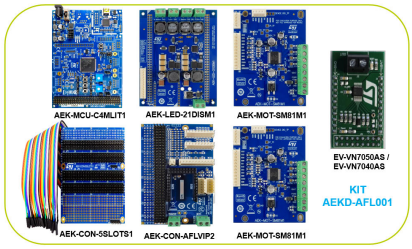
STSW-AFL001

Data brief

Flash image for Adaptive Front Light Demo for SPC58EC80 microcontroller



AutoDevKit

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SPC5 Studio

Features

- MCU flash image of adaptive front light demo for SPC58EC80 automotive microcontroller
- Demo code runs a continuous loop that actuates all the loads in the AEKD-AFLLIGHT1 kit:
  - four LED strings
  - two stepper motors
  - one fan
- Each actuation step includes a final CAN message to identify the performed action to the BMC/Cluster ECU
- The source code is available in SPC5-STUDIO development environment with STSW-AUTODEVKIT plugin
- Compatible with AEK-MCU-C4MLIT1MCU board, available individually or in following kits:
  - AEKD-AFLPANEL1 adaptive front lighting kit assembly
  - AEKD-AFL001 adaptive front lighting set of boards

  Part of the AutoDevKit initiative

Product summary	
AutoDevKit adaptive front lighting kit	AEKD-AFL001
AutoDevKit adaptive front lighting kit firmware	STSW-AFL001
MCU discovery board for SPC5 Chorus 4M automotive microcontroller with CAN transceivers	AEK-MCU-C4MLIT1
AutoDevKit stepper motor driver board for automotive applications	AEK-MOT-SM81M1
AutoDevKit digitally controlled LED driver board	AEK-LED-21DISM1
5 slot AutoDevKit connector board	AEK-CON-5SLOTS1
AutoDevKit connector board	AEK-CON-AFLVIP2

Description

The STSW-AFL001 software for the SPC58EC80 automotive MCU contains executable code for a demonstration sequence of typical actions in an adaptive front light application based on the AutoDevKit initiative.

The code is packaged as a Flash image that can be directly downloaded on the microcontroller using the SPC5-UDESTK software available for download from the PLS website. The UDE tool, which also includes a very powerful debugger, requires a license for professional use, but can be used free of charge for limited evaluation purposes.

Control boards not belonging to the AutoDevKit initiative may require an external JTAG debugger, such as the SPC5-UDESTK debugger available from the ST website.

The code actuates typical loads in an AFL scenario in a continuous loop through dedicated LED (AEK-LED-21DISM1), motor control (AEK-MOT-SM81M1) and fan switch (EV-VN7050AS) functional boards.

To better simulate the behavior of an adaptive light ECU, the MCU sends a corresponding CAN message after every actuation performed in the demonstration sequence. The CAN messages only consist of simple payloads for each actuation performed to demonstrate the functionality and timing constraints of the transmissions.

The code is built using components belonging to the AutoDevKit library: there is a specific component in SPC5-STUDIO for each board, which can be configured to the peripherals of the chosen microcontroller, and a simple API is provided to simplify control of the specific functional boards.

To access the source code, download and install SPC5-STUDIO and the STSW-AUTODEVKIT AutoDevKit plugin extension.

Product summary	
code generator, quick resource configurator and Eclipse development environment for SPC5 MCUs	SPC5-STUDIO
Applications	Adaptive front lighting systems for vehicles Car chassis lighting

Revision history

Table 1. Document revision history

Date	Version	Changes
01-Oct-2019	1	Initial release.