

SPECIFICATIONS

SWISS-2 and SWISS-3, Digital TCSPC module



Digital TCSPC is designed for fast FLIM data acquisition and with the unique capability to cover the range from picoseconds to seconds with a time bin of 1 picosecond. Featuring 8 independent input channels, the unit records time-tagged time-resolved (TTTR) events in streaming mode.

Two versions of the module are available: one unit (SWISS-2) allows for maximum data transfer rate of 8.5 M tags/second while the second (SWISS-3) reaches 65 M tags/second; dead time is 6 ns and 2 ns respectively. Decay times from the picosecond to the second time scales can be resolved (FLIM and PLIM). The card is supported by drivers in Windows 10, 64-bit, operating systems. The connection to the computer is through USB protocol.

Measurements:

- Time-Tagged-Phase-Resolved lifetime measurements
- Single-wavelength and multi-wavelength FLIM/PLIM
- Confocal images
- Anisotropy measurements (steady-state and time-resolved)
- FCS, FCCS, PCH
- Scanning FCS, RICS, N&B
- Stoichiometry
- Single Molecule FRET
- PIE measurements

Features:

- 8-channel simultaneous acquisition
- Decay rates range: from picoseconds to seconds
- Dead time: 6 ns and 2ns (model dependent)
- Trigger input from external source
- Pixel, Line and Frame CLK synchronization
- USB communication
- Drivers for Windows 10, 64-bit, OS

Specifications

Feature	SWISS-2	SWISS-3
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Operation		
No. of INPUT channels	8	4
Minimum time bin width (ps)	1	
Time resolution, RMS jitter (ps)	34	10
Dead Time (ns)	6	2
Decay times measurement	PLIM and FLIM: from 10 ps to ~ 3 months	
Synchronization w/ scanning devices	LINE/FRAME/PIXEL Scan	

Data Acquisition (Photon Mode or Time-Tagged Time Resolved)		
Data Transfer rate (M tags/s)	8.5	65
Burst Memory (M tags)	8	512
Max sync rate (MHz)	167	500

Input signals		
Input impedance (Ω)	50	
No. of CFD inputs	2 standard, up to 4	2 standard, up to 4
Min CFD Input signal (V)	30mV (amplification stages are included)	
Non-CFD Input signal range (V)	0.3	± 3
Non-CFD Trigger level range (V)	0 – 2.5	± 2.5
Non-CFD min pulse height (mV)	100	
Non-CFD min pulse width (ns)	1	0.5

Mechanical & Electrical		
Input connectors	BNC	BNC
Data interface	USB2	USB3
Power	120/240 V, 50/60 Hz, 40 W	
Dimensions (cm)	42.5 (W) x 36 (D) x 10 (H)	

For more information please call (217) 359-8681
or visit our website at www.iss.com



1602 Newton Drive
Champaign, Illinois 61822 USA
Telephone: (217) 359-8681
Telefax: (217) 359-7879
Email: iss@iss.com

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