

GM-100 IMU/GPS

GM-100 is a high performance MEMS based six-degree-of-freedom sensors 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-100 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 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
- Max. navigation update rate of 4 Hz
- RS232 digital output
- Compact and robust design
- Low power consumption



Applications :

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

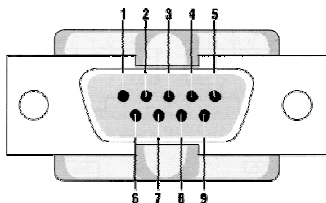
Output

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

Specification

IMU		
Sensors	Angular rate	Acceleration
● Full scale	±300 deg/sec	±10 g
● In run bias stability	54 deg/hr	20 mg
● Random walk	4.2 deg/√hr	
● Non-linearity	0.1 % of FS	±0.2 % of FS
● Noise	0.60 deg/sec	35 mg RMS
● Alignment error	±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)	
● 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	< 1.2 W	
● Start-up time	< 1 sec	
Environment		
● Operation temperature	-40 ~ +85°C	
● Storage temperature	-40 ~ +85°C	
● Vibration	5g, RMS (20~2000 Hz)	
● Shock	60g (11ms 1/2 sine wave)	
Physical		
● Size	70 mm x 60 mm x 40 mm (L x W x H)	
● Weight	< 160 grams	

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