



Laboratory



## ELETECH TEST LABORATORY ELETECH CERTIFICATIONS & ACCREDITATION



**MEDICAL &  
HEALTHCARE**  
ISO 13485:2021



**RAILWAYS &  
TRANSPORTATION**  
ISO 22163:2023



**INDUSTRY &  
ENERGY**  
ISO 9001:2015



**ENVIRONMENTAL**  
ISO 14001:2015



**LABORATORY**  
\*ISO/IEC 17025:2017



## ELEPRINT LABORATORY ELEPRINT CERTIFICATIONS & ACCREDITATION



**RAILWAYS &  
TRANSPORTATION**  
ISO 22163:2023



**INDUSTRY &  
ENERGY**  
ISO 9001:2015



**AVIONICS &  
AEROSPACE**  
AS/EN 9100:2018



\*EMC, climatic, insulation, vibration and shock tests  
accredited ISO/IEC 17025:2017

## LABORATORY TEST SERVICES

Elemaster test laboratories stands as a reference partner for companies requiring accurate and internationally recognized verification of their products. Thanks to our know-how, we offer comprehensive engineering services, supported by certified quality systems for the industrial, railway, and medical sectors. Strengths of our service are:

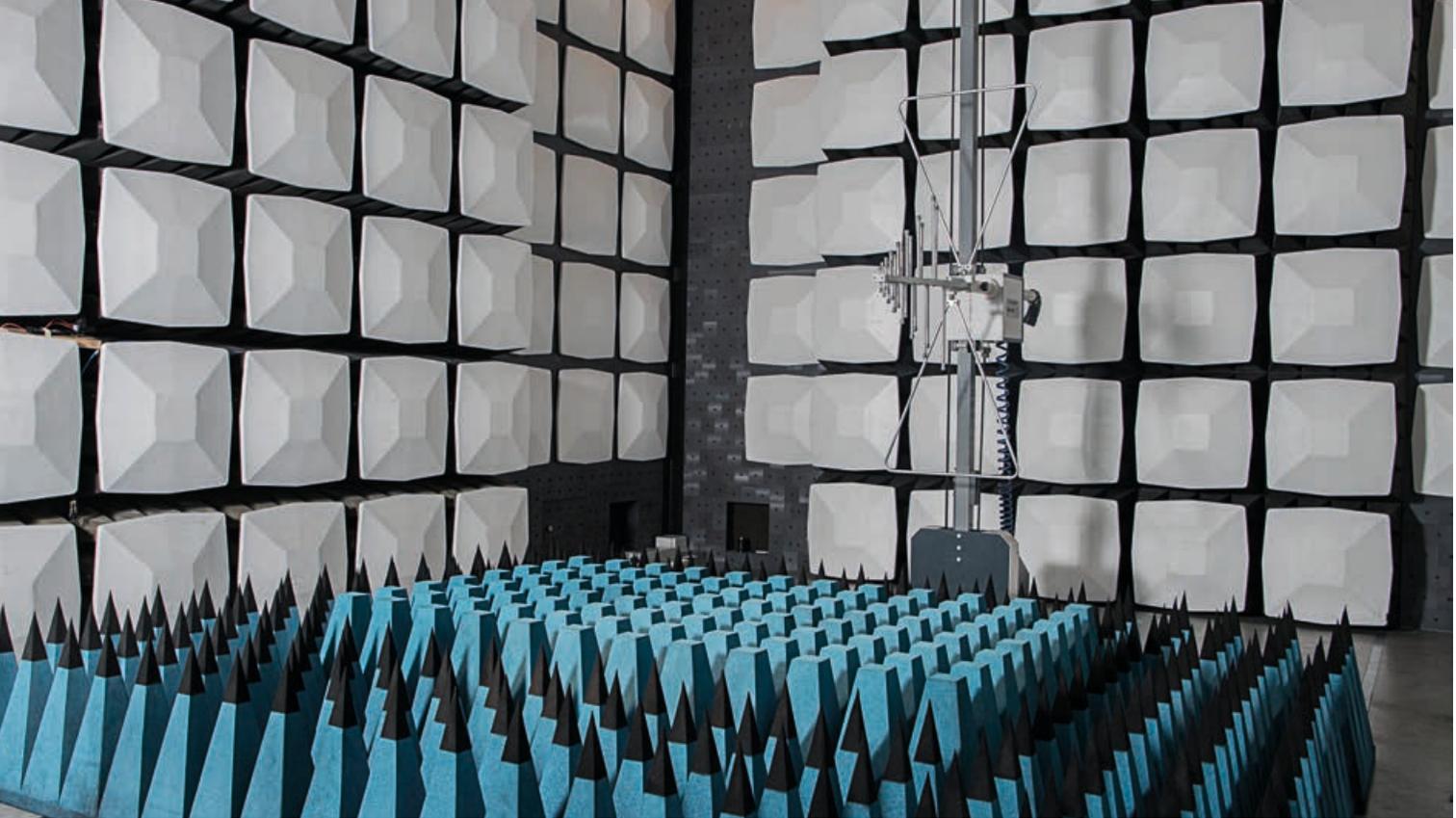
- Proven experience in complex applications
- Highly skilled technical team providing end-to-end customer support, from test planning to result interpretation
- Strategic location close to engineering hubs
- Flexibility and fast response to customer projects, positioning us as a true time to market accelerator.

