



4 Channel Gated Photon Counter

Four timing channels / four gates / flexible trigger

Time per bin 4 ns to 262 μ s

800 MHz saturated count rate

Low dead time 1.25 ns

Minimum gate width 1 ns

Sustained bin transfer rate 160 MHz

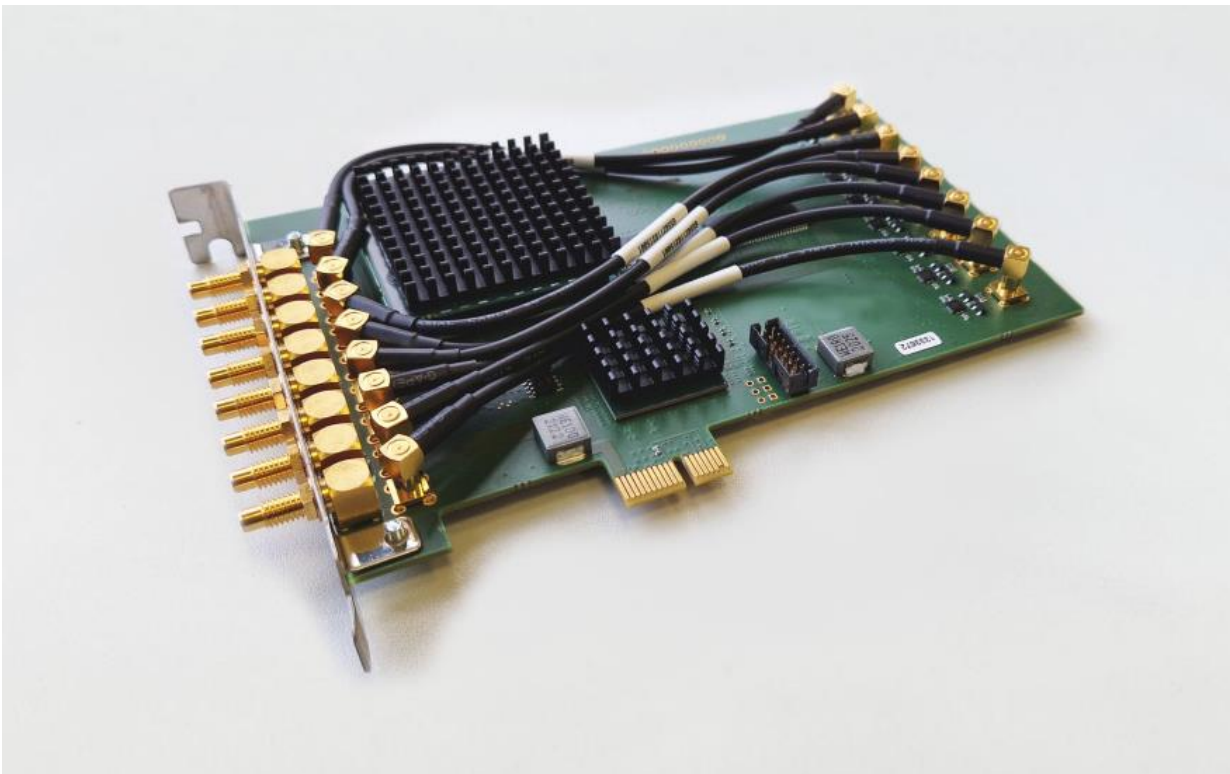
Optical transient waveform recording

Recording of luminescence spectra

Single molecule detection

Gated detection

Gating off scattering pulses





Input Channels

Counter Channels	4
Frequency Range	0 to 800 MHz
Dead Time	1.25 ns
Gate Channels	4 (1 Trigger Optional)
Principle	Threshold Discriminator
Discriminator Input Bandwidth	4 GHz
Maximum Pulsed (<1 ms) Input Voltage Range	-5.5 V to +5.5 V
Maximum DC Input Voltage Range	-3.3 V to +3.3 V
Min. Input Pulse Width	0.625 ns
Min. Gate Width	1 ns
Min. Trigger Pulse Width	1 ns
Discriminator Threshold (All Inputs)	-500 to 500 mV in Steps of 4 mV
Input Connectors	SMC, 50 Ohm

Time-Measurement Circuitry

Principle	Time-to-Digital Converter
Resolution	4 ns
Time Range	4 ms (Software Limited)

Data Acquisition

Max. Count Rate	800 MHz / Channel
Online Display	Hardware Multiscaler, Triggered Accumulation, Multiscaler Stream

Hardware Multiscaler

No. of Time Bins	64 to 65,536
Time / Bin	4 ns to 262 μs
Max. Counts / Bin	65,535
Time Range	256 ns to 17.2 s
Sustained Count Rate	800 MHz / Channel

Triggered Accumulation

No. of Time Bins	64 to 4,096
Time / Bin	4 ns to 16,384 μs
Max. Counts / Bin	65,535
Time Range	256 ns to 67.1 ms
Sustained Count Rate	800 MHz / Channel
Max. Trigger Rate	50 MHz

Multiscaler Stream

Max. No. of Time Bins	Unlimited
Time / Bin	4 ns to 128 ns
Max. Counts / Bin	127
Count Threshold	1 to 127 Counts
On-Board FIFO Buffer Capacity	3,500,000 Bins
Sustained Bin Transfer Rate	160 MHz (All Channels Combined)

Operation Environment

Operating System	Windows 10, Windows 11
Bus Connector (Slot Type)	PCI-ex
Total Power Consumption	approx. 12 W from +3.3 V, 3 W from +12 V
Dimensions	165 mm x 110 mm x 20 mm

Related Products

SPC-180N, SPC-180NX, SPC-180NXX, SPC-QC-104 TCSPC modules, HPM-100 hybrid detectors, DCC-100PCIe detector controller
 BDS-SM ps diode lasers, BDS-MM picosecond diode lasers, SPCImage NG data analysis software

Related Literature

W. Becker, The bh TCSPC Handbook, 10th edition (2023). 950 pages, available on <https://www.becker-hickl.com>. Please contact bh for printed copies.

The bh TCSPC Technique, Principles and Applications. Overview brochure, 27 pages. Available on <https://www.becker-hickl.com>

International Sales Representatives



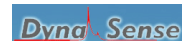
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