

CPU Type	JP7	JP11	JP12	JP13	JP14	JP16	JP17	JP19	JP20	JP21	JP24
486DX/DX2	close	open	3-4	1-2,3-4	open	1-2	1-2	open	open	open	open
Intel SL DX/DX2	close	open	3-4	1-2,3-4	2-3,4-5	1-2	1-2	open	1-2	1-2	open
Cyrix DX/DX2	open	1-2	3-4	1-2,3-4	1-2,3-4	2-3	1-2	2-3	1-2	2-3	2-3
Intel DX4	close	open	3-4	1-2,3-4	2-3,4-5	1-2	1-2	open	1-2	1-2	open
UMC USS	close	open	1-2	2-3	open	1-2	2-3	open	2-3	open	3-4

Intel 486DX4 Clock Multiply Select  
 JP9 Open 3X  
 1-2 2X  
 AMD 3.3V 486DX2 JP9.3-JP14.1

CPU Type Setup  
 JP7,JP10,JP11,  
 JP12,JP13,JP14

CPU Reset Select  
 JP15 1-2(Default)  
 Intel SL DX/DX2/DX4 & Cyrix CPU  
 JP15 3-4

CPU Type Select  
 JP16,JP17,JP19  
 JP20,JP21,JP24

System Clock Select  
 JP18

System Clock	25M	33M	40M	50M
JP18(1-2)	open	close	open	close
JP18(3-4)	open	close	close	open
JP18(5-6)	open	open	open	open

Cache Configuration  
 JP22,JP23,JP25

Keyboard Controller Select  
 JP27,JP28

Speaker  
 CN1

Keylock  
 CN2

Turbo Switch  
 JP29

Turbo LED  
 JP30

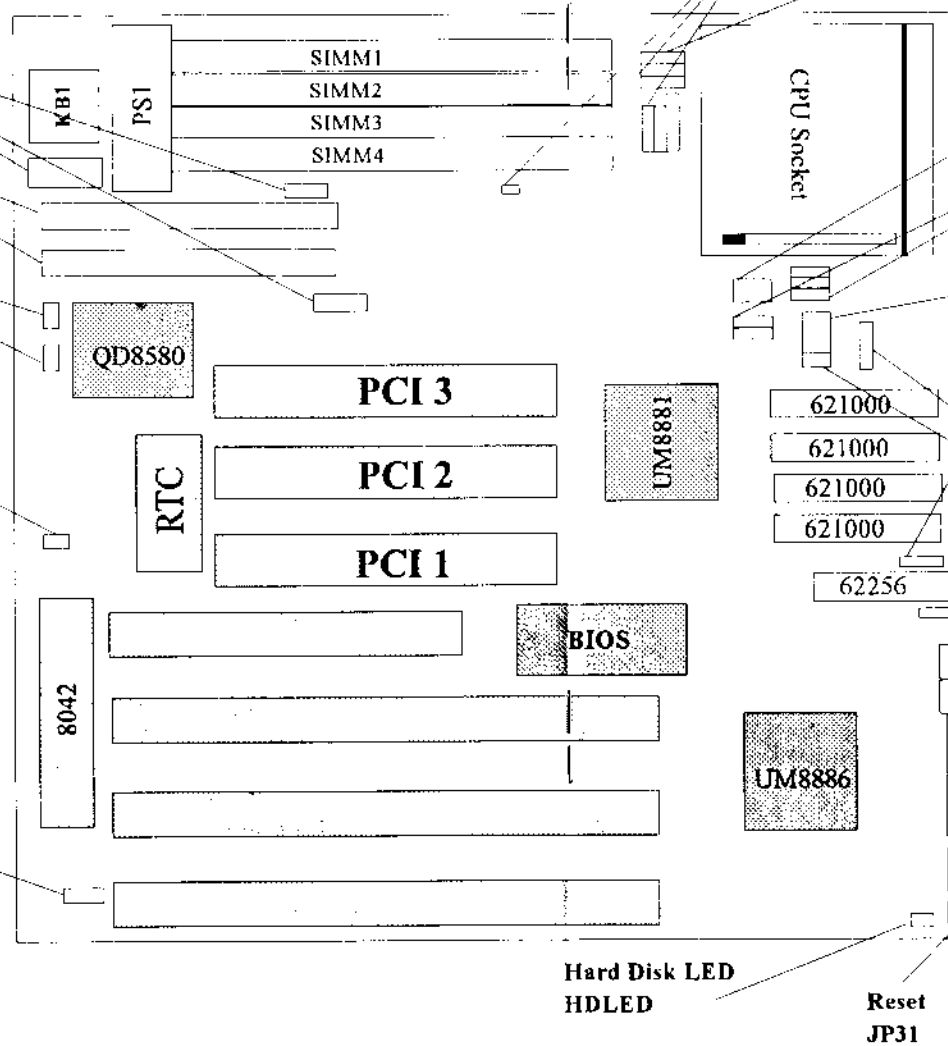
Keyboard Controller Select  
 JP1,JP5,JP6

