



BOOK NOW!

A Visit to Dolby Laboratories for SMART Group Members

We are delighted to invite members to a Lead-Free Wave & Selective Soldering Workshop, including a Tour of the Lead-Free Manufacturing Facility, at Dolby Laboratories Inc, European HQ, Wootton Bassett; December 5th 2008.

Nigel Burtt, Production Engineering Manager and SMART Group Technical Committee Member; who is hosting this event, is no stranger to members. His frequent updates of WEEE & RoHS issues on *smart-e-link* have been very helpful.

The presentations will include wave and selective soldering, lead-free solder pot contamination, Nigel's 'Chamber of Horrors', PCB ENIG vs Immersion Ag Finish and Outgassing.

To book your place please contact Tony Gordon on 01494 465217

More on: www.smartgroup.org/pdf/wave2007.pdf

As a taster for this event Nigel Burtt writes:

FAIL TO PREPARE = PREPARE TO FAIL

For our main product, the CP650, an audio processor for replay of 35mm film soundtracks and control of cinema projectors, we had fully converted this design to be RoHS compliant in advance of the deadline here in the UK factory. There were a few parts that were giving us nightmares as the deadline loomed but it all came together and the first units shipped to customers in early June 2006. As part of our corporate plan for RoHS, we decided that the US factory would lag behind our change-over and convert a year later on this product since the output from here in the main always ships to non-RoHS territories only. This was a pragmatic approach so that if we later found a major reliability problem with the RoHS version, the company still had some products to sell to customers who did not require a RoHS compliant product!

In fact, having monitored our internal and external return rates before and after the change-over we have found no significant change in our MTBF figures. Of course there have been a few reliability issues, but almost all have been as a result of supplied component batch problems rather than lead-free soldering or assembly

defects. Armed with this data we were able to confidently convert the US factory to build this product fully RoHS compliant too.

All this said, it has not been quite all plain sailing with lead-free. I'm reminded very often that there don't seem to be that many new problems caused by lead-free but we just seem to encounter old problems, seen years ago with standard lead solder, which are well documented and had been thought to be already solved by the industry. Perhaps we just have to accept that it takes time to adjust to a new learning curve, or maybe the narrow process window has re-excited the defects which had previously been cured. We will be giving more details of our challenges at the SMART Group event to be held here on December 5th

The workshop will cover:

- Why use selective soldering
- User experience of selective and wave soldering with lead-free
- PCB design rules for selective soldering
- Flux requirements for wave and selective soldering
- Compatibility of solder masks and lead-free solder
- Setting up lead-free profiles
- Solder alloy choices
- Cost of lead-free process operation
- Inspection criteria for lead-free joints
- Copper dissolution with selective and wave soldering
- Soldering defects on selective and wave – Causes and Cures

