 2 Master / 3 slave 32 bit VESA Bus.
- ☛ Support 32/64/128/256/512 KB cache size.
- ☛ Supports 32 pin/72 pin dual type sim modules.
- ☛ Support SMI/SMM/PMU/APM power controllers.

REMARK

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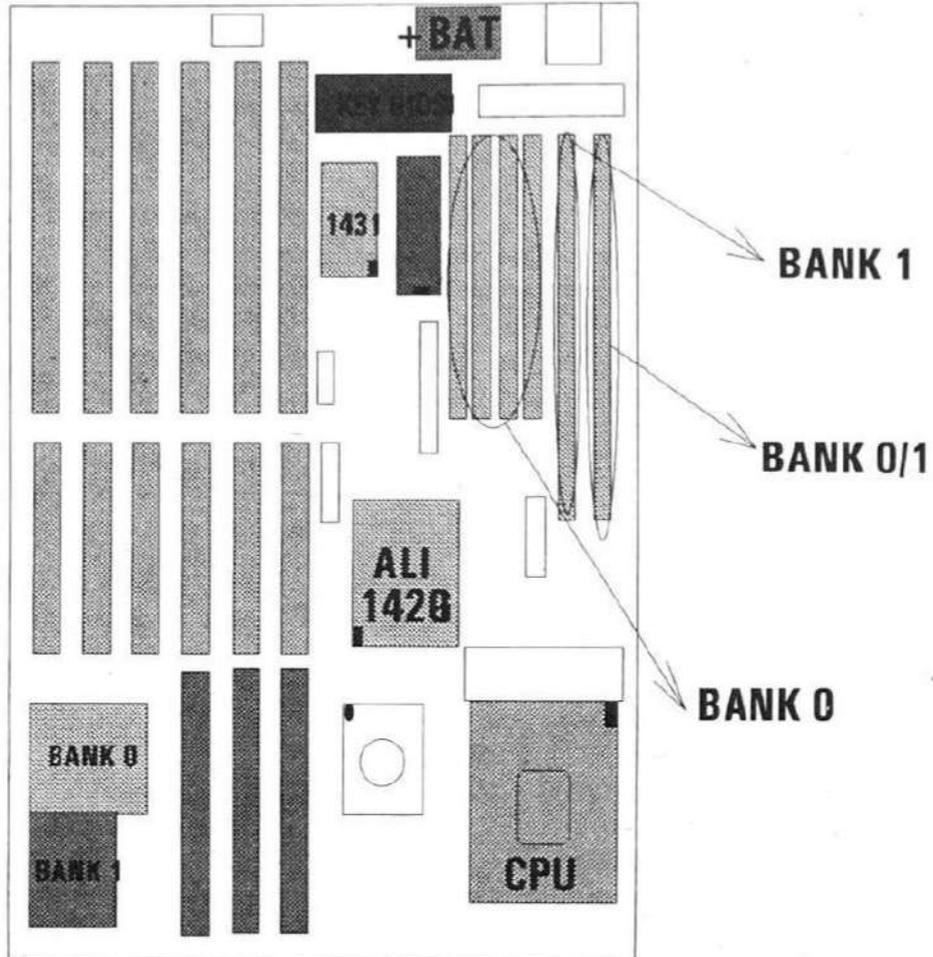
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1-2 ALI-1429G Green M/B LAYOUT



CHAPTER 2 INSTALLATION

Now the system is ready to operate, but hardware must be setup various functions of the system. Be carefully to install CPU pin1 into CPU socket and power supply connector must be correctly.

