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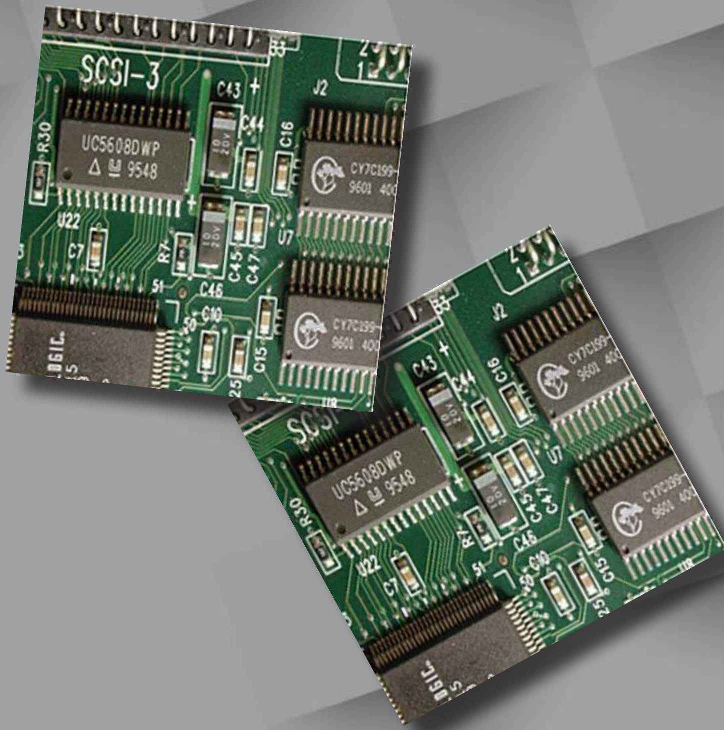
Micross Clearwater Services

Offers the most complete array of services from any one source



- Independent Third-Party ITAR Registered Lab
- Multiple IC Detection Methods
- Complies with AS6081 & AS6171 Requirements
- Turnkey Cost-Effective Test Solutions
- Highly-Experienced & Personalized Service
- Efficient & Fast RFQ Process

Micross' counterfeit mitigation lab performs screening of customer-supplied components in accordance with defined government and industry-recognized standards. Our testing services provide an elevated level of assurance for contractors providing electronic components to the DoD, who are subject to DFARS 252.246.7007 and 7008. As an independent, third-party lab, Micross Clearwater is an approved vendor for multiple Tier 1 and 2 contractors.

Micross Clearwater comprehensive IC counterfeit mitigation services include:

- Visual Inspection (IDEA 1010 Checklist)
- Mark Permanency (MIL-STD-883)
- Decapsulation (DPA)
- X-Ray
- XRF
- SAM (Scanning Acoustic Microscopy)
- SEM (Scanning Electron Microscopy)
- Electrical Authenticity
- Up-screen Testing:
  - Temperature and Performance Rating
- MIL-STD (Group A/B)

We also provide supplementary services inclusive of:

- IC Programming
- Tape & Reel
- 3D Lead Scan
- Lead Repair
- Bake and Dry Pack
- Solderability Test

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Micross Clearwater Value-added Solutions

EXTENSIVE CAPABILITIES

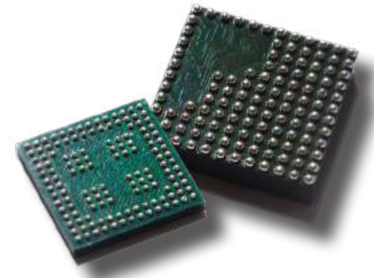
- Axial/Radial Taping & Straightening
- Bake & Dry Pack
- BGA Reball & Ball Attach
- Board Rework
- Bond Pull Test
- Burn-in Testing
- Constant Acceleration
- Coplanarity Testing/Inspection
- Conversion to PbFree & Sn/Pb
- C-SAM Analysis
- Decapsulation (DPA)
- Device Programming
- Die Shear Testing
- DNA Marking
- Electrical Authenticity Testing
- Electrical/Functional Testing
- EPROM Programming
- External Visual Inspection
- Failure Analysis
- Fluorescent Dye Penetrant
- Hermetic Seal Testing
- IC Counterfeit Detection
- IC Programming
- Lead Attach
- Marking/Permanency
- PinD Testing
- RoHs Testing
- SAM (Scanning Acoustic Microscopy)
- SEM (Scanning Electron Microscopy)
- Solder Dip
- Solderability Testing
- Tape & Reel/3D Scanning of Components
- Trim & Form
- X-ray/Radiography
- XRF Analysis
- Upscreening
- Temperature/Speed Upscreen

