



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY DALLAS – PLANO WEST
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ELECTRICAL

Valid To: December 31, 2025

Certificate Number: 214.19

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the organization’s compliance with A2LA’s FDA ASCA Accreditation Program ¹ requirements), accreditation is granted to this laboratory to perform the following EMC, Radio, and Telecommunication tests on IT/Multimedia Equipment, Audio Equipment, Industrial Equipment, Radio Equipment, and Cellular Devices, Military/Aerospace, Aircraft Components, and Automotive Components:

<u>Test Technology:</u>	<u>Test Method(s):</u>
Emissions	
Radiated and Conducted	47 CFR, FCC Part 15 (Subpart B) using ANSI C63.4:2014 ² ; 47 CFR, FCC Part 18 using FCC MP-5:1986; GR 1089-CORE; ICES-001 (Issue 5, July 2020); ICES-002 (Issue 7, September 2020) ICES-003 (Issue 7, October 2020) ICES-004 (Issue 5, October, 2022); ICES-005 (Issue 5, December 2018); ICES-006 (Issue 3, July 2018)
International	IEC/CISPR 11 Ed. 6.0 (2015) +A1(2016) CISPR 11 Ed. 6.2 (2019); CISPR 11: 2015 A1:2016 A2:2019 IEC/CISPR 11 Ed. 4.1 (2004-06) +A2(2006); IEC/CISPR 11 Ed. 5 (2009-05) +A1(2010) CISPR 12 (2007) + A1 (2009); CISPR 14-1:2020; CISPR 14-1 (2005) + A1 (2008) + A2 (2011); CISPR 14-1 (2016); IEC/CISPR 15 (2018); CISPR 15 (2009); CISPR 32 Ed. 2.1 (2015) +A1(2019); CISPR 32 Ed. 1 (2012-01); CISPR 16-2-3:2016; CISPR 16-2-3:2019; CISPR 16-2-1:2014; CISPR 16-2-1:2014+A1:2017



Test Technology:

Test Technology:

<u>Test Technology:</u>	<u>Test Method(s):</u>
Conducted Immunity (MIL/RTCA/DO)	MIL-STD-1399; MIL-STD-461 B-G (Methods CS101, CS102, CS103, CS104, CS105, CS109, CS114, CS115, CS116, CS117, CS118); MIL-STD-462; MIL-PRF-28800F; RTCA/DO-160C-G (Sections 16, 17, 18,19, 20, 22)
Power Frequency Magnetic Field Immunity	EN/IEC 61000-4-8 (excluding short duration mode); KS C 9610-4-8 (excluding short duration mode); IEC 61000-4-8; EN 61000-4-8; IEC 61000-4-8, Ed. 1.1 (2001); IEC 61000-4-8 (2009); KS C 9610-4-8; SANS 61000-4-8 Ed. 2 (2009)
Pulsed Magnetic Field	IEC 61000-4-9; EN 61000-4-9; BS EN 61000-4-9 (2016); SANS 61000-4-9 Ed. 1.1 (2003); IEC 61000-4-9 (2016); KS C 9610-4-9
Damped Oscillatory Magnetic Field	IEC 61000-4-10; EN 61000-4-10; IEC 61000-4-10 (2016); SANS 61000-4-10 Ed. 1.1 (2003)
Voltage Dips, Short Interruptions and Voltage Variations	EN/IEC 61000-4-11; KS C 9610-4-11; IEC 61000-4-11 Ed. 2.1 (2017); EN 61000-4-11 (2004) +A1(2017); IEC 61000-4-11 Ed. 2 (2004-03); SANS 61000-4-11 Ed. 1 (2005)
Mains Harmonics and Interharmonics	IEC 61000-4-13; EN 61000-4-13; SANS 61000-4-13 Ed. 1.1 (2009)
Mains Voltage Fluctuations	IEC 61000-4-14; EN 61000-4-14; IEC 61000-4-14:1999 +AMD1:2001 +AMD2:2009; SANS 61000-4- 14 Ed. 1.2 (2009)
DC Ripple Input Power	IEC 61000-4-17; EN 61000-4-17; EN 61000-4-17:1999+A2:2009; IEC 61000-4-17 Ed. 1.2 (2009)
Variation of Power Frequency	IEC 61000-4-28; EN 61000-4-28; IEC 61000-4-28 (1999) +A1(2001) +A2(2009); SANS 61000-4-28 Ed. 2.1 (2009)
Voltage Dips, Short Interruptions, and Voltage Variations on DC Input Power Port	IEC 61000-4-29; EN 61000-4-29; IEC 61000-4-29 (2000); SANS 61000-4-29 Ed. 1 (2005)
Radiated Fields in Close Proximity	IEC 61000-4-39; EN 61000-4-39; IEC 61000-4-39 (2017)
Power Transients	EN 300 132-1 ; EN 300 132-2; ANSI T1.315; ATT-TP-76200; ATT-TP-76450