2-1 SIM MODULES INSTALLATION

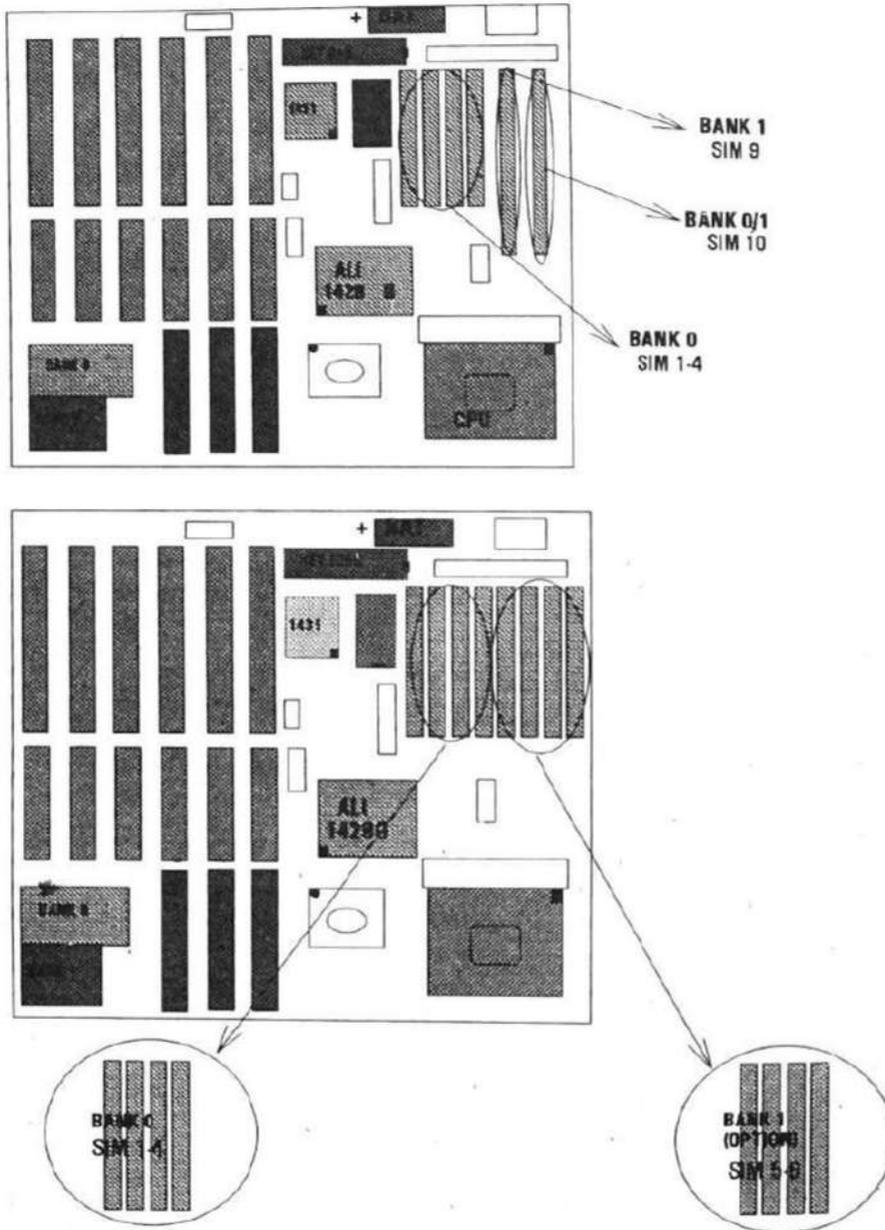
On board sim module installation

The ALI-1429G 486 Green motherboard can be expanded form 1MB to 128 MB by using 256K, 1M, 4M, 16M type sim module.

The available sim modules assemble on BANK 0 and BANK 1 for the ALI-1429G 486 Green motherboard. Please refer the table as below:

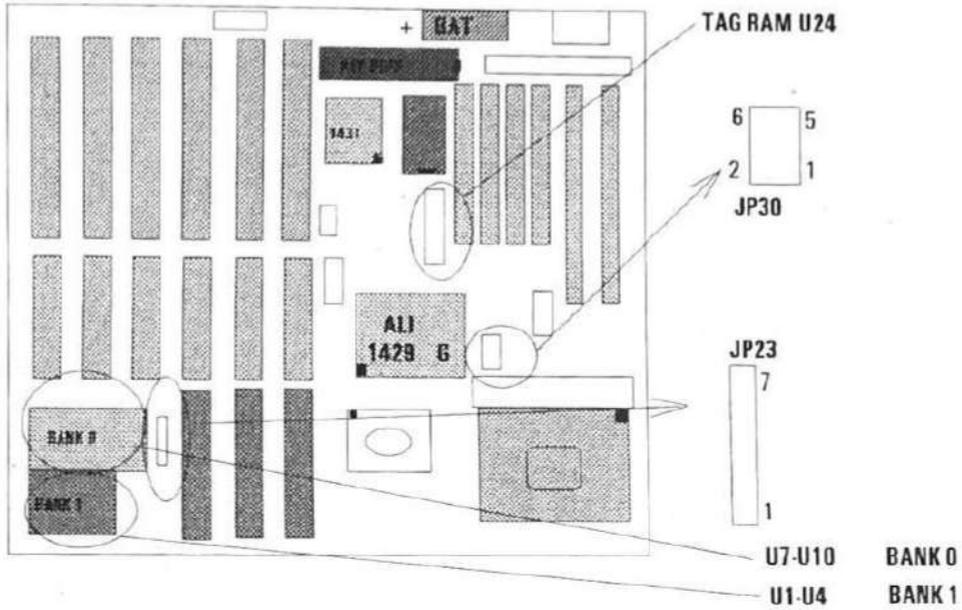
BANK 0 SIM1-4	BANK 0/1 SIM 10	BANK 1 SIM9	BANK 1 SIM5-8	TOTAL MEMORY
256KX9	NONE	NONE	NONE	1MB
NONE	256KX36	NONE	NONE	1MB
256KX9	NONE	256KX36	NONE	2MB
NONE	256KX36	256KX36	NONE	2MB
256KX9	NONE	NONE	256KX9	2MB
1MX9	NONE	NONE	NONE	4MB
NONE	1MX36	NONE	NONE	4MB
1MX9	NONE	1MX36	NONE	8MB
NONE	1MX36	1MX36	NONE	8MB
1MX9	NONE	NONE	1MX9	8MB
256KX9	NONE	1MX36	NONE	5MB
NONE	256KX36	1MX36	NONE	5MB
256KX9	NONE	NONE	1MX9	5MB
4MX9	NONE	NONE	NONE	16MB
NONE	4MX36	NONE	NONE	16MB
1MX9	NONE	4MX36	NONE	20MB
4MX9	NONE	1MX36	NONE	20MB
1MX9	NONE	NONE	4MX9	20MB
4MX9	NONE	4MX36	NONE	32MB
4MX9	NONE	NONE	4MX9	32MB
16MX9	NONE	NONE	NONE	64MB
16MX9	NONE	4MX9	NONE	80MB
16MX9	NONE	NONE	4MX9	80MB
16MX9	NONE	NONE	16MX9	128MB

