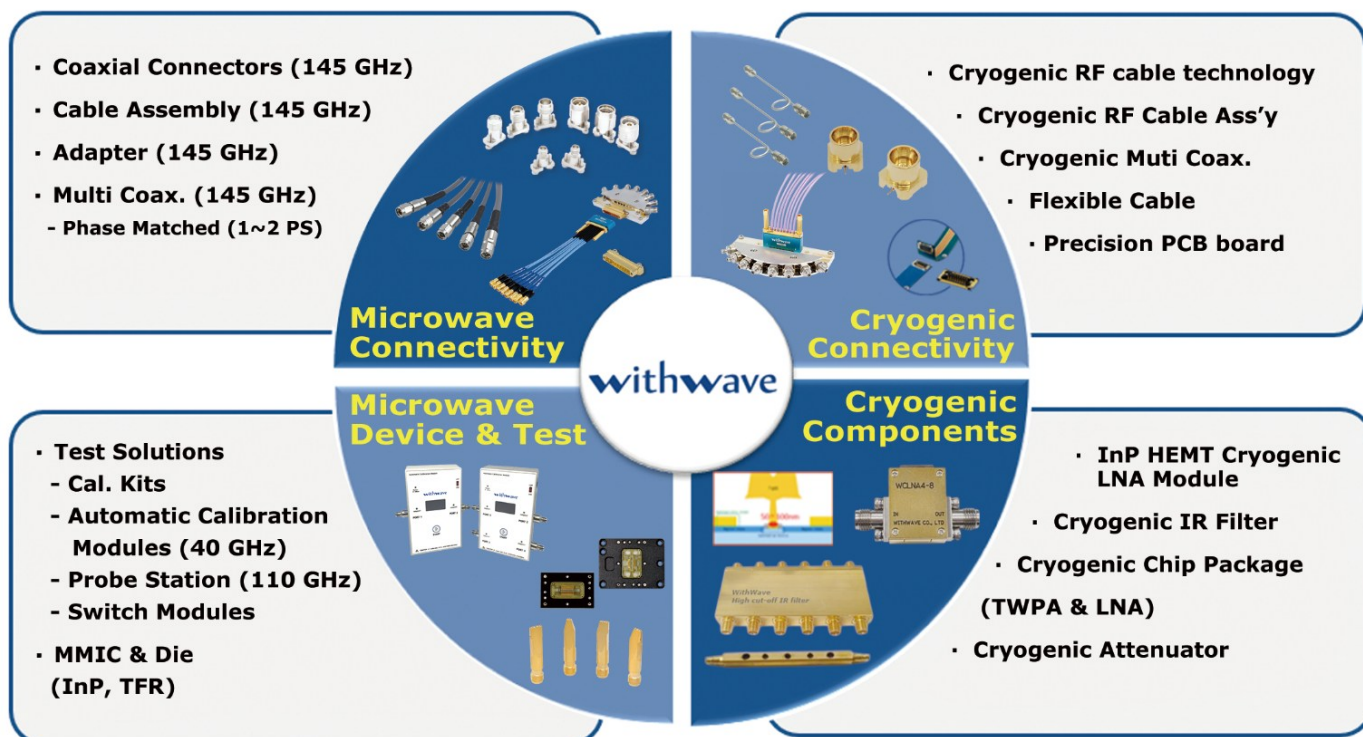


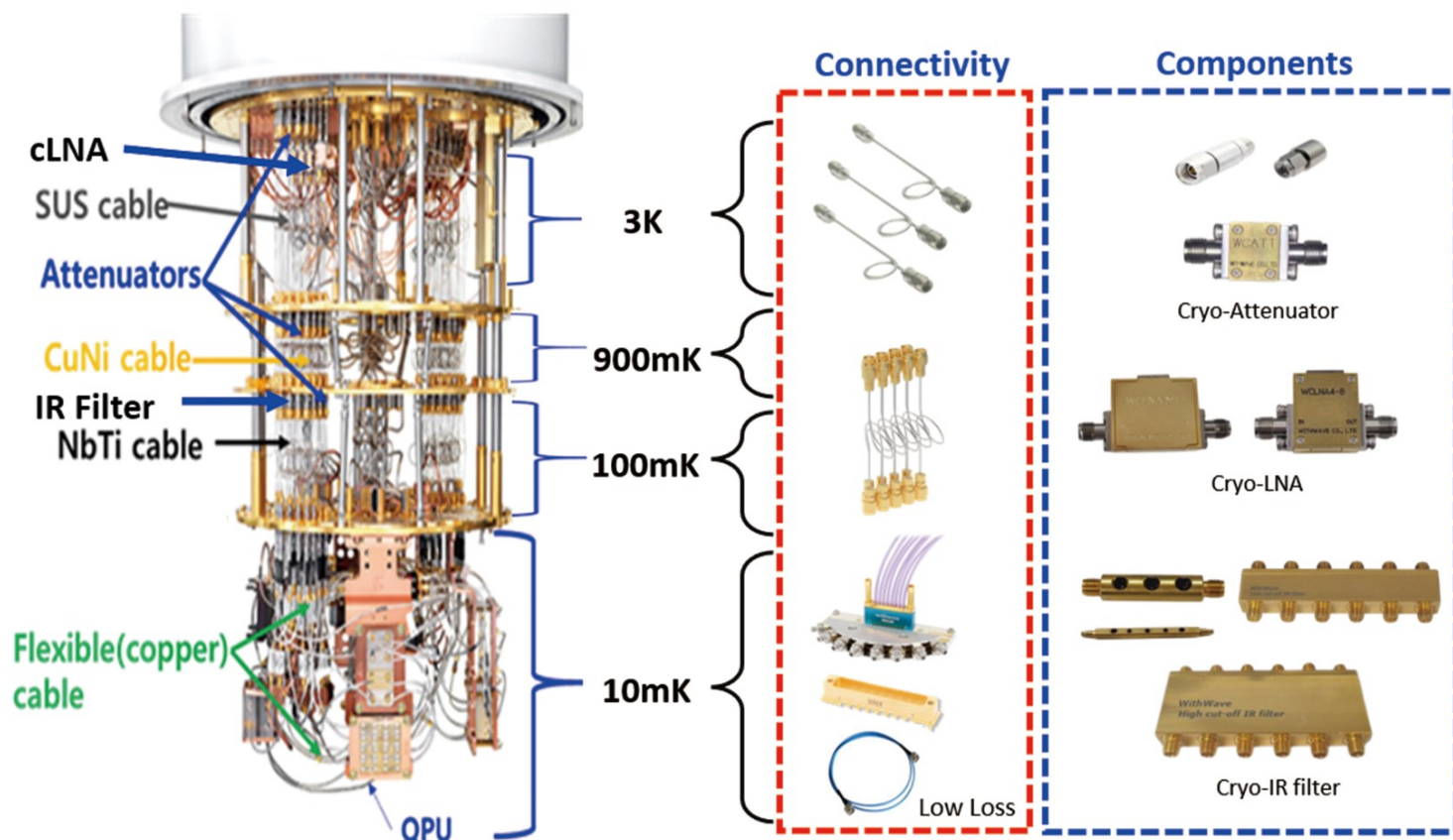


Core Technology

Core Technologies of WithWave for Quantum Computer and Microwave Systems



Product Family for Quantum Computer



Cryogenic Quantum Components

**4K
Cryogenic Test**

• Cryogenic Attenuator

2.92 mm type



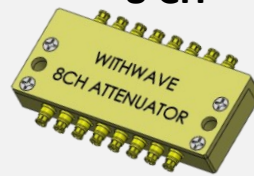
ATC-K01-xx
(xx : Attenuation)

SMPS type



ATC-S01-xx
(xx : Attenuation)

8 CH



ATC-S01-8C-XX
(xx : Attenuation)

- Frequency : DC to 20 GHz
- Minimal change in attenuation (temperature and frequency)
- Excellent RF matching : 50 Ohm
- NiCr deposited on Quartz substrate
- OFHC body, Au plated without Ni (non-magnetic)

Application

- Cryogenic quantum computing
- Superconducting electronics

• Cryogenic Infrared Filters

SMA type



IRF-K01-S
(Low cut-off)



IRF-K02-S
(High cut-off)

6 CH



IRF-K01-6C
(Low cut-off)



IRF-K02-6C
(High cut-off)

SMPS type

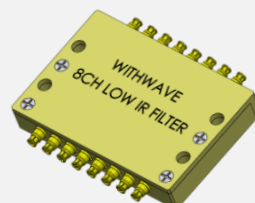


IRF-S01-S
(Low cut-off)

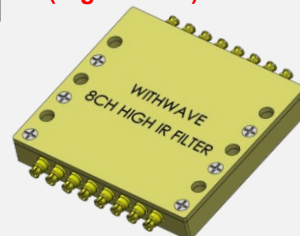


IRF-S02-S
(High cut-off)

8 CH



IRF-S01-8C
