

FW V32c for Cello IQ Release Notes



Cellocator Division
Pointer Telocation Ltd.

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POINTER



FW V32c for Cello IQ

Release Notes



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1 Introduction

This document describes the changes which have been implemented in FW32c versus FW32a, and the upgrade process from FW32a to FW32c and from FW 32b to FW 32c. The information is intended for customers who have received Cello-IQ units for field trial or for evaluation and want to upgrade the unit FirmWare to FW32c.

This document provides complementary information to the Cello-IQ Release Notes which serves as the release notes source for the Cello-IQ. 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 FW32c are described in the What's New section, the upgrade process from FW32a (ob FW32b) to FW32c is described in the Upgrade procedures section.



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2 Content

The FW32c 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

- ◆ F0454_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ50
- ◆ F0455_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ40
- ◆ DFD_RC8595
- ◆ DFD_voice_files.rar (version 8997)

2.3 Firmware for upgrade from FW32b to FW32c

- ◆ F0454_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ50_for_F0448.csf
- ◆ F0455_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ40_for_F0449.csf

2.4 Firmware for upgrade from FW32a to FW32c

- ◆ F0454_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ50.csf
- ◆ F0455_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ40.csf

2.5 PL File

- ◆ hw_31_fw_32c_Cello-IQ40_V809.pl
- ◆ hw_31_fw_32c_Cello-IQ50_V809.pl

2.6 Supported Languages

The DFD supports the following languages:

- ◆ English
- ◆ Spanish
- ◆ French
- ◆ Russian
- ◆ Hebrew
- ◆ Morocco Arabic



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2.7 Software Utilities

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

- ◆ Evaluation Suite: Evaluation suite setup x64 ver 1_0_10.msi (64 bit)
- ◆ Evaluation Suite: Evaluation suite setup ver 1_0_10.msi (32 bits)
- ◆ Integration Package: Integration Package V2.1 [Full Package].rar

2.8 Documentation

- | | |
|--|------------------|
| ◆ Cello-IQ Release Notes | Version: 2.1 |
| ◆ FW32c for Cello-IQ Release Notes (this document) | Version: 1.0 |
| ◆ Cello-IQ Product Overview | Version: 2.4 |
| ◆ 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: 2.0.0.4 |
| ◆ Cellocator Wireless Communication Protocol | Version: 4.0.0.8 |
| ◆ Serial Interfaces Specifications | Version: 6.0.0.4 |
| ◆ Cellocator Integration Package Manual [Full Edition] | Version: 2.1 |



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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 Version

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

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

Firmware 32c (and 32b) Protocol Version is set to 1, while in FW32a version it is 0.



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1	System code, byte 1 – ASCII "C"							Prefix of message's frame																															
2	System code, byte 2 – ASCII "S"																																						
3	System code, byte 3 – ASCII "A"																																						
4	Length of message from byte 6 to CS																																						
5																																							
6	Message ID (Sequential numerator used by ACK mechanism. In replies contains the numerator of the command.)																																						
7																																							
8	Message Type / Initiator / Direction (0 for CSA event) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Initiator</td> <td style="width: 15%;">Direction</td> <td colspan="3" style="background-color: yellow;">Protocol Version</td> <td colspan="3">Message Type</td> </tr> <tr> <td>0 – reply or ACK</td> <td>0 – inbound</td> <td colspan="3" style="background-color: yellow;">1</td> <td colspan="3"></td> </tr> <tr> <td>1 – active</td> <td>1 – outbound</td> <td colspan="3" style="background-color: yellow;"></td> <td colspan="3"></td> </tr> <tr> <td>Bit 7</td> <td>Bit 6</td> <td style="background-color: yellow;">Bit 5</td> <td style="background-color: yellow;">Bit 4</td> <td style="background-color: yellow;">Bit 3</td> <td>Bit 2</td> <td>Bit 1</td> <td>Bit 0</td> </tr> </table>								Initiator	Direction	Protocol Version			Message Type			0 – reply or ACK	0 – inbound	1						1 – active	1 – outbound							Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1
Initiator	Direction	Protocol Version			Message Type																																		
0 – reply or ACK	0 – inbound	1																																					
1 – active	1 – outbound																																						
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0																																

3.9 Modified Default Presets

FW32c 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.

Byte	Description	Default										
N	Module Name 56 – Restore vehicle preset	56										
N+1	Length of module – 2	2										
N+2	Preset number <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Number</th> <th>Vehicle type</th> </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>	Number	Vehicle type	0	Private	1	Large Van	2	Light Truck/bus	3	Heavy Truck	0
Number	Vehicle type											
0	Private											
1	Large Van											
2	Light Truck/bus											
3	Heavy Truck											
N+3	Spare	0										

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 V32c.



