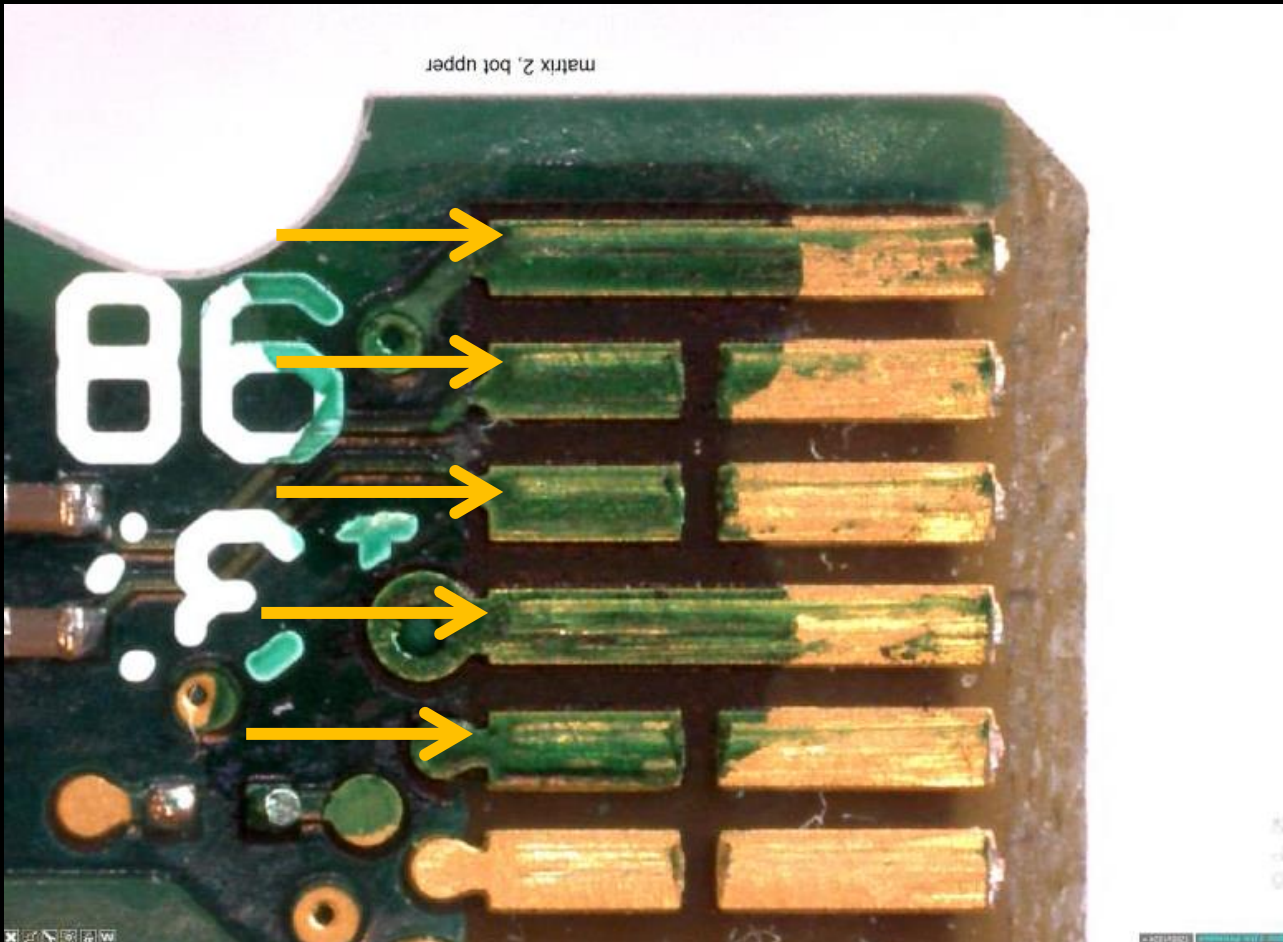


A close-up photograph of an AMC (Advanced Mezzanine Card) socket on a MicroTCA backplane. The socket is a complex, multi-layered metal structure with numerous gold-plated contacts. It is mounted on a grey printed circuit board (PCB) which has several other components, including what appears to be a USB port and other connectors. The lighting is dramatic, highlighting the metallic textures and the precision of the manufacturing.

