Semi-Rigid Cable Assemblies

INTRODUCTION

Carlisle Interconnect Technologies (CarlisleIT) has decades of experience in producing some of the highest-quality semi-rigid cable assemblies in the industry. Serving both the military and commercial markets, we have the pedigree and top-of-the-line CNC equipment to custom-build cables that meet even the most stringent application requirements. We carry a vast selection of commercial, QPL, and custom RF/Microwave connectors, along with a variety of Carlisle-manufactured cable types and sizes to suit just about any budget or application.

CarlisleIT’s Semi-Rigid Assemblies are manufactured by our trained technicians to meet J-STD-001E cable assembly standards and MIL-C-17 specifications. All assemblies are inspected per IPC-A-610 and IPC-A-620 to ensure that each one performs as specified. Our Semi-Rigid Cables offer tight physical tolerances, minimal VSWR, and high phase stability to meet your system design requirements. Phase-matched assemblies are also available upon request, and are ideal for radar and differential signal transmission applications.

FEATURES

» Custom-designed per drawings
» Excellent VSWR performance and phase stability
» Vast selection of cable and connector options
» Computerized forming equipment ensures repeatability and accuracy
» MIL and commercial-grade connectors available

CUSTOM SOLUTIONS

In addition to our standard offering, CarlisleIT is proud to offer a vast library of modified designs and customized options which may include:

» Non-standard connector options
» Additional testing
» Phase matching

Our team of on-site engineers can help develop the right solution for your application needs.
## Semi-Rigid Cable Assemblies

### Mechanical and Electrical Specifications of Popular MIL-DTL-17 Semi-Rigid Cables at Ambient Temperature

<table>
<thead>
<tr>
<th>Cable MIL-SPEC Part No.</th>
<th>Nom Frequency Range</th>
<th>Power Handling @ Max MIL-SPEC</th>
<th>Maximum Attenuation (dB/FT)</th>
<th>Jacket Material</th>
<th>Center Conductor Material</th>
<th>Minimum Inside Bend Radius (inches)</th>
<th>Connector Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>M17/151-00001</td>
<td>0.047</td>
<td>109</td>
<td>6.5</td>
<td>0.4</td>
<td>0.9</td>
<td>1.3</td>
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<tr>
<td>M17/133-RG405</td>
<td>0.085</td>
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<td>0.22</td>
<td>0.5</td>
<td>0.8</td>
<td>1.3</td>
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<tr>
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<td>0.62</td>
<td>1.22</td>
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<td>0.48</td>
<td>0.64</td>
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<tr>
<td>M17/130-RG402</td>
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<td>-</td>
<td>0.375</td>
<td>SMA, TNC, N</td>
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<td>19</td>
<td>200</td>
<td>0.08</td>
<td>0.21</td>
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</tr>
</tbody>
</table>

* = Silver Plated Copper Clad Steel  ** = Silver Plated Copper  ‡ = All Cables Have a PTFE Dielectric

### ORDERING GUIDELINES

For assemblies with the best performance, lowest cost, and shortest lead time:

1) **Select Cable Type:** Select a cable to meet the requirements of the application.

2) **Select Connectors:** Choose from the vast line of CarlisleIT connectors. Note: Smaller diameter cables pair with small connectors such as SMP, while larger diameter cables pair better with connectors such as Type N.

3) **Dimensions:** To eliminate the build-up of tolerances, drawing layouts should be in absolute XYZ format with one connector interface reference plane designated as the 0, 0, 0 point. All measurements will be made from this point.

4) **Bends:** For best performance, do not exceed the minimum inside bend radii specified for a given cable type. To allow for use of computerized forming equipment, and to mitigate tooling requirements:
   - Use the same bend radius within the same assembly.
   - Avoid radii greater than 0.5".
   - Allow a minimum of 0.150" of straight cable between bends.

5) **Markers:** Specify MIL-SPEC marker material, such as M23053/5, in the color of your choice. CarlisleIT will mark with contrasting white or black ink.

6) **Drawings:** Ensure drawings are complete with all dimensions, views, material, and tolerances, as well as any electrical requirements. If requested, CarlisleIT will generate unique part numbers for your assemblies.

*Please inquire for custom configurations.*