

Test Cables

Coax Test Cables for:

- *High Volume Production Test Stations*
- *Research & Development Labs*
- *Environmental & Temperature Test Chambers*
- *Replacement for OEM Test Port Cables*
- *Field RF Testing*
- *Cellular Infrastructure Site Testing*



SilverLine™ Test Cables are cost effective, durable, high-performance cable assemblies designed for use in a broad range of test and interconnect applications. Fabricated from rugged, solid PTFE dielectric cable with stainless steel connectors and a proven strain relief system, these cables provide long life and excellent stability in applications where they are repeatedly flexed and mated/unmated. SilverLine™ test cables are ideal for use in production, field and laboratory test environments. They are also economical enough to be used as interconnects in test systems.

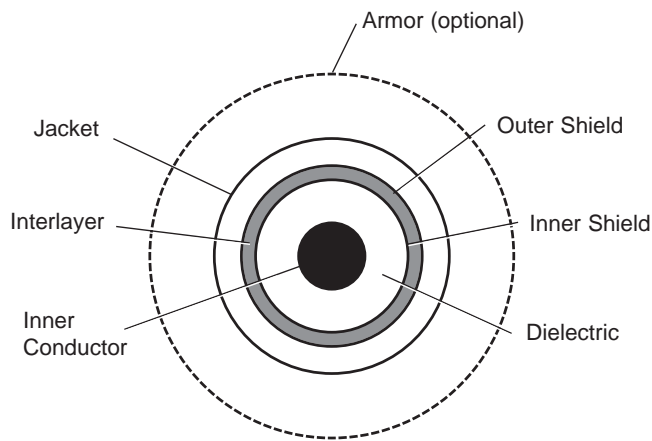
Features & Benefits:

- Phase & Loss Stable
- Long Flex Life
- Triple Shielded Cable
- High Mating Cycle, Stainless Steel Connectors
- Rugged, Solder-Clamp Attachment
- Redundant, Long Life Strain Relief System
- ROHS Compliant

Time's Silverline™ Product Guarantee

Times will repair or replace your SilverLine test cable at its option if the connector attachment fails within four months of shipment. This guarantee excludes cable or connector interface damage from misuse or abuse.

SilverLine™ Specifications:



Cable Construction

Inner Conductor: Solid Silver Plated Copper Clad Steel

Dielectric: Solid PTFE

Shield: Silver-Plated Copper Flat Ribbon Braid Aluminum-Polyimide Tape Interlayer 36 GA Silver-Plated Copper Braid (90%k)

Jacket: Clear FEP

Armor (Optional): Steel wire reinforced, thick wall, high flex life clear PVC

Connectors

- Passivated stainless steel finish (QMA coupling nut nickel plated brass)
- QMA sure-grip coupling nut design
- Captive contact
- Thick wall interface (SMA)
- Gold plated beryllium copper center contacts
- PTFE dielectric
- Type N OneTurn™ (1 full rotation to mate)
- High temperature 7mm
- Knurl/hex coupling nut (Type N and TNC)
- Precision grade 7-16

Connector Attachment/Strain Relief

- Rugged, solder-clamp to braid. 175 lb pull force. Additional crimp system on armored version.
- Redundant triple layer strain relief system (Dual layer on armored version)

Physical & Mechanical Specifications

Dimensions	in	mm
Inner Conductor	0.037	0.94
Dielectric	0.116	2.95
Inner Shield	0.126	3.20
Interlayer	0.132	3.35
Outer Shield	0.154	3.91
Jacket	0.195	4.95
Armor (optional)	0.450	11.50
Weight lbs./ft (kg/m)	Cable: 0.043 (0.064)	Armor: 0.066 (0.098)
Armor Crush Resistance	1200 lbs. per linear inch	
Bend Radius: minimum	1	25
Connector Retention	Unarmored & Armored > 175 lbs	
Mating Life Cycle	SMA, Type N: > 5000*	QMA: > 2500*
Length Tolerances	≤ 2 ft. or 0.75m, -0, +0.50" (12.7mm) > 2 ft. or 0.75m, -0, +2% of length	
Temperature Range	-67°/+221°F	-55°/+105°C

