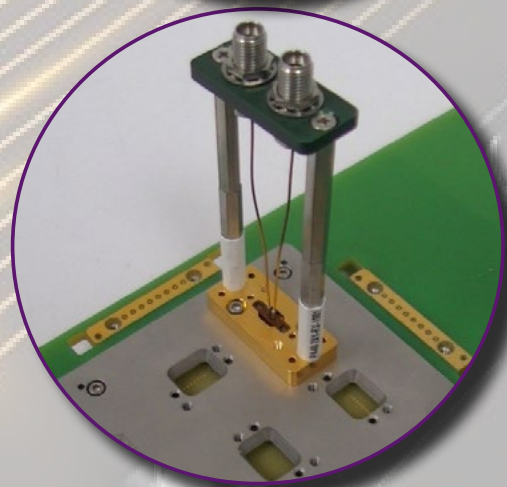
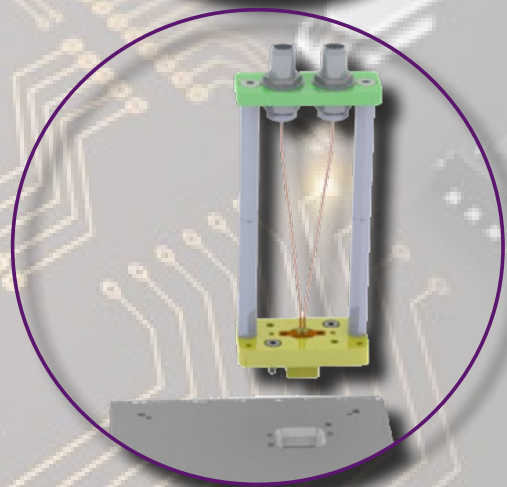
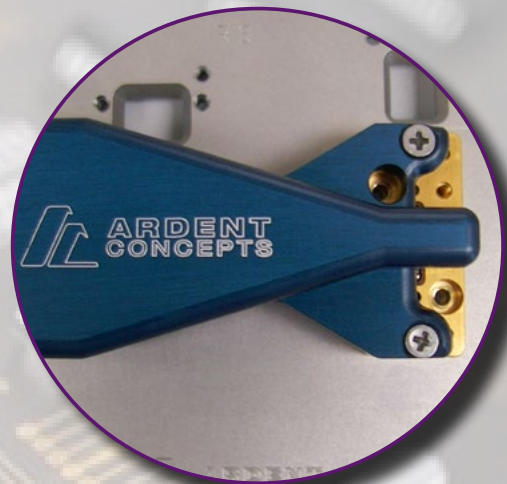