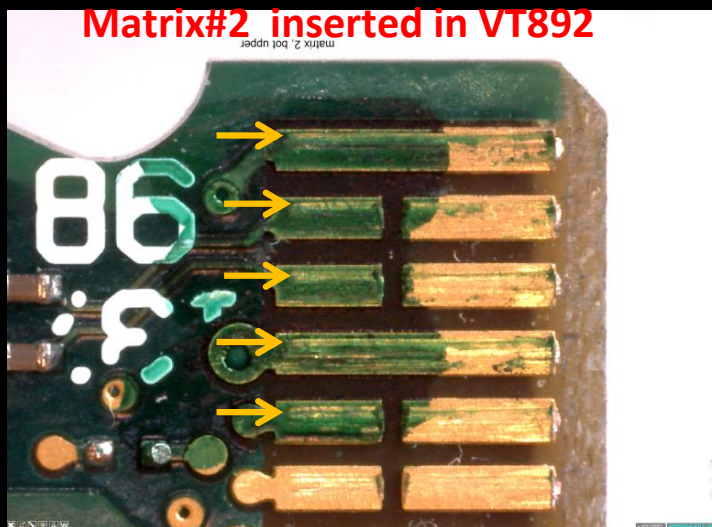
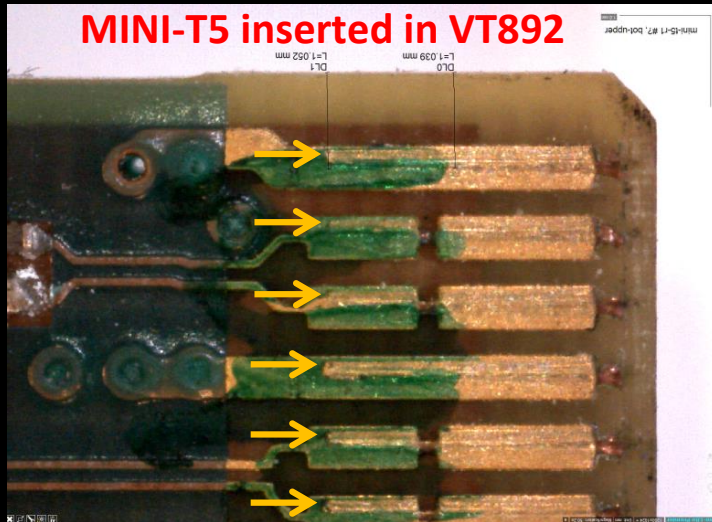
AMC Sockets on MicroTCA backplanes & ATCA cards

