



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

TUV SUD AMERICA INC.  
2320 Presidential Drive, Suite 101  
Durham, NC 27703  
William (Mac) Elliott Phone: 813 284 2736

ELECTRICAL

Valid To: February 28, 2021

Certificate Number: 2955.18

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Product Safety and EMC tests

**I. Product Safety Testing**

**Product Category:**

**Test Method(s) <sup>1,2</sup>:**

Information Technology Equipment

IEC 60950-1;

*(Excluding:*

EN 60950-1;

*Ionizing and Laser Radiation,*

UL 60950-1;

*UV Radiation,*

CAN/CSA-C22.2 NO. 60950-1;

*Concentration of flammable vapors,*

AS/NZS 60950.1;

*IEC 60529,*

GB 4943.1

*Tests for protection against*

*dust & water ingress,*

*Cathode Ray Tube tests,*

*Hot flaming oil test,*

*Proof tracking (CTI) test,*

*Insulated winding wires test,*

*Power line cross test,*

*10kV surge test,*

*Accessibility test for*

*media destruction device,*

*Test for high pressure lamps,*

*Thermal cycling and thermal aging,*

*Fluid pressure and leakage,*

*Sound pressure level,*

*Resistance to fire)*

**Product Category:**

**Test Method(s) <sup>1,2</sup>:**

Electrical Equipment for Measurement,  
Control and Laboratory Use

IEC 61010-1;  
EN 61010-1;  
UL 61010-1;  
CAN/CSA-C22.2 NO. 61010-1

*(Excluding:  
Ionizing and Laser Radiation,  
UV Radiation,  
Concentration of flammable vapors,  
IEC 60529,  
Tests for protection against  
dust & water ingress,  
Cathode Ray Tube tests,  
Hot flaming oil test,  
Proof tracking (CTI) test,  
Insulated winding wires test,  
Power line cross test,  
10kV surge test,  
Accessibility test for media  
destruction device,  
Test for high pressure lamps,  
Thermal cycling and thermal aging,  
Fluid pressure and leakage,  
Sound pressure level,  
Resistance to fire)*

Audio / Video, Information, and  
Communication Technology Equipment

IEC 62368-1;  
EN 62368-1;  
UL 62368-1;  
CAN/CSA-C22.2 NO. 62368-1

*(Excluding:  
Ionizing and Laser Radiation,  
UV Radiation,  
Concentration of flammable vapors,  
IEC 60529,  
Tests for protection against  
dust & water ingress,  
Cathode Ray Tube tests,  
Hot flaming oil test,  
Proof tracking (CTI) test,  
Insulated winding wires test,  
Power line cross test,  
10kV surge test,  
Accessibility test for  
media destruction device,  
Test for high pressure lamps,  
Acoustic energy measurement  
Thermal cycling and thermal aging,  
Fluid pressure and leakage,  
Sound pressure level,  
Resistance to fire)*

## II. EMC Testing

### Test Technology:

### Test Method(s) <sup>1,2</sup>:

#### *Emissions*

Radiated and Conducted

47 CFR FCC Part 15, Subpart B  
(using ANSI C63.4:2014);  
47 CFR FCC Part 18 (using FCC MP-5:1986);  
IEC CISPR 11; EN 55011;  
IEC 61000-6-3; IEC 61000-6-4  
EN 55014-1;  
CISPR 16-2-1; CISPR 16-2-3;  
CISPR 22; CISPR 32  
EN 55022; EN 55032;  
ICES-001; ICES-003; ICES-006;  
AS/NZS CISPR 11; AS/NZS CISPR 14.1;  
AS/NZS CISPR 22; AS/NZS CISPR 32;  
AS/NZS 61000.6.3; AS/NZS 61000.6.4;  
AS/NZS 61000.3.2; AS/NZS 61000.3.3

Current Harmonics

IEC 61000-3-2; EN 61000-3-2

Voltage Flicker and Fluctuations

IEC 61000-3-3; EN 61000-3-3

#### *Immunity*

Electrostatic Discharge (ESD)

