Equal1 - developing revolutionary quantum servers with unmatched performance, affordability, and energy efficiency

29/01/2024 10:07 pm GMT

Equal1 Labs are bringing a scalable semiconductor quantum computer to the market.

A highly capable & award winning start-up, Equal1 was co-founded by Dirk Leopold, Prof. Robert Bogdan Staszewsky and Mike Asker as a spin-out from the UCD School of Electrical and Electronic Engineering in 2017.

Democratizing Quantum Computing

"Our mission is to democratize quantum computing. To democratize quantum, we first must commercialize. By moving quantum computing from research labs to quantum silicon manufactured using the same foundries and processes that create smartphones, we are able to make quantum computing more accessible and affordable. This will ultimately enable the widespread adoption of an inclusive quantum computing ecosystem, empowering diverse users to harness its potential."

Jason Lynch, CEO at Equal1 Labs, former General Manager at Analog Devices and Managing Director at Hittite Microwave

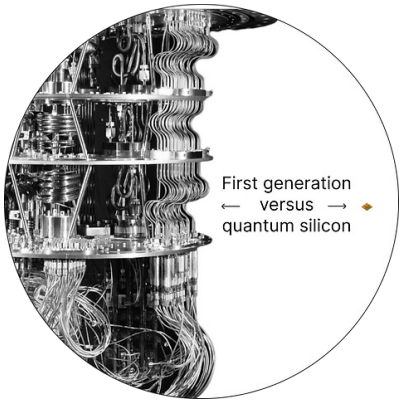
Quantum System-On-Chip Technology

Equal1's QSoC processors, integrating a complete quantum computing system onto one chip, usher in a groundbreaking computing advancement — Quantum Servers. Equal1 Quantum System-on-a-Chip (QSoC)

processors offer groundbreaking quantum silicon that integrates entire quantum computing systems onto a single chip, that overcome first-generation limitations.

First-generation quantum computers are engineering marvels, exhibiting a Schrödinger-esque paradox: they demonstrate the feasibility of quantum computing, yet also reveal their limited commercial potential. These systems entail considerable construction and operating expenses and struggle to achieve the qubit capacity needed for high-performance, fault-tolerant quantum computing.

Equal is the first company to demonstrate silicon spin qubits using standard CMOS processes. Our groundbreaking QSoC processor, integrate a complete quantum system— millions of spin qubits, measurement and control microelectronics, AI-powered real-time error correction and high-speed I/O—into a single, programmable chip manufactured on a low-cost foundry CMOS process.



Shaping the Future of Technology and Climate Sustainability

Quantum computing's unparalleled ability to simulate chemical processes will lead to breakthroughs in carbon capture, alternative fuels, batteries, and more. It can efficiently solve optimization problems, benefiting industries like logistics and finance, and massively reduce the cost of AI modelling.

Achieving net-zero emissions goals requires significant advances in climate technology, which current supercomputers cannot deliver. According to McKinsey, quantum computing could be transformative, potentially enabling climate technologies to abate an additional seven gigatons of CO_2 per year by 2035, helping align the world with the 1.5°C target.

Equal1's groundbreaking QSoC technology — a complete quantum system on a single chip — paves the way for quantum servers, a game-changing breakthrough for the industry. With QSoC single-chip, minimal external components, integrated cryocooler, and a mere 1.5kW power consumption, Equal1 quantum servers will stand free or slot into standard rack configurations.

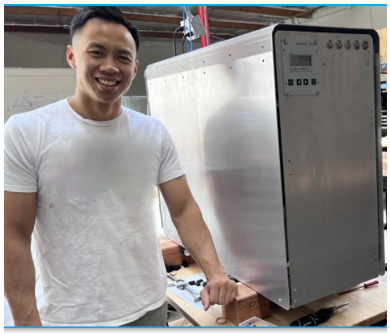
Equal1's Partnership with ReaDI-Watch

"Using the ReaDI-Watch platform and having the support of the ReaDI-Watch team helped us the consider all aspects of the "real-time" R&D Management in Equal1. With the teams help, we developed our strategy and are now in a position to meet our grant funding (DTIF) and R&D tax credit requirements" - Jason Lynch, CEO, Equal1 Labs

Innovation at Pace

Equal1 and ReaDI-Watch have worked together since 2021, to support the multi-million euro R&D investments that have been made by the company towards their important mission & vision.

In a company where Innovation and R&D is at the core like Equal1, the team & leadership have recognised that strong day-to-day management practices, combined by a stellar strategy, are the key ingredients for success. They innovate at pace, across the globe, to bring Quantum technology to the world.



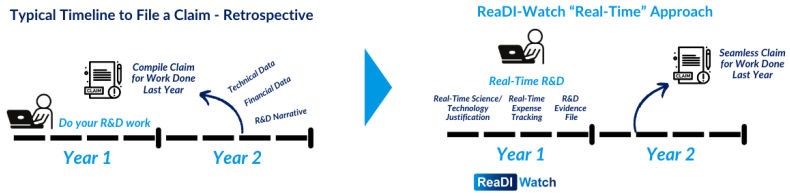
Growth & Strategic Planning

As an Innovation, Technology and IP-centric company, the business has a serious technology and IP strategy, with team members across 4 countries (and timezones), partnerships with some of the world's leading quantum organisations and investors who are at the cutting edge of next generation technology.

Proactive, inclusive strategy & planning takes place in the company, to ensure that each development taking place is aligned to commercial targets, understood by all the stakeholders in the business and enacted by teams across these countries.

Real-Time Development Management

Engaging with the key finance, leadership & technical team in the company, Equal1 positioned the ReaDI-Watch platform to support the day-to-day management, tracking & execution of developments and R&D projects.



"Real-Time" R&D at Equal1 means minimum bureaucracy / overhead while ensuring strong traceability & communication.

Grant Supports and R&D Tax Credits

Equal1 have had a stellar track-record of grant funding, including Enterprise Ireland's "Disruptive Technologies Innovation Fund". Alongside their stellar Irish track record, the company has won significant EU funding for their quantum technology development. This significant funding is only won by companies with a very strong & disruptive technology and growth plan. Innovating with ReaDI-Watch, Equal1 continue to grow.

ReaDI-Watch "Real-time" development data is leveraged periodically to submit grant and R&D tax claims seamlessly. Strong evidence files, clear labour hours and development activities are maintained.

Contact Details

ReaDI-Watch: dbyrne@readi-watch.com - Dave Byrne, CEO

Equal1: info@equal1.com