AMC Sockets on MicroTCA backplanes & ATCA cards

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Scratch mark misaligned
Plug or Socket Problem?

MINI-T5 inserted in VT892

MINI-T5 inserted in Schroff

GLIB inserted in VT892

GLIB inserted in Schroff

Matrix#2 inserted in VT892

Matrix#2 inserted in Schroff
Other end of connector OK

MINI-T5 inserted in VT892

MINI-T5 inserted in Schroff

Matrix #2 inserted in VT892

Matrix #2 inserted in Schroff
Metrology measurements

Data have been corrected for edge connector quality

Upper pad limit at +0.24 mm

Pad width = 0.48mm +/- 0.02mm

Lower pad limit at -0.24 mm

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
Pin 86
Pin 170

Top Side, Upper Region
Pin 85

Bottom Side, Lower Region
Pin 170

Top Side, Lower Region
Pin 1