

Computer Specifications

CPU and Memory

16-bit CPU	80386SX microprocessor, 16 MHz or simulated 8 MHz clockrate, selectable through a switch or through software
	24-bit address and 16-bit data bus
On-board memory	1MB RAM on main system board; expandable using 256KB or 1MB SIMMs to 2MB, 4MB, 6MB, 8MB, 10MB, 12MB, or 14MB (maximum); SIMMs must be 70ns access speed or faster
ROM	64KB
Math coprocessor	80387SX (16 MHz) support; coprocessor is optional

Controllers

Diskette	Supports up to two drives in any of four formats: 3 1/2-inch, high-density, 1.44MB; 3 1/2-inch, double-density, 720KB; 5 1/4-inch, high-density, 1.2MB; or 5 1/4-inch, double-density, 360KB; controller on main system board
Hard disk	Supports up to two drives available in 40MB or 100MB; embedded controller

Interfaces

Serial	RS-232C, programmable, asynchronous; DB-9P male connector
Parallel	Standard 8-bit parallel; DB-25S female connector
Auxiliary	Mini DIN (6-pin) connector for IRQ 12 mouse or other device
Option slots	Five standard input/output expansion slots (one with 8-bit bus and four with 16-bit bus); one special slot occupied by a serial/parallel interface card
Speaker	Internal
Clock/calendar RAM	Real-time clock, calendar, and 64-byte CMOS RAM for configuration; battery backup

Power Supply

Switching type, fan-cooled, 115/230 VAC (switch-selectable), 140 W; +5 VDC, +12 VDC, -5 VDC, -12 VDC; 50/60 Hz

Mass Storage

	Three half-height drives maximum
Standard	3 1/2-inch diskette drive, 1.44MB (high-density) storage capacity
Optional	3 1/2-inch diskette drive, 720KB (double-density) storage capacity
Optional	3 1/2-inch diskette drive, 1.44MB (high-density) storage capacity
Optional	5 1/4-inch diskette drive, 1.2MB (high-density) storage capacity
Optional	5 1/4-inch diskette drive, 360KB (double-density) storage capacity
Optional	3 1/2-inch hard disk drive (in a 5 1/4-inch mounting frame), 40MB storage capacity
Optional	3 1/2-inch hard disk drive (in a 5 1/4-inch mounting frame), 100MB storage capacity

Keyboard

	Detachable, three positions, 101 sculpted keys
Layout	58-key QWERTY main keyboard; 17-key numeric/cursor pad; IO cursor keys; 16 function keys (user-definable)
Function keys	Four levels (normal, shift, control, alternate); user-definable

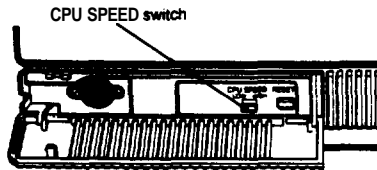
Environmental Requirements

Temperature	Operating range: 41° to 104° F (5° to 35° C) Storage range: -40° to 158° F (-40° to 60° C)
Humidity	Operating range: 20% to 80% non-condensing Storage range: 5% to 95% non-condensing

Physical Characteristics

Width	15.7 inches (400 mm)
Depth	16.4 inches (416.5 mm)
Height	6.2 inches (157 mm)
Weight (without keyboard)	Single diskette drive model: 23.2 lb (10.5 kg) 40MB or 100MB hard disk drive model: 24.9 lb (11.3 kg)

Switch Settings

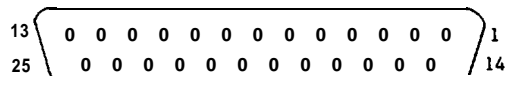


There are no DIP switches on the Equity 386SX. However, there is a CPU SPEED switch on the front of the unit in the lower left hand corner.

The CPU SPEED switch selects between 8MHz and 16MHz. When the computer is running at 8MHz, the power light is orange, and at 16MHz, the light is green.