IEC 61000-4-2; EN 61000-4-2; KN 61000-4-2

Radiated Immunity

IEC 61000-4-3; EN 61000-4-3; KN 61000-4-3

Electrical Fast Transients

IEC 61000-4-4; EN 61000-4-4; KN 61000-4-4

Surge

IEC 61000-4-5; EN 61000-4-5; KN 61000-4-5

Conducted Immunity

IEC 61000-4-6; EN 61000-4-6; KN 61000-4-6

Power Frequency Magnetic Field Immunity

IEC 61000-4-8; EN 61000-4-8; KN 61000-4-8

Voltage Dips, Short Interruptions,  
and Line Voltage Variations

IEC 61000-4-11; EN 61000-4-11; KN 61000-4-11

#### *Generic / Product Specific EMC Standards*

Residential, Commercial and  
Light Industrial Generic  
(Emissions and Immunity)

EN 61000-6-1; EN 61000-6-3

Industrial Generic  
(Emissions and Immunity)

EN 61000-6-2; EN 61000-6-4

**Test Technology:****Test Method(s) <sup>1,2</sup>:**

ITE/Telecom (Immunity)

EN 300 386, EN 55024  
(excluding Sections 7.2.1.1.2 and 7.2.2.1.2,  
690 MHz to 6 GHz, RFI at 10 V/m)

Household Appliances

EN 55014-2; IEC CISPR 14-2

Multimedia Equipment

EN 55035; CISPR 35

Medical Equipment  
(Emissions and Immunity) <sup>1</sup>EN 60601-1-2:2015  
(excluding equipment for use in Home Healthcare  
Environment, as well as the spot frequencies  
identified in Section 8.10)Laboratory Equipment  
(Emissions and Immunity)EN 61326-1; EN 61326-2-1; EN 61326-2-2;  
EN 61326-2-3; EN 61326-2-6Uninterruptible Power Supply  
(Emissions and Immunity)

EN 62040-2

Electric Utility Meters

ANSI C12.1  
(Only Tests #17 [excluding 100 kHz Ring Wave],  
25, 27, and 28);  
IEEE C62.41.1;  
IEEE C62.41.2 (excluding 100 kHz Ring Wave)***Country Specific Standards***

Vietnam EMC/Radio Standards

TCVN 7189:2009; TCVN 7317:2003;  
QCVN 118:2018/BTTTT;  
QCVN 86:2019/BTTTT

Korea EMC/Radio Standards

Technical Requirements for Electromagnetic  
Compatibility  
(RRA Public Notification 2018-29, Dec 24, 2018);  
Test Methods for Electromagnetic Compatibility  
(RRA Announce 2018-128, Dec 24, 2018);KN11;  
KN 60601-1-2;  
KN 301 489-1;  
KN 301 489-3;  
KN 301 489-17;  
KN 301 489-32;  
KN 301 489-52;  
KN 35;  
KN 61000-6-1;  
KN 61000-6-2

Japan

VCCI V-2/2016 (up to 6 GHz); V-3/2016; V-4/2012;  
VCCI-CISPR 32:2016

**Test Technology:**

***Radio Tests / Intentional Radiators***

**Test Method(s) <sup>1,2</sup>:**

47 CFR, FCC Part 2;  
47 CFR, FCC Part 15, Subpart C  
(using ANSI C63.4:2014 and ANSI C63.10:2013);  
47 CFR, FCC Part 15, Subpart E  
(using ANSI C63.10:2013 and  
KDB Publication 789033);  
47 CFR, FCC, Part 15 F (using ANSI C63.10:2013);  
47 CFR, FCC, Part 15 G (using ANSI C63.10:2013);  
47 CFR, FCC, Part 15 H (using ANSI C63.10:2013);  
ANSI C63.10:2013

Licensed Radio – FCC

47 CFR, FCC Part 2;  
47 CFR, FCC Parts 22, 24, 25, 27, 30, 73, 74, 80, 87,  
90, 95, 96, 97, 101 (using ANSI/TIA-603-E,  
TIA-102.CAAA-E-2016, and ANSI C63.26:2015);  
ANSI C63.26:2015

