B&P Technology Co., Ltd.

Quantum Computing Customized Solutions

From the beginning...

The legend of physics, Richard Feynman, proposed the concept of "quantum computing" in his 1982 lecture titled "Simulating Physics with Computers" at the University of California, Berkeley. When traditional computers need to simulate quantum systems like molecules, classical computing power encounters fundamental limitations. Feynman pointed out that quantum computers could overcome this limitation by utilizing the special properties of quantum bits.

In the 1990s, with breakthrough work by physicists such as Peter Shor (who proposed the quantum factorization algorithm) and Lov Grover (who proposed the quantum search algorithm), the theoretical foundation of quantum computing was solidified, and its exponential acceleration potential was mathematically proven for the first time.

Current quantum computing technology has developed multiple development paths, among which superconducting quantum computing and optical quantum computing are the most cutting-edge. By continuously improving the coherent control capabilities of quantum bits, scientists have achieved breakthrough application results in fields such as drug molecule simulation, global logistics route optimization, and machine learning acceleration.

About us

B&P Technology Co., Ltd., founded in 2025, is an integrator and supplier of quantum information technology, providing customized product solutions for clients worldwide.

For more details, please visit: https://www.bpquantum.com

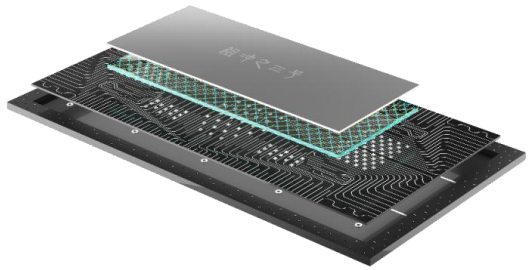
Certifications:

Customized solutions for superconducting QC

Customizable 36-, 66-, and 100+ qubit quantum computers, with supporting software, on-site training, and a 2-year warranty.

Our Partners

国盾量子 QuantumCTek



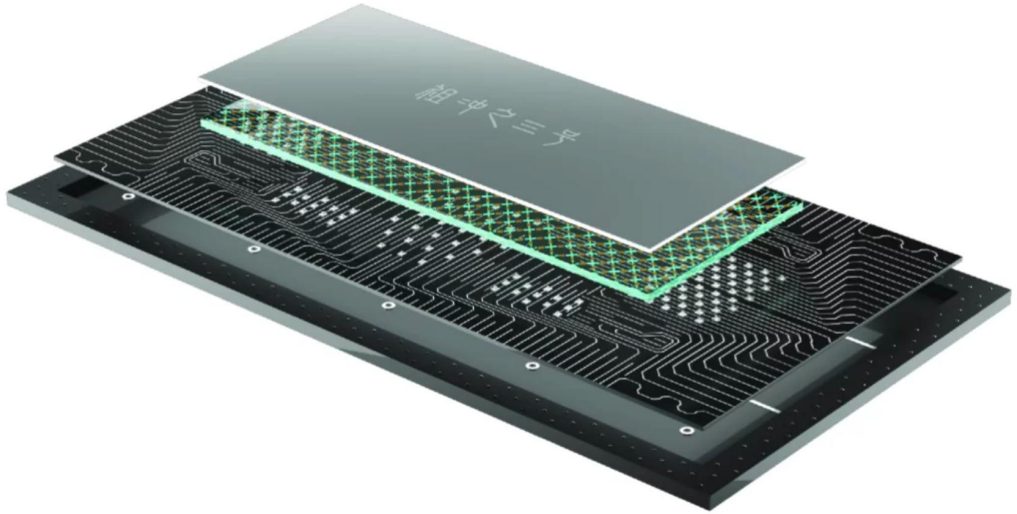
QuantumCTek Co., Ltd. (stock code: 688027), established in 2009, is the only listed company in the world with business scope covering all three major fields of quantum communication, quantum computing and quantum measurement.

In June 2021, the "Zuchongzhi" superconducting quantum computing prototype was unveiled, making China one of only two countries to achieve "superconducting quantum computational supremacy." QuantumCTek has been participating in the development of "Zuchongzhi" series of superconducting quantum computers, and has well-established itself as one of the few providers of complete solutions for superconducting quantum computers in the world.

