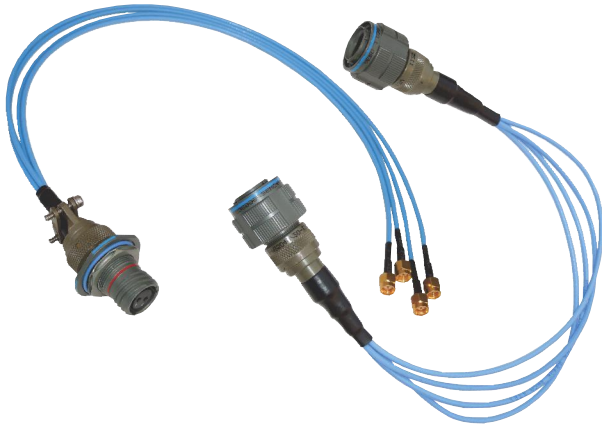


# MIL-38999 Based RF Coaxial Cable Sets, DC-18 GHz, ULL04 Series, Ultra Low Loss

Avoid Multiple Coaxial Cables • Quick Assemble/Disassemble • D38999 more rugged than SMA, N

DC-18 GHz use, Ultra Low Loss RF Cable  
MIL-38999 Connectors



Our MIL-38999 connectors based RF Cable Sets are ideal for military applications where panel space is at a premium. Instead of using a bunch of RF cables the designer can choose 1 single cable set with D38999 connectors and with multiple wire configurations. Well suited for portable radars where quick field assembly & disassembly is important.

Constructed using QPL'ed D38999 connectors from Deutsch/Aero, imported hi-frequency coaxial contacts and Ultra-Low-Loss Coaxial cable from USA.

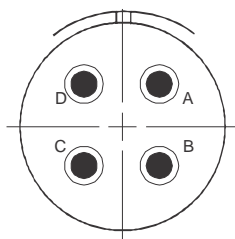
## FEATURES, MIL STD MATERIALS

- MIL-38999 Series III connectors are QPL listed from suppliers like Deutsch, Aero Inc
- MIL-39029 compliant Hi-Frequency Coaxial Inserts
- DC- 18 Ghz frequency range, ultra low loss cable
- Many combinations of channels available including 4 wire, 6 wire, 8 wire, 11 wire. Pls contact us for custom versions
- Imported ultra-low loss Hi-Frequency cable with low density PTFE dielectric
- Aluminium Shell with Olive Drab Plating

## MIL/DEFENSE APPLICATIONS

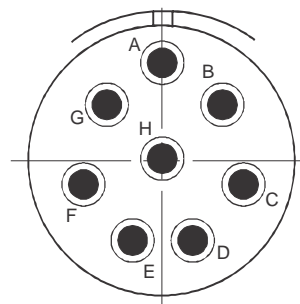
- Where panel space is at a premium. Multiple discrete RF cables can be substituted by single D38999 cable set
- Portable radars where quick field assembly & disassembly is important
- Applications where more rugged solution than SMA/N/TNC is needed

## Hi-Freq. Insert Arrangements for DC-18 Ghz, D38999 RF Cable Sets



4 RF contacts,  
Shell size 21,  
G75 Pattern

Fig 1

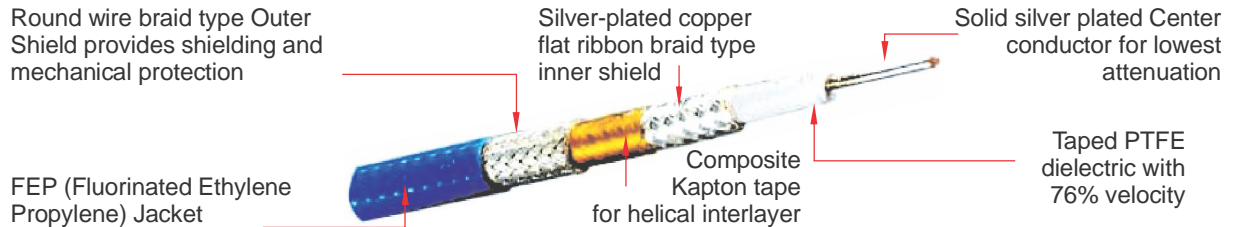


8 RF contacts,  
Shell size 25,  
J8 Pattern

Fig 2

### ULL04 Ultra-low Loss Cable Construction

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



#### 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	

#### Electrical Specifications

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

#### 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

### Ordering Codes Description

ULL04 - (Length) (Connector 1) (Connector 2)  
 □ □ - □ (□ / □ / □) - □ (□ / □ / □) - □ - □  
**L L 1 2 3 4 1 2 3 4 U W**

