



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ELECTRICAL (EMC)

Valid To: September 30, 2024

Certificate Number: 0214.48

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on Consumer, Laboratory, Medical, Railway, Automotive, Aerospace, & Photonic products:

Test(s):

Test Method(s) ²:

EMISSIONS

Conducted and Radiated
Emissions
(3m semi-anechoic chamber)

47 CFR FCC Part 15, Subpart B (using ANSI C63.4:2014);
47 CFR FCC Part 18, (using OET MP-5:1986);
CISPR 11¹; EN 55011¹; CISPR 12¹; EN 55012¹;
CISPR 14-1¹ (excluding disturbance power measurements);
EN 55014-1¹ (excluding disturbance power measurements);
CISPR 15¹; EN 55015¹;
CISPR 22¹; EN 55022¹; AS-NZS CISPR22¹;
CISPR 25 (sections 6.3, 6.4, 6.5 only);
EN 55025 (sections 6.3, 6.4, 6.5 only);
CISPR 32¹ (excluding Annex H);
EN 55032¹ (excluding Annex H); KS C 9832;
AS/NZS CISPR 32¹ (excluding Annex H);
ICES-001¹; ICES-002¹; ICES-003¹; ICES-005¹

Harmonic Emissions

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

Voltage Fluctuations and Flicker

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

IMMUNITY

ESD

EN 61000-4-2¹; IEC 61000-4-2¹; ANSI C37.90.3;
KS C 9610-4-2

Radiated Immunity

EN 61000-4-3¹; IEC 61000-4-3¹; ANSI C37.90.2k
KS C 9610-4-3

EFT / Burst

EN 61000-4-4¹; IEC 61000-4-4¹; ANSI C37.90.1;
KS C 9610-44

Test(s):**Test Method(s) ²:*****IMMUNITY (cont.)***

Surge	EN 61000-4-5 ¹ ; IEC 61000-4-5 ¹ ; KS C 9610-4-5
Conducted Immunity	EN 61000-4-6 ¹ ; IEC 61000-4-6 ¹ ; KS C 9610-4-6
Power Frequency Magnetic Field	EN 61000-4-8 ¹ ; IEC 61000-4-8 ¹ ; KS C 9610-4-8
Pulse Magnetic Field	EN 61000-4-9 ¹ ; IEC 61000-4-9 ¹
Damped Oscillated Magnetic Field	EN 61000-4-10 ¹ ; IEC 61000-4-10 ¹
Voltage Dips, Short Interruptions and Voltage Variations	EN 61000-4-11 ¹ ; IEC 61000-4-11 ¹ ; KS C 9610-4-11
Harmonics and Interharmonics	EN 61000-4-13; IEC 61000-4-13
Conducted Common Mode Disturbances in the Frequency (<i>Range 0 Hz-150 kHz</i>)	EN 61000-4-16 ¹ ; IEC 61000-4-16 ¹
Ripple On and DC Input Power Port	EN 61000-4-17 ¹ ; IEC 61000-4-17 ¹
Damped Oscillatory Wave	EN 61000-4-18 ¹ ; IEC 61000-4-18 ¹ ; EN 61000-4-12 ¹ ; IEC 61000-4-12 ¹ ; EN 60255-22-1; ANSI C37.90.1
Variation of Power Frequency	EN 61000-4-28 ¹ ; IEC 61000-4-28 ¹
Voltage Dips / Short Interrupts	EN 61000-4-29 ¹ ; IEC 61000-4-29 ¹
Testing and measurement techniques – Radiated fields in close proximity – Immunity test	EN 61000-4-39; IEC 61000-4-39 (<i>magnetic field only</i>)
Impulse Voltage Withstand Dielectric (AC or DC) (<i>to 5 kV</i>), Insulation Resistance Protective Bonding	IEC 60255-5; EN 60255-5; IEC 60255-27; EN 60255-27

GENERIC STANDARDS

Immunity for Residential, Commercial and Light-Industrial Environments	EN 61000-6-1; IEC 61000-6-1; AS/NZS 61000-6-1
Immunity for Industrial Environments	EN 61000-6-2; IEC 61000-6-2; AS/NZS 61000-6-2



Test(s):**Test Method(s) ²:*****GENERIC STANDARDS (cont.)***

Emission for Residential,
Commercial and Light-Industrial
Environments

EN 61000-6-3; IEC 61000-6-3; AS/NZS 61000-6-3

Emission for Industrial
Environments

EN 61000-6-4; IEC 61000-6-4; AS/NZS 61000-6-4

Emission standard for
professional equipment in
commercial and light-industrial
locations

