

Description

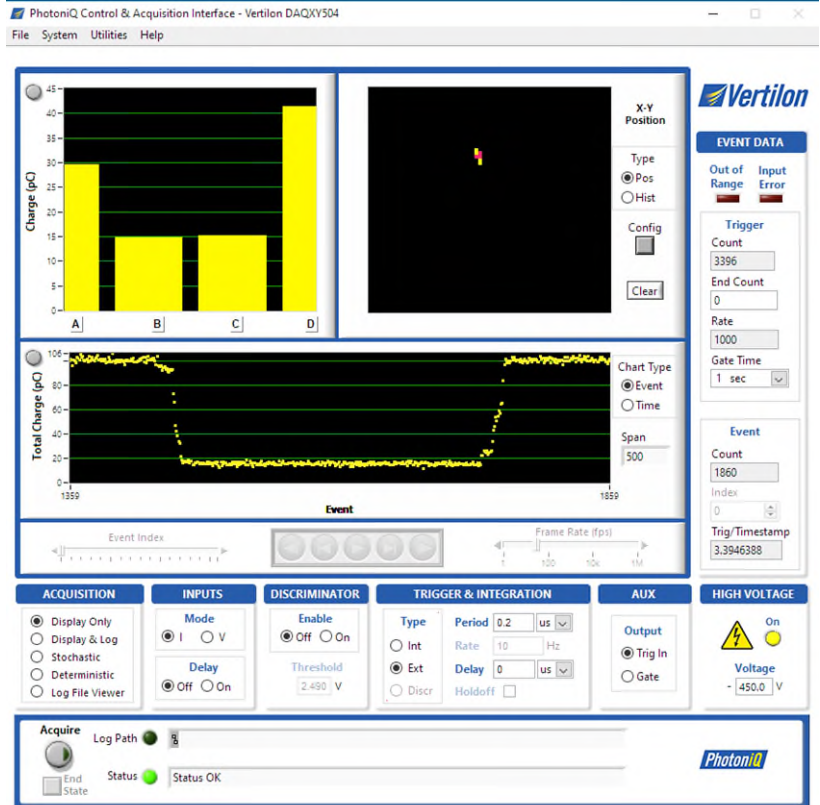


MAPMTs and SiPM arrays to be reduced to just four channels (using position of the centroid or center of the light distribution) by means of a simple resistive network. The DAQXY504 is fully configurable through the PC via its USB 2.0 port using an included graphical user interface. Continuous high speed data transfers to the PC are also handled through this interface. Additionally, a LabVIEW™ generated DLL is provided for users who wish to write their own applications that interface directly to the unit.

The PhotoniQ Model DAQXY504 is designed to offer scientists, engineers, and developers an off-the-shelf solution for their multi-channel electro-optic sensor needs. Implemented as a stand-alone laboratory instrument with a PC interface, the PhotoniQ is used for charge integration and data acquisition (DAQ) from Anger logic-connected multianode photomultiplier tubes (MAPMT) and silicon photomultiplier (SiPM) arrays. The use of Anger logic allows for high channel count

