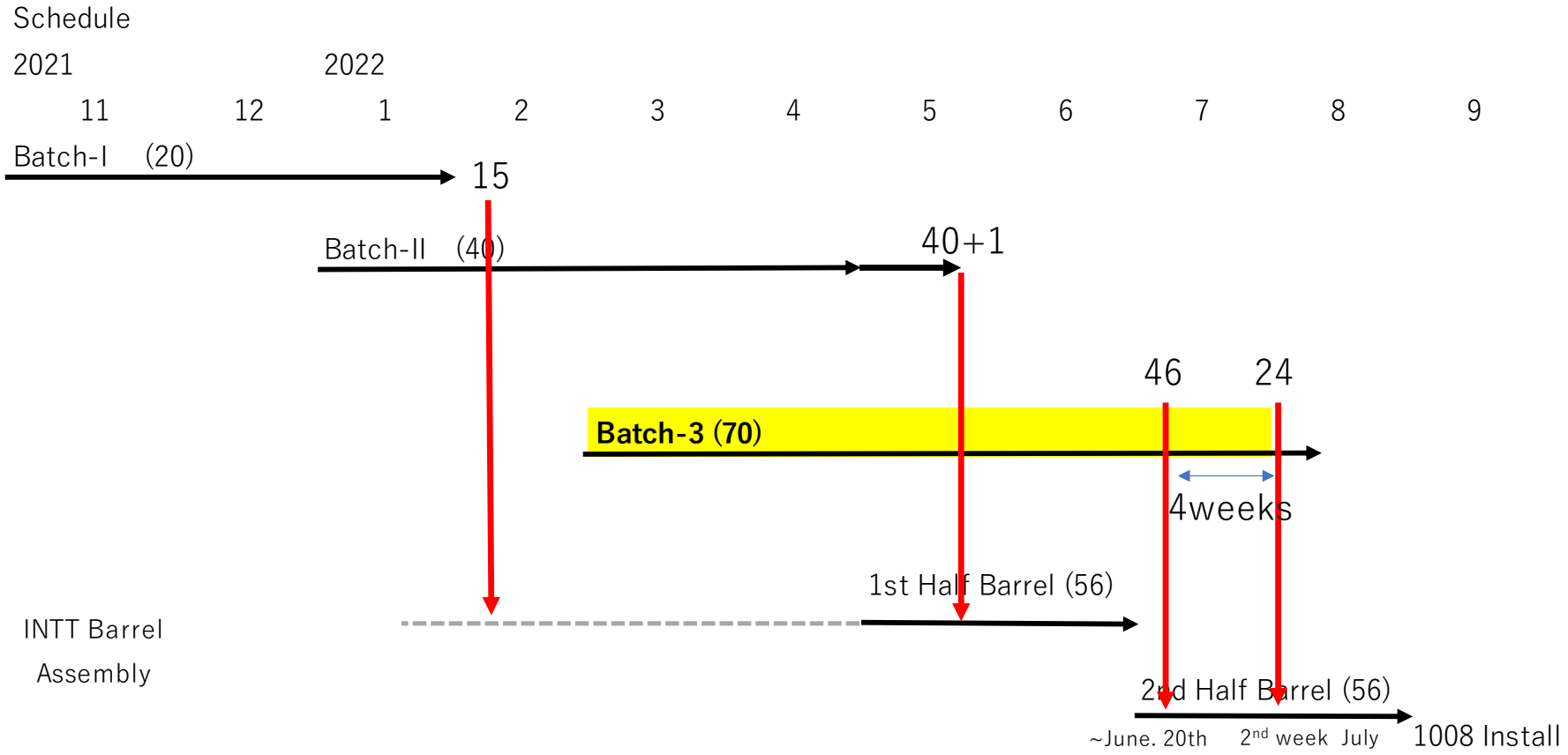
Production Status

RIKEN/RBRC

Itaru Nakagawa

Bus Extender Production Batch-II, III



Total Qty. in BNL	15	56	102	126

INTT Production Status

Today

* Beyond 112 are spares

2022	1	2	3	4	5	6	7	8	Qty*	Status
Silicon									135	Done
HDI									176	Done
Stave									204	Done
Bus Extender	Batch-1(20)			Batch-2(40)			Batch-3(70)		130	Production
Conversion Cable	Prototype-1		Contract	Prototype-2		Design	Production (130)		130	Prototype-II
Beam Clock Board	Design		Public bid	Preproduction(2)		Test	Production(18)		20	Preproduction
Barrel Assembly										

