



**3/486**

**OPTi495SLC VL-BUS**

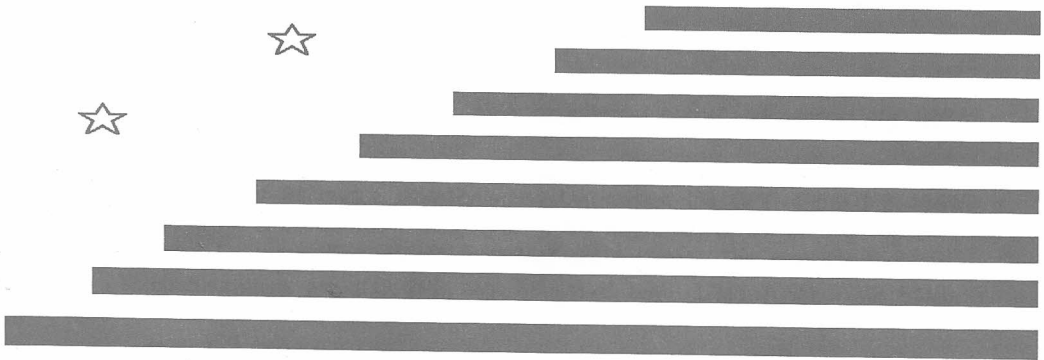
**OPTi495XLC VL-BUS**

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CHAPTER 1 INTRODUCTION



## CHAPTER 1 INTRODUCTION



This manual is designed to provide the basic information necessary for users to understand and properly use the OPTi-495SLC VESA Local Bus mainboard.

The OPTi-495SLC 3/486WB Cache motherboard is a Low-Cost two-chip solution offering optional performance for low to mid range 386/486-base AT systems. The OPTi-495SLC 3/486WB Cache M/B is designed for 386 systems running from 33MHz and 40 MHz, or 486 systems running from 25, 33 and 50 MHz. It supports 386DX, 486SX, 486DX, 486DX2 and two 32-bit Local Bus.

The OPTi-495SLC 3/486WB Cache motherboard 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 OPTi-495SLC 3/486WB Cache M/B allows for 1 Megabyte to 64 Megabyte of 32-bit high speed memory by using 256K, 1M, 4M and 16M sim modules. The available memory configurations are, 1MB, 2MB, 4MB, 5MB, 8MB, 16MB, 17MB, 20MB, 32MB, 64MB.

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## INTRODUCTION

### SPECIFICATION



Processor : 386DX, 486SX, 486DX, 486DX2, 486DLC

Coprocessor : 80387(PGA/PQFP)

CPU Clock : 33/40MHz FOR 386 M/B  
25/33/40/50/DX2-66MHz FOR 486 M/B

CPU Clock SOURCE : Clock generator

Memory : Up TO 64MB

Memory configuration : 1MB/2MB/4MB/5MB/8MB/16MB/17MB/20MB/32MB/64MB

Memory using : 256K/1MB/4MB/16MB Module, memory up to 64MB  
on board

Cache configuration : 64KB/128KB/256KB

BIOS Subsystem Type : AMI ROM BIOS

I/O Subsystem No. of slots : Four 16-bit & two 8-bit ISA Slots, two 32-bit  
Local Bus Slots.

