

DSP APV(U)8000 Series

MADE IN JAPAN

Digital Signal Processor for γ -ray Spectroscopy

VME/Unit

DSP (Digital Signal Processor) for Gamma-ray Spectroscopy, Features originally developed Circuit Design, Firmware, and Application Software.

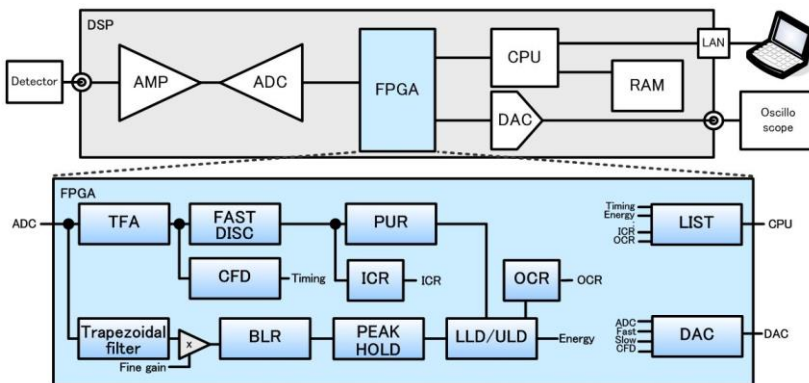
- Number of Channels 2, 4, 8 CH (Simultaneous sampling)
- Energy resolution 1.7 keV @ 1.33 MeV
- Time resolution 0.625ns (minimum unit)
- Throughput 100kcps and over
- Operation mode Histogram, List, and Waveform
- Multi function Spectroscopy Amp, Timing Filter Amp
CFD, DAC for input & filtered output
- Dimension: VME 6U size, Unit box
- Communication I/F TCP/IP
- Options UDP Data Communication, Dual-CH Coincidence and Rise Time Measurement
- Software Application Software with manual

Overview

Radiation spectrometer equipped with Digital Signal Processing (DSP) function for Gamma-ray spectroscopy.

Ge detector-preamp output signal is processed by high speed ADC (100 MHz, 14 bit) and high density FPGA. Analyzed data using histogram, event, and waveform applications is transferred to PC via Ethernet (TCP/IP or UDP).

Application software is supplied as a standard accessory.



APU8004 4CH Unit



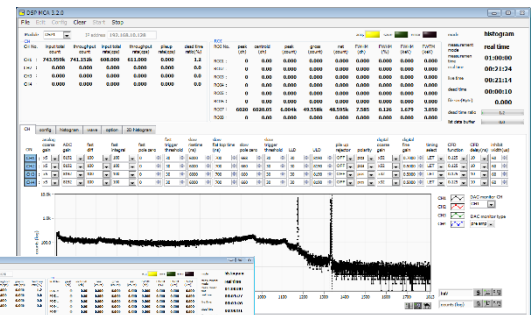
APV8008 (Front)
(VME 6U size)



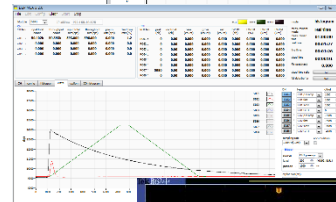
APV8008



VME RACK 7 Slots



Application Data
(Histogram and waveform)



DAC Output (Upper: Preamp, Lower: Trapezoidal filter)

*Images is for illustration purpose.

*Please note that contents may change without prior notice.

Specifications

Analog Input	2, 4, 8 CH
Coarse Gain	x2, x4, x10, x20
Fine Gain	x0.5 ~ x1.5
ADC Input Signal	$\pm 1V$
Input Impedance	1k ohm
Sampling Rate	100MSPS
Resolution	14bit
ADC GAIN	8K, 4K, 2K, 1K, 512, 256 ch
Trapezoidal Filter	0.4 ~ 16 μ s (0.01step)
Digital Signal Processing	Baseline Restorer, Pileup Rejecter, CFD, etc.
External dimensions (Unit: mm)	VME 6U 20(W) x 262(H) x 187(D) Unit box 300(W) x 56(H) x 335(D)
Weight	VME 6U about 400g Unit box about 3300g

