

The text "5G" is rendered in a large, bold, black sans-serif font. To the right of the "G" are three curved lines of increasing size, representing a radio signal or Wi-Fi symbol. The background is a blue-toned network diagram with a world map silhouette, overlaid with various circular icons representing different technologies and services.

5G

High-Performance Interconnect
Solutions for 5G Networks and Systems

CARLISLE[®]
INTERCONNECT TECHNOLOGIES

The future of access technology continues to evolve, and working with a company focused on that future is critical to your enterprise success. Carlisle Interconnect Technologies (CarlisleIT) brings 5G processing capabilities, coupled with high-bandwidth and low-latency connectivity, to worldwide applications and markets. Our high-performance interconnect solutions offer scalability, interoperability, reliability, and flexibility.

With a rich and diverse portfolio from standard RF connectors, RF adapters, and RF cable assemblies to highly-engineered, custom interconnect solutions, CarlisleIT is your perfect partner for both high-volume and low-cost solutions, along with custom products geared toward solving unique connectivity issues seen in complex 5G applications.

Whatever your application or industry, work with CarlisleIT for your 5G and Gen-Z cable assemblies, connectors, and interconnect systems.



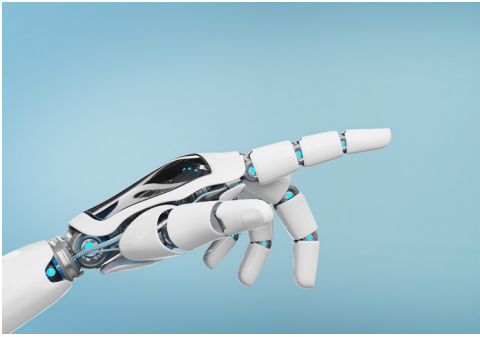
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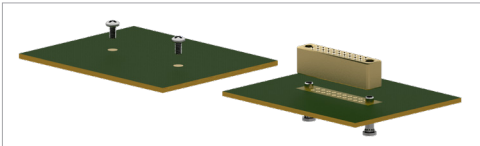
Internet of Things

Machine Learning | Smart Connected Cities | Sensor Networks Building & Home Automation

Machine learning is a critical component of systems using the Internet of Things (IoT) today. Machines that are used every day, like washers and dryers, lights, mics, speakers, and watches, are connected to each other or to a central network so that they can communicate and quickly share data for real-time decision-making. A growing application is image recognition and obstacle detection for both security and autonomous vehicle driving systems.

One of the biggest challenges in IoT applications is saving and managing the huge amounts of data needed to perform tasks effectively. The large storage systems needed for the many racks of data storage and servers are connected by copper and optical fiber links for fast data access.

We offer high-speed, low-loss coaxial cable assemblies, ganged high-frequency connectors, cable-to-board, and board-to-board high-speed card edge connectors, and open pin field connectors to facilitate this data access.



Board-to-Board Connectors

IoT Solutions from CarlisleIT

Interoperability | High-Speed | Security | Reliability

CoreHC™ Ganged Interconnect Adapters	10
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Test & Measurement Systems

**Protocol Analyzers | Network Analyzers | Spectrum Analyzers | Oscilloscopes
Time Domain Reflectometers**

High bandwidths, faster data upload and download, and ultra-low latency are some of the key parameters of 5G networks that need to be measured and verified by tools like protocol and network analyzers, VNAs, spectrum analyzers, and high-sampling-rate oscilloscopes. PCIe protocol is widely used in the industry to support chip-to-chip, board-to-board, and adapter-to-board communications. PCIe 5.0 currently runs at 16 GT/s or 32 Gbps per lane in each upstream and downstream direction, providing a total maximum bandwidth of 128 Gbps in a 16-lane configuration.

We offer high-performance Gen-Z assemblies, card edge board-side connectors, and card-edge cable assemblies to connect systems under test (SUT) with the test and measurement instruments, including protocol analyzers.

T&M Systems Solutions from CarlisleIT

Low Latency | High Bandwidth | Faster Data Rate | High Density

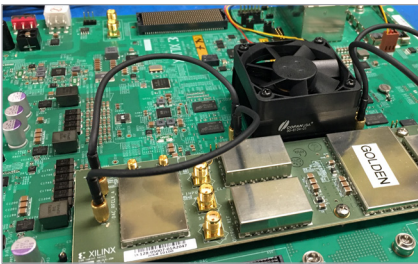
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LeCroy's SUMMIT M516 Protocol Analyzer



LeCroy's SUMMIT Z416 Protocol Analyzer



SecureThread™ board-side connectors and ultra-flexible coax cable assemblies are designed into Xilinx Zynq® RF SoC evaluation and development platforms.

Network Infrastructure

Routers, Switches & Gateway | Base Stations | Broadcast Antennas Server Racks Cloud Networks

A high-speed 5G network relies upon the seamless connectivity between indoor residential femtocell customer premises and outdoor micro- and macrocell base station units. Software-defined networks provide interoperability and scalability between various existing networks that may be using different communication protocols.

Ultra low-loss RF coaxial cable assemblies connect the base station units with radio units in 5G and LTE networks. With high flexibility and excellent signal integrity performance and reliability, CarlisleIT's coaxial cable assemblies result in long lifecycles for both indoor and outdoor operations of 5G cell equipment. Readily available high-precision RF adapters can be used to adapt and translate the RF interfaces required for seamless connectivity across the system. Our CoreHC™ high-frequency ganged interconnect adapters interconnect solution address the need for adapting the tightly spaced high-frequency traces to more usable RF channels that can be connected to VNA and BERT scopes for analysis.

