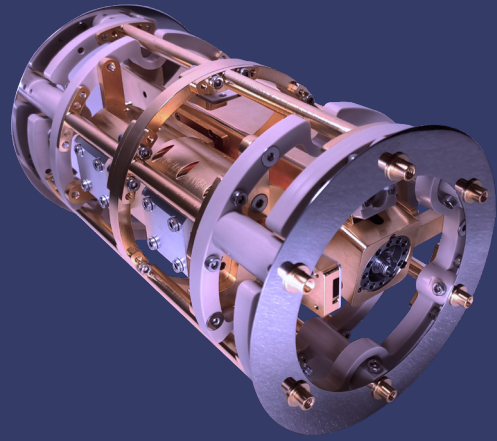


# TEMPO

## 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 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.

#### TEMPO

*Pilot Unit available for pre-order from 2025.*



#### 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.

# TEMPO

## COMPACT RUBIDIUM OPTICAL CLOCK

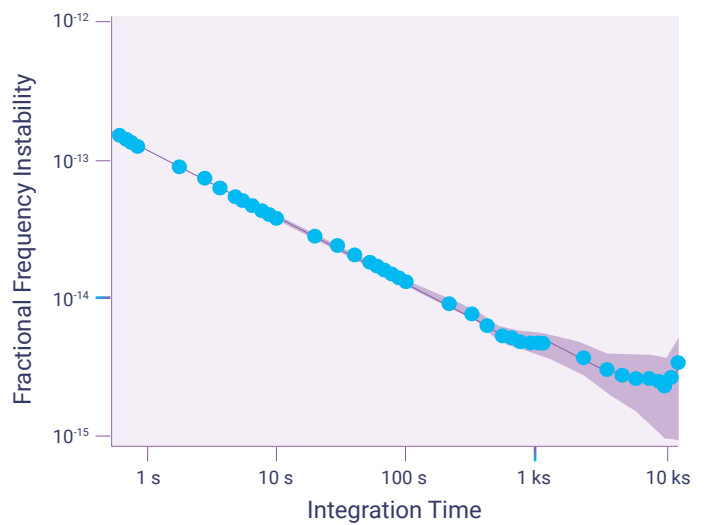
### TARGETED RESULTS\*

Stability	
Averaging Time(s)	Allan Deviation
1	$2 \times 10^{-13}$
10	$4 \times 10^{-14}$
100	$1 \times 10^{-14}$
1,000	$5 \times 10^{-15}$
10,000	$3 \times 10^{-15}$

### OTHER SPECIFICATIONS

Chassis	
Dimension	4U rackmount
Weight	< 50kg
Power Consumption	< 200 W
Optical Outputs	1560 nm, 778 nm
RF Outputs	10 MHz, 1 pps

### NOMINAL FREQUENCY STABILITY VS INTEGRATION TIME



\*Initial test results available by end of 2024.