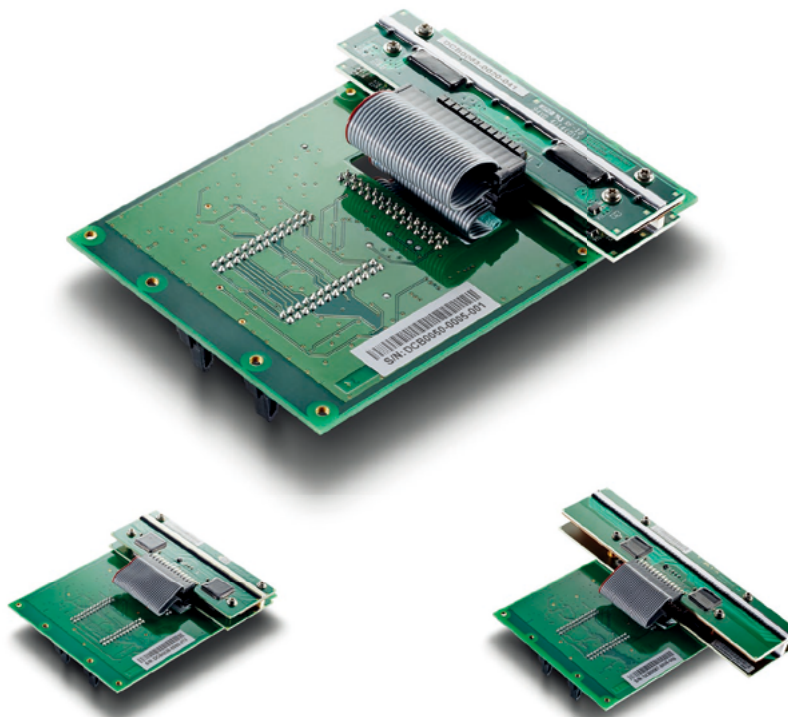


X-Card

Dual energy X-ray detector board



X-Card | The X-Card detector card is a dual-energy linear array X-ray detector card. It has two two-layers of Silicon photodiode arrays, targeted for different X-ray energy ranges. X-ray sensitive scintillant material is located on top of the photodiode arrays to convert X-ray signal in to visible light, which generates current at photodiode. The electrical current signals from photodiodes are connected to inputs of charge-sensitive preamplifier array ASICs.

Current is integrated in the read out CMOS chip by charge amplifiers (one for each pixel). All pixels in high-energy and low-energy array are integrated simultaneously. The voltage outputs from charge amplifiers are read out in serial mode through a multiplexing circuitry in the same ASIC.

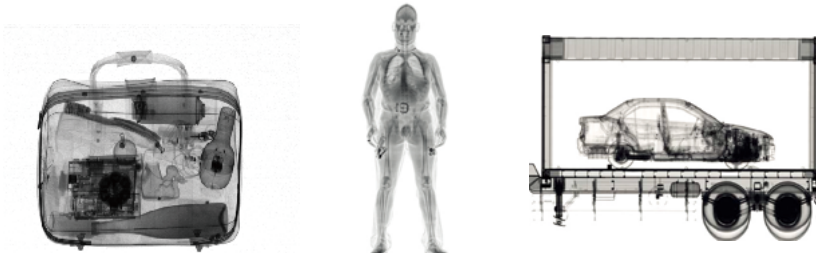
X-DAQ board is typically used to sample the voltage signals and provide processed digital data to a host computer.

APPLICATIONS

- Security 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

- X-Card 1.5, 1.6 and 2.5 form an X-ray detector board family, utilizing high performance photodiodes and integrator / multiplexer ASICs
- Advanced features, cost effectiveness, high reliability and easy maintenance for X-ray screening systems
- Single energy version as an option
- Sensitivity range from 1.5pC to 76.5pC with 51 steps (12 steps enabled by default). Separate sensitivity setting for low energy and high energy detectors
- Minimum line integration time 0.2 ms
- Differential analog output with maximum read-out rate of 1 MHz (pixels/sec)

