

D-Sub(15pin) -only Analog



Application:

- > Computer Monitors



Applications:

- > Standard video
- > Home-Cinema
- > Videoconference/Presentation



Applications:

- > High-quality video
- > Home-Cinema
- > Videoconference/Presentation



Applications:

- > Highest-quality video
- > Home-Cinema
- > Videoconference/Presentation

Belden Video-Multicore-Cables for Videoconference/Presentation and Home Cinema

VGA (Video Graphics Array):

Most computers connect to monitors with this kind of cable. The connector is a 15-pin high-density D-sub. (DB-15) This is a 15-pin connector in what would normally be a 9-pin shell.

Sufficient for short lengths, most VGA cables are run up to approximately 5 m. This short length allows the use of low-quality coaxes of no specific impedance or even twisted-pairs.

For higher quality, or longer lengths (up to 80 m) Belden's 5-coax 1522A is an excellent choice.

This cable fits the 8 mm OD of most 15-pin VGA connectors, and features five true 75Ω coaxes, with a guaranteed maximum timing variation (delay skew) of 13 nsec (nanoseconds) per 100 m.

Composite Video (FBAS):

Composite signals combine luminance (brightness), chroma (color), and sync signals all in one coax cable. In home/consumer applications, most composite connections are made with RCA connectors. **Belden 1505A is the ideal choice for this application. Where flexibility is desired, use our new superflex 1505F.**

S-Video (S-VHS™, Y/C):

S-video separates the luminance (brightness, "Y") and chroma (color, "C") signals to improve picture detail. Color-signals are transmitted over a dual coax cable up to approximately 15 m. **Use Belden's 1807A or 1808A.**

Component Video (RGB, YUV):

Video color signals can be divided into primary colors, red, green, and blue (RGB). These "component" signals are carried on multiple coaxes. RGB component provides the ultimate analog picture quality.

It is possible to use a 15-Pin to BNC connection cable, with the BNC's into the component input and the 15-pin connector into VGA output.



An even higher quality would be a BNC-to-BNC cable such as **Belden's Multicore video 152xA, 14xxB, 778xA, 779xA, and 771xA series.** The last series features bundled RG-6 precision coaxes for maximum quality and distance.

The coax cables in the last three series (77xx) are sweep tested to 3 GHz and are therefore ideal for any coax-based high frequency graphics applications such as SXGA, XGA etc.

Current applications

Many presentations or seminars are using projectors, plasma or TFT-displays with source material from computers. In many of these applications, the distance from the computer to the display can be significant. Therefore you need to use higher quality cables that support long-run VGA or other display signals.

These display solutions are increasing from 640x480 up to 3840x2400, and bandwidth is increasing too. Lower resolution signals can go farther than higher resolution. Higher bandwidth, higher data rate signals, require higher quality coaxes to support them.

Timing Error

Multicore video cables intended for use with RGB or VGA signals divide the signal into component parts. This requires a specification for the different arrival times of the components. More than a 40-nsec timing error between all coaxes is considered “non-broadcast-quality”.

Timing variations occur in RGB cable because the multiple coaxes cannot be exactly the same. They will have slightly different velocities. These can translate to a difference in the time it takes the signal to travel along a given lengths of cable. Physical and Electrical Lengths should be the same! Many inexpensive cables are severely distance-limited by the timing of the components.

The table below shows timing variations, and how far a signal can go on a cable until it reaches the 40-nsec maximum timing error:

Max. Timing (100 ft.)	Distance to 40ns Max.
1 nsec / 30.48 m	1.219 m / 4000 ft.
2 nsec / 30.48 m	609 m / 2000 ft.
3 nsec / 30.48 m	406 m / 1333 ft.
4 nsec / 30.48 m	305 m / 1000 ft.
5 nsec / 30.48 m	243 m / 800 ft.
6 nsec / 30.48 m	203 m / 667 ft.
7 nsec / 30.48 m	174 m / 571 ft.
8 nsec / 30.48 m	152 m / 500 ft.
9 nsec / 30.48 m	135 m / 444 ft.
10 nsec / 30.48 m	122 m / 400 ft.

(calculation: 40/x nsec x 30.48 m = Distance)

Belden's Multicore video cables are “pre-timed” to this specification:
 < 1.3 ns: 14xxB, 152xA series
 < 1.24 ns: 778xA, 779xA, 771xA series

“Pre-timed” Video Multicores

The purpose of timing an RGB cable is to get within the 40-nsec window and even less. Installation time and labour can be saved if pre-timed cable is specified.

Belden pre-timed cable can be simply cut and connectorized with no complex field timing, or length compensation.

Best Quality

Belden's digital video Multicore cables (77xx series) can be used for analog RGB or VGA applications, or for multiple analog or digital composite signals. Professional applications can be covered with the following:

- (778xA)** 3, 4, 5, 6, 12 x 1855A
- (779xA)** 3, 4, 5 or 10 x 1505A
- (771xA)** 3, 4, 5 or 10 x 1694A

Return Loss

Return loss (RL) measures all the impedance variations (physical imperfections) of a cable. All Belden precision digital video Multicore cables exceed the SMPTE return loss specification for HDTV distribution (-15 dB) and provide maximum “RL Headroom” with a guaranteed RL specification limit of -23 dB (5 to 850 MHz) and -21 dB (850 to 3000 MHz), with the following transmission distance (in meters):

Bandwidth	88.5 MHz 177 Mbps	135 MHz 270 Mbps	750 MHz 1.485 Mbps
Specification	ITU-R BT. 601	SMPTE 259 M	SMPTE 292 M
Application	601 PAL Composite	SDI Component	HDTV
Belden No.			
778xA (1855A)	277	229	64
779xA (1505A)	402	338	91
771xA (1694A)	494	415	113

The bend radius of these cables is optimised for installations where space is limited. The suggested minimum bend is no tighter than 10 x the diameter of the cable, e.g. 6.8” (172 mm) for 7712A (5x1694A) and 3.8” (96 mm) at 7789A (5x1855A).