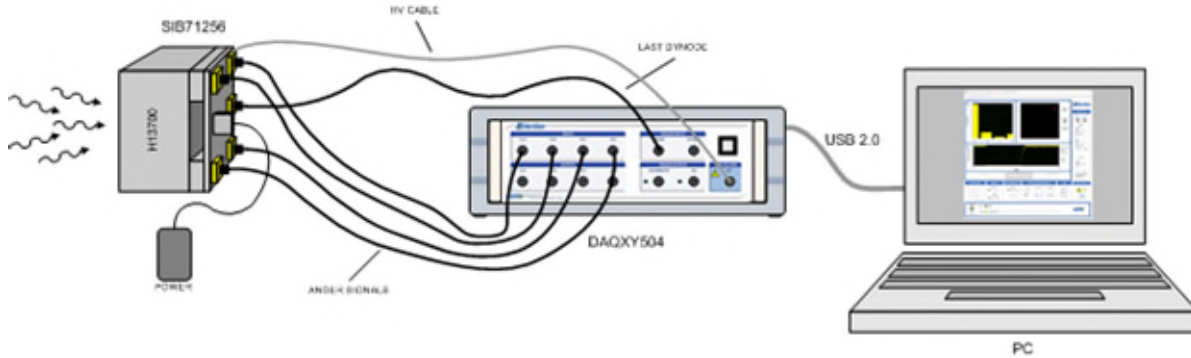
Features

- Four gated integrator / data acquisition input channels
- Inputs configurable for current mode or voltage mode
- Four buffered output channels for monitoring signals with external equipment
- Graphical User Interface (GUI) for menu driven data acquisition and configuration
- USB 2.0 interface supports high data transfer rates
- Three real-time GUI displays of charge per channel, total charge (oscilloscope mode), and X-Y position
- High-speed event capture at 14-bit resolution
- Data acquisition optimized for random particle analysis
- 2.5 usec event pair resolution with trigger rate up to 390 KHz
- High speed discriminator for connection to MAPMT last dynode
- Triggering by discriminator, external input, or internal source
- Switchable delay per input for trigger signal delay compensation
- Control of integration gate parameters such as delay and period
- Event trigger / time stamping with 100 nsec resolution
- Optional high voltage output for MAPMT or SiPM array bias
- LabVIEW™ DLL for interface to user custom applications

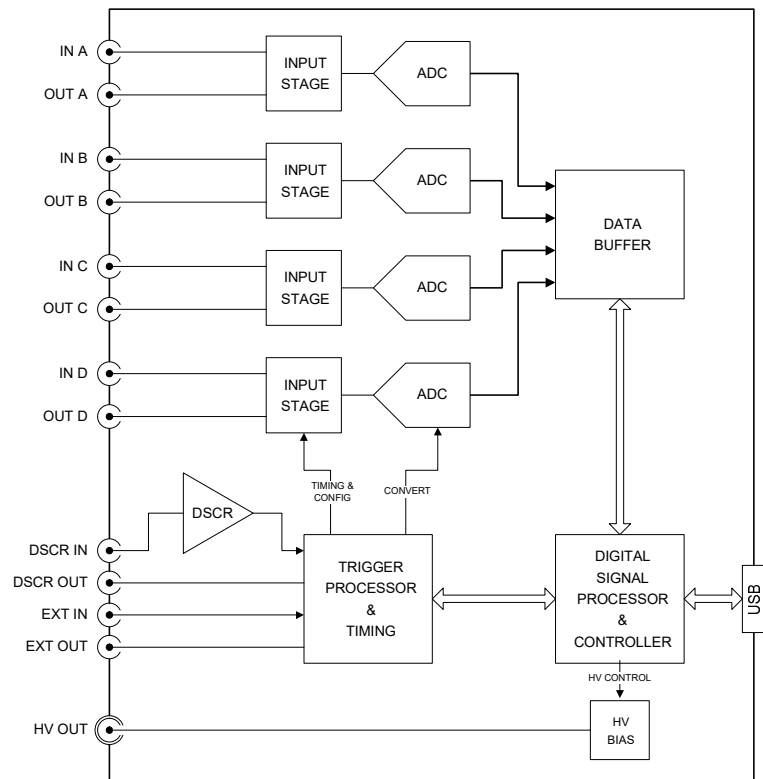


Typical Setup

A typical setup using a DAQXY504 and Vertilon SIB71256 Anger logic sensor interface board for the Hamamatsu H13700 16 x 16 MAPMT is shown below. The Hamamatsu H13700 MAPMT is mounted to the SIB71256 and positioned to detect incoming light from a scintillator crystal or optical assembly. The four anger logic outputs from the SIB71256 connect to four inputs on a PhotoniQ DAQXY504 four channel charge integrating MAPMT data acquisition system. Digitized output data from the DAQXY504 is sent through a USB 2.0 connection to a PC for display, logging, or real time processing. The amplified last dynode signal from the SIB71256 connects to the DAQXY504 internal discriminator that generates a trigger to the PhotoniQ. A high voltage bias of up to negative 1200 volts is sent directly to the PMT from an SHV connector located on the front panel of the PhotoniQ. Note that the high voltage output is an optional configuration on the DAQXY504.



Functional Block Diagram



Ordering Information

DAQXY504 includes power supply and USB cable.

DAQXY504 is directly compatible with Vertilon Anger logic sensor interface boards including SIB71256, SIB064-1018, SIB164-1018, and others. See User Guides for performance specifications. All sensor interface boards sold separately.

High voltage power supply options (HVPS001, HVPS002, and HVPS701) sold separately.

See DAQXY504 User Manual for complete specification.

See Hamamatsu MAPMT datasheets for device-specific information



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