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Deck Unit / Interface Box Update for Newer NMEA Devices

Equipment Affected

- SBE 11*plus* CTD Deck Unit, digital firmware < 5.2
- SBE 33 Carousel Deck Unit, NMEA firmware < 2.4
- SBE 36 CTD Deck Unit with NMEA firmware < 2.4
- PN 90488 SEACAT/SEALOGGER RS-232 & Navigation Interface Box (AC-powered), firmware < 3.1
- PN 90545 SEACAT/SEALOGGER RS-232 & Navigation Interface Box (DC-powered), firmware < 3.1
- PN 90158 SEACAT/SEALOGGER RS-232 & Navigation Interface Box (AC-powered), firmware < 2.6
- PN 90204 SEACAT/SEALOGGER RS-232 & Navigation Interface Box (DC-powered), firmware < 2.6

Note: PN 90402 SBE 45 Power, Navigation, & Remote Temperature Interface Box is not affected by this problem.

Description of Problem

Some newer NMEA navigation devices output latitude and longitude *minutes* to 7 or more digits to the right of the decimal place (i.e., xxx.xxxxxxx). The Sea-Bird Deck Units and Interface Boxes listed above do not correctly decode latitude and longitude data with more than 6 digits to the right of the decimal place, resulting in NMEA data with incorrect and unpredictable fractional minutes for latitude and longitude. All other data (NMEA time, CTD and auxiliary sensor data) is unaffected.

Solution and Corrective Action by Sea-Bird

Update Firmware to provide a Permanent Solution

Sea-Bird has updated the firmware for each of these Deck Units and Interface Boxes to accommodate additional digits to the right of the decimal place for NMEA latitude and longitude minutes. The updated firmware truncates any fractional minutes beyond 6 digits to the right of the decimal place.

- All Deck Units / Interface Boxes listed above **except** PN 90488 and PN 90545 SEACAT/SEALOGGER RS-232 & Navigation Interface Boxes – The firmware is on an EPROM, which is easily replaced in the field. Upon request, Sea-Bird will mail you an EPROM with the updated firmware (at no charge), along with instructions for installing the EPROM.
- PN 90545 and PN 90488 SEACAT/SEALOGGER RS-232 & Navigation Interface Boxes – These Interface Boxes do not have an EPROM. To implement the update, they must be returned to Sea-Bird. Sea-Bird will update the Interface Box to the current firmware version at no charge. Please contact Sea-Bird to schedule the return of your Interface Box.

Temporary Solutions

One of the following techniques may allow you to deploy the Deck Unit or Interface Box before obtaining updated firmware:

- If the number of digits output by your NMEA device is user-programmable, set the NMEA device to output no more than 6 digits to the right of the decimal place for latitude and longitude minutes.
- If possible, connect your NMEA device directly to the computer (instead of to the Deck Unit / Interface Box). Modify the instrument configuration (.con) file in Seasave V7 to indicate that NMEA data is being appended in the computer instead of in the Deck Unit. NMEA data appended in this manner does not have a limitation on number of digits to the right of the decimal place.

Notes:

1. Use Seasave V7 version 7.18 and later if connecting the NMEA device directly to the computer.
2. Direct connection of the NMEA device to the computer is not supported by Seasave V7 for older instruments - SBE 16 (not *plus*) or 19 (not *plus*).