Global Manufacturing. Local Support.

Wherever you are, so are we. With manufacturing centers around the globe, our highly qualified team of nearly 350 engineers is up to any challenge. Our extensive worldwide manufacturing capabilities, coupled with end-to-end local project management and engineering support, allow us to design, build, test and certify your product in-house, saving you the time and hassle of managing multiple vendors.

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CARLISLE MEDICAL TECHNOLOGIES
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CarlisleIT offers a complete line of high-performance, flexible microwave cables with excellent loss characteristics, outstanding phase stability, and unsurpassed flexibility, compared to standard flexible cables—all without sacrificing mechanical integrity. CarlisleIT has greatly increased connector reliability through a unique connector attachment that withstands mechanical and thermal stresses for better than standard connectors.

Features and benefits of RF cables typically used in Test and Measurement applications are summarized in the table below:

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Customer Features and Benefits</th>
</tr>
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| Flexible Cables   | • Versatile low loss cables operating up to 70GHz  
                  | • Excellent shielding effectiveness and precision phase matching                               |
| Semi-Rig/Cable    | • Stand-formable cables with lower leakage and improved bending radius than semi-rigid types |
| Semi-Rigid Cables | • Stand-formable cables with lower leakage and improved bending radius than semi-rigid types |
| RG Cables         | • Benchmark by which all other RF cables are measured  
                  | • Highest RF shielding and lowest attenuation                                                   |
| Armor Braid       | • Excellent crush, torque and kink resistance for use in rugged environment                    |
| Twinax           | • Suitable for 0dB differential signaling  
                  | • Low loss and phase matching guaranteed by design                                              |

High-Performance Wire & Cable

CarlisleIT’s High-Performance Wire & Cable offers a complete line of high-performance, flexible microwave cables with excellent loss characteristics, outstanding phase stability, and unsurpassed flexibility, compared to standard flexible cables—all without sacrificing mechanical integrity. CarlisleIT has greatly increased connector reliability through a unique connector attachment that withstands mechanical and thermal stresses for better than standard connectors.

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| Semi-Rigid Cables | • Stand-formable cables with lower leakage and improved bending radius than semi-rigid types |
| RG Cables         | • Benchmark by which all other RF cables are measured  
                  | • Highest RF shielding and lowest attenuation                                                   |
| Armor Braid       | • Excellent crush, torque and kink resistance for use in rugged environment                    |
| Twinax           | • Suitable for 0dB differential signaling  
                  | • Low loss and phase matching guaranteed by design                                              |

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| Semi-Rigid Cables | • Stand-formable cables with lower leakage and improved bending radius than semi-rigid types |
| RG Cables         | • Benchmark by which all other RF cables are measured  
                  | • Highest RF shielding and lowest attenuation                                                   |
| Armor Braid       | • Excellent crush, torque and kink resistance for use in rugged environment                    |
| Twinax           | • Suitable for 0dB differential signaling  
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<tr>
<td>Flexible Cables</td>
<td>• Versatile low loss cables operating up to 70GHz • Excellent shielding effectiveness and precision phase matching</td>
</tr>
<tr>
<td>Semi-Flex/Conformable Cables</td>
<td>• Hand-formable cables with lower leakage and improved bending radius than semi-rigid types</td>
</tr>
<tr>
<td>Semi-Rigid Cables</td>
<td>• Highest attenuation • Thinner, higher density connections • Superior RF shielding and low-loss attenuation</td>
</tr>
<tr>
<td>SiCables</td>
<td>• Higher reliability with excellent crush, torque and kink resistance for rugged use</td>
</tr>
<tr>
<td>Features</td>
<td>• Suitable for 1000 drops differential signaling • Low loss and phase matching parameters by design</td>
</tr>
</tbody>
</table>

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Test & Measurement Products and Services

High-Performance Cable

Digital

RF Products

Probes

CarlisleIT.com
RF Products

High-Density RF Ganged Interconnects
CarlisleIT offers a wide portfolio of low loss, high frequency precision RF connectors in various configurations for design flexibility and multiple applications. The following table shows featured board mount connectors with key specifications and ordering information:

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Temperature</th>
<th>Operating Voltage</th>
<th>Body Material</th>
<th>Contact Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMB-E4F2-xL1</td>
<td>Edge Mount (Manual Solder)</td>
<td>-55° to 125°C</td>
<td>±1500V</td>
<td>Stainless Steel</td>
<td>Gold-plated BeCu</td>
</tr>
<tr>
<td>TMB-E8F2-xL1</td>
<td>Vertical Solder (Signal Pad)</td>
<td>-55° to 125°C</td>
<td>±1500V</td>
<td>Stainless Steel</td>
<td>Gold-plated BeCu</td>
</tr>
<tr>
<td>TMB-V4FS-2SM</td>
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</tr>
</tbody>
</table>

