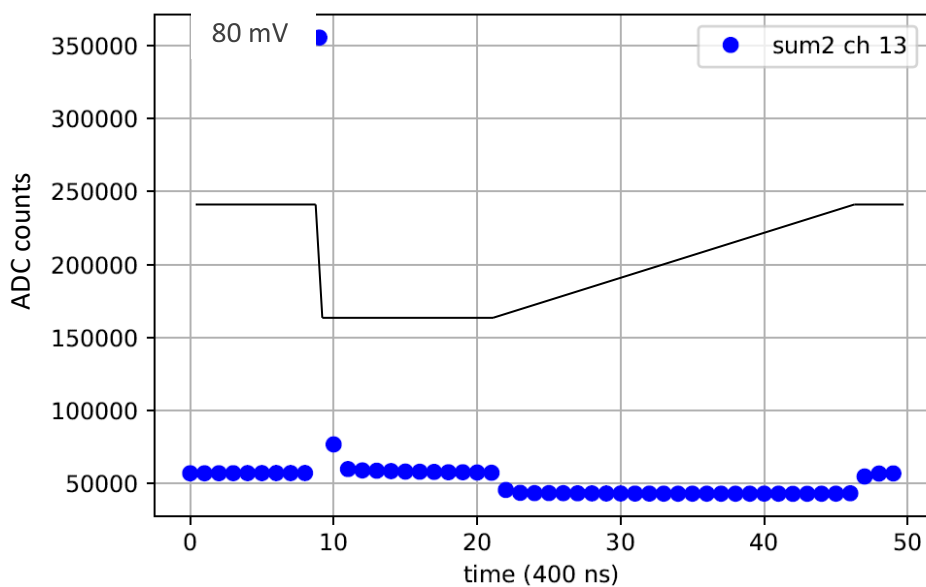


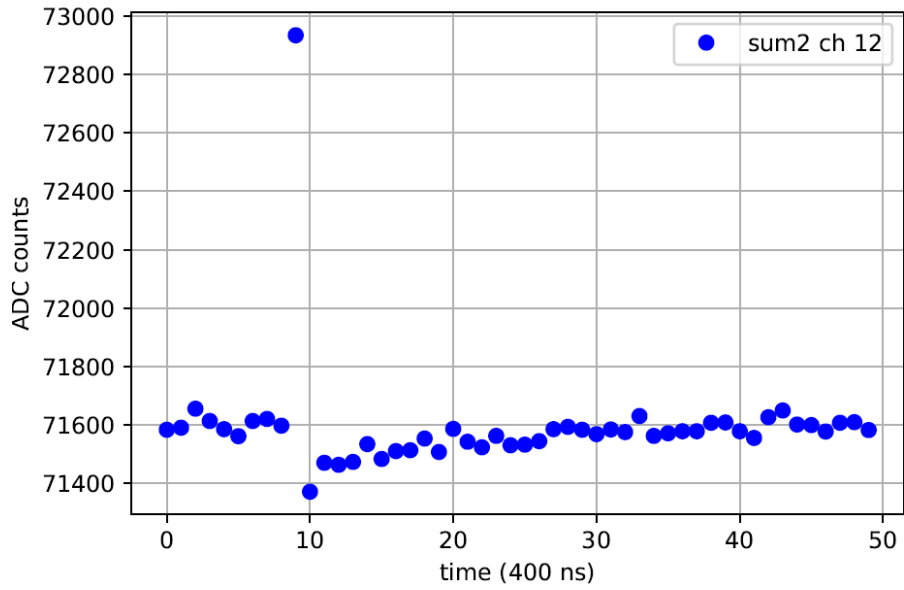
## SAMPA Crosstalk Study

Apply a large amplitude (80 mV) pulse to a channel and inspect adjacent channels for a signal. Use DAS mode where raw ADC samples at 5 MHz are continuously streamed off chip for all channels. Visibility of crosstalk signal is enhanced by summing samples of many pulses (400). Two samples at 5 MHz essentially capture all of the pulse, so add consecutive samples in pairs (defining an effective sample period of 400 ns).

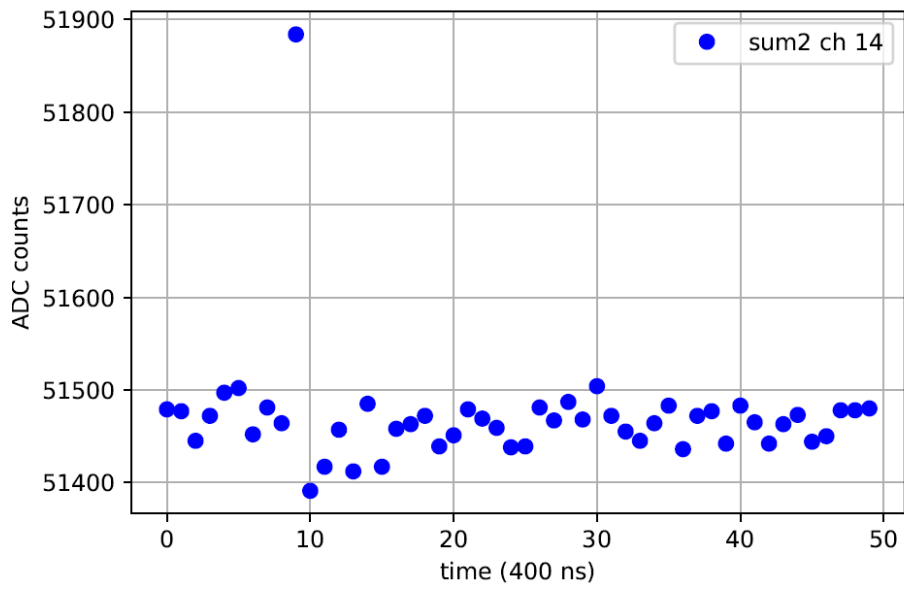
The pulse period is 20  $\mu\text{s}$  (shown below) and is an integral multiple of the sampling period of 0.200  $\mu\text{s}$ , so consecutive pulses can be added directly. Over the time of 400 pulses (8 ms) the phase relationship between the ADC clock and the uncorrelated pulser time base will drift negligibly compared to the sample period.



**Driven Channel 13**  
amp(13) = 298434  
(Driving waveform shown)



**Adjacent Channel 12**  
 amp(12) = 1330  
 $xtalk = amp(12)/amp(13)$   
 = 0.45%



**Adjacent Channel 14**  
 amp(14) = 408  
 $xtalk = amp(14)/amp(13)$   
 = 0.14%