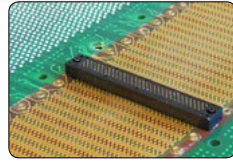
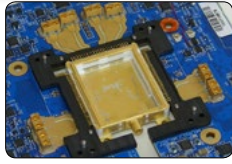


Application Case Study

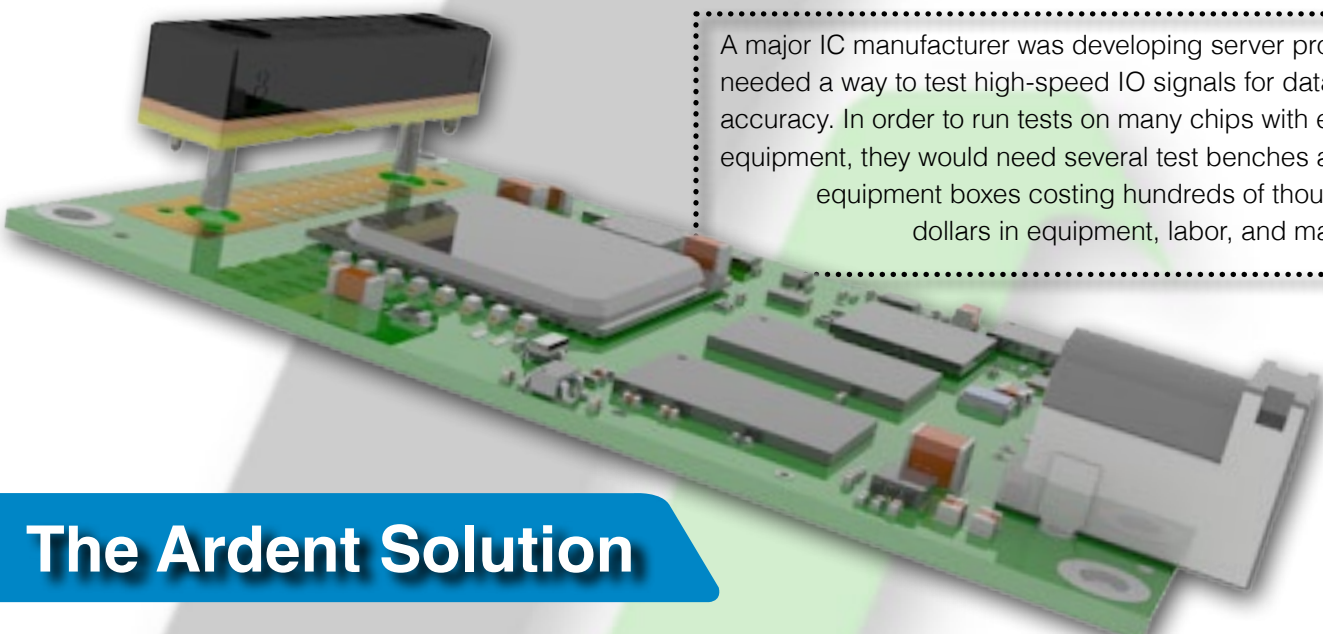
ACS #0001



20 GHz SerDes TX & RX Loopback Testing

Problems Faced During Application

A major IC manufacturer was developing server processors and needed a way to test high-speed IO signals for data rate and accuracy. In order to run tests on many chips with external test equipment, they would need several test benches and test equipment boxes costing hundreds of thousands of dollars in equipment, labor, and maintenance.



The Ardent Solution

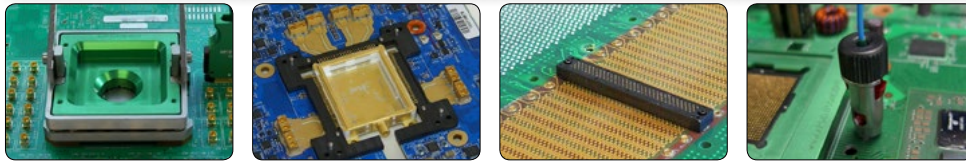
Ardent's TR Multicoax Loopback provided a solution where the chip could test its own IO. The chip was able to run at speed and monitor various characteristics of its transmitters and receivers quickly. The chip has a loopback that does not use the last stage of the TX driver so the customer was able to test using different transmitter signal output levels to run transmitter into receiver with this loopback solution.

