

J-402B/J-402BG
3/486 VL-BUS MAIN BOARD
USER'S MANUAL

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Chapter 1 Introduction

Congratulations on the purchase of your New J-402B /J-402BG 3/486 VL-Bus main board.

The J-402B/J-402BG 3/486 VL-Bus main board is a lowcost three-chip solution offering optimal performance for low to mid range 386/486-based AT system. The J-402B/J-402BG VL-Bus main board is designed for 386 systems running from 25, 33 and 40MHz, or 486 systems running from 25, 33 and 50MHz. It supports 386DX, 486SX, 486DX, 486DX2 Cyrix 486DLC, M6, M7, P24T, and Three 32-bit local Bus.

The J-402B/J-402BG 3/486 VL-Bus main board. also has an option to accommodate either 64K, 128K, 256K of external cache and support the 80387 numeric coprocessor.

Because of its unique memory subsystem design, the J-402B /J-402BG 3/486 VL-Bus main board, allows for 1 Megabyte Megabytes of 32-bit high speed memory by using 256K, to 64 1M,4M and 8M SIMM modules. The available memory configurations are 1MB, 2MB, 4MB, 5MB, 8MB, 16MB, 20MB, 32MB,64MB.

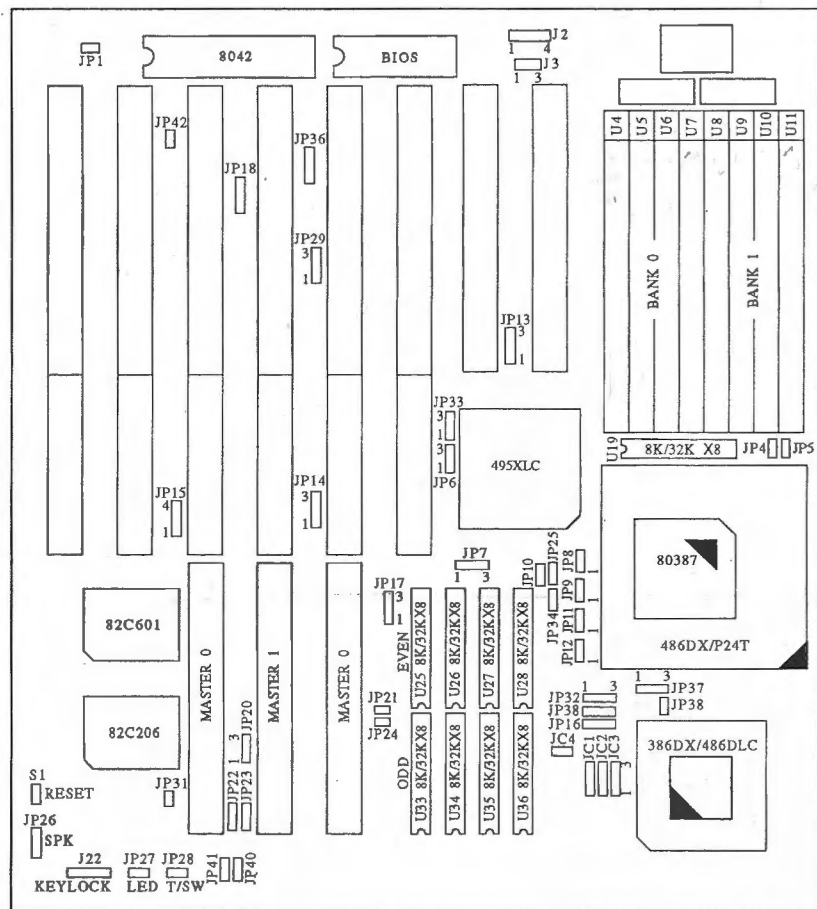
SPECIFICATION

Processor:	386DX, 486SX, 486DX, 486DX2, 486DLC, M6, M7, P24T
Coprocessor:	Intel ULSI, IIT, Cyrix 80387
CPU Clock:	33/40MHz for 386 M/B 25/33/40/50/DX2-50/DX2-66MHz, for 486M/B
CPU Clock Source:	Clock generator
Memory:	Up to 64MB
Memory configuration:	1MB/2MB/4MB/5MB/8MB/16MB/ 20MB/32MB/64MB
Memory using:	256KB/1MB/4MB/8MB Module, memory up to 64MB on board
SRAM configuration:	64KB/128KB/256KB
BIOS Subsystem Type:	AMI ROM BIOS
Additional BIOS features:	Setup program resides in ROM.
I/O Subsystem No. of slots:	Six 16-bit & Two 8-bit ISA Slots, Three 32-bit Local Bus slots.
Dimension:	22X25.5 cm, 2/3 Baby AT size
Additional features	
Miscellaneous connectors:	Reset button. Turbo speed indicator. Internal battery.
Board design:	Four layer implementation for low noise operation.

SYSTEM FEATURES

- Low cost, low power, 1.0 μ m CMOS technology.
- Bust-Line-Fill during cache-read-miss.
- Support 386DX(PGA), 486DLC/486DX/486DX2/486SX (PGA), M6, M7, P24T CPU
- Up to 10% performance enhancement from write-through cache scheme.
- Support VESA local bus to increasing video & IDE performance.
- Adjustable system speed clock by clock generator.
- 387 Coprocessor support for 386 mode.
- Hidden refresh support to enhance system performance.
- Copy-back Direct-mapped with size of 64KB, 128KB, 256KB.
- Up to 64MB of local high-speed, page-mode, DRAM memory space.
- Supports 1 through 2 banks of 256KX9, 1MX9, 4MX9, 16MX9. SIMM.
- Turbo/slow speed selection.
- Support 2-1-1-1 or 3-2-2-2 cache cycles.
- 1X and 2X clock source, supporting systems running up to 50MHz.
- Shadow RAM support for system BIOS, video BIOS, and adaptor card BIOS.
- Control of two non-cacheable regions.
- On-chip comparator determines cache hit or miss.

J-402B/J-402BG 3/486 VL-BUS MAIN BOARD Layout



Chapter 2 Installation

BEFORE TURNING ON THE SYSTEM POWER, PLEASE FOLLOW THE FOLLOWING INSTRUCTIONS CAREFULLY OR YOUR SYSTEM MAY NOT OPERATE CORRECTLY. THANK YOU!!

