

COMPACT, STAND-ALONE DIGITAL MULTI-CHANNEL ANALYZER WITH PULSE HEIGHT ANALYSIS

TOPAZ-Pico

MAIN FEATURES

- Fully digital Multi-Channel Analyzer (MCA), suitable for medium-energy resolution detectors.
- PCB available for OEMs
- Full Pulse-Height Analysis (PHA) and Multi-Channel Scaling (MCS) modes of data acquisition
- Up to 4096 channels for PHA and MCS acquisition
- Advanced electronic noise reduction algorithms
- Compact MCA with size of 80 mm x 60 mm (PCB) and 107x72x19 mm³ in the aluminium case, weight < 150 grams (with case)
- USB 2.0 for data communication and device control
- Miniature design combining low power consumption with low noise
- Basic spectrum acquisition and device control software included
- Available programming libraries for Windows and Linux Operating System (upon request)
- Optional TTL counter input, suitable for connection of a counter, e.g. neutron counter

DESCRIPTION

TOPAZ-Pico is a compact, stand-alone digital Multi-Channel Analyzer (MCA), which can perform Pulse Height Analysis (PHA) of the signal produced by a standard scintillation detectors.

The device is therefore useful for obtaining the energy spectrum from the photon radiation detected by the scintillator, and can be easily interfaced to a typical PC or notebook via a standard USB port for further data transfer and analysis. The MCA is provided with a basic software package that allows to control the device, and to acquire and visualize the energy spectrum.



TOPAZ-Pico BNC

The bMCA software incorporates an advanced and easy-to-use “discovery” function that can be used to detect automatically the MCAs of the bMCA series and **TOPAZ** series connected to the PC.

A set of programming libraries is also offered, which makes the incorporation of the **TOPAZ-Pico** into existing radiation systems or setups very easy.

The programming libraries are available for both MS Windows and Linux operating systems. The device is available either in a rugged, pocket-size aluminium box with input and output connectors or as separate Printed-Circuit Board (PCB) for OEM distribution.

OPTIONS AVAILABLE

TOPAZ-Pico is provided with several scintillation detector assemblies. Our catalogue includes NaI(Tl), CsI(Tl), BGO and CeBr₃ detectors. Standard configurations with

- NaI(Tl), CsI(Tl) and BGO, with cylindrical volume 2”x2” or 3”x3”
- CeBr₃ with cylindrical volume 1.5”x1.5”

Other scintillator types and volumes can be provided on request.

In addition to standard supply, the following options are available upon request:

- Topaz-Pico
- Topaz-Pico/BNC has BNC connector for signal and separate SHV connector for HV output
- Topaz-Pico OEM board

TECHNICAL SPECIFICATIONS

PHA Acquisition Mode

- Spectral memory size of 256, 512, 1024, 2048 and 4096 channels
- Coarse gain with amplification factors of 1, 2, 4 and 8. Fine gain from 1 to 2 in steps of 1/4096
- Upper and Lower Level Discriminator settings given in channels

MCS Acquisition Mode

- Spectral memory size of 256, 512, 1024, 2048 and 4096 channels
- Dwell time from 0.1 sec to “count-forever”
- Easy to setup from ROIs or nuclide information.

Digital Settings

- Rise Time: from 0.1 to 12 μ sec in steps of 0.2 μ sec
- Flat Top: from 0.1 to 8.0 μ sec in steps of 0.1 μ sec
- Threshold: 1 to 255
- Digital Base Line Restorer (BLR)
- Pile-Up Rejector (PUR)

High Voltage Power Supply

- Miniature HV power supply embedded into the MCA assembly
- Voltage: (positive) 0 to 1500 Volts in 4096 steps



TOPAZ-Pico OEM

Data Communication

- USB 2.0, cable included

Physical

- Sizes:
 - MCA box: 107 x 72 x 19 mm³ (HxWxD)
 - PCB only: 80 mm x 60 mm
- Weight: less than 150 grams (including box)
- Connectors :
 - USB type mini B (to computer)
 - Lemo connector. Type ERA 05 403 CLL (for both detector HV Bias and Signal)
- Indicators:
 - Red LED for detector high voltage
 - Yellow LED for incoming count rate (ICR)
 - Green color LED for power and communication status

Other

- The device is supplied with a basic software to control operation, data acquisition and visualization.
- (upon request) necessary programming libraries for Microsoft Windows and Linux

Optional

- The MCA can be supplied with extra input connector for TTL signal counting



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