



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ELECTRICAL

Valid to: February 28, 2021

Certificate Number: 3331.05

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following product safety, radio, telecommunications, and electromagnetic compatibility (EMC) tests:

<u>Test Description:</u>	<u>Test Method(s) ¹:</u>
<i>Emissions</i>	
Radiated & Conducted (up to 40 GHz)	47 CFR, FCC Part 15, Subpart B (using ANSI C63.4:2014); 47 CFR, FCC Part 18 (using MP-5:1986); IEC/CISPR 11; EN 55011; EN/IEC 55012; CISPR 12; EC/EN 55013; CISPR 14-1; IEC/EN 55014-1; CISPR 15; IEC/EN 55015; IEC/CISPR 22; EN 55022; AS/NZS CISPR 22:2009 + A1:2010; EN 55032; CISPR 32; KN 32; ICES-001, Issue 4; ICES-003, Issue 5; VCCI-CISPR 32:2016 (up to 6 GHz); CNS 13803; CNS 13783-1; CNS 13438:2006 (up to 6 GHz); TCVN 7189 (2009); QCVN 118:2018/BTTTT; J55014 (H2O); JIS C 1806-1; RTCA/DO-160D, Sections 21.3 and 21.4; MIL-STD-462; MIL-STD-461D/E/F CE101, CE102, RE101, RE102
Current Harmonics	IEC/EN 61000-3-2; JIS C 61000-3-2; KN 61000-3-2
Flicker and Fluctuations	EN/IEC 61000-3-3; KN 61000-3-3

<u>Test Description:</u>	<u>Test Method(s) ¹:</u>
<i>Immunity</i>	
Electrostatic Discharge	IEC/EN 61000-4-2; KN 61000-4-2; RTCA/DO-160D, Section 25
Radiated	IEC/EN 61000-4-3; KN 61000-4-3
Electrical Fast Transient / Burst	IEC/EN 61000-4-4; KN 61000-4-4
Surge	IEC/EN 61000-4-5; KN 61000-4-5; IEEE Std C37.90.1
Conducted	IEC/EN 61000-4-6; KN 61000-4-6
Power Frequency Magnetic Field	IEC/EN 61000-4-8; KN 61000-4-8
Voltage Dips, Short Interrupts and Voltage Variations	IEC/EN 61000-4-11; KN 61000-4-11
Ring Wave	IEEE Std. C62.41
<i>Generic / Product Specific EMC Standards ²</i>	EN/IEC 61000-6-1; EN/IEC 61000-6-2; EN/IEC 61000-6-3; EN/IEC 61000-6-4; KN 61000-6-1; KN 61000-6-2; KN 61000-6-3; KN 61000-6-4; IEC/EN 61204-3; EN/IEC 60601-1-2; KN 60601-1-2; EN/IEC 61547; ISO 11451-4; EN/IEC 12895; EN/IEC 13309; EN 12015; EN 12016; EN/ISO 13766; EN/ISO 14982; EN 50121-3-2; EN 50121-2; EN 50121-3-1; EN 50121-4; EN 62233; EN 55103-1; EN 55103-2; EN/IEC 61326-1; EN/IEC 61326-2-6; EN/IEC 61326-3-2; EN/IEC 61800-3; KN 61800-3; CISPR 24; EN 55024; KN 24; KN 35; EN 50121-1; EN 50130-4; EN 55103-2; EN 50121-4; EN 50121-3-2; EN/IEC 50155; EN 50270; EN 50293; EN/IEC 55014-2; IEC/CISPR 14-2; KN 14-1; KN 14-2; EN 50370-1; EN 50370-2; EN 50361; EN 50364; EN 50371; KN 15; KN 20; KN 24; KN 61547; ETSI EN 301 489-1; ETSI EN 301 489-3; ETSI EN 301 489-4; ETSI EN 301 489-5; ETSI EN 301 489-6; ETSI EN 301 489-7;

Test Description:	Test Method(s) ¹:
Generic / Product Specific EMC Standards ² (cont.)	ETSI EN 301 489-8; ETSI EN 301 489-9; ETSI EN 301 489-10; ETSI EN 301 489-12; ETSI EN 301 489-15; ETSI EN 301 489-16; ETSI EN 301 489-17; ETSI EN 301 489-18; ETSI EN 301 489-19; ETSI EN 301 489-20; ETSI EN 301 489-23; ETSI EN 301 489-24; ETSI EN 301 489-25; ETSI EN 301 489-26; ETSI EN 300 386 V1.5.1/ V1.6.1; KN 301 489-01; KN 301 489-03; KN 301 489-07; KN 301 489-17

¹ When the date, revision or edition of a test method standard is not identified on the scope of accreditation, the laboratory is expected 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 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 ³ :		
Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
Unintentional Radiators		
Part 15B	ANSI C63.4:2014	40000
Industrial, Scientific, and Medical Equipment		
Part 18	FCC MP-5:1986	40000

³ 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 RHEINLAND OF NORTH AMERICA, INC.

Youngsville, 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 3rd day of July 2019.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3331.05
Valid to February 28, 2021

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