Test reports from MPP

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DEPFET Lab 04.10.2017

Module checks before glueing

- **DHPT high speed (HS) Links**
  short scan (to have a reference for later) ~15 min
  - bias 200 to 250, step 5
  - bias_d 100 to 150, step 5
  - delay 0
- **Delays** ~15 min
- **ADCs optimization using small parameter space** ~14 h (night scan)
- **Pedestal/noise (1k frames)** ~10 min
- **2-bit offset (delay and current source optimization)** ~ 15 min
- **Pedestal/noise (1k frames)** ~10 min
- **DCD analog common mode correction (ACMC)** ~1 min
- **Pedestal/noise (1k frames)** ~10 min
- **Source measurement different regions** ~ **?** min/h
  - Threshold 5
  - Verify shape of the spectra
  - SNR in different regions
  - Adjust VNSubIn / Use ACMC

W47_IB: hs_link, delays, pedestals, adc_curves, sample_point_curve, offsets, pedestal & noise, ACMC, source scan (currently ongoing)

W02_IB: hs_link, delays, pedestals, adc_curves, offsets, pedestals & noise, ACMC, source ✓

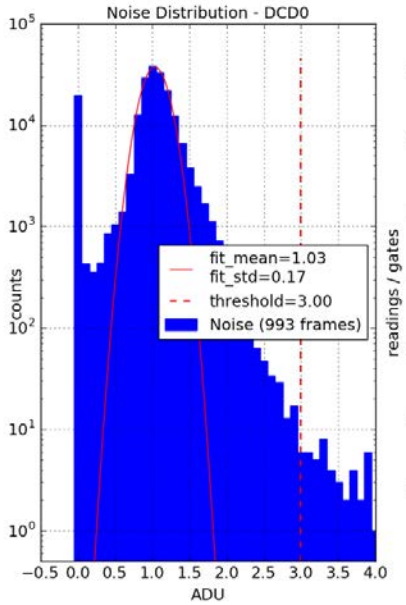
W47_IF: hs_link, delays, pedestals, adc_curves, offsets, pedestals & noise, ACMC,

