



Audio / Video Tutorial

What are Audio/Video products?

Audio/Video products consist of cables, adapters, converters and extenders which utilize various video and audio interfaces to transmit and receive video and/or audio signals.

How are Audio/Video products used?

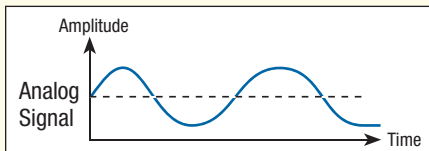
The primary function of Audio/Video cables is the interconnection between a signal generating device such as a CPU (Central Processing Unit) and a display device such as a monitor. The interfaces used to make this connection have evolved over the years and include EVC, HD15, DVI, HDMI and DisplayPort to name a few. Also there are Audio/Video converters which convert two different technologies such as HDMI to DisplayPort etc. Audio/Video extenders amplify, extend and repeat Audio/Video signals.

Where are Audio/Video products used?

Audio/Video products are used in a wide variety of video and/or audio signal transmission applications found in both office and home environments from business computers to home entertainment systems. Additionally these products are used in government and military applications as well as industrial and process control environments.

Monitor/Video Terms

Analog Signals: Both video and audio signals that are continuously varying in level are considered analog.



Attenuation: Attenuation is the reduction in the strength of a signal.

Bandwidth: The difference between the upper and lower usable limits of a band of frequencies.

Baseband: Unmodulated video or audio signals with an exclusive transmission path.

Chroma: The color portion of a video signal "C".

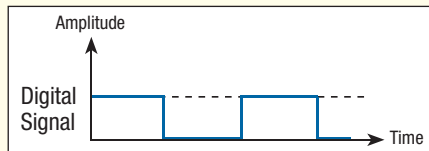
Composite Sync: A combination of horizontal and vertical sync pulses.

dB: A logarithmic unit of measure where 3dB represents a doubling or halving the power level from a given starting point.

DDC: (Data Display Channel) is a standard that defines communication between a monitor and a host system.

DVI : Digital Video Interface

Digital Signals: Data presented as discrete values i.e. On/Off or Binary.



HDMI: High Definition Multimedia Interface. All digital audio and video.

Luma: The brightness portion of a video signal ("Y").

Pixel: A single point on a display.

Resolution: The density of pixels in a given area typically expressed as the horizontal x vertical values, (ex. 640x480).

Refresh Rate: Also referred to as the scan rate. It is the number of times in one second (Hz) that the electron beam travels across the screen horizontally from one scan line to the next.

RGB: Red, Green and Blue.

SVGA: Super Video Graphics Array (HD15).

S-Video: A video signal that separates the "Y" or Luma and "C" or chroma information.

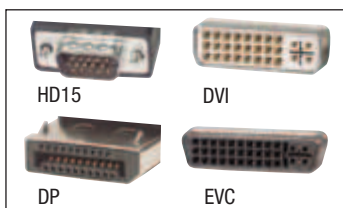


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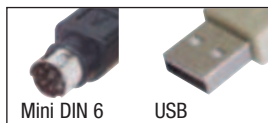
Common Computer Interfaces

The interconnection between a Central Processing Unit (CPU) and the Monitor, Mouse, Keyboard and Speakers found in a typical desktop computer set up uses a number of different interfaces. Below is a list of some of the more common types.

CPU to Monitor



CPU to Keyboard



Monitor

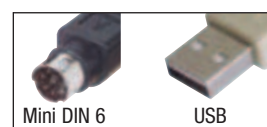


Keyboard



Central Processing Unit (CPU)

Mouse



CPU to Mouse



Speakers



CPU to Speakers

Major Digital Interfaces

	EVC (Enhanced Video Connector) or P&D (Plug & Display)	DP (Display Port)	DVI (Digital Video Interface)	HDMI (High Definition Multimedia Interface)
Standards Group	VESA (Video Electronics Standards Association)	VESA (Video Electronics Standards Association)	DDWG (Digital Display Work Group)	HDMI Founders (Consortium of leading consumer electronics manufacturers)
Maximum Channels	3	8	6 (Dual Link)	8
Maximum Resolution	SXGA (1280 x 1024)	1080p	QXGA (2048 x 1536)	HDTV 720P and 1080P
Analog / Digital Combination	P&D (30 + 4 Pin) Yes	No	DVI-I (24 + 4 Pin) Yes	No
Digital / Audio	No	Yes	No	Yes