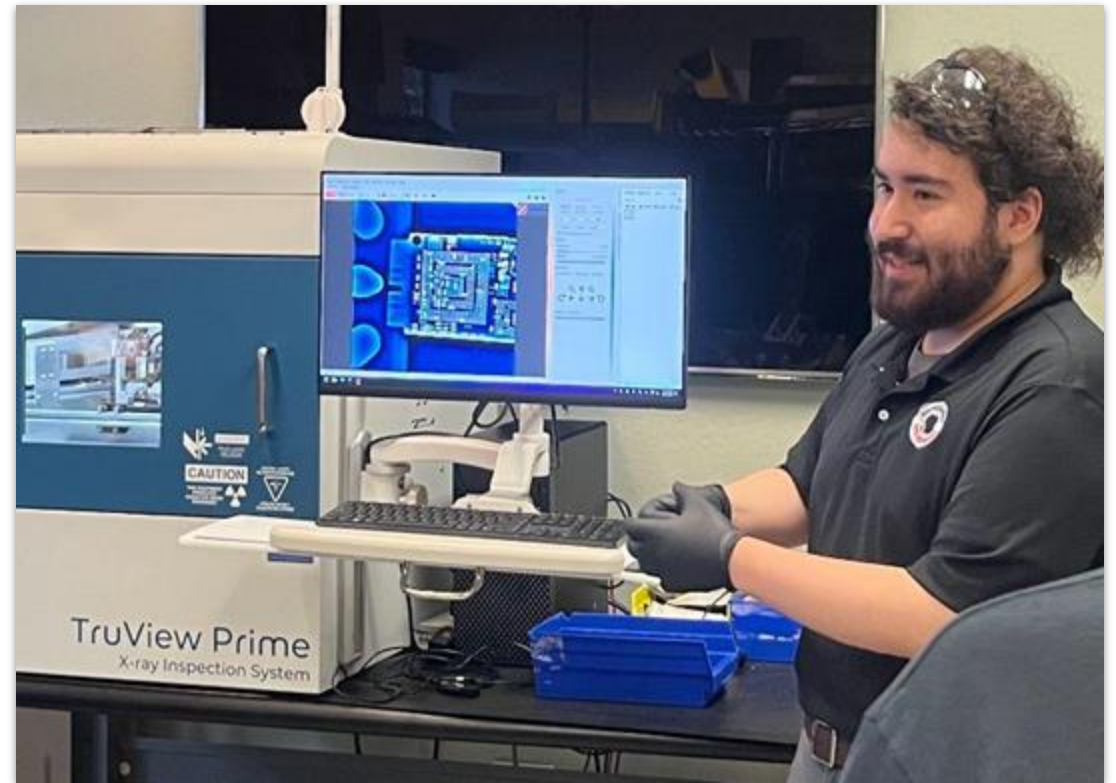


Using X-Ray Technology in Data Recovery

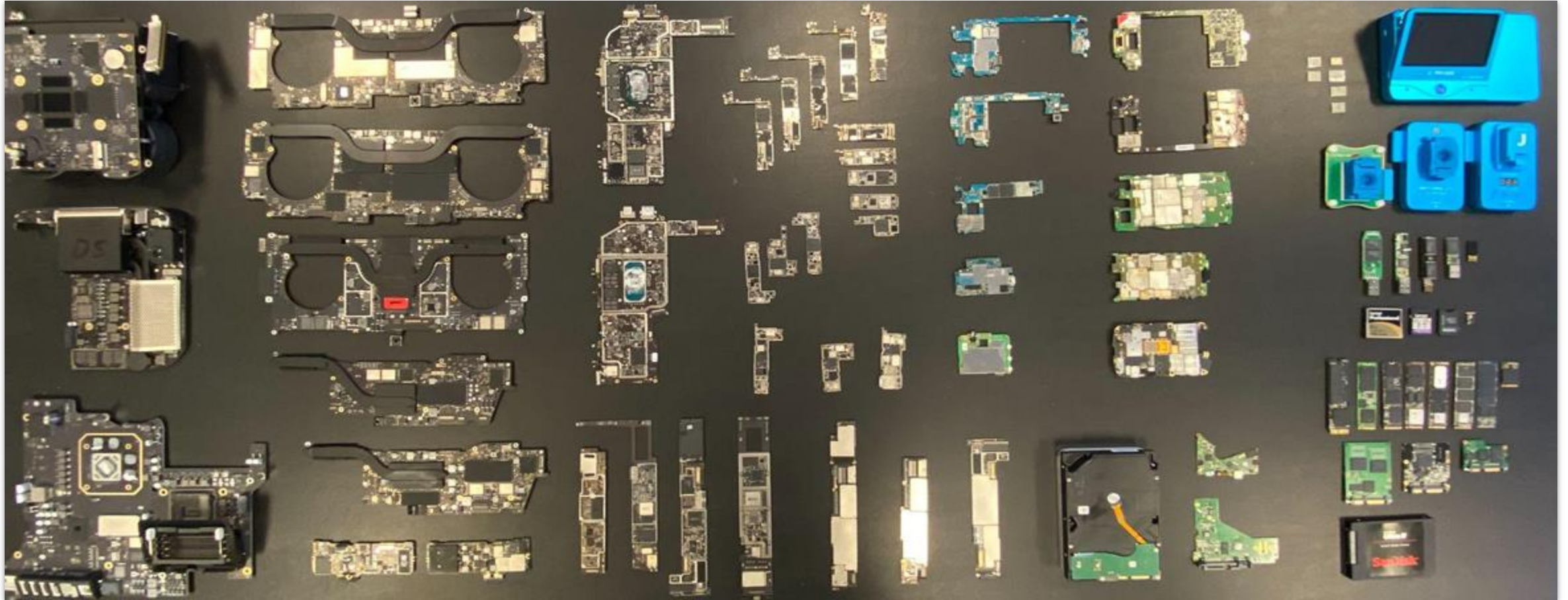
Presenter: Matt Burger

Introduction: Matthew Burger

- Data Recovery Engineer
- Physical recovery and imaging of flash memory devices

