Ekinox 2 Series

NEW

TACTICAL GRADE MEMS

Inertial Systems

ITAR Free

0.02° RMS

IMU
AHRS
MRU
INS
VG

Motion Sensing & Navigation

AEROSPACE GROUND MARINE

EKINOX 2 SERIES R&D specialists usually compromise between high accuracy and price. The Ekinox 2 Series has been designed to bring robust and cost-effective MEMS solutions to the FOG technology's level of accuracy. Ekinox Series opens a new world of opportunities.

SBG SYSTEMS

Ekinox 2 Series

Brings robust and cost-effective MEMS to the Tactical Grade

Ekinox Series is a product range of high accuracy inertial systems. It has been designed to bring robust, maintenance free, and cost-effective MEMS to the tactical grade. Thanks to a drastic selection of high end MEMS sensors, an advanced calibration procedure, and powerful algorithm design, the Ekinox 2 Series achieves 0.02° attitude accuracy.

- High Performance Inertial Systems
- ITAR Free
- Cost-effective & Robust MEMS technology
- Maintenance Free

KEY FEATURES

- Up to 4 connected equipment
- Survey Grade GNSS receiver (Ekinox2-N/D)
- 8 GB Data Logger
- IP68 Enclosure
- Web Interface & Ethernet
- 200 Hz Output Rate

Accuracy

3D ORIENTATION

Roll, Pitch	0.03°	GNSS aiding
	0.02°	RTK aiding
	0.015°	Post-Processing
Heading	0.1°	Dual Antenna GNSS (baseline < 2 m)
	0.05°	Dual Antenna GNSS (baseline < 4 m)
	0.03°	Post-Processing

POSITION

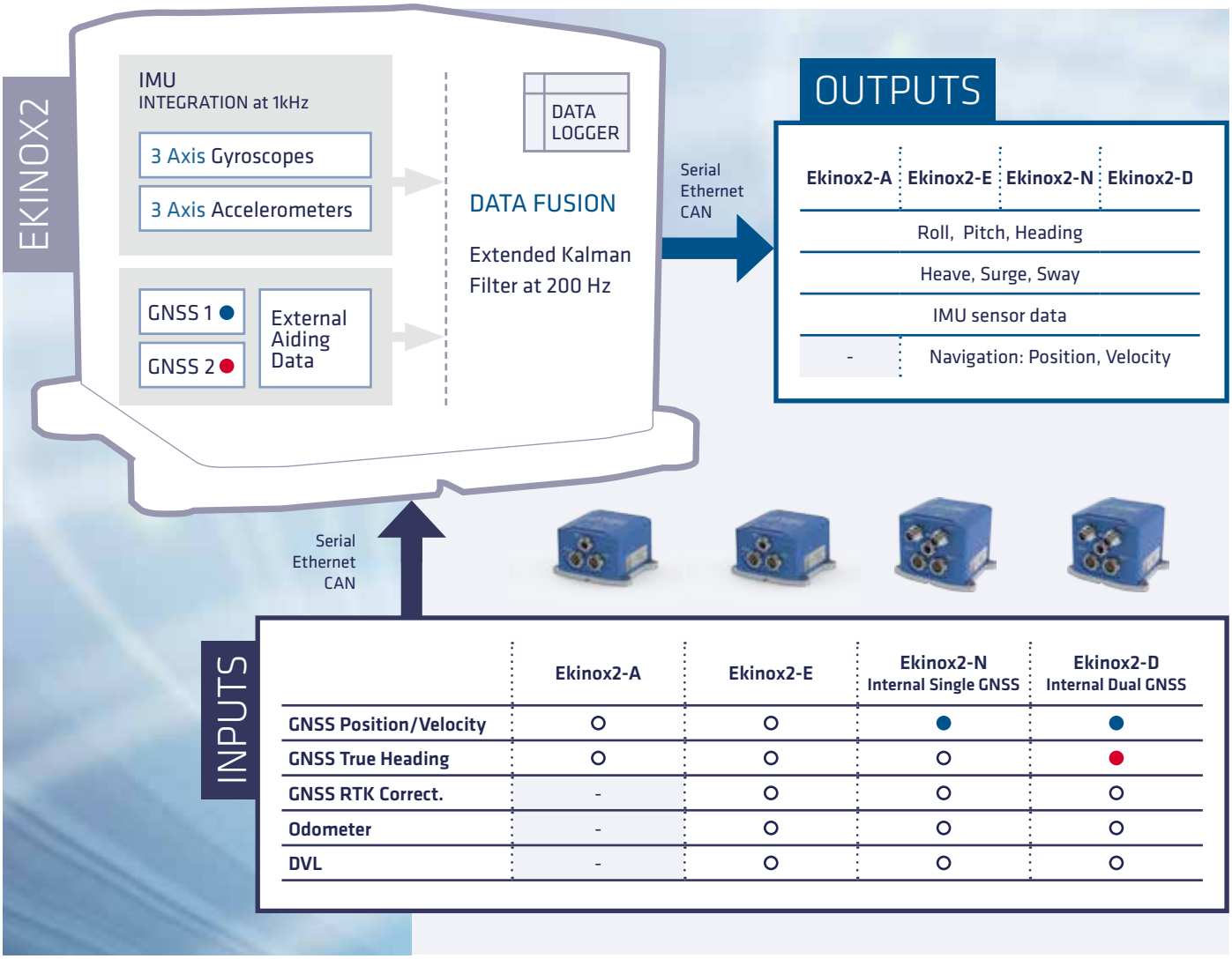
Single Point L1/L2	1.2 m	
SBAS	0.6 m	
DGPS	0.4 m	
RTK	0.02 m	
RTK 30s Outage	3 m	Marine conditions
RTK 60s Outage	0.2% TD	Marine conditions, DVL* aided
	3 m	Automotive mode - With odometer
PPK**	0.02 m	

