

GM-150 IMU/GPS

GM-150 is a high performance silicon based six-degree-of-freedom sensors which integrated with next generation GPS receiver. This high reliability strap-down inertial system provides accurate measurement of angular rate and linear acceleration. Inertial package intended for navigation, control, dynamics testing and instrumentation applications.

GM-150 achieves its excellent performance by employing proprietary algorithms to characterize and correct for the effects of temperature, linearity and misalignment.

Product Features :

- 6-DOF high stability silicon based MEMS sensors
- Factory calibrated sensitivity, bias and alignment
- All sensors have temperature compensation
- Time synchronization between GPS and IMU signals
- Next-generation RF technology
- Supports WASS, EGNOS and MSAS
- RS232 digital output
- Compact and robust design



Applications :

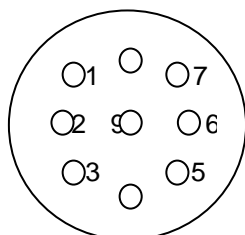
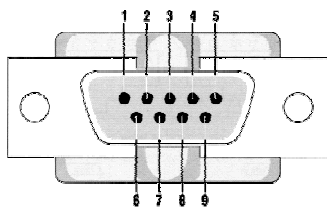
- Guidance and control
- Platform control and stabilization
- UAV, Drone & Land vehicle testing
- Antenna pointing
- Robotics

Output

- 3-axis angular rate and acceleration
- GPS position, velocity and time

Specification

IMU		
Sensors	Gyroscope	Accelerometer
● Operation range	±300 °/sec	±18g
● In run bias stability	25 °/hr (1σ)	0.2 mg (1σ)
● Random walk	2 °/√hr (1σ)	0.2 m/sec/√hr (1σ)
● Bias temperature coefficient	0.01 °/sec/°C	±0.3 mg/°C
● Noise density	0.05 °/sec/√Hz RMS	0.5 mg/√Hz RMS
● Non-linearity	0.1 % of FS	±0.1 % of FS
● Misalignment	±0.5 deg	±0.5 deg
GPS receiver		
● Receiver type	50-channel, GPS L1, C/A code	
● Supports	SBAS (WASS, MSAS and EGNOS)	
● Navigation update rate	4 Hz	
● Position accuracy	2.0 m CEP (SBAS) 2.5 m CEP autonomous, no SA	
● Time accuracy (1PPS)	30 ns	
● Optional limits	Altitude 18,000 m Velocity 1,854 km/hr (~1000 knots)	
Electrical		
● Power input	9 ~ 32 VDC	
● Power consumption	< 1.2 W	
System		
● Digital output	RS232	
● Output sampling rate	50 Hz (100 Hz for optional)	
● Baud rate	4800 bps (default), 4800 / 9600 / 38400 / 57600 / 115200 bps are adjustable	
Environment		
● Operation temperature	-40 ~ +85°C	
● Storage temperature	-40 ~ +85°C	
● Vibration	5 g, RMS (20~2000 Hz)	
● Shock	60 g, 11 ms 1/2 sine wave	
Physical		
● Size	85 mm × 65 mm × 50 mm (L × W × H)	
● Weight	< 300 grams	
● Connector	D-type 9-pin (O-type optional)	



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