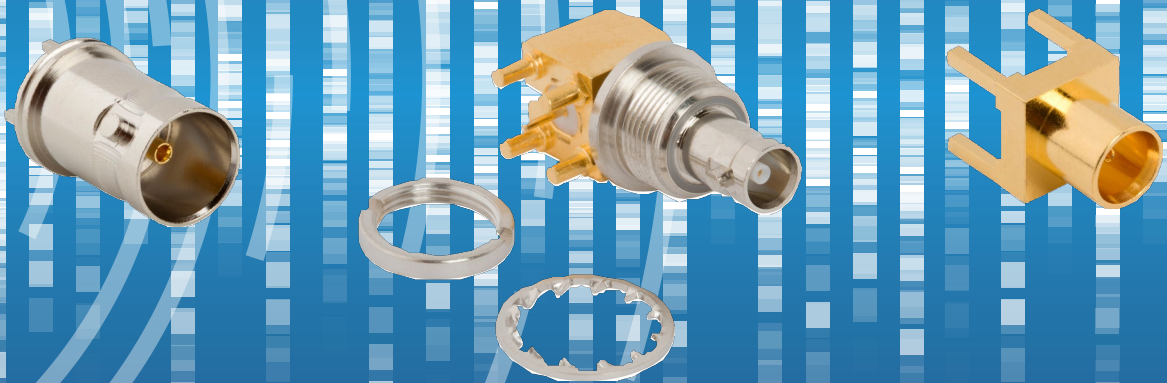


12G SDI

BROADCAST SOLUTIONS

Amphenol® RF

www.amphenolrf.com



12G SDI BROADCAST SOLUTIONS

12G High-Frequency RF Interconnect for Broadcast

Ultra High Definition Video (also known as “Ultra HD” or “4K”), with 4x the resolution of 1080P HD video, requires an interconnect system that can transfer data at a rate of up to 12 Gbps. Using legacy BNC connectors often supporting a max frequency of 3 GHz, this could require 2 or 4 channels.

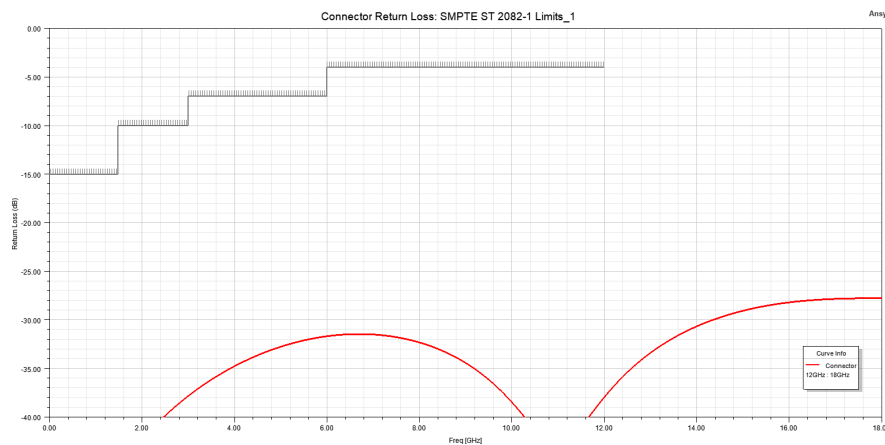
Amphenol RF's line of 12G BNC, HD-BNC and MCX products are optimized for 4K Ultra HD broadcast video, providing fully intact signal transmission on a single channel. These connectors are designed for 12G-SDI video applications, and come in a variety of PCB mounting and cable terminations. Peak performance can be reached when Amphenol RF 12G connectors are used as a mated pair.

Features and Benefits

- One channel for 4K or Ultra-HD quality
- 12 Gbps performance per SMPTE standard
- Familiar bayonet coupling mechanisms for BNC and HD-BNC configurations
- Quick and easy mating with push-on coupling mechanism for MCX versions
- Variety of PCB and cable-mount products
- Designs available for industry-standard and 12G-specific cable types

Applications

- Mobile Broadcast
- Patch Panels
- HD Cameras
- Digital Signage
- Video Encoders
- Video Routers
- Remote Viewing