On-board IDE Connector  
 JH1,JH2

IDE Controller Setup  
 JP2,JP3

Clear CMOS Jumper  
 JC

Keyboard Controller Select  
 JP4



Hard Disk LED  
 HDLED

Reset  
 JP31

# Quick Setup Guide

## (A) System Clock Setting for CPU

System Clock	25MHz	33MHz	40MHz	50MHz
JP18 (1-2)	OPEN	CLOSE	OPEN	CLOSE
JP18 (3-4)	OPEN	CLOSE	CLOSE	OPEN
JP18 (5-6)	OPEN	OPEN	OPEN	OPEN

## (B) CPU Type Setting

	JP11	JP19	JP21	JP14	JP13	JP20	JP24	JP12	JP7	JP16	JP17
486SX	OPEN	OPEN	OPEN	OPEN	2-3	OPEN	OPEN	OPEN	CLOSE	1-2	1-2
AMD 486DX4 486DX/DX2	OPEN	OPEN	OPEN	OPEN	1-2, 3-4	OPEN	OPEN	3-4	CLOSE	1-2	1-2
Intel SL 486SX/SX2	OPEN	OPEN	1-2	2-3, 4-5	2-3	1-2	OPEN	OPEN	CLOSE	1-2	1-2
Intel SL 486DX/DX2	OPEN	OPEN	1-2	2-3, 4-5	1-2, 3-4	1-2	OPEN	3-4	CLOSE	1-2	1-2
Intel 486DX4	OPEN	OPEN	1-2	2-3, 4-5	1-2, 3-4	1-2	OPEN	3-4	CLOSE	1-2	1-2
Cyrix 486SX	1-2	2-3	2-3	1-2, 3-4	2-3	1-2	2-3	OPEN	OPEN	2-3	1-2
Cyrix 486DX/DX2	1-2	2-3	2-3	1-2, 3-4	1-2, 3-4	1-2	2-3	3-4	OPEN	2-3	1-2
LMC USS	OPEN	OPEN	OPEN	OPEN	2-3	2-3	3-4	1-2	CLOSE	1-2	2-3

When using AMD 3.3V 486DX2/66/80, an additional cable should add to connect JP14 Pin1 to JP9 Pin3.

## (C) 3.3V CPU Power Supply Setup

Warning : Make sure the CPU Power Supply Voltage is correct , otherwise the CPU could be damaged.

Main Board Configuration	With Q1 & Q2 installed	Only Q1 installed	Q1&Q2 not installed
3V 486 CPU	AUTODETECT	Open jumper Q2	not supported
5V 486 CPU	AUTODETECT	Close jumper Q2	always 5V

*Note: Q1 is a voltage regulator LT-1086 or TIP127*

*Q2 is a FET NDP-505*

## (D) SIMM RAM Installation

The Main Board provide 4x72-pin SIMM sockets for you to install flexible size of on-board memory. You can use either double-bank or single-bank SIMM according to the SIMM configuration table below.

The following Table is a typical SIMM configuration.

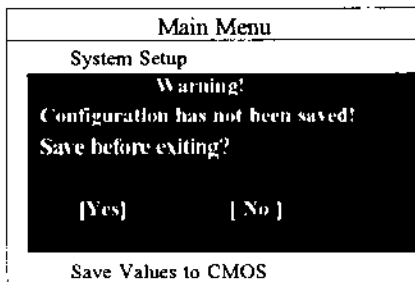
RAM SIZE	72-pin SIMM #1	72-pin SIMM #2	72-pin SIMM #3	72-pin SIMM #4
2 MB	1 MB x 1	1 MB x 1	--	--
4 MB	4 MB x 1	--	--	--
4 MB	--	4 MB x 1	--	--
8 MB	4 MB x 1	4 MB x 1	--	--
8 MB	--	--	8 MB x 1	--
12 MB	4 MB x 1	4 MB x 1	4 MB x 1	--
16 MB	4 MB x 1	4 MB x 1	4 MB x 1	4 MB x 1
16 MB	8 MB x 1	8 MB x 1	--	--
16 MB	16 MB x 1	--	--	--
32 MB	16 MB x 1	16 MB x 1	--	--
32 MB	--	--	16 MB x 1	16 MB x 1
32 MB	32 MB x 1	--	--	--
48 MB	16 MB x 1	16 MB x 1	16 MB x 1	--
64 MB	32 MB x 1	32 MB x 1	--	--
128 MB	32 MB x 1	32 MB x 1	32 MB x 1	32 MB x 1

