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New CNT tests & KURNS test

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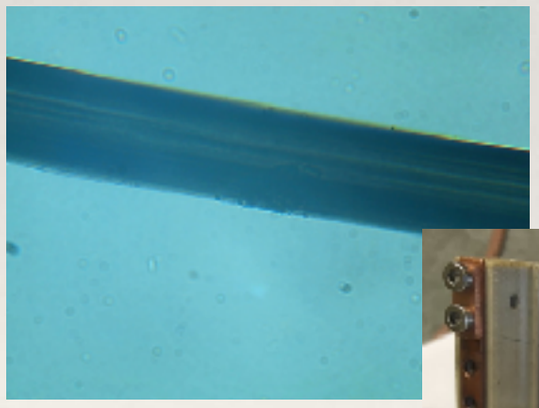
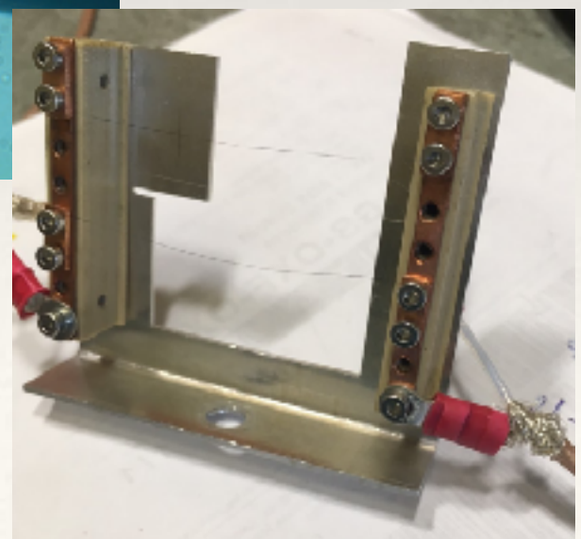
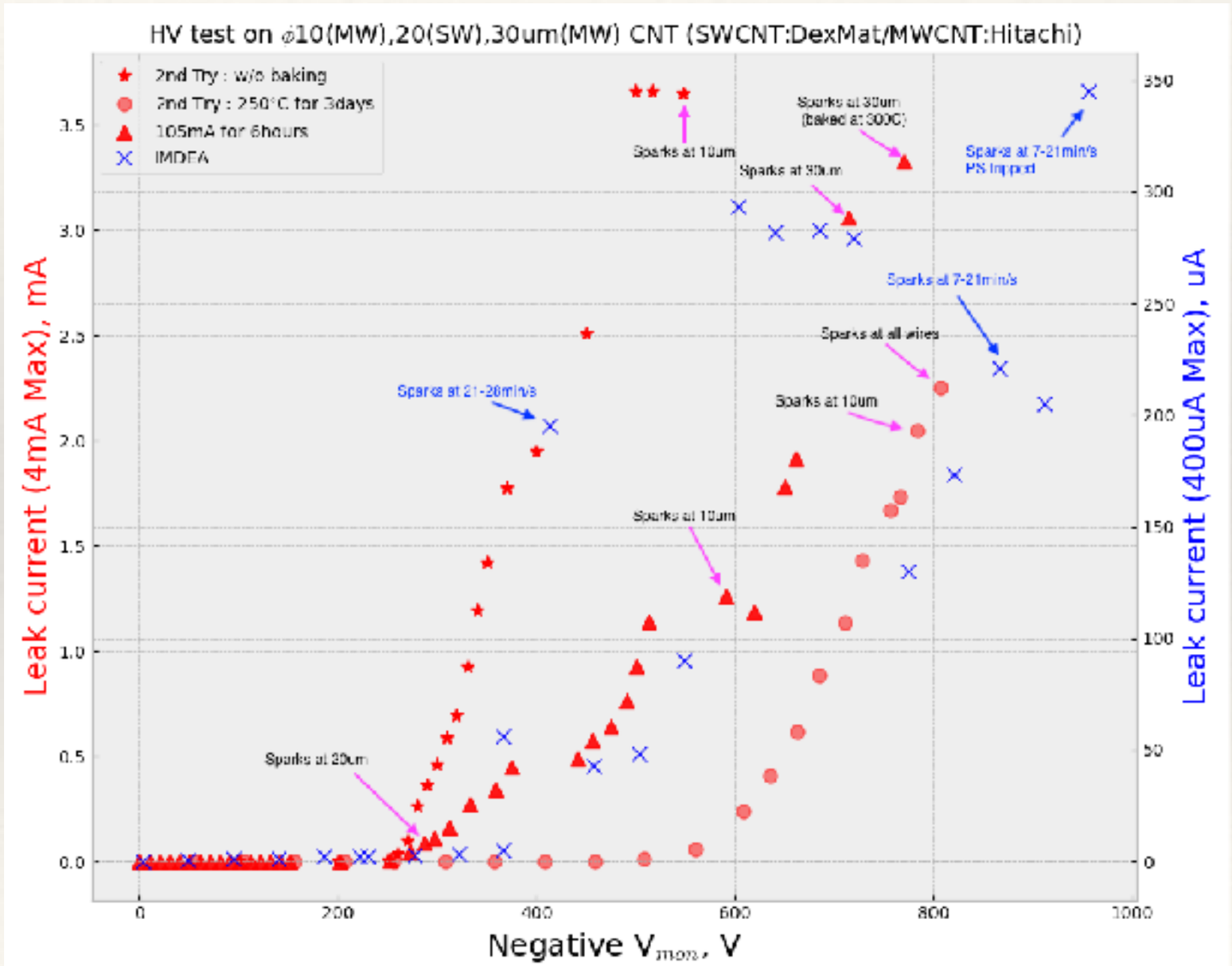
HV Test on New CNT (IMDEA)