Key Benefits

- Replaced expensive test equipment boxes
- Monitor chip transmitter and receiver characteristics quickly
- Test using different transmitter signal output levels

Application Case Study

ACS #0001



Key Performance Data

Electrical Specifications

Frequency Range	DC to 20 GHz
Return Loss ¹	-18 dB through 70 GHz
Insertion Loss ²	-0.8 dB to 20 GHz; -2 dB to 40 GHz
Crosstalk	-85 dB through 70
Impedance ¹	50 Ω +/- 2.5 Ω
Phase Matching	+/- 2 ps standard

Mechanical Specifications

Pitch	2.54 mm
Insertion Life	1,000+ mating cycles
Field Replaceable Interface	Yes
Footprint	Microstrip & Stripline compatible

Notes: ¹Largely a function of PCB design. ²Measurement includes 3" of cable. ³Consult factory for additional cable options.

Related Products

CA Series™ - Connectors & Interposers



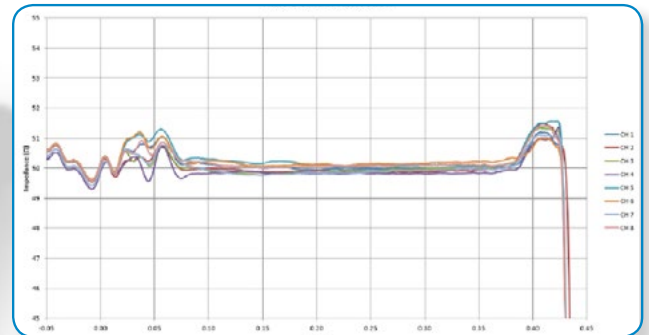
- 32 Gbps+
- Area array to 0.4mm pitch
- Compression mount & solderless
- Pure vertical interface – no offset required
- Ideal for high shock and vibration/extreme temperatures applications

SK Series™ - Multi-GHz Sockets

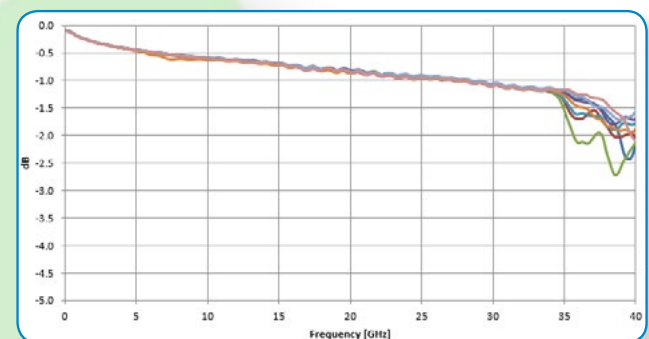


- 40 Ghz+/32 Gbps+ performance
- Thermal management ready
- Solderless/compression mount system provides flexibility throughout design
- Quick connection of multiple signals to PCB
- Custom designed to your application

