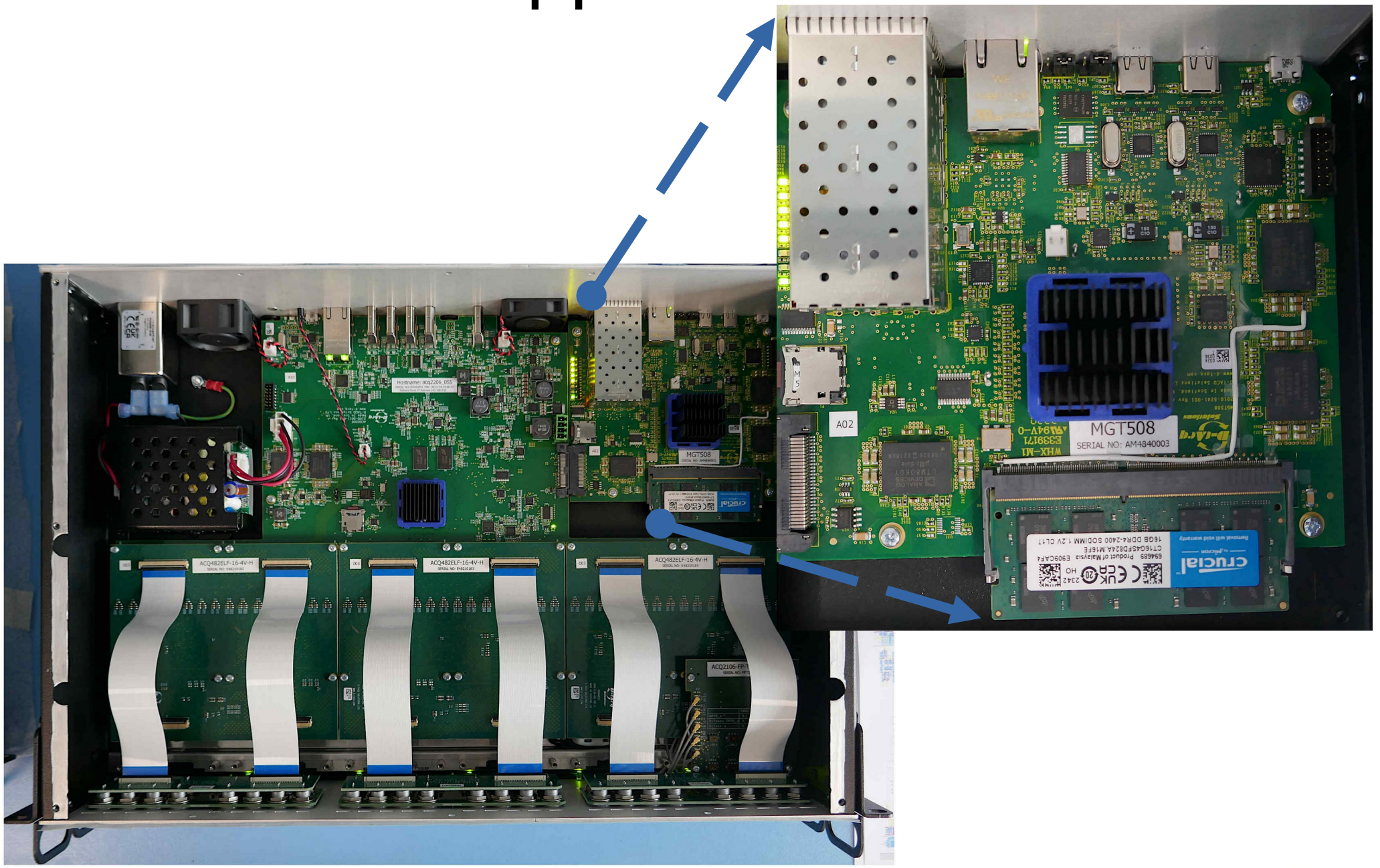
ACQ2206+MGT508 DEEP RAM Capture.

MGT508 upgrades ACQ2206 additional DRAM

- 16GB DRAM provides 14GB capture memory.
- The memory can fill at 2GB/s
- Offload on Ethernet 1000T at up to 110MB/s
- MGT508 completely supercedes MGTDRAM
  - 2x deeper, 5x faster offload.
- MGT508 includes a ZYNQ MPSOC, running its own Linux in 2GB DRAM, with future options:
  - Faster 10Gbps serial links.
  - Advanced DSP in a dedicated FPGA

