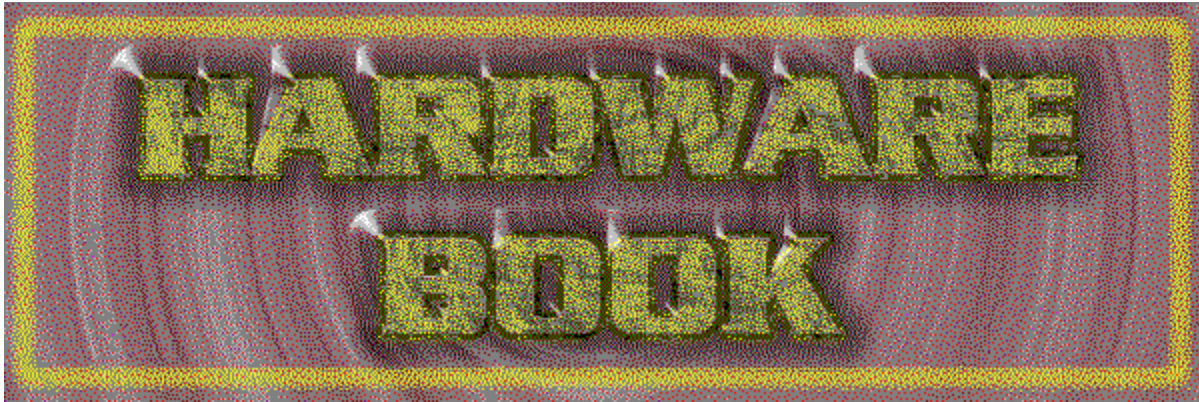


## The Hardware Book v0.1



Welcome to the Hardware Book. Your electronic reference guide.  
Created and maintained by Joakim Ögren.  
Current version 0.1

*This is the WinHelp version of The Hardware Book. It's currently to be considered beta.  
To get a new version visit the HwB homepage at  
<http://www.blackdown.org/~qtech/hw.html>.*



1. [Connectors](#)
2. [Cables](#)
3. [Adapters](#)
4. [Circuits](#)
5. [Misc](#)
6. [Tables](#)
7. [WWW Links](#)
8. [Download](#) **NEW**
9. [Wanted](#)
10. [About](#)

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Open this address in your WWW browser.

## Connector Menu



What does the the information that is listed for each connector mean? See the [tutorial](#).

### Buses:

- [ISA](#)
- [EISA](#)
- [PCI](#)
- [VLB](#)
- [Zorro II/III](#)
- [Zorro II](#)
- [CPU-port \(A1200\)](#)
- [Ramex \(A1000\)](#)
- [Video Expansion \(Amiga\)](#)
- [CD32 Expansion](#)
- [CDTV Diagnostic Slot](#)
- [CDTV Expansion Slot](#)

### In/Out:

- [Serial \(9\)](#)
- [Serial \(25\)](#)
- [RS232](#)
- [Parallel \(Amiga\)](#)
- [Parallel \(PC\)](#)
- [Centronics](#)

### Video:

- [VGA \(15\)](#)
- [VGA \(9\)](#)
- [CGA](#)
- [EGA](#)
- [PGA](#)
- [MDA \(Hercules\)](#)
- [VGA Feature](#)
- [Amiga Video](#)
- [RF Monitor \(Amiga 1000\)](#)
- [CDTV Video Slot](#)
- [Commodore 1084 & 1084S \(Analog\)](#)

- [Commodore 1084 & 1084S \(Digital\)](#)
- [Commodore 1084d & 1084dS](#)

## **Joystick/Mouse:**

- [Mouse/Joy \(Amiga\)](#)
- [Gameport \(PC\)](#)

## **Diskdrive:**

- [Internal Diskdrive](#)
- [External Diskdrive \(Amiga\)](#)

## **Keyboard:**

- [Keyboard \(5 Amiga\)](#)
- [Keyboard \(6 Amiga\)](#)
- [Keyboard \(5 PC\)](#)
- [Keyboard \(6 PC\)](#)
- [Keyboard \(XT\)](#)

## **Data storage interfaces:**

- [SCSI Internal](#)
- [SCSI Internal Differential](#)
- [SCSI External Centronics 50](#)
- [SCSI External \(Future Domain\)](#)
- [SCSI External \(Amiga/Mac\)](#)
- [IDE Internal](#)
- [ESDI](#)
- [ST506/412](#)

## **Memories:**

- [SIMM 72-pin](#)
- [SIMM 30-pin](#)
- [CDTV Memory Card](#)

## **Home audio/video:**

- [SCART](#)
- [S-Video](#)

## **C64:**

- [Cartridge \(C64\)](#)
- [Audio/Video \(C64\)](#)
- [Cassette \(C64\)](#)
- [Serial I/O \(C64\)](#)
- [User I/O \(C64\)](#)

## **PC motherboards:**

- [Turbo LED](#)
- [AT Backup Battery](#)
- [AT LED/Keylock](#)
- [5.25" Power](#)
- [3.5" Power](#)

- [MotherboardPower](#)
- [PC-Speaker](#)

## **Misc:**

- [Ethernet 10Base-T](#)
- [MidiOut](#)
- [MidiIn](#)

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## Cable Menu



What does the the information that is listed for each connector mean? See the [tutorial](#).

### **Nullmodem:**

- [Nullmodem 9p to 9p](#)
- [Nullmodem 9p to 25p](#)
- [Nullmodem 25p to 25p](#)

### **Modem:**

- [Modem 9p to 25p](#)
- [Modem 25p to 25p](#)
- [Two-Wire Modem 9p to 25p](#)
- [Two-Wire Modem 25p to 25p](#)

### **Printer/Parallel:**

- [Printercable](#)
- [LapLink/InterLink Parallel Cable](#)

### **Loopback plugs:**

- [Parallel Port Loopback](#)
- [Serial Port Loopback \(9\)](#)
- [Serial Port Loopback \(25\)](#)

### **Data storage:**

- [Floppy cable](#)
- [ST506/412 cable](#)
- [ESDI cable](#)
- [IDE cable](#)
- [SCSI cable \(Amiga/Mac\)](#)

### **TV/Video/Monitor:**

- [Video to TV SCART cable](#)
- [Amiga to SCART cable](#)
- [9 to 15 pin VGA cable](#)

### **Networking:**

- [Ethernet 10Base-T Crossover cable](#)
- [Ethernet 10Base-T Straight Thru cable](#)

## **Misc:**

- [ParaLoad cable](#)
- [MIDI cable](#)
- [Misc unsupported cables](#)

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## Adapter Menu



What does the the information that is listed for each connector mean? See the [tutorial](#).

### Serial:

- [Nullmodem adapter](#)
- [9p to 25p Serial adapter](#)

### Keyboard:

- [Mini-DIN to DIN Keyboard adapter](#)
- [DIN to Mini-DIN Keyboard adapter](#)

### Joysticks:

- [Amiga 4 Joysticks adapter](#)
- [PC 2 Joysticks adapter](#)

### Misc:

- [A1000 to Amiga Parallel adapter](#)

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## Misc Menu



### Active Filters:

- [Butterworth 1st order Lowpass](#)
- [Butterworth 1st order Highpass](#)
- [Butterworth 2nd order Lowpass](#)
- [Butterworth 2nd order Highpass](#)
- [Butterworth 3rd order Lowpass](#)
- [Butterworth 3rd order Highpass](#)
- [Butterworth 4th order Lowpass](#)
- [Butterworth 4th order Highpass](#)
- [Bessel 2nd order Lowpass](#)
- [Bessel 2nd order Highpass](#)
- [Bessel 3rd order Lowpass](#)
- [Bessel 3rd order Highpass](#)
- [Bessel 4th order Lowpass](#)
- [Bessel 4th order Highpass](#)
- [Linkwitz 4th order Lowpass](#)
- [Linkwitz 4th order Highpass](#)

### Definitions:

- [DTE & DCE](#)

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## WWW Links



Here are some links to good sites of technical information on the Internet.

### Misc:

**Name**

[TheRef](#) **NEW**

[Norm's Industrial Electronics: Reference Material](#) **NEW**  
[Circuit Cookbook](#)

**Author**

[F. Robert Falbo](#)  
[Norman Dyrvik](#)  
[Dan Charrois](#)

**Comment**

Harddrives  
Misc electr  
Various cir



### FAQs:

**Name**

[alt.comp.hardware.homebuilt FAQ](#)

**Author**

[Mark Sokos](#)

**Comment**

Misc inform



If you have any more good links of interest, please send me an e-mail at [qtech@mailhost.net](mailto:qtech@mailhost.net).

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## Download Menu



The Hardware Book is available in some other formats as well. Since these are converted from HTML the result may sometimes look a little bit strange. If there is some major visual errors or if a link doesn't work, feel free to send an e-mail. This version is currently to be considered as beta. And btw, if you like to see HwB in some other format, let me know.

HWB01W95.ZIP  
HWB01WIN.ZIP

960906  
960906

WinHelp-version for Windows 95 & Windows NT.

WinHelp-version for Windows v3.x. (Will work on Windows 95 & Windows NT, but not as fancy as the native version).

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## Wanted



Please help me make this reference guide larger. I guess there is much more to add. Don't hesitate to send some strange pinout, circuit or cable.

If you have a strange serial-port on your dish-washer, SEND it to me :-)

If it doesn't have one you could send me a circuit to add a serial-port to it. :-)

I'm especially searching for the following:

- NuBus (Apple Macintosh)
- MCA (IBM)
- PCMCIA
- 44 pin 2.5" IDE
- 50 pin SCSI Centronics pin-configuration
- Filters

If you have any of the above listed please send me an e-mail at [qtech@mailhost.net](mailto:qtech@mailhost.net).

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## About Hardware Book



WWW LINKS



ABOUT



WWW LINKS

What about this? Your free reference guide to electronics. Could it be even better? Perhaps if you'll help me. Please send any material you have that might be of interest for this project. Send it to [gtech@mailhost.net](mailto:gtech@mailhost.net). Visit the pages often. I will add things all the time. All new information will be marked



WWW LINKS

updated or changed information is marked

for about two weeks. And

**UPDATED**

I would like to thank the following people:

Niklas Edmundsson

for helping me find some of the information in HwB and being a nice friend..

Karl Asha

for letting me use his web-server to store HwB.

Tomas Ögren

for comments.

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Choose this address in your e-mail reader.

# Connector Tutorial



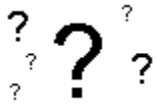
## Short tutorial

### Heading

First at each page there a short heading describing what the connector is.

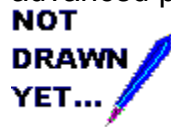
### Pictures of the connectors

After that there is at each page there is one or more pictures of the connectors. Sometimes there is some question marks only. This means that I don't know what kind of connector it is or how it looks.



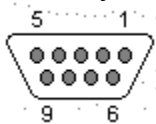
(At the computer)

There may be some pictures I haven't drawn yet. I illustrate this with the following advanced picture:

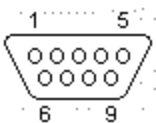


(At the computer)

Normally are one or more pictures. **These are seen from the front, and NOT the soldside. Holes (female connectors usually) are darkened.** Look at the example below. The first is a female connector and the send a male. The texts insde parentheses will tell you at which kind of the device it will look like that.



(At the videocard)



(At the monitor cable)

### Texts describing the connectors

Below the pictures there is texts that describes the connectors. Including the name of the physical connector.

5 PIN DIN 180 (DIN41524) at the computer.

## Pin table

The pin table is perhaps the information you're looking for. Should be simple to read. Contains mostly the following three columns; Pin, Name & Description.

Pin	Name	Description
1	CLOCK	Key Clock
2	GND	GND
3	DATA	Key Data
4	VCC	+5 VDC
5	N/C	Not connected

## Contributor & Source

All persons that helped me or sent me information about the connector will be listed here. The source of the information is perhaps a book or another site. I must admit that I'm bad at writing the source, but I'll try to fill in these in the future.

*Contributor: Joakim Ögren*

*Source: Amiga 4000 User's Guide from Commodore*





A20	A11	O	Address bit 11
A21	A10	O	Address bit 10
A22	A9	O	Address bit 9
A23	A8	O	Address bit 8
A24	A7	O	Address bit 7
A25	A6	O	Address bit 6
A26	A5	O	Address bit 5
A27	A4	O	Address bit 4
A28	A3	O	Address bit 3
A29	A2	O	Address bit 2
A30	A1	O	Address bit 1
A31	A0	O	Address bit 0
B1	GND		Ground
B2	RESET	O	Active high to reset or initialize system logic
B3	+5VDC		+5 VDC
B4	IRQ2	I	Interrupt Request 2
B5	-5VDC		-5 VDC
B6	DRQ2	I	DMA Request 2
B7	-12VDC		-12 VDC
B8	/CARD SLCTD	I	Card selected; activated by cards in XT's slot J8
B9	+12VDC		+12 VDC
B10	GND		Ground
B11	/MEMW	O	Memory Write
B12	/MEMR	O	Memory Read
B13	/IOW	O	I/O Write
B14	/IOR	O	I/O Read
B15	/DACK3	O	DMA Acknowledge 3
B16	DRQ3	I	DMA Request 3
B17	/DACK1	O	DMA Acknowledge 1
B18	DRQ1	I	DMA Request 1
B19	/REFRESH	I/O	Refresh
B20	CLOCK	O	System Clock (67 ns, 8-8.33 MHz, 50% duty cycle)
B21	IRQ7	I	Interrupt Request 7
B22	IRQ6	I	Interrupt Request 6
B23	IRQ5	I	Interrupt Request 5
B24	IRQ4	I	Interrupt Request 4
B25	IRQ3	I	Interrupt Request 3
B26	/DACK2	O	DMA Acknowledge 2
B27	T/C	O	Terminal count; pulses high when DMA term. count reached
B28	ALE	O	Address Latch Enable
B29	+5VDC		+5 VDC
B30	OSC	O	High-speed Clock (70 ns, 1431818 MHz, 50% duty cycle)
B31	GND		Ground
C1	SBHE	I/O	System bus high enable (data available on SD8-15)
C2	LA23	I/O	Address bit 23
C3	LA22	I/O	Address bit 22
C4	LA21	I/O	Address bit 21
C5	LA20	I/O	Address bit 20
C6	LA18	I/O	Address bit 19
C7	LA17	I/O	Address bit 18
C8	LA16	I/O	Address bit 17
C9	/MEMR	I/O	Memory Read (Active on all memory read cycles)
C10	/MEMW	I/O	Memory Write (Active on all memory write cycles)
C11	SD08	I/O	Data bit 8
C12	SD09	I/O	Data bit 9

C13	SD10	I/O	Data bit 10
C14	SD11	I/O	Data bit 11
C15	SD12	I/O	Data bit 12
C16	SD13	I/O	Data bit 13
C17	SD14	I/O	Data bit 14
C18	SD15	I/O	Data bit 15
D1	/MEMCS16	I	Memory 16-bit chip select (1 wait, 16-bit memory cycle)
D2	/IOCS16	I	I/O 16-bit chip select (1 wait, 16-bit I/O cycle)
D3	IRQ10	I	Interrupt Request 10
D4	IRQ11	I	Interrupt Request 11
D5	IRQ12	I	Interrupt Request 12
D6	IRQ15	I	Interrupt Request 15
D7	IRQ14	I	Interrupt Request 14
D8	/DACK0	O	DMA Acknowledge 0
D9	DRQ0	I	DMA Request 0
D10	/DACK5	O	DMA Acknowledge 5
D11	DRQ5	I	DMA Request 5
D12	/DACK6	O	DMA Acknowledge 6
D13	DRQ6	I	DMA Request 6
D14	/DACK7	O	DMA Acknowledge 7
D15	DRQ7	I	DMA Request 7
D16	+5 V		
D17	/MASTER	I	Used with DRQ to gain control of system
D18	GND		Ground

Contributor: Joakim Ögren

Source: *IBM PC/AT Technical Reference, pages 1-25 through 1-37*

Please send any comments to Joakim Ögren.



E16 ACCESS KEY  
E17 BE1#  
E18 LA31#  
E19 GND  
E20 LA30#  
E21 LA28#  
E22 LA27#  
E23 LA25#  
E24 GND  
E25 ACCESS KEY  
E26 LA15  
E27 LA13  
E28 LA12  
E29 LA11  
E30 GND  
E31 LA9

F1 GND  
F2 +5V  
F3 +5V  
F4 ---  
F5 ---  
F6 ACCESS KEY  
F7 ---  
F8 ---  
F9 +12V  
F10 M/IO#  
F11 LOCK#  
F12 (reserved)  
F13 GND  
F14 (reserved)  
F15 BE3#  
F16 ACCESS KEY  
F17 BE2#  
F18 BE0#  
F19 GND  
F20 +5V  
F21 LA29#  
F22 GND  
F23 LA26#  
F24 LA24#  
F25 ACCESS KEY  
F26 LA16  
F27 LA14  
F28 +5V  
F29 +5V  
F30 GND  
F31 LA10

G1 LA7  
G2 GND  
G3 LA4  
G4 LA3  
G5 GND  
G6 ACCESS KEY  
G7 D17

G8 D19  
G9 D20  
G10 D22  
G11 GND  
G12 D25  
G13 D26  
G14 D28  
G15 ACCESS KEY  
G16 GND  
G17 D30  
G18 D31  
G19 MREQx

H1 LA8  
H2 LA6  
H3 LA5  
H4 +5V  
H5 LA2  
H6 ACCESS KEY  
H7 D16  
H8 D18  
H9 GND  
H10 D21  
H11 D23  
H12 D24  
H13 GND  
H14 D27  
H15 ACCESS KEY  
H16 D29  
H17 +5V  
H18 +5V  
H19 MAKx

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*







98+22 PIN EDGE CONNECTOR at the computer.

