Sony Semiconductor Solutions Announces 1 mm Square Image Sensor for Medical Single-Use Endoscopes, Featuring Industryâ??s First [*1] 5 m Digital Transmission and High Image Quality

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Providing stable transmission of high-definition images for thin endoscopes

ATSUGI, Japan, Oct. 22, 2026 /PRNewswire/ â?? Sony Semiconductor Solutions Corporation (Sony) today announced the upcoming release of the IMX742, a CMOS image sensor with approximately 0.51 effective megapixels*2 for medical single-use endoscopes. This sensor is the industryâ??s first*1 to support digital output and data transmission through a 5 m*3 cable.

Demand for disposable, single-use endoscopes is growing in the medical field to help prevent infections and reduce the burden of endoscope reprocessing and managing equipment after use. Cameras on such endoscopes require not only compact sensors that are compatible with todayâ??s increasingly small diameter insertion parts but also improved basic performance such as high image quality and stable signal transmission.

By miniaturizing peripheral circuits, including the A/D converter, and using proprietary bi-directional communication technology to transmit control and video signals via the same cable, the IMX742 combines approximately 0.51 effective megapixels with a compact 1 mm-square sensor size. Furthermore, digitizing image signals on the sensor enables low-noise imaging at a high frame rate of 60 fps, with stable transmission via a 5 m cable, providing clear images for endoscopic visualization. These features will contribute to the miniaturization and improved image quality of thin endoscope cameras used in bronchoscopes and ureteroscopes.

Sony has provided image sensors for reusable endoscopes and will expand its offerings to single-use endoscope applications, for which demand continues to rise, thereby contributing to the realization of endoscope systems designed to meet needs for reduced invasiveness and improved operability and visibility.

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Main FeaturesHigh resolution and digital output in a compact 1 mm-square sensorThe new sensor combines approximately 0.51 effective megapixels and digital output in a compact 1 mm-square sensor suitable for thin endoscopes. By miniaturizing peripheral circuits, including the A/D converter, Sony achieved both high resolution and digital output while maintaining sufficient pixel area.

Additionally, Sonyâ??s proprietary bi-directional communication technology enables both control and video signals to be transmitted via the same cable while keeping the number of sensor pins to six. These features contribute to the miniaturization and improved image quality of thin endoscopes, including bronchoscopes and ureteroscopes.

Stable transmission of high-quality 60 fps images on a 5 m cableThe sensor digitizes image signals on-chip, enabling lower-noise imaging than analog output and providing high visibility in dark areas inside the body. It also supports a high frame rate of 60 fps, enabling smooth video display.

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Additionally, digital signal output enables stable video transmission over a 5 m cable, increasing flexibility in system configuration.

Related LinksIMX742 product pagehttps://www.sony-semicon.com/en/products/is/medical/endoscope/IMX742.html

Sonyâ??s image sensor products for use with medical endoscopeshttps://www.sony-semicon.com/en/products/is/medical/endoscope.html

Key Specifications

View original content to download multimedia:https://www.prnewswire.co.uk/news-releases/sony-semiconductor-solutions-announces-1-mm-square-image-sensor-for-medical-single-use-endoscopes-featuring-industrys-first-1-5-m-digital-transmission-and-high-image-quality-302899093.html

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