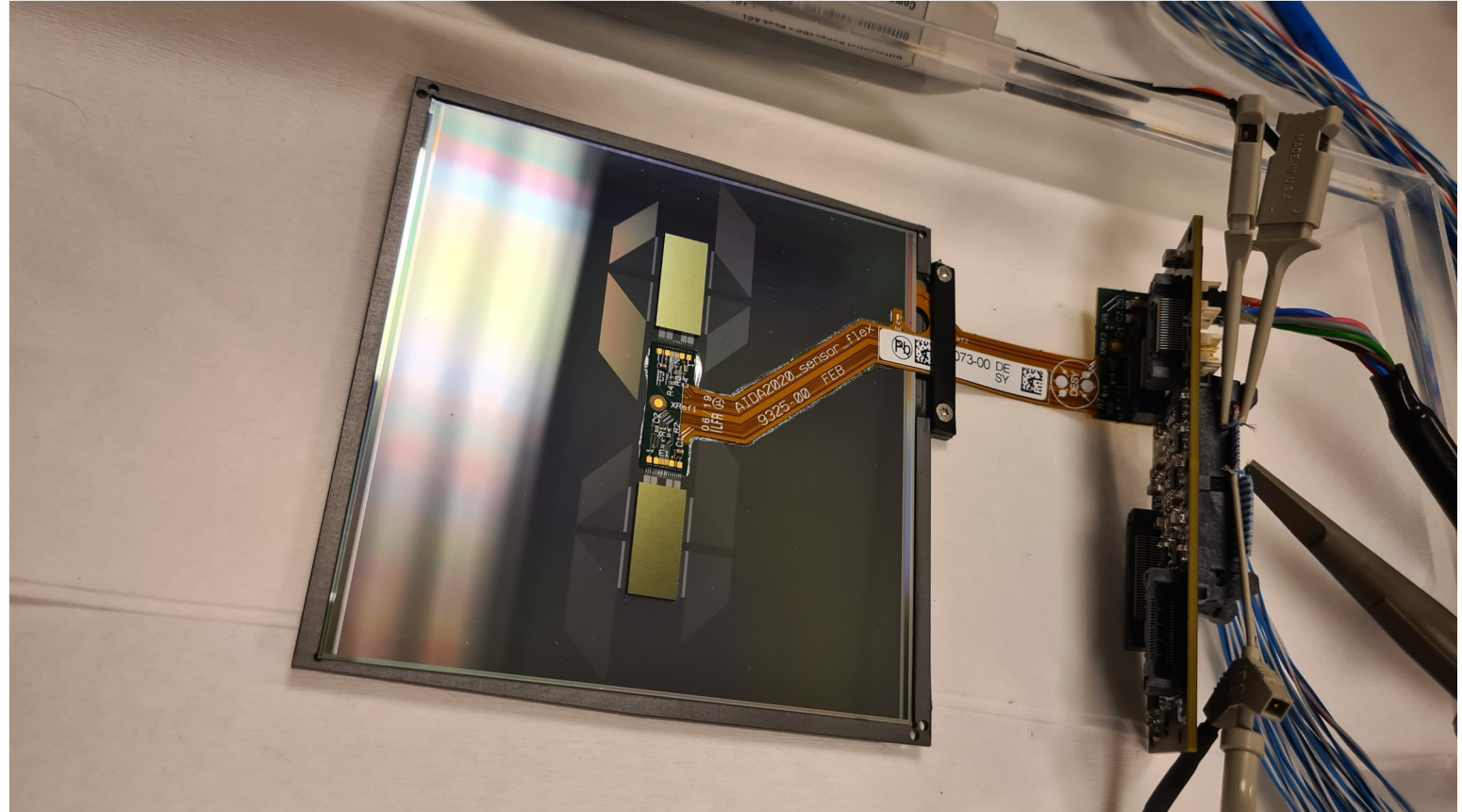


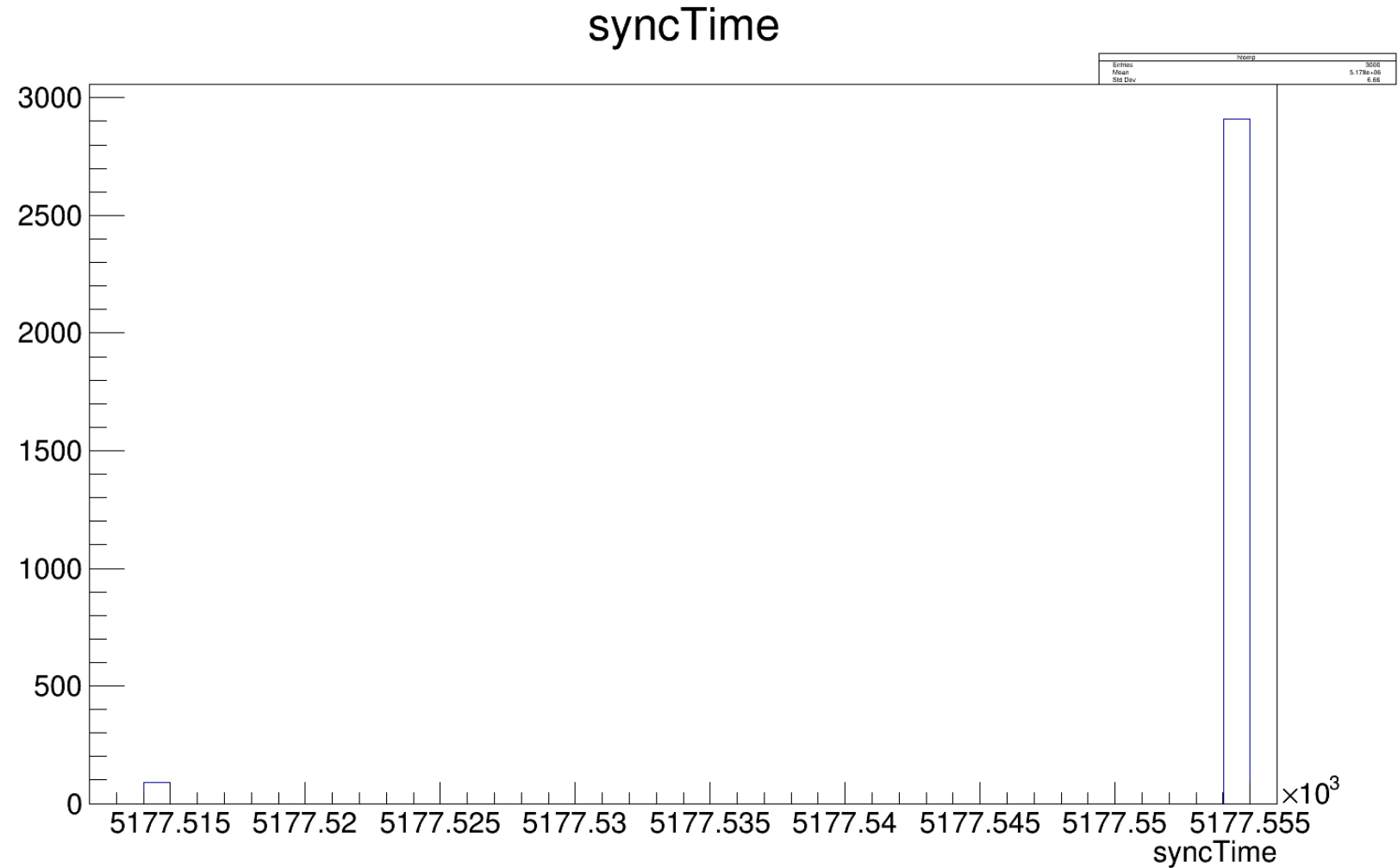
Asynchronicity

- Tested 3 sensors for asynchronicity, found two that were asynchronous above $TDD = 0$
- One sensor was synchronous even at $TDD = 24$
- In this case all sensors were plugged into the same cassette board with the same slot.
- I repeated each measurement 3 times
- So the issue cannot lie before the Kapton Flex.



