C-Nav®

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C-NavX1 GNSS Receiver

FEATURES

Quad-band GNSS receiver, capable of tracking GPS, GLONASS, BeiDou, Galileo and QZSS constellations

Unique and highly redundant Iridium® delivery method for C-Nav correction tracking

Supports decimeter-level multi-constellation positioning with C-NavMAX correction service

RTK, NTRIP and other functions enabled as standard

C-NavX1 GNSS Receiver

Technical Specifications

Features

- Completely independent and redundant C-Nav augmentation delivery system, exclusively delivered using Iridium's extensive global satellite communications network
- Global accuracy (Pole to Pole)
- All-in-view parallel tracking with 226 channels for navigation and SBAS, plus Iridium Burst and SBD Service Channels.
- Satellite-based augmentation system (SBAS) tracking (WAAS / EGNOS / MSAS / QZSS / GAGAN)
- Multi-constellation GNSS navigation using (GPS, GALILEO and GLONASS)
- Multi-constellation carrier and code tracking of:
  - GPS: L1 C/A, L1P, L2C, LP2, L5Q
  - GLONASS: G1 C/A, G1P, G2 C/A, G2P, G3
  - Galileo: E1B, E5A, E5B, E5AltBOC
  - BeiDou: B1, B2
  - QZSS: L1 C/A, L1C, L1-SAIF, L2C, L5
- C-Nav Correction Service via Iridium, LTE or Internet (NTRIP)
- Ability to activate, configure, interrogate, log, access and download all input and output data from the unit via LTE or locally using any of the ports.
- High-sensitivity / low-signal level tracking
- Fast signal acquisition / re-acquisition
- Manages augmentation outages for up to 10 minutes
- Programmable output rates
- 1 pulse-per-second (PPS) output
- Storage capacity of 30GB, logging up to 100 days data, continuously overwriting data
- C-Setup PC control software included

C-NavX1 Specification (Provisional)

GNSS	
GNSS Engine	Topcon B125
Tracking Channels	226
GPS	L1 C/A, L1P, L2C, L2P, L5Q
GLONASS	G1 C/A, G1P, G2 C/A G2P, G3
Galileo	E1B, E5a, E5b, E5AltBOC
BeiDou	B1, B2
QZSS	L1 C/A, L1C, L1-SAIF, L2C, L5
SBAS	WAAS, EGNOS, MSAS, GAGAN
Time-To-First-Fix	Hot: <15s Warm: <44s Cold: 60s
Reacquisition	1s
1PPS	Resolution: 5nS Polarity: P/N Width: 3.3mS Interval: 10mS-1000s Timescale: GNSS

Positioning	Horizontal	Vertical
Standalone	1.2 m	1.8 m
SBAS (RMS)	0.8 m	1.2 m
Code Differential (RMS)	0.3 m	0.5 m
RTK (1σ)	5 mm + 0.5 ppm	10 mm + 0.8 ppm
GNSS PPP (1σ)	0.05 m	0.10 m
PPP Convergence (2σ)	< 30 min (GNSS)	
Velocity	0.02 m/s	
Measurement Rate	20 Hz	
Positioning Rate	20 Hz	

Hardware I/O	
Isolated RS-232	2x DSUB9 Connectors
Isolated RS-422	2x DSUB9 Connectors
Ethernet	1x RJ45 Connector
1PPS	1x BNC Connector
USB 2.0	1x USB Connector
Standard Baud Rates	1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200bps

Software I/O	
NTRIP Client	Yes
Ethernet Sessions	8 (max)

Message Formats	
NMEA	GGA, GLL, GNS, GRS, GSA, GST, GSV, RMC, VTG, ZDA
RTCM 2.x	1, 3, 6, 9, 15, 16, 18-24, 31, 32, 34, 36
RTCM 3.x	1003-1008, 1011, 1012, 1014-1017, 1019-1028, 1030-1033, 1071-1077, 1081-1087, 1091-1097, 1111-1117, 1121-1127, 1230
CMR/CMR+[1]	0, 1, 2, 3, 5, +
GNSS Binary	TPS

RTK Operating Modes	
RTK Base	Yes
RTK Rover	Yes

Physical and Environmental	
Dimensions (L, W, H)	265 x 165 x 90 mm
Weight	2 kg (exclusive of mounting bracket or antenna)
Power Consumption	10W
Voltage Input	9 to 36V DC
Antenna Voltage	5V DC
Antenna Current	100mA
Ingress Protection	IP67
Operating Temperature	-40 to +70°C
Storage Temperature	-40 to +85°C
Humidity	95% non-condensing
Vibration	TBC
Shock	TBC
Certifications	TBC
Compliance / Approvals	IEC 60945 NMEA-0183 compatibility up to V4.1. FCC Part 15 Class B CE RoHS WEEE QC message strings comply with the recommendations OGP 373-19 and IMCA S015 (July2011). IP67 rated

[1] CMR/CMR+ is a third-party proprietary format. Use of this format is not recommended and performance cannot be guaranteed. Use of industry standard RTCM 3.x is always recommended for optimal performance.

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