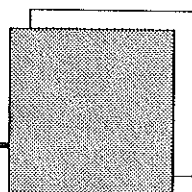


486 VL3 CACHE MAIN BOARD

MV035E USER'S MANUAL



Warning

To ensure the reliability of the Computer DO NOT reconfigure the board while the Power is ON.

If you wish to reconfigure the board, make sure that the power to the system is OFF before changing any hardware setting such as Jumper setting or DIP switch.

Checklist

Your 486VL3 Cache package contain the following:

- * 486VL3 Cache Mother board.
- * User's manual.

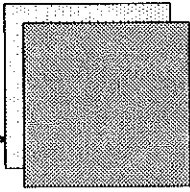


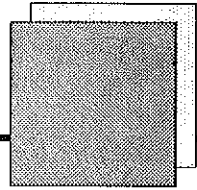
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Introduction



1

About this Manual

This manual is designed to provide the basic information necessary for the end user to understand and properly use of the 486VL3 Cache Mother board. The mother board ensure superlative performance and complete compatibility with software written for IBM PC/AT 80286 type , 80386 type and 80486 type of processor.

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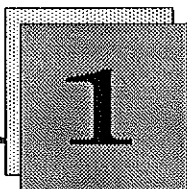
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Introduction

Mother Board Features

- * OPTI chipset 82C895 and 82C602
- * Support 80486 SX/DX/DX2, P24T, P24C (DX4), AMD 486 SL-Enhanced P23S, P4S, P24S and Cyrix M6/M7 Microprocessor
- * Memory up to 128MB
- * Optional 64KB, 128KB, 256KB or 512KB external cache
- * Eight 16bit slots with Three VESA slots 1 Slave / 2 Master
- * Dimension: 22 x 25 cm with 4 Layers
- * 1x clock source, supporting systems running from 25 to 50 MHz
- * Support System Memory Management (SMM) for Power Management
- * Support full SMI Interface
- * Power Management port for specific control during all modes of operation

NOTE

JUMPER CAP

Red	Jumpers Represent	Voltage	Selector
White	Jumpers Represent	CPU	Type
Yellow	Jumpers Represent	Clock	Selector
Blue	Jumpers Represent	Cache	Option
Black	Jumpers Represent	Other	Option

System Board Setup

2

Jumpers and Connectors reference

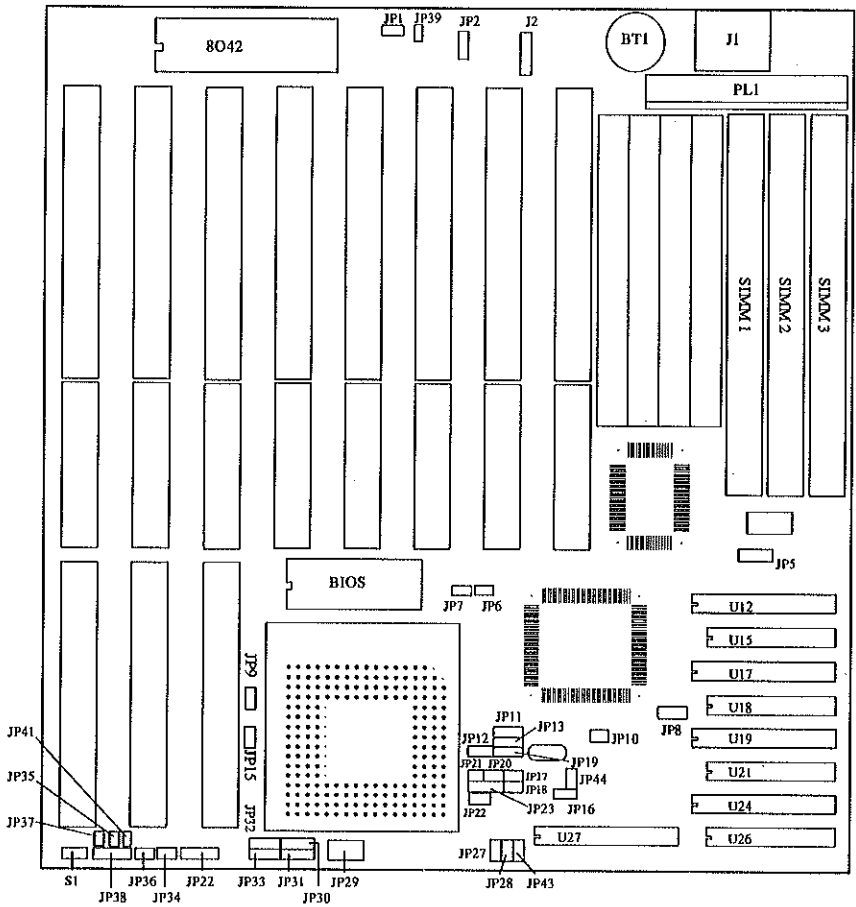
Before installing the mother board, make sure the jumpers setting are set for your configuration. The Function of each jumpers are as follows:

CPU Type Selector	JP9,JP11,JP12,JP13,JP15, JP23,JP32
P24D Write Back/Write Throught	JP19
SL-enhanced CPU Selector	JP10,JP12,JP20,JP21
CYRIX M7 Clock Selector	JP22
P24C Clock selector	JP30
CPU VOLTAGE Selector	JP29
Mono / Color Selector	JP1
Clock Generator Frequency Selector ...	JP16,JP17,JP18
CACHE Option	JP8,JP27,JP28,JP43,JP44
VL-BUS Option	JP33,JP35,JP37
Charge / Discharge CMOS	JP2
CRT Power Down	JP39
Speaker Connector	JP38
Turbo Switch Connector	JP36
Turbo LED Connector	JP34
Reset Switch Connector	S1
External Battery Connector	J2
Keylock/Power LED Connector	J22
Keyboard Connector	J1
Power Supply Connector	PL1
Memory Select	JP5
Micellaneous Jumper	JP6,JP7,JP31
SMI LED	JP41

2

System Board Setup

Component Layout



System Board Setup

2

CPU Type Selector

CPU Type Selector is used to select different type of CPU.

CPU TYPE	JP9	JP11	JP12	JP13	JP15	JP23	JP32
486SX	OPEN	1-2	OPEN	OPEN	OPEN	2-3	OPEN
487SX	OPEN	1-2	OPEN	2-3	OPEN	1-2,3-4	OPEN
486DX	OPEN	1-2	OPEN	1-2	OPEN	1-2,3-4	OPEN
M6	CLOSE	2-3	2-3	OPEN	OPEN	2-3	1-2
M7	CLOSE	2-3	2-3	1-2	OPEN	1-2,3-4	OPEN
P24C	OPEN	1-2	OPEN	1-2	OPEN	1-2,3-4	OPEN
P24D	OPEN	2-3	OPEN	1-2	CLOSE	1-2,3-4	2-3
P24T	OPEN	2-3	OPEN	1-2	OPEN	1-2,3-4	OPEN

NOTE: If AMD DX2-66, DX2-80, DX4-100 CPU (3.0 VOLTS) is used note JP19 (1-2 for DX4-100, 2-3 for DX2-66, DX2-80)

NOTE: If SL-enhanced CPU is used JP12 is set to 1-2

NOTE: If CYRIX DX2-66/80 (3.45V) is used the jumper setting is the same as INTEL 486DX CPU. (Voltage setting 3-5,4-6)

NOTE: If P24C (DX4-100 MHz) CPU is used note JP30 P24C CLOCK x2, Clock Generator Frequency 50/16 and JP29 CPU VOLTAGE 3-5, 4-6 3.45 Volts

WARNING: Wrong CPU Voltage to P24C will DAMAGE the CPU.

JP19 P24D Write Back/Through

1-2 P24D Write Back

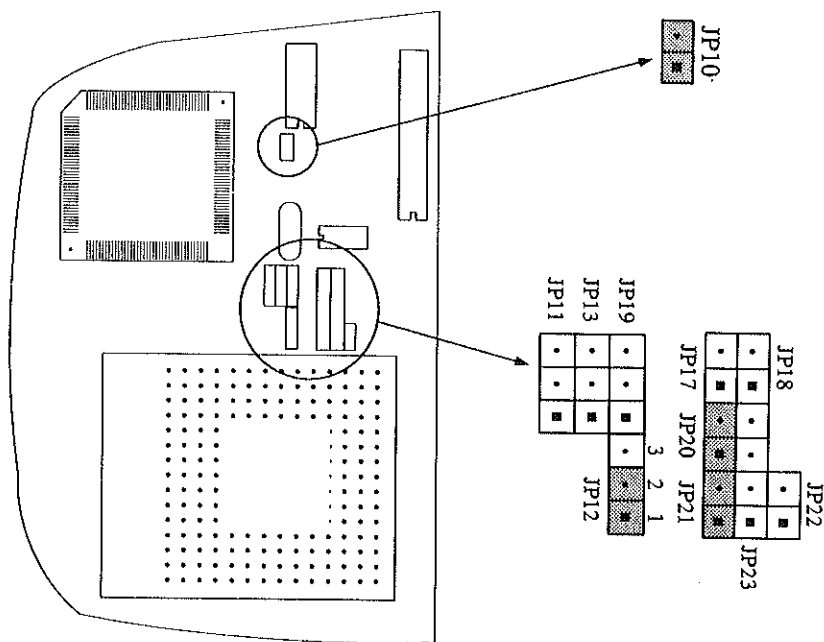
2-3 P24D Write Through

2

System Board Setup

JP10,JP12,JP20,JP21 SL-ENHANCED CPU Selector

NOTE: If SL-enhanced CPU is used, jumpers must be close or set properly otherwise no SMI function.



