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PRESS INFORMATION

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TMD makes good progress in environmentally-friendly lead free soldering programme *- to meet the requirements of new EU legislation*

Specialist UK electronics company TMD Technologies Ltd (TMD) has made significant advances in its programme to investigate the implications of new legislation related to environmentally-friendly lead free soldering processes in the manufacture of its microwave transmitters and associated products.

The lead free programme is aimed at meeting the requirements of new 'green' EU legislation, which came into force in July of this year. The legislation restricts the use of a number of hazardous substances (RoHS – The Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment - in particular lead (Pb).

Dr Shubo Gao, who was appointed last year with the responsibility for ensuring that TMD's future PCB assembly processes will be compatible with not only lead free but also any lead containing processes that may still be necessary for the near future, has reported that her team are now currently making and evaluating prototype PCB assemblies.

"An exhaustive test schedule has been devised to enable us to expose any problems with lead free soldering processes at an early stage", said Dr Gao. "These test are in line with *JEDEC/iNEMI test standards on *tin whiskers, in conjunction with TMD's *HALT and *HASS test programmes".

The investigation also includes evaluation of the most popular brands of lead free solders and PCB pad finishes for hand soldering production.

The first batches of lead free PCB assembly prototypes are being tested for tin whisker growth, and are being compared with lead-tin soldered ones. "A selection of components with different terminal finishes is also under evaluation, and if we do encounter a tin whiskers problem and can rectify it this will be a major step forward and will create considerable confidence in our processes", explained Dr Gao.

After thoroughly testing many different choices of lead free assemblies, the results will be compared for reliability, ease of assembly, quality and cost. Based on these findings, Dr Gao will be making recommendations for TMD's future PCB assembly processes.

The lead free programme was initiated early this year as a Knowledge Transfer Partnership between TMD and CRDM Research (Centre for Rapid Design & Manufacture), a Department of the Faculty of Technology, Buckinghamshire Chiltern University College. The programme is funded by the Department of Trade and Industry and TMD.

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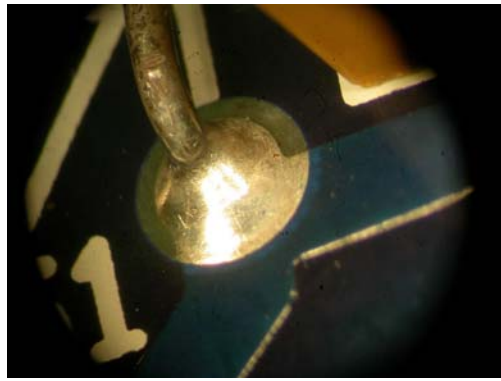
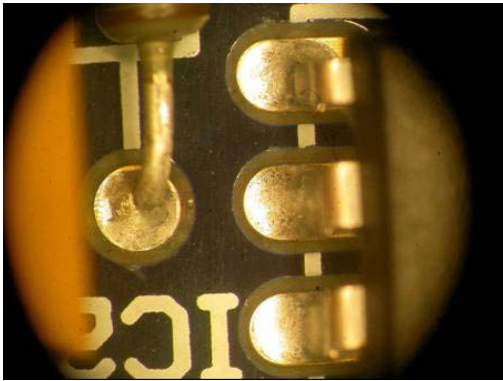
JEDEC – Joint Electron Device Engineering Council

iNEMI – International Electronics Manufacturing Initiative

HALT – Highly Accelerated Life Testing

HASS – Highly Accelerated Stress Screening

'Tin Whiskers' – Work on lead free PCB assembly has highlighted the capability of high tin content surfaces to produce unwanted 'tin whiskers' – a frequently observed but not well understood phenomenon. A tin whisker is a single crystal of tin that grows spontaneously from a surface containing tin metal. Tin whiskers between adjacent conductors can cause transient or permanent failures of the electronic equipment.



Close views of lead free PCB Assemblies

TMD

TMD is a British manufacturing company located in Hayes, West London - close to Heathrow Airport - and is fully integrated with all functions under one roof.

The company designs and manufactures specialised transmitters for radar and electronic warfare applications, high voltage power supplies and microwave tubes. It also produces a range of commercial amplifiers for EMC testing, medical and scientific applications.

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