

# sbgECom Library

## Change-log v1.11.920-stable

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### 1. Summary

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This software release focuses on new features, bug fixes and, reliability.

It also adds the support for latest products and firmware releases.

### 2. Import highlights from this release

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- Support for new ELLIPSE firmware 1.7
- New commands for fixed lever arm mode for ELLIPSE
- New commands for AirData module
- New commands for CAN odometer module
- General improvements

### 3. Upgrade Procedure

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The latest sbgECom Library version comes with an SDK release. You can download the latest SDK using the SBG Systems support center web area.

### 4. All changes for release 1.11.920-stable

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#### 4.1. New Feature

- [SBGECom-123] - Implement DVL aiding configuration SBG\_ECOM\_CMD\_DVL\_####
- [SBGECom-126] - Implement AirData aiding configuration SBG\_ECOM\_CMD\_AIRDATA\_####
- [SBGECom-135] - Add configuration commands for CAN odometer support
- [SBGECom-136] - Add sbgECom Log Event Output useful for virtual odometer
- [SBGECom-137] - Add SBG\_ECOM\_LOG\_DEPTH / SBG\_ECAN\_MSG\_DEPTH\_INFO/ALTITUDE output logs
- [SBGECom-140] - Updated SBG\_ECOM\_CMD\_AIDING\_ASSIGNMENT command for AirData support
- [SBGECom-141] - Add airDataInput demo project to show external sbgECom AirData aiding
- [SBGECom-142] - Updated SBG\_ECOM\_LOG\_PRESSURE to SBG\_ECOM\_LOG\_AIR\_DATA with airspeed
- [SBGECom-143] - Updated SBG\_ECAN\_MSG\_PRESSURE to SBG\_ECAN\_MSG\_AIR\_DATA with airspeed

- [SBGECom-156] - Add baseline length field in SBG\_ECOM\_LOG\_GPS#\_HDT log
- [SBGECom-162] - Add SBG\_ECOM\_LOG\_DIAG message to send text
- [SBGECom-163] - Add CAN output message with vehicle body velocity
- [SBGECom-164] - Add CAN output message with track, slip and curvature indications
- [SBGECom-168] - Add INDYN NMEA like message output for marine applications
- [SBGECom-170] - Add SBG\_ECOM\_CMD\_GNSS\_1\_INSTALLATION command to set/get GNSS lever arm
- [SBGECom-173] - Add compatibility support Crossbow AHRS500 series
- [SBGECom-174] - Basic Logger: Add support for error log messages
- [SBGECom-175] - Basic Logger: Add support for UDP interfaces

## 4.2. Improvement

- [SBGECom-132] - Updated SBG\_ECOM\_CMD\_AIDING\_ASSIGNMENT command for DVL support
- [SBGECom-133] - Renamed DVL standard deviation as quality indicator in DVL log structure
- [SBGECom-144] - Converted SBG\_ECOM\_AIDING\_EM\_LOG\_RECV to SBG\_ECOM\_AIDING\_DEPTH\_RECV
- [SBGECom-145] - Renamed SBG\_ECOM\_AIDING\_PRESSURE\_RECV to SBG\_ECOM\_AIDING\_AIR\_DATA\_RECV
- [SBGECom-146] - Renamed SBG\_ECOM\_SOL\_PRESSURE\_USED to SBG\_ECOM\_SOL\_AIR\_DATA\_USED
- [SBGECom-147] - Added SBG\_ECOM\_SOL\_DEPTH\_USED in EKF solution status
- [SBGECom-165] - Updated CAN log default IDs for Ship Motion HP from 0x210 to 0x14A
- [SBGECom-169] - Updated SBG\_ECOM\_THIRD\_PARTY\_IXBLUE\_XXX logs to comply with naming conventions
- [SBGECom-176] - Minor code cleanup and removed useless defines
- [SBGECom-177] - Updated all C types to use standard ones uint32 -> uint32\_t
- [SBGECom-178] - Updated common lib code with improved organization

## 4.3. Removed feature

- [SBGECom-100] - Removed deprecated sbgEComSetReceiveCallback method
- [SBGECom-101] - Removed deprecated sbgEComCmdGnss1SetModel method
- [SBGECom-102] - Removed deprecated sbgEComCmdSensorSetMotionProfile method
- [SBGECom-103] - Removed deprecated sbgEComCmdMagSetModel method
- [SBGECom-171] - SBG\_ECOM\_CMD\_GNSS\_1\_LEVER\_ARM\_ALIGNMENT deprecated and replaced by SBG\_ECOM\_CMD\_GNSS\_1\_INSTALLATION

