

RFORANGE®

MEGAPHASE RF ORANGE FLEXIBLE CABLE TO 110 GHZ



High Performance RF Orange® Cable Assemblies

MegaPhase RF Orange® cable assemblies deliver rugged, low-loss performance up to 110 GHz for high-accuracy RF test and calibration. Designed for phase and amplitude stability under flexure and temperature variation, they ensure consistent, repeatable measurements across lab, production, and ATE environments.

- Minimal change in VSWR, phase, and amplitude during flexure and temperature shifts, ensuring measurement stability over time
- Rugged, armored construction provides long service life in demanding test environments
- Ultra-flexible design with reliable performance across a wide frequency range up to 110 GHz

Electrical Data

Maximum Frequency	Impedance	Propagation Velocity	Time Delay
110 GHz	50 Ω nominal	TM32 69% nominal TM67 80% nominal TM110 78.7% nominal	TM32 1.47 ns/ft (4.82 ns/m) TM67 1.27 ns/ft (4.167 ns/m) TM110 1.291 ns/ft (4.236 ns/m)
Shielding Effectiveness	Dielectric Withstanding Voltage		Capacitance
-100 dB minimum (cable only)	TM32 10 kV at 60 Hz TM67 1.2 kV at 60 Hz TM110 400 V at 60 Hz		TM32 29.0 pF/ft (95.1 pF/m) TM67 25.4 pF/ft (83.3 pF/m) TM110 25.82 pF/ft (84.71 pF/m)

Mechanical Data

Outer Diameter	Static Bend Radius	Max. Operating Temperature
0.285 in (0.724 cm)	1.5 in (3.81 cm)	-67 to 275° F (-55 to 135° C)

Cable Construction

Inner Conductor:	Dielectric	Outer Conductor	Standard Finish
Solid Ag-plated Cu	TM32 PTFE TM67, TM110 Foamed FEP	TM 32 - GrooveTube® Cu TM 67 / TM 110 - Ag plated Cu/ Ag plated Cu	Polyolefin over Metallic Braid

Available Connectors

(Dependent on cable type)
 1.0 mm, 1.85 mm, 2.4 mm, 2.92 mm, 3.5 mm
 BNC, SMA, TNC, Type N
 Other connectors available upon request

Maximum Assembly Length

(Consult factory)

*TM32 includes TM26, TM18, TM8, TM4

** TM67 includes TM50, TM40, TM34



MEGAPHASE RF ORANGE[®] FLEXIBLE CABLE TO 110 GHZ

Specifications

Frequency		TM 32 Series*		TM 67 Series**		TM 110 Series***		Conn Loss dB	VSWR
		Attenuation		Attenuation		Attenuation			
Band	GHz	dB/ft	dB/m	dB/ft	dB/m	dB/ft	dB/m		
UHF	0.3	0.062	0.203	0.104	0.341	0.167	0.548	0.006	1.10
	0.5	0.082	0.268	0.135	0.443	0.217	0.711	0.009	
	0.8	0.106	0.348	0.172	0.566	0.276	0.904	0.012	
L	1.0	0.120	0.394	0.194	0.635	0.309	1.014	0.014	
S	2.0	0.178	0.585	0.279	0.915	0.442	1.451	0.024	1.15
	2.4	0.199	0.652	0.307	1.009	0.486	1.596	0.027	
	3.0	0.227	0.744	0.347	1.137	0.547	1.793	0.032	
C	4.0	0.270	0.885	0.405	1.328	0.636	2.087	0.040	
	6.0	0.347	1.138	0.505	1.658	0.789	2.588	0.055	
X	8.0	0.417	1.367	0.593	1.945	0.921	3.020	0.070	1.20
	10.0	0.482	1.580	0.672	2.205	1.039	3.408	0.084	1.25
	12.4	0.555	1.822	0.759	2.491	1.168	3.822	0.101	1.30
Ku	15.0	0.631	2.070	0.847	2.779	1.297	4.255	0.118	
	18.0	0.715	2.345	0.941	3.089	1.435	4.707	0.139	1.35
K	20.0	0.769	2.522	1.001	3.285	1.522	4.992	0.152	
	22.0	0.821	2.695	1.059	3.475	1.605	5.266	0.165	
	24.0	0.873	2.865	1.115	3.659	1.686	5.530	0.178	
KA	26.5	0.937	3.073	1.183	3.881	1.783	5.849	0.194	1.40
	28.0	0.974	3.196	1.223	4.011	1.839	6.035	0.204	
	30.0	1.024	3.358	1.274	4.181	1.913	6.277	0.217	
	32.0	1.072	3.518	1.325	4.347	1.985	6.513	0.230	
	34.0			1.375	4.510	2.055	6.743	0.243	1.45
36.0			1.423	4.669	2.124	6.969	0.256		
V	40.0			1.518	4.980	2.257	7.406	0.281	1.50
	45.0			1.633	5.356	2.417	7.931	0.313	
	50.0			1.743	5.719	2.571	8.436	0.344	1.55
	60.0			1.955	6.414	2.864	9.396	0.406	
	67.0			2.097	6.881	3.059	10.035	0.450	1.60
	70.0					3.140	10.302	0.468	
W	80.0					3.403	11.166	0.530	
	90.0					3.656	11.995	0.591	
	100.0					3.900	12.795	0.652	
	110.0					4.136	13.571	0.713	