Pin	+5V	+3.3V	Universal	Description
A1	TRST			TRST ??
A2	+12 V			+12 VDC
A3	TMS			TMS ??
A4	TDI			TDI ??
A5	VCC02			+5 VDC
A6	INTA			Interrupt A
A7	INTC			Interrupt C
A8	VCC04			+5 VDC
A9	RESV01			Reserved VDC
A10	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
A11	RESV03			Reserved VDC
A12	GND03	(OPEN)	(OPEN)	Ground or Open (Key)
A13	GND05	(OPEN)	(OPEN)	Ground or Open (Key)
A14	RESV05			Reserved VDC
A15	RESET			Reset
A16	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
A17	GNT			GNT ?? (or maybe VNT ??)
A18	GND08			Ground
A19	RESV06			Reserved VDC
A20	AD30			Address/Data 30
A21	+3.3V01			+3.3 VDC
A22	AD28			Address/Data 28
A23	AD26			Address/Data 26
A24	GND10			Ground
A25	AD24			Address/Data 24
A26	IDSEL			ID Select ???
A27	+3.3V03			+3.3 VDC
A28	AD22			Address/Data 22
A29	AD20			Address/Data 20
A30	GND12			Ground
A31	AD18			Address/Data 18
A32	AD16			Address/Data 16
A33	+3.3V05			+3.3 VDC
A34	FRAME			Frame ???
A35	GND14			Ground
A36	TRDY			T Ready ???
A37	GND15			Ground
A38	STOP			Stop
A39	+3.3V07			+3.3 VDC
A40	SDONE			SDONE ???
A41	SBO			SBO ???
A42	GND17			Ground
A43	PAR			PAR ???
A44	AD15			Address/Data 15
A45	+3.3V10			+3.3 VDC
A46	AD13			Address/Data 13
A47	AD11			Address/Data 11
A48	GND19			Ground
A49	AD9			Address/Data 9
A52	C/BE0			C/BE0 ???
A53	+3.3V11			+3.3 VDC
A54	AD6			Address/Data 6
A55	AD4			Address/Data 4
A56	GND21			Ground

A57	AD2			Address/Data 2
A58	AD0			Address/Data 0
A59	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
A60	REQ64			Request 64 bit ???
A61	VCC11			+5 VDC
A62	VCC13			+5 VDC
A63	GND			Ground
A64	C/BE[7]#			
A65	C/BE[5]#			
A66	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
A67	PAR64			
A68	AD62			Address/Data 62
A69	GND			Ground
A70	AD60			Address/Data 60
A71	AD58			Address/Data 58
A72	GND			Ground
A73	AD56			Address/Data 56
A74	AD54			Address/Data 54
A75	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
A76	AD52			Address/Data 52
A77	AD50			Address/Data 50
A78	GND			Ground
A79	AD48			Address/Data 48
A80	AD46			Address/Data 46
A81	GND			Ground
A82	AD44			Address/Data 44
A83	AD42			Address/Data 42
A84	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
A85	AD40			Address/Data 40
A86	AD38			Address/Data 38
A87	GND			Ground
A88	AD36			Address/Data 36
A89	AD34			Address/Data 34
A90	GND			Ground
A91	AD32			Address/Data 32
A92	RES			Reserved
A93	GND			Ground
A94	RES			Reserved
B32	AD17			Address/Data 17
B33	C/BE2			C/BE2 ???
B34	GND13			Ground
B35	IRDY			Interrupt Ready ???
B36	+3.3V06			+3.3 VDC
B37	DEVSEL			Device Select ???
B38	GND16			Ground
B39	LOCK			Lock ???
B40	PERR			P Error ???
B41	+3.3V08			+3.3 VDC
B42	SERR			S Error ???
B43	+3.3V09			+3.3 VDC
B44	C/BE1			C/BE1 ???
B45	AD14			Address/Data 14
B46	GND18			Ground
B47	AD12			Address/Data 12

B48	AD10			Address/Data 10
B49	GND20			Ground
B50	(OPEN)	GND	(OPEN)	Ground or Open (Key)
B51	(OPEN)	GND	(OPEN)	Ground or Open (Key)
B52	AD8			Address/Data 8
B53	AD7			Address/Data 7
B54	+3.3V12			+3.3 VDC
B55	AD5			Address/Data 5
B56	AD3			Address/Data 3
B57	GND22			Ground
B58	AD1			Address/Data 1
B59	VCC08			+5 VDC
B60	ACK64			Acknowledge 64 bit ???
B61	VCC10			+5 VDC
B62	VCC12			+5 VDC
B63	RES			Reserved
B64	GND			Ground
B65	C/BE[6]#			??
B66	C/BE[4]#			??
B67	GND			Ground
B68	AD63			Address/Data 63
B69	AD61			Address/Data 61
B70	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
B71	AD59			Address/Data 59
B72	AD57			Address/Data 57
B73	GND			Ground
B74	AD55			Address/Data 55
B75	AD53			Address/Data 53
B76	GND			Ground
B77	AD51			Address/Data 51
B78	AD49			Address/Data 49
B79	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
B80	AD47			Address/Data 47
B81	AD45			Address/Data 45
B82	GND			Ground
B83	AD43			Address/Data 43
B84	AD41			Address/Data 41
B85	GND			Ground
B86	AD39			Address/Data 39
B87	AD37			Address/Data 37
B88	+5V	+3.3V	Signal Rail	+V I/O (+5 V or +3.3 V)
B89	AD35			Address/Data 35
B90	AD33			Address/Data 33
B91	GND			Ground
B92	RES			Reserved
B93	RES			Reserved
B94	GND			Ground

*Notes: Pin 63-94 exists only on 64 bit PCI implementations.*

*+V I/O is 3.3V on 3.3V boards, 5V on 5V boards, and define signal rails on the Universal board.*

*Contributor: Joakim Ögren*

*Source:?*

Please send any comments to [Joakim Ögren](#).



A20 Dat31  
A21 Adr30  
A22 Adr28  
A23 Adr26  
A24 GND  
A25 Adr24  
A26 Adr22  
A27 Vcc  
A28 Adr20  
A29 Adr18  
A30 Adr16  
A31 Adr14  
A32 Adr12  
A33 Adr10  
A34 Adr08  
A35 GND  
A36 Adr06  
A37 Adr04  
A38 WBACK#  
A39 BEO#  
A40 Vcc  
A41 BE1#  
A42 BE2#  
A43 GND  
A44 BE3#  
A45 ADS#

A48 LRDY#  
A49 LDEV  
A50 LREQ  
A51 GND  
A52 LGNT  
A53 Vcc  
A54 ID2  
A55 ID3  
A56 ID4  
A57 LKEN#  
A58 LEAD5#

B1 Dat00  
B2 Dat02  
B3 Dat04  
B4 Dat06  
B5 Dat08  
B6 GND  
B7 Dat10  
B8 Dat12  
B9 Vcc  
B10 Dat14  
B11 Dat16  
B12 Dat18  
B13 Dat20  
B14 GND  
B15 Dat22  
B16 Dat24  
B17 Dat26

B18	Dat28
B19	Dat30
B20	Vcc
B21	Adr31
B22	GND
B23	Adr29
B24	Adr27
B25	Adr25
B26	Adr23
B27	Adr21
B28	Adr19
B29	GND
B30	Adr17
B31	Adr15
B32	Vcc
B33	Adr13
B34	Adr11
B35	Adr09
B36	Adr07
B37	Adr05
B38	GND
B39	Adr03
B40	Adr02
B41	n/c
B42	RESET#
B43	DC#
B44	M/ID#
B45	W/R#
B48	RDYRTN#
B49	GND
B50	IRQ9
B51	BRDY#
B52	BLAST#
B53	ID0
B54	ID1
B55	GND
B56	LCLK
B57	Vcc
B58	LBS16#

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*







## Zorro II/III Connector



## Zorro II/III



(At the computer)

100 PIN EDGE CONNECTOR at the computer.

Pin	Physical Name	Zorro II Name	Zorro III Address Phase	Zorro III Data Phase
1	Ground	Ground	Ground	Ground
2	Ground	Ground	Ground	Ground
3	Ground	Ground	Ground	Ground
4	Ground	Ground	Ground	Ground
5	+5VDC	+5VDC	+5VDC	+5VDC
6	+5VDC	+5VDC	+5VDC	+5VDC
7	/OWN	/OWN	/OWN	/OWN
8	-5VDC	-5VDC	-5VDC	-5VDC
9	/SLAVEn	/SLAVEn	/SLAVEn	/SLAVEn
10	+12VDC	+12VDC	+12VDC	+12VDC
11	/CFGOUTn	/CFGOUTn	/CFGOUTn	/CFGOUTn
12	/CFGINn	/CFGINn	/CFGINn	/CFGINn
13	Ground	Ground	Ground	Ground
14	/C3	/C3 Clock	/C3 Clock	/C3 Clock
15	CDAC	CDAC Clock	CDAC Clock	CDAC Clock
16	/C1	/C1 Clock	/C1 Clock	/C1 Clock
17	/CINH	/OVR	/CINH	/CINH
18	/MTCR	XRDY	/MTCR	/MTCR
19	/INT2	/INT2	/INT2	/INT2
20	-12VDC	-12VDC	-12VDC	-12VDC
21	A5	A5	A5	A5
22	/INT6	/INT6	/INT6	/INT6
23	A6	A6	A6	A6
24	A4	A4	A4	A4
25	Ground	Ground	Ground	Ground
26	A3	A3	A3	A3
27	A2	A2	A2	A2
28	A7	A7	A7	A7
29	/LOCK	A1	/LOCK	/LOCK
30	AD8	A8	A8	D0
31	FC0	FC0	FC0	FC0

32	AD9	A9	A9	D1
33	FC1	FC1	FC1	FC1
34	AD10	A10	A10	D2
35	FC2	FC2	FC2	FC2
36	AD11	A11	A11	D3
37	Ground	Ground	Ground	Ground
38	AD12	A12	A12	D4
39	AD13	A13	A13	D5
40	Reserved	(/EINT7)	Reserved	Reserved
41	AD14	A14	A14	D6
42	Reserved	(/EINT5)	Reserved	Reserved
43	AD15	A15	A15	D7
44	Reserved	(/EINT4)	Reserved	Reserved
45	AD16	A16	A16	D8
46	/BERR	/BERR	/BERR	/BERR
47	AD17	A17	A17	D9
48	/MTACK	(/VPA)	/MTACK	/MTACK
49	Ground	Ground	Ground	Ground
50	E Clock	E Clock	E Clock	E Clock
51	/DS0	(/VMA)	/DS0	/DS0
52	AD18	A18	A18	D10
53	/RESET	/RST	/RESET	/RESET
54	AD19	A19	A19	D11
55	/HLT	/HLT	/HLT	/HLT
56	AD20	A20	A20	D12
57	AD22	A22	A22	D14
58	AD21	A21	A21	D13
59	AD23	A23	A23	D15
60	/BRn	/BRn	/BRn	/BRn
61	Ground	Ground	Ground	Ground
62	/BGACK	/BGACK	/BGACK	/BGACK
63	AD31	D15	A31	D31
64	/BGn	/BGn	/BGn	/BGn
65	AD30	D14	A30	D30
66	/DTACK	/DTACK	/DTACK	/DTACK
67	AD29	D13	A29	D29
68	READ	READ	READ	READ
69	AD28	D12	A28	D28
70	/DS2	/LDS	/DS2	/DS2
71	AD27	D11	A27	D27
72	/DS3	/UDS	/DS3	/DS3
73	Ground	Ground	Ground	Ground
74	/CCS	/AS	/CCS	/CCS
75	SD0	D0	Reserved	D16
76	AD26	D10	A26	D26
77	SD1	D1	Reserved	D17
78	AD25	D9	A25	D25
79	SD2	D2	Reserved	D18
80	AD24	D8	A24	D24
81	SD3	D3	Reserved	D19
82	SD7	D7	Reserved	D23
83	SD4	D4	Reserved	D20
84	SD6	D6	Reserved	D22
85	Ground	Ground	Ground	Ground
86	SD5	D5	Reserved	D21
87	Ground	Ground	Ground	Ground

88	Ground	Ground	Ground	Ground
89	Ground	Ground	Ground	Ground
90	Ground	Ground	Ground	Ground
91	SenseZ3	Ground	SenseZ3	SenseZ3
92	7M	E7M	7M	7M
93	DOE	DOE	DOE	DOE
94	/IORST	/BUSRST	/IORST	/IORST
95	/BCLR	/GBG	/BCLR	/BCLR
96	Reserved	(/EINT1)	Reserved	Reserved
97	/FCS	No Connect	/FCS	/FCS
98	/DS1	No Connect	/DS1	/DS1
99	Ground	Ground	Ground	Ground
100	Ground	Ground	Ground	Ground

Contributor: Joakim Ögren

Source: *Amiga 4000 User's Guide from Commodore*

Please send any comments to Joakim Ögren.



## Zorro II Connector



## Zorro II



(At the A2000)

86 PIN EDGE CONNECTOR at the A2000.

Pin	A50	A100	A200	A2000B	Name	Description
	0	0	0			
1					GND	Ground
2					GND	Ground
3					GND	Ground
4					GND	Ground
5					+5V	+5 Volts DC
6					+5V	+5 Volts DC
7					n/c	
8					-5V	-5 Volts DC
9					n/c	
					28CLOCK	28MHz Clock
10					+12V	+12 Volts DC
11					n/c	
					/COPCFG	Configuration Out
12					CONFIG IN, Grounded	
13					GND	Ground
14					/C3	C3 Clock
15					CDAC	Clock
16					/C1	C1 Clock
17					/OVR	
18					RDY	Ready
19					/INT2	Interrupt 2
20					/PALOPE	
					n/c	
					/BOSS	
21					A5	Address 5
22					/INT6	Interrupt 6
23					A6	Address 6
24					A4	Address 4
25					GND	Ground
26					A3	Address 3
27					A2	Address 2

28	A7	Address 7
29	A1	Address 1
30	A8	Address 8
31	FC0	Processor status 0
32	A9	Address 9
33	FC1	Processor status 1
34	A10	Address 10
35	FC2	Processor status 2
36	A11	Address 11
37	GND	Ground
38	A12	Address 12
39	A13	Address 13
40	/IPL0	
41	A14	Address 14
42	/IPL1	
43	A15	Address 15
44	/IPL2	
45	A16	Address 16
46	/BEER	Bus Error
47	A17	Address
48	/VPA	
49	GND	Ground
50	ECLK	E Clock
51	/VMA	
52	A18	Address 18
53	RST	Reset
54	A19	Address 19
55	/HLT	Halt
56	A20	Address 20
57	A22	Address 22
58	A21	Address 21
59	A23	Address 23
60	/BR	
	/CBR	
61	GND	Ground
62	/BGACK	
63	D15	Data 15
64	/BG	
	/CBG	
65	D14	Data 14
66	/DTACK	
67	D13	Data 13
68	R/W	Read/Write
69	D12	Data 12
70	/LDS	
71	D11	Data 11
72	/UDS	
73	GND	Ground
74	/AS	
75	D0	Data 0
76	D10	Data 10
77	D1	Data 1
78	D9	Data 9
79	D2	Data 2
80	D8	Data 8
81	D3	Data 3

82  
83  
84  
85  
86

D7  
D4  
D6  
GND  
D5

Data 7  
Data 4  
Data 6  
Ground  
Data 5

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*





## CPU-port (A1200) Connector



## CPU-port (A1200)



(At the computer)

UNKNOWN CONNECTOR at the computer.

Pin	Name	Description
1	n/c	Reserved
2	n/c	Reserved
3	n/c	Reserved
4	n/c	Reserved
5	n/c	Reserved
6	n/c	Reserved
7	n/c	Reserved
8	n/c	Reserved
9	GND	Ground
10	+5V	+5 Volts DC
11	A23	Address 23
12	A22	Address 22
13	A21	Address 21
14	A20	Address 20
15	A19	Address 19
16	A18	Address 18
17	A17	Address 17
18	A16	Address 16
19	GND	Ground
20	+5V	+5 Volts DC
21	A15	Address 15
22	A14	Address 14
23	A13	Address 13
24	A12	Address 12
25	A11	Address 11
26	A10	Address 10
27	A9	Address 9
28	A8	Address 8
29	GND	Ground
30	+5V	+5 Volts DC
31	A7	Address 7
32	A6	Address 6

33	A5	Address 5
34	A4	Address 4
35	A3	Address 3
36	A2	Address 2
37	A1	Address 1
38	A0	Address 0
39	GND	Ground
40	+5V	+5 Volts DC
41	D31	Data 31
42	D30	Data 30
43	D29	Data 29
44	D28	Data 28
45	D27	Data 27
46	D26	Data 26
47	D25	Data 25
48	D24	Data 24
49	GND	Ground
50	+5V	+5 Volts DC
51	D23	Data 23
52	D22	Data 22
53	D21	Data 21
54	D20	Data 20
55	D19	Data 19
56	D18	Data 18
57	D17	Data 17
58	D16	Data 16
59	GND	Ground
60	+5V	+5 Volts DC
61	D15	Data 15
62	D14	Data 14
63	D13	Data 13
64	D12	Data 12
65	D11	Data 11
66	D10	Data 10
67	D9	Data 9
68	D8	Data 8
69	GND	Ground
70	+5V	+5 Volts DC
71	D7	Data 7
72	D6	Data 6
73	D5	Data 5
74	D4	Data 4
75	D3	Data 3
76	D2	Data 2
77	D1	Data 1
78	D0	Data 0
79	GND	Ground
80	+5V	+5 Volts DC
81	/IPL2	
82	/IPL1	
83	/IPL0	
84	n/c	Reserved
85	/RST	Reset
86	/HLT	Halt
87	n/c	Reserved
88	n/c	Reserved

89	SIZE1	
90	SIZE0	
91	/AS	Address Strobe
92	/DS	Data Strobe
93	R/W	Read/Write
94	/BERR	Bus Error
95	n/c	Reserved
96	/AVEC	
97	/DSACK1	
98	/DSACK2	
99	CPUCKLA	
100	ECLOCK	EClock pulse
101	GND	Ground
102	+5V	+5 Volts DC
103	FC2	Processor Status 2
104	FC1	Processor Status 1
105	FC0	Processor Status 0
106	/RMC	
107	n/c	Reserved
108	n/c	Reserved
109	n/c	Reserved
110	n/c	Reserved
111	/BR	Slot specific Bus Arbitration
112	/BG	Slot specific Bus Arbitration
113	n/c	Reserved
114	/BOSS	
115	/FPUCS	FPU Chip select
116	/FPUSENSE	FPU Sense
117	CCKA	
118	/RESET	Reset
119	GND	Ground
120	+5V	+5 Volts DC
121	/NETCS	
122	/SPARECS	
123	/RTCCS	Realtime Clock Chip select
124	/FLASH	
125	/REG	
126	/CCENA	
127	/WAIT	
128	/KBRESET	Keyboard reset
129	/IORD	IO Read
130	/IOWR	IO Write
131	/OE	Output enable
132	/WE	
133	/OVR	/DTACK Override
134	XRDY	External Ready
135	/ZORRO	
136	/WIDE	
137	/INT2	Interrupt level 2
138	/INT6	Interrupt level 6
139	GND	Ground
140	+5V	+5 Volts DC
141	SYSTEM1	System1 Ground
142	SYSTEM0	System0 Ground
143	/xRxD	
144	/xTxD	

145	/CONFIG OUT	
146	AGND	Audio Ground
147	ALEFT	Audio Left
148	ARIGHT	Audio Right
149	+12V	+12 Volts DC
150	-12V	-12 Volts DC

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*



## Ramex (A1000) Connector



## Ramex (A1000)



(At the computer)

60 PIN EDGE CONNECTOR (.156") at the computer.

Pin	Name	Description
1	GND	Ground
2	D15	Data 15
3	+5V	+5 Volts DC
4	D12	Data 12
5	GND	Ground
6	D11	Data 11
7	+5V	+5 Volts DC
8	D8	Data 8
9	GND	Ground
10	D7	Data 7
11	+5V	+5 Volts DC
12	D4	Data 4
13	GND	Ground
14	D3	Data 3
15	+5V	+5 Volts DC
16	D0	Data 0
17	GND	Ground
18	DRA4	
19	DRA5	
20	DRA6	
21	DRA7	
22	GND	Ground
23	/RAS	
24	GND	Ground
25	GND	Ground
26	/CASU0	
27	GND	Ground
28	/CASL0	
29	+5V	+5 Volts DC
30	+5V	+5 Volts DC
A	GND	Ground

B	D14	Data 14
C	+5V	+5 Volts DC
D	D13	Data 13
E	GND	Ground
F	D10	Data 10
H	+5V	+5 Volts DC
J	D9	Data 9
K	GND	Ground
L	D6	Data 6
M	+5V	+5 Volts DC
N	D5	Data 5
P	GND	Ground
R	D2	Data 2
S	+5V	+5 Volts DC
T	D1	Data 1
U	GND	Ground
V	DRA3	
W	DRA2	
X	DRA1	
Y	DRA0	
Z	GND	Ground
AA	/RRW	
BB	GND	Ground
CC	GND	Ground
DD	/CASU1	
EE	GND	Ground
FF	/CASL1	
HH	+5V	+5 Volts DC
JJ	+5V	+5 Volts DC

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*



## Video Expansion (Amiga) Connector



## Video Expansion (Amiga)



(At the computer)

36+54 PIN EDGE CONNECTOR at the computer.

