Introduction

The RedWave Labs Q425 Time Tagger is a high-precision, dual-width PXIe module with eight time-tagging inputs.



The Q425 operates from the PXIe backplane's 100 MHz reference clock or an external 10 MHz reference via a front-panel SMA input. A clock output allows synchronisation of other instruments.

Time-tagged data is transferred to host memory over PCIe and is accessible through a software API.

Specification

Features	**Time Tagger Q425 provides digital timing resolution down to 0.5ps**	
Applications	**Photon Timing, QKD, Quantum computing, single-photon spectroscopy, LiDAR, light source characterisation**	
Specifications	Parameter	Value
Power	Triple	+3.3V, +5V +12 V from PXIe
Time-tagger Inputs	Voltage Type	0.5-5V threshold
	Digital Resolution	0.5ps
	Total tag rate	500 Megatags/s
	Maximum burst channel tag rate	125 Megatags/s
	Deadtime	4ns
	Precision	6.8ps rms single channel
	Number	8 Continuous timing inputs
Clock Sources	Differential	100MHz PXIe bus clock
	Single-ended	SMA 50Ω terminated
Reference Output	Single-ended	SMA, 1.5V into 50Ω
Standards	PCIe (XJ3 and XJ4)	8 lane gen 3 PCIe
	Clock	100MHz PXIe back plane clock/10 MHz TTL
	Inputs/output	50Ω terminated
Dimensions	WxHxD	160 x 100 x 33 mm
Weight		300 g
Storage Temp		-55 to 100 C
Operating Temp		-40 to 85 C

* RedWave Labs Ltd keeps improving its products and therefore some specifications can vary.

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