

# Coaxial Cable Solutions Guide

General Cable offers a complete line of Carol® Brand Coaxial Cables for today's sophisticated high-speed, wide-bandwidth electronics products that run over long distances with minimal signal loss or degradation.

General Cable has the right coaxial cable to serve every application, including:

- CATV/MATV/DBS
- HDTV/SDI
- CCTV

The General Cable Coaxial Cable Solutions Guide is a quick-reference tool to make it easier to specify and sell the right cable for the required application – residential, commercial, entertainment and security. Whatever the application calls for, we have a coaxial cable that delivers the performance your customers need.



## CATV/MATV/DBS



Broadband signal, 5MHz–3GHz, VHF/UHF, is traditionally transmitted as an analog signal received directly off air (MATV) or delivered as a community access television (CATV) service and uses a 75 Ohm system.







**Recommended Coaxial Cable Construction:** Copper clad steel (CCS) conductor with a foam polyethylene or Teflon\* core, an aluminum/Mylar\* foil, a minimum of 60% braid, which is typically aluminum (AL) for this application, and a PVC jacket.

For home use, a CM rated coax should be used. A commercial application may require a National Electrical Code (NEC 800 or 725) Riser (CMR) or Plenum (CMP) rated cable. Economical cable solutions use low smoke PVC (75°C) jackets. Teflon\* (FEP) and other fluoropolymer materials (150°C) may be used to provide a more durable and higher-temperature cable alternative.

It is a common misconception that RG 6 coax is "better" than RG 59. While RG 6 has become the industry standard and is an excellent value, it is a larger cable than RG 59. RG 6 allows the same signal level to be delivered a greater distance. This is expressed as a decibel value at particular frequencies. For example, at 100 MHz, General Cable's Carol® Brand part number C5775 RG 6 coax cable has an attenuation value of 2.05 db/100'. A similar construction Carol® Brand part number C5782 RG 59 coax cable exhibits an attenuation value (loss) at 100 MHz frequency of 2.70 db/100'. This may or may not be significant, depending on the input signal level and distance of the cable run.

For a longer cable run, or if the coax cable is planned for use as the backbone in a system, Carol® Brand part number C5039 RG 11 coax cable should be used, because its attenuation at 100 MHz frequency is 1.30 db/100'.

### CATV/MATV/DBS RG 59, RG 6 and RG 11 Ratings

Coax Solution	Carol	Belden	Genesis	West Penn	Commscope
 RG 6 CCS/Foil/60% AL Braid CATV/CM	C5775	9116/1829A	5303	841	5726
 RG 6 CCS/Foil/60% AL Braid CATVR/CMR	C5886	9116R	—	—	—
 RG 6 CCS/Quad/Foil/60%/40% AL Braid CATV/CM	C5785	1189A	5307	Q841	5740
 RG 6 CCS/Quad/Foil/60%/40% AL Braid CATVR/CMR	C5889	1884A	—	—	—
 RG 6 CCS/Foil/60% AL Braid CMP - Plenum	C3524	9116P	—	25841	2275K
 RG 6 CCS/Quad/Foil/60%/40% AL Braid CMP - Plenum	C3525	1189AP	—	25Q841	—
 RG 11 CCS/Foil/60% AL Braid CATV/CM	C5039	1525A	—	—	5913
 RG 11 CCS/Foil/60% AL Braid CL2P/CMP - Plenum	C3528	1523AP	—	—	2285K

\*Note: DuPont™ trademark

**HDTV/SDI**



A DTV signal is a television signal provided in a digital form. Data bits, like in a computer, provide a dramatically better picture and better sound quality called High Definition TV (HDTV). HDTV is the highest quality of DTV and is only one of the available formats. In addition to enhanced picture quality, the DTV signal allows several program streams (multicasting) on one channel, providing more program potential, as well as interactive services.

Serial Digital Interface (SDI) is the standard for digital video transmission over coaxial cable. The SMPTE 295M standard provides maximum distances (300 meters; 140 meters for High Definition), typically at 270 Mbps with 540 Mbps possible over a coaxial cable.

**Recommended Coax Cable Construction:** Cable providing signal to and within the home/building will continue to be CCS construction (C5775, C5785). Cables with SBC conductors (395011, 495025) are recommended for the interconnect between the decoder box and other electronic devices (TV, DVD, DVR, CD, Bluray).

**HDTV/SDI—Interconnect Cables RG 59, RG 6 and RG 11 Ratings**

Coax Solution	Carol	Belden	Genesis	West Penn	Commscope
 RG 59 SBC/Foil/95% TC Braid CMR	395025	1505A	5361	819	5553
 RG 59 SBC/Miniature/Foil/95% TC Braid CMR - Single RGB - Overall jacket containing 3 x 395031 RGB - Overall jacket containing 5 x 395031	395031 395031X3 395031X5	1855A — —	— — —	— — —	— — —
 RG 59 SBC/Foil/95% TC Braid CMP - Plenum	495023	1506A	—	—	—
 RG 6 SBC/Foil/95% TC Braid CMR	395011	1694A	—	—	5765
 RG 6 SBC/Foil/95% TC Braid CMP - Plenum	495025	1695A	—	—	—
 RG 11 SBC/Foil/95% TC Braid CMR	395029	7731A	—	—	—
 RG 11 SBC/Foil/95% TC Braid CMP - Plenum	495027	7732A	—	—	2286K



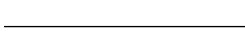

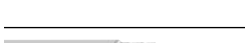
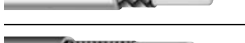
**CCTV**



Closed Circuit TV (CCTV) signals are typically lower-frequency analog signals. Attenuation increases as frequency increases, therefore lower baseband signals are able to travel longer distances on an RG 59 type coaxial cable than a higher-frequency television signal. This is why RG 59 is the most common coax for CCTV. It is becoming more common for Unshielded Twisted Pair (UTP) products, like Category 5e and 6 cables, to be used for Closed Circuit over Twisted Pair (CCTP) or Web-enabled cameras implemented over a Power over Ethernet network architecture; however, these solutions require the use of specialized equipment.

**Recommended Coax Cable Construction:** Solid bare copper (SBC) conductor and a bare copper (BC) braid shield with coverage of 90-95% to minimize signal loss of both the horizontal and vertical sync signals. Stranded conductors are recommended for pan, zoom, tilt (PZT) cameras.

**CCTV RG 59 and RG 11 Ratings**

Coax Solution	Carol	Belden	Genesis	West Penn	Commscope
 RG 59 SBC/95% BC Braid CM	C1142	543945	5001	—	—
 RG 59 Stranded (7/30) BC/95% BC Braid CM	C1103	9259	—	—	—
 RG 59 Stranded (7/30) BC/95% BC Braid + 22 AWG (7/30) Shielded Pair CM	C8025	9265	—	—	—
 RG 59 SBC/95% BC Braid + 18 AWG (7/26) Unshielded Pair CM	C8028	549945	—	—	—
 RG 59 SBC/95% BC Braid + 18 AWG (7/26) Unshielded Pair CMP - Plenum	C8030	649948	—	—	—
 RG 59 SBC/95% BC Braid CMP - Plenum	495028	643948	5351	25815	2037V
 RG 11 SBC/95% BC Braid CM	395058	513945	—	811	5905
 RG 11 SBC/95% BC Braid CMP - Plenum	495015	613948	—	—	2286K
 RG 6 BC/95% BC Braid CMP - Plenum	495035	—	—	—	2277V

**\*Abbreviation Key**

AL - aluminum    SBC - solid bare copper    CCS- copper clad steel    BC - bare copper    TC - tinned copper

