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How to run a DAC scan

Check if the firmware loaded in the PDMDBs is the one without the FIFO (go on the PDMDB panels and check if in the text fields under FPGA filename there are file names of type PDMDB0FPGA0iserdes.txt) . If not, load the firmware using the ./LoadFirmwareNoFIFO.sh. Before to continue the usual procedure to setup the system to take data, change the FPGA file in the PDMDB panels to PDMDB0FPGA0iserdes.txt for the FPGA0 of PDMDB0 and so on).

Check that the following lines are as reported (they are respectively 87 and 0d for external trigger data taking):

7A00 bc (old miniDAQ firmware: ea)

7B00 1d (old minDAQ firmware: 0d)

Once phases have been aligned, open the GBT client panel, click on GBT on the Communication radio button at the top and select the DAC tab. Select:

PC : CCPC1

GBT ID: 3 (for PDMDB0), 4 (for PDMDB1)

SCA ID: 0

Select all the lines (1,2,3,4) and click Activate Channel for each of them.

Click on the MiniDAQ expert button on the RICH Run Control panel and tick on the Trigger Configuration section the following:

External (set the value in the text field to the number of events per step you want to acquire)

CalibA (periodicity 1, bxid 3087)

TAE half window (10)

Send the START_RUN command, go on the FSM tab of the Device Editor and Navigator, right click on the SODIN/SODIN_Test/SODIN_GBTtest_Core0 partition, click on the Triggers config button, find the Calib A periodicity text field (in the left bottom part of the panel, under Calibration Triggers), change the value from 2 to 1 and click Apply Display.

Click on the DAC Scan button in the RICH Run Control panel, set the CLAROs configuration, click apply and then Program Claros.

Once the Claros have been configured, set the DAC scan parameters, click apply and click Start.

Files will be written in the /localdisk/DACscans/ folder.

How to analyse a DAC scan

In order to analyze a DAC scan connect to:

lbrich@pclbrich02

cd /home/Packages/offline/test/

source runDAC.sh #runNumber

Files will be written in /localdisk/DACscans/#runNumber/output folder.

The name of the merged file is total#runNumber.root

The file is also copied to eos: /eos/lhcb/testbeam/rich/tb2017/data/DACscans/

-- LhcbTestbeamSupportService - 2017-05-16

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