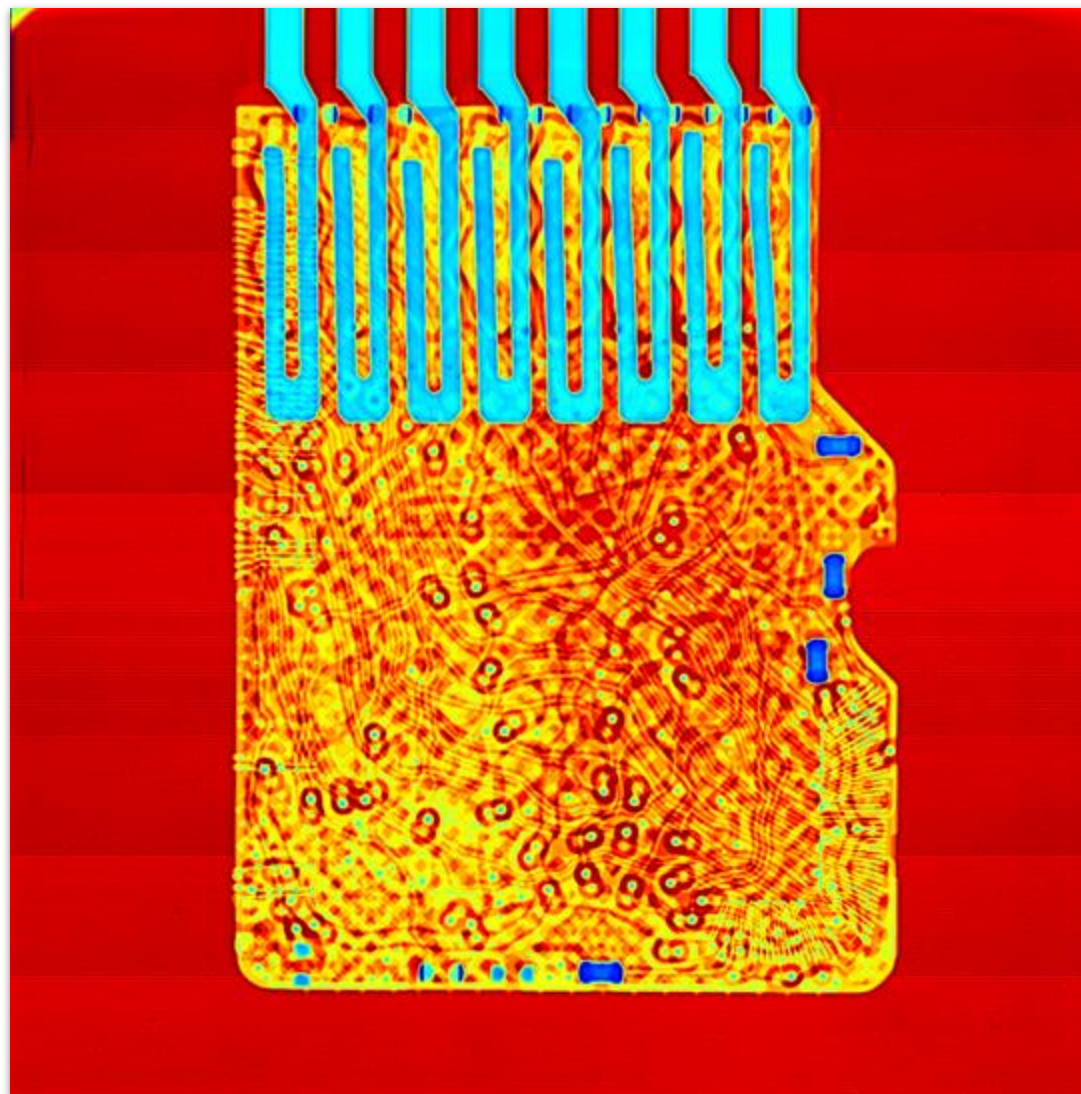


All flash memory devices

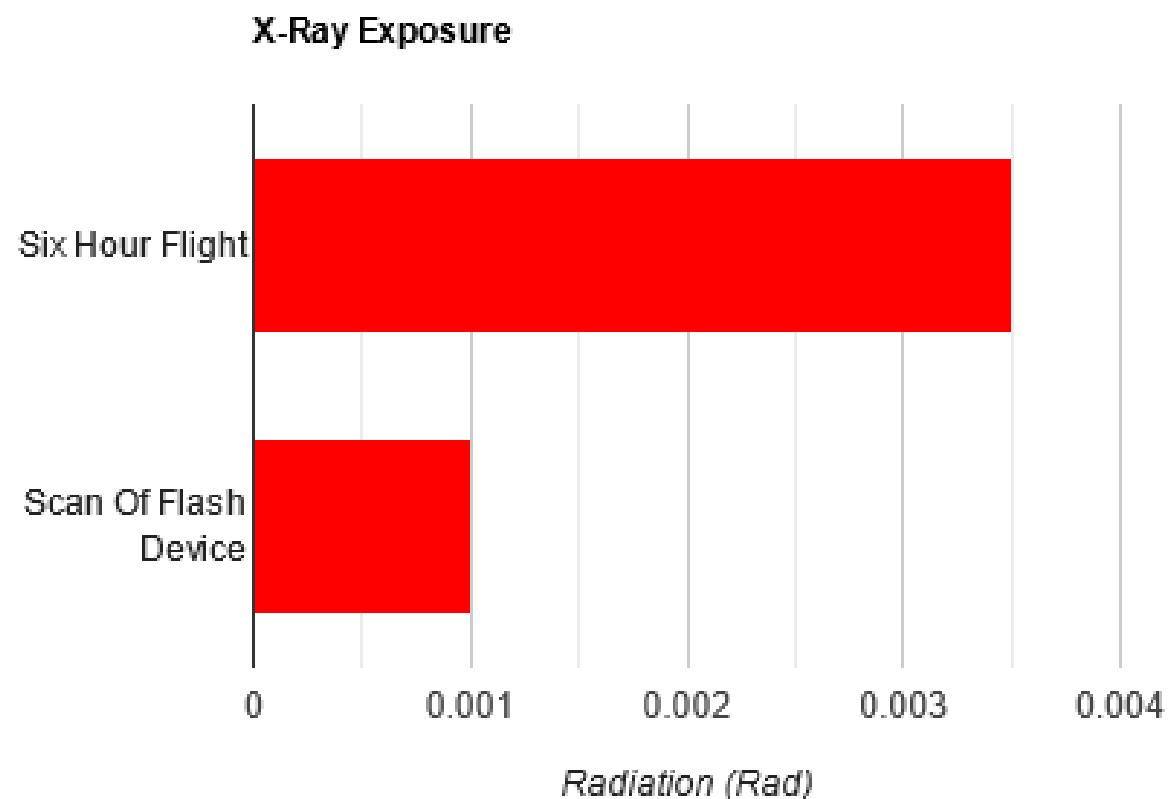


Personal Safety

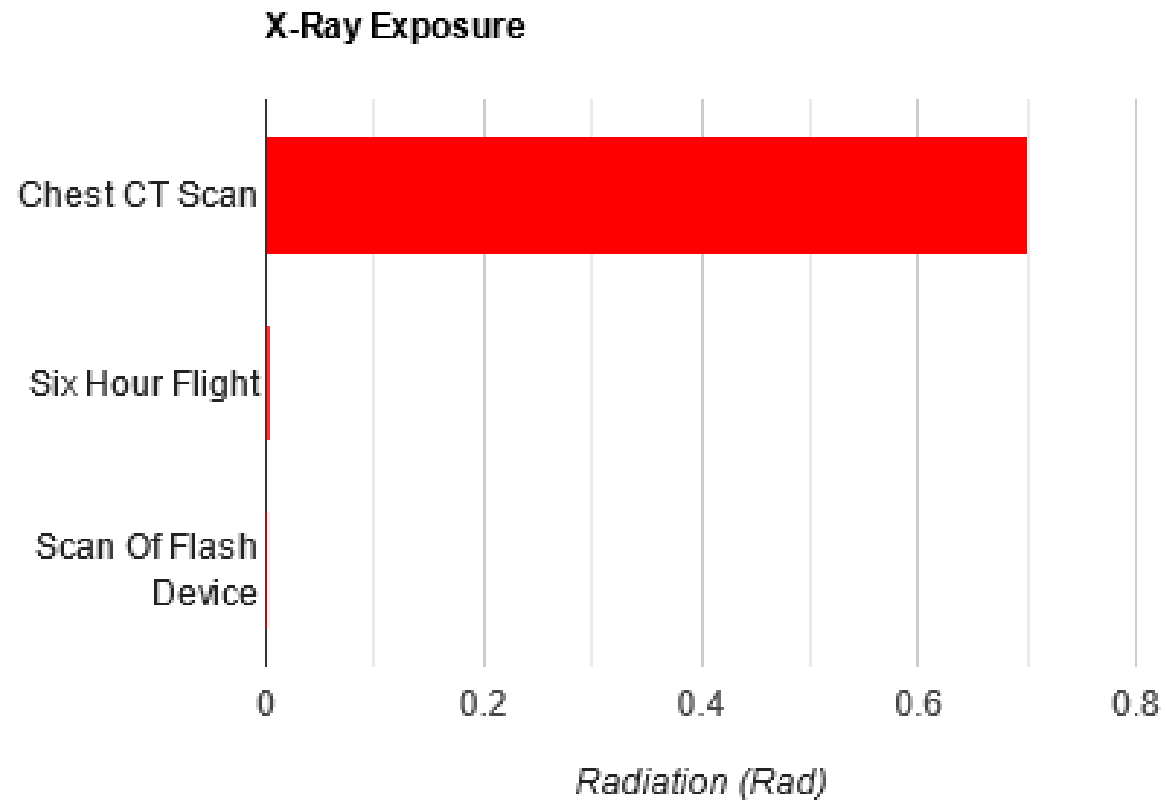
- FDA and CE certified
- Fully Shielded Equipment
- Multi-interlock System



