

aerospace security automotive telecommunication

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Experts on engineering,
procurement and
testing of high reliability
components and
electronic equipment



ALTER
TECHNOLOGY GROUP

TÜV NORD GROUP

www.altertechnology.com

ALTER TECHNOLOGY, is the European leader in engineering and test for EEE components and equipment, within the space and other high technology markets.

Our quality policy ensures the highest quality standards, currently accredited by ENAC and certified ISO 9001, EN 9100, ISO 14001 and OHSAS 18001. Our internal policy demands continual improvement, guaranteeing state-of-the-art processes and technologies.

SERVICES

EEE PARTS PROCUREMENT

We successfully help our customers, to comply with the budget, schedule, technical and quality requirements of their product by providing a full range of services.

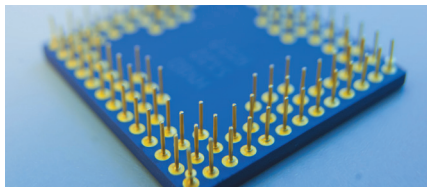
Our services cover the entire process, parts engineering, parts ordering, ITAR management, inspections, failure analysis, storage, non-conformance management, etc., providing parts ready for integration into the final equipment.



TESTING OF ELECTRONIC AND OPTOELECTRONIC COMPONENTS

We have extensive experience in the development, design and performance of test plans. As a brief summary we can perform the following testing across a wide range of EEE components:

- ✚ Reliability and Environmental Testing
 - Full characterization (room + temperature extremes)
 - Specific testing of parts at very extreme temperature [-190°C to +350°C] including vacuum conditions
 - Screening, burn-in, life testing
 - Counterfeit screening
 - Environmental, endurance testing
 - Thermal vacuum
 - Mechanical testing
- ✚ Radiation
 - Radiation engineering
 - Gamma radiation testing
 - Heavy ion testing
 - Proton, laser and neutron testing
 - Development of combined tests (radiation + vacuum + thermal)



- ✚ Materials analysis and acceptance inspection
 - DPA, failure analysis, constructional analysis
 - Optical and infrared inspection
 - Real time radiographic inspection, 3D and virtual microsectioning capabilities
 - Scanning acoustic microscopy (SAM)
 - Scanning electron microscopy (SEM)
 - EDX and XRF microanalysis for prohibited materials or material identification
 - FIB microsectioning for dice inspection, TEM inspection
 - Plasma and reactive ion etching
 - Lock-in thermography

PACKAGING DESIGN

- ✚ Optical modelling
- ✚ Package design
- ✚ Thermo-mechanical modelling
- ✚ Design for manufacturing

ASSEMBLY CAPABILITY

- ✚ Wafer processing
- ✚ Pick and place
- ✚ Die attach
- ✚ Gold stud bumping
- ✚ Flip chip
- ✚ Wire bond
- ✚ Encapsulation
- ✚ Fibre align

TESTING AND CERTIFICATION OF EQUIPMENT AND SYSTEMS

The accredited laboratory covers:

- ✚ EMC and radio testing
- ✚ Safety testing
- ✚ Mechanical and environmental testing
- ✚ IEC/EN, FCC, MIL-STD and RTCA-DO standards
- ✚ Reliability engineering & functional safety
- ✚ Certification of security products for alarm systems
- ✚ Management of CE marking in complex systems