Contract

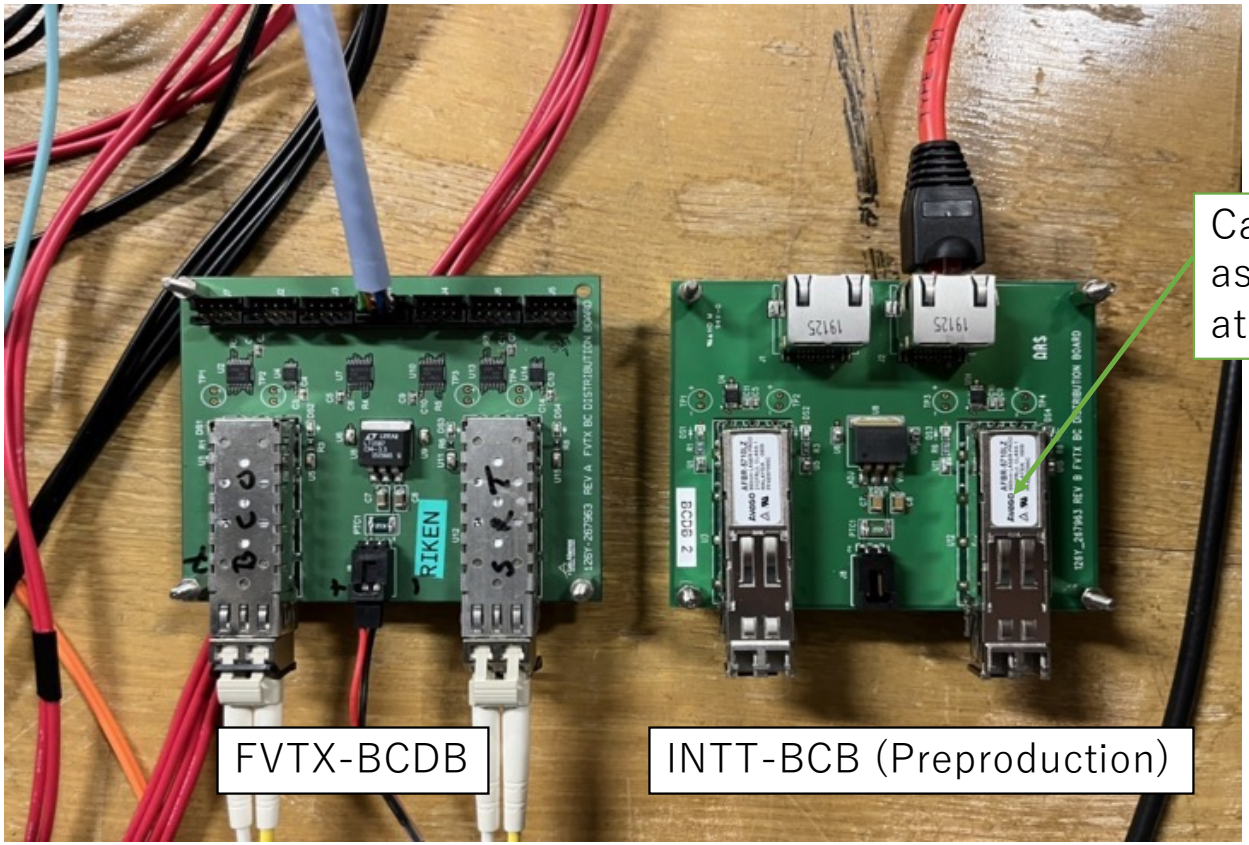
Parts procurement

- 24 BEX are to be delivered in 2nd week of July.
- BCB board testing is finished. 18 production BCB was also completed by July 4th. The BCB cable is ready to start fabrication as soon as its length is fixed.
- The partial data drop issue needs to be understood better to set green light for micro-coax production.

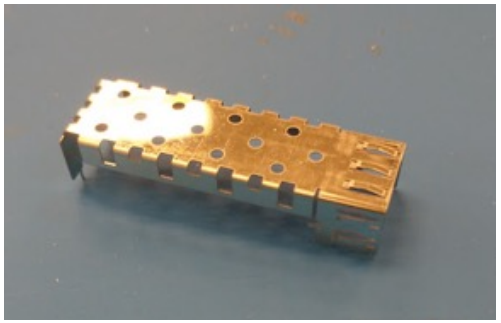
Beam Clock Board

Pre-Production Beam Clock Board

2 Pre-production boards are to be shipped to BNL next week.



Cage covers are to be assembled before shipping at RIKEN



New BCLK Cable Manufactured in RIKEN

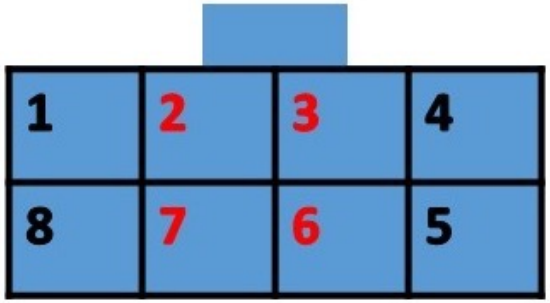
Manufactured by Ryota Shishikura

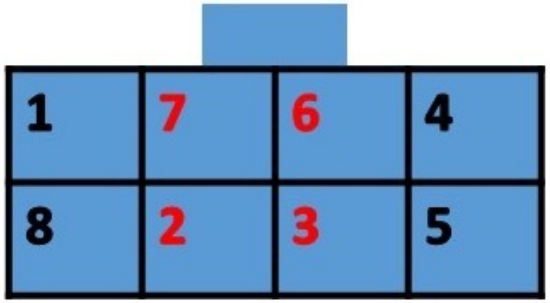
Channel Map

BCDB	ROC ✕	ROC ○	Label
1	1	2	DGND
2	2	1	DGND
3	3	4	BCOp
4	4	3	BCOn
5	5	6	STARTp
6	6	5	STARTn
7	7	8	DGND
8	8	7	DGND

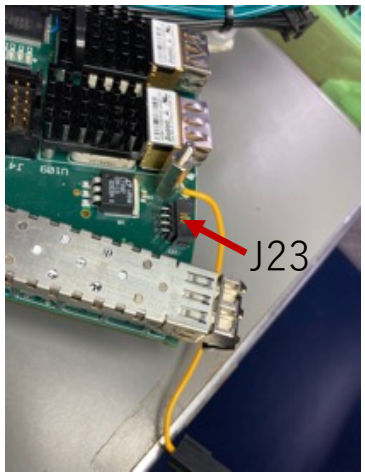
Some how positive and negative channels have to be flipped to make the calibration working.

