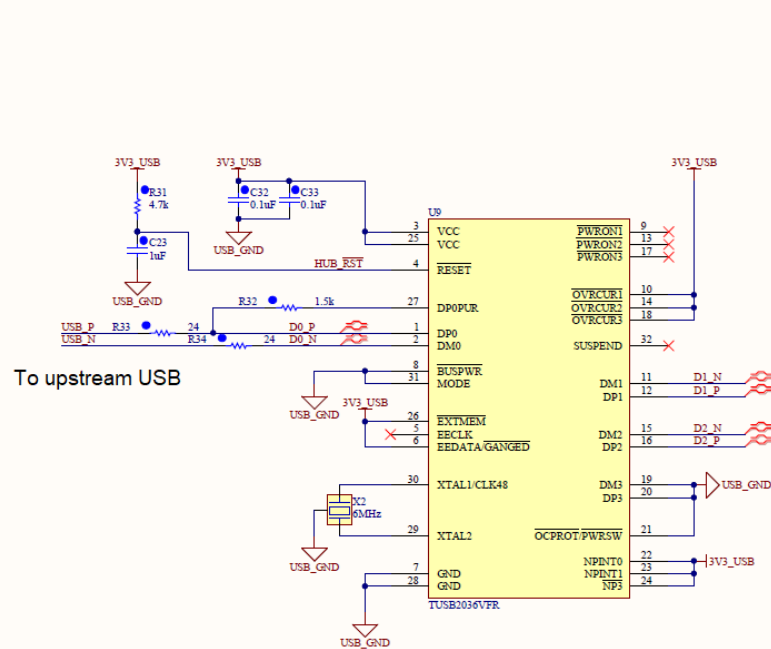


# TUSB2036 Troubleshooting

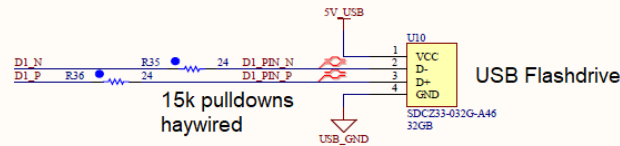
# Symptoms

- USB hub recognized
- Downstream devices show error “This device cannot start. (Code 10) Insufficient system resources exist to complete the API.”
  - Flashdrive is recognized as “USB Mass Storage Device”
  - FTDI FT4232H only recognized as “USB Composite Device”
- No power complaints on my desktop
- On two laptops, windows gives two warnings for “The hub does not have enough power to support the [USB Mass Storage Device/USB Composite Device]”

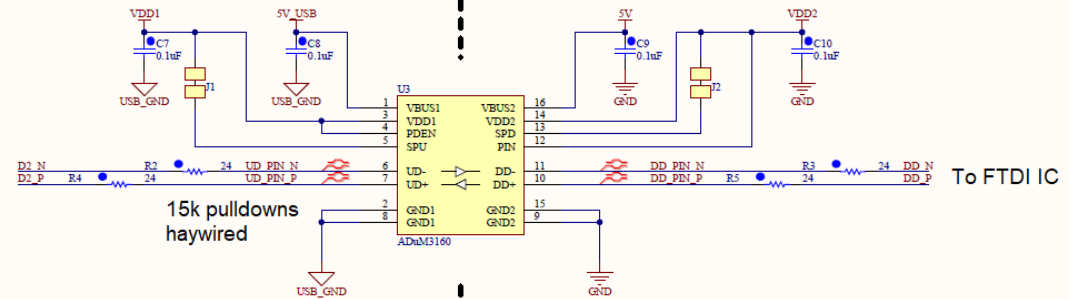
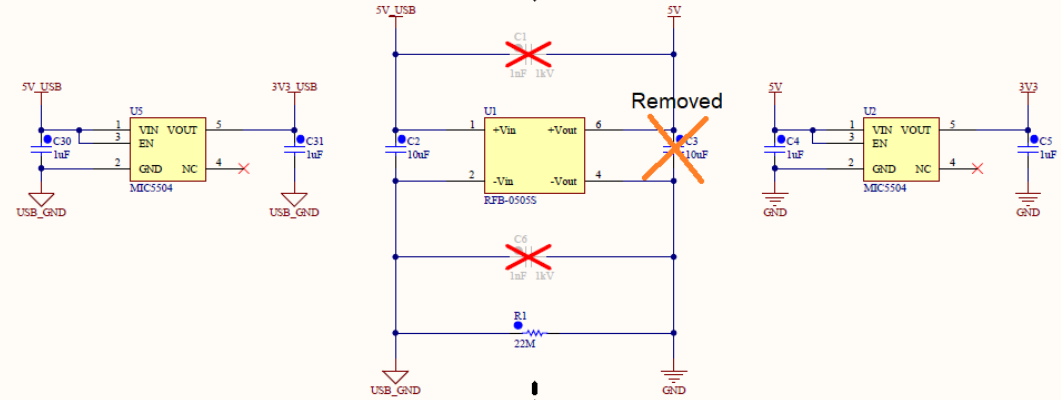
# Schematic



