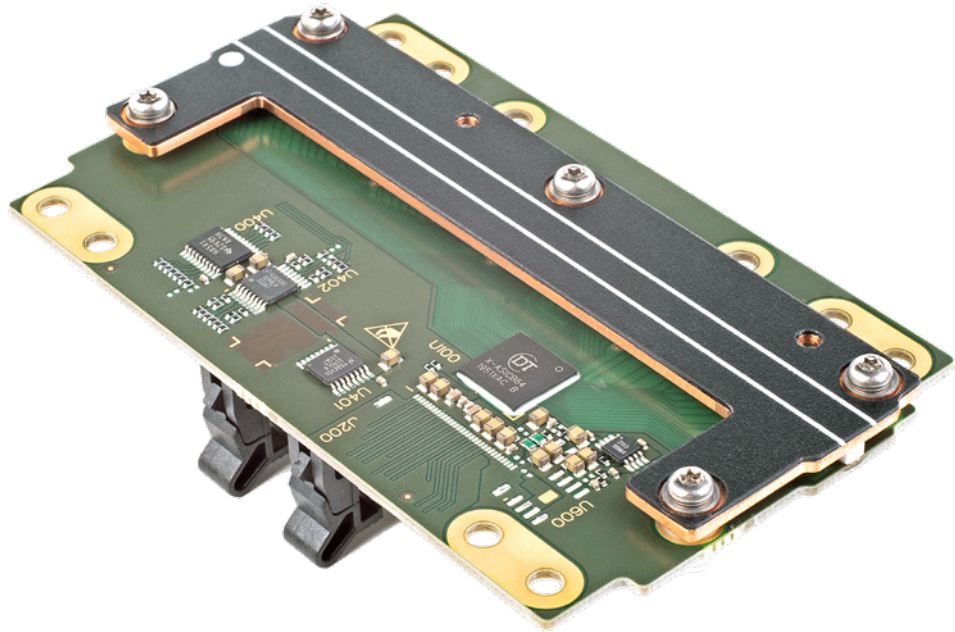


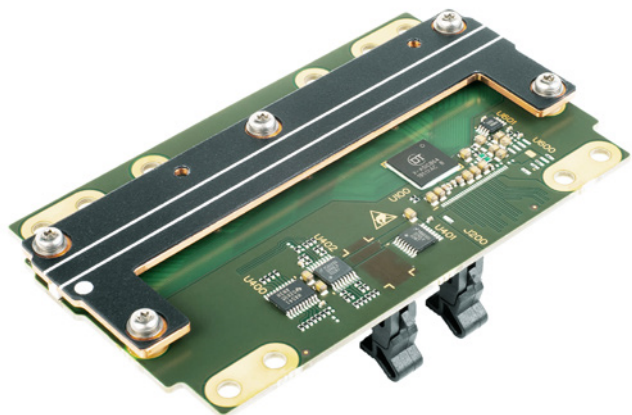
Aurora XS



Dual-energy X-ray detector board



- Enables rapid time-to-market of cost-effective X-ray systems
- Suits harsh imaging conditions
- Supports safe and easy installation and maintenance
- Provides good imaging quality with low X-ray flux
- Reduces energy consumption and carbon footprint
- Resistant for electromagnetic interferences
- Fits compact system designs perfectly
- Adapts to a wide range of applications
- Meets industry regulations and standards



The Aurora XS is a dual-energy X-ray detector solution that is designed to address the cost efficiency and reliability requirements of the urban security screening market. The Aurora XS adapts to versatile X-ray imaging systems, which secure safety on train and metro stations, and in public buildings and event venues, for example.

The Aurora XS is built on a novel detector platform that is boosted by unique algorithms and an application-optimized, single-chip ASIC. These smart features make reliable dual-energy imaging with a single-layer sensor possible.

The Aurora XS is equipped with a compact mechanical footprint, making it an ideal solution for small X-ray system

form factors. The Aurora XS has a durable structure with reliable mechanical and electrical interfaces, and a robust sensor for stringent radiation hardness requirements, and harsh imaging conditions such as humidity, mechanical stress, and temperature changes. With its robustness and simplified structure, the Aurora XS also enhances more environmental sound screening than conventional detector solutions in the segment.

The Aurora XS provides imaging performance that meets industry regulations and responds to urban security requirements, even at low X-ray flux. The low-noise Aurora XS features a fully digitalized data path. It is equipped with an application-optimized, single-chip ASIC, which effectively mitigates the impact of external electromagnetic interferences. The Aurora XS has a wide sensitivity range from 0.25 pF to 31.75 pF with 127 controllable gain-setting steps, which ensure adaptability for the entire range of the urban X-ray screening applications.

The Aurora XS is available as a complete subsystem that includes detectors, a control unit, and software libraries for rapid time-to-market of cost-effective X-ray systems. Furthermore, it supports safe and easy installation and maintenance.

Key features

- Dual-energy detector solution boosted with novel algorithms
- Robust structure with reliable mechanical and electrical interfaces
- Simplified system design
- Low noise solution
- Fully digitalized data path
- Very compact mechanical size
- Wide sensitivity range from 0.25 pF to 31.75 pF with 127 steps
- Controllable gain setting
- ROHS compliant
- Complete subsystems available including detectors, controllers and software libraries

Applications

Urban security applications, such as

- Transportation (train and subway stations, seaports)
- Buildings (banks, campuses, courts, hospitals, hotels, prisons, schools, shopping malls)
- Event venues (stadiums, concert halls, exhibitions)
- Logistics (mailrooms, parcel lines)
- Mobile security systems

Technical Specifications

Feature	X-Card D021606414E
X-ray sensor	DT proprietary dual-energy structure
Number of pixels	LE 64 pixels, HE 64 pixels
Scintillator material	Ceramic GOS
Dynamic range	13000:1 @ 2 pF, 20000:1 @ 10 pF
A/D resolution	16 bits
Integration time range	1.27 ms to 25 ms
Sensitivity range	0.25 pF—31.75 pF, adjustable with 0.25pF steps
Pixel pitch	1.575 mm
Pixel active area width	1.2 mm
Pixel active area scanning direction	2.0 mm
Scintillator alignment tolerance to reference hole	±0.4 mm
X-ray response non-uniformity, pixel to pixel	-15% to +10%
Dark offset non-uniformity, pixel to pixel	-15% to +10%
X-ray response non-uniformity, card to card	-15% to +15%
Radiation hardness	Lifetime dose max 100 kGy
Mechanical length	101.6 mm
Mechanical width	59.5 mm
Mechanical height	26.5 mm
Weight	62.5 g

Typical application performance

Image quality, wire resolution	Min AWG 34 (ASTM F792:2017) Min AWG 34 (GB/T 15208.2, level I)
Image quality, steel penetration	Min 24 mm, typical 36mm (ASTM F792:2017) Min 27 mm, typical 38mm (GB/T 15208.2, level II)
Image quality test conditions	60x40 X-ray scanner: 160 kVp, 0.5 mA, SDD~1m, belt speed 20 cm/sec

X-Card D021606414E outline

