



China National Accreditation Service for Conformity Assessment
LABORATORY ACCREDITATION CERTIFICATE
(Registration No. CNAS L3089)

**Testing Center of Guangzhou Termbray Electronics
Technology Co., Ltd.**

(Legal Entity: Guangzhou Termbray Electronics Technology Co., Ltd.)

No.888, Jiufu West Road, Luogang District, Guangzhou, Guangdong, China

is accredited in accordance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date: 2024-08-02

Expiry Date: 2030-08-01

Signed on behalf of China National Accreditation Service for Conformity Assessment

张朝华

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Accreditation Cooperation Mutual Recognition Arrangement (APAC MRA).
The validity of the certificate can be checked on CNAS website at <http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml>.

Name: Testing Center of Guangzhou Termbray Electronics Technology Co., Ltd.

Address: No.888, Jiufu West Road, Luogang District, Guangzhou, Guangdong, China

Registration No. CNAS L3089

Accreditation Criteria: ISO/IEC 17025:2017 and relevant requirements of CNAS

Effective Date: 2024-09-12 Expiry Date: 2030-08-01

SCHEDULE 3 ACCREDITED TESTING SCOPE

№	Test Object	Item/Parameter		Standard or Method	Note	Effective Date
		№	Item/ Parameter			
1	Print Circuit Board	1	Micro-section Fabrication	Microsectioning, Manual Method IPC-TM-650 (2015.6 Revision F) 2.1.1	Accredited only for:Solid sample	2024-09-12
		2	Micro-section Measurement	Acceptability of printed boards IPC-A-600K(2020.7)		2024-09-12
				Qualification and performance specification for rigid printed boards IPC 6012 F (2023.9)		2024-09-12
				Specification for Multilayer Boards PERFAG 3C (1997)		2024-09-12
		3	Solder Mask hardness	Solder Mask Abrasion (Pencil Method) IPC-TM-650 (1988.2 Revision A-Reaffirmed) 2.4.27.2		2024-09-12
		4	Adhesion	Adhesion, Solder Mask (Non-Melting Metals) IPC-TM-650 (1997.8 Revision B) 2.4.28 (1997.8 Revision B)		2024-09-12
				Adhesion, Solder Resist (Mask), Tape Test Method IPC-TM-650 (2007.3) 2.4.28.1		2024-09-12
				Adhesion, Tape Testing IPC-TM-650(2004.5 Revision E) 2.4.1		2024-09-12



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		5	Solderability	Solderability tests IPC J-STD-003 D (2022.10)	Accredited only for board edge dip , Solder Float and wetting balance test	2024-09-12
		6	Thermal Stress, Plated-Through Holes IPC-TM-650 2.6.8 (2004.5 Revision E)	Thermal Stress, Plated-Through Holes IPC-TM-650 (2004.5 Revision E) 2.6.8		2024-09-12
		7	Thermal Shock/Cycle Test	Temperature Cycling, Printed Wiring Board IPC-TM-650 (1987.12 Revision B) 2.6.6	Accredited only for:working space:45cm X40cmX45 cm, temperature range:-80℃~+220℃	2024-09-12
				Thermal Shock & Continuity, Printed Board IPC-TM-650 (1997.8 Revision A) 2.6.7	Accredited only for:working space:45cm X40cmX45 cm, temperature range:-	2024-09-12



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					80°C~+220 °C	
				Thermal Shock - Conformal Coating IPC-TM-650 (2000.7 Revision A) 2.6.7.1	Accredited only for:working space:45cm X40cmX45 cm, temperature range:- 80°C~+220 °C	2024-09-12
				Thermal Shock, Continuity and Microsection, Printed Board IPC-TM-650 (2020.3 C 版本) 2.6.7.2	Accredited only for:working space:45cm X40cmX45 cm, temperature range:- 80°C~+220 °C	2024-09-12
				Thermal Shock - Solder Mask IPC-TM-650 (2000.7) 2.6.7.3	Accredited only for:working space:45cm X40cmX45 cm, temperature range:-	2024-09-12



