

## Autonomous Intelligent Platform



ipBase: Plug-on MCA with embedded processor and Ethernet connectivity

### Unattended Radiation Monitoring

- Boots into data acquisition mode
- Autonomously monitor environment for changes
- Periodic and event-driven automatic reporting
- Multiple instruments report to a central computer via internet.
- Routing and data type information embedded in data stream.

## A digital MCA plug-on with embedded intelligence and Ethernet connectivity

The ipBase is a complete spectroscopy solution for unattended radiation sensors. Detectors equipped with an ipBase can be adjusted, pre-programmed, and deployed. The instruments will operate autonomously after power-on.

The embedded processor controls the data acquisition and sends data back to a central computer. Developers have unrestricted access to the instrument's software and can add local data processing in order to fully customize the instrument to the application.

The unit will work with any scintillator and is available for many different PMT pinouts as well as positive or negative HV.

Power consumption is 1.5 W to 2.5 W and can be software-controlled. Power is supplied via Ethernet or via an external battery voltage input for solar-powered operation.

The ipBase contains a digital eMorpho MCA that provides users with raw data such as histograms, list mode, pulse shapes and real-time pulse shape analysis.

The completely digital signal processing used in the eMorpho works with all scintillators. For most, the instrument can automatically adapt to the light-pulse shapes and no adjustments aside from the gain are necessary.

An embedded 150 MHz ARM-9 32-bit RISC processor controls the MCA and can be user-programmed to inspect the raw data and take action as required. This creates a truly autonomous instrument ready to report unusual incidences immediately, without being polled.

Bridgeport Instruments provides open-source software to control the MCA, provide Ethernet connectivity, and a computer-side API to receive and store data.

Specially designed data formatting embeds added information in a data header such that the receiving computer can identify the origin and type of data.

**Starting at \$3250**

- **Complete Programmable Spectroscopy Solution**  
HV + MCA + ARM-9 + Ethernet
- **Easy to deploy**  
No specialized training required
- **Versatile**  
Positive and negative HV, .8 and 10-stage PMTs
- **Rugged**
  - IP67 watertight connector
  - Power via PoE 802.3af or DC-power (6 V to 16 V)
- **Programmable**
  - Open-source software
  - Reprogram via Ethernet
- **MCA**
  - 4096 channels, 32-bit
  - up to 13 Mcps
  - Oscilloscope, List mode,  $n/\gamma$ ,  $\alpha/\beta$  discrimination
  - Uses pulse shape information for pile-up rejection
- **Embedded Processor**
  - ARM-9, 32-bit RISC processor 150 MHz, 8MB RAM, 4MB flash, NV-RAM, RTC
  - Net-OS 7.3 and higher
  - User-programmable