



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

QUALITECH
EMC & Product Safety Laboratory
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ELECTRICAL

Valid To: June 30, 2024

Certificate Number: 1633.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electromagnetic compatibility and product safety tests:

Test Technology:

Test Method(s)¹:

Emissions

Unintentional Radiators
Conducted and Radiated
(3m semi-anechoic chamber)

EN 55022; CISPR 22; AS/NZS CISPR 22;
CAN/CSA-CEI/IEC CISPR 22:2002;
VCCI V-3 (up to 6 GHz);
ICES-003-Issue 7;
CFR 47, FCC Part 15, Subpart B (using ANSI C63.4:2014);
EN 55011; EN 55011:2007 + A2:2007;
EN 55011:1998 + A1:1999 + A2:2002;
CISPR 11; CISPR 11:2006; CISPR 11:2004 + A1:2004;
CISPR 11:1997 + A1:1999 + A2:2002;
EN 55103-1; EN 55103-1:2009;
AS/NZS CISPR 11:2004;
ICES-001-Issue 5; KN32;
CFR 47, FCC Part 18 (using MP-5:1986);
IS 961, P. 6.1; IS 961, P. 6.1 (08-2001);
AS/NZ 3548;
EN 55014-1; CISPR 14-1;
EN 55015; CISPR 15; CISPR 15:2008; AS/NZS CISPR 15;
EN 55032; CISPR 32; AS/NZS CISPR32

Harmonic Current Emissions

IEC 61000-3-2; EN 61000-3-2;
EN 61000-3-2:2006 + A1:2009 + A2:2009;
IEC 61000-3-12; EN 61000-3-12

Flicker Emissions

IEC 61000-3-3; EN 61000-3-3; EN 61000-3-3:2008;
IEC 61000-3-11; EN 61000-3-11

Immunity

Electrostatic Discharge (ESD)

IEC 61000-4-2; EN 61000-4-2; EN 61000-4-2:2009

Radiated Immunity (up to 6 GHz)

IEC 61000-4-3; EN 61000-4-3;
EN 61000-4-3:2006 + A1:2008 + A2:2010 + IS:2009

(A2LA Cert. No. 1633.01) Revised 03/07/2023

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Test Technology:**Test Method(s)¹:*****Immunity (Cont.)***Electrical Fast Transient/Burst
(EFT)IEC 61000-4-4; EN 61000-4-4;
EN 61000-4-4:2004 + A1:2010

Surge

IEC 61000-4-5; EN 61000-4-5; EN 61000-4-5:2006

Conducted Immunity

IEC 61000-4-6; EN 61000-4-6; EN 61000-4-6:2009

Power Frequency Magnetic Fields

IEC 61000-4-8; EN 61000-4-8

Pulse Magnetic Field

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

Damped Oscillatory Magnetic Field

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

Voltage Dips, Short Interruptions
and Variations

IEC 61000-4-11; EN 61000-4-11; EN 61000-4-11:2004

Ring Wave

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

Conducted, Common Mode
Disturbances in the Frequency
Range 0 Hz to 150 kHz

IEC 61000-4-16; EN 61000-4-16

Ripple on D.C. Input Power Port

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

Damped Oscillatory Wave

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

Voltage Dips, Short Interruptions
and Voltage Variations on D.C.
Input Power Port

IEC 61000-4-29; EN 61000-4-29

MIL-STD and Avionics TestsMIL-STD-461; MIL-STD-461 C/D/E/F/G
(Excluding RS05/RS105);
MIL-STD-462;
MIL-STD-464 A/B/C (ESD Test only);
MIL-STD-1275 A/B/C/D/E;
MIL-STD-704 A/B/C/D/E/F;
RTCA/DO-160; RTCA/DO-160 D/E/F/G
(Excluding Sec. 22, Levels 4 & 5);
MIL-STD-1399 Section 300B
(Excluding Sec. 5.3.3 Voltage spike test);
Defense Standard 59-411 Part 3**Transmitters and Receivers
(up to 40 GHz)
(Excluding SAR and HAC
testing)**

