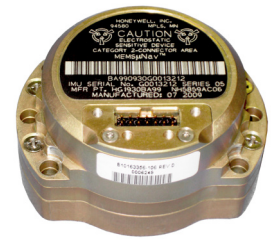


SPAN[®] OEM-HG1930



SMALL, AFFORDABLE MEMS IMU PAIRS WITH SPAN TECHNOLOGY TO DELIVER 3D POSITION, VELOCITY AND ATTITUDE



ABOUT SPAN: WORLD-LEADING GNSS+INS TECHNOLOGY

Synchronous Position, Attitude and Navigation (SPAN) technology brings together two different but complementary technologies: Global Navigation Satellite System (GNSS) positioning and Inertial Navigation Systems (INS). The absolute accuracy of GNSS positioning and the stability of Inertial Measurement Unit (IMU) measurements combine to provide an exceptional 3D navigation and attitude solution that is stable and continuously available, even through periods when satellite signals are blocked.

SMALL IMU FOR DEMANDING APPLICATIONS

The HG1930 is a small, low cost Micro Electromechanical Systems (MEMS) IMU manufactured by Honeywell. It provides tactical grade performance for unmanned vehicles and other commercial and/or military guidance applications. When integrated with NovAtel's SPAN technology, this IMU is ideal for airborne and ground applications that require accurate 3D position, velocity and attitude data.

COMBINING SPAN AND MEMS TECHNOLOGY

A proprietary MEMS Interface Card (MIC) couples the HG1930 with SPAN receivers, offering a unique, powerful GNSS+INS system for weight and size constrained applications. Designed as a board stack configuration for ease of integration, the MIC can interface directly with NovAtel's small form factor OEM615™ SPAN receiver.

The HG1930 is also available as a stand alone product so integrators can easily pair it with an existing SPAN receiver.

REQUIRE HIGHER ACCURACY?

Take advantage of NovAtel CORRECT™ to receive your choice of accuracy and performance, from decimetre to RTK-level positioning. For the most demanding applications, Inertial Explorer® post-processing software from our Waypoint® Products Group offers the highest level of accuracy.

BENEFITS

- + Ideal for unmanned vehicles
- + Easy integration with SPAN receivers
- + Ideal for size-constrained applications

FEATURES

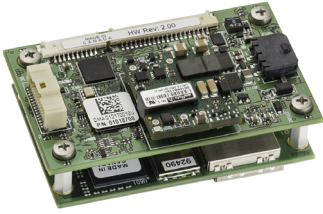
- + MEMS gyros and accelerometers
- + Small size and light weight
- + 10-30 VDC power input¹
- + 100 Hz data rate
- + Long MTBF
- + SPAN INS functionality

If you require more information about our SPAN products, visit www.novatel.com/span

1. Voltage range for the MIC not the IMU.

OEM-HG1930

MIC SPECS:¹



PHYSICAL AND ELECTRICAL

Dimensions
75.1 × 45.7 × 19.5 mm

Weight 31 g

Power
Input voltage 10 VDC – 30 VDC
Power consumption 5.3 W²

COMMUNICATION PORTS

1 LV-TTL COM port to interface to NovAtel GNSS receiver
1 IMU port with RS-422 interface
1 pass through USB port³

CONNECTORS

20-pin OEM615 mating connector
3-pin locking power connector
30-pin locking communication connector
20-pin locking IMU connector
10-pin locking IMU connector

ENVIRONMENTAL

Temperature
Operating -40°C to +75°C
Storage -50°C to +90°C

Vibration
Random MIL-STD 810G (Cat 24, 7.7 g RMS)
Sine IEC 60068-2-6

Bump IEC 68-2-29 (25 g)
Shock MIL-STD-810G (40 g)

IMU-HG1930-CA50



PERFORMANCE⁴

Gyroscope Performance
Input range ±1000 deg/sec
Rate bias 20 deg/hr
In-run bias stability 2 deg/hr
Rate scale factor 300 ppm
Angular random walk 0.125 deg/√hr

Accelerometer Performance
Range ±30 g
Scale factor 300 ppm
Bias repeatability 5 mg
Bias in-run stability 3 mg

PHYSICAL AND ELECTRICAL

IMU dimensions
64.8 mm dia max × 35.7 mm h max

IMU weight 200 g

Power consumption <3 W
MTBF >20,000 hours

For the most recent details of this product: www.novatel.com/products/span-gnss-inertial-systems/span-imus/span-mems-imus/OEM-HG1930/

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PERFORMANCE DURING GNSS OUTAGES⁵

Outage Duration	Positioning Mode	POSITION ACCURACY (M) RMS		VELOCITY ACCURACY (M/S) RMS		ATTITUDE ACCURACY (DEGREES) RMS		
		Horizontal	Vertical	Horizontal	Vertical	Roll	Pitch	Heading
0 s	RTK ⁶	0.02	0.05	0.010	0.010	0.060	0.060	0.100
	SP	1.20	0.60	0.020	0.010	0.060	0.060	0.100
	PP ⁷	0.01	0.02	0.020	0.020	0.007	0.007	0.014
10 s	RTK ⁶	0.23	0.18	0.040	0.024	0.070	0.070	0.120
	SP	1.31	0.73	0.050	0.024	0.070	0.070	0.120
	PP ⁷	0.01	0.02	0.020	0.020	0.007	0.007	0.015
60 s	RTK ⁶	6.16	2.07	0.250	0.080	0.085	0.085	0.141
	SP	7.24	2.62	0.260	0.090	0.085	0.085	0.141
	PP ⁷	0.19	0.04	0.03	0.020	0.010	0.010	0.020

Version 6 Specifications subject to change without notice.

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1. Stacked configuration shown with OEM615 receiver. OEM615 sold separately.
2. 12VDC, OEM615 stack configuration.
3. OEM615 USB port in stack configuration.
4. Supplied by IMU manufacturer.
5. Outage statistics were calculated by taking the RMS of the maximum errors over a minimum of 30 complete GNSS outages. Each outage was followed by 120 seconds of full GNSS availability before the next outage was applied. High

accuracy GPS updates (fixed ambiguities) were available immediately before and after each outage. The survey data used to generate these statistics is ground vehicle data collected with frequent changes in azimuth (i.e. as normally observed in ground vehicle environments).
6. 1 ppm should be added to all values to account for additional error due to baseline length.
7. Post-processing results using Inertial Explorer software.

