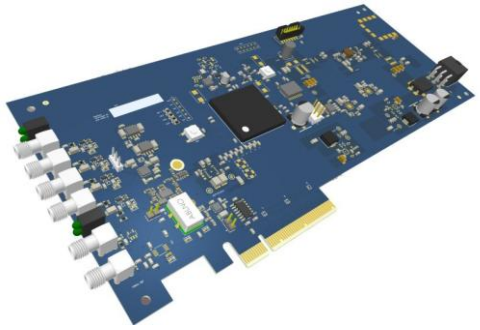
Introduction

The Redwave Labs Time Tagger Q400 is a PCIe card that works within an x64 Linux computer. It provides four count inputs and a fifth input for synchronising counting. External clocks can be provided as either a 10MHz single ended or 100MHz differential signal. Counts are returned over the PCIe bus to the main system memory and are accessible via an API.



Specification

Features	**Time Tagger Q400 provides timing resolution to 31.25ps**	
Applications	**Photon Timing, QKD, Quantum computing, single-photon spectroscopy**	
Specifications	Parameter	Value
Power	Triple	3.3V +12 V from PCIe finger
Time-tagger Inputs	Voltage Type	0.5-5V pulse
	Resolution	31.25ps
	Number	4 Continuous timing inputs
		1 Slow synchronisation or framing pulse
Clock Sources	Single-ended	10MHz e.g. from GPS or atomic standard
	Differential	100MHz or custom
	Internal clock	100MHz derived from 25MHz crystal
Gate Input	Type	3V3 CMOS logic
	Connection	SMA
Connectors	Timing	SMA positive pin. Max 5V 10GHz
	PCIe	8 lane Gen 3 finger connector
	Clock	SMA positive pin. 10MHz sinusoidal. Max 13dBm
	Pulses	4x SMA 50 Ohm 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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