Contents

Chapter 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:

- Intel/AMD 486DX/DX2/DX4

- Intel 486SX

- Intel SL SX and Intel SL DX/DX2/DX4

- Intel P24T and P24D

- Cyrix 486DX/DX2/DX4/Cyrix 5x86

- UMC 486

- AMD Enhanced DX2/DX4 Writeback/Am5x86

- AMD Enhanced SX Writeback

The main board is fully compatible with the thousands of software applications developed for IBM PC/AT™-compatible computers. The control logic provides high-speed performance for the most advanced multi-user, multitasking applications available today.

The board's high-performance 32- or 64-bit Peripheral Component Interconnect (PCI) local bus lets you add highly integrated peripheral controller components, peripheral add-in boards, and processor/memory systems. The Industry Standard Architecture (ISA) bus slots allow you to choose from thousands of 8- and 16-bit industry-standard add-on boards. A floppy disk drive controller, IDE hard disk drive controller, serial ports (16550), and parallel port (with EPP and ECP modes) are included so that you can easily connect peripheral devices without using expansion slots. In addition, an IDE hard disk drive controller is included so that you can connect up to four IDE hard disk drives.

The board supports up to 128MB of on-board DRAM memory. Best of all, it automatically detects installed memory modules, so *it is not necessary to configure memory with jumper switches*. It also offers optional SRAM cache memory (128KB, 256KB) to reduce the number of wait states caused by low-speed I/O devices.

1-1 Features

- High-speed upgradeable CPU

- Selectable CPU voltage: 3.3V, 3.45V, 4.0V, and 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)

- Three 16-bit input/output (I/O) expansion slots

- Auto-detection of installed DRAM memory: no configuration is necessary

- Optional 128KB, 256KB 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)

  - Parallel port with bi-directional lines: supports Enhanced Parallel Port (EPP) and Extended Capabilities Port (ECP)

- On-board floppy disk drive controller

- Licensed Award BIOS

- Selectable BIOS type: EPROM, 5V flash memory, or 12V flash memory

- Lithium coin battery

- Shadow RAM for ROM BIOS and video ROM to improve system performance

- Hardware "green" function

1-2 Unpacking

The main board comes securely packaged in a sturdy cardboard shipping carton. In addition to this *User's Guide,* the shipping carton contains:

- The main board

- Cables: IDE, FDD, serial, and parallel port

- IDE Drivers distribution floppy disk: includes drivers for Windows 3.1, Windows NT 3.x, OS/2 2.x, and Novell Netware.

If any of these items is missing or damaged, contact the dealer from whom you purchased the main board. Save the shipping materials and carton in case you want to ship or store the board in the future.

NOTE: Leave the main board in its original packing until you are ready to install it.

Inside the carton, the main board is sandwiched between sheets of sponge and packed in an anti-static bag. After you unpack the board, inspect it for damage. Press down all the integrated circuits to make sure they are properly seated in their sockets. Do not apply power to the board if it appears to have been damaged.

1-3 Electrostatic Discharge Precautions

Make sure you ground yourself before handling the mainboard or other system components. Electrostatic discharge can easily damage the components. Note that you must take special precaution when handling the mainboard in dry or air-conditioned environments.

Abide by the precautions below to protect your equipment from electrostatic discharge:

- Do not remove the anti-static packaging until you are ready to install the mainboard and other system components.

- Ground yourself before removing any system component from its protective anti-static packaging.

- You can ground yourself by grasping the expansion slot covers or other unpainted portions of the computer chassis.

- Frequently ground yourself while working, or use a grounding strap.

- Handle the mainboard by the edges and avoid touching its components.