On Board SIMM Installation

The J-402B/J-402BG 3/486 VL-Bus main board can be expanded memory from 1MB to 64MB. Either 256K or 1M, 4M or 16M SIM DRAM can be used on the J-402B/J-402BG 3/486 VL-bus mainboard. There are special BANK 0 and BANK 1 SIMM of assembly available for the J-402B/J-402BG 3/486 VL-Bus mainboard. They are:

- SIMM Module Used: (256K, 1M, 4m, 16mx9 of SIMM 4 Pcs)

BANK 0	BANK 1	TOTAL MEMORY
256K X 9, 4 pcs	NONE	1M
256K X 9, 4 pcs	256K X 9, 4 pcs	2M
1M X 9, 4 pcs	NONE	4M
256K X 9, 4 pcs	1M X 9, 4 pcs	5M
1M X 9, 4 pcs	1M X 9, 4 pcs	8M
4M X 9, 4 pcs	NONE	16M
1M X 9, 4 pcs	4M X 9, 4 pcs	20M
4M X 9, 4 pcs	1M X 9, 4 pcs	20M
4M X 9, 4 pcs	4M X 9, 4 pcs	32M
16MX 9, 4 pcs	NONE	64M

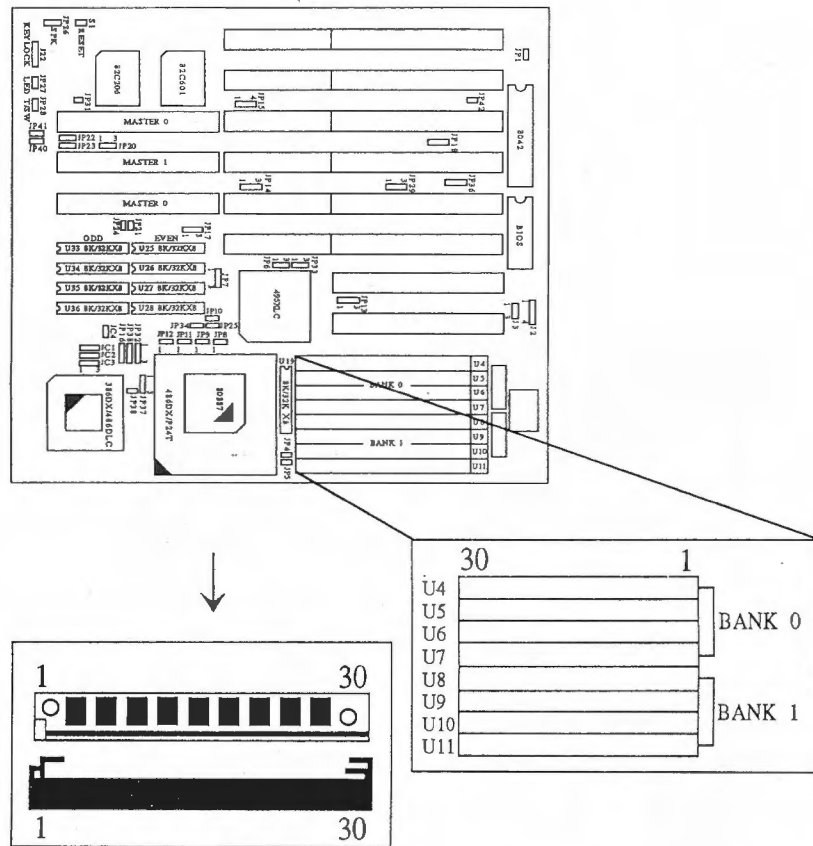
SIMM MODULE DRAM on the motherboard consists of BANK 0-1. When you install the DRAM on the motherboard, first completely fill BANK 0, then fill BANK 1. The spaces of BANK 0 should be fully occupied, otherwise the motherboard will not work.

SIM RAM ON BOARD POSITION

Please refer to the table for the BANK 0 and BANK 1 position.

BANK 0 INSTALL:	U4	U5	U6	U7
BANK 1 INSTALL:	U8	U9	U10	U11

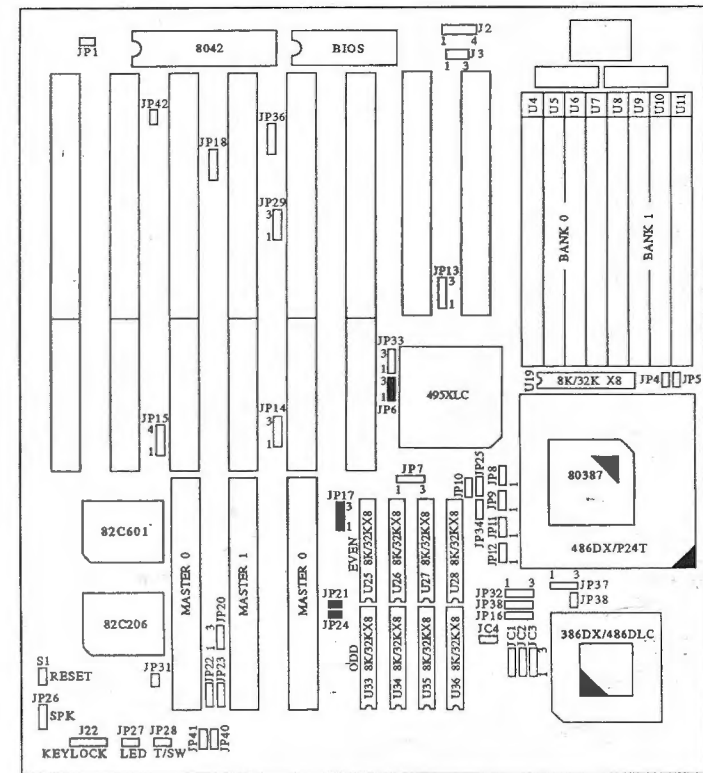
■ Please refer to the following figure for operating the SIM DRAM:



CACHE SRAM INSTALL SELECTION

CACHE SIZE	CACHE SRAM		TAG RAM	JUMPER SETTING			
	BANK 0	BANK 1	U19	JP21	JP24	JP6	JP17
64K	U25, U26, U27, U28	U33, U34, U35, U36	8KX8	OP	OP	2-3	2-3
128K	32KX8, 4PCS	NONE	8KX8	CL	OP	1-2	1-2
256K	32KX8, 4PCS	32KX8, 4PCS	16KX8/32KX8	CL	CL	2-3	2-3