Pin	Name	Dir	Description
1	RGB16	O	Red Bit 0
2	RGB17	O	Red Bit 1
3	LINELF	O	Audio Line Out Left
4	LINERT	O	Audio Line Out Right
5	C28D	O	Pixel-Synchronous Clock
6	+5V	-	+5 Volts DC (1 A)
7	ARED	O	Analog Red
8	+5V	-	+5 Volts DC (1 A)
9	GND	-	Digital Ground
10	+12V	-	+12 Volts DC (40 mA)
11	AGREEN	O	Analog Green
12	GND	-	Digital Ground
13	GND	-	Digital Ground
14	/CSYNC	O	Composite Sync
15	ABLUE	O	Analog Blue
16	/XCLKEN	I	Genlock Clock Enable
17	GND	-	Digital Ground
18	BURST	O	Burst Gate
19	/C4	O	3.55/3.58 MHz Clock
20	GND	-	Digital Ground
21	GND	-	Digital Ground
22	/HSYNC	O	Horizontal Sync (47 Ohm)
23	RGB4	O	Blue Bit 4
24	GND	-	Digital Ground
25	RGB7	O	Blue Bit 7
26	/VSYNC	O	Vertical Sync (47 Ohm)
27	RGB15	O	Green Bit 7
28	BLANK	O	Video Blank
29	RGB23	O	Red 7
30	/PIXELSW	O	Genlock Overlay (47 Ohm)
31	-5V	-	-5 Volts DC
32	GND	-	Digital Ground

33	/XCLK	I	Genlock Clock
34	/C1	O	C1 Clock
35	+5V	-	+5 Volts DC (1 A)
36	PSTROBE	O	Printer Port Handshake
1	GND	-	Digital Ground
2	RGB20	O	Red Bit 4
3	RGB21	O	Red Bit 5
4	RGB22	O	Red Bit 6
5	GND	-	Digital Ground
6	RGB12	O	Green Bit 4
7	RGB13	O	Green Bit 5
8	RGB14	O	Green Bit 6
9	GND	-	Digital Ground
10	RGB5	O	Blue Bit 5
11	RGB6	O	Blue Bit 6
12	GND	-	Ground
13	SOG	O	Sync-On-Green Indicator
14	TBASE	O	50/60 Hz Software Clock Timebase
15	CDAC	O	7.09/7.16 MHz Clock
16	PPOUT	I/O	Printer Port Paper Out
17	/C3	O	3.55/3.58 MHz Clock
18	PBUSY	I/O	Printer Port Busy
19	/LPEN	I	Light Pen Input
20	/PACK	I/O	Printer Port Acknowledge Handshake
21	PSEL	O	Printer Port Select
22	GND	-	Digital Ground
23	PPD0	I/O	Printer Port Data Bit 0
24	PPD1	I/O	Printer Port Data Bit 1
25	PPD2	I/O	Printer Port Data Bit 2
26	PPD3	I/O	Printer Port Data Bit 3
27	PPD4	I/O	Printer Port Data Bit 4
28	PPD5	I/O	Printer Port Data Bit 5
29	PPD6	I/O	Printer Port Data Bit 6
30	PPD7	I/O	Printer Port Data Bit 7
31	/LED	O	LED (Audio filter bypass) Setting
32	GND	-	Digital Ground
33	RAWLF	O	Raw (Unfiltered) Audio Left
34	AGND	-	Audio Ground
35	RAWRT	O	Raw (Unfiltered) Audio Right
36	AGND	-	Audio Ground
37	n/c	-	Reserved for future expansion
38	n/c	-	Reserved for future expansion
39	GND	-	Digital Ground
40	GND	-	Digital Ground
41	n/c	-	Reserved for future expansion
42	n/c	-	Reserved for future expansion
43	GND	-	Digital Ground
44	GND	-	Digital Ground
45	RGB18	O	Red Bit 2
46	RGB19	O	Red Bit 3
47	RGB8	O	Green Bit 0
48	RGB9	O	Green Bit 1
49	RGB10	O	Green Bit 2
50	RGB11	O	Green Bit 3
51	RGB0	O	Blue Bit 0

52	RGB1	<input type="radio"/>	Blue Bit 1
53	RGB2	<input type="radio"/>	Blue Bit 2
54	RGB3	<input type="radio"/>	Blue Bit 3

*Note: Do not mix analog & digital grounds.*

*Contributor: Joakim Ögren*

*Source: Amiga 4000 User's Guide from Commodore*

*Please send any comments to Joakim Ögren.*



## CD32 Expansion-port Connector



## CD32 Expansion-port



(At the computer)

UNKNOWN 182 PIN CONNECTOR (SAME AS MCA) at the computer.

Pin	Name	Desc	Comment
1	A31	Address 31	Probably not connected since 68EC020
2	A30	Address 30	Probably not connected since 68EC020
3	A29	Address 29	Probably not connected since 68EC020
4	A28	Address 28	Probably not connected since 68EC020
5	A27	Address 27	Probably not connected since 68EC020
6	A26	Address 26	Probably not connected since 68EC020
7	A25	Address 25	Probably not connected since 68EC020
8	A24	Address 24	Probably not connected since 68EC020
9	DGND	Data Ground	
10	VCC	+5V DC	
11	A23	Address 23	
12	A22	Address 22	
13	A21	Address 21	
14	A20	Address 20	
15	A19	Address 19	
16	A18	Address 18	
17	A17	Address 17	
18	A16	Address 16	
19	DGND	Data Ground	
20	VCC	+5V DC	
21	A15	Address 15	
22	A14	Address 14	
23	A13	Address 13	
24	A12	Address 12	
25	A11	Address 11	
26	A10	Address 10	
27	A9	Address 9	
28	A8	Address 8	
29	DGND	Data Ground	
30	VCC	+5V DC	
31	A7	Address 7	
32	A6	Address 6	

33	A5	Address 5
34	A4	Address 4
35	A3	Address 3
36	A2	Address 2
37	A1	Address 1
38	A0	Address 0
39	DGND	Data Ground
40	VCC	+5V DC
41	D31	Data 31
42	D30	Data 30
43	D29	Data 29
44	D28	Data 28
45	D27	Data 27
46	D26	Data 26
47	D25	Data 25
48	D24	Data 24
49	DGND	Data Ground
50	VCC	+5V DC
51	D23	Data 23
52	D22	Data 22
53	D21	Data 21
54	D20	Data 20
55	D19	Data 19
56	D18	Data 18
57	D17	Data 17
58	D16	Data 16
59	DGND	Data Ground
60	VCC	+5V DC
61	D15	Data 15
62	D14	Data 14
63	D13	Data 13
64	D12	Data 12
65	D11	Data 11
66	D10	Data 10
67	D9	Data 9
68	D8	Data 8
69	DGND	Data Ground
70	VCC	+5V DC
71	D7	Data 7
72	D6	Data 6
73	D5	Data 5
74	D4	Data 4
75	D3	Data 3
76	D2	Data 2
77	D1	Data 1
78	D0	Data 0
79	DGND	Data Ground
80	VCC	+5V DC
81	/IPL2	Interrupt Priority Level 2
82	/IPL1	Interrupt Priority Level 1
83	/IPL0	Interrupt Priority Level 0
84		
85	/RST	Reset
86	/HALT	Halt
87	/ECS	ECS??
88	/OCS	OCS??

89	SIZE1	Size 1	Indicates number of bytes remaining to transfer
90	SIZE0	Size 0	Indicates number of bytes remaining to transfer
91	/AS	Address Strobe	
92	/DS	Data Strobe	
93	/R/W	Read/Write	
94	/BERR	Buss Error	
95			
96	/AVEC	Autovector Req	Autovector request during interrupt acknowledge
97	/DSACK1	Data Ack 1	Data tranfer and size acknowledge
98	/DSACK0	Data Ack 0	Data transfer and size acknowledge
99	CPUCLK_A		
100			
101	DGND	Data Ground	
102	VCC	+5V DC	
103	FC2	Function Codes 2	
104	FC1	Function Codes 1	
105	FC0	Function Codes 0	
106			
107			
108			
109			
110			
111	/CPU_BR	CPU bus request??	
112	/EXP_BG	Expansion bus granted??	
113	/CPU_BG	CPU bus granted??	
114	/EXP_BR	Expansion bus request??	
115			
116			
117	/PUNT		
118	/RESET	68020 RESET	
119	/INT2	Interrupt 2	Generate a level 2 interrupt
120	/INT6	Interrupt 2	Generate a level 6 interrupt
121	/KB_CLOCK	Keyboard clock	
122	/KB_DATA	Keyboard data	
123	/FIRE0	Fire Button 0??	
124	/FIRE1	Fire Button 1??	
125	/LED	Power On LED ??	
126	/ACTIVE	Disk active LED	
127	/RXD	Serial Recieve	Serial data in
128	/TXD	Serial Transmit	Serial data out
129	/DKRD		Floppy interface (Paula?)
130	/DKWD		Floppy interface (Paula?)
131	SYSTEM		
132	/DKWE		Floppy interface (Paula?)
133	CONFIG_OUT		
134			
135	DGND	Data Ground	
136	+12V	+12V DC	
137	DGND	Data Ground	
138	+12V	+12V DC	
139	17MHZ		For FMV inteface ??
140	EXT_AUDIO		For FMV inteface ??
141	DA_DATA		For FMV inteface ??
142	/MUTE		For FMV inteface ??
143	DA_LRCLK		For FMV inteface ??
144	DA_BCLK		For FMV inteface ??

145	DGND	Data Ground	
146	VCC	+5V DC	
147	DR	Digital Red	
148	DG	Digital Green	
149	DB	Digital Blue	
150	DI	Digital Intensity	
151	/PIXELSW_EXT		
152	/PIXELSW		
153	/BLANK		
154	PIXELCLK	Pixelclock	For manipulating RGB data
155	DGND	Data Ground	
156	VCC	+5V DC	
157	/CSYNC	Composite sync	
158	CCK_B	Color clock ??	
159	/HSYNC	Horizontal sync	
160	/VSYNC	Vertical sync	
161	VGND	Video ground	
162	VGND	Video ground	
163	AR_EXT	Analog Red External	
164	AR	Analog Red	
165	AG_EXT	Analog Green External	
166	AG	Analog Green	
167	AB_EXT	Analog Blue External	
168	AB	Analog Blue	
169	VGND	Video ground	
170	VGND	Video ground	
171	/NTSC		
172	/XCLKEN	Enable External video clock	(Genlock)
173	XCLK	External video clock	(Genlock)
174	/EXT_VIDEO	External Video	Disable internal video interfaces
175	DGND	Data Ground	
176	VCC	+5V DC	
177	AGND	Audio Ground	
178	+12V	+12V DC	
179	LEFT_EXT	Left sound External	
180	LEFT	Left sound	
181	RIGHT_EXT	Right sound External	
182	RIGHT	Right sound	

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.





## CDTV Diagnostic Slot Connector



## CDTV Diagnostic Slot



(At the computer)

80 PIN ??? CONNECTOR at the computer.

Pin	Name	Description
1	GND	Ground
2	GND	Ground
3	VCC	+5 VDC
4	VCC	+5 VDC
5	/CFGOUT	Configout AutoConfig signal (not connected)
6	/CFGIN	Configin AutoConfig signal (grounded)
7	GND	Ground
8	CCKQ	3.58 MHz CCKQ clock (C3)
9	CDAC	7.16 MHz CDAC clock (90 before system clock)
10	CCK	3.58 MHz CCK clock (C1)
11	/OVR	Override (Disables /DTACK generation of Gary)
12	XRDY	External Ready (Generates wait states while low).
13	/INT2	Level 2 Interrupt
14	n/c	not connected
15	A5	Address Bus 5
16	/INT6	Level 6 Interrupt
17	A6	Address Bus 6
18	A4	Address Bus 4
19	GND	Ground
20	A3	Address Bus 3
21	A2	Address Bus 2
22	A7	Address Bus 7
23	A1	Address Bus 1
24	A8	Address Bus 8
25	/FC0	Processor Function Code Status (bit 0)
26	A9	Address Bus 9
27	/FC1	Processor Function Code Status (bit 1)
28	A10	Address Bus 10
29	/FC2	Processor Function Code Status (bit 2)
30	A11	Address Bus 11
31	GND	Ground
32	A12	Address Bus 12

33	A13	Address Bus 13
34	/IPL0	Interrupt Priority Level (bit 0)
35	A14	Address Bus 14
36	/IPL1	Interrupt Priority Level (bit 1)
37	A15	Address Bus 15
38	/IPL2	Interrupt Priority Level (bit 2)
39	A16	Address Bus 16
40	/BERR	Bus Error
41	A17	Address Bus 17
42	/VPA	Valid Peripheral Address (asserted by Gary)
43	GND	Ground
44	E	E Clock
45	/VMA	Valid Memory Address (asserted by Gary)
46	A18	Address Bus 18
47	/RST	Reset
48	A19	Address Bus 19
49	/HLT	Halt
50	A20	Address Bus 20
51	A22	Address Bus 22
52	A21	Address Bus 21
53	A23	Address Bus 23
54	/BR	Bus Request
55	GND	Ground
56	/BGACK	Bus Grant Acknowledge
57	D15	Data Bus 15
58	/BG	Bus Grant
59	D14	Data Bus 14
60	/DTACK	Data Transfer Acknowledge (normally asserted by Gary)
61	D13	Data Bus 13
62	R/W	Read/Write (high=read, low=write)
63	D12	Data Bus 12
64	/LDS	Lower Data Strobe
65	D11	Data Bus 11
66	/UDS	Upper Data Strobe
67	GND	Ground
68	/AS	Address Strobe
69	D0	Data Bus 0
70	D10	Data Bus 10
71	D1	Data Bus 1
72	D9	Data Bus 9
73	D2	Data Bus 2
74	D8	Data Bus 8
75	D3	Data Bus 3
76	D7	Data Bus 7
77	D4	Data Bus 4
78	D6	Data Bus 6
79	GND	Ground
80	D5	Data Bus 5

*Note: Pin 7-80 is equivalent with the Amiga 500's pin 13-86 at the 86 pin Amiga 500 connector.*

*Contributor: Joakim Ögren*

*Source: Darren Ewaniuk's CDTV Technical Information*

*Please send any comments to Joakim Ögren.*



## CDTV Expansion Slot Connector



## CDTV Expansion Slot

```

  2  4  6  8 10 12 14 16 18 20 22 24 26 28 30
  -- -- -- -- -- -- -- -- -- -- -- -- -- --
  -- -- -- -- -- -- -- -- -- -- -- -- -- --
  1  3  5  7  9 11 13 15 17 19 21 24 25 27 29
  
```



(At the computer)

30 PIN ??? CONNECTOR at the computer.

Pin	Name	Description
1	GND	Ground
2	GND	Ground
3	VCC	+5 VDC
4	VCC	+5 VDC
5	SD1	Data Bus 1
6	SD0	Data Bus 0
7	SD3	Data Bus 3
8	SD2	Data Bus 2
9	SD5	Data Bus 5
10	SD4	Data Bus 4
11	SD7	Data Bus 7
12	SD6	Data Bus 6
13	/SDREQ	DMA Request
14	/INTX	Interrupt Request
15	/CSS	Chip Select
16	/SDACK	DMA Acknowledge
17	/IOR	I/O Read
18	/IOW	I/O Write
19	A8	Address Bus 8
20	7M	7.16 MHz System Clock
21	A6	Address Bus 6
22	A7	Address Bus 7
23	A4	Address Bus 4
24	A5	Address Bus 5
25	A2	Address Bus 2
26	A3	Address Bus 3
27	/IFRST	+5 VDC

28	A1	Address Bus 1
29	GND	Ground
30	GND	Ground

*Contributor: Joakim Ögren*

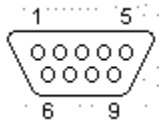
*Source: Darren Ewaniuk's CDTV Technical Information*

*Please send any comments to Joakim Ögren.*

## Serial (PC 9) Connector



## Parallel (PC)



(At the PC)

9 PIN D-SUB MALE at the PC.

Pin	Nam	Dir	Description
	e		
1	CD	I	Carrier Detect
2	RXD	I	Recieve Data
3	TXD	O	Transmit Data
4	DTR	O	Data Terminal Ready
5	GND	-	System Ground
6	DSR	I	Data Set Ready
7	RTS	O	Request to Send
8	CTS	I	Clear to Send
9	RI	I	Ring Indicator

Contributor: Joakim Ögren

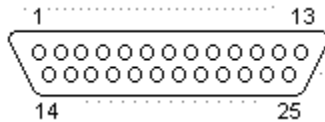
Source:?

Please send any comments to Joakim Ögren.

## Serial (25) Connector



## Serial (25)



(At the computer)

25 PIN D-SUB MALE at the computer.

Pin	PC	Amiga	A1000	RS232	Dir	Description
1	SHIELD	SHIELD	SHIELD	GND	-	Shield Ground
2	TXD	TXD	TXD	TXD	O	Transmit Data
3	RXD	RXD	RXD	RXD	I	Recieve Data
4	RTS	RTS	RTS	RTS	O	Request to Send
5	CTS	CTS	CTS	CTS	I	Clear to Send
6	DSR	DSR	DSR	DSR	I	Data Set Ready
7	GND	GND	GND	GND	-	System Ground
8	CD	CD	CD	CD	I	Carrier Detect
9	n/c	+12V	n/c	-	-	+12 Volts DC (20 mA max)
10	n/c	-12V	n/c	-	-	-12 Volts DC (20 mA max)
11	n/c	AUDO	n/c	-	O	Amiga Audio Out (Left)
12	n/c	n/c	n/c	S.SD	-	Speed Indicate
13	n/c	n/c	n/c	S.CTS	-	
14	n/c	n/c	-5V	S.TXD	-	50mA max
15	n/c	n/c	AUDO	TXC	-	
16	n/c	n/c	AUDI	S.RXD	-	
17	n/c	n/c	EB	RXC	-	EB=Buffered Port Clock 716 kHz
18	n/c	AUDI	/INT2	-	I	Amiga Audio In (Right)
19	n/c	n/c	n/c	S.RTS	-	
20	DTR	DTR	DTR	DTR	O	Data Terminal Ready
21	n/c	n/c	+5V	SQD	-	
22	RI	RI	n/c	RI	I	Ring Indicator
23	n/c	n/c	+12V	SS	-	
24	n/c	n/c	/C2	TXC1	-	C2=Clock 3.58MHz
25	n/c	n/c	/RESET	-	-	

**Note:** Do not connect SHIELD(1) to GND(7).

Contributor: [Joakim Ögren](#)

Source: Amiga 4000 User's Guide from Commodore

Please send any comments to [Joakim Ögren](#).

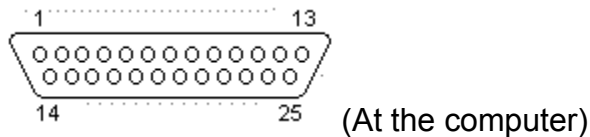




## RS232 Connector



### Serial (25)



25 PIN D-SUB MALE at the computer.

Pin	RS232	Dir	Description
1	GND	-	Shield Ground
2	TXD	O	Transmit Data
3	RXD	I	Recieve Data
4	RTS	O	Request to Send
5	CTS	I	Clear to Send
6	DSR	I	Data Set Ready
7	GND	-	System Ground
8	CD	I	Carrier Detect
9	-	-	RESERVED
10	-	-	RESERVED
11	-	-	UNASSIGNED
12	S.CD	I	Secondary Carrier Detect
13	S.CTS	I	Secondary Clear to Send
14	S.TXD	O	Secondary Transmit Data
15	TXC	O	Transmission Signal Element Timing
16	S.RXD	I	Secondary Recieve Data
17	RXC	I	Reciever Signal Element Timing
18	-	-	UNASSIGNED
19	S.RTS	O	Secondary Request to Send
20	DTR	O	Data Terminal Ready
21	SQD	I	Signal Quality Detector
22	RI	I	Ring Indicator
23	SS	-	Data Signal Rate Selector
24	TXC	-	Transmit Signal Element Timing
25	-	-	UNASSIGNED

*Note: Do not connect SHIELD(1) to GND(7).*

*Contributor: [Joakim Ögren](#)*

*Source:?*

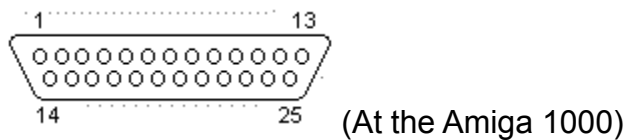
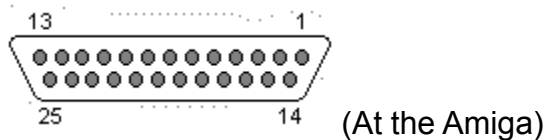
*Please send any comments to [Joakim Ögren](#).*



## Parallel (Amiga) Connector



## Parallel (Amiga)



25 PIN D-SUB FEMALE at the Amiga.

25 PIN D-SUB MALE at the Amiga 1000.

Pin	Name	A1000	Dir	Description
1	/STROBE	/STROBE	O	Strobe
2	D0	D0	I/O	Data Bit 0
3	D1	D1	I/O	Data Bit 1
4	D2	D2	I/O	Data Bit 2
5	D3	D3	I/O	Data Bit 3
6	D4	D4	I/O	Data Bit 4
7	D5	D5	I/O	Data Bit 5
8	D6	D6	I/O	Data Bit 6
9	D7	D7	I/O	Data Bit 7
10	/ACK	/ACK	I	Acknowledge
11	BUSY	BUSY	I/O	Busy
12	POUT	POUT	I/O	Paper Out
13	SEL	SEL	I/O	Select (Amiga: shared with RS232 RING-indicator)
14	+5V PULLUP	GND	-	+5 Volts DC (10 mA max)
15	n/c	GND	-	
16	/RESET	GND	O	Reset
17	GND	GND	-	Signal Ground
18	GND	GND	-	Signal Ground
19	GND	GND	-	Signal Ground
20	GND	GND	-	Signal Ground
21	GND	GND	-	Signal Ground
22	GND	GND	-	Signal Ground
23	GND	+5V	-	Signal Ground
24	GND	n/c	-	Signal Ground
25	GND	/RESET	-	Signal Ground

*Contributor: Joakim Ögren*

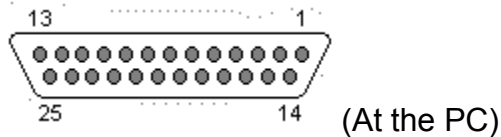
*Source: Amiga 4000 User's Guide from Commodore*

