

Updates on Camera & Ground Plane Monitoring System

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**ProtoDUNE-SP DAP Meeting
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Camera System

- **Three different camera systems for ProtoDUNE-SP**
- **Update on Bo and Edgar's systems here**
- **9 cameras in total**
- **5 cameras from Bo**

Successfully communicated with the 4 cameras.

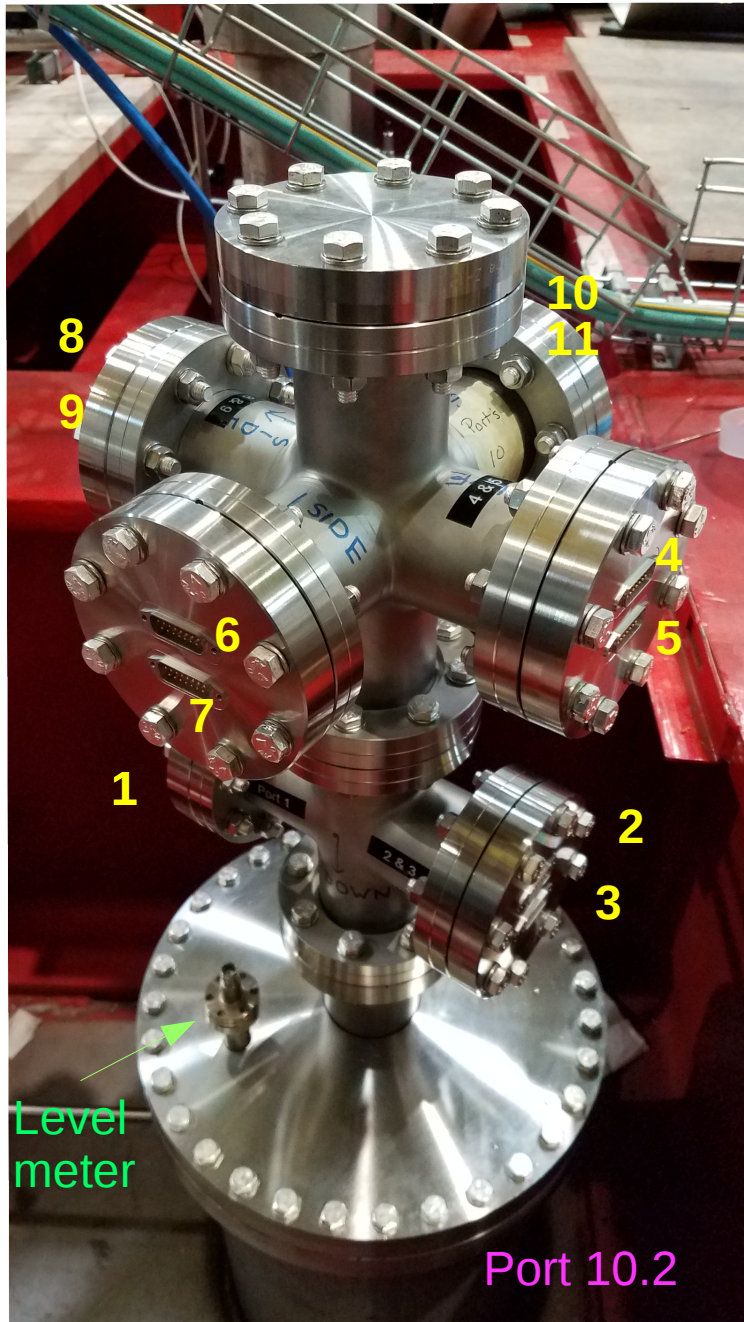
We lost connection of 1 of Bo's camera.

→ Problem seems due to the back-end connection

- **4 cameras from Edgar**

Successfully communicated with all cameras.

