



# ***Main Board***

*The Pleasure of Your Computing*

*The Board Bring You  
To The Word*

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# 1 Introduction







Your 80486 PCI main board is a full-featured IBM PC/AT™-compatible board offering a unique modular architecture that lets you upgrade the system by simply replacing the CPU. The board supports the PCI local bus and the following high-performance CPUs, with support for voltages from 3.3V to 5V:

- Intel: 486SX-25/33, 486DX-33, 486DX2-66, 486DX2-66 Overdrive, 486DX4-75/100, 486DX4-75/100 Overdrive
- AMD: 486DX2-66 (write-through), 486DX2-80 (write-through), 486DX4-100 (write-through), 486DX4-120 (write-back), 5x86-P75-133/150/160 (write-back)
- Cyrix: 486DX2-66/80, 486DX2v-66/80, 486DX4-100, 5X86-100/120/133

## 1.1 Features

- Selectable CPU voltage: 3.3V through 5.0V
- On-board clock generator lets you change CPU speed by jumper switch (you don't have to change the oscillator)
- ZIF (Zero-Insertion Force) CPU socket
- Three master PCI local bus slots (rev. 2.0)
- Four 16-bit input/output (I/O) expansion slots
- Auto-detection of installed DRAM memory: no configuration is necessary
- Optional 128KB, 256KB, or 512KB SRAM cache memory
- On-board Intelligent Drive Electronics (IDE) hard disk drive controller: supports Mode 3 and Mode 4 hard disk drives
- On-board peripheral ports:
  - Two on-board serial ports (16550)

### 3 Setting Jumper Switches

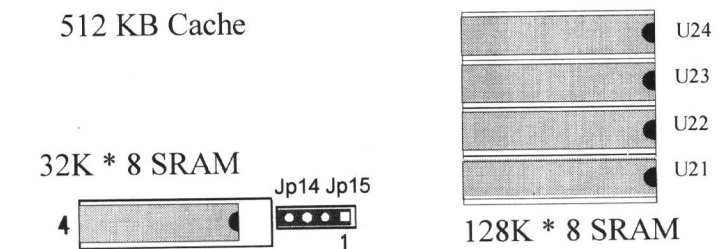
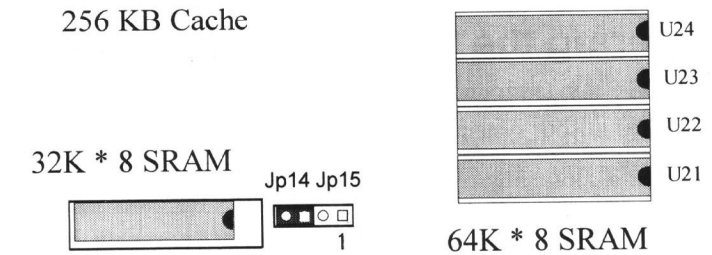
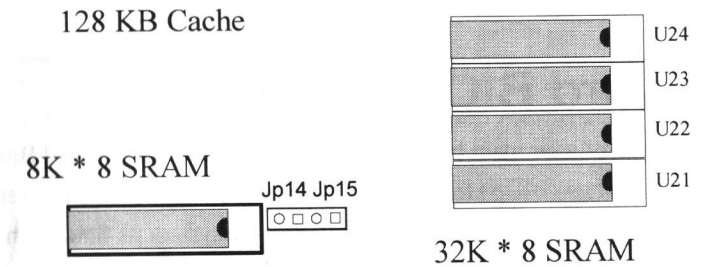
Function	Jumper	Selection	Jumper Setting
BIOS Type	JP1	EPROM/5V Flash	 1
		12V Flash Memory	 1
BIOS setup Data	JP3	Keep the Data	 1
		Clear the Data	 1
Monitor Type	JP7	Color Monitor	 1
		Monochrome Monitor	 1

**WARNING!** *Selecting the wrong voltage may severely damage your CPU. For voltage information, refer to the documentation provided with the CPU.*

