Onsite summary and status report

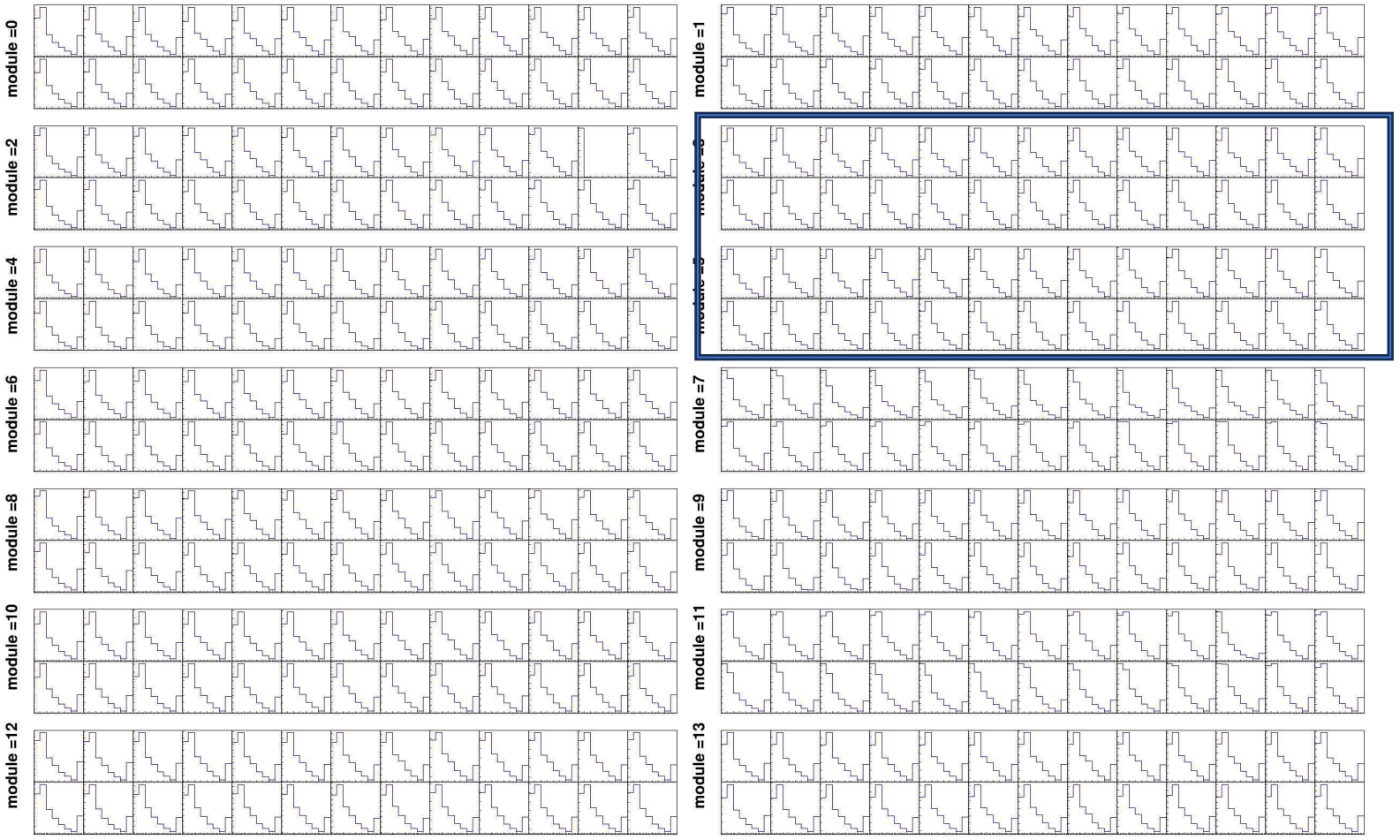
Jaein Hwang

July 6 2023

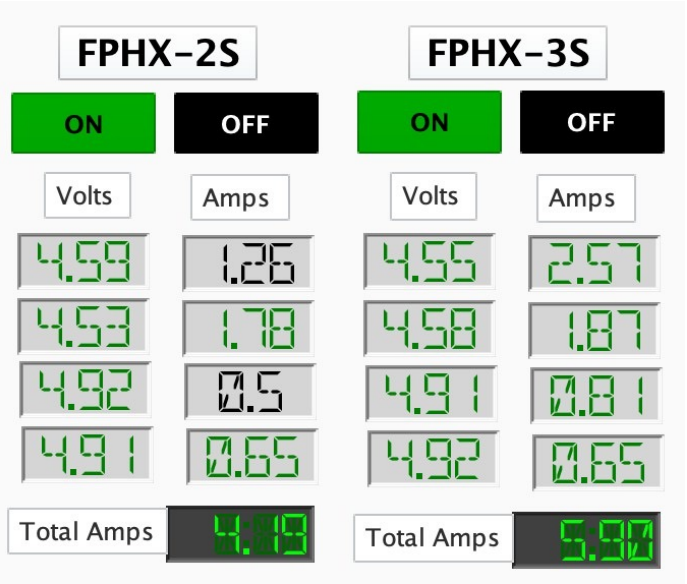
INTT1 missing ladders issue (solved)

Run 20703
(July 4 / 2023)

INTT 1 module are working properly.



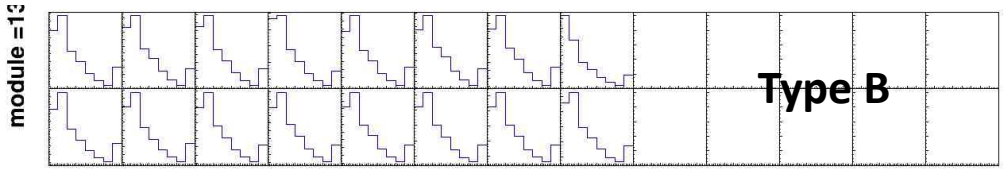
Problem was in LV module.



The ports where the current drop occurred matched the port of the ladders which were empty.

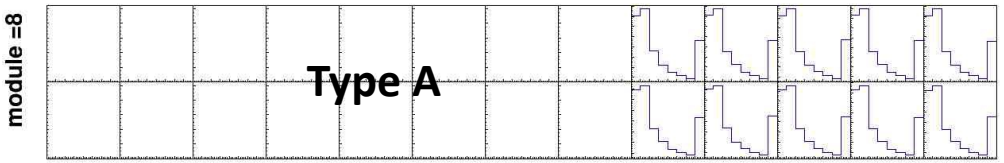
Summary of health check (Run 20703)

- After masking Felix slow control to block fake calibration mode hit, all ladders are working properly based on Run 20703. (July 4 / 2023)

