

1. Overview



ECZT-D2003 high-resolution CZT spectrometer is a high-performance γ -spectrometer device independently designed and manufactured by our company. It integrates a large-sized CZT detector, ASIC chip, ADC, and FPGA readout circuit. The device features advanced algorithms that can achieve three-dimensional depth correction, charge coupling correction, and K-escape peak calibration, outputting energy and time information. This makes it convenient for users to perform spectrum analysis, nuclide identification, 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 High energy resolution: $\leq 1.5\%$ @662keV
- ▶ 4 Operating temperature range: -20°C - 45°C , temperature drift $< 1.0\%$ Cs-137
- ▶ 5 Built-in heat sink and fan
- ▶ 6 Low power consumption and lightweight
- ▶ 7 Modular design, small size, high integration, easy to integrate and expand

3. Main Technical Parameters

Detector Type	CZT	External Interface	2-pin aviation plug power interface, 2-pin aviation plug to RJ45 network port
Crystal Thickness	10mm, 15mm (optional)	Power Supply	DC 16V
Crystal Volume	19.4cm ³ , 29cm ³ (optional)	Power Consumption	7.5W
Energy Resolution	$\leq 1.5\%$ @662keV	Housing Material	Aluminum
Spectral Energy Range	30keV~ 3MeV	Dimensions	90mm X90mm X 135mm
Output Information	Spectral information, time information	Weight	1.5kg (excluding cables)

