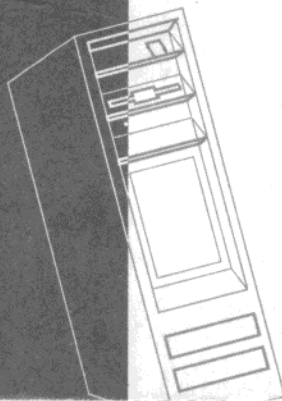
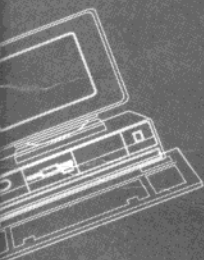
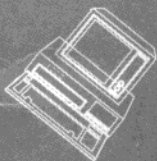


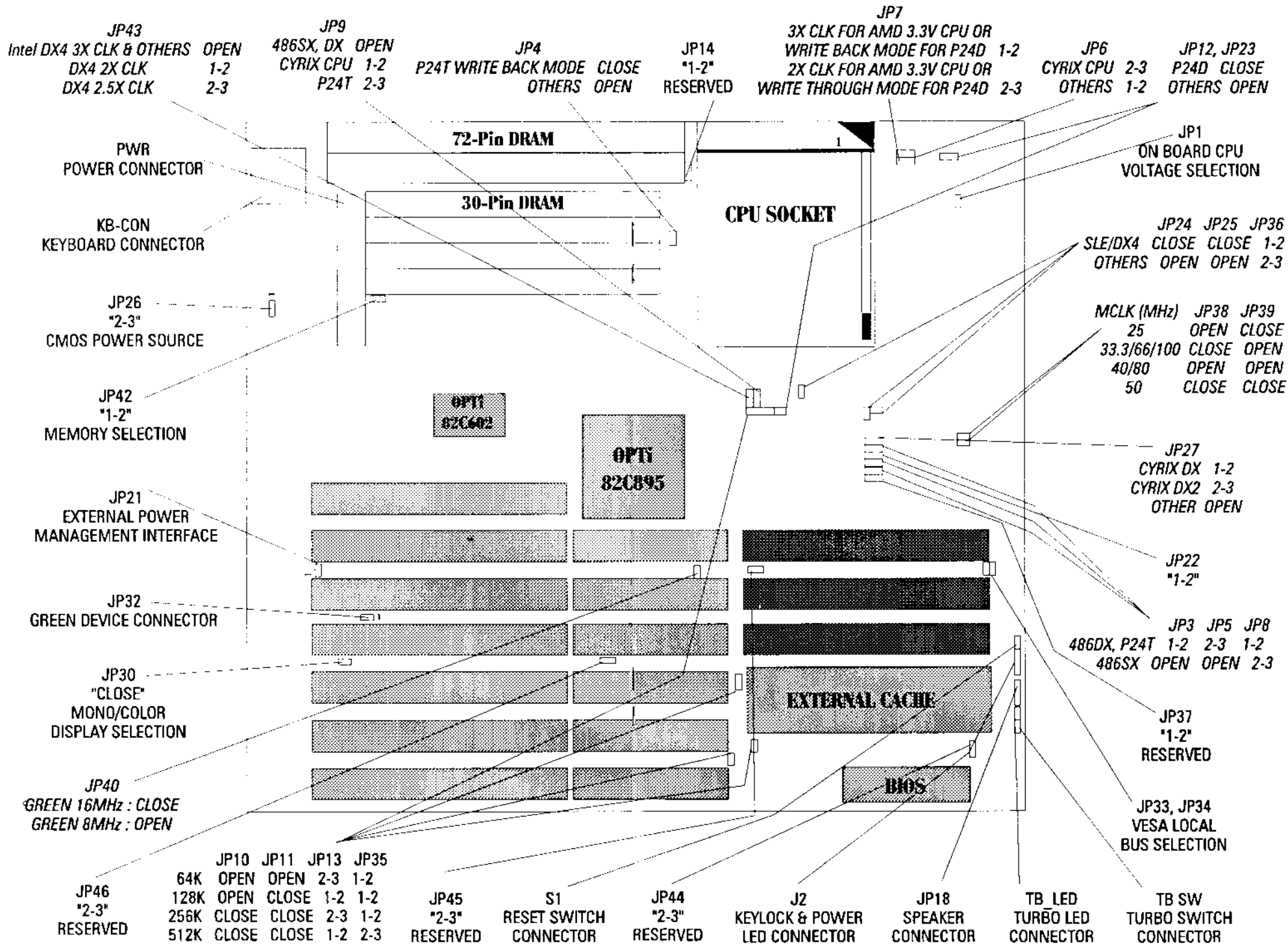


VL/ISA-PB486P3



User Manual
PC Main Board





1. Quick Setup

Below is a quick and easy way to setup your OPTi895 GREEN PC system.

Note : "*" Default Setting

1.1 Memory configuration

The OPTi895 GREEN PC supports 72PIN SIMM RAM and 30 PIN SIMM RAM. Up to 64 MB main memory size can be accommodated. A total of 23 different memory configurations were shown in the following table :

JP-42	INDEX	30 PIN BANK0 SIMM (1-4)	72 PIN BANK0-1 (J21)	72 PIN BANK2-3 (J22)	TOTAL MEMORY	
1-2	1	256KB	---	---	1MB	
	2	1MB	---	---	4MB	
	3	4MB	---	---	16MB	
	4	1MB	---	4MB-S	8MB	
	5	1MB	---	8MB-D	12MB	
	6	1MB	---	16MB-S	20MB	
	7	4MB	---	16MB-S	32MB	
	8	---	---	2MB-D	---	2MB
	9	---	---	4MB-S	---	4MB
	10	---	---	2MB-D	2MB-D	4MB
	11	---	---	2MB-D	4MB-S	6MB
	12	---	---	8MB-D	---	8MB
	13	---	---	4MB-S	4MB-S	8MB
	14	---	---	2MB-D	8MB-D	10MB
	15	---	---	4MB-S	8MB-D	12MB
	16	---	---	16MB-S	---	16MB
	17	---	---	8MB-D	8MB-D	16MB
	18	---	---	4MB-S	16MB-S	20MB
