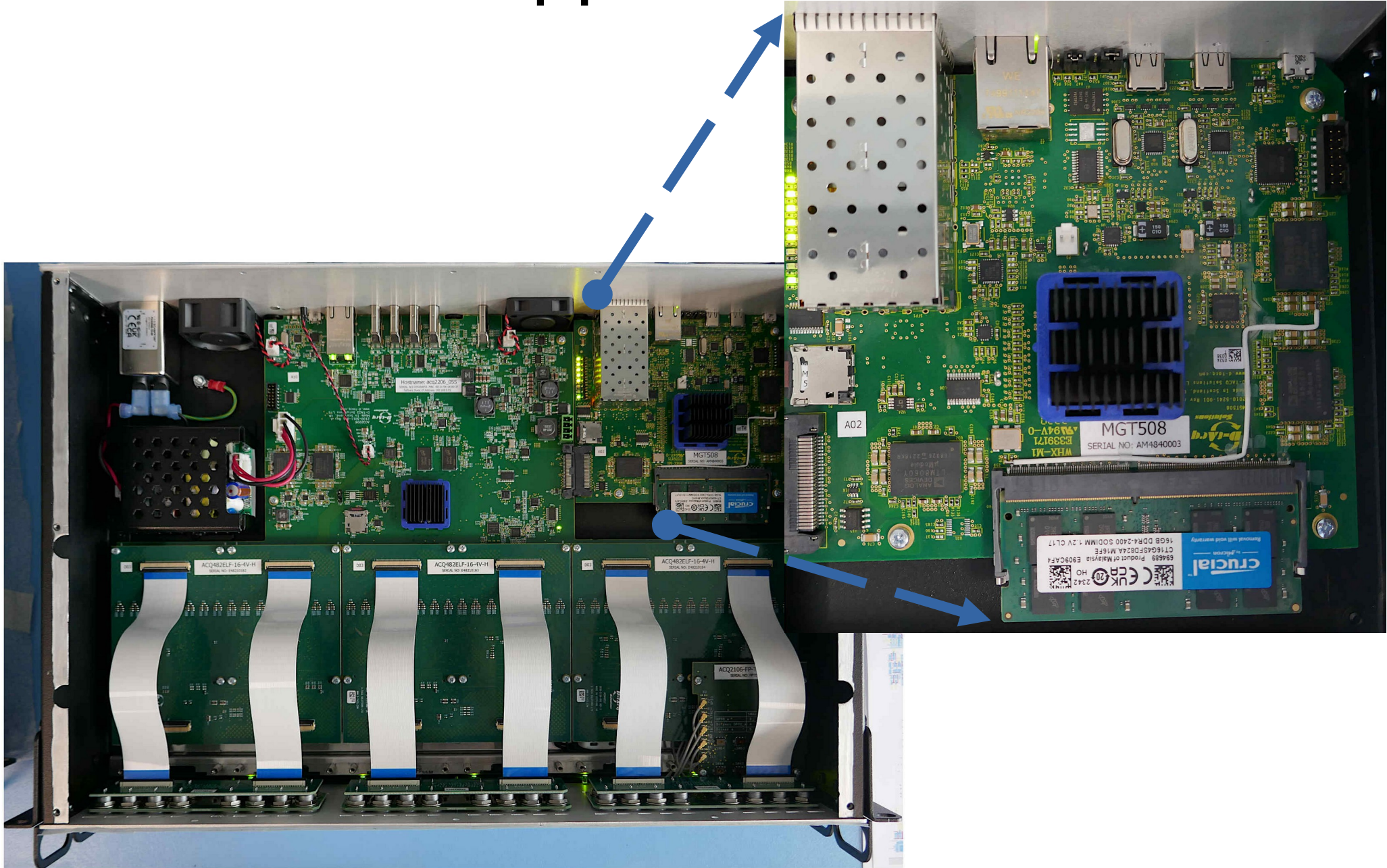


ACQ2206+MGT508 DEEP RAM Capture.

