



## 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

NovAtel's SPAN (Synchronous Position, Attitude and Navigation) technology brings together two different, but complementary technologies: GPS positioning and inertial navigation. The absolute accuracy of GPS 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 GPS 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 GPS-synchronous strobes and event input lines ensure the MPPC is easy to integrate into larger systems.

### SPAN-MPPC Advantages

Tight coupling of the GPS 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 receiver stack delivers many powerful features including GPS+GLONASS capability and AdVance™ RTK performance. 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.

If you require more information about our SPAN products,  
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**PRELIMINARY**  
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**SPAN System Performance<sup>1</sup>**

<b>Horizontal Position Accuracy (RMS)</b>	
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 <sup>2</sup>	50 ns RMS
Maximum Velocity <sup>3</sup>	515 m/s

**Compatible IMUs**

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

**Physical and Electrical**

**Dimensions** 85 x 125 x 15 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  
Removable SD Card 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  
Storage -50°C to +85°C  
Humidity 95% non-condensing  
Vibration (operating)  
Random RTCA DO-160D, curve C  
Sinusoidal IEC 68-2-6  
Shock (operating) IEC 68-2-27, 25 g

**Regulatory**

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

**Included Accessories**

- Mounting Standoffs
- CD

**Optional Accessories**

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

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Version 1 - Specifications subject to change without notice.

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For the most recent details of this product:

[novatel.com/Documents/Papers/SPAN-MPPC.pdf](http://novatel.com/Documents/Papers/SPAN-MPPC.pdf)

<sup>1</sup> Attitude performance is dictated by the IMU GNSS.

<sup>2</sup> Time accuracy does not include biases due to RF or antenna delay.

<sup>3</sup> Export licensing restricts operation to a maximum of 515 metres per second.