1-4 Mainboard Layout
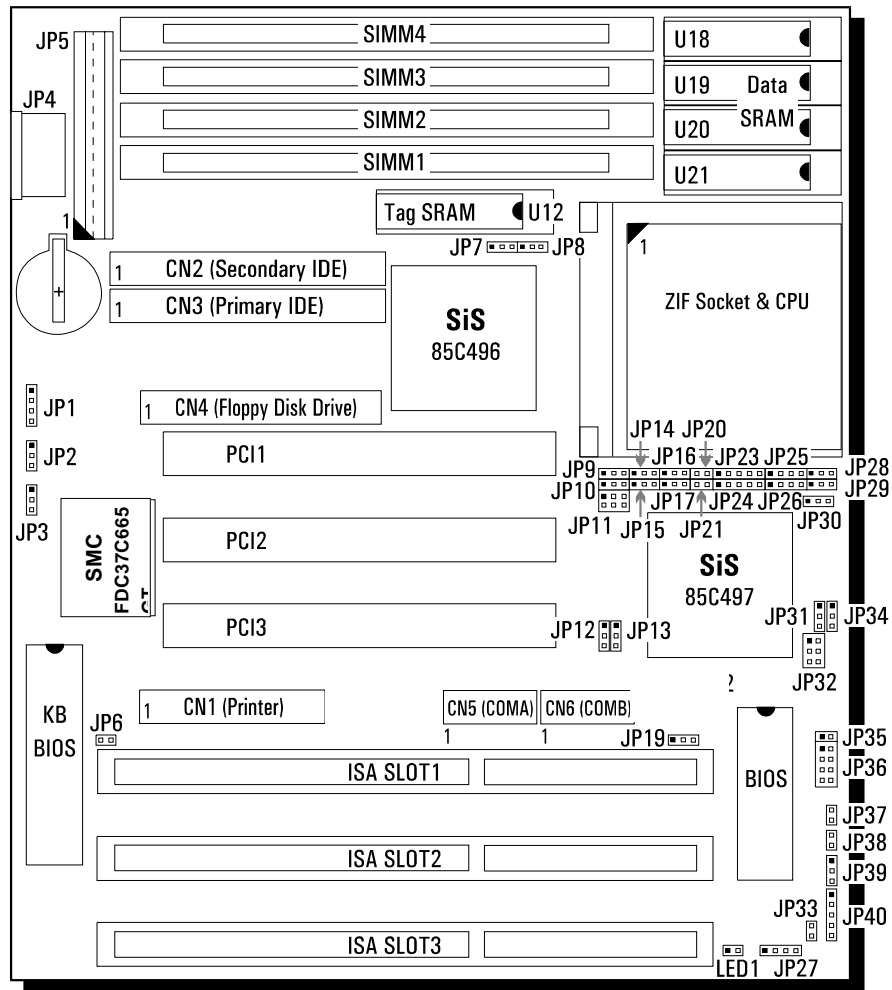
Figure 1.   The main board layout

The jumper switches and their functions are listed in the table below.

Jumper	Function
JP2 & JP3	Clear BIOS Setup Data
JP6	Monochrome/Color Selection
JP7 & JP8	Cache Size Selection
JP9 & JP10	CPU Type Selection
JP14-JP17	
JP20-JP21	
JP23-JP26	
JP28-JP30	
JP11 & JP12	Clock Speed Selection
JP13	[Factory Preset: Testing Purposes Only]
JP19	BIOS Type Selection
JP31, JP32, & JP34	CPU Voltage Selection

Chapter 2

Setting Up the Main Board

This chapter describes getting your main board ready for operation.   It includes instructions for:

- Installing a CPU upgrade
- Installing DRAM memory and SRAM cache memory

It also provides descriptions of making board connections and replacing the lithium battery.

