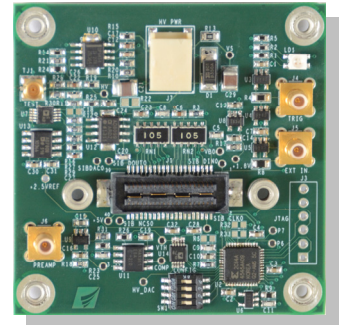
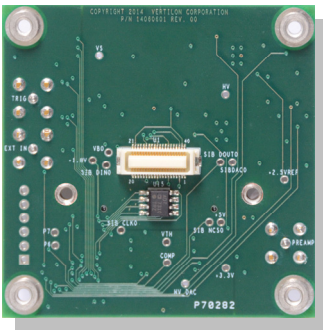
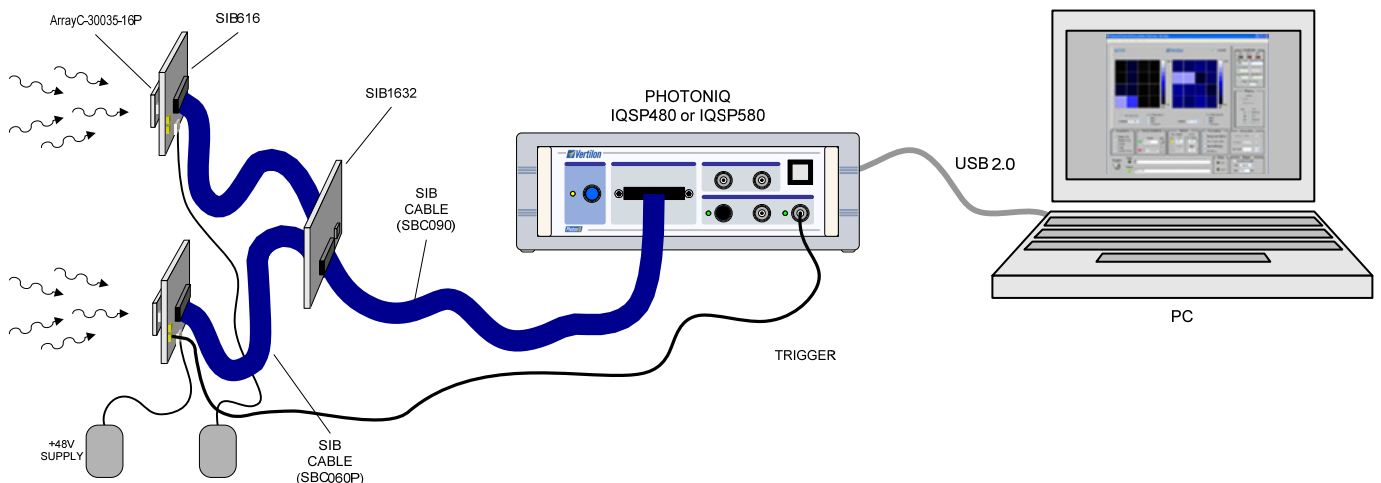


Description

The SIB616 sensor interface board allows for a SensL ArrayC-30035-16P 4 x 4 silicon photomultiplier (SiPM) array to easily interface to a Vertilon PhotoniQ multichannel data acquisition system. The SiPM is inserted into the bottom side of the printed circuit board where its anode output signals are routed directly to a sensor interface board (SIB) connector. The SIB connector mates to a micro-coaxial cable assembly that connects the 16 device outputs to the PhotoniQ. Bias to SiPM array is provided by an on-board adjustable high voltage bias supply. A special current-sense output on the supply is available that represents the AC charge signal produced by the SiPM array. This signal is fed into a user-programmable leading edge discriminator that generates a trigger signal when an event exceeding a preset energy threshold is detected on the ArrayC-30035-16P device. The trigger output is typically connected to the trigger input on the PhotoniQ data acquisition system where it is used to initiate the collection of the energy signals from the SiPM array connected to the DAQ system's inputs.

