

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

Half-19"-1U, Multisource 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

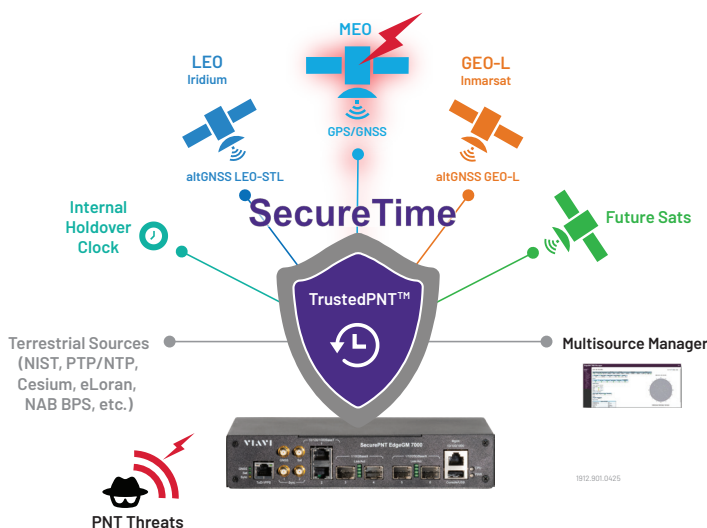
Secure and resilient Position, Navigation and Timing (PNT) services are vital to support at-risk critical infrastructure from rising PNT disruptions such as intricate jamming, spoofing, and meaconing attacks on GPS/GNSS antennas and malicious hacking cyberattacks on network timing targeting NTP/PTP protocols and GPS/GNSS receivers.

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 fuses, authenticates, verifies, qualifies, and learns from multiple timing sources based on its intelligent zero-trust architecture that adheres to the principle of "never trust, always verify".



SecurePNT EdgeGM 7000 powered with SecureTime GEO/LEO Service

Key Features

- Multisource receivers for GNSS backup: Multi-band GNSS with GEO-L for an outdoor antenna, or optional LEO STL only for an indoor antenna
- High-speed $\leq 25G$ PTP Grandmaster and NTP Time Server
- Super near-Rb holdover performance options
- Flexible timing platform: SyncE, NTP, PTP (PTRC-A/B), GM, APTS, BC-C/D, Client Clock, TC, 1 PPS, ToD, 10 MHz, Gateway Clock
- High-performance sub-ns timestamping

Key Benefits

- Secure, resilient edge Grandmaster clock
- GNSS backup with on-demand SecureTime altGNSS GEO-L Service activation, or optional LEO STL Service with a LEO STL receiver
- 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 altGNSSSM GEO/LEO Service

Multisource Receivers	
<ul style="list-style-type: none"> Default config for an outdoor antenna: <ul style="list-style-type: none"> Multi-band GNSS (L1, L2, L5) GEO-L Optional config for an indoor antenna: <ul style="list-style-type: none"> LEO STL 	<ul style="list-style-type: none"> Multi-band GNSS <ul style="list-style-type: none"> 184 channels, multi-constellations (GPS, Galileo, Beidou, QZSS, NavIC), multi-band L1/2 or L1/5 user-selectable
SecureTime altGNSS GEO/LEO Service	
<ul style="list-style-type: none"> Alternate GNSS backup options On-demand GEO-L activation over the air 	<ul style="list-style-type: none"> Optional Iridium LEO STL over Ethernet with a LEO STL receiver
Holdover	
<ul style="list-style-type: none"> Super near-Rb holdover oscillator options 	<ul style="list-style-type: none"> Standard H-8: 1.5 μs over 8 hours* Optional H-24: 1.5 μs over 24 hours*
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 STL 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"> μPNTranscoderTM option: <ul style="list-style-type: none"> Patented multisource-to-GPS transcoder Any multisource RF in from GNSS/LEO STL/GEO-L SMA and optional GPS L1 C/A RF out on "Sat-Out" SMA to retrofit legacy GPS/GNSS clock equipment with resiliency 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

*At constant ambient temperature

Specifications continued

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"> 256/512²/1024² 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"> SyncCenter configurator NTP (thousands TPS) <ul style="list-style-type: none"> Client Servers
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, web-based application 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

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| <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, MSTPSFP diagnostics (SFF-8472) |
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Power and Environmental

