

SilverLine[®]-VNA (26.5 and 40 GHz)

ISO 9001 Certified

Vector Network Analyzer Test Cables

- Vector Network Analyzer Measurements
- Research & Development
- Laboratory Use



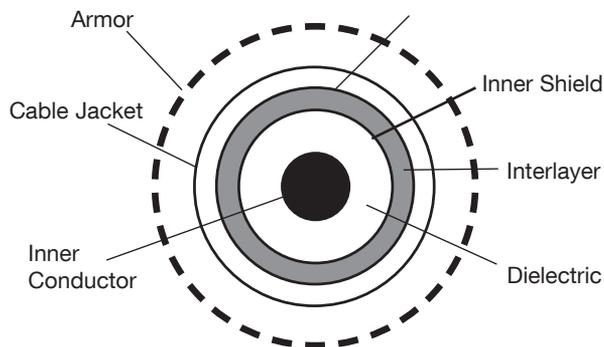
SilverLine[®]-VNA is a precision test cable with excellent loss, VSWR and phase/flexure stability. Protected by a torque and crush resistant armor, SilverLine[®]-VNA test cables exhibit extraordinary ruggedness comparable to OEM supplied test cables but at a fraction of the cost, making them the ideal choice for daily use in factory and lab applications.

The braided PET outer jacket makes SilverLine[®]-VNA easy to handle, non-conductive and improves flexibility when compared to extruded jackets. The chrome plated metal back shell maintains the integrity of the cable to connector interface and allows for easy handling.

Features & Benefits:

- 26.5 and 40 GHz options
- Low loss 40 GHz cables now available!
- Phase, Loss & VSWR stable
- High flex life
- Torque and crush resistant stainless steel armor
- Chrome plated strain relief back shells
- ROHS Compliant

SilverLine®-VNA



Cable Construction

Inner Conductor:

Solid silver plated copper

Dielectric:

Micro-porous PTFE

Shield:

Metalized tape interlayer and silver plated copper round braids

Jacket: FEP

Armor:

100% coverage, non-interleaved, stainless steel spiral sheath for crush resistance and captured, opposing force steel braid for torque resistance. PET monofilament yarn outer cover to eliminate conductivity and improve handling

Connectors:

- Instrument grade
- Passivated stainless steel
- Captive center contacts

Attachment Method:

Solder/clamp/crimp. Protective metal back shell

Physical & Mechanical Specifications		
Dimensions	in	mm
Outside Diameter Over Armor	0.43	10.8
Armor Crush Resistance	1050 lbs per linear inch	
Bend Radius (min)	2.5"	
Connector Retention	150 lbs	
Connector Mating Life (min)*	500*	
Electrical Specifications		
VSWR Max.	26.5 GHz	40 GHz
3.5mm	1.35:1	
2.9 mm & 2.4 mm	1.45:1	
Impedance	50 ohms	
Velocity of Propagation	78% nominal	
Shielding Effectiveness	> 100 db	
Capacitance	26 pf/ft	
Phase Stability**	+/- 5° typical, +/- 10° max	
Amplitude Stability (max)**	+/- 0.25 db	
Return Loss Stability**	better than 1.5 db	
Flex Life**	10,000 min, 25,000 typical	
Attenuation, max @ 77° (25° C)		
Frequency (GHz)	dB/100 ft	(dB/100 m)
1	11	(36)
6	28	(92)
12	41	(135)
18	51	(167)
26	63	(206)
40	82	(269)
Max Power Handling @ 77° F (25° C), sea level, (cable only)		
Frequency (Ghz)	Watts	
1	1190	
6	460	
12	310	
18	240	
26	200	
40	150	

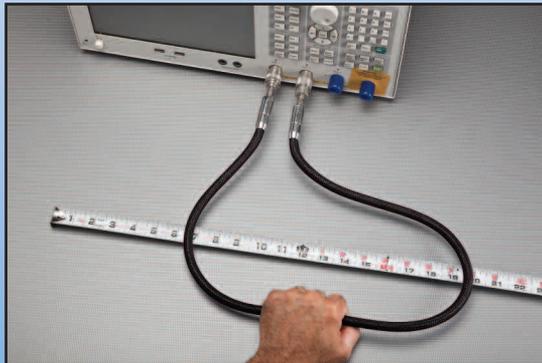
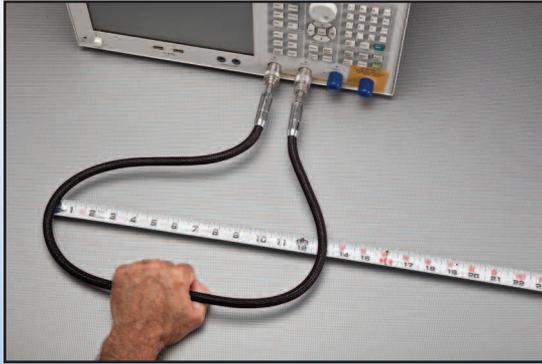
Serialized, plotted loss and VSWR data supplied with every cable

*Specifications subject to change without notice.