Greg Iles – Imperial College London

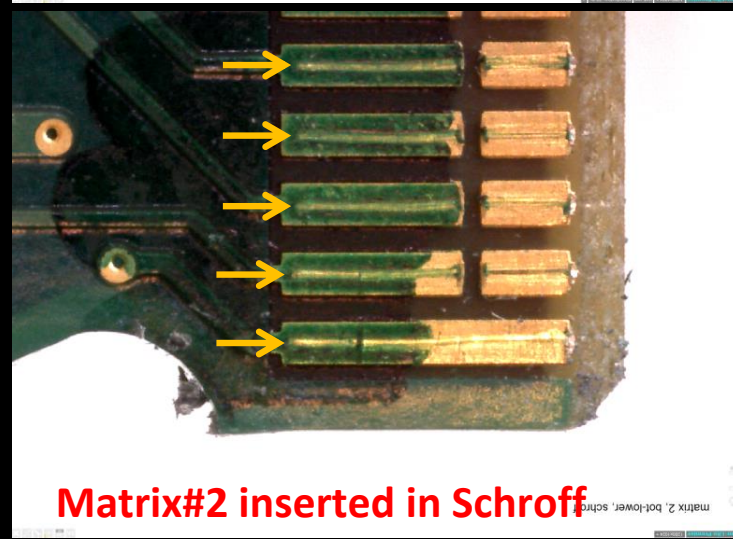
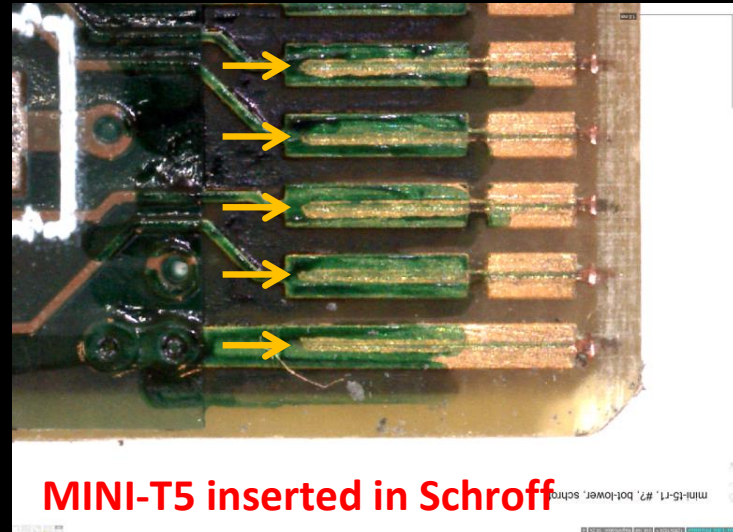
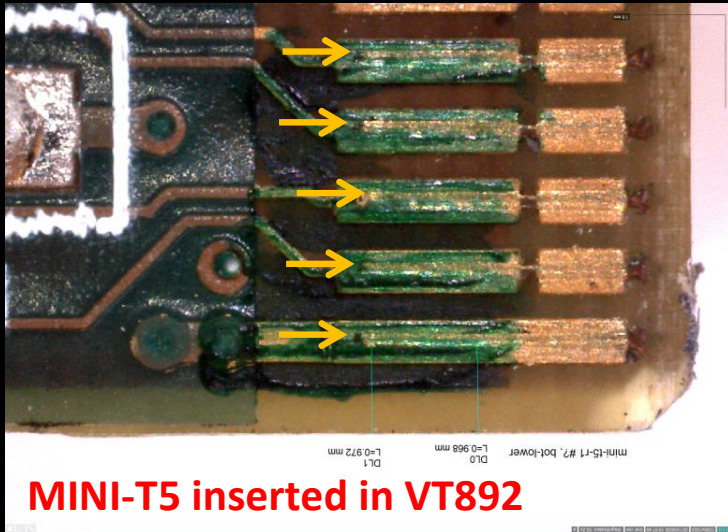
Scratch mark misaligned



