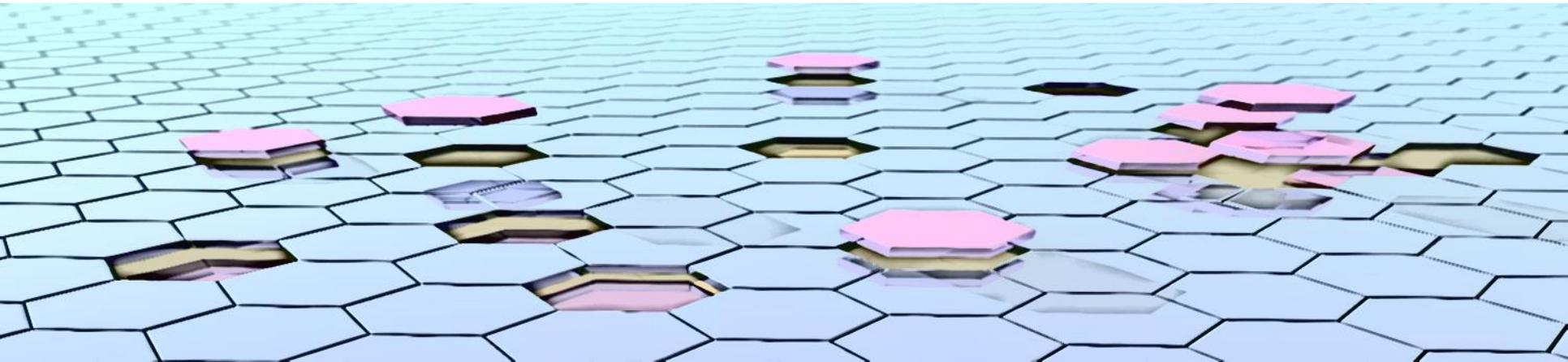
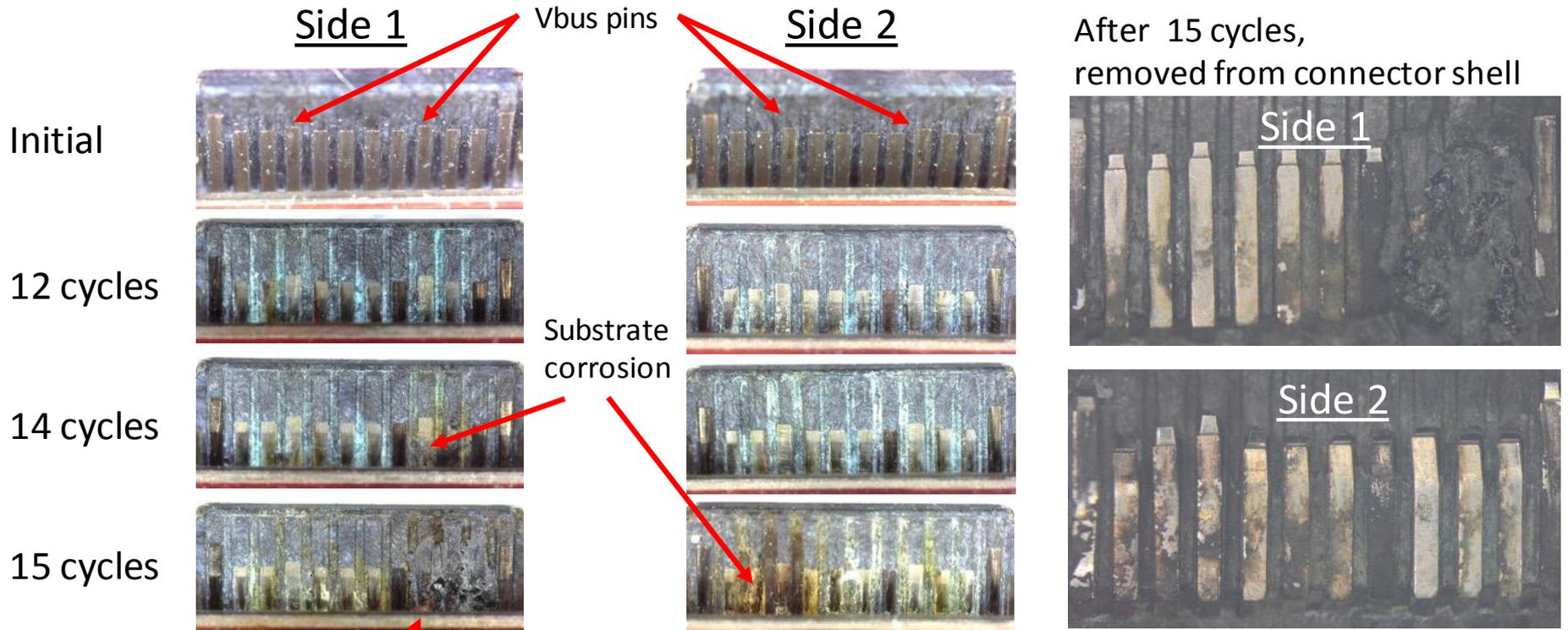


