

Computer Specifications

Main Unit

CPU	486SLC microprocessor
System speed	Turbo and Normal speeds available; Turbo speed depends on CPU (25 MHz or 33 MHz), Normal speed is simulated 8 MHz speed; speed selection through keyboard command To select Normal speed, press the Ctrl, Alt, and - keys simultaneously. To select Turbo speed, press the Ctrl, Alt, and + keys simultaneously. (Use the - or + key on the numeric keypad; Num Lock must be on.)
Memory	2MB RAM standard on a system board; expandable using 2MB or 6MB memory module to 8MB (maximum). The system may be offered with 2, 4, or 8MB of standard memory

ROM	128KB system BIOS, video BIOS, and Setup code located in OT-PROM on main system board
Video RAM	256KB DRAM on main system board
Shadow RAM	Supports shadowing of system and video BIOS ROM into RAM
Numeric coprocessor	Socket for optional CyrixCx 83S87-33 (for the 33 MHz model) or 83S87-25 (for the 25 MHz model) or an Intel 387SX (for the 25 MHz model) multifrequency numeric coprocessor
Clock/calendar	Real-time clock, calendar, and CMOS RAM; backed up by built-in Dallas compatible clock chip (DS 1287)
Controllers	
Diskette drive	Built-in controller for internal 3½-inch/2-inch diskette drive; supports 1.44MB and 720KB formats
Hard disk	Built-in controller for internal hard disk drive
Parallel	25-pin, D-sub, female connector; standard
Serial (2)	RS-232C, programmable, asynchronous, 9-pin, D-sub male connector
LCD and CRT	Built-in controller supporting standard VGA monochrome LCD; external 15-pin, D-sub, female connector for connecting an external analog VGA or SVGA monitor
Pointing device or external keyboard	6-pin, mini-DIN connector for a PS/2-type pointing device or for the mouse/keyboard adapter (for connecting an external keyboard and/or a pointing device)
Speaker	Built-in ISA compatible speaker controller; internal
Modem	Internal connector for optional fax/modem
Phone jack	Standard RJ-11 connector for the internal fax/modem
Keyboard	
	85 (International) or 84 (US) keys; embedded numeric keypad and F11 and F12 keys
Mass Storage	
Diskette drive	One internal, 3½-inch diskette drive; supports 1.44MB and 720KB formats
Hard disk drive	One internal 80MB, 120MB, or 180MB IDE hard disk drive

LCD Display Monochrome: 640 × 480 × 32 shades of gray, 0.3 mm, high-contrast 2-film; paper-white, backlit by one CCFT (cooled cathode fluorescent tube); continuous brightness and contrast controls; power-saving feature

Setup Program Stored in ROM; accessible by pressing the Delete key when prompted during boot (memory test)

Power Supply

AC adapter +15.5VDC, 2.4.A continuous AC adapter with international voltage input, 50/60 Hz

Battery pack Rechargeable, internal NiCad battery pack; 8-cell, 9.6 volt, 1.7AH, 16.3W

Caution
Use only the AC adapter and batteries designed for use with the ActionNote (AC adapter model number AP-3S25 and battery model number 8KR-1700AE).

Physical Dimensions

Height 42 mm (1.6 in)

Width 280 mm

Depth 225 mm (8.7 in)

Weight (with battery pack installed) 2.5 kg (5.5 lbs)

Environmental Requirements

Temperature Operating: 5° to 35° C (41° to 95° F)
Non-operating: -20° to 60° C (-4° to 140° F)

Humidity Operating: 30% to 90% (non-condensing)
Non-operating: 5% to 95% (non-condensing)

Altitude Operating: -61 to 3,048 m (-200 to 10,000 feet)
Non-operating: -61 to 10,668 m (-200 to 35,000 feet)

Acoustical noise 20 dB

Caution
When traveling by airplane, take the computer into the passenger compartment as carry-on luggage to prevent it from being stored in an unpressurized storage compartment.