JP10	JP12	JP20	JP21	
OPEN	OPEN	OPEN	OPEN	NON SL-ENHANCED CPU
CLOSE	1-2	CLOSE	CLOSE	SL-ENHANCED CPU

System Board Setup

2

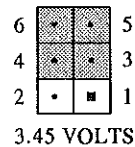
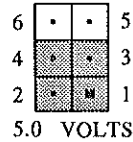
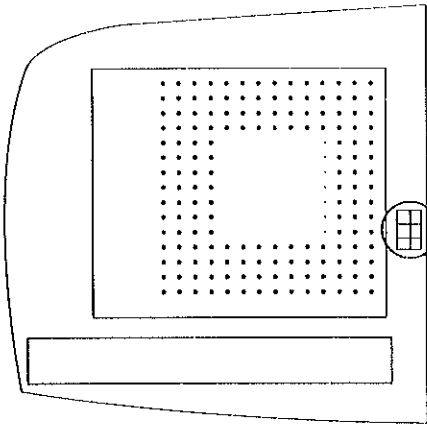
JP22 CYRIX M7 CLOCK Selector

OPEN OTHER CPU
CLOSE M7 x2 CLK

JP30 P24C CLOCK Selector

OPEN P24C x3 CLK
1-2 P24C x2 CLK
2-3 P24C x2.5 CLK

JP29 CPU VOLTAGE Selector



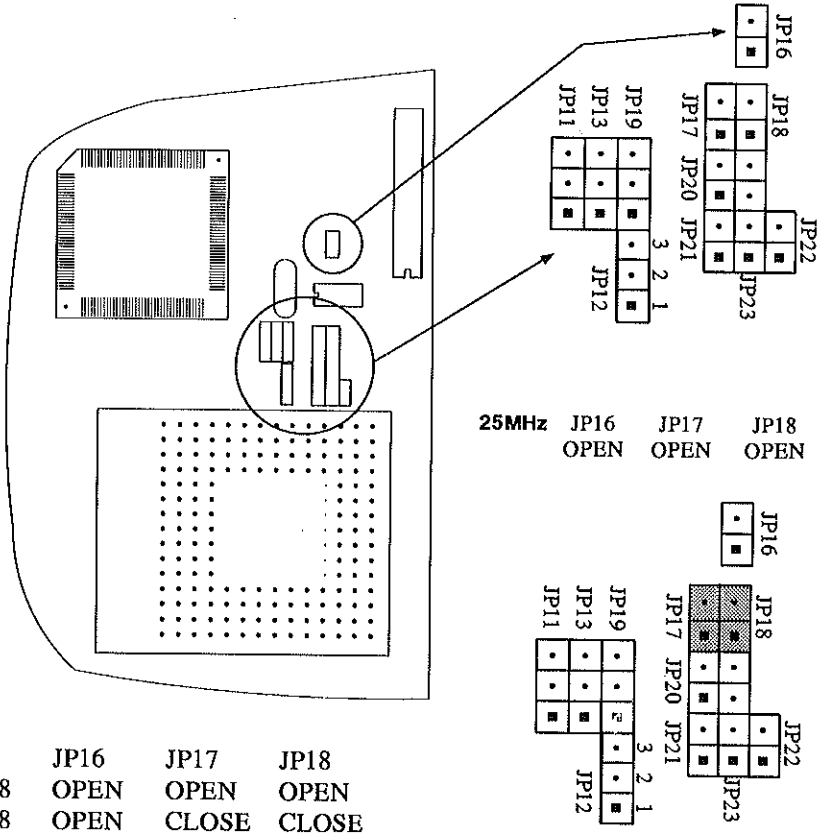
3-5 , 4-6 3.45 VOLTS P24C CPU
1-3 , 2-4 5.0 VOLTS OTHER CPU

2

System Board Setup

JP16,JP17,JP18

CLOCK GENERATOR FREQUENCY SELECTOR



40MHz & 50 MHz next page.

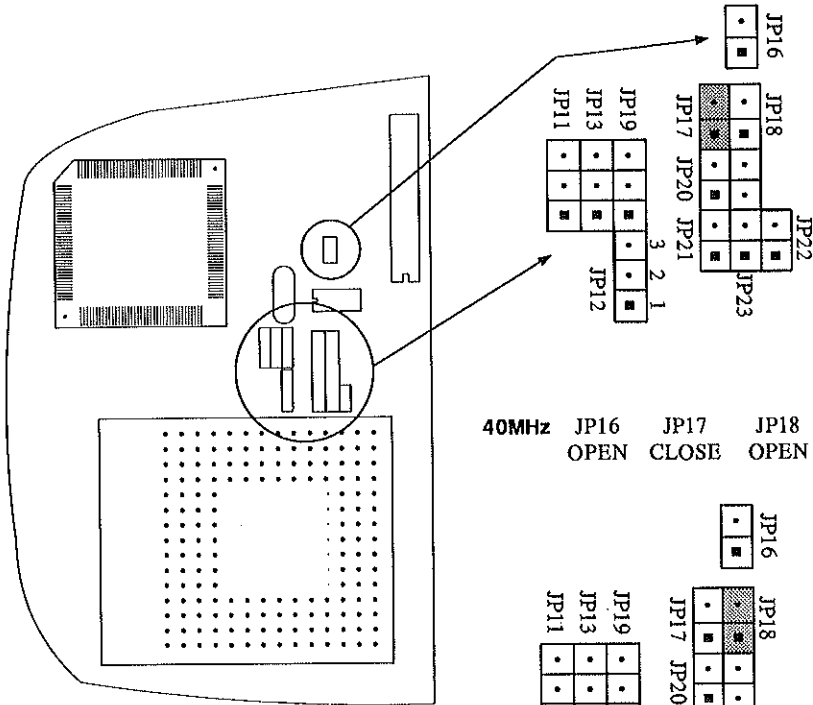
33MHz JP16 JP17 JP18
OPEN CLOSE CLOSE

System Board Setup

2

JP16,JP17,JP18

CLOCK GENERATOR FREQUENCY SELECTOR



40MHz JP16 JP17 JP18
 OPEN CLOSE OPEN

50MHz JP16 JP17 JP18
 OPEN OPEN CLOSE

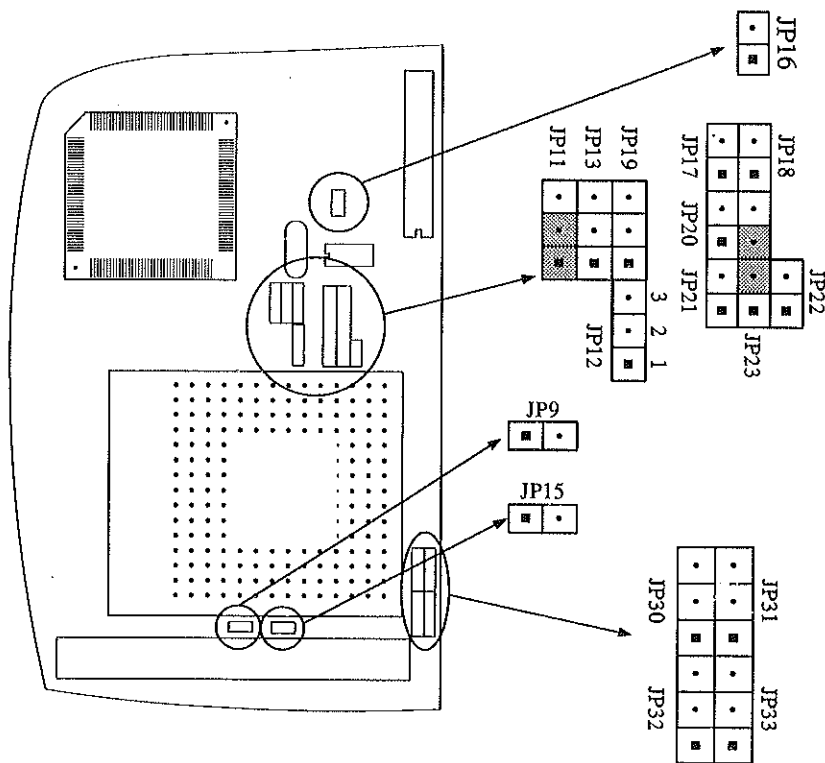
	JP16	JP17	JP18
40/8	OPEN	CLOSE	OPEN
50/16	OPEN	OPEN	CLOSE