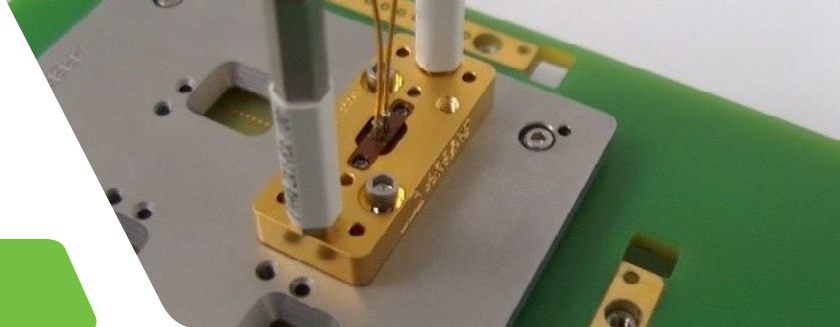


ARDENT CONCEPTS

An Amphenol Company

IC Footprint Probe Catalog High Speed | Solderless





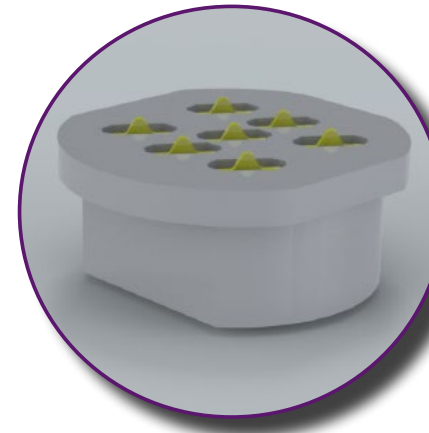
IC Footprint Probes

Ardent Design Support

Unmatched Design Services

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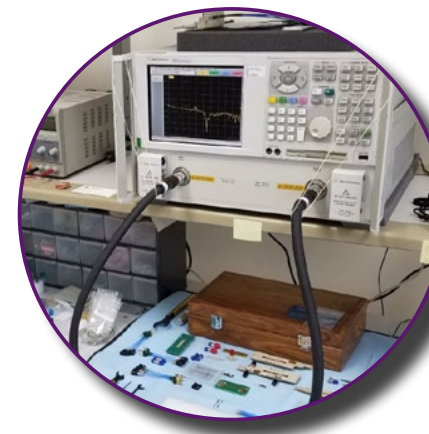
DESIGN

Ardent engineers bring novel approaches to solving even the most difficult connector challenges by working with customers to identify their electrical and mechanical needs.



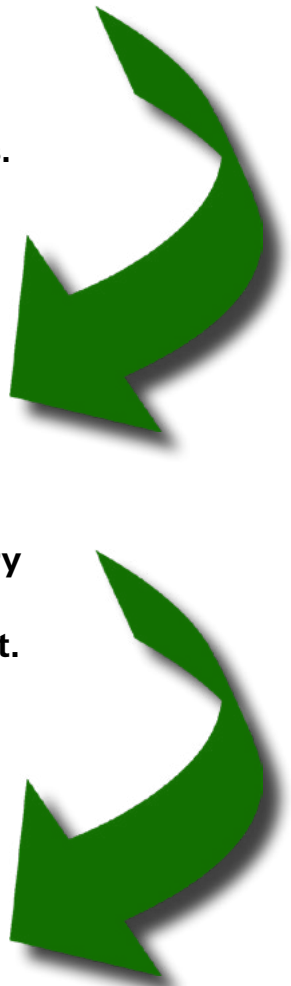
SIMULATE

Advanced HFSS simulation lets our Signal Integrity Engineers ensure that our proprietary contacts will perform at the ever increasing speeds demanded by the markets we support.



MEASURE

We recognize that simulation on its own is not always sufficient. Ardent's in house Signal Integrity Lab features 40 GHz & 67.5 GHz PNAs, and equipment to ensure that your connectors and interposers are measured to ensure success.