LEDs

-  Power—Power is on
-  Low battery—Battery capacity is less than 20%
-  Charging—Battery is fully charged; blinks when the AC adapter is connected and charging the battery
-  Suspend mode—Computer is in Suspend mode
-  Hard disk drive—Computer is accessing the hard disk drive
-  Num Lock—Num Lock is on, which activates the embedded numeric keypad
-  Caps Lock—caps Lock is on
-  Scroll Lock—Scroll Lock is on

Options

6MB expansion memory module

External PS/2-compatible keyboard

NiCad battery pack

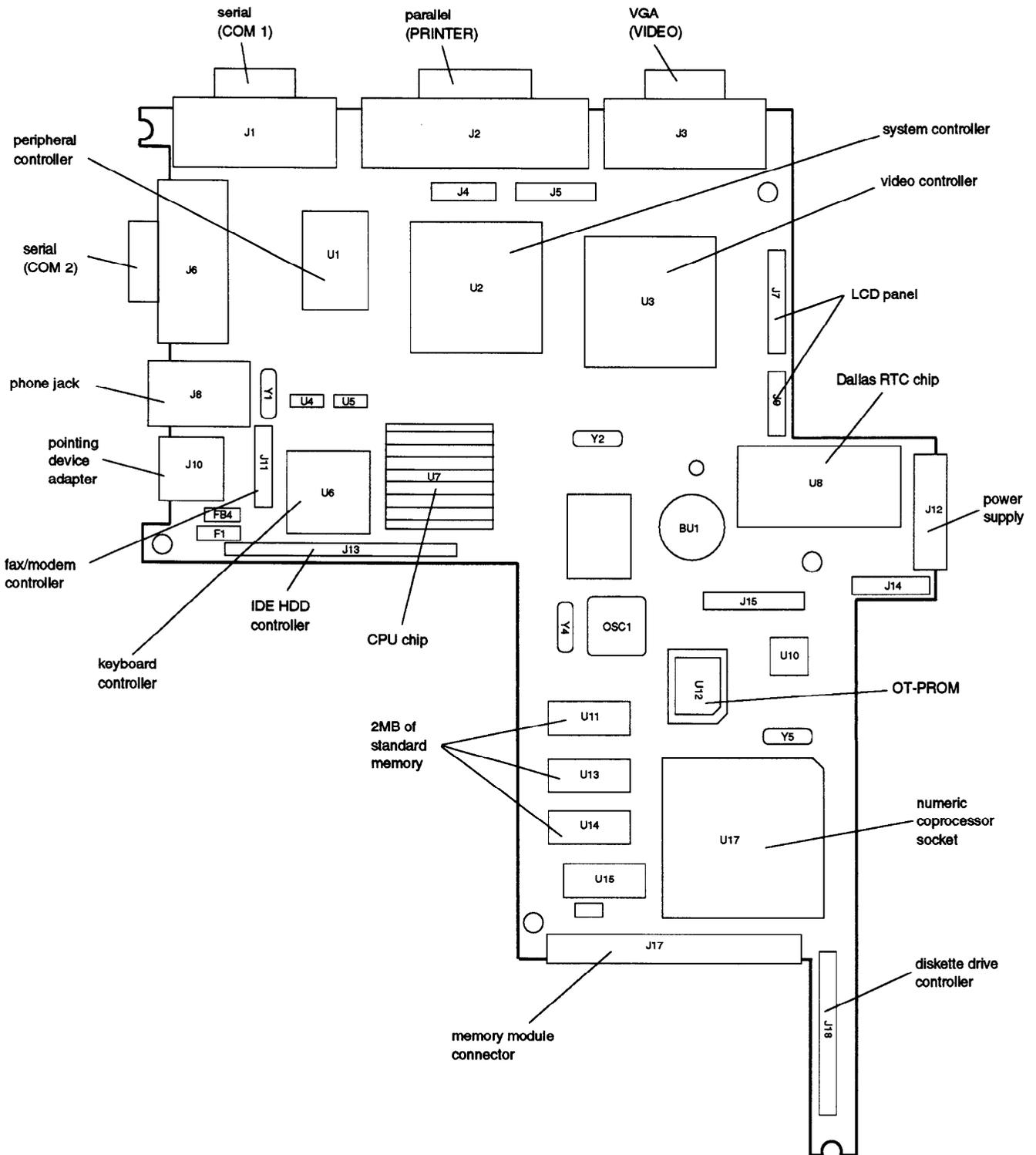
Additional AC adapter

Internal fax/modem

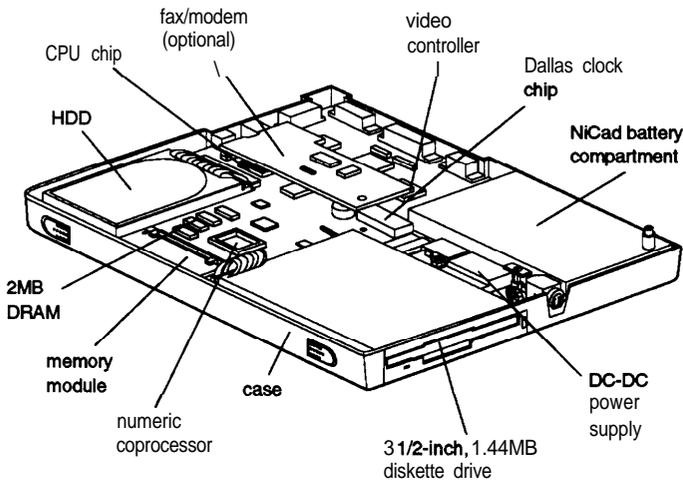
Cyrix Cx 83S87-33, or Cx 83S87-25, or Intel 387SX numeric coprocessor

Adapter for an automobile cigarette lighter

Main System Board Diagram

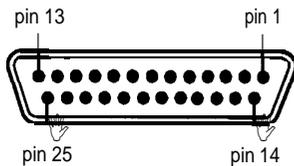


Major Subassemblies



Connector Pin Assignments

Parallel Port Connector (J2)

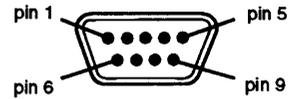


Parallel Port Connector Pin Assignments

Pin	Signal	Pin	Signal	Pin	Signal
1	Strobe	10	ACK*	19	Signal ground
2	Data 0	11	Busy	20	Signal ground
3	Data 1	12	Paper end	21	Signal ground
4	Data 2	13	Select	22	Signal ground
5	Data 3	14	Auto*	23	Signal ground