# 5. All changes for release 1.10.3692-stable

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## 5.1. New Feature

- [SBGECom-115] - Add Septentrio Internal GNSS model for new Ellipse D
- [SBGECom-117] - Added getters for delta a angle / velocity / temperature for IMU Short log
- [SBGECom-119] - Added new Swell Mode Ship Motion status flags

## 5.2. Improvement

- [SBGECom-118] - Improved sbgEComStartFrameGeneration & sbgEComFinalizeFrameGeneration methods
- [SBGECom-122] - Increased time out for sbgEComCmdLicenseApply to support new ELLIPSE-D internal GNSS

## 6. All changes for release 1.9.706-stable

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### 6.1. New Feature

- [SBGECom-110] - Added DOLOG HRP proprietary message
- [SBGECom-111] - Added a new short IMU log message also used for post processing
- [SBGECom-112] - Add a heavy machinery motion profile definition for Ellipse series

### 6.2. Bug Fixes

- [SBGECom-113] - Fixed invalid SBG\_ECOM\_CAN\_RX/TX\_OK comments

## 7. All changes for release 1.8.2916-stable

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### 7.1. New Feature

- [SBGECom-95] - Added GPS number of SV used and diff corrections details in sbgECom protocol
- [SBGECom-105] - Add compatibility with SBG\_ECOM\_CMD\_VALIDITY\_THRESHOLDS command
- [SBGECom-108] - Added support for aiding assignment on Port E for ELLIPSE-E and N

### 7.2. Improvement

- [SBGECom-91] - Added sbgEComSetCmdTrialsAndTimeOut to setup the number of trials and default time out for commands

## 8. All changes for release 1.7.235-stable

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### 8.1. New Feature

- [SBGECom-89] - Implement Kongsberg Binary 26 message output
- [SBGECom-87] - Add an uptime indication in SBG\_ECOM\_LOG\_STATUS
- [SBGECom-86] - Added the command SBG\_ECOM\_CMD\_ETHERNET\_INFO to current device IP address
- [SBGECom-85] - Added command SBG\_ECOM\_CMD\_ETHERNET\_CONF to define / retrieve the Ethernet configuration
- [SBGECom-77] - Add new output log class for NMEA proprietary messages
- [SBGECom-75] - Added UAV motion profile definition (for low dynamic rotary wing UAV applications)

### 8.2. Improvements

- [SBGECom-83] - Better use of size\_t type instead of uint32 to comply with C standard and 64 bit platforms

### 8.3. Tasks

- [SBGECom-84] - Updated sbgCommonLib to latest revision

## 8.4. Removed Feature

- [SBGECom-79] - Removed deprecated "course" from the GNSS configurable aiding sources

## 9. All changes for release 1.5.209-stable

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### 9.1. New Feature

- [SBGECom-72] - Added proprietary NMEA message PASHR for roll, pitch, heading, heave
- [SBGECom-70] - Added SBG Proprietary NMEA message with acceleration and angular rate
- [SBGECom-68] - Added SBG\_ECOM\_OUTPUT\_MODE\_DIV\_5 flag for 40 Hz output
- [SBGECom-66] - Added SBG\_ECOM\_GENERAL\_CPU\_OK status flag
- [SBGECom-65] - Added sbgEComHandleOneLog method to return even if more logs are available
- [SBGECom-64] - Added sbgEComSendAck method
- [SBGECom-62] - Added sbgEComStartFrameGeneration and sbgEComFinalizeFrameGeneration methods
- [SBGECom-59] - Added sbgECom log generation code
- [SBGECom-57] - Added SBG\_ECOM\_LOG\_FAST\_IMU\_DATA message definition
- [SBGECom-40] - Added KVH third party output format id (SBG\_ECOM\_THIRD\_PARTY\_KVH)

### 9.2. Improvements

- [SBGECom-74] - Switched unix projects to CMake
- [SBGECom-73] - Added examples into the sbgECom
- [SBGECom-63] - Updated sbgCommonLib to latest revision
- [SBGECom-61] - Use stream buffer instead of basic buffer for sbgECom log parsing
- [SBGECom-51] - Added SBF (Septentrio) protocol support on Ellipse-E
- [SBGECom-50] - Added direct PPS from internal GNSS Sync Output (SBG\_ECOM\_CMD\_SYNC\_OUT\_CONF)
- [SBGECom-47] - Made the sbgECom 64 bit compatible
- [SBGECom-46] - Switched project files to Visual Studio 2013
- [SBGECom-45] - Added a new callback method (sbgEComSetReceiveLogCallback) and deprecated the old one (sbgEComSetReceiveCallback)
- [SBGECom-42] - Improved handling of MSG and CLASS fields in low level protocol functions