Coaxial Launch Optimization

Description

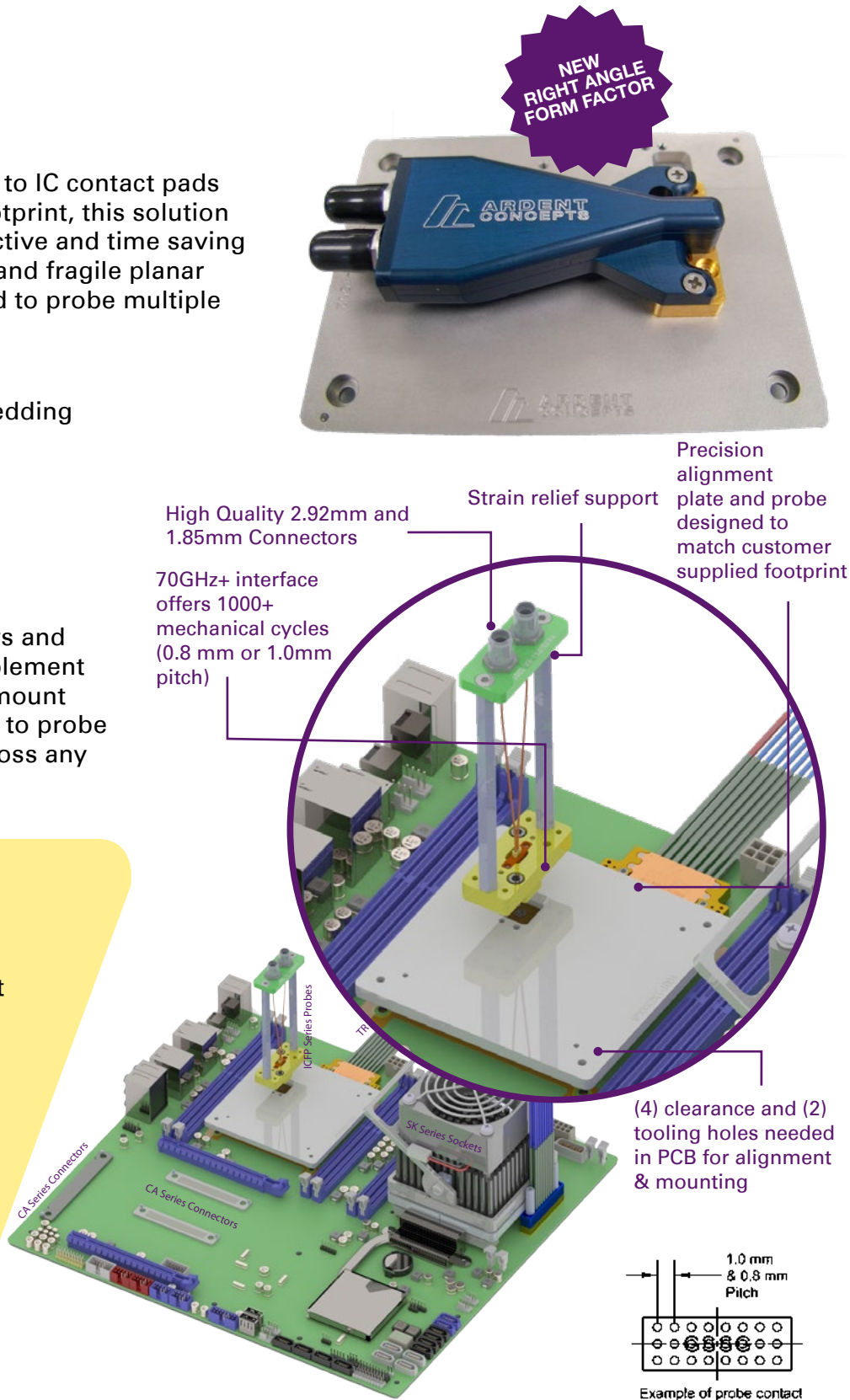
Ardent's ICFP offers 50 ohm access to IC contact pads and signal paths on an IC circuit footprint, this solution is a simple to manipulate, cost effective and time saving alternative to expensive X-Y tables and fragile planar probes for Engineers who may need to probe multiple signals at once.

- Reference Design De-Bug
- Reference Design Loss De-Embedding
- Test Interface Characterization
- Test Interface Troubleshooting
- TDR Measurements
- Probe Card Verification

With ICFP technology, test engineers and reference design engineers can implement the shortest, fastest, compression mount connector technology on the planet to probe multiple signals simultaneously across any area array.

Key Benefits

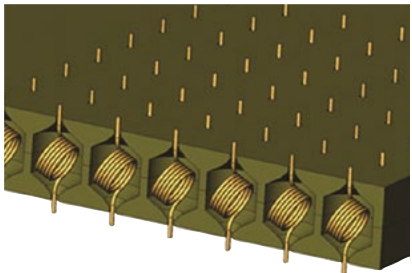
- Performance
- › 40 GHz+
 - › Less expensive and more robust than planar probes
 - › Quicker and easier probing through guided alignment
- Density & Flexibility
- › 0.8 mm and 1.0 mm pitches for industry standard IC packages
 - › Compression mount
 - › Pure vertical interface – no offset required
- Cost Savings
- › No more breaking of fragile planar probes



Contact Technology

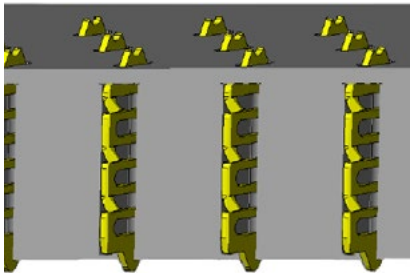
Let us help you choose the right contact set for your application

- Spring Probe™**
- Scalable solutions for connectors down to .4 mm Pitch
 - Eliminates the barrel and the plunger from a traditional “pogo” style spring pin (Less mechanical components to fail)
 - Patented “wipe action” of the coils causes contact to behave like a solid element Instead of behaving like an inductor. The result is exceptionally clean AC performance in an extremely short electrical path



