

NAVIKA - 1400T

NAVIC+GPS Timing Module

Features:

- Navika - 1400T is NavIC (L5) GPS (L1) and GAGAN Module
- Navika - 1400T process signals from two GNSS frequency bands L1 and L5
- Supports 32 tracking and 26 acquisition channels
- All-in-view positioning
- Precise 1 PPS pulse output synchronised to GPS/UTC time
- PPS timing accuracy of $\pm 5\text{ns}$ (1 sigma)
- PPS, PP2S and 10MHz Output
- Holdover: $\pm 7\mu\text{s}$ over 5 minute period (min. 1 hour learning)
100ppb over 24 hours
- Time pulse jitter of $\pm 5\text{ns}$
- Position update rate of 1 Hz
- Multipath mitigation
- Anti-jamming - 16 tone interference mitigation
- Supply Voltage Range 2.7V to 3.3V
- On-board LNA for passive antenna designs
- NMEA-0183 v4.11 message output



19mmx19mm

Product Description:

Navika-1400T is a dual-constellation receiver that combines the advantages of GPS L1 and NavIC L5 signals. Targeted specifically at the Indian market, Navika-1400T provides navigation and timing for various applications.

With 32 tracking and 26 acquisition channels, Navika-1400T supports fast satellite searches in all receiver modes. The module outputs the navigation data over UART in the NMEA 0183 data format.

In environments prone to unintentional jamming or in applications that require GNSS to be co-located with high power transmitters (e.g. 4G modems), Navika-1400T supports up to 16 interfering tone mitigation. The module also supports anti-spoofing algorithms to detect attempts to misguide. Most land applications suffer from the deleterious effects of multipath. Navika-1400T includes multipath mitigation techniques to improve the location accuracy under such conditions.

Applications:

- Railways
- Telecom Networks
- Powergrid
- Surveillance & Security
- Marine Navigation
- Drones / UAV's
- Portable units

Specifications of NavIC+GPS Module

Performance Characteristics	
Receiver	L1 C/A GPS, L5 SPS NavIC, 32 Tracking and 26 Acquisition Channels

Sensitivity	
Acquisition	-145 dBm in Cold start
Reacquisition	-152dBm
Tracking	-162dBm

Time to First Fix	
Hot Start (with valid ephemeris, almanac, position and time estimate)	1-2s (typical, under open sky conditions or at -130 dBm signal power)
ColdStart (without almanac, time, or position)	35s (typical, under open sky conditions or at -130 dBm signal power)

Timing Specification	
1 PPS Timing	± 5ns (1 sigma)
Time Pulse Jitter	± 5ns
Holdover stability	±7us over 5 minute period 100ppb over 24 hours

Accuracy	
Position (Horizontal)	1.5m (CEP50)
Velocity	0.1m/s(RMS)

Reacquisition	
Signal	1s
Position	1s
Blockage Time	1 minute

Navigation Solution	
PVT	
PositionUpdateRate	1Hz

PC / Host Communication	
Interface	UART
Baud Rate	4800bps to 115200bps
Message Formats	NMEA0183Ver.4.11ASCII, as well as proprietary messages

Environmental Characteristics	
Operational Temperature Range (Ambient)	-40°C to +85°C
Storage Temperature Range	-40°C to +85°C
Humidity	95%RH
Altitude	18000m

Output Messages	
NMEA	GGA, GNS, GSA, RMC, GLL, GSV, VTG, ZDA
ASCII	Version, Receiver Configuration

Input Messages	
ASCII	NMEA message control and configuration, Elevation mask, DOP settings, Factory reset, Restart

* Information mentioned in this document is subject to change. Please contact us for more details.