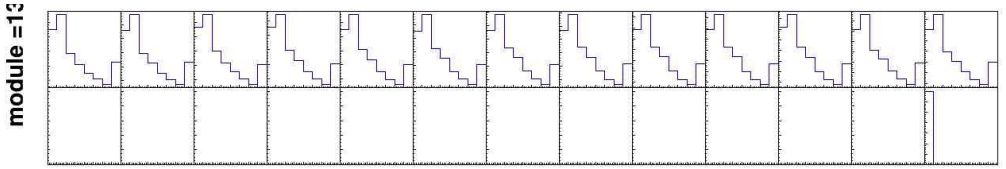


Run 20703 module 13 INTT3

3 / No



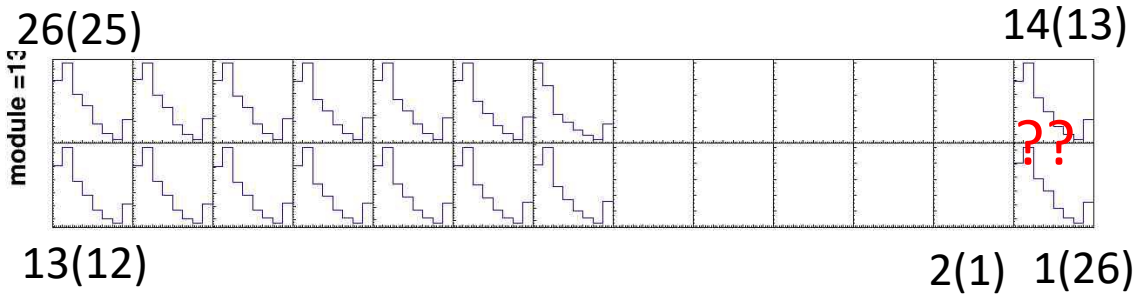
Run 20703 module 8 INTT5



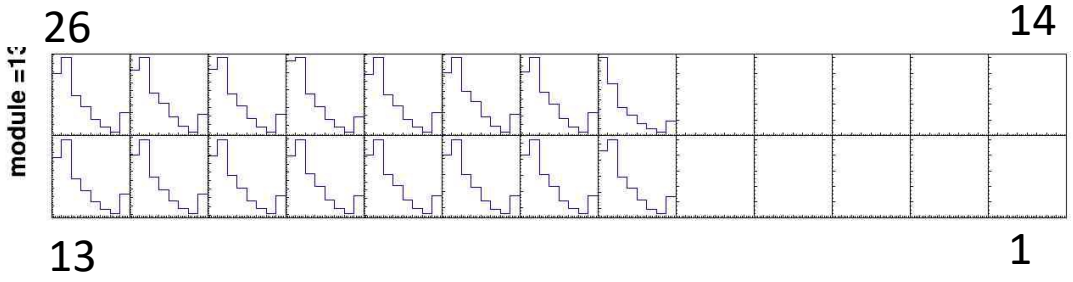
Run 20703 INTT2

Chip miss-alignment issue(solved)

Type B chips at module 13 in INTT3 have been masked due to no-bias issue



Run 20703 INTT3
Before decoder fixed



Run 20703 INTT3
After decoder fixed

The alignment of the chip was moved one by one.

Before

chip_id = (chip)%26+1
case for chip 1~26
chip 25 -> chip 26
chip 26 -> chip 1
chip 1 -> chip 2

After

Chip_id = (chip-1)%26+1
case for chip 1~26
chip 25 -> chip 26
chip 26 -> chip 1
chip 1 -> chip 2

Standalone INTT RonCotrol(rc_server) on LOCAL

RonControl(rc_server) is available to take the data with standalone INTT on LOCAL MODE

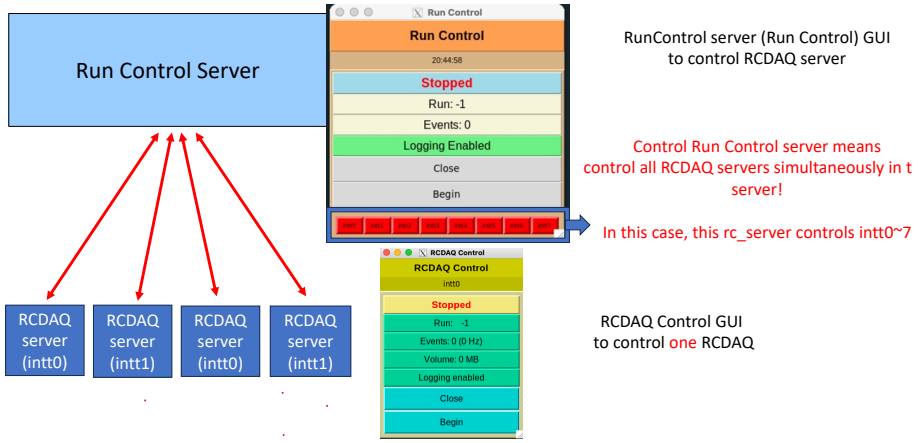
Please go to wiki page and make sure you have latest instructions!

https://wiki.sphenix.bnl.gov/index.php/INTT_Felix_DAQ INTT WIKI ->INTT Barrel Operation -> Standalone DAQ

This instructions covers : what rc_server is.. How to use.. How to change INTT configuration..

What is rc_server? (Run Control server)

Run Control server is a server to control multi-RCDAQ simultaneously.



RunControl server (Run Control) GUI to control RCDAQ server

Control Run Control server means control all RCDAQ servers simultaneously in t server!

In this case, this rc_server controls intt0~7

RCDAQ Control GUI to control one RCDAQ

How to run rc_server

Make sure you are in intt RCDAQ server (intt0~7), otherwise, you could affect other sub-detectors

0) Go to shift crew to make sure you can take data and to make sure we are in LOCAL mode.

