

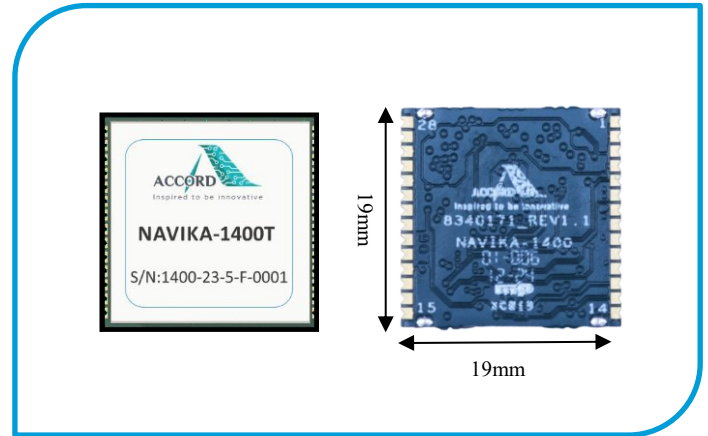
NAVIKA-1400T

Multi Band High-precision GNSS Timing Module



KEY FEATURES:

- Navika -1400T is a GNSS High Accuracy Timing Module
- Processes signals from multiple constellations across L1 and L5 frequency bands
- Supports 116 channels
- All-in-view positioning
- Precise 1 PPS pulse output synchronized to GPS/UTC time
- Standard 10MHz Frequency output.
- PPS timing accuracy of <math><5\text{ns}</math> (1 sigma)
- PPS/nPPS and 10MHz Output
- Single Satellite PPS
- Holdover: Better than 10 ppb over 24 hours
- Position update rate of 1 Hz/10 Hz
- Multipath mitigation
- Anti-Jamming & Anti- Spoofing
- Timing Integrity - TRAIM
- On-board LNA for passive antenna designs
- NMEA-0183 v4.11 message output



APPLICATIONS:

- Financial Trading
- Synchronization of power grid
- Internet Infrastructure
- Cellular systems
- Railway Networks



PRODUCT DESCRIPTION:

The Navika-1400T is a compact, high-performance GNSS receiver designed specifically for timing applications. With support for GPS, GLONASS, BeiDou, Galileo, NavIC, and SBAS signals, it provides accurate position and precise time outputs. Its dual-core processing engine ensures quick position starts, while the powerful baseband delivers reliable performance.

Ideal for system integrators, the Navika-1400T offers seamless integration with existing systems. Its 19 mm x 19 mm form factor includes 28 interface SMT pads, allowing easy connectivity. The module accepts signals from both active and passive patch antennas, making it versatile for various setups.

Key performance metrics include a 1-2 second hot start TTFF, impressive -165 dBm tracking sensitivity, sub-2-meter position accuracy, and all-in-view positioning. Industry-standard peripherals like UART, I2C, and SPI facilitate external interfacing.

❖ SPECIFICATIONS FOR NAVIKA-1400T

▪ Performance Characteristics

Receiver	L1 - GPS/GALILEO/SBAS/GLONASS/BeiDou L5 - NavIC 64 tracking, 52 acquisition channels
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▪ Sensitivity

Acquisition	-146 dBm (Cold start)
Reacquisition	-153 dBm
Tracking	-165 dBm

▪ Time to First Fix

Hot Start (with valid ephemeris, almanac, position and time estimate)	1-2 sec (typical) switch OFF/ON cycle less than 1 hour
Warm Start (with almanac, position and time estimate)	30 sec (typical)
Cold Start (without almanac, time, or position)	30 sec (typical)

▪ Accuracy

Position (Horizontal, combined)	1.5 m (CEP50 @ -130dBm, with SBAS)
Velocity	0.1 m/sec (RMS)

▪ Security Features

Anti Jamming & Anti Spoofing	Supported
Multipath Mitigation	Supported

▪ Navigation Solution

PVT	2D/3D position, velocity, and time (WGS84)
Position Update Rate	1 Hz /10 Hz
Altitude	18,000 meters

▪ Time and Frequency

1PPS Accuracy	< 5ns Absolute Timing Mode
Time Pulse Jitter	< 5ns
Frequency output	Programmable from 10Hz to 10MHz
Pulse Width	5ms (default)
Pulse Edge	Rising (configurable)
Pulse Delay	0ns (adjustable between -999 to +999ns)
Holdover	Better Than 10 ppb over 24 Hours

▪ PC/Host Communication

Interface	UART
Baud Rate	Adjustable: 4800 – 230400bps Default: 115200
Message Formats	NMEA0183 Ver. 4.11, ACCORD Proprietary ASCII

▪ Environmental Characteristics

Operational Temperature Range (Ambient)	-40°C to +85°C
Storage Temperature Range	-40°C to +85°C
Humidity	95% non-condensing, +30°C to 60°C

▪ Electrical Characteristics

Total Current Consumption	100mA @ 3.3V (acquisition + tracking)
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▪ Output Messages

NMEA	GGA/GNS, GSA, RMC, GLL, GSV, VTG, ZDA
ASCII	Version, PPS Configuration, Antenna Status

▪ Input Messages

ASCII	NMEA message control and configuration, Elevation mask, DOP settings, Factory reset, 1PPS configuration
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