Case study:
Targeting improved performance
with 35% material cost reduction



International Smartphone OEM:

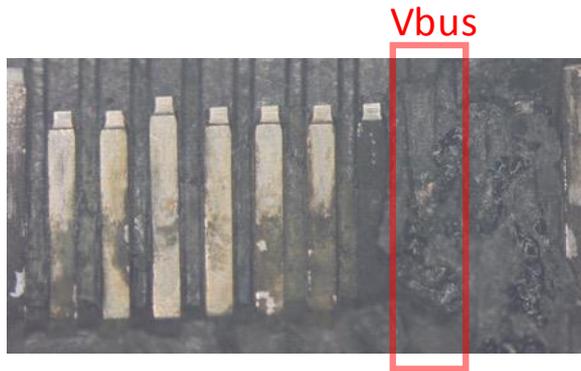
5V/1A PIC test, device connector



- Catastrophic failure at cycle 15
- Substrate corrosion obvious at cycle 14

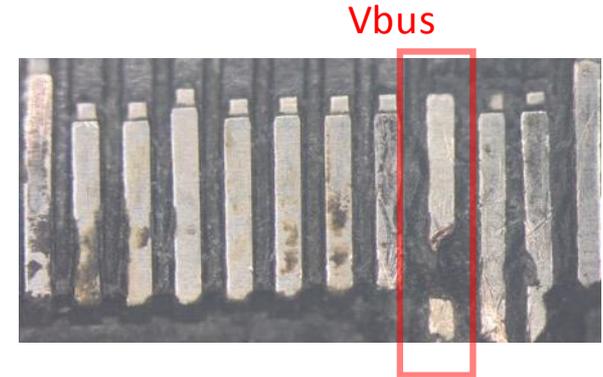
International Smartphone OEM:

Failure analysis, device connector



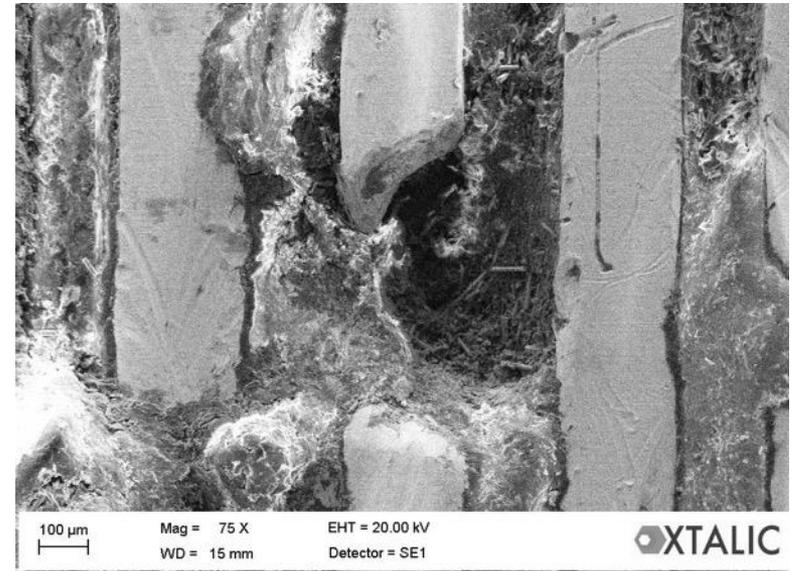
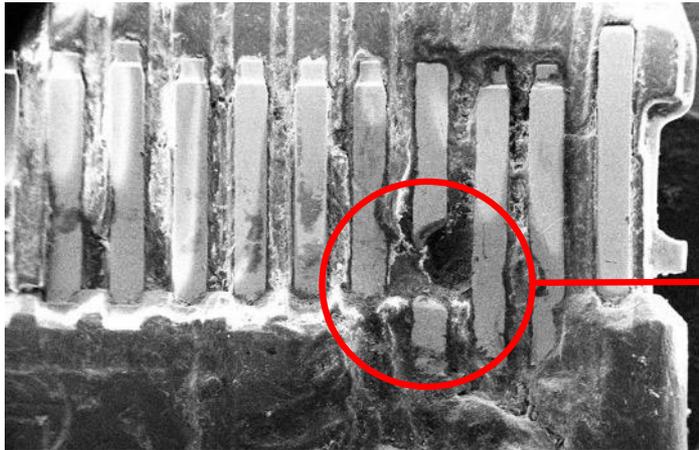
Vbus

