Test & Measurement

TIMES
MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

TIMES MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

Clarity™ Series

18, 26.5, and 40 GHz Test Cables

Applications :

- Research & Development Labs
- VNA Test Port Extension cables
- Scalar Analyzers
- High Volume Production Test
- System Level RF Connection
- Test Rack Interconnect
- Bench or Portable Test Equipment
- Antenna Ranges
- Anechoic Chambers
- RF Module Testing

When everything is important, Times new Clarity™ Series is the clear choice. Industry-leading performance and unparalleled value.

- Broad Frequency Response
- Ruggedness & Durability
- Wide Temperature Range
- Crush & Kink Resistance
- Torque Resistance
- Connector retention
- Low Attenuation
- RF stability with flexure
- Consistency
- Reliability
- Flexibility
- Ergonomics
- Aesthetics
- Lead Time
- Cost of ownership
- ROHS Compliant

Ordering Information:

Clarity Series

18 = 18 GHz
26 = 26.5 GHz
40 = 40 GHz

Every half foot or quarter meter
1.5 ft (0.50m) are shortest lengths

CLXXX-XXXX-XX.XXX

F = feet
M = meters

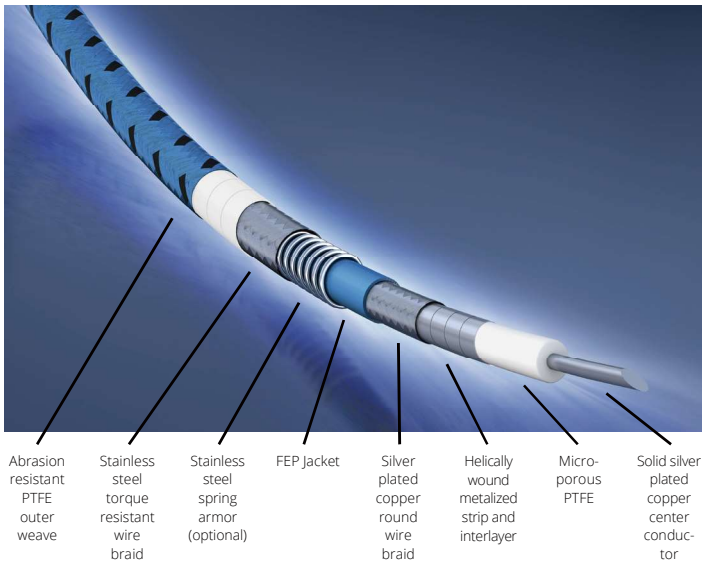
U = unarmored
S = steel armored

Ex: NMKF is correct, KFNM is incorrect

First Connector

SM = SMA male SureGrip knurl (18 or 26.5 GHz)
SH = SMA male hex nut (18 or 26.5 GHz)
SF = SMA female (18 or 26.5GHz)
SMR = SMA right angle SureGrip knurl (18 GHz)
35M = 3.5mm male SureGrip knurl (26.5 GHz only)
35H = 3.5mm male hex nut (26.5 GHz only)
35F = 3.5mm female (26.5 GHz only)
3RF = 3.5mm ruggedized female (NMD) 26.5 GHz only
NM = Type N male (18 GHz)
NMR = Type N right angle (18 GHz only)
KM = 2.92mm male SureGrip knurl (40 GHz)
KH = 2.92mm male hex nut (40 GHz)
KMR = K (2.92mm) right angle SureGrip knurl (40 GHz)
KF = 2.92mm female (40 GHz)
KRF = K ruggedized female (40 GHz only)
24M = 2.4mm male SureGrip knurl (40 GHz only)
24H = 2.4mm male hex nut (40 GHz only)
24F = 2.4mm female (40 GHz only)
2RF = 2.4mm ruggedized female (NMD) (40 GHz only)

Second Connector



Connectors & Strain Relief :

- Super-sharp stainless steel SureGrip™ knurled coupling nut
- Unique, elliptical-shaped, Sure-Grip™ injected molded strain relief (Armored version only)

Mechanical Specifications		
Dimensions	in	mm
Armored Diameter: armor/strain relief	0.29 / 0.50	7.37 / 12.70
Unarmored Diameter: cable/strain relief	0.190 / 0.425	4.83 / 10.8
Min bend radius, armored (max flex life)	1.5 (3.0)	38 (76)
Min bend radius, unarmored (max flex life)	1.0 (2.0)	25 (50)
Flex Life [1] (unarmored/armored)	25,000 / 50,000	
Crushing (armored version)	200 lbs/lin.in.	
Mating life cycle [2]	5000	
Storage/Operating Temerature	- 45ºC Min	+85º C Max

