

SiS 85C496/497 486 PCI MB.

SS486 Rev. P2C

User's Manual

Chapter 1 Introduction

SYSTEM OVERVIEW

The SS486 Rev.P2 Cache system board is 1/2 Baby AT-sized, fully PC/AT compatible and offers outstanding performance and features.

With 128K/256K/512K cache memory on board, this system is really a high speed machine that is suited for building advanced personal computers or workstations.

The SS486 Rev.P2 Cache system board is designed with the SiS 85C496 / 85C497 chipset and LG Prime 3B fast I/O which are highly integrated. With this chipset, there are only a few discrete devices required, which allows 2 memory banks to be placed on the board. The size of the memory can be scaled from 1MB upto 128 MB.

FEATURES

The SS486 Rev.P2 Cache system board supports (or includes) the following features :

CPU Function

- * Support Intel, AMD, Cyrix 486SX/DX/DX2/DX4, P24D, P24T, 5X86 and X5 CPU

Chipset

- * SiS 85C496/85C497 chipset and LG Prime 3B fast I/O

CACHE

- * Support 128K/256K/512K 2nd Level CACHE,
Using 32Kx8/64Kx8/128Kx8 Asynchronous SRAM

Memory

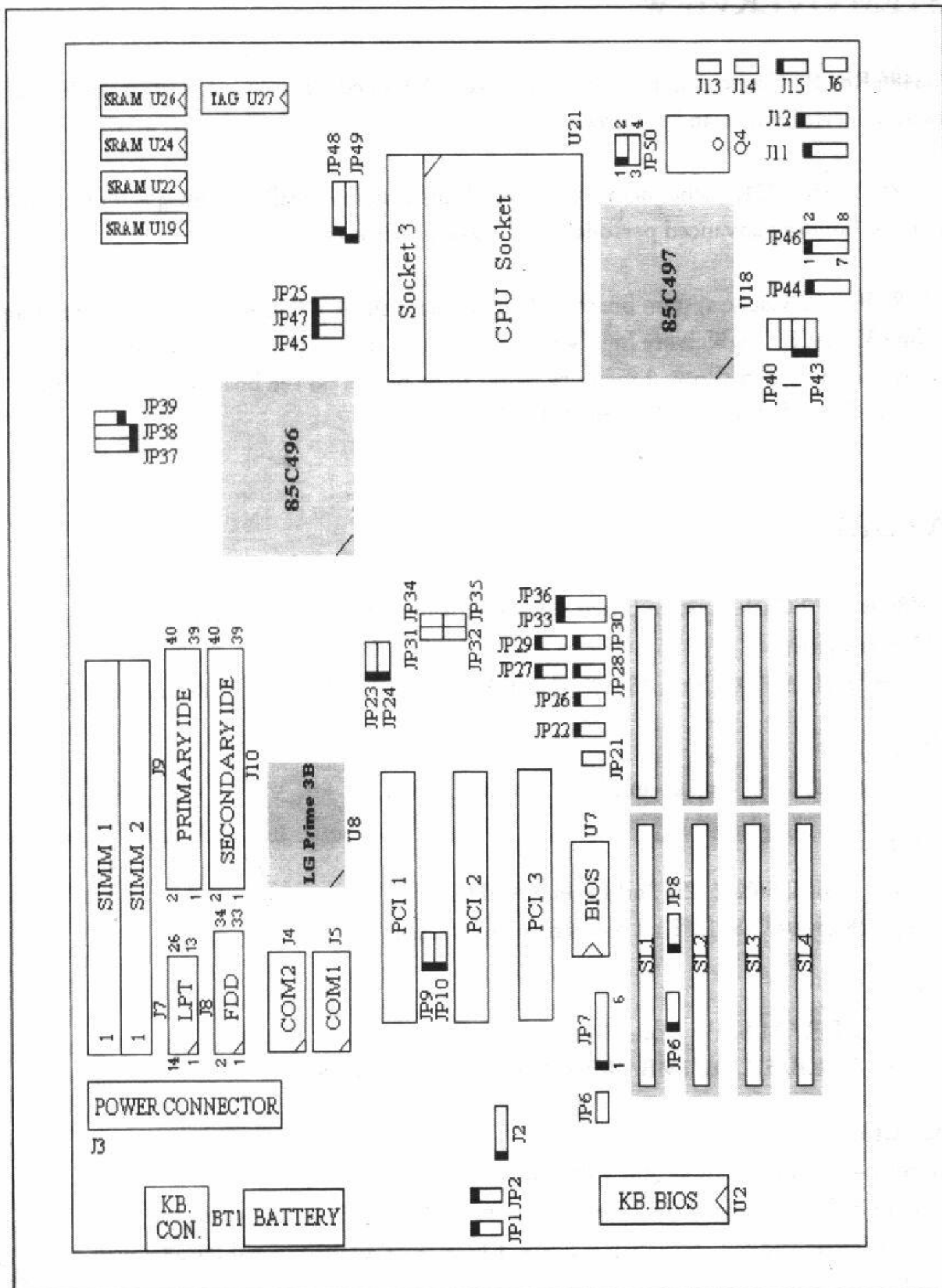
- * Support 2 DRAM banks from 1MB upto 128MB.
- * Support 256KB/512KB/1MB/4MB/16MB fast page mode SIMM