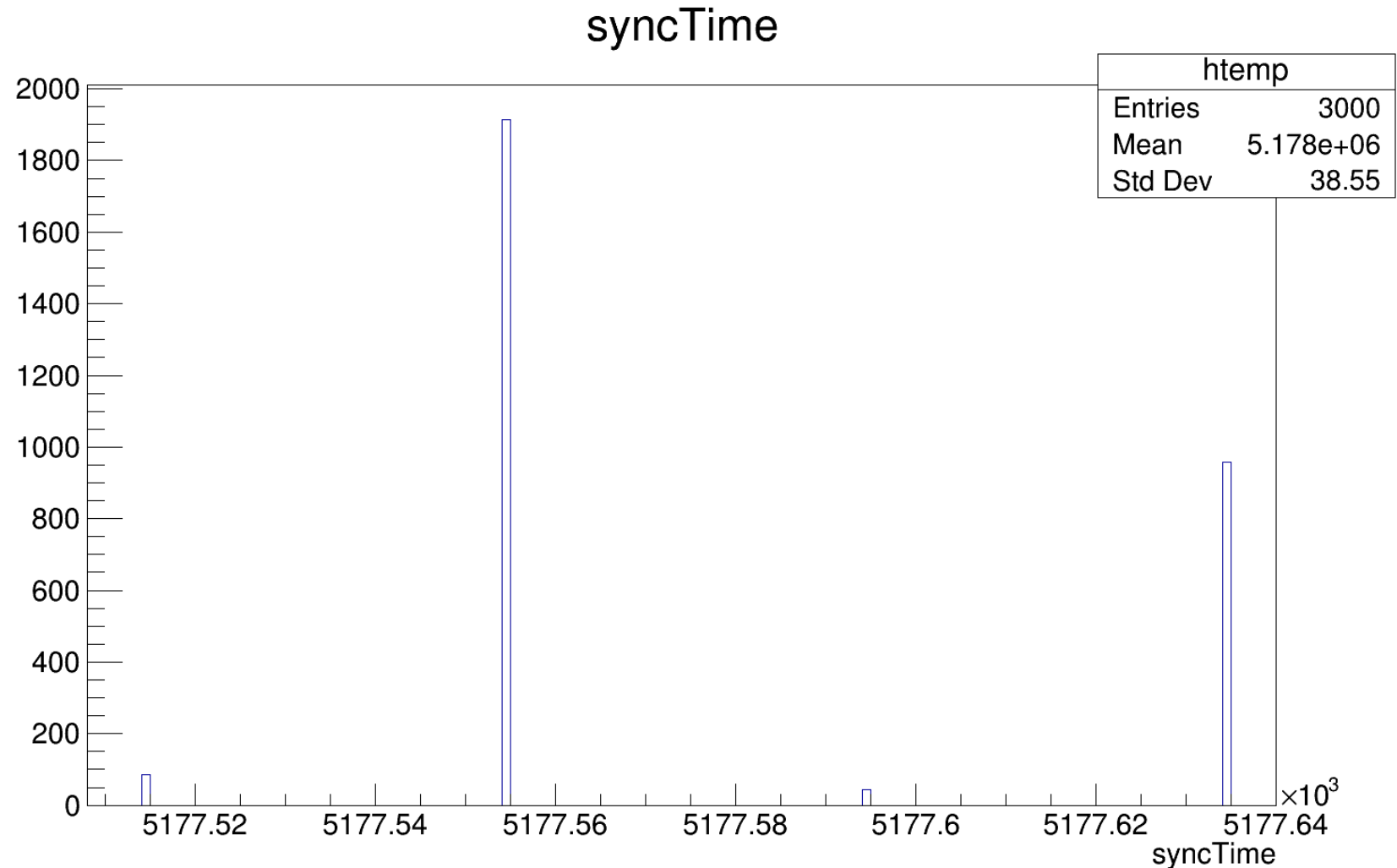
Synchronous

- Synchronous showing only 2 peaks (due to sometimes being on the edge of a cycle)
- These are all the same for both KpiX including the virtual one



Asynchronous

- Asynchronous showing 4 peaks where one KpiX has the same behavior as the other two but shifted in time
- This one KpiX does not line up with the virtual KPiX



