Ellipse AHRS & INS

Product change Notice

Document PCNELI3
Date 12 Dec 2018

Doc. Type PCN: New Ellipse series hardware revision

Support support@sbg-systems.com
+33 1 80 88 45 00

SBG Systems
1, avenue Eiffel
78420 – Carrières-sur-Seine – FRANCE

This notice is to inform you about an Ellipse2-D hardware revision update.

1. Description of change

In order to handle the obsolescence of the ELLIPSE2-D internal GNSS receiver, SBG Systems has updated the hardware design, by integrating a new receiver. This new design comes with improved performance in challenging conditions, thanks to Galileo support, advanced RAIM techniques, and an interference mitigation tool.

1.1. New GNSS receiver specifications

Following specification table replaces older GNSS receiver specifications.

	Specification		Remark
Channels	448		
Signal tracking	**GPS**: L1, L2, L2C **GLONASS**: L1, L2 **GALILEO**: E1 B/C, E5b	**Beidou** B1, B2, **SBAS**, **QZSS**	All constellations & signals enabled by default
Horizontal position accuracy	Single point L1/L2	1.2 m	RTK precision available in option
	SBAS / DGPS	0.6 m / 0.4 m	
	RTK	1 cm + 1ppm	
Velocity accuracy	0.03 m/s RMS		
True Heading Accuracy	0.15° 0.1°	1m baseline 2m baseline	
Velocity limit	515 m/s		Due to export licenses
Time to First Fix	Cold start	< 45 s	
	Hot start	< 20s	
Signal reacquisition		1s	
Output frequency	5 Hz		
Diff. Corrections	RTCM V2.x, V3.x CMR V2.0, CMR+		Sent via serial PORT C
Options	RTK		

SBG SYSTEMS

1.2. Interference mitigation tool

In addition to a more robust signal processing in all common situations, the new GNSS receiver embeds an interference mitigation tool. This tool is really helpful in case of complex integration with a lot of disturbing RF signals. The tool can be used in automatic mode or user can enter manual filtering parameters to filter out any unexpected noise in the GNSS frequency spectrum.

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 compatible. Function is compatible as well for most users but some advanced features might be slightly different from previous units. Changes are listed below. Other specification and performance parameters remain the same.

2.1. New hardware revision

The hardware revision, written in the calibration report and in the device information data (retrieved using the sbgECom protocol) is now “2”.

2.2. Reduced power consumption

The hardware revision power consumption is reduced, down to 1.5W.

2.3. Increased boot time

Due to the increased GNSS receiver boot time, the Ellipse-D new hardware revision will generate the first output samples within 30s after power up.

2.4. Different GNSS commands protocol

Typical users won’t be affected by this change. However, for some advanced users that directly sent commands to the receiver through PORT C in order to tune the receiver operation, it should be noted that the protocol used by the new receiver is now based on Septentrio ICD.

2.5. Different GNSS RAW data protocols

For post-processing applications, it is important to note that the new hardware revision receiver outputs RAW data in the SBF protocol (Septentrio) while previous revision produced a Novatel binary protocol.

All supported post-processing solutions (Qinertia and Inertial Explorer) have a native support of this SBF protocol so this will not affect the post-processing workflow.

2.6. Differential correction protocols update

the new receiver does not handle Novatel proprietary corrections (RTCA, RTCAOBS2).

New supported protocol are RTCM V2.x, V3.x, CMR V2.0, CMR+.

3. New commercial offer

3.1. New pricing

Thanks to significant optimizations in the manufacturing process, the ELLIPSE2-D is now offered at a more attractive pricing, especially when considering the RTK option.

Please contact your sales representative for more information about new pricing.

3.2. Simplified GNSS options

These optimizations also allow us to provide a simplified options scheme, with the highest level of performance for all sensors.

Now, all units are delivered with a full GNSS constellations support (GPS, GLONASS, GALILEO, BEIDOU), RAW data output enabled for post-processing and advanced.

3.2.1. New GNSS option matrix

New GNSS options are summarized below.

Constellation		Signals		Positioning		Options	
GPS+GLONASS+GALILEO + BEIDOU	G	L1/L2	1	Standalone+DGPS	S	RAW Data	B
				RTK	V		

3.2.2. Product code equivalence

Following table lists the equivalences between previous and new product codes:

Ellipse2-D product code	Hardware rev.	Ellipse2-D new product code	Hardware rev.
ELLIPSE2-D-G#A#-B#-**A1SA**	1.1	ELLIPSE2-D-G4A#-B#-**G1SB**	2
ELLIPSE2-D-G#A#-B#-**B1SA**	1.1		
ELLIPSE2-D-G#A#-B#-**D1SA**	1.1		
ELLIPSE2-D-G#A#-B#-**F1SA**	1.1		
ELLIPSE2-D-G#A#-B#-**A1VB**	1.1	ELLIPSE2-D-G4A#-B#-**G1VB**	2
ELLIPSE2-D-G#A#-B#-**B1VB**	1.1		
ELLIPSE2-D-G#A#-B#-**D1VB**	1.1		
ELLIPSE2-D-G#A#-B#-**F1VB**	1.1		

3.3. Hardware revision 1.1 EOL announcement

Although SBG Systems strongly recommends to switch to new hardware revision as soon as possible, it is possible to keep ordering V1.1 hardware units according to the next table details:

Ellipse product code	Hardware revision	Last time buy	Last shipping	Remarks
ELLIPSE2-D-G#A#-B#-A1SA ELLIPSE2-D-G#A#-B#-B1SA	1.1	November 15th 2018	Dec. 15st, 2018	Orders with hardware revision 1.1 will be accepted until stock is

ELLIPSE2-D-G#A#-B#-D1SA ELLIPSE2-D-G#A#-B#-F1SA ELLIPSE2-D-G#A#-B#-A1VB ELLIPSE2-D-G#A#-B#-B1VB ELLIPSE2-D-G#A#-B#-D1VB ELLIPSE2-D-G#A#-B#-F1VB	exhausted. SBG Systems reserve the right to acknowledge orders using the new hardware revision.

Note: this EOL has a shorter notice than usually, as the new hardware is Form, Fit and Function compatible with the previous one and therefore does not require specific re-qualification.

3.4. New hardware revision availability

First deliveries of new hardware revision are expected by end of October 2018.

4. Contact

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

EMEA:

SBG Systems S.A.S.
1, avenue Eiffel
78420 – Carrières-sur-Seine
FRANCE

Phone: +33 1 80 88 43 70
support@sbg-systems.com

Americas:

SBG Systems North America, Inc
5932 Bolsa Avenue, Suite #103
Huntington Beach, CA 92649
USA

Phone: +1 (657) 549-5807
support@sbg-systems.com