2-2 SIM MODULES LOCATION



2-3 SRAM INSTALLATION

The ALI-1429G mainboard can support cache memory from 32K to 512K bytes. either 8KX8,16KX8,64KX8,or 128KX8 can be used on ALI-1429G motherbord.

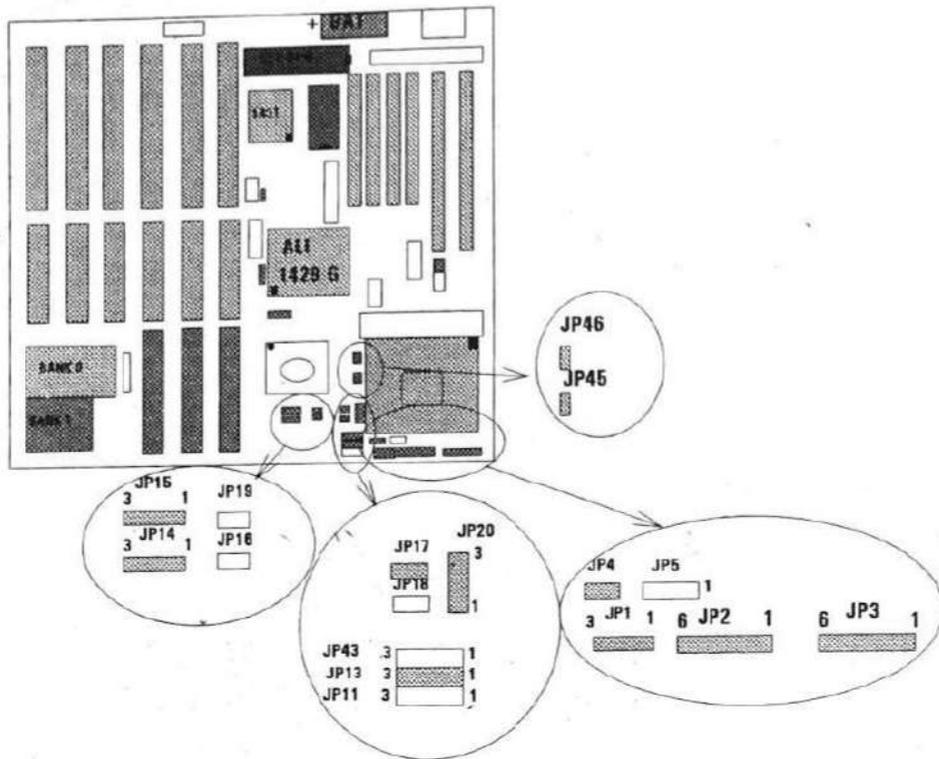


Cache Configuration Size

* THE FOLLOWING TABLE IS FOR JP23,JP30 DEFAULT JUMPER SETTING

32K		64K		64K		128K		256K		256K*		512K	
TAG RAM	DATA RAM	TAG RAM	DATA RAM	TAG RAM	DATA RAM	TAG RAM	DATA RAM	TAG RAM	DATA RAM	TAG RAM	DATA RAM	TAG RAM	DATA RAM
8K*8 U24	8K*8 U7-U10	8K*8 U24	16*8 U7-U10	8K*8 U24	8K*8 U1-U4 U7-U10	8K*8 U24	32K*8 U7-U10	16*8/64K*8 32K*8 U24	16K*8/32K*8 U7-U10	16K*8/32K*8 U24	32K*8 U7-U10	32K*8 U24	128K*8 U7-U10
JP23 6-7 open	JP30	JP23 6-7	JP30 1-2	JP23 5-6	JP30 1-2	JP23 6-7	JP30 1-2	JP23 6-7	JP30 1-2	JP23 5-6	JP30 1-2	JP23 6-7	JP30 1-2
			4-5			4-5	3-4	4-5	3-4	3-4	3-4	4-5	3-4
						2-3		2-3		1-2		2-3	5-6

2-4 CPU TYPE INSTALLATION



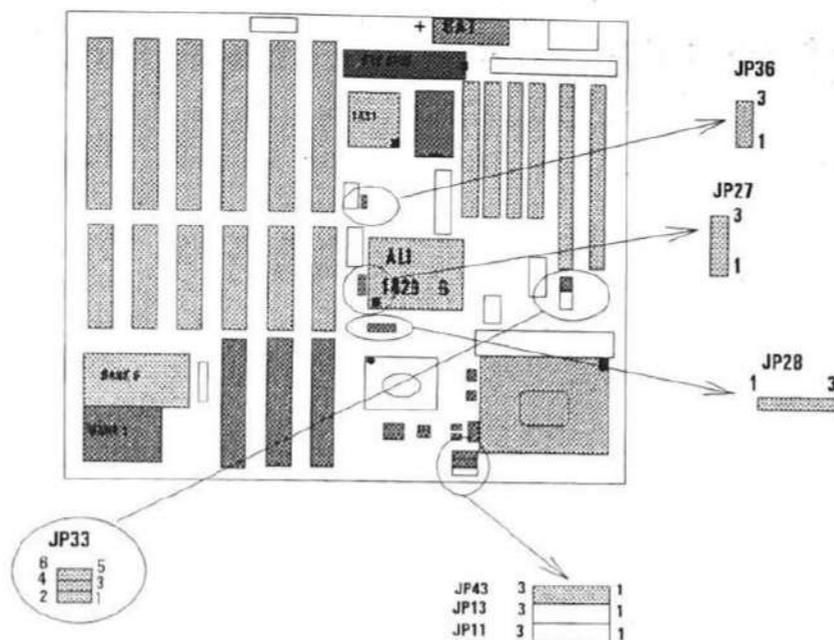
CPU TYPE SELECTION

CPU TYPE	JP13	JP15	JP17	JP14	JP20	JP45&46
486DX/DX2	2-3	2-3	CLOSE	1-2	1-2	OPEN
DX4/M7						
486SX /M6	OPEN	1-2	OPEN	1-2	1-2	OPEN
487SX	1-2	2-3	CLOSE	1-2	1-2	OPEN
P24T	1-2	2-3	CLOSE	2-3	2-3	OPEN
Ti486SXL2	OPEN	1-2	OPEN	1-2	1-2	CLOSE

* NOTE: If use Cyrix M6, JP4 must be opened.

SMI CPU SELECTION

SMI CPU	JP2	JP3	JP1
486 SERIAL /486DX4	1-2	1-2	1-2
AMD 486DXL	2-3	2-3	1-2
CYRIX M6/M7	4-5	4-5	2-3
Ti 486 SXL/SXL2	5-6	1-2,5-6	1-2
5V GENERAL CPU	OPEN	OPEN	OPEN (Defaulted)



