Cable Assemblies
**CABLE ASSEMBLY CAPABILITIES**

**Industry-Standard MIL-DTL-17 Flexible Cable Assemblies**
SV Microwave supplies a full range of general-purpose cable assemblies using MIL-DTL-17 type cable. These cost-effective, high-quality assemblies are custom built using exacting manufacturing processes. Depending on the customer requirement, both standard and QPL connectors are available.

**Extended Frequency Flexible Cable Assemblies**
SV Microwave produces a series of high-frequency coaxial cable assemblies for general interconnect applications. These cable assemblies can feature either improved versions of MIL-DTL-17 cables or a variety of custom cables working at higher infrequency than can be achieved by standard MIL-DTL-17 cable. Many of the cables also offer improved performance for shielding and attenuation.

**Formable Cable Assemblies**
Serving as reliable replacements for semi-rigid assemblies, SV Microwave offers a series of formable coaxial cable assemblies. All formable cable assemblies use tin-filled braided cable and standard semi-rigid connectors for a cost-effective solution to custom-bent assemblies. Suitable for most interconnect applications, the cable can be easily formed without specialized tools or custom drawings.

**Semi-Rigid Cable Assemblies**
SV Microwave utilizes the highest quality MIL-standard and custom semi-rigid cables and connectors for their semi-rigid coaxial cable assemblies built to customer specifications. Cable is formed using specialized tooling or SV Microwave’s CNC bending equipment. These high-precision cable assemblies are well suited where space is limited and tight bend radius is required.
### Features:
- Industry-standard cable types
- Various standard coaxial connectors
- Multiple connector attachment options
- RG cable sizes ranging from approx. .072 to .500 inch (1.8 to 12.7 mm) diameter
- Economical RF interconnect solutions

### Applications:
- OEM market
- Between equipment interconnect
- Internal interconnect
- Wireless and GPS
- Control and command

#### Typical Cable Types

<table>
<thead>
<tr>
<th>RG Number</th>
<th>MIL-DTL-17 Number</th>
<th>O.D. Diameter (Inches)</th>
<th>Shields</th>
<th>Frequency (GHz Max.)</th>
<th>Jacket Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG178</td>
<td>M17/93-RG178</td>
<td>0.072 (1.8)</td>
<td>1</td>
<td>3</td>
<td>FEP</td>
</tr>
<tr>
<td>RG316</td>
<td>M17/113-RG316</td>
<td>0.102 (2.6)</td>
<td>1</td>
<td>3</td>
<td>FEP</td>
</tr>
<tr>
<td>RD316</td>
<td>M17/152-00001</td>
<td>0.114 (2.9)</td>
<td>2</td>
<td>12.4</td>
<td>FEP</td>
</tr>
<tr>
<td>RG142B</td>
<td>M17/60-RG142</td>
<td>0.195 (5.0)</td>
<td>2</td>
<td>12.4</td>
<td>FEP</td>
</tr>
<tr>
<td>RG223</td>
<td>M17-84-RG223</td>
<td>0.211 (5.4)</td>
<td>2</td>
<td>12.4</td>
<td>PVC</td>
</tr>
<tr>
<td>RG58</td>
<td>M17/28-RG58</td>
<td>0.195 (5.0)</td>
<td>1</td>
<td>1</td>
<td>PVC</td>
</tr>
</tbody>
</table>

#### Graphs:
- **Attenuation** graph showing attenuation in dB/100ft vs. frequency (MHz)
- **CW Power** graph showing power in Watts vs. frequency (MHz)
EXTENDED FREQUENCY, FLEXIBLE CABLE ASSEMBLIES

Features:
- Extended frequency flexible cable
- Various standard coaxial connectors
- High shielding
- Low attenuation
- RG cable sizes ranging from approx. .072 to .500 inch (1.8 to 12.7 mm) diameter
- Economical microwave interconnect solutions

Applications:
- OEM market
- Between equipment interconnect
- Internal interconnect
- Wireless and GPS
- Control and command
- Radar and EW systems
- General test cables

