

# Flash Bootloader

## Readme

CBD1800284

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Status	Released

## Contents

<b>1</b>	<b>Introduction.....</b>	<b>3</b>
<b>2</b>	<b>Software Tools .....</b>	<b>4</b>
<b>3</b>	<b>Documentation .....</b>	<b>5</b>
<b>4</b>	<b>Delivery Log.....</b>	<b>6</b>
<b>5</b>	<b>Build .....</b>	<b>7</b>
5.1	Compiler and Linker Options.....	7
5.2	Compiler Warnings.....	7
<b>6</b>	<b>Bootloader Setup.....</b>	<b>8</b>
6.1	DaVinci Configurator .....	8
6.2	User Configuration File .....	8
<b>7</b>	<b>Demonstration Project .....</b>	<b>9</b>
7.1	Build Demonstration Bootloader/ Application.....	9
7.2	Memory Map .....	9
<b>8</b>	<b>Known Issues &amp; Restrictions.....</b>	<b>10</b>
8.1	Beta Delivery Restrictions .....	10
<b>9</b>	<b>Contact.....</b>	<b>11</b>

## 1 Introduction

This document contains project specific information, which cannot be found in any other documentation, like special information to setup the project (if necessary), hints for Demos, restrictions and limitations, common pitfalls and justifications for observed compiler warning and changed project details (i.e. compiler options).

This document can restrict descriptions in other documents and contain latest warnings and hints.

This delivery contains a FBL\_FCA\_SLP5 specific bootloader that complies with the OEM flashing specification and flashing sequence.



### Caution

We have configured the software and programs in accordance with your specifications in the questionnaire. Whereas the programs support other configurations than the one specified in your questionnaire, Vector's release of the programs delivered to your company is expressly restricted to the configuration you have specified in the questionnaire.

## 2 Software Tools

The following Vector tools are included in your Flash Bootloader package.

Program	Description
DaVinci Configurator	Code generation tool which auto generates parameter files for the Flash Bootloader based on customer input.
vFlash Template	Flash tool which is capable of downloading application as well as calibration data to an ECU running the Flash Bootloader. The tool itself is not a standard part of the delivery and must be purchased separately. The delivery comes with an OEM specific template to be used with the vFlash tool.
Hexview	Viewer and editor of container files. May be used to edit & create required containers manually. A script solution that generates the required header formats automatically will be provided.

Table 2-1 Software tools needed to configure and run the bootloader.

The following Vector tools are recommended but not part of the delivery:

Program	Description
vFlash	Flash tool which is capable of downloading application as well as calibration data to an ECU running the Flash Bootloader. This tool offers OEM container independent download of raw data files (binaries or hex files instead of i.e. PDX containers), which makes it very helpful setting up and testing the bootloader.
CANoe	This tool can be used for logging bus traces (maybe requested if you need support) over residual bus simulations until testing.
ODX Studio	This tool can be useful for flashing ODX based containers based on OEM requirements.
CANape	This tool is used for XCP based downloads.

Table 2-2 Recommended Software tools

### 3 Documentation

The following documentation is included in this delivery:

**Note**

Documentation concerning the Flash Bootloader can be found in the **Doc** folder of your delivery. Note that the Hexview reference manual is found in the Misc/Hexview directory.

Document	Content
Readme_CBD1800284.pdf	Latest information for your project collected by the integrator who setup and tested your delivery.
IssueReport_CBD1800284.pdf	The issue report for the delivery. Please check the file carefully and contact Vector if one of these issues needs to be fixed.
Legal documents	Legal documents dependent on the sales site.

## 4 Delivery Log

Delivery Number	Date	Details / Updates
D00	2018-08-03	Beta Delivery

## 5 Build

### 5.1 Compiler and Linker Options

The Compiler and Linker Options used in this Bootloader can be found in [DeliveryDescription\\_CBD1800284.html](#).

