

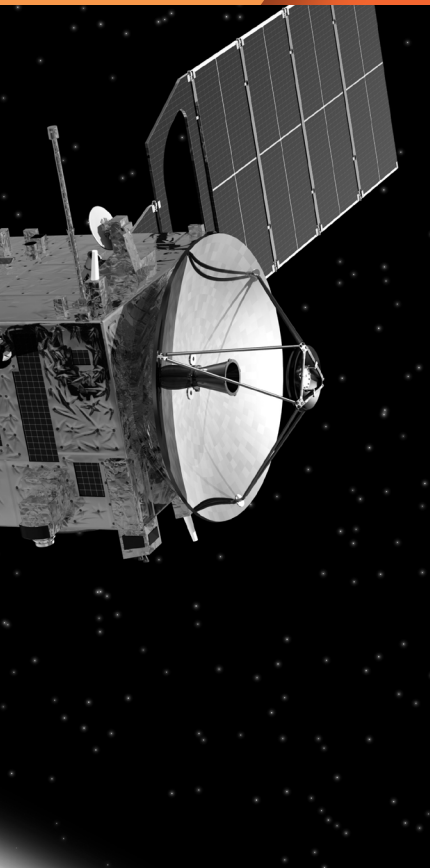
Innovation that Defines Performance

# CONNECTING CHAMPIONS

ADVANCING TECHNOLOGY WITH  
INTERCONNECT SOLUTIONS







Over the past seven decades Radiall has pioneered innovative interconnect solutions that reach every corner of the globe, fly in space and are recognized by leading brands for their enduring performance. With cutting-edge manufacturing facilities on three continents and a footprint in 17 countries, we support eight primary industries and hundreds of applications. You'll find us everywhere technology brings people together, from buses and trains to commercial aircraft and satellites.



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# E-LIGHT TRANSCEIVER

*Compact Pluggable Transceiver for Harsh Environments*

*Designed for demanding environments, this transceiver combines a small form factor with an ARINC 801 optical contact disconnect.*

The E-Light transceiver is designed to withstand mil/aero environments, and is fully compliant with the related standards (ARINC, MIL). Fitted with both optical and electrical disconnects, this new package simplifies handling on the host board. The transceiver is electrically pluggable and screw-mounted, whereas the optical patch cord is tool-less with a disconnect locking system.

## FEATURES & BENEFITS

- Qualified for harsh environments
- Small form factor
- Tool-less removable optical patch cord with ARINC801 contact
- High optical link budget

## APPLICATIONS

- Digital video communication
- Radar
- Sensor interconnects
- Data processing
- Industrial data links

# Q-MTITAN™

*Ruggedized MT Based Multifiber Solution for Increased Density  
in Harsh Environments*

***Radiall's Q-MTitan™ interconnect solution, the ARINC 846 standard, is the preferred solution for increased density in harsh environments.***

Designed for use in the existing size #8 Quadrax cavities of off-the-shelf multipin connectors, such as MIL-DTL-38999, ARINC 600, EPX EN4644, EN4165 connectors, Radiall's Q-MTitan™ contacts feature a compact, lightweight and ruggedized body that incorporates and protects the widely used MT ferrule, ensuring the mating of 12 or 24 optical fibers. Q-MTitan™ achieves and maintains excellent optical performance in harsh environments and is the preferred design for the ARINC 846 standard.

## FEATURES & BENEFITS

- High density, size 8, keyed MT quadrax contact (12 or 24 fibers)
- Extendable product design to support the full multipin connector range
- High temperature range: -55 °C / +125 °C
- High vibration level: 41.7 Grms
- Pre-alignment features ensure high performance, achieving very high mating cycles
- Excellent extension to D-Lightsys® multichannel transceivers

## APPLICATIONS

- Aerospace
- Defense
- Space applications
- High data transmission and high density



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# TARANIS™

## *High-Power for Harsh Environments*

*To support Urban Air Mobility (UAM) and Electrical Vertical Take Off and Landing (eVTOL), Radiall designed a perfect solution for harsh environment electrical power generation, transformation, distribution and propulsion interfaces.*

The Taranis range offers a versatile family of products. Available in both straight and right angles to ease the implementation in the narrowest environments, Taranis can secure power connections from cable-to-cable, or equipment (busbar) to cable in multiple formats (1, 2 or 3 poles). This solution offers a unique 100% 360° shielding and grounding continuity along the conductive lines.

