Calibration

CALIBRATION SERVICES | ACCREDITED SCOPE

Measured Quantities/ Instruments	Range to be calibrated
*Micrometers	0 – 300 mm
*Dial Test Indicators	0 – 1 mm
*Dial Gauges	0 – 10 mm
*Vernier and Digital Calipers	0-600 mm
*Height Gauges	0-300 mm
*Feeler Gauges	Up to 3mm
*Steel rules	0-150 mm
*Profile Projector	0-150mm, X and Y-axis
*Weighing Instruments	up to 160 kgf
*Pressure gauge, transducers, transmitters and recorders	10,000 psi
*Vaccum gauges	0~ -25 inHg
*Force gauge	up to 160 kgf
*Voltmeters	up to 1000 V
*Ammeters	0 to 20 A
*Wattmeters	up to 20.9 kW
*Ohmmeters	0 to 180 MΩ
*LCR Meters	0 to 180 MΩ; 2 mF;20 H
*Digital Multimeters	up to 6.5 digits resolution
*Clampmeter	up to 1000 A, AC/DC
*Frequency Meters	up to 15 MHz
*Timer/ Stop watch	up to 550 mins.
*Frequency standard/ source	10 Hz to 1 MHz
*Oscilloscope	600 MHz; 40 V; 400 ms
*DC power supply	1000 V, 20 A
*High voltage tester (Hipot)	up to 40 kV DC up to 28 kV AC @60 Hz

Measured Quantities/ Instruments	Range to be calibrated
*Thermometry instruments (thermometers, indicators, controllers, recorders, transmitters, transducers)	Thermocouple and RTD types; -200 to 1767 deg. C
*Ovens and baths	-80 to 300 deg. C
*Incubator	
*Autoclaves and sterilizing ovens	
*Industrial freezers and refrigerators	
*Thermohygrometer/ Thermohygrograph	20-40 °C 33-96 % RH
Environmental Chamber (RH)	10-95 % RH -80 to 300 °C
Current Shunt	20 A
*Resistors/ Decade Box	up to 1 Gohm
Resistivity/ Conductivity meters	as per standard solutions
pH meter	4, 7 and 10 pH
Field Meter / Charge Plates	1000 V
*Current/ Voltage Calibrator	1000 V, 20 A
Air Ionizers	voltage decay/ time
Electronic Load	1000 V, 20 A
Torque wrench	up to 600 Nm
*Torque meter	up to 30 Nm
Thermometry sensors (thermocouples, RTDs, thermostat, surface probe, bimetallic, glass thermometer)	-30 to 130 deg. C

Calibration

CALIBRATION SERVICES | ACCREDITED SCOPE

Electrical

- Current Shunt Resistor
- *Decade Resistor
- Resistivity Meter
- *Wrist / Foot Strap Tester
- Charge Plate Monitor (up to 1000 V)
- Field Meter (up to 1000 V)
- Ground Bond Tester
- Earth Ground Tester
- *Hi Pot Tester
- *Current / Voltage Calibrator
- Air Ionizer
- *Counter
- Electronic Load
- Non-contact tachometer

Mass/Volume

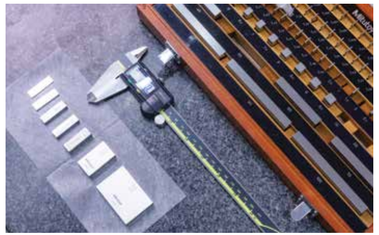
- *Tension Gauge
- *Gram Gauge
- *Torque Driver
- *Torque Tester
- *Pressure Gauge
- *Force Gauge
- *Push-Pull Gauge
- Test Weights Calibration, up to 2 kg
- *Common Laboratory Glasswares like flasks, beakers, pipetes, burettes

Mechanical

- Measuring Microscope
- Pin Gauge
- Paste Height Tester

Temperature

- Thermocouple



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IMI

ATC LAB

ANALYTICAL TESTING AND CALIBRATION

About Us

A leading global electronics manufacturing solutions expert, IMI specializes in highly reliable and quality electronics for long product life cycle segments in the automotive, industrial, power electronics, communications, and the medical markets.

The company provides engineering, manufacturing, and support and fulfillment capabilities to diverse industries globally.

Our Analytical Testing and Calibration or ATC laboratory delivers fast, reliable testing and calibration services across industries. With cutting-edge equipment and a commitment to innovation, we help customers solve problems and maintain seamless operations.

ATC Accreditation

PAB ACCREDITED
TESTING AND CALIBRATION LABORATORY
PNS ISO/IEC 17025:2017

ATC Laboratory

*ISO/ IEC17025 accredited laboratory by the PAB (Philippine Accreditation Bureau) and expert in the following:

- Identification of the failure mode, failure mechanism, and probable causes;
- Accelerated stress testing and modeling in predicting product life profile and reliability; and
- Calibration and verification of inspection and measuring instruments in consonance with international standards.

IMI ATC Lab takes pride in its highly competent, committed, and disciplined professionals from various disciplines that include Metallurgy, Materials Science, Physics, Chemistry, Instrumentation, and Electronics.


