



SPAN MEMS Technology Integrated with NovAtel's Powerful OEM615™ Receiver

Benefits

SPAN enabled enclosure featuring NovAtel's tightly coupled OEM615 GNSS + INS engine

Can be paired with an external receiver to support ALIGN® GNSS azimuth aiding for low dynamic applications

Small, lightweight and rugged

Features

Metre to centimetre level accuracy

Regulated 10-30 VDC input

200 Hz navigation solution and raw measurement output

Serial, USB, CAN and Multi I/O interface including dedicated wheel sensor input

GPS, GLONASS, SBAS and RTK support

SPAN: World Leading GNSS + INS Technology

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

SPAN Enabled MEMS Receiver

The SPAN-IGM-A1 delivers world class NovAtel® SPAN technology in an integrated, single box solution. The SPAN-IGM-A1 offers tightly coupled GNSS inertial navigation featuring our OEM615 receiver.

The smallest and lightest GNSS + Inertial Navigation System (INS) receiver in our product portfolio, the SPAN-IGM-A1 can be configured from the factory as an integrated GNSS + INS engine or as a standalone IMU sensor for pairing with an existing NovAtel SPAN receiver.

ALIGN Enabled

Building on NovAtel's successful SPAN-SE-D enclosure, we offer our ALIGN heading solution as an option on the SPAN-IGM-A1. ALIGN can be activated by pairing the SPAN-IGM-A1 with an external ALIGN enabled receiver such as our FlexPak6™.

Improved Accuracy

NovAtel's Advance® RTK improves real-time performance and accuracy. For more demanding applications, Inertial Explorer® software from our Waypoint® Products Group can be used to post-process SPAN data to provide the highest level of accuracy.

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

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SPAN System Performance¹OEM615 SPAN² tightly coupled RTK GNSS/INS engine**Horizontal Position Accuracy (RMS)**

Single Point L1/L2	1.2 m
SBAS ³	0.6 m
DGPS	0.4 m
RT-2™	1 cm + 1 ppm

Data Rates

GNSS measurement	20 Hz
GNSS position	20 Hz
IMU measurement	200 Hz
INS solution	Up to 200 Hz
Time accuracy	20 ns RMS

Physical and Electrical

Dimensions	152 x 142 x 51 mm
Weight	515 g

Power

Input voltage	10-30 VDC
Power consumption ⁴	4 W

Antenna LNA Power Output

Output voltage	5 VDC [+5%/-5%]
Maximum current	100 mA

Connectors

Main Port and AUX Port	DB-HD15
Antenna	TNC

Communication Ports

1 USB	12 Mbps
1 RS-232 or RS-422	921,600 bps
1 RS-232	921,600 bps
1 CAN port	1 Mbps

Inputs/Outputs

2 Event Input Triggers
1 Configurable PPS
1 Wheel sensor port
1 VARF

Status LEDs

Power
GNSS status
INS status

Environmental**Temperature**

Operating	-40°C to +65°C
Storage	-50°C to +80°C

Humidity

MIL-STD-810G
95% non-condensing

Random Vibe

MIL-STD-810G (7.7 g)

Vibration (operating)

Random	MIL-STD-810G (7.7 g)
Sinusoidal	IEC 60068-2-6 (5 g)

Bump

IEC 60068-2-27 (25 g)

Shock

MIL-STD-810G (40 g)

Immersion

IEC 60529 IPX7

Compliance

FCC, CE, Industry Canada

Included Accessories

- Combined Power, Data and I/O Cables

Optional Accessories

- Inertial Explorer® post-processing software
- GPS-700 series antenna and RF cables
- NovAtel Connect™ GUI software
- SPAN-IGM bracket kit for ALIGN

Optional Configurations

Available OEM615 options:

- GLONASS
- ALIGN^{5,6}
- Stackable with FlexPak6 for an ALIGN solution

**Performance During GNSS Outages**

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 ⁷	0.050	0.035	0.070	0.030	0.040	0.040	0.220
	SP	1.200	0.600	0.070	0.030	0.040	0.040	0.300
	PP ⁸	0.010	0.020	0.020		0.040	0.040	0.220
10 s	RTK ⁷	2.000	0.320	0.225	0.040	0.095	0.095	0.390
	SP	2.290	0.900	0.225	0.040	0.100	0.100	0.490
	PP ⁸	0.040	0.020	0.022		0.043	0.043	0.221



Version 1 - Specifications subject to change without notice.

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For the most recent details of this product:

novatel.com/assets/Documents/Papers/SPAN-IGM-A1.pdf

¹ Typical values. Performance specifications subject to GPS system characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources.

² For detailed receiver specifications, see NovAtel's OEM615 product sheet and Receiver brochure.

³ GPS only.

⁴ Typical, GPS + GLONASS only, 12 V, 25°C, without FlexPak6.

⁵ For additional information on optional configurations, see our firmware options on our web site or contact NovAtel for more information.

⁶ ALIGN requires a secondary GNSS receiver paired with the SPAN enclosure.

⁷ 1 ppm should be added to all values to account for additional error due to baseline length.

⁸ Post-processing results using Inertial Explorer software.

