TFlex®

- Low Loss Microwave Interconnect
- Wireless Base Station Interconnect

Flexible alternative to Semirigid Coax

Features & Benefits

- Meets all MIL-C-17 Requirements
- Excellent Shielding Effectiveness
- Low Passive Intermod (PIM)
- Stable Loss, Phase, & VSWR vs Flexing
- Uses Standard Solder-on Semirigid Connectors

TFlex employs a thin helical wrap of silver plated copper tape and overall braid sized such that standard solder-on connectors can be used.

TFlex was developed 10 years ago and have been widely adopted by the commercial and military OEM's.

Some of the key characteristics of TFlex are:

Passive Intermod – typically > -150dBc (2x 20 watt carriers)

Shielding Effectiveness – comparable to standard semirigid and like semirigid is beyond measurable limits.

Small/Lightweight – same size but lighter weight than standard CL semirigid coax.

Phase Stable – the helical tape outer conductor minimizes electrical length change with temperature to yield substantial improvement over equivalent size flexible cables.

Low Loss – can achieve loss comparable to standard CL semirigid coax.

Attenuation Stability – silver plated outer conductor prevents oxidation of the conductors thereby minimizing attenuation change vs time.

Power Handling – comparable to standard CL semirigid.

Corrosion Resistance – jacketing of the cable with FEP provides excellent protection when cable is deployed in a corrosive environment.

Formability – the flexible nature of TFlex eliminates the need for hand or precision machine bending. TFlex is preterminated in it's approximate desired length and just 'plugged in' using the most convenient/desirable routing.

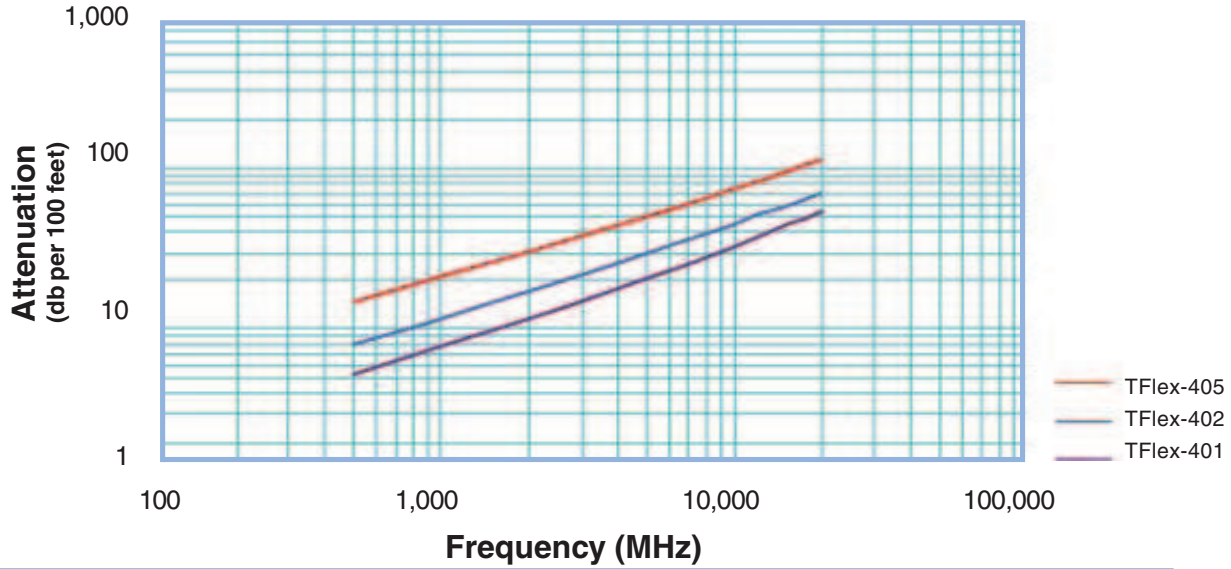
Connectors (solder-on) – are available from a variety of sources to fit standard semirigid coax and TFlex.