2

System Board Setup

486SX 25/33 MHz

CPU and Clock Generator Jumpers Setting



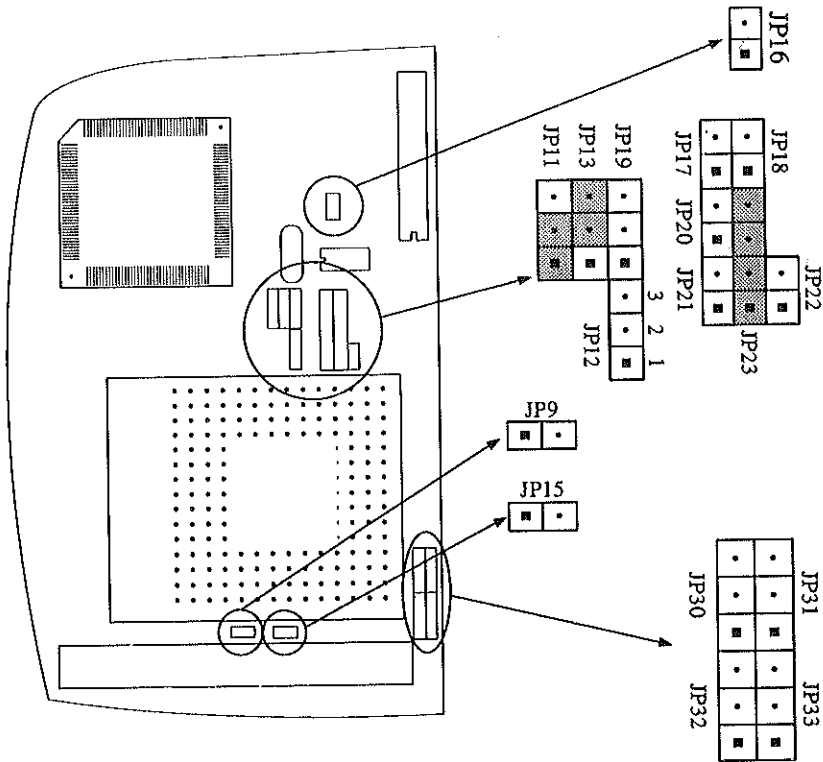
CPU	JP11 (1-2), JP23 (2-3)
	JP9, JP12, JP13, JP15, JP32 (OPEN)
Clock Generator	JP16 JP17 JP18
	OPEN OPEN OPEN 25/8 MHz
	OPEN CLOSE CLOSE 33/8 MHz

System Board Setup

2

487SX 25/33 MHz

CPU and Clock Generator Jumpers Setting



CPU

JP11 (1-2), JP13(2-3), JP23 (1-2,3-4)

JP9, JP12, JP15, JP32 (OPEN)

Clock Generator

JP16 JP17 JP18

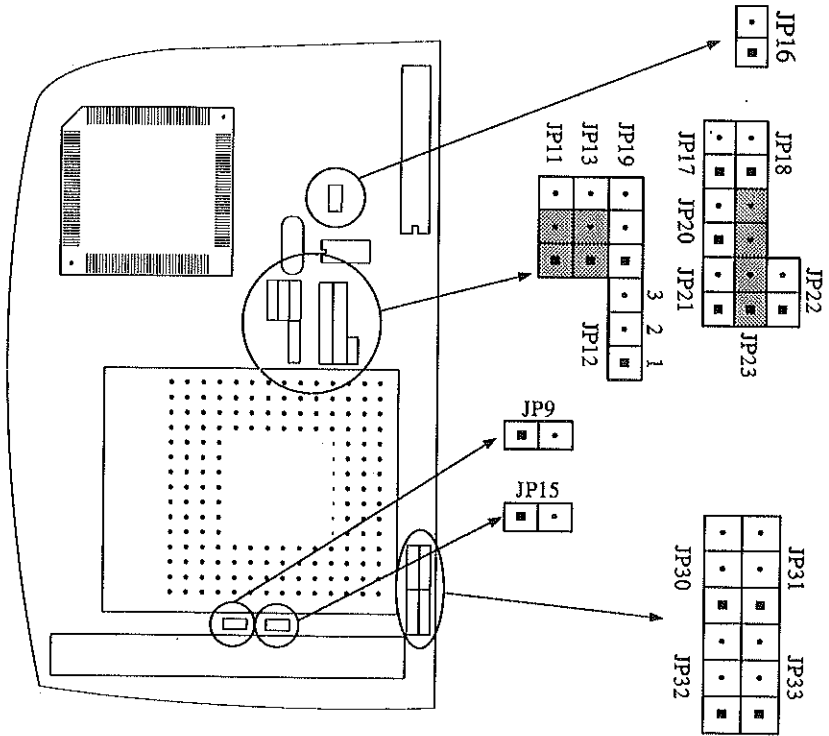
OPEN OPEN OPEN 25/8 MHz

OPEN CLOSE CLOSE 33/8 MHz

2

System Board Setup

**486DX 33/40/50 MHz, DX2 50/66 MHz
CPU and Clock Generator Jumpers Setting**



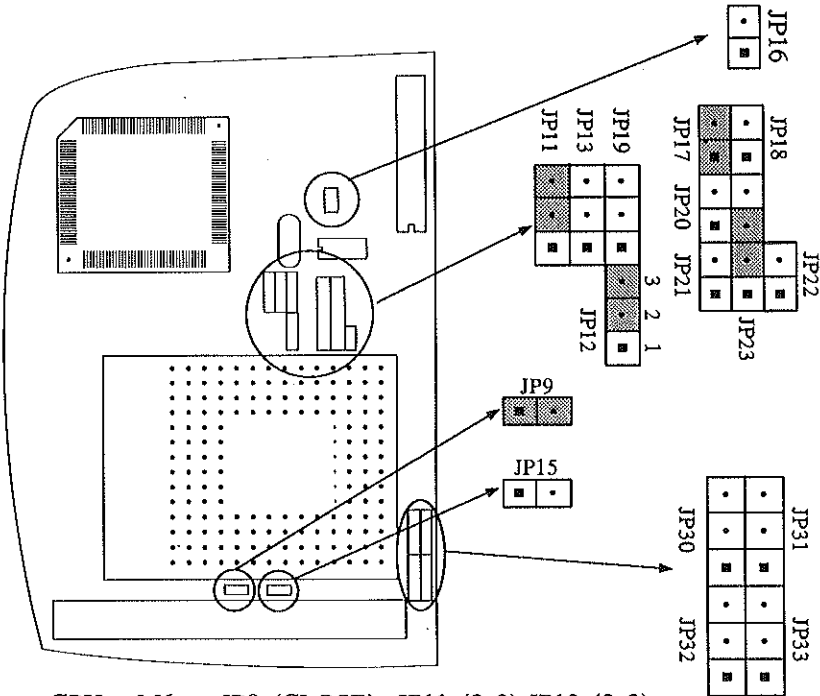
CPU	JP11 (1-2), JP13 (1-2)	JP23 (1-2,3-4)	
	JP9, JP12, JP15, JP32 (OPEN)		
Clock Generator	JP16	JP17	JP18
	OPEN	CLOSE	CLOSE
	OPEN	CLOSE	OPEN
	OPEN	OPEN	CLOSE
			33/8 MHz
			40/8 MHz
			50/16 MHz

System Board Setup

2

M6/M7 40 MHz

CPU and Clock Generator Jumpers Setting



CPU M6 JP9 (CLOSE), JP11 (2-3), JP12 (2-3)
 JP23 (2-3), JP32 (1-2)
 JP13 JP15 (OPEN)

CPU M7 JP9 (CLOSE), JP11 (2-3), JP12 (2-3)
 JP13 (1-2), JP23 (1-2,3-4)
 JP15, JP32, JP22 (OPEN)

