FEA mini stave PCB connector

Shuaiyan

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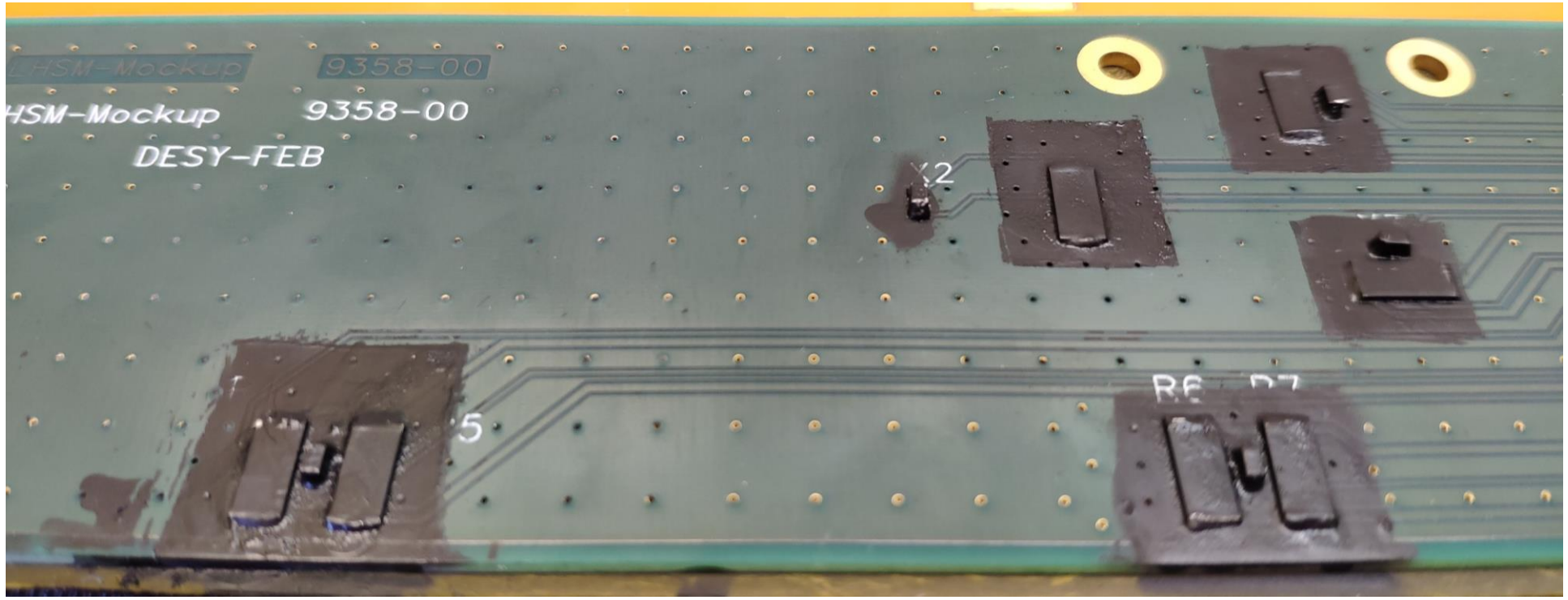
Spray painting mini stave PCB

