

4K-UHD 3G-SDI HD-SDI



TAILOR-MADE CONNECTORS

Q11-3002 (26 AWG) (0,41 / 1,90 / 3,50)	■ ■ ■
Q11-3003 (24 AWG) (0,51 / 2,40 / 3,81)	■ ■ ■
Q11-3005 (23 AWG) (0,58 / 2,70 / 4,50)	■ ■ ■
Q11-3006 (20 AWG) (0,80 / 3,75 / 6,00)	■ ■ ■
Q11-3026 (20 AWG) (1,20 / 5,00 / 7,00)	■ ■ ■

Q11-3007 (18 AWG) (1,00 / 4,60 / 7,00)	■ ■ ■
Q11-3008 (16AWG) (1,25 / 5,60 / 9,20)	■ ■ ■
Q11-3009 (14 AWG) (1,60 / 6,80 / 10,30)	■ ■ ■
Q11-3010 (12 AWG) (2,05 / 8,60 / 11,10)	■ ■ ■

Applications

Coaxial cables destined for the transmission of digital video. Designed to transmit video signals without compression, SDI, in all its categories. From the lowest definition governed by the SMPTE 259 m standard and with a bitrate of 360 Mbps, to the high definition HD-SDI and 3G-SDI defined by the SMPTE 292 m and SMPTE 424 m standards respectively, with a bitrate that reaches up to 1.5 Gbps in HD-SDI and 3 Gbps in 3G-SDI. Additionally, cables starting with Q11-3005 are also capable of carrying 4K-UHD 6G-SDI and 12G-SDI signals with bitrates of 6 Gbps and 12 Gbps, respectively.

Description

Composed of a single solid central conductor of high purity polished copper (BC). The dielectric is high density polyethylene foam (FHDPE). The screen consists of an aluminum tape and a braid of TC tinned copper wires with 90% coverage and the cover is made of flame retardant UL-PVC. A range of custom designed BNC connectors are available for each of the cables. Produced through the use of CNC machines that give them great precision.

Advantages

✓ BC	Polished copper with a high level of purity . Provides higher conductivity than conventional copper.
✓ FHDPE	High density polyethylene foam. This insulator has a higher dielectric constant than regular polyethylene foam, allowing for higher signal propagation speed and decreased attenuation .
✓ Double screened	Increases signal protection from outside interference . The aluminum tape offers 100% shielding while the braid improves cable handling compared to spiral screens, allowing it to be flexed without fear of losing the high level of shielding it offers.
✓ PVC FR	Flame retardant PVC IEC-60332-1 / UNE-EN 60332-1-2 that offers more safety in case of fire.
✓ BNC	Tailor-made connectors , which will provide the assembled cable with a characteristic impedance uniformity of 75Ω throughout the operating frequency range. Models for 3G and 4K signals.

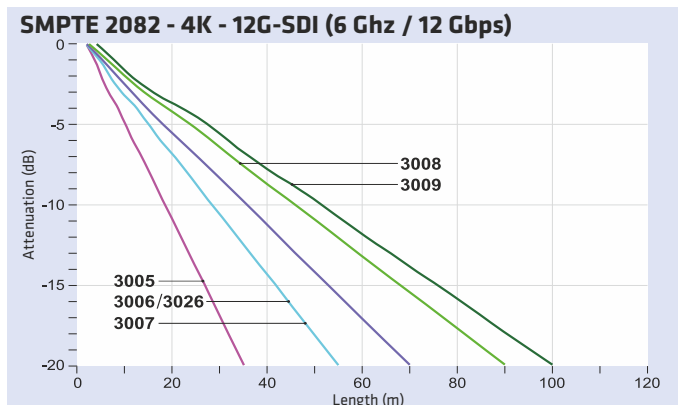
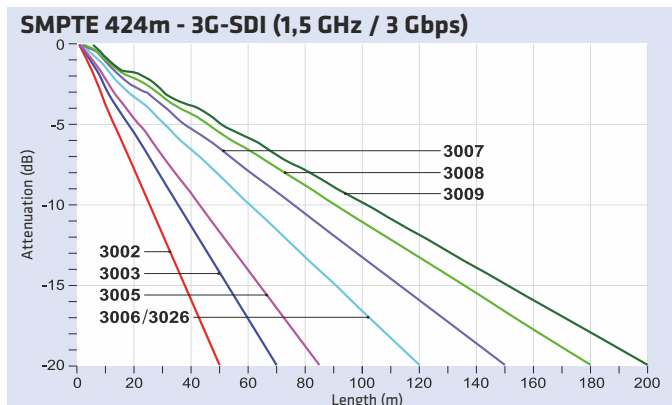
Technical data

