

YETS Maintenance Update

January 26, 2023

Peter Camporeale, Jacky Li
On behalf of TileCal maintenance team



Interventions

1. LBC 38

Problem: Cooling problem (excluded from cooling in December PPV cycle investigations as a leaky module).

Intervention: Opened the drawer and replaced the white connectors on the external part of the HV side; T-connector on patch panel was also replaced

Status: Drawer closed; DVS test performed; Channel 25 problematic in HG, LG, and integrator. Leak fixed.

2. LBC 49

Problem: Cooling problem

Intervention: Opened the drawer and isolated the leak to the internal part of the HV side; that section is now excluded from the cooling loop.

Status: Drawer closed and ready for DVS test. Leak fixed.

Interventions

3. LBA 45

Problem: Cooling problem (excluded from cooling in December PPV cycle investigations as a leaky module).

Intervention: Isolation valves were closed. Replaced cooling connectors on the HV side of the drawer

Status: Drawer closed and ready for DVS tests. Leak fixed.

4. LBA 58

Problem: Cooling problem (excluded from cooling in December PPV cycle investigations as a leaky module).

Intervention: Isolation valves were closed. Excluded the entire HV side from cooling because there is not enough room to extract the drawer and replace connectors

Status: Drawer closed and ready for DVS tests. Leak bypassed.

Interventions

5. LBA 30

Problem: (1) Cooling problem (excluded from cooling in December PPV cycle investigations as a leaky module). (2) DMU5 digital errors

Intervention: (1) Isolation valves were closed. The drawer was extracted by 2m. After replacing the connectors, there was still a leak, so each of the 4 cooling sections was isolated. External MB side of cooling loop was identified as having leak and was isolated. (2) Replaced Digitizer #6

Status: Drawer closed; passed DVS test. Leak bypassed.

6. LBC 33

Problem: Cooling problem

Intervention: Extracted drawer by 1.5 and identified the source of leak as the connectors in the middle of the HV side of the drawer. Cooling connectors were replaced

Status: Drawer closed; passed DVS test. Leak fixed.

Interventions

7. EBC 48

Problem: Cooling problem

Intervention: HV side of the drawer was wholly excluded.

Unfortunately, the proximity of the Small Wheel means there is not enough room to extract and replace the connectors

Status: Drawer closed and ready for DVS test. No change.

8. EBC 49

Problem: Cooling cooling problem

Intervention: HV side of the drawer was wholly excluded.

Unfortunately, the proximity of the Small Wheel means there is not enough room to extract and replace the connectors

Status: Drawer closed and ready for DVS test. No change.

Interventions

9. EBC 30

Problem: Cooling problem (excluded from cooling in December PPV cycle investigations as a leaky module)

Intervention: Cooling was first closed by isolation valves. For better circulation, the nominal pressure in Loop #23 was increased 0.9 bar → 1.0 bar. Extraction to the middle of the drawer was possible. Excluded the internal part of the MB section to solve leak

Status: Drawer closed, passed DVS test. Leak bypassed.

10. EBA 11

Problem: MB side of LVPS was failing to start

Intervention: Replaced AUX Board #3, but that did not solve problem

Status: Unresolved. We will look Harting Pin #72 next

Interventions

11. EBA 07

Problem: Cooling problem (excluded from cooling in December PPV cycle investigations as a leaky module)

Intervention: HV side of the drawer was wholly excluded. Unfortunately, the proximity of the Small Wheel means there is not enough room to extract and replace the connectors

Status: Drawer closed and ready for DVS test. Leak bypassed.

12. EBA 55

Problem: MB side of LVPS did not start

Intervention: AUX Board #14 was replaced (it affects EBA 53-56)

Status: Module is incorrectly monitored as having voltage larger than 210 V.

Future Actions

- Now, all major electronics and cooling problems marked for maintenance have been addressed (Marked “YES” on <https://codimd.web.cern.ch/pvIX3mqnS3KdSIV6xV65Mw>) except EBA 25 CIS instability
- For the coming weeks, we will address (1) cooling and (2) easy-to-reach minor electronics issues (marked “TBC” on the above list):
 - Before Christmas, PPV cycle was ~650 minutes, but it dropped to ~450 minutes on January 1st. Cooling investigation will continue to regain this difference, hopefully.
 - Due to difficulties with access, we can only reach electronics issues close to patch panel (~PMT 32-48). We will try to address integrator single-channel problems here, firstly: EBA05, EBC09, EBC34, EBC35, EBC37, LBA31

Maintenance Team 20.1-26.1

Irakli

Stan

Nugzar

Jacky

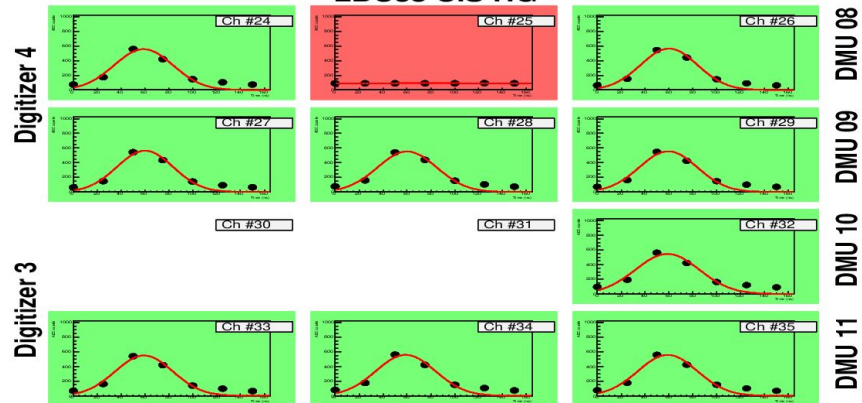
Peter

Oleg

Andrei

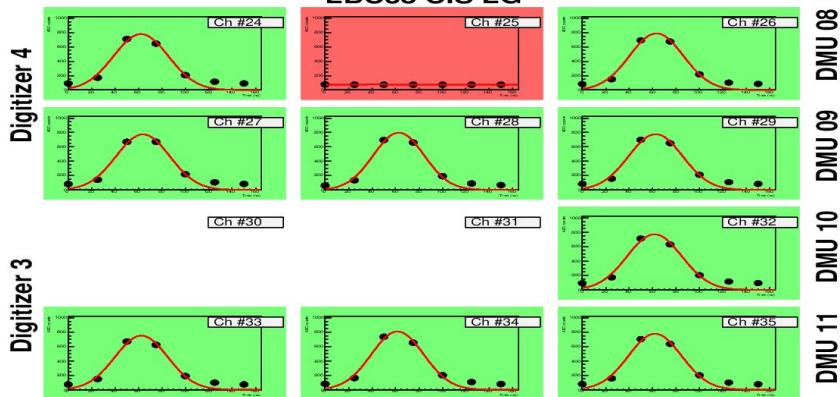
Appendix

LBC38 CIS HG



LBC 38:
Problems in
channel 25

LBC38 CIS LG



Alternating DAC odd/even channels: ADC counts

