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SERVICE MANUAL

CDTV

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1.1 SPECIFICATIONS

CENTRAL PROCESSING UNIT

MC68000 (Motorola) 16/32 bit main CPU

CPU SPEED

7.15909 MHz (NTSC); 7.09379 MHz (PAL)

NOTE: CPU speeds can vary when using an external system clock such as with genlocking units.

CUSTOM CHIPS

3 Amiga-specific custom chips (Agnus, Paula and Denise) which enhance system performance by taking over tasks such as handling video, sound, direct memory access (DMA) and/or graphics.

OTHER CUSTOM CHIPS

CDTV will also have other custom chips for handling the CD-ROM interface and IR control.

MEMORY

1 MB (Megabyte) chip RAM; 2K non-volatile RAM reserved for system (clock, prefs, etc.); 512K ROM

INTERNAL SLOTS

Intelligent video slot (for optional genlock, RF board, etc.) 15 pin edge connector; DMA slot — for SCSI, LAN, etc.

VIDEO OUTPUTS

Analog RGB, Digital RGB (DB-23 connector); Composite video NTSC or PAL (RCA connector); Component video Y-C (S connector type for S-VHS and Hi8); RF Modulated (F connector); Optional genlock capabilities via plug-in module. Three-mode (CDTV, video source or mixed) under software control.

VIDEO DISPLAY (GENERAL)

400 lines/vertical frequency 60Hz (NTSC); 512 lines/vertical frequency 50Hz (PAL); Graphic co-processor with beam synced draw, fill and move modes (blitter); Maximum 1Mb video memory (chip memory); Palette of 4096 colors; Maximum 6 bitplanes; 8 sprites per scanline

OPERATING SYSTEM

Amiga kickstart 1.3 in ROM; ISO 9660 file system handler; High-speed decompression for graphics, audio and other data; CD+G, CD+midi, CDDA support

IR (INFRARED) REMOTE UNIT SPECS

Landscape format

Proprietary high-speed IR signal; Power supplied by 2 AA batteries; 10 numeric keys plus Escape and Enter; Joy/Mouse, CD/TV and Genlock keys; Button for Up, Down, Left, Right and diagonal movement; Two Select (or Fire) keys: A and B; CD audio — Reverse, Forward, Play/Pause, Headphone Volume Up-Down and Stop keys

OPTIONAL ACCESSORIES

External floppy disk drive; Trackball; Personal RAM or ROM card; Genlock; Keyboard; Modem

ADDED RAW KEYBOARD CODES

6C Play/Pause; 6D Stop; 6E Fast Forward; 6F Fast Reverse

MEMORY MAP (IN ADDITION TO IM CHIP A500)

Memory Card	\$E00000-\$E000FF
Non-volatile Memory	\$DC8000
DMAC	Auto config., typically \$E90000
Tri-port	Mapped to DMAC, \$B0

COMPUTER GENERATED AUDIO SPECS

4 independent sound channels (right and left); Complex waveforms; Sound buffer up to 128K, unlimited seamless sound; 8-bit D/A converter plus 6-bit volume control

AUDIO EXTRAS

Capable of sound mapping Amiga over CD-DA sound.

1.1 SPECIFICATIONS (Continued)

REAR PORTS

Centronics parallel interface; RS-232 serial interface; External floppy disk drive interface (Amiga floppy disk drive compatible); Hardwired alternative to IR for keyboard, mouse, joystick; 2 audio output ports (RCA type plug) (requires external audio amplifier); Midi in and out

FRONT PORT

Stereo headphone jack; Port for optional personal RAM/ROM card (256K)

POWER CONSUMPTION

50W (average AC100-240V, 50/60Hz)

ENVIRONMENTAL CONDITIONS

Operating temperature	5C to 40C (non-condensing); 41F to 104F
Operating humidity	25% to 80% (non-condensing)

FRONT PANEL DISPLAY

Fluorescent (white characters on black); Time, track and volume level; Clock remains lit when unit is turned off; Display controllable by application

FRONT PANEL CONTROLS

Power On/Off; Headphone volume Up/Down; Play/Pause; Stop; Forward/Reverse — Scan/Skip; CD/TV; Reset

TEXT MODES

80 characters/25 lines; 60 characters/25 lines; Various font sizes and types selectable; Screen colors user definable

GRAPHICS MODES

(NTSC)

320 X 200 non-interlaced	32 colors
640 X 200 non-interlaced	16 colors
320 X 400 interlaced	32 colors
640 X 400 interlaced	16 colors

plus overscan and HAM modes

(PAL)

320 X 256 non-interlaced	32 colors
640 X 256 non-interlaced	16 colors
320 X 512 interlaced	32 colors
640 X 512 interlaced	16 colors

plus overscan, HAM, etc.

