



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

TUV SUD CANADA ¹
4479 Autoroute 440 O
Laval, Quebec, H7P 4W6, CANADA
Phone: 450-687-4976

ELECTRICAL

Valid To: June 30, 2021

Certificate Number: 2955.20

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above, *as well as the satellite laboratory location listed below*, to perform the following product safety, emissions, immunity, and radio tests:

<u>Test Technology:</u>	<u>Test Method(s) ²:</u>
Electrical Product Safety ³	
<i>(Excluding: Ionizing radiation, high vacuum devices, flammability/fire tests, softening temperature, vibration, implosion, dust, microbiological test for bioseals & sonic and ultrasonic pressure)</i>	UL/CSA IEC/EN 60335-1; UL 1598/C22.2 No. 250; C22.1 No. 250; UL/CSA IEC/EN 60950-1; UL/IEC 61800-5-1; CSA C22.2 No. 107.1; CSA C22.2 No. 107.2; CSA C22.2 No. 107.3; CSA C22.2 No. 301; CSA-Z432; CSA-Z434; CSA 22.2 No.274; CAN/CSA-Z142; UL/CSA IEC/EN 60950-22; UL/CSA/AAMI IEC 60601-1; UL/CSA IEC/EN 60601-2 (All Inclusive); UL 22; UL 73; UL 197; UL 291; UL 294; UL 506; UL 508, 508A, 508C; UL 745; UL 778; UL 813; UL 859; UL 873; UL 935; UL 1012; UL 1017; UL 1028; UL 1088; UL 1097; UL 1236; UL 1310; UL 1411; UL 1419; UL 1431; UL 1492; UL 1561; UL 1563; UL 1573; UL 1574; UL 1585; UL 1598; UL 1778; UL 1838; UL 1993; UL 1995; UL 1741; UL/CSA IEC/EN 61010-1; UL/CSA IEC/EN 61010-2 (All Inclusive); UL/CSA IEC/EN 61010A-2-010; UL/CSA IEC/EN 61010A-2-041; UL/CSA IEC/EN 61010A-2-051; UL/CSA IEC/EN 61010B-1; UL/CSA/IEC/EN 60601-1 (including all collateral standards); UL/CSA/IEC/EN 62368-1; IEC 62304; IEC 62366; IEC/ISO 80601-2, CSA 80601-2 (including all particular standards);

<u>Test Technology:</u>	<u>Test Method(s) ²:</u>
Electrical Product Safety ³ (cont.) <i>(Excluding: Ionizing radiation, high vacuum devices, flammability/fire tests, softening temperature, vibration, implosion, dust, microbiological test for bioseals & sonic and ultrasonic pressure)</i>	UL/CSA IEC 60065-1; IEC/EN 60335-2 (All Inclusive); IEC/EN 60601-1-4; IEC/EN 60601-2-2; IEC/EN 60244-4; EN 60255-5; IEC/EN 60255-2-26; IEC/EN 60529; IEC/EN 60601-2-22; IEC/EN 61326-3-1; EN ISO 13850; EN ISO 13857; EN ISO 14119; EN ISO 13855; EN ISO 14120; EN ISO 4414; IEC/EN 60204-1; EN 415-3; EN ISO 12100; NFPA 79; ANSI B11.19; UL 50/50E CSA 94.x (All Inclusive); IEC 62368-x (All Inclusive); IEC 60730-2-x (All Inclusive); UL 8750; IEC/EN 60598-2-x (All Inclusive)

¹ This accreditation covers testing performed at the main laboratory listed above, and at the satellite laboratory listed below:

TUV SUD CANADA
 2972 Joseph-A-Bombardier
 Laval, Quebec, H7P 6E3, CANADA
 Phone: 450-687-4976