2-1   Quick Setup

The flowchart below is a summary of the procedures that you will follow to install and set up the main board in your computer system.

```
1                              5
Install a CPU in the           Make connections
ZIF socket
        │                              │
        ▼                              ▼
2                              6
Choose the CPU voltage,        Turn on the power & press
type, and speed                <DEL> to enter BIOS Setup
        │                              │
        ▼                              ▼
3                              7
Install SIMMs in sockets       Load Setup default values
                               & enalbe HDD Type
        │                      Auto Detect
        ▼                              │
4                                      ▼
Make sure the cache            8
size configuration             Save changes & exit BIOS
is correct                     Setup
```
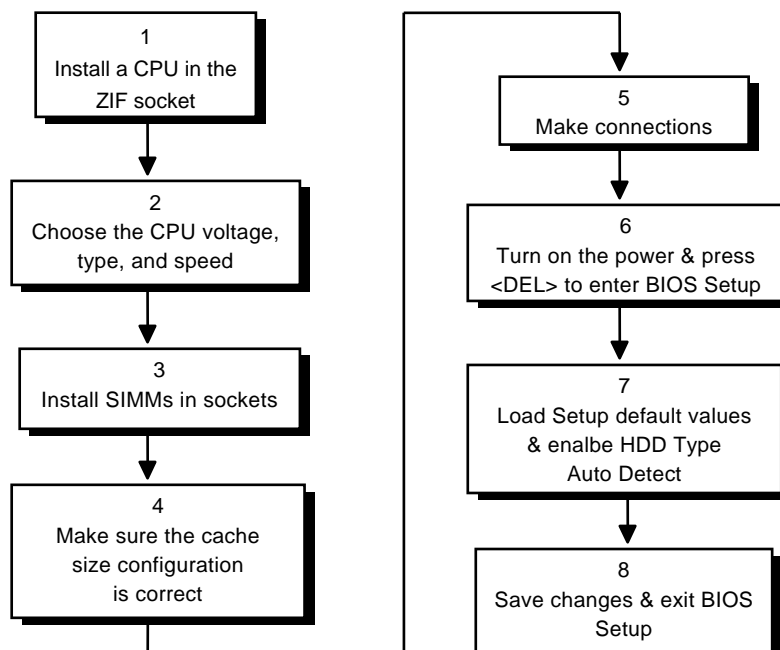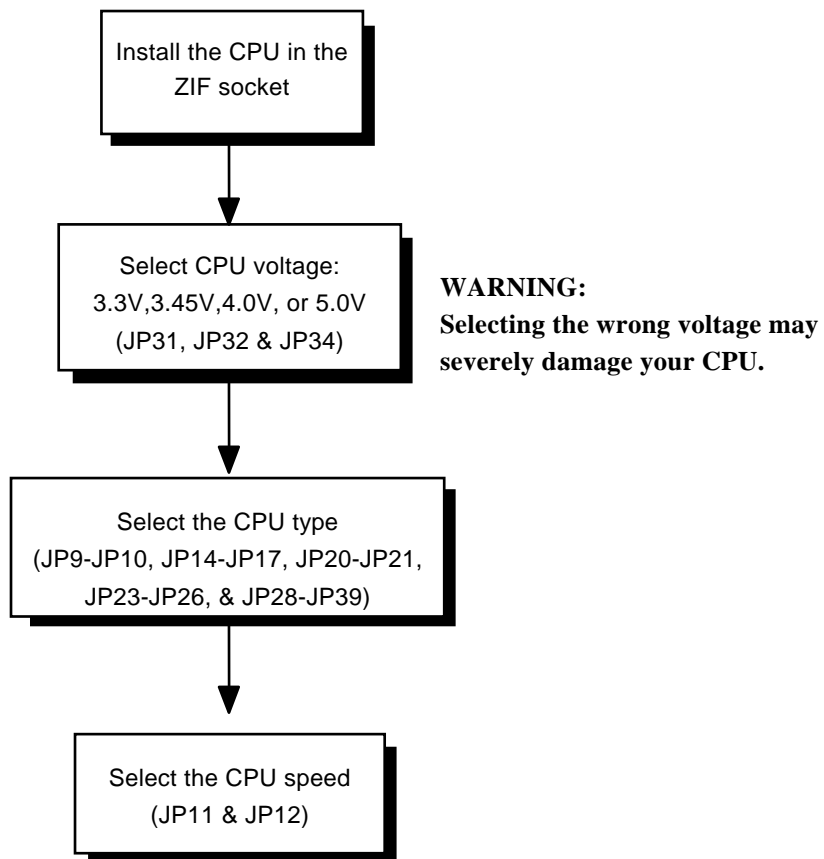
2-2 Installing a CPU Upgrade

You can upgrade your main board by simply replacing the CPU and changing the settings of jumper switches on the board. The board supports the following high-performance CPUs:

