



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

NATIONAL TECHNICAL SYSTEMS (NTS)
Massachusetts Facility
1146 Massachusetts Avenue
Boxborough, MA 01719
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ELECTRICAL

Valid to: September 30, 2019

Certificate Number: 0214.14

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Electromagnetic Compatibility/Interference (EMC/EMI), Lightning Transients, Surges and Product Safety tests:

Tests:

Test Method(s) ¹:

Emissions

Radiated/Conducted
(3 m Semi Anechoic Chamber)
(10m Semi Anechoic Chamber)

47 CFR, FCC Part 15 B (using ANSI C63.4:2014);
47 CFR, FCC Part 18 (using MP-5:1986);
ICES-003;
CISPR 32; EN 55032; KN 32;
CISPR 22; EN 55022; KN 22; TCVN 7189 (2009);
CISPR 11; EN 55011;
CISPR 14-1; EN 55014-1;
VCCI V-3 (up to 6 GHz);
CNS 13438 (up to 6 GHz);
AS/NZ 3548;
MIL-STD-461A, B, & C (Methods CE01, CE03,
RE01, & RE02);
MIL-STD-461D, E, & F (Methods CE101, CE102,
CE106 [up to 18 GHz], RE101, & RE102);
MIL-STD-462; MIL-STD-462D;
RTCA/DO-160C, D, E, F, & G (Section 21)

Current Harmonics

EN/IEC 61000-3-2

Voltage Fluctuations & Flicker

EN/IEC 61000-3-3

Magnetic Effects

RTCA/DO-160D, E, F, & G (Section 15)

Tests:

Test Method(s) ¹:

Immunity

Electrostatic Discharge (ESD)

IEC/EN/KN 61000-4-2;
RTCA/DO-160D, E, F, & G (Section 25);
MIL-STD-1686

Radiated Immunity

IEC/EN/KN 61000-4-3;
RTCA/DO-160C, D, E, F, & G (Section 20);
MIL-STD-461A, B, & C (Methods RS01, RS02, &
RS03); MIL-STD-462; MIL-STD-462D;
MIL-STD-461E & F (Methods RS101 & RS103);
MIL-HDBK-240;
DoD-STD-1399 Section 70;
IEC/EN/KN 61000-4-8

Electrical Fast Transient/Burst

IEC/EN/KN 61000-4-4

Electromagnetic Pulse (EMP)

EN/IEC 61000-4-9;
EN/IEC 61000-4-10

Surge Immunity

EN/IEC 61000-4-5 (*excluding 6.2*);
IEC/EN/KN 61000-4-12;
RTCA/DO-160C, D, E, F & G (Sections 17, 19, &
22)

Conducted Immunity

IEC/EN/KN 61000-4-6;
IEC/EN 61000-4-16;
RTCA/DO-160C, D & E (Sections 18 & 20);
MIL-STD-461A, B & C (Methods CS01, CS02, &
CS06); MIL-STD-462; MIL-STD-462D;
MIL-STD-461E & F (Methods CS101, CS106,
CS109, CS114, CS115, & CS116)

Voltage Dips, Short Interruptions & Line
Voltage Variations

IEC/EN/KN 61000-4-11;
EN/IEC 61000-4-29;
IEC 61000-4-34:2005 + A1:2009

Harmonics & Interharmonics

IEC 61000-4-13

Power quality

RTCA/DO-160C, D, E, F, & G (Section 16);
MIL-STD-1399-300A & B;
MIL-STD-704A, B, C, D, E, & F;
MIL-STD-1275B, C, & D;
ATIS 0600315*;
ETSI/EN 300-132-2; ETSI/EN 300-132-3

***Generic/Product Family Standards & Industry
Standards***

IEC/EN/KN 61000-6-1; IEC/EN/KN 61000-6-2;
IEC/EN 61000-6-3; IEC/EN 61000-6-4;
EN 60601-1-2; IEC/EN 61326-1;
GR-1089-CORE;
ETSI EN 300 386; ATT-TP-76200;
CISPR 24; EN 55024; KN 24; KN 35



Tests:

Test Method(s) ¹:

Product Safety

Electrical & Electronic Components

MIL-STD-202 (300 Series Methods, *excluding methods 304 & 306*)

Acoustics

Acoustic Characteristics of Materials & Structures

EN/IEC 60065; EN/IEC 61010-1;
CSA C22.2 No. 1010-1;
MIL-STD-740-2;
UL 61010A-1; UL 3111;
ISO 7779

Sound Power/Sound Pressure

CSA C22.2 No. 1010-1;
GR-63-CORE;
EN/IEC 60065; EN/IEC 61010-1;
ETS 300/753;
MIL-STD-740-1;
UL 61010A-1; UL 3111;
ISO 7779

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*.

*NOTE: The laboratory's accreditation includes all revisions of the standards identified by this mark above.

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.1²

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 (February 1986)	40000

² 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

NATIONAL TECHNICAL SYSTEMS (NTS)

Boxborough, MA

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 15th day of November 2017.

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

President and CEO
For the Accreditation Council
Certificate Number 0214.14
Valid to September 30, 2019

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