Clock probing

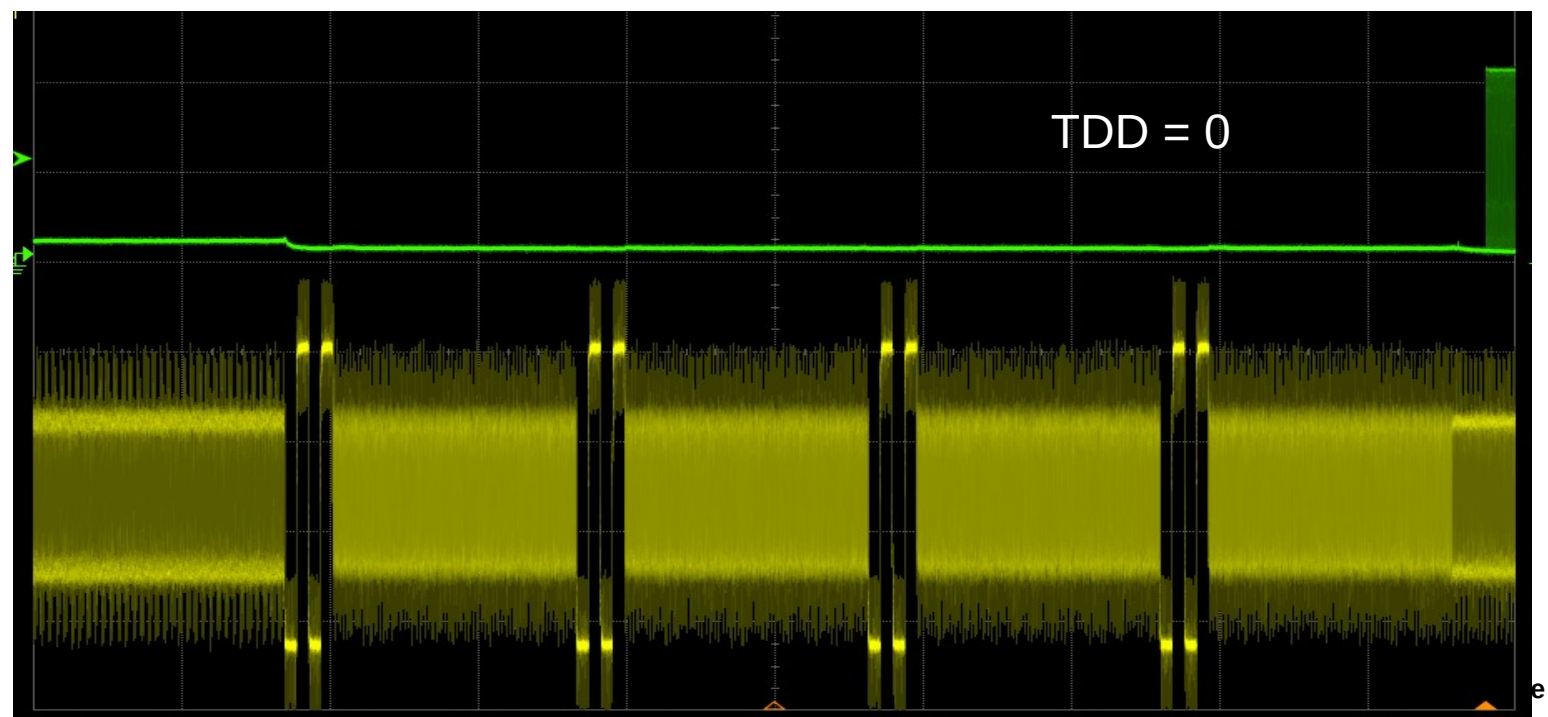
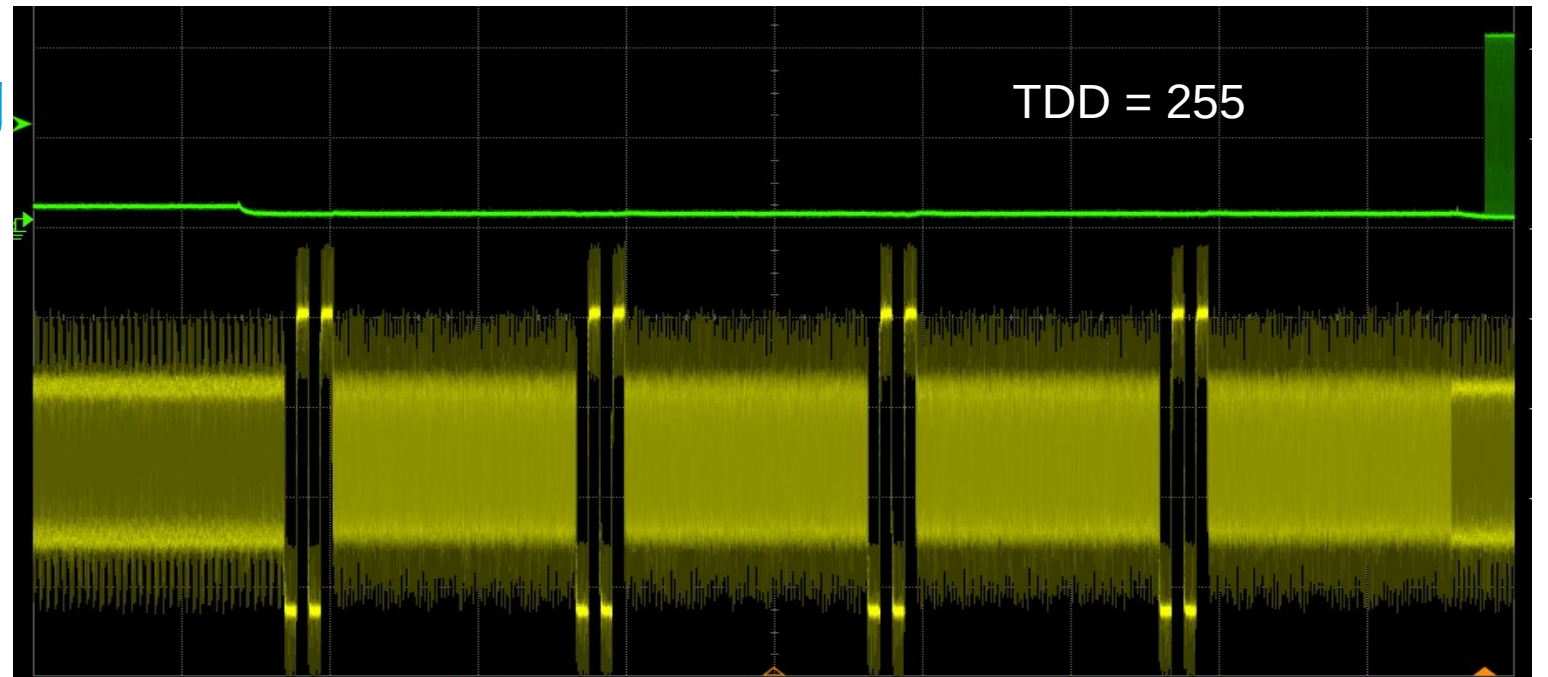
- Attached probes to two sensors. One synchronous sensor and one asynchronous sensor.
- Once again probed the clock and data lines.