Digital Products

AltaVei® Open Pin Field Interconnect Solution
AltaVei®’s Open Pin Field Interconnect solution is designed to optimize the high-density footprint and reliability in dense, high-moisture-environmental applications. The board density of connectors is available in the following configurations, Board to Board, Board to Cable, Cable to Cable and Cable to Panel. All configurations are available in the following options: Vertical, Right Angle to Vertical and Right Angle to Right Angle.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Contact Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2GHz to 65GHz</td>
<td>High signal integrity and reliability in a long life package ensures high performance</td>
</tr>
<tr>
<td>10,000 mating cycles</td>
<td>High reliability and low cost of ownership</td>
</tr>
</tbody>
</table>

Card-Edge Connectors
Card-Edge Connectors contact system is designed for high-speed, high-density applications. Card-Edge Connectors have a smooth mating surface area, which reduces the wear and tear of contacts and increases the durability and cycle life of the contact system. They also lower insertion and withdrawal forces while supporting data rates up to 32Gbps with excellent signal integrity.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Contact Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2GHz to 65GHz</td>
<td>Excellent signal integrity and performance up to 32Gbps</td>
</tr>
</tbody>
</table>

RF Adapters
CarlisleIT’s RF Technologies offers a wide portfolio of high precision, low loss in series and inter-series RF adapters for different applications ranging from DC to 65GHz:

- Complete Family of Series and Inter-Series Adapters
- Three adapters come standard in a passivated stainless-steel body with a captive phosphor bronze Cager center conductor to ensure mating reliability
- DC-18GHz Impedance, Low VSWR and Insertion Loss for high signal integrity
- Designed for high-speed and low loss in series multipliers and inter-series adapters
- High signal integrity, low VSWR and Insertion Loss for high signal integrity
- Complete family of in-series and inter-series adapters
- These adapters come standard in a passivated stainless-steel body with a captive phosphor bronze Cager center conductor to ensure mating reliability
- DC-1GHz Impedance, Low VSWR and Insertion Loss for high signal integrity

Signal Integrity
CarlisleIT’s RF Technologies offers signal integrity services to its customers in order to optimize the complex design for best possible system performance. CST, SolidWorks and ProE are some of the tools used to simulate the customer’s printed circuit board stack up and board level simulation. Board designs are optimized for the lowest return loss, insertion loss, and cross talk. Effects of materials like trace lines, vias, traces, Rogers, and high-speed DIM, dimensions, and layout of signal lines relative to ground plane in board layer stack-up can also be seen and optimized for the frequency range of interest.

Probes
Passive Probes
CarlisleIT offers low cost high performance, compact CATIV and CATIII rated probes in US certified plastic body suitable for a variety of applications. The Passive Probe is a standard, commercial-off-the-shelf system engineered to deliver consistent, repeatable and dependable results. The Passive Probe provides an industry leading combination of high bandwidth and high voltage in a low cost, rugged, general purpose probing solution.

Digital Products

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**Digital Products**

**Altavé™ Open Pin Field Interconnect Solution**

Altavé™ family of optical open pin field high-speed interconnects (OPFi) interconnects is optimized to provide scalability and reliability in dense, high-maneuverable-rack applications. The breadth of family of connectors is available in the following configurations, Board to Board, Board to Cage, Cable to Board and Cable to Panel. All configurations are available in the following options: Vertical to Vertical, Right Angle to Vertical and Right Angle to Right Angle. *Frequencies ranging from 2 to 32 Gbps, 130 and 300 ohm signal performance and perform to IPC standards.*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Connector/Cable Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-speed</td>
<td>Supports up to 32 Gbps with 130 ohm or 300 ohm performance</td>
</tr>
<tr>
<td>High-reliability</td>
<td>Designed to handle high-speed data rates without sacrificing reliability or performance</td>
</tr>
<tr>
<td>Ease of assembly</td>
<td>Easy-to-use, efficient design for high-speed connectivity</td>
</tr>
</tbody>
</table>

**Card-Edge Connectors**

Card-Edge Connectors are an innovative card-edge connector system designed for high speed, high-density applications. Card-Edge Connectors have a smooth exit surface area, which reduces the wear out of contacts and increases the durability and cycle life of the card system. They also lower insertion and withdrawal forces while supporting data rates up to 30 Gbps with excellent signal integrity. *High-speed performance with superior signal integrity.*

**Probes**

**Passive Probes**

Carlisle offers low cost high performance, compact CAT III and CAT IV rated probes in US certified plastic body suitable for a variety of applications. The Passive Probe is a standard, commercial-off-the-shelf system engineered to deliver consistent, repeatable and dependable results. The Passive Probe provides an industry leading combination of high bandwidth and high voltage in a low-cost, rugged, general-purpose probing solution.

