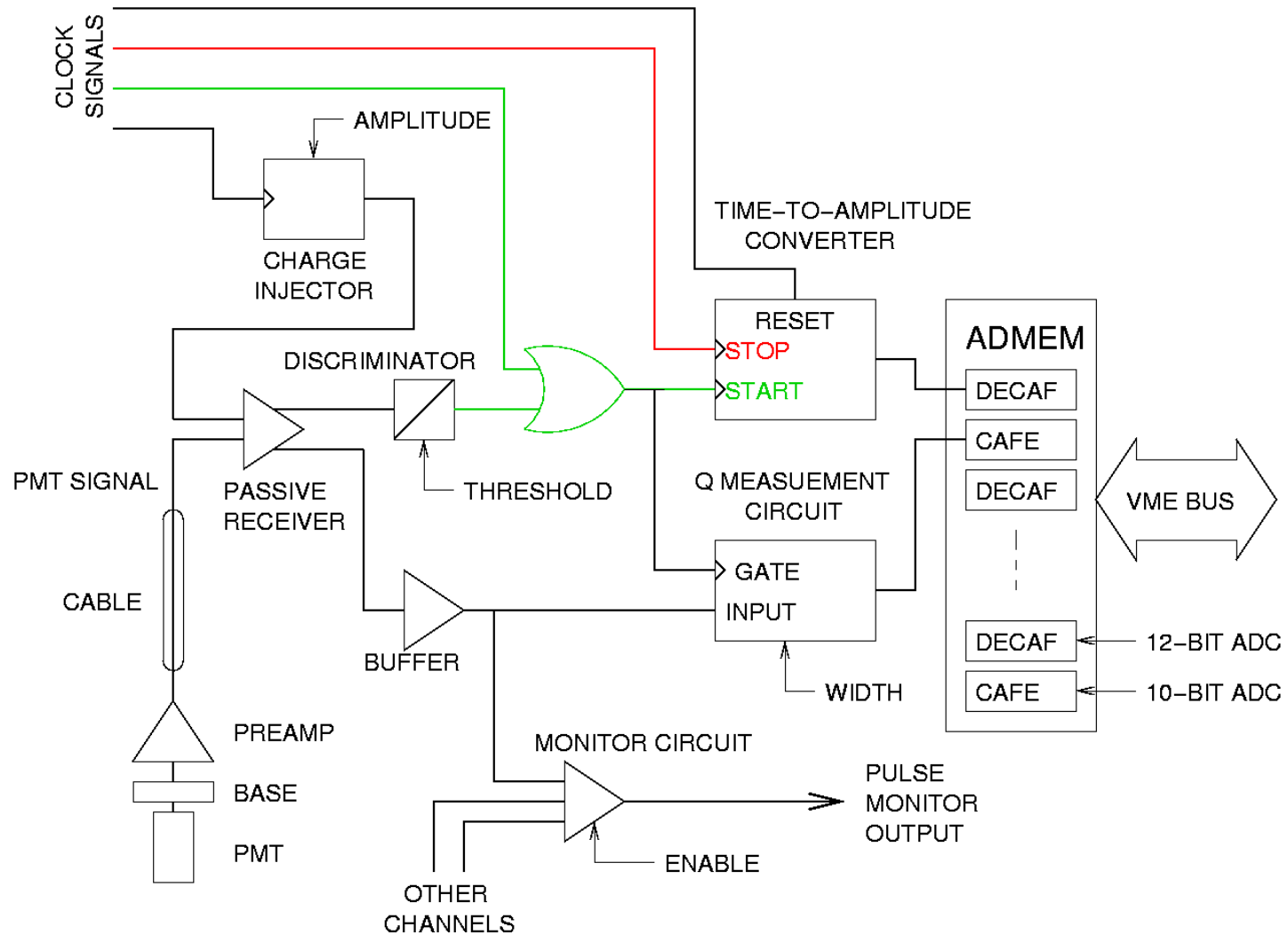


TOF Clock Distribution

- TOF clock distribution reminder
- TOF and CLC clock synchronization
- New clock translator modules