Expansinos

- * Support 4 16-Bit ISA Slots and 3 PCI Master Slots
- * Build-in 2 PCI Enhanced IDE Ports, support PIO Mode 0, 1, 2, 3, 4 Hard Drive
- * Build-in 2 High-Speed 16550 Serial Ports, 1 ECP/EPP bi-directional Parallel port,
1 2.88 MB Floppy port

Chapter 2 System Board Layout

PLACEMENT of the SS486 Rev.P2C MB.



Chapter 3 Hardware Configuration

Before the system is ready to operate, the hardware must be configured to allow for various functions within the system. To configure the SS486 Rev.P2 Cache system board is a simple task, only a few jumpers, connectors and sockets need to be selected. Please refer to system board layout in Chapter 2 for the locations.

DRAM SIMM SOCKETS

The SS486 Rev.P2 Cache system board will support 2 DRAM banks, Bank 0, and Bank 1 in SIMM sockets, uses 72-pin SIMM : DRAM type can be 256K, 1M, 4M or 16M by 32/36 bits Fast Page Mode and faster than 80 ns.

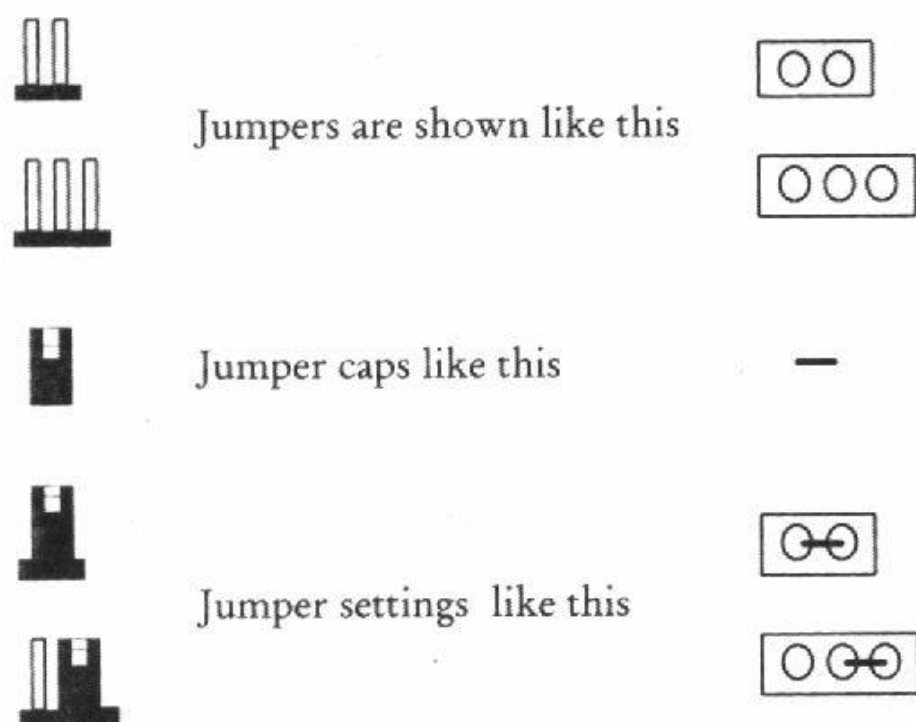
With the use of 256K, 1M, 4M DRAM modules, 1M and up to 32M of local memory can be attained. The installation of DRAM SIMMs is "Table-free", which allows the SIMMs be installed into any slot location and any combinations.

