FW V32b for Cello IQ Release Notes

Cellocator Division
Pointer Telocation Ltd.

Proprietary and Confidential

Version 1.0

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POINTER

Pointer Telocation Ltd. 14 Hamelacha St., Rosh Ha'ayin 48091, Israel • Tel: 972-3-5723111 • Fax: 972-3-5723100 • www.pointer.com

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1 Introduction

This document describes the changes which have been implemented in FW32b versus FW32a, and the upgrade process from FW32a to FW32b. The information is intended for customers who have received Cello-IQ units for field installation or for evaluation and want to upgrade the unit FirmWare to FW32b.

This document provides complementary information to the Cello-IQ Release Notes which serves as the release notes source. Further explanations and descriptions can be found in *Cello-IQ Product Overview.*

A full list of related documents can be found in the *Documentation* section.

The changes implemented in FW32b are described in the *What's New* section and the upgrade process from FW32a to FW32b is described in the *Upgrade to FW32b* section.

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2 Content

The FW32b for the Cello-IQ release includes the components listed in the sections below.

2.1 Hardware

- CT7700225-000 Cellocator Cello-IQ 50
- CT7700225-000 Cellocator Cello-IQ 40

2.2 Firmware

- F0448_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32b_CelloIQ50.csf
- F0449_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32b_CelloIQ40.csf
- DFD_RC8595.csf
- DFD_voice_files.rar (version 8740)

2.3 PL File

- hw_31_fw_32b_Cello-IQ40_V807.PL
- hw_31_fw_32b_Cello-IQ50_V807.PL

2.4 Software Utilities

The following SW utilities are available for the Cello-IQ:

- Evaluation Suite: Evaluation suite setup x64 ver 1_0_9.msi (64 bit)
- Evaluation Suite: Evaluation suite setup ver 1_0_9.msi (32 bits)
- Integration Package: Integration Package V2.0 [Full Package].rar

2.5 Documentation

Cello-IQ Release Notes	Version: 2.0
FW32b for Cello-IQ Release Notes (this document)	Version: 1.0
Cello-IQ Product Overview	Version: 2.3
Cello family Hardware Installation Guide	Version: 3.0
Cello-IQ Evaluation Manual	Version: 1.0
Cello-IQ Integration Manual	Version: 1.0
Programming Manual Cellocator Cello	Version: 31p
CSA Programming Manual	Version: 2.0.0.3
Cellocator Wireless Communication Protocol	Version: 4.0.0.7
Serial Interfaces Specifications	Version: 6.0.0.3
Cellocator Integration Package Manual	Version: 2.0

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3 What's New

3.1 Cello IQ 40 Support

A new FW variant, named Cello-IQ 40, is now available. This version contains a reduced feature set for entry level driver behavior management applications.

Please refer to the *Cello-IQ Product Overview* for a detailed comparison between the two variants.

3.2 Continuous Maneuvers Statistics

The unit will send statistics of continuous maneuvers (speeding, idling, off-road and engine RPM) together with the event. Each maneuver has unique module statistics.

3.3 Crash Attributes

Crash information parameters have been added to the 'crashInfo' fields.

3.4 Movement Detection Improvement

The unit now detects engine status and movement independently. When there is no GPS available, accelerometer data and main power indication are taken into consideration for engine state, movement and idling detection. As a result, Eco trip scores should be more accurate.

3.5 Severity Thresholds in PL

Maneuver severity thresholds (determines green, yellow and red DFD indication) have been added to the PL.

3.6 DFD: Voice Messages and Beeps Controlled Separately

It is possible to configure voice messages and sound effect (beeps) indications separately. Voice messages can be enabled without beeps, and vice versa.

3.7 Synchronization to latest Fleet Functionality

Fleet functionality is based on Cello FW 31p.

3.8 CSA Protocol ID

Protocol ID has been added to the CSA header for server side management.

Firmware version 32b introduces an updated CSA messages structure. The server protocol can differentiate between the Firmware 32a protocol structure and Firmware 32b protocol structure via the field named “Protocol Version”.

Firmware 32b Protocol Version is set to 1, while in the previous version it is 0.

