Bonding options for ePIC BIC

A follow-up from March 1st meeting:

checking on the bonding constraints

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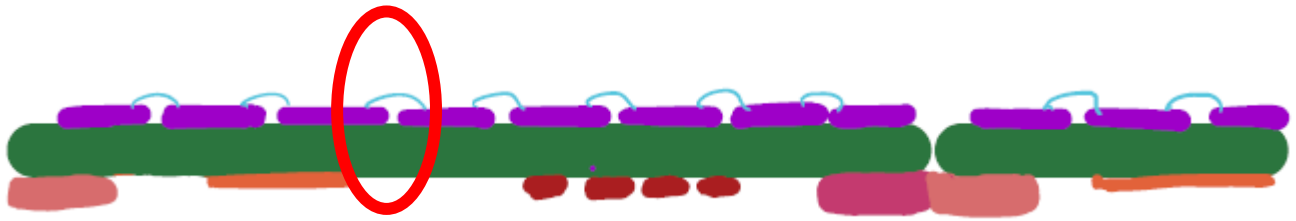
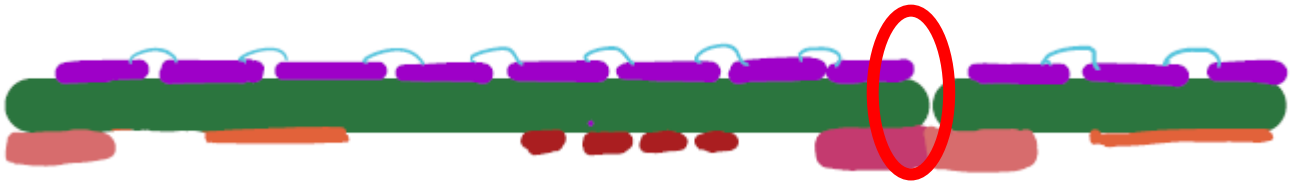
Checking on the bonding distances/constraints: chip-to-chip

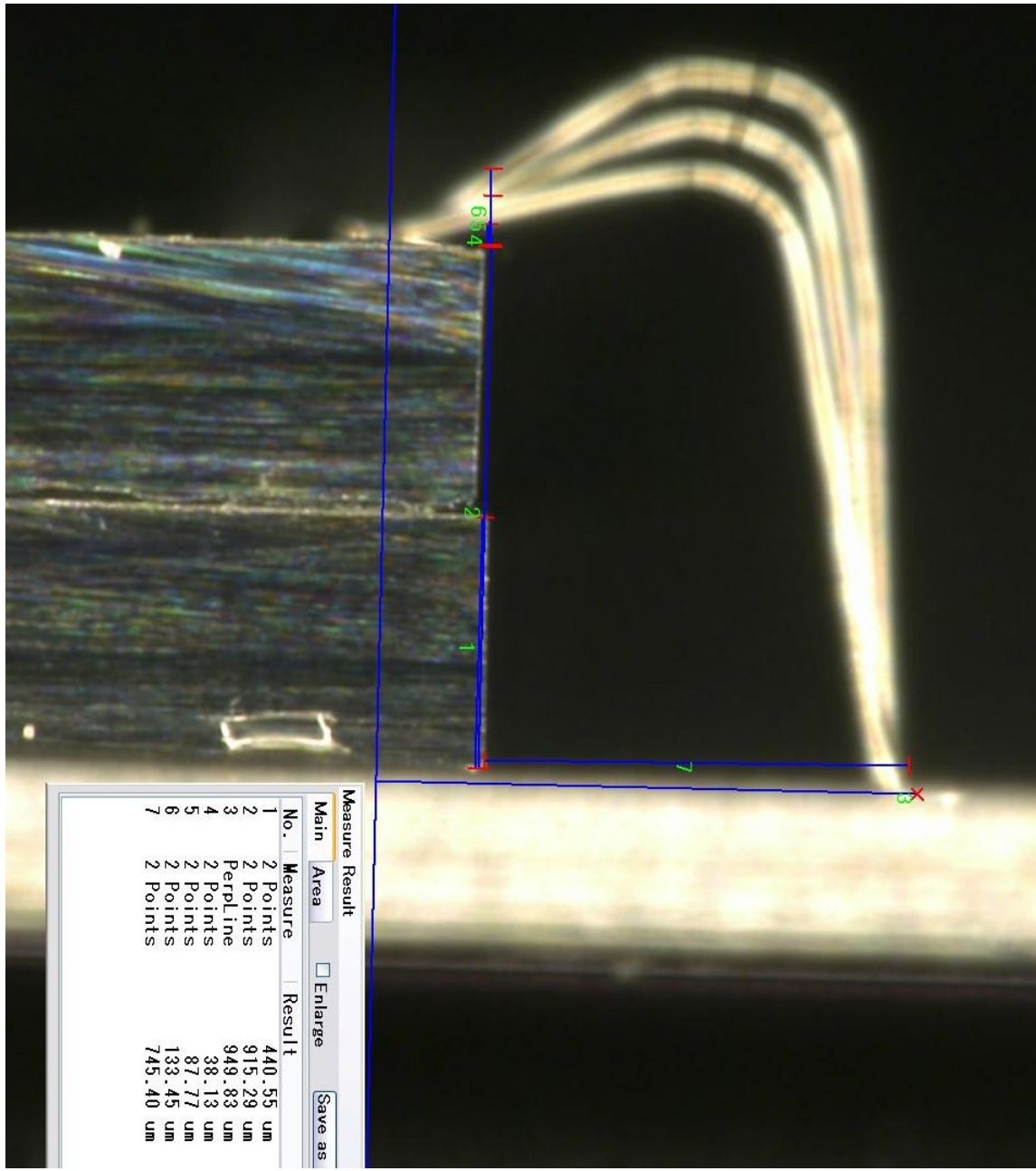
- Have to have a bond height at the chip edge (which is at HV!)
- Assuming x2 safety factor and max(HV) = 400 V, would need 266 um loop height.
- ➔ > ~500 um pad pitch distance for the same height.
- Is this the case for V4/5 chips?



