

PMT Real Data Analysis (Bo)

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Motivation/Improvements

Motivation

- Verify design specifications of readout equipment.
Includes ADC/pe of the PMT readout system
- Develop code that successfully readout of real PMT data via external triggers

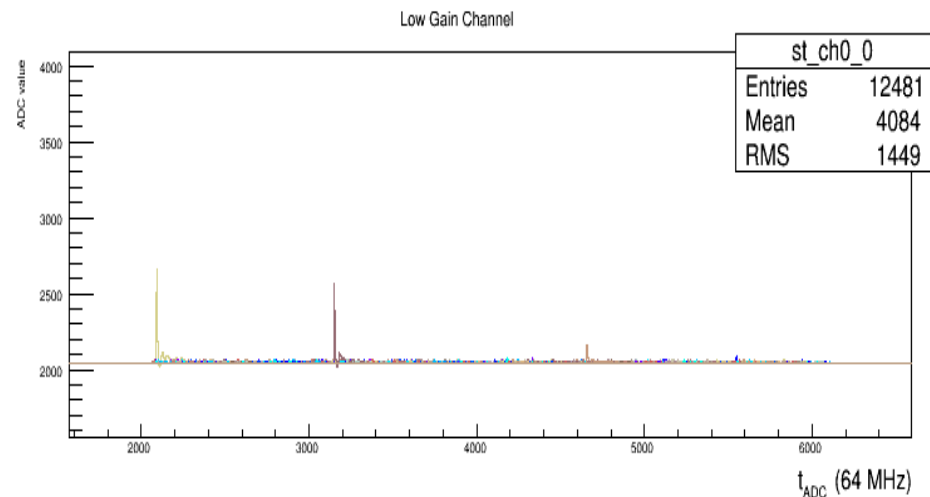
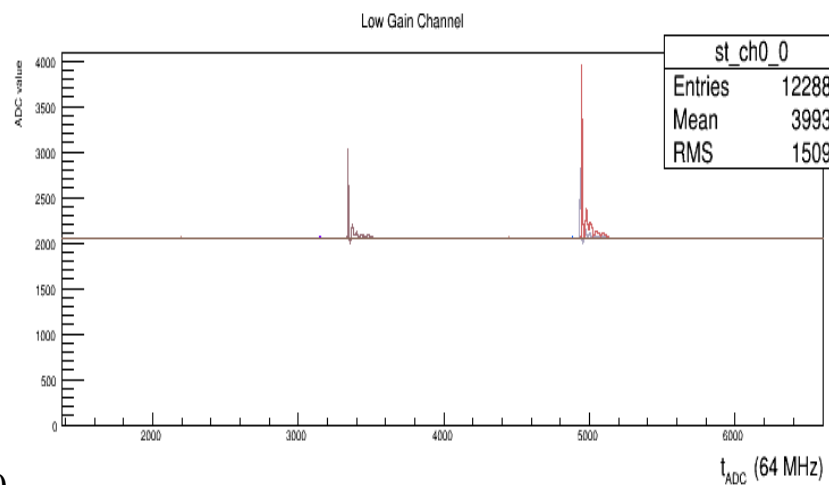
Improvements made to previous analysis

- Bad events (improper readout) excluded – about 1/7 of total events
- All events recognized and analyzed – about 5x as many events as before
- All pulses from all channels read – about 1.5x as many pulses (in the high gain channel) as before
- Time dependent histograms updated to show all four frames of readout (x us)
- Time cuts made to pulses: corresponding events in the high and low gain channels must occur within 20 samples after the trigger
- Further noise suppression by requiring the max amplitude of all pulses to be over 2100 ADC (baseline of 2048)

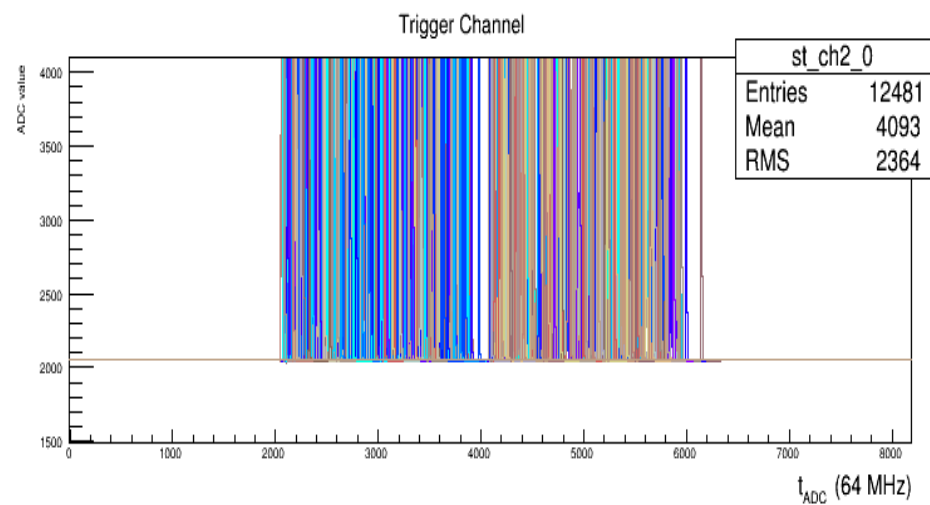
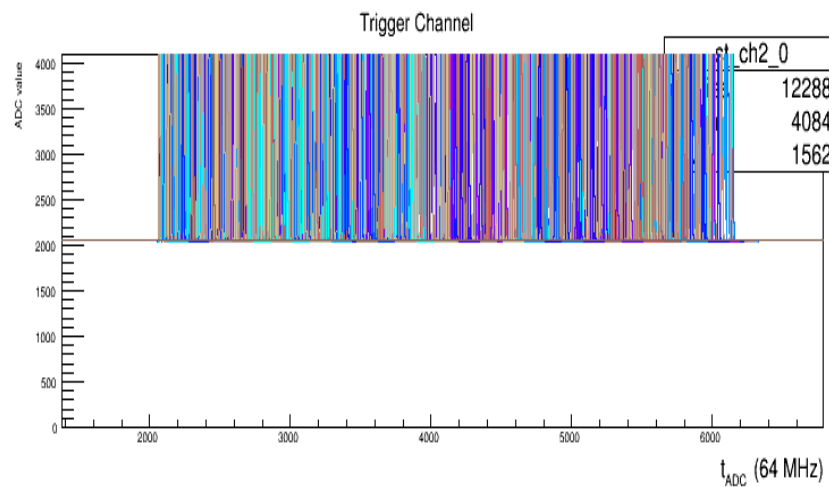
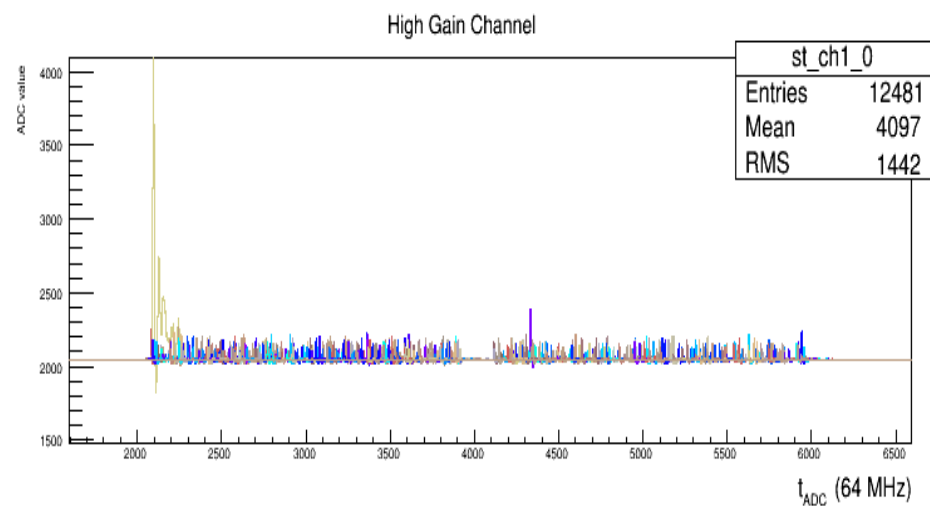
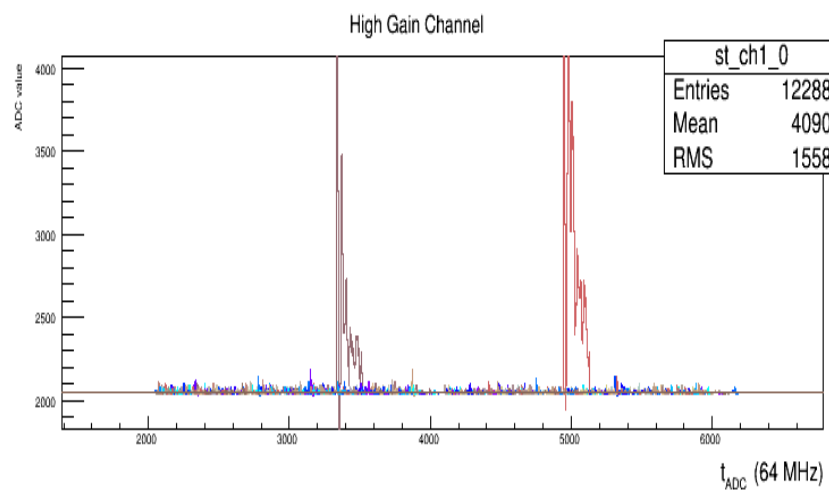
Results

Time Dependent Pulses (full data files)