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<table>
<tr><td>1</td><td>System code, byte 1 – ASCII “C”</td><td rowspan="9">Prefix of message's frame</td></tr>
<tr><td>2</td><td>System code, byte 2 – ASCII “S”</td></tr>
<tr><td>3</td><td>System code, byte 3 – ASCII “A”</td></tr>
<tr><td>4</td><td rowspan="2">Length of message from byte 6 to CS</td></tr>
<tr><td>5</td></tr>
<tr><td>6</td><td rowspan="2">Message ID (Sequential numerator used by ACK mechanism. In replies contains the numerator of the command.)</td></tr>
<tr><td>7</td></tr>
<tr><td>8</td><td>Message Type / Initiator / Direction (0 for CSA event)
<table>
<tr><td>Initiator
0 – reply or ACK
1 - active</td><td>Direction
0 – inbound
1 - outbound</td><td colspan="3">Protocol Version
1</td><td colspan="3">Message Type</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Bit 5</td><td>Bit 4</td><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td></tr>
</table></td></tr>
</table>

3.9 Modified Default Presets

FW32b supports revised preset values designed to better support large vans, and light and heavy trucks. The wireless protocol supports the Restore Default Vehicle Preset command designed to restore the preset data per vehicle type into the unit’s memory.

<table>
<tr><th>Byte</th><th>Description</th><th>Default</th></tr>
<tr><td>N</td><td>Module Name 56 – Restore vehicle preset</td><td>56</td></tr>
<tr><td>N+1</td><td>Length of module – 2</td><td>2</td></tr>
<tr><td>N+2</td><td>Preset number
<table>
<tr><td>Number</td><td>Vehicle type</td></tr>
<tr><td>0</td><td>Private</td></tr>
<tr><td>1</td><td>Large Van</td></tr>
<tr><td>2</td><td>Light Truck/bus</td></tr>
<tr><td>3</td><td>Heavy Truck</td></tr>
</table></td><td>0</td></tr>
<tr><td>N+3</td><td>Spare</td><td>0</td></tr>
</table>

This module is sent in messages of type 2 whenever a Preset Restore to Defaults for a certain vehicle type is required. The unit responds after the restore is completed with a message type 3 containing the same module.

The unit should be reset in order to activate the new presets.

In order to restore the presets of the four vehicle types, you need to issue 4 commands, one for each vehicle type, and then reset the unit.

The preset values should be restored, as described, after the unit is upgraded from FW V32a to V32b.

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3.10 Evaluation Suite

The Evaluation Suite is a new SW application which replaces the Full Package. It supports all Cellocator units and provides two variants: one for the Cello-IQ and one for all other products. During the installation process you can select the required variant.

The Evaluation Suite also includes the complementary SW applications: Serial CSF STK flasher, Communication Logger, PL Comparison and Unit Simulators (GSM & CSA). The Evaluation Suite application is described in the *Evaluation Suite Manual* document.

