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|---|---|---|---|
| JP8-- Cytix 3v CPU : 1-2
Normal : 2-3 | JP18 --3X CLK for AMD 3V CPU : 1-2
2X CLK for AMD 3V CPU : 2-3 | JP33 -- Reserved : 1-2 | JP23 JP26 JP27 JP29 JP32 JP31 |
| JP9-- Reserved : OPEN | Others : OPEN | JP36 --DX4(Green 16MHz) : CLOSE
Other(Green 8MHz) : OPEN | SLE/DX4 : 2-3 CLOSE CLOSE 486SX, |
| JP10-- Clear CMOS : 1-2 | JP19 -- 2-3: Cytix , 1-2: Others | JP37--Reserved : 2-3 | Others : 1-2 OPEN OPEN SL-486SX : OPEN OPEN 2-3 |
| On Board Battery : 2-3 | JP20 -- 1- 2 : Reserved | JP38 , JP39--VESA Local
BUS Selection | Others : 1-2 2-3 1-2 |
| JP12-- External Power
Management Interface | 2-3 : Reserved
OPEN : DX4 3X CLK & Others | JP40--"2.3" Reserved | |
| JP13-- Green Device Connector | JP21 --On Board CPU Voltage Selection | JP45--Reserved Switch Connector | |
| JP14-- Color : CLOSE
MONO : OPEN | JP28 --Cytix DX : 1-2
Cytix DX2 : 2-3
Others : OPEN | JP46 --Keylock & Power
LED Connector | MCLK(MHz) JP34 JP35 JP43 JP44 JP41 JP22 |
| JP15--Reserved : OPEN | JP30 --Reserved : 1-2 | JP47 --Speaker Connector | 25 Close Open 128K Open Close 1-2 1-2 |
| JP16--Reserved : OPEN | JP50 -- Reserved : 2-3 | JP48 --Turbo LED Connector | 33/66/100 Open Close 256K Close Close 2-3 1-2 |
| | | JP49 --Turbo Switch
Connector | 40/80 Open Open 512K Close Close 1-2 2-3 |
| | | | 50 Close Close |

1. Introduction

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

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,AMD486 and Cyrix microprocessor.

Features

<i>CPU</i>	--Intel 80486SX/DX/DX2/SL-Series --Intel P24C (DX4) --AMD Am486DX/DX2 --Cyrix Cx486DX/DX2(M7)
<i>System Clock</i>	--Use system clockchip generator IMI468, CPU operating frequency 8-100MHz
<i>DRAM Memory</i>	--Support 4 banks of 72pin SIMM module. --Support 1MB to 64MB DRAM memory on board
<i>Cache Memory</i>	--Support 128KB, 256KB or 512KB Secondary Cache memory on board --Support 486 Burst mode on Secondary Cache memory
<i>Shadow RAM</i>	--Main BIOS Shadow function programmable --Video BIOS Shadow function programmable --Adapter BIOS Shadow function programmable --Shadow RAM Cacheable function programmable
<i>Green Function</i>	--System Timeout Timer from 15 seconds to 4 hours --Auto-Mode is used to accommodate non SL-Series CPU, system clock slow down to 8 MHz --SMI-Mode is used to accommodate SL-Series CPU, system clock slow down to 0 MHz --Support individual Monitor Standby Mode (Monitor off) control --Support IDE Hard Disk Drive Power Down Mode control --Support External Power Control Port for monitor power on/off. --Wake up system by all IRQs, DRQs, and HDD/FDD I/O Ports

Introduction

- Support APM (Advanced Power Management) function
- I/O Bus Slots* --32-bit VL-Bus Slot x 3 (support two Bus Masters)
 - 16-bit ISA Slot x 6
 - 8-bit ISA Slot x 1
- BIOS* --Licensed with Advanced AMI WinBIOS, Support Flash ROM BIOS
- Dimension* --2/3 Baby AT size (22cm x 25cm)

2. Hardware Configuration

Note : “*” represents default jumper setting

2.1 Memory Configuration

The OPTi895 GREEN PC supports 4-pcs 72 Pin SIMM RAM. Up to 64 MB main memory size can be accommodated. A total of 16 different memory configurations are shown in the following table :

