SAAB

TransponderTech

NAVIGATE WITH CONFIDENCE

R6 NAV NEO

Panama-approved NPPU and DGNSS Compass

CANAL DE PANAMÁ

R6 NAV NEO

With R6 NAV NEO, operators are not just meeting the new requirements for the Panama Canal – they are equipping their vessels with a fully integrated, IMO type-approved navigation system that enhances precision, security, and operational efficiency worldwide.

CANAL DE PANAMÁ

It's a Panama approved Piloting Unit

R6 NAV NEO is approved by the Panama Canal Authority (ACP), meeting the requirements for a Non-Portable Piloting Unit (NPPU) in the Panama Canal.

It ensures seamless Wi-Fi-connectivity to piloting tablets for real-time monitoring of position, heading, and vessel movements with extreme precision. The system has a built-in AIS-receiver and UPS battery back-up.

It's a powerful DGNSS Compass

R6 NAV NEO is a modular system built on the IMO type-approved R6 NAV PRO Compass, which delivers bridge integrated high-precision positioning and motion monitoring, and ensures accurate, uninterrupted navigation in any waters.

The Multi-GNSS receiver supports GPS, Galileo, GLONASS, BeiDou, IRNSS, and QZSS. Multi-Frequency operations maximizes redundancy, and enables advanced resilience against jamming and spoofing.

It's 2 systems in 1

Unlike conventional piloting units, R6 NAV NEO is designed and type-approved for seamless bridge integration, making it a true navigational asset rather than only a pilot support tool.

This makes R6 NAV NEO the ideal choice for NeoPanamax vessels, for precise and secure navigation in any waters globally, and the system will already be operational on arrival to Panama.

R6 NAV NEO Components

- R6 NAV PRO Compass with I6 IMU
- C6 COM for reception of RTK corrections, built-in AIS receiver and Wi-Fi interface for piloting software.
- U6 UPS with >10 hours of power back-up

Verified Jamming and Spoofing Protection

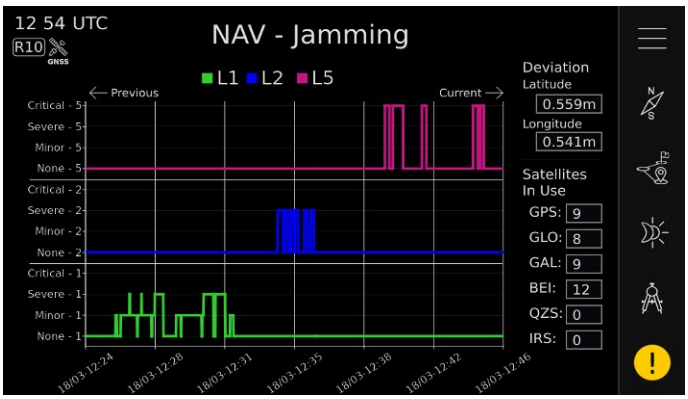
Maintaining a secure and accurate position is critical in GNSS-compromised environments. The R6 NAV PRO Compass ensures continuous reliability through advanced digital signal filtering and suppression, verified by third-party testing for maximum resilience against interference.

Jamming detection

The R6 NAV PRO Compass provides real-time monitoring and logging of GNSS jamming levels across L1, L2, and L5 frequency bands. It analyses position deviations under interference conditions and triggers BAM-compliant alerts when severe jamming is detected.

Spoofing detection

The dual-antenna R6 NAV PRO Compass uses signal analysis and fixed antenna baseline monitoring to detect spoofing attempts. Any deviation from the expected baseline or anomalies in signal properties will trigger BAM-compliant alerts, ensuring navigational integrity.



Jamming detection view

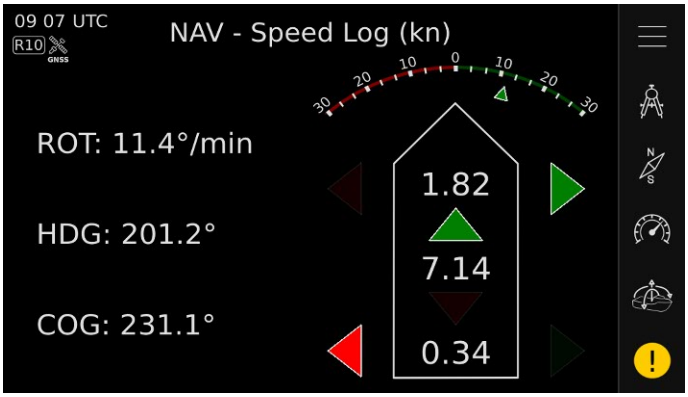
Jamming resilience

Designed to maintain valid positioning even under jamming, the system can operate effectively when one or two frequencies (L1, L2, or L5) are interfered. Since L1-band jamming is most prevalent, older single-band GNSS receivers are significantly more vulnerable – while R6 NAV PRO ensures continued accuracy.

