

# Time Spectrometer APV8702-8

## 3GHz ADC digital waveform processing

## High time resolution High throughput

MADE IN JAPAN

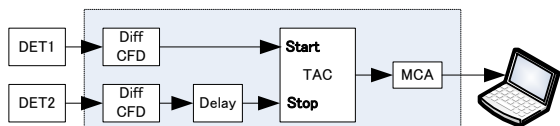
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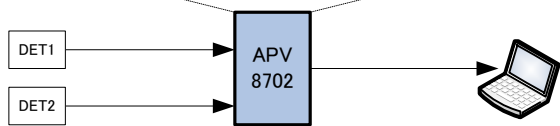
This board is a spectral meter for time analysis which adopted high speed 3 GHz ADC for each channel. This board integrates the functions of radiation measurement modules such as Differential CFD, Delay, TAC, MCA required for time analysis. In the processing method, the preamplifier signal from the detector is sampled into a waveform with the high speed ADC, then time analysis is performed in the FPGA, and the calculation result is transferred to the computer by Ethernet communication. It can be used for time difference measurement such as positron lifetime measurement.

### Features

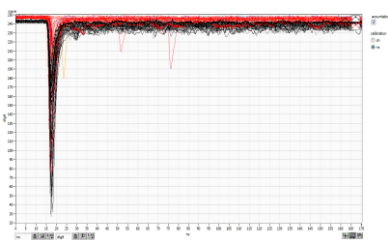
- ADC: **2 channel, 3 GHz, 8-bit**
- Time Resolution: **161 ps (BaF<sub>2</sub> scintillator vs BaF<sub>2</sub> scintillator),  
Sample: Silicon**
- Coincidence Window: **± 60 ns**
- Analysis mode: **Wave height, TAC, Waveform, (option) Pulse shape**
- Function: **Digital CFD (WALK, THRESHOLD, LLD ,ULD)**



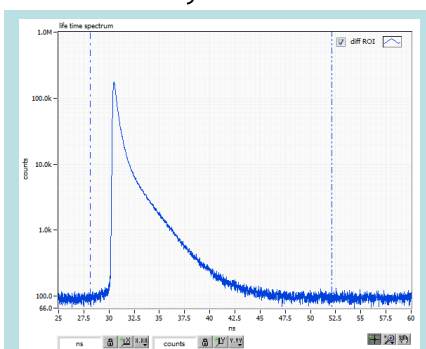
Measuring of combination of some module.



APV8702-8 has integrated each module.



Waveform acquisition mode  
BaF<sub>2</sub> scintillator vs BaF<sub>2</sub> scintillator



Time resolution analysis mode  
(lifetime spectrum)  
Sample: polycarbonate

### Specifications

Rise time	0.5 ns
Input range	340 mVp-p / 1.7 Vp-p (Max.)
Offset	±170 mVp-p / ±0.85 V
Measurement time range	120 ns (8192 ch) *1.3 ps / ch to 333.3 ps / ch
Signal input terminal	SMA connector (CH1 and CH2), 50Ω
Communication	Ethernet (TCP / IP)
External I/O terminal	LEMO00 series connector (VETO input, GATE input CH1 and CH2 discriminator. output), SMA connector
External dimensions	20 (W) × 262 (H) × 187 (D) (Unit: mm) VME 1 width
Total weight	About 400g

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



Manufacture of Radiation and Radioactivity measurement devices

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