Electrical Specifications

VSWR Max		4 GHz	6 GHz	18 GHz	26.5 GHz**
	BNC	1.20:1			
	7-16 DIN, QMA		1.25:1		
	SMA, 2.4mm, 3.5mm, Type N, TNC		1.20:1	1.30:1	1.35:1 (SMA, 2.4mm, 3.5mm)
	7mm		1.25:1	1.35:1	
Impedance	50 ohms				
Velocity of Propagation	70 %				
Shielding Effectiveness	>100 dB				
Capacitance	29.4 pf/ft = 96.4 pf/meter				
Phase Stability (ten, 4" radius, 180° reverse bends)	DC to 10 GHz: +/- 1.1° 10 to 18 GHz: +/- 2.0°				
Attenuation Max @ +77°F (+25°C)					
Attenuation (GHz)	dB/100 ft		dB/100 m		
1	12.2		40.0		
2	18.0		59.0		
6	34.2		112		
12	52.5		172		
18	68.4		224		
26.5	88.7		290		
Attenuation at Frequency (A=K1 √ FMHz + K2 FMHz)					
K1	0.348				
K2	0.0012				
Power Handling @ +77°F (+25°C) (Sea Level) (Cable Only***)					
Power Handling (GHz)	Watts (max.)				
0.4	891				
1	539				
2	363				
6	180				
12	117				
18	88				
26.5	65				

* SMA Male & Type N: Assumes use of calibrated torque wrench, proper care and cleaning of interface and mated connector is within mil spec limits. † QMA: Assumes proper use, care and cleaning.

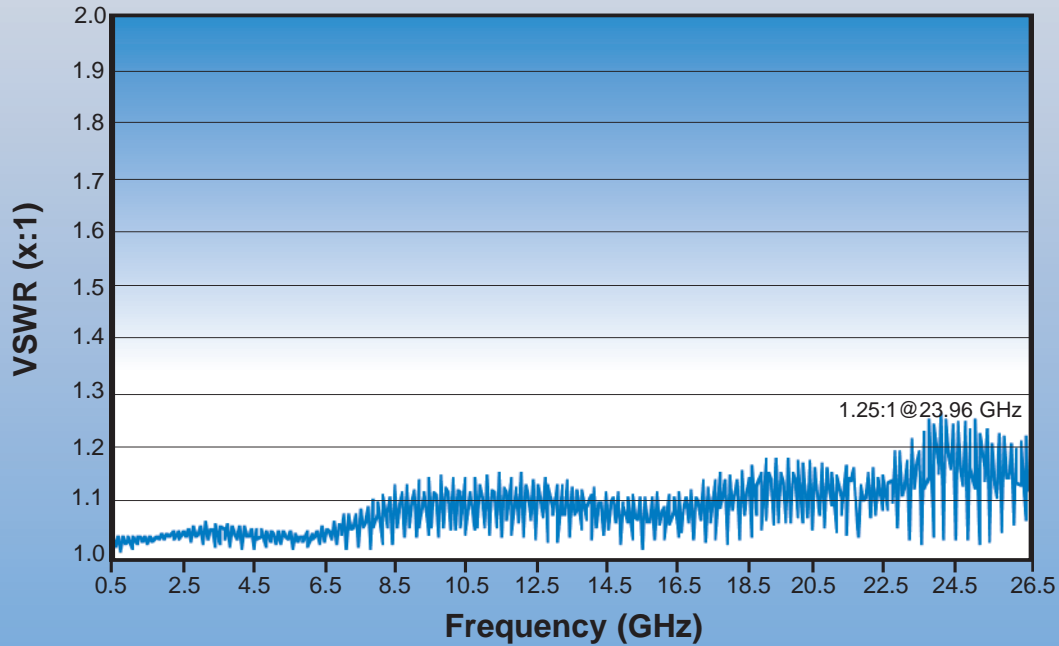
** All 26.5 GHz cables are RF characterized on a production basis through 20.0 GHz.

*** Connector configuration may limit cable assembly maximum power handling capability.

Specifications subject to change without notice.

SilverLine Test Cable

Typical VSWR vs Frequency
(26.5 GHz SMA Male/SMA Male, 3 ft long)



Ordering Information

U = Unarmored
A = Armored

Feet: 0.50 ft Increments

Example: -04.50F = 4.50 ft

Meters: 0.25 m increments

Example: -00.75M = 0.75 m

SLXXX-XXXXXX-XX.XXX

F = Feet M = Meters

Connector Codes (2 or 3 Characters)

First Connector

Maximum Frequency

04 = 4.0 GHz (BNC equipped only)

06 = 6.0 GHz

18 = 18.0 GHz

26 = 26.5 GHz (SMA, 2.4mm, 3.5mm only)



3.5mm Female (L), Ruggedized 3.5mm Female (R)



3.5mm Male (L), Ruggedized 3.5mm Male (R)

BM = BNC Male

SM = SMA Male

S1T = SMA Male **OneTurn™**

SF = SMA Female

SMR = SMA Right Angle

35M = 3.5mm Male

35F = 3.5mm Female

3RM = 3.5mm Ruggedized Male

3RF = 3.5mm Ruggedized Female

2RF = 2.4mm Ruggedized Female

NM = Type N Male

N1T = Type N Male **OneTurn™**

NF = Type N Female

NMR = Type N Right Angle

70M = 7mm

76M = 7-16 DIN Male

76F = 7-16 DIN Female

TM = ETNC Male (Extended range)

