



ZXW-Sensor

RELIABLE 5HZ RTK PERFORMANCE

ZXW-Sensor™ from Thales is a high-precision dual-frequency GPS receiver with SBAS capability, built for the most demanding guidance, navigation and positioning uses. By adding world-class real-time GPS performance directly to your dynamic application, the ZXW-Sensor guarantees reliable and accurate centimeter-level positions.

STATE-OF-THE-ART RTK TECHNOLOGY

ZXW-Sensor 12 Channel dual-frequency receiver features patented Z-Tracking™ technology from Thales. Z-Tracking is key to ensuring precise centimeter-level positioning. In addition, the receiver's high update rates in RTK mode provide more accurate positioning for challenging applications such as machine control, agriculture, vehicle guidance, construction, land and marine surveying and precision navigation. The ZXW-Sensor also offers superior signal tracking sensitivity.

RAPID REAL-TIME POSITIONING

ZXW-Sensor features innovative Instant-RTK® technology from Thales, providing fast and accurate real-time positioning for demanding applications. With Instant-RTK, fixed ambiguity solutions are available within seconds after full satellite lock. Instant-RTK reaches a level of performance no other GPS provider can match.

PROFESSIONAL QUALITY GPS WITH SBAS CAPABILITY

ZXW-Sensor is the ideal GPS solution for a wide variety of positioning and navigation needs. ZXW-Sensor is capable of outputting SBAS (WAAS/EGNOS/MSAS) raw data for RTK processing and integrity monitoring. Backed by Thales' expertise in the high-precision GPS market, and innovative GPS technology, ZXW-Sensor combines cost-effective flexibility with high-precision GPS performance.



ADVANTAGES:

- Backwards compatibility for seamless upgrades from Z-Sensor™
- Low power consumption
- Lightweight, vibration and shock resistant package
- Reliable operation in the presence of interfering signals
- Includes 85 MB internal memory for data storage
- SBAS raw data output for improved positioning and integrity monitoring

VALIDATE GPS PERFORMANCE WITH ZXW-SENSOR EVALUATION KIT

Thales offers the ZXW-Sensor Development Kit so you can conduct a comprehensive evaluation of the receiver's performance to ensure that this is the right GPS device for the application. The Development Kit contains every tool you need to test each function, including a ZXW-Sensor, power supply, interface cables, antenna, manuals, Mission Planning™ software, and Windows®-based Evaluate™ software. Evaluate software communicates directly with the receiver for control and monitoring, providing visual displays of satellite information, receiver position and velocity. The software is also capable of data logging and position accuracy analysis.

TECHNICAL SPECIFICATIONS

Standard Features

- 36-channel, all-in-view parallel tracking
 - 12 channels L1 C/A code and carrier tracking
 - 12 channels L1 P-code and full wave length carrier tracking
 - 12 channels L2 P-code and full wave length carrier tracking
- Z-Tracking
- Real-time data output (code and carrier)
- NMEA V2.3 and V3.0
- 1PPS timing signal (5V TTL)
- 10 Hz raw data output (code and carrier)
- Enhanced edge and strobe correlator (advanced multipath mitigation for C/A code)
- Instant-RTK
- 5Hz Synchronized RTK
- Speed¹ (max): 514 m/sec (1,000 knots)
- Altitude¹ (max): 18287 m (60,000 ft)
- User selectable update rate up to 10Hz
- Less than 30 ms position latency
- Event marker
- RTK remote mode
- RTK base mode
- Differential and RTK support for:
 - RTCM V2.2
 - Thales proprietary DBEN format
 - CMR/CMR+
- Point-positioning mode (automatic averaging)
- Remote monitoring
- SBAS raw data support
- Internal 85 MB memory for data storage
- User-defined coordinate system
- 1 year warranty
- 1 year free technical support

Instant-RTK and 5Hz Synchronized RTK

Instant-RTK and 5 Hz Synchronized RTK are available as standard features on all ZXW-Sensor units. Instant-RTK provides fixed ambiguity solutions in as few as two seconds² after full satellite lock. 5 Hz Synchronized RTK provides 5 Hz update rate in Synchronized RTK mode.

Real-Time Position Accuracy³

- Autonomous⁴
 - Horizontal (CEP) 1.5 m (9.843 ft)
 - Differential
 - Horizontal (CEP) 40 cm (15.75 in)
 - Synchronized RTK
 - Horizontal (CEP) 1.0 cm (0.39 in) + 2 PPM
 - Maximum position update rate: 5 Hz
 - Fast RTK
 - Horizontal (CEP) 2.0 cm (0.79 in) + 2 PPM
 - Maximum position update rate: 10 Hz
 - < 30 ms position latency
- Stated accuracy occurs with a high speed data link, such as the internal radio. Fast RTK accuracy will degrade with a slower data link. Synchronized RTK accuracy will not degrade with a slower data link.*

Velocity Accuracy³ (knots)

- 0.1 (95%)

Communications

- 3 bi-directional RS-232 serial ports
- 1 internal port for internal radio

Technical Specifications Environmental/Physical

- Operating Temp: -30°C to + 55°C (-22°F to + 131°F)
- Storage Temp: -40°C to +80°C (-40°F to + 176°F)
- Power Consumption: 4.0 W (typical)
- Input Voltage: 10–28 VDC
- Size: 5.84 cm H x 17.27 cm W x 21.84 cm D (2.3 in H x 6.8 in W x 8.6 in D)
- Connector: DB25 (compatible with the GG24™ and G12™ Sensors)
- Weight: 1.705 kg (3.75 lbs.)
- Humidity: 100% condensing
- Vibration: MIL-STD-810E “Minimum Integrity Test-General”
- FCC Class B and CE Mark

Data Link Requirement

- Minimum data link rate: 600 bps (using Compact RTK message, generated once every 5 seconds, 12 satellites in view)

ZXW-Sensor Development Kit

Development Kit includes ZXW-Sensor receiver, antenna, power supply, cables, receiver operating manuals, Evaluate software/manual, Mission Planning software/manual.

¹ Higher altitudes and speeds available under validated export license.

² Fast Instant-RTK solution requires open sky conditions that allows receiver to track L1 and L2 signals on at least 6 satellites with a PDOP less than 6 for baseline lengths less than 10 km.

³ Accuracy and TTFF specs. are based on tests conducted in California under open sky conditions. Differential tests performed on a short baseline using Thales ZXW-Sensor base station with Geodetic antenna and ZXW-Sensor remote with Geodetic antenna (Marine IV antenna for TTFF). Antenna benchmark locations determined using CORS sites Point Blunt (PBL1) and Pigeon Point (PPT1). Tests at different locations under different conditions may produce different results.

Position accuracy specifications are for horizontal positioning. Vertical error is typically <2 times horizontal error.

⁴ Real-time position accuracies obtained with SA off. With SA on, accuracy of autonomous positioning may degrade up to 100 meters (95%) as specified by the U.S. Department of Defense.

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