TechnoAP

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

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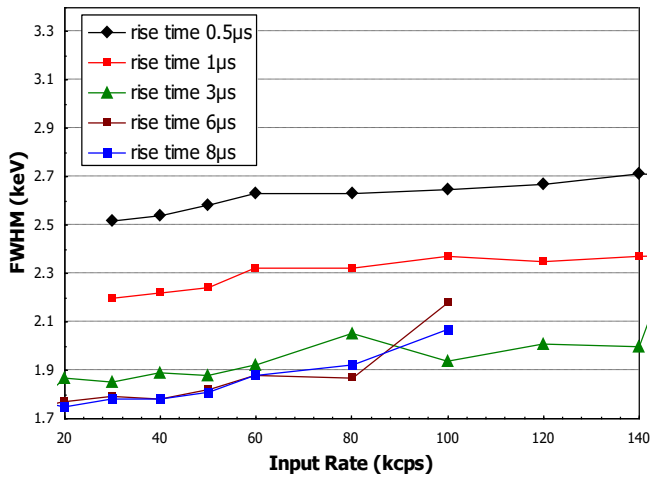
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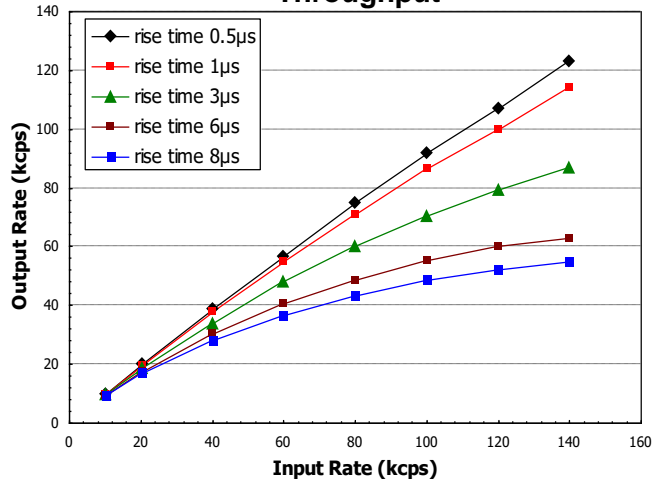
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Performance

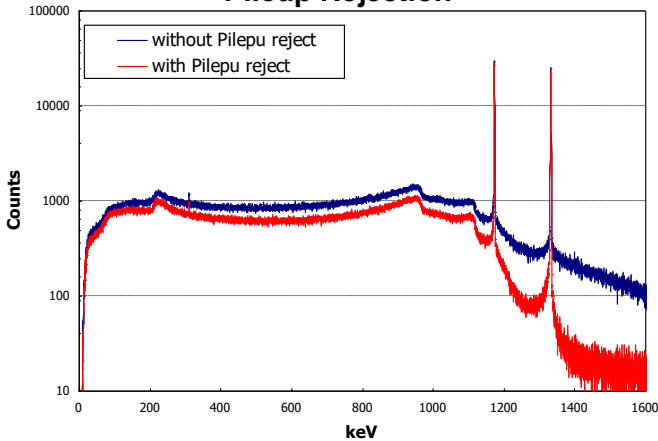
Resolution



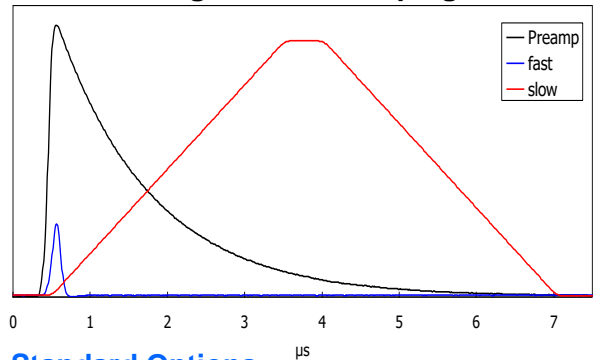
Throughput



Pileup Rejection



Digital Pulse Shaping



Standard Options

- Hardware/Software Manual (English version is on the way)
- Input AC cable 3P (for Unit Box)
- Application Software CD (Windows)

Shape	Model #	# of channels	Input SW*	Option	Price
VME 6U	APV8002	2	○	○	On request
	APV8004	4	○	○	On request
	APV8008	8	○	-	On request
Unit Case	APU8002	2	○	○	On request
	APU8004	4	○	○	On request
	APU8008	8	○	-	On request
Option	UDP Transfer	Upgrade Std TCP/IP speed of 1MB/sec to 2MB/sec			On request
	Coincidence	Coincidence counting: AND•OR•Coincidence time (10ns to 500ns)			On request
	Coincidence 2 dimensional histogram	Create CH-CH two dimensional histogram from coincidence function output			On request
	Rise Time Measurement	Rise time measurement of preamp output signal (10 to 90% or 20 to 80%: 0.625S min)			On request
	Rise Wave Measurement	Add preamp output signal rise time waveform to "event data"			On request
VME Frame	VME 7 slot frame	Power Supply : 5V (60A, 120mV ripple typ), +/- 12V			On request

*Input switch: Selectable either resistive feedback type or transistor reset type

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