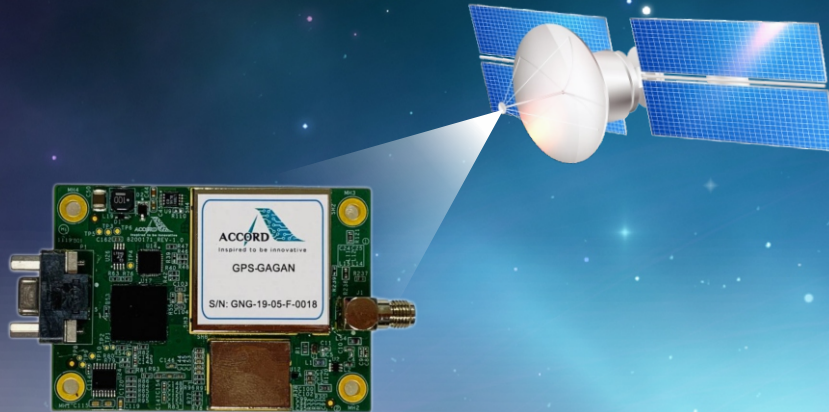


ACC-GPS-NANO

32-channel GPS SBAS Receiver



Description

GPS-SBAS-NANO is a miniature high performance GPS-SBAS receiver designed specifically for satellite applications.

The receiver supports 16 acquisition and tracking channels to enhance the time to first fix under cold start even under satellite dynamics. The message interface is provided on UART and I2C. The NMEA protocol alongside a proprietary protocol provides all the information needed during the satellite motion.

The receiver works from a 5V power supply interface though it can support a wide input voltage range from 3.6V to 36V. The antenna interface is provided through a SMA connector. The receiver is designed to work with an active GPS antenna. The power to the antenna is fed by the receiver itself.

Features

- ◆ High performance GPS-SBAS receiver
 - Supports 16 Acquisition and 16 Tracking channels
 - Supports 10 Km/s velocity profile
 - Works out of a single 5.0 V input supply
 - Consumes less than 500 mW
 - Supports RS-232 serial interface with NMEA 0183 message output
- ◆ 9-pin D-type micro connector to bring out the power and signal Interface
- ◆ SMA female connector for antenna interface
- ◆ PCB available in a small form-factor for space constrained designs

Utility

- ◆ Accurate Determination of Orbital Position and Time
- ◆ Position or/and Time Stamping of Payload Data
- ◆ Designed for satellites that are operating in the LEO Orbits considering the altitude and velocity of the satellite

Specifications

System Specifications

Channels per path	32 Channels (GPS, SBAS) - 16 acquisition and 16 tracking
Cold Start TTFF (without almanac, time or position)	120 s, open sky
Reacquisition	10 s
Position Accuracy (horizontal)	10m, 1 σ
Velocity Accuracy	0.2 m/s, 1 σ
Update rate	1 Hz
Dynamics	Velocity: 10000 m/s Acceleration: 2 g
Altitude	2000 Km
Sensitivity (acquisition)	-130 dBm
Sensitivity (tracking)	-136 dBm
Reference Oscillator stability	0.5 ppm

Electrical

Supply Current (@ 5.0 V)	< 0.5 W
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Antenna

Frequency	GPS L1 band (1575.42 MHz)
Bandwidth	20MHz
Gain	26dB
Noise Figure	<2dB
RF connector	SMA male connector

*Antenna is not part of the standard accessory

Input Messages

Proprietary ASCII	Reset, Communication port setting, Message configuration, Version query
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Output Messages

NMEA Ver 4.10 (ON by default)	\$GPGGA, \$GPGLL, \$GPGSA, \$GPGSV, \$GPRMC, \$GPVTG, \$GPZDA
Proprietary binary (OFF by default)	As defined in the ICD (measurement counter, navigation state, antenna status, number of satellites used for fix, GPS time, position, velocity, GDOP, PDOP)

Environmental

Operating Temperature	-10°C to +55°C
Vibration	14g _{RMS} (random)

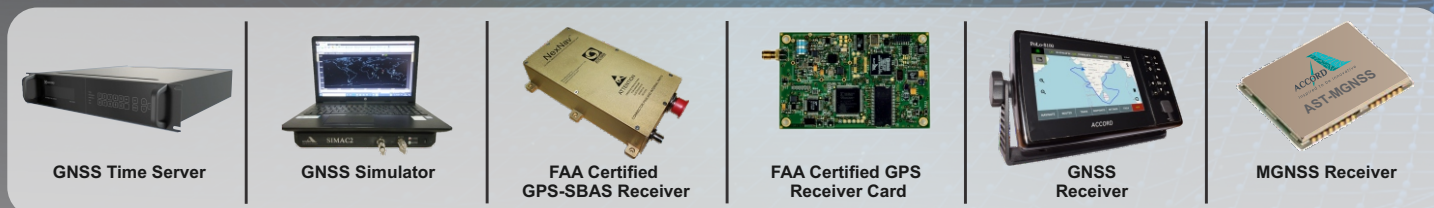
Mechanical

Dimensions	50mm x 70mm x 13.9mm +/- 1mm
Weight	<40 gms
Board-to-Board Interface	9 pin D-type, Micro-D Plug
RF connector	SMA female connector

Host Communication over UART

Configuration	TX, RX
Baud Rate	4800-115200 bps; default:9600 bps
Message Formats	8 data bits, 1 start bit, 1 stop bit, odd parity

Few other products realized by ACCORD



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