

Waveform acquisition processing by 1GHz 14bit-ADC
High time resolution and High throughput

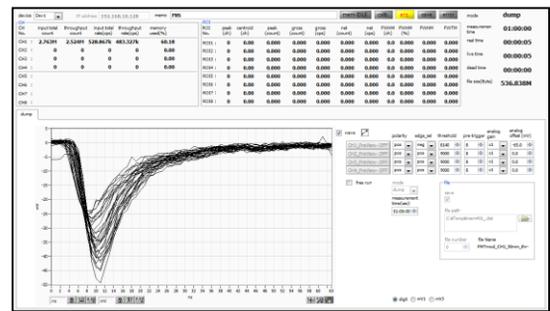
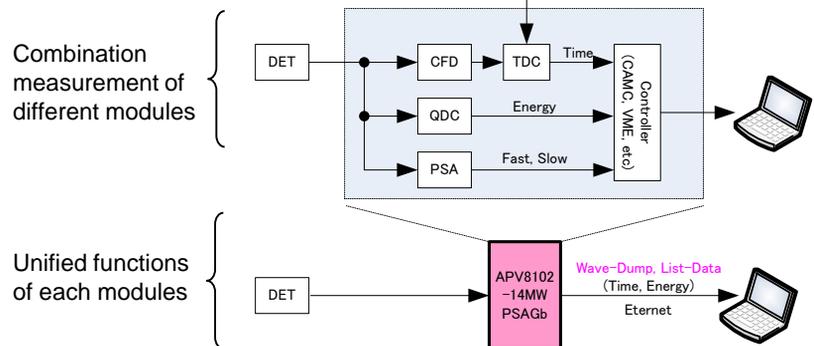
This is a waveform acquisition and analysis board with 2 channels of high speed, high resolution ADC (1 GHz, 14 bits). In addition to real-time analysis at 1 GHz by FPGA, waveform acquisition at 1 Mcps or more is possible by installing high-speed DDR type memory. Acquired by supporting Gigabit Ethernet communication High-speed processing (list data generation and transfer) with no dead time due to high-speed reading of waveform data and signal processing is realized with high time resolution and high throughput. All ADCs operate synchronously at 1 GHz clock and can also be used for signal analysis from multiple high-speed scintillation detectors. It also supports synchronous processing between multiple boards, and it is easy to expand even for multi-channel analysis.



Features

ADC	1 GHz , 2 channels 14-bit Resolution, Synchronism Sampling
Time resolution	Coarse: 2 ns Fine: 7.8 ps
Output	1 M cps or more per channel
Analyze mode	Waveform acquisition, List (TDC + QDC etc.)
Functions	(Digital) CFD, TDC, DC, PSA etc.
Interface	1000 BASE-T (over 1M List event)
Memory	1 GB (512 MB + 512 MB) * 2

NOTE: The number of channels that can be supported depends on the option to be selected and the customization of signal processing.



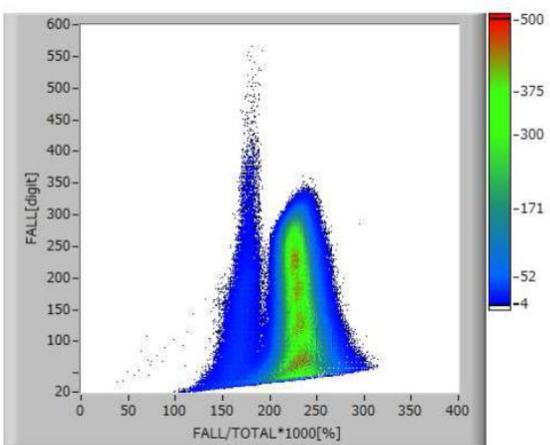
List Data Example (1 event: 112bit)



Specifications

Analog signal input type	PMT anode signal, Fast-NIM signal etc.
Analog signal input range	± 3 V (Z_{in} : 50 Ω , GAIN x 1) (LEMO connector x 2) *Customizable maximum ± 4 V capable
Analog offset adjustment	± 2 V (12 bit) *Customizable ± 20 mV to ± 4 V capable
Analog gain switch	x 1 and x 3 *Customizable under input range limit x 10 capable
Analog signal rise time	Under 1 ns (@Gain x 1)
Outside in/output signal terminal (TTL level)	CLK input, CLK output, GATE input, VETO input CLR input, OR output (LEMO connector x 6) *Customizable switch in/output signal
Interface	Ethernet (TCP / IP) 1000BASE-T
Dimension and Weight	VME1 width 20mm(W) x 262mm(H) x 187mm(D), 540g
Environmental conditions	Temperature 5 to 25 degrees
Electricity consumption	+5 V (2.5 A), +12 V (0.6 A), -12V (0.3 A)
Accessories	Application and Instruction Manual

Application Waveform acquisition



Discrimination of gamma and neutron
(Vertical axis: Waveform fall time integral calculus level
Horizontal axis: Fall time integral calculus level / All waveform integral calculus level)

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