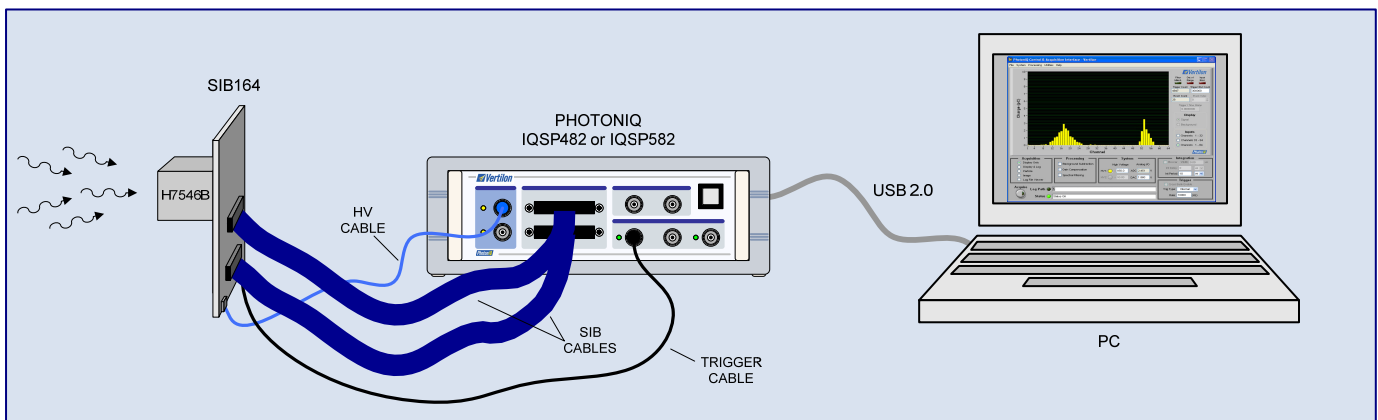
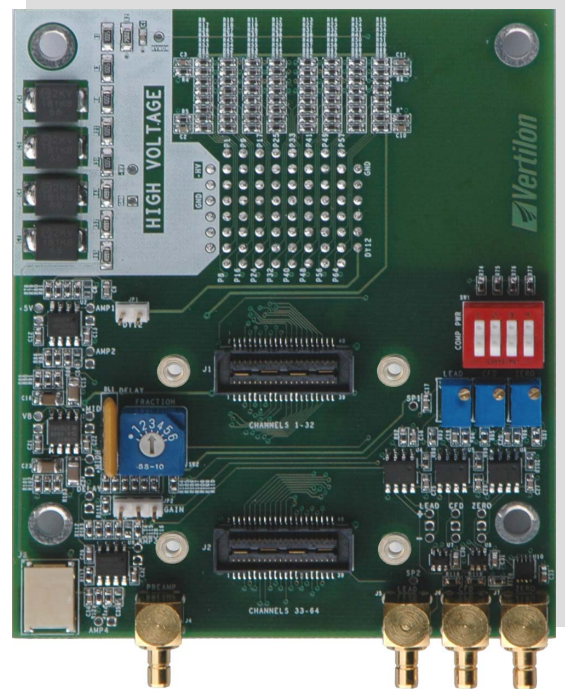


## Product Overview

- Mounting board for Hamamatsu H7546B 64 channel MAPMT
- 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 gain and discriminator thresholds
- 100% compatible with Vertilon's PhotoniQ multichannel DAOs
- No external power supply required



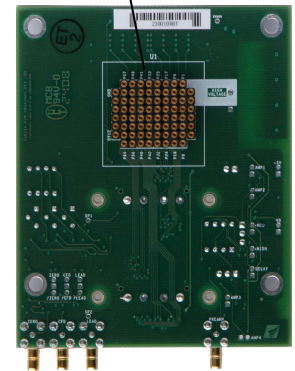
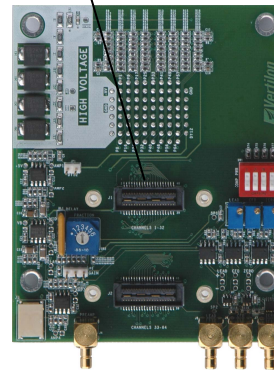
Typical Setup

## Description

The SIB164 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 H7546B is mounted to the bottom side of the SIB164 through 69 socket pins that connect the PMT'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 SIB164 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 H7546B 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 SIB164. For applications utilizing the last dynode output of the H7546B, the SIB164 includes a two stage high speed preamplifier whose output is available on an SMB connector. When critical timing and triggering are required, this output can be connected to a separate high performance external discriminator. Alternatively, one of the three on-board discriminators can be used when the timing requirements are not as stringent. The outputs from 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 each available on an SMB connector. Several user adjustments are included for optimizing system gain and trigger thresholds for the discriminators.

