



List of video connectors

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For broader coverage of this topic, see [Video](#).

This is a list of physical RF and video connectors and related video signal standards.

Physical connectors

[\[edit \]](#)

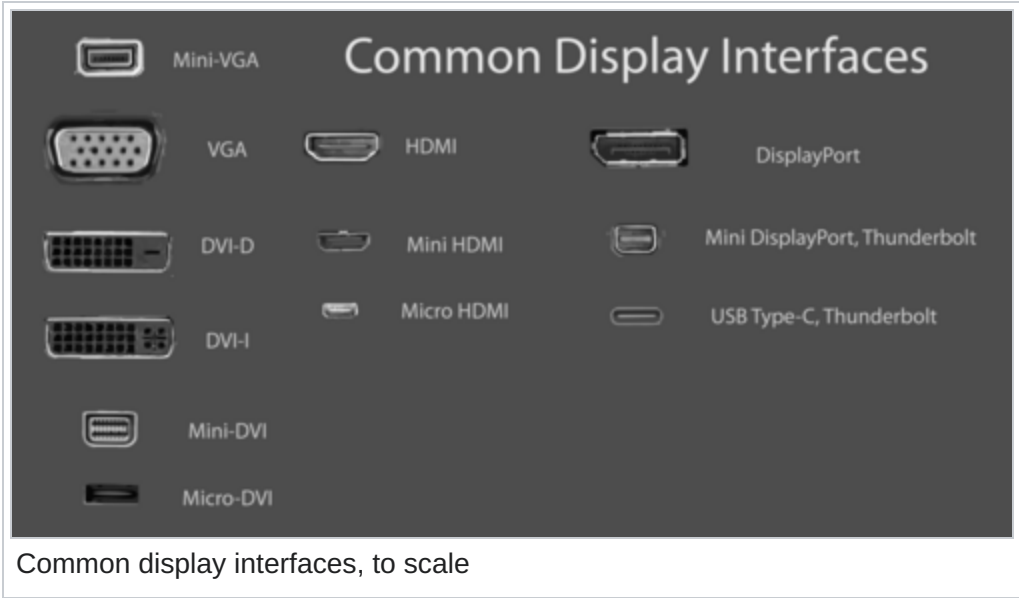


Image	Class or connector name	Used for	Notes
RF connectors (radio frequency signals). Generally use coaxial cable types such as RG-6 and RG-59 (except for twin-lead).			
 Belling-Lee/IEC 169-2 connector	TV aerial plug (a.k.a. antenna plug)	Television antenna connection for most video devices outside North America. Used by early home computers and game consoles to connect them to TVs because of the lack of any other connector.	Generally not used in North America.
	BNC	Alternative to RCA for professional video electronics. Protocols: Serial digital interface (SDI) and HD-SDI. CoaXPress	75 Ω for video signal (SDI and CoaXPress) on, for example, RG59 and RG6 . 50 Ω for data link, like Ethernet on RG58 . 93 Ω on RG62 .



50 Ω (white/bottom row) and 75 Ω C connectors (red/top row)

C connector
(*Concelman* connector)



General Radio 874 connectors

GR connector
(*General Radio* connector)

Mostly seen on the company's test equipment.

Uniquely "hermaphrodite" connector, i.e. no male/female pairing. cf. [Anderson connector](#)



F connector

Used for most North American TV antenna connections, as well as [satellite](#) and [cable](#) systems worldwide. Also common in North America for early home computers and game consoles, older VCRs, [RF modulators](#), and even [CECBs](#) due to lack of other connectors.

Once not used outside North America for TV antennas (except for satellite reception), but gaining acceptance elsewhere with advent of digital TV.



N connector
(*Neill* connector)

Mostly seen on professional quality VHF and UHF cables and equipment.

Generally 50 Ω but has been manufactured as 75 Ω ; difference being thinner centre connectors; not reliably interconnected.



