

ROBUST, RESILIENT POSITIONING  
AND TIMING FOR CRITICAL OPERATIONS

# SNDR-X

+ POSITIONING, NAVIGATION AND TIMING RECEIVER



## KEY FEATURES & BENEFITS

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>The Challenge</b> | Standard GNSS receivers used in public safety and critical infrastructure are prone to failures due to signal disruptions and cyberattacks, risking safety and operational efficiency.                                                                                                                                                                                                                                                                         |
| <b>Our Solution</b>  | StarNav's advanced system is a multi-frequency multi-source receiver that integrates modern GNSS signals with other ambient radio signals, enhancing reliability and providing robust protection against disruptions and malicious attacks. This ensures uninterrupted operation of critical systems. Whether needing a reliable PNT system or a PNT measurement recorder for system development and experimentation, SNDR-X is the perfect flexible platform. |

## WHY CHOOSE SNDR-X

|                             |                                                                                                                                                                                                                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Scalability</b>          | Reprogrammable hardware receiver architecture, enabling the signal-types it can process (e.g., Globalstar, Iridium, a new signal in the future, etc.) to be updated via a simple and secure file update.                                                                                           |
| <b>User-Selectable</b>      | The signals used by the PNT filter are user-selectable. The PNT observables recorded are user-selectable. The output data can be configured to output a) raw measurement observables and/or b) the PNT solution. The clock source is selectable between an internal OCXO or an external reference. |
| <b>Automated Assessment</b> | The receiver leverages frequency and source diversity to detect and exclude untrusted bands using a statistical residual test.                                                                                                                                                                     |
| <b>Flexibility</b>          | May be used on various vehicle platforms or critical infrastructure. This system can be configured as an IQ recorder for development. The system may serve as a test platform for PNT service providers.                                                                                           |

## HOW IT WORKS

In addition to standard GNSS signals, SNDR-X processes communication signals (cellular, TV broadcast, Globalstar, Iridium, Orbcomm) and terrestrial and other satellite-based PNT services coming soon, such as Xona Space Systems Pulsar, to maintain PNT in challenging environments. All frequency bands are processed independent of each other. (e.g., this receiver uses a direct-acquire GPS L5 and Galileo E5a receiver). This field programmable gate array-based platform allows you to upgrade your receiver with the latest signal types, even after you have purchased your unit.

## USE CASES

|                                                         |                                                                                                                                        |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Public Safety &amp; Emergency Response</b>           | Reliable positioning and timing for first responders, ensuring effective operation during crises despite potential signal disruptions. |
| <b>Critical Infrastructure Management</b>               | Protect power grids, water networks, and transportation systems, which depend on precise timing and positioning during cyber attacks.  |
| <b>Military &amp; Defense Operations</b>                | Supporting navigation and coordination of military assets in hostile environments.                                                     |
| <b>Transportation &amp; Fleet Management</b>            | Reliable positioning and timing data for vehicle tracking and logistics, improving safety and efficiency.                              |
| <b>Telecommunications &amp; Network Synchronization</b> | Robust timing for network synchronization, crucial for performance and reliability.                                                    |
| <b>Precision Agriculture</b>                            | Multi-source and multi-frequency measurement corrections reduce scintillation impact.                                                  |
| <b>Research and Development</b>                         | PNT data logging and timing outputs for developing, testing, or characterizing new PNT services.                                       |



Proven Accuracy,  
Cost-Effective, Scalable

Please call or email us for a quote or to request a demo.  
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## TECHNICAL SPECIFICATIONS

### GENERAL

**Configurable Product** Four tunable RF synthesizers and receive paths, each user-configurable, to support coherent reception of four separate frequency bands.

**Multiple Signal Sources** GPS, Galileo, other GNSS, Xona Space Systems Pulsar, other LEO, Cellular, other non-GNSS signals\*

**Frequency Bands** 400-6000 MHz. Preselection filters are optimized for PNT.

**Modes of Operation** PNT Receiver or IQ recorder.

\* See Signal License Menu or contact us for a full list.

### SENSOR INTEGRATION

IMU

Barometric Altimeter

Magnetometer

External Sensor Input (optional)

### PHYSICAL

**Dimensions (in)** 5 x 6 x 3.5

**Weight** 2.25 lbs.

**Voltage Input** 12 VDC

**Power Consumption** 25 W (40 W in IQ recorder mode)

**Operating/Storage Temp** 0 to 65°C/ -20 to 85°C

### DATA STORAGE

**Device** SD Card (SSD for IQ recording)

**Data Type** Pseudorange, Doppler, carrier phase, carrier-to-noise ratio, other PNT data

**Data Rates** Configurable

### INTERFACES

**Antenna Ports** 4 x SMA

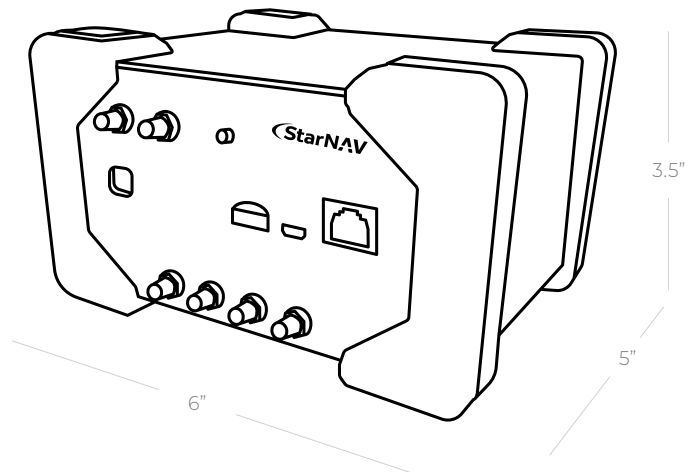
**External 10 MHz Input** SMA

**Trigger/ Timing** 1 PPS Output Through SMA

**Status Indicators** LEDs

**Serial** UART over Micro-USB

**Network** Ethernet data transfer interface



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