



Navika-200 - 17mm x 22.4 mm GPS-SBAS(GAGAN) Module

Features

- Stand-alone 32 channels GPS-SBAS(GAGAN) positioning module
- 17mm x 22.4mm module form-factor
- GPS-SBAS positioning module
- More than 16K Correlators for fast acquisition and robust tracking
- Fast Time-To-First-Fix
- Precise 1PPS output with configurable pulse characteristics
- Single 3.3V input supply
- Edge half-PTH connection points for easy assembly
- NMEA0183 compatible message format and Custom binary message for host communication



Navika-200
(17mm x 22.4mm)

Product Description

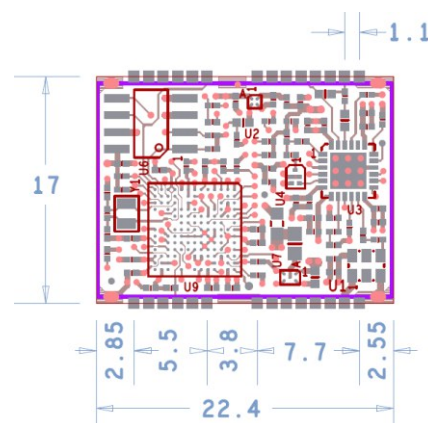
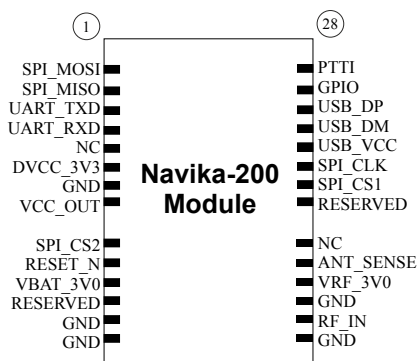
Navika-200 is a L1, C/A code based GPS-SBAS receiver module. Its superior acquisition and tracking sensitivity ensures continuous location availability under poor visibility conditions and even indoors.

With a form-factor of 17mm x 22.4mm, Navika-200 lends itself for integration into applications with severe space constraints.

Navika-200 can be interfaced to active GPS antenna. For applications that demand precise time synchronization, Navika-200 provides an accurate time pulse with associated GPS / UTC time stamping.

The module provides several standard interfaces such as SPI port, UART port and a full-speed USB port that enable the module to be interfaced in a variety of ways to the outside world. The module also supports four general purpose I/O's that can be used to drive LED's or digital input-output ports.

Navika-200 supports NMEA-0183 message protocol to communicate the location information. In addition, Navika proprietary messages convey additional information for a tighter integration with the end application.



Navika-200 Mechanical and Pinout Diagram

Specifications of Navika-200 Module

Performance Characteristics

Receiver :32 channels L1-C/A code GPS-SBAS

Sensitivity

Acquisition : -155dBm (Hot start, 1SV @ -140dBm)
-160dBm (Reacquisition)
Tracking : -163dBm

Time to First Fix

Hot Start (with valid ephemeris, almanac, position and time estimate) : 2-3 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) : 35 sec (typical)

Note: Active antenna kept under open sky with HDOP<2 and C/N0 > 40dB-Hz

Accuracy

Position (Horizontal) : <2.5 m (RMS)
Velocity : 0.1 m/sec (90% without S/A)

Note: Active antenna kept under open sky with HDOP<2 and C/N0 > 40dB-Hz

Reacquisition

Signal : < 1 sec
Position : < 1 sec
Blockage Time : 3 minutes

Navigation Solution

PVT : 2D/3D position, velocity, and Time (default) (WGS84)
Position Update Rate : 1 Hz

PC/Host Communication

Interface : UART
Baud Rate : 115200 (by default)
Message Formats : NMEA0183 Ver. 3.01 ASCII 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% non-condensing +30°C to 60°C
Altitude : 18,000 meters

Electrical Characteristics

Total Current Consumption : 85mA @ 3.3V
GPS MIPS on ARM : 25

Output Messages

NMEA : \$GPGGA, \$GPGSA, \$GPRMC, \$GPGLL, \$GPGSV, \$GPVTG, \$GPZDA
ASCII : Version, Receiver Configuration, Antenna Status, PPS mode

Input Messages

ASCII : NMEA message control and Configuration, Elevation Mask, DOP settings, Factory reset, Restart, 1PPS configuration

Timing

1PPS : < +/- 10ns, RMS without errors
Pulse Width : 386us (adjustable between 386us to 500ms in steps of 386us)
Pulse Edge : Rising (configurable)
Pulse Delay : 0ns (adjustable between -999 to +999ns)