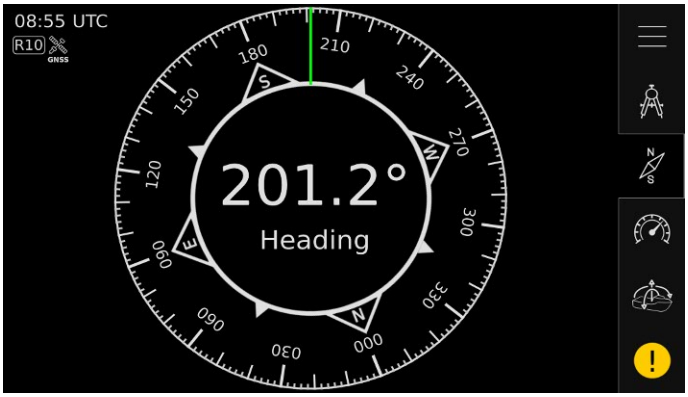
Precise Motion Monitoring

The R6 CDU displays real-time ship position and movement data with high accuracy, as well as distributed to ECDIS, ARPA, and other onboard systems via standardized network and serial interfaces.

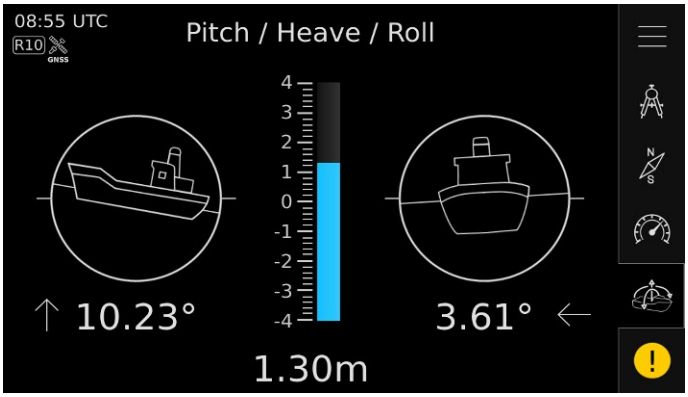
The integrated I6 IMU (Inertial Measurement Unit) delivers precise vessel orientation and motion tracking, enhancing navigation reliability.