(Low cut-off)



IRF-S02-8C
(High cut-off)

- Impedance: 50 Ohm
- Capable of operation : 10 mK
- Connector types: SMA(Female), SMPS(Female)
- Body and Plating Material : Gold Plated OFHC Copper

Application

- Cryogenic quantum computing
- Superconducting electronics

Cryogenic Quantum Components

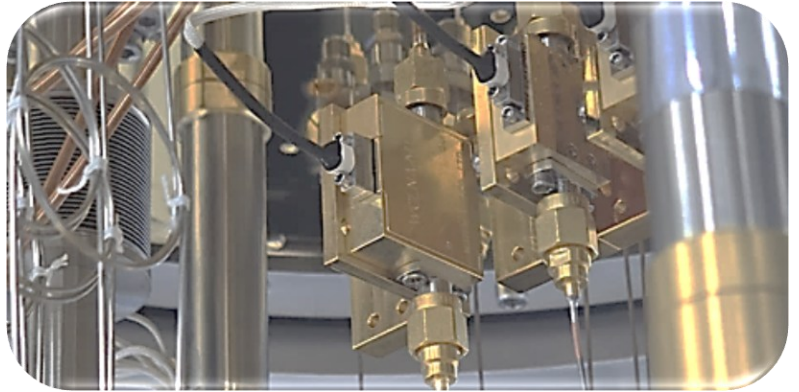
• Cryogenic Low noise Amplifier

$T_n = 3 \sim 4K @ 4K$



- Optimized for 4~8 GHz frequency range.
- Ultra-low noise temperatures of 3~4K at 4K
- Built with InP HEMT technology for superior cryogenic and RF characteristics.

**4K
Cryogenic Test**



Application

- Cryogenic quantum computing
- Radio astronomy
- Superconducting electronics
- RF signal amplification at low temperature

• Low Noise Power Supply



Front



OLED Screen

Rear



- Ultra low noise output with high stability
- Optimized for cryogenic HEMT LNA modules
- Integrated automatic gate bias control
- Fine-tunable drain voltage and current

Application

- Cryogenic quantum computing
- Radio astronomy
- Superconducting electronics
- RF signal amplification at low temperature