



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY FREMONT NEWARK

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ELECTRICAL

Valid to: September 30, 2027

Certificate Number: 0214.26

In recognition of the successful completion of the A2LA evaluation process accreditation is granted to this laboratory listed above, *as well as the two satellite laboratories listed below*, to perform the following electromagnetic compatibility, NEBS, radio, wireless, telecom and energy producing/measuring devices, and product safety tests:

Test:

Test Method(s) ¹:

Emissions

Radiated & Conducted
(3, 5, & 10 meter semi-anechoic chambers)

47 CFR (FCC Rules) Part 15B (using ANSI C63.4:2014);
47 CFR (FCC Rules) Part 18 (using FCC MP-5:1986);
EN 55011; KS C 9811; CISPR 11;
AS/NZS CISPR 11; BS EN 55011;
ICES-001; KS C 9832 (*excluding Annex H*);
EN 55032 (*excluding Annex H*);
CISPR 32 (*excluding Annex H*);
AS/NZS CISPR 32 (*excluding Annex H*);
BS EN 55032 (*excluding Annex H*);
ICES-003;
CNS 15936:2016 (*excluding Annex H*);
VCCI-CISPR 32:2016 (*excluding Annex H*);
ICES-005; ICES-006;
SI 961 Part 32; IFT-008-2015;
QCVN 118:2018/BTTT

Current Harmonics

EN IEC 61000-3-2; IEC 61000-3-2;
KS C 9610-3-2; AS/NZS 61000-3-2; BS EN 61000-3-3;
UNECE Regulation 10, Revision 6, Electronic Sub-assemblies
(ESA), Sections 7.11, 7.12

Voltage Fluctuations

EN 61000-3-3; IEC 61000-3-3;
KS C 9610-3-3; AS/NZS 61000-3-3; BS EN 61000-3-3

Immunity

Electrostatic Discharge (ESD)

EN 61000-4-2; IEC 61000-4-2; KS C 9610-4-2

Radiated Immunity

EN 61000-4-3; IEC 61000-4-3; KS C 9610-4-3

Test:**Test Method(s) ¹:**

Electrical Fast Transient/Burst

EN 61000-4-4; IEC 61000-4-4; KS C 9610-4-4;
UNECE Regulation 10, Revision 6, Electronic Sub-assemblies
(ESA), Section 7.15

Surge Immunity

EN 61000-4-5; IEC 61000-4-5; KS C 9610-4-5;
UNECE Regulation 10, Revision 6, Electronic Sub-assemblies
(ESA), Section 7.16

Conducted Immunity

EN 61000-4-6; IEC 61000-4-6; KS C 9610-4-6

Power Frequency Magnetic Field
Immunity

EN 61000-4-8; IEC 61000-4-8; KS C 9610-4-8

Pulse Magnetic Field Immunity

EN 61000-4-9; IEC 61000-4-9

Damped Oscillatory Magnetic Field
Immunity

EN 61000-4-10; IEC 61000-4-10

Voltage Dips, Short Interruptions,
and Line Voltage VariationsEN 61000-4-11; IEC 61000-4-11;
KS C 9610-4-11

Ring Wave Immunity

EN 61000-4-12; IEC 61000-4-12

Immunity to conducted, common
mode disturbances in the frequency
range 0 Hz to 150 kHzEN 61000-4-16;
IEC 61000-4-16 (*excluding test levels above 30V*)Ripple on D.C. Input Power Port
Immunity

EN 61000-4-17; IEC 61000-4-17

Damped Oscillatory Surge Immunity

EN 61000-4-18; IEC 61000-4-18

Radiated fields in close proximity -
Immunity test 9 kHz to 26 MHz.

EN IEC 61000-4-39; IEC 61000-4-39

**Generic and Product Family
Standards**IEEE 1613; IEC 60533; IEC 61850-3;
BS EN 61850-3;
IEEE 37.90.1; IEC 60092-504 (Section 5: Table 1, Items 4a,
4b, 5, 11a & 11b only);
EN 61000-6-1; IEC 61000-6-1; BS EN 61000-6-1;
KS C 9610-6-1; EN 61000-6-2; IEC 61000-6-2;
BS EN 61000-6-2; KS C 9610-6-2;
EN 61000-6-3; IEC 61000-6-3; BS EN 61000-6-3;
KS C 9610-6-3; AS/NZS 61000.6.3;
UNECE Regulation 10, Revision 6, Electronic Sub-assemblies
(ESA), Sections 7.13, 7.14;
EN 61000-6-4; IEC 61000-6-4; BS EN 61000-6-4
KS C 9610-6-4; AS/NZS 61000.6.4; IEC 61000-6-5;
EN 61000-6-5;
EN 50121-1; BS EN 50121-1; EN 50121-3-2;
BS EN 50121-3-2; EN 50121-4; BS EN 50121-4;

