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International Electronics Manufacturing Initiative

Access to SnPb BGA Components: User Perspective

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Problem statements

- **RoHS and other Global environmental legislation has led to potential supply continuity issues**
 - **Our customers have not relaxed reliability expectations for most products targeted toward industrial applications**
 - **Insufficient predictive models and lack of empirical data has raised concerns about the ability of Pb-free assemblies to perform over the product life expectancy of a number of industrial products.**
 - **RoHS has granted exemptions for the continued utilization of Pb in solders for many of these industrial applications, but not for large volume commercial product usage**
 - **Suppliers are now faced with the question about the economic impact of maintaining dual supply chains to support both conventional SnPb and Pb-free products**

Alcatel-Lucent's Perspective

- It is our position, and that of the High-Rel industry in general, to continue to utilize SnPb assembly processes until Pb-free assembly reliability is adequately proven
- Where possible we are shifting to Pb-free alternates on peripherally leaded components as long they are backward compatible with SnPb assembly process and comply with industry accepted practices for ensuring long-term reliability
- We can not use area array components with Pb-free balls (BGA) until Pb-free assemblies can demonstrate the ability to meet the service life expectations of our products.
- In general those component suppliers that service telecom and other High-Rel industries have agreed to continue to produce SnPb BGA components for new and existing products until at least 2010
- However caveats are often stated along with that commitment:
 - As long as it is economically viable
 - Lead-times may push out
 - Cost increases over Pb-free versions may occur
- Other suppliers that focus more on consumer type applications tend to be more resistive to making SnPb BGA components available:
 - Ordering and Logistics related concerns
 - Internal SnPb BGA assembly availability
- There appear to be no technical limitations to continued production of SnPb BGA components

Where do we go from here?

- **What are our options?**
 - **Develop custom specifications on BGA components**
 - Creates cost and availability issues if supplier is willing to support need
 - **Work with third parties or directly with contract assemblers to re-ball packages with SnPb materials**
 - Introduces other reliability risks that may void warranties
 - Adds costs and reduces flexibility
 - Consider working through a distribution channel to maintain an inventory of commonly used components
 - **Ignore the risks and convert to Pb-free**
 - Problem of getting Pb-free parts on certain products
 - Older LTB inventories are especially problematic
 - Potential cost of failure difficult to calculate
 - **Work together with consortia members, component suppliers, contract manufacturers and 3rd party assemblers to:**
 - Work through the outstanding issues associated with Pb-free assemblies
 - Understand and develop a cost effective means of obtaining SnPb BGA components until the High-Rel industry is in a position to convert to Pb-free assemblies



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