- Intel/AMD 486DX/DX2/DX4

- Intel 486SX

- Intel SL SX and Intel SL DX/DX2/DX4

- Intel P24T and P24D

- Cyrix 486 DX/DX2/DX4/5x86

- UMC 486

- AMD Enhanced DX2/DX4 Writeback/Am5x86

- AMD Enhanced SX Writeback

Installing A CPU: Overview

The flowchart below illustrates the procedures that you will follow to install a CPU.

```
┌─────────────────────┐
│  Install the CPU in the │
│      ZIF socket      │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│  Select CPU voltage: │        WARNING:
│ 3.3V,3.45V,4.0V, or 5.0V │  Selecting the wrong voltage may
│ (JP31, JP32 & JP34)  │        severely damage your CPU.
└─────────────────────┘
           │
           ▼
┌──────────────────────────────┐
│      Select the CPU type       │
│ (JP9-JP10, JP14-JP17, JP20-JP21, │
│   JP23-JP26, & JP28-JP39)      │
└──────────────────────────────┘
           │
           ▼
┌─────────────────────┐
│  Select the CPU speed │
│    (JP11 & JP12)     │
└─────────────────────┘
```

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 in tervals 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 Figure 1, "The main board layout," 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.

2-3   Installing Memory

The main board uses two types of Random-Access memory:

•   Dynamic Random-Access Memory (DRAM) packaged in Single In-Line Memory Modules (SIMMs).   These modules occupy sockets on the main board and provide a total of from 1MB to 128MB of on-board system memory.

•   Static Random-Access Memory (SRAM).   These optional memory

chips occupy sockets on the main board and provide 128KB, 256KB   of cache memory.

Installing DRAM

The main board 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.

The board accepts combinations of SIMMs with different sizes; furthermore, you can install SIMM in any socket.   The main board automatically detects installed SIMMs; no configuration via jumper switches or BIOS setup is necessary.

☞   **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 retainning 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

The main board has sockets for 128KB, 256KB of SRAM cache mrmory.

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 in tervals as you handle the chips.

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

1. Turn off the system.

2. Find the on-board sockets in which you will install the Sram chips and determine which type of chips to install.

    Refer to Figure1, "The main board layout," for the location of SRAM sockets on the board.   The description of jumper switches JP7-JP8 later in this chapter lists the type of chips to install for each memory canfiguration.

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 JP7-JP8 to choose 128KB, 256KB of installed SRAM cache memory.

2-4 Making Conncetions

This section describes some of the connectors on the main board.   See Figure 1 for the location of the connectors on the board.   Refer to the appendix for a listing of the connectors' pin signals.

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

CN2:   Secondary IDE Connector

Attach the cable for the primary IDE hard disk drive to this connector. Make sure that the red stripe on the cable corresponds to pin 1 of the connector.

CN3:   Primary IDE Connector

Attach the cable for the secondary IDE hard disk drive to this connector.   Make sure that the red stripe on the cable corresponds to pin 1 of the connector.

JP1: External Battery Connector

Attach an external battery to this connector.   Using an external battery helps conserve the on-board battery.

JP4:   The Keyboard Connector

Attach a keyboard to this five-pin female DIN keyboard connector.

JP5:   The Power Supply Connector

The power supply connector consists of two six-pin male components. Plug the dual connectors from the power supply to this connector.

JP27:   Speaker Connector

Attach an external system speaker to this connector.
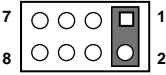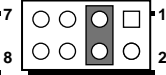
JP33:   IDE Active LED Connector

This connector is usually attached to the LED indicator on the front of an IDE hard disk drive.   The IDE LED lights when the disk drive is active.

JP35:   Standby Mode Switch Connector

This connector is usually connected by a lead to a push button on the front of the system case.   Press the button to enter the power-saving standby mode.

JP36:   Power-Saving Output Signal Connector

This connector specifies that, for the selected power-saving mode, the voltage level will go from high to low when the system enters the selected mode.   When the system wakes up, the voltage level goes from low to high.

Signal	JP36	Voltage Level
Enter Doze Mode	7 ○○○■ 1 / 8 ○○○▮ 2	High --> Low
Enter Suspend Mode	7 ○○▮□ 1 / 8 ○○▮○ 2	High --> Low

Enter Standby Mode	7 ☐☐○□ 1 8 ☐☐○○ 2	High --> low

JP37:   Turbo LED Connector

This connector is usually connected by a lead to a Turbo LED indicator on the front of the system case.   The indicator lights during high-speed operation.

JP38:   Reset Connector

This connector is usually connected by a lead to a system reset button on the front of the system case.   Press this button to restart the computer without turning the power off.