Eletech Labs provide services related to **EMC, radio, safety, EMF, climatic and mechanical** tests

- Definition of Directive and technical standards applicable to the product
- Definition of the test plan
- Execution of test in accredited laboratories
- Release of Test report
- Supply of technical documentation
- Support for voluntary product certification and homologations
- Legislative updating

**ILAC** laboratory accreditation (**ISO/IEC 17025:2017** for EMC, climatic, insulation, vibration and shock tests) and certification (**ISO 9001:2015, ISO 22163:2023, ISO 13485:2021**) guarantees technical competence, impartiality, and rigorous quality in all measurement processes, ensuring test results acknowledged worldwide.

Environmental certification (**ISO14001:2015**) is the clear indication of interest in environmental protection and rational use of resources.



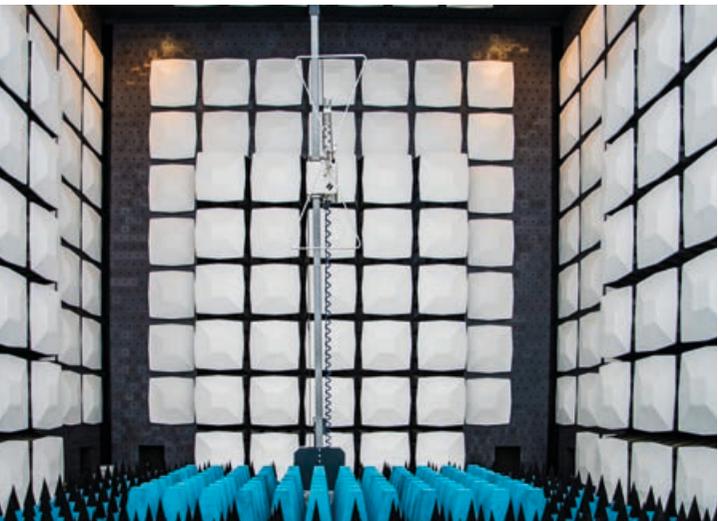
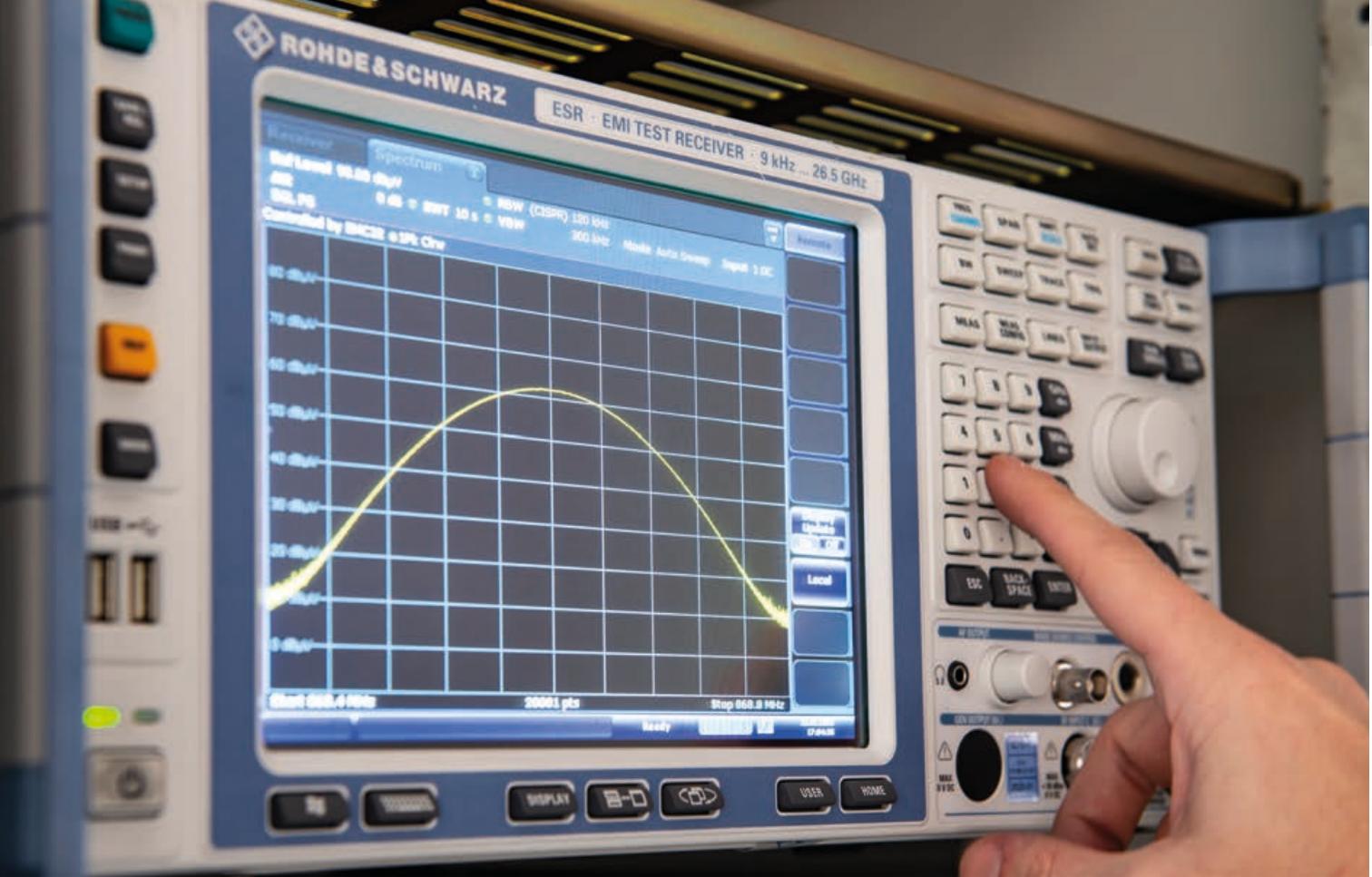