- Multi-wall (Single layer) CNT wire (tape) from IMDEA, rectangular shape, baked at 350C.
  - 7-21min/s : 54um - 104um
  - 21-28min/s : 48um - 66um
- 7-21min/s tape shows high resistivity to bias voltage.
- Difficult to handle the tape, less tensile strength than other CNTs.







Ion Beam Profile with New CNTs

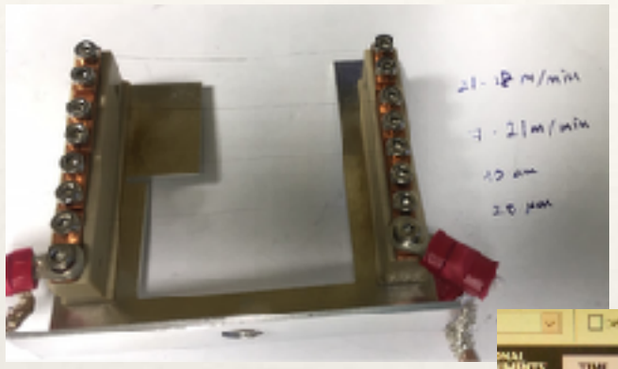


Fig.1. CNT wires on test frame.

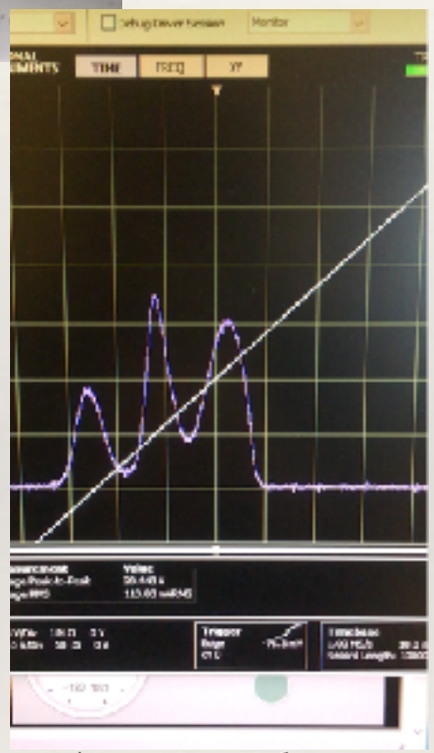
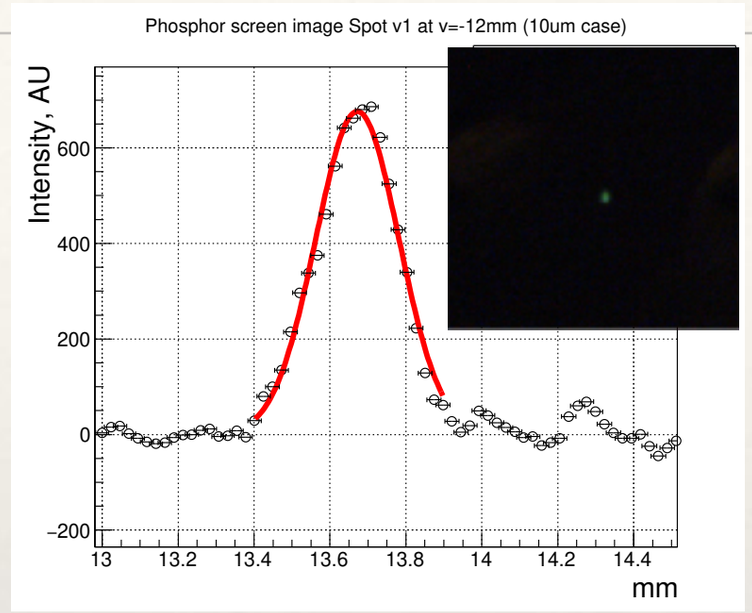


Fig.2. 21-28min/s CNT with ion beam.



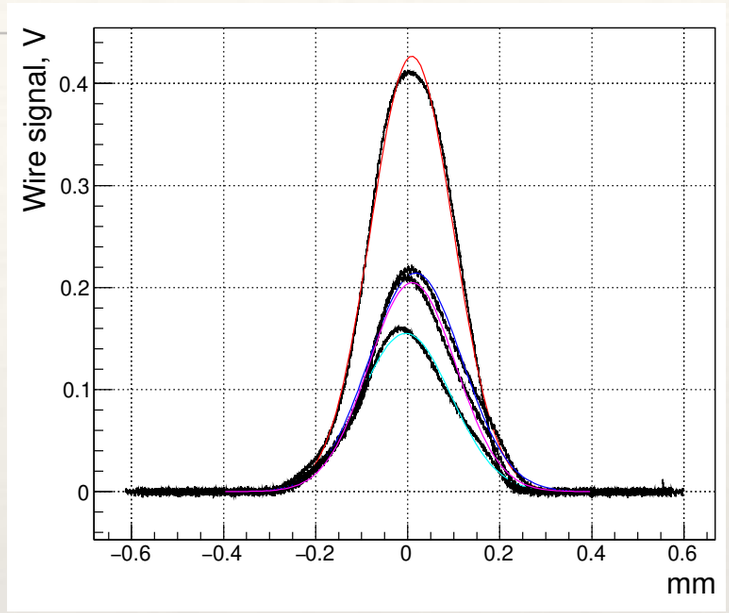


Fig.3. Ion beam profile measured by screen (left) and wires (right).

Tab.1 Comparisons of ion beam profile.

