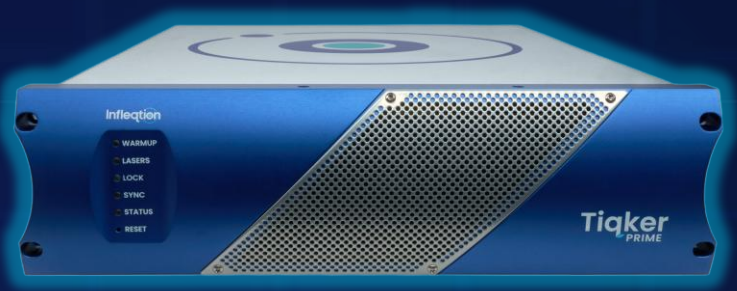
Quantum Frequency Reference

Tiqker™ offers active hydrogen maser-like short-term precision in a compact form-factor package that occupies the same rack space as cesium-beam frequency references.

Tiqker, an optical atomic clock, operates continuously in industrial environments, minimizing signal instability due to vibration and temperature variation.



Applications

- Holdover for GNSS/GPS-reliant timing solutions, allowing uninterrupted access
- High-precision RF and optical outputs for coherent sensing such as Very Long Baseline Interferometry (VLBI) or multi-static radar
- Integrated optical frequency comb output enables sub-picosecond clock synchronization through optical two-way time and frequency transfer
- Time synchronization for high-speed data networks



- Active hydrogen maser-like stability with compact form factor and low environmental sensitivity
- One-tenth the size and one-fifth the weight of an active hydrogen maser
- Half the cost of an active hydrogen maser

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Available now!

Contact sales@infleqtion.com to learn more or place an order.

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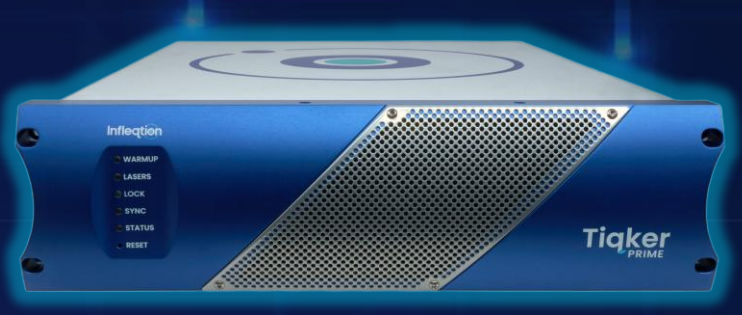
Tiqker Prime Specifications



Frequency Stability

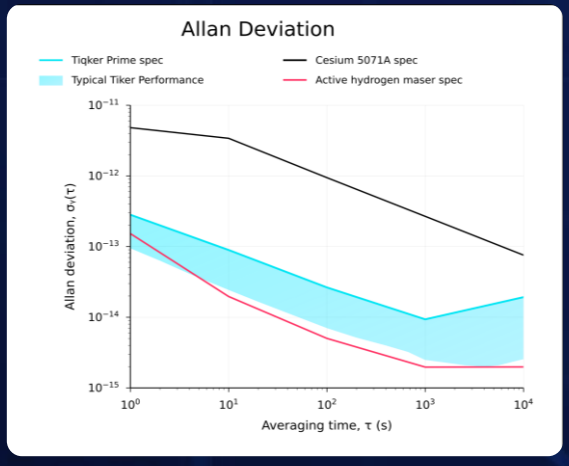
Average Time (s)	Allan Deviation Minimum Performance
1	≤ 5.0 x 10 $^{-13}$
10	≤ 2.0 x 10 $^{-13}$
100	≤ 7.0 x 10 $^{-14}$
1,000	≤ 3.0 x 10 $^{-14}$
10,000	≤ 4.0 x 10 $^{-14}$

Phase Noise

SSB – (dBc / Hz)

Offset Frequency	Minimum Performance		
	5MHz	10MHz	100MHz
1 Hz	≤ -115	≤ -110	≤ -95
10 Hz	≤ -125	≤ -120	≤ -105
100 Hz	≤ -135	≤ -130	≤ -115
1k Hz	≤ -140	≤ -140	≤ -120
10k Hz	≤ -140	≤ -140	≤ -120
100k Hz	≤ -140	≤ -140	≤ -120

ADEV Performance (typical)



Frequency Outputs

Frequency	5 MHz, 10 MHz, 100 MHz
Format	Sine
Amplitude	≥ 1 Vrms
Optical	1556nm CW, Pulsed Narrow Comb Output 1530nm–1610nm

Timing Interfaces

Output Format	1 PPS (2x) (20µs square pulse)
Load Impedance	50 Ω
Input Format	1 PPS (1x)

Size, Weight, Power, Temperature

Height x Width x Depth	150 mm x 482 mm x 646 mm
Weight	< 22 kg
Power	< 100 W Warm Up < 85 W Steady State
Operating Temp.	15C – 30C

Programming

Software Command Set	SCPI adapted to RS-232C & Ethernet
Alarm Format	TTL High, Normal TTL Low, Fault

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