INDUSTRIES SERVED

- Automotive
- Aerospace
- Commercial
- Defense
- Consumer
- Industrial
- Medical
- Oil & Gas
- SATCOM

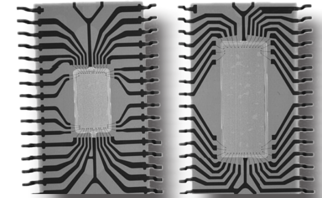
PACKAGES*

- BGA
- QFP
- DIP
- PLCC
- SOIC
- SOIP
- TSSOP
- SOTxx
- TOxx
- DPAC
- Axial Leaded



DEVICES*

- Memory
- Processors
- Controllers
- DAC/ADCs
- CODECs
- EPROMs
- EEPROMs
- Resistors
- Capacitors
- Diodes
- Transistors



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Micross Clearwater provides extensive 3D scanning capabilities coupled with technical expertise, state-of-the-art equipment and unsurpassed capacity while maintaining an ISO 9001 Quality System. Micross Clearwater provides a quick turn and cost-effective alternative to expensive in-house processing.

Advance & Investigate Visual Inspection

Micross inspects the component & packaging using the IDEA 1010 methodology and checklist to identify non-conformances on the IC body, leads and markings. High-powered inspection equipment and trained lab technicians combined with Micross' Counterfeit database are all factors that help to ensure that any external issues are identified and documented.

Automated Radial & Axial Taping & Straightening (with Optional Lead Trim & Form)

Micross offers radial package type T&R taping and straightening services that meet or exceed EIA-468. Requirements with capabilities for: TO-126, TO-263, TO-92, LED and electrolytic capacitors utilizing in-line 2D vision inspection to ensure the highest quality standards. Micross' axial package type T&R services meet or exceed EIA-296 for rectifiers, resistors, diodes and capacitors.

Automated Lead Inspection

Micross is the benchmark for Automated Lead Inspection - T&R that allows for minimum handling and maximizing 3-D in-line vision inspection for tray-to-tray, tray-to-tube, tube-to-tube and tube-to-tape. Micross utilizes state-of-the-art quality systems to meet or exceed EIA-481. Micross' Lead Inspection Services ensure component integrity.

Inspection capabilities include: co-planarity, bent leads, sweep, pitch, standoff, ball height, ball diameter and true position for most package types. Reconditioning is done per the JEDEC specification dimensional product outlines.

Bake & Dry Pack

Micross' Bake and Dry Pack services ensure that moisture sensitive components are protected and quality assured throughout the packaging process. Our specially designed equipment will ensure that your components are not damaged as they are transferred from plastic tubes to metal tubes as part of the baking process. Our procedures and processes meet or exceed EIA-583 and are JEDEC MS level compliant.

Decapsulation

Micross Decapsulation/Delidding Process will expose the die for any IC. This process will allow us to view the die and verify such things as the manufacturer's logo, part number, mask and unique die markings that are associated with the component.

Electrical Authenticity Testing

Electrical Authenticity Testing is used to ensure that a component is still functioning and meets the manufacturer's specified parameters for its intended purpose. Our highly-experienced Engineers will design a series of tested based primarily on our customer's requirements and specifications that may include both DC and AC parameters.

Manual Tape & Reel (T&R) & Detape

Micross can handle your T&R requirements no matter the size of your job and has a huge selection of in-stock carrier tape and extensive experience with SOIC, QFN, TSOP, SSOP, MSOP, SOJ, PLCC, QFP and BGA package types. In addition, Micross also offers automated detaping.