TNC connector (left), compared with BNC (right)

Threaded Neill-Concelman connector
(TNC)



Twin-lead

Used for older TV antenna installations in the US and various other countries worldwide. Current use generally limited to [baluns](#) to

Replaced by F connector in North America and Belling-Lee Connector in

		adapt 300 Ω twin-lead to/from 75 Ω F connector.	other countries outside North America.
	UHF connector (e.g. PL-259/SO-239)	Despite its name, now most commonly seen on higher-power HF radio equipment, e.g. SSB transceivers. A popular choice for amateur radio enthusiasts.	50 Ω

D-subminiature family [[edit](#)]

Image	Class or connector name	Used for	Notes
	CGA , MDA , EGA connector (DE-9)	The historical connector used by MDA, EGA and CGA graphic cards is a female nine-pin D-subminiature (DE-9). The signal standard and pinout are backward-compatible with CGA, allowing EGA monitors to be used on CGA cards and vice versa.	Early VGA cards also used this connector.
	VGA connector (DE-15)	Became a nearly ubiquitous analog computer display connector after first being introduced with IBM x86 machines. Older VGA connectors were DE-9 (9-pin). The modern DE-15 connector can carry Display Data Channel to allow the monitor to communicate with the graphics card, and optionally vice versa. ^[1]	Being replaced by DVI from 1999 onward.
	DB13W3	Analog computer video, color and monochrome. Sun Microsystems , Silicon Graphics , IBM RISC , Intergraph and some Apple Computer computer workstations.	Obsolete; replaced by VGA and DVI. Same connector was used by 3Com for a redundant PSU on the 3300 switch family.

DVI-related [[edit](#)]

Image	Class or connector name	Used for	Notes
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Single-link DVI-D male plug.



Dual-link DVI-D male plug.

[Digital Visual Interface](#) (DVI).
Five variants are: DVI-I single link, DVI-I dual link, DVI-D single link, DVI-D dual link, and DVI-A.



Male Mini-DVI plug on top of a 12-inch PowerBook G4; female port is second from left.

[Mini-DVI](#)

[VGA](#), [DVI](#), [television](#). [Apple Computer](#) alternative to Mini-VGA.

Often now replaced by Mini DisplayPort.



Female Micro-DVI port (rightmost) on [MacBook Air](#)

[Micro-DVI](#)

[DVI-D](#) dual link

Replaced with Mini DisplayPort.



[DMS-59](#)

twin [DVI](#) (for two monitors via an adapter cable)



[Apple Display Connector](#)

Combines DVI, USB, and power.



HDMI connector plugs (male): Type D

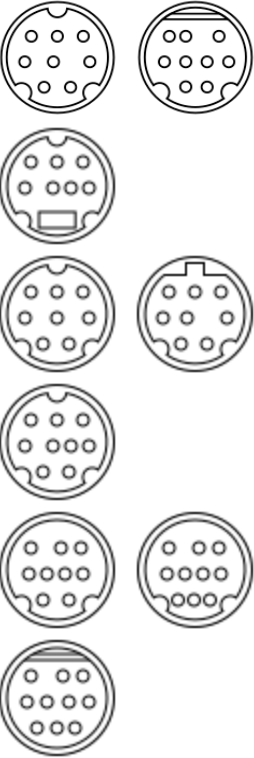
[High-Definition Multimedia Interface](#) (HDMI)

[High definition](#) digital video devices ([HDMI](#) protocol)

Electrically compatible with DVI-D and DVI-I, but not DVI-A, using a simple adapter.

(Micro), Type C
(Mini), and Type A.

DIN/Mini-DIN [\[edit \]](#)

Image	Class or connector name	Used for	Notes
	DIN-style 10-pin	CCJ connector	
	Mini-DIN 4-pin	S-Video (separate video, split video, super-video, or Y/C)	
	Various Mini-DIN configurations	Various systems and protocols - see Mini-DIN for details	

Others [\[edit \]](#)

Image	Class or connector name	Used for	Notes
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Three RCA connectors - yellow for [composite video](#), and white and red for stereo audio

[RCA connector](#)

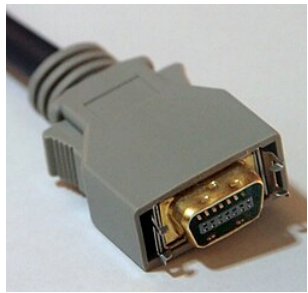
Widely used in [consumer electronics](#) for audio and video.

A single connector must be used for each signal.



