TRIGGER HYBRID READOUT ISSUES

DAQ/Trigger Meeting
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October 24, 2019

Outline

▸ Status of Trigger Hybrid Readout Test with a RevE

▸ Summary of Known Issues

▸ Thoughts on What is Causing the Problem and How to Solve It?

Full Rate and Hybrid Readout

▸ Simulated Phonon Pulse Ejected by a Waveform Generator

▸ PrePulse = 1024
OnPulse = 1024
PostPulse = 960

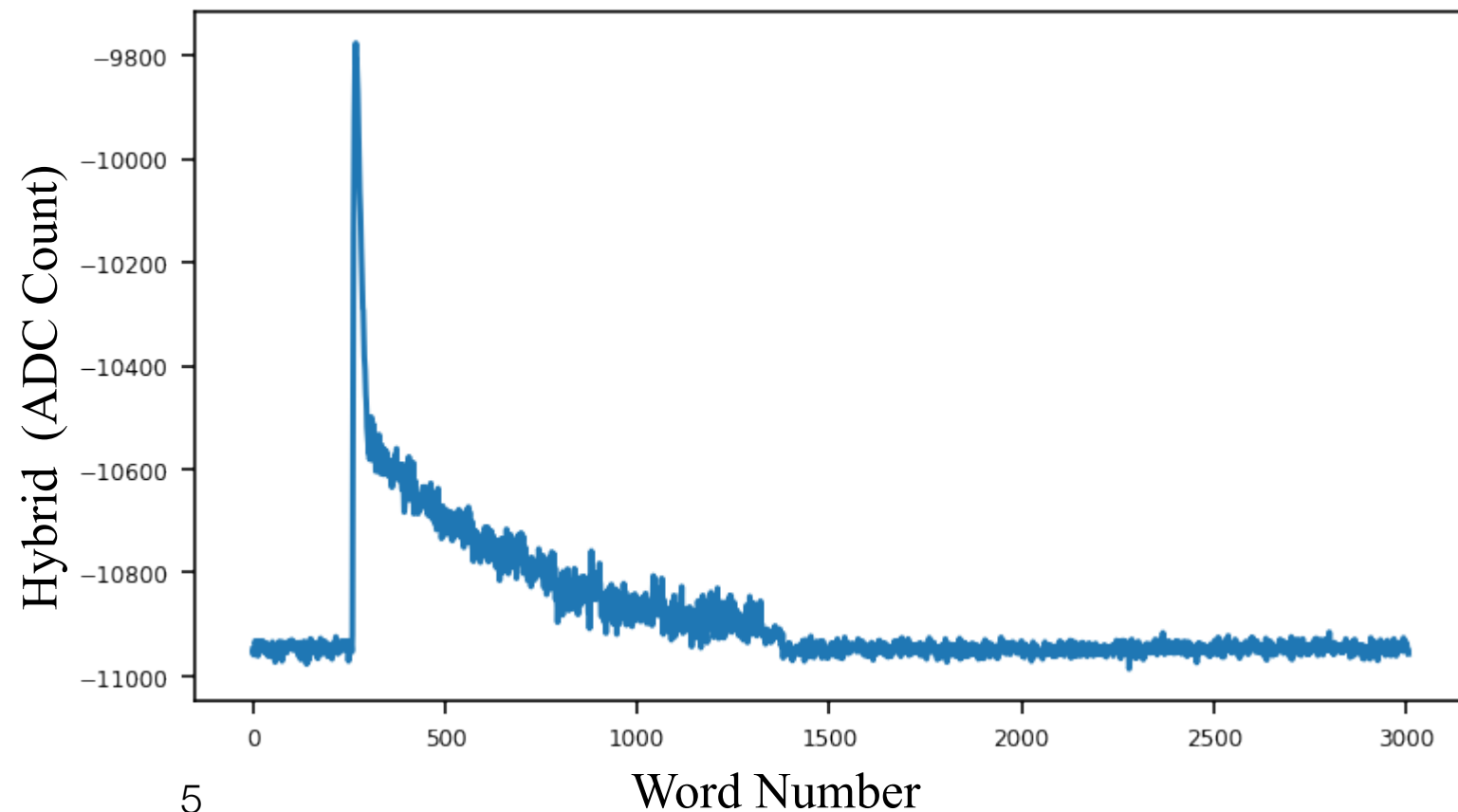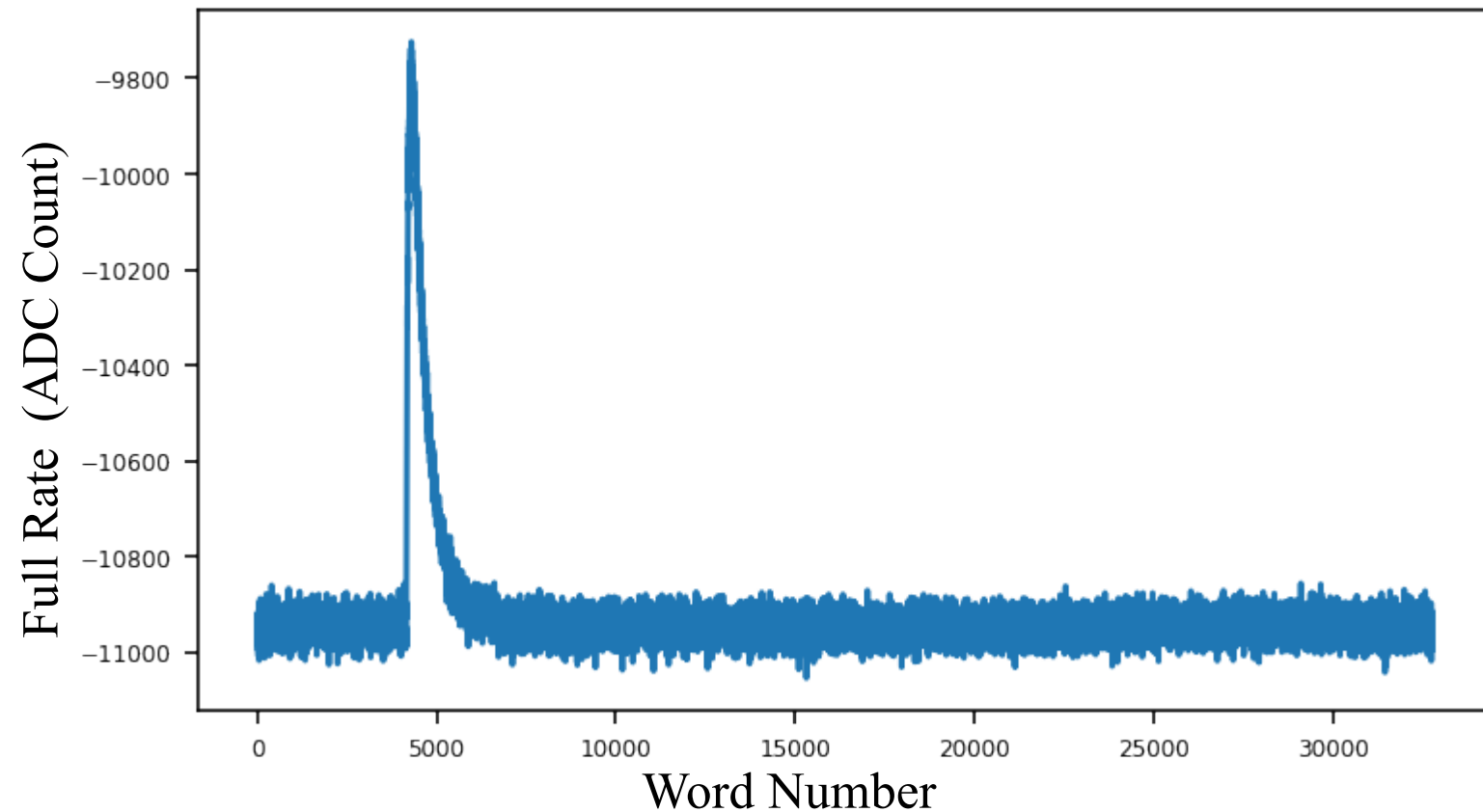▸ Zeros show up in the beginning of the readout