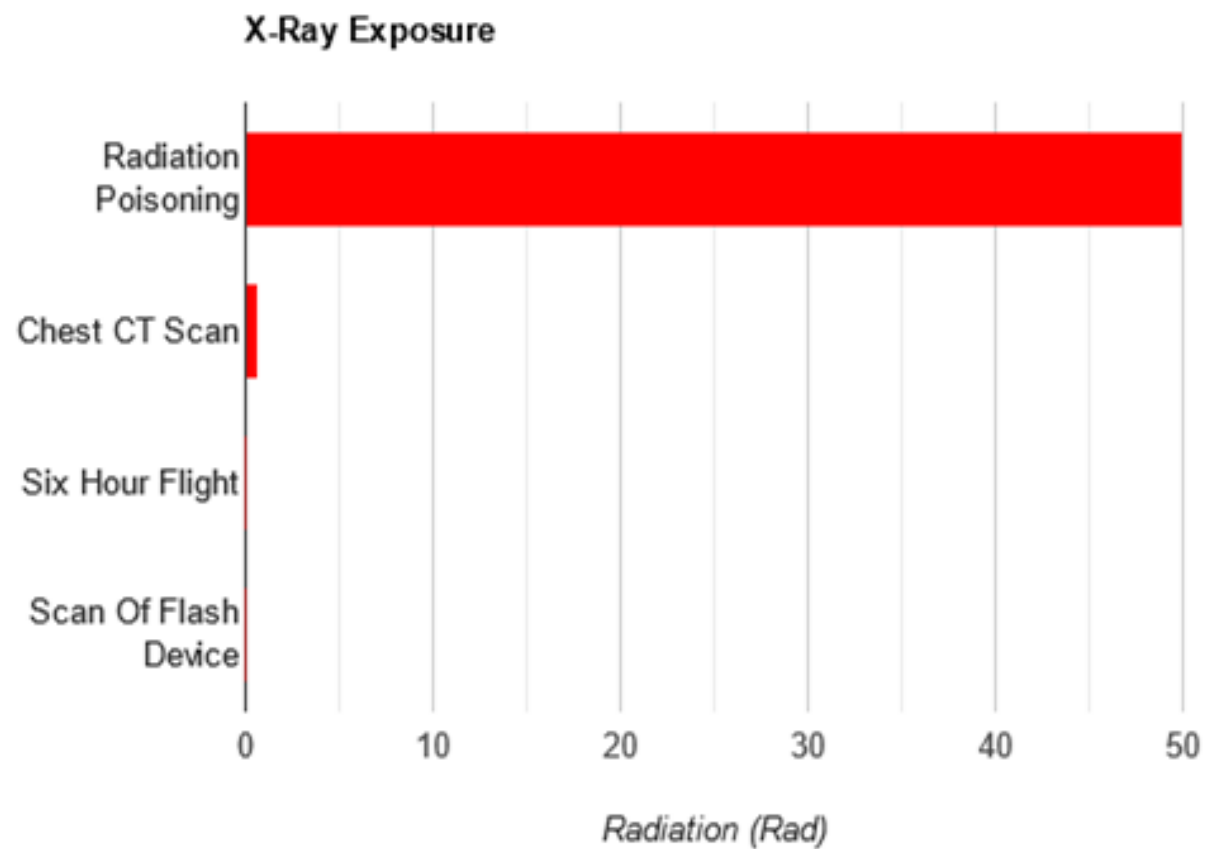
Data Safety



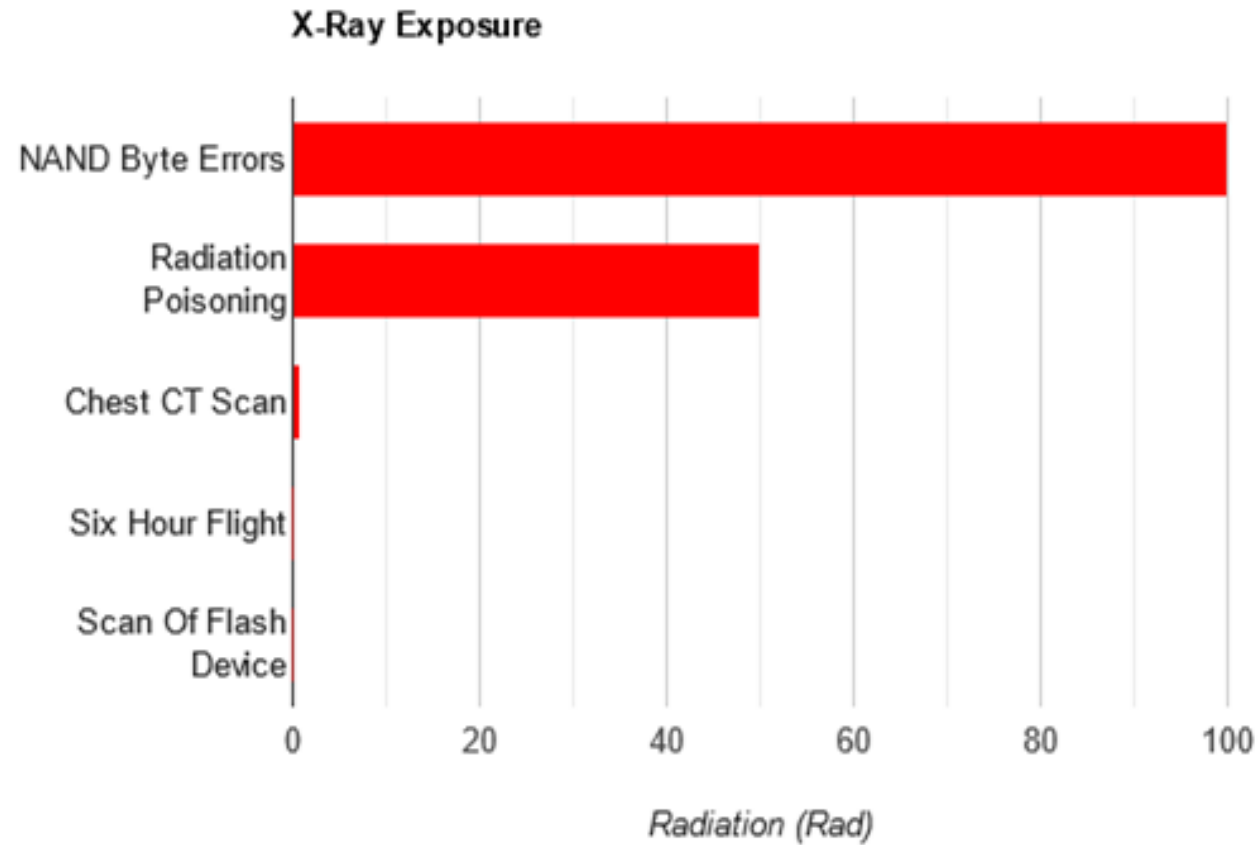
Data Safety