[SCART](#)

[Consumer electronics](#), mostly in Europe. Carries analog [stereo](#) sound, along with [composite video](#) and/or [RGB](#) video. Some devices also support [S-Video](#), which shares the same pins as composite video and RGB. $Y P_B P_R$ is also sometimes supported as a non-standard extension via the RGB pins.



[D-Terminal](#)

Popular in [Japan](#) for analog [high definition video](#). Available resolutions are specified as D1 through D5.



[PDMI](#)

- [Advent Vega](#)
- [Dell Streak](#)
- [Boeing Black](#)

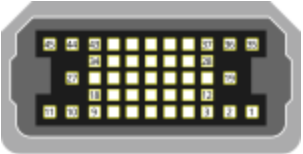
30 pin receptacle including the following electrical interfaces: 2-lane [DisplayPort v1.1a](#), [USB 3.0](#), [USB On-The-Go](#), Analog stereo [line-out](#), [HDMI CEC](#) for remote control, high output power line from both host and portable device

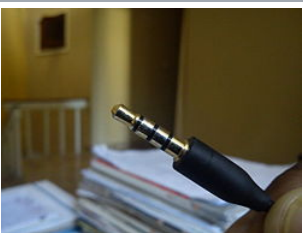
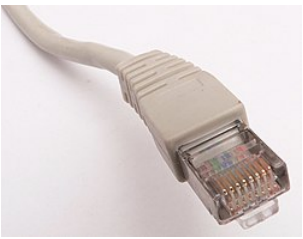


Male Mini-VGA plug on top of an Apple

[Mini-VGA](#) (used for laptops)

Used for laptops, especially from [Apple Computer](#) and some from [Sony](#).

laptop, female port is second from right.			
 AV Multi (gold-plated male plug)	AV Multi	Sony proprietary. Combines composite video, S-Video, RGsB/YP_BP_R (both use same pins) and stereophonic sound (two analog channels).	Used for all analog audio and video out on for the PlayStation, PlayStation 2 and PlayStation 3 video game consoles. (A few early original PlayStation models featured RCA outs for composite video and stereo analog audio in addition to the AV Multi connector.)
	35-pin MicroCross Molex connector	VESA Enhanced Video Connector and VESA Plug and Display (a.k.a. M1-DA) both used this connector with slightly different pin assignments. These schemes combined VGA or digital video, audio, FireWire, and USB signals into a single connector.	Deprecated. Made obsolete by DFP and later DVI.
	HDI-45	Apple proprietary. Combines Analog VGA out, stereo analog audio out, analog microphone in, S-video capture in, Apple desktop bus interface.	Proprietary connector used on Apple Macintosh Centris computers, and the Apple AudioVision 14 Display. An attempt by Apple to deal with cable clutter, by combining five separate cables from computer to monitor.
 Female port (20-pin)	Digital Flat Panel (DFP)	Used with the PanelLink digital video protocol.	Deprecated. Made obsolete by DVI.
3D model of a UDI connector	Unified Display Interface		Proposed to replace both DVI and HDMI. Deprecated by Intel in favor of DisplayPort.

	3.5 mm (1⁄8 in) TRRS and TRS connector	Analog camcorders commonly use a 3.5 mm four-contact TRRS connector to carry composite video and stereo audio.	Jack appears identical to more common three-contact stereo audio-only (Walkman) 3.5 mm TRS connector.
	DisplayPort	DisplayPort (DP) was designed to replace VGA, DVI, and FPD-Link and standardized by VESA. ^[2] It is primarily used to connect a video source to a display device such as a computer monitor. It can also carry audio, USB, and other forms of data. DisplayPort is backward compatible with other interfaces such as HDMI and DVI through the use of active or passive adapters.	
	Mini DisplayPort	Proposed alternative to HDMI, used with computer displays: (VGA, DVI) Apple Inc.'s successor to their own Mini-DVI.	The same connector is used for Intel's Thunderbolt connector, developed in cooperation with Apple.
	HDBaseT (8P8C modular connector)	Used for transmission of uncompressed high-definition video, audio, Ethernet, high-power over cable and various controls, via a 100 m Cat5e/Cat6 cable with 8P8C modular connectors of the type commonly used for telephone and Ethernet LAN connections.	

