Jackson Labs

ENGINEERING CHANGE NOTIFICATION FORM

ECN: 100-001-000122	REV: 1	ISSUE DATE: 12/18/2012
TYPE OF CHANGE: Firmware Modification		

DETAILED DESCRIPTION OF CHANGE:
Firmware improvements outlined in detail below.

REASON FOR CHANGE:
Functionality Improvements and bug fixes.

PRODUCTS AFFECTED:

Firmware Version	Model
Units with firmware version 2.38 and earlier	FireFly-1C
	FireFly-II
	FireFly-IIA (and ULN-xxxx)
	LC_1x1
	Mini-JLT

AVAILABILITY:

MILESTONE	DATE
ECN sent to customer	12/21/2012

Issue 1):

continuing regression-testing of firmware 2.38 on non-timing receiver products in moving vehicles showed that firmware release 2.38 may cause the GPS unit to stay in Position Hold mode independently of the GPS:DYNAMIC settings and vehicle velocity. Not all units are affected; units that are not affected by this issue do not need to be updated. This issue can be verified by checking the SYST:STAT? command output to say "Position Hold" instead of the expected "3D Fix" indication. If the unit indicates "3D Fix" in the syst:stat? command the unit is not affected and does not need to be updated.

Units that are affected will permanently keep the GPS receiver in stationary mode, and this may cause the GPS receiver to lose lock and to stop generating a PVT solution at speeds in excess of ~40mph. Applications that are stationary and do not move the GPS antenna are not affected and do not need the firmware update.

Cause:

A residual timing-receiver related EEPROM setting may have been incorrectly set to "timing mode enabled" at the factory, even though GPS receivers that are not timing-receivers do not support this feature. The side effect of this EEPROM setting is that the GPS:Dynamic mode only operates in stationary mode. This EEPROM setting cannot be changed in the field.

Solution:

Upgrading affected units to firmware revision 2.39 will fix this issue.

Issue 2):

NMEA sentences such as $GPGGA may be missing a leading zero in the longitude output for longitudes less than +/-10 degrees. Longitudes greater or equal to +/-10 degrees are not affected. NMEA specifies a constant number of digits for longitude, and the missing leading zero may cause some application software to interpret the longitude incorrectly. The latitude output is properly formatted.

Cause:

The NMEA output format is incorrectly programmed by missing a leading zero in the longitude field for longitudes less than 10 degrees from Greenwich.

Solution:

Upgrading affected units to firmware revision 2.39 will fix this issue.

REFERENCE DOCUMENTS/ATTACHMENTS:

CONTACTS	NAME	EMAIL
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PLEASE CONTACT JACKSON LABS TECHNOLOGIES, INC. WITH ANY QUESTIONS