

# Adapters

## Video Adapters



**BNCF-RCAM**  
**BNC female to RCA male adapter**  
 Part # 100-226-01 (Qty. 10)  
 Part # 100-226-03 (Qty. 50)  
 Part # 100-226-04 (Qty. 100)



**RCAF-BNCM**  
**RCA female to BNC male adapter**  
 Part # 100-229-01 (Qty. 10)  
 Part # 100-229-03 (Qty. 50)  
 Part # 100-229-04 (Qty. 100)



**RCAF-BNCF PM**  
**RCA female to BNC female panel mount adapter**  
 Part # 100-142-02 (Qty. 10)  
 Part # 100-142-03 (Qty. 50)  
 Part # 100-142-04 (Qty. 100)



**BNCF-BNCF**  
**BNC female to female barrel connector**  
 Part # 100-227-01 (Qty. 10)  
 Part # 100-227-03 (Qty. 50)  
 Part # 100-227-04 (Qty. 100)



**BNCF-BNCF PM**  
**BNC female to BNC female panel mount adapter**  
 Part # 100-228-01 (Qty. 10)  
 Part # 100-228-03 (Qty. 50)  
 Part # 100-228-04 (Qty. 100)



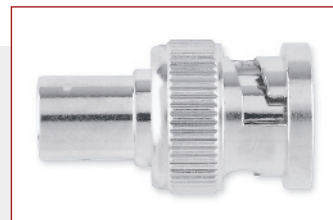
**BNCM-BNCF T**  
**(1) BNC male to (2) BNC female T connector**  
 Part # 100-230-01 (Qty. 10)  
 Part # 100-230-03 (Qty. 50)  
 Part # 100-230-04 (Qty. 100)



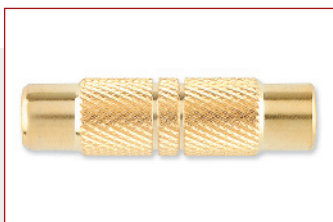
**BNCF-BNCF T**  
**(1) BNC female to (2) BNC female T connector**  
 Part # 100-231-01 (Qty. 10)  
 Part # 100-231-03 (Qty. 50)  
 Part # 100-231-04 (Qty. 100)



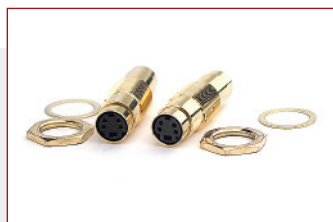
**BNCM-BNCF Right Angle**  
**BNC male to BNC female right angle connector**  
 Part # 100-232-01 (Qty. 10)  
 Part # 100-232-03 (Qty. 50)  
 Part # 100-232-04 (Qty. 100)



**T-BNC**  
**75 ohm, BNC male termination adapter**  
 Part # 100-234-01 (Qty. 10)  
 Part # 100-234-03 (Qty. 50)  
 Part # 100-234-04 (Qty. 100)



**RCAF-RCAF Gold**  
**RCA female to female Gold barrel connector**  
 Part # 100-233-01 (Qty. 10)  
 Part # 100-233-03 (Qty. 50)  
 Part # 100-233-04 (Qty. 100)



**SVHSF-SVHSF PM**  
**4-pin mini-DIN female-female panel mount adapter**  
 Part # 100-105-01 (Qty. 10)



## Adapters 9-pin D, 15-pin HD, S-Video and Audio Adapters (continued)

### Video Adapters (Continued)



#### A/V Adapter Kit

Offering an easy way to try many of our most popular A/V adapters, the A/V Adapter Kit includes the following adapters housed in a plastic case:

- (5) BNCf-RCAM
- (5) RCAF-BNCM
- (5) BNCf-BNCF
- (5) BNCF-BNCF T
- (5) BNCF-BNCF T

A/V Adapter Kit Part# 42-066-01



#### Video DC Block

BNC male to BNC female. Removes DC offset from video signal

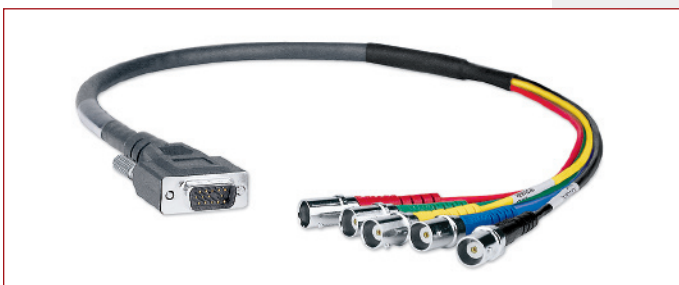
Part # 26-495-02



#### SY VGAM-RGBHVF (molded)

15-pin male VGA to 5 BNC female 2' (60 cm)

Part # 26-397-01



#### SY VGAM-RGBHVF (pigtail)

15-pin male VGA to 5 female BNCs, 2' (60 cm)

