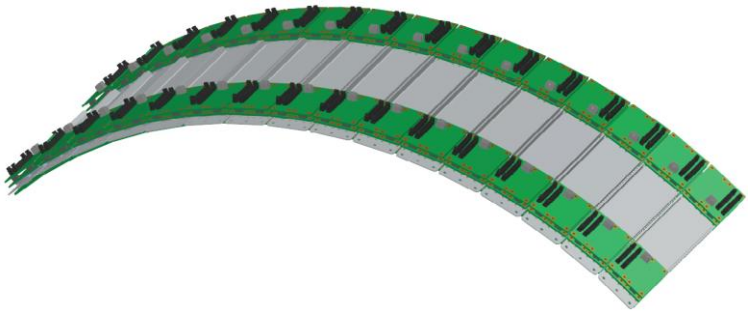
XDAS-CT X-Ray Electronics

SENS - TECH

SALES DATA SHEET

KEY FEATURES



- Modular design for any tunnel size
- High speed electronics for any speed
- Fixed or rotating gantry options available
- Single or double sided photodiode arrays
- Range of low and high energy scintillators
- Single and dual energy options available
- Range of pluggable detector arrays
- Short integration time down to 300µs
- 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
- High speed fibre interface to workstation

APPLICATIONS

- Security – Cabin baggage scanning
- Security – Checked baggage scanning
- Food – Highest separation to maximise yield
- Waste – Maximum reclaim rare earth metal separation
- Mining – Mineral sorting to maximise yield
- Wood – Maximise yield of high value wood

DESCRIPTION

XDAS-CT single and dual energy high speed, low noise CT kits comprise application specific Sens-Tech XDAS DH (Detector Head) and SP (Signal Processing) boards for any tunnel size. Control of many parameters is available to give 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 Farraday 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 50 to 200KeV.

Data acquisition time can be selected in the range 300µs to 65ms subject to the number of detector boards and the maximum read-out rate from the system of 2.5Gbit/s. Data is output in 16-bit format. The detector is linked to a client workstation via high-speed fibre interface.

User settings to control integration times, gain and number of sub-samples can be set separately for each DH board. These together with system configuration are transmitted over the fibre link 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

INTEGRATION TIME 300µs to 65ms	**SUB SAMPLES** 1,2 OR 4
SNR Up to 38,000:1 **POWER SUPPLY** 12V Typical 15V Maximum	**NON-LINEARITY** <0.1% over 10 pC **GAIN ADJUSTMENT** 31 steps, 1.875 pC to 60 pC
A/D CONVERSION & OUTPUT 16 BIT	**MAXIMUM READ-OUT RATE** 2.5 Gbit/s
DATA INTERFACE Fibre link sFPDP 8b/10b fibre data encoding	**DETECTOR PITCH** 2.0-3.0mm
DETECTOR ACTIVE LENGTH 50mm to 4m	**SCINTILLATOR TYPES** GOS or CdWO4
RELATIVE HUMIDITY (NON-CONDENSING) 95%	**STORAGE / OPERATING TEMPERATURE** -10 to +60°C / +10 to +40°C

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.