LINX-TDI-DE - X-Ray Camera

SENS - TECH

SALES DATA SHEET

FEATURES AND BENEFITS

- Delivers ultra-sharp, high-contrast images at fast line speeds.
- Enhanced sensitivity enables lower X-ray power usage and improved energy efficiency.
- Accurately detects bones in fish as small as 0.3 mm at 0.5 m/s line speed.
- Supports simultaneous dual-energy imaging for advanced material differentiation.
- Synchronised TDI scanning eliminates motion blur for precise inspection results.
- Built for continuous operation in demanding industrial environments.

APPLICATIONS

- Food – Smallest foreign object detection
- Food – Highest separation to maximise yield
- Waste – Maximum reclaim rare earth metal separation
- Wood – Quality control to maximise value

DESCRIPTION

The LINX-TDI-DE is a next-generation 2D X-ray imaging system built on advanced Time Delay Integration (TDI) technology. By accumulating multiple line scans into one high-resolution image, the system delivers exceptional image clarity, reduced noise, and superior material contrast — even at high production speeds.

Combined with Dual-Energy X-ray capability, it distinguishes materials based on atomic density, enabling accurate identification of low-density contaminants such as plastics, bone fragments, or glass — substances that traditional single-energy systems often miss.

Designed for industrial precision and reliability, the LINX-TDI-DE is ideal for applications where accuracy, speed, and durability are essential.

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 50µs 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

INTEGRATION TIME 50µs to 50ms	**SUB SAMPLES** 1, 2 OR 4
SNR Up to 38,000:1 **POWER SUPPLY** 12V (9V to 30V), 100mV/p-p ripple	**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** 48MB/s
DATA INTERFACE GIGE Ethernet / UDP protocol	**DETECTOR PITCH** 1.0-2mm
DETECTOR ACTIVE LENGTH 50mm to 4m	**SCINTILLATOR TYPES** GOS, ZnSe, Si, and others
OPERATING CASE TEMPERATURE +5 to +60°C	**STORAGE TEMPERATURE** -40 to +70°C
HUMIDITY (NON-CONDENSING) OPERATING 30°C 93%	**HUMIDITY (NON-CONDENSING) NON-OPERATING** 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.