M17/RG

'Select' Types and Sizes

- *Low Loss HF-UHF Interconnect*
- *Wireless Base Station Interconnect*
- *Low Passive Intermod (silver plated types)*
- *Where MIL Spec Pedigree is Required*
- *Tactical Field Antenna Feeders*

Features & Benefits

- **Meets all MIL-C-17 Requirements**
- **Good Shielding Effectiveness**
- **Low Passive Intermod (PIM)**
- **Readily available in Distribution**
- **Uses Standard Connectors**

Attenuation (Loss) – again not the best by today's standards but is usually acceptable at HF frequencies.

Attenuation Stability – silver plated outer conductor prevents oxidation of the conductors thereby minimizing attenuation change vs time. Conversely, bare copper outer conductors may oxidize quite rapidly precipitating loss increase which is only significant at frequencies > 500 MHz.

Power Handling – solid dielectric materials (high thermal conductivity) provides excellent power handling capability.

Temperature Range - broad operating temperature range.

Mechanical Properties – solid dielectric provides superior crush resistance and therefore is well suited for tactical applications.

M17/RG's are traditional MIL Spec coax cables that were born 50-60 years ago. Originally created to support WWII military applications, these cables quickly became the products of choice for commercial wireless applications once they hit the surplus market, and continue to be used today.

M17/RG's have been widely adopted for commercial and military applications. Their QPL stature insures a high quality product made to the same spec regardless of the manufacturer.

Some of the key characteristics of M17/RG's are:

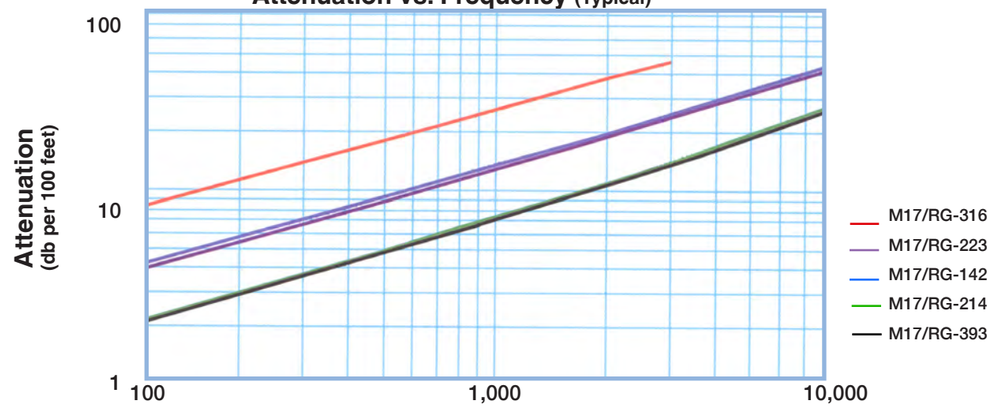
Shielding Effectiveness – in the 40 to 60 dB range and is acceptable for many lower frequency applications.

Phase Stable – not the best for phase stability by today's standards but can be optimized by appropriate preconditioning over the temp range of interest.

