

OSA 5400 STL module

STL or STL + GNSS timing / PNT module



5G Mobile



Telecom



Defense



Data center



Smart grid



Transportation



Financial



Broadcast

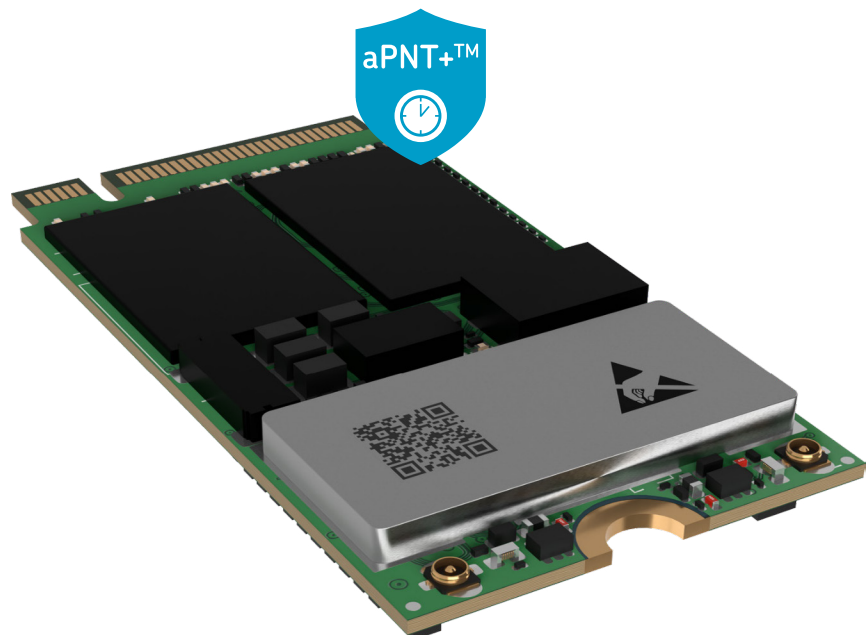
Benefits

- Supports both low-earth orbit STL and multi-constellation GNSS timing sources
- Combining STL with GNSS minimizes the vulnerabilities of GNSS alone, making jamming very difficult and spoofing virtually impossible
- Simple, scalable system supports low-touch provisioning and management of 10s to 1,000s of units
- Common NMEA protocol support for configuration and monitoring
- Accurate timing delivery with the most compact, carbon-friendly power footprint on the market
- Support of advanced STL based location and navigation

Overview

As the threats of jamming and spoofing in GNSS systems escalate, the need for guaranteed synchronization and positioning becomes crucial. Assured positioning, navigation and timing (PNT) has become a requirement across industries and a prerequisite for government and critical infrastructure. There are two types of modules: one that supports STL only, and another that supports both STL+GNSS.

The OSA 5400 Series is an M.2 module integrated with STL and GNSS receivers for versatile deployment in a wide range of environments and industries, including 5G, smart grids and data centers. It meets stringent demands for resilience, reliability and precision. By receiving accurate timing from both STL and various GNSS constellations, it provides host devices with dual time sources in a single, standard form-factor module. It's also fully compatible with the OCP M.2 Sync Module Base Specification, ensuring seamless integration.



5400 M.2 STL + GNSS Module

Oscilloquartz multisource aPNT+™ platform

OSA 5400 STL module

High-level technical specifications

OSA 5400 Series highlights

- Cost-effective sync delivery
- Small form-factor PRTC-A, GNSS and STL receiver
- Robust design
- Ethernet and PCIe connectivity

STL receiver

- Resilient PNT from GNSS and STL gives assurance of dual satellite time sources
- STL-only mode available for indoor antenna locations where GNSS is not available
- Authenticated service
- Advanced location and navigation data provided via NMEA

Universal applicability

- Simple and flexible host interfacing
- Satellite-delivered timing direct to any location
- Small footprint with minimal configuration requirements

GNSS receiver

- Up to three concurrent GNSS constellation
- Supporting GPS, GLONASS, BeiDou, and GALILEO
- Hardware-supported jamming and spoofing detection

