C-Nav™

oceaneering.com/cnav

C-Nav3050®

GNSS Receiver

FEATURES

- **Integrated GNSS/L-Band receiver**
- **Patented multipath rejection**
- **Software configurable to user requirements**

Connecting What's Needed with What's Next™

OCEANEERING®

C-Nav3050®

Technical Specifications

Features

- All-in-view parallel tracking with 66-channels
- Satellite-based augmentation system (SBAS) tracking (WAAS / EGNOS / MSAS / GAGAN)
- Built-in C-NavC[1]® and C-NavC[2]® L-Band receiver
- C-NavC[2]® operating mode with automatic fail-safe to C-NavC[1]®
- C/A, P1, P2, L2C, L5, G1, and G2 code tracking
- L1, L2, L5, G1 and G2 full wavelength carrier phase tracking
- C-Nav corrections over Internet
- High-sensitivity / low-signal level tracking
- Fast signal acquisition / re-acquisition
- Superior interference suppression (both in- and out-of-band) using custom tuned antennas
- Patented multipath rejection
- RTK Extend™
- C-Nav over-the-air activation capabilities
- Configurable as real time kinematic (RTK) base or rover
- Programmable output rates
- Event marker input / 1 pulse-per-second (PPS) output
- 2GB internal data storage
- C-Setup PC control software included

- For more information: **oceaneering.com/cnav**

Dimensions/weight	
Length	6.47 in / 164 mm
Width	4.60 in / 117 mm
Height	2.37 in / 60 mm
Weight	1.1 lb / 0.5 kg

Front status indication
Power/GNSS Status, correction service status, interface status, and Bluetooth status

External power	
Input	AC / DC Adapter 110 / 220 VAC 12 VDC Nominal 0.5A (9.0 V to 32 VDC)

Connectors	
I/O ports	2 x 9 pin Positronic
DC ports	1 x 9 pin Positronic
RF connector	TNC (with 5VDC bias for antenna / LNA)

Temperature (ambient)	
Operating	-40°F to 158°F / -40°C to 70°C
Humidity	95% non-condensing

Accuracy (RMS) horizontal/vertical	
RTK (<40km)	1 cm + 0.5ppm / 2cm + 1ppm
C-Nav services (95%)	8 cm / 15 cm
Code DGNSS (<200 km)	40 cm + 3 ppm / 90 cm + 3 ppm
Velocity	0.01 ms
RTK extend (<15 mins)	3 cm + 1 ppm / 6 cm + 2 ppm

User programmable output rate	
Position/velocity/time	1, 5, 10, 25, 50, or 100 Hz
Raw data	1, 5, 10, 25, 50, or 100 Hz

Data latency	
Position/velocity/time	10 ms at all rates
Raw data	10 ms at all rates

Time-to-first-fix	
Cold/warm/hot	< 60 s / < 50 s / < 20 s (Typical values measured per ION-STD 101)

I/O connector assignments	
Data interfaces	2 x RS232 (1-changeable to RS422, 4800 -115200 baud rates) 1 x USB 2.0 (host or device) Bluetooth Ethernet (10T / 100T)

Input/output data messages	
NMEA-0183	ALM, GBS, GGA, GLL, GRS, GSA, GST, GSV, RMC, RRE, VTG, ZDA, GFA, DTM, GNS, MLA
Differential correction	RTCM 2.3 and 3.0, SBAS and C-Nav (proprietary)
RTK connection	CMR / CMR+, RTCM, NavCom Ultra RTK
Receiver control	NavCom proprietary commands (ASCII)

Compliance/Approvals
IMO performance standard for GPS: IEC 60529
IMO performance standard for GNSS: IEC 61108-1:2003
NMEA-0183 compatibility up to V4.1
FCC Part 15 Class B, CE
QC message strings comply with the recommendations in OGP 373-19 and IMCA S015 (July 2011)

MBRTK - Range and Bearing Option
High-accuracy range and bearing data between vessels
Multiple rovers can use a common base
RTK levels of accuracy for range, irrespective of differential correctors
Converter available to emulate a fanbeam output
Heading accuracy (degrees at 1 sigma) + 0.6 / baseline length in meters
Baseline horizontal accuracy + 1 cm + 1 ppm
MBRTK NMEA-0183 Outputs: HDT, TTM, ROT

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