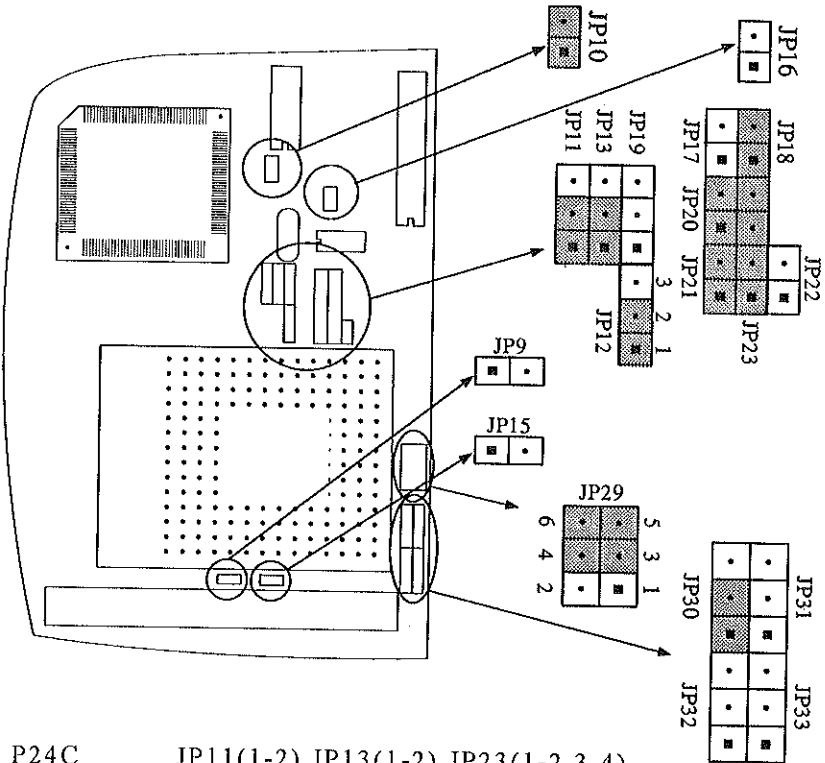
Clock Generator JP16 JP17 JP18
 OPEN CLOSE OPEN 40/8 MHz

2

System Board Setup

P24C DX4-100 MHz

CPU and Clock Generator Jumpers Setting



CPU P24C
DX4-100

JP11(1-2),JP13(1-2),JP23(1-2,3-4)
JP30(1-2),JP29(3-5,4-6)
JP10,JP12,JP20,JP21(1-2)

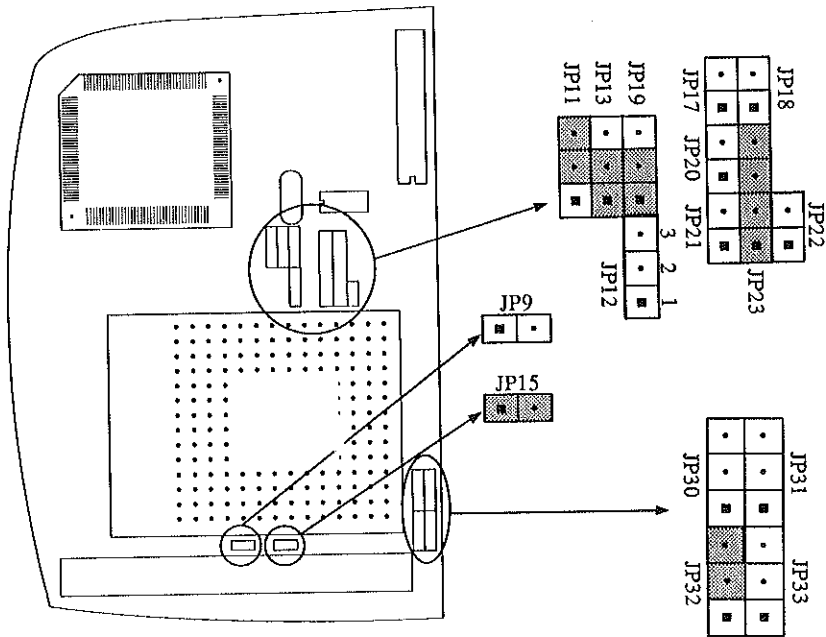
Clock Generator

JP16	JP17	JP18	
OPEN	OPEN	CLOSE	50/16 Mhz

System Board Setup

2

P24D, P24T CPU Jumpers Setting



CPU P24D JP11(2-3),JP13(1-2),JP15(CLOSE),JP23(1-2,3-4),JP19(1-2),JP9,JP12(OPEN),JP32(2-3)

CPU P24T JP11(2-3),JP13(1-2),JP23(1-2,3-4),JP32(2-3),JP15(CLOSE),JP9,JP12,JP19(OPEN)

2

System Board Setup

JP8,JP27,JP28,JP43,JP44 CACHE OPTION

SIZE	JP8	JP27	JP28	JP44	TAG RAM	JP43
64 K	2-3	OPEN	OPEN	1-2	8K * 8	OPEN
128 K	1-2	CLOSE	OPEN	1-2	8K * 8	OPEN
256 K	2-3	CLOSE	CLOSE	2-3	16K * 8	OPEN
256 K	2-3	CLOSE	CLOSE	1-2	32K * 8	OPEN
512 K	1-2	CLOSE	CLOSE	1-2	32K * 8	CLOSE

SRAM CONFIGURATION

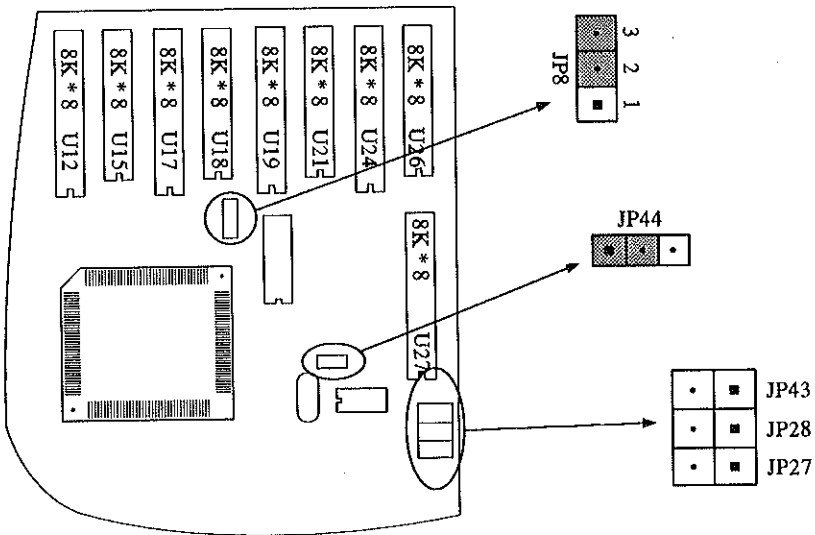
	BANK 0	BANK 1	TAG U27
64 K	8K * 8	8K * 8	8K * 8
128 K	32K * 8	NONE	8K * 8
256 K	32K * 8	32K * 8	32K * 8/16K * 8
512 K	128K * 8	NONE	32K * 8

※ BANK 0 (U12,U17,U19,U24) BANK 1 (U15,U18,U21,U26)

System Board Setup

2

64K CACHE Type of SRAM and Jumper Setting

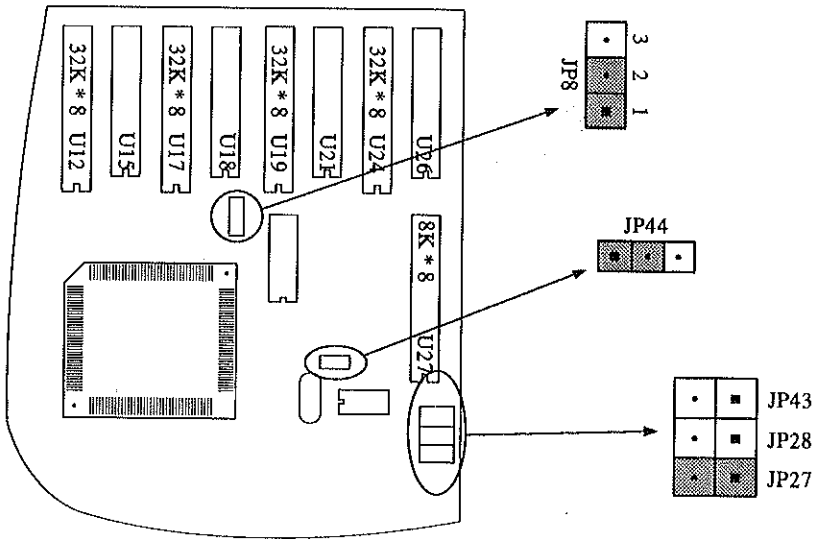


SRAM	8K * 8 -20ns	TAG RAM	8K * 8 - 15ns
BANK 0	(U12,U17,U19,U24)		U27
BANK 1	(U15,U18,U21,U26)		
	JP8	JP44	JP27
	2-3	1-2	OPEN
			JP28
			OPEN
			JP43
			OPEN

