

THE WARRIOR CABLE®

MEGAPHASE THE WARRIOR CABLE® TO 50 GHZ



The Warrior Cable® to 50 GHz

Rugged, Crush-Proof Performance for Harsh Environments

- Internally armored with GrooveTube® technology for exceptional crush resistance up to 250 lbs/in
- Stable performance under vibration, flexure, and impact in demanding field applications
- Pull-resistant connectors and chemical-resistant jacketing withstand harsh environments including salt, humidity, dust, and sand

Electrical Data

Maximum Frequency	Impedance	Propagation Velocity	Time Delay
520: 32 GHz 520x: 50 GHz	50 Ω nominal	520: 69% nominal 520x: 80% nominal	520: 1.47 ns/ft (4.82 ns/m) 520x: 1.27 ns/ft (4.167 ns/m)
Shielding Effectiveness	Dielectric Withstanding Voltage		Capacitance
-110 dB minimum (cable only)	520: 10 kV at 60 Hz 520x: 1.2 kV at 60 Hz		520: 29.0 pF/ft (95.1 pF/m) 520x: 25.4 pF/ft (88.3 pF/m)

Mechanical Data

Finished Outer Diameter	Static Bend Radius	Weight with Standard Jacket/Armor	Crush Resistance	Operating Temp Range
520: 0.330 in (0.838 cm)	520: 1.5 in (3.81 cm)	520: 0.05 lbs/ft (0.067 kg/m)	250 lbs/linear in (44.6 kg/linear cm)	-67 to 275°F (-55 to 135°C) Above 185°F (85°C) use "T" designation

Cable Construction

Inner Conductor	Dielectric	Outer Conductor	Standard Finish
Solid Ag-plated Cu	520: Solid PTFE 520x: Foamed FEP	520: GrooveTube® Cu 520x: Solid Ag-plated Cu Foil/Braid	Neoprene over Metallic Braid

(A wide variety of other protective finishes and armors available)

Available Connectors

520: 1.85 mm, 2.4 mm, 2.9mm, 3.5mm, 7mm, 7-16 DIN, BNC, SMA, TNC, Type N, ZMA, ZN
(maximum frequency dependent on cable; other connectors available)

MegaPhase standard connectors are designed using passivated 303 Stainless Steel. These designs pass Salt Spray testing in accordance with Mil-Std-202 Method 101 condition C. MegaPhase suggests for more stringent environments the use of 303 Stainless Steel Gold plated connectors, this must be requested at the time of quoting.



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Specifications

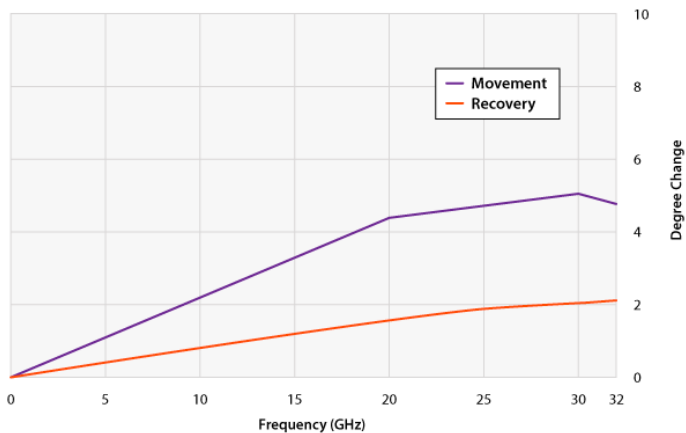
Frequency		520		520x		Conn Loss dB	VSWR
		Attenuation		Attenuation			
Band	GHz	dB/ft	dB/m	dB/ft	dB/m		
UHF	0.3	0.062	0.203	0.104	0.341	0.006	1.10
	0.5	0.082	0.268	0.135	0.443	0.009	
	0.8	0.106	0.348	0.172	0.566	0.012	
L	1.0	0.120	0.394	0.194	0.635	0.014	1.15
S	2.0	0.178	0.585	0.279	0.915	0.024	
	2.4	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	1.35
	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	1.40
	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	1.45
	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		3.676	1.375	4.510	0.243	
	36.0		3.833	1.423	4.669	0.256	
V	40.0		4.141	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

All Warrior cable assemblies are tested 100% for S-Parameters and each assembly is serialized. Standard test data includes VSWR and insertion loss. Additional testing options will be quoted upon request. Full traceability is available for each cable assembly.