### (E) Auto configuration with ROM default

You can enter BIOS SETUP by pressing <DEL> key during power on memory test. After entered BIOS SETUP you can use arrow keys to highlight :

Load ROM Default Values

and press <Enter> key, the ROM defaults are loaded then you can save the setting to CMOS and exit SETUP by pressing <F10> .The screen as shown below :



Move Enter Select

F1 Help

ESC Exit

F10 Save & Exit

Move the highlight cursor to [Yes] then press [Enter] to save the configuration and exit the BIOS Setup.

*Note :*

*If you cannot successfully boot the system more than 3 times, the BIOS will show the following message :*

*Previous boot incomplete-Default configuration used*

*Press <F1> to resume, <DEL> to setup.*

*You can reconfigure your system by pressing <Del> to enter BIOS Setup.*

## 1. Introduction

The manual help you to be more familiar with the system board and also serves as a guide for future system upgrading. UMC880 Main Board is a highly integrated IBM PC/AT compatible system board that support all members of 486 family, and features a WRITE BACK/WRITE THROUGH secondary cache memory from 128KB to 512KB in size. It support PCI local bus architecture, ISA bus architecture and integrate a High Performance PCI IDE Controller on-board. This main board also support Dark Green Function (SMM mode of SMI-CPU) to allow maximum power saving.

### 1.1. Main Feature

- |                |   |
|----------------|---|
| CPU            | <ul style="list-style-type: none"><li>- Intel 80486SX/DX/DX2/'SL Enhanced 25/33/50/66 MHz</li><li>- Intel 80486DX4 75/100MHz</li><li>- AMD486DX/DX2/DX4 40/66/80/100MHz</li><li>- Cyrix Cx486DX/DX2 40/50MHz</li><li>- UMC U5S 33MHz</li></ul>  |
| System memory  | <ul style="list-style-type: none"><li>- 4 x 72pin SIMM module</li><li>- flexible memory size from 2MB to 128MB</li></ul>  |
| Cache memory   | <ul style="list-style-type: none"><li>- Support 0/128/256/512KB secondary cache on board with either Write Back or Write through mode</li></ul>   |
| On-board IDE   | <ul style="list-style-type: none"><li>- Support 4 IDE Device and Enhanced IDE Function</li></ul>  |
| Green Function | <ul style="list-style-type: none"><li>- Enter Doze mode from 15 seconds to 8 min. CPU Clock down to 1/2 of normal speed for SMI CPU or 8MHz for non-SMI CPU</li><li>- Enter standby mode from 2 minutes to 512 min. CPU Clock down to 1/4 of normal speed for SMI-CPU or 8MHz for non-SMI CPU and turn off screen and IDE HDD power down if set</li><li>- Enter suspend mode from 2 minutes to 512 min. Stop CPU clock (Only for Intel SL Enhanced &amp; Cyrix CPU)</li></ul> |
| I/O Bus Slots  | <ul style="list-style-type: none"><li>- 32-bit PCI Local Bus slot x 3</li><li>- 8-bit XT Bus slot x 1</li><li>- 16-bit AT Bus slot x 3</li></ul>  |
| Board Size     | <ul style="list-style-type: none"><li>- 220 x 220mm</li></ul>   |

## 2. Hardware configuration

### 2.1. CPU type configuration

UMC880 Main Board supports all 486 series CPU which provide an easy way to upgrade your system. When you install a different 486 CPU, you should set the jumper correctly otherwise the system will not work properly. Please refer to QUICK SETUP GUIDE section B & C for the correct jumper settings of different CPU type.

### 2.2. System clock configuration

CPU should work with proper clock frequency. The system clock frequency should not exceed the CPU maximum working frequency. Table below is the maximum working frequency of different CPU type.

CPU TYPE	486SX/25 486DX/25	486SX/33 486DX/33	486DX/40 486DX/50	486DX/50	486SX/50 486DX/50	486DX/66	486DX/75	486DX/100
System Clock	25MHz	33MHz	40MHz	50MHz	25MHz	33MHz	25MHz	33MHz

Please refer to QUICK SETUP GUIDE "section A" to set your System Clock correctly.