HEAVE

Real-time	5 cm or 5%	Whichever is greater, velocity aided
Wave period	0 to 20 s	Auto-adjusting
Delayed	2.5 cm or 2.5%	Whichever is greater, velocity aided
Wave period	0 to 40 s	

** Depends on DVL performance. - TD: Travelled Distance.- Typical RMS values*
***Post-processing Kinematic*

A Cutting-Edge Architecture



	Ekinox2-A	Ekinox2-E	Ekinox2-N Internal Single GNSS	Ekinox2-D Internal Dual GNSS
GNSS Position/Velocity	○	○	●	●
GNSS True Heading	○	○	○	●
GNSS RTK Correct.	-	○	○	○
Odometer	-	○	○	○
DVL	-	○	○	○

● *Included* ● *Included* ○ *External Aiding Required*

Software

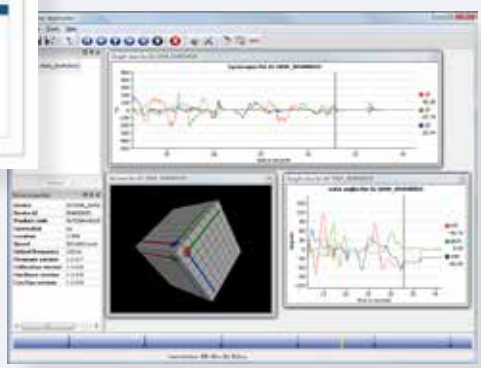
CONFIGURATION, REAL-TIME DISPLAY & REPLAY

Configuration is made easy through our intuitive embedded web interface where all parameters can be quickly displayed and adjusted.

The sbgCenter offers all the tools for real-time visualization (200 Hz) and replay of the records stored in the internal data logger.

Embedded Web Interface

sbgCenter



Applications

AEROSPACE

Mid-sized & large UAV
Avionics
LiDAR
Gyro-stabilized camera
Flight data recorder

- Ready-to-use INS/GPS (Ekinox2-N)
- Designed for harsh environments
- Temperature calibrated (-40 to 75°C)
- Unmatched precision in high vibration conditions (MIL-STD-810G)
- Robust IP68 enclosure

LAND

Car motion
Unmanned Ground Vehicle
Camera and 3D scanner
SATCOM antenna
Machine Control

- All-in-one solution with Dual Antenna GPS, RTK GNSS, and odometer (Ekinox 2 Land Solution)
- Ethernet & CAN connectivity
- Precise GPS UTC synchronization
- Low latency (2 ms)
- Very low noise on Attitude & Navigation data

MARINE

Hydrography
Motion monitoring
Performance sailing
Offshore
Targeting system

- Integrated Dual Antenna GPS for True Heading (Ekinox2-D)
- Real-time Auto adjusting heave on 4 monitoring points
- NMEA, TSS & Simrad protocols
- Ethernet & Web interface

SUBSEA

AUV, ROV
SONAR, LiDAR, Camera

- Compact and low-power consumption
- Real-time data fusion with DVL, etc.
- Up to 4 simultaneously connected equipment

Seamless Integration

STARTING BOX

The selected Ekinox model is shipped with a quick start guide and its own calibration report.