Network Infrastructure Solutions from CarlisleIT

Scalability | High Bandwidth | Interoperability | Reliability

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RF/Microwave Adapters	10



Automotive & Autonomous Driving

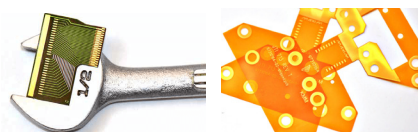
Inter-Car Communication | Data Storage Terminal | Music & Entertainment Clouds Transceiver/Antenna Connectivity | Driverless/Guided Navigation

Vehicle-to-vehicle and vehicle-to-infrastructure communication in ADS rely heavily on high bandwidth and ultra-fast 5G network infrastructures for services such as traffic and road congestion updates, high-definition streaming videos, and audio-video calling. Rear and side-view cameras, radars, GPS, and LiDARs are some of the sensors that provide real-time decision-making insight to central control systems of self-driving cars for safe and reliable driving.

Our high-quality edge launch, vertical-mount RF, and high-speed digital board-side connectors address the need to launch the interconnects to and from tightly spaced, high-density systems boards. Our microflex PCB circuits allow high-density, ultra-lightweight system integration while offering the greatest flexibility and speeds with excellent signal integrity. Our ability to offer 1 mil (25 um) trace spacings on the flex circuit and blind and buried vias as small as 25 um to interconnect multiple layers on the flex PCB, are some of the unique, unmatched capabilities in the industry. These capabilities make these products suitable for applications like smart displays, cameras, radars, and LiDAR units within ADS systems.



Low-Loss RF Coax Jumpers

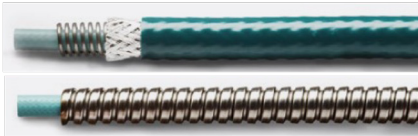


CarlisleIT Microflex PCB Circuits

Automotive & Autonomous Driving Solutions from CarlisleIT

High-Density | High-Speed | Flexibility | Ultra Low Loss

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UTIFLEX Cable Assemblies

Medical Services

**Remote Patient Monitoring | Robotic Surgery | Internet of Medical Things
VR/AR Medical Learning | Hospital Energy Efficiency & Management**

It is now possible to remotely monitor vitals like blood pressure, blood glucose, and heart rate using high-speed, in-home wireless networks connected to 5G cellular networks. Additional applications enabled by 5G networks include robotic surgeries, efficient and fast data analysis-transfer-storage, virtual reality, and augmented reality for medical learning.

Among our vast RF product line, we offer high-density flex circuits, SMPM/SSMP-based CoreGD™ and SecureThread™ interconnect solutions, which provide the high reliability and long life needed for the rugged uses related to healthcare applications. These solutions provide high data rates and adapt the signals from high-density, tightly spaced traces on the board, to any standard precision RF interface (1.85 mm, 2.4 mm, 2.92 mm, and 3.5 mm).

Medical Services Solutions from CarlisleIT

Custom & Rugged Designs | High-Reliability | Standard Approvals

UTiFLEX Cable Assemblies	7
UTiPHASE Cable Assemblies	7
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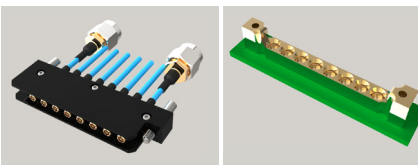
SecureThread Interconnect Solution

Military/Defense & Aerospace

**Unmanned Flying Drones | MIMO Active Antenna Systems | High-Density Radar Systems
Space Shuttle Communication Systems | Air to GND Communications | Satellite Tracking
Systems | Massive Data Storage & Transfers | Unmanned Autonomous Vehicles**

Both reliability and precision of intercept and strike missiles are improved with lower latencies and the higher speeds of data achieved with 5G networks. Unmanned flying drones are able to capture and transmit higher resolution images over wide areas using faster networks. With additional bandwidth available, it is possible to use dedicated and encrypted channels for sensitive ground-to-ground or ground-to-air communications.

We offer extremely lightweight and precisely phase-matched coaxial cable assemblies that play a vital role in satellite communication. Lightweight assembly design keeps the operational costs low, resulting in longer life. Precise phase-matching results in excellent signal integrity, providing high system reliability. Our SecureThread Interconnect System provides robust connectivity between cables and the SMPM/SSMP connectors on system boards. CoreGD™ is the ruggedized ganged SMPM/SSMP connector system used to translate tight pitch channels for easier and flexible connections. AltaVel, our open pin field interconnect system that is ruggedized with EMI shielding metal housing, addresses high-density signal connectivity issues between printed circuit boards or board to cables.



CoreGD Interconnect Solution

Military/Defense & Aerospace Solutions

Custom & Rugged Designs | High-Reliability | Standards Approvals

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Board-Side SecureThread Connectors

Solutions for 5G Applications

High Performance Cable Assemblies

Ultra-flexible, low-loss cable assemblies UTIFLEX® and highly-phase stable UTIPHASE™ family of cable assemblies offer unique features that may be suitable under variety of operating conditions, like wide operating temperatures and vibrations etc.

UTIFLEX® Cable Assemblies

UTIFLEX is a complete line of high-performance microwave cable assemblies using an ultra-low-density PTFE dielectric, resulting in excellent loss characteristics and unsurpassed flexibility without sacrificing mechanical integrity. Overall reliability is improved with connector attachments that stand mechanical and thermal stresses far better than standard connectors. The UTIFLEX family has the lowest insertion loss across the DC – 65 GHz frequency range and provides up to 25% space savings for space flight applications.