## ELECTROMAGNETICAL COMPATIBILITY (EMC)

Basic standard	Measure
EN/IEC 61000-3-3 EN/IEC 61000-3-11	Flicker, until 15kW three-phase
EN/IEC 61000-3-2 EN/IEC 61000-3-12	Harmonics, until 15kW three-phase
EN/IEC 61000-4-2	Electrostatic discharge, until 30kV
EN/IEC 61000-4-3	Radiated fields
EN/IEC 61000-4-4	Burst, Fast transient
EN/IEC 61000-4-5	Surge, high energy impulse
EN/IEC 61000-4-6	RF fields induced
EN/IEC 61000-4-8	Magnetic field
EN/IEC 61000-4-11 EN/IEC 61000-4-29	Interruption, ac/dc voltage variation
EN 55016-1-2 EN IEC 55016-1-1	Conducted and radiated emission

Product standard	Field
EN/IEC 61326-1	Measurement, control and laboratory
EN/IEC 60601-1-2	Medical devices
EN 55032 EN 55035	Information technology
EN/IEC 55015 EN/IEC 61547	Illumination
EN/IEC 55011	Industrial
EN/IEC 61000-6-1 EN/IEC 61000-6-3	Generic for residential areas
EN/IEC 61000-6-2 EN/IEC 61000-6-4	Generic for industrial areas
EN/IEC 55014-1 EN/IEC 55014-2	Domestic appliances
EN 50121-3-2 EN 50121-4 EN 50155 - EN 50121-5	Railway sector
EN 50130-4	Alarm systems
EN/IEC 60974-10	Welding equipment







## DELTA TYPE TEST FOR RADIO EQUIPMENTS

Standard	Technology	Example
ETSI EN 300 328	Wideband transmission systems	Bluetooth, Zigbee, Wi-Fi
ETSI EN 300 330	Short Range Devices (SRD): 9 kHz to 25 MHz	RFID
ETSI EN 300 220-1 /-2	Short Range Devices (SRD): 25 MHz to 1000 MHz	868MHz radio modules





## SAFETY TEST

Test	Characteristics
Absorption measure	0÷600 Vac 0÷100 A 10Hz ÷ 100kHz
Accessibility test	Different Test gauges and probes
Residual voltage measure	Oscilloscope and voltage probe
Temperatures measure in normal / fault condition	Thermocouple or thermo camera
Leakage currents measure	0÷300V 20A 0,04÷50mA
Ground resistance measure	3÷40A ac 1÷650mΩ
Insulation resistance measure	500/1000 Vdc 1÷2000MΩ
Dielectric strength test	0÷5k Vac and 0÷6k Vdc
Insulation distances measure	With hundredth gauge and CAD system
Generic test	With 20N sphere, 500g sphere, Dynamometer, dynamometric screwdrivers

### Used standards

EN 61010-1, EN 60335-1, EN 60730-1, EN 62368-1  
EN 60601-1, EN 60204-1, EN 61131-2

## EMF TEST

Human exposure to electromagnetic Fields

Reference standard	Test
EN 62479	Low Power Electronic and Electrical Appliances
EN 62311	Electronic and Electrical Appliances
EN 62233	Household appliances
EN 62493	Lighting equipments

