

Al – Faraday Cage glue FR4

Honeycomb/millifoam

glue

glue FR4

glue Kapton Copper

Copper Kapton DLC

prepreg Copper

Kapton

Honeycomb/millifoam

Glue FR4 glue

glue FR4 glue Al – Faraday Cage

Progress since last meeting.

TEST BEAM at CERN SPS North Area H8: 14 – 28 June 2023 has been completed

- 2D readout: step by step approach
- 1. One prototype reads the 2-nd coordinate on the "top" copper layer Same readout geometry on the top and the bottom:
- 780 mm pitch
 300 mm width
 10 x 10 cm² active surface
 128 channels
 The effect charge collection on the «top» layer is the object of investigation.





Progress since last meeting. TEST BEAM at CERN SPS North Area H8: 14 – 28 June 2023

- 2D readout: step by step approach
- 2. A second prototype reads both coordinates on the bottom in "COMPASS-like" strips configuration with capacity sharing read-out:
- 1200 μm pitch
- 300 μm vs 1000 μm strips width
- 10 x 10 cm² active surface
- 83 channels



μRWELL foil
(amplification){3 capacitive
sharing pad layers0.3 mm300 μm
readout layers0.6 mm300 μm
readout layers1.2 mm1.2 mm1.2 mm





Progress since last meeting. TEST BEAM at CERN SPS North Area H8: 14 – 28 June 2023



Set-up

 π/μ



July 6th, 2023







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Efficiency

- CS readout reaches a plateau at higher HV values than standard readout scheme.
- TOP readout is not yet at plateau at 600 V
 (HV was chosen to to be raised to higher values)







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Resolution

- CS readout reaches 100 μm resolution at highest HV values (starting from 1200 μm pitch)
- TOP readout resolution is fixed at 250-300 μm
 (pitch is 780 μm)







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Cluster Size

- CS readout Cluster Size is not lower than 2.5 strips and increases to 4 at higher HV.
- higher cluster size → better resolution
- TOP readout cluster size is fixed at 1.3
- Bottom readout cluster size
 increases from 1.5 to 2.3 with HV







NEXT STEP

• Test the 40x46 cm2 prototype!

with X-RAYS and cosmics





July 6th, 2023