Corrosion product and melted plastic removed from Vbus contact



Vbus

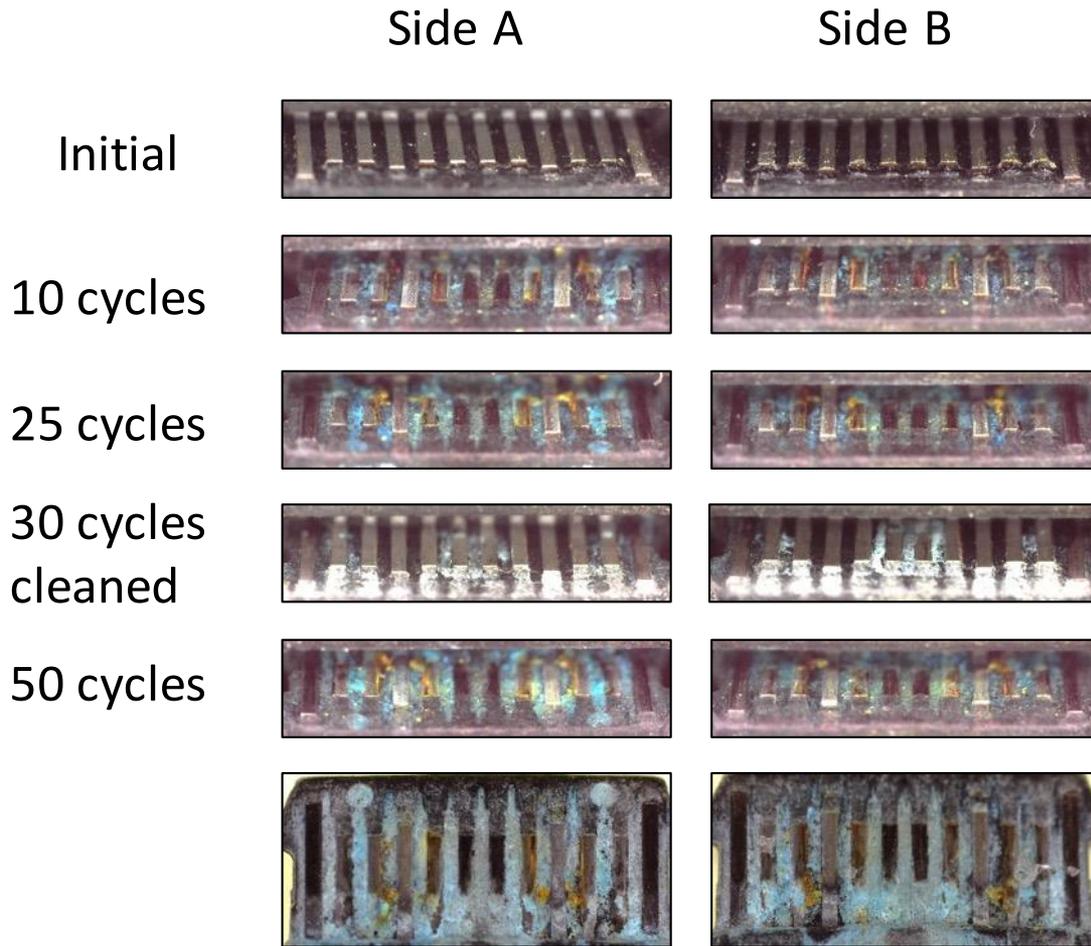
Thermal overload from corrosion caused connector plastic to melt around Vbus



