

## IC TESTING FOR COMPLIANCE / COUNTERFEIT / FAULTY IC DETECTION

Retronix offers a suite of test services to verify IC compliance, and to identify counterfeit or faulty IC's

### TYPICAL APPLICATIONS:

An IC Supplier would use us to test IC's they are about to sell, to ensure they are what they are supposed to be. This is often at the instance of the customer.

An IC supplier would also use us to verify returned product, or arbitrate on disputed product.

Goods in at a CEM or OEM would use us to validate incoming IC's, on a sample basis. After we recover IC's we would use these tests to verify if they are functional.

A High Reliability user might use to test that the IC's being sold operate at the extreme temperatures needed.

Extreme Temperature Test

Visual Inspection

XRF Test

Solderability Test

Electrical Test (Curve Trace)

Ionic Contamination Test

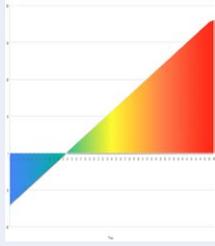
Key Function Test

3D X-Ray Inspection

Memory Programming

Decapsulation Test

## EXTREME TEMPERATURE TEST



Retronix Temperature Test system fully conforms to the MIL-STD-883, being able to electrically and functionally check IC's at temperature extremes of +180°C & -55°C. This is critical for extreme environment electronics.

## IONIC CONTAMINATION TEST



Ionic test is performed to measure the level of ionic residues which is a good indicator of the cleanliness of the IC. Retronix provide a full report that details the sample size, contamination value & device type.

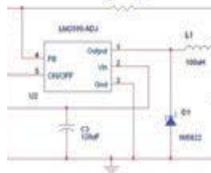
## VISUAL INSPECTION



Visual inspection criteria employed by Retronix conforms to IDEA-STD-1010-B, MIL-STD-883G and the mechanical dimension criteria of product datasheets. These tests will not only find remarked devices, they will also be able to tell if the components are NEW and UNUSED.

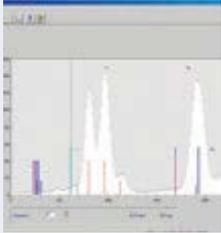
## KEY FUNCTION TEST

1) Example of Circuit designed on CAD before being implemented.



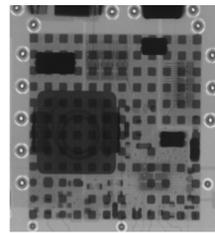
KFT at Retronix involves our engineers designing a test circuit to check for the main aspects of the device detailed on the datasheets, for example the  $R_{ds(on)}$  value of MOSFET

## XRF TEST / XRF ANALYSIS



Our XRF Testing/XRF Analysis facility allows a non-destructive method to determine what alloy a termination consists of. All devices can be XRF tested including BGAs, QFP's, TSOP's, Capacitors, Resistors and Connectors.

## 3D X-RAY INSPECTION



3D X-Ray inspection systems have been specifically & ergonomically designed for the circuit board (PCB) & semiconductor industries offering high resolution nano-focus X-Ray systems not only within failure analysis laboratories but also within production environment.

## SOLDERABILITY TEST



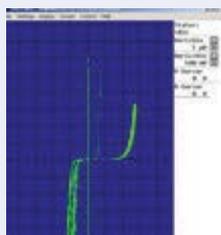
Solderability testing verifies whether a component is re-solderable. In line with JEDEC standards, we use our Solderability test to ensure that parts will not have Solderability issues in the manufacturing process.

## MEMORY PROGRAMMING



Our flash memory test uses programmers to check for Counterfeit Programmable components. Using this Flash memory test tool, we can easily check device ID codes and confirm if your devices are BLANK or already programmed.

## ELECTRICAL TEST (CURVE TRACE)



Electrical test is an IC Test to check the electrical parameters of every pin to pin e.g. current, voltage, diode resistivity and silicon connectivity. This is a very strong tool which allows us to detect whether a component is defective or not.

## DECAPSULATION TEST



Retronix can perform decapsulation of plastic molded packages using an automated etching system. We can also use decapsulation and high magnification analysis to check for signs of damage on the surface of an IC.