Unlicensed Transmitters

47 CFR FCC Part 15 C, ANSI C63.10-2013

U-NII without DFS Intentional
Radiators

47 CFR FCC Part 15, Subpart E; ANSI C63.10-2013

Test Technology:**Test Method(s)¹:****Licensed Transmitters
(Up to 40 GHz)**

Commercial Mobile Services (FCC Licensed Radio Service Equipment)	47 CFR FCC Part 22 (cellular), Part 24, Part 25 (below 3 GHz), Part 27; ANSI C63.26-2015; ANSI/TIA-603-E-2016
General Mobile Radio Services (FCC Licensed Radio Service Equipment)	47 CFR FCC Part 22 (non-cellular), Part 90 (below 3 GHz), Part 95, Part 97 (below 3 GHz), Part 101 (below 3 GHz); ANSI C63.26-2015; ANSI/TIA-603-E-2016
Signal Boosters (Part 20, Section 90.219)	47 CFR FCC Part 20; ANSI C63.26-2015;

Radio Transmitters

Australia	AS/NZS 4268; AS/NZS 4771; AS/CA S042.4_2015
Canada	RSS-GEN; RSS-119; RSS-123; RSS-125; RSS-130; RSS-131; RSS-132; RSS-133; RSS-139; RSS-192; RSS-195; RSS-199; RSS-210; RSS-220; RSS-247; RSS-248; RSS-310
European Union (EU) (<i>Excluding Adaptivity, DFS and Protocol Conformance testing</i>)	ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 330-1; ETSI EN 300 330-2; ETSI EN 303 447; ETSI EN 300 440-1; ETSI EN 300 440-2; ETSI EN 300 440; ETSI EN 300 328; ETSI EN 303 413; ETSI EN 300 487; ETSI EN 300 827; ETSI EN 300 385; ETSI EN 302 065; ETSI EN 302 065 V1.1.1:2008; ETSI EN 301 428; ETSI EN 301 443; ETSI EN 301 357-1; ETSI EN 301 357-2; ETSI EN 301 511; ETSI EN 301 502; ETSI EN 301 893; ETSI EN 302 544-1; ETSI EN 302 544-2; ETSI EN 303 609; ETSI EN 301 908-1; ETSI EN 301 908-2; ETSI EN 301 908-3; ETSI EN 301 908-4; ETSI EN 301 908-5; ETSI EN 301 908-6; ETSI EN 301 908-7; ETSI EN 301 908-11; ETSI EN 301 908-12; ETSI EN 301 908-13; ETSI EN 301 981-15; ETSI EN 302 217-1; ETSI EN 302 217-2-1; ETSI EN 302 217-2-2; ETSI EN 302 291-1; ETSI EN 302 291-2; ETSI EN 300 113-1; ETSI EN 300 113-2; ETSI EN 201 468; ETSI TS 136106; EN 62479

Automotive (ESA) Tests

Conducted Emissions	CISPR 25 (2002, 2008), Sections 6.2 and 6.3; GMW3097, Section 3.3.2
Radiated Emissions (<i>ALSE Method</i>)	CISPR 25 (2002, 2008), Section 6.4; GMW3097, Section 3.3.1
Magnetic Field Emissions	GMW3097, Section 3.3.3
Electrical Transient Conduction Along Supply Lines	ISO 7637-2 (2004, 2011); GMW3097, Sections 3.5.3 to 3.5.6

Test Technology:**Test Method(s)¹:**

Electrical Transient Transmission
by Capacitive and Inductive
Coupling (Other Than Supply
Lines)

ISO 7637-3 (2007);
GMW3097, Sections 3.5.3 to 3.5.6

Bulk Current Injection (BCI)
(*Substitution and Closed-Loop
Methods*)

ISO 11452-4 (2005, 2011 [*Excluding section 6.2*]);
GMW3097, Section 3.4.1

Electrostatic Discharge (ESD)

ISO 10605
(2001 [*Excluding section 6*], 2008 [*Excluding section 10*]);
GMW3097, Sections 3.6.1 to 3.6.3

