

Microwave laboratory

ALTER

Experts in design, packaging and testing
of high reliability components

ALTER TECHNOLOGY GROUP has accumulated significant experience over more than 30 years participating in many ESA projects, and for Space agencies worldwide.

MAIN ACTIVITIES:

- ❑ EEE engineering, testing and procurement
- ❑ Microwave design, packaging and test
- ❑ Certification of equipment.

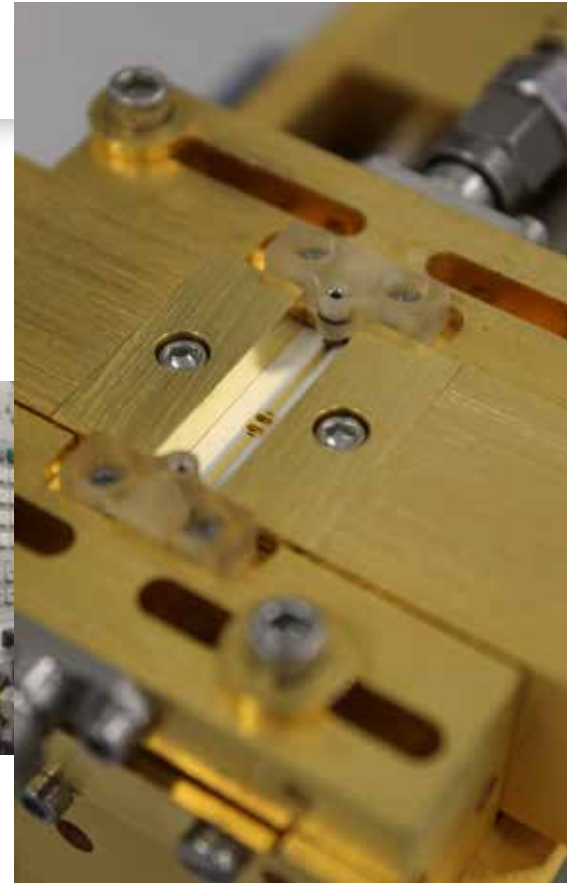


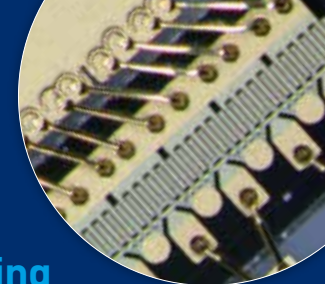
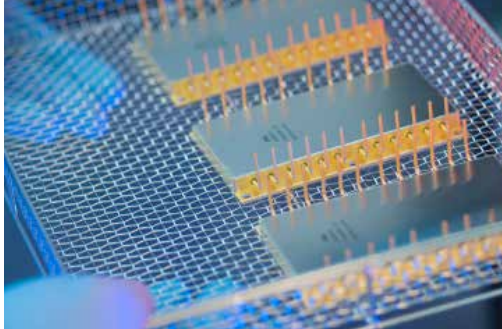
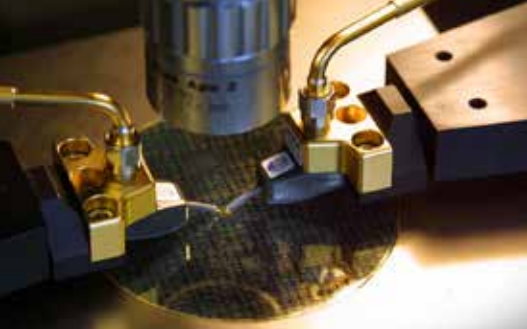
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Packaging & Assembly

All the capabilities required for the assembly and testing of MMICs.

Our expertise in packaging solutions spans the full product life-cycle: from design through prototyping, process optimization, product qualification, failure analysis, volume manufacturing and transfer to low-cost volume manufacture.

Our list of services covers a wide variety of activities:

- **Die Attach:** using epoxy or eutectic materials, our non-contact handling process for MMIC dies
- **Flip-Chip & Au Stud Bumping** for bare die or wafer scale with a variety of sizes and materials and shapes.
- **Wire bonding:** Gold ball, Wedge- Wedge, Ribbon bonding with optimal wire bond length & loop profile.

Engineering Expertise

In-house design, manufacture, and test of:

- ✦ Test fixtures for solderless measurements.
- ✦ MW PCB boards with controlled impedance routing.
- ✦ Customize calibration kits for MW devices.
- ✦ Impedance matching networks.
- ✦ Complex test setups for electrical characterization.

The know-how of our PhD and engineers is capable of supporting **any microwave technology**: microstrip, coaxial, rectangular waveguide,...

Test Services

With a **highly trained team of testing engineers** we are able to offer a wide variety of microwave lab services. From the smallest passive part to the most complex integrated components, we achieve a high level of services and outstanding testing reliability.

Main Test Services:

- ✦ Characterization of multiport MW devices.
- ✦ On-wafer measurements
- ✦ Radiation Testing
- ✦ Burn-in and life tests.
- ✦ Temperature cycling.
- ✦ Thermal shock.
- ✦ HAST (pressure cooking).
- ✦ Humidity test 85/85.
- ✦ Vibration testing.