

Ellipse Series

Product Change Notice

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PCN: New Ellipse series generation

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This notice is to inform you about a major Ellipse series update providing performance improvements, size reduction, while decreasing the price of the Ellipse product line.

This new line is called the Ellipse Series 3rd Generation and will be announced publicly on June 22nd, 2020.

1. Description of change

Major changes are listed below.

1.1. New 64-bit Architecture

A new 64bit processor is now embedded in the whole Ellipse product line. It allows more precise algorithm computation which improves the overall performance in many situations like with RTK for example.

1.2. New Dual-frequency GNSS receiver

Ellipse inertial navigation systems with integrated GNSS (ELLIPSE-N and ELLIPSE-D) now embed a new dual band, quad constellations GNSS receiver, capable of delivering centimeter precision (RTK) in standard and without extra cost. This new GNSS receiver supports four constellations at the same time: GPS, GLONASS, GALILEO, and BEIDOU.

This new receiver allows the Ellipse-N to provide centimetric position while keeping the exact same compact form factor with a reduced price. RAW data output now enables the Ellipse-N to benefit from efficient post-processing with Qinertia. RTK is included as standard.

Ellipse-D keeps the same performance and features than the previous Ellipse2-D but with a revised hardware, offering a tremendously reduced form factor and price, and slightly lower power consumption. Ellipse-D provides a dual antenna dual frequency GNSS/INS functionality with an unprecedented price-size-performance ratio. RAW data remains available for the Ellipse-D. RTK is included as standard.

1.3. New OEM versions

A very small OEM form factor is introduced for all products, including for the dual antenna version ELLIPSE-D. This OEM version is perfectly suitable for higher volume applications, where cost, and size matter. It replaces the light versions provided for the Ellipse2-A, Ellipse2-N, and Ellipse2-E.

The difference between the previous light version and the new OEM are:

Aluminum enclosure

CAN bus with all serial ports available at the same time

PCB mounted TTL with a small board-to-board connector (DF40). This allows a more tight integration, with a gain of size and weight.

Please note that the Ellipse Micro Series could be an interesting option for the Ellipse-A and Ellipse-E light version replacement if RS-232/422 are mandatory.

New OEM Mechanical characteristics:

Ellipse-N/D OEM version	Ellipse-A/E OEM version
29.5 x 25.5 x 16 mm	TBD
17grams	Available Q4, 2020

2. Impact of change

SBG Systems has taken all actions to ensure a smooth transition for all users. Changes are listed below and detailed by model.

2.1. Ellipse2-D impact of change

New Ellipse-D size, weight, and power consumption have decreased. All new mechanical and electrical characteristics are detailed in the *Ellipse Series HW manual*.

Auxiliary connector is removed. Pin-out of the main connector does not change (see the *Ellipse series HW manual*). The communication protocol does not change, and it is described in the *FW manual*.

As the GNSS receiver changes, the GNSS Raw data protocol has been modified; this change is transparent for all Qinertia users. New Ellipse-D only accepts RTCM 3.x for input GNSS corrections.

GNSS receiver specifications is given in the table below.

	Specification		Remark
Signal tracking	GPS: L1C/A, L2C GLONASS: L10F, L20F GALILEO: E1, E5b	Beidou: B1I, B2I QZSS: L1C/A, L2C	All constellations & signals enabled by default
Horizontal position accuracy	Single point RTK	1.5 m 1 cm + 1 ppm	
Velocity accuracy	0.05 m/s RMS		
True Heading Accuracy	0.4° 0.3°	1m baseline 2m baseline	
Velocity limit	500 m/s		
Time to First Fix	Cold start Hot start	< 24 s < 2 s	
Signal reacquisition	2 s		
Output frequency	5 Hz		
Diff. Corrections	RTCM V3.3		Sent via serial PORT B or E

2.2. Ellipse2-A, Ellipse2-E, Ellipse2-N impact of change

New hardware revision of box versions is 100% form, fit, and function compatible with existing Ellipse2-A, Ellipse2-E, and Ellipse2-N.

2.2.1. OEM package

The new OEM package replaces the light version for Ellipse-A/E and N. Size, weight, and power consumption change. All new mechanical and electrical characteristics are detailed in the *Ellipse Series HW manual*. New OEM package have only TTL interface.

2.3. New hardware revision

The hardware revision, written in the calibration report and in the device information data (retrieved using the sbgECom protocol) is now “3”.

3. New commercial offer

To bring more clarity to the Ellipse product line in the long run, we decided not to indicate the version of the product line in the product model names anymore. We handle the evolution of product line generations in our system. The name of the product “Ellipse2-D” gets back to “Ellipse-D” for example. The name of the Series is Ellipse Series Third Generation.