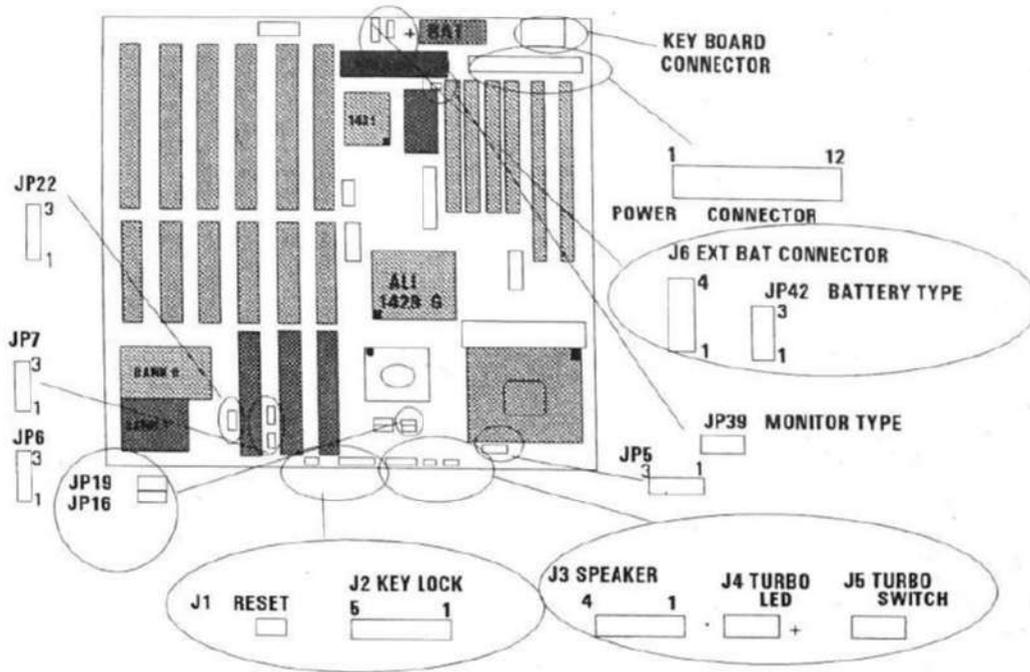
CPU SPEED SELECTION

CPU SPEED	JP33	JP36	JP28
486DX-25/DX2-50/DX4-75	1-2,5-6	1-2	1-2
486DX-33/DX2-66/DX4-100	1-2,3-4	1-2	1-2
486DX40/486DX2-80	5-6	1-2	1-2
486DX50	1-2,5-6	2-3	2-3
Ti486SXL-25/SXL2-50	1-2,5-6	1-2	2-3
Ti486SXL-20/SXL2-40	5-6	1-2	2-3
Ti486SXL-33/SXL2-66	1-2,3-4	1-2	2-3