Dimenssion : 8.6" × 10.6" , 2/3 Baby AT size



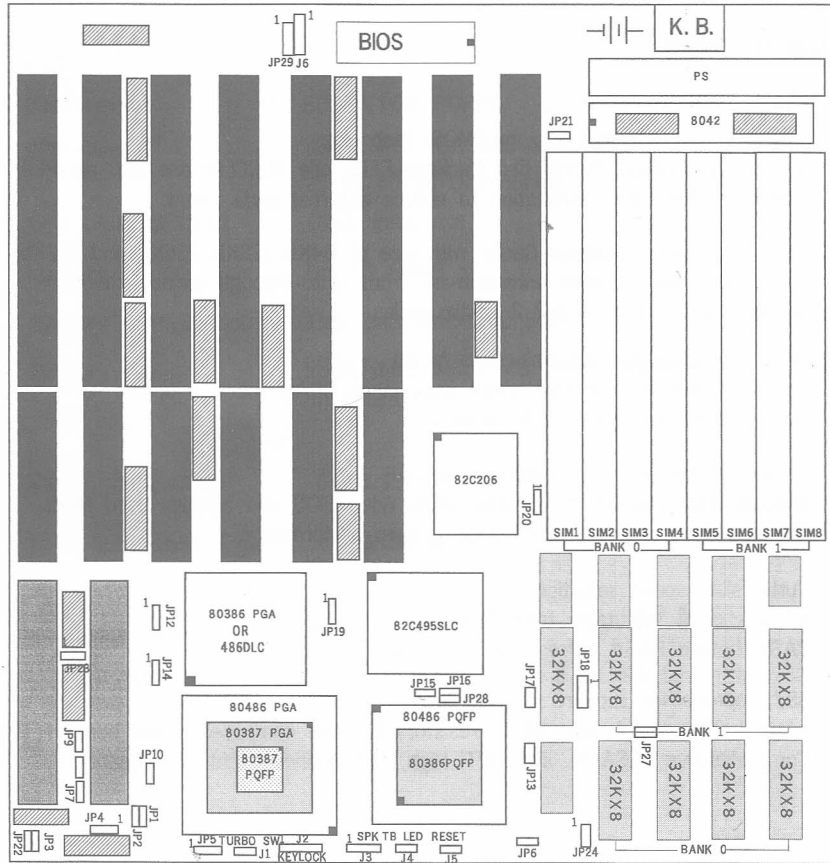
## SYSTEM FEATURES

OPTi 495SLC features include :

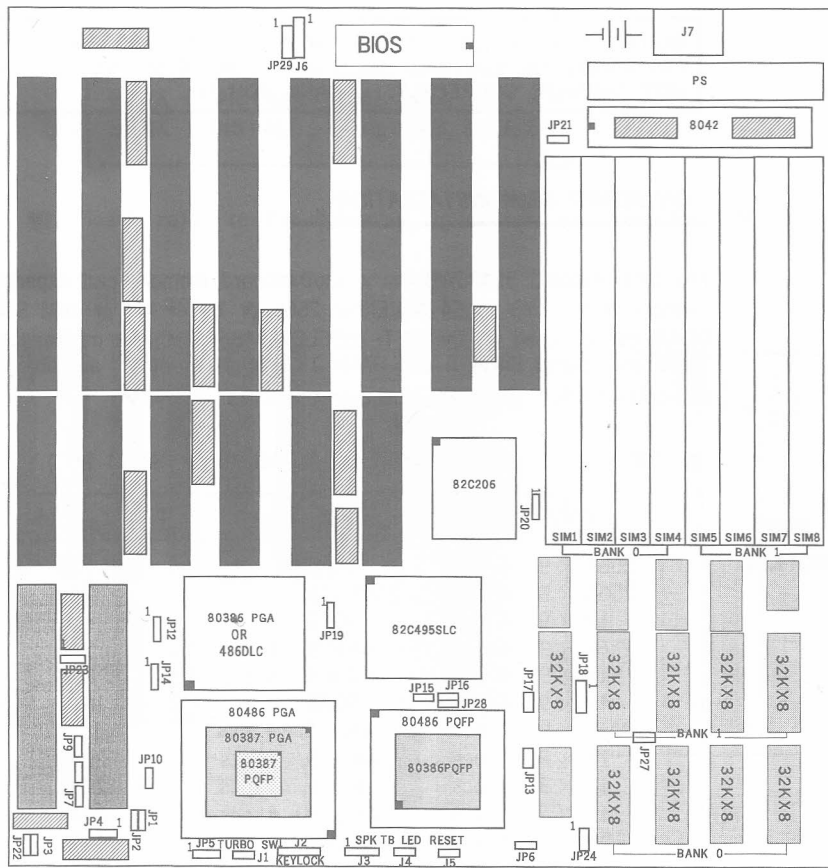
- Low cost, low power, 1.0  $\mu$ m CMOS Technology.
- One 160-pin CMOS Plastic Flat Package (PFP), one PLCC (or one 100-pin PFP).
- Internal buffers and termination to reduce external parts count.
  
- Copy-Back Direct-Mapped Cache with size of 64Kb, 128Kb, 256Kb and 512Kb.
- Up to 10% performance enhancement from write-through cache scheme.
- Supports 2-1-1-1 or 3-2-2-2 cache cycles.
  
- On-chip comparator determines cache hit or miss.
- Up to 64-MB of local high-speed, page-mode, DRAM memory space.
- Burst-line-fill during Cache-Read-Miss.
  
- Control of two non-cacheable regions.
- Shadow RAM support for System BIOS, Video BIOS and adapter card BIOS.
- Hidden refresh support to enhance system performance.
  
- Turbo/slow speed selection.
- AT-bus clock selectable from CLK( /6, /5, /4, /3).
- CAS# before RAS# refresh reduces power consumption.
  