### 5.2 Compiler Warnings

Warning	Module(s)	Line(s)	Justification
variable "rxBuffer" was set but never used	Fbl_cw.c	287	Used in some configurations

## 6 Bootloader Setup

### 6.1 DaVinci Configurator

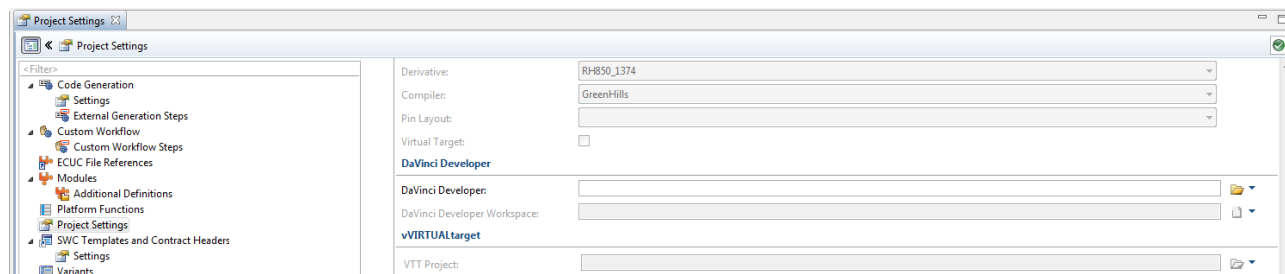


Figure 6-1 Configuration Setup

In this configuration tool you'll find the same information by opening the Project Settings view under Project Settings as shown in the following picture.

### 6.2 User Configuration File

A user configuration file is required to properly setup certain parts of the bootloader.

The following configurations are required for configuring the bootloader.

Required Macro	Definition

Table 6-1 User Config File Macros



#### Note

An example user configuration file is included with the bootloader demo (`.\Demo\DemoFbl\Config\user_config.cfg`)

### 6.3 Flash Library

The Renesas Flash Library must be added to the `.\BSW\Flash` folder in order to compile the flash driver files.

### 6.4 MCAL

A Third Party MCAL must be added to the `.\external` folder in order to compile the bootloader.



## 7 Demonstration Project



### Caution

The demo projects were setup on a local ECU. The configurations as well as the code in the user callback functions are adapted to handle the local setups. Please check configuration and user callbacks carefully before working with the demo projects.

The files from \_Template folder do not contain the hardware initialization routines. Please refer to the Demo project to get the bootloader running.

### 7.1 Build Demonstration Bootloader/ Application

This delivery comes with a demo for the bootloader.

The demo comes along with a make support. This system can be used to compile the demo with just a few modifications on your computer.

Please follow these steps to recompile the demonstration projects:

- ▶ Adapt the compiler path. This is done in the file "Demo/DemoFbl/Appl/Makefile":  
`COMPILER_BASE = <base folder of your compiler-installation>`



### Note

The compiler path should not have any spaces. If your compiler path is installed in a directory that includes spaces, the entire path must be enclosed in quotes.

- ▶ Run "m.bat". First, a dependency list is generated. If this was successful, the compile and link process is started.
- ▶ Try "m help" to see a list of all available options of the delivered Make Support.

### 7.2 Memory Map

Please reference the linker file provided in the Demo/DemoFbl/Appl directory for an example.

## 8 Known Issues & Restrictions

See IssueReport\_CBD1800284.pdf.

### 8.1 Beta Delivery Restrictions

Beta includes a demo flash bootloader and bootmanager. This version of the bootloader has not been tested for the jump from application to the bootloader.



#### Caution

This is a beta development delivery. This delivery is not fully tested and may have the following limitations:

- The delivery content may change between the beta and final delivery. Components and versions may be different between the two.
- The delivery may contain only a subset of the features and components ordered compared to the final delivery.

## 9 Contact

Any questions concerning the Flash Bootloader package should be sent to the following email address:

[support@vector.com](mailto:support@vector.com)

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