

First tests of the 32-channel CAEN DRS4 board

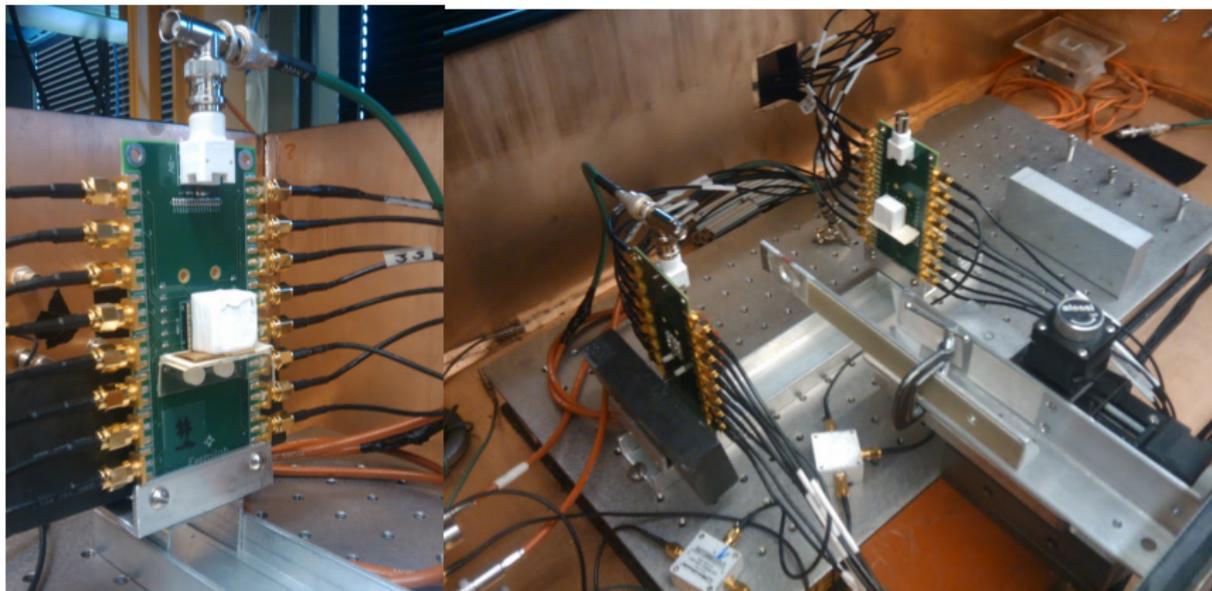
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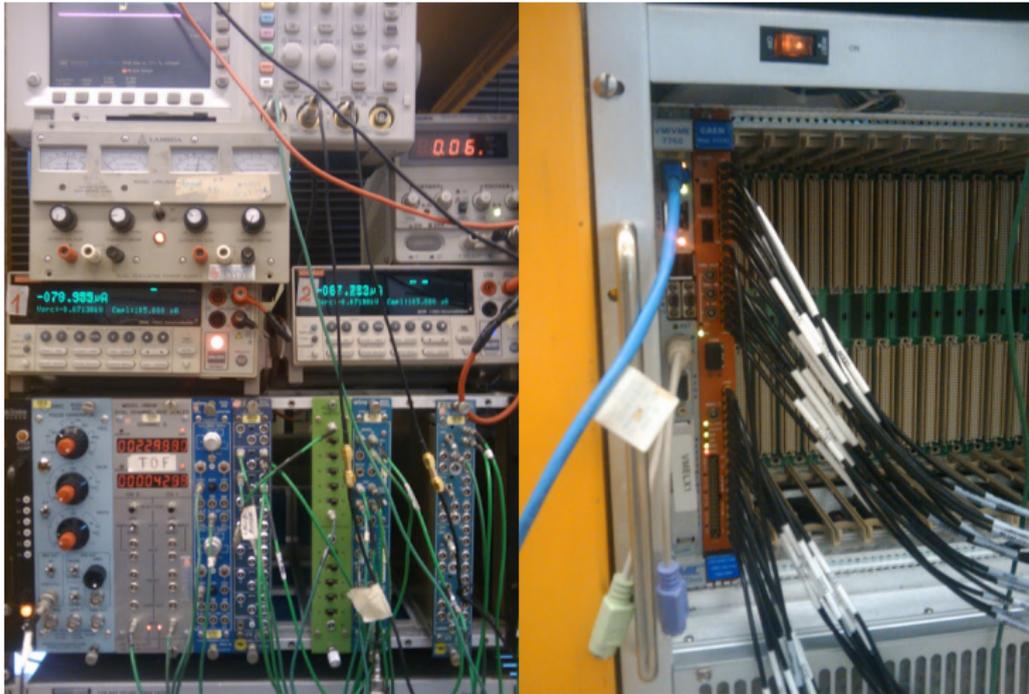
Outline

