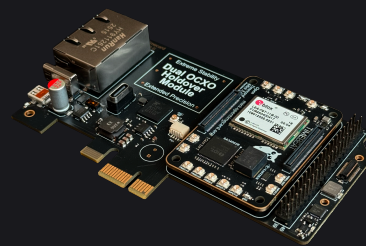


ALL-IN-ONE TIME SYNC SOLUTION

OPEN TIMECARD MINI V3

PCIe FORM FACTOR



KEY FEATURES

- Full height and half height PCIe slot profiles
- NTP, PTP, PPS & Frequency distribution direct from the card
- 1 GbE built-in network port
- Integrated OCXO
- Multi-band GPS/GNSS receiver
- Full PTP Profile support

GENERAL SPECIFICATIONS

- Accuracy of time pulse signal: up to 2.5 ns
- Time pulse jitter: ± 4 ns
- ± 5 ppb stability
- Resistant to shock and vibration

PTP PROFILES

- Default & Enterprise-Draft (E2E and P2P)
- IEC 61850-9-3 Utility Profile
- IEEE C37.238-2017 (& 2011) Power Profile
- ITU-T G.8265.1 (/2) & G.8275.1 (/2) Telecom
- SMPTE 2059-2 & AES67/RAVENNA

APPLICATIONS

Finance

PCIe form factor integrates with existing trading servers, providing accurate time synchronisation directly within high-frequency trading systems.

Broadcast

Compact PCIe form factor fits easily into broadcast equipment, ensuring precise timing for live broadcasts and content scheduling.

Defence

Compact form factor is ideal for integration into vehicle and mobile units, providing robust and precise time synchronisation for critical operations.

Telecom / 5G

PCIe form offers a space-efficient solution for precise timing in network components, supporting smooth handoffs and antenna synchronisation.

PCIe

PTP

NTP

PPS

OCXO

Multi-Band GNSS

MULTI-CONSTELLATION GPS/GNSS MODULE

UBLOX
LEA-F9T

5NS TIMING ACCURACY • ULTRA-LOW POWER

MODULE DESCRIPTION

The LEA-F9T is a multi-band GNSS module offering 5 ns (1-sigma) timing accuracy with unparalleled low power consumption. The module can be configured to function as a L1,L2 or L1,L5 dual-band receiver.

● PERFORMANCE

Receiver Type	Multi-band GNSS timing
Absolute Timing Accuracy	5 ns
Differential Timing	2.5 ns
Time Pulse Frequency	0.25Hz - 25MHz
Time Pulse Jitter	±4 ns
Time-mark Resolution	8 ns
Velocity Accuracy	0.05 m/s
Heading Accuracy	0.3 deg
Dynamics	≤ 4g
Max Altitude	80,000 m
Max Velocity	500 m/s

● ACQUISITION (COLD START)

CONSTELLATION	COLD	HOT
GPS+GLO+GAL+BDS	24s	2s
GPS+BDS+GAL	25s	2s
GPS+GAL	29s	2s
GPS+GLO	26s	2s
GPS+BDS	28s	2s
GPS	29s	2s

● SENSITIVITY

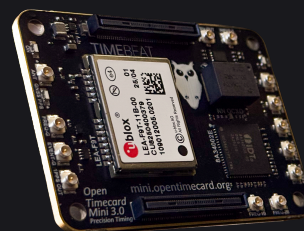
Tracking & Navigation	-167 dBm
Reacquisition	-160 dBm
Cold Start	-148 dBm
Hot Start	-157 dBm



INTEGRATED OSCILLATOR

OCXO MODULE

OVEN-CONTROLLED CRYSTAL OSCILLATOR WITH AGING COMPENSATION



MODULE DESCRIPTION

The PT comes with an integrated OCXO module with aging compensation. The specifications listed are based on uncompensated input; once compensated you can expect better results. Typical holdover expected is 1.5 μ s / 8 hours.

● TIMING HOLDOVER CAPABILITY

Short-Term Stability	0.1 ppb ($\tau=1s$, root Allan var.)
Daily Aging (After 30 Days)	± 5 ppb
Yearly Aging	± 1 ppm
Warm-Up Drift (First 5 Min)	± 0.1 ppm

● PHASE NOISE PERFORMANCE

@ 10 Hz	-94 dBc/Hz
@ 100 Hz	-120 dBc/Hz
@ 1 kHz	-140 dBc/Hz
@ 10 kHz	-145 dBc/Hz
@ 100 kHz	-150 dBc/Hz
@ 1 MHz	-155 dBc/Hz

● ENVIRONMENTAL & POWER

Operating Temp	0°C to +50°C
Storage Temp	-55°C to +105°C
Steady-State Power	0.4 W (@ +25°C)
Compliance	RoHS compliant

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