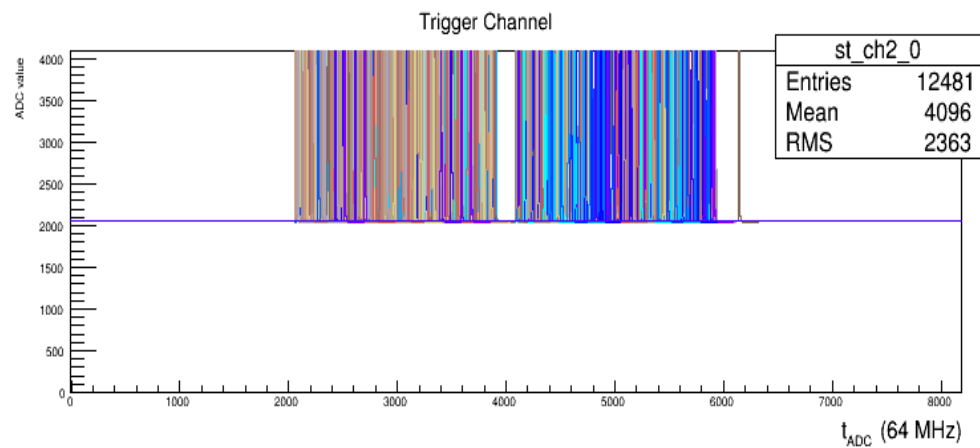
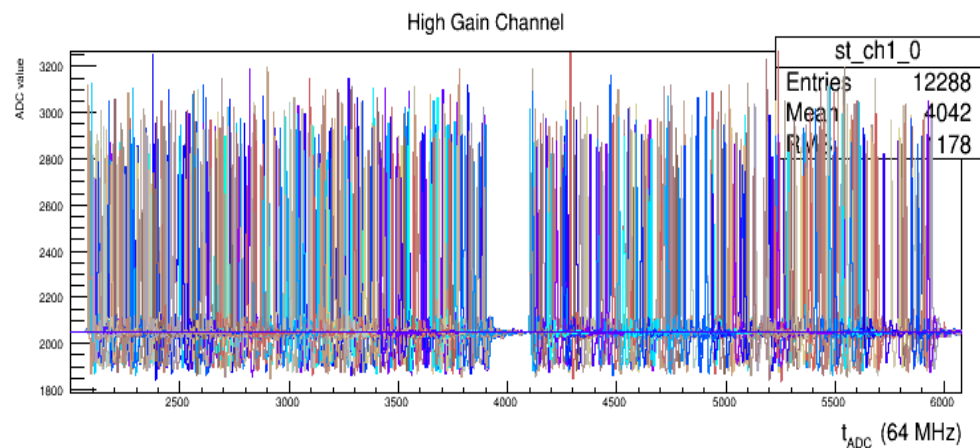
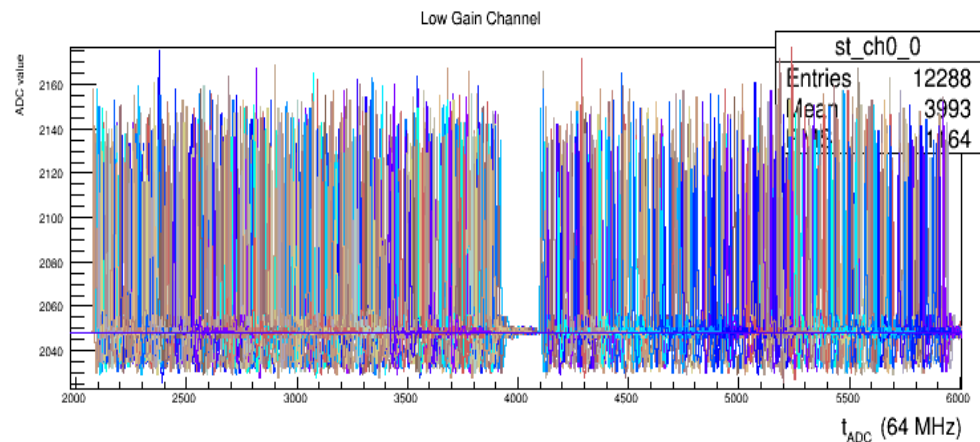
LED1450