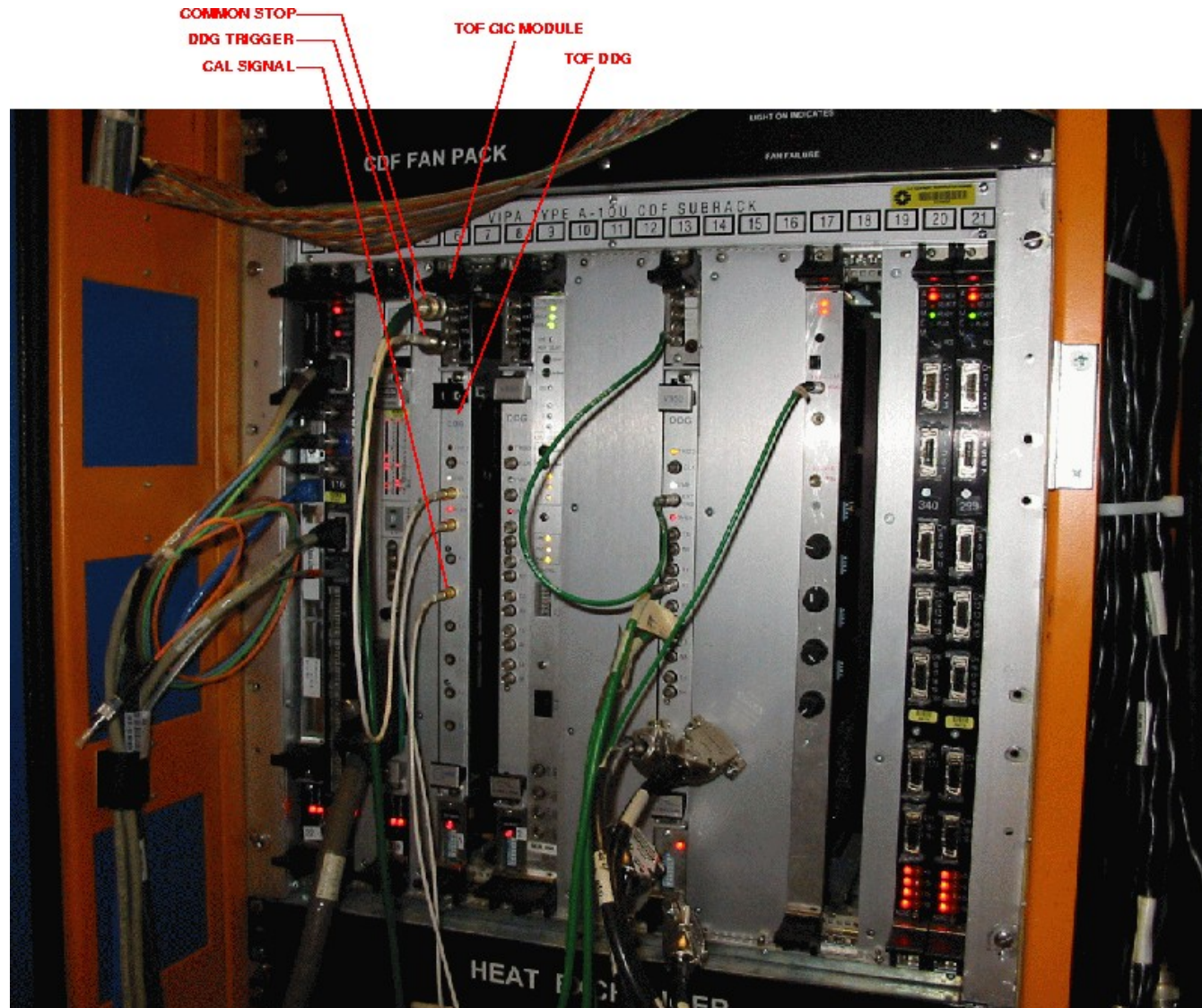
TOF Clock Distribution



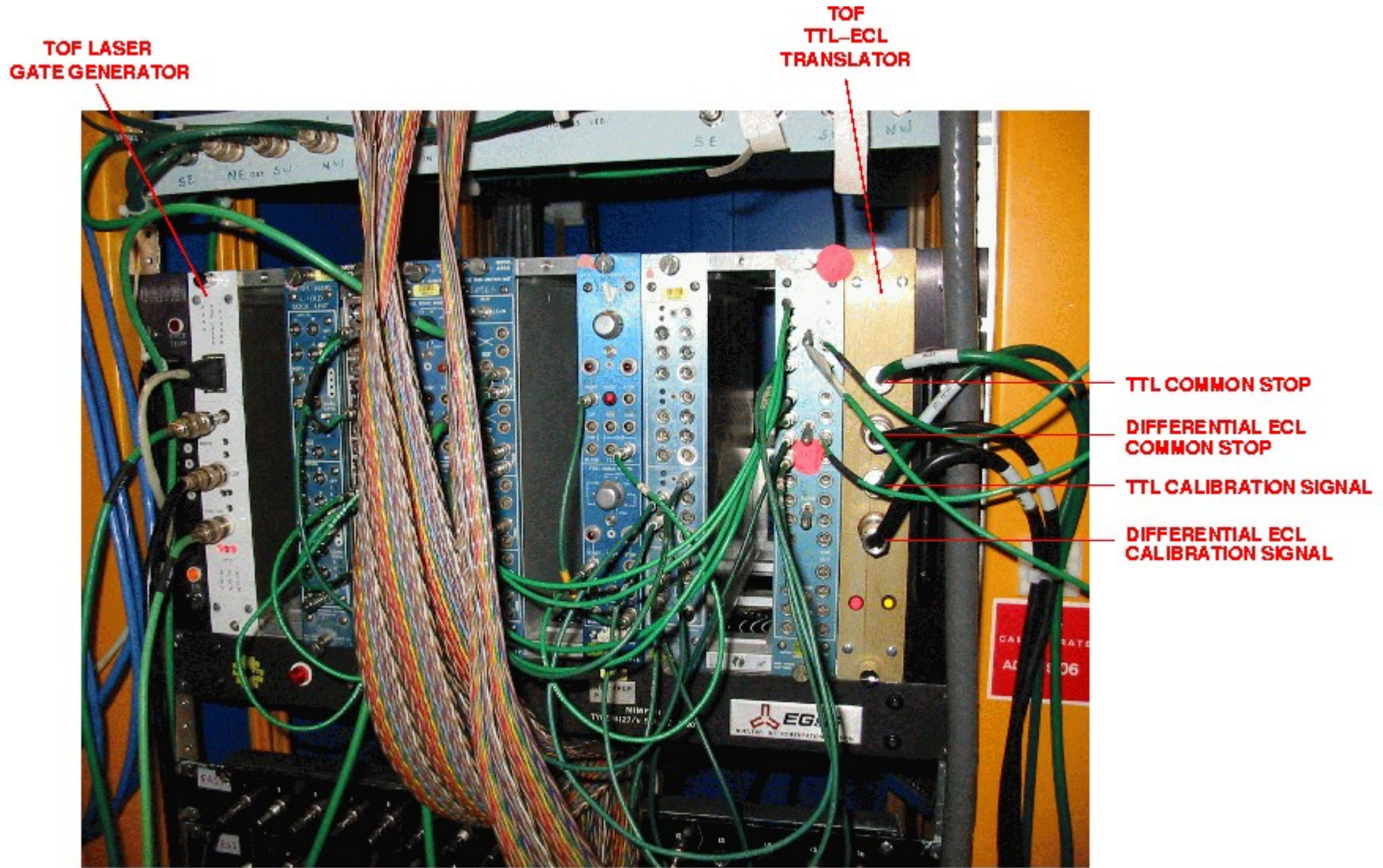
TOF Clock Distribution

- Time measured from discriminator pulse to common stop
- Common stop fanned out to all channels:
 - TTL CDF_CLK signal from 1RR18D
 - Translated to differential ECL in 1RR15F
 - 1:8 fanout in b0wcal00
 - 1:6 fanouts in b0wcal00..b0wcal07
 - 1:9 fanouts on TOMAIN boards

TOF Clock Distribution (1RR18D)

