C-Nav3050®

GNSS Receiver

FEATURES

Integrated GNSS/L-Band receiver

Patented multipath rejection

Software configurable to user requirements
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-NavC¹ and C-NavC² L-Band receiver
» C-NavC² operating mode with automatic fail-safe to C-NavC¹
» 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

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>6.47 in / 164 mm</td>
</tr>
<tr>
<td>Width</td>
<td>4.60 in / 117 mm</td>
</tr>
<tr>
<td>Height</td>
<td>2.37 in / 60 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>1.1 lb / 0.5 kg</td>
</tr>
</tbody>
</table>

### 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 + 0.5 ppm / 2 cm + 1 ppm

**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

<table>
<thead>
<tr>
<th>Cold/warm/hot</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold</td>
<td>&lt; 60 s</td>
</tr>
<tr>
<td>Warm</td>
<td>&lt; 50 s</td>
</tr>
<tr>
<td>Hot</td>
<td>&lt; 20 s</td>
</tr>
</tbody>
</table>

(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
- 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