Calibration


Reliability Engineering


Failure Analysis

(*) Accredited Scope

Test Facilities and Equipment

Our facilities and equipment include:


Class 10K Cleanroom


Reliability Laboratory


Calibration Laboratory


Chemical Laboratory

Reliability Test Services

Our reliability engineering team:

Designs reliability stress test plan conforming to international standards	Builds customized reliability test set-up	Performs accelerated stress test to predict product life profile and define applicable warranty

Services

Compliance Testing based on International Standards

*High Temperature Storage and Operating Life Tests (HTS and HTOL) based on IEC 60068-2-14, JESD22-A104, JESD22-A105

*Low Temperature Storage and Operating Life Tests (LTS and LTOL) based on IEC 60068-2-1, JESD22-A119

*Temperature Humidity Test (THT), biased and unbiased based on IEC 60068-2-30, IEC 60068-2-38, IEC 60068-2-78, JESD22-A101

*Temperature Cycle Test (TCT and PTCE)/Temperature Shock Test (TST) based on IEC 60068-2-14, JESD22-A104, JESD22-A105

*Temperature Step Test based on ISO 16750-4

Highly Accelerated Life Test (HALT)/ Highly Accelerated Stress Screen (HASS) based on MIL-HDBK-338

*Sinusoidal/ Sine Vibration test based on IEC 60068-2-6 and JIS D 1601

*Random Vibration Test based on IEC 60068-2-64, MIL-STD-810G, Part Two, 514.6 and ASTM D4728

*Classical/Mechanical Shock Test based on IEC 60068-2-27, IEC 60068-2-29, MIL-STD-810G, Part Two, 516.6

Power Module Test based on AQG324

Automotive application based on AECQ101

Thin Whisker Susceptibility based on JESD201

Mechanical Tests

Free Fall
Fluid/ Substance Stability Test/Resistance Test to Chemical Loads
Vibration Test
Drop Test
Shear Test

Others

Electrochemical Migration Resistance Test
Fluid/ Substance Stability Test/Resistance Test to Chemical Loads
Insulation Resistance Test
Moisture Sensitivity Level Preconditioning
Solderability Testing
Electromagnetic Compatibility (EMC) Tests
Power Cycling Test
Pre-EMC

Failure Analysis Test Services

Going beyond identifying the defect, our failure analysis experts

Analyze failure	Identify failure mode and failure mechanism	Recommend preventive measures on probable cause of failure

Services

Sample Preparation

Mechanical Cross section with Parallel Lapping
Mechanical Decapsulation & Dismantling
Physical Etching (via Ion Milling or Laser decapsulation)

Physical Analysis

*Cross-section/SEM Inspection & SEM Dimensional Measurements (Destructive)
Component & Module Integrity Inspection
*Solder Joint/Solderability Inspection /IMC Thickness Measurements
BGA Solderability Inspection based on IPC7095A
*Tin Whisker Inspection based on JESD201A & JESD22A121A
PCBA Inspection ((based on IPC-A-610H)
Dye Penetrant Test

Imaging

Three Modes Optical Inspection (brightfield, darkfield, differential interference contrast)
*Scanning Acoustic Microscopy (SAM) Imaging: Delamination Inspection & %Void Measurement
X-ray Imaging
SEM Imaging
Thermal Imaging / Fault Isolation Through Hotspot Detection

*Plating Thickness Measurements (Non-Destructive)

ENIG/ ENEPIG Plated
Electrolytic Plated
Immersion Tin Plated

Surface Analysis / Material Composition Analysis

Surface Morphology / Die Surface Inspection
*Elemental Analysis / Elemental Mapping (via SEM EDS, FESEM EDS)
*Organic Material Characterization (via FTIR)
*RoHS Screening (via XRF)

Ionic Contamination

*Ion Cleanliness Test for PCB/PCBA (via Ion Chromatography)
Critical Cleanliness Control System (C3)
Resistivity of Solvent Extract (ROSE) Method

Chemical Destructive Analysis

Chemical Decapsulation (gold, aluminum, copper)
Chemical Deglobbing
Cratering Test
Wet Etching

*Thermal Analysis of Polymers, Plastics & Adhesives

Melting point / Melting Range
Heat Capacity
Crystallization
Glass transition
Identification
Thermal stability
Decomposition temperature
Purity

Others

Component Level Failure Analysis
Board Level Failure Analysis
Technical Cleanliness (ISO 16232 / VDA 19.1)
Camera Module Bombing Leak Test
NVR (Non Volatile Residue Test)
Oil Residue Determination


High or Low Temperature Storage Test Chamber Tenney BTC:
–73°C to 200°C
Enviro Oven MO384:
30°C to 300 °C


Temperature Humidity Test Chamber Weiss WK340
-45°C to 180°C
10% to 98% RH


Semi Anechoic Chamber
Conducted Emission and Radiated Emission
150 kHz to 2.5 GHz


Drop Test
ISO 2248-1985, GB/ t48575-92, JIS Z0202-1994
Maximum Drop Height: 1.5m
Maximum Load Weight: 80kg


Vibration Testing Room
Model: i240/SA3M
Sine Wave: 1142 m/s2
Random Wave: 800 m/s2 rms
Shock Wave: 2285 m/s2 peak


Field Emission Scanning Electron Microscopy (FESEM EDS)
Max Magnification: 1,000,000x
Resolution: 0.9 nm at 15 keV ; 1.4 nm at 1 keV


Scanning Acoustic Microscope (SAM) Evolution II
transducers: 20 MHz, 30 MHz, 50 MHz, 75 MHz, 110 MHz


Phenom XL
(100,000x)


Thermal Analyzer
Discovery DSC 250 (-90°c to 550°c)
Discovery TGA 55 (25°c to 1000°c)


Nicolet iS50 Fourier Transform Infrared Spectrometer (FTIR)
Spectral Range: 350-7800 1/cm-1