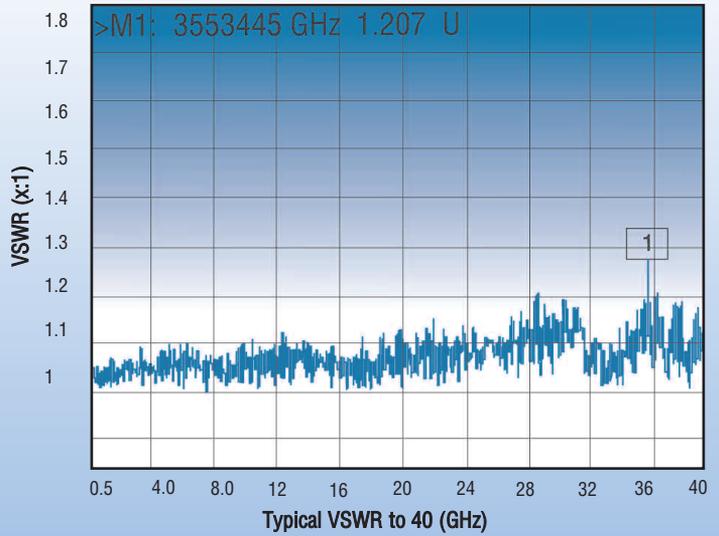
*Requires mating connections to be clean and within mechanical specifications. Calibrated torque wrench required.

**RF stability and flex life are in accordance with the flex test method example on P.3. Data is for cables 4ft or shorter. Longer cables may exhibit different stability characteristics. A cable will exhibit some instability when new. A very brief period of use is required to alleviate cable component stresses from manufacturing after which the cable will "settle" and maintain the values stated.

40 GHz Flex Test (one full cycle)



Cable is pulled off center 10" in both directions



Ordering Information

SilverLine, Steel Armor, VNA Style

SLSVXX-XXXXXX-XX.XXX

Maximum Frequency

26 = 26.5 GHz

40 = 40 GHz

Feet: 0.5ft increments

Meters: 0.25m increments

Min length: 1.5ft (0.5 meters)

*Lengths longer than 6ft (2m) will have an extruded TPR outer jacket replacing the PET weave for improved durability.

F = Feet, M = Meters

35M = 3.5mm male (26.5 GHz)

35F = 3.5mm female (26.5 GHz)

3RF = 3.5mm ruggedized female (26.5 GHz)

KM = 2.92mm male (40 GHz)

KF = 2.92mm female (40 GHz)

KRF = 2.92mm ruggedized female (40 GHz)

24M = 2.4mm male (40 GHz)

24F = 2.4mm female (40 GHz)

2RF = 2.4mm ruggedized female (40GHz)

First Connector



Second Connector

Now there is a SilverLine[®] Test Cable available for almost every application:

- SilverLine[®] for high volume production RF testing
- SilverLine[®]- TG (TuffGrip) for cell site distance to fault testing
- SilverLine[®]- LP (Low PIM) for cell site Passive Intermodulation testing
- SilverLine[®]- VNA for 40 GHz R&D testing
- SilverLine[®]- SF (Super Flex) for more flexibility
- SilverLine[®]- XF (Extra Flex) for tight areas and breadboard development
- SilverLine[®]- LL (Low Loss) 30% lower loss
- SilverLine[®]- DAS (Distributed Antenna System) for in-building wireless radio testing (*coming in early, 2014*)
- SilverLine[®]- ULA (Ultra Low Attenuation) for high power, high frequency testing (*coming in early, 2014*)

Visit our website or contact your Times local representative for more information.

About Times Microwave Systems

Times Microwave Systems, was founded in 1948 as the Times Wire and Cable Company. Today, the company specializes in the design and manufacture of high performance flexible, semi-flexible and semi-rigid coaxial cable, connectors and cable assemblies. With over 60 years of leadership in the design, development, and manufacture of coaxial products for defense microwave systems, Times Microwave Systems is the acknowledged leader, offering high tech solutions for today's most demanding applications.

Cable assemblies from Times Microwave Systems are used as interconnects for microwave transmitters, receivers, and antennas on airframes, missiles, ships, satellites, and ground based communications systems, and as leads for test and instrumentation applications.

As a highly specialized and technically focused company, Times Microwave Systems has been able to continually meet the challenges of specialty engineered transmission lines for both the military and commercial applications, drawing upon our:

- Thousands of unique cable and connector designs
- Exceptional RF and microwave design capability
- Precise material and process controls
- Unique in-house testing capabilities including RF shielding/leakage, vibration, moisture/vapor sealing, phase noise and flammability
- Years of MIL-T-81490, MIL-C-87104, and MIL-PRF-39012 experience
- ISO 9001 Certification

In 2010, Times Microwave Systems introduced its Times-Protect[™] line of lightning and surge protection solutions to address the challenging needs of wireless systems in the 21st century.

With over 60 years of Times Microwave Systems aerospace cable and connector technology experience and unparalleled design expertise, Times Microwave Systems' staff of Field Applications Engineers can help to provide the right solution for your interconnect applications.



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