



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

NATIONAL TECHNICAL SYSTEMS (NTS)

3761 South Central Avenue

Rockford, IL 61102

David Potpinka Phone: 978 266 1001

ELECTRICAL

Valid To: May 31, 2018

Certificate Number: 0214.28

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

Test Technology:

Test Method(s)¹:

Emissions

Radiated Emissions

47 CFR FCC Parts 15B (using ANSI C63.4:2014);
47 CFR FCC Part 18 (using MP-5:1986); VCCI V-3 (up to 6 GHz);
ANSI C63.4:2003; ANSI C63.4:2009;
EN 55011; CISPR 11; AS/NZS CISPR 11; KN 11;
EN 55012; CISPR 12; AS/NZS CISPR 12; KN 12;
EN 55014-1; CISPR 14-1; AS/NZS CISPR 14-1; KN 14-1;
EN 55022; CISPR 22; AS/NZS CISPR 22; KN 22;
EN 55032; CISPR 32; AS/NZS CISPR 32; KN 32;
EN/IEC 61000-6-3; EN/IEC 61000-6-4;
AS/NZS 4268 + A1/A2; AS/NZS 4251-1; AS/NZS 4251-2;
MIL-STD-461 E and F (RE101, RE102, RE103)²;
MIL-STD-462 (RE101, RE102, RE103)²;
MIL-STD-462 (RE01, RE02)²;
RTCA/DO-160 C, D, E, F, G, Section 15² and 21²

Conducted Emissions²

47 CFR FCC Part 15B (using ANSI C63.4:2014);
47 CFR FCC Part 18 (using MP-5:1986); VCCI V-3;
ANSI C63.4:2003; ANSI C63.4:2009;
EN 55011; CISPR 11; AS/NZS CISPR 11; KN 11;
EN 55012; CISPR 12; AS/NZS CISPR 12; KN 12;
EN 55014-1; CISPR 14-1; AS/NZS CISPR 14-1; KN 14-1;
EN 55022; CISPR 22; AS/NZS CISPR 22; KN 22;
EN 55032; CISPR 32; AS/NZS CISPR 32; KN 32;
EN/IEC 61000-6-3; EN/IEC 61000-6-4;
AS/NZS 4268 + A1/A2; AS/NZS 4251-1; AS/NZS 4251-2;
AS/NZS 4250-1; AS/NZS 4250-2;
MIL-STD-461 E and F (CE101, CE102, CE106);
MIL-STD-462 D (CE101, CE102, CE106);
MIL-STD-462 (CE01, CE03, CE07);
RTCA/DO-160 C, D, E, F, G, Section 21

Test Technology:**Test Method(s)¹:***Emissions (cont.)*Harmonics²

EN/IEC 61000-3-2; AS/NZS 61000.3.2

Flicker²

EN/IEC 61000-3-3; AS/NZS 61000.3.3

*Immunity*Electrostatic Discharge (ESD)²EN/IEC/KN 61000-4-2³; AS/NZS 61000.4.2³;
RTCA/DO-160 C, D, E, F, G, Section 25; MIL-STD-1686 CElectrical Fast Transient/Burst²EN/IEC/KN 61000-4-4³; AS/NZS 61000.4.4³Surge Immunity²EN/IEC/KN 61000-4-5³; AS/NZS 61000.4.5³;
IEEE C62.41; IEEE C62.41.1; IEEE C6241.2Radiated²EN/IEC/KN 61000-4-3³; AS/NZS 61000.4.3³;
MIL-STD-461 E and F (RS101, RS103, RS105);
MIL-STD-462D (RS101, RS103);
MIL-STD-462 (RS01, RS02, RS03);
RTCA/DO-160 C, D, E, F, G, Section 20Conducted²EN/IEC/KN 61000-4-6³; AS/NZS 61000.4.6³;
MIL-STD-461 E and F (CS103, CS104, CS105, CS109, CS114,
CS115, CS116); MIL-STD-462D (CS103, CS104, CS105, CS109,
CS114, CS115, CS116); MIL-STD-462 (CS01, CS02, CS06)RF Frequency Susceptibility²

