

# Connectors

## VGA

Original VGA (31.5 KHz - 640x480)/SVGA (35-37 KHz - 800x600)

VGA (VESA Standard)

Commodore Monitor 1084/VGA

EGA - TTL (15.74-21.85 KHz)

CGA - TTL (15.75 KHz - 320x200 or 640x200)

Monochrome - TTL (18.43 KHz - 720x350)

Scart

Scart (Japanese style)

S-Video

NeoGeo Audio/Video

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Commodore Monitor 1084(S)

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Sega Saturn

Sega Genesis 2/32X/Nomad

Super Nintendo/Super Famicon

Super Nintendo/Super Famicon

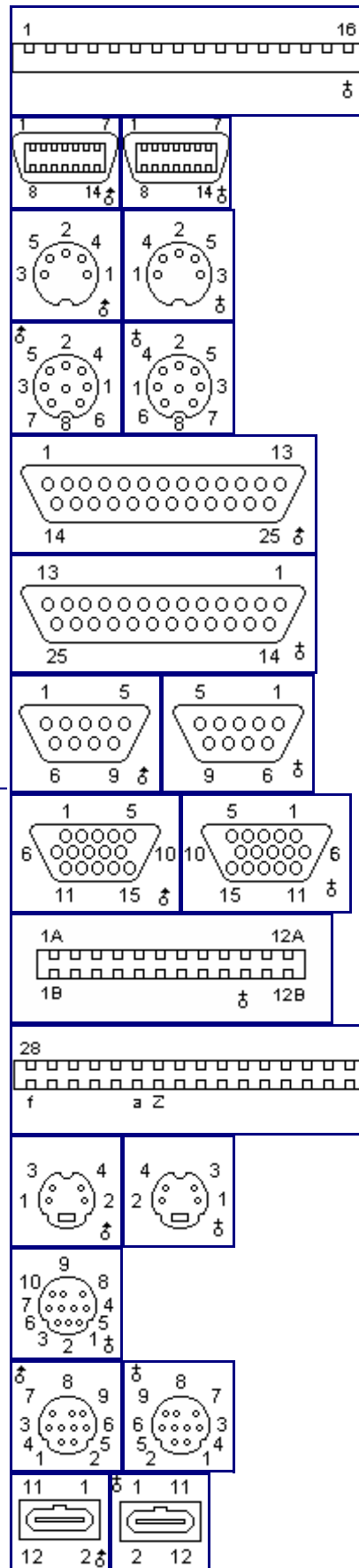
(newer models)

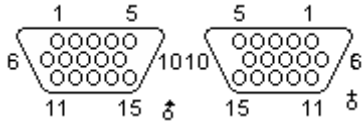
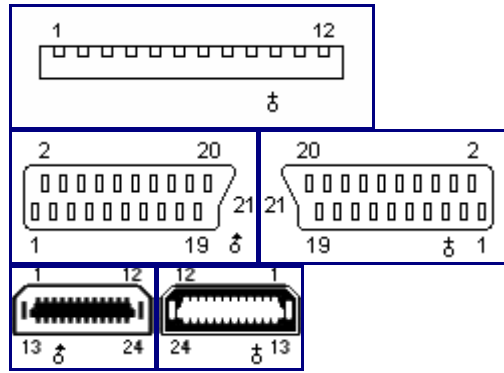
Nintendo 64

Jaguar

Game Cube

XBox





VGA

- 1 RED Red Video
- 2 GREEN Green Video
- 3 BLUE Blue Video
- 4 ID2 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 Monitor ID Bit 0
- 12 ID1/SDA Monitor ID Bit 1
- 13 H-/CSYNC Horizontal Sync (or Composite Sync)
- 14 VSYNC Vertical Sync
- 15 ID3/SCL Monitor ID Bit 3

Original VGA (31.5 KHz - 640x480)/SVGA (35-37 KHz - 800x600)

- 1 Red (Analog)
- 2 Green (Analog)
- 3 Blue (Analog)
- 4 Reserved
- 5 Ground
- 6 Red Return
- 7 Green Return
- 8 Blue Return
- 9 No Connect
- 10 Ground
- 11 (ID0) GND (Color)
- 12 (ID1) NC (Color)
- 13 Horizontal Sync
- 14 Vertical Sync
- 15 No Connect

Note: Monitor ID Lines ID1, ID0=NC, G for color; G, NC for Mono. ID0 only may be used.

