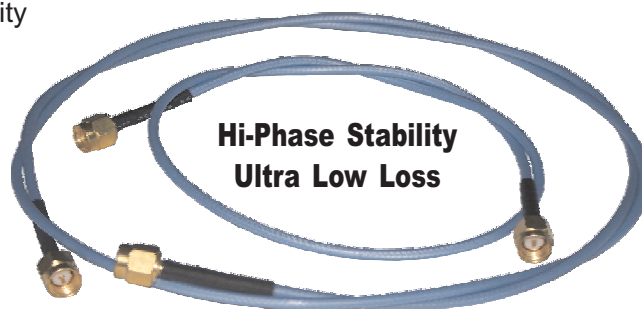


ULL04-Series are ultra low loss and phase stable (with bending) RF Cable Sets. Incorporate low density e-PTFE taped cables and low VSWR connectors.

- **Proprietary MIL-C-17 conformant cable**
- **Imported SMA, N & TNC Connectors**
- Loss and VSWR are stable with flexing/bending
- Shielding Effectiveness over 90dB
- High temperature FEP jacket for harsh environment application (up to +125°C)
- Ultra Low Loss, DC~18 GHz (much lower loss than solid PTFE cables)



EQUIVALENT TO

- Semflex HP160S
- Radiall SHF5M
- Micro-Coax UFB197C

APPLICATIONS

- Radars, EW Systems where lowest loss and phase stability are important
- Interconnect within LRU's in military systems
- Test Cables for environmental & temperature chambers testing
- Harsh environments demanding lowest loss

Electrical Specifications

Impedance	50 ohms
Velocity	76 %
Shielding Effectiveness	> -90dB
Capacitance	26.7 pF/ft

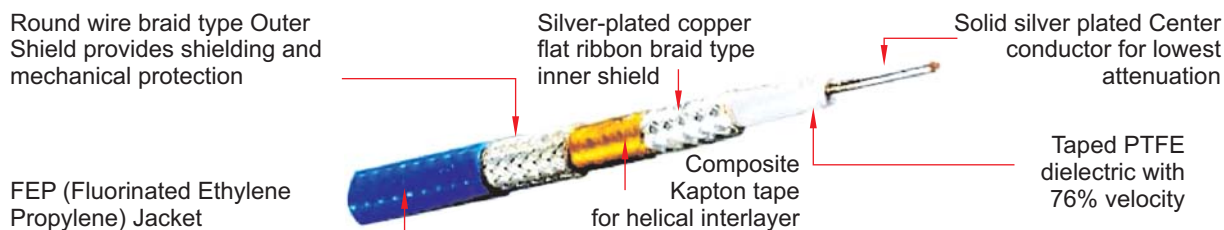
Physical and Mechanical Specifications

Dimensions	inches	mm
Jacket	< 0.180	< 4.8
Bending Radius (minimum)	0.9	23
Weight	0.054 kg/m	
Temperature Range	-55°C to +125°C	

Attenuation and Power Handling Data

Frequency GHz	Insertion Loss		Power Watts
	dB/100ft	dB/100m	
0.4	6.4	20.9	900
3	17.8	58.4	320
10	33.3	109.4	165
12	36.7	120.4	150
18	45.5	149.4	120

