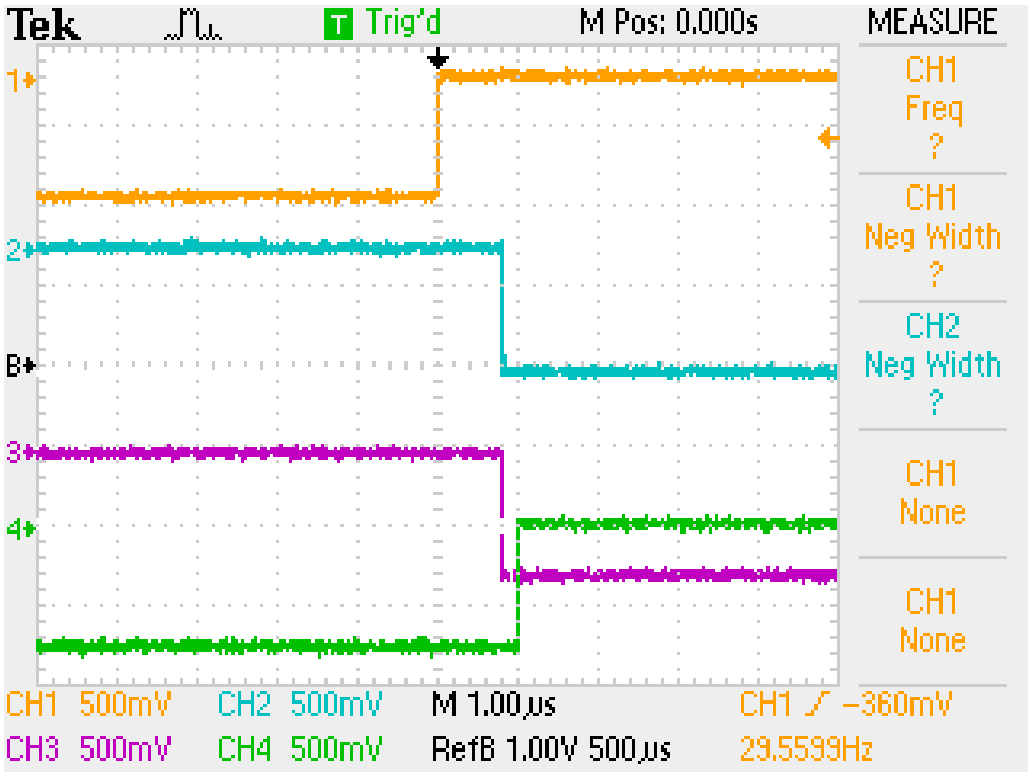


# Mott DAQ Timing

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# Helicity Signals Timing

T\_Settle starts 1.0  $\mu$ s earlier than all other helicity signals



T\_Settle

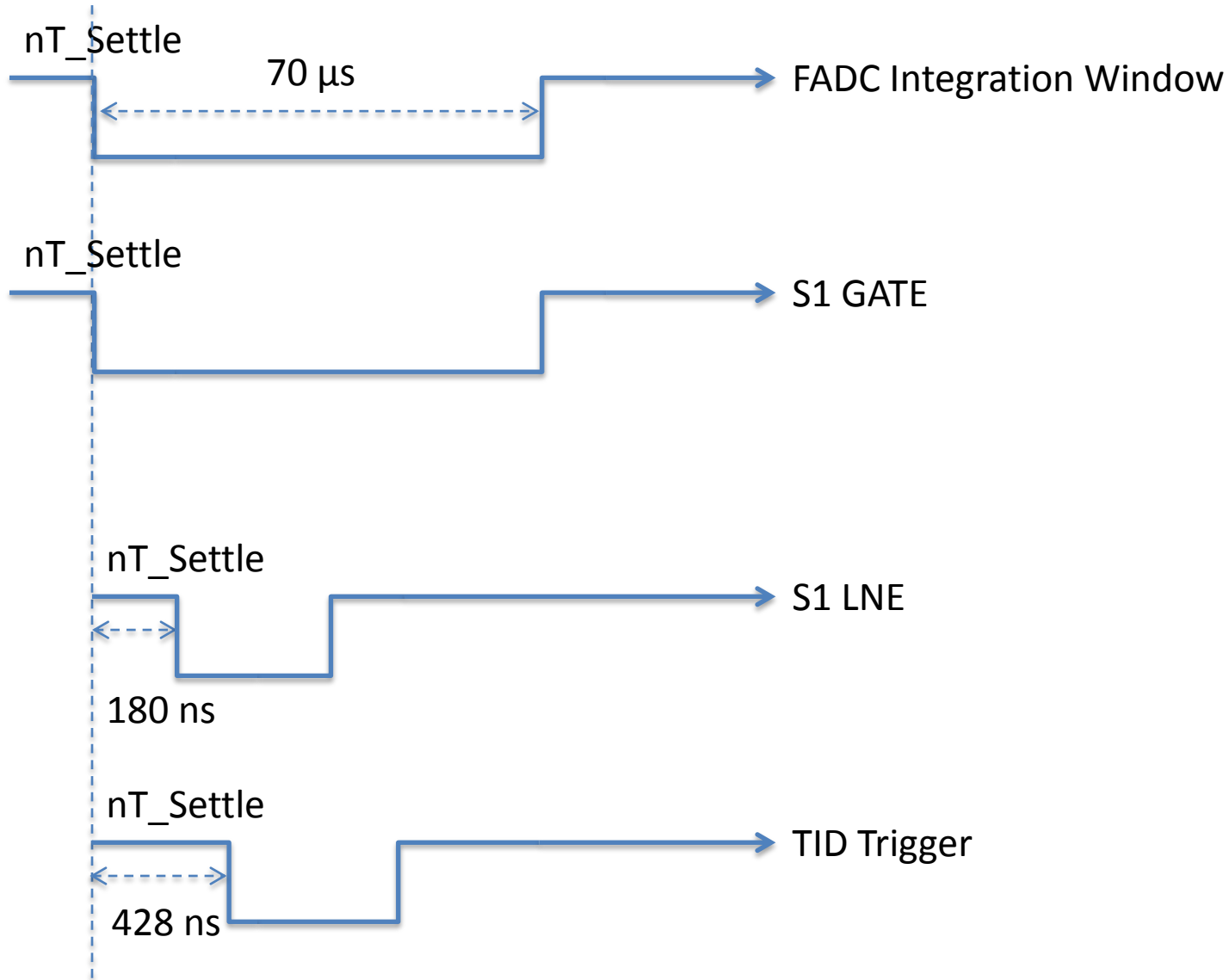
Pair -Sync

Pattern-Sync

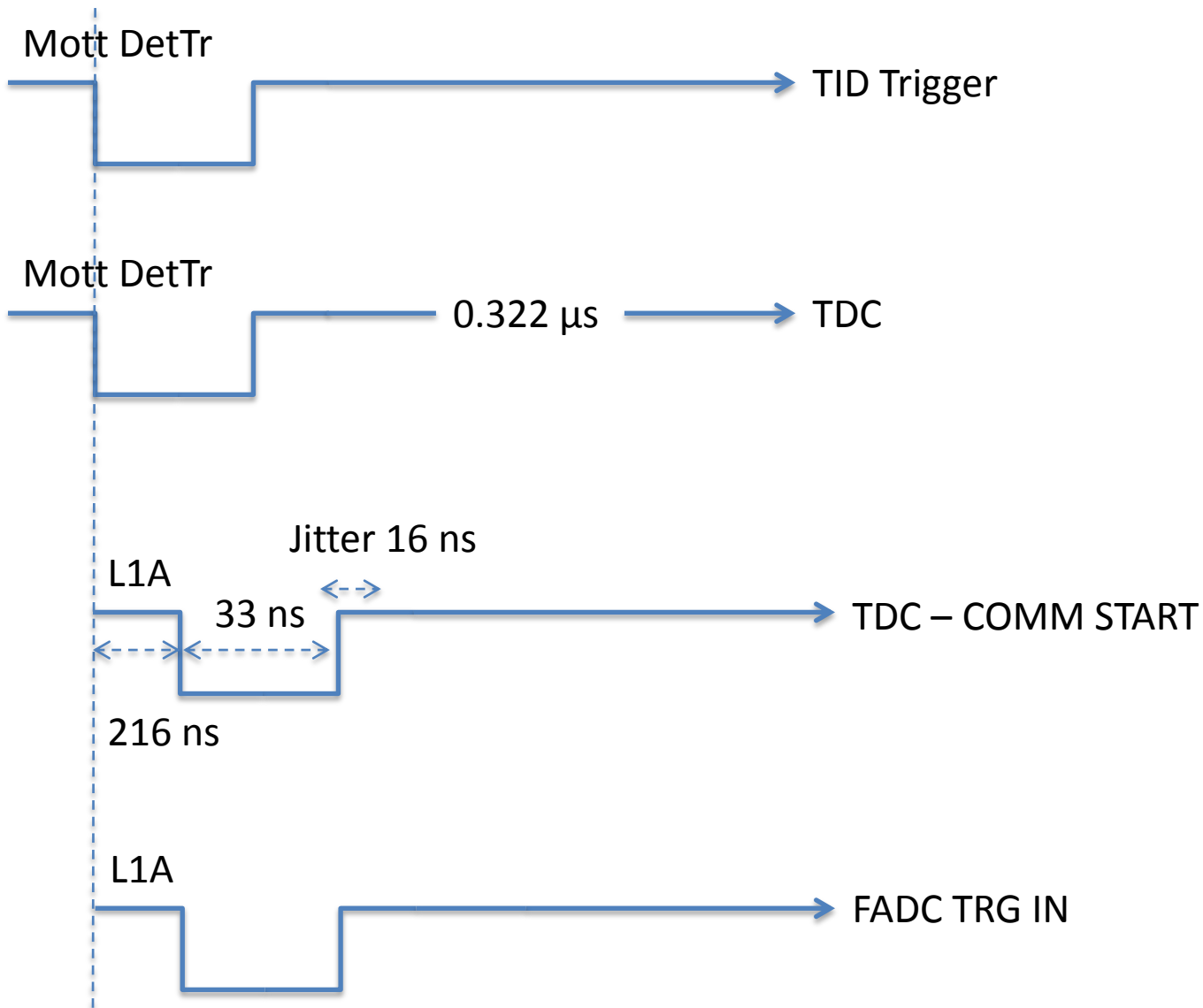
Delayed Helicity

- $\Delta T(\text{nTSettle-Delayed Hel}) = 950 \text{ ns}$
- $\Delta T(\text{nTSettle-PatSync}) = 1.1 \text{ us}$
- $\Delta T(\text{nTSettle-PairSync}) = 940 \text{ ns}$

# Scalers / FADC\_Int



# Mott Signals



## Busy Delays

All the measurements were done using the configuration (or control readout list “crl”) files used during the data taking.

