XDAS-HE X-Ray Electronics

SENS - TECH

SALES DATA SHEET

KEY FEATURES

- Modular design for any vehicle size
- High speed electronics for any vehicle speed
- Range of high energy scintillators
- Single and dual energy options available
- Range of pluggable detector arrays
- Short integration time down to 50µs
- Low noise electronics with excellent SNR
- 31 steps of gain from 1.875 pC to 60 pC
- Continuous or externally triggered scan
- High speed fibre or GIGE interface available

APPLICATIONS

- Security – Fixed vehicle scanning
- Security – Mobile vehicle scanning
- Security – Rail container scanning
- Security – Ports container scanning

DESCRIPTION

XDAS-HE single and dual energy high speed, low noise HE kits comprise application specific Sens-Tech XDAS DH (Detector Head) and SP (Signal Processing) boards for any vehicle 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 high energy scintillator and photodiode arrays and signal processing electronics. Pitch and chemistry is application specific to cover the LINAC energy range up to 10MeV.

Data acquisition time can be selected in the range 50µs to 50ms 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 50µs 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 GIGE Gibabit Ethernet or Fibre link sFPDP	**DETECTOR PITCH** 2.0-6.0mm
DETECTOR ACTIVE LENGTH Unlimited	**SCINTILLATOR TYPES** CsI 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.