

Xsens

Avior RTK GNSS/INS

High-accuracy positioning and orientation in a compact OEM module

Next-generation OEM RTK GNSS/INS delivering reliable positioning and heading for deeply embedded applications.

Xsens Avior RTK GNSS/INS combines the Xsens high-performing OEM inertial core with advanced sensor fusion, RTK capability and an external u-blox ZED-X20P receiver to deliver centimeter-level positioning and highly stable orientation in a compact, low SWaP-C form factor.



Engineered for high-precision OEM navigation in GNSS-challenged environments

Designed for embedded systems that need robust orientation and meter-level positioning, Xsens Avior GNSS/INS provides a stronger inertial foundation, broad interfaces and the established Xsens software ecosystem for fast evaluation and deep integration. The RTK version adds RTK capability for centimeter-level positioning accuracy.

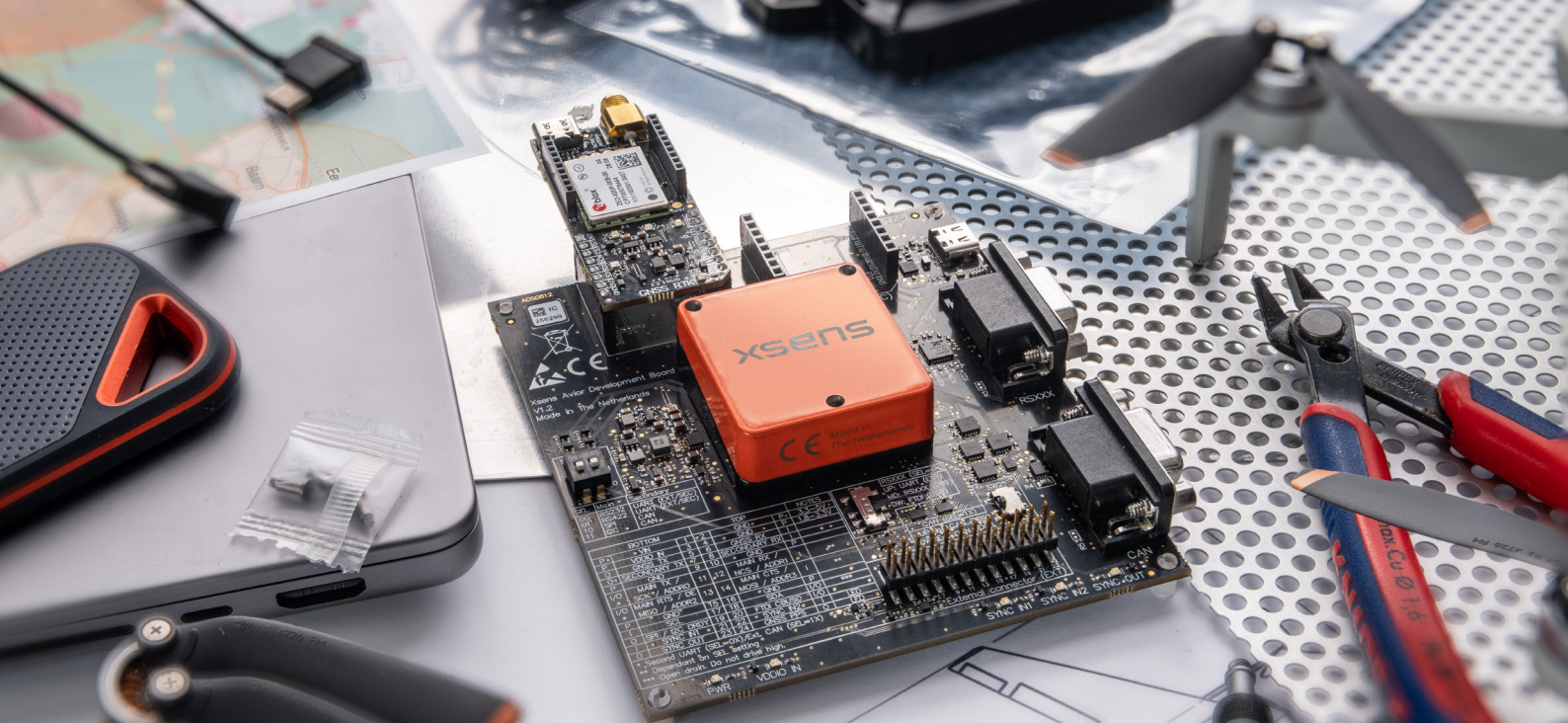
- › RTK capability for centimeter-level positioning accuracy
- › External quad-band u-blox ZED-X20P receiver for maximum satellite visibility
- › Support for modern high-precision services such as PointPerfect and Galileo HAS
- › Improved RTK convergence and re-acquisition after signal loss

