

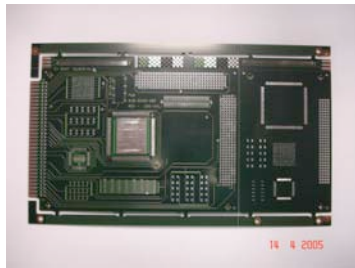
## AUTOSIR TESTING & THE NUMBER OF TEST SITES

*Q – How many test sites do I need to measure for the new IPC/IEC standards?*

A – There are 2 new SIR standards publishing in 2006:

- IEC 61189-5 - 5E02 Test Coupon = GEN3/NPL TB57
- IPC-TM-650 2.6.3.7 Test Coupon = IPC – B52

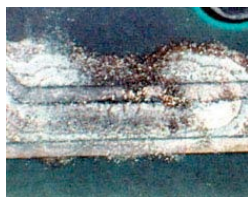
These are both involving Process Characterisation testing as distinct from Materials Characterisation testing.



IPC B52 Test Coupon

As a result of GEN3 SYSTEMS involvement in the standards development work, we have been able to ensure some similarity between these 2 test coupons or test vehicles. Both have 16 individual test sites or patterns located that will permit the over-mounting of components to replicate the intended manufacturing process.

Electro-Chemical reactions, in the form of dendrites, are an ever increasing problem for the reliable performance of electronic circuits in ever more hostile operating situations.



Electro-Chemical Failure

These new tests are to investigate the synergistic compatibility of the minimum 12 different types of materials used in the assembly process: e.g. Solder resist – Solder Paste – Surface-mount Adhesive – Solder Flux etc..

The minimum number of coupons generally required for statistical evaluation is 3 and the typical process matrix is estimated to require around 16 test coupons/vehicles – not forgetting to include control coupons.

Therefore  $16 \times 16 = 256$  test sites that require 256 Measurement Channels.

The Auto-SIR 256 is specifically designed for this purpose.