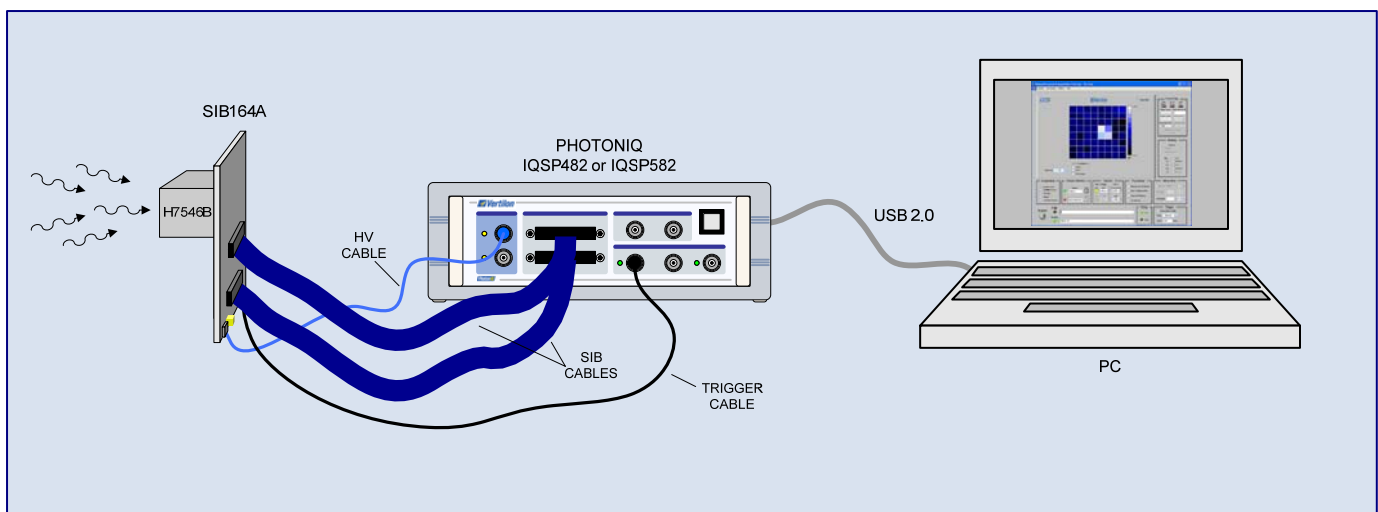
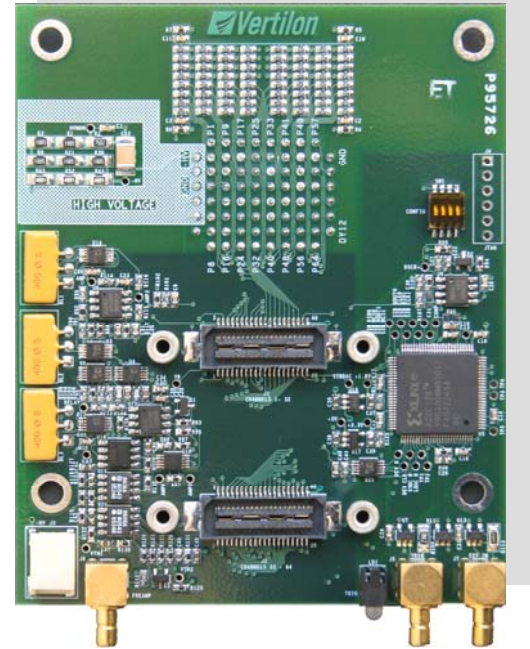


