cronologic

TimeTagger4 - Product Brief

TimeTagger4-TBT

TimeTagger4-PCIe

TDC-Modules

www.cronologic.de

TimeTagger4

Introduction

cronologic presents an exciting series of low-cost, mid-resolution time-to-digital converters. These time interval analyzers are available as measurement cards, TDC modules, and desktop devices and offer a single-shot resolution of 100 ps to 800 ps with a high readout bandwidth.

Time Taggers are ideally suitable in applications that do not require the highest single-shot timing resolution, but high data acquisition rates and the lowest multiple hit deadtime. These include certain types of mass spectroscopy (TOF-MS), time-correlated single photon counting (TCSPC), phase shift measurement, quantum cryptography and frequency counting applications.

TimeTaggers are high-throughput, low-cost common start time-to-digital converters (TDCs). The timestamps of leading or trailing edges of digital pulses are recorded from the TimeTaggers with the following single shot time resolutions (quantization):

- TimeTagger4-**1.25G:**   **800 ps**
- TimeTagger4-**2.5G:**   **400 ps**
- TimeTagger4-**5G:**   **200 ps**
- TimeTagger4-**10G:**   **100 ps**

For all TimeTaggers, cronologic will support you with drivers for Windows and Linux.

Technical Data

Optimized for	low cost
TDC channels	1 AC-coupled start channel 4 AC-coupled stop channels
Connectors	5x LEMO 00 / board-to-board (TDC-Modules)
Bin size (version-dependent)	**800** / **400** / **200** / **100** ps
Double pulse resolution	2 bins
Dead time between groups	none
Start rate (version-dependent)	**0.625** / **1.25** / **2.5** / **5** GHz burst, 18 MHz sustained
Stops	**0.625** / **1.25** / **2.5** / **5** GHits/s per channel for bursts of up to 3900 stops
	40 MHits/s per channel sustained
	60 MHits/s over all channels sustained
Range	1.6 ms, 430 ms extended
measuring mode	common start or continuous
Maximum hits per packet	≈8000 hits
synchronisation of multiple boards	external clock input only
Readout interface	PCIe2 x1 @ 400MB/s / USB4 (desktop units)