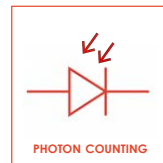
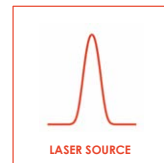


CHRONOXEA

Picosecond Time Tagger

Universal SPAD Correlation Unit

13 ps Digital Resolution • 4 Event Channels • Internal & External Sync.



AUREA Technology's **CHRONOXEA** is a standalone, high-precision time tagger **compatible with SPAD and SNSPD** readout signals that meet the specified electrical input requirements. Featuring independent event channels with **sub-20 ps timing resolution** and programmable channel delays, it supports internal and external clock synchronization for multi-node coincidence analysis.

Housed in a **compact enclosure**, CHRONOXEA delivers turnkey Python and C++ APIs alongside an automated GUI, streamlining correlation setups across **QKD networks, TCSPC, and quantum metrology**.

Features

- Timing resolution down to 13 ps
- 4 independent input channels
- Adjustable per-channel delay
- Internal & external sync
- Universal TTL/NIM compatibility
- Python & C++ APIs with GUI

Applications

- Entanglement-Based QKD (BBM92)
- Multi-Node Entanglement Swapping
- Bell-State Analysis
- TCSPC
- Quantum Source Characterization

Options

- 19-inch Rack form factor

TECHNICAL SPECIFICATIONS

TIME TAGGING AND TEMPORAL PERFORMANCE ¹

Digital Resolution	13 ps
Timing Jitter (RMS)	8 ps
Timing Jitter (FWHM)	20 ps
Max Event Rate (Continuous)	1 MTags/s/channel
Max Event Rate (Burst)	200 MTags/s/channel ¹
Sustained Transfer Rate	4 MTags/s/channel
Internal Clock Range	18 Hz – 4 MHz (adjustable)
External Clock Frequency	100 MHz max.
Frequency Divider	1 – 255 (adjustable)
Adjustable Channel Delay	0 – 10 ns (10 ps step)

¹ For a burst of 15 successive events.

MECHANICAL – POWER – ENVIRONMENTAL

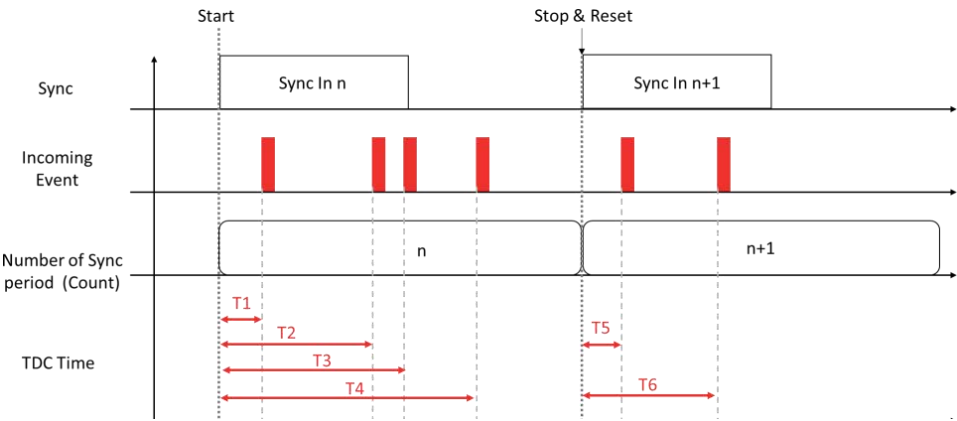
Form Factor	2U Rack Compatible
Dimensions (L x W x H)	163 x 195 x 55 mm
Weight	0.5 kg
Power Consumption	< 12 W
Operating Temperature	+10 °C to +35 °C

DIGITAL INTERFACES – INPUT/OUTPUT – SOFTWARE

Sync / Start Input	1x SMA 50 Ω
Event / Stop Inputs	4x SMA 50 Ω
Input Signal Levels	TTL CMOS LVTTTL LVCMOS NIM
Host Interface	USB 2.0 port
Control Software	Dedicated GUI
Programming APIs	Python C++
Supported OS	Windows Linux

TIME-TAGGING PRINCIPLE

Tag Value	TDC Time
n	T1
n	T2
n	T3
n	T4
n+1	T5
n+1	T6



Pairs fine picosecond arrival times with clock cycle counts for continuous, overflow-free event recording.

SOFTWARE

The CHRONOXEA features a user-friendly software interface for real-time channel delay adjustment, clock synchronization, and time-correlated event logging.

Full software support includes a dedicated GUI alongside Python and C++ APIs with ready-to-use code examples for custom automation. Designed for MacOs, Microsoft Windows, and Linux operating systems.

CUSTOMER SUPPORT

Integrating advanced technologies can be challenging, but AUREA Technology is here to help you achieve your objectives.

Work with AUREA Technology and benefit from our dedicated technical support team. Our experts in single-photon detection, low-light detection, and QKD systems are available to support you throughout your integration.

Contact our technical support team and receive an answer within a day at sales@aureatechnology.com.

ORDERING INFORMATION

ACCESSORIES ON REQUEST

CHRONOXEA

Contact us at sales@aureatechnology.com for custom solutions and options.

WARRANTY

Any warranty shall be void if the Product has been damaged, disassembled, modified, misused, neglected, improperly installed, used beyond its specified ratings or operating conditions, otherwise abused, or used in hazardous activities.

DISCLAIMER

The manufacturer reserves the right to modify this document at any time without prior notice and disclaims liability for editorial, pictorial, or typographical errors.

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- USB to Serial converter cable