



### SALES DATA SHEET

#### KEY FEATURES

- Modular design - Array lengths up to 4m
- 0.4-2.5mm - detector pitch
- Wide range of low and high energy scintillators
- Stacked boards or detector arrays option
- Pluggable detector arrays
- Range of filter options
- Short integration time down to 50 $\mu$ s
- Low noise electronics with SNR up 38,000:1
- 31 steps of gain from 1.875 pC to 60 pC
- Continuous or externally triggered scan
- GIGE interface to workstation



#### APPLICATIONS

- Food – Smallest foreign object detection
- Food – Highest separation to maximise yield
- Waste – Maximum reclaim rare earth metal separation
- Mining – Mineral sorting to maximise yield
- Wood – Quality control to maximise value
- Security – Conventional baggage scanning
- Security – High dose cargo/vehicle scanning

#### DESCRIPTION

XDAS dual energy modular high speed and low noise arrays are built up of Sens-Tech XDAS DH (Detector Head) and SP (Signal Processing) boards to provide an array of any length. The gain for each DH board can be set separately and a huge number of other parameters are available to give the maximum imaging control.

The XDAS electronics will need to be housed to protect the electronics from the machine environment and with adequate screening to protect the electronics from radiation damage. A perfect Faraday cage is essential to keep interference out.

#### PRINCIPLES OF OPERATION

XRT X-ray signal is detected and measured using XDAS low and high energy scintillator and photodiode arrays and signal processing electronics. Pitch and chemistry is application specific to cover the energy range of 5 to 500KeV. **Please note:** Single energy systems are also available.

Data acquisition time can be selected in the range 50 $\mu$ s to 50ms subject to the number of detector boards and the maximum read-out rate from the system of 48MB/s. Data is output in 16-bit format. The detector is linked to a client workstation via GIGE ethernet.

User settings to control integration times, gain and number of sub-samples can be set separately for each DH board. together with information on system configuration are transmitted over the selected interface and stored in non-volatile RAM so that at switch-on, the system is initiated in the last mode saved.



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### SPECIFICATION

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| <b>INTEGRATION TIME</b><br>50µs to 50ms                  | <b>SUB SAMPLES</b><br>1,2 OR 4                                     |
| <b>SNR</b><br>Up to 38,000:1                             | <b>NON-LINEARITY</b><br><0.1% over 10 pC                           |
| <b>POWER SUPPLY</b><br>12V (9V to 30V), 100mV/p-p ripple | <b>GAIN ADJUSTMENT</b><br>31 steps, 1.875 pC to 60 pC              |
| <b>A/D CONVERSION &amp; OUTPUT</b><br>16 BIT             | <b>MAXIMUM READ-OUT RATE</b><br>48MB/s                             |
| <b>DATA INTERFACE</b><br>GIGE Ethernet / UDP protocol    | <b>DETECTOR PITCH</b><br>0.4-2.5mm                                 |
| <b>DETECTOR ACTIVE LENGTH</b><br>50mm to 4m              | <b>SCINTILLATOR TYPES</b><br>CsI, CdWO4, GOS, ZnSe, Si, and others |
| <b>OPERATING CASE TEMPERATURE</b><br>+5 to +60°C         | <b>STORAGE TEMPERATURE</b><br>-40 to +70°C                         |
| <b>HUMIDITY (NON-CONDENSING) OPERATING</b><br>30°C 93%   | <b>HUMIDITY (NON-CONDENSING) NON-OPERATING</b><br>40°C 93%         |

### EVALUATION SYSTEM AND SOFTWARE

- XDAS XAPI and SDK software is supplied to demonstrate capability and for integration to host machine.
- The software enables setting of important acquisition parameters such as gain, offset correction and integration time.
- Data can be logged to a csv file and displayed in graphical form.
- Imaging application DLLs are also available – contact Sens-Tech for details.