

Navika-131

GPS-SBAS Module with Integrated Antenna

Features

- GPS-SBAS positioning module
- 30mm x 30mm module with integrated antenna
- Multi-path detection and compensation
- More than 16K Correlators for fast acquisition and robust tracking
- Fast Time-To-First-Fix
- Single 3.3V input supply
- Provides better than 2.5m of position accuracy
- Altitude limit removed(Altitude support greater than 50km)
- UART interface for host communication with baud rate support upto 1Mbps
- 6 pin interface connector through which it can be plugged into any application hardware
- NMEA0183 compatible message format and Custom binary message for host communication
- GPS Quality indicator message
- RoHS compliant



Navika-131
(30mm x 30mm)

Product Description

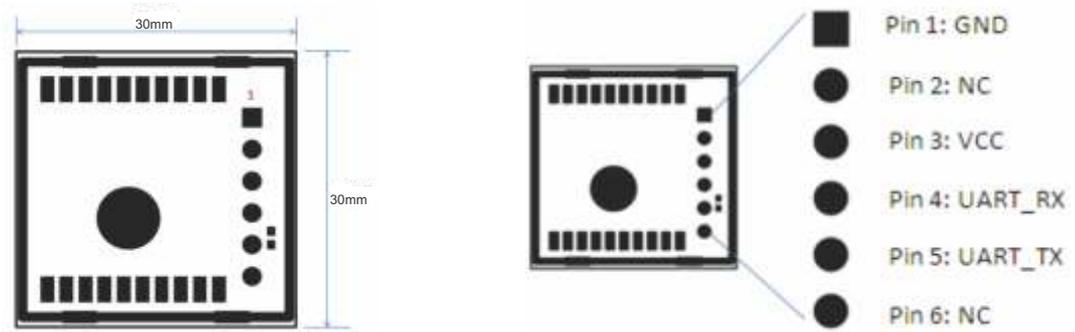
Navika-131 is a self-contained GPS-SBAS module that is ready-to-use in end applications. It is designed for products where an internal or concealed antenna is a key requirement. It can also be used in applications to minimize design efforts.

Navika-131 integrates a GPS patch antenna and the electronics onto a single PCB to realize a 30mm x 30mm high performance GPS-SBAS receiver module.

The electrical interface points are provided as 6Pin connector that allow the system integrator to directly use the module onto the application hardware.

Navika-131 requires very few external interfaces. A single 3.3V power supply is all it takes to get the module up and running in cold start. A standard UART interface allows the user to communicate with the receiver module.

Navika-131 supports NMEA-0183 message protocol to communicate the location information. In addition, Accord proprietary messages convey additional information for a tighter integration with the end application.



Navika-131-Connection Diagram

Specifications of Navika-131 Module

Performance Characteristics

Receiver :48 channels L1-C/A code GPS-SBAS

Sensitivity

Acquisition : -154dBm (Hot start, 1SV @ -140dBm)
 : -160dBm (Reacquisition)

Tracking : -163dBm (GPS)

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 : 9600 bps (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 : Altitude limit removed (Altitude support greater than 50km)

Electrical Characteristics

Navigation Power : 85mA @ 3.3V

Output Messages

NMEA : \$GPGGA, \$GPGSA, \$GPRMC, \$GPGLL, \$GPGSV, \$GPVTG, \$GPZDA

ASCII : Version, Receiver Configuration

Input Messages

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