Part # 26-493-01



#### IN9101

BNC male to RCA male 6' (1.8 m)

Part # IN9101

# Adapters 9-pin D, 15-pin HD, S-Video and Audio Adapters (continued)

## Video Adapters (Continued)



### Male S-Video Adapters

4-pin mini DIN male to (2) BNC adapters

#### S-Video Male to 2 Female BNCs

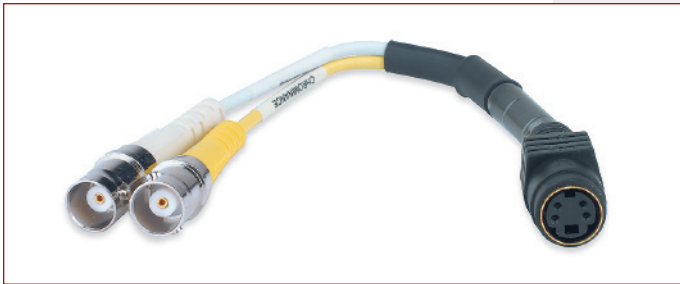
SVHSM-BNCF 8" (0.2 m) ..... 26-353-01

#### S-Video Male to 2 Male BNCs

SVHSM-BNCM 1' (0.3 m) ..... 26-353-02

SVHSM-BNCM 3' (0.9 m) ..... 26-353-03

SVHSM-BNCM 6' (1.83 m) ..... 26-353-04



### Female S-Video Adapters

4-pin mini DIN female to (2) BNC adapters

#### S-Video Female to 2 Female BNCs

SVHSF-BNCF 8" (0.2 m) ..... 26-541-01

#### S-Video Female to 2 Male BNCs

SVHSF-BNCM 1' (0.3 m) ..... 26-541-02

SVHSF-BNCM 3' (0.9 m) ..... 26-541-03

SVHSF-BNCM 6' (1.83 m) ..... 26-541-04

## Audio Adapters



### MSR 6

3.5 mm mini stereo male to (2) RCA female adapter 6" (15 cm)

Part # 26-592-01



### CSR 6

(1) Captive screw male to

(2) RCA female adapter 6" (15 cm)

Part # 26-575-01



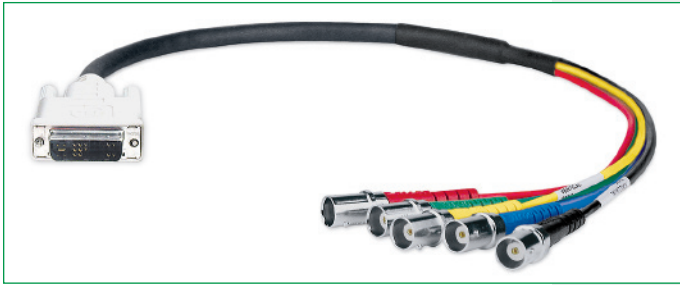
### IN9107

Stereo audio adapter cable - (1) 3.5 mm stereo mini male to (2) RCA male, 6' (1.8 m)

Part # IN9107

## Adapters 9-pin D, 15-pin HD, S-Video and Audio Adapters (continued)

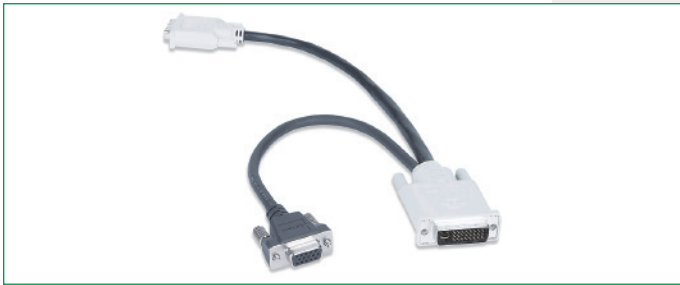
### DVI Adapters



**SY DVIA-RGBHVF**  
DVI-A Male to 5 BNC Female 6" (15 cm)  
Part # 26-609-01



**DVIAM-VGAF**  
DVI-A Male-VGA Female Cable 6" (15 cm)  
Part # 26-619-01



**DVIIM-VGAF/DVIIF**  
DVI-I Male to 15-pin HD Female and DVI-D Female  
"Y" Adapter 12" (30 cm)  
Part # 26-612-01

ADAPTERS

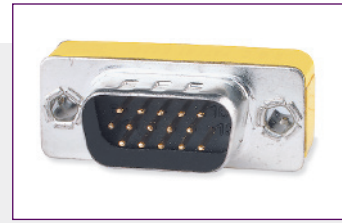
## Computer and Control Adapters



**T-VGA**  
VGA and Super VGA termination  
adapter plug  
Part # 26-106-01



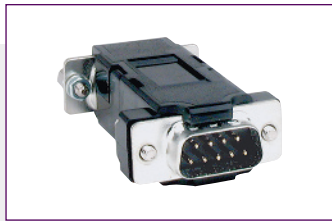
**USPA-VGA**  
Universal Sync Process Adapter  
Part # 26-602-01



