



# CERTIFICATE OF ACCREDITATION

## ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

**UltraTech Engineering Labs Inc.**  
**3000 Bristol Circle**  
**Oakville ON L6H 6G4 Canada**

has been assessed by ANAB  
and meets the requirements of international standard

## ISO/IEC 17025:2005

while demonstrating technical competence in the field of

## TESTING

Refer to the accompanying Scope of Accreditation for information regarding the types of tests to which this accreditation applies.

AT-1945

Certificate Number



ANAB Approval

Certificate Valid: 09/08/2017-10/08/2017  
Version No. 008 Issued: 09/08/2017



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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).



# ANSI-ASQ National Accreditation Board

## SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

### UltraTech Engineering Labs Inc.

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### TESTING

Valid to: October 8, 2017

Certificate Number: AT-1945

#### I. Electrical / EMC

FIELD OF TEST	TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED
Electromagnetic Compatibility	Conducted and Radiated Emissions (40 Hz to 40 GHz)	FCC 47 CFR Parts 11, 15, 18; ANSI C63.4(2014), ANSI C63.10(2013), ANSI C63.17(2013); FCC OST/MP-5(February 1986); ICES 001,003,004,005,006 CISPR 22; EN 55022; AS/NZS CISPR 22; CAN/CSA-CEI/IEC CISPR 22; CNS 13438(up to 6GHz); VCCI V-3 (up to 6 GHz); CISPR 11; EN 55011, AS/NZS CISPR 11; CISPR 32, EN55032; EN 50121-3-2, EN 50121-4; EN 50366; EN 55103-1; CISPR 15, EN 55015, KN 15:2015-12 Technical Requirements for Electromagnetic Compatibility (RRA Public Notification 2015-27, Dec 3, 2015); Test Methods for Electromagnetic Compatibility (RRA Announce 2015-110, Dec 3, 2015); KN 11:2015-12, KN 32:2015-12 (Annex 11), KN 22
	Harmonic Emissions	IEC 61000-3-2, EN 61000-3-2, AS/NZS 61000-3-2
	Flicker	IEC 61000-3-3, EN 61000-3-3, AS/NZS 61000-3-3
	Product Specific Emissions	IEC 61000-6-3; EN 61000-6-3; KN 61000-6-3; IEC 61000-6-4; EN 61000-6-4; KN 61000-6-4; AS/NZS 61000.6.4; CISPR 12, EN 55012 CISPR 14-1: (excluding measurement of clicks); EN 55014-1 (excluding measurement of clicks); AS/NZS CISPR 14-1, KN 14-1, EN 60255-26 CISPR 25, sections 6.2, 6.3 and 6.4 only CISPR 13, EN 55013



**I. Electrical / EMC**

<b>FIELD OF TEST</b>	<b>TESTS OR PROPERTIES MEASURED</b>	<b>SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED</b>
Electromagnetic Compatibility	ESD Immunity	IEC 61000-4-2, EN 61000-4-2, KN 61000-4-2, DO-160D/E/F: Section 25
	Radiated Immunity (Up to 6 GHz, 20 V/m)	IEC 61000-4-3, EN 61000-4-3, KN 61000-4-3
	EFT	IEC 61000-4-4; EN 61000-4-4; KN 61000-4-4
	Surge	IEC 61000-4-5; EN 61000-4-5; KN 61000-4-5
	Conducted Immunity	IEC 61000-4-6, EN 61000-4-6, KN 61000-4-6
	Low Frequency Magnetic Immunity	IEC 61000-4-8, EN 61000-4-8, KN 61000-4-8
	Pulse Magnetic Immunity	IEC 61000-4-9, EN 61000-4-9
	Damped Oscillatory Magnetic Immunity	IEC 61000-4-10, EN 61000-4-10
	Power Dips and Interrupts	IEC 61000-4-11, EN 61000-4-11, KN 61000-4-11
	Ring Wave Immunity	IEC 61000-4-12, EN 61000-4-12, ANSI/IEEE C37.90, ANSI/IEEE C62.41
	Harmonics and Inter-harmonics	IEC 61000-4-13, EN 61000-4-13
	Immunity, Common Mode Disturbances	IEC 61000-4-16, EN 61000-4-16
	Damped Oscillatory Waveform Immunity	IEC 61000-4-18, EN 61000-4-18
	Product Specific Immunity	CISPR 24; EN55024; AS/NZS CISPR 24; EN 61000-6-1; EN 61000-6-2; AS/NZS 4254.1; CISPR 14-2, EN 55014-2, AS/NZS CISPR 14-2, KN 14-2:2015-12, EN 61547, KN 61547 CISPR 20 and EN 55020; EN 55103-2; EN 50130-4 Test Methods for Electromagnetic Compatibility (RRA Announce 2015-110, Dec 3, 2015); KN 35:2015-12 (Annex 11-2) KN 24, KN 61000-6-1, KN 61000-6-2
Emissions and Immunity Standards	Combined Generic / Product Specific	IEC 60601-1-2; EN 60601-1-2; IEC 61326; EN 61326; IEC 50121; EN 50121; IEC 50155, EN 50155; EN 300 386; ISO 7637-2; ISO 7637-3, IEC/EN 61850-3