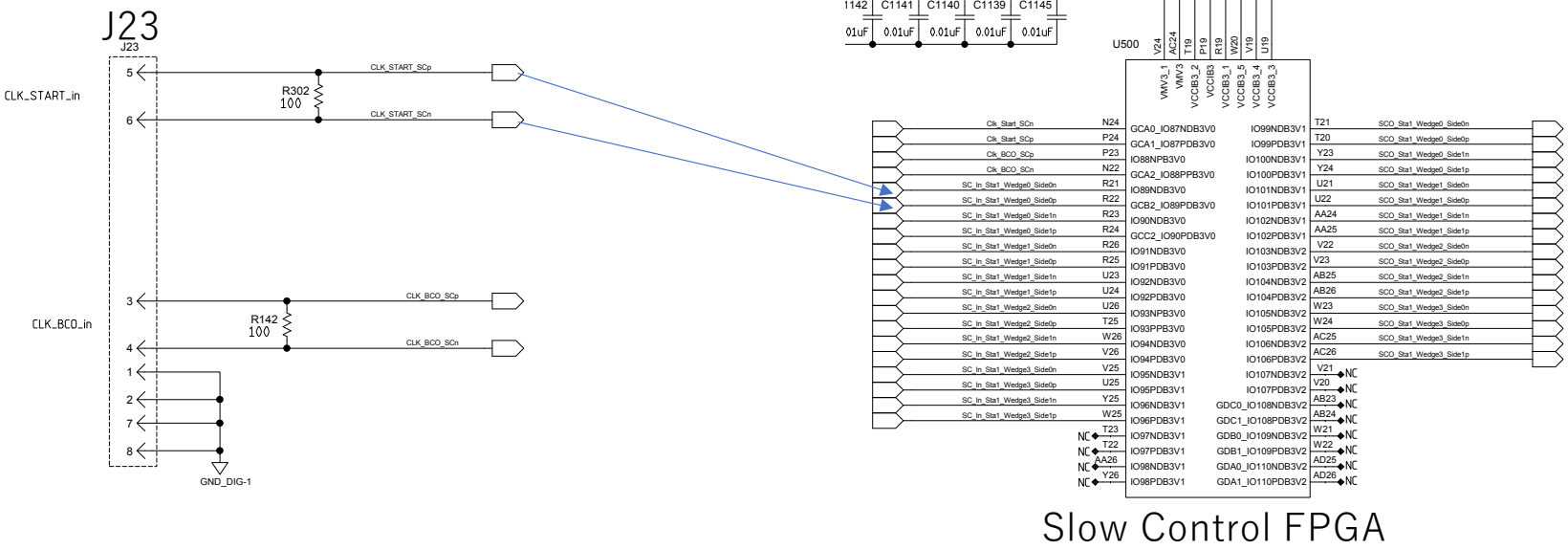
BCLK CABLE FOR REGULAR ROC





The origin of twisted channel map at ROC



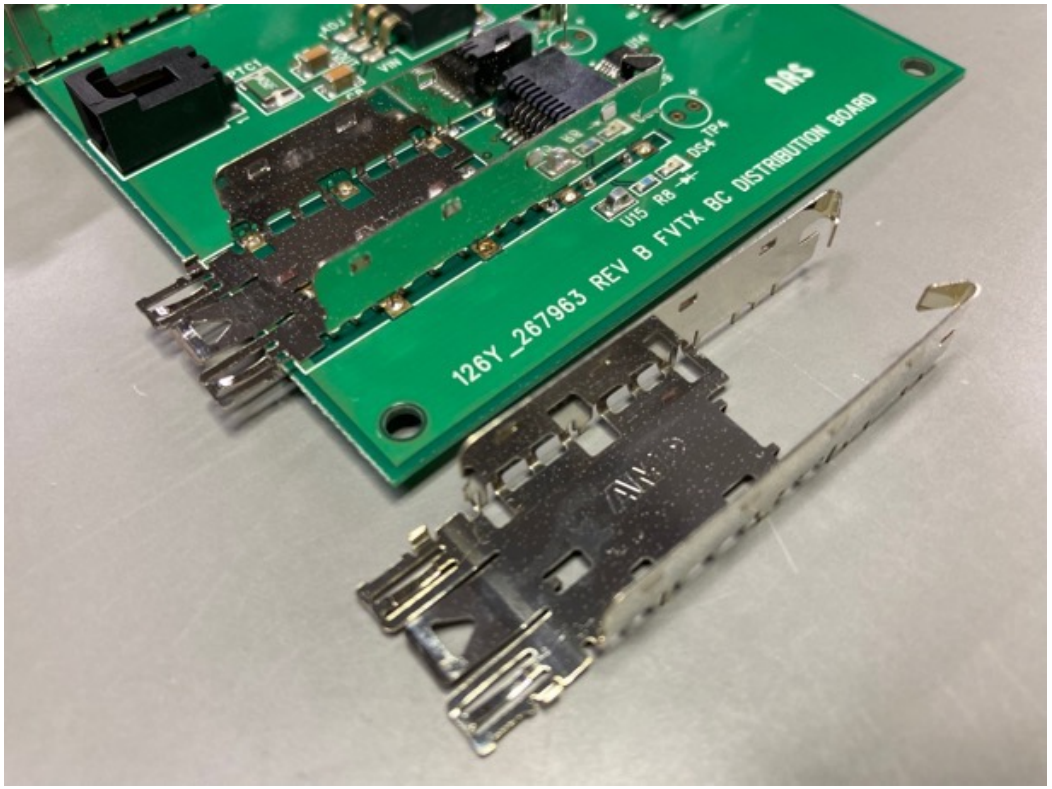


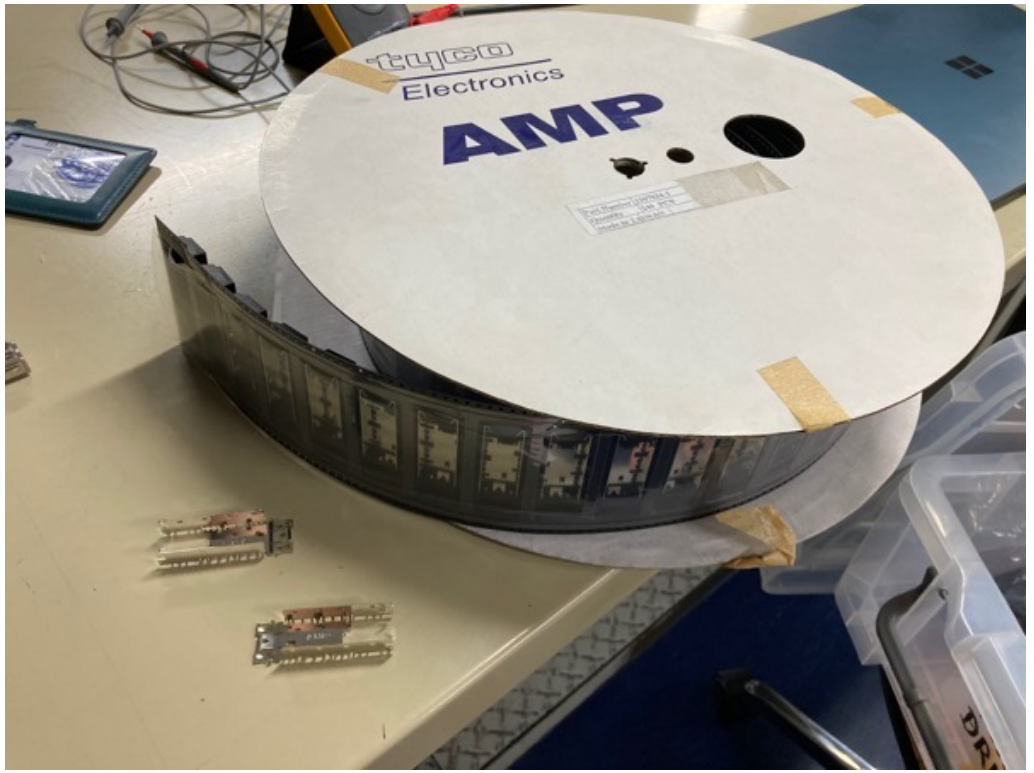
J23	Slow Control FPGA Pin#	ROC_slow_control_top.pdc
CLC_BCO_SCp	P23	set_io BCO_CLK_0_n -pinname P23
CLC_BCO_SCn	N22	set_io BCO_CLK_0_p -pinname N22

