

# Gamma-Radiation CdZnTe Micro Spectrometer



Main Applications

Main Features

- ▶ Very compact
- ▶ Changeable CdZnTe detection modules
- ▶ Digital pulse processing
- ▶ High energy resolution
- ▶ High efficiency
- ▶ High count rate capability
- ▶ USB powered
- ▶ Minimal power requirements
- ▶ Easy-to-use

- ▶ Gamma-radiation spectroscopy
- ▶ Environmental monitoring
- ▶ Nuclear power plants
- ▶ Monitoring of nuclear material flow
- ▶ Home land security



## Gamma-Radiation CdZnTe Micro Spectrometer $\mu$ SPEC

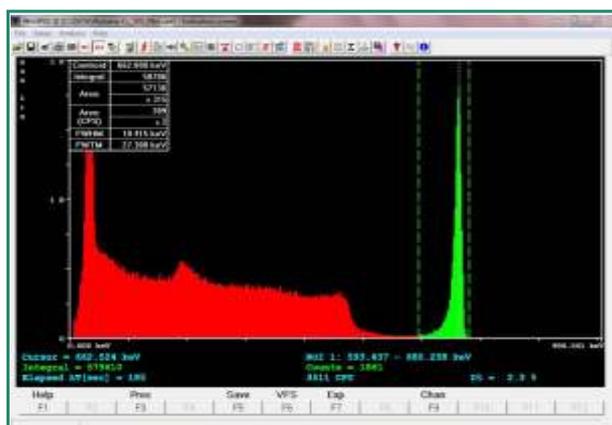
Gamma-Radiation Micro spectrometer  $\mu$ SPEC is a very compact high performance device with changeable CdZnTe detection modules. The  $\mu$ SPEC is based on application of high-sensitivity room temperature operating CdZnTe semiconductor detectors and miniature multi channel analyser MikroMCA527 (GBS Elektronik GmbH). The  $\mu$ SPEC allows measurements of gamma-radiation spectra and storing it for processing in a PC via USB port. The changeable detection modules contain the high quality CdZnTe quasi-hemispherical detector of volume 60 mm<sup>3</sup>, 500 mm<sup>3</sup> or 1500 mm<sup>3</sup>.

The  $\mu$ SPEC is a self-sufficient device and consists of the CdZnTe detector, charge sensitive preamplifier, main amplifier, digital signals processor, high and low voltages power supplies and computer interface. It is communicated and powered from the PC via USB port.

The  $\mu$ SPEC is operated and entirely compatible with the Windows based GBS MCA166/MCA527 WinSPEC software.

### Specifications

• detector type	CdZnTe quasi-hemispherical detector
• detector volumes:	
$\mu$ SPEC60	60 mm <sup>3</sup>
$\mu$ SPEC500	500 mm <sup>3</sup>
$\mu$ SPEC1500	1500 mm <sup>3</sup>
• energy range	20 keV to 3.0 MeV
• energy resolution (FWHM) at 662 keV:	
$\mu$ SPEC60, $\mu$ SPEC500	< 2.5%
$\mu$ SPEC1500	< 3.5%
• maximal throughput	> 100 kcps
• number of channels	128, 256, 512, 1k, 2 k
• integral non-linearity	< 0.3 %
• shaping equivalent	adjustable in the range 0.1...2 $\mu$ s
• PZC adjustment	automated
• power supply	USB, 4.5 V...5.25 V, 100 mA max
• connector	Micro USB, A or B type
• dimensions	25 mm $\times$ 25 mm $\times$ 72 mm
• weight (maximal)	80 gram



User interface of the WinSPEC software.



Communication with PC via USB connection.