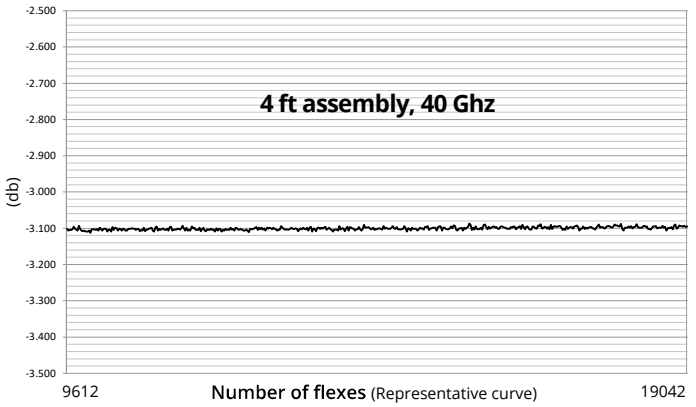
Electrical Specifications @ Room Temperature				
Impedance		50 ohms		
Velocity of Propagation		78%		
Shielding Effectiveness		> 100 db		
Capacitance		26pf/ft (85pf/m)		
VSWR (maximum)		18 GHz 1.20:1	26.5 GHz 1.25:1	40 GHz 1.35:1
Phase Stability (degrees)*	typical	+/- 1.0	+/- 1.5	+/- 2.0
Amplitude Stability (dB)*	typical	+/- 0.02	+/- 0.035	+/- 0.04
Attenuation, max @ 77°F (25°C)	dB/100 ft	45	55	68
	(db/100 m)	(148)	(181)	(223)
Cable Power Handling (Cable Only)				
@77°F (25°C) sea level, watts (max)		18	15	13

Attenuation (per 100ft) at any frequency: 0.3077*√f(MHz) + 0.000159*f(MHz)
Specifications subject to change without notice.

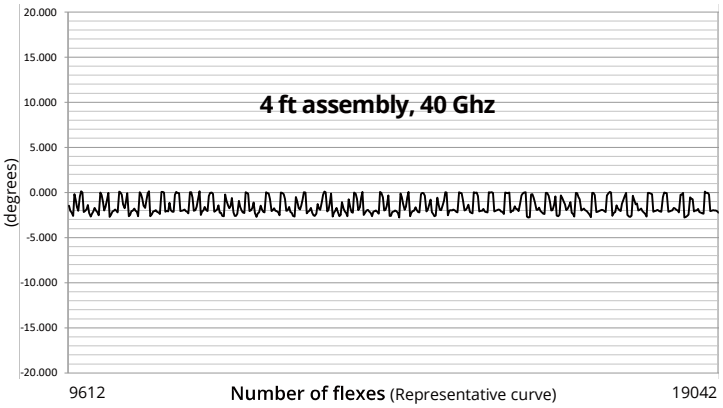
1 As tested using Times' flex testing methods. 4ft long cable, stop at 50000cycles. Longer cables can have more total instability. Assumes test equipment is calibrated every 8 hours. New cables can have a break in period of several hundred flexes before optimum stability occurs. Contact your Times representative or the factory for a copy of this test procedure and/or actual test results.

2 SMA and Type N male only. Achieving or extending mating life requires the strict use of a calibrated torque wrench at all times and careful, deliberate mating so as not to damage center contacts. Inspect and clean all interfaces frequently and check that mating interfaces are within IEEE 287 connector standards. Failure to do so may void warrantee.

Amplitude Stability while in motion



Phase Stability while in motion



DO:

- Inspect interfaces before every mate. Clean frequently
- Gently start the coupling nut. Fully thread & tighten w/ fingers first
- Use a calibrated torque wrench
- Cap connectors and protect the assembly when not in use
- Have replacements available in the event they are needed

DON'T:

- Force the cable beyond the recommended minimum bend radius
- Force two connectors. If any resistance is felt STOP and examine
- Mate 2.92mm to other than SMA or 3.5mm series
- Mate connectors that have non-concentric contacts
- Insert foreign or dirty objects into the interface

TIMES MICROWAVE SYSTEMS
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Clarity™ Series

ROHS

50 GHz Test Cables

Applications :

- 5G development
- Research & Development Labs
- Bench VNA's and analyzers
- High Volume Production Test
- RF Module Testing

When everything is important, Times new Clarity™ Series is the clear choice. Industry-leading performance and unparalleled value.

- Broad Frequency Response
- Rugged & Durable
- Predictable over Temperature
- Solid Connector Retention
- RF Stable with Flexure
- Consistent between Batches
- Long Flex Life
- Ergonomically Designed
- Attractive Appearence

Ordering Information:

Clarity Series
Steel Armored
50 GHz

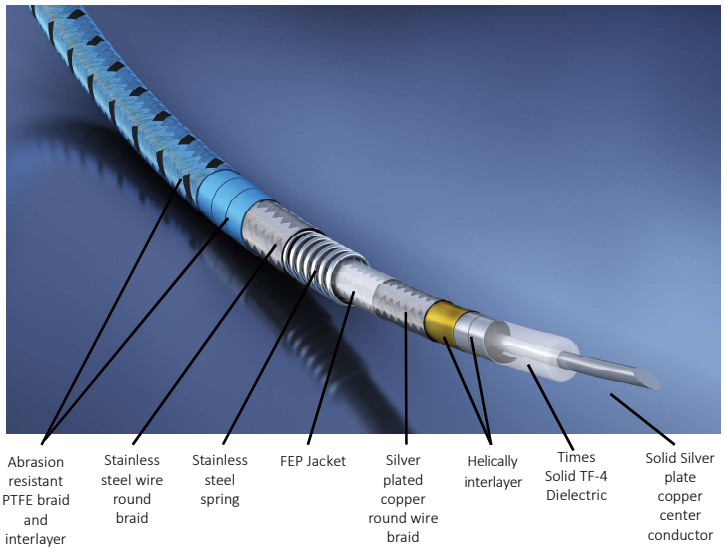
CLS50-XXXXXX-XX.XXX

Every half foot or quarter meter
(1.5ft or 0.5m is the shortest)
Example: -01.50F = 1.5ft

