

SecurePNT EdgeGM 7000 with Multi-Orbit SecureTime altGNSS GEO/LEO Service

Half-19"-1U, Multi-orbit and Resilient 1/10/25G PTP Edge Grandmaster Clock

Defense | 5-6G Telecommunications | Transportation | AI Data Center | Energy | Public Safety | Private 5G | Financial | Critical Infrastructure

Solving Industry Challenges

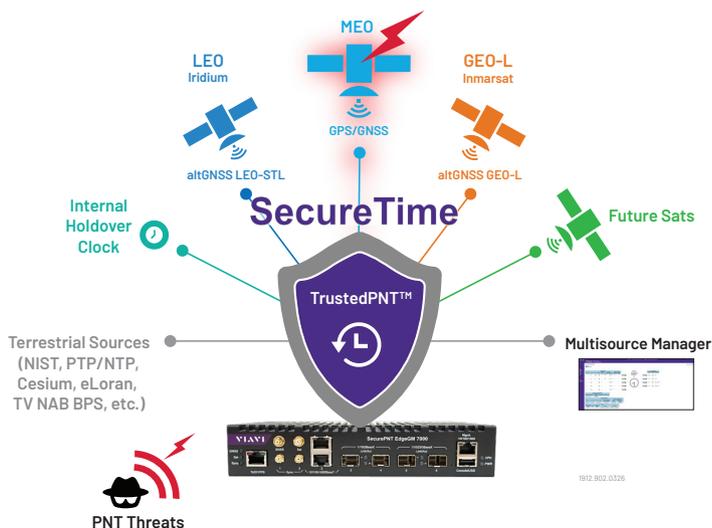
Secure and resilient Position, Navigation and Timing (PNT) services are vital to support at-risk critical infrastructure from rising PNT disruptions such as intricate jamming, spoofing, and meaconing attacks on GPS/GNSS antennas.

Additionally, AI-computing data center infrastructure requires higher PTP speeds to connect to higher-speed ports of network elements while synchronizing them effectively.

Secure and Resilient PNT Grandmaster Clock Solution

The new SecurePNT™ EdgeGM™ 7000 series integrates advanced resiliency from multi-orbit space and terrestrial sources and high-speed Grandmaster clock capabilities, all packed into a half-19" unit.

The EdgeGM 7000 solution is powered by innovative TrustedPNT™ technology, which authenticates, verifies, and qualifies multiple orbital and terrestrial timing sources, for smooth, seamless switching for a trusted timing reference, adhering to the principle of "never trust, always verify".



SecurePNT EdgeGM 7000 powered with SecureTime GEO/LEO Service

Key Features

- Multi-orbit receivers for Resilient PNT:
 - Multi-band multi-constellation GNSS
 - altGNSS GEO-L
 - altGNSS LEO-S
- Half 19" form factor
- High-speed $\leq 25G$ PTP Grandmaster and NTP Time Server
- Flexible timing platform: SyncE, NTP, PTP (PTRC-A/B), GM, APTS, BC-C/D, Client Clock, TC, 1PPS/ToD, 10 MHz, Gateway Clock
- High-performance sub-ns timestamping

Key Benefits

- Secure, resilient edge Grandmaster clock
- GNSS backup with SecureTime altGNSS GEO-L or LEO-S Service
- Powerful platform to upgrade from 10G to 25G PTP with a simple license (no costly rip and replace)
- User-friendly SNMP management and Sync GUI monitoring capabilities
- Multi-industry PTP profiles (L2/L3, Telecom, Enterprise, Power, and more)