<b>L L</b>	Length	0.5 = 0.5 ; 1 = 1.0 ; 2 = 2.0
<b>1</b>	Connector Series	MIL38999 = D38999
<b>2</b>	Number of Channels(wires)	4 channel = 4xST ; 6 channel = 6xST
<b>3</b>	Male/Female Designator	P = Male; W = Female Wallmount; J = Female Jamnut
<b>4</b>	Insert Pattern Code	G75 = G75 ; J8 = J8
<b>U</b>	Unit of Length	M = Meter ; F = Feet ; I = Inch
<b>W</b>	Frequency Code	18 GHz = 18G ; 3 GHz = 3G ; 0.5 GHz = 0.5G

1m cable set with D38999 (Male) on both sides, 4 wire, 18GHz = ULL04-1.0-D38999(4xST/P/G75)-D38999(4xST/P/G75)-M-18G

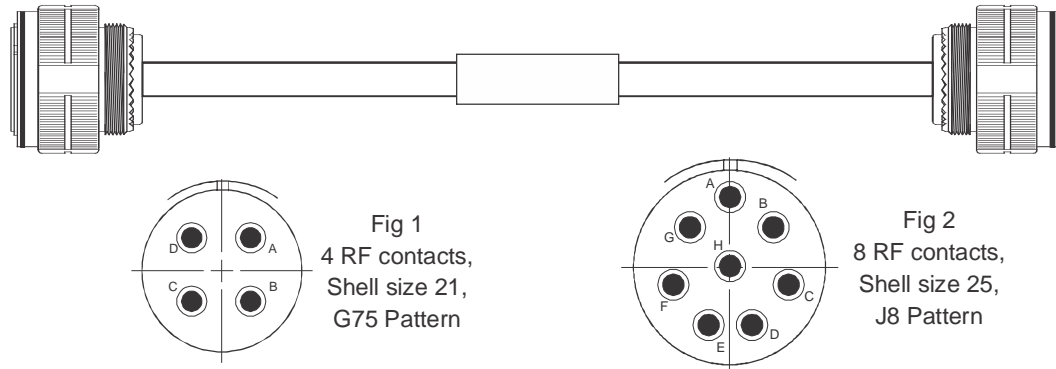
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# MIL-38999 Based RF Coaxial Cable Sets, DC-18 GHz, ULL04 Series, Ultra Low Loss

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## D38999-D38999 RF Cable Sets Ordering Codes - DC-18 GHz