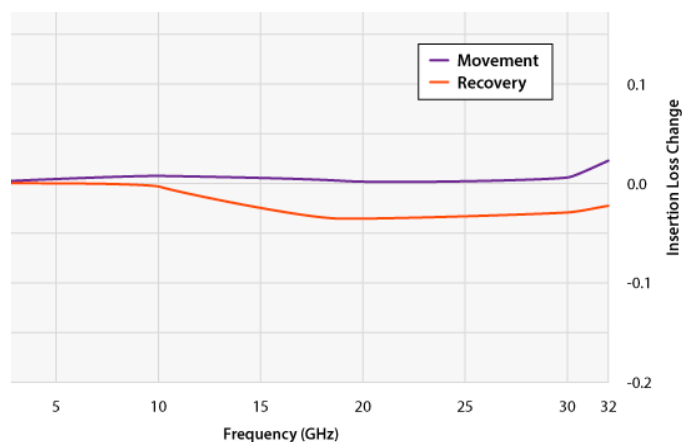


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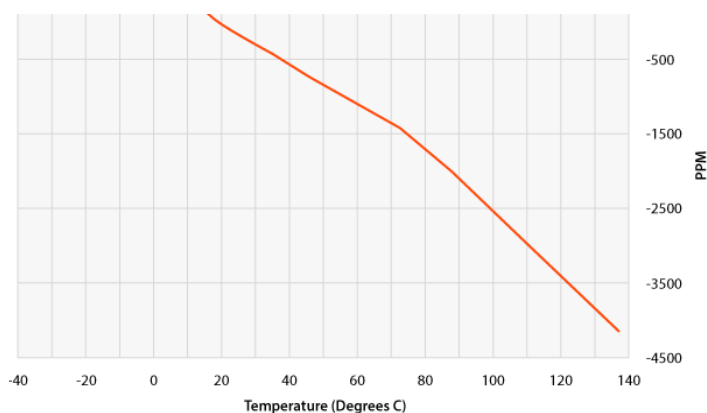
520 Phase Change vs. Flexure



