

FEATURES:

Sub-centimeter position accuracy with GNSS-RTK (GPS, GLONASS, Galileo, BeiDou)

Accurate SOG, Bow, Stern and Along speed measurement at low velocities (up to 5cm/s or 0.1 knot)

Independent Heading (HDT) and Rate of Turn (ROT) generator

State-of-the-art ARGUS software enhances situational awareness

Designed for demanding environments

APPLICATIONS:

- Maneuvering in confined waters
- Single Point Mooring (SPM)
- Berthing application
- Ship-to-ship operations
- Offshore FPSO
- Ferry application
- Ship trials
- Rig movements
- River piloting



OneBoxPro+ PPU by NavSim for the ultimate pilot

NavSim has always strived to maintain its leading position in producing high-performance Portable Pilot Units. Our new product, the NavSim OneBoxPro+ PPU, is the perfect combination of practical field experience and the latest technology.

This is an integrated decision support system developed for the diverse needs of Marine Pilots. Responsive, reliable and accurate, our PPU components have been specifically selected, tested and adopted by Pilots worldwide. When power consumption, portability and dependable performance are of the utmost importance, the NavSim OneBoxPro+ PPU simply delivers.

ARGUS software

Key to the flexibility of the NavSim PPU system is NavSim ARGUS software. Developed in close consultation with Pilots, ARGUS software parses data feeds to provide Pilots with accurate, real time and predictive positioning information for not only themselves but also vessels in the surrounding area. Ideal for approaches in congested harbors, passage through confined waterways or for navigating varying coastal tides and currents; the ARGUS software is designed to provide the best information, displayed in real time when and where you need it. The built-in Chart Updater plug-in assures that all Electronic Nautical Chart updates are delivered and installed automatically.

The ultimate performance...

The next-generation NavSim OneBoxPro+ PPU is the only system designed to provide Heading (HDT), Rate of Turn (ROT), AIS information and GNSS-RTK positioning – all independent from the vessel's devices. It is packed into the smallest form factor available today on the market with over 20hrs of battery life. The state of the art RG5-ROT generator delivers rate of turn data with unprecedented accuracy and responsiveness (at 0.1/min resolution), whilst Real-Time Kinematic (RTK) differential corrections allows vessel docking with bow, stern and along speeds provided at centimeter per second resolution.

...and mobility

NavSim OneBoxPro+ PPU is equipped with a state-of-the-art, long-range Wi-Fi transceiver which supports up to 6 simultaneous clients. An additional ARGUS mobile extension app for Android and iOS devices assures that the crucial movement parameters of the vessels are always at hand.



NavSim
TECHNOLOGY

OneBoxPro+ Portable Pilot Unit DataSheet



GNSS CHARACTERISTICS

- Position Antenna 220 Channel:
 - GPS: Simultaneous L1 C/A, L2E, L2C, L5
 - GLONASS: Simultaneous L1 C/A, L2 C/A
 - BeiDou: B1, B2
 - Galileo: Simultaneous L1 BOC, E5A, E5B
 - SBAS: Simultaneous L1 C/A, L5
 - QZSS: L1 C/A, L1 SAIF, L2C, L5
- Vector Antenna 220 Channel (option):
 - GPS: Simultaneous L1 C/A, L2E, L2C
 - GLONASS: Simultaneous L1 C/A, L2E, L2C
 - BeiDou: B1
- High precision multiple correlator for GNSS pseudorange measurements
- Unfiltered, unsmoothed pseudorange measurements data for low noise, low multipath error, low time domain correlation and high dynamic response
- Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- Maximum output rate: 50 Hz

POSITIONING SPECIFICATION¹⁾

- Single Baseline RTK (<50km):
 - horizontal: 0.008 m + 1 ppm
 - vertical: 0.015 m + 1 ppm
- DGPS:
 - horizontal: 0.25 m + 1 ppm
 - vertical: 0.50 m + 1 ppm
- SBAS:
 - horizontal: 0.50 m
 - vertical: 0.85 m

RTK INITIALIZATION & CHARACTERISTICS

- 40 km and more in dual frequency mode
- Reference outputs/inputs : CMR, CMR+, SCM RX, RTCM 2.1, 2.2, 2.3, 3.0, 3.1

Time to first fix (TTFF)¹⁾

- Signal re-acquisition: 2 sec
- Hot start: 11 sec
- Warm start: 30 sec
- Cold start: 45 sec

UHF TRANSCEIVER CHARACTERISTICS

- Supports output of selectable navigational data from the PPU to nearby vessels/shore station
- Frequency range: 403-473MHz
- Tuning range: 70 MHz
- Channel spacing: 12,5kHz/20kHz/25kHz
- Modulation: 4FSK, GMSK
- Sensitivity BER <10E-3: -114dB @12,5kHz; -111dB @25kHz
- Adjacent Channel Selectivity (FEC ON) Selectivity at ± 50 kHz: >47dB @2.5 kHz; >52dB @25 kHz; >67dB @12.5/25kHz

AIS CHARACTERISTICS

- Dual Channel AIS receiver
- via Internet

I/O INTERFACES

- 1x Wi-fi
- 1x RS232 service (Rx and Tx signals)
- 2x GPS Antenna TNC
- 2x UHF/VHF Antenna

PERFORMANCE SPECIFICATION¹⁾

- Time to First Fix: <45s (cold) / <30s (warm)
 - Signal Re-acquisition: <2s
- Velocity Accuracy:
 - horizontal: 0.007 m/s
 - vertical: 0.020 m/s
- Acceleration: 11 g
- Rate of Turn:
 - resolution: 0.07°/min
 - range: $\pm 60^\circ$ /min
- Heading: <0.05° @10m baseline

PHYSICAL, ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS²⁾

- Dimension (WxHxD): 305x144x270 mm
- Battery operation: 20+ hours
- Weight: 4.5 kg, incl. antennas
- Vibration/Mechanical shock: MIL810F/MIL810D
- Operating temperature: -30° to +65°C (-22° to +150°F)
- Storage temperature: -30° to +65°C (-22° to +150°F)
- Humidity: 95% non-condensing
- IP Rating: IP67

Notes

- Accuracy and TTFF specifications may be affected by atmospheric conditions, signal multipath, satellite geometry and corrections availability and quality. Position accuracy specifications are for horizontal positioning. Vertical error is typically < 2 times horizontal error.
- Dependent on appropriate mounting/enclosure design.
- List includes all available and compatible communication modules which are not included in standard configuration (should be purchased separately depending on local requirements/needs).