	19	---	---	16MB-S	16MB-S	32MB
	20	---	---	32MB-D	---	32MB
	21	---	---	32MB-D	32MB-D	64MB
2-3	22	4MB	8MB-D	4MB-S	16MB	
	23	16MB	32MB-D	16MB-D	64MB	

"S" stands for single bank memory.

"D" stands for double bank memory.

Note : At least 1MB of main memory must be installed. The memory banks must be filled from BANK0, then BANK1. In addition, each memory bank must use the same type of SIMM RAM module .

Quick Setup

1.2. CPU & Frequency selection

(i) CPU selection (JP3, JP4, JP5, JP6, JP7, JP8, JP9, JP12, JP22, JP23, JP24, JP25, JP27, JP36, JP40, JP43)

CPU TYPE	486SX	486DX	SL - 486SX	SL - 486DX	INTEL 486DX4
JP3	OPEN	1-2	OPEN	1-2	1-2
JP4	OPEN	OPEN	OPEN	OPEN	OPEN
JP5	OPEN	2-3	OPEN	2-3	2-3
JP6	1-2	1-2	1-2	1-2	1-2
JP7	OPEN	OPEN	OPEN	OPEN	OPEN
JP8	2-3	1-2	2-3	1-2	1-2
JP9	OPEN	OPEN	OPEN	OPEN	OPEN
JP12	OPEN	OPEN	OPEN	OPEN	OPEN
JP22	1-2	1-2	1-2	1-2	1-2
JP23	OPEN	OPEN	OPEN	OPEN	OPEN
JP24	OPEN	OPEN	CLOSE	CLOSE	CLOSE
JP25	OPEN	OPEN	CLOSE	CLOSE	CLOSE
JP27	OPEN	OPEN	OPEN	OPEN	OPEN
JP36	1-2	1-2	2-3	2-3	2-3
JP40	OPEN	OPEN	OPEN	OPEN	CLOSE
JP43	OPEN	OPEN	OPEN	OPEN	OPEN 3X CLK
					1-2 : 2X CLK
					2-3 : 2.5X CLK

