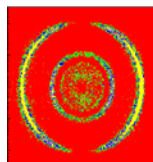


# The cTDCx comparator Time-to-Digital Converter

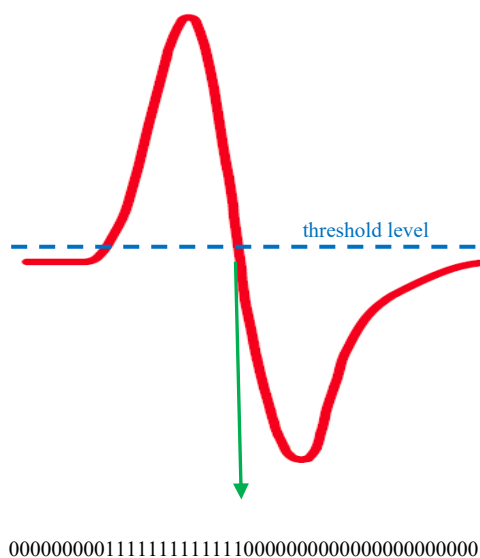
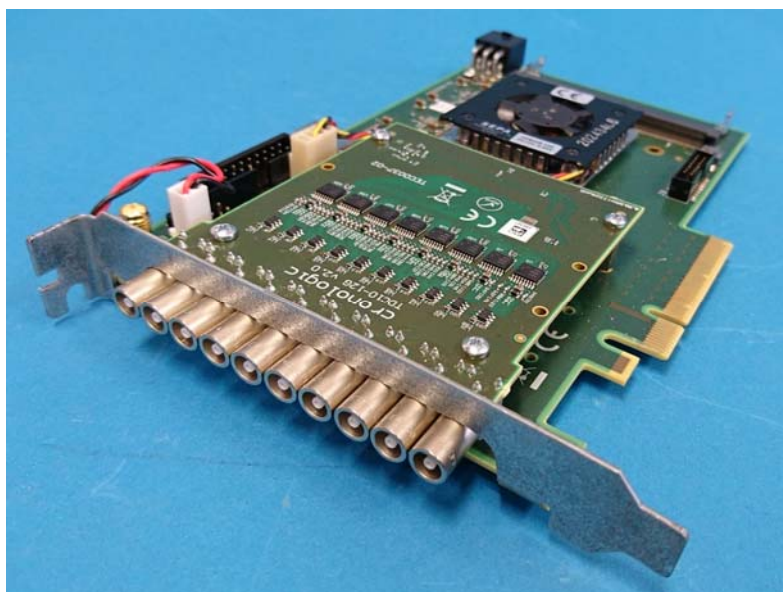


**RoentDek**  
Handels GmbH  
Supersonic Gas Jets  
Detection Techniques  
Data Acquisition Systems  
Multifragment Imaging Systems

The **cTDCx** is a 10-channel comparator TDC (PCIe-card) for read-out of **DLD** and **Hex** detectors via constant fraction discriminator (CFD) or bipolar output amplifiers (the **RoentDek BFAMP**) with <100 psec time resolution (nominal least bit 90 psec), unlimited range and number of hits, incl. CoboldPC data acquisition and analysing software. It yields <100 micron position resolution with **RoentDek** DLD/HEX detectors. Data acquisition speed at least 100 kHz to > 2 MHz per channel (CPU dependent). Compatible with Win10 64 bit.

## Cost saving and much more than a TDC...

The **cTDCx** can either be operated as self-triggering TDC, detecting the edge transitions of a NIM signal or used as a digital comparator, sampling the analog signal level and detecting transitions between a selected threshold. If a **cTDCx** is used in combination with a **RoentDek BFAMP** amplifier, an intermediate CFD unit (usually mandatory for standard TDC operation such as for models like **RoentDek TDC8HP** or **TDC4HM**) is not needed. This reduces system complexity and costs and simplifies operation.



*cTDCx card for PCIe slot of a PC with Win10 64 OS and digital output pattern (high/low) in response to a signal input (red) and threshold setting (right picture). The internal software automatically detects the major signal transition (here indicated by an arrow) which specifies the signal timing.*

## Specifications:

- resolution 88.5ps (LSB)
- PCIe card
- compatible with Windows 10 64 bit.
- unlimited range
- virtually no dead-time (2x LSB)
- unlimited number of hits per trigger event
- software adjustable trigger thresholds