

Computer Specifications

CPU and Memory

CPU	Cyrix 32-bit, 3.3 volt Cx486DX-V33 microprocessor; includes built-in math coprocessor, 8KB of internal cache, and APM and SMM power management features; cache can be enabled or disabled using Setup
System speed	Maximum speed (33 MHz) and low speed (8 MHz) available; speed selection through Setup
Memory	4MB RAM standard on the system board; expandable to 8MB or 20MB using a 4MB or 16MB memory expansion module
ROM	128KB Flash ROM device containing the system and VGA BIOS, Setup program code, and PCMCIA socket services; upgradable through Setup using Flash ROM upgrade diskette

Video RAM	512KB DRAM supports resolutions up to 1024 x 768 in 16 colors or 800 x 600 in 256 colors
Shadow RAM	Supports shadowing of system and video BIOS ROM into RAM; selectable through Setup
Clock/calendar	Real-time clock, calendar, and CMOS RAM; backed up by internal battery

Controllers

Video	Video controller and video modes depend on the LCD screen installed; 16-bit local bus interface to the microprocessor; hardware cursor and color expansion features; internal timers for backlight control and standby mode Supports enhanced video modes on an external monitor; maximum resolution of 800 x 600 x 256 colors or 1024 x 768 x 16 colors; automatic external monitor detection; simultaneous display with LCD screen using Fn F5 command or software
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Diskette drive	Built-in super I/O controller for one internal 3.5-inch diskette drive; supports 720KB and 1.44MB formats
Hard disk	Built-in super I/O controller has interface to one 2.5-inch, IDE internal hard disk drive
PCMCIA	Built-in Cirrus Logic CL-PD6710 controller for PCMCIA version 2.1, Type II card slot; supports Type I and Type II cards; JEIDA 4.1 compatible; supports low power and suspend modes; supports hot insertion (including ExCA standards)

Interfaces

External VGA	Auto-sensing, 15-pin, D-sub, female connector for analog monitor; resolutions of 640 x 480 (VGA), 800 x 600 x 256 colors or 1024 x 768 x 16 colors
Parallel	Centronics compatible; 25-pin, D-sub, female connector; standard 8-bit parallel; supports standard (AT compatible), bidirectional (PS/2 compatible), enhanced (EPP), and high-speed (ECP) modes
Serial	RS-232C, programmable, asynchronous, 9-pin, D-sub male connector
Pointing device or external keyboard	Auto-sensing, 6-pin, mini-DIN connector for a PS/2-type pointing device or external keyboard

Phone jack Standard RJ-11 connector for the internal fax/modem

Fax/Modem Internal 9600/2400 baud send/receive fax/modem with the following characteristics:

Characteristic	Fax	Modem
Compatibility	Group 3, CCITT G3 V.2.1, V.27ter, V.29 (send only)	Bell 103,212A, CCITT V.22, V.22 bis
Speeds	9600, 7200, 4800, 2400, 300 baud	2400, 1200, 300 baud
Command set	Class 1	Enhanced AT
Data correction	MNP 2 to 4, V.42	
Data compression	MNP 5 V.42 bis	
Dialing type	Touch-tone or pulse	

Keyboard 85 keys; 101-key keyboard compatible; embedded numeric keypad and Fn key for hot key commands; international keyboard also available

Trackball Built-in 16 mm, PS/2 compatible trackball with two buttons

Mass Storage

Hard disk drive One internal IDE hard disk drive, 2.5-inch form factor; maximum height .5 inches (12.7 mm); MCC mounting holes on the base; Setup automatically detects drive type

Diskette drive One internal, 3.5-inch diskette drive; 720KB or 1 1.44MB format

LCD Screen Monochrome: 9.5-inch diagonal, 64 gray shades, 640 x 480, backlit

Dual-scan STN color: 9.5-inch diagonal, 640 x 480 x 256 colors, backlit

Active matrix TFT color: 8.5-inch diagonal, 640 x 480 x 256 colors, backlit

Setup Program Stored in ROM; accessible by pressing F12 at system startup; includes power management utilities

Software Latest versions of MS-DOS, Microsoft Windows, Comit for Windows modem software, and WinFax Lite; PCMCIA services and utilities; cursor enhancer; on-line documentation; video drivers and utilities for Microsoft Windows, Windows Battery Monitor, and several MS-DOS video utilities; all installed on the hard disk drive

Power Supply

AC adapter There are two AC adapters: a lightweight adapter supplied as standard, and a larger, fast-charge adapter available as an option.