Return Loss:
Amphenol RF connector
simulation vs SMPTE limits



12G CONNECTORS

BNC Connectors

Cable Mount Connectors

Cable Type	Part Number	Description
Belden 4505P	031-70572-12G	BNC Straight Crimp Plug
	031-70573-12G	BNC Straight Crimp Jack
Belden 4505R	031-70543-12G	BNC Straight Crimp Jack
	031-70546-12G	BNC Straight Crimp Plug
	031-70567-12G	BNC Straight Crimp Jack, Bulkhead
Belden 4694P	031-70557-12G	BNC Straight Crimp Jack
	031-70558-12G	BNC Straight Crimp Plug
	031-70565-12G	BNC Straight Crimp Jack, Bulkhead
Belden 4694R	031-70547-12G	BNC Straight Crimp Jack
	031-70548-12G	BNC Straight Crimp Plug
Belden 4731R, 4731P	031-70559-12G	BNC Straight Crimp Jack
	031-70560-12G	BNC Straight Crimp Plug
Belden 4794R	031-70534	BNC Straight Crimp Plug
	031-70539-12G	BNC Straight Crimp Jack
	031-70545-12G	BNC Right-Angle Crimp Plug
	031-70568-12G	BNC Straight Crimp Jack, Bulkhead
Belden 4855R	031-70537-12G	BNC Straight Crimp Plug
	031-70538-12G	BNC Straight Crimp Jack
	031-70544-12G	BNC Right-Angle Crimp Plug
	031-70566-12G	BNC Straight Crimp Jack, Bulkhead
	031-70549-12G	BNC Right-Angle Crimp Plug IP67
Canare L-3.3CUHD	031-70554-12G	BNC Straight Crimp Plug
	031-70555-12G	BNC Straight Crimp Jack
Canare L-5.5CUHD	031-70552-12G	BNC Straight Crimp Plug
	031-70553-12G	BNC Straight Crimp Jack

PCB Connectors

Part Number	Description
031-70526-11	BNC Edge Mount 0.062" PCB Jack, 16 mm Hex Nut
031-70526-12	BNC Edge Mount 0.062" PCB Jack, 14 mm Hex Nut
031-70526-13	BNC Edge Mount 0.062" PCB Jack, Spanner Nut
031-70526-21	BNC Edge Mount 0.084" PCB Jack, 16 mm Hex Nut
031-70526-22	BNC Edge Mount 0.084" PCB Jack, 14 mm Hex Nut
031-70526-23	BNC Edge Mount 0.084" PCB Jack, Spanner Nut
031-70530	BNC Straight PCB Jack, 16.22 mm Height
031-70535-12G	BNC Right-Angle PCB Jack
031-70535S-12G	BNC Right-Angle PCB Jack, Spanner Nut
031-70536-12G	BNC Straight PCB Jack, 22.96 mm Height
031-70576-12G	BNC Straight PCB Jack, Bulkhead
031-70577-12G	BNC Straight PCB Jack Isolated
031-70578-12G	BNC Right-Angle PCB Jack Isolated
031-70564-12G	BNC Right-Angle PCB Jack IP67



031-70530



031-70537-12G



031-70539-12G



034-1065-12G



034-1018-12G



034-1025-12G

HD-BNC Connectors

Cable Mount Connectors



Cable Type	Part Number	Description
Belden 1505A	034-1025-12G	HD-BNC Straight Crimp Plug
Belden 1694A	034-1017-12G	HD-BNC Straight Crimp Plug
Belden 1855A	034-1026-12G	HD-BNC Straight Crimp Plug
Belden 4505P	034-1137-12G	HD-BNC Straight Crimp Plug
Belden 4505R	034-1120-12G	HD-BNC Straight Crimp Plug
Belden 4694P	034-1130-12G	HD-BNC Straight Crimp Plug
Belden 4694R	034-1121-12G	HD-BNC Straight Crimp Plug
Belden 4731R, 4731P	034-1132-12G	HD-BNC Straight Crimp Plug
	034-1104-12G	HD-BNC Straight Crimp Plug
Belden 4794R	034-1119-12G	HD-BNC Right Angle Crimp Plug
	034-1107-12G	HD-BNC Straight Crimp Plug
Belden 4855R	034-1118-12G	HD-BNC Right-Angle Crimp Plug
	034-1122-12G	HD-BNC Right Angle Crimp Plug IP67
	034-1123-12G	HD-BNC Straight Crimp Jack IP67
	034-1128-12G	HD-BNC Straight Crimp Plug
Canare L-3.3CUHD	034-1128-12G	HD-BNC Straight Crimp Plug
Canare L-5.5CUHD	034-1127-12G	HD-BNC Straight Crimp Plug