Transversal and Longitudinal Speed Log view



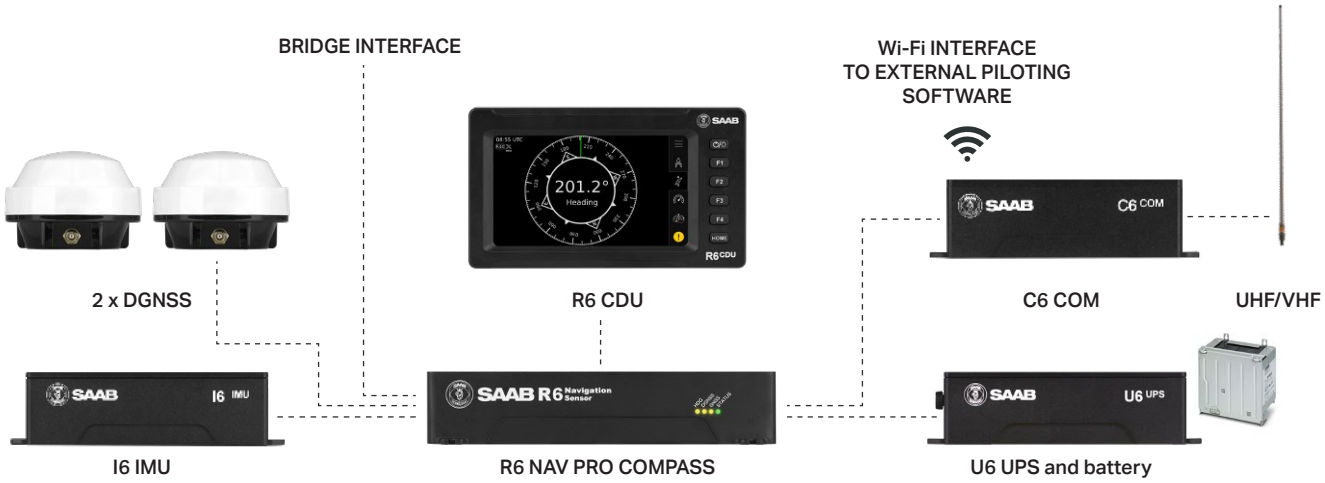
Heading view



Pitch / Heave / Roll view

Accuracy

	POSITION (RMS)						MOTION (RMS)			
	Default	SBAS	IALA Beacon	Galileo HAS	Atlas H10	RTK	HDG	ROT	Roll, Pitch	Heave
R6 NAV NEO	1.2 m	0.3 m	0.3 m	0.1 m	0.04 m	0,01 m	0.01°	0.1°/min	0.05°	0,1 m



Technical Specifications

Positioning / Dynamic Motion Monitoring	
Supported systems	GPS: L1, L2, L5 GLONASS: G1, G2, G3 BeiDou: B1i, B1C, B2a, B2b, B2i, B3i Galileo: E1, E5a, E5b, E6 QZSS: L1, L2, L5, L6 NavIC (IRNSS): L5
Corrections supported	SBAS, IALA Beacon, Galileo HAS, Atlas subscription, RTK
Position Accuracy (RMS 67% / 2DRMS 95%)	Uncorrected: 1.2 m / 2.5 m SBAS/IALA Beacon: 0.3 m / 0.6 m Galileo HAS: 0.1 m / 0.2 m Atlas subscription: 4 cm / 8 cm RTK: 8 mm + 1 ppm / 15 mm + 2 ppm
Speed Accuracy (RMS)	1 cm/sec
Rate of Turn accuracy (RMS)	0.1°/min
Heading* (RMS)	< 0.02° @ 5.0 m antenna separation < 0.01° @ 10.0 m antenna separation
Channels	1.100+
Sensitivity	-142 dBm
Update rate	Up to 10 Hz
GNSS Fix	60s/30s typical (Cold/Warm)
Heading Fix	10s typical (Hot Start)
Timing (1PPS) accuracy	20 ns

IALA Beacon Receiver	
Dual receiver	Manual- or Automatic- tuning
Frequency	283.5 to 325.0 kHz
MSK Bit Rates	50, 100, 200 bps
Cold Start Time	< 1 minute typical
Reacquisition	< 2 seconds typical
Sensitivity	25 µV/m for 6 dB SNR @ 200 bps

Inertial Measurement Unit, IMU	
Pitch/Roll (RMS)	< 0.05°
Heave (RMS)	< 0.1 m
Gyro Bias Instability	≤ 1.2°/hr
Angular Random Walk	≤ 0.08°/√hr

Data interfaces	
IEC 61162-1/2	RS-422 Input output
IEC 61162-450	Dual Ethernet RJ45
Alert Relay	0.1-5A, 30VDC, 150W
Bridge alert management	IEC 62923-1/-2
GNSS	2x 50 Ohm (TNC), 5 VDC
1PPS Out	5 VDC (BNC)
RTK protocols supported	ROX, RTCM v3.1, CMR, CMR+
UHF/AIS	N-Type
Wi-Fi	SMA

Environmental	
Operation temperature	-15°C to +55°C
Storage temperature	-30°C to +80°C

Power supply	
Input Voltage	12-24VDC
Consumption	Navigation Sensor: 8 W, CDU: 5 W

Dimensions/Weight	
Navigation Sensor	261x53x176 mm / 1900 g
CDU	223x129x48 mm / 1500 g
IMU Unit	205x135x53 mm / 1100g
Com Unit	205x135x53 mm / 1100g
U6 UPS	205x135x53 mm / 1400g
Battery	202x202x110 mm / 9200g

UHF Receiver	
Frequency	403 to 473 MHz (default 454.325 MHz)
Bandwidth	12,5/20/25 KHz
Modulation	GMSK/4FSK/8FSK/16FSK)
Protocol	TrimTalk 450S (configurable)
Sensitivity	< -115dBm

AIS Receiver	
Frequency	161.975 / 162.025 MHz
Sensitivity	< -116dBm at 20% packet error rate

Wi-Fi	
Access Point	IEEE 802.11 a/b/g/n, 2.4 GHz
Number of Clients	4
Security	WPA2
Output Power	18 dBm
Sensitivity	< -82 dBm

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Specifications subject to change without notice.
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