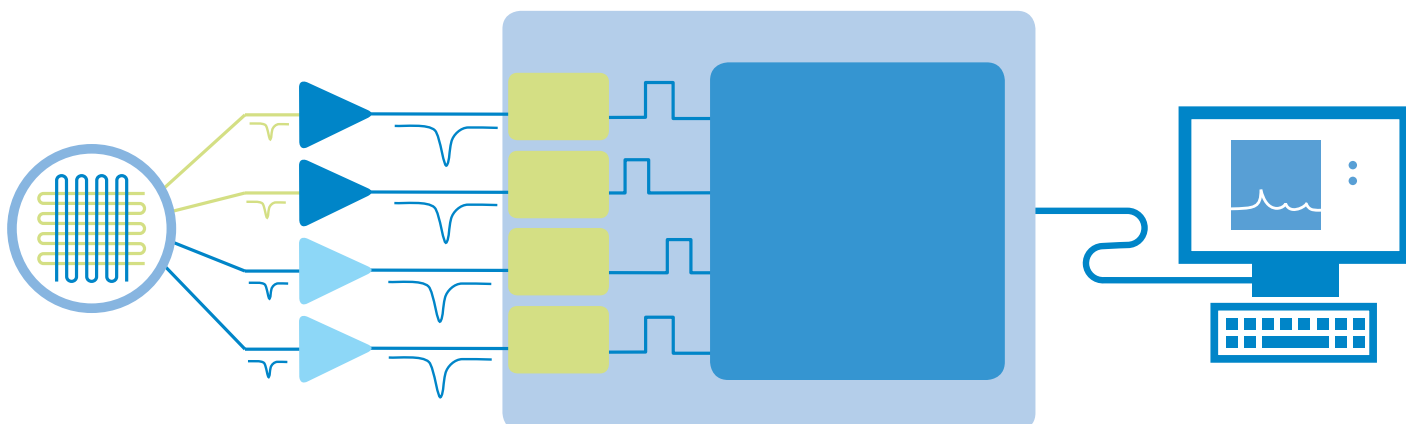


3D (x, y, t) High Count Rate Detector

For photons and charged particle detection



HIGHLIGHTS

FEATURE	BENEFIT
Working in "counting mode" (NOT in integration of charge)	Extremely linear
Single count x, y and t information availability	Essential in time resolved acquisitions
Cross delay anodes techniques for position decoding	Intrinsically suitable for timing information
"Time encoding" electronics based on digital TDC	Suitable for count frequencies of up to 20 M Counts/s and multi-hit detection
"Time encoding" electronics based on TAC	Suitable for time resolutions of up to 20 ps

APPLICATIONS

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

- Electron spectroscopy
- Time-of-flight

HOW DOES IT WORK?

In each Elettra 3D Detector there is a two-dimensional detector, which gives spatial information and a data acquisition system that is designed to provide time resolved information.

They 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.

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 μ m
Max count rate in time resolved mode	4 M counts/sec

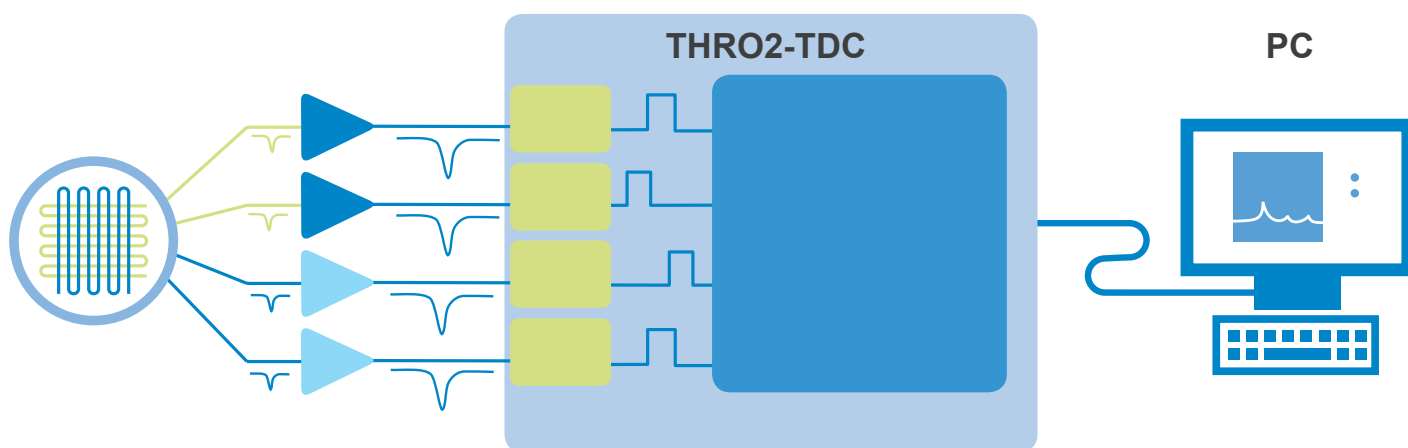
DELIVERABLES

- Delay-Line (1D) and Cross Delay-Line (2D) Detectors
- RUD-RFLN-XLS, Pulse Amplifier
- PIT-RFLN, Wide Bandwidth Pulse Amplifier
- CFD V2.0, Constant Fraction Discriminator
- THR02-TDC, Advanced 4-Channel Time to Digital Converter
- **Coming soon:** THR02-TAC, Advanced 4-Channel Time to Analogue Converter

See the single product brochures for details.

BLOCK DIAGRAM


3D (x, y, t) High Count Rate Detector



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

 RUD-RFLN-XLS, Pulse Amplifier

 PIT-RFLN, Wide Bandwidth Pulse Amplifier

 CFD V2.0, Constant Fraction Discriminator

Contact us!

Industrial Liaison Office

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