



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

NATIONAL TECHNICAL SYSTEMS (NTS)

1435 Allec Street

Anaheim, CA 92805

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ELECTRICAL

Valid To: September 30, 2018

Certificate Number: 3343.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electrical tests:

<u>Test Description/Capabilities:</u>	<u>Test Method(s) ¹:</u>
Arc Resistance	ASTM D495; IPC-4101; IPC-TM-650 (Method 2.5.1); UL 746A
Comparative Tracking Index (CTI)	ASTM D3638; UL 746A
Conductive Anodic Filament Resistance (CAF) Range: (10 ⁵ to 10 ¹³) Ohm *	IPC-4101; IPC-6012; IPC-A-600; IPC-9201; IPC-TM-650 (Method 2.6.25)
Continuity	MIL-P-50884 ² ; MIL-PRF-50884 ² ; MIL-PRF-55110 ² ; MIL-PRF-31032 ² ; IPC-TM-650 (Method 2.6.7)
Dielectric Breakdown and Electrical Strength AC Range: (0 to 6) kV * DC Range: (0 to 70) kV *	ASTM D149; IPC-4101; IPC-TM-650 (Methods 2.5.6.2 and 2.5.6); UL 746A
Dielectric Withstand Voltage (DWV) AC Range: (0 to 6) kV * DC Range: (0 to 70) kV *	IPC-6012; IPC-A-600; IPC-6013; IPC-9201; IPC-TM-650 (Methods 2.5.7 and 2.5.7.1); MIL-STD-202 (Method 301); MIL-P-50884 ² ; MIL-PRF-50884 ² ; MIL-PRF-55110 ² ; MIL-PRF-31032 ² ; MIL-I-46058; IPC-CC-830; IPC-SM-840; UL 746A; J-STD-004

Test Description/Capabilities:

Test Method(s) ¹:

DC Resistance, Volume and Surface Resistivity
Range: (10⁵ to 10¹³) Ohm *

ASTM D257;
IPC-4101;
IPC-4202;
IPC-TM-650 (Method 2.5.17);
IPC-TM-650 (Method 2.5.17.1);
UL 746A

Hydrolytic Stability

IPC-TM-650 (Methods 2.6.11 and 2.6.11.1);
IPC-CC-830;
IPC-SM-840;
FED-STD-141;
MIL-I-46058

Moisture and Insulation Resistance (MIR)
Range: (10⁵ to 10¹³) Ohm *

IPC-6012;
IPC-6013;
IPC-TM-650 (Method 2.6.3);
MIL-I-46058;
MIL-STD-202 (Method 302);
MIL-P-50884 ²; MIL-PRF-50884 ²;
MIL-PRF-31032 ²;
MIL-PRF-55110 ²

Permittivity and Loss Tangent
(*Dielectric Constant and Dissipation Factor*)
Range: 1 MHz to 1.5 GHz *

IPC-4101;
IPC-TM-650 (Method 2.5.5.9)

Surface Insulation Resistance

IPC-TM-650 (Methods 2.6.3.5 and 2.6.3.7);
IPC-A-600;
IPC-9201;
J-STD-004;
IEC 61189-5

*Including Customer Specifications directly related to the test technologies and within the parameters listed above

¹ When the date, revision or edition of a test method standard is not identified on the scope of accreditation, the laboratory is required to be using the current version within one year of the date of publication, per part C., Section 1 of A2LA R101 - *General Requirements - Accreditation of ISO-IEC 17025 Laboratories.*

² These methods are Performance Specifications which make reference to test methods identified on the scope of accreditation. The laboratory is not accredited to these Performance Specifications.

On the following materials/products:

Circuit Boards and Circuit Board Components; Electronics; Adhesives; Aircraft Components; Automotive Components; Plastic and Rubber Insulating Materials.

Laboratory performs tests according to IPC-QL-653 "Certification of Facilities that Inspect/Test Printed Boards, Components and Materials."





Accredited Laboratory

A2LA has accredited

NATIONAL TECHNICAL SYSTEMS (NTS)

Anaheim, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 27th day of December 2016.

A handwritten signature in black ink, appearing to read "L. Sen", written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 3343.01
Valid to September 30, 2018

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.