# TS

TESI ACCREDITA  
CERT. 8462-2025\_ACCR\_EXT  
C-40-1000  
S.N. 247432 (1202100)  
T.A. 2023-06-06  
S.A.S. 2020-06-06

CLI100

ELITECH

## CLIMA TEMPERATUR SYSTEME

C-40/600  
Modo manuale

16.06.25  
10:38:03  
Stop

**Temperatura**  
Nom.: 5.00 °C  
Reale: 25.59 °C

**Aria di scarico**  
Umidità  
Nom.: 20.0 %UR  
Reale: 45.7 %UR

**Riserva d'acqua**  
Nom.: 15.0 l  
Reale: 8.0 l

TemnAriaAliment

PAUSE MANUAL PRG ALARM

START/STOP

WPAV 2D 3D 4D XRTIC CoTi RULES WPAV QMT

ARCHIVE REVIEW PHYSIO PLEX VTR  
EXAM REVIEW BIOPSY GAIN CLEAR ALL  
ADJUST

ADM S-REF HPRF

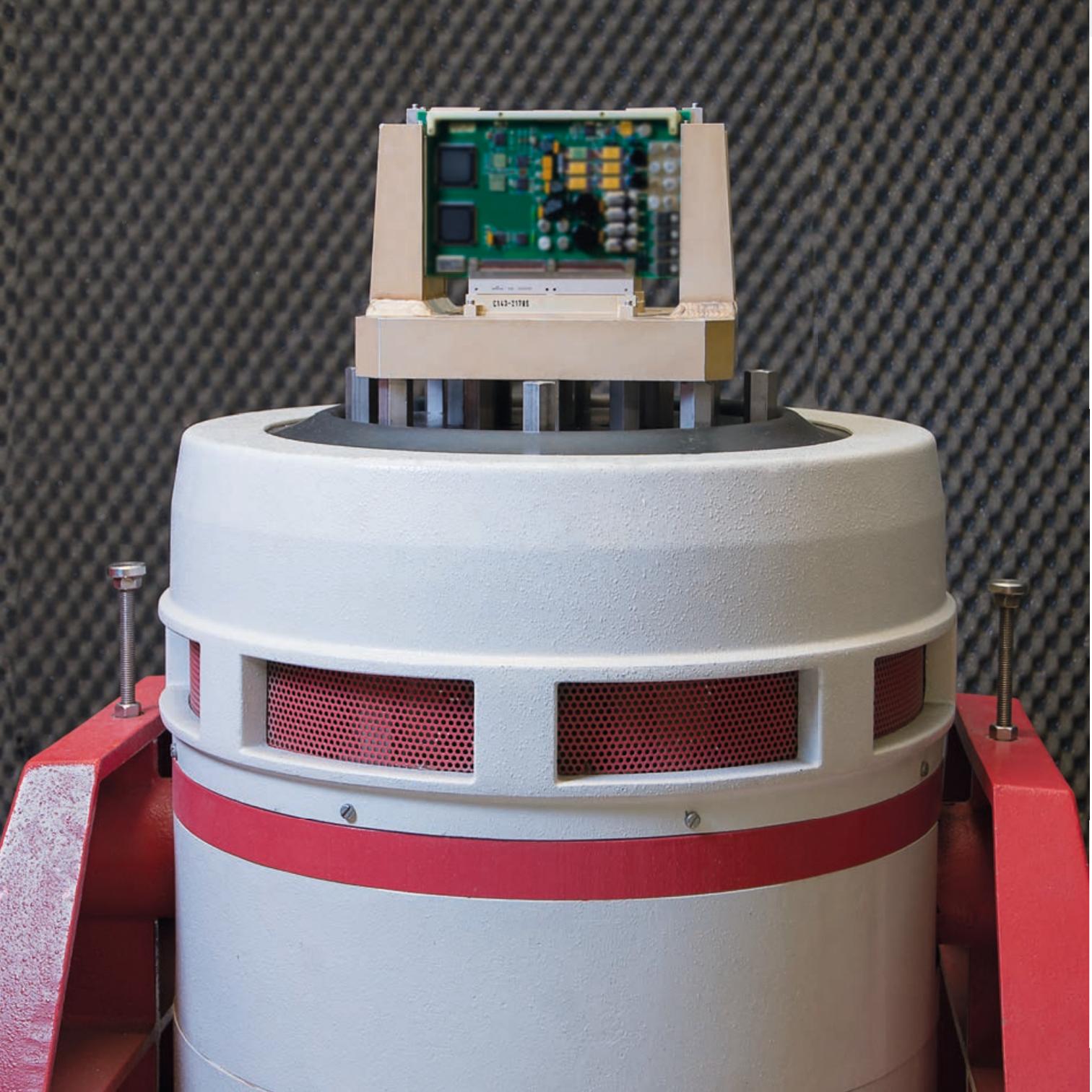
ADM SETUP FILTER 65 Hz SV SIZE 3.0 mm ANGLE 0° AUDIO 7