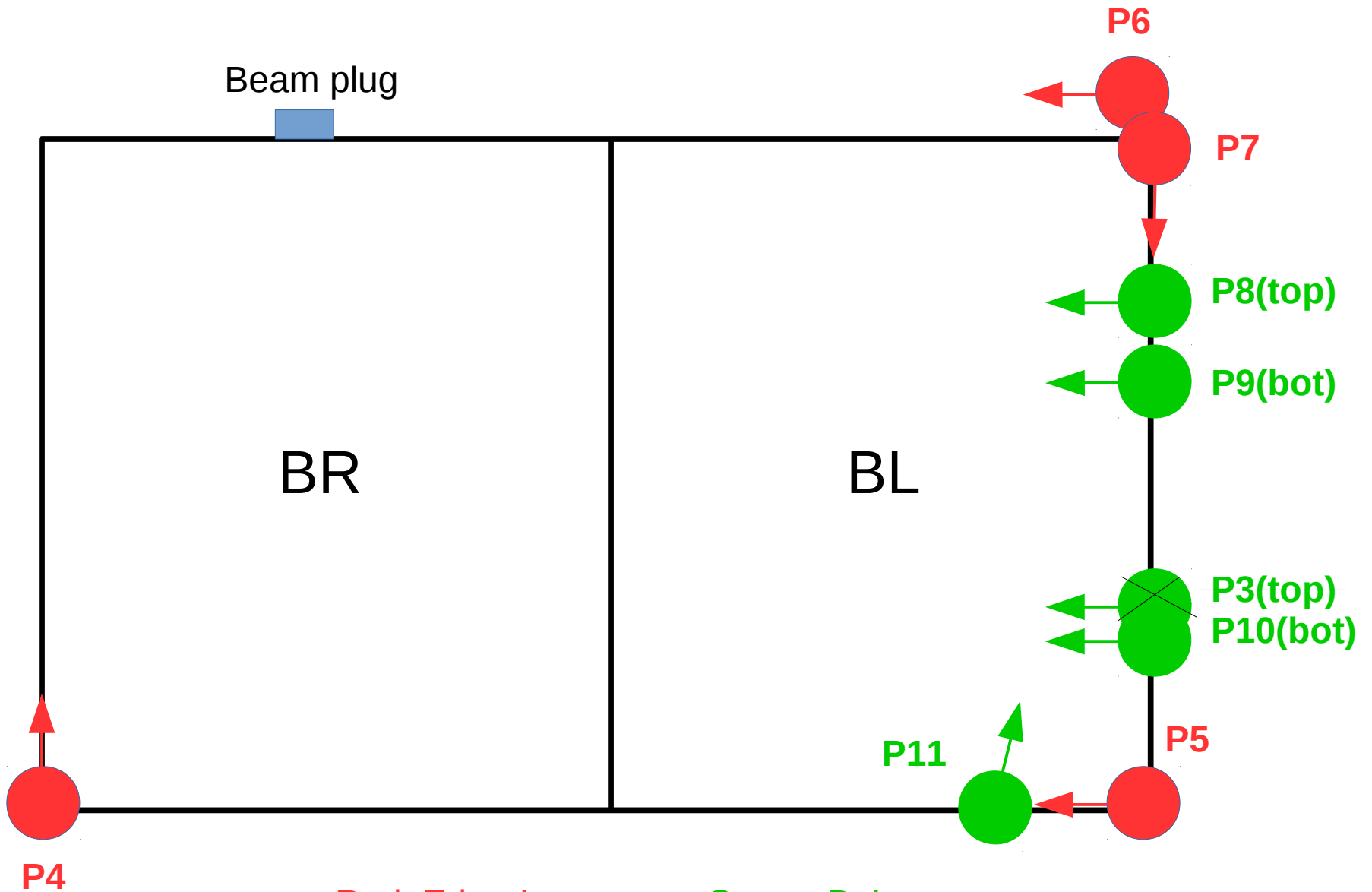
Signal Readout Port



Port Number	Item
1	Ground plane readouts
2	RTD
3	- Bo's Cam #3 - Bo's Red LEDs - Edgar's LEDs
4	Edgar's Cam #1
5	Edgar's Cam #2
6	Edgar's Cam #3
7	Edgar's Cam #4
8	Bo's Cam #5
9	Bo's Cam #4
10	Bo's Cam #1
11	Bo's Cam #2