Radiated Immunity

ISO 11452-2 (2004);
GMW3097, Section 3.4.2

Magnetic Field Immunity

ISO 11452-8 (2007); GMW3097, Section 3.4.4

Generic Automotive Product
Specific Tests

ISO 11452-2; ISO 11452-4; ISO 16750-1; ISO 16750-2;
SAE J1113-2; SAE J1113-3; SAE J1113-4; SAE J1113-11;
SAE J1113-12; SAE J1113-13; SAE J1113-21;
SAE J1113-22; SAE J1113-41; SAE J1113-42;
GMW3097; GMW3172; CISPR 25;
European Commission Directive 2004/104/EC;
United Nations E/ECE/324;
E/ECE/TRANS/505
Addendum 9/Rev.4 Regulation No. 10
E/ECE/324;
E/ECE/TRANS/505
Regulation No. 116;
BS EN 50498:2010

Electrical Product Safety Tests

OFF
(Office equipment and audio/video)
(*Excluding ionizing radiation, UV
radiation, light emitting diodes
(LED's), external flexible cord,
strength of picture tubes and
protections against effects of
implosion*)

IEC 60950-1; IEC 60950-1:2005 + A1:2009 + A2:2013;
EN 60950-1; EN 60950-1:2006 + A1:2010 + A2:2013;
UL 60950-1; CAN/CSA-C22.2 No. 60950-1;
CAN/CSA-C22.2 No. 60950-1-07 (2nd Ed.);
UL 60950-1:2007 R12.11; UL 60950-1:2007 R10.14;
CAN/CSA-C22.2 No. 60950-1-07 + A1;
CAN/CSA-C22.2 No. 60950-1-07 + A1:2011 + A2:2014
SI 60950-1 Part 1; AS/NZS 60950.1; AS/NZS 60950.1:2011;
AS/NZS 60950.1:2011 + A1;
EN 60950-21; IEC 60950-21; UL 60950-21;
EN 60950-22; IEC 60950-22; UL 60950-22;
EN 62368-1; EN 62368-1:2014;
IEC 62368-1; IEC 62368-1:2014;
UL 62368-1; UL 62368-1:2014;
CAN/CSA-C22.2 NO. 62368-1;
CAN/CSA-C22.2 NO. 62368-1-14;
EN 60065; IEC 60065;
UL 60065; CAN/CSA-C22.2 NO. 60065

Test Technology:**Test Method(s)¹:**

MEAS (Measuring Devices)
(*Excluding tracking index,
ionizing radiation, ultrasonic
pressure, high vacuum devices*)

EN 61010-1; IEC 61010-1;
UL 61010-1; CAN/CSA 61010-1

HOUS
(Household and similar electrical
appliances)
(*Excluding oxygen bomb test,
cord reel test*)

EN 60335-1; IEC 60335-1; EN 60335-2-23; IEC 60335-2-23;
EN 60335-2-24; IEC 60335-2-24; EN 60335-2-27;
IEC 60335-2-27; EN 60335-2-32; IEC 60335-2-32;
EN 60335-2-36; IEC 60335-2-36

MED³
(*Medical equipment*)
(*Excluding cathode ray
tubes, pressure vessels, natural
latex rubber aging, material group
classification, spark ignition,
ignition of flammable anesthetic
mixtures, flexibility, adherence,
X-radiation, sterilization,
bio compatibility testing*)