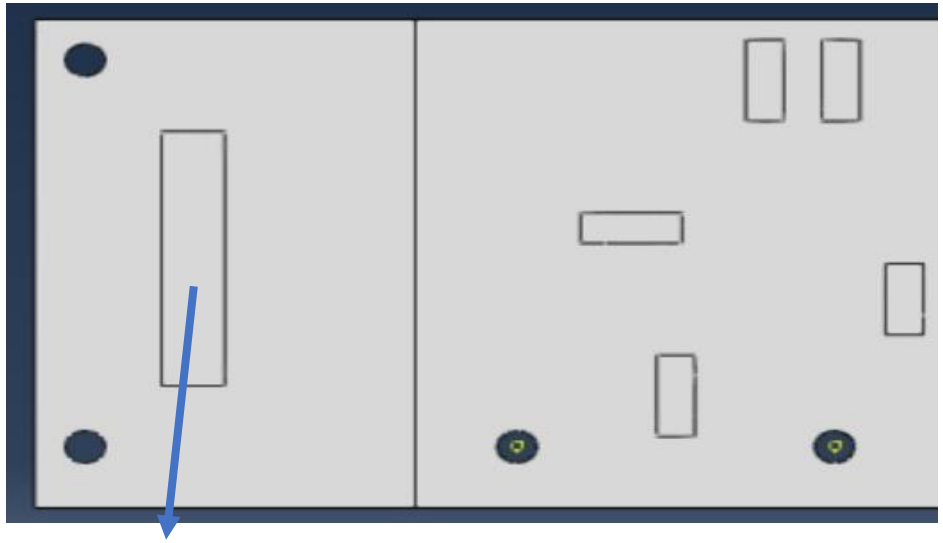
- Got paint on Wednesday, spray a rectangle around resistor
- Plan to do -15C measurement this week



PCB model update

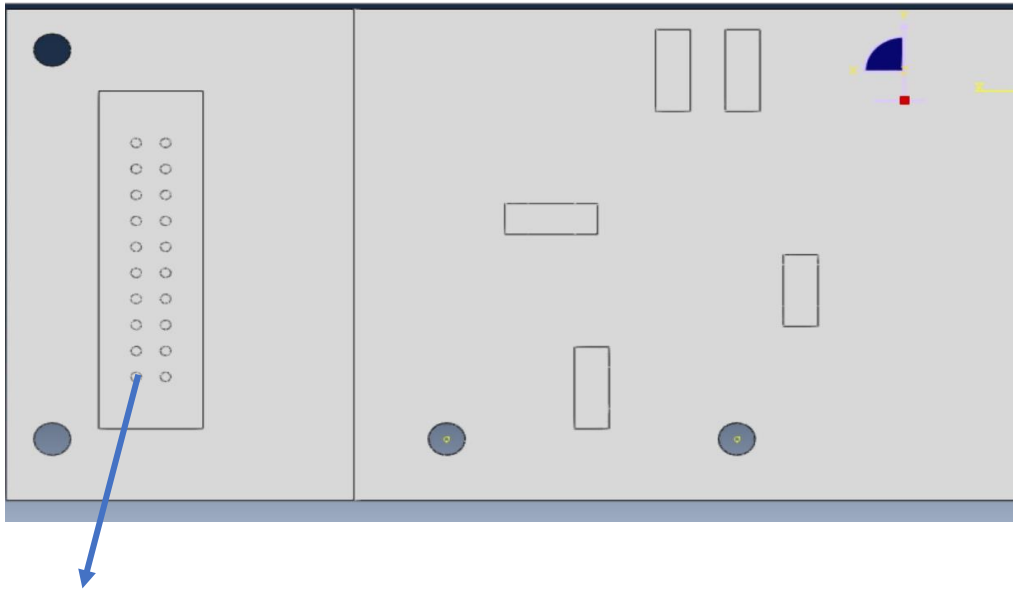
- Simulate PCB connector region using two methods

Method 1: assign a 5x25 mm area on PCB as connector pins (suggested by Graham)



