Chapter 1
Introduction

The **80486** mainboard is a high-performance mainboard based on the 80486 microprocessor and featuring PCI and ISA Bus support. The mainboard offers a high degree of flexibility in configuration and is fully IBM PC/AT compatible.

The PCI (Peripheral Component Interconnect) Local Bus is a high performance, 32-bit or 64-bit bus with multiplexed address and data lines. It is intended for use as an interconnect mechanism between highly integrated peripheral controller components, peripheral add-in boards, and process/memory system.

Caution: *You need to set EMS386.EXE as follows when you want to use AMD None Green CPU , the Green function, and EMS in DOS or Windows at the same time:*

```
device : <path> EMM386.EXE x=E800-EFFF
```

Key Features

The advanced features of the **80486** mainboard include:

* Supports CPUs running at 25/33/40/50/66/75/80/100/120 MHz including:
    — Intel P24D and P24T
    — Intel 80486DX4 (P24C)
    — Intel 80486DX / DX2-SL
    — Intel 80486DX2 / DX /SX
    — Cyrix CX486DX2/DX / S
    — Cyrix M1–SC
    — AMD DX/DX2/4
    — Ti 80486 DX2

— IBM 80486 DX2
— Enhanced AMD DX2/DX4

- PCI / Host bridge compliant to PCI specification V2.0

- Supports write back mode CPU internal (Level 1) cache

- Level 2 write back policy for high performance

- Flexible cache RAM size 64/128/256/512/1024 KB in two banks or one bank with 16 bytes line size

- DRAM auto-detection / banking

- Supports four banks of DRAM including four 72-pin SIMM sockets with memory size up to 256 MB using combinations of 256K, 1M, 2M, 4M, 8M, 16M, 32M, 64M SIMM modules

- Supports 4Mx4 4K, 2Mx8 4K, and 1Mx16 2K of Refresh DRAM

- Provides green PC power management

- Supports EDO DRAM

- Three PCI connectors and four 16 bit I/O slots

- On-board CR2032 3.0 Volt lithium battery

- Supports 3.3 / 4.0 Volts for low power CPU

- On-board ZIF socket

- Provides flash ROM support

- Monitor power control connector and fan power control connector

- Two enhanced IDE interfaces on-board, both of them support ATA spec., up to mode 4 , and Bus master

- Supports two 16550 compatable enhanced serial ports and one floppy disk interface

