SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY WASHINGTON DC LLC
(formerly PCTEST)
7185 Oakland Mills Road
Columbia, MD 21046
Zach Keyser Phone: 410 290 6652

ELECTRICAL

Valid To: February 29, 2028 Certificate Number: 2041.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above, ***as well as the one satellite laboratory locations listed below,*** to perform the following Electromagnetic Compatibility, SAR, HAC, Telecommunications, OTA, RF, and Conformance and Protocol testing of wireless devices:

Test Technology:	**Test Method(s)** [1]**:**
Emissions	
Radiated and Conducted	CFR 47, FCC Part 15B (using ANSI C63.4:2014); CFR 47, FCC Part 18 (using MP-5:1986); CFR 47, FCC Parts 15/C/E (without DFS)/F/G/H (using ANSI C63.10:2020); CFR 47, FCC Part 15E (with DFS) (using FCC KDB 905462 D02 (v02) - April 8, 2016); CFR 47, FCC Part 15D (using ANSI C63.17:2013); ANSI C63.10:2020; ANSI C63.30:2021; KDB 987594; ETSI TS 134 124 Universal Mobile Telecommunications System (UMTS); (3GPP TS 34.124); (3GPP TS38.124 NR); Electromagnetic Compatibility (EMC) Requirements for Mobile Terminals and Ancillary Equipment); ETSI TS 136 124 LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); (3GPP TS 36.124); ETSI TS 151 010-1 Digital Cellular Telecommunications System (Phase 2+) (GSM); 3GPP TS 51.010-1, Section 12 (Conducted and Radiated Spurious Emissions); EN55011; EN 55032; CNS 15936 (up to 6 GHz) (2016); AS/NZS CISPR 11; IEC/CISPR 11; CISPR 32; FCC OET/MP-5; ICES-003; KS C 9811; KS C 9832; VCCI V-3(2016.11); VCCI V-3 (2015.04); VCCI 32-1: VCCI-CISPR 32 ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

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5202 Presidents Court, Suite 220 | Frederick, MD 21703-8515 | Phone: 301 644 3248 | Fax: 240 454 9449 | www.A2LA.org

Test Technology:	**Test Method(s) [1]:**
Transmitter/Receiver	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-181; RSS-182; RSS-191; RSS-192; RSS-194; RSS-195; RSS-196; RSS-197; RSS-198; RSS-199; RSS-210; RSS-211; RSS-213; RSS-215; RSS-216; RSS-220; RSS-222; RSS-236; RSS-238; RSS-243; RSS-244; RSS-246; RSS-247; RSS-248; RSS-251; RSS-252; RSS-287; RSS-288; RSS-310; RSS-Gen
SAR/RF Exposure	IEEE 1528-2013; RSS-102; EN 50360-2017; EN 62209-1:2016; EN 62209-2:2010/A1:2019; IEC 62209-1 2nd Edition 2016; IEC 62209-2 2010; IEC PAS 63083-2017; EN 50566-2017/A1:2023; IEC 62209-2 AMD 1; Australian Communications Authority Radio Communications (Electromagnetic Radiation – Human Exposure) Standard 2014; ARPANSA RPS S-1(Rev.1):2021; Australia Radiocommunications Equipment (General) Rules 2021; FCC KDB 447498 D01; FCC KDB 616217 D04; FCC KDB 643646 D01; FCC KDB 865664 D01 and D02; FCC KDB 941225 D01, D05, D05A, D06, and D07; EN 50401:2017; EN 50385:2017; IEC 62479:2010; EN 62479:2010; EN 50663:2017; EN 62232:2022; IEC 62232:2022; IEEE C95.1-1992; IEEE C95.1-2005; IEEE C95.1: 2019; IEEE C95.3-2002; IEEE C95.3-2021; IEC/IEEE 63195-1:2022; RSS-102.SAR.MEAS; RSS-102.NS.MEAS; RSS-102.IPD.MEAS; IEC TR 62630:2010; IEEE C95.3.1:2010; IEC TR 63170:2018; AS/NZS 2772.2:2016; EN 62209-3: 2019; IEC 62209-3:2019; ICNIRP (100kHz – 300 GHz):2020; IEC 62311:2019; EN 62311:2020; IEC/IEEE 62209-1528:2020; EN IEC/IEEE 62209-1528; IEEE/IEC 63184-2025; RRA Public Notification 2018-18, December 7, 2018; KS C 3370-1; KS C 3370-2
Hearing Aid Compatibility	ANSI C63.19:2019; CTIA Test Plan for Hearing Aid Compatibility v.3.1.1 (2017); RSS-HAC; ANSI/TIA-5050-2018 \
Radio	
United States Radio	47 CFR FCC Parts 20, 22, 24, 25, 27, 30, 73, 74, 80, 87, 90, 95, 96, 97, 101 (using ANSI/TIA-603-E, TIA-102.CAAA-E, ANSI C63.26:2015); ANSI C63.26:2015