F= feet
M=meters

24M = 2.4mm male SureGrip knurl
24F = 2.4mm female
2RF = 2.4mm ruggedized female

First Connector
↓
Second Connector



Connectors & Strain Relief :

- User friendly stainless steel SureGrip™ knurled coupling nut
- Unique, elliptical-shaped, Sure-Grip™ injected molded strain relief

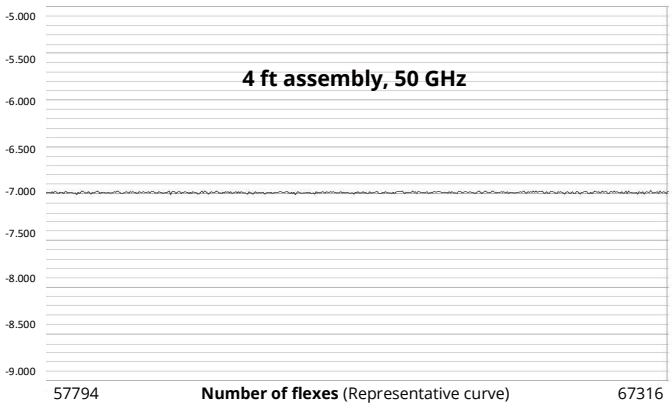
Mechanical Specifications		
Dimensions	in	mm
Armored Diameter: armor/strain relief	0.29 / 0.50	7.95 / 12.70
Min bend radius, armored (max flex life)	1.5 (3.0)	38 (76)
Crushing (armored version)	200 lbs/lin.in.	
Flex life[1]	50,000	
Temperature Range	-67°/+ 257°F	-55°/+125°C

Electrical Specifications (50GHz)				
Impedance	50 Ohms			
Velocity of Propagation	70%			
Shielding Effectiveness	> 100 dB			
Capacitance	29pf/ft (95pf/m)			
VSWR (typ/max)	1.30:1 / 1.40:1			
Phase Stability (degrees)* typical	+/- 4.0			
Amplitude Stability (dB)* typical	+/- 0.08			
Attenuation, max @77°F (25°C)	**18 GHz**	**40 GHz**	**50 GHz**	
dB/100ft	89	144	165	
(dB/100m)	(292)	(472)	(541)	

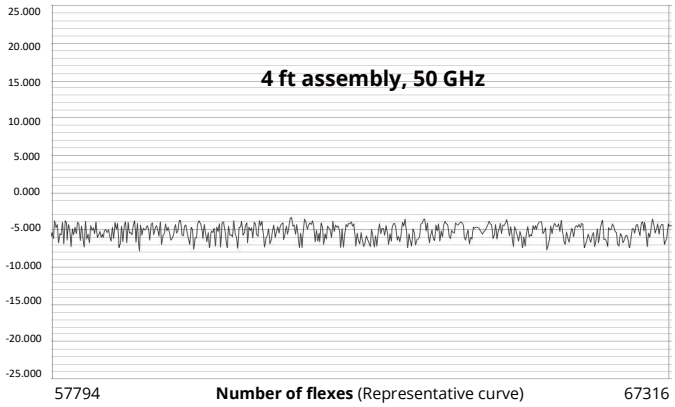
Attenuation (per 100ft) at any frequency: 0.5556*√f(MHz) + 0.0008*f(MHz)
Specifications subject to change without notice.

1. As tested using Times' flex testing methods. 4ft long cable. Longer cables can have more total instability. Assumes test equipment is calibrated every 8 hours. New cables can have a break in period of several hundred flexes before optimum stability occurs. Contact your Times representative or the factory for a copy of this test procedure and/or actual test results.

Amplitude Stability while in motion



Phase Stability while in motion



DO :

- Inspect interfaces before every mate. Clean frequently
- Gently start the coupling nut. Fully thread & tighten w/fingers first
- Use a calibrated torque wrench
- Cap connectors and protect the assembly when not in use

DON'T :

- Force the cable beyond the recommended minimum bend radius
- Force two connectors. If any resistance is felt STOP and examine
- Mate connectors that have non-concentric contacts
- Insert foreign or dirty objects into the interface

TIMES MICROWAVE SYSTEMS
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Clarity™ 70

TEST AND MEASUREMENT

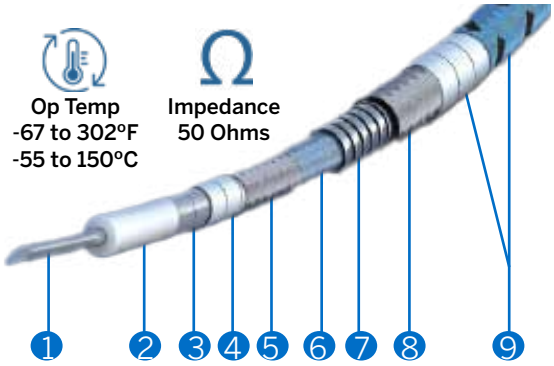
The *Clarity* 70 test cable boasts steel torque, crush and overbend protection with abrasion resistance - without compromising flexibility. The cable is ultra-stable through 70 GHz with exceptionally low attenuation. The design includes an ergonomic, stainless steel protective barrel strain relief and a hex coupling nut.