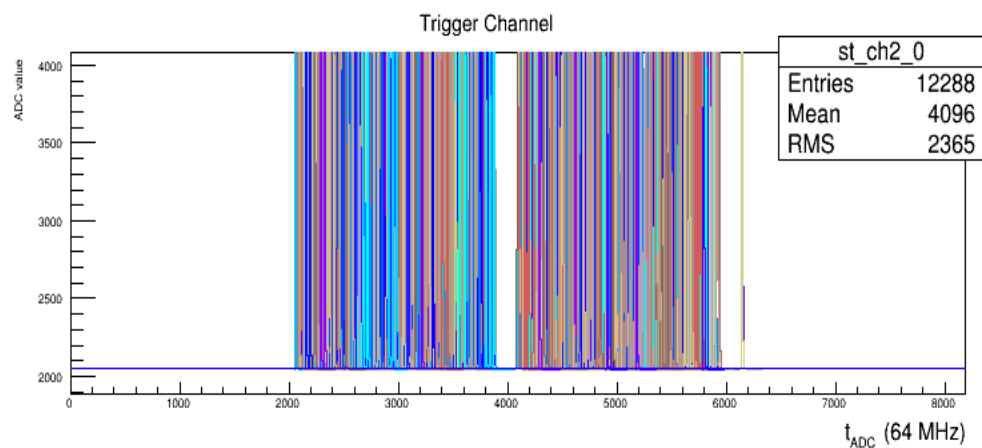
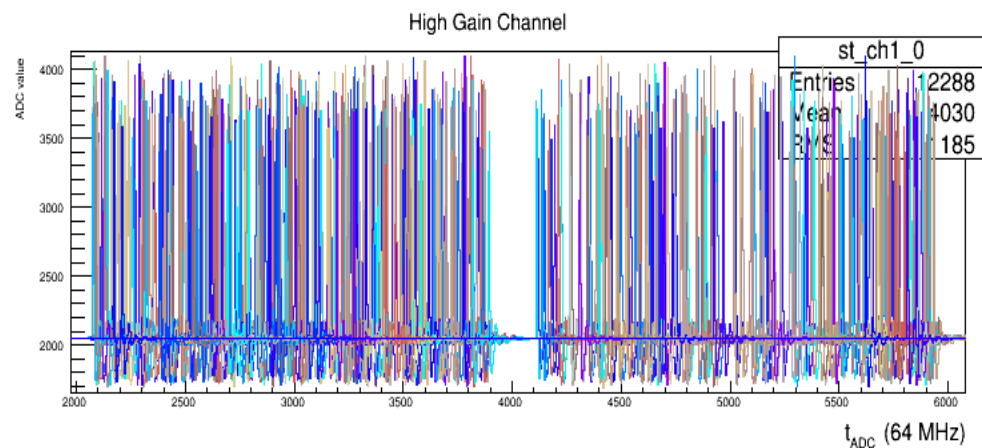
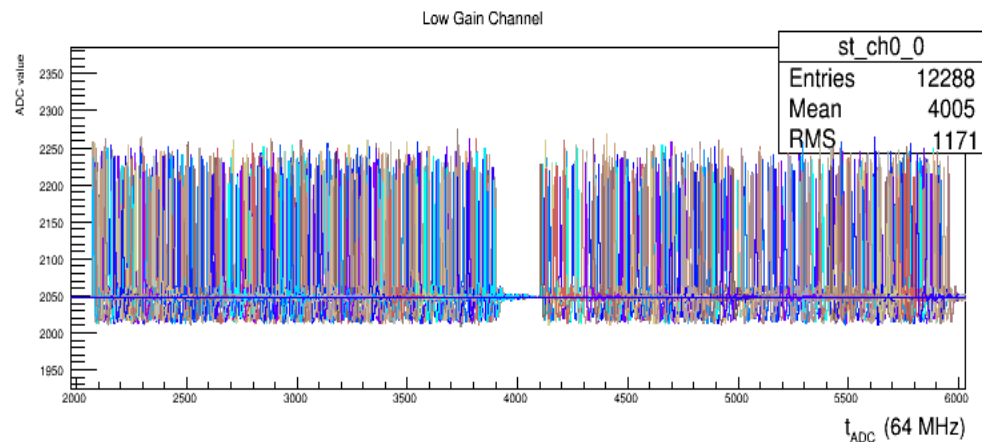
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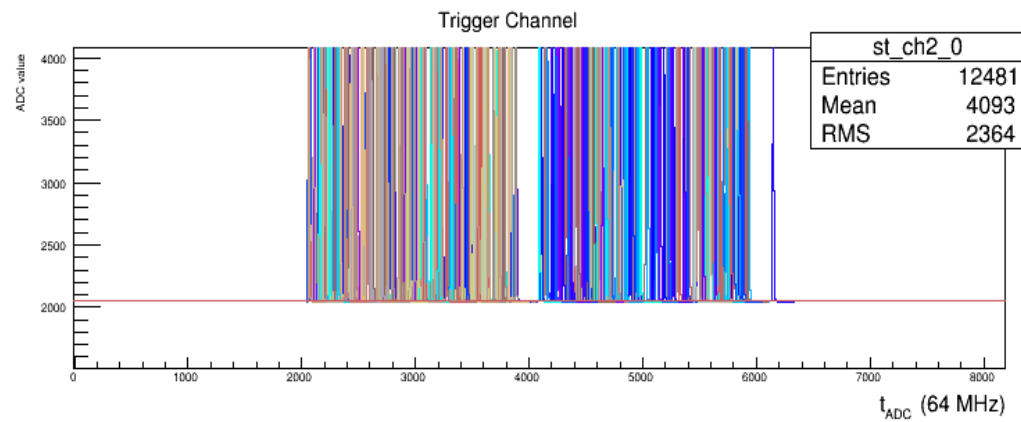
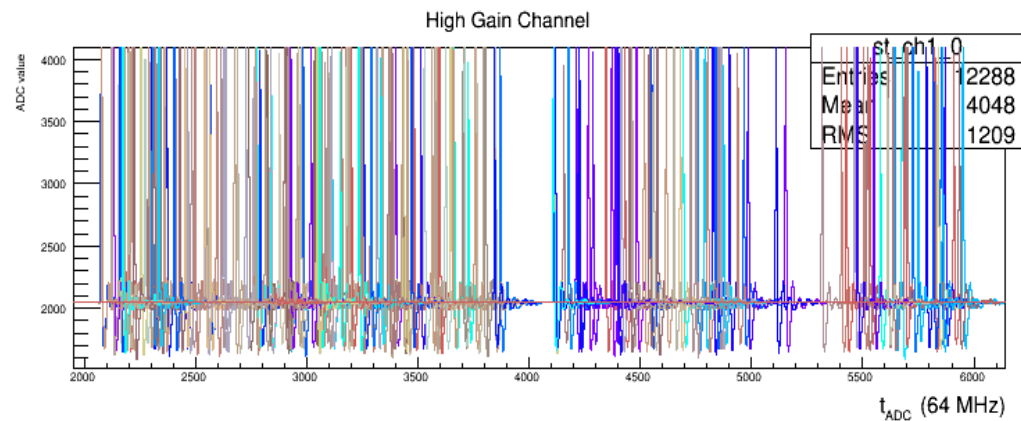
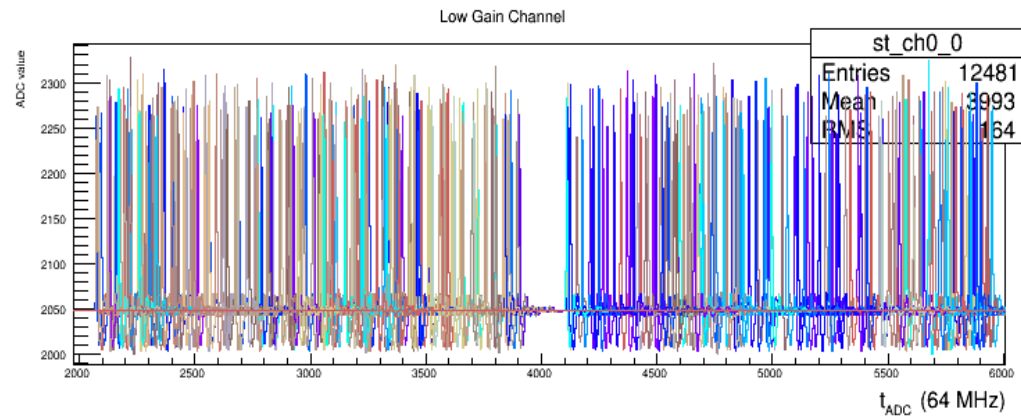
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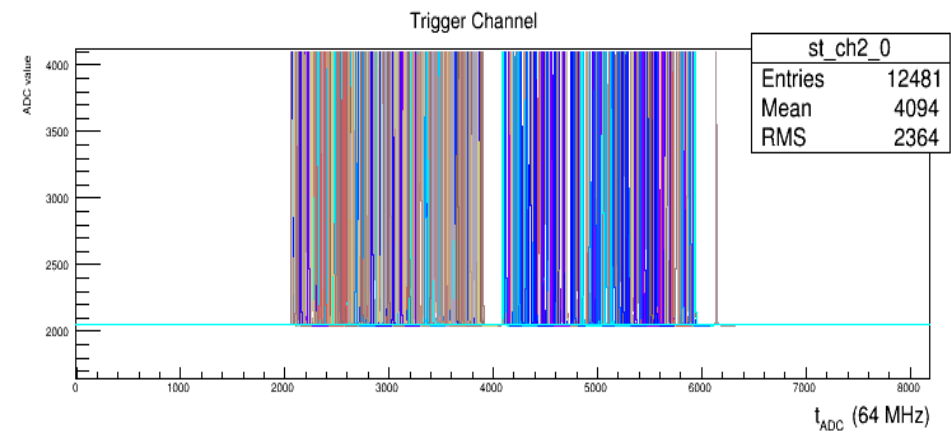
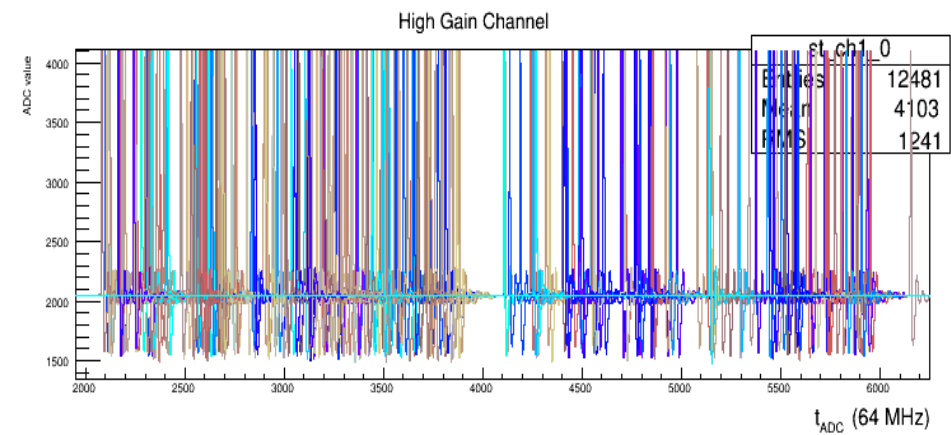
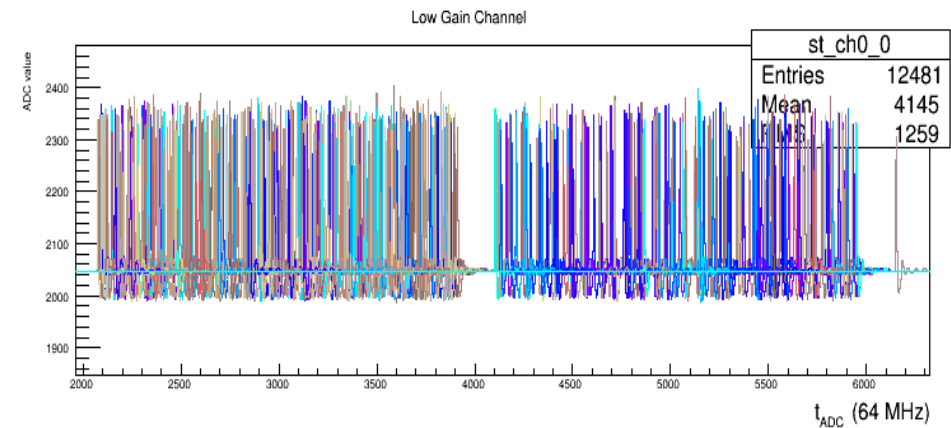
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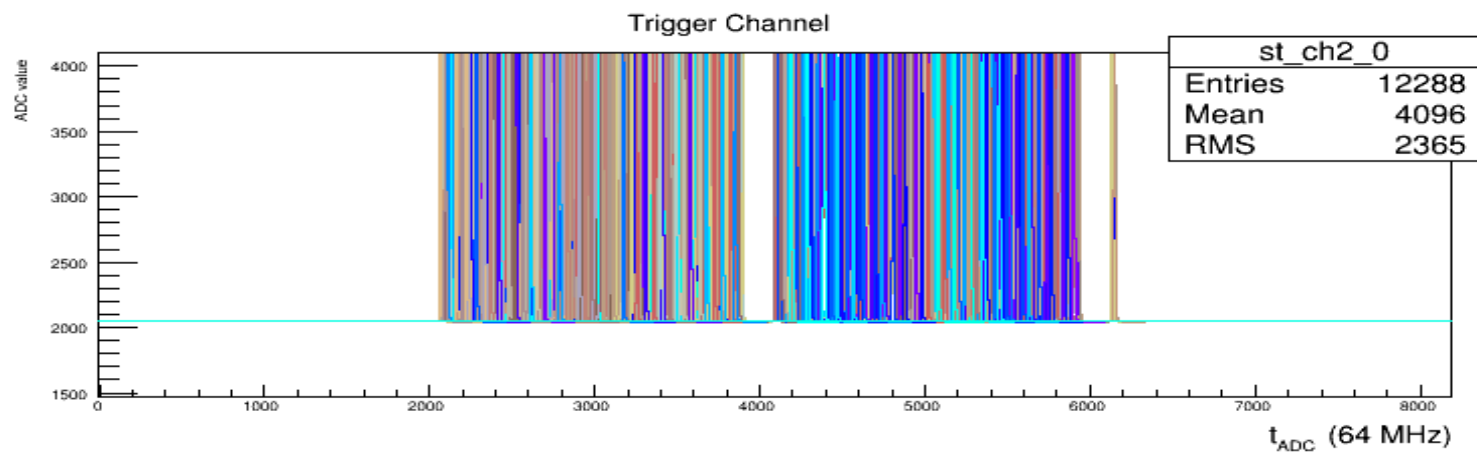
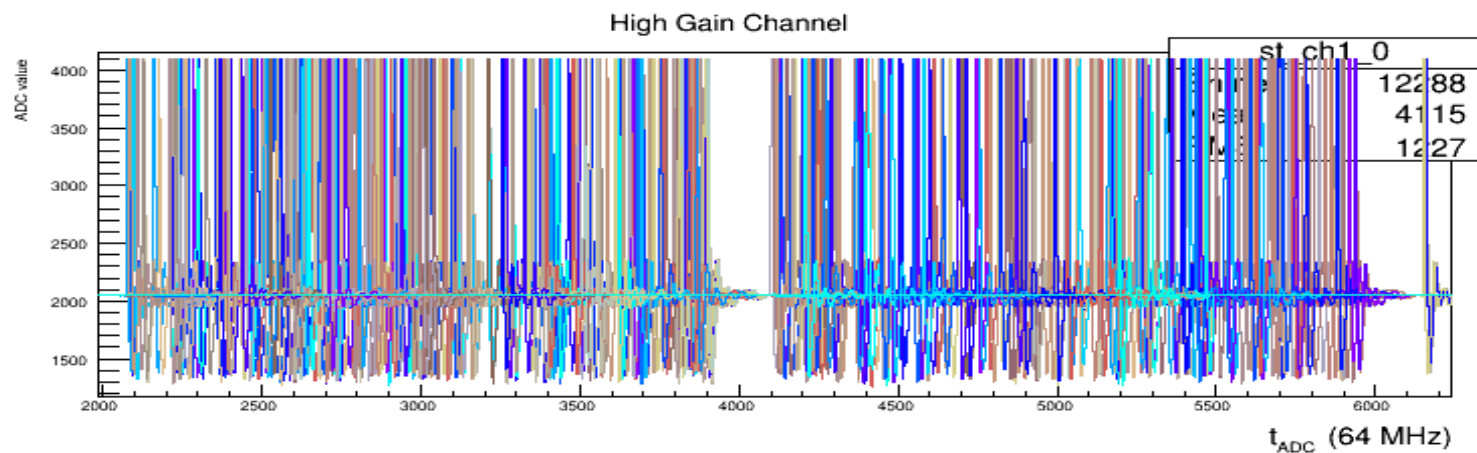
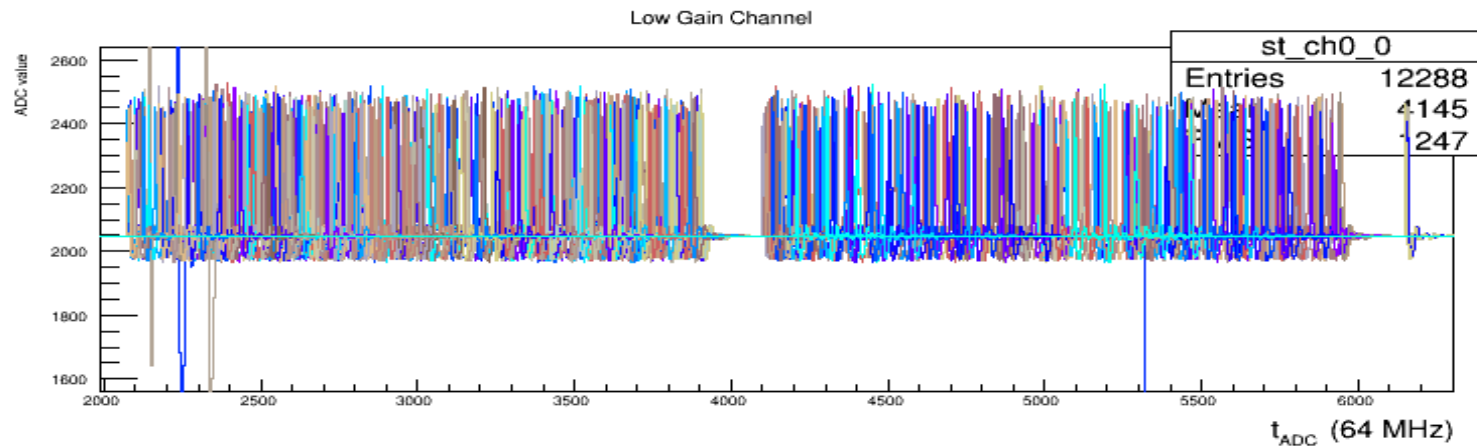
LED1675