JP27:1-2 FOR Ti-486SXL/SXL2 CPU ONLY
 2-3 OTHER CPU

JP43:1-2 FOR 3.3V CPU(486DX4/P24CT)
 2-3 FOR 5V GENERAL CPU

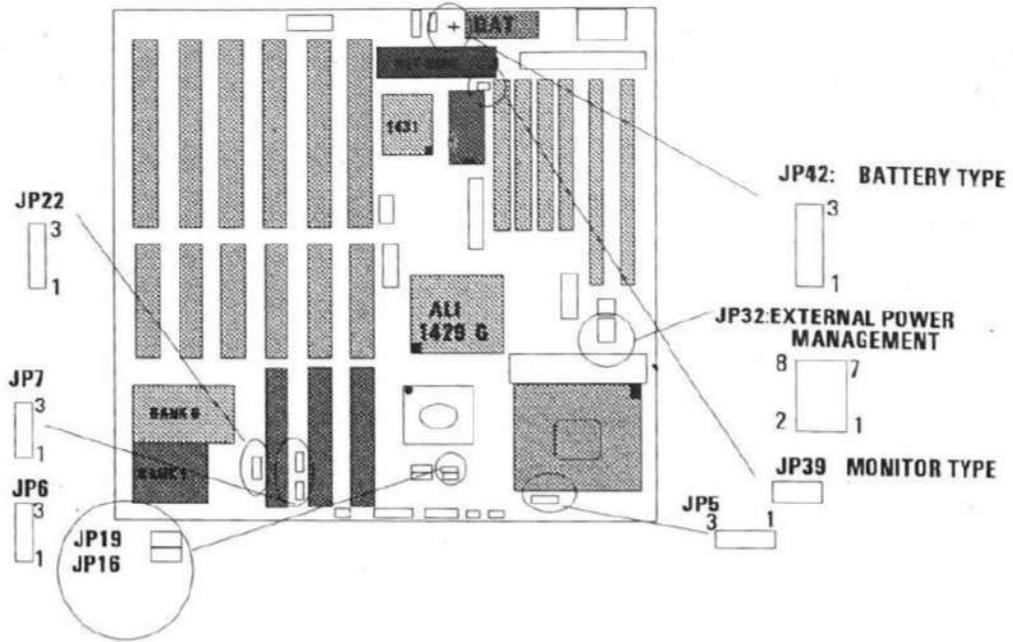
2-5 FUNCTION CONNECTOR&OTHER JUMPER



FUNCTION CONNECTOR

CONNECTOR	PIN OUT	DESCRIPTION
J2:KEY LOCK	1 2 3 4 5	LED POWER NOT USE GROUND KEY LOCK GROUND
J3: SPEAKER NOTE:SPEAKER BEEP 1 BEEP:DOZE MODE 2 BEEP:STAND BY 3 BEEP:SUSPEND LONG BEEP:ON	1 2 3 4	DATA OUT NOT USED GROUND +5V DC
J1:RESET	1 2	GROUND RESET IN
J4:TURBO LED NOTE:POWER SAVING STATUS LED Flicker on/off 0.5 sec:Doze mode 1 sec:Standby mode 2 sec:Suspend mode	1 2	+A NODE - CATHODE
J5:TURBO SWITCH Short:Turbo mode Open:Slow mode	1 2	Ground Select Pin
KB1:KEYBOARD CONNECTOR	1 2 3 4 5	KEYBOARD CLOCK KEYBOARD DATA N.C. Ground +5V DC
PS1:POWER CONNECTOR	1 2 3 4 5,6,7,8 9 10,11,12	Power Good +5V DC +12V DC -12V DC Ground -5V DC +5V DC
J6:EXTERNAL/INTERNAL BATTERY NOTE:1.PIN 1&4 FOR EXTERNAL BATTERY CONNECTOR. 2.2-3 PIN CLOSE FOR ENABLE INTERNAL BATTERY 3.1-2 PIN TOUCH FOR CLEAR CMOS SETUP DATA	1 2 3 4	Ground CMOS POWER INPUT BATTERY POWER EXTERNAL BATTERY INPUT

OTHER JUMPER REFERENCE LAYOUT



OTHER JUMPER

JP6:VESA ID3

1-2:VESA BUS <= 33MHZ

2-3:VESA BUS > 33MHZ

JP7:VESA ID2

1-2: VESA 0 WAIT

2-3: VESA 1 WAIT

JP22: FIXED ON 2-3(CPU Ready 1 wait state)

JP5:CYRIX/Ti 486SXL

OPEN:OTHER

1-2: Cyrix W/B CPU

2-3:Ti 486SXL/SXL2

JP16: Cyrix M7 Write Back/Write Through

OPEN :Write Through

CLOSE :Write Back

JP39: Monitor type

CLOSE: color monitor

OPEN :mono monitor

JP42: BATTERY TYPE USED

1-2: USE NI-CD BATTERY

2-3: USE LITHIUM BATTERY

JP32: EXTERNAL POWER MANAGEMENT
CONNECTOR(OUTPUT)

PIN 1,3: 2 STANDBY MODE OUTPUT

PIN 5,7: 2 SUSPEND MODE OUTPUT

JP11: FIXED ON 1-2 OPEN : FOR GENERAL CPU

JP34,35: FIXED CLOSE JP29: FIXED ON 2-3

JP19: CLOSE: FOR INTEL S SERIAL CPU

OPEN: FOR 5V GENERAL CPU

CHAPTER 3 BIOS SETUP

