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Cryonium™ Quantum Computing Range

March 2026 - Radiall, a global leader in interconnect solutions, launches the **Cryonium™ Quantum Computing Range**, a comprehensive portfolio of cryogenic interconnect solutions for next-generation quantum systems.

Developed through long-standing collaboration with leaders in quantum computing, the Cryonium™ range is already trusted in some of the world's most advanced quantum environments.

From Components to Turnkey System Integration

Built on Radiall's expertise, the Cryonium™ range delivers fully customized, turnkey side loader solutions for quantum computing platforms. Trusted by leading system developers, these solutions ensure seamless performance from room temperature to milli-Kelvin levels, while streamlining the integration of complex dilution refrigerators.

"Our role extends well beyond the supply of individual components," said Guillaume Gattaz, RF&I Business Unit Director at Radiall. "We work closely with our customers as an engineering partner, developing customized side loader solutions that are fully integrated and thermalized. This approach allows quantum system architects to concentrate on qubit performance, while Radiall ensures the integrity and reliability of the entire signal chain."

A Structured Cryogenic Ecosystem

The Cryonium™ range brings together a coherent portfolio of cryogenic interconnect technologies, drawing on Radiall's long-standing expertise in RF connectors, cable assemblies and switching solutions. Each element of the range is engineered to operate reliably at near-absolute-zero temperatures, ensuring stable performance across the full thermal gradient of the cryostat.

Key components of the Cryonium™ Quantum Computing Range include:

- **Semi-Rigid 3D Cabling**
Engineered for complex cryogenic architectures, these cable assemblies feature precise three-dimensional bending adapted to specific system layouts. Supporting frequencies from DC to 20 GHz, they are available in a range of lengths, diameters and material configurations suitable for operation at 4 K, 1 K and 10 mK.
- **Cryogenic RF Connectors**
Developed by Radiall's RF&I experts, these connectors deliver reliable, cryogenic-ready performance for quantum systems. The portfolio includes high-frequency SMA, SMPM and SMPM-Lock connectors, as well as high-density hermetic feedthroughs, ensuring signal integrity from feedthroughs to refrigerator stages.
- **Cryogenic Attenuators**
To optimize signal-to-noise ratio in sensitive quantum circuits, Radiall offers high-performance attenuators ranging from 0 to 20 dB, operational from 4 K down to 10 mK. These components support RF line thermalization and signal protection and can be seamlessly integrated into custom side loader assemblies.
- **Infrared Filters**
Designed to reduce thermal noise and electromagnetic interference, these filters help

maintain qubit coherence by blocking unwanted infrared radiation, enabling longer and more stable quantum states.

- **RF Low-Pass Filters**

These filters reject high-frequency interference while allowing only the desired microwave signals to pass, supporting improved qubit coherence and system stability.

- **Cryogenic Switches**

Radiall's proven SPDT and SPnT cryogenic switches deliver exceptional reliability at 10 mK. Based on patented RAMSES™ technology, these non-magnetic switches eliminate friction and particle contamination, enabling ultra-low-power, mission-critical signal routing.

- **F2C-40 Floating Cryogenic Cluster**

A key solution for cryostat densification, this 40-way high-density multi-coaxial connector features a unique floating structure that maintains stable connectivity during thermal cycling. It supports frequencies up to 18 GHz at ultra-low temperatures (10 mK) and is also available in a 16-pin configuration.

With the Cryonium™ Quantum Computing Range, Radiall reinforces its position as a trusted partner for the quantum computing market—combining the reliability of a global manufacturer with the agility and expertise of a custom solutions provider.

For more information about Radiall's customized quantum solutions, please contact a Radiall sales representative or visit www.radiall.com.

For more information, contact:

Europe and Asia

Radiall SA
25 Rue Madeleine Vionnet
93300 Aubervilliers, France
Tel: +33 (0)1 49 35 35 35
E-mail: infofr@radiall.com

North America

Radiall USA, Inc.
8950 S. 52nd Street, Suite 401
Tempe, Arizona 85284
Sales Tel: 480-682-9400
E-mail: infousa@radiall.com

Product contact

Sebastien Roy
Product Manager
E-mail: sebastien.roy@radiall.com