FPGA code check by Takashi

The positive & negative channels are flipped at slow control FPGA. Presumably, the mistake was overlooked in ROC design and was compenstated in software.

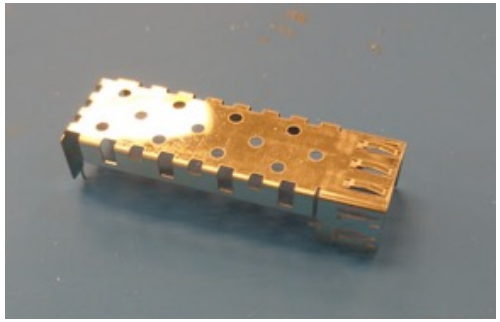
Tyco Electronics AMP 1367034-1



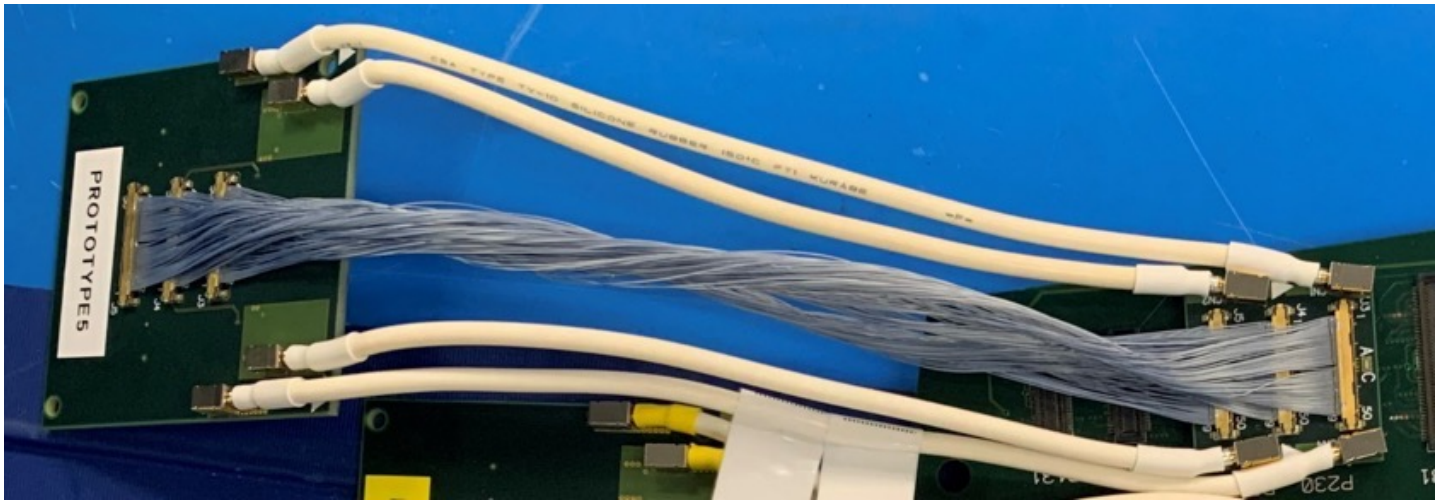


I found base parts of the cage in RIKEN. They are not molex brand but Tyco Electronics AMP brand though, they look almost identical. According to Tyco Electronics AMP co., “they look similar, but not the same products”.

