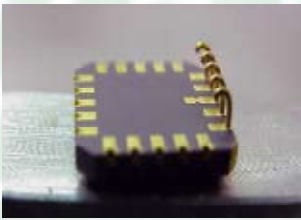




Lead Attach



The reliability of leadless chip carrier (LCC) solder joints is enhanced through the addition of J-shape and L-shape SMT leads. These leads can provide the

necessary compliance to withstand coefficient of thermal expansion (CTE) mismatch between the printed wiring board (PWB) and the component package material, as well as extreme vibration and shock environments common to space and military applications.

It is increasingly difficult to match the PWB and component CTEs as boards are more densely populated with components, components are more creatively packaged, and pressure is being applied to reduce costs.

Thermal compression bonding of J- and L- leads is the accepted method for mitigating LCC solder joint reliability issues.

Corfin Industries provides component preparation services to defense, medical, telecommunications, and other high reliability industries. We pioneered our core technology, Robotic Hot Solder Dip (RHSD), in the 1980's and today serve major OEMs and their subcontractors around the world. Corfin Industries has earned an unmatched reputation for quality and dependability resulting in preferred supplier status for numerous defense programs. Corfin facilities are ISO 9001 and AS9100 registered and JPL-certified for less than 50 volts of ESD potential at any work station.

The Corfin Industries Difference

1. Corfin leads the industry in turnaround times, quality, coplanarity, and guaranteed yields.

Every member of the Corfin team recognizes that quality is not just about inspection and test: it is about the total customer experience with our service. From your first contact with Corfin Industries through the shipment of your order, stringently applied rules and processes ensure that everything goes according to plan. We never make assumptions and understand that no detail is too small to get right.



At Corfin, what we do is unique. How we do it is truly innovative.

2. Reliable and service-tested thermal compression bonding.

Unlike processes that use high temperature solder, thermal compression bonding eliminates risk of reflow during subsequent gold removal and assembly operations.



3. Proprietary RHSD equipment removes gold from the attached leads.

Corfin's dynamic, nitrogen-blanketed solder wave technology and multi-axis, robotic system allow for extremely precise handling of the modified LCC, ensuring controlled contact with the solder wave and heat exposure.





Lead Attach Equipment & Process

Welder/Bonder Controller

- Closed loop control of temperature, time, and slope
- Programmable process parameters ensure controlled preheat, rise, reflow, and cool.
- Compression head adjusts for pressure to avoid part damage.
- Component fixture holds leads and component in position for bonding, adapts for any lead count, and is configured for high throughput multiple component processing.

Thermode Features

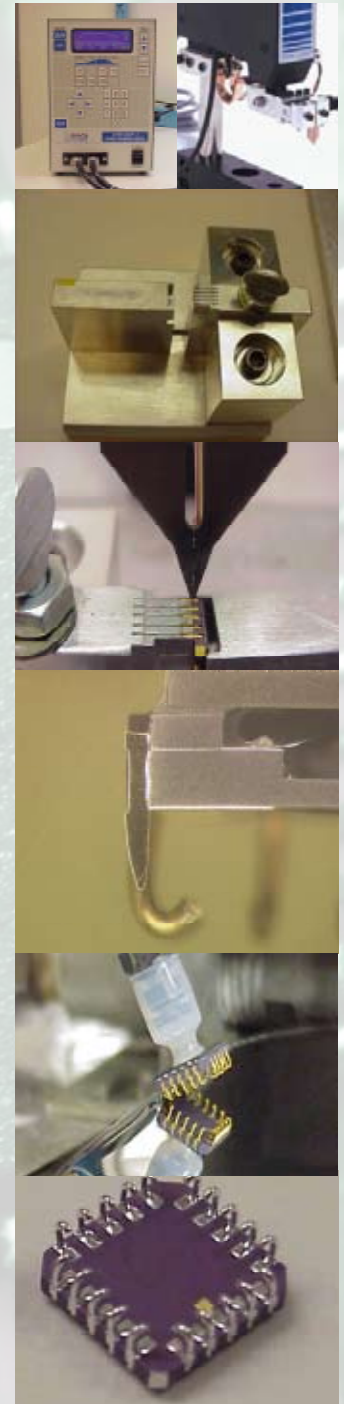
- Repeatable weld force for consistent thermal compression bonds
- Compression heads used by Corfin include a standard force-firing feature that starts the bonding when preset electrode force reached.

Lead Attach Coplanarity and Compression Bond

- Tight process controls for consistent lead placement in the castellation
- Coplanarity verified for each lot processed
- Component cross-section at the midpoint of the leads shows solid compression bond (photo at right).

Robotic Hot Solder Dip (RHSD) for Gold Mitigation

- J- or L-leads refinished with SnPb solder mitigates risk of gold embrittlement in assembly solder joints. Component lead bonds withstand multiple soldering passes at 290°C.
- Corfin proprietary robotics ensure consistent immersion depth, regulated temperature exposure, even solder thickness, coplanarity, and process cleanliness.
- Five-step process integrates flux, pre-heat, hot solder dip with dynamic solder wave under a nitrogen blanket, water rinse, and dry.



Please contact us to arrange a site visit and see our process in action.