DATASHEET

Cardinal Multi-Port High-Frequency Coaxial Assemblies ›

Providing versatile and scalable test solutions for high-speed datacom, 5G/6G, mmWave radar and other advanced applications, Cardinal Multi-Port High-Frequency Coaxial Assemblies deliver phase-matched, high-precision connections up to 145 GHz. Solderless compression attachment and high-density PCB connection improve versatility, minimize downtime and accelerate testing operations while maintaining consistent performance over 500+ mating cycles.

ADVANTAGES AND FEATURES

Enables future growth in high-performance device testing

Supporting mmWave frequencies up to 145 GHz and data characterization rates up to 448Gbps, these assemblies enable future-proofing of test and measurement capabilities.

Delivers high-precision connectivity

Phase matching to ±1ps provides signal synchronization for optimal performance and data transfer, minimizing latency and enhancing signal integrity.

Ensures long-term durability

A rating of 500+ mating cycles enables use with demanding test workflows and reduces the total cost of ownership.

Frequencies	DC to 67 GHz, DC to 110 GHz, DC to 145 GHz
Data Characterization Rate	Up to 448Gbps
Port Configuration	Single-row 1x4 or 1x8; dual-row 2x8
Cable Connectors	1.85, 1.0, 0.8mm coaxial

Minimizes the PCB footprint

The high-density PCB connector reduces the space required for board connections, shortening trace lengths and enabling smaller evaluation boards.

Accelerates testing operations

Consolidating multiple connections into a single PCB connector reduces installation time and downtime while avoiding inconsistent signal integrity between individual RF connectors.

Improves board design flexibility

Solder-free compression termination to the PCB with vertical, right-angle and edge-mount options reduces installation complexity, simplifies reconfigurations and minimizes rework.

MARKETS AND APPLICATIONS

Test and Measurement

224G and 448G test equipment
Automated test equipment
Network analyzers

Networking

High-frequency cabling
Hyperscale computing architectures
Quantum computing architectures

Aerospace and Defense

High-frequency communications
Satellite communications

Automotive

Radar system validation equipment

Telecommunications

5G and 6G networks

224G and 448G Test Equipment

Hyperscale Computing Architectures

5G and 6G Networks

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Cardinal Multi-Port High-Frequency Coaxial Assemblies ›

SPECIFICATIONS

67 GHz Precision Coaxial Assemblies

Reference Information

Packaging: Bag
Designed in: Millimeters
RoHS: Yes (2011/65/EU)
REACH: Yes (2006/1907/EC)
Halogen Free: Yes

Mechanical

Connection to Instrumentation: 1.85mm coaxial
PCB Attachment: Compression mount
PCB Mount Orientation: Vertical, right-angle or edge-mount
Port Configuration: Single-row 1x4 or 1x8; dual-row 2x8
Pitch: 2.54mm (0.10")
Cable Lengths: 6, 12, 24 or 36" (152, 305, 610 or 914mm) with custom lengths available
Bend Radius: 8.00mm (installation), 15.00mm (repeated)
Attachment: Solderless compression
Durability (min.): 500 cycles

Electrical

Frequencies: DC to 67 GHz
Impedance: 50 Ohms
Return Loss: -13 dB (up to 67 GHz)
VSWR: 1.6:1
Velocity of Propagation: 70%

Physical

Connector Housing: Stainless steel
Cable: 1.53mm-diameter PTFE coaxial
Operating Temperatures: -55 to +125°C

110 GHz Precision Coaxial Assemblies

Reference Information

Packaging: Bag
Designed in: Millimeters
RoHS: Yes (2011/65/EU)
REACH: Yes (2006/1907/EC)
Halogen Free: Yes

Mechanical

Connection to Instrumentation: 1.0mm coaxial
PCB Attachment: Compression mount
PCB Mount Orientation: Vertical or right-angle
Port Configuration: Single-row 1x4 or 1x8; dual-row 2x8
Pitch: 2.54mm (0.10")
Cable Lengths: 6, 12, 24 or 36" (152, 305, 610 or 914mm) with custom lengths available
Bend Radius: 7.00mm (installation), 18.00mm (repeated)
Attachment: Solderless compression
Durability (min.): 500 cycles

Electrical

Frequencies: DC to 110 GHz
Impedance: 50 Ohms
Return Loss: -10 dB (up to 110 GHz)
VSWR: 2.0:1
Velocity of Propagation: 76%

Physical

Connector Housing: Stainless steel
Cable: 1.81mm-diameter PTFE coaxial
Operating Temperatures: -55 to +125°C

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Cardinal Multi-Port High-Frequency Coaxial Assemblies ›

SPECIFICATIONS

145 GHz Precision Coaxial Assemblies

Reference Information

Packaging: Bag
Designed in: Millimeters
RoHS: Yes (2011/65/EU)
REACH: Yes (2006/1907/EC)
Halogen Free: Yes

Mechanical

Connection to Instrumentation: 0.8mm coaxial
PCB Attachment: Compression mount
PCB Mount Orientation: Vertical or right-angle
Port Configuration: Single-row 1x4 or 1x8; dual-row 2x8
Pitch: 2.54mm (0.10")
Cable Lengths: 6, 12, 24 or 36" (152, 305, 610 or 914mm) with custom lengths available
Bend Radius: 7.00mm (installation), 13.00mm (repeated)
Attachment: Solderless compression
Durability (min.): 500 cycles

Electrical

Frequencies: DC to 145 GHz
Impedance: 50 Ohms
Return Loss: -10 dB (up to 145 GHz)
VSWR: 2.0:1
Velocity of Propagation: 70%

Physical

Connector Housing: Stainless steel
Cable: 1.30mm-diameter PTFE coaxial
Operating Temperatures: -55 to +125°C

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