



## **FOR IMMEDIATE RELEASE**

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### **New SPM evaluation system, a huge benefit in proving the real alternative to PMTs for Nuclear Medicine**

*(Cork, Ireland; 22 April, 2009)* "Nuclear Medicine research institutes and OEMs are faced with many obstacles when it comes to building PET or PET/MRI systems for brain, preclinical or full human body imaging. Limitations due to magnetic fields, lack of uniformity, large form factor and problematic glass tubes are some of the issues that spring to mind," explained Dr. Carl Jackson (SensL) at a recent invited talk.

"Unlike Photomultiplier Tubes (PMT), Silicon Photomultipliers (SPM) are not impacted by large magnetic fields and no special precautions are required to operate them in this environment. High uniformity is achieved across the SPM detectors resulting in simplified calibration and electronic design. Additionally, the SPMs have a small form factor and are light which makes ring assembly simpler and more compact for Nuclear Medicine applications," Jackson added.

With this in mind, SensL has recently developed a complete modular set of evaluation hardware which accompanies the SPMArray Version 2 large area silicon photomultiplier to simplify testing and hardware configurations necessary to assess SPM technology as the viable alternative to PMT's.

The SPMArray 2 detector array platform with summed, pixellated detection and multichannel pre-amplification electronics has been fully upgraded with additional optional features for simplified module readout and power delivery - An evaluation motherboard has been designed which can be mounted directly to the SPMArray2 detector and pre-amplification electronics to provide a complete evaluator kit for testing the SPM technology for Nuclear Medicine.

Overall, the SPMArray2 is a flexible, total detector/readout solution and alternative to the PMT for Nuclear Medicine. Now with the added feature set of pre-amplification, power and direct I/O readout, plus the evaluation board; it is easier to carry out measurements, the evaluation process of the SPM technology is faster and hardware requirements are minimized, all without the hassle of designing custom electronics.

#### **About SensL (<http://www.sensl.com>)**

**SensL** provides low light sensing solutions to the market. Their goal is to provide the best solution for each customer application through the use of their breakthrough technology or through the integration of other commercially available detector products with their electronics.



They provide standard as well as customizable and flexible products to suit customer requirements for a variety of application areas including: PET/MRI, Confocal Microscopy, Hand-held Radiation Detection, Microfluidic Cytometry, Spectroscopy and High Energy Physics.

**SensL Product Overview:**

[http://www.sensl.com/pdfs/Datasheets/SensL\\_Product\\_Overview.pdf](http://www.sensl.com/pdfs/Datasheets/SensL_Product_Overview.pdf)

**The Ready-to-go SPMArray evaluation board:**

- Uses standard readout connectors (SMAs)
- Allows fast evaluation of the SPMArray2 and pre-amplification board
- Has 16 individual SMA sockets for monitoring the output from each pixel on a oscilloscope, for example
- Has a single SMA socket for monitoring summed outputs of all pixels
- Allows Board-to-board interface to pre-amplification electronics
- Allows Board-to-cable-to-board interface to pre-amplification electronics
- Allows a simple mains socket universal ac adapter to provide 6V DC power to the evaluation board

SensL's evaluation board can be coupled with its industry leading SPMArray2 technology. This evaluation board provides the user with an easy way to power and test the Silicon Photomultiplier Array technology pioneered by SensL. The evaluation board provides the ability to provide power the SPMArray2, provides 16 separate or a single summed readout channel and users can program the bias voltage control through a SPI interface. The evaluation module operates off of a universal AC adaptor and then generates all of the necessary voltages to operate the preamplifier circuitry and power the SPMArray2. Output on the evaluation board is via the SensL's FFC cable or via 16 SMA connectors for easy readout of single channels via the pre-amplifier board of the SPMArray2. Output of the evaluation module can be either positive or negative to correspond with the users existing electronics and data acquisition systems. For customers who are working with summed SPMArrays, the evaluation board allows customers to access a single summed readout point to provide a single output from the 16 channels normally from the SPMArray2. This increases the flexibility of the module for Nuclear Medicine, Radiation Detection and High Energy Physics customers.

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