1 Introduction

Experimental setup with 32 channels

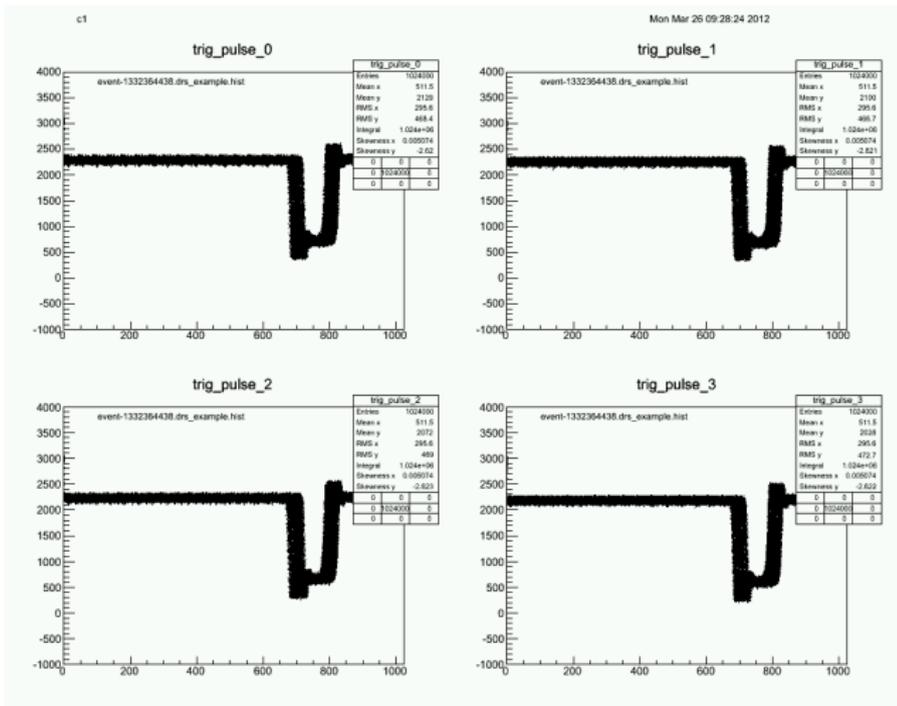


- 32 channel setup with two Sergey's boards for Hamamatsu 11064 SiPMs is operational
- use ^{22}Na source (not shown here)
- trigger: coincidence of 2 channels, one from each side



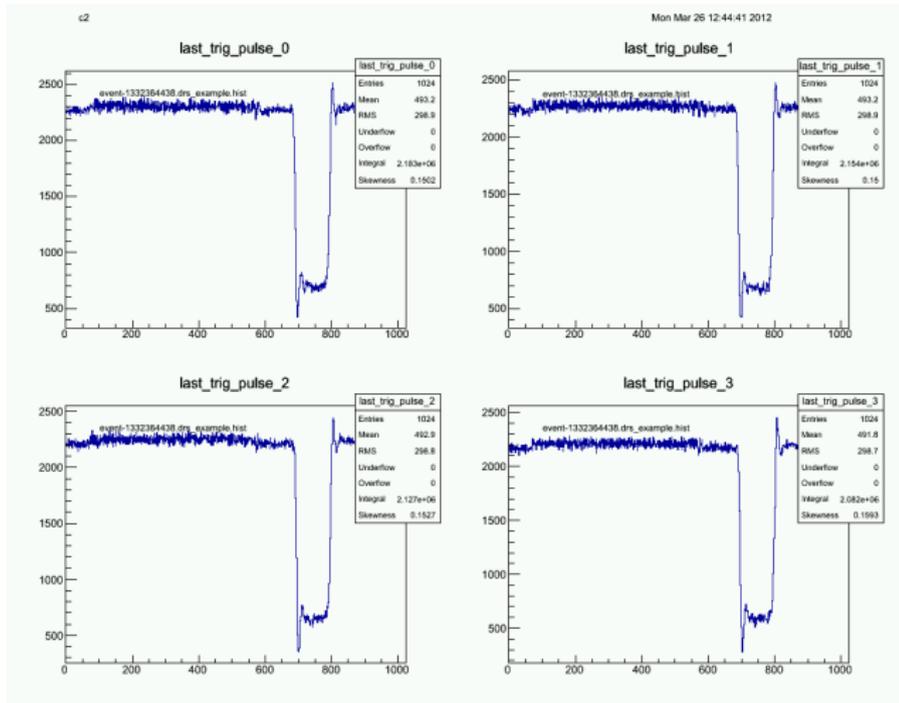
- CAEN 1742 VME board - right photo
- 4 readout groups 8 channels each (4 DRS4 chips), fast trigger - 2 inputs