Photo credit: Charles

Positions of Cameras

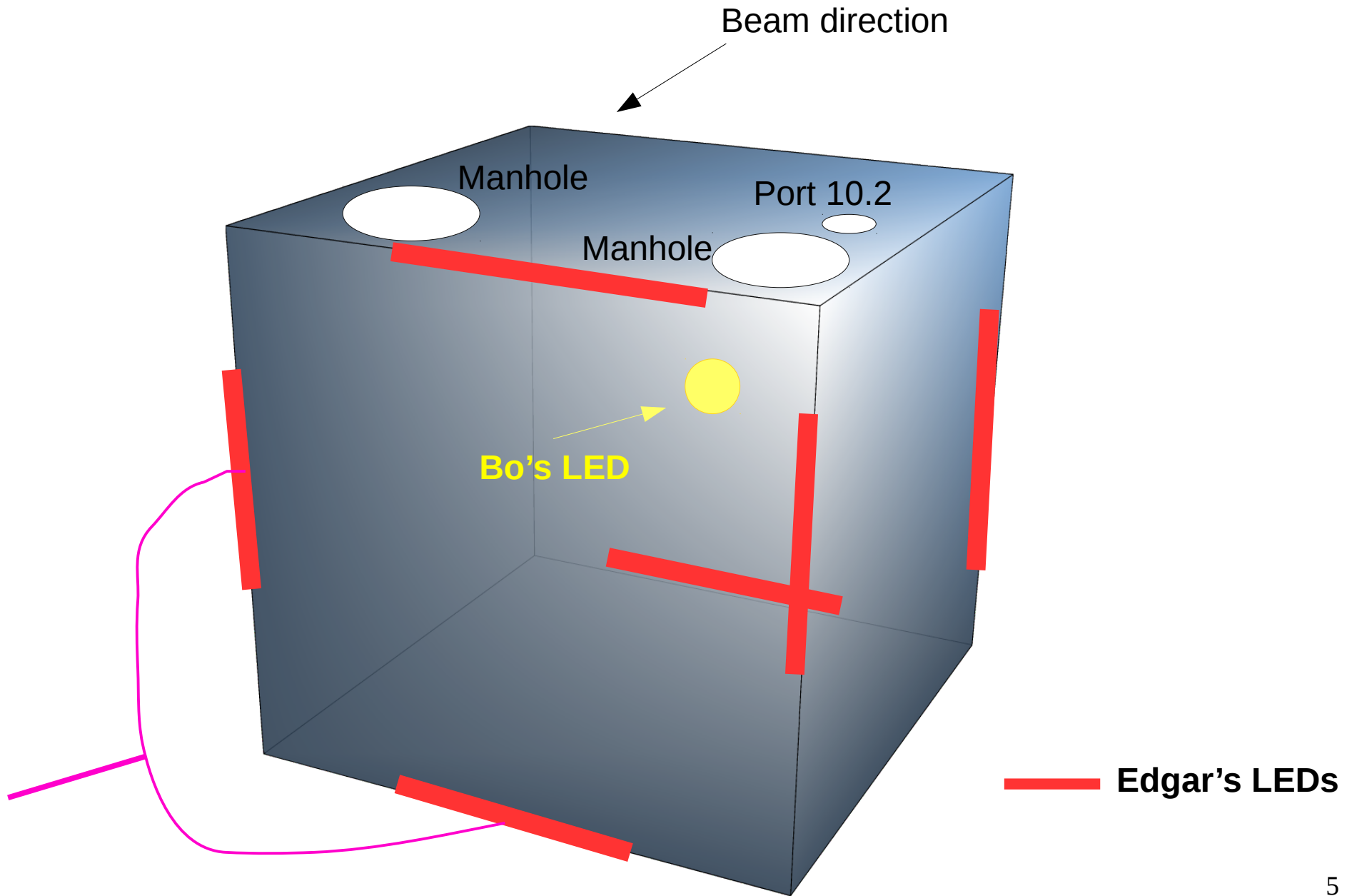


Red: Edgar's cameras Green: Bo's
Arrow: Camera pointing position