*Please send any comments to Joakim Ögren.*

## Parallel (PC) Connector



## Parallel (PC)



25 PIN D-SUB FEMALE at the PC.

Pin	Name	Dir	Description
1	/STROBE	O	Strobe
2	D0	O	Data Bit 0
3	D1	O	Data Bit 1
4	D2	O	Data Bit 2
5	D3	O	Data Bit 3
6	D4	O	Data Bit 4
7	D5	O	Data Bit 5
8	D6	O	Data Bit 6
9	D7	O	Data Bit 7
10	/ACK	I	Acknowledge
11	BUSY	I	Busy
12	PE	I	Paper End
13	SELIN	I	Select In
14	/AUTOFD	O	Autofeed
15	/ERROR	I	Error
16	/INIT	O	Initialize
17	/SEL	O	Select
18	GND	-	Signal Ground
19	GND	-	Signal Ground
20	GND	-	Signal Ground
21	GND	-	Signal Ground
22	GND	-	Signal Ground
23	GND	-	Signal Ground
24	GND	-	Signal Ground
25	GND	-	Signal Ground

*Note: Direction are defined from the viewpoint of the computer.*

*Contributor: [Joakim Ögren](#)*

*Source:?*

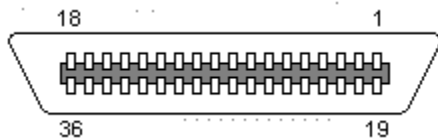
*Please send any comments to [Joakim Ögren](#).*



## Centronics Connector



## Centronics



(At the Printer)

36 PIN CENTRONICS FEMALE at the Printer.

Pin	Name	Dir	Description
1	/STROBE	I	Strobe
2	D0	I/O	Data Bit 0
3	D1	I/O	Data Bit 1
4	D2	I/O	Data Bit 2
5	D3	I/O	Data Bit 3
6	D4	I/O	Data Bit 4
7	D5	I/O	Data Bit 5
8	D6	I/O	Data Bit 6
9	D7	I/O	Data Bit 7
10	/ACK	O	Acknowledge
11	BUSY	O	Busy
12	POUT	O	Paper Out
13	SEL	O	Select
14	/AUTOFEED	?	Autofeed
15	n/c		
16	0 V		
17	CHASSIS GND		
18	+5 V PULLUP	-	+5 V DC (50 mA max)
19	GND	-	Signal Ground
20	GND	-	Signal Ground
21	GND	-	Signal Ground
22	GND	-	Signal Ground
23	GND	-	Signal Ground
24	GND	-	Signal Ground
25	GND	-	Signal Ground
26	GND	-	Signal Ground
27	GND	-	Signal Ground
28	GND	-	Signal Ground
29	GND	-	Signal Ground
30	/GNDRESET	-	Reset Ground
31	/RESET	I	Reset



32	/FAULT	O	Fault (Low when offline)
33	0 V	-	Signal Ground
34	n/c		
35	+5 V	O	+5 V DC
36	/SLCT IN	I	Select In (Taking low or high sets printer on line or off line respectively)

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

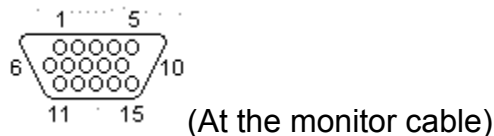
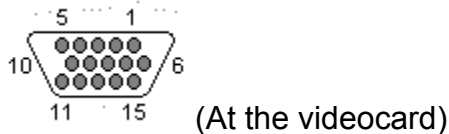
## VGA (15) Connector



## VGA (15)

VGA=Video Graphics Array.

Videotype: Analogue.



15 PIN HIGHDENSITY D-SUB FEMALE at the videocard.

15 PIN HIGHDENSITY D-SUB MALE at the monitor cable.

Pin	Name	Dir	Description
1	RED	O	Red Video (75 ohm, 0.7 V p-p)
2	GREEN	O	Green Video (75 ohm, 0.7 V p-p)
3	BLUE	O	Blue Video (75 ohm, 0.7 V p-p)
4	ID2	I	Monitor ID Bit 2
5	GND	-	Ground
6	RGND	-	Red Ground
7	GGND	-	Green Ground
8	BGND	-	Blue Ground
9	KEY	-	Key (No pin)
10	SGND	-	Sync Ground
11	ID0	I	Monitor ID Bit 0
12	ID1 or SDA	I or I/O	Monitor ID Bit 1 (or DDC Serial Data Line)
13	HSYNC or CSYNC	O	Horizontal Sync (or Composite Sync)
14	VSYNC	O	Vertical Sync
15	ID3 or SCL	I or I/O	Monitor ID Bit 3 (or DDC Data Clock Line)

*Note: Direction are defined from the viewpoint of the graphics display adapter.*

*Amiga note: Only available on A3000, via adapters on AGA machines and on display-cards.*

*Contributor: Joakim Ögren*

*Source:?*

Please send any comments to [Joakim Ögren](#).

## VGA (9) Connector



## VGA (9)

VGA=Video Graphics Array.  
Videotype: Analogue.



(At the videocard)



(At the monitor cable)

9 PIN D-SUB FEMALE at the videocard.  
9 PIN D-SUB MALE at the monitor cable.

Pin	Name	Dir	Description
1	RED		Red Video
2	GREEN		Green Video
3	BLUE		Blue Video
4	HSYNC		Horizontal Sync
5	VSYNC		Vertical Sync
6	RGND		Red GND
7	GGND		Green GND
8	BGND		Blue GND
9	SGND		Sync GND

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## CGA Connector



## CGA

CGA=Color Graphics Adapter.

Videotype: TTL, 16 colors.

Also known as IBM RGBI.



(At the videocard)



(At the monitor cable)

9 PIN D-SUB FEMALE at the videocard.

9 PIN D-SUB MALE at the monitor cable.

Pin	Name	Description
1	GND	Ground
2	GND	Ground
3	R	Red
4	G	Green
5	B	Blue
6	I	Intensity
7	RES	Reserved
8	HSYNC	Horizontal Sync
9	VSYNC	Vertical Sync

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## EGA Connector



## EGA

EGA=Enhanced Graphics Adapter.  
Videotype: TTL, 16/64 colors.



(At the videocard)



(At the monitor cable)

9 PIN D-SUB FEMALE at the videocard.  
9 PIN D-SUB MALE at the monitor cable.

Pin	Nam	Description
1	GND	Ground
2	SR	Secondary Red
3	PR	Primary Red
4	PG	Primary Green
5	PB	Primary Blue
6	SG/I	Secondary Green / Intensity
7	SB	Secondary Blue
8	H	Horizontal Sync
9	V	Vertical Sync

*Contributor:* Joakim Ögren

*Source:?*

*Please send any comments to Joakim Ögren.*

## PGA Connector



## PGA

Videotype: Analogue.



(At the videocard)



(At the monitor cable)

9 PIN D-SUB FEMALE at the videocard.

9 PIN D-SUB MALE at the monitor cable.

Pin	Name	Description
1	R	Red
2	G	Green
3	B	Blue
4	CSYNC	Composite Sync
5	MODE	Mode Control
6	RGND	Red Ground
7	GGND	Green Ground
8	BGND	Blue Ground
9	GND	Ground

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.



## MDA (Hercules) Connector



## MDA (Hercules)



(At the videocard)



(At the monitor cable)

9 PIN D-SUB FEMALE at the videocard.  
9 PIN D-SUB MALE at the monitor cable.

Pin	Nam	Description
	e	
1	GND	Ground
2	GND	Ground
3	n/c	
4	n/c	
5	n/c	
6	I	Intensity
7	M	Mono Video
8	H	Horizontal Sync
9	V	Vertical Sync

Contributor: Joakim Ögren

Source:?

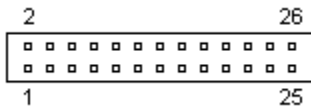
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## VGA Feature Connector



## VGA Feature Connector



(At the videocard)

26 PIN IDC at the Video card.

Pin	Name	Description
1	PD0	DAC Pixel Data Bit 0 (PB)
2	PD1	DAC Pixel Data Bit 1 (PG)
3	PD2	DAC Pixel Data Bit 2 (PR)
4	PD3	DAC Pixel Data Bit 3 (PI)
5	PD4	DAC Pixel Data Bit 4 (SB)
6	PD5	DAC Pixel Data Bit 5 (SG)
7	PD6	DAC Pixel Data Bit 6 (SR)
8	PD7	DAC Pixel Data Bit 7 (SI)
9	CLK	DAC Clock
10	BLK	DAC Blanking
11	HSYNC	Horizontal Sync
12	VSYNC	Vertical Sync
13	GND	Ground
14	GND	Ground
15	GND	Ground
16	GND	Ground
17		Select Internal Video
18		Select Internal Sync
19		Select Internal Dot Clock
20	n/c	Not used
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	n/c	Not used
26	n/c	Not used

Contributor: [Joakim Ögren](#)

Source:?

Please send any comments to [Joakim Ögren](#).

## Amiga Video Connector



## Amiga Video



(At the Amiga)

23 PIN D-SUB MALE at the Amiga.

Pin	Amiga	Dir	Description
1	/XCLK	I	Extern Clock
2	/XCLKEN	I	Extern Clock Enable (47 Ohm)
3	RED	O	Analog Red (75 Ohm)
4	GREEN	O	Analog Green (75 Ohm)
5	BLUE	O	Analog Blue (75 Ohm)
6	DI	O	Digital Intensity (47 Ohm)
7	DR	O	Digital Red (47 Ohm)
8	DG	O	Digital Green (47 Ohm)
9	DB	O	Digital Blue (47 Ohm)
10	/CSYNC	O	Composite Sync (47 Ohm)
11	/HSYNC	O	Horizontal Sync (47 Ohm)
12	/VSYNC	O	Vertical Sync (47 Ohm)
13	GNDRTN	-	Digital Ground (for /XCLKEN) Don't connect with pin 16-20.
14	/PIXELSW	O	Genlock overlay (47 Ohm)
15	/C1	O	Clock out (47 Ohm)
16	GND	-	Video Ground
17	GND	-	Video Ground
18	GND	-	Video Ground
19	GND	-	Video Ground
20	GND	-	Video Ground
21	-12V	-	-12 Volts DC (10 mA max) (A500/A600/A1200)
	-5V	-	-5 Volts DC (10 mA max) (A1000/A2000/A3000/A4000)
22	+12V	-	+12 Volts DC (100 mA max)
23	+5V	-	+5 Volts DC (100 mA max)

Contributor: [Joakim Ögren](#)

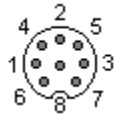
Source: *Amiga 4000 User's Guide from Commodore*

Please send any comments to [Joakim Ögren](#).

## RF Monitor (Amiga 1000) Connector



## RF Monitor (Amiga 1000)



(At the computer)

8 PIN DIN "C" FEMALE at the computer.

Pin	Name	Description
1	n/c	
2	GND	
3	AUDL	Audio Left
4	CVIDEO	Composite Video
5	GND	
6	n/c	
7	+12V	+12 Volts DC
8	AUDR	Audio Right

Contributor: [Joakim Ögren](#)

Source:?

Please send any comments to [Joakim Ögren](#).

## CDTV Video Slot Connector



## CDTV Video Slot

```

  2  4  6  8 10 12 14 16 18 20 22 24 26 28 30
  -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
  -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
  1  3  5  7  9 11 13 15 17 19 21 24 25 27 29
  
```



(At the computer)

30 PIN ??? CONNECTOR at the computer.

Pin	Name	Description
1	GND	Video Ground
2	GND	Video Ground
3	XCLK	External Genlock Clock (in)
4	R	Red (in to video card)
5	/XCLKEN	Enables External Clock on XCLK.
6	BR	Buffered Red (out from video card)
7	GND	Video Ground
8	G	Green (in to video card)
9	GMS0	Genlock mode 0 (from computer, genlock button)
10	BG	Buffered Green (out from video card)
11	GMS1	Genlock mode 1 (from computer, genlock button)
12	B	Blue (in to video card)
13	/PIXELSW	Genlock signal
14	BB	Buffered Blue (out from video card)
15	VSYNC	Vertical Sync (in to video card)
16	CSYNC	Horizontal Sync (in to video card)
17	HSYNC	Composite Sync (in to video card)
18	BCSYNC	Buffered Composite Sync (out from video card)
19	GND	Video Ground
20	AUDR	Audio Right Output (from computer to RF modulator)
21	DGND	Digital Ground
22	AUDL	Audio Left Output (from computer to RF modulator)
23	-12V	-12 VDC (can be -5 VDC instead)
24	DGND	Digital Ground
25	+12V	+12 VDC
26	/CD/TV	CD/TV button. (Low=CDTV video on RF, High=Antenna)
27	VCC	+5 VDC

28	/CCK	3.58 MHz color clock (C1 clock)
29	GND	Video Ground
30	VCC	+5 VDC

*Note: Used for RF-modulator usually.*

*Contributor: Joakim Ögren*

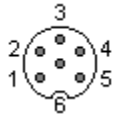
*Source: Darren Ewaniuk's CDTV Technical Information*

*Please send any comments to Joakim Ögren.*

## Commodore 1084 & 1084S (Analog) Connector



## Commodore 1084 & 1084S (Analog)



(At the Monitor)

6 PIN DIN FEMALE at the Monitor.

Pin	Name	Description
1	G	Green
2	HSYNC	Horizontal Sync
3	GND	Ground
4	R	Red
5	B	Blue
6	VSYNC	Vertical Sync

*Contributor: [Joakim Ögren](#)*

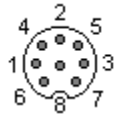
*Source: [National Amiga's C1084 page](#)*

*Please send any comments to [Joakim Ögren](#).*

## Commodore 1084 & 1084S (Digital) Connector



## Commodore 1084 & 1084S (Digital)



(At the Monitor)

8 PIN DIN 'C' FEMALE at the Monitor.

Pin	Name	Description
1	n/c	Not connected
2	R	Red
3	G	Green
4	B	Blue
5	I	Intensity
6	GND	Ground
7	HSYNC	Horizontal Sync
8	VSYNC	Vertical Sync

Contributor: [Joakim Ögren](#)

Source: [National Amiga's C1084 page](#)

Please send any comments to [Joakim Ögren](#).



## Commodore 1084d & 1084dS Connector



## Commodore 1084d & 1084dS



(At the Monitor)

9 PIN D-SUB MALE ?? at the Monitor.

Pin	Name	Analog Mode	Digital Mode
1	GND	Ground	Ground
2	GND	Ground	Ground
3	R	Red	Red
4	G	Green	Green
5	B	Blue	Blue
6	I	n/c	Intensity
7	CSYNS	Composite Sync	n/c
8	HSYNC	n/c	Horizontal Sync
9	VSYNC	n/c	Vertical Sync

Contributor: Joakim Ögren

Source: National Amiga's C1084d page

Please send any comments to Joakim Ögren.



## Mouse/Joy (Amiga) Connector



## Mouse/Joy (Amiga)



(At the computer)



(At the mouse/joy cable)

9 PIN D-SUB MALE at the computer.

9 PIN D-SUB FEMALE at the mouse/joy cable.

Pin	Mouse/ Trackball	Lightpen	Digital Joystick	Paddle	Dir	Comment
1	V-pulse	n/c	/FORWARD	BUTTON 3	I	
2	H-pulse	n/c	/BACK	n/c	I	
3	VQ-pulse	n/c	/LEFT	BUTTON 1	I	
4	HQ-pulse	n/c	/RIGHT	BUTTON 2	I	
5	BUTTON 3(M)	Penpress	n/c	PotX	I/O	
6	BUTTON 1(L)	/Beamtrigger	/BUTTON 1	n/c	I/O	
7	+5V	+5V	+5V	+5V	-	50 mA max
8	GND	GND	GND	GND	-	
9	BUTTON 2(R)	BUTTON 2	BUTTON 2	PotY	I/O	

*Note: Pot is a linear 470 kOhm (10 %)*

*Contributor: [Joakim Ögren](#)*

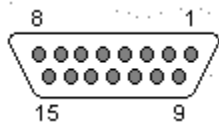
*Source: Amiga 4000 User's Guide from Commodore*

*Please send any comments to [Joakim Ögren](#).*

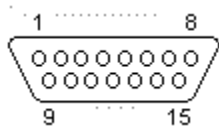
## Gameport (PC) Connector



## Gameport (PC)



(At the computer)



(At the joystick cable)

15 PIN D-SUB FEMALE at the computer.

15 PIN D-SUB MALE at the joystick cable.

Pin	Nam	Dir	Description
	<b>e</b>		
1	+5V	-	+5 VDC
2	/B1	I	Button 1
3	X1	I	Joystick 1 - X
4	GND	-	Ground
5	GND	-	Ground
6	Y1	I	Joystick 1 - Y
7	/B2	I	Button 2
8	+5V	-	+5 VDC
9	+5V	-	+5 VDC
10	/B4	I	Button 4
11	X2	I	Joystick 2 - X
12	GND	-	Ground
13	Y2	I	Joystick 2 - Y
14	/B3	I	Button 3
15	+5V	-	+5 VDC

*Note: Use 100kohm resistor.*

*Contributor: [Joakim Ögren](#)*

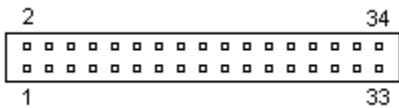
*Source:?*

*Please send any comments to [Joakim Ögren](#).*

## Internal Diskdrive Connector



## Internal Diskdrive



(At the computer & diskdrives)

34 PIN IDC MALE at the computer & diskdrives.

Pin	Name	Dir	Description
2	/REDWC	O	Density Select
4	NC		Reserved
6	NC		Reserved
8	/INDEX	I	Index
10	/MOTEA	O	Motor Enable A
12	/DRVSB	O	Drive Sel B
14	/DRVSA	O	Drive Sel A
16	/MOTEB	O	Motor Enable B
18	/DIR	O	Direction
20	/STEP	O	Step
22	/WDATE	O	Write Data
24	/WGATE	O	Floppy Write Enable
26	/TRK00	I	Track 0
28	/WPT	I	Write Protect
30	/RDATA	I	Read Data
32	/SIDE1	O	Head Select
34	/DSKCHG	O	Disk Change

*Note: All odd pins are GND, Ground.*

*Direction is relative the controller at the computer.*

*Note: Can be an Edge-connector on some PC's.*

*Contributor: [Joakim Ögren](#)*

*Source:?*

*Please send any comments to [Joakim Ögren](#).*

## External Diskdrive (Amiga) Connector



## External Diskdrive (Amiga)



(At the Amiga)

23 PIN D-SUB FEMALE at the Amiga.

Pin	Name	Dir	Description
1	/RDY	I/O	Disk Ready
2	/DKRD	I	Disk Read Data
3	GND	-	Ground
4	GND	-	Ground
5	GND	-	Ground
6	GND	-	Ground
7	GND	-	Ground
8	/MTRXD	OC	Disk Motor Control
9	/SEL2	OC	Select Drive 2
10	/DRES	OC	Disk Reset
11	/CHNG	I/O	Disk Removed From Drive-Latched Low
12	+5V	-	+5 Volts DC (250 mA max)
13	/SIDE	O	Select Disk Side (0=Upper, 1=Lower)
14	/WPRO	I/O	Disk is Write Protected
15	/TKO	I/O	Drive Head position over Track 0
16	/DKWE	OC	Disk Write Enable
17	/DKWD	OC	Disk Write Data
18	/STEP	OC	Step the Head-Pulse, First low, then high
19	DIR	OC	Select Head Direction (0=Inner, 1=Outer)
20	/SEL3	OC	Select Drive 3
21	/SEL1	OC	Select Drive 1
22	/INDEX	OC	Disk Index Pulse
23	+12V	-	+12 Volts DC (160 mA max, 540 mA surge)

Contributor: Joakim Ögren

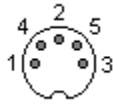
Source: *Amiga 4000 User's Guide from Commodore*

Please send any comments to Joakim Ögren.

## Keyboard (5 Amiga) Connector



## Keyboard (5 Amiga)



(At the computer)

5 PIN DIN 180 (DIN41524) FEMALE (A1000/A2000/A3000) at the computer.

Pin	A1000	A2000/A3000
1	+5 Volts	KCLK
2	CLOCK	KDAT
3	DATA	n/c
4	GND	GND
5		+5 Volts

Contributor: Joakim Ögren

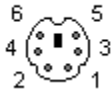
Source:?