## ENVIRONMENT AND RELIABILITY TEST

Reference standard	Test
EN 60068-2-1	A test: cold
EN 60068-2-2	B test: dry hot
EN 60068-2-14	N test: Temperature change
EN 60068-2-30	Db test: Damp heat cyclic
EN 60068-2-38	Z/AD test: combined temperature/humidity cyclic test
EN 60068-2-78	Cab test: damp heat steady state

Temperature range:	-70 ÷ +180°C
Humidity range:	10÷98%
Max temperature gradient:	10°C/min
Maximum humidity gradient:	3%/min
Maximum burn-in test room:	3x3x h 2 m





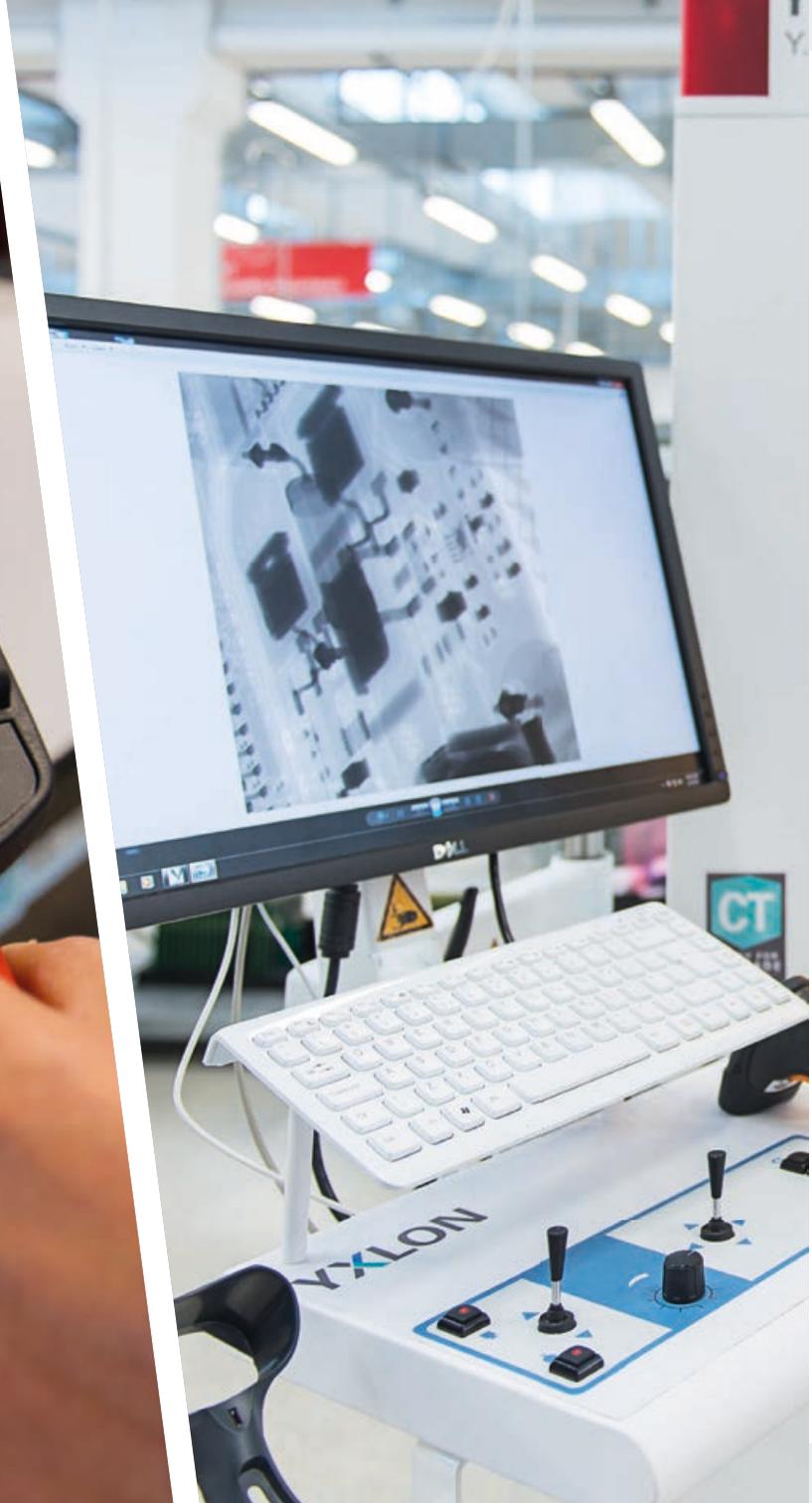
## MECHANICAL TEST

Reference standard	Test	
EN 60068-2-6	Fc Test: Vibration	Sinusoidal vibration
EN 60068-2-27	Ea Test: Shock	Half-sinusoidal, trapezoidal, triangular, saw-tooth
EN 60068-2-64	Fh Test: Vibration	Random broadband (numeric control)