Note: Lost connection of P3

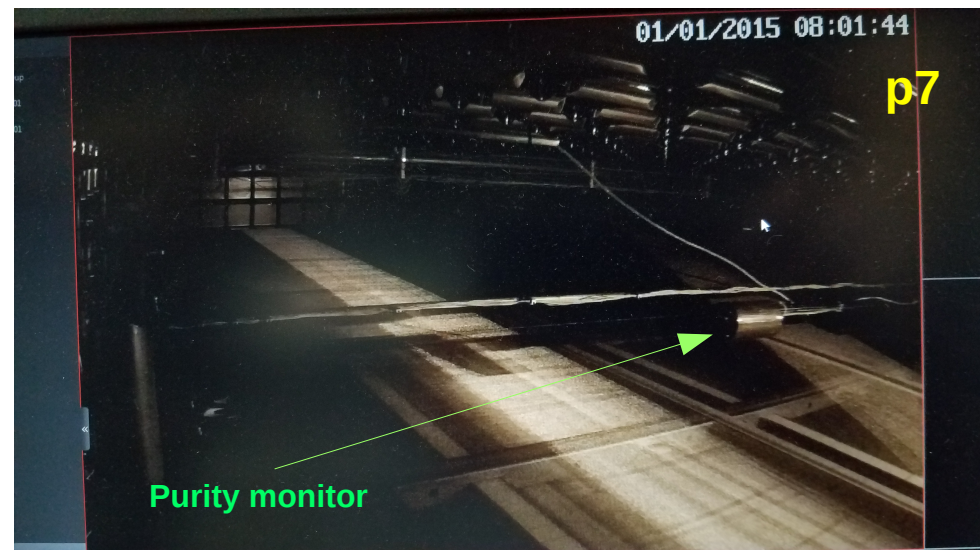
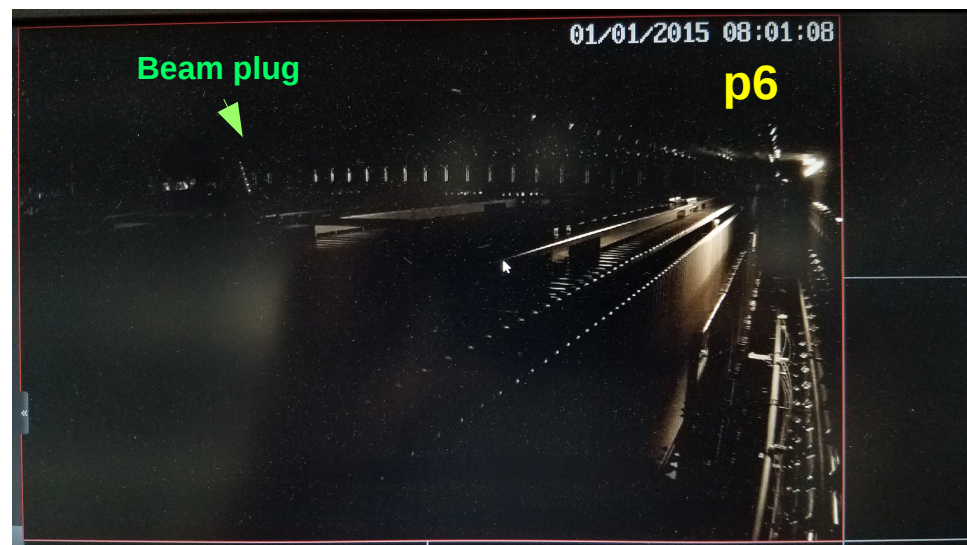
p.s. Figure not drawn to scale

