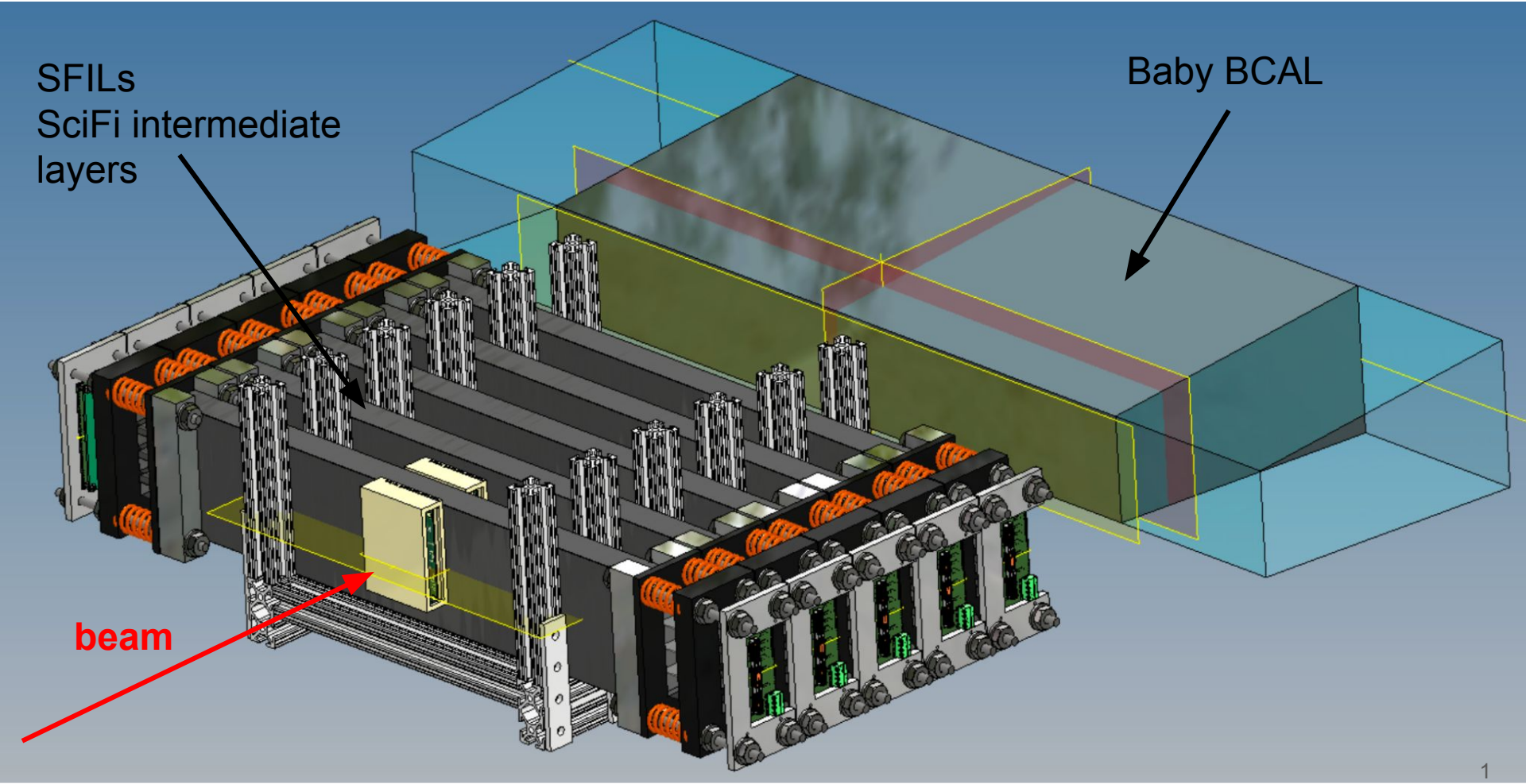
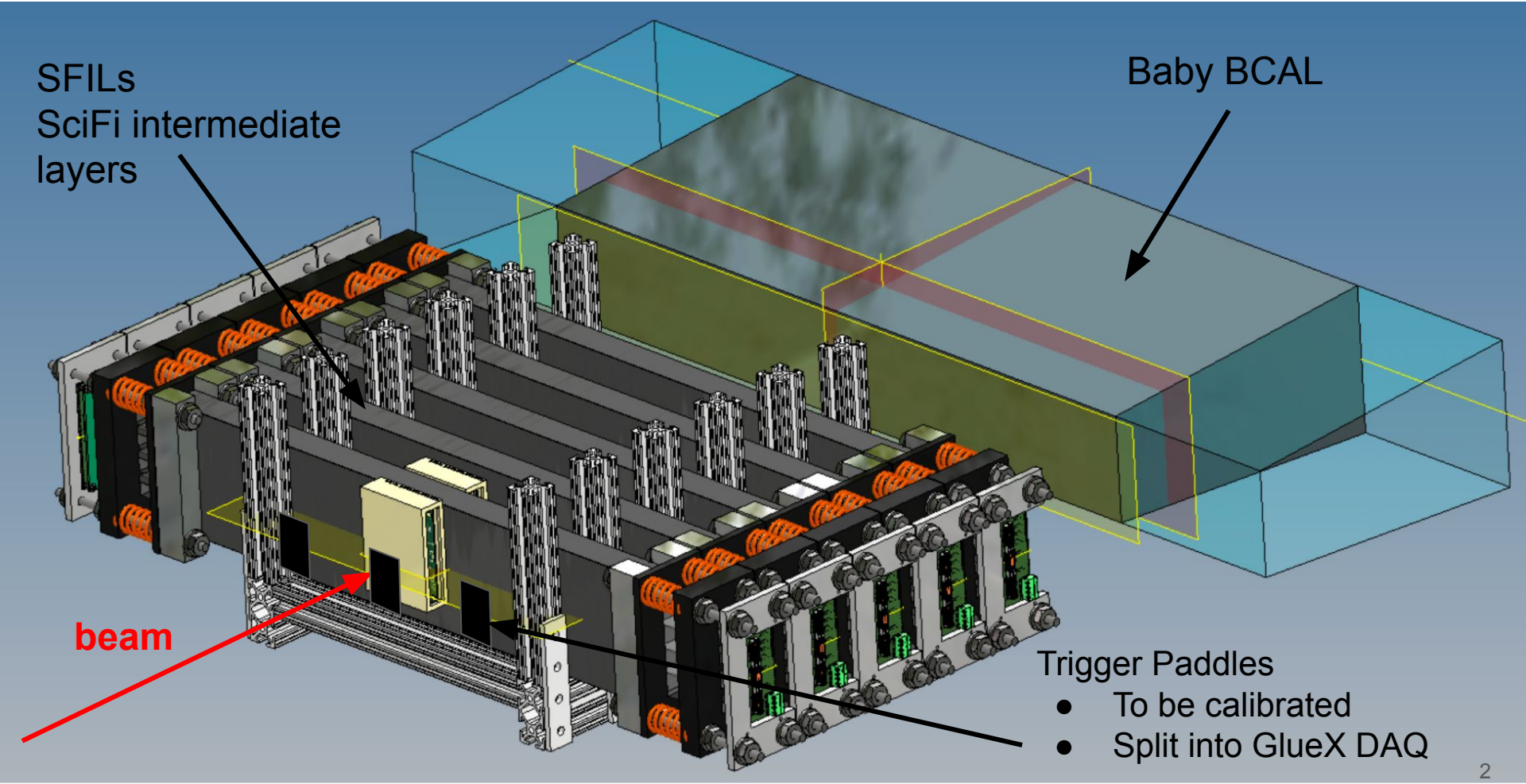