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Test Technology:	**Test Method(s) [1]:**
European Radio	ETSI EN 302 065-1; ETSI EN 302 065-2; ETSI EN 302 065-3; ETSI EN 302 065-4; ETSI EN 302 291-1; ETSI EN 302 291-2; ETSI EN 302 502; ETSI EN 302 510-1; ETSI EN 302 510-2; ETSI EN 302 537; ETSI EN 301 511; ETSI EN 301 839; ETSI EN 301 893; ETSI EN 301 908-1; EN 301 908-15 (RSE Only); EN 301 441; EN 302 264 ; EN 303 396; ETSI EN 301 908-13 (RSE Only); ETSI EN 300 220-2; ETSI EN 300 220-3-1; ETSI EN 300 220-3-2; ETSI EN 300 220-4; ETSI EN 300 328; ETSI EN 300 328; ETSI EN 300 330; ETSI EN 300 440; ETSI EN 300 440-2; ETSI EN 303 687
Taiwan Radio	LP0002 (2020); LP0002 (2024); DGT LP0002; IS2019 (2020)
Korean Radio	Regulations on Radio Equipment (MSIT Ordinance MSIT No. 86, Jan. 4, 2022); Unlicensed Radio Equipment Established Without Notice (MSIT Public Notification 2025-14, Mar. 27, 2025); Technical Requirements for the Human Protection against Electromagnetic Waves (MSIT Public Notification 2019-4, January 16, 2019); Equipment to be Subject of the Test Procedure for Electromagnetic Field Strength and Specific Absorption Rate (RRA Public Notification 2023-12, Jun 30, 2023); Technical Requirements for Radio Equipment for Telecommunication Services (Public Notification 2023-22, Dec 8, 2023); Technical Requirements for Measurement and Test Procedure of Specific Absorption Rate (RRA Public Notification 2018-18, Dec 7, 2018); Technical Requirements for Measurement of Electromagnetic Field Strength (RRA Public Notification 2023-11, Jun 30, 2023); KS X 3123; KS X 3142; KS X 3270; KS X 3271
Australia/New Zealand Radio	AS/NZS 4268:2017
Vietnam Radio	QCVN 127 (2021): BTTTT; QCVN 129 (2021): BTTTT
RF, Protocol, and RRM Conformance	
5G NR	3GPP 37.571-1; 3GPP 37.571-2; 3GPP TS 38.521-1; 3GPP TS 38.521-2; 3GPP TS 38.521-3; 3GPP TS 38.521-4; 3GPP TS 38.522; 3GPP TS 38.523-1; 3GPP TS 38.523-2; 3GPP 38.523-3; 3GPP TS 38.533; 3GPP TS 34.229-5; AT&T 10776 Test Plans(5G/4G/3G/2G)

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Test Technology:	**Test Method(s) [1]:**
LTE	3GPP TS 36.521-1; 3GPP TS 36.521-3; 3GPP TS 36.523-1; 3GPP 37.571-1; 3GPP 37.571-2; 3GPP TS 34.229-1; ETSI EN 301 908-13 Version 13.1.1 (2019-11); 3GPP Carrier Aggregation; 3GPP Cat-NB & Cat-M; SKYLO Test Plan; VZW 4G/5G Lab Conformance Test Plan; T-Mobile 4G/5G Lab Test; AT&T LTE Conformance; AT&T IoT Accelerator Conformance, 19263; USCC Lab Conformance; KDDI LTE Device Testing; SoftBank LTE Testing; GSMA TS.35;
VoLTE	IMS VoIP; Rich Communication Services (RCS); IMS Registration and Retry; ePDG Live Network; E911 for VoLTE; VZW hVoLTE; VZW VoIP and VT Performance; VZW Interband RRM and Protocol
Carrier Aggregation	VZW Carrier Aggregation Supplementary RF; VZW Carrier Aggregation Data Throughout
UICC	USIM/USAT/CSIM/ISIM Interaction Test Plan (LTE/MM); 3GPP TS 31.121; 3GPP TS 31.124; ETSI TS 102 230; SIM Application Interaction Test Plan; UICC USIM ISIM Electrical; UICC USIM ISIM Protocol (LTE); SWP/HCI ETSI TS 102 694-1; ETSI TS 102 695-1
CBRS - OnGo/WInnForum	OnGo Alliance Certification Test Plan; WInnForum Conformance and Performance Test Technical Specification, WINNF-TS-0122