CD-ROM DRIVE SPECS

Sony/Philips type CD-ROM standard Mode 1, Mode 2

Data readout from disk	153 Kbytes/sec (Mode 1); 171 Kbytes/sec (Mode 2); 2 Megabytes/sec (burst)
Average access time	0.5 sec
Maximum access time	0.8 sec
Soft read error	Less than 10e-9
Hard read error	Less than 10e-12
Seek error	Less than 10e-6
Commands	CD-ROM, CD-Audio, CD+G
MTBF	10,000 P.O.H.
Standard supported	ISO-9660
Data Capacity	540 MegaBytes (approx.) (about 700 Amiga floppy disks)

CD AUDIO SPECS

8X oversampling	
Audio output	External 1.4VRMS, 10K OHM
Frequency response	4-20KHz
Signal/Noise	- 92DB
Channel Separation	- 85DB
Harmonic Distortion	0.02% at 1 KHz
Maximum audio capacity	about 28 hours - AM quality
Sample Rates	variable from CD Audio rate (44KHz) to 6KHz
Dual 16 bit D/A converter plus	64 levels of attenuation

Commodore International Spare Parts List SHIPPING ASSEMBLIES

Commodore part numbers are provided for reference only and do not indicate the availability of spare parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally. Part number information may vary according to country, some parts may not be available in all countries. Part Numbers are subject to change, see Parts (Section 2) of current Techtopics for current numbers.

CDTV SHIPPING ASSY	CDTV SHIPPING ASSY (Continued)
513402-01 US	363713-02 MODULATOR, CDTV PAL
513402-02 CN	363713-01 MODULATOR, CDTV NTSC
513402-03 U.K.	903508-07 CORD, POWER BSI BLACK
513402-04 GR	903508-18 CORD, POWER UL/CSA BLACK
513402-05 NOT USED, USE -04	903508-01 CORD, POWER VDE BLACK
513402-06 IT	903508-02 CORD, POWER SEV BLACK
513402-07 NOT USED, USE -06	903508-03 CORD, POWER SAA BLACK
513402-08 SG	903508-10 CORD, POWER JP BLACK
513402-09 NOT USED, USE -06	390875-01 AUTO RF SWITCH BOX NTSC
513402-10 NOT USED, USE -06	251846-01 CABLE, RF PAL
513402-11 NOT USED, USE -06	325228-01 RF SWITCH SD
513402-12 SD	252590-01 QD CADDY
513402-13 NOT USED, USE -08	252594-01 REMOTE CONTROLLER CDTV
513402-14 NOT USED, USE -06	252592-01 BOX, INDIVIDUAL CDTV
513402-15 NOT USED, USE -06	252593-01 CARTON, OUTER CDTV
513402-16 NOT USED, USE -06	252594-01 BOX, ACCESSORY
513402-17 NOT USED, USE -06	252595-01 FOAM, PACKING - FRONT
513402-18 AL	252596-01 FOAM, PACKING - REAR
513402-19 NOT USED, USE -06	311945-01 CABLE AUDIO
513402-20 NOT USED, USE -06	400807-01 SVC SUB ASSY
513402-21 JP	318882-01 CARD, WARRANTY, CN
513402-22 GUIDE, QUICK CONNECT	368014-01 CARD, WARRANTY, AL
250805-01 MAIN ASSY CDA-1, NTSC	320408-04 BAG, FLAT 650MM X 650MM FOR CDTV
250802-02 MAIN ASSY CDA-1, PAL-I	324257-01 BAG, DRYING AGENT
250802-04 MAIN ASSY CDA-1, PAL-G	367889-01 DISK ASSY - CD WELCOME DISK