Trigger pulses, summed over 1000 events



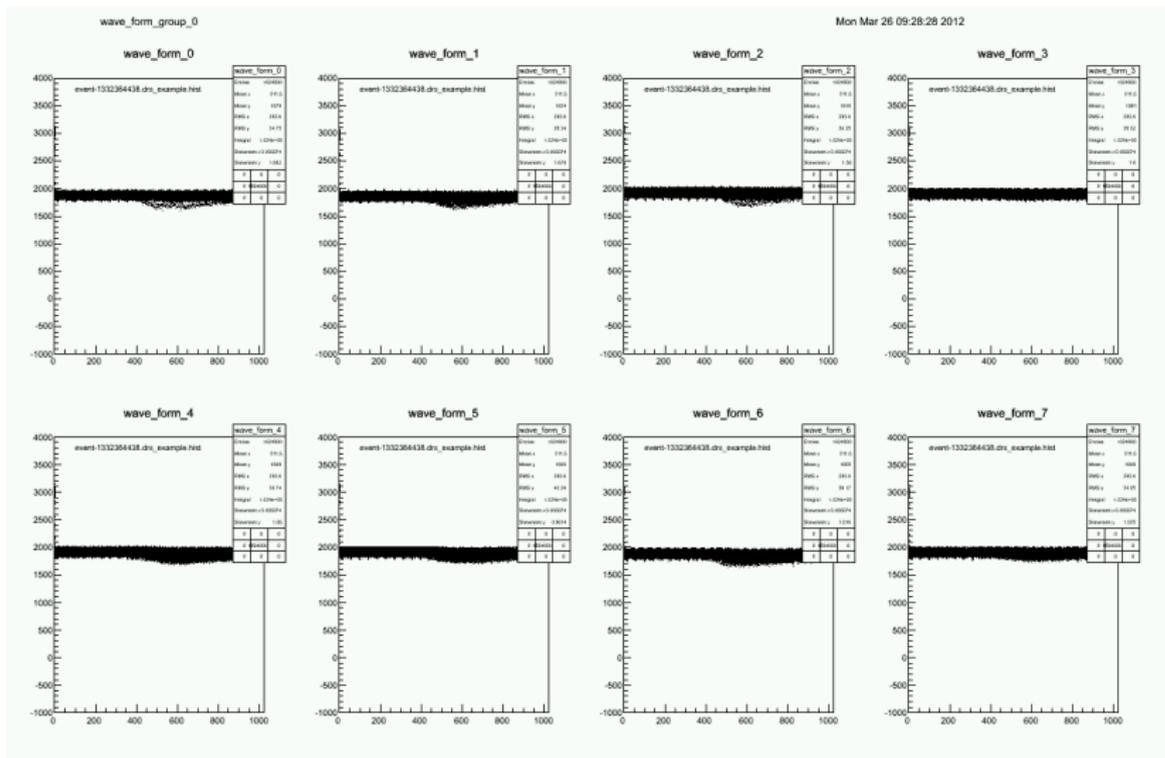
- Steve's VME CAEN-1742 readout program is working!
- CAEN-1742 can store trigger pulses for each readout group - **plots above**