Specifications

SecurePNT EdgeGM 7000 with Multi-Orbit SecureTimeSM altGNSS GEO/LEO Service

Multi-orbit Receiver	
<ul style="list-style-type: none"> Multi-Band GNSS GEO-L LEO-S 	<ul style="list-style-type: none"> 184 channels, multi-constellations (GPS, Galileo, Beidou, QZSS, NavIC), L1, L2, L5 Optional VIAVI timing service Optional Iridium PNT timing service
Holdover	
<ul style="list-style-type: none"> H-8: 1.5 μs over 8 hours* 	
PTP/IEEE-1588	
<ul style="list-style-type: none"> Functions: <ul style="list-style-type: none"> Grandmaster (PRTC-A/B¹ - 100/40 ns) Boundary Clock (Class C/D) Ordinary Clock (M/S) Transparent Clock (Class C/D) Gateway Clock (e.g., G.8275.2 (L3 upstream) and G.8275.1(L2 downstream)) Profiles supported: <ul style="list-style-type: none"> Telecom Frequency (G.8265.1) Telecom Phase (G.8275.1/G.8275.2 - L2/L3) Enterprise² Power² Default (IEEE1588) 802.1AS Custom 	<ul style="list-style-type: none"> APTS: <ul style="list-style-type: none"> GM PTP ingress/egress offset compensation when GNSS is lost Modes supported: <ul style="list-style-type: none"> 1 and 2 step L2 Multicast L3/UDP Unicast/Multicast Mixed transport modes E2E and P2P delay VLAN tagging Scalable Client capacity: <ul style="list-style-type: none"> 256/1024² Unicast @ full packet rate Support for max packet rates for: <ul style="list-style-type: none"> Announce, Sync and Del.Req/Del.Resp messages HW timestamping: <1 ns resolution
Other Timing Services/Features	
<ul style="list-style-type: none"> Synchronous Ethernet (SyncE): <ul style="list-style-type: none"> G.8261, G.8262, G8262.1 (eEEEC) ESMC (G.8264) Support O-RAN configurations LLS-C1/C2/C3/C4 	<ul style="list-style-type: none"> Clock Central configurator NTP (thousands TPS) <ul style="list-style-type: none"> Client Servers