Features & Benefits

- » Low VSWR (1.25:1 to 40 GHz typ.)
- » Excellent shielding effectiveness
- » Precision phase matching
- » Superior weight savings with ARACON® outer shield
- » Space qualified per J-STD-011 standard
- » Low outgassing materials
- » Radiation resistant up to 100 Mrad
- » Low consistent losses with high flexure
- » High phase stability with flexure
- » Armor options with interlocked stainless steel or polyurethane jacket over braid

For more information, visit:

CarlisleIT.com/products/cable-assemblies-harnesses/utiflex



UTIFLEX Cable Assemblies

UTIPHASE™ Cable Assemblies

Our UTIPHASE family of microwave coaxial cable assemblies combines the ultra-flexibility and low losses of UTIFLEX cables with high phase-stability over its entire operating temperature range. These cables flatten the phase vs. temperature response curves and are designed for highly phase-critical, flexible cable applications. These cables utilize CarlisleIT's proprietary fluoropolymer dielectric, eliminating typical "knee" response in phase vs. temperature plots.

Features & Benefits

- » Improved reliability and crush resistance with sturdy concentric core
- » Minimal system phase variation with linear phase performance
- » Low insertion loss with Vp of 80%
- » Operates from DC – 70 GHz and uses standard connectors and armor
- » High shielding effectiveness of >90%
- » High bend/flex capability
- » Low VSWR (1.25:1 to 40 GHz typ.)
- » Highly phase-stable at the entire temperature range of -70 °C – 125 °C
- » CarlisleIT's thermal phase-stable proprietary dielectric, eliminating PTFE "knee"

For more information, visit:

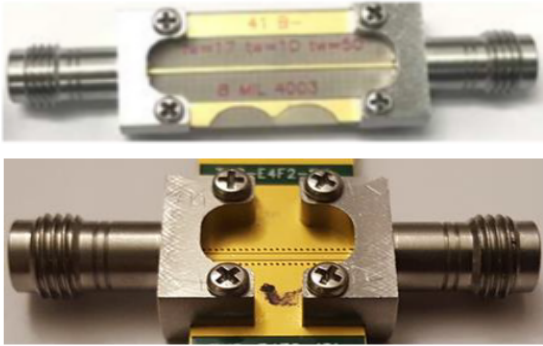
CarlisleIT.com/products/cable-assemblies-harnesses/utiphase



UTIPHASE Cable Assemblies

Solutions for 5G Applications

Precision RF Connectors



CPW and Stripline Evaluation Boards for Edge-Launch RF Connectors

We offer a wide portfolio of low-loss, high-frequency precision RF connectors in various configurations for design flexibility and multiple applications. With a cut-out optimized for the trace on the front, our vertical-mount field-replaceable connectors are suitable for co-planar waveguide designs. With excellent mechanical reliability, electrical signal integrity, and EMI shielding, these connectors can be replaced in the field for quick turnaround.

Features & Benefits

- » Solder-Mount (Vertical-mount and edge-launch options)
- » Solderless/Field-Replaceable (Vertical-mount CPW, vertical-mount stripline, edge-launch, edge-launch 30° angled, and edge-launch narrow-body options)
- » Support co-planar waveguide and stripline layouts
- » 50 Ω impedance
- » Max. frequencies ranging from 26.5 GHz – 70 GHz
- » 30° angled edge-launch connectors for high-density, tight-pitch designs, PCBs with multiple thickness profiles, and low Z-heights
- » Narrow-body edge launch connectors for high-density, tight pitch designs

Solderless Field-Replaceable Connectors

CarlisleIT offers high-precision solderless RF connectors in vertical, edge-mount, and 30° angled configurations for design and routing flexibility. Our high-performance, rugged edge-mount connectors can accommodate PCBs with multiple thickness profiles without compromising signal integrity. Current connector configurations include 1.85 mm, 2.4 mm, 2.92 mm, and 3.5 mm interfaces supporting a DC – 70 GHz frequency range.

Features & Benefits

- » Solderless and field-replaceable for design flexibility
- » Compression-mount for ease-of-use
- » Vertical, edge-mount, and angled configurations to address space constraints
- » Low insertion and return loss for excellent signal integrity

For more information, visit: CarlisleIT.com/prod-info/field-replaceable

Solder-Mount Connectors				
Vertical-Mount				
1.85 mm	2.40 mm	2.92 mm	3.5 mm	
Edge Launch				
1.85 mm	2.40 mm	2.92 mm	3.5 mm	
Field-Replaceable/Solderless Connectors				
Vertical-Mount CPW				
1.85 mm	2.40 mm	2.92 mm	3.5 mm	
Vertical-Mount Stripline				
1.85 mm	2.40 mm	2.92 mm	3.5 mm	
Edge-Launch				
1.85 mm	2.40 mm	2.92 mm	3.5 mm	
Edge-Launch (30° Angled)				
1.85 mm	2.40 mm	2.92 mm	3.5 mm	
Edge-Launch (Narrow Body)				
1.85 mm	2.40 mm	2.92 mm	3.5 mm	

Products available through authorized distributors. Visit CarlisleIT.com/distributors for more information.