SEM images show Vbus contact completely corroded through

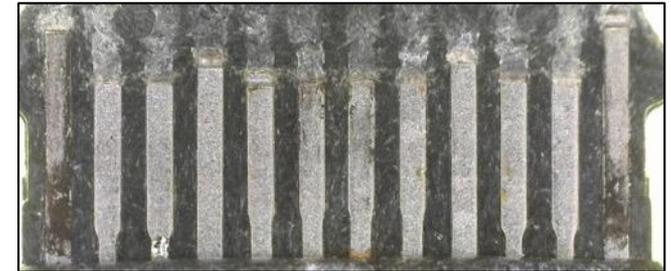
Xtalic IC stack "A":

5V/1A PIC test, device connector



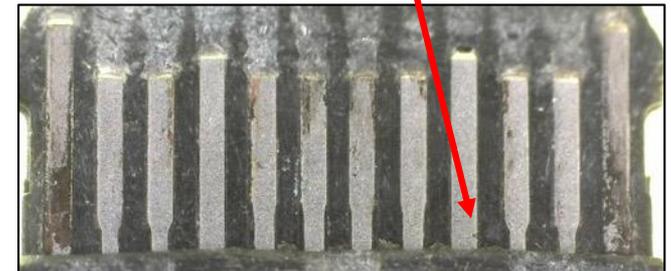
After 50 cycles,
removed from connector shell

Side A



Side B

Exposed
substrate



- Test stopped at 50 cycles. Minor signs of substrate corrosion

Xtalic IC stack "A":

Failure analysis, device connector at 50 cycles

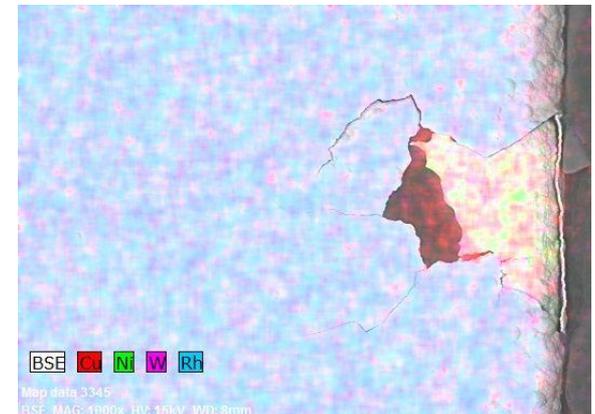
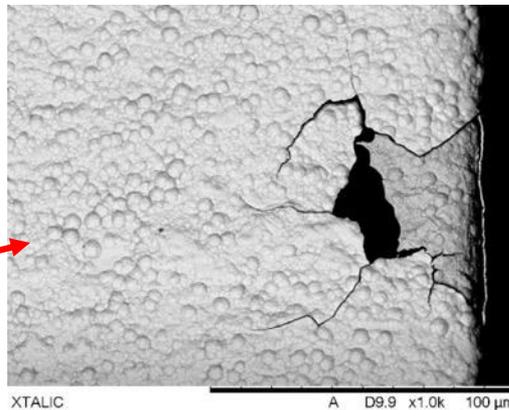
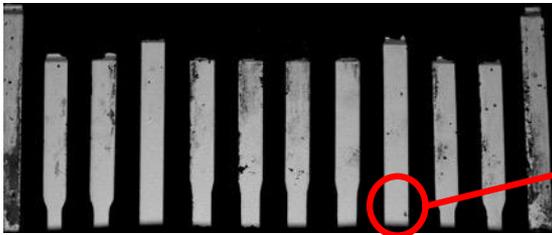
SEM Imaging

Side A



- No corrosion of Vbus pins on connector Side A

Side B



- Area of exposed substrate at base of Vbus pin on side B after 50 cycles, device still operational