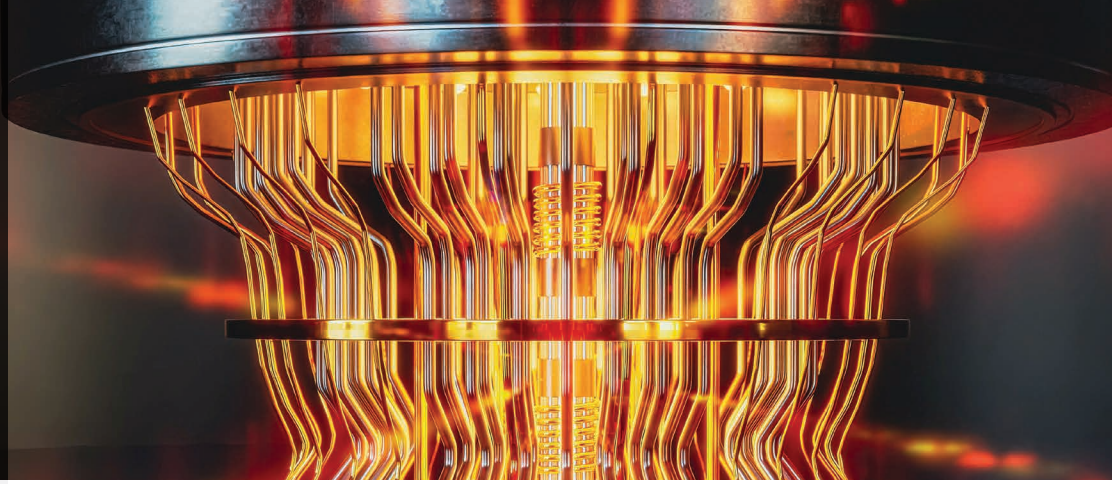
INFRARED **FILTER**

Infrared Filters that Protect Qubits for Quantum Computing



As an important actor in the high technology sector and to anticipate the future's needs of components in the quantum race, Radiall developed a specific attenuator range for cryogenic applications. These attenuators fit perfectly for commercial quantum computer applications.

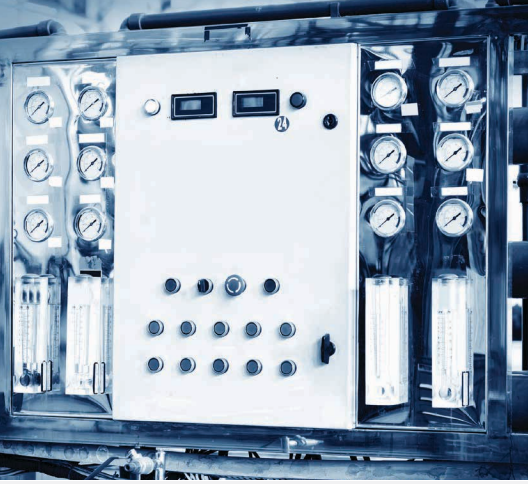
The primary application of these filters is to block infrared radiation (undesired frequency range) between two stages of the cryostat, which is the containment enclosure of a quantum computer. Typically, there are five stages at different temperatures. Starting from the top and descending to the bottom stage, which approaches absolute zero (-273 °C), where the qubits are located. These filters need to allow the RF signal to pass from one stage to another while preventing the propagation of infrared radiation. This is crucial for the proper functioning and extended lifespan of the qubits.

FEATURES & BENEFITS

- *Operating temperature: 0.01 - 350 °K*
- *Better and longer performances for the quantum computer*
- *Reliability: Accurate and consistent attenuation values near 0 °K*
- *Economic: Extends the qubit lifetime*

APPLICATIONS

- *Cryogenic applications*
- *Quantum computing*



Provide better and longer performances for the quantum computer.
Reliability: Accurate and consistent attenuation values near 0 °K
Economic: Extends the qubit lifetime

PART NUMBERS	ATTENUATION VALUE (dB)	CONNECTOR	FREQUENCY (GHz)	TYPE
R438 538 101	0.6	SMA	DC - 15 GHz	F to F
R438 538 100	2			