

# Navsight Series

## Product change Notice

Document Date	PCNNAVS01 Apr 30, 2019	Support	support@sbg-systems.com +33 1 80 88 45 00
Doc. Type	PCN: New Navsight series hardware revision	SBG Systems	1, avenue Eiffel 78420 - Carrières-sur-Seine - FRANCE

This notice is to inform you about a Navsight series hardware revision update.

### 1. Description of change


SBG Systems announces a change in Navsight hardware. This change provides minor improvements on the serial lines and integration of a new GNSS receiver for Trimble users.

In addition, a new hardware revision of Apogee IMU completes this PCN, providing improved performance in vibrating environments and a single IMU version for all markets.

#### 1.1. New Trimble GNSS board integration (BD992)

The new hardware revision integrates the BD992 GNSS receiver (-T versions only). This new board has an increased tracking capability. It has following specifications:

	Specification	Remark	
Channels	336		
Signal tracking	GPS: L1 C/A, L2E, L2C, L5 GLONASS: L1 C/A, L2 C/A, L3 CDMA Galileo: E1, E5A, E5B, E5AltBOC, E6	Beidou B1, B2, B3 SBAS, QZSS L1 C/A, L2C, L5 L-Band OmniSTAR, RTX	
Horizontal position accuracy (1 sigma)	SBAS / DGPS	0.5 m / 0.25 m	PPP support requires a valid subscription from a third party PPP service provider.
	PPP	10 cm	
	RTK	0.8 cm + 1 ppm	RTK positioning mode available in option
Velocity accuracy	0.7 cm/s RMS		
True Heading Accuracy	0.09 °	2m baseline	GNSS only true heading accuracy, not enhanced by the INS.
	0.05 °	10m baseline	
Operating Limits	Altitude: 18 000m * Velocity: 515 m/s * Acceleration: 11g	*Due to export control	
Time to First Fix	Cold start / Warm start	< 45 s / < 30 s	
Signal reacquisition	L1/L2/L5	< 2.0 s	
Output frequency	PVT: 5Hz / Raw data: 1Hz		
Diff. Corrections input	RTCM 2.1 2.2, 2.3, 3.0, 3.1, 3.2 CMR, CMR+, SCMRX		

 **Note:** The Septentrio Variant -S remains unchanged in this new hardware revision

## 1.2. Removed spurious data output at startup/power off

For all users, this new revision removes a bunch of invalid data that could be sent over serial ports a short time after system power ON or OFF.

## 1.3. New Apogee IMU specifications

The Apogee V2 IMUs embed a set of 3 MEMS capacitive accelerometers that provide a consistent performance in all conditions, including vibrating environments.

A single range ( $\pm 10g$ ) is able to support all applications. This simplifies the use of a single sensor in various markets, and also helps reducing delivery time. The increased accelerometer measurement range provides also a significantly reduced Vibration Rectification Error for marine applications. Marine applications will therefore benefit from a better handling of vibrations and shocks.

This new IMU is also the first IMU calibrated on the new production tools (two axis rotary tables). This improves the overall performance thanks to higher precision alignments.

The specifications are listed in the table below, depending on the IMU configuration.

Accelerometer specification	A3	Remarks
Full scale (g)	$\pm 10$	
Velocity Random Walk ( $\mu g/\sqrt{Hz}$ )	30	Allan variance - @ 25°C
In run bias instability ( $\mu g$ )	7	Allan variance - @ 25°C
Bandwidth (Hz)	100	Attenuation of 3 dB
Orthogonality (°)	< 0.02	Over temperature range

The Apogee V2 IMUs embed 3 high performance MEMS gyroscopes. The specifications are listed below:

Gyroscope specification	G3	Remarks
Full scale (°/s)	$\pm 200$	
In run bias instability (°/hr)	0.05	Allan variance - @ 25°C
Angular Random Walk (°/√hr)	0.012	Allan variance - @ 25°C
Bandwidth (Hz)	100	Attenuation of 3 dB
Orthogonality (°)	0.02	Over temperature range

## 2. Impact of change

SBG Systems has taken all actions to ensure a smooth transition for all users.

New hardware revision is 100% form and fit and function compatible.

## 2.1. New product codes equivalence

### 2.1.1. Navsight processing unit

Navsight processing unit product codes remain valid; Only the revision number is updated.

Revision number up to 1.4 use the old hardware and revision number of 1.5 and above use the new hardware described in this PCN.

### 2.1.2. Apogee IMU

The new Apogee IMU product code is slightly different, with a -V2 appended at the end.

IMU product code	Hardware rev.	New product code	Hardware rev.
APOGEE-I-G3A1-B	1	APOGEE-I-G3A3-B-V2	2
APOGEE-I-G3A1-S	1	APOGEE-I-G3A3-S-V2	2
APOGEE-I-G3A3-B	1	APOGEE-I-G3A3-B-V2	2

## 2.2. Initial Hardware revision EOL announcement

As the transition should be fully transparent for every customer, and due to the strong demand, there is no more possibility to order the older hardware revision as of Apr 30, 2019.

## 2.3. New hardware revision availability

First deliveries of the new Navsight processing unit are expected by Apr 30, 19.

First deliveries of new Apogee IMU hardware revision are expected by June 15<sup>th</sup> 2019 (4 weeks lead time).

## 3. Contact

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If you need any further information after reading this document, please contact us by email or phone.

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