



iNEMI

International Electronics Manufacturing Initiative

High Reliability Activities

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High Reliability Perspective

- **Sn-Pb assembly is well understood and reliable - primary reason for taking the RoHS Pb exemption or being listed as “Out of Scope”.**
- **The components supply chain has rapidly been converting to RoHS compliant offerings (Pb-free) with little motivation to continue to produce SnPb product.**
- **Work to date has not provided the assurance of long term reliability with Pb-free assembly**
- **Work is underway that will provide the industry with better understanding of Pb-free alternatives.**

The Business Challenge

- Consumer electronics are Driving Component supply base.
- **Total Available Market (TAM) for all High Reliability categories (Servers, Telecom, Military, etc.) is on the order of <10% of Revenue for component Supply Base.**
- Most suppliers prefer to have their entire product line converted to Pb-free.
- **Maintaining a dual supply chain to satisfy the High Rel segments is costly and adds complexity.**
- There is uncertainty on how long the Pb-free exemptions will last or when High Rel. segment will convert.
- **Today's alternatives are not very attractive:**
 - Supply risk of not being able to secure SnPb compatible BGAs and other critical component and sub-assemblies.
 - Risk of rapid conversion of products prior to full understanding of long term reliability test results.

Scenarios

- Long term solution is to reduce reliability risk of Pb-free components and assembly.
 - The economic incentive is compelling
 - Well worth technology investment
 - Could take several years to complete but this is cumulative, so strides made today are useable.
- What can we do in the short term to help encourage the availability of SnPb compatible BGAs?
- What can we do in the mid term to close remaining knowledge gaps that the High Rel. segments face?
- What can be done longer term to better understand and predict reliability of electronics hardware using Pb-free components and assembly?



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