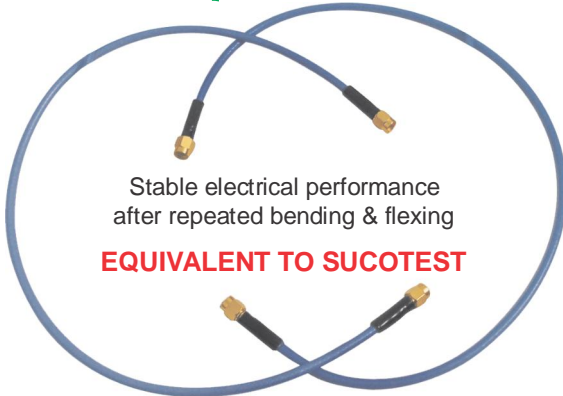
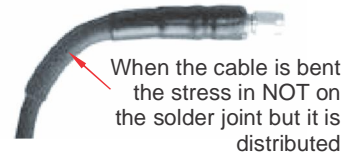


- VSWR is low due to the flat ribbon based construction.
- VSWR and attenuation are stable with aging and flexures.

Unique solution for Test Applications



Rugged Strain Relief



DuraTest-Series Pre-Connectorized Cable Sets are intended for daily use in the test labs and in automated testings. Feature excellent phase stability, low insertion loss and high flexure usage without loss of properties. Uses Triple Shielded e-PTFE taped cable and precision SMA or N connectors.

APPLICATIONS

- OEM test cables replacement
- Test cable for environmental and temperature test chambers
- R&D Labs
- Automated testing

TECHNICAL PERFORMANCE

- Strain relief design avoids breakage at connector/cable joint
- Stable IL, VSWR & phase even after repeated flex cycles
 - Phase stable with temperature
- Connectors: Precision & low VSWR SMA or N
- VSWR: <1.38:1@18GHz (for SMA(M) straight on both sides)

Physical & Mechanical Specifications

| Parameters | Specifications |
|-----------------------|----------------|
| Jacket | < 4.8 mm |
| Bending Radius (min.) | 23 mm |

| Parameters | Specifications |
|-------------------|-----------------|
| Weight | 0.054 kg/m |
| Temperature Range | -55°C to +125°C |

Electrical Specifications

| Parameters | Specifications |
|-------------------------|--------------------|
| Impedance | 50 ohms |
| Velocity of Prop. | 76 % |
| Shielding Effectiveness | better than -90 dB |
| Capacitance | 26.7 pF/ft |
| Frequency Range | DC~18 GHz |

Attenuation & Power Handling Vs Frequency

| Frequency (GHz) | Insertion Loss | | Power Watts |
|-----------------|----------------|---------|-------------|
| | dB/100ft | dB/100m | |
| 0.4 | 7.1 | 23.3 | 910 |
| 3 | 19.1 | 62.6 | 310 |
| 10 | 36.2 | 118.7 | 160 |
| 12 | 39.0 | 128.2 | 130 |
| 18 | 49.4 | 162.1 | 120 |

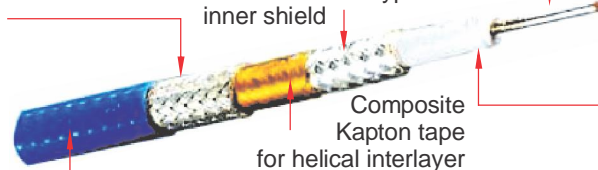
Triple Shielded e-PTFE taped Cable provides Phase & VSWR stability with bending