Characteristic	Lightweight (standard)	Fast charge
AC connection	two folding connectors	cable: 6 feet (2 meters)
DC cable	6 feet (2 meters)	6 feet (2 meters)
Input voltage frequency	100V to 240VAC 50/60 Hz	90V to 264VAC 47 to 63 Hz
Output voltage current	15VDC 1.4A max.	15VDC 2.7A max.

DC-IN port

Maximum current	2.7A
Minimum current	0.6A
Voltage	15V

Battery pack Rechargeable, internal, 2.3 Ah, 8.4 Volt NiMH battery pack; current regulation by thermistor; an internal bridge battery allows the computer to run while the battery pack is being changed

Auto adapter The auto adapter allows the computer to be powered and charged from the cigarette lighter connector in an automobile

Size	4 x 3 x 1.5 inches (100 x 75 x 38 mm)
Weight	1 lb (0.45 kg)
Input cable	3 feet (1 m)
Output cable	3 feet (1 m)
Input voltage current	10 to 14 VDC 4A max.
Output voltage current	15VDC 2.7A max.

Caution

Use only the adapters and batteries designed for use with the ActionNote 700 (AC adapter model numbers A881291 and A881301, Auto adapter model number A881311, and battery pack A881281).







Environmental Requirements

Condition	Operating	Non-operating
Temperature	41° to 95° F (5° to 35° C)	-4° to 140° F (-20° to 60° C)
Humidity (non-condensing)	30% to 90%	5% to 95%
Altitude	-200 to 12,000 ft (-61 to 4,000 m)	-200 to 30,000 ft (-61 to 13,200 m)
Acoustical noise	35 dB @ 1 meter (maximum)	

Physical Dimensions

Model	Depth		Width		Height		Weight	
	inches	mm	inches	mm	inches	mm	lb	kg
Monochrome	8.5	217	11.0	275	1.4	36	4.42	2.0
STN color	8.5	217	11.0	275	1.6	40	4.99	2.3
TFT color	8.5	217	11.0	275	1.6	40	4.99	2.3

LEDs

-  Power-Green = power is on;
 Yellow = battery is low;
 Red = battery is very low, save data;
 Red blinking = system 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
-  Scroll Lock-Scroll Lock is on
-  Caps Lock-Caps Lock is on
-  DC-IN-Yellow = power is supplied by the adapter and the battery is charging;
 Green = battery is fully charged;
 Red = battery is too hot or too cold;
 Blinking red = battery is installed incorrectly or is damaged.

Accessories

- Lightweight AC adapter
- Carrying case

Optional Equipment

- 4MB memory expansion module
- 16MB memory expansion module
- External keyboard
- Cl External numeric keypad
- Additional NiMH battery packs
- Extra AC adapter
- Enhanced, fast-charging AC adapter
- Adapter for an automobile cigarette lighter
- PCMCIA Type II cards including modems, flash RAM, RAM, fax/modems, LAN cards, etc.
- 260MB and higher capacity hard disk drive upgrades

Caution

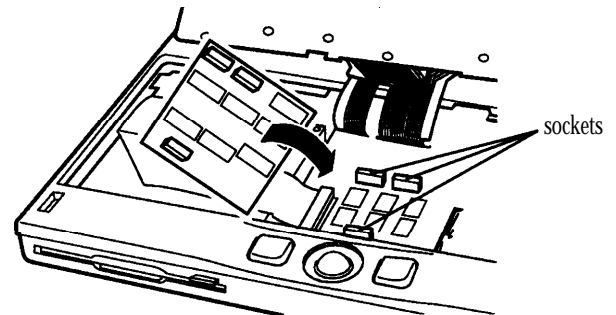
When traveling by airplane, take the computer into the passenger compartment as carry-on luggage to prevent it from being stored in an unpressurized storage compartment.

