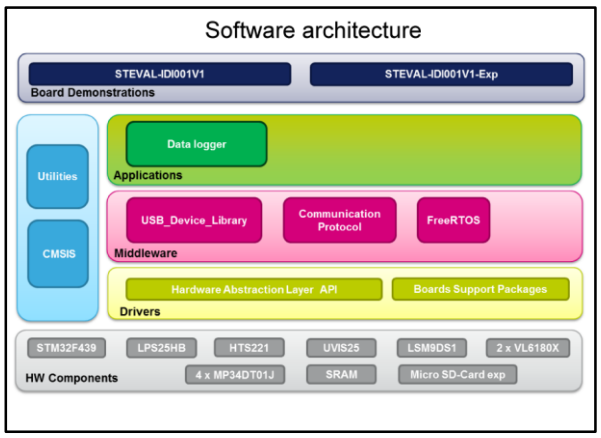
STSW-IDI001

Software developer tool for sensor hub applications

Data brief



Description

The software gathers drivers for a wide range of ST sensors. It is built on the STM32-Cube framework which makes it easy to expand and adapt the software for specific applications.

The package comes with a data logger application with two major features: sensor data and multichannel audio streaming via USB (Virtual COM Port + AudioIN composite class), and sensor data storage on an SD card.

Features

- Compatible with STM32-Cube framework
- Data logger example application
- Complete middleware to easily communicate with a client application using a proprietary protocol
- Audio + CDC class USB driver to allow the device to be recognized as a standard USB microphone and a Virtual COM port
- Third party real-time operating system for multi-tasking applications
- Third party FAT file system module for small embedded systems
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms

1 Detailed description

What is STM32Cube?

STMCube™ represents an STMicroelectronics' initiative to make developers' lives easier by reducing development effort, time and cost. STM32Cube covers STM32 portfolio.

STM32Cube version 1.x includes:

- The STM32CubeMX, a graphical software configuration tool that allows the generation of C initialization code using graphical wizards.
- A comprehensive embedded software platform specific to each series (such as STM32CubeF4 for the STM32F4 series), which includes:
  - the STM32Cube HAL embedded abstraction-layer software, ensuring maximized portability across the STM32 portfolio
  - a consistent set of middleware components such as RTOS, USB, TCP/IP and graphics
  - all embedded software utilities with a full set of examples

How does this software complement STM32Cube?

This software is based on the STM32CubeHAL hardware abstraction layer for the STM32 microcontroller. The package extends STM32Cube by providing a board support package (BSP) for the STEVAL-IDI001V1 board and some middleware components for serial communication with a PC.

Interaction with all the sensors on board is guaranteed by the abstract low-level drivers that allow developers to communicate with it in a hardware-independent manner.

The package also includes a data logger application that the developer can use to start experimenting with the code. This application makes available to the user a tool to acquire data from different types of sensors. The nature of the acquired data provides the possibility to implement a wide variety of algorithms.

The USB device audio class in the middleware allows the device to be recognized as a standard multi-channel USB microphone. For this purpose, a utility for Windows PC is required in order to record and save the audio stream. Any freeware or commercial audio recording software may be used.

2 Revision history

Table 1: Document revision history

Date	Version	Changes
23-Nov-2015	1	Initial release.

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.