Light Position

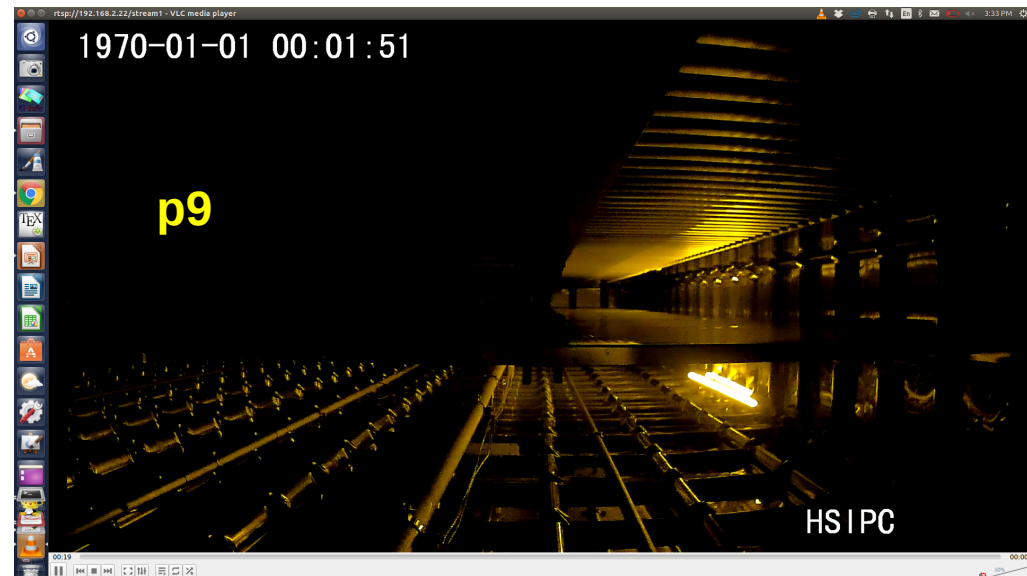
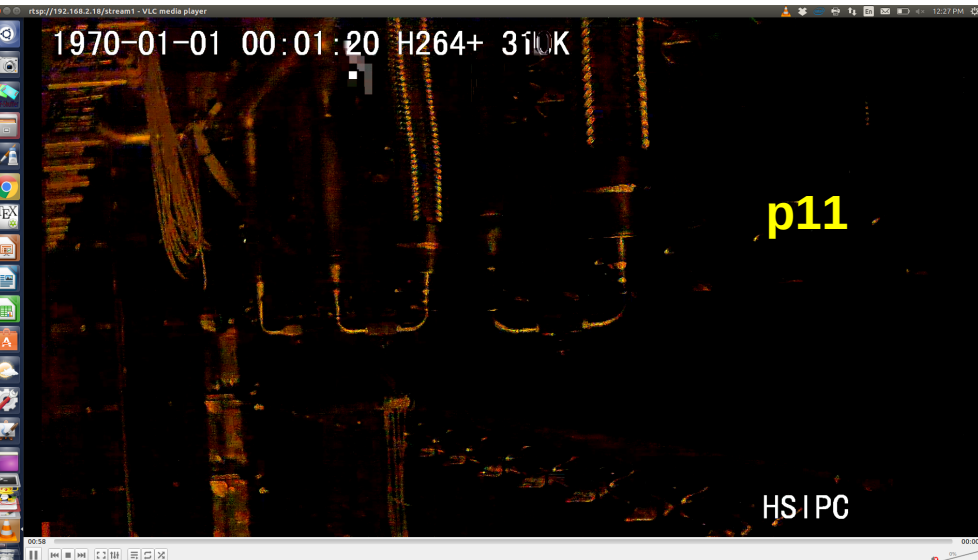
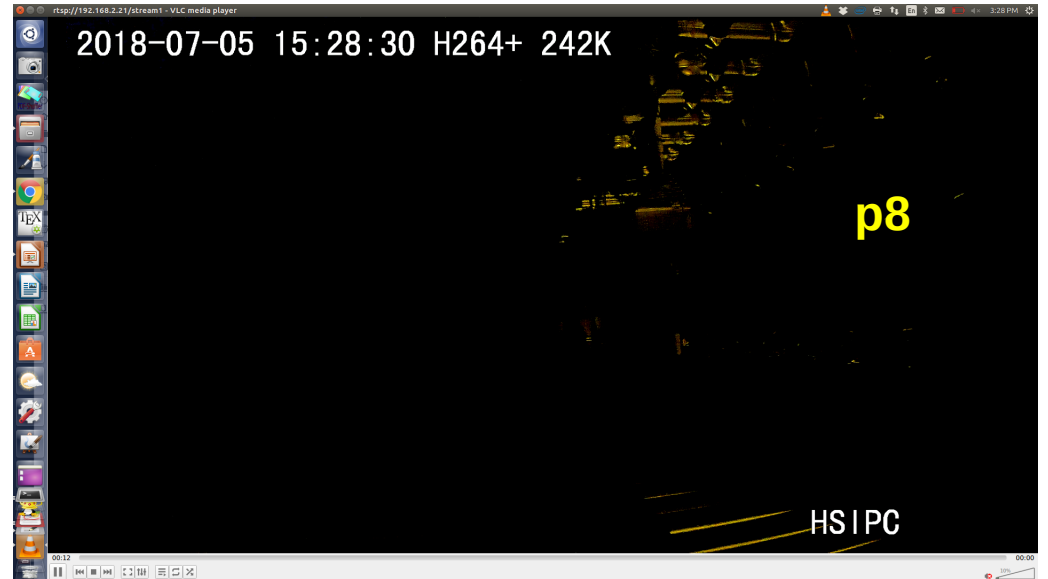
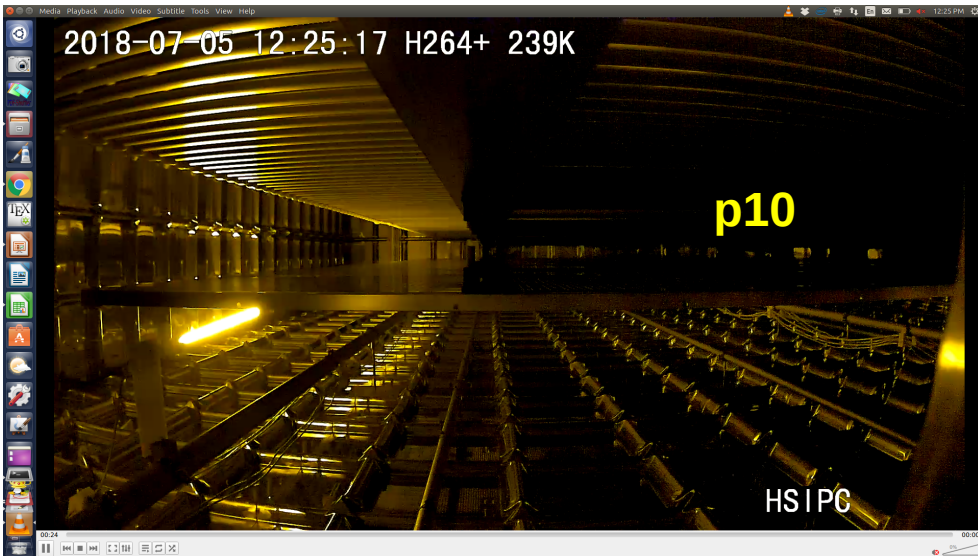