Australia / New Zealand

AS/NZS 4268:2017

Europe

EN 300 086;  
EN 300 113; EN 300 113-1; EN 300 113-2;  
EN 300 220-1; EN 300 220-2;  
EN 300 220-3-1; EN 300 220-3-2;  
EN 300 220-4;  
EN 300 296; EN 300 296-1; EN 300 296-2;  
EN 300 328;  
EN 300 330; EN 300 330-1; EN 300 330-2;  
EN 300 390;  
EN 300 440; EN 300 440-1; EN 300 440-2;  
ETSI EN 301 489-1; ETSI EN 301 489-3;  
ETSI EN 301 489-5; ETSI EN 301 489-17;  
ETSI EN 301 489-19; ETSI EN 301 489-33;  
ETSI EN 301 489-52;  
EN 301 511; EN 301 893;  
EN 301 908-1; EN 301 908-2;  
EN 302 065; EN 302 065-1;  
EN 302 065-2; EN 302 065-3;  
ETSI EN 302 065-4;  
EN 302 208;  
ETSI EN 303 413;  
EN 303 417;  
EN 303 883

Canada

RSS-Gen, Issue 5 (Amendment 1, March 2019);  
RSS-102, Issue 5 (March 2015) (RF Exposure);  
RSS-102, Issue 5 (March 2015) (Nerve Stimulation);  
SPR-002, Issue 1 (September 2016);  
RSS-119, Issue 12 (May 2015);  
RSS-130, Issue 2 (February 2019);  
RSS-132, Issue 3 (January 2013);  
RSS-133, Issue 6  
(January 2013, Amendment January 2018);

**Test Technology:****Test Method(s) <sup>1,2</sup>:**Canada  
(cont.)RSS-134, Issue 2 (February 2016);  
RSS-139, Issue 3 (July 2015);  
RSS-210, Issue 10 (December 2019);  
RSS-216, Issue 2 (January 2016);  
RSS-220, Issue 1 (March 2009, Amendment July 2018);  
RSS-247 (without DFS), Issue 2 (February 2017);  
RSS-310, Issue 5 (January 2020)

Taiwan

CNS 13438 (*up to 6 GHz*);  
DGT LP0002

Singapore

IMDA TS SRD

Hong Kong

HKCA 1007; HKCA 1035;  
HKCA 1039; HKCA 1042

Vietnam

QCVN 18:2014/BTTTT; QCVN 54:2011/BTTTT

***RF Exposure***

IEEE C95.3; EN 62311

<sup>1</sup>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.

<sup>2</sup>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*. When a superseded standard or method is required for an accredited test, the scope will include the superseded date/version.

**On the following products or types of products:**

Land Mobile Radio Service, Digital Devices, Peripheral Devices, Personal Communications, Miscellaneous Wireless Communication Services, Private Land Mobile Radio Service, Family Radio Service, Industrial, Scientific, and Medical (ISM) Equipment; Information Technology Equipment (ITE); Household Appliances; Portable Tools; Multimedia; and Medical Equipment

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 <sup>3</sup>:

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

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 <sup>3</sup>:

<b>Rule Subpart/Technology</b>	<b>Test Method</b>	<b>Maximum Frequency (MHz)</b>
<u>U-NII without DFS Intentional Radiators</u> Part 15E	ANSI C63.10:2013	40000 MHz
<u>UWB Intentional Radiators</u> Part 15F	ANSI C63.10:2013	40000 MHz
<u>BPL Intentional Radiators</u> Part 15G	ANSI C63.10:2013	40000 MHz
<u>White Space Device Intentional Radiators</u> Part 15H	ANSI C63.10:2013	40000 MHz
<u>Commercial Mobile Services</u> <u>(FCC Licensed Radio Service Equipment)</u> Parts 22 (cellular), 24, 25 (below 3 GHz), and 27	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000 MHz
<u>General Mobile Radio Services</u> <u>(FCC Licensed Radio Service Equipment)</u> Parts 22 (non-cellular), 90 (below 3 GHz), 95 (below 3 GHz), 97 (below 3 GHz), and 101 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000 MHz
<u>Citizens Broadband Radio Services</u> <u>(FCC Licensed Radio Service Equipment)</u> Part 96	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000 MHz
<u>Maritime and Aviation Radio Services</u> Parts 80 and 87	ANSI/TIA-603-E; ANSI C63.26:2015	40000 MHz
<u>Microwave and Millimeter Bands</u> <u>Radio Services</u> Parts 25, 30, 74, 90 (above 3 GHz), 95 (above 3 GHz), 97 (above 3 GHz), and 101	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000 MHz
<u>Broadcast Radio Services</u> Parts 73 and 74 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000 MHz

<sup>3</sup>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

**TUV SUD AMERICA, INC.**

Durham, NC

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 6<sup>th</sup> day of May 2019.

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

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 2955.18  
Valid to February 28, 2021

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