Adding Memory

The ActionNote 700 Series comes with 4MB of memory on the system board. You can increase the memory to 8MB by installing a 4MB memory module, or to 20MB by installing a 16MB memory module.

To install the memory module, press the keyboard forward and lift the front of the keyboard until it tilts back to rest against the LCD screen.

Locate the three sockets near the center front of the board. Align the three connectors on the memory module with the three sockets on the system board; then press it firmly into place.



Replace the keyboard; then run Setup to make sure the computer recognizes the new amount of memory.

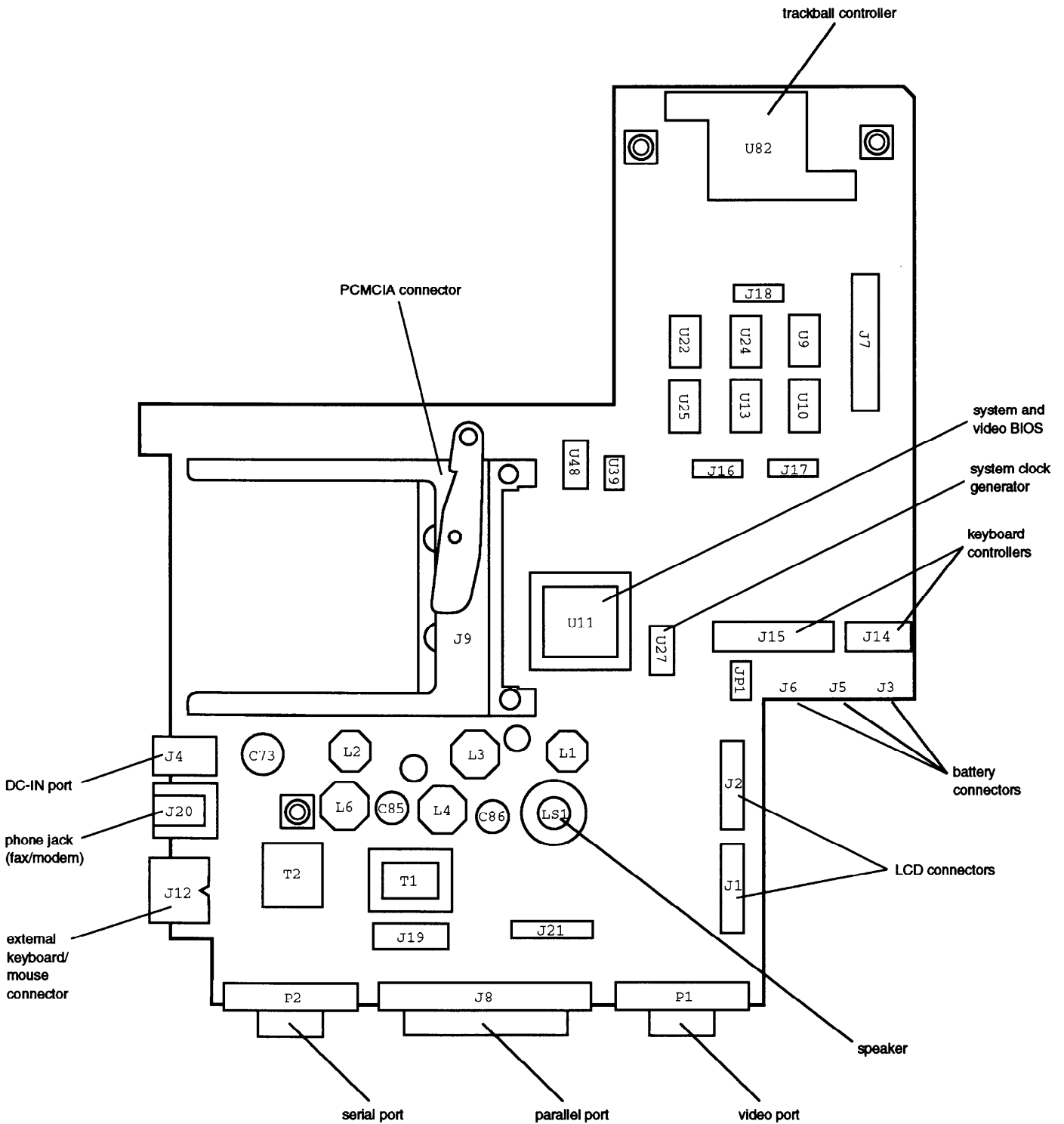
System Board Major Components

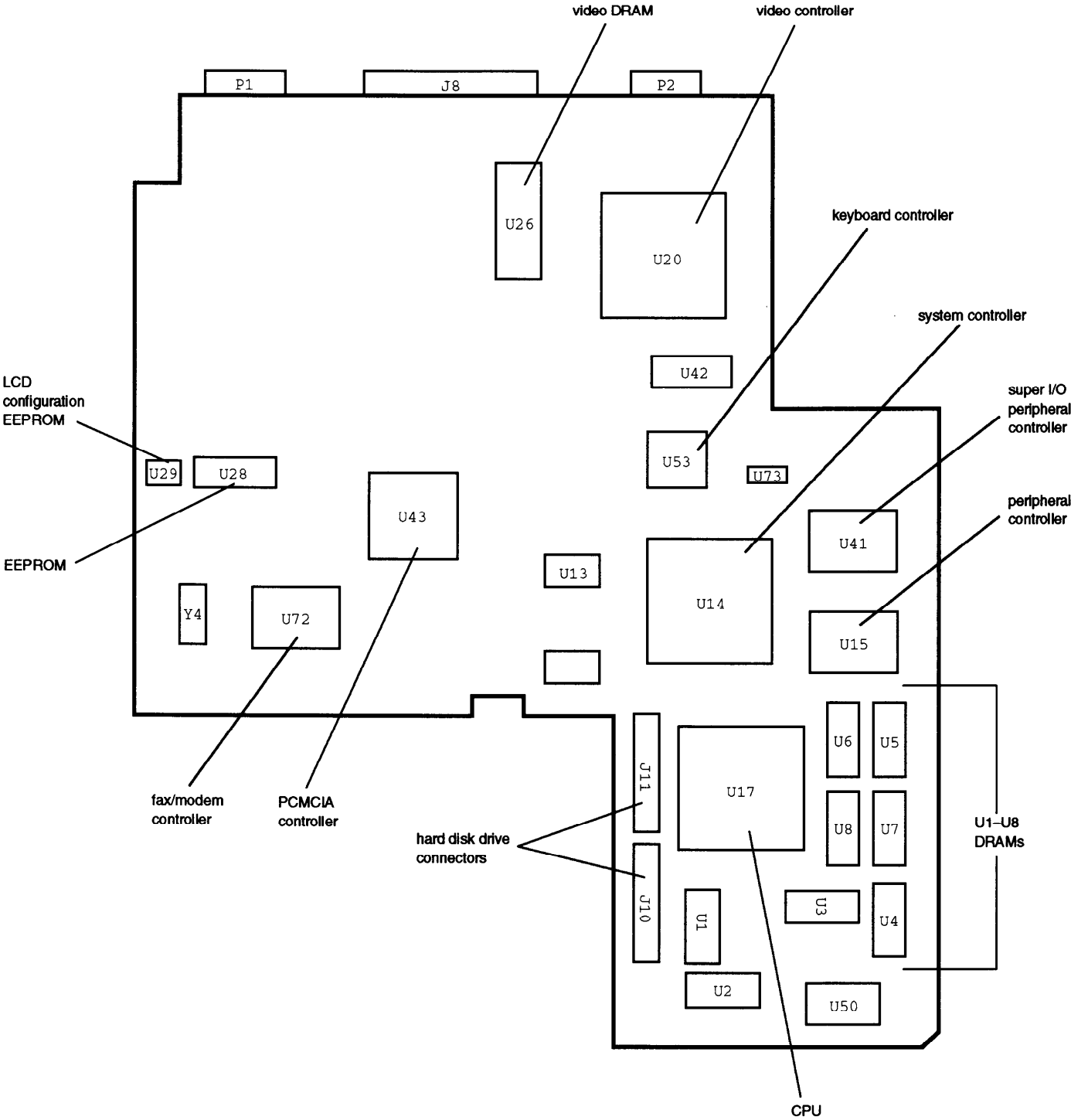
The following table lists the major components on the system board.

