PASSPORT, SiWLC ECAL **SLAB 15**

SLAB ID

Slab ID : 15

ASU version :FEV11

Skiroc version : Skiroc2 **NASICS :** 16

DIF ID : 12 **Firmware version :** 1603

SBM ID : V4b 19 **SMBversion :** SMBV4

Wafers ID/Info : ?

Comments :
Kapton tape covering the internal face of the aluminum plate that covers the ASU.

Folder → slab15_2

BAD SLAB → SOME CHIPS ARE NOT RESPONDING.

SLAB REJECTED FOR BEAM TEST.
FURTHER INVESTIGATION NEEDED.
THIS SLAB LOOKED QUITE OPTIMAL BEFORE COMMISSIONING.

Commisioning by : *A. Irles and J. Nanni*

at : *LAL, ECAL workshop*

setup : *Prototype rack (as used in 2016). PVC prototype for single slab. Cosmics taken in a table.*
Cable : HV 6 connected to first HV connector in patch pannel.
Slab/dif 1, connected to first connector in patch pannel.
GDCC V1_1, port 1

SOLDERING POINTS, CABLING, etc (visual inspection)

With closed aluminum cover, turn around the slab and check soldering points in :
*- **DIF resistors (for slow control)** Resoldered*
*-**HV (GND at SMB)** Ok → soldered to daq interface big spot (not to lemo connectors)*

comments and others :

Turn slab around, open aluminim cover and do a check of soldering points :
*- **HV GND (bottom slab)** Needed resoldering.*

comments and others :

ELECTRICAL + SIGNAL CHECKS (multimeter)

Electrical checks (NOT POWERED SLABS)		
		Comments
GND/PCB	ok	
RESISTOR/DVDD	ok	
SlowControl :	ok	
S4-S16	ok	
SRIN-SROUT	ok	
Readout Return S9-S21	ok	
GND HV and bottom PCB	ok	
No shortcuts between VDDA/VDD/GND	ok	

Electrical checks (Low Votlage on)		
		Comments
Green LED in SLAB	ok	
BLUE LED light (DIF) blinking	ok	
1.2V and 2.5V in J3 and J4 (DIF)	ok	
VDDA	ok	
VDDD	ok	
Configure : RED LED blinks	ok	

Comments :

DAQ SETUP

Short acquisitions tests :

- *spill 2Hz, widht 2 ms, BT mode*
- *1 minute*
- *dif_1_1_1*

Find noisy, scurves

- *spill 2Hz, widht 2ms, BT mode*
- *dif_1_1_1*

Cosmics

- *spill 4Hz, widht 150ms, BT mode*
- *1h*
- *dif_1_1_1*

CALICOES/PYRAME VERSION :

DATA/RESULTS folder : */home/data/prototech/BTJune2017_commissioning/slab15_2 (pc-ecal03)*

SlowControl :

PA=1.2pF
cc=6pF
hold (manual) =150
DAC (manual) = 230 DAC

ANALYSYS code :
https://github.com/airqui/tpecal/commit/8d5eb4a32a5522ccfd476e5257d9aac9ed78258a

COMMENTS : *(suspicious ADC=4 channels masked by default)*

```
rocN=0
for roc in list_dev("skiroc","root"):
    reconfigure(roc,"allow_trig_chans_skiroc","all")
    reconfigure(roc,"enable_preamp_chans_skiroc","all")
    reconfigure(roc,"disable_preamp_chans_skiroc","37")
    reconfigure(roc,"disallow_trig_chans_skiroc","37")
    if rocN==1 or rocN==9:
        #preamp
        reconfigure(roc,"disable_preamp_chans_skiroc","41")
        reconfigure(roc,"disable_preamp_chans_skiroc","42")
        reconfigure(roc,"disable_preamp_chans_skiroc","43")
        reconfigure(roc,"disable_preamp_chans_skiroc","44")
        reconfigure(roc,"disable_preamp_chans_skiroc","45")
        reconfigure(roc,"disable_preamp_chans_skiroc","46")
        reconfigure(roc,"disable_preamp_chans_skiroc","47")
        reconfigure(roc,"disallow_trig_chans_skiroc","41")
        reconfigure(roc,"disallow_trig_chans_skiroc","42")
        reconfigure(roc,"disallow_trig_chans_skiroc","43")
        reconfigure(roc,"disallow_trig_chans_skiroc","44")
        reconfigure(roc,"disallow_trig_chans_skiroc","45")
        reconfigure(roc,"disallow_trig_chans_skiroc","46")
        reconfigure(roc,"disallow_trig_chans_skiroc","47")
        print("roc=%s"%(roc))
    if rocN==0 or rocN==8:   get 0 out of 0 events for chip 10  (-nan%)
        reconfigure(roc,"disable_preamp_chans_skiroc","5")
        reconfigure(roc,"disallow_trig_chans_skiroc","5")
    if rocN==7 or rocN==15:
        reconfigure(roc,"disable_preamp_chans_skiroc","3")
        reconfigure(roc,"disallow_trig_chans_skiroc","3")
        reconfigure(roc,"disable_preamp_chans_skiroc","9")
        reconfigure(roc,"disallow_trig_chans_skiroc","9")
        reconfigure(roc,"disable_preamp_chans_skiroc","10")
        reconfigure(roc,"disallow_trig_chans_skiroc","10")
    if (rocN==9 or rocN==1):
        reconfigure(roc,"disable_preamp_chans_skiroc","48-53")
        reconfigure(roc,"disallow_trig_chans_skiroc","48-53")
    rocN=rocN+1
    if rocN==16:
        rocN=0
```

short ACQ tests

Horizontal position. Open slab.