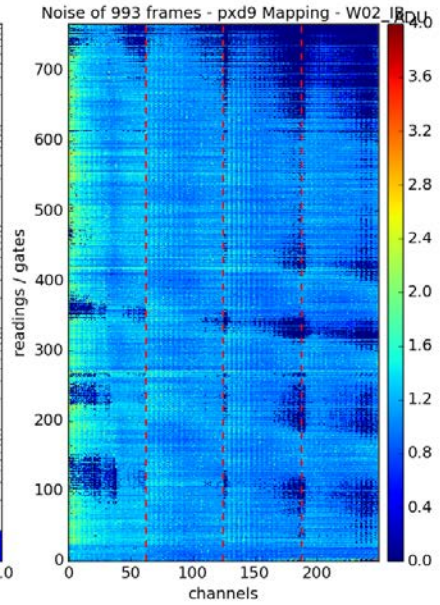
W44_IF: under test

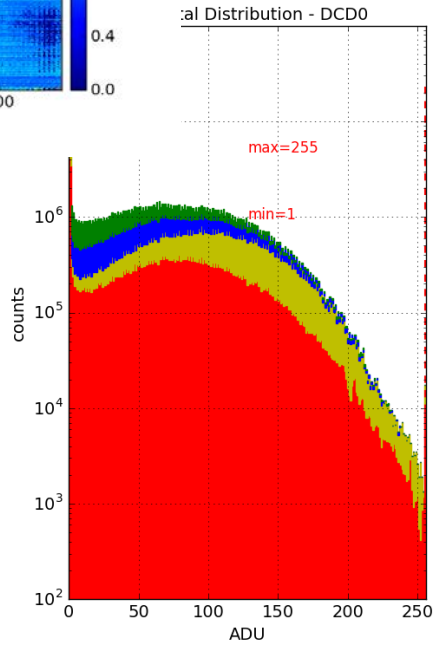
W46_IF. HLL for rings and GM

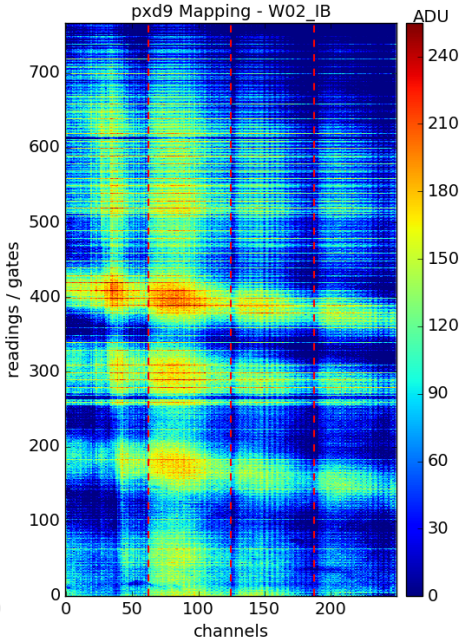
W02_IB

W02_IB – pedestals without offsets, without ACMC

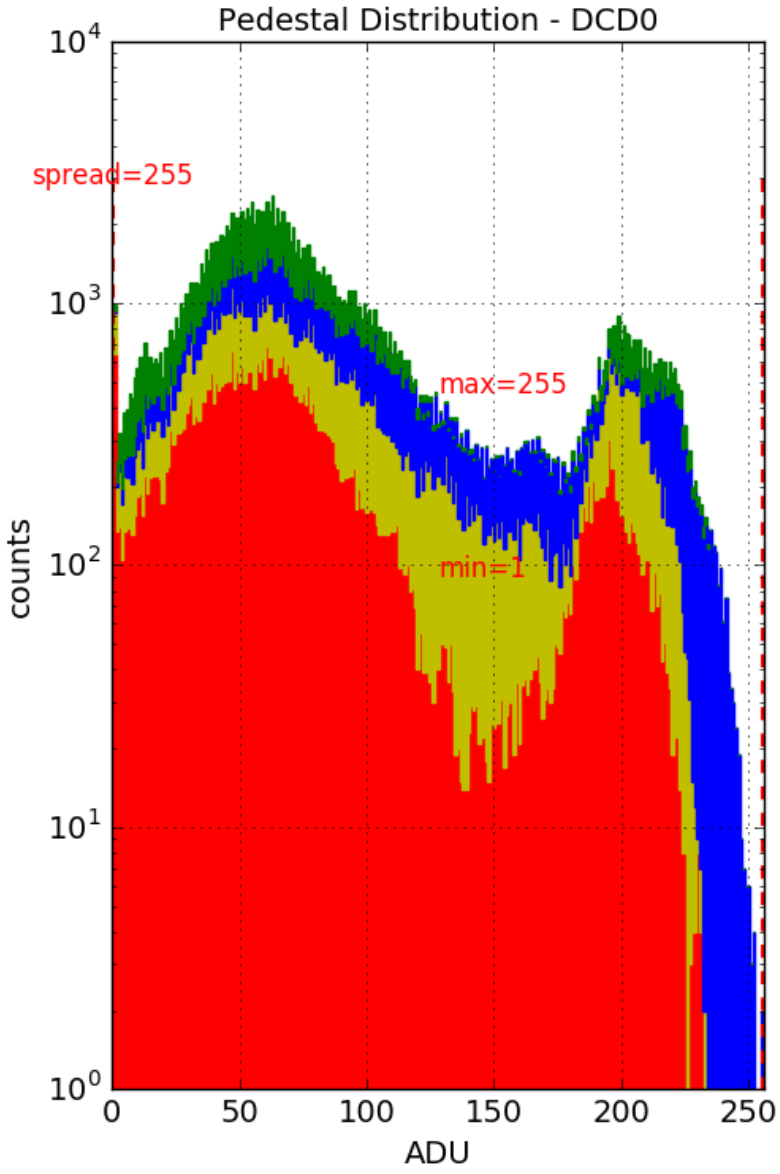


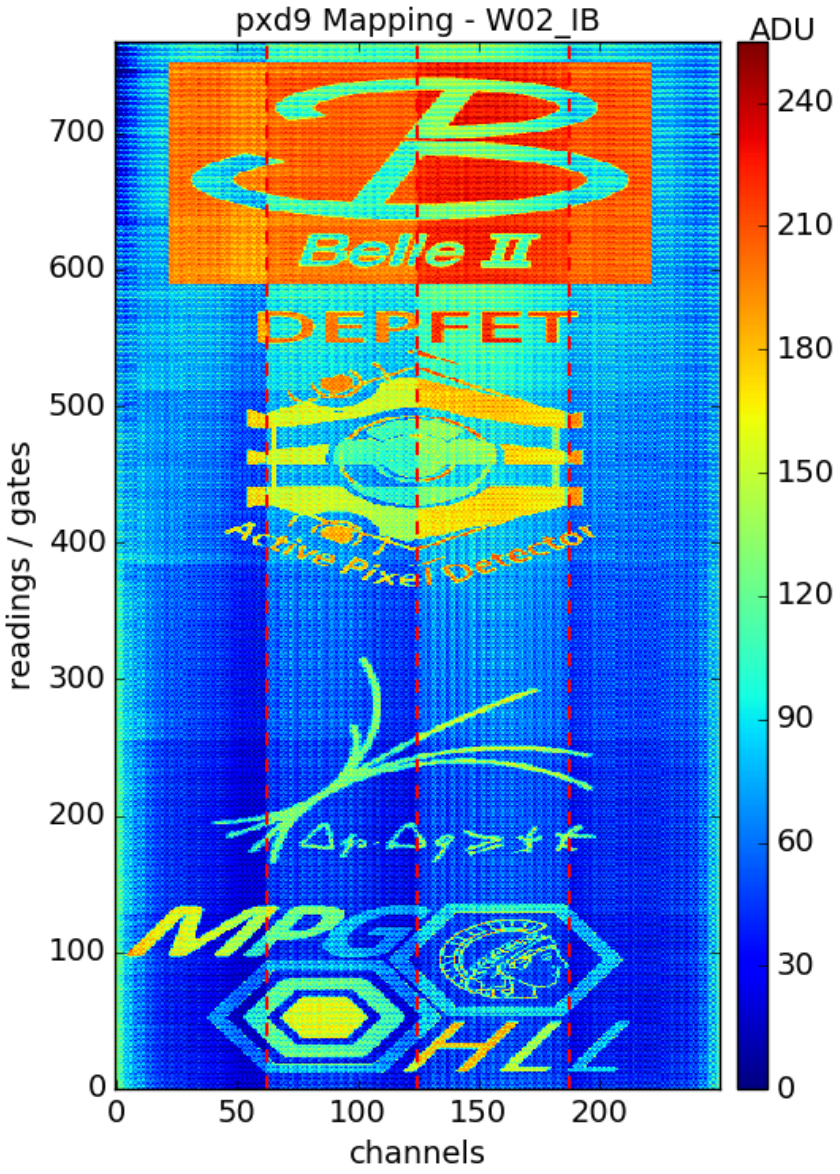




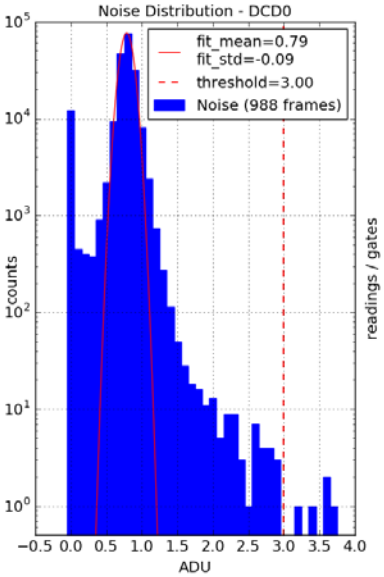


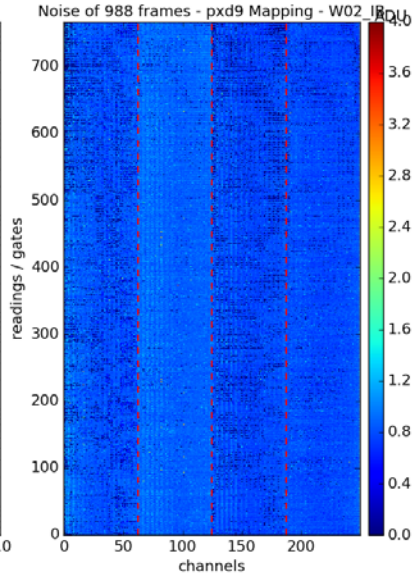
W02_IB – offset delays

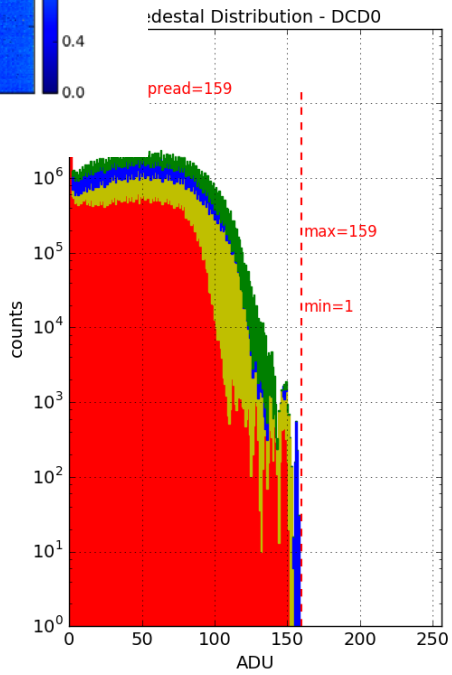


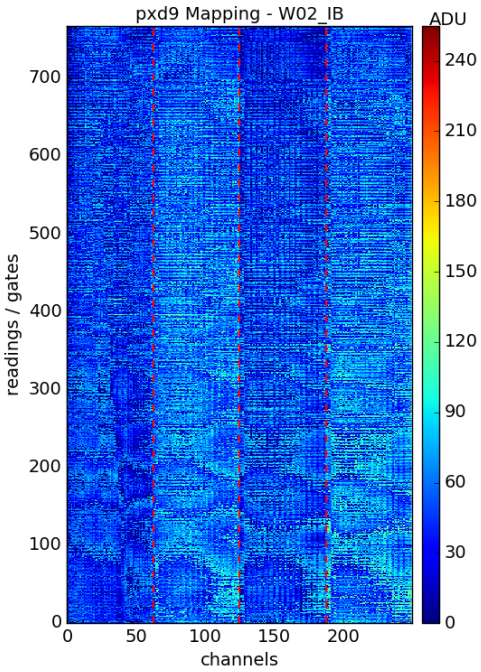


W02_IB – pedestals with offsets, with ACMC





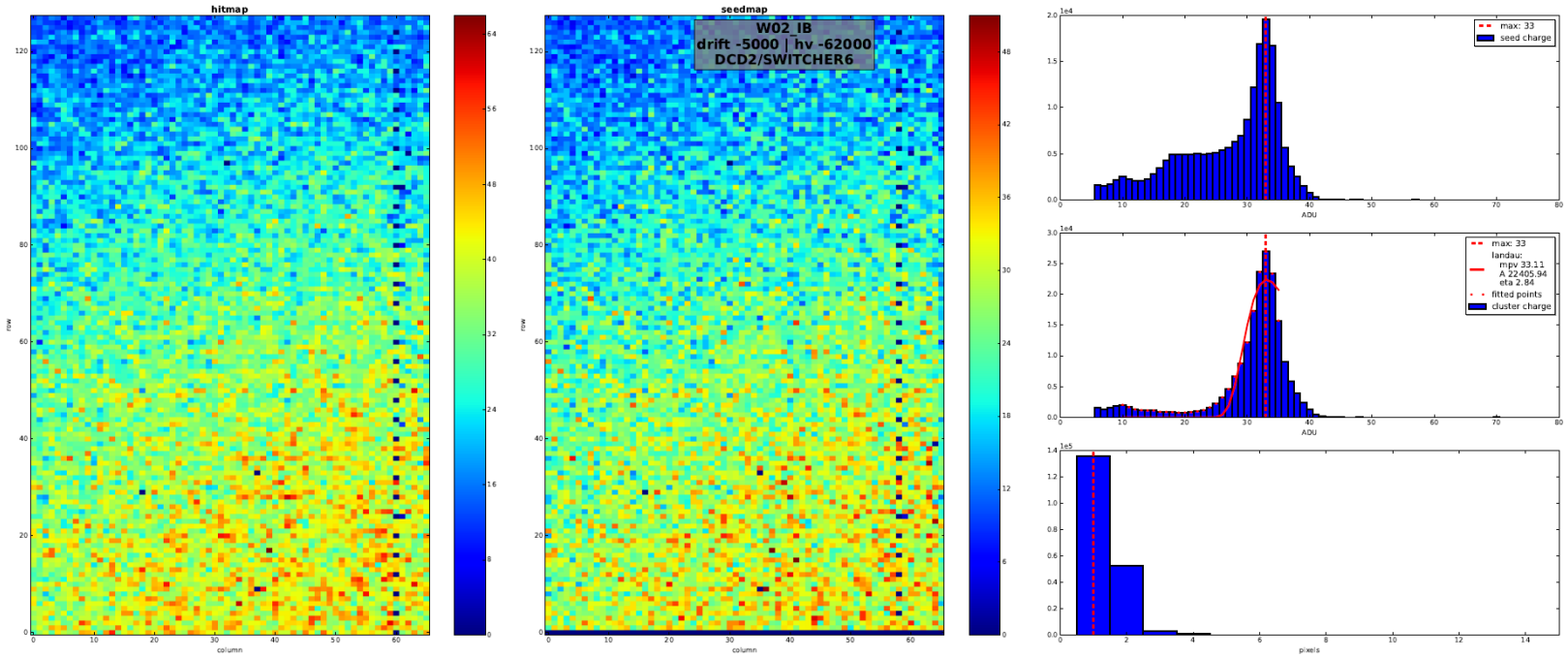




W02_IB - source

Measurement done

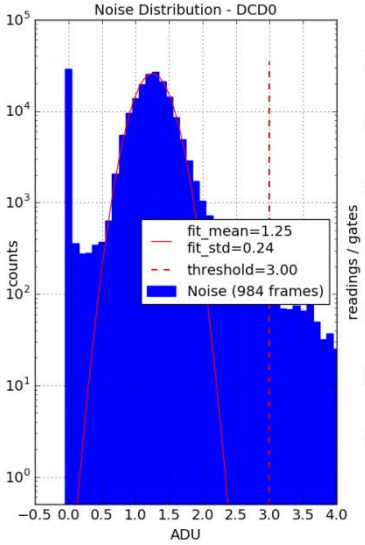
Analysis currently ongoing

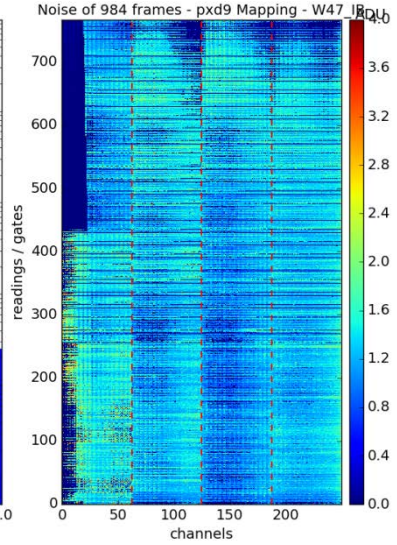


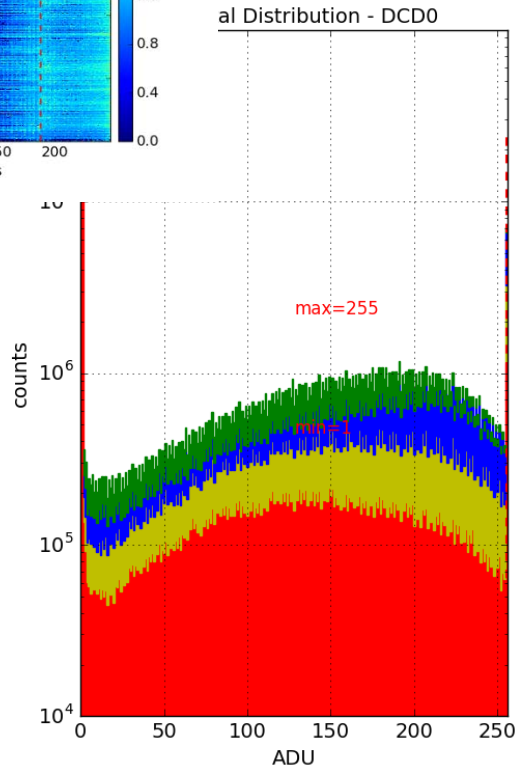
/pxdtest8/W02_IB/source_scan/2017_10_02_004/hv-62000_drift-5000

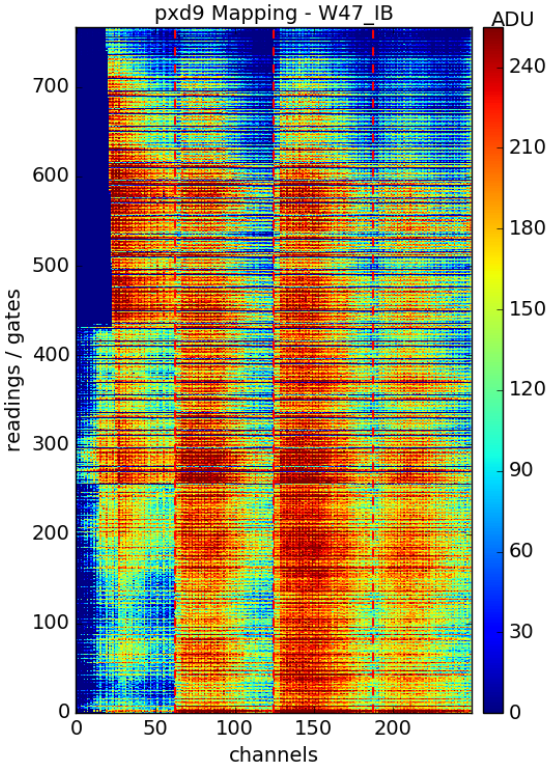
W47_IB

W47_IB – pedestals without offsets, without ACMC

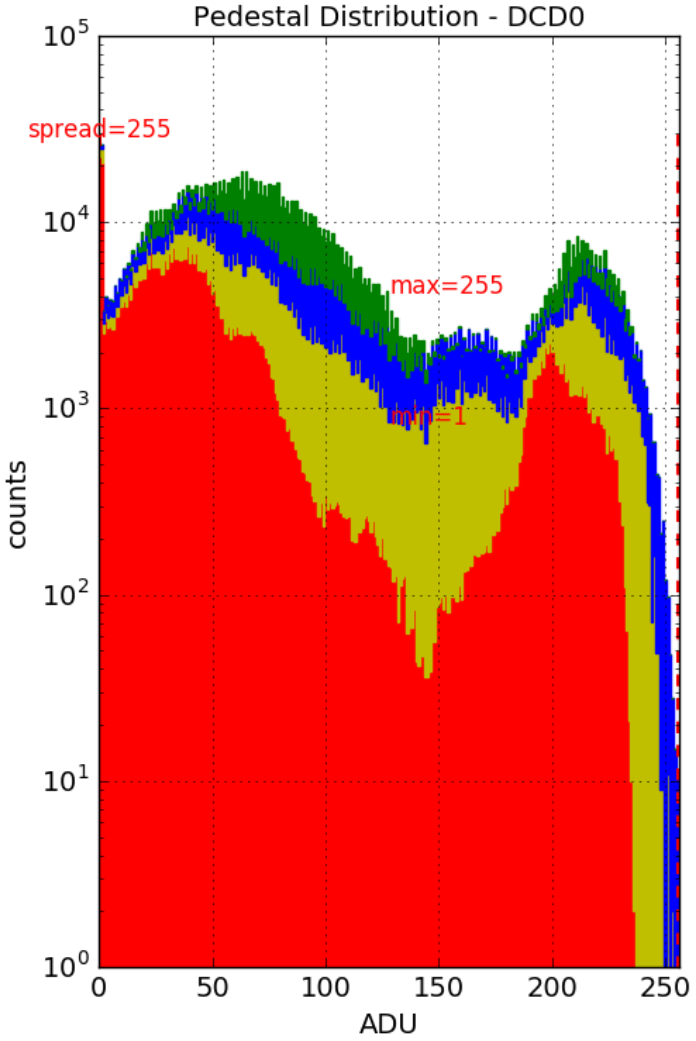


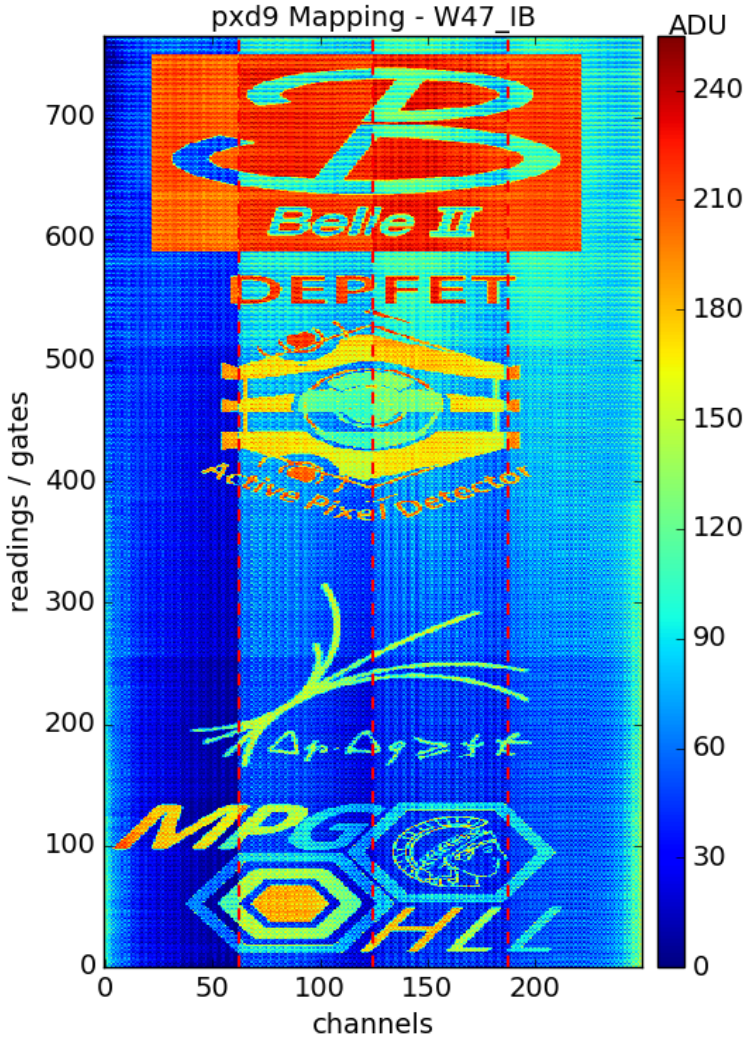




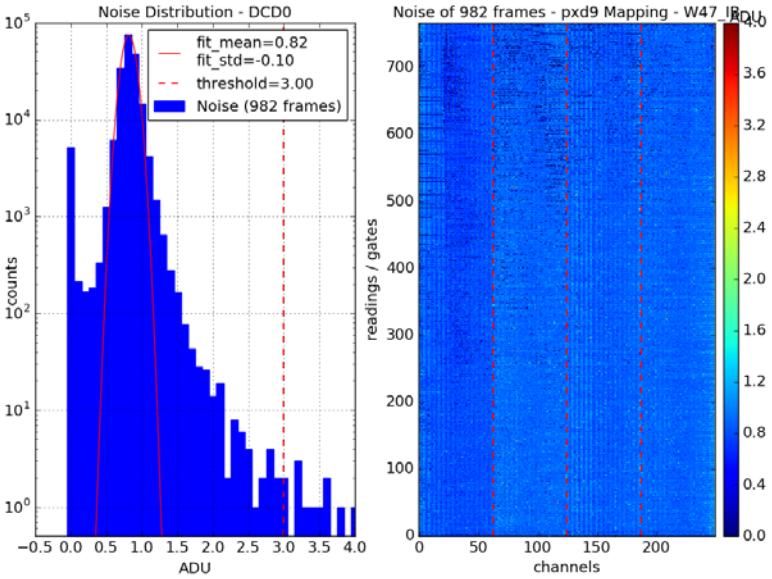


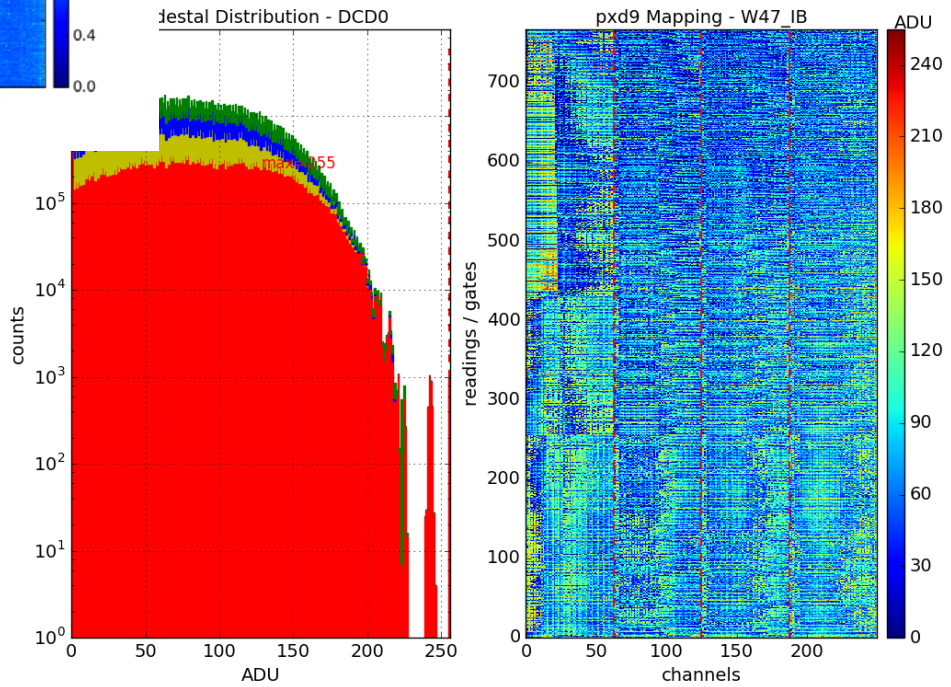
W47_IB – offset delays





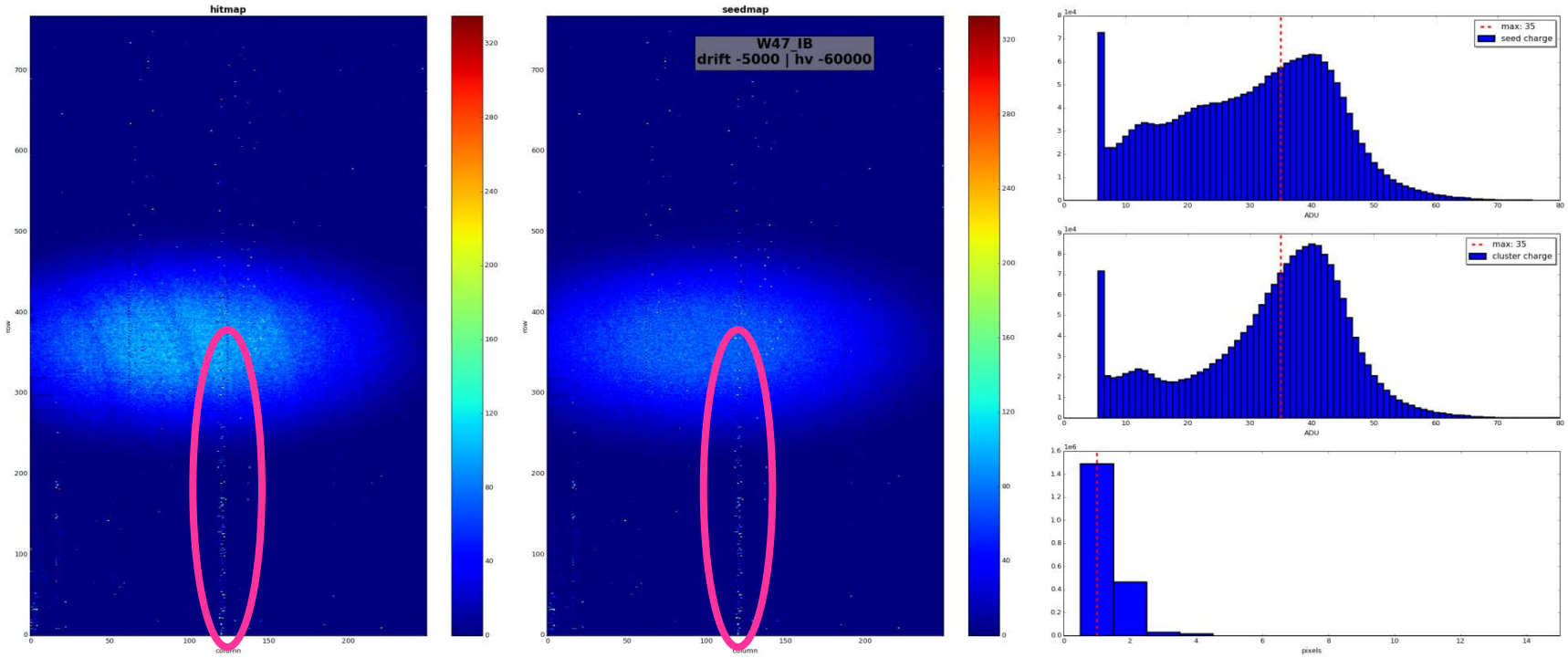
W47_IB – pedestals with offsets, with ACMC