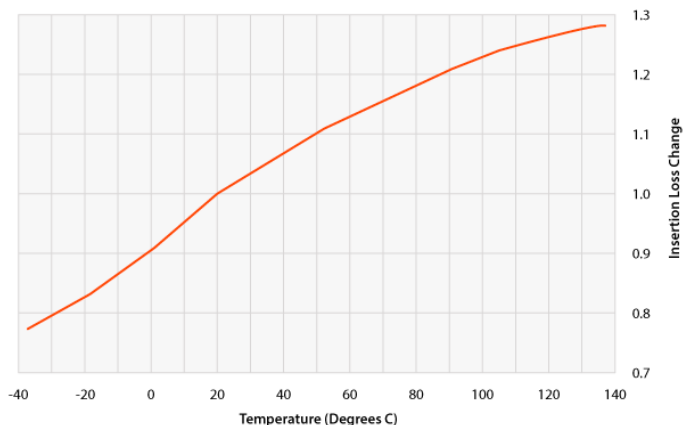
520 Insertion Loss vs. Flexure



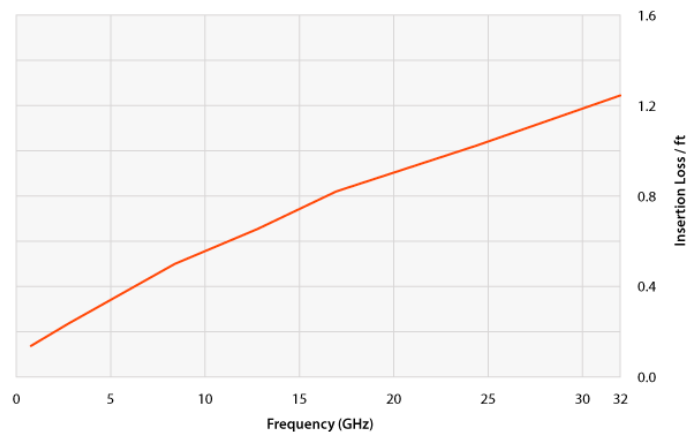
520 Phase Change vs. Temperature



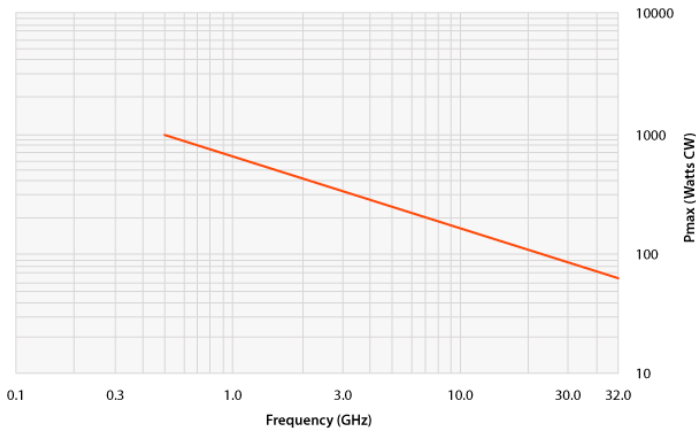
520 Insertion Loss vs. Temperature



520 Insertion Loss

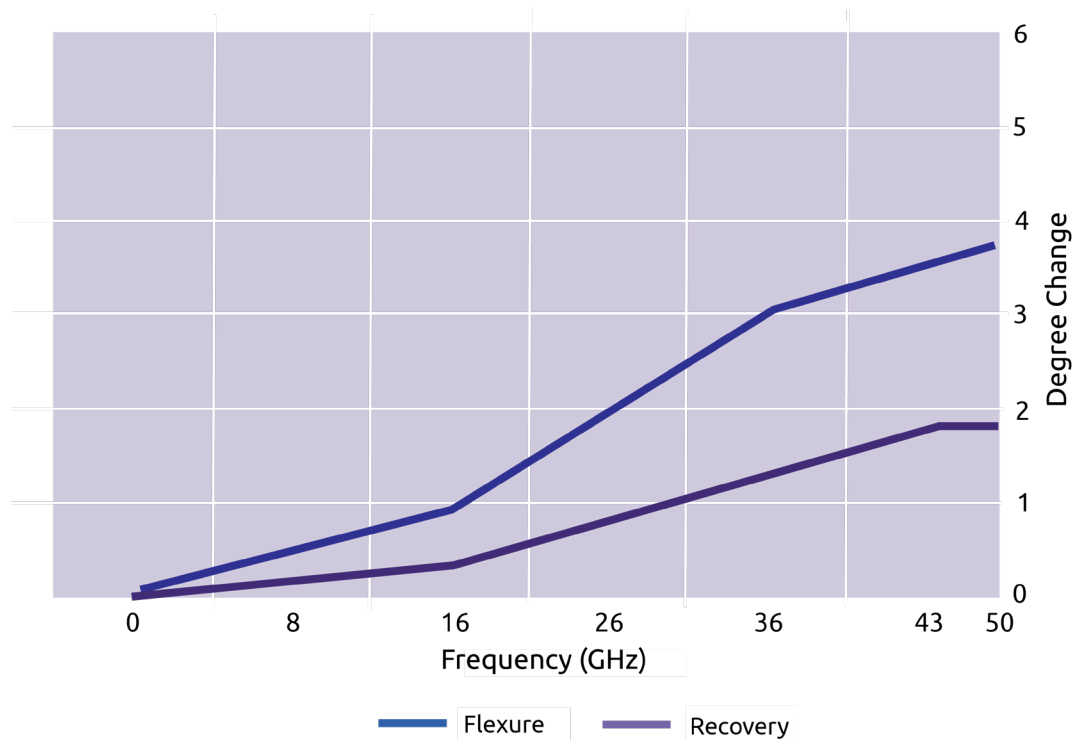


520 Cable CW Power Handling