Configuration  
 - 2 downstream ports (NP3 = 0)  
 - All 3 ports configured as non-removable, though internally set as 2 since NP3 is not active (NPINT = 11)  
 - Downstream current protection as far as host is concerned (not actually implemented) (OCPROT = 1)

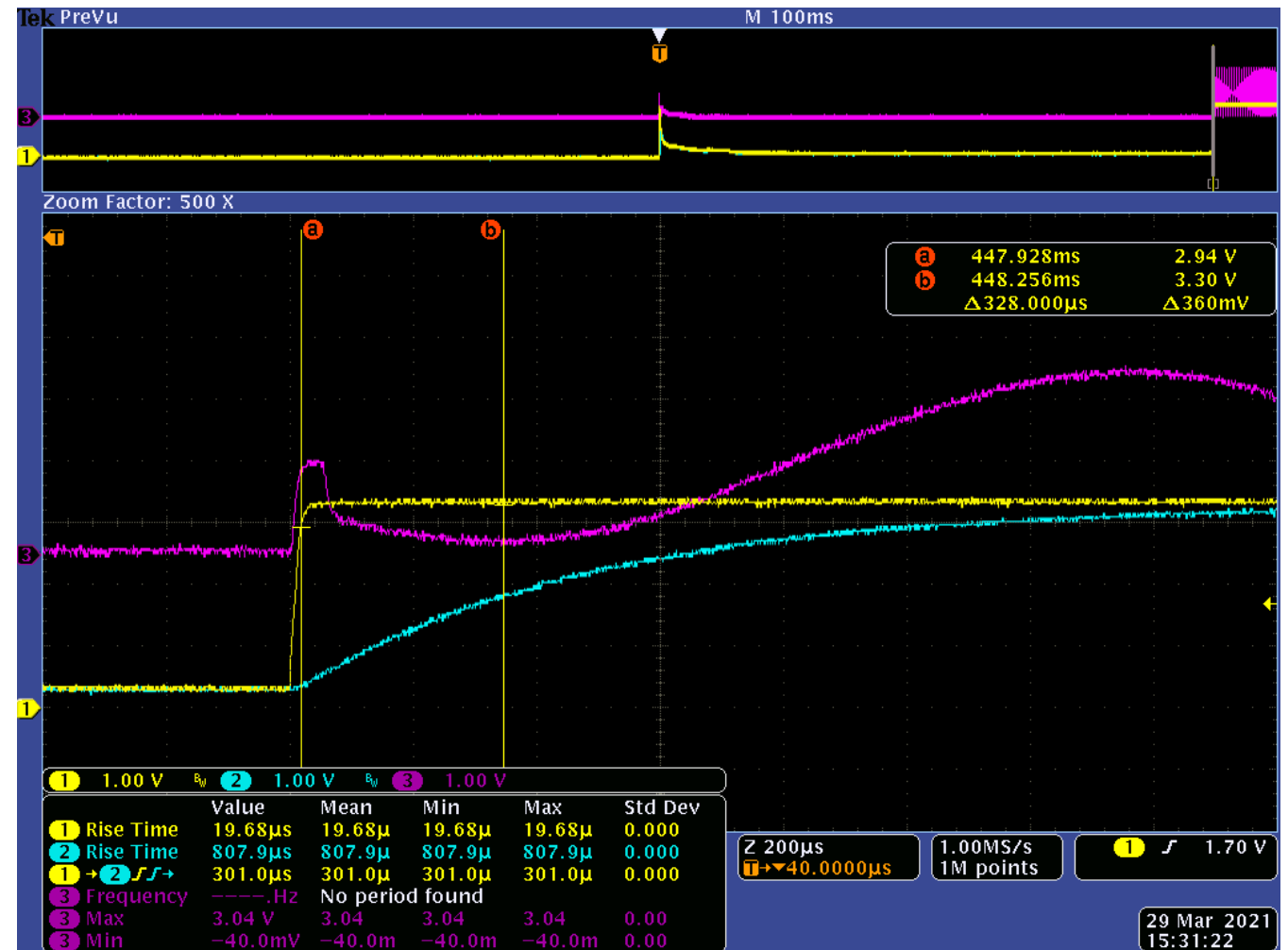