4. Test Data

● Energy Resolution

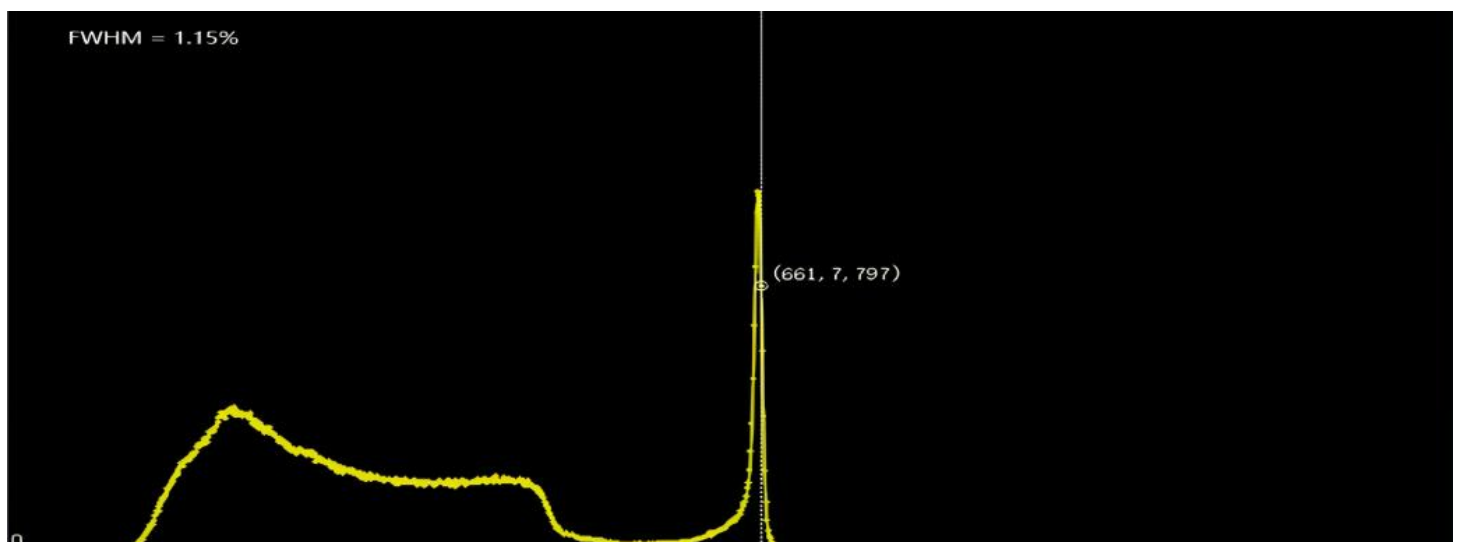


Figure 1: Cs-137 Energy Resolution

● Nuclide Energy Spectrum

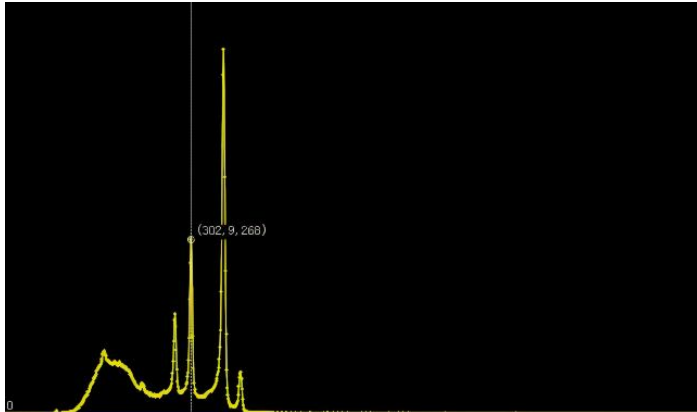


Figure 2: Ba-133 Energy Spectrum

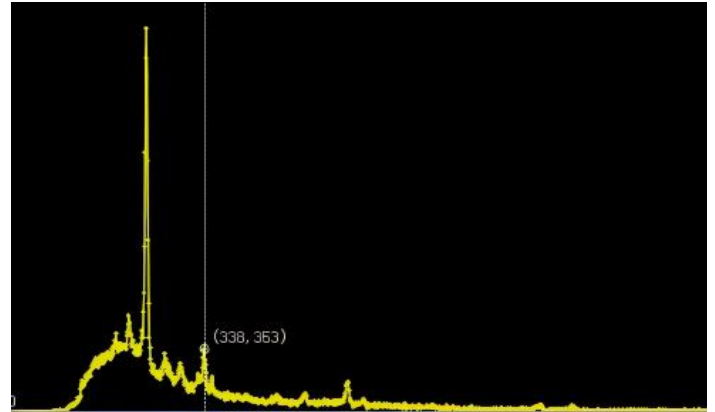


Figure 3: Th-232 Energy Spectrum

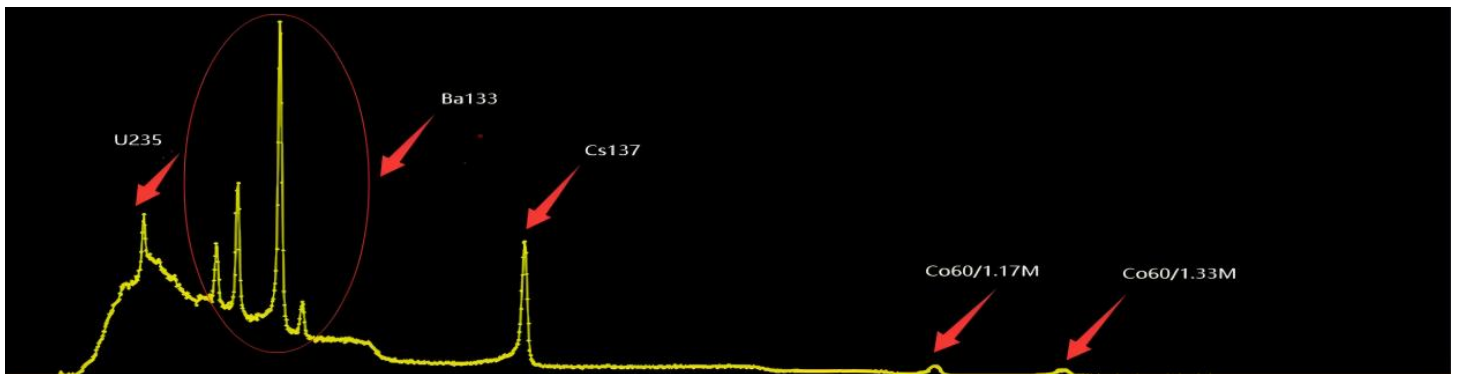
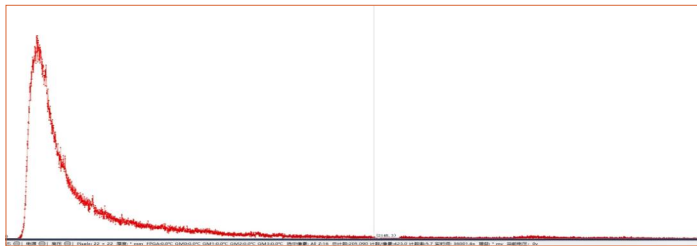
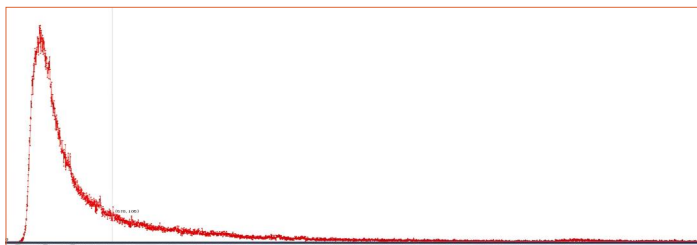


Figure 4: Mixed spectrum

● Lead Chamber Background Counting



● Aerosol Test



● Energy Linearity