Commodore International Spare Parts List MAJOR ASSEMBLIES

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250802 MAIN ASSY CDTV	250805-01 REAR PANEL ASSY CDTV
250802-01 NTSC	252549-01 PANEL REAR CDTV
250802-02 PAL-I	325552-06 CONN POWER FILTER
250802-03 SECAM	252551-01 FAN
250802-04 PAL-G	252831-01 GASKET FAN
250802-05 BLANK CARD	252552-01 METAL COVER SCSI SLOT W/O CARD
250802-06 SCART	252840-01 HARNESS ASSY FAN
250803-01 BOTTOM CHASSIS ASSY CDTV NTSC	252553-01 HARNESS ASSY AC INPUT
250803-02 BOTTOM CHASSIS ASSY CDTV PAL	905476-04 TUBING HEAT SHRINKABLE 4 DIA X 40 L
255077-01 LABEL, RATING CDTV	1540010-04 GROUND CABLE ASSY GREEN/YELLOW
366567-01 LABEL, SERIAL #	906800-11 SCREW PH M3 X 35 BLACK
366565-01 LABEL, LASER CAUTION	906800-05 SCREW PH M3 X 6 BLACK
325090-02 SEAL, WARRANTY	905950-03 NUT HEXAGON M3
366566-01 LABEL, DISK CAUTION	906805-01 SCREW STP FLAT HEAD M3 X 6 BLACK
252655-01 INSULATION SHEET, FLASH MEMORY	907272-01 FLAT WASHER M3
252597-01 COVER, TOP CDTV	
252651-01 VIDEO CARD, NTSC	250807-01 FRONT BEZEL ASSY CDTV
390891-01 VIDEO CARD, PAL FOR 250802-02 SET SW TO PAL-I	252556-01 FRONT BEZEL CDTV
390932-01 VIDEO CARD, SECAM FOR 250802-04 SET SW TO PAL-G ON VIDEO	252567-01 DOOR CADDY CROM DRIVE
CARD 390891-01	252568-01 SPRING DOOR CADDY
363714-01 VIDEO SCART CARD	252569-01 PLASTIC FILTER FL DISPLAY
906883-03 SCREW, SELF TAPPING PAN HEAD M3 X 6 (QTY = 2)	250481-01 PCB ASSY POWER SW & PHONE JACK
252466-02 SCREW, SELF TAPPING BIND HEAD M4 X 6 (QTY = 4)	252571-01 DOOR MEMORY CARD
906800-05 SCREW, PAN HEAD M3 X 6 (QTY = 2)	252572-01 LENS PLASTIC LED
	252573-01 BUTTON POWER SWITCH
250803 BOTTOM CHASSIS ASSY CDTV (-01 - NTSC; -02 - PAL)	252574-01 PLASTIC SWITCH UNIT
250804-01 CROM MECHANISM ASSY CDTV	250483-01 PCB ASSY LED INDICATOR GREEN
250482-01 PCB ASSY MEMORY CARD	250669-01 FLEXIBLE BUSHING
252583-01 BOTTOM CHASSIS CDTV	252666-01 HOLDER FRONT BEZEL
250806-01 POWER SUPPLY ASSY CDTV	252668-01 NYLON WASHER
252584-01 BRACKET METAL REG MKE TOP	906115-01 TOROID
252584-01 FOOT CDTV W/ HOT STAMP	252570-01 PLATE LOGO COMMODORE
252585-01 FOOT RUBBER CDTV	250479-01 PCB ASSY DISPLAY CDTV
252635-01 RUBBER BUSHING	252630-01 PLASTIC PCB HOLDER SW AND PHONE JACK
252641-01 CABLE TIE	906885-01 SCREW STP PH M2.5 X 8
250484-01 PCB ASSY MAIN LOGIC CDTV NTSC	906883-01 SCREW STP PH M3 X 8
250484-02 PCB ASSY MAIN LOGIC CDTV PAL	906883-04 SCREW STP PH M3 X 10
250485-01 PCB ASSY MIDI INTERFACE	