- Supports EPP/ECP high performance parallel port

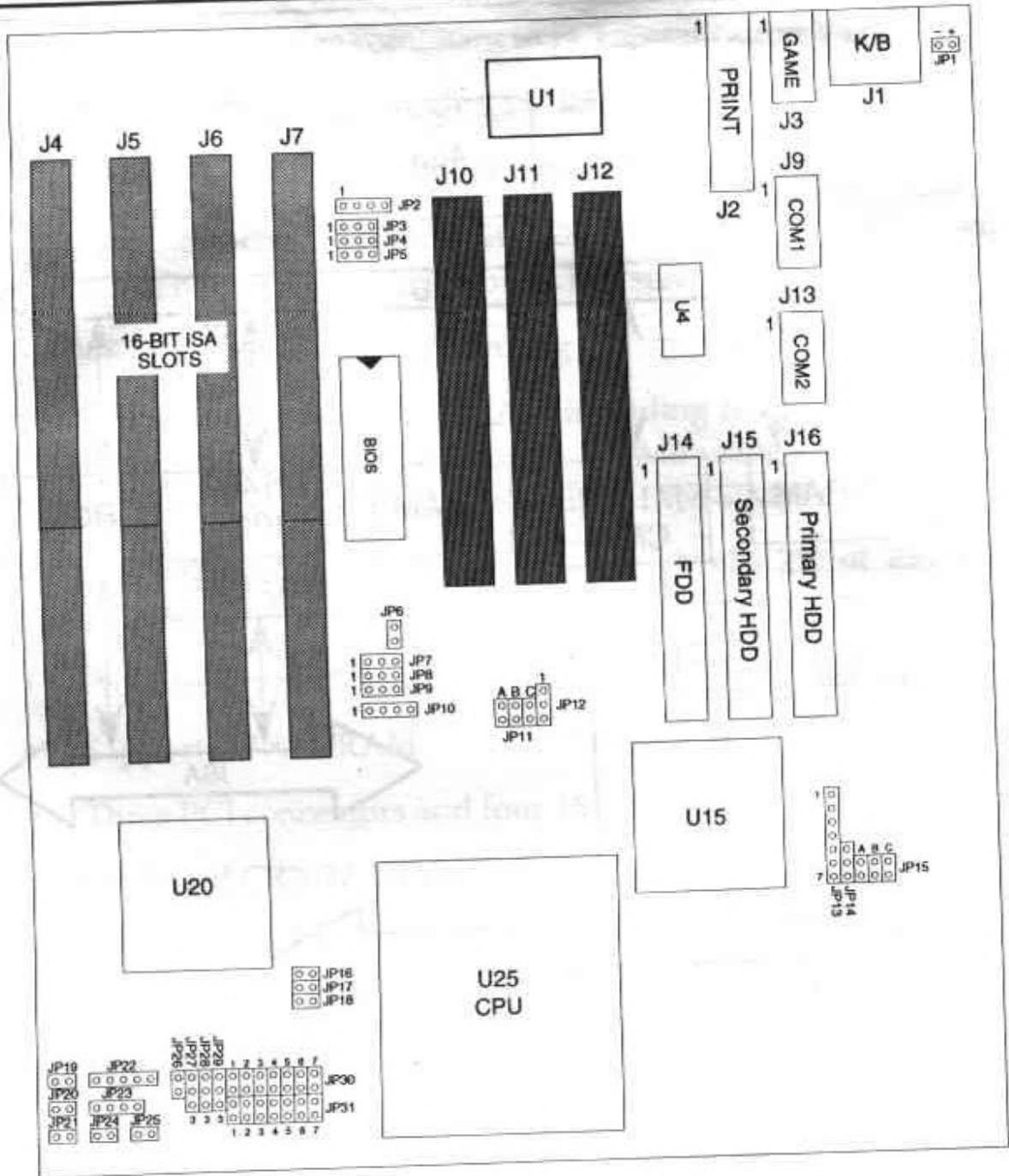- Build in NCR SCSI driver

Mainboard Component Locations

Figure 1–1. Mainboard Component Locations

J6 – Power Supply Connectors

The power supply connectors are two six-pin male header connectors. Plug the dual connectors from the power directly onto the board connectors.

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

JP1– Monitor Power Control Connector

Attach the power control signal cable from a Green monitor to this connector.

Pin	Description
1	Anode (+)
2	Cathode (–), Ground

JP2 – External Battery Connector

You can attach an external battery to JP3. The default setting is 2-3, for using the internal battery.

Pin	Description
1 and 4	External Battery Positive
2 and 3	Internal Battery Positive
3 and 4	Clear CMOS

JP3, JP4 – I/O DMA Selectors

The mainboard provides an DMA features connector for the use of DMA of ECP feature. The default setting is 2-3.

Pin	Discription	Discription
1 – 2	DRQ 1	DACK 1
2 – 3	DRQ 3	DACK 3

JP10 – Fan Power Connector

JP10 supports +5V and VCC power for the CPU fan. When the system enters suspend mode, it stops supplying power to the fan.

Pin	Description
1	Controller pin
2, 3	Ground
4	VCC/5V

JP17 – Suspend Switch Connector

JP17 connects to a push button that allows you to toggle the system between Suspend mode and Normal mode.

JP19 – Turbo LED Connector

Attach a turbo LED for indicating system speed to this connector.

Pin	Description
1	Anode (+)
2	Cathode (–), Ground

Jumper Switch Settings

You can configure hardware options by setting jumper switches on the mainboard. See Figure 1-1 for jumper locations.

JP5 – Flash ROM Jumper

The mainboard uses two types of Flash chip — 5 volt and 12 volt. Set the mainboard for either type with jumper JP2.

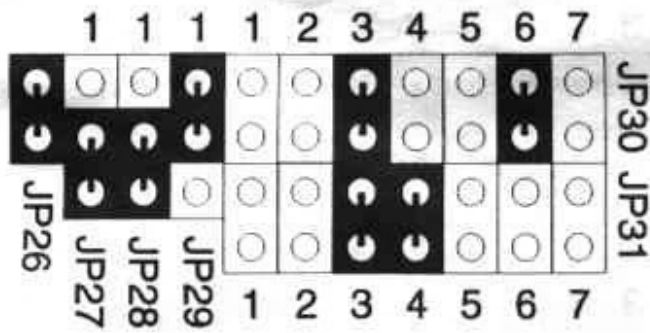| Description	JP2
5 volt Flash programming	3 2 1
12 volt Flash programming	3 2 1