JP40:   Keylock & Power LED Connector

These connectors are usually connected by leads to a keyboard lock and power LED indicator on the front of the system case.   A key provided with the case lets you electronically disconnect the keyboard from the main board.   The power LED lights when the system is turned on.

LED1:   Power-Saving LED Connector

This connector is usually connected by a lead to an LED on the front of the system case.   When the system enters power-saving mode, the LED will light.

# 2-5   Replacing the Lithium Battery

The main board's Lithium 2032 "coin" battery provides long-lasting, leakproof 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.   In addition, replacements are easily installed.

Chapter 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 Figure 1 in Chapter 1 for the positions of the jumpers on the board.

A jumper switch is closed (sometimes referred to as 'shorted') with the plastic cap inserted over two pins of the jumper. A jumper is open with the plastic cap inserted over one or no pin(s) of the jumper.

Closed
(shorted)
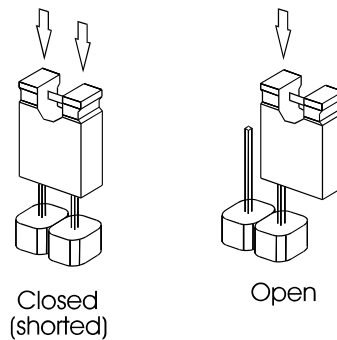
Open

NOTE: When a jumper is open, keep the plastic cap inserted over one pin of the jumper so that you don't lose it.

• **JP2 & JP3: Clear BIOS Setup Data (BLACK color selector)**

These jumpers let you clear the BIOS setup data stored in CMOS memory.

NOTE: We recommend that only experienced technicians attempt to use these jumpers to clear BIOS setup data.

BIOS Setup Data	JP3	JP2
Maintain BIOS setup data in CMOS memory	○ ● ▢ 1	○ ● ▢ 1
Clear BIOS setup data	● ● ▢ 1	● ● ▢ 1

• **JP6: Monochrome/Color Monitor (BLACK color selector)**
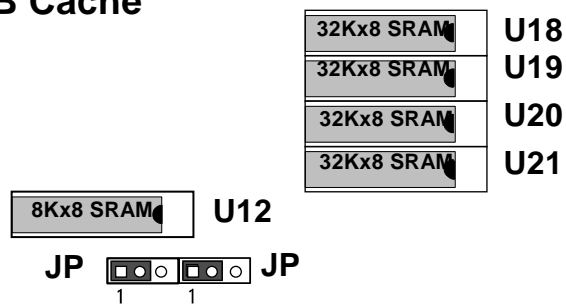
This jumper lets you choose between a color or monochrome monitor. The default setting is Color (closed).

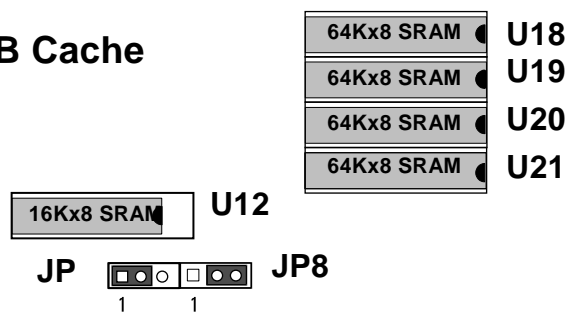| Monitor	JP6
Color monitor	▢ ●
Monochrome monitor	▢ ○

- ## JP7 & JP8: Cache Memory Configuration (BLACK color selector)

Use these jumpers to configure SRAM cache memory. The main board has sockets for 128KB, 256KB of SRAM cache memory (for a description of installing SRAM chips, see "Installing Memory" in the previous chapter). The figure below shows the installed SRAM chips and cache size configuration settings .