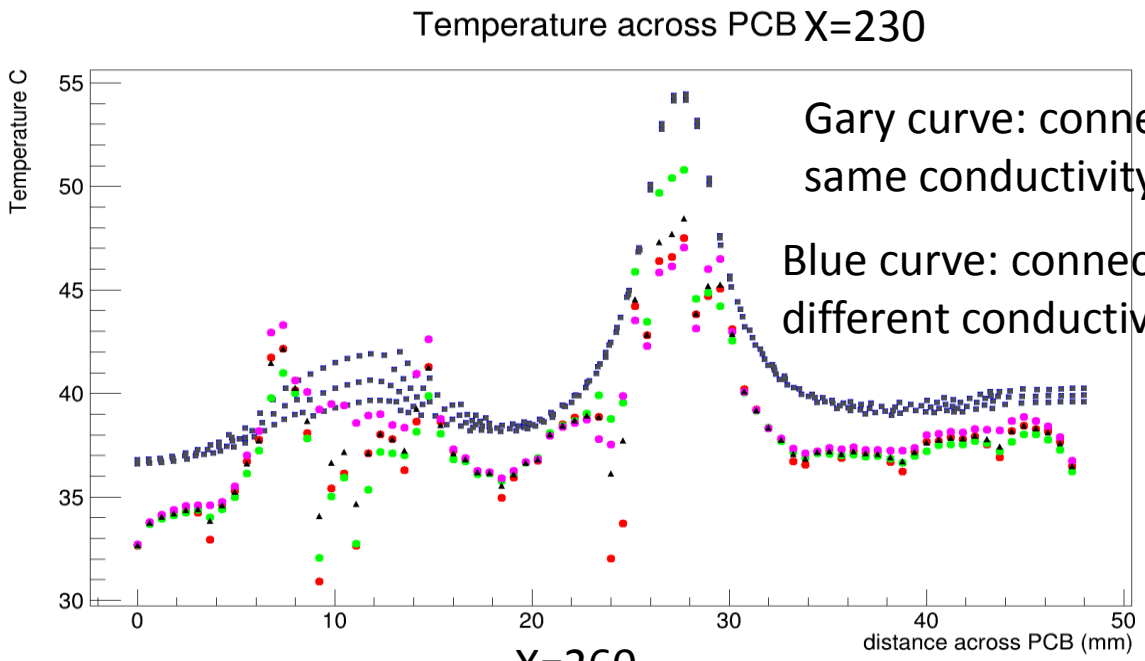
Conductivity: on plane k11,k22 are same as rest of PCB region, 0.0258 W/mm K
Through plane k33: 0.00474; 0.0007 rest of PCB region

Method 2: partition 20 circular area (D=0.9mm) on PCB as connector pins



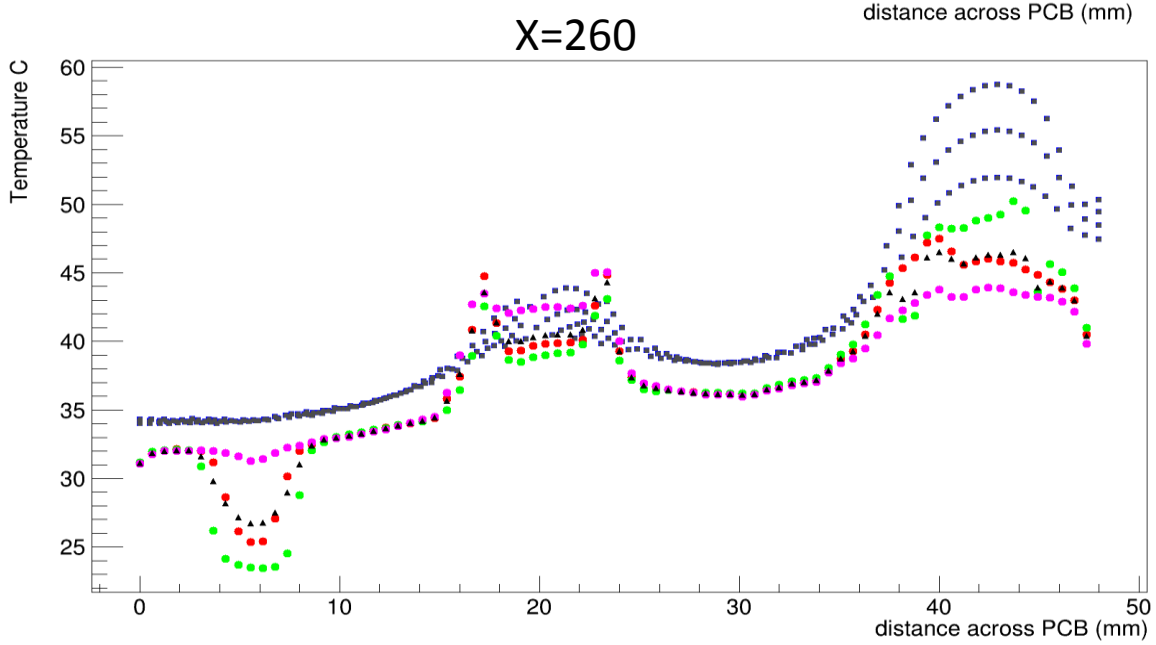
20 pins conductivity: k11=k22=k33, 0.075 W/mm K
Rest of PCB region,k11=k22=0.0258, k33=0.0007

