



SPAN-SE

Features

Single antenna configuration and future dual antenna support

SD card data logging

Environmentally sealed

GPS-only or GPS/GLONASS options

Wheel sensor input for ground applications

Benefits

NovAtel SPAN technology offering tightly-coupled GNSS/INS

World class GNSS using NovAtel OEMV technology

Compatible with IMUs from various suppliers

Software backwards compatibility with previous SPAN products

Available in a fully enclosed product or as a board stack for OEM integrators

The Solution Engine for NovAtel's SPAN™ Technology.

GNSS + INS with SPAN

NovAtel's SPAN (Synchronous Position, Attitude and Navigation) technology brings together two different, but complementary technologies: GNSS positioning and inertial navigation. The absolute accuracy of GNSS positioning and the stability of IMU gyro and accelerometer measurements combine to provide a 3D position, velocity and attitude solution. Unlike GNSS-only navigation systems, the solution is stable and continuously available, even through periods when GNSS signals are blocked.

For further information about SPAN, visit us at www.novatel.com/products/span.htm

SPAN-SE Overview

SPAN-SE is the solution engine of NovAtel's leading-edge SPAN technology. It provides the user interface to SPAN and outputs raw measurement data or solution data over several communication protocols or to a removable SD card. Multiple GPS-synchronous strobes and event input lines offer easy integration into a larger system. Combining SPAN-SE with a SPAN-supported IMU creates a complete GNSS/INS system. For applications requiring an external heading reference, a dual-antenna version of SPAN-SE will be available soon.

SPAN-SE Advantages

SPAN-SE uses NovAtel's powerful OEMV® receiver technology as its GNSS engine. The OEMV delivers many enabling features like GPS/GLONASS capability and Advantech™ RTK, which are both supported in SPAN-SE. A dedicated CPU for real-time GPS/INS processing results in fast data rates and low raw data and solution latency for highly dynamic or time-critical applications.



Precise thinking

SPAN-SE

Performance¹

Horizontal Position Accuracy (RMS)

Single Point L1	1.8m
Single Point L1/L2	1.5m
SBAS	0.6m
CDGPS	0.6m
DGPS	0.45m
Omnistar	
VBS	0.7m
XP	0.15m
HP	0.1m
RT-20	0.2m
RT-2	1cm+1 ppm

Measurement Precision

L1 C/A Code	4cm RMS
L1 Carrier Phase	0.5mm RMS (differential channel)
L2 P(Y) Code	8cm RMS
L2 Carrier Phase	1mm RMS (differential channel)

Data Rates

GPS Measurement	50Hz
GPS Position	20Hz
IMU Measurement	Up to 200Hz
INS Solution	Up to 200Hz
Time Accuracy ²	20ns RMS
Maximum Velocity ³	515 m/s

Physical and Electrical

Size	200 x 248 x 76 mm
Weight	3.4 kg
Power Input Voltage	9-30VDC
Power Consumption (single antenna)	10W (typical)
Power Consumption (dual antenna)	12W (typical)

Antenna Port(s) Power Output

Output Voltage	+5VDC
Maximum Current	100mA

COM Port Output Power

Output Voltage	+9-30 VDC
Maximum Current	1.5 A

Input/Output Connectors

Power	ODU Mini Snap, Series K, 4 pin
I/O 1	ODU Mini Snap, Series K, 30 pin
I/O 2	ODU Mini Snap, Series K, 30 pin
Ethernet	RJ-45
Primary RF	TNC Female
Secondary RF	TNC Female
USB Device	Type B
USB Host	Type A

Communication Ports

RS232/RS422 software	
configurable UART COM Ports	4
IMU Connection	1
RTK correction Input UART COM Port	1
USB 2.0 Host	1
USB 2.0 Device	1
Ethernet	1
Removable SD Card	1
Event Input Triggers	4
Configurable Output Strokes	4

Environmental

Temperature	
Operating	-40°C to +65°C
Storage	-50°C to +95°C
Humidity	95% non-condensing
Waterproof	IEC 60529 IPX7
Dust	IEC 60529 IP6X

Vibration (operating)

Random	RTCA DO-160D, curve C
Sinusoidal	IEC 68-2-6

Shock (Operating)	IEC 68-2-27, 60g
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Regulatory

Emissions	FCC Part 15, Class B EN 55022, Class B
Immunity	EN 55024
Safety	EN 609050-1

Included Accessories

VDC Power Cable
2x Serial Cables
SD Card
Mounting Brackets

Optional Accessories

GPS-700 series antennas
ANT-500 series antennas
RF cables – 5, 10 and 30m lengths

Additional Features

Field-upgradable firmware
Supports RTCM SC-104 version 3.0, CMR version 3.0, CMR+, NMEA 0183 version 3.01, and RTCA DO-217 message types

- ¹ GNSS/INS performance is dictated by the IMU integrated with SPAN. For GNSS/INS performance please see the individual product sheets at: http://www.novatel.com/products/span_product_matrix.htm
For additional GNSS Specifications please see: <http://www.novatel.com/Documents/Papers/OEMV3.pdf>
- ² Time accuracy does not include biases due to RF or antenna delay.
- ³ Export licensing restricts operation to a maximum of 514 metres per second.



Precise thinking



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