- 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

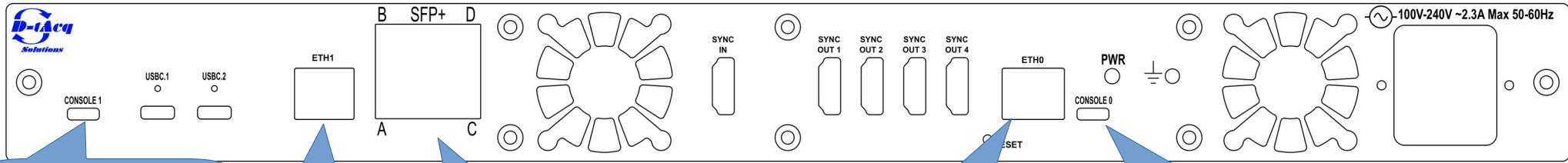
Appearance



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



ACQ2206 Console

MGT508
Ethernet

Quad SFP+
Future fast
comms opt.

ACQ2206
Ethernet

ACQ2206 Console

acq2206_055 - Google Chrome

acq2206_055

Not secure acq2206_055/d-tacq/#id

Home System Firmware FPGA Temperature Power Status Top Interrupts acq400.0 acq400.1 acq400.2

acq400.3 acq400.4 acq400.5 acq400.6 mgt400.B mgt400.A adma0 adma1 acq480.1 acq480.2 acq480.3

acq480.4 acq480.5 acq480.6

CARRIER

SITE	MANUFACTURER	MODEL	PART	SERIAL
0	D-TACQ Solutions	acq2206sfp	acq2206sfp	CE4260055

build detail: root@rpi-009 R1010 Fri May 03 13:33:00 UTC 2024
eth0 macaddr: 00:21:54:14:00:37 eth0 ipaddr: 10.12.197.59
eth1 macaddr: 00:21:54:24:00:37 eth1 ipaddr:

MODULES

SITE	MANUFACTURER	MODEL	PART	SERIAL
1	D-TACQ Solutions	ACQ482ELF	ACQ482ELF-16-4V-H N=8 M=08	E48210182
2	D-TACQ Solutions	ACQ482ELF	ACQ482ELF-16-4V-H N=8 M=08	E48211182
3	D-TACQ Solutions	ACQ482ELF	ACQ482ELF-16-4V-H N=8 M=08	E48210183
4	D-TACQ Solutions	ACQ482ELF	ACQ482ELF-16-4V-H N=8 M=08	E48211183
5	D-TACQ Solutions	ACQ482ELF	ACQ482ELF-16-4V-H N=8 M=08	E48210184
6	D-TACQ Solutions	ACQ482ELF	ACQ482ELF-16-4V-H N=8 M=08	E48211184
C	D-TACQ Solutions	MGT508	MGT508 N=8 M=91	AM4840003