RTCA/DO-160 C, D, E, F, G, Section 20

Power Frequency Magnetic
Field²EN/IEC/KN 61000-4-8³; AS/NZS 61000.4.8³;
RTCA/DO-160 C, D, E, F, G, Section 15; MIL-STD-461, RS101Pulsed Magnetic Field²

EN/IEC 61000-4-9

Voltage Dips/Interrupts and
Variations²EN/IEC/KN 61000-4-11³; AS/NZS 61000.4.11³Voltage Spike²RTCA/DO-160 C, D, E, F, G, Section 17;
MIL-STD-461F (CS106)Power Input²RTCA/DO-160 C, D, E, F, G, Section 16;
MIL-STD-704 A, B, C, D, E, F, w/ Notice 1Audio Frequency Conducted
Susceptibility²RTCA/DO-160 C, D, E, F, G, Section 18;
MIL-STD-461 (CS101)Induced Signal Susceptibility²

RTCA/DO-160 C, D, E, F, G, Section 19

Lightning Induced Transient²

RTCA/DO-160 C, D, E, F, G, Section 22

Test Technology:**Test Method(s)¹:**

Generic and Product Family Standards

EN/IEC 61000-6-1; AS/NZS 61000.6.1;
EN/IEC 61000-6-2; AS/NZS 61000.6.2;
CISPR 14-2; EN 55014-2; AS/NZS CISPR 14-2;
CISPR 24; EN 55024; AS/NZS CISPR 24; KN 24; KN 35;
BS EN/IEC 60601-1-2; BS EN/IEC 60947-1; BS EN/IEC 60439-1;
BS EN/IEC 61326-1; BS EN/IEC 61326-2; BS EN 50130-4;
BS EN 50131-1; EN 61800-3; IEC 61800-3 (*up to 75A, 1000V*);
BS EN ISO 14982; ISO 14982 (*using component methods except ISO 7637 and ISO 11452-3*)

Radio (excluding SAR)

European Union

ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 330-1;
ETSI EN 300 330-2; ETSI 300 440-1; ETSI EN 300 440-2;
ETSI EN 300 328 V1.7.1; ETSI EN 301 489-1;
ETSI EN 301 489-3; ETSI EN 301 489-17

Canada

RSS-119; RSS-210 (*excluding DFS testing*); RSS-243;
ICES-001; ICES-002; ICES-003

United States

47 CFR, FCC Parts 2, 15C (using ANSI C63.10-2013);
ANSI C63.10-2009;
47 CFR, FCC Part 90, 95 (using ANSI/TIA-603-C-2004)

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 This laboratory meets the requirements in A2LA R104 - "*General Requirements: Accreditation of Field Testing and Field Calibration Laboratories*" to offer field testing services for the noted tests.

³ The laboratory's accreditation includes all revisions of the noted standards.

Testing Activities Performed in Support of FCC Declaration of Conformity and Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1⁴

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
<u>Unintentional Radiators</u>		
Part 15B	ANSI C63.4:2014	40000
<u>Industrial, Scientific, and Medical Equipment</u>		
Part 18	FCC MP-5 (February 1986)	40000
<u>Intentional Radiators</u>		
Part 15C	ANSI C63.10:2013	40000

⁴ Accreditation does not imply acceptance to the FCC equipment authorization program. Please see the FCC website (<https://apps.fcc.gov/oetcf/eas/>) for a listing of FCC approved laboratories.





Accredited Laboratory

A2LA has accredited

NATIONAL TECHNICAL SYSTEMS (NTS)

Rockford, IL

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 21st day of March 2016.

A handwritten signature in blue ink, appearing to read 'L. J. ...', positioned above a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 0214.28
Valid to May 31, 2018
Revised February 28, 2018

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