Customized Superconudcting Quantum Computing Chip

Chinese Team Officially Report On Zuchongzhi 3.0, Claims Million Times Speedup Over Google's Sycamore

Reports, Research Matt Swayne • May 9, 2025



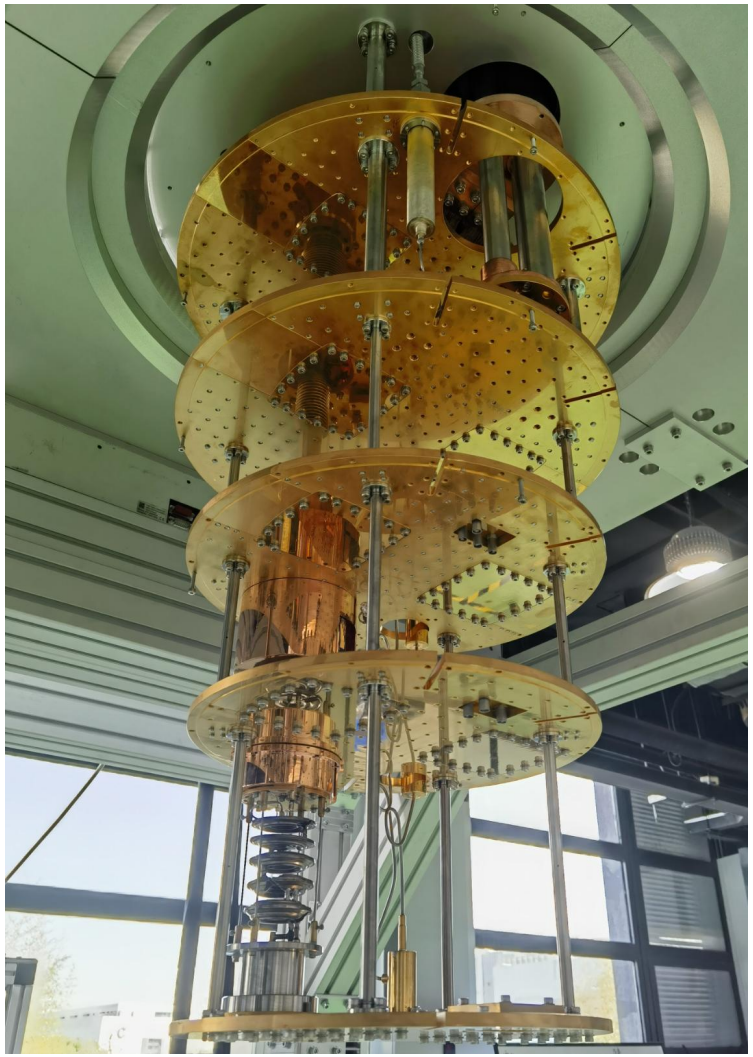
Chip Structure	Tunable Coupling
35 control qubits, 55 coupling qubits (gen II)	√
66 control qubits, 110 coupling qubits (gen I)	√
66 control qubits, 110 coupling qubits (gen II)	√
100+ control qubits, 160+coupling qubits (gen II)	√

Key Indicators

Qubit	36 control bits, 55 coupling bits (Generation IV chip)	66 control bits, 110 coupling bits (Generation III chip)	66 control bits, 110 coupling bits (Generation IV chip)	100+ control bits, 160+ coupling bits (Generation IV chip)
single qubit gate fidelity	Avg: 99.74%	Avg:99.20%	Avg: 99.70%	Avg: 99.65%
two qubit gate fidelity	Avg: 99.28%	Avg: 98.80%	Avg: 99.20%	Avg: 99.10%
readout fidelity	Avg: 96.24%	Avg:95.00%	Avg: 96.17%	Avg: 96.12%
T1	50us	20us	50us	50us

*The table indicators are typical values, and specific indicators are subject to delivery