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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.

Please note that the Evaluation Suite support only CSA Protocol Version 1 and consequently supports only Cello-IQ units with FW32c (or FW32b) and does not support units with FW32a.

3.11 Integration Package

The integration Package has been modified in order to support the CSA protocol. Only the Full Edition variant supports the CSA protocol. The DLL Edition and the Linker Package do not support the CSA protocol.



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4 Upgrade procedures

4.1 Upgrade FW from 32a

The upgrade from FW32a to FW32c defines also the Cello-IQ variant: Cello-IQ 40 or Cello-IQ50. Please note that once the unit is upgraded and the variant is set the unit cannot be changed from Cello-IQ 50 to 40 or vice versa.

To upgrade 32a to 32c and set the variant to Cello-IQ 40, the file F0455_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ40.csf should be used

To upgrade 32a to 32c and set the variant to Cello-IQ 50, the file F0454_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ50.csf should be used.

4.2 Upgrade FW from 32b

To upgrade Cello-IQ 40 from FW32b to FW32c, the file F0455_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ40_for_F0449.csf should be used.

To upgrade Cello-IQ 50 from 32b to 32c, the file F0454_PCelloHW31_Telit3-Auto_STM32F103RDT6_S8192_32c_CelloIQ40_for_F0448.csf should be used.

4.3 FW Upgrade Instructions

The upgrade requires performing the following steps:

1. Install the new Evaluation Suite provided with the V32c package. This is mandatory as FW32c integrates only with the Evaluation Suite.
2. Connect the unit to Communication Center and flash the unit with the appropriate upgrade file as explained in previous sections.
3. Download 32c PL to unit (do not use the memory map option from former PL) and reset the unit.
4. Connect unit again to the Communication Center, Select the CSA Commands option in the Safety tab and send the following commands:
 - Module #19 - Erase accident data
 - Module #18 - Delete all files other than EDR files
 - Module #18 - Erase unsent CSA events
 - Module #56 - Restore Preset Command / Respond (according to vehicle type)
 - Module #20 - Leave calibration command.

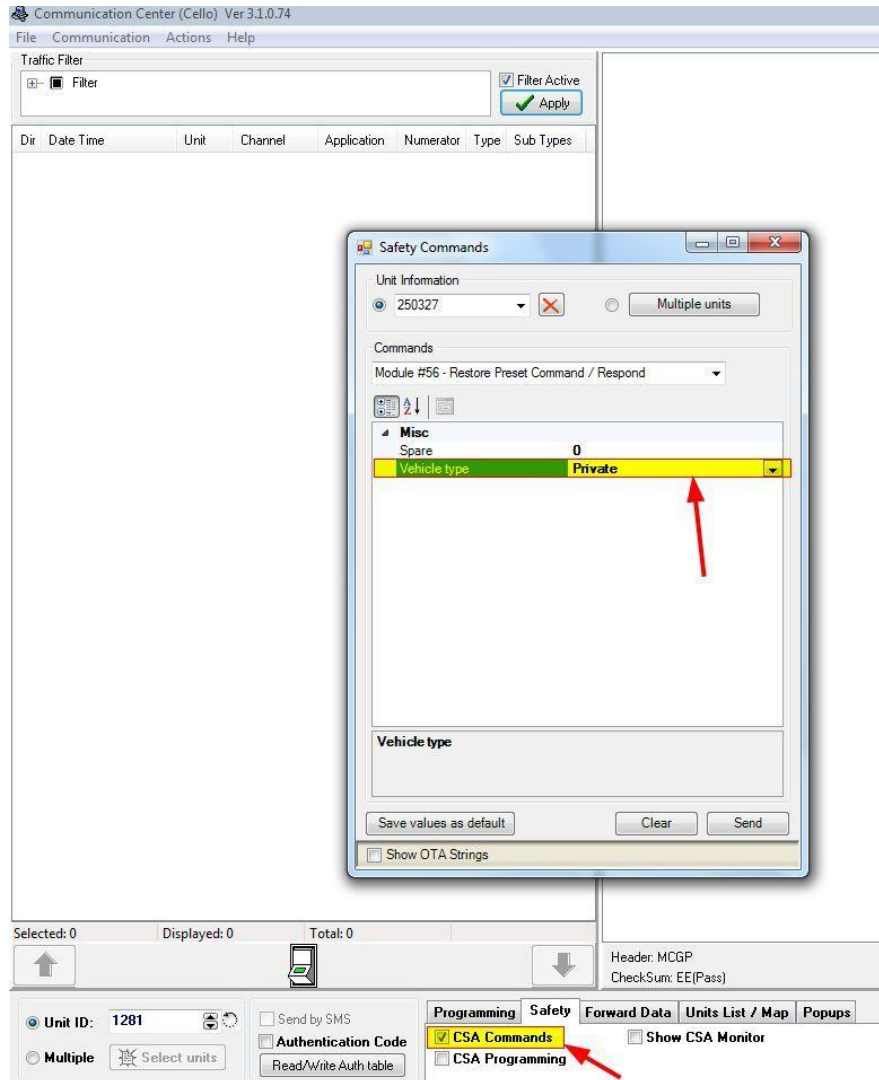
Validate that an acknowledgement is received after each command.



