

P4134D

STMicroelectronics' New Full-Color Ambient Light Sensor with Flicker Detect Boosts Camera Performance in Smartphones and IoT Devices

- *STMicroelectronics' low-power and miniature multispectral color sensors can be easily integrated and hidden to adjust screen color temperature and brightness in bezel-less smartphones*
- *Sets new standards for smartphone camera assistance for white-balance, artificial/natural/outdoor lighting discrimination and flicker frequency measurement to ensure optimal exposure settings*

Geneva, February 19, 2019 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, has released an innovative full-color ambient light sensor (ALS) that helps smartphones take better pictures and present more visually accurate data on screen displays. By simultaneously providing scene color temperature, ultra-violet (UVA) radiation level, and lighting frequency information, the [VD6281](#) lets the camera correct white balance and enhance color presentation, and sets appropriate exposure times for the camera to avoid flicker artefacts and eliminate banding in pictures and videos, especially in scenes lit with contemporary LED sources.

“Leveraging the Company’s extensive camera system know-how, ST’s new VD6281 offers customers a state-of-the-art multispectral ambient light sensor,” said Eric Aussedat, General Manager of ST’s Imaging Division. *“Our roadmap for ALS and flicker sensors is an ideal complement to ST’s market-leading FlightSense™ Time-of-Flight (ToF) product portfolio. With a growing number of high-quality, high-resolution cameras per phone, our goal is to offer an advanced solution to assist white-balance correction and remove flicker artefacts in smartphone camera images. Mobiles equipped with VD6281 were already released in 2018, and many others will be coming soon.”*

With its small form factor of 1.83 x 1.0 x 0.55mm, the VD6281 is the smallest multispectral ambient light sensor available, allowing integration in bezel-free smartphones with small notches and inside smartwatches, where a high screen ratio is at a premium. The sensor uses high-performance, direct-deposition filter material

to create 6 independent color channels: Red, Green, Blue, near-Infrared, UVA and Clear for superior color-sensing capability and cutting-edge CCT (Color-Correlated Temperature) over a wide field-of-view of 120 degrees, enabling accurate assistance for white-balance algorithms, even in difficult conditions including low contrast scenes, low light levels, or exotic artificial lighting.

The VD6281 is in production and available now from ST sales channels.

Technical Notes to Editors:

ST has created innovative photodiode structures and a patented analog readout to boost sensitivity and reduce system noise while maintaining a tiny die area. The VD6281 is up to 5x more sensitive than other color sensors in the market, allowing integration behind a coverglass, inside an optical module with another companion chip or flashLED, or through an opaque phone back cover, supporting optimal industrial design. With superior sensitivity and noise control, concurrent UVA, RGB and IR sensing is now a reality. Extracted UVA information can help the camera system determine whether the user is indoors or outdoors and assist the image color rendering under artificial or natural light. The VD6281 can detect light levels as low as 1mLux, works in less than 8ms (1 video frame at 120fps), and consumes less than 1mW in the ALS mode.

The VD6281 also embeds a patented flicker engine to detect fast artificial light variations. The sensor can detect all lighting frequencies from 50Hz to 2kHz with better than 3% accuracy, including PWM square signals generated by LED emissions. The VD6281 can output flicker information in both analog and digital format in parallel with ALS operation. In conjunction with algorithms and host-processing, it is uniquely able to detect multiple light frequency harmonics in a scene to capture pictures or video clips without the “banding effect” even in scenes with a complex mix of conventional lighting sources, including tungsten, halogen, neon, fluorescent, and LED.

ST's VD6281 module is simple to use (6 pins), is I²C based, and comes with a turnkey software driver compatible with Android platforms for fast and simple integration. The module package is reflowable, Lead-Free and RoHS compliant.

About STMicroelectronics

ST is a global semiconductor leader delivering intelligent and energy-efficient products and solutions that power the electronics at the heart of everyday life. ST's products are found everywhere today, and together with our customers, we are enabling smarter driving and smarter factories, cities and homes, along with the next generation of mobile and Internet of Things devices.

By getting more from technology to get more from life, ST stands for life.augmented.

In 2018, the Company's net revenues were \$9.66 billion. Further information on ST can be found at www.st.com.

For Press Information Contact:

Michael Markowitz
Director Technical Media Relations
STMicroelectronics
Tel: +1 781 591 0354
Email: michael.markowitz@st.com