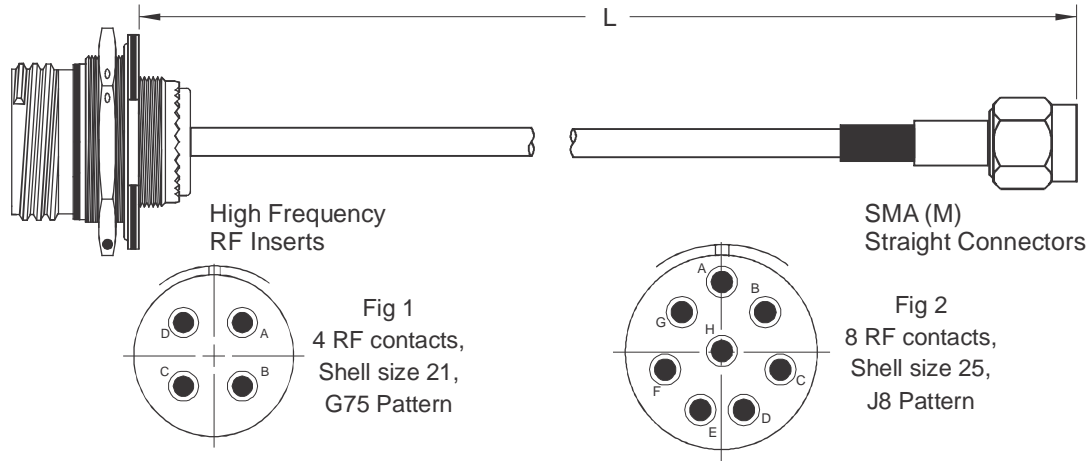
Ordering Code	Connector 1	Connector 2	Length	Insert Pattern	Insertion Loss (dB)			
					0.5 GHz	2 GHz	12 GHz	18 GHz
<b>DC-18 GHz, 2 wire</b>								
ULL04-1.0-D38999(2xST/P/G75)-D38999(2xST/P/G75)-M-18G	D38999 Plug, 2 x RF	D38999 Plug, 2 x RF	1 m	Fig 1*	0.39	0.63	1.53	1.75
ULL04-2.0-D38999(2xST/P/G75)-D38999(2xST/P/G75)-M-18G	D38999 Plug, 2 x RF	D38999 Plug, 2 x RF	2 m	Fig 1*	0.71	1.24	2.95	3.61
ULL04-5.0-D38999(2xST/P/G75)-D38999(2xST/P/G75)-M-18G	D38999 Plug, 2 x RF	D38999 Plug, 2 x RF	5 m	Fig 1*	1.64	3.31	7.41	8.80
ULL04-1.0-D38999(2xST/P/G75)-D38999(2xST/P/G75)-F-18G	D38999 Plug, 2 x RF	D38999 Plug, 2 x RF	1 feet	Fig 1*	0.14	0.21	0.42	0.51
ULL04-2.0-D38999(2xST/P/G75)-D38999(2xST/P/G75)-F-18G	D38999 Plug, 2 x RF	D38999 Plug, 2 x RF	2 feet	Fig 1*	0.24	0.31	0.79	0.95
<b>DC-18 GHz, 4 wire</b>								
ULL04-1.0-D38999(4xST/P/G75)-D38999(4xST/P/G75)-M-18G	D38999 Plug, 4 x RF	D38999 Plug, 4 x RF	1 m	Fig 1*	0.39	0.63	1.53	1.75
ULL04-2.0-D38999(4xST/P/G75)-D38999(4xST/P/G75)-M-18G	D38999 Plug, 4 x RF	D38999 Plug, 4 x RF	2 m	Fig 1*	0.71	1.24	2.95	3.61
ULL04-5.0-D38999(4xST/P/G75)-D38999(4xST/P/G75)-M-18G	D38999 Plug, 4 x RF	D38999 Plug, 4 x RF	5 m	Fig 1*	1.64	3.31	7.41	8.80
ULL04-1.0-D38999(4xST/P/G75)-D38999(4xST/P/G75)-F-18G	D38999 Plug, 4 x RF	D38999 Plug, 4 x RF	1 feet	Fig 1*	0.14	0.21	0.42	0.51
ULL04-2.0-D38999(4xST/P/G75)-D38999(4xST/P/G75)-F-18G	D38999 Plug, 4 x RF	D38999 Plug, 4 x RF	2 feet	Fig 1*	0.24	0.31	0.79	0.95
<b>DC-18 GHz, 8 wire</b>								
ULL04-1.0-D38999(8xST/P/J8)-D38999(8xST/P/J8)-M-18G	D38999 Plug, 8 x RF	D38999 Plug, 8 x RF	1 m	Fig 2*	0.39	0.63	1.53	1.75
ULL04-2.0-D38999(8xST/P/J8)-D38999(8xST/P/J8)-M-18G	D38999 Plug, 8 x RF	D38999 Plug, 8 x RF	2 m	Fig 2*	0.71	1.24	2.95	3.61
ULL04-5.0-D38999(8xST/P/J8)-D38999(8xST/P/J8)-M-18G	D38999 Plug, 8 x RF	D38999 Plug, 8 x RF	5 m	Fig 2*	1.64	3.31	7.41	8.80
ULL04-1.0-D38999(8xST/P/J8)-D38999(8xST/P/J8)-F-18G	D38999 Plug, 8 x RF	D38999 Plug, 8 x RF	1 feet	Fig 2*	0.14	0.21	0.42	0.51
ULL04-2.0-D38999(8xST/P/J8)-D38999(8xST/P/J8)-F-18G	D38999 Plug, 8 x RF	D38999 Plug, 8 x RF	2 feet	Fig 2*	0.24	0.31	0.79	0.95

