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## A 32 Channel Time-Tagging and Coincidence Detector Unit with High Data Throughput

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Coincidence detectors and time-tagging units are used in many physical experiments. Some experiment in quantum optics need however many channels, which initiated this project, but the board could be used for other experiments too. This device is a 32 channel time-tagging and coincidence detector unit, with about 8 ps of timing resolution, which can process up to 200 million pulses per second and transfer the results to a host computer over USB-3 SS connection or PCIe port. The device also includes individually programmable channel offsets, dead-time filters, coincidence vector event filter and 8 programmable pattern trigger outputs. From the coincidence vectors histograms with programmable duration are generated in real-time. Result data can be stored in real-time to a storage device. Most importantly the device is properly characterized and the performance of each channel is measured individually.

### Minioral

Yes

### IEEE Member

No

### Are you a student?

No

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