BCB Production Status

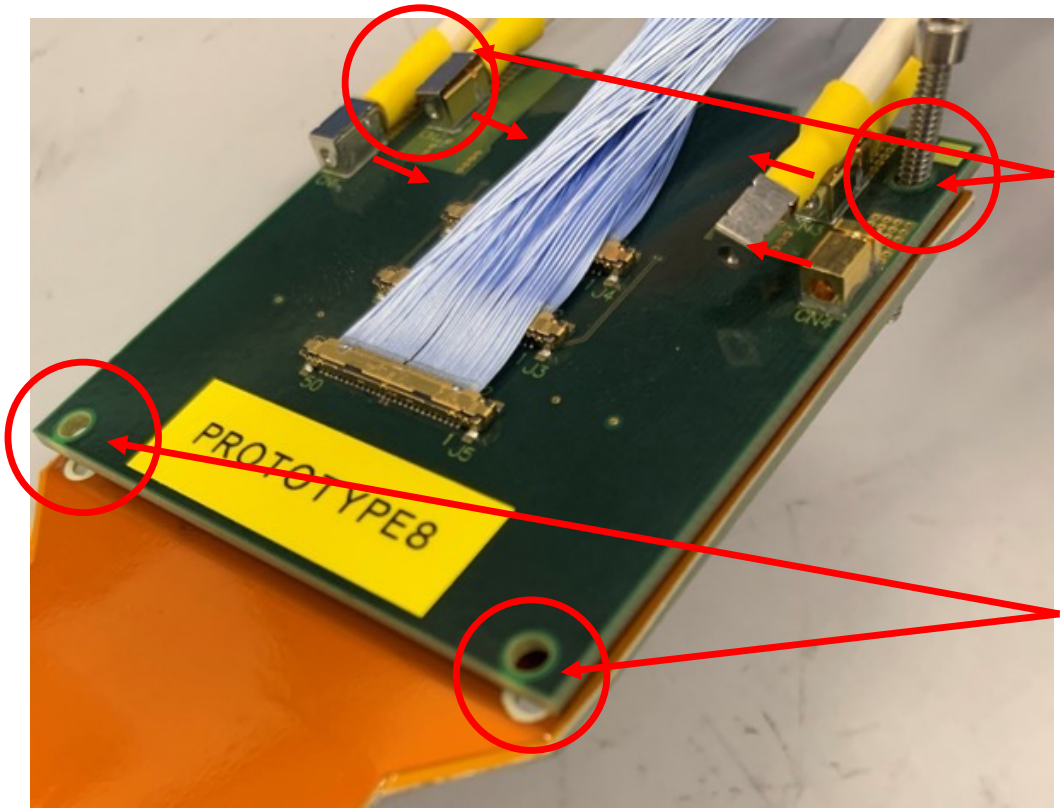


- 18 production BCB fabrication has been completed this week. Asuka is keeping them until the cage covers are provided from RIKEN.
- 35+10 cage covers are to be delivered soon to RIKEN, then provided to Asuka for the assembly.
- In the meantime, Itaru is working on the paper works for exporting.



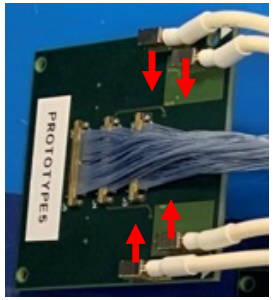
μ-Coax Cable

Hole Misalignment and Under Cable

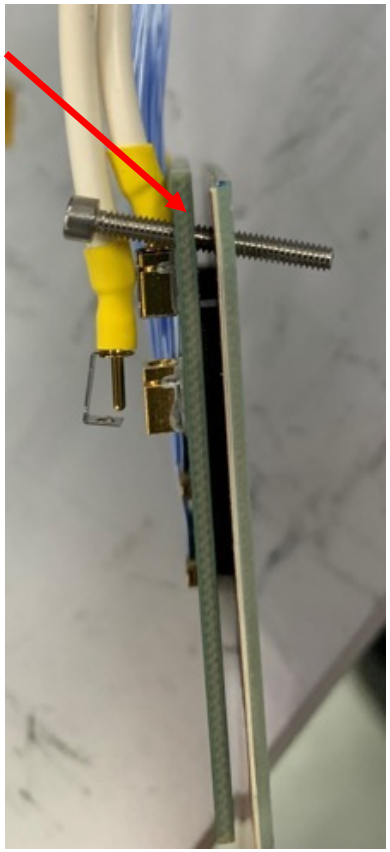


Can't install screw under cable. Move connectors in?