Imported Triple Shielded e-PTFE taped Phase Stable & Low Loss Cable Construction



Ordering Codes Description

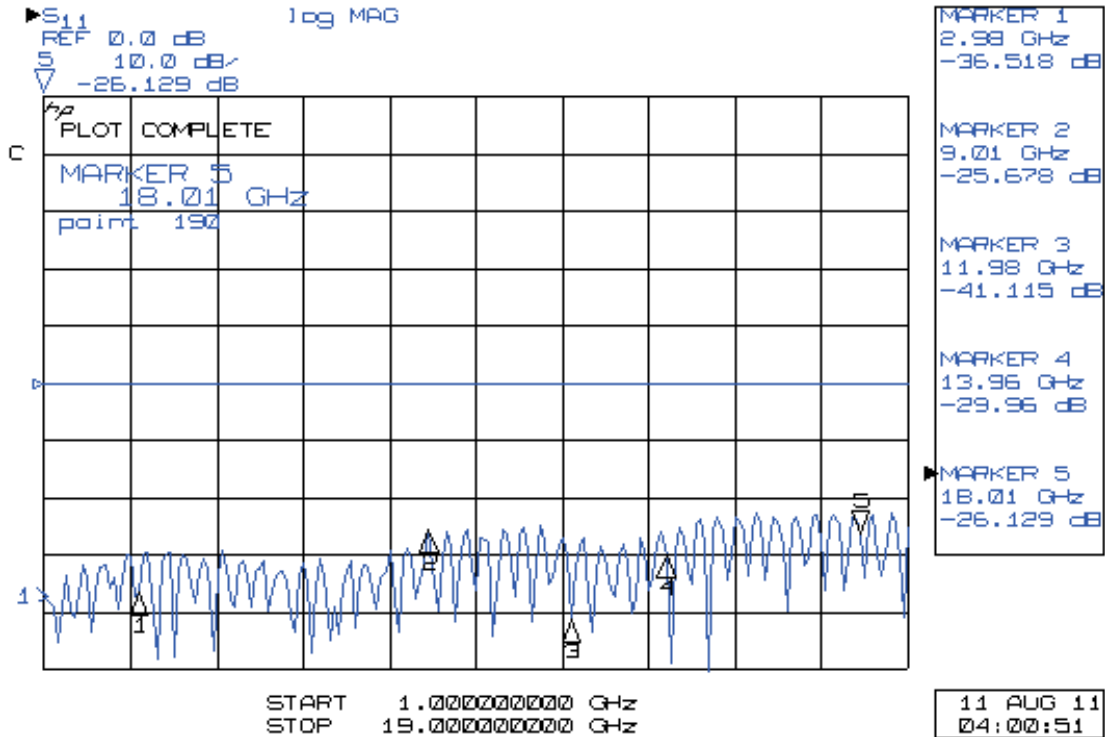
ULL042 - (Length) □ □ - (Connector 1) □ (□ / □) - (Connector 2) □ (□ / □) - □
 L L 1 2 3 1 2 3 U

LL	Length	0.5 = 0.5 ; 1 = 1.0 ; 2 = 2.0
1	Connector Series	SMA = SMA ; N = N
2	Male/Female Designator	M = Male
3	Orientation of Connector	ST = Straight
U	Unit of Length	M = Meter ; F = Feet ; I = Inch

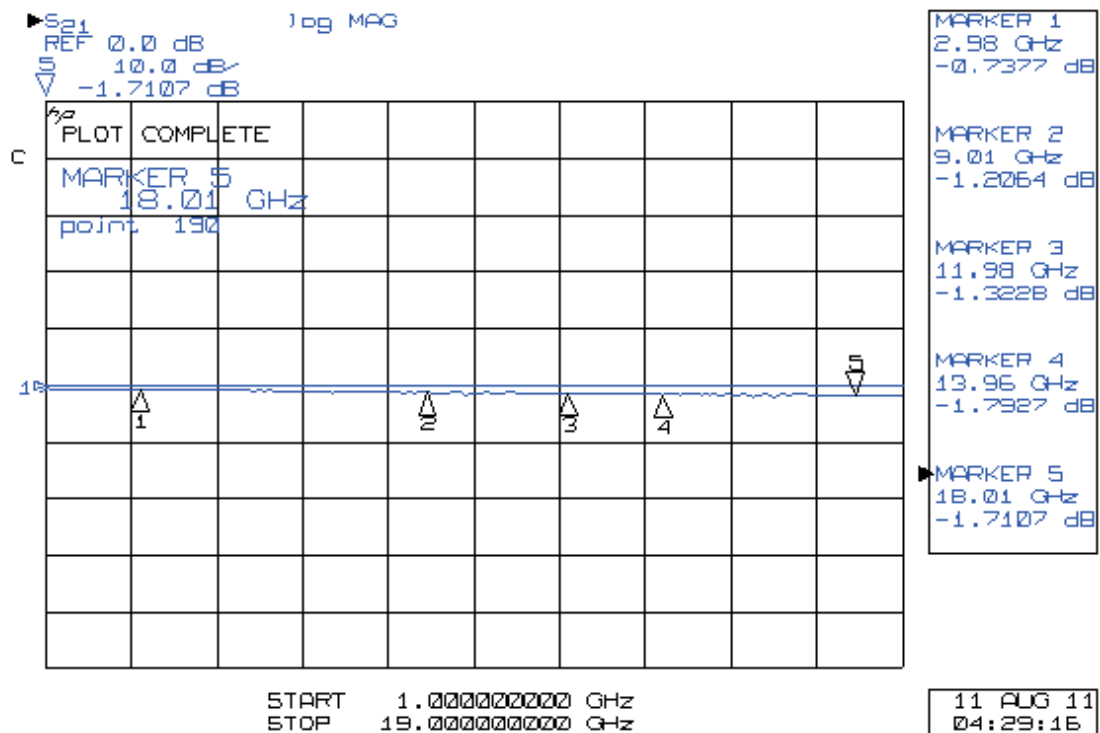
1 meter cable set with SMA (Male) on both sides = ULL04-1.0-SMA(M/ST)-SMA(M/ST)-M

