

# MPS Reliability Lab Introduction

August 2023



# Reliability Lab Capability

- **1000m<sup>2</sup> Lab Space, 90 sets Reliability Test equipment**
- **First-class RE lab to support:**
  - JEDEC/AEC-Q defined qualification tests  
Test Capability: HTOL, HBM/CDM ESD, Latch-up, Precondition, HTSL, LTSL, HAST/THB, AC/UHAST, Temperature Cycling, Thermal Shock, etc.
  - Customer special requirement



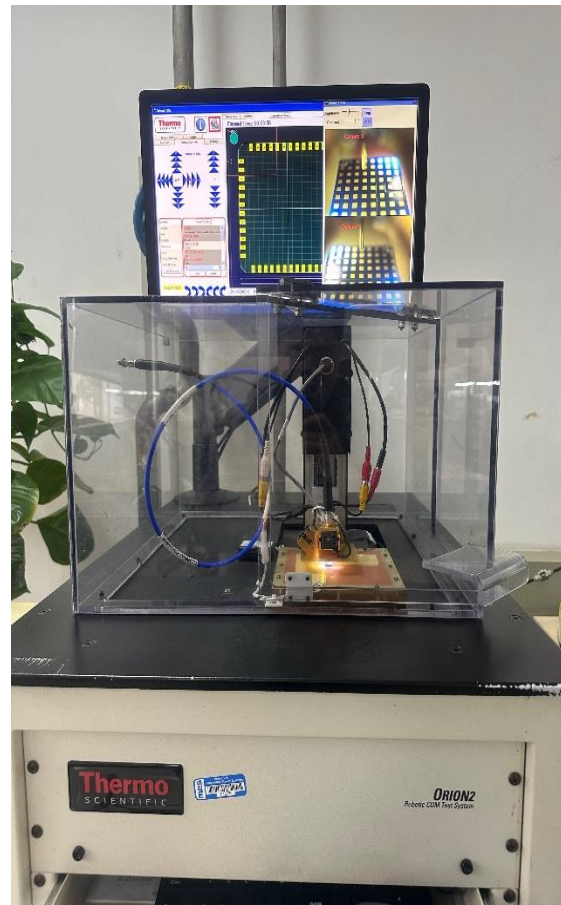
# Reliability Lab Capability

Reliability Test	JEDEC Reference	Equipment
High Temperature Operating Life (HTOL)	JESD22-A108	DESPATCH PBC 2-18
Electrostatic Discharge Human Body Model (HBM)	ANSI/ESDA/JEDEC JS-001	ThermoFisher Science-MK1 Hanwa-N5000
Electrostatic Discharge Charged Device Model (CDM)	ANSI/ESDA/JEDEC JS-002	ThermoFisher-Orion2 Hanwa-C5000
Latch-up (LU)	EIA/JESD78	ThermoFisher Science-MK1 Hanwa-N5000
Precondition—Moisture soak	J-STD-020	ESPEC LHU-114
Precondition—Reflow	J-STD-020	S1050MC-N2, 10 ZONE
Precondition—delamination	J-STD-020	Acoustic Microscope SONOSCAN C-SAM D9500
High Temperature Storage Life (HTSL)	JESD22-A103	ESPEC BTZ-1LN
Low Temperature Storage Life (LTSL)	JESD22-A119	ULTRA LT-UTF150W
Highly Accelerated Temperature and Humidity Stress Test (HAST)	JESD22-A110	HIRAYAMA PC-422R8D
Temperature Humidity Bias Life Test (THB)	JESD22-A101	ESPEC GPR-3
Accelerated Moisture Resistance - Unbiased Autoclave (AC)	JESD22-A102	HIRAYAMA PC-422R8D
Accelerated Moisture Resistance - Unbiased HAST (UHAST)	JESD22-A118	HIRAYAMA PC-422R8D
Temperature Cycling (TC)	JESD22-A104	ESPEC TSE-12-A
Thermal Shock (TS)	JESD22-A106	ESPEC BTZ-1LN
Power Temperature Cycling (PTC)/Solder Joint Reliability (SJR)	JESD22-A105/IPC9701	ESPEC EGNZ12-6NAL

# Reliability Lab Equipment Example (1)



**DESPATCH HTOL SYSTEM**



**CDM ESD Machine**



**HBM ESD/Latch-up Machine**

# Reliability Lab Equipment Example (2)



**10-Zone Reflow Oven**



**ESPEC Temperature/Humidity Chamber**



**High Temperature Chamber**



**SONOSCAN C-SAM 9500D**



**Low Temperature Chamber**

# Reliability Lab Equipment Example (3)



**HARIYAMA HAST/UHAST/AC Chamber**



**ESPEC THB/UTHB Chamber**

# Reliability Lab Equipment Example (4)



**ESPEC Temp. Cycle Chamber**



**ESPEC Power Temp. Cycle Chamber**