

Non-Portable Piloting Unit (NPU)

# SAL SPU-100



A Revolution in  
High Precision  
Navigation



SAL NAVIGATION







# Unmatched Accuracy, Unparalleled Performance

With growing pressure on ports and terminals to meet increasing demands for efficiency, precision and reliability have become more critical than ever. Designed to exceed the stringent requirements of the Panama Canal Authority (ACP), SAL SPU-100 enables precise and efficient navigation through some of the world's most demanding maritime routes.

SAL SPU-100 delivers unmatched accuracy, providing precise and dependable data for improved real-time decision-making, streamlining communication, minimizing delays, and optimizing operational efficiency.





# SAL SPU-100

## Unmatched Accuracy You Can Rely on in the Most Challenging Environments

Designed to meet and exceed the stringent standards set by the Panama Canal Authority (ACP), ensuring safe and efficient navigation through the world's most critical waterways. Tested and verified under real jamming and spoofing conditions to meet Panama requirements, SAL SPU-100 provides uninterrupted data – every time.

### Key Capabilities:

- **Panama Canal Safety Compliance:** Specifically engineered to meet and surpass the stringent positioning requirements set by the ACP, introduced with Advisory to Shipping No. A-32-2022 for Neopanamax vessels (2023).
- **Tested for Resilience:** Rigorously tested under real-world GPS/GNSS jamming and spoofing conditions in large-scale trials at Andøya, independently vetted by researchers from the Norwegian Coastal Authorities. The SPU-100 consistently outperforms traditional SOLAS-class systems, delivering reliable and uninterrupted data.

- **Global Utility:** Provides superior navigational support for safe passage through complex waterways worldwide.
- **Navigational Accuracy:** Provides highly precise, independent data on positioning, speeds, heading, and Rate of Turn, trusted by pilot organizations globally.
- **Backup Power:** A backup battery ensures uninterrupted operation during power outages.
- **SAL SPU-100 Application:** Engineered to facilitate direct interaction with the SAL Navigation SPU-100 device via Wi-Fi. Core functionalities include installation verification, sensor diagnostics, and real-time data feedback for accurate setup, connectivity, and monitoring.

### SPU-100 Compatible With:

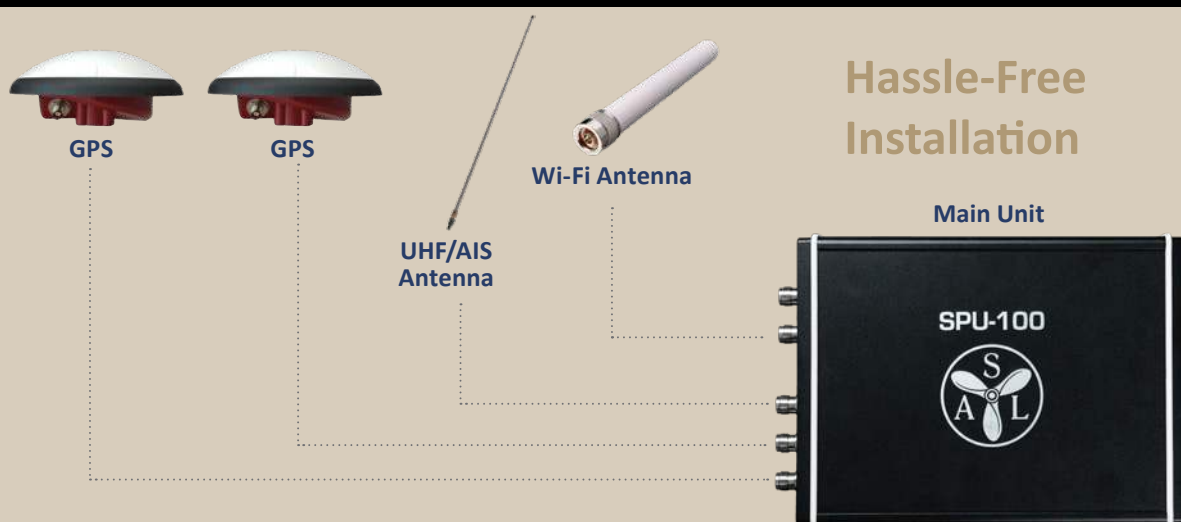
SafePilot  
Qastor  
OrcaX  
SEAiQ  
PilotPro



## Key Figures

GNSS	GPS, QZSS, Galileo, GLONASS, BeiDou
IMU	Ultra low noise gyro (0.08°/Vhr)
UHF Radio	GMSK, Trimtalk 450S (configurable)
AIS Receiver	Dual frequency: 161.975 & 162.025 MHz
Wi-Fi	IEEE 802.11 a/b/g/n
Battery Back-up	> 7.5 hours of operation
Data output	GGA, VTG, HDT, ROT, GSA, GSV, VDM
Operating Temperature	–20°C to +70°C







# For the Highest Level of Safety and Efficiency

Built on technology that exceeds standard bridge instrumentation, SAL SPU-100 sets a new standard for advanced pilotage systems used in ports worldwide. Whether in the Panama Canal or confined waters globally, SAL SPU-100 provides superior navigational support, ensuring safe passage through complex waterways.





# System Components

## Standard



Height: 82 mm  
Width: 143 mm  
Depth: 200 mm  
Weight: 2.5 kg



Height: 79 mm  
Diameter: 170 mm  
Weight: 0.5 kg



Height: 1260 mm  
Diameter: 50 mm  
Weight: 0.7 kg



Height: 200 mm  
Diameter: 15 mm  
Weight: 0.03 kg

### Main Unit

The SPU-100 boasts state-of-the-art GNSS positioning and inertial components, robustly tested under real GNSS jamming and spoofing signal scenarios, ensuring dependable performance under challenging conditions.

### GNSS Antenna

Full GNSS Precision Antenna. GPS/QZSS-L1/L2/L5, QZSS-L6, GLONASS-G1/G2/G3, Galileo-E1/E5a/E5b/E6, BeiDou-B1/B2/B2a/B3, NavIC-L5.

### UHF / AIS Antenna

UHF/AIS Fibreglass antenna

### Wi-Fi Antenna

High gain Wi-Fi antenna.



Length: 3 meter  
Weight: 0.5 kg



Length: 35 meter  
Weight: 2.5 kg

### Wi-Fi Cable

3m High gain antenna RF cable both end pre-made antenna connectors.

### Antenna Cable

35m High gain antenna RF cable both end pre-made antenna connectors.

## Optional



Height: 144 mm  
Width: 48 mm  
Depth: 29 mm  
Weight: 0.2 kg

### 4G Antenna

Enables data transfer to shore.



Length: 45 meter  
Weight: 3.3 kg

### Antenna Cable

45m High gain antenna RF cable both end pre-made antenna connectors



# Navigation Towards a Sustainable Future

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