"Select" M17 Coaxial Cables

M17 Numberinches (mm) (mm)	Conductor inches (mm)	Dielectric inches (mm)	Shields inches (kg/m)	Jacket lbs/foot Vp(%)	Weight ohms (pF/m)	Impedance pF/foot Cent. Cond	Shield	Capacitance kvrms	DC Resistance ohms/1kft (kg F (C)	Voltage Range	Oper. Range	Temp.	Freq.	M17
M17/113-RG316	SCCS 7/.0067" 0.0201 (0.51)	PTFE 0.060 (1.52)	1:SC 0.078 (1.98)	FEP-IX 0.098 (2.49)	0.012 (0.018)	50 +/- 2	69.5	29.4 (96.5)	83.3 (273.3)	8.5 (27.9)	1.2	-67 +392 (-55 +200)	.05-3 GHz	
M17/84-RG223	SC 0.0355 (0.90)	PE 0.116 (2.95)	2:SC 0.162 (4.11)	PVC-IIA 0.212 (5.38)	0.041 (0.061)	50 +/- 2	65.9	30.8 (101.1)	8.2 (26.9)(	2.2 7.2)	1.9	-40 +185 (-40 +85)	.04-12.4 GHz	
M17/60-RG142	SCCS 0.037 (0.94)	PTFE 0.116 (2.95)	2:SC 0.162 (4.11)	FEP-IX 0.195 (4.95)	0.043 (0.064)	50 +/- 2	69.5	29.4 (96.5)	19.1 (62.7)	2.2 (7.2)	1.9	-67 +392 (-55 +200)	.05-8 GHz	
M17/75-RG214	SC 7/.0296" 0.0888 (2.26)	PE 0.285 (7.24)	2:SC 0.343 (8.71)	PVC-IIA 0.425 (10.8)	0.130 (0.194)	50 +/- 2	65.9	30.8 (101.1)	1.7 (5.6)	1.3 (4.3)	5.0	-40 +185 (-40 +85)	.05-11 GHz	
M17/127-RG393	SC 7/.0312" 0.094 (2.39)	PTFE 0.285 (7.24)	2:SC 0.343 (8.71)	FEP-IX 0.390 (9.91)	0.175 (0.261)	50 +/- 2	69.5	29.4 (96.5)	1.5 (4.9)	1.3 (4.3)	5.0	-67 +392 (-55 +200)	.05-11 GHz	

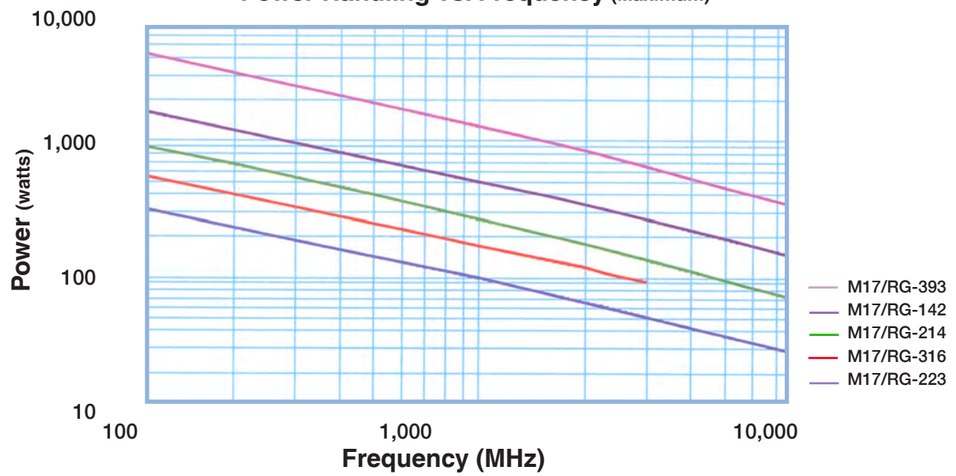
Attenuation vs. Frequency (Typical)



Frequency (MHz)	10	30	50	100	400	1,000	1,500	2,000	2,500	3,000	10,000	k1	k2
M17/RG-316	2.5	4.3	5.6	8	16	26	32	38	42	47	-	0.787	0.00120
M17/RG-223	1.2	2.1	2.8	4	8	13	17	20	22	25	51	0.384	0.00126
M17/RG-142	1.2	2.1	2.7	4	8	13	16	19	21	24	49	0.368	0.00120
M17/RG-214	0.7	1.2	1.6	2.2	4.7	7.9	10	11.9	13.7	15.3	37	0.210	0.00126
M17/RG-393	0.6	1.1	1.4	2.0	4	7	9	11	13	14	31	0.191	0.00120

Attenuation at Any Frequency = [k1 x SQRT (Fmhz)] + [k2 x Fmhz]; dB per 100 feet

Power Handling vs. Frequency (Maximum)



Frequency (MHz)	10	30	50	100	400	1,000	1,500	2,000	2,500	3,000	10,000
M17/RG-393	15141	8612	6604	4584	2156	1275	1000	838	729	649	286
M17/RG-142	5601	3206	2468	1726	831	504	401	340	298	267	125
M17/RG-214	3181	1808	1386	961	451	266	209	175	152	135	59
M17/RG-316	1869	1072	827	580	282	173	138	118	104	93	-
M17/RG-223	1081	619	476	333	161	97	78	66	58	52	24

Watts; Sea Level; Ambient +40C; VSWR 1:1