

VNA Test Port Extension Cables



High Performance VN Series Cable Assemblies

MegaPhase VNA cable assemblies are designed to ease the time associated with test equipment calibrations where compensation for loss, mismatches, and feedthroughs are critical to the test outcome. VN series cables are mechanically stable and can be bent with little effect on insertion loss, phase or VSWR. They can be employed time and again when rigorous test regiments are called for. Cable assemblies are available in user defined lengths up to 25 feet. These low loss alternatives to expensive OEM test cables are the perfect solution for any test lab employing critical test equipment in their production operations. The cable is constructed with an armored jacket and boot to protect the connectors and for effective VNA, PNA, and scalar test calibrations. Cables are available in phase matched lengths and come with a large variety of integrated connectors including the popular ruggedized NMD type.

Electrical Data

Maximum Frequency:	50 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:	10 kV at 60 Hz
Capacitance:	29.0 pF/ft (95.1 pF/m)

Mechanical Data

Finished Outer Diameter:	0.625 in (1.588 cm)
Static Bend Radius:	4.0 in (10.16 cm)
Weight with Standard Jacket/Armor:	0.18 lbs/ft (0.26 kg/m)
Max. Assembly Length:	25 ft (8 m)
Crush Resistance:	250 lbs/linear in (44.6 kg/linear cm)
Operating Temp. Range:	-76 to 248° F (-60 to 120° C) Above 185° F (85° C) use "T" designation

Cable Construction

Inner Conductor:	Solid Ag-plated Cu
Dielectric:	PTFE
Outer Conductor:	GrooveTube® Cu
Standard Finish:	Metal Braid/Metal Conduit

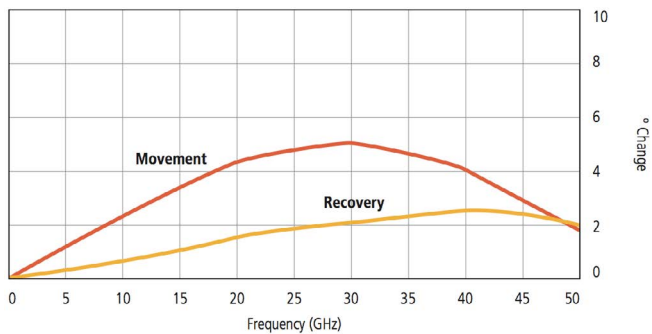
(a wide variety of other protective finishes and armors available)

Available Connectors

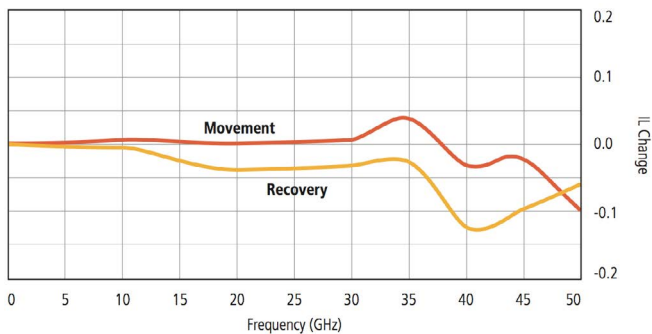
1.85mm, 2.4mm, 2.92mm, 3.5mm, 7mm, SMA, TNC, Type N

VNA Test Port Extension Cables (cont'd)