6	Data 4	15	Error*	24	Signal ground
7	Data 5	16	Init*	25	Signal ground
8	Data 6	17	Selectin*		
9	Data 7	18	Signal ground		

*Active low logic

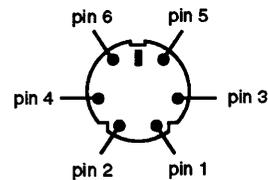
Serial Port Connectors (J1 and J6)



Serial Port Connector Pin Assignments

Pin	Signal	Pin	Signal
1	Data carrier detect	6	Data set ready
2	Receive data	7	Request to send
3	Transmit data	8	Clear to send
4	Data terminal ready	9	Ring indicator
5	Signal GND		

Pointing Device Connector (J10)

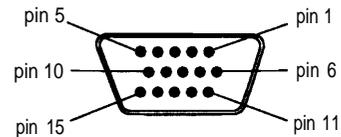


This connector supports simultaneous use of a pointing device and an external keyboard when the mouse/keyboard adapter is attached.

Pointing Device Connector Pin Assignments

Pin	Signal	Pin	Signal
1	Keyboard Data	4	+5 VDC (fused)
2	Pointing device data	5	Clock, keyboard
3	Ground	6	Clock, pointing device

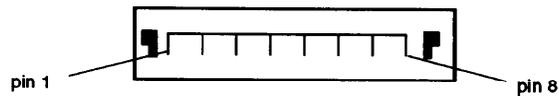
VGA Port Connector (J3)



VGA Port Connector Pin Assignments

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	6	Ground	11	MS0
2	Green	7	Ground	12	MS1
3	Blue	a	Ground	13	Horizontal sync
4	MS2	9	Unused	14	Vertical sync
5	Ground	10	Ground	15	Unused

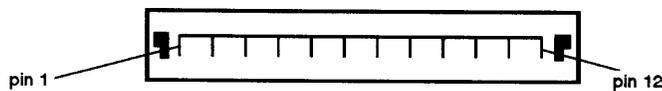
Internal Keyboard Connector (J14)