USB SIDE DUT SIDE



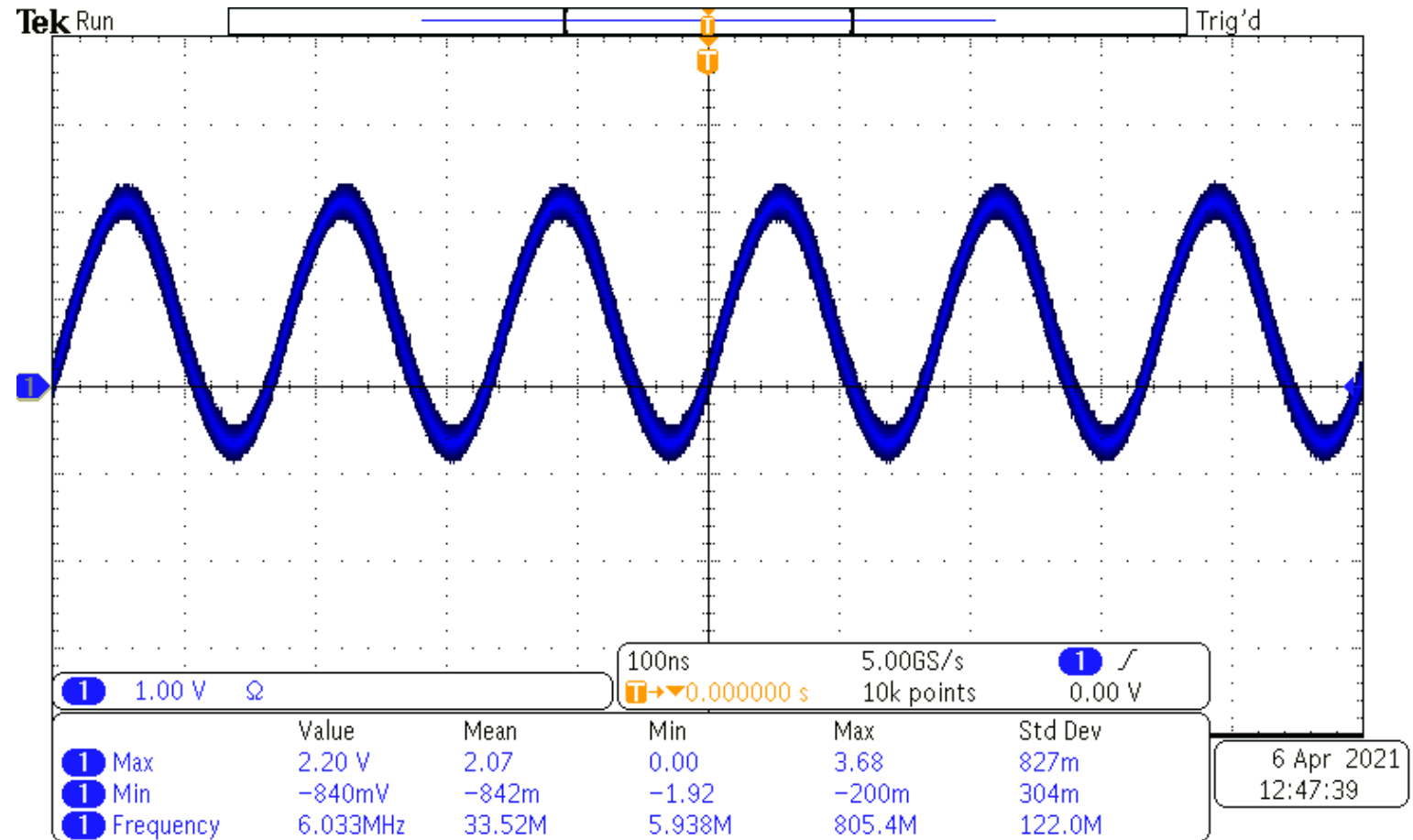
# Power-on Reset

- CH1 – 3.3V\_USB
- CH2 – Reset
- CH3 – XTAL1 pin
  - Due to 1MS/s rate the 6MHz oscillation is not shown properly. I have confirmed that it is working fine.
- Timing from 90% VCC (2.97V) on VCC to V(IT)+ (1.8V) on reset

