



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ELECTRICAL (EMC)

Valid to: September 30, 2020

Certificate Number: 1983.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Electromagnetic Compatibility, Bluetooth, Radio & Wireless, and Specific Absorption Rate (SAR) tests:

Tests:

Standards*:

Emissions

Radiated & Conducted

CFR 47 FCC Parts 2, 15
(using ANSI C63.4-2014, ANSI C63.4a-2017),
and 18
(using MP-5-1986);
CISPR 25 (*excluding clause 5*);
ICES 001; ICES 002; ICES 003; ICES 004;
ICES 005; ICES 006;
VCCI V-3 (*up to 6 GHz*);
72/245/EWG; ECE R10;
RTCA/DO-160 D/E/F/G
(section 21, except reverberation method)

Immunity

Electrostatic Discharge (ESD)

EN 61000-4-2; IEC 61000-4-2;
RTCA/DO-160 D/E/F/G
(section 25)

Radiated Immunity

EN 61000-4-3; IEC 61000-4-3;
ECE R10; ISO 11452-2;
RTCA/DO-160 D/E/F/G
(sections 19, 20 except reverberation method)
(only Cat. R, S, T, W, Y)

Electrical Fast Transient/Burst

EN 61000-4-4; IEC 61000-4-4;
RTCA/DO-160 D/E/F/G
(section 17)

Tests:

Standards*:

Immunity (cont.)

Surge Immunity	EN 61000-4-5; IEC 61000-4-5; RTCA/DO-160 D/E/F/G (section 22)
Conducted Immunity	EN 61000-4-6; IEC 61000-4-6 RTCA/DO-160 D/E/F/G (section 18, 19, 20)
Power Frequency Magnetic Field Immunity	EN 61000-4-8; IEC 61000-4-8 (excluding short duration mode)
Voltage Dips, Short Interruptions, and Line Voltage Variations	EN 61000-4-11; IEC 61000-4-11
Ring Wave	EN 61000-4-12; IEC 61000-4-12
Harmonics and Interharmonics	EN 61000-4-13; IEC 61000-4-13
Voltage Fluctuation	EN 61000-4-14; IEC 61000-4-14
Conducted, Common Mode Disturbances	EN 61000-4-16; IEC 61000-4-16
Damped Oscillatory Wave	EN 61000-4-18; IEC 61000-4-18
Variation of Power Frequency	EN 61000-4-28; IEC 61000-4-28
Voltage Dips, Short Interruptions, and Voltage Variations	EN 61000-4-29; IEC 61000-4-29
Transient Immunity on Supply Lines and Non-Supply Lines	ISO 7637-2; ISO 7637-3
Bulk Current Injection	ISO 11452-4
Power Input	RTCA/DO-160 D/E/F/G (section 16)
Magnetic Effect	RTCA/DO-160 D/E/F/G (section 15)
<i>EMC Product Specific Standards</i>	EN 50121-3-2
<i>Bluetooth</i>	
Bluetooth RF, Protocol and Profile Conformance Profile Interoperability	Bluetooth Core and Profile Specifications; Bluetooth Test Specifications (including EDR)
Bluetooth RF, Low Energy	RF Conformance for Bluetooth Low Energy



Tests:

SAR

Exposure to Electromagnetic Fields

Radio, Wireless

***Mobile Communication
(excluding protocol conformance testing)***

OTA Testing

Standards*:

EN 50383 (*excluding clause 6*); IEEE C95.3;
RF Radiation Exposure, KDB 865664,
KDB 447498 (using IEEE 1528-2013);
RSS 102; SPR-002; EN 50566