*At constant ambient temperature

¹ Depending on RF receiver

² Planned

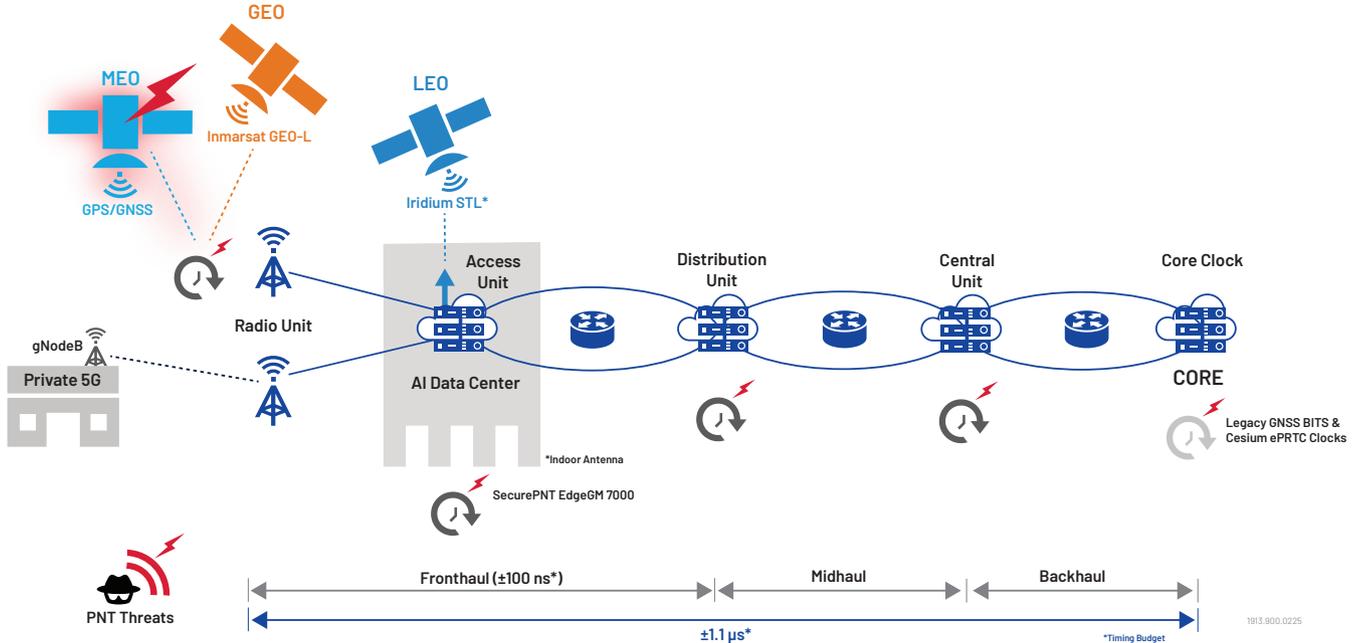
Specifications continued

Interfaces and Indicators	
<ul style="list-style-type: none"> • Ethernet ports: <ul style="list-style-type: none"> – 2 x 100/1000BaseT (RJ45) – 2 x 1/2.5/10G (SFP+) – 2 x 1/2.5/10/25G (SFP28) • Supported SFP/SFP+: MM, SM, SFS, xWDM, Copper • Sync and Timing: <ul style="list-style-type: none"> – All 6 ports support PTP, SyncE and NTP (user settable) – GNSS antenna in (SMA) – Sat antenna in, LEO-S or GEO-L, (SMA) – 2 x external 1 PPS and 10/1.544/2.048 MHz In/out, user settable, (SMA) – ToD (NMEA/1PPS)(RJ45) 	<ul style="list-style-type: none"> • Management (OOB): <ul style="list-style-type: none"> – 1 x 10/100/1000BaseT (RJ45) – 1 x USB (local console) • LEDs <ul style="list-style-type: none"> – Link/Activity (per port) – GNSS – Sat – Sync – CPU – Power
Management	
<ul style="list-style-type: none"> • Interfaces: <ul style="list-style-type: none"> – CLI: Console, Telnet, SSH – SNMP: v1/v2c/v3, extensive MIBs – Web: HTTP/HTTPS – Netconf/YANG – Management VLAN – IPv6 management • Sync GUI monitoring <ul style="list-style-type: none"> – User-friendly, embedded web-based user interface • Authentication: <ul style="list-style-type: none"> – RADIUS, TACACS+ – Multiple local users – User access levels (15) – Management ACLs – 802.1x (port/MAC based) 	<ul style="list-style-type: none"> • DHCP client, relay, server, snooping • Link discovery: LLDP, CDP aware • Operations: <ul style="list-style-type: none"> – Remote System Update (FTP (SFTP) or HTTP/S) – Configuration upload/download (FTP or HTTPS/S) – Text based config files, including PTP Profiles • Alarms: <ul style="list-style-type: none"> – SNMP traps – Syslog (internal and remote server) – CLI events • Remote temperature reading and alarm • Per port and queue detailed statistics • RMON