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		№	Item/ Parameter			
					80°C~+220 °C	
				Temperature change IEC 60068-2-14 Part2 Test Na (2023, the 7th edition)	Accredited only for:working space:45cm X40cmX45 cm, temperature range:-80°C~+220 °C	2024-09-12
		8	Peel Strength	Peel Strength of Metallic Clad Laminates IPC-TM-650 (1994.12 Revision C) 2.4.8	Accredited only for:condition A and B	2024-09-12
				Peel Strength of Metallic Clad Laminate at Elevated Temperature (Hot Air Method) IPC-TM-650 (1994.12 Revision A) 2.4.8.3		2024-09-12
		9	High Potential	Dielectric Withstanding Voltage, PCB IPC-TM-650 (2004.5 Revision D) 2.5.7	Accredited only for:Voltage range:AC 0~5kv DC 0~6kv	2024-09-12
				Dielectric Withstanding Voltage- Polymeric Conformal Coating IPC-TM-650 (2000.7) 2.5.7.1	Accredited only for:Voltage range:VAC 5K/VDC 6KV	2024-09-12



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№	Test Object	Item/Parameter		Standard or Method	Note	Effective Date
		№	Item/ Parameter			
				Dielectric Strength, Polymer Solder Mask, and/or Conformal Coatings IPC-TM-650 (2007.3) revision B 2.5.6.1	Accredited only for: Voltage range: VAC 5K/VDC 6KV	2024-09-12
		10	Bow and Twist	Bow and Twist (Percentage) IPC-TM-650 (1999.6 Revision C) 2.4.22		2024-09-12
				Bow and Twist-Laminated PC-TM-650 (1993.5 Revision C) 2.4.22.1		2024-09-12
		11	Ionic Contamination	Detection and Measurement of Ionizable Surface Contaminants by Resistivity of Solvent Extract (ROSE) IPC-TM-650 (2012.11 Revision D) 2.3.25		2024-09-12
				Ionic Cleanliness Testing of Bare PWBs IPC-TM-650 (2000.10) 2.3.25.1		2024-09-12
		12	Pull Strength of Unsupported Component Hole	Land Bond Strength, Unsupported Component Hole IPC-TM-650 (2007.1) 2.4.21		2024-09-12
		13	Hydrolytic Stability Solder Mask	Hydrolytic Stability Solder Mask IPC-TM-650 D (2007.3) 2.6.11	Accredited only for: chamber method	2024-09-12
		14	Electrochemical Migration	Testing for Resistance to Electromigration GR-78-CORE (2007.9 Issue 2) 13.2.7		2024-09-12
				Resistance to Electrochemical Migration, Solder Mask IPC-TM-650 D (2007.3) 2.6.14	Accredited only for: chamber method	2024-09-12
				Hydrolytic Stability Solder Mask IPC-TM-650 (2000.9) 2.6.14.1	Accredited only for:	2024-09-12



