

Cavity AMC Testing

RF testing using E4438 generator

- Connect low noise RF generator to inputs:
 - LCLS II
 - 40 MHz @ 0dBm
 - Generate test files
 - `ssh laci@cpu-b34-bp01`
 - `cd /afs/slac/g/lcls/users/BPM/LCLS_II/BPM/software/lcls2-py-scripts/`
 - `./launch.sh cavityTakeData.py -Y cavity_yaml/*_project.yaml/000TopLevel.yaml -D cavity_yaml/*_project.yaml/config/defaults_cc.yaml -b1 -n1 -d /data/cpu-b34-bp01/bpm_data/`

Log onto a machine that you can get a Matlab license for

- `ssh <username>@rdsrv223`
- Copy test files to the proper directory
 - `cd /afs/slac/g/lcls/users/BPM/LCLS_II/Data`
 - `scp -r laci@cpu-b34-bp01:/data/cpu-b34-bp01/bpm_data/<filename>/<space>.`

Open data in Matlab

- Source the following
 - `bash`
 - `source /afs/slac/g/lcls/epics/setup/epicsenv-7.0.3.1-1.0.bash`
 - `source /afs/slac/g/controls/development/package/matlab/setup/matlab_2017b_setup_local.bash`
 - `cd /afs/slac/g/lcls/users/BPM/LCLS_II/matlab`
 - `matlab &`
 - Be sure to close Matlab when done
- Run `SNR_b84_GenADC.m`
- Change line 17 to have the right filename
- Change line 26 to `ADC.index=4`
 - Bay 0
 - 0 == Unused
 - 1 == Ain 2
 - 2 == Ain 1
 - 3 == Ain 0
 - Bay 1
 - 4 == Unused
 - 5 == Ain 2
 - 6 == Ain 1
 - 7 == Ain 0

Look for and record the values:

- `sig_power > 1`
- `SNR > 68`
- Repeat for indices (5,6,7)