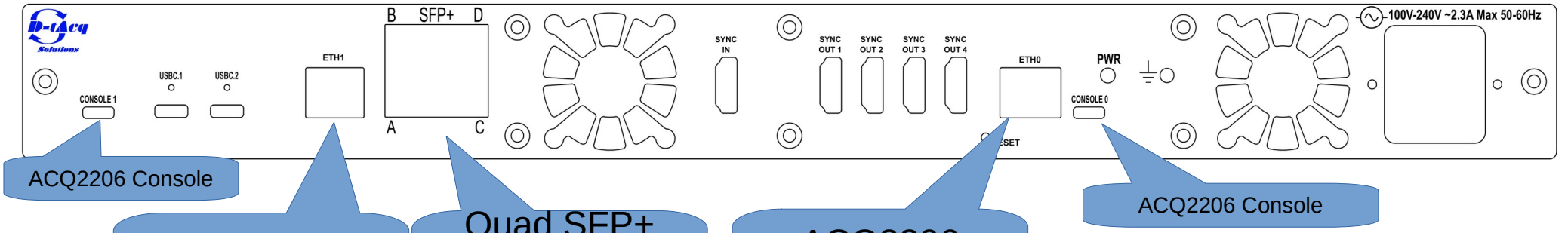
Appearance

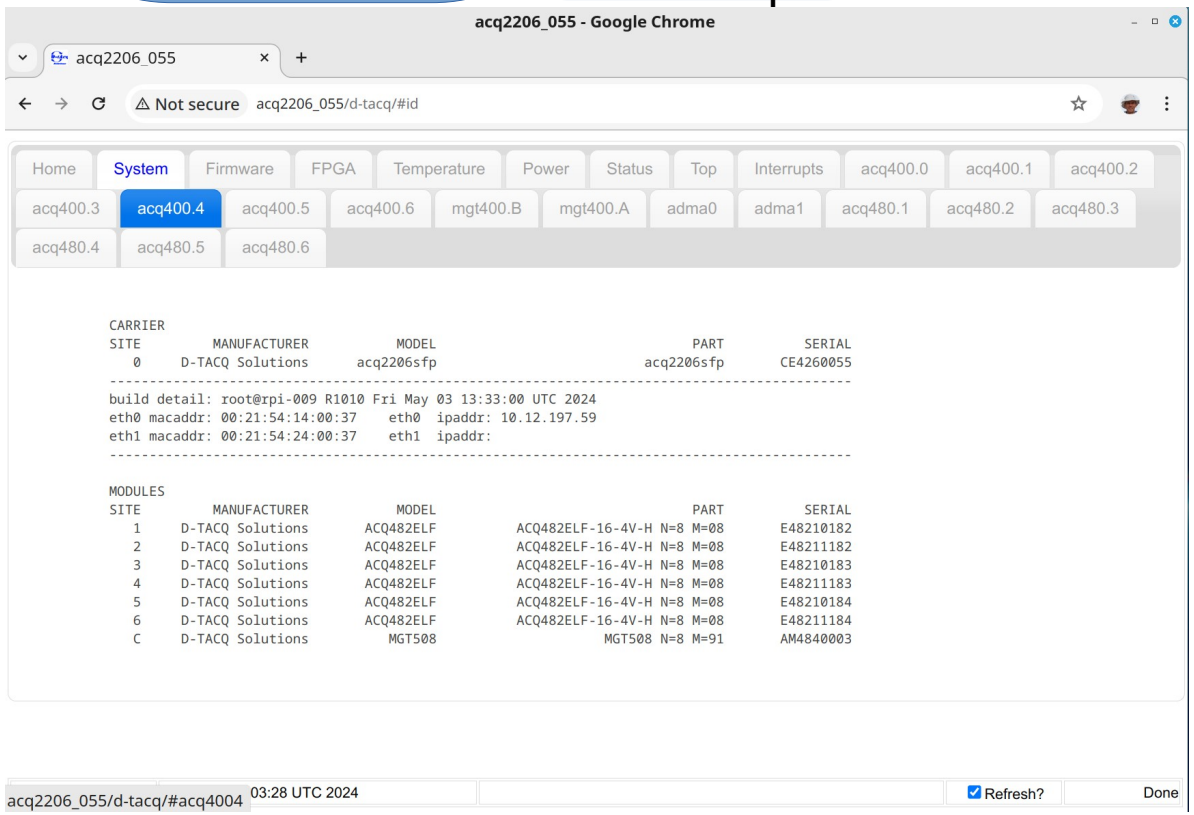


Host Side Software

- Use HAPI:
  - git-clone https://github.com/D-TACQ/acq400_hapi.git
  - Review mgt508_README.md
- Optional: GUI:
  - ACQ400CSS
- Test Signal:
  - We connected test signals to two inputs
    - (CH01, CH13)

Ports





Usage:4GUG CHAP 28=
Summary:
Pull: fill with capture data
Read: offload data
Write: optionally initialize the data