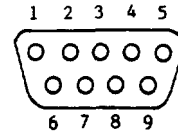
Connector Pin Assignments

Parallel Port Connector



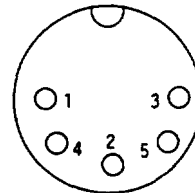
PIN NUMBER	SIGNAL NAME	DIRECTION	DESCRIPTION
1	- STROBE	O	Printer strobe
2	DATA0	O	Data 0
3	DATA1	O	Data 1
4	DATA2	O	Data 2
5	DATA3	O	Data 3
6	DATA4	O	Data 4
7	DATA5	C	Data 5
8	DATA6	O	Data 6
9	DATA7	O	Data 7
10	- ACK	I	Printer acknowledge
11	BUSY	I	Printer busy
12	PE	I	Printer paper empty
13	SLCT	I	Printer select
14	AUTOFD	O	Auto feed XT
15	- ERROR	I	Printer error
16	- INIT	I	Printer initialize
17	- SLCTIN	I	Printer select in
18 - 25	SG	I	Signal ground
FG	FG	I	Frame around

Serial Port Connector



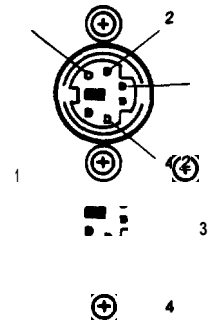
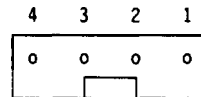
PIN NUMBER	SIGNAL NAME	DIRECTION	DESCRIPTION
1	CDC	I	Data carrier detect
2	SIN	I	Receive data
3	SOUT	O	Transmit data
4	SG	O	Data terminal ready
5	DSR	I	Signal ground
6	RTS	O	Data set ready
7	CTS	I	Request to serial
8	CTS	I	Clear to send
9	RI	I	Ring Indicator

Keyboard Connector



PIN NUMBER	SIGNAL
1	Clock
2	Data
3	N.C.
4	Ground
5	+ 5 VDC
	Ground

Mouse Connector

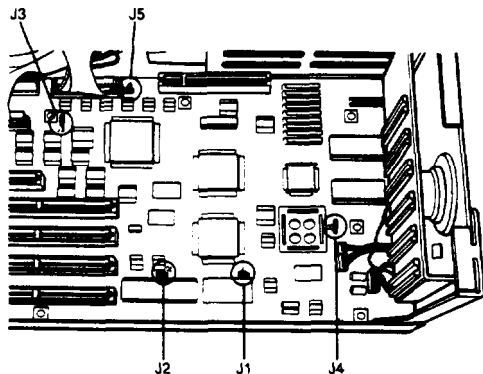


PIN NUMBER	SIGNAL NAME	DIRECTION	DESCRIPTION
1	MSCLK	O	Mouse clock
2	MSGND	I	Mouse signal ground
3	MSDATA	I	Mouse data
4	MSVCC	I	Mouse power (+ 5 VDC)

I/O Port Addresses

ADDRESS	FUNCTION
000-01F	DMA Controller 1
020-03F	Interrupt Controller 1
040-05F	Timer/Counter
060-06F	Keyboard controller and Port B
070-07F	CMOS RAM and Non-Maskable Interrupt Mask
080-09F	DMA Page Register
0A0-0BF	Interrupt Controller 2
0C0-0DF	DMA Controller 2
0E0-0FF	Numeric Coprocessor
1F0-1F8	Hard Disk Controller
278-27F	Parallel Port 1
2F8-2FF	Serial Port 1
378-37F	Parallel Port 0
3B0-3BF	Parallel Port 2 (on some video boards)
3F0-3F7	floppy Disk Controller
3F8-3FF	Serial Port 0

