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Ndigo6G-12

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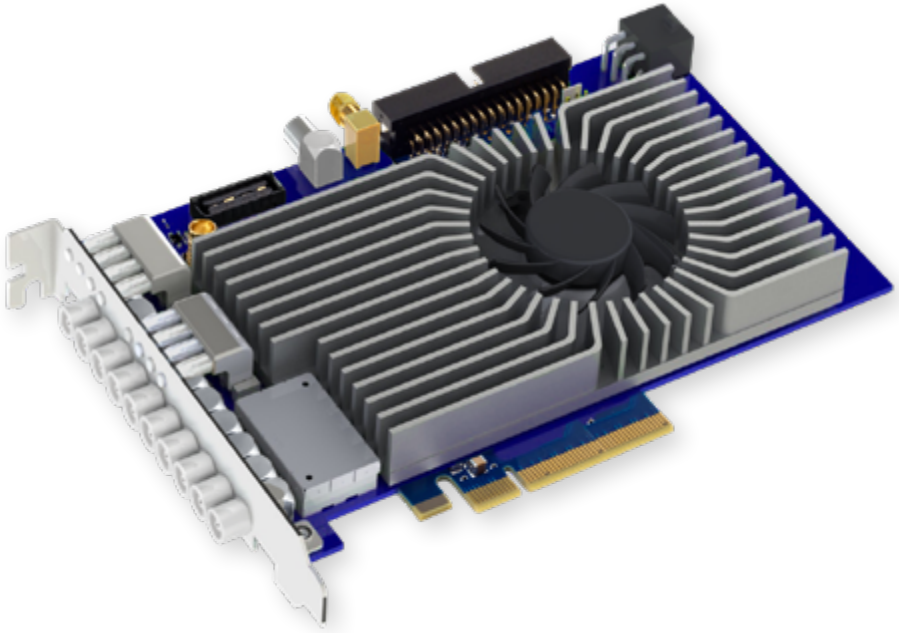
Product Brief



Introduction

The Ndigo6G-12 offers 6400Msps sample rate, 12 bits resolution and a greatly improved readout rate of 6000MB/s.

The unit is a combined ADC/TDC board for the acquisition of pulses in time of flight applications. It builds on the established Platform of the Ndigo5G-10 but takes it to the next level both in performance and flexibility.

The Ndigo6G-12 was specifically designed for time of flight applications like LIDAR or TOF mass spectrometry. Pulse arrival times can be measured with an accuracy down to 5 ps together with information on pulse shape such as area or amplitude.

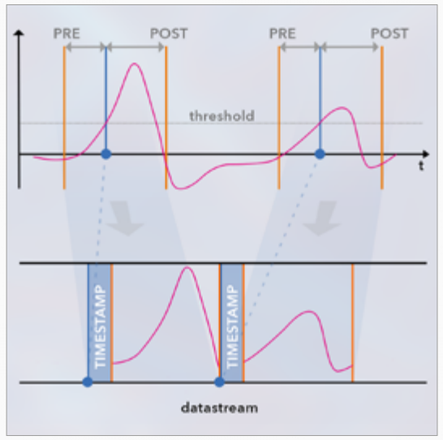
Four channels with 1600 Msps at 12 bit resolution can be acquired independently. Alternatively, the four channels can be combined into two channels or decreased to a single channel. This way, either a higher temporal resolution up to 6400 Msps or a larger dynamic range can be achieved.

Technical Data

Optimized for	TOF applications
ADC channels	4
TDC channels	4
Gating channels	4
Connectors	10x LEMO 00
Sample rate single channel	6400 Msps
Sample rate multi channel	1600 Msps
Resolution	12 bits
Double pulse resolution	TBD
Maximum bandwith	TBD
TDC bin size	12 ps
Multihit	unlimited
Dead time between Groups	none
TDC readout rate	TBD
ADC readout rate	approx. 6000 MByte/s
Range	TBD
Common start/stop	yes / yes
Number of boards that can be event-synchronized	8
Readout interface	PCIe3 x8
Time base	50 ppb on board or external 10 MHz clock
On-board calibration data storage	✓
Adjustable trigger windows	✓
Overlapping events possible	✓
Easy to use Windows C API	✓
In-system firmware update	✓

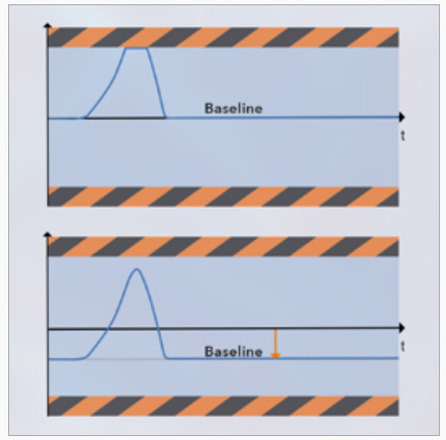
Features

Zero suppression



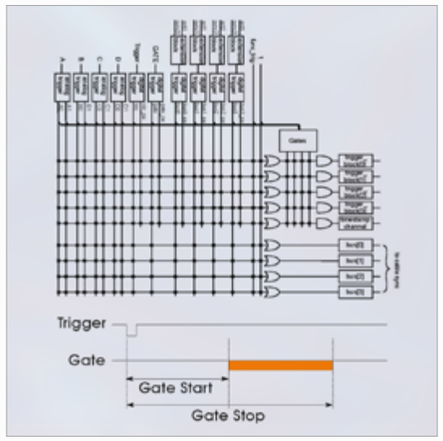
Detect pulses above a certain threshold and only acquire the relevant data to massively reduce the amount of data that needs to be copied and analysed.

Configurable DC Offset



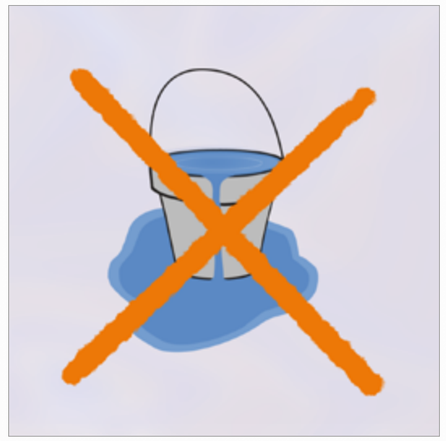
When acquiring unipolar pulses, shift the baseline to the edge of the ADC range to double your dynamic range compared with conventional ADC boards.

Flexible Utility Functions



A multitude of useful details help you to create a highly integrated setup with a minimum of external components. Using the integrated TiGer timing pattern generator can provide digital pulse patterns to control your experiment or internal triggers. Use gate and veto functions with our gating logic. This also works across channels or from the additional digital input with a flexible trigger matrix.

Streaming Architecture



Don't pay for expensive memory upgrades! The buffers of the Ndigo6G-12 are only limited by the size of your main memory. Data is streamed at a rate of 6000MByte/s concurrently to data acquisition. There is no dead time and latency is minimized.

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