



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

DEKRA CERTIFICATION, INC.
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ELECTRICAL

Valid To: October 31, 2020

Certificate Number: 2764.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Electrical tests:

<u>Test:</u>	<u>Test Method(s) ¹:</u>
<i>EMC</i>	
<i>Emissions</i>	
Conducted and Radiated (3m semi-anechoic chamber)	CISPR 32; EN 55032;
	CISPR 22; EN 55022;
	CISPR 11; EN 55011;
	CFR 47 FCC, Part 15, Subpart B (using ANSI C63.4:2014);
	CFR 47 FCC, Part 18 (using MP-5:1986); ICES-001; ICES-003
Harmonics Current Emissions	EN 61000-3-2; IEC 61000-3-2
Fluctuation and Flicker	EN 61000-3-3; IEC 61000-3-3
<i>Immunity</i>	
Electrostatic Discharge (ESD)	EN 61000-4-2; IEC 61000-4-2
Radiated Immunity	EN 61000-4-3; IEC 61000-4-3
Electrical Fast Transient/Burst (EFT)	EN 61000-4-4; IEC 61000-4-4
Surge Immunity	EN 61000-4-5; IEC 61000-4-5
Conducted Immunity	EN 61000-4-6; IEC 61000-4-6
Power Frequency Magnetic Field	EN 61000-4-8; IEC 61000-4-8
Voltage Dips, Short Interruptions and Voltage Variations Immunity	EN 61000-4-11; IEC 61000-4-11

<u>Test:</u>	<u>Test Method(s) ¹:</u>
<i>Family, Product or Industry Specific Specifications</i>	
	IEC/EN 61000-6-1;
	IEC/EN 61000-6-2;
	IEC/EN 61000-6-3;
	IEC/EN 61000-6-4;
	IEC/EN 55014-1; CISPR 14-1;
	IEC/EN 55014-2; CISPR 14-2;
	IEC/EN 55024; CISPR 24;
	IEC/EN 55020; CISPR 20;
	IEC/EN 60601-1-2;
	IEC/EN 61326-1;
	IEC/EN 61326-2-1 through 2-6;
	EN 301 489-1;
	EN 301 489-3;
	EN 301 489-5;
	EN 301 489-17;
	EN 301 489-19;
	EN 301 489-34;
	EN 301 489-52
<i>Automotive EMC</i>	
Conducted and Radiated Emissions	CISPR 25; EN 55025
Conducted Transient Immunity	ISO 7637-2; ISO 7637-3
Electrostatic Discharge (ESD)	ISO 10605 (<i>excluding clause 10 vehicle test method</i>)
Absorber-lined Shielded Enclosure (ALSE)	ISO 11452-2
Bulk Current Injection (BCI)	ISO 11452-4 (<i>excluding TWC test method</i>)
Product Family Standards	UNECE Regulation 10 (<i>ESA (electronic sub assembly) only</i>); IEC 61851-21-1 (<i>ESA only</i>); EN 61851-21 (<i>clause 9 EMC only</i>); IEC 61851-21-2; EN 61851-22 (<i>clause 11.3 EMC only</i>); EN 50498
<i>RF Testing</i>	
Unlicensed Transmitter / Receiver – Emissions	CFR 47 FCC, Part 15, Subparts C, E, and F (using ANSI C63.10:2013 and FCC KDB 905462 D02 [v02]); RSS-GEN; RSS-210; RSS-213; RSS-220; RSS-247 (with DFS)

<u>Test:</u>	<u>Test Method(s) ¹:</u>
Licensed Transmitter / Receiver – Emissions (excluding SAR and HAC testing)	CFR 47 FCC Parts 2, 22, 24, 25, 27, 90, 95, 96, 97, and 101 (using ANSI/TIA-603-E, TIA 102.CAAA-E, and ANSI C63.26:2015); KDB 971168 D01 Power Measurement License Digital System; RSS-GEN; RSS-102 (RF Exposure Evaluation); RSS-119; RSS-130; RSS-132; RSS-133; RSS-134; RSS-139; RSS-197; RSS-199; ARIB-STD-T66
EU Radio Test	ETSI EN 300 328; ETSI EN 301 893; ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 330; ETSI EN 300 440; ETSI EN 303 413; ETSI EN 303 417
GSM/GPRS/EDGE. Radiated Spurious Emissions	ETSI EN 301 511; ETSI TS 151.010-1; 3GPP TS 51.010-1
WCDMA/UMTS/HSPA Radiated Spurious Emissions	ETSI EN 301 908-1; ETSI TS 134.124; 3GPP TS 34.124
LTE FDD/TDD Radiated Spurious Emissions	ETSI EN 301 908-1; ETSI TS 136.124; 3GPP TS 36.124
<i>Wireless</i>	
GSM; GPRS; EGPRS; UMTS (W-CDMA); LTE; CDMA; CDMA 1RTT; CDMA1xEVDO	CTIA Test Plan for Wireless Device Over-the-Air Performance; Method of Measurement for Radiated RF Power and Receiver Performance, Version 3.6
Wi-Fi	CTIA Test Plan for RF Performance Evaluation of Wi-Fi Mobile Converged Devices, Version 2.0.2
UMTS/GSM/ GPRS/EDGE	3GPP TS 34.114; User Equipment (UE)/Mobile Station (MS) Over the Air (OTA) Antenna Performance; Conformance Testing (excluding reverberation chamber method)

<u>Test:</u>	<u>Test Method(s) ¹:</u>
<i>CBRS</i>	
Broadband Radio Service (CBRS)	Test and Certification for Citizens Broadband Radio Service (CBRS); Conformance and Performance Test Technical Specification; CBSD/DP as Unit Under Test (UUT) Working Document WINNF-TS-0122
<i>Field Trials ²</i>	
GSM, UMTS, LTE	GSM Association Official Document TS.11

On the following products or types of products:

Base Stations, Subscriber Stations, Customer Premise Equipment (CPE), NFC Devices, Mobile Devices, Agents and Managers.

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 This laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these tests.



Testing Activities Performed in Support of FCC Declaration of Conformity and 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
<u>Unintentional Radiators</u> Part 15B	ANSI C63.4:2014	40000 MHz
<u>Industrial, Scientific, and Medical Equipment</u> Part 18	FCC MP-5 (February 1986)	40000 MHz
<u>Intentional Radiators</u> Part 15C	ANSI C63.10:2013	40000 MHz
<u>U-NII without DFS Intentional Radiators</u> Part 15E	ANSI C63.10:2013	40000 MHz
<u>U-NII with DFS Intentional Radiators</u> Part 15E	FCC KDB 905462 D02 (v02)	40000 MHz
<u>UWB Intentional Radiators</u> Part 15F	ANSI C63.10:2013	40000 MHz
<u>Commercial Mobile Services (FCC Licensed Radio Service Equipment)</u> Parts 22 (cellular), 24, 25 (below 3 GHz), and 27	ANSI/TIA-603-E; TIA-102.CAAA-E	40000 MHz
<u>General Mobile Radio Services (FCC Licensed Radio Service Equipment)</u> Parts 22 (non-cellular), 90 (below 3 GHz), 95, 97 (below 3 GHz), and 101 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E	40000 MHz
<u>Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment)</u> Part 96	ANSI/TIA-603-E; TIA-102.CAAA-E	40000 MHz

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

DEKRA CERTIFICATION, INC.

Sterling, VA

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 6th day of December 2018.

A handwritten signature in black ink, appearing to read "L. Sen", written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 2764.01
Valid to October 31, 2020

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