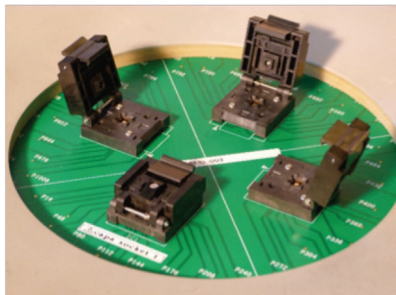


## Presto Engineering ESD Services

**Presto Engineering's ESD Services cover all aspects of electronic device reliability qualification with fast turnaround time.**

Electrostatic discharge (ESD) testing is performed early in the qualification cycle, usually at first-silicon. Evolution in technology and applications (RF, analog) constantly drive new configurations, usage patterns and failure modes.

Our experts have considerable expertise in the field, sitting at the industry's top certification consortia and organizations. With decades of experience in performing stress tests on a broad range of devices, our teams are quick to establish the right stress protocol and, most importantly, identifying failure mechanisms when they occur—leveraging our advanced, in-house failure analysis labs.



### A Proven Methodology

We have performed more than 10,000 ESD jobs and combine more than 100 man-years of experience across our labs worldwide. Our standard flow includes:

- Identification of mission profile
- Selection of fixturing
- Test execution
- Reporting

We support all type of electrical stresses:

- HBM/MM
- Latch-up
- CDM
- TLP
- Gun
- PPW
- OVS

### Wide Range of Supported Standards

IC level:

JEDEC, AEC, ESDA, ANSI

Market specific:

MIL, AEC, ESCC, ISO (AUTO)



### Fast Turn-around Time

Since concerns over ESD reliability usually come early in the development cycle, typically after first silicon, we pride ourselves with very fast turn-around times, giving real-time feedback to design and product teams.

This is made possible by our very comprehensive inventory of fixtures and adapters—more that 850 of them. Most packages can be accommodated by one of our existing boards/sockets, alleviating the need for extra design time and/or NRE.

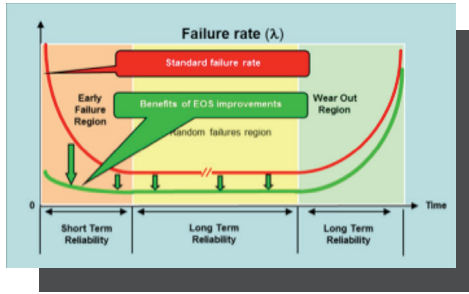
Our ESD labs are located in each of our world-wide hubs: San Jose, CA; Caen, France; and Migdal Haemek, Israel.

### Over Voltage Stress (OVS)

Beyond peak voltage stress, industry practices are quickly evolving towards a new kind of electrical stress that verifies the robustness of devices to sustained energy dissipation, leading to absolute maximum rating (AMR) qualification.



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Together, with leading automotive customers, Presto Engineering has developed a unique, fully-automated system that assesses and validates AMR.

### Failure Analysis

Our hubs include failure analysis labs that constantly address issue and failures during reliability qualification, including ESD/EOS failure. Our ESD experts and capabilities in these labs ensure that reaction time to failure is extremely fast.

### Consulting and Audits

Beyond stressing devices, our experts will help you understanding the best stress strategies and set-up for your mission profile(s), as well as

consult with you on the best design strategies for ESD protection.

Based on their experience of operational audits, our experts can also help you in assessing and improving ESD integrity and guidelines.

### ESD Services Standards

- ESD-HBM (JEDEC JESD22-A114, ESDA ANSI/ESD STM5.1, MIL 883G/3015-7, AEC Q100Rev G/002D; SPACE/23800)
- ESD-MM (JEDEC JESD22-A115A, ESDA ANSI/ESD STM5.2, AEC Q100Rev G/003E)
- ESD-CDM (EDEC JESD22-C101D, ESDA ANSI/ESD STM5.3.1, AEC Q100Rev G/011B)
- ESD-TLP (ESDA ANSI/ESD STM5.5.1)
- ESD-GUN-HMM (ESDA ESD WIPS 5.6)
- EMC-ESD-GUN (IEC 61000-4-2, ESDA ANSI/ESD STM5.5.1, AEC Q100Rev G/ISO 10605)
- Latch-up (JEDEC EIA/JESD78B, ESDA ANSI/ESD SP5.4, MIL 883G/ 3023.1, AEC Q100Rev G/ 004C)
- Over Voltage Stress (OVS; IEC 60134)
- Absolute Maximum Rating (AMR)

### About Presto Engineering - an ISO 9001:2008 and ISO 17025 company

Presto Engineering provides comprehensive semiconductor product engineering and production solutions to IDM, fabless and electronics companies, contributing to improving ramp time, margins and quality of new products.

We are recognized experts in the development of test solutions, for component characterization and production. This expertise, combined with state of the art ESD, reliability and failure analysis capabilities, produces a competitive advantage for our customers in optimizing end-product performance, including accelerating time to market. We offer turn-key solutions from customer tape-out to delivery of finished goods to end-customer(s), including assembly, test, qualification, industrialization, and production sustaining activities.

Presto Engineering is headquartered in San Jose, California and has operations in Europe. Additional information is available on the company's website at [www.presto-eng.com](http://www.presto-eng.com).

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