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Test Technology:	**Test Method(s) [1]:**
Emissions	
Radiated and Conducted	CFR 47, FCC Part 15B (using ANSI C63.4:2014); CFR 47, FCC Part 18 (using MP-5:1986); CFR 47, FCC Parts 15/C/E (without DFS)/F/G/H (using ANSI C63.10:2013) CFR 47, FCC Part 15E (with DFS) (using FCC KDB 905462 D02 (v02) - April 8, 2016); CFR 47, FCC Part 15D (using ANSI C63.17:2013); ANSI C63.10:2020; ANSI C63.30:2021; KDB 987594; ETSI TS 134 124 Universal Mobile Telecommunications System (UMTS); (3GPP TS 34.124); ETSI TS 136 124 LTE; Evolved Universal Terrestrial Radio Access (E-UTRA) (3GPP TS 36.124); (3GPP TS38.124 NR); Electromagnetic Compatibility (EMC) Requirements for Mobile Terminals and Ancillary Equipment); ETSI TS 151 010-1 Digital Cellular Telecommunications System (Phase 2+) (GSM); 3GPP TS 51.010-1, Section 12 (Conducted and Radiated Spurious Emissions); EN55011; EN 55032; CNS 15936 (up to 6 GHz) (2016); AS/NZS CISPR 11; IEC/CISPR 11; CISPR 32; FCC OET/MP-5; ICES-003; KS C 9811; KS C 9832; VCCI V-3(2016.11); VCCI V-3 (2015.04); VCCI 32-1; VCCI-CISPR 32; ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata toC63.10a-2024
Transmitter/Receiver	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-181; RSS-182; RSS-191; RSS-192; RSS-194; RSS-195; RSS-196; RSS-197; RSS-198; RSS-199; RSS-210; RSS-211; RSS-213; RSS-215; RSS-216; RSS-220; RSS-222; RSS-236; RSS-238; RSS-243; RSS-244; RSS-246; RSS-247; RSS-248; RSS-251; RSS-252; RSS-287; RSS-288; RSS-310; RSS-Gen; No IS
Hearing Aid Compatibility	ANSI C63.19:2019
Radio	
United States Radio	47 CFR FCC Parts 20, 22, 24, 25, 27, 30, 73, 74, 80, 87, 90, 95, 96, 97, 101 (using ANSI/TIA-603-E, TIA-102.CAAA-E, ANSI C63.26:2015); ANSI C63.26:2015

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Test Technology:	**Test Method(s)** [1]**:**
European Radio	ETSI EN 302 065-1; ETSI EN 302 065-2; ETSI EN 302 065-3; ETSI EN 302 065-4; ETSI EN 302 291-1; ETSI EN 302 291-2; ETSI EN 302 502; ETSI EN 302 510-1; ETSI EN 302 510-2; ETSI EN 302 537; ETSI EN 301 511; ETSI EN 301 839; ETSI EN 301 893; ETSI EN 301 893; ETSI EN 301 908-1; EN 301 908-15 (RSE Only); EN 301 441; EN 302 264; EN 303 396; ETSI EN 301 908-13 (RSE Only); ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 328; ETSI EN 300 328; ETSI EN 300 330; ETSI EN 300 440; ETSI EN 300 440-2
Taiwan Radio	LP0002 (2020); LP0002 (2024); DGT LP0002; IS2019 (2020)
Korean Radio	Regulations on Radio Equipment (MSIT Ordinance MSIT No. 86, Jan. 4, 2022); Unlicensed Radio Equipment Established Without Notice (MSIT Public Notification 2025-14, Mar. 27, 2025); Technical Requirements for the Human Protection against Electromagnetic Waves (MSIT Public Notification 2019-4, January 16, 2019) Equipment to be Subject of the Test Procedure for Electromagnetic Field Strength and Specific Absorption Rate (RRA Public Notification 2023-12, Jun 30, 2023); Technical Requirements for Radio Equipment for Telecommunication Services (RRA Public Notification 2023-22, Dec 8, 2023); Technical Requirements for Measurement and Test Procedure of Specific Absorption Rate (RRA Public Notification 2018-18, Dec 7, 2018); Technical Requirements for Measurement of Electromagnetic Field Strength (RRA Public Notification 2023-11, Jun 30, 2023); KS X 3123; KS X 3142; KS X 3270; KS X 3271
Australia/New Zealand Radio	AS/NZS 4268:2017
OTA	CTIA Test Plan for Wireless Device Over-the-Air Performance [2,3] CTIA 01.20 Test Methodology, SISO, Anechoic Chamber; CTIA 1.22 Test Methodology, Millimeter Wave; CTIA 01.40 Test Methodology, MIMO, Static Channel Model, Multi-Probe Anechoic Chamber; CTIA 1.51 Location Based Technology; PTCRB NAPRD03; PTCRB PPMD; VZW 5G NR FR1 RF OTA Test Plan; VZW NR FR2 OTA Performance Test Plan; VZW OTA Radiated Performance for CDMA & LTE Multimode Devices; VZW LTE Over the Air Radiated Performance Test Plan