W47_IB - source

Measurement currently ongoing & some noisy pixel



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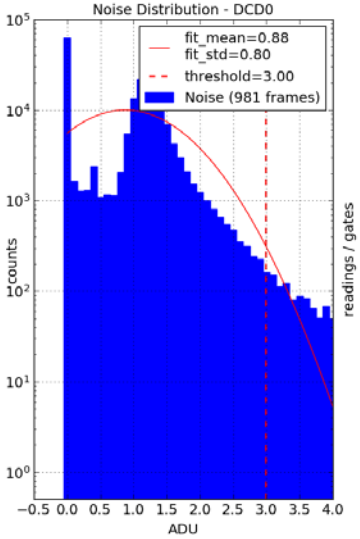
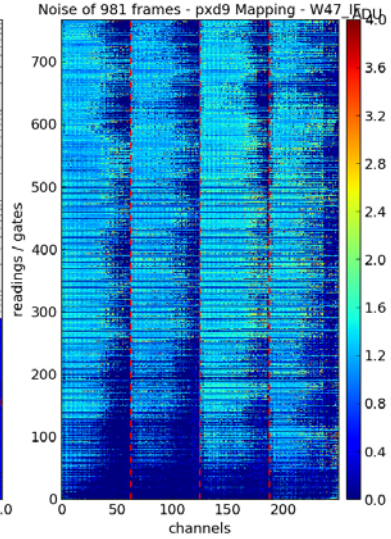
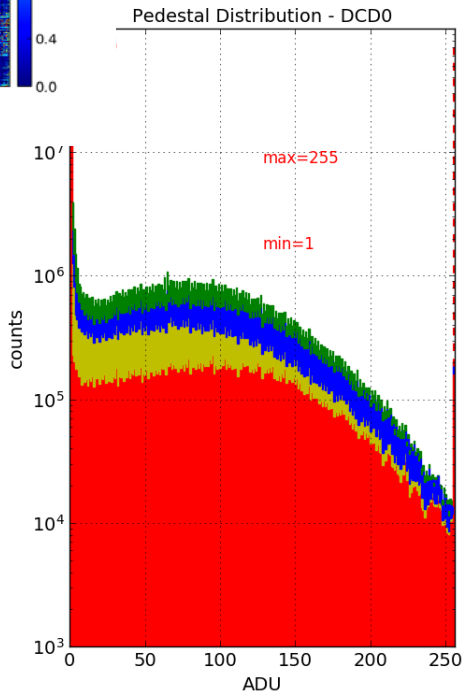
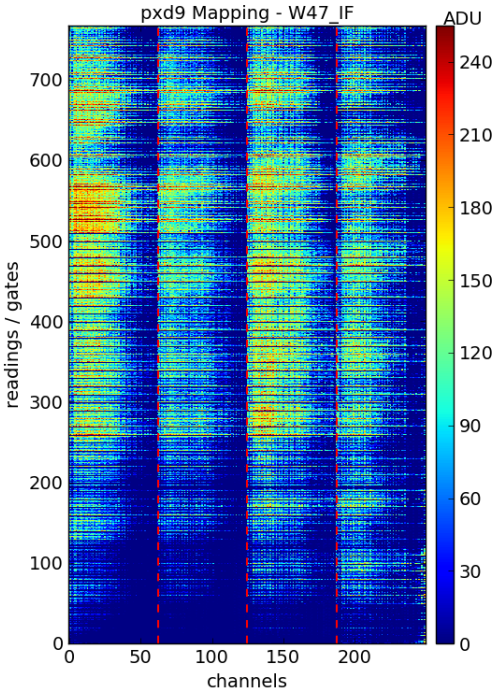
W47_IF

W47_IF – pedestals without offsets, without ACMC

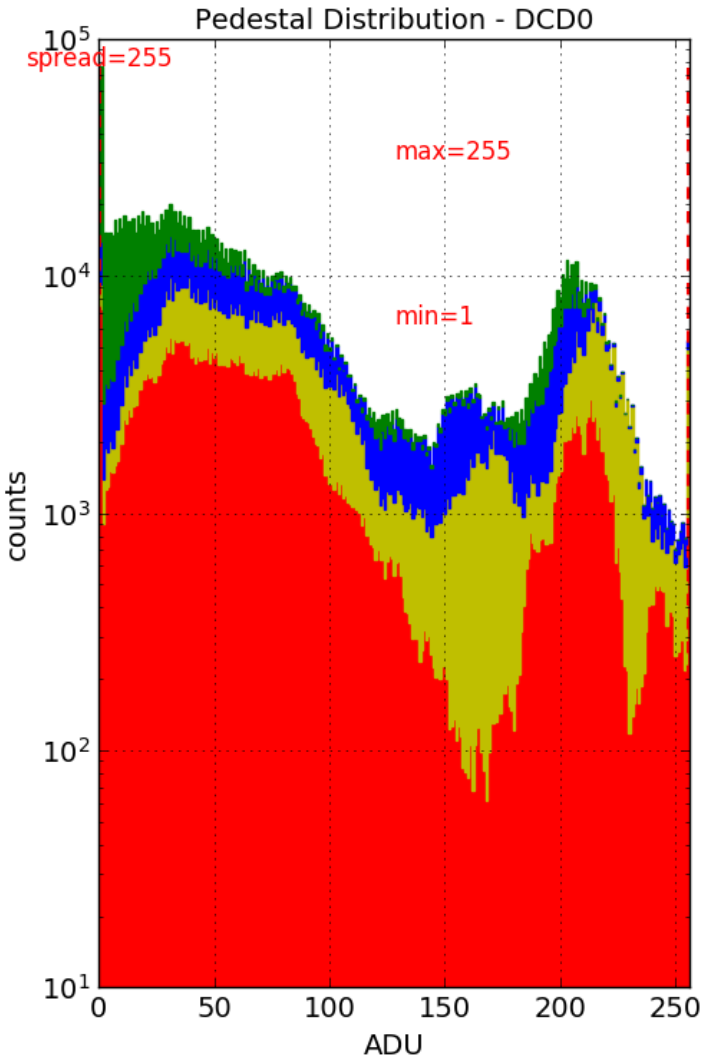


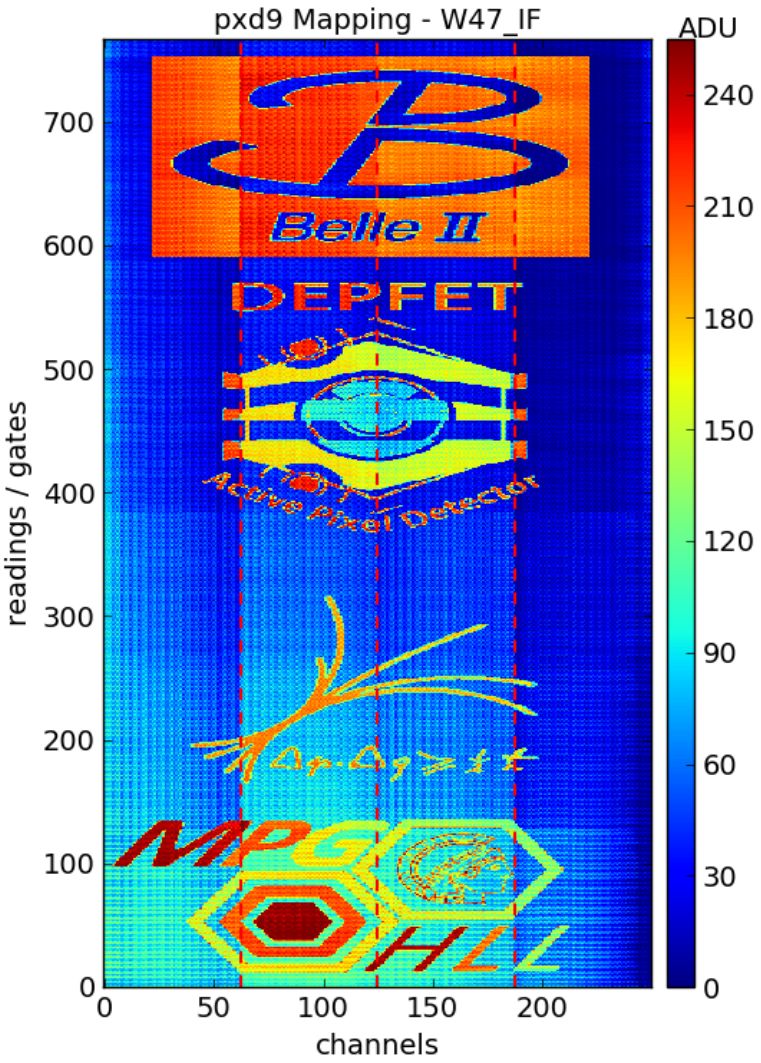




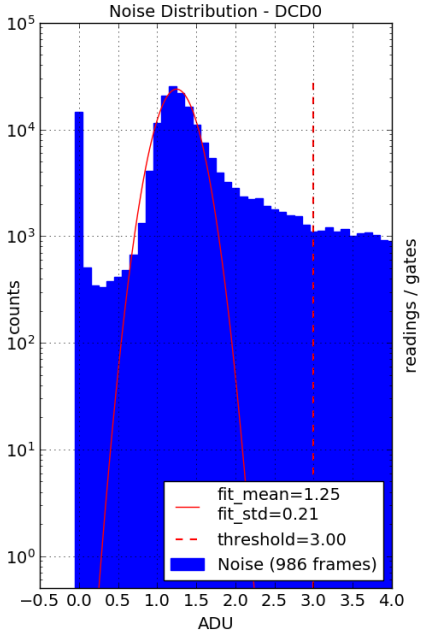


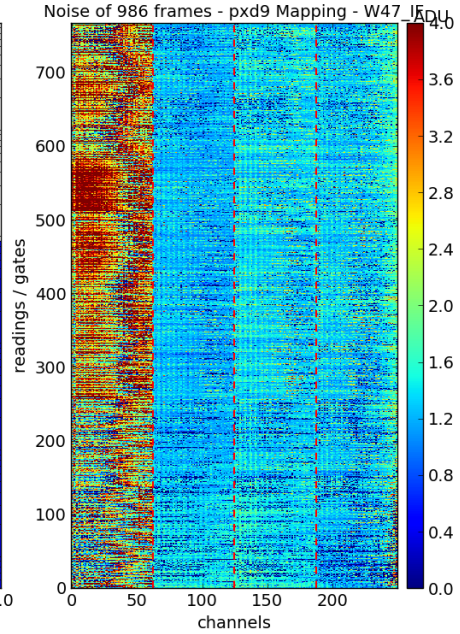
W47_IF – offset delays



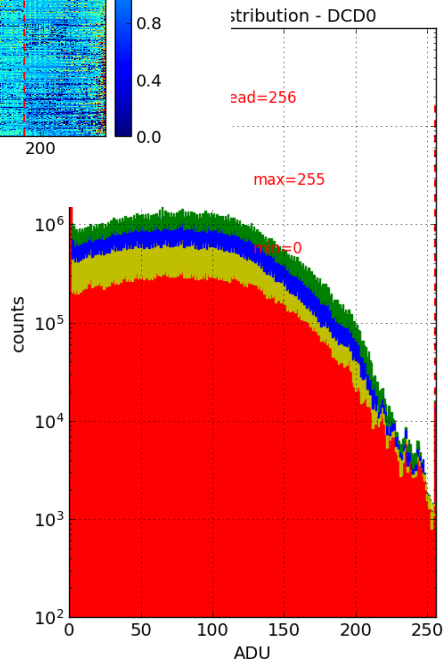


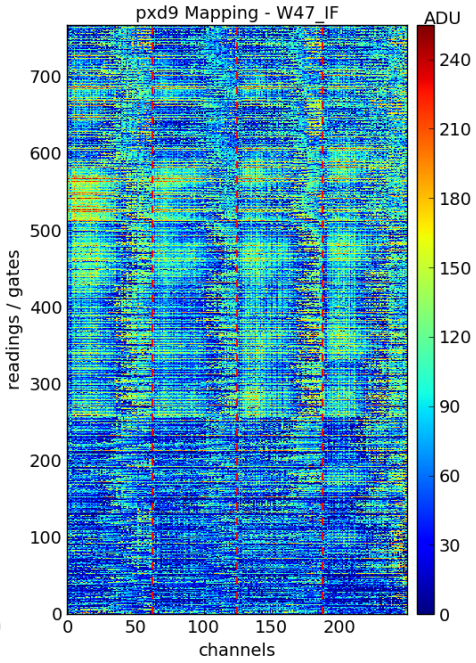
W47_IF – pedestals with offsets, without ACMC



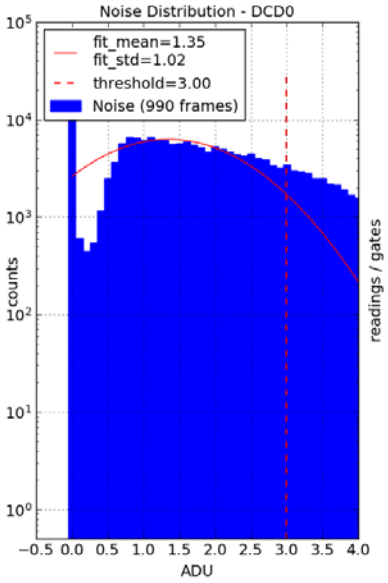


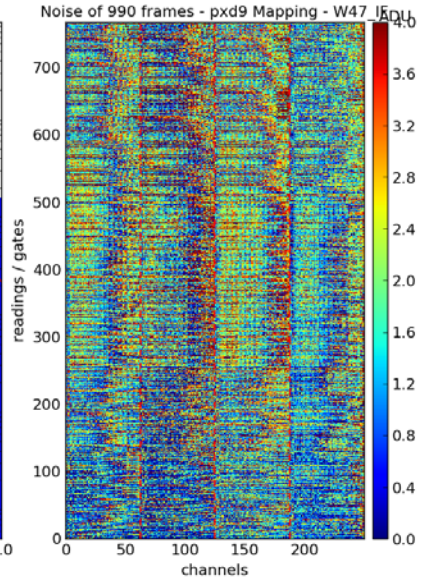
high noise on DCD1



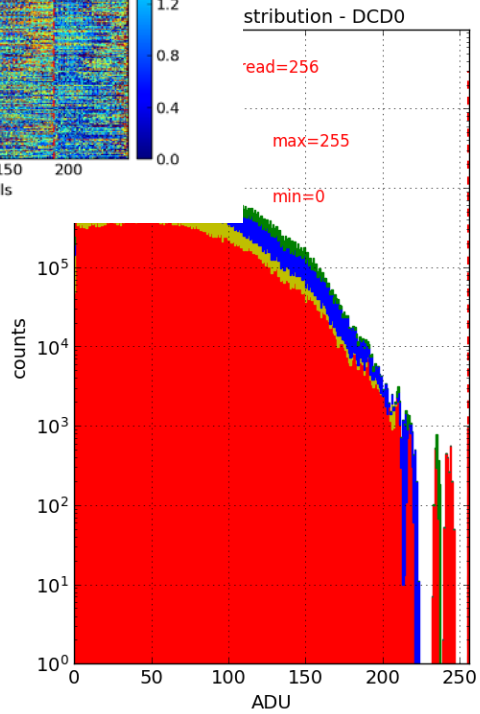


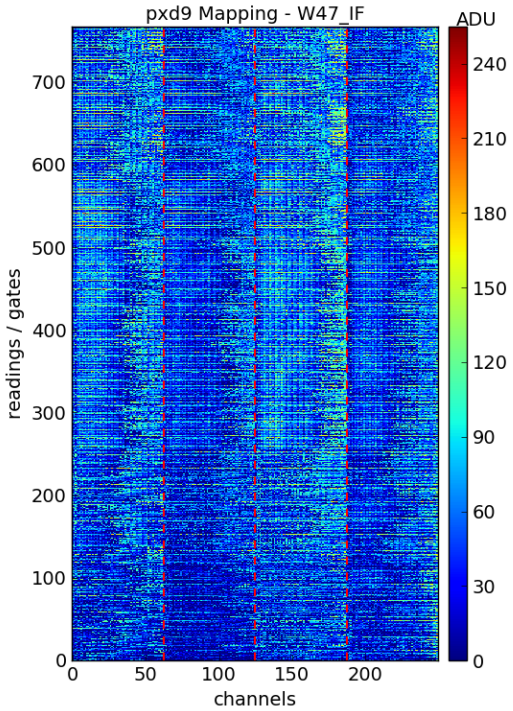
W47_IF – pedestals with offsets, with ACMC





