

SENSOR KIT

YOUR QUICKEST PATH TO MARKET

Saint-Gobain Crystals provides radiation detection expertise with an advanced integrated MCA to provide:

- » Optimized detection solution to match the application
- » Ready to use software interface or customizable by user
- » Fully optimized vertical integration (crystal, PMT and electronics)
- » Ideal solution for high count rate applications
- » Solution for all detection needs (gamma, neutron, alpha, beta, X-ray) with standard or customizable detectors
- » Low power consumption
- » Performance stabilization option
 - Providing a constant gain over the operating temperature range
 - Providing a constant energy resolution over the operating temperature range.
 - Maintaining the best possible pileup rejection

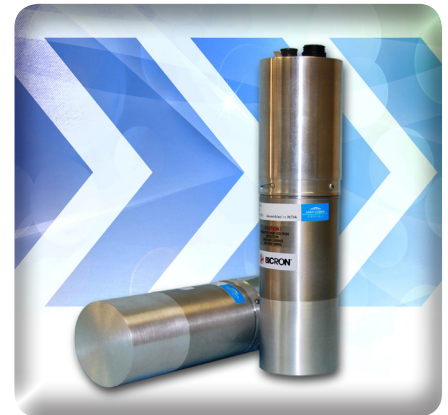
Benefits

- » Quick access to the market
- » Reduced development time, risk and cost
- » Single source for full detection solution
- » Get it right the first time with matching of components
- » Open-source, open access application for programmers
- » Extended battery life for mobile systems
- » Designed for consistent output in changing environmental conditions
- » Add additional counting detector without additional electronics
- » Custom firmware

Applications:

- » Prompt gamma neutron activation analysis
- » Whole body counters
- » Portal monitoring
- » Food monitoring
- » Hand held

*What could you build with the **Sensor Kit**?*

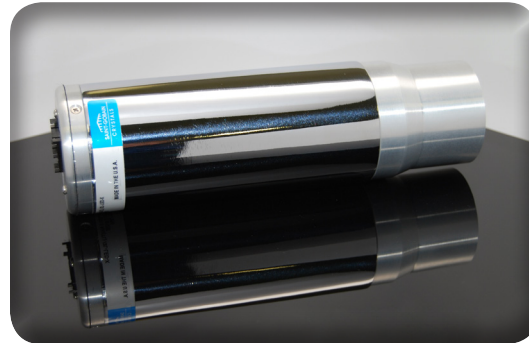


Contact Saint-Gobain Crystals about your application and needs to have a Sensor unit designed to meet your requirements through Crystal, PMT and MCA selection with optimized settings.

Ready to collect data after USB connection or customize to work with your software.

Radiation Detector

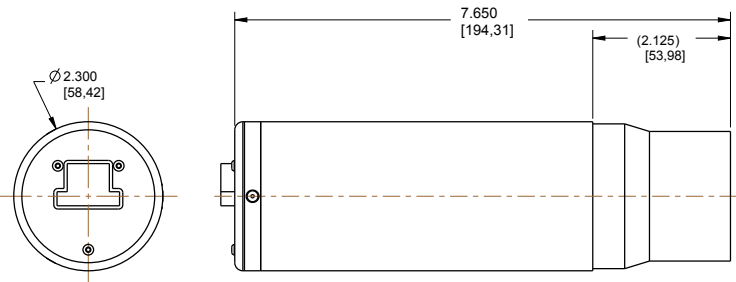
- A wide range of commercially available radiation detectors for X-ray, gamma, neutron, alpha, and beta applications
- One source for all radiation detectors
 - Inorganics: LaBr₃(Ce), NaI(Tl), CsI(Na), BGO, LYSO, CLLB and other elpasolites
 - Plastic scintillators
 - Neutron detectors
 - Other advanced materials
- Access to standard and custom designs
- Performance stabilization system stability of ±5% between -20°C and +50°C for Sensor Kit based NaI(Tl) (see Figure 1)



Example of a fully integrated design

MCA usbBase - typical features

- USB-powered & controlled
- On Board energy histogram 4096 x 32
- Accurate count rates and real time measurement
- List mode: Stores energies and time stamps
- Integrated non-volatile memory
- Low-power HV unit
- Sealed construction; IP67 water tight connectors
- Open source application programmer’s interface (API in Python and C++)
- GPIO supports DAQ synchronization between modules.
- Morpho Data Server supports native apps and web-browsers
- Operational from -40°C to +60°C