Test:**Generic and Product Family
Standards
(cont.)****Test Method(s) ¹:**

IEC 62236-4;
EN 50155; EN 55013; KN 13;
EN 55020 (only for audio/video equipment without tuner);
KN 20 (only for audio/video equipment without tuner);
EN 50130-4; EN 55014-1 (*excluding click measurement*);
CISPR 14-1 (*excluding click measurement*);
KS C 9814-1 (*excluding click measurement*);
CISPR 14-2; KS C 9814-2; EN 55014-2;
EN 55103-1; EN 55103-2;
CISPR 35 (*excluding Annexes A, D, F.4, G*);
KS C 9835 (*excluding Annexes A, D, F.4, G*);
EN 55035(*excluding Annexes A, D, F.4, G*);
BS EN 55035(*excluding Annexes A, D, F.4, G*);
SI 961 Part 35 (*excluding Annexes A, D, F.4, G*);
EN 61326-1; IEC 61326-1;
EN IEC 61326-1; BS EN 61326-1;
BS EN IEC 61326-1; IEC 61326-2-1; EN 61326-2-1;
EN IEC 61326-2-1; BS EN 61326-2-1; BS EN IEC 61326-2-1;
IEC 61326-2-3; EN 61326-2.3; EN IEC 61326-2-1;
BS EN 61326-2-3; BS EN IEC 61326-2-3; EN 61326-2-6;
BS EN IEC 61326-2-6; IEC 61326-3-1; EN 61326-3-1;
BS EN 61326-3-1;
IEC 60601-1-2; EN 60601-1-2; KS C IEC 60601-1-2;
IEC TS 60601-4-2;
EN 60601-2-2 (Section 202 only);
EN 60601-2-10 (Section 202 only);
EN 60601-2-18 (Section 202 only);
EN 60601-2-22 (Section 201.17 only);
EN 60601-2-24 (Section 202 only);
AS/NZS 3200.1.2; ISO 15197 (Section 6.4 only);
EN 301 437; EN 300 386; BS EN 300 386; EN 301 449
(4.2.2.2.2, 4.2.2.2.3, 4.2.3, 4.2.4, 4.2.5, 4.2.6, and 4.2.7 only);
EN 300 132-2; EN 300 132-3;
EU-ITU-T: K.20 (except 2.1.5, 2.1.6, 2.2 above 600V, 4.2
above 600V, 5.1.2 & 5.2.2 above 600V), K.21 (except 2.1.5,
2.1.6, 2.2 above 600V, 4.1.5, 4.2 above 600V, and 5.1.2 &
5.2.2 above 600V);
British Telecommunications Standard GS7;
Deutsche Telekom EMC Specification 1 TR 9;
ANATEL Resolution 442;
Enforcement Decree of MSIT NO. 1, July 26, 2017;

**Network Equipment Building
Systems (NEBS)**

Telcordia GR-1089-CORE, (Sections 1, 2, 3, 4 (*excluding*
4.6.1.3.2 and 4.6.2.1.2.2A), 7, 9, and 10 only);
ATIS-0600315.01

**Network Equipment and Power
Grounding, Environmental, and
Physical Design Requirements**

AT&T ATT-TP-76200 (*excluding Section 2.7*)

Test:**Test Method(s) ¹:****Automotive EMC**

Radiated & Conducted Emissions

CISPR 25 (sections 6.3, 6.4, 6.5 only);
UNECE Regulation 10, Revision 6, Electronic Sub-assemblies
(ESA), Sections 6.5, 6.6, 7.10

Radiated Immunity (ALSE)

ISO 11452-2; ISO 13766-1;
ISO 13766-2; ISO 14982;
UNECE Regulation 10, revisions 6, electronic Sub-assemblies
(ESA), Section 6.8

Bulk current injection (BCI)