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Lead Conditioning / Straightening

Micross has multiple platforms to perform automated lead conditioning for any leaded product from both tray and tube that fail lead scan. These parts can be conditioned and re-scanned to virtually eliminate your scrap. Micross can even pull parts off a board and re-condition them. Reconditioning is done per the JEDEC specification dimensional product outlines.

Resistance to Solvents (Mark Permanency)

Mark Permanency Tests are used to detect any attempts to resurface remark or disguise the original part markings/identity. These tests include: MIL-STD-883 Testing & other accelerated testing methods such as 1M2 and Dynasolve.

Scanning Acoustic Microscopy (SAM)

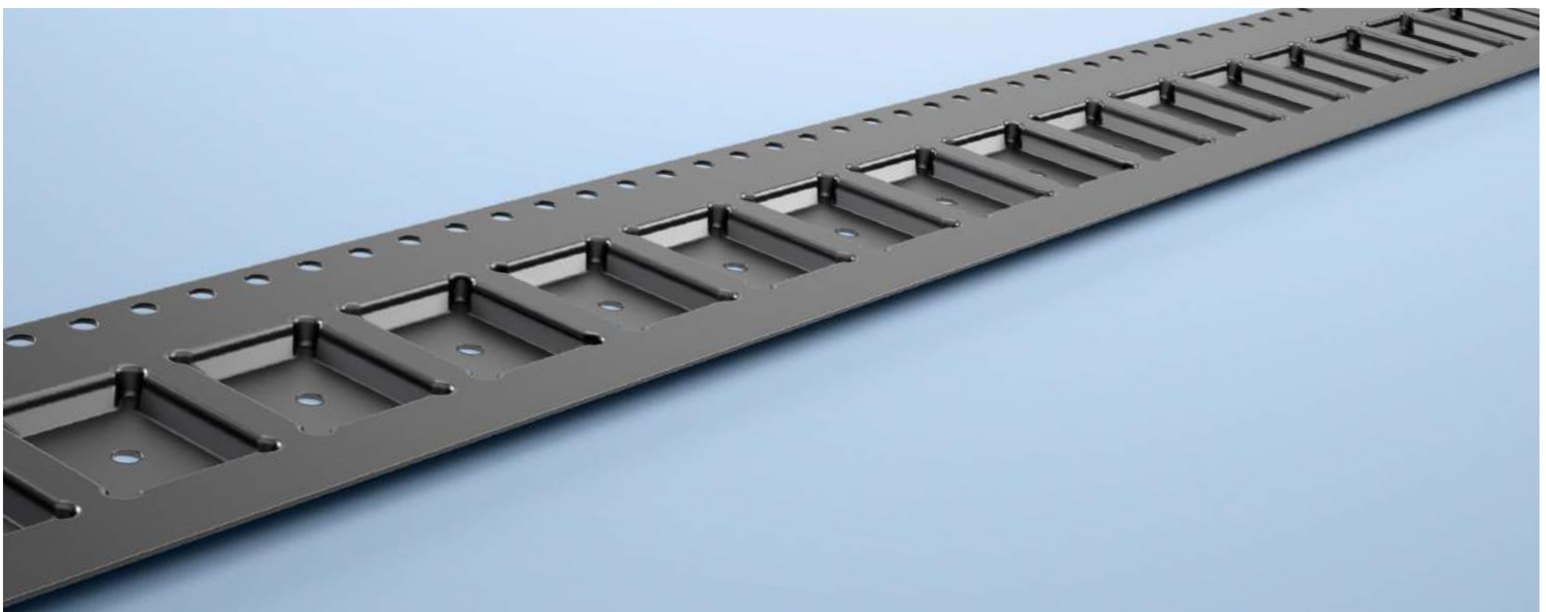
SAM Analysis helps to identify internal dimensions, cracks, voids, delaminations and interface quality issues that are characteristic of reused components.

Scanning Electron Microscopy (SEM)

SEM analysis measures and evaluates the surface of materials, surface pitting, failure analysis and contaminants.

X-Ray / XRF

Micross utilizes state-of-the-art X-Ray Technology techniques including in-tape inspection utilizing Reel-to-Reel Technology to inspect for peppering of Counterfeit ICs. Elemental analysis (XRF) is used to determine ROHS compliance and plating thickness.