2

System Board Setup

128K CACHE Type of SRAM and Jumper Setting

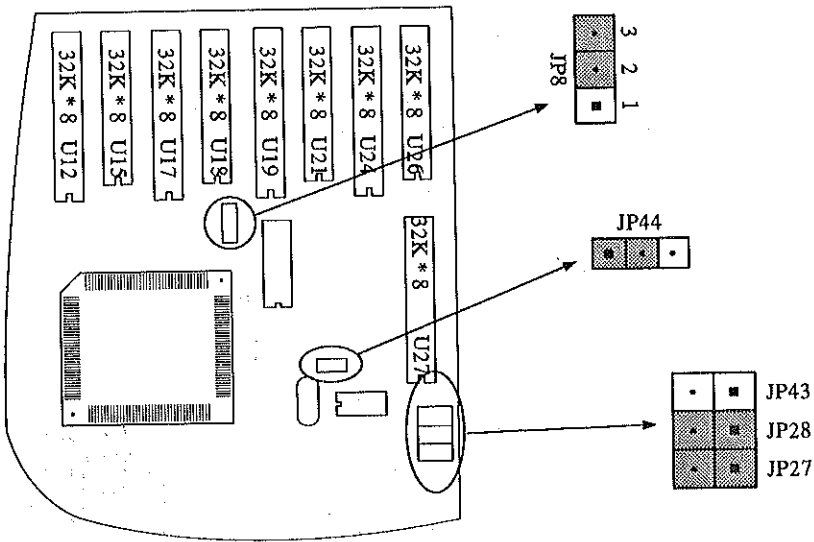


SRAM	32K * 8 -20ns	TAG RAM	8K * 8 - 15ns
BANK 0	(U12,U17,U19,U24)		U27
	JP8	JP44	JP27
	JP28	JP28	JP43
	1-2	1-2	CLOSE
			OPEN
			OPEN

System Board Setup

2

256K CACHE Type of SRAM and Jumper Setting



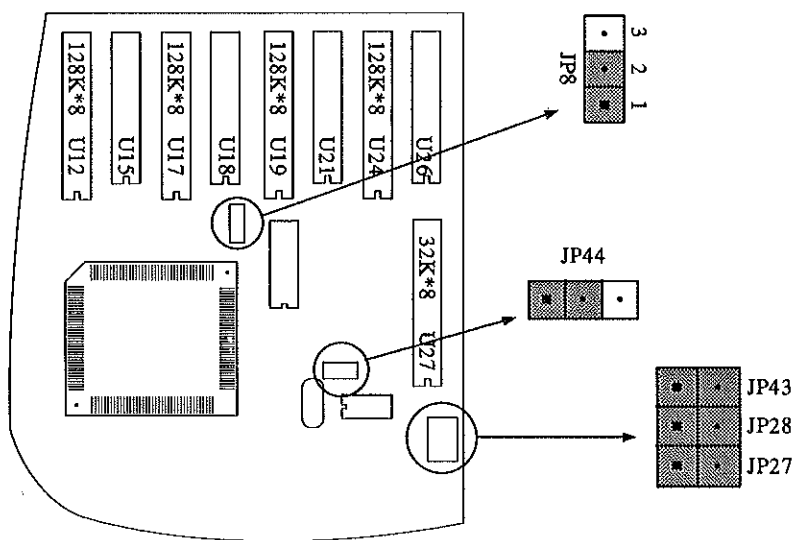
SRAM	32K * 8 -20ns	TAG RAM	32K * 8 - 15ns
BANK 0	(U12,U17,U19,U24)		U27
BANK 1	(U15,U18,U21,U26)		
	JP8	JP44	JP27
	2-3	1-2	CLOSE
			JP28
			CLOSE
			JP43
			OPEN

2

System Board Setup

512K CACHE

Type of SRAM and Jumper Setting

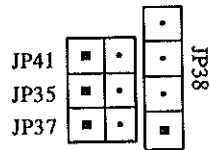
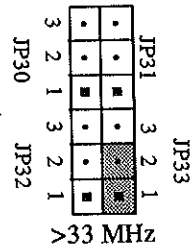
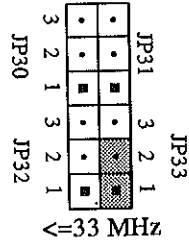
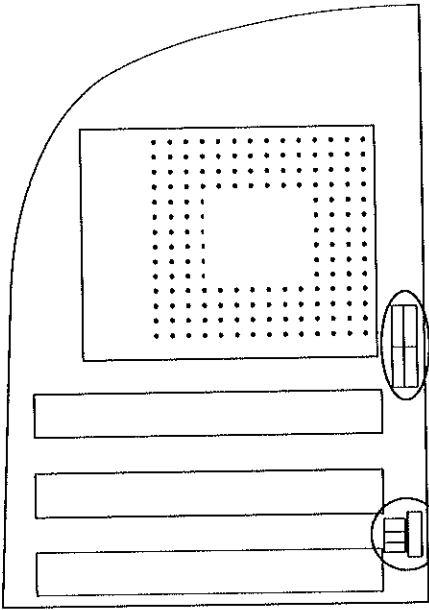


SRAM	128K * 8 -20ns	TAG RAM	32K * 8 - 15ns
BANK 0	(U12,U17,U19,U24)		U27
	JP8	JP27	JP28
	JP27	JP28	JP43
	1-2	CLOSE	CLOSE
			JP44
			1-2

System Board Setup

2

JUMPER LOCATION



JP33, JP35, JP37 VL-BUS OPTION

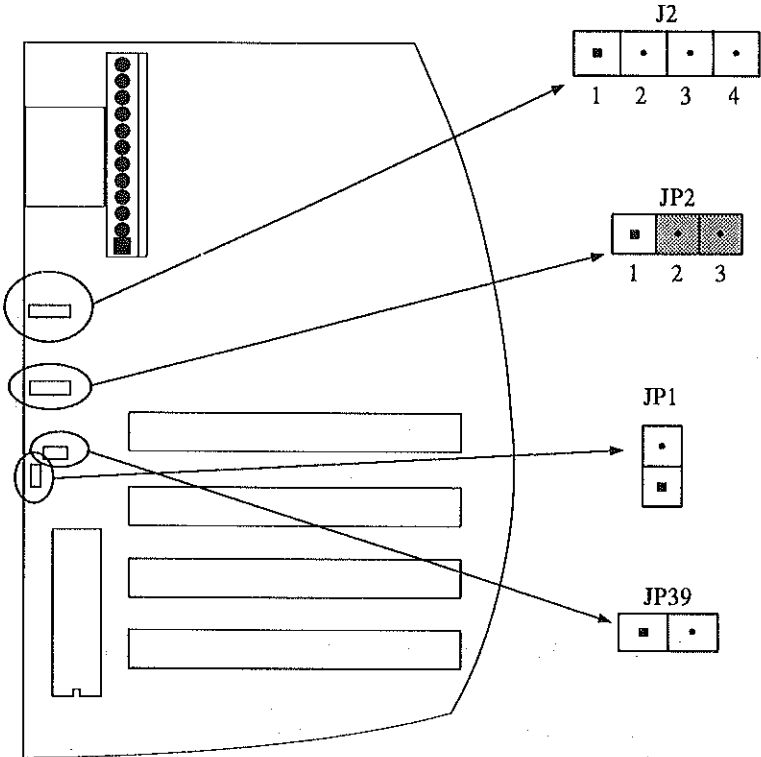
JP33		JP35		JP37	
1-2	> 33 MHz	OPEN	0 W/S	OPEN	LCLK <= 33 MHz
2-3	<= 33 MHz	CLOSE	1 W/S	CLOSE	LCLK > 33 MHz

2

System Board Setup

JP1 MONO/COLOR Selector

OPEN MONO include EGA and VGA
CLOSE COLOR for CGA only



System Board Setup



JP2 CHARGE / DISCHARGE CMOS

1-2 DISCHARGE CMOS NOTE: All DATA in the CMOS will be ERASE.
2-3 CHARGE CMOS

J2 EXTERNAL BATTERY CONNECTOR (Note of the POLARITY)

NOTE: PIN 1 for (+) PIN 4 for (-)

J1 KEYBOARD CONNECTOR

PL1 POWER SUPPLY CONNECTOR

NOTE: Wrong connection will damage the mainboard.

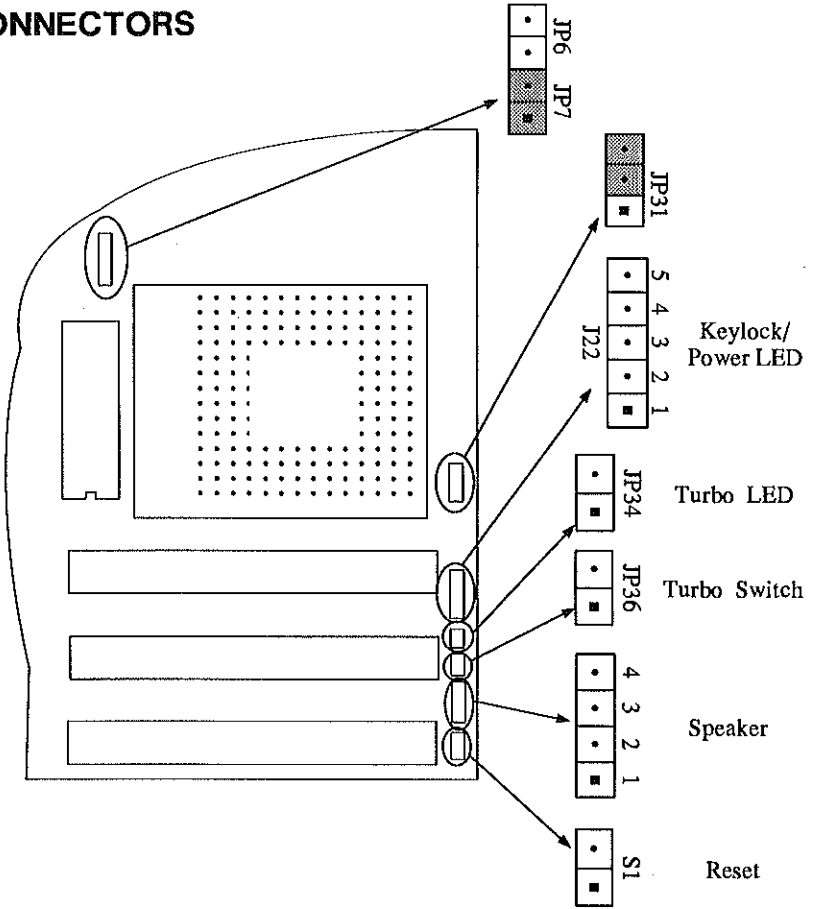
JP39 CRT Power Down

NOTE: This function need a Green function power supply , note of the polarity. Set Power Management setup CRT Power Down ENABLE.

