

Pulse Shape Discrimination

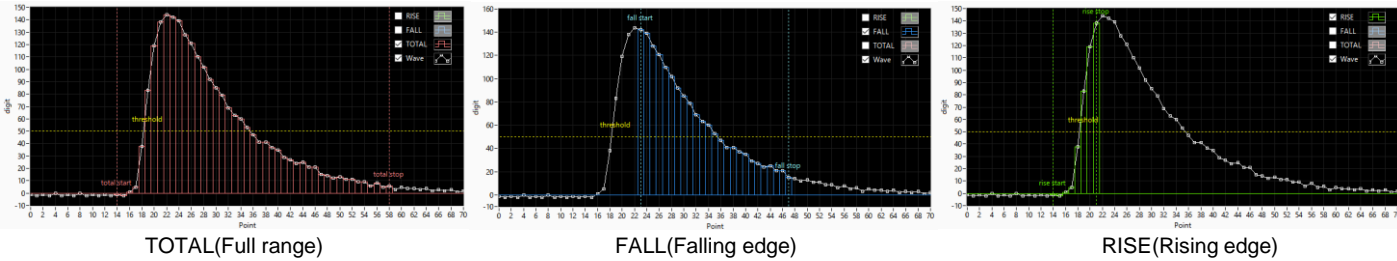
MADE IN JAPAN

Ideal for Neutron & Gamma ray discrimination measurement in Liquid Scintillator

OPTION

Features

For the waveforms collected on the DPP board, integrate the specified ranges individually for TOTAL (Full range), FALL (Falling edge), RISE (Rising edge) (see the figure below), and send it as list data to the PC via the Ethernet forward. It can display a 2D histogram based on the integration result. The object of the vertical and horizontal axes of the histogram can be selected arbitrarily (eg. horizontal axis FALL / TOTAL, vertical axis FALL), it is also possible to extract a specified range of data and display a one-dimensional histogram.



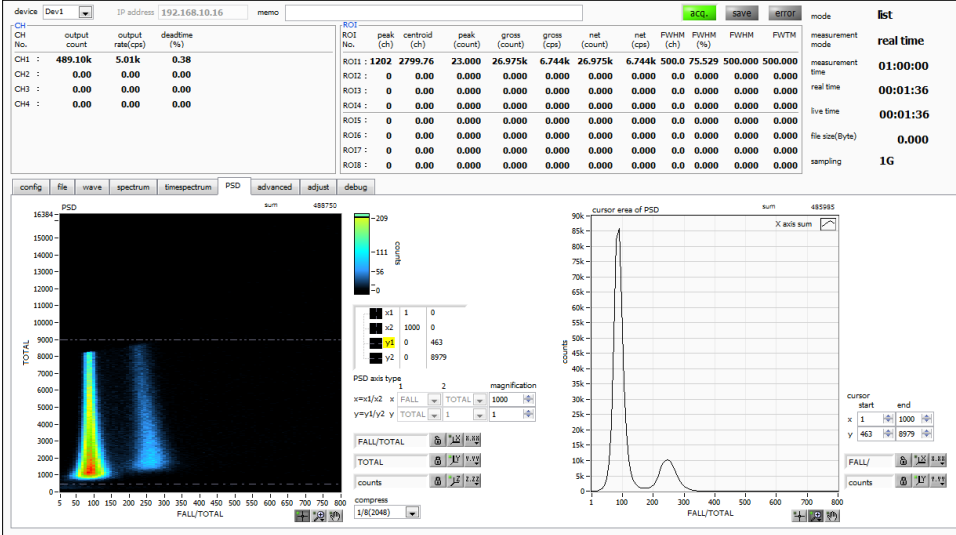
List data structure (1 event: 128 bits)

	127	111	95	79	15	12	0
Event#1	TOTAL[15..0]	FALL[15..0]	RISE[15..0]	TDC[63..0]	CH#[2..0]	QDC[12..0]	
Event#2	TOTAL[15..0]	FALL[15..0]	RISE[15..0]	TDC[63..0]	CH#[2..0]	QDC[12..0]	
...							
Event#n	TOTAL[15..0]	FALL[15..0]	RISE[15..0]	TDC[63..0]	CH#[2..0]	QDC[12..0]	

※ TDC Time resolution Δt : 3.9ps(1GSPS)/7.8ps(500MSPS)

Measurement example

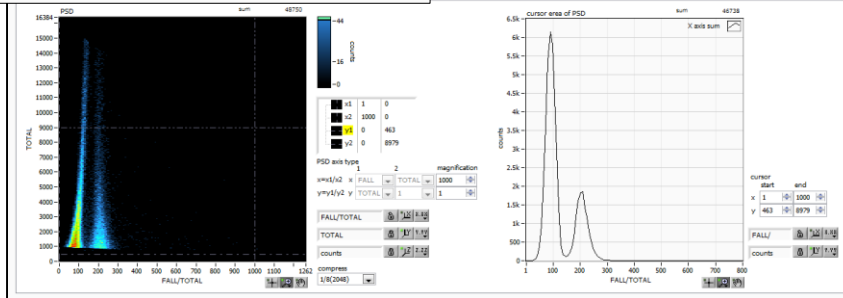
Two dimensional histogram (Left side) and one dimensional histogram (Right side)



[ENVIRONMENT]

Digital Pulse Processor:
APV8104-14
(1 GSPS, 14 bits, 4 CH)
Radiation source:
252 Cf (Californium)

In the case of stilbene scintillator
($\phi 50.8 \times 50.8$ mm, PMT:H3378-51)



In the case of Organic liquid scintillator (NE213, PMT:R4143)

TechnoAP

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

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