SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ELECTRICAL

Valid To: May 31, 2024 Certificate Number: 3021.01

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 satellite laboratory location listed below***, to perform the following tests on Bluetooth®, Wireless Devices, Near Field Communication Devices, and Mobile Devices:

Test(s):	**Test Method(s) [2]:**
Bluetooth [3]	
Bluetooth RF Conformance Tests	TS, TSS & TP as outlined in the Bluetooth Qualification Program Test Case Reference List (TCRL)
Bluetooth Profile Conformance Test	TS, TSS & TP as outlined in the Bluetooth Qualification Program Test Case Reference List (TCRL)
Bluetooth Profile Interoperability Test	TS, TSS & TP as outlined in the Bluetooth Qualification Program Test Case Reference List (TCRL)

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Test(s):	**Test Method(s) [2]:**
Mobile Communications	
Global System for Mobile Communications (GSM); Harmonized EN for Mobile Stations in the GSM 900 and GSM 1800 Bands Covering Essential Requirements Under Article 3.2 of the R&TTE Directive	ETSI EN 301 511 (*excluding Radiated Spurious Emissions*)
Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation Cellular Networks; Part 2: Harmonized EN for IMT-2000, Introduction and Common Requirements, Covering Essential Requirements of Article 3.2 of the R&TTE Directive	ETSI EN 301 908-2
Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation Cellular Networks; Part 13: Harmonized EN for IMT-2000, Evolved Universal Terrestrial Radio Access (E-UTRA) (UE) Covering the Essential Requirements of Article 3.2 of the R&TTE Directive	ETSI EN 301 908-13
3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; UICC-Terminal Interface; Universal Subscriber Identity Module (USIM) Application Test Specification	3GPP TS 31.121
3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Mobile Equipment (ME) Conformance Test Specification; Universal Subscriber Identity Module Application Toolkit (USAT) Conformance Test Specification	3GPP TS 31.124
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Common Test Environments for User Equipment (UE); Conformance Testing	3GPP TS 34.108

Test(s):	**Test Method(s) [2]:**
Mobile Communications *(cont.)*	
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; User Equipment (UE) Conformance Specification; Radio Transmission and Reception (FDD); Part 1: Conformance Specification	3GPP TS 34.121-1
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification	3GPP TS 34.123-1
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common Test Environments for User Equipment (UE) Conformance Testing	3GPP TS 36.508
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Conformance Specification Radio Transmission and Reception Part 1: Conformance Testing	3GPP TS 36.521-1
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Conformance Specification; Radio Transmission and Reception; Part 3: Radio Resource Management (RRM) Conformance Testing	3GPP TS 36.521-3
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification	3GPP TS 36.523-1
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; User Equipment (UE) Application Layer Data Throughput Performance	3GPP TR 37.901

Test(s):	**Test Method(s) [2]:**
Mobile Communications *(cont.)*	
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; 5GS; User Equipment (UE) conformance Specification; Part 1: Common test environment	3GPP TS 38.508-1
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; 5GS; User Equipment (UE) conformance Specification; Part 2: Common Implementation Conformance Statement (ICS) Proforma	3GPP TS 38.508-2
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; User Equipment (UE) Conformance Specification; Radio Transmission and Reception; Part 1: Range 1 Standalone	3GPP TS 38.521-1
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; User Equipment (UE) Conformance Specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking Operation with other radios	3GPP TS 38.521-3
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; User Equipment (UE) Conformance Specification; Radio transmission and reception; Part 4: Performance	3GPP TS 38.521-4
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; User Equipment (UE) Conformance Specification; Applicability of Radio Transmission, Radio Reception, and Radio Resource Management Test Cases	3GPP TS 38.522
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; 5GS; User Equipment (UE) Conformance Specification; Part 1: Protocol	3GPP TS 38.523-1
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; 5GS; User Equipment (UE) Conformance Specification; Part 2: Applicability of Protocol Test Cases	3GPP TS 38.523-2

Test(s):	**Test Method(s) [2]:**
Mobile Communications *(cont.)*	
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; User Equipment (UE) Conformance Specification; Radio Resource Management (RRM)	3GPP TS 38.533
Smart Cards; UICC-Terminal Interface; Physical, Electrical and Logical Test Specification	ETSI TS 102 230
3rd Generation Partnership Project; Technical Specification Group GSM/EDGE Radio Access Network Digital Cellular Telecommunications System (Phase 2+); Mobile Station (MS) Conformance Specification; Part 1: Conformance Specification	3GPP TS 51.010-1 (*excluding Radiated Spurious Emissions*)
3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Mobile Station (MS) Conformance Specification; Part 4: Subscriber Identity Module (SIM) Application Toolkit Conformance Test Specification	3GPP TS 51.010-4
Global Certification Forum – Certification Criteria	GCF-CC
GSM N.A. Permanent Reference Document: Overview of PCS Type Certification Review Board (PTCRB) Mobile Equipment Type Certification and IMEI Control	PTCRB-NAPRD.03
PTCRB Program Management Document Process Overview of PTCRB Device Type Certification and IMEI Control	PTCRB-PPMD
Intelligent Transport Systems – ESafety – eCall End-to-End Conformance Testing	EN 16454:2015 (*excluding: Chapters 10 – 12.4.9, Annexes B – E*)
Mobile Standards Group (MSG); Pan-European eCall End-to-End and In-band Modem Conformance Testing; Prose Test Specification	ETSI TS 103 412
Mobile Standards Group (MSG); eCall HLAP Interoperability Testing	ETSI TS 103 428