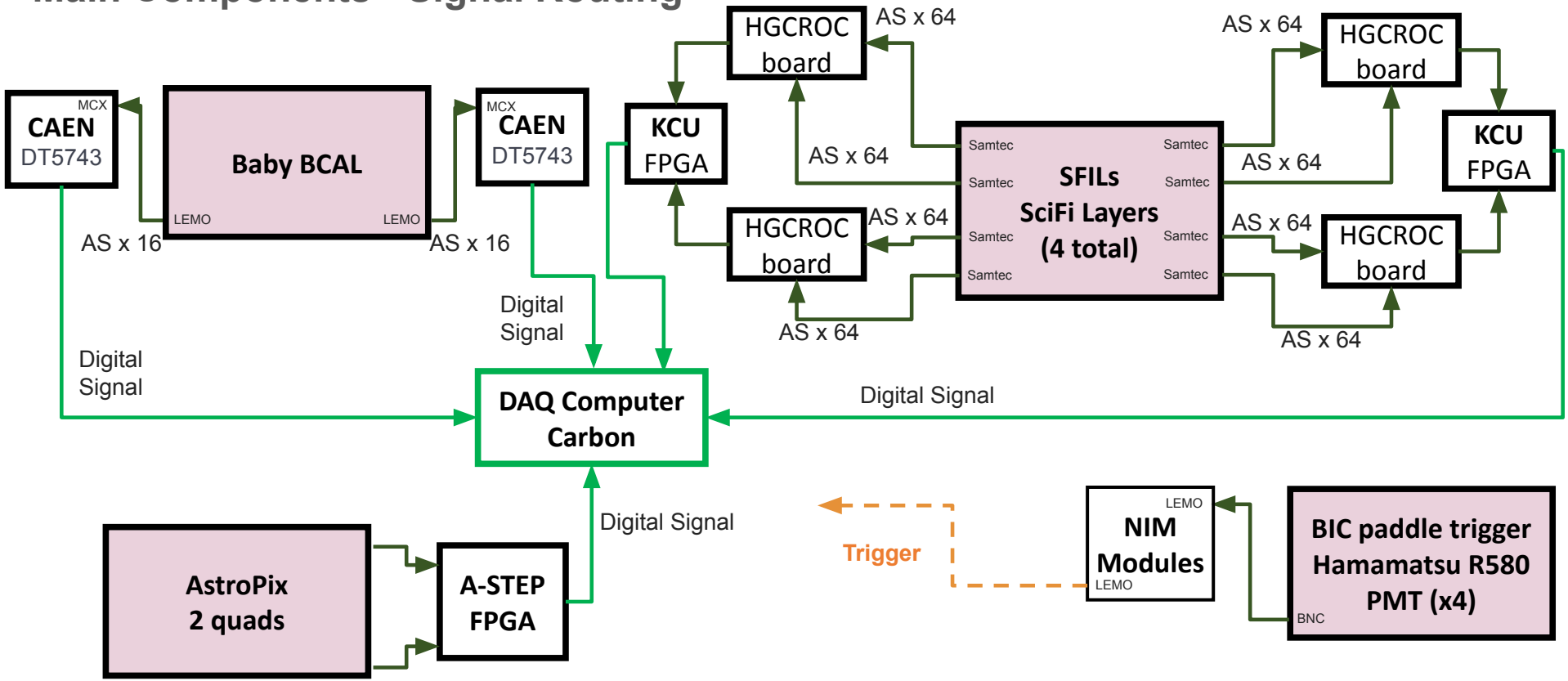