### 2.3. Cache memory configuration

UMC880 main board support 0KB/128KB/256KB/512KB of secondary cache memory. The secondary cache memory are consists of one of Tag SRAM and 4 of data SRAM. Table below is the jumper setting and SRAM selection of secondary cache.

CACHE RAM SIZE	TAG SRAM	DATA SRAM	LOACTION OF DATA SRAM
128KB	8K x 8	32K x 8 x 4	U(10-13)(Pin3-30)
256KB	32K x 8	64K x 8 x 4	U(10-13)
512KB	32K x 8	128K x 8 x 4	U(10-13)

CACHE RAM SIZE	JP23		JP22	JP25
	1-2	3-4		
128KB	ON	OFF	OFF	1-2
256KB	ON	ON	OFF	2-3
512KB	ON	ON	ON	2-3

### 2.4. On-board PCI IDE Controller Configuration

UMC880 main board integrate an High Performance PCI IDE Controller on-board, you can configure it through JP2 and JP3

FUNCTION	JP2
Enable IDE Controller	OPEN
Disable IDE Controller	CLOSE

OPTION	JP3	REMARK
OPEN	Relocatable Port Address	
CLOSE	Fixed Port Address	Default Setting

## 2.5. Connector pin assignment

### 2.5.1. Key lock connector (CN2)

PIN NUMBER	FUNCTION
1	+5V
2	NC
3	GND
4	KEY LOCK
5	GND

### 2.5.2. Speaker connector (CN1)

PIN NUMBER	FUNCTION
1	SPKDATA
2	NC
3	GND
4	VCC

### 2.5.3. Power connector (PS1)

PIN NUMBER	FUNCTION
1	POWER GOOD
2	+5V(VCC)
3	+12V
4	-12V
5	GND
6	GND
7	GND
8	GND
9	-5V
10	+5V(VCC)
11	+5V(VCC)
12	+5V(VCC)

### 2.5.4. Turbo switch (JP29)

JP29	FUNCTION	CPU SPEED
OPEN	TURBO	HIGH
CLOSE	NON-TURBO	LOW

### 2.5.5. Turbo LED (JP30)

PIN NUMBER	FUNCTION
1	CATHODE
2	ANODE

## 2.5.6. Keyboard connector (KB1)

PIN NUMBER	FUNCTION
1	CLOCK
2	DATA
3	NC
4	GND
5	VCC

## 2.5.7. Reset switch (JP31)

JP31	FUNCTION
CLOSE ONCE	RESET SYSTEM
OPEN	NORMAL

## 2.5.8. Hard Disk LED (HDLED)

HDLED	FUNCTION
1	CATHODE
2	ANODE

## 2.5.9. Clear CMOS (JC)

If the RTC installed is BENCHMARK BQ-3287A, the following procedures should be taken for clearing CMOS.

1. Power on the system, and close JC once then leave JC open.
2. Power off the system, wait 3-5 seconds.
3. Power on the system again, now all the CMOS setting is lost. Entering BIOS Setup and setup your system.

## 2.5.10. Other jumper introduction and default settings

PIN NUMBER	DEFAULT SETTING	FUNCTION	REMARK
JP15	1-2	CPU RESET SELECT	3-4 (Intel SL & Cyrix CPU)
JP10	OPEN	CPU UP#	
JP9	OPEN (3X CLK)	Intel 486DX4 CLOCK MODE	1-2 2X CLK
JP5	2-3 (EXTERNAL KC)	KEYBOARD CONTROLLER SELECT	1-2 (INTERNAL KC)
JP6	2-3 (EXTERNAL KC)	KEYBOARD CONTROLLER SELECT	1-2 (INTERNAL KC)
JP4	2-3 (EXTERNAL KC)	KEYBOARD CONTROLLER SELECT	1-2 (INTERNAL KC)
JP28	2-3 (EXTERNAL KC)	KEYBOARD CONTROLLER SELECT	1-2 (INTERNAL KC)
JP1	1-3,2-4,5-7,6-8 (EXTERNAL K.C.)	KEYBOARD CONTROLLER SELECT	7-9,8-10 (INTERNAL KC)
JP27	1-2 (EXTERNAL KC)	KEYBOARD CONTROLLER SELECT	2-3 (INTERNAL KC)
JP26	OPEN	EXTERNAL POWER MANAGEMENT INTERRUPT INPUT TO PMC	