Clock probing

- Attached probes to two sensors. One synchronous sensor and one asynchronous sensor.
- Once again probed the clock and data lines.
- Probing done at TDD = 0 and TDD = 255 for both (also TDD = 24 for the asynchronous)

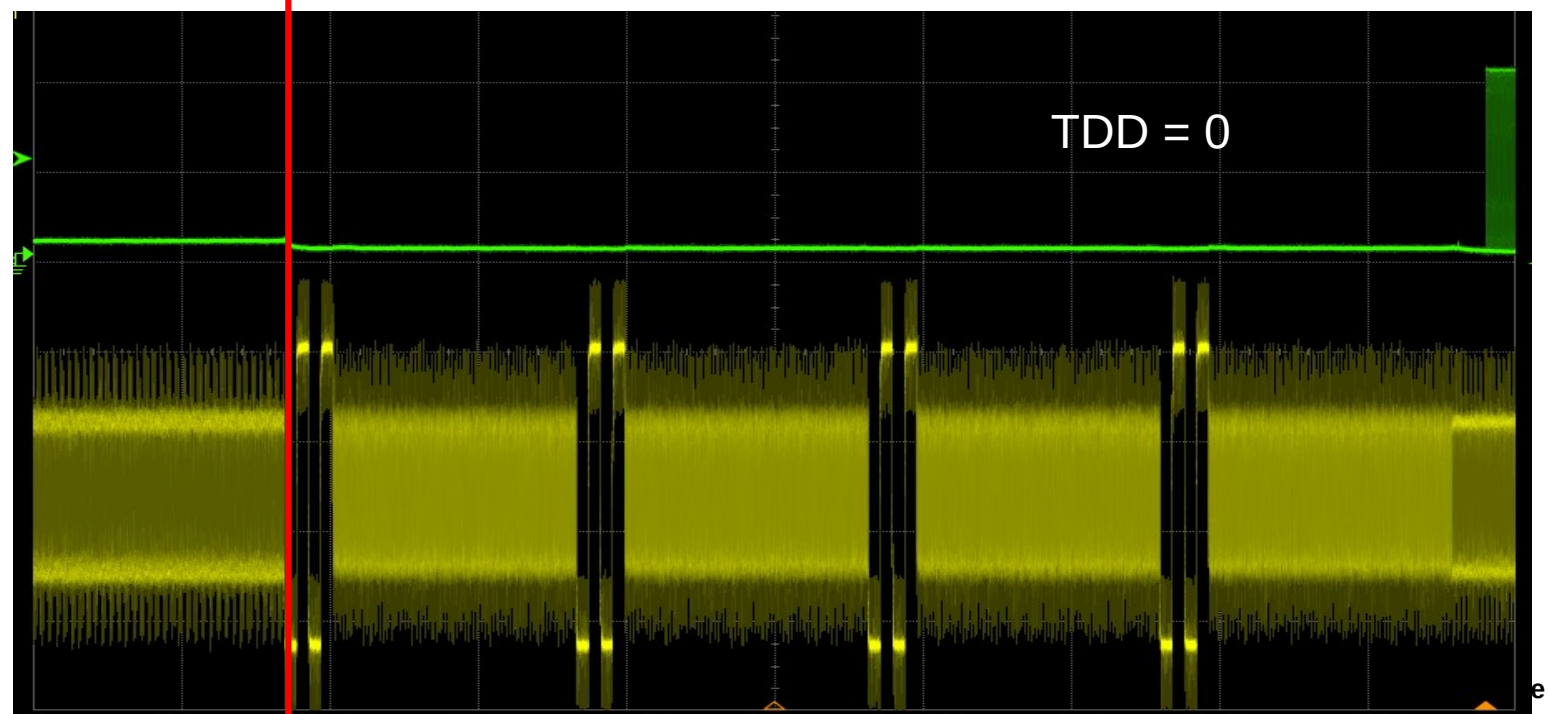
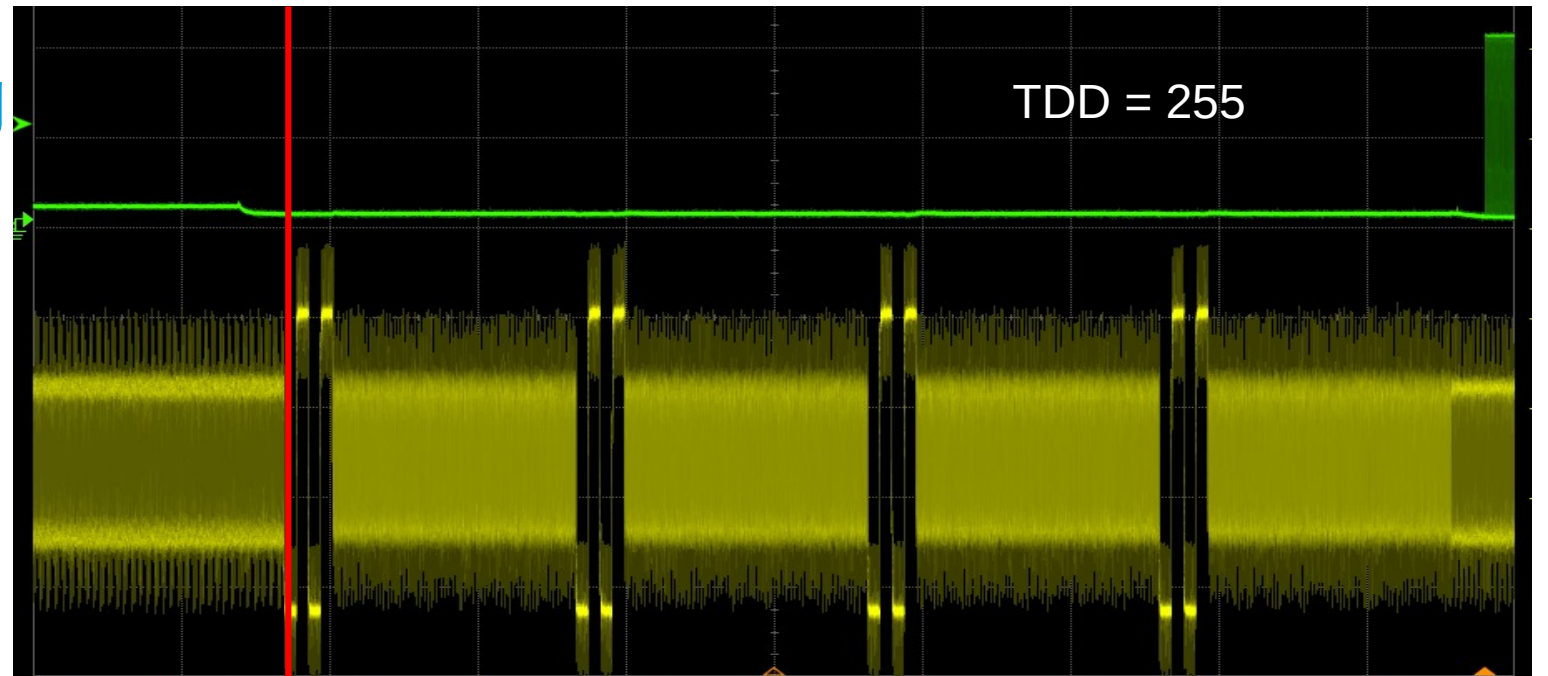
Synchronous probing