- 387 Coprocessor support for 386 mode.
- Internal CD and CA bus pull-up resistors to save components and board real-estate.
- Comprehensive VESA VL and OPTi High Performance Local Bus support.

# INTRODUCTION

## OPTI-495SLC 31/486WB CACHE MOTHERBOARD LAYOUT



# CHAPTER 2 INSTALLATION





**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 OPTi-495SLC 3/486WB Cache motherboard memory can expanded memory from 1MB to 64 MB. Either 256K or 1M or 4M or 16M SIMM DRAM can be used on the OPTi-495SLC 3/486WB Cache motherboard. There are special BANK 0 and BANK 1 SIMM of assembly available for the OPTi-495SLC 3/486WB Cache motherboard. They are :

■ SIM MODULE USED : (256K, 1M, 4M, 16MX9 OF SIM 4 PCS)

● **RAM SIZE SELECTION**

BANK 0	BANK 1	TOTAL MEMORY
256K × 9, 4 pcs	NONE	1M
256K × 9, 4 pcs	256K × 9, 4 pcs	2M
1M × 9, 4 pcs	NONE	4M
256K × 9, 4 pcs	1M × 9, 4 pcs	5M
1M × 9, 4 pcs	1M × 9, 4 pcs	8M
4M × 9, 4 pcs	NONE	16M
256K × 9, 4 pcs	4M × 9, 4 pcs	17M
1M × 9, 4 pcs	4M × 9, 4 pcs	20M
4M × 9, 4 pcs	1M × 9, 4 pcs	20M
4M × 9, 4 pcs	4M × 9, 4 pcs	32M
16M × 9, 4 pcs	NONE	64M

SIM 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.