Mono VGA is similar using only the Green Video and Return.

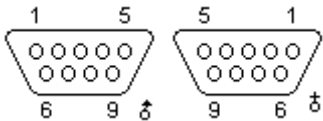
## VGA (VESA Standard)

Note that many of the pins shown above as "no connects" (actually, these were sometimes used as monitor ID bits by many manufacturers) are now defined under the VESA Display Data Channel standard. This standard provides

two protocols for display ID and control, including support for the full ACCESS.bus interface. The current definition of the "VGA" pinout per the DDC standard is:

- 1 Red (Analog)
- 2 Green (Analog)
- 3 Blue (Analog)
- 4 Reserved
- 5 Return
- 6 Red Return
- 7 Green Return
- 8 Blue Return
- 9 +5 VDC (frm host)\*
- 10 Sync return
- 11 Monitor ID0 (opt.)
- 12 Data (SDA)
- 13 Horizontal Sync
- 14 Vertical Sync
- 15 Data clock (SCL)\*

Those signals marked with an asterisk would be supplied by the host only if the host supports the DDC2 protocol (I2C or ACCESS.bus).



Commodore Monitor 1084/VGA

- 1 GND Ground
- 2 GND Ground
- 3 R Red
- 4 G Green
- 5 B Blue
- 6 I Intensity
- 7 CSYNC Composite Sync
- 8 HSYNC Horizontal Sync
- 9 VSYNC Vertical Sync

EGA - TTL (15.74-21.85 KHz)

- 1 GND
- 2 Secondary RED Video
- 3 Primary RED Video
- 4 Primary GREEN Video

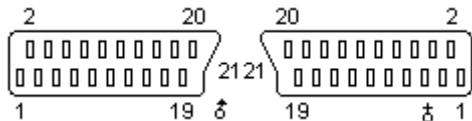
- 5 Primary BLUE Video
- 6 Secondary Green Video/Intensity
- 7 Secondary Blue Video
- 8 H Sync TTL Positive
- 9 V Sync TTL Negative

CGA - TTL (15.75 KHz - 320x200 or 640x200)

- 1 GND
- 2 Unused
- 3 RED Video
- 4 GREEN Video
- 5 BLUE Video
- 6 Intensity
- 7 Unused
- 8 H Sync TTL Positive
- 9 V Sync TTL Positive

Monochrome - TTL (18.43 KHz - 720x350)

- 1 GND
- 2 Unused
- 3 Unused
- 4 Unused
- 5 Unused
- 6 Intensity
- 7 Video
- 8 H Sync TTL Positive
- 9 V Sync TTL Negative



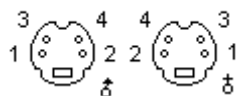
Scart

- 1 AOR Audio Out Right
- 2 AIR Audio In Right
- 3 AOL Audio Out Left + Mono
- 4 AGND Audio Ground
- 5 B GND RGB Blue Ground
- 6 AIL Audio In Left + Mono
- 7 B RGB Blue In
- 8 SWTCH Audio/RGB switch / 16:9
- 9 G GND RGB Green Ground
- 10 CLKOUT Data 2: Clockpulse Out
- 11 G RGB Green In
- 12 DATA Data 1: Data Out
- 13 R GND RGB Red Ground
- 14 DATAGND Data Ground
- 15 R RGB Red In / Chrominance
- 16 BLNK Blanking Signal
- 17 VGND Composite Video Ground
- 18 BLNKGND Blanking Signal Ground

- 19 VOUT Composite Video Out
- 20 VIN Composite Video In / Luminance
- 21 SHIELD Ground/Shield (Chassis)

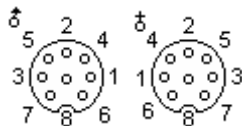
Scart (Japanese style)

- 1 AR Audio Right
- 2 ? ?
- 3 AGND Audio Ground
- 4 ? ?
- 5 AL Audio Left
- 6 ? ?
- 7 BLNKGND Blanking Signal Ground
- 8 ? ?
- 9 BLNK Blanking Signal
- 10 ? ?
- 11 ? ?
- 12 ? ?
- 13 R GND RGB Red Ground
- 14 ? ?
- 15 R RGB Red
- 16 +5V +5V
- 17 G GND RGB Green Ground
- 18 B GND RGB Blue Ground
- 19 G RGB Green
- 20 B RGB Blue
- 21 SHIELD Ground/Shield (Chassis)



