caim sea

EMPOWERING YOUR FLEET
TO NAVIGATE EFFICIENTLY
AND SAFELY
SINCE 1945

NON PORTABLE PILOTING UNIT
Compliant with Panama
Canal Authority requirements

NaviMotion

NaviMotion

PCA adivsory to Shipping No. A-32-2022 requires all vessels with 109+ ft beam having a non-portable piloting unit installed.

Starting: October 1st 2023

NaviMotion – CAIM's solution for you.

Approved

Precise

Compliant

NaviMotion

Navimotion is composed by two units. The main piloting processor and the UPS unit with "lead crystal" batteries allowing an easy trasport and granting 10 hours of power supply in case of black out.

In the box:

1x Fixed piloting Unit
1x UPS
2x GNSS Antenna
1 x UHF Antenna
1 x VHF Antenna
2x Wi-Fi Antenna
All cables included

The product is approved by the Panama Canal Authority and equipped with the latest technology in motion measurement and GNSS System.

As required a label will be provided to the vessel that will provide ID, SSID & password / QR code validated by the Panama Canal Authority
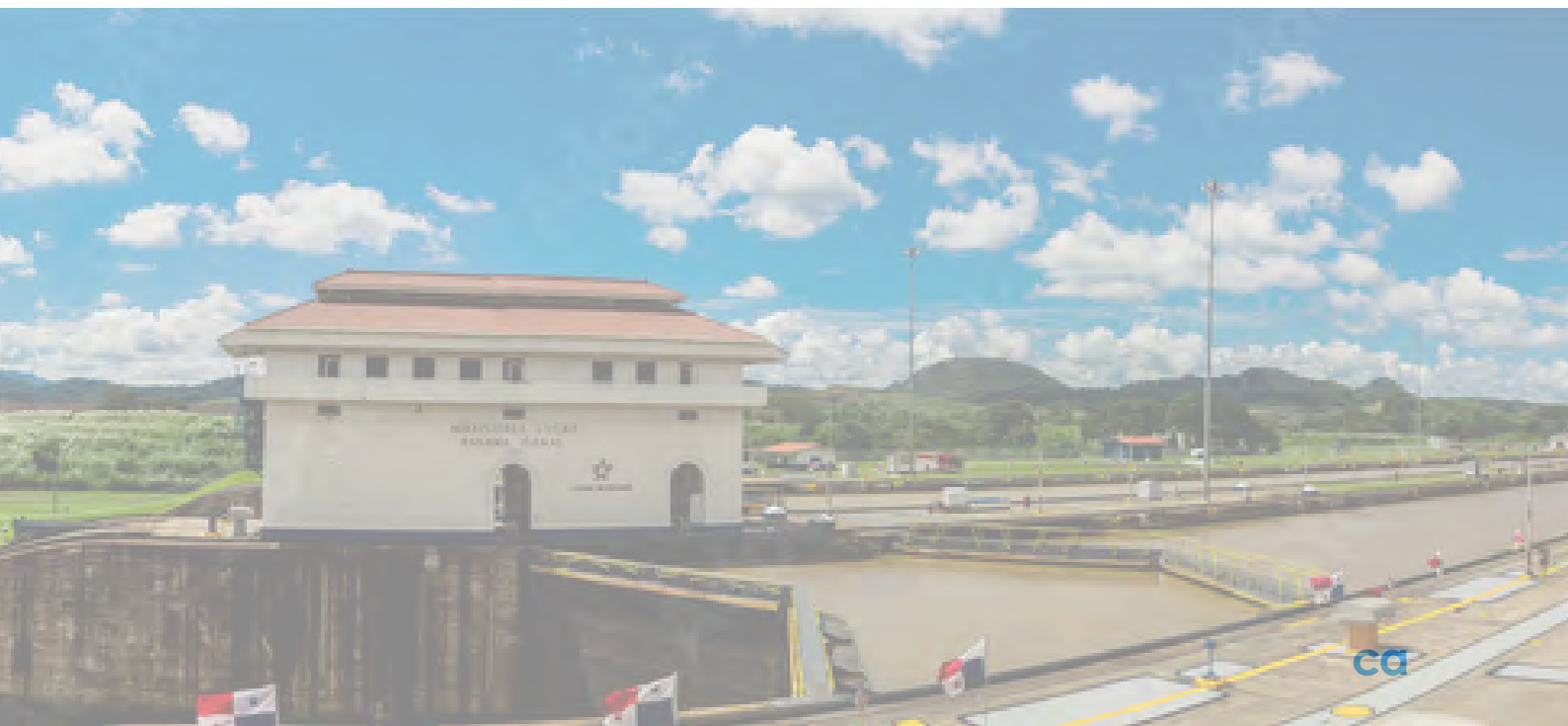
ID
SSID
Password