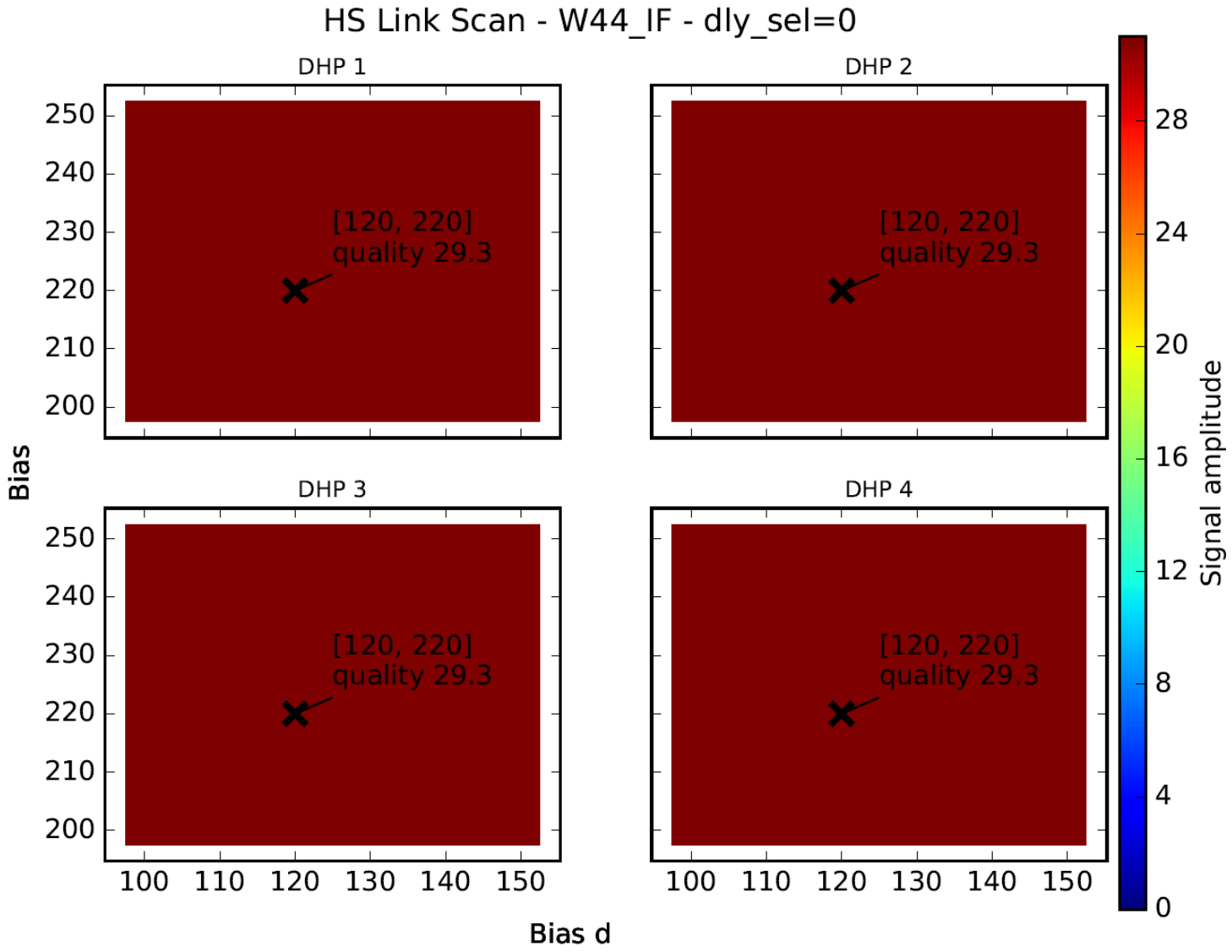
high noise



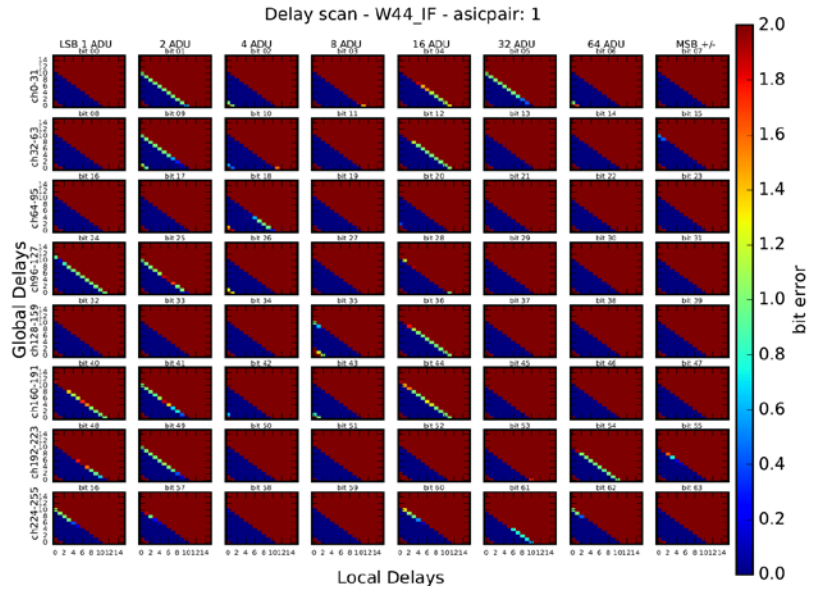


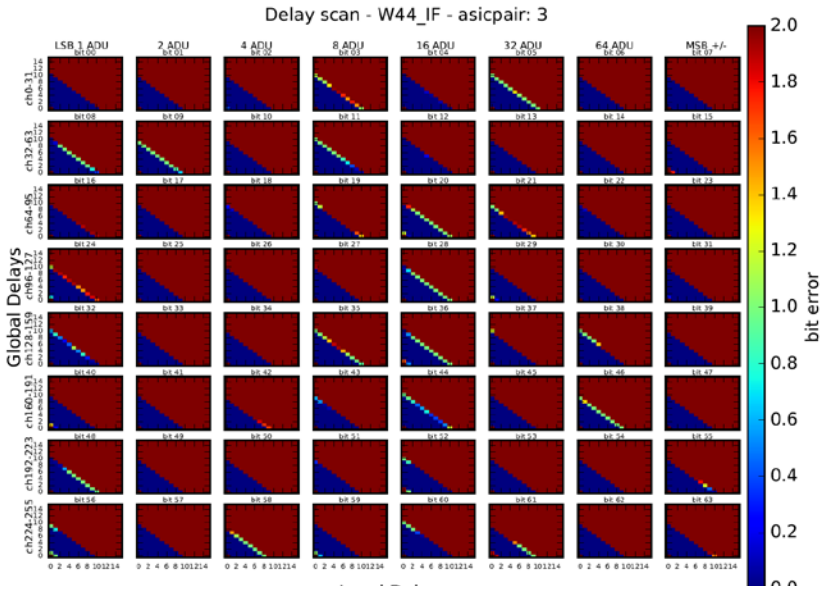
W44_IF

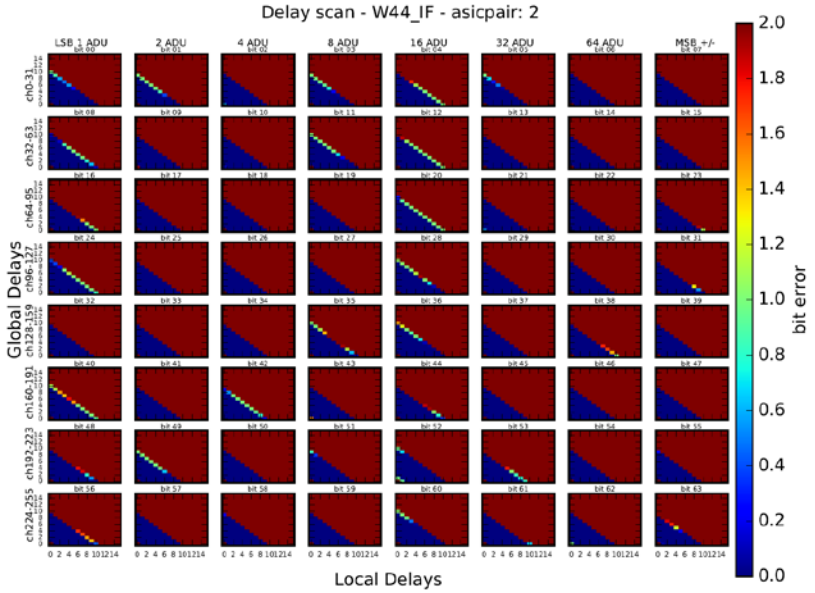
W44_IF – HS links

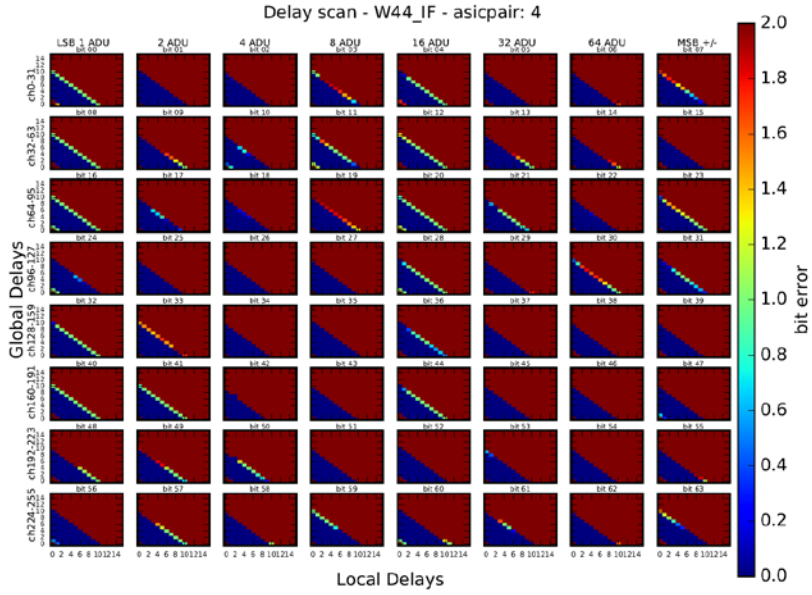


W44_IF – delays

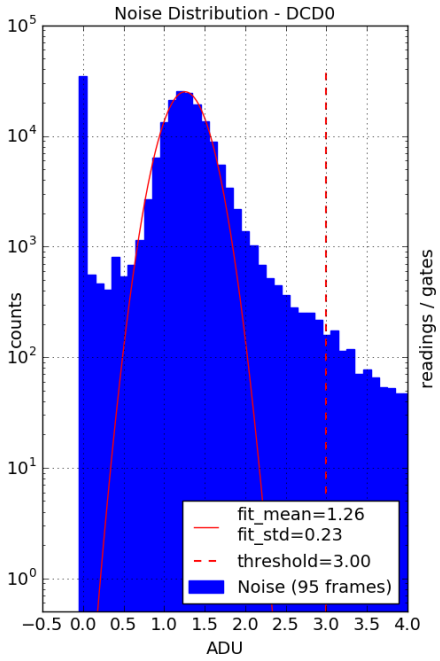


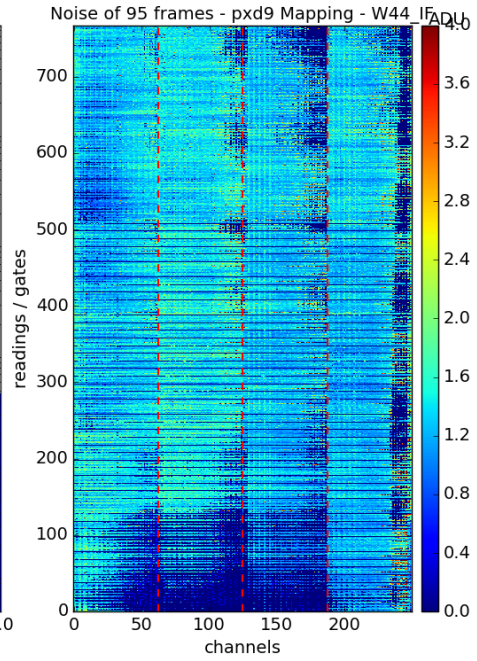


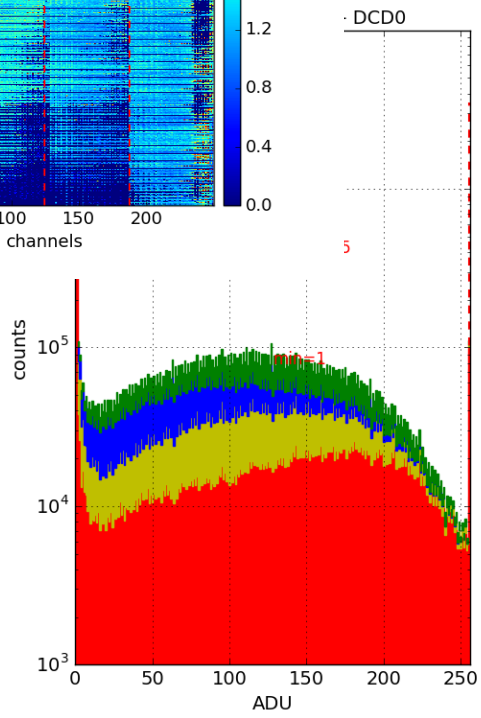


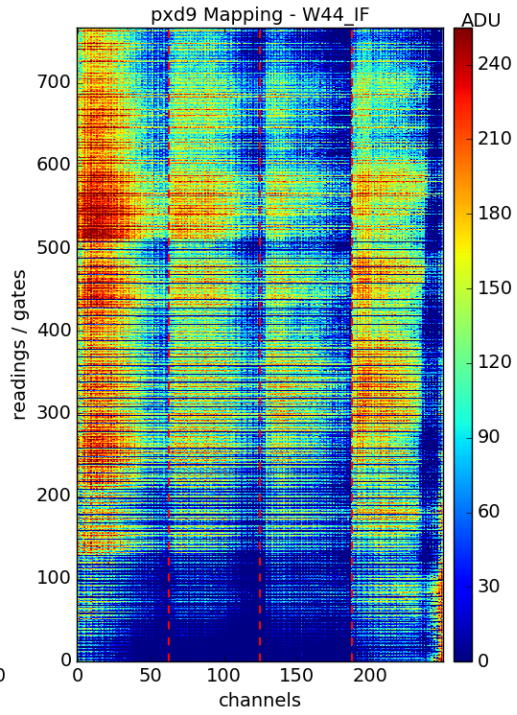


W44_IF – pedestals without offsets, without ACMC

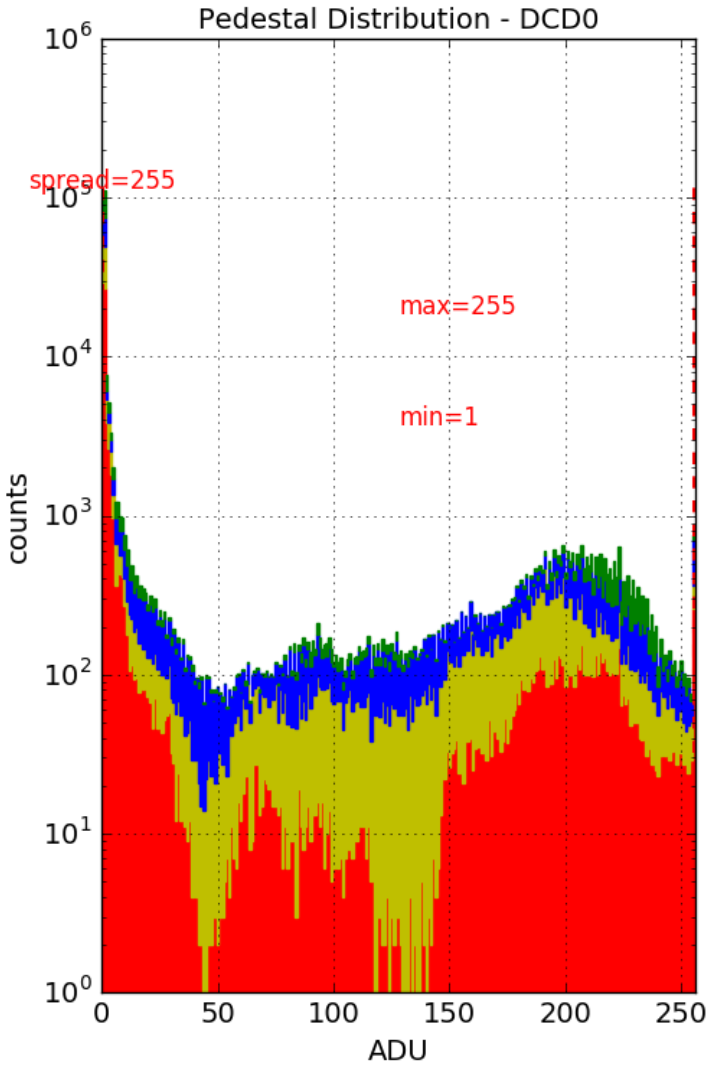


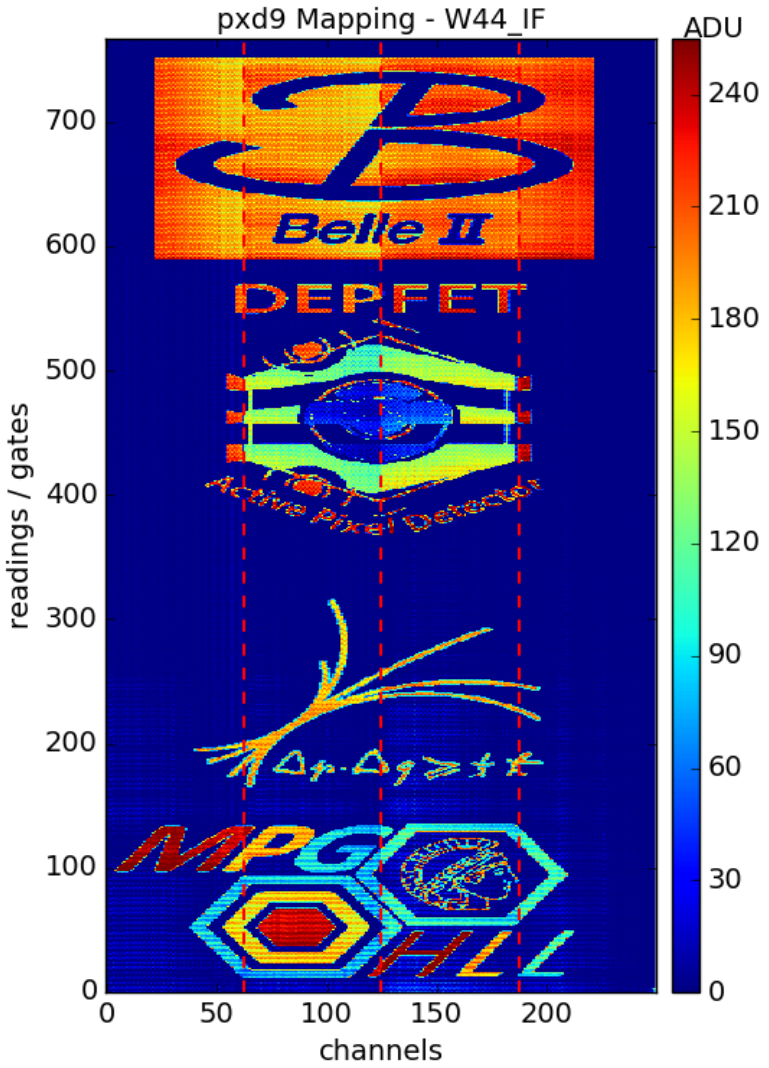






W44_IF – offset delays





W44_IF – pedestals with offsets, with**out** ACMC

to do

W44_IF – pedestals with offsets, with ACMC

to do

Backup

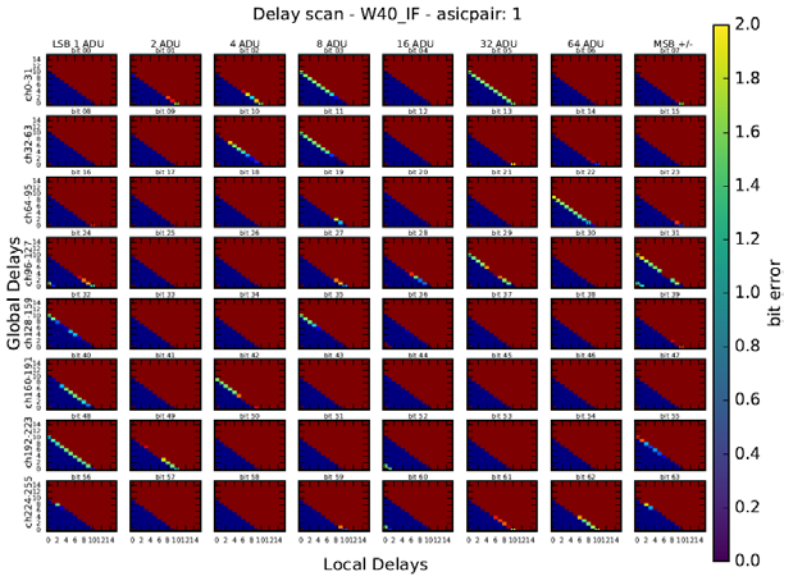
Module checks before glueing - **Issues**