## Product Overview

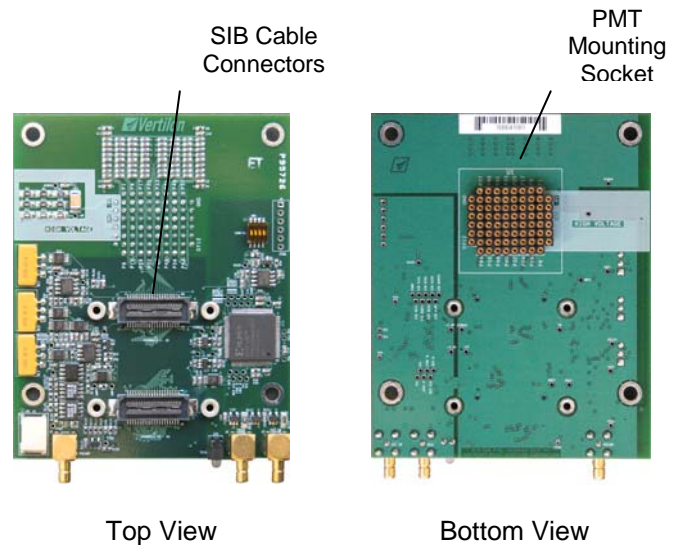
- Interface board for Hamamatsu H7546B multianode PMT
- Provides 64 channel interface to data acquisition systems
- Separate high voltage input for PMT cathode bias
- High speed preamplifier for last dynode output
- Leading edge, constant fraction, and zero slope discriminators
- Adjustable discriminator gain and energy threshold
- 100% compatible with Vertilon's PhotoniQ multichannel DAQs
- No external power supply required
- Simplified control through PhotoniQ graphical user interface



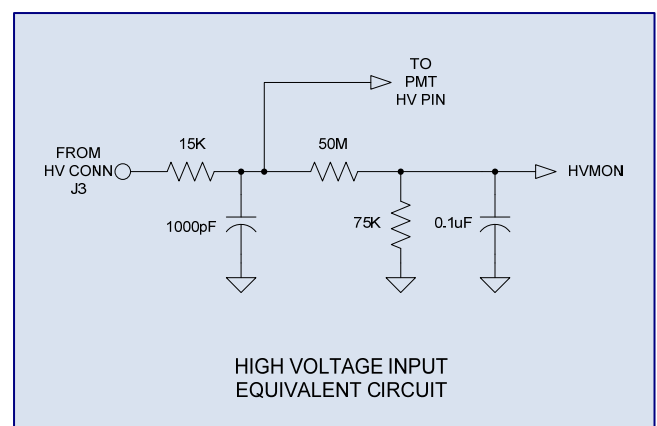
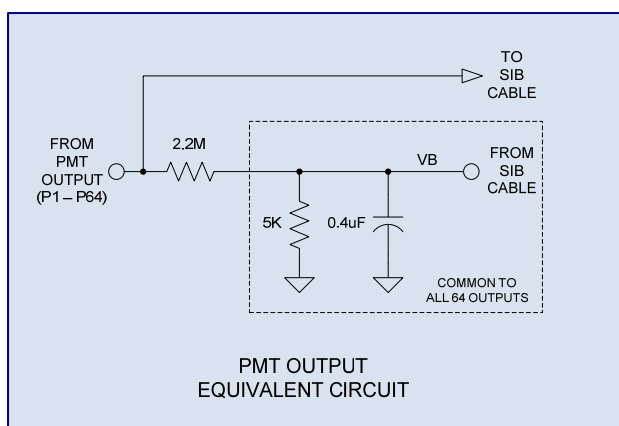
Typical Setup