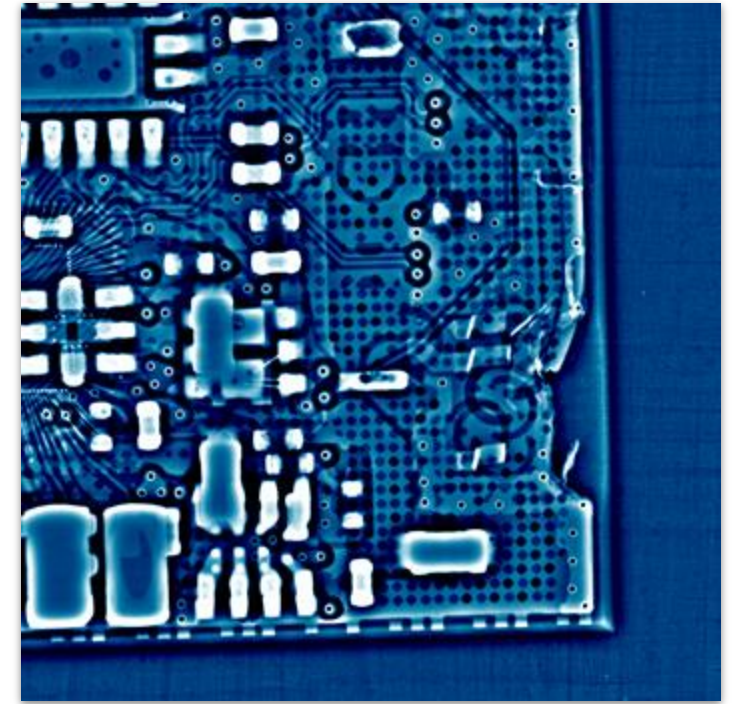
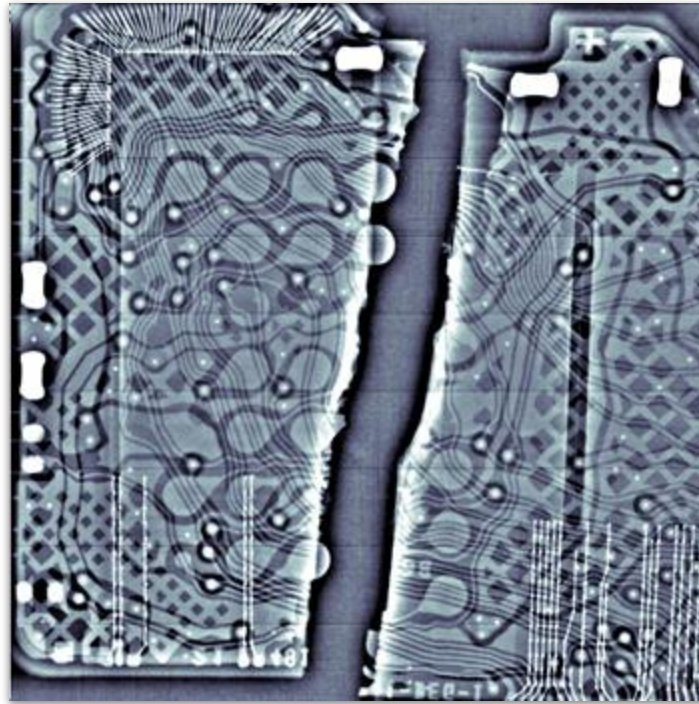
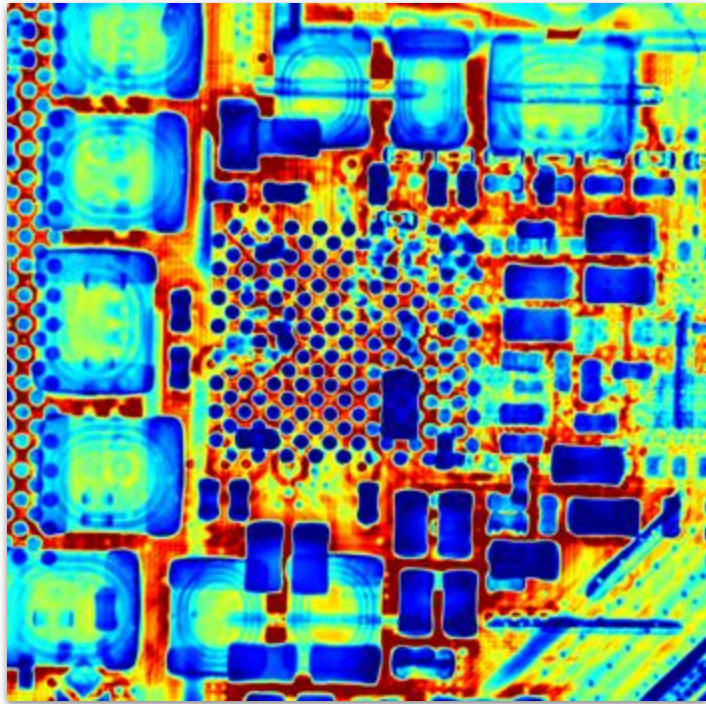
Data Safety