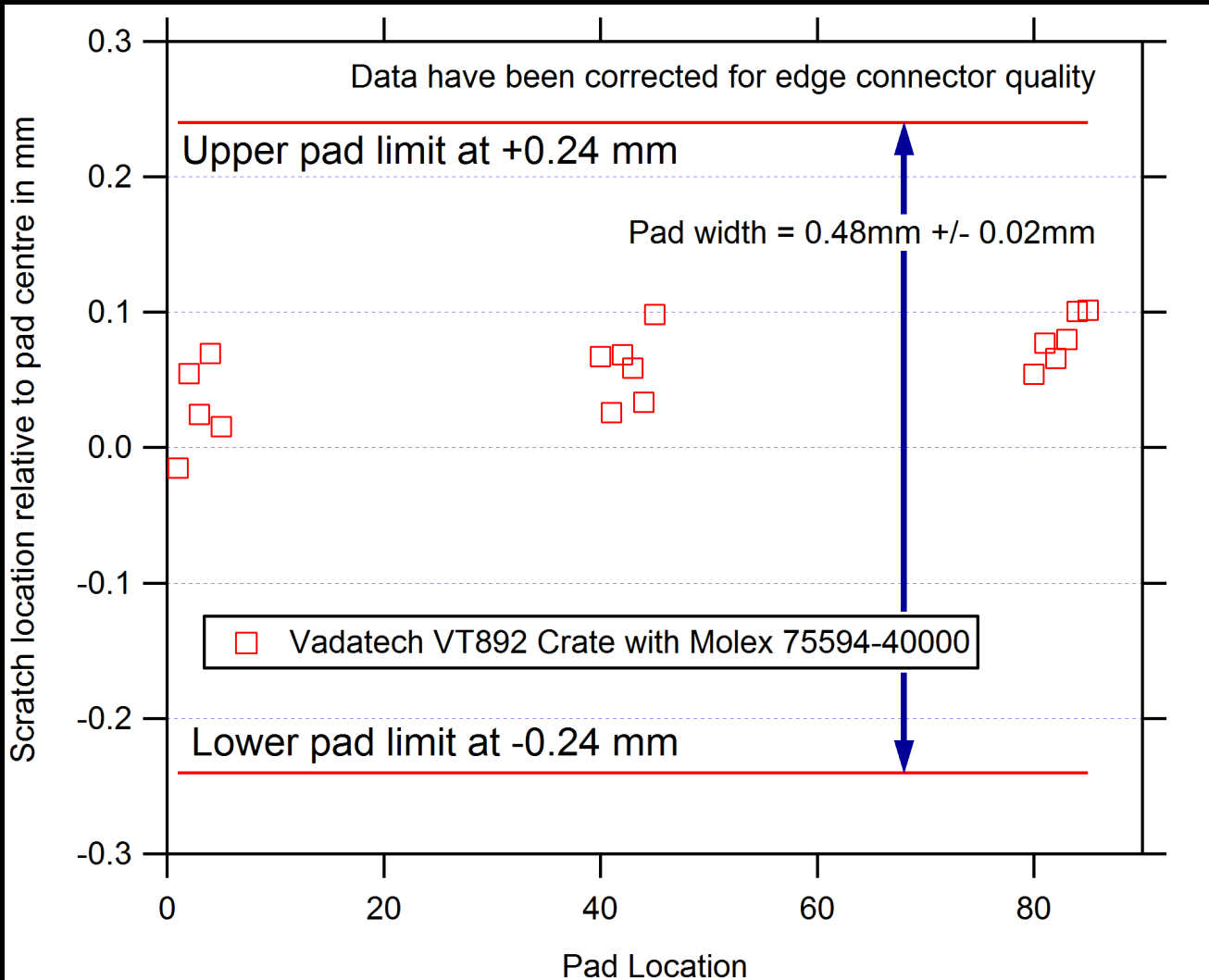
Plug or Socket Problem?



Other end of connector OK



Metrology measurements

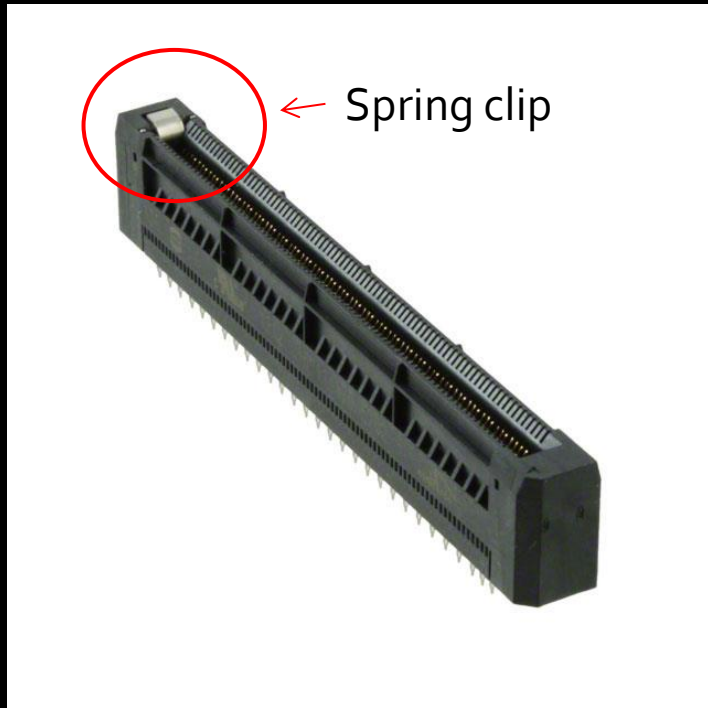


Scratch location relative to pad centre

Includes corrections applied for PCB scaling & offset

Investigate other connectors....