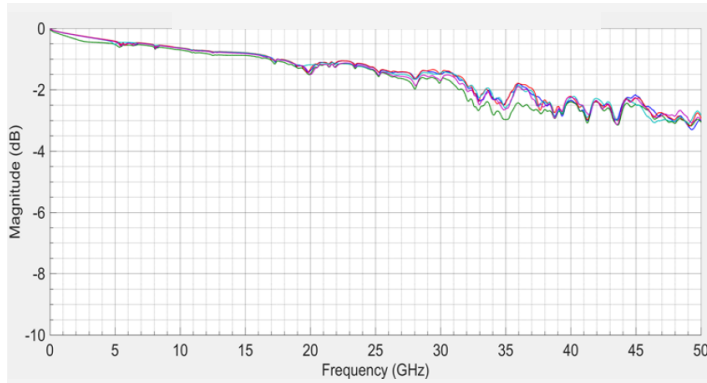
For more information, visit: CarlisleIT.com/prod-info/precision-rf-connectors

Specifications	1.85 mm	2.4 mm	2.92 mm	3.5 mm
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
Max. Frequency	70 GHz	50 GHz	40 GHz	26.5 GHz
Intermateability	2.4	1.85	SMA, 3.5	SMA, 2.92
VSWR Max	1.3:1	1.3:1	1.3:1	1.3:1

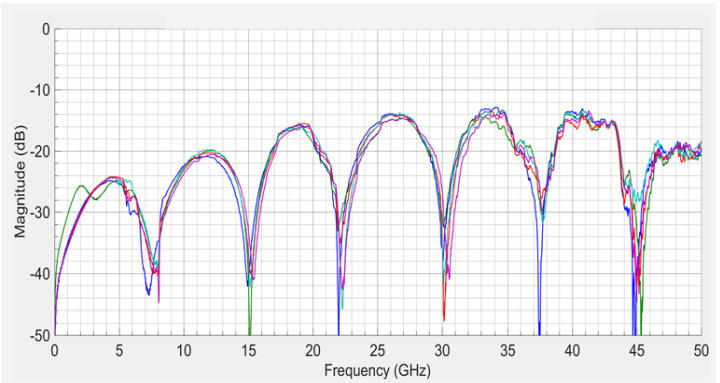
Solutions for 5G Applications

Solderless Field-Replaceable Connectors Cont'd.

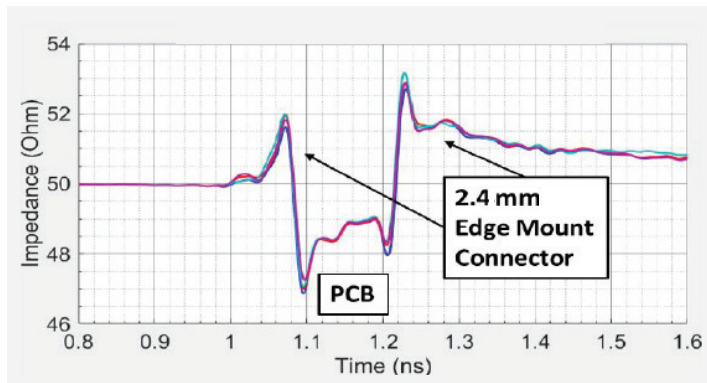
Insertion Loss (S21), TMB-E4F2-1L1, CarlisleIT Edge-Mount PCB (Rev A)



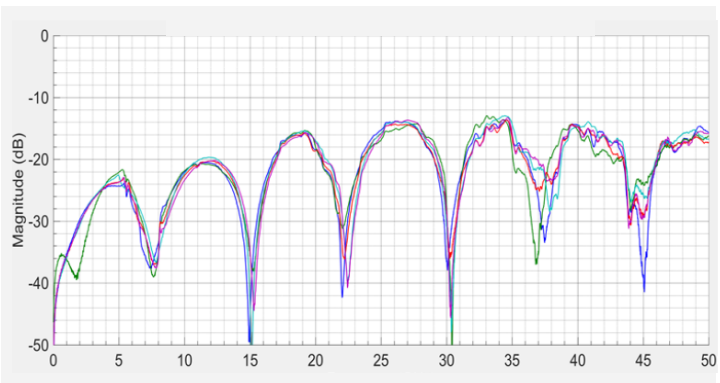
Return Loss (S11), TMB-E4F2-1L1, CarlisleIT Edge-Mount PCB (Rev A)



TDR, Rise Time 15 ps



Return Loss (S22), TMB-E4F2-1L1, CarlisleIT Edge-Mount PCB (Rev A)



For more information, visit:
CarlisleIT.com/prod-info/precision-rf-connectors

Low-Loss RF Coax Cable Assemblies

CarlisleIT offers multiple RF jumper configurations with 1.85 mm, 2.40 mm, 2.92 mm, and 3.50 mm connector types on .079" (outer shield diameter) coaxial cable. Their low insertion loss and VSWR indicate their high quality and performance.

Features & Benefits

- » Standard double-shielded RF coax cables
- » Interlock stainless steel armor coax cable assemblies for rugged applications
- » SecureThread™ coupling nut locks RF coax cables in place
- » High-performance, low-loss coaxial cable assemblies
- » Low VSWR and insertion loss
- » Supporting frequencies up to 65 GHz
- » Phase matching down to 1 ps

For more information, visit:
CarlisleIT.com/prod-info/high-performance-low-loss-rf-coax-jumpers

RF Coax Jumpers				
DC – 65 GHz				
SecureThread SMPM/SSMP	1.85 mm	2.4 mm	2.92 mm	3.5 mm
Precision RF Connectors on 0.079" or 0.105" (Outer Shield) Coax Cable - 65 GHz, 1.85 mm SMPM/SSMP, - 50 GHz, 2.4 mm, - 40 GHz, 2.92 mm, - 26 GHz, SMA Custom Cable Assemblies available upon request.				

RF Armor Coax Jumpers			
DC – 65 GHz			
1.85 mm	2.4 mm	2.9 mm	3.5 mm
Precision RF Connectors on 0.079" or 0.105" (Outer Shield) Coax Cable 65 GHz, 1.85 mm SMPM/SSMP • 50 GHz, 2.4 mm • 40 GHz, 2.92 mm • 26 GHz, 3.5 mm SMA Custom Cable Assemblies available upon request.			

Armored Coax Cables provide additional tensile, torsional, and crush resistance.