Data Safety

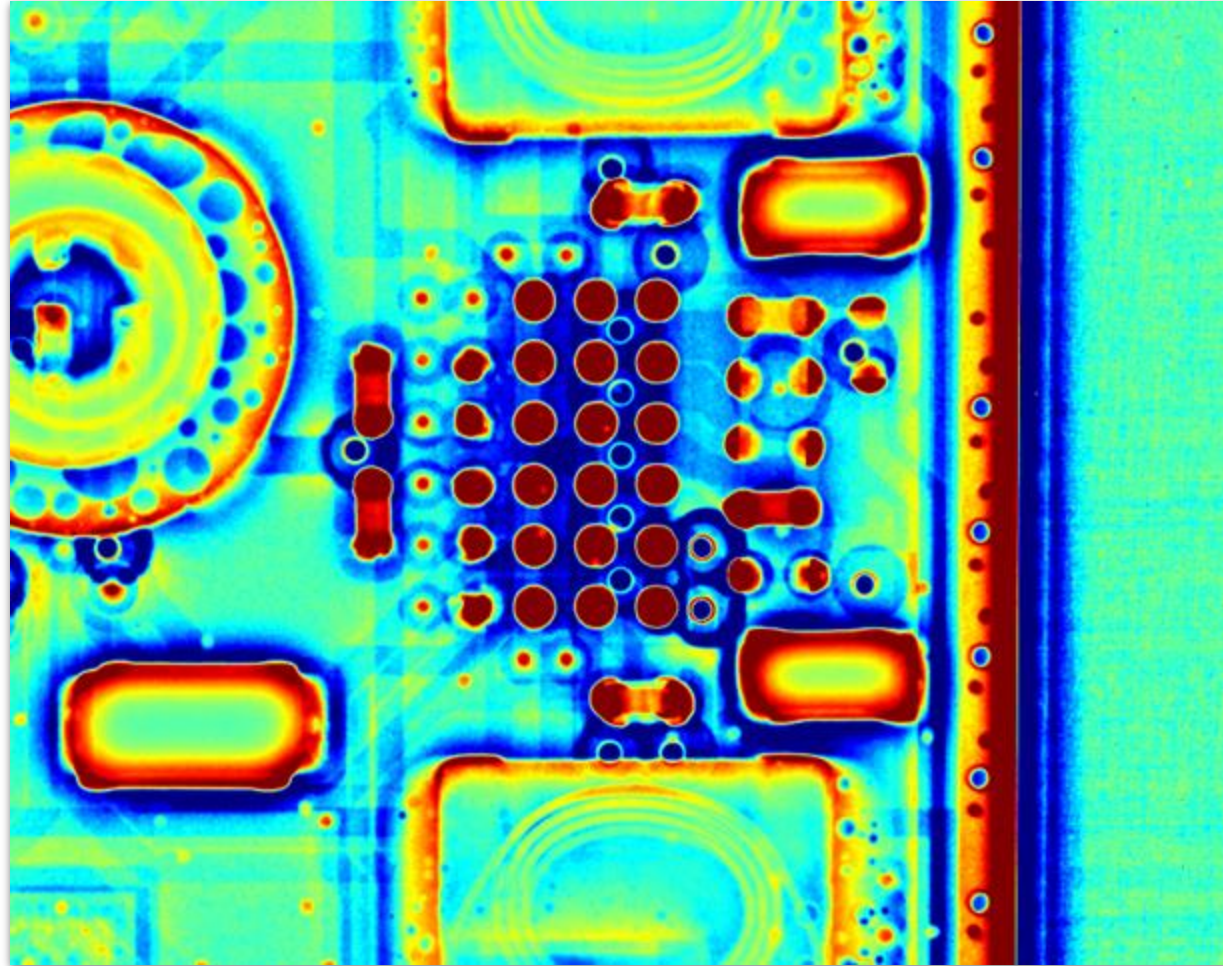


Recovery Evaluation

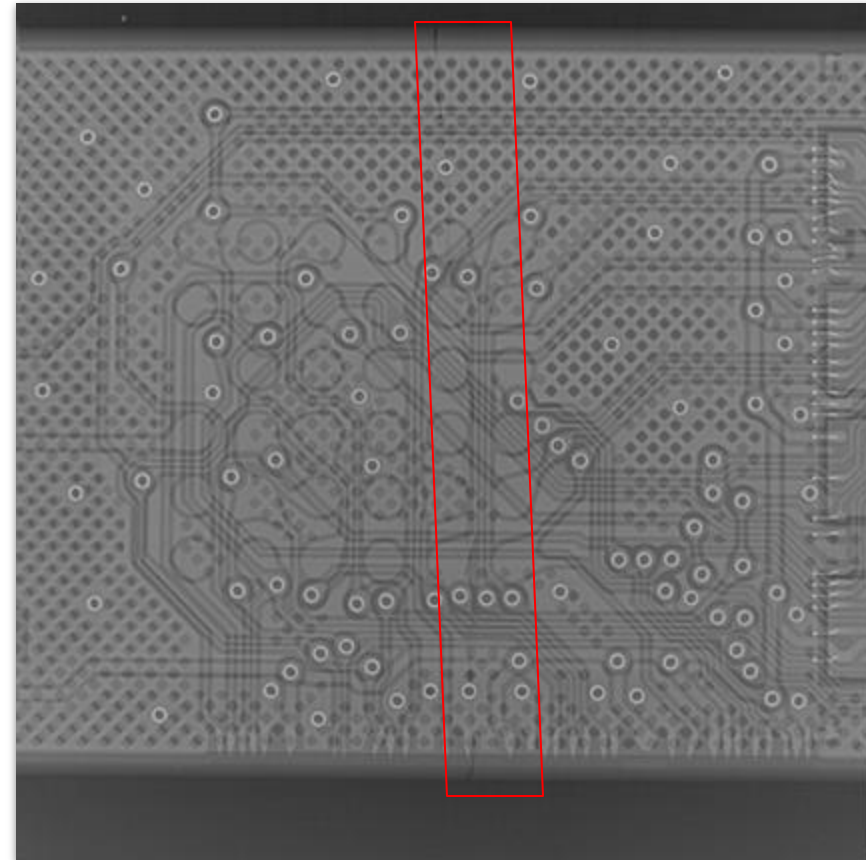


Liquid Damage

- Missing solder pads