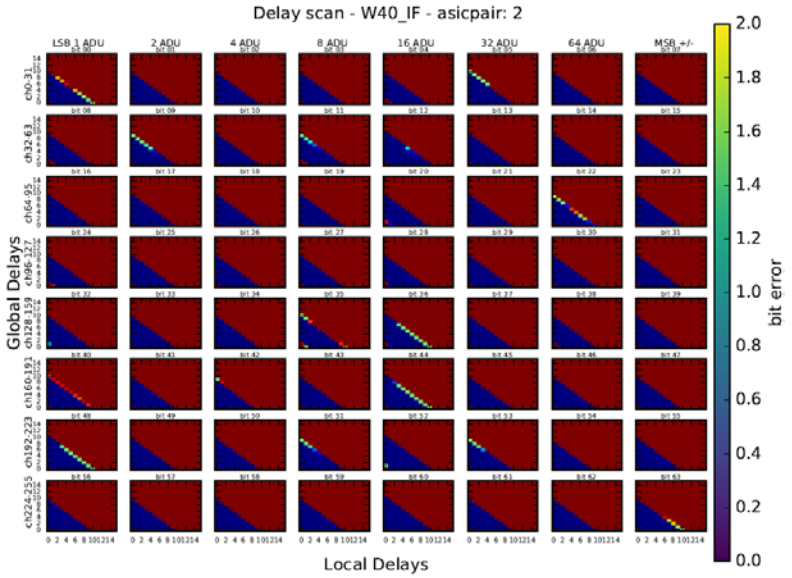
- **DHPT high speed (HS) Links**
  short scan (to have a reference for later)
  - bias 200 to 250, step 5
  - bias_d 100 to 150, step 5
  - delay 0
- **Delays** ✓
- **ADCs optimization using small parameter space**

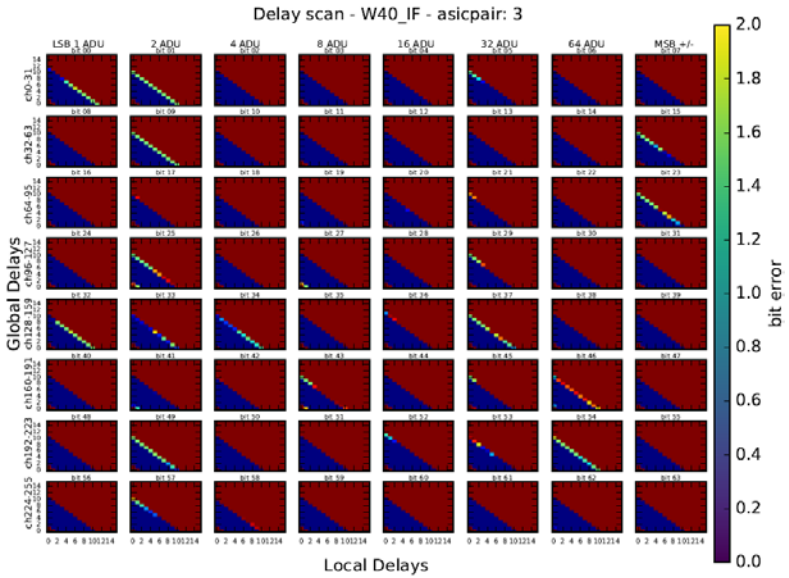
problem with crowded root partition during analysis. Problem still remains

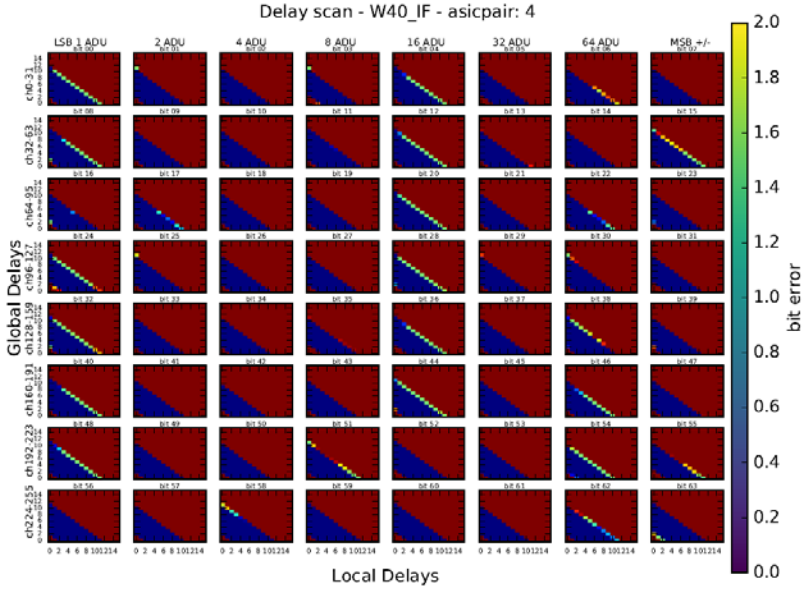
- **Pedestal/noise (1k frames)** not defined what to analyse – compare etc?
- **Sampling Point Curve** – missing: verfification of the Switcher sequence in DHP memory
- **2-bit offset (delay and current source optimization)** coding guidelines missing but working
- **Pedestal/noise (1k frames)** - same as above
- **DCD analog common mode correction (ACMC)** ✓
- **Pedestal/noise (1k frames)** - same as above
- **Source measurement different regions** – working but extremely slow (is the stepper implemented)
  - Threshold 5
  - Verify shape of the spectra
  - SNR in different regions
  - Adjust VNSubIn / Use ACMC

W40_IF – delays







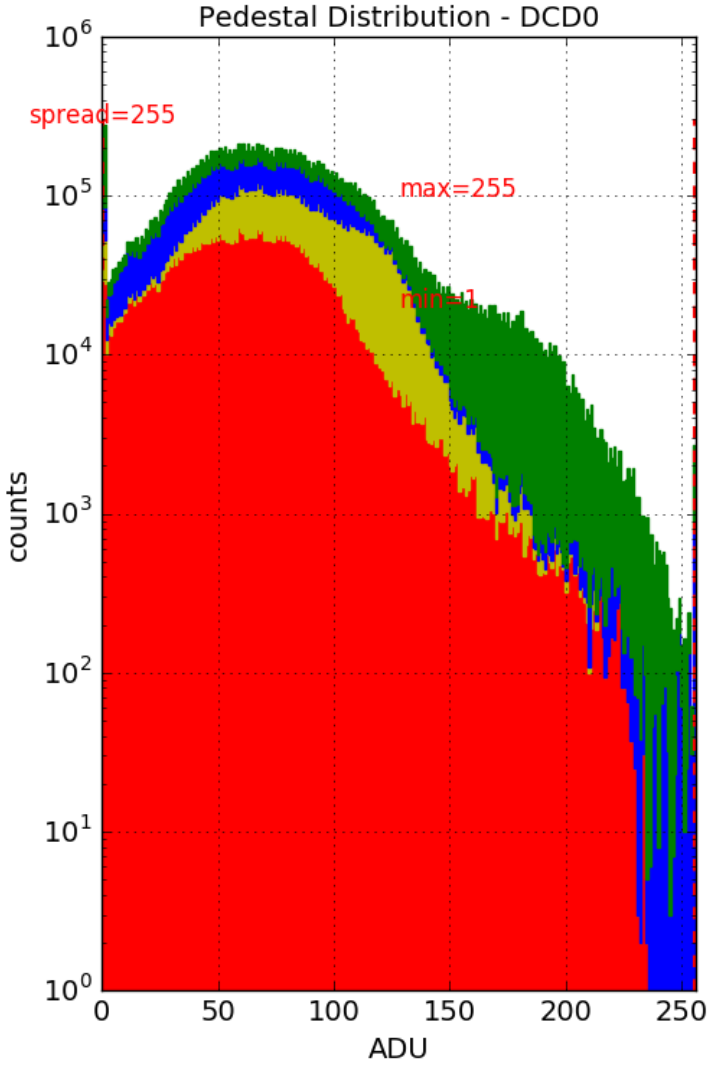


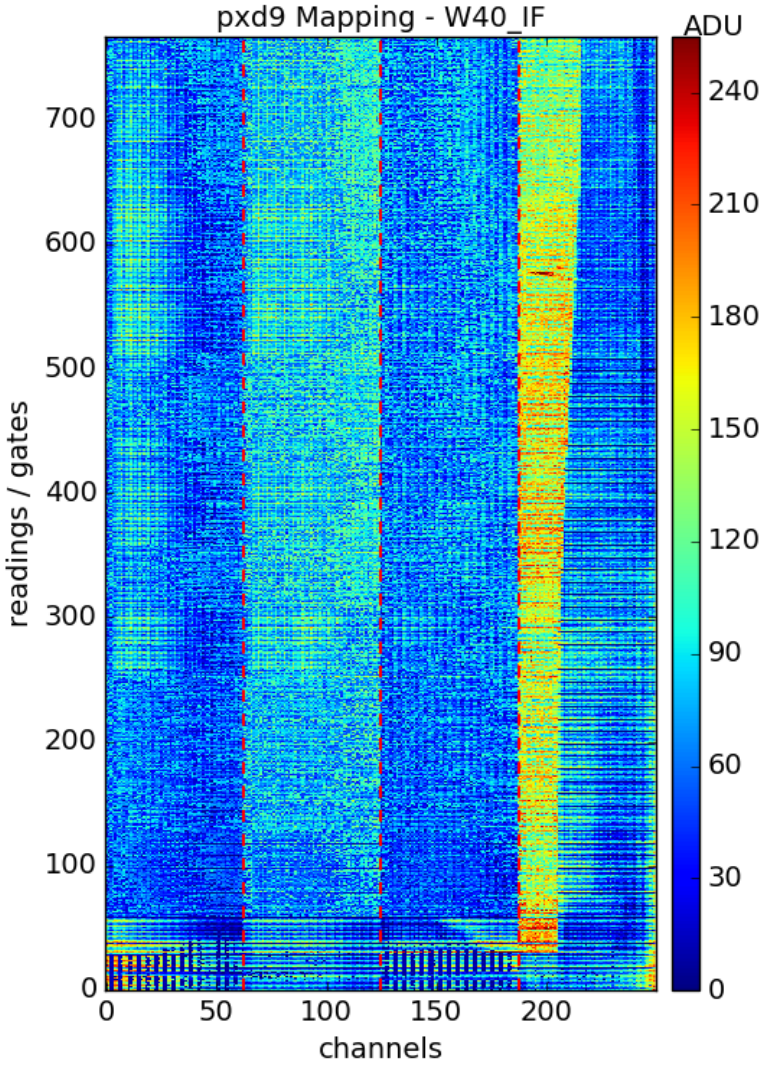
W40_IF – ADC curves

Measurements done, analysis missing

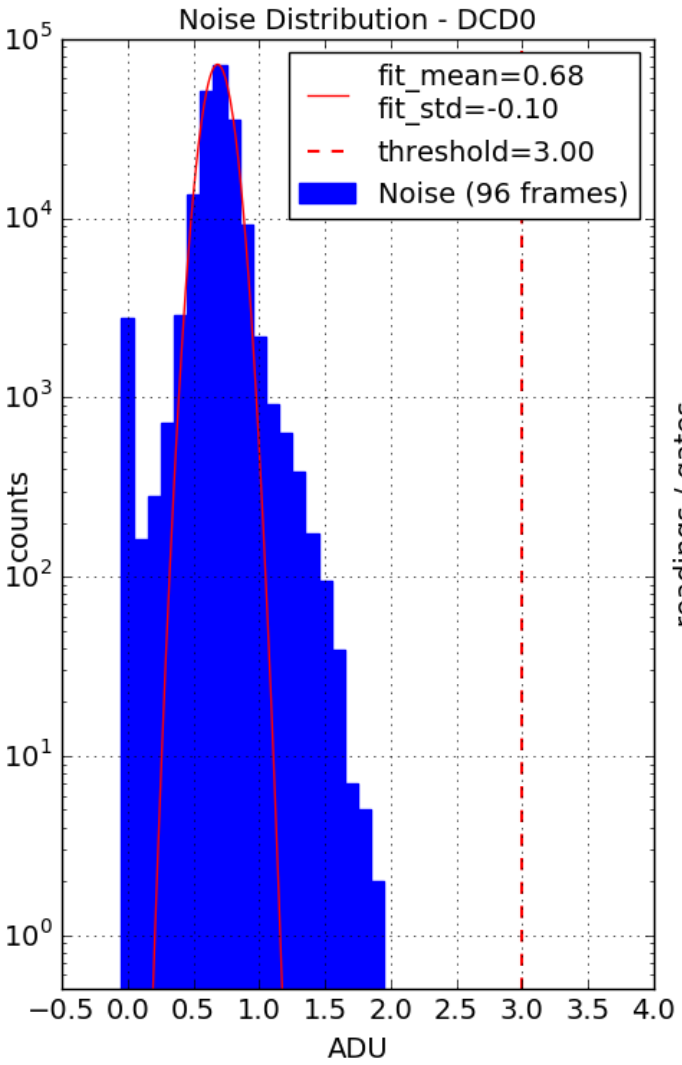
Problem with analysis

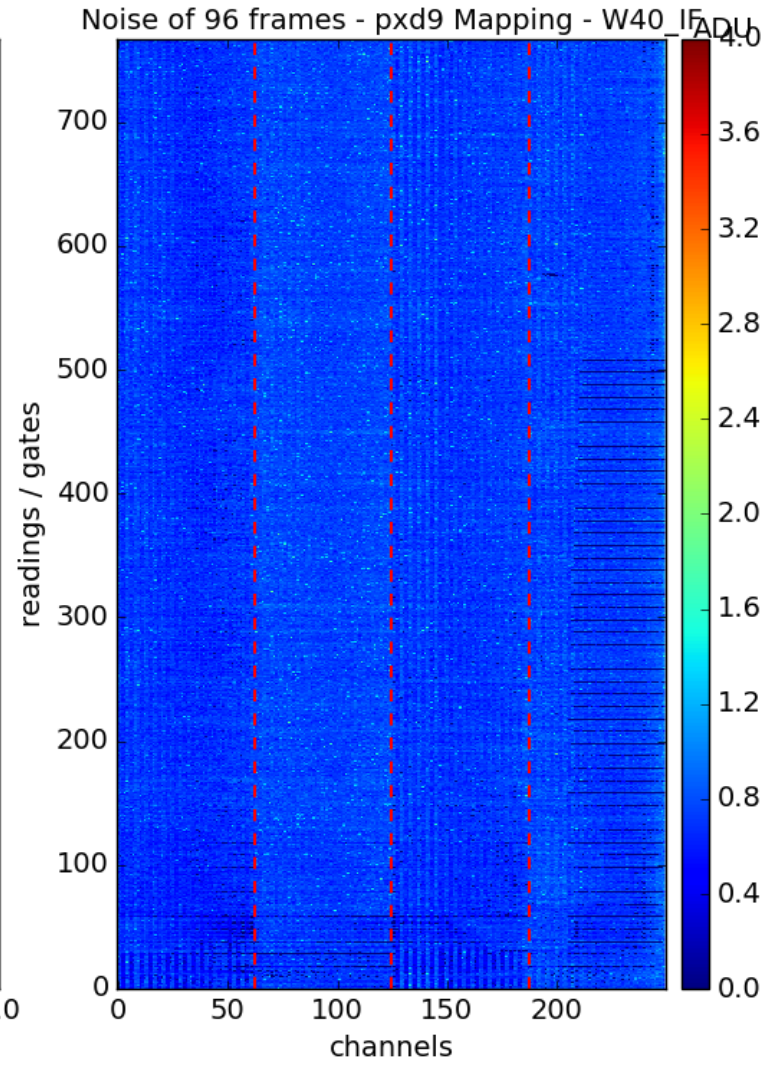
W40_IF – pedestals – with Offsets and ACMC