\* For detailed mechanical dimensions, panel cutouts refer to standard MIL-38999 Series III connectors

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**D38999-SMA Breakout RF Cable Set Ordering Codes - DC-18 GHz**



Ordering Code	Connector 1	Connector 2	Length	Insert Pattern	Insertion Loss (dB)			
					0.5 GHz	2 GHz	11 GHz	18 GHz
<b>DC-18 GHz, 2 x SMA, Wall Mount MIL38999</b>								
ULL04-1.0-D38999(2xSTW/G75)-SMA(2xST/M)-M-18G	D38999 Wall Mount, 2 x RF	2 x SMA	1 m	Fig 1*	0.39	0.63	1.53	1.75
ULL04-2.0-D38999(2xSTW/G75)-SMA(2xST/M)-M-18G	D38999 Wall Mount, 2 x RF	2 x SMA	2 m	Fig 1*	0.71	1.24	2.95	3.61
ULL04-5.0-D38999(2xSTW/G75)-SMA(2xST/M)-M-18G	D38999 Wall Mount, 2 x RF	2 x SMA	5 m	Fig 1*	1.64	3.31	7.41	8.80
ULL04-1.0-D38999(2xSTW/G75)-SMA(2xST/M)-F-18G	D38999 Wall Mount, 2 x RF	2 x SMA	1 feet	Fig 1*	0.14	0.21	0.42	0.51
ULL04-2.0-D38999(2xSTW/G75)-SMA(2xST/M)-F-18G	D38999 Wall Mount, 2 x RF	2 x SMA	2 feet	Fig 1*	0.24	0.31	0.79	0.95
<b>DC-18 GHz, 4 x SMA, Wall Mount MIL38999</b>								
ULL04-1.0-D38999(4xSTW/G75)-SMA(4xST/M)-M-18G	D38999 Wall Mount, 4 x RF	4 x SMA	1 m	Fig 1*	0.39	0.63	1.53	1.75
ULL04-2.0-D38999(4xSTW/G75)-SMA(4xST/M)-M-18G	D38999 Wall Mount, 4 x RF	4 x SMA	2 m	Fig 1*	0.71	1.24	2.95	3.61
ULL04-5.0-D38999(4xSTW/G75)-SMA(4xST/M)-M-18G	D38999 Wall Mount, 4 x RF	4 x SMA	5 m	Fig 1*	1.64	3.31	7.41	8.80
ULL04-1.0-D38999(4xSTW/G75)-SMA(4xST/M)-F-18G	D38999 Wall Mount, 4 x RF	4 x SMA	1 feet	Fig 1*	0.14	0.21	0.42	0.51
ULL04-2.0-D38999(4xSTW/G75)-SMA(4xST/M)-F-18G	D38999 Wall Mount, 4 x RF	4 x SMA	2 feet	Fig 1*	0.24	0.31	0.79	0.95
<b>DC-18 GHz, 8 x SMA, Wall Mount MIL38999</b>								
ULL04-1.0-D38999(8xSTW/J8)-SMA(8xST/M)-M-18G	D38999 Wall Mount, 8 x RF	8 x SMA	1 m	Fig 2*	0.39	0.63	1.53	1.75
ULL04-2.0-D38999(8xSTW/J8)-SMA(8xST/M)-M-18G	D38999 Wall Mount, 8 x RF	8 x SMA	2 m	Fig 2*	0.71	1.24	2.95	3.61
ULL04-5.0-D38999(8xSTW/J8)-SMA(8xST/M)-M-18G	D38999 Wall Mount, 8 x RF	8 x SMA	5 m	Fig 2*	1.64	3.31	7.41	8.80
ULL04-1.0-D38999(8xSTW/J8)-SMA(8xST/M)-F-18G	D38999 Wall Mount, 8 x RF	8 x SMA	1 feet	Fig 2*	0.14	0.21	0.42	0.51
ULL04-2.0-D38999(8xSTW/J8)-SMA(8xST/M)-F-18G	D38999 Wall Mount, 8 x RF	8 x SMA	2 feet	Fig 2*	0.24	0.31	0.79	0.95