Trigger pulses, last event



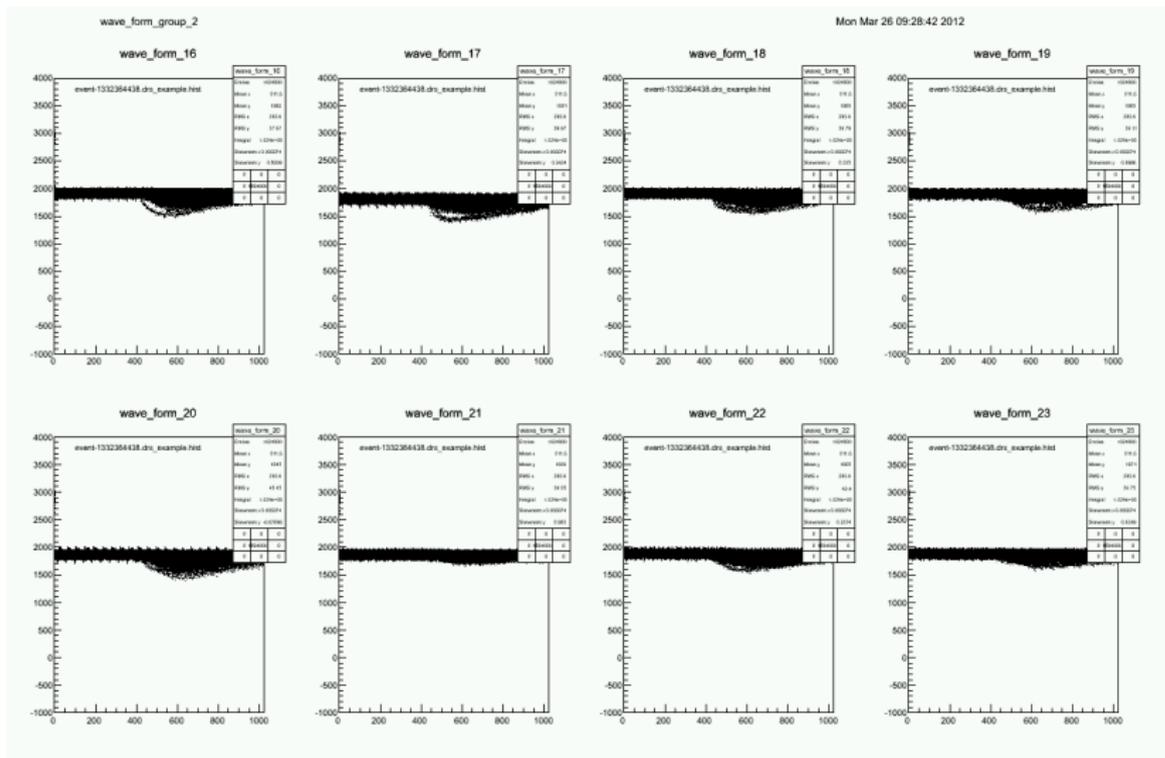
- trigger pulses for single event (the last one)