W40_IF – noise – with Offsets and ACMC





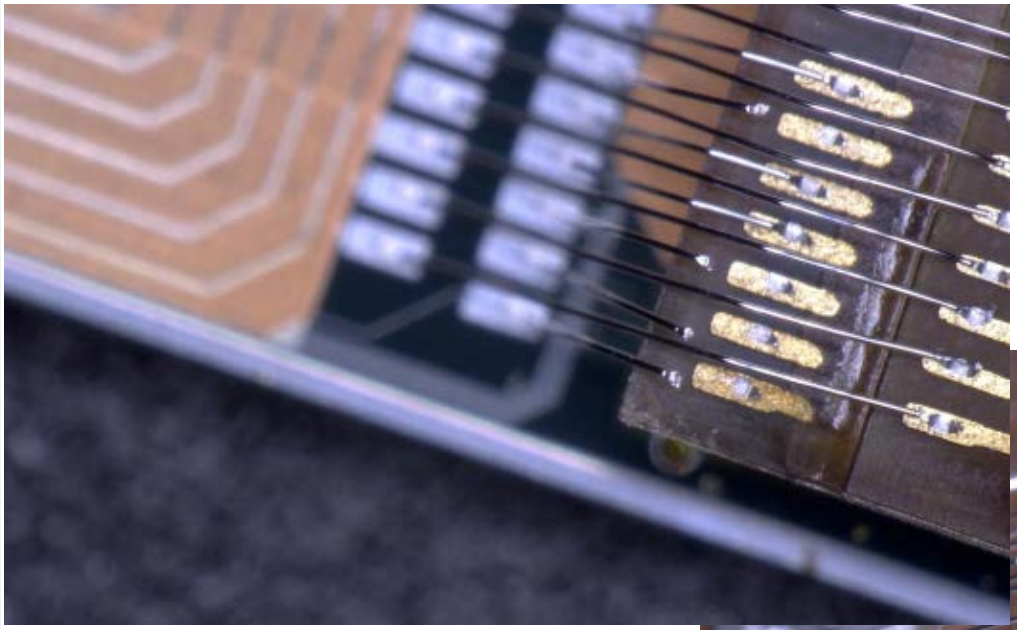
W40_OF – source measurements

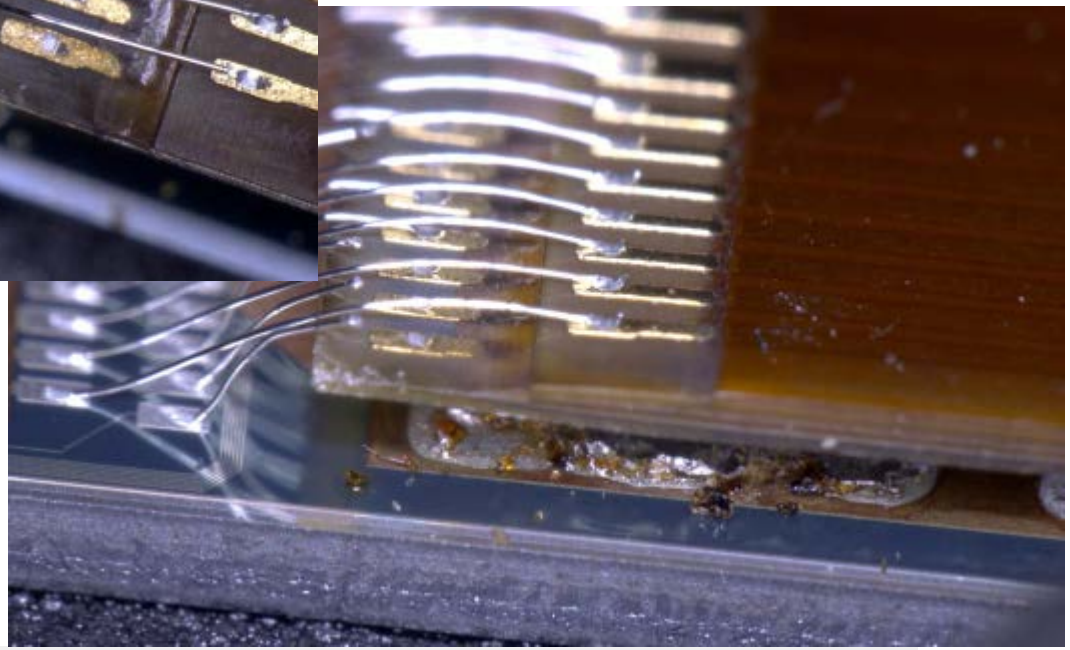
/pxdtest8/W40_IF/source/2017_08_07

Name

- ..
- run001_nosource
- run002_nosource
- run003_nosource_dcmc_threshold5_ped25_cm20
- run004_nosource_no-dcmc_threshold5
- run005_source_threshold5_hv60_drift4
- run006_source_threshold5_hv60_drift5
- run007_source_threshold5_hv60_drift6
- run008_source_threshold5_hv64_drift4
- run009_source_threshold5_hv64_drift5
- run010_source_threshold5_hv64_drift6
- run011_source_threshold5_hv68_drift4
- run012_source_threshold5_hv68_drift5
- run013_source_threshold5_hv68_drift6
- run014_source_threshold5_hv72_drift4
- run015_source_threshold5_hv72_drift5
- run016_source_threshold5_hv72_drift6
- run017_source_threshold5_hv56_drift4
- run018_source_threshold5_hv56_drift5
- run019_source_threshold5_hv56_drift6
- run020_source_threshold5_hv56_drift6_pos1
- run021_source_threshold5_hv56_drift6_pos0
- run022_source_threshold5_hv56_drift6_pos3
- run023_source_threshold5_hv56_drift6_pos4
- run024_source_threshold5_hv56_drift6_pos5
- run025_source_threshold5_hv64_drift4_painting

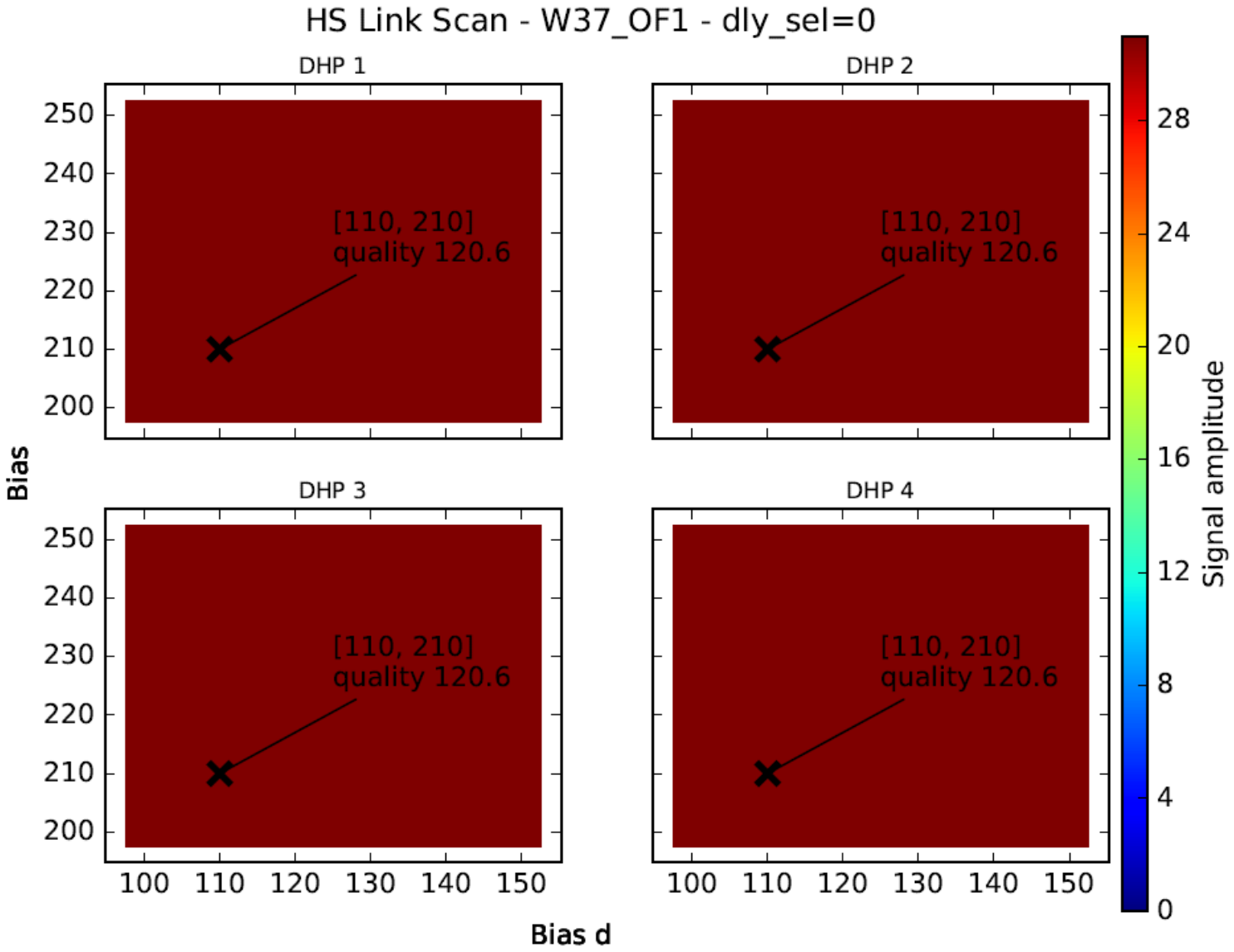
W38_IB & W40_IF - ladder



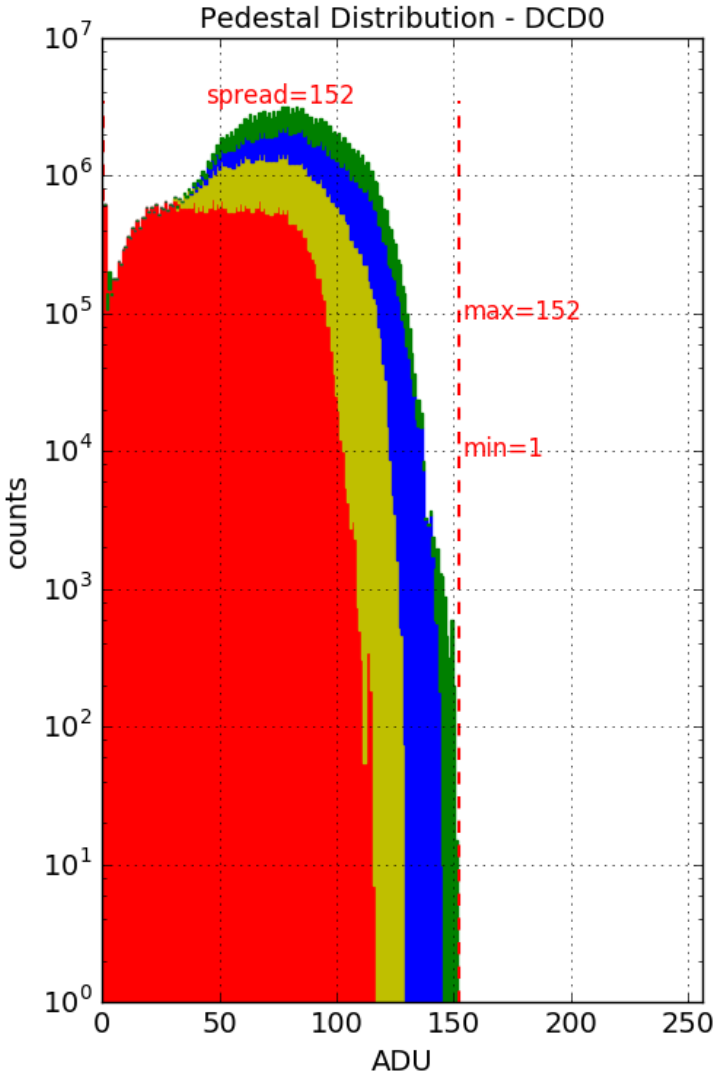


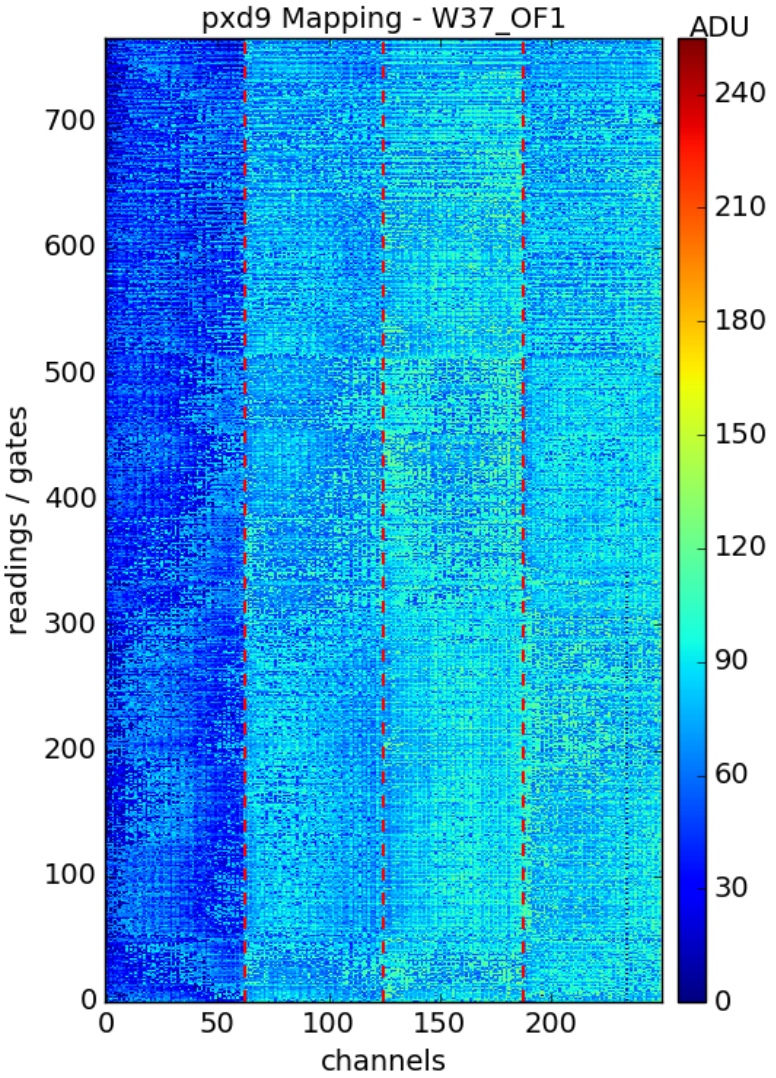
15 mA	30 mA	-4000 mV	3000 mV	3000 mV		3050 mV	3009 mV	5 mA	gate-on2
15 mA	30 mA	-4000 mV	3000 mV	3000 mV		810 mV	733 mV	16 mA	gate-on3
30 mA	30 mA	0 mV	3000 mV	6000 mV		3056 mV	3023 mV	10 mA	gate-off
120 mA	150 mA	0 mV	6000 mV	7000 mV		7238 mV	6002 mV	24 mA	source

W37_OF1 – HS links

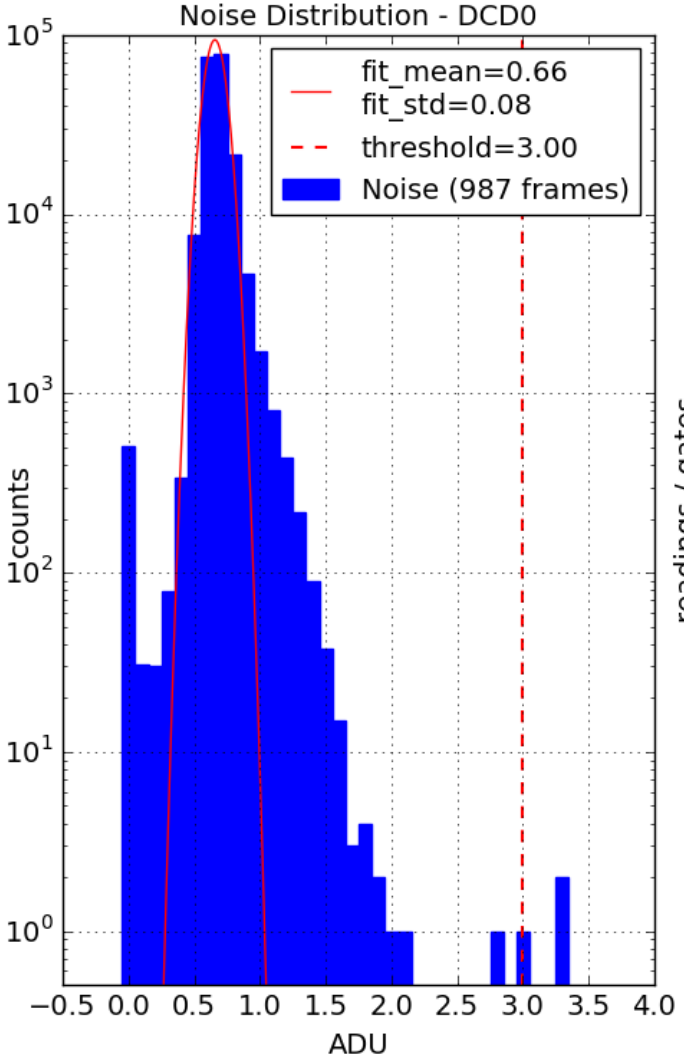


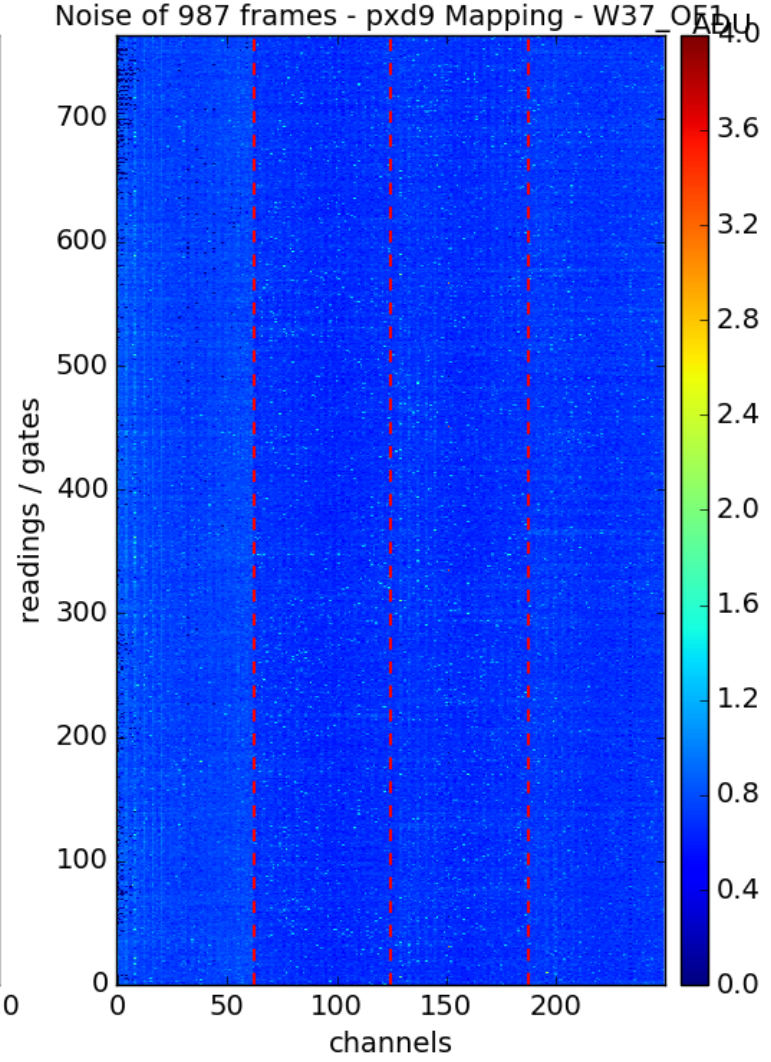
W37_OF1 – pedestals with ACMC and offsets