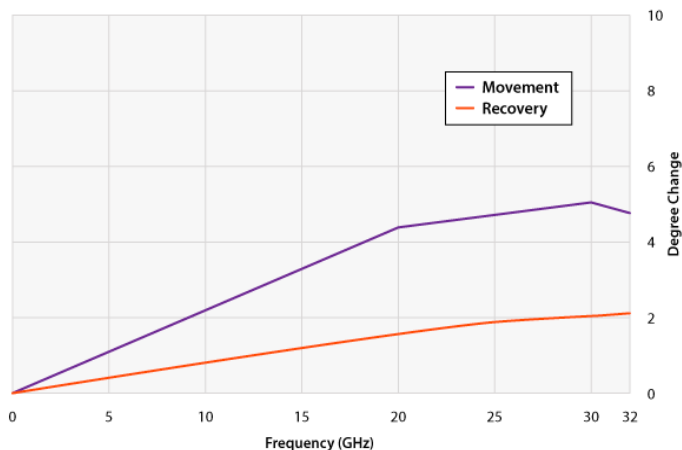
*TM32 includes TM26, TM18, TM8, TM4. **TM67 includes TM50, TM40, TM34.

**TM110 includes TM70

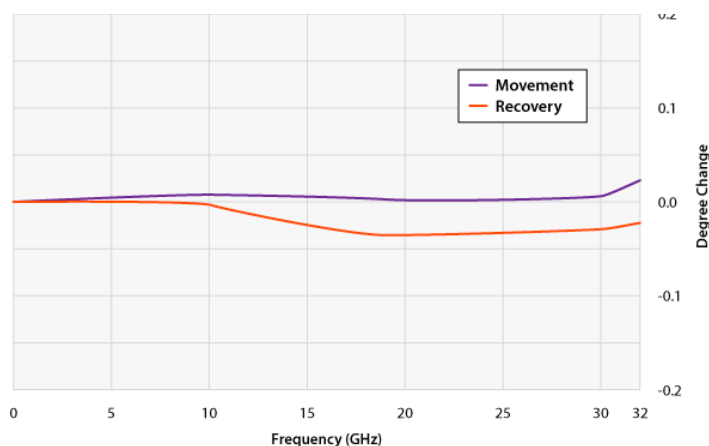


MEGAPHASE RF ORANGE® FLEXIBLE CABLE TO 32 GHz

