

Coaxial Digital Video 75Ω
SDI / HDTV / 3G-SDI / 4K



HIGHLIGHTS

APPLICATIONS

CONNECTORS

	<ul style="list-style-type: none"> • 3G-SDI and 4K digital video signals • Long distance video transmissions • Film and television studios 	<p>CC 912/B (4K) CC 912 (4K) CC 812 (3G)</p>
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CONSTRUCTION

CONDUCTOR	SIZE	1x1x0.35mm ² (22AWG)
	COND. MATERIAL	BC (Bare Copper)
	CONSTRUCTION	7/∅0.254±0.008mm
INSULATION	MATERIAL	FHDPE (Foam High Density Polyethylene)
	DIAMETER	3.40±0.10mm
	COLOR	White(RAL9010)
SHIELD	AL/MYLAR MATERIAL	Al Tape attached to the Insulation
	AL/MYLAR CONSTRUCTION	16/0.02mm
	BRAID SHIELD MATERIAL	TC (Tinned Copper)
	BRAID SHIELD CONSTRUCTION	24/6/∅0.10±0.008mm 90% Covering
JACKET	MATERIAL	PVC FR (WITH RoHS)
	DIAMETER	6.00±0.15mm
	COLOR	Q11-234 : PURPLE(RAL4005) Q11-234N : BLACK(RAL9005)
PACKING	LABEL	Q11-234, Q11-234N
	M/SPOOL	100m, 500m
	SIZE SPOOL	100m: 235x75x110mm (paper) 500m: 390x130x240mm (wood)
JACKET PRINTING	Q11-234 EMELEC ViasCom® 22AWG SDI FLEXIBLE VIDEO CABLE (White Ink Ral 9010)	
<p>Product Diagram</p>		<p>Picture Packing</p>

CHARACTERISTICS

ELECTRICAL	CONDUCTOR RESISTANCE	MAX: 55 Ω/km, 20°C							
	INSULATION RESISTANCE	MIN: 10 MΩ/km, 20°C							
	BRAID RESISTANCE	MAX: 13 Ω/km							
	DIELECTRIC STRENGTH	AC500V 60Hz/1MIN							
	CHARACTERISTIC IMPEDANCE	75 Ω							
	CAPACITANCE C/S	53 pF/m							
	VELOCITY OF PROPAGATION	0,89c							
	INDUCTANCE	0,32 μH/m							
	NOMINAL DELAY	3,75 ns/m							
	MAXIMUM VOLTAGE	CA 49V							
	ATTENUATION	MHz	10	50	200	400	700	1000	2000
		dB/100m	4	6	13	17	24	28	42
RETURN LOSS	MHz	5 - 470		470 - 1000		1000 - 2000		-	
	dB/100m	-23		-20		-18		-	
PHYSICAL	FLAME TEST	VW-1 / IEC 60332-1-2 / UNE EN 60332-1-2							
	OPERATING TEMPERATURE	-15°C / +70°C							

