

HPD IQ2000

Rapid Chip-Scale Prober

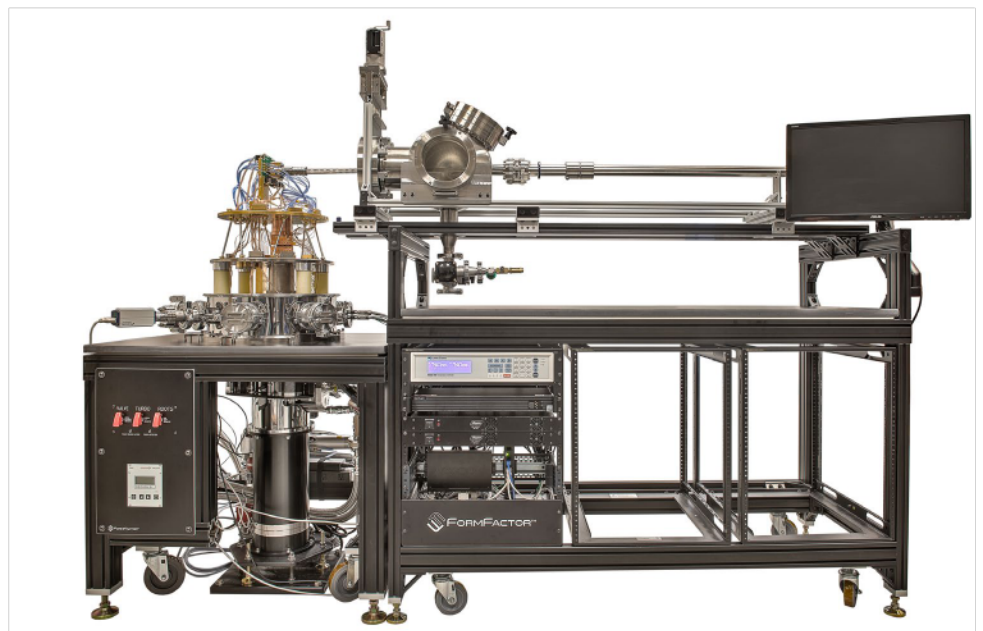
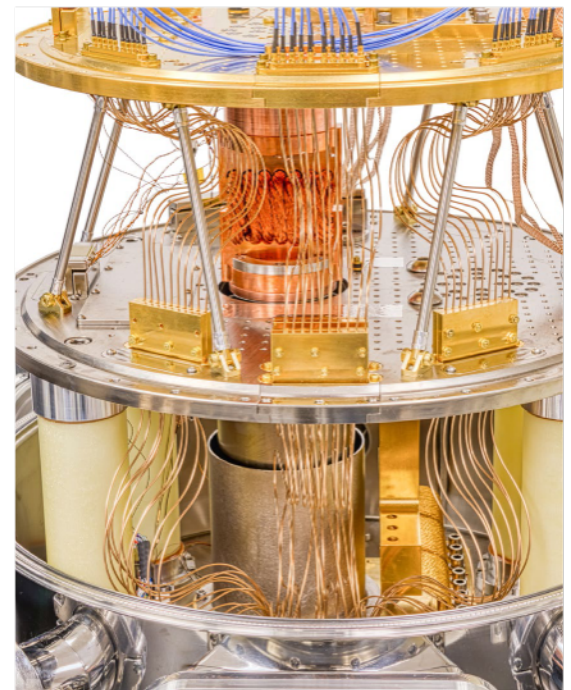
Overview

Quantum test engineers have limited throughput due to the time it takes to cooldown a device to the test temperature. Current methodologies used in cryogenic chip probing systems require as much as 24 hours to exchange the device under test, which includes warming up the cryogenic system, venting the system to atmospheric pressure, disassembling the vacuum shroud and radiation shields to access the chip, and then reverting the process to prepare for the next cooldown.

FormFactor's HPD IQ2000 is a high throughput chip-scale prober for singulated die testing at 4 K or 2 K. The system's load-lock design enables thermalization of the device under test from 300 K to 4 K in less than an hour - improving the device throughput by up to 10X compared to conventional chip probers.

