

Devboard Setup at SLAC

Test Setup

Hybrid power: 2.5 V to AVDD and DVDD, 1.25 V to V125.

Devboard power: 5.5V

Bias

Operation

Starting trackerGui

The trackerGui can be started by issuing the following commands from a terminal. onlineGui is optional.

```
cd /u1/software/daq
source setup_env.csh
./bin/onlineGui &
./bin/trackerGui
```

The screenshot shows the 'Tracker Control (on darkphoton.site)' window. It has a title bar with a close button. Below the title bar are five tabs: 'System' (selected), 'Commands', 'Status', 'Configuration', and 'Calibration'. The 'System' tab contains a 'Configuration and State' section with a text box showing: 'State: System Configured From calibration_config.xml. System is in run state 'Stopped' 5 Out Of 5 Apvs Are Synced!'. Below this are six buttons: 'HardReset', 'SoftReset', 'RefreshState', 'Set Defaults', 'Load Settings', and 'Save Settings'. The next section is 'Data File' with a text input field and three buttons: 'Browse', 'Open', and 'Close'. Below that is the 'Run Control' section with three controls: 'Run Rate' (a dropdown menu set to '100Hz'), 'Run Count' (a spinner box set to '2000'), and 'Run State' (a dropdown menu set to 'Stopped'). Below these is a blue progress bar labeled '100%'. The final section is 'Counters' with four input fields: 'Register Rx' (set to '1118'), 'Timeout' (set to '16'), 'Data Rx' (set to '19862 - 0 Hz'), and 'Error' (set to '0'). Below these are two more input fields: 'Data File' (set to '0 - 0 Hz') and 'Unexpected' (set to '0'). At the bottom of the 'Counters' section is a 'Reset Counters' button.

Figure 1: trackerGui

Taking a Calibration Run

A calibration run can be taken as follows

```
source /ul/software/daq/setup_env.csh
~/hybrid/scripts/run_cal.py -t <hybrid type> -c <cal type> <basename>
```

<hybrid type> is 1 for L1-3, 2 for L4-6. <cal type> is 0 for baseline only, 1 for response (all cal groups, single delay), 2 for shape (cal group 0, all delays), 3 for full shape cal (all groups, all delays). <basename> is the base filename for the output data files (e.g. if you set it to data/blah, output filenames will be data/blah_cal_0.bin, etc.).

Quality Assurance Tests

Running Baseline Analysis

Running the baseline analysis can be done as follows. Normally this would be run on the _baseline_dtrig.bin file.

```
~/hybrid/bin/meeg_baseline -t <hybrid type> <filename>
```

<hybrid type> is define the same way as for run_cal.py.

Running Calibration Analysis

After a calibration run for each calibration group has been taken (see Taking a calibration run), the analysis of the files can be done as follows, where <filenames> is a list of all files with calibration pulses. You can use something like "basename_cal_g?_d?.bin" to automatically list all the files you want.

```
~/hybrid/bin/meeg_tp -t <hybrid type> <filenames>
```

By default this just makes text files as output. Options -r and -f make plots.