



Power-PC Processor Board Stack Maximizes Navigation Capabilities in Challenging Environments

Benefits

Continuous, stable navigation

Increased processing capability
for demanding GNSS/INS
applications

Supports IMUs from various
suppliers

Small volume for size-restricted
applications

Features

OEMV-3 form factor

Wheel sensor input for ground
applications

Optional development kit

UART, USB, Ethernet and CAN
peripherals

GNSS+INS Solution Unlike Any Others

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 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 GNSS signals are blocked.

SPAN-MPPC Overview

The SPAN-MPPC is designed to connect directly to NovAtel's OEMV-3 receiver to create a powerful GNSS/INS receiver board-stack. When connected to a SPAN-supported IMU, the MPPC creates a continuous GNSS/INS navigation system that delivers accurate position, velocity and attitude. It outputs raw measurement data or solution data over several communication protocols. Multiple GNSS-synchronous strobes and event input lines ensure the MPPC is easy to integrate into larger systems.

SPAN-MPPC Advantages

Tight coupling of the GNSS and IMU measurements provides more satellite observations and the most accurate, continuous solution possible. With NovAtel's world-class OEMV® technology as its GNSS receiver, the SPAN-MPPC delivers many powerful features including GPS+GLONASS capability and AdVance® RTK performance. A dedicated CPU for real-time GNSS/INS processing results in fast data rates and low raw data and solution latency for highly dynamic or time-critical applications.

If you require more information about our SPAN products,
visit novatel.com/products/span-gnss-inertial-systems

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SPAN System Performance¹

Horizontal Position Accuracy (RMS)	
Single Point L1	1.8 m
Single Point L1/L2	1.5 m
SBAS	0.6 m
CDGPS	0.6 m
DGPS	0.45 m
OmniSTAR®	
VBS	0.7 m
XP	0.15 m
HP	0.1 m
RT-20®	0.2 m
RT-2™	1 cm+1 ppm
Measurement Precision	
L1 C/A Code	4 cm RMS
L1 Carrier Phase	0.5 mm RMS (differential channel)
L2 P(Y) Code	8 cm RMS
L2 Carrier Phase	1 mm RMS (differential channel)
Data Rates	
GPS Measurement	50 Hz
GPS Position	20 Hz
IMU Measurement	Up to 200 Hz
INS Solution	Up to 200 Hz
Time Accuracy ²	50 ns RMS
Maximum Velocity ³	515 m/s

Compatible IMUs

IMU-H58
IMU-H62
IMU-LN200
IMU-FSAS

Physical and Electrical

Dimensions	85 x 125 x 27 ⁴ mm
Weight	75 g
Power	
Power Consumption	8 W (typical with OEMV-3 connected)
Input Voltage	+9 to +30 VDC

Communication Ports	
RS232/RS422 software configurable UART Ports	4
IMU Connection	1
RTK correction Input UART COM Port	1
USB 2.0 Host	1
USB 2.0 Device	1
Ethernet	1
Event Input Triggers	4
Configurable Output Strobes	3

Input/Output Connectors

OEMV-3 connections	1 x 40-pin dual row female connector
User connection	2 x 40-pin dual row connector

Environmental

Temperature	
Operating	-40°C to +85°C ⁵
Storage	-50°C to +85°C
Humidity	95% non-condensing
Vibration (operating)	
Random	RTCA DO-160D, curve C
Sinusoidal	SAE J1211, 4g
Shock (operating)	MIL-STD-810F method 516.5, 22g
Regulatory Emissions	
	FCC Part 15, Class B EN 55022, Class B
Immunity	EN 55024

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

Included Accessories

- Mounting standoffs
- CD

Optional Accessories

- OEMV-3 receiver
- GPS-700 series antennas
- ANT series antennas
- RF cables – 5, 10 and 30 m lengths
- Heatsink



Version 2 - Specifications subject to change without notice.

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For the most recent details of this product:
novatel.com/assets/Documents/Papers/SPAN-MPPC.pdf

¹ Attitude performance is dictated by the IMU GNSS.

² Time accuracy does not include biases due to RF or antenna delay.

³ Export licensing restricts operation to a maximum of 515 metres per second.

⁴ With OEMV-3 receiver.

⁵ With heatsink. -40°C to +70°C without heatsink.



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