



RELIABILITY LABORATORY

- *We provide a large range of services (details are given in next page)*

- *You can **trust us** because:*

... *We have modern equipment, purchased in 2008-2009*

15 machines purchased by Romanian projects for infrastructure development

... *We know how to do things*

More than 30 years in delivering high reliability electronic components and in reliability testing of microelectronic devices and electronic components

... *We are included in European scientific networks*

The Laboratory is member of the network "European Microsystem Reliability EUMIREL", aimed to deliver reliability services about micro- and nanosystems, established in 2007, and was partner of the European Network of Excellence "Patent-DfMM" (FP6/IST project, 2004-2008)



We are the cheapest and safest solution for you!

OFFER ON RELIABILITY SERVICES

About Microelectronic components, Microsensors, MEMS and Nanostructures

Technological and scientific services:

- **Testing at unique or combined stresses**, including calculation of failure rate and other reliability indicators with soft ALTA6 (ReliaSoft); The technical data are indicated in the table:

Test	Technical data
Thermal cycling	2 chambers of 11 litres each: Low temp. (-65...0°C) and High temp. (+60...200°C), Temperature fluctuations: $\pm 2^\circ\text{C}$; Heating duration: 15 min (-65°C...150°C)
Pressure + Temperature	Capacity: 49 litres; Temperature range: +5°C over ambient ...+200°C ($\pm 0.5^\circ\text{C}$); Pressure range: 10...1100 mbar
Temperature + Humidity (Damp heat)	Temperature range: -40...+180°C; Speed: 5°C / min, Humidity range: 20...95%RH, between +10°C...+80°C
Thermal (+ Electrical) stress	Capacity: 53 litres; Temperature range: +5°C over ambient ...+220°C ($\pm 0,5^\circ\text{C}$); Electrical bias of sample
Vibrations + Electrical stress + Thermal stress + Humidity	Frequency range: DC...3000 Hz, Maximum moving mass: 6.8 Kg, Main resonance frequency: >3000 Hz, Climatic system: 264 litres; Temperature range: - 40 °C...+180°C ($\pm 1^\circ\text{C}$); Heating speed: 2,5 °C/min, from -30°C to +150°C; Cooling speed: 1,0°C/min, from +150°C to -30°C; Humidity range: +10%...+95% RH ($\pm 3\%$... $\pm 5\%$ RH)
Electrical stress + Thermal stress + Pressure	Highly Accelerated Stress Test (HAST), 18 litres, Temperature range: 105...142°C, Humidity range: 75%...100% RH, Pressure range: 0.02...0.196 Mpa.
Hermeticity	Bomb pressure test: 5 atm
Mechanical acceleration	Maximum 20,000g
Mechanical shock	Shock with free fall; Maximum acceleration 4500 g; Maximum height: 60 in; Maximum speed at impact: 200 in/sec; Minimum time duration: 0.3 ms
Mechanical ("Tilting") + Thermal stress	Functional testing for MEMS accelerometers, simulating the use in aero spatial and automotive applications; Thermal stress superposed on tilting

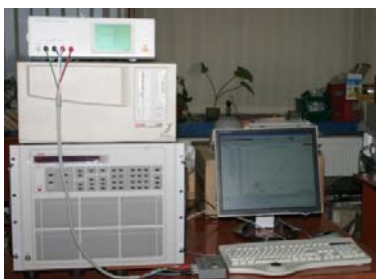
- **Electrical characterising at various temperatures:**
 - o Keithley 4200 SCS - C-V units 3532-50, DMM 2700-7700 and 2002; 6211-2182; Stimuli: Voltage CC < 100V, Current CC < 1A; Impulses: analogical signal 30V, <40MHz; Measurements: Voltage 0.5 μV , Current 1 fA;
 - o Temptronic TP04300A-8C3-11 / Thermo Stream - Temperature variation: from - 80°C to +250°C Transition time: up 7 sec, down 20 sec; Temperature control +/- 0.1°C.

Training courses on:

- Quality & reliability assurance for semiconductor devices;
- Reliability accelerated testing for MEMS;
- Failure analysis at accelerated testing;
- Characterisation of microelectronic devices and MEMS.

Consultance / technical assistance:

- Reliability analysis for all families of semiconductor devices;
- Elaborating standards and other documents for various types of electronic components;
- Qualification of semiconductor devices.



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