STSW-IMG021

Data brief

Linux driver for the VL53L3CX Time-of-Flight ranging sensor with multi target detection

Features

- Linux driver
- Based on VL53L3CX bare driver

Description

The STSW-IMG021 contains a driver running under Linux. It is based on the VL53L3CX bare driver. 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 Raspberry Pi 3. The driver is split into two parts: a kernel module and a user mode.

The VL53L3CX bare driver is a set of C functions controlling the VL53L3CX device (e.g.init and ranging) to enable the development of end-user applications.

The VL53L3CX is the latest Time-of-Flight (ToF) product from STMicroelectronics and embeds ST's third generation FlightSense patented technology. It combines a high performance proximity and ranging sensor, with multi target distance measurements and automatic smudge correction. The miniature reflowable package integrates a single photon avalanche diode (SPAD) array and physical infrared filters to achieve the best ranging performance in various ambient lighting conditions, with a wide range of cover glass windows. The VL53L3CX combines the benefits of a high-performance proximity sensor, with excellent short distance linearity, together with ranging capability up to 5 m.

With patented algorithms and ingenious module construction, the VL53L3CX is also able to detect different objects within the field of view (FoV) with depth understanding. The ST histogram algorithms allow cover glass crosstalk immunity beyond 80 cm, and dynamic smudge compensation.

Product status link
STSW-IMG021

Revision history

Table 1. Document revision history

Date	Version	Changes
28-May-2020	1	Initial release
01-Dec-2020	2	In Section Description, modified the range from 3 m to 5 m
15-Oct-2021	3	Description: removed reference to standard Linux device driver model, removed that kernel module communicates with the daemon using netlink, replaced "daemon" with "mode".