

Surface Mount Technology

Exceeding expectations, redefining excellence

Calian provides a state-of-the-art surface mount technology (SMT) assembly line that is capable of laser marking PWBs, includes automated solder paste inspection, 3D automated optical inspection (AOI) and off-line 3D x-ray inspection.

Our manufacturing capabilities and equipment enable a variety of production volumes from small prototype runs to high volume continuous production. Low density to large highly populated and mixed technology assembly is also available.

Calian's highly skilled, certified operators and technicians follow through on engineering processes and strict quality controls. Our dedicated customer support team and our commitment to on-time delivery help ensure we meet your critical applications and timelines.

Unmatched technical depth and experience

- Over 20 years of SMT assembly experience
- IPC and SMTA membership
- Our staff serve on multiple IPC standards development committees
- We conduct ongoing research into the latest developments and solutions in the industry's rapidly changing environment, including new alloys, materials, processes, software and equipment

Stringent control processes

- First off inspection, including 3D X-ray
- Product thermal profiling for optimum solder joint formation while meeting component and solder paste recommended profiles
- 3D automated optical inspection for process control and final product compliance to industry and customer-specific quality standards

Value-added services

- Fully programmable conformal coating and dispense system. Designed for use with both solvent- or water-based coatings.
- DRC/DFM analysis using industry-leading software tools
- BGA reballing for salvage, rework, or lead/lead-free alloy change
- Tape & Reel processing for bulk parts
- Non-destructive failure analysis using 3D X-ray and Computerized Tomography (CT)

Quality management: certifications and compliance

- Class 3 IPC Standards & Certified IPC Trainer (CIT)
- Certified as conforming to the requirements of ISO 9001:2015
- Controlled Goods Registration Program (CGRP) and ITAR
- Counterfeit Avoidance Policy, Calian Responsible Mineral ("conflict-free") Policy

Surface Mount Technology (SMT) specifications

Process	Equipment	Capability
Placement	3x ASM Siplace SX-1	<ul style="list-style-type: none"> • 55,000 CPH • Feeder capacity: 330 x 8mm tracks, 28 JEDEC trays • Component range: 0201(metric) to 200mm x 125mm x 40mm • Board size: 50mm x 50mm to 850mm x 560mm • Pin-in-hole and odd-form placement • Glue dispensing for component staking
Laser mark	ASYS Insignum 2000	<ul style="list-style-type: none"> • In-line, double-sided, Data Matrix
Paste print	ASYS EKRA Serio 4000	<ul style="list-style-type: none"> • Alignment repeatability $\pm 12,5 \mu\text{m}$ @ 6Sigma post-print inspect • Vector Guard foils with NanoSlic treatment as required
Inspection	CyberOptics SE500-II 3D SPI CyberOptics SQ3000 3D AOI Nordson DAGE XD7600NT Ruby	<ul style="list-style-type: none"> • SPI: in-line, 3D @ $50 \text{ cm}^2/\text{s}$ • AOI: in-line, 3D @ $16 \text{ cm}^2/\text{s}$, 0201 mm minimum component size • XRAY: off-line 2D X-RAY, < 0.5um feature recognition • 70 deg oblique angle views, 23,400X total magnification • X-Plane analysis to view individual 2D slices, 3D computerized tomography
Reflow	Heller 1809 Mark III	<ul style="list-style-type: none"> • 9 zone with controlled cooling; KIC thermal profiler
Cleaning	Aqueous Technologies Trident III Duo LD Aqueous Technologies Stencil Washer LDO	<ul style="list-style-type: none"> • Dual bay washer with cleanliness verification • Advanced SPC software capabilities enable assembly serial numbers and process data to be captured, including set and actual cleanliness levels • Ultrasonic stencil cleaning, misprint cleaning
Cleanliness test	SCS SMD 650 Omegameter	<ul style="list-style-type: none"> • ROSE test per IPC-TM-650 2.3.25
BGA / BTC rework	Kurtz ERSR HR 550	<ul style="list-style-type: none"> • De-soldering, placement and soldering of BGA and bottom • Terminated components up to 70 x 70 mm; computer aided • Placement and thermal profiling • Custom stencils for PWB site or component paste printing
Conformal coating	PrecisionCoat VI	<ul style="list-style-type: none"> • Fully programmable selective conformal coating and dispense system • For use with solvent-based or water-based coatings
Tape and reeling	V-TEK TM-50	<ul style="list-style-type: none"> • Transfer of bulk and tube inventory to reels; in-house Kanban • Inventory of carrier tape stock for common components
MSL control		<ul style="list-style-type: none"> • Custom computerized Moisture Sensitivity Level (MSL) tracking system
DRC / DFM analysis	DownStream Technologies DFMStream and CAM350	<ul style="list-style-type: none"> • Comprehensive analysis for all major PCB design tools, Gerber files, intelligent manufacturing files, and NC data
Data formats		<ul style="list-style-type: none"> • Gerber, ODB++, IPC-2581

