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STMicroelectronics brings always-on vision to next-generation personal electronics with new ultralow-power image sensors

- [VD55G4](#) and [VD65G4](#) extend the ST BrightSense portfolio with compact, ultralow-power, microcontroller-compatible sensors for wearables, AR/VR, and smart devices
- These new global-shutter image sensors can consume up to 10x less, in operating mode at around 800×700 resolution and 10 frames per second

Geneva, Switzerland — April 28, 2026 — STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, introduces a new generation of ultralow-power global-shutter image sensors that deliver high-quality, always-on vision to compact devices operating on batteries or harvested energy. The VD55G4 (monochrome) and VD65G4 (RGB color) sensors, part of the ST BrightSense portfolio, are now available to early adopters, enabling customers to start designing their next generation of smart, ultralow-power vision devices today.

Designed for the next wave of personal electronics and smart devices, the new sensors serve applications including wearables, AR/VR and XR headsets, smart home appliances and medical devices. They are engineered to deliver rich visual context and AI-ready data under tight constraints on power, size, and cost. The sensors combine an ultralow-power detect-and-wake architecture with a very small global-shutter optical format and interfaces optimized for low-power microcontrollers and cost-effective systems on chips (SoCs).

“Always-on vision is becoming essential for the next generation of personal electronics, from smart glasses and AR/VR headsets to intelligent home appliances and medical devices. With VD55G4 and VD65G4, we are bringing this capability to smaller, lighter products that must run for a long time on a tiny battery. These new sensors help our customers create more intuitive and responsive experiences, extend battery life, and bring embedded vision and edge AI into everyday devices,” said Alexandre Balmeffrezol, Executive Vice President and General Manager of the Imaging Sub-Group at STMicroelectronics.

From wearables and AR/VR to smart appliances

VD55G4 and VD65G4 bring always-on vision to products that must stay small, light, and extremely power-efficient. Building on the ST BrightSense family, they add a color option, faster response for interactive use cases, and simple connectivity to

low-power microcontrollers, making it easier to add vision to space- and cost-constrained designs.

In wearables, the sensors enable all-day, always-aware features such as glance detection, presence sensing, and contextual alerts, while fitting into very compact designs and working directly with microcontroller-based platforms.

For AR/VR and XR headsets, they combine low power and high-quality capture to support accurate tracking and spatial awareness, helping extend battery life without compromising comfort.

In smart home appliances, IoT devices, and medical products, the sensors allow more intelligence to run locally on the device itself, reducing cloud dependence and standby power. Their tiny size and energy efficiency also make them well suited to solar- or energy-harvesting-powered vision nodes.

Ultralow-power design that consumes up to 10x less

Thanks to an optimized sensor architecture and dedicated always-on mode, VD55G4 and VD65G4 can consume up to 10 times less power than conventional global-shutter sensors. They can watch for changes in a scene and wake up the main processor only when needed, shifting from continuous streaming to event-driven operation. This enables all-day, always-on experiences, longer battery life, and practical vision systems powered by small batteries or energy harvesting.

Their very small footprint and integrated image processing simplify design and reduce system cost, while supporting responsive, AI-ready vision features in a wide range of edge devices.

Growing design ecosystem

The VD55G4 (monochrome) and VD65G4 (RGB color) image sensors are produced on 300 mm wafers using a 3D-stacked 65 nm / 40 nm architecture and in-house process and manufactured in ST Crolles plant.

ST is also offering the full companion ecosystem with multiple tools and resources, including:

- development boards for platforms such as STM32 and Raspberry Pi,
- turnkey camera modules,
- evaluation software, platform drivers,
- a software development kit to accelerate embedded vision projects.

These upcoming public resources will help designers quickly prototype and deploy always-on vision solutions with these new sensors.

Pricing information and sample requests are available from STMicroelectronics sales offices. Learn more about ST BrightSense portfolio at: www.st.com/industrial-consumer-cmos-image-sensors

About STMicroelectronics

At ST, we are 48,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An integrated device manufacturer, we work with more than 200,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of cloud-connected autonomous things. We are on track to be carbon neutral in all direct and indirect emissions (scopes 1 and 2), product transportation, business travel, and employee commuting emissions (our scope 3 focus), and to achieve our 100% renewable electricity sourcing goal by the end of 2027. Further information can be found at www.st.com.

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