System board major components

Component	Description
U1-U8	DRAMs (1MB x 4bit x 80ns)
U11	29LV010 system and video BIOS (128KB x 8)
U14	86C368 system controller; manages AT bus control logic, DRAM controller, and CPU clock generation
U15	82C206 peripheral controller; manages DMA controllers, interrupt controllers, 8254 timer/counter, and RTC
U17	Cyrix CX486DX-V33 CPU
U20	CL-GD672X5 flat panel video controller, integrated frequency synthesizer/DAC; SimulSCAN support
U26	Video DRAM (256KB x 16 x 80ns)
U27	IDC2028 system clock generation
U28	68HC05P9 battery charging, power on, configuration EEPROM control
U29	93C06 configuration EEPROM for storing brightness and contrast settings for panel
U41	37C665 super I/O peripheral controller for IDE drive, diskette drive, serial and parallel ports, and ECP
U43	CL-PD6710 PCMCIA host adapter
U53	H8 keyboard controller
U72	RC224ATF/1 fax/modem controller
U82	Trackball controller
LS1	Speaker
J1, J2	LCD connectors
J3, J5, J6	Battery connectors
J4	DC-IN port
J10, J11	HDD connectors
J14, J15	Internal matrix keyboard connectors
J21	LED connector

Main System Board Diagrams





Connector Pin Assignments

Parallel port connector pin assignments (J8)

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 connector pin assignments (P2)

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		

External keyboard/mouse connector pin assignments (J12)

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

Video port connector pin assignments (P1)

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	6	Ground	11	MS0
2	Green	7	Ground	12	MS1
3	Blue	8	Ground	13	Horizontal sync
4	MS2	9	Unused	14	Vertical sync
5	Ground	10	Ground	15	Unused

Internal Keyboard Connectors

Internal keyboard connector pin assignments (J14)

Pin	Signal
1-8	KINO-KIN7

Internal keyboard connector pin assignments (J15)

Pin	Signal
1-16	KINO-KIN15

DC-IN Power Connector

DC-IN power connector pin assignments (J4)

Pin	Signal
1	DC input
2	Chassis ground
3	Chassis ground

LED Connector

LED connector pin assignments (J21)

Pin	Signal	Pin	Signal
1	BAT_COM	6	+3V
2	Hard disk drive LED	7	AC_COM
3	Num Lock	8	LOW_BTTY
4	Scroll Lock	9	VL_BTTY
5	caps Lock		

Diskette Drive Cable Connector

Diskette drive connector pin assignments (J18)

Pin	Signal	Pin	Signal
1	HDSEL	14	No connect
2	Ground	15	FDIR
3	RDATA_	16	DENSEL
4	Ground	17	MTR0_
5	WRPRT_	18	No connect
6	Ground	19	No connect
7	TRK0_	20	No connect
8	Ground	21	SKCHG
9	WGATE_	22	+5V
10	Ground	23	DRV0
11	WDATA_	24	+5V
12	No connect	25	INDEX-
13	STEP_	26	+5V

IDE Hard Disk Drive Connector

Hard disk drive connector pin assignments (J11)

Pin	Signal	Pin	Signal
1	IDEIOW_	11	IDECS0
2	Ground	12	IDECS1
3	IDEIOR_	13	IDELED_
4	Ground	14	No connect
5	No connect	15	No connect
6	IDEIRQ14	16	No connect
7	IOCS16_	17	Ground
8	IDEA1	18	IDEVCC
9	IDEA0	19	IDEVCC
10	IDEA2	20	Ground

Hard disk drive connector pin assignments (J10)

Pin	Signal	Pin	Signal
1	IDERST_	11	IHDUD3
2	Ground	12	HDUD12
3	HDUD7	13	HDUD2
4	HDUD8	14	HDUD13
5	HDUD6	15	HDUD1
6	HDUD9	16	HDUD14
7	HDUD5	17	HDUD0
8	HDUD10	18	HDUD15
9	HDUD4	19	Ground
10	HDUD11	20	Ground

