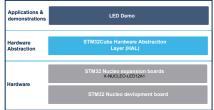


## LED driver software expansion for STM32Cube





#### **Features**

- Driver software expansion for X-NUCLEO-LED12A1 expansion board based on LED1202
- Normal and GUI modes
- In normal mode, each LED starts from the minimum intensity to reach the maximum intensity
- In GUI mode, LED intensity can be controlled via GUI
- Sample implementation available for X-NUCLEO-LED12A1 when connected to a NUCLEO-L073RZ, NUCLEO-L476RG or NUCLEO-F401RE development board
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms

### **Description**

The X-CUBE-LED12A1 expansion software package for STM32Cube runs on the STM32 and includes drivers that recognize the LED1202 LED Driver IC.

The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers.

The software comes with a sample implementation of the drivers running on the X-NUCLEO-LED12A1 expansion board when connected to a NUCLEO-L073RZ, NUCLEO-L476RG or NUCLEO-F401RE development board.

The X-CUBE-LED12A1 lets you easily create your own application using the driver implemented.

Product summary		
LED driver software expansion for STM32Cube	X-CUBE-LED12A1	
LED driver expansion board based on LED1202 device for STM32 Nucleo	X-NUCLEO- LED12A1	
12-channel low quiescent current LED driver	LED1202	
Applications	LED Lighting Smart Home	

**Detailed description** 



## 1.1 What is STM32Cube?

**Detailed description** 

STM32Cube is a combination of a full set of PC software tools and embedded software blocks running on STM32 microcontrollers and microprocessors:

- STM32CubeMX configuration tool for any STM32 device; it generates initialization C code for Cortex-M cores and the Linux device tree source for Cortex-A cores
- STM32CubeIDE integrated development environment based on open-source solutions like Eclipse or the GNU C/C++ toolchain, including compilation reporting features and advanced debug features
- STM32CubeProgrammer programming tool that provides an easy-to-use and efficient environment for reading, writing and verifying devices and external memories via a wide variety of available communication media (JTAG, SWD, UART, USB DFU, I2C, SPI, CAN, etc.)
- STM32CubeMonitor family of tools (STM32CubeMonRF, STM32CubeMonUCPD, STM32CubeMonPwr) to help developers customize their applications in real-time
- STM32Cube MCU and MPU packages specific to each STM32 series with drivers (HAL, low-layer, etc.), middleware, and lots of example code used in a wide variety of real-world use cases
- STM32Cube expansion packages for application-oriented solutions.

### 1.2 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 X-NUCLEO-LED12A1 expansion board.

The drivers abstract low-level details of the hardware and allow the applications to access the LED1202 mounted on the X-NUCLEO-LED12A1.

The package includes a sample application that the developer can use to start experimenting with the code. The sample application works in two modes: normal mode and GUI mode.

In normal mode, the demo runs on a NUCLEO-L073RZ, NUCLEO-L476RG, or NUCLEO-F401RE development board plus the X-NUCLEO-LED12A1 expansion board and the panel board.

In GUI mode, the demo runs on the same hardware and lets you control the LED intensity via GUI.

For this purpose, the package also includes a utility for Windows PC. This utility allows you to choose among several options available on the expansion board.

You can find this PC GUI (downloadable from the STSW-LED1202GUI web page) in the utility folder of the X-CUBE-LED12A1 package.

DB4572 - Rev 2 page 2/4



# **Revision history**

**Table 1. Document revision history** 

Date	Revision	Changes
04-Oct-2021	1	Initial release.
08-Nov-2021	2	Added references to the STSW-LED1202GUI PC GUI.

DB4572 - Rev 2 page 3/4



#### **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. For additional information about ST trademarks, please refer to www.st.com/trademarks. 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.

© 2021 STMicroelectronics - All rights reserved

DB4572 - Rev 2 page 4/4