



Ministry of Electronics and
Information Technology
Government of India

ADVANCED **ELECTRONICS** TEST FACILITY



Lahari: Mysore ESDM Cluster
No.336/4 & 336/5, Hebbal Industrial Area, Hebbal, Mysore - 570 016



www.lahariaetf.com



Foreword

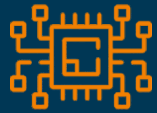
Lahari is the first in kind initiative supported by Government of India, Government of Karnataka and Indian Electronic Industry to go operational, with the goal of promoting new ideas, new designs, and new products, while gaining access to worldwide markets for the emerging electronic industry of India.

There is a strong industry-wide convictions and consensus that Lahari can meet the electronics industry's end-to-end needs like - testing, inspection, certification, and market access.

We are delighted to welcome you to Lahari and to present you with the various services we provide in terms of compliance, regulations, engineering, design, support, and counselling.

Contact us for further information, and we will be happy to assist you.





About Us

As we know, the demand for high technology electronics products has shown significant growth. In order to boost manufacturing of electronic products. In India, GOI has announced an ESDM policy to provide financial support, technological support and better market Penetration for Indian Electronic industries.

Lahari is a big wave of advanced technologies to grow Indian industry, encourage new investments, create new employment opportunities and new product designs. It is a world-class advanced electronics test centre located in the historic city of Mysore, and it is to serve the industry's different testing, quality, and regulatory needs. It assists in gaining access to more advanced technology and moving up the product value chain.

The facility is expanded over a 45k sq. ft. in the state of the art ISO17025 accredited with the capability of testing as per national & international quality standards. The facility includes the EMI / EMC, Reliability & Environmental testing Lab and component testing lab.

Lahari is to provide support to the electronic industries across country and aims to be a MODEL FACILITY to be replicated across the country.

The Facility also have dedicated space for engineering activities for iterative product improvement, resident expert consultancy services and special pricing for members. We are happy to share the top industries in the field of electronics such as Brevera, Cyient, EAPL, Implantaire, Kaynes, LTTS - L&T Technology Services, Rangsons, Skanray, Vinyas & others have joined the momentum as members of the clusters.





VISION

“ To grow and enable the Indian electronic industry to compete globally and be certified for safe, sustainable and quality products. ”

MISSION

“ To work in the interest of the Indian electronics industry to help them be compliant, create new products and new market. Through its advanced technologies and partnership, Lahari will provide all technological needs of the industry such as testings, certification for all global standards, skill development, product design consultation as end-to-end services. ”





Compete globally with certified, safe, sustainable & quality products
ALL AT ONE PLACE, AT LAHARI

World-Class Testing Facilities at Lahari

The facility and services are made available to the member companies at a very attractive pricing & preference for their time for testing. Lahari's ESDM testing facilities aims to provide support to start-ups and promote new product designs and compliance with very minimal fees.

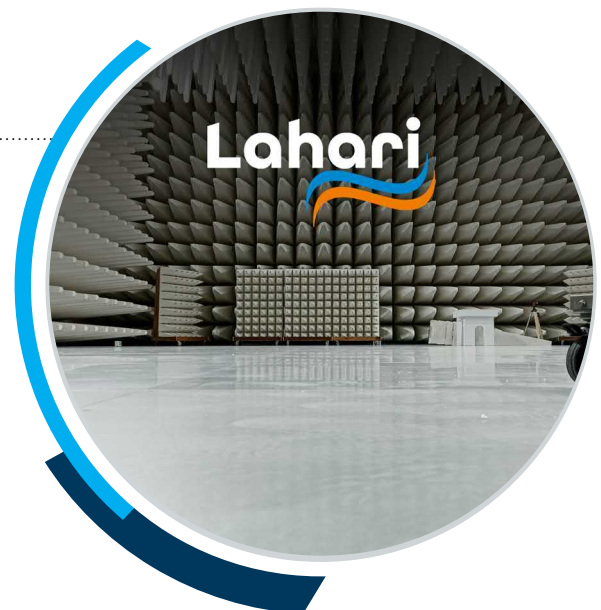
It aims to service entire electronic industries including medical devices, IT hardware (product & sub-assemblies/components), power, energy and telecom (products like invertors, switch gears, control gears, meters etc.), automotive, military and aerospace.

Lahari looks forward to partner with you for India's growth in electronic industries and create better access for both domestic and global markets and create millions of new job opportunities.