INDEX	BANK 0 J21	BANK 1 J22	BANK 2 J23	BANK 3 J24	TOTAL MEMORY
1	1MB-S	---	---	---	1MB
2	1MB-S	1MB-S	1MB-S	1MB-S	4MB
3	2MB-D	---	2MB-D	---	4MB
4	2MB-D	---	4MB-S	---	6MB
5	8MB-D	---	---	---	8MB
6	4MB-S	---	4MB-S	---	8MB
7	2MB-D	---	8MB-D	---	10MB
8	4MB-S	---	8MB-D	---	12MB
9	16MB-S	---	---	---	16MB
10	8MB-D	---	8MB-D	---	16MB
11	4MB-S	---	16MB-S	---	20MB
12	16MB-S	---	16MB-S	---	32MB
13	32MB-D	---	---	---	32MB
14	32MB-D	---	32MB-D	---	64MB
15	4MB-S	4MB-S	4MB-S	4MB-S	16MB
16	16MB-S	16MB-S	16MB-S	16MB-S	64MB

“S” stands for single memory bank.

“D” stands for double memory bank.

Note:

At least 1MB main memory must be installed. The memory banks must be filled from BANK 0, then BANK 1, 2, 3. In addition, each memory bank must use the same type of SIMM RAM module.

Hardware Configuration

2.2. CPU & Frequency Selection

(I) CPU Selection (JP8, JP17, JP18, JP19, JP20, JP23, JP26, JP27, JP28, JP29, JP31, JP32, JP36)

CPU TYPE	486SX	486DX/DX2	SL 486SX	SL 486DX
JP8	2-3	2-3	2-3	2-3
JP17	OPEN	OPEN	OPEN	OPEN
JP18	OPEN	OPEN	OPEN	OPEN
JP19	1-2	1-2	1-2	1-2
JP20	OPEN	OPEN	OPEN	OPEN
JP23	1-2	1-2	2-3	2-3
JP26	OPEN	OPEN	CLOSE	CLOSE
JP27	OPEN	OPEN	CLOSE	CLOSE
JP28	OPEN	OPEN	OPEN	OPEN
JP29	OPEN	1-2	OPEN	1-2
JP31	2-3	1-2	2-3	1-2
JP32	OPEN	2-3	OPEN	2-3
JP36	OPEN	OPEN	OPEN	OPEN

CPU TYPE	AMD 3.3V CPU	INTEL 486DX4	Cyrix 486 DX
JP8	2-3	2-3	5V CPU : 2-3 3V CPU : 1-2
JP17	OPEN	OPEN	1-2
JP18	1-2 : 3X CLK	OPEN	OPEN
	2-3 : 2X CLK		
JP19	1-2	1-2	2-3
JP20	OPEN	OPEN : 3X CLK	OPEN
		1-2 : Reserved	
		2-3 : Reserved	
JP23	1-2	2-3	1-2
JP26	OPEN	CLOSE	OPEN
JP27	OPEN	CLOSE	OPEN
JP28	OPEN	OPEN	1-2 : M7 1X CLK
			2-3 : M7 2X CLK
JP29	1-2	1-2	1-2
JP31	1-2	1-2	1-2
JP32	2-3	2-3	2-3
JP36	OPEN	CLOSE	OPEN

(II) Frequency selection (JP34, JP35)

CPU	JP34	JP35
25MHz	CLOSE	OPEN
33MHz/66MHz/100MHz	OPEN*	CLOSE *
40MHz/80MHz	OPEN	OPEN
50MHz	CLOSE	CLOSE

2.3. Cache Size Selection (JP43, JP44, JP41, JP22)

Cache Size	JP22	JP41	JP43	JP44	SRAM 8Kx8	SRAM 32Kx8	SRAM 128Kx8
128K	1-2	1-2	OPEN	CLOSE	U13	U5-U8	---
256K	1-2	2-3	CLOSE	CLOSE	---	U5-U13	---
512K	2-3	1-2	CLOSE	CLOSE	---	U13	U5-U8

2.4. VESA Local Bus Selection (JP38, JP39)

JUMPER	SETTING	FUNCTION
JP38	OPEN *	0WS
	CLOSE	1WS
JP39	OPEN *	<= 33MHz
	CLOSE	> 33MHz

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

2.5. Green Device Connector (JP13)

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

When the system turns into Auto mode or SMI mode, the JP13-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.

