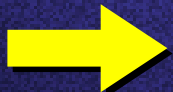




Agenda

1. Lead Free Transition and Impacts
2. **Lead Free Failure Modes**
3. A Comprehensive Lead Free Strategy
4. **GEIA Lead Free Standards and Handbooks**
 - GEIA-STD-0005-1 Performance Standard
 - GEIA-STD-0005-2 "Tin Whisker Document"
 - GEIA-HB-0005-1 Program Management Guidelines
 - GEIA-HB-0005-2 Technical Guidelines
 - GEIA-STD-0005-3 Performance Testing
 - GEIA-HB-0005-3 Rework and Repair
 - **GEIA-HB-0005-4 Reliability Assessment**
5. **Summary**
 - Acknowledgements
 - Lead Free Links
 - Points of Contact





What is the Reliability Document?

- **GEIA-HB-0005-4 Reliability Assessment for Aerospace and High Performance Electronics Containing Lead-free Solder**

This document will describe the methods of reliability assessment, modeling, reliability impacts on design, and failure rate predictions. This effort is underway and we are defining the content.



GEIA-HB-0005-4 Methodology

- Purpose of Methodology section
 - Define what's needed to do an analysis
 - Explain the “why’s” of what’s needed
- Define environment
 - Define bounds for LRU environments, e.g. avionics, engines, etc.
 - Allow for actual measurements or similarity from like product
 - Point to other documents if available
 - Component-level environments needs to be addressed by separate analysis
 - Measurement of actual hardware
 - Analytical models for steady state temperature, ramp rate, etc.



GEIA-HB-0005-4 Assessment

- Process
- Inputs
- Analysis
- Format



GEIA-HB-0005-4 Status

- Initial Team established
- Additional support is needed
- Contact LEAP-WG for participation