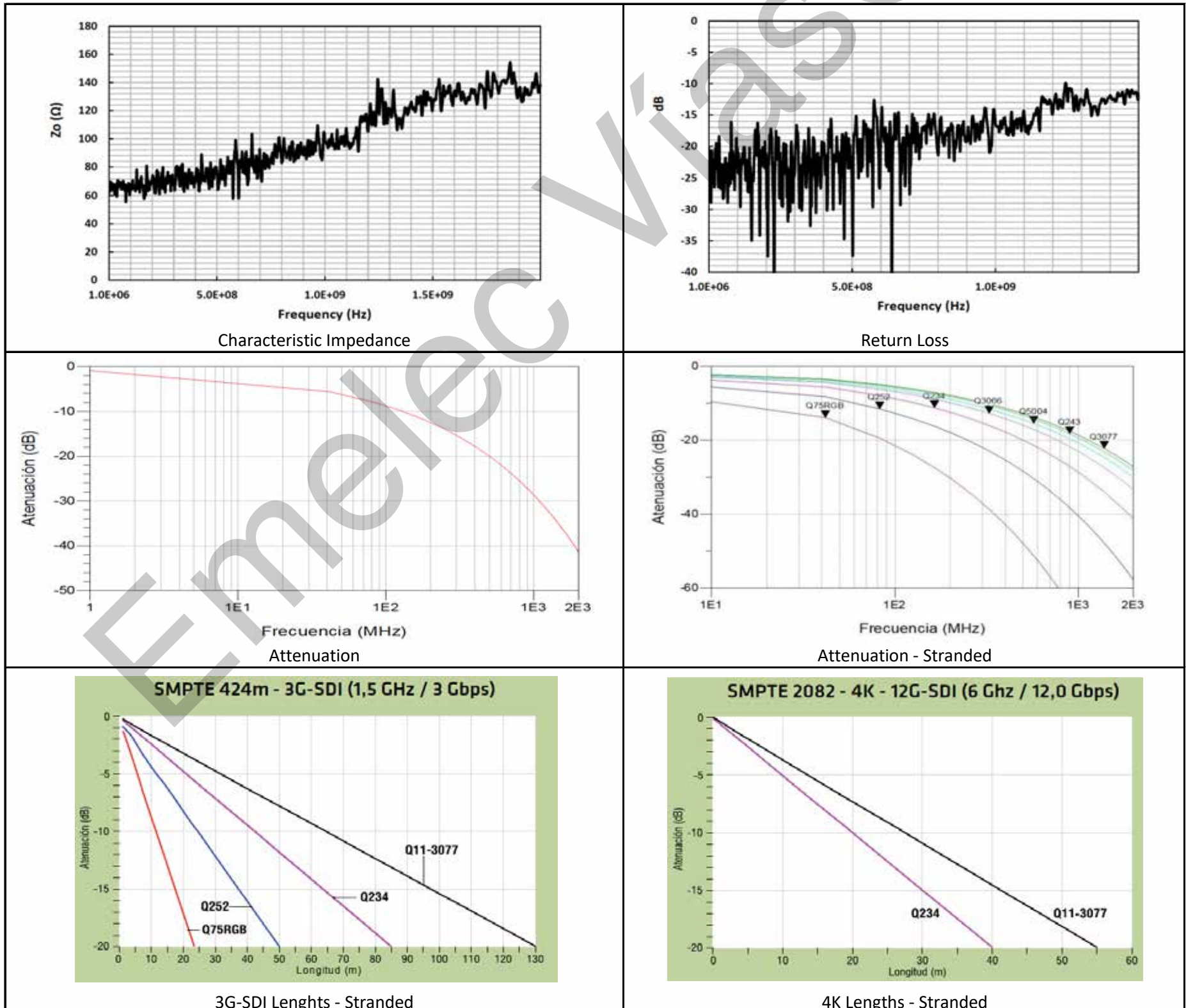
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MAXIMUM TRANSMISSION DISTANCES IN METERS (In black: Simulated Distance | In green: Actual Distance)

MAX. LOSS	30 dB	30 dB	30 dB	20 dB	20 dB	40 dB	40 dB
FREQUENCY	135 MHz	180 MHz	270 MHz	750 MHz	1,5 GHz	3 GHz	6 GHz
BITRATE	270 Mbps	360 Mbps	540 Mbps	1,5 Gbps	3,0 Gbps	6,0 Gbps	12 Gbps
STANDARD	SMPTE 259M	SMPTE 259M	SMPTE 344M	SMPTE 292M	SMPTE 424M	SMPTE 2081	SMPTE 2082
SIGNAL	Component 4:3	Component 16:9	Progressive 16:9	HD-SDI	3G-SDI	6G-SDI	12G-SDI
DISTANCE	290	250	200	80 150	55 85	60	40

- The maximum distances for SMPTE 259M and SMPTE 344M signals have been defined upon reaching a maximum attenuation of 30 dB.
- HD-SDI and 3G-SDI: For SMPTE 292M and SMPTE 424M signals, the distances have been defined upon reaching a maximum attenuation of 20 dB, as specified by the standards.
- 4K: For SMPTE 2081 and SMPTE 2082 signals, the distances have been defined upon reaching a maximum attenuation of 40 dB, as specified by the standards.
- To obtain the simulated results (values in black), each cable was virtually modeled using circuit simulation software and the attenuations were calculated.
- The green values for HD-SDI and 3G-SDI signals represent the actual transmission distance achieved during physical testing of the cable along with our 3G BNC connectors. A Blackmagic DeckLink SDI 4K video capture/transmission card was used, connected to a Tektronix WVR 8200 waveform monitor.
- To obtain the results for 4K signals, attenuation was measured at the specified frequencies for different cable lengths until reaching the maximum 40 dB defined by the standards. A Keysight N9916A FieldFox network analyzer was used.
- Both the simulation and actual measurements of the cables were conducted at the Electronics Engineering Department laboratory of UPC.
- It is not recommended to use distances greater than those indicated, but depending on the receiver's ability to reconstruct the signal, proper reproduction may still be possible.
- In all cases, a possible error margin of 3 dB must be considered.