EN 61000-6-8; IEC 61000-6-8

PRODUCT STANDARDS

Railway Equipment

IEC 62236-3-2; EN 50121-3-2; IEC 60571; EN 50155

Household Appliances, Electric
Tools and Similar Apparatus

CISPR 14-1 (*excluding disturbance power measurements*);
EN 55014-1 (*excluding disturbance power measurements*);
CISPR 14-2; EN 55014-2

Information Technology
Equipment

CISPR 24; EN 55024

Multimedia Equipment

CISPR 35 (*excluding Annex F, G and H*);
EN 55035 (*excluding Annex F, G and H*);
KS C 9835

General Requirements for Home
and Building Electronic Systems
(HBES) and Building
Automation and Control
Systems (BACS)

EN 50491-5-2; EN 50491-5-3; IEC 63044-5-2; IEC 63044-5-3

Medical Equipment

EN 60601-1-2; IEC 60601-1-2

Laboratory Equipment

IEC 61326-1; EN 61326-1

Lighting

IEC 61547; EN 61547

Power Substation Equipment

IEC 61850-3; IEEE 1613; IEEE 1613.1; IEC 61000-6-5;
IEC 60255-26; SN-62.1008-1 (Hydro-Quebec)

Low Voltage Equipment

SN-62.1008e (*clauses 7.10, 7.12, 7.13 only*)

Electro-sensitive protective
equipment

IEC 61496-1 (*clause 4.3.2*)

Test(s):

Test Method(s) ²:

PRODUCT STANDARDS (cont.)

Airborne Equipment	RTCA-DO160 Section 15 (Magnetic Effect); RTCA-DO160 Section 16 (Power Input); RTCA-DO160 Section 17 (Voltage Spike); RTCA-DO160 Section 18 (Audio Frequency Conducted Susceptibility – Power Inputs); RTCA-DO160 Section 19 (Induced Signal Susceptibility) <i>Paragraphs 19.3.1, 19.3.2, 19.3.3, 19.3.4 only</i>); RTCA-DO160 Section 20.4 (Conducted Susceptibility); RTCA-DO160 Section 20.5 (Radiated Susceptibility – <i>up to 8 GHz, Categories S & T only</i>); RTCA-DO160 Section 21.4 (Conducted RF Emissions); RTCA-DO160 Section 21.5 (Radiated RF Emissions); RTCA-DO160 Section 25 (Electrostatic Discharge); Airbus ABD0100.1.2 Section 3.5 (ESD); Boeing D6-16050-5 Section 7.1 (ESD); Boeing D6-16050-5 Section 8.1 (Audio Frequency Conducted Emission)
Airborne Equipment (cont.)	
Road Vehicles Equipment	EN 12895, ISO 10605 ¹ ; ISO 11452-2; ISO 11452-4 (<i>excluding TWC method</i>); ISO 11452-8 (<i>excluding Helmholtz coil</i>); ISO 11451-2 (<i>80 MHz to 8 GHz</i>); ISO 11451-4 (<i>excluding TWC method</i>); EN 50498 (<i>excluding conducted transients</i>); ECE Reglement No. 10 (<i>excluding conducted transients</i>)
Earth-moving and building construction machinery	ISO 13766-1 (<i>excluding conducted transients</i>); ISO 13766-2 (<i>excluding conducted transients</i>)
Lifts, Escalators, and Moving Walks Equipment	EN 12015; EN 12016; ISO 22200
Road Traffic Signal Systems	EN 50293
Radio Equipment and Services	ETSI EN 301 489-1 (<i>excluding clause 9.6</i>)

¹ This laboratory performs field testing activities for the noted test methods.

² When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA R101 - *General Requirements- Accreditation of ISO-IEC 17025 Laboratories*.

Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1 ³:

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
Unintentional Radiators Part 15B	ANSI C63.4:2014	26500
Industrial, Scientific, and Medical Equipment Part 18	FCC MP-5 (February 1986)	26500

³Accreditation 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 CANADA INC.

Boucherville, Québec, Canada

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *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 April 2017*).



Presented this 22nd day of November 2022.

A blue ink signature of Trace McInturff, written over a horizontal line.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0214.48
Valid to September 30, 2024

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