128KB Cache

32Kx8 SRAM	U18
32Kx8 SRAM	U19
32Kx8 SRAM	U20
32Kx8 SRAM	U21

8Kx8 SRAM	U12

JP   JP

512KB Cache

64Kx8 SRAM	U18
64Kx8 SRAM	U19
64Kx8 SRAM	U20
64Kx8 SRAM	U21

16Kx8 SRAM	U12

JP   JP8

- ## JP11 & JP12: CPU Clock Speed   (WHITE color selector)

Use JP11 and JP12 to select the external clock speed of the CPU. Calculate the clock speed according to the following formula:

Ext. Clock Speed x CPU Clock Multiplier = CPU Speed

Example: If you have an Intel 486 DX2-66 CPU and the CPU clock multiplier is set to 2, set the external clock speed to 33Mhz.

| Clock Speed	JP12	JP11	CPU Type
25MHz			SX-25, DX-25, DX2-50
33MHz			SX-33, DX-33, DX2-66, DX4-100,Cyrix5x86-100, Am5x86-P75
40MHz			SX-40, DX-40, DX2-80, DX4-120,Cyrix5x86-120
50MHz			DX-50

NOTE: Depending on the installed CPU, you will use either JP16 or JP30 to set the CPU clock multiplier (see the CPU jumper settings later in this chapter).

- ## JP13: Factory Preset   (BLACK color selector)

This jumper is used for testing purposes only. Its setting is factory preset.
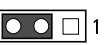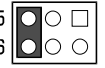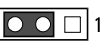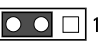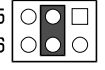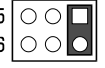
• JP19: BIOS Type   (BLACK color selector)

Use this jumper to select the BIOS type: EPROM, 5V flash memory, or 12V flash memory.

BIOS Type	JP19
EPROM (default)	1 □ ○ ○
12V Flash Memory (Intel Brand Flash Rom)	1 ■ ● ○
5V Flash Memory (SST, Winbond & Mx Brand Flash Rom)	1 □ ● ●

• JP31, JP32, & JP34: CPU Voltage (YELLOW color selector)

Use JP31, JP32, and JP34 to select the CPU voltage.

Voltage	JP31	JP34	JP32
3.3V	● ● □ 1	● ● □ 1	5 ● ○ □ 1 / 6 ● ○ ○
3.45V	● ● □ 1	● ● □ 1	5 ○ ● □ 1 / 6 ○ ● ○
4.0V	● ● □ 1	● ● □ 1	5 ○ ○ ■ 1 / 6 ○ ○ ●
5V	○ ● ■ 1	○ ● ■ 1	[Any setting]

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

• **Select CPU type, Clock, Voltage:**

CPU type selector (BLUE):   **JP9, JP10, JP14, JP15, JP16, JP17, JP20, JP23, JP24, JP25, JP26, JP28 JP29, JP30**

CPU Clock selector (WHITE):   **JP12, JP11**

CPU Voltage selector (YELLOW): **JP31, JP32, JP34**

The location for above jumper
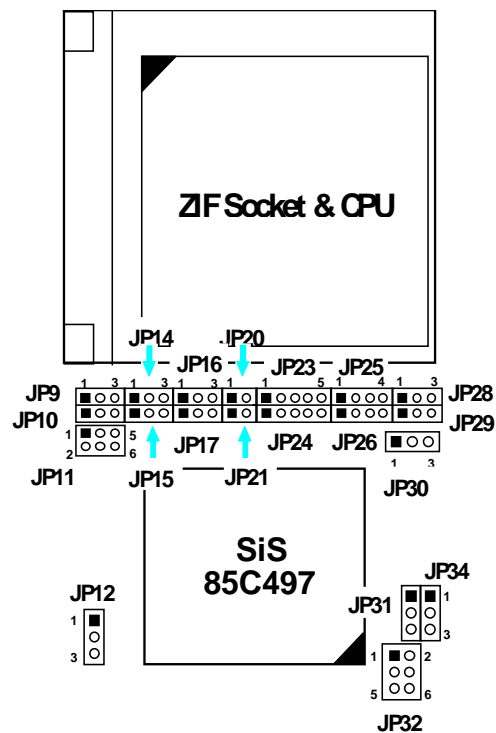
Note: Ti CPU setting is the same as Cyrix CPU.

