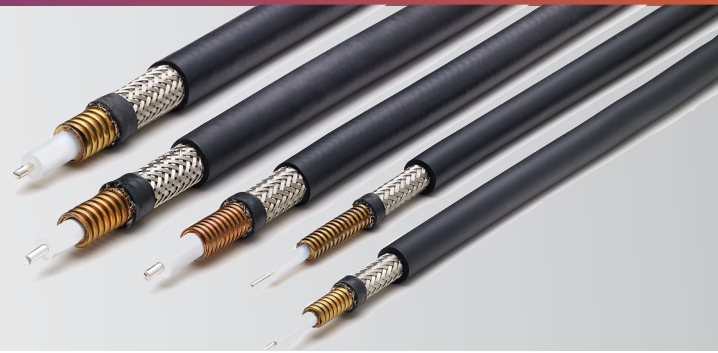




MEGAPHASE GROOVETUBE® CABLES TO 50 GHZ



GrooveTube® Cables to 50 GHz

Rugged, Low-Loss Performance for Severe Environments

- Low-loss, phase- and amplitude-stable performance with low VSWR for demanding RF applications
- Rugged GrooveTube® armored construction provides exceptional resistance to vibration, flexure, and harsh operating conditions
- Ideal for phased-array radar, electronic warfare, and high-reliability interconnects, with phase matching and custom configurations available

Electrical Data

Maximum Frequency	Impedance	Propagation Velocity	Time Delay
135: 10.0 GHz 620: 26.5 GHz 520: 32.0 GHz 520x: 50.0 GHz	50 Ω nominal	135: 84% nominal 520: 69% nominal 520x: 80% nominal 620: 80% nominal	135: 1.21 ns/ft (3.97 ns/m) 620: 1.27 ns/ft (4.17 ns/m) 520: 1.47 ns/ft (4.82 ns/m) 520x: 1.27 ns/ft (4.17 ns/m)
Shielding Effectiveness	Dielectric Withstanding Voltage	Capacitance	
-110 dB minimum (cable only)	135: 15 kV at 60 Hz 620: 7.5 kV at 60 Hz 520x: 1.2 kV at 60 Hz	520: 29.0 pF/ft (95.1 pF/m) 620: 26.7 pF/ft (87.6 pF/m) 135 Series: 15.8 pF/ft (51.8 pF/m)	

Mechanical Data

Finished Outer Diameter	Static Bend Radius	Weight with Standard Jacket/Armor	Crush Resistance	Operating Temp. Range*
520, 520x, 620: 0.285 in (0.724 cm) 135: 0.400 in (1.016 cm)	520, 520x, 620: 1.5 in (3.81 cm) 135: 3.0 in (7.62 cm)	520, 520x, 620: 0.05 lbs/ft (0.067 kg/m) 135: 0.14 lbs/ft (0.209 kg/m)	250 lbs/linear in (44.6 kg/linear cm)	520, 520x, 135: -67 to 275°F (-55 to 135°C) 620: -40 to 185°F (-40 to 85°C)

* For all series except 620: Above 185° F (85° C) use "T" designation

Cable Construction

Inner Conductor	Dielectric	Outer Conductor	Standard Finish
1, 5 & 6 Series: Solid Ag-plated Cu	135: Boundless PTFE 520: PTFE 520x: Foamed FEP 620: Foam PE	520, 620, 135, GrooveTube® Cu 520x Ag plated Cu Foil/Braid	520, 520x, 620, 135: Polyolefin over Metallic Braid

Available Connectors

620: 2.4mm, 2.92mm, 3.5mm, 7mm, BNC, SMA, TNC, Type N
135: 3.5mm, SMA, N Series, TNC, 7-16 DIN
520: 520x 1.85mm, 2.4mm, 2.92mm, 3.5mm, 7mm, 7-16 DIN, BNC, SMA, TNC, Type N, ZMA, ZN

(maximum frequency dependent on cable)
Other connectors available upon request



MEGAPHASE GROOVETUBE® CABLES TO 50 GHZ

Specifications - 5 Series

Frequency		520 Series		520x Series		Conn. Loss dB	VSWR
		Attenuation		Attenuation			
Band	GHz	dB/ft	dB/m	dB/ft	dB/m		
UHF	0.3	0.062	0.203	0.104	0.341	0.006	1.10
	0.5	0.082	0.268	0.135	0.443	0.009	
	0.8	0.106	0.348	0.172	0.566	0.012	
L	1.0	0.120	0.394	0.194	0.635	0.014	
S	2.0	0.178	0.585	0.279	0.915	0.024	1.15
	2.4	0.199	0.652	0.307	1.009	0.027	
	3.0	0.227	0.744	0.347	1.137	0.032	
C	4.0	0.270	0.885	0.405	1.328	0.040	
	6.0	0.347	1.138	0.505	1.658	0.055	
X	8.0	0.417	1.367	0.593	1.945	0.070	1.20
	10.0	0.482	1.580	0.672	2.205	0.084	1.25
	12.4	0.555	1.822	0.759	2.491	0.101	1.30
Ku	15.0	0.631	2.070	0.847	2.779	0.118	
	18.0	0.715	2.345	0.941	3.089	0.139	
K	20.0	0.769	2.522	1.001	3.285	0.152	1.35
	22.0	0.821	2.695	1.059	3.475	0.165	
	24.0	0.873	2.865	1.115	3.659	0.178	
	26.5	0.937	3.073	1.183	3.881	0.194	
Ka	28.0	0.974	3.196	1.223	4.011	0.204	1.40
	30.0	1.024	3.358	1.274	4.181	0.217	
	32.0	1.072	3.518	1.325	4.347	0.230	
	34.0			1.375	4.510	0.243	1.45
	36.0			1.423	4.669	0.256	
V	40.0			1.518	4.980	0.281	1.50
	45.0			1.633	5.356	0.313	
	50.0			1.743	5.719	0.344	1.55