## Description

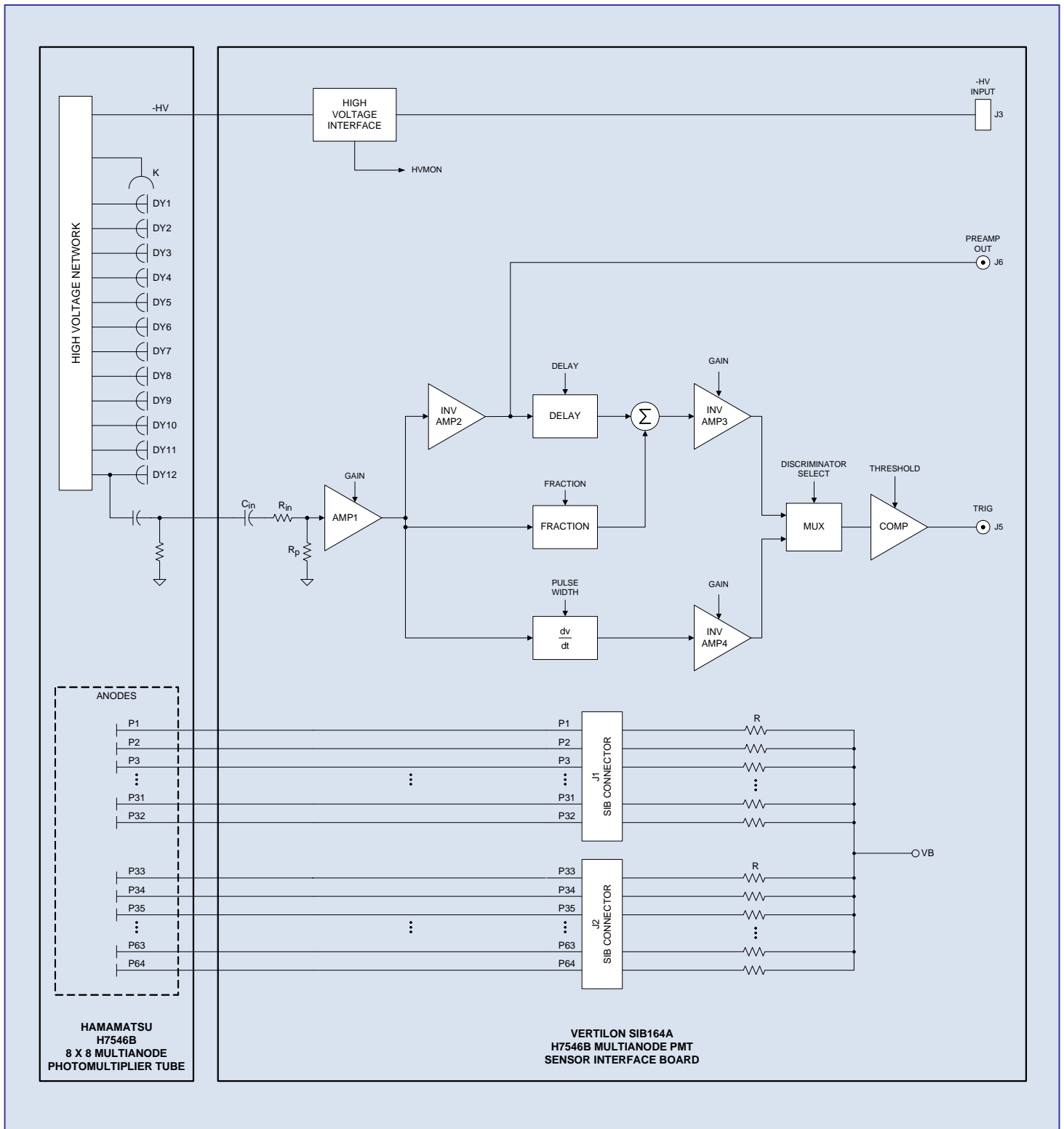
The SIB164A multianode photomultiplier tube interface board provides the mechanical and electrical connectivity between the Hamamatsu H7546B 64 anode PMT and external signal processing electronics such as Vertilon's PhotoniQ multichannel data acquisition systems. The PMT is mounted to the bottom side of the SIB164A through 76 socket pins that connect the device's 64 anode signals, high voltage input, and last dynode output to the board. The anode signals are routed to two connectors located on the top of the board that each connect to a specialized high density coaxial cable assembly. This arrangement allows the SIB164A to be conveniently mounted directly into the user's optical setup with the PMT facing outward from the bottom of the board and the sensor interface board (SIB) cables exiting from the top. The SIB cables carry the 64 anodes from the PMT to the PhotoniQ where the charge from each is separately integrated, digitized, and sent to a PC for display or further signal processing. The negative high voltage bias to the PMT's cathode is supplied directly from the PhotoniQ on a high voltage cable to a dedicated connector on the SIB164A. For applications utilizing the last dynode output of the H7546B, the SIB164A includes a two stage high speed preamplifier whose output is available on an SMB connector. When specialized timing and triggering are required, this output can be connected to a separate external discriminator and triggering electronics. Alternatively, for more general purpose applications when the trigger requirements are not as stringent, one of the three on-board discriminators can be used. A leading edge, constant fraction, and zero slope discriminator — which respectively generate trigger signals based on a threshold, percentage of pulse height, and pulse peak — are available to the user. Several adjustments are included for optimizing preamp gain, discriminator gain, and discriminator energy thresholds. The full functionality and operation of the SIB164A is conveniently controlled through the PhotoniQ's graphical user interface. Intelligent software in the PhotoniQ constantly monitors the status of its SIB connectors to determine the type of sensor interface board attached to them. Once recognized, a dialog box specific to the recognized SIB is made available in the GUI through which the user has complete control over its operation.