250805-01 REAR PANEL ASSY CDTV	250485-01 PCB ASSY MIDI INTERFACE
250807-01 FRONT BEZEL ASSY CDTV	252625-01 SCHEMATIC MIDI INTERFACE
390918-01 HOLDER BOTTOM CHASSIS	252626-01 PCB MIDI INTERFACE
906883-03 SCREW PAN HEAD M3 X 6	252166-03 CONN 5 PIN DIN
906883-04 SCREW PAN HEAD M3 X 10	252664-01 PCB HOLDER PLASTIC
390903-01 SCREW ST PH M3 X 6 BLACK	252628-01 HARNESS ASSY MIDI INTERFACE
251449-02 SCREW ST PH M4 X 8	
251541-04 SPRING WASHER M4	250483 PCB ASSY LED INDICATOR (-01 - GREEN; -02 - AMBER)
905665-04 LOCK WASHER EXT TOOTH M4	252598-01 PCB LED INDICATOR
906883-01 SCREW ST PH M3 X 8	325521-07 LED GREEN 5 DIA ROHM
906885-02 SCREW ST M2.2 X 6	325521-04 LED GREEN 5 DIA SHARP
906670-03 SCREW M2.2 X 6	252621-02 LED AMBER 5 DIA ROHM SLH 56YC
	252621-01 LED AMBER 5 DIA SHARP
250806-01 POWER SUPPLY ASSY CDTV	252582-02 HARNESS ASSY 2 CONDUCTOR
252560-01 REGULATOR SWITCHING MKE	
252562-01 BRACKET METAL REG MKE BOTTOM	250481-01 PCB ASSY POWER SWITCH AND PHONE JACK
252632-01 SHEET INSULATION POWER SUPPLY	252578-01 PCB POWER SW AND PHONE JACK
252635-01 HARNESS ASSY POWER MKE	252579-01 HEADPHONE JACK 6.43 DIA PC MOUNT TANAKA ELEC
252637-01 HARNESS ASSY CROM POWER	252580-01 SWITCH POWER PC MOUNT EXCELL ELEC
252638-01 HARNESS ASSY POWER SWITCH	252581-01 HARNESS ASSY SHIELDED 2 CONDUCTORS
906885-02 SCREW STP PH M2.6 X 8	252582-01 HARNESS ASSY 2 CONDUCTORS
907272-07 WASHER FLAT M2.6	252629-01 PLATE GROUND SW AND PHONE JACK
251541-07 WASHER SPRING M2.5	
250804-01 CROM MECHANISM ASSY CDTV	250482-01 PCB ASSY MEMORY CARD
252554-01 CROM MECHANISM CRS11-B MKE	252575-01 PCB MEMORY CARD
252555-01 METAL BRACKET HOLDER MAIN LOGIC	252576-01 HARNESS ASSY FLAT CABLE 40 PIN
252557-01 PLASTIC GUIDE OPTION CARD	252577-01 CONN MEMORY CARD ITT CANNON
252576-02 HARNESS ASSY 40 PIN FLAT CABLE	252645-01 COPPER TAPE 15MM WIDTH
252639-01 HARNESS ASSY AUDIO CONTROL	250479-01 PCB ASSY DISPLAY CDTV
906883-01 SCREW ST PH M3 X 8	252537-01 SCHEMATIC DISPLAY CDTV
252634-01 STAND OFF LOGIC PCB (TO BE PRESSED BY MFG)	252642-01 PCB DISPLAY CDTV
252556-01 BUTTON EJECT CR 5119 MKE	252538-01 PCB DISPLAY CDTV
252667-01 HOLDER INSULATION SHEET	252539-01 IR RECEIVER MODULE SHARP
	252546-01 RUBBER DISPLAY T=5
250486-01 PCB ASSY FLASH MEMORY	252540-01 FL DISPLAY CPF2423A NORITAKE
252658-01 SCHEMATIC FLASH MEMORY FROM AER	
252659-01 PCB FLASH MEMORY	250484 PCB ASSY MAIN LOGIC CDTV (-01 - NTSC; -02 - PAL)
	252604-01 PCB FAB MAIN LOGIC CDTV