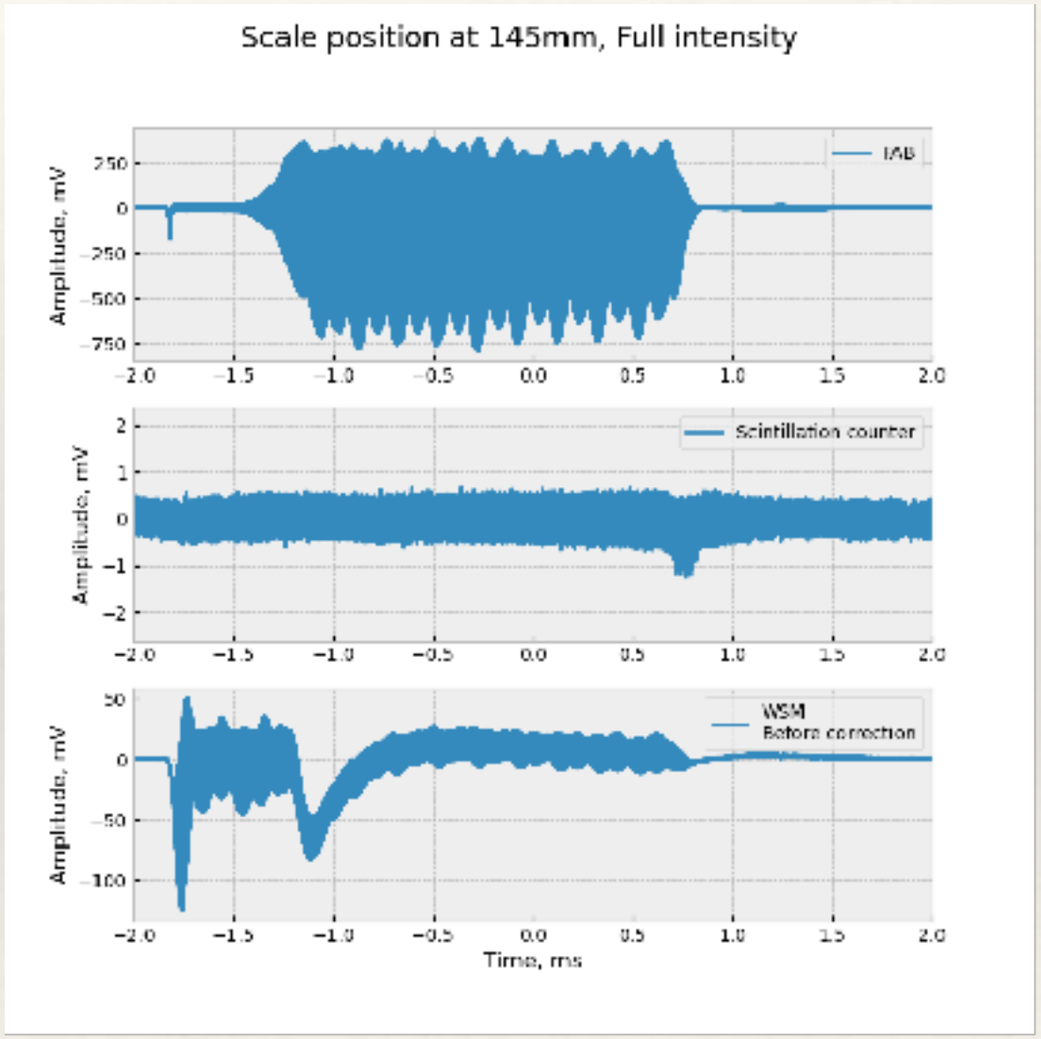
Screen	110.1±5.1mm
21-28min/s	89.47±1.2mm
7-21min/s	98.5±3.4mm
10um	100.8±1.1mm
20um	94.5±1.2mm

- 21-28min/s CNT was not tensioned enough (Fig.2), which might underestimate the beam profile.
- Current signals on 7-21min/s is smaller than the other CNTs, but the measured profile is consistent to other ones.

