

# Digital Spectrometer APN102

MADE IN JAPAN

Digital Spectrometer within high-voltage power supply

NIM

APN102(2CH) is all-in-one digital spectrometer which has high-voltage power supply, preamp power, and MCA (Multi Channel Analyzer). Preamp signal of the detector is directly input to the APN102, and the digital signal processing is processed a high-speed ADC (100MHz·14Bit) and highly-integrated FPGA. The measurement data will be transferred to the PC via USB.

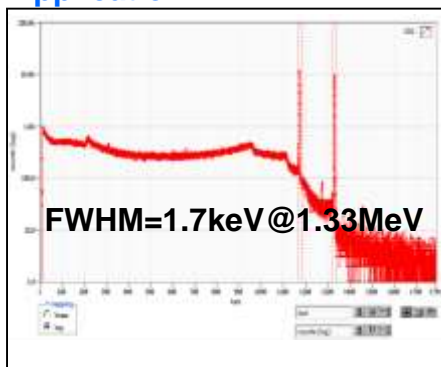
- **Intended detector**    **Semiconductor detectors (Ge, CdTe, Si)**  
**Scintillation detectors (LaBr3(Ce), NaI(Tl), CsI(Tl)), etc.**
- **Resolution**            **1.7keV@1.33MeV (Ge semiconductor detector)**  
**2.8 ~ 3.5%@662keV (LaBr3(Ce) scintillation detector)**
- **Throughput**            **100kcps and over**
- **Mode**                    **Histogram, Waveform**
- **Multiple functions**    **Spectroscopy amp, Timing filter amp**  
**Filter shape output DAC, Pulser (test) output DAC**  
**Auto Pole-Zero Cancellation**  
**Coincidence (Option)**
- **Software**                **Included with application and instruction manual**
- **Interface**                **USB 2.0**



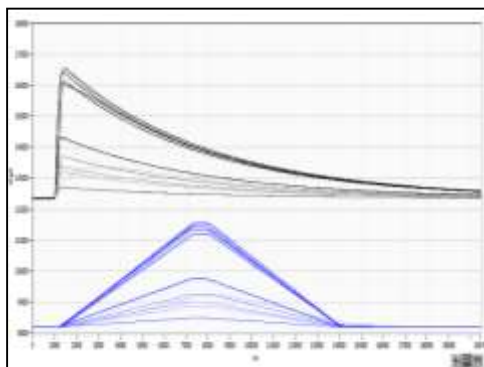
APN102 (Front)

APN102 (Rear)

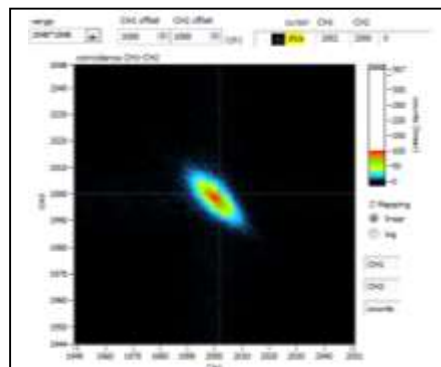
## Application



Ge detector and using Co-60 radiation source  
(Peak spectra @ 1.17MeV and 1.33MeV)



Waveform (preamp, slow)



Coincidence 2D-Map (Option)

## Specifications

Analog Input	±1V, Input-Impedance: 1kΩ
Analog Gain	Coarse Gain: x2, x4, x10, x20, Fine Gain: x0.5~x1.5
Sampling Rate	100MSPS (Resolution: 14Bit)
ADC GAIN	8K, 4K, 2K, 1K, 512, 256ch
Digital Processing	Trapezoidal Filter: 0.1~16μs, Baseline Restorer, Pileup Rejecter, Coarse/Fine Gain
High-voltage	0V~±4000V(max: 1.0mA), Ripple: 20mVp-p (typ.)
Preamp Power	±12V, ±24V (NIM-standard)
Interface	USB2.0
Dimension, Weight	NIM2U[68(W) x221(H) x249(D)], 1570g
Power consumption	12V(about0.6A)
Operating Condition	Temperature: 0~40°C, No dew condensation
PC requires	Windows 7, Display: WXGA and over
Accessory	USB cable, Application, Manual



LaBr3(Ce) detector and using Cs-137 radiation source  
(Peak spectra of γ-ray @662keV and Ba-Kα ray @30keV)

\*Images is for illustration purpose.  
\*Please note that contents may change without prior notice.

# TechnoAP

Design and fabrication of electronic circuit associated with measurement control and radiation measurement

## TechnoAP Co., Ltd.

+81-29-350-8011  
+81-29-352-9013  
2976-15 Mawatari, Hitachinaka-shi, Ibaraki, 312-0012, Japan  
<http://www.techno-ap.com>  
[order@techno-ap.com](mailto:order@techno-ap.com)

Updated on 2017/03/29