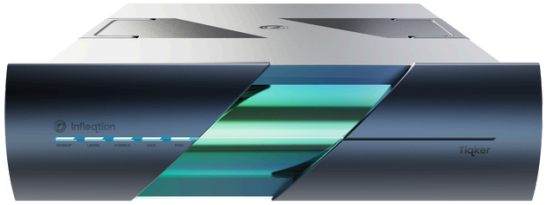
# Tiqker

## Atomic Frequency Reference

Tiqker™ bridges the gap between hydrogen maser short-term performance and cesium-beam level holdover. Tiqker™ is designed to operate continuously in various environments, minimizing signal instability due to vibration and temperature variation. Tiqker™ Prime comes ready for use in a form factor that is a drop-in replacement for cesium-beam frequency references.



**Tiqker Prime Production Unit**

## Applications

- Holdover for GNSS/GPS-reliant timing solutions, allowing uninterrupted access to accurate time for data centers and telecommunications infrastructure
- High-precision RF, microwave, and optical outputs for clock and data recovery in high-throughput optically-switched networks
- Integrated optical frequency comb enables sub-picosecond clock synchronization through optical two-way time and frequency transfer and dense multiplexing for optical communications
- Augmentation of time synchronization systems in wired or wireless high-speed data transfer, e.g., 6G base stations and backbone networks

### Tiqker Prime

**Pilot Unit**


- 3U form factor for standard rack applications
- Hydrogen maser like stability with Cs-beam holdover, form-factor, and environmental tolerance
- ***Available for pre-order***

Contact sales@infleqtion.com to learn more.

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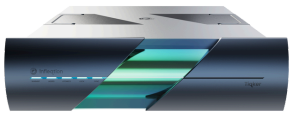


## Prime Specifications

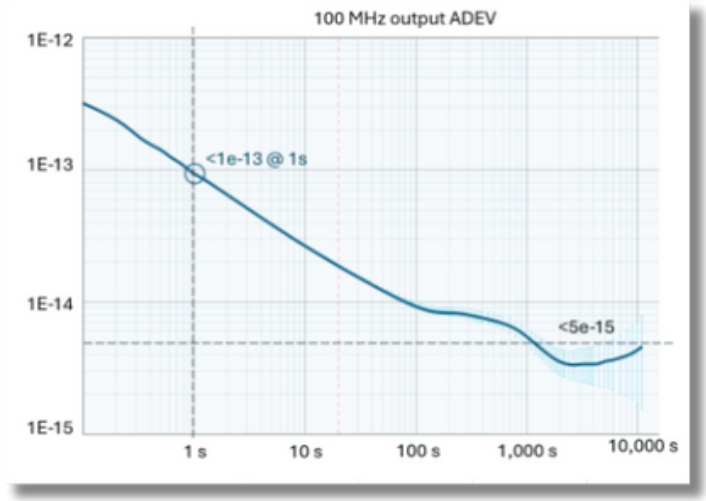
- **50 times more stable**
- **Low phase noise**

*At 10-second averaging time and at $10^{-13}$ frequency stability as compared with standard cesium beam references*

| Frequency Stability | | |
|---|---|---|
| Average Time(s) | Typical ADEV | Maximum ADEV |
| 1 | ≤ $1.2 \times 10^{-13}$ | $3.0 \times 10^{-13}$ |
| 10 | ≤ $5.0 \times 10^{-14}$ | $1.0 \times 10^{-13}$ |
| 100 | ≤ $2.0 \times 10^{-14}$ | $4.0 \times 10^{-14}$ |
| 1,000 | ≤ $6.0 \times 10^{-15}$ | $1.5 \times 10^{-14}$ |
| 10,000 | ≤ $4.0 \times 10^{-15}$ | $5.0 \times 10^{-15}$ |
| Flicker Floor | ≤ $5.0 \times 10^{-15}$ | ≤ $5.0 \times 10^{-15}$ |

| Holdover (projected) | |
|---|---|
| Level (ns) | Minimum Period |
| 1000 | >9 days |
| 100 | >4.5 days |
| 10 | >2.3 days |
| 1 | >1 day |

**Performance (typical)**




| Frequency Outputs | |
|---|---|
| Frequency | 5 MHz, 10 MHz, 100 MHz, Optical 1556 CW |
| Format | Sine |
| Amplitude | ≥ 1 Vrms |
| 10 MHz Phase Noise | < -110 dBc/Hz at 1 Hz |

| Timing Outputs | |
|---|---|
| Format | 1 PPS |
| Load Impedance | 50 Ω |

| Operating Environment | |
|---|---|
| Temperature | 15 °C - 35 °C |
| Humidity | 0 to 85% RH (40 °C max) |
| Magnetic Field | DC, 55, 60 Hz, 2G peak any orientation |

| Dimensions | |
|---|---|
| Height x Width x Depth | 133.4 mm x 425.5 mm x 532.9 mm |
| Weight | <30 kg |

| Programming | |
|---|---|
| Software Command Set | SCPI adapted to RS 232C & Ethernet |
| Alarm (TTL) | BNC |
| Output | TTL High, Normal<br>TTL Low, Fault |

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