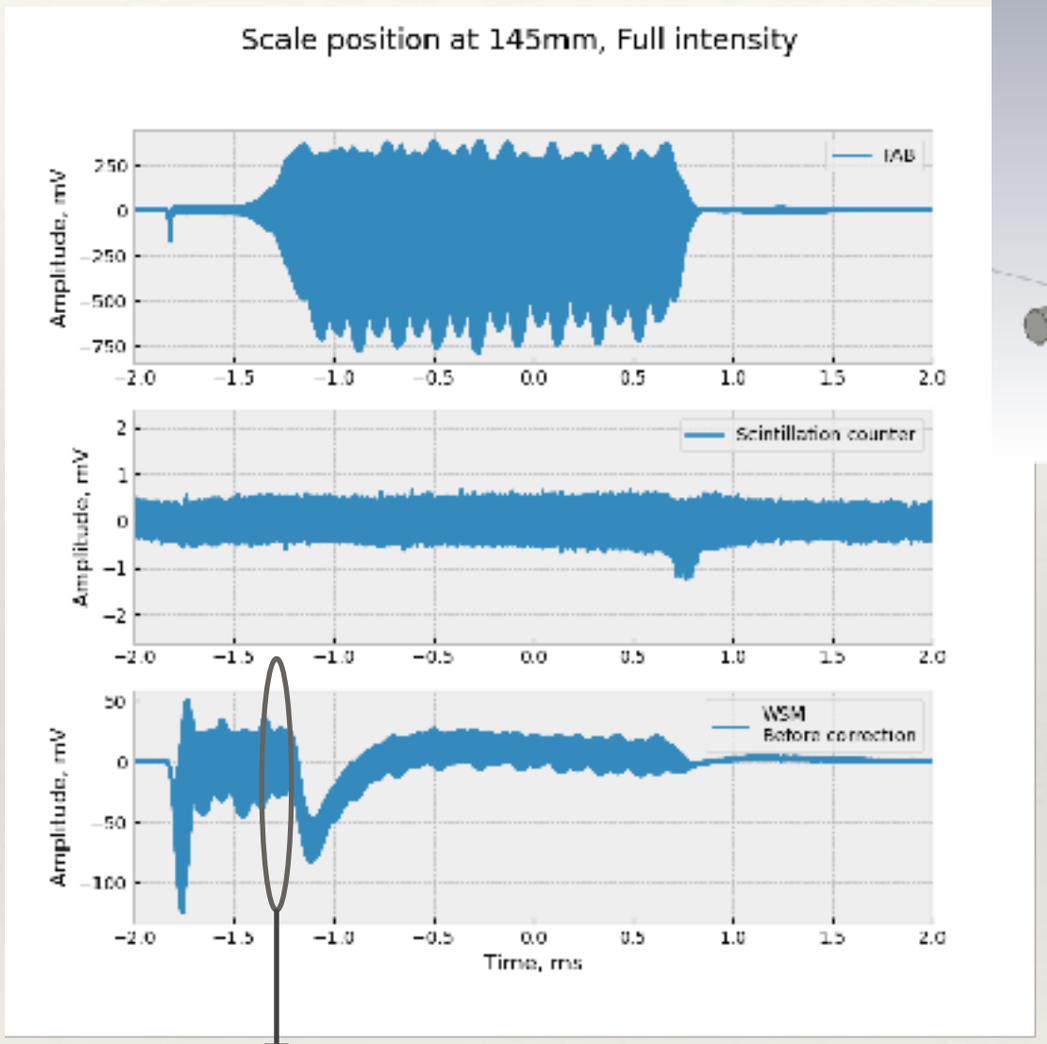
7-21min/s will be suitable for HV bias application, but smaller current.