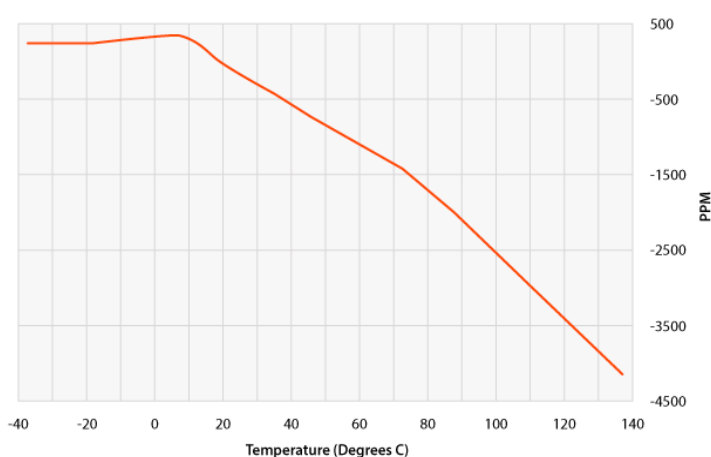
Phase Change vs. Flexure



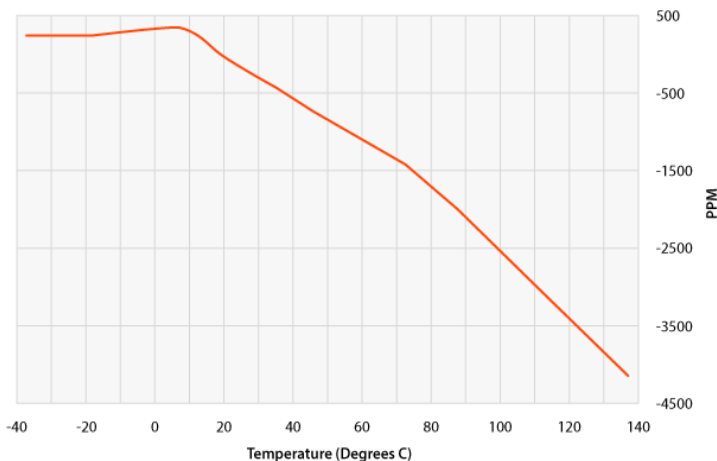
Insertion Loss vs. Flexure



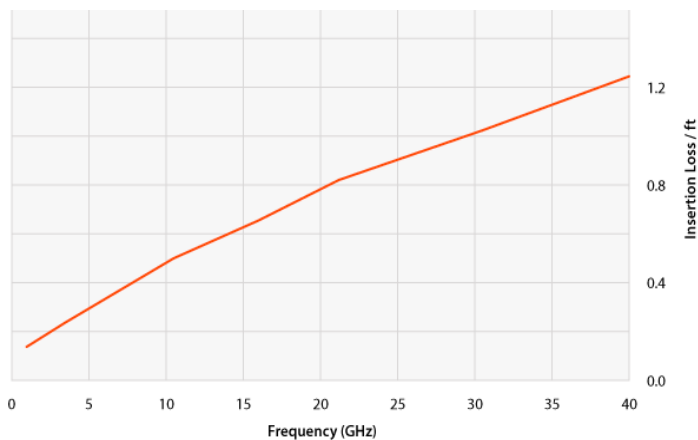
Phase Change vs. Temperature



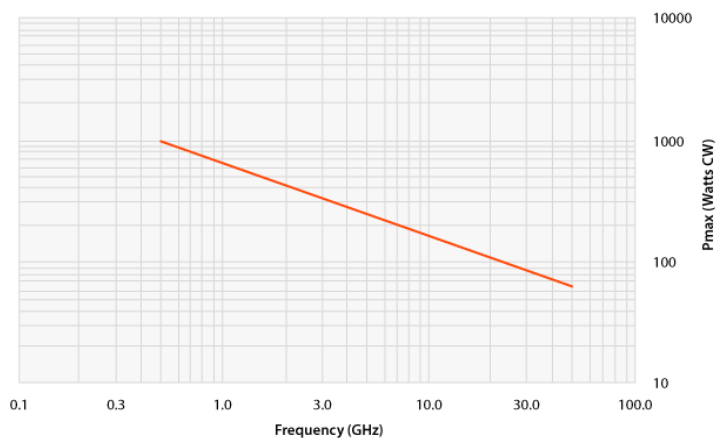