Solutions for 5G Applications

RF/Microwave Adapters

We offer a full-gender family of precision RF adapters in different connector options to cover applications ranging from DC – 65 GHz. All of our adapters are 100% tested to ensure optimum performance over their respective frequency range.

Features & Benefits

- » In-series and between-series adapters
- » Straight and right-angle adapters
- » SMA, 1.85 mm, 2.4 mm, 2.92 mm, and 3.5 mm interfaces
- » Max frequency range: DC – 65 GHz

Products available through authorized distributors.

Visit CarlisleIT.com/distributors for more information.

For more information, visit:

CarlisleIT.com/products/connectors-accessories/rf-microwave-adapters



Precision RF Adapters

CoreHC™ Ganged Interconnect Adapters

We offer high-density CoreHC multichannel test-point systems targeted for circuit boards where space is limited. These products result in reduced trace lengths and higher signal integrity compared to boards using traditional SMA-type connectors.

CoreHC is a compression force interconnect system with 2.5 mm channel spacing that can be attached directly to a board without a connector. The interconnect system adapts the tightly spaced traces and signals to connect easily with the analyzer systems.

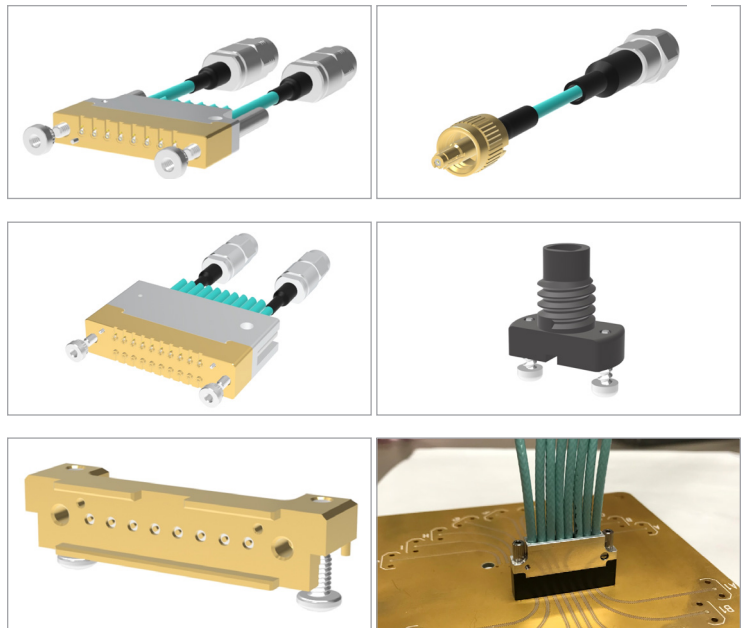
Features & Benefits

- » Vertical-mount and edge-mount for design flexibility
- » Supports DC – 70 GHz frequencies
- » Direct-attach and surface-mount options
- » 2.5 mm channel-to-channel pitch
- » Cable-to-board and board-to-board solutions
- » 2, 4, 6, 8, and 10 channels edge-mount
- » 1, 2, 4, 6, 8, and 10 channels single-row vertical-mount

Products available through authorized distributors.

Visit CarlisleIT.com/distributors for more information.

For more information, visit: CarlisleIT.com/prod-info/corehc



Single and Dual Row CoreHC Interconnect Systems

CoreGD™ Ganged SMPM/SSMP Interconnect Adapters

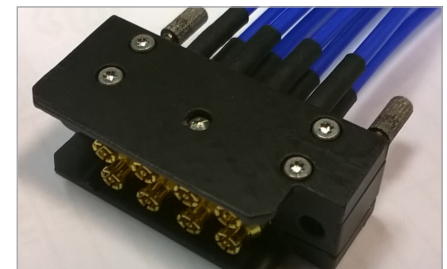
We offer high-density SMPM/SSMP interface-based CoreGD multichannel, test-point systems targeted for high-density boards where space is limited. These products result in reduced trace lengths and higher signal integrity compared to boards using traditional SMA-type connectors.

CoreGD is a typical male/female mate/demate type interface using SMPM/SSMP connectors. This rugged interconnect provides high reliability in extremely harsh conditions.

Features & Benefits

- » Vertical-mount and edge-mount for design flexibility
- » Supports DC – 70 GHz frequencies
- » Surface-mount rugged SMPM/SSMP board-side connectors
- » 4 mm channel-to-channel pitch
- » Cable-to-board and board-to-board solutions
- » 2, 4, 6, 8, and 10 channels edge-mount
- » Vibration-resistant; suitable for harsh environments

For more information, visit: CarlisleIT.com/prod-info/coregd



Dual Row 8 Channel CoreGD Cable Assembly

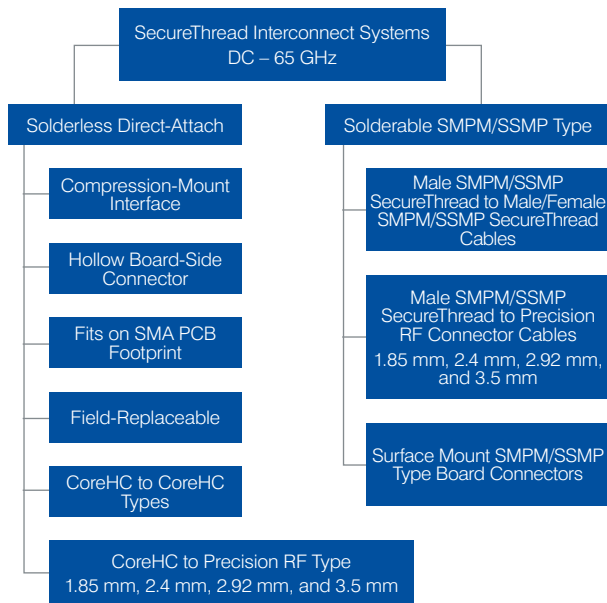
Solutions for 5G Applications

SecureThread™ Interconnect Systems

SecureThread, our high-performance interconnect system, uses a blind-mate push-on interface with a threaded coupling nut that prevents the cable assembly from moving once the connection is made.