### JP14 & JP15: Cache Memory Configuration

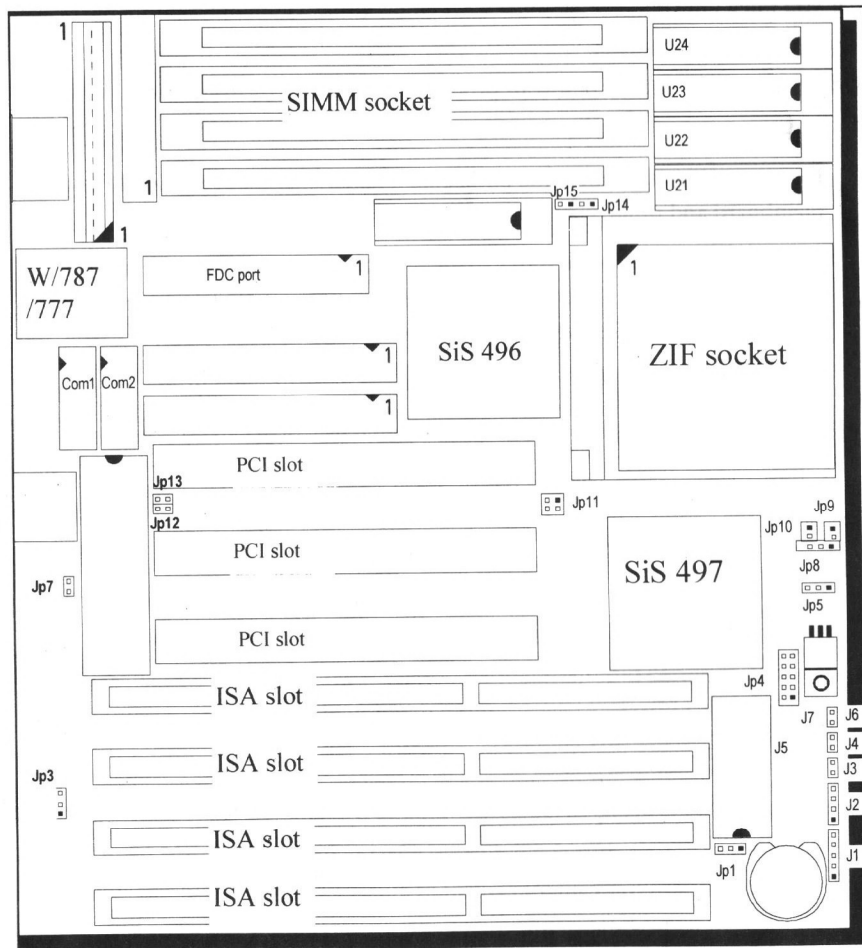
Use these jumpers to configure SRAM cache memory. The main board has sockets for 128KB, 256KB, or 512KB of SRAM cache memory. The figure below shows the installed SRAM chips and cache size configuration settings.

### 3 Setting Jumper Switches



## 1.4 Mainboard Layout

The layout diagram shows the location of connectors, major components, and jumper switches on the mainboard.



## 2 Setting Up the Mainboard

The below chapter is the procedures that you will follow to install and set up the mainboard in your computer system.

### 2.1 Installing a CPU and RAM

You can install and upgrade your mainboard by simply replacing the CPU and changing the settings of jumper switches on the board. The mainboard supports a wide variety of high-performance CPUs.

#### *Installing a CPU in the ZIF Socket*

If there is already a CPU in the ZIF socket, remove it by pulling the ZIF socket lever out to the side and then raising it. Then lift out the CPU.

*CAUTION: Static electricity can cause serious damage to integrated circuit chips. Avoid building up a static electricity charge in your body by touching a grounded object before you touch the chips and at frequent intervals as you handle the chips.*

#### **Install a CPU in the ZIF socket as follows:**

1. Turn off the system.
2. Find the ZIF socket. Refer to the mainboard layout in Chapter 1 for the location of ZIF socket on the board.
3. Raise the ZIF socket lever by pulling it out to the side and then pulling up.
4. Align the pin 1 corners of the CPU and the ZIF socket and place the CPU in the socket.
5. Press the ZIF socket lever down. The socket plate will slide forward. When the CPU is installed fully, the ZIF socket lever should snap into place.