3
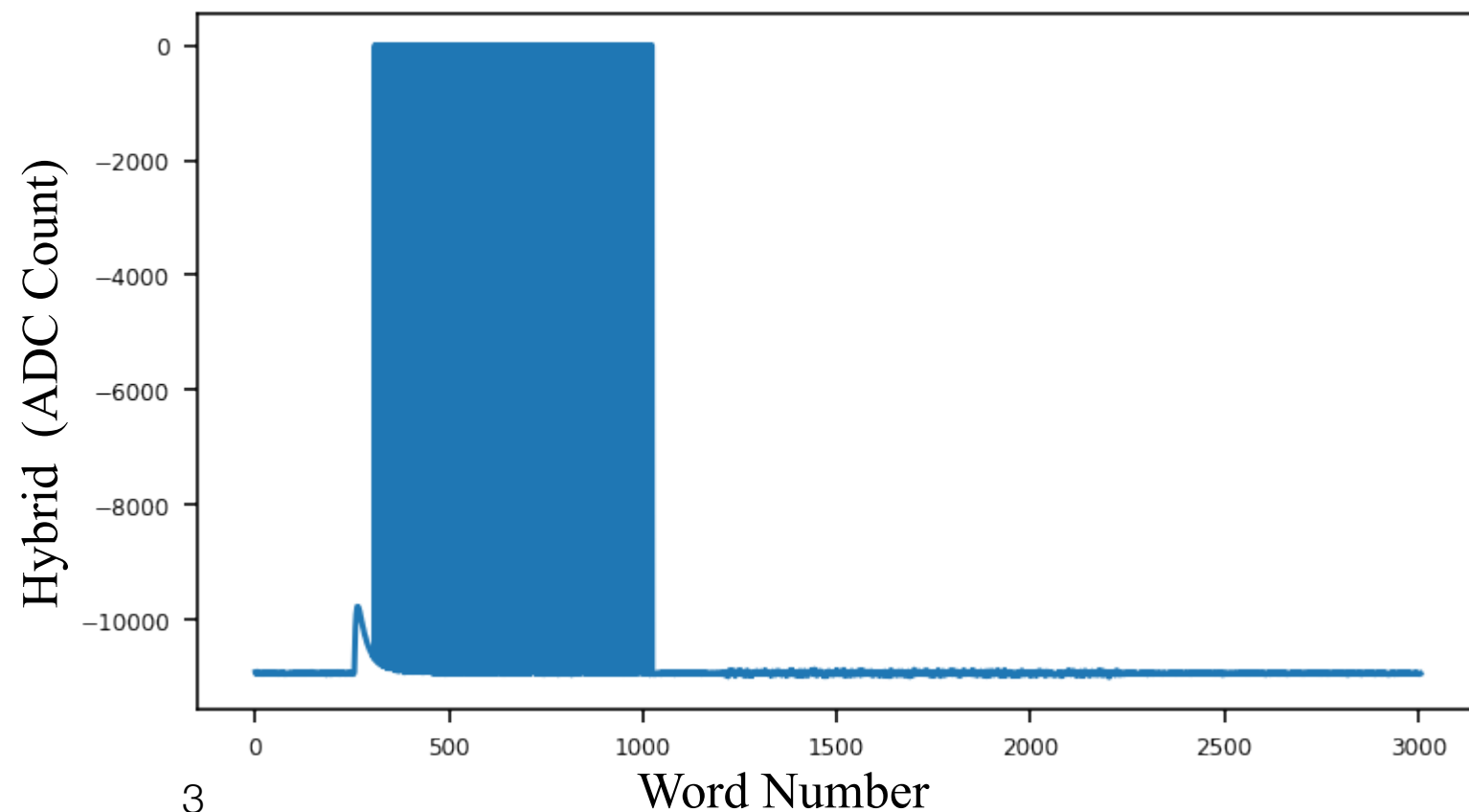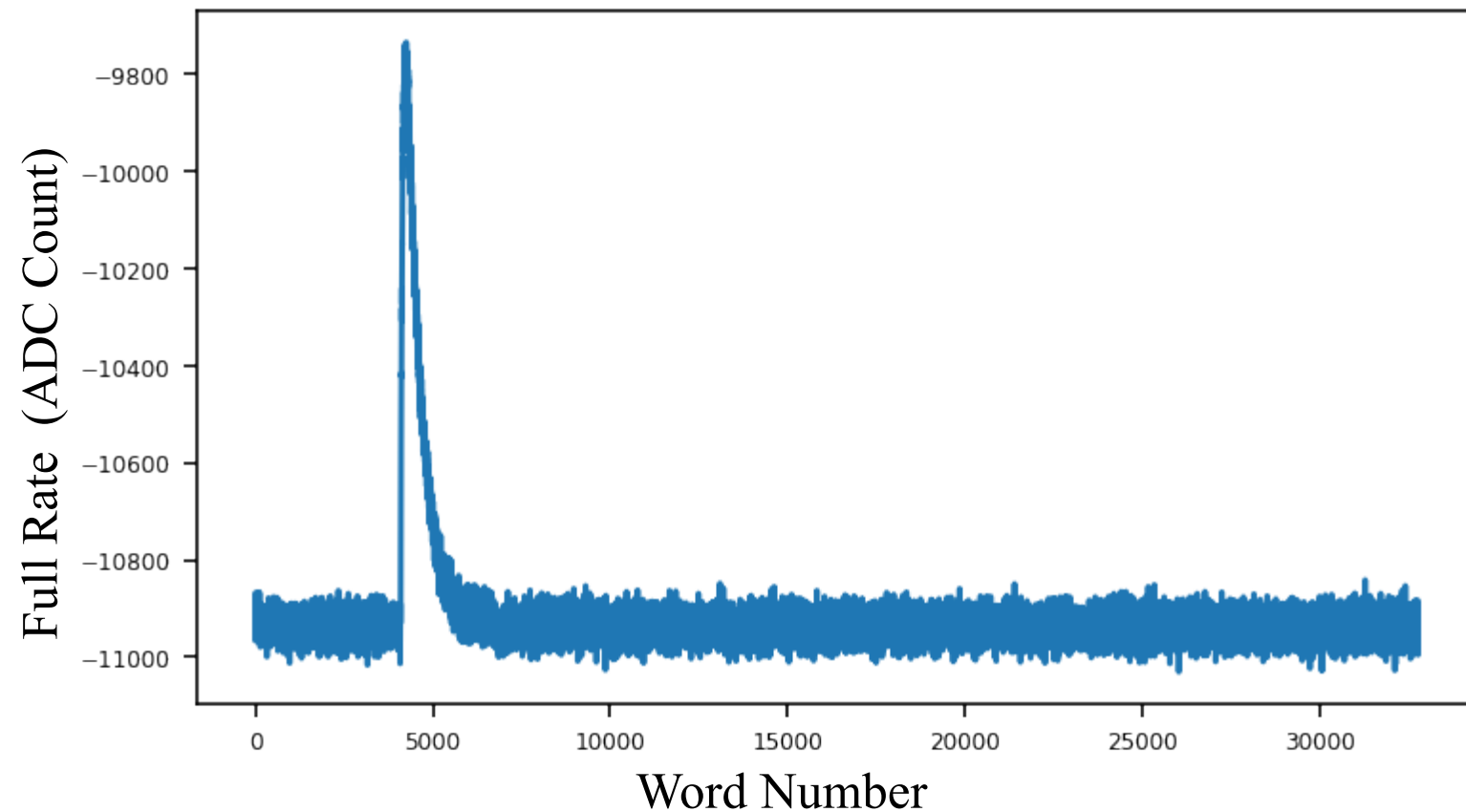
Hybrid Readout - Zoomed In
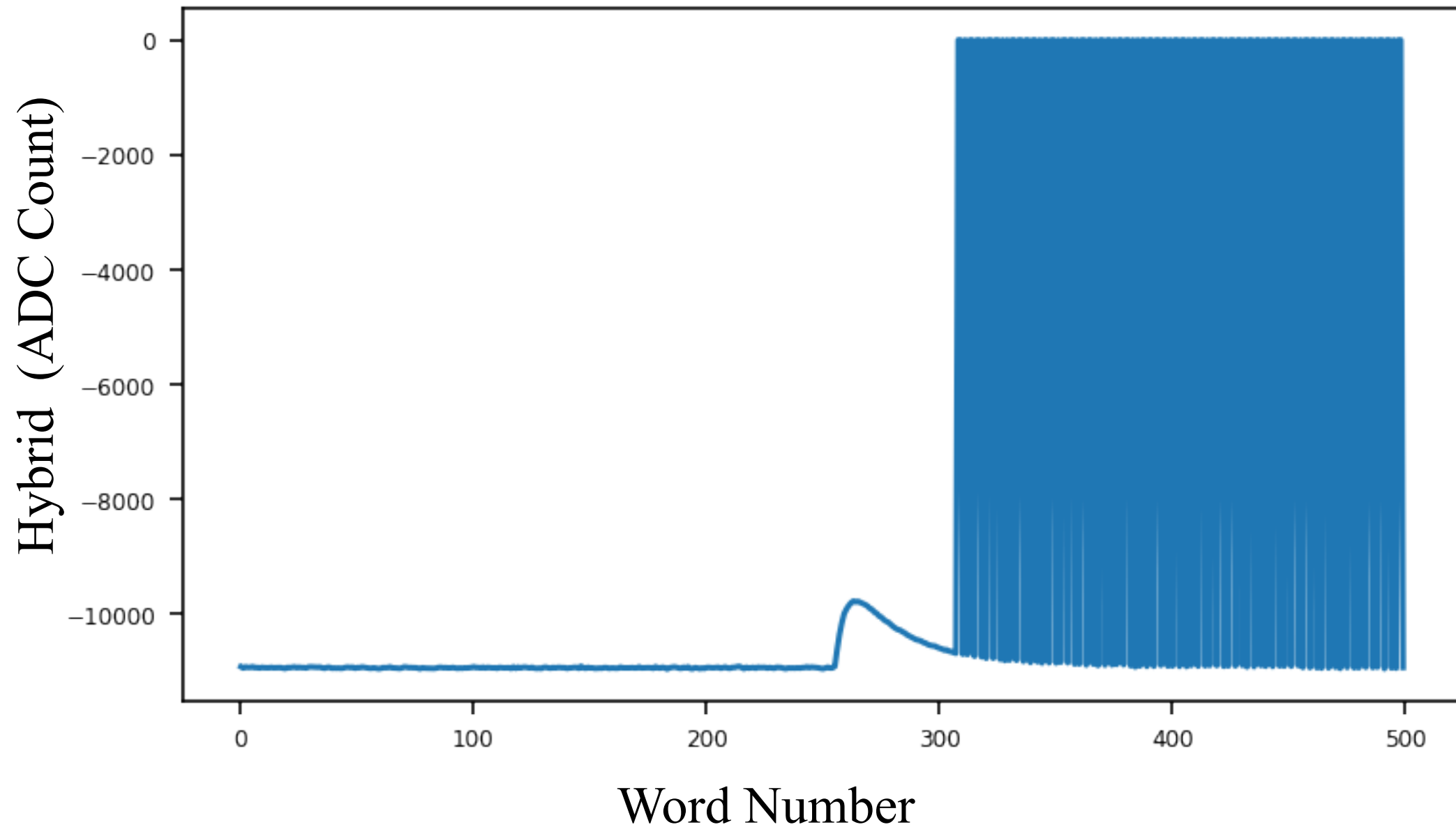
▸ Zeros show up periodically after word number 307

Full Rate and Hybrid Readout

▶ PrePulse = 300
OnPulse = 1024
PostPulse =   1684

▶ We calculated what the hybrid data should look like from the full-rate data and confirmed that it is working as expected.

▶ Hybrid Readout is Working Perfectly!

What is Causing This Issue?

▶ We Contacted <u>Jon Wilson</u> regarding this issue

▶ He thinks that the Rev E DCRCs need an updated version of the microcontroller code

▶ There should be a connection between the FPGA and microcontroller that allows the FPGA to ask the microcontroller to wait when it requests a read but the data isn't ready yet.

▶ We get those zeros when data is not ready but microcontroller requests to read it

▶ The code has been updated before with the wait function to solve this issue but we guess Sten has been sending DCRCs with a version of the microcontroller code that ignores the wait signal

▶ Belina contacted Sten about this issue. She has not heard back from him yet.

Discussion

▶ What is the plan for resolving this issue?

▶ Should we update all microcontroller image on all boards in different facilities ?

▶ Other thoughts and concerns?