■ Please refer to the following for setting up the JP21, JP24, JP6, JP17



CPU ASSEMBLE OPERATION

A Type CPU Assemble 386DX/386DX+80387, 486DLC/
486DLC+80387

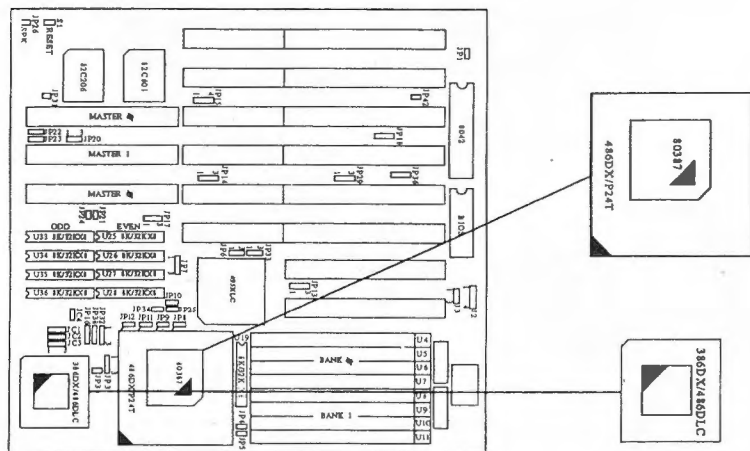
STEP 1 SET 386 MODE

CPU TYPE	JP25	JP16	JP34	JP14	JP29	JP31	JP20	JP 7
386 MODE	OP	2-3	1-2	1-2	1-2	CL	OP	1-2

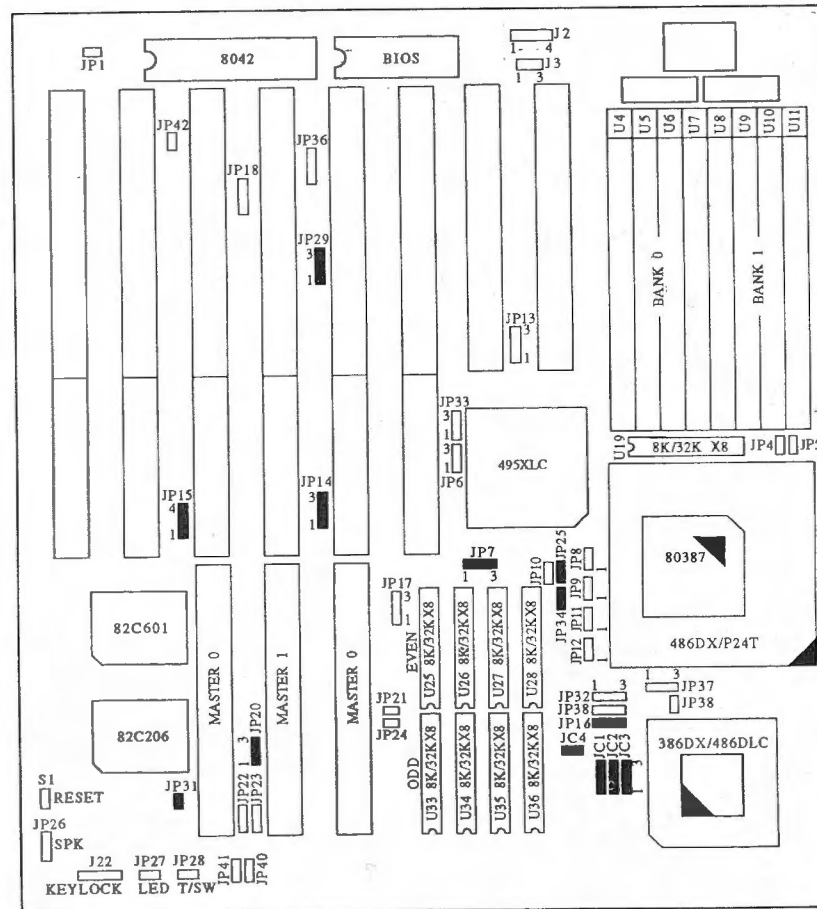
STEP 2 386 CPU CLOCK SELECT JUMPER SETTING

JUMPER	CPU TYPE	
	386DX-33/486DLC-33	386DX-40/486DLC-40
JC1	2-3	2-3
JC2	1-2	2-3
JC3	1-2	1-2
JC4	CL	CL

STEP 3 PLEASE REFER TO THE FIGURE FOR 386DX/ 486DLC, 80387 POSITION.



STEP 4 Please refer to the following figure for setting up to
JP25, JP16, JP34, JP14, JP29, JP20, JP15, JP31, JC1,
JC2, JC3, JC4, JP7:



B Type CPU Assemble 486DX, 486SX, 486DX2, 487SX, OVERDRIVE:

STEP 1 SET 486 MODE

CPU TYPE	JP25	JP16	JP34	JP14	JP29	JP31	JP20
486 MODE	CL	1-2	OP	2-3	1-2	OP	1-2

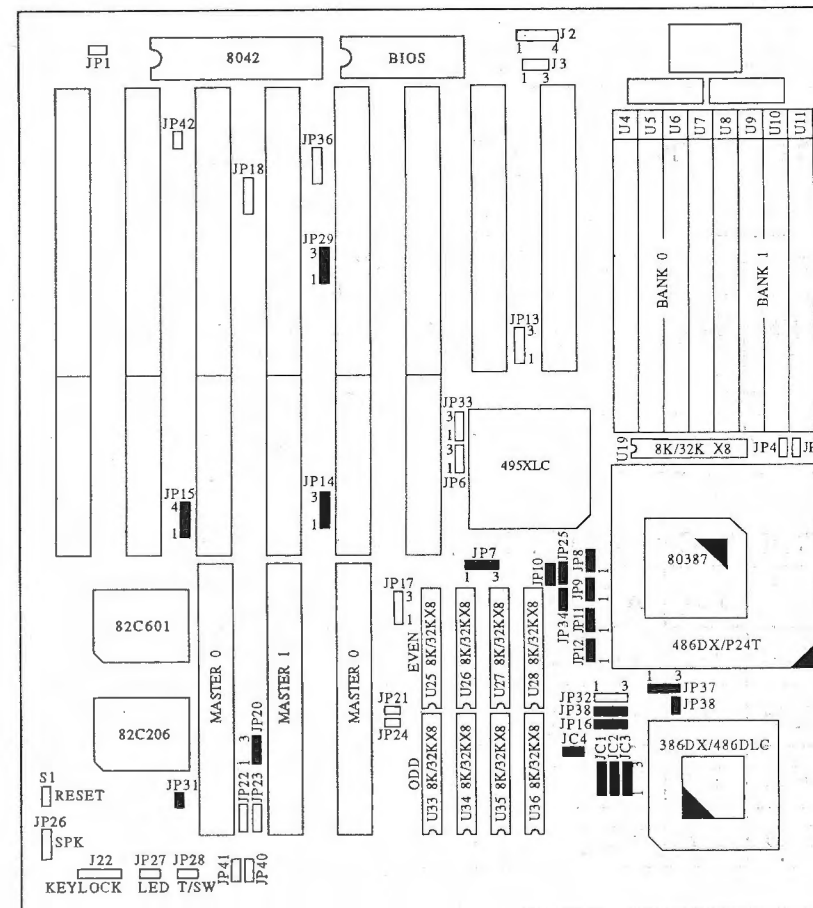
STEP 2 SET 486DX, 486SX, 487SX

	JP7	JP8	JP9	JP10	JP11	JP12	JP37	JP38	JP39
486DX	1-2	OP	1-2	2-3	1-2	2-3	OP	2-3	OP
486SX	1-2	OP	OP	OP	2-3	OP	OP	2-3	OP
487DX	1-2	OP	1-2	2-3	1-2	1-2	OP	2-3	OP