PCB Connectors

Part Number	Description
034-1018-12G	HD-BNC Edge Mount PCB Jack
034-1028-12G	HD-BNC Straight PCB Jack, Bulkhead
034-1028H-12G	HD-BNC Straight PCB Jack, Bulkhead, Hex Nut
034-1030-12G	HD-BNC Right-Angle PCB Jack
034-1065-12G	HD-BNC Straight PCB Jack
034-1126-12G	HD-BNC Straight PCB Jack, Surface Mount, Bulkhead
034-1131-12G	HD-BNC Right-Angle PCB Jack Dual Port, Vertical
034-1135-12G	HD-BNC Right-Angle PCB Jack Dual Port, Offset
034-1139-12G	HD-BNC Straight PCB Jack Isolated
034-1140-12G	HD-BNC Right-Angle PCB Jack Isolated



919-417J-71P12G



919-418J-71P12G



919-421P-71S12G

MCX Connectors

Cable Mount Connectors



Cable Type	Part Number	Description
Belden 4855R	919-416P-71A12G	MCX Right-Angle Crimp Plug
	919-421P-71S12G	MCX Straight Crimp Plug

PCB Connectors

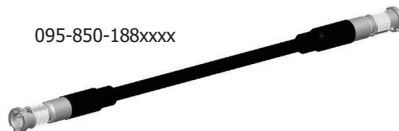
Part Number	Description
919-415J-71P12G	MCX Straight PCB Jack, 3.66 mm Legs
919-417J-71P12G	MCX Right-Angle PCB Jack, 3.66 mm Legs
919-418J-71P12G	MCX Edge Mount 0.062" PCB Jack
919-422J-71P12G	MCX Straight PCB Jack, 2.85 mm Legs
919-423J-71P12G	MCX Straight PCB Jack, 2.06 mm Legs
919-426J-71P12G	MCX Edge Mount 0.032" PCB Jack

12G CABLE ASSEMBLIES

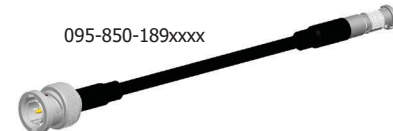
095-850-187xxxx



095-850-188xxxx



095-850-189xxxx



Straight Plug to Straight Plug Cable Assemblies

Cable Type	Part Number	Description
Belden 4505R	095-850-217XXXX	BNC Straight Plug to HD-BNC Straight Plug
Belden 4694R	095-850-218XXXX	BNC Straight Plug to HD-BNC Straight Plug
Belden 4794R	095-850-186XXXX	BNC Straight Plug to BNC Straight Plug
	095-850-214XXXX	HD-BNC Straight Plug to HD-BNC Straight Plug
Belden 4855R	095-850-187XXXX	BNC Straight Plug to BNC Straight Plug
	095-850-188XXXX	HD-BNC Straight Plug to HD-BNC Straight Plug
	095-850-189XXXX	BNC Straight Plug to HD-BNC Straight Plug

Standard Lengths Available

Code	Length in Inches (Meters)	Code	Length in Inches (Meters)
-006	6.00 [0.152]	M025	9.84 [0.25]
-012	12.00 [0.305]	M050	19.69 [0.50]
-018	18.00 [0.457]	M075	29.53 [0.75]
-024	24.00 [0.610]	M100	39.37 [1.00]
-036	36.00 [0.914]	M125	49.21 [1.25]
-048	48.00 [1.219]	M150	59.06 [1.50]
-060	60.00 [1.524]	M200	78.74 [2.00]
-072	72.00 [1.829]	M300	118.11 [3.00]
-120	120.00 [3.048]	M500	196.85 [5.00]
-144	144.00 [4.572]	M10L	393.70 [10.00]
-180	180.00 [7.620]	M20L	787.40 [20.00]
-300	300.00 [15.240]	M30L	1181.10 [30.00]
-600	600.00 [22.860]		
-900	900.00 [30.480]		

