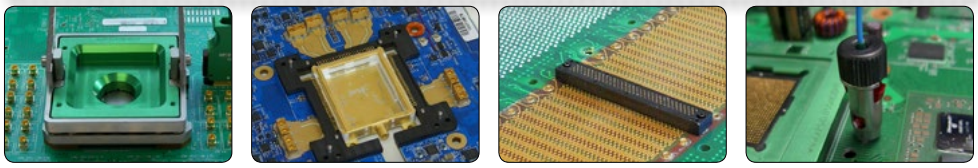
Application Case Study

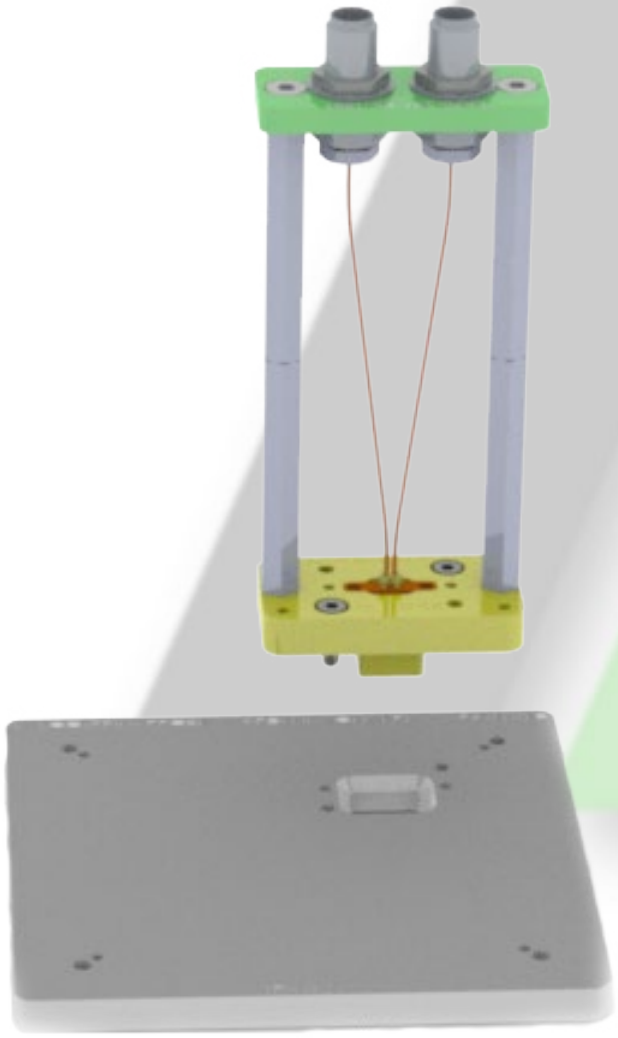
ACS #0010



pcIE Gen 3 Probing

Problems Faced During Application

A major IC Manufacturer was developing a new PCIE device and needed a repeatable way to de-embed the signal losses on their compliance base boards (CBB) to allow them to accurately characterize the performance of their device. The goal was to develop a solution that was consistent, very low loss and capable of accessing signal paths in the area array of the DUT. The traditional method of using SMA launches from the PCB was introducing artifacts into the measurement due to the losses in the SMA and the PCB trace. Alternative methods of using planar probes and an x-y table were considered but proved to be expensive, time consuming and highly prone to errors in repeatability.



The Ardent Solution

The IC Manufacturer worked with Ardent to design an easy to use, step-able Cartesian Coordinate based IC Footprint probe which was capable of making direct contact with these signal locations and allowing connection to instrumentation for de-embedding and de-bugging the CBB. This solution greatly increased the customer's confidence in the design of their IC and will result in a faster release to market.

