CAEN
Tools for Discovery

N1068

16 Channel Programmable Spectroscopy Amplifier and CFD

CAEN state-of-the-art Multi Channel Spectroscopy Amplifier & Constant Fraction Discriminator now merged in a single NIM programmable unit.

Features

- 16 channels in a one unit wide NIM module
- ± 4 V input dynamics on 50 Ω (SE) and 110 Ω (DIFF)
- Programmable input polarity
- Unipolar Output Gaussian Signal
- Active baseline restorer
- Programmable 4 shaping time per channel
- Programmable fast unipolar input mode for PMT and all fast charge detectors
- Coarse and fine gain for energy amplifier
- Programmable pole-zero adjustment; Pile-up rejection
- Low Power, Low Noise
- 16 XOUT channels (energy out x10)
- CFD output with 5 step delay and programmable threshold individually selectable
- Timing filter amplifiers with programmable differentiation and integration time
- Programmable width and delay on ECL CFD output
- CFD, Energy or Timing filter multiplexed output
- OR output and Multiplicity output
- Multiplicity discriminator with programmable threshold
- Fully programmable via USB, Ethernet and RS485

Overview

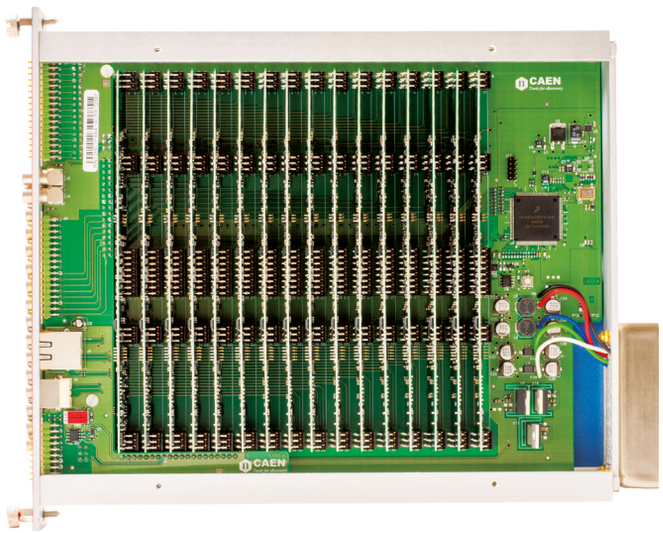
The N1068 is a 16 channel Programmable Spectroscopy Amplifier with Time Filter, 30% Constant Fraction Discriminator (CFD) and pile-up rejection implemented in a single width NIM module. This module is designed to be used with Silicon, Germanium, and many other detectors typically connected to charge sensitive preamplifiers. It is also possible to directly connect the detector output to the amplifier thanks to a dedicated circuit of the N1068 able to manage fast signals (from about few hundreds of ns decay time). N1068GE is a specific amplifier version for Germanium detector, while a new version for PMTs is coming soon.

Both positive and negative signals can be input into the N1068. The board is able to retrieve both the energy and time information using two different sections: the energy section performs a CR-RC^5 shaping with four different time constants (0.5, 1, 2, 4 µs, extended up to 16 µs for N1068GE), a pole-zero compensation, a coarse and fine gain, and a DC restorer. An additional option of shaping time is dedicated to fast signals with no charge sensitive preamplifier.

Pile-up rejection is configurable individually for each channel. When enabled, a pile-up event corresponds to a saturation of the output. The gaussian output is provided both in the OUT connectors and in the XOUT connectors (out x10).

After a differential and integration stage of the input, the timing section performs a 30% Constant Fraction Discrimination (CFD) with programmable delay, for a precise timing of the signal. The CFD signal is provided on the CFD out connectors.

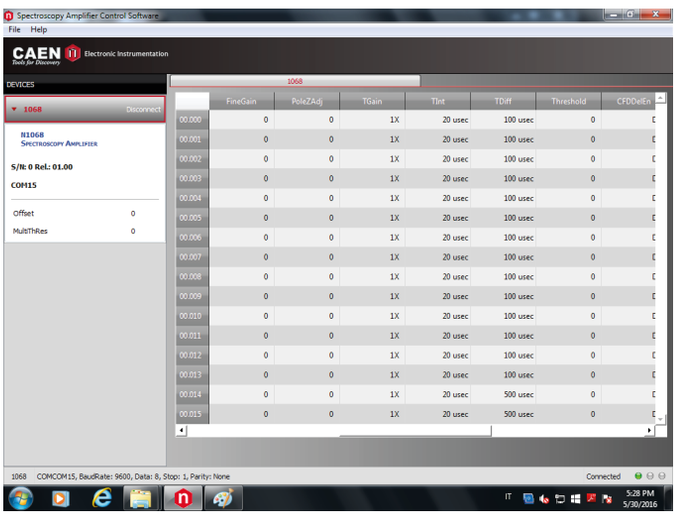
The N1068 is fully controlled by the Spectroscopy Amplifier Control Software, which manages all the settings of the board itself, via USB 2.0, Ethernet and RS485 interfaces.



Software

Spectroscopy Amplifier Control Software

CAEN-CSA is a software tool that allows an easy management of all the functional parameters of the CAEN Spectroscopy Amplifiers N568E and N1068. Module control can take place via either USB or TCP/IP and features an user friendly graphical user interface.



All CAEN Control Software is available for free download on the web site.

Ordering Option

Code	Description
WN1068SXAAAA	N1068S - 16 ch Programmable Spectroscopy Amplifier and 16 ch CFD Single Ended Inputs
WN1068DXAAAA	N1068D - 16 ch Programmable Spectroscopy Amplifier and 16 ch CFD Differential Inputs
WN1068GEXAAA	N1068GE- 16 ch Programmable Spectroscopy Amplifier and 16 ch CFD for Germanium Detectors

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