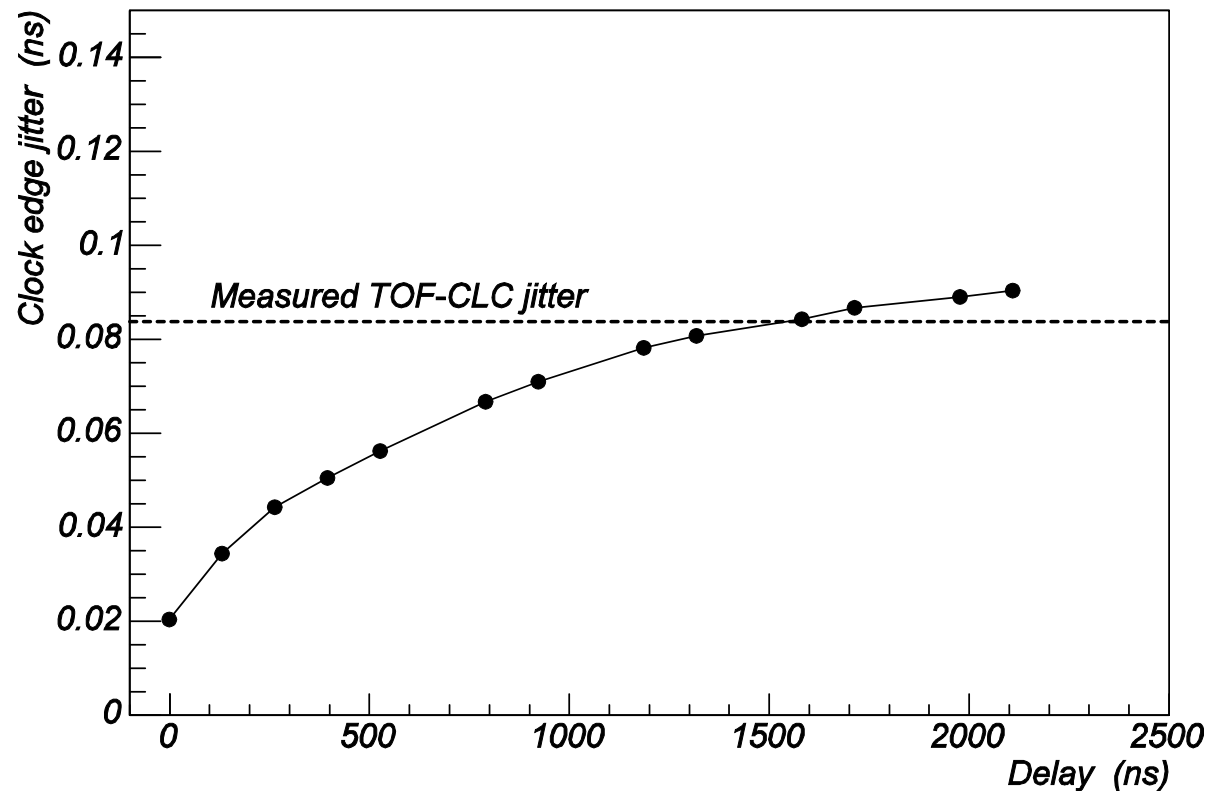


TOF Clock Distribution (1RR15F)



CLC Clock Distribution

- All the CLC timing is performed in the same crate
- One limitation of relative TOF-CLC timing is jitter between TOF and CLC clock signals.