By leveraging FormFactor's long experience in advanced probe card technology, the IQ2000 enables a higher density electrical interface than has ever been possible in chip-scale probers. The increased number of pins on the device allows the test of more structures in a single cooldown.

With the IQ2000 rapid chip-scale prober, quantum hardware developers can quickly obtain data for process development statistics to intelligently iterate on chip designs.

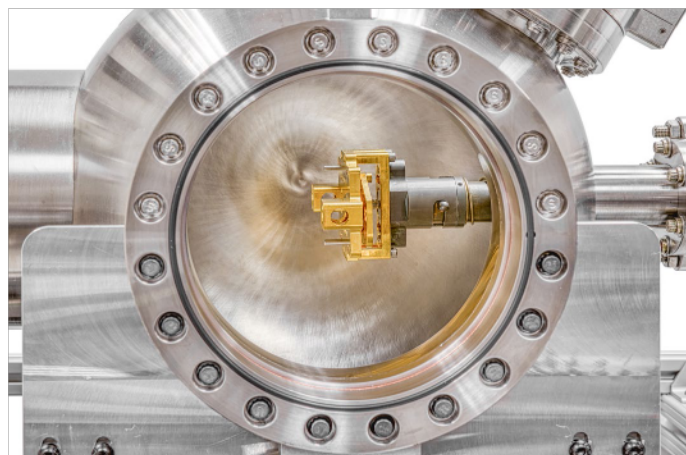
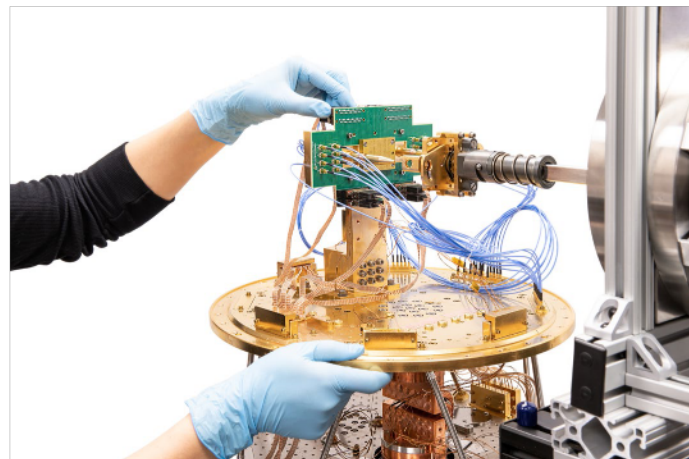
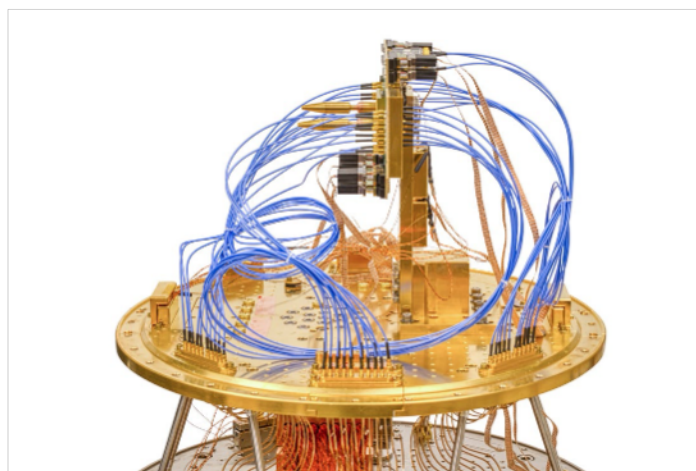


➤ Key Features

- **Load-lock chamber:** Cycle devices 10X faster in a cryogenic environment
- **High-density electrical interface at cryogenic temperatures:** More pins on the device enables more test structures to be probed with a single cooldown
- **Base temperature of < 2K or < 4K with high cooling power:** Test devices at the temperatures that matter most for pre-screening and evaluating device performance
- **Low vibration:** Stable contact with the device under test and enables low noise measurements

➤ Design Specifications

- 192 DC lines (>700 possible)
- 28 RF pins (< 12 GHz)
- Max 22 x 22 mm² chip size
- < 4K or < 2K sample temperature
- Heat dissipation: 200 mW at 4 K; >100 mW at 2 K
- Thermalization to 4 K in less than 1 hour



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