	Q11-3002	Q11-3003	Q11-3005	Q11-3006	Q11-3026	Q11-3007	Q11-3008	Q11-3009	Q11-3010
Conduct. (mm)	1/0,41 BC	1/0,51 BC	1/0,584 BC	1/0,80 BC	1/0,80 BC	1/1,00 BC	1/1,25 BC	1/1,60 BC	1/2,05 BC
Section (mm ²)	0,132 (26 AWG)	0,204 (24 AWG)	0,27 (23 AWG)	0,50 (20 AWG)	0,50 (20 AWG)	0,785 (18 AWG)	1,23 (16AWG)	2,01 (14 AWG)	3,30 (12 AWG)
Insulator (mm)	1,90 FHDPE	2,40 FHDPE	2,70 FHDPE	3,75 FHDPE	3,75 FHDPE	4,60 FHDPE	5,60 FHDPE	7,10 FHDPE	8,20 FHDPE
Screen	Al Tape + TC Braid 90%	Al Tape + TC Braid 90%	Al Tape + TC Braid 95%	Al Tape + TC Braid 90%	Al Tape + TC Braid 90%	Al Tape + TC Braid 90%	Al Tape + TC Braid 90%	Al Tape + TC Braid 90%	Al Tape + TC Braid 90%
Cover (mm)	3,50 PVC	3,81 PVC	4,50 PVC	6,00 PVC	13,50 PVC	7,00 PVC	9,20 PVC	10,30 PVC	11,10 PVC
Colors									
BNC 4K BNC 3G BNC	CC804	CC806	CC806	CC912 / CC912/B CC812 CC702	CC912 / CC912/B CC812 CC702	CC918 CC818 CC704	CC928 CC828	CC932 CC832 CC706	CC936 CC836
Tool	HR003	HR001, HR002	HR001, HR002	HR001	HR001	HR002	-	HR001, HR002, HR003 (pin) and HR004 (ferule)	-
Present. (m)	Spool 100	Spool 100	Spool 100/500	Spool 100/500	Spool 100/500	Spool 100/500	Spool 100/300	Spool 100/300	Spool 100/300

Recommended maximum distances in meters (In black Simulated Result | In green Real Result)

Max. Loss	30dB		20dB		40dB	
	180 Mhz / 360 Mbps	270 Mhz / 540 Mbps	750 Mhz / 1,5 Gbps	1,5 Ghz / 3,0 Gbps	3 Ghz / 6,0 Gbps	6 Ghz / 12,0 Gbps
	Video by components (SMPTE 259M, Component Video 16:9)	480p 60 fps (SMPTE 344M, Progressive 16:9)	720p 60 fps / 1080p 30 fps (HD Ready) (SMPTE 292M, HD-SDI)	1080p 60 fps (Full HD) (SMPTE 424M, 3G-SDI)	4K at 30 fps (UHD) (SMPTE 2081, 6G-SDI)	4K at 60 fps (UHD) (SMPTE 2082, 12G-SDI)
Q11-3002	140	120	45 80	35 50	-	-
Q11-3003	180	140	60 100	40 70	-	-
Q11-3005	210	170	70 115	45 85	55	35
Q11-3006	280	230	90 160	65 120	85	55
Q11-3026	280	230	90 160	65 120	85	55
Q11-3007	340	280	110 200	80 150	100	70
Q11-3008	490	400	140 230	95 180	130	90
Q11-3009	530	430	170 250	115 200	150	100
Q11-3010	620	500	200	135	-	-

- The maximum distances for SMPTE 259M and SMPTE 344M signals have been defined as reaching a maximum attenuation of 30 dB.
- HD-SDI and 3G-SDI. For the SMPTE 292M and SMPTE 424M signals, the distances have been defined when reaching a maximum attenuation of 20 dB, according to the standards.
- 4K. For SMPTE 2081 and SMPTE 2082 signals, the distances have been defined when reaching a maximum attenuation of 40 dB, according to the standards.
- To obtain the simulated results, values in black, virtually each cable has been built with circuit simulator software and the attenuations have been calculated.
- The values in green color of the HD-SDI and 3G-SDI signals represent the distance transmitted correctly when performing the physical tests of the cable together with our 3G BNCs. A Blackmagic DeckLink SDI 4K video capture/transmitter card connected to a computer and a Tektronix WVR 8200 waveform monitor has been used.
- To obtain the results of the 4K signals, the attenuation has been measured at the frequencies indicated for different cable lengths up to the maximum 40 dB established by the standards. The Keysight N9916A FieldFox network analyzer has been used.
- Both the simulation and the real measurements of the cables have been carried out in the laboratory of the Electronic Engineering Department of the Polytechnic University of Catalonia.
- It is not recommended to use distances greater than those indicated, although depending on the capacity of the receiver to reconstruct the signal, it may be reproduced correctly.
- In all cases, a possible margin of error of 3 dB must be taken into account.



Frequency attenuation (dB/100m)

- Attenuation that the signal will have experienced when crossing 100 metros of cable depending on the frequencies of the signals it transports.
- It allows us to know the cable that best suits our needs.

