



IECQ Certificate of Approval Independent Testing Laboratory

IECQ Certificate No.: IECQ-L ULTW 22.0003-01	Issue No.: 3	Status: Current
Additional Site to Certification: IECQ-L ULTW 22.0003		Originally Issued: 2022/01/17
Supersedes: IECQ-L ULTW 22.0003-01 Issue 2	Issue Date: 2024/02/21	Site Added: 2022/01/17
CB Reference No.: 50600440 ITL	Expiration: 2025/01/16	

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 Hsinchu 302082
 Taiwan

The organization, facilities and procedures have been assessed and found to comply with the applicable requirements for Independent Testing Laboratory organization approval, in support of the IECQ system, which is in accordance with the Basic Rules IECQ 01 and Rules of Procedure IECQ 03-6 "Independent Testing Laboratory Assessment Program Requirements" of the IEC Quality Assessment System for Electronic Components (IECQ) and applicable requirements of ISO/IEC 17025:2017 for the testing of electronic components under the IECQ.

Scope:

**Reliability testing of electronic components.
 See attached schedule.**

– Attached Schedule: IECQ-L_ULTW_50600440 ITL_Schedule 02-21-24.pdf –

Approved by Certification Body (CB): DQS Group - DQS Taiwan Inc.

8F, 23, Yuan Huan West Road,
 Feng Yuan Dist., Taichung City
 Taiwan

Authorized person:
Bob CHEN




The validity of this certificate is maintained through on-going surveillance audits by the IECQ CB issuing this certificate.
 This Certificate of Conformity may be suspended or withdrawn in accordance with the Rules of Procedure of the IECQ System and its Schemes.
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Schedule of Scope to Certificate of Approval

Independent Testing Laboratory

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Appendix-1 (50600440 ITL)

Schedule of Scope to Certificate of Approval

Test Items	Standard/Method
ESD Human Body Model (HBM)	ANSI/ESDA/JEDEC JS-001-2017 AEC-Q100-002 AEC-Q101-001 MIL-STD-883
ESD Machine Model (MM)	JESD22-A115
ESD Charged Device Model (CDM)	ANSI/ESDA/JEDEC JS-002-2018 AEC-Q100-011 AEC-Q101-005
IC Latch-Up Test (LU)	JESD78 AEC-Q100-004 MIL-STD-883
Preconditioning Test	JESD22-A113 IPC/JEDEC J-STD-020 IPC/JEDEC J-STD-033
Acoustic Microscopy for Nonhermetic Encapsulated Electronic Components	IPC/JEDEC J-STD-035
High / Low Temperature Operating Teat (HTOL / LTOL)	JESD22-A108 MIL-STD-883 MIL-STD-750
Temperature and Bias Life Test	AEC-Q101 AEC-Q102 JESD22-A108 MIL-STD-750 MIL-STD-883

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High Temperature Gate Bias (HTGB)	AEC-Q101 JESD22-A108
High Temperature Reverse Bias (HTRB)	AEC-Q101 JESD22-A108
High Humidity High Temperature Reverse Bias (H3TRB)	AEC-Q101 JESD22-A101
High Temperature Storage Life Test	JESD22-A103
Low Temperature Storage Life Test	JESD22-A119
Early Life Failure Rate (ELFR)	JESD74 AEC-Q100-008 JESD85
Highly Accelerated Temperature and Humidity Stress Test (HAST)	JESD22-A110
Accelerated Moisture Resistance - Unbiased HAST (UHAST) & Unbiased Autoclave (AC)	JESD22-A118 JESD22-A102
Temperature-Humidity Biased Life Test	JESD22-A101
Cycled Temperature and Humidity Biased Life Test (Moisture Resistance)	JESD22-A100 MIL-STD-883
Temperature Cycling Test	JESD22-A104 MIL-STD-883
Power and Temperature Cycling Test	JESD22-A105
Intermittent Operational Life	MIL-STD-750
Temperature Shock Test	MIL-STD-810

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IEC QUALITY ASSESSMENT SYSTEM (IECQ)
 covering Electronic Components,
 Assemblies, Related Materials and Processes
 For rules and details of the IECQ visit www.iecq.org

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Moisture Sensitivity Level (MSL)	JESD22-A113 IPC/JEDEC J-STD-020 IPC/JEDEC J-STD-033
Thermal Stress Test	IPC/JEDEC J-STD-020 IPC-TM-650 Method 2.6.27
Moisture and Insulation Resistance Test and Conductive Anodic Filament (CAF) Resistance	IPC-TM-650 Method 2.6.3 IPC-TM-650 Method 2.6.25
Program / Erase Endurance and Data Retention Stress Test (EDR)	JESD22-A117 AEC-Q100-005
Dye and Pull Test (Dye and Pry Test)	IPC-TM-650 Method 2.4.53
Solderability Test	IPC J-STD-002 IPC J-STD-003
Conductive Resistance Test	IPC-TM-650 Method 2.5.32 IPC-9701
PCB Hot Oil Test	IPC-TM-650 Method 2.4.6
PCB Solder Float Resistance Test	IPC-TM-650 Method 2.4.13
Solder Ball Shear Test	JESD22-B117 JESD22-B116 AEC-Q100-001 AEC-Q100-010 AEC-Q101 AEC-Q102 AEC-Q104 IPC-TM-650 Method 2.4.42.3 MIL-STD-883 MIL-STD-750
Wire Bond Pull Test	JESD22-B120 AEC-Q101 AEC-Q102 AEC-Q104 IPC-TM-650 Method 2.4.42.3 MIL-STD-883 MIL-STD-750

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Board Flex Test	JESD22-B113 AEC-Q101-002 AEC-Q200-005 EIAJ ED-4702A MIL-STD-883 IPC-9702
Lead Fatigue Test (Lead Integrity Test)	JESD22-B105 AEC-Q100 AEC-Q104 MIL-STD-883
Salt Spray Test (Salt Atmosphere Test)	JESD22-A107 MIL-STD-883 MIL-STD-750 ISO 10289

Technical Reviewer of DQS: Paul Yang Date: 02/21/2024

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