Please send any comments to Joakim Ögren.

## Keyboard (6 Amiga) Connector



## Keyboard (6 Amiga)



(At the computer)

6 PIN MINI-DIN FEMALE (PS/2 STYLE) (A4000/CD32/CDTV) at the computer.

Pin	Name	Dir	Description
1	DATA	I/O	Data
2	n/c	-	
3	GND	-	Ground
4	+5V	-	+5 Volts DC (100 mA max)
5	CLOCK	O	Clock
6	n/c	-	

Contributor: [Joakim Ögren](#)

Source: *Amiga 4000 User's Guide from Commodore*

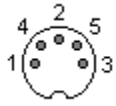
Please send any comments to [Joakim Ögren](#).



## Keyboard (5 PC) Connector



## Keyboard (5 PC)



(At the computer)

5 PIN DIN 180 (DIN41524) FEMALE at the computer.

Pin	Name	Description	Technical
1	CLOCK	Clock	CLK/CTS, Open-collector
2	DATA	Data	RxD/TxD/RTS, Open-collector
3	n/c	Not connected	Reset on some very old keyboards.
4	GND	Ground	
5	VCC	+5 VDC	

Contributor: [Joakim Ögren](#)

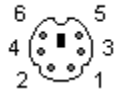
Source:?

Please send any comments to [Joakim Ögren](#).

## Keyboard (6 PC) Connector



## Keyboard (6 PC)



(At the computer)

6 PIN MINI-DIN FEMALE (PS/2 STYLE) at the computer.

Pin	Name	Dir	Description
1	CLK	O	Clock
2	GND	-	Gnd
3	DATA	I/O	Key Data
4	n/c	-	Not connected
5	VCC	-	Power
6	n/c	-	Not connected

*Contributor: [Joakim Ögren](#)*

*Source:?*

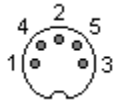
*Please send any comments to [Joakim Ögren](#).*



## Keyboard (XT) Connector



## Keyboard (XT)



(At the computer)

5 PIN DIN 180 (DIN41524) FEMALE at the computer.

Pin	Name	Description	Technical
1	CLK	Clock	CLK/CTS, Open-collector
2	DATA	Data	RxD, Open-collector
3	/RESET	Reset	
4	GND	Ground	
5	VCC	+5 VDC	

Contributor: [Joakim Ögren](#)

Source:?

Please send any comments to [Joakim Ögren](#).

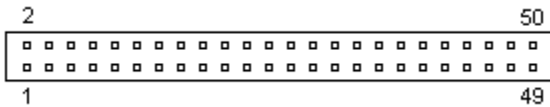
## SCSI Internal Connector



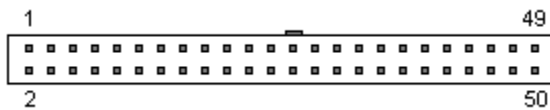
## SCSI Internal

SCSI=Small Computer System Interface.

Based on an original design by Shugart Associates. SCSI was ratified in 1986.



(at the controller & harddisk)



(at the cable.)

50 PIN IDC MALE at the controller & harddisk.

50 PIN IDC FEMALE at the cable.

Pin	Name	Dir	Description
2	DB0	I/O	Data Bus 0
4	DB1	I/O	Data Bus 1
6	DB2	I/O	Data Bus 2
8	DB3	I/O	Data Bus 3
10	DB4	I/O	Data Bus 4
12	DB5	I/O	Data Bus 5
14	DB6	I/O	Data Bus 6
16	DB7	I/O	Data Bus 7
18	PARITY	I/O	Data Parity (odd Parity)
20	GND	-	Ground
22	GND	-	Ground
24	GND	-	Ground
26	TMPWR	-	Termination Power
28	GND	-	Ground
30	GND	-	Ground
32	/ATN	I	Attention
34	GND	-	Ground
36	/BSY	I/O	Busy
38	/ACK	I	Acknowledge
40	/RST	I/O	Reset
42	/MSG	O	Message
44	/SEL	I/O	Select
46	/C/D	O	Control/Data

48    /REQ        Request  
50    //O          Input/Output

*All odd-numbered pins, except pin 25, are connected to ground. Pin 25 is left open.*

*Amiga note: Available on A3000, and on computers equipped with SCSI-expansionboards.*

*Contributor: Joakim Ögren*

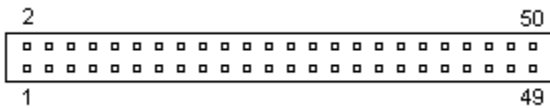
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*Please send any comments to Joakim Ögren.*

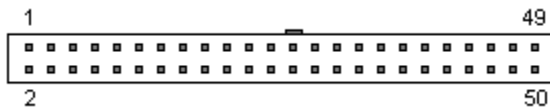
## SCSI Internal Differential Connector



## SCSI Internal Differential



(at the controller & harddisk.)



(at the cable.)

50 PIN IDC MALE at the controller & harddisk.

50 PIN IDC FEMALE at the cable.

Pin	Name	Description
01	GND	Ground
02	GND	Ground
03	+DB0	+Data Bus 0
04	-DB0	-Data Bus 0
05	+DB1	+Data Bus 1
06	-DB1	-Data Bus 1
07	+DB2	+Data Bus 2
08	-DB2	-Data Bus 2
09	+DB3	+Data Bus 3
10	-DB3	-Data Bus 3
11	+DB4	+Data Bus 4
12	-DB4	-Data Bus 4
13	+DB5	+Data Bus 5
14	-DB5	-Data Bus 5
15	+DB6	+Data Bus 6
16	-DB6	-Data Bus 6
17	+DB7	+Data Bus 7
18	-DB7	-Data Bus Parity7
19	+DBP	+Data Bus Parity (odd Parity)
20	-DBP	-Data Bus Parity (odd Parity)
21	DIFFSENS	
22	GND	Ground
23	res	Reserved
24	res	Reserved
25	TERMPWR	Termination Power
26	TERMPWR	Termination Power

27	res	Reserved
28	res	Reserved
29	+ATN	+Attention
30	-ATN	-Attention
31	GND	Ground
32	GND	Ground
33	+BSY	+Bus is busy
34	-BSY	-Bus is busy
35	+ACK	+Acknowledge
36	-ACK	-Acknowledge
37	+RST	+Reset
38	-RST	-Reset
39	+MSG	+Message
40	-MSG	-Message
41	+SEL	+Select
42	-SEL	-Select
43	+C/D	+Control or Data
44	-C/D	-Control or Data
45	+REQ	+Request
46	-REQ	-Request
47	+I/O	+In/Out
48	-I/O	-In/Out
49	GND	Ground
50	GND	Ground

*Contributor: Joakim Ögren*

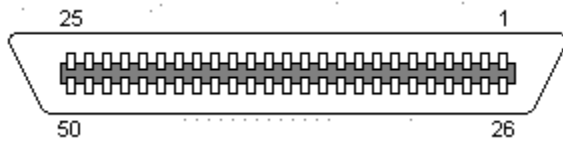
*Source:?*

*Please send any comments to Joakim Ögren.*

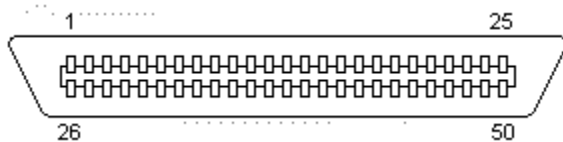
## SCSI External Centronics 50 Connector



## SCSI External Centronics 50



(At the controller & devices)



(At the cable)

50 PIN CENTRONICS FEMALE at the controller & devices.

50 PIN CENTRONICS MALE at the cable.

Pin	Name	Dir	Description
1-24	GND	-	Ground
25	key	-	Key
26	DB0	I/O	Data Bus 0
27	DB1	I/O	Data Bus 1
28	DB2	I/O	Data Bus 2
29	DB3	I/O	Data Bus 3
30	DB4	I/O	Data Bus 4
31	DB5	I/O	Data Bus 5
32	DB6	I/O	Data Bus 6
33	DB7	I/O	Data Bus 7
34	PARITY	I/O	Data Parity (odd Parity)
35	GND	-	Ground
36	GND	-	Ground
37	GND	-	Ground
38	TMPWR	-	Termination Power
39	GND	-	Ground
40	GND	-	Ground
41	/ATN	I	Attention
42	n/c	-	
43	/BSY	I/O	Busy
44	/ACK	I	Acknowledge
45	/RST	I/O	Reset
46	/MSG	O	Message
47	/SEL	I/O	Select

48 /C/D       Control/Data  
49 /REQ      Request  
50 //O       Input/Output

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## SCSI External (Future Domain) Connector



## SCSI External (Future Domain)



(At the controller)



(At the cable)

25 PIN D-SUB FEMALE at the controller.

25 PIN D-SUB MALE at the cable.

Pin	Name	Dir	Description
1	GND	-	Ground
2	DB1	I/O	Data Bus 1
3	DB3	I/O	Data Bus 3
4	DB5	I/O	Data Bus 5
5	DB7	I/O	Data Bus 7
6	GND	-	Ground
7	/SEL	I/O	Select
8	GND	-	Ground
9	TMPWR	-	Termination Power
10	/RST	I/O	Reset
11	C/D	O	Control/Data
12	I/O	O	Input/Output
13	GND	-	Ground
14	DB0	I/O	Data Bus 0
15	DB2	I/O	Data Bus 2
16	DB4	I/O	Data Bus 4
17	DB6	I/O	Data Bus 6
18	PARITY	I/O	Data Parity
19	GND	-	Ground
20	/ATN	I	Attention
21	/MSG	O	Message
22	/ACK	I	Acknowledge
23	BSY	I/O	Busy
24	/REQ	O	Request
25	GND	-	Ground



*Contributor: Joakim Ögren*

*Source: TheRef TechTalk*

*Please send any comments to Joakim Ögren.*

## SCSI External (Amiga/Mac) Connector



## SCSI External (Amiga/Mac)



(At the controller)



(At the cable)

25 PIN D-SUB FEMALE at the controller.

25 PIN D-SUB MALE at the cable.

Pin	Name	Dir	Description
1	/REQ	O	Request
2	/MSG	O	Message
3	I/O	O	Input/Output
4	/RST	I/O	Reset
5	/ACK	I	Acknowledge
6	BSY	I/O	Busy
7	GND	-	Ground
8	DB0	I/O	Data Bus 0
9	GND	-	Ground
10	DB3	I/O	Data Bus 3
11	DB5	I/O	Data Bus 5
12	DB6	I/O	Data Bus 6
13	DB7	I/O	Data Bus 7
14	GND	-	Ground
15	C/D	O	Control/Data
16	GND	-	Ground
17	/ATN	I	Attention
18	GND	-	Ground
19	/SEL	I/O	Select
20	PARITY	I/O	Data Parity
21	DB1	I/O	Data Bus 1
22	DB2	I/O	Data Bus 2
23	DB4	I/O	Data Bus 4
24	GND	-	Ground
25	TMPWR	-	Termination Power

*Amiga note: Only available on A3000 and on computers equipped with a SCSI-controller.*

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

## IDE Internal Connector

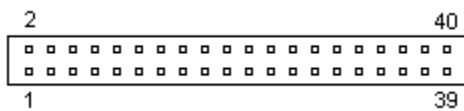


## IDE Internal

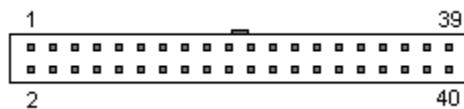
IDE=Integrated Drive Electronics.

Developed by Compaq and Western Digital.

Newer version of IDE goes under the name ATA=AT bus Attachment.



(At the controller & peripherals)



(At the cable)

40 PIN IDC MALE at the controller & peripherals.

40 PIN IDC FEMALE at the cable.

Pin	Name	Dir	Description
1	/RESET	O	Reset
2	GND	-	Ground
3	DD7	I/O	Data 7
4	DD8	I/O	Data 8
5	DD6	I/O	Data 6
6	DD9	I/O	Data 9
7	DD5	I/O	Data 5
8	DD10	I/O	Data 10
9	DD4	I/O	Data 4
10	DD11	I/O	Data 11
11	DD3	I/O	Data 3
12	DD12	I/O	Data 12
13	DD2	I/O	Data 2
14	DD13	I/O	Data 13
15	DD1	I/O	Data 1
16	DD14	I/O	Data 14
17	DD0	I/O	Data 0
18	DD15	I/O	Data 15
19	GND	-	Ground
20	KEY	-	Key
21	n/c	-	Not connected
22	GND	-	Ground

23	/IOW	O	Write Strobe
24	GND	-	Ground
25	/IOR	O	Read Strobe
26	GND	-	Ground
27	IO_CH_RDY	I	
28	ALE	-	
29	n/c	-	Not connected
30	GND	-	Ground
31	IRQR	I	Interrupt Request
32	/IOCS16	-	IO ChipSelect 16
33	DA1	O	Address 1
34	n/c	-	Not connected
35	DA0	O	Address 0
36	DA2	O	Address 2
37	/IDE_CS0	O	(1F0-1F7)
38	/IDE_CS1	O	(3F6-3F7)
39	/ACTIVE	O	Led driver
40	GND	-	Ground

*Note: Direction is relative the controller at the computer.*

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

## ESDI Connector



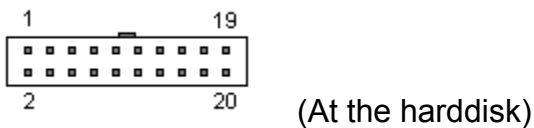
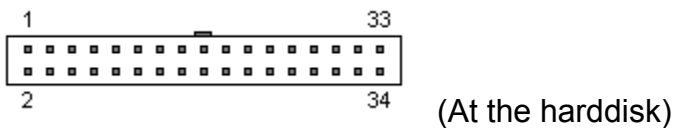
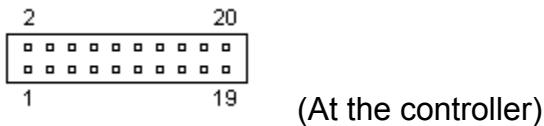
## ESDI

ESDI=Enhanced Small Device Interface.

Developed by Maxtor in the early 1980's as an upgrade and improvement to the ST506 design.



(At the controller)



34 PIN IDC MALE at the Controller.

20 PIN IDC MALE at the Controller.

34 PIN IDC FEMALE at the Harddisk.

20 PIN IDC FEMALE at the Harddisk.

## Control connector

Pin	Name	Description
2	Head Sel 3	
4	Head Sel 2	
6	Write Gate	
8	Config/Stat Data	
10	Transfer Acknowledge	
12	Attention	

14	Head Sel 0
16	Sect/Add MK Found
18	Head Sel 1
20	Index
22	Ready
24	Transfer Request
26	Drive Sel 1
28	Drive Sel 2
30	Drive Sel 3
32	Read Gate
34	Command Data

*Note: All odd are GND, Ground.*

## Data connector

Pin	Name	Description
1		Drive Selected
2		Sect/Add MK Found
3		Seek Complete
4		Address Mark Enable
5		(reserved, for step mode)
6	GND	Ground
7		Write Clock+
8		Write Clock-
9		Cartridge Changed
10		Read Ref Clock+
11		Read Ref Clock-
12	GND	Ground
13		NRZ Write Data+
14		NRZ Write Data-
15	GND	Ground
16	GND	Ground
17		NRZ Read Data+
18		NRZ Read Data-
19	GND	Ground
20	GND	Ground

*Contributor: [Joakim Ögren](#)*

*Source:?*

*Please send any comments to [Joakim Ögren](#).*

## ST506/412 Connector



## ST506/412

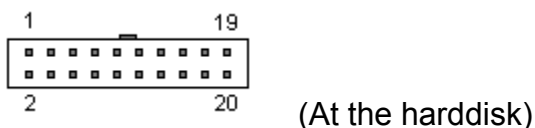
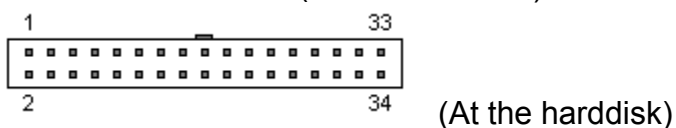
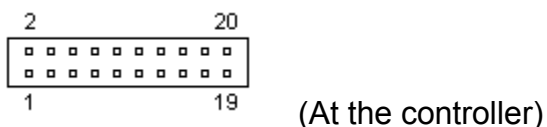
Developed by Seagate.

Also known as MFM or RLL since these are the encoding methods used to store data. Seagate originally developed it to support their ST506 (5 MB) and ST412 (10 MB) drives.

The first drives used an encoding method called MFM (Modified Frequency Modulation). Later a new encoding method was developed, RLL (Run Length Limited). RLL had the advantage that it was possible to store 50% more with it. But it required better drives. This is almost never an problem. Often called 2,7 RLL because the recording scheme involves patterns with no more than 7 successive zeros and no less than two.



(At the controller)



34 PIN IDC MALE at the Controller.

20 PIN IDC MALE at the Controller.

34 PIN IDC FEMALE at the Harddisk.

20 PIN IDC FEMALE at the Harddisk.

## Control connector



Pin	Name	Description
2	e	Head Sel 8
4		Head Sel 4
6		Write Gate
8		Seek Complete
10		Track 0
12		Write Fault
14		Head Sel 1
16		(reserved)
18		Head Sel 2
20		Index
22		Ready
24		Step
26		Drive Sel 1
28		Drive Sel 2
30		Drive Sel 3
32		Drive Sel 4
34	Direction In	

*Note: All odd pins are GND, Ground.*

## Data connector

Pin	Name	Description
	e	
1		Drive Selected
2		GND
3		(reserved)
4		GND
5		(reserved)
6		GND
7		(reserved)
8		GND
9		(reserved)
10		(reserved)
11		GND
12		GND
13		Write Data+
14		Write Data-
15		GND
16		GND
17		Read Data+
18		Read Data-
19		GND
20	GND	

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

## 72 pin SIMM Connector



## 72 pin SIMM

SIMM=Single Inline Memory Module

**NOTE:** I've seen a couple of different pin-configurations for the 72 pin SIMM's.  
Can anyone verify the table below?? I'm confused....



(At the computer)

72 PIN SIMM at the computer.

Pin	Name	Description
1	VSS	+5 VDC
2	DQ0	Data 0
3	DQ16	Data 16
4	DQ1	Data 1
5	DQ17	Data 17
6	DQ2	Data 2
7	DQ18	Data 18
8	DQ3	Data 3
9	DQ19	Data 19
10	VCC	+5 VDC
11	N/C	
12	A0	Address 0
13	A1	Address 1
14	A2	Address 2
15	A3	Address 3
16	A4	Address 4
17	A5	Address 5
18	A6	Address 6
19	A10	Address 10
20	DQ4	Data 4
21	DQ20	Data 20
22	DQ5	Data 5
23	DQ21	Data 21
24	DQ6	Data 6
25	DQ22	Data 22
26	DQ7	Data 7
27	DQ23	Data 23
28	A7	Address 7

29	N/C	
30	VCC	+5 VDC
31	A8	Address 8
32	A9	Address 9
33	/RAS3	
34	/RAS2	
35	MP2	Parity 2
36	MP0	Parity 0
37	MP1	Parity 1
38	MP3	Parity 3
39	GND	Ground
40	/CAS0	
41	/CAS2	
42	/CAS3	
43	/CAS1	
44	/RAS0	
45	/RAS1	
46	N/C	
47	/WE	
48	N/C	
49	DQ8	Data 8
50	DQ24	Data 24
51	DQ9	Data 9
52	DQ25	Data 25
53	DQ10	Data 10
54	DQ26	Data 26
55	DQ11	Data 11
56	DQ27	Data 27
57	DQ12	Data 12
58	DQ28	Data 28
59	VCC	+5 VDC
60	DQ29	Data 29
61	DQ13	Data 13
62	DQ30	Data 30
63	DQ14	Data 14
64	DQ31	Data 31
65	DQ15	Data 15
66	n/c	
67	PD1	Parity Data 1 ?? or is it something to query size?
68	PD2	Parity Data 2 ??
69	PD3	Parity Data 3 ??
70	PD4	Parity Data 4 ??
71	n/c	
72	VSS	+5 V DC

*Notes: MP0,MP1,MP2,MP3 are N/C on all x32 bit modules (modules without parity).*

*A9 is a N/C on 256k and 512k modules.*

*A10 is a N/C on 256k, 512k, 1M and 4M modules.*

*RAS1/RAS3 are N/C on 256k, 1M and 4M modules.*

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

## 30 pin SIMM Connector



## 30 pin SIMM

SIMM=Single Inline Memory Module.



