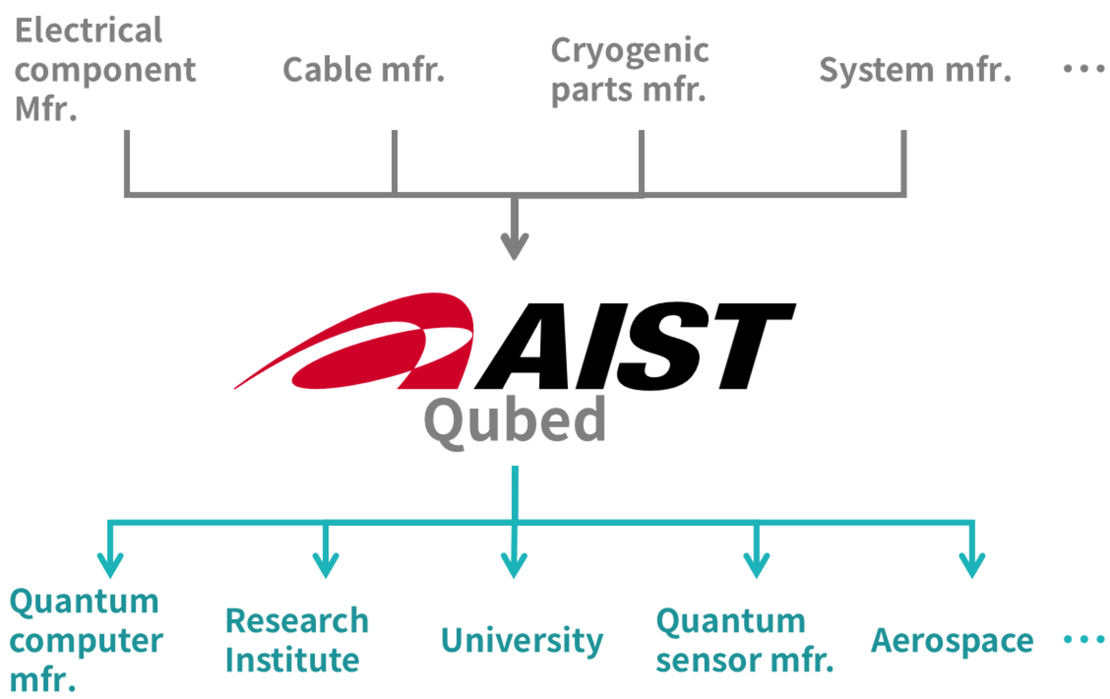
Testbed for Components and Materials for Quantum Computer

Qubed

- Evaluation environment for component and materials for quantum computers
- A platform capable of assessing high-frequency, cryogenic, thermal, and optical properties
- Clarifying evaluation standards for quantum materials to support the establishment of a supply chain

Evaluation Service

To realize large-scale quantum computers, a variety of quantum components—such as wiring, amplifiers, and connectors with excellent properties—are essential. Establishing a supply chain for these components requires both a robust evaluation environment and clearly defined assessment standards. The Qubed serves as a platform for evaluating high-frequency, cryogenic, thermal, and optical properties of quantum components. Through this initiative, we aim to lower the barriers for companies with diverse technologies to enter the quantum industry.



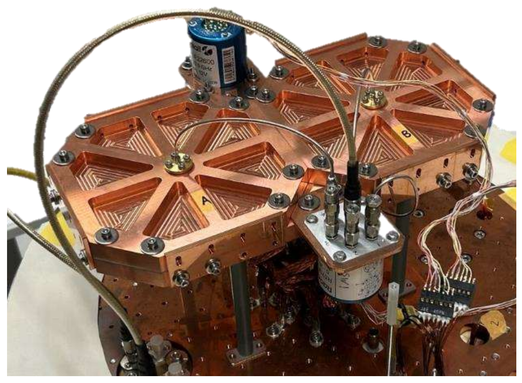
Evaluation of High-Frequency Components

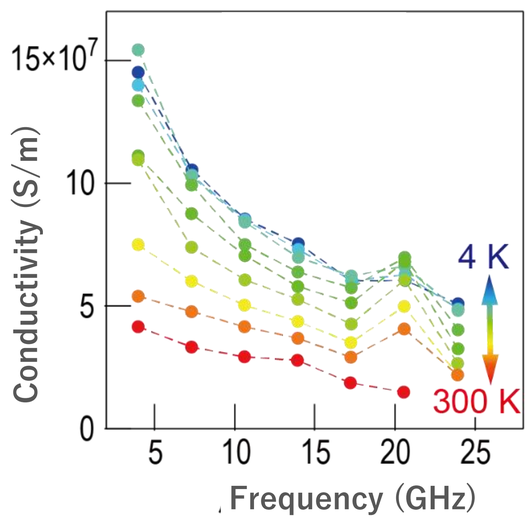
Characterization system using a tandem refrigerator

- Emulating quantum computing environments with a tandem refrigerator and characterizing cryogenic RF components such as cables and circulators.
- Microwave measurements calibrated at arbitrary temperatures from 4 K to 300 K using a high-frequency switch
- S-parameter measurements and time-domain analysis up to 26.5 GHz
- Simultaneous measurement of multiple microwave components with a high-frequency system of up to 8 ports.

Other Measurement Solutions

- Cryogenic characterization of dielectric and metallic materials for high-frequency substrates
- Cryogenic evaluation of magnetic and thermal properties
- Original evaluation methods developed for quantum device


Resonator for high-frequency material parameter evaluation



G-QuAT

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