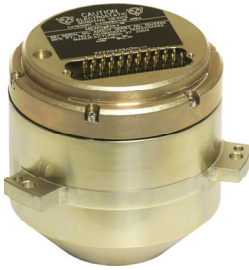


SPAN®

OEM-HG1900



## Tactical Grade MEMS IMU Combines with SPAN Technology Providing 3D Position, Velocity and Attitude

### Benefits

Excellent performance for price

Ideal for size constrained applications

Easy to integrate with SPAN GNSS receivers

### Features

MEMS Gyros

Small size and light weight

10-30 VDC power input<sup>1</sup>

100 Hz data rate

Long MTBF

SPAN INS functionality

### Sophisticated, Tactical Grade Performance

The HG1900 Inertial Measurement Unit (IMU) offers a hybrid package of Honeywell's Micro Electromechanical Systems (MEMs) Gyros and RBA accelerometers. Economical, robust and small, the low power HG1900 provides high end tactical grade performance for commercial and military guidance and navigation 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.

### About SPAN: World-Leading GNSS + INS Technology

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 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.

### Combining SPAN and MEMS Technology

A proprietary NovAtel MEMS Interface Card (MIC) couples the HG1900 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 interfaces directly with NovAtel's small form factor OEM615 SPAN receiver.

The HG1900 is also available as a stand alone product so integrators can easily pair it with an existing SPAN receiver such as a SPAN-SE™ or SPAN-MPPC™.

### Require Higher Accuracy?

NovAtel's AdVance® RTK and satellite augmentation systems such as SBAS can be used to improve real-time performance and accuracy. For the most demanding applications, Inertial Explorer® post-processing software from our Waypoint® Products Group offers the highest level of accuracy.

If you require more information about our SPAN products, visit [novatel.com/products/span-gnss-inertial-systems](http://novatel.com/products/span-gnss-inertial-systems)

[www.novatel.com](http://www.novatel.com)  
[sales@novatel.com](mailto:sales@novatel.com)

1-800-NOVATEL (U.S. and Canada)  
or 403-295-4900

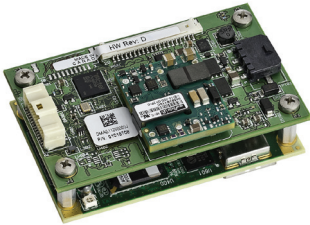
China 0086-21-54452990-8011

Europe 44-1993-848-736

SE Asia and Australia 61-400-883-601

<sup>1</sup> Voltage range for the MIC not the IMU.



**MIC SPECS:<sup>1</sup>****Physical and Electrical**

<b>Dimensions</b>	75.1 x 45.7 x 19.5 mm
<b>Weight</b>	31 g
<b>Power</b>	
Input Voltage	10 VDC – 30 VDC
Consumption	5.6 W <sup>2</sup>

**Communication Ports**

- 1 LV-TTL COM port to interface to NovAtel GNSS receiver
- 1 IMU port with RS-422 interface
- 1 pass through USB port<sup>3</sup>

**Connectors**

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

**Environmental****Temperature**

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

**Vibration**

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

**Bump**

IEC 68-2-29 (25 g)

**Shock**

MIL-STD-810G (40 g)

**IMU Performance****IMU-HG1900-CA50**

Gyro Input Range	±1000 deg/sec	Accelerometer Range	±30 g	IMU Size	92.7 mm dia max x 79.1 mm h
Gyro Rate Bias	5 deg/hr	Accelerometer Linearity	500 ppm	IMU Weight	<460 g
In-run Gyro Bias Stability	1 deg/hr	Accelerometer Scale Factor	200 ppm	Power Consumption	<3 W
Gyro Rate Scale Factor	150 ppm	Accelerometer Bias Repeatability	1 mg	MTBF	>20,000 hours
Angular Random Walk	0.09 deg/√h	Accelerometer Bias In-run Stability	0.7 mg		

**Performance During GNSS Outages<sup>4</sup>**

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 <sup>5</sup>	0.020	0.050	0.020	0.010	0.011	0.011	0.035
	HP	0.100	0.080	0.020	0.010	0.013	0.013	0.037
	SP	1.200	0.600	0.020	0.010	0.015	0.015	0.040
	PP	0.010	0.015	0.020		0.008	0.008	0.020
10 s	RTK <sup>5</sup>	0.135	0.050	0.035	0.014	0.015	0.015	0.044
	HP	0.370	0.280	0.037	0.015	0.015	0.015	0.045
	SP	1.325	2.410	0.040	0.016	0.017	0.017	0.046
	PP	0.020	0.020	0.020		0.009	0.009	0.021
60 s	RTK <sup>5</sup>	2.843	0.382	0.132	0.021	0.021	0.021	0.065
	HP	3.190	0.635	0.135	0.022	0.022	0.022	0.067
	SP	4.170	2.870	0.138	0.023	0.025	0.025	0.070
	PP	0.110	0.040	0.030		0.011	0.011	0.027



Version 2 - Specifications subject to change without notice.

© 2012 NovAtel Inc. All rights reserved.

NovAtel, Advant, Inertial Explorer, Waypoint and SPAN are registered trademarks of NovAtel Inc.

SPAN-SE, SPAN-MPPC and OEM6 are trademarks of NovAtel Inc.

Printed in Canada.

OEM-HG1900 D16798 July 2012

For the most recent details of this product:

[novatel.com/assets/Documents/Papers/OEM-HG1900.pdf](http://novatel.com/assets/Documents/Papers/OEM-HG1900.pdf)<sup>1</sup> Stacked configuration shown with OEM615 receiver. OEM615 sold separately.<sup>2</sup> 12 VDC, OEM615 stack configuration<sup>3</sup> OEM615 USB port in stack configuration<sup>4</sup> 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).<sup>5</sup> 1 ppm should be added to all values to account for additional error due to baseline length.