Can't install screw

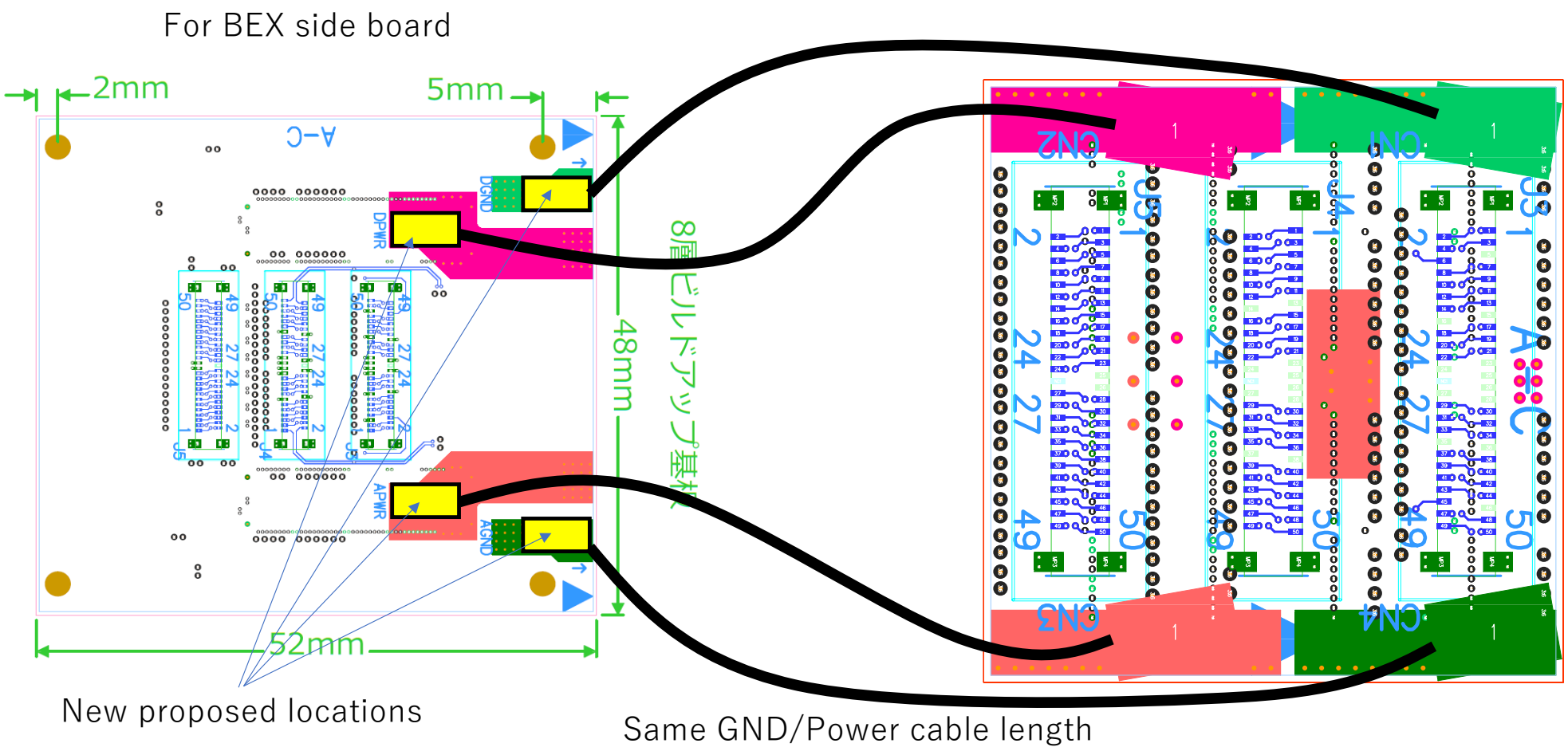


Can't install screw properly



Feedback from Dan Cacace

Modified Layout of the GND/Power Connectors

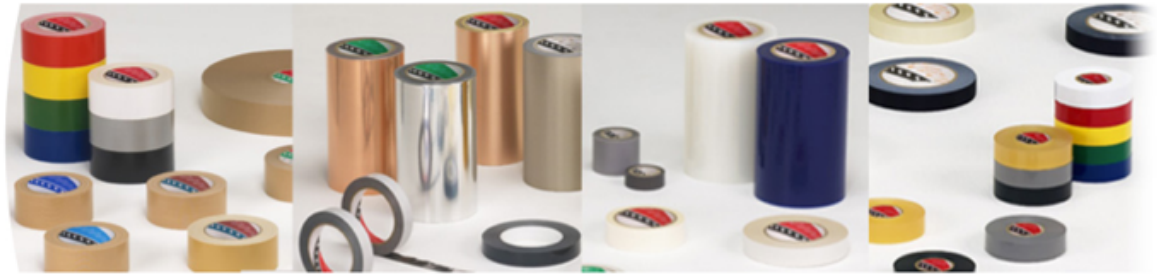


This cover seems to be a good solution

Acetate Cloth Adhesive Tape

https://www.teraokatape.co.jp/english/products/class/class001/list001/data_000866.html

Product Information

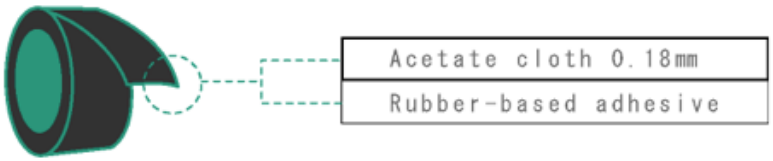


Acetate cloth adhesive tape

570S

No. 570S is a insulating tape made from acetate fabric coated with a rubber adhesive. Highly compatible with resins and varnish, this tape achieves stable adhesive property. As this tape is made from flexible acetate fabric, it works well on uneven surfaces and is optimal for use in binding harnesses, etc.

Structure



Features

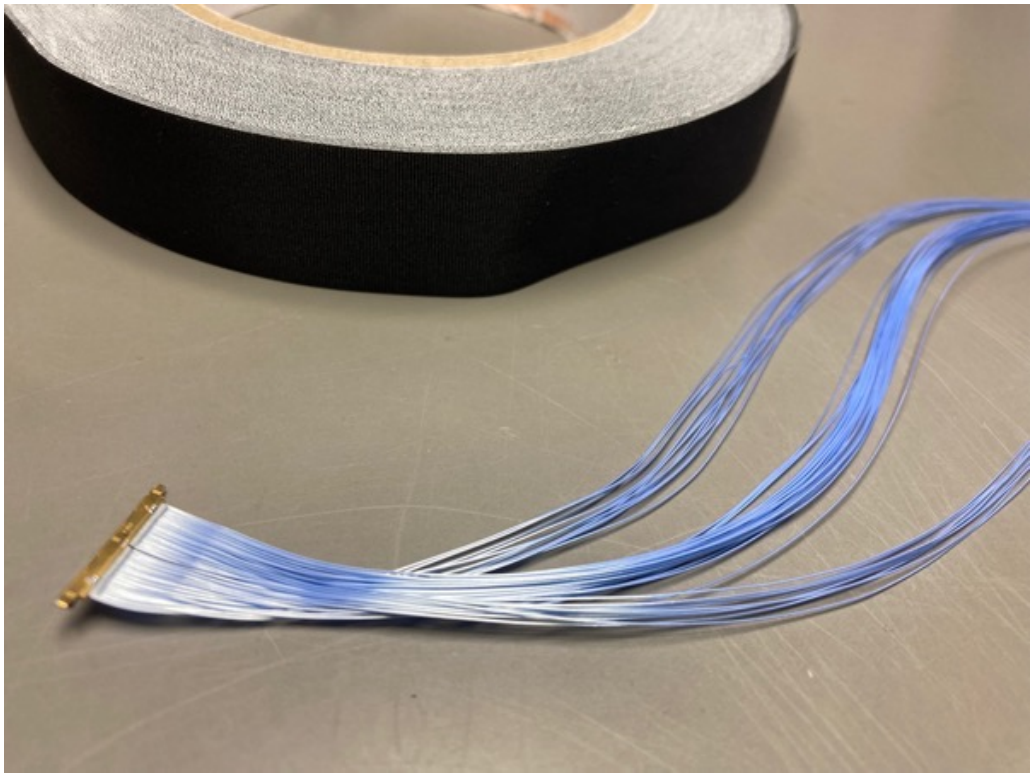
Search Product

Search by Product classification

For electrical insulation and electronic equipment

- For electrical insulation
- Flame retardant tape
- For conductive/shielding
- For optics
- For shade
- Kapton film adhesive tape
- Thermal conduction
- Silicone rubber adhesive tape
- Anti-electric charge adhesive tape
- For masking electrical

