



# quTAG

Fastest Time Tagger in the solar system



## Key features

- < 25 ps / < 10 ps timing resolution (FWHM/RMS)
- 4 stop channels, 1 start channel
- 100 Mcps max. event rate
- max. 16 stop channels

## Applications

- Quantum Optics/ Information/Communication
- LIDAR
- Fluorescence/Phosphorescence Lifetime Imaging
- Fluorescence Correlation Spectroscopy (FCS)
- Stimulated Emission Depletion Microscopy (STED)
- Foerster Resonance Energy Transfer (FRET)
- Single Photon Emitter Characterisation

## quTAG Preliminary Specifications

### Timetag/ Stop Inputs

Number of channels	4
Timing resolution (jitter, FWHM)	< 25 ps
Timing resolution (jitter, RMS)	< 10 ps
Bin width	1 ps
Signal levels (threshold comparator)	2 .. +3 V
	e.g. LVTTTL, NIM
Threshold level resolution	1.22 mV
Edge	Rising, falling
Termination	50 Ohms
Max event rate per channel	25 Mcps
DNL/INL	< 1 %
Delay range	-100 .. +100 ns
Delay resolution	1 ps
Input connectors	SMA

### All Time Tag/Stop channels

Max event rate	100 Mcps
Max. acquisition time	213 days

### Start Input

Max. Event Rate	100 periodic MHz
	10 aperiodic Mcps
Signal Levels	-2 .. +3 V
(Threshold)	e.g. LVTTTL, NIM
Threshold level resolution	1.22 mV
Edge	Rising, falling
Termination	50 Ohms
Dead time	
(min. pulse to pulse separation)	≤ 40 ns
Input connector	SMA

### Clock Input

Frequency	10 MHz
Signal Levels (Threshold)	-5 .. +5 V
Signal Form	sinusoidal
	square wave
Termination	50 Ohms
Input connector	SMA

### Synchronisation

Number of synchronisable quTAGs	4
Max # of synchronised channels	16

### Software

Operating Systems	Windows, Linux
Supplied software	GUI/DLL/LabView
	Command line

### Power supply

Voltage	90 .. 240 VAC
Frequency	50 .. 60 Hz
Power consumption	60 VAC
Connector	IEC Inlet

Dimensions	34 x 22 x 4 cm
Weight	4 kg
USB Interface	USB 3

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