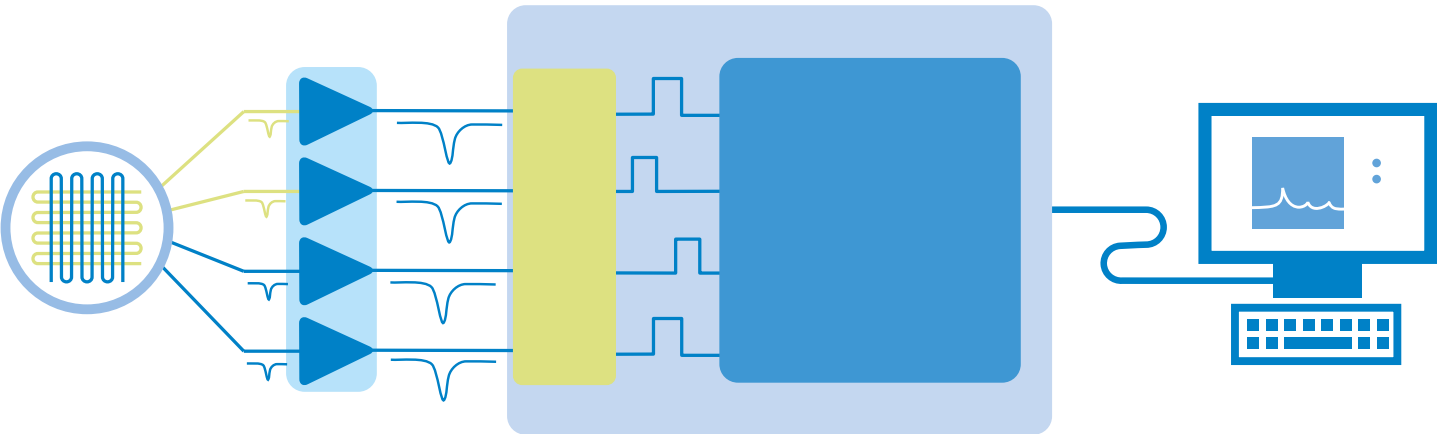


Cross Delay-Line Detector Edge

For photons and charged particles 3D (x,y,t) detection



Highlights

Feature	Benefit
Single count x, y and t information availability	Essential in time resolved acquisitions
Single count acquisition (NOT integration of charge)	Extremely linear
"Time encoding" electronics based on digital TDC	Suitable for count frequencies of several M Counts/s (the limit are the MCP) Suitable for multi-hit pump and probe experiments with precision better than 100 ps
External trigger and possibility to "gate" the acquisition	Possibility to correlate each count with external events and to reduce dramatically dark counts and noise

Applications

Applications that require single particle detection with high spatial and time resolution:

- Electron spectroscopy
- Time-of-flight

How Does It Work?

Elettra 3D (x, y, t) Cross Delay-Line Detectors are “(cross) delay anodes” detectors, where the position is obtained through time information, i.e. by calculating the time between the start and stop signals coming from the anode ends, enhanced by the

possibility to correlate each event with external triggers. The 3D (x, y, t) Cross Delay-Line Detectors are compatible with your existing analysers and are interchangeable with the standard phosphorous screen and CCD camera approach.

Specifications

2-D detector size	30 x 30 mm
	90 x 20 mm
	46 x 46 mm
2-D detector size, in “equivalent pixels”	30 x 30 mm: 740 x 740
	90 x 20 mm: 2200 x 490
	46 x 46 mm: 2900 x 2900
Temporal resolution on the detector	27 ps
Temporal precision on the detector	40–50 ps
Corresponding spatial precision on the detector	60–70 μm
Max count rate in time resolved mode	4 M counts/sec

Available Options

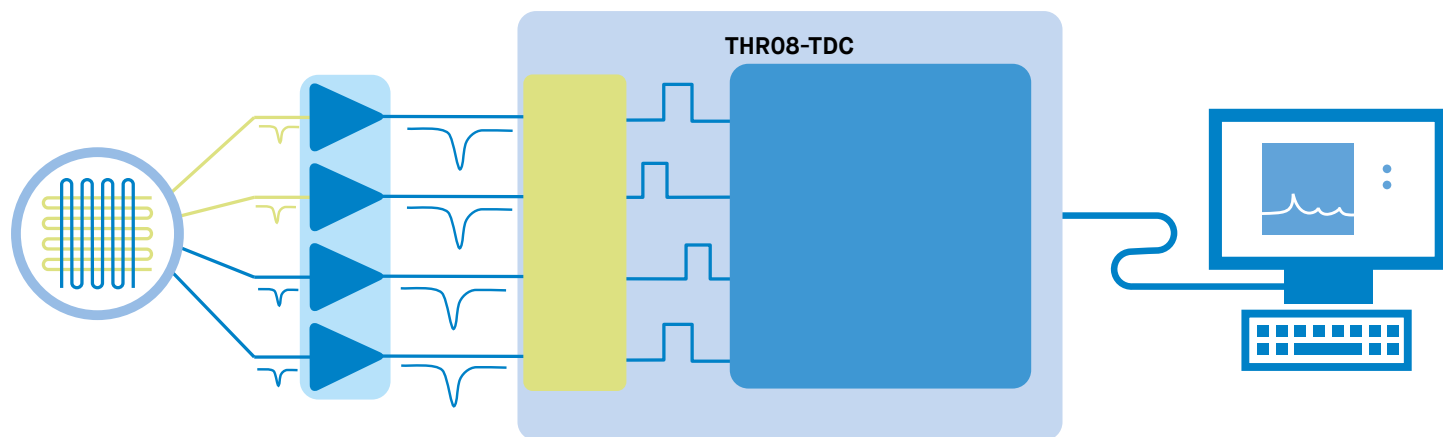
- 3D (x, y, t) Cross Delay-Line Detector (with 4 analogue channels)
- 3D (x, y, t) Cross Delay-Line Detector (with 4 analogue + 4 digital channels)
- 3D (x, y, t) Cross Delay-Line Detector (with 8 analogue channels)

Deliverables

- Delay-Line (1D) and Cross Delay-Line (2D) Detectors
- RF Pulse Amplifier
- CFD4, 4-Channel Constant Fraction Discriminator
- THR08-TDC, Advanced 8-Channel Time to Digital Converter

See the single product brochures for details.

Block Diagram



 Delay-Line (1D) and Cross Delay-Line (2D) Detector

 RF Pulse Amplifier

 CFD4, 4-Channel Constant Fraction Discriminator

Contact us!

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