EN 60601-1:06+ AMD 1:13 +AMD 2:21;
IEC 60601-1:05 + AMD 1:12 +AMD 2:20;
ANSI/AAMI ES60601-1:05+A1:12+C1:09+A2:10;
CAN/CSA-C22.2 No. 60601-1:14;
EN 60601-1-6:10 + AMD 1:15 +AMD 2:21;
IEC 60601-1-6:10 + AMD 1:12 +AMD 2:20;
EN 60601-1-8:07 + A1:13; IEC 60601-1-8:06 + A1:12;
EN 60601-1-11:15+A1:21; IEC 60601-1-11:15+A1:20;
EN 60601-1-12:15; IEC 60601-1-12:14+A1:20;
EN 60601-2-2:18; IEC 60601-1-2:17;
EN 60601-2-3:15+A1:16; IEC 60601-1-3:12+A1:16;
EN 60601-2-10:15; IEC 60601-2-10:12;
EN 60601-2-12:06; IEC 60601-2-12:01;
EN 60601-2-18:96+A1:00; IEC 60601-2-18:96+A1:00;
EN 60601-2-19:96+A1:96; IEC 60601-2-18:90+A1:96;
EN 60601-2-22:20; IEC 60601-2-22:19;
EN 60601-2-23:00; IEC 60601-2-23:99;
EN 60601-2-24:15; IEC 60601-2-24:12;
EN 60601-2-34:14; IEC 60601-2-34:11;
EN 60601-2-35:96; IEC 60601-2-35:96;
IEC 60601-2-41:21 (*clause 201.9 only*);
IEC 60601-2-49:15; IEC 60601-2-49:11;
EN 60601-2-57:11; IEC 60601-2-57:11;
EN 60601-2-62:13; IEC 60601-2-62:13;

MISC (Miscellaneous)

EN 60825-1; EN 60825-1:2007;
IEC 60825-1; IEC 60825-1:2008 (2nd Ed.);
EN 60825-2; EN 60825-2:2004 + A1:2007;
IEC 60825-2; IEC 60825-2:2004 + A1:2006;
IEC 60529; EN 60529; EN 60939-1; IEC 60939-1;
EN 60939-2; IEC 60939-2; EN 60939-3; IEC 60939-3

LITE (Lamp Controlgear)

EC 61347-1; EN 61347-1; IEC 61347-2-12; EN 61347-2-12;
IEC 61347-2-13; EN 61347-2-13

Adjustable Speed Electrical Power
Drive Systems

EN 61800-5-1; EN 61800-5-1:2007; IEC 61800-5-1

Electrical Relays

IEC 60255-5 (*Clearance, creepage distance, solid insulation and
Dielectric test*)

Power & Energy

IEEE 1613 (*Dielectric Test*)

Test Technology:**Test Method(s)¹:*****Electrical Product Safety Tests
(Cont.)***

Photovoltaic Power Conversion

IEC 62109-1

***Generic/Product Family/ Product
Specific Standards***

EN 61000-6-1; IEC 61000-6-1; AS/NZS 61000.6.1;
EN 61000-6-2; IEC 61000-6-2; AS/NZS 61000.6.2;
EN 61000-6-3; IEC 61000-6-3; AS/NZS 61000.6.3;
EN 61000-6-4; IEC 61000-6-4; AS/NZS 61000.6.4;
CISPR 14-2; EN 55014-2; CISPR 24; EN 55024;
AS/NZS CISPR 24:2002; IS 961, P. 6.2; CISPR 35; EN 55035;
AS/NZS CISPR 35; KN35; AS/NZS 4252.1; EN 50083-2;
IEC 61204-3; EN 61204-3; IEC 61326-1; EN 61326-1;
IEC 61326-2-1; EN 61326-2-1; IEC 61326-2-2; EN 61326-2-2;
IEC 61326-2-3; EN 61326-2-3; IEC 61326-2-5;
EN 61326-2-5; IEC 61326-3-1; EN 61326-3-1;
IEC 61326-3-2; EN 61326-3-2; EN 50121-4; EN 50121-3-2;
EN 50155; EN 50130-4; IEC 60945; EN 60945; EN 55103-2;
IEC 60255-22-1; IEC 60255-22-3; IEC 60255-22-4;
IEC 62236-4; IEC 60255-22-7; IEC 62040-2;
IEC 62052-11 (sections 7.3,7.5 only);
IEC 60092-504 (Test # 4a,4b,13,14,15,16,17,18,19,20 only);
IEC 60092-504 (sections: 4a,4b,13,14,15,16,17,18,19,20 only);
EN 50270 (excluding the use of toxic or combustible gases);
IEC 50293; EN 50293; IEC 60601-1-2; EN 60601-1-2;
BS EN ISO 11608-1:2015 (only sec 10.10);
ETSI EN 300 386; ETSI EN 201 468;
ETSI EN 301 489-1; ETSI EN 301 489-3; ETSI EN 301 489-4;
ETSI EN 301 489-5; ETSI EN 301 489-6; ETSI EN 301 489-7;
ETSI EN 301 489-8; ETSI EN 301 489-12; ETSI EN 301 489-14;
ETSI EN 301 489-17; ETSI EN 301 489-19;
ETSI EN 301 489-22; ETSI EN 301 489-23;
ETSI EN 301 489-24; ETSI EN 301 489-25;
ETSI EN 301 489-26; ETSI EN 301 489-28;
ETSI EN 301 489-32; ETSI EN 301 489-33;
ETSI EN 301 489-50; ETSI EN 300132-1; ETSI EN 300132-2;
ETSI TR 100283;
ITU-T K.17; ITU-T K.20; ITU-T K.21;
ITU-T K.44; ITU-T K.45; ITU-T K.54;
ANSI/IEEE C37.90.1;
IEEE C62.41; IEEE C62.41.1; IEEE C62.41.2;
Telcordia GR-1089-CORE;
GR-468 Issue 2 (section 3.2.10.2 only);
EN 61800-3 ; IEC 61800-3;
EN /IEC 60870-2-1; EN/ IEC 61547;
EN/IEC 61850-3 (clause 6.7 only);
ANSI/IEEE1613 (clauses 4-8 only);
ANSI C12.1 (tests # 5, 6, 16, 17, 18, 21, 25, 26, 27, and 28 only);
ANSI C12.20 (tests # 5, 6, 16, 17, 18, 21, 25, 26, 27, and 28 only);
ANSI N42.17A (sections 6.8,8.2,8.3,8.4 only);
DNV2.4 (sections 3.4, 3.5, and 3.14 only);
IEC 60532 (section 7.2 only); IEC 60730-1 (clauses 23 and 26 only); SEMI F47-0200; SBC TP76200MP Sec. 7; ANSI T1.315;
FTZ 1TR9; VDE 0877 P2; VDE 0877 P3 ;



