

LINX-TDI-DE - X-Ray Camera

SALES DATA SHEET

DUAL ENERGY TIME DELAY INTEGRATION DETECTOR



SENS - TECH

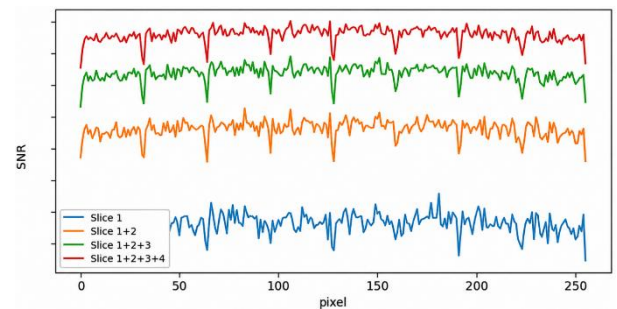
FEATURES AND BENEFITS

- 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. Multiple line scans are accumulated and consolidated through our **XALGOLIB** software producing a single 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

DETECTOR PITCH

0.8-1.6mm

SCINTILLATORS

LE - Si/ZnSe/GOS HE - GOS

CHANNELS

128 pixels by 4 slice modules

INTEGRATION TIME

50µs to 50ms

MAXIMUM READ-OUT RATE

48MB/s

SNR

Up to 38,000:1

GAIN ADJUSTMENT

31 steps, 1.875 pC to 60 pC

ADC OUTPUT

16 BIT

WORKSTATION INTERFACE

GIGE Ethernet / UDP protocol

DE CONFIGURATION

Stacked detectors

SUB SAMPLES

1, 2 OR 4

POWER SUPPLY

12V - 100mV/p-p ripple

DETECTOR ACTIVE LENGTH

100mm to 1,500mm

OPERATING TEMPERATURE

+5 to +60°C

OPERATING HUMIDITY

30°C 93%

STORAGE TEMPERATURE

-40 to +70°C

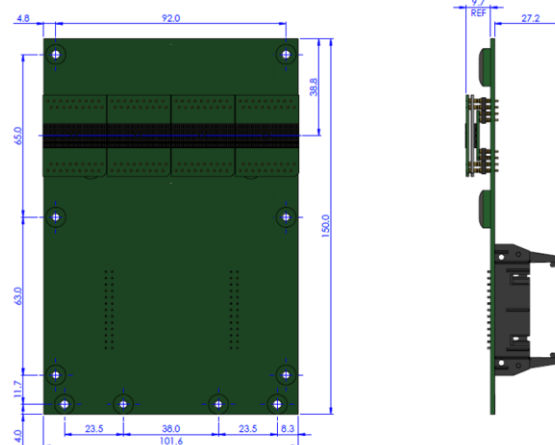
NON-LINEARITY

<0.1% over 10 pC

LAN interface GIGE RJ45 connector

D connector for trigger and power

Status LED



DEVELOPMENT SOFTWARE

XAPI

- [Data acquisition](#) – Acquires and processes raw data from X-ray beam XRT in real time.
- [Signal processing](#) – Processes and packages raw pixel intensity, timing and sensor-specific metadata.

XALGOLIB

- [Description](#) – Core image processing software library for high-performance X-ray data analysis.
- [How it works](#) – Modular pick and mix of real-time functions across entire inspection workflow.

APPLICATION SOFTWARE

- Customer is responsible for this.
- Connects with XAPI and uses XAlgoLIB to produce highest quality data and images.