2

System Board Setup

CONNECTORS



System Board Setup

2

JP38 SPEAKER CONNECTOR

JP36 TURBO SWITCH

OPEN NORMAL SPEED
CLOSE TURBO SPEED

JP34 TURBO LED (Note of the POLARITY)

CLOSE LED WILL LIGHT OFF
OPEN LED WILL LIGHT ON

NOTE: If KEYBOARD is used to change the speed TURBO LED will not change.

S1 RESET CONNECTOR

NOTE: This switch is always open otherwise the system won't start up.

J22 KEYLOCK & POWER LED

JP6,7,31 Micellaneous Jumper

JP6 : OPEN
JP7 : CLOSE (MPO PULL DOWN)
JP31 : 2-3 (MPO PULL DOWN)
JP33 : 1-2 (DEFAULT)

2

System Board Setup

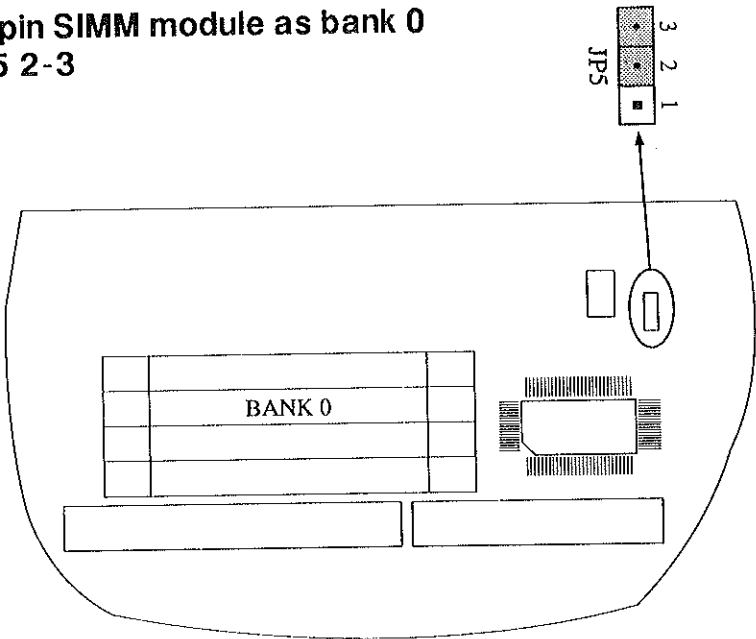
Memory Configuration

JP5 Memory Select

This control 30 pin or 72 pin SIMM module as bank 0.

30 pin SIMM module as bank 0

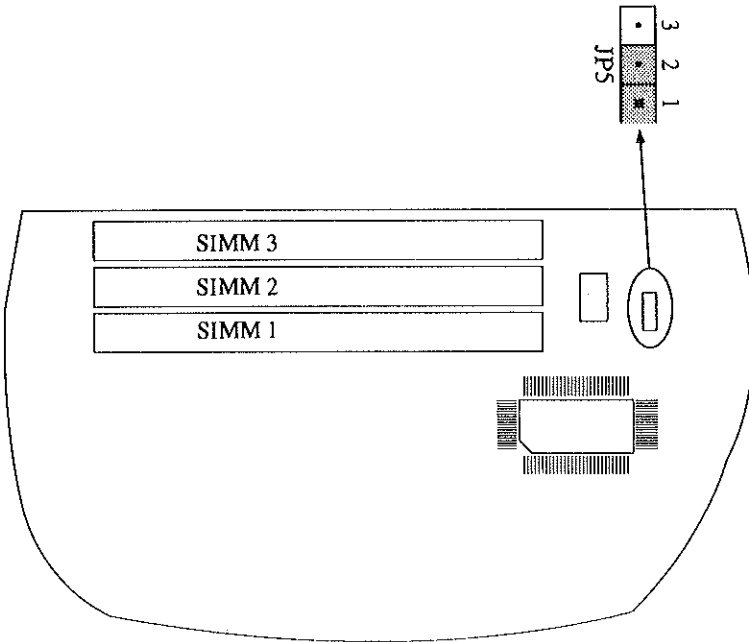
JP5 2-3



System Board Setup

2

72 pin SIMM module as bank 0
JP5 1-2



2

System Board Setup

The system board Memory can be expanded from 2MB to 128MB. Memory can be installed by using 256K, 1M, 4M and 16M * 36 SIMM RAM Module.

MEMORY SIZE	30 PIN		72 PIN	
	SIMM 0	SIMM 1	SIMM 2	SIMM 3
2M	256K * 9	256K * 36	-----	-----
	-----	512K * 36	-----	-----
4M	1M * 9	-----	-----	-----
	-----	1M * 36	-----	-----
8M	1M * 9	1M * 36	-----	-----
	-----	2M * 36	-----	-----
16M	4M * 9	-----	-----	-----
	-----	4M * 36	-----	-----
	1M * 9	1M * 36	1M * 36	1M * 36
	-----	2M * 36	2M * 36	-----
32M	4M * 9	4M * 36	-----	-----
	-----	4M * 36	4M * 36	-----
64M	-----	16M * 36	-----	-----
	4M * 9	4M * 36	4M * 36	4M * 36
128M	-----	16M * 36	16M * 36	-----
	-----	-----	-----	-----

NOTE: SIMM 1 and SIMM 2 is used for DOUBLE SIDED SIMM Module.
Set JP5 1-2

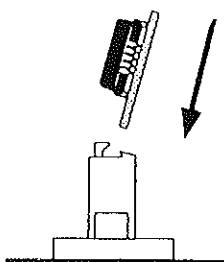
System Board Setup

2

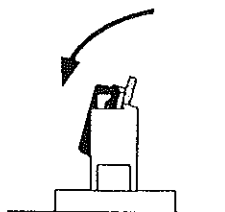
Installing Memory Modules.

There are four sockets on the system board that can accommodate up to a maximum of 128 megabytes of memory using 256K, 1M, 2M, 4M and 16M * 36 size RAM Modules with the access time of 70ns or faster. Extreme use of caution should be exercised when installing or removing the SIMM memory module in order to avoid damaging the SIMM socket.

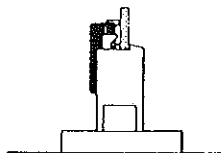
Steps for installing SIMM RAM Modules in the system board.



Insert the SIMM at an angle into the socket's edge connector slot



Press it forward into the retaining clips



The installed SIMM should be at 90 degree to the board

- 1 Carefully hold the SIMM. Insert the SIMM module's "GOLD EDGE" connector into the socket at a 70 degree angle and guide the component side of the module. (Note that the modules can only be fit into the socket one way.)



2

System Board Setup

- 2 Gently press the SIMM module into the socket in downward position, then snap it into place in the vertical position. The module should clip into the locking tabs at each end of the socket. The SIMM is probably not inserted fully into the socket if the pegs do not fit into the hole.
- 3 To remove the module, gently push the edge of the sockets. Disengage one side of the modules first, then the other side, to avoid breaking the socket.

Award BIOS Setup

3

ROM ISA BIOS (2C4UKW01)
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 F10: Save & Exit Setup	↑ ↓ → ←: Select Item (Shift) F2: Change Color
Time, Date, Hard Disk Type....	

NOTE:

Before running the main-board with the software program run BIOS SETUP-“LOAD SETUP DEFAULT”, setup default is the best setup configuration for the main-board.

