

**WHEN SIGNAL INTEGRITY AND DENSITY MATTER**

CarlisleIT's CoreHC direct attach cable assembly is a multichannel, test-point system targeted for high-density boards where space is limited. It offers reduced trace lengths and higher signal integrity, compared to boards using traditional SMA-type connectors. On average, there is four times higher available bandwidth for signals in the same real estate as SMA connectors.

Carlisle's unique compression force design results in easier and rapid connectivity of high frequency signals on the board. Since there are configurations using single or multiple channels, board size can be optimized accordingly.

The vertical mount-attach solution eliminates the board-side connector or interposer by offering a direct connection of signals between traces and pads on PCB footprint and compression pins on cable assembly. Board-side interposer is required for edge mount-type solution. Optimized footprints and layouts are available upon request.

Solution is optimized for demanding bandwidths up to 65GHz. Standard products are available in single-, 2-, 4-, 6-, 8- and 10-channel configurations.

Solution is offered in following configurations:

- » Vertical Cable to Board
- » Edge launch Cable to Board
- » Single point solderless connection
- » Vertical solderless board-to-board connector
- » Vertical board-to-board—one side is solderable, second side is coax compression

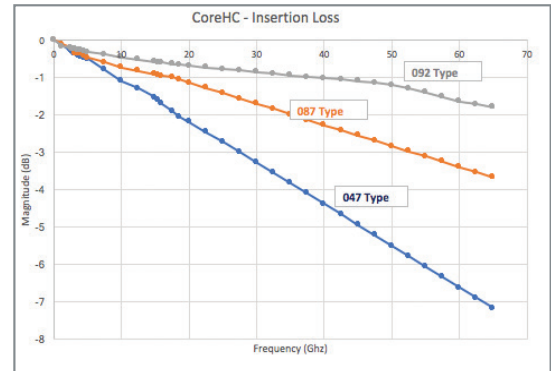
**FEATURES & BENEFITS**

Feature	Customer Benefit
DC to 65GHz Frequency range	Supports a variety of applications today and emerging applications of tomorrow, reducing overall cost
Multiple board-to-board solutions	8mm to 20mm stack-up height in 2mm increments to meet certain height restrictions
One-piece interface for vertical-mount type	Saves time and reduces costs because no soldering to the board is required; only PEM nuts are used for installation and removal
Zero force to disengage	Eliminates damage to PCB solder joints and footprints
20,000 mate/demate cycles	High signal integrity in a long-life package provides high performance and lower cost of ownership
Smaller overall footprint size	2.5mm pitch to access signals in dense environments and save PCB space
2, 5 and 10 pico-second phase matching	High signal integrity
SMA, 2.92mm, 2.4mm and 1.85mm cable-side connectors	Supports frequencies up to 65GHz
0.047, 0.087 and 0.092 coax cables are available	High-performance, microwave-grade, flexible coaxial cables offer high density, high frequency and low losses
Edge launch/mount option	Offers design flexibility for complex board layouts
Multiple channels	Standard products available in single row, 2, 4, 6, 8 and 10 channels; custom configurations upon request
Multiple signal probing	Probing is possible on single-ended or differential signals
Flexible cables	Offers high electrical and mechanical stability
Tilt protection	Shape of housings ensures high mechanical stability
Keying	Eliminates mismatching
No custom tooling required	Interconnect mounts on board with standard tools
Solder-free installation	Field reconfigurable or replaceable