A set of software tools is included such as the sbgCenter application, API C libraries with code examples, etc.

A robust and waterproof transport case is fitted to contain other ordered items such as cables, GNSS antennas, etc.

NEED A CUSTOM PACKAGE?

Every industry has its own constraints. Our Sales Engineers will work with you to recommend the right solution for your project, or for an entirely custom design.

SBG SYSTEMS SERVICES

Support – Training - Custom Design

Specifications

Preliminary

SENSORS PERFORMANCE

	Accelerometers		Gyroscopes
	A2	**A3**	
Measurement range	8 g	14 g	300 °/s
Random walk	7 µg/√Hz	30 µg/√Hz	0.14 °/√h
Bias in-run instability	2 µg	5 µg	< 0.5 °/hour

INTERFACE

Aiding Sensors	2x GNSS, RTCM, DVL, Odometer, Gyro-compass
Protocols	Output: NMEA, ASCII, Binary, TSS, Simrad Input: NMEA, Trimble, Novatel, Septentrio, Hemisphere, Veripos, Fugro, PD0, PD6
Output Rate	1 to 200 Hz
Logging Capacity	8 GB or 48h @ 200 Hz
Serial RS-232/422	Model N/D - 2 outputs / 4 inputs Model A/E - 3 outputs / 5 inputs
CAN	1 CAN 2.0 A/B bus up to 1 Mbit/s
Pulses	Inputs: PPS, Event marker up to 1 kHz Outputs: SyncOut, Trigger 5 inputs / 2 outputs
Ethernet	Full Duplex (10/100 Base T)

ENVIRONMENTAL SPECIFICATIONS

Operating Vibrations	20 Hz to 2 kHz as per MIL-STD-810G Accelerometer 8 g: 3 g RMS Accelerometer 14 g: 8 g RMS
IP Rating	IP68
Operating Temperature	-40 to 75°C / -40 to 167°F
MTBF	50,000 hours

PHYSICAL CHARACTERISTICS

	Ekinox2-A/E	Ekinox2-N/D
GPS	-	L1/L2 Dual Antenna GNSS receiver
Weight	400 grams 0.88 pounds	600 grams 1.32 pounds
Dimensions (L x W x H)	10 x 8.6 x 5.8 cm 3.9 x 3.4 x 2.2 ”	10 x 8.6 x 7.5 cm 3.9 x 3.4 x 2.9 “
Power Consumption	< 3 W	< 6 W
Supply Voltage	9 to 36 VDC	9 to 36 VDC

PRODUCT CODE INS

▪ *standard product options*

EKINOX2-#-G4A#-####

MODEL
A: AHRS
E: INS
N: INS with internal GNSS
D: INS with internal Dual GNSS

GYROSCOPES
4: 300 °/s ▪

ACCELEROMETERS
2: 8 g
3: 14 g

Other ranges available upon request

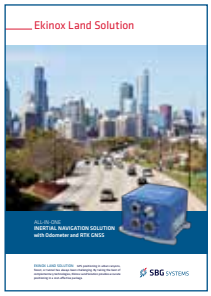
GNSS OPTIONS

Typical RMS values. All specifications subject to change without notice.

SBG Systems is a leading supplier of MEMS-based inertial motion sensing solutions. The company provides a wide range of inertial solutions from miniature to high accuracy. Combined with cutting-edge calibration techniques and advanced embedded algorithms, SBG Systems products are ideal solutions for industrial & research projects such as unmanned vehicle control, antenna tracking, camera stabilization, and surveying applications.

PRODUCTS

Subsea MRU & INS



Ekinox INS with RTK base station and odometer

TEST RESULTS

Marine

Hydrography

Automotive

Aerospace

SBG Systems EMEA (Headquarters)
Phone: +33 1 80 88 45 00
E-mail: sales@sbg-systems.com

SBG Systems North America
Phone: +1 (657) 845-1771
E-mail: sales.usa@sbg-systems.com

www.sbg-systems.com