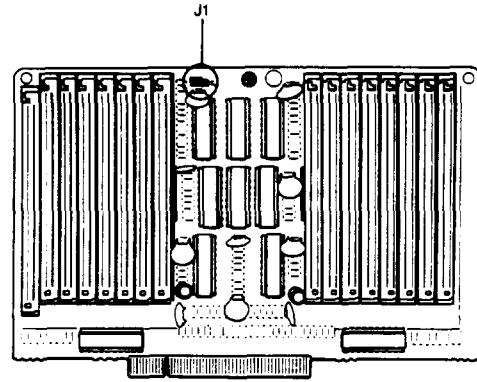
Jumper Settings



Main system board jumper settings

Jumper number	Jumper setting	Function
J1	1-2	Math coprocessor installed
J1	2-3*	No math coprocessor installed
J2	1-2	Password skip enabled
J2	2-3*	Password skip disabled
J3	1-2	Disables the built-in hard disk drive controller so you can use a hard disk drive controller on an option card in your computer
J3	2-3*	Enables the built-in hard disk drive controller
J4	1-2*	Sets the P-ROM type to 256 Kbits
J4	2-3	Sets the P-ROM type to 512 Kbits
J5	1-2	Disables the built-in mouse connector so you can use a mouse or other pointing device connected to a port on an option card in your computer. the device must use the IRQ 12 signal
J5	2-3*	Enables the built-in mouse connector for use with a mouse which uses the IRQ 12 signal

* Factory setting



SIMM card jumper settings

Jumper number	Jumper setting	Function
J1	1-2	SIMMs have been installed for additional memory
J1	2-3*	No SIMMs have been installed

* Factory setting

Possible Equity 386SX SIMM configurations

Left bank								Right bank								Total MB
1A	2A	3A	4A	5A	6A	7A	8A	12A	13A	14A	15A	16A	17A	18A	19A	
																1MB
							*			*						2MB
						1	*			*		1				4MB
					1	1	*			*		1	1			6MB
				1	1	1	*			*		1	1	1		8MB
			1	1	1	1	*			*		1	1	1	1	10MB
		1	1	1	1	1	*			*		1	1	1	1	12MB
	1	1	1	1	1	1	*			*		1	1	1	1	14MB

* = 256KB SIMMs
1 = 1MB SIMMs

DMA Channels

CHANNEL	FUNCTION
0	Spare
1	Spare
2	floppy disk transfers
3	Spare (Hard disk drive)
4	Cascade of data from channel 0-3
5	Spare
8	Spare
7	Spare

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Hardware Interrupts

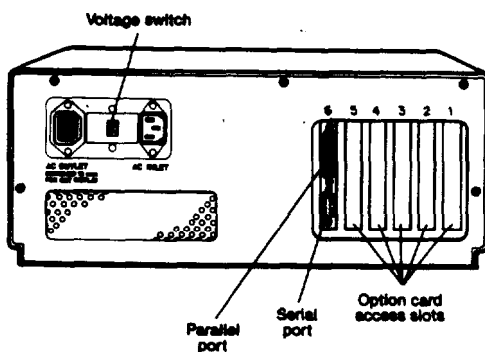
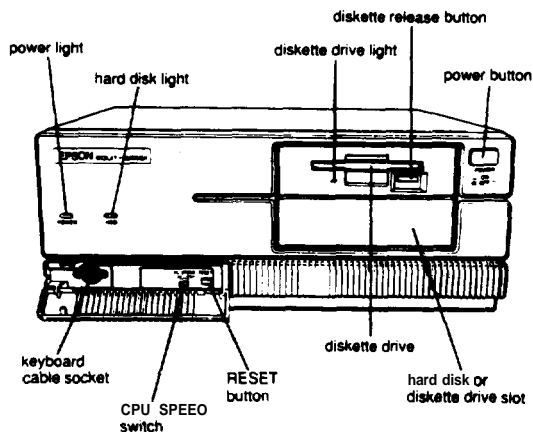
CTLR1	CTLR2	FUNCTION
IRQ0		Timer Output 0
IRQ1		Keyboard
IRQ2		Interrupt from CTLR2
IRQ3		serial port 2
IRQ4		Serial port 1
IRQ5		Parallel port 2
IRQ6		floppy disk interrupt
IRQ7		Parallel port 1
	IRQ8	RTC interrupt
	IRQ9	Software redirected to IRQ2
	IRQ10	Reserved
	IRQ11	Reserved
	IRQ12	Mouse, pointing device
	IRQ13	Coprocessor
	IRQ14	Hard disk controller
	IRQ15	Reserved

Installation/Support Tips

Power

The Equity 386SX has a power supply that is switchable between 115V, for USA and Canadian use, and 230V, for use in other countries. The voltage switch is located at the rear of the CPU between the AC inlet and the AC outlet. (see figure below)

WARNING! The voltage is not changed between the AC inlet and the AC outlet. If the CPU is switched for 230V in order to function in Europe, only peripherals certified for use at 230V should be plugged into the outlet.



