



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

TUV RHEINLAND OF NORTH AMERICA, INC.
710 Resende Road, Building 199
Webster, NY 14580
Mr. David Lanski Phone: (585) 357-6044
Email: dlanski@us.tuv.com

ELECTRICAL

Valid to: November 30, 2024

Certificate Number: 3331.08

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the laboratory's compliance with A2LA's ENERGY STAR® Accreditation Program requirements ¹⁾ and A2LA's FDA ASCA Accreditation Program requirements, accreditation is granted to this laboratory to perform the following radio, telecommunications, electromagnetic compatibility (EMC), and product safety tests:

Test Description:

Test Method(s) ²⁾:

Emissions

Radiated & Conducted
(up to 40 GHz)

47 CFR, FCC Part 15 B (using ANSI C63.4:2014);
47 CFR, FCC Part 18 (using MP-5:1986);
ANSI C63.4:2009;
IEC/CISPR 11; EN 55011; KS C 9811;
CISPR 12; CAN/CSA CISPR 12;
IEC/EN 55013;
CISPR 14-1; IEC/EN 55014-1; KS C 9814-1;
CISPR 15; IEC/EN 55015;
CISPR 22; IEC/EN 55022; AS/NZS CISPR 22:2009 & A1:2010; KN 22;
CISPR 32; EN 55032; KS C 9832;
IEC/EN 12015;
ICES-001; ICES-002, Issue 7;
ICES-003, Issue 6; ICES-003, Issue 7; ICES-005 Issue 5;
VCCI-CISPR 32:2016 (up to 6 GHz); CNS 13803; CNS 13783-1;
CNS 13438:2006 (up to 6 GHz) CNS 15936:2016 (up to 6 GHz);
TCVN 7189 (2009); QCVN 96:2015/BTTTT; QCVN 118:2018/BTTTT

Current Harmonics

IEC/EN 61000-3-2; JIS C 61000-3-2; KS C 9610-3-2;
IEC/EN 61000-3-12

Flicker

IEC/EN 61000-3-3; IEC/EN 61000-3-11; KS C 9610-3-3

Immunity

Electrostatic Discharge

IEC/EN 61000-4-2; KS C 9610-4-2

Radiated

IEC/EN 61000-4-3; KS C 9610-4-3

Test Description:**Test Method(s) ²:*****Immunity (cont.)***

Electrical Fast
Transient / Burst IEC/EN 61000-4-4; KS C 9610-4-4

Surge IEC/EN 61000-4-5; KS C 9610-4-5

Conducted IEC/EN 61000-4-6; KS C 9610-4-6

Power Frequency
Magnetic Field IEC/EN 61000-4-8; KS C 9610-4-8

Voltage Dips,
Short Interrupts, and
Voltage Variations IEC/EN 61000-4-11; KS C 9610-4-11

