

12G SDI

BROADCAST SOLUTIONS

Amphenol[®] RF
www.amphenolrf.com



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12G High-Frequency BNC & HD-BNC Connectors 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 and HD-BNC products are optimized for 4K Ultra HD Broadcast, 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.

Cable Mount Connectors

| Cable Type | Part Number | Configuration |
|--------------|---------------|----------------------------------|
| Belden 1505A | 112951-11 | BNC Straight Crimp Plug |
| Belden 1694A | 112957-11 | BNC Straight Crimp Plug |
| Belden 1855A | 112955-11 | BNC Straight Crimp Plug |
| Belden 4505R | 031-70546-12G | BNC Straight Crimp Plug |
| | 031-70543-12G | BNC Straight Crimp Jack |
| Belden 4694R | 031-70548-12G | BNC Straight Crimp Plug |
| | 031-70547-12G | BNC Straight Crimp Jack |
| Belden 4794R | 031-70539-12G | BNC Straight Crimp Jack |
| | 031-70545-12G | BNC Right-Angle Crimp Plug |
| | 031-70534 | BNC Straight Crimp Plug |
| Belden 4855R | 031-70544-12G | BNC Right-Angle Crimp Plug |
| | 031-70549-12G | BNC Right-Angle Crimp Plug, IP67 |
| | 031-70537-12G | BNC Straight Crimp Plug |
| | 031-70538-12G | BNC Straight Crimp Jack |

| Cable Type | Part Number | Configuration |
|--------------|--------------|-------------------------------------|
| Belden 1505A | 034-1025-12G | HD-BNC Straight Crimp Plug |
| Belden 1694A | 034-1017-12G | HD-BNC Straight Crimp Plug |
| Belden 1855A | 034-1107-12G | HD-BNC Straight Crimp Plug |
| | 034-1026-12G | HD-BNC Straight Crimp Plug |
| Belden 4505R | 034-1120-12G | HD-BNC Straight Crimp Plug |
| Belden 4694R | 034-1121-12G | HD-BNC Straight Crimp Plug |
| Belden 4794R | 034-1119-12G | HD-BNC Right-Angle Crimp Plug |
| | 034-1104-12G | 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 |

PCB Connectors

| Part Number | Configuration |
|---------------|--------------------------------------|
| 031-70526-11 | BNC Edge Mount PCB Jack, Hex Nut |
| 031-70526-13 | BNC Edge Mount PCB Jack, Spanner Nut |
| 031-70530 | BNC Straight PCB Jack, 16.22 mm |
| 031-70535-12G | BNC Right Angle PCB Jack |
| 031-70536-12G | BNC Straight PCB Jack, 20.95 mm |

| Part Number | Configuration |
|--------------|---|
| 034-1018-12G | HD-BNC Edge Mount PCB Jack |
| 034-1028-12G | HD-BNC Straight PCB Jack, Bulkhead |
| 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 |



031-70530

034-1018-12G

031-70539-12G

034-1065-12G

031-70537-12G

034-1025-12G

Features and Benefits

- One channel for 4K or Ultra-HD quality
- Familiar BNC bayonet coupling mechanism in HD-BNC options
- Designs available for common and 12G-specific broadcast cable types

Applications

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

12G Cable Assemblies



095-850-187xxxx



095-850-188xxxx



095-850-189xxxx

Straight Plug to Straight Plug Cable Assemblies

| Cable Type | Part Number | Configuration |
|--------------|----------------|------------------|
| Belden 4794R | 95-850-186xxxx | BNC to BNC |
| Belden 4855R | 95-850-187xxxx | BNC to BNC |
| | 95-850-188xxxx | HD-BNC to HD-BNC |
| | 95-850-189xxxx | HD-BNC to BNC |

Standard Lengths Available

| Code | Length in Inches (Meters) |
|------|---------------------------|
| -006 | 6.00 [0.152] |
| -012 | 12.00 [0.305] |
| -018 | 18.00 [0.457] |
| -024 | 24.00 [0.610] |
| -036 | 36.00 [0.914] |
| -048 | 48.00 [1.219] |
| -060 | 60.00 [1.524] |
| -072 | 72.00 [1.829] |
| -120 | 120.00 [3.048] |
| -144 | 144.00 [4.572] |
| -180 | 180.00 [7.620] |
| -300 | 300.00 [15.240] |
| -600 | 600.00 [22.860] |
| -900 | 900.00 [30.480] |

| Code | Length in Inches (Meters) |
|------|---------------------------|
| M025 | 9.84 [0.25] |
| M050 | 19.69 [0.50] |
| M075 | 29.53 [0.75] |
| M100 | 39.37 [1.00] |
| M125 | 49.21 [1.25] |
| M150 | 59.06 [1.50] |
| M200 | 78.74 [2.00] |
| M300 | 118.11 [3.00] |
| M500 | 196.85 [5.00] |
| M10L | 393.70 [10.00] |
| M20L | 787.40 [20.00] |
| M30L | 1181.10 [30.00] |

Straight Plug to Straight Jack Cable Assemblies

| Cable Type | Part Number | Configuration |
|--------------|----------------|---------------|
| Belden 4794R | 95-850-192xxxx | HD-BNC to BNC |
| Belden 4855R | 95-850-193xxxx | HD-BNC to BNC |

*xxxx denotes length code. See standard lengths available.

12G Adapters

| Part Number | Description |
|-----------------|--|
| 031-218-12G | BNC Plug to BNC Plug |
| 031-220N-75-12G | BNC Jack to BNC Jack, Bulkhead |
| 031-9-75-12G | BNC Jack to BNC Plug, Right Angle |
| 112444-12G | BNC Jack to BNC Jack, Bulkhead, Isolated |
| 112446-12G | BNC Jack to BNC Jack |
| 031-70540-12G | BNC Jack to HD-BNC Plug |
| 031-70541-12G | BNC Plug 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 |
| 034-1112-12G | HD-BNC Jack to HD-BNC Jack |
| 034-1113-12G | HD-BNC Plug to HD-BNC Plug |



031-220N-75-12G



031-9-75-12G

Technical Specifications (Connectors)

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

| Mechanical | |
|------------------|-------------------------|
| Coupling Style | 2-stud bayonet coupling |
| Mating Cycles | 500 cycles min. |
| Cable Attachment | Crimp |
| Assembly Tool | CTL-17 |

| Environmental | |
|-------------------|-----------------------------|
| Temperature Range | -65 °C to +165 °C |
| RoHS | Compliant with exemption 6C |

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

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

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