ARGUS

High resolution Scanners for Medical and Dental X-ray Applications.
TELEDYNE DALSA’S ARGUS PLATFORM
Argus, Teledyne DALSA’s innovative scanning X-ray detector platform is a high performance cost effective solution for dental panoramic, cephalometry, mammography and general radiography applications.

Argus–PAN
The Argus-PAN is designed for extra-oral X-ray applications. The extremely low noise operation, coupled with high performance 16-bit ADC, provides up to 80dB of dynamic range.

Argus DQ
The Argus-DQ features an advanced scintillator technology for ultra-high resolution and low noise applications like mammography.

Argus-SCAN
Argus-SCAN will provide an extremely wide 44 cm wide field of view ideal for applications such as body scanning and trauma imaging.

Argus features include:
• Assembled with advanced MEMS fabrication techniques for high resolution and large fields of view up to 44 cm wide.
• Flexible and robust modular form factor for ease of integration into existing panoramic dental systems.
• High dynamic range and sensor large full well enables high contrast images.
• Low sensor readout noise provides images with high clarity.
• Ethernet interface for ease of integration.
• 16 bit ADC for high precision image capture.
• Anti-blooming, preserves image integrity on the edges and in bright spots of the image.
• Custom scintillator available.
Argus advanced x-ray scanners are designed for applications requiring the highest image quality in a cost effective platform.

**High spatial resolution**

Argus scanning detectors provide a large field of view from 220 mm to 440 mm and even larger. Argus modules include high resolution scintillator technology and standard Ethernet connectivity, allowing images to be ported directly to a computer for image processing. Reliable operation and image quality are pivotal to the success of your business. As such we have utilized all the latest available technologies, to create a product that provides highest image quality as well as detector reliability.

**Robust Quality - radiation hardened**

Argus utilizes the latest Teledyne DALSA imaging and sensor fabrication technologies. Our radiation hard sensor fabrication process ensures longevity of our product and an image quality that is immune to X-ray radiation degradation over time. This means you will be able to acquire the same high quality images over and over, and get consistent results over the lifetime of your modality.

In addition, Argus utilizes the latest advancements in MEMs technology in order to minimize the gap between the adjacent sensors (less than 75µm). This also benefits our detectors in terms of planarity, so that the same high image quality is maintained throughout the whole field of view of the detector. Using MEMS technology, seamless detectors with very high resolution and large field of view become possible.
The Argus platform incorporates Teledyne DALSA's patented **TDI technology** for high detective quantum efficiency (DQE) and image quality. Teledyne DALSA is a leader in TDI CCD sensor technology and has been involved in providing high end TDI image sensors and cameras to the industrial market for many years.

**About TDI**

Time Delay & Integration (TDI) is based on line scan technology and provides dramatically increased responsivity compared to other scanning methods. It permits greater scanning speeds in low exposure levels, or allows reduced exposure levels (and costs) at conventional speeds. From conventional industrial inspection to high-end medical x-ray scanning, TDI line scan delivers an unmatched combination of sensitivity and speed by accumulating multiple exposures of the same (moving) object, effectively increasing the integration time available to collect incident quanta. The object motion must be synchronized with the exposures to ensure a crisp image.

**Modular Design**

Argus platform is modular and easily customizable to your system's specific needs. The mechanical and electrical interface of the camera is designed such that no customization is required in the majority of applications. The Ethernet interface is a low cost widely available interface that reduces overall system cost, and simplifies the detector integration into your X-ray modality. The Field of view of the detector can also be adjusted for your specific X-ray imaging needs. Field of view of 44 cm in length and even higher is possible. The choice of X-ray scintillator material is also customizable.

Finally, all the above mentioned technical advantages are packed in a cost effective detector that ensures your competitive positioning in the market.

**Argus Image**

Measured contrast 10% at 15 lp/mm*

*Notes: 18 lp/mm nyquist limit with 27µm pixel, high resolution scintillator, area mode, FFC on 35keV
**Teledyne DALSA** has a long history in providing X-ray detectors to the medical market, both on standard and application specific basis. Our certified manufacturing, technology core and history in providing solutions to the medical market helps us to provide you with a robust solution that gives you a competitive edge in the market. Our complete and integrated solution, from sensor design and fabrication, detector design and manufacturing, image acquisition and software expertise make Teledyne DALSA a one stop solution for your detection technology needs and provides you with a reliable source for your imaging needs.

**Argus Applications**
- Panoramic dental and cephalometric applications
- Veterinary scanning
- Scientific imaging
- Trauma X-ray (full body X-ray scan)
- Pharmaceutical inspection

**Argus Modules**
The Argus TDI X-ray scanning platform will support three modules, the **Argus-PAN**, the **Argus-DQ**, and the **Argus-SCAN**.

**Argus-PAN** is designed for extra-oral X-ray applications such as panoramic and cephalometric X-ray imaging.

**Argus-DQ** features advanced scintillator technology for very high resolution and low noise required for applications like mammography. The Argus-DQ is a high image quality detector and valuable alternative to costly X-ray panels for mammography screening applications.

**Argus-SCAN** will provide an extremely wide 44 cm wide field of view ideal for applications such as general radiography and trauma imaging. The Argus-Scan provides faster imaging speeds and can be customized for larger field of view for specific applications.
Specifications

Physical resolution: 8160 (H) x 256 (V)
Pixel size: 27 µm
Field of view: 221 or 442 mm x 6.9 mm
Binning: 2x2, 3x3, 4x4, 5x5, 6x6
Line rate: 2kHz
Readout speed, typical: 10MHz per output
Number of outputs per CCD: 1
Dead imaging space between dice: < 75 µm
Power Supply: 12V
Power consumption: 15W max
Interface: Ethernet
Maximum x-ray resolution: Up to 7 lp/mm (in 2x2)
Synchronization: Software trigger, External
Temperature range, storage: 0 °C to 60 °C
Temperature range, operation ambient: 10 °C to 40 °C

For more detailed product information please visit: www.teledynedalsa.com/ls or contact us at sales.sensors@teledynedalsa.com

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