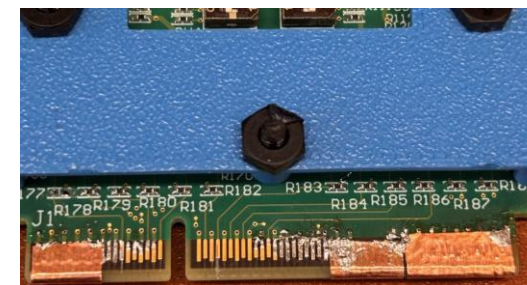
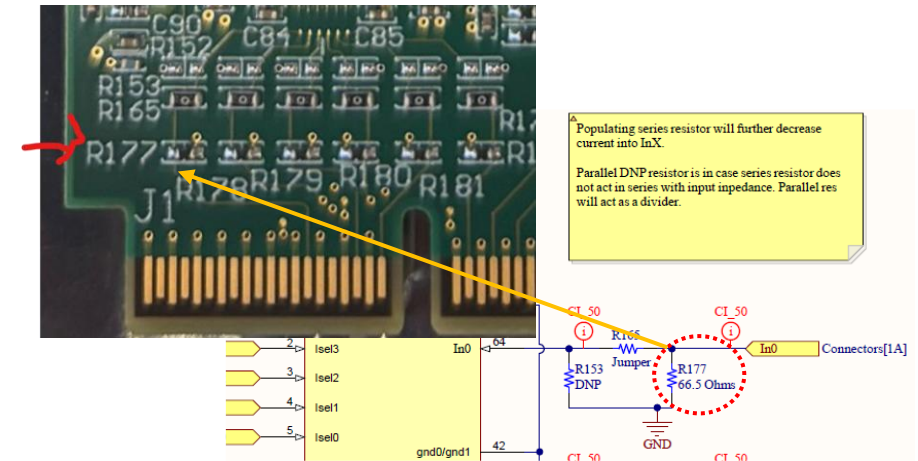
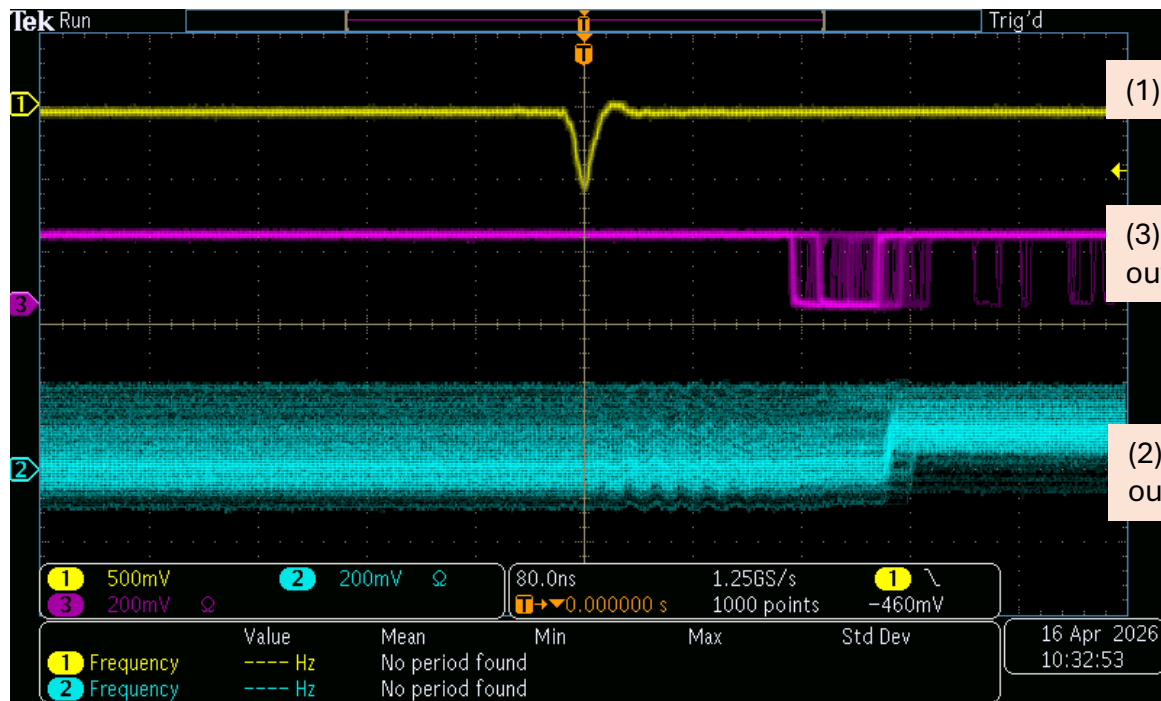