Test(s):	**Test Method(s) [2]:**
Smartcard	
Integrated Circuit Card Specification for Payment Systems: Book 1: Application Independent ICC to Terminal Interface Requirements	EMVCo Terminal Type Approval: Level 1 Mechanical and Electrical Test Cases; EMVCo Terminal Type Approval: Level 1 Protocol Test Cases; EMV Contact Card Level 1 Type Approval ICC Electrical Test Cases; EMV Contact Card Level 1 Type Approval ICC Protocol Test Cases
Integrated Circuit Card Specification for Payment Systems: Book 2: Security and Key Management	EMVCo Type Approval Terminal Level 2 Test Cases
Integrated Circuit Card Specification for Payment Systems: Book 3: Application Specification	EMV Card Type Approval CCD Level 2 Test Cases
Integrated Circuit Card Specification for Payment Systems: Book 4: Cardholder, Attendant, and Acquirer Interface Requirements	EMV Card Type Approval CPA Level 2 Test Cases
EMV Contactless Specification for Payment Systems- Book D- EMV Contactless Communication Protocol Specification	EMVCo Type Approval Contactless Terminal Level PCD Analogue Test Bench and Test Case Requirements
	EMVCo Type Approval Contactless Terminal Level PCD Digital Test Bench & Test Cases
	EMV Type Approval PCD Level 1 Laboratory Guidelines for Terminal Validation and Interoperability Testing
	EMV Contactless COTS Level 1 Type COTS Level 1 Test Guidelines
	EMVCo Contactless Type Approval PICC Analogue Test Bench and Test Case Requirements
	EMVCo PICC Level 1 Protocol Digital Test Cases
	EMVCo Mobile L1 Performance Test Cases
	EMV Mobile Product Level 1 Type Approval; Laboratory Guidelines for Mobile Level 1 Interoperability Testing

[1] *This accreditation covers testing performed at the main laboratory listed above, and the satellite laboratory listed below*:

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Deputy Authorized Representative: Jacob Jang 82 31 321 2998
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Test(s):	**Test Method(s) [2]:**
Mobile Communications	
Guideline for Spurious Emission Radiated Testing	PVG.04
Global System for Mobile Communications (GSM); Harmonized EN for Mobile Stations in the GSM 900 and GSM 1800 Bands Covering Essential Requirements Under Article 3.2 of the R&TTE Directive	ETSI EN 301 511 (*Radiated Spurious Emissions Only*)
3rd Generation Partnership Project; Technical Specification Group GSM/EDGE Radio Access Network Digital Cellular Telecommunications System (Phase 2+); Mobile Station (MS) Conformance Specification; Part 1: Conformance Specification	3GPP TS 51.010-1 (*Radiated Spurious Emissions Only*)
Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation Cellular Networks; Part 1: Harmonized EN for IMT-2000, Introduction and Common Requirements, Covering Essential Requirements of Article 3.2 of the R&T IE Directive	ETSI EN 301 908-1
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Electromagnetic Compatibility (EMC) Requirements for Mobile Terminals and Ancillary Equipment	3GPP TS 34.124
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); ElectroMagnetic Compatibility (EMC) Requirements for Mobile Terminals and Ancillary Equipment	3GPP TS 36.124

Test(s):	**Test Method(s) [2]:**
Mobile Communications	
3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; ElectroMagnetic Compatibility (EMC) Requirements for Mobile Terminals and Ancillary Equipment	3GPP TS 38.124

[2] 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 part C., Section 1 of A2LA *R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories*.

[3] Developed through the Bluetooth® Special Interest Group (SIG) with Bluetooth® Qualification Test Cases Reference List (TCRL) and Product Requirements available at http://www.bluetooth.com.

Accredited Laboratory

A2LA has accredited

CETECOM LIMITED

Anyang-si, Gyeonggi-do, Korea

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*).

American Association for Laboratory Accreditation
CORPORATE SEAL 1978
DISTRICT OF COLUMBIA
A2LA

Presented this 6th day of April 2022.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3021.01
Valid to May 31, 2024

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