Example:
git-clone acq400_hapi

Use Case: 14GB capture (1): 48ch x 20MSPS x 7.8s

```
./user_apps/acq2206/mgt508_capture.py --simulate=0 --GB=14 --clear_mem=0 acq2206_055,mgt508-003
```

peter@danna: ~/PROJECTS/acq400_hapi

File Edit View Search Terminal Help

```
peter@danna:~/PROJECTS/acq400_hapi$ ./user_apps/acq2206/mgt508_capture.py --simulate=0 --GB=14 --clear_mem=0 acq2206_055,mgt508-003
uut_pairs: ['acq2206_055,mgt508-003']
Start pull mgt508-003

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Pull Complete
Capture 446 time 7.8 sec 1833 MB/s
TIMING:func:'wait_pull_complete' took: 26.68 sec
mgt508_read_mem MGT=mgt508-003 GB=14
removing old data from mgt508-003
mgt508-003 clean
fixing file size to be an integer # samples: 134217696 (1398101.0)
mgt508-003/000001/0000 len 127 MB total 0.1 GB
mgt508-003/000001/0001 len 127 MB total 0.2 GB
mgt508-003/000001/0002 len 127 MB total 0.4 GB
```
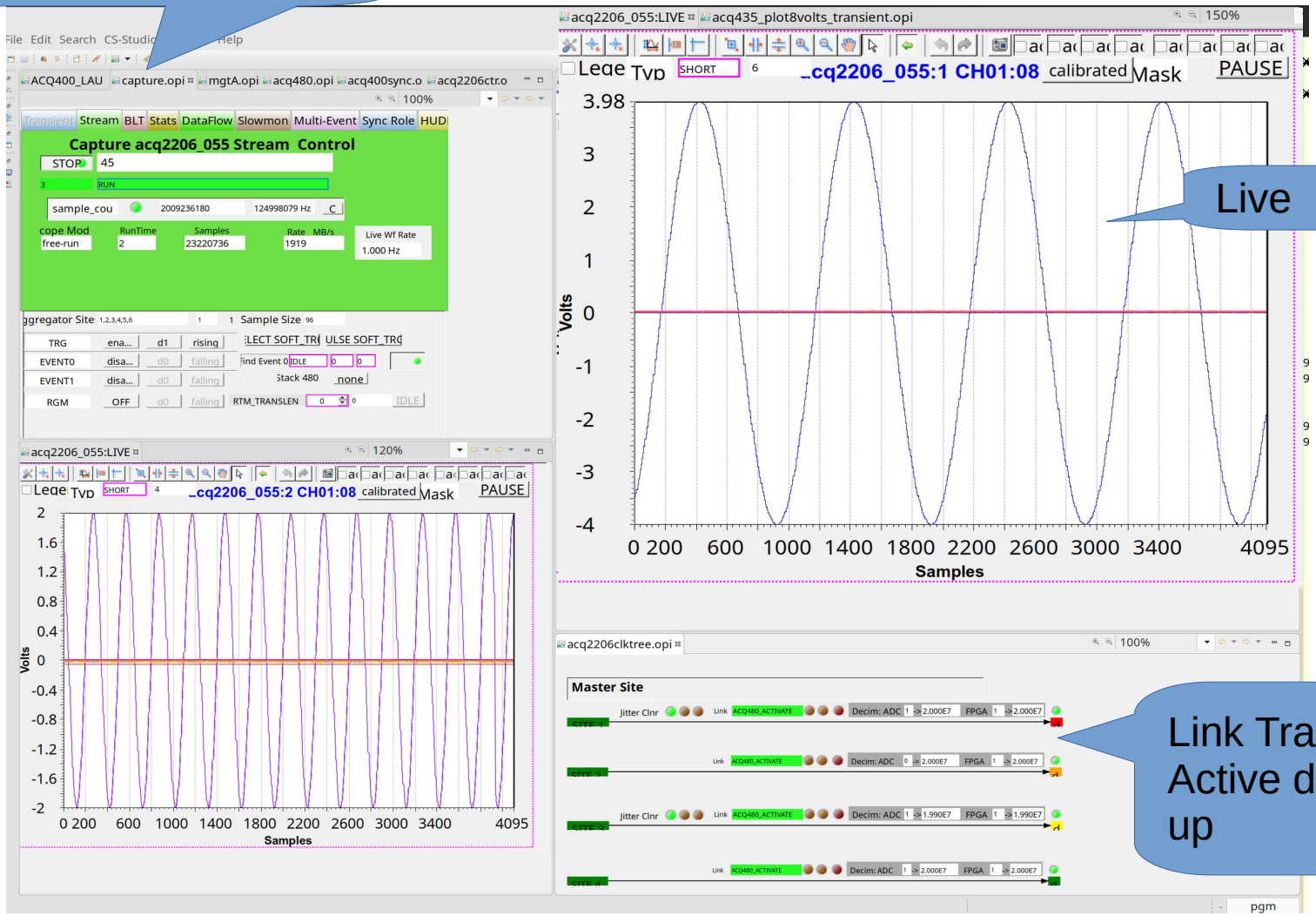