Installing Floppy Disk Drives

When installing a floppy disk drive as drive B, remember to set the drive select jumper to the second position and attach the passthrough

connector on the floppy drive controller cable to the drive, not the end connector.

If the drive does not function normally, make sure that the drive type has been correctly selected in SETUP. Also check that any special drivers that may be necessary have been installed correctly.

Installing Hard Disk Drives

It is recommended that a 16-bit AT-type hard disk controller be used in the Equity 386SX, if you are installing a drive that cannot make use of the internal hard disk controller. Also remember to disable the onboard hard disk controller when installing such a drive.

If you are having difficulty in formatting the hard disk drive, try starting over with the Unconditional Format option in diagnostics.

setup

When installing an optional expanded memory board, do not list the memory under the memory expansion option in SETUP. That option is for EXTENDED memory ONLY.

When installing a hard disk drive, be sure to consult the drive type tables (on page EQ386SX-6) for the drive type which fits the drive you are installing.

Adding Memory Modules

- The total amount of memory must be one of the following: 1 MB, 2MB, 4MB, 6MB, 8MB, 10MB, 12MB or 14MB.
- Memory banks must be filled with one size SIMM. You cannot mix SIMM types in one bank.
- Sockets 7A, 8A, 12A and 13A accept only 256KB SIMMs. The rest of the sockets accept only 1 MB SIMMs. The 256KB SIMM sockets must be filled before using any of the 1 MB sockets.

Software Problems

When installing a copy-protected software package on the Equity 888% first try the

Installation at **16MHz**. If this does not work properly, try switching to **8MHz** for the installation. If you are still unable to load the program at **16MHz**, try loading at **8MHz** and then switching to **16MHz**.

When using a software package that uses a **keydisk** as its copy-protection method, try loading it at **16MHz**. If this does not work, enable the **Auto Speed** option in **SETUP**.

Power-on Password

Make sure that you do not forget the **Power-on Password** should you set one up. If you do, it will be necessary to disable it by moving jumper 2 on the main circuit board to the 1-2 position.

If you enable network server mode after installing a password, the computer prompts you for that password before allowing you to access the system – as long as you boot the system from the **Reference** diskette.

However, if you install MS-DOS on the hard disk and boot from that drive, the prompt no longer appears. The computer shows the normal MS-DOS prompt (e.g., C>), but it still requires the password before allowing you to access the system in network server mode.

