CAEN
Tools for Discovery

N1081A

NIM Four-Fold Programmable Logic Unit

LOGIC GATES
AND/OR/Majority
NIM/TTL translator
Veto
Coincidence

COUNTERS and TIMERS
Scaler
Rate Meter
Counter
Start/Stop

TIMING
Events list
ToF
ToT

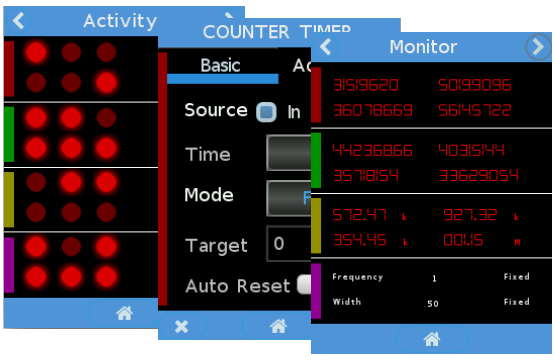
DIGITAL PULSE GENERATOR
NIM/TTL generator
Poisson statistics
Pattern generator

KEY FEATURES

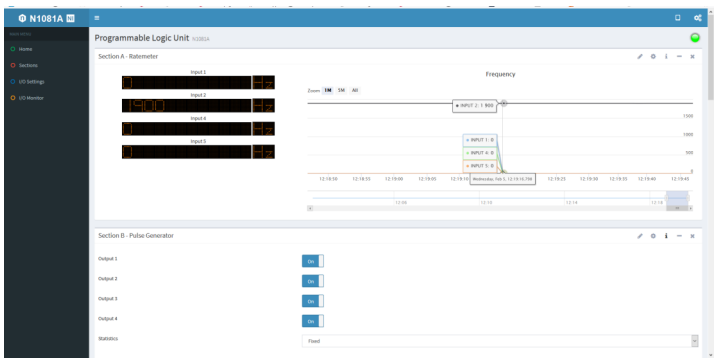
- Double-width NIM unit
- Wide range of **user-selectable functionalities:** logic functions, counting, timing, digital pulse generator.
- 4 independent sections, each with:
  - 6 NIM/TTL input
  - 4 NIM/TTL output
- Input stage with **Gate&Delay** and **Voltage Threshold** for analog input signals
- **2.8" touch screen display** with user-friendly widgets to configure each section and monitor real-time data
- Ethernet (1 Gbps) and USB2.0 connectivity
- **Web-based Graphical User Interface** to remotely control the module and access advanced features

The N1081A is a **laboratory tool** that incorporates in a single NIM module the most common functionalities that you need to implement the **logic capabilities** of your experiment.

The module is organized in four sections, with 6 inputs and 4 outputs each (selectable impedance) accepting TTL/NIM signals. Each section is configurable independently according to one of the available **pre-programmed functions**, like scaler, counter, time stamping, digital pulse generator, etc. The section programming can be done using the **2.8" touch screen display** or via the **web-interface**. Each section integrates a programmable voltage threshold for analog input signals and an asynchronous Gate&Delay. This allows the user to trim at best the needed parameters and to perform accurate measurements.



On the touch screen interface, each function is associated to a **widget**, for quick configuration and monitor purposes, and an online help with cabling instructions is directly accessible on the display.



The **web-interface** allows the user to remotely configure the instrument, monitor the functions output, dump data on file or history chart and access to the most advanced features, like the logic analyser and the configuration of advanced functions. No software installation is required!

Developed in collaboration with Nuclear Instruments

TECHNICAL SPECIFICATIONS

Form factor	2U NIM
Power consumption	1.5 A @ 12V (Typ.)
Logic Functions	Logic Gates (AND/OR/Majority, …) Fan IN-OUT NIM/TTL translator Gate&Delay Veto Coincidence Scaler, MCS Rate Meter Counter Timer Timing (timestamping, ToF, ToT) Digital Pulse Generator
I/Os	4 independent sections: ◊ 6 NIM/TTL input: Gate&Delay 5ns resolution, Programmable Voltage Threshold for analog signals ◊ 4 NIM/TTL output
I/O delay	20 ns
Connectors	LEMO
Counter max. frequency	30 MHz TTL 40 MHz NIM
Pulse Generator	NIM/TTL Max. frequency 10 MHz / 20 ns pulse width
Integration gate	1 µs … 3600 s
Connectivity	Ethernet (Gbps), USB 2.0
Touch Screen Display	2.8” LCD, Transmissive type
Software	◊ Touch screen widgets ◊ Web-based Graphical User Interface

Ordering Option

Ordering code	Description
WN1081AXAAAA	N1081A—Four-fold programmable Logic Unit

CAEN SpA
Via Vetraia 11
55049 – Viareggio Italy
Tel +39.0584.388.398
Fax +39.0584.388.959
info@caen.it www.caen.it

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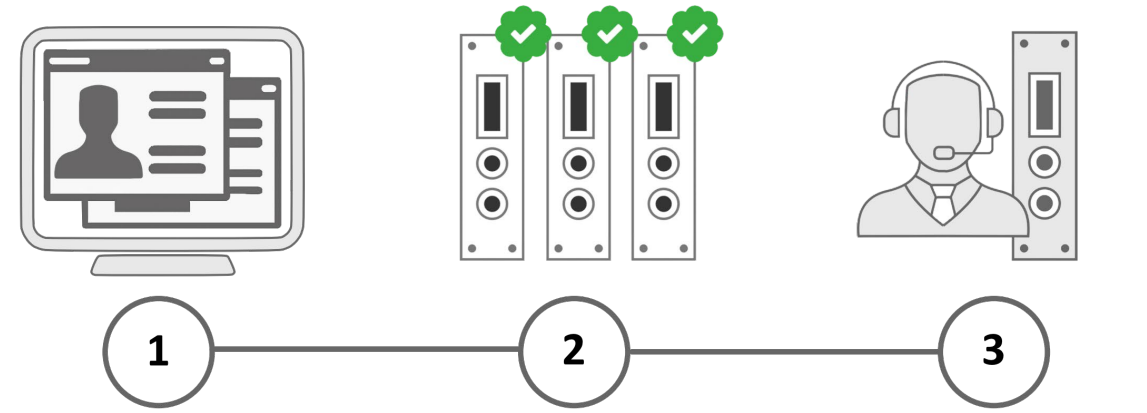

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Electronic Instrumentation

CAEN S.p.A.
Via Vetraia 11
55049 - Viareggio
Italy
Phone +39 0584 388 398
Fax +39 0584 388 959
info@caen.it
www.caen.it

CAEN GmbH
Brunnenweg 9
64331 Weiterstadt
Germany
Tel. +49 (0)212 254 4077
Mobile +49 (0)151 16 548 484
info@caen-de.com
www.caen-de.com

CAEN Technologies, Inc.
1 Edgewater Street - Suite 101
Staten Island, NY 10305
USA
Phone: +1 (718) 981-0401
Fax: +1 (718) 556-9185
info@caentechnologies.com
www.caentechnologies.com

CAENspa INDIA Private Limited
B205, BLDG42, B Wing,
Azad Nagar Sangam CHS,
Mhada Layout, Azad Nagar, Andheri (W)
Mumbai, Mumbai City,
Maharashtra, India, 400053
info@caen-india.in
www.caen-india.in

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