Features & Benefits

- » Solderless direct attach or solderable SMPM/SSMP interface
- » Threaded lock coupling nut to secure cable in place
- » Solderable SMPM/SSMP or hollow compression-type board-side connector
- » Supported frequency range of DC – 65 GHz
- » Keeps the connection secure at all times
- » Phase matching in pairs down to 2 ps



For more information, visit:
CarlisleIT.com/prod-info/secure-thread

Card Edge Connector System

Our Card Edge Connectors System is designed for high-speed, high-density applications. These connectors have a smooth mating surface area, which reduces the wear and tear of the contacts and increases the durability and cycle life of the contact system. Both vertical and edge-launch options support 0.062" and 0.093" thick boards.

Features & Benefits

- » Low insertion and removal forces
- » 32 Gbps data rate
- » Excellent signal integrity
- » High-density up to 60 Pins
- » Board-side connectors and mating PCB

For more information, visit:
CarlisleIT.com/prod-info/card-edge-connectors

SecureThread				
Thread Lock SMPM/SSMP (DC – 65 GHz)				
ST - 1.8 mm (M/F)	ST - 2.4 mm (M/F)	ST - 2.92 mm (M/F)	ST - 3.5 mm (M/F)	ST - ST (M/F)
Board-Mount Connectors				
Field-Replaceable (CoreHC)				
<ul style="list-style-type: none"> • STC: SecureThread compression mount interface • Field-replaceable threaded CoreHC board-mount connectors are hollow plastic bodies allowing contact of compression mount • SecureThread CoreHC cable assemblies with PCB footprint • SecureThread cable assemblies use coax cables with 0.092" cable jacket and 0.079" outer shield sizes 				
Surface-Mount (SMPM/SSMP Type)				
<ul style="list-style-type: none"> • ST: SecureThread SMPM/SSMP interface with threaded coupling nut • SecureThread cable assemblies use coax cables with 0.092" cable jacket and 0.079" outer shield sizes 				

Card Edge Connectors		
Vertical-Mount		
DC – 20 GHz		
20 Pins 10 Pins Per Row	40 Pins 20 Pins Per Row	60 Pins 30 Pins Per Row
Edge-Launch		
DC – 20 GHz		
20 Pins 10 Pins Per Row	40 Pins 20 Pins Per Row	60 Pins 30 Pins Per Row

Both Vertical and Edge Launch Board Side Connectors support 0.062" and 0.093" thick boards.

Solutions for 5G Applications

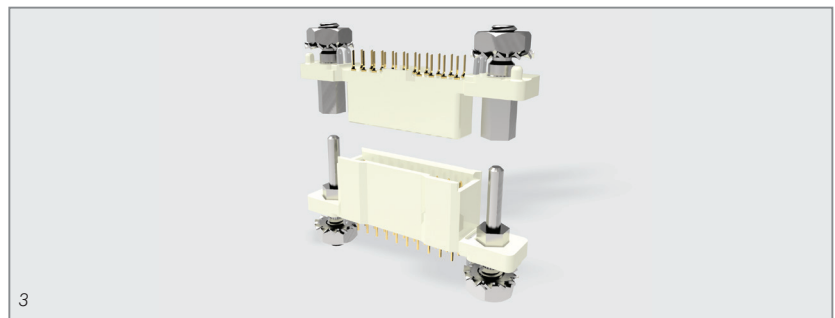
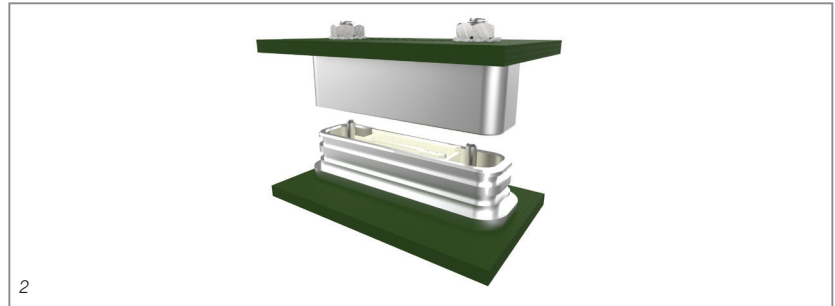
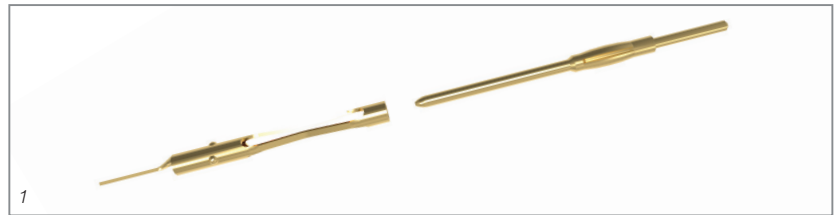
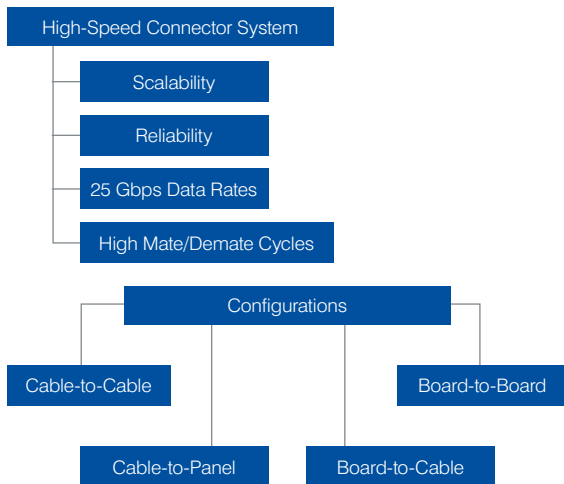
AltaVel™ Open Pin Field Interconnect System

AltaVel is a high-speed open field interconnect system supporting data rates up to 25 Gbps. Available in 10 – 200 pins and standard plastic and EMI safe metal housing options, the interconnect system is suitable for 50 or 75 Ω single-ended and 85 or 100 Ω differential signaling systems.