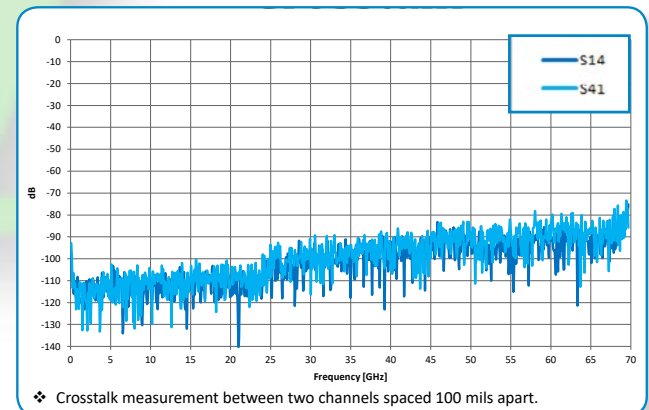
Time Domain Response



Insertion Loss



Crosstalk



More Information

Phone: (603)474-1760

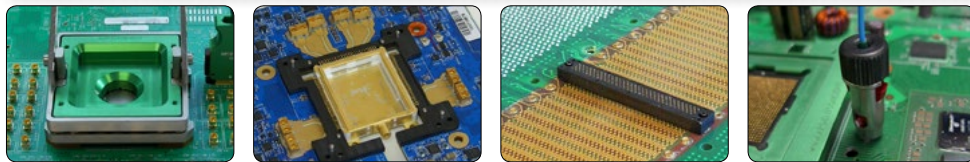
E-mail: info@ardentconcepts.com

Ardent Concepts, Inc.
4 Merrill Industrial Drive Unit #102
Hampton, NH 03842

Technical: support@ardentconcepts.com

Application Case Study

ACS #0001



Key Performance Data

Electrical Specifications

Frequency Range	DC to 70 GHz
Return Loss ¹	-18 dB through 70 GHz
Insertion Loss ²	-1.5 dB through 40 GHz, -3 dB through 70 GHz
Crosstalk	-70 dB through 70 GHz
Impedance ¹	50 Ω +/- 2.5 Ω
Phase Matching	+/- 2 ps standard

Mechanical Specifications

Pitch	2.54 mm
Cables	.047" diameter cables ³
Connectors	SMA, SMK (2.92 mm), or V (1.85 mm)
Cable Length	6"/ 152 mm, 12"/ 304 mm, 24"/ 608 mm
Insertion Life	1,000+ mating cycles
Field Replaceable Interface	Yes
Footprint	Microstrip & Stripline compatible

Notes: ¹Largely a function of PCB design. ²Measurement includes 3" of cable. ³Consult factory for additional cable options.

Related Products

CA Series™ - Connectors & Interposers



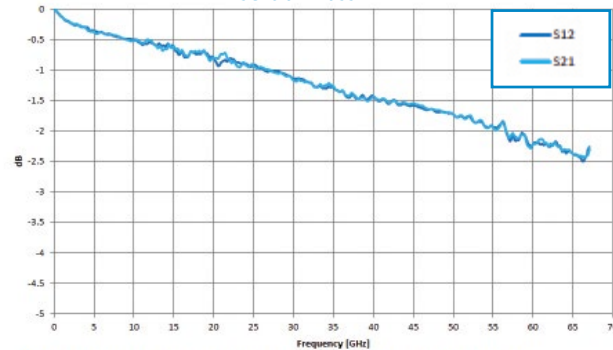
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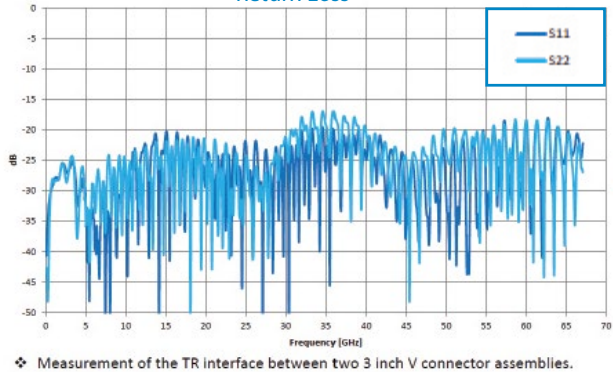


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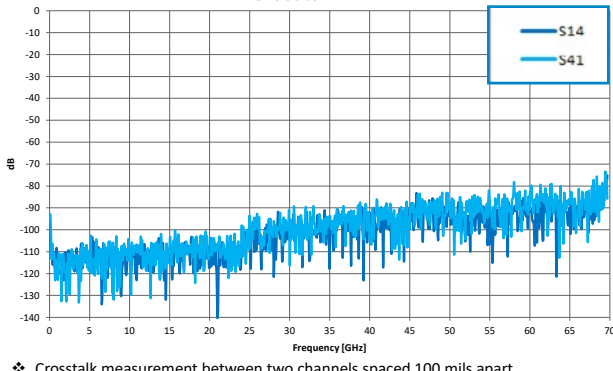
Insertion Loss



Return Loss



Crosstalk



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