Insertion Loss vs. Temperature



Insertion Loss



Cable CW Power Handling

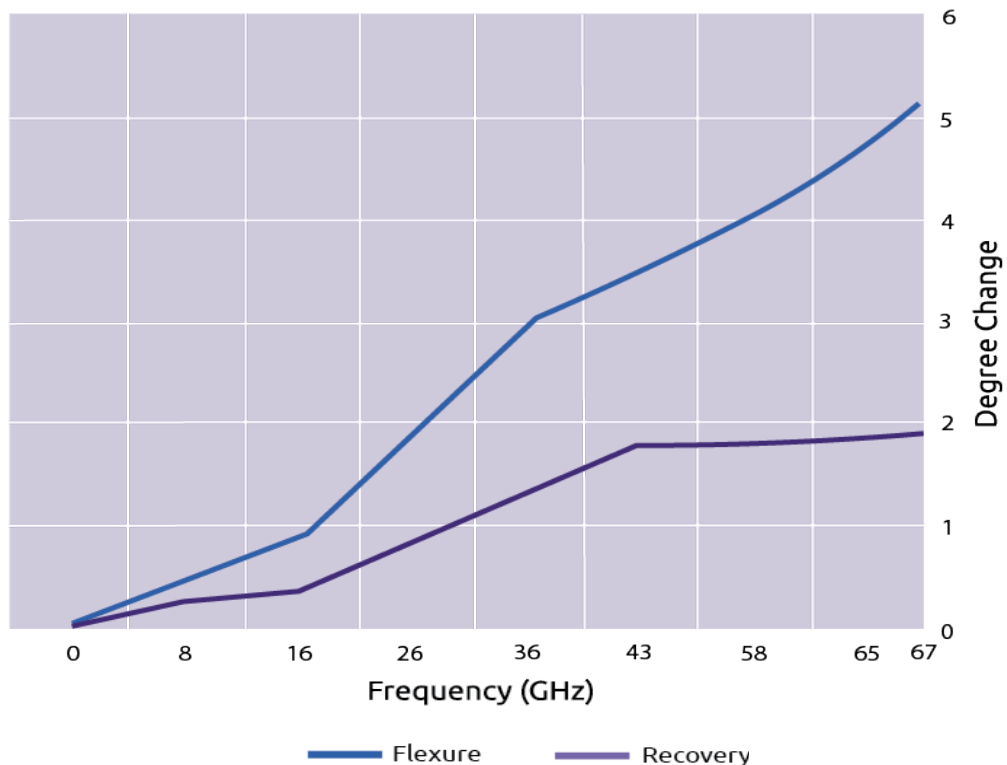


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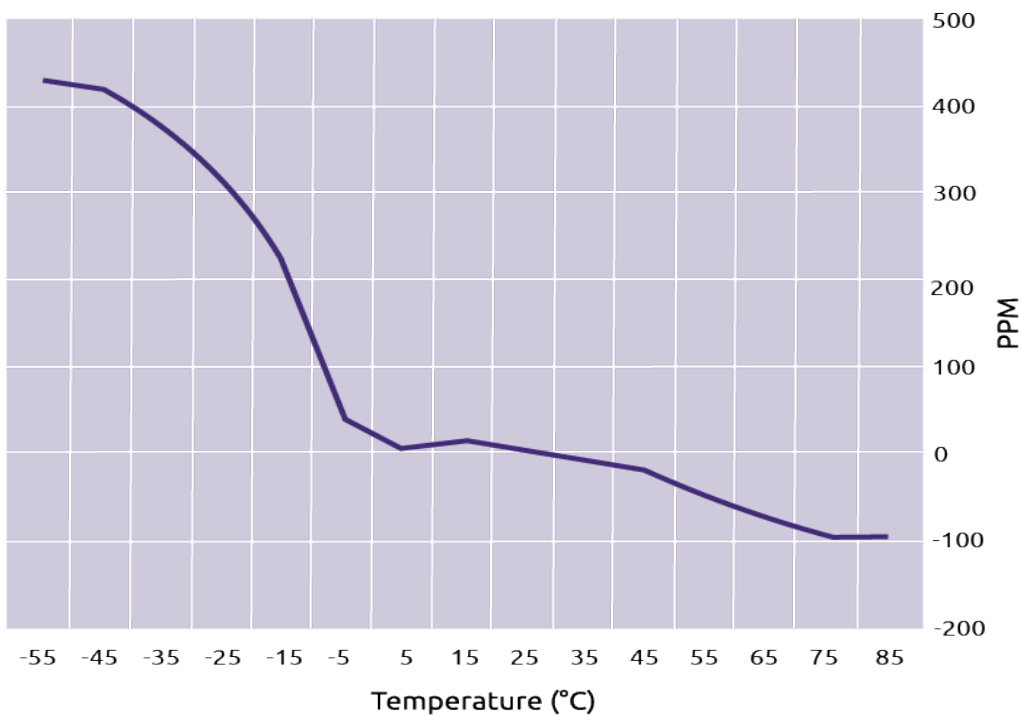