Ultra low temperature experimental platform



Technical Parameter	Technical Specification
Model Selection	FP400，FP1000
Minimum Temperature	<10 mK
Cooldown Time	<30 h
MC Plate Diameter	320 mm
Sample Space Below Mixing Chamber	Diameter 317mm; Height 340mm (Customizable)
Main System External Dimensions	2100mm * 1300mm * 2800mm
Number of Sideloading Ports	2
Frequency Range of Measurement Lines	DC-18.0 GHz
Ultimate Vacuum	<1.0 * 10-6mbar
Pulse Tube Refrigerator Power	1.5 W @4.2 K
Pulse Tube Refrigerator Minimum Temperature	≤2.8 K

Electronic Control Unit

Highly Integrated All-in-One Solution

- Single chassis dimensions: 485mm (W) * 400mm (L) * 440mm (H), capable of testing and controlling up to 120 qubits maximum.
- A single chassis includes all modules required for quantum computing experiments: control XY signal output module, bias Z signal output module, readout excitation output module, readout processing input module, and readout Pump module, eliminating the need for additional equipment configuration.
- Compared to discrete measurement and control equipment, the highly integrated ez-Q engine 2.0 offers higher cost-effectiveness.

More Suitable for Quantum Computing Experiments

- Designed according to experimental requirements for each module: control XY sampling rate 12 GSPS, bias Z sampling rate 1 GSPS, readout excitation output sampling rate 4 GSPS, readout processing input sampling rate 4 GSPS.
- Control signal bandwidth 400 MHz, readout excitation output/input bandwidth 1.2 GHz.
- Control signal SFDR: better than -50 dB within the center frequency range of -400 MHz to +200 MHz; Phase noise: ≤ -90 dBc/Hz @ 1 kHz offset (6 GHz output).
- Paired with mature measurement and control API interfaces, based on a natural expression of pulse sequences, reducing experimental labor costs.

Selection Examples

Unsure which system you need? Reference for qubit count vs. possible application scenarios:

36 Control Qubits & 55 Coupling Qubits (2nd Gen Chip)	Configured with custom algorithms and software systems to: Simulate the quantum state evolution of new lithium battery electrolyte materials, accelerating R&D for high-energy-density batteries; Optimize portfolio weights, calculating optimal asset allocation under risk constraints; Run Grover's algorithm to demonstrate search acceleration in small databases, etc.
66 Control Qubits & 110 Coupling Qubits (2nd & 3rd Gen Chips)	Simulate protein-ligand binding energy, shortening drug screening cycles; Solve urban freight routing problems, achieving near-optimal solutions multiple times faster than classical algorithms; Train quantum neural networks for medical image classification tasks, etc.
100+ Control Qubits & 160+ Coupling Qubits (2nd Gen Chip)	Simulate cracking paths for RSA-1024; Quantum simulation of atmospheric chemical reactions; Quantum random circuit sampling, etc.
Quantum + Classical Hybrid*	Optimize investment portfolios to maximize returns for a given risk; Simulate the electronic structure of small molecules to predict biological activity; Optimize power grid load distribution to improve renewable energy utilization rates, etc.

*Quantum-Classical Hybrid Computing combines the parallelism of quantum computing with the stability of classical computing. It is currently the quantum computing solution closest to practical application.

Supporting Services / After-Sales

The full-stack quantum computing solution includes a complete set of equipment (with complimentary cryogenic components and software), on-site installation, training, testing, and a **two-year on-site maintenance service*.**

