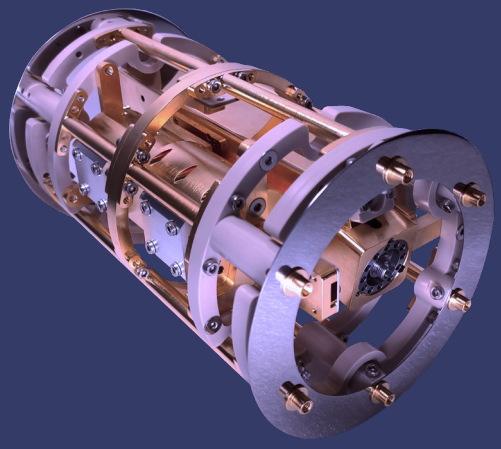
TEMPO

COMPACT RUBIDIUM OPTICAL CLOCK

The TEMPO optical atomic clock combines compact laser technology with our patented optical atomic interrogation method to deliver exceptional timing stability, combining the short-term precision of a hydrogen maser with the long-term performance of Cesium-beam frequency references.



KEY FEATURES AND BENEFITS

Exceptional frequency stability

Achieved through innovative engineering design, optimised selection of operating parameters, and the use of in-fibre optics to enable both durability and stability across diverse environmental conditions.

Low environmental sensitivity

In-fibre optical systems for high reliability, environmental insensitivity and robustness.

TEMPO

Pilot Unit available for pre-order.

TEMPO APPLICATIONS

The TEMPO can operate across a range of deployment platforms in potentially adverse conditions, having first degree immunity to vibration, acceleration and temperature fluctuations.

On-board timing solution

for mobile assets, ensuring accurate synchronisation in dynamic environments where reliable timing is critical for navigation, communication, and operational coordination.

Positioning, Navigation, and Timing (PNT)

in GPS-denied environments, offering high-precision timekeeping that enables accurate location and navigation even when satellite signals are unavailable or compromised.

Power and communication infrastructure

ensuring ultra-precise time synchronisation across networks, which is critical for maintaining stability, efficiency, and seamless coordination in grid operations and data transmission.

Precision reference for timing networks

providing the unparalleled stability needed to synchronise all connected systems and devices, ensuring reliable and consistent performance across the entire network.

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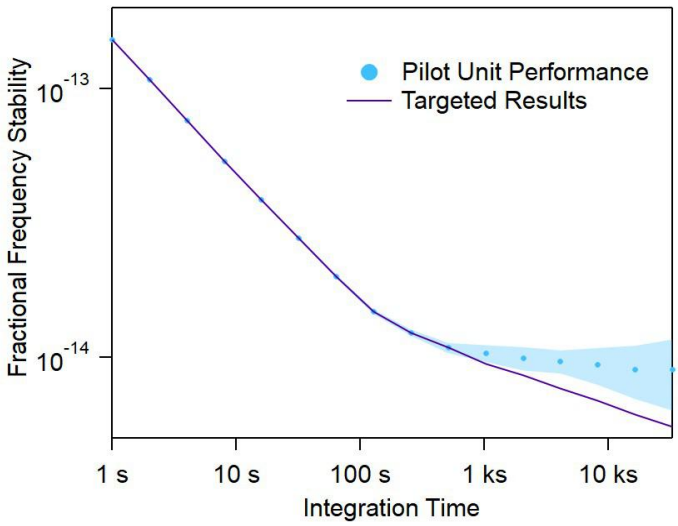
TEMPO

COMPACT RUBIDIUM OPTICAL CLOCK

TARGETED RESULTS*

Stability	
Averaging Time(s)	**Allan Deviation**
1	1.5×10^{-13}
10	4×10^{-14}
100	1×10^{-14}
1,000	9×10^{-15}
10,000	6×10^{-15}

NOMINAL FREQUENCY STABILITY VS INTEGRATION TIME



OTHER SPECIFICATIONS

Chassis	
Dimension	4U rackmount
Weight	< 32 kg
Power Consumption	< 140 W
Optical Outputs	1560 nm, 778 nm
RF Outputs	10 MHz, 1 pps

*Results correct as at April 2025.

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