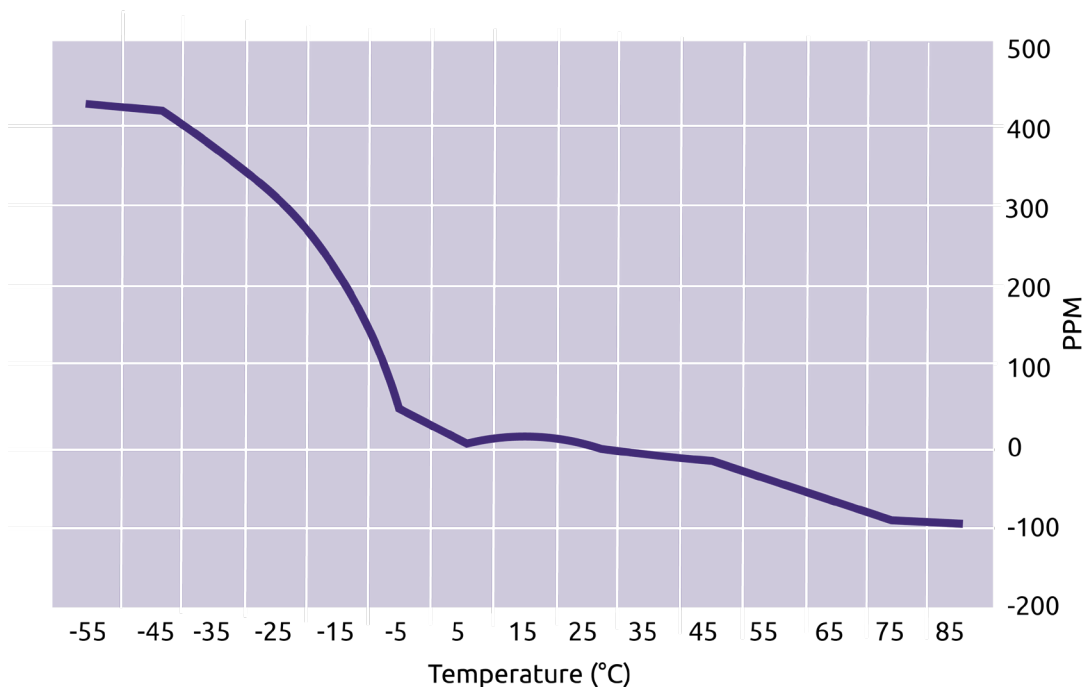


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520x Phase vs. Flexures



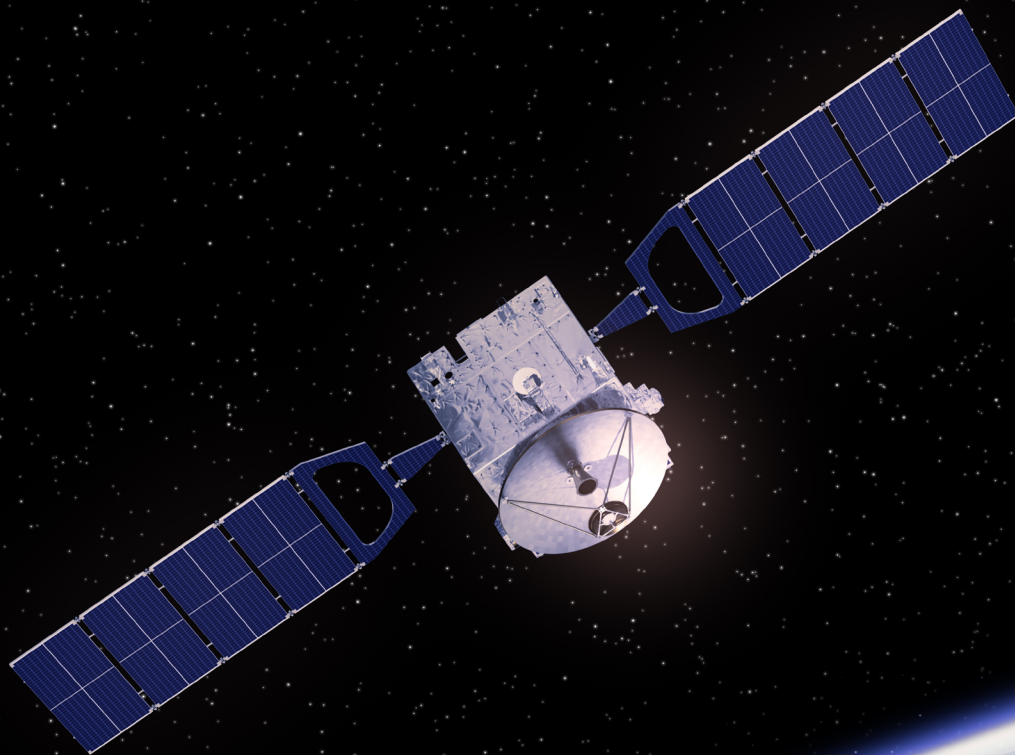
520x Phase vs. Temperature





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

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