3

Award BIOS Setup

ROM ISA BIOS (2C4UKW01)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Thu, Apr 28 1994						
Time (hh:mm:ss) : 17 : 16 : 33						
	CYLS	HEADS	PERCOMP	LANDZONE	SECTORS	
Drive C : User (249Mb)	1001	15	65535	1000	34	
Drive D : None (0Mb)	0	0	0	0	0	
Drive A : 1.2M, 5.25 in.						
Drive B : 1.44M, 3.5 in.						
Video : EGA/VGA						
Halt On : All Errors						
				Base Memory:	640K	
				Extended Memory:	64512K	
				Other Memory:	384K	
				<hr/>		
				Total Memory:	65536K	
<hr/>						
ESC: Quit	↑ ↓ ← →: Select Item		PU/PD/+/-: Modify			
F1: Help	(Shift) F2: Change Color					

The following pages tell you the options of each item & describe the meanings of each option.

Award BIOS Setup

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Date

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

day	The day, from Sun to Sat, determined by the BIOS and is display-only
date	The date, from 1 to 31 (or the maximum allowed in the month)
month	The month, Jan through Dec
year	The year, from 1900 through 2099

Time

The time format is <hour><minute><second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

Drive C type/Drive type

The category identify the types of hard disk drive C or drive D that has been installed in the computer. There are 46 predefined types and a user definable type. Type 1 to Type 46 are predefined. Type User is user-definable.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

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.

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Award BIOS Setup

CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precom
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, 5.25in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5in	3-1/2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

Video

The category selects the type of adapter used for the primary system monitor that must matches your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For Ega, VGA, SEGA, or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

Award BIOS Setup

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Error halt

The category determines whether the computer will stop if an error is detected during power up.

No errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted.
All errors	The system boot will not be stopped for any error that may be detected
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

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 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K 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 1MB in the CPU's memory address map.



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Award BIOS Setup

Expanded Memory

Expanded Memory is memory defined by the Lotus/Intel/Microsoft (LIM) standard as EMS. Many standard DOS applications can not utilize memory above 640K, 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 with 1MB or memory above 1MB, 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 640K to 1024K 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 are is Shadow RAM.

Award BIOS Setup

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ROM ISA BIOS (2C4UKW01)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Enabled	System BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	Video BIOS Shadow	: Enabled
External Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	CC000-CFFFF Shadow	: Disabled
Boot Sequence	: C, A	D0000-D3FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D4000-D7FFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	D8000-DBFFF Shadow	: Disabled
Boot Up NumLock Status	: On	DC000-DFFFF Shadow	: Disabled
Boot Up System Speed	: High	E0000-E3FFF Shadow	: Disabled
IDE HDD Block Mode	: Disabled	E4000-E7FFF Shadow	: Disabled
Gate A20 Option	: Fast	E8000-EBFFF Shadow	: Disabled
Memory Parity Check	: Enabled	EC000-EFFFF Shadow	: Disabled
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6	ESC: Quit	↑ ↓ ← → : Select Item
Delay (Msec)	: 250	F1: Help	PU/PD/+/-: Modify
Security Option	: Setup	F5: Old Values (Shift)	F2: Color
		F6: Load BIOS Defaults	
		F7: Load Setup Defaults	

The following pages tell you the options of each item & describe the meanings of each options.

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Award BIOS Setup

Virus Warning

This category flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the mean time, you run an anti-virus program to locate the problem.

<p>! Warning ! Disk boot sector is to be modified Type "Y" to accept write or "N" to abort write Award Software, Inc.</p>
--

Enabled	Activate automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disable	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

CPU Internal Cache/External Cache

These two categories speed up memory access. However, it depends on CPU/chipset design. The default value is disable.

Enabled	Enable cache
Disabled	Disable cache

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Award BIOS Setup

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Enabled	Enable quick POST
Disabled	Disable POST

Boot Sequence

This category determines which drive computer searches first for the disk operating system (i.e., DOS). Default value is A,C.

C,A	System will first search for hard disk drive then floppy disk drive.
A,C	System will first search for floppy disk drive then hard disk drive.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
Disable	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 360K.

Boot Up NumLock Status

The default value is on.

On	Keypad is number keys
Off	Keypad is arrow keys

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Award BIOS Setup

Boot Up System Speed

It selects the default system speed - the speed that the system will run at immediately after power on.

High	Set the speed to high
Low	Set the speed to low

IDE HDD Block Mode

Enable	Enable IDE HDD Block Mode
Disable	Disable IDE HDD Block Mode

Gate A20 Option

Normal	Keyboard
Fast	chipset

Memory Parity Check

Enabled	Normal memory parity check
Disabled	Ignore memory parity check

Typematic Rate Setting

This determines the typematic rate.

Enabled	Enable typematic rate
Disabled	Disable typematic rate

Award BIOS Setup

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Typematic Rate (Chars/Sec)

6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

Typematic Delay (Msec)

When hold a key, the time between the first and second character displayed.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

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Award BIOS Setup

Note: To disable security, select **PASSWORD SETTING** at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

System BIOS Shadow

It determines whether system BIOS will be copied to RAM, however, it is optional from chipset design. System Shadow will improve the system performance.

Enabled	System shadow is enabled
Diabled	System shadow is disabled

Video BIOS Shadow

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

Enabled	Video shadow is enabled
Diabled	Video shadow is disabled

C8000-CBFFF Shadow/EC000-EFFF Shadow

These categories determine whether optional ROM will be copied to RAM by 16K byte.

Enabled	Optional shadow is enabled
Diabled	Optional shadow is disabled

Award BIOS Setup

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ROM ISA BIOS (2C4UKW01)
CHIPSET FEATUERS SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	
AT Clock Option	: SYNC	
Synchronous AT Clock	: CLK/6	
DRAM Read Wait State	: 5-4-4-4	
DRAM Write Wait State	: 1 WS	
Cache Read Burst	: 3-2-2-2	
Cache Write Wait State	: 1 WS	
Hidden Refresh Option	: Enabled	
Slow Refresh Enable	: Disabled	
Single ALE Enable	: Disabled	
Extra AT Cycle WS	: Disabled	
Fast AT Cycle	: Disabled	
Back To Back I/O Delay	: Disabled	
Master Mode Byte Swap	: Disabled	
System BIOS Cacheable	: Disabled	
Video BIOS Cacheable	: Disabled	
		ESC: Quit ↑↓←→: Select Item F1: Help PU/PD/+-: Modify F5: Old Values (Shift)F2: Color F6: Load BIOS Defaults F7: Load Setup Defaults

The following pages tell you the options of each item & describe the meanings of each options.

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Award BIOS Setup

Item	Options	Descriptions
A. Auto Configuration	1. Enable	Pre-defined values for DRAM, cache.. timings according to CPU type & system clock.
	2. Disable	Users can configure their own timings.
		Note: When this item is enabled, the pre-defined items will become SHOW-ONLY
B. AT Clock Option	Async Sync	Define the AT BUS Clock source Note: Async is OSC/2 (14.318) Sync is CLK 1x input
C. Synchronous AT Clock (8) Remark 1	CLK /6 CLK /5 CLK /4 CLK /3	Define the Sync Clock value Usually, AT bus clock should be programmed to 8 MHz, e.g. When system clock is 33MHz, choose 1/4 CLKIN
D. DRAM Read Wait State (*) Remark 1 *	3-2-2-2 4-3-3-3 5-4-4-4	Defines the wait states to be added during DRAM read cycle
E. DRAM Write Wait State (*) Remark 1	0 WS 1 WS	Defines the wait states to be added during DRAM write cycle. Choose 1 WS for faster system or slower DRAM

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Item	Options	Descriptions
F. Cache Read Burst (* Remark 1	2-1-1-1 3-1-1-1 2-2-2-2 3-2-2-2	Defines cache timing (Burst WS & Lead-off) for Cache read cycle.
G. Cache Write Wait State (* Remark 1	1 WS 0 WS	Defines the number of wait state to be used for Cache write cycle.
H. Hidden Refresh Option	Disable Enable	To enable/disable the Hidden Refresh capability of the chipset When enable, no HOLD cycle will be asserted to CPU, so that the system will have a better performance.
I. Slow Refresh Enable	Disable Enable	System will refresh the DRAM periodically to prevent data lost. To enable Slow Refresh means the period between 2 refresh cycle is longer. Note: Do not enable this item unless your memory support slow refresh.
J. Single ALE Enable	Disable Enable	To define single ALE instead of multiple ALEs during bus conversion cycle if this item is enabled
K. Extra AT Cycle WS	Disable Enable	To Enable/Disable insert one extra wait state in standard AT bus cycle.

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Award BIOS Setup

Item	Options	Descriptions
L. Fast AT Cycle	Disable Enable	To Enable/Disable AT bus fast cycle. When enable, the AT bus cycle is shorter than standard AT bus cycle.
M. Back To Back I/O Delay	Disable	No back to back I/O delay
	Enable	3 BLK back to back I/O delay
N. Master Mode Byte Swap	Disable Enable	To Enable/Disable byte swapping for AT bus master.
O. System BIOS Cacheable	Disable Enable	Defines whether or not the System BIOS area to be cached by the on board cache RAM.
P. Video BIOS Cacheable	Disable Enable	Defines whether or not the Video BIOS area to be cached by the on board cache RAM.