STEP 3 486 CPU CLOCK SELECT JUMPER SETTING

JUMPER	CPU TYPE			
	486DX2-50 486DX-25 486SX-25 OVERDRIVE-25	486DX2-66 486DX-33 486SX-33 OVERDRIVE-33	486DX-40	486DX-50
JC1	1-2	2-3	2-3	1-2
JC2	1-2	1-2	2-3	2-3
JC3	2-3	1-2	1-2	1-2
JC4	OP	OP	OP	OP

STEP 4 Please refer to the following figure for setting up to JP25, JP16, JP34, JP14, JP29, JP31, JP20, JP15, JP7, JP8, JP9, JP10, JP11, JP12, JP37, JP38, JP39, JC1, JC2, JP3, JP4, POSITION:



C TYPE CPU ASSEMBLE M6, M7, P24T

STEP 1 SET P24T, M6, M7 MODE

MODE	JP25	JP16	JP34	JP14	JP29	JP31	JP20
P24T	CL	1-2	2-3	2-3	2-3	OP	1-2
M6/M7	CL	1-2	2-3	2-3	2-3	OP	1-2

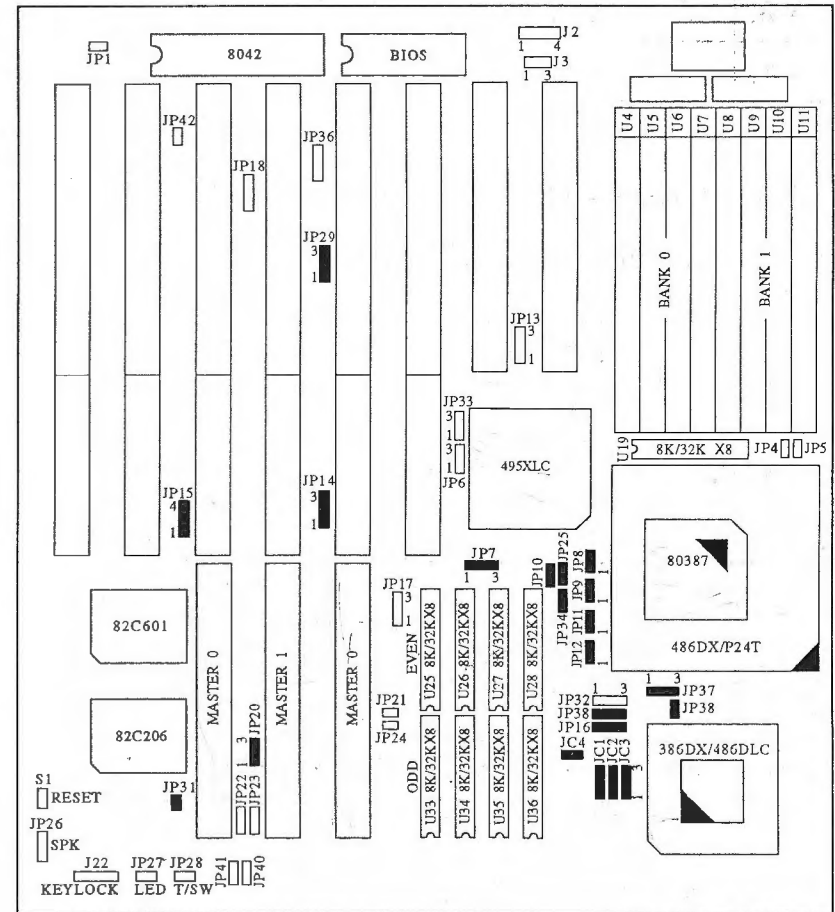
STEP 2 CPU TYPE SELECT JUMPER SETTING

	JP7	JP8	JP9	JP10	JP11	JP12	JP37	JP38	JP39
P24T	2-3	1-2	1-2	1-2	1-2	2-3	OP	2-3	OP
M6	2-3	2-3	OP	1-2	2-3	OP	OP	1-2	CL
M7 1XCLK	2-3	2-3	1-2	1-2	1-2	2-3	1-2	1-2	CL
M7 2XCLK	2-3	2-3	1-2	1-2	1-2	2-3	2-3	1-2	CL

STEP 3 CPU TYPE SELECT JUMPER SETTING

	JC1	JC2	JC3	JC4
25M	1-2	1-2	2-3	OP
33M	2-3	1-2	1-2	OP
40M	2-3	2-3	1-2	OP
50M	1-2	2-3	1-2	OP

STEP 4 Please refer to the following figure for setting up to JP25, JP16, JP34, JP14, JP29, JP31, JP20, JP15, JP7, JP8, JP9, JP10, JP11, JP12, JP37, JP38, JP39, JC1, JC2, JC3, JC4 POSITION:



4.INTERNAL CACHE WRITE BACK (W.B.) / WRITE THROUGH (W.T.) SELECT JUMPER SETTING

	JP4	JP5
W.B.	CL	OP
W.T.	OP	CL

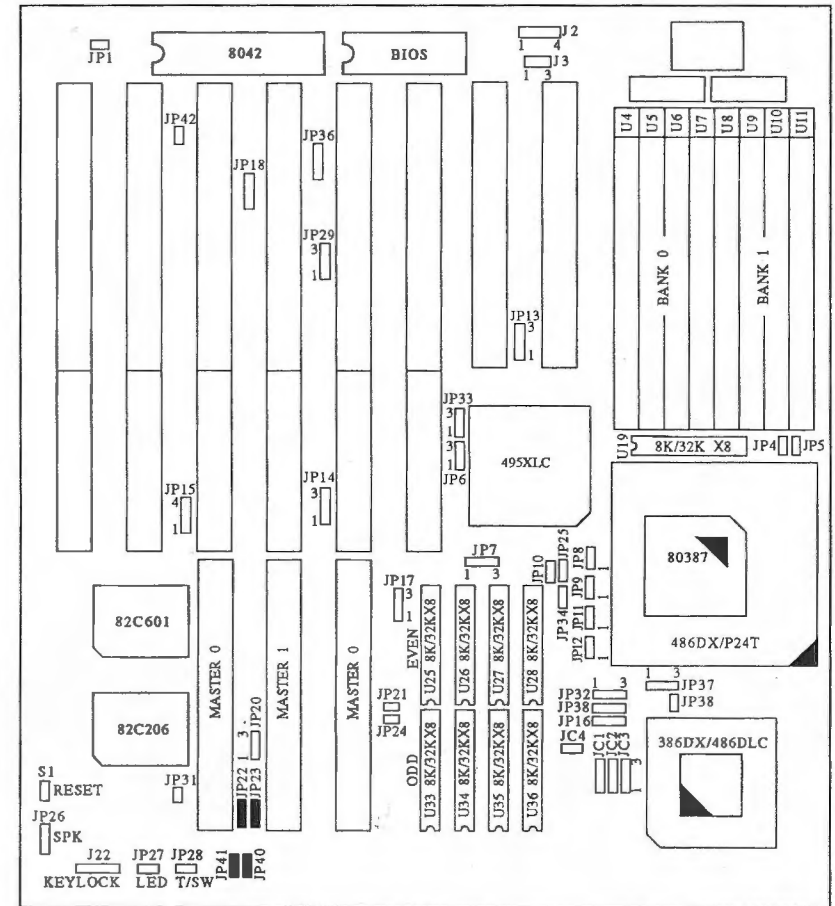
5.J-402B/J-402BG VL-BUS JUMPER SETTING

STEP 1 VL-BUS SPEED & VL-BUS MODE JUMPER SETTING

VL-BUS	JP22	JP23	JP40	JP41
< 33M	X	OP	X	X
> 33M	X	CL	X	X
0 WS	OP	X	X	X
1WS	CL	X	X	X
386	X	X	OP	CL
486	X	X	CL	OP

NOT:IF YOU HAVE COMPARBILITY PROBLEM IN VL-BUS PLEASE TRY JP13 SET 1-2 & JP32 SET 2-3

STEP 2 Please refer to the following figure for setting up JP22, JP23, JP40, JP41



J-402B/J402BG 3/486 VL-BUS MAIN BOARD

◆ JP1: DISPLAY ADAPTER SETUP

JUMPER	MEANING	SETTING	USAGE
JP1	DISPLAY TYPE	PIN 1, 2	
		OPEN	MONOCHROME
		SHORT	COLOR

◆ JP22: KEYLOCK & POWER LED CONNECTOR

CONNECTOR	USAGE	PIN DESCRIPTION
JP22	KEYLOCK & POWER LED	1 LED power
		2 not used
		3 GROUND
		4 keyboard inhibitor
		5 GROUND

◆ JP26: SPEAKER CONNECTOR

CONNECTOR	USAGE	PIN DESCRIPTION
JP26	SPEAKER	1 data out
		2 not used
		3 GROUND
		4 +5V

◆ JP28: TURBO SW CONNECTOR

CONNECTOR	USAGE	PIN DESCRIPTION
JP28	TURBO SW	1 GROUND
		2 Select pin

◆ JP27: TURBO LED CONNECTOR

CONNECTOR	USAGE	PIN	DESCRIPTION
JP27	TURBO LED	1	+ ANODE
		2	- CATHODE

◆ S1: RESET

CONNECTOR	USAGE	PIN	DESCRIPTION
S1	Reset	1	GROUND
		2	Reset in

◆ JP2: EXTERNAL BATTERY CONNECTOR

PIN	DESCRIPTION
1-2	BATTERY DISCHARGE.
2-3	short is internal battery 3.6V by used

JP2: 2-3 Normal Operation (Default)

JP2: 1-2 Clear CMOS Memory (206 Setup of Data)

NOTE: Must put on 2-3 location just can operating the system

◆ J1: KEYBOARD CONNECTOR

PIN	DESCRIPTION
1	keyboard clock
2	keyboard data
3	space
4	GROUND
5	+5V dc

Chapter 3 AMI BIOS Setup

AMI BIOS System configuration Setup

This section will tell you how to set up the system configurations (CMOS) under the AMI BIOS. After booting the system and testing the memory.

The SETUP program is contained in the system's Read-Only-Memory Rather than on a diskette.

To enter SETUP, press the "DEL" key. The following menu appears:

AMIBIOS SETUP PROGRAM-AM AMI BIOS SETUP UTILITIES (C) 1992 American Megatrends Inc., All Rights Reserved
STANDARD CMOS SETUP ADBANCED CMOS SETUP ADVANCED CHIPSET SETUP PEWER MANAGEMENT SETUP AUTO CONFIGURATION WITH BIOS DEFAULTS AUTO CONFIGURATION WITH POWER-ON DEFAULTS CHANGE PASSWORD HARD DISK UTILITY WRITE TO CMOS AND EXIT DO NOT WRITE TO CMOS AND EXIT
Standard CMOS Setup for changing Time, Date, Hard Disk Type, etc.
ESC:EXIT ↓ → ↑ :Sel F2/F3:Color F10:Save & Exit

Please enter "STANDARD CMOS SETUP" to enter the next screen.
The following pages show simple charts and instructions for the CMOS setup.

AMIBIOS SETUP PROGRAM-WARNING INFORMATION
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Improper Use of Setup may Cause Problems!!

If System Hangs, Reboot System and Enter Setup by Pressing the (DEL) key

Do any of the following After Entering Setup

- (i) Alter Options to make System Work
- (ii) Load BIOS Setup Defaults
- (iii) Load Power-on Defaults

Hit "ESC" to Stop now, Any other Key to Continue
Hit "ESC" to Stop now, Any other Key to Continue

AMIBIOS SETUP PROGRAM - STANDARD COMOS SETUP
(C) 1992 American Megatrends Inc., All Rights Reserved

Date (mm/date/year) : Base memory size : 640 KB
Time (hour/min/sec) : 19:35:25 Ext. memory size : 3072 KB

	Cyl	Head	WPcom	LZone	Sect	Size
Hard disk C:type : 37	615	8	128	615	17	41MB
Hard disk D:type : Not Installed						
Floppy drive A: : 1.2 MB, 5 1/4"						
Floppy drive B: : Not Installed						
Primary display : Monochrome						
Keyboard : Installed						

Month : Jan, Feb.....Dec
Date : 01 02 03.....31
Year : 1901, 1902.....2099

ESC: Exit ↓→↑ : Select F2/F3: Color PU/PD: Modify

AMIBIOS SETUP PROGRAM-AM AMI BIOS SETUP UTILITIES
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STANDARD CMOS SETUP

ADVANCED CHIPSET SETUP
PEWER MANAGEMENT SETUP
AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
CHANGE PASSWORD
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT

Advanced CMOS Setup for configuring System Options

ESC:EXIT ↓→↑ :Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP PROGRAM-WARNING INFORMATION
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Improper Use of Setup may Cause Problems!!