(At the computer)

30 PIN SIMM at the computer.

Pin	Name	Description
1	VCC	+5V DC
2	/CAS	
3	DQ0	Data 0
4	A0	Address 0
5	A1	Address 1
6	DQ1	Data 1
7	A2	Address 2
8	A3	Address 3
9	GND	Ground
10	DQ2	Data 2
11	A4	Address 4
12	A5	Address 5
13	DQ3	Data 3
14	A6	Address 6
15	A7	Address 7
16	DQ4	Data 4
17	A8	Address 8
18	A9	Address 9
19	A10	Address 10
20	DQ5	Data 5
21	/WE	Write Enable
22	GND	Ground
23	DQ6	Data 6
24	N/C	
25	DQ7	Data 7
26	QP	Data Parity Out
27	/RAS	
28	/CASP	Something Parity ????
29	DP	Data Parity In
30	VCC	+5V DC

*Note: SIMM above is a 4MBx9.  
QP & DP is N/C on SIMMs without parity.  
A9 is N/C on 256kB.  
A10 is N/C on 256kB & 1MB.*

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*



27	A11	Address Bus 11
28	A12	Address Bus 12
29	A13	Address Bus 13
30	A14	Address Bus 14
31	A15	Address Bus 15
32	A16	Address Bus 16
33	A17	Address Bus 17
34	R/W	Read/Write (High=Read)
35	/CSMCO	Chip Select Odd Bytes
36	/CSMCEN	Chip Select Even Bytes
37	VCC	+5 Volts DC
38	GND	Ground
39	A18	Address Bus 18 (Short J16 to connect A18 to processor bus)
40	A19	Address Bus 19 (Short J17 to connect A19 to processor bus)

**Note: Address space=\$E00000-\$E7FFFF**

**Contributor: Joakim Ögren**

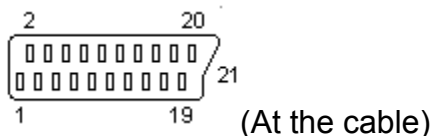
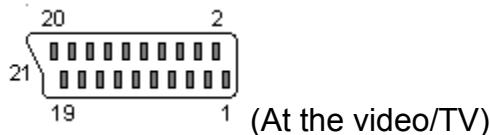
**Source: Darren Ewaniuk's CDTV Technical Information**

**Please send any comments to Joakim Ögren.**

## SCART Connector



## SCART



21 PIN SCART FEMALE at the Video/TV.

21 PIN SCART MALE at the Cable.

Pin	Name	Description	Signal Level	Impedance
1	AOR	Audio Out Right	0.5 V rms	1k ohm
2	AIR	Audio In Right	0.5 V rms	10k ohm
3	AOL	Audio Out Left + Mono	0.5 V rms	1k ohm
4	AGND	Audio Ground		
5	B GND	RGB Blue Ground		
6	AIL	Audio In Left + Mono	0.5 V rms	10k ohm
7	B	RGB Blue In	0.7 V	75 ohm
8	SWTCH	Audio/RGB switch / 16:9		
9	G GND	RGB Green Ground		
10	CLKOUT	Data 2: Clockpulse Out (Unavailble ??)		
11	G	RGB Green In	0.7 V	75 ohm
12	DATA	Data 1: Data Out (Unavailble ??)		
13	R GND	RGB Red Ground		
14	DATAGND	Data Ground		
15	R	RGB Red In / Chrominance	0.7 V (Chrom.: 0.3 V burst)	75 ohm
16	BLNK	Blanking Signal	1-3 V=RGB, 0-0.4 V=Composite	75 ohm
17	VGND	Composite Video Ground		
18	BLNKGND	Blanking Signal Ground		
19	VOUT	Composite Video Out	1 V	75 ohm
20	VIN	Composite Video In / Luminance	1 V	75 ohm
21	SHIELD	Ground/Shield (Chassis)		

Contributor: [Joakim Ögren](#)

Source: Various sources, [Video Demystified at Keith Jack's pages](#)

Please send any comments to [Joakim Ögren](#).





## S-Video Connector



## S-Video



(At the peripheral)

4 PIN MINI-DIN FEMALE at the peripheral.

Pin	Name	Description
1	GND	Ground
2	GND	Ground
3	Y	Intensity
4	C	Color

Contributor: Joakim Ögren

Source: Video Demystified at Keith Jack's pages

Please send any comments to Joakim Ögren.

## Cartridge Expansion (C64) Connector



## Cartridge Expansion (C64)



(At the computer)

UNKNOWN CONNECTOR at the computer.

Pin	Name	Description
1	GND	Ground
2	+5V	+5 Volts DC
3	+5V	+5 Volts DC
4	/IRQ	Interrupt Request
5	/CR/W	
6	DOTCLK	Dot Clock
7	I/O 1	
8	/GAME	Game
9	/EXROM	
10	I/O 2	
11	/ROML	ROM Low
12	BA	
13	/DMA	
14	CD7	Cartridge Data 7
15	CD6	Cartridge Data 7
16	CD5	Cartridge Data 7
17	CD4	Cartridge Data 7
18	CD3	Cartridge Data 7
19	CD2	Cartridge Data 7
20	CD1	Cartridge Data 7
21	CD0	Cartridge Data 7
22	GND	Ground
A	GND	Ground
B	/ROMH	ROM High
C	/RESET	Reset
D	/NMI	Non Maskable Interrupt
E	S02	
F	CA15	Cartridge Address 15
H	CA14	Cartridge Address 14
J	CA13	Cartridge Address 13
K	CA12	Cartridge Address 12

L	CA11	Cartridge Address 11
M	CA10	Cartridge Address 10
N	CA9	Cartridge Address 9
P	CA8	Cartridge Address 8
R	CA7	Cartridge Address 7
S	CA6	Cartridge Address 6
T	CA5	Cartridge Address 5
U	CA4	Cartridge Address 4
V	CA3	Cartridge Address 3
W	CA2	Cartridge Address 2
X	CA1	Cartridge Address 1
Y	CA0	Cartridge Address 0
Z	GND	Ground

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

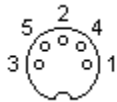
## Audio/Video (C64) Connector



## Audio/Video (C64)



(At the computer)



(At the cable)

5 PIN DIN 180 (DIN41524) FEMALE at the Computer.

5 PIN DIN 180 (DIN41524) MALE at the Cable.

Pin	Name	Description
1	LUM	Luminance
2	GND	Ground
3	AOUT	Audio Out
4	VOUT	Video Out
5	AIN	Audio In

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## Cassette (C64) Connector



## Cassette (C64)



(At the computer)

UNKNOWN CONNECTOR at the computer.

Pin	Name	Description
A-1	GND	Ground
B-2	+5V	+5 Volts DC
C-3	MOTOR	Cassette Motor
D-4	READ	Cassette Read
E-5	WRITE	Cassette Write
F-6	SENSE	Cassette Sense

*Contributor: [Joakim Ögren](#)*

*Source:?*

*Please send any comments to [Joakim Ögren](#).*

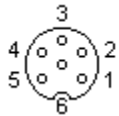
## Serial I/O (C64) Connector



## Serial I/O (C64)



(At the computer)



(At the cable)

6 PIN DIN (DIN45322) FEMALE at the Computer.

6 PIN DIN (DIN45322) MALE at the Cable.

Pin	Name	Description
1	/SRQIN	Serial SRQIN
2	GND	Ground
3	ATN	Serial ATN In/Out
4	CLK	Serial CLK In/Out
5	DATA	Serial DATA In/Out
6	/RESET	Reset

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## User I/O (C64) Connector



## User I/O (C64)



(At the computer)

UNKNOWN CONNECTOR at the computer.

Pin	Name	Description
1	GND	Ground
2	+5V	+5 Volts DC (100 mA max)
3	/RESET	Reset
4	CNT1	
5	SP1	
6	CNT2	
7	SP2	
8	/PC2	
9	ATN	Serial Attention In
10	+9V AC	+9 Volts AC (100 mA max)
11	+9V AC	+9 Volts AC (100 mA max)
12	GND	
A	GND	Ground
B	/FLAG2	
C	PB0	????????????????????
D	PB7	Data 7
E	PB6	Data 6
F	PB5	Data 5
H	PB4	Data 4
J	PB3	Data 3
K	PB2	Data 2
L	PB1	Data 1
M	PB0	Data 0 ??????????????
N	GND	Ground

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.



## Turbo LED Connector



## Turbo LED



(At the computer)

UNKNOWN CONNECTOR at the computer.

Pin	Name	Description
1	+5V	+5 VDC
2	/HS	HighSpeed
3	+5V	+5 VDC

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## AT Backup Battery Connector



## AT Backup Battery



(At the computer)

UNKNOWN CONNECTOR at the computer.

Pin	Name	Description
1	BATT+	Battery+
2	key	Key
3	GND	Ground
4	GND	Ground

Contributor: [Joakim Ögren](#)

Source:?

Please send any comments to [Joakim Ögren](#).

## AT LED/Keylock Connector



## AT LED/Keylock



(At the computer)

UNKNOWN CONNECTOR at the computer.

Pin	Name	Description
1	LED	LED Power
2	GND	Ground
3	GND	Ground
4	KS	Key Switch
5	GND	Ground

Contributor: [Joakim Ögren](#)

Source:?

Please send any comments to [Joakim Ögren](#).

## 5.25" Power Connector



## 5.25" Power

Used for harddisks & 5.25" peripherals.



(At the powersupply cable)



(At the peripheral)

UNKNOWN CONNECTOR at the powersupply cable.

UNKNOWN CONNECTOR at the peripheral.

Pin	Nam	Color	Description
1	+5V	. Red	+5 VDC
2	GND	. Black	+5 V Ground
3	GND	. Black	+12 V Ground (Same as +5 V Ground)
4	+12V	. Yellow	+12 VDC

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## 3.5" Power Connector



## 3.5" Power

Used for floppies.



(At the powersupply cable)



(At the peripheral)

UNKNOWN CONNECTOR at the powersupply cable.

UNKNOWN CONNECTOR at the peripheral.

Pin	Nam	Color	Description
1	+5V	. Red	+5 VDC
2	GND	. Black	+5 V Ground
3	GND	. Black	+12 V Ground (Same as +5 V Ground)
4	+12V	. Yellow	+12 VDC

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## Motherboard Power Connector



## Motherboard Power



(At the computer)

UNKNOWN CONNECTOR at the computer.

### P8

Pin	Name	Color	Description
1	PG	. Orange	Power Good, +5 VDC when all voltages has stabilized.
2	+5V	. Red	+5 VDC (or n/c)
3	+12V	. Yellow	+12 VDC
4	-12V	. Blue	-12 VDC
5	GND	. Black	Ground
6	GND	. Black	Ground

### P9

Pin	Name	Color	Description
1	GND	. Black	Ground
2	GND	. Black	Ground
3	-5V	. White or Yellow	-5 VDC
4	+5V	. Red	+5 VDC
5	+5V	. Red	+5 VDC
6	+5V	. Red	+5 VDC

Contributor: [Joakim Ögren](#)

Source:?

Please send any comments to [Joakim Ögren](#).



## PC Speaker Connector



## PC Speaker



(At the computer)

UNKNOWN CONNECTOR at the computer.

Pin	Name	Description
1	-SP	-Speaker
2	key	Key
3	GND	Ground
4	+SP5V	+Speaker +5 VDC

Contributor: [Joakim Ögren](#)

Source:?

Please send any comments to [Joakim Ögren](#).

## Ethernet 10Base-T Connector



## Ethernet 10Base-T



(At the devices)

RJ45 MALE CONNECTOR at the devices.

Pin	Name	Description
1	TX+	Transceive Data+
2	TX-	Transceive Data-
3	RX+	Receive Data+
4		
5		
6	RX-	Receive Data-
7		
8		

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.



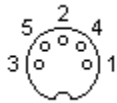
## MIDI Out Connector



## MIDI Out



(At the peripheral)



(At the cable)

5 PIN DIN 180 (DIN41524) FEMALE at the peripheral.

5 PIN DIN 180 (DIN41524) MALE at the cable.

Pin	Name	Description
1	n/c	
2	GND	Ground
3	n/c	
4	CSINK	Current Sink
5	CSRC	Current Source

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

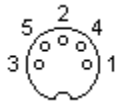
## MIDI In Connector



## MIDI In



(At the peripheral)



(At the cable)

5 PIN DIN 180 (DIN41524) FEMALE at the peripheral.

5 PIN DIN 180 (DIN41524) MALE at the cable.

Pin	Name	Description
1	n/c	
2	n/c	
3	n/c	
4	CSRC	Current Source
5	CSINK	Current Sink

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

# Cable Tutorial



## Short tutorial

### Heading

First at each page there a short heading describing the cable.

### Pictures of the connectors

After that there is at each page there is one or more pictures of the connectors. Sometimes there is some question marks only. This means that I don't know what kind of connector it is or how it looks.



(To the computer)

There may be some pictures I haven't drawn yet. I illustrate this with the following advanced picture:

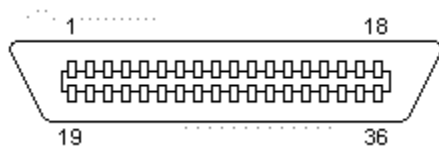


(To the computer)

Normally are one or more pictures. **These are seen from the front, and NOT the soldside. Holes (female connectors usually) are darkened.** Look at the example below. The first is a female connector and the send a male. The texts inside parentheses will tell you at which kind of the device it will look like that.



(To the Computer)



(To the Printer)

## Texts describing the connectors

Below the pictures there is texts that describes the connectors. Including the name of the physical connector.

25 PIN D-SUB MALE to the Computer

36 PIN CENTRONICS MALE to the Printer.

## Pin table

The pin table is perhaps the information you're looking for. Should be simple to read. Contains mostly the following three columns; Name, Pin 1, Pin 2. Sometimes when not the same pin is connected to each side there is another column describing the name at connector 2.

	25-DSub	36-Cen
Strobe	1	1
Data Bit 0	2	2
Data Bit 1	3	3
Data Bit 2	4	4
Data Bit 3	5	5
Data Bit 4	6	6
Data Bit 5	7	7
Data Bit 6	8	8
Data Bit 7	9	9
...	...	...

## Contributor & Source

All persons that helped me or sent me information about the connector will be listed here. The source of the information is perhaps a book or another site. I must admit that I'm bad at writing the source, but I'll try to fill in these in the future.

*Contributor: Joakim Ögren*

*Source: Amiga 4000 User's Guide from Commodore*

## Nullmodem (9-9) Cable



## Nullmodem (9-9) Cable



(To Computer 1).



(To Computer 2).

9 PIN D-SUB FEMALE to Computer 1.

9 PIN D-SUB FEMALE to Computer 2.

	D-Sub 1	D-Sub 2	
Carrier Detect	1	1	Carrier Detect
Recieve Data	2	3	Transmit Data
Transmit Data	3	2	Recieve Data
Data Terminal Ready	4	6	Data Set Ready
System Ground	5	5	System Ground
Data Set Ready	6	4	Data Terminal Ready
Request to Send	7	8	Clear to Send
Clear to Send	8	7	Request to Send
Ring Indicator	9	9	Ring Indicator

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

## Nullmodem (9-25) Cable



## Nullmodem (9-25) Cable



(To Computer 1).



(To Computer 2).

9 PIN D-SUB FEMALE to Computer 1.

25 PIN D-SUB FEMALE to Computer 2.

	<b>D-Sub 9</b>	<b>D-Sub 25</b>	
Carrier Detect	1	8	Carrier Detect
Recieve Data	2	2	Transmit Data
Transmit Data	3	3	Recieve Data
Data Terminal Ready	4	6	Data Set Ready
System Ground	5	7	System Ground
Data Set Ready	6	20	Data Terminal Ready
Request to Send	7	4	Clear to Send
Clear to Send	8	5	Request to Send
Ring Indicator	9	22	Ring Indicator

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

## Nullmodem (25-25) Cable



## Nullmodem (25-25) Cable



(To Computer 1).



(To Computer 2).

25 PIN D-SUB FEMALE to Computer 1.  
25 PIN D-SUB FEMALE to Computer 2.

	D-Sub 1	D-Sub 2	
Carrier Detect	8	8	Carrier Detect
Recieve Data	3	2	Transmit Data
Transmit Data	2	3	Recieve Data
Data Terminal Ready	20	6	Data Set Ready
System Ground	7	7	System Ground
Data Set Ready	6	20	Data Terminal Ready
Request to Send	4	4	Clear to Send
Clear to Send	5	5	Request to Send
Ring Indicator	22	22	Ring Indicator

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.



## Modem (9-25) Cable



## Modem (9-25) Cable

This cable should be used for DTE to DCE connections with hardware handshaking.



(To Computer).



(To Modem).

9 PIN D-SUB FEMALE to the Computer

25 PIN D-SUB MALE to the Modem

	Femal	Mal	Dir
	e	e	
Shield		1	
Transmit Data	3	2	↑
Recieve Data	2	3	↓
Request to Send	7	4	↑
Clear to Send	8	5	↓
Data Set Ready	6	6	↑
System Ground	5	7	
Carrier Detect	1	8	↑
Data Terminal Ready	4	20	↑
Ring Indicator	9	22	↑

Contributor: Joakim Ögren

Source: ?

Please send any comments to Joakim Ögren.



## Modem (25-25) Cable



## Modem (25-25) Cable

This cable should be used for DTE to DCE connections with hardware handshaking.



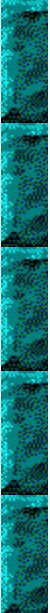
(To Computer).




(To Modem).

25 PIN D-SUB FEMALE to the Computer

25 PIN D-SUB MALE to the Modem

	Femal	Mal	Dir
	e	e	
Shield Ground	1	1	
Transmit Data	2	2	
Recieve Data	3	3	
Request to Send	4	4	
Clear to Send	5	5	
Data Set Ready	6	6	
System Ground	7	7	

Carrier Detect	8	8	
Data Terminal Ready	20	20	
Ring Indicator	22	22	

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

## Two-Wire Modem (9-25) Cable



## Two-Wire Modem (9-25) Cable

This cable should be used for DTE to DCE connections without hardware handshaking.



(To Computer).

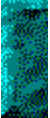
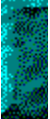
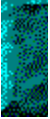
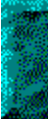
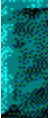
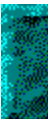
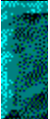
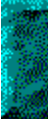


(To Modem).

9 PIN D-SUB FEMALE to the Computer

25 PIN D-SUB MALE to the Modem

	Femal e	Mal e	Dir
Shield Ground		1	
Transmit Data	3	2	
Recieve Data	2	3	
System Ground	5	7	
<b>Jumper these:</b>			
Request to Send	7		
Clear to Send	8		

Data Set Ready	6	
Carrier Detect	1	
Data Terminal Ready	4	
Request to Send	4	
Clear to Send	5	
Data Set Ready	6	
Carrier Detect	8	
Data Terminal Ready	20	

*Contributor: Joakim Ögren*

*Source: ?*

*Please send any comments to Joakim Ögren.*

## Two-Wire Modem (25-25) Cable



## Two-Wire Modem (25-25) Cable

This cable should be used for DTE to DCE connections without hardware handshaking.



(To Computer).

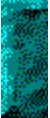
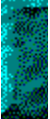
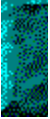
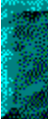
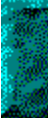
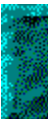
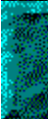
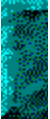


(To Modem).

25 PIN D-SUB FEMALE to the Computer

25 PIN D-SUB MALE to the Modem

	Femal e	Mal e	Dir
Shield Ground	1	1	
Transmit Data	2	2	
Recieve Data	3	3	
System Ground	7	7	
<b>Jumper these:</b> Request to Send	4		
Clear to Send	5		

Data Set Ready	6	
Carrier Detect	8	
Data Terminal Ready	20	
Request to Send	4	
Clear to Send	5	
Data Set Ready	6	
Carrier Detect	8	
Data Terminal Ready	20	

*Contributor: Joakim Ögren*

*Source: ?*

*Please send any comments to Joakim Ögren.*

## Printer Cable



## Printer Cable



(To the Computer)



(To the Printer)

25 PIN D-SUB MALE to the Computer

36 PIN CENTRONICS MALE to the Printer.

	25-DSub	36-Cen
Strobe	1	1
Data Bit 0	2	2
Data Bit 1	3	3
Data Bit 2	4	4
Data Bit 3	5	5
Data Bit 4	6	6
Data Bit 5	7	7
Data Bit 6	8	8
Data Bit 7	9	9
Acknowledge	10	10
Busy	11	11
Paper Out	12	12
Select	13	13
Autofeed	14	14
Error	15	32
Reset	16	31
Select	17	36
Signal Ground	18	33
Signal Ground	19	19
Signal Ground	20	21
Signal Ground	21	23
Signal Ground	22	25
Signal Ground	23	27
Signal Ground	24	29
Signal Ground	25	30

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*



## LapLink/InterLink Parallel Cable



## LapLink/InterLink Parallel Cable



(To Computer 1).