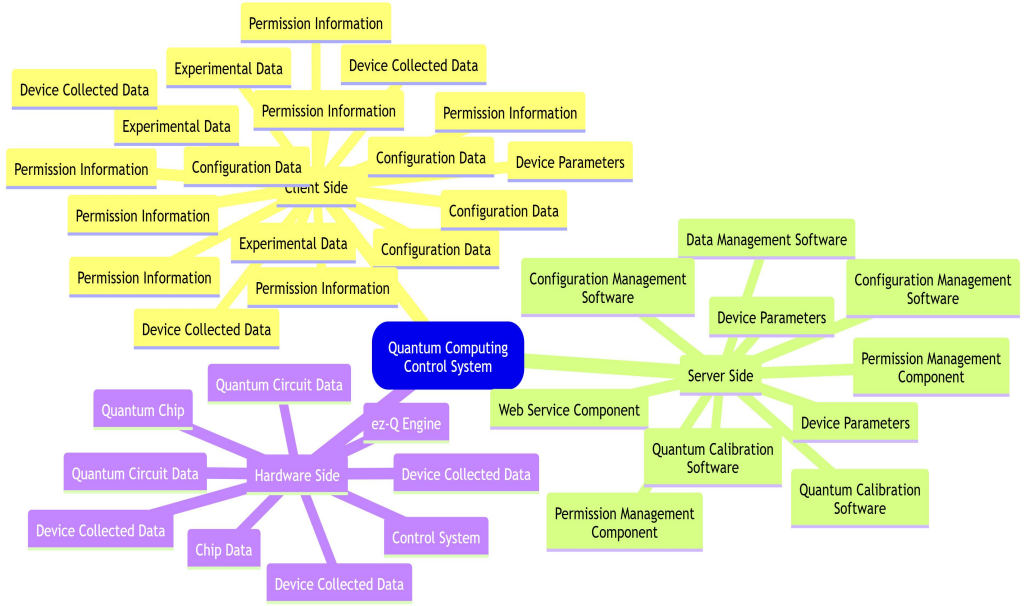
*Varies by plan

Cryogenic Cables

Custom bent to specified lengths provided by the client, with corresponding tooling and fixtures designed; cable options include conventional materials such as Cupronickel (CuNi), Stainless Steel (SS), Aluminum wire, and Niobium Titanium wire.

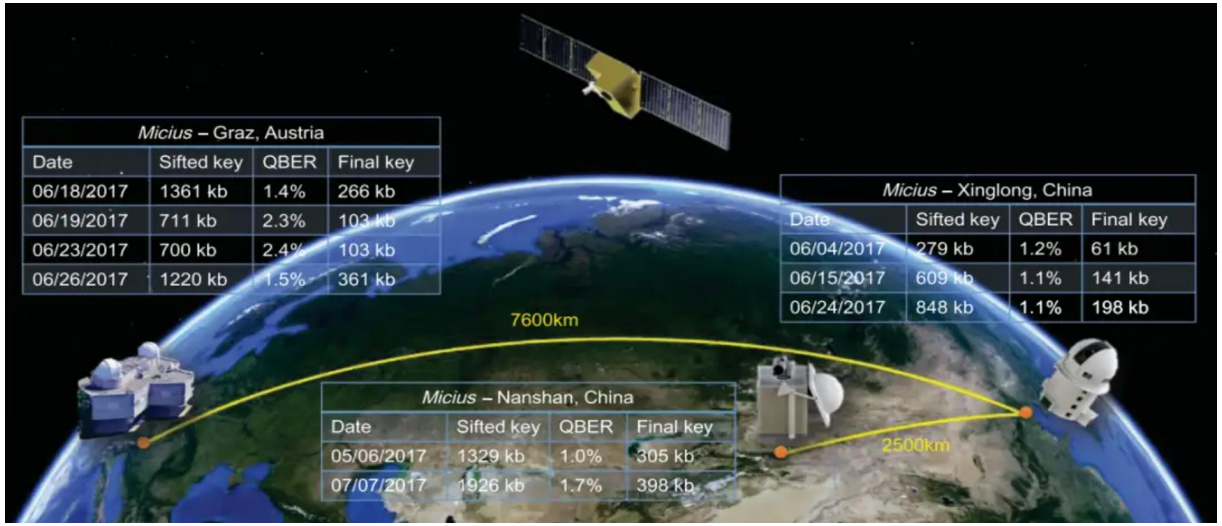
Cryogenic Devices

Tailored solutions including customizable heat sink plates, hermetic feedthroughs, adapters, cryogenic attenuators, Josephson impedance taper parametric amplifiers, and more, designed to meet specific client circuit requirements.



Supporting Services / After-Sales

For more quantum communication and security solutions, please contact us for details.



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