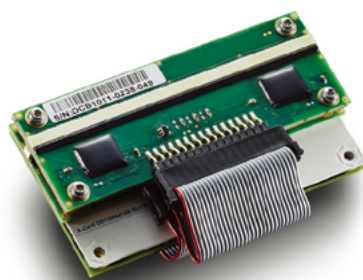


Digital X-Card

Dual-energy or single-energy X-ray detector board



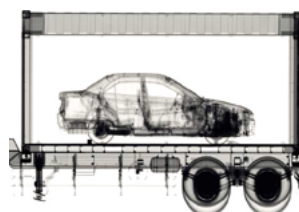
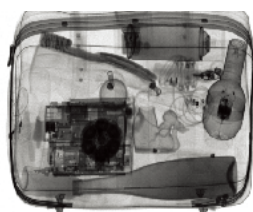
Digital X-Card Series | The digital X-Card Series is a X-ray detector board family based on Detection Technology's next generation digital X-ray detector sub-system platform.

The digital X-Card is a Dual-energy or Single-energy linear array X-ray detector card. Dual-energy digital X-Card has two-layers of silicon photodiode arrays with different scintillator materials and copper filter in between in order to separate high-energy and low-energy X-ray ranges. X-ray flux and energy are detected

by the digital X-Card, and then converted into digital image data and finally sent back to X-GCU.

Number of digital X-Cards and X-GCU with necessary accessories provides a complete subsystem for X-ray image acquisition system with easy to use, high throughput and reliable Gigabit Ethernet PC interface.

Complete subsystems available, including detectors, controllers and software libraries for rapid system development.



APPLICATIONS

- Security inspection
- Cargo and vehicle inspection
- Multi-view imaging
- Non-destructive testing
- Food inspection
- Raw material sorting
- Thickness measurement
- Foreign particle detection
- CT imaging
- Bone densitometry

KEY FEATURES AND BENEFITS

- Pixel pitch options: 0.2, 0.4, 0.8, 1.5, 1.6 and 2.5 mm
- Both Single-energy and Dual-energy supported
- Daisy chain connection between digital X-Cards
- High throughput data transfer (150 Mbps) with X-Link based asynchronous LVDS communication
- Very short integration time down to 100us
- Very compact mechanical size
- Wide sensitivity range from 1.5pC to 76.5pC with 12 steps for 1.5, 1.6 and 2.5mm digital X-Cards
- Separately controllable gain setting for each HE and LE card
- Centralized remote firmware update by X-GCU
- Enable local diagnostics functions: test patterns, temperature, humidity and voltage monitoring
- Robust local configuration parameters management
- Advanced features, cost effectiveness, high reliability and easy maintenance for X-ray screening systems
- Serial number readout for traceability
- EMC Compliance

GENERAL CHARACTERISTICS						
PARAMETER	Digital X-Card 0.2 series	Digital X-Card 0.4 series	Digital X-Card 0.8 series	Digital X-Card 1.5 series	Digital X-Card 1.6 series	Digital X-Card 2.5 series
Pixel pitch	0.20 mm	0.40 mm	0.80 mm	1.50 mm	1.575 mm	2.49 mm
Pixel height	0.30 mm	0.60 mm	0.80 mm	3.20 mm	2.00 mm	2.80 mm
Pixel width	0.15 mm	0.32 mm	0.72 mm	1.40 mm	1.20 mm	2.10 mm
Number of pixels	256	128	LE: 128 HE:128	LE: 64 HE: 64		
Low energy Scintillator options	GOS screen					
High energy Scintillator options	CdWO4		CsI (TI)	Ceramic GOS or CsI (TI)		CsI (TI) or CdWO4
Minimum integration time	320 us	200 us	200 us	580 us (100 us*)	580 us	100 us
Maximum integration time	128 ms					
Sensitivity range	1.5pC and 3pC		0.75pC- 10.5pC	1.5pC to 76.5pC with 12 steps		
AD resolution	16-bit					
Maximum X-Link throughput	150 Mbps					
Maximum cable length between X-GCU and digital X-Card	3 m	3 m	20 m	3 m (20 m*)	3 m	20 m
Panel-mount cable connection support	No		Yes	No (Yes*)	No	Yes
Maximum cable length between digital X-Cards	1 m					
Operational voltage range	10.8V - 26.4V DC					
Typical power consumption	1.0W			1.2W		
Electro static immunity	2kV (Human body model, IEC61000-4-2)					
Voltage sensor	Yes					
Temperature sensor	+/- 1 °C		+/- 0.2 °C	+/- 1 °C (+/- 0.2 °C*)	+/- 1 °C	+/- 0.2 °C
Humidity sensor	No		Yes	No (Yes*)	No	Yes
Operating temperature	0 - +50 °C					
Operating humidity at 30 °C	< 85% RH non-condensing					
Storage temperature	-10 - +60 °C					
Storage humidity at 40 °C	< 95% RH non-condensing					

* Supported by high tier digital X-Cards

MECHANICAL DIMENSIONS OF DIGITAL X-CARD FAMILY				
PRODUCT SERIES	Active length	Length	Width	Max height
Digital X-Card 0.2 Series	51.18 mm	51.30 mm	63.00 mm	LE: 23.00 mm
Digital X-Card 0.4 Series				HE: 32.60 mm
Digital X-Card 0.8 Series	102.40 mm	102.50 mm	65.00 mm	SE: 25.50 mm DE: 33.20 mm
Digital X-Card 1.5 Series	96.80 mm	96.90 mm	62.00 mm	SE: 24.40 mm DE: 32.20 mm
Digital X-Card 1.6 Series	101.60 mm	101.70 mm	64.20 mm	SE: 25.10 mm DE: 31.80 mm
Digital X-Card 2.5 Series	160.60 mm	160.70 mm	69.00 mm	SE: 30.20 mm DE: 37.50 mm

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