DIGITAL VIDEO 75Ω STRANDED

4K-UHD 3G-SDI HD-SDI

TAILOR-MADE CONNECTORS

Q11-75RGB (30AWG) (0,30 / 1,50 / 2,80)

Q11-252 (26AWG) (0,50 / 2,55 / 4,30)

Q11-234 (22AWG) (0,76 / 3,40 / 6,00)

Q11-3077 (18AWG) (1,24 / 5,20 / 7,20) SOON

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 that varies between 143 and 360 Mbps, to the HD-SDI and 3G-SDI high definition 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 Q11-234 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 several high-purity polished copper (BC) or tinned copper (TC) conductors. The dielectric is high density polyethylene foam (FHDPE). There are several types of screen that are made up of a spiral of TC wires, an aluminum tape and a braid of TC wires, just one braid or two braids depending on the cable model. 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.**
Braided screen	It improves cable handling with respect to the spiral screen, allowing it to be **flexed without fear** of losing the high level of shielding it offers. The Q11-234 cable has **double shielding** to increase signal protection against external interference.
UL-PVC	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.

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Technical data

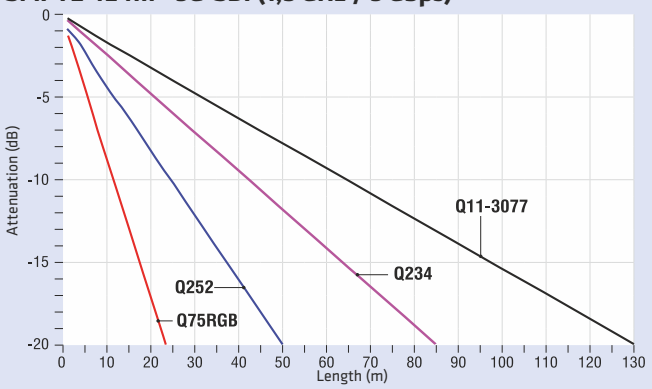
	Q11-75RGB	Q11-252	Q11-234	Q11-3077
Conduct. ø (mm)	7/0,10 TC / 0,30	19/0,10 TC / 0,50	7/0,254 BC / 0,762	19/0,254 BC / 1,24
Section (mm²)	0,05 (30AWG)	0,15 (26AWG)	0,35 (22AWG)	0,962 (18AWG)
Insulator (mm)	1,50 FHDPE	2,55 FHDPE	3,40 FHDPE	5,20 FHDPE
Screen	TC Spiral 100%	TC Braid 85%	Al Tape + TC Braid 90%	Double TC Braid 90%
Cover (mm)	2,80 PVC	4,30 PVC	6,00 PVC	7,20 PVC
Colors				
BNC 4K BNC 3G BNC	CC802	CC806	CC912 / CC912/B CC812 CC702	CC924 CC824
Tool	HR003	HR001, HR002	HR001	HR002
Present. (m)	Spool 100/500 (black, white)	Spool 100/500	Spool 100/500	Spool 100/300

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

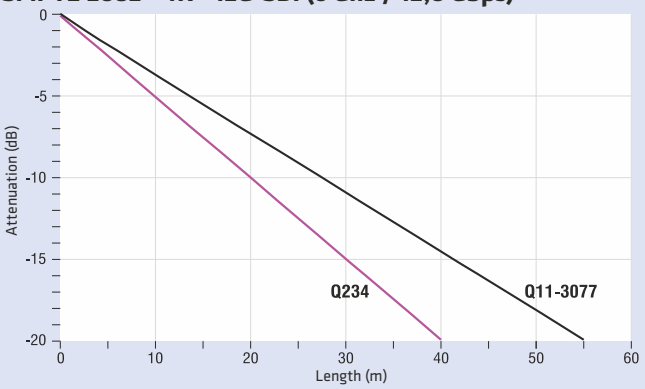
Max. Loss	30dB 180 Mhz / 360 Mbps Video by components (SMPTE 259M, Component Video 16:9)	30dB 270 Mhz / 540 Mbps 480p 60 fps (SMPTE 344M, Progressive 16:9)	20dB 750 Mhz / 1,5 Gbps 720p 60 fps / 1080p 30 fps (HD Ready) (SMPTE 292M, HD-SDI)	20dB 1,5 Ghz / 3,0 Gbps 1080p 60 fps (Full HD) (SMPTE 424M, 3G-SDI)	40dB 3 Ghz / 6,0 Gbps 4K at 30 fps (UHD) (SMPTE 2081, 6G-SDI)	40dB 6 Ghz / 12,0 Gbps 4K at 60 fps (UHD) (SMPTE 2082, 12G-SDI)
Q11-75RGB	100	80	20 I 20	15 I 15	-	-
Q11-252	170	140	55 I 80	40 I 50	-	-
Q11-234	250	200	80 I 150	55 I 85	60	40
Q11-3077	390	310	125 I 150	85 I 130	90	55

- 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.

SMPTE 424m - 3G-SDI (1,5 GHz / 3 Gbps)

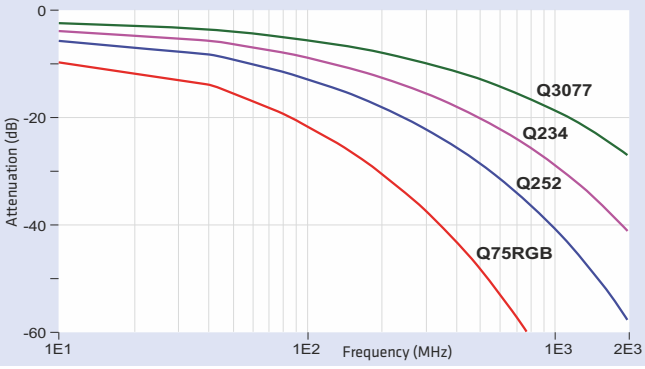


SMPTE 2082 - 4K - 12G-SDI (6 Ghz / 12,0 Gbps)



Frequency attenuation (dB/100m)

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



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