

## **DPP-ZLEPLUS**

**Digital Pulse  
Processing for the  
Zero Length  
Encoding**



## Features

- Enhanced Zero Suppression of input signals
- Input signal baseline calculation
- ZLE Threshold (two values for 751 series)
- Programmable Look Back and Look Forward windows.
- Acquisition window synchronized with an external trigger or an internal global trigger (725-730 only)
- Provides also timing information (trigger time stamps)
- Compliant with:
  - **2740, 2745 Digitizer 2.0**
  - **725, 730, 751 Digitizer 1.0**
- Source files and Visual Studio project available for free

## Description

### Free downloadable DPP-ZLEplus Trial version.

- The user can download and install DPP-ZLEplus firmware without any license key and use it with time frame limitation: every 30 min the user have to restart (Power off/power on) the board.
- To get time-unlimited operating DPP-ZLEplus the user should purchase a License.

The Zero Length Encoding (**DPP-ZLEplus**) firmware has been developed for the **2740, 2745 Digitizer 2.0** and **725, 730, 751 Digitizer 1.0** families. It allows the user to transfer the digitized waveforms in compressed mode, performing an enhanced Zero Suppression algorithm on the input signals.

DPP-ZLE continuously calculates the baseline of the input signals and, whenever a global trigger occurs (external trigger in case of 751 series), it searches for the significant input pulses within an user-defined Acquisition window. An input pulse is considered significant if it either exceeds an Upper Threshold or falls below a Lower Threshold referred either to the calculated baseline or absolute values in case of 751 series, or if it exceeds a single **ZLE Threshold** in case of **725, 730, 2740** and **2745** series.

It is possible to store not only the over threshold part of the significant pulses, but also the samples before and after the threshold crossing points by means of programmable **Look Back and Look Forward windows**.

A demo software (**DPP-ZLEplus Demo Software**) is available with C source files and Visual Studio project for a first approach to the DPP-ZLEplus algorithm principles and for a further personalization. The DPP-ZLEplus Demo software can also control and acquire data from multiple synchronized boards.

Family	<b>725 Digitizer 1.0</b>	<b>730 Digitizer 1.0</b>	<b>751<sup>(*)</sup> Digitizer 1.0</b>	<b>2740-45 Digitizer 2.0</b>
<b>Channels</b>	Up to 16	Up to 16	Up to 8	Up to 64
<b>Max Sampling Rate</b>	250 MS/s	500 MS/s	1 GS/s	125 MS/s
<b>Resolution</b>	14-bit	14-bit	10-bit	16-bit
<b>Form Factor</b>	Desktop - NIM - VME	Desktop - NIM - VME	Desktop - NIM - VME	Desktop - VME

### Applications

- Neutrino Experiments
- Read out of a large number of detectors following a global trigger
- Drift chambers, TPC, Cherenkov detectors
- Application requiring an effective data reduction

**(\*)NOTE: DPP-ZLEplus does not support 751 DES mode (2 GS/s sampling frequency).**

## Ordering Options

Code	Description
WFDPPZLAA25	DPP-ZLE - Digital Pulse Processing Zero Length Encoding for (16ch x 725)
WFDPPZLAA30	DPP-ZLE - Digital Pulse Processing Zero Length Encoding for (16ch x 730)
WFDPPZLAA51	DPP-ZLE - Digital Pulse Processing Zero Length Encoding for (8ch x 751)
WFDPPZLAD25	DPP-ZLE - Digital Pulse Processing Zero Length Encoding for (8ch x 725)
WFDPPZLAD30	DPP-ZLE - Digital Pulse Processing Zero Length Encoding for (8ch x 730)
WFDPPZLAD51	DPP-ZLE - Digital Pulse Processing Zero Length Encoding for (4ch x 751)

## Related Products

### V1730 / V1730S



16/8 Channel 14 bit 500 MS/s Digitizer

### DT5751



2/4 Input Channel 10 bit 2/1 GS/s Digitizer

### V1751



4/8 Input Channel 10 bit 2/1 GS/s Digitizer

### VX1725 / VX1725S



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

### DT5725 / DT5725S



8 Input Channel 14-bit 250 MS/s Digitizer

## **N6725 / N6725S**



8 Channel 14-bit 250 MS/s Digitizer

## **VX1730 / VX1730S**



16/8 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

## **VX1751**



4/8 Input Channel 10 bit 2/1 GS/s Digitizer

## DT5730 / DT5730S



8 Input Channel 14 bit 500 MS/s Digitizer

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