MEGAPHASE GROOVETUBE® CABLES TO 50 GHZ

Specifications (continued)

Frequency		135		VSWR	Conn. Loss dB
		Attenuation			
GHz	Band	dB/ft	dB/m		
0.3	UHF	0.032	0.106	1.15:1	0.006
0.5		0.042	0.137		0.009
0.8		0.053	0.175		0.012
1.0	L	0.060	0.196		0.014
2.0	S	0.086	0.283	1.20:1	0.024
2.4		0.096	0.311		0.027
3.0		0.107	0.351		0.032
4.0	C	0.125	0.410	1.30:1	0.040
6.0		0.156	0.511		0.055
8.0	X	0.183	0.599		0.070
10.0		0.207	0.678	1.35:1	0.084

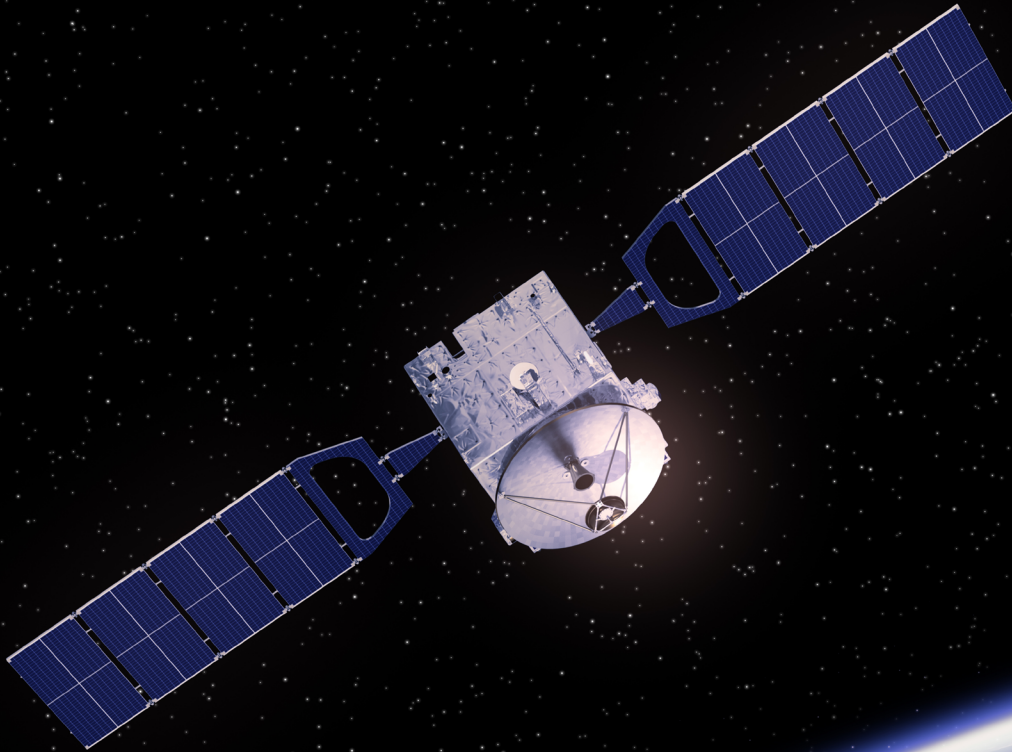
Frequency		620		VSWR	Conn. Loss dB
		Attenuation			
GHz	Band	dB/ft	dB/m		
0.3	UHF	0.054	0.179	1.10	0.006
0.5		0.071	0.234		0.009
0.8		0.092	0.301		0.012
1.0	L	0.103	0.339		0.014
2.0	S	0.151	0.497	1.15	0.024
2.4		0.168	0.550		0.027
3.0		0.190	0.625		0.032
4.0	C	0.225	0.737		0.04
6.0		0.285	0.935	1.20	0.055
8.0	X	0.338	1.111	1.25	0.07
10.0		0.388	1.272		0.084
12.4		0.443	1.454	1.30	0.101
15.0	Ku	0.499	1.639	1.35	0.118
18.0		0.561	1.841	1.40	0.139
20.0	K	0.601	1.971		0.152
22.0		0.639	2.097		0.165
24.0		0.677	2.220		0.178
26.5		0.722	2.370	1.45	0.194
28.0	Ka	-	-		0.204
30.0		-	-		0.217
32.0		-	-		0.23





MegaPhase®

With the right connection anything is possible



Visit us at megaphase.com

About us

Founded in 1998 and headquartered in Stroudsburg, Pennsylvania, MegaPhase designs and manufactures high-performance RF coaxial cables and connectors for OEMs in critical markets including test instrumentation, defense, aerospace, telecommunications, and satellite systems. Serving more than 500 customers in 30 countries—including major technology leaders and the U.S. government—MegaPhase is best known for its industry-leading GrooveTube® technology, a breakthrough flexible cable design used in high-reliability, high-power, and phase-defined applications across ground, sea, air, and space platforms. All products are manufactured in-house, tested 100% in a state-of-the-art RF lab up to 110 GHz, and engineered to deliver exceptional phase stability, low loss, and long-term measurement repeatability, helping customers achieve more reliable results at a lower cost per measurement.

MegaPhase

122 Banner Road, Stroudsburg, PA 18360-6433 | Tel: 570-424-8400 | Solutions@MegaPhase.com