

Selecting an RF Coaxial Cable

Cable Reference										
COAXIAL CABLE (RG#) MIL-C-17 REFERENCE	8 /74	55 184	58 /28	59 /29	141 /111	142 /111	174 /119	178 /93	179 /94	188 /138
PHYSICAL CONSTRUCTION										
Inner Conductor (mm/in)	2.16/.085	0.81/.032	0.89/.035	0.58/.023	0.99/.039	0.94/.037	0.48/.019	0.30/.012	.294/.012	0.30/.92
Dielectric (mm/in)	7.24/.285	2.94/.116	2.94/.116	370/14	4.22/.116	2.94/.116	1.52/.060	0.84/0.33	1.60/.063	1.52/.060
Dielectric Material	PE	PE	PE	PE	PTFE	PTFE	PE	PTFE	PTFE	PTFE
Outer Conductor (mm/in)	8.1/.318	4.47/.176	3.53/.139	4.44/.175	3.71/.146	4.11/.162	2.00/.079	1.32/.052	2.08/.082	2.06/.081
Jacket (mm/in)	10.29/.405	5.46/.215	4.95/.195	6.14/.242	4.83/.190	4.95/.195	2.79/.110	1.80/.071	2.54/.100	2.79/.110
Jacket Material	PVC-1	PE-111	PVC-1	PVC-1	FG BRAID-V	FG BRAID-V	PVC-1	FEP-1X	FEP-1X	PFA-X11
Shields	Single	Double	Single	Single	Single	Double	Single	Single	Single	Single
COAXIAL CABLE (RG#) MIL-C-17 REFERENCE	8 /74	55 184	58 /28	59 /29	141 /111	142 /111	174 /119	178 /93	179 /94	188 /138
ELECTRICAL CHARACTERISTICS										
Impedance (OHMS)	52.0	53.5	50.0	75.0	50.0	50.0	50.0	50.0	75.0	50.0
Frequency (GHz)	1.0	3.0	1.0	1.0	1.0	3.0	1.0	3.0	1.0	1.0
Attenuation, Max dB. @ 25 Deg. C/100 ft.										
1.0 GHz	9.0	14.7	28.0	15.1	13.0	13.0	31.3	50.2	37.0	30
2.0 GHz	15.0	22.0			19.5	19.5				39.5
5.0 GHz	28.0	40.7			36.0	36.0				
10.0 GHz	47.0				62.0	62.0				
14.0 GHz										
18.0 GHz										
Power Handling Watts @ 25 Deg. C										
1.0 GHz	180.0	50.00	53.0	75.0	845.0	650.0	16.0	68.0	260.0	175.0
2.0 GHz		35.0			546.0	420.0				122.0
5.0 GHz		19.0				240.0				
10.0 GHz										
14.0 GHz										
18.0 GHz										
COAXIAL CABLE (RG#) MIL-C-17 REFERENCE	8 /74	55 184	58 /28	59 /29	141 /111	142 /111	174 /119	178 /93	179 /94	188 /138
MECHANICAL CHARACTERISTICS										
Minimum Bend Radius (mm/in)		25.4/1.0	25.4/1.0	25.4/1.0	25.4/1.0	25.4/1.0	12.2/.05	10.2/.04	12.2/.05	12.2/.500
Temperature Rating (Deg. C)	-40 to +80	-55 to +80	-88 to +85	-55 to +85	-55 to +250	-55 to +200	-55 to +85	-55 to +200	-55 to +200	-55 to +250
<p>PE: Solid Polyethylene, PE-111: Clear Polyethylene, PVC-1: Black polyvinylchloride, contaminating,, Type 1, per MIL-C-17, FG Braid -V: Fiberglass, impregnated, Type V, per MIL-C-17, PTFE: Polytetrafluoroethylene, per MIL-C-7, FEP: Fluorinated Ethylene Propylene, PFA-X11: Perfluoroalkoxy, per MIL-C-17, FEO-IX: Fluorinated ethylene propylene, Type IX, per MIL-C-17, PVC-11A: Black polyvinylchloride, non-contaminating, Type 11A, per MIL-C-17, BC: Bare Copper</p>										