Lahari is a "ONE STOP PRODUCT DEVELOPMENT & COMPLIANCE FACILITY," dedicated to electronics manufacturing sector.

EMC TESTING FACILITY

EMC testing facilities at Lahari include 10 m Shielded Anechoic Chamber, ESD gun (Electrostatic discharge test), Multi-functional test generator and 3 phase harmonics & flicker measuring system among others. These are the best of the breed facilities offered to members and non-members of Lahari at a reasonable cost.



Mr. Vishwaprasad Alva
MD, Skanray Technologies Ltd.



"Lahari has been set up understanding the real pain points of the industry and the startups. This is an end-to-end solution for making Indian Electronics design and manufacturing companies be compliant with Global standards and get significant export revenue. It's a one-stop facility where you get in with a prototype and go out with a fully compliant, safe and certified product. Since the GOI and GOK have funded significantly, Lahari the country's first 'not for Profit' facility will subsidize the deserving Startups and help the country's Atmanirbhar Bharat goal".

At our facility, we will examine the electromagnetic compatibility(EMC) for your products in accordance with all common standards like CISPR 11/16/25/32, MIL-STD, and IEC 61000 etc.

Radiated Susceptibility: 80 MHz to 6 GHz; up to 200 V/m

Radiated Emissions: 9 kHz to 26.5 GHz

Conducted Susceptibility: 150 kHz to 400 MHz; up to 300 mA

Conducted Emissions: 9 kHz to 300 MHz

10 m Semi Anechoic Chamber (SAC)

- Internal work space Dimensions: 18.5m*12m*6.2m
- Chamber is Validated according to CISPR 16-1-4
- **NSA** is ± 3.5 db, **SVSWR** ≤ 5.5 db at 10m range and field uniformity of 0.6 db
- **Shielding effectiveness** verified according to EN 50147-1/IEEE 299
- Turn table of 5 meter diameter supports test samples of maximum 5000 kg
- A fully automatic sliding door of 4m*4m for moving the test samples
- Video monitoring and recording of the test samples
- Feed through up to AC:4*230V 16A, 2*400V 32A & DC: Up to 1000V 100A



Multi-Functional Test Generator

Any equipment with the ability for wireless communication is tested by injecting interference and monitored for the generated waveforms. Helps to analyse what is happening to the equipment's performance, which must be according to the international standards.

This simulator is for evaluating the immunity of the products against EFT, Surge, Power Magnetic field and pulse magnetic field.

Surge test according to IEC 61000-4-5:
Up to 7 kV (DC & AC: 1Φ & 3Φ)

EFT test according to IEC 61000-4-4:
Up to 5.5 kV (DC & AC: 1Φ & 3Φ)

Power frequency magnetic field test as per the IEC 61000-4-8: Up to 1200 A/m with 1m*1m Antenna

Pulse magnetic field test as per the IEC 61000-4-9:
Up to 1200 A/m with 1m*1m Antenna



Mr. Pavan Ranga

MD - Rangsons Aerospace Private Limited

"The advance test and qualification platform we have put together at Lahari is the most impactful ingredient in establishing Mysore as a center for Innovation in Electronics System Design and Manufacturing"

Voltage dips and interruptions test

Voltage dips and interruptions test conducted as per the IEC 61000-4-11 for both AC & DC



ESD Gun (Electro Static Discharge Test)

Electro-Static Discharge (ESD) Gun simulator system generates standard-conform discharge pulses of ± 200 Volts to ± 30 kV, in both air discharge and contact discharge operation as per the standard IEC 61000-4-2



Mr. Narendra Narayanan
 Founder & MD, Vinyas Innovative Technologies Pvt Ltd

"We took one of the best decisions to be part of Lahari. It is one-stop solution for all things related to testing and certification. We are happy about it."



Get Testing, Certification, Product Design & Consulting
ALL AT ONE PLACE, AT LAHARI

3 Phase Harmonics & Flicker Measuring System

It is an accurate and flexible three-phase system designed to measure harmonics & flicker.

Harmonics : IEC61000-3-2 & IEC61000-3-11

Flickers: IEC61000-3-3 & IEC61000-3-12

ENVIRONMENTAL TESTING FACILITIES

Lahari's environmental testing* facilities includes environmental chambers of 32/64 CFT volume, walk-in chamber of 1200 CFT volume, Hot air oven, salt corrosion test, Combined Altitude Temperature and Humidity (CATH) chamber, HALT & HASS, thermal shock, testo Thermography and data logger among many others.