### *Installing DRAM*

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The mainboard provides a variety of possible DRAM configurations. The board has four SIMM sockets; each socket can accept a 1MB, 4MB, 8MB, 16MB, or 32MB SIMM. Depending on the desired memory capacity and the SIMM size, you can install one, two, or four SIMMs on the board.

#### **Install a SIMM into an on-board socket as follows:**

1. Turn off the system.
2. Align the SIMM so that the pin 1 marking corresponds to the SIMM socket pin 1 marking. The SIMM can fit in the socket in one way only; you cannot insert the SIMM incorrectly.
3. Holding the SIMM at about a 15-degree angle to the board, insert the SIMM's "golden finger" connectors into the socket.
4. Firmly press down on both sides of the SIMM so that it snaps into the locking tabs at either end of the SIMM socket. You will hear a click when the SIMM snaps into place. A retaining peg at each end of the socket fits into a hole on the SIMM.

To remove a SIMM from a socket, carefully pry the tab away from each end of the SIMM. The SIMM should fall back to an angle; you can then pull the SIMM from the socket.

### *Installing SRAM Cache Memory*

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The mainboard has sockets for 128KB, 256KB, or 512KB of SRAM cache memory.

*CAUTION: Static electricity can cause serious damage to integrated circuit chips. Avoid building up a static electricity charge in your body by touching a grounded object before you touch the chips and at frequent intervals as you handle the chips.*

#### **Install SRAM cache memory chips in on-board sockets as follows:**

1. Turn off the system.
2. Refer to the mainboard layout in Chapter 1 for the location of SRAM sockets on the board. The description of jumper switches JP14-JP15 in the next chapter lists the type of chips to install for each memory configuration.
3. Align the chip so that the pin 1 notch on the chip corresponds to the notch on the appropriate board socket.

*NOTE: The 32Kx8 SRAM chips have fewer pins than the board sockets. When installing these chips, make sure that the four pins at the pin 1 end of the socket are exposed.*

4. Carefully but firmly press the chip into the socket, applying even pressure to both ends of the chip.
5. Repeat steps 3 and 4 for each SRAM chip.
6. Set jumpers JP14-JP15 to choose 128KB, 256KB, or 512KB of installed SRAM cache memory.

## **2.2 Making Connections**

This section describes some of the connectors on the mainboard. See the board layout in Chapter 1 for the location of the connectors. Refer to the appendix for a listing of the connectors' pin signals.

*CAUTION: Before making connections on the board, be sure that the power to the system is turned off.*

Connector	Function
PRINT	Printer Connector (LPT1)
IDE1	Primary Secondary IDE Connector
IED2	Secondary IDE Connector
FDC:	FDD Connector
















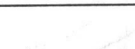
COM1	ComA ports
COM2	ComB Ports
J1	Keylock & Power LED Connector
J2	Speaker Connector
J3	Reset Connector
J4	Turbo LED Connector
J6	Turbo Switch
J12	HDD1 LED
J13	HDD2 LED

### 2.3 Replacing the Lithium Battery

The mainboard's Lithium 2032 "coin" battery provides long-lasting, leak proof power for CMOS memory. Unlike other types of batteries, the Lithium battery will not release chemicals that may damage the board. The Lithium battery is not rechargeable, but replacements are readily available at convenience stores, supermarkets, and camera shops.

## 3 Setting Jumper Switches

You can configure the operating characteristics of the main board by setting jumper switches on the board. This chapter presents a detailed description of the jumper switches. Refer to the main board layout in Chapter 1 for the positions of the jumpers on the board.

Function	Jumper	Selection	Jumper Setting
Voltage Selection	JP5	3.3 V	 1
		5V	 1
CPU Type	JP8	Normal	 1
		OverDrive	 1
CPU Type	JP9	Write Back	 1
		Write Through	 1
Clock	JP10	3x Frequency	 1
		2x, 4x Frequency	 1
CPU external speed	JP11	25 Mhz	 3
			 1
		33 Mhz	 3
			 1
40 Mhz	 3		
	 1		
50 Mhz	 3		
	 1		