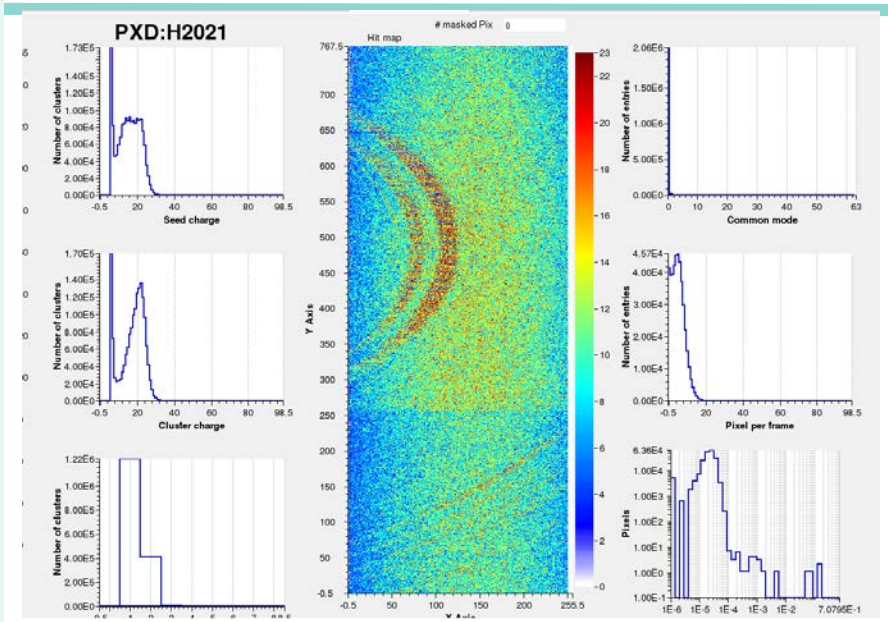


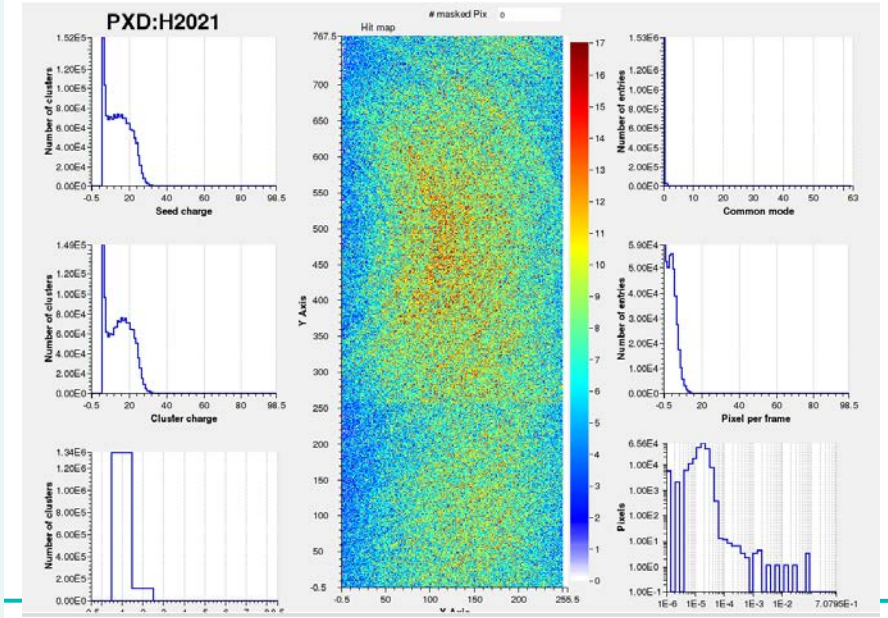
W37_OF1 – noise with ACMC and offsets





W37_OF1 – source measurements





/pxdtest8/W37_OF1/source/2017_08_10_003

Name

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- drift_-3000__hv_-64000
- drift_-3000__hv_-66000
- drift_-3000__hv_-68000
- drift_-3000__hv_-70000
- drift_-3000__hv_-72000
- drift_-3000__hv_-74000
- drift_-3000__hv_-76000
- drift_-3000__hv_-78000
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/pxdtest8/W37_OF1/source/2017_08_10_003

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- drift_-6000__hv_-68000
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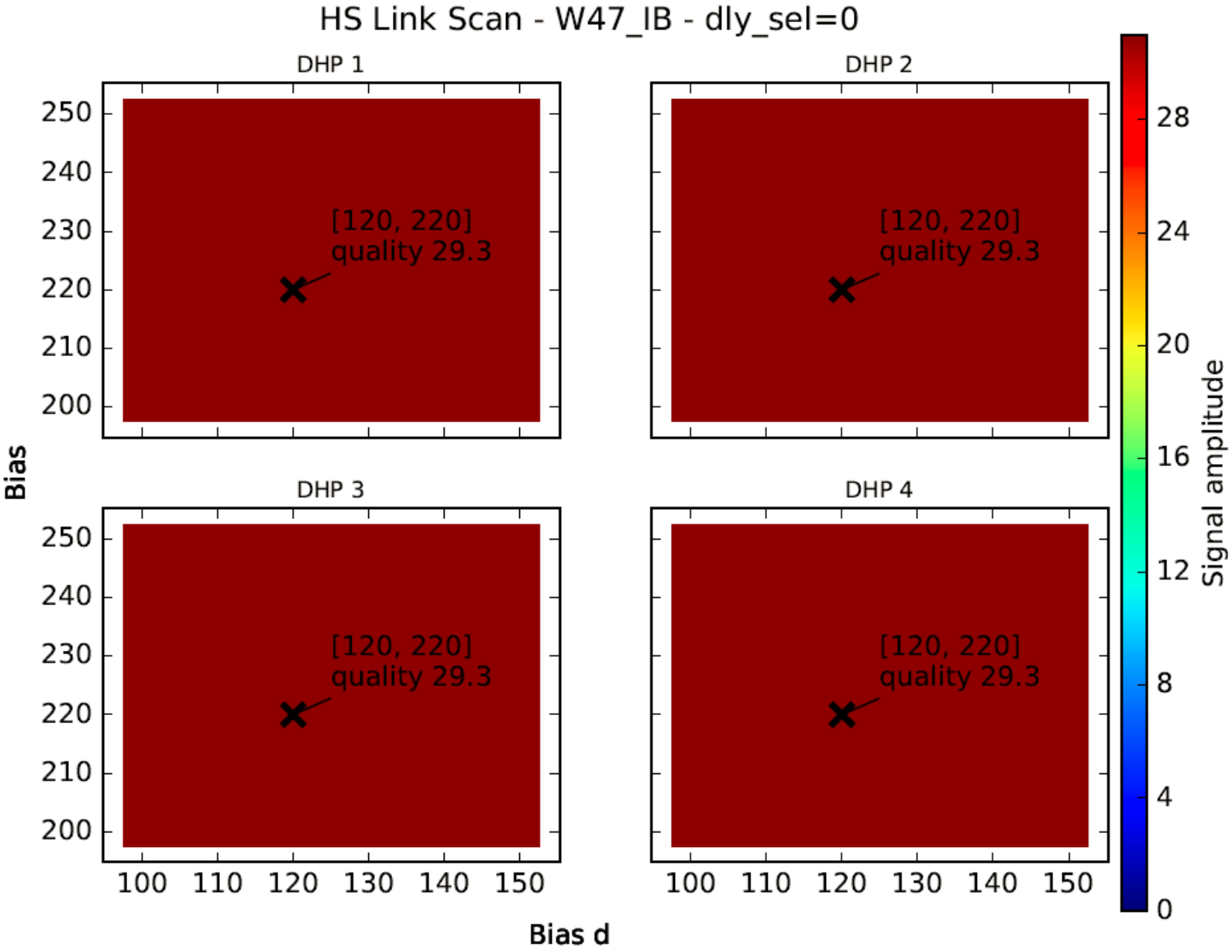
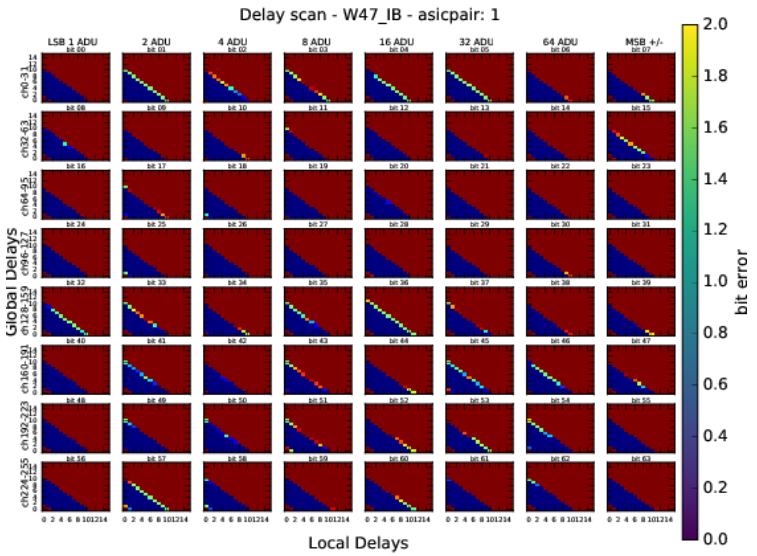
- drift_-6000__hv_-80000