Test Technology:**Test Method(s)¹:*****Generic/Product Family/ Product
Specific Standards (Cont.)***

JESD22-A114-B; UL 2231-2, 2nd Ed.:2012 and C22.2 No.
281.2-12, 1st Ed.: (2012): Section 24 only;
UL 991 (sections 10,11,12,13,14,15 only);
UL 1699B (sections 39, 40, 41, 42 only)

On the following products or types of products:

Electrical and Electronic Apparatus, Information Technology Equipment (ITE) and
Telecommunication Equipment, Scientific and Medical Equipment (ISM), Electrical equipment for
Measurements Control and Laboratory use, Laser products, Household and similar Electrical
Appliances, Radio Equipment, Automotive Electrical/Electronic Subassembly (ESA).

¹ When the date, revision or edition of a test method standard is not identified on the scope of accreditation, the laboratory is required 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.

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.1 ²:

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 C63.10:2013	40000
<u>U-NII without DFS Intentional Radiators</u>		
Part 15E	ANSI C63.10:2013	40000
<u>Commercial Mobile Services (FCC Licensed Radio Service Equipment)</u>		
Parts 22 (cellular), 24, 25 (below 3GHz), and 27	ANSI/TIA-603-E-2016; ANSI C63.26-2015	40000
<u>General Mobile Radio Services (FCC Licensed Radio Service Equipment)</u>		
Parts 22 (non-cellular), 90 (below 3GHz), 95, 97 (below 3GHz), and 101 (below 3GHz)	ANSI/TIA-603-E-2016; ANSI C63.26-2015	40000
<u>Signal Boosters</u>		
Signal Boosters (Section 90.219) (Wideband Consumer Signal Boosters, Provider-specific signal boosters, and Industrial Signal Boosters)	ANSI C63.26-2015;	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.

³ The laboratory is only accredited for testing activities outlined within the test methods listed above. Reference to any other activity within these standards, such as a risk management or risk assessment, does not fall within the laboratory's accredited capabilities.



Accredited Laboratory

A2LA has accredited

QUALITECH

Petah-Tikva, Israel

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 29th day of August 2022.

A blue ink signature of Trace McInturff.

Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1633.01
Valid to June 30, 2024

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