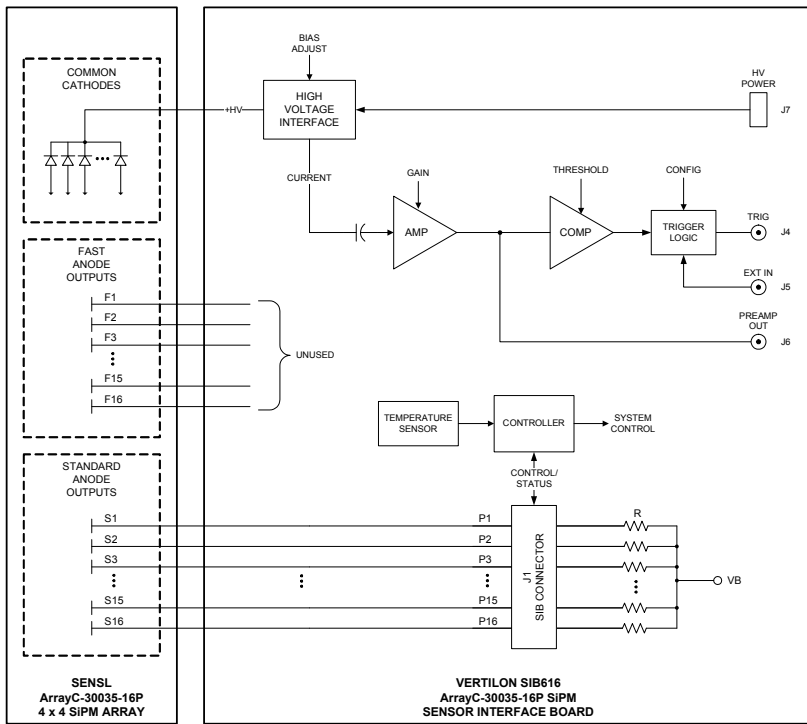


Typical Dual Sensor Setup

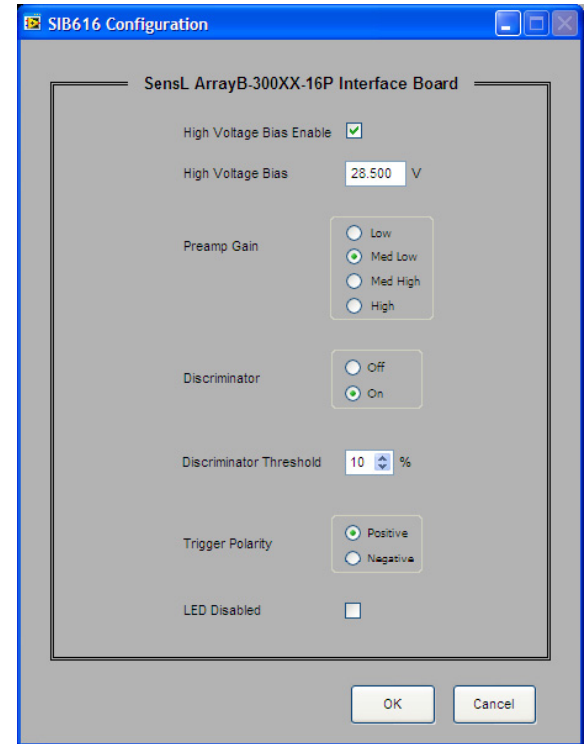


The SensL ArrayC-30035-16P silicon photomultipliers are inserted into the SIB616s which are positioned in an optical assembly to detect incoming radiation. The SIB cables from each SIB616 connects to a Vertilon SIB1632 where the 16 outputs from each SiPM array are combined into one SIB cable (SBC090) that connects to a PhotoniQ IQSP480 or IQSP580 multichannel data acquisition system. The discriminator channel from one SIB616 produces a trigger to the PhotoniQ whenever a radiation event is detected on the SiPM. The energy level threshold for the radiation event is set by the user through the PhotoniQ graphical user interface. Charge signals from the 32 anodes from the two ArrayC-30035-16P devices are acquired by the PhotoniQ for each trigger produced by the SIB616. Digitized output data from the PhotoniQ is sent through a USB 2.0 connection to a PC for display, logging, or real time processing. In the figure above, the PhotoniQ GUI is set to display a dual 4 x 4 image of the energy levels for each event captured.

Functional Block Diagram



Configuration Dialog Box



Mechanical Data

Ordering Information

SIB616 is directly compatible with Vertilon PhotoniQ IQSP480 / IQSP580 32 channel data acquisition systems. PhotoniQ systems sold separately. See User Manual for performance specifications.

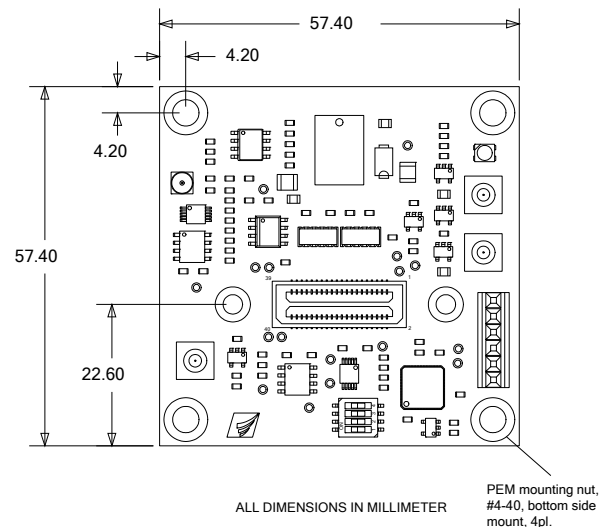
SIB616 includes +48V power source for high voltage bias supply and two SMB120 coaxial cables, SMB plug to BNC plug, 120 cm.

Sensor interface board (SIB) cables ordered separately. Specify part number SBCxxx, where "xxx" equals length in centimeter.

See SIB616 User Guide for complete specification.

The Vertilon SIB1632 is an optional product that allows two SIB616 sensor interface boards to be used with one Vertilon 32 channel data acquisition system. See SIB1632 product sheet for details.

See SensL ArrayC-30035-16P datasheet for specific device information



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