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№	Test Object	Item/Parameter		Standard or Method	Note	Effective Date
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					liquid flux	
		15	Conductive Anodic Filament Resistance	Conductive Anodic Filament (CAF) Resistance Test: X-Y Axis IPC-TM-650 (2021.2 C Revision) 2.6.25		2024-09-12
		16	Glass Transition Temperature (DSC)	Glass Transition Temperature and Cure Factor by DSC IPC-TM-650 (2017.11 Revision D) 2.4.25		2024-09-12
		17	Glass Transition Temperature and Z-Axis Thermal Expansion (TMA)	Glass Transition Temperature and Z-Axis Thermal Expansion by TMA IPC-TM-650 (1994.12 Revision C) 2.4.24		2024-09-12
		18	Time to De-lamination	Time to Delamination (TMA Method) IPC-TM-650 (1994.12) 2.4.24.1		2024-09-12
		19	Surface Insulation Resistance	Insulation Resistance Testing GR-78-CORE (2007.9) 14.4		2024-09-12
				Bare Board Cleanliness by Surface Insulation Resistance IPC-TM-650 (2004.1) 2.6.3.5		2024-09-12
				Surface Insulation Resistance – Fluxes - Telecommunications IPC-TM-650 (2004.1) 2.6.3.6		2024-09-12
		20	Moisture and Insulation Resistance	Moisture and Insulation Resistance, Printed Boards IPC-TM-650(2004.5 Revision F) 2.6.3		2024-09-12
				Moisture and Insulation Resistance - Solder Mask IPC-TM-650 (2007.3 E) 2.6.3.1		2024-09-12
				Moisture and Insulation Resistance - Conformal Coating IPC-TM-650 (2003.7 Revision A) 2.6.3.4		2024-09-12
		21	Thermal Storage	Dry heat DIN IEC 60068-2-2 Test B Ba& Bb (2007 The 5th edition)	Accredited only for:work space:30cm×30cm×40c	2024-09-12



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					m;Highest temperature :288°C	
		22	Composite Temperature and Humidity Cycling	Basic environmental testing procedures Part2: Composite temperature/humidity cyclic test IEC 60068-2-38 (2021.3, the 3rd edition)	Accredited only for: work space:60cm×60cm×85cm;temperature area:-70°C~+150°C;relative humidity:20%RH~98%RH	2024-09-12
		23	PTH Rework Simulation	Rework Simulation, Plated-Through Holes for Leaded Components IPC-TM-650 (2004.5 Revision C) 2.4.36		2024-09-12
		24	Tensile Strength and Ductility	Tensile Strength and Elongation, In-House Plating IPC-TM-650 (2004.5 Revision A) 2.4.18.1		2024-09-12
				Tensile Strength and Elongation, Copper Foil IPC-TM-650 (1980.8 Revision B) 2.4.18		2024-09-12
		25	Bond Strength of PAD	Pull-off Strength of Footprint JIS C 5012 (1993) 8.4		2024-09-12
		26	Water Absorption	Water Absorption, Metal Clad Plastic Laminates IPC-TM-650 (1986.5 Revision A) 2.6.2.1		2024-09-12
		27	Interconnect Stress (IST)	DC Current Induced Thermal Cycling Test IPC-TM-650 (2014.5 Revision) 2.6.26	Accredited only for: Method A	2024-09-12



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		28	Damp Heat, Steady State	Damp Heat, Steady State IEC 60068-2-78 Test Cab (2012, the 2nd edition)	Accredited only for:work space:60cm×60cm×85cm;temperature area:-70℃~+150℃;relative humidity:20%RH~98%RH	2024-09-12
		29	Cold Storage	Environment testing Part 2: Cold IEC 68-2-1 Part 2: Test A: Aa & Ab (2007, the 6th edition)	Accredited only for:work space:60cm×60cm×85cm;Lowest temperature :-70℃	2024-09-12
		30	Damp heat, Cyclic	Environmental testing- Part 2 Test Db: Damp heat, cyclic (12h+12h cycle) IEC 60068-2-30 Part 2 Test Db: Damp heat, cyclic (2005, the 3rd edition)	Accredited only for:work space:60cm×60cm×85cm;temperature area:-70℃~+150℃;rela	2024-09-12



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					tive humidit:20 %RH~ 98%RH	
2	Print Circuit Board	1	Damp heat, Cyclic	Environmental testing- Part 2 Test Db: Damp heat, cyclic (12h+12h cycle) IEC 60068-2-30 Part 2 Test Db: Damp heat, cyclic (2005, the 3rd edition)	Accredited only for:work space:60cm×60cm×85cm;temperature area:-70℃~+150℃;relative humidit:20 %RH~ 98%RH	2024-09-12



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