3-1 AWARD BIOS SYSTEM CONFIGURATION SETUP

This section will explain how to set up the system configuration (CMOS) under the AWARD BIOS. The SETUP program is contained in the system's Read-Only-Memory rather than on a diskette. To enter SETUP, press the < Del > key when the system is booting up. The following menu appears:

Please enter "STANDARD CMOS SETUP" to enter the next screen.

ROM ISA BIOS (2C4K9D00)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
LOAD BIOS DEFAULTS	
LOAD SETUP DEFAULTS	
ESC: QUIT	↑↓→←:SELECT ITEM
F10: SAVE & EXIT SETUP	(SHIFT)F2:CHANGE COLOR
Time, Date, Hard Disk Type	

Date (mm:dd:yy) : Mon. Jan 10 1994																
Time(hh:mm:ss) : 14:29:57																
	<table border="1"> <thead> <tr> <th>CYLS.</th> <th>HEADS</th> <th>PRECOMP</th> <th>LANDZONE</th> <th>SECTORS</th> </tr> </thead> <tbody> <tr> <td>903</td> <td>8</td> <td>65535</td> <td>902</td> <td>46</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	CYLS.	HEADS	PRECOMP	LANDZONE	SECTORS	903	8	65535	902	46	0	0	0	0	0
CYLS.	HEADS	PRECOMP	LANDZONE	SECTORS												
903	8	65535	902	46												
0	0	0	0	0												
Drive C: Use (162Mb)																
Drive D: None (0Mb)																
Drive A: 1.2M, 5.25 in.																
Drive B: None																
Video : EGA/VGA	<table border="1"> <tr> <td>Base Memory</td> <td>: 640K</td> </tr> <tr> <td>Extended memory</td> <td>: 15360K</td> </tr> <tr> <td>Expanded Memory</td> <td>: 0K</td> </tr> <tr> <td>Other Memory</td> <td>: 384K</td> </tr> <tr> <td colspan="2">-----</td> </tr> <tr> <td>Total Memory</td> <td>: 16384K</td> </tr> </table>	Base Memory	: 640K	Extended memory	: 15360K	Expanded Memory	: 0K	Other Memory	: 384K	-----		Total Memory	: 16384K			
Base Memory	: 640K															
Extended memory	: 15360K															
Expanded Memory	: 0K															
Other Memory	: 384K															