Ring Wave IEC/EN 61000-4-12; KS C 9610-4-12

***Generic / Product Specific
EMC Standards ³***

IEC/EN 61000-6-2; IEC/EN 61000-6-1;
IEC/EN 61000-6-3; IEC/EN 61000-6-4;
JIS C 1806-1;
IEC/EN 50130-4;
IEC/EN 55014-2;
CISPR 24; IEC/EN 55024
(*excluding Acoustic Telecommunication Terminal Equipment*);
IEC/EN 61326-1;
IEC/EN 61326-2-1; IEC/EN 61326-2-2; IEC/EN 61326-2-3;
IEC/EN 61326-2-4; IEC/EN 61326-2-5; IEC/EN 61326-2-6;
EN/IEC 61326-3-1; EN/IEC 61326-3-2;
IEC/EN 60601-1-2; JIS T0601-1-2; KS C IEC 60601-1-2;
EN/IEC 60533; EN/IEC 62233;
IEC/EN 12895; IEC/EN 14982; IEC/EN 13309;
IEC/EN 50121-2; IEC/EN 50121-3; IEC/EN 50121-4;
EN/IEC 50121-3-1; EN/IEC 50121-3-2;
EN/IEC 61547; KS C 9547; EN/IEC 60945; KN 60945;
IEC/EN 50270; IEC/EN 50293; IEC/EN 50370-1; IEC/EN 50370-2;
IEC/EN 61204-3;
ETSI EN 301 489-1; ETSI EN 301 489-3; ETSI EN 301 489-17;
EN 300 386 v1.5.1; EN 300 386 v1.6.1;
EN 61800-3
(*test methods only, excluding supply influences – magnetic fields*);
KS C 9800-3 Annex 18; KS C 9814-2; KN 24; KS C 9835;
EN 55035 (*except IEC 61000-4-20, and 21*);
KS C 9990; KN 51; KS C 9974-10; KS C 9040-2; KS C IEC 60947-1;
KS C 9610-6-1; KS C 9610-6-2; KS C 9610-6-3; KS C 9610-6-4;
KS X 3124; KS X 3137; KS X 3125; KS X 3127; KS X 3128;
KN 301 489-07; KS X 3130; KS X 3131; KS X 3136; KS X 3126;
KS X 3132; KS X 3139; KN 301 489-24; KN 301 489-26;
KS X 3134; KS X 3138;
ANSI C12.20:2010

Test Description:**Test Method(s) ²:*****Radio Communications****(excluding SAR, DFS, & HAC)*

Unlicensed Radio 47 CFR, FCC Parts 15 C/E (using ANSI C63.10:2013);
47 CFR, FCC Part 15.247, Part 15.245, Part 15.225, & Part 15.407
(using ANSI C63.10:2013)

Canada RSS-GEN (Issue 5, April 2018, Amendment 1 – March 2019,
Amendment 2 – February 2021);
RSS-102 (RF Exposure)^{MEAS}
(Issue 5, March 2015, Amendment 1 – February 2021);
RSS-210 (Issue 10, December 2019, Amendment April 2020);
RSS-215 (Issue 2, June 2009);
RSS-216 (Issue 2, January 2016, Amendment 1 – September 2020);
RSS-220 (Issue 1, March 2009, Amendment 1 – July 2018);
RSS-243 (Issue 3, February 2010);
RSS-247 (without DFS), (Issue 2, February 2017);
RSS-248 (Issue 1, November 2021);
RSS-287, (Issue 2, March 2014, Amendment 2, May 2022);
RSS-288 (Issue 1, January 2012)

European Union (EU) EN 300 220-1; EN 300 220-2; EN 300 330-1; EN 300 330-2;
EN 300 440-1; EN 300 440-2; ETSI EN 301 511;
ETSI EN 301 908-1; ETSI EN 301 908-2; ETSI EN 301 908-13

Taiwan LP0002 (2020)

Vietnam QCVN 55:2011/BTTTT

Product Safety ⁴

Office EN/IEC/CSA/UL 60950-1;
(excluding clauses detailed EN/IEC/CSA/UL 62368-1
*in Table 1 below)**

Electronics EN/IEC/CSA/UL 60065
(excluding clauses detailed
*in Table 2 below)**

Measurement EN/IEC/CSA/UL 61010-1
(excluding clauses detailed
*in Table 3 below)**

Medical UL 60601-1 (Ed. 2);
(excluding clauses detailed IEC 60601-1-2 Edition 4.1 2020-09 CONSOLIDATED VERSION;
*in Table 4 below)** ANSI/AAMI ES60601-1:2005/(R)2012 & A1:2012, C1:2009/(R)2012 &
A2:2010/(R)2012 (Cons. Text) [Incl. AMD2:2021];
CAN/CSA 22.2 601.1-M90 (Ed. 2);
CAN/CSA 22.2 No. 60601-1 (Ed. 3 and 3.1);
EN/IEC 60601-1

Test Description:**Test Method(s) ²:**

ENERGY STAR Tests ¹
 Imaging Equipment
 (copiers, fax machines,
 digital duplicators,
 mailing machines, printers,
 scanners, and
 all-in-one devices)

ENERGY STAR Program Requirements for Imaging Equipment;
 ENERGY STAR Program Requirements Version 3.2;
 Test Method for Determining Imaging Equipment Energy Use,
 Rev. Dec-2018
 With reference to IEC 62301

¹ A2LA provides accreditation to the U.S. EPA's [Conditions and Criteria for Recognition of Laboratories for the ENERGY STAR Program](#) by verifying an organization's compliance to A2LA document [R222 - Specific Requirements - EPA ENERGY STAR Accreditation Program](#) and to the related test methods listed above.