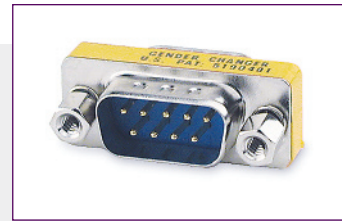
**15HD GCM**  
VGA male-male gender changer  
Part # 10-439-01



**15HD GCF**  
VGA female-female gender changer  
Part # 10-439-10



**VGAF-9DM**  
VGA female to 9-pin D male adapter  
Part # 26-170-03



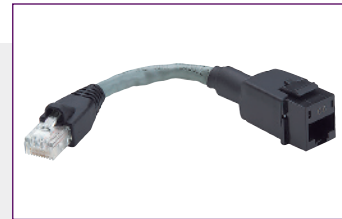
**9D GCM**  
9-pin D male-male gender changer  
Part # 10-438-01



**9D GCF**  
9-pin D female-female gender changer  
Part # 10-438-10



**NETXC M-M**  
Ethernet crossover cable to connect a  
computer directly to an IP Link® product  
Part # 26-591-01



**NETXA M-F**  
Ethernet crossover adapter to connect a  
computer directly to an IP Link® product  
Part # 26-615-01

# Custom Cables

For applications requiring a unique, customized cable solution, Extron can provide a quick custom cable assembly for many cables, of various lengths, and with most popular connector terminations. From the most basic to the most complex, Extron's world-class manufacturing department can produce custom cable assemblies in a matter of days. Consider these factors:

- Quality materials and components
- Most advanced quality control standards
- Manufacturing capacity to meet any expectations
- Highly skilled technicians and assemblers
- Extron quality and performance

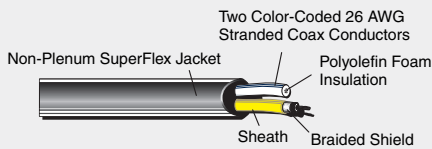
Extron can partner with you to meet your exact specifications, providing solutions for many different applications. We can provide you with these benefits:

1. One-stop shopping for all your cable needs
2. Just-in-time delivery to reduce inventory overhead
3. Expanded service and support capabilities
4. Build only what is needed to reduce wasted material
5. Decreased technician time = increased profitability

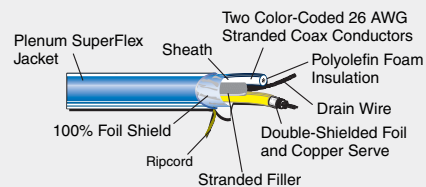
We understand that time, quality, and profitability are crucial in any installation. Extron has the experience and manufacturing capacity to provide on-time delivery and the highest quality backed by our lifetime Cable Performance Warranty. To access this service, please call your Extron Representative at 800-633-9876 (if in the United States or Canada), or call 714-491-1500. Fill out the Extron Custom Cable Request Form (page 82) and fax it in for an expedited quote.

## Video Cables

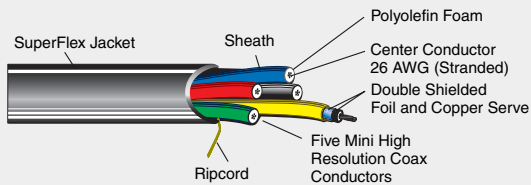
**MHR-2**



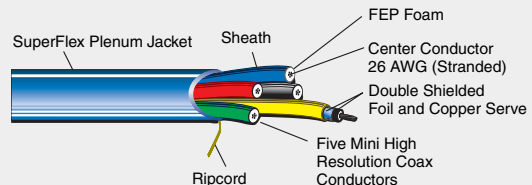
**MHR-2P**



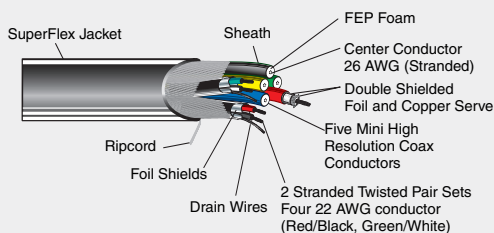
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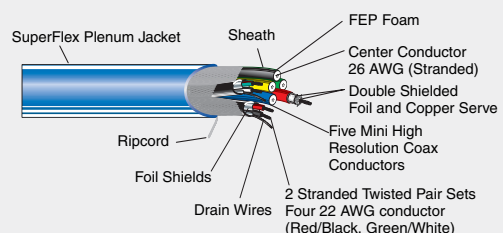
**MHR-5P**



