

NEWSPACE MARKET · COMPANY PROFILE

ALTER

ALTER Technology

Spain · founded 1986 · semiconductor.altertechnology.com

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WITH DATASHEETS

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as of 20 August 2026



ALTER Technology

ALTER Technology provides laboratory and engineering services for high-reliability Electrical, Electronic, and Electromechanical (EEE) components and equipment for space and harsh environments. The company specializes in microelectronics and optoelectronics engineering, procurement, assembly, and testing. Its services include parts engineering, logistics support, electronic design, radiation verification testing (TID, DD; SEE), electrical measurements at various temperatures, screening, qualification, destructive physical analysis (DPA), constructional analysis, failure analysis, and full characterization of electronic components at wafer, component, and system levels. They also focus on photonics for technologies such as electro-optical devices, cryogenic and space vacuum systems, image sensors, and optical communication systems. ALTER Technology serves customers in space, aerospace, defense, medical, and automotive sectors, including space equipment manufacturers and institutions like the European Space Agency (ESA). The company's journey began with TECNOLOGICA in Spain in 1986, followed by acquisitions in France, the UK, and Italy. Since 2011, it has been integrated within the TÜV NORD GROUP. Facilities are located across Spain, France, Germany, and the UK, totaling 8,500 m² of laboratories. They have been involved in projects such as ADM-AEOLUS, BEPI Colombo, Galileo, Meteosat, Juice, Ariel, and LISA. The company holds certifications and accreditations including ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, and ISO/IEC 17025:2017, and is ENAC accredited for testing and compliance services. They have been audited by organizations such as ESA, CNES, and DLA.

This profile is generated from the live NewSpace Market catalogue. Specifications are as published by the manufacturer; every product links to a page where a request for quotation reaches the company directly.

SERVICES

Services

Component Qualification Rigorously assess and certify the reliability and suitability of EEE components for space missions and other high-demand applications.	Electrical Testing Evaluate the performance, reliability, and safety of electronic components and systems through various electrical tests.
Environmental Testing Evaluate the durability and reliability of electronic components, materials, and systems under extreme environmental conditions.	Microelectronics and Optoelectronics Engineering Provide engineering solutions for microelectronics and optoelectronics components and equipment for space and harsh environments.
Virtual LAB Access Provide real-time remote visualization of tests performed in the Hi Rel Laboratory.	

Product catalogue

ALTER TECHNOLOGY

Component Qualification Services

ALTER Technology rigorously assesses and certifies EEE components for space missions through failure analysis, counterfeit detection, constructional analysis, destructive physical

Failure Analysis	Root cause investigation of component failures
Counterfeit Detection	Identification and elimination of counterfeit components
Constructional Analysis	Internal structure evaluation for design integrity
DPA	Detailed examination of internal failures and manufacturing defects
Lot Acceptance Testing	Batch compliance verification
Additional Services	MSL assessment, PEM qualifications, COTS qualification, re-lifing, screening, upscreening

price on request



ALTER TECHNOLOGY

Cryogenic and Space Vacuum Testing

ALTER Technology provides cryogenic and space vacuum testing services using deep vacuum chambers and cryostats to qualify image sensors, photonic devices, and quantum systems for s

Test Environment	Deep vacuum and cryogenic temperatures
Quantum Applications	Single-photon detectors, superconducting circuits, entangled photon sources
Qualification Tests	Outgassing behavior, thermal contraction, mechanical integrity
Custom Setups	Specialized vacuum chambers and cryostats with controlled temperature and pressure

price on request

ALTER TECHNOLOGY

Electrical Testing for EEE Components

ALTER Technology provides accredited electrical testing for electronic components including ESD testing up to 16.5 kV, LCR characterization up to 3 GHz, high-power dielectric testi

ESD Testing Capability	Up to 16.5 kV
ESD Standard	EN 61000-4-2
ESD Modes	Contact and air-discharge
Dielectric Withstanding Voltage	Up to 12 kV
LCR Characterization Frequency	Up to 3 GHz
Temperature Range	-80 °C to +200 °C
Bias Current Measurement	Femtoampere-level

price on request



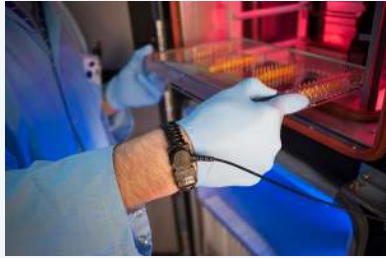
ALTER TECHNOLOGY

Electronic Design Services

ALTER Technology provides comprehensive electronic design services from concept to manufacturing, including PCB design (FR4, IMS, flex), FPGA design, RF design, power electronics,

PCB Substrate Types	FR4, IMS, flexible, rigid-flex
Assembly Methods	Through-hole and surface-mount, selective and reflow soldering
Design Capabilities	Analog, mixed-signal, digital, RF, high-frequency, power electronics
Power Electronics	DC/DC and DC/AC converters
FPGA Design	Advanced processing for automotive and aerospace
EMC Testing	Radiated and conducted EMC
Software Tools	Altium Designer, Autodesk Inventor

price on request



ALTER TECHNOLOGY

Environmental Testing for Space Components

ALTER Technology provides ENAC-accredited environmental testing simulating temperature, humidity, mechanical stress, and radiation conditions for space and high-reliability electro