JUMPERS AND CONNECTORS

On the mainboard, the setting options for each jumper are printed on the board with a stylized bird's-eye view of which pins to connect for each setting. For example, if a jumper has three pins, connecting, or 'shorting', the first and second pins creates one setting and shorting the second and third pins creates another. The same jumper diagrams are used in the manual. The jumpers are always shown from the same point of view as shown in the whole-board diagram in this chapter.

The figure below shows what the manual diagrams look like and what they represent.

Jumper Diagrams



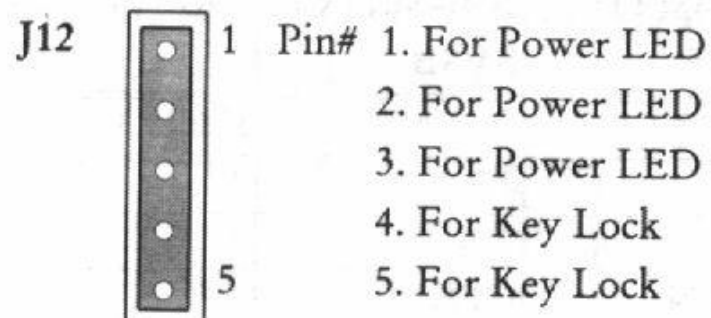
JUMPER SETTINGS

JP50 3.3V or 5V CPU Voltage Selection

	**3.3V CPU Voltage	5V CPU Voltage
Diagram	<p>Q4</p> <p>4 3</p> <p>2 1</p> <p>JP50</p> <p>U21</p> <p>CPU Socket</p>	<p>Q4</p> <p>4 3</p> <p>2 1</p> <p>JP50</p> <p>U21</p> <p>CPU Socket</p>

Note : ** is Default Setting.

J12 CASE Front Pannel Key Lock and Power LED



CPU Type Configuration

(A) Intel 486 CPU Type Selection

	486SX	486DX/DX2/DX4	P24D	Pentium Over Drive P24T
JP22	2-3	2-3	2-3	2-3
JP27	1-2	1-2	2-3	OPEN
JP28	OPEN	OPEN	OPEN	1-2
JP29	OPEN	OPEN	1-2	1-2
JP30	OPEN	2-3	2-3	1-2
JP33	4-5	4-5	4-5	1-2
JP36	4-5	4-5	1-2	3-4
JP41	SHORT	SHORT	SHORT	SHORT
JP44	2-3	1-2, 3-4	1-2, 3-4	1-2, 3-4
JP48	3-4	3-4	1-2, 3-4	3-4

Note : 1. JP26 P24T Internal CACHE Write-Back or Write-Through Selection

JP26	CACHE Mode
1-2	Write-Back
2-3	Write-Through

2. JP43 P24D Internal CACHE Write-Back or Write-Through Selection

JP43	CACHE Mode
1-2	Write-Back
2-3	Write-Through

(B) AMD 486 CPU Type Selection

	Am486DX/DX2 V8T/NV8T	Am486DX4 NV8T	Am486DX2 SV8B	Am486DX4 SV8B	Am5x86-P75-133/160
JP21	OPEN	OPEN	SHORT	OPEN	SHORT
JP22	OPEN	OPEN	2-3	2-3	2-3
JP27	OPEN	OPEN	2-3	2-3	2-3
JP28	OPEN	OPEN	OPEN	OPEN	OPEN
JP29	OPEN	OPEN	1-2	1-2	1-2
JP30	2-3	2-3	2-3	2-3	2-3
JP33	OPEN	OPEN	4-5	4-5	4-5
JP36	4-5	4-5	1-2	1-2	1-2
JP41	OPEN	OPEN	SHORT	SHORT	SHORT
JP43	2-3	1-2	OPEN	OPEN	OPEN
JP44	1-2, 3-4	1-2, 3-4	1-2, 3-4	1-2, 3-4	1-2, 3-4
JP48	OPEN	OPEN	1-2, 3-4	1-2, 3-4	1-2, 3-4

Note : JP43 Am486DX2/DX4 SV8B, Am5x86-P75 CPU Internal CACHE Write-Back or Write-Through Selection