FEATURES

- **Broad Frequency Response**
- **Rugged & Durable**
- **Phase Stable Over Temperature**
- **Long Flex Life**

Specifications

	Units		
Diameter	in (mm)	0.20	(5.08)
Weight	lb/ft (kg/m)	0.01	(0.02)
Minimum Bend Radius	in(mm)	1.00	(25.4)
Crushing	lb/lin (kg/lcm)	200	(35.75)
Flex Life		>50000	
Maximum Frequency	GHz	70	
Velocity of Propagation	%	80	
Capacitance	pF/ft (pF/m)	24.6	(80.7)
Delay	ns/ft (ns/m)	1.27	(4.14)
Sheilding	dB	-90	
VSWR Typical		1.35:1	
VSWR Max		1.40:1	
Phase Stability	°	+/- 5	
Amplitude Stability	dB	+/- 0.10	



1. **Center Conductor** — Silver Plated Copper
2. **Dielectric** — Expanded PTFE
3. **Tape Wrap** — Silver Plated Copper
4. **Interlayer** — PTFE
5. **Wire Braid** — Silver Plated Copper
6. **Jacket** — Blue FEP
7. **Spring** — Stainless Steel
8. **Wire Braid** — Stainless Steel
9. **Outer Braid** — Abrasion Resistant PTFE

IL = (K1 x √(f) + K2 x f) x Cable

Cable Insertion Loss

Length unit must match K value unit.

K Values

	dB/ft	dB/m
K1	0.00611	0.01862328
K2	0.000136	4.14528E-06

f= Frequency in MHz

Attenuation

	dB/100ft	dB/100m
1000 MHz	19.46	59.31
4000 MHz	39.19	119.44
6000 MHz	48.14	146.74
10000 MHz	62.46	190.38
18000 MHz	84.42	257.32
26500 MHz	103.07	314.15
40000 Mhz	127.64	389.05
67000 Mhz	167.27	509.82
70000 Mhz	171.18	521.74

Clarity™ 70

TEST AND MEASUREMENT

Ordering Guide

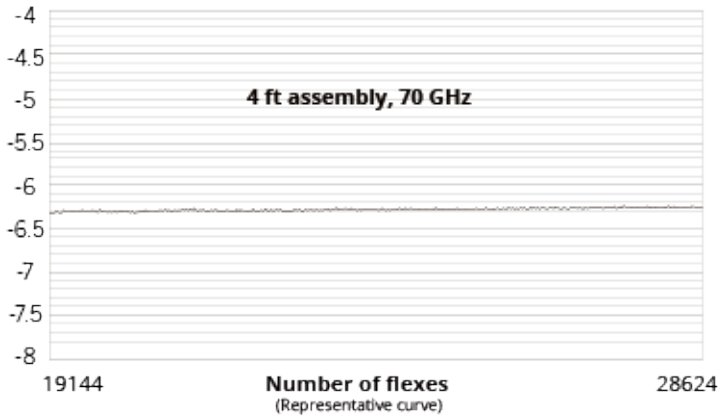
CLS70- 18M 18M-XX.XX M

CONNECTOR A	CONNECTOR B	LENGTH	UNITS OF MEASURE
			M METERS
			F FEET

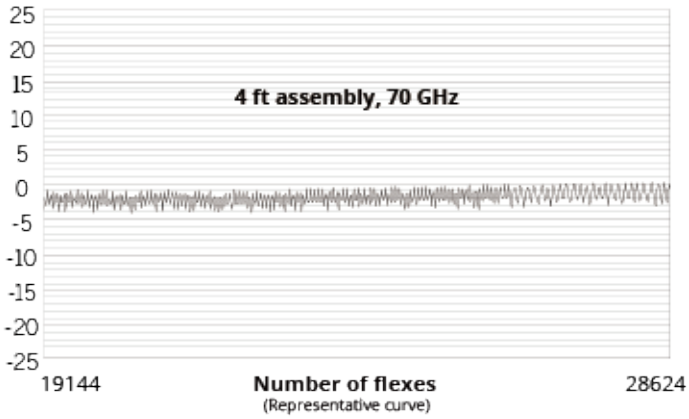
USE ABBREVIATIONS FROM THE CHART BELOW.

Abbreviation	Description
18M	1.85mm Male connector
18F	1.85mm Female connector
18RF	1.85mm Ruggedized Female

Amplitude Stability while in motion



Phase Stability while in motion



Our flex test method uses 4ft cables at 70GHz. The testing equipment calibration occurs every 8 hours.
Email us at techquestions@timesmicro.com to obtain a copies of test procedure specifications and results.

Heritage—in the air and on the ground, thousands of assemblies built over decades

Global manufacturing capability: US, Europe and Asia.

Assembled and tested assemblies provide assured performance

WORLD HEADQUARTERS
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TIMES MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

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SilverLine® Test Cables

Coax Test Cables for:

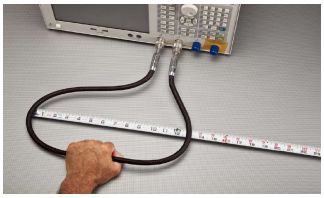
- High volume, in-process production test
- Incoming/final test inspection
- RF test systems interconnects

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.

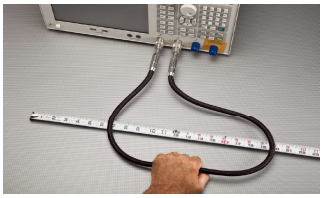
Time's Silverline® Product Guarantee
Times will repair or replace your SilverLine test cable at its option if the connector attachment fails within four months of shipment. This guarantee excludes cable or connector interfacedamage from misuse or abuse.