Cable Reference										
COAXIAL CABLE (RG#) MIL-C-17 REFERENCE	214 /75	223 /84	316 113	RD316 /152-00001	393 /127	400 /128	402 /130	405 /133	OMNI-FLEX 100 N/A	OMNI-FLEX 200 N/A
PHYSICAL CONSTRUCTION										
Inner Conductor (mm/in)	2.26/.089	0.89/.035	0.51/.020	0.51/.020	2.26/.093	0.94/.037	0.91/.036	0.51/.020	0.25/.010	0.25/0.10
Dielectric (mm/in)	7.24/.285	2.94/.116	1.52/.060	1.52/.060	7.24/.265	2.94/.116	2.99/.118	1.67/.066	0.73/.029	0.73/.029
Dielectric Material	PE	PE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	FEP	PTFE
Outer Conductor (mm/in)	9.14/.360	4.11/.162	2.00/.079	2.49/.098	8.7/.343	4.11/.162	3.58/.141	2.15/.085	1.02/.040	1.02/.040
Jacket (mm/in)	10.80/.425	5.38/.212	2.48/.098	2.90/.114	9.9/.052	4.95/.195			1.9/.075	1.32/.052
Jacket Material	PVC-11A	PVC-11A	FEP-IX	FEP-IX	FEP-IX	FEP-IX	BC	BC	FEP	FEP
Shields	Double	Double	Single	Double	Double	Double	Single	Single	Single	Single
COAXIAL CABLE (RG#) MIL-C-17 REFERENCE	214 /75	223 /84	316 113	RD316 /152-00001	393 /127	400 /128	402 /130	405 /133	OMNI-FLEX 100 N/A	OMNI-FLEX 200 N/A
ELECTRICAL CHARACTERISTICS										
Impedance (OHMS)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Frequency (GHz)	11.0	12.4	3.0	3.0	11.0	12.0	20.0	20.0	6.0	6.0
Attenuation, Max dB. @ 25 Deg. C/100 ft.										
1.0 GHz	12.0	14.7	29.6	29.6	7.50	14.2	12.0	19.5	50.0	50.0
2.0 GHz	18.5	22.0	42.4	42.4	11.0	20.6	17	27.3	90.0	90.0
5.0 GHz	35.0	40.7			21.0	37.4	29.0	47.5		
10.0 GHz	56.0				35.0	62.0	44.0	70.4		
14.0 GHz								86.0		
18.0 GHz										
Power Handling Watts @ 25 Deg. C							64.0	98.0		
1.0 GHz	170.0	50.0	135.0	135.0	1700	650.0	450.0	130.0	20.0	20.0
2.0 GHz	104.0	35.0	94.0	94.0	1200	420.0	320.0	92.0	20.0	20.0
5.0 GHz	54.0	19.0			620	240.0	180.0	54.0		
10.0 GHz					350		120.0	35.0		
14.0 GHz							92.0	27.0		
18.0 GHz							72.0	22.0		
COAXIAL CABLE (RG#) MIL-C-17 REFERENCE	214 /75	223 /84	316 113	RD316 /152-00001	393 /127	400 /128	402 /130	405 /133	OMNI-FLEX 100 N/A	OMNI-FLEX 200 N/A
MECHANICAL CHARACTERISTICS										
Minimum Bend Radius (mm/in)	50.8/2.0	25.4/1.0	12.2/.05	12.2/.05	50.8/2.0	25.4/1.0	6.35/0.25	6.35/.025	9.5/0.375	9.5/0.375
Temperature Rating (Deg. C)	-40 to +80	-55 to +50	-55 to +200	-55 to +200	-55 to +200	-55 to +200	-55 to +125	-55 to +125	-40 to +105	-40 to +125
PE: Solid Polyethylene, PE-111: Clear Polyethylene, PVC-1: Black polyvinylchloride, contaminating,, Type 1, per MIL-C-17, FG Braid -V: Fiberglass, impregnated, Type V, per MIL-C-17, PTFE: Polytetrafluoroethylene, per MIL-C-17, FEP: Fluorinated Ethylene Propylene, PFA-X11: Perfluoroalkoxy, per MIL-C-17, FEO-IX: Fluorinated ethylene propylene, Type IX, per MIL-C-17, PVC-11A: Black polyvinylchloride, non-contaminating, Type 11A, per MIL-C-17, BC: Bare Copper										