

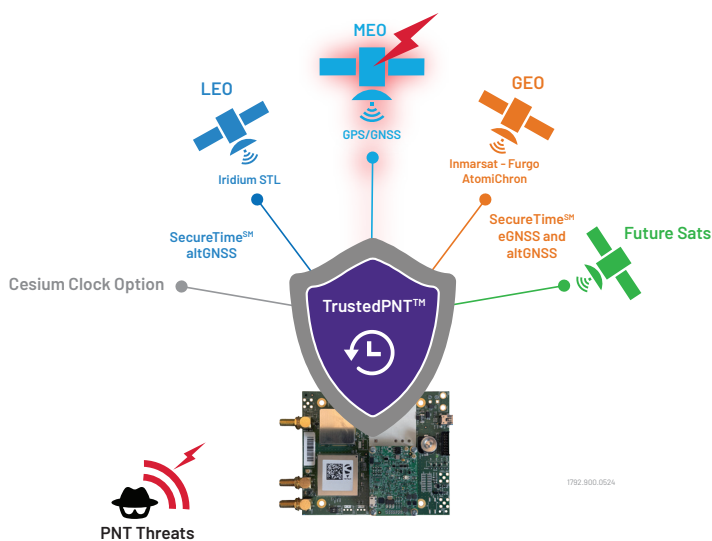
Secure μ PNT-440 Module

Rapidly Enable Vulnerable GPS/GNSS Clocks with Multi-Source Resilience

Defense | 5G Communications | SATCOM | Transportation | Data Center
 Energy | Financial | Critical Infrastructure

Resilience Without Replacement

Mission-critical defense and infrastructure systems depend on GPS-based timing, yet modern jamming and spoofing can compromise those signals within seconds. The Secure μ PNT-440 uses VIAVI's patented Transcoder™ to generate a clean GPS L1 signal from trusted alternate sources—including authenticated multi-constellation GNSS, GEO SecureTime corrections, or LEO STL services—allowing legacy GPS clocks to operate normally even when GPS is denied or spoofed. With precision holdover, UTC-traceable accuracy, and TrustedPNT™ source selection, the μ PNT-440 delivers resilient timing and positioning without system redesign.



Key Benefits

- Secure and resilient PNT clock solution with new SecureTimeSM Services, integrating these alternative and enhanced sources on top of GPS/GNSS:
 - altGNSSSM LEO-S - alternative GNSS-independent source with encryption, <65 ns rms accuracy traceable to UTC (NIST), powered by Iridium STL
 - altGNSSSM LEO LOCUS - Iridium GNSS-independent dynamic timing with positioning support, enabling enhanced navigation through sensor fusion
 - eGNSSSM GEO - enhanced GNSS source, authenticated spoofing detection/mitigation, <2.5 ns rms ultra-high accuracy, traceable to UTC, powered by Fugro AtomiChron on Inmarsat
- Maintains precise PNT in GPS/GNSS-denied or indoor environments
- Extending the capability of existing GPS/GNSS equipment using the PNT-440 in-line between the antenna and receiver
- Embeddable module that adds secure and resilient PNT to any system

Features

- All-band GNSS receiver, supporting GEO Sat Signals, and LEO STL receiver
- Integrated rugged OCXO for holdover stability
- RF GPS L1 output, compatible with existing coax antenna cabling for legacy integration
- Comprehensive SCPI command set enables full user control and easy automation via USB or RS-232

