

Implementing transmitters and receivers for infrared remote control protocols, software expansion for STM32Cube

IRRC signal detection and generation, menu control using Eval board LCD		
Application		
IRTIM	TIM	Other
HAL drivers		
STM32G0 Series	STM32F0 Series	STM32F3 Series
Hardware		
STM32G081B_EVAL	STM32373C_EVAL	
STM32072B_EVAL	STM32303C_EVAL ⁽¹⁾	
Boards for demonstrations		

(1) Obsolete. Only for legacy.

Features

- RC5 protocol
- SIRC protocol
- Transmitter
- Receiver

Description

The purpose of this example (X-CUBE-IRREMOTE) is to provide a generic solution for implementing an IR transmitter (a remote control device) and receiver using the timers available on the microcontrollers of the STM32F0 Series, STM32F3 Series, and STM32G0 Series. The example implements RC5 and SIRC protocols on selected evaluation boards. Implementation is designed to be easily reconfigurable for other STM32 microcontroller series, boards and protocols.

Product status link

X-CUBE-IRREMOTE



1 General information

The X-CUBE-IRREMOTE Expansion Package runs on STM32 microcontrollers based on Arm® cores.

Note: Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.



1.1 Ordering information

X-CUBE-IRREMOTE is available for free download from the www.st.com website.

1.2 What is STM32Cube?

STM32Cube is an STMicroelectronics original initiative to significantly improve designer's productivity by reducing development effort, time and cost. STM32Cube covers the whole STM32 portfolio.

STM32Cube includes:

- A set of user-friendly software development tools to cover project development from conception to realization, among which are:
 - STM32CubeMX, a graphical software configuration tool that allows the automatic generation of C initialization code using graphical wizards
 - STM32CubeIDE, an all-in-one development tool with peripheral configuration, code generation, code compilation, and debug features
 - STM32CubeProgrammer (STM32CubeProg), a programming tool available in graphical and command-line versions
 - STM32CubeMonitor (STM32CubeMonitor, STM32CubeMonPwr, STM32CubeMonRF, STM32CubeMonUCPD) powerful monitoring tools to fine-tune the behavior and performance of STM32 applications in real-time
- STM32Cube MCU and MPU Packages, comprehensive embedded-software platforms specific to each microcontroller and microprocessor series (such as STM32CubeG0 for the STM32G0 Series), which include:
 - STM32Cube hardware abstraction layer (HAL), ensuring maximized portability across the STM32 portfolio
 - STM32Cube low-layer APIs, ensuring the best performance and footprints with a high degree of user control over the HW
 - A consistent set of middleware components such as RTOS, USB Host and Device, USB PD, OpenBootloader and FAT file system
 - All embedded software utilities with full sets of peripheral and applicative examples
- STM32Cube Expansion Packages, which contain embedded software components that complement the functionalities of the STM32Cube MCU and MPU Packages with:
 - Middleware extensions and applicative layers
 - Examples running on some specific STMicroelectronics development boards

2 License

X-CUBE-IRREMOTE is delivered under the *Mix Ultimate Liberty+OSS+3rd-party V1* software license agreement (SLA0048).

The software components provided in this package come with different license schemes as shown in [Table 1](#).

Table 1. Software component license agreements

Software component	Owner	License
Board support package (BSP)	STMicroelectronics	BSD-3-Clause
Cortex [®] -M CMSIS	Arm Limited	Apache License 2.0
HAL STM32G0, STM32F0, STM32F3	STMicroelectronics	BSD-3-Clause
Project examples	STMicroelectronics	Ultimate Liberty (source release)

Revision history

Table 2. Document revision history

Date	Version	Changes
30-Mar-2016	1	Initial release.
14-Oct-2020	2	Extended document scope to the STM32G0 Series and removed STM32L4 Series support: updated Description . Added Ordering information , What is STM32Cube? and License .

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