- › Highest-performing Xsens OEM inertial core for stable orientation and reduced drift
- › Broad embedded interface set: UART, SPI, I2C, CAN and CAN-FD
- › Heave output for marine and oshore applications
- › Covariance output for real-time data quality assessment

Applications:

- › Autonomous vehicles requiring high-precision navigation
- › Construction, mining and agriculture (AgTech)
- › Drones and UAVs
- › Outdoor mobile robotics
- › Industrial and automated vehicles
- › Marine systems (ROV, USV)
- › Payload and platform stabilization
- › Surveying, mapping and geospatial systems
- › Embedded outdoor applications





Sensor fusion performance

Accelerometer	_____	Calibrated
Gyroscope	_____	Calibrated
Roll, Pitch	_____	0.2° RMS
Yaw/Heading	_____	0.5° RMS
Position	_____	0.6 cm + 1 m CEP
Velocity	_____	0.03 m/s RMS
Heave	_____	< 5 cm < 6 cm
Strapdown Integration (SDI)	_____	Yes

Gyroscope

Standard full range	_____	±300°/s
In-run bias stability	_____	8°/h
Bandwidth (-3dB)	_____	400 Hz
Noise density	_____	0.004°/s/√Hz
g-sensitivity (calibr.)	_____	0.08°/s/g

Accelerometer

Standard full range	_____	±8 g
In-run bias stability	_____	15 µg
Bandwidth (-3dB)	_____	470 Hz
Noise Density	_____	15 µg/√Hz

Magnetometer

Standard full range	_____	±8 G
Total RMS noise	_____	1 mG
Non-linearity	_____	0.2%
Resolution	_____	0.25 mG

RTK GNSS Receiver

Brand	_____	u-blox
Model	_____	External MAX-F10S
RTCM input port	_____	n/a
RTK correction port	_____	RTCM 3.x

Mechanical

IP-rating	_____	IP51
Operating Temperature	_____	-40 to 85 °C
Casing material	_____	Aluminum
Mounting orientation	_____	No restriction, full 360° in all axes
Dimensions	_____	36.8 x 40 x 15.7 mm
Connector	_____	Socket 1.27 mm pitch, 10x2 (vertical, SMD, with alignment pins)
Weight	_____	35.2 g
Certifications	_____	CE, FCC, RoHS, ITAR-free

Electrical

Input voltage	_____	3.2 V to 5.1 V
Power consumption (typ)	_____	<0.5 W

Interfaces / IO

Interfaces	_____	UART, SPI, I2C, CAN, CAN-FD
Sync Options	_____	SyncIn, SyncOut, ClockSync
Protocols	_____	Xbus, ASCII (NMEA), CAN, CAN-FD
Clock drift	_____	1 ppm
Output frequency	_____	Up to 2 kHz, 400 Hz SDI
Built-in-self test	_____	Gyr, Acc, Mag, GNSS

Software Suite

GUI (Windows/Linux)	_____	MT Manager, Firmware updater, Magnetic Field Mapper
SDK (Example code)	_____	C++, C#, Python, Matlab, Public source code
Drivers	_____	LabVIEW, ROS, GO
Support	_____	Online manuals, community and knowledge base

Unless stated otherwise, all specifications are typical. Specifications subject to change without notice. This document is informational and not binding. Complete and detailed specifications are available at mtidocs.xsens.com. **Scan QR code for quick access.**

Contact Us:

www.xsens.com
info@xsens.com
 +31 (88) 973 6700