S-Video

- 1 GND Ground (Y)
- 2 GND Ground (C)
- 3 Y Intensity (Luminance)
- 4 C Color (Chrominance)



NeoGeo Audio/Video

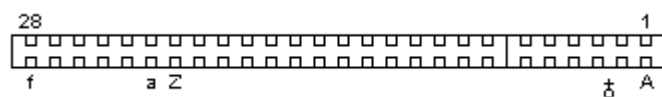
- 1 AOUT Audio out
- 2 GND Ground
- 3 VIDEO Composite Video Out
- 4 +5V +5 VDC
- 5 GREEN Green Video
- 6 RED Red Video
- 7 NSYNC Negative Sync
- 8 BLUE Blue Video

Sega Genesis/Sega Master System

- 1 Composite Video
- 2 Ground
- 3 Audio Mono (use Headset connector for stereo)
- 4 Green
- 5 +5VDC
- 6 Sync
- 7 Red
- 8 Blue

Commodore Monitor 1084(S)

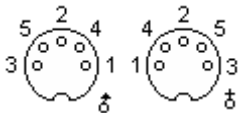
- 1 n/c Not connected
- 2 R Red
- 3 G Green
- 4 B Blue
- 5 I Intensity
- 6 GND Ground
- 7 HSYNC Horizontal Sync
- 8 VSYNC Vertical Sync



JAMMA

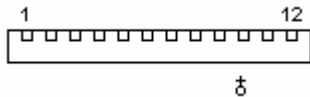
- 1 Ground
- 2 Ground
- 3 +5V
- 4 +5V
- 5 -5V
- 6 +12V
- 7 Key (no connection)
- 8 Meter 1
- 9 Lockout 1
- 10 Speaker +
- 11 Audio +
- 12 Video Red
- 13 Video Blue
- 14 Video Ground
- 15 Test Switch
- 16 Coin 1
- 17 1 Player start
- 18 Player 1 Up
- 19 Player 1 Down
- 20 Player 1 Left
- 21 Player 1 Right
- 22 Player 1 Button 1
- 23 Player 1 Button 2
- 24 Player 1 Button 3
- 25 (Player 1 Button 4)
- 26 Not used
- 27 Ground

28 Ground  
 A Ground  
 B Ground  
 C +5V  
 D +5V  
 E -5V  
 F +12V  
 H Key (no connection)  
 J Meter 2  
 K Lockout 2  
 L Speaker -  
 M Audio Ground  
 N Video Green  
 P Video Sync  
 R Service Switch  
 S Tilt Switch "Pinball Slam"  
 T Coin 2  
 U 2 Player start  
 V Player 2 Up  
 W Player 2 Down  
 X Player 2 Left  
 Y Player 2 Right  
 Z Player 2 Button 1  
 Aa Player 2 Button 2  
 Ab Player 2 Button 3  
 Ac (Player 2 Button 4)  
 Ad Not used  
 Ae Ground  
 Af Ground



PC-Engine

1 Video  
 2 Right  
 3 Ground  
 4 +5v  
 5 Left

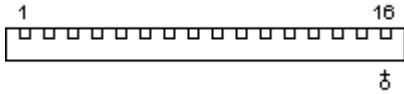


Playstation

1 GND Ground  
 2 RT Right Audio  
 3 GND Ground  
 4 LT Left Audio  
 5 Y S-Video Y  
 6 SYNC Composite Sync  
 7 C S-Video C

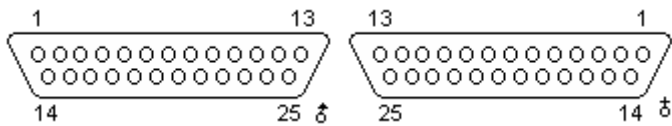
- 8 VGND Video Ground
- 9 B Blue
- 10 +5V +5 VDC
- 11 R Red
- 12 G Green

(Add a 220uf capacitor in each of the RGB lines to get an acceptable picture)



