DPP-DAW

Digital Pulse Processing with Dynamic Acquisition Window

Features

- Independent channel self-trigger
- Automatic adjustment of the acquisition window length to match the actual input pulse duration
- User defined minimum record length and pre-trigger for a complete event reconstruction
- Continuous signal baseline calculation for baseline drift compensation
- Programmable input delay to compensate for veto generation latency
- Channel Trigger Time Tag for event correlation

Description

The **Dynamic Acquisition Window (DPP-DAW)** firmware has been developed to improve the **zero suppression** capabilities of the CAEN 724, 725 and 730 digitizer family and allow the user for **trigger-less acquisition systems**. By running the DPP-DAW firmware, each channel of the digitizer is able to self-trigger and acquire data independently from the others.

DPP-DAW can dynamically adjust the record length of every triggered event according to its Time Over Threshold **to fit the actual duration of the input pulses**. This prevents that a pulse larger than expected gets chopped because of a too short acquisition window. The user can set a minimum record length, a pre-trigger and a time of under-threshold to acquire those samples of interest before and after the Time Over Threshold. This allows for a full reconstruction of the digitized pulses.

DPP-DAW is able to **continuously evaluate the signal baseline** and refer a trigger threshold to its value. Therefore, the threshold can follow the baseline drift of the input signal without changing the trigger conditions of the data acquisition system.

DPP-DAW can accept an **external veto** to inhibit the data acquisition. A programmable input delay is available to compensate for the latency due to the veto generation if managed by an external logic unit.

CAEN provides open source demo software (**DPP-DAW Demo Software**) for a first approach to the DPP-DAW algorithm principles and basic control of the digitizer. The DPP-DAW Demo software can also control and acquire data from multiple synchronized boards.

Family	**724**	**725**	**730**
Channels	Up to 8	Up to 16	Up to 16
Max Sampling Rate	100 MS/s	250 MS/s	500 MS/s
Resolution	14-bit	14-bit	14-bit
Form Factor	Desktop - NIM - VME	Desktop - NIM - VME	Desktop - NIM - VME

Applications

- Neutrino experiments
- Large number of detectors
- Drift chambers, TPC, Cherenkov detectors
- Application requiring an effective data reduction

Ordering Options

Code	Description
WFWDPPDAWA25	DPP-DAW - Digital Pulse Processing with Dynamic Acquisition Window (16ch x 725)
WFWDPPDAWA30	DPP-DAW - Digital Pulse Processing with Dynamic Acquisition Window (16ch x 730)
WFWDPPDAWD25	DPP-DAW - Digital Pulse Processing with Dynamic Acquisition Window (8ch x 725)
WFWDPPDAWD30	DPP-DAW - Digital Pulse Processing with Dynamic Acquisition Window (8ch x 730)
WFWDPPDAWXEA	DPP-DAW - Digital Pulse Processing with Dynamic Acquisition Window (8ch x 724)
WFWDPPDAWXED	DPP-DAW - Digital Pulse Processing with Dynamic Acquisition Window (4/2 ch x 724)

Related Products

VX1730 / VX1730S

16/8 Input Channel 14 bit 500 MS/s Digitizer

N6725 / N6725S

8 Channel 14-bit 250 MS/s Digitizer

V1724

8 Input Channel 14 bit 100 MS/s Digitizer

DT5725 / DT5725S

8 Input Channel 14-bit 250 MS/s Digitizer

VX1725 / VX1725S

16/8 Input Channel 14-bit 250 MS/s Digitizer

N6724

2/4 Channel 14 bit 100 MS/s Digitizer

V1730 / V1730S

16/8 Channel 14 bit 500 MS/s Digitizer

DT5724

4/2 Input Channel 14 bit 100 MS/s Digitizer

DT5730 / DT5730S

8 Input Channel 14 bit 500 MS/s Digitizer

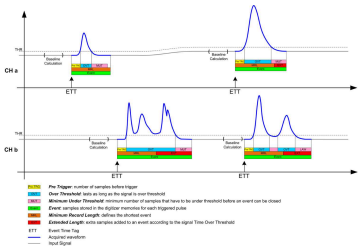
N6730 / N6730S

8 Channel 14-bit 500 MS/s Digitizer

V1725 / V1725S

16/8 Input Channel 14-bit 250 MS/s Digitizer

Gallery



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