SIB Cable Connectors

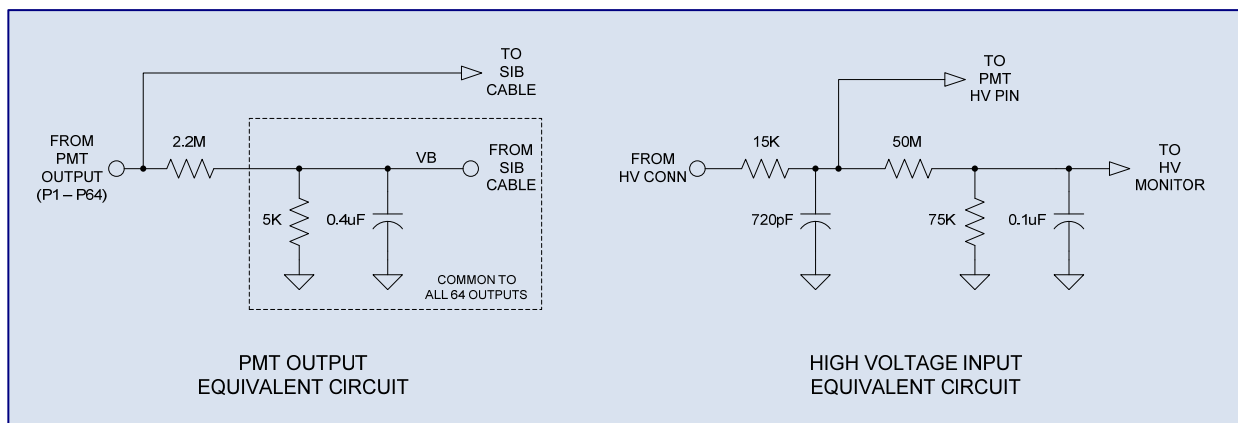
H7546B Mounting Pins



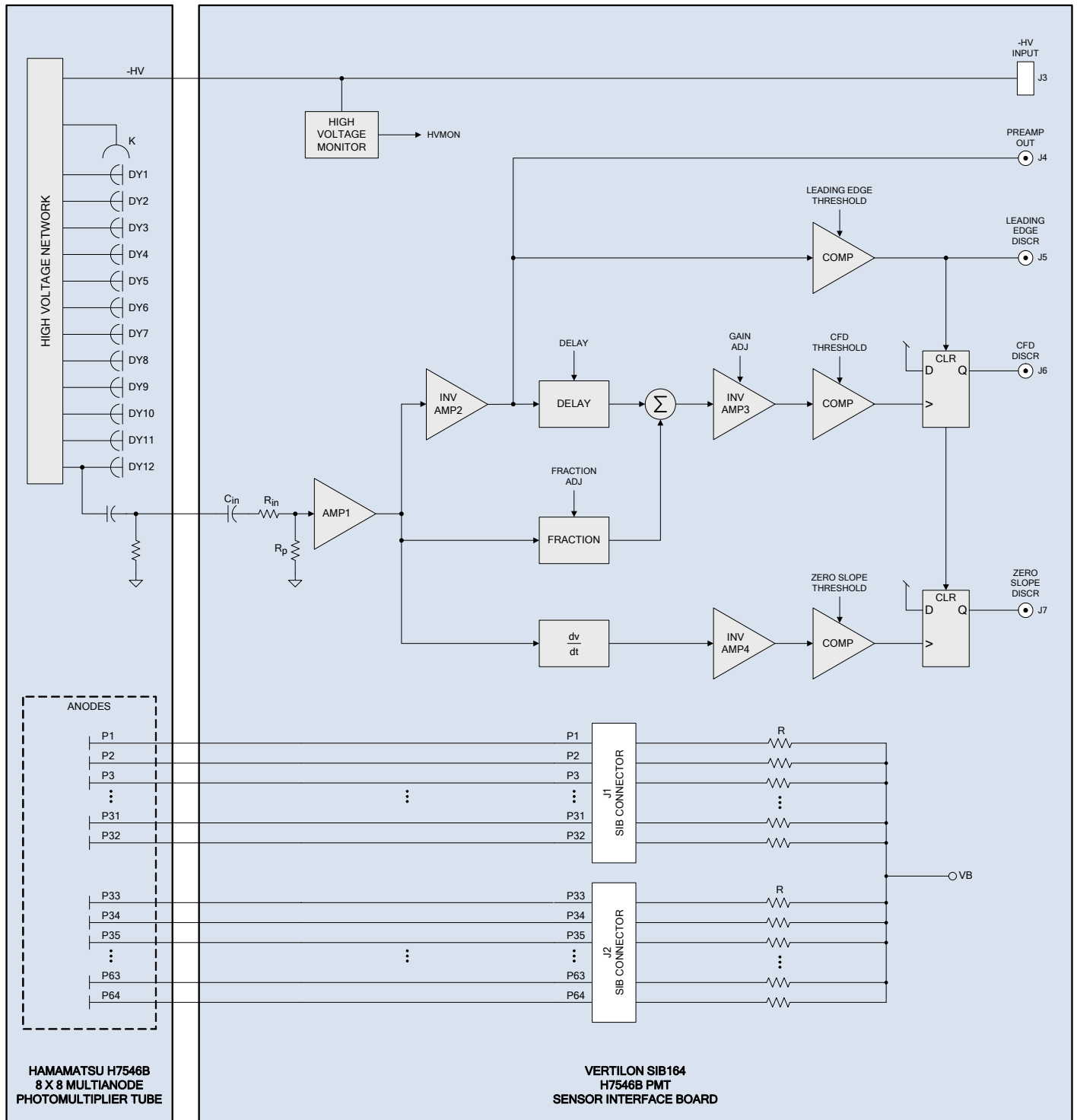
Top View

Bottom View

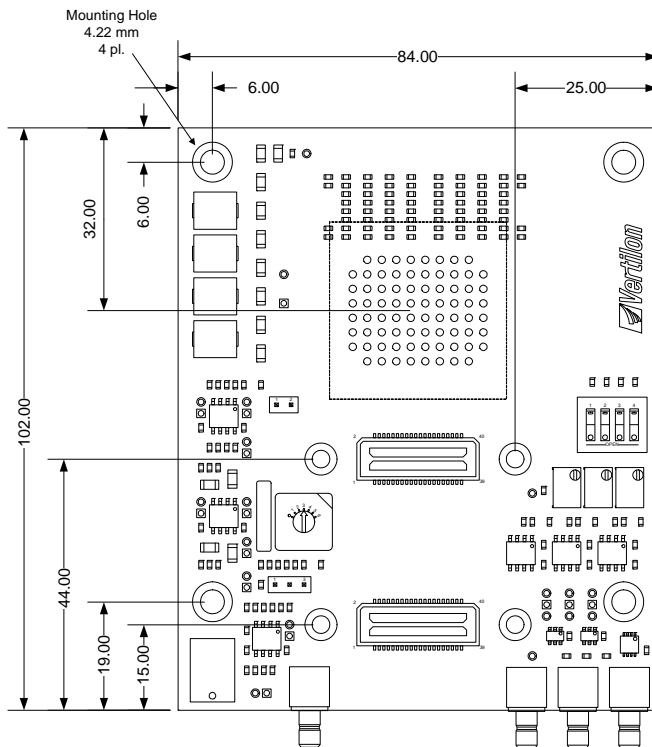
## Electrical Interface Circuits



Functional Block Diagram



## Mechanical Data



ALL DIMENSIONS IN MILLIMETER

### Specifications

Description	Specification
Number of Anode Circuits	64
Last Dynode Preamplifier Gain	18.6 dB, inverting
Leading Edge Discriminator Time Delay	5 nsec
Leading Edge Discriminator Time Walk	3 nsec
Input Signal Range: 30 - 150mV	
Constant Fraction Discriminator Time Delay	6 nsec
Constant Fraction Discriminator Time Walk	0.8 nsec
Input Signal Range: 10 - 100mV	
Zero Slope Discriminator Time Delay	6 nsec
Zero Slope Discriminator Time Walk	1.5 nsec
Input Signal Range: 20 - 200mV	
Discriminator Jitter	<500 psec
Supply Voltage	+5.0 V
Supply Current	+75 mA
Width	84 mm
Length	102 mm
Height	2.5 mm (PCB thickness only)

## General Safety Precautions

Warning: HIGH VOLTAGES – Voltages can exceed 2000V

Operate device within specified range

Electrostatic discharge sensitive

Do not operate in wet, damp or explosive atmosphere

See H7546B data sheet for specific handling information



## Ordering Information

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

Order PhotoniQ data acquisition system separately. SIB164 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 SIB164. Included with high voltage power supply option HVPS001 or HVPS002 for IQSP482 / IQSP582.

See SIB164 User Guide for complete specification.

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