1) phnxrc@intt1:~$ cd ~/operations/INTT

```
phnxrc@intt1:~/operations/INTT$ rc_shutdown
localhost: RPC: Program not registered
```

2) Type “rc_shutdown” until see “localhost : RPC: Program not registered” =→

3) Type “bash setup_all_rcdaqs.sh” -> initialization INTT ROCs, Felix, Chips.

4) Type “bash rc_setup_local.sh” -> Two GUIs are supposed to pop up

Run Control GUI

GL1/GTM Status GUI

```
phnxrc@intt1:~/operations/INTT$ rc_status
intt0 -1 0 0 1 0
intt1 -1 0 0 1 0
intt2 -1 0 0 1 0
intt3 -1 0 0 1 0
intt4 -1 0 0 1 0
intt5 -1 0 0 1 0
intt6 -1 0 0 1 0
intt7 -1 0 0 1 0
```

4) Type “rc_status” and check output looks like ==========→

5) Type “bash intt_gtm_setup.sh” -> Setup gtm , L1 Delay, Modibits

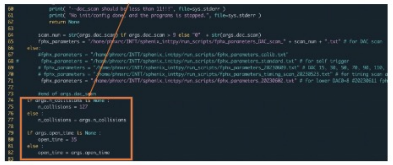
7) Type “bash intt_take_data.sh” -> Start to take the beam data

8) Type “rc_end” to stop the run.

9) To do a new run without initialization, Type “rc_begin”. If you want to initialize the detectors, start from 3).

How to change n_collision, open_time

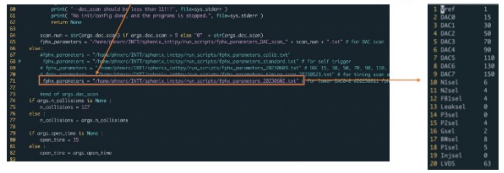
- Make sure you are in OPC0 or intt RCDAQ server (intt0~7)
- Open /home/phnxrc/INTT/sphenix_inttpy/run.py
- Find n_collisions and open_time. Change to your setting.



After changing, execute setup_all_rcdaqs.sh
or do "pyhton3 /home/phnxrc/INTT/sphenix_inttpy/run.py" at every each intt0~7 servers.

How to change FPHX Parameters(DAC, LVDS...)

- Make sure you are in OPC0 or intt RCDAQ server (intt0~7)
- Open /home/phnxrc/INTT/sphenix_inttpy/run.py
- Find "fphx_parameters". Change the content inside the fphx_parameters file.

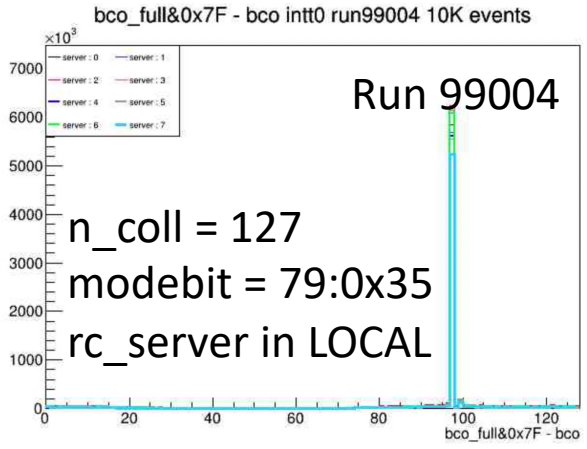


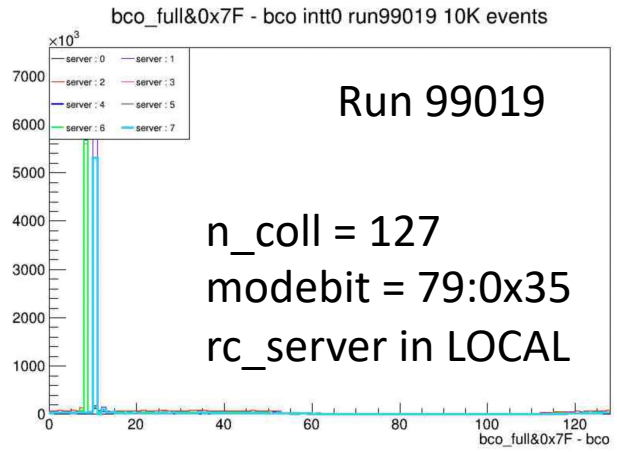
After changing, execute setup_all_rcdaqs.sh
or do "pyhton3 /home/phnxrc/INTT/sphenix_inttpy/run.py" at every each intt0~7 servers.

