

75 Ω Broadcast, Video & CATV Coaxial Cables

RG-59

Video Coaxial Cable

MIL-C-17 / SMPTE · 75 $\Omega \pm 3 \Omega$ · $\varnothing$ 6.15 mm · 22/20 AWG Cu or CCS · Solid or Foam
PE · 95

75 Ω Video & SDI $\varnothing$ 6.15 mm (0.242")

95 % Bare Cu Braid

Application

RG-59 is the industry-standard 75 Ω flexible video coaxial cable ($\varnothing$ 6.15 mm / 0.242 in) supplied in two engineered constructions: MIL-C-17 RG-59B/U (22 AWG CCS + solid PE + bare Cu braid) for RF/analog interconnect, and Broadcast/CCTV RG-59 (20 AWG solid)

Typical uses: Broadcast Studio & OB Van Patching, Analog & HD-over-Coax Security CCTV, MADI, Word Clock & Genlock Sync, Headend CATV & Satellite IF Distribution, Industrial Vision & Inspection Cameras

Construction



Cross-section, not to scale

1	Center conductor (20 AWG Cu or 22 AWG)	MIL-C-17 / SMPTE
2	Polyethylene dielectric (Solid or Foam)	MIL-C-17 / SMPTE
3	High-coverage bare copper braid	MIL-C-17 / SMPTE
4	Flame-retardant PVC / LSZH / PE jacket	MIL-C-17 / SMPTE

Technical data

Typical values

Characteristic impedance Z_0	75 $\Omega \pm 3 \Omega$ ($\pm 1.5 \Omega$ SDI grade)
Velocity of propagation (VoP)	66 % (Solid PE) / 78–82 % (Foam PE)
Shield DC resistance	$\leq 8.5 \Omega/\text{km}$ (95 % bare Cu braid)
Operating temperature range	-40 °C to +80 °C
Flame retardance	IEC 60332-1-2 / UL 1666 CMR
Cold-bend rating	-40 °C per MIL-DTL-17
Center conductor diameter	0.81 mm (20 AWG Cu) / 0.58 mm (23 AWG CCS)
Outer jacket diameter	6.15 mm $\pm$ 0.15 mm (0.242 in)
Nominal cable weight	52.0 kg/km (35 lb/1000 ft)
Low-frequency hum rejection	95 % bare Cu braid blocks 50/60 Hz ground
UV & outdoor weather	UV-stabilised outer sheath
Moisture barrier	Flooded gel + PE jacket option for burial
Standards	MIL-C-17 / MIL-DTL-17/29 (RG-59B/U)

Nominal capacitance	67.3 pF/m (Solid PE) / 53.5 pF/m (Foam PE)
Conductor DC resistance	$\leq 33 \Omega/\text{km}$ (20 AWG Cu) / $\leq 165 \Omega/\text{km}$ (CCS)
Max. operating voltage	2,300 V rms (MIL RG-59B/U) / 300 V (UL)
Installation temperature range	-20 °C to +70 °C
LSZH option	IEC 60332-3-24 & IEC 60754-1/2
Outdoor UV stability	Black PVC or carbon-black HDPE
Dielectric diameter	3.71 mm $\pm$ 0.10 mm (0.146 in)
Min. bend radius (fixed / flex)	30 mm (5×D) / 60 mm (10×D)
Connector compatibility	75 Ω BNC, F-type, RCA, DIN 1.0/2.3
High-frequency RF shielding	100 % foil + braid on SDI/CATV variant
Abrasion resistance	Flexible matte studio PVC or PUR option
RoHS / REACH status	RoHS 3 compliant

Sizes

4 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Construction / Variant	Conductor	Outer $\varnothing \approx$ mm	Metal kg/km	Weight $\approx$ kg/km	Min. bend R fixed mm
Standard RG-59 variants 4 sizes						
☐ RG-59/U CCTV (20 AWG Bare Cu + 95% Cu Braid)	75 Ω 95% Bare Cu Braid (PVC)	20 AWG ($\varnothing$ 0.81 Cu)	6.15	25.5	52.0	31
☐ RG-59B/U MIL-C-17 (CCS + Solid PE)	75 Ω 95% Bare Cu Braid (PVC)	23 AWG ($\varnothing$ 0.58 CCS)	6.15	22.0	54.0	31
☐ RG-59 3G-SDI Broadcast (Foam PE + Foil/Braid)	75 Ω Al-Foil + 95% Tinned Cu Braid	20 AWG ($\varnothing$ 0.81 Cu)	6.15	26.5	49.0	31
☐ RG-59 + 2×0.75 mm ² Siamese CCTV Power	75 Ω Coax + 2×0.75 mm ² Power	20 AWG + 2×0.75 mm ²	6.15	39.8	82.0	31

– Dimensions and weights are nominal production values subject to manufacturing tolerances per MIL-C-17 / SMPTE ST 259 / ST 292.

Attenuation & RF power handling

6 sizes

Frequency	Nominal attenuation dB / 100 m	Nominal attenuation dB / 100 ft	Max. CW RF power W (@ 40 °C)	Impedance $Z_0 \Omega$	Velocity VoP %
1 MHz (Baseband Video)	1.0	0.30	900	75	78.0
10 MHz (HD-CVI / TVI / AHD)	2.8	0.85	420	75	78.0
100 MHz	8.9	2.71	180	75	78.0
270 MHz (SMPTE 259M SD-SDI)	13.8	4.21	110	75	78.0
750 MHz (SMPTE 292M HD-SDI)	22.6	6.89	65	75	78.0
1500 MHz (SMPTE 424M 3G-SDI)	32.8	10.00	45	75	78.0

– Attenuation values apply at +20 °C ambient into a matched 75 Ω load; CW power ratings assume VSWR 1.0:1 at +40 °C ambient.

Standards and approvals

- ✓ MIL-C-17 / SMPTE
- ✓ IEC 60332-1-2 / UL CMR
- ✓ RoHS 3 / CE

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/rg-59-video-coaxial-cable



Typical values for this cable type, based on MIL-C-17 / SMPTE ST 259 / ST 292. Values for your order are confirmed in the quotation. Subject to change without notice.
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