

VANA CALIBRATION

The Vana calibration procedure is the same as described in Sec. 14.9 of the POS User Guide.

Before beginning the iterative part of the procedure, you should do a VcThrCalibration targeting an absolute threshold of 70 VCal.

Then you do iterations of the following list:

- 1) CalDelCalibration to 20%
- 2) SCurve99By3 (two WBCs). Take an SCurve run scanning over two WBCs. Run the SCurve analysis on the in-time WBC data and rename the TrimOutput file as TrimDefault.dat. Also run the SCurve analysis on the data from both WBCs and rename the TrimOutput file as TrimDefault_abs.dat.
- 3) Run PixelInTimeVana to produce new dac settings.

A Python script is available to help with step 2) and 3).

After taking the SCurve99By3 run, you can run the script passing run number, key and a logfile name as arguments:

```
runSCurveAnalysisForVana.py -r <runNumber> -k <runKey> -l <logfile>
```

The script will run the SCurve analysis for in-time and absolute thresholds, run PixelInTimeVana to produce new dac settings and insert the new dac settings.

The configuration files for the SCurve analysis are set by:

```
pixelAnalysisExe    = './bin/linux/x86_64_slc5/PixelAnalysis.exe'  
SCurveInTimeConfig = 'configuration/SCurveAnalysis_FPix_WBC156.xml'  
SCurveAbsConfig    = 'configuration/SCurveAnalysis_FPix.xml'  
pixelIntimeVanaExe = './bin/linux/x86_64_slc5/PixelIntimeVana.exe'  
rundir             = os.environ[ 'POS_OUTPUT_DIRS' ]  
dacdir             = os.environ[ 'PIXELCONFIGURATIONBASE' ]+' /dac'
```

Remember to kill all the Supervisors before doing the next iteration to make sure that new dac are loaded.

Appendix: calibration configuration files

VcThrCalibration

```
Mode: VcThrCalibration
Rows:
10 | 20
Cols:
10 | 20
VcalLow
Scan: WBC 154 156 1
Scan: VcThr 0 200 2
Set: Vcal 70
Repeat: 25
ToCalibrate:
+ all
```

CalDelCalibration

```
Mode: CalDelCalibration
Parameters: Fraction 0.2
Rows:
11 | 21
Cols:
11 | 21
VcalLow
Scan: CalDel 0 255 2
Scan: WBC 155 157 1
Set: Vcal 50
Repeat: 10
ToCalibrate:
+ all
```

SCurve99By3

```
Mode: SCurve
Rows:
 0 | 9 |
18 | 27 |
36 | 45 |
54 | 63 |
72
Cols:
3 13 26 | 39 1 14 |
27 40 2
VcalLow
Scan: Vcal 10 160 1
```

Scan: WBC 155 156 1

Repeat:

15

ToCalibrate:

all