(To Computer 2).

25 PIN D-SUB MALE to Computer 1.

25 PIN D-SUB MALE to Computer 2.

Name	Pi	Pi	Name
	n	n	
Data Bit 0	2	15	Error
Data Bit 1	3	13	Select
Data Bit 2	4	12	Paper Out
Data Bit 3	5	10	Acknowledge
Data Bit 4	6	11	Busy
Acknowledge	10	5	Data Bit 3
Busy	11	6	Data Bit 4
Paper Out	12	4	Data Bit 2
Select	13	3	Data Bit 1
Error	15	2	Data Bit 0
Reset	16	16	Reset
Select	17	17	Select
Signal Ground	25	25	Signal Ground

Contributor: Joakim Ögren

Source: ?

Please send any comments to Joakim Ögren.

## Parallel Port Loopback



## Parallel Port Loopback

Used to verify that a port is working. This one works with Norton Utilities: Norton Diagnostics from Symantec.



(To Computer).

25 PIN D-SUB MALE to Computer.

Name	Pi	Pi	Name
	n	n	
Data Bit 0	2	15	Error
Data Bit 1	3	13	Select
Data Bit 2	4	12	Paper Out
Data Bit 3	5	10	Acknowledge
Data Bit 4	6	11	Busy

Contributor: [Joakim Ögren](#)

Source:?

*Please send any comments to [Joakim Ögren](#).*

## Serial Port Loopback (9)



## Serial Port Loopback (9)

Used to verify that a port is working. This one works with Norton Utilities: Norton Diagnostics from Symantec.



(To Computer).

9 PIN D-SUB FEMALE to Computer.

Name	Pi	Pi	Pi	Pi
	n	n	n	n
Jumpering 1	2	3		
Jumpering 2	7	8		
Jumpering 3	1	4	6	9

Contributor: [Joakim Ögren](#)

Source: ?

*Please send any comments to [Joakim Ögren](#).*

## Serial Port Loopback (25)



## Serial Port Loopback (25)

Used to verify that a port is working. This one works with Norton Utilities: Norton Diagnostics from Symantec.



(To Computer).

25 PIN D-SUB FEMALE to Computer.

Name	Pi	Pi	Pi	Pi
	n	n	n	n
Jumpering 1	2	3		
Jumpering 2	4	5		
Jumpering 3	6	8	20	22

Contributor: [Joakim Ögren](#)

Source: ?

*Please send any comments to [Joakim Ögren](#).*

## Floppy Cable

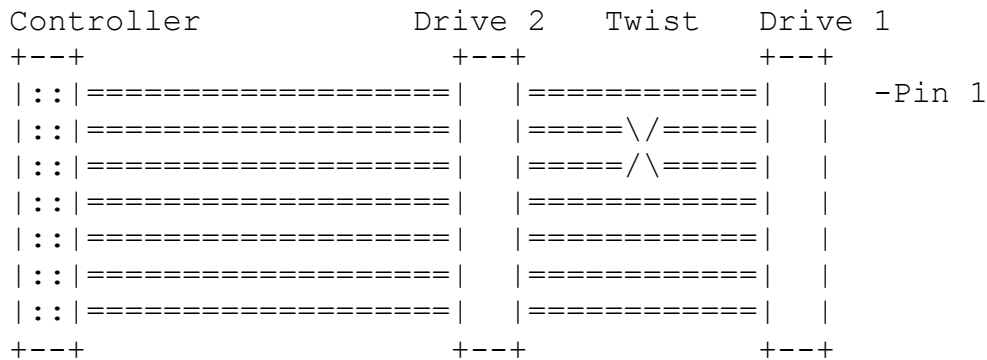


## Floppy Cable

The original floppy cable required that each drive was jumpered to the right ID. But IBM come up with an idea to avoid jumpering the floppies.

If wire 10-16 are twisted before the last connector the jumpering is avoided. Each drive should be jumpered to act as Drive 2. If only one drive is used then leave the middle connector free.

The IDC could also be an edge connector on some old drives.



(To the Controller)



(To the Drive 2)



(To the Drive 1)

34 PIN IDC FEMALE to the Controller.

34 PIN IDC FEMALE to the Drive 2.

34 PIN IDC FEMALE to the Drive 1.

	<b>Controlle r</b>	<b>Drive 1</b>	<b>Drive 2</b>
Wire 1-9	1-9	1-9	1-9
Wire 10	10	16	10
Wire 11	11	15	11
Wire 12	12	14	12
Wire 13	13	13	13
Wire 14	14	12	14
Wire 15	15	11	15
Wire 16	16	10	16
Wire 17-34	17-34	17-34	17-34

*Contributor: Joakim Ögren*

*Source: TheRef TechTalk*

*Please send any comments to Joakim Ögren.*

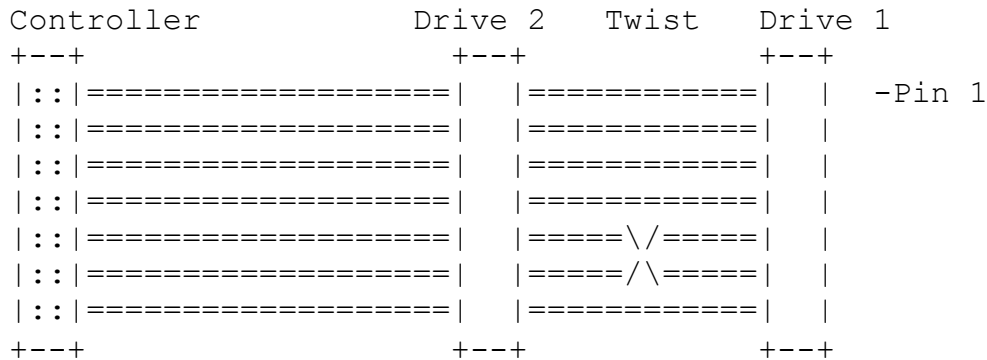


## ST506/412 Cable



## ST506/412 Cable

The ST506/412 interface requires two cables, one for control and one for data. The control cable is shared between the two drives. But each drive has each own data cable. By twisting some wires on the control cable it won't be necessary to set the ID for each drive, since the twist will do the job. Wires 25 to 29 should be twisted between drive 1 & drive 2.



## Control cable



(To the Controller)



(To the Drive 2)



(To the Drive 1)

34 PIN IDC FEMALE to the Controller.

34 PIN IDC FEMALE to the Drive 2.

34 PIN IDC FEMALE to the Drive 1.

	<b>Controller</b>	<b>Drive 1</b>	<b>Drive 2</b>
Wire 1-24	1-9	1-9	1-9
Wire 25	25	29	25
Wire 26	26	28	26
Wire 27	27	27	27
Wire 28	28	26	28
Wire 29	29	25	29
Wire 30-34	30-34	30-34	30-34

## Data cable



(To the Controller)



(To the Drive)

20 PIN IDC FEMALE to the Controller.

20 PIN IDC FEMALE to the Drive.

	<b>Controller</b>	<b>Drive</b>
Wire 1-20	1-20	1-20

*Contributor: [Joakim Ögren](#)*

*Source: [TheRef TechTalk](#)*

*Please send any comments to [Joakim Ögren](#).*

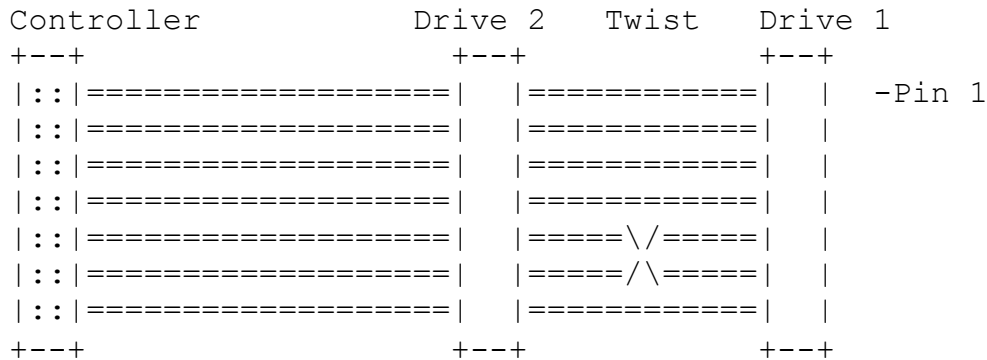


## ESDI Cable



## ESDI Cable

The ESDI interface requires two cables, one for control and one for data. The control cable is shared between the two drives. But each drive has each own data cable. By twisting some wires on the control cable it won't be necessary to set the ID for each drive, since the twist will do the job. Wires 25 to 29 should be twisted between drive 1 & drive 2.



## Control cable



(To the Controller)



(To the Drive 2)



(To the Drive 1)

34 PIN IDC FEMALE to the Controller.

34 PIN IDC FEMALE to the Drive 2.

34 PIN IDC FEMALE to the Drive 1.

	<b>Controller</b>	<b>Drive 1</b>	<b>Drive 2</b>
Wire 1-24	1-9	1-9	1-9
Wire 25	25	29	25
Wire 26	26	28	26
Wire 27	27	27	27
Wire 28	28	26	28
Wire 29	29	25	29
Wire 30-34	30-34	30-34	30-34

## Data cable



(To the Controller)



(To the Drive)

20 PIN IDC FEMALE to the Controller.

20 PIN IDC FEMALE to the Drive.

	<b>Controller</b>	<b>Drive</b>
Wire 1-20	1-20	1-20

*Contributor: [Joakim Ögren](#)*

*Source: [TheRef TechTalk](#)*

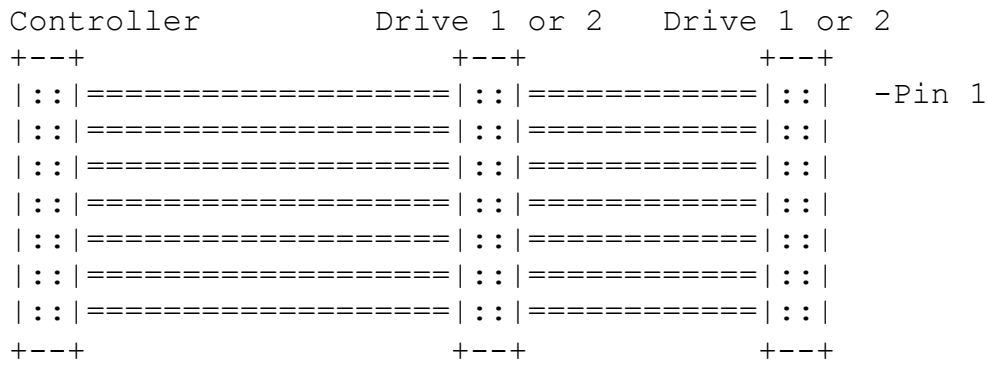
*Please send any comments to [Joakim Ögren](#).*

## IDE Cable



## IDE Cable

The IDE interface requires only one cable. All pins straight from 1 to 1, 2 to 2 and so on. The drives can be connected in any order. Only remember that one should be jumpered as Master and the other as Slave. If only one drive is used, jumper it as Single (if such a mode exists, or most common Master else).



(To the Controller)



(To the Drive 1)



(To the Drive 2)

- 40 PIN IDC FEMALE to the Controller.
- 40 PIN IDC FEMALE to the Drive 1.
- 40 PIN IDC FEMALE to the Drive 2.

Controlle Drive 1 Drive 2  
r

Wire 1-40 1-40 1-40 1-40

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## SCSI Cable (Amiga/Mac)



## SCSI Cable (Amiga/Mac)



(To the Amiga/Mac).



(To the Peripheral).

25 PIN D-SUB FEMALE to the Amiga/Mac.  
50 PIN IDC FEMALE to the Peripheral.

	<b>DSu</b>	<b>ID</b>
	<b>b</b>	<b>C</b>
Request	1	48
Message	2	42
Input/Output	3	50
Reset	4	40
Acknowledge	5	38
Busy	6	36
Data Bus 0	8	2
Data Bus 3	10	8
Data Bus 5	11	12
Data Bus 6	12	14
Data Bus 7	13	16
Control/Data	15	46
Attention	17	32
Select	19	44
Data Parity	20	18
Data Bus 1	21	4
Data Bus 2	22	6
Data Bus 4	23	10
Termination Power	25	26

*Note: All the other pins (7+9+14+16+18+24) at the DSub should be connected to the all odd pins except 25 at the IDC connector.*

*Contributor: Joakim Ögren*

*Source: ?*

Please send any comments to [Joakim Ögren](#).

## Video to TV SCART Cable



## Video to TV SCART cable



(To the TV)



(To the Video Recorder)

21 PIN SCART MALE to the TV.

21 PIN SCART MALE to the Video Recorder.

	T	VC	
	V	R	
Audio Right Out	1	2	Audio Right In
Audio Right In	2	1	Audio Right Out
Audio Left Out	3	6	Audio Left In
Audio Left In	6	3	Audio Left Out
Audio Ground	4	4	Audio Ground
Red	1	15	Red
	5		
Red Ground	1	13	Red Ground
	3		
Green	11	11	Green
Green Ground	9	9	Green Ground
Blue	7	7	Blue
Blue Ground	5	5	Blue Ground
Status / 16:9	8	8	Status / 16:9
Reserved	1	10	Reserved
	0		
Reserved	1	12	Reserved
	2		
Fast Blanking Ground	1	14	Fast Blanking Ground
	4		
Fast Blanking	1	16	Fast Blanking
	6		
Video Out Ground	1	18	Video In Ground

	7		
Video In Ground	1	17	Video Out Ground
	8		
Video Out	1	20	Video In
	9		
Video In Ground	2	19	Video Out
	0		
Ground	2	21	Ground
	1		

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*



## Amiga to SCART Cable



## Amiga to SCART cable



(To the Computer)



(To the TV)

23 PIN D-SUB FEMALE at the Amiga  
21 PIN SCART MALE at the TV

	Amiga	T	
Analog Red	3	1	RGB Red In
		5	
Analog Green	4	11	RGB Green In
Analog Blue	5	7	RGB Blue In
Composite Sync	10	2	Video In
		0	
Video GND	17	1	Video GND
		7	
GND	19	1	Blanking GND
		8	
+12V	22	1	Blanking (Connect via a 150 Ohm resistor)
		6	
+12V	22	8	Audio/RGB switch (Connect via a 1 kOhm resistor)
Phono Right		2	Audio IN Right
Phono Right GND		4	GND
Phono Left		6	Audio IN Left
Phono Left GND		4	GND

Contributor: Joakim Ögren

Source: ?

Please send any comments to Joakim Ögren.



## 9 to 15 pin VGA Cable



## 9 to 15 pin VGA cable



(To the Computer)



(To the Monitor)

9 PIN D-SUB MALE to the Computer

15 PIN HIGH DENSITY D-SUB FEMALE to the Monitor

	9-Pin	15-Pin
Red Video	1	1
Green Video	2	2
Blue Video	3	3
Horizontal Sync	4	13
Vertical Sync	5	14
Red GND	6	6
Green GND	7	7
Blue GND	8	8
Sync GND	9	10 + 11

Contributor: Joakim Ögren

Source: ?

Please send any comments to Joakim Ögren.

## Ethernet 10Base-T Crossover Cable



## Ethernet 10Base-T Crossover Cable



(To network interface card

1).



(To network interface card

2).

RJ45 MALE to network interface card 1).

RJ45 MALE to network interface card 2).

This cable can be used to cascade hubs, or for connecting two Ethernet stations back-to-back without a hub.

Name	Pi	Pi	Nam
	n	n	e
TX+	1	3	RX+
TX-	2	6	RX-
RX+	3	1	RX+
RX-	6	6	RX-

Contributor: Joakim Ögren

Source: ?

Please send any comments to Joakim Ögren.

## Ethernet 10Base-T Straight Thru Cable



## Ethernet 10Base-T Straight Thru Cable



(To network interface card).



(To hub).

RJ45 MALE to network interface card).

RJ45 MALE to hub).

Name	Pi	Cable Color	Pi	Name
TX+	1	White/Orange	1	TX+
TX-	2	Orange	2	TX-
RX+	3	White/Green	3	RX+
	4	Blue	4	
	5	White/Blue	5	
RX-	6	Green	6	RX-
	7	White/Brown	7	
	8	Brown	8	

Contributor: Joakim Ögren

Source: ?

Please send any comments to Joakim Ögren.

## ParaLoad Cable



## ParaLoad Cable



(To C64).



(To Amiga).

??? USERPORT at the C64

25 PIN D-SUB MALE at the Amiga

	<b>C6</b>	<b>Amig</b>	
Ground	A	17-25	Ground
FLAG2	B	1	Strobe
PB0	C	2	D0
PB1	D	3	D1
PB2	E	4	D2
PB3	F	5	D3
PB4	H	6	D4
PB5	J	7	D5
PB6	K	8	D6
PB7	L	9	D7
PA2	M	11	Busy

Contributor: Joakim Ögren

Source: ?

Please send any comments to Joakim Ögren.



## MIDI Cable



## MIDI Cable



(To the 1st peripheral)



(To the 2nd peripheral)

5 PIN DIN 180 (DIN41524) MALE to the 1st peripheral.

5 PIN DIN 180 (DIN41524) MALE to the 1st peripheral.

	1	2
	s	n
	t	d
Shield	2	2
Current Source	4	4
Current Sink	5	5

*Note: Although that pin 2 only is connected at MIDI Out it's simpler to connect it to both ends.*

*Contributor: Joakim Ögren*

*Source: ?*

*Please send any comments to Joakim Ögren.*

## Misc Unsupported Cables



## Misc unsupported Cables

These cables may or may not be correctly constructed. Handle with care.

## C64 Centronics Cable

Requires a cartridge with Centronics support (TFCIII..)



(To the C64).



(To the Printer)

??? USERPORT at the C64

36 PIN CENTRONICS MALE to the Printer.

	<b>C64 UserPort</b>	<b>Centronics</b>	
	??????	36	Signal Ground
Flag2	A	16	Reset
	B	11	Busy
	C-L	2-9	Data Bit 0-7
	M	1	Strobe

## Amiga to IBM RGBI Cable



(To the Monitor).



(To the Amiga).



9 PIN D-SUB ?? to the Monitor.

23 PIN D-SUB FEMALE to the Amiga.

	<b>9 Pin</b>	<b>23 Pin</b>	<b>Comment</b>
Ground	1	16	
Ground	2	16	
Digital Red	3	9	(Via 2 Hex Inverters, i.e 74LS04)
Digital Green	4	8	(Via 2 Hex Inverters, i.e 74LS04)
Digital Blue	5	9	(Via 2 Hex Inverters, i.e 74LS04)
Digital Intensity	6	6	(Via 2 Hex Inverters, i.e 74LS04)
Horizontal Sync	8	11	(Via 1 Hex Inverters, i.e 74LS04)
Vertical Sync	9	12	(Via 1 Hex Inverters, i.e 74LS04)
+5V		23	(Power for the IC)

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

# Adapter Tutorial



## Short tutorial

### Heading

First at each page there a short heading describing the adapter.

### Pictures of the connectors

After that there is at each page there is one or more pictures of the connectors, usually there's two connectors. Sometimes there is some question marks only. This means that I don't know what kind of connector it is or how it looks.



(To the computer)

There may be some pictures I haven't drawn yet. I illustrate this with the following advanced picture:



(To the computer)

Normally are one or more pictures. **These are seen from the front, and NOT the soldside. Holes (female connectors usually) are darkened.** Look at the example below. The first is a female connector and the send a male. The texts insde parentheses will tell you at which kind of the device it will look like that.



(To the Computer).



(To the Serialcable).

### Texts describing the connectors

Below the pictures there is texts that describes the connectors. Including the name of the physical connector.

9 PIN D-SUB FEMALE to the Computer.  
25 PIN D-SUB MALE to the Serialcable.

## Pin table

The pin table is perhaps the information you're looking for. Should be simple to read. Contains mostly the following three columns; Name, Pin 1, Pin 2. Sometimes when not the same pin is connected to each side there is another column describing the name at connector 2.

