Xsens Vision Navigator

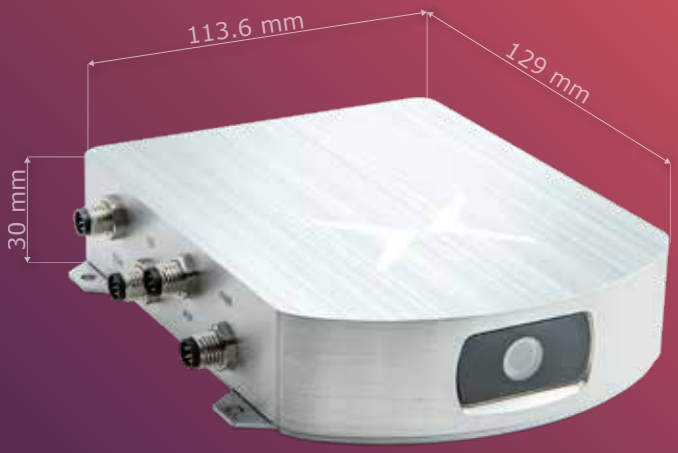
- **Accurate positioning during GNSS outages**
- **Full ROS1/2 compatibility**
- **Ethernet, WIFI, USB-C, UART and CAN interfaces**

The Vision Navigator is a vision- and dual RTK GNSS/INS enabled navigation module, for tracking accurate 3D position, velocity and orientation, even in challenging outdoor- and GNSS-denied environments, supported by Visual Inertial Odometry technology.

With the Vision Navigator, position drift is distance-dependent as opposed to time-dependent as found in more traditional GNSS/INS devices.

The Dual-antenna and built-in industrial grade IMU provide reliable heading information even at low velocities or when standing still. Also, it features the possibilities of feeding wheel odometry data and using the internal recording memory.

Vision Navigator has a browser-based GUI and is supported by ROS with resources available in Github.



Starter Kit p/n: XVN-090D-1B-SK
Single Unit p/n: XVN-090D-1B

To order, please contact **sales@movella.com**

This document is informational and not binding.
Complete and detailed specifications are available at **mtidocs.movella.com**

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Sensor Fusion Performance

Roll, Pitch	<0.4 deg
Yaw/Heading	0.4 deg (1m antenna baseline)
Position accuracy with RTK	1cm + 1ppm
Position accuracy during GNSS outages	0.75% of distance travelled[1]
Velocity	0.1 m/s

Gyroscope

Standard full range	2000 deg/s
Noise Density	0.003 º/s/√Hz

Accelerometer

Standard full range	16 g
Noise Density	65 µg/√Hz

GNSS Receiver

Brand	u-blox
Model	ZED-F9P (2x, internal)
RTK correction input	RTCM 3
RTCM input port	Ethernet, Wifi or serial

Barometer

Standard full range	260-1250 hPa
Total RMS noise	0.75 Pa

[1] *with wheel odometry.*

Mechanical

IP-rating	IP67
Operating Temperature	-30 to +85 ºC
Casing material	Aluminum
Mounting orientation	With view of surroundings
Dimensions	129x113.6x30 mm
Connector	M8 8-pins x3, M8 4-pins x1, SMA x3, USB-C x1
Weight	420 g
Certifications	CE

Electrical

Input voltage	4.5 to 36V
Power consumption (typ)	7.5 W

Interfaces / IO

Interfaces	UART, Ethernet, Wifi, CAN, USB-C
Sync Options	SyncIn, SyncOut (PPS), NTP
Protocols	ASCII, NMEA and ROS
Output Frequency	Up to 100 Hz

Software Suite

GUI	Browser-based GUI
SDK (Example code)	Github C++ library
Drivers	ROS
Support	Online manuals, community and knowledge base

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ISO 9001 2015 CERTIFIED

Unless stated otherwise, all specifications are typical. Specifications subject to change without notice.
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