ENGINEERING CHANGE NOTIFICATION FORM

ECN: 100-001-000126	REV: 1	ISSUE DATE: 3/18/2014

TYPE OF CHANGE: Firmware Modification

DETAILED DESCRIPTION OF CHANGE:
Firmware release 0.71 for CSAC boards includes improvements in the LCD interface including additional LCD pages, improved key debouncing, and user feedback when starting the position survey. Release 0.71 also addresses bugs related to starting the survey, and SCPI interface format issues.

REASON FOR CHANGE:
Functionality improvements, added features and bug fixes.

PRODUCTS AFFECTED:

Firmware Version	Model
Firmware 0.70a and previous versions for CSAC	CSAC [1] HD CSAC [1] LN CSAC [2] DROR-II [2]

Notes:
[1] Requires CSAC GPSDO firmware variant
[2] Requires LN CSAC firmware variant

AVAILABILITY:

MILESTONE	DATE
ECN release for firmware release files	3/18/2014

Release 0.71 for CSAC based boards provide the following improvements:

Issue 1:

Some key presses fail to advance the LCD page while some key presses advance two pages.

Resolution:

Firmware 0.71 fixes the issue by modifying the key debouncing routine to better differentiate short key presses and key bouncing conditions.

Issue 2:

Holding the key for 8-seconds to initiate survey fails to provide feedback that key is held long enough. This leads to the key being held unnecessarily long, or not long enough to start auto-survey.

Resolution:

Firmware 0.71 fixes the issue by adding a Survey Status LCD page and switching to that page when the key has been held long enough to initiate the survey.

Issue 3:

The response from the gps:survey:status? query includes the survey position variance in mm^2 that incorrectly outputs as a negative number with large variance values.

Resolution:

Firmware 0.71 fixes the issue by correctly outputting the survey variance as an unsigned value.

Issue 4:

When the survey is started from holding the key for 8 seconds and timing mode is initially disabled (gps:tmode off), the unit will not report position hold mode when the survey completes. This issue only occurs when the survey is started with the key and not with the gps:surv once command.

Resolution:

Firmware 0.71 fixes the problem by properly enabling position hold when the survey is started by holding the key.

Issue 5:

Speed in ACTUAL POSITION section of the gps? query output and XYZ velocity in gps:xyzsp output is sometimes a non-zero value when in position hold mode. However, in position hold mode the speed is known to be zero.

Resolution:

Firmware 0.71 fixes the issue by ignoring the small, non-zero speed and velocity values reported by the GPS receiver and reporting speed and velocity of zero instead.

Issue 6:

Output from csac:mode? query is in decimal format instead of the hexadecimal format described in the User Manuals. This field should also be in hexadecimal format to facilitate reading the bit-wise mode values.

Resolution:

Firmware 0.71 fixes the issue by outputting the csac:mode? query response in hexadecimal format like 0x0000.

Issue 7:

The sending the gryo:calibrate:compute command causes the SCPI interface to become unresponsive requiring a reset of the unit.

Resolution:

Firmware 0.71 fixes this issue.

Issue 8:

When in holdover in external 1PPS sync mode, the GPS receiver is reset every 5 minutes. A periodic reset of the GPS receiver can be helpful when in holdover due to lack of GPS fix, but this reset is unnecessary when the receiver has a GPS fix.

Resolution:

Firmware 0.71 fixes the issue by testing the GPS fix status of the receiver before performing a reset during holdover.

Issue 9:

When powering up or restarting the unit with timing mode previously set to off (gps:tmode off) the first attempt to start a survey holding the key or with the gps:surv once command fails.

Resolution:

Firmware 0.71 fixes this issue.

Feature Addition:

Additional LCD pages were added including the Navigation Page, UTC/GPS Time Page, and the previously mentioned Survey Status Page. The Navigation Page includes heading, speed, dynamics state and altitude. The UTC/GPS Time Page includes UTC time, GPS time and the leap second offset. The Survey Status Page includes survey status, duration and position variance. Below are examples of the three added LCD pages.

Navigation Page

UTC/GPS Time Page

Survey Status Page

REFERENCE DOCUMENTS/ATTACHMENTS:

CONTACTS	NAME	EMAIL
Software Engineer	Keith Loiselle	keith@jackson-labs.com

PLEASE CONTACT JACKSON LABS TECHNOLOGIES, INC. WITH ANY QUESTIONS