**This section is relevant to STL+GNSS module*

Resiliency

- GNSS and STL Time signals
- Configurable fallback options

Management

- Configuration and monitoring via common NMEA messages

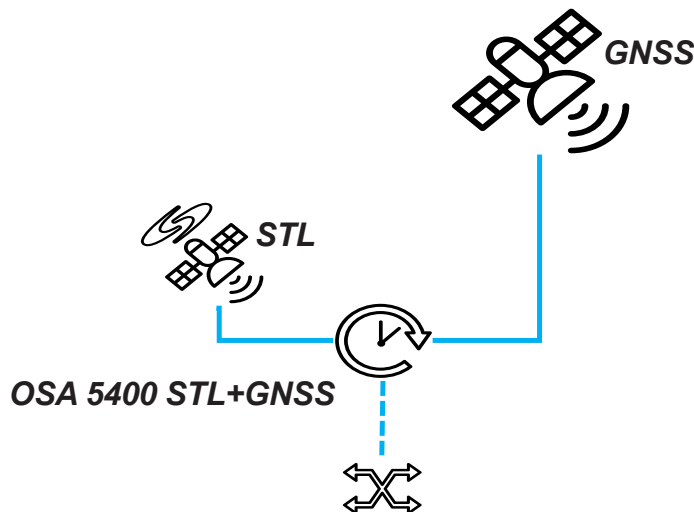
Applications in your network

Adding resiliency to an existing PTP network

- Local timing solution with STL satellite-delivered UTC-traceable time
- Local timing solution with GNSS satellite-delivered UTC-traceable time
- GNSS with fallback to STL
- Simultaneous combination of GNSS time and STL time

Adding resiliency for timing and position needs

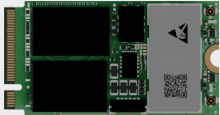
- Timing provided by STL Satellite-delivered UTC traceable
- location information provided via NMEA (requires LOCATE license)
- SVI (space vehicle information) provided via NMEA to use in Navigation systems (requires NAVIGATE license)



OSA 5400 STL module

Product specifications

Timing receiver module

	OSA 5405 M.2 STL GNSS	Compact, Resilient, dual timing receiver module	Featuring integrated STL + GNSS receiver with external antenna, PPS, and UART interfaces
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GNSS receiver

- PRTC-A
- Accuracy within +/-100nsec from UTC
- Independent 72-channel multi-constellation
- Supports single satellite timing modes
- Survey fixed location
- Configurable fixed location
- Navigation mode
- Configurable satellites SNR and elevation masks
- Advanced spoofing and jamming detection on device level
- GPS/QZSS L1 C/A and GLONASS L10F, BeiDou B1, Galileo E1, SBAS (QZSS, WAAS, EGNOS, MSAS)
- Up to three concurrent GNSS constellations
- User-configurable antenna cable delay compensation
- Voltage to antenna: +3.3V or 5V, user configurable
- Antenna connectors: 2 micro-miniature AMC4 RF connector, 50 ohms (<1.45mm mated height)

**This section is relevant to STL+GNSS module*

Operational accessories

- GNSS (GPS/GLONASS/BeiDou/Galileo) antenna kits
- STL+ GNSS (GPS/GLONASS/BeiDou/Galileo) roof antenna kits
- STL (outdoor/indoor) antenna kits
- Indoor and outdoor antenna cables, lightning protectors and mounting kits

**Accuracy can be improved with high stability external frequency reference*

STL receiver

- Provides authenticated timing / location from LEO satellites
- Accuracy within +/-100nsec from UTC (1-sigma)
- Location and navigation information provided via NMEA
- Position accuracy within 50 meters (1-sigma) in Navigation dynamic modes

Outdoor antenna

- Position accuracy within 30 meters (1-sigma), after 1 hour survey, with outdoor antenna
- Unaffected by high multipath, urban canyon environments
- Authenticated signal (resilient to manipulation)
- Voltage to antenna: 3.3VDC or 5VDC
- Antenna connector micro-miniature AMC4 RF connector, 50 ohms (<1.2mm mated height)

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Standards and recommendations

- In-band management (over PTP/SyncE port)
- Safety
- IEC/UL 62368-1
 - EMC, environmental
- EN 55032, EN 55035
 - ETSI EN 300 386
 - FCC CFR 47 Part 15 Subpart B
 - ANSI C63.4
 - CISPR 32, CISPR 35
 - IEEE 1613
 - IEC 61850-3
 - RoHS; CE; UL; FCC; WEEE

Power consumption

- Max. power consumption: 4W

Mechanical

- Size: 22mm (W) x 4mm (H) x 42mm (D)
- Weight: 5g

Environmental

- Operating temperature: -25 to +70°C
- Storage temperature: -40 to +85°C
- Humidity: 5 to 95% (non-condensing)

Installation

- Host device with suitable M.2 interface

M.2 connector main interfaces

- B-Key slot 22x42
- CLK (10MHz) in/out
- PPS in/out
- NMEA in/out
- Power