### FEATURES & BENEFITS

- Operating range: 900 V / 115 A 25k ft
- Partial discharge: PDIV 1690 VDC - 1690 VAC 25k ft
- Temperature range: -65 °C to 150 °C
- Vibration: 16.9 grms
- 100 mating/unmating cycles
- IP67
- Altitude immersion: 25k ft

### APPLICATIONS

- Battery connector
- Power transformation units (inverters)
- Electric motors
- Power distribution to busbar and equipment

# QUICKFUSIO® 6 COAX

## Multicoax High-Frequency Lightweight Connector

*QuickFusio®*, Radiall's high-performance, lightweight miniature multipin connector is extending its wide range with a 6 COAX solution enabling multiple high-frequency (S,L,C bands) harnesses and connections.

QuickFusio™ 6 COAX is 60% lighter and 80% smaller than its competition. It's the perfect solution for harnesses and space constrained connections that require low profile package applications in harsh environments. Offering the same competitive cost, simple wiring, compactness and lightweight benefits of the QuickFusio™ series, the new 6 Coax arrangement perfectly complements the existing range and allows the simultaneous connection of 6 high frequency coax signals in a simple tool-less operation. Designed for the aerospace market, QuickFusio also serves applications requiring high performances and robustness but are constrained by size and weight.

### FEATURES & BENEFITS

- Time saving: Tool-less instant mating
- Self inspection (visual indication of locking)
- Compact: 60% lighter and 80% smaller than its competition (circular 38999)
- Grounding continuity: Line-to-line and line-to-frame
- Impedance: 50 Ohms
- Frequency range: 6 GHz
- RF leakage: 60 dB @ 6 GHz
- VSWR: 1.30:1
- Cable type (typical): AEP100, 2.10 dB/m, 0.013 kW @ 6 GHz

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### APPLICATIONS

- S, L, C HF bands applications for harsh environments
- Anti-collision systems (drones)
- GPS application (eVtol - UAM)
- Altimeters (eVTOL - UAM)
- Radiocom (Ground Vehicles - eVTOL - UAM)
- Surveillance activity (Defense)
- Weapons control systems (Defense)
- New space satellites



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# SP8T 40 GHz COAXIAL SWITCH

## High-Performance Coaxial Switch

*To meet the growing demands for various Test & Measurement applications, Radiall has introduced a new SP8T 40 GHz Coaxial Switch. Terminated and Non Terminated SP8T switches are fitted with SMA 2.9 mm connectors to complete a large range of existing 40 GHz switches.*

- Operating frequency: 40 GHz
- VSWR: 1.45:1 @ 40 GHz typical
- Insertion Loss: 0.8 @ 40 GHz typical
- Average power: 5 W @ nominal voltage at 25 °C

### FEATURES & BENEFITS

- Frequency: DC - 40 GHz
- Excellent RF performances and repeatability
- Life span: minimum guarantee 2 million cycles
- Various options available

### APPLICATIONS

- 5G telecom
- High frequency test & measurement
- Satellite communication



# IMP FAMILY

*The New Generation of Solderless Interconnect Solutions*

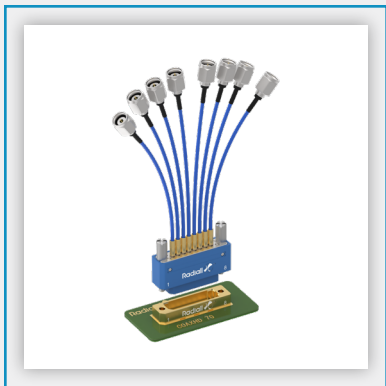
*Interconnect micro-miniature pressure contacts are the latest innovative solution for a variety of applications, including AESA antennas. Their solderless system meets the new integration needs of board-to-board solutions.*

Radiall has introduced innovative connectors to follow the trend of application miniaturization while increasing performance. The products provide increased integration density, lighter interconnection and simplified product integration. The IMP family is comprised of different products designed to suit a variety of applications in the defense and space industries: IMP-HD, IMP-LP and IMP-SR.