acq2206_055/d-tacq/#acq4004 03:28 UTC 2024 Refresh? Done

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  
ut_pairs: ['acq2206_055,mgt508-003']  
Start pull mgt508-003
```

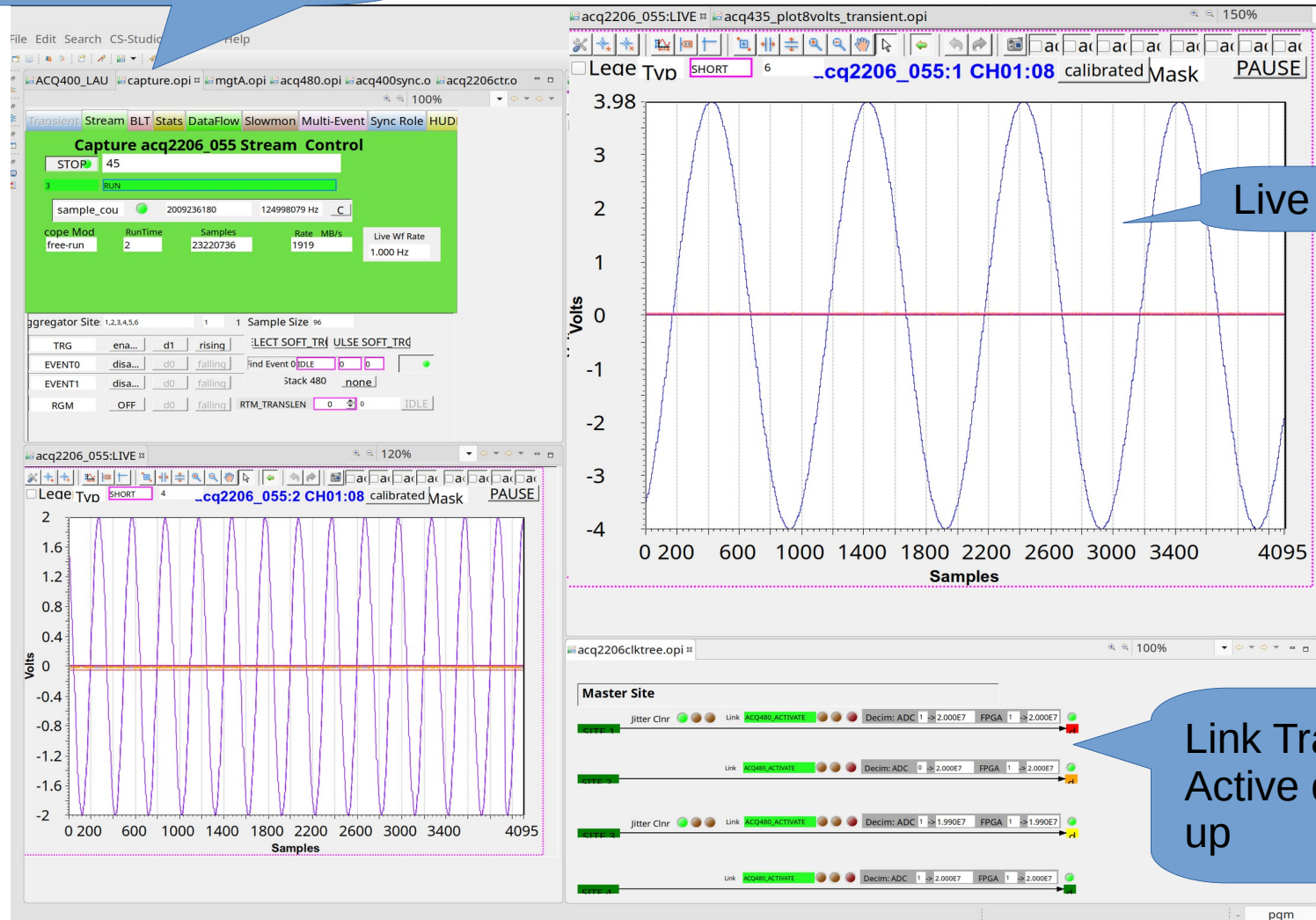
```
.....|.....|.....|.....|.....|.....|.....|.....|  
.....|.....|.....|.....|.....|.....|.....|.....|  
.....|.....|.....|.....|.....|.....|.....|.....|  
.....|.....|.....|.....|.....|.....|.....|.....|  
.....|.....|.....|.....|.....|.....|.....|.....|
```

