

FEATURES

- Ultra Low Loss < 0.7 dB/meter @18GHz (much lower loss than solid PTFE dielectric cable)
- Loss, VSWR & Phase are stable with bending and temperature
- Superior Shielding Effectiveness over -95 dB

APPLICATIONS

- Radars, EW Systems for lowest loss and phase stability.
- · Conform to airborne needs of temp. cycling, vibration etc.
- · Applications needing ultra phase stable cables
- Test cables for Hi-Vacuum chambers

Electrical Specifications Impedance 50 Ohms Velocity of Propagation > 80 % Better than -95dB Shielding Effectiveness 25pF/ft Capacitance 82 pF/m **Frequency Range** DC ~ 18 Ghz Phase Stability Vs Flexures <0.4°/GHz, (360° wrap on a mandrel of Typ. ±5.4°@18G 76.5mm diameter) Phase Stability Vs Temp. <10 ppm/degree (parts per million, ppm) (<1500 ppm in -40 ~ +85°) Phase Stability Vs Temp. <1° / m / GHz) (degree/ meter / GHz) Atten. Stability Vs Temp. <0.2 % /°C Atten. Stability Vs Bending ± 0.2dB

Ultra Low Loss Phase Stable

EQUIVALENT TO: Semflex LA290 H&S Sucoflex 106 Radiall SHF8M

Physical & Mechanical Specifications

Dimensions	inches	mm	
Outer diameter	0.30	7.62	
Bend Radius (min.)	1.5	38.2	
Weight	0.113 Kg/m		
Temperature Range	-55° ~	+ 150°C	

Attenuation and Power Handling Data

Froquoney	Insertio	Av Power		
Frequency	dB/100ft	dB/100m	Watts	
500 MHz	3.7	12.1	2400	
1 GHz	5.2	17.0	1700	
2 GHz	7.5	24.5	1200	
4 GHz	10.7	35.1	820	
8 GHz	13.2	44.1	500	
12 Ghz	16.5	55.4	450	
18 GHz	20.4	68.1	330	

Imported Ultra Low Loss, Triple Shielded Hi-Power Cable details

Round wire braid provides shieldir protection FEP (Fluorinated Ethylene Propyle Jacket	d outer shield Silve ng and mechanical braic d ene) Alum polyester	r-plated copper flat ribbon type inner shield Center lowest attenuation inium interlayer Taped PTFE dielectric with >80% velocity			
	Ordering Cod	es Description			
ŀ	(Length) (Connect HF18G - □ □ - □(□/ L L 1 2	or 1) (Connector 2) □) - □(□/□) - □ 3 1 2 3 U			
LL	Length	0.5 = 0.5 ; 1 = 1.0 ; 2 = 2.0			
1 Connector Series		SMA = SMA, N = N, TNC = TNC			
2 Male/Female Designator		M = Male			
3	Orientation of Connector	ST = Straight			
U	Unit of Length	M = Meter ; F = Feet ; I = Inch			

1 meter cable set with SMA (Male) on both sides = HF18G-1.0-SMA(M/ST)-SMA(M/ST)-M

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S11 Plot of 2m HF18G Pre-Connectorized Cable Set with N(M) on both sides

S21 Plot of 2m HF18G Pre-Connectorized Cable Set with N(M) on both sides



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Connectors for Ultra Low Loss & Phase Stable Cable Assemblies







Connectors Specifications

Specifications	SMA Connectors	N Connectors	TNC Connectors	
Outer Conductor	Stainless Steel, Passivated	Stainless Steel, Passivated	Stainless Steel, Passivated	
Center Conductor	er Conductor BeCu, Gold Plated BeCu, Gold Plated		BeCu, Gold Plated	
Insulation	PTFE	PTFE	PTFE	
Gaskets	Silicon Rubber	Silicon Rubber	Silicon Rubber	
Nominal Impedance	50Ω	50Ω	50Ω	
Frequency range	DC~18 GHz	DC~18 GHz	DC~18 GHz	
Mating & Unmating	500 Operations min	500 Operations min	500 Operations min	
Vibration	As per MIL-STD202, method 204, test condition D			
Mechanical Shock	As per MIL-STD202, method 213, test condition I			
Thermal Shock	As per MIL-STD202, method 107, test condition B			
Corrosion	As per MIL-STD202, method 101, test condition B			
Humidity	As per MIL-STD202, method 106			
Temperature Cycle	As per MIL-STD202, method 102A, test condition C			

