Description

The SIB332 Sensor Interface Board (SIB) provides the electrical and mechanical connectivity between a Hamamatsu S8550 series 4 x 8 element APD array and a Vertilon PhotoniQ multi-channel data acquisition system. The S8550 mounts directly to the bottom of the SIB332 through 34 socket pins where electrical connections to the 32 APD anodes are made to the SIB connector located on the top of the board. The SIB connector conforms to Vertilon’s standard, low-noise, multi-channel, cable interconnection system. It mates to a micro-coaxial cable assembly that connects the APD outputs to the PhotoniQ. The negative high voltage bias to the APD array is made through a separate dedicated connector where a high voltage cable connects between it and the high voltage output from the PhotoniQ. A passive circuit on the SIB332 divides the raw high voltage output from the PhotoniQ by two for input to the APD array. Also available on the SIB322 are two outputs that are used in conjunction with the APD array’s common cathode current signal — an amplified version of the signal and a pulse discriminator trigger output.

Typical Setup

In a typical setup the Hamamatsu S8550 array is plugged into the SIB332 Sensor Interface Board which in turn connects to a Vertilon PhotoniQ IQSP480 or IQSP580 multi-channel data acquisition system using a SIB cable. When triggered from the trigger output on the board or from an external source, the PhotoniQ integrates and digitizes the 32 charge signals from the array and outputs a data packet to the PC over a USB connection. The PhotoniQ also supplies the negative high voltage bias to the APD array through a specialized high voltage cable.
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Vertilon Corporation, 66 Tadmuck Road, Westford, MA 01886 / Tel: (978) 692-7070 / Fax: (978) 692-7010 / www.vertilon.com