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S11 Plot of 1m ULL04 Pre-connectorized cable set with SMA(M) on both sides



S21 Plot of 1m ULL04 Pre-connectorized cable set with SMA(M) on both sides



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Connectors Specifications

Specifications	SMA Connectors	N Connectors	TNC Connectors
Outer Conductor	Stainless Steel, Passivated/Gold plated	Copper alloy	Copper alloy
Center Conductor	Brass, Gold Plated	Brass, Gold Plated	Brass, Gold Plated
Insulation	PTFE	PTFE	PTFE
Gasket	Silicone Rubber	Silicone Rubber	Silicone Rubber
Nominal Impedance	50 Ω	50 Ω	50Ω
Frequency range	DC~18 GHz	DC~11 GHz	DC~11 GHz
Mating/Unmating	500 operations	500 operations	500 operations
Vibration	As per MIL-STD-202, method 204, test condition D		
Mechanical Shock	As per MIL-STD-202, method 213, test condition I		
Thermal Shock	As per MIL-STD-202, method 107, test condition B		
Humidity	As per MIL-STD-202, method 106		
Temperature Cycle	As per MIL-STD-202, method 102A, test condition C		

Cable Set Ordering Codes

Ordering Code	Length	Insertion Loss (dB) Typical			
		0.5 GHz	2 GHz	11 GHz	18 GHz
SMA (Male) Straight - SMA (Male) Straight (DC to 18 GHz)					
ULL04-0.5-SMA(M/ST)-SMA(M/ST)-M	0.5m	0.19	0.27	0.70	0.85
ULL04-1.0-SMA(M/ST)-SMA(M/ST)-M	1m	0.41	0.63	1.42	1.75
ULL04-2.0-SMA(M/ST)-SMA(M/ST)-M	2m	0.71	1.24	2.95	3.61
ULL04-5.0-SMA(M/ST)-SMA(M/ST)-M	5m	1.64	3.31	7.41	8.80
ULL04-1.0-SMA(M/ST)-SMA(M/ST)-F	1 feet	0.14	0.21	0.42	0.51
ULL04-2.0-SMA(M/ST)-SMA(M/ST)-F	2 feet	0.24	0.31	0.79	0.95
SMA (Male) Straight - SMA (Male) Right Angle (DC to 12 GHz)					
ULL04-0.5-SMA(M/ST)-SMA(M/RA)-M	0.5m	0.20	0.28	0.78	-
ULL04-1.0-SMA(M/ST)-SMA(M/RA)-M	1m	0.41	0.64	1.44	-
ULL04-2.0-SMA(M/ST)-SMA(M/RA)-M	2m	0.72	1.25	2.96	-
ULL04-5.0-SMA(M/ST)-SMA(M/RA)-M	5m	1.70	3.45	7.42	-
ULL04-1.0-SMA(M/ST)-SMA(M/RA)-F	1 feet	0.15	0.16	0.43	-
ULL04-2.0-SMA(M/ST)-SMA(M/RA)-F	2 feet	0.25	0.33	0.80	-
SMA (Male) Right Angle - SMA (Male) Right Angle (DC~12 GHz)					
ULL04-0.5-SMA(M/RA)-SMA(M/RA)-M	0.5m	0.21	0.29	0.79	-
ULL04-1.0-SMA(M/RA)-SMA(M/RA)-M	1m	0.42	0.65	1.45	-
ULL04-2.0-SMA(M/RA)-SMA(M/RA)-M	2m	0.73	1.27	2.98	-
ULL04-5.0-SMA(M/RA)-SMA(M/RA)-M	5m	1.72	3.47	7.45	-
