

Semi-Rigid Cables to 110 GHz

Custom and Standard Designs Using CNC Bending

- Catalog or Build-to-Print
- Stable Performance
- Custom Design Services
- Precision CNC Bends
- Sizes 0.034in (0.86mm) to .25in (6.35mm)
- Wide Variety of Connectors

MegaPhase offers high reliability semi-rigid cable assemblies in a variety of configurations. With precision CNC bending, our customers are guaranteed consistency among multiple assemblies. MegaPhase offers custom design services complete with engineering drawings. These assemblies are MIL-DTL-17 qualified, typically with a tin-plated copper outer conductor. Applications include delay lines, switch matrices, test fixtures, instrumentation, and other integrated systems.

Electrical Data

Maximum Frequency:

SR047: 110 GHz
SR034, SR086: 50.0 GHz
SR141: 34.0 GHz
SR250: 18.0 GHz

Impedance:

50 Ω nominal

Propagation Velocity:

69% nominal

Time Delay:

1.47 ns/ft (4.82 ns/m)

Shielding Effectiveness:

-110 dB minimum (cable only)

Dielectric Withstanding Voltage:

SR034 & SR047: 2.0 kV at 60 Hz
SR086 & SR141: 5.0 kV at 60 Hz
SR250: 7.5 kV at 60 Hz

Capacitance:

9 pF/ft (95.1 pF/m)

Mechanical Data

Finished Outer Diameter:

SR034: 0.034 in (0.086 cm)	SR141: 0.141 in (0.358 cm)
SR047: 0.047 in (0.119 cm)	SR250: 0.250 in (0.635 cm)
SR086: 0.086 in (0.218 cm)	

Static Bend Radius:

SR034: 0.05 in (0.127 cm)	SR141: 0.25 in (0.635 cm)
SR047: 0.08 in (0.191 cm)	SR250: 0.50 in (1.270 cm)
SR086: 0.13 in (0.318 cm)	

Weight with Standard Jacket/Armor:

SR034: 0.003 lbs/ft (0.004 kg/m)
SR047: 0.005 lbs/ft (0.007 kg/m)
SR086: 0.016 lbs/ft (0.024 kg/m)
SR141: 0.035 lbs/ft (0.052 kg/m)
SR250: 0.106 lbs/ft (0.158 kg/m))

Operating Temp. Range:

SR034 & SR047: -40 to 212° F (-40 to 100° C)
SR086 & SR141: -40 to 257° F (-40 to 125° C)
SR250: -40 to 194° F (-40 to 90° C)



Semi-Rigid Cables to 110 GHz (continued)

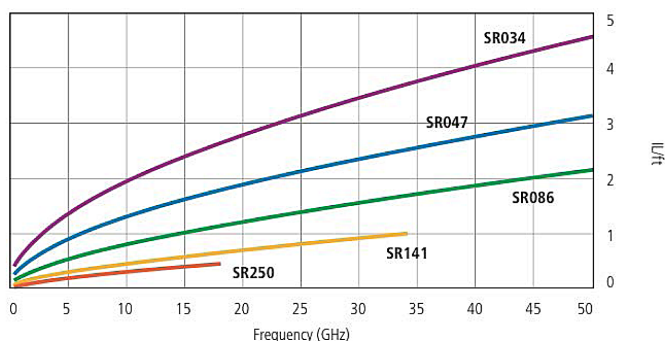
Cable Construction

Inner Conductor:
SR034, SR047,
SR086 & SR141: Solid Ag-plated Cu-clad Steel
SR250: Solid Ag-plated Cu
Dielectric: PTFE
Outer Conductor: Sn-plated Cu Tube

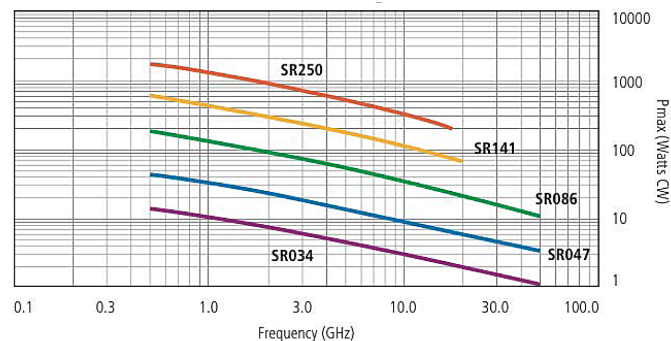
Available Connectors

SR034: MMCX, SMA, SSMA
SR047: 1.0 mm, 2.4mm, 2.92mm, 3.5mm, SMA
SR086: 2.4mm, 2.92mm, 3.5mm, MMCX, OSP, OSSP, SMA, SMB, SMC, SMP, SSMA, SSMB, SSMP, TNC, Type N, ZMA
SR141: 2.92mm, 3.5mm, SMA, TNC, Type N
SR250: SMA, Type N
(maximum frequency dependent on cable; other connectors available)

Insertion Loss



Cable CW Power Handling



Note: Data at ambient temperature and sea level. Power handling of a cable assembly is also connector dependent and includes variables such as altitude, temperature and system VSWR. See website for connector power handling standards, including altitude, temperature and VSWR derating.