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The screen for **Module #56 - Restore Preset Command / Respond** is shown below.

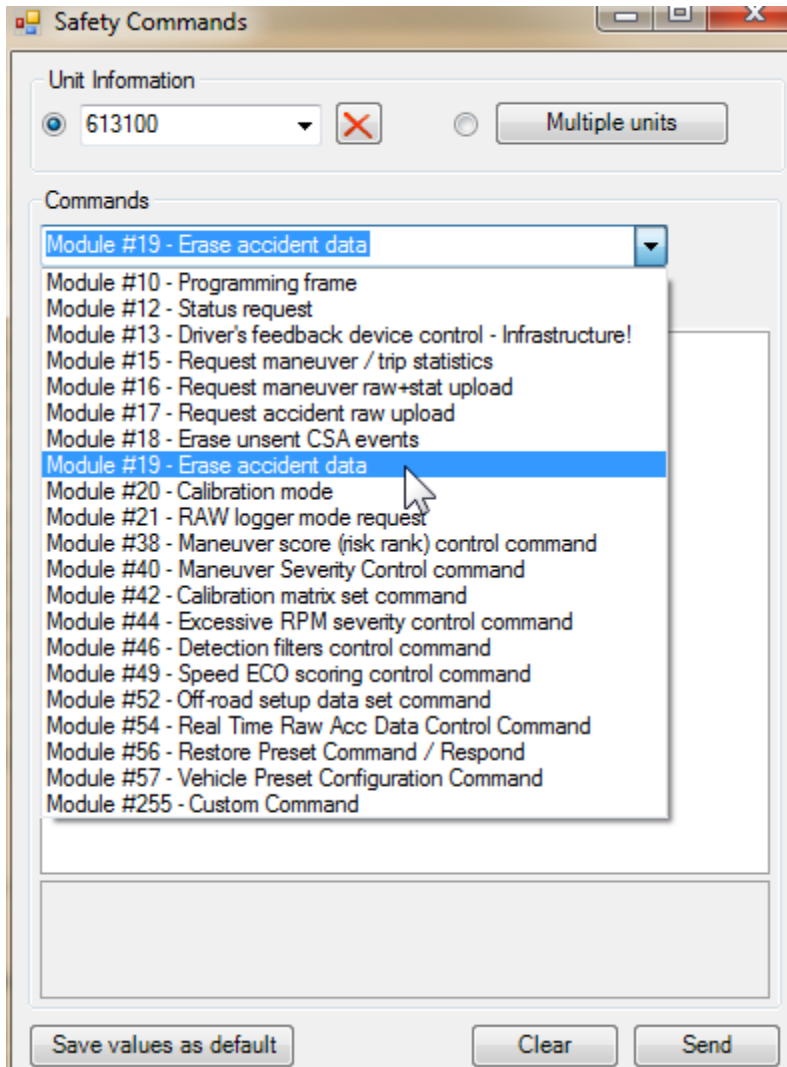




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The screen for **Module #19 - Erase accident data** is shown below.



4.4 Upgrade integration package to V2.1

In order to upgrade the integration package to V2.1 you have to remove the existing application and to install the V2.1 version.

Please note that integration package with version older than 2.0 does not support the CSA protocol at all.

Integrators using "Cellocator Integration Package [Full Edition] v2.0" should be aware that after units are upgraded to Fw32c some protocol modules will be mishandled till the server is upgraded to "Cellocator Integration Package [Full Edition] v2.1"



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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).
9723	In rare cases, if the file FTP upload fails, the unit might send a burst of 'upload failure' events.



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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