**Image**

Carlisle offers a wide portfolio of low loss, high frequency precision RF connectors in various configurations for design flexibility and multiple applications. The following table shows featured board mount connectors with key specifications and ordering information.

<table>
<thead>
<tr>
<th>Title</th>
<th>Pack No.</th>
<th>Description</th>
<th>Temperature</th>
<th>Operating Frequency</th>
<th>Body Style</th>
<th>Connector/Cable Options Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.85 mm</td>
<td>TMB-V4FS-2SM</td>
<td>Vertical Solder (Signal Pad)</td>
<td>5°C to 155°C</td>
<td>Up to 40 GHz</td>
<td>Edge Mount</td>
<td>Vertical Solder (Signal Pad)</td>
</tr>
<tr>
<td>1.85 mm</td>
<td>TMB-V4F2-1L1</td>
<td>Post Contact, 0.016 Pin</td>
<td>5°C to 155°C</td>
<td>Up to 40 GHz</td>
<td>Edge Mount</td>
<td>Post Contact, 0.016 Pin</td>
</tr>
</tbody>
</table>

**Card Edge Connectors**

Card Edge Connectors are a flexible, scalable design that can handle up to 10,000 mate/de-mate cycles. Carlisle's AltaVel™ family of open pin field High-Speed Digital (>25 Gbps) Interconnect is optimized to provide scalability and reliability in dense, high-maneuverable-rack applications. The AltaVel family of connectors is available in the following options: Board to Board, Board to Cage, Cable to Board and Cable to Panel. All configurations are available in the following options: Vertical to Vertical, Right Angle to Vertical and Right Angle to Right Angle. *Frequencies ranging from 2 to 32 Gbps, 130 and 300 ohm signal performance and perform to IPC standards.*

**Image**

Carlisle Interconnect Technologies offers a wide portfolio of low loss, high frequency precision RF connectors in various configurations for design flexibility and multiple applications. The following table shows featured board mount connectors with key specifications and ordering information.

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</tbody>
</table>

**RF Adapters**

Carlisle Interconnect Technologies offers a wide portfolio of high precision, low loss in series and inter-RF adapters for different applications ranging from C1 to C12. *Complete family of Series and Inter-Adapters* *Three adapters come standard in a patented stainless-steel body with a capacitor-bonded Copper center conductor to ensure maximum reliability* *25 GHz bandwidth, Low SWR and Insertion Loss for High signal integrity*
RF Products

High-Density RF Ganged Interconnects
CarlisleIT offers a wide portfolio of high-performance, low-loss, high-frequency precision RF connectors in various configurations for design flexibility and multiple applications. The following table shows featured board mount connectors with key specifications and ordering information.

Digital Products

AltaVei™ Open Pin Field Interconnect Solution
CarlisleIT’s AltaVei™ family of open pin RF interconnects (OptiDigi) interconnects is optimized to provide scalability and reliability in dense, high-speed multichip systems. The breadth of connectivity is available in the following configurations, Board to Board, Board to Cable, Cable to Cable and Cable to Panel. All configurations are available in the following interfaces: Vertical, Right Angle, Right Angle to Vertical, Right Angle to Right Angle. AltaVei is typical for multi-chip systems.

Precision Connectors
CarlisleIT offers a wide portfolio of low loss, high-frequency precision RF connectors in various configurations for design flexibility and multiple applications. The following table shows featured board mount connectors with key specifications and ordering information.

RF Adapters
CarlisleIT interconnects offers a wide portfolio of high precision, low loss in series and inter-series RF adapters for different applications ranging from C/F, 60GHz, and 85GHz. They feature a combination of high bandwidth, high density, low loss, and low cost adapters. The following table shows featured board mount connectors with key specifications and ordering information.
High-Performance Wire & Cable

CarlisleIT offers a complete line of high-performance, flexible microwave cables with excellent loss characteristics, outstanding phase stability, and unsurpassed flexibility, compared to standard flexible cables—all without sacrificing mechanical integrity. CarlisleIT has greatly increased connector reliability through a unique connector attachment that withstands mechanical and thermal stresses for better than standard connectors.

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| Semi-Flexible/Conformable Cables | • Hand-formable cables with lower leakage and improved bending radius than semi-rigid types  

| Semi-Rigid Cables       | • Highest quality cables for ultra-high RF cables are manufactured  

| Bi-Cables              | • Higher reliability with excellent crush, torque and kink resistance for rugged use  

| Features               | • Suitable for 100 ohm differential signaling  

| Low loss and phase matching parameters by design  |