SFILs
SciFi intermediate
layers
Baby BCAL
beam

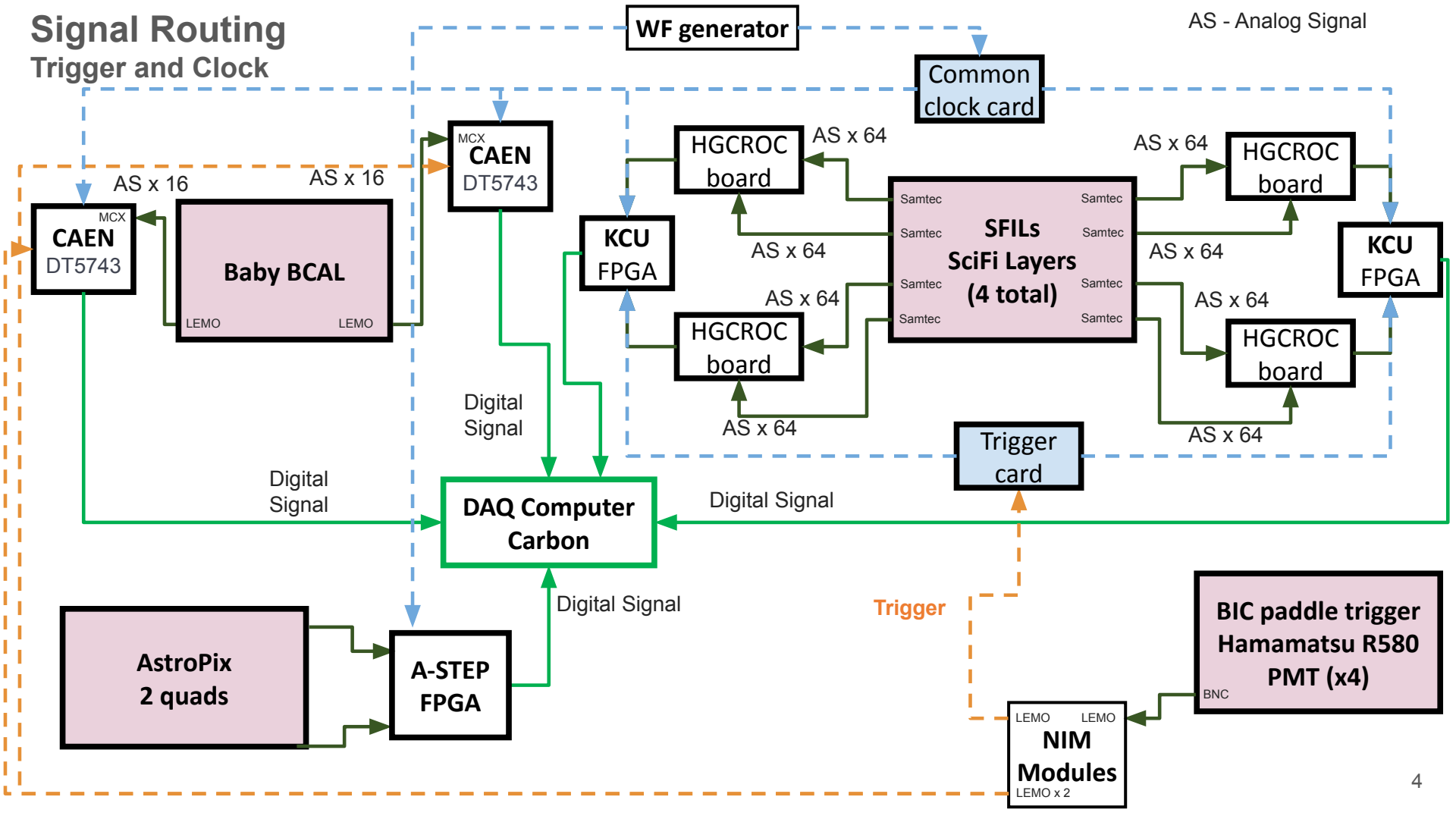

SFILs
SciFi intermediate layers
Baby BCAL
beam
Trigger Paddles
To be calibrated
Split into GlueX DAQ