Remark 1 : All items mark with (*) in this menu, will be loaded with predefined values according to CPU type & speed as long as the item 'Auto Configuration' is set to 'Enabled'.

Award BIOS Setup

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ROM ISA BIOS (2C4UKW01)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

PM Mode	: SMI Green	CRT Power Down	: Disable
Power Management	: Max Saving	LDEV Detection	: Disable
Doze timer	: 15 Sec	LREQ Detection	: Disabled
Sleep Timer	: 15 Sec	Video Detection	: Disable
HDD Standby Timer	: 1 Min	HDD Detection	: Enable
Sleep Clock	: Stop Clock	FDD Detection	: Enable
CRT Sleep	: Enable	DRQ0 Detection	: Enable
PM Wait for APM	: Enable	DRQ1 Detection	: Enable
IRQ3 Detection	: Enable	DRQ2 Detection	: Enable
IRQ4 Detection	: Enable	DRQ3 Detection	: Enable
IRQ5 Detection	: Enable	DRQ5 Detection	: Enable
IRQ6 Detection	: Enable	DRQ6 Detection	: Enable
IRQ7 Detection	: Enable	DRQ7 Detection	: Enable
IRQ8 Detection	: Disable		
IRQ9 Detection	: Enable		
IRQ10 Detection	: Enable		
IRQ11 Detection	: Enable		
IRQ12 Detection	: Enable		
IRQ14 Detection	: Disable		
IRQ15 Detection	: Enable		
		ESC: Quit	↑ ↓ ← →: Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values (Shift)	F2: Color
		F6: Load BIOS Defaults	
		F7: Load Setup Defaults	

The following pages tell you the options of each item & describe the meanings of each options.

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Item	Options	Descriptions
A. PM Mode	SMI Green	Pre-defined only for the Intel S-Serial CPU, that all of Power-Management interrupt is using SMI.
	Auto Green	Pre-defined only for the other CPU (AMD, Cyrix...)
		Note: This item is Show-Only, depend on whether the CPU is Intel S-Serial or not.
B. Power Management	Disable	Global Power Management will be disabled
	User Define	Users can configure their own power management
	Min Saving	Pre-defined timer values are used such that all timers are in their MAX value.
	Max Saving	Pre-defined timer values are used such that all timers are in their MIN value.

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Item	Options	Descriptions
C. Doze timer (* Remark 1)	15 Sec 2 Min 5 Min 15 Min 30 Min 45 Min 60 Min 240 Min	Defines the continuous idle time before the system entering DOZE mode. If any item defined in (I) is enabled & active DOZE timer will be reloaded
	Disable	System will never enter DOZE mode.
		Note: This mode is only for Intel S-Serial, the CPU clock will down to 8 MHz in DOZE mode.
D. Sleep timer (* Remark 1)	15 Sec 2 Min 5 Min 15 Min 30 Min 45 Min 60 Min 240 Min	Defines the continuous idle time before then system entering SLEEP mode. If any item defined in (I) is enabled & active SLEEP timer will be reloaded.
	Disable	System will never enter SLEEP mode.

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Award BIOS Setup

Item	Options	Descriptions
E. HDD Standby Timer (* Remark 1)	Disable	HDD's motor will not off
	1 Min 2 Min 3 Min 4 Min 5 Min 6 Min 7 Min 8 Min 9 Min 10 Min 11 Min 12 Min 13 Min 14 Min 15 Min	Defines the continuous HDD idle time before the HDD entering power saving mode (motor off)
F. Sleep Clock		Note: When HDD is in power saving mode, any access to the HDD will wake the HDD up
	Stop	To define the CPU stop in sleep mode
	Slow	To define the CPU slow-down (8MHz) in sleep mode
G. CRT Sleep		Note: This item is only for Intel S-Serial, the BIOS will automatically detect CPU and disable this item if the CPU is not Intel S-Serial.
	Disable	To define the CRT will not turn off during SLEEP mode.
H. CRT Power Down	Enable	To define the CRT will turn off during SLEEP mode.
	Disable	To define the CRT will not turn off Green SLEEP mode.
I. PM Wait For APM	Enable	To define the CRT will turn off Green SLEEP mode.
	Disable	Update timer.
	Enable	Will not update timer.

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Item	Options	Descriptions
J. IRQ3 Detection IRQ4 Detection IRQ5 Detection IRQ6 Detection IRQ7 Detection IRQ8 Detection IRQ9 Detection IRQ10 Detection IRQ11 Detection IRQ12 Detection IRQ14 Detection IRQ15 Detection LDEV Detection LREQ Detection Video Detection HDD Detection FDD Detection DRQ0 Detection DRQ1 Detection DRQ2 Detection DRQ3 Detection DRQ5 Detection DRQ6 Detection DRQ7 Detection	Disable	The specified event's activity will not affect the PM timers.
	Enable	The specified event's activity causes the PM Timers to be reloaded. i.e. the Power Management Unit (PMU) monitors the specified activities as PM events.

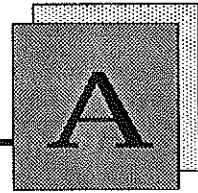
* Remark 1: All items with (*) in this menu, will be loaded with predefined values as long as the item 'Power Management' is not configured to 'User Defined'.

These items are:

Item 'Doze Timer', 'Sleep Timer' & 'HDD Standby Timer'.

Remark 2: If the CPU you're using is not a Intel S-Serial CPU, the System BIOS will automatically detect the CPU & the POWER MANAGEMENT SETUP will not show "Doze Timer" and "Sleep Clock".

Appendix A



Appendix A

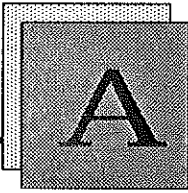
Jumper setting

Jumper setting contain the following jumpers: CPU TYPE, CACHE SIZE and CLOCK GENERATOR.

CPU	CPU TYPE						CLOCK GENERATOR				
	JP9	JP11	JP12	JP13	JP15	JP23	JP32	JP16	JP17	JP18	
SX	-25	OPEN	1-2	OPEN	OPEN	OPEN	2-3	OPEN	OPEN	OPEN	OPEN
	-33	OPEN	1-2	OPEN	OPEN	OPEN	2-3	OPEN	OPEN	CLOSE	CLOSE
DX	-33	OPEN	1-2	OPEN	1-2	OPEN	1-2,3-4	OPEN	OPEN	CLOSE	CLOSE
	-40	OPEN	1-2	OPEN	1-2	OPEN	1-2,3-4	OPEN	OPEN	CLOSE	OPEN
	-50	OPEN	1-2	OPEN	1-2	OPEN	1-2,3-4	OPEN	OPEN	OPEN	CLOSE
DX2	-50	OPEN	1-2	OPEN	1-2	OPEN	1-2,3-4	OPEN	OPEN	OPEN	OPEN
	-66	OPEN	1-2	OPEN	1-2	OPEN	1-2,3-4	OPEN	OPEN	CLOSE	CLOSE
M6	-40	CLOSE	2-3	2-3	OPEN	OPEN	2-3	1-2	OPEN	CLOSE	OPEN
M7	-40	CLOSE	2-3	2-3	1-2	OPEN	1-2,3-4	OPEN	OPEN	CLOSE	OPEN
P24C	-75	OPEN	1-2	OPEN	1-2	OEN	1-2,3-4	OPEN	OPEN	OPEN	OPEN
P24C	-100	OPEN	1-2	OPEN	1-2	OPEN	1-2,3-4	OPEN	OPEN	OPEN	CLOSE
P24D		OPEN	2-3	OPEN	1-2	CLOSE	1-2,3-4	2-3			
P24T		OPEN	2-3	OPEN	1-2	CLOSE	1-2,3-4	2-3			

※ If use P24C-75 JP30 set open (clock x 3)

※ If use P24C-100 JP30 set 1-2 (clock x 2)



Appendix A

JP8,JP27,JP28,JP43,JP44 CACHE OPTION

SIZE	JP8	JP27	JP28	JP44	TAG RAM	JP43
64 K	2-3	OPEN	OPEN	1-2	8K * 8	OPEN
128 K	1-2	CLOSE	OPEN	1-2	8K * 8	OPEN
256 K	2-3	CLOSE	CLOSE	2-3	16K * 8	OPEN
256 K	2-3	CLOSE	CLOSE	1-2	32K * 8	OPEN
512 K	1-2	CLOSE	CLOSE	1-2	32K * 8	CLOSE

SRAM CONFIGURATION

	BANK 0	BANK 1	TAG U27
64 K	8K * 8	8K * 8	8K * 8
128 K	32K * 8	NONE	8K * 8
256 K	32K * 8	32K * 8	32K * 8/16K * 8
512 K	128K * 8	NONE	32K * 8

※BANK 0 (U12,U17,U19,U24) BANK 1 (U15,U18,U21,U26)