

Features

- INS/GPS Integrated Navigation System
- Fast Start-up and Fully Self-contained
- Low Power Consumption
- Temperature Compensated
- Compact and Rugged Package



Applications

- Vehicle Instrumentation
- Robotics/Avionics
- Guidance and Control Systems
- Platform Stabilization
- Unmanned Aerial Vehicles

Description

The Marion® GA6350H is an INS/GPS integrated navigation system that can be used to measure position, velocity, attitude, angular rate and acceleration under dynamic conditions. It is a highly integrated, compact, light, and fully self-contained navigation system. It encloses three MEMS type gyroscopes, three accelerometers, three magnetometers, air data sensors, and a GPS receiver. The GA6350H calculates stabilized position and attitude by fusing gyroscope, accelerometer, and GPS information. In its basic operation, it provides raw IMU data such as angular rates and accelerations. It can also provide attitude, position and static/dynamic pressure that can be used to determine altitude and airspeed. The data update rate of the system is 100Hz. Internally, it implements a Kalman filter that integrates inertial sensor data and GPS information. A temperature compensation technique is used to improve the angular rate accuracy.

Specification

Performance	Input Range	Rate	± 1000 °/sec
		Acceleration	$\pm 30G$
	Accuracy	Position	3 m CEP (with GPS)
		Velocity	0.5 m/s RMS (with GPS)
		Heading, Roll, Pitch	1 °, 0.3 °, 0.3 °RMS (with GPS)
	Gyro Drift		5 °/hr
Update Rate		100 Hz	
Physical	Weight		1.8 kg (Including case)
	Size (L, W, H)		144 mm X 146 mm X 110 mm
Electrical	Power Consumption		15 W (nominal)
	Input Voltage		18 ~ 32 V
Environmental	Operating Temperature		-40 ~ 85 °C

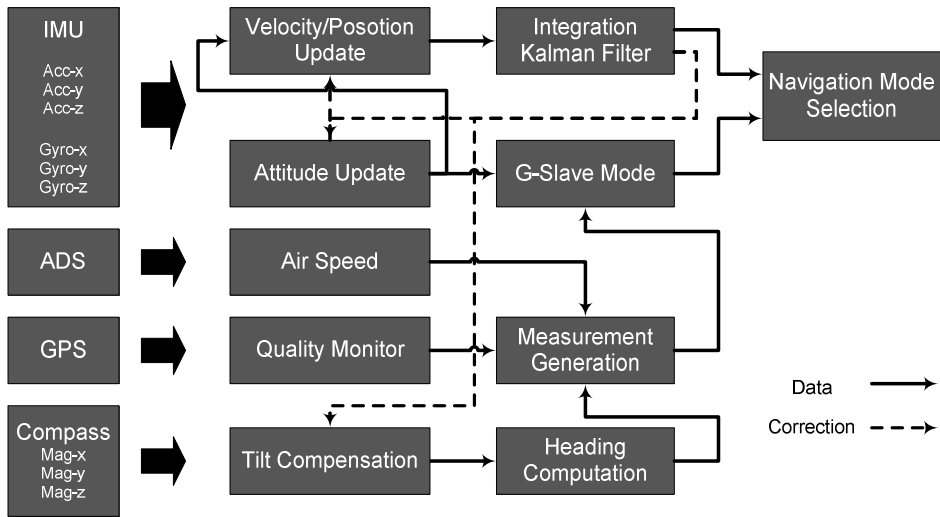


Figure 1. Architecture of Integration Algorithm



Figure 2. Connector Shape

Pin	Name	Description
1	NC_TX+	Data Out (+)
2	NC_TX-	Data Out (-)
3	NC_RX+	Data In (+)
4	NC_RX-	Data Out (-)
10	DGND	Digital Ground
14	DGND	Digital Ground
34	POWER	+28VDC
35	POWER	+28VDC
36	PGND	Power Ground
37	PGND	Power Ground

Table 1. Pin Description

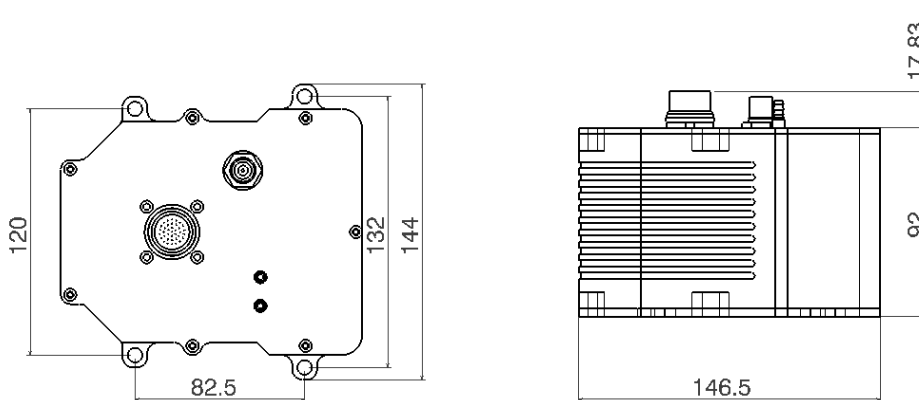


Figure 3. Physical Dimension

(In Millimeters)