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| <ul style="list-style-type: none"> • Power Supply: <ul style="list-style-type: none"> – Internal power supply: 20-60 VDC, dual feed – AC adapter option • Power consumption: • 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 (14°F to 122°F) – Extended: -40°C to 65°C (-40°F to 149°F)(optional) • Storage temperature: -40°C to 80°C (-40°F to 176°F) • Humidity: 10-90%, non-condensing |
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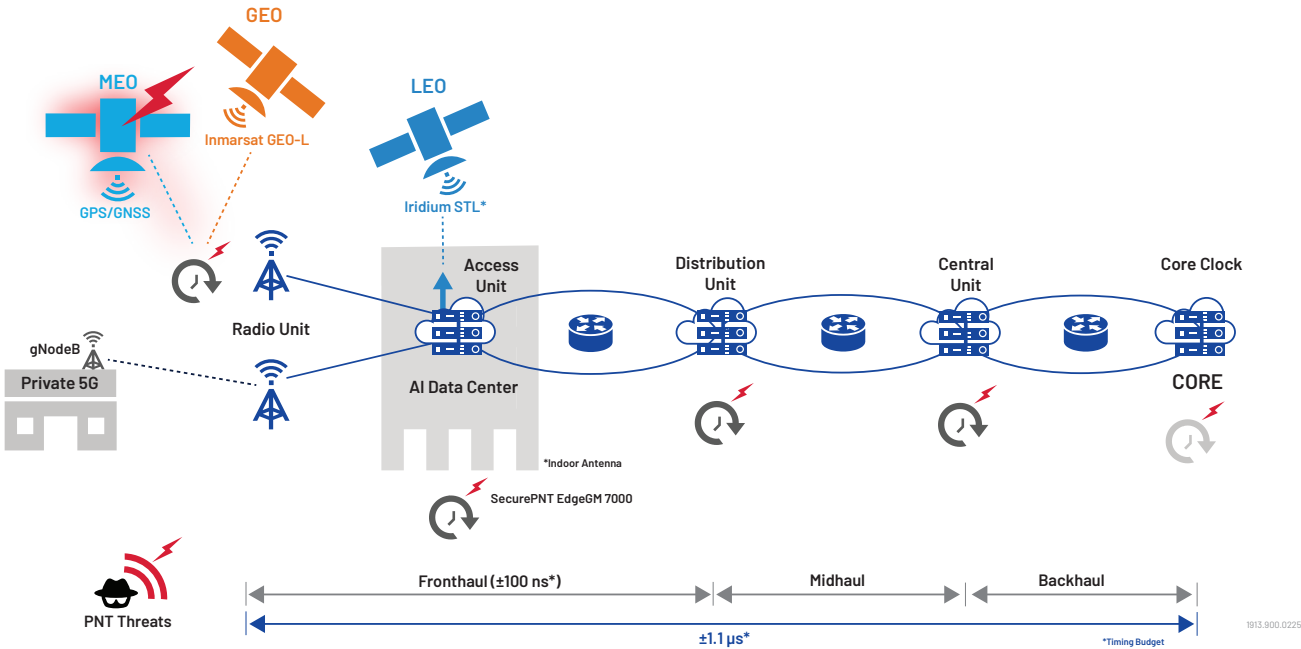
Physical

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| <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) • Mounting: <ul style="list-style-type: none"> – Desktop – Rack – Wall | <ul style="list-style-type: none"> • Weight: TBD • Accessories: <ul style="list-style-type: none"> – USB cable (console) – 19" rack mounting kit (optional) – Rooftop GNSS antenna (optional) – Indoor/Outdoor LEO STL antenna for GNSS backup (optional) – Outdoor GEO-L antenna for GNSS backup (optional) |
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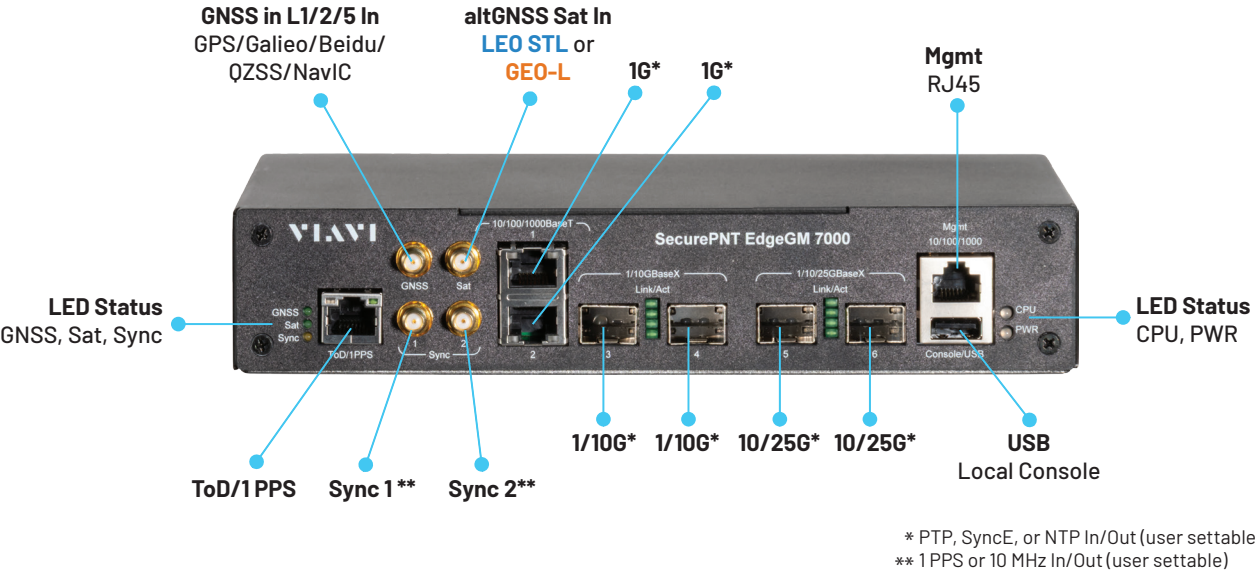
Regulatory and Compliance

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| <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 |
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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



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