Main Components - Signal Routing



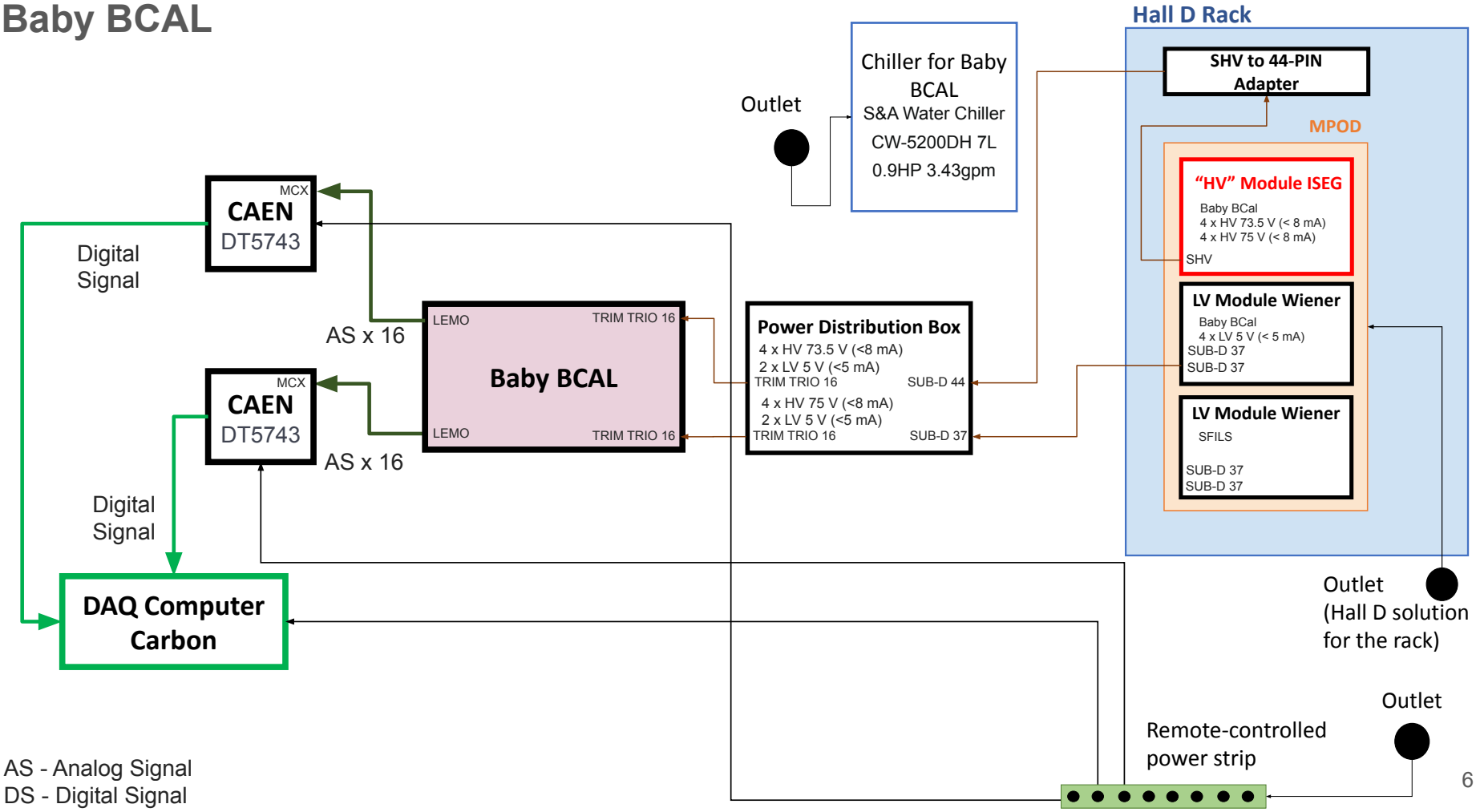
AS - Analog Signal
DS - Digital Signal

Signal Routing
Trigger and Clock



Electrical Diagrams
Power supply channel and electrical outlets count

Baby BCAL



AS - Analog Signal
DS - Digital Signal

Total Count - Baby BCAL

Outlets:

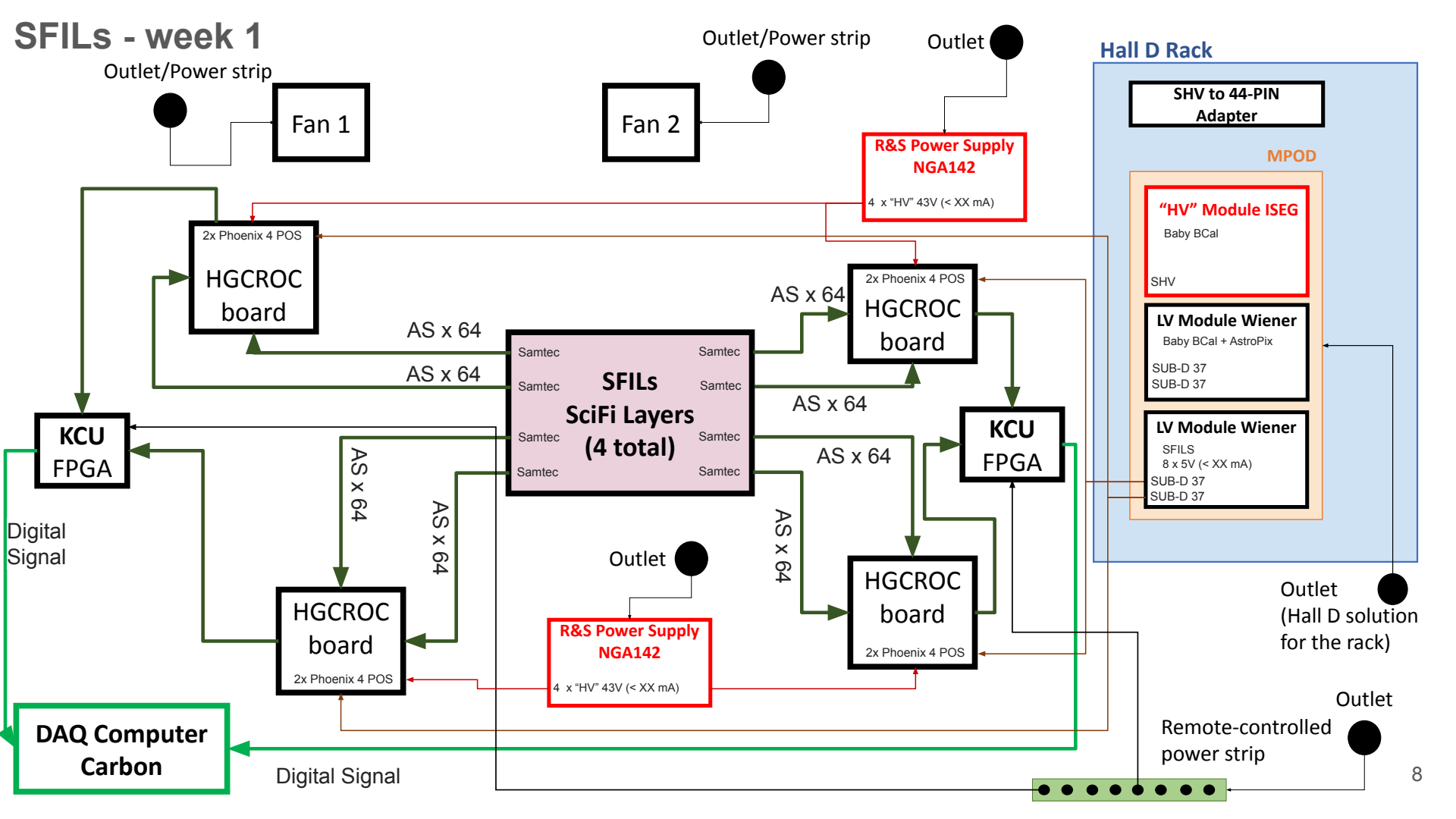
- 2 outlets for CAEN DT5743 WF Digitizers (Remote-controlled power strip)
- 1 outlet for DAQ Computer (Remote-controlled power strip)
- 1 outlet for the chiller (I expect this will need to be in the wall outlet)
- 2 slots in MPOD crate for power supply modules or we can bring our own crate if no space in the existing one. (upstairs, limited by the power cable lengths - they are borrowed from GlueX)