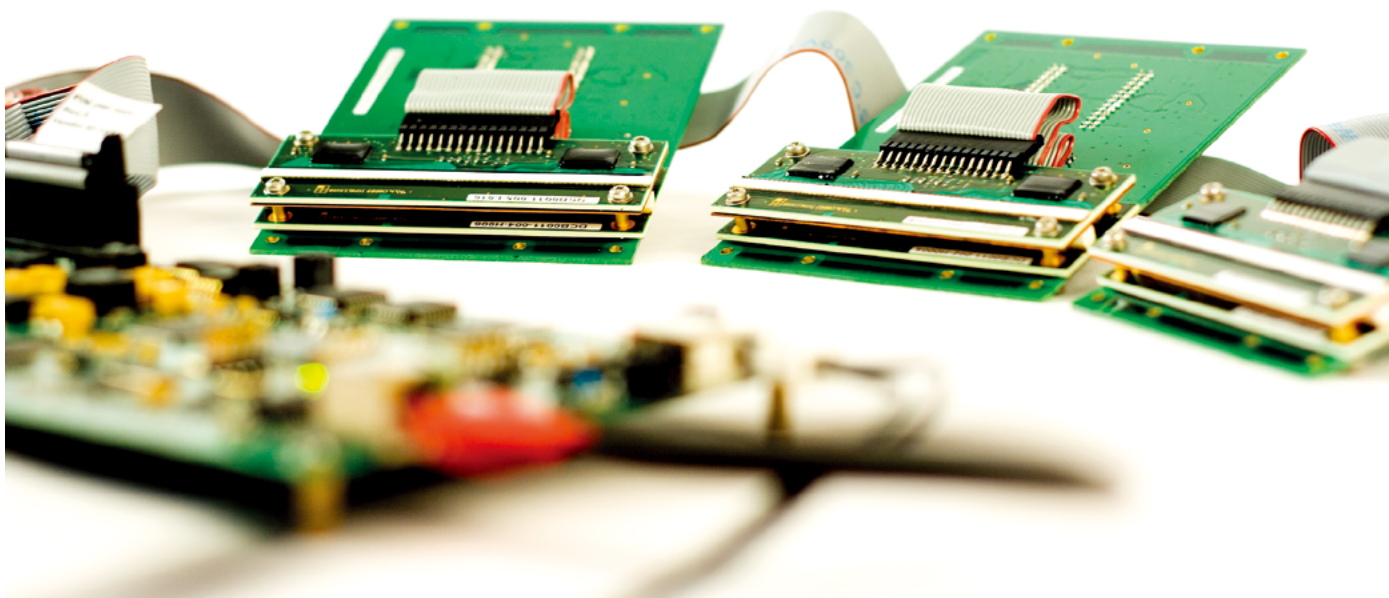


COMMON CHARACTERISTICS

PARAMETER	VALUE
Low energy scintillator	GOS sheet, 145 mg/cm ² , thickness: 0.3 mm
High energy filter material / thickness	Copper / 0.6 mm
High energy scintillator	CsI(Tl) Crystal thickness: 3 mm / 4 mm
Number of pixels	Low energy: 64, High energy: 64
Minimum integration time	0.2 ms
Maximum integration time	128 ms
Maximum read out rate	1 MHz
Dynamic range	~ 1: 6500 @ 2pF feedback capacitance
Operational voltage	±6V, +5V DC
Electro static immunity	2kV (Human body model, IEC61000-4-2)

PRODUCT SPECIFIC CHARACTERISTICS

PARAMETER	X-Card 1.5-64DE	X-Card 1.6-64DE	X-Card 2.5-64DE
Pixel pitch	1.500 mm	1.575 mm	2.490 mm
Pixel height, active area (in scanning direction)	3.2 mm	2.0 mm	2.8 mm
Pixel width, active area	1.4 mm	1.2 mm	2.1 mm
Pixel height, CsI scintillator (in scanning direction)	3.0 mm	2.7 mm	2.7 mm
Pixel width, CsI scintillator	1.200 mm	1.175 mm	2.000 mm
Active area length	96.8 mm +0.2 / -0.1 mm	101.6 mm +0.2 / -0.1 mm	160.6 mm +0.2 / -0.1 mm
Total width of card	96.9 mm +0.6 / -0.1 mm	101.7 mm +0.6 / -0.1 mm	160.8 mm +0.6 / -0.1 mm



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