1. Start Capture
2. Data arrives, "……|" = 320MB
Capture Time: 7.8s, total shot time 27s
3. Offload into 127MB files

Use Case: 14GB capture (2): 48ch x 20MSPS x 7.8s

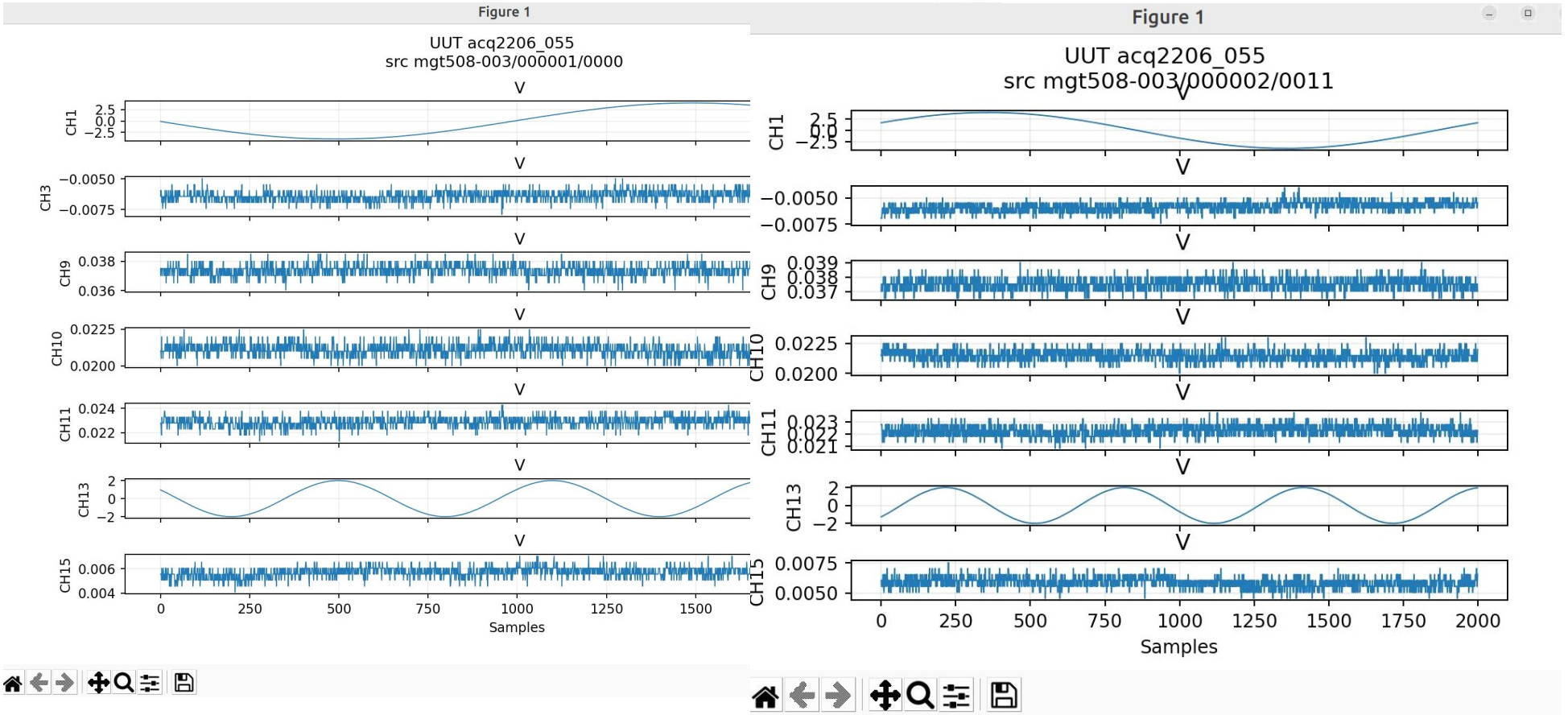
Live View of Data Flow



Live Data Plot

Link Training. Active during start up

Use Case: 14GB capture (3): 48ch x 20MSPS x 7.8s




```
./user_apps/analysis/host_demux.py --src mgt508-003/000001/0000 --pchan 1,3,9,10,11,13,15  --egu=1 --pses=0:2000:1 acq2206_055 &
./user_apps/analysis/host_demux.py --src mgt508-003/000002/0011 --pchan 1,3,9,10,11,13,15  --egu=1 --pses=0:2000:1 acq2206_055 &
```

Plotting data from the front and back of the shot.