Thermal Tests	Accelerated bias aging, cryogenic evaluation, HAST, humidity, temperature cycling, thermal
Mechanical Tests	Mechanical testing, preconditioning, radiation testing, salt atmosphere testing
Compliance Tests	IP testing, EMC testing
ENAC Accreditation	345/LE 809
EMC Directive	Notified Body for 2004/108/EC
International Recognition	NIST (USA), RRA (South Korea), NATA (Australia)

price on request

ALTER TECHNOLOGY

ESA Space Test Center

ALTER Technology operates an ESA-certified space test center per ECSS-Q-ST-20-07C for validation of small satellites and their components, offering environmental, EMC, vibration, s

Certification Standard	ECSS-Q-ST-20-07C
Parent Organization	TÜV NORD GROUP
Testing Capabilities	Thermal vacuum, vibration, shock, EMC
Digital Platform	doEEEt.com – high-reliability parts data with radiation tolerance filtering
Services	Parts selection, COTS assessment, custom packaging, qualification management, component st

price on request



ALTER TECHNOLOGY

Image Sensor Solutions for Space

ALTER Technology develops and qualifies custom camera systems and image sensor solutions for aerospace and scientific applications, including radiation testing, cryogenic character

Radiation Tests	TID, TNID, SEE (heavy ions and protons)
Test Environments	Radiation, vacuum, cryogenic temperatures
Packaging Options	Hermetic sealing, precision placement, thermoelectric cooler integration
Application Range	Machine vision to deep-space exploration

price on request



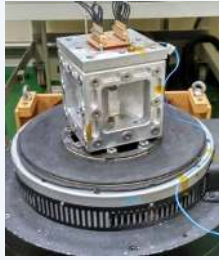
ALTER TECHNOLOGY

Materials and Processes Laboratory

ALTER Technology's Materials & Processes Lab offers cross-section analysis, PCB qualification, crimp quality services, advanced materials analysis (SEM-EDS, Raman, FT-IR, XPS),

PCB Standards	IPC-A-600, IPC-A-610, ECSS-Q-ST-70-60C, ECSS-Q-ST-70-61C
Crimp Standard	ECSS-Q-ST-70-26C
Materials Analysis Techniques	SEM-EDS, Raman Microscopy, FT-IR, XPS
Coating Characterization	Tg, CTE, layer thickness, surface energy, adhesion, roughness
Non-Destructive Inspection	C-SAM (Scanning Acoustic Microscopy), 2D X-ray, 3D CT
Accreditation	ENAC ISO/IEC 17025:2020, ESA Category A, ISO 9001, AS9100
Microsectioning Accreditation	Only ENAC-accredited ISO/IEC 17025:2017 lab for microsectioning inspection

price on request



ALTER TECHNOLOGY

Mechanical Testing for Space Components

ALTER Technology provides vibration, shock, and constant acceleration testing for space components to validate structural integrity under launch and operational stress, with capabi

Constant Acceleration Capability	Up to 50,000 g
Vibration Test Types	Sine, random, sine-on-random, random-on-random
Vibration Standards	ECSS-Q-ST-70-08C, ECSS-Q-ST-70-38C, EN 60068-2-6, EN 60068-2-64, ISO 19683, EN 61373
Shock Methods	Classical mechanical shock, Shock Response Spectrum (SRS)
Shock Standards	EN 60068-2-27, MIL-STD-202, MIL-STD-883, ECSS-Q-ST-70-38C, ISO 19683
Constant Acceleration Standards	MIL-STD-883 Method 2001, MIL-STD-202 Method 212, ECSS-Q-ST-70-08C
Electrical Monitoring	During and post-test

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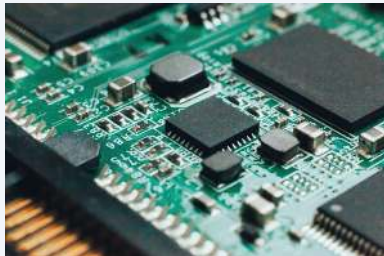
ALTER TECHNOLOGY

Optical Communication Systems

Alter Technology develops space-grade optical transceiver modules for intra-satellite communications and VCSEL-based optical interconnects for satellite onboard processors.

