

## 1. Overview



EP-AP3112 is a high energy resolution preamplifier for SiPM with extremely low noise and fast time response, featuring high resolution and wide output dynamic range. It can be coupled with various types of crystal scintillators, liquid scintillators and plastic scintillators. It is widely used in the field of high energy resolution nuclear radiation measurement.

## 2. Functional indicators

- ▶ 1 ..... Suitable for SiPM detectors
- ▶ 2 ..... Allowable high voltage input range is 0~±50V
- ▶ 3 ..... Low noise, high signal amplitude output for direct coupling to all types of scintillators
- ▶ 4 ..... Combined use with scintillators in spectroscopic applications

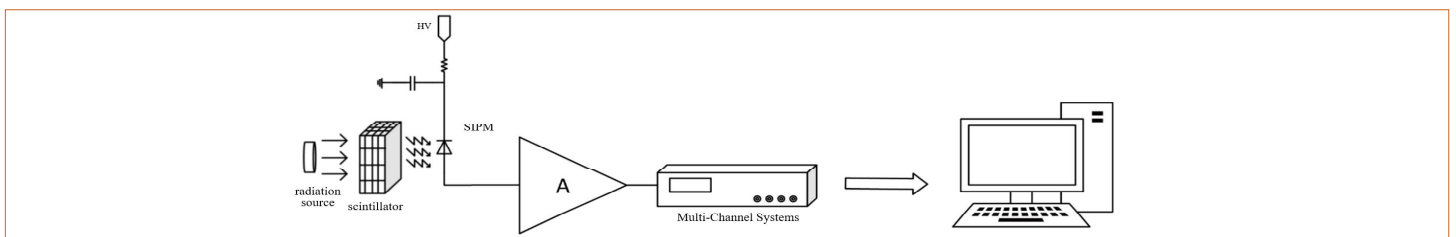
## 3. Performance parameter

Power supply	Power	High Voltage Output Voltage	Gain Linearity	Charge Gain	Rising time	Decay time constant	Output swing	Analog bandwidth	Output resistance	Gain Temperature Stability	Operating temperature	Storage temperature
+12V	350mW	±50V MAX	<0.01%	1568mV/pC	<20ns (3pF)	30μs	±4V	350MHz	50Ω	<±0.5%/C	0°C~+50°C	-40°C~+125°C

## 4. Electromechanical interface

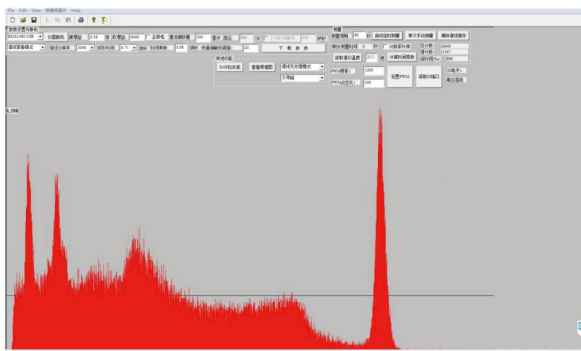
- ▶ INPUT ..... Detector Connection Port
- ▶ TEST ..... Test signal input port
- ▶ HV ..... High voltage input port (BNC)
- ▶ POWER ..... DC power input port (DB9/NIM standard)
- ▶ E ..... Energy output signal
- ▶ T ..... Time output signal

● Figure 1 Connection method



## 5. Performance testing

● Figure 2 Energy spectrum test plot of LaBr<sub>3</sub>



The LaBr<sub>3</sub>+SiPM detector was tested using an EP-AP3112 charge sensitive preamplifier with a measured <sup>137</sup>Cs energy resolution of 2.2%@662keV.