Total Memory	: 16384K															
Halt On: ALLErrors																
Esc:Quit	↑↓→←:SELECT ITEM															
F1 : Help	(SHIFT)F2:CHANGE COLOR															
	PU/PD +/- : Modify															

ROM ISA BIOS (2C4K9D00)
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
LOAD BIOS DEFAULTS	
LOAD SETUP DEFAULTS	
ESC: QUIT	↑↓→←:SELECT ITEM
F10: SAVE & EXIT SETUP	(SHIFT)F2:CHANGE COLOR
Virus protection, Boot sequence ...	



ROM ISA BIOS (2C4K9000)
 BIOS FEATURES SETUP
 AWARD SOFTWARE, INC.

Virus Warning	: Enabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CFFFF Shadow	: Disabled
External Cache	: Enabled	D0000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D8000-DFFFF Shadow	: Disabled
Boot Sequence	: A, C	E0000-E7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	E8000-EFFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled		
Boot Up NumLock Status	: On		
Boot Up System Speed	: High		
IDE HDD Block Mode	: Disabled		
Gate A20 Option	: Fast	Esc: Quit	↑↓→←:SELECT ITEM
Typematic Rate Setting	: Disabled	F1 : Help	PU/PD/+/- : Modify
Typematic Rate(Chars/Sec)	: 6	F5 : Old Values (SHIFT)F2:COLOR	
Typematic Delay(Msec)	: 250	F6 : Load BIOS Defaults	
Security Option	: Setup	F7 : Load Setup Defaults	

ROM ISA BIOS (2C4K9D00)
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
LOAD BIOS DEFAULTS	
LOAD SETUP DEFAULTS	
ESC: QUIT	↑↓→←:SELECT ITEM
F10: SAVE & EXIT SETUP	(SHIFT)F2:CHANGE COLOR
At clock, DRAM timings	

. THE SETUP FOR DX-50MHz/DX-40MHz/M6, M7-40MHz CPU SYSTEM M/B

ROM ISA BIOS (2C4K9D00)
 BIOS FEATURES SETUP
 AWARD SOFTWARE, INC.

Auto Configuration	: Enable	Internal Cache WB/WT	: WT
AT Bus Clock	: 7.19MHz	External Cache WB/WT	: WB
Cycle Check Point	: Normal	Cache Write Timing	: 1 WS
HITMJ Sampling Time	: 5t	Cache Read Timing	: 1 WS
Polling Clock Setting	: 28.636MHz	VESA L2 Cache Write	: Normal
IO Recovery	: Disable	VESA L2 Cache Read	: Normal
Onboard IO Recovery	: Disable	Shadow BIOS Cacheable	: Disabled
ISA Write Cycle	: 0 WS	Local ready syn mode	: SYN
16 Bit ISA I/O Command	: 0 WS	VESA Master Cycle ADSJ	: Delay
16 Bit ISA Mem Command	: 0 WS	LEDVJ Check Point Delay	: 3 CLK 2
32 Bit ISA Wait Time	: 8t	Memory Relocation	: Disabled
Internal ADS Delay	: Disable		
Hidden Refresh	: Disable	Esc: Quit	↑↓→←:SELECT ITEM
Slow Refresh	: Disable	F1 : Help	PU/PD +/- : Modify
DRAM Read Timing	: Slow	F5 : Old Values	(SHIFT)F2: COLOR
DRAM Write Timing	: Slow	F6 : Load BIOS Defaults	
RAS To CAS Delay	: 6t	F7 : Load Setup Defaults	