	<b>9-Pin</b>	<b>25-Pin</b>
Carrier Detect	1	8
Recieve Data	2	3
Transmit Data	3	2
Data Terminal Ready	4	20
System Ground	5	7
Data Set Ready	6	6
Request to Send	7	4
Clear to Send	8	5
Ring Indicator	9	22

## Contributor & Source

All persons that helped me or sent me information about the connector will be listed here. The source of the information is perhaps a book or another site. I must admit that I'm bad at writing the source, but I'll try to fill in these in the future.

*Contributor: Joakim Ögren*

*Source:Amiga 4000 User's Guide from Commodore*

## Nullmodem Adapter



## Nullmodem Adapter

This adapter will enable you to use a normal serialcable as a nullmodem.



(To the Computer).



(To the Serialcable).

25 PIN D-SUB FEMALE to the Computer.

25 PIN D-SUB MALE to the Serialcable.

	<b>Female</b>	<b>Male</b>	
Shield Ground	1	1	Shield Ground
Transmit Data	2	3	Recieve Data
Recieve Data	3	2	Transmit Data
Request to Send	4	5	Clear to Send
Clear to Send	5	4	Request to Send
Data Set Ready	6	20	Data Terminal Ready
Data Terminal Ready	20	6	Data Set Ready
Ground	7	7	Ground

*Contributor: [Joakim Ögren](#)*

*Source: ?*

*Please send any comments to [Joakim Ögren](#).*

## 9 to 25 Serial Adapter



## 9 to 25 Serial Adapter

This adapter will enable you to connect a 25 pin serialcable to a 9 pin connector at the computer.



(To the Computer).



(To the Serialcable).

9 PIN D-SUB FEMALE to the Computer.

25 PIN D-SUB MALE to the Serialcable.

	<b>9-Pin</b>	<b>25-Pin</b>
Carrier Detect	1	8
Recieve Data	2	3
Transmit Data	3	2
Data Terminal Ready	4	20
System Ground	5	7
Data Set Ready	6	6
Request to Send	7	4
Clear to Send	8	5
Ring Indicator	9	22

*Contributor: Joakim Ögren*

*Source:?*

*Please send any comments to Joakim Ögren.*

## Mini-DIN to DIN Keyboard Adapter



## Mini-DIN to DIN Keyboard Adapter

This adapter will enable you to use a keyboard with a 6 pin Mini-DIN connector to a computer with a 5 pin DIN connector.



(To the keyboard)



(To the computer)

6 PIN MINI-DIN FEMALE (PS/2 STYLE) to the keyboard.

5 PIN DIN 180 (DIN41524) MALE to the computer.

	<b>Mini-DIN</b>	<b>DIN</b>
Shield	Shield	Shield
Clock	1	1
Ground	2	4
Data	3	2
+5 VDC	5	5

*Contributor: [Joakim Ögren](#)*

*Source:?*

*Please send any comments to [Joakim Ögren](#).*

## DIN to Mini-DIN Keyboard Adapter

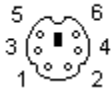


## DIN to Mini-DIN Keyboard Adapter

This adapter will enable you to use a keyboard with a 5 pin DIN connector to a computer with a 6 pin Mini-DIN connector.



(To the keyboard)



(To the computer)

5 PIN DIN 180 (DIN41524) FEMALE to the keyboard.

6 PIN MINI-DIN MALE (PS/2 STYLE) to the computer.

	<b>DIN</b>	<b>Mini-DIN</b>
Shield	Shield	Shield
Clock	1	1
Data	2	3
Ground	4	2
+5 VDC	5	5

*Contributor: [Joakim Ögren](#)*

*Source:?*

*Please send any comments to [Joakim Ögren](#).*

## Amiga 4 Joysticks Adapter



### Amiga 4 Joysticks adapter

This adapter will make it possible to connect 2 extra joysticks to the Amiga. This requires that the game is aware of this Multi-Joystick Extender in order to use it.



(To the 1st Joystick).



(To the 2nd Joystick).



(To the Computer).

9 PIN D-SUB MALE to the 1st Joystick.

9 PIN D-SUB MALE to the 2nd Joystick.

25 PIN D-SUB MALE to the Serialcable.

	Parpor	Joy	Joy
	t	1	2
Up 1	2	1	
Down 1	3	2	
Left 1	4	3	
Right 1	5	4	
Up 2	6		1
Down 2	7		2
Left 2	8		3
Right 2	9		4
Fire 2	11		6
Fire 1	13	6	
Ground 2	18		8
Ground 1	19	8	

Contributor: Joakim Ögren

Source: Tomi Engdahl's Joystick page



Please send any comments to [Joakim Ögren](#).

## PC 2 Joysticks Adapter



### PC 2 Joysticks adapter

This adapter will make it possible to connect 1 extra joystick to the PC. The gameport contains pins for two joysticks but you'll need this adapter to be able to connect two joysticks to one connector.



(To the Computer)



(To the 1st Joystick)



(To the 2nd Joystick)

15 PIN D-SUB MALE to the Computer.

15 PIN D-SUB FEMALE to the 1st Joystick.

15 PIN D-SUB FEMALE to the 2nd Joystick.

	PC	Joy 1	Joy 2
+5 VDC	1	1	-
Button 1	2	2	
Joystick 1 - X	3	3	
Ground	4	4	4
Ground	5	5	5
Joystick 1 - Y	6	6	
Button 2	7	7	
+5 VDC	8	8	
+5 VDC	9	9	1
Button 4	10	10	2
Joystick 2 - X	11	11	3
Ground	12	12	
Joystick 2 - Y	13	13	6
Button 3	14	14	7

+5 VDC                    15 15 8

*Note: Since pin 12 is often used for MIDI-stuff on gameport equipped soundcards it's better to use the ground from pin 4 &5.*

*Contributor: Joakim Ögren*

*Source: Tom Engdahl's Joystick page*

*Please send any comments to Joakim Ögren.*

## A1000 to Amiga Parallel Adapter



## A1000 to Amiga Parallel Adapter

This adapter will enable you to connect normal Amiga peripherals to an Amiga 1000. The Amiga 1000 has a male connector at the computer instead of a normal female connector. And some signals has changed places.



(To the Amiga 1000).



(To the Amiga peripheral).

25 PIN D-SUB FEMALE to the Amiga 1000.

25 PIN D-SUB FEMALE to the Amiga peripheral.

	<b>A100</b>	<b>Amig</b>
	<b>0</b>	<b>a</b>
Ground	14	23
Ground	15	24
Ground	16	25
+5V	23	14
n/c	24	15
Reset	25	16

All other straight over, 1 to 1, 2 to 2...

*Contributor: [Joakim Ögren](#)*

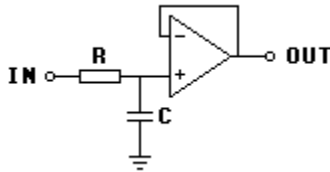
*Source: ?*

*Please send any comments to [Joakim Ögren](#).*

## Active Filter: Butterworth 6dB Lowpass



## Active Filter: Butterworth (1st order, 6 dB/octave, Lowpass)



$R=4.7k-10\text{ kOhm}$

$C=1.000/(2*\pi*F_c*R)$

Contributor: Joakim Ögren

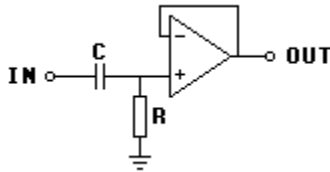
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Butterworth 6dB Highpass



## Active Filter: Butterworth (1st order, 6 dB/octave, Highpass)



$C=4.7\text{n}-10\text{nF}$

$R=1.000/(2*\pi*F_c*C)$

Contributor: Joakim Ögren

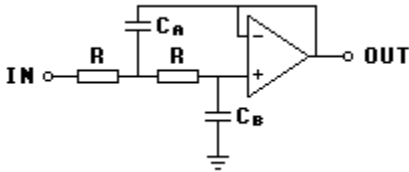
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Butterworth 12dB Lowpass



## Active Filter: Butterworth (2nd order, 12 dB/octave, Lowpass)



$R=4.7k-10\text{ k}\Omega$

$C_a=1.414/(2*\pi*F_c*R)$

$C_b=0.7071/(2*\pi*F_c*R)$

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

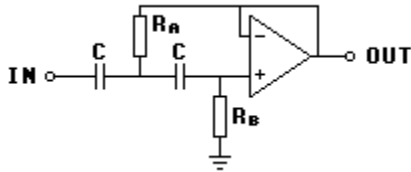
## Active Filter: Butterworth 12dB Highpass

WWW LINKS

MISC

WWW LINKS

## Active Filter: Butterworth (2st order, 12 dB/octave, Highpass)



$C=4.7\text{n}-10\text{nF}$

$R_a=0.7071/(2*\pi*F_c*C)$

$R_b=1.414/(2*\pi*F_c*C)$

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.



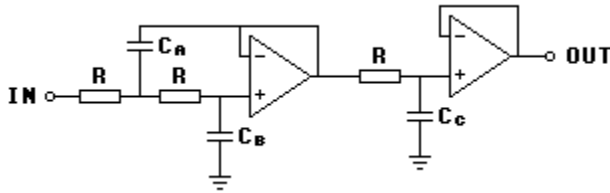
## Active Filter: Butterworth 18dB Lowpass

WWW LINKS

MISC

WWW LINKS

## Active Filter: Butterworth (3st order, 18 dB/octave, Lowpass)



$R=4.7k-10\text{ k}\Omega$

$C_a=2.000/(2*\pi*F_c*R)$

$C_b=0.500/(2*\pi*F_c*R)$

$C_c=1.000/(2*\pi*F_c*R)$

Contributor: Joakim Ögren

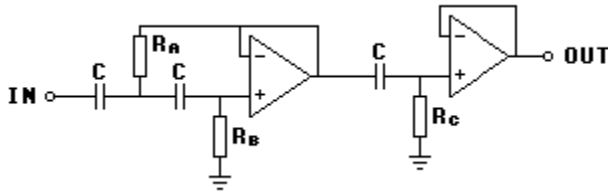
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Butterworth 18dB Highpass



## Active Filter: Butterworth (3st order, 18 dB/octave, Highpass)



$$C=4.7\text{n}-10\text{nF}$$

$$R_a=0.500/(2*\pi*F_c*C)$$

$$R_b=2.000/(2*\pi*F_c*C)$$

$$R_c=1.000/(2*\pi*F_c*C)$$

Contributor: Joakim Ögren

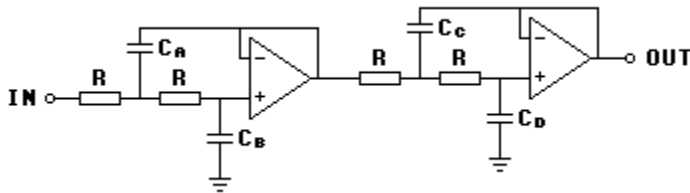
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Butterworth 24dB Lowpass



## Active Filter: Butterworth (4th order, 24 dB/octave, Lowpass)



$R=4.7k-10\text{ k}\Omega$

$C_a=1.0824/(2*\pi*F_c*R)$

$C_b=0.9239/(2*\pi*F_c*R)$

$C_c=2.6130/(2*\pi*F_c*R)$

$C_d=0.3827/(2*\pi*F_c*R)$

Contributor: Joakim Ögren

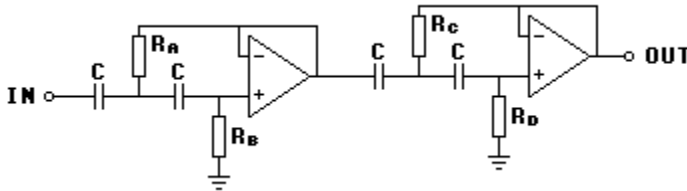
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Butterworth 24dB Highpass



## Active Filter: Butterworth (4th order, 24 dB/octave, Highpass)



$$C=4.7\text{n}-10\text{nF}$$

$$R_a=0.9239/(2*\pi*F_c*C)$$

$$R_b=1.0824/(2*\pi*F_c*C)$$

$$R_c=0.3827/(2*\pi*F_c*C)$$

$$R_d=2.6130/(2*\pi*F_c*C)$$

Contributor: Joakim Ögren

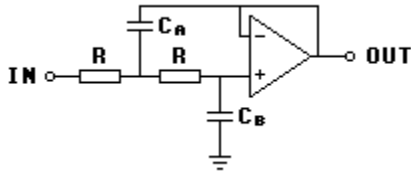
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Bessel 12dB Lowpass



## Active Filter: Bessel (2nd order, 12 dB/octave, Lowpass)



$R=4.7k-10\text{ k}\Omega$

$C_a=0.9076/(2\pi F_c R)$

$C_b=0.6809/(2\pi F_c R)$

Contributor: Joakim Ögren

Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Bessel 12dB Highpass



## Active Filter: Bessel (2st order, 12 dB/octave, Highpass)



$C=4.7n-10nF$

$R_a=1.1017/(2*\pi*F_c*C)$

$R_b=1.4688/(2*\pi*F_c*C)$

Contributor: [Joakim Ögren](#)

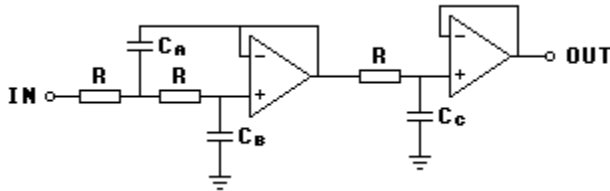
Source:?

Please send any comments to [Joakim Ögren](#).

## Active Filter: Bessel 18dB Lowpass



## Active Filter: Bessel (3rd order, 18 dB/octave, Lowpass)



$R=4.7k-10\text{ k}\Omega$

$C_a=0.9548/(2\pi F_c R)$

$C_b=0.4998/(2\pi F_c R)$

$C_c=0.7560/(2\pi F_c R)$

Contributor: Joakim Ögren

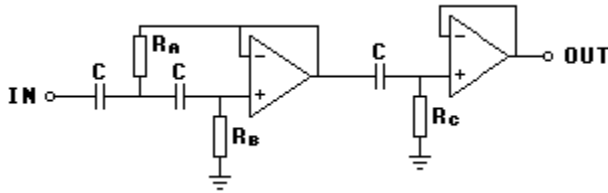
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Bessel 18dB Highpass



## Active Filter: Bessel (3st order, 18 dB/octave, Highpass)



$$C=4.7\text{n}-10\text{nF}$$

$$R_a=1.0474/(2*\pi*F_c*C)$$

$$R_b=2.0008/(2*\pi*F_c*C)$$

$$R_c=1.3228/(2*\pi*F_c*C)$$

Contributor: Joakim Ögren

Source:?

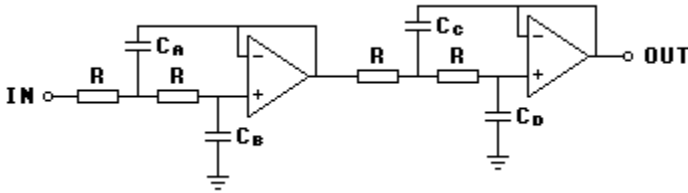
Please send any comments to Joakim Ögren.



## Active Filter: Bessel 24dB Lowpass



## Active Filter: Bessel (4th order, 24 dB/octave, Lowpass)



$R=4.7k-10\text{ k}\Omega$

$C_a=0.7298/(2\pi F_c R)$

$C_b=0.6699/(2\pi F_c R)$

$C_c=1.0046/(2\pi F_c R)$

$C_d=0.3872/(2\pi F_c R)$

Contributor: Joakim Ögren

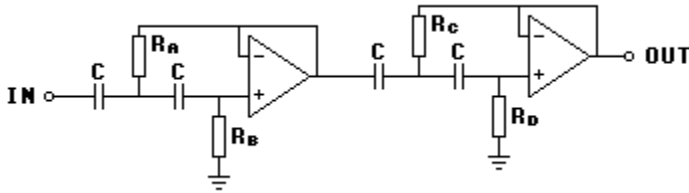
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Bessel 24dB Highpass



## Active Filter: Bessel (4th order, 24 dB/octave, Highpass)



$$C=4.7\text{n}-10\text{nF}$$

$$R_a=1.3701/(2*\pi*F_c*C)$$

$$R_b=1.4929/(2*\pi*F_c*C)$$

$$R_c=0.9952/(2*\pi*F_c*C)$$

$$R_d=2.5830/(2*\pi*F_c*C)$$

Contributor: Joakim Ögren

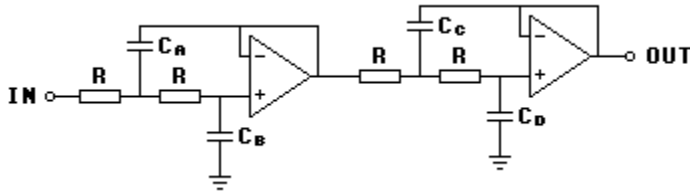
Source:?

Please send any comments to Joakim Ögren.

## Active Filter: Linkwitz 24dB Lowpass



## Active Filter: Linkwitz (4th order, 24 dB/octave, Lowpass)



$R=4.7k-10\text{ k}\Omega$

$C_a=C_c=2\cdot C_b$

$C_b=C_d=1/(2\cdot\sqrt{2}\cdot\pi\cdot F_c\cdot R)$

Contributor: [Joakim Ögren](#)

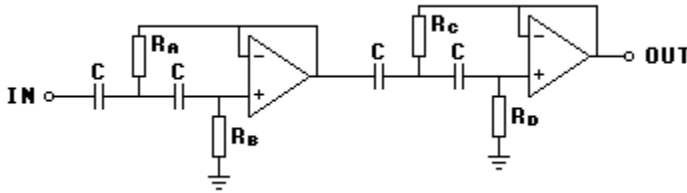
Source:?

Please send any comments to [Joakim Ögren](#).

## Active Filter: Linkwitz 24dB Highpass



## Active Filter: Linkwitz (4th order, 24 dB/octave, Highpass)



$$C=4.7\text{n}-10\text{nF}$$

$$R_a=R_c=1/(2*\text{sqr}(2)*\text{pi}*F_c*C)$$

$$R_b=R_d=2R_a$$

Contributor: [Joakim Ögren](#)

Source:?

Please send any comments to [Joakim Ögren](#).

## Defintion: DTE & DCE



## Definition: DTE & DCE

### DTE

DTE is acronym for Data Terminal Equipment.

Examples of DTE is computers & terminals.

### DCE

DCE is acronym for Data Communication Equipment.

Examples of DCE is modems.

### Wiring

Wiring a cable for DTE to DCE communication is easy. All wires goes straight from pin x to pin x.

But wiring a cable for DTE to DTE (nullmodem) or DCE to DCE requieres that some wires are crossed. A signal should be wire from pin x to the opposite signal at the other end. With opposite signals I mean for example Transmit & Send.

*Contributor: [Joakim Ögren](#)*

*Source:?*

*Please send any comments to [Joakim Ögren](#).*

This the URL for the WWW page:

<http://theref.c3d.rl.af.mil/>

Open this address in your WWW browser.

This the e-mail address:

<mailto:falbof@rl.af.mil>

Choose this address in your e-mail reader.

This the URL for the WWW page:

<http://www.compusmart.ab.ca/ndyrvik/nierrefer.htm>

Open this address in your WWW browser.



This the e-mail address:

<mailto:ndyrvik@compusmart.ab.ca>

Choose this address in your e-mail reader.

This the URL for the WWW page:

<http://www.ee.ualberta.ca/~charro/cookbook/>

Open this address in your WWW browser.

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<mailto:charro@ee.ualberta.ca>

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<ftp://ftp.netcom.com/pub/di/dibald/FAQS/achh.faq>

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<mailto:msokos1@gl.umbc.edu>

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This the e-mail address:

<mailto:qtech@ts.umu.se>

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<http://nyquist.ee.ualberta.ca/~ewaniu/cdtv/cdtv-technical.html>

Open this address in your WWW browser.

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<http://www.interlog.com/~gscott/t-1084.html>

Open this address in your WWW browser.



This the URL for the WWW page:

<http://www.interlog.com/~gscott/t-1084d.html>

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<http://theref.c3d.rl.af.mil>

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<http://www.mindspring.com/~kjack1/scart.html>

Open this address in your WWW browser.

This the URL for the WWW page:

<http://www.mindspring.com/~kjack1/svideo.html>

Open this address in your WWW browser.

This the URL for the WWW page:

<http://www.hut.fi/~then/circuits/joystick.html>

Open this address in your WWW browser.