Any comments, any questions welcome!

BCO miss-alignment issue & short plan for tomorrow

- BCO alignment issue may be solved(?)
  Problem was Felix couldn't receive the FPHX reset modebit from GTM in GLOBAL MODE
  test run result with new rc_server on LOCAL MODE (July 1st)





https://sphenix-intra.sdcc.bnl.gov/WWW/elog/INTT/319

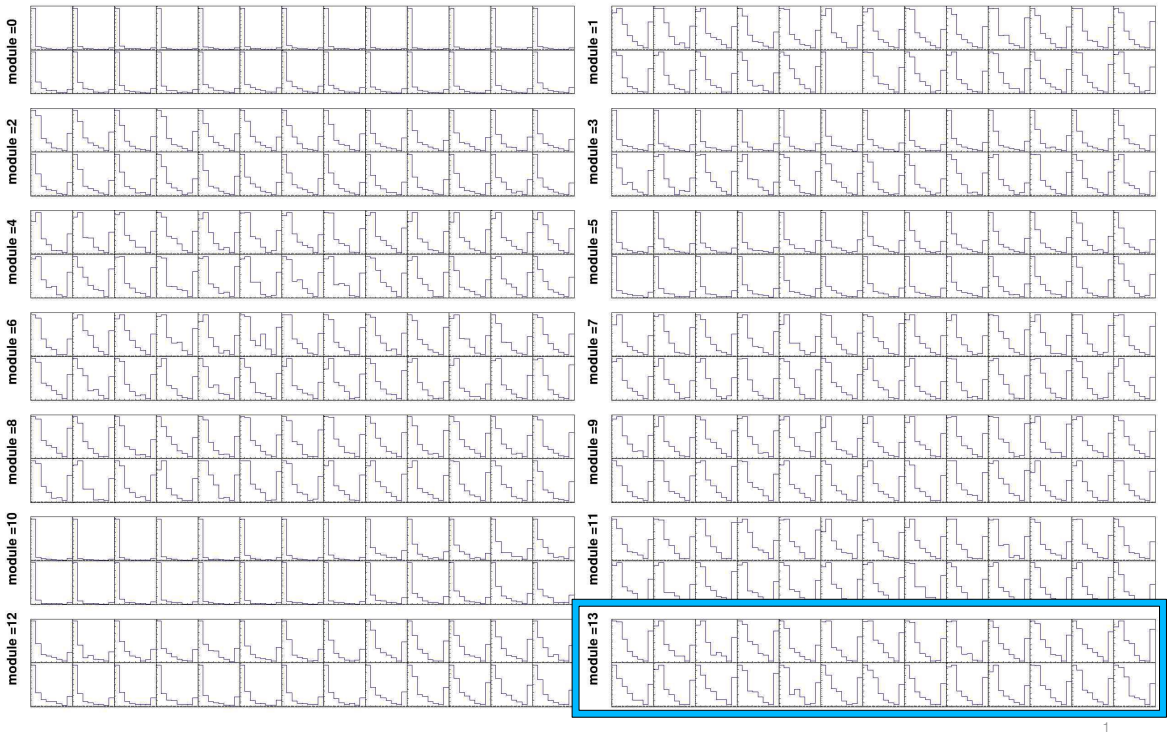
- We modified our scheduler file (configuration file to send modebits signal through GTM) and now we can receive reset signal. (confirmed by oscilloscope and GTM GUI). We have to confirm with real beam data!

  Now plan is INTT will take the data tomorrow morning.