<u>Test Technology:</u>	<u>Test Method(s) ^{2,3}:</u>
Unintentional Emissions Radiated & Conducted	
U.S. (FCC)	
Unintentional Radiators	47 CFR, FCC Part 15, Subpart B (using ANSI C63.4-2014)
Industrial, Scientific, and Medical (Consumer ISM)	47 CFR, FCC Part 18 (using MP-5:1986); MP-5:1986
Canada (ISED)	
Unintentional Radiators	ICES-003; ANSI C63.4-2014; CAN/CSA-CEI/IEC CISPR 22; CAN/CSA-CISPR 32; CAN/CSA C108.6-M91



Test Technology:	Test Method(s) ^{2,3}:
Industrial, Scientific and Medical (ISM) Radio Frequency Generators	ICES-001
Vehicles, Boats and Other Devices Propelled by an Internal Combustion Engine, Electrical Means, or Both	ICES-002
Japan	
Unintentional Radiators	VCCI V-3 (<i>up to 6 GHz</i>); V-4; VCCI-CISPR 32:2016 (<i>up to 6 GHz</i>); JIS T 0601-1-2
Australia	
Unintentional Radiators	AS/NZS CISPR 32; AS/NZS CISPR 11; AS/NZS CISPR 12; AS/NZS CISPR 13; AS/NZS CISPR 14.1 (<i>excluding measurements of clicks</i>); AS/NZS CISPR 15; AS/NZS CISPR 22; AS/NZS CISPR 24; AS/NZS CISPR 25; AS 62040-2; AS/NZS 61000-3-2; AS/NZS 61000-3-3; AS/NZS 61000-6-1; AS/NZS 61000-6-2; AS/NZS 61000-6-3; AS/NZS 61000-6-4
International	
Unintentional Radiators	CISPR 11; CISPR 12; CISPR 13; CISPR 14-1 (<i>excluding measure of clicks</i>); CISPR 15; CISPR 16-2-1; CISPR 16-2-3; CISPR 22; CISPR 32; EN 55011; EN 55012; EN 55013; EN 55014-1 (<i>excluding measure of clicks</i>); EN 55015; EN 55022; EN 55032; EN 12015 (<i>excluding measurements of clicks</i>); EN 15194 (sections C1.2.2 and C1.2.3)

Test Technology:	Test Method(s) ^{2,3}:
Intentional Emissions Unlicensed Transmitters	
U.S. (FCC)	
Intentional Radiators	47 CFR, FCC Part 15 C, Unlicensed Transmitters (using ANSI C63.10-2013)
U-NII without DFS Intentional Radiators	47 CFR, FCC Part 15 E, U-NII without DFS (using ANSI C63.10-2013)
Canada (ISED)	
Intentional Radiators License Exempt	RSS-GEN; RSS-102 (Nerve Stimulation); SPR-002 (Nerve Stimulation); RSS-102 (RF Exposure); RSS-210; RSS-213; RSS-244; RSS-247 (without DFS); RSS-310; ANSI C63.10-2013
Japan	
Intentional Radiators License Exempt	ARIB Standard STD-T66; ARIB Standard STD-T99
Australia/New Zealand	
Intentional Radiators License Exempt	AS/NZS 4268 with Radiocommunications (Short Range Devices) Standard 2014
International	
Intentional Radiators License Exempt	ETSI EN 300 220-2; ETSI EN 300 330-2; ETSI EN 303 454; ETSI EN 300 328; ETSI EN 301 893; ETSI EN 302 291; ETSI EN 301 489-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -13, -14, -15, -16, -17, -19, -22, -27, -31, & -52; ETSI EN 300 440-1; ETSI EN 300 440-2; ETSI EN 301 908-1 V11.1.1 (sections 4.2.2 and 4.2.3)