The quick reference table for CPU type, Clock & Voltage selection : C

	Function	CPU TYPE Selector (BLUE)								
CPU		JP9	JP10	JP14	JP15	JP16	JP17	JP20	JP23	JP24
AMD	DX2-66	2-3	2-3	O	O	2-3	O	O	O	4-5
	DX2-80	2-3	2-3	O	O	2-3	O	O	O	4-5
	DX4-100 Write Through	2-3	2-3	O	O	1-2	O	O	O	4-5
	DX4-100 Write Back	2-3	1-2	O	1-2	1-2	2-3	C	2-3	4-5
	DX4-120	2-3	1-2	O	1-2	1-2	2-3	C	2-3	4-5
	Am5x86-P75 X5-133	2-3	1-2	O	1-2	1-2	2-3	C	2-3	4-5
Cyrix	DX2-66	2-3	2-3	O	O	O	1-2	C	O	2-3
	DX2-80	2-3	2-3	O	O	O	1-2	C	O	2-3
	DX4-100	2-3	2-3	O	O	O	1-2	C	O	2-3
	5x86-100	2-3	2-3	O	1-2	O	2-3	C	2-3	4-5
	5x86-120	2-3	2-3	O	1-2	O	2-3	C	2-3	4-5
Intel	DX4-100 Write Back	2-3	1-2	O	1-2	1-2	2-3	C	2-3	4-5
	DX4-100 Write Through	2-3	2-3	O	O	O	2-3	C	1-2	4-5
	DX2-66	2-3	2-3	O	O	O	2-3	C	1-2	4-5
	DX2-50	2-3	2-3	O	O	O	2-3	C	1-2	4-5
	SX-25	O	2-3	O	O	O	2-3	C	1-2	4-5
	P24D-66	2-3	1-2	O	1-2	1-2	2-3	C	2-3	4-5
	P24T-63	1-2	1-2	1-2	O	O	2-3	C	O	1-2
	P24T-83	1-2	1-2	1-2	O	O	2-3	C	O	1-2

					CLOCK Selector (WHITE)		VOLTAGE Selector (YELLOW)			
JP25	JP26	JP28	JP29	JP30	JP12	JP11	JP31	JP34	JP32	
1-2 3-4	3-4	O	O	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	3-4	O	O	O	2-3	1-2	2-3	2-3	3-4	3.45V
1-2 3-4	3-4	O	O	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	1-2 3-4	O	1-2	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	1-2 3-4	O	1-2	O	2-3	1-2	2-3	2-3	3-4	3.45V
1-2 3-4	1-2 3-4	O	1-2	2-3	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	2-3	2-3	2-3	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	2-3	2-3	2-3	O	2-3	1-2	2-3	2-3	1-2	4.0V
1-2 3-4	2-3	2-3	2-3	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	1-2 3-4	O	1-2	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	1-2 3-4	O	1-2	O	2-3	1-2	2-3	2-3	3-4	3.45V
1-2 3-4	1-2 3-4	O	1-2	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	3-4	O	O	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	3-4	O	O	O	1-2	1-2 3-4	2-3	2-3	3-4	3.45V
1-2 3-4	3-4	O	O	O	1-2	O	2-3	2-3	3-4	3.45V
2-3	3-4	O	O	O	1-2	O	2-3	2-3	3-4	3.45V
1-2 3-4	1-2 3-4	O	1-2	O	1-2	1-2 3-4	1-2	1-2	X	5V
1-2 3-4	3-4	1-2	1-2	O	1-2	O	1-2	1-2	X	5V
1-2 3-4	3-4	1-2	1-2	O	1-2	1-2 3-4	1-2	1-2	X	5V

Note: "O"   Open
"C"   Closed

• **JP39: Turbo Switch**

This connector sets the default speed of the CPU clock. This connector is usually connected by a lead to a Turbo/Normal switch on the front of the system case.

Default Clock Speed	JP39
High-speed (turbo) operation	1
Normal (low-speed) operation	1

You can change between high-speed and low-speed operation by pressing the Turbo/Normal switch on the front of the system case or by pressing the following key combinations simultaneously:

CTRL, ALT, and "-": Switches the CPU to low speed.

CTRL, ALT, and "+": Switches the CPU to high speed.

Appendix: Connector Pin Signals

This appendix lists the pin signals for the board's external connectors.

CN1: Printer Connector

Pin	Description	Pin	Description
1	STB#	10	ACK#
2	PD0	11	BUSY
3	PD1	12	PE
4	PD2	13	SLCT
5	PD3	14	AFD#
6	PD4	15	ERR#
7	PD5	16	INIT#
8	PD6	17	SLIN#
9	PD7	18-25	GND
		26	N.C.