- Irregular shaped solder balls
- Corrosion under and around IC



Cracked Silicon



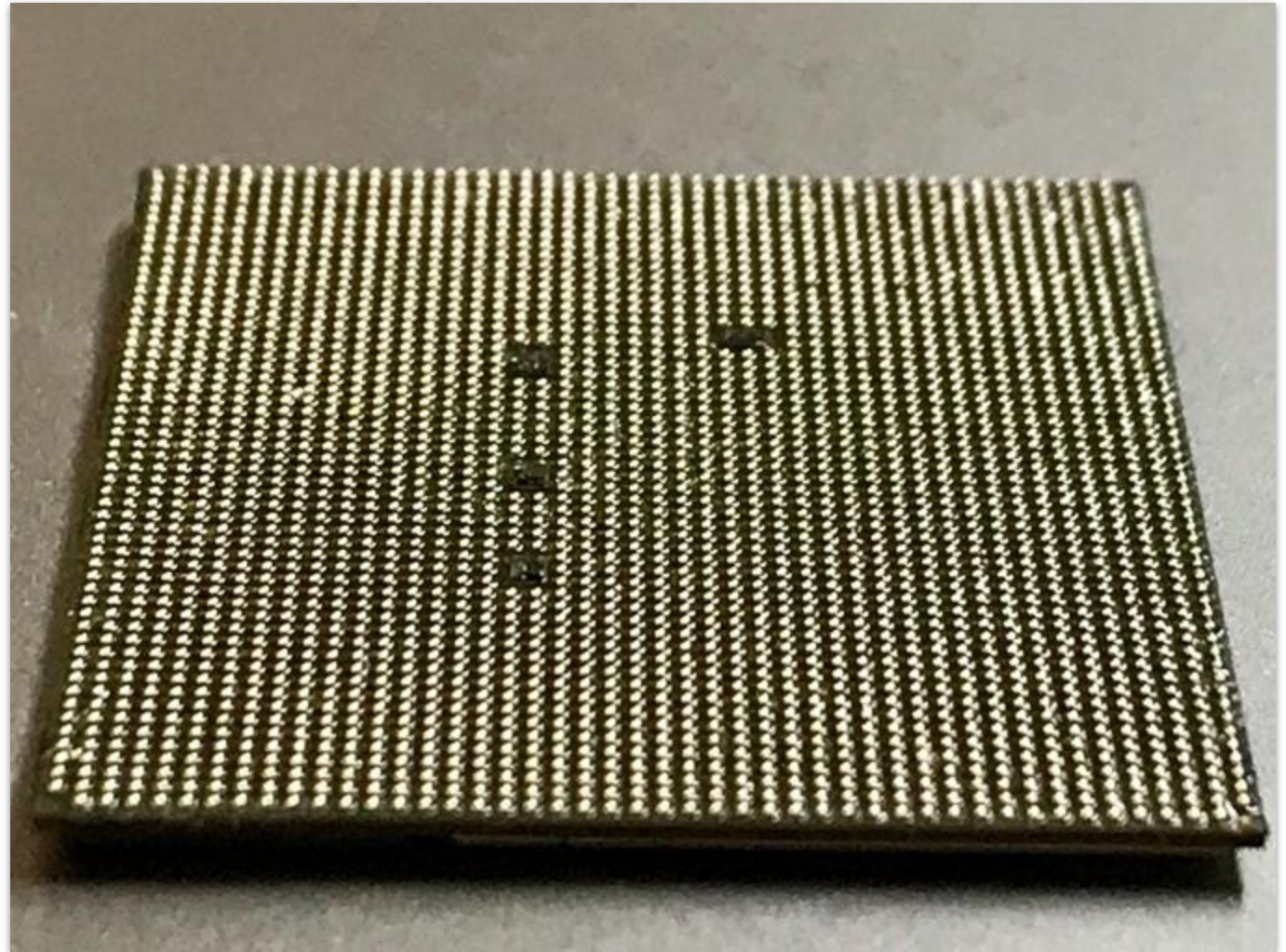
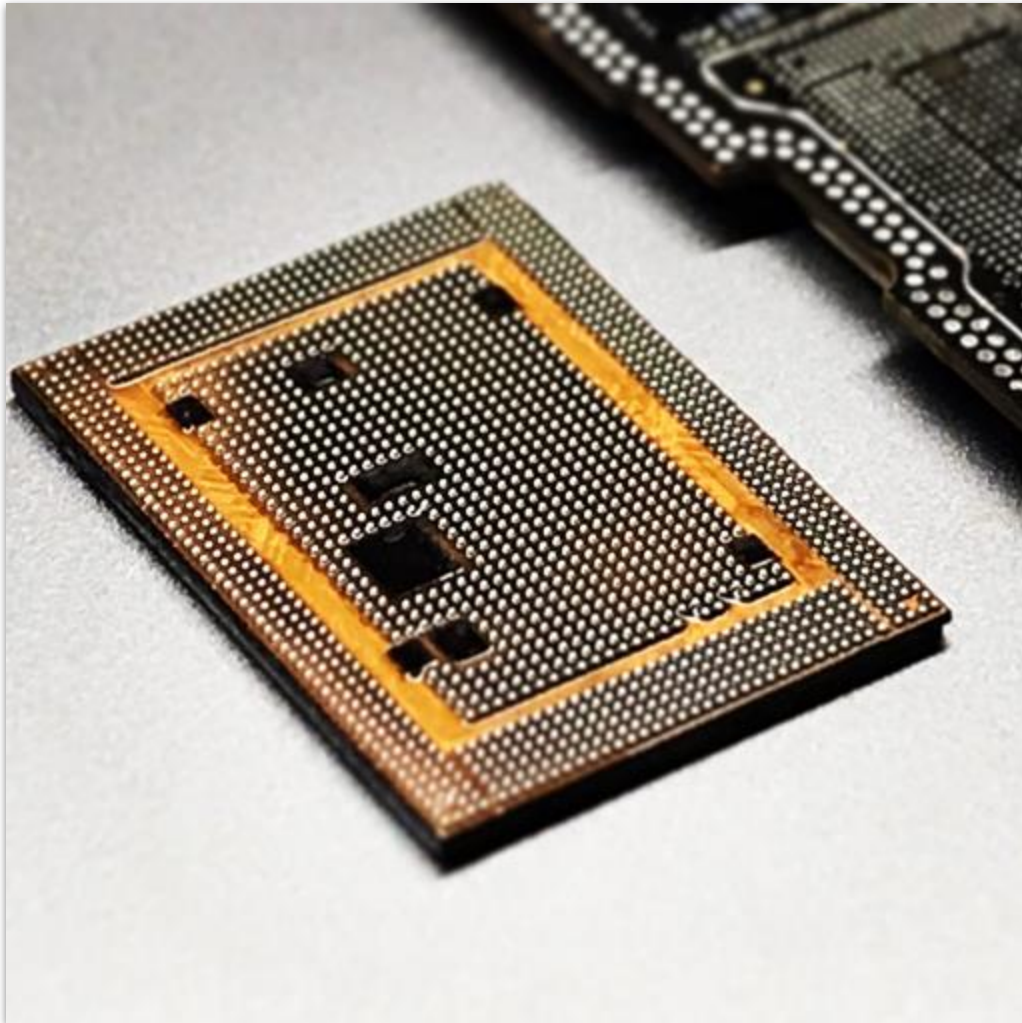