Internal Keyboard Connector Pin Assignments

Pin	Signal
1	IRQ1
2	GA20
3	KBRST
4	Keyboard data line
5	+5 VDC system (+5VSYST)
6-8	Keyboard data line

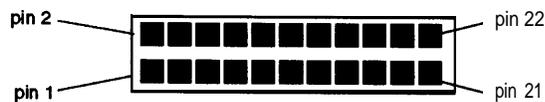
Internal Keyboard Connector (J15)



Internal Keyboard Connector Pin Assignments

Pin	Signal
1	caps Lock
2-12	Keyboard data line

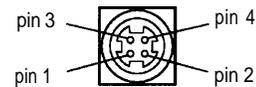
DC-DC Power Connector (J12)



Power Connector Pin Assignments

Pin	Signal	Pin	Signal
1	Ground	12	Vcc
2	Ground	13	Vcc
3	Ground	14	Vcc
4	Ground	15	Vcc
5	EXTAC	16	+12 VDC
6	Ground	17	VCCSUS
7	BATLO	18	CHARGE
8	+24 VDC	19	Vin
9	LCD_ON	20	CONTR VR+
10	+24 VDC	21	FULLPON
11	Vin	22	CONTR VR-

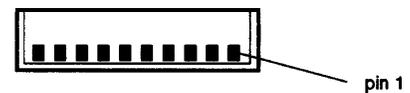
AC-DC Power Connector (JP1)



Power Connector Pin Assignments

Pin	Signal
1	Ground
2	+ 15.5 VDC
3	Ground
4	+ 15.5 VDC
Shielded	Frame ground

LED Connector (J5)



LED Connector Pin Assignments

Pin	Signal	Pin	Signal
1	Ground	6	Charging
2	Hard disk drive LED	7	/LOSPD
3	caps Lock	8	BATTLO
4	Num Lock	9	Ground
5	Scroll Lock	10	+5 V

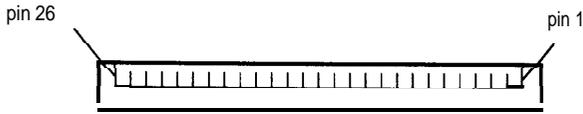
Suspend/Resume Connector (J4)



Suspend/Resume Connector Pin Assignments

Pin	Signal	Pin	Signal
1	Ground	5	BL_VR+
2	CONTR VR-	6	Ground
3	CONTR VR+	7	Ground
4	BL_VR	8	SUS/RES

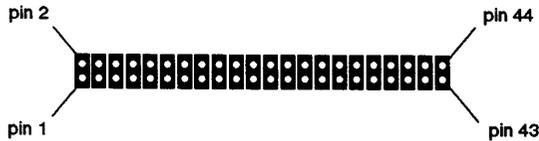
Diskette Drive Cable Connector (J18)



Diskette Drive Connector Pin Assignments

Pin	Signal	Pin	Signal
2	/INDEX	18	WGATE
4	/DRV0	20	/TRK0
6	DSKCHG	22	/WRPRT
8,13	Reserved	24	/RDATA
9	RPM/LC	26	HDSEL
10	/MTR0	1-11 (odd)	+5VDC
12	DIR	15-25 (odd)	Ground
14	/STEP		
16	/WDATA		

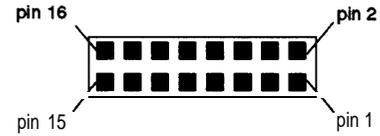
IDE Hard Disk Drive Connector (J13)



IDE Hard Disk Drive Connector Pin Assignments

Pin	Signal	Pin	Signal	Pin	Signal
1	/RESET	15	D1	29	Resewed
2	Ground	16	D14	30	Ground
3	D7	17	D0	31	IRQ14
4	D8	18	D15	32	/IOCS16
5	D6	19	Ground	33	HA1
6	D9	20	Reserved	34	Reserved
7	D5	21	Resewed	35	HA0
8	D10	22	Ground	36	HA2
9	D4	23	/IOW	37	/HDCS0
10	D11	24	Ground	38	/HDCS1
11	D3	25	/IOR	39	/LEDHDD
12	D12	26	Ground	40,43	Ground
13	D2	27	CHRDY	41,42	+5V
14	D13	28	Reserved	44	+5V