Round wire braid type Outer Shield provides shielding and mechanical protection

Silver-plated copper flat ribbon braid type inner shield

Solid silver plated Center conductor for lowest attenuation

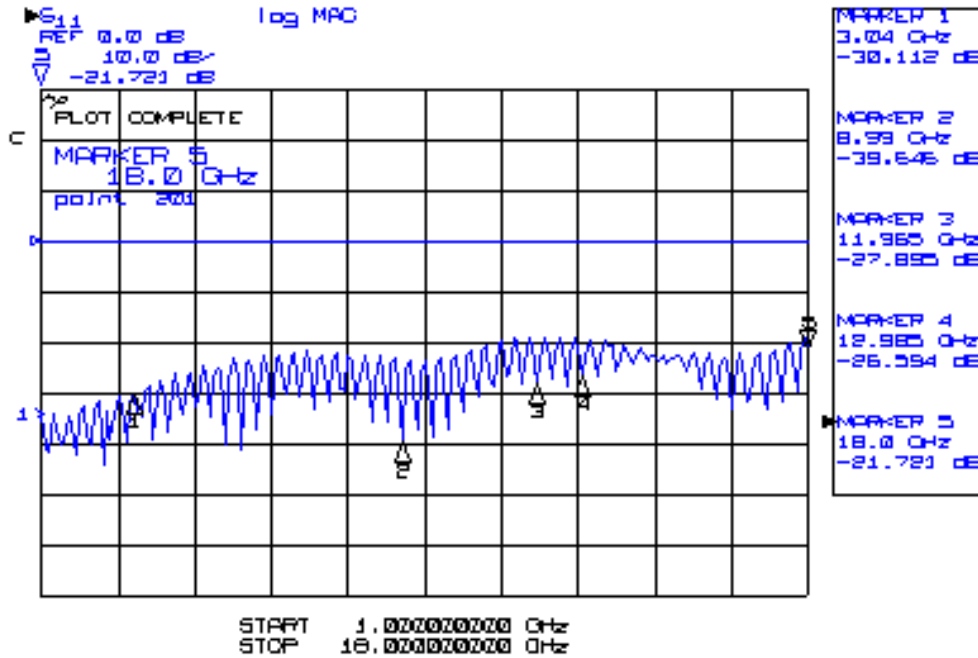
FEP (Fluorinated Ethylene Propylene) Jacket