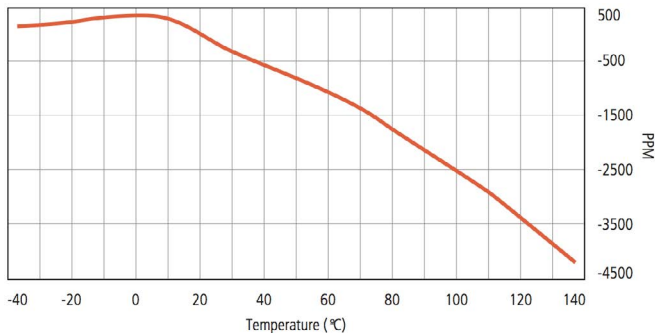
Phase Change vs. Flexure



Insertion Loss vs. Flexure



Phase Change vs. Temperature



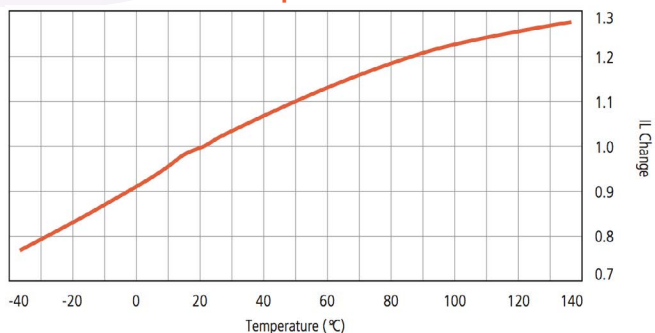
Specifications

Frequency		Part No.	Attenuation		Conn. Loss dB	VSWR
GHz	Band		dB/ft	dB/m		
0.3	UHF	VN4	0.062	0.203	0.006	1.10
0.5			0.082	0.268	0.009	
0.8			0.106	0.348	0.012	
1.0	L		0.120	0.394	0.014	1.15
2.0	S		0.178	0.585	0.024	
2.4			0.199	0.652	0.027	
3.0	C		0.227	0.744	0.032	1.20
4.0			0.270	0.885	0.040	
6.0			0.347	1.138	0.055	
8.0	X	VN8	0.417	1.367	0.070	1.25
10.0			0.482	1.580	0.084	
12.4			0.555	1.822	0.101	
15.0	Ku	VN18	0.631	2.070	0.118	1.30
18.0			0.715	2.345	0.139	
20.0			0.769	2.522	0.152	
22.0	K	VN26	0.821	2.695	0.165	1.35
24.0			0.873	2.865	0.178	
26.5			0.937	3.073	0.194	
28.0	Ka	VN34	0.974	3.196	0.204	1.40
30.0			1.024	3.358	0.217	
32.0			1.072	3.518	0.230	
34.0			1.121	3.676	0.243	
36.0	VN40	1.168	3.833	0.256	1.45	
40.0		1.262	4.141	0.281		
45.0	Q	VN50	1.377	4.158	0.313	1.50
50.0	V	1.490	4.888	0.344		

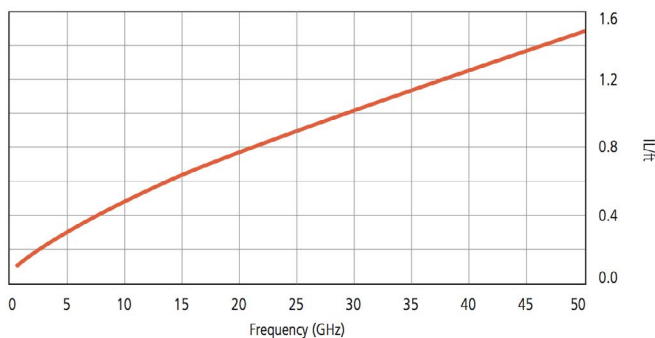
Note: Typical Insertion Loss dB = (Attenuation)(Length) + 2(Conn. Loss) Attenuation at any frequency = (0.10506 x $\sqrt{\text{freq GHz}}$) + (0.01494 x freq GHz)

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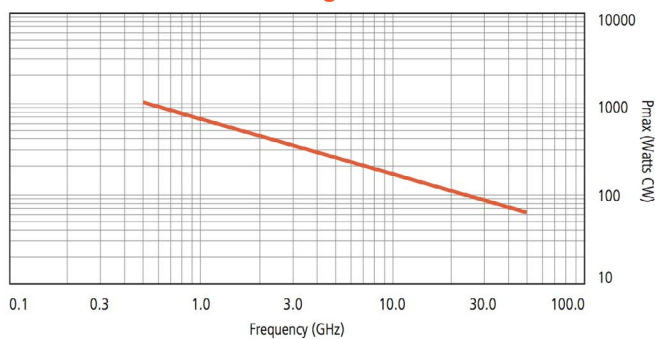
Insertion Loss vs. Temperature



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.