JP43	CACHE Mode
1-2	Write-Back
2-3	Write-Through

(C) Cyrix 486 CPU Type Selection

	CX486SX (M6)	CX486DX/DX2 (M7)	CX486DX4	CX5x86
JP22	1-2	1-2	1-2	2-3
JP27	OPEN	OPEN	2-3	2-3
JP28	2-3	2-3	2-3	OPEN
JP29	OPEN	2-3	2-3	1-2
JP30	OPEN	2-3	2-3	2-3
JP33	2-3	2-3	2-3	4-5
JP36	4-5	4-5	4-5	4-5
JP41	SHORT	SHORT	SHORT	SHORT
JP44	2-3	1-2, 3-4	1-2, 3-4	1-2, 3-4
JP48	2-3	2-3	2-3	1-2, 3-4

CACHE Memory Configuration

The corresponding bank to part identification are as follow :

Data SRAM -- U19, U22, U24, U26

Tag -- U27

	128 KB	256 KB	512 KB
JP25	1-2	2-3	2-3
JP45	1-2	1-2	2-3
JP47	1-2	2-3	1-2
SRAM TYPE	32K*8	64K*8	128K*8
TAG RAM	8K*8	32K*8	32K*8

CPU Clock Frequency Selection

	25 MHz	**33 MHz	40 MHz	50 MHz
CPU TYPE	486SX-25 486DX2-50 P24T-63 486DX4-75	486SX/DX-33 486DX4-100 486DX2-66 P24T-83 5X86-100 Am5x86-P75-133	486SX/DX-40 486DX2-80 486DX4-120 5X86-120 Am5x86-P75-160	486DX-50
JP23	1-2	1-2	1-2	2-3
JP32	OPEN	SHORT	OPEN	SHORT
JP35	OPEN	SHORT	SHORT	OPEN

Parallel Port Function Selection

JP9	JP10	Parallel Port Function
1-2	1-2	**Bidirection
2-3	1-2	EPP
1-2	2-3	ECP
2-3	2-3	Disable Parallel Port

Note : ** is Default Setting.

Parallel Port DRQ & DACK Selection

JP6	DRQ Select
1-2	DRQ 3
**2-3	DRQ 1
JP8	DACK Select
1-2	DACK 3
**2-3	DACK 1

Others

Jumper	Setting	Function
J1		Keyboard Connector
J2		4.5V External Battery Connector
J3		Power Supply Connector
J5		COM1 Serial Port
J4		COM2 Serial Port
J7		Parallel Port
J8		Floppy Disk Port
J9		Primary IDE Port
J10		Secondary IDE Connector
JP38		Primary IDE LED Connector
JP37		Secondary IDE LED Connector
JP1, JP2	**1-2	Normal, Keep RTC CMOS Setting
	2-3	Discharge RTC CMOS Setting
JP7	1-2	12V Flash Memory BIOS
	**2-3	5V Flash Memory BIOS or EPROM BIOS
J6		Reset Switch
J11		Speake Connector
J13		SMI Switch
J14		Turbo LED
J15	1-2	De-Turbo Mode
	**2-3	Turbo Mode

Note : ** is Default Setting.

Chapter 4 Specifications

CPU Intel, AMD, Cyrix 486SX/DX/DX2/DX4, P24D, P24T, 5X86 and X5 CPU

WORD SIZE

- * Data Path 16-bit, 32-bit
- * Physical Addressing 20 address lines in real mode
26 address lines in protected mode

CLOCK RATE 25/33/40/50 MHz

MEMORY

- * EPROM 1024K
- * DRAM up to 128MB. (SIMM)
- * SRAM 128K/256K/512K (DIP)

DIMENSION

- * Length & Width 8.67 inches x 8.67 inches (22cm x 22cm)
- * Height 3/4 inches with components mounted, but without expansion boards and cablds
- * PCB Thickness 4 layers, 0.05 inches normal
- * Weight 517 g (18.27 ounces)

ENVIRONMENT

- * Operating Temperature 10°C to 40 °C, (50°F to 104°F)
- * Required Airflow 50 linear feet per minute across 80486
- * Storage Temperature -40°C to 70°C, (-40°F to 158°F)
- * Humidity 0 to 90% noncondensing
- * Altitude 0 to 10,000 feet