Semi-Rigid Cables to 110 GHz (continued)

Specifications

Frequency		SR034		SR047		SR086		SR141		SR250		Conn. Loss dB	VSWR
		Attenuation		Attenuation		Attenuation		Attenuation		Attenuation			
GHz	Band	dB/ft	dB/m	dB/ft	dB/m	dB/ft	dB/m	dB/ft	dB/m	dB/ft	dB/m		
0.3	UHF	0.327	1.072	0.217	0.713	0.117	0.384	0.063	0.207	0.039	0.127	0.006	1.10
0.5		0.423	1.387	0.281	0.923	0.153	0.501	0.083	0.271	0.051	0.168	0.009	
0.8		0.536	1.758	0.357	1.172	0.195	0.641	0.106	0.349	0.066	0.217	0.012	
1.0	L	0.600	1.969	0.400	1.312	0.220	0.722	0.120	0.394	0.075	0.246	0.014	
2.0	S	0.853	2.798	0.570	1.870	0.319	1.048	0.176	0.577	0.112	0.366	0.024	1.15
2.4		0.963	3.071	0.626	2.053	0.353	1.157	0.195	0.639	0.124	0.407	0.027	
3.0		1.049	3.441	0.702	2.303	0.399	1.308	0.221	0.726	0.142	0.465	0.032	
4.0	C	1.215	3.986	0.814	2.672	0.468	1.535	0.261	0.856	0.169	0.553	0.040	
6.0		1.496	4.909	1.005	3.298	0.588	1.930	0.331	1.087	0.217	0.711	0.055	
8.0	X	1.736	5.695	1.168	3.833	0.694	2.278	0.394	1.292	0.260	0.854	0.070	1.20
10.0		1.949	6.394	1.314	4.311	0.791	2.595	0.451	1.481	0.301	0.987	0.084	1.25
12.4		2.180	7.151	1.472	4.830	0.898	2.947	0.516	1.693	0.347	1.138	0.101	
15.0	Ku	2.407	7.899	1.629	5.344	1.007	3.304	0.582	1.909	0.394	1.293	0.118	1.30
18.0		2.649	8.691	1.769	5.891	1.125	3.691	0.654	2.145	0.446	1.464	0.139	
20.0	K	2.800	9.187	1.900	6.234	1.200	3.937	0.700	2.297	-	-	0.152	1.30
22.0		2.944	9.660	2.000	6.562	1.273	4.176	0.745	2.444	-	-	0.165	
24.0		3.083	10.115	2.096	6.878	1.344	4.408	0.789	2.588	-	-	0.178	
26.5		3.249	10.660	2.212	7.257	1.430	4.691	0.842	2.764	-	-	0.194	
28.0	Ka	3.346	10.977	2.279	7.478	1.480	4.856	0.874	2.867	-	-	0.204	1.40
30.0		3.471	11.387	2.366	7.764	1.546	5.073	0.915	3.003	-	-	0.217	
32.0		3.592	11.785	2.451	8.043	1.611	5.286	0.956	3.136	-	-	0.230	
34.0		3.710	12.173	2.534	8.314	1.675	5.495	0.996	3.268	-	-	0.243	1.45
36.0		3.286	12.551	2.615	8.579	1.738	5.701	-	-	-	-	0.256	
40.0		4.048	13.281	2.771	9.091	1.860	6.103	-	-	-	-	0.281	
45.0	V	4.313	14.150	2.957	9.703	2.009	6.591	-	-	-	-	0.313	1.50
50.0		4.565	14.979	3.136	10.288	2.153	7.064	-	-	-	-	0.344	1.55
60.0		-	-	3.473	11.393	-	-	-	-	-	-	0.406	
67.0		-	-	3.695	12.124	-	-	-	-	-	-	0.450	
75.0		-	-	3.939	12.924	-	-	-	-	-	-	0.499	
80.0	W	-	-	4.086	13.407	-	-	-	-	-	-	0.530	
90.0		-	-	4.371	14.341	-	-	-	-	-	-	0.591	
100.0		-	-	4.644	15.238	-	-	-	-	-	-	0.652	
110.0		-	-	4.908	16.102	-	-	-	-	-	-	0.713	

Note: Typical Insertion Loss dB = (Attenuation)(Length) + 2(Conn. Loss)

Attenuation at any frequency = SR034: $(0.59248 \times \sqrt{\text{freq GHz}}) + (0.00752 \times \text{freq GHz})$

SR047: $(0.39284 \times \sqrt{\text{freq GHz}}) + (0.00716 \times \text{freq GHz})$

SR086: $(0.20608 \times \sqrt{\text{freq GHz}}) + (0.01392 \times \text{freq GHz})$

SR141: $(0.10948 \times \sqrt{\text{freq GHz}}) + (0.01052 \times \text{freq GHz})$

SR250: $(0.06569 \times \sqrt{\text{freq GHz}}) + (0.00931 \times \text{freq GHz})$

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