### 9.3. Bug fixes

- [SBGECom-71] - Fixed sbgEComCmdGetInfo incorrect error code return when an invalid payload is received
- [SBGECom-44] - Fixed Various incompatibilities in Big Endian platforms
- [SBGECom-43] - Added output of NACK reasons in sbgECom configuration commands using the return code

## 9.4. Removed Feature

- [SBGECom-60] - Removed Ship Motion 1,2,3 and Ship Motion HP 1,2,3 due to new deported heave concepts

## 10. All changes for release 1.4.3239-stable

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### 10.1. New Feature

- [SBGECom-28] - Added differential correction age, diff base id and num sv to the SBG\_ECOM\_LOG\_GPS#\_POS
- [SBGECom-29] - Added GNSS raw data log for the second GNSS receiver
- [SBGECom-30] - Added official support for Ellipse additional output interfaces PORT C and PORT E
- [SBGECom-33] - Added big/little endian support for stream buffer
- [SBGECom-34] - Added sbgPlatform.h file to setup platform specific configuration such as endianness

### 10.2. Improvements

- [SBGECom-7] - Added support for both little and big endian platforms
- [SBGECom-32] - Improved stream buffer error handling
- [SBGECom-36] - Improved File naming and overall library organization
- [SBGECom-37] - Modified firmware and software version numbering scheme
- [SBGECom-38] - Increased raw GPS data buffer size from 2048 to 4096 bytes

### 10.3. Bug fixes

- [SBGECom-21] - Fixed SBG\_ECOM\_ETH#\_RX\_OK and SBG\_ECOM\_ETH#\_TX\_OK status definitions
- [SBGECom-27] - Changed sbgEComHandle behavior so the error returned by receive call back is taken into account
- [SBGECom-35] - Fixed improper comments in some configuration structures

## 11. All changes for release 1.3

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### 11.1. New Feature

- [SBGECom-10] - Added sbgInterfaceChangeBaudrate for both windows and unix platforms
- [SBGECom-19] - Added SBG\_ECOM\_LOG\_PRESSURE log for depth sensors and altimeters
- [SBGECom-25] - Added support for Ellipse series
- [SBGECom-26] - Added SBG\_ECOM\_LOG\_USBL log for USBL aiding equipments (beta)

### 11.2. Improvements

- [SBGECom-18] - Fixed Typos in GPS pos, Vel and Hdt Fix Status
- [SBGECom-20] - Better error checking for sbgStreamBuffer with new method sbgStreamBufferGetLastError
- [SBGECom-22] - Added UTC & Clock status to the binary log SbgLogUtcData
- [SBGECom-23] - Added Solution status to the binary log SbgLogEkfEuler, SbgLogEkfQuat, SbgLogEkfNav
- [SBGECom-24] - Added time stamp to the log SBG\_ECOM\_LOG\_MAG\_CALIB



## 12. All changes for release 1.2

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### 12.1. New Feature

- [SBGECom-14] - Added SBG\_ECOM\_LOG\_SHIP\_MOTION\_HP logs for delayed heave output
- [SBGECom-15] - Added sbgInterfaceSerialChangeBaudrate method to change the serial interface baud rate
- [SBGECom-17] - Added SBG\_ECOM\_POS\_FIXED / SBG\_ECAN\_POS\_FIXED position type for GPS

### 12.2. Improvements

- [SBGECom-13] - Updated SBG\_ECOM\_LOG\_SHIP\_MOTION\_XXX logs to add velocity and status data
- [SBGECom-16] - Changed GPS OmniStar solution type to PPP ones for better compatibility with third party GPS

### 12.3. Removed Feature

- [SBGECom-11] - Removed heave status field from SBG\_ECOM\_LOG\_STATUS log

## 13. All changes for release 1.1

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### 13.1. New Feature

- [SBGECom-1] - Added output log for DVL support
- [SBGECom-3] - Added output for GPS 1 raw data in order to support post processing
- [SBGECom-4] - Added event markers logs support
- [SBGECom-6] - Added Unix support and build script
- [SBGECom-8] - Added sbgEComReceiveAnyCmd method that return any received command that is not an output log
- [SBGECom-9] - Added settings import and export command

### 13.2. Improvements

- [SBGECom-2] - Added pitch information in the SbgLogGpsHdt GPS true heading log
- [SBGECom-5] - Now sbgEComProtocolReceive method returns the received command even if the CRC is not valid