

# Solutions@Mecmesin

## PCB Solder Joint Shear

### Specification

Millennium Microtech Thailand, part of [Microchip Technology Inc Thailand](#) operates a manufacturing, packaging and testing plant for Printed Circuit Board (PCB) Integrated Circuit (IC) components.

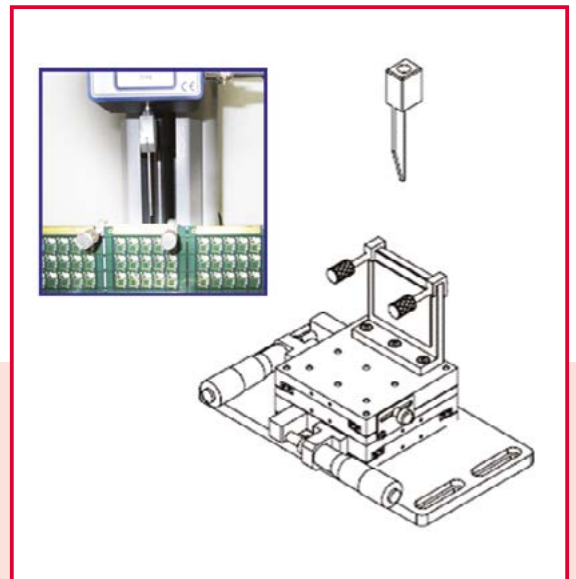
The company wanted to perform shear tests on surface-mount solder joints in a fast, repeatable, way, with customer service that would meet the unique challenges of some of the designs. Certain components are especially small and mounted on extremely thin boards.

### Solution

The Mecmesin Asia team worked with the company to specify a custom fixture to perform the shearing test. Great precision was needed for the quality control personnel to align the individual solder joints with the angle-tipped probe in the upper fixture. The jig holding the PCB needed to hold the delicate component securely and was attached to an adjustable X-Y table to enable the operator to locate the test piece quickly in two dimensions. Additionally, the integration of a stereo microscope (7-30x magnification) with a 56 LED ring light provided a clear view of the individual joint under test. Once the sample is in position, the MultiTest 2.5-xt runs the test, initiated from its touch screen interface, to move the crosshead down a fixed distance and return the peak compressive shear force value. The data is used to monitor production and keep the manufacturing tolerances within specification.

### System

- MultiTest 2.5-xt touch screen test stand
- 50 N Intelligent loadcell
- Custom-designed lower fixture
- Adjustable X-Y table
- Stereo microscope (7-30x) with 56 LED ring light



A custom fixture was made by Mecmesin Asia to hold the delicate PCB and align the solder joint precisely



The simplicity and repeatability of the touch screen controlled MultiTest xt makes an efficient QC process

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# electrical and electronics industry



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