Accreditation by A2LA does not infer Recognition by the EPA for ENERGY STAR testing. Please verify this organization's recognition status at the EPA's website, located at:
http://www.energystar.gov/index.cfm?fuseaction=recognized_bodies_list.show_RCB_search_form

² 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.*

³ For Product Family Standards listed on this scope of accreditation, the laboratory is found to be compliant with all test methods referenced within the Product Family Standard. As such, if outdated versions of the specific test methods are identified by the Product Family Standards listed on this scope of accreditation, it is not necessary to explicitly list the outdated versions of the specific test methods on the scope. In addition, the laboratory is capable of issuing accredited test reports to the outdated versions of the specific test methods although the outdated versions are not listed on this scope of accreditation.

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 ⁵:

<u>Rule Subpart/Technology:</u>	<u>Test Method:</u>	<u>Maximum Frequency:</u>
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

⁵ 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.



***Exclusion Tables**

Table #1: Clauses excluded from IEC 60950-1 and IEC 62368

Standard	Clause	Measurement/Testing
IEC 60950-1	2.1.1.8	Energy hazards – D.C. mains supplies
IEC 60950-1	2.3.1 / 2.3.4	Limits of TNV circuits
IEC 60950-1	2.3.5	Operating voltages generated extern.
IEC 60950-1	2.10.9	Thermal cycling
IEC 60950-1	4.3.6	Direct plug-in equipment
IEC 60950-1	4.3.13	Radiation – Ionizing radiation
IEC 60950-1	4.6.5	Adhesives for constructional purposes
IEC 60950-1	6.2	Protection of equipment users from over-voltages on telecom. Networks
IEC 60950-1	6.3	Protection of the telecommunication wiring system from overheating
IEC 60950-1	7.3	Protection of equipment users from over-voltage on cable distribution systems
IEC 60950-1	7.4.2	Voltage surge test
IEC 60950-1	7.4.3	Impulse test
IEC 60950-1	Annex A	Resistance to heat and fire
IEC 60950-1	Annex H	Ionizing radiation
IEC 60950-1	Annex M	Telephone ringing signals
IEC 60950-1	Annex Q	Voltage dependent resistors
IEC 60950-1	Annex U	Triple insulated wire
IEC 62368-1		
IEC 62368-1	4.7	Equipment for direct insertion in to mains socket-outlets
IEC 62368-1	5.4.1.5.3	Thermal cycling test procedure
IEC 62368-1	5.4.2.3.2.5	Determining transient voltage levels by measurement
IEC 62368-1	5.4.4.6.5	Mandrel test for inseparable thin sheet material
IEC 62368-1	5.4.5.2	Antenna terminal insulation
IEC 62368-1	8.5.4.2	Equipment having an electromechanical device for destruction of media
IEC 62368-1	8.5.5.2	High pressure lamps
IEC 62368-1	10	Radiation
IEC 62368-1	Annex G.9	IC current limiters
IEC 62368-1	Annex G.10	Test for resistors serving as a safeguard
IEC 62368-1	Annex G.13	Tests on coated printed boards
IEC 62368-1	Annex G.15	Pressurized liquid filled components
IEC 62368-1	Annex G.16	IC including capacitor discharge function (ICX)
IEC 62368-1	Annex J	Insulated winding wires for use without interleaved insulation
IEC 62368-1	Annex R	Limited short-circuit test
IEC 62368-1	Annex S	Tests for resistance to heat and fire
IEC 62368-1	Annex U	Mechanical strength of CRTs and protection against the effects of implosion