# FCFD evaluation card test status

Takao Sakaguchi, BNL on Apr 30, 2026

- Initial smoke test passed (Apr 13). Removed a 66.5 Ohm resistor placed at the input (Raymond's suggestion).
  - Found input/output channel mapping issue.
  - Big noise due to the "on-the-fly" pulse injection system
- Analog should come after discriminator.
- All unused pins are connected to GND (were floated).
  - One channel is found dead. Opened another one (removed 66 ohm)



# Issue and next step

- Issue
  - Initial stage of the FCFD is Transimpedance Amplifier (I to V converter), instead of Integrator. Should be same low impedance (virtual ground) at the input of the chip.
  - 66.5 Ohm was placed to make the input impedance of the card to 50 Ohm, and to attenuate the signal to 25% level.
  - We are asking FCFD experts what to place.. No response so far.
- We should be able to feed HRPPD pulse to the card and test.
- Next steps
  - IO started wire-bonding for the rest five cards Monday last week. **Not finished yet as of today.**
  - Will send one card to Raymond for his test.

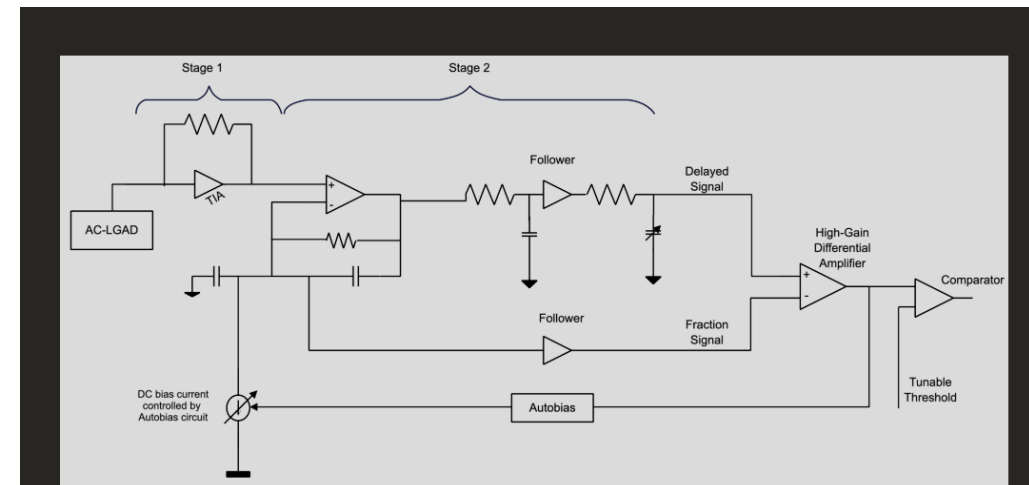
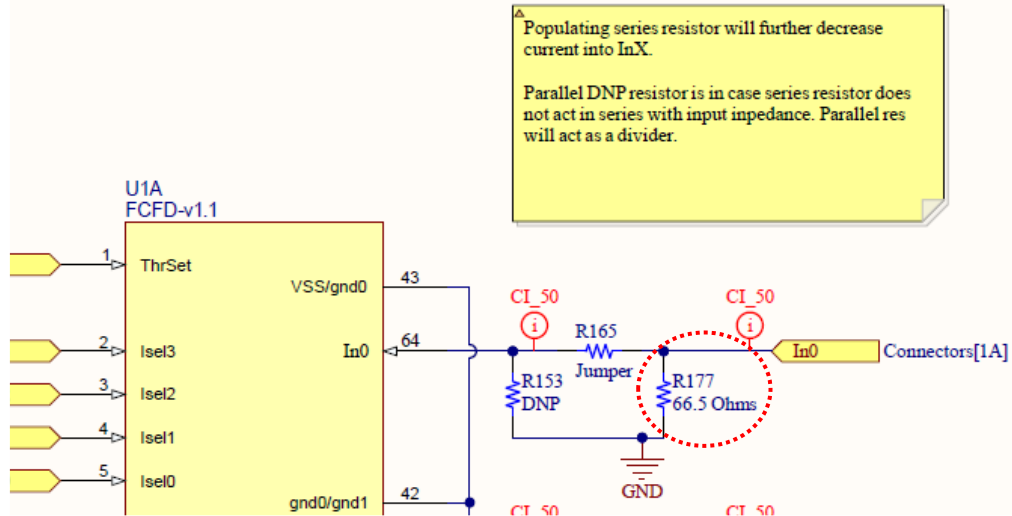


Figure 6: A simplified diagram of the 2-stage amplifier used in the FCFD1.1 ASIC, and its main blocks.

# Backup