ISO 11452-4 (*excluding TWC method*); ISO 13766-1;
ISO 13766-2;
UNECE Regulation 10, Revision 6, Electronic Sub-assemblies
(ESA), Section 6.8, 7.18 (*excluding Stripline method*)

Direct RF Power Injection

ISO 11452-7

Immunity to Magnetic Fields

ISO 11452-8

Portable Transmitter

ISO 11452-9

Immunity to Conducted
Disturbances in the Extended
Audio Frequency Range

ISO 11452-10

ESD

ISO 10605 (*excluding clause 10 vehicle test method*);
ISO 13766-1; ISO 13766-2;
ISO 14982

Conducted Transient Immunity

ISO 7637-2; ISO 7637-3; ISO 13766-1; ISO 13766-2

Broadband & Narrowband Emissions

ISO 14982; ISO 16750-2;
UNECE Regulation 10, Revision 6, Electronic Sub-assemblies
(ESA), Sections 6.7, 6.9, 7.17, 7.19**Wireless****(Excluding HAC & SAR)**ANSI/TIA 603-E; EN 300-113; EN 300 220-1; EN 300 220-2;
EN 300 220-3; EN 300 220-4; EN 300 328; EN 300 330;
EN 300 440; EN 300 761-1; EN 300 761-2; EN 301-357;
EN 301 839; EN 301 893; EN 301 489-1 to -6; EN 301 489-9;
EN 301 489-12; EN 301 489-13; EN 301 489-15;
EN 301 489-17; EN 301 489-19; EN 301 489-20;
EN 301 489-22; EN 301 489-27 to -29; EN 301 489-31;
EN 301 489-33 to -35; EN 301 489-50, EN 301 489-51;
EN 301 489-52; EN 301 489-53; EN 301 908-1; EN 303 413;
EN 303 454; ETSI ES 201 468; ES 203 021; BS 301 489-1;
BS EN 301 489-34; KS X 3124; KS X 3125; KN 301 489-7;
KS X 3126; KS X 3129; KN 301 489-24; KS X 3134;
EN 302 208; EN 302 291; EN 302 502;
AS/NZS 4268; NOM-121-SCTI-2009;
LP0002 February 2024 (*excluding sections 4.11*
[10.500-10.550 GHz and 24.075-24.175 GHz
frequency bands], 4.13, 4.14, 4.15, 5.13, and 6.20);

Test:

**Wireless
(Excluding HAC & SAR)
(cont.)**

**Industry Canada Radio
Standards Specifications (RSS)
in Category I Equipment
Standards List, up to 200 GHz
(Excluding HAC & SAR)**

**Intentional and Unintentional
Radiators to FCC Regulations,
up to 200 GHz
(Excluding HAC & SAR)**

Test Method(s) ¹:

KS X 3123; KS X 3143;
QCVN 18:2014/BTTTT; QCVN 47:2015/BTTTT;
QCVN 55:2023/BTTTT; QCVN 73:2013/BTTTT;
QCVN 74:2020/BTTTT; QCVN 88:2015/BTTTT;
QCVN 94:2015/BTTTT; QCVN 95:2015/BTTTT;
QCVN 96:2015/BTTTT; QCVN 54:2020/BTTTT;
QCVN 65:2021/BTTTT; TCN 68.242:2006;
ANATEL Resolution 506

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-140; RSS-141;
RSS-142; RSS-170; RSS-192; RSS-194; RSS-195; RSS-196;
RSS-197; RSS-198; RSS-199 (using ANSI C63.26:2015);
RSS-210; RSS-215; RSS-216; RSS-236; RSS-243; RSS-244;
RSS-246; RSS-247;
RSS-248 (using ANSI C63.10-2020+Cor.1-2023,
ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024);
RSS-310;
ANSI C63.30-2021 (*excluding Large Loop Antenna System,
section 4.5.2.3*)