ULL04-1.0-SMA(M/RA)-SMA(M/RA)-F	1 feet	0.16	0.18	0.46	-
ULL04-2.0-SMA(M/RA)-SMA(M/RA)-F	2 feet	0.26	0.36	0.82	-
N (Male) Straight - N (Male) Straight (DC~11 GHz)					
ULL04-0.5-N(M/ST)-N(M/ST)-M	0.5m	0.20	0.29	0.78	-
ULL04-1.0-N(M/ST)-N(M/ST)-M	1m	0.41	0.64	1.43	-
ULL04-2.0-N(M/ST)-N(M/ST)-M	2m	0.71	1.26	2.96	-
ULL04-5.0-N(M/ST)-N(M/ST)-M	5m	1.63	3.46	7.42	-
ULL04-1.0-N(M/ST)-N(M/ST)-F	1 feet	0.15	0.15	0.43	-
ULL04-2.0-N(M/ST)-N(M/ST)-F	2 feet	0.25	0.33	0.80	-

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Specifications for Phase Stable & Low Loss Pre-Connectorized Cable Sets

Length Connector 1 Connector 2

- Should be flexible, easily routable
- Cable should conform to MIL standards MIL-C-17 and Connectors to MIL-PRF-39012

Electrical Specifications

- Impedance : 50 ohms
- Frequency : DC~18 GHz
- Velocity of Propagation : 76 %
- Shielding Effectiveness : better than -90 dB
- Power Handling : > 300 Watts Average @ 3 GHz
> 150 Watts Average @ 10 GHz
> 110 Watts Average @ 18 GHz
- Insertion Loss : < 0.20 dB/feet @ 3 GHz
< 0.38 dB/feet @ 10 GHz
< 0.50 dB/feet @ 18 GHz
- VSWR : < 1.30 (DC~11 GHz, for SMA straight connectors)
< 1.35 (11~18 GHz, for SMA straight connectors)

Physical & Mechanical Specifications

- Construction should be triple shielded e-taped type ultra low loss and electrical performance stability with time
- Center Conductor : Solid Silver Plated Copper
- Dielectric : Low Density PTFE
- Inner Shield : Silver Plated Copper Flat Ribbon Tape
- Interlayer : Metalized Foil Tape
- Outer Shield : Silver-Plated Copper Braid
- Jacket : Fluorinated Ethylene Propylene (FEP)
- Overall diameter : < 4.8 mm
- Bending Radius : < 23 mm (0.9 in)
- Temperature Range : -55°C to +125°C

Connector Specifications (SMA)

- Outer Conductor: Stainless Steel, Gold Plated
- Center Conductor: Brass, 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

Specifications N Type (DC~11 GHz)

- Outer Conductor: Copper Alloy
- Center Conductor: Brass, Gold Plated
- Insulation: PTFE
- Frequency range: DC~11 GHz
- Should meet test conditions of MIL-STD-202 for vibration, mechanical shock, thermal shock, corrosion, humidity, temperature cycling