**MHR-5STP-2**

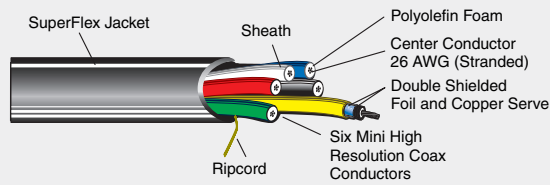


**MHR-5STP-2P**

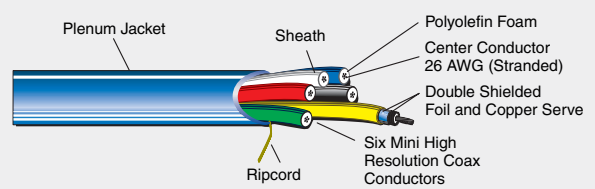


# Video cables (continued)

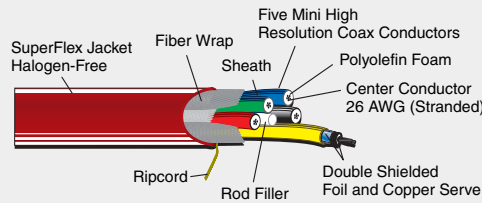
**MHR-6**



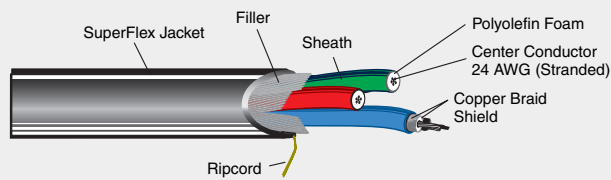
**MHR-6P**



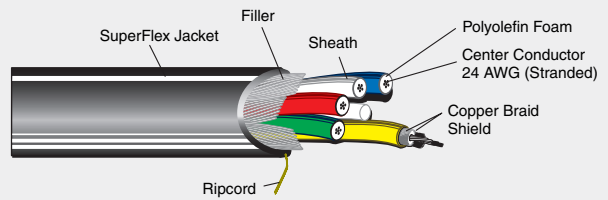
**MHRHF-5**



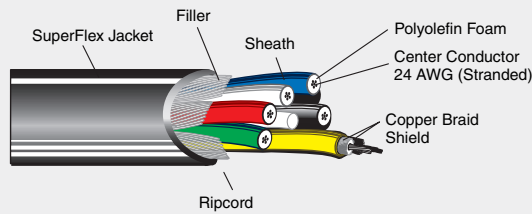
**M59-3**



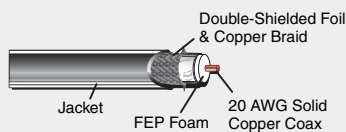
**M59-5**



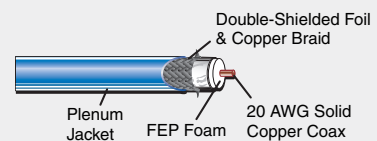
**M59-6**



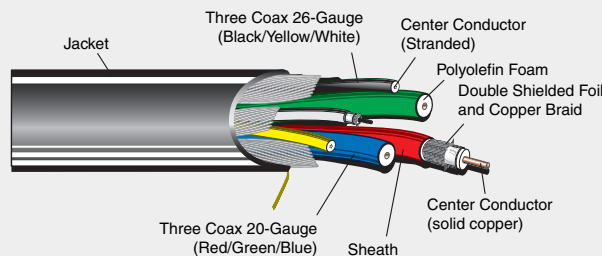
**RG59**



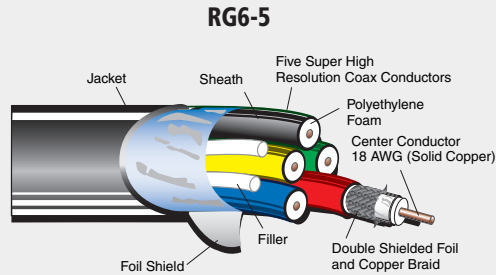
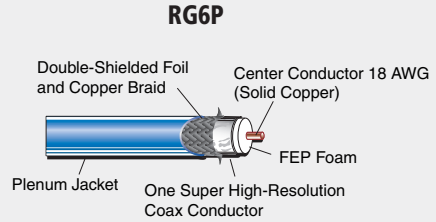
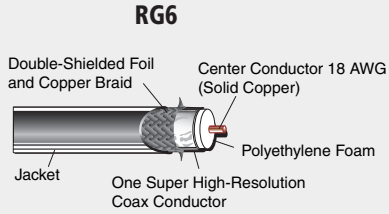
**RG59-P**



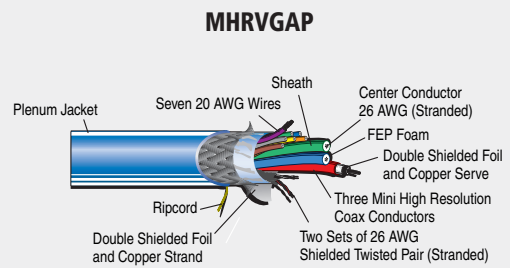
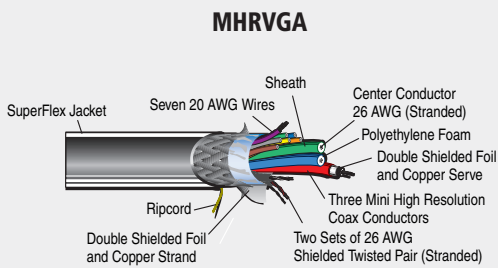
**RG59-3MHR-3**