\* For detailed mechanical dimensions, panel cutouts refer to standard MIL-38999 Series III connectors

\* Other connectors like TNC, N, BMA etc available - substitute instead of SMA in P/N

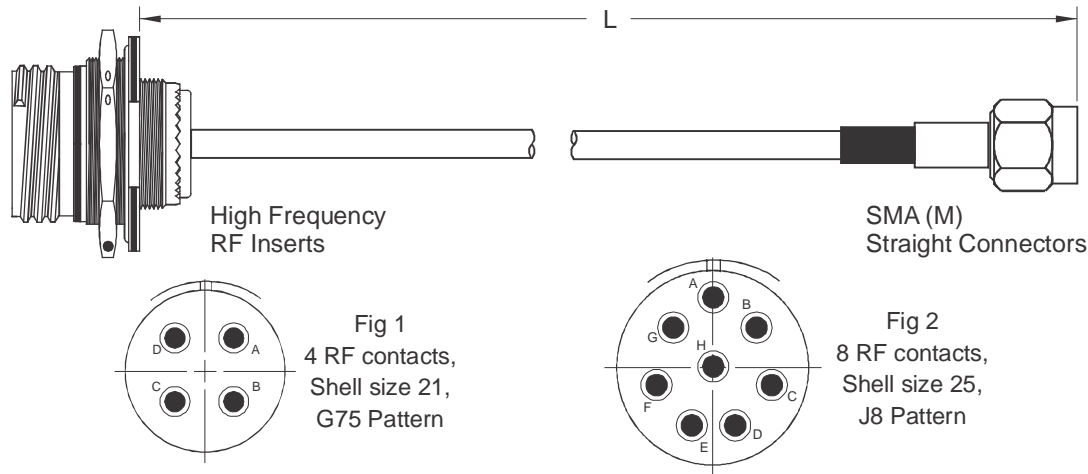
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# MIL-38999 Based RF Coaxial Cable Sets, DC-18 GHz, ULL04 Series, Ultra Low Loss

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## D38999-N Breakout RF Cable Set Ordering Codes - DC-11 GHz



Ordering Code	Connector 1	Connector 2	Length	Insert Pattern	Insertion Loss (dB)			
					0.5 GHz	2 GHz	11 GHz	18 GHz
<b>DC-11 GHz, 2 x N, Wall Mount MIL38999</b>								
ULL04-1.0-D38999(2xST/W/G75)-N(2xST/M)-M-11G	D38999 Wall Mount, 2 x RF	2 x N	1 m	Fig 1*	0.39	0.63	1.53	-
ULL04-2.0-D38999(2xST/W/G75)-N(2xST/M)-M-11G	D38999 Wall Mount, 2 x RF	2 x N	2 m	Fig 1*	0.71	1.24	2.95	-
ULL04-5.0-D38999(2xST/W/G75)-N(2xST/M)-M-11G	D38999 Wall Mount, 2 x RF	2 x N	5 m	Fig 1*	1.64	3.31	7.41	-
ULL04-1.0-D38999(2xST/W/G75)-N(2xST/M)-F-11G	D38999 Wall Mount, 2 x RF	2 x N	1 feet	Fig 1*	0.14	0.21	0.42	-
ULL04-2.0-D38999(2xST/W/G75)-N(2xST/M)-F-11G	D38999 Wall Mount, 2 x RF	2 x N	2 feet	Fig 1*	0.24	0.31	0.79	-
<b>DC-11 GHz, 4 x N, Wall Mount MIL38999</b>								
ULL04-1.0-D38999(4xST/W/G75)-N(4xST/M)-M-11G	D38999 Wall Mount, 4 x RF	4 x N	1 m	Fig 1*	0.39	0.63	1.53	-
ULL04-2.0-D38999(4xST/W/G75)-N(4xST/M)-M-11G	D38999 Wall Mount, 4 x RF	4 x N	2 m	Fig 1*	0.71	1.24	2.95	-
ULL04-5.0-D38999(4xST/W/G75)-N(4xST/M)-M-11G	D38999 Wall Mount, 4 x RF	4 x N	5 m	Fig 1*	1.64	3.31	7.41	-
ULL04-1.0-D38999(4xST/W/G75)-N(4xST/M)-F-11G	D38999 Wall Mount, 4 x RF	4 x N	1 feet	Fig 1*	0.14	0.21	0.42	-
ULL04-2.0-D38999(4xST/W/G75)-N(4xST/M)-F-11G	D38999 Wall Mount, 4 x RF	4 x N	2 feet	Fig 1*	0.24	0.31	0.79	-
<b>DC-11 GHz, 8 x N, Wall Mount MIL38999</b>								
ULL04-1.0-D38999(8xST/W/J8)-N(8xST/M)-M-11G	D38999 Wall Mount, 8 x RF	8 x N	1 m	Fig 2*	0.39	0.63	1.53	-
ULL04-2.0-D38999(8xST/W/J8)-N(8xST/M)-M-11G	D38999 Wall Mount, 8 x RF	8 x N	2 m	Fig 2*	0.71	1.24	2.95	-
ULL04-5.0-D38999(8xST/W/J8)-N(8xST/M)-M-11G	D38999 Wall Mount, 8 x RF	8 x N	5 m	Fig 2*	1.64	3.31	7.41	-
ULL04-1.0-D38999(8xST/W/J8)-N(8xST/M)-F-11G	D38999 Wall Mount, 8 x RF	8 x N	1 feet	Fig 2*	0.14	0.21	0.42	-
ULL04-2.0-D38999(8xST/W/J8)-N(8xST/M)-F-11G	D38999 Wall Mount, 8 x RF	8 x N	2 feet	Fig 2*	0.24	0.31	0.79	-

