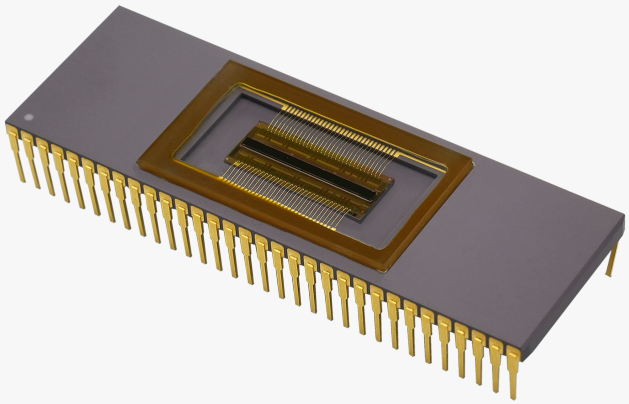
Gpixel Introduces New Family of SWIR Line Scan Image Sensors for Industrial Inspection

Gpixel announces the launch of the first 2 image sensors in a new family of line scan sensors sensitive in the short-wave infrared (SWIR)portion of the spectrum

CHANGCHUN, JILIN, CHINA, June 10, 2025 /EINPresswire.com/ -- Gpixel announces the launch of the first two image sensors in a new family of line scan sensors sensitive in the short-wave infrared (SWIR) portion of the spectrum, GIR1201 and GIR2505. Both sensors offer high line rate, high dynamic range, and digital output via on-chip ADC. They are sensitive in the range 900 nm to 1700 nm and have a QE of 75% at 1550 nm.



GIR1201 and GIR2505 use industry standard InGaAs technology to maximize sensitivity to SWIR wavelengths and share the same 64-pin DIP package for easy integration.

GIR1201 is a 1024 x 1 InGaAs line scan image sensor with 12.5 µm square global shutter pixel. The sensor integrates a 12-bit ADC and delivers a dynamic range of 72dB. Both high-gain (HG) and low-gain (LG) modes are supported. In LG mode, GIR1201 has a maximum full well capacity of 1.6 Me□. In HG mode, the maximum full well capacity is 120 ke□ . It utilizes 2 pairs of Sub-LVDS interfaces with a maximum data rate of 1.68 Gbps for a maximum line frequency of 71.9 kHz. GIR1201 consumes less than 450 mW at the highest line frequency and is packaged in a 64-pin DIP with a package size of 57.4 x 18.9 mm.

GIR2505 is a 512 x 2 InGaAs line scan image sensor with 25 µm square global shutter pixel. The sensor integrates a 12-bit ADC and provides 70 dB of dynamic range. Both high-gain (HG) and low-gain (LG) modes are supported. In LG mode, GIR2505 has a maximum full well capacity of 1.6 Me□. In HG mode, the maximum full well capacity is 85 ke□. It utilizes 2 pairs of Sub-LVDS interfaces with a maximum data rate of 1.68 Gbps, for a maximum line frequency of 40.4 kHz. GIR2505 also consumes less than 450 mW at the highest line frequency and is packaged in a 64-pin DIP with a package size of 57.4 x 18.9 mm.

“Gpixel continues to expand its offering of CMOS image sensors useful outside of the visible spectrum. Our portfolio can address sensing applications with wavelengths starting in the soft x-ray range,” said Wim Wuyts, CCO of Gpixel, “and with the launch of this new family, we extend into the longer wavelengths not addressable by silicon, but where many of our industrial imaging customers have critical applications.”

SWIR line scan cameras are used in a variety of industrial and scientific applications due to their ability to reveal features invisible in visible or near-infrared imaging. In food processing, agriculture, and pharmaceuticals, SWIR is ideal for detecting moisture content. In recycling and material sorting, SWIR can distinguish between different types of plastics and separate organic from inorganic materials. Semiconductor inspection benefits from SWIR’s ability to see through silicon, allowing detection of internal defects. In agriculture, SWIR imaging can assess ripeness or detect bruising under the skin of fruits and vegetables. It’s also used in pharmaceutical quality control for pill inspection and coating uniformity, and in web and surface inspection of continuous materials like textiles, paper, or films, where it highlights defects and variations in coatings or structure. Line scan imagers sensitive in the SWIR also have applications in optical coherence tomography (OCT), especially for the nondestructive testing of silicon wafers and other semiconductor materials.

Engineering samples and evaluation systems are available now. Contact info@gpixel.com for inquiries.

About Gpixel
Gpixel is an international company providing high-end customized and off the-shelf CMOS image sensor solutions for industrial, medical, scientific, and professional imaging applications. Gpixel’s standard products include the GMAX and GSPRINT fast frame rate sensors, the GSENSE high-end scientific CMOS image sensor series, the GLUX series of high sensitivity sensors for surveillance, the GL series of line scan imagers, the GLT series of TDI imagers, GTOF series of time-of-flight 3D imagers, he GCINE
series of sensors for professional video and photography, and the GIR family of SWIR image sensors. Gpixel provides a broad portfolio of products leveraging the latest technologies to meet the ever-growing demands of the professional imaging market.

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