Specifications	
Pitch	0.4 mm and above
Frequency	70 GHz+
Insertion Loss	-1 dB at 40 GHz @ 1 mm pitch
Self-Inductance	.5 nH
Mated Height	.76 mm and above

- Connect-R™**
- Cost-Effective Automation Loaded Contacts
 - High Performance
 - Stamped Contact for Area Array Applications Down to .6mm Pitch



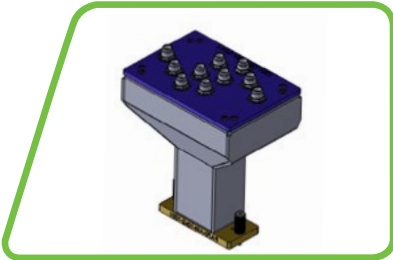
Specifications	
Pitch	0.8 mm and above (area), .6 mm and above (linear)
Frequency	40 GHz+
Insertion Loss	-1 dB at 40 GHz @ 1 mm pitch
Self-Inductance	.5 nH
Mated Height	1.57 mm

Form Factors



Single Differential Pair

- Single Diff pair probe platform shares many similar components
- New pitches and form factors driven by marketplace leaders (Broadcom/Arista)
- ICFP ahead of competition in probing pitches



XTALK Differential Pair

- XTALK Diff pair probe platform shares many similar components
- New pitches and form factors driven by marketplace leaders (Broadcom/Arista)
- ICFP ahead of competition in probing pitches

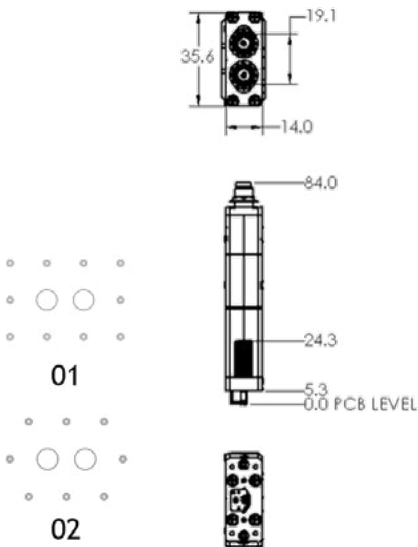


Single Ended High Density

- 8 channel 1.27mm pitch, used for near ASIC probing of optical module TX-RX chipsets
- Newest design-win is probing directly on substrate
- True 50 Ω , best isolation for characterizing chipsets
- Users have included Rockly Photonics and Broadcom OSD

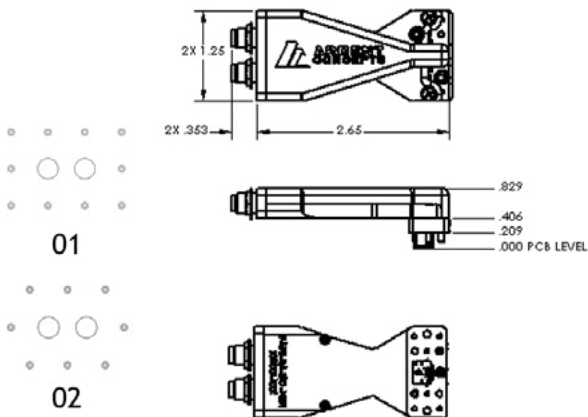
Single Differential Pair Probes

PAXX-2X1-YYZZ



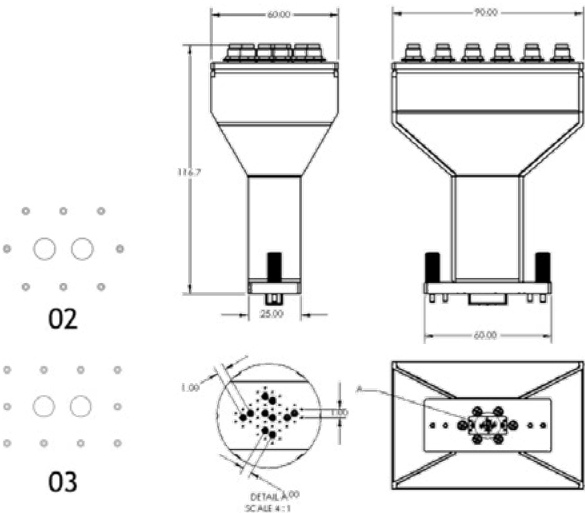
Options	
XX = Frequency	40 = 40 GHz Solution (2.92mm connectors)
	70 = 70 GHz Solution (1.85mm connectors)
YY = Pitch of Connector	08 = 0.8mm Signal to Signal Pitch
	09 = 0.9mm Signal to Signal Pitch
	10 = 1.0mm Signal to Signal Pitch
ZZ = Probing Pattern	01 = Square Pattern
	02 = Rhombic Pattern

