



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

RADIOMETRICS MIDWEST CORPORATION

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ELECTRICAL (EMC)

Valid To: February 28, 2022

Certificate Number: 1495.01

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

Technology:

Test Method(s):

Radiated and Conducted Emissions
Measurements Unintentional
Radiators
(*E-field 10k to 18 GHz*)
(*LISN 10k to 400 MHz*)
(*Current Probe 10Hz to 1GHz*)

CFR 47, FCC Part 15B (using ANSI C63.4-2014);
CFR 47, FCC Part 18 (FCC MP-5:1986);
ICES-003, Issue 6:2019;
IEC CISPR 11:2015 (*excluding DC-AN*);
IEC CISPR 22:2008; IEC CISPR 32:2015;
EN 55011:2016 (*excluding DC-AN*);
EN 55032:2015;
MIL-STD 461E:1999 (Methods RE102, CE101, CE102);
MIL-STD 461F:2007 (Methods RE102, CE101, CE102);
MIL-STD 461G:2015 (Methods RE102, CE101, CE102);
RTCA/DO-160E:2004 (Section 21);
RTCA/DO-160F:2007 (Section 21 Anechoic Chamber Method);
RTCA/DO-160G:2010 (Section 21 Anechoic Chamber Method);
VCCI CISPR 32 (2016) (*up to 6 GHz*)

Radiated and Conducted Emissions
Measurements; Intentional Radiators
& Radio Equipment
(*9 kHz to 26 GHz*)

CFR 47, FCC Part 15C (using ANSI C63.10-2013);
CFR 47, FCC Parts 22, 24, 25, 27, 90, 95, 97 & 101 (General
Mobile Radio Services per ANSI/TIA-603-E, Commercial Mobile
Services per ANSI/TIA-603-E and ANSI C63.26:2015);
CRF 47, FCC Parts 20 & 90.219 (Signal Boosters per ANSI
C63.26:2015);
RSS-GEN: Issue 5, 2019;
RSS-119: Issue 12, 2015;
RSS-130 Issue 2, 2019;
RSS-131 Issue 3, 2017;
RSS-210: Issue 10, 2019;
RSS-247: Issue 2, 2017 (without DFS);
ETSI EN 300 330 V2.1.1;
ETSI EN 300 220-1 V3.1.1;
ETSI EN 300 440 V2.2.1

Technology:

Test Method(s):

Radiated Emissions Measurements
(H-field 30Hz to 30 MHz)

CFR 47, FCC Part 15C (using ANSI C63.4-2014);
CFR 47, FCC Part 18 (using FCC MP-5:1986);
MIL-STD 461E:1999 (Method RE101);
MIL-STD 461F:2007 (Method RE101);
MIL-STD 461G:2015 (Method RE101)

Electrostatic Discharge Immunity

IEC 61000-4-2:2008;
RTCA/DO-160E:2004 (Section 25);
RTCA/DO-160F:2007 (Section 25);
RTCA/DO-160G:2010 (Section 25);
MIL-STD 461G:2015 (Method CS118);
ISO 10605; ISO 10605:2001

Radiated Immunity
(E-field 10kHz to 18 GHz)

IEC 61000-4-3:2006 + A1 2007 + A2 2010;
MIL-STD 461E:1999 (Method RS103);
MIL-STD 461F:2007 (Method RS103);
MIL-STD 461G:2015 (Method RS103);
RTCA/DO-160E:2004 (Section 20, Anechoic Chamber Method);
RTCA/DO-160F:2007 (Section 20, Anechoic Chamber Method);
RTCA/DO-160G:2010 (Section 20, Anechoic Chamber Method)

Radiated Immunity
(H-field 30 Hz to 100 kHz)

MIL-STD 461E:1999 (Method RS101);
MIL-STD 461F:2007 (Method RS101);
MIL-STD 461G:2015 (Method RS101);
IEC 61000-4-8:2009

Conducted Immunity
(30Hz to 400 MHz)

MIL-STD 461E:1999 (Methods CS101, CS114);
MIL-STD 461F:2007 (Methods CS101, CS114);
MIL-STD 461G:2015 (Methods CS101, CS114);
RTCA/DO-160E:2004 (Section 18 and 20);
RTCA/DO-160F:2007 (Section 18 and 20);
RTCA/DO-160G:2010 (Section 18 and 20);
IEC 61000-4-6:2013; ISO 11452-4:2011