By signal standard [\[edit \]](#)

Signal standard name	Introduction year	Connector	Type	Max. resolution (X-px × Y-px (l) @ Z-Hz)	Used for	Notes [hide]

Composite video	1956 ^[3]	1 RCA, BNC, TV Aerial Plug, Mini-VGA, DIN 5-pin, ^[4] SCART 21-pin	Analog	576 lines tv compatible 625 lines tv compatible	Consumer electronics, including VCR and LaserDisc, 1970–1980s home computers like the VIC-20, 1980s–1990s video game consoles, some laptops, some single-board computers like the Raspberry Pi	Used with PAL, NTSC or SECAM color.
RGBS	1977	SCART 21-pin (a.k.a. Peritel), JP-21			Consumer electronics, Early home computers such as Commodore Amiga, Acorn Archimedes and various gaming consoles such as the Mega Drive and Super NES	SCART is a European "unified" A/V interface for bi-directional stereo audio, composite video and s-video, and unidirectional RGBS and data. YP _B P _R is also available in some non-standard set-ups via the RGB pins.
S-Video (a.k.a. separate video, split video, super-video, and Y/C)	1979	1 Mini-DIN 4-pin, 1 Mini-DIN 7-pin, 1 Mini-VGA, 2 BNC, 2 RCA connectors, 8-pin DIN, ^[4] SCART 21-pin			S-VHS, some laptop computers, analog broadcast video, 1980-1990s home computers including the Commodore 64,	The 4-pin mini-DIN that is most common in consumer products today debuted in JVC's 1987 S-VHS. The 7-pin mini-DIN is

					C128 and Atari 8-bit computers	commonly used on laptops. Used with PAL, NTSC or SECAM color. Where two connectors are used, they are labeled <i>Chroma</i> and <i>Luma</i> .
MDA	1981	DE-9	Digital	720 × 350 @ 50, Text only	IBM PC, PC/XT, PC/AT and compatibles	
RGBI (CGA)		DE-9		640 × 200 @ 60		
HGC	1982	DE-9 ^[5]		720 × 348 @ 50		
EGA	1984	DE-9		640 × 350 @ 60		
Amiga video	1985	DB23	Both, GenLock	1280 × 400/512 @ 30/25	Commodore Amiga	Similar to SCART, but also includes a digital RGBI signal, Genlock clock, composite sync and +12/+5VDC power ^[6]
RGBHV	1987	VGA connector (DE-15/HD-15), DE-9, separate BNC connectors, Mini-VGA, DVI/Mini-	Analog	2048 × 1536 @ 85 ^[7]	The VGA connector was Introduced with IBM x86 machines, but became a universal analog display interface. Display Data	Successor analog protocols include SVGA, XGA, etc. DVI is a more modern digital alternative. Where BNC is

		DVI/Micro-DVI.			Channel was later added to allow monitors to identify themselves to graphic cards, and graphic cards to modify monitor settings.	used, available as 3 connectors with <i>Sync on Green</i> , or 5 connector Red / Green / Blue / Horizontal Sync / Vertical sync.
		Mac-II/Quadra DA15F		1152 × 870 @ 75 ^[8]	Macintosh	Mac-DA15F and Sun-13W3 were similar in capability to VGA. Some Sun machines used 4 or 5
	1990	13W3 DB13W3		1152 × 900 @ 76	Workstations. Sun, SGI et al.	BNC connectors to transfer video signal.
Gigabit Video Interface (GVIF)	1996		Digital		Automotive	Sony proprietary
OpenLDI	1998	MDR36	LVDS Digital			
YP _B P _R (a.k.a. component video)	1990s	3 RCA or BNC connectors, Apple-AAUI, D-Terminal, SCART 21-pin	Analog	1920 × 1080 @ 60 ^[9]	Consumer electronics	Also referred to as Component video and YUV D-Terminal uses voltage levels to signal resolution.
Digital Visual	1999	DVI, Mini-DVI, Micro-DVI	Both	2560 × 1600 @ 60 3840 × 2400 @ 33	Video cards	Almost a ubiquitous computer

