

Control Processor Unit board

Note

This board is used by the “Old” PU.

Purpose and description

This circuit board is an ISA Half-sized Single Board Computer delivered by ICP. It is equipped with a 486 CPU and advanced high performance multi-mode I/O. There are two variants of the circuit board that might be placed in the system. These are identified as:

- SSC-486H

or

- SSC-5x86H

Both of them are explained in this chapter. The Control Processor Board is located in the Processing rack.

Specifications

The Half-sized Single Board Computers SSC-486H and SSC-5x86H provides the following specifications:

	SSC-486H	SSC-5x86H
CPU	486SX/DX/DX2 or DX4	486SX/DX/DX2/DX4 or Cyrix/AMD 5x86
Bus	PC/104 bus	ISA bus and PC/104 bus
DMA channels	7	7
Interrupt levels	15	15
Chipset	UM8498F and UM8496	M1489 and M1487
Real-time clock/calendar	DS-12887 chip and quartz oscillator, 128B CMOS memory, powered by lithium battery for over 10 years of data retention.	DS-12887 chip and quartz oscillator, 128B CMOS memory, powered by lithium battery for over 10 years of data retention.
RAM memory	1MB to 64MB	1MB to 64MB, EDO and standard DRAM supported.
IDE hard disk drive interface	Up to two IDE hard drives.	Up to two PCI Enhance IDE hard drives.
Floppy disk drive interface	Two 2.88MB, 1.44MB, 1.2MB, 720KB or 360KB floppy disk drives.	Two 2.88MB, 1.44MB, 1.2MB, 720KB or 360KB floppy disk drives.
High speed serial ports	Two NS16C550 compatible UARTs	Two NS16C550 compatible UARTs
Bi-directional Parallel Port	Yes	Yes

	SSC-486H	SSC-5x86H
Watch-dog timer	Can be set by 1, 2, 10, 20, 110 or 220 seconds period. Reset or NMI was generated when CPU did not periodically trigger the timer. Your program use hex 043 and 443 to control the watch-dog and generate a system reset.	Can be set by 1, 2, 10, 20, 110 or 220 seconds period. Reset or NMI was generated when CPU did not periodically trigger the timer. Your program use hex 043 and 443 to control the watch-dog and generate a system reset.
External power connector	Yes	Yes
Keyboard connector	Yes	Yes
Mouse	PS/2 Mouse Port on-board	PS/2 Mouse Port on-board
Power Consumption	+5V @ 2.5A (486DX2-66, 4MB RAM) +/- 12V @ 20mA (for RS-232 only)	+5V @ 1.75A (5x86-133, 4MB RAM)
Operating temperature	0° ~ 60°C (CPU needs cooler)	0° ~ 60°C (CPU needs cooler)

→ *The set-up procedures for SSC-486H and SSC-5x86H are described on page 154*

Facilities

Jumpers

All the SSC-5x86H- and SSC-486H circuit board's jumpers are preset at the factory. The default settings are listed in the tables.

→ *Refer to figure 20 for different jumper settings.*

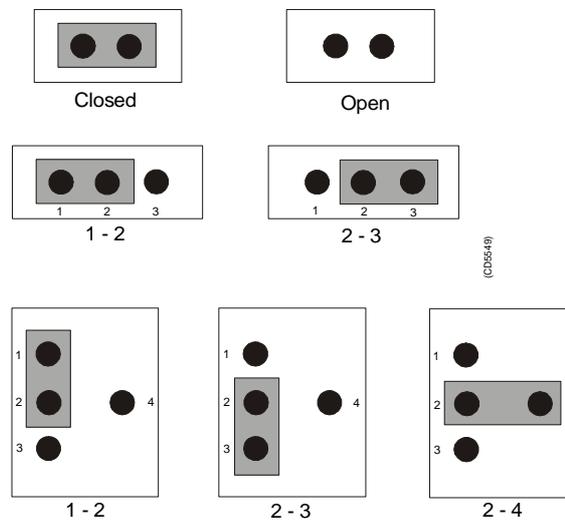


Figure 20 Different applicable jumper settings

The SSC-486H circuit board:

	Jumpers	Settings	Description
SSC-486H CPU	JP1	2 - 3	-
	JP2	1 - 2 3 - 4	-
	JP3	Open	-
	JP4	Open	-
	JP5	1 - 2	-
	JP6	Open	-
	JP7	Open	-
CPU Clock Generator Speed (33 MHz)	JP8	1 - 2 Closed 3 - 4 Closed 5 - 6 Open 7 - 8 Open	-
CPU Voltage (+3.3 V)	JP12	2 - 3	-
	JP24	Open	-
Upgrade the External Cache (128KB, 32K x 8)	JP13	2 - 3	-
	JP14	1 - 2 3 - 4	-
Watch-Dog Timer, Active Type	JP18	1 - 2	Open when WDT time-out
WDT Time-out period (10 sec.)	JP17	1 - 2 Open 3 - 4 Closed 5 - 6 Open 7 - 8 Open	-

	Jumpers	Settings	Description
Parallel Port Interface, Parallel Port Interrupt Setting (IRQ7)	JP22	1 - 2	-
Parallel Port Data Request Setting (DRQ3)	JP20	2 - 3	-
Parallel Data Acknowledge (DACK3)	JP19	2 - 3	-
Serial Port Interface, COM1 Serial Port Interrupt Setting (IRQ4)	JP21	1 - 2	-
COM2 Serial Port Interrupt Setting (IRQ3)	JP23	1 - 2	-
IDE Host Adapter Interface	JP11	Open	IDE IOCHDRY Non-Connected
FDC47C665 Multi-I/O Chipset	JP16	Open	Enable FDC37C665
PS/2 Mouse IRQ Selection (IRQ12)	JP15	Closed	-

The SSC-5x86H circuit board:

	Jumpers	Settings	Description
SSC-5x86H CPU	JP1	2 - 3	-
	JP2	2 - 3	-
	JP3	3 - 4	-
	JP4	3 - 4	-
	JP5	3 - 4	-
	JP6	5 - 6	-
	JP7	2 - 3	-
	JP8	2 - 3	-
	JP9	Closed	-
	JP10	Open	-
CPU Clock (33MHz)	JP11	1 - 2 Closed 3 - 4 Closed	-
	JP12	Open	-
	JP14	1 - 2	-
CPU Voltage (+3.3V)	JP13	2 - 3	-
Watch-Dog Timer, Active Type	JP15	1 - 2	Open when WDT time-out

	Jumpers	Settings	Description
WDT Time-out period (10 sec.)	JP16	1 - 2 Open 3 - 4 Closed 5 - 6 Open 7 - 8 Open	-
DiskOnChip Memory Address	JP17	5 - 6	Address E000
PS/2 Mouse	JP18	Closed	Enable PS/2 Mouse, IRQ12

Connections

COM1 is used for external sync (RTS, CTS). COM1, pin RX/TX, is also connected to the test connector at the Processing Unit bottom plate, for debug purposes and factory production testing.

→ *Refer to description page 61.*

1PPS signal is connected from the parallel port (signal on pin 10, GND (ground) on pin 23) to the bottom plate in the Transceiver Unit.