Trimble PX-1 RTX

Smart Antenna

1. What is the Trimble PX-1 RTX Smart Antenna enclosure?

This is a “drop-in” smart antenna (SA) option that combines Trimble® PX-1 RTX receiver with a Calian® jam-resistant antenna in a single enclosure to provide precise position and orientation solution for navigation, guidance, and control for the Advanced Air Mobility market.

2. What are the benefits of Trimble PX-1 RTX Smart Antenna?

The PX-1 RTX SA **significantly reduces integration time and effort** from months of engineering to weeks of acceptance testing. It maximizes PX-1 RTX performance by addressing the two major integration challenges associated with board-level integration.

- **RF interference resolution:** The smart antenna properly mitigates RF interference associated with compact platforms such as drones; ensuring the best integrity of the positioning system
- **Proper vibration shielding:** The enclosure is specifically designed to protect the receiver from the high-frequency mechanical noise and vibrations typical of drone propulsion systems; bypassing the need for custom damping solutions.

Additionally, the SA is integrated with Calian’s jam resistant Accutenna® antenna element to further protect against out-of-band signal interference.

3. What is the physical specification of PX-1 RTX SA?

The SA weighs 284 grams with dimensions of 123mm (D) × 51mm (H). It supports a wide range of power input (9-30V) and has a 4W power consumption.

4. What is the Trimble PX-1 RTX?

The Trimble PX-1 RTX is a small form factor GNSS-IMU OEM board module that combines three core Trimble’s technologies: Trimble ProPoint® GNSS, Applanix® In-Fusion®+ and Trimble CenterPoint® RTX correction service, designed to provide:

- Accurate and robust high rate cm level continuous GNSS-inertial position with CenterPoint RTX correction service.
- High accuracy orientation with true heading immune to environmental effects.
- Small, lightweight, single antenna triple-frequency multi-constellation embedded GNSS-IMU hardware. Offered to Autopilot, UAV manufacturers and integrators to improve drone operation and safety through a service subscription model.

5. What is ProPoint GNSS?

Trimble ProPoint GNSS leverages Trimble Maxwell™ 7 hardware and all global constellations to deliver high-precision position in challenging environments like urban canyons and dense canopy. A key advancement, Trimble IonoGuard™, ensures centimeter-level stability and maximum uptime by mitigating ionospheric disturbances and signal scintillation through independent tracking and rapid lock recovery. Combined with advanced algorithms, the ProPoint GNSS engine provides industry-leading protection against jamming, spoofing, and multipath interference.

6. What is Applanix IN-Fusion+?

The Applanix IN-Fusion+ is Trimble technology that provides an advanced version of an "Aided-inertial" navigation system or Aided INS. An Aided INS is an INS that uses other sources of information to continuously correct or "aid" the INS errors. Such an approach means that the INS errors no-longer grow unbounded, allowing the use of a less accurate and hence smaller and less expensive IMU (ie. using MEMS sensors), while still obtaining sufficient position and orientation accuracy.

It also is an optimal method of "blending" or "fusing" the information of all measurement systems into a single solution. This advanced technology takes the advantages of each measurement technology and eliminates or significantly reduces their limitations. The result is the most accurate and robust spatial knowledge solution.

The Applanix IN-Fusion+ is tightly integrated with ProPoint GNSS allowing it to achieve extremely robust high-rate Aided-INS position output at the cm level under all types of signal environments.

7. What is Trimble CenterPoint RTX?

Trimble CenterPoint RTX is advanced, precise point positioning technology that provides real-time, centimeter-level corrections with a high level of accuracy without the need for terrestrial infrastructure, delivered worldwide via L-band satellite or cellular/IP networks.

A truly multi-frequency GNSS technology, it employs its own dedicated precise ephemeris correction service and derives integer-level ambiguities for accuracy approaching that of RTK.

Beyond precision, the service integrates Trimble RTX-NMA (Navigation Message Authentication), a world-first security layer that cryptographically verifies the authenticity of GPS and BeiDou signals. This protects the receiver against spoofing attacks and signal interference by cross-referencing satellite data with Trimble's global monitoring network. Supporting GPS, GLONASS, Galileo, BeiDou, and QZSS, Trimble RTX® provides a complete, resilient positioning solution that ensures data integrity alongside high-precision performance.

8. What is the timeline for availability and distribution?

Following a soft launch in May 2026, the PX-1 RTX Smart Antenna is scheduled for official commercial release in Q3, 2026. Please contact your regional representative for more details regarding the sale and pricing.

APPLANIX CONTACT & SUPPORT

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