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



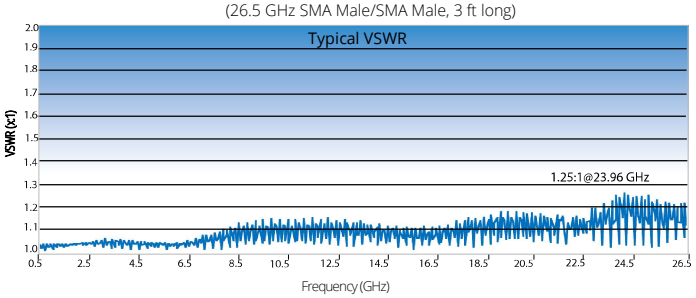
Flex Test (one full cycle)



Cable is pulled off center 10" in both directions

** Phase stability data IAW Times' phase/flex test criteria as demonstrated above.

(26.5 GHz SMA Male/SMA Male, 3 ft long)



Connectors:

- Passivated stainless steel finish
- Captive center contact
- Thick wall, 26.5 GHz SMA
- Type N & SMA OneTurn™ (1 full rotation to mate)
- Knurl/hex coupling nut (Type N and TNC)

Connector Attachment/Strain Relief

- Rugged, solder-clamp to braid. 175-300 lb pull force. Additional crimp system on armored version.
- Redundant triple layer strain relief system (Dual layer on armored version)

Mechanical Specifications		
Dimensions	in	mm
Armored Diameter: armor/strain relief	0.450	11.50
Unarmored Diameter: cable/strain relief	0.195	4.950
Min bend radius, armored (max flex life)	2.25	57
Min bend radius, unarmored (max flex life)	1.00	25
Crushing (armored version)	PVC:1200 lbs. per linear inch -Steel: 1500 lbs.per linear inch	
Mating Life Cycle *	SMA,Type N: >5000	
Temperature range	-67°/+ 185°F	-55°/+85°C

Electrical Specifications					
Impedance		50 Ohms			
Velocity of Propagation		70%			
Shielding Effectiveness		>-90 dB			
		4 GHz	6 GHz	18 GHz	26.5 GHz
VSWR (maximum)	BNC	1.20:1			
	7-16 DIN		1.25:1		
	SMA, 3.5mm		1.20:1		1.35:1
	Type N, TNC		1.30:1 (cube R/A)	1.35:1 (cube R/A)	
Phase Stability** (50,000 cycles)	typical	+/-2° through 18GHz +/-3° through 26.5GHz			
Amplitude Stability (dB)**	max	+/-0.1			
Attenuation, max@77°F (25°C)		dB/100 ft	(dB/100 m)		
6 GHz		34	112		
18 GHz		68	224		
26.5 GHz		89	290		

Cable Power Handling (Cable Only)	
@77°F (25°C) sea level, watts (max)	
6 GHz	180
18 GHz	88
26.5 GHz	65

Attenuation (per 100ft) at any frequency: 0.348*√f(MHz) + 0.0012*f(MHz)

Specifications subject to change without notice.

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

** RF stability and flex life are in accordance with the flex test method example. 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.

Ordering Information:

U = Unarmored 1ft (0.25m) minimum assembly length
A = Armored 2 ft (0.5m) minimum assembly length
S = Steel, torque & crush resistant armor 3 ft (1.0m) min. length

Feet: 0.50 ft increments
Example: -04.50F = 4.50ft

Meters: 0.25 m increments
Example: -00.75M = 0.75 m

SLXX-XXXXXX-XX.XXX

F = Feet M = Meters

Maximum Frequency
04 = 4.0 GHz (BNC one or both ends)
06 = 6.0 GHz
18 = 18.0 GHz
26 = 26.5 GHz

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

A brand new cable can have a break-in period of several hundred flexes.

Connector Codes (2 or 3 Characters)

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
3RF	=	3.5mm Ruggedized Female
NM	=	Type N Male
N1T	=	Type N Male OneTurn™
NF	=	Type N Female
NMR	=	Type N Right Angle
76F	=	7-16 Female
43M	=	4.3/10 male (this is not a low PIM assembly)
43F	=	4.3/10 female (this is not a low PIM assembly)
TM	=	ETNC Male (Extended range)
TF	=	ETNC Female (Extended range)

First Connector

Second Connector

Labels on unarmored assemblies under 1.5 feet (0.5m) long remain loose to increase flexibility.
Some connector combinations and / or lengths may be unavailable.
Please contact Times or your Times authorized representative.

TIMES MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

SilverLine®-ExtraFlex

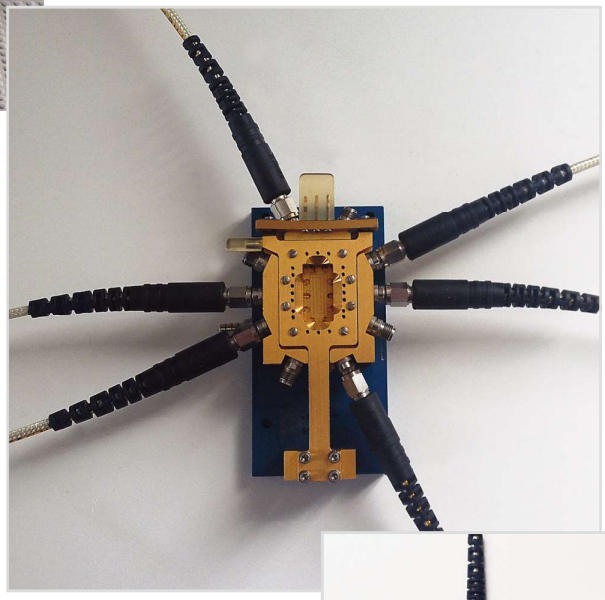
- Production test for small sized RF products
- Edge launch testing
- General purpose RF Interconnects through 26.5 Ghz

SilverLine®-ExtraFlex was designed for testing delicate components such as exposed RF circuits with edge launch connectors. Thin, lightweight and flexible, this coax makes handling PC boards easy yet does not compromise RF stability and isolation. Using Times' proprietary TF-4 dielectric SilverLine®-ExtraFlex goes one step further, exhibiting linear phase change from 0ºC to +30ºC (see graph).