LED1700

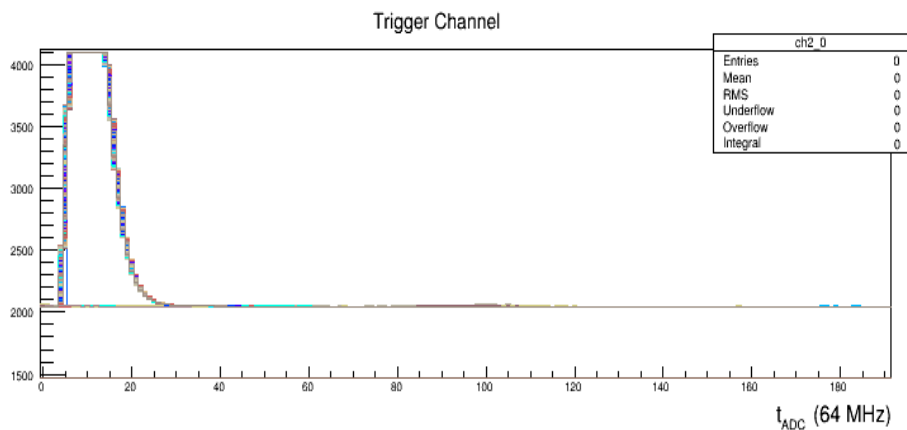
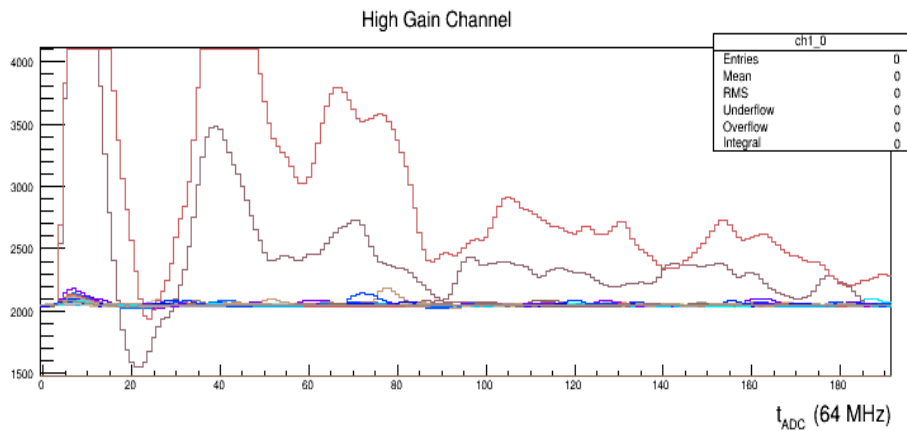
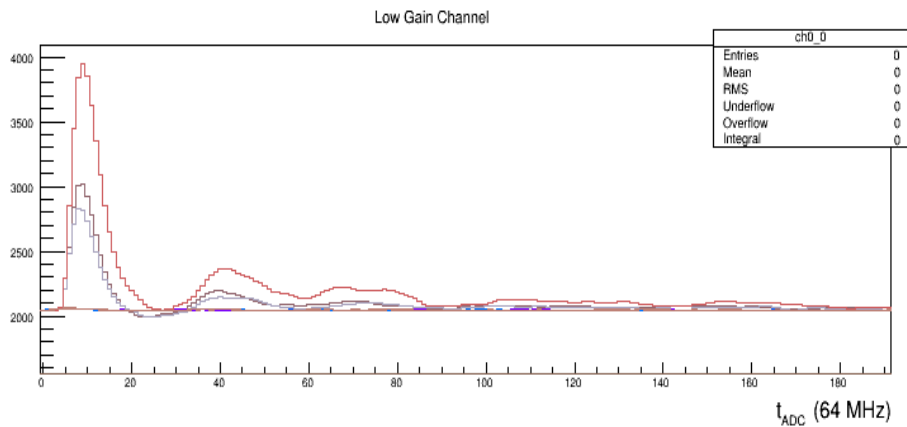


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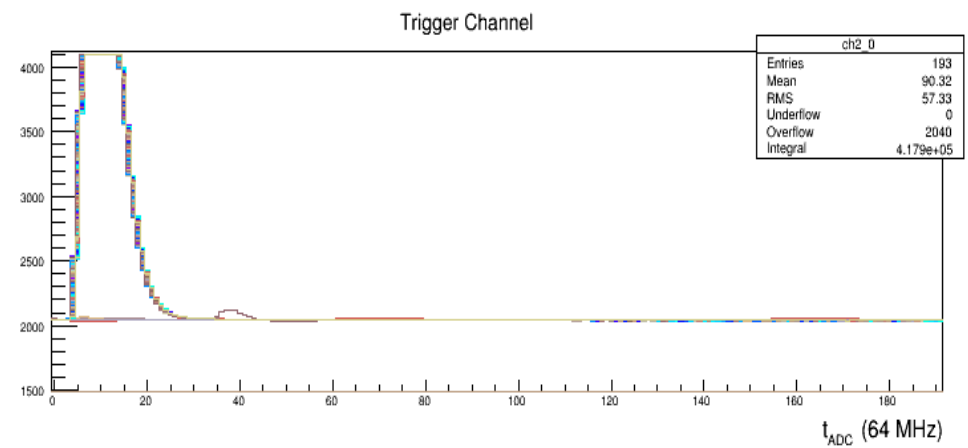
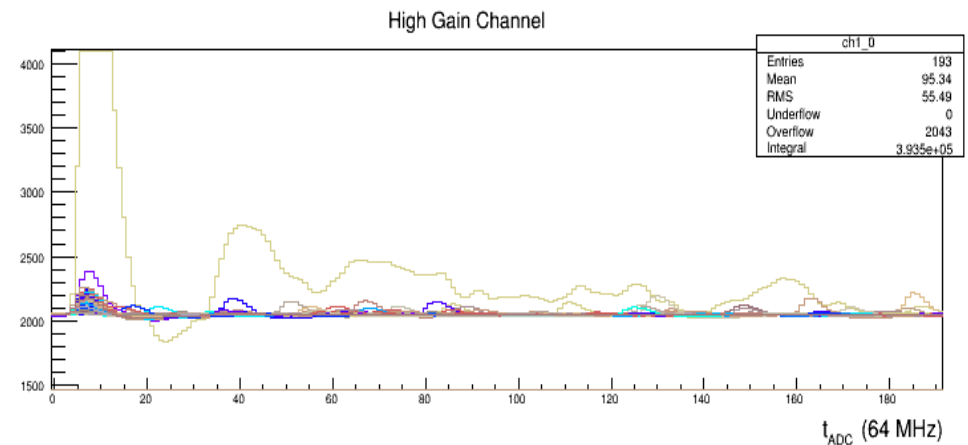
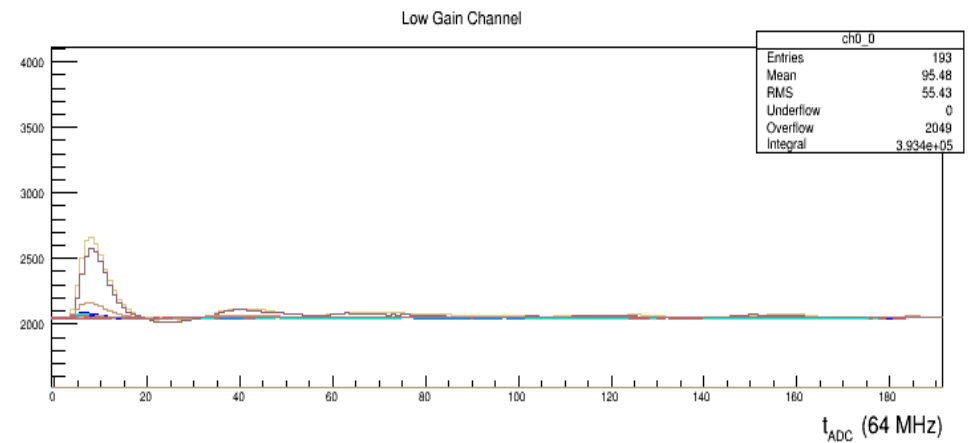


Filtered Time Independent Pulses (full data files)

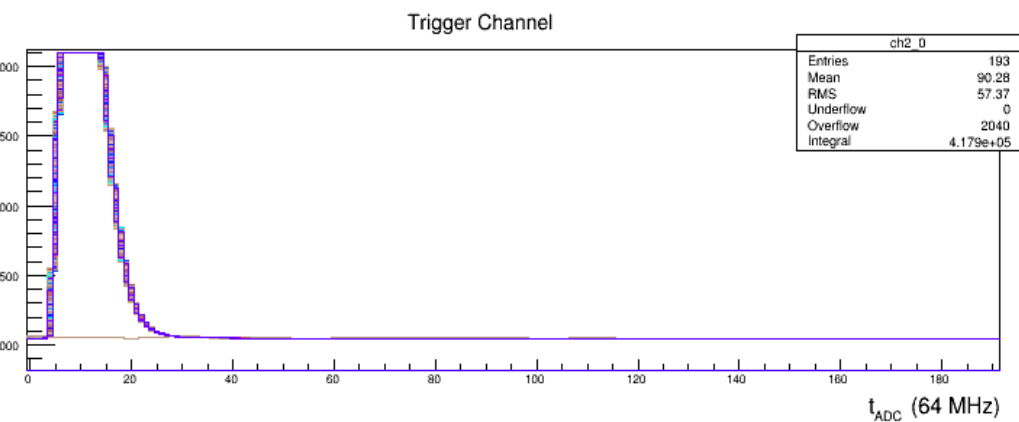
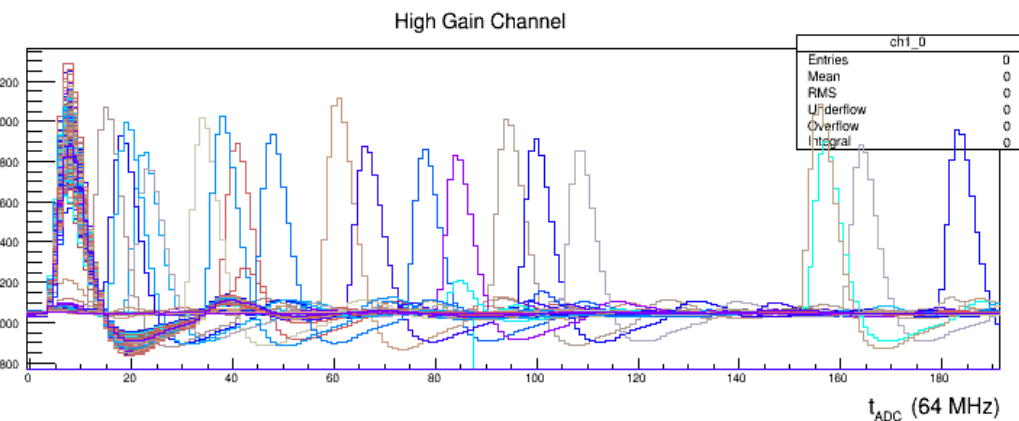
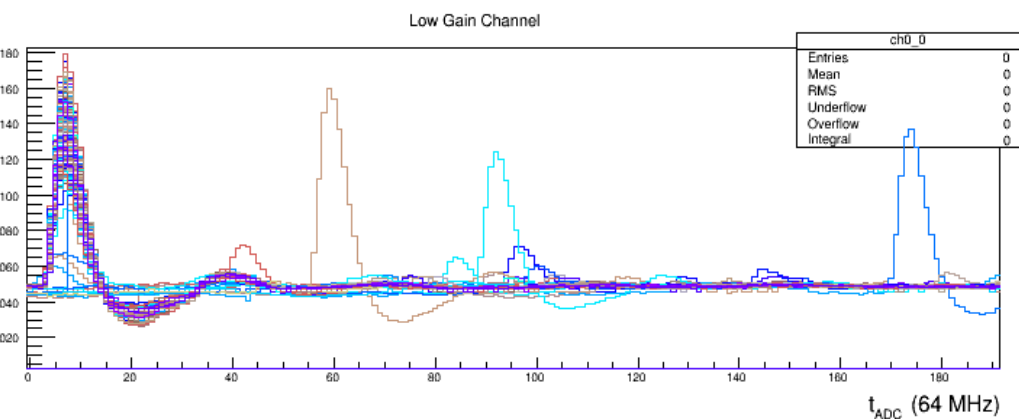
LED1450