PAXX-RA-2X1-YYZZ

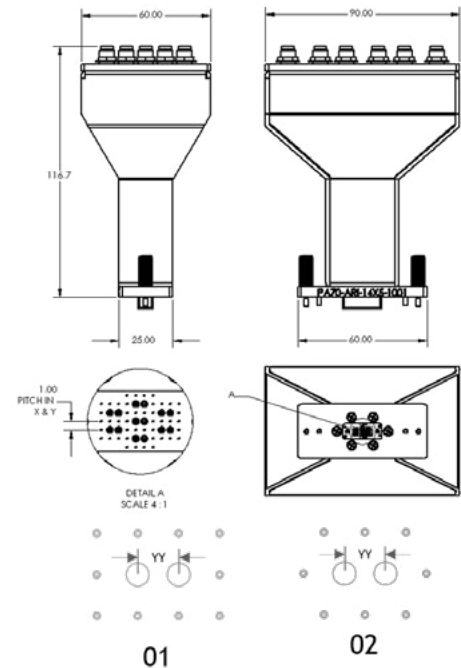


Options	
XX = Frequency	40 = 40 GHz Solution (2.92mm connectors)
	70 = 70 GHz Solution (1.85mm connectors)
YY = Pitch of Connector	08 = 0.8mm Signal to Signal Pitch
	09 = 0.9mm Signal to Signal Pitch
	10 = 1.0mm Signal to Signal Pitch
ZZ = Probing Pattern	01 = Square Pattern
	02 = Rhombic Pattern

PAXX-10X2-YYZZ

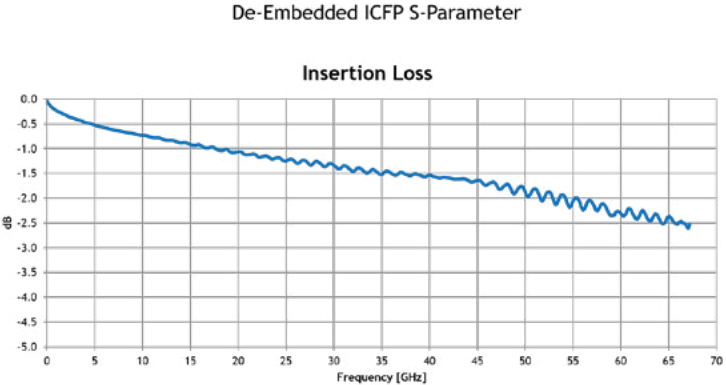


Options	
XX = Frequency	40 = 40 GHz Solution (2.92mm connectors)
	70 = 70 GHz Solution (1.85mm connectors)
YY = Pitch of Connector	08 = 0.8mm Signal to Signal Pitch
	09 = 0.9mm Signal to Signal Pitch
	10 = 1.0mm Signal to Signal Pitch
ZZ = Probing Pattern	01 = Rhombic RX Pattern
	02 = Rhombic TX Pattern
	03 = Square
	04 =