Walk In Chamber

To perform the environmental tests like dry heat, cold, temp cycling, composite temp and humidity cycling tests for large size test samples.

STD: IEC 60068-2-x, MIL-STD-810

Specification of walk-in chamber:

Temp: -70° C to 180° C

Humidity: 10-98% RH

Ramp rate: 3° C per min

Volume: 1200 CFT ≈ 33500 litres

Internal dimensions: 3000mm*3600mm*3000mm



Mr. Ramesh Kannan

President & MD, Kaynes Technology India Pvt.

"We are very delighted to have Lahari facility at Mysore. It will help to position us better at global market space."



Hot Air Oven

Curing, drying, ageing, annealing or any heat processing tests at higher temperatures.

STD: IEC 60068-2-x, MIL-STD-810

TEMP: Ambient to +300° C

Salt Corrosion Test

Salt corrosion test is for accelerating real-world corrosion failures with EUTs. As the name implies, the test comprises different climates which are cycled automatically so the samples under test undergo the same sort of changing environment that would be encountered in the natural world.

STD: IEC 60068-2-x, MIL-STD-810, ASTM B117 etc...

Specifications of the corrosion test chamber:

Volume: 900 litres

Salt spray test temperature range: Ambient to 50° C

Condensation: 1.5 ml ± 0.5 ml/80cm²/hr

High humidity/Wetting mode: 95 to 100% RH (Uncontrolled)

Drying mode: Ambient to 70° C

Internal Dimension: 1350mm*850mm*750mm



Ms. Meena Nagaraj (IAS)
 MD, KITS, GOK

"When you think of innovating in India, the biggest gap was the area of testing and certification. This used to take a lot of time, which affected time-to-market. With Lahari, now it's a clean flow for the Industry"



Combined Altitude Temperature and Humidity (CATH) Test Chamber

Combined Altitude Temperature and Humidity chamber can simulate pressure, temperature and humidity in its test space. It is primarily used in R&D and testing of aerospace components.

STD: IEC 60068-2-x, MIL-STD-810

Specifications of the CATH chamber:

Temp: -70° C to 180° C

Humidity: 15-95% RH

Altitude: 1 Lakh feet \approx 30 Km \approx 10mbar pressure

High pressure: Up to 2 bar at ambient temp

Ramp rate: 7° C per min

Volume: 950 litres

Internal dimensions: 1000mm*980mm*950mm

Environmental chambers (32 CFT & 64 CFT)

To perform the environmental tests like dry heat, cold, temp cycling, composite temp and humidity cycling tests for electronic products at component and sub systems level.

STD: IEC 60068-2-x, MIL-STD-810

Specification of Environmental chamber:

Temp: -70° C to 180° C

Humidity: 10-98% RH

Ramp rate: 15° C per min in 32 CFT volume chamber & 5° C per min in 64 CFT volume chamber

Internal dimensions:

32 CFT: 970mm*940mm*990mm

64 CFT: 1200mm*1170mm*1140mm



Mr. Rajendra Velagapudi
CEO, Cyient DLM Pvt. Ltd.

"Lahari facility in Mysore will now boost the manufacturing and assemblies of PCBA and ICB clusters promoting manufacturing and employment."



Data Loggers

Portable data loggers for monitoring temperature, voltage and current. It can have 30/60 channels which can be configured for monitoring and recording of required parameters.

** Awaiting Installation*

HALT & HASS

HALT (Highly Accelerated Life Testing) and HASS (Highly Accelerated Stress Screening) for evaluating product reliability of all industries. Through HALT, the temperature and vibrations are raised for hostile testing for critical areas like aircraft. Through this testing, the simulation helps in eliminating any chance of failure.

This testing is being used by major manufacturing and R&D organisations to improve product reliability.

STD:

Combined Temp and Vibration: -100 C to +200 C with Ramp Rate of 70 deg/m

Vibration: 6 degree

** Awaiting Installation*



Mr. Ashok Shanbhag

MD, ELECTRONIC AUTOMATION PRIVATE Ltd. (EAPL)

"What is heartening is getting insights and inputs on challenges on the gaps that we in industry faced. Kudos to Sanjeev and team for setting this up."



Skill development and exposure
on global standards
ALL AT ONE PLACE AT LAHARI

Thermal Shock

Thermal Shock for exposing EUTS to sudden temperature changes in a very short time.