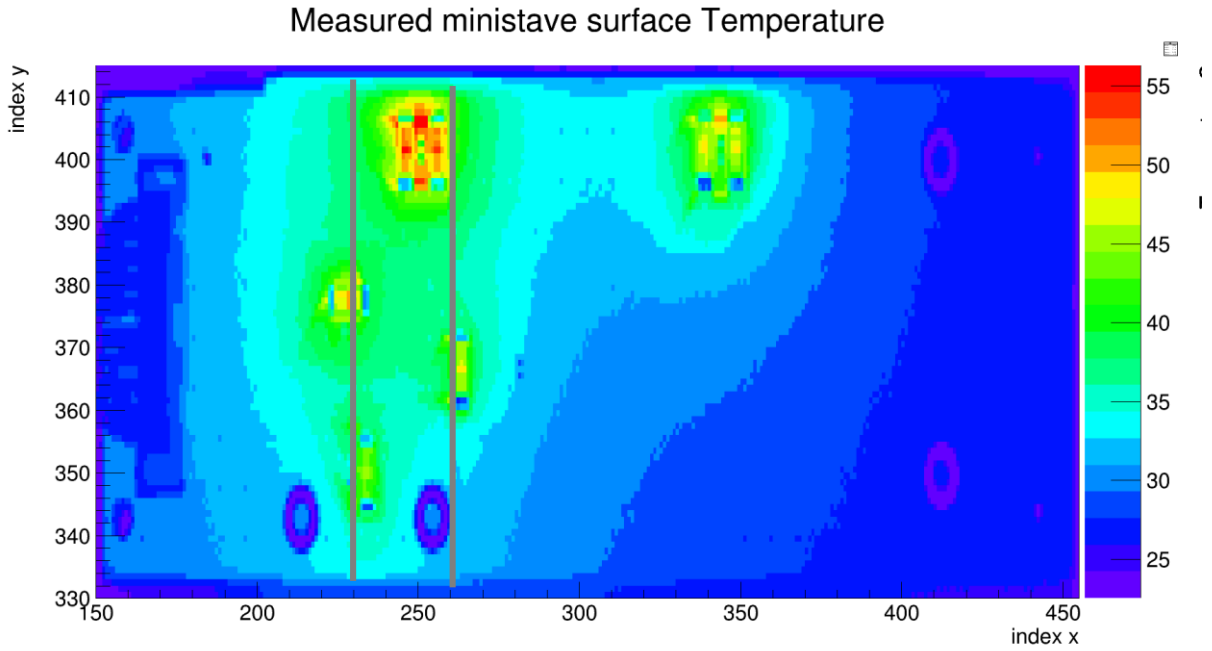
Method 1 (compare FEA with 05/23 Chiller T +20C measurement)