\* For detailed mechanical dimensions, panel cutouts refer to standard MIL-38999 Series III connectors

\* Other connectors like TNC, SMA, BMA etc available - substitute instead of N in P/N

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## Specifications for D38999-D38999 RF Coaxial Cable Sets

**Length                      Connector 1                      Connector 2**

- Should be flexible, easily routable
- Cable conforms to MIL standards MIL-C-17 and connectors to MIL-38999 Series III

### 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  
50 Watts Average @ 10 GHz  
10 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 : < 1.45 (DC~18 GHz)

### Physical & Mechanical Specifications

- Construction : 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

### Specifications of D38999 Series III series connectors

- Connectors : MIL-38999 Series III, QPL listed
- Connector make : Reputed make like Deustch, Aero Inc etc
- Shell Material : Aluminium Alloy
- Shell Plating : Olive drab cadmium
- Insulator : Thermoplastic or thermoset
- Endurance : 500 mating / unmating operations
- Shock : 300G for 3 ms
- Vibration : 60G sine, 44G random
- Temperature Range : -65 to +200°C
- Insulation Resistance : >5000 MΩ (at 500Vdc)

## Specifications for D38999-SMA Breakout RF Coaxial Cable Sets

Length            Connector 1            Connector 2

- Should be flexible, easily routable
- Cable conforms to MIL standards MIL-C-17 and connectors to MIL-38999 Series III

### 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  
50 Watts Average @ 10 GHz  
10 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 : < 1.45 (DC~18 GHz, for SMA straight connectors)
- VSWR : < 1.40 (DC~11 GHz, for N/TNC straight connectors)

### Physical & Mechanical Specifications

- Construction : 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, N, TNC)

- Outer Conductor: Brass/Stainless Steel, Gold plated
- Center Conductor: Brass, Gold Plated
- Insulation: PTFE
- Frequency range: DC~18 GHz for SMA straight, DC~11 GHz for SMA right angle
- Frequency range: DC~11 GHz for N and TNC straight
- Meet test conditions of MIL-STD-202 for vibration, mechanical shock, corrosion, humidity, temperature cycling

### Specifications of D38999 Series III series connectors

- Connectors : MIL-38999 Series III, QPL listed
- Connector make : Reputed make like Deutsch, Aero Inc etc
- Shell Material : Aluminium Alloy
- Shell Plating : Olive drab cadmium
- Insulator : Thermoplastic or thermoset
- Endurance : 500 mating / unmating operations
- Shock : 300G for 3 ms
- Vibration : 60G sine, 44G random
- Temperature Range : -65 to +200°C
- Insulation Resistance : >5000 MΩ (at 500Vdc)