<u>Test Technology:</u>	<u>Test Method(s):</u>
Power Transients (MIL/RTCA/DO)	MIL-HDBK-704/2-8; DoD-STD-1399, Section 300A and B; MIL-STD 1275; RTCA/DO160C-G Section 16
Lightning	RTCA/DO-160 C-G (Section 22); GR-1089-CORE; MIL-HDBK-704/2-8; MIL-STD 461 G CS117
Steady State Power Induction	GR-1089-CORE; ETSI EN 300 386; AT&T-TP76200
DC Potential	GR-1089-CORE; AT&T-TP76200
Electrical Safety	GR 1089-CORE; AT&T-TP76200
Bonding & Grounding	GR 1089-CORE; AT&T-TP76200
Insulation Resistance	GR-49-CORE; GR-937-CORE; GR-950-CORE; GR-2916-CORE
Energy Efficiency for Telecom Equipment	ATIS-0600015; VZ.TPR.9205
Heat Dissipation	GR-63-CORE; ATIS-0600010
DC Power Port	GR-1089-CORE (Section 10)
Generic/Product Family Standards and Industry Standards	EN/IEC 61000-6-1; KS C 9610-6-1; IEC 61000-6-1 (2016); IEC 61000-6-1, Ed. 2 (2005-03); EN/IEC 61000-6-2; KS C 9610-6-2; EN 61000-6-2 (2016); EN 61000-6-2 (2005) +AC (2005); IEC 61000-6-2 (2016); EN IEC 61000-6-2 (2019); IEC 61000-6-2 Ed. 2.0 (2005-01); EN 61000-6-2 (2005); EN/IEC 61000-6-3; KS C 9610-6-3; EN 61000-6-3 (2007) + A1 (2011) + AC (2012); AS/NZS 61000.6.3; EN/IEC 61000-6-4; KS C 9610-6-4; EN 61000-6-4 (2007) + A1 (2011); IEC 61000-6-3 (2020); IEC 61000-6-4 (2018); AS/NZS 61000.6.4; KS C 9824; CISPR 24; EN 55024; EN 61326; ETSI EN 300 386; GR-1089-CORE; ATT-TP-76200; EN/IEC 60601-1-2; EN 50082; EN 61326; IEC 60601-1-2; CISPR 14-2; KS C 9814-2; EN 55014-2; CISPR 35 (excluding Annex A and G) EN 55035 (excluding Annex A and G); KS C 9835 (excluding Annex A and G); IEEE P1613

Test Technology:

Test Method(s):



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Test Technology:

Test Method(s):



<u>Test Technology:</u>	<u>Test Method(s):</u>
Europe (excluding Protocol Testing) (cont.)	ETSI EN 301 489-19 v2.2.1 (2022-09); ETSI EN 301 489-23 V1.5.1 (2011-11); ETSI EN 301 489-23 V1.5.1 (2011-11); ETSI EN 301 489-27 V2.1.1 (2016-12); ETSI EN 301 489-27 V2.2.1 (2019-04); ETSI EN 301 489-29 V2.1.1 (2016-12); ETSI EN 301 489-29 V2.2.1 (2019-04); ETSI EN 301 489-31 V2.1.1 (2016-11); ETSI EN 301 489-31 V2.2.1 (2019-04); ETSI EN 301 489-33 V2.1.1 (2016-11); ETSI EN 301 489-34 V2.1.1 (2019-04); ETSI EN 301 489-35 V.2.1 (2016-12); ETSI EN 301 489-50 V2.1.1 (2017-02); ETSI EN 301 489-50 V2.3.1 (2021-03); ETSI EN 301 489-51 V2.1.1 (2019-04); ETSI EN 301 489-52 V1.2.1 (2021-11); ETSI EN 303 454 V1.1.1 (2018-01)
Hong Kong	HKCA 1007, Issue 5 (March 2012); HKCA 1008, Issue 4 (November 2013); HKCA 1015, Issue 4 (February 2003); HKCA 1033, Issue 7 (March 2012); HKCA 1035, Issue 7 (May 2016); HKCA 1039, Issue 6 (June 2015); HKCA 1042, Issue 2 (February 2003); HKCA 1048, Issue 2 (June 2008); HKCA 1049, Issue 1 (April 2005); HKCA 1052, Issue 5 (June 2022)