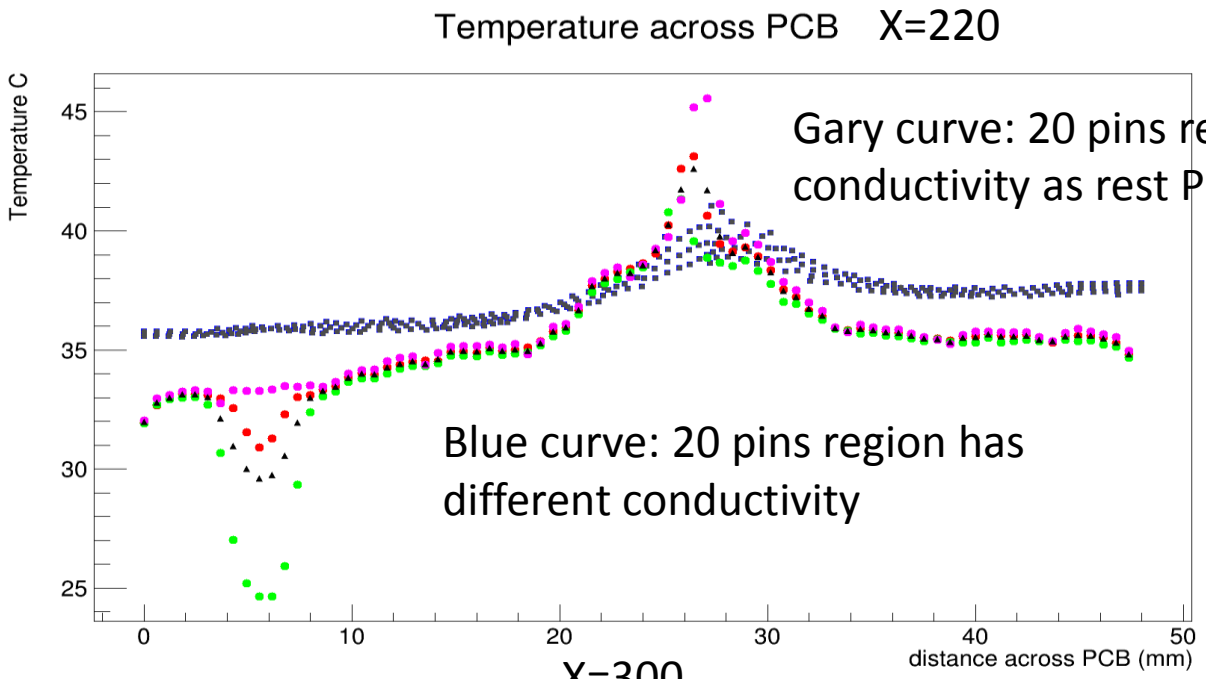
Gary curve: connector region has same conductivity as rest PCB region

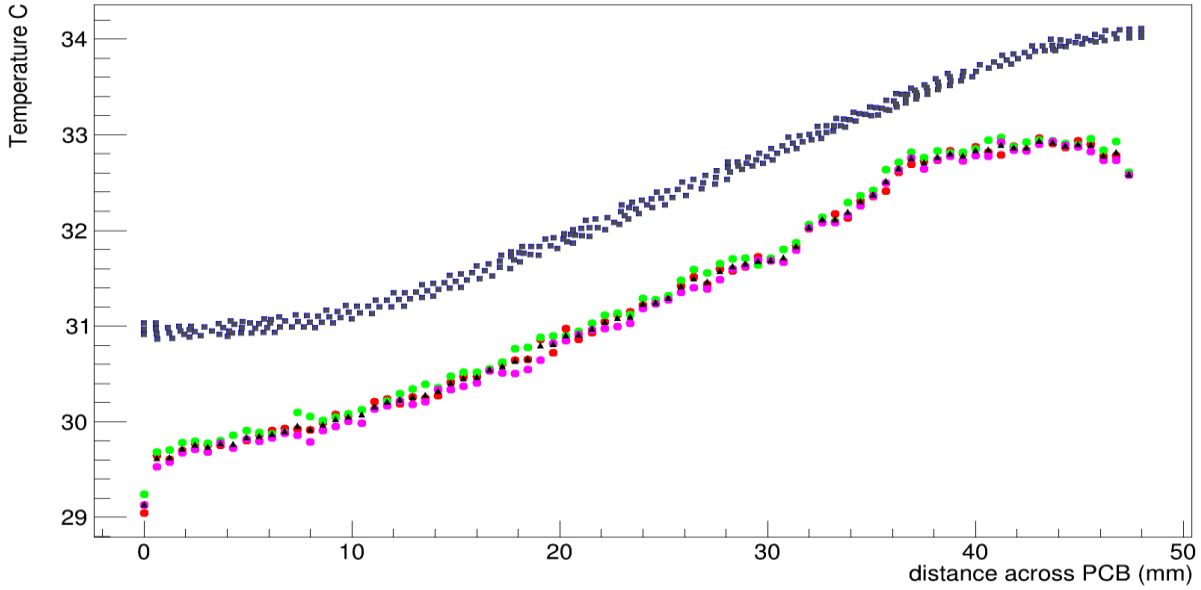
Blue curve: connector region has different conductivity