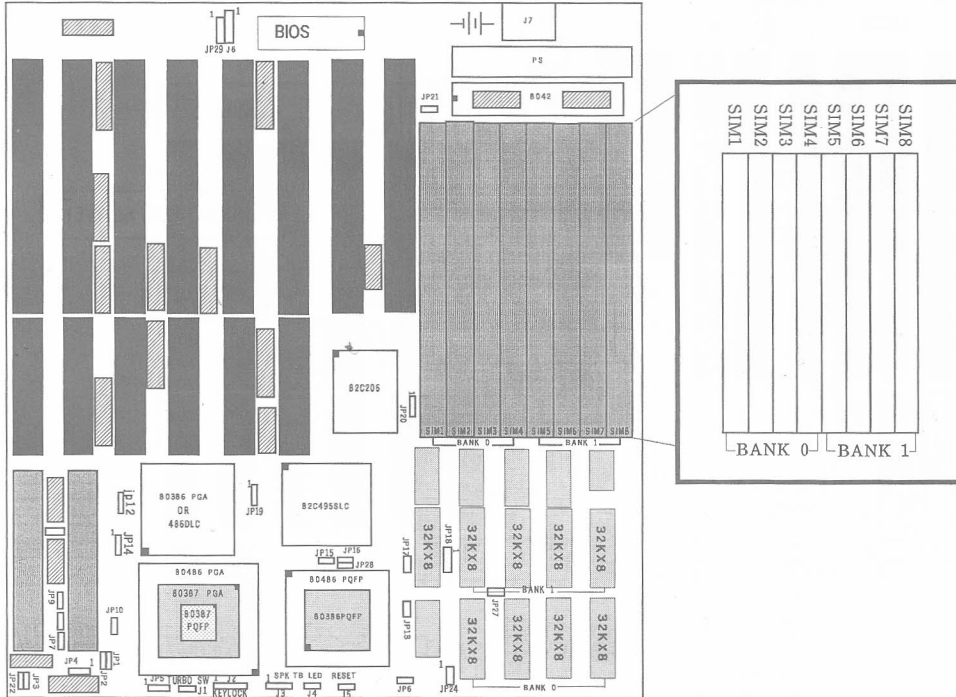
# INSTALLATION

## SIM MODULE ON BOARD POSITION

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

**BANK 0 INSTALL : SIM1, SIM2, SIM3, SIM4**  
**BANK 1 INSTALL : SIM5, SIM6, SIM7, SIM8**

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



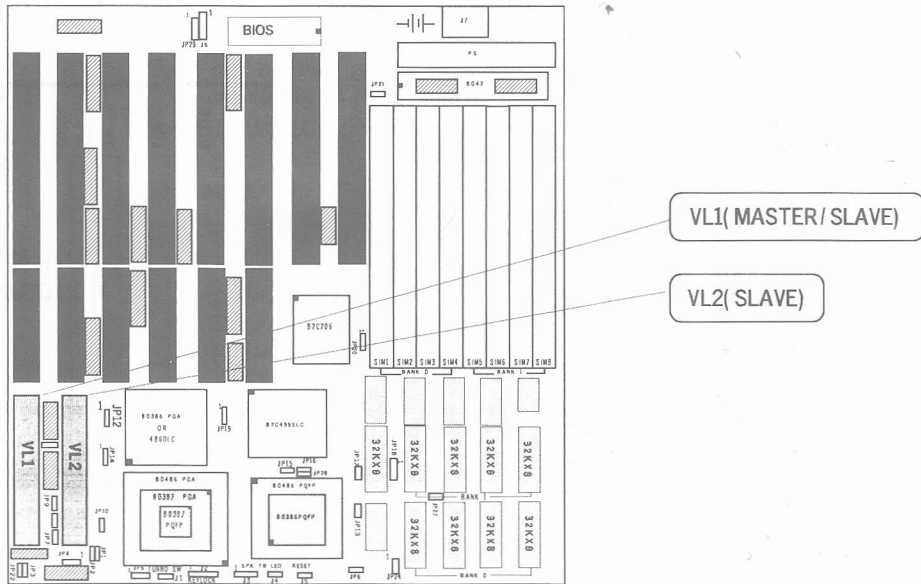
# INSTALLATION

## VESA CARD INSTALL OPERATION

- JP23 : VESA CARD SELECTION ON VL2 SLOT  
2-3 : USE DC-680T RUN 486 50MHz VESA VGA OR TEKRAM  
VESA CACHE IDE OR OTHER SPECIAL VESA CARD  
  
1-2 : USE STANDARD VESA CARD WITH ALL CPU OR USE  
VESA CARD WITH 386-33/40, 486-25/33/DX2-50/66 CPU  
(DEFAULT)

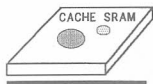


- Please refer to the following figure for setting up to JP23 operation :



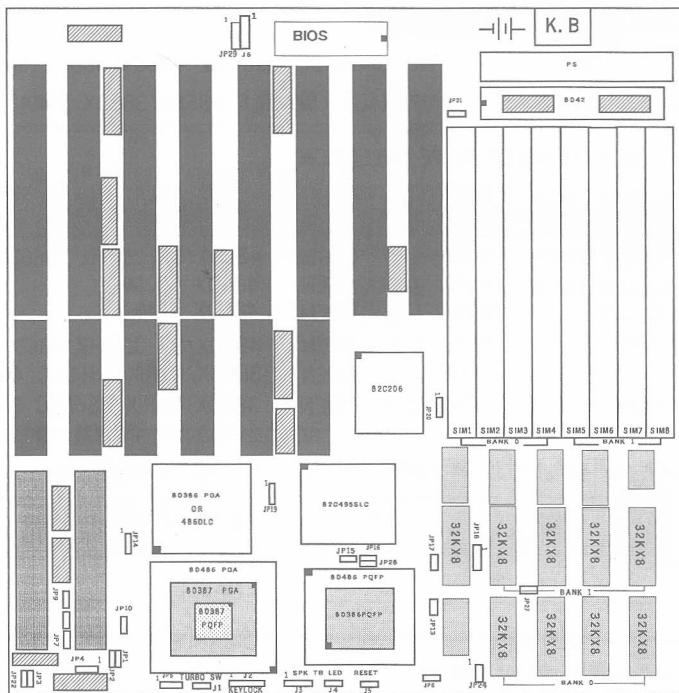
# INSTALLATION

## CACHE SRAM INSTALL SELECTION



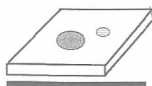
CACHE SIZE JUMPER SETTING							CACHE SRAM		TAG RAM	CACHE SIZE
JP17	JP13	JP28	JP20	JP18	JP24	JP27	BANK 0	BANK 1		
							U9, U10, U11, U12	U14, U15, U16, U17	U13	
OPEN	OPEN	OPEN	1-2	2-3	OPEN	OPEN	8KX8, 4 pcs	8KX8, 4 pcs	8KX8-20	64 K
CLOSE	OPEN	OPEN	2-3	1-2	OPEN	OPEN	32KX8, 4 pcs	NONE	8KX8-20	128K
CLOSE	CLOSE	OPEN	1-2	2-3	OPEN	OPEN	32KX8, 4 pcs	32KX8, 4 pcs	32KX8-20	256K