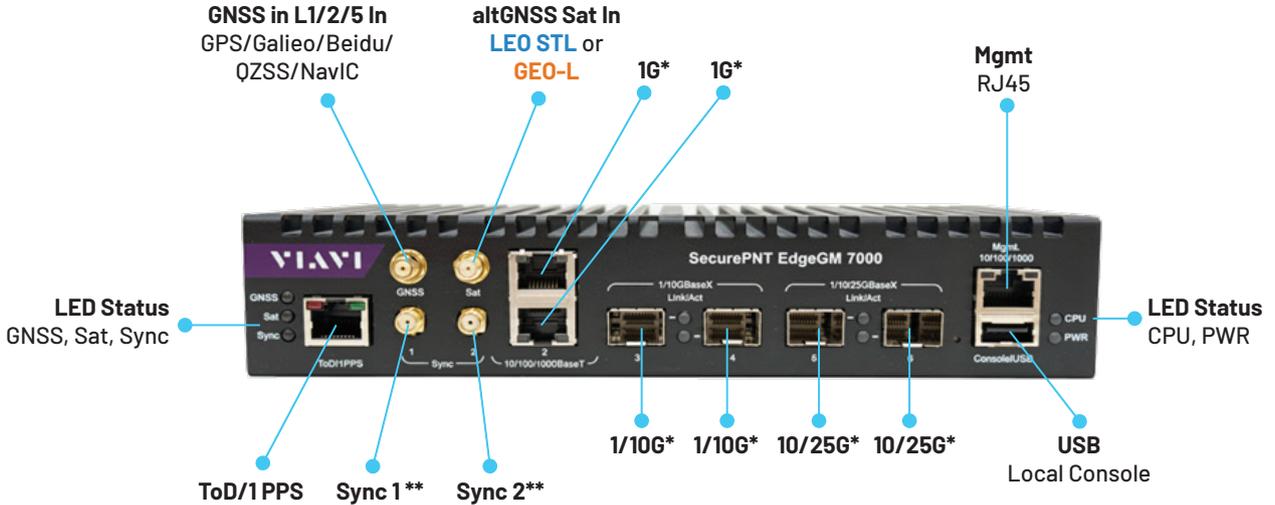
Specifications continued

Network Protection	
<ul style="list-style-type: none"> • Link aggregation: static or LACP • Loop protection • Linear protection: G.8031 	<ul style="list-style-type: none"> • Ring protection: G.8032v2 • Spanning tree: STP, RSTP, MSTP
Power and Environmental	
<ul style="list-style-type: none"> • Power Supply: <ul style="list-style-type: none"> – Internal power supply: 20-60 VDC, dual feed • Power consumption: <ul style="list-style-type: none"> – Maximum: <25 W; typical: <20 W 	<ul style="list-style-type: none"> • Operating temperature: <ul style="list-style-type: none"> – Standard: -10°C to 50°C • Storage temperature: -40°C to 80°C • Humidity: 10-90%, non-condensing
Physical	
<ul style="list-style-type: none"> • Dimensions (HxWxD): <ul style="list-style-type: none"> – 44 x 221 x 150mm (1.73 x 8.70 x 5.90 inch) • Weight: 3.2 lbs / 1.4515 kgs 	<ul style="list-style-type: none"> • Mounting: <ul style="list-style-type: none"> – Desktop – Rack – Wall
Regulatory and Compliance	
<ul style="list-style-type: none"> • Safety: <ul style="list-style-type: none"> – IEC EN60950-1 • CE • RoHS 	<ul style="list-style-type: none"> • EMC: <ul style="list-style-type: none"> – FCC CFR 47 part 15, subpart B, Class A – EN 300 386 V1.3.3: 05

Typical Applications: 5-6G O-RAN/AI Data Center/Private 5G Network Timing Architecture with GNSS Backup from Multi-Orbit SecureTime altGNSS GEO/LEO Service



SecurePNT EdgeGM 7000 Applications Powered with SecureTime GEO/LEO Service



* PTP, SyncE, or NTP In/Out (user settable)
 * PTP unicast clients support: 256/1024
 * PTP profiles: Telecom (G.8275.1 L2 FOPS/G.8275.2 L3 unicast/POPS), Enterprise, Power, etc.
 ** 1PPS or 10/1.544/2.028 MHz In/Out (user settable)

Ordering Information

Catalog Number	Description
22187366	EGM-7000L Multi-Band GNSS / GEOL Receiver w/ 8hr holdover
22187356	EGM-7000S Multi-Band GNSS / STL Receiver w/ 8hr holdover
22187697	EGM-7000 Multi-Band GNSS Receiver w/ 8hr holdover
Software Options	
22187690-000	EGM-7000 1024 PTP Client Capacity Option
22187691-000	EGM-7000 25G PTP Option
SecureTimeSM Service Options	
SecureTime altGNSS GEO-L	
SecureTime altGNSS LEO-S	
Standard Accessories (included with product)	
<ul style="list-style-type: none"> • Power Supply Adapter Kit (power adapter/cord and AC Plug Adapters) • USB Cable, 1 meter • Desktop Adhesive Mounting Pads • Grounding Washer/Nut Kit 	
Optional Accessories	
22188213	Full 19-inch 1U Rack Mount Kit
22181619	GNSS Multi-band L1/L2/L5 Antenna
22181620	GEO-L Helical Antenna (EGM-7000L)
22181618	Iridium Helical Active Antenna (EGM-7000S)
22184694	Iridium/GNSS SMA Magnetic Mount Antenna (EGM-7000S)



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