Question to Andrew: What needs to be the wall outlet and what the power strip?

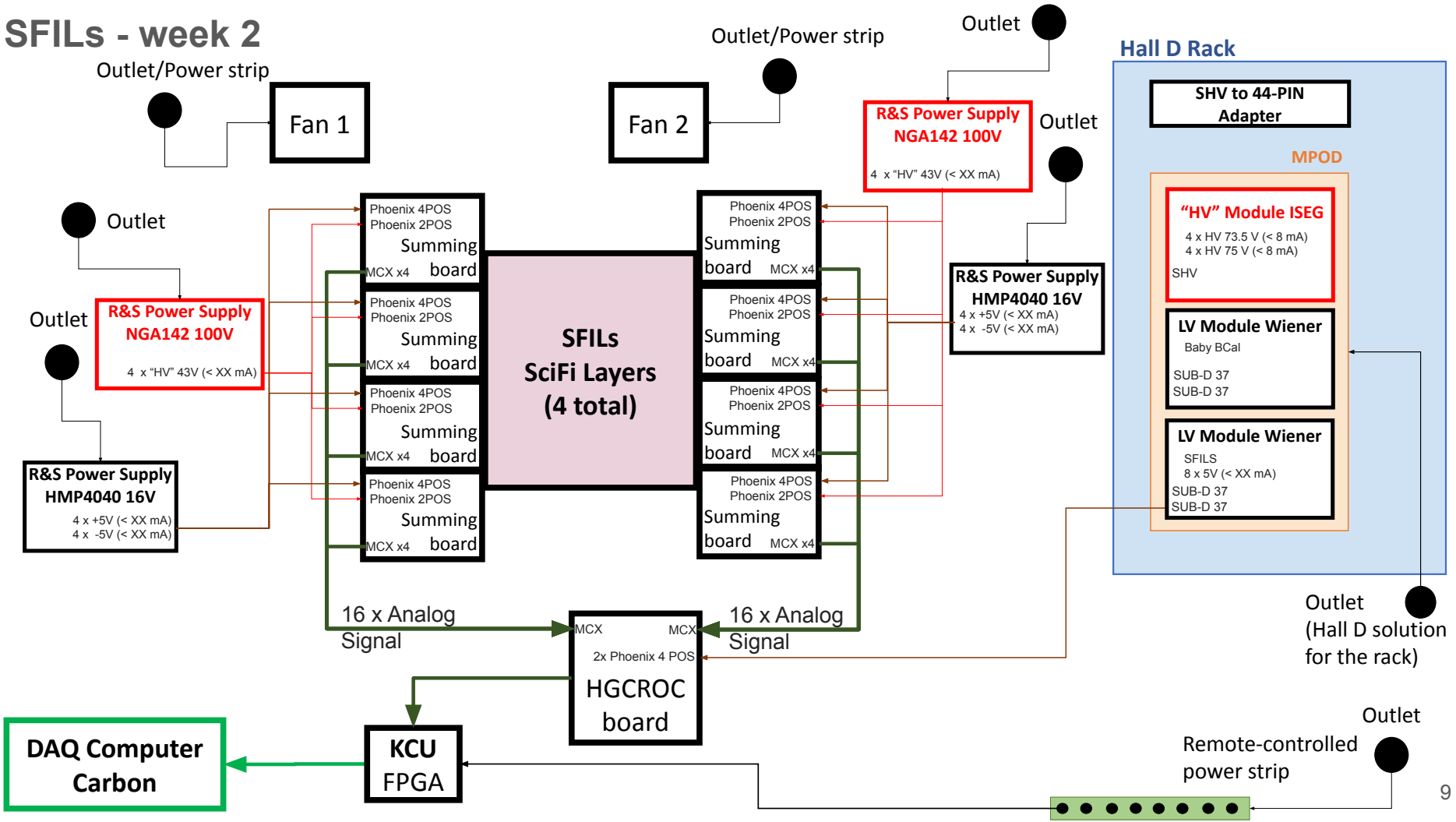
Power line count: (see the diagram on previous page)