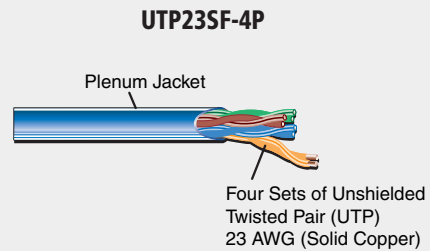
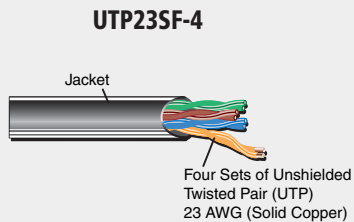
## Video cables (continued)



## Multi-Conductor Cables

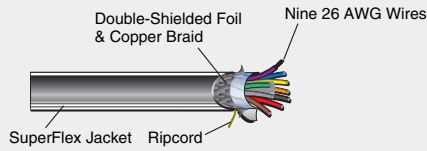


## A/V UTP Cables

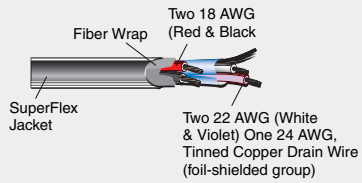


# Audio and Control Cables

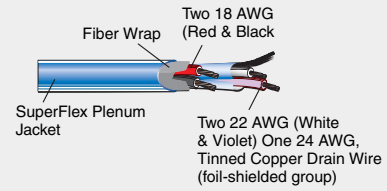
## RS-232



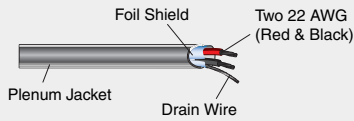
## CTL



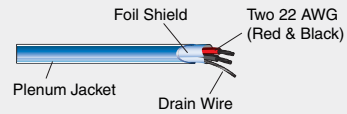
## CTLP



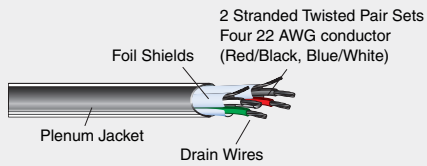
## STP22



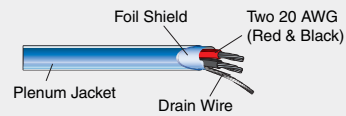
## STP22P



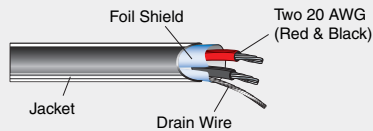
## STP22-2



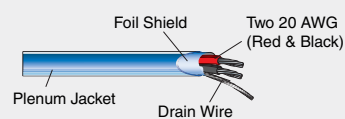
## STP22-2P



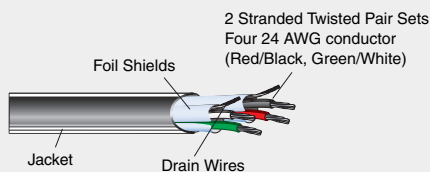
## STP20



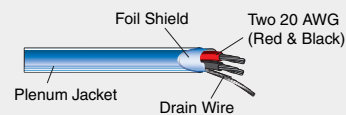
## STP20P



## STP20-2

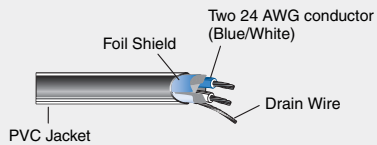


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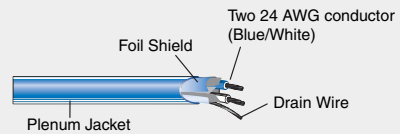