Test Technology:	Test Method(s) ^{2,3}:
Radio Licensed Transmitters	
U.S. (FCC)	
Commercial Mobile Services	47 CFR, FCC Part 22 (cellular), Part 24, Part 25 (below 3 GHz), Part 27 (using ANSI C63.26-2015); ANSI/TIA 603-E
General Mobile Radio Services	47 CFR, Part 22 (non-cellular), Part 90 (below 3 GHz), Part 95, (below 3 GHz), Part 97 (below 3 GHz), and Part 101 (below 3 GHz) (using ANSI C63.26-2015)
Citizens Broadband Radio Services	47 CFR, Part 96 (using ANSI C63.26-2015)
Canada (ISED)	
Licensed Transmitters	RSS-GEN; RSS-102 (Nerve Stimulation); SPR-002 (Nerve Stimulation); RSS-102 (RF Exposure); RSS-119; RSS-123; RSS-127; RSS-132; RSS-133; RSS-134; RSS-137; RSS-139; RSS-192; RSS-195; RSS-197
Korea	
Technical Requirements for Electromagnetic Compatibility	Technical Requirements for Electromagnetic Compatibility (RRA Announce 2018-128, Dec 24, 2018) Korean only; KN 11; KN 13; KN 22; KN 60601-1-2; KN 14-1; KN 14-2; KN 15; KN 61547; KN 301 489-1; KN 301 489-17; KN 301 489-6; KN 301 489-13; KN 301 489-5; KN 301 489-3; KN 301 489-9; KN 301 489-18; KN 301 489-15; KN 301 489-2;

Test Technology:	Test Method(s) ^{2,3}:
Korea (cont.)	KN 301 489-27; KN 301 489-32; KN 301 489-20; KN 62040-2; KN 32; KN 35 (<i>excluding xDSL-specific requirements</i>); KN 61000-6-3; KN 61000-6-1; KN 61000-6-4; KN 61000-6-2
Taiwan	CNS 13438 (<i>up to 6 GHz</i>); LP0001; LP0002
Immunity	
Electrostatic Discharge (ESD)	IEC 61000-4-2; EN 61000-4-2; KN 61000-4-2; IEC 60255-22-2; IEEE C37.90.3
Radiated Immunity	IEC 61000-4-3; EN 61000-4-3; KN 61000-4-3; IEC 60255-22-3; IEEE C37.90.2
Electrical Fast Transient / Burst	IEC 61000-4-4; EN 61000-4-4; KN 61000-4-4; IEC 60255-22-4
Surge Immunity	IEC 61000-4-5; EN 61000-4-5; KN 61000-4-5; IEEE C37.90.1; IEEE C62.41; IEEE C62.45; IEC 60255-22-5 (level 3 and 4)
Conducted Immunity	IEC 61000-4-6; EN 61000-4-6; KN 61000-4-6; IEC 60255-22-6
Power Frequency Magnetic Field Immunity	EN 61000-4-8; IEC 61000-4-8; KN 61000-4-8
Impulse Magnetic Field	IEC 61000-4-9; EN 61000-4-9; KN 61000-4-9
Voltage Dips, Interruptions, and Line Voltage Variations	IEC 61000-4-11; EN 61000-4-11; KN 61000-4-11; IEC 61000-4-17; EN 61000-4-17; IEC 61000-4-29; EN 61000-4-29
Harmonics / Inter-harmonics	IEC 61000-4-13; EN 61000-4-13
Immunity to Conducted, Common Mode Disturbances in the Frequency Range 0 Hz to 150 kHz	IEC 61000-4-16; EN 61000-4-16
Current Harmonics	EN 61000-3-2; IEC 61000-3-2

