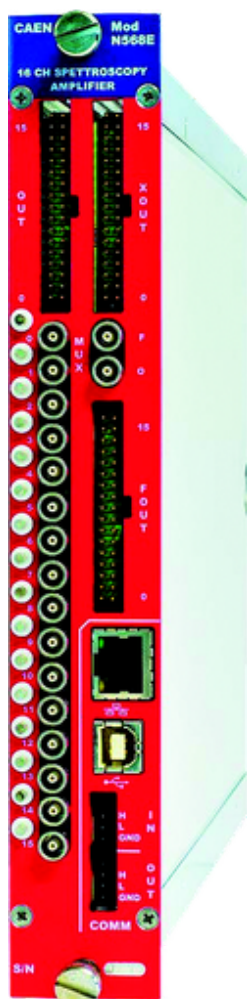
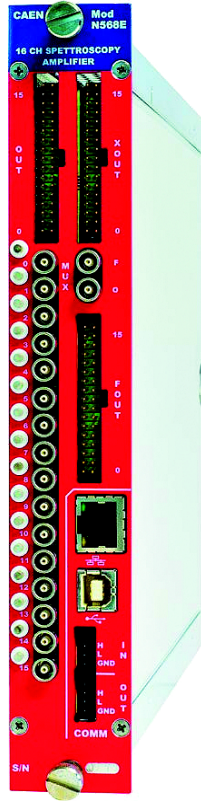


## N568E

# 16 Channel Programmable Spectroscopy Amplifier (Low Noise)



## Features



- 16 channels
- Positive or negative inputs accepted on each channel
- Wide gain range: 0.15 to 480 per channel
- Programmable shaping time per channel
- Programmable pole-zero cancellation per channel
- 16 normal or inverted outputs (further 10x amplification outputs also available)
- 16 fast amplifier outputs for timing purposes
- Energy and timing multiplexed outputs
- Completely programmable via USB and Ethernet
- Input noise smaller than 15  $\mu\text{V}$  RMS @ Gain=100
- Supported by **CAEN-CSA** software

## Description

The **N568E** is a **16 channel spectroscopy amplifier** implemented in a single-width NIM module. The following versions are available:

<b>Version</b>	<b>N568ELC</b>	<b>N568E</b>	<b>N568EB</b>
<b>Description</b>	16 Ch Low Cost Ethernet Prog. Spectroscopy Amplifier	16 Ch Ethernet Prog. Spectroscopy Amplifier	16 Ch Ethernet Prog. Spectroscopy Amplifier
<b>Shaping time</b>	0.2, 1, 3, 6 $\mu$ s	0.2, 1, 3, 6 $\mu$ s	0.1, 0.2, 1, 3 $\mu$ s
<b>Impedance</b>	50 $\Omega$	50 $\Omega$	50 $\Omega$
<b>Features</b>	Low cost	Low noise	Low noise

For each channel the amplification gain, the output polarity, the shaping time and the pole-zero cancellation, are remotely programmable, either via **USB** or **Ethernet**; the **RS485** port allows to connect up to **32** daisy chained modules. The gain ranges from **0.15** to **480**.

The working parameter values are automatically stored in a non-volatile memory. A semi-Gaussian output is provided either with the programmed gain (**OUT**) or with a further 10x amplification (**XOUT**), either direct or inverted. A **Common Offset** can be programmed via software and allows to shift the baseline of the output. A **FOUT** output provides a fast amplification for timing purposes (fixed gain factor of 20). A **MUX OUT** allows to monitor both the OUT and the FOUT outputs of a single channel.

The N568E is supported by freely downloadable **CAEN-CSA** software, available for both Windows and Linux OS.

## Technical Specifications

### Packaging

One unit wide NIM module

### Inputs 0÷15

Positive or negative pulses with rise time >18 ns, max. amplitude: 8 V (absolute value), 50 Ω impedance

### OUT 0÷15

Unipolar, ±8 V dynamic range, 100 Ω impedance

### XOUT 0÷15

Unipolar, further 10x fixed amplification of the OUT value, ±8 V dynamic range, 100 Ω impedance

### FOUT 0÷15

Unipolar, 100 ns differentiation time constant, ±8 V dynamic range, 100 Ω impedance

Risetime: 25 ns typically

### MUX O

Unipolar, ±8 V dynamic range, 100 Ω impedance

### MUX F

Unipolar, 100 ns differentiation time constant, ±8 V dynamic range, 100 Ω impedance

Risetime: 25 ns typically

### Gain

Adjustable from 0.15 to 480

### Shaping time N568E/N568ELC

Selectable time constant of 0.2 μs, 1 μs, 3 μs and 6 μs

### Shaping time N568EB

Selectable time constant of 0.1 μs, 0.2 μs, 1 μs and 3 μs

### Pole zero

Adjustable on 256 steps in a range from 50 μs to 500 μs

### Integral non-linearity

<± 0.05% in 90% of the full scale @ Gain=90 and 6 μs shaping time (± 0.2% typ. for any shaping time)

### Equivalent input noise

- N568E: < 15 μV RMS (Gain=100 and 3 μs shaping time)
- N568ELC: < 25 μV RMS (Gain=100 and 3 μs shaping time)

### **Crosstalk**

< 0.02 %

### **Count rate stability**

< 0.05 % (from 1 to 20 KHz and 3  $\mu$ s shaping time)

## Ordering Options

Code	Description	
WN568ELCXAAA	N568ELC - 16 Channel Low Cost Ethernet Prog. Spectroscopy Amplifier (0.2, 1, 3, 6 $\mu$ s - 50 Ohm)	RoHS
WN568EXAAAAA	N568E - 16 Channel Ethernet Prog. Spectroscopy Amplifier (0.2, 1, 3, 6 $\mu$ s - 50 Ohm)	RoHS
WN568EXBBAAA	N568EBB - 16 Channel Progr. Spectroscopy Amplifier(0.1, 0.2, 1, 3 $\mu$ s - 50 Ohm)	RoHS

## Accessories

### A952



Cable assembly 2.54mm 34 pin female to 2.54mm 34 pin female - 50 cm

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### A385



Adapter 2.54mm 34-pin female to 16x LEMO 00 female (or MCX male) - 50 cm / 1 m

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## Related Software Libraries

### CAEN HV Wrapper Library



Library for CAEN Power Supply Control

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## Related Products

### NV8020A



7U CRATE VME/NIM 8 slot VME64 365W, 5 slot NIM 150W

### NIM8304



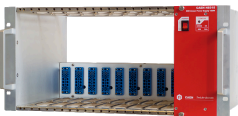
7U 12 slot smart fan unit Switching 2000 W Crate

### NIM8306



2 Slot Switching 750 W Mini Crate

### NIM8302



5U 10 slot 150 W Compact Crate

### NIM8305



2 Slot Switching 450 W Mini Crate

### **NIM8302P**



5U 5 slot 150 W Portable Crate

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### **CAEN-CSA**



Spectroscopy Amplifier Control Software

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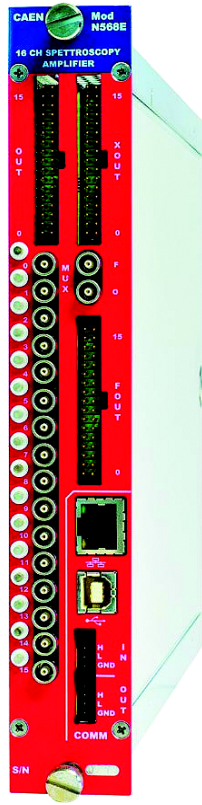
### **NIM8303**



5U 12 slot 300/600 W Crate

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# Gallery



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