Commodore International Spare Parts List

PCB Components

PCB Assembly CDTV

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IC COMPONENTS		CONNECTORS (Continued)	
390084-03	86000 CPU 8MHz	390851-02	DIN MINI 4 PIN
318072-01	GARY 5917	903345-20	HEADER ASSY 40 PIN 2.54 PITCH
252126-02	DENISE 8362R8	252616-03	HEADER ASSY 3 PIN 2 PITCH
252127-02	PAULA 8364R7	252616-02	HEADER ASSY 4 PIN 2.5 PITCH
315093-02	ROM KICKSTART V1.3	250669-04	HEADER ASSY 2 PIN 2.5 PITCH
318029-03	CIA 8520 A-1 2 MHz	250669-02	HEADER ASSY 2 PIN 2.5 PITCH
390229-01	VIDEO HYBRID	252616-04	HEADER ASSY 4 PIN 2 PITCH
318099-01	DRAM 256K X 4 100NS ZIP	903332-02	HEADER ASSY 2 PIN 2.54 PITCH
318099-05	DRAM 256K X 4 80NS ZIP	380333-01	JUMPER
318069-02	F. AGNUS 8372	OSCILLATORS, TRANSISTORS AND DIODES	
390563-02	DMAC 4701	325566-14	OSCILLATOR MODULE 28.63636 MHZ
252606-01	ROM CDROM DRIVER, 000	252344-01	OSCILLATOR MODULE 28.37516 MHZ
252607-01	ROM CDROM DRIVER, EVEN	325566-12	OSCILLATOR MODULE 28.63636 MHZ
252608-01	CPU LC6554H	902707-01	TRANSISTOR PNP 2N3906
252609-02	CPU 6500Q1	390192-01	TRANSISTOR PNP 2N3904
318073-01	RTC MSM6242B	252338-01	TRANSISTOR POWER 2SD789
252611-01	AMP M51568FP	902354-01	TRANSISTOR JFET MPF102
252612-01	ATT TC9154AP	902723-02	TRANSISTOR 2SA1309A
901523-01	TIMER NE555	902717-01	TRANSISTOR 2N4733
390086-01	AMP TL084ALF347	902707-01	TRANSISTOR 2N3906
901523-10	AMP TL082ALF353N	900928-02	DIODE ZENER 5.1V RD 5.1EB
901879-03	TRI-PORT 6525B	900922-02	DIODE ZENER 30V RD 30EB
252614-01	DAC LC7583M	900850-09	DIODE SIGNAL IN4448C
328156-02	RESET PST518B	900850-01	DIODE SIGNAL IN4148
252620-01	SRAM 16K 5K DIP 100NS	252618-01	OSCILLATOR CERAMIC 3MHZ
252620-02	SRAM 16K 5K DIP 120NS	252618-02	OSCILLATOR CERAMIC 4MHZ
252620-03	SRAM 16K 5K SIP 150NS	900560-01	OSCILLATOR CRYSTAL 32.768 KHZ
901521-29	74LS373	RESISTOR PACKS	
901521-16	74LS138	252657-01	S COM 82K 9 ELEMENT
318050-01	74F244	902441-17	S COM 470 OHM 5 ELEMENT
901521-11	74LS157	902410-08	S COM 4.7K 9 ELEMENT
310003-01	74HC245	902441-10	S COM 120 OHM 5 ELEMENT
901882-01	1489	902410-13	S COM 10K 9 ELEMENT
901883-01	149B	902410-09	S COM 3.3K 9 ELEMENT
901521-28	74LS164	252647-02	S COM 47K 3 ELEMENT
901521-52	74LS293	902442-55	S COM 4.7K 7 ELEMENT
901521-06	74LS74	902441-31	S COM 4.7K 5 ELEMENT
390110-01	74F04	902422-04	INDIVIDUAL 22 OHM 4 ELEMENT
901521-46	74LS245	902422-06	INDIVIDUAL 68 OHM 4 ELEMENT
901521-38	74LS38	902422-05	INDIVIDUAL 47 OHM 4 ELEMENT
901521-31	74LS32	902227-05	INDIVIDUAL 68 OHM 5 ELEMENT
901521-03	74LS06	252648-01	INDIVIDUAL 68 OHM 3 ELEMENT
901522-30	7407	902422-06	INDIVIDUAL 1K 4 ELEMENT
901521-22	74LS27	252648-02	INDIVIDUAL 1K 3 ELEMENT
901521-02	74LS04	RESISTORS — 1/4W ± 5% UNLESS OTHERWISE SPECIFIED	
901521-21	74LS02	390904-25	1M
901521-01	74LS00	390904-24	470K
901521-13	74LS244	390904-23	100K
318066-01	74F00	390904-22	47K
IC SOCKETS		390904-20	15K
390185-01	84 PIN PLCC	390904-19	12K
390141-01	64 PIN SDIP	390904-18	10K
904150-10	64 PIN DIP	390904-17	4.7K
251313-02	48 PIN DIP	390904-16	3.3K
904150-06	40 PIN DIP	390904-14	1.5K
390768-02	32 PIN DIP MCH TOOL	390904-13	1K
252600-01	HOLDER CONN CARTRIDGE	390904-12	750 OHM
209566-02	TRANSFORMER DC-DC CONV	390904-05	33 OHM
CONNECTORS		390904-10	120 OHM
390851-03	DIN MINI 5PIN	390904-07	56 OHM
390242-03	D SUB 23 PIN MALE	390904-09	100 OHM
390241-03	D SUB 23 PIN FEMALE	390904-06	47 OHM
390242-05	D SUB 25 PIN MALE	390904-04	27 OHM
390241-05	D SUB 25 PIN FEMALE	390904-15	2.7K
252602-01	CARD EDGE 30 PIN 2.54 PITCH	390904-03	22 OHM
252617-11	KEL 8811 SERIES 170L		
252603-10	HOUSING MOLEX 52007		
252122-02	RCA JACK RED		
252122-01	RCA JACK WHITE		