## FEATURES & BENEFITS

- Up to 40 GHz
- Low phase noise: -20 to -30 dB @ 1 kHz
- Insertion loss:  $\leq 0.25$  dB
- Crosstalk: -85 dB typ. @ 18 GHz
- Diameter: from 2.52 mm
- Board-to-board distance: from 1.41 mm





# COAXHD70

## *High-Density Multi-Port Solution*

***The CoaxHD family offers a high-density multi-port solution capable of supporting signal transmission up to 70 GHz.***

Radiall's CoaxHD70 is a type of multi-port coaxial connector, featuring high-frequency capability of 70 GHz, exceptional durability and reliable performance.

- Frequency range: DC - 70 GHz, supporting data rates up to 224 Gbps
- Surface-Mount Technology (SMT) receptacle for PCB mounting
- 8 coaxial contacts with a 3.0 mm pitch
- Solderless, spring-loaded inner and outer coaxial contacts
- Secure plug-to-receptacle connection with two jackscrew locks
- Retention clip keeps each contact securely in place inside the housing, providing stability and reliability
- Allows for individual line replacement
- Available in standard lengths of 152 mm and 305 mm, with custom lengths available
- Tool-less installation for ease of use

### **FEATURES & BENEFITS**

- Data rate up to 224 Gbps PAM4
- High density
- Repeatability
- RF performance stability through 1,000 mating cycles
- Robust and reliable locking mechanism
- Tool-free installation
- Field reparability

### **APPLICATIONS**

- High speed chipset verification
- High speed device verification
- Optical transceiver verification

# SHF 110 GHz CABLE ASSEMBLIES

## *Super High Frequency Cable Assemblies*

*With this cable assembly range, Radiall meets the demands of the most challenging applications where high frequency and data rate are critical.*

Equipped with 1 mm instrument grade connectors, these cables reach high levels of phase and insertion loss stabilities.

### FEATURES & BENEFITS

- Frequency range: DC - 110 GHz
- IEEE287-1 instrument grade connectors
- Phase stability vs flexibility:  $< 15^{\circ}\text{C}$  @ 110 GHz
- IL stability vs flexibility:  $< 0.1\text{ dB}$  @ 110 GHz
- VSWR  $< 1.42:1$  @ 110 GHz
- Temperature range:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

### APPLICATIONS

- Test & measurement
- High speed data
- Space applications





# SiO<sub>2</sub> CABLE ASSEMBLIES

## *Silicon Dioxide Based Cable Assemblies*

*To meet the needs of demanding applications, Radiall offers the SiO<sub>2</sub> cable assemblies range. The silicon dioxide based cable assemblies offer extreme resistance in space applications and harsh environments with high temperatures and high levels of radiation. Their glass-like dielectric core ensures a low phase variation RF interconnection.*

- Temperature range: -55 °C to +600 °C
- Frequency range: DC - 18 GHz
- Cable size: 0.25", 0.142"
- Available connector series: SMA, N

### FEATURES & BENEFITS

- Very high temperature resistance
- Flat and low phase stability vs temperature
- Radiation resistance
- Fully sealed solution (laser welding)
- Glass-beaded connectors

### APPLICATIONS

- Electronic radar array
- High definition interferometry
- Temperature probe (reactor)
- Hypersonic weapon
- Outer space launcher/satellite
- Nuclear industry:
  - Thermal measurement
  - Low frequency data

# QUANTUM SIDE LOADER

## *High-Density Modular Solution*

*Radiall's semi-rigid cable assemblies use specific technology to withstand the lower temperatures down to tens of milliKelvin. These technologies have been rigorously tested both in the lab and in the field proving the robustness of the Radiall solution.*

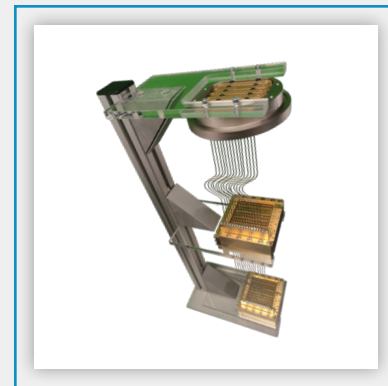
With cable sizes of 0.034" and 0.047" and SMA - SMP - SMPM - SMPW connectors, Radiall can manufacture different configurations that reach up to 67 GHz in cryogenic environments.

