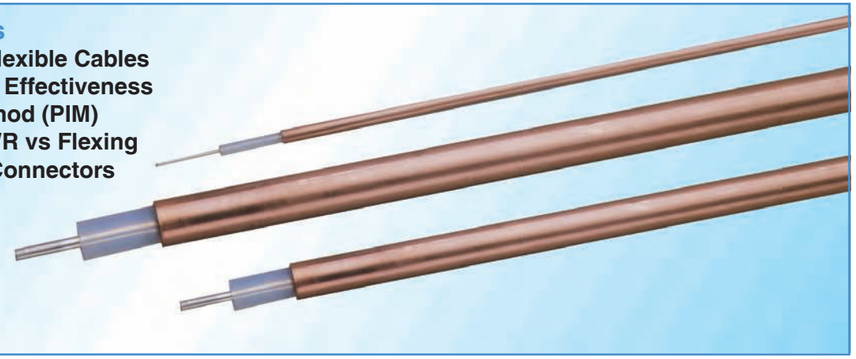
Coppersol®

Semirigid Coax

- **Low Loss Microwave Interconnect**
- **Wireless Base Station Interconnect**
- **Low Passive Intermod**
- **High Temperature**
- **High Power**

Features & Benefits

- **Lower Loss than Flexible Cables**
- **Superior Shielding Effectiveness**
- **Low Passive Intermod (PIM)**
- **Stable Loss & VSWR vs Flexing**
- **Readily Available Connectors**



Coppersol employs a thin tubular copper outer conductor and solid PTFE dielectric which provides the lowest attenuation and highest shielding giving it significant performance advantages over flexible coax of similar size.

Coppersol was developed 30-40 years ago and was subsequently adopted by the military and MIL-C-17 specification sheets and QPL status were achieved.

Some of the key characteristics of Coppersol are:

Shielding Effectiveness – the highest achievable for any cable and is estimated at >165 db, well below measurable limits..

Small/Lightweight – much smaller and therefore lighter weight than flexible coax having similar electrical performance.

Phase Stable – the solid outer conductor minimizes electrical length change with temperature to substantially lower levels than flexible coax cables.

Low Loss – can achieve up to 50% less loss than flexible cable of the same size.

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

Electrical Performance – has lowest VSWR and pulse reflection coefficient and exhibits very uniform characteristics to >20 GHz.

Corrosion Resistance – jacketing of the bare copper tube or plating with tin or silver is recommended when cable is deployed in a corrosive environment.

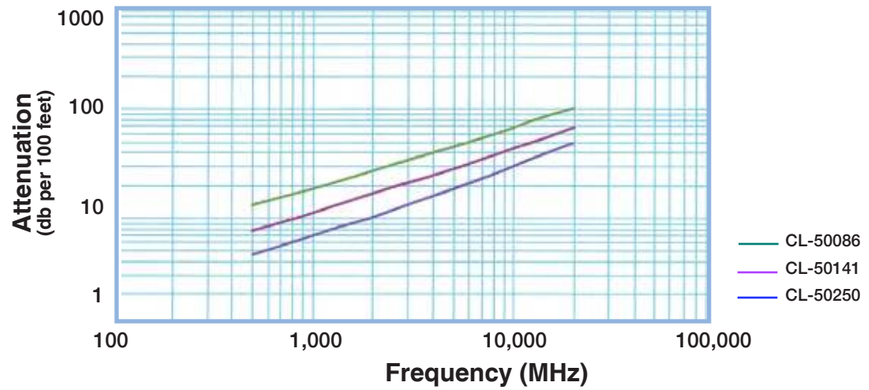
Formability – the solid copper tube enables the cable to be bent to any 3 dimensional configuration and have it retain its shape.

Connectors – standard inexpensive solder-on connectors are available from a variety of connector sources.

Coppersol Semirigid Coaxial Cables

TMS Numberinches (mm)	Conductor inches (mm)	Dielectric inches (kg/m)	Shields lbs/foot Vp(%)	Weight ohms (pF/m)	Impedance pF/foot Cent. Cond	Capacitance Shield (s)	DC Resistance ohms/1kft (/km) kvrms	Voltage F (C)	Oper. Range in. (mm)	Temp. Radius	Min. Bend Freq.	Test
CL-50086 M17/133-RG405	SCCS 0.0201 (0.51)	PTFE 0.066 (1.68)	BC Tube 0.0865 (2.20)	0.0153 (0.023)	50+/-1.5 69.5	29.4 (96.5)	64.8 (212.6)	2.68 (8.86)	1.5	-40+194 (-40+125)	0.125 (3.2)	0.5-20 GHz
CL-50141 M17/130-RG402	SCCS 0.0362 (0.92)	PTFE 0.1175 (2.98)	BC Tube 0.141 (3.58)	0.0344 (0.051)	50+/-1 69.5	29.4 (96.5)	20.0 (65.6)	1.32 (4.3)	1.9	-40+194 (-40+125)	0.250 (6.4)	0.5-20 GHz
CL-50250 M17/129-RG401	SC 0.0641 (1.63)	PTFE 0.209 (5.31)	BC Tube 0.250 (6.35)	0.105 (0.156)	50+/-0.5 69.5	29.4 (96.5)	2.6 (8.4)	0.45 (1.5)	3.0	-40+194 (-40+125)	0.375 (9.5)	0.5-20 GHz

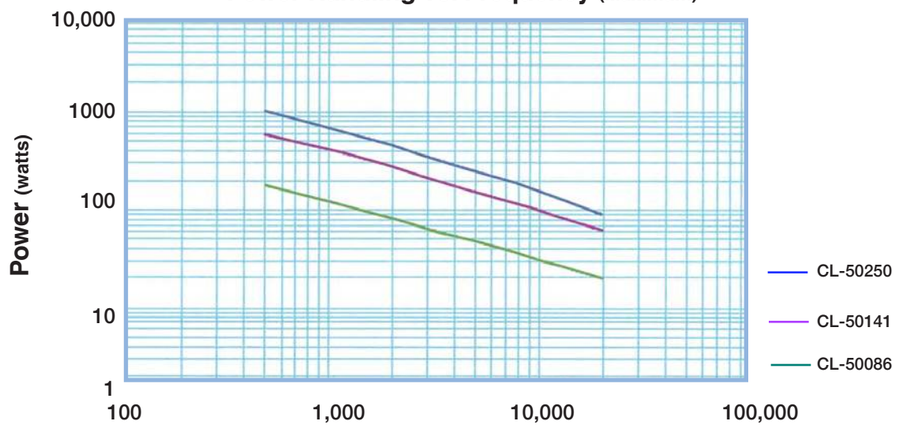
Attenuation vs. Frequency (Typical)



Frequency (MHz)	500	1,000	2,000	3,000	8,000	10,000	12,000	16,000	18,000	20,000	k1	k2
CL-50086	13.2	19.0	27.6	34	60	68	76	91	97	104	0.564	0.00120
CL-50142	7.7	11.3	16.6	21.0	38	44	49	59	64	69	0.318	0.00120
CL-50250	4.6	6.9	10.4	13.4	26	30	34	42	46	49	0.179	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	16,000	18,000	20,000
CL-50250	1024	685	449	347	179	152	133	107	97	90
CL-50141	592	403	271	213	115	99	87	71	65	60
CL-50086	174	120	82	65	36	31	28	23	21	20

Watts; Sea Level; Ambient +40C; VSWR 1:1; Outer Conductor +125C