MDS (Morpho Data Server)

- The Morpho Data Server (MDS) handles the low level USB communication with the eMorpho MCA units.
- The MDS communicates with the world through TCP/IP - zeroMQ - XML command and data tags.
- Clients connect to the MDS via native apps or a web-browser.
- Clients can be local or remote.
- Clients can run on any platform, under any OS and can be written in most languages such as:
 - C, C++
 - Python™
 - PHP™
 - Java™ on Android™
 - LabVIEW™

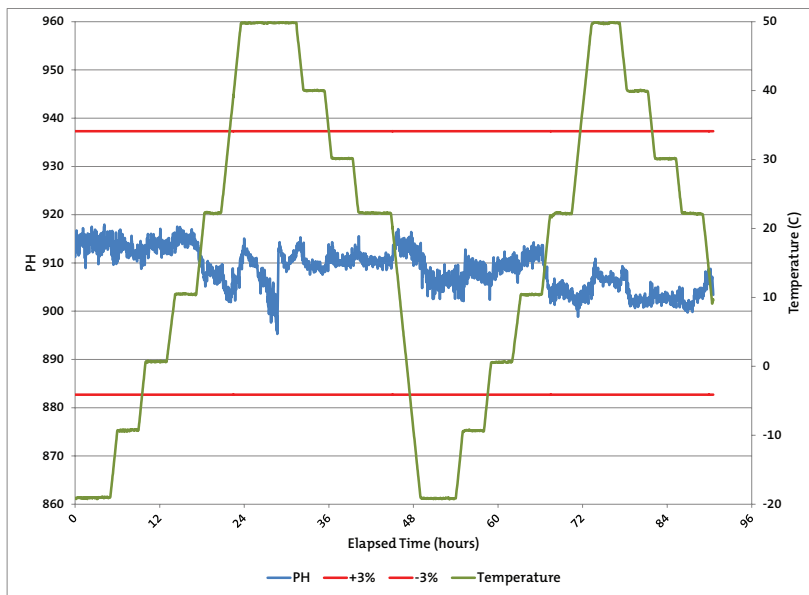
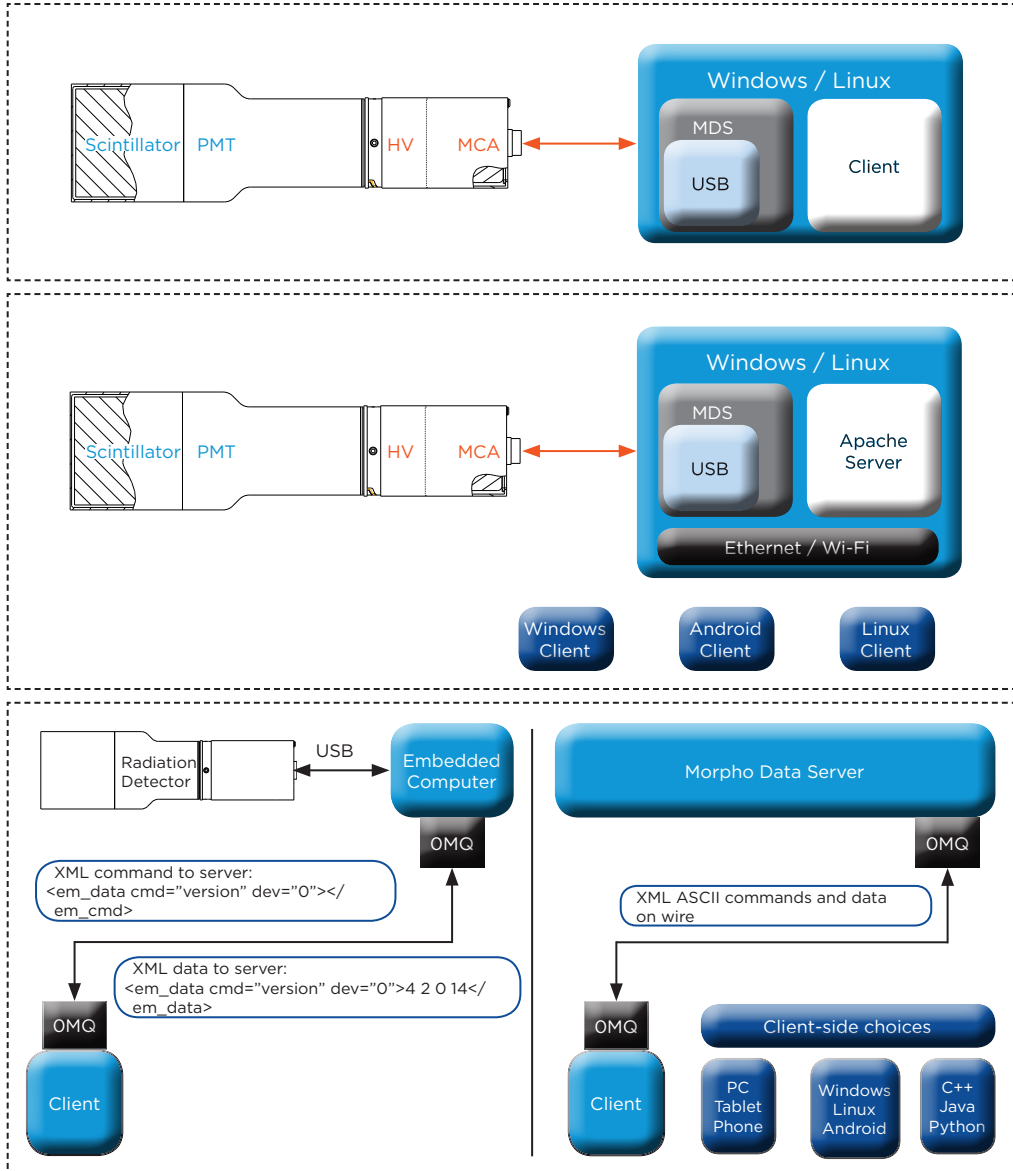