Cable Set Ordering Codes (Other lengths and Connectors are availale on request)

Ordering Code	Longth	Insertion Loss (dB) Typical						
	Lengui	1.5 GHz	3 GHz	6 GHz	9 GHz	12 GHz	13.5 GHz	18 GHz
SMA (Male) S	SMA (Male) Straight - SMA (Male) Straight (DC to 18 GHz)							
HF18G-1.0-SMA(M/ST)-SMA(M/ST)-M	1m	0.28	0.40	0.57	0.72	0.81	0.88	1.03
HF18G-2.0-SMA(M/ST)-SMA(M/ST)-M	2m	0.46	0.67	0.97	1.21	1.39	1.50	1.76
HF18G-5.0-SMA(M/ST)-SMA(M/ST)-M	5m	1.02	1.50	2.16	2.70	3.10	3.34	3.94
N (Male) Straight - N (Male) Straight (DC to 18 GHz)								
HF18G-1.0-N(M/ST)-N(M/ST)-M	1m	0.31	0.43	0.60	0.75	0.84	0.91	1.06
HF18G-2.0-N(M/ST)-N(M/ST)-M	2m	0.49	0.70	1.00	1.24	1.42	1.53	1.79
HF18G-5.0-N(M/ST)-N(M/ST)-M	5m	1.05	1.53	2.19	2.73	3.13	3.37	3.97
TNC (Male) Straight - TNC (Male) Straight (DC to 18 GHz)								
HF18G-1.0-TNC(M/ST)-TNC(M/ST)-M	1m	0.33	0.48	0.62	0.77	0.86	0.93	1.08
HF18G-2.0-TNC(M/ST)-TNC(M/ST)-M	2m	0.52	0.73	1.02	1.26	1.44	1.55	1.81
HF18G-5.0-TNC(M/ST)-TNC(M/ST)-M	5m	1.07	1.55	2.21	2.75	3.15	3.39	4.00

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Specifications for Ultra Low Loss, Triple Shielded Pre-Connectorized Cable Sets, DC~18 GHz

Length Connector 1 Connector 2

• Should be flexible and routable.

• Cable should conform to MIL-C-17; Connectors should conform to MIL-PRF-39012.

Cable Specifications

Impedance	: 50 ohms
Frequency	: DC~18 GHz
 Velocity of Propagation 	: > 80 %
Shielding Effectiveness	: better than -90 dB
 Power Handling 	: > 1200 Watts Average @ 2 GHz
	> 500 Watts Average @ 8 GHz
	> 320 Watts Average @ 18 GHz
 Insertion Loss 	: < 0.08 dB/feet @ 2 GHz
	< 0.18 dB/feet @10 GHz
	< 0.25 dB/feet @18 GHz
• VSWR	:< 1.35 @ (DC~11 GHz, for straight connectors)
	< 1.40 @ (11~18 GHz, for straight connectors)
Inner Conductor	: Solid Silver Plated Copper
Dielectric	: Taped PTFE
Inner Shield	: Flat Silver Plated Copper Strip
Outer Shield	: Silver-Plated Copper round Braid
Jacket	: Fluorinated Ethylene Propylene (FEP)
 Overall diameter 	: < 8.0 mm
 Bend Radius 	: < 45 mm (1.7 in)
Temp. Range	: -55° ~ + 150°C

Connector Specifications (SMA)

- Outer Conductor
 Stainless Steel, Passivated
- Center Conductor : Beryllium Copper, Gold Plated
- Insulation : PTFE
- Frequency Range : DC~18 GHz
- Should meet test conditions of MIL-STD-202 for vibration, mechanical shock, thermal shock, corrosion, humidity, temperature cycling

Connector Specifications (N)

- Outer Conductor : Stainless Steel, Passivated
- Center Conductor : Beryllium Copper, Gold Plated
- Insulation : PTFE
- Frequency Range : DC~18 GHz
- Should meet test conditions of MIL-STD-202 for vibration, mechanical shock, thermal shock, corrosion, humidity, temperature cycling

Connector Specifications (TNC)

- Outer Conductor : Stainless Steel, Passivated
- Center Conductor
 Beryllium Copper, Gold Plated
- Insulation : PTFE
- Frequency Range : DC~18 GHz
- Should meet test conditions of MIL-STD-202 for vibration, mechanical shock, thermal shock, corrosion, humidity, temperature cycling