■ Please refer to the following figure for setting up to JP17, JP13, JP28 JP20, JP18, JP24, JP27 position :



# INSTALLATION

## CPU ASSEMBLE OPERATION



### ◆ 386/486 mode selection

JP15	JP14	JP12	MODE
OPEN	1-2	1-2	386 MODE
CLOSE	2-3	2-3	486 MODE

### ◆ SET 486 CPU TYPE SELECTION JUMPER SETTING :

JP5	JP6	JP19	USAGE
1-2	CLOSE	1-2	486DX, 486DX2
OPEN	OPEN	2-3	486SX
2-3	CLOSE	1-2	487DX, OVERDRIVE

### ◆ UPGRADE JUMPER

JP16	
OPEN	NO UPGRADE (ENABLE 486SX/386DX SMD)
CLOSE	UPGRADE (DISABLE 486SX/386DX SMD)

### ◆ CPU SPEED RATE SELECTION

JP1	JP2	JP3	JP4	JP22	CPU SPEED RATE
OPEN	OPEN	OPEN	1-2	CLOSE	486DX/SX 25MHZ, 486DX2 50MHZ
CLOSE	OPEN	OPEN	1-2	OPEN	486DX 50 MHZ
CLOSE	CLOSE	OPEN	1-2	OPEN	486DX 40MHZ
OPEN	CLOSE	OPEN	1-2	OPEN	486DX/SX 33MHZ, 486DX2 66MHZ
CLOSE	CLOSE	CLOSE	2-3	OPEN	386DX/CYRIX 486DLC 40 MHZ
CLOSE	OPEN	CLOSE	2-3	OPEN	386DX/CYRIX 486DLC 33 MHZ

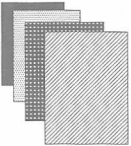
### ◆ 87DLC PQFP SETTING : JP10

JP10	87DLC PQFP
OPEN	ENABLE
CLOSE	DISABLE

## INSTALLATION

### 495SLC VL-BUS M/B JUMPER SETTING DECIPTION

#### ◆ JP21 DISPLAY ADAPTER SETUP :



JUMPER	MEANING	SETTING	USAGE
JP21	DISPLAY TYPE	PIN 1. 2	
		OPEN	MONOCHROME
		CLOSE	COLOR

#### ◆ KEYLOCK & POWER LED CONNECTOR : J2

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

#### ◆ SPEAKER CONNECTOR : J3

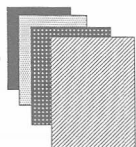
CONNECTOR	USAGE	PIN	DESCRIPTION
		1	data out
		2	not used
		3	GROUND
		4	+ 5V

#### ◆ TURBO SW CONNECTOR : J1

CONNECTOR	USAGE	PIN	DESCRIPTION
	TURBO SW	1	GROUND
		2	Select pin

When  IT's open and it's on the turbo mode.

When  It's close and it's on the normal mode.



◆ TURBO LED CONNECTOR

CONNECTOR	USAGE	PIN	DESCRIPTION
J4	TURBO LED	1	+ ANODE
		2	- CATHODE

◆ RESET SW CONNECTOR

CONNECTOR	USAGE		DESCRIPTION
J5	RESET	1	GROUND
		2	Reset in

◆ J6 : EXTERNAL BATTERY CONNECTOR

PIN	DESCRIPTION
2-3 SHORT	INTERNAL BATTERY USE(DEFAULT)
3-4 SHORT	CLEAR BIOS SETUP DATA

◆ KB : KEYBOARD CONNECTOR

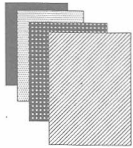
PIN	DESCRIPTION
1	keyboard clock
2	keyboard data
3	space
4	GROUND
5	+ 5V DC

◆ BATTERY TYPE : JP29

2-3	NI-CD RECHARGE BATTERY 3.6V USE
1-2	LITHUM DISCHARGE BATTERY 3.6V USE

# JUMPER/CONNECTOR

◆ PS : POWER SUPPLY CONNECTOR



CONNECTOR	PIN	DESCRIPTION
PS	1	POWER GOOD
PS	2	+ 5V DC
PS	3	+12V DC
PS	4	-12V DC
PS	5	GROUND
PS	6	GROUND
PS	7	GROUND
PS	8	GROUND
PS	9	- 5V DC
PS	10	+ 5V DC
PS	11	+ 5V DC
PS	12	+ 5V DC

- Please refer to the following figure for setting up to J1, J2, J3, J4, J5, J6, J7, position :