Dreamcast

- 1 Ground
- 2 Right Audio
- 3 Left Audio
- 4 +12v
- 5 +5v
- 6 31 kHz RGB - (VGA rate) Connect to GND with pin 7
- 7 15 kHz RGB - (TV rate) Connect to GND
- 8 Vertical Sync (for VGA)
- 9 Horizontal Sync (for VGA)
- 10 Composite Sync
- 11 S-video
- 12 S-video
- 13 Composite Video
- 14 Blue (Use 220uf cap)
- 15 Green (Use 220uf cap)
- 16 Red (use 220uf cap)



Parallel Port (PC)

- 1 /STROBE Strobe
- 2 D0 Data Bit 0
- 3 D1 Data Bit 1
- 4 D2 Data Bit 2
- 5 D3 Data Bit 3
- 6 D4 Data Bit 4
- 7 D5 Data Bit 5
- 8 D6 Data Bit 6
- 9 D7 Data Bit 7
- 10 /ACK Acknowledge
- 11 BUSY Busy
- 12 PE Paper End
- 13 SEL Select
- 14 /AUTOFD Autofeed
- 15 /ERROR Error
- 16 /INIT Initialize
- 17 /SELIN Select In

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

#### Parallel Port (PC/EPP)

1 nStrobe Strobe  
2 data0 Address, Data or RLE Data Bit 0  
3 data1 Address, Data or RLE Data Bit 1  
4 data2 Address, Data or RLE Data Bit 2  
5 data3 Address, Data or RLE Data Bit 3  
6 data4 Address, Data or RLE Data Bit 4  
7 data5 Address, Data or RLE Data Bit 5  
8 data6 Address, Data or RLE Data Bit 6  
9 data7 Address, Data or RLE Data Bit 7  
10 /nAck Acknowledge  
11 Busy Busy  
12 PError Paper End  
13 Select Select  
14 /nAutoFd Autofeed  
15 /nFault Error  
16 /nInit Initialize  
17 /nSelectIn Select In  
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

#### Parallel Port (Amiga)

1 /STROBE Strobe  
2 D0 Data Bit 0  
3 D1 Data Bit 1  
4 D2 Data Bit 2  
5 D3 Data Bit 3  
6 D4 Data Bit 4  
7 D5 Data Bit 5  
8 D6 Data Bit 6  
9 D7 Data Bit 7  
10 /ACK Acknowledge  
11 BUSY Busy  
12 POUT Paper Out  
13 SEL Select (Shared with RS232 RING-indicator)  
14 +5V PULLUP +5 Volts DC (10 mA max)  
15 n/c Not connected

16 /RESET Reset  
17 GND Signal Ground  
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

Parallel Port (Amiga 1000)

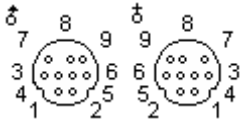
1 /STROBE Strobe  
2 D0 Data Bit 0  
3 D1 Data Bit 1  
4 D2 Data Bit 2  
5 D3 Data Bit 3  
6 D4 Data Bit 4  
7 D5 Data Bit 5  
8 D6 Data Bit 6  
9 D7 Data Bit 7  
10 /ACK Acknowledge  
11 BUSY Busy  
12 POUT Paper Out  
13 SEL Select (Shared with RS232 RING-indicator)  
14 GND Signal Ground  
15 GND Signal Ground  
16 GND Signal Ground  
17 GND Signal Ground  
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



Sega Saturn

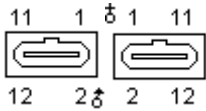
1 Sync  
2 Stereo L  
3 Stereo R  
4 +5VDC  
5 Red  
6 Green  
7 Blue  
8 Composite Video  
9 Luminance

## 10 Chrominance



Sega Genesis 2/32X/Nomad

- 1 Blue
- 2 +5VDC
- 3 Green
- 4 Composite Video
- 5 Sync
- 6 Audio Mono
- 7 Red
- 8 Stereo L
- 9 Stereo R



Super Nintendo/Super Famicon

- 1 R Red (Requires 200 uF in series)
- 2 G Green (Requires 200 uF in series)
- 3 CSYNC Composite Sync
- 4 B Blue (Requires 200 uF in series)
- 5 GND Ground
- 6 GND Ground
- 7 Y S-Video Y
- 8 C S-Video C
- 9 CVBS Composite Video
- 10 +5V +5 VDC
- 11 L+R Left+Right Audio (Mono)
- 12 L-R Left-Right Audio (Used to calculate Stereo)