Voltage Dips, Short Interruptions
and Voltage Variations

IEC 61000-4-11:2004;
RTCA/DO-160E:2004 (Section 16);
RTCA/DO-160F:2007 (Section 16);
RTCA/DO-160G:2010 (Section 16)

Electrical Fast Transient Immunity

IEC 61000-4-4:2012

Surge Immunity & Voltage Spikes

IEC 61000-4-5:2005;
IEC 61000-4-5:2014;
RTCA/DO-160E:2004 (Section 17);
RTCA/DO-160F:2007 (Section 17);
RTCA/DO-160G:2010 (Section 17)

Induced Signal Susceptibility

RTCA/DO-160E:2004 (Section 19);
RTCA/DO-160F:2007 (Section 19);
RTCA/DO-160G:2010 (Section 19)

Technology:**Test Method(s):**

Lightning Induced Transient
Susceptibility

RTCA/DO-160E:2004 (Section 22), (*Waveform Sets A to F Only*);
RTCA/DO-160F:2007 (Section 22), (*Waveform Sets A to F Only*);
RTCA/DO-160G:2010 (Section 22), (*Waveform Sets A to F Only*)

Magnetic Effect

RTCA/DO-160G:2010 (Section 15)

Vehicle level RF Immunity
(*Excluding parallel-plate TLS*)

ISO 11451-2:2005 and/or 2015

Vehicle RF Radiated Emissions

CISPR 12:2007 + A1 2009

Vehicle Component RF Emissions

CISPR 25:2016 (*ASLE method*)

Vehicle Component Level RF
Immunity

ISO 11452-2:2019

Vehicle Component Immunity to
Transients

SAE J1113-11:2018;
ISO 7637-2:2011 (*12V Systems only*)

Screening Attenuation Measurements
by Reverberation Chamber Method

IEC 61726:2015

Screening Attenuation

IEEE Std 299:2006

Electricity Meters Code for
Electricity Metering (*Basic
Radiation Susceptibility only*)

ANSI C12.1:2014 (Section 4.7.3.12.1, Anechoic Chamber Method
Only)

Harmonic Current Emissions

EN 61000-3-2:2014

Voltage Fluctuations and Flicker

EN 61000-3-3:2013

Product Family Standards:

ISO 13766-1:2018 (*Excluding Section 4.9*);
ISO 13766-2:2018 (*Excluding Section 5.3*);
ISO 14982:2009; ISO 7176-21:2009 (Anechoic Chamber Method);
EN 12184:2009;
EN 55035:2017 (*Excluding xDSL Ports*);
IEC 60601-1-2:2014; EN 61000-6-1:2019;
EN 61000-6-2:2019;
EN 61000-6-3:2007 + A1: 2011;
EN 61000-6-4:2007 + A1: 2011;
EN 61326-1:2013;
RESNA WC-2:2009 (Section 21);
ETSI EN 301 489-1 V2.2.3;
ETSI EN 301 489-3 V2.1.1;
ETSI EN 301 489-17 V3.2.0;
ETSI EN 300 220-2 V3.2.1
(*These standards use a subset of the above documents for technical reference*)

Testing Activities Performed in Support of FCC 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
<u>Unintentional Radiators</u> Part 15B	ANSI C63.4:2014	18000 MHz
<u>Industrial, Scientific, and Medical Equipment</u> Part 18	FCC MP-5 (February 1986)	18000 MHz
<u>Intentional Radiators</u> Part 15C	ANSI C63.10:2013	26000 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; ANSI C63.26:2015	26000 MHz
<u>General Mobile Radio Services (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	26000 MHz
<u>Signal Boosters</u> Part 20 (Wideband Consumer Signal Boosters, Provider-specific Signal Boosters, and Industrial Signal Boosters), Section 90.219	ANSI C63.26:2015	26000 MHz

¹Accreditation does not imply acceptance to the FCC equipment authorization program. Please see the FCC





Accredited Laboratory

A2LA has accredited

RADIOMETRICS MIDWEST CORPORATION

Romeoville, IL

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 27th day of January 2020.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1495.01
Valid to February 28, 2022

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