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Micross Clearwater
Quality and Contact Information

Quality and Certifications

Micross Clearwater is an independent third-party ITAR-Registered counterfeit mitigation lab that performs screening of customer-supplied components. In business for over 40 years, Micross has earned a sterling reputation for upholding strict standards for quality and reliability.

- ANSI/ESD-S20.20:14
- AS9100 / ISO 9001
- DLA Certified
  - AS6081:A1,A3,A4,A5,A6
  - FSC 5962 Limited Electrical Test per QTSL-5961 / 5962 3.1.3
- MIL-STD-750 - Test Methods
  - 3001, 3011, 3036, 3041, 3061, 3066, 3071, 3076, 3406, 3407, 3411, 3413, 4001, 4011, 4016, 4021, 4022, 4023

Contact Information:

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Industry-leading provider of Component Modification Solutions driven by proprietary processes and innovative technologies

COMPONENT SOLUTIONS

- Robotic Hot Solder Dip (RHSD)
- BGA Reballing
- Lead Attach
- Trim & Form and Reconditioning

TEST & INSPECTION

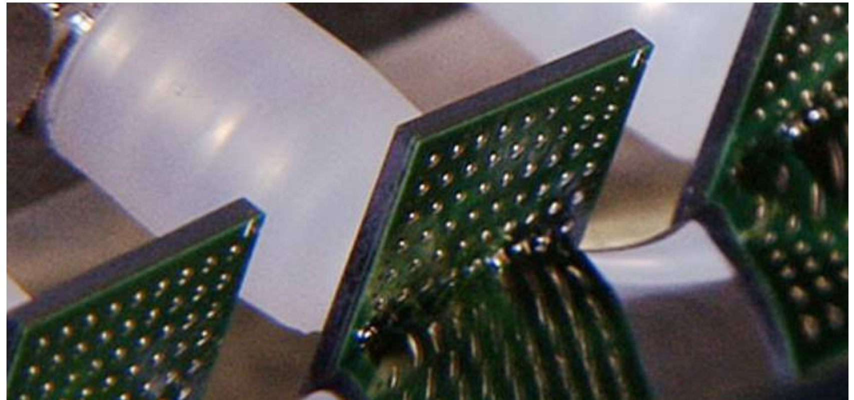
- Fine & Gross Leak Testing
- Acoustic Microscopy
- X-ray Inspection
- X-ray Fluorescence Analysis

PCB SOLUTIONS

- Assembly
- Rework
- Repair
- Component Harvesting

SUPPORT SOLUTIONS

- Tape and Reel
- 3D Scan
- Bake and Package
- Marking & Labeling



BGA Reballing

Robotic Hot Solder Dip

ROBOTIC HOT SOLDER DIP

- **Established Center of Excellence in Manchester, NH (63,000 sq. ft.)** & pioneered Robotic Hot Solder Dip Technology (RHSD) since 1984.
- Unparalleled robotic capacity supporting industry-leading quality & lead-times.
- Robotic Hot Solder Dip (RHSD) for Tin Whisker Risk Elimination, Gold Removal and Restoration of Solderability
- RoHS Compliance – removes SnPb & replaces it with SAC305 or specified alloy
- Post-Process Testing: Solderability, XRF Solder Characterization, Ionic Cleanliness
- Proprietary ultra-flat finish for bottom termination packages (QFN, MLF, LCC)

TIN WHISKER ELIMINATION per automated process removes 100% of the pure tin and replace with SnPb (tin-lead) **RHSD per:** GEIA-STD-0006 and Nadcap AC 7120

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Micross is the global one-source provider of Bare Die & Wafers, Advanced Interconnect Technology, Custom Packaging & Assembly, Component Modification Services, Electrical & Environmental Testing and Hi-Rel Products to manufacturers and users of semiconductor devices. In business for more than 40 years, our extensive hi-reliability capabilities serve the Aerospace & Defense, Space, Medical and Industrial markets. Micross possesses the sourcing, packaging, assembly, engineering, test and logistics expertise needed to support an application throughout its entire program cycle.

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