Back up

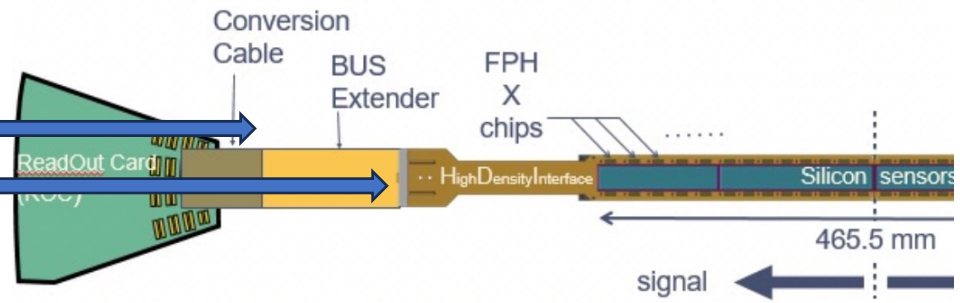
INTT2 empty chips

Run 10483 / June 11 7:20 PM



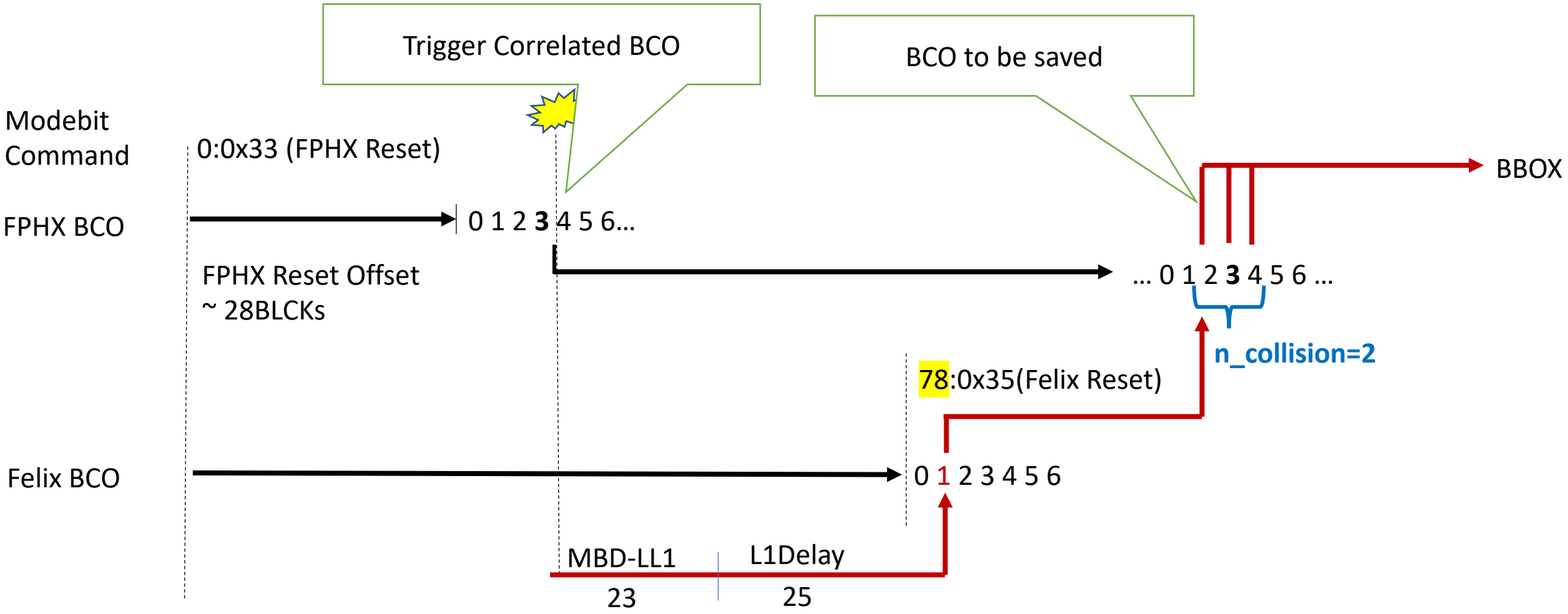
Run 10493 / June 12 3:40 AM

Half of INTT2 began to be empty from the time Run10430
bad connection between
the conversion cable and BUS extender
or BUS extender and HDI?
Rachid checked the connection, couldn't find problem.



Modebit

INTT (felix-2) was timed-in successfully through the modebit scan. The sweet spot of felix BCO counter reset command issue timing was found at 76 BCLKs after FPHX BCO counter reset issue.



Modebit Felix Reset Delay: 28+23+25=76