XDAS-CT-DB-DEV-KIT

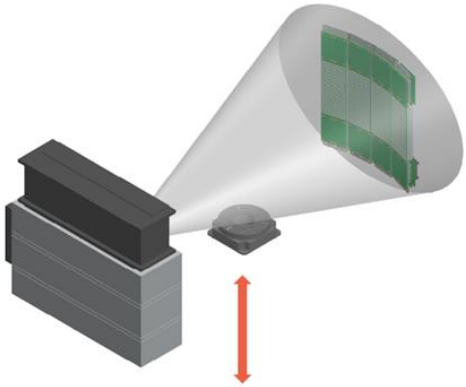
SALES DATA SHEET
DUAL ENERGY MULTI-SLICE CT DEVELOPMENT KIT

SENS - TECH

KEY FEATURES

- Based on a modular proven XDAS platform
- Dual energy 24 slice by 32 channel detector modules
- Data acquisition modules can be tiled side by side
- Double sided photodiode detector array
- Low energy on underside and high energy on top side

- **Kit also includes:**
  - X-ray source/tube subsystem
  - 2 stage rotating table gantry
  - API/SDK with CT DLLs



BENEFITS

- Software and rotational gantry accelerate new CT product development and speeds up time to market
- Dual energy architecture means no need to pulse low and high energy - simplifying development phase
- Time consuming initial stages of research and development eliminated fast forwarding to prototyping
- TSA/ECAC approved electronics gives confidence in full system certification path
- Forward compatible architecture future proofed for next generation products.

DESCRIPTION

- XDAS computed tomography dual energy development kits enable conventional scanning OEMs to develop high speed, low noise CT systems for both checked and cabin baggage customers.

- CT kits comprise application specific Sens-Tech XDAS DH (Detector Head) and SP (Signal Processing) boards which can be configured for tunnels of any size.

- Two stage rotating gantry allows test objects to be rotated and moved up and down emulating real world rotating gantry around baggage conveying belt at checkpoint and checked baggage speeds.

- API control of many key parameters is available to give maximum imaging control and a library of starter algorithms are provided provide plug and play capability.

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 for cabin and checked baggage CT to allow for the atomic density separation in the most rigorous airport security environments. .

Data acquisition time can be selected in the range 512µs 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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SENS TECH

SPECIFICATION

DETECTOR PITCH
2.0mm

SCINTILLATORS
LE GOS/ HE GOS

CHANNELS
32 pixel by 24 slice modules

MIN INTEGRATION TIME
512µs

MAXIMUM READ-OUT RATE
2.5 Gbit/s

DATA INTERFACE
Fibre link sFPDP 8b/10b

WORKSTATION INTERFACE
PCIE card

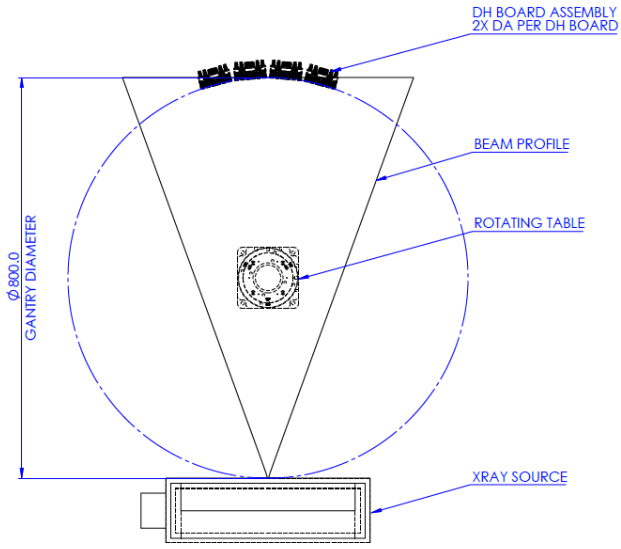
X-RAY SOURCE/TUBE
160keV / 800W / 5mA

ROTATING TABLE GANTRY
360° circular motion

BEAM PROFILE
For 800mm diameter

ROTATIONAL SPEED
Up to 400RPM

SERVO SPEED
0.5m/s belt emulation



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.