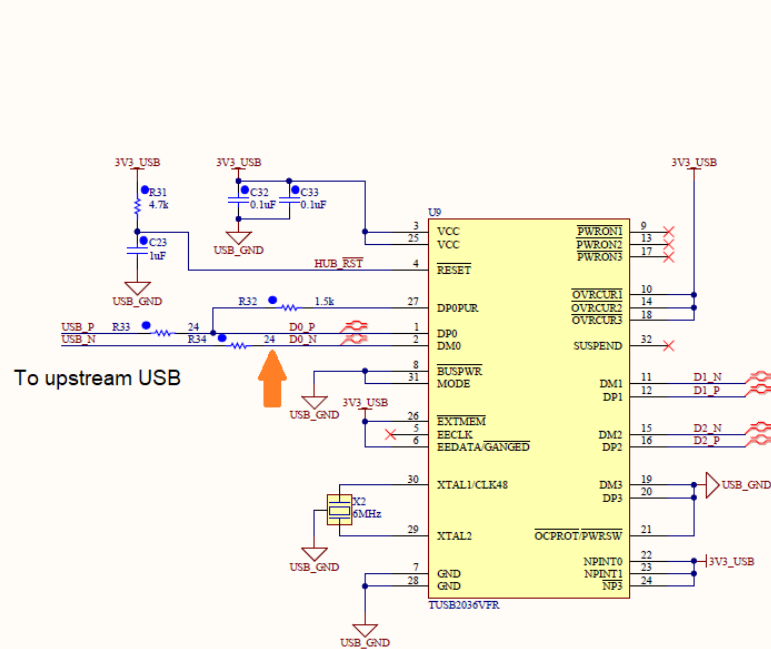


# XTAL1 Input Pin

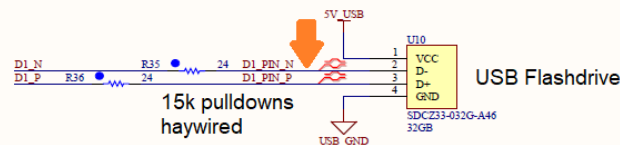
- Overdriven
- Within max operating range



