SI-SENSORS
A DIVISION OF SPECIALISED IMAGING LTD

## Ultra-high speed image sensor

**SI Sensors**
reports collaborating with **ESCATEC Switzerland AG** to develop new and improved assembly processes for the **ultra-high speed image sensor** at the heart of the **Kirana high speed video camera** from parent company – **Specialised Imaging.**

**Image captions**: A: Assembly of the Kirana image sensor ceramic substrate before curing ; B: X-ray inspection of image sensor bonding and connections

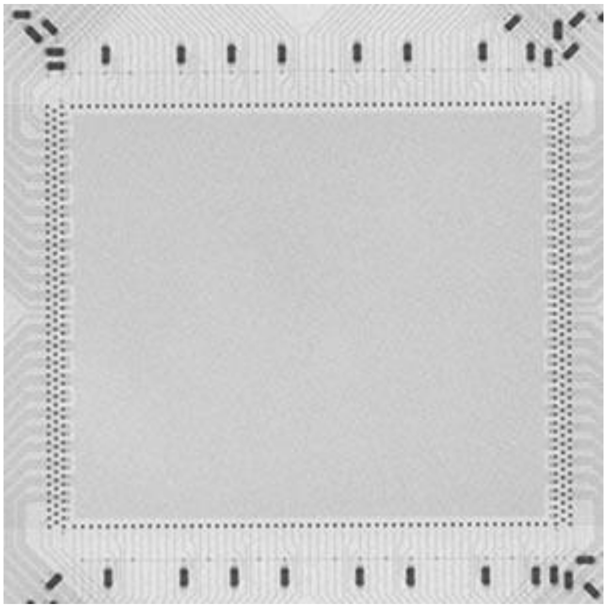

**Image captions** B: X-ray inspection of image sensor bonding and connections

**Collecting high resolution data**
at millions of frames per second, the Kirana image sensor chip dissipates significant power which requires careful thermal management.

**Phil Brown**,
General Manager of **SI Sensors** commented "To overcome this challenge we developed a novel Aluminium Nitride ceramic package that offers high thermal conductivity and closely matches the Coefficient of Thermal Expansion of the silicon image sensor. This unique packaging provides efficient heat extraction from the image sensor die and enables a wide operating temperature range."

**He added**
"Mounting the Kirana large area image sensor with high precision within the ceramic package also presented significant challenges. We worked closely with ESCATEC over the last 2 years to develop bespoke jigs, tools and processes to enable a transition from engineering prototype assembly to high yield production sensors which are currently undergoing full characterisation. 100% of sensors are subjected to Xray inspection to confirm that there are no bubbles in the sensor adhesive and that all connections are made with high integrity**."**

**The Kirana high speed video camera**
will be exhibited on the **ESCATEC stand A2.125** at **Laser World of Photonics** in Munich, Germany from 24-27th June 2025.

**The Kirana**
is a true ultra-high-speed video camera that combines the flexibility of a video camera with the speed and resolution approaching those only available with framing cameras. The unique sensor employed by the Kirana offers 180 images at capture speeds up to 7 million images/second at full resolution. For further information please visit https://specialised-imaging.com/products/video-cameras/kirana/

**SI Sensors**
is a division of Specialised Imaging, focused on innovative CMOS image sensor design and development. The company's aim is to use its extensive in-house IP and design experience, together with the latest software tools, to design novel image sensors using the most appropriate foundry technologies globally. The full-service CMOS image sensor design offered by the company includes circuit design, pixel optimisation, simulation, layout, verification, and tape-out. In addition, to ensure performance and consistent quality and reliability SI Sensors perform detailed electro-optical testing from characterisation through to mass production testing adhering to industry standards such as EMVA 1288. For further information please visit www.si-sensors.com or contact the company on +44 1442 827 728 / info@si-sensors.com,

**ESCATEC**
is a multinational provider of electronic manufacturing services. The company offers expertise and resources for Product Design & Development, Microelectronics, PCB Assembly, Box Build Assembly, Mechatronics & Machining, and Plastic Injection Moulding to help OEMs looking to

scale their business by outsourcing design & manufacturing. For further information visit https://www.escatec.com/.

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