CHAPTER 3 BIOS SETUP

• THE SETUP FOR SX, DX-33MHz/DX2-66MHz/M6, M7-33MHz CPU SYSTEM M/B

BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	Enable	Internal Cache WB/WT	: WT
AT Bus Clock	: 7.19MHz	External Cache WB/WT	: WB
Cycle Check Point	: Fast	Cache Write Timing	: 0 WS
HITMJ Sampling Time	: 5t	Cache Read Timing	: 1 WS
Polling Clock Setting	: 28.636MHz	VESA L2 Cache Write	: Normal
IO Recovery	: Disable	VESA L2 Cache Read	: Normal
Onboard IO Recovery	: Disable	Shadow BIOS Cacheable	: Disabled
ISA Write Cycle	: 0 WS	Local ready syn mode	: SYN
16 Bit ISA I/O Command	: 0 WS	VESA Master Cycle ADSJ	: Delay
16 Bit ISA Mem Command	: 0 WS	LEDVJ Check Point Delay	: 3 CLK 2
32 Bit ISA Wait Time	: 8t	Memory Relocation	: Disabled
Internal ADS Delay	: Disable		
Hidden Refresh	: Enable	Esc: Quit	↑↓→←:SELECT ITEM
Slow Refresh	: Disable	F1 : Help	PU/PD/+/- : Modify
DRAM Read Timing	: Normal	F5 : Old Values	(SHIFT)F2: COLOR
DRAM Write Timing	: Normal	F6 : Load BIOS Defaults	
RAS To CAS Delay	: 6t	F7 : Load Setup Defaults	

• THE SETUP FOR SX, DX-25MHz/DX2-50MHz CPU SYSTEM M/B

Auto Configuration	Enable	Internal Cache WB/WT	: WT
AT Bus Clock	: 7.19MHz	External Cache WB/WT	: WB
Cycle Check Point	: Normal	Cache Write Timing	: 0 WS
HITMJ Sampling Time	: 5t	Cache Read Timing	: 0 WS
Polling Clock Setting	: 28.636MHz	VESA L2 Cache Write	: Normal
IO Recovery	: Disable	VESA L2 Cache Read	: Normal
Onboard IO Recovery	: Disable	Shadow BIOS Cacheable	: Disabled
ISA Write Cycle	: 0 WS	Local ready syn mode	: SYN
16 Bit ISA I/O Command	: 0 WS	VESA Master Cycle ADSJ	: Delay
16 Bit ISA Mem Command	: 0 WS	LEDVJ Check Point Delay	: 2 CLK 2
32 Bit ISA Wait Time	: 8t	Memory Relocation	: Disabled
Internal ADS Delay	: Disable		
Hidden Refresh	: Enable	Esc: Quit	↑↓→←:SELECT ITEM
Slow Refresh	: Disable	F1 : Help	PU/PD/+/- : Modify
DRAM Read Timing	: Fast	F5 : Old Values	(SHIFT)F2: COLOR
DRAM Write Timing	: Fast	F6 : Load BIOS Defaults	
RAS To CAS Delay	: 6t	F7 : Load Setup Defaults	

ROM ISA BIOS (2C4K9D00)
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
LOAD BIOS DEFAULTS	
LOAD SETUP DEFAULTS	
ESC: QUIT	↑↓→←:SELECT ITEM
F10: SAVE & EXIT SETUP	(SHIFT)F2:CHANGE COLOR
Save data to CMOS & Exit SETUP	

ROM ISA BIOS (2C4K9D00)
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
LOAD BIOS DEFAULTS	SAVE to CMOS and EXIT (Y/N): Y
LOAD SETUP DEFAULTS	
ESC: QUIT	↑↓→←:SELECT ITEM
F10: SAVE & EXIT SETUP	(SHIFT)F2:CHANGE COLOR
Changed/Set/Disabled Password	

APPENDIX A

RMA & QUESTION INQUIRY FORM

When your mainboard doesn't work or not properly, please fill this form to describe related situation. If the space is not enough to use, you can attach another paper.

MODEL NO : _____ **Serial NO. :** _____

CONTACT SALES : _____

DATE : _____

HARDWARE :

CPU BRAND : _____, Model : _____, Speed: _____ Mhz.

MATH-Brand : _____, Model: _____, Speed: _____ Mhz.

SIMMBrand : _____, Speed : _____ ns, Q'ty : _____ Pcs, Total : _____ MB.

CACHE Brand : _____, Speed : _____ ns, Total : _____ KB on board.

TAG RAM Brand: _____, Speed : _____ ns,

BIOS : _____ <A> AMI, <W> AWARD, <P> PHOENIX .

BIOS VERSION and DATE CODE : _____

VGA BRAND : _____, MODEL: _____, CHIP _____

HARD DISKCAPACITY : _____ MB, Vender : _____

SOFTWARE:

OS SYSTEM : _____, VERSION : _____

SOFTWARE PROGRAM/PACKAGE : _____

BIOS SETUP USE AUTO-CONFIG : ___ YES, ___ NO.

< A > ERROR

- | | |
|--|---|
| <input type="checkbox"/> HANG UP | <input type="checkbox"/> NO PICTURE ON SCREEN |
| <input type="checkbox"/> BOOTING LOCK | <input type="checkbox"/> FLOPPY R/W ERROR |
| <input type="checkbox"/> HARD DISK ERROR | |
| <input type="checkbox"/> OTHER _____ | |

< B > ERROR MESSAGE ON YOUR SCREEN (SHOW US CHARACTER)



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