Commodore International Spare Parts List

PCB Components (Continued)

PCB Assembly CDTV

RESISTORS (Continued)		CAPACITORS (Continued)	
390904-02	10 OHM	900463-28	MLC AXIAL .01UF
390904-01	4.7 OHM	900019-07	MLC AXIAL .047UF
390904-11	470 OHM	900463-26	MLC AXIAL .6800PF
390904-21	22K	900463-23	MLC AXIAL .3900PF
901600-15	47 OHM, 1/2W ± 5%	900463-37	MLC AXIAL .1UF
901600-52	33 OHM, 1/2W ± 5%	900010-42	CER DISCS 22PF
901550-07	100K	900010-54	CER DISCS 33PF
901550-07	12K	900010-35	CER DISCS 10PF
901550-20	10K	900010-23	CER DISCS 580PF
901550-19	4.7K	900100-33	ELECT 47UF 16V
901550-02	3.3K	900010-61	CER RAD 0.1UF 25V
901550-01	1K	900463-10	MLC AXIAL 330 PF
901550-94	68 OHM	900463-12	MLC AXIAL 470PF
901550-56	47 OHM	900463-16	MLC AXIAL .001UF
901550-63	22 OHM	900019-17	MLC RAD 47PF 50V
901550-138	4.7 OHM	900022-05	MLC RAD .33UF 50V
901550-58	470 OHM	900100-58	ELECT RAD 470UF 10V
901550-52	220 OHM	900100-59	ELECT RAD 4.7UF 25V
901550-06	33K	251029-06	TRIMMER 6.8 - 45PF
RESISTORS — 1/4W 5%, CARBON		MISCELLANEOUS	
901550-02	3.3K	312754-02	INSULATION TAPE
901550-89	150 OHM	905476-05	TUBING SHRINKABLE 3 X 20L
901550-105	33 OHM	251584-15	WRAPPING WIRE AWG 28 L = 20MM
901550-58	470 OHM	251842-02	EMI FILTER 100PF
901550-56	47 OHM	390297-02	EMI FILTER 100PF W/FERRITE
901550-52	220 OHM	903025-01	FERRITE BEAD
901550-75	270 OHM	903025-01	FERRITE BEAD
CAPACITORS		251842-02	EMI FILTER 100PF
390101-04	ELECT RAD 22UF 35V	252627-01	PHOTOCOUPLER PC900V
900100-34	ELECT RAD 10UF 50V	252541-01	TACT SWITCH (USE W/252642-01) HOSHIDEN
900100-57	ELECT RAD 3300UF 10V	252644-01	TACT SWITCH (USE W/252538-01) ALPS
900100-33	ELECT RAD 47UF 16V	252547-01	LED AMBER 1 X 5 SHARP
390101-02	ELECT RAD 100UF 16V	252621-02	LED AMBER 5 DIA SHARP
900100-48	ELECT RAD 47UF 50V	252621-01	LED AMBER 5 DIA SHARP
390101-03	ELECT RAD 470UF 16V	252548-01	HOLDER LED (USE W/252547-01)
900100-11	ELECT RAD 4.7UF 25V	252542-01	WIRE FLAT JUMPER 2 MM PITCH 10 CONDUCTS L = 100
900022-01	MLC RAD 22UF 50V	252542-02	WIRE FLAT JUMPER 2 MM PITCH 10 CONDUCTS L = 100
900022-03	MLC RAD .1UF 50V	251188-03	COIL INDUCTOR 100UH
900463-04	MLC AXIAL 100PF	252598-01	SHIELD PLATE LOGIC PCB
390082-05	MLC AXIAL .22UF	252601-01	INSULATION SHEET LOGIC PCB
		390879-01	STAND OFF M2.5 X 0.45 X 13 (SUB USE W/250486-01)
		906883-01	SCREW SELF TAPPING PAN HEAD M3 X 8 (DTY 4)
		906883-07	SCREW SELF TAPPING PAN HEAD M3 X 16 (DTY 4)
		318277-17	POLYFOAM BLOCK