- 8 x 75V (MPOD ISEG)
- 4 x 5V (MPOD Wiener)

SFILs - week 1


Outlet/Power strip
Fan 1
Outlet/Power strip
Fan 2
Outlet
R&S Power Supply NGA142
4 x "HV" 43V (< XX mA)
Hall D Rack
SHV to 44-PIN Adapter
MPOD
"HV" Module ISEG
Baby BCal
SHV
LV Module Wiener
Baby BCal + AstroPix
SUB-D 37
SUB-D 37
LV Module Wiener
SFILS
8 x 5V (< XX mA)
SUB-D 37
SUB-D 37
2x Phoenix 4 POS
HGCROC board
AS x 64
AS x 64
SFILs SciFi Layers (4 total)
Samtec
AS x 64
AS x 64
KCU FPGA
Digital Signal
AS x 64
AS x 64
AS x 64
HGCROC board
2x Phoenix 4 POS
Outlet
R&S Power Supply NGA142
4 x "HV" 43V (< XX mA)
HGCROC board
2x Phoenix 4 POS
KCU FPGA
Outlet
(Hall D solution for the rack)
DAQ Computer Carbon
Digital Signal
Outlet
Remote-controlled power strip

SFILs - week 2


Outlet/Power strip
Fan 1
Outlet/Power strip
Fan 2
Outlet
R&S Power Supply
NGA142 100V
4 x "HV" 43V (< XX mA)
Outlet
Hall D Rack
SHV to 44-PIN
Adapter
MPOD
"HV" Module ISEG
4 x HV 73.5 V (< 8 mA)
4 x HV 75 V (< 8 mA)
SHV
LV Module Wiener
Baby BCal
SUB-D 37
SUB-D 37
LV Module Wiener
SFILS
8 x 5V (< XX mA)
SUB-D 37
SUB-D 37
Outlet
Outlet
R&S Power Supply
NGA142 100V
4 x "HV" 43V (< XX mA)
R&S Power Supply
HMP4040 16V
4 x +5V (< XX mA)
4 x -5V (< XX mA)
Phoenix 4POS
Phoenix 2POS
Summing
board
MCX x4
SFILs
SciFi Layers
(4 total)
R&S Power Supply
HMP4040 16V
4 x +5V (< XX mA)
4 x -5V (< XX mA)
16 x Analog
Signal
16 x Analog
Signal
MCX
MCX
2x Phoenix 4 POS
HGCROC
board
Outlet
(Hall D solution
for the rack)
DAQ Computer
Carbon
KCU
FPGA
Outlet
Remote-controlled
power strip

Total Count - SFILs

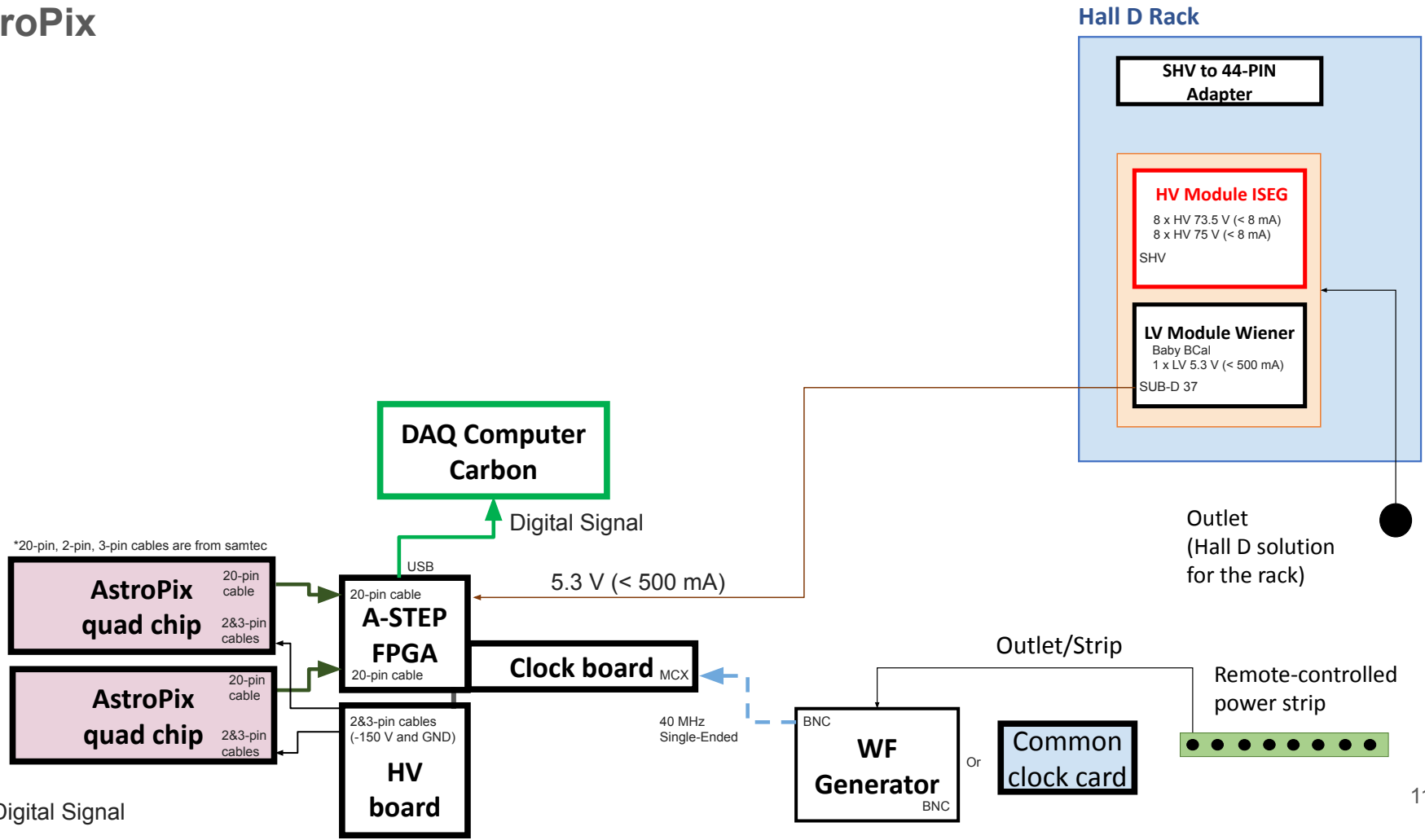
Outlets:

- 2 outlets/slots in power stip for 2 fans (cooling)
- 2 slots for KCU FPGA (remote controlled strip)
- 1 slot in MPOD crate for LV power supply modules or we can bring our own crate if no space in the existing one. (upstairs)
- 2 outlets for R&S Power Supplies NGA142
- 2 outlets for R&S Power Supplies HMP4040

Power line count: (see the diagram on previous page, max from 2 setups is taken)

- 8 x 5V (MPOD, 8 ch LV module) - HGCROC boards
- 8 x +5V (R&S HMP4040, 4 ch power supply) - Summing boards
- 8 x -5V (R&S HMP4040, 4 ch power supply) - Summing boards
- 8 x <43V (R&S NGA142, 2 ch power supply) - bias

AstroPix



DS - Digital Signal

Total Count - AstroPix

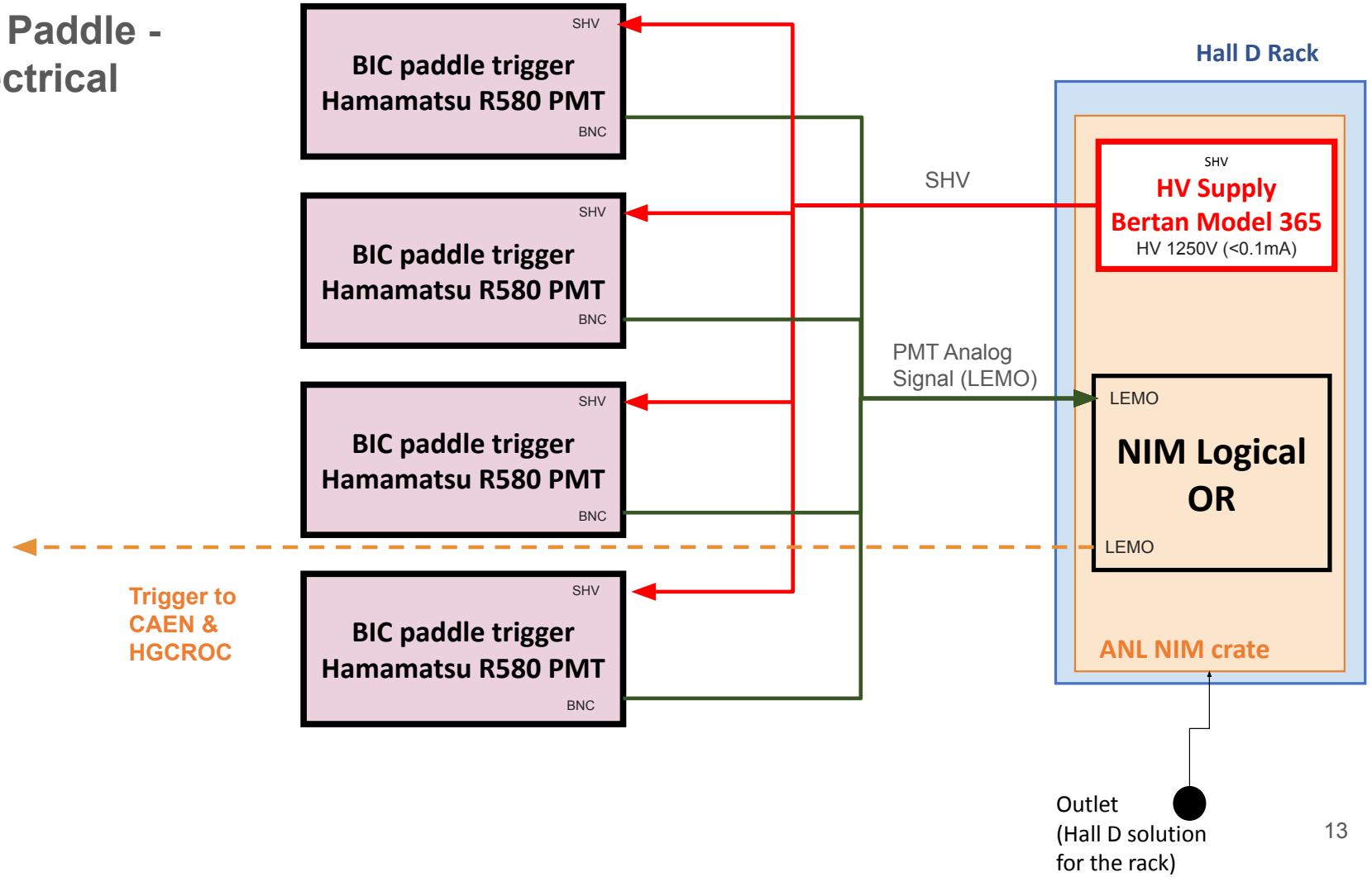
Outlets:

