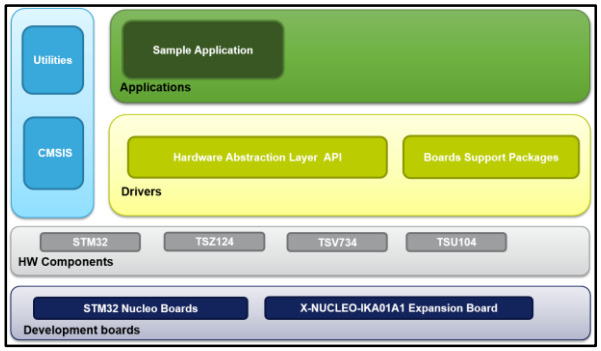
X-CUBE-ANALOG1

Multifunctional software expansion for STM32Cube

Data brief



Features

- Complete middleware to build applications such as instrumentation amplifier, current sensing (TSZ124), LED driver (TSV734), photodiode/UV and window comparator (TSU104)
- Easy portability across different MCU families, thanks to STM32Cube
- Transmit real-time voltage readings to a PC using serial communication
- Free, user-friendly license terms
- Example implementation available for X-NUCLEO-IKA01A1 expansion board plugged to a NUCLEO-F401RE, NUCLEO-F103RB, NUCLEO-L053R8 or NUCLEO-L476RG board

Description

The X-CUBE-ANALOG1 is an expansion software package for STM32Cube. The software runs on the STM32 microcontroller and is used for reading and configuring various analog functions such as instrumentation amplifier, current sensing, LED driver, photodiode/UV and window comparator operational amplifier drivers using the TSZ124, TSV734 and TSU104 devices running on an STM32 microcontroller.

The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. It is compatible with the X-NUCLEO-IKA01A1 expansion board plugged to a NUCLEO-F401RE, NUCLEO-F103RB, NUCLEO-L053R8 or NUCLEO-L476RG board. The software comes with an example implementation to aid comprehension.

What is STM32Cube?

STMCube™ represents and original initiative by STMicroelectronics to ease developers' life by reducing development effort, time and cost. STM32Cube covers the STM32 portfolio.

Version 1.x of STM32Cube includes:

- The STM32CubeMX, a graphical software configuration tool that allows the generation of C initialization code using graphical wizards.
- A comprehensive embedded software platform, delivered per series (such as STM32CubeF4 for the STM32F4 series)
  - The STM32Cube HAL, an STM32 abstraction layer embedded software, ensuring maximized portability across the STM32 portfolio
  - A consistent set of middleware components such as RTOS, USB, TCP/IP, graphics
  - All embedded software utilities, including a full set of examples

How does this software complement STM32Cube?

The proposed software is based on the STM32CubeHAL, the hardware abstraction layer for the STM32 microcontroller. The package extends STM32Cube by providing a board support package (BSP) for the analog expansion board.

The drivers abstract low-level details of the hardware and allow the middleware components and applications to access analog data in a hardware-independent manner.

The package also includes a sample application that developers can use to start experimenting with the code. The sample application enables analog data logging on a PC through the serial communication driver.

1 Revision history

Table 1: Document revision history

Date	Version	Changes
01-Oct-2015	1	Initial release.
23-May-2016	2	Minor text edits Updated cover page features and description

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