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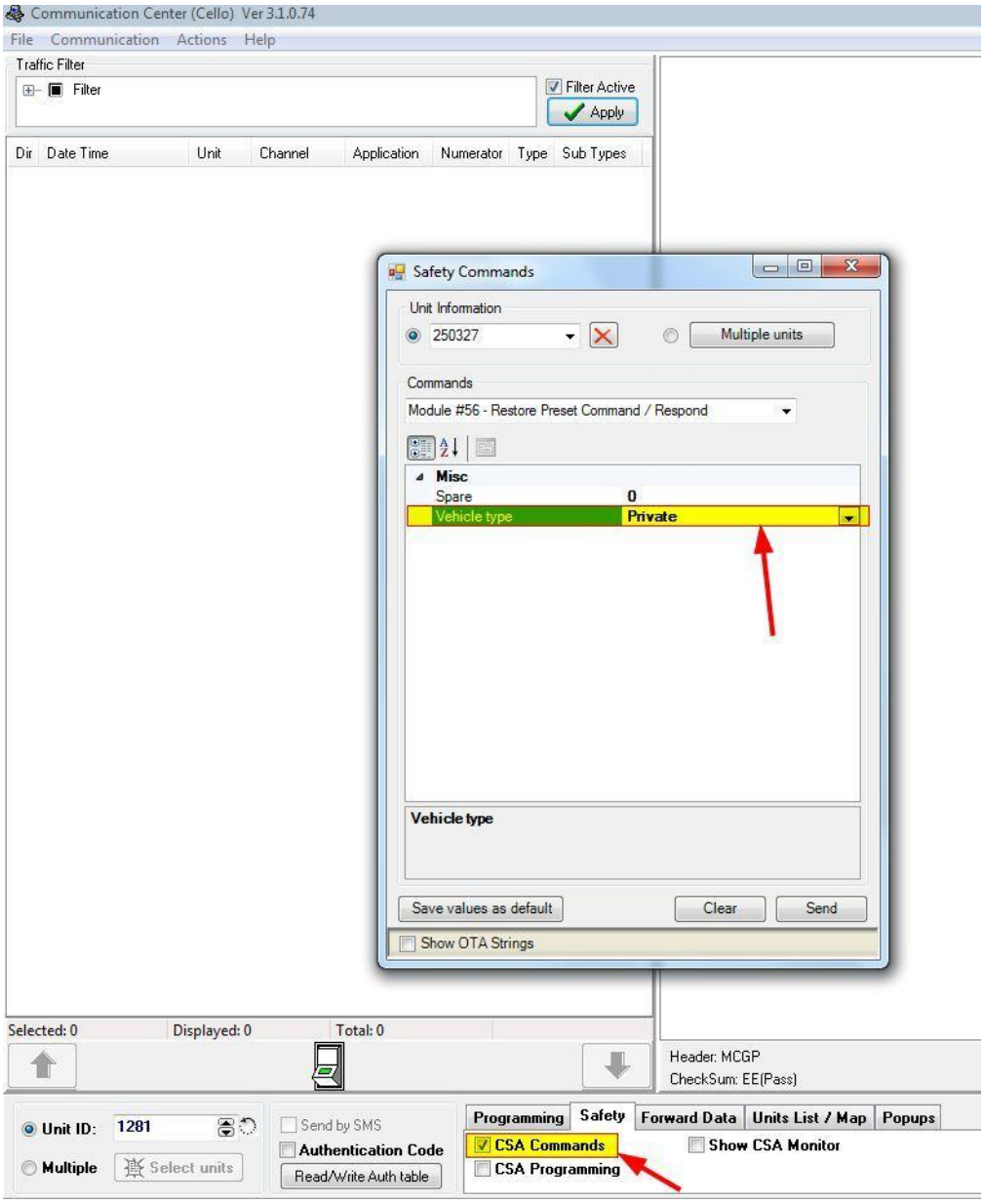
4 Upgrade to FW32b

The upgrade from FW31a to FW32b requires performing the following steps:

1. Use the **Full_Package_ver1.0.4680.exe** provided with the FW32a package for upgrading the FW to V32b.
2. Install the new Evaluation Suite provided with the V32b package. This is mandatory as FW32b integrates only with the Evaluation Suite.
3. Select the **CSA Commands** option in the **Safety** tab of the Communication Center of the Evaluation Suite to restore the four presets, and then reset the unit. The relevant screens are shown below.



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5 Bug Fixes

The following table lists all bugs and issues that were released as Known Issues in earlier releases, and were resolved during the current release project.

TT#	Description
9152	Unit should have sent Crash Report Event over SMS when GPRS was not available.
9257	Module #51 received with Message Initiator as "0" instead of "1".
9542	Short Trips with no fix during the trip generated Trip Eco score of '0'.
9543	Over Speeding Maneuver End event did not hold the event severity.
9547	When the uploading crash file was enabled and the crash events disabled, the unit should have saved the raw data and uploaded the crash raw data file.
9559	During Off Road maneuvers, the unit was resetting, causing irregular work mode.
9448	Memory overflow of Trips data file area in NVM caused the loss of the one trip.
9354	DFD ambient light sensing needed improving (controls DFD LEDs brightness).

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6 Known Issues

The following table summarizes the known issues which have been encountered during the applications and system tests:

#	Description	Comments/Workaround
	DFD feedback for off-road events does not support the three layer feedback that is available for other maneuver types.	Will be included in next release
	VIN is not populated in crash attributes.	
	If the FTP upload of a 'trip end' event fails, and a new trip starts before the attempted re-upload succeeds, the next FTP upload 'trip end' event will include both events.	No effect on unit's performance
	In rare cases, if the file FTP upload fails, the unit might send a burst of 'upload failure' events.	No effect on unit's performance

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