Toshiba launches high-speed colour CCD linear image sensor for Automated Optical Inspection equipment

New sensor doubles data readout speed and simplifies system integration for grain sorters and other industrial inspection applications

Düsseldorf, Germany, 5th February 2026 – Toshiba Electronics Europe GmbH ("Toshiba") introduces the TCD2400DG, a new lens reduction type CCD linear image sensor designed to meet the demanding requirements of modern optical inspection equipment. The new sensor features 4096 elements with a 7µm pitch and is intended for use in line scan cameras, which are essential for high-speed, high-precision inspection tasks such as colour sorting in food processing and quality control in industrial manufacturing.

The TDC2400DG supports a maximum data rate of 100MHz (50MHz master clock frequency x 2 channels). With a maximum line rate of 22.7kHz, the new sensor achieves more than twice the readout speed of Toshiba's previous model, the TCD2564DG. This significant performance boost enables inspection systems to process massive volumes of image data rapidly, supporting the precise and accurate identification of fast-moving objects.

The TCD2400DG features 4096 independent elements for each of the three RGB colour channels, arranged in three independent lines, allowing direct acquisition of high-resolution colour images without the need for the colour interpolation required by Bayer element arrays. This architecture enables immediate processing, making it ideal for applications where rapid and reliable judgment is critical.

A key innovation of the TDC2400DG is the built-in timing generator and CCD driver circuit, components that were previously mounted externally. This reduces the number of signal lines required to drive the sensor and eliminates the need for an external CCD driver, simplifying wiring and system design. The streamlined configuration not only

reduces the bill of materials (BOM) and accelerates development but also helps mitigate electromagnetic interference (EMI), a common challenge in high-speed systems.

Toshiba will continue to expand its product lineup to meet the needs of imaging and sensing technology, supporting application devices such as multifunction device scanners and various inspection equipment.

For more information about the TDC2400DG CCD linear image sensor, which is housed in a 32-pin CERDIP package, please visit: https://toshiba.semicon-storage.com/eu/semiconductor/product/linear-image-sensors/detail.TCD2400DG.html

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About Toshiba Electronics Europe

Toshiba Electronics Europe GmbH (TEE) offers European consumers and businesses a wide variety of hard disk drive (HDD) products plus semiconductor solutions for automotive, industrial, IoT, motion control, telecoms, networking, consumer and white goods applications. Next to HDDs, the company's broad portfolio encompasses power semiconductors and other discrete devices ranging from diodes to logic ICs, optical semiconductors as well as microcontrollers and application specific standard products (ASSPs) amongst others. In addition, TEE offers SCiB™ battery cells and modules with lithium titanium oxide (LTO) for heavy-duty applications.

TEE has its headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services.
Visit Toshiba's websites at www.toshiba.semicon-storage.com and www.scib.jp/en for further company and product information.

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