<table>
<thead>
<tr>
<th>Typical Cable Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Type</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>SVSW405</td>
</tr>
<tr>
<td>SVDS316</td>
</tr>
<tr>
<td>SVTS316</td>
</tr>
<tr>
<td>SVSW402</td>
</tr>
<tr>
<td>SVTS142</td>
</tr>
</tbody>
</table>
FORMABLE CABLE ASSEMBLIES

Features:
• Formable high-frequency cable
• Cost-saving alternative to semi-rigid
• Bend without specialized equipment
• Various standard coaxial connectors
• High shielding
• Low attenuation
• RG cable sizes ranging from approx. .072 to .500 inch (1.8 to 12.7 mm) diameter
• Economical microwave interconnect solutions

Applications:
• OEM market
• Internal interconnect
• Control and command
• Radar and EW systems
• Semi-rigid replacements

![Formable cable assemblies](image)

### Typical Cable Types

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>O.D. Diameter Inch (mm)</th>
<th>Shield Material</th>
<th>Frequency GHz (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formable .086</td>
<td>0.086 (2.2)</td>
<td>Tin Soaked Copper Braid</td>
<td>20</td>
</tr>
<tr>
<td>Formable .141</td>
<td>0.141 (3.6)</td>
<td>Tin Soaked Copper Braid</td>
<td>20</td>
</tr>
<tr>
<td>Aluminum .086</td>
<td>0.086 (2.2)</td>
<td>Tin Plated Aluminum</td>
<td>65</td>
</tr>
<tr>
<td>Aluminum .141</td>
<td>0.141 (3.6)</td>
<td>Tin Plated Aluminum</td>
<td>35</td>
</tr>
</tbody>
</table>
**SEMI-RIGID CABLE ASSEMBLIES**

**Features:**
- Standard MIL-DTL-17 specification cable
- Various standard coaxial connectors
- High shielding
- Tight bend radius
- RG cable sizes ranging from approx. .072 to .500 inch (1.8 to 12.7 mm) diameter
- Economical microwave interconnect solutions

**Applications:**
- OEM market
- Internal interconnect
- Wireless and GPS
- Control and command
- Radar and EW systems
- High-shielding requirements
- Instrumentation

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**Attenuation**

![Attenuation Graph]

- **Frequency (GHz)**
- **Attenuation (dB/100ft)**

**Power**

![Power Graph]

- **Frequency (GHz)**
- **Power (Watts)**

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**Typical Cable Types**

<table>
<thead>
<tr>
<th>Semi-Rigid Cable</th>
<th>MIL-DTL-17 Number</th>
<th>O.D. Diameter Inches (mm)</th>
<th>Frequency GHz (Max.)</th>
<th>Jacket Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR047</td>
<td>M17/151</td>
<td>0.047 (1.2)</td>
<td>110</td>
<td>Copper/Tin Plated Copper</td>
</tr>
<tr>
<td>SR086</td>
<td>M17/133</td>
<td>0.086 (2.2)</td>
<td>80</td>
<td>Copper/Tin Plated Copper</td>
</tr>
<tr>
<td>SR141</td>
<td>M17/130</td>
<td>0.141 (3.6)</td>
<td>35</td>
<td>Copper/Tin Plated Copper</td>
</tr>
<tr>
<td>SR250</td>
<td>M17/129</td>
<td>0.250 (6.4)</td>
<td>18</td>
<td>Copper/Tin Plated Copper or Tin Plated Aluminum</td>
</tr>
</tbody>
</table>
CABLE ASSEMBLY TESTING AND QUALITY ASSURANCE

Electrical Testing
- Frequency ranges from DC to 50 GHz
- Insertion loss
- VSWR
- Phase and phase matching
- RF leakage
- Continuity
- DWV

Environmental and Mechanical Testing
- Failure analysis/DPA capabilities include:
  - XRF
  - Cross section
  - High-magnification photography
  - Solderability
- Tensile strength
- Salt fog
- Shock and vibration
- Altitude
- Industrial corrosion

Quality Assurance
- ISO 9001-2000 registered
- Quality approved to MIL-I-45208 and MIL-STD-790
- Calibration system compliant to ISO10012-2
- Operators trained in IPC-STD-001C requirement for soldering electrical and electronic assemblies

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