Features & Benefits

- » 1.27 mm pitch for high-density systems
- » 8 mm min. stack-up height for low profile systems
- » Configurable in 4 row x 10, 20, 30, 40, and 50 columns for design flexibility and scalability

Our rugged metal EMI housing option is a readily available option for applications used in extreme environments.



Available contact and connector systems: 1) High-reliability contact system featuring 3 points of contact. Available in Surface Mount (SMT), Paste-in-Hole (PIH), and Plated-Through-Hole (PTH) termination styles. 2) Connector without metal shell, 3) Connector with metal shell

Application & Use Cases

Card Edge Connector System

- » PCIe Gen 5 and Gen 6 systems
- » Gen-Z interconnect systems
- » SATA, SATA Express
- » SaaS and NVMe systems

AltaVel™ Open Pin Field Interconnect System

- » Optical transceiver systems
- » Network storage systems
- » FPGA and SoC test system

For more information, visit:
CarlisleIT.com/prod-info/altavel

Solderless Field Replaceable Connectors

- » RF systems test and characterization
- » RF connectors characterization
- » Quick validation and prototyping

Solutions for 5G Applications

High-Speed Gen-Z Cable Assemblies

Gen-Z is a new data access architecture and technology that increases the data rates and bandwidths of the links between processors and peripheral components, including memory devices up to 400 GT/s.

Gen-Z connectors are available in 1C, 2C, 4C, -1C, -2C, -4C, and -4C+ sizes, where C stands for Chiclets, a building block of bandwidth. A1(or 1C) chiclet connector supports power management and 8 differential pairs of high-speed signals. A 2C connector maintains the functionality of the 1C connector, but supports an additional 8 differential pairs, and likewise the 4C connector supports an additional 16 differential pairs. Gen-Z connectors support both symmetric and asymmetric traffic, so differential pairs can be dynamically assigned as “transmit” or “receive” based on workload need.

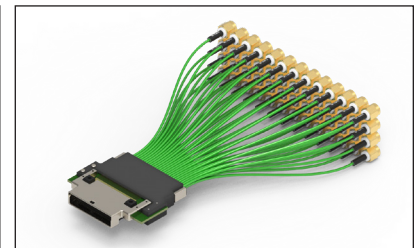
CarlisleIT offers standard and custom interconnect solutions for high-speed Gen-Z compliant data communication. These standard based solutions use Twinax cables for high-speed data and ribbonized coax cables for control and management signals.

Features & Benefits

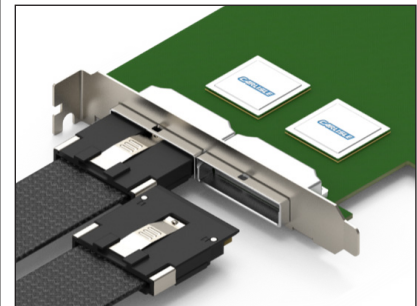
- » Readily available 1C and 2C standard pinout-compliant assemblies
- » Meet SFF-TA-1002 pinout specifications
- » Readily available 1C and 2C max differential pairs configuration cable assemblies
- » Maximum number of high-speed differential channels
- » No sideband signals; there are 10 additional pairs of signals compared to the standard pinout solution
- » 4C and 4C+ standard pinout-compliant cable assemblies available upon request
- » Vertical-mount and edge launch
- » DC – 70 GHz
- » CPW and strip-line types



2C Cable Assembly



Gen-Z to SMA Cable



Assembly Function

1C Width	2C Width	4C Width	4C+ Width
56 Contacts	84 Contacts	140 Contacts	168 Contacts
28 Pins Top and Btm rows	42 Pins Top and Btm rows	70 Pins Top and Btm rows	84 Pins Top and Btm rows
18 Differential Pairs	26 Differential Pairs	44 Differential Pairs	52 Differential Pairs
9 Pins Top Row + 9 Pins Btm Row	13 Pairs Top Row + 13 Pairs Btm Row	22 Pins Top Row + 22 Pairs Btm Row	22 Pins Top Row + 22 Pins Btm Row

For more information, visit:
CarlisleIT.com/prod-info/gen-z-interconnect-solutions

Solutions for 5G Applications

Low-Loss Flex Circuits

A multilayer flex circuit has three or more conductive layers with insulating dielectric in between. It features blind or buried vias and top or bottom access to conductors.

CarlisleIT specializes in microvias – vias created with precision laser drilling techniques and those that require dimensional and positional accuracy which most companies cannot attain. By using thinnest dielectrics available for making interconnects, we make flex circuit interconnects as thin as 1 MIL (25 μm) – including the protective cover layer.