CPU TYPE	AMD 3.3V CPU	P24T	P24D	Cyrix 486 DX
JP3	1-2	1-2	1-2	1-2
JP4	OPEN	WB CLOSE	OPEN	OPEN
JP5	2-3	2-3	2-3	2-3
JP6	1-2	1-2	1-2	2-3
JP7	1-2 : 3X CLK	OPEN	1-2 : P24D WB	OPEN
	2-3 : 2X CLK		2-3 : P24D WT	
JP8	1-2	1-2	1-2	1-2
JP9	OPEN	2-3	2-3	1-2
JP12	OPEN	OPEN	CLOSE	OPEN
JP22	1-2	1-2	1-2	1-2
JP23	OPEN	OPEN	CLOSE	OPEN
JP24	OPEN	OPEN	CLOSE	OPEN
JP25	OPEN	OPEN	CLOSE	OPEN
JP27	OPEN	OPEN	OPEN	1-2 : M7 1X CLK
				2-3 : M7 2X CLK
JP36	1-2	1-2	2-3	1-2
JP40	OPEN	OPEN	OPEN	OPEN
JP43	OPEN	OPEN	OPEN	OPEN

“WB” stands for Write back

“WT” stands for Write Through

(II) Frequency selection (JP38, JP39)

CPU	JP38	JP39
25MHz	OFF	ON
33MHz/66MHz/100MHz	ON *	OFF *
40MHz/80MHz	OFF	OFF
50MHz	ON	ON

1.3. Cache size selection (JP10, JP11, JP13, JP35)

Cache Size	JP10	JP11	JP13	JP35	SRAM 8Kx8	SRAM 32Kx8	SRAM 128Kx8
64K	OPEN	OPEN	2-3	1-2	U5-U13	---	---
128K	OPEN	CLOSE	1-2	1-2	U13	U5-U8	---
256K	CLOSE	CLOSE	2-3	1-2	---	U5-U13	---
512K	CLOSE	CLOSE	1-2	2-3	---	U13	U5-U8

1.4. VESA Local Bus selection (JP33, JP34)

JUMPER	SETTING	FUNCTION
JP33	OPEN	0WS
	CLOSE	1WS
JP34	OPEN	<= 33MHz
	CLOSE	> 33MHz

Note : J18 & J19 are VESA MASTER 0, J20 is VESA MASTER 1

1.5. Green device connector (JP32)

PIN NUMBER	FUNCTION	
1	GND	
2	CONNECT TO EXTERNAL DEVICE FOR GREEN (AC POWER, VGA etc.)	NORMAL = HIGH GREEN MODE = LOW

When the system gets in Auto mode or SMI mode, the JP32-pin 2 will change from HIGH to LOW level. When the system is resumed, the pin 2 will return to high level. The jumper is used to connect the green function for monitor power on/off control.

1.6. External Power Management Interface (JP21)

PIN NUMBER	FUNCTION	
1	GND	
2	EXTERNAL POWER MANAGEMENT INTERFACE	NORMAL = HIGH GREEN MODE = LOW

1.7. On Board CPU Voltage Selection CPU (JP1)

There are two choices available for the CPU speed :

JP1	FUNCTION
OFF	FOR 3.3V CPU (DX4 etc.)
ON	FOR 5V CPU

If there is an on board Auto Detect 5V-3.3V Voltage regulator, then it is no need to select any CPU Voltage jumper setting. If there is no on board Auto Detect 5V-3.3V Voltage regulator, then you need to select the CPU Voltage manually using the JP1 jumper.