Test Technology:	Test Method(s) ^{2,3}:
Immunity (cont.)	
Voltage Fluctuations & Flicker	EN 61000-3-3; IEC 61000-3-3
Generic and Product Specific Standards	
Laboratory Equipment (Emission and Immunity)	IEC 61326-1; EN 61326-1; IEC/EN 61326-2-6; IEC/EN 61326-2-2
Medical Equipment (Emissions and Immunity) ³	IEC 60601-1-2; EN 60601-1-2; NBR IEC 60601-1-2
Alarm Systems (Immunity)	EN 50130-4; IEC 50131-2-2; EN 50131-2-2; IEC 50131-5-3; EN 50131-5-3; IEC 62599-2
UPS / Audio / Lighting	IEC 60240-2; EN 62040-2; IEC55103-1; EN 55103-1; IEC 55103-2; EN 55103-2; IEC61547; EN 61547
Household Appliances	CISPR 14-2:1997 + A1:2001; EN 55014-2 + A1:2001 + A2:2008
ITE/Telecom (Immunity)	CISPR 24; EN 55024; KN 24; ETSI EN 300 386; CISPR 35; EN 55035
Residential, Commercial and Light Industrial Generic (Emissions and Immunity)	IEC 61000-6-3; EN 61000-6-3; IEC 61000-6-1; EN 61000-6-1
Industrial Generic (Emissions and Immunity)	IEC 61000-6-4; EN 61000-6-4; IEC 61000-6-2; EN 61000-6-2
Railway (Emissions and Immunity)	EN 50121-1; EN 50121-2; EN 50121-3-1; EN 50121-3-2; EN 50121-4; EN 50121-5; IEC 62236-1; IEC 62236-2; IEC 62236-3-1; IEC 62236-3-2; IEC 62236-4; IEC 62236-5
Uninterruptible Power Supply (Emissions)	IEC 62040-2; EN 62040-2
Tele-control Equipment and Systems (Emissions)	IEC 60870-2-1; EN 60870-2-1
Cable Networks/Radio Signals (Emissions and Immunity)	EN 50083-2; IEC 60728-2
Relays (Emissions and Immunity)	EN 60255-26

<u>Test Technology:</u>	<u>Test Method(s) ^{2,3}:</u>
Generic and Product Specific Standards (cont.)	
Product family standard for lifts, escalators, and moving walks (Immunity)	EN 12016
Vehicles, Boats, and Internal Combustion Engines	EN 55025; CISPR 25
Automatic Electrical Controls	IEC 60730-1 (sections 23 and 26); EN 60730-1 (sections 23 and 26)
Machine Tools (Emissions and Immunity)	EN 50370-1; EN 50370-2
Automotive Component EMC	ISO 11452-2; ISO 11452-4
Agricultural/Forestry Machinery	ISO 14982 (<i>excluding section 6.8</i>)
Communication Networking Devices	IEEE 1613; IEEE 1613.1
Home and Building Electronic, Automation & Control System	EN 50491-5-1; EN 50491-5-2

On the following products or types of products:

Industrial, Scientific, and Medical (ISM) Equipment; Information Technology Equipment (ITE); Household Appliances; Portable Tools; Multimedia; and Medical Equipment.

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*.

³ The laboratory is only accredited for testing activities outlined within the test methods listed above. Reference to any other activity within these standards, such as risk management or risk assessment, does not fall within the laboratory's accredited capabilities.

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 ⁴ :		
Rule Subpart/Technology	Test Method	Maximum Frequency
Unintentional Radiators		
Part 15B	ANSI C63.4-2014	40000 MHz
Industrial, Scientific, and Medical Equipment		
Part 18	FCC MP-5 (February 1986)	40000 MHz
Intentional Radiators		
Part 15C	ANSI C63.10:2013	40000 MHz
U-NII without DFS Intentional Radiators		
Part 15E	ANSI C63.10:2013	40000 MHz
Commercial Mobile Services (FCC Licensed Radio Service Equipment)		
Parts 22 (cellular), 24, 25 (below 3 GHz), and 27	ANSI C63.26-2015	40000 MHz
General Mobile Radio Services (FCC Licensed Radio Service Equipment)		
Parts 22 (non-cellular), 90 (below 3 GHz), 95 (below 3 GHz), 97 (below 3 GHz), and 101 (below 3 GHz)	ANSI C63.26-2015	40000 MHz
Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment) Part 96	ANSI C63.26-2015	40000 MHz

⁴Accreditation 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

TUV SUD CANADA

Laval, Quebec, 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 16th day of December 2019.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2955.20
Valid to June 30, 2021

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