High-Isolation RF Connectors ›

Compact High-Isolation RF Connectors from Molex use a board-to-board array architecture to minimize crosstalk and maintain signal integrity in high-density RF systems. These automation-friendly, multi-port interconnects combine better-than-80 dB isolation, ±1.00mm board-to-board axial tolerance and guide-pin-free mating. This streamlines integration and supports scalable, cost-effective connectivity for wireless, networking, antenna, multiple-input multiple-output (MIMO) and advanced RF module applications.

ADVANTAGES AND FEATURES

Enhances signal integrity
Robust shielding, stamped-and-formed contacts and selective plating help preserve signal integrity and reduce unwanted coupling between adjacent RF channels.

Reduces crosstalk risk
Better-than-80 dB port-to-port isolation performance delivers improved signal transmission across multiple RF paths, enhancing reliability in complex networks.

Supports high-density architectures
The multi-port board-to-board array configuration consolidates multiple RF channels into a compact interface, minimizing the connector footprint, reducing the connector count and preserving valuable PCB real estate.

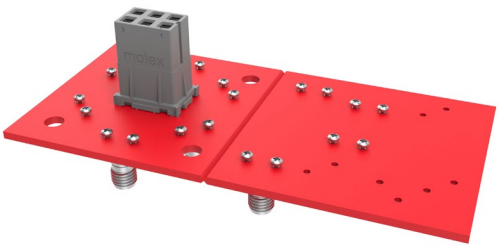
Isolation	Better than 80 dB up to 10 GHz
Axial Tolerance	±1.00mm assembly tolerance
RF Ports	4, 6 or 8
Board-to-Board Distance	10.00 to 40.00mm

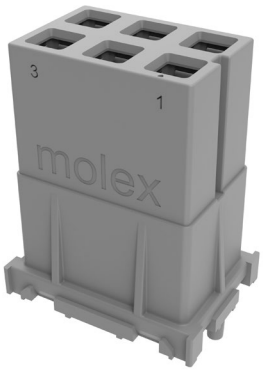
Simplifies board layout and integration
By eliminating guide pins, the bell-mouth connector design conserves valuable routing space and improves mating alignment.

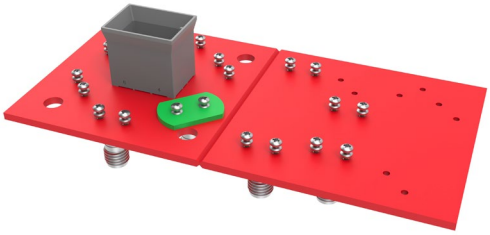
Improves board spacing flexibility
The connector supports board-to-board spacing of 10.00 to 40.00mm (including 28.50mm solutions available off the shelf) with ±1.00mm axial tolerance, making this the first multi-port connector of its type on the market in this stack-height range.

Optimizes manufacturing efficiency and quality at scale
Insert/injection-molded construction and support for automated production processes, including available tape-and-reel packaging, improve reliability and efficiency across development and production volumes.

Ensures reliability in harsh environments
The USCAR2- and USCAR49-validated design is ruggedized for use in automotive systems and other applications subject to vibration forces and extreme temperatures.







PRODUCT OVERVIEW SHEET

High-Isolation RF Connectors ›

MARKETS AND APPLICATIONS

Automotive
Shark-fin antennas
Telematics modules

Electrical and Power
Magnetic resonance imaging and other imaging equipment

Industrial Automation
5G/6G radio heads and modules
Broadband radio equipment
Massive MIMO systems
System modules

MedTech
Bluetooth personal area networks
RF system modules
Wide area network modules
Wireless local area networks

Telecommunications
5G/6G radio heads and modules
Broadband radio equipment
Massive MIMO systems
System modules



Shark-Fin Antennas



Wide Area Network Modules



5G/6G Radio Heads and Modules

SPECIFICATIONS

Reference Information
Packaging: Tape and reel, bag
Designed in: Millimeters
RoHS: Yes
Halogen Free: Yes
Validation: USCAR2, USCAR49, EIA-364-23

Physical
Housing: Plated plastic (liquid-crystal polymer, or LCP)
Contact: Copper alloy
Plating: Gold
Underplating: Nickel
Operating Temperatures: -40 to +105°C

Electrical
Frequency Range: 0.08 MHz to 10 GHz
Isolation: > 80 dB @ 10 GHz
Return Loss (Gated):
≥ 23 dB (0.08 MHz to 6 GHz)
≥ 20 dB (6 to 8 GHz)
≥ 12 dB (8 to 10 GHz)
Insertion Loss (max.):
0.3 dB (0.08 MHz to 1 GHz)
0.5 dB (1 to 3 GHz)
0.7 dB (3 to 6 GHz)
0.9 dB (6 to 8 GHz)
1.4 dB (8 to 10 GHz)
Impedance: 50 Ohms
Voltage: 60V

Mechanical
Board-to-Board Distance: 10.00 to 40.00mm (28.50mm available off the shelf)
Axial (Z-Axis) Tolerance: ±1.00mm
Receptacle X-Z Radial Gatherability: ±1.65mm
Contact Pitch: 5.08mm
PCB Attachment: Surface-mount with opposing through-hole legs
Recommended PCB Thickness: 1.98mm
Contact Ports: 4, 6 or 8
Configurations: PCB side-plug and PCB side-socket versions
Durability: 500 cycles

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