47 CFR (FCC Rules) Part 11;
47 CFR (FCC Rules) Part 15B (using ANSI C63.4:2014);
47 CFR (FCC Rules) Part 15C (using ANSI C63.10:2013 or
ANSI C63.10-2020 and ANSI C63.10a-2024);
47 CFR (FCC Rules) Part 15D (using ANSI C63.17:2013);
47 CFR (FCC Rules) Part 15E (using ANSI C63.10:2013 or
ANSI C63.10-2020 and ANSI C63.10a-2024,
FCC KDB 905462 D02 (v02));
47 CFR (FCC Rules) Part 15F/G/H (using ANSI C63.10:2013
or ANSI C63.10-2020 and ANSI C63.10a-2024);
ANSI C63.30-2021
(*excluding Large Loop Antenna System, section 4.5.2.3*);
47 CFR (FCC Rules) Part 18 (using FCC MP-5:1986);
47 CFR (FCC Rules) Part 20 (signal boosters)
(using ANSI C63.26:2015);
47 CFR (FCC Rules) Parts 20, 22 (cellular and non-cellular),
24, 25, 27, 30, 74, 80, 87, 90, 95, 96, 97 and 101
(using ANSI/TIA 603-E, TIA-102.CAAA-E, and
ANSI C63.26:2015)

38995 Cherry Street
Newark, CA 94560

Test:

Energy Efficiency Tests

Test Method(s) ¹:

ATIS-0600015.2018 (R2023) Energy Efficiency for
Telecommunication Equipment: Methodology for
Measurement and Reporting General Requirements;

ATIS-0600015.02.2016 (R2021) Energy Efficiency for
Telecommunication Equipment: Methodology for
Measurement and Reporting –Transport & Optical Access
Requirements;

ATIS-0600015.03.2023 Energy Efficiency for
Telecommunication Equipment Methodology for
Measurement and Reporting for Router and Ethernet
Switch Products;

ATIS-0600015.01.2021 Energy Efficiency for
Telecommunication Equipment: Methodology for
Measurement and Reporting – Server Requirements;

ATIS-0600015.11.2016 (R2021) Energy Efficiency for
Telecommunication Equipment: Methodology for
Measurement and Reporting DC/DC Converter Requirements

324 N. Mary Avenue
Sunnyvale, CA 94086

Test:

Emissions

Radiated and Conducted
(5 meter Semi-anechoic Chambers)

Test Method(s) ¹:

47 CFR (FCC Rules) Part 15B (using ANSI C63.4:2014);
EN 55011; BS EN 55011; KS C 9811; CISPR 11;
AS/NZS CISPR 11;
ICES-001; ICES-003; ICES-005; ICES-006;
VCCI V-3 (up to 6 GHz); VCCI-CISPR 32;
QCVN 118:2018/BTTTT;
CNS 15936 (2016) (*excluding Annex H*);
EN 55032 (*excluding Annex H*);
CISPR 32 (*excluding Annex H*);
AS/NZS CISPR 32 (*excluding Annex H*);
BS EN 55032 (*excluding Annex H*);
KS C 9832 (*excluding Radiated Emissions below 1 GHz*)

Current Harmonics

EN IEC 61000-3-2; IEC 61000-3-2; KS C 9610-3-2;
BS EN IEC 61000-3-2; IEC 61000-3-11; EN 61000-3-11;
KS C 9610-3-11

Test:**Test Method(s) ¹:****Emissions (cont.)**

Voltage Fluctuations

EN 61000-3-3; IEC 61000-3-3; KS C 9610-3-3;
BS EN IEC 61000-3-3; IEC 61000-3-12; EN 61000-3-12;
KS C 9610-3-12**Immunity**

Electrostatic Discharge (ESD)

