



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

F2 LABS
16740 Peters Road
Middlefield, OH 44062
Wendy Fuster Phone: 301 253 4500 Ext. 101

ELECTRICAL (EMC)

Valid To: November 30, 2019

Certificate Number: 0793.02

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

Tests (Parameters):

Standard(s) ¹:

Emissions (up to 40 GHz)

Generic or Product Specific

EN 50270; EN 55015; EN 60601-1-2; EN 61000-6-3;
EN 61000-6-4; EN 61326; EN 61326-2-1;
EN 61326-2-2; EN 61326-2-3; EN 61326-2-4;
EN 61326-2-5; EN 61326-2-6; EN 55014-1;
EN 62233; IEC 62233;
IEC 61326; IEC 61326-2-1; IEC 61326-2-2;
IEC 61326-2-3; IEC 61326-2-4;
IEC 61326-2-5; IEC 61326-2-6;
IEC 60601-1-2; IEC 60601-1-2 Ed. 3.0 b:2007;
EN 60601-1-2:2007/AC:2010; EN 60601-1-2:2015;
IEC 60601-1-2 Ed 4.0:2014; KN 60601-1-2;
IEC 61000-6-3; KN 61000-6-3;
KN 61000-6-4; IEC 61000-6-4;
IEC 55014-1; CISPR 14-1; CISPR 15; KN 14-1; KN 15;
CNS 13438 (up to 6 GHz); KN32; CISPR 32;
SI 961 Part 6.1; IMDA TS SRD;
IEC 60601-2-64 (section 201.17);
IEC 60601-2-1 (section 201.17)

Basic Standards

(Conducted;
Radiated – 9 kHz to 40 GHz;
3m / 10m site)

CFR 47, FCC Part 15, Part B (using ANSI C63.4:2014);
CFR 47, FCC Part 18 (using MP-5:1986);
CFR 47, FCC Part 15, Part C (using ANSI C63.10:2013);
ANSI C63.4:2003, 2009;
ANSI C63.10:2013; VCCI/V-3 (up to 6 GHz);
CNS 13438 (up to 6 GHz); AS/NZS 3548;
ICES-001; ICES-003; EN 55011; KN11; CISPR 11;
KN 22; CISPR 22; EN 55022; SI 961 Part 6.1

Current Harmonics

IEC/EN 61000-3-2; KN 61000-3-2

Tests (Parameters):

Standard(s) ¹:

Emissions (cont.)

Voltage Fluctuations and Flicker

IEC/EN 61000-3-3; KN 61000-3-3

Immunity

Generic or Product Specific

IEC 60601-1-2; EN 60601-1-2:2015;
EN 60601-1-2:2007/AC:2010;
IEC 60601-1-2 Ed. 3.0 b:2007;
IEC 60601-1-2 Ed. 4.0:2014;
EN 61547; EN 61000-6-1; EN 61000-6-2; EN 55024;
EN 61326; EN 60601-1-2; EN 50270; EN 301 489-1;
EN 301 489-3; EN 301 489-17; IEC 61547;
IEC 61000-6-1; IEC 61000-6-2;
IEC 55024; IEC 61326; IMDA TS SRD;
ANSI/RESNA WC-2 2009, Section 21;
ISO 7176-21:2009; SI 961 Part 6.2; KN 35;
KN 60601-1-2; KN 24; KN 14-2; KN 61547;
KN 61000-6-1; KN 61000-6-2; KN 301 489-1;
KN 301 489-3; KN 301 489-17; CISPR 14-2;
CISPR 24; IEC 55014-2; EN 55014-2; ISO 22200

Basic Standards

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

Electrostatic Discharge (ESD)

KN 61000-4-2

Radiated Immunity

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

Electrical Fast Transient/Burst

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

Surge Immunity

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

Conducted Immunity

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

Power Frequency Magnetic
Field Immunity

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

Voltage Dips, Short Interruptions,
and Line Voltage Variations

EN 61000-4-11; IEC 61000-4-11; KN 61000-4-11
IEC 61000-4-16; EN 61000-4-16

Radio (up to 40 GHz)
(excluding SAR)

CFR 47, FCC Part 15, Subpart C
(using ANSI C63.10:2013);
RSS-210; RSS-247; RSS-GEN;
EN 300 328; EN 300 330-2;
IMDA TS SRD;
EN 300 440-1; EN 300 440-2;
EN 300 220-2

RF Exposure

IEEE C95.1; IEEE C95.3; OET Bulletin 65;
ICNIRP Guidelines Vol. 74 #4



Tests (Parameters):

Avionics/Military

Standard(s) ¹:

DO 160-Sections 21 and 25;
NFPA 1982- Sections 8.19-8.21 for PASS devices

Field Testing - Insitu Methods ²:

Emissions

Generic or Product Specific

EN 60601-1-2:2015; EN 60601-1-2:2007/AC:2010;
IEC 60601-1-2 Ed. 4.0:2014;
IEC 60601-1-2 Ed. 3.0 b:2007;
EN 60601-1-2; EN 61000-6-3; EN 61000-6-4;
EN 61326; EN 55014-1; IEC 55014-1;
IEC 60601-1-2; IEC 61000-6-3; IEC 61000-6-4;
IEC 61326; CISPR 14-1;
CFR 47, FCC Part 15, Subpart B,
(using ANSI C63.4:2014);
CFR 47, FCC Part 18 (using MP-5:1986);
ANSI C63.4:2003, 2009;
EN 55011; EN 55022;
ICES-001; ICES-003, Issue 6;
CISPR 11; CISPR 22

Immunity

Generic or Product Specific

EN 60601-1-2:2015; EN 60601-1-2:2007/AC:2010;
IEC 60601-1-2 Ed. 4.0:2014;
IEC 60601-1-2 Ed. 3.0 b:2007;
EN 61000-6-1; EN 61000-6-2; EN 55024;
EN 61326; EN 60601-1-2; IEC 61000-6-1;
IEC 61000-6-2; IEC 55024; IEC 61326;
IEC 60601-1-2; CISPR 14-2; CISPR 24; ISO 22200;
EN 61000-4-2; IEC 61000-4-2;
EN 61000-4-3; IEC 61000-4-3;
EN 61000-4-4; IEC 61000-4-4;
EN 61000-4-5; IEC 61000-4-5;
EN 61000-4-6; IEC 61000-4-6;
EN 61000-4-8; IEC 61000-4-8;
EN 61000-4-11; IEC 61000-4-11

RF Exposure

IEEE C95.1; IEEE C95.3; OET Bulletin 65;
ICNIRP Guidelines Vol. 74 #4

On the following types of products/equipment:

Information Technology Equipment (ITE), Scientific Equipment, Industrial Equipment, Test & Measurement Equipment, Lighting Equipment, Household Appliances / Electric Tools, Audio/Video Equipment, Medical Equipment, Electrical Control Equipment, and Electrical Laboratory Equipment.



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*.

²This 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 |
|--|--------------------------|--------------------------|
| 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 |

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

F2 LABS

Middlefield, OH

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *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 8 January 2009).



Presented this 27th day of November 2017.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 0793.02
Valid to November 30, 2019

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