## Audio and Control cables (continued)

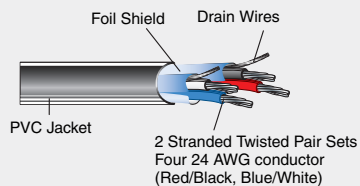
**STP24LC**



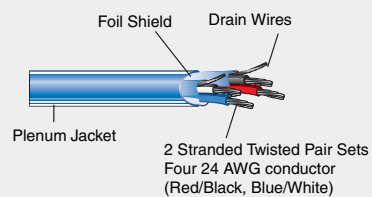
**STP24LCP**



**STP24LC-2**

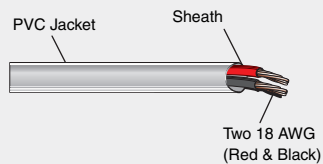


**STP24LC-2P**

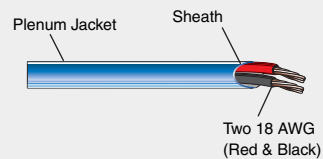


## Speaker Cables

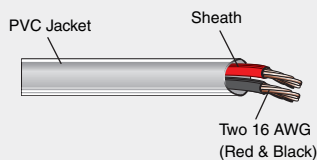
**SPK18**



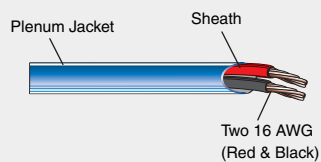
**SPK18P**



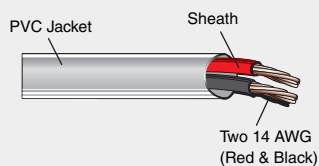
**SPK16**



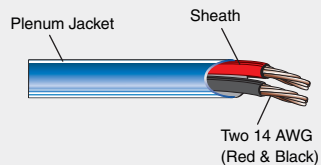
**SPK16P**



**SPK14**

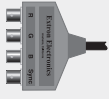


**SPK14P**



# Connectors

**BNC 4 Block  
(Female 2' Length)**



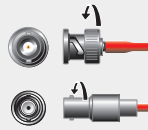
**BNC 5 Block  
(Female 2' Length)**



**4-pin Mini-DIN**



**Male or Female BNC  
Connectors**



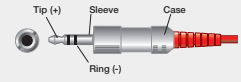
**F-Type Connector**



**Compression  
RCA Connector**



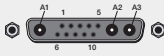
**3.5 mm Stereo  
Plug Connector**



**3.5 mm Captive  
Screw Connector**



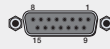
**13W3 Connector**



**DB 9 Connector**



**DB 15 Connector**



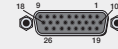
**DB 25 Connector**



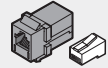
**HD 15 Connector**



**HD 26 Connector**



**RJ-45 Connector**





## Amplitude

The level or strength of a signal as measured by the height of its waveform. Electronic waveforms can be displayed and measured on an oscilloscope.

## Attenuation

To reduce the amplitude (strength) of a signal or current, a.k.a. insertion loss. Measured in decibels (dB).

## AWG

American Wire Gauge. A standard measurement for wire conductor diameter.

## Capacitance

The ability to store an electrical charge. Capacitance is a condition that exists between conductors in a cable. As signal frequencies become higher, an impedance called "capacitive reactance" ( $X_c$ ) becomes greater, causing signal loss and distortion.

## Crosstalk

This is caused by interference between two signals, usually from an adjacent channel, which adds an undesired signal to the desired signal. Crosstalk is caused by magnetic induction or capacitive coupling and can occur when there are grounding problems or improper cable shielding. Video symptoms include noise and ghosting, while audio symptoms include signal leakage.

## D1 component

A parallel digital recording format that handles digital component video with a 4:2:2 sampling of Y, Cr, and Cb.

## Decibels (dB)

The standard unit used to express gain or loss of power. It indicates the logarithmic ratio of output power divided by input power. A power loss of 3 dB is an attenuation of half of the original value. The term "3 dB down" is used to describe the half power point. In audio work, 0 dB is the threshold of hearing. 120 dB level is the threshold of pain. A change of 3 dB halves or doubles the apparent loudness.

## Diode

An electronic device that allows current to flow in one direction only.

## DV

Digital video. A serial digital video format. During the 4:1:1 sampling process, all video samples are kept, and half of the color samples are discarded.

## DVI

Digital Visual Interface. A serial/parallel digital format for computer graphics connection between a computer and its local display.

## EMI

Electromagnetic interference. Caused by high current machinery such as air conditioning units or electric motors. The interference is a low frequency induced magnetic field that can manifest itself as bars rolling through the image, similar to a hum bar.

## ETL

Edison Testing Laboratories. When marked by the ETL symbol, a product has been tested and evaluated to nationally recognized safety standards with regard to fire, electric shock, and related safety hazards. There is also an ETL symbol for Canada. Test results are equivalent to UL.

## FireWire™

Also known as 1394 or IEEE-1394. A data communication standard used with digital camcorders, the 1394 FireWire manages the digitization, compression, and audio synchronization processes while shooting. This puts broadcast quality video footage directly into your computer or DV (digital video) editing system. FireWire supports data transfer rates of 100 to 400 Mbps.

## Frequency

The number of times a particular event happens per a given time. In A/V, the number of complete cycles per second of a musical tone or electronic signal, expressed in Hertz (Hz).

## HD-SDI

High Definition-Serial Digital Interface. A serial digital format that handles HD signals in a television plant at a data rate of 1.485 gigabits per second.

## HDTV

High definition digital television. A serial digital format based on the timing parameters of SDTV. HDTV uses more than twice the samples of SDTV. HDTV also refers to a device that can receive and display all ATSC video formats: 720p, 1080p, or 1080i.

## High impedance

Hi Z or high Z. A relative term that is different for each application. In video, when the signal is not terminated it is said to have a hi Z load. Hi Z is typically 800 to 10 kohms or greater.

