



The new possible

Product Portfolio

Introducing Hybrid Control, a revolutionary new approach for quantum builders to effortlessly achieve their ambitious milestones, previously considered impossible.

Hybrid Control drives our entire product lineup –
Discover how transformative it can be for your success.

Quantum Control Software

1 QUA

Revolutionizing quantum programming, our hybrid development platform is powered by the intuitive QUA pulse-level language. With Python-like syntax, and unmatched agility and flexibility, QUA dramatically simplifies the coding of complex, adaptive quantum-classical workflows.

2 QUALibrate

A calibration automation software solution that increases productivity, accelerates system tuning, and optimizes QPU performance at scale.

3 Control Application Library

A comprehensive repository of QUA-based routines, saving you valuable development time and ensuring you get the best out of your qubits.

Quantum Control Hardware

4 OPX1000

A modular high-density Hybrid Control platform for large-scale quantum computers. With its unique Hybrid Control technology and qubit-led analog front-end, OPX1000 features unmatched real-time processing power, cutting-edge analog performance, and smooth scalability. Designed for quantum builders aiming to achieve the impossible.

5 NVIDIA DGX Quantum

NVIDIA DGX Quantum seamlessly integrates GPU/CPU accelerators for ultra-fast quantum-classical processing (data round-trip latency of less than 4 μ s). Co-developed with NVIDIA, it unlocks new possibilities in QEC, calibration, and hybrid applications.

6 QDAC-II | QDAC-II Compact

Achieve ultra-low noise and high precision with this 24-channel DAC. With up to 25-bit resolution, it's the ultimate tool for DC and low-frequency quantum control. With QDAC-II Compact, you get – all your DC and low-frequency needs in 1 U.

7 QSwitch

A software-controlled breakout box that provides flexible configuration for experimental setups, ensuring smooth operation across multiple outputs.

8 OPX+

A hybrid controller with real-time processing, ultra-fast feedback, and integrated control /readout ports.

9 Octave

Extend your control system's range to 18 GHz with this auto-calibrated IQ mixing & local oscillator solution. Designed for seamless integration with OPX+, enabling advanced quantum experiments with ease.

10 Cryogenic Electronics

Cutting-edge chip carriers, sample holders, and filters for superconducting and spin devices – ensuring the highest fidelity for qubit operations.

Benefits

The New Possible

Achieve milestones faster and get groundbreaking results with powerful Hybrid Control solutions.

Effortless Scalability

Designed for smooth expansion, ensuring synchronization, reliability, easy programming, and optimal performance as your system grows in complexity and size.

HPC-QC Integration

Integrating HPC and quantum from the quantum control hardware up, brining GPU/CPU accelerators as close as possible to the qubits.

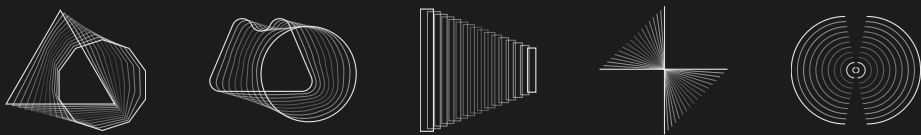
Comprehensive Portfolio

From software to cryogenic electronics, our field-proven solutions maximize the performance of any quantum processor.

About Quantum Machines

Quantum Machines (QM) is driving the future of quantum computing through Hybrid Control, seamlessly integrating quantum and classical computing. Conventional controllers struggle with disjointed operations, creating friction that limits scalability. The Pulse Processing Unit (PPU), at the core of QM's innovation, is a special processor for quantum control, designed to eliminate this barrier by bringing classical computing closer to qubits, reducing latency and enabling real-time execution of quantum error correction, and other advanced algorithms. The hybrid development platform further streamlines development, empowering quantum computer builders to create efficient quantum-classical programs. OPX1000, QM's flagship controller, embodies this hybrid approach. It is a modular, high-density control platform with a cutting-edge quantum-led analog front end. OPX1000 is tailored for large-scale quantum computers, offering unparalleled performance, scalability, and ready HPC integration, including an ultra-fast interface to GPU/CPU accelerators for boosting quantum control. With hundreds of deployments worldwide, Quantum Machines' solutions are trusted by quantum computer builders, research labs, and HPC centers. For more information, visit quantum-machines.co.

* These specifications are given as-is and to the best of our knowledge. The full spec document, including relevant legal information and disclaimers is available upon request
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Go from unbearable friction to boundless achievement with Hybrid Control

There's too much friction in our quantum R&D and we're all feeling it – slow progress, long runtimes, and excessive latency. This happens when control is disjointed: the needed quantum control units and classical compute resources are patched together weakly and run on separate threads. And the friction is only getting worse as qubits improve and scale.

Hybrid Control harmonizes quantum and classical operations, eliminating friction and optimizing performance across software and hardware, so builders can iterate at speed, resolve setbacks, and bring their visionary ideas to life.