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Test Technology:	**Test Method(s) [1]:**
OTA (continued)	VZW Location Determination Test Plan; VZW LTE-LBS Performance Test Plan; T-Mobile Network Certification TRD 30-998; AT&T 13340 OTA; AT&T Device Architecture IoT; USCC LTE Over The Air Radiated Test Plan; CTIA Test Plan for RF Performance Evaluation of Wi-Fi Mobile Converged Devices (Wi-Fi Alliance); GSMA TS.24 Operator Acceptance Values for Device Antenna Performance; 3GPP TS 34.114 Technical Specification UE/MS OTA Antenna Performance; 3GPP TS 37.544 Technical Specification UTRA & E-UTRA UE OTA Antenna Performance; QCVN 117:2023/BTTTT
Wired and Wireless Conformance	
CBRS - OnGo/WInnForum	OnGo Alliance Certification Test Plan; WInnForum Conformance and Performance Test Technical Specification, WINNF-TS-0122
Military and Airborne Equipment	MIL-STD-461G, RE102; AFI91-208

Information Technology
7195 Oakland Mills Rd, Suite A
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Test Technology:	**Test Method(s) [1]:**
Wired and Wireless Conformance	
CTIA IoT Security	CTIA Cybersecurity Certification Test Plan for IoT Devices[3]

On the following types of products:
Consumer and Industrial Cellular, WifI, and RF enabled devices; Network Equipment; Commercial and Industrial Information Technology Equipment (ITE); Medical Electrical Equipment; Industrial, Scientific, and Medical Equipment

[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 test method, per Annex A, Part C of A2LA's *R101 - General Requirements: Accreditation of Conformity Assessment Bodies.*

[2] CTIA 01.01 Test Scope Requirements and Applicability is used in support of the CTIA Test Plan for Wireless Device Over-the-Air Performance3and should not be considered its own test method.

[3] Accreditation to the requirements of the CTIA Certification Test Plan does not imply authorization by the CTIA Certification program. Please see the CTIA website https://ctiacertification.org/test-labs/ for a listing of Authorized Test Labs (ATLs).

Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.:		
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)	330000
Intentional Radiators		
Part 15C	ANSI C63.10:2020	330000
Unlicensed Personal Communication Systems Devices		
Part 15D	ANSI C63.17:2013	20000
U-NII without DFS Intentional Radiators		
Part 15E	ANSI C63.10:2020	40000
U-NII with DFS Intentional Radiators		
Part 15E	FCC KDB 905462 D02 (v02) - April 8, 2016	40000
UWB Intentional Radiators		
Part 15F	ANSI C63.10:2020	200000
BPL Intentional Radiators		
Part 15G	ANSI C63.10:2020	40000
White Space Device Intentional Radiators		
Part 15H	ANSI C63.10:2020	40000
Commercial Mobile Services (FCC Licensed Radio Service Equipment)		
Parts 22 (cellular), 24, 25 (below 3 GHz), and 27	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	330000
General Mobile Radio Services (FCC Licensed Radio Service Equipment)		
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; TIA-102.CAAA-E; ANSI C63.26:2015	330000

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Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.:		
Rule Subpart/Technology	**Test Method**	**Maximum Frequency (MHz)**
Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment)		
Part 96	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	330000
Maritime and Aviation Radio Services		
Parts 80 and 87	ANSI/TIA-603-E; ANSI C63.26:2015	330000
Microwave and Millimeter Bands Radio Services		
Parts 25, 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	330000
Broadcast Radio Services		
Parts 73 and 74 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	330000
RF Exposure		
Devices Subject to SAR Requirements	IEEE Std 1528:2013	6000
Hearing Aid Compatibility		
Part 20 (HAC for Commercial Mobile Services)	ANSI C63.19:2019 (incorporation of reference)	6000
Signal Boosters		
Part 20 (Wideband Consumer Signal Boosters, Provider-specific signal boosters, and Industrial Signal Boosters) Section 90.219	ANSI C63.26:2015	330000
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.		

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Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY WASHINGTON DC LLC

Columbia, MD

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 2026.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2041.01
Valid to February 29, 2028

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

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