TF = ETNC Female (Extended range)

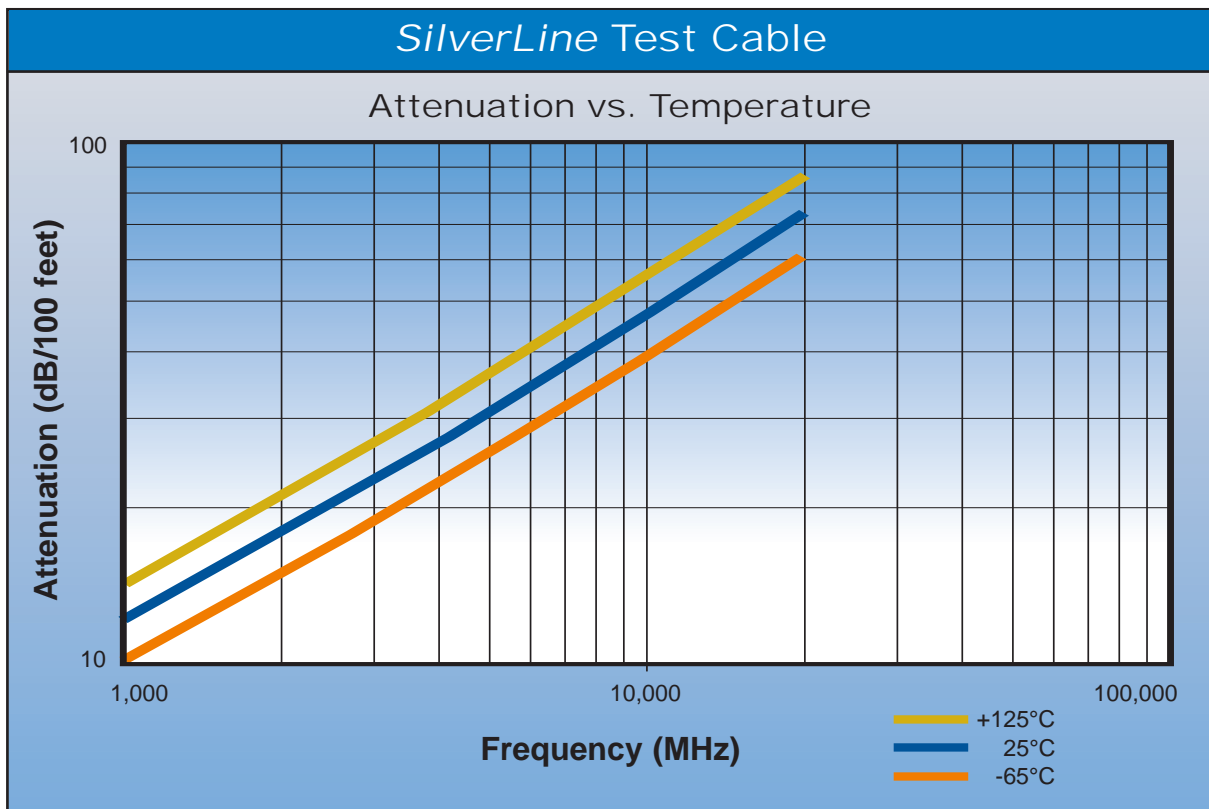
QMM = QMA Male

Second Connector

Some connector combinations and/or lengths may be unavailable. Please contact Times or your Times authorized representative.

Specifications subject to change without notice.

SilverLine™ Specifications:



SilverLine QMA Adaptors

3191-133EA SMA Plug	3191-188EA BNC Jack
3191-134EA SMA Jack (Standard)	3191-189EA Type N Jack
3191-141EA Mini-UHF Plug (Lengthened)	3191-190EA N Plug-QMA plug between series
3191-143EA Type N Plug	3191-192EA SMB Plug
3191-148EA TNC Plug	3191-193EA TNC Reverse Polarity
3191-182EA Mini-UHF Jack	3191-194EA SMA Reverse Polarity
3191-183EA PL259 Jack	3191-195EA SMA Plug-QMA plug between series
3191-184EA PL259 Plug	3191-196EA SMB Jack
3191-187EA BNC Plug	

TuffGrip Adaptors

3191-180EA = 7-16 Female-7-16 Female	3191-222EA = N Male-7-16 Female
3191-212EA = N Male-N Male	3191-223EA = N Male-7-16 Male
3191-221EA = N Female-N Female	

All Times SilverLine adaptors are solid stainless steel and designed for ruggedness, durability and long life.



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