TFlex Flexible Alternative to Semirigid Coaxial Cables

TMS Number	Conductor inches (mm)	Dielectric inches (mm)	Shields inches (mm)	Jacket inches (mm)	Weight lbs/foot (kg/m)	Impedance ohms Vp(%)	Capacitance pF/foot (pF/m)	DC Resistance ohms/1kft (/km) Cent. Cond	DC Resistance ohms/1kft (/km) Shield (s)	Oper. Voltage kvrms	Temp. Range F (C)	Min, Bend Radius in. (mm)	Test Freq.
TFlex-405	SCCS 0.0201 (0.51)	PTFE 0.064 (1.63)	SC tape&braid 0.085 (2.16)	Blue FEP 0.104 (2.64)	0.015 (0.022)	50+/-1 69.5	29.3 (96.1)	64.5 (212.6)	10.7 (35.0)	1.5	-85+267 (-65+125)	0.250 (6.4)	0.5-20 GHz
TFlex-402	SC 0.036 (0.91)	PTFE 0.118 (3.00)	SC tape&braid 0.141 (3.58)	Blue FEP 0.160 (4.06)	0.033 (0.049)	50+/-1 69.5	29.3 (96.1)	8.0 (26.2)	7.63 (25.0)	1.9	-85+257 (-65+125)	0.500 (12.7)	0.5-20 GHz
TFlex-401	SC 0.0641 (1.63)	PTFE 0.208 (5.28)	SC tape&braid 0.249 (6.32)	Blue FEP 0.270 (6.9)	0.095 (0.142)	50+/-1 69.5	29.3 (96.1)	2.6 (8.4)	2.09 (6.9)	3.0	-85+257 (-65+125)	1.25 (31.8)	0.5-20 GHz

- **Low Passive Intermod**
- **Phase Stable**
- **All Semirigid Coax Applications**

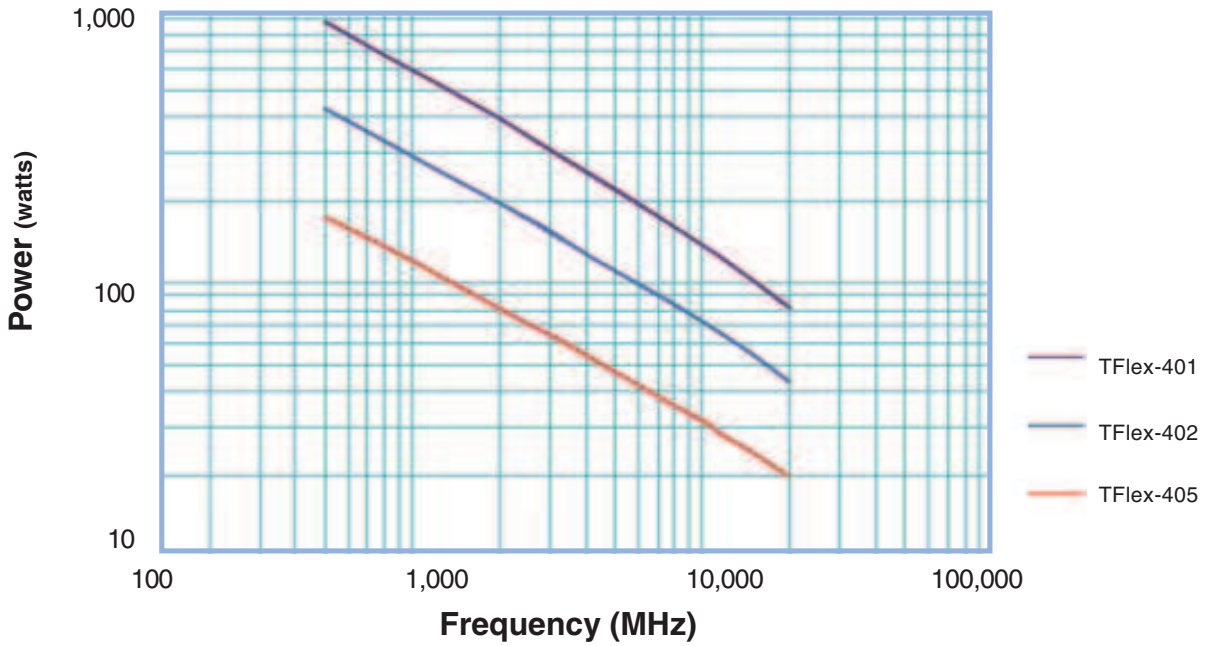
Attenuation vs. Frequency (Typical)



Frequency (MHz)	500	1,000	2,000	3,000	8,000	10,000	12,000	15,000	18,000	20,000	k1	k2
TFlex-405	14.7	21.1	30.6	38	66	75	83	99	106	113	0.630	0.00120
TFlex-402	8.0	11.6	17.2	22	39	45	51	61	66	71	0.330	0.00120
TFlex-401	5.3	7.8	11.8	15	28	33	37	46	50	54	0.210	0.00120

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

Power Handling vs. Frequency (Maximum)



Frequency (MHz)	500	1,000	2,000	3,000	8,000	10,000	12,000	15,000	18,000	20,000
TFlex-401	885	595	394	306	160	136	120	97	88	81
TFlex-402	426	290	195	154	83	72	63	52	48	44
TFlex-405	173	119	81	65	36	31	28	23	21	20

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