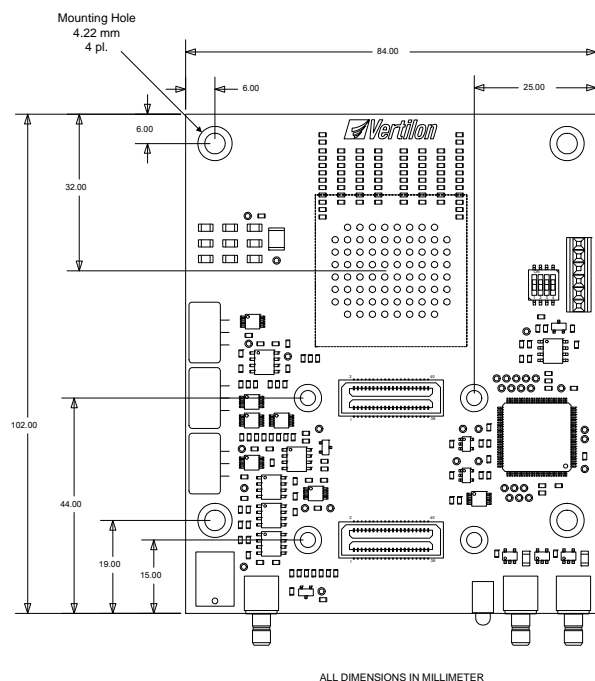
## Electrical Interface Circuits



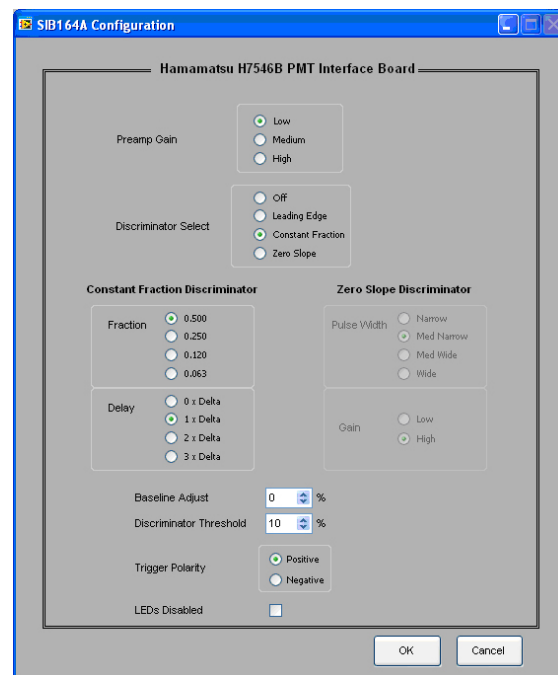
Functional Block Diagram



## Mechanical Data



## Configuration Dialog Box



## Specifications

Description	Specification
Number of Anode Circuits	64
Last Dynode Preamplifier Gain	10 dB, inverting
Leading Edge Discriminator Time Delay	10 nsec
Constant Fraction Discriminator Time Walk (Input Signal Range: 60 - 150mV)	1.5 nsec
Zero Slope Discriminator Time Walk (Input Signal Range: 10 - 80mV)	5 nsec
Discriminator Jitter	<500 psec
Supply Voltage	+5.0 V
Supply Current	+75 mA
Width	84 mm
Length	102 mm
Height	1.57 mm (PCB thickness only)

## Ordering Information

Includes 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.

Order PhotoniQ data acquisition system separately. SIB164A directly compatible with Vertilon IQSP482 and IQSP582 64 channel data acquisition systems. See PhotoniQ User Manual for performance specifications.

High voltage cable not included with SIB164A. Included with high voltage power supply option HVPS001 or HVPS002 for IQSP482 / IQSP582.

See SIB164A User Guide for complete specification.



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