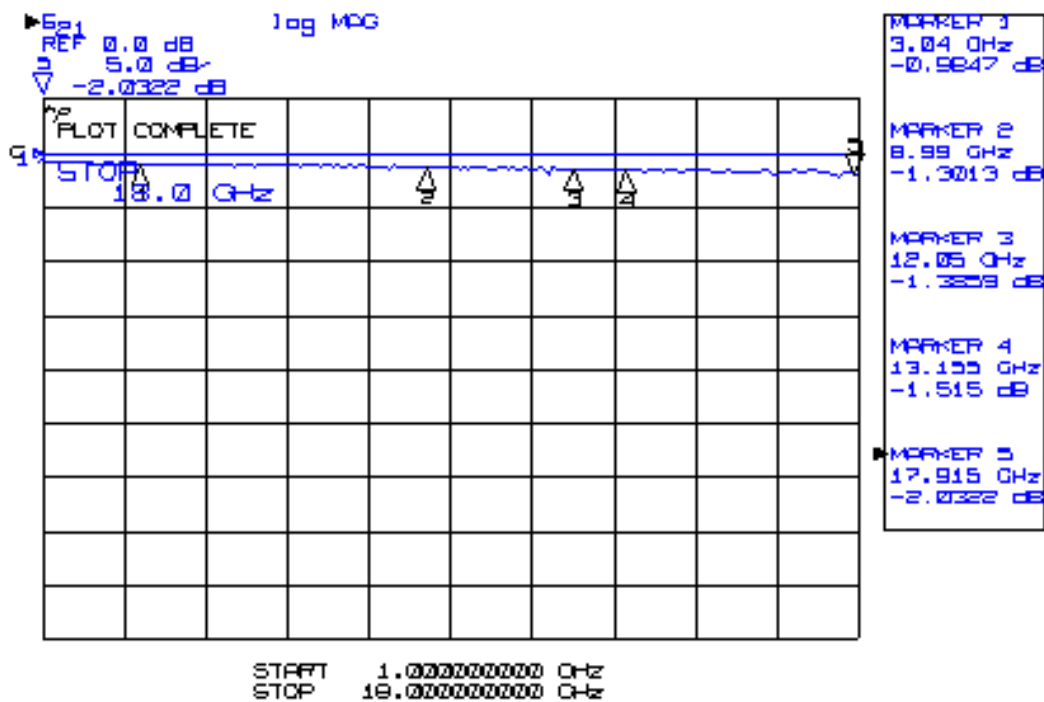
Taped PTFE dielectric with 76% velocity

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



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



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Connector Specifications

| Specifications | SMA Connectors | N Connectors | TNC Connectors |
|-------------------|---|---------------------|---------------------|
| Outer Conductor | Stainless Steel, Passivated or 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 | 50 Ω |
| Frequency range | DC~18 GHz | DC~11 GHz | DC~11 GHz |
| Mating/Unmating | 500 operations min. | 500 operations min. | 500 operations min. |
| 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 | | |
| Corrosion | As per MIL-STD-202, method 101, test condition B | | |
| Humidity | As per MIL-STD-202, method 106 | | |
| Temperature Cycle | As per MIL-STD-202, method 102A, test condition C | | |

Ordering Codes Description

DuraTest - $\square \square$ (Length) - $\square (\square / \square)$ (Connector 1) - $\square (\square / \square)$ (Connector 2) - \square
L L - **1 2 3** - **1 2 3 U**

| | | |
|------------|--------------------------|----------------------------------|
| L L | 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 ; RA = Right Angle |
| U | Unit of Length | M = Meter ; F = Feet ; I = Inch |

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

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) | | | | | |
| DuraTest-0.5-SMA(M/ST)-SMA(M/ST)-M | 0.5m | 0.25 | 0.49 | 1.19 | 1.50 |
| DuraTest-1.0-SMA(M/ST)-SMA(M/ST)-M | 1m | 0.41 | 0.80 | 1.98 | 2.52 |
| DuraTest-2.0-SMA(M/ST)-SMA(M/ST)-M | 2m | 0.71 | 1.43 | 3.61 | 4.55 |
| DuraTest-3.0-SMA(M/ST)-SMA(M/ST)-M | 3m | 1.04 | 2.06 | 5.23 | 6.59 |
| DuraTest-5.0-SMA(M/ST)-SMA(M/ST)-M | 5m | 1.64 | 3.31 | 8.50 | 10.66 |
| DuraTest-1.0-SMA(M/ST)-SMA(M/ST)-F | 1feet | 0.19 | 0.36 | 0.85 | 1.11 |
| DuraTest-2.0-SMA(M/ST)-SMA(M/ST)-F | 2 feet | 0.27 | 0.55 | 1.34 | 1.74 |