Fax/Modem Connector

Fax/Modem connector pin assignments (J20)

Pin	Signal	Pin	Signal
1	No connect	4	TIP
2	No connect	5	No connect
3	RING	6	No connect

PCMCIA Connector

PCMCIA connector pin assignments (J9)

Pin	Signal	Pin	Signal	Pin	Signal
1	Ground	24	PCA5	47	PCA18
2	PCD3	25	PCA4	48	PCA19
3	PCD4	26	PCA3	49	PCA20
4	PCD5	27	PCA2	50	PCA21
5	PCD6	28	PCA1	51	SLOT_VCC
6	PCD7	29	PCA0	52	SLOT_VPP
7	A-CE1	30	PCD0	53	PCA22
8	PCA10	31	PCD1	54	PCA23
9	A-OE	32	PCD2	55	PCA24
10	PCA11	33	A-WP	56	PCA25
11	PCA9	34	Ground	57	A_5V_DET
12	PCA8	35	Ground	58	A_RESET
13	PCA13	36	A-CD1	59	A-WAIT
14	PCA14	37	PCD11	60	A-INPACK
15	A-WE	38	PCD12	61	A-REG
16	A_RDY	39	PCD13	62	A_BVD2
17	SLOT_VCC	40	PCD14	63	A_BVD1
18	SLOT_VPP	41	PCD15	64	PCD8
19	PCA16	42	A-CE2	65	PCD9
20	PCA15	43	No connect	66	PCD10
21	PCA12	44	A-IORD	67	A-CD2
22	PCA7	45	A-IOWR	68	Ground
23	PCA6	46	PCA17	69	Ground

LCD Panel Connector

LCD connector pin assignments (J1)

Pin	Signal	Pin	Signal
1	LFS	9	LD6
2	LLCLK	10	LD5
3	VDCLK	11	LD4
4	FPVEE	12	LD3
5	VPANEL	13	LD2
6	FPGND	14	LD1
7	VLCD	15	LD0
8	LD7		

LCD connector pin assignments (J2)

Pin	Signal
1-8	UD0-UD7
9	MOD
10	DE-
11	FP ground
12	FP ground

DMA Assignments

Level	Assigned device
DMA0	Available
DMA1	Available
DMA2	FDD controller
DMA3	ECP
DMA4	Cascade for CTRL 1
DMA5	Available
DMA6	Available
DMA7	Available

Hardware Interrupts

IRQ no.	Function
IRQ0	Timer
IRQ1	Keyboard
IRQ2	Cascade
IRQ3	COM 2 (2F8h)
IRQ4	COM 1 (3F8h)
IRQ5	Available
IRQ6	FDD controller
IRQ7	Parallel port (LPT1)
IRQ8	Clock/calendar
IRQ9	cascade video
IRQ10	Available
IRQ11	Available
IRQ12	Trackball
IRQ13	Reserved for coprocessor
IRQ14	HDD controller
IRQ15	Available

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 drive
200 - 208	Reserved for game port
208 - 278	Reserved
240 - 24F	PCMCIA controller
27F - 2F8	Reserved
2F8 - 2FF	Serial port 2
2FF - 3B0	Reserved
3B0 - 3F0	Video system
3BC - 3BE	Parallel port 1
3F0 - 3F8	Diskette drive controller
3F8 - 3FF	Serial port 1

Diskette Drive Information

Standard diskette drive specifications

Parameters	3.5-inch 1.44MB Citizen W1DA
Storage capacity	1474KB
Size (In)	3.5
Cylinders	80
Heads	2
Tracks	160
Track density	135 TPI
Power on ready time	505 ms (or less)
Settling time	15 ms (or less)
Average latency time	100 ms

Information Reference List

Engineering Change Notices

None.

Technical Information Bulletins

None.

Product Support Bulletins

None.

Related Documentation

- TM-AN700 EPSON ActionNote 700 Series Service Manual
- PL-AN700 EPSON ActionNote 700 Series Parts Price List
- 400290700 EPSON ActionNote 700 Series User's Guide