Secure Embedded Devices

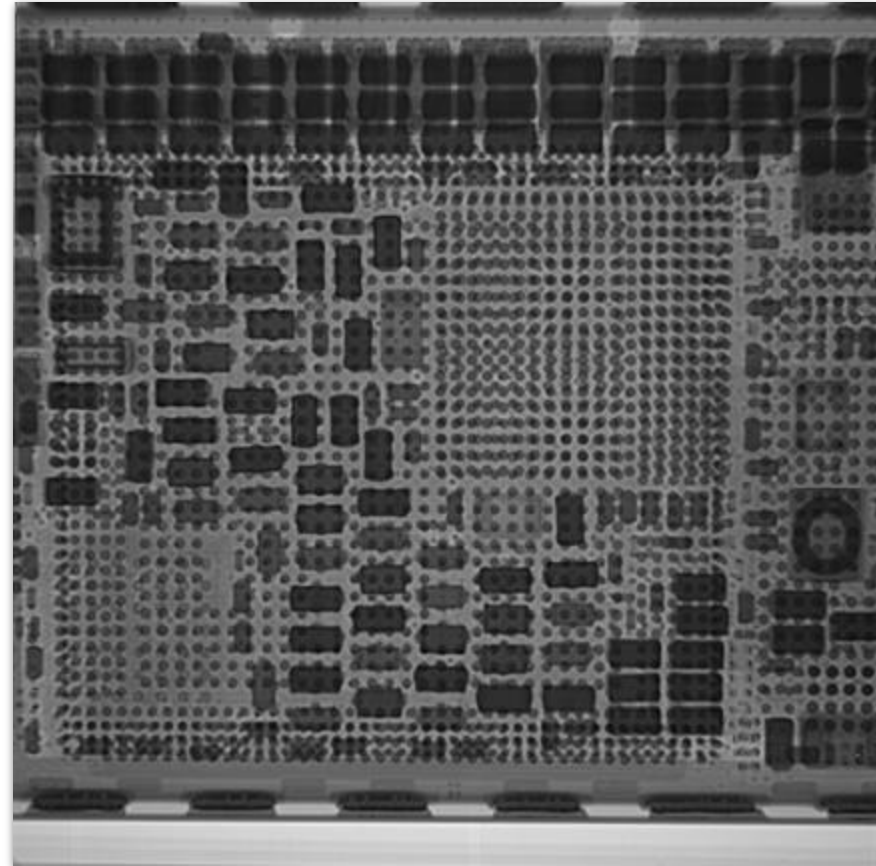
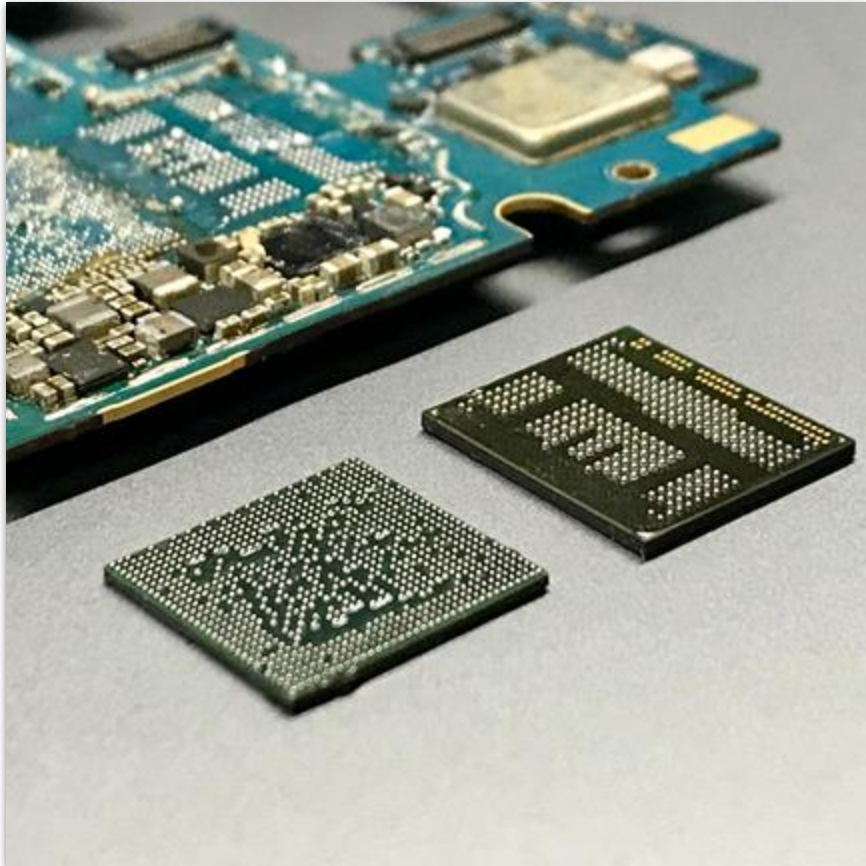
More than just storage required