- 1 outlet for WF Generator (Remote-controlled power strip)
- Same MPOD LV Module as for Baby BCAL

Power line count: (see the diagram on previous page)

- 1 x 5.3V (MPOD Wiener)

Trigger Paddle - Full Electrical



Total Count - Trigger

Crates/Outlets:

- 1 Slot for the NIM Crate (NIM logic for trigger and HV supply for paddles - HV Supply Bertan Model 365)

Power line count: (see the diagram on previous page)

- 4 x HV 1250V (<0.1mA)

Summary of outlets, crates, etc

Crates/ Slots in Crates:

- Slots for 3 MPOD Modules (1 x ISEG 100 V power supply, 2 x Wiener 16 V power supplies) - close to the setup (platform). We can bring our own crate if needed.
- 1 Slot for the NIM Crate (NIM logic for trigger and HV supply for trigger paddles - HV Supply Bertan Model 365). We can bring our NIM crate or use the available one. Preferably upstairs.

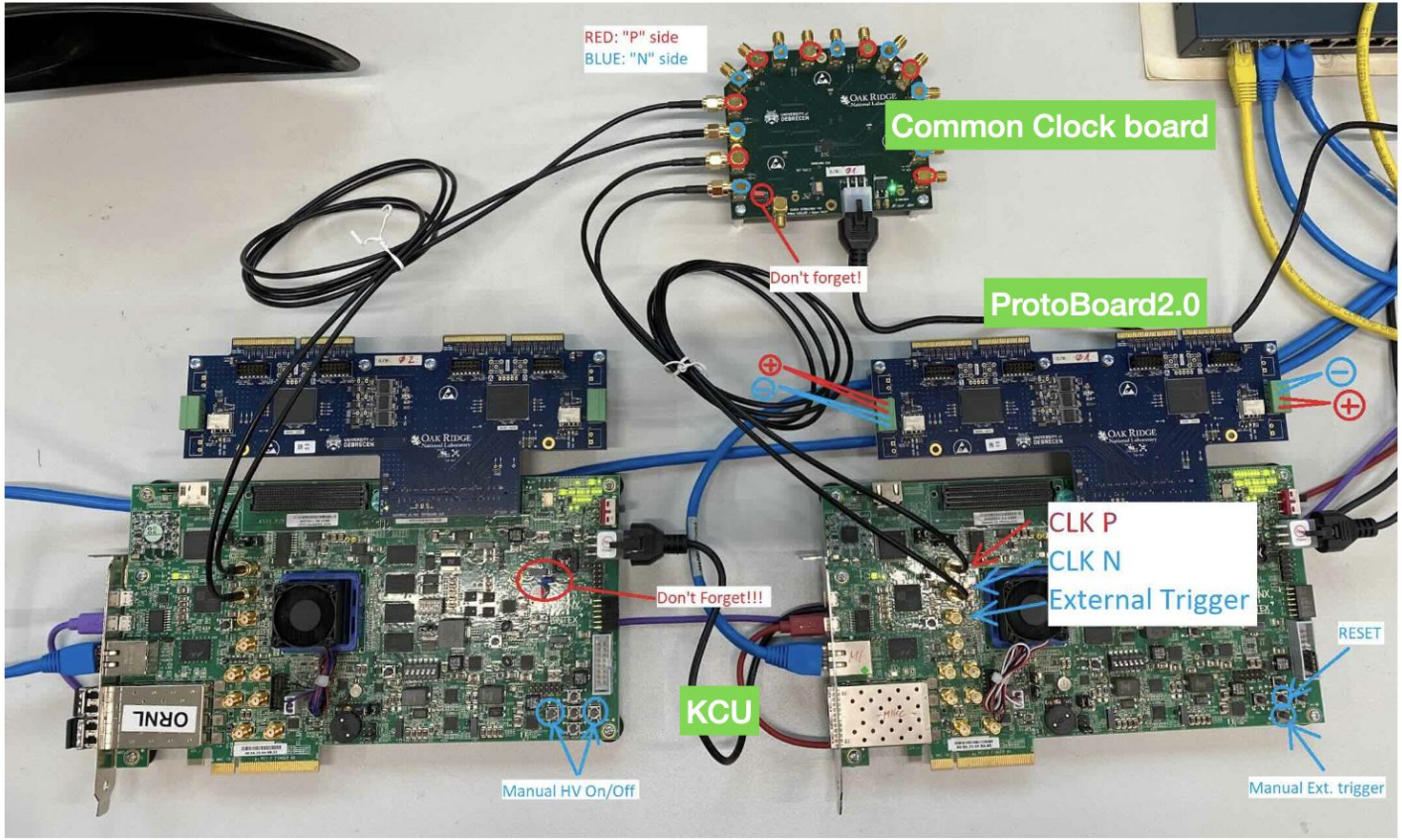
Remote controlled power strip slots:

- 2 outlets for CAEN DT5743 WF Digitizers
- 1 outlet for DAQ Computer
- 2 slots for KCU FPGA
- 1 outlet for WF Generator

Outlets/power strip slots:

- 1 for the chiller (cooling)
- 2 for fans (cooling)
- 2 outlets for R&S Power Supplies NGA142
- 2 outlets for R&S Power Supplies HMP4040

Backup


RED: "P" side
BLUE: "N" side
Common Clock board
Don't forget!
ProtoBoard2.0
CLK P
CLK N
External Trigger
RESET
Don't Forget!!!
KCU
Manual HV On/Off
Manual Ext. trigger

Old Baby BCal - AstroPix Setup - Fermilab