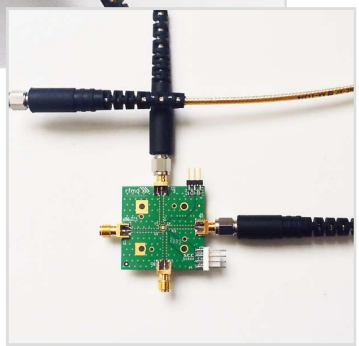
SilverLine®-ExtraFlex uses the same robust, proven connector attachment system that has made SilverLine® the preferred choice in RF test labs everywhere. A new injection-molded strain relief system designed to match the cable's flexibility assures the cable will bend tightly but not fail prematurely behind the connector.

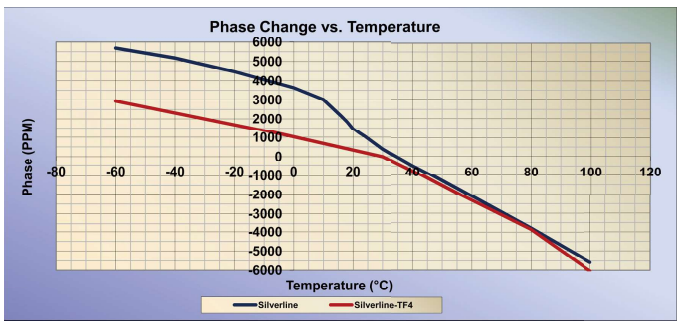
Features and Benefits:

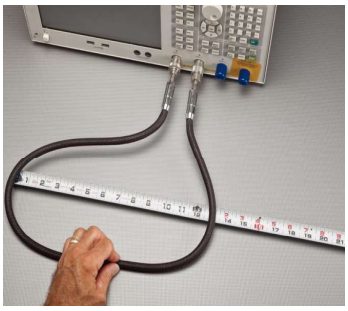
- 30% Smaller than Standard SilverLine®
- Improved Flexibility
- RF Stable With Flexure
- Better than -90dB Isolation
- 26.5 Ghz Operation
- Linear Phase Change From 0º to 30ºC
- Injection-Molded Strain Relief
- ROHS Compliant

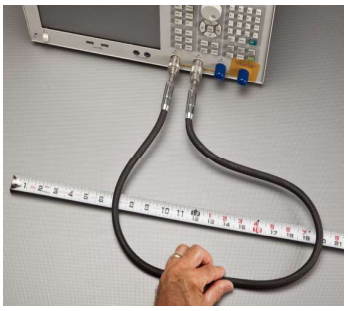


Test fixture photo courtesy of
Inter-Continental Microwave
www.icmicrowave.com









** Phase stability data IAW Times' phase/flex test criteria as demonstrated above.

Connectors:

- Stainless steel
- Solder/Clamp attachment
- Captive contact construction

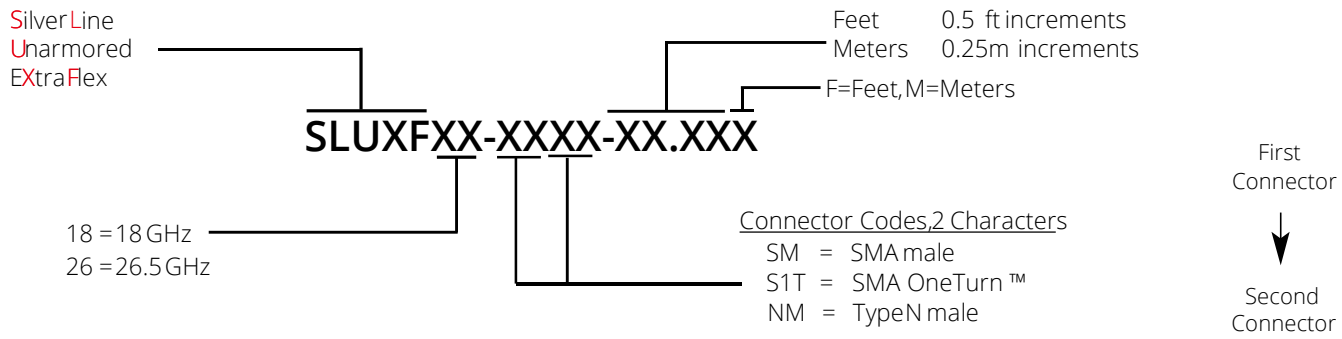
* Mating life assumes the use of a calibrated torque wrench, interfaces are clean and within mil specs limits.