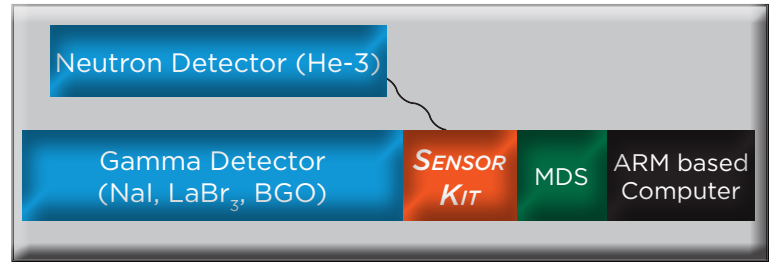
Figure 1: Typical performance data collected with NaI(Tl) model 2X4H4/2A-LED-MCA-X

System Examples

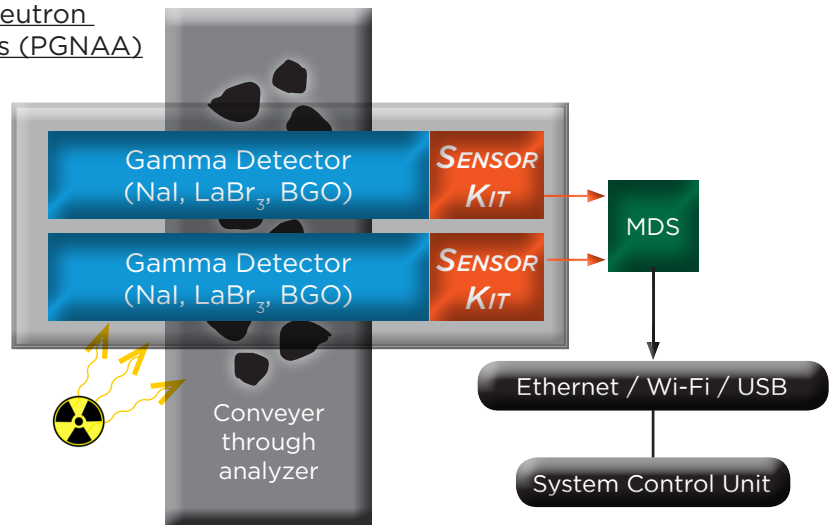


WHAT COULD YOU BUILD WITH A **SENSOR KIT**?

Handheld



Prompt gamma neutron activation analysis (PGNAA)



Portal Monitor



Saint-Gobain Crystals

www.crystals.saint-gobain.com

Manufacturer reserves the right to alter specifications.

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