TOT Busy (us)	Mode	Use	Channels
47.6 - 52.4	FADC Int	Electron production	At 30 and 960Hz
214	Mott Sample	Mott production	

## Busy Delays

The evaluation of the busy signal for each single piece was done starting from the configuration files used during the data taking. To evaluate each contribution all the other boards were removed from “trigger” session of the crl file. ONLY the correspondent board was read.

Busy (us)	Module	Mode	
106	FADC	Mott Sample	16 channels and 500 samples
83	FADC	Mott Sample	16 channels and 148 samples
25 - 26	FADC	FADC_Int	16 channels
14.8 – 17.4	TDC		
31 - 32	Scalers (S1+S2)		Both boards together
11.8 - 13.2	Scaler S1		Only Scaler S1
8.8 - 9.9	All the environment		NO readout of any board

# Delays & Signals

Signal	Delay	Width	Jitter	
S1 LNE = nTSettle delayed	180ns	70us		
TID Trigger = nTSettle delayed	428ns	70us		
TDC Mott Det .Trigger	322ns			
L1A - Det. Trigger	216ns	33ns	16ns	
L1A FADC Tr input	1.8us			
TDC PEPPo Detectors	760ns			220ns ribbon cable + 510 JLab discrl + 10ns modules delay
TDC CH19 (TS1)	812ns			
TDC CH21 (TS1B)	912ns			
121kHz clock	8.16us			
TS1 octal unit PEPPo NIM crate	252ns	158ns		Signals from Mott LVT2, Coincidence signal
PMT5 (FCD)	165ns			Signal from PEPPo Lin Fan In/Out, cable delay only (156ns)

Signal	Amplitude	Width	
TTL detector signals in S2	+5V	20ns	From PEPPo LVT
NIM detector signals in S1	-0.7V	20ns	