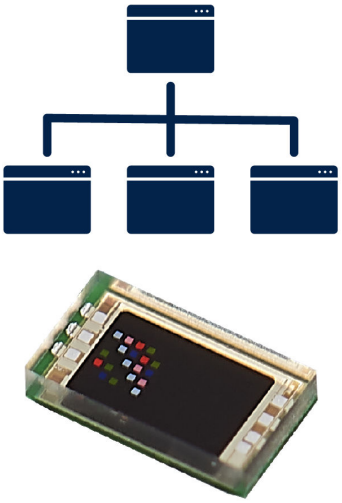
STSW-IMG302

Data brief

VD6283 6-channel ambient light sensor and flicker sensor software packages



Features

- The VD6283 software packages are composed of drivers and application code examples to control the VD6283 device, as well as documentation to help software developers.
- The application programming interface (API) provides control over a full range of features, such as starting/stopping the device, or performing ambient light sensing or flicker frequency measurements.
- The following software packages are available:
  - **STM32 driver**: Driver integrated in STM32 environment in C code with standard example code. It can be compiled on STM32CubeIDE and used with an EVK board and STM32 F401 board.
  - **Linux driver:** User space Linux driver in C code with standard example code. It can be used with an EVK board and Raspberry Pi.
  - **Standalone driver:** Driver without example code. It can be used with any integration platforms (complete the STALS_platform.h file to specify the targeted platform if needed).
  - **Python example code**: Binding Python to debug easily and work with a small package in a Python environment. It can be useful for lab work and tests. It needs to be used with an EVK board and STM32 F401 Nucleo board. The Nucleo board must be flashed using the binary file. The example code can be run in a Python console or a Python IDE.
  - **Qualcomm SEE driver**: Driver built on the OpenSSC 11.0.2.4 platform and tested with the Qualcomm HDK8550 board, in conjunction with the sensor adapter board. It enables ALS and the ambient light flicker sensing functions. It is easily portable to many Qualcomm sensor hub (always-on island) platform environments.

Description

The VD6283 API is a set of C functions controlling the VD6283 device (for example, Start, GetAlsValues, or GetFlickerFrequency) to enable the development of end-user applications. The standalone driver is structured in a way that it can be compiled on any kind of platform through a well-isolated platform layer (mainly for low-level I²C access). STM32, Linux, and Qualcomm SEE drivers are also provided to ease the use of the standalone driver in these environments and quickly perform ALS or ambient light flicker frequency measurements.

The VD6283 (1.83 x 1.0 x 0.55 mm) is the smallest 6-channel, ambient light sensor (ALS) on the market. Light measurement is fast and accurate, thanks to an individual ADC and readout circuitry for each color channel (red, green, blue, IR, clear, and visible). The VD6283 uses hybrid color filters with precise responses allowing accurate computation of the correlated color temperature (CCT) and Lux information. The VD6283 can be used for display brightness management or scene light correction.

With a patented architecture and a high-performance photodiode design, the VD6283 can extract ambient light flicker frequencies to avoid “banding effects” on videos, or to check that they are safe for human eyes. Additionally, the VD6283 is the only sensor able to extract different light flicker waveforms from 100 Hz and 2 kHz, including LED square signals, that can run flicker operations simultaneously with ALS operations.

Revision history

Table 1. **Document revision history**

Date	Version	Changes
20-May-2021	1	Initial release
13-May-2024	2	Updated the Features. Updated the first paragraph of the Description.
14-Apr-2025	3	Updated the title. Updated the Features. Added information regarding the Qualcomm SEE driver. Replaced the term "flicker" by "ambient light flicker".

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