STD: IEC 60068-2-x, MIL-STD-810

Cold zone: Ambient to -65°C

Hot zone: Ambient to $+180^{\circ}\text{C}$

Volume of the chamber: 110 litres

Internal Dimensions:

430mm*630mm*530mm



Testo Thermography

With 160 x 120 pixels, your ideal entry into thermography, you can visualize temperature differences from 0.12°C , and automatically recognize hot-cold spots.

Features:

High resolution and image quality

Connection to App and other Testo measuring instruments

Automatic setting of emissivity

Objectively comparable images

**Awaiting Installation*



Mr. Yogesh Dubey

CEO, Implantaire Technologies (India) Private Ltd.

"We are very happy to leverage Lahari for designing for global companies. This has created additional opportunities that we can leverage to create more business."



INGRESS PROTECTION (IP) TESTING FACILITIES

Lahari's ingress protection testing facilities include Dust Chamber, Test Probes, RAIN Test facilities among many others.



Dust Chamber (IP5X & IP6X)

Dust Ingress Testing exposes your product to airborne circulating dust over time. These tests are performed to determine the product's ability to withstand exposure to dust in their end-use environment.

STD: IEC 60529, IEC 60068-2-68

Volume of the chamber: 1000 litres

Chamber dimensions:

1000mm*1000mm*1000mm

Rain Test

Rain Test Facility for IPX1, X2, X3, X4, X5, X6, X7, X8 & X9 for Ingress protection testing of products. It can support EUTs of a maximum size of 1m cube and maximum mass of 100kg.

STD: IEC 60529, IEC 60068-2-18

IP X1 to X9(Rain Test)

** Awaiting Installation*



Mr. Rabi Rout

Group Head, Delivery LTTS

"What used to take 12 to 18 months, for us will take less than 6 months when we see at Lahari. Our time to market with the new product going to be blazing fast."



Test Probes

Protection of persons against access to hazardous parts inside the enclosure; Protection of the equipment inside the enclosure against ingress of solid foreign objects.

STD: IEC 60529, IEC 60068-2-68
IP 1X to 4X

**Awaiting Installation*

MECHANICAL TESTING FACILITIES

Mechanical testing facilities at Lahari include Test for Shock & Vibration Tests, Package Drop tests among others. These are the best of the breed facilities offered to members and non-members of Lahari at a reasonable cost.

Shock & Vibration Test Facility

Electrodynamic Shaker

All three axes (X, Y & Z)

Acceleration: 100g

Displacement: >60mm

Velocity: 1.8m/sec

Payload mass: 500 Kgs

Profiles: Sine, Random, Shock, SOR, RSTD

STD: IEC 60068-2-x, MIL-STD-810

**Awaiting Installation*



Mr. K. Krishna Moorthy

CEO & President, India Electronics & Semiconductors Association (IESA)

"Karnataka is on the top of the map when it comes to Electronics, Semiconductors and similar new age technology development, R&D and manufacturing"

Lahari provides a significant impetus to this leadership position to further the cause of Karnataka when it comes to Electronics Manufacturing. India is poised to become the 5th largest producer of Electronics in the world in the next 5 years and Lahari will be the flag bearer, without doubt"





Package Drop Test

The Package Drop Tester simulates the drop/fall of the packaged finished products to evaluate their damages. All the rhododendrons, angles and faces of the package container can be tested so that the manufacturer can know how to take measures effectively to protect products against damage during transportation.

Height: 300 mm to 1800 mm

Payload Mass: Max 80 kgs

STD: ISTA & ASTM

* Awaiting Installation

WIRELESS TESTING FACILITY

Lahari's wireless testing facilities include Wireless Testing for TEC and Global Markets for more among many others. Testing for the performance of radio and telecommunications products /devices to ensure that they will not interfere with other users of the radio frequency spectrum.

Wireless Testing for TEC and Global Markets

The radio equipment is using the radio spectrum effectively and meet RF safety limits. The products using one or more of the RFID, BTs, WLANS, GSM, LTE. 4G, 5G & more technologies need to comply with regulatory standards.

RFID, BT, Wi-Fi, GSM, 3G,5G & LTE SAR

*Awaiting installation



Mr. Kaveesh Gowda,
 Secretary, Vidya Vikas Education Trust

"I am very happy and proud that VVIET is associated as Academic Partner to LAHARI to design, develop and execute innovative training programs on global standard & Specification for Electronics Industry in the area of Advanced Testings."