MEGAPHASE RF ORANGE® FLEXIBLE CABLE TO 67 GHz

Phase vs. Flexure



Phase vs. Temperature

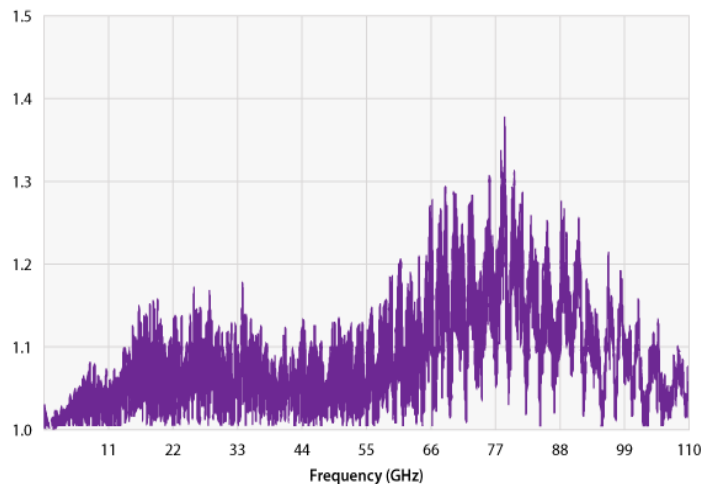


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**TM110 includes TM70

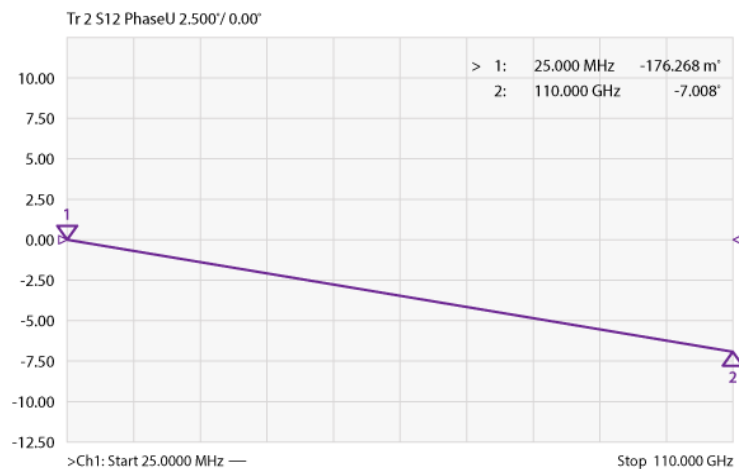


MEGAPHASE RF ORANGE® FLEXIBLE CABLE TO 110 GHZ

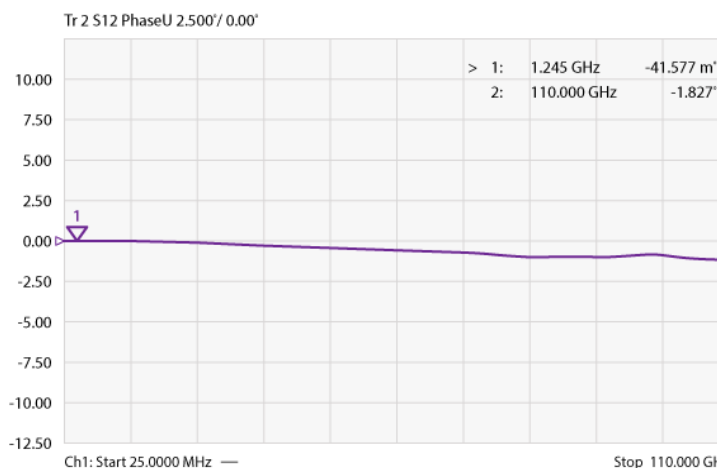
Typical VSWR