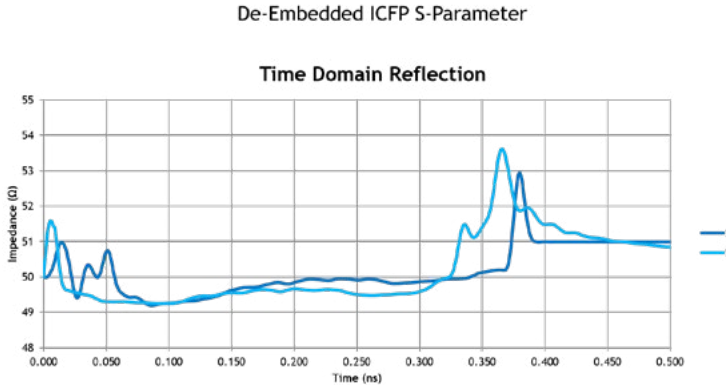


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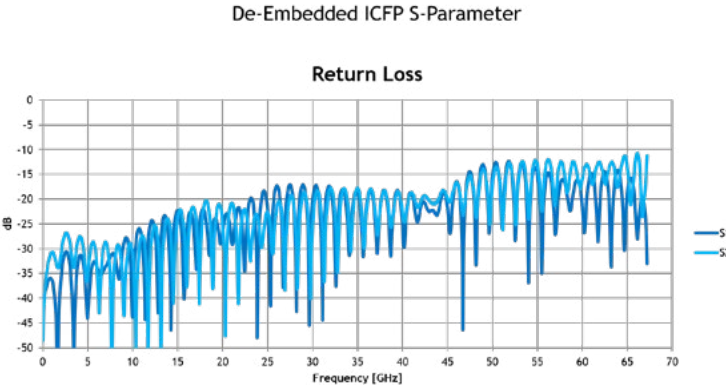
Benefits and SI Measurements



❖ De-embedded measurement of the ICFP PA70-2X1-1001 using the half through method, including the ICFP interface and 3 Inches of semi-rigid cable.



❖ S11 is through the coax of the probe first. S22 is through the interface first.
❖ De-embedded measurement of the ICFP PA70-2X1-1001 using the half through method, including the ICFP interface and 3 Inches of semi-rigid cable.



❖ S11 is through the coax of the probe first. S22 is through the interface first.
❖ De-embedded measurement of the ICFP PA70-2X1-1001 using the half through method, including the ICFP interface and 3 Inches of semi-rigid cable.

Additional Information

Ask about our Application Notes and Case Studies

For more resources including: case studies, application notes, video demonstrations, webinars, and more, please don't hesitate to contact our support team or visit the resources area on our website at www.ardentconcepts.com.

More Information

For questions
please contact us:
Phone: (603)474-1760
E-mail: info@ardentconcepts.com
Technical: support@ardentconcepts.com

Amphenol Ardent Concepts
4 Merrill Industrial Ave
Hampton, NH 03842

Product Specifications

Specifications	
Material	Gold Plated all metal interface and ground block
	High dK dielectrics for fine impedance control
	Coax • Silver Plated copper covered Steel (SPCW) center conductor • FEP Dielectric • Copper outer Jacket/Ground Shield
Electrical Performance	50 Ω ± 5% impedance
	S21 I.L. ≥ -3 dB @ 67.5 GHz
	S11 R.L. ≥ -10 dB @ 67.5 GHz
	NEXT/FEXT ≥ -70 dB @ 67.5 GHz
	Measured Date includes Ardent Spring Probe Interface and 3" of .034" semi-rigid cable with 1.85mm female coaxial connector
Mechanical Performance	1,000 cycles mate/de-mate
	Screw attachment to PCB
	Field replaceable interface
	3" long .034" diameter semi-rigid cabling
	Minimum of 0.8mm signal to signal pitch
Environmental	-40° to 120° C
Specifications	112 Gbps Pam-4
	DDR 4
	PCI-E Gen 4
Tooling Information	Includes protective sacrificial shipping cover and protective rubber caps
	Packaged in hard shell foam lined reusable case
	S2P Files available upon request
Target Markets/Applica-tions	Semiconductor ASIC design and test
	Communications Line Card design and test

Related Products

www.ardentconcepts.com/ic-footprint-probe

SK Series™ - High Speed | Compression Mount Sockets



- Durable 40 GHz+ socket solutions offer low loss connection for high performing devices
- Up to 70 x 70 mm package sizes
- Multiple lid and base design options
OEM moldable designs available
- Compression mount solderless design

QUICKLINK™ Coaxial Connector



- Superior signal integrity DC to 70 GHz+
- Reusable across programs promotes exponential cost savings
- Board component reduction while increasing reliability and density
- Rapid connection to PCB - No threading or tools required

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

More Information

For questions
please contact us:
Phone: (603)474-1760
E-mail: info@ardentconcepts.com
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