EN 61373	Mechanical test	Railway field

Max dimensions in EUT: 60x60x60 cm

Max weight in EUT: 130 kg

	Vibration test	Shock test
Max force:	8896 N	8896 N
Frequency range:	2 ÷ 3000Hz	/
Shock time	/	0,5-1-6-11-18-25 msec
Max peak acceleration (sinusoidal)	75 g peak	45 g peak
Max peak acceleration (Random)	60 g rms	/
Max displacement	± 25,4 mm	± 25,4 mm





## THERMOGRAPHY

**Thermography** is a technical system that allow the possibility (using a colour map) to detect the thermal energy released by a body.

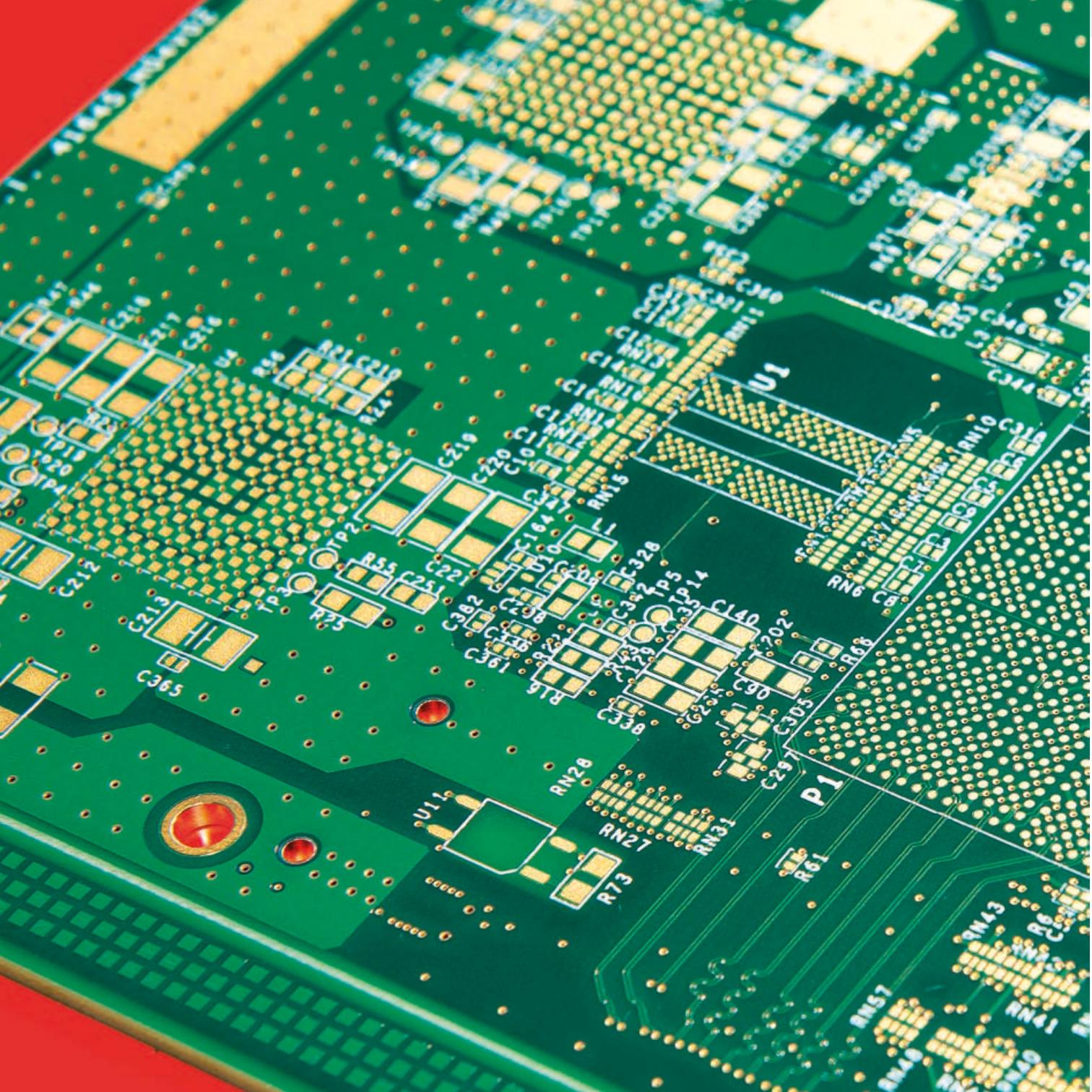
Thanks to a digital camera (thermo-camera) with a particular sensor, the thermal energy can be recognized by infrared field coming from the surfaces, it can help during check test to reduce timing and risks of damages on the components.