If System Hangs, Reboot System and Enter Setup by Pressing the (DEL) key

Do any of the following After Entering Setup

- (i) Alter Options to make System Work
- (ii) Load BIOS Setup Defaults
- (iii) Load Power-on Defaults

Hit "ESC" to Stop now, Any other Key to Continue

AMIBIOS SETUP PROGRAM-ADVANCED CMOS SETUP

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Typematic Rate Programming	:Disabled	Video ROM Shadow C000,16K	Enabled
Typematic Rate Delay (msec)	:500	Video ROM Shadow C400,16K	Enabled
Typematic Rate (Chars/Sec)	:30	Adaptor ROM Shadow C800,16K	Disabled
Above 1 MB Memory Test	:Disabled	Adaptor ROM Shadow CC00,16K	Disabled
Memory Test Tick Sound	:Enabled	Adaptor ROM Shadow D000,16K	Disabled
Memory Parity Error Check	:Enabled	Adaptor ROM Shadow D400,16K	Disabled
Hit (DEL) Message Display	:Enabled	Adaptor ROM Shadow D800,16K	Disabled
Hard Disk Type 47 RAM Area	:0:300	Adaptor ROM Shadow DC00,16K	Disabled
Wait For (F1) If Any Error	:Enabled	Adaptor ROM Shadow E000,16K	Disabled
System Boot Up Num Lock	:On	Adaptor ROM Shadow E400,16K	Disabled
Weitek Processor	:Absent	Adaptor ROM Shadow E800,16K	Disabled
Floppy Drive Seek At Boot	:Enabled	Adaptor ROM Shadow EC00,16K	Disabled
System Boot Up Sequence	:A ;C:	System ROM Shadow F000,64K	Enabled
System Boot Up CPU Speed	:High	BootSector Virus Protection	Disabled
External Cache Memory	:Enabled	IDE Block Mode Transfer	Disabled
Internal Cache Memory	:Enabled	IDE Standby mode	Disabled
Turbo Switch Function	:Enabled	Auto Key - Lock Timeout	Disabled
Password Checking Option	:Setup		

(Ctrl) Pu-Pd:Modify F1:Help F2/F3:Color
F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults

AMIBIOS SETUP PROGRAM-AMI BIOS SETUP UTILITIES

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STANDARD CMOS SETUP

ADVANCED CMOS SETUP

ADVANCED CHIPSET SETUP

PEWER MANAGEMENT SETUP

AUTO CONFIGURATION WITH BIOS DEFAULTS

AUTO CONFIGURATION WITH POWER-ON DEFAULTS

CHANGE PASSWORD

HARD DISK UTILITY

WRITE TO CMOS AND EXIT

DO NOT WRITE TO CMOS AND EXIT

Advanced Chipset Setup for Contiquare and Chipset Registering

ESC:EXIT ↓ → ↑ :Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP PROGRAM-WARNING INFORMATION

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Improper Use of Setup may Casuse Problems!!

If System Hangs, Reboot System and Enter Setup by Pressing the (DEL) key

Do any of the following After Entering Setup

- (i) Alter Options to make System Work
- (ii) Load BIOS Setup Defaults
- (iii) Load Power-on Defaults

Hit "ESC" to Stop now, Any other Key to Continue

The Setup For Operation 486DX-50 MHz CPU System

AMIBIOS SETUP PROGRAM-ADVANCED CHIPSET SETUP

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Auto Config Function	:Enable
Hidden Refresh	:Enable
Single ALE Enable	:NO
Keyboard Reset Control	:Disable
AT BUS Clock Selection	:CLK1/6
Fast Decode Enable	:Disable
Memory Read Wait State	:1 W/S
Memory Write Wait State	:1 W/S
Cache Read Cycle	:3-2-2-2
Cache Write Wait State	:2 W/S
Non-Cacheable Block-1 Size	:Disabled
Non-Cacheable Block-1 Base	:0 KB
Non-Cacheable Block-2 Size	:Disabled
Non-Cacheable Block-2 Base	:0 KB
Cacheable RAM Address Range	:16 MB
Video BIOS Area Cacheable	:Yes
Internal Cache Write Policy	:Wr-Thru

(Ctrl) Pu-Pd:Modify F1:Help F2/F3:Color
F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults

The Setup For Operation 486DX-40 MHz System

AMIBIOS SETUP PROGRAM -ADVANCED CHIPSET SETUP (C) 1992 American Megatrends Inc.,All Rights Reserved	
Auto Config Function	:Enable
Hidden Refresh	:Enable
Single ALE Enable	:NO
Keyboard Reset Control	:Disable
AT BUS Clock Selection	:CLKI/5
Fast Decode Enable	:Disable
Memory Read Wait State	:1 W/S
Memory Write Wait State	:1 W/S
Cache Read Cycle	:3-2-2-2
Cache Write Wait State	:2 W/S
Non-Cacheable Block-1 Size	:Disabled
Non-Cacheable Block-1 Base	:0 KB
Non-Cacheable Block-2 Size	:Disabled
Non-Cacheable Block-2 Base	:0 KB
Cacheable RAM Address Range	:16 MB
Video BIOS Area Cacheable	:Yes
Internal Cache Write Policy	:Wr-Thru
(Ctrl) Pu-Pd:Modify F1:Help F2/F3:Color F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults	

The Setup For Operation 486DX/SX-33, 486DX2-66 MHz System

AMIBIOS SETUP PROGRAM -ADVANCED CHIPSET SETUP (C) 1992 American Megatrends Inc.,All Rights Reserved	
Auto Config Function	:Enable
Hidden Refresh	:Enable
Single ALE Enable	:NO
Keyboard Reset Control	:Disable
AT BUS Clock Selection	:CLKI/4
Fast Decode Enable	:Disable
Memory Read Wait State	:1 W/S
Memory Write Wait State	:1 W/S
Cache Read Cycle	:3-2-2-2
Cache Write Wait State	:2 W/S
Non-Cacheable Block-1 Size	:Disabled
Non-Cacheable Block-1 Base	:0 KB
Non-Cacheable Block-2 Size	:Disabled
Non-Cacheable Block-2 Base	:0 KB
Cacheable RAM Address Range	:16 MB
Video BIOS Area Cacheable	:Yes
Internal Cache Write Policy	:Wr-Thru
(Ctrl) Pu-Pd:Modify F1:Help F2/F3:Color F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults	