Interface (DVI)						display link. Uncompressed video only. High-bandwidth Digital Content Protection (HDCP) encryption is optional.
	2000	Apple Display Connector (ADC)		2560 × 1600 @ 60	Apple Inc. Macintoshes and monitors	Proprietary connector designed to combine DVI-I, USB, and monitor power
Serial digital interface (SDI)	2003	BNC	Digital	From 143 Mbit/s to 12 Gbit/s, depending on variant. 480i , 576i , 480p, 576p, 720p, 1080i, 1080p, UHDTV1, UHDTV2	Broadcast video. Variants include SD-SDI, HD-SDI, Dual Link HD-SDI, 3G-SDI, 6G-SDI, 12G-SDI. ^{[10]}	
High-Definition Multimedia Interface (HDMI)	2003	19 pin HDMI Type A/C		10240 x 4320 @ 120 (version 2.1) ^{[11]}	Many A/V systems and video cards (including motherboards with IGP)	High-bandwidth Digital Content Protection (HDCP) encryption is mandatory.
DisplayPort	2007	20-pin (external) 32-pin (internal)	LVDS Digital	10240 × 4320 @ 60 15360 × 8640 @ 60 (version 2.0)	Apple Inc. Lenovo , HP , and Dell systems and monitors ATI RV670 based graphics cards and	DisplayPort introduced the 128-bit AES to replace HDCP . DisplayPort version 1.1

					NVIDIA G92 graphics cards (both as OEM optional implementations)	added support for HDCP .
DiiVA	2008	13-pin	Digital	2560 × 1600 @ 75 4096 × 2160 @ 24	A/V systems	High-bandwidth Digital Content Protection (HDCP).
HDBaseT	2010	8P8C		4096 × 2160 @ 24	A/V systems, data at 10.2 Gbit/s, power up to 100 watts	
CoaXPress		BNC connector, DIN 1.0/2.3			Machine vision and industrial cameras	Supports 20.83 Mbit/s uplink channel and power over the same coaxial cable
Mobile High-Definition Link (MHL)		5 pin		1920 × 1080 @ 60 3840 × 2160 @ 30 (version 3.0) 7680 × 4320 @ 120 (superMHL)	Connecting mobile devices to TVs	Supports High-bandwidth Digital Content Protection (HDCP)

See also [edit]

- [Computer display standard](#)

References [edit]

- ↑ [VGA pinout and signals @ pinouts.ru](#)
- ↑ "DisplayPort Technical Overview" (PDF). VESA.org. 10 January 2011. Retrieved 23 January 2012
- ↑ "What is CVBS video format" . *Google Groups*. *Archived* from the original on February 20, 2022. Retrieved February 19, 2022.
- ↑ ^{***a***} ^{***b***} [settorezero.com - Cavo di collegamento video Commodore 64 / S-Video / Scart](#) , 2008-01-29
- ↑ "The PC video acronyms" . 070820 philipstorr.id.au
- ↑ "Amiga video pinout" . pinouts.ru

- 7. ^ 2560 × 1600 @ 60 Hz in theory, although few existing WQXGA device offers analog inputs (certain Barco projectors do)
- 8. ^ Capable of higher on later Macintosh models if used with the right equipment, i.e. a DA15F to VGA converter coupled with a sufficiently capable analog display
- 9. ^ Although YP_BP_R connections are theoretically capable of higher resolutions, resolutions above 1080p (1920 × 1080 @ 60p) are uncommon. Additionally, many devices limit YP_BP_R connections to 1080i (1920 × 1080 @ 60i) due to lack of encryption, allowing higher resolutions only via encrypted digital connections.
- 10. ^ "Think 12G-SDI over Coax Isn't Possible? Think Again!" . *www.belden.com*. Archived from [the original](#) on December 29, 2016. Retrieved June 6, 2022.
- 11. ^ "HDMI" . *www.hdmi.org*. Retrieved December 21, 2017.

External links [[edit](#)]

- [Monitor Ports](#) Pinouts and other technical information; lacks more recent interfaces such as HDMI
- [PC Graphics standard overview](#) Simple table of PC video standards thru XGA with DB9 pinouts
- [Standard and device-specific video interfaces pinouts](#) Numerous standards described and categorized, including such recent ones as DVI and HDMI
- [List of computer video standards and connectors pinouts](#) Wiki format (including community updates and free redistribution); broad coverage including HDMI

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