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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) | | | | | |
| DuraTest-0.5-SMA(M/ST)-SMA(M/ST)-M | 0.5m | 0.25 | 0.49 | 1.18 | 1.50 |
| DuraTest-1.0-SMA(M/ST)-SMA(M/ST)-M | 1m | 0.41 | 0.81 | 1.98 | 2.52 |
| DuraTest-2.0-SMA(M/ST)-SMA(M/ST)-M | 2m | 0.72 | 1.44 | 3.62 | 4.55 |
| DuraTest-3.0-SMA(M/ST)-SMA(M/ST)-M | 3m | 1.03 | 2.08 | 5.24 | 6.59 |
| DuraTest-5.0-SMA(M/ST)-SMA(M/ST)-M | 5m | 1.65 | 3.32 | 8.50 | 10.67 |
| DuraTest-1.0-SMA(M/ST)-SMA(M/ST)-F | 1feet | 0.21 | 0.37 | 0.85 | 1.12 |
| DuraTest-2.0-SMA(M/ST)-SMA(M/ST)-F | 2 feet | 0.28 | 0.56 | 1.35 | 1.75 |
| SMA (Male) Straight - SMA (Male) Right Angle (DC to 11 GHz) | | | | | |
| DuraTest-0.5-SMA(M/ST)-SMA(M/RA)-M | 0.5m | 0.26 | 0.52 | 1.24 | - |
| DuraTest-1.0-SMA(M/ST)-SMA(M/RA)-M | 1m | 0.43 | 0.84 | 2.08 | - |
| DuraTest-2.0-SMA(M/ST)-SMA(M/RA)-M | 2m | 0.75 | 1.50 | 3.80 | - |
| DuraTest-3.0-SMA(M/ST)-SMA(M/RA)-M | 3m | 1.07 | 2.15 | 5.50 | - |
| DuraTest-5.0-SMA(M/ST)-SMA(M/RA)-M | 5m | 1.72 | 3.47 | 8.93 | - |
| DuraTest-1.0-SMA(M/ST)-SMA(M/RA)-F | 1feet | 0.22 | 0.39 | 0.90 | - |
| DuraTest-2.0-SMA(M/ST)-SMA(M/RA)-F | 2 feet | 0.30 | 0.59 | 1.43 | - |
| SMA (Male) Right Angle - SMA (Male) Right Angle (DC to 11 GHz) | | | | | |
| DuraTest-0.5-SMA(M/RA)-SMA(M/RA)-M | 0.5m | 0.28 | 0.54 | 1.30 | - |
| DuraTest-1.0-SMA(M/RA)-SMA(M/RA)-M | 1m | 0.45 | 0.88 | 2.19 | - |
| DuraTest-2.0-SMA(M/RA)-SMA(M/RA)-M | 2m | 0.78 | 1.55 | 3.98 | - |
| DuraTest-3.0-SMA(M/RA)-SMA(M/RA)-M | 3m | 1.12 | 2.27 | 5.78 | - |
| DuraTest-5.0-SMA(M/RA)-SMA(M/RA)-M | 5m | 1.81 | 3.65 | 9.37 | - |
| DuraTest-1.0-SMA(M/RA)-SMA(M/RA)-F | 1feet | 0.24 | 0.40 | 0.94 | - |
| DuraTest-2.0-SMA(M/RA)-SMA(M/RA)-F | 2 feet | 0.32 | 0.61 | 1.49 | - |
| N (Male) Straight - N (Male) Straight (DC to 11 GHz) | | | | | |
| DuraTest-0.5-N(M/ST)-N(M/ST)-M | 0.5m | 0.30 | 0.52 | 1.24 | - |
| DuraTest-1.0-N(M/ST)-N(M/ST)-M | 1m | 0.47 | 0.85 | 2.09 | - |
| DuraTest-2.0-N(M/ST)-N(M/ST)-M | 2m | 0.75 | 1.51 | 3.80 | - |
| DuraTest-3.0-N(M/ST)-N(M/ST)-M | 3m | 1.08 | 2.17 | 5.50 | - |
| DuraTest-5.0-N(M/ST)-N(M/ST)-M | 5m | 1.73 | 3.48 | 8.94 | - |
| DuraTest-1.0-N(M/ST)-N(M/ST)-F | 1feet | 0.22 | 0.39 | 0.90 | - |
| DuraTest-2.0-N(M/ST)-N(M/ST)-F | 2 feet | 0.30 | 0.59 | 1.42 | - |
| TNC (Male) Straight - TNC(Male) Straight (DC to 11 GHz) | | | | | |
| DuraTest-0.5-N(M/ST)-N(M/ST)-M | 0.5m | 0.26 | 0.53 | 1.23 | - |
| DuraTest-1.0-N(M/ST)-N(M/ST)-M | 1m | 0.43 | 0.87 | 2.08 | - |
| DuraTest-2.0-N(M/ST)-N(M/ST)-M | 2m | 0.76 | 1.52 | 3.79 | - |
| DuraTest-3.0-N(M/ST)-N(M/ST)-M | 3m | 1.09 | 2.18 | 5.50 | - |
| DuraTest-5.0-N(M/ST)-N(M/ST)-M | 5m | 1.75 | 3.49 | 8.93 | - |
| DuraTest-1.0-N(M/ST)-N(M/ST)-F | 1feet | 0.23 | 0.40 | 0.89 | - |
| DuraTest-2.0-N(M/ST)-N(M/ST)-F | 2 feet | 0.31 | 0.61 | 1.42 | - |

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Specifications for Phase & VSWR stable Pre-Connectorized Test Cable Sets , DC~18 GHz

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
- 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 : < 1.30 (DC~11 GHz, for SMA straight connectors)
< 1.35 (11~18 GHz, for SMA straight connectors)

Physical & Mechanical Specifications

- Construction should be triple shielded expanded PTFE taped for Phase & VSWR stability against bending
- 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 inch)
- 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

Specifications TNC 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