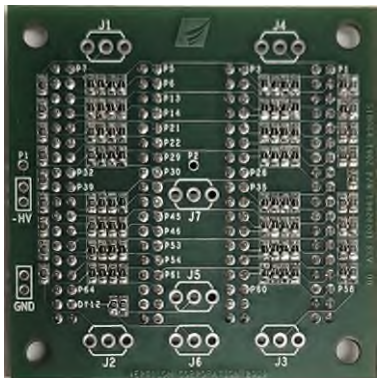
SIB064-1902 Sensor Interface Board for Hamamatsu MAPMT

Product Sheet

Description

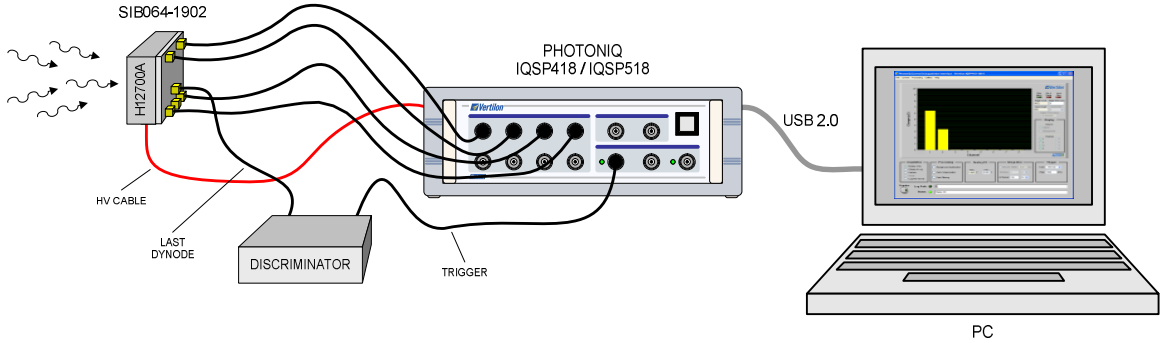


(Hard-wired cables not shown)

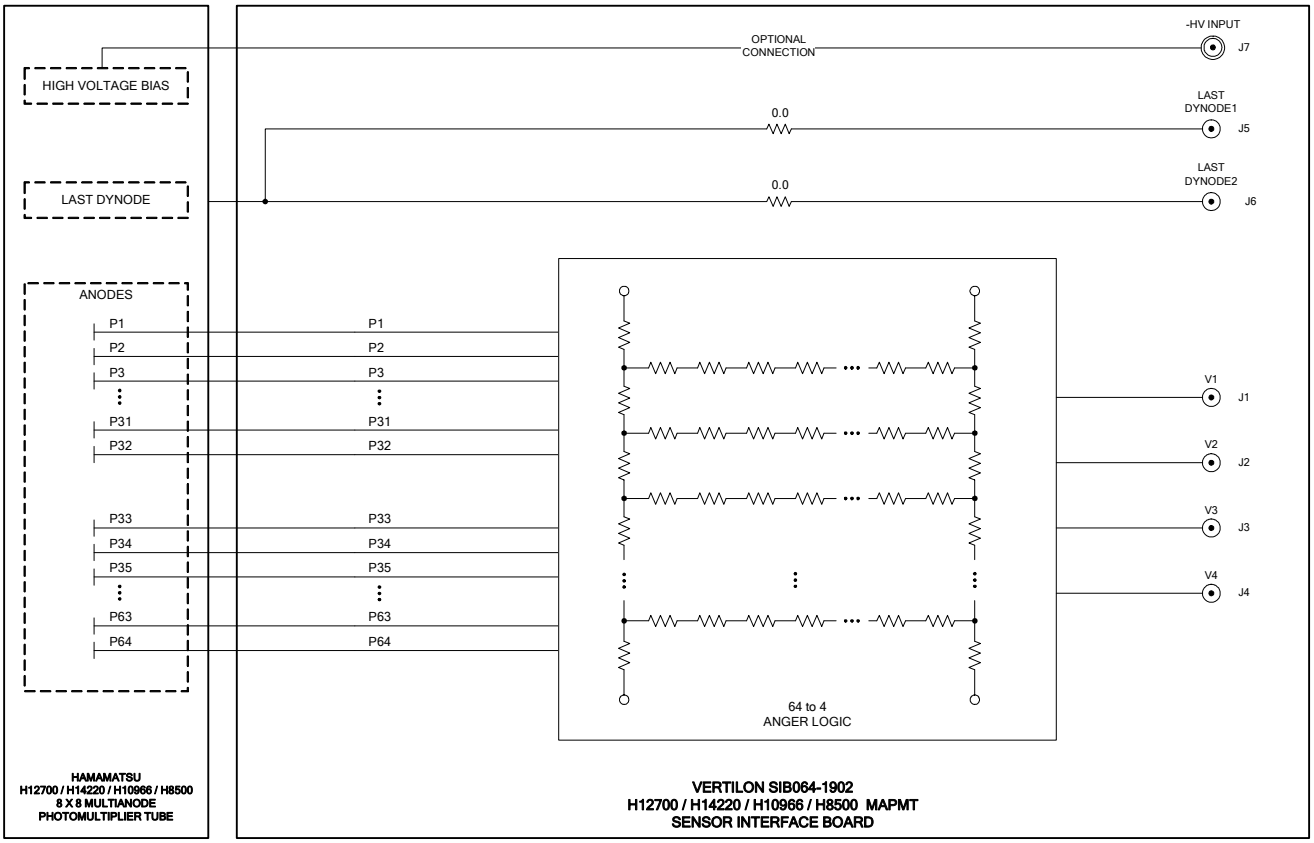
The SIB064-1902 multianode photomultiplier tube interface board provides the mechanical and electrical connectivity between Hamamatsu 64 anode 2" square MAPMTs, and external signal processing electronics such as Vertilon's PhotoniQ multichannel data acquisition systems. Supported MAPMTs include the Hamamatsu H12700, H14220, H10966, and H8500. The MAPMT is mounted to the bottom side of the SIB064-1902 through 144 socket pins that connect the PMT's 64 anode signals and last dynode output to the board. The anode signals are routed to an on-board resistive anger logic circuit that generates four anger signal outputs. These outputs connect using four hard-wired coaxial cables to Vertilon's PhotoniQ IQSP418 or IQSP518 multichannel data acquisition system where the charge from each is separately integrated, digitized, and sent to a PC for display or further signal processing. For applications utilizing the last dynode output of the MAPMT, the SIB064-1902 includes two hard-wired coaxial cables that connect directly to this PMT signal which can be used to generate a trigger to the data acquisition system or other external electronics. When using an MAPMT with an integral high voltage cable, the negative high voltage bias to the MAPMT's cathode is supplied directly through this cable which is compatible with the high voltage SHV output from the PhotoniQ. Alternatively, when using an MAPMT with no integral high voltage cable, four included optional socket pins can be added to the board for direct connection of the pins to the MAPMTs high voltage input. In this case, the high voltage bias is supplied through the SIB064-1902 on a specialized hard-wired SHV cable from the PhotoniQ. If required, this option can be ordered separately.