## Hum bar

Interference in the form of a horizontal bar moving vertically on the display screen. Hum bars can be caused by ground loops.

## ID bit termination

ID bit termination is used to indicate (identify) what type of device (what type of monitor) is attached to a computer-video output port or at the end of a daisy chain. ID bit termination involves connecting specific data lines/pins to the electrical ground. For example, VGA-type displays use pins 4, 11, and 12 for ID bits; but pins 4, 7, and 10 are used for Macintosh ID bits; and pins 3, 4, 8, and 9 are used for many Sun display devices. ID bit termination ensures that the correct video signals will be sent to the display device. A computer checks for ID bits during the power-up self diagnosis, and sets the video output frequency and resolution based on how the ID bits are set. Some computers will not send any video signal if they do not sense any ID bits on bootup, so no picture will be displayed. ID bits are also called "sense lines."

## IEEE 1394

IEEE (Institute of Electrical and Electronics Engineers) 1394. Also known as FireWire. A serial digital format that handles a wide range of data. IEEE 1394 offers peer-to-peer interface capability, so it does not require computer support. This is the interface used by the DV format.

### Impedance

The opposition or "load" to a signal, measured in ohms and abbreviated R,  $\Omega$ , or Z. In video, typical low impedance circuits (low Z) are 600 ohms or less, and high impedance circuits (high Z) may be 10 kohms or greater. Video termination impedance is 75 ohms. See "high impedance" or "low impedance."

### Impedance-matching

Circuits that generate audio or video signals are designed to work with a certain "load" (impedance). When connecting devices in a system, it is important that the impedance specifications are adhered to. If the impedance of the load is not matched to that of the source, there could be undesirable results, such as loss or distortion of the original signal, reflections, etc.

### Low capacitance

Capacitance is defined as the ability to store an electrical charge. It is usually measured in picofarads per foot (pF/ft). The lower the capacitance of a cable, the better it performs at higher frequencies maintaining the desired wave form definition and minimizing errors.

### Low impedance

The condition where the source or load is at a lower impedance than the characteristic impedance of the cable. Low source impedance is common; low load impedance is usually a fault condition. Example: 30-600 ohms.

### Ohm

The unit of electrical resistance, limiting a current of 1 amp when subjected to a potential difference of 1 volt. Represented by  $\Omega$ , R, or Z.

### Oscilloscope

A test device that allows measurement of electronic signals by displaying the waveform on a visual display calibrated to show signal amplitude per unit of time.

### Plenum cable (CL2P/CMP)

Cable having a construction that meets Underwriters Laboratories specifications for resistance to fire under UL 910.

### Power (electrical)

The dissipation of heat by passing a current through a resistance. Measured in watts (W), it is expressed by Ohm's law from the three variables: voltage (E), current (I), and resistance (R). That is,  $P = I^2 \times R$ ,  $P = E^2/R$  or  $P = E \times I$ .

### Resistance

The opposition to the flow of electric current. See "power" and "ohms."

### RFI

Radio frequency interference. High frequency interference from transmissions such as telephones, microwaves, and television stations.

### SDI

Serial Digital Interface. The serial digital version of the D1 component television recording format. SDI simplifies the connection and routing of component digital signals to one coaxial cable.

### SDTI

Serial Digital Transport Interface. Uses the SDI data format for the transport of digital data other than component digital video signals. SDTI is frequently used for transporting compressed SDTV and HDTV through a television plant.

### SDTV

Standard Digital Television. A serial digital format whose samples and timing are derived from 4:2:2 digital component video sources. The main difference between existing digital component video and SDTV is an MPEG-2 compression step to reduce the channel bandwidth. Also known as Standard Definition Television, referring to a device that can receive and display NTSC, PAL, or SECAM video formats.

### Signal loss

The resulting signal output of a system is less than the signal input. In video systems, the problem usually manifests as a lower contrast picture.

### Sync

Synchronization. In video, sync is a means of keeping the image display in step with the changing image source. This is accomplished with timing pulses to ensure that each step in a process occurs at exactly the right time. For example, horizontal sync determines exactly when to begin each horizontal line (sweep) of the electron beam. Vertical sync determines when to bring the electron beam to the top left of the screen to start a new field. There are many other types of sync in a video system. Also called "sync signal" or "sync pulse."

### Termination

A load resistance or impedance at the end of a cable or signal line used to match the impedance of the equipment that generated the signal to ensure maximum transmission of power. The impedance absorbs signal energy to prevent signal reflections from going back toward the source. For video signals, termination impedance is typically 75 ohms; for sync signals it is usually 510 ohms.

### UL

Underwriters Laboratories. When marked by the UL symbol, a product has been tested and evaluated to nationally recognized safety standards with regard to fire, electric shock, and related safety hazards. There is also a UL for Canada, sometimes called CUL, and a UL "recognized component" with its own symbol, resembling a backward "UR."