**I. Electrical / EMC**

FIELD OF TEST	TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED
Radio Transmitters and Receiver	<p>Output Power Power Spectral Density Conducted Spurious Emissions Radiated Spurious Emissions Occupied Bandwidth Duty Cycle Frequency Stability ERP/EIRP Audio Frequency Response Modulation Limiting Transient Frequency Behavior Intermodulation Dwell time, Minimum Frequency Occupation &amp; Hopping Sequence SAR – RF RF Exposure MPE – RF RF Exposure</p>	<p><b>USA:</b> TIA-102.CAAA-D(2013) &amp; ANSI/TIA-603-D(2010) using 47 CFR Parts 2, 20, 22(cellular and non-cellular), 24, 25, 27, 73, 74, 80, 87, 90, 95, 96, 97 and 101, ANSI C63.17(2013); ANSI 63.26(2015), KDB Publications 789033 D02 v01r03, 971168 D01 v02r02, 971168 D02 v01, 971168 D03 v01, 935210 D02 v03r02(April 08, 2016), 935210 D03 v04(February 12, 2016), 935210 D04 v02(February 12, 2016), 935210 D05 v01r01(February 12, 2016)</p> <p><b>Canada:</b> RSS-Gen; RSS-102; 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-141; RSS-142; RSS-170; RSS-181; RSS-182; RSS-191; RSS-192; RSS-194; RSS-195; RSS-196; RSS-197; 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-247; RSS-251; RSS-287; RSS-288; RSS-310</p>
	<p>Output Power Power Spectral Density Conducted Spurious Emissions Radiated Spurious Emissions Occupied Bandwidth Duty Cycle Frequency Error Modulation range ERP/EIRP Dwell time, Minimum Frequency Occupation &amp; Hopping Sequence Adjacent channel power Intermodulation attenuation Transmitter attack time Transmitter release time Rx maximum usable sensitivity Rx average sensitivity Rx co-channel rejection Rx spurious response rejection Rx Intermodulation response rejection Blocking/ Desensitization</p>	<p><b>Europe</b> ETSI EN 300 086; ETSI EN 300 220; ETSI EN 300 328; ETSI EN 300 330; ETSI EN 300 386; ETSI EN 300 440; ETSI EN 301 489-1; ETSI EN 301 489-3; ETSI EN 301 489-4; ETSI EN 301 489-5; ETSI EN 301 489-7; ETSI EN 301 489-8; ETSI EN 301 489-17; ETSI EN 301-489-24 ETSI EN 300 826; ETSI EN 301 113; ETSI EN 301 459; ETSI EN 301 441; ETSI EN 301 893; ETSI EN 301 721 ETSI EN 302 065; ETSI EN 302 502; ETSI EN 302 372, KN 301 489-1, KN 301 489-3. KN 301 489-5, KN 301 489-7, KN 301 489-17, KN 301 489-24</p>



**I. Electrical / EMC**

<b>FIELD OF TEST</b>	<b>TESTS OR PROPERTIES MEASURED</b>	<b>SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED</b>
RF Safety and EMF	SAR (Specific Absorption Rate)  RF Exposure MPE (Maximum Permissible Exposure)	OET Bulletin 65, IEEE STD 1528(2013), IEEE STD 1528a IEEE STD C95.1; IEEE STD C95.3; ANSI C63.19(2011) IEC 62209, EN 62209, IEC 62479, EN 62479, EN 62233 IEC 50360, EN 50360, IEC 50361, EN 50361, IEC 50364, EN 50364, IEC 50371, EN 50371 H46-2/99-273 <sup>E</sup> , Health Canada Safety Code 6 KDB Publications 865664 D01 v01r04, 865664 D01 v01r02, 447498 D01 v06, 447498 D02 v02r01, 447498 D03 v01
RF Safety and EMF	EMF Lighting Equipment	IEC 62493, EN 62493
	EMF Household Appliances	IEC 62232, EN 62232
Military EMC	Conducted Emissions	MIL-STD-461E, F: Methods CE101, CE102, CE106; MIL-STD-462D: Methods CE101, CE102, CE106; MIL-STD-462: Methods CE01, CE02, CE03, CE06
	Radiated Emissions	MIL-STD-461E, F: Methods RE101, RE102 and RE103; MIL-STD-462D: Methods RE101, RE102 and RE 103; MIL-STD-462: Methods RE01, RE02 and RE03
	Conducted Susceptibility	MIL-STD-461E, F: Methods CS101, CS 103; CS 104; CS 105, CS109, CS114, CS115, CS116; MIL-STD- 462D: Methods CS101, CS103, CS114, CS115, CS116; MIL-STD-462: Methods, CS01, CS02, CS03, CS04, CS05, CS06, CS08
	Radiated Susceptibility	MIL-STD-461E, F: Methods RS101, RS103; MIL-STD-461/462D: Methods RS101, RS103
Aviation EMC	Power Input	RTCA DO-160 E, F, G: Section 16
	Voltage Spikes	RTCA DO-160 E, F, G: Section 17
	Audio Frequency Conducted Susceptibility	RTCA DO-160 E, F, G: Section 18
	Induced Signal Susceptibility	RTCA DO-160 E, F, G: Section 19
	Conducted Susceptibility and Radiated Susceptibility	RTCA DO-160 E, F, G: Section 20.4 Section 20.5
	Conducted and Radiated Emissions	RTCA DO-160 E, F, G: Sections 21.4 & 21.5
	