ELECTRICAL SCHEMATICS



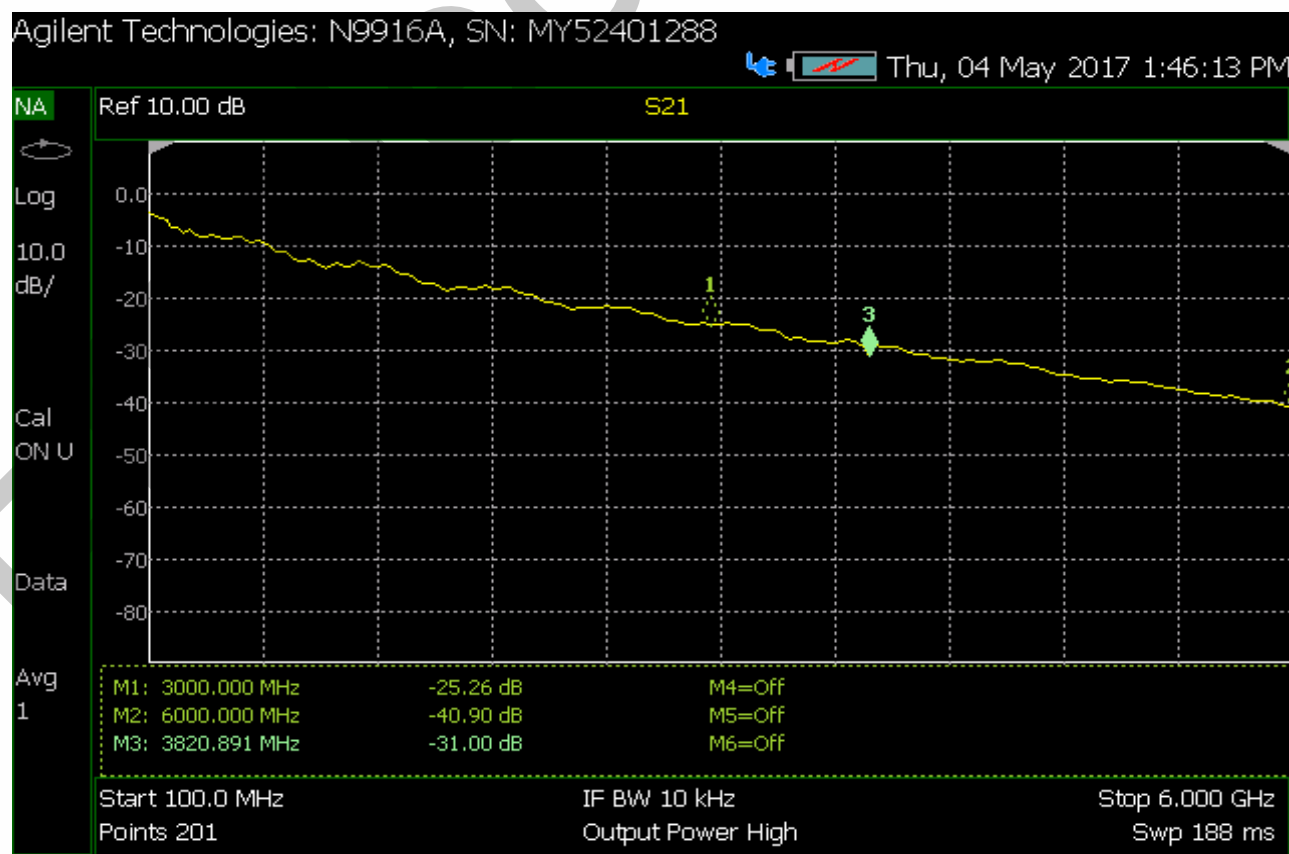
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REAL TESTS



SMPTE 424m - 1,5 GHz / 3 Gbps - 85 meters

- Test performed using a Blackmagic Decklink SDI 4K capture/transmission card and a Tektronix WVR 8200 waveform monitor.
 - The errors, shown in red, observed during the 3 Gbps test occur because the Tektronix monitor used does not have the 3G option installed and, therefore, cannot automatically interpret the SMPTE 424M standard. However, when set manually, it can be seen that the signal is received correctly and there are no errors in the eye diagram.



SMPTE 2082 - 6 GHz / 12 Gbps - 40 meters

- Test performed by measuring the cable attenuation using a Keysight N9916A FieldFox network analyzer.
 - The tests were conducted using our Emelec 3G BNC connectors, which increase the signal attenuation by less than 1 dB per connector.

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