Data Rates (per channel)	28 to 56 Gb/s
Channels	Multiple configurations
Application	Intra-satellite communications, Satellite onboard processors
Funding/Project	European Space Agency (ESA), EU-funded SIPHODIAS project

price on request



ALTER TECHNOLOGY

Parts Engineering and Product Assurance

ALTER Technology provides EEE parts engineering and product assurance across the complete lifecycle of space unit design, covering Declared Component Lists, radiation engineering,

Standards Compliance	ECSS-Q-ST-60C
Radiation Tests	TID, TNID (displacement damage), SEE
Radiation Software Tools	OMERE, CREME96, FLUKA, FASTRAD
Mission Types Supported	LEO, GEO
Review Phases Supported	PDR, CDR, MRR, TMR
Training Platform	ESA Learning Hub (since 2021)
Experience	25+ years in space sector

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ALTER TECHNOLOGY

Photonic Integrated Circuit (PIC) Characterization

ALTER Technology provides comprehensive characterization, testing, qualification, packaging, and reliability assessment services for Photonic Integrated Circuits (PICs) for space,

Testing Capabilities	Optical characterization, thermal cycling, radiation testing
Quantum Technologies	QKD, quantum processors, atomic clocks, gravimeters, single-photon detectors
Packaging Services	Optical alignment, thermal management, mechanical robustness
Quantum Projects	QUEST, SLAM, rAmpart, QPICPAC

price on request



ALTER TECHNOLOGY

Photonics Components Testing

ALTER Technology provides a full suite of photonics component testing including optoelectronic characterization, environmental and mechanical testing, precision optical alignment,

Spectral Range	UV to mid-infrared
Thermal Cycling Range	-263 °C to +430 °C
Optical Alignment Accuracy	Sub-micron
Cleanroom Class	ISO-5 (Class 100)
Characterization Equipment	Tunable lasers, integrating spheres, spectrum analysers
Alignment Hardware	High-resolution actuators and rotation stages

price on request



ALTER TECHNOLOGY

Procurement Engineering for Space EEE Components

ALTER Technology provides coordinated and direct procurement engineering for space EEE components, including Declared Component List management, supplier audits, incoming inspectio

Procurement Approaches	Coordinated Parts Procurement (CPPA), Direct Procurement
Primary Customer	ESA satellite projects (CPPA)
Documentation	PADs, procurement specifications, test plans
Testing Services	Incoming inspection, DPA, screening, evaluation testing, LAT, re-lifing
Compliance	ITAR compliance management
Additional Services	Obsolescence management, manufacturer audits, storage solutions

price on request



ALTER TECHNOLOGY

Radiation Test – RADLAB

ALTER RADLAB provides comprehensive radiation testing for EEE components used in space and high-reliability applications, covering total ionizing dose, heavy ion, proton, laser, an

TID Dose Rate	>100 Krad(Si)/h
TID Source Type	Cobalt-60 (panoramic, cell, and pool sources)
TID Biasing Modes	Static and dynamic biasing
Heavy Ion Effects Tested	SEU, SET, SEL, SESB, SEB, SEGR, SEFI
Additional Test Methods	Proton (SEE and displacement damage), laser pre-qualification, neutron (accelerated soft e
Certifications	UNE-EN 9100:2010, UNE-EN-ISO 9001:2008, UNE-EN-ISO/IEC 17025:2005, DLA-MIL, ENAC No. 345/L
Remote Monitoring	Yes

price on request [datasheet](#)



ALTER TECHNOLOGY

RF & Microwave Testing

ALTER Technology provides a full set of RF and microwave testing activities covering traditional low-frequency EEE components and microwave devices across 300 MHz to 300 GHz, inclu

Frequency Range	300 MHz to 300 GHz
Technology Coverage	MMIC, microstrip, coaxial, rectangular waveguide
Design Methods	Distributed circuit elements, transmission-line theory
Markets Served	Space, aerospace, defense, high-reliability

price on request



ALTER TECHNOLOGY

TAB@PLUS Long-Term Conservation System

TAB@PLUS is a proprietary controlled-atmosphere system for preserving electronic components for up to 50 years, actively suppressing aging mechanisms rather than merely slowing the

Preservation Duration	Up to 50 years
Core Technology	Controlled atmosphere with absorbers and temperature-managed diffusion control
Protection Mechanisms	Eliminates harmful gases, blocks intermetallic growth, multi-layer functional packaging
Monitoring	Cyclical monitoring and analysis with continuous validation
Supported Item Types	Displays, assemblies, devices, wafers, dies
Degradation Risks Addressed	Diffusion processes, intermetallic phase growth, volatile outgassed compounds, corrosion,
Provider	HTV ALTER TECHNOLOGY GmbH (TÜV NORD Group)

price on request



ALTER TECHNOLOGY

Vibration Testing for Space Hardware

ALTER Technology provides specialized vibration testing to validate space component and package reliability under sine, random, and shock conditions simulating rocket launch and op

Vibration Types	Sine, random, shock
MIL-STD-883 Methods	2002, 2005, 2006, 2007, 2026
MIL-STD-750 Methods	2016, 2046, 2051, 2056, 2057
MIL-STD-202 Methods	201, 204, 213, 214
ECSS Standards	ESCC 3401, ESCC Q-ST-70-38, ECSS-Q-ST-70-08C
IEC Standards	EN-60068-2-6:2008, EN-60068-2-27:2011, EN-60068-2-64:2008
Other Standards	MIL-STD-810, RTCA-DO-160

price on request

[datasheet](#)

Contact ALTER Technology

Open the company profile on NewSpace Market to see full specifications and datasheets, and to send a request for quotation that reaches the manufacturer directly.

<https://newspacemarket.com/companies/alter-technology/>

<https://semiconductor.altertechnology.com>

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