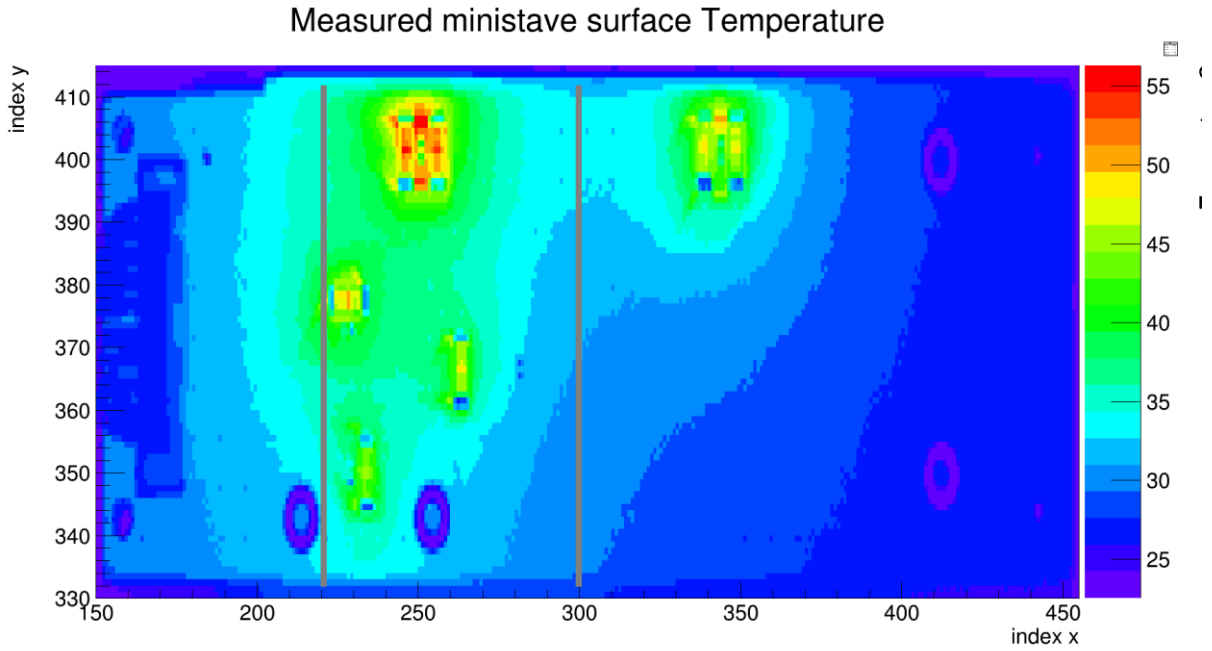




Method 2 (compare FEA with 05/23 Chiller T +20C measurement)







Summary

- From FEA results, connecter pins has negligible effect toward PCB surface near resistor area
- Graham is trying to do experiment to verify this