The Setup For Operation 486DX/SX-25, 486DX2-50 MHz System

AMIBIOS SETUP PROGRAM -ADVANCED CHIPSET SETUP (C) 1992 American Megatrends Inc.,All Rights Reserved	
Auto Config Function	:Enable
Hidden Refresh	:Enable
Single ALE Enable	:NO
Keyboard Reset Control	:Disable
AT BUS Clock Selection	:CLKI/3
Fast Decode Enable	:Disable
Memory Read Wait State	:1 W/S
Memory Write Wait State	:1 W/S
Cache Read Cycle	:3-1-1-1
Cache Write Wait State	:2 W/S
Non-Cacheable Block-1 Size	:Disabled
Non-Cacheable Block-1 Base	:0 KB
Non-Cacheable Block-2 Size	:Disabled
Non-Cacheable Block-2 Base	:0 KB
Cacheable RAM Address Range	:16 MB
Video BIOS Area Cacheable	:Yes
Internal Cache Write Policy	:Wr-Thru
(Ctrl) Pu-Pd:Modify F1:Help F2/F3:Color F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults	

The setup For Operation 386DX-40/Cyrix 486DLC-40MHZ system

AMIBIOS SETUP PROGRAM -ADVANCED CHIPSET SETUP (C) 1992 American Megatrends Inc.,All Rights Reserved	
Auto Config Function	:Disable
Hidden Refresh	:Enable
Single ALE Enable	:NO
Keyboard Reset Control	:Disable
AT BUS Clock Selection	:CLKI/5
Fast Decode Enable	:Disable
Memory Read Wait State	:1 W/S
Memory Write Wait State	:1 W/S
Cache Read Cycle	:2-1-1-1
Cache Write Wait State	:1W/S
Non-Cacheable Block-1 Size	:Disabled
Non-Cacheable Block-1 Base	:0 KB
Non-Cacheable Block-2 Size	:Disabled
Non-Cacheable Block-2 Base	:0 KB
Cacheable RAM Address Range	:16 MB
Video BIOS Area Cacheable	:Yes
Internal Cache Write Policy	:Wr-Thru
(Ctrl) Pu-Pd:Modify F1:Help F2/F3:Color F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults	

The setup For Operation 386DX-33, Cyrix 486DLC-33MHz system

AMIBIOS SETUP PROGRAM-ADVANCED CHIPSET SETUP (C) 1992 American Megatrends Inc.,All Rights Reserved	
Auto Config Function	:Enable
Hidden Refresh	:Enable
Single ALE Enable	:NO
Keyboard Reset Control	:Disable
AT BUS Clock Selection	:CLKI/4
Fast Decode Enable	:Disable
Memory Read Wait State	:1 W/S
Memory Write Wait State	:1 W/S
Cache Read Cycle	:3-1-1-1
Cache Write Wait State	:1W/S
Non-Cacheable Block-1 Size	:Disabled
Non-Cacheable Block-1 Base	:0 KB
Non-Cacheable Block-2 Size	:Disabled
Non-Cacheable Block-2 Base	:0 KB
Cacheable RAM Address Range	:16 MB
Video BIOS Area Cacheable	:Yes
Internal Cache Write Policy	:Wr-Thru
(Ctrl) Pu-Pd:Modify F1:Help F2/F3:Color F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults	

AMIBIOS SETUP PROGRAM-AM AMI BIOS SETUP UTILITIES (C) 1992 American Megatrends Inc., All Rights Reserved	
STANDARD CMOS SETUP	
ADVANCED CMOS SETUP	
ADVANCED CHIPSET SETUP	
POWER MANAGEMENT SETUP	
AUTO CONFIGURATION WITH BIOS DEFAULTS	
AUTO CONFIGURATION WITH POWER-ON DEFAULTS	
CHANGE PASSWORD	
HARD DISK UTILITY	
WRITE TO CMOS AND EXIT	
DO NOT WRITE TO CMOS AND EXIT	
Advanced CMOS Setup for configuring System Options	
ESC:EXIT ↓ → ↑ :Sel F2/F3:Color F10:Save & Exit	

AMIBIOS SETUP PROGRAM-POWER MANAGEMENT SETUP (C) 1993 American Megatrends Inc.,All Rights Reserved	
Device-1 Timeout :Disabled	(Keyboard/Mouse Timeout.)
Device-2 Timeout :Disabled	(Power off Device Timeout.)
Device-3 Timeout :Disabled	
Device-4 Timeout :Disabled	
Device-5 Timeout :Disabled	
(Ctrl) Pu-Pd:Modify F1:Help F2/F3:Color F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults	

- NOTE:
- In J-402BG with MEGAKEY Keyboard Bios the power management function is ENABLE. You can set Device 1 timeout From 1 Min to 255 Min, to slow down CPU speed. Device 2 timeout From 1 Min to 255 Min, to power off MONITOR.
 - In J-402E the power management doesn't function.
 - The Green Function only active in 486 mode & Please set JP42, JP18 close.

Alternative System speed

SOFTWARE SWITCH:

FOR AMI BIOS:

After booting the system. Press "CTRL" + "ALT" + "-" at the same time to select low-speed, Press "CTRL" + "ALT" + "+" at the same time to select high-speed.

Please review the following configuration:

CPU SPEED	KEYBOARD	CPU SPEED
NORMAL	"CTRL" + "ALT" + "+"	TURBO
CPU SPEED		CPU SPEED
TURBO	"CTRL" + "ALT" + "-"	NORMAL

SHADOW RAM

For efficient execution of BIOS, it is preferable to execute BIOS code through RAM rather than through slower EPROMs. The OPTI-495XLC provides the shadow RAM feature which if enabled allows the BIOS code to be executed from address like BIOS EPROM. The software should transfer code stored in the BIOS EPROMs to the system RAM, before enabling the shadow RAM feature. This feature significantly improves the performance of BIOS-call intensive applications. Performance improvements as high as 300 to 400% have been observed in benchmark tests on the shadow RAM. The shadow RAM feature is invoked by enabling the corresponding bits in the ROM enable register and the RAM mapping register.

When the Shadow RAM feature is being utilized, then the RAM is mapped as shown in Figure 1, overlapping or Shadowing the EPROM area. In both cases, for accesses beyond the 1 Mbyte address range, the processor is switched from real to protected mode from BIOS.

■ FIGURE 1 RAM MAPPING WITH SHADOW RAM (MORE THAN 1MB OF RAM)

■ FIGURE 1 RAM MAPPING WITH SHADOW RAM (MORE THAN 1MB OF RAM)

	SYSTEM	MAPPING	ADDRESS
4MB	→ ←	RAM	3FFFFFFH
3MB	→ ←	RAM	300000H 2FFFFFFH
2MB	→ ←	RAM	200000H 1FFFFFFH
1MB		RAM ROM SHADOW RAM	100000H 0FFFFFFH
640KB	→ ←	RAM	010000H 09FFFFFFH 000000H
0KB			

APPENDIX

NOTICE : PLEASE REMEMBER YOUR PASSWORD OF
SETTED CHARACTERS! IF KEY IN ERROR
PASSWORD THE SYSTEM CAN'T BOOT ON
ANY MORE!!