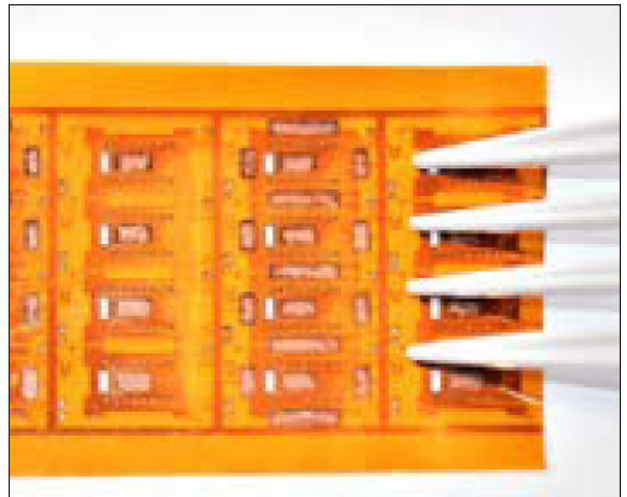
A thin flex circuit allows for thin, tiny traces with tight spacing, and possibly fewer number of layers. At the same time, these flex circuits are lighter and highly-flexible.

Flex circuits can reduce product assembly time because they seamlessly integrate form, fit, and function into a single circuit. A reduction in assembly time also reduces manufacturing errors and costs.

Features & Benefits

- » 1 MIL (25 μm) trace/space for small, compact size
- » 25 μm vias and critical dimensions of laser ablated features to 10 μm , allows high density
- » Complex 3+ layer HDI flex circuits the other shops won't touch

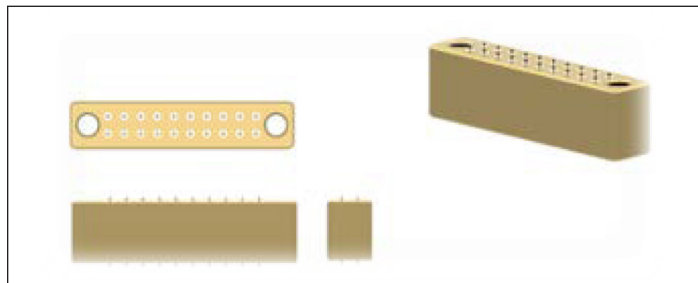
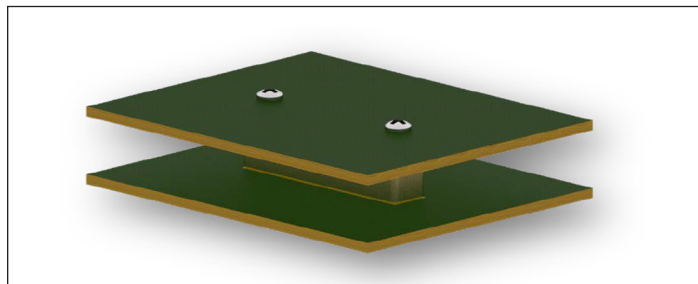
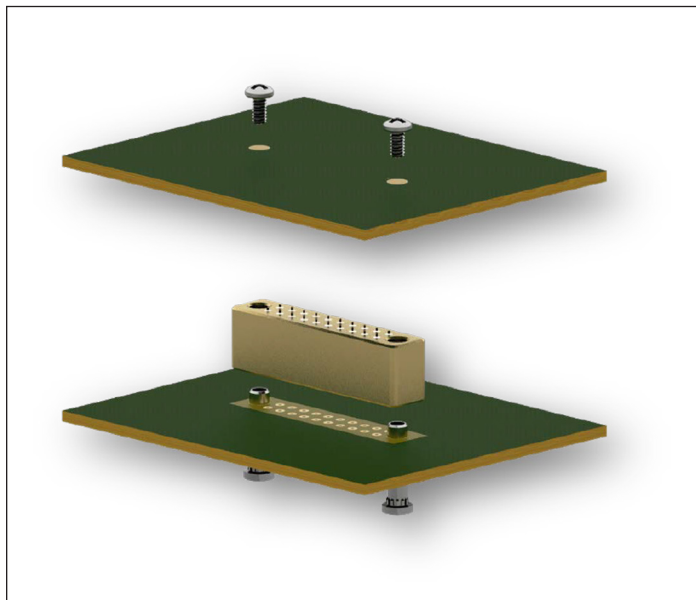
For more information, visit:
[CarlisleIT.com/prod-info/low-loss-flex-circuits](https://www.carlisleit.com/prod-info/low-loss-flex-circuits)



Solutions for 5G Applications

Board-to-Board Connectors

Using CoreHC interconnect technology, CarlisleIT offers high-density, board-to-board connectivity solutions to address the need of interconnecting multiple boards, while maintaining the excellent signal integrity at high frequencies in the range of DC - 65 GHz. 2, 4, 6, 8, and 10 channels standard. Spring-pin solutions are readily available resulting in typical stack up height of 8 mm max.



These connectors only require optimized footprint on each PCB to be connected. By using alignment nuts on one PCB and machined nuts on the other, these connectors provide highly reliable interconnectivity between high-density boards without any soldering. Spring pins, dielectric insulators and gold-plated body block are the key components of the connector. CarlisleIT can also customize the solution with any number of high speed and digital channels in single, dual, or multiple rows configuration depending on customer's application.

Features & Benefits

- » Easy installation with no soldering required
- » Supports frequencies from DC – 65 GHz for a variety of applications
- » Suitable for both Co-planer Waveguide and Strip line lay outs
- » Long life with 20,000 mate/demate cycles

For more information, visit:

CarlisleIT.com/prod-info/board-to-board-connectors

Global Manufacturing. Local Support.

Wherever you are, so are we. With manufacturing centers around the globe, our highly qualified team of 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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FACILITIES CERTIFICATIONS

- » AS9100
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- » ISO 13485
- » ISO 14001
- » ITAR registration
- » MIL-SPEC/SAE
- » RoHS compliance

Performance with Purpose



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