NOISE 0,1,2,3,4,5 : *Make short acquisition and convert the data → Conversion ok ? NO → Wrong Hit Bits.*

FILEINTEGRITY
/home/data/prototech/BTJune2017_commissioning/slab15_2/5/noise_DAC230_hold150_dif_1_1_1.raw 0

DATA INTEGRITY SUMMARY
total number of spills = 120
TOTALGOOD 0 % are spills with acceptable data
bad -- 0 % have bad data size
bad -- 0 % have more than 15 SCA
bad -- 0 % have bad chip number
bad -- 1.66667 % have extra bits in BCID
bad -- 0 % have extrabits in low gain.
bad -- 0 % have extrabits in high gain
bad -- 98.3333 % have different hit bit for low and high gain
bad -- 0 % bad number of SCA or channels

Check signals with oscilloscope.

start_acq ok
val_evt ok
chipsat ok
reset_b ok
TX on ok
Data out ok

Horizontal position. Covered slab with a waste bag.
NOISE 6 : *Make short acquisition and convert the data → Conversion BAD.*

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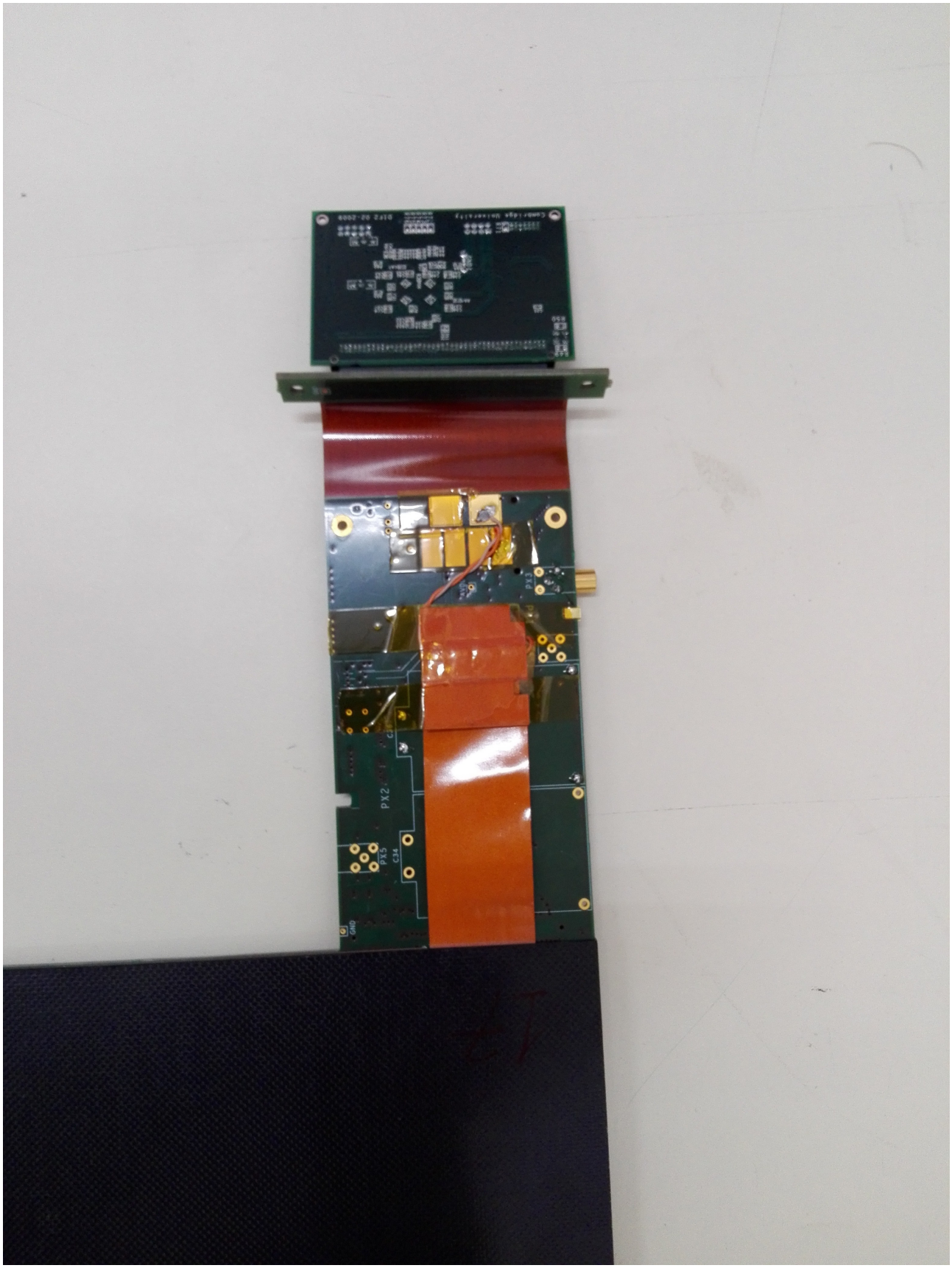
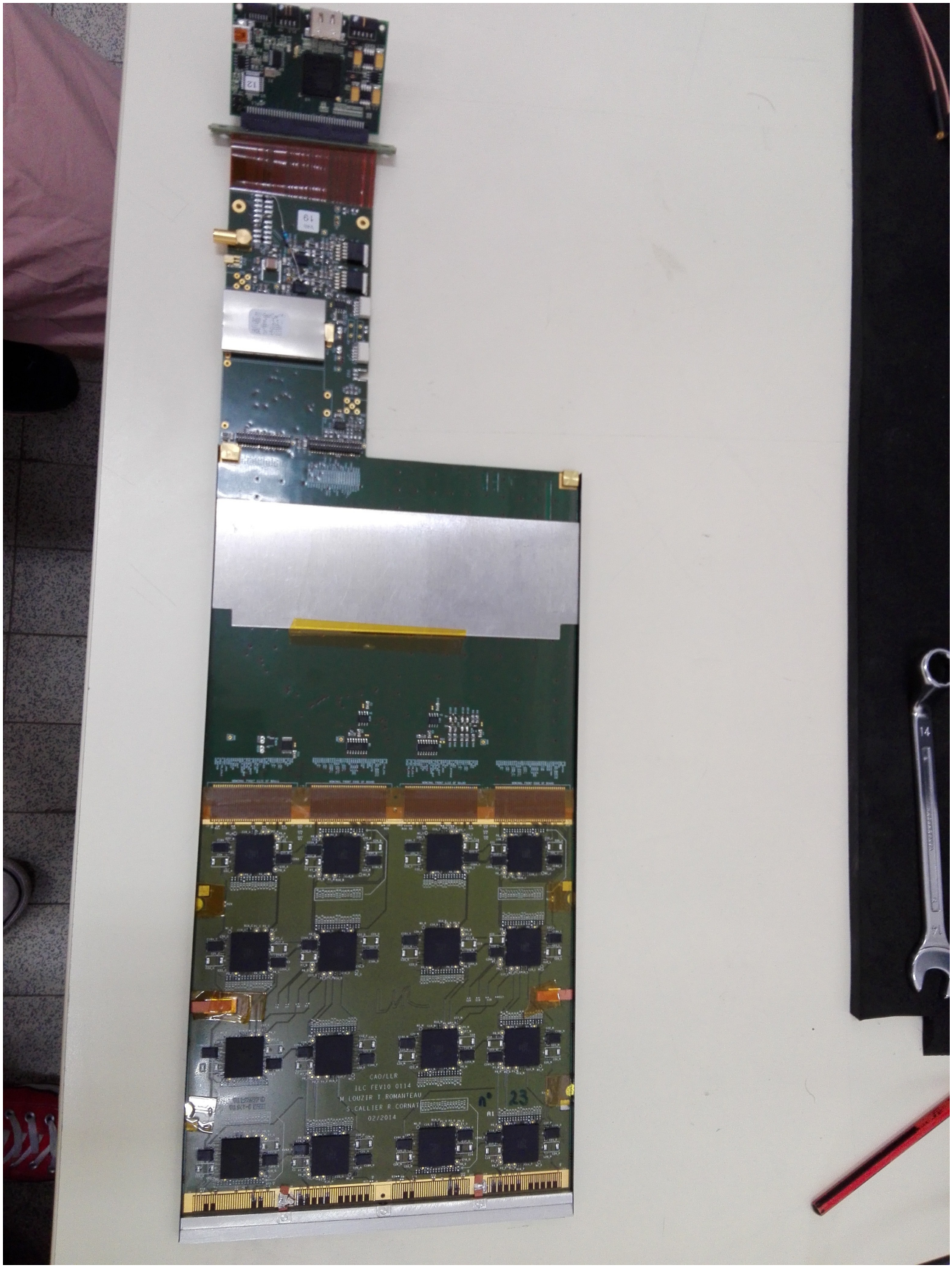
NOISE 7 :HV ON. *Make short acquisition and convert the data → Conversion BAD. Some chips empty. Too high threshold ?*

NOISE 8 :HV ON. *Same, without waste bag.*

NOISE 9 :HV ON. *DAC= 200, waste bag in.*

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