# SPECIFICATIONS & PERFORMANCE

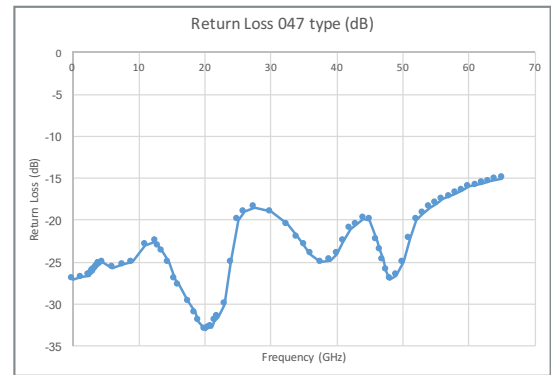
Parameter	Specification		
Frequency Range	DC to 65GHz		
Impedance	50 Ω +/- 2.5		
VSWR	<b>Frequency Range</b>	<b>VSWR</b>	<b>Return Loss</b>
	DC-20GHz	1.2:1	>=26dB at DC to 65GHz
	20GHz-30GHz	1.25:1	>=17dB at 26.5GHz to 50GHz
	30GHz-65GHz	1.40:1	> = 14dB from 50GHz to 65GHz
Insertion Loss	047 type cable; -2.2dB (max) at 20GHz	087 type cable; -1.15dB (max) at 20GHz	092 type cable; -0.7dB (max) at 20GHz
Working Voltage	335V RMS max @ sea level		
DWV (Dielectric Withstand Voltage)	500V RMS (min)		
Insulation Resistance	5000 M Ω (min)		
RF High Potential	100 VRMS @ 5MHz		
Force to Engage   Smooth Bore	60g (max per channel)		
Force to disengage   Smooth Bore	0 (max per channel)		
Insertion Life	20,000 mating/ demating cycles		
Phase Matching	2, 5 and 10ps		
Pitch	2.5mm		
Form Factor	Compression Mounts directly to board		
Interface (Cable End to Equipment)	Female or male SMK 2.92mm or V 1.85mm		
Temperature Range	-65°C to 150°C		
Environmental	Meets MIL-STD-202 for corrosion, vibration moisture resistance, thermal and mechanical shock		

## Core HC Direct Attach — Insertion Loss



\* All numbers are per channel for 1-foot cable length  
\*\* Data is based on simulations

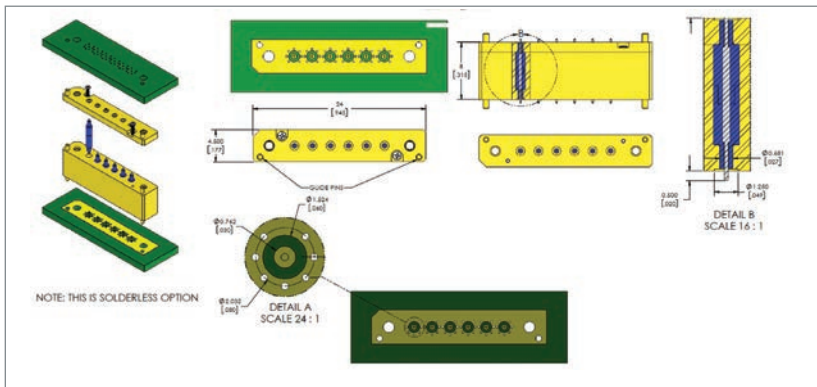
## Return Loss .047 type (dB)



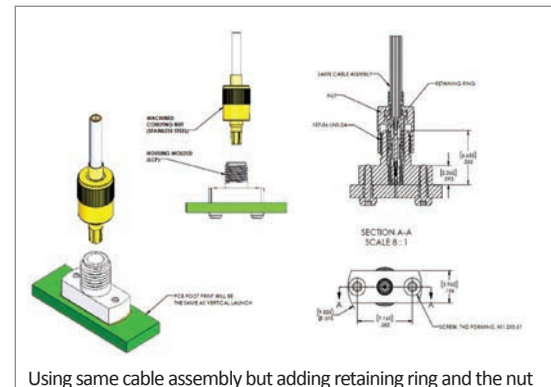
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## TYPICAL APPLICATION: SMALL FOOTPRINT AND DENSE CONFIGURATION

### Board to Board Using Spring Pin



### CoreHC 2.5mm Secure Thread/Field Replaceable



### CHECK OUT OTHER RELATED PRODUCTS

» CoreGD  
[www.CarlisleIT.com/products/CoreGD](http://www.CarlisleIT.com/products/CoreGD)

» CoreHC  
[www.CarlisleIT.com/products/CoreHC](http://www.CarlisleIT.com/products/CoreHC)

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