

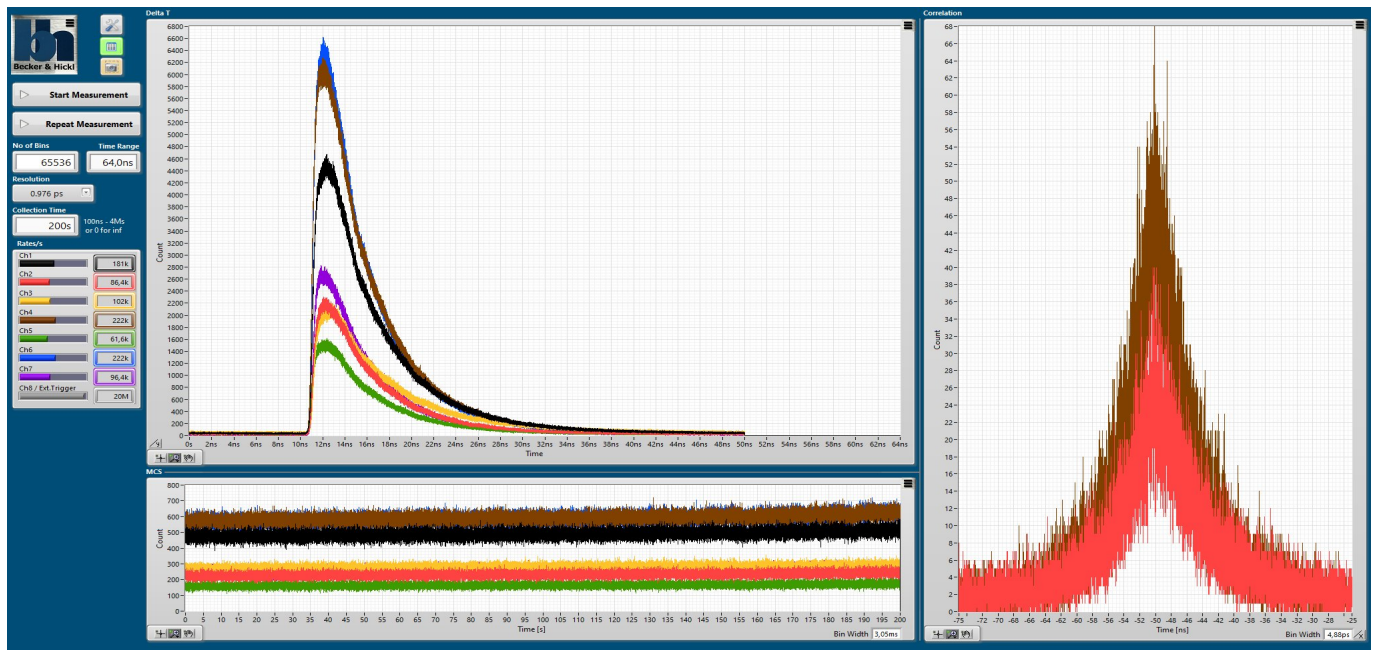
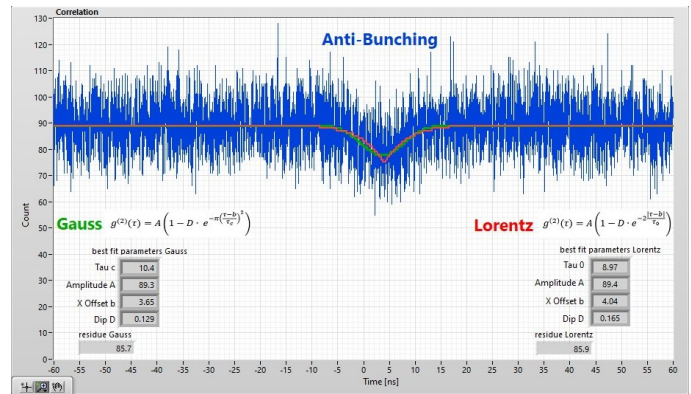


## 7-Channel Time-Correlated Single Photon Counting Module 8-Channel Photon Time-Tagger Module

- Eight absolute timing channels or Seven parallel TCSPC channels plus one synchronisation / reference channel
- Ultra-high discriminator bandwidth
- Excellent timing stability
- Low dead time
- Extremely high sustained count rate
- Extremely high peak count rate

- Recording of optical waveforms
- Photon time- and parameter-tagging

- Photon anti-bunching experiments
- Photon-Correlation experiments
- Quantum-computing experiments
- Fluorescence decay measurement
- Molecular imaging
- Metabolic FLIM
- FRET experiments
- fNIRS and NIRS experiments
- Single-molecule spectroscopy
- Fluorescence correlation



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### Photon Channels

Principle	Threshold Discriminator
Discriminator Input Bandwidth	4 GHz
Min. Input Pulse Width	1 ns
Discriminator Threshold	-500 to 500 mV in Steps of 4 mV
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
Frequency Range	0 to 400 MHz
Input Connectors	SMC, 50 Ohm

### Synchronisation Channel / External Clock

Each of the Photon Channels can be used as a timing-reference input or as an external clock input

### Time-Measurement Circuitry

Principle	Time-to-Digital Converter
IRF Width, FWHM, Photon vs. Sync Channel	<40 ps
Typical RMS Timing Jitter, Photon vs. Sync Channel	14 ps
Min. Time / Bin	1 ps
Timing Stability, Range 16 ns, over 10 Minutes	<5 ps RMS
Diff. Nonlinearity	<2 % RMS
Dead Time	2 ns

### Data Acquisition (FIFO Mode)

Method	Parameter-Tagging of Individual Photons, Continuous Writing to Disk
Peak Count Rate	500 MHz / Channel
Sustained Count Rate (Bus-Transfer Limited)	140 MHz, All Channels Combined
Peak Count Rate	500 MHz
Peak-Rate Buffer Capacity (Photons / Channel)	4,000
On-Board FIFO Buffer Capacity (Photons Combined)	2,600,000

### Data Acquisition GUI Software

Online Display Count Rates, Multiscaler, Delta-T Function, Threshold Scan, Auto-/Cross-Correlation

#### Delta-T Function

No. of Time Bins	1 to 10 M
Time / Bin	1 ps to 65,536 ps
Time Range	1 ps to 640 ms
Sync Channel, Selectable	1 to 8
Optional External Trigger	Channel 8

#### Threshold Scan

Threshold Range	-500 mV to 500 mV
Stepsize	4 mV

### 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



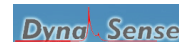
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