Quick Setup

1.8. Turbo switch connector (TB_SW)

There are two choices available for the CPU speed :

TURBO	SPEED	TURBO LED
CLOSE	LOW	OFF
OPEN *	HIGH	ON

Note: As some VL-Bus Add-on cards can not boot at 8 MHz (CPU speed), we recommend the system should be boot with turbo mode (High Speed).

1.9. CMOS Power source (JP26)

JP26	OPERATION
1-2	CLEAR CMOS
2-3 *	ON BOARD BATTERY

1.10. Mono/Color display selection (JP30)

Jumper JP30 informs the system what type of display is currently in use.

JP30	DISPLAY ADAPTOR TYPE
OPEN	MONO DISPLAY
CLOSE *	COLOR DISPLAY

1.11. JP14, JP37, JP44, JP45, JP46 (Default)

Factory use only, Do not alter.

JP14	JP37	JP44	JP45	JP46
1-2	1-2	2-3	2-3	2-3

1.12. Connectors

There are several connectors located on the OPTi 895 mainboard, They are used to connect with some peripheral devices to enhance the performance of the system operation.

Connector	FUNCTION
PL1	POWER CONNECTOR
J3	KEYBOARD CONNECTOR
TB-LED	TURBO LED CONNECTOR
J2	POWER LED & KEYLOCK CONNECTOR
JP18	SPEAKER CONNECTOR
S1	HARDWARE RESET CONNECTOR

2. Introduction

This manual has two purposes. First, to help the users to get familiar with the system board. Second, to serve as a guide of procedures and specifications for future system upgrade.

2.1. General specification on OPTi 895 GREEN PC main board

OPTi 895 GREEN PC MB provides a highly integrated solution for fully compatible, high performance PC/AT platforms, it supports Intel's 80486DX4/DX2/DX/SX/SL Enhanced CPU and P24T, P24D, AMD486 & Cyrix microprocessor.

2.2. Features

CPU	--Intel 80486SX/DX/DX2/SL-Series --Intel P24C (DX4), P24T, P24D --AMD Am486DX/DX2/DX4 --Cyrix Cx486DX/DX2(M7)
System Clock	--Use system clockchip generator IMI468, CPU operating frequency 8-100MHz
DRAM Memory For 895	--Support 2 banks of 72pin 256K, 1M, 4M, and 16Mx36/32 SIMM module and 1 bank of 30pin 256K, 1M, 4M, 16Mx8/9 SIMM module --Support 1MB to 64MB DRAM memory on board
Cache Memory	--Support 64KB, 128KB, 256KB or 512KB Secondary Cache memory on board --Support 486 Burst mode on Secondary Cache memory
Shadow RAM	--Main BIOS Shadow function programmable --Video BIOS Shadow function programmable --Adaper BIOS Shadow function programmable --Shadow RAM Cacheable function programmable
Green Function	--System Timeout Timer from 15 seconds to 4 hours --Auto-Mode is used to accommodate non SL-Series CPU, system clock slows down to 8 MHz --SMI-Mode is used to accommodate SL-Series CPU, system clock slows down to 0 MHz --Support individul Monitor Standby Mode (Monitor off) control --Support IDE Hard Disk Drive Power Down Mode control

Introduction

	--Support External Power Control Port for monitor power on/off
	--Wake up system by all IRQ, DRQ, and HDD/FDD IO Port
	--Support APM (Advanced Power Management) function
I/O Bus Slots	--32-bit VL-Bus Slot x 3 (support two Bus Master)
	--16-bit ISA Slot x 6
	--8-bit ISA Slot x 1
BIOS	--Licensed Advanced AMI WinBIOS, Support Flash ROM BIOS
Dimension	--2/3 Baby AT size (22cm x 25cm)



P/N 430-01005-105
ML-V4P895P3/SMT/V5