Key Benefits

- Time saving alternative to expensive X-Y tables and fragile planar probes
- Probe multiple signals at once
- Step-able for precise probing without a microscope

ARDENT CONCEPTS
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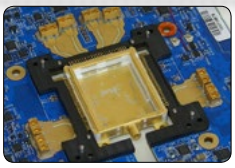
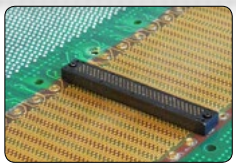
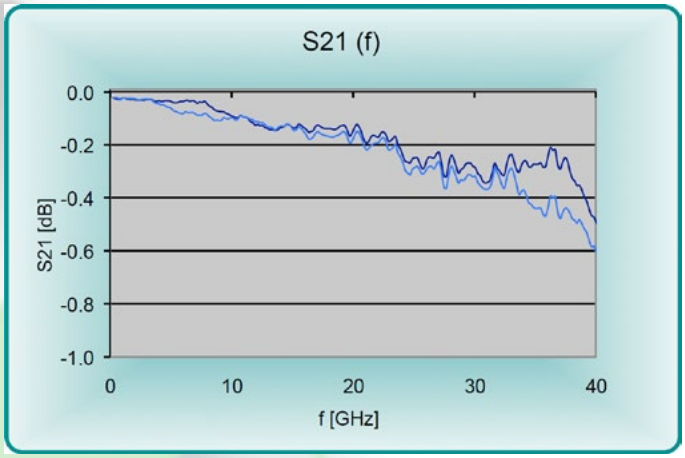
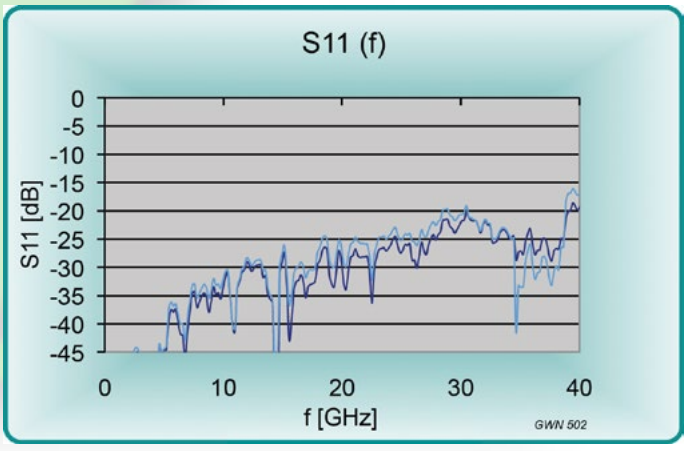




Key Performance Data

Electrical Specifications	
Frequency Range	DC to 40 GHz+
Return Loss[1]	-20 dB through 20 GHz
Insertion Loss[2]	-2 dB through 40 GHz
Crosstalk	-50 dB through 40 GHz+
Impedance[1]	50 Ω +/- 10% @ interface

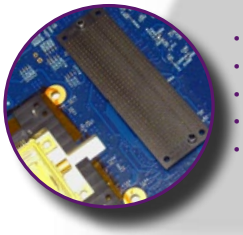
Mechanical Specifications	
Pitch	0.80 mm or larger signal to signal
Form Factor	Compression mounts to socket/DUT footprint
Cabling	.023" diameter coaxial cables
Interface (cable end to equipment)	Female SMK (2.92 mm)
Insertion Life	1,000+ mating cycles
Field Replaceable Components	Yes
Footprint	Microstrip & Stripline compatible





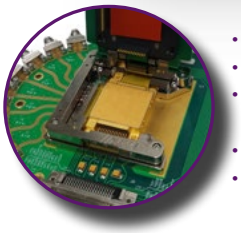
Related Products

CA Series™ - Connectors & Interposers



- 32 Gbps+
- Area array to 0.4mm pitch
- Compression mount & solderless
- Pure vertical interface – no offset required
- Ideal for high shock and vibration/extreme temperatures applications

SK Series™ - Multi-GHz Sockets



- 40 Ghz+/32 Gbps+ performance
- Thermal management ready
- Solderless/compression mount system provides flexibility throughout design
- Quick connection of multiple signals to PCB
- Custom designed to your application

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