Chip-to-PCB bonding

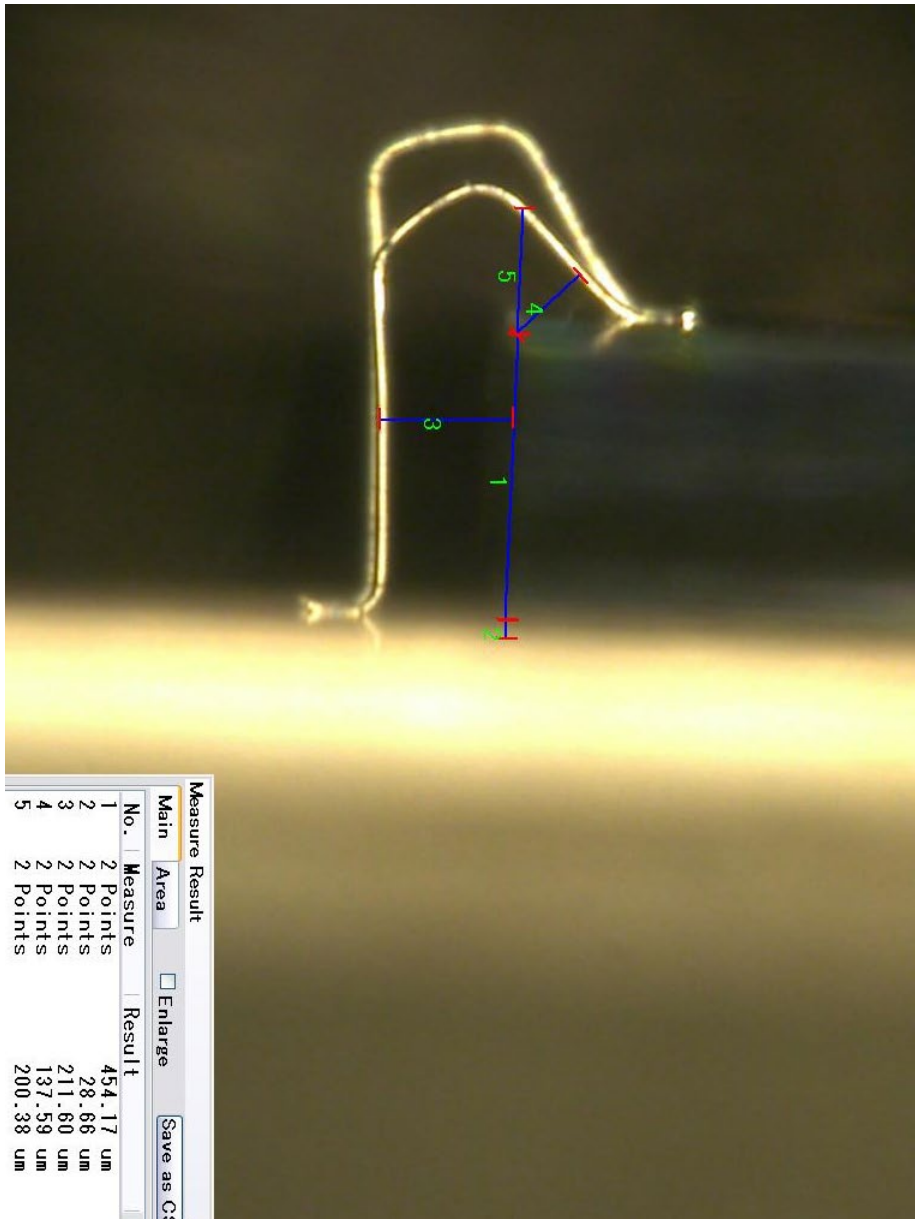
- Still need the loop height (HV)
- Cannot get too close to the chip edge without making unreliable bond due to kinks at **both** source and destination locations.
  - Note the horizontal distance limits the max loop height to avoid “vertical” portion of the wire and a large part of the wire pressing against the bonding wedge.
- Would prefer ~1 mm. This is probably too much.

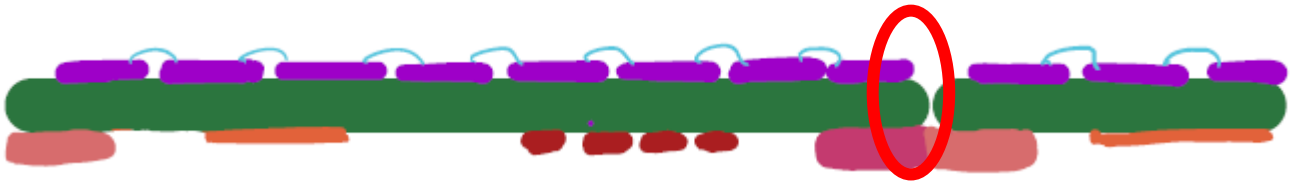




Chip-to-PCB bonding (2)

- An extreme case – got very close, but:
  - Wire against he wedge, kinks.
  - Limitations on the wire pitch (due to the wedge width)





Chip-to-PCB bonding (2)

- To stagger the SPI bond pads, to be able to bond to the other side?
- This would allow to limit the length of the hybrid required.