IQSP480 PhotoniQ 32 Channel Charge Acquisition System

Product Sheet

Description

The PhotoniQ Model IQSP480 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 from photomultiplier tubes, photodiodes, and other multi-element charge-based sensors. It is a precision, high speed, multi-channel parallel system capable of providing real-time DSP-based signal processing on input events. Flexible intelligent triggering allows the unit to reliably capture event data using one of several sophisticated triggering techniques. Through the PC, the PhotoniQ is fully configurable via its USB 2.0 port using an included graphical user interface. Continuous high speed data transfers to the PC are handled through this interface, or for custom applications through the provided Windows DLL set.

Applications

- **Bioaerosol Detection and Discrimination**
- **Flow Cytometry**
- **Fluorescence Spectroscopy**
- **Spatial Radiation Detection**
- **Confocal Microscopy**
- **Analytical Chemistry**
- **Particle Physics**
- **Piezoelectric Sensor Array Readout**
- **High Speed Spectroscopy**
- **Arrays of Individual Sensors**

Features

- 32 gated integrator/data acquisition channels
- 96 dB dynamic range (16-bit resolution)
- 5.0 usec typical event pair resolution (EPR)
- 65,000 events per second sustained average event rate (SAER)
- Single photon sensitivity when used with typical multi-anode PMTs
- Intelligent triggering supports edge, internal, level, and boxcar modes
- Advanced triggering capability supports pre-triggering, event based, and cross bank
- Flexible control of integration parameters such as delay, period, or external boxcar
- Real-time data discrimination, channel gain normalization and background subtraction
- Programmable spectral filtering function for real time detection of predefined spectrums
- General purpose digital output linked to spectral filter function
- Compatible with commonly available multi-anode PMTs and avalanche photodiode arrays
- Available with optional negative 1000V or 1500V high voltage bias supplies

Vertilon Corporation, 66 Tadmuck Road, Westford, MA 01886 / Tel: (978) 692-7070 / Fax: (978) 692-7010 / www.vertilon.com

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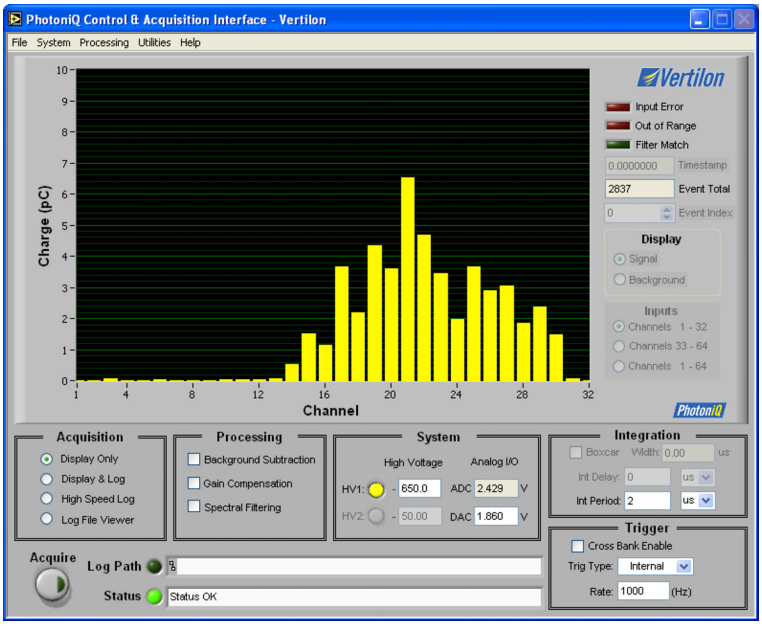

Software Features & Functions

- Graphical User Interface (GUI) for menu driven data acquisition, configuration, and status
- Real time display shows total integrated charge level across all channels for each captured event
- Integrated log file viewer permits on-screen viewing of logged event data
- High speed event counter
- Event time stamping with 100 nsec resolution
- USB 2.0 interface supports high transfer rates
- Included Microsoft Windows DLLs for interface to custom user applications

Included Accessories and Software

The PhotoniQ IQSP480 comes enclosed in a rugged, EMI-shielded, laboratory instrument case and is shipped with the following standard components and software:

- PhotoniQ Control and Acquisition Interface Software CD-ROM
- DC power supply (+5V, 2A) with power cord
- USB 2.0 cable (15')

Supported Sensors

The sensors below are supported using separately ordered Vertilon sensor interface boards (SIBs). Custom SIBs are also available.

- Hamamatsu multi-anode PMT, H7260
- Hamamatsu multi-anode PMT, H8711
- Hamamatsu multi-anode PMT, R5900U-L16
- Pacific Silicon Sensor avalanche photodiode array, AD-LA-16-9-DIL18

Specifications*

Description	Specification
Number of Channels	32
Resolution	16 bits
Dynamic Range	96 dB
Equivalent Input Noise Charge	30 fC RMS typ.
Maximum Input Signal	2000 pC
Channel-to-Channel Crosstalk	-84 dB typical, -80 dB max.
Input Bias Current	±40 pA typical, ±150 pA max.
Minimum Event Pair Resolution (MEPR)	5.0 usec typ., 7.5 usec max.
32 Channel Sustained Average Event Rate (SAER)	65,000 events/sec
8 Channel Sustained Average Event Rate (SAER)	130,000 events/sec
Power Consumption	3.0 Watts typ., 4.5 Watts max.
Width	9.843 in. (250 mm)
Height	3.346 in. (85 mm)
Length	10.236 in. (260 mm)

* See PhotoniQ User Manual for details

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