EN 61000-4-2; IEC 61000-4-2; KS C 9610-4-2

Radiated Immunity

EN 61000-4-3; IEC 61000-4-3; KS C 9610-4-3

Electrical Fast Transient/Burst

EN 61000-4-4; IEC 61000-4-4; KS C 9610-4-4

Surge Immunity

EN 61000-4-5; IEC 61000-4-5; KS C 9610-4-5

Conducted Immunity

EN 61000-4-6; IEC 61000-4-6; KS C 9610-4-6

Voltage Dips and Interrupts

EN 61000-4-11; IEC 61000-4-11; KS C 9610-4-11

**Generic and Product Family
Standards**CISPR 35 (only Annexes F.1 – F.3);
KS C 9835 (only Annexes F.1 – F.3);
BS EN 55035 (only Annexes F.1 – F.3);
EN 300 386; BS EN 300 386;
CISPR 24; EN 55024; BS EN 55024; TCVN 7317;
EN 61000-6-1; KS C 9610-6-1;
AS/NZS 61000-6-1; BS EN IEC 61000-6-1;
EN 61000-6-2; KS C 9610-6-2;
AS/NZS 61000-6-2; BS EN IEC 61000-6-2;
EN 61000-6-3; KS C 9610-6-3 (*excluding 30-1000 MHz*);
AS/NZS 61000-6-3; BS EN IEC 61000-6-3;
EN 61000-6-4; KS C 9610-6-4 (*excluding 30-1000 MHz*);
AS/NZS 61000-6-4; BS EN 61000-6-4;
IEC 61000-6-5; EN 61000-6-5; BS EN 61000-6-5**Network Equipment Building
Systems (NEBS)**Telcordia GR-1089-CORE, Sections 1, 2, 3, 4.1 to 4.3, 4.5, 4.6,
4.7 (*excluding AC Power Fault*), 7, 9, and 10**Generic and Product Family
Standards**British Telecommunications Standard GS7;
Deutsche Telekom EMC Specification 1 TR 9;
EN 50121-1; BS EN 50121-1; EN 50121-4; BS EN 50121-4;
IEEE 1613; IEC 62236-4;
IEC 61850-3 (*excluding magnetic immunity*)**Energy Efficiency Tests**ATIS 0600015: 2018 (R2023) Energy Efficiency for
Telecommunication Equipment: Methodology for
Measurement and Reporting General Requirements;ATIS 0600015.03.2023 Energy Efficiency for
Telecommunication Equipment: Methodology for Measurement
and Reporting for Router and Ethernet Switch Products

Test:**Energy Efficiency Tests
(cont.)****Test Method(s) ¹:**ATIS-0600015.02.2016 (R2021) Energy Efficiency for
Telecommunication Equipment: Methodology for
Measurement and Reporting –Transport & Optical
Access Requirements**On the following types of equipment:**

Telecommunications Terminal Equipment (TTE); Network Equipment; Information Technology Equipment (ITE); Medical Electrical Equipment; Industrial, Commercial, and Medical Test Equipment; Professional Audio and Video Equipment; Radio Equipment; Electronic (Digital) Products; Industrial and Scientific Instruments; Cabled Distribution Systems, Automotive.

¹ When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per Annex A, Part C of A2LA R101 - *General Requirements: Accreditation of Conformity Assessment Bodies*.

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:

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
<u>Unintentional Radiators</u> Part 15B	ANSI C63.4:2014	40000
<u>Industrial, Scientific, and Medical Equipment</u> Part 18	FCC MP-5 (February 1986)	40000
<u>Intentional Radiators</u> Part 15C	ANSI C63.10-2020	200000
<u>Unlicensed Personal Communication Systems Devices</u> Part 15D	ANSI C63.17:2013	40000
<u>U-NII without DFS Intentional Radiators</u> Part 15E	ANSI C63.10-2020	40000
<u>U-NII with DFS Intentional Radiators</u> Part 15E	FCC KDB 905462 D02 (v02)	40000
<u>UWB Intentional Radiators</u> Part 15F	ANSI C63.10-2020	200000
<u>BPL Intentional Radiators</u> Part 15G	ANSI C63.10-2020	200000

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:

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
<u>White Space Device Intentional Radiators</u> Part 15H	ANSI C63.10-2020	200000
<u>Commercial Mobile Services</u> <u>(FCC Licensed Radio Service Equipment)</u> Parts 22 (cellular), 24, 25 (below 3 GHz), and 27	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>General Mobile Radio Services</u> <u>(FCC Licensed Radio Service Equipment)</u> Parts 22 (non-cellular), 90 (below 3 GHz), 95, 97 (below 3 GHz), and 101 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>Citizens Broadband Radio Services</u> <u>(FCC Licensed Radio Service Equipment)</u> Part 96	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	200000
<u>Maritime and Aviation Radio Services</u> Parts 80 and 87	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	200000
<u>Microwave and Millimeter Bands Radio Services</u> Parts 25 (above 3 GHz), 30, 74, 90 (above 3 GHz), 95 (above 3 GHz), 97 (above 3 GHz), and 101	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	200000
<u>Signal Boosters (Part 20)</u> Wideband Consumer Signal Boosters Provider-specific Signal Boosters Industrial Signal Boosters Signal Boosters (Section 90.219)	ANSI C63.26:2015	200000

Note: 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

ELEMENT MATERIALS TECHNOLOGY FREMONT NEWARK

Fremont, CA

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 15th day of August 2025.

A blue ink signature of Mr. Trace McInturff, Vice President of Accreditation Services.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0214.26
Valid to September 30, 2027

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