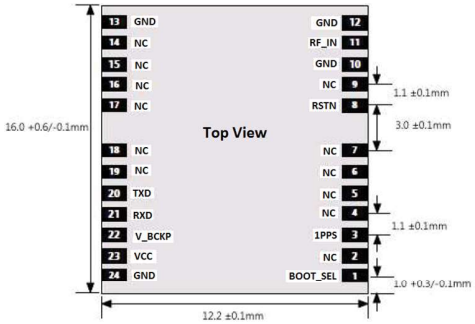
GNSS Receiver Module (NavIC + GPS)

Parry Tech's GNSS receiver module supports IRNSS NavIC (L5), GPS (L1) and GAGAN (L1). Targeted for the Indian market this would serve to the AIS-140 requirements for the fleet management, tracking solutions.

It can track all in-view GPS, GAGAN and NavIC satellites and fully autonomous such that once power is applied, the receiver automatically searches, acquires, and tracks satellite signals. The dual consellation NavIC + GPS dual capability enables using greater number of satellite signal than GPS-only receivers. The increased number of satellite offers superior performance in challenging urban canyon and multipath environments

The module contains single-chip Phoenix positioning engine inside, featuring high sensitivity,low power consumption, and fast TTFF. The superior cold start sensitivity allows it to acquire, track, and get position fix autonomously in difficult weak signal environment. The receiver's superior tracking sensitivity allows continuous position coverage in nearly all outdoor application environments. The high performance signal parameter search engine is capable of testing 16 milliontime-frequency hypotheses per second, offering superior signal acquisition and TTFF speed.



Features

- Single-chip stand alone NavIC / GPS / GAGAN receiver capable of receiving L1 / L5 signals from NavIC, GPS & GAGAN satellites to provide 3D navigation in a single SMD module.
- Module provides sub-meter accuracy navigation and timing for various applications and supports 230 acquisition and tracking channels
- Based on Skytraq PX100 chipset, this RoHs compliant tiny 12mm x 16mm module has Phoenix positioning engine inside, featuring high sensitivity, low power consumption, and fast TTFF
- Multipath detection and suppression, Jamming detection and mitigation
- Works with Passive and Active Antenna

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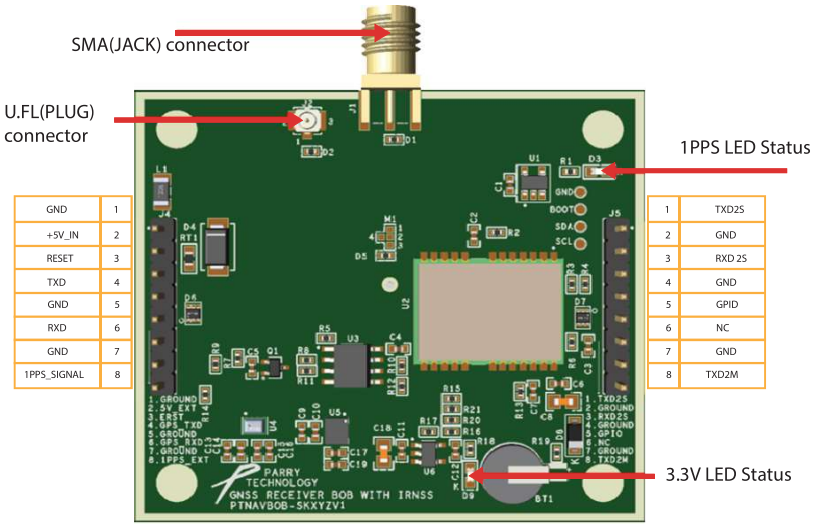
APPLICATIONS

- Autonomous Vehicle guidance
- Photogrammetry
- UAVs
- Precision agriculture
- Robotics
- Automatic container movement

GNSS Module Break-out-Board

The GNSS Module break-out-board is an evaluation board for the IRNSS/GPS module and offers internal and external antenna options. It is fully autonomous such that once power is applied, the receiver automatically searches, acquires, and tracks satellite signals. When enough satellites are tracked with valid measurements, the receiver produces 3D position and velocity outputs.



Benefits of GNSS BoB

- Suitable on board or external antennas for best overall system performance.
- Possibility to use any external antenna with antenna matching option.
- One BOB suitable for multiple requirements (GPS, NavIC)

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TECHNICAL SPECIFICATIONS

RF Specifications		
Satellite constellations supported	L5 NavIC, L1 GPS/GAGAN	
Sensitivity	<-145/ -144dBm	GPS/ NavIC Cold start
	<-154/ -153dBm	GPS/ NavIC Hot start
	<-155/ -154dBm	GPS/ NavIC Re-acquisition
	<-160/ -156dBm	GPS/ NavIC Tracking
Accuracy	Position	2.5m CEP
	Time	12nsec
Start-up Time	~1sec hot start and ≤30sec cold start	
Update Rate	1 / 2 / 4 / 5 / 8 / 10 Hz, default 1Hz	
Dynamics	4G (39.2m/sec^2) acceleration	
Multi-path Mitigation	Multi-path detection and suppression	
A-GPS	7-day server-based AGPS, Self-aided ephemeris estimation	
Power Supply specifications		
Input voltage	5V ±5%	
Input current	≤120mA	
Power Consumption	≤0.6W	
Digital Specifications		
Communication	UART communication; 3.3V LVTTL	
Speed	4800bps (Min) and 115200bps (Max)	
Software Specifications		
Protocol	NMEA-0183 V3.01, SkyTraq binary, 115200 baud, 8, N, 1	
Datum	Default WGS-84, User definable	
Dimension SpecificationsVV		
Dimension	(50 x 55 x 17.3) ±1mm	
Interface Specifications		
RF Interface	For external antenna: SMA (Jack) & U. FL(Plug)	
DC & Digital Interface	1x8 Header (Plug) – 2Nos	
Environmental Specifications		
Operating Temperature	-40°C to +85°C	
Storage Temperature	-55°C to +100°C	
Relative Humidity	5% to 95%	
Operational Limits	Altitude <18,000m or velocity < 515m/s, not exceeding both	

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