Mechanical Specifications		
Dimensions	in	mm
Armored Diameter	0.15	3.80
Min bend radius (max flex life)	0.75	19
Mating life cycle *	5000	
Temperature range	-67°/+ 257 °F	-55°/+125 °C
Electrical Specifications		
Impedance	50 Ohms	
Velocity of Propagation	70%	
Shielding Effectiveness	>-90 dB	
VSWR (maximum)	**18 GHz** 1.30:1	**26.5 GHz** 1.35:1
Phase Stability (50,000 cycles)** max	+/-2.0°	+/-3.0°
Amplitude Stability (dB)** max	+/-0.1	+/-0.1
Attenuation, max@77°F (25°C)	dB/100 ft	(dB/100 m)
1 GHz	16	52
2 GHz	24	79
6 GHz	45	148
12 GHz	66	216
18 GHz	85	279
26.5 GHz	102	335

Attenuation (per 100ft) at any frequency: 0.49656*√f(MHz) + 0.0008*f(MHz)

Specifications subject to change without notice.

Ordering Information:



A brand new cable can have a break-in period of several hundred flexes.

SilverLine®-VNA (110 GHz)

Coaxial Test Cables

- **Automotive**: Collision avoidance radar test
- **Communications**: Point-to-point backhaul system test
- **Wafer Test**: Probe Connections
- **Electronic Warfare**: Targeting/tracking systems. Satellite testing
- **Environmental**: Remote atmospheric sensing

Photo courtesy of Anritsu

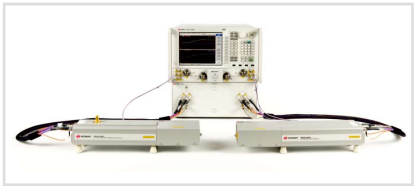


Photo courtesy of Keysight

SilverLine®-VNA 110 GHz is an armored, extremely high frequency coax cable assembly designed for use where waveguide is impractical .

SilverLine®-VNA 110 GHz now offers the user working in these frequencies an alternative to the limited selection of semi - rigid solutions offered by current suppliers. Test technicians experienced in the use and handling of traditional 110 GHz products will find Times' solution to be more than competitive for RF stability and overall product life.

Features & Benefits:

- Flexible / rebendable
- Steel armored, torque resistant
- Nomex outer sleeve
- 1.0mm male and female connectors
- ROHS Compliant

Connectors:

Stainless steel. Solder contact and braid. Additional crimp to armor for added strength and torsion resistance.

1. Standard "tick-tock" flex test. Contact Times for test details.

Care and Handling Guidelines:

While armored, 110 GHz cables are sensitive microwave instruments. Flexible cables can easily be forced beyond the recommended minimum bend radius.This will likely degrade or destroy the RF performance. All flexible cables have a limited flex life. Develop procedures that limit flexing. 1.0mm interfacesare delicate. Keep them meticulously clean and the center contacts concentric within the outer contact. Use a microscope to examine ifnecessary. DO NOT mate connectors that are dirty, suspected of being damaged or outside concentric tolerances. Connectors MUST be aligned whenmating. Misalignment will damage the interfaces and voids the warranty. Test equipment makers publish extensive use and handling procedures on their websites that cover these and related topics.

DO:

-Inspect interfaces before every mate. Clean if needed.
-Gently start the coupling nut and fully thread with fingers first.
-Hand tighten, but use a calibrated torque wrench to tighten.4 lbs max.
-Limit use to experienced technicians.
-Cap connectors and store cables separately in a protective container.
-Keep a spare pair of cables ready, just in case.

DON'T:

-Force the cable to bend beyond the recommended minimum radius.
-Force two connectors. If any resistance is felt STOP and examine.

Warranty

Product to be free from workmanship and materials defects and to meet stated data sheet performance for a period of 90 days. Excludes cable or connector interface damage from misuse, abuse, mishandling or mis-mating outside the data sheet recommendations. Warranty claims are subject to factory analysis and may include analysis charges depending on findings.

Mechanical Specifications		
Dimensions	in	mm
Armored Diameter: armor/strain relief	0.180	4.60
Min bend radius, armored (max flex life)	0.40	10
Mating life cycle *	500	
Temperature range	-85°/+ 257°F	-65°/+125°C

Electrical Specifications		
Impedance	50 Ohms	
Velocity of Propagation	78%	
Shielding Effectiveness	>100 dB	
Capacitance	25.9 pf/ft (85 pf/m)	
VSWR (maximum)	**110 GHz** 1.4:1	
Phase Stability (degrees) ** typical	+/-10°	
Attenuation, max@77°F (25°C)	dB/100 ft	(dB/100 m)
50 GHz	328	1076
72 GHz	398	1306
84 GHz	433	1419
96 GHz	465	1524
110 GHz	501	1642

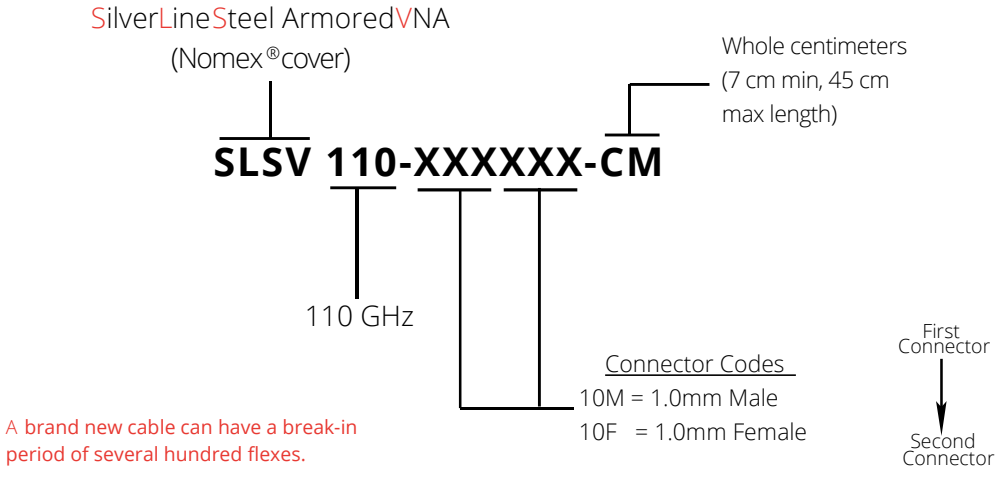
Attenuation (per 100ft) at any frequency: 1.430*√f(MHz) + 0.0129*f(MHz)