SAFETY TESTING FACILITY

Safety testing facilities at Lahari include From Temperature & Humidity Meter, Earth, Luminometer, AC Power Source among others. These are the best of the breed facilities offered to members and non-members of Lahari at a reasonable cost.

Safety Test Facility

Testing of the products for compliance with relevant safety standards.

STD: 62368, 61010, 60601-1 and more



Temperature
Humidity Meter



Earth Ground
Clamp Meter



Luminometer



AC Power Source

DEBUG & ENGINEERING FACILITY

Lahari provides empanelled consultancy and required equipment for debugging to analyze and fix the problems. Spectrum analyzer, Field probes, high-end digital storage oscilloscopes, EMC simulation software and protocol analyzers among others. These are the best of the breed facilities offered to members and non-members of Lahari at a reasonable cost.

SA, DSO, NWA & Field probes EMI/EMC analysis Software



Near Field Probes



Digital Storage Oscilloscope



Spectrum Analyzer

GUEST HOUSE FACILITIES

The modern guest house facility at LAHARI helps those coming for testing their equipment and products or training. The facility includes Air Conditioned and comfortable double bed rooms with all equipments and facilities for a comfortable stay.



TRAINING AT LAHARI ESDM

The objectives of the training are as follows:

- Provide training on Global Standards for engineering students to get them Industry ready.
- Certification based on learning and evaluation.
- Exposure to see how global standards are being adopted in the design and how they are tested for various certifications for global market access.
- Short module of training and skill development on Global Standards for Industry R&D teams

Lahari has two training rooms, two lounges, two conference rooms and nine guest rooms to provide a great infrastructure to run these programs.



Mr. Venugopala P K
CEO - Brevera Technologies Pvt Ltd

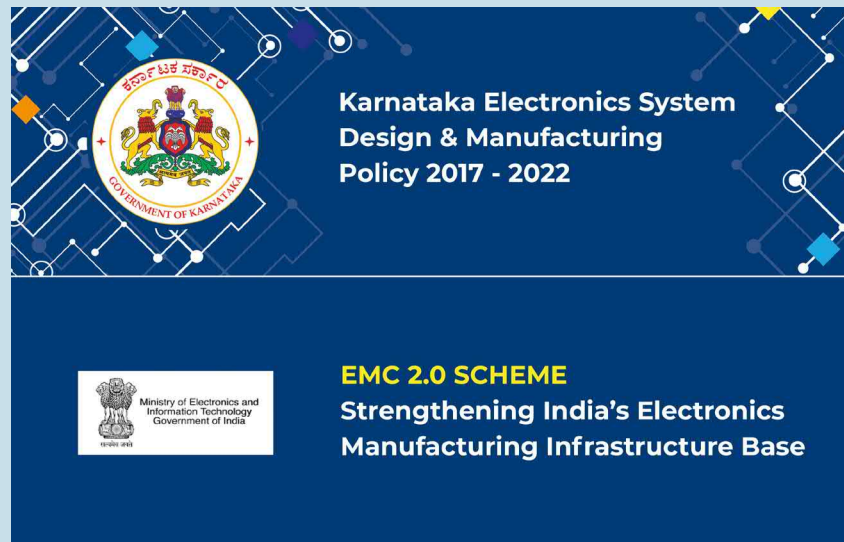
"Lahari has given us a platform to scale our business from designing to developing the prototypes for domestic and international clients. "

POLICIES OF CENTRAL & STATE GOVERNMENT ON ESDM

The central and state governments have been providing a conducive environment for industries to start and grow their business. Towards this, LAHARI has been set up in association with Industry to provide support for testing and certification services.

We provide support for the product companies who require testing and certification for their products, along with training.

We will be very happy to help you connect with Government of India and other State Governments on various policy initiatives for the Industry to set up and grow their business. We can help you connect and provide information on regulatory environment, incentives, help in networking with Industry Bodies, TBIs, Academic Institutions, Incubators, etc from the Start-up Ecosystem.



PROMOTING & SUPPORTING STARTUP




LAHARI is committed to the efforts of GOI and GOK to promote startups and specially in the field of electronics manufacturing. In continuation of this, Lahari is providing cutting edge technology and testing facility to high-tech startups. We especially provide support for the product companies who require testing and certification for their products, along with training. We help you connect with Government and

other bodies for your pilot programs, work towards providing information on regulatory environment, incentives, help in getting network with other industry players and with industry bodies, TBIs, academic institutions, incubators, etc from the startup ecosystem.



#startupindia



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