Lapping Harness with Acetate Cloth Adhesive Tape

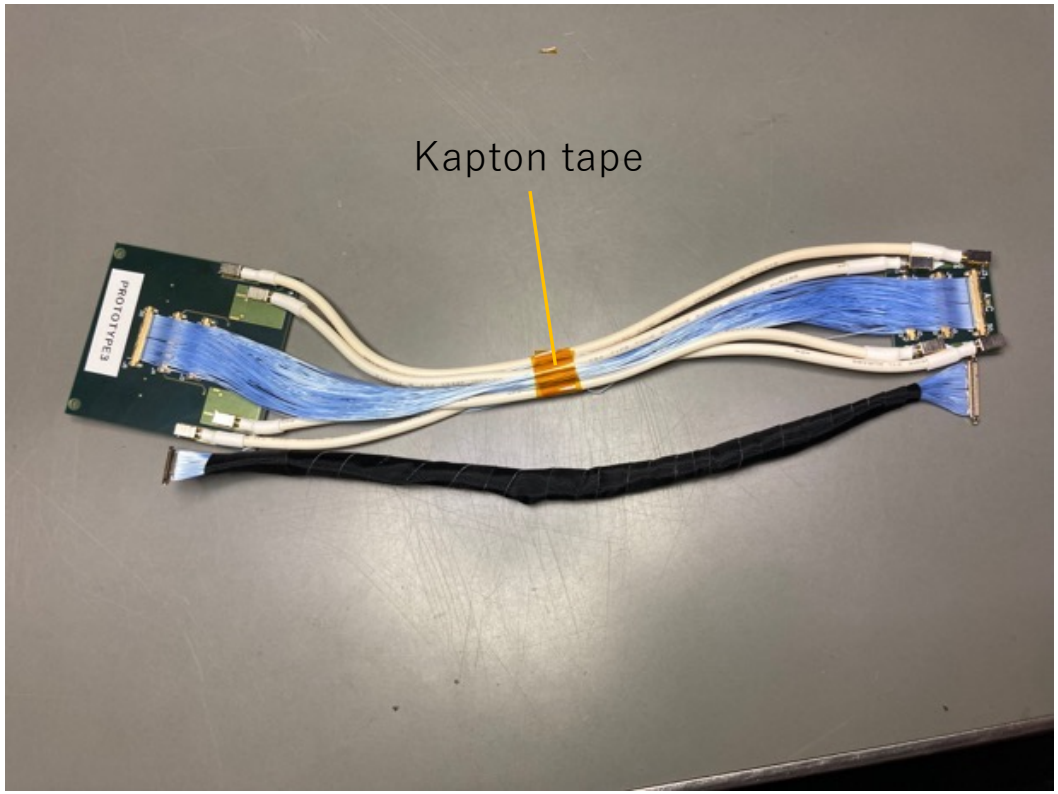


2cm width Acetate Cloth Adhesive Tape 570S, Teraoka co.

Lapping Harness with Acetate Cloth Adhesive Tape

Resulting harness is still flexible though, lost some flexibility.
Need to reduce overlapping are to secure more flexiblility.

Lapping Harness with Acetate Cloth Adhesive Tape



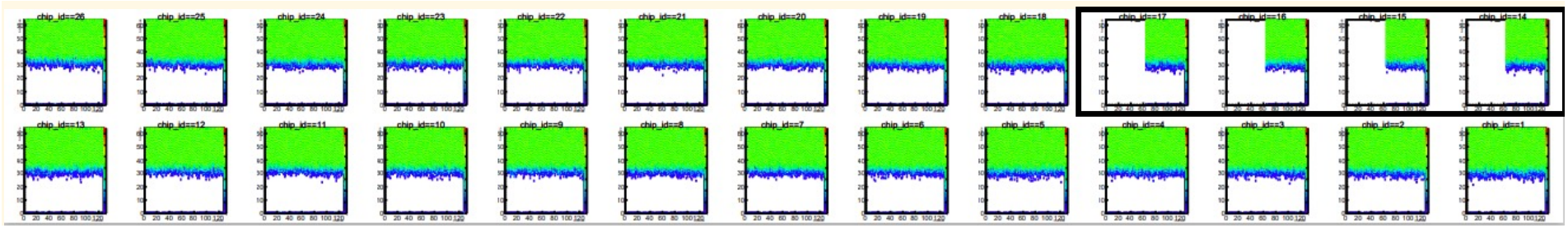
Bundled Harness E16 @ J-Parc experiment

Interval between tapes should be optimized.