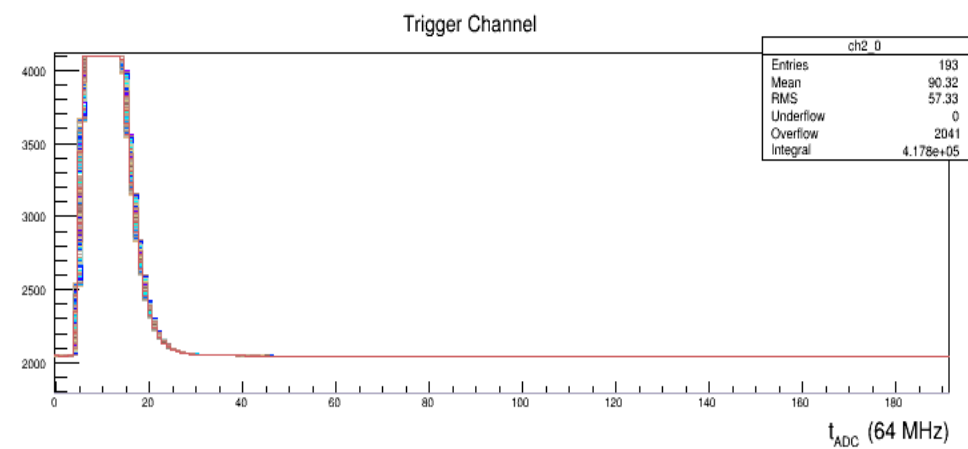
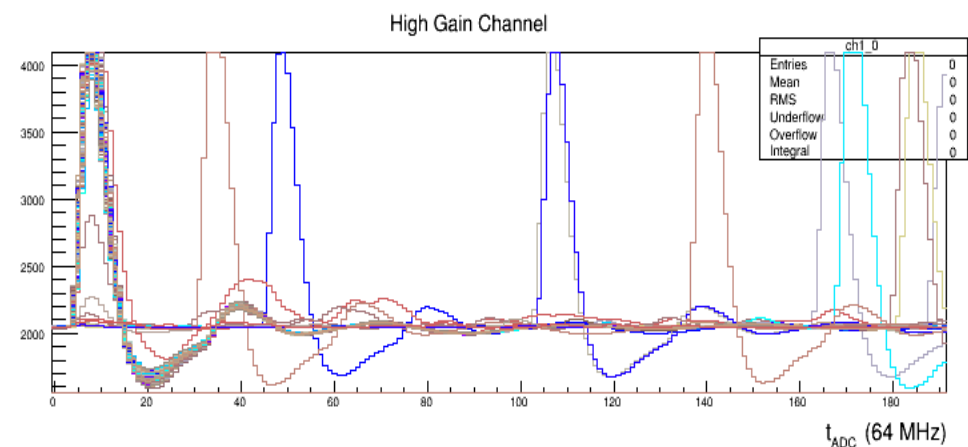
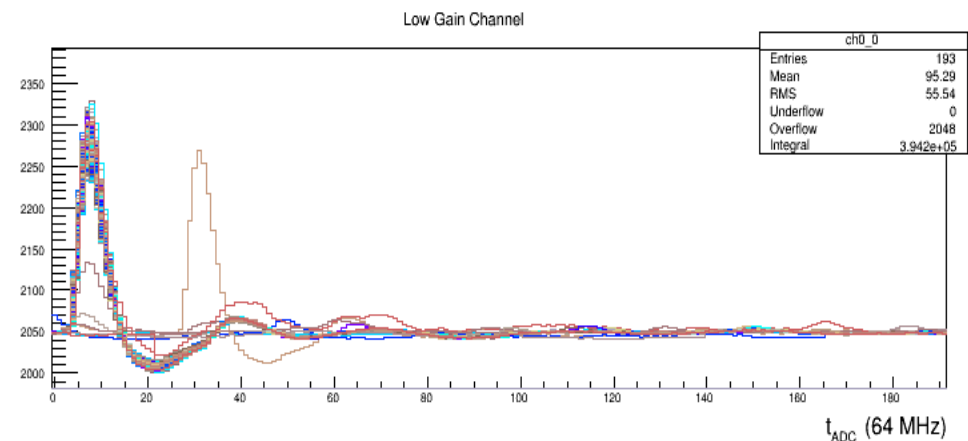
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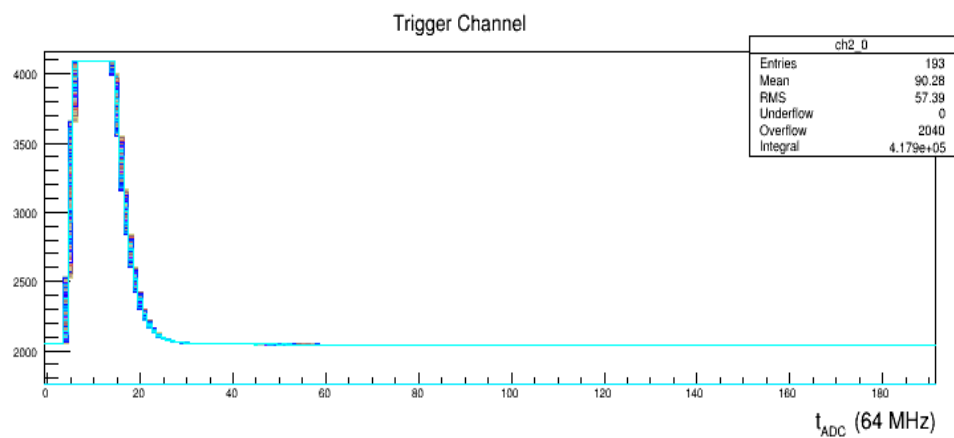
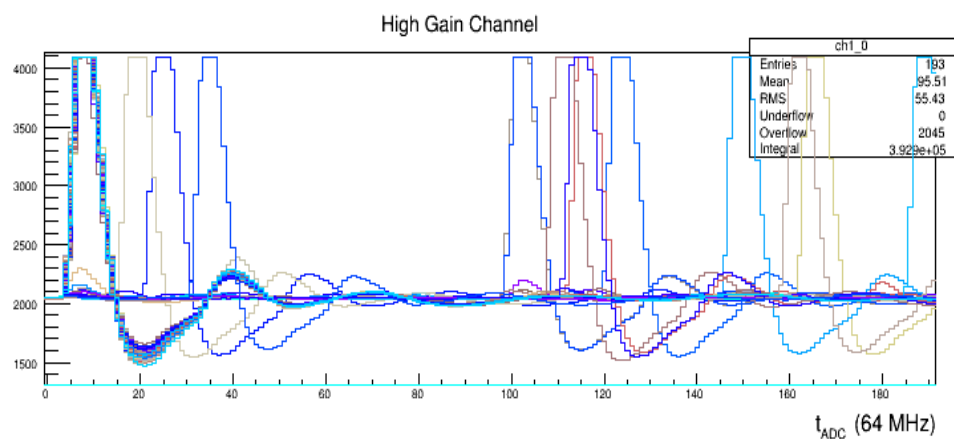
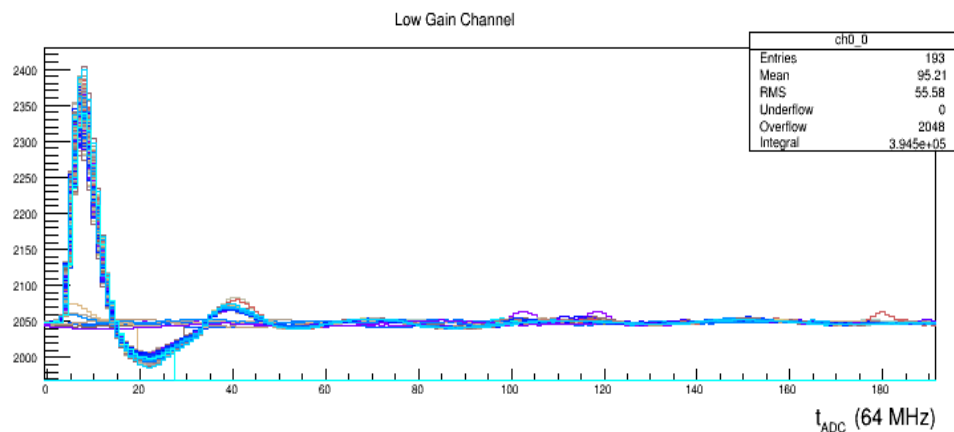
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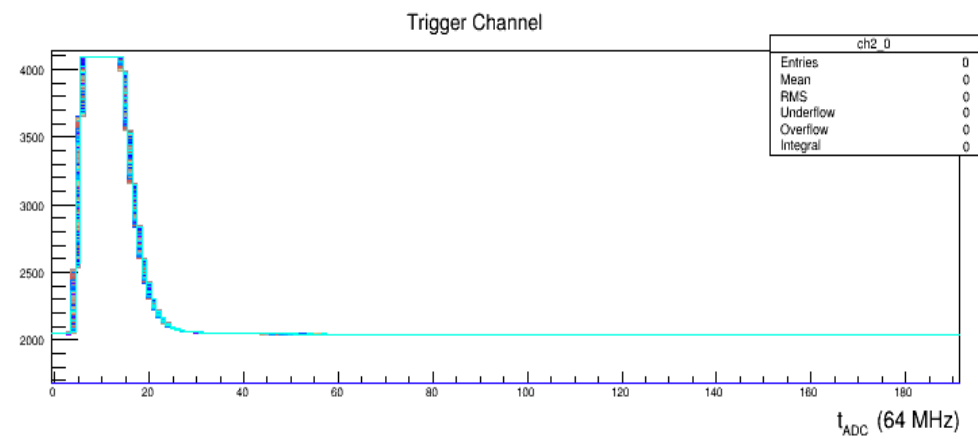
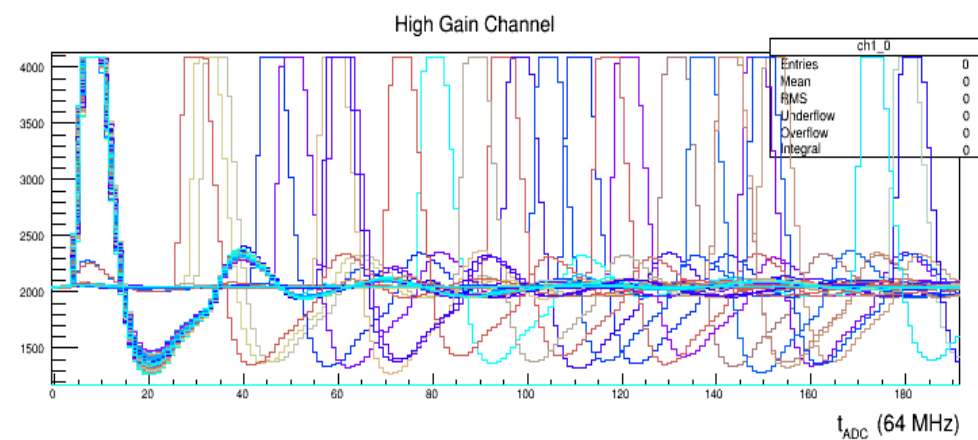
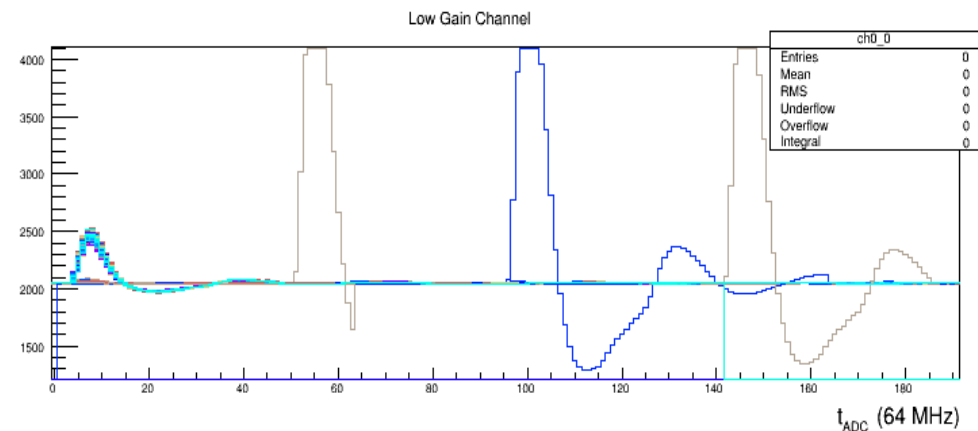
LED1675