Korea

KS X 3123; KS X 3124; KS X 3125; KS X 3126;
 KS X 3134; KS C 9995;
 RRA Public Notification 2018-18, Dec. 7, 2018;
 Equipment to be Subject of Test Procedure for Electromagnetic Field
 Strength and Specific Absorption Rate
 (RRA Public Notification 2023-12, Jun 30, 2023);
 RRA Announce 2021-10, Feb 8, 2021;
 RRA Public Notification 2019-32, Dec. 31, 2019;
 Technical Requirements for Measurement of Electromagnetic Field
 Strength (RRA Public Notification 2023-11, Jun 30, 2023);
 Technical Requirements for the Human Protection against
 Electromagnetic Waves
 (MSIT Public Notification 2019-4, Jan 16, 2019);
 Notice on Conformity Assessment of Broadcasting and
 Communications Equipment
 (RRA Public Notification 2023-3, Feb 3, 2023);
 Unlicensed Radio Equipment Es Announ9 (ip)6141 Td[(()-4,agnetic Field
 Strength (RRA Publ 32104.9 (B)3.9n 16, 2019);
 Notice on Coned9 (m)6.3 (i)-18 (r)8.9 (em)4 (on)lotlip6()TjEMC /66 (e)-1.6 (nt)-4.6 (



<u>Test Technology:</u>	<u>Test Method(s):</u>
Korea (<i>cont.</i>)	Unlicensed Radio Equipment Established Without Notice RRA Announce 2011-32, Korean only (Dec 27, 2011); RRA Public Notification 2012-21 (Nov. 06, 2012); RRA Announce 2013-33 Korean only, (Jul. 26, 2013); RRA Notice 2014-2, Korean only (Feb. 4, 2014); RRA Announce 2014-90 (Dec. 23, 2014); RRA Announce 2015-81, Korean only (Sep. 30, 2015); RRA Announce 2015-135 (Jan. 5, 2016); RRA Notice 2017-7, Korean only (Aug. 4, 2017); RRA Public Notification 2015-23 (Nov. 18, 2015); RRA Public Notification 2017-8 (Aug. 28, 2017); RRA Public Notification 2011-24 (Dec. 23, 2011); RRA Announce 2012-21, Korean only (Jun. 28, 2012); RRA 2013-3 and 2013-24, June 17, 2013, Korean only; RRA 2014-8 and RRA 2014-37 (Jun. 23, 2014); RRA Public Notification 2015-27 (Dec. 03, 2015); RRA Announce 2015-110 (Dec. 03, 2015); RRA Public Notification 2016-26 (Dec. 19, 2016); RRA Announce 2016-79 (Dec. 19, 2016); RRA Public Notification 2017-19 (Dec. 28, 2017); RRA Announce 2017-71 (Dec. 28, 2017)
Taiwan	LP0002 (2020); IS2019 (2020); RTTE01 (2020)
Singapore	IMDA TS CMT (September 2020); IMDA TS LMR Issue 1 (October 2016); IMDA TS SRD Issue 1, Rev. 3 (Sept 2023)

Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1 ⁴:

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
Microwave and Millimeter Bands Radio Services		
Part 25, Part 30, Part 74, Part 90 (above 3 GHz), Part 95 (above 3 GHz), Part 97 (above 3 GHz), and Part 101	ANSI/TIA-603-E; ANSI/TIA-102.CAAA-E; ANSI C63.26:2015	40000

A2LA has accredited

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Plano , TX

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 February 2024

Mr. Trace McInturff, Vice President , Accreditation Services