Typical Specifications

Secure μPNT-440	
1 PPS stability with GNSS and multi-source SecureTime Services	<5 ns ¹ RMS GPS/GNSS locked (L-band)
	<65 ns ¹ RMS altGNSS LEO locked to Iridium STL (L-band)
	<2.5 ns ¹ RMS eGNSS GEO locked to Fugro AtomChron on Inmarsat (L-band)
Holdover performance	<2 μ s ² over 8 hours with rugged OCXO
NMEA Messages	Standard - GGA, GLL, RMC, GSA, GSV, ZDA, PASHR
	Proprietary - PJLTS, PJLTV, GGAST
GPS/GNSS Receiver	
Multifrequency	L1, L2, L3, L5, L6
Constellations	GPS/Galileo (SBAS)/GLONASS/BeiDou/QZSS/NAVIC
GNSS Tracking Performance (C/N0 Threshold)	
Acquisition	33 dB-Hz
Tracking	20 dB-Hz
Time to First Fix (TTFF)	
Cold Start	<45 sec
Warm Start	<20 sec
Hot Start	1 sec
STL LEO Receiver Sensitivity	-100 dBm tracking
Intelligent Zero-trust Multi-source Switchover	GNSS (4 frequencies, optional eGNSS Navigation Message Authentication on 4 constellations), STL LEO
Oscillator Specifications	
Frequency Stability	$\pm 3\text{E-}9$, -10°C to +75°C
Power	
Power Supply Voltage (Vdd)	+12 VDC $\pm$ 1 VDC
Power Consumption	<10 W
Environmental	
Temperature	
Operating	-25°C to +75°C
Storage	-45°C to +85°C
Mechanical	
Size	
Height	0.716 in/1.82 cm
Width	3.685 in/9.36 cm
Depth	4.439 in/11.28 cm
Weight	<0.5 lbs/226 grams

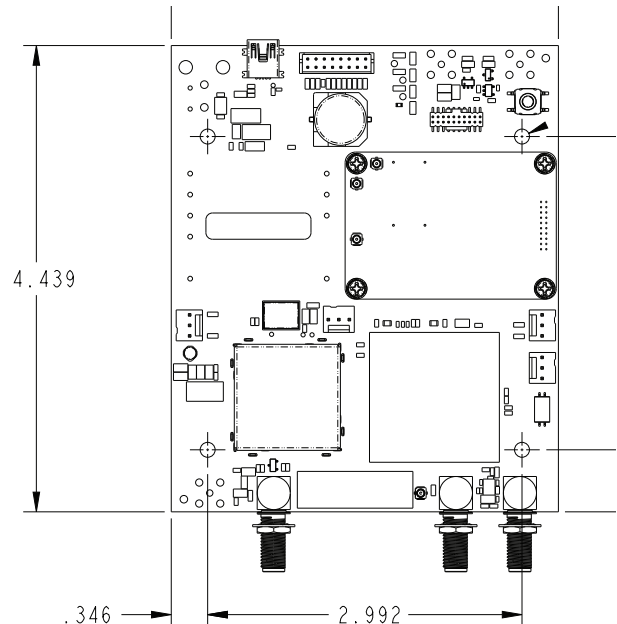
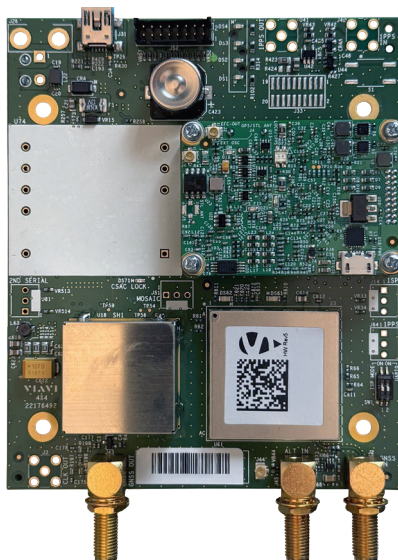
Typical Specifications continued