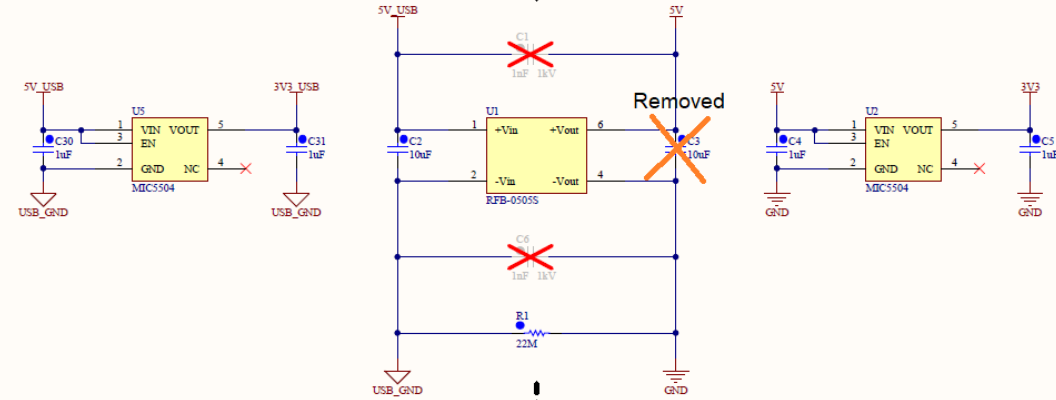
# USB Probe Points



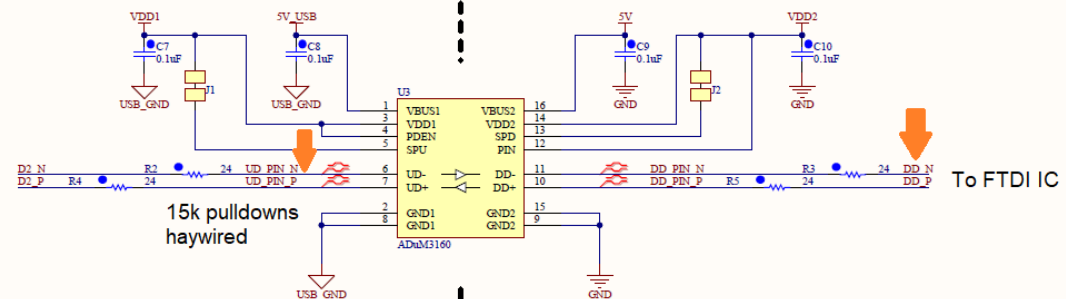
Configuration  
 - 2 downstream ports (NP3 = 0)  
 - All 3 ports configured as non-removable, though internally set as 2 since NP3 is not active (NPINT = 11)  
 - Downstream current protection as far as host is concerned (not actually implemented) (OCPROT = 1)



USB SIDE DUT SIDE



Removed



15k pulldowns haywired

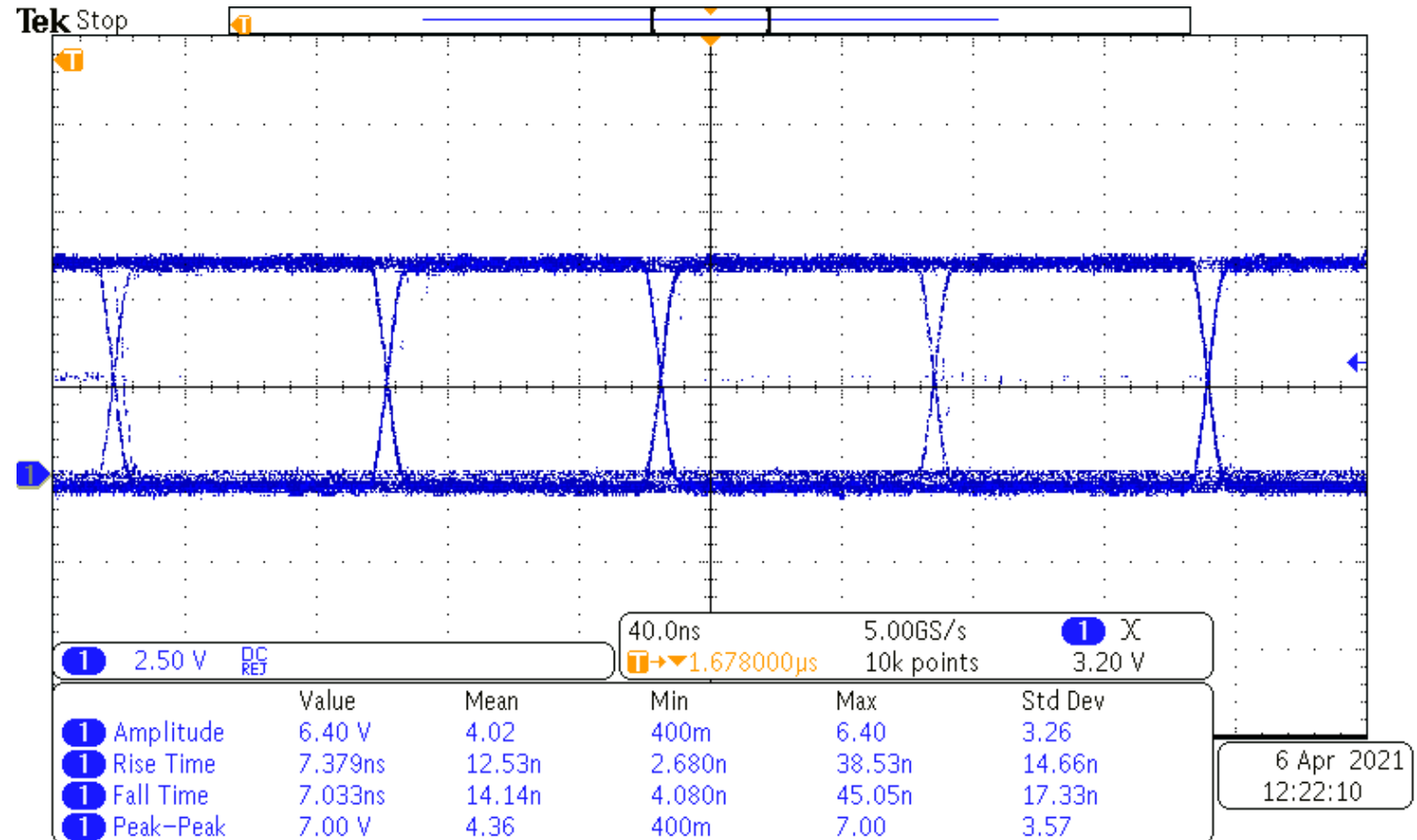
To FTDI IC

- R33 and R34 on TUSB2036 side (PD0 and PM0)