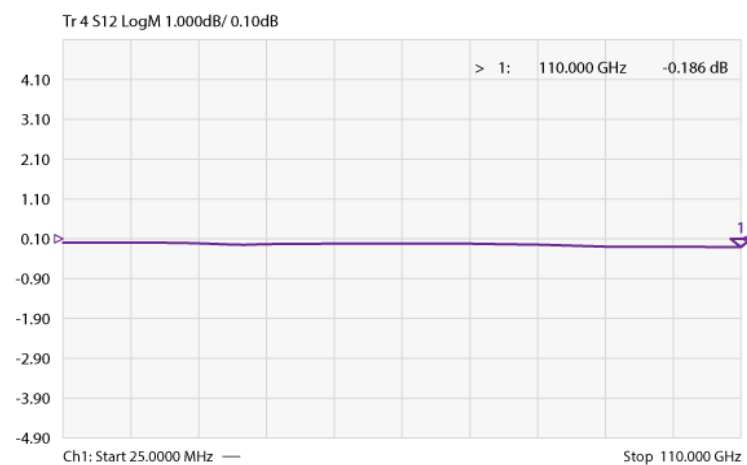
Phase vs. Flexure



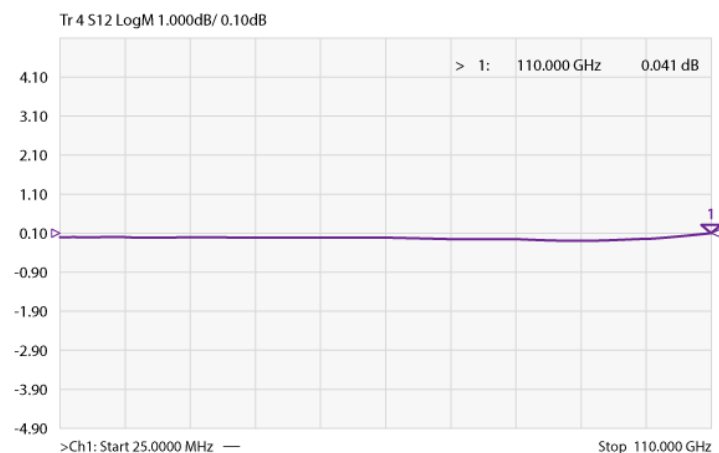
Phase Recovery



Insertion Loss vs. Flexure



Insertion Loss Recovery



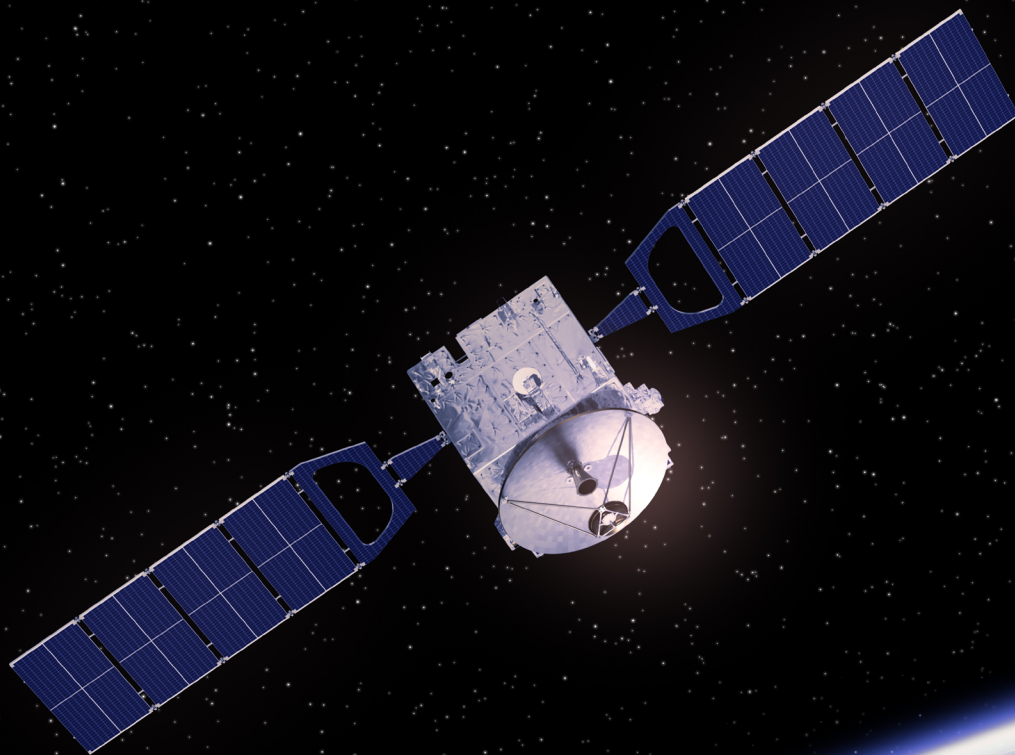
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MegaPhase®

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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