Hard Disk Drive Types

Type no.	Type	Cylinders	Heads	Sectors	Precomp	ending zone	MB	Drive Mm8
00								fixeddisk
01	ST-506	306	4	17	128	305	10.2	(Used by ESDI)
02	ST-506	615	4	17	300	615	20.4	(1)
03	ST-506	615	6	17	300	615	30.6	
04	X-506	940	8	17	512	940	32.4	
05	ST-506	940	6	17	512	940	46.8	
06	ST-506	615	4	17	—	615	20.4	
07	ST-506	462	8	17	256	511	17.7	
08	ST-506	733	5	17	—	733	30.4	
09	ST-506	900	15	17	—	901	121	
10	ST-506	820	3	17	—	820	20.4	
11	ST-506	a55	5	17	—	a55	35.5	
12	ST-506	855	7	17	—	055	49.7	
13	ST-506	306	8	17	128	319	20.3	
14	ST-506	733	7	17	—	733	42.6	
15								-reserved-
16	ST-506	612	4	17	0	663	20.3	
17	ST-506	977	5	17	300	977	50.5	CDC 94205-51 (2)
18	ST-506	977	7	17	—	977	56.8	
19	ST-506	1024	7	17	512	1023	59.5	
20	ST-506	733	5	17	300	732	30.4	Toshiba MK-133FA
21	ST-506	733	7	17	300	732	42.6	Toshiba MK-134FA
22	ST-506	733	5	17	300	733	30.4	
23	ST-506	306	4	17	0	336	102	
24	ST-506	612	4	17	305	663	20.4	
25	ST-506	306	4	17	—	340	102	
26	ST-506	612	4	17	—	670	20.4	
27	ST-506	6%	7	17	300	732	40.6	
28	ST-506	976	5	17	488	977	40.5	
29	ST-506	306	4	17	0	340	102	
30	ST-506	611	4	17	306	663	20.4	
31	ST-506	732	7	17	300	732	42.6	
32	ST-506	1023	5	17	—	1023	42.5	
33								none
34								none
35								none
36								none
37								none
38								none
39								none
40								none
41	ESDI	1022	5	34	—	1022	84.8	CDC 94216-106 (3)
42	ESDI	1022	5	36	—	1022	89.8	CDC 94216-106
43	ST-506	1024	8	17	512	1023	68.0	(4)
44	ESDI	828	10	34	—	828	137.5	Toshiba MK-156F
45	ST-506	1024	5	17	512	1023	42.5	(5)
46	ST-506	615	8	17	128	618	40.8	NEC D5147H
47								none
48	ST-506	820	6	17	—	820	40.8	Seagate ST251
49	ST-506	830	10	17	—	830	68.9	Toshiba MK56FB
50	ST-506	1024	9	17	—	1023	76.5	Seagate ST4096
51	ESDI	828	7	34	—	828	96.2	Toshiba MK-154F
52	ESDI	967	5	36	—	967	85.0	CDC 94166-101
53	ESDI	967	7	36	—	967	119.0	0x94166-141

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Type no.	Type	Cylinders	Heads	Sectors	Precomp	Landing zone	MB	Drive name
54	ESDI	967	9	36	—	967	153.0	CDC 94166-182
55	ESDI	1022	7	34	—	1022	1186	Micropolis 1354A
56	ESDI	967	5	34	—	967	80.3	CDC 94166-101 (3)
57	ESDI	967	7	34	—	967	1124	CDC 94166-141(3)
56	ESDI	967	9	34	—	967	144.5	CDC 94166-182 (3)
59	AT	980	5	17	—	979	405	CONNERCP-344
60	AT	776	8	33	—	775	100	CONNERCP-3104
61	AT	745	4	26	—	744	405	Mini 8051A native mode
62	AT	965	5	17	—	Auto	40	Quantum40AT(6)
63	AT	965	10	17	—	Auto	80	Quantum pro 80AT (6)
64-255								none

Notes:

- 1 Miniscribe 8425F, Seagate ST125
 - 2 Conner CP-344 or Miniscribe 8051A can be used as type 17
 - 3 For Western Digital ESDI HDC or Drive Maker default setting
 - 4 Micropolis 1325, Alaa 3085, Lanstor Lan64, Maxtor XT1085, Newbury NDR1085
 - 5 Micropolis 1323A Miniscribe 3035, Microscience HH1050 Seagate ST4053
 - 6 The landing zone value is 964
- Types 1 through 47 are allocated at 0FE401h. IBM new AT-compatible area
- Types 48 through 63 are allocated at 0FE402h. IBM new AT-compatible area

Information Reference List**Engineering Change Notices**

None.

Product Support Bulletins

None.

Related Documentation

Y19299100100		Equity 386SX User's Guide
Y19499100200		Equity 386SX MS-DOS 4.01 Manual
Y19499100300		Equity 386SX Shell User's Guide
Y19499100400		Equity 386SX Command Summary
Y19499100500		Equity 386SX Installation Guide
M-TM-EQ386SX		Equity 386SX Service Manual
M-PM-EQ386SX		Equity 386SX Technical Reference Manual
M-PL-EQ386SX		Equity 386SX Parts List

Technical Information Bulletins

None.