Harting 16 11 170 5202 000

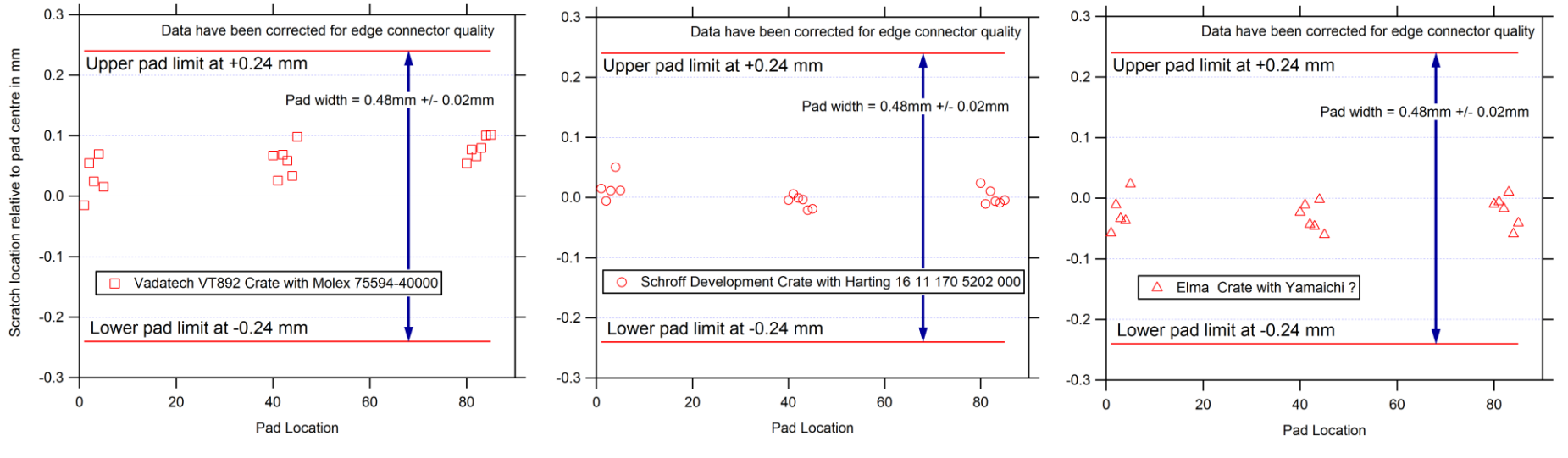


Yamaichi CNo80 *



* Not yet confirmed whether Elma use this exact part

More Metrology measurements



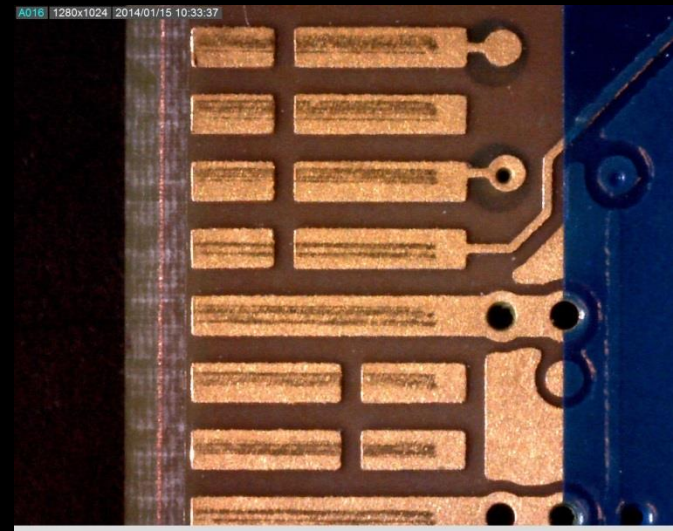
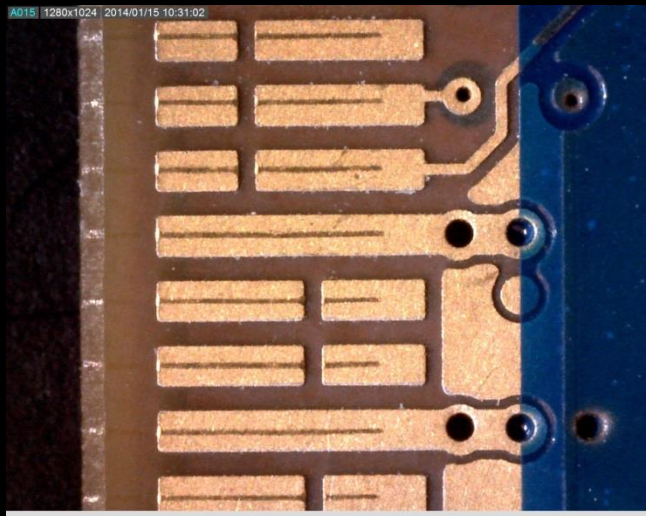
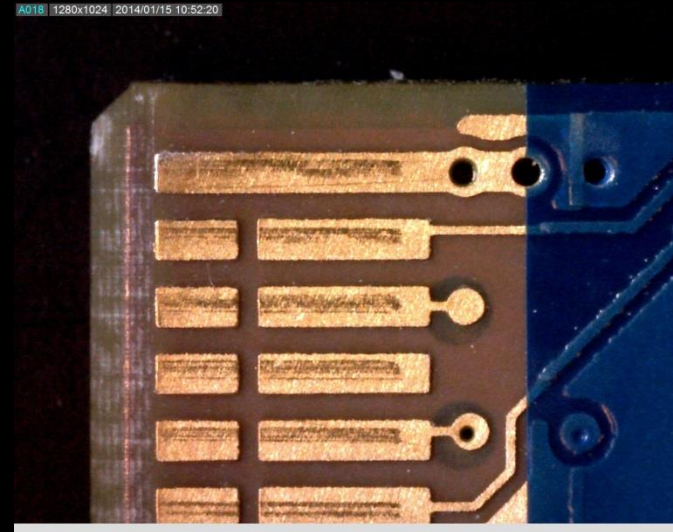
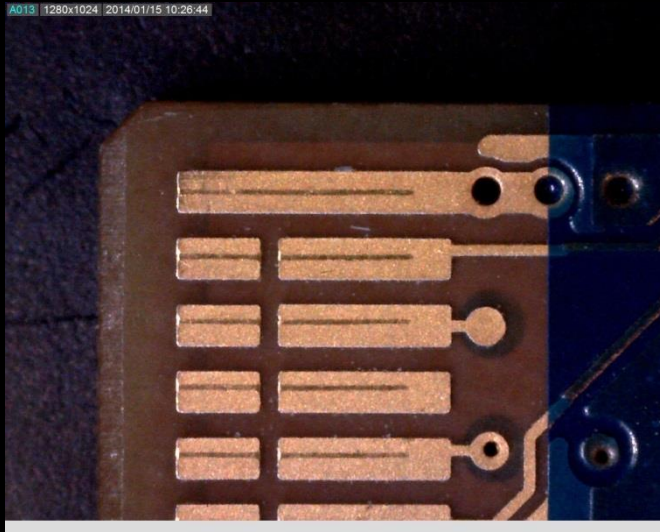
Vadatech / Molex

Schroff / Harting

Elma / Yamaichi

*** Note this is a very limited study. Would be good to have cross-check by another group ***

Card inserted 5 times into the same slot



Schroff / Harting

Elma / Yamaichi

Schroff / Harting Crate

Some connector manufacturers query robustness of card edge with repeated insertions.