- Heat distribution measures
- Non-destructive test
- Machines and equipments thermodynamic
- Fault finding on printed circuits
- Fault finding
- Thermal monitoring during mechanical fatigue test
- Thermal monitoring during electric test
- Thermal monitoring during tests and safety / failure test
- Predictive maintenance



## X-RAY INSPECTION

Equipment available and IPC trained inspectors to perform production monitoring and detailed analysis vs. IPC and/or Customer requirements.



## ANALYSIS OF PCBs

Elemaster can provide further services, dedicated to the **analysis of PCBs**, through its own laboratory located in **Eleprint**, the company of the group whose core business is the Printed Circuit Boards production

The test lab in a PCB manufacturer is one of the most important things, as in this way we can guarantee the highest level of quality to all our Customers, performing several kinds of test on your products:

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### **Chemical tests**

To check your circuits, we can do:

- Qualitative data analysis of organic substances concentration by water spectrophotometric test.
- Analysis for check and management of production lines.
- Analysis of organic substances in electrolytic line by CVS.

### **Thermo-mechanical PCB analysis**

To offer you the best choice among different options, setting the ideal material which you will need to reach the exact performance that you want, and to check PCB construction and reliability, by TMA we can define:

- TG
- Delta TG
- TTD

### **Electric and electronic PCB analysis**

To keep high frequency signal integrity, we can perform:

- Electric/Electronic PCB Analysis
- PCB Impedance Control by CITS Polar instrument

### **Non destructive tests for surface coating measure and hole copper thickness**

To ensure the best level of quality on your products, we can do:

- Non-destructive thickness measure on finishing coating chemical nickel-gold, tin-HAL, by Fischerscope X-Ray
- Non-destructive measure of copper thickness in the holes (by CMI, Eddy current instrument)
- Quality acceptance evaluation provided by Certified IPC Specialists – IPC-A-600.

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All tests are performed by Certified IPC Specialists (CIS), who are able to define the suitability of all samples according to the standards IPC-A-600, class II or class III. Our internal IPC trainer CIT ensures us a high standard for all the inspections performed by operators.



**PJLA**  
Testing  
Accreditation #101188

The brochure was updated in February 2026  
to view the complete list of laboratory tests please visit [www.elemaster.com](http://www.elemaster.com)





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