AMIBIOS SETUP PROGRAM—AMI BIOS SETUP UTILITIES (C) 1992 American Megatrends Inc., All Rights Reserved
STANDARD CMOS SETUP ADVANCED CMOS SETUP ADVANCED CHIPSET SETUP AUTO CONFIGURATION WITH BIOS DEFAULTS AUTO CONFIGURATION WITH POWER-ON DEFAULTS CHANGE PASSWORD HARD DISK UTILITY WRITE TO CMOS AND EXIT DO NOT WRITE TO CMOS AND EXIT Change the User Password Stored in the CMOS
ESC: EXIT ↓→↑ : Sel F2/F3: Color F10: Save & Exit

- (1) PLEASE KEY IN DEFAULT PASSWORD DEFAULT IS "AMI" (FIRST TIME)
- (2) IF YOU HAVE SET OWN PASSWORD ALREADY, KEY IN YOUR PASSWORD.....

AMIBIOS SETUP PROGRAM—CHANGE PASSWORD (C) 1992 American Megatrends Inc., All Rights Reserved
Enter CURRENT Password: AMI
USE Maximum 6 ASCII Characters, ESC : Exit

- IF YOU WANT TO CHANGE NEW PASSWORD GO TO NEXT SETUP!

AMIBIOS SETUP PROGRAM—CHANGE PASSWORD
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Enter NEW Password :

USE Maximum 6 ASCII Characters, ESC : Exit

AMIBIOS SETUP PROGRAM—CHANGE PASSWORD
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Re-Enter NEW Password :

USE Maximum 6 ASCII Characters, ESC : Exit

- NEXT SCREEN OF MEANING IS YOU HAVE FINISHED PASSWORD SETTINGS! PRESS "ENTER" TO FINAL!

AMIBIOS SETUP PROGRAM—CHANGE PASSWORD
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NEW Password Installed:

USE Maximum 6 ASCII Characters, ESC : Exit

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STANDARD CMOS SETUP
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AUTO CONFIGURATION WITH BIOS DEFAULTS
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CHANGE PASSWORD
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT

Format the Hard Disk, Auto interleave Detection and Media Analysis

ESC: EXIT ↓→↑: Sel F2/F3: Color F10: Save & Exit

AMIBIOS SETUP PROGRAM—HARD DISK UTILITY
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	Cyln	Head	WPcom	LZone	Sect	Size(MB)
Hard Disk C: Type : 33	1024	5	1023	1024	17	43
Hard Disk D: Type : Not Installed						

Ha

Hard Disk Type can be changed from the STANDARD CMOS SETUP option in Main Menu

Hard Disk Format
Auto Interleave
Media Analysis

ESC: EXIT ↓→↑: Sel F2/F3: Color F10: Save & Exit

AMIBIOS SETUP PROGRAM—HARD DISK UTILITY
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	Cyl	In	Head	WPcom	LZone	Sect	Size(MB)
Hard Disk C: Type : 33	1024	5	1024	1024	17	43	
Hard Disk D: Type : Not Installed							

Hard Disk Format

Disk Drive (C/D) ?C	
Disk Drive Type ?33	
Interleave (1-16) ?1	
Mark Bad Tracks (Y/N) ?N	
Proceed (Y/N) ?Y	

ESC: EXIT ↓→↑ : Sel F2/F3: Color F10: Save & Exit

DJ-402B 3/486 VL-BUS MAIN BOARD JUMPER SETTING QUICK REFERENCE:

JUMPER	CACHE		RAM			
	64K	128K	256K	486DX2-50	486DX2-66	
JP21	OPEN	CLOSE	CLOSE			
JP24	OPEN	OPEN	CLOSE			
JP6	2-3	1-2	2-3			
JP17	2-3	1-2	2-3			

JUMPER	386DX-33	386DX-40	486DX2-50	486DX2-66	486DX-40	486DX-50
	486DLC-33	486DLC-40	486DX-25	486DX-33		
JC1	2-3	2-3	1-2	2-3	2-3	1-2
JC2	1-2	2-3	1-2	1-2	2-3	2-3
JC3	1-2	1-2	2-3	1-2	1-2	1-2
JC4	CLOSE	CLOSE	OPEN	OPEN	OPEN	OPEN
JP4	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN
JP5	CLOSE	OPEN	CLOSE	CLOSE	CLOSE	CLOSE
JP7	1-2	1-2	1-2	1-2	1-2	1-2
JP8	X	X	OPEN	OPEN	OPEN	OPEN
JP9	X	X	1-2(SX:OP)	1-2(SX:OP)	1-2	1-2
JP10	X	X	2-3(SX:OP)	2-3(SX:OP)	2-3	2-3
JP11	X	X	1-2(SX:2-3)	1-2(SX:2-3)	1-2	1-2
JP12	X	X	2-3(SX:OP)	2-3(SX:OP)	2-3	2-3
JP14	1-2	1-2	2-3	2-3	2-3	2-3
JP16	2-3	2-3	1-2	1-2	1-2	1-2
JP20	OPEN	OPEN	1-2	1-2	1-2	1-2
JP22	CLOSE	CLOSE	OPEN	OPEN	CLOSE	CLOSE
JP23	OPEN	CLOSE	OPEN	OPEN	CLOSE	CLOSE
JP25	OPEN	OPEN	CLOSE	CLOSE	CLOSE	CLOSE
JP29	1-2	1-2	1-2	1-2	1-2	1-2
JP31	CLOSE	CLOSE	OPEN	OPEN	OPEN	OPEN
JP37	X	X	OPEN	OPEN	OPEN	OPEN
JP38	X	X	2-3	2-3	2-3	2-3
JP39	X	X	OPEN	OPEN	OPEN	OPEN
JP40	OPEN	OPEN	CLOSE	CLOSE	CLOSE	CLOSE
JP41	CLOSE	CLOSE	OPEN	OPEN	OPEN	OPEN

CMOS SETUP

Load BIOS default first (AUTO CONFIGURATION WITH BIOS DEFAULT)

Then change the following settings in CMOS

Auto Config Function	Enable	Disable	Enable	Enable	Enable	Enable
AT BUS Clock Selection	CLKI/4	CLKI/5	CLKI/3	CLKI/4	CLKI/5	CLKI/6
Memory Read Wait State	1	1	1	1	1	1
Memory Write Wait State	1	1	1	1	1	1
Cache Read Cycle	3-1-1-1	2-1-1-1	3-1-1-1	3-2-2-2	3-2-2-2	3-2-2-2
Cache Write Cycle	1	1	2	2	2	2