Typical Setup

A typical setup using a SIB064-1902 is shown below. A Hamamatsu H12700A MAPMT is mounted to the SIB064-1902 and positioned to detect incoming light from a scintillator crystal or optical assembly. The four anger logic outputs from the SIB064-1902 connect to four inputs on a PhotoniQ IQSP418 or IQSP518 multichannel PMT data acquisition system. Digitized output data from the PhotoniQ is sent through a USB 2.0 connection to a PC for display, logging, or real-time processing. An additional connection between the last dynode output on the SIB064-1902 and a discriminator creates a trigger to the PhotoniQ. When using an H12700A, a high voltage bias of up to negative 1500 volts is sent directly to the PMT from an SHV connector located on the rear of the PhotoniQ. Alternatively, if an H12700B is used instead of an H12700A, bias to the PMT can be provided through the high voltage connector on the SIB064-1902. Note that the rear panel high voltage output is an optional configuration on the IQSP418 and IQSP518. An identical setup can be used for most other Hamamatsu 2" square, 64 channel MAPMTs.



Functional Block Diagram



Ordering Information

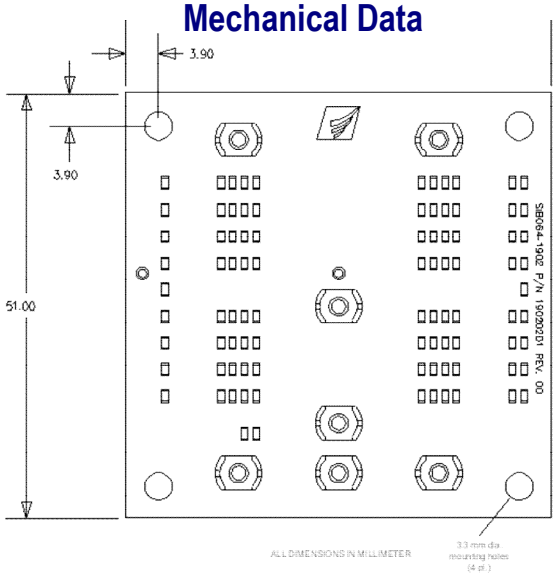
SIB064-1902 is directly compatible with Vertilon PhotoniQ IQSP418 / IQSP518 / DAQXY504 expandable charge integrating data acquisition systems. PhotoniQ systems sold separately. See PhotoniQ User Manual for performance specifications.

SIB064-1902 includes five 60 cm hard-wired coaxial cables with BNC plugs on the far ends. An additional hard-wired high voltage cable can be included as an option.

See SIB064-1902 User Guide for complete specification.

See Hamamatsu individual MAPMT datasheets for specific device information

Mechanical Data



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