2.6. External Power Management Interface (JP12)

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

JP12 is used to connect the external device to set Green Mode manually.

2.7. On Board CPU Voltage Selection CPU (JP21)

There are two choices available for the CPU speed :

JP21	FUNCTION
OPEN	FOR 3.3V CPU (DX4 etc.)
CLOSE	FOR 5V CPU

If there is an on board Auto Detect 5V-3.3V Voltage regulator(Q4 on board), then there is no need to selection 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 jumper JP21.

Hardware Configuration

2.8. Turbo Switch Connector (JP49)

There are two choices available for the CPU speed :

TURBO	SPEED	TURBO LED
CLOSE	LOW	OFF
OPEN *	HIGH	ON

2.9. CMOS Power Source (JP10)

JP10	OPERATION
1-2	CLEAR CMOS
2-3 *	ON BOARD BATTERY

2.10. Mono/Color Display Selection (JP14)

Jumper JP14 inform the system what type of display is currently in use.

JP14	DISPLAY ADAPTER TYPE
OPEN	MONO DISPLAY
CLOSE *	COLOR DISPLAY

2.11. Reserved Jumper Settings (JP9, JP15, JP16, JP30, JP33, JP37, JP40, JP50)

Factory use only, Do not alter.

JP9	JP15	JP16	JP30	JP33	JP37	JP40	JP50
OPEN	OPEN	OPEN	1-2	1-2	2-3	2-3	2-3

2.12. Connectors

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

CONNECTOR	FUNCTION
PL1	POWER CONNECTOR
J3	KEYBOARD CONNECTOR
JP48	TURBO LED CONNECTOR
JP46	POWER LED & KEYSLOCK CONNECTOR
JP47	SPEAKER CONNECTOR
JP45	HARDWARE RESET CONNECTOR

V4P895GRN (4x72pin) Motherboard CPU Jumper Settings

CPU TYPE	486SX	486DX	SL-486SX	SL-486DX	INTEL 486DX4	AMD 3.3V CPU	AMD 3.3V Enhance CPU	AMD 3.3V X5-133 CPU	P24D	CYRIX 486 DX CPU CYRIX 5X86 3.3V CPU CYRIX M1 3.3V CPU
JP8	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	5V CPU : 2-3 3V CPU : 1-2
JP9	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN
JP15	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	CLOSE	CLOSE	CLOSE	OPEN
JP16	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	CLOSE	CLOSE	CLOSE	OPEN
JP17	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	2-3	2-3	2-3	1-2
JP18	OPEN	OPEN	OPEN	OPEN	OPEN	1-2 : 3X CLK 2-3 : 2X CLK	1-2 : WB 2-3 : WT	1-2	1-2 : WB 2-3 : WT	OPEN
JP19	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	2-3
JP20	OPEN	OPEN	OPEN	OPEN	OPEN: 3X CLK 1-2 : 2X CLK 2-3 : 2.5 CLK	OPEN	OPEN	1-2 : 4X CLK	OPEN	OPEN
JP23	1-2	1-2	2-3	2-3	2-3	1-2	2-3	2-3	2-3	1-2
JP26	OPEN	OPEN	CLOSE	CLOSE	CLOSE	OPEN	CLOSE	CLOSE	CLOSE	OPEN
JP27	OPEN	OPEN	CLOSE	CLOSE	CLOSE	OPEN	CLOSE	CLOSE	CLOSE	OPEN
JP28	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	1-2 : M7 1X CLK 2-3 : M7 2X CLK
JP29	OPEN	1-2	OPEN	1-2	1-2	1-2	1-2	1-2	1-2	1-2
JP30	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2
JP31	2-3	1-2	2-3	1-2	1-2	1-2	1-2	1-2	1-2	1-2
JP32	OPEN	2-3	OPEN	2-3	2-3	2-3	2-3	2-3	2-3	2-3
JP36	OPEN	OPEN	OPEN	OPEN	CLOSE	OPEN	OPEN	OPEN	OPEN	OPEN

"WB" stand for Write back, and "WT" stand for Write Through