Straight Plug to Straight Jack Cable Assemblies

Cable Type	Part Number	Description
Belden 4505R	095-850-215XXXX	BNC Straight Jack to HD-BNC Straight Plug
Belden 4694R	095-850-216XXXX	BNC Straight Jack to HD-BNC Straight Plug
Belden 4794R	095-850-192XXXX	BNC Straight Jack to HD-BNC Straight Plug
Belden 4855R	095-850-193XXXX	BNC Straight Jack to HD-BNC Straight Plug
	095-850-232XXXX	BNC Straight Jack to BNC Straight Plug
	095-850-243XXXX	BNC Straight Bulkhead Jack to MCX Straight Plug
	095-850-300XXXX	HD-BNC Straight Bulkhead Jack IP67 to HD-BNC Straight Plug

Right-Angle Plug to BNC Straight Jack Plug

Cable Type	Part Number	Description
Belden 4855R	095-850-233XXXX	BNC Right-Angle Plug to BNC Straight Jack
Belden 4855R	095-850-242XXXX	BNC Straight Bulkhead Jack to MCX Right-Angle Plug

*xxxx denotes length code. See standard lengths available.

12G ADAPTERS

In-Series Adapters

Part Number	Configuration
112446-12G	BNC Jack to BNC Jack
031-220N-75-12G	BNC Jack to BNC Jack, Bulkhead
112444-12G	BNC Jack to BNC Jack, Bulkhead, Isolated
031-9-75-12G	BNC Jack to BNC Plug, Right-Angle
112532-12G	BNC Jack to BNC Plug, Push-On
031-218-75-12G	BNC Plug to BNC Plug
034-1112-12G	HD-BNC Jack to HD-BNC Jack
034-1109-12G	HD-BNC Jack to HD-BNC Jack, Bulkhead
034-1110-12G	HD-BNC Jack to HD-BNC Jack, Bulkhead, Isolated
034-1111-12G	HD-BNC Jack to HD-BNC Plug, Right-Angle

Between Series Adapters

Part Number	Configuration
031-70540-12G	BNC Jack to HD-BNC Plug
AD-BNCJMCXJ12G1	BNC Jack to MCX Jack
AD-BNCJMCXJ-12G	BNC Jack to MCX Jack, Bulkhead
AD-BNCJMCXP-12G	BNC Jack to MCX Plug
031-70541-12G	BNC Plug to HD-BNC Jack
AD-HDBNCJMCP-12G	HD-BNC Jack to MCX Plug
AD-HDBNCJMCP-12G	HD-BNC Jack to MCX Jack



031-220N-75-12G



031-9-75-12G



AD-HDBNCJMCP-12G

TECHNICAL SPECIFICATIONS (CONNECTORS)

Electrical

	BNC	HD-BNC	MCX
Impedance	75Ω	75Ω	75Ω
Frequency range	DC - 12 GHz	DC - 18 GHz	DC - 12 GHz
Return Loss	≥ 30 dB @ DC - 6 GHz	≥ 15 dB @ DC - 12 GHz	≥ 15 dB @ DC - 12 GHz
Dielectric Withstanding Voltage	1500 VRMS Min.	1000 VRMS Min.	500 VRMS Min.
Insulation Resistance	5000 MΩ	10000 MΩ	10000 MΩ
Contact Resistance	Center Contact	≥ 1.5 mΩ	≥ 5 mΩ
	Outer Contact	≥ 0.2 mΩ	≥ 2.5 mΩ

Environmental

Coupling Style	2-Stud Bayonet Coupling	2-Stud Bayonet Coupling	Push-On
Mating Cycles	500 Cycles Min.	500 Cycles Min.	500 Cycles Min.
Cable Attachment	Crimp	Crimp	Crimp

Materials

Body and Outer Contacts	Brass or zinc die-cast, nickel or gold plated	Brass or zinc die-cast, nickel or gold plated	Brass, gold plated
Male Contact	Brass or phosphor bronze, gold plated	Brass or phosphor bronze, gold plated	Brass, gold plated
Female Contact	Beryllium copper, gold plated	Beryllium copper, gold plated	Beryllium copper, gold plated
Crimp Ferrule	Brass, nickel plated	Brass, nickel plated	Copper, nickel plating
Spring	Stainless steel, nickel plated	Stainless steel, nickel plated	N/A
Insulator	PTFE	PTFE	PTFE
Gasket	Silicone rubber	Silicone rubber	N/A

*Technical specifications are typical and may vary by specific part number or design. See component drawing for additional information.

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