I/O Connectors	
Signal	Connector / Description / Function
RF Output	SMA(f) GPS L1 C/A RF output signal to retrofit legacy GPS/GNSS clock equipment
STL Input	SMA(f) STL input signal
GNSS Input	SMA(f) GNSS input signal Antenna bias DC voltage, when enabled (default)
TTL Status	16-pin Hirose ³ connector 3.3V CMOS
Firmware Updates	Available over serial interfaces in ISP mode In Situ firmware updates
NMEA Messages	Available over serial interfaces
Primary Serial Control	Mini-USB UART3, mutually exclusive with RS-232 port
RS-232 Serial Control	16-pin Hirose ³ connector UART3, mutually exclusive with mini-USB
RS-422 Serial Control	16-pin Hirose ³ connector UART0, mutually exclusive with TTL port
TTL Serial Control	16-pin Hirose ³ connector UART0, mutually exclusive with RS-422 port
Power	Molex 436400201 12 VDC $\pm$ 1 VDC

¹ Typical RMS accuracy traceable to UTC/NIST; eGNSS GEO performance based on Fugro AtomiChron® service (<5 ns to UTC 95 % of the time)

² Minimum of 24 hours GNSS Locked @ 25°C, no airflow, no motion

³ Hirose connector - DF11-16DP-2DSA; Mating connector DF11-16DS-2C

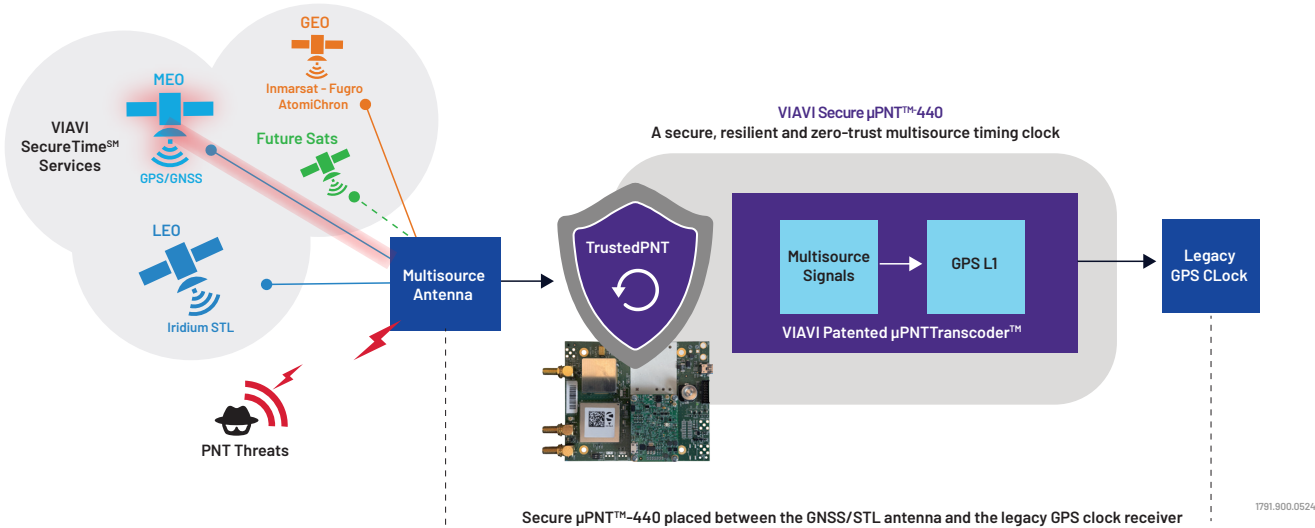


Ordering Information	
Catalog Number	Description
22178049-000	PNT-440 Module w/Ruggedized OCXO
SecureTime SM Service Options	SecureTime altGNSS LEO-S
	SecureTime altGNSS LEO LOCUS
	SecureTime eGNSS GEO

Typical Use Case

Quickly retrofitting legacy GPS clocks, at-risk of rising jamming and spoofing cyberattacks, with a secure, resilient and zero-trust multisource PNT clock at a fraction of the cost.

Contact VIAVI today to request your Secure μ PNT-440 demo unit to start your successful POC and to safeguard your network against rising GPS cyberthreats.



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