ATHENA 2424-X

Flat Panel Detector

Large area 24 × 24 cm high resolution 23 MP X-ray detector

Features and Benefits

- **CMOS Active Pixel Sensor technology for intrinsic low noise, small pitch, and fast readout**
- **Active area 24 cm × 24 cm**
- **4800 × 4800 (23M) pixels**
- **50 µm pixel size**
- **10 GbE data interface (×4)**

Applications

- **PCB & final assembly**
- **Semiconductor & packaged die**
- **Battery Inspection**

ATHENA 2424-X is a performance-leading X-ray detector comprising a 4800 × 4800 active pixel sensor array of 50 × 50 µm pixels. This detector consists of a 2-by-2 matrix of proprietary low-noise, radiation-tolerant CMOS image sensors, with a scintillator on a Fibre Optic Plate. The detector is accessed through a software interface, connected via a 10 GbE SFP+ hardware interface.

Building on the market leading vM2428 detector family, ATHENA 2424-X has been developed to offer a 4× larger imaging area for those applications that require a larger field of view without compromising the high native 50 × 50 µm resolution. The underlying CMOS sensors which make up the tiled array exhibit excellent low noise performance and high sensitivity for fast image capture.

A unique feature of the sensor is in the single pixel row & column spacing between the 4 individual tiles which make up the array. This ensures the 50 µm gap between tiles can be interpolated in the same way as any other standard single line defects that are commonly corrected without loss of image quality. In addition, the sensor has programmable integration that can be changed by the user.

General	
Sensor technology	CMOS APS (*)
Pixel size	50 µm
Pixel count	4800 × 4800
Pixel resolution	23M pixels
Active area	24 × 24 cm
Max frame rate full res	10 fps
Scintillator	CsI
Number of CMOS tiles	4
Line gap between tiles	50 µm (1 pixel)
Imaging data	
Hardware interface	10 GbE (x4)
Max data rate	4.3 Gb/s
Imaging modes	
Pixel sensitivity modes	2
Non-destructive read-out	Yes
Hardware trigger input	Yes
Power & mechanical	
Power supply	24 V_{dc}
Power consumption	60 W
External dimensions	274 × 373 × 51mm
Weight	8 kg

(*) APS = Active Pixel Sensor, where the pixel has an in-built amplifier to boost lower signal levels.

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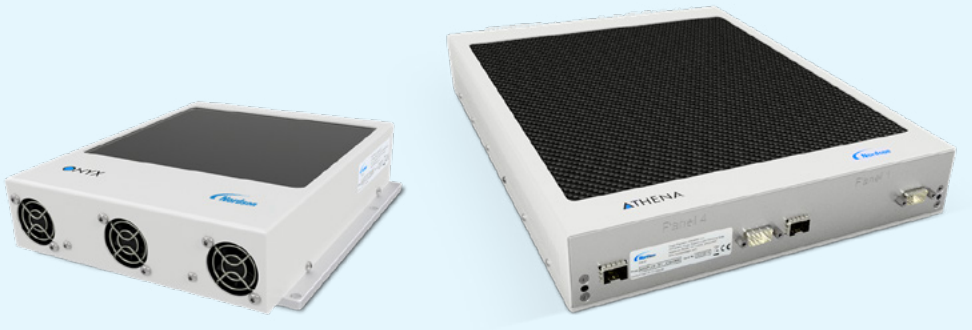
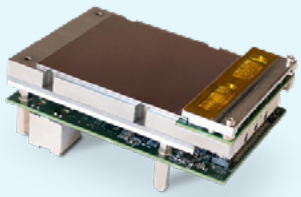
X-ray detectors



X-ray sources (tube & power supplies)

OEM products

Our engineering team is fully versed in developing custom products according to specific application requirements.
For further information, please contact us.



Software

Our proprietary imaging capture and tube control software enables users to quickly evaluate our products and integrate them into their existing software stack.

For more information, speak with your Nordson representative or contact your Nordson regional office

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