TRUcore™ 300 Series

TRUcore™ 300 Series cable assemblies offer a new level of RF and microwave performance combined with superior mechanical and environmental durability. TRUcore™ assemblies are optimized for 18 GHz broadband electrical performance, but also provide designers with a mechanically durable construction that will not degrade under real-life torque, vibration, crush or kinking forces that may be critical in your application. TRUcore™ provides a flexible coax solution without the need for supplemental armor or jacketing to protect the controlled density core of the cable.

TRUcore™ 300 Series cable assemblies utilize an innovative core design that provides excellent phase stability over temperature and offers greater than two times the crush and torsional resistance of typical military specifications even while remaining under load conditions. Our unique TRUtie™ cable-connector attachment technology has been designed to eliminate the cable junction as a point of mechanical stress failure, exceeding typical military specifications.

In addition to the broad range of standard configurations in this series, TRU can also provide specific engineered solutions for your challenging applications. Our experienced Applications Engineering team is available to personally work with your design team to answer all your technical questions.

Visit our website to find additional support and product information:

trucorporation.com

**Typical Insertion Loss**

<table>
<thead>
<tr>
<th>Frequency (GHz)</th>
<th>Attenuation (dB/300 ft, max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>2.89</td>
</tr>
<tr>
<td>1</td>
<td>5.60</td>
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<tr>
<td>3</td>
<td>10.13</td>
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<tr>
<td>6</td>
<td>14.92</td>
</tr>
<tr>
<td>12</td>
<td>22.30</td>
</tr>
<tr>
<td>18</td>
<td>26.44</td>
</tr>
</tbody>
</table>

**Phase vs. Frequency**

- Enhanced torque and crush resistance
- 1.20:1 VSWR typical
- Stainless steel connectors
- Slotted N, ATNC interfaces
- Environmentally sealed
- Ideal for ground-based, sea and airborne platforms
### TRUcore™ 300 Specifications

#### Requirement | Detail
--- | ---
**Electrical** |  
Operating Frequency | 18.0 GHz max.
Impedance | 50 Ohms nominal
Velocity of Propagation | 78% nominal
VSWR | 1.35:1 max. (0.20:1 typical), see graph
Attenuation | 0.28 dB/ft + 0.35 @ 18 GHz, see graph for typical performance
Shielding Effectiveness | > -90 dB

#### Mechanical

| Requirement | Detail |
--- | ---
Cable/Connector Retention | Exceeds MIL-T-81490 and MIL-C-87104
Torque Resistance | Exceeds MIL-T-81490 and MIL-C-87104 performance requirements, even while remaining under concentrated load conditions
Crush Resistance | >2x MIL-T-81490 and MIL-C-87104 performance requirements, even while remaining under concentrated load conditions
Phase vs. Flexure | See graph
Flexure Life | 100,000 cycles minimum per MIL-C-87014
Minimum Bend Radius | 1.50 inch (38.1 mm) nominal
Cable Outer Diameter | 0.30 inch (7.6 mm) nominal
Mating Torque | SMA: 9 in-lbs. (0.312 hex)
Type N: 23 in-lbs. (0.750 hex)
ATNC: 23 in-lbs. (0.562 hex)
Mating Durability | 500 cycles minimum
Cable Materials | Silver plated, copper center conductor
Expanded, PTFE dielectric
Silver plated, copper shield layers
Extruded FEP Jacket
Connector Materials | Passivated, stainless steel outer bodies
Gold plated, beryllium copper spring fingers, brass contacts
PTFE Insulators
Gaskets/O-rings: silicone, fluoroelastomer

#### Environmental

| Requirement | Detail |
--- | ---
Temperature | -65 to +200°C
Moisture Resistance | MIL-STD-202, Method 106G
Salt Atmosphere (Corrosion) | MIL-STD-202, Method 106E
Phase vs Temperature | <1,500 PPM, see graph

### TRUcore™ 300 Series

#### Specifying TRUcore™ 300 Cable Assemblies

TRUcore™ cable assemblies are available in custom lengths, configurations, or with alternate connector interfaces to meet your specific application requirements. Contact your local sales representative or distribution sales office to discuss your requirement or request a quote.

#### Standard Connector Options

TRUcore™ 300 Series cable assemblies are available in three standard connector interface configurations: SMA, type N and ATNC. Each are designed specifically for use with TRUcore™ cable to optimize 18 GHz electrical performance and ensure high levels of mechanical and environmental durability. Each connector features passivated stainless steel bodies for long life and are environmentally sealed when mated. Type N and ATNC connectors feature slotted spring finger interfaces and tie wire holes for use in applications where vibration may be present. Our unique TRUtie™ clamp method for cable-connector attachment provides best in class retention and exceeds all reference military specifications. Custom connector configurations are also available to meet your application requirement.