LED1700

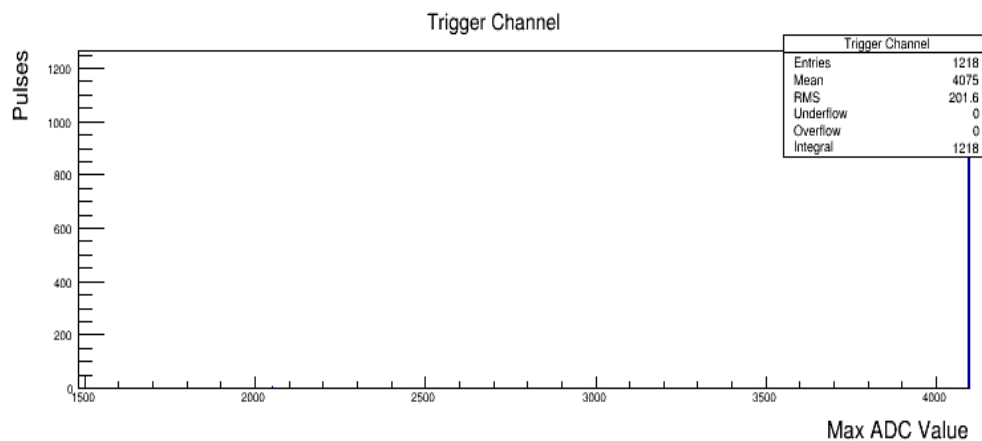
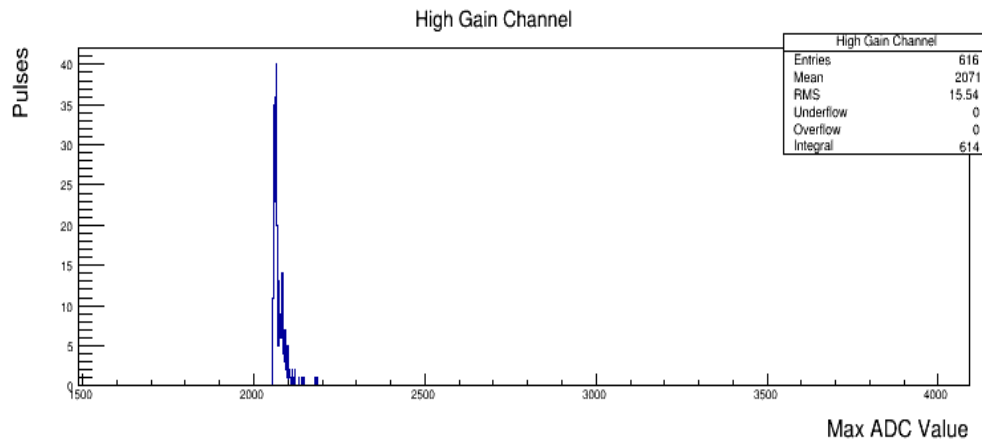
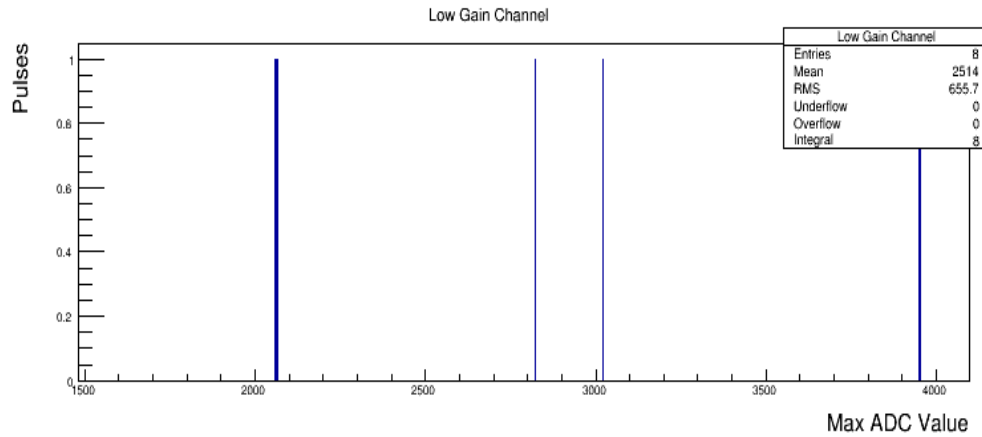


LED1750

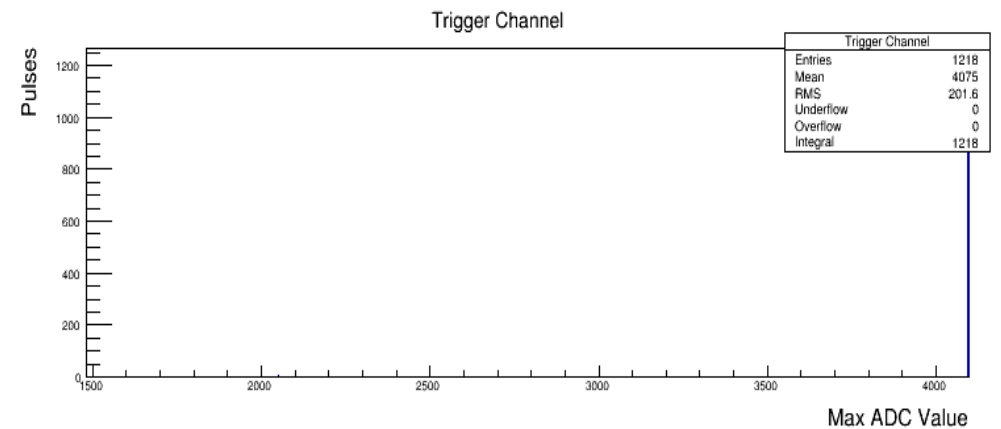
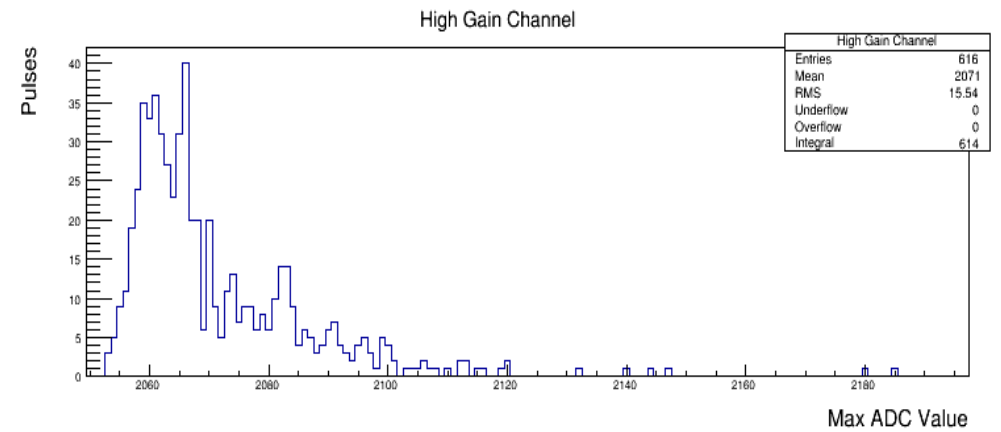
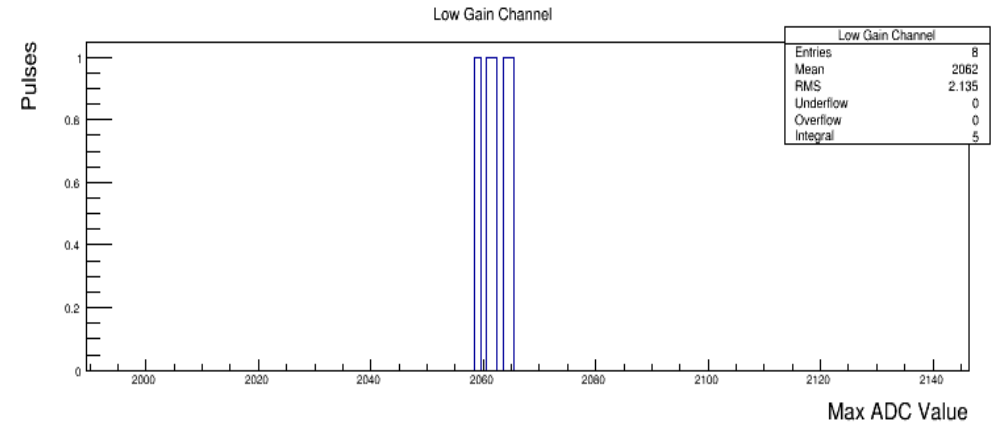


Max ADC Distribution

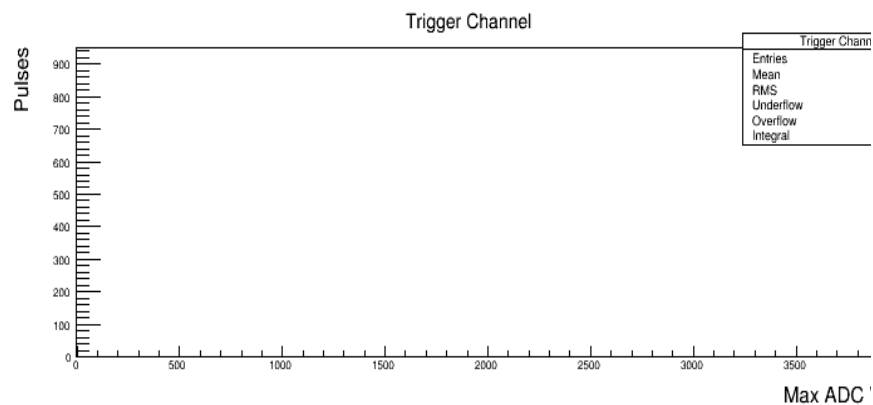
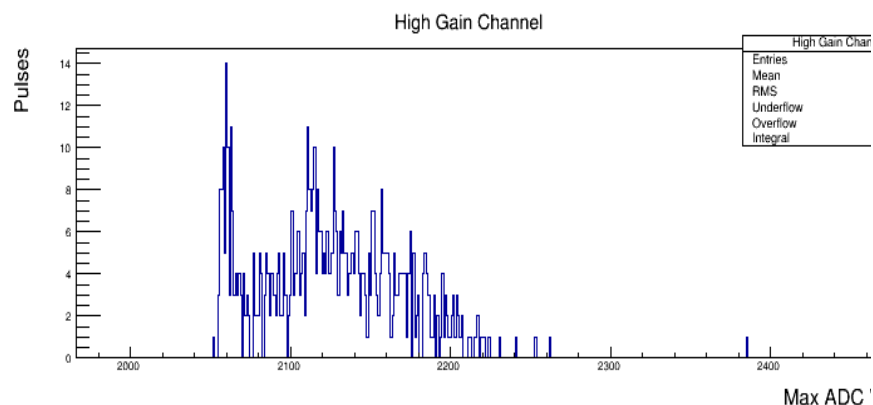
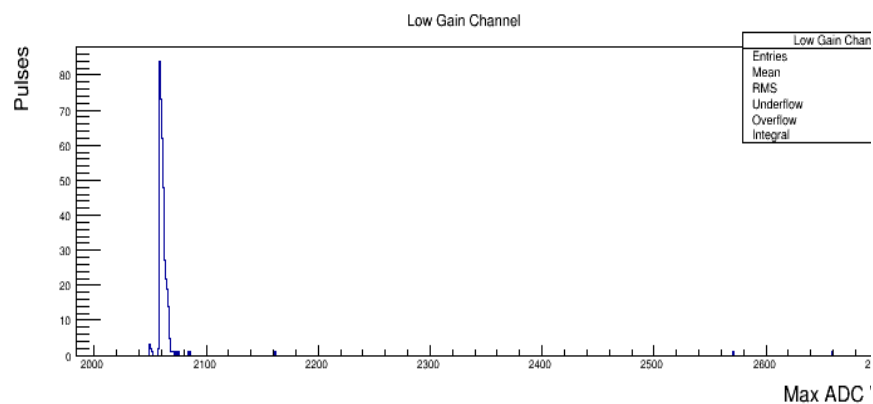
LED1450