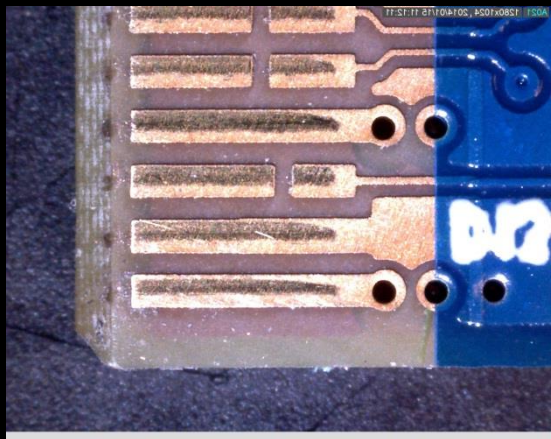
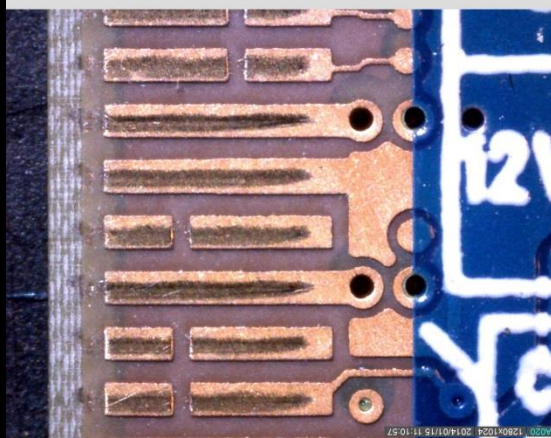
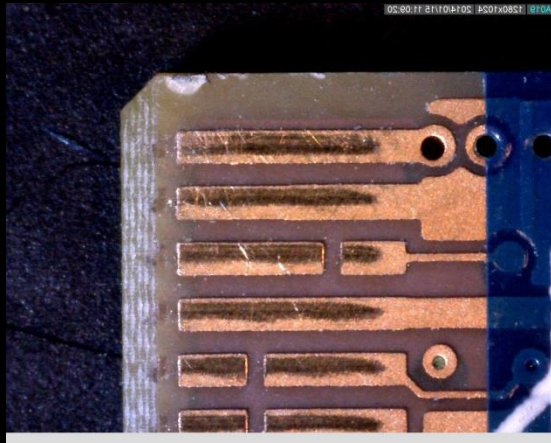
Spec > 200 insertions

Card inserted 240 times:
20 times into 12 slots

Visibly pads seem fine (i.e. gold intact).

Note that while the scratch mark is quite broad the final resting point seems better defined.

Certainly possible to do a much more comprehensive measurement, but I stopped at this stage.



Conclusions

Vadatech is discontinuing Molex connector use

- New backplanes will use Yamaichi and will be designed for 10G

Large number of claims / counter claims by different manufacturers

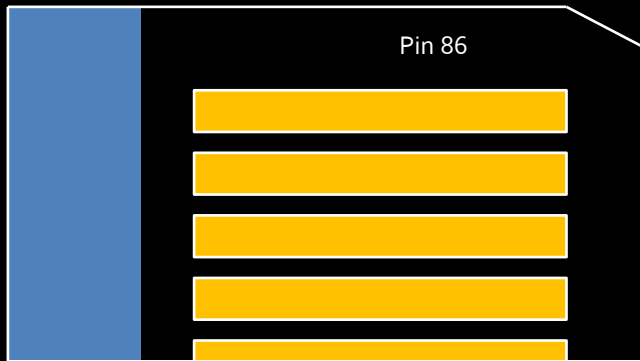
- e.g. signal quality, potential for pad damage, alignment, etc

Recommend that community as whole invests some time to evaluating AMC sockets more thoroughly

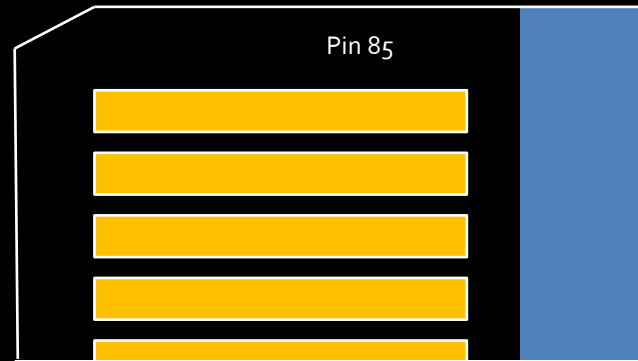
End

Card edge location

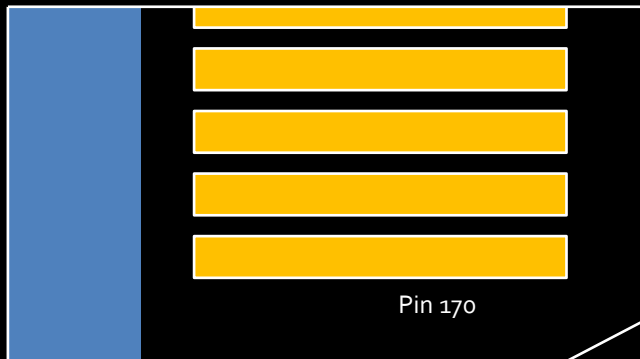
Bottom Side, Upper Region



Top Side, Upper Region



Bottom Side, Lower Region



Top Side, Lower Region