p.s. Figure not drawn to scale

Images from Edgar's Cameras



Images from Bo's Cameras



Update on Ground Plane Monitoring System

- All ground plane readouts have passed the QA tests!
- All cable routing (warm+cold) completed.

GP Channel	Measured Vs [V]	Measured Vgp [V]	Rcg [kΩ]	Is this GP physically contact with others?
UP-US-BL	1.204	1	301.2	No
UP-US-BR	-	-	300.6	No
DN-US-BL	1.204	1	299.1	No
DN-US-BR	1.204	1	298.1	No
UP-MS-BL	1.204	1	300.8	No
UP-MS-BR	-	-	300.9	No
DN-MS-BL	1.204	1	300.7	No
DN-MS-BR	-	-	300.5	No
UP-DS-BL	1.204	1	300.5	No
UP-DS-BR	-	-	300.6	No
DN-DS-BL	1.204	1	300.6	No
DN-DS-BR	1.204	1	300.6	No

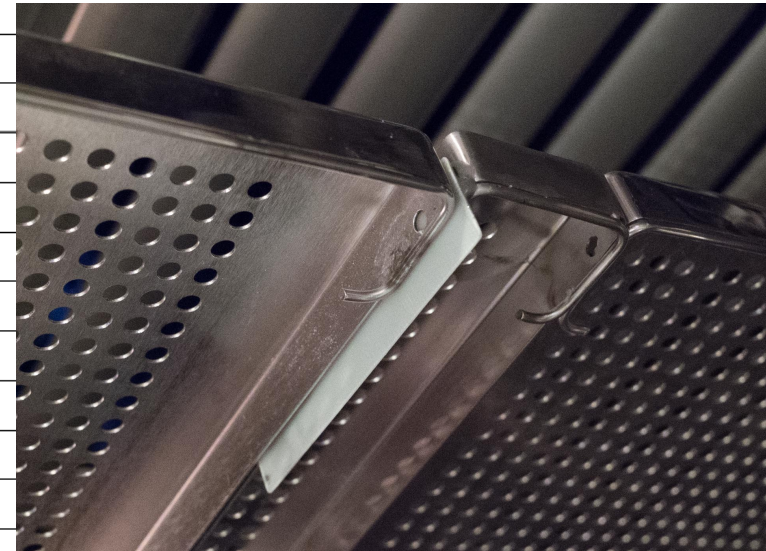


Photo credit: Bo

- *BL-US/MS ground planes: Tests made on 06/21,22/2018
- *Found DN-US-BL & DN-US-BR were physically in contact 06/22/2018
- *Inserted a thin FR4 plate between DN-US-BL and DN-US-BR: 06/25/2018
- *Confirmed that all ground planes passed the electrical connection tests.

See details in the e-log post:
<https://pdspelog.cern.ch/elisa/display/3334>