Signal pulses, Group 0, sum over 1000 events



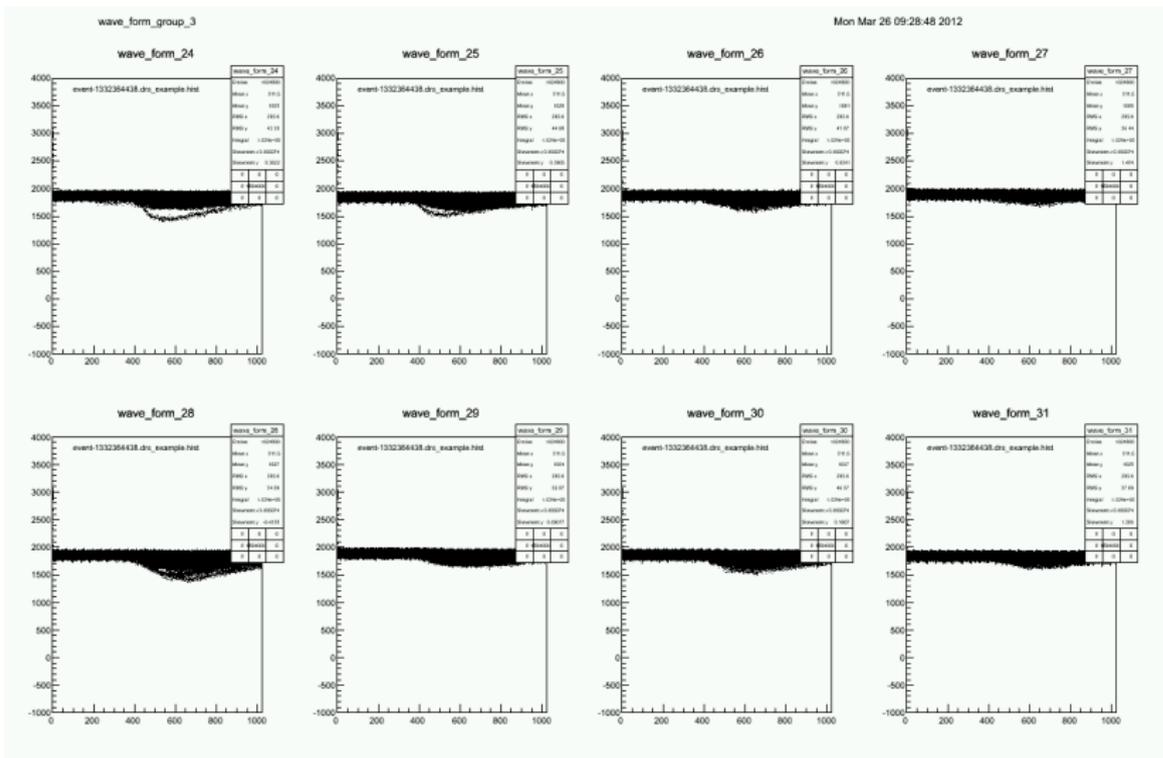
● data pulses, group 0, sum over 1000 events

Signal pulses, Group 2, sum over 1000 events



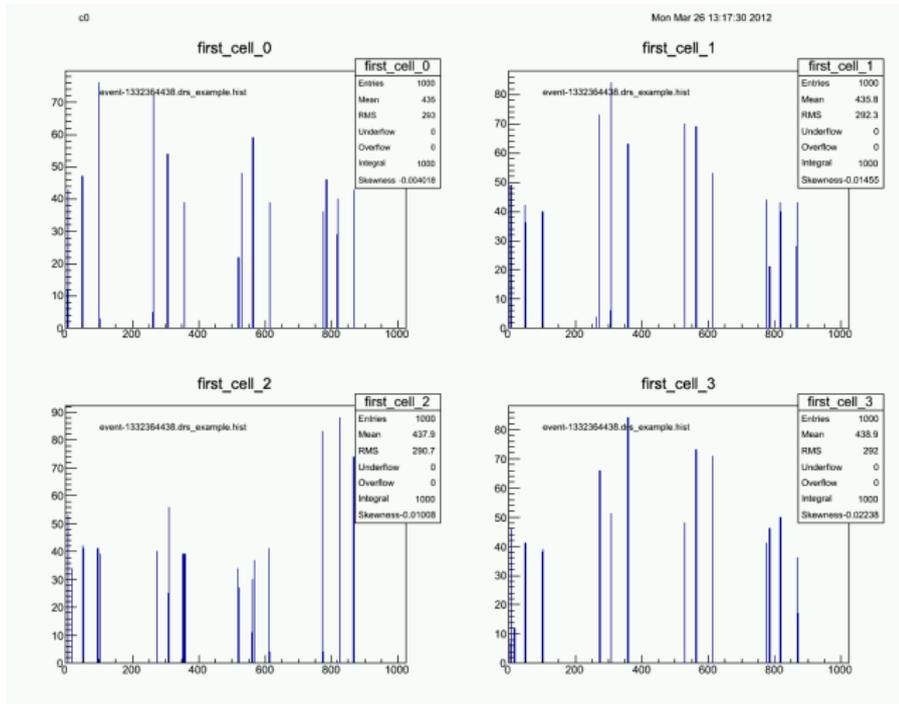
● data pulses, group 2, sum over 1000 events

Signal pulses, Group 3, sum over 1000 events



● data pulses, group 3, sum over 1000 events

First Cell for different groups



● first cell is not distributed randomly

Summary

- all channels of the CAEN 1742 DRS4 board seem to work
- readout software by Steve is working fine
- analysis software in place
- the board needs to be calibrated, $1024 \cdot (32+4) \cdot 3$ constants per board
 - ▶ 2 constants per cell in the signal channel for amplitude calibration
 - ▶ 1 - for timing calibration