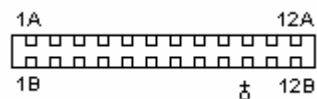
Super Nintendo/Super Famicon (newer models)

- 1 R Red (Requires 200 uF in series)
- 2 G Green (Requires 200 uF in series)
- 3 CSYNC Composite Sync
- 4 B Blue (Requires 200 uF in series)
- 5 GND Ground
- 6 GND Ground
- 7 n/c Not connected
- 8 n/c Not connected
- 9 CVBS Composite Video
- 10 +5V +5 VDC
- 11 L+R Left+Right Audio (Mono)
- 12 L-R Left-Right Audio (Used to calculate Stereo)

Nintendo 64

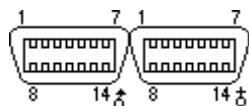
- 1 n/c Not connected

- 2 n/c Not connected
- 3 n/c Not connected
- 4 n/c Not connected
- 5 GND Ground
- 6 GND Ground
- 7 Y S-Video Y
- 8 C S-Video C
- 9 CVBS Composite Video
- 10 +5V +5 VDC
- 11 L+R Left+Right Audio (Mono)
- 12 L-R Left-Right Audio (Used to calculate Stereo)



Jaguar

- 1A AL Audio Left
- 2A AGND Audio Ground
- 3A GND Ground
- 4A GND Ground (Chroma)
- 5A B RGB Blue
- 6A HSYNC Horizontal sync
- 7A G RGB Green
- 8A CHROMA Chroma
- 9A GND? Ground?
- 10A +5V? +5 VDC?
- 11A +5V? +5 VDC?
- 12A ? ?
- 1B AR Right audio
- 2B AGND Audio GND
- 3B GND Ground
- 4B R RGB Red
- 5B CSYNC Composite (Vertical) Sync
- 6B ? ?
- 7B LGND Luminance Ground
- 8B LUM Luminance
- 9B GND Ground
- 10B CVBSGND Composite Video Ground
- 11B CVBS Composite Video
- 12B ? ?



Game Cube

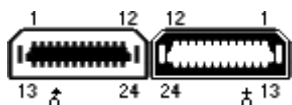
- 1 Y
- 2 Y GND
- 3 Pb
- 4 Pb GND
- 5 Pr
- 6 PR GND
- 7 ? Reserved

- 8 Line 1
- 9 Line 2
- 10 ? Reserved
- 11 Line 3
- 12 GND Ground
- 13 ? Reserved
- 14 Plug In Flag

There are so far five D connector types, each a higher resolution than the last. Used primarily for Japanese digital satellite broadcasting, the resolutions are:

- D1 525 Interlaced
- D2 525 progressive
- D3 1125 Interlaced
- D4 750 progressive
- D5 1125 progressive

Note that each is backward compatible. This means that a D5 TV can display all of these modes, where a D3 TV can only display D1-D3.



XBox

- 1 Audio Right
- 2 Audio Right GND
- 3 SP-DIF Digital Audio
- 4 V-Sync (VGA Mode)
- 5 Mode GND
- 6 Mode GND
- 7 Mode GND
- 8 GND
- 9 Variable
- 10 Pin 9 GND
- 11 Variable
- 12 Pin 11 GND
- 13 Vcc
- 14 Audio Left
- 15 Audio Left GND
- 16 H Sync (VGA Mode)
- 17 Mode Select 1
- 18 Mode Select 2
- 19 Mode Select 3
- 20 +12v
- 21 Pin 22 GND
- 22 Variable
- 23 Pin 24 GND
- 24 Variable

NTSC Mono PAL/Secam Mono Component NTSC Stereo VGA (31 kHz RGB) PAL Stereo SCART (15 kHz RGB)

9	-	-	Pb	-	B	-	B
11	Y	Y	Y	Y	G	Y	G
22	C	C	Pr	C	R	C	R
24	V	V	-	V	-	V	S

V = Composite Video  
 S = Composite Sync  
 Y = S-video Luma  
 C = S-video Chroma  
 Blue = GND

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