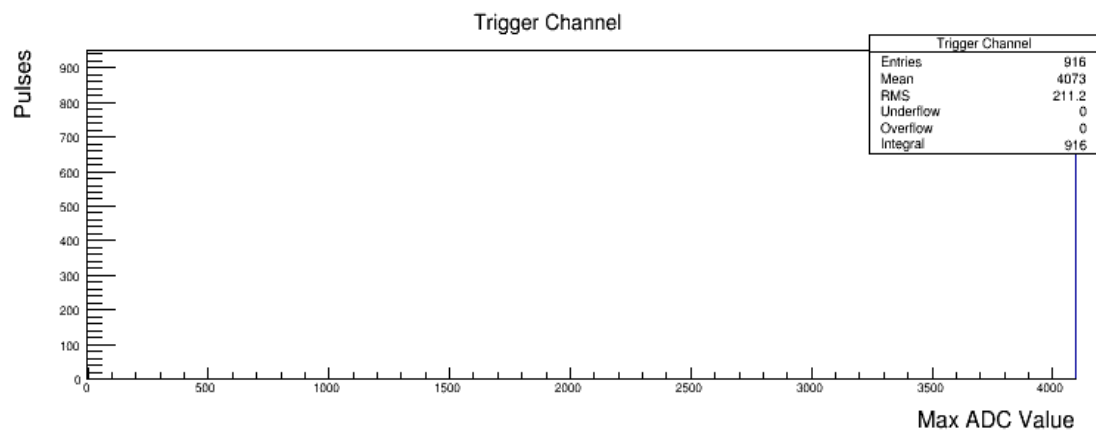
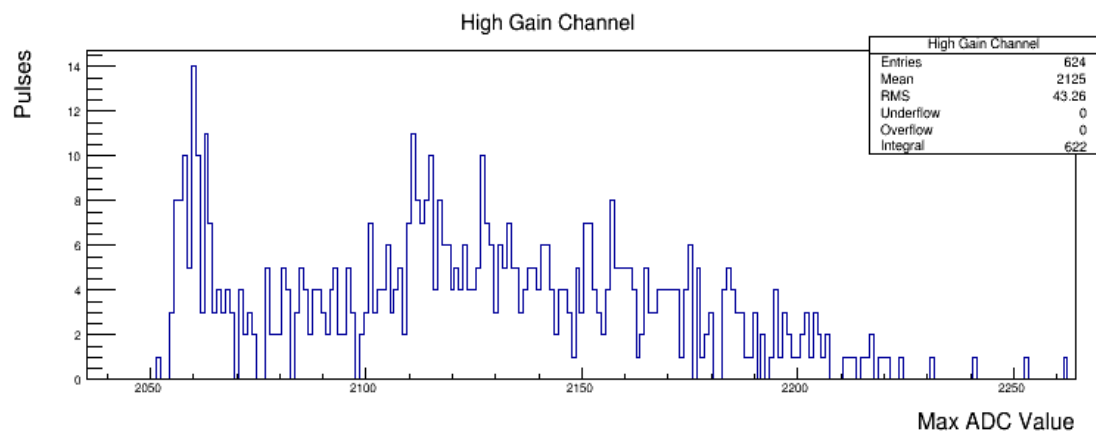
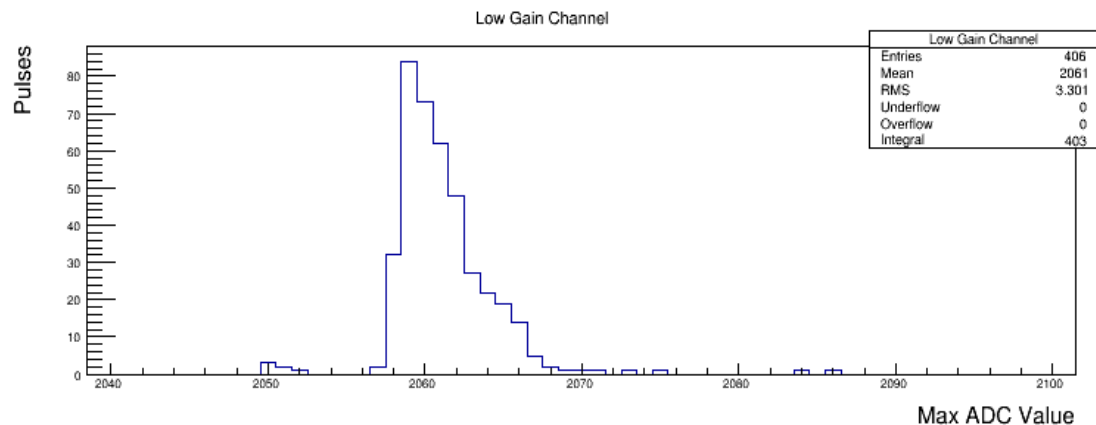
LED1450 (Zoomed in)



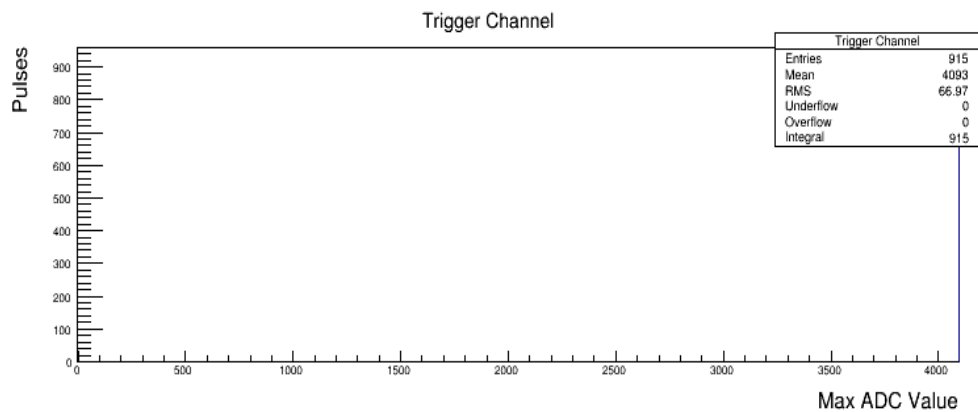
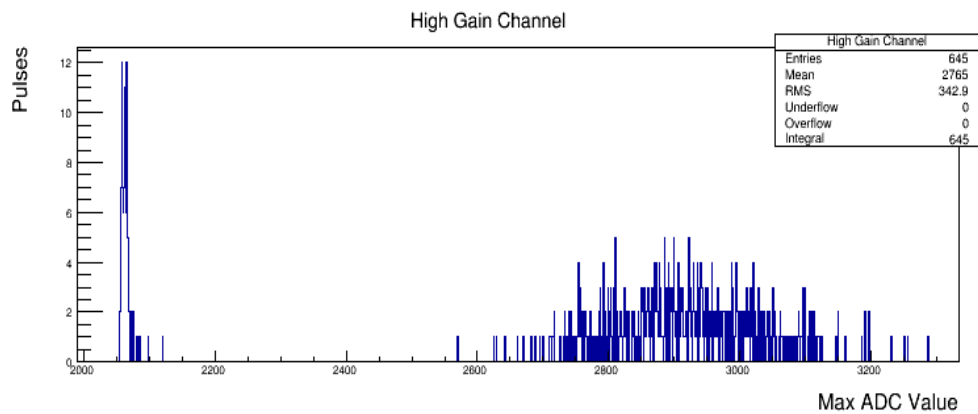
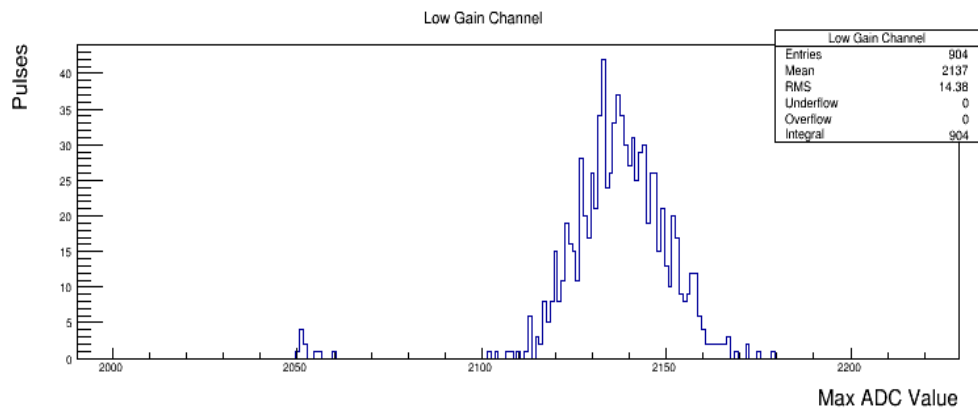
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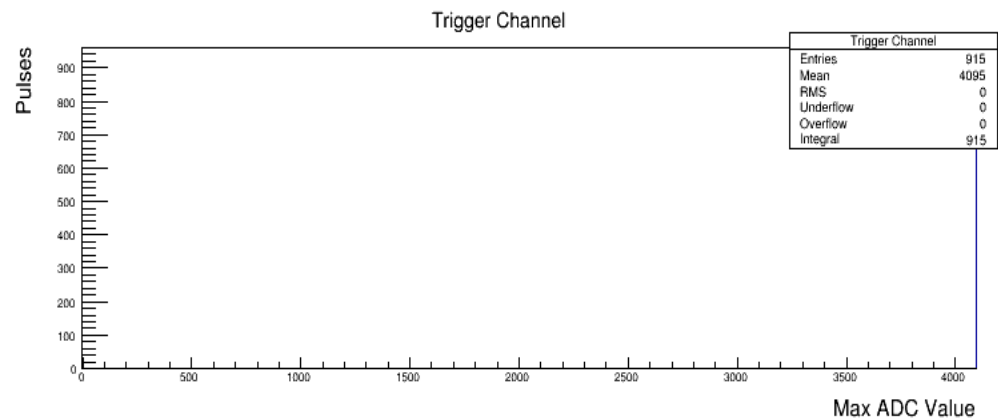
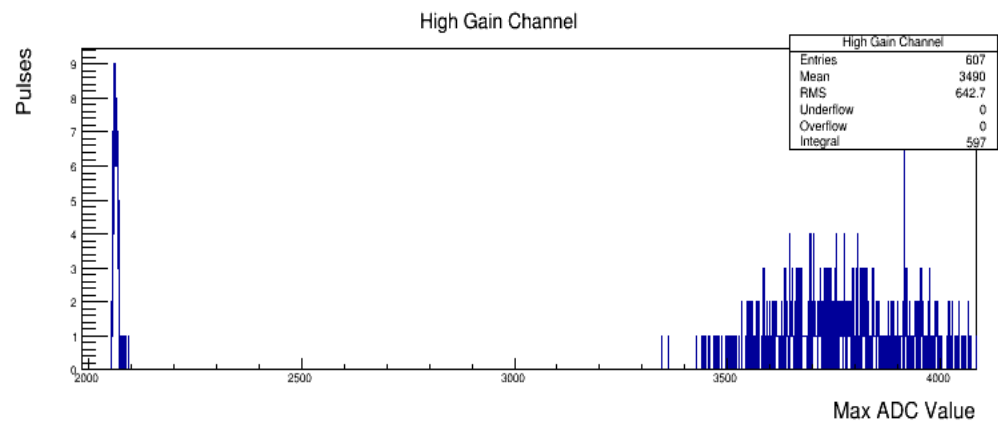
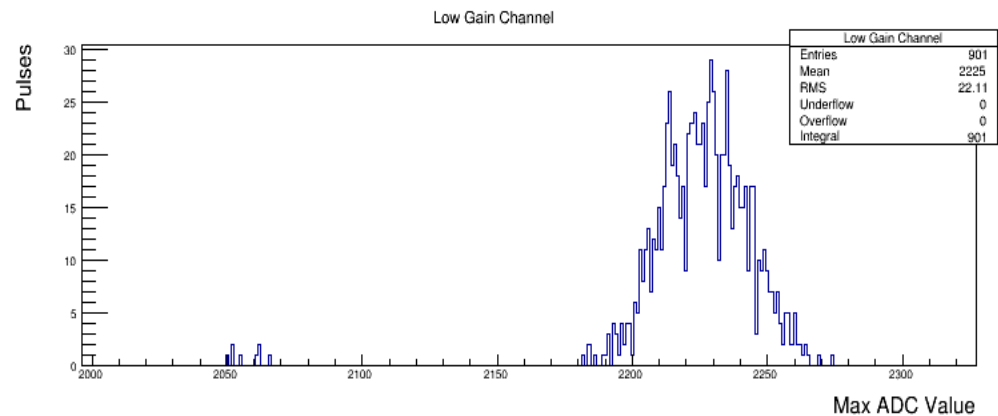
LED1500 (Zoomed in)