CPU Installation

You install the CPU in the ZIF socket provided on the mainboard. Refer to Figure 1-1 for the location of the CPU.
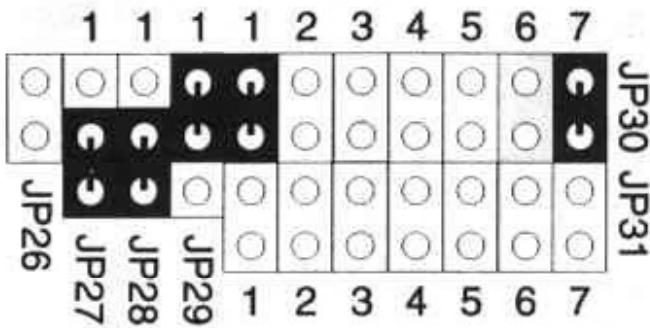
Install the CPU as follows:

Caution: *Static electricity can seriously damage the CPU.*

1. Review the section on static electricity precautions at the beginning of this manual.

2. Locate the CPU socket on the mainboard.

3. Make sure the ZIF socket arm is up in the "open" position.

4. Align the pins of the CPU to match the ZIF socket holes. Make sure that pin 1 of the CPU aligns with pin 1 of the ZIF socket.
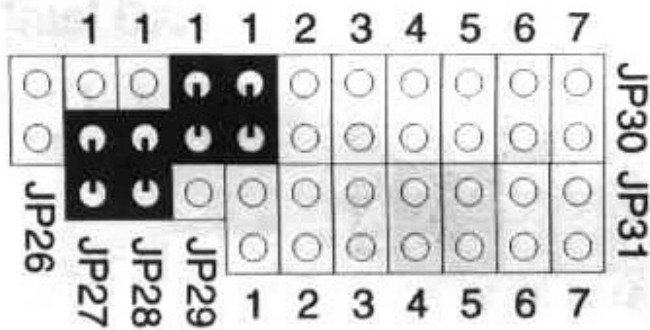
5. Insert the CPU into the ZIF socket.

6. Press the ZIF socket arm downwards until it snaps into place at the side of the socket.

CPU Type Jumpers

Set jumpers JP26~JP31 so that the mainboard recognizes the type of CPU installed. Set CPU type as shown below.

Intel SX

Intel DX/DX2

Intel SX–S

Intel DX–S/DX2–S

Intel DX4–S

Intel P24D, Cyrix M1–SC

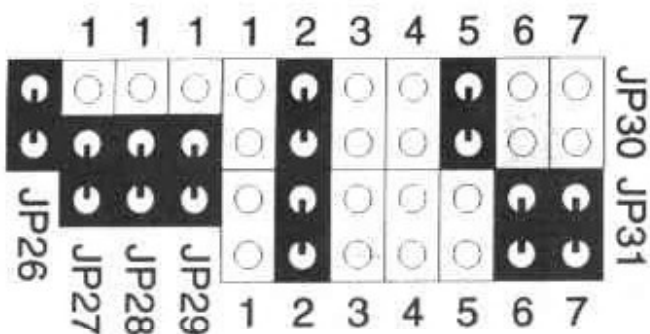## Intel P24T

IBM, Cyrix, and TI DX/DX2

AMD DX/DX2 (None Green)

AMD DX4 (None Green)

Enhanced AMD DX4

JP7~JP9 – CPU Power Jumpers

Check your CPU for the voltage it requires and set jumpers
JP7~JP9 accordingly as shown below.

CPU Power	JP6	JP7	JP8	JP9
3.3 Volts	[▬▬]	[○ ▬▬] 3 2 1	[○ ▬▬] 3 2 1	[○ ▬▬] 3 2 1
4 volts	[○ ○]	[○ ▬▬] 3 2 1	[○ ▬▬] 3 2 1	[○ ▬▬] 3 2 1
5 Volts	[▬▬]	[▬▬ ○] 3 2 1	[▬▬ ○] 3 2 1	[▬▬ ○] 3 2 1

Memory Installation

The mainboard provides four SIMM sockets that support 8 banks
of DRAM with auto-banking and auto-detection functions. You
can install up to 256MB of memory using combinations of 256K,
1M, 2M, 4M, 8M, 16M, 32M, and 64M SIMM modules. If you
have 1 bank of DRAMs, you may put them in any slot. But,
when you use 2 bank of DRAMs, they must be installed in
sequence, for example, SIMM 0 + 1, SIMM 1 2, SIMM 2 + 3.