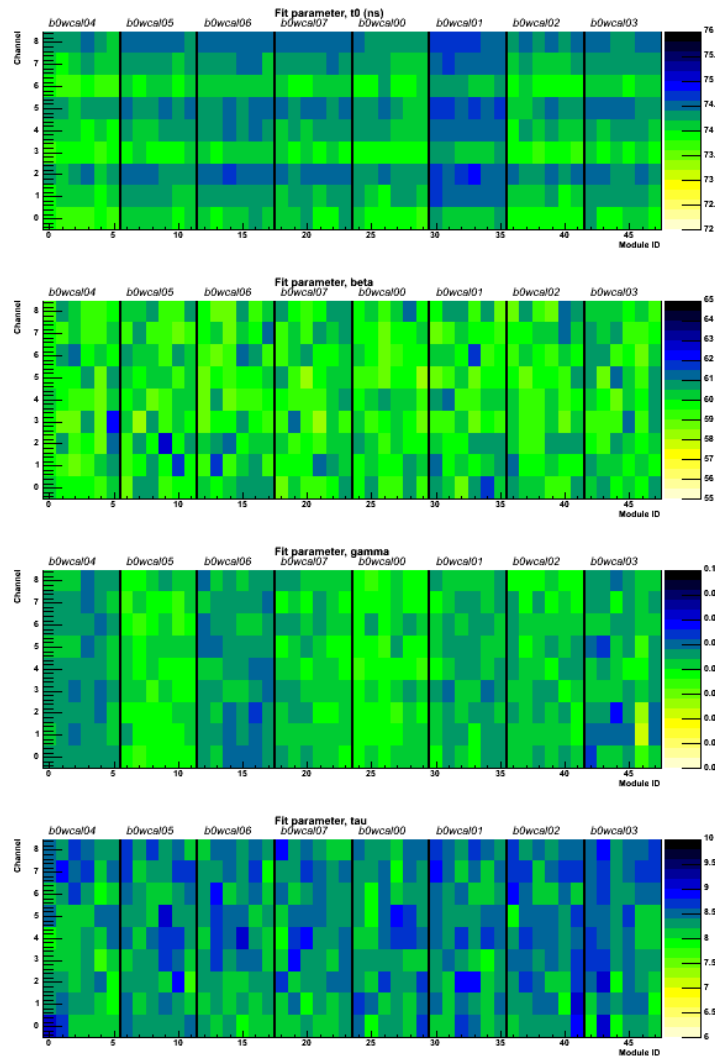


TOF-CLC Clock Synchronization

- Derive both TOF and CLC common stop signals from same source (1RR18D)
- Replace TTL→ECL translator module in 1RR15F by TTL→ECL + 1:2 fanout module
- New module also translates ECL→NIM for receiving clock signal in CLC NIM crate.
- Main difference for TOF is small change in timing of CAL and STOP signals.

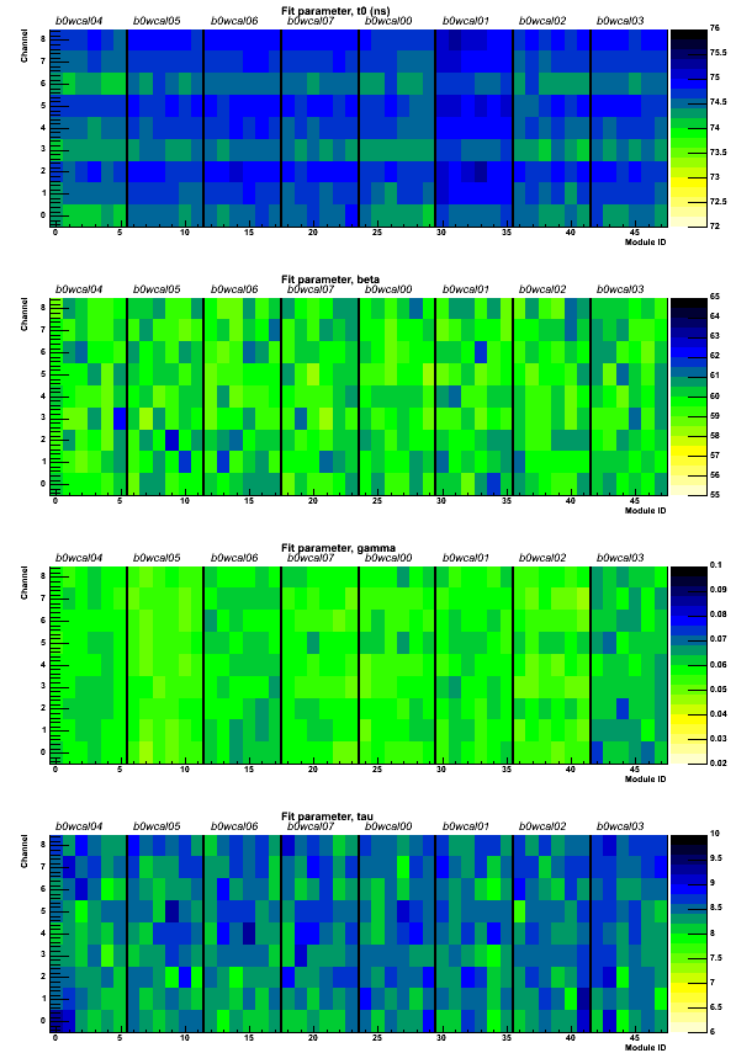
New Clock Translator Modules

TOF TAC calibration 190872 (0x2e998)



Original

TOF TAC calibration 190875 (0x2e99b)



New

New Clock Translator Modules

- Replaced old translator module with new one (serial #1) on January 5th
- Small (few 100 ps) shifts in STOP and CAL signals
- TAC calibration run 191976 taken with new module
- Probably should define a new data taking period for calibrations
- Spare modules in cabinet near east clean room

Next Steps

- Need to synchronize TOF and CLC clock edges: same clock edge must arrive at TOF front-end and CLC crate for a given bunch crossing
- Needs careful checks of electrical lengths of all cables in TOF and CLC systems
- Working on the details with CLC group
- Should be ready some time this spring.

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