



NOKI

TECHNOLOGIES

Noki Technologies, a privately-owned family business operating through two decades in the Nuclear Medicine and Nuclear Energy. Leveraging our expertise, we bring to the fore, Advanced Measurement & Automation Instruments. Our focus on innovation and precision drives us to deliver solutions tailored to the evolving demands of our clients.

X- SPEC PORT

GAMMA SPECTROMETER

Description

The X-Spec is a compact and portable digital Multi-Channel Analyzer (MCA) specifically designed for conducting precise radiation analysis in the field or laboratory. It supports various scintillation detectors like NaI(Tl), LaBr₃ (Ce), LaCl₃(Ce), and CeBr₃ to provide high-accuracy energy spectrum data of photon radiation. With its rugged design, the X-Spec is ideal for radiation monitoring in challenging environments. It includes a powerful software suite for data acquisition, analysis, and geotagging, ensuring precise location-based radiation readings.

The device can be connected to PCs via USB or Ethernet for real-time data transfer, making it easy to use in both remote and controlled environments. The integrated rechargeable Li-Ion battery provides up to 8 hours of continuous operation, ensuring flexibility and mobility for on-the-go radiation monitoring.



Key Features

Portable Design

Lightweight and portable with up to 8 hours of continuous operation on a rechargeable lithium-ion battery, making it ideal for field use.

IP67 Rating

The X-Spec is dust-proof and water-resistant, ensuring safe operation in rugged outdoor conditions.

High Sensitivity and Resolution

Supports scintillation detectors like NaI(Tl), LaBr₃(Ce), and CeBr₃ with a wide energy range and high sensitivity.

Optional GM Integration

Supports a wide range of GM Detectors to perform additional Surveying Operations.

Geotagging Capability

Includes automated and manual modes for geotagging radiation data. Users can record counts or dose rates along with precise geographical coordinates.

Data Aggregation

Ability to combine geotagged data from multiple devices into a single centralized database for comprehensive analysis.

Remote Access & Monitoring

Data can be accessed remotely via cloud or on-premise servers, allowing for real-time monitoring and collaboration.

Two Acquisition Modes

Pulse Height Analysis (PHA) for detailed energy spectrum analysis.

Multi-Channel Scaling (MCS) for timing and frequency analysis.

Integrated High Voltage Power Supply

Advanced, low-noise high voltage power supply that supports up to 1500V, ensuring compatibility with a wide range of detectors.

Easy Integration

Compatible with existing radiation systems through USB or Ethernet connections, with programming libraries available for both Windows and Linux.

Technical Specifications

Detection Modes

- **PHA Acquisition Mode** Supports 256, 512, 1024, 2048, or 4096 channels, allowing for detailed spectrum analysis.
- Memory presets for live time, real time, or counts on a region of interest (ROI). Adjustable Upper and Lower Level discriminator settings.
- **MCS Acquisition Mode** Allows dwell time from 0.1 seconds to indefinite counting, with easy ROI setup.
- Memory configurations: 256, 512, 1024, 2048, or 4096 channels.

Digital Settings

- **Rise Time** Adjustable from 0.1 to 12 μsec in steps of 0.2 μsec .
- **Flat Top** Adjustable from 0.1 to 8.0 μsec in steps of 0.1 μsec .
- **Threshold** Adjustable between 1 and 255 for better signal discrimination.
- **Base Line Restorer (BLR)** Digital functionality to maintain signal accuracy during low count rates.
- **Pile-Up Rejection (PUR)** Reduces errors during high count rates, enhancing measurement accuracy.

High Voltage Power Supply

- **Voltage Range** Supports up to 1500V with fine adjustment in 4096 steps.
- **Connection** USB 2.0 or Power-over-Ethernet (PoE) for versatile power and data transfer.

Gain Settings

- **Amplification Factors** Gain settings with values of 1, 2, 4, and 8.
- **Fine Gain** Adjustable fine gain from 1 to 2 in steps of 1/4096 for enhanced precision.

Software Capabilities

- **Energy Calibration and Peak Search** Tools for efficient energy calibration and peak identification.
- **Data Processing** Generates reports, saves spectral data in ASCII format, and includes nuclide library management.
- **External Application Support** Allows integration with external applications for further data processing.

Geotagging Software Features

- **Automated/Manual Geotagging** Allows for automated or manual tagging of radiation data with location coordinates.
- **Counts & Dose Rates** Records counts or dose rates with geolocation for precise mapping.
- **Data Aggregation** Combines geo-referenced data from multiple devices into a centralized database.
- **Remote Monitoring** Data can be monitored remotely via cloud-based or on-premise servers.

Physical Specifications

- **Dimensions** Height 142 mm, Width 227 mm
- **Weight:** Approx 1 kg
- **Operating Temperature** -40°C to +85°C.
- **Battery Life** Up to 8 hours with a rechargeable lithium-ion battery.
- **IP Rating** IP67 for dust and water protection, allowing use in harsh environments.

Additional Features

- **Indicators** Red for detector high voltage, Yellow for incoming count rate, and Green for power and communication.
- **Geiger-Muller Counter Integration** Provides additional detection capabilities for low-level radiation monitoring.
- **Scintillation Detectors Supported** Includes NaI(Tl), LaBr₃(Ce), CeBr₃, and others, with a typical energy resolution of 3.2% at 662 keV for Cs-137.

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