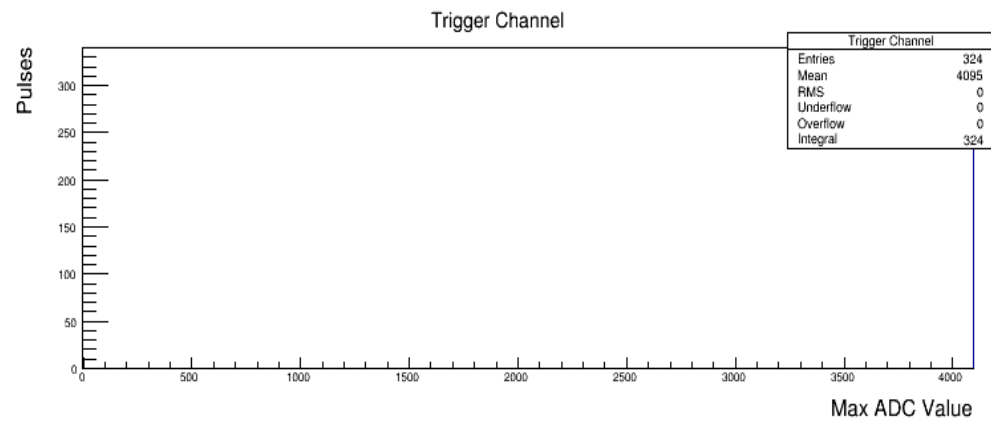
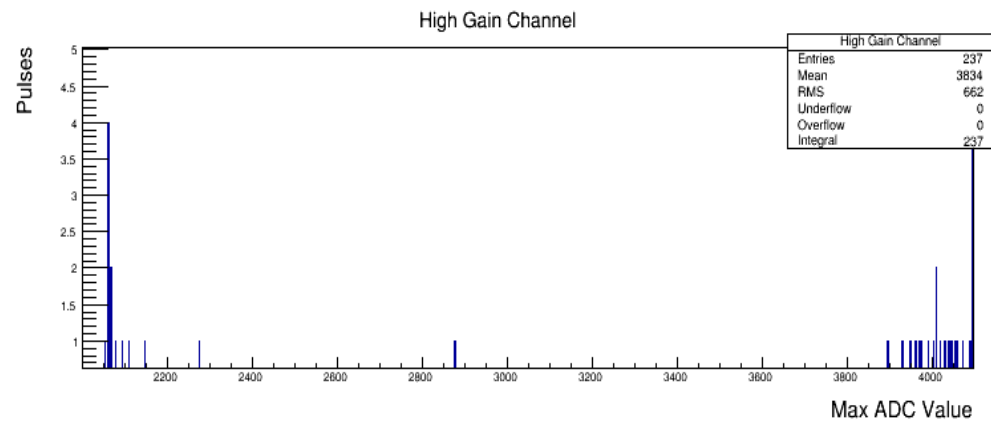
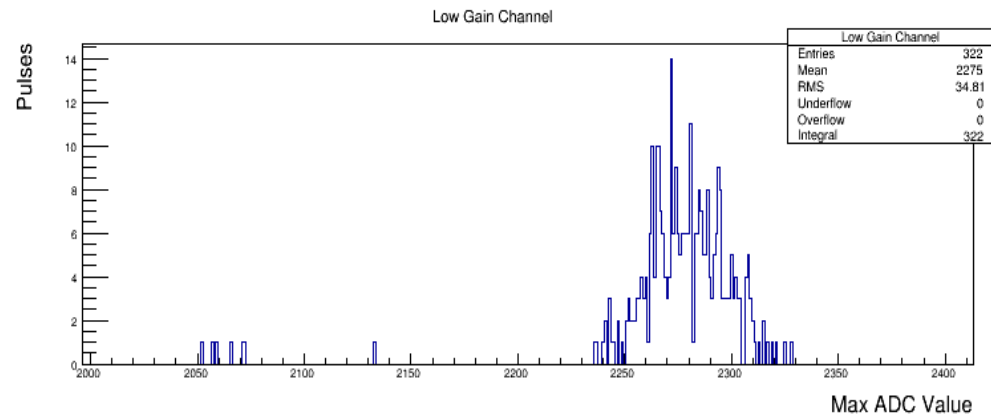
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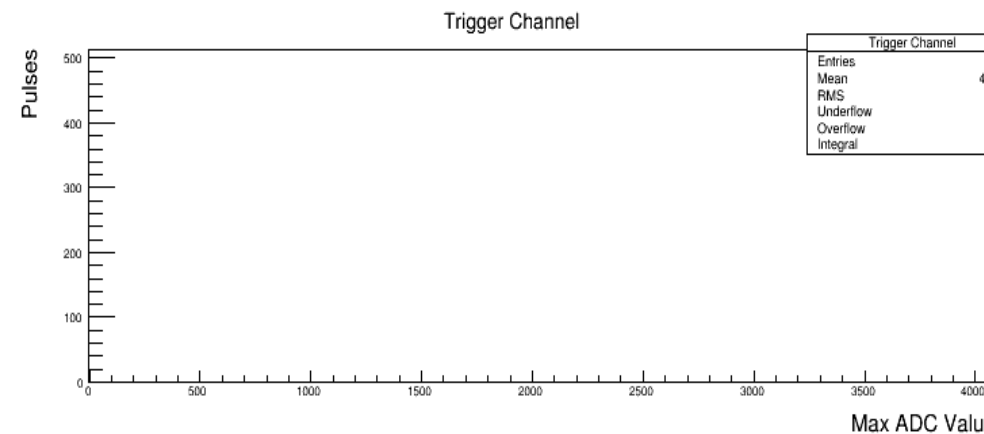
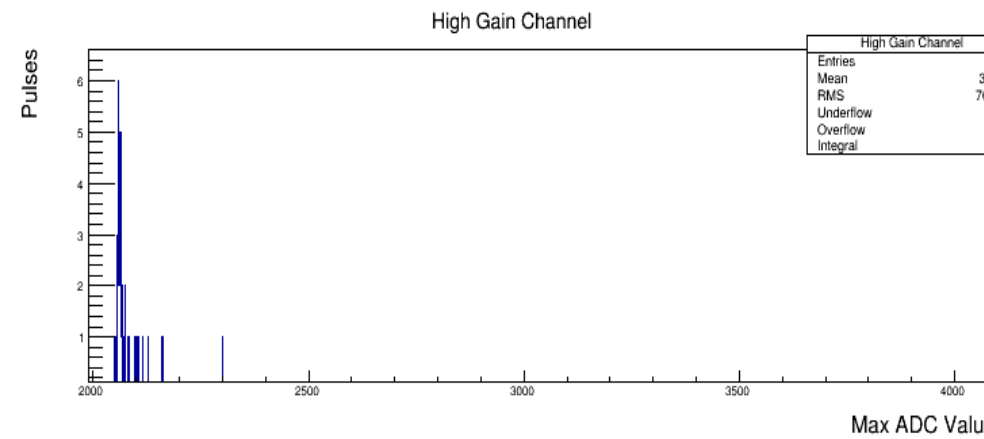
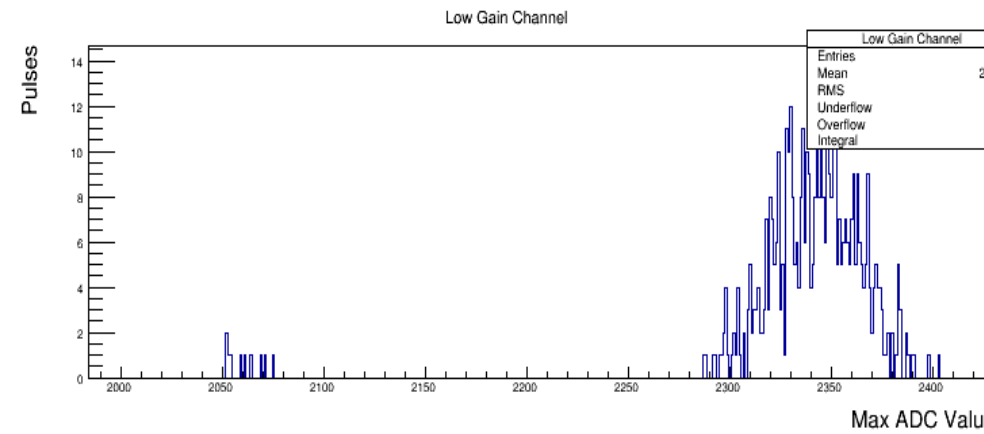
LED1650



LED1675



LED1700



LED1750