Table #2 Clauses excluded from IEC 60065

Clause	Measurement/Testing
6.1	Ionizing radiation
6.2	Laser radiation
6.3	Light emitting diodes
8.3	Hygroscopic materials
8.17	Endurance test for wound components
8.21	Mandrel test
10.2	Surge test
10.3	Humidity treatment
12.1.3	Vibration conditioning
12.3	Remote controls
13.3.4	Transient voltages
13.6	Jointed insulation
13.7	Enclosed and sealed parts
14.2	Resistors – damp heat test
14.6	Protective device testing
15.4	Device forming part of the mains plug
18	Mechanical strength of picture tubes and protection against effects of implosion
20.1.3	Pre-conditioning of printed circuit boards
Annex A	Additional requirements for apparatus with protection against splashing water
Annex G	Flammability test methods
Annex H	Insulated winding wires for use without interleaved insulation

Table #3 Clauses excluded from IEC 61010-1

Clause	Measurement/Testing
6.7.1.3	Test equipment for tracking index
9.3.1	Flammability tests
10.5.2	Non-metallic enclosures
11.6	Specially protected equipment (IP rated)
11.7	Fluid pressure and leakage
12.2.1	Ionizing radiation
12.3	UV radiation
12.4	Microwave radiation
12.5	Sound pressure measurements
12.6	Laser sources
13.2.3	Implosion of cathode ray tubes
14.7	Flammability tests
14.8	Transient over voltage
Annex H	Qualification of conformal coating for protection against pollution

Table #4 Clauses excluded from IEC 60601-1

Edition of Standard	Clause	Measurement/Testing
Ed. 2	29	X-radiation
	37	Flammable gasses
	App. F	Flammable mixtures
Ed. 3	8.9.1.7	Material groups classification
	9.5.2	Cathode ray tubes
	9.6.3	Hand-transmitted vibration
	9.7.5	Pressure vessels
	10.1	X-radiation
	11.2	Fire prevention (spark ignition apparatus)
	G	Protection against hazards of ignition of flammable anesthetic mixtures
	G.4.3	Prevention of electrostatic charges
	L	Insulated winding wires for use without interleaved insulation

<p>Testing Activities performed under the scope of the U.S FDA ASCA Pilot Program Specifications: <i>Basic Safety and Essential Performance of Medical Electrical Equipment, Medical Electrical Systems, and Laboratory Medical Equipment – Standards Specific Information for the Accreditation Scheme for Conformity Assessment (ASCA) Pilot Program published on September 25th, 2020, and in accordance with all requirements of A2LA R256 Specific Requirements- FDA ASCA Program</i> ⁶:</p>	
<u>Standards:</u>	<u>ASCA Doc Number:</u>
ANSI/AAMI ES60601-1:2005/(R)2012 & A1:2012, C1:2009/(R)2012 & A2:2010/(R)2012 (Cons. Text) [Incl. AMD2:2021]	19-46
IEC 60601-1-2 Edition 4.1 2020-09 CONSOLIDATED VERSION	19-36
ANSI/AAMI ES60601-1:2005/(R)2012 and A1:2012, C1:2009/(R)2012 and A2:2010/(R)2012 (Consolidated Text)	19-4

⁴ 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.

⁶ These methods have been assessed by A2LA according to A2LA’s FDA ASCA Program requirements. Accreditation by A2LA does not imply FDA ASCA-Accreditation. All ASCA-accreditation decisions for testing laboratory applications are made solely by the FDA, a list of approved laboratories can be found at FDA.gov.



Accredited Laboratory

A2LA has accredited

TUV RHEINLAND OF NORTH AMERICA, INC.

Webster, NY

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 laboratory also meets A2LA R222 - *Specific Requirements EPA ENERGY STAR Accreditation Program*. 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 2nd day of February 2023.

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

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3331.08
Valid to November 30, 2024

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