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

3.1. New product name

The product name changes, the HW code is not use anymore. The table below lists old product name and the corresponding new one.

Old Product name	New Product Name
ELLIPSE2-A-G4A2-B1	ELLIPSE-A Marine AHRS
ELLIPSE2-A-G4A2-B2	ELLIPSE-A Marine AHRS - CAN
ELLIPSE2-A-G4A3-B1	ELLIPSE-A Land Air AHRS
ELLIPSE2-A-G4A3-B2	ELLIPSE-A Land Air AHRS - CAN
ELLIPSE2-A-G5A4-B1	ELLIPSE-A High Dynamics AHRS
ELLIPSE2-A-G5A4-B2	ELLIPSE-A High Dynamics AHRS - CAN
ELLIPSE2-E-G4A2-B1	ELLIPSE-E Marine INS - Ext. GNSS
ELLIPSE2-E-G4A2-B2	ELLIPSE-E Marine INS - Ext. GNSS - CAN
ELLIPSE2-E-G4A3-B1	ELLIPSE-E Land Air INS - Ext. GNSS
ELLIPSE2-E-G4A3-B2	ELLIPSE-E Land Air INS - Ext. GNSS - CAN
ELLIPSE2-E-G5A4-B1	ELLIPSE-E High Dynamics INS - Ext. GNSS
ELLIPSE2-E-G5A4-B2	ELLIPSE-E High Dynamics INS - Ext. GNSS - CAN
ELLIPSE2-N-G4A2-B1	ELLIPSE-N Marine INS - GNSS RTK
ELLIPSE2-N-G4A2-B2	ELLIPSE-N Marine INS - GNSS RTK - CAN
ELLIPSE2-N-G4A3-B1	ELLIPSE-N Land Air INS - GNSS RTK
ELLIPSE2-N-G4A3-B2	ELLIPSE-N Land Air INS - GNSS RTK - CAN

Old Product name	New Product Name
ELLIPSE2-N-G5A4-B1	ELLIPSE-N High Dynamics INS - GNSS RTK
ELLIPSE2-N-G5A4-B2	ELLIPSE-N High Dynamics INS - GNSS RTK - CAN
ELLIPSE2-D-G4A2-B1	ELLIPSE-D Marine INS - GNSS RTK
ELLIPSE2-D-G4A2-B2	ELLIPSE-D Marine INS - GNSS RTK - CAN
ELLIPSE2-D-G4A3-B1	ELLIPSE-D Land Air INS - GNSS RTK
ELLIPSE2-D-G4A3-B2	ELLIPSE-D Land Air INS - GNSS RTK - CAN
ELLIPSE2-D-G5A4-B1	ELLIPSE-D High Dynamics INS - GNSS RTK
ELLIPSE2-D-G5A4-B2	ELLIPSE-D High Dynamics INS - GNSS RTK - CAN

3.2. Ellipse 2 series EOL announcement

Although SBG Systems strongly recommends to switch to new hardware revision as soon as possible, it is possible to keep ordering Ellipse 2 series units according to the next table details:

Ellipse Hardware code	Hardware revision	Last time buy	Last shipping	Remarks
ELLIPSE2-D-xx	2	June 30 th 2021	December 30 th 2021	Product is replaced by new Ellipse-D
ELLIPSE2-A-xx	2	June 30 th 2021	December 30 th 2021	Product is replaced by new Ellipse-A
ELLIPSE2-E-xx	2	June 30 th 2021	December 30 th 2021	Product is replaced by new Ellipse-E
ELLIPSE2-N-xx	2	June 30 th 2021	December 30 th 2021	Product is replaced by new Ellipse-N
ELLIPSE2-x-xx-Lx	2	June 30 th 2021	December 30 th 2021	Product replacement will be the new Ellipse OEM version

Note: All models of the Ellipse Series 3rd Generation delivery schedule is subject to change. Last time buy and last shipping dates could be reviewed accordingly in order to insure at least 1 year after product replacement availability.

3.3. New Ellipse series 3rd generation unit availability

Here after the list of model availability,

Ellipse Model	Availability
ELLIPSE-D Box	July 2020
ELLIPSE-D OEM	July 2020
ELLIPSE-A Box	September 2020
ELLIPSE-E Box	September 2020
ELLIPSE-N Box	September 2020
ELLIPSE-N OEM	September 2020
ELLIPSE-A/E OEM	Q4 2020

4. Contact

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

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