



iNEMI

International Electronics Manufacturing Initiative

Defense and Aerospace

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Advancing manufacturing technology

Background

Continuing trend in the military since the late '80's to utilize “COTS” (common off-the-shelf) products

Products that have been developed with rugged environments in mind,
up-front in the design cycle

Ruggedization comes in the way of the packaging on every level (from
die to enclosure)

Various products are drivers of technologies – fuel cells, miniaturized
displays, better batteries, etc.

Need to expand chapter to address “soldier on the ground” products

A benchmark is required

MTBF, Lifecycle, Temperature, etc

Various tools to analyze the process, design and assembly to determine
how products can be COTS candidates.

One has to bridge what exists versus what is required.

Background

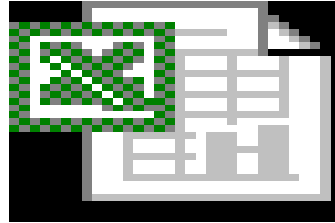
- **How is reliability achieved**

- Self-diagnosis is critical for software/hardware
- Built-in-Test (BIT)

- **RoHS impact**

- Accelerated testing at –40 to 125 on SnAgCu solderjoints are less reliable than SnPb, more prone to shock induced failures
- Availability of components with SnPb coatings are getting more difficult to find and with higher cost premiums
- Tin whiskers are perceived as a major concern – tin coatings are prohibited in many instances
- Military is requiring retinning Pb-free components with SnPb in most situations where SnPb parts are not available
- Major supply chain issues for SnPb parts availability

Defense & Aerospace Spreadsheet



Microsoft Excel Worksheet

Conclusions

- Chapter needs to expand the breadth of the military/defense coverage due to product drivers from “soldier on the ground” requirements
- Require Chair with Army product knowledge/contacts for accessing this information
- Aerospace coverage is good but could be upgraded in some areas – test, memory, package cost, displays
- Need T.C. help in finding a Chair immediately that brings Army/Marine product knowledge
- Bill Murphy will continue to participate and is also trying to recruit help from other Lockheed Martin sites



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