SIGNAL	DESCRIPTION
28MHZ	28.63636 MHz (NTSC) / 28.37516 MHz (PAL) Master Clock
7MHZ	7 MHz Processor Clock
A[23:1]	Processor Address (68000)
ACK	Data Acknowledge (Parallel)
AS	Address Strobe (68000)
AUDIN	Audio Input (RS232 jack)
AUDOUT	Audio Output (RS232 jack)
BEER	Bus Error (68000)
BG	Bus Grant (68000)
BGACK	Bus Grant Acknowledge (68000)
BLISS	Blitter Slowdown (chips)
BLIT	Chip Memory Access (chips)
BR	Bus Request (68000)
BUSY	Device Busy (parallel)
CASL/CASU	CAS lower/upper byte (DRAM)
CCK	Color Clock aka C1 (chips)
CCKQ	Color Clock Quadrature aka C3 (chips)
CDAC	7 MHz Quadrature Clock
CHNG	Media Change (floppy)
CLKRD/CLKWR	Real-time Clock Read/Write
CSYNC	Composite Sync (video)
CTS	Clear to Send (rs232)
D[15:0]	Processor Data (68000)
DIR	Direction (floppy)
DKRD	Diskette Read Data (floppy)
DKWDB	Diskette Write Data (floppy)
DKWEB	Diskette Write Enable (floppy)
DHAL	Chip DMA Request (chips)
DRA[8:0]	DRAM Address (DRAM, chips)
DRD[15:0]	DRAM Data (DRAM, chips)
DSR	Data Set Ready (rs232)
DTACK	Data Transfer Acknowledge (68000)
DTR	Data Terminal Ready (rs232)
E	Peripheral E Clock (68000)
EXRAM	Expansion Memory Present
FC[0:0]	Function Control (68000)
FIRE0/FIRE1	Fire Button (joysticks)
HLT	Processor Halt (68000)
HSYNC	Horizontal Sync (video)
INDEX	Diskette Index Hole (floppy)
INT[2,3,6]	Interrupt Requests (chips)
IORESET	I/O Reset
IPL[2:0]	Processor Interrupt Requests (68000)
KBCLOCK	Keyboard Clock (keyboard)
KBDATA	Keyboard Data (keyboard)
KBRESET	Keyboard Reset (keyboard)
LDS/UDS	Upper/Lower Data Strobe (68000)
LED	Power On LED