### USB

Universal Serial Bus. A serial digital format that promotes the concept of Plug and Play to computer peripherals. USB requires a host computer for support. USB 1.1 supports a data transfer rate up to 12 Mbps, while USB 2.0 supports a data transfer rate up to 480 Mbps.

### Volt

The potential difference or electromotive force that will cause a current of one ampere to flow through the resistance of one ohm. Symbolized by E or V.

## General Purpose Cable Cross-Reference

For your convenience in selecting the right cable for each application, we have prepared cross-reference tables for some of the most commonly used cables A/V professionals have come to rely on in integrating systems.

### RG59 Cable

Extron Model	Belden*	West Penn*	Page #
RG59	1505A	819	40
RG59P	1506A	25819	40

### Low Capacitance Digital Audio Cable

Extron Model	Belden*	West Penn*	Page #
STP24LC	1800B	DA2401	54
STP24LC-2	1802B	DA2402	54

### RG6 Cable

Extron Model	Belden*	West Penn*	Page #
RG6	1694A	6350	44
RG6P	1695A	256350	44

### Low Capacitance Serial Control Cable

Extron Model	Belden*	West Penn*	Page #
STP24LC	—	D4851	54
STP24LC-2	1419A 8162	D4852	54

### Serial Control/Audio Cable

Extron Model	Belden*	West Penn*	Page #
STP22	9451	(X)454	52
STP20	9464	N/A	52
STP22-2	8723	77510/D510	52
STP20-2	N/A	N/A	52
STP22-P	82761	25291	52
STP20-P	N/A	25292	52
STP22-2P	88723	N/A	52
STP20-2P	N/A	N/A	52

### Speaker Cable

Extron Model	Belden*	West Penn*	Page #
SPK18	8461	224	56
SPK16	8471	225	56
SPK14	8473	226	56
SPK18P	82740	25224	56
SPK16P	N/A	25225	56
SPK14P	N/A	25226	56

## Crimp Connector to Cable Cross-Reference

The Extron BNC crimp connectors are designed to fit every Extron coaxial cable, as well as many other coaxial cables used by A/V professionals. The chart below shows some of the many cables that are compatible with our Extron BNC crimp connectors.

Part #	Description	Extron	Belden	Canare	Liberty	West Penn
100-250-01	BNC male MHR, Qty. 50	MHR-2/5/6, MHRHF-5, MHRVGA			RGB5C-PVC	
100-250-02	BNC male MHR, Qty. 500	MHR-2/5/6, MHRHF-5, MHRVGA			RGB5C-PVC	
100-253-01	BNC female MHR, Qty. 50	MHR-2/5/6, MHRHF-5, MHRVGA			RGB5C-PVC	
100-253-02	BNC female MHR, Qty. 500	MHR-2/5/6, MHRHF-5, MHRVGA			RGB5C-PVC	
100-263-01	BNC male M59 Qty. 50	M59 -3/5/6				
100-263-02	BNC male M59 Qty. 500	M59 -3/5/6				
100-257-01	BNC male RG59, Qty. 50	RG59	1505A & 1506A	V-4CFB & L-4CFB	20-CMR-VIDEO-color & 20-CMP-VID-COAX	819 & 25819
100-257-02	BNC male RG59, Qty. 500	RG59	1505A & 1506A	V-4CFB & L-4CFB	20-CMR-VIDEO-color & 20-CMP-VID-COAX	819 & 25819
100-260-01	BNC male RG6, Qty. 50	RG6, RG6-5	1694A & 1695A		18-CMP-SD, 18-CMP-VID-COAX, RGB5C	6350, WP6354, WP6355, 256350
100-260-02	BNC male RG6, Qty. 500	RG6, RG6-5	1505A & 1506A		18-CMP-SD, 18-CMP-VID-COAX, RGB5C	6350, WP6354, WP6355, 256350



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**MHR-2**  
Two Conductor Mini High Resolution S-Video Cable



**MHR-5/6**  
Five/Six Conductor Mini High Resolution Cable



**MRRHF-5**  
Five Conductor Mini High Resolution Halogen-Free Cable

**M59-3/5/6**  
Three/Five/Six Conductor Mini 59 Flex Cable

**RG59**  
Single Conductor RG59 High Resolution Cable



**RG59-3MHR-3**  
Three Conductor RG59 High Resolution and Three Conductor MHR Cable

**MHR-5STP-2 Cable**  
Five Conductor MHR and Two 22 AWG Shielded Twisted Pairs Cable



**RG6**  
Single Conductor RG6 Super High Resolution Cable



**MHRVGA**  
Mini High Resolution Audio, Video, Control Cable



**CTL**  
Comm-Link Control Systems Cable



**UTP23SF-4**  
Enhanced Skew-Free™ AV UTP Cable



**STP Series**  
Serial Control/Audio Cable



**STP24LC**  
Low Capacitance Serial Control/Digital Audio Cable



**SPK Series**  
Speaker Cable