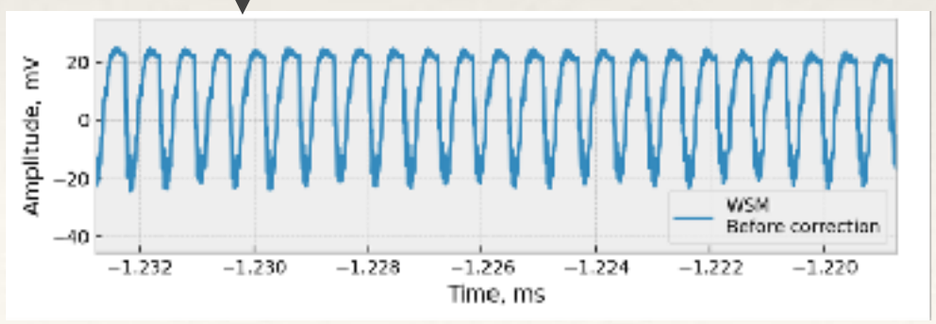
Test at KURNS in January

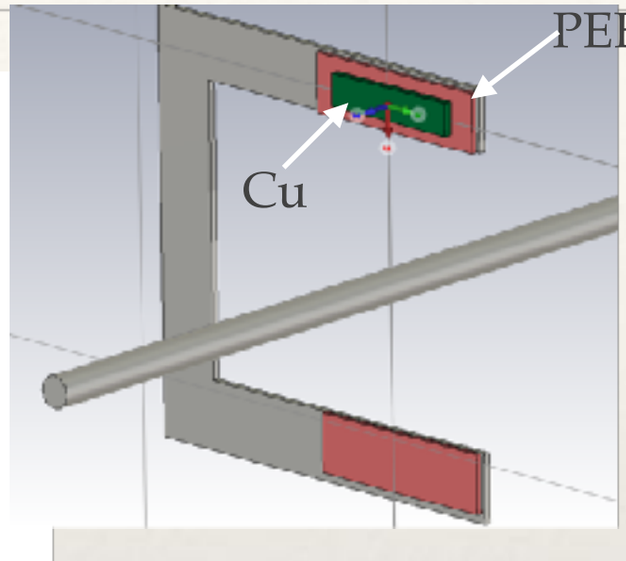
- 10um CNT
- Test with new current Amplifier
- DAQ system



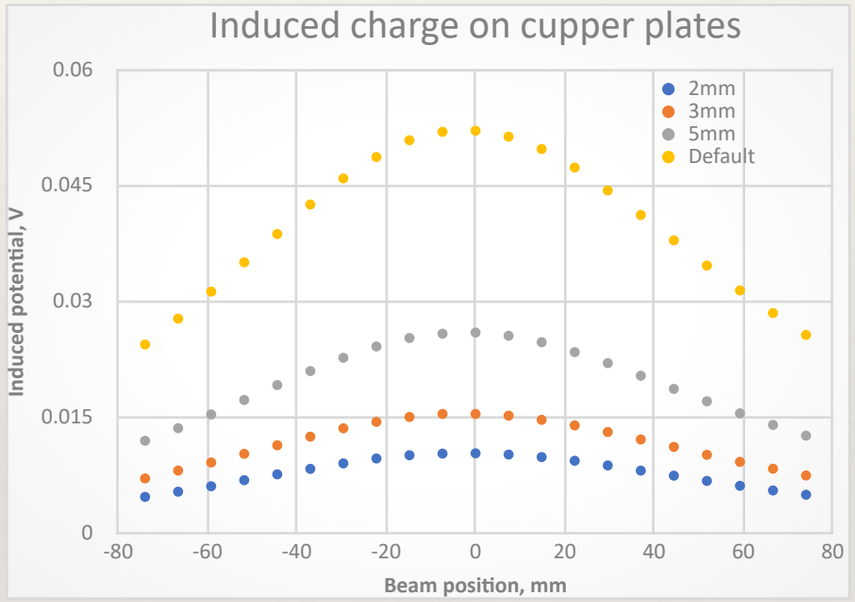
WSM Measurements







1V is applied on the probe, which position is moved in horizontal. Induced charge on copper plate is computed by CST.



- The WSM picked up beam induced charge via metallic structures.
- The thinner PEEK block increases the capacitance between metallic plates and grounded frame, minimising induced pickup signals.