Digital Signal Processor

TechnoAP

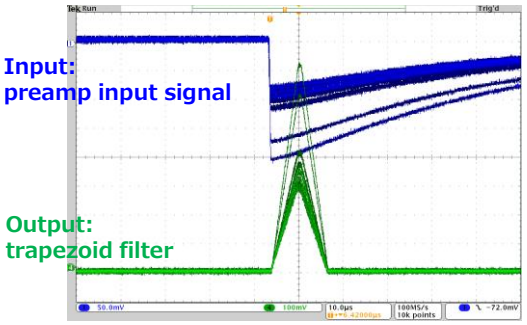
APU8008A / APU8016A

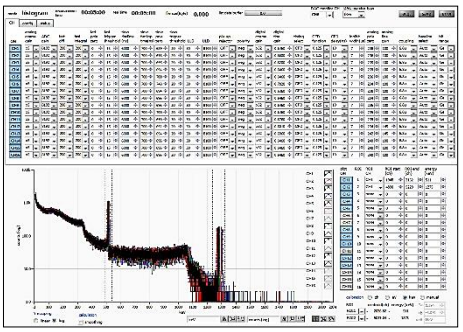
The measurement device features digital signal processing (DSP) capability designed for gamma ray spectroscopy across 16 systems. It directly receives signals from detector preamplifiers, digitizes them using a high-speed ADC (100Msps, 16-bit), applies trapezoidal filtering via FPGA, captures pulse peak values, and generates spectra. Measurement data is transmitted to a computer via Gigabit Ethernet. It maintains list-mode time accuracy consistently, enabling continuous operation suitable for extensive measurements. Additionally, it now includes updated spectral analysis software as a standard feature.

APU8016A

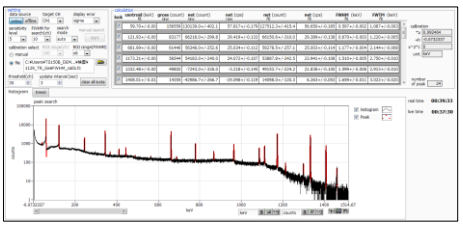
Features

Suitable Detectors	Semiconductor Detectors such as Ge, CdTe, Si etc. Scintillator Detectors such as LaBr3(Ce), NaI(Tl) etc.
Energy Resolution	1.6～2.2keV@1.33MeV, Ge Semiconductor Detector
Throughput	> 200kcps
Integral Non-linearity	< ±0.025% (typ.)
Differential Non-linearity	< ±1.0% (typ.)
Mode	Histogram, List, Wave
Spectrum Analysis Software	Gauss Fit Analysis, Peak Search Analysis, Dead Time Adjustment, Energy Correction, Half Width Correction





Histogram Mode



Peak Search Analysis

Specifications

Analog Input	8/16 ch, LEMO Connector Rang: ±2V, Input Impedance: 1kΩ
Analog Gain	Coarse Gain x1, x2, x5, x10
ADC	100Msps, 16bit
ADC Gain	16k, 8k, 4k, 2k, 1k, 512, 256 ch.
Digital Signal Processing	Trapezoidal Filter Rise time 0.1～20μs (0.01μs step) Flattop time 0.05～2μs (0.01μs step) Timing Filter, Baseliner Restorer, Pileup Rejecter, Auto-pole zero, Auto-threshold etc.
Digital Gain	Coarse Gain x1, x2, x4, x8, x16, x32, x64, x128 Fine Gain x0.3333～x1.0000
External Control	GATE Input, VETO Input, Clear Input, Clock Input/Output, LEMO Connector etc.
Communication I/F	Gigabit Ethernet, TCP/IP, UDP
Power Consumption	AC240V
Dimension	W: 300 x H: 56 x D: 335 mm
Weight	Approx. 3100g
Application	Data Measurement Control, Spectrum Analysis Software

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

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