- Actually visible on the data line faintly is what appears to be the end of the data taking phase. Shown by the small dip of the green curve



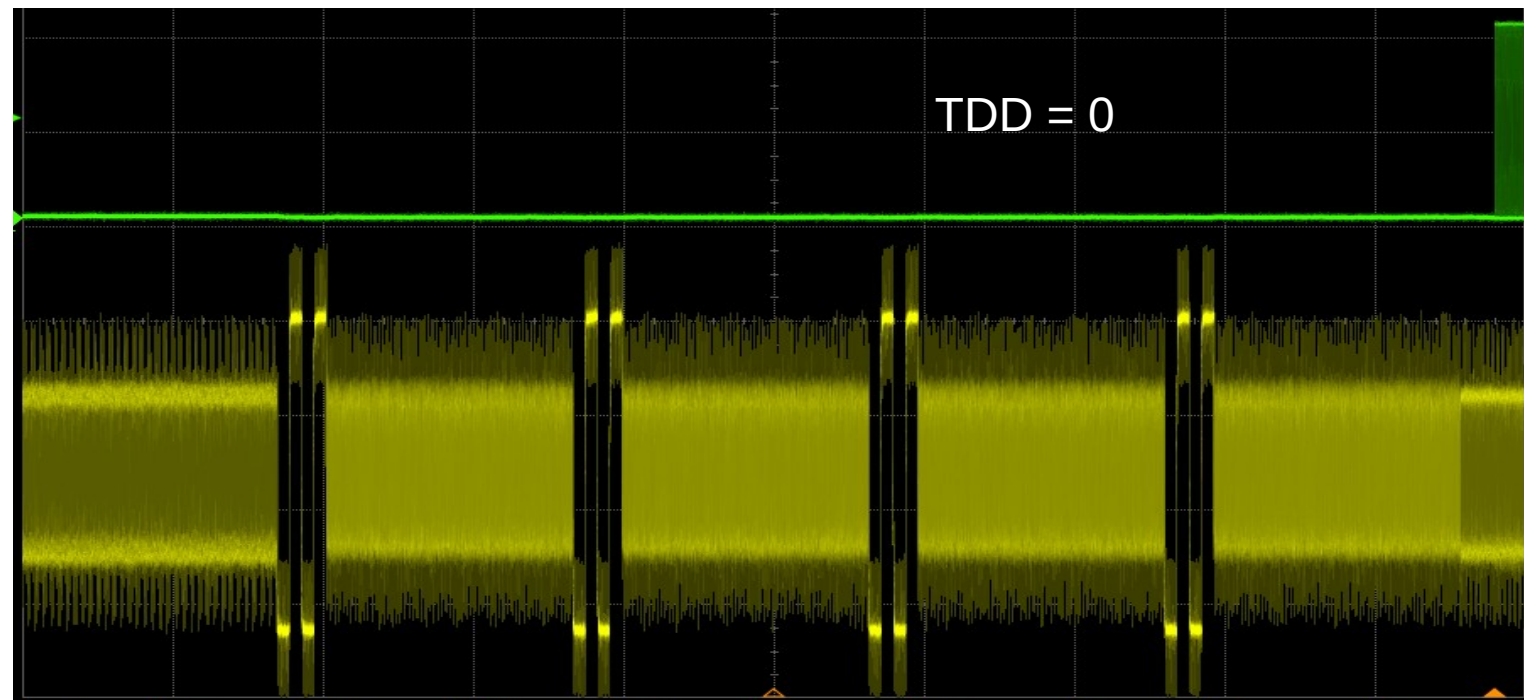
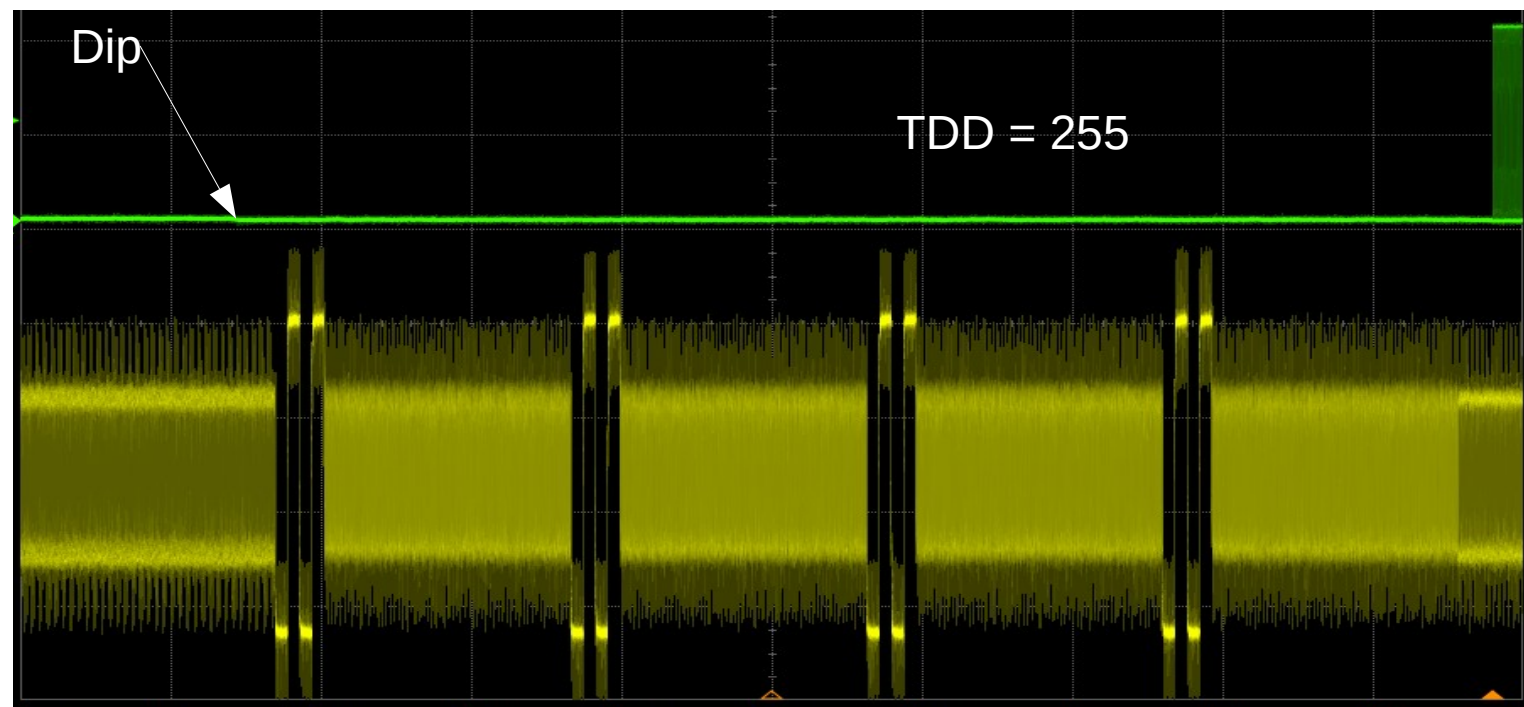
Synchronous probing

- Actually visible on the data line faintly is what appears to be the end of the data taking phase. Shown by the small dip of the green curve
- Comparing it between the upper TDD=255 and the lower TDD=0 shows exactly where TimeDigitizeDelay acts and what clock it is based on, the **AcquisitionClock**



Synchronous probing

- The same is true for the asynchronous sensor though here the dip after Acquisition is much smaller.



Synchronous probing

- If we say the issue lies with the clock and it only appears during settings in which $TDD \neq 0$.
- Then any such clock issues must be in the blue area to the right unless the TDD somehow affects areas completely unrelated to it.