SIGNAL	DESCRIPTION
LEFT/RIGHT	Audio Channels
MTR	Motor On (floppy)
MTR0	Motor On Drive (floppy)
MOV/MOH	Mouse Quadrature Signals (joysticks)
MV/MH	Mouse Quadrature Signals (joysticks)
OVL	Overlay ROM over RAM
OV	Override System Decodeing
PIXELSW	Pixel Switch (video)
POTX/POTY	Pot Lines (joysticks)
POTIX/POTLY	Pot Lines (joysticks)
POUT	Paper Out (parallel)
PPD[7:0]	Parallel Port Data (parallel)
RAMEN	RAM Enable (chips)
REGEN	Chip Register Enable (chips)
RAS0/RAS1	RAS Internal/Expansion Lines (DRAM)
RDY	Drive Ready (floppy)
RESET	General Reset
RGA[8:1]	Register Address Bus (chips)
RI	Ring Indicate (rs232)
ROMEN	ROM Enable
RTS	Request to Send (rs232)
RST	Processor Reset (68000)
RXD	Receive Data (RS232)
RW	Processor Read/Write (68000)
SEL	Select (parallel)
SEL[3:0]	Drive Select (floppy)
SIDE	Side Select (floppy)
STEP	Head Step Command (floppy)
TRK0	Track 0 Sense (floppy)
TXD	Transmit Data (RS232)
VMA	Valid Memory Address (68000)
VPA	Valid Peripheral Address (68000)
VSYNC	Vertical Sync (video)
WE	Write Enable (DRAM)
WPROT	Write Protect Sense (floppy)
XCLK	External 28 Mhz Clock (genlock)
XCLKEN	External Clock Enable (genlock)
XRDY	External Data Ready
AUDL/AUDR	Amiga Audio Left/Right
AEMP	Audio Deemphasis
AUPLY	CD Audio Play
BAS	Buffered Address Strobe
BCLK	CD Audio Clock
BCSMCEN/BCSMC0D	Buffered Chip Select Memory Card Even/Odd
BRW	Buffered Processor Read/Write
BSEN	Logic Voltage Sense
BTXD	Buffer Transmit Data (midi)
BLDS/BU0DS	Buffered Upper/Lower Data Strobe

SIGNAL	DESCRIPTION
C16M	16MHz Dac Clock
CDAL/CDAR	CD Audio Left/Right
CD/TV	Select CD/TV (see INCD)
CONFIGIN	Config In
CONFIGOUT	Config Out
CSCD	Chip Select CDROM Driver
CSEN/CSOD	Chip Select CDROM Driver Even/Odd
CSMC	Chip Select Memory Card
CSMCEN/CSMC0D	Chip Select Memory Card Even/Odd
CSNV	Non-Volatile Memory Select
CSRC	Real Time Chip Select
CSX0	XT Device Chip Select No.0
DACATT	Attinuator Data (Dac)
DACLCH	Attinuator Latch (Dac)
DACST	Attinuator Strobe (Dac)
DATA	CD Audio Data
DMCD	Dmac Dma Data
EOP.CSX1	End of Process/XT Device Chip Select No.1
GMS[1:0]	Genlock Mode Select (Remote Control)
IFRST	Interface Reset
INAC	Indicator Power/Status
INCD	Indicator CD/TV Mode
INTD	CD Drive Reset
INTS	SCSI Interrupt
IOR/IOW	Dmac Read/Write
KBSE	Keyboard Sense
LMUTE	Line Mute
LRCLK	Audio Left/Right Clock
MPS	Power Sense (Logic)
MS[1:0]	Genlock Mode Select (Amiga)
MUTE	CD Mute
POWER	Main Logic Power On/Off
SD[7:0]	Dmac XT/SCSI Data
VCK	Attinuator Data Clock (Head Phone)
VDATA	Attinuator Data Clock (Head Phone)
VF[2:1]	Filament Voltage
VST	Attinuator Data Clock (Head Phone)
VPP	-30V Voltage
XA,YA,XB,YB[2:1]	Mouse Input Signal
XDACK	XT Device Data Acknowledge
XDREQ	XT Device Data Requirement
EMC	ENABLE MEMORY CARD
ECD	ENABLE CDROM DRIVER (ROM)
WEPR0M	WRITE ENABLE E2 PR0M





















