Galaxy Navigation Corp.

GN-150 INS/GPS

The **GN-150** is an excellent, small size, low weight and MEMS silicon-based Inertial Measurement Unit (IMU) integrated with next-generation GPS for control and navigation applications. It provides a wide range of output modes and advanced settings for specific usage scenarios.

GN-150 has an embedded navigation computer that runs a real-time Kalman filter providing drift-free, inertial data and 3-D orientation data. **GN-150** is sealed enclosure ensures long, trouble-free life and performance over full altitude and temperature range without risk of moisture contamination.

Highlights

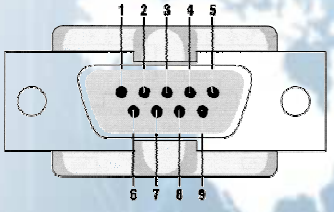
- Kalman-filter algorithms provided
- Full INS and attitude solution
- Embedded navigation computer and AHRS
- Misalignment, temperature and sensor cross-sensitivity calibrated
- Easy installation in any system application
- Next-generation RF technology (support GPS and Galileo)
- Digital output
- Compact, robust and water-proof design
- Low weight and low power consumption

Output

- Position coordinates, time,
- Heading, Pitch/Roll attitude angle

Applications

- UAV and Target Drone
- Marine Dynamics
- Autonomous vehicles
- Antenna Stabilization
- Attitude Reference
- Train & Container Tracking



Connector pins definition

Pin	Signal
1	Digital Transmit data
2	Digital Receive data
3	Positive power input (+Vc)
4	Power ground
5	Chassis ground
6	GPS Tx
7	GPS Rx
8	Signal ground
9	1 PPS out

GN-150 Specification

Sensors	Gyroscope	Accelerometer
● Full scale	±300°/sec	±18 g
● In run bias stability	25°/hr (1σ)	0.2 mg (1σ)
Operation range		
● Heading	0°~360°	
● Pitch	±90°	
● Roll	±180°	
● Altitude	18,000 m	
● Velocity	1,854 km/hr (~1000 knots)	
Accuracy		
● Heading	<1°	
● Pitch/Roll	<0.5°	
● Position accuracy	2.0 m CEP (SBAS), 2.5 m CEP autonomous	
● Velocity accuracy	0.1 m/s (50% @ 30 m/s)	
● Time accuracy (1PPS)	30 ns	
GPS receiver		
● Receiver type	50-channel, GPS L1, C/A code	
● Supports	SBAS (WASS, MSAS and EGNOS)	
● Navigation update rate	1 Hz	
● Acquisition	Cold start 32 sec, Warm start 32 sec, Hot start < 3 sec, Aided start < 1 sec	
I/O Interface		
● Digital output	RS232	
● Output sampling rate	50 Hz (100 Hz for optional)	
● Baud rate	9600 bps @ 50 Hz	
Electrical		
● Power input	9 ~ 32 VDC	
● Power consumption	< 1.5 W	
● Start-up time	35 sec	
Environment		
● Operation temperature	-40 ~ +85°C	
● Storage temperature	-40 ~ +85°C	
● Vibration	5g, RMS (20~2000 Hz)	
● Shock	60g, 8ms 1/2 sine wave	
Physical		
● Size	85 mm × 65 mm × 50 mm (L × W × H)	
● Weight	< 300 grams	
● Connector	D-type 9-pin