# Downstream Port 1

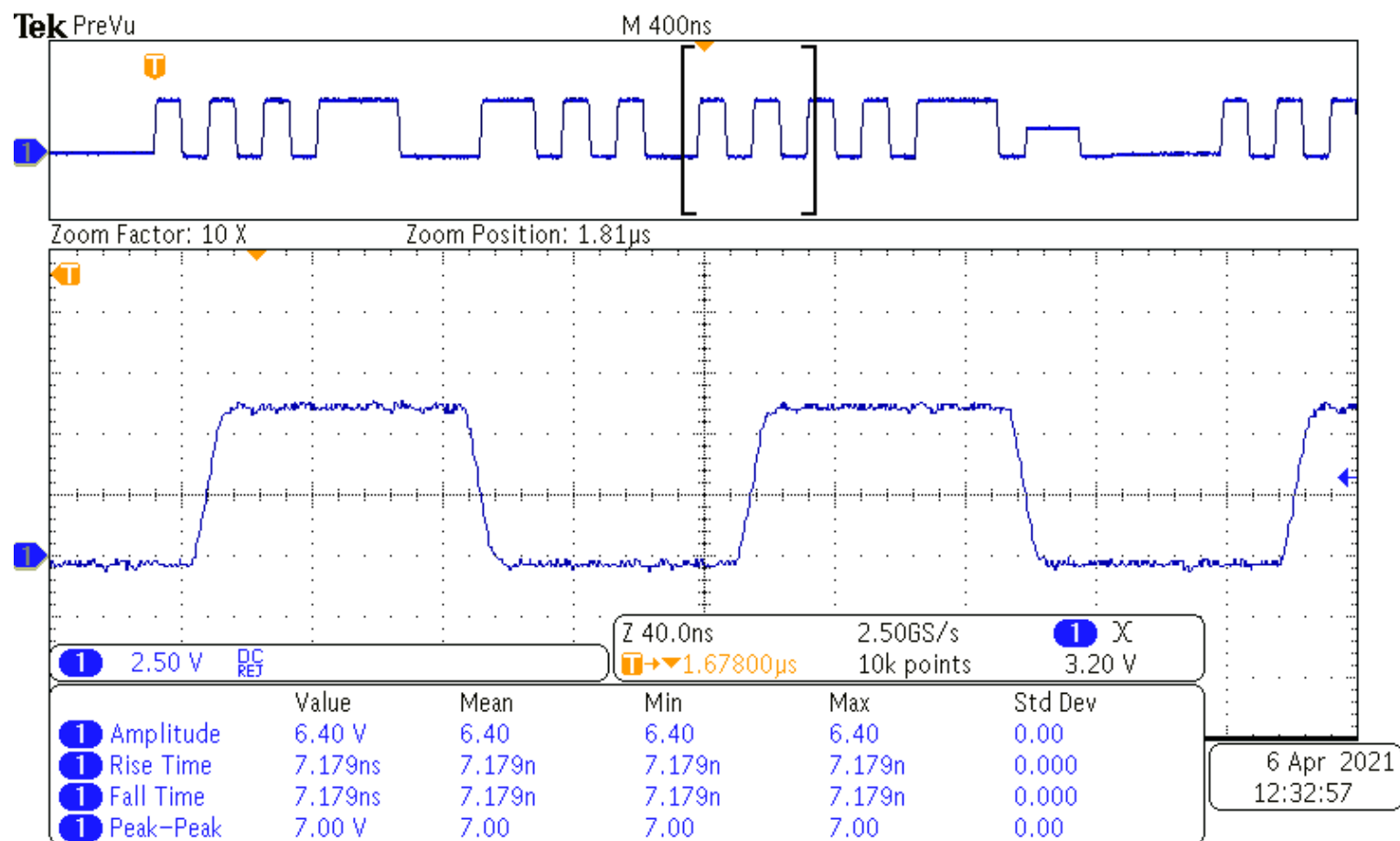
- R35 and R36 on flash drive side





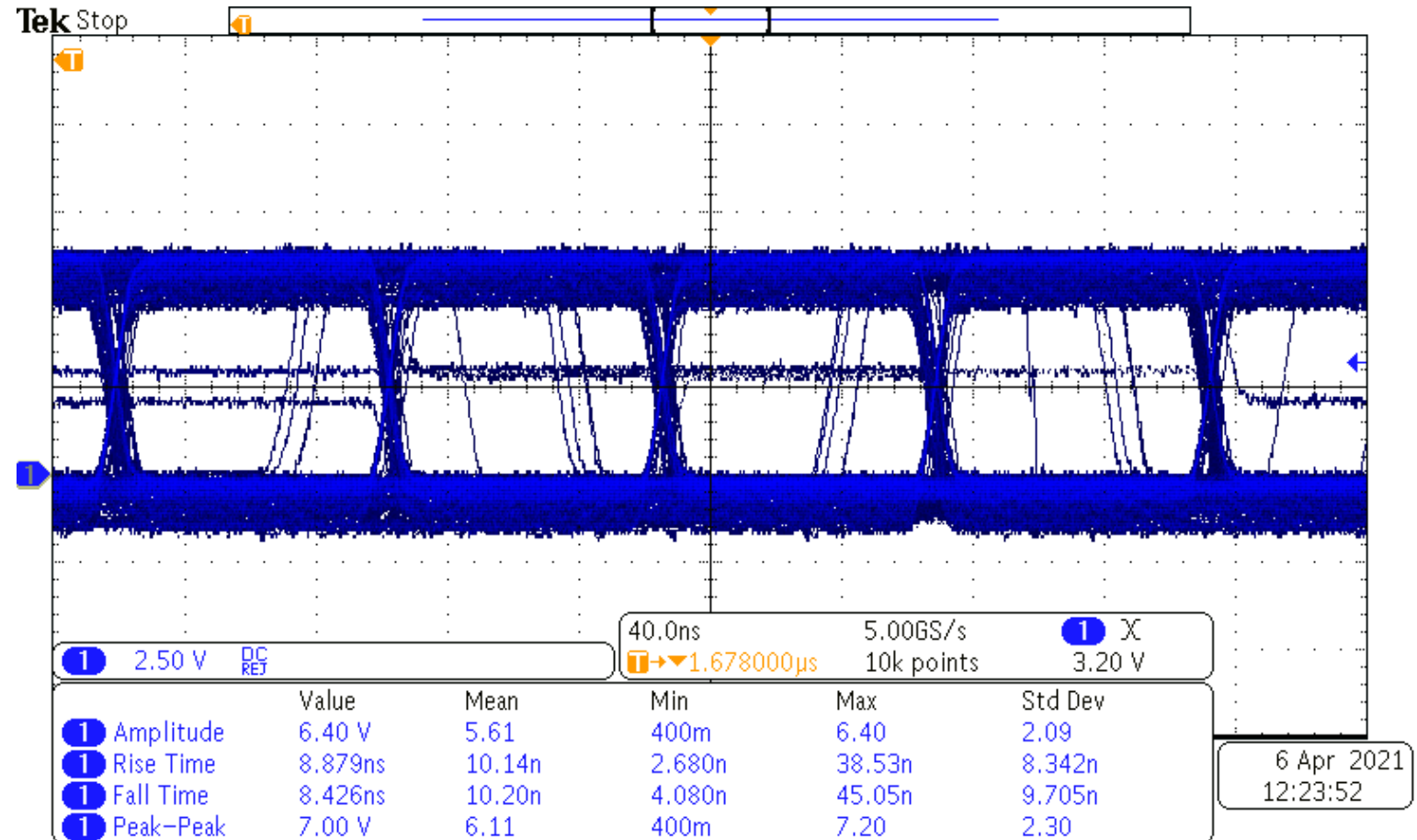
# Downstream Port 1

- R35 and R36 on flash drive side



# Downstream Port 2

- R2 and R4 on ADuM3160 side
- I did not attempt to capture a single transaction like for port 1 (previous slide)



# Downstream Port 2 After Isolator

- R3 and R5 on FTDI IC side (on another schematic sheet)