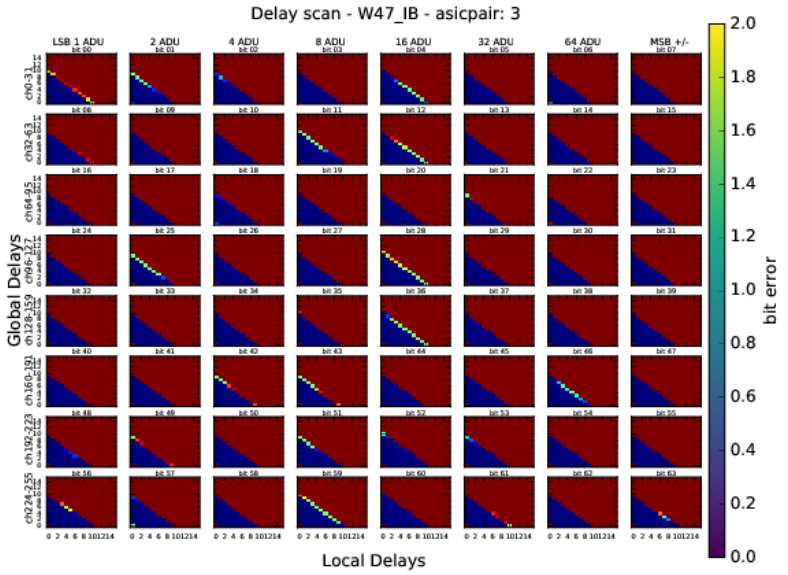
see talk by Harrison

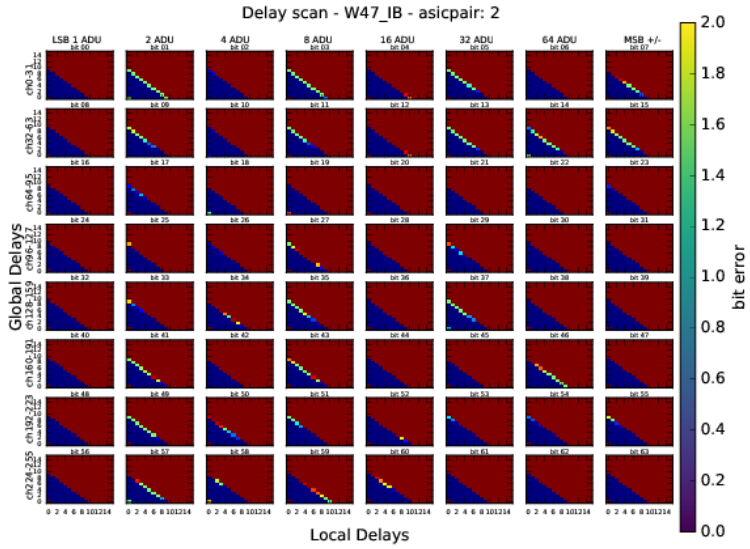
W47_IB – HS link

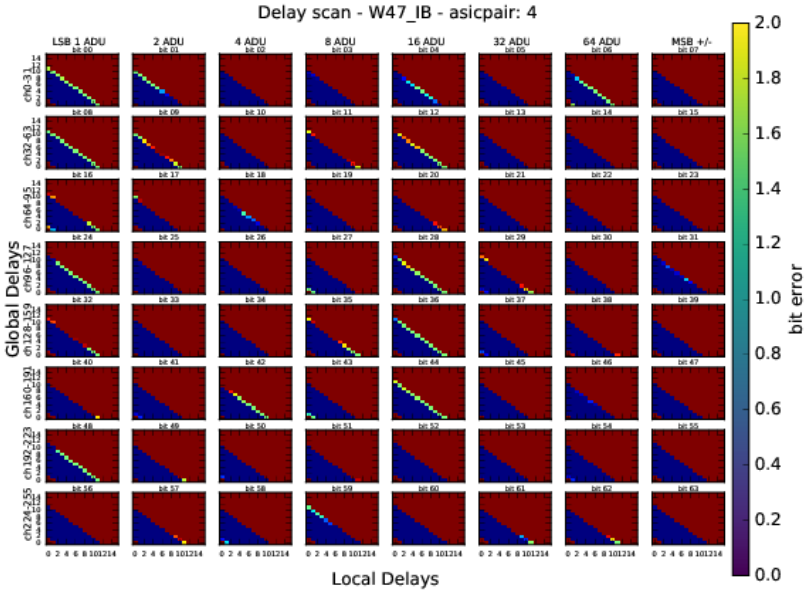


W47_IB – delays

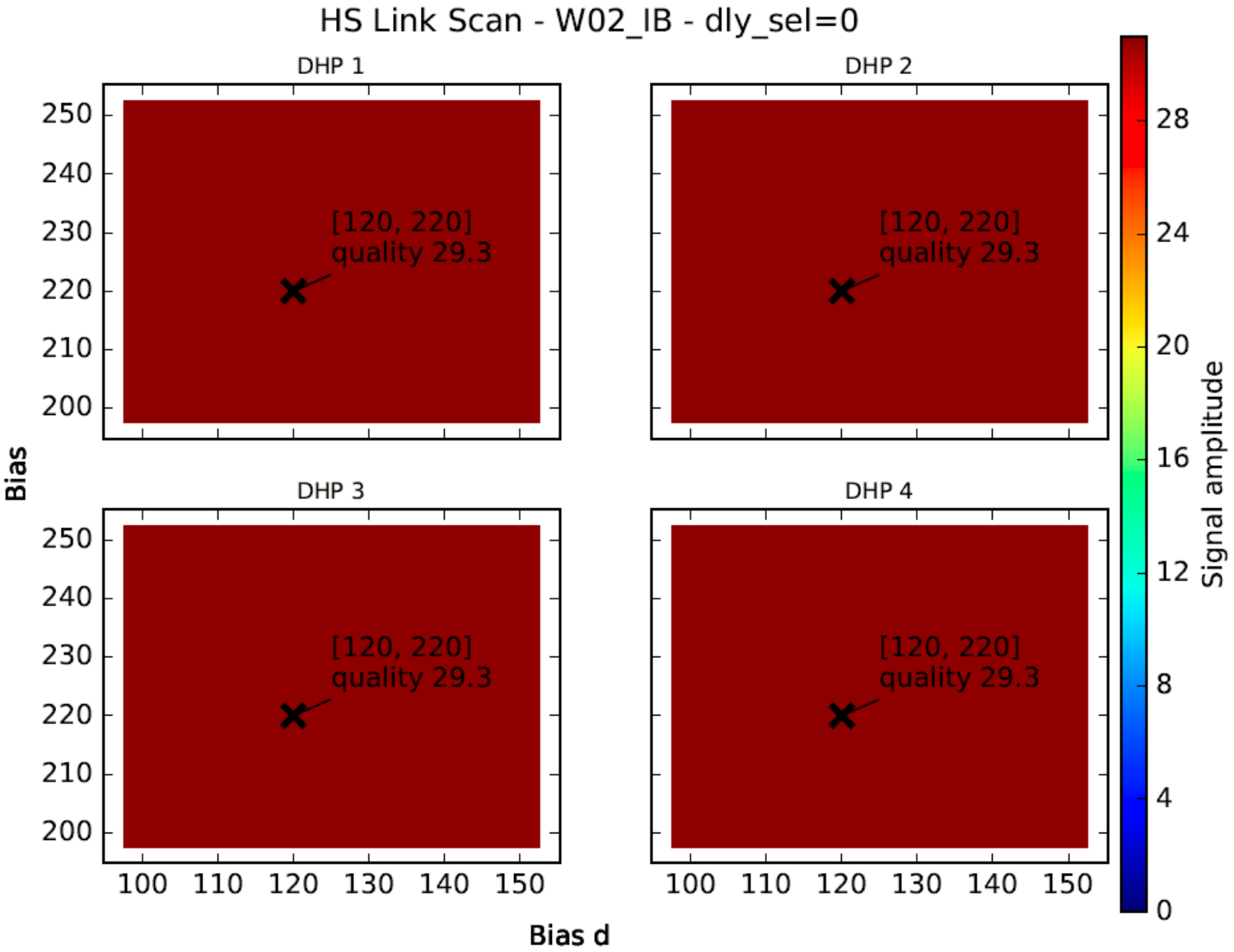




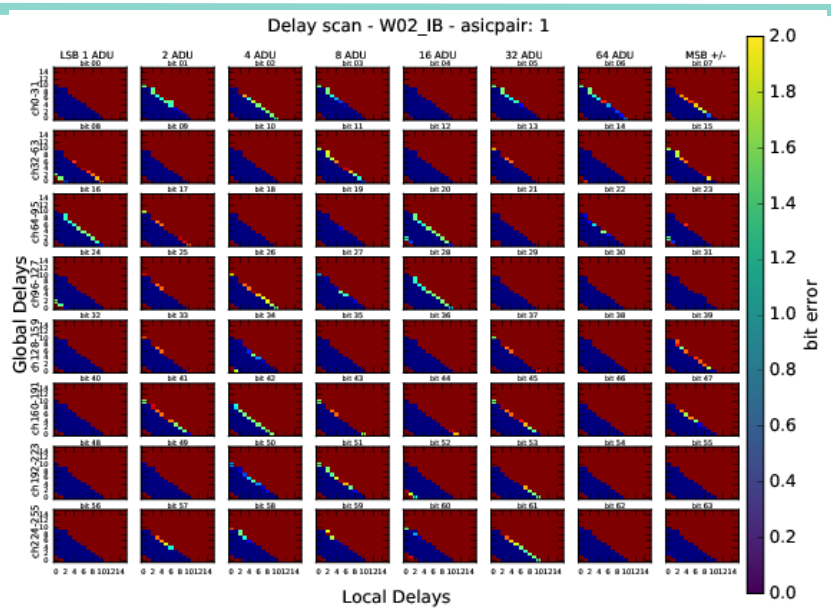


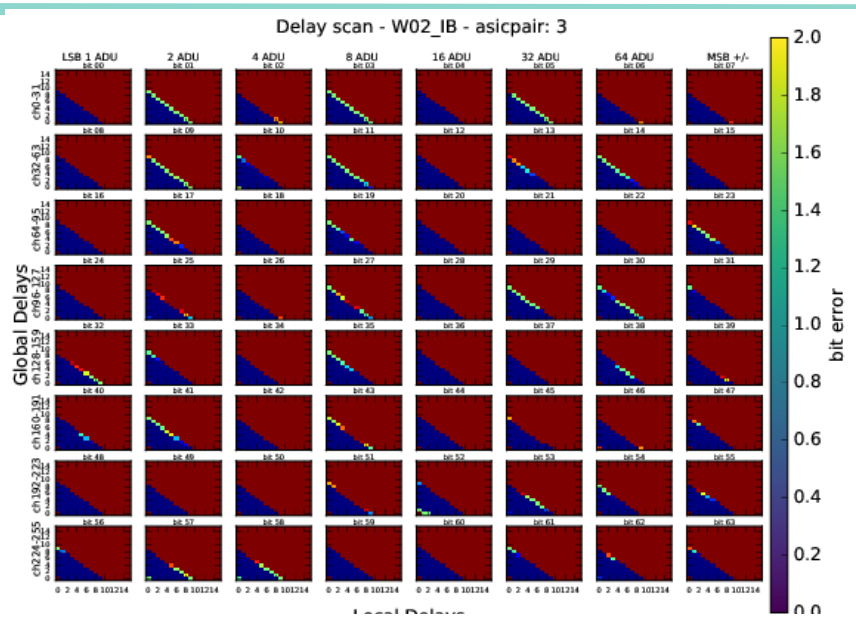


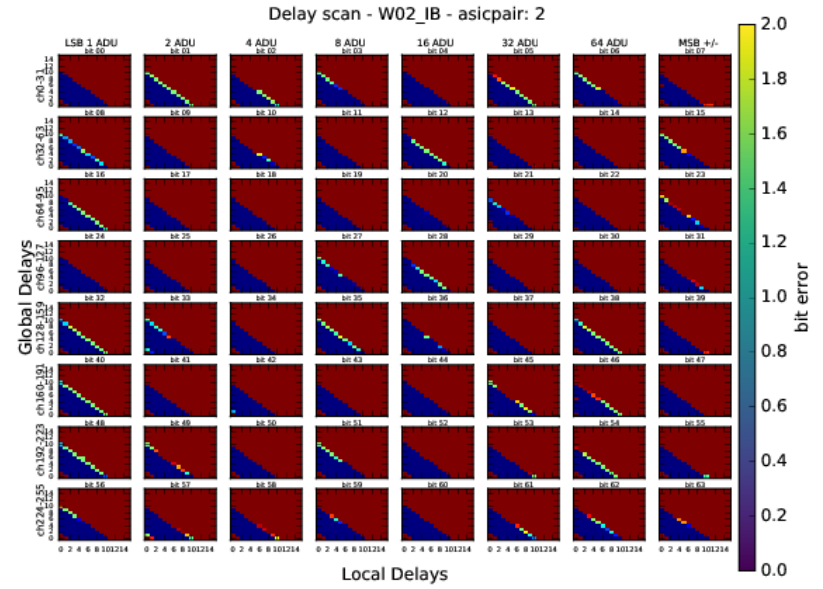
W02_IB – HS link

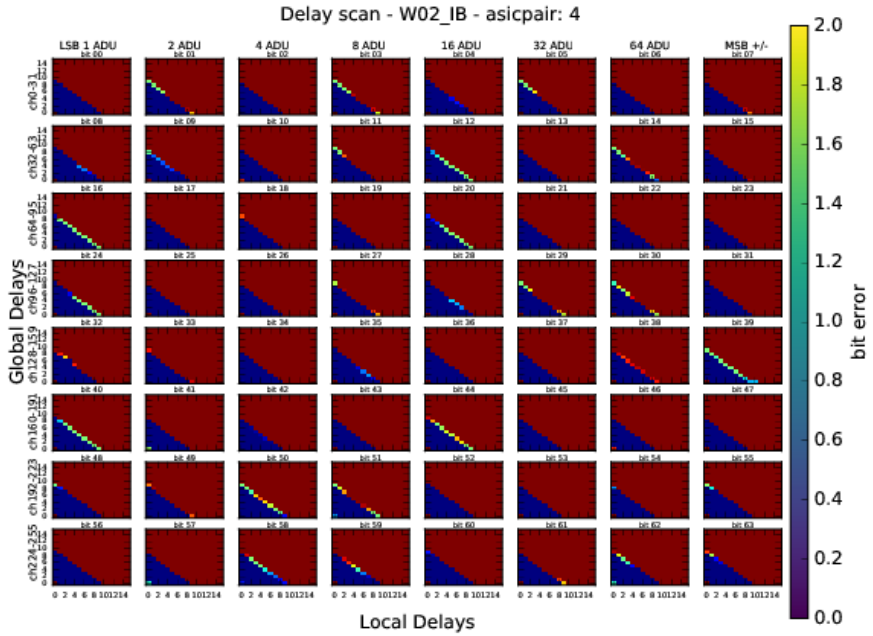


W02_IB – delays

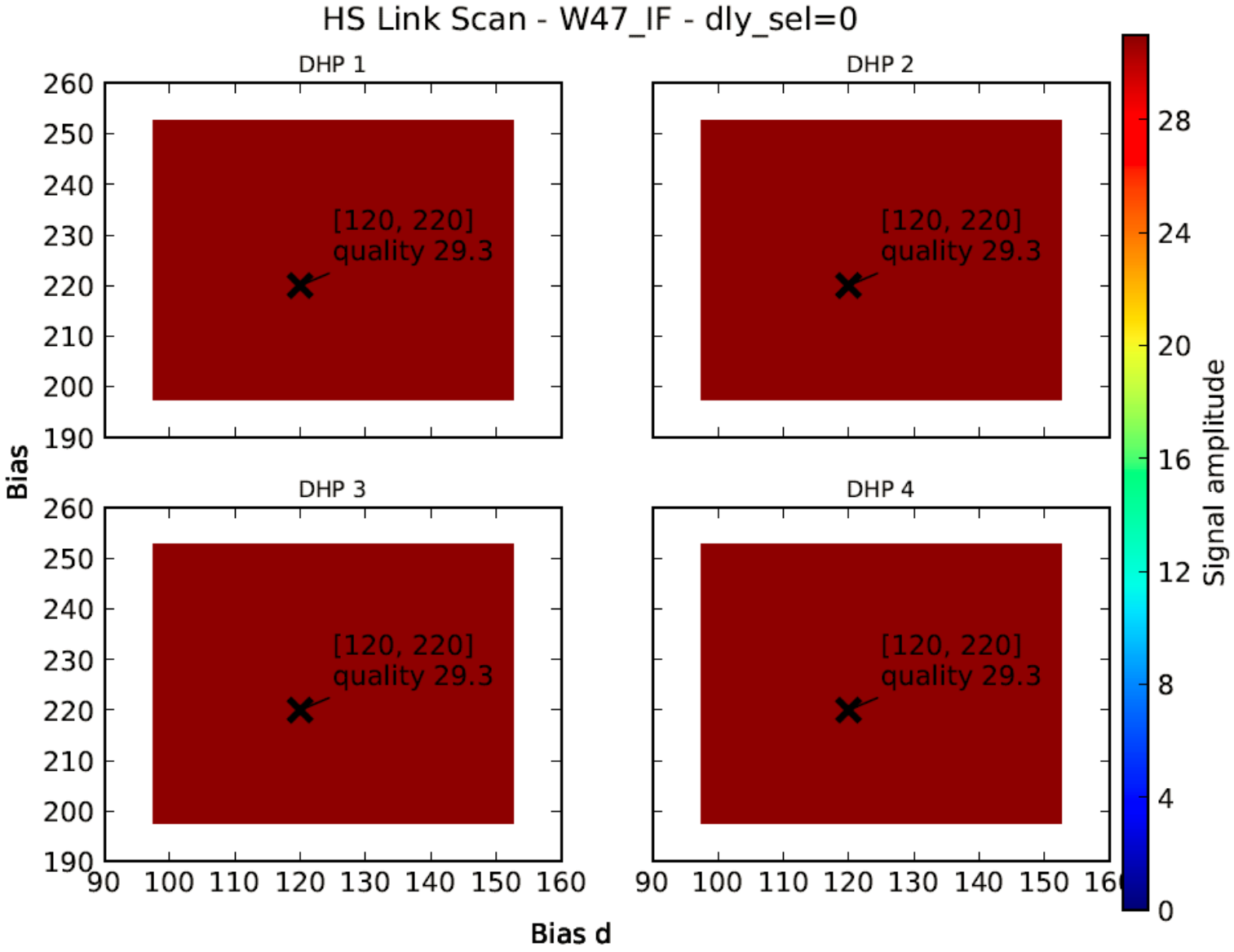
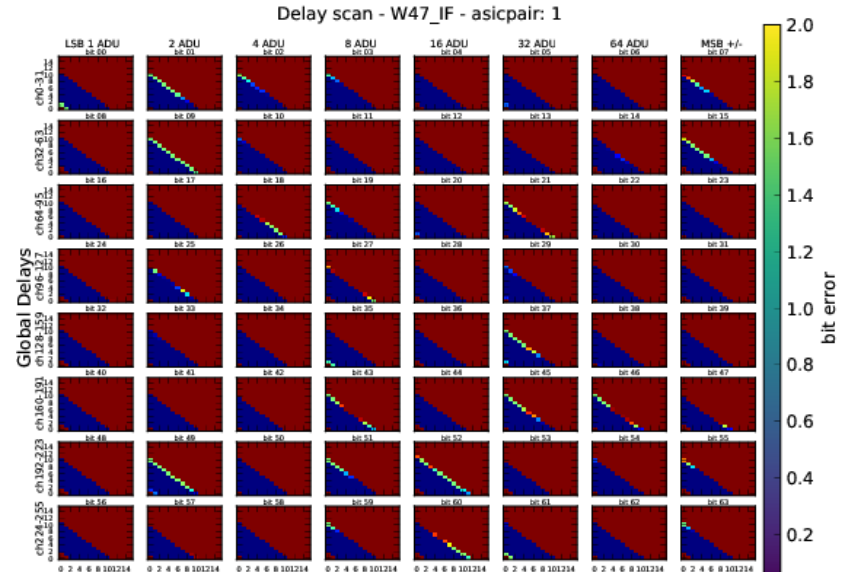
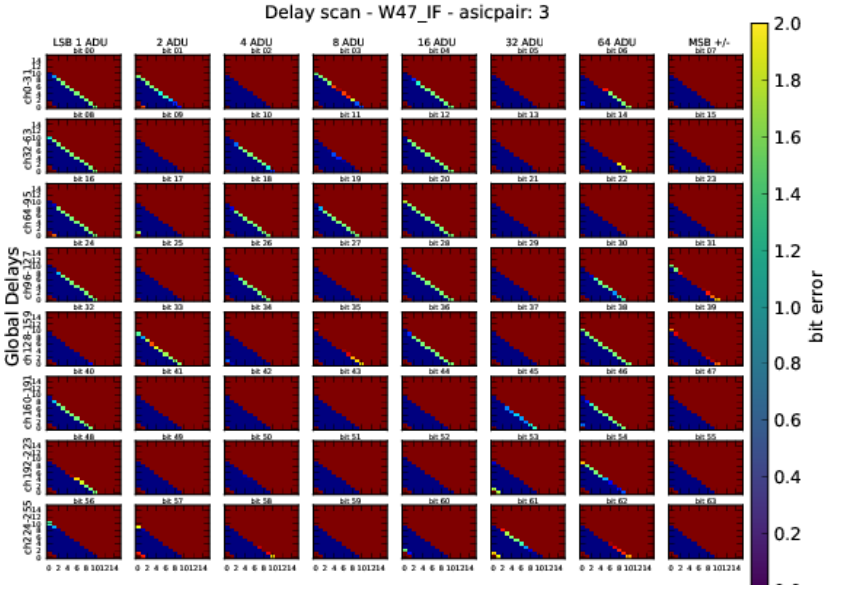
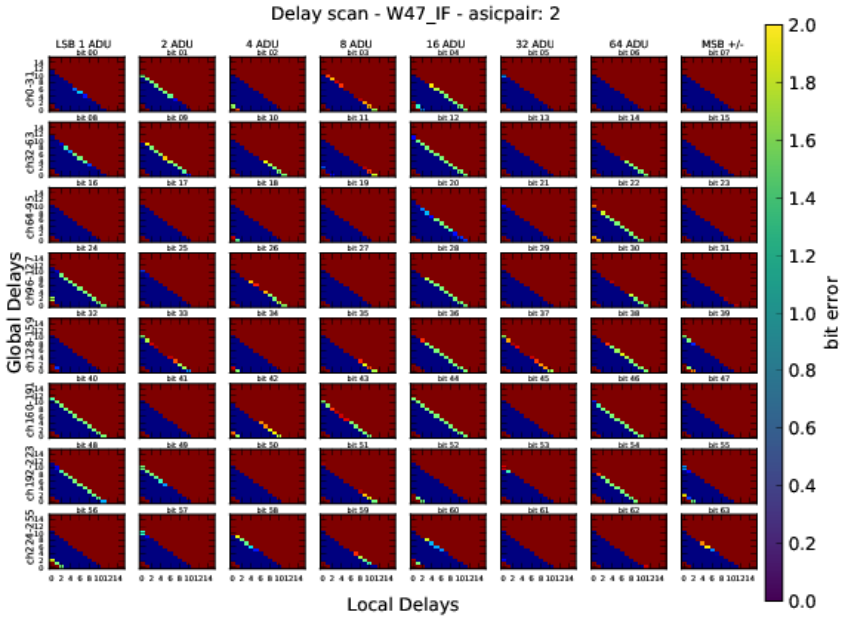
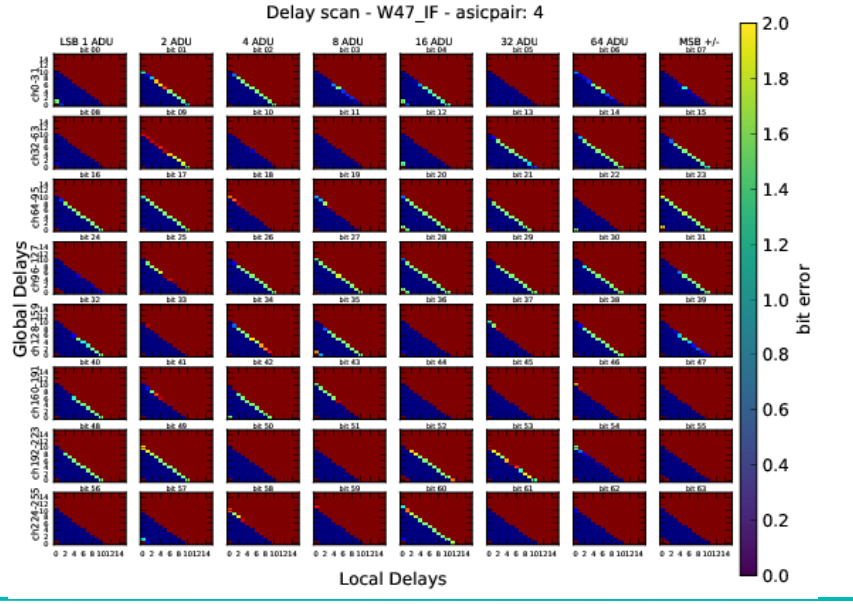








W47_IF – HS link



W47_IF – delays