### FEATURES & BENEFITS

- Temperature range down to 10 °mK
- Non-magnetic
- 3D precise bending shape
- High thermal isolation
- CuproNickel CuN (4 °K)
- Niobium Titanium NbTi (1 °K),
- Copper Silver CuPro (10 °mK)

### APPLICATIONS

- Quantum computers
- Instrumentation





# QUANTUM COMPONENTS

## *SMA Attenuators & IR Filters*

*To support growing quantum technology, Radiall is working with R&D, laboratories and start-ups to create new interconnect solutions that are tested in-house and qualified in accredited labs.*

In quantum computing, cryogenic microwave attenuators are used in different stages of the thermal dilution refrigerator to reduce noise and maintain signal integrity. The Module Attenuator 30 Ways, a key component, plays a vital role by attenuating signals at various levels within the refrigerator. Infrared (IR) filters are primarily used to block undesired infrared radiation between cryostat stages, further enhancing signal quality. The RF lines across each layer increase the Signal-to-Noise Ratio (SNR), while the attenuator helps to thermalize and protect the signal.

### FEATURES & BENEFITS

- Operating temperature: 0.01 to 350 °K
- Attenuations values: up to 20 dB
- Low deviation:  $\pm 0.3$  dB

### APPLICATIONS

- All cryogenic applications
- Quantum computing

# QUANTUM CONNECTORS

## *Cryogenic Product Solution*

*Radiall's QRYSTALL connectors offer a comprehensive array of cryogenic solutions designed for optimal qubit management. These connectors ensure reliable performance in extreme conditions, maintaining integrity down to 10 millikelvin (-273.14 °C).*

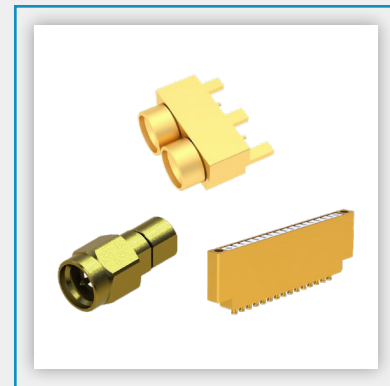
Radiall's high-density hermetic feedthrough 180 Ways provides robust and reliable connectivity for cryogenic environments. Alongside the Multi-port 15 Ways, as well as SMA and SMPM connectors, these solutions ensure comprehensive coverage across the entire fridge chain in quantum computing systems. This combination offers seamless signal transmission and exceptional performance under extreme conditions.

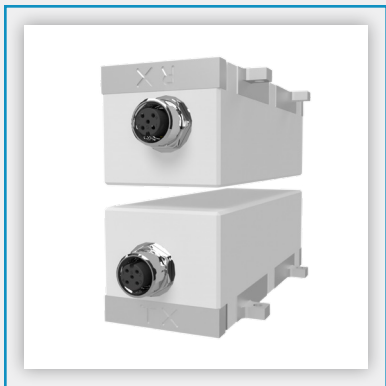
### FEATURES & BENEFITS

- Excellent performance in cold environments (10 °mKelvin)
- Attenuator up to 20 dB
- Multi-port 65 GHz

### APPLICATIONS

- Quantum computing





# CONTACTLESS CONNECTOR

## *Contactless Power & Data Connectors*

*The Co15CAN is a contactless connectors evaluation kit that provides data and power transmission 15W at a short distance without any physical contact through non-electrically conductive materials.*

To meet the growing demand for more flexible and reliable connections, Radiall developed contactless connectors for harsh environments. Release connections from physical barriers to simplify maintenance and save cost.

- Power transmission: 15W
- Data transmission: 250 kbps, CAN, bi-directional
- Distance of transmission: 8 to 16 mm  $\pm$ 2 mm
- Input/output voltage: 24 VDC
- Operational temperature: -40 to +70 °C
- IP67

### FEATURES & BENEFITS

- Continuous power of 15W
- Distance of transmission up to 8 to 16 mm  $\pm$ 2 mm
- Misalignment tolerance:  $\pm$ 2 mm
- Bi-directional data transmission

### APPLICATIONS

- Smart factory
- Industrial connected devices
- Renewable energy
- Medical equipment



# QUICK INSTALL

## *High-Density Lightweight Quick Connect*

*Quick Install is a high-density, lightweight, versatile and easy-to-use connector, making it the ideal solution for harsh environment applications.*