Fax/modem Connector (J11)



Fax/modem Connector Pin Assignments

Pin	Signal	Pin	Signal
1	Phone jack 2	9	CTS2
2	Phone jack 3	10	DSR2
3	Unused	11	Ground
4	Unused	12	F/M SPKR
5	RTS2	13	SOUT2
6	DCD2	14	SIN2
7	DTR2	15	+5 V
8	RT2	16	+5 V

LCD Panel Connector (J7)



LCD Connector Pin Assignments

Pin	Signal	Pin	Signal
1	Frame start pulse	9	UD1
2	Line clock	10	UD2
3	Panel clock	11	UD3
4	Control	12	LD0
5	Ground	13	LD1
6	-24 VDC contrast	14	LD2
7	Ground	15	LD3
8	UD0		

LCD (CCFT) Inverter Connector (J9)



LCD (CCFT) Inverter Connector Pin Assignments

Pin	Signal	Pin	Signal
1	+5 VDC	6	BL ON
2	+5 VDC	7	-24 VDC
3	BL_VR+	8	FP VCC
4	BL_VR-	9	Ground
5	V IN		

DMA Assignments

Level	Assigned device
DMA0	Spare (8-bit)
DMA1	Spare (8-bit)
DMA2	FDD controller (8-bit)
DMA3	Spare (8-bit)
DMA4	Cascade for CTRL-1
DMA5	Spare (16-bit)
DMA6	Spare (16-bit)
DMA7	Spare (16-bit)

Hardware Interrupts

IRQ no.	Function
IRQ0	Timer output
IRQ1	Keyboard
IRQ2	Cascade
IRQ3	Serial port 2 (COM 2 or fax/modem)
IRQ4	Serial port 1 (COM 1)
IRQ5	Available
IRQ6	FDD controller
IRQ7	Parallel port
IRQ8	Real-time clock
IRQ9	Cascade VGA
IRQ10	Available
IRQ11	Reserved
IRQ12	PS/2 compatible pointing device
IRQ13	Reserved
IRQ14	HDD controller
IRQ15	Reserved

System I/O Address Map

Hex address	Assigned device
000 - 020	DMA controller 1
020 - 040	Interrupt controller
040 - 060	Timer/counter
060 - 070	Keyboard controller
070 - 080	Real-time clock NMI (non-maskable interrupt mask)
080 - 0A0	DMA page register
0A0 - 0C0	Interrupt controller 2
0C0 - 0F0	DMA controller 2
0F0 - 0F1	Clear math coprocessor busy
0F1 - 0F8	Reset math coprocessor
0F8	Math coprocessor
100 - 1F0	Reserved
1F0 - 200	Hard disk
200 - 208	Reserved for game port
208 - 278	Reserved
278 - 27F	Parallel port 2
27F - 2F8	Reserved
2F8 - 2FF	Serial port 2
2FF - 378	Reserved
378 - 380	Parallel port 1 (default)
380 - 3B0	Reserved
3B0 - 3F0	Video system
3F0 - 3F8	Floppy controller
3FF	Serial port 1 (default)

Hard Disk Drive Types

Model number	Height	Drive capacity	Drive type	Cylinders	Heads	Landing zone	Sectors
Toshiba MK1422FCV	0.5-in.	82MB	1 or 47*	988	10	0	17
Toshiba MK1522FCV	0.5-in.	126.3MB	2	812	8	0	38
Ariel A120	0.59-in.	131MB	47	535	10	0	50
Ariel A180	0.59-in.	175MB	3	715	10	0	50

* BIOS dependent

Note: Type 47 must be selected to enter User Defined drive specifications.

Information Reference List

Engineering Change Notices

None.

Technical Information Bulletins

None.

Product Support Bulletins

None.

Related Documentation

TM-ACTNOTE	Epson ActionNote Service Manual
ADDACTNOT33	ActionNote Service Manual Addendum
PL-ACTNOTE	Epson ActionNote Parts Price List
SPKACTNOT33	Epson ActionNote Self Paced Kit
400210900	Epson ActionNote User's Guide
400211000	Epson ActionNote Quick Reference