BGA Rework Verification

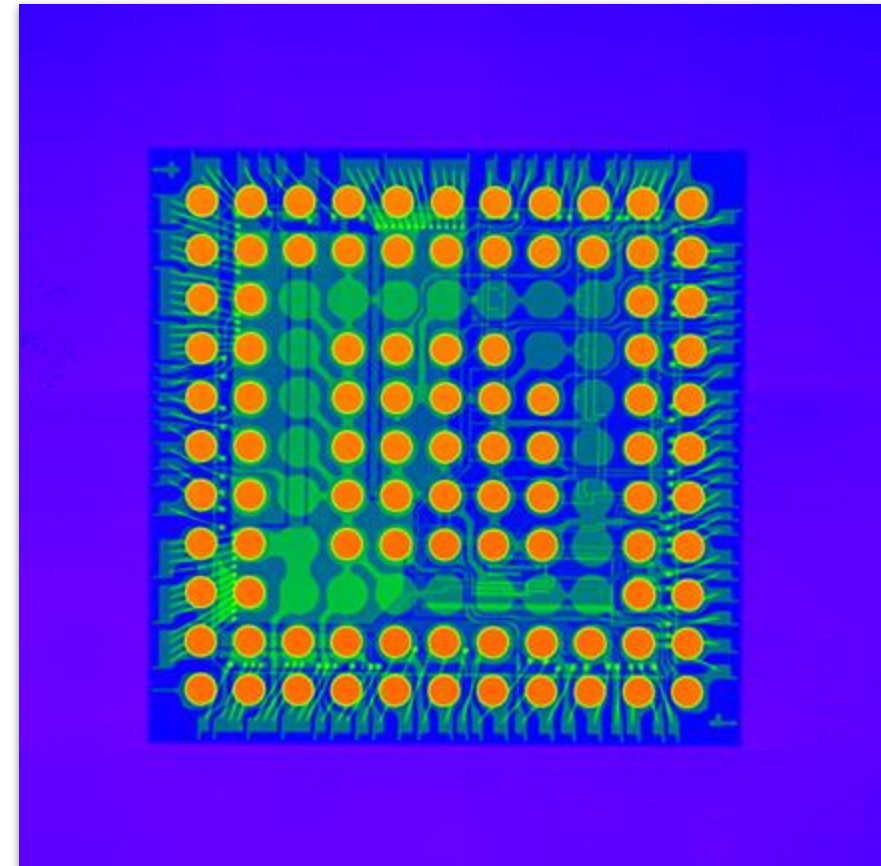


BGA Rework Verification



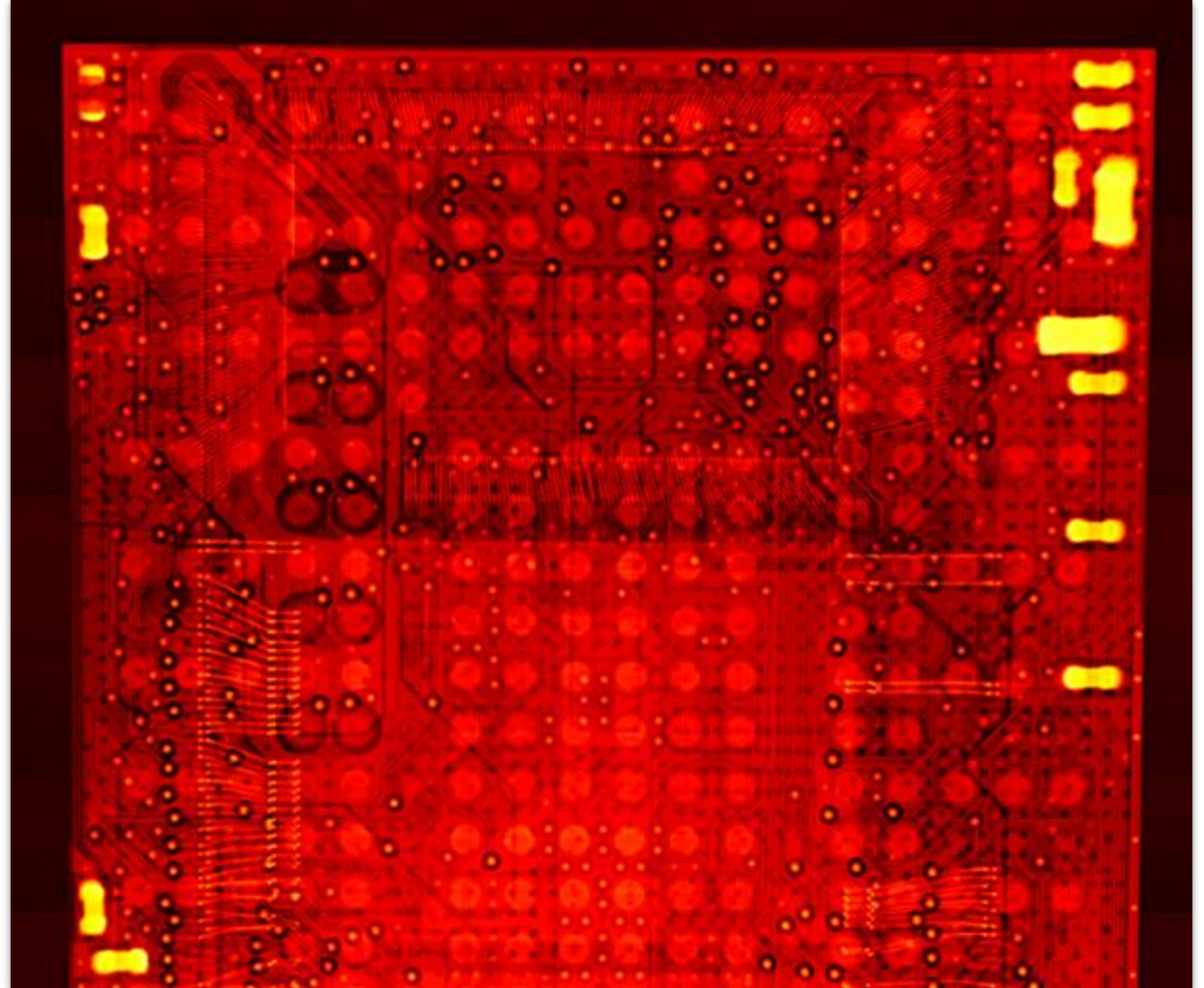
Continued R&D: Chip Level Recovery

- Failed IC Packaging
- Disbonds
- Electrically Failed Bonds and Silicon



Future Data Recovery Toolkit: Chip Level Recovery

- IR Imaging
- Electron and acoustic microscopy
- Chemical and laser decapsulating
- Microprobing / other failure analysis techniques



Thank you

Matthew Burger
Data Recovery Engineer
DriveSavers Data Recovery
Matt.Burger@DriveSavers.com