CN2: Secondary IDE and CN3: Primary IDE

Pin	Description	Pin	Description
1	IDE reset signal	15	IDE data bit 1
2	GND	16	IDE data bit 14
3	IDE data bit 7	17	IDE data bit 0
4	IDE data bit 8	18	IDE data bit 15
5	IDE data bit 6	19, 22, 24, 26, 30, 40	GND
6	IDE data bit 9	23	IDE write signal
7	IDE data bit 5	25	IDE read signal
8	IDE data bit 10	27	IDE ready signal
9	IDE data bit 4	20, 21, 28, 29, 32, 34	N.C.
10	IDE data bit 11	31	IDE IRQ
11	IDE data bit 3	33	IDE address bit 1
12	IDE data bit 12	35	IDE address bit 0
13	IDE data bit 2	36	IDE address bit 2
14	IDE data bit 13	37, 38	IDE chips select signal
		39	IDE active signal

CN4: Floppy Disk Drive Connector

Pin	Description	Pin	Description
1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33	GND	18	DIR#
2	RWC#	20	STEP#
4,6	N.C.	22	WD#
8	INDEX#	24	WE#
10	MOA#	26	TRAK0
12	DSB#	28	WP#
14	DSA#	30	RDATA#
16	MOB#	32	HEAD#
		34	DSKCHG#

CN5: COMA Port and CN6: COMB Port

Pin	Description	Pin	Description
1	DCD	6	DSR
2	SIN	7	RTS
3	SOUT	8	CTS
4	DTR	9	RI
5	GND	10	N.C.

JP4: The Keyboard Connector

Pin	Description
1	Keyboard data
2	Keyboard clock
3	N.C.
4	Ground
5	+5V DC

JP5: The Power Supply Connector

Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5v DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

JP27: Speaker Connector

Pin	Description
1	DATA out
2	Ground
3	Ground
4	Vcc

JP33: IDE Active LED

Pin	Description

1	IDE Active Signal
2	+5V DC

JP37: Turbo LED Connector

Pin	Description
1	+5V DC
2	Turbo Signal

JP40: Keylock & Power LED Connector

Pin	Description
1	Power LED
2	N.C.
3	Ground
4	Keylock
5	Ground

LED1: Power-Saving LED Connector

Pin	Description
1	+5V DC
2	Standby Signal

Jumper Switches and Functions List

Jumper	Function
JP1	External Battery Connector
JP2 & JP3	Clear BIOS Setup Data

JP4	Keyboard Connector
JP5	Power Supply Connector
JP6	Monochrome/Color Selection
JP7 & JP8	Cache Size Selection
JP9 & JP10	CPU Type Selection
JP14-JP17	
JP20-JP21	
JP23-JP26	
JP28-JP30	
JP11 & JP12	Clock Speed Selection
JP13	[Factory Preset: Testing Purposes Only]
JP19	BIOS Type Selection
JP27	Speaker Connector
JP31, JP32, & JP34	CPU Voltage Selection
JP33	IDE Active LED Connector
JP35	Standby Mde Switch Connector
JP36	Power-Saving Output Signal Connector
JP37	Turbo LED Connector
JP38	Reset Connector
JP39	Turbo Switch Connector
JP40	Keylock & Power LED Connector
LED1	Power Saving LED Connector
CN1	Printer Connector
CN2	Secondary IDE Connector
CN3	Primary IDE Connector
CN4	Floppy Disk Drive Connector
CN5	Serial Port 1 Connector
CN6	Serial Port 2 Connector

Jumper	
JP1	
JP2 & JP3	BIOS
JP4	
JP5	

JP6	/
JP7 & JP8	
JP9 & JP10	CPU
JP14-JP17	
JP20-JP21	
JP23-JP26	
JP28-JP30	
JP11 & JP12	
JP13	
JP19	BIOS
JP27	
JP31, JP32, & JP34	CPU
JP33	
JP35	
JP36	
JP37	Turbo
JP38	Reset
JP39	Turbo
JP40	LED
LED1	LED
CN1	
CN2	2
CN3	1
CN4	
CN5	1
CN6	2