

SERVATRON

Serving The
Electronics
Industry



Servatron's RoHS Compliance Plan





Project Status To Date

Major Accomplishments:

- Defined customer RoHS requirements
- Instituted controls for handling RoHS materials, documentation and product
- Mfg Process instituted for the PCBA processes
- RoHS Part numbering scheme established for Servatron
- Instituted RoHS Component Selection Software
- Built deliverable RoHS products





Materials

- Part Numbering
 - Adding –R to compliant p/n's creating a unique P/N in JDE
 - Adding “RoHS” as part of description in JDE
 - “LF” AVL Indicator
- Material Identification
 - Green Label added to all RoHS compliant parts at Stores
 - Only intended as visual cue, not p/n control





SMT Process

- **Equipment Process Capability (Lead-Free)**
 - Ekra Stencil Printers: capable
 - Europlacer Pick and Place: capable
 - BTU Reflow Oven: capable
 - Austin American Wash: capable
 - CR Technology X-Ray: capable
 - Air Vac BGA rework: capable





SMT Process (cont'd)

- **Solder/Alloy and Flux Selection**
 - Kester R520A Water Soluble paste, SAC305 alloy (AIM WS 353)
 - Existing Kester TSF-6805 WS tacky flux used for BGA rework; evaluating Kester TSF-6952 NC tacky flux to eliminate cleaning
 - SMT rework uses same Kester 331 WS fluxed wire, but SAC305 alloy; existing Kester 2331-ZX WS liquid flux as needed





Dedicated RoHS Post-SMT Area

- **Dedicated RoHS Assembly Area**
 - Post SMT Work Stations
 - Inspection Station
 - Repair Station
- **Mfg area is solely dedicated to RoHS products**
- **Dedicated Soldering & Inspection Equipment**
 - High temp solder tips available
 - Solder wire with RoHS compliant alloy
 - SN96.5/Ag3.0/Cu0.5
- **Specific Assembly Procedures for RoHS products**
- **All personnel in area trained to IPC- A- 610 rev D lead free requirements**





Final Assembly

- **All Module & Final Assemblies Vary in Complexity**
 - Flexible or Dedicated Assembly Areas
 - Some may require hand soldering of wires (RoHS)
 - Flexible assy process to run very much like the SMT line
 - Set-up and tear down required specific to RoHS
 - Depending on customer to supply a RoHS compatible design
 - Cables (Pre-tinned leads), LCD's
 - Coatings on plastics, Keyboards
 - Screw and battery contact plating
 - Etc..





Manufacturing Test

- **Testing**
 - Performed in standard mfg test process
 - Performed with standard test equipment
- **Technician Troubleshoot and Repair**
 - Material Control (product) – RoHS PCBA's to be transferred on racks with green RoHS traveler or individual ESD bags with RoHS label
 - Material Control (components) – All RoHS repair components will be stored by RoHS P/N in the dedicated RoHS repair area
 - Troubleshooting performed at standard tech bench with required test equipment
 - All repair of RoHS boards will be done at repair bench within a dedicated lead free work zone in mfg
 - Repair work performed by a RoHS trained tech or repair person





Lead Free Solder, Inspection & Repair Training

- **Training Plan**
 - Train to IPC-A-610 Rev D requirements
 - IPC Certified Servatron Trainer (training since 1997)
 - People being trained two at a time with the trainer
 - Training Records Updated after completion of training
 - Only people who have signed-off Lead Free Training Records will be allowed to solder, inspect or rework lead free boards
- **Groups to be Trained**
 - SMT Inspection & Repair, Post SMT, Technicians, Auditors, Engineers, BGA Repair Specialist, Proto Assembly
 - Eighteen people have completed the training course to date





Process Qualification

- RoHS Solderability Verification
- RoHS Cleanliness Verification
- Product Reliability Testing
 - Performed by customer if required
- In-Process Audits
 - Performed by existing quality organization
- RoHS Compliance Team
 - Quality Engineer
 - Post Engineer
 - SMT Engineer
 - Manager Material Handling
 - Manager Materials
 - Production Operations Manager
 - SMT Manager
 - Team Leader
 - Monthly reviews with Sr. Management