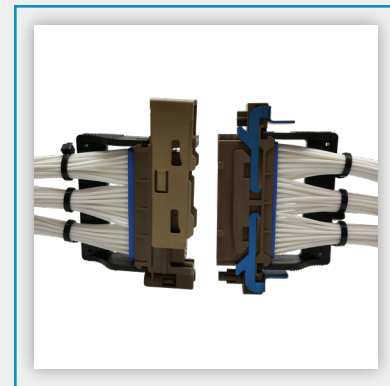
Designed to address commercial aircraft signal, fiber and power distribution, Quick Install Radiall connectors can be the perfect solution for severe environment equipment and applications where density, weight and slim form factor is key. The Quick Install Range offers a wide range of products, to carry signal, power, fiber optics HF or data. Available in disconnect (cable-to-cable) or equipment (cable-to-PCB), Quick Install has been designed to simplify customer's work and total cost of ownership: instant assembly on the frame, instant tool-less mating, self inspection features allowing you to remove control steps. For additional electrical performances (shielding, continuity), also discover our QuickSlim range designed with the same connector shape.

### FEATURES & BENEFITS

- 80% installation time saving: Tool-less instant mating
- Self inspection (visual and sensitive indication of locking)
- Compact (slim shape)
- Lightweight (15% lighter than competition)
- FOD proof (foreign object damage): No screw
- Signal, power, data, HF compatible
- Temperature range: -55 °C - + 175 °C
- Vibration: 16.9 Grms
- Mating/unmating: 100 cycles
- Corrosion salt spray: 96 h
- Altitude immersion: 50 kft

### APPLICATIONS

- EWIS (Electrical Wire Interconnect Systems)
- Equipment connection
- UAM / eVTOL (slim form factor & lightweight)
- New space satellites (power, signal, fiber, data)
- Industrial and transportation

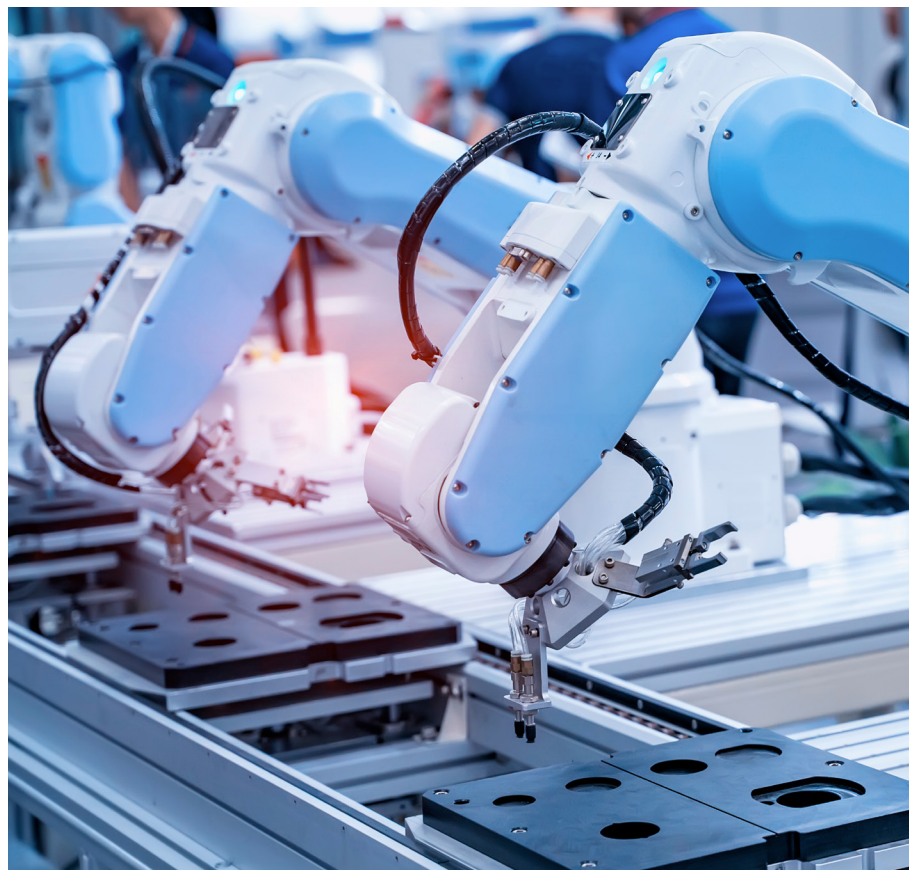


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