Linux driver for the VL53L4ED Time-of-Flight high accuracy proximity sensor with extended temperature range

Features

- Linux driver
- Based on the VL53L4ED ultra lite driver (ULD)

Description

The STSW-IMG046 contains a driver running under Linux. It is based on the VL53L4ED ULD. The user integrates the Linux device driver into the Linux as a specific implementation. Then, the Linux device driver implements the sequencing of actions, execution/threading of models, platform adaptations, and device structure allocations. The software is validated using a Raspberry Pi 3. The driver is split into two parts: A kernel module and a user mode.

The VL53L4ED ULD is a set of C functions controlling the VL53L4ED device (for example, init and ranging) to enable the development of end-user applications.

The VL53L4ED is specifically designed for high-accuracy, short-range measurements requiring extended temperature capability. It offers an 18° field of view for measurements from 1 mm up to 1300 mm in standard conditions, and up to 1150 mm under its extended temperature. Special settings also provide an accurate distance measurement up to 800 mm under ambient light conditions (5 klx).

This sensor has an effective temperature range of -40°C to 105°C, ensuring reliable measurement, even in extreme temperature conditions. It is the ideal product for industrial devices requiring proximity sensing. Examples include presence detection and system activation applications. The VL53L4ED is a direct derivative of the VL53L4CD with which it is pin-to-pin compatible. Its fully embedded on-chip processing helps to reduce design complexity and BOM cost. This is because less powerful and less expensive microcontrollers can be used.

Product status link
STSW-IMG046

DB5184 - Rev 1 - December 2023
For further information contact your local STMicroelectronics sales office.

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Revision history

Table 1. Document revision history

Date	Version	Changes
20-Dec-2023	1	Initial release

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