Flash Bootloader Delivery Information

1 General

Target Processor: TMS570LS0714PGEQQ1
Compiler Software Version: TI CCS v4.9.5
OEM: GM
Software License Package: SLP5

2 Software Components

The following components can be found in found the FBL folder of your delivery. Do not modify the contents of these files without prior written permission from Vector (modification of these files will void your warranty).

Component	Description
fbl_diag	Module implements diagnosis service functions. The implementation is specific to requirements defined the OEM.
fbl_flio	Flash I/O routines provide interface to flash driver
fbl_hdr	Secure Fbl header parsing module
fbl_hw	Hardware dependent code (CAN communication and H/W Timer)
fbl_main	Main module with main loop
fbl_mem	Library containing common functionality for memory programming
fbl_mio	General purpose API to device -drivers (MIO == Memory Input/Output)
fbl_tp	Transport Layer – Combines (and splits) diagnostics requests (and responses) across multiple CAN message frames.
fbl_vect	FBL vector table – defines all Interrupt Service vectors (usually this cannot be modified
fbl_wd	Watchdog support module

The following components must be adapted by the customer and are located in the FBL_Template directory of your delivery.

Component	Description
_applvect _fbl_applvect	Application vector table – Jump table to all Interrupt Service Routines in Operating Software.
_fbl_ap	Hardware specific callback routines
_fbl_apdi	Application specific diagnostic routines
_fbl_apnv	Nonvolatile memory access routines, e.g. for presence-pattern handling.
_fbl_apwd	Application specific watchdog routines

3 Documentation

Documentation concerning the Flash Bootloader can be found in the _Doc folder of your delivery.

File	Description
AN-ISC-2-1011_CANfblGM_CALL_From_CANdesc.pdf	Calling the Bootloader from applications using CANdesc.
TechnicalReference_FBL_GM_CMPR.pdf	Technical Reference for GM compression interface
TechnicalReference_FBL_TMSx70.pdf	Hardware specific Flash Bootloader reference guide
TechnicalReference_FBL_GM_SLP5.pdf	Technical Reference for the Flash Bootloader
TechnicalReference_FBL_GM_Containers.pdf	Technical Reference describing downloadable container file creation
UserManual_FlashBootloader.pdf	Getting started with the Flash Bootloader
TechnicalReference_SecurityModule.pdf	Technical Reference for the Security Module Software
TechnicalReference_NvWrapper.pdf	Technical Reference for the non-volatile wrapper component
TestReport.pdf	Flash Bootloader Integration Test Report.
UserManual_FlashBootloader.pdf	Getting started with the Flash Bootloader
DeliveryDescription_CBD1400501.html	Version information for delivered components

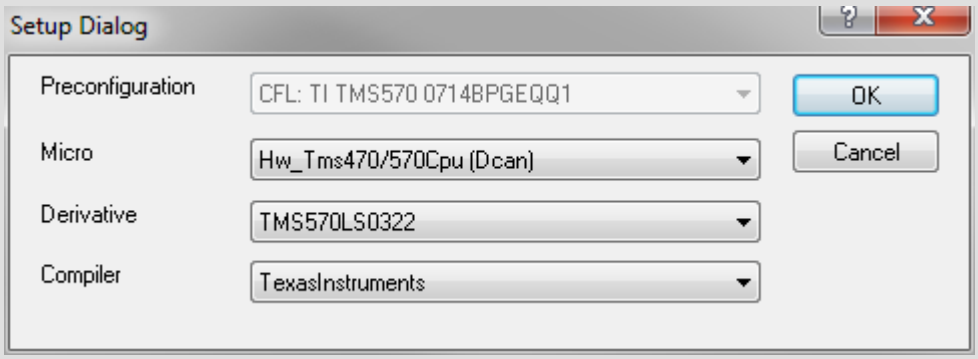
4 Software Tools

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

Name	Description
GENy	Code generation tool which auto generates parameter files for the Flash Bootloader based on customer input.
vFlash	Flash tool which is capable of downloading application as well as calibration data to an ECU running the Flash Bootloader.
Hexview	Viewer and editor of container files. May be used to edit & create required containers.

GENy configuration

When creating your own GENy configuration please use the following settings.



5 Build

The Bootloader supports the Texas Instruments compiler version 4.9.5 of the command line tools.

Compiler and Linker Options

The Compiler and Linker Options used in this Bootloader can be found in DeliveryDescription_CBD1400501.html.

Compiler Warnings

Vector develops software that leads to as few compiler warnings as possible. It is unfortunately impossible to write platform-independent software that is functional on small 8-bit micro-controllers and powerful 32-bit micro-controllers and does not lead to compiler warnings. Changes to reduce the number of warnings for one compiler sometimes increase the number of warnings for another compiler.

The following compiler warnings occurred during integration and do no harm:

"../../../demo/demofbl/appl/include/MemMap.h", line 182: warning: pragma can only be applied to a file level symbol, not 'fblStartMagicFlag'

"../../../bsw/fbl/fbl_flio.h", line 95: remark: zero used for undefined preprocessing identifier

"../../../demo/demofbl/appl/include/MemMap.h", line 200: warning: pragma DATA_SECTION can only be applied to a file level symbol definition, not "eepData" (declared at line 154 of "..\..\..\bsw\eep\EepIO.h")

"../../../BSW/FBL/fbl_hw.c", line 161: warning: nonstandard conversion between pointer to function and pointer to data

"../../../BSW/FBL/fbl_mem.c", line 1525: remark: controlling expression is constant

Demo Application

The demo application DemoAppl is in principle a flash Bootloader with a few modifications and different linkage than the DemoFbl. The jump from the application into the flash Bootloader is prepared and executed in fbl_jmpToBoot.c.

Please check TechnicalReference_FBL_GM_Containers.pdf for detailed information on creating downloadable container files.

6 Known Issues

See IssueReport_CBD1400501.pdf.

7 Contact

Any questions concerning the Flash Bootloader package should be sent to the following e-mail address.

fbl_support@us.vector.com

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