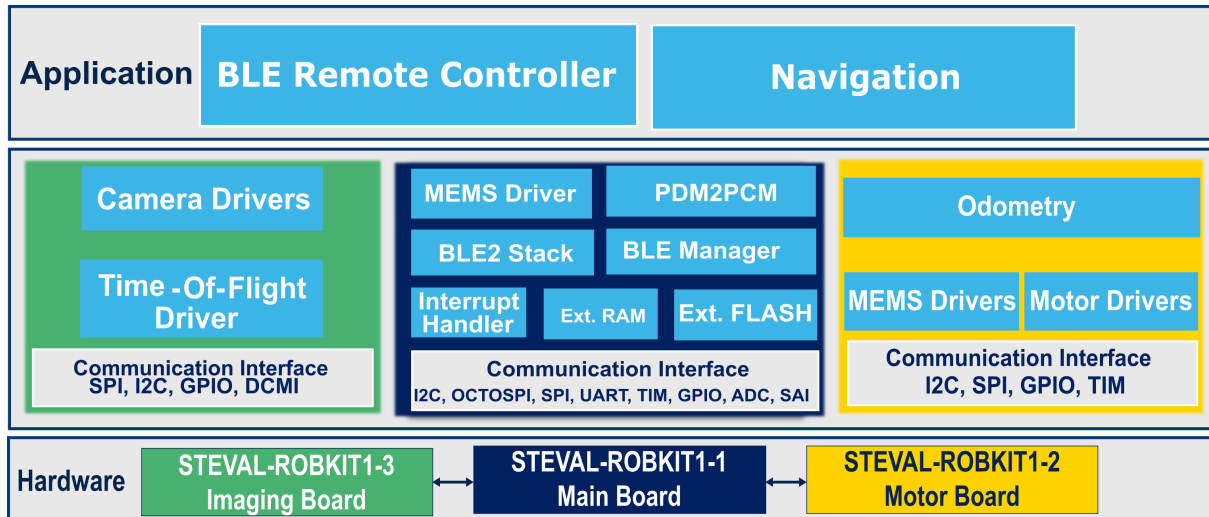


## Firmware for STEVAL-ROBKIT1 evaluation board for Robotics applications



Product status link

[STSW-ROBKIT1](#)

### Features

- Ready examples for robotics application development
- Independent firmware for the STEVAL-ROBKIT1-1 (Main board) and STEVAL-ROBKIT1-2 (motor board)
- Customized protocol for seamless communication between the boards of the kit
- Odometry for precise navigation
- DCMI interface for efficient and versatile camera integration supporting various image resolutions
- 8x8 multizone Time-of-Flight sensor data for various applications like navigation and Edge/Cliff detection
- External flash and PSRAM for efficient data management
- Monitor and control the robotic kit through a dedicated mobile application, ST robotic App
- The software package supports features of the ST Robotic App, such as Bluetooth® Low Energy remote control for managing the robot's movements and operations. Additionally, the app enables users to monitor sensor data through real time plotting
- LEDs and buzzer beep for error alerts
- Workspace support for IAR, STM32CubeIDE, and Keil®
- Capability for seamless reconfiguration of the peripherals using the .ioc file for STM32CubeMX, simplifying the development process for the users

## Description

The **STSW-ROBKIT1** is a comprehensive software package designed for **STEVAL-ROBKIT1** robotics evaluation kit. This ready-to-use programmable platform for the development of robotic applications.

The **STSW-ROBKIT1** software package includes two modular firmware components. One is designed for the main board, which operates at a CPU clock frequency of up to 550MHz, enabling high-performance processing. The other is tailored for the motor control board, ensuring precise motor operations.

The firmware fully utilizes the kit's capabilities by leveraging data from high-quality motion sensors, including a 6-axis accelerometer and gyroscope, a 3-axis magnetometer, a digital microphone, a FlightSense sensor, and a monochrome camera, all integrated for robotic applications.

The DCMI mode is employed for the monochrome camera, allowing efficient image capture and processing.

The kit's connectivity is enhanced using the ST Robotic App, which interfaces with the kit through a Bluetooth® Low Energy processor module. The user application interfaces directly to the host layer of the Bluetooth® Low Energy protocol stack, ensuring seamless communication.

Precise control of the kit's movement is achieved using PWM and encoder signals, enabling accurate and reliable motion control.

## Revision history

**Table 1. Document revision history**

Date	Revision	Changes
05-Dec-2024	1	Initial release.

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