High-Performance CZT Compton Imaging Module

ECZT-D2005

1.Overview

ECZT-D2005 high-performance CZT Compton imaging module is independently designed and manufactured by our company. It integrates a large-sized pixelated CZT detector, ASIC chip, ADC, and FPGA readout circuit. The device features advanced algorithms that can achieve ray interaction DOI (Depth of Interaction), charge coupling correction, and K-escape peak calibration. It outputs the position information (X, Y, Z (DOI)), energy information, and time information for each detected γ-ray, making it convenient for users to perform spectrum analysis, γ-ray imaging, and source localization applications.

2.Product Features

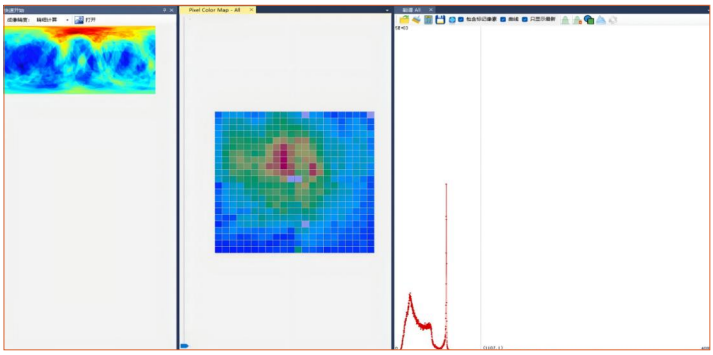
1. Operates at room temperature without additional cooling
2. Built-in energy calibration information, directly outputs energy without user calibration
3. X, Y sub-pixel resolution ≤0.5 mm, Z direction resolution <1 mm
4. High energy resolution: ≤1.5% @ 662 keV
5. No collimator required
6. 4π imaging
7. Good energy linearity and uniformity
8. Low power consumption and lightweight
9. Modular design, small size, high integration, easy to integrate and expand

3.Main Technical Parameters

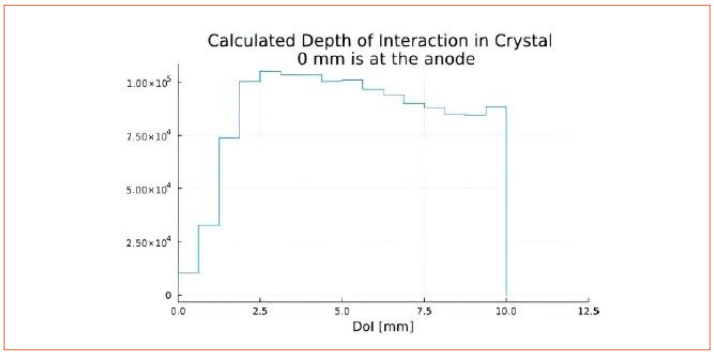
Detector Type	CZT	Energy Resolution	⩽1.5%@662keV	Communication Interface	RJ45 network port
Crystal Thickness	10mm, 15mm (optional)	Energy Spectra range	30keV~ 3MeV	Power Supply	DC 16V
Crystal Volume	19.4cm^3, 29cm^3 (optional)	Field of View / FOV	4π (360°)	Power Consumption	7.5W
Pixel arrays	22 X 22	Imaging Energy Range	250keV~ 3MeV	Dimensions	83.5mm X 83.5mm X 127mm
Pixel Size	2mm	Output Information	Energy Spectra information, time information, 3D (X,Y,Z) position information	Weight	1100g (excluding powercable)

4.Test Data

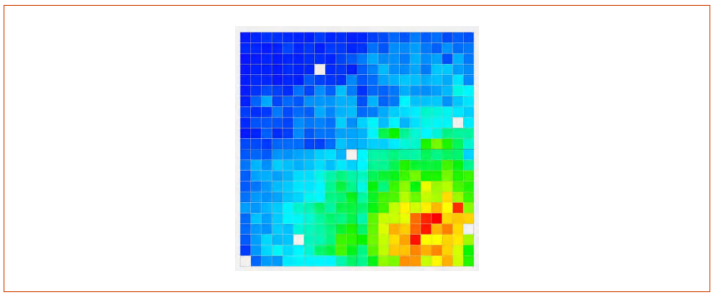
- Upper-computer software



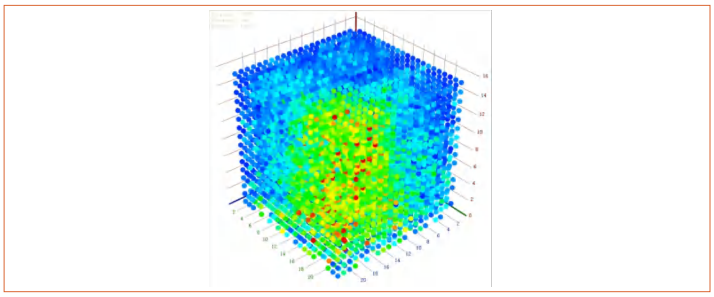
- Depth distribution



- Imaging



Two-Dimensional Imaging



Three-Dimensional Imaging

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