```
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

Figure 1

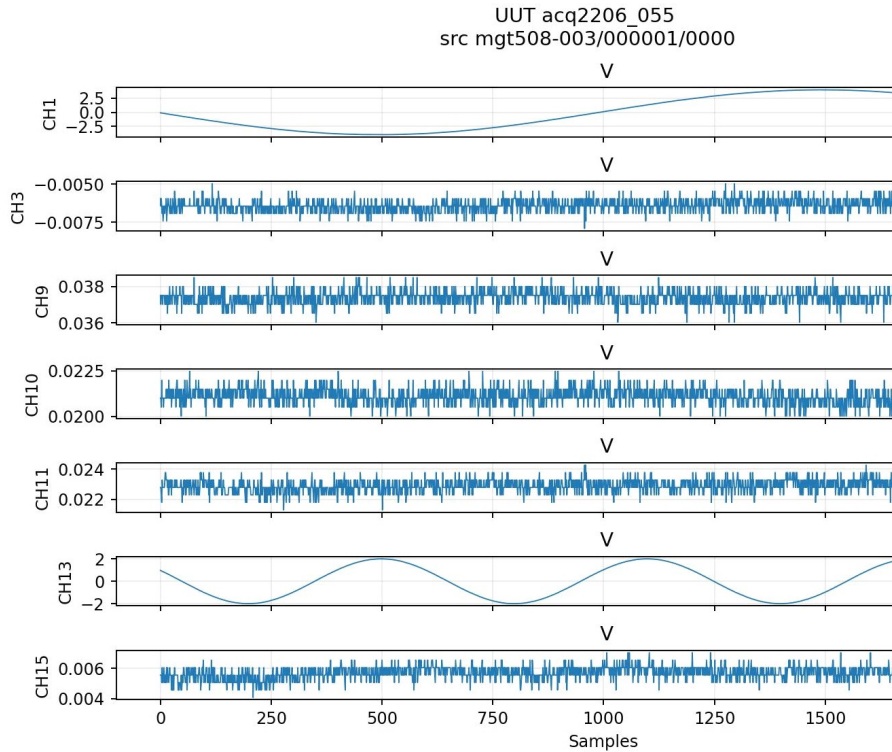
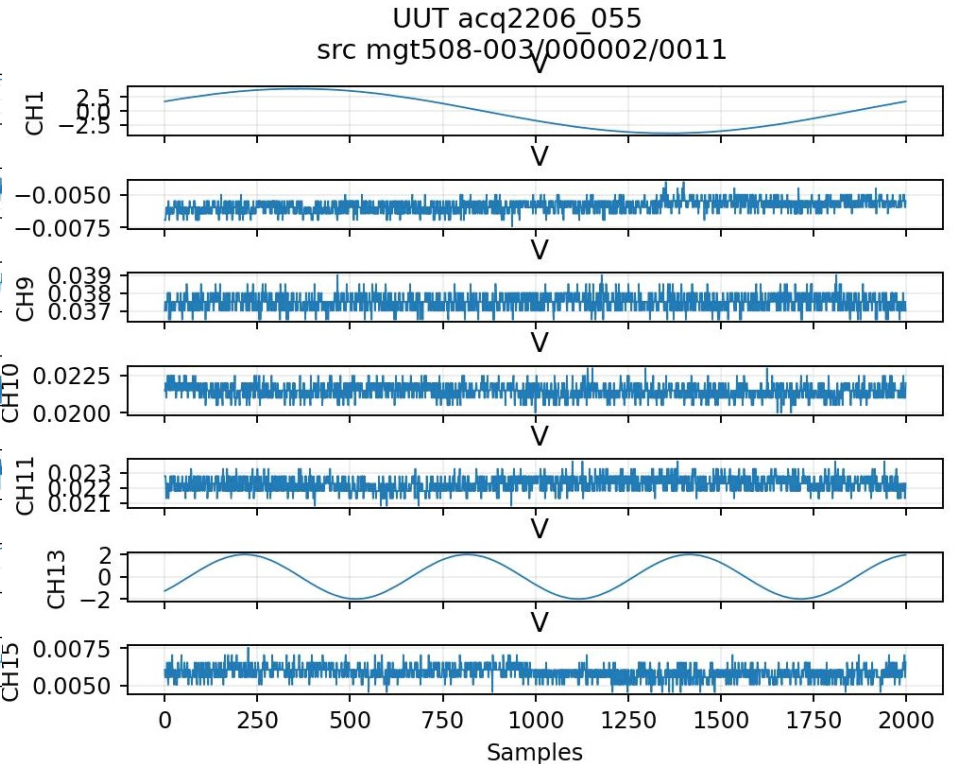


Figure 1



```
./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.