IEC 62493

47 CFR Parts 2 (including SAR and MPE), 15 C/D/E;
CFR 47 FCC Parts 2, 20, 22, 24, 25, 27, 30, 73, 74,
80, 87, 90, 95, 96, 97, 101,
KDB 971168 (using ANSI/TIA 603-D (2010));
ANSI/TIA 603-E (2016);
ANSI/TIA-102.CAAA-D/E;
CFR 47 FCC Part 20 (using KDB 935210);
RSS GEN; RSS 111; RSS 112; RSS 117; RSS 119;
RSS 123; RSS 125; RSS 127; RSS 130; RSS 131;
RSS 132; RSS 133; RSS 134; RSS 135; RSS 137;
RSS 139; RSS 141; RSS 142; RSS 170; RSS 181;
RSS 182; RSS 191; RSS 192; RSS 194; RSS 195;
RSS 140; RSS 196; RSS 197;
RSS 199; RSS 210; RSS 211;
RSS 213; RSS 215; RSS 216; RSS 220; RSS 222;
RSS 236; RSS 238; RSS 243; RSS 244; RSS 247;
RSS 251; RSS 252; RSS 287; RSS 288; RSS 310;
ARIB STD-T66; ARIB STD-T71; ARIB STD-T90;
TELEC T-241;
47 CFR 47 FCC Part 15, KDB 789033,
KDB 905462 (using ANSI C63.10-2013);
47 CFR 47 FCC Part 15 (using ANSI C63.17-2013);
ANSI C63.26-2015

GSM: TS 51.010-01; ETSI TS 151010-1
UMTS: TS 34.124; ETSI TS 134124
LTE: TS 36.124; ETSI TS 136124

OTA: CTIA Test Plan for Wireless Over-the-Air
Performance (Free Space only)

On the following products or types of products:

Information Technology Equipment (ITE), Industrial, Scientific and Medical Equipment (ISM), Automotive
Equipment, Telecommunications Equipment

*Note: 3m and 10m semi-anechoic chambers



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.1¹:

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
Unlicensed Personal Communication Systems Devices Part 15D	ANSI C63.17:2013	40000 MHz
U-NII without DFS Intentional Radiators Part 15E	ANSI C63.10:2013	40000 MHz
U-NII with DFS Intentional Radiators Part 15E	FCC KDB Publication 905462 D02 V02	40000 MHz
UWB Intentional Radiators Part 15F	ANSI C63.10:2013	40000 MHz
BPL Intentional Radiators Part 15G	ANSI C63.10:2013	40000 MHz
White Space Device Intentional Radiators Part 15H	ANSI C63.10:2013	40000 MHz
Commercial Mobile Services (FCC Licensed Radio Service Equipment) Parts 22 (cellular), 24, 25 (non-microwave), and 27	ANSI/TIA-603-E-2016; TIA-102.CAAA-E-2016; ANSI C63.26-2015	40000 MHz
General Mobile Radio Services (FCC Licensed Radio Service Equipment) Parts 22 (non-cellular), 90 (non-microwave), 95, 97, and 101 (non-microwave)	ANSI/TIA-603-E-2016; TIA-102.CAAA-E-2016; ANSI C63.26-2015	40000 MHz
Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment) Part 96	ANSI/TIA-603-E-2016; TIA-102.CAAA-E-2016; ANSI C63.26-2015	40000 MHz



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.1¹:

Rule Subpart/Technology	Test Method	Maximum Frequency
Maritime and Aviation Radio Services Parts 80 and 87	ANSI/TIA-603-E-2016; ANSI C63.26-2015	40000 MHz
Microwave and Millimeter Bands Radio Services Parts 25, 30, 74, 90 (M, DSRC, Y, Z), Part 95 (M and L), and 101	ANSI/TIA-603-E-2016; TIA-102.CAAA-E-2016; ANSI C63.26-2015	40000 MHz
Broadcast Radio Services Parts 73 and 74 (non-microwave)	ANSI/TIA-603-E-2016; TIA-102.CAAA-E-2016; ANSI C63.26-2015	40000 MHz
RF Exposure Devices Subject to SAR Requirements	IEEE Std 1528:2013	6000 MHz
Signal Boosters Part 20 (Wideband Consumer Signal Boosters, Provider-specific signal boosters, and Industrial Signal Boosters)	ANSI C63.26-2015; FCC KDB 935210 D03 (v04); FCC KDB 935210 D04 (v02); FCC KDB 935210 D05 (v01r01)	40000 MHz

¹Accreditation 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

EUROFINS PRODUCT SERVICE GMBH

Reichenwalde, Germany

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 20th day of December 2018.

A blue ink signature of the Senior Director of Accreditation Services.

Senior Director, Accreditation Services
For the Accreditation Council
Certificate Number 1983.01
Valid to September 30, 2020

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