Specifications subject to change without notice.

* Mating life requires hand tightening and/or the strict use of a calibrated torque wrench and clean interfaces that are within the IEEE 287 precision connector standards.

** RF stability and flex life are in accordance with the flex test method example. 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.

Ordering Information:



TIMES MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

SilverLine® - LPA

Low PIM Adapters

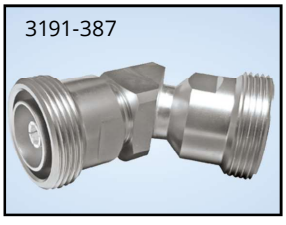
DIN, Mini-DIN & Type N for PIM Sensitive Systems

- Cellular or Wireless
- Tower or in-building
- Production or laboratory

SilverLine®- LPA low PIM adapters exhibit exceptional PIM performance in any cellular or wireless frequency range.

Times uses only the most robust designs for long product life regardless of the environment. All product is 100% tested and individually packaged prior to shipping.

Two 45° Configurations!



Mechanical Specifications		
Body and Coupling Nut	Tri-metal plated brass	
Center Contact	Gold or Silver Plated	
Mating Life	500 min*	
Temperature Range	-40°/+ 185 °F	-40°/+85°C
Electrical Specifications		
Impedance	50 Ohms	
Frequency.Max	All straight configurations 6 GHz	45° or right angle 3 GHz
VSWR (maximum)	All straight configurations 1.1:1 (3 Ghz) 1.2:1 (6 Ghz)	45° or right angle 1.25:1
PIM* (IM3)	-125 dBm +/- 3 dBm (2 x 43 dBm carriers)	

*Interfaces must be clean and proper torque forces applied

Specifications subject to change without notice.

Ordering Information

Individual Adapters:

	Kit Designator
3191-331 = 7-16 female bullet	A
3191-332 = 7-16 male/female right angle	B
3191-376 = 7-16 male bullet	C
3191-377 = 7-16 male/female	D
3191-378 = 7-16 male/Type N male	E
3191-379 = 7-16 male/Type N female	F
3191-380 = 7-16 female/Type N female	G
3191-381 = 7-16 female/Type N male	H
3191-382 = 7-16 male/female 45°	I
3191-387 = 7-16 female/female 45°	J
3191-394 = 4.1/9.5 male/7-16 female	K
3191-395 = 4.1/9.5 female/7-16 female	L
3191-396 = Type N male/Type N male	M
3191-397 = Type N female/Type N female	N
3191-411 = 4.1/9.5 female/Type N female	O
3191-412 = 4.1/9.5 female/Type N male	P
3191-413 = 4.1/9.5 male/Type N female	Q

	Kit Designator
3191-414 = 4.1/9.5 male/Type N male	R
3191-415 = 4.3/10 female/7-16 female	S
3191-416 = 4.3/10 male/7-16 female	T
3191-417 = 4.3/10 female/Type N male	U
3191-418 = 4.3/10 male/Type N male	V
3191-419 = 4.1/9.5 female/7-16 male	W
3191-420 = 4.1/9.5 male/7-16 male	X
3191-421 = 4.3/10 female/7-16 male	Y
3191-422 = 4.3/10 male/Type N female	Z
3191-6125 = NEX10 male/NEX10 female	3
3191-6126 = NEX10 male/7-16 male	4
3191-6127 = NEX10 female/7-16 male	5
3191-6128 = NEX10 male/7-16 female	6
3191-6129 = NEX10 female/7-16 female	7
3191-6130 = NEX10 male/Type N male	8
3191-6131 = NEX10 female/Type N male	9
3191-6132 = NEX10 male/Type N female	$
3191-6133 = NEX10 female/Type N female	@

Standard (small) SilverLine Adapter Kits: (Hard case with foam insert containing seven adapters)
660-0234: Contains one each A, D, E, F, G, H and I
660-0235: Contains one each A, D, G, H, I, K and L
660-0236: Contains one each A, C, M, T, W, Y and Z

Specifications subject to change without notice

Custom (Large) SilverLine Adapter Kits: (Hard case with foam. 10 pieces min, 20 max (max of four 45's or r/a's combined)

SLK-XXXXX . . . (Insert designator from above in alphabetical order (20 max) . Duplicate designators acceptable)

MISSION

TIMES MICROWAVE SYSTEMS designs and manufactures high performance RF and microwave transmission lines. These products consist of coaxial cables, connectors, accessories and cable assemblies.

We are committed to understanding the needs and requirements of our customers and providing highly engineered, cost effective products.

TIMES MICROWAVE SYSTEMS is dedicated to total customer satisfaction and superior results for our shareholders in all we do.

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