

Merger firmware update

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TRG weekly meeting

22nd Sep., 2022



Merger firmware update

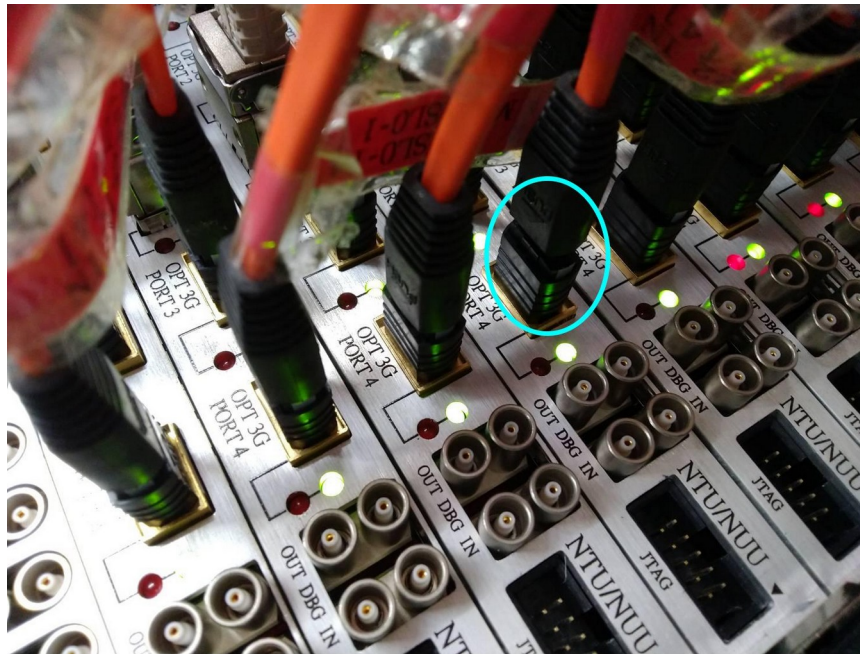
- v2.49 → v2.50
- Features:
 - Masking on single FE input channel.
 - Improve the timing condition of firmware.
- In the cosmic run last weekend, new firmware was downloaded to SL0,1,2, and the 2D tracking rate looks the same. Stability of optical links also looks fine.
 - Ready to update the flash for all Mergers.
 - Plan to do it gradually after Nov.

Firmware download to flash

- During testing the new firmware, I was using JTAG to download .sof (.bit of Intel FPGA).
 - At least 3 Mergers (0-2, 1-3, 7-1) cannot be detected by JTAG at all.
 - We cannot do anything using JTAG on them.
 - I tried to re-insert those boards on VME crate, two of them became working (1-3, 7-1), but 0-2 is still not accessible now.
- To update Merger firmware .pof (.mcs) to flash:
 - We can do it via Merger crates' VME first, but it is possible to fail (< 10%?)
Failed → Empty flash → Empty FPGA.
 - Then, we need to use JTAG to download .pof to those failed ones.
 - Using command line via VME to update all Mergers:
5 crates in parallel → ~1 hr.
 - There will be 5~10 failed ones → ~1 more hr.
- But if failure happens in 0-2, we cannot do anything using JTAG.
 - Replace with spare board?
 - Try other JTAG cable? Need to find them in B2.
 - Move 0-2 to a standalone crate to test.

Fragile AVAGO connector

- Two are newly found at Merger side.
 - Merger0-3 U2 (FE22)
 - Merger5-1 U1
- We have chance to replace them in LS1?



Merger0-3 U2 (FE22)