NaviMotion
NON - PORTABLE PILOTING UNIT

PANAMA CANAL AUTHORITY COMPLIANT

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NaviMotion   NaviDock

NaviMotion is fully compatible with the Panama Pilot's Tablet (WLAN).
CAIM can optionally supply NGMAT, the tablet supporting the crew in precise operations outside Panama.

NGMAT is in addition, an emergency aid allowing the vessel to reach the nearest port in case of an ECDIS failure.

With the software NaviDock reading all sensors provided by Navimotion and official ENC displayed provides the most precise position available allowing the master to carry out every maneuver with high quality data. NGMAT is a rugged tablet with high-brightness and water resistance IP65.

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Technical Specifications

GNSS Antenna

Frequencies: GPS/QZSS-L1/L2/L5, QZSS-L6, GLONASS-G1/G2/G3, Galileo-E1/E5a/E5b/E6, BeiDou-B1/B2/B2a/B3, NavIC-L5

Gain: ≥ 37 dB

Noise Figure: ≤1.8 dB typ. @ 25ºC

VSWR: < 1.5:1 typ. | 1.8:1 max.

Operating Temperature: -45ºC to 85ºC

Shock & Drop: MIL-STD-810G - Test method 516.6 – IP Rating: (housing) IP69K

Dual Antenna GNSS Receiver

Tracked Systems: GPS / QZSS, Galileo, GLONASS, BeiDou

Frequencies: L1C/A, L2C, L1OF, L2OF, E1B/C, E5b, B1I, B2I

Interference Mitigation: Spoofing and Jamming detection

Position Accuracy: RTK: 0.01m +/- 1ppm, SBAS: 1m

Heading Accuracy@10m Antenna Separation: 0.02 degrees

Speed Accuracy: 0.01m /sec

Rate of Turn Accuracy: 0.1º/min

UHF Antenna

VSWR @ 454.325MHz: < 1.5

Gain 2dbi

Lightning protection

UHF DGNSS Corrections

Frequency: 454.325 MHz (configurable)

Radio frequency (RF) Protocol: Trimtalk 450S (configurable)

DGNSS Corrections Protocol: RTCMv3

Network DGNSS Corrections

Protocol: Networked Transport of RTCM via Internet Protocol (NTRIP)

UDP Port: 2102

AIS VHF Antenna

VSWR @ 162MHz: < 1.5

Gain 2dbi

Lighting protection

AIS Receiver

Dual Frequency: 161.975 & 162.025MHz

Receiver Sensitivity: <-110dBm @ 20% packet error rate

Cables for VHF, UHF and GNSS Antennas

Operating Temperature: -40ºC to 80ºC

Total loss signal cables: Max. 17dB

Inertial Motion Unit (IMU)

Gyro Bias Instability: 0.8º/h

Gyro Angular Random Walk: 0.08º/√h

Accelerometer Bias Instability: 0.02 m/s/√h

Accelerometer Random Walk: 6µg

6 Degree OF Freedom

WiFi

Access Point: IEEE 802.11 b/g/n with double band

Number of clients: ≥ 4

Security: WPA2

Signal strength: > -70dBm at all conning positions

Data Output

NMEA output: GGA, VTG, HDT, ROT, GSA, GSV, ZDA, VDM

UDP Port: 17608

Data Protocol Compatible with Trelleborg SafePilot

Certification ID output: PTMSX message every 10 seconds

Jamming and Spoofing status output: PTMSG message every 5 seconds

Dimensions

Pilot Unit: 250w/90h/230d mm - weight 2kg

UPS Battery Backup: 265w/125h/320d mm - weight 8kg

Power

Supply: 90 - 240 VAC

Battery Backup: ≥ 10 hours of operation with sealed SiO2 batteries, not restricted to IATA DGR

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