DRIVING EMBEDDED EXCELLENCE

ETAS

RTA-FBL Standard Port 1.0.0

Release Notes

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Contents

1 Introduction

This document contains the release note for RTA-FBL Standard V1.0 developed by ETAS.

1.1 Definitions and Abbreviations

Term/Abbreviation	Definition
AUTOSAR	AUTomotive Open System Architecture
BSW	Basic Software
CAN	Controller Area Network
CAN FD	CAN Flexible Datarate
Dcm	Diagnostic Communication Manager
DiD	Data iDentifier
ECU	Electronic Control Unit
FBL	Flash Bootloader
Fee	Flash EEPROM Emulation

1.2 References

Ref.	Description	Version
[1]	ISO 14229-1	2013
[2]	RTA-FBL_Standard_User_Manual	1.2

1.3 Conventions

The following typographical conventions are used in this document:

Choose **File →□Open**.	Menu commands are shown in boldface.
Click **OK**.	Buttons are shown in boldface.
Press <ENTER>.	Keyboard commands are shown in angled brackets.
The "Open File" dialog box is displayed.	Names of program windows, dialog boxes, fields, etc. are shown in quotation marks.
`Select the file setup.exe`	Text in drop-down lists on the screen, program code, as well as path- and file names are shown in the Courier font.
A *distribution* is always a one-dimensional table of sample points.	General emphasis and new terms are set in italics.

1.4 User Documentation

The RTA-FBL Standard user's documentation in PDF format can be found as part of the Documentation of this product after installation.

2 Product Definition

2.1 Functions at a glance

The scope of the project is to implement a Flash Bootloader not compliant to any OEM specification. A Flash Bootloader is a piece of software that resides in a permanent partition of the ECU's flash memory. The purpose of Flash Bootloader is to establish the ECU entry point upon power up or power on reset and to enable flash programming of application software and calibration data via a diagnostic protocol on some physical channel. The Flash Bootloader implements the startup sequence when the ECU is powered up or after power on reset. Flash programming of the ECU is required when application software or calibration data is missing or an update to these is required.

A detailed description of the Standard RTA-FBL functionalities and all the available UDS services is present in [2].

2.2 Safety-Relevance

The bootloader delivered in this release has been developed to a Quality-Management (QM) level. Therefore, the bootloader software is not certified to any safety level (including any ASIL-x level) and should not be used with any safety-relevant applications.

2.3 General Description

2.3.1 System Prerequisites

The following minimum system prerequisites have to be met:

Required Hardware	1,0 GHz PC 1 GB RAM DVD-ROM drive Network adapter Graphics with a resolution of at least 1024 x 768, 32 MB RAM
Required Operating System	Windows® 10
Required Free Disk Space	500 MB (not including the size for application data)

The following system prerequisites are recommended:

Recommended Hardware	2,0 GHz Dual-Core PC or equivalent 2 GB RAM DVD-ROM drive Network adapter Graphics with a resolution of 1280 x 1024, 128 MB RAM

Recommended Free Disk Space >2,0 GB

2.4 Delivery

The software is delivered with an installer. All software documentation is available in the Portable Document Format (PDF), which requires Adobe® Reader®. You will find the installation link in the Documentation directory on the installation. This document provides information relevant to installation and licensing of this product.

2.5 Target Environment Description

2.5.1 Hardware Target System and Components

This software delivery is target-independent. The dummy target provided with the software installation cannot be built. You can only use the generated code as a reference to explore how different parameters change the generated FBL instance.

2.5.2 Software Prerequisites/Dependencies

Software Name	**Version No.**	**Description**
Microsoft Windows	10	Software has been fully tested, including the provided GUI configuration tool in this version of Windows.

2.5.3 Hardware and Software Tools

You will need to have the following tools in order to generate the BSW that is generated as part of the FBL, as well as to configure and generate the FBL.

Tool Name	**Version**	**Description**
RTA-CAR	9.2	RTA-FBL configurator tool.
RTA-FBL – Standard Port	1.0.0	FBL generator tool.
.NET framework	3.5	This is required by the ETAS license management. In most cases, you will already have this installed on your machine.

2.6 Compile/Build Tools and Notes

2.6.1 Compiler/Build Tools

Your Standard FBL Target Guide will provide information on how to build an instance of the bootloader for your real target.

2.7 Integration Notes

Refer to the User Manual for notes for instruction on integration with application software. Your Standard FBL Target Guide may also provide additional integration information for your target.

3 Changes

This chapter describes changes with respect to the previous versions of this software.

3.1 What's New

This delivery, compared to the previous release, implements the bootloader update functionality.

This delivery can be used for production purpose.

3.2 Compatibility to Earlier Releases

A project created with RTA-FBL 0.9.0 can be migrated to RTA-FBL 1.0.0: it is necessary to properly update .arxml files of FBL module and change RTA Tool configuration setting to use the new generators.

Please keep in mind, however, that some files may not be generated with the new version to avoid overwriting user modifications done on the existing project.

3.3 Fixed Problems

Issue Tracking No.	Issue Name	Description and workarounds
RTAFBL-2187	Download with wrong CRC	If the wrong CRC is received with RID 0xF000, the next downloads will fail regardless of the CRC value. Workaround is to reset the FBL.
RTAFBL-2185	Transfer Exit Service length	UDS service $37 does not check the correct transferRequestParameterRecord
RTAFBL-2184	Wrong NRC	If an out of order Request Download service is sent during the reprogramming sequence, FBL replies with NRC 0x22 instead of NRC 0x24

3.4 Known Issue Reports

If a product issue develops, ETAS will prepare a Known Issue Report (KIR) and post it on the internet. The report includes information regarding the technical impact and status of the solution. Therefore, you must check the KIR applicable to this ETAS product version and follow the relevant instructions prior to operation of the product.

The Known Issue Report (KIR) can be found here:

http://www.etas.com/kir

3.5 Known Issues

N/A

3.6 Known Limitations

Limitation Tracking No.	**Limitation Name**	**Description and workarounds**
RTAFBL-1326	Suppressed responses persists across UDS requests	If a UDS request without sub function is received after SPRMIB was set to TRUE, the SPRMIB is managed as TRUE until a new UDS request with a sub function is received.
RTAFBL-1332	Single Frame functional requests	As result of a limitation in the types of frames supported by RTA-BSW, functional addresses should only be used for single-frame communication. All multi-frame communication should be done using physical Can Ids.
RTAFBL-1333	Request download addressAndLength-FormatIdentifier	As stated in [2], this parameter of the request download request must equal to 0x44. Due to a limitation of the BSW, values less than 0x44 but greater than 0x00 do not return a correct NRC.

4 Contact, Support and Problem Reporting

For details of your local sales office as well as your local technical support team and product hotlines, take a look at the ETAS website:

ETAS subsidiaries	www.etas.com/en/contact.php
ETAS RTA Technical Support Website	https://rtahotline.etas.com/
ETAS RTA Technical Support Email	rta.hotline@etas.com