Partial Data Drop Issue

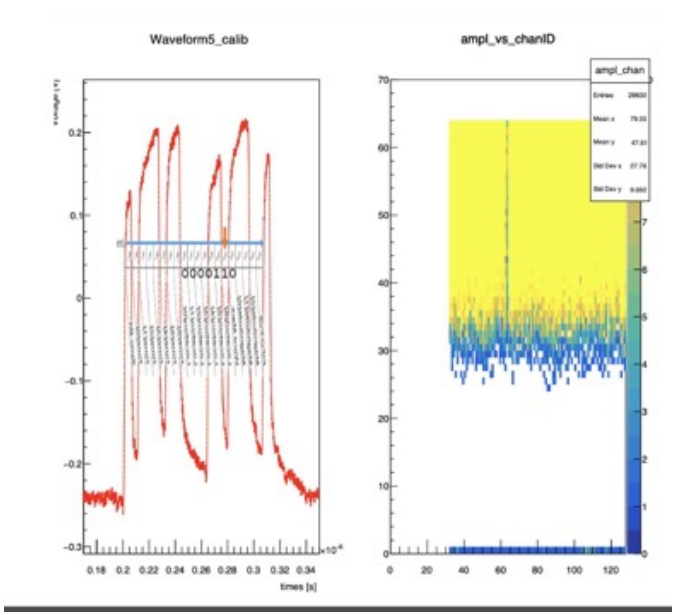
Partial Data Drop Issue

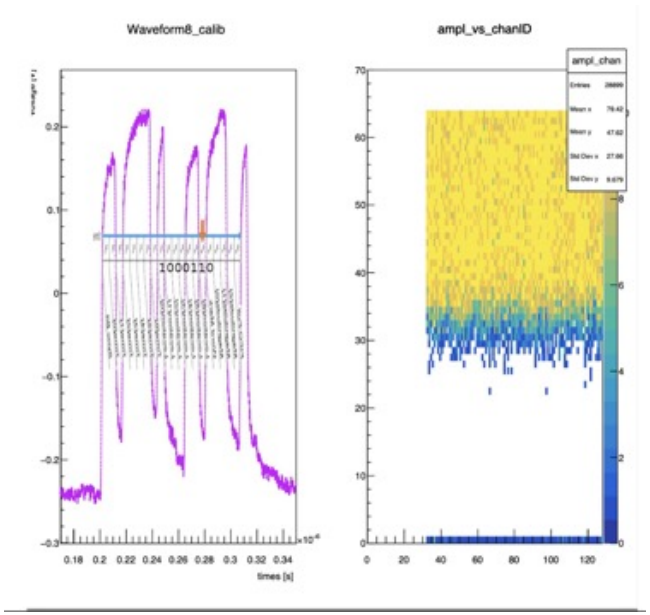
D3 port with μ-Coax + BEX

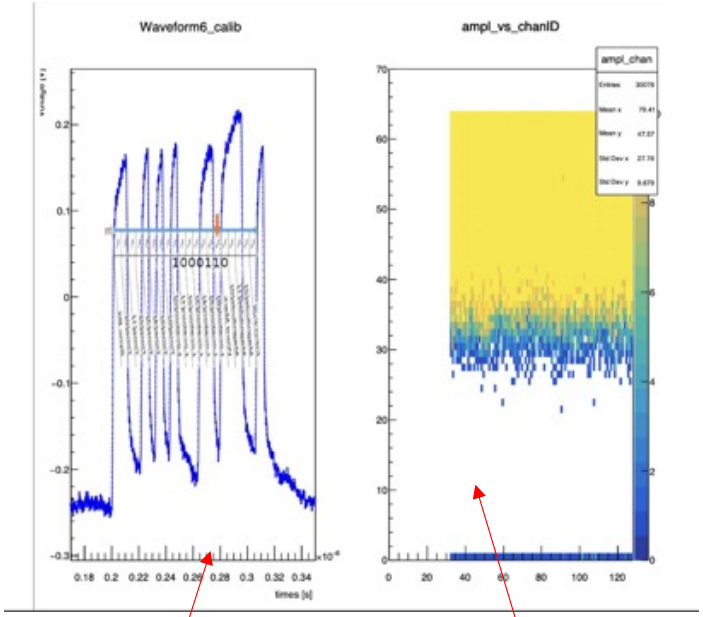


- Sample data transmission with a high speed oscilloscope
- Isolate the origin either upstream (FPHX) or downstream (ROC)
- The measurement was done in June 20th at RIKEN with a help from Takashi Kondo from TIRI.

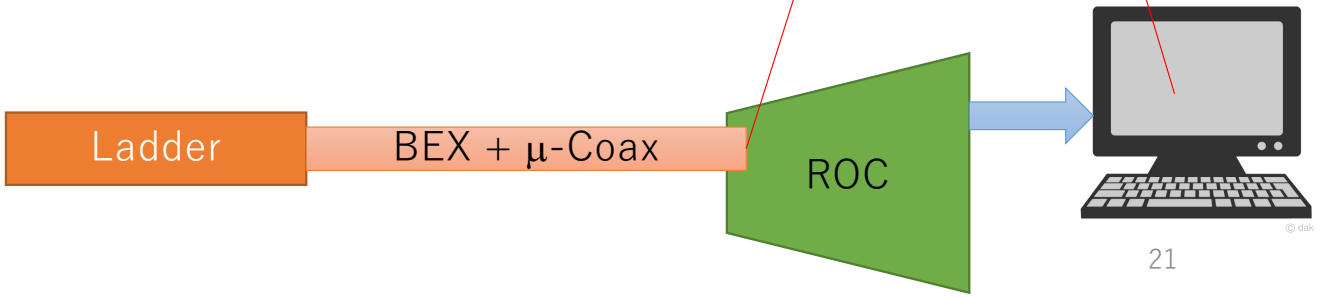
Observed Results







- Took 7 snapshots
- No evidence of data drop at ROC was observed within 7 attempts.
- The cause is likely to be in upstream=FPHX chip (roughly $(3/4)^7$~93% possibility)

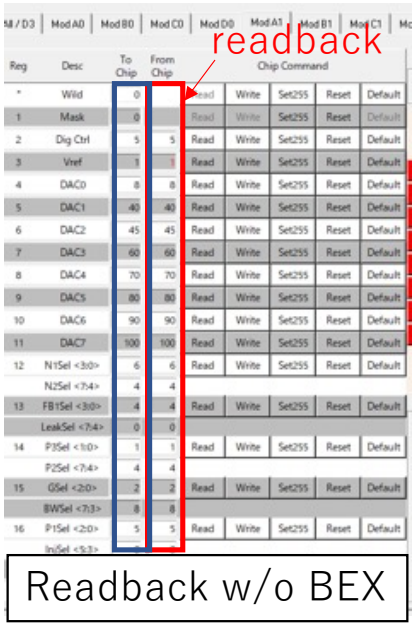


Next step

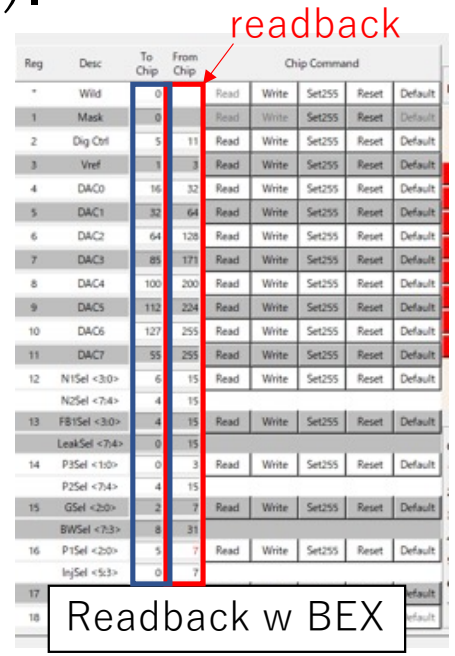
- Possible failure of FPHX initialization somehow.
- Inspect FPHX status with the readbacker.
- Need to modify the ROC slow control FPGA code to make the readbacker working with BEX (timing issue).

Installed FPGA code downloader for Actel FPGA

- Actel Libero IDE v9.1
- Flash Pro Version 11.9_SP4 (included in Libero Package)



Readback w/o BEX



Readback w BEX

Demands of ROC FPGA Download

- Partial Data Drop Issue
- NE3 Calibration Pulse Recovery
- Raul's Signal Sending Time Measurement (Need to play with calibration pulse sequence)
- **Expert GUI**

There is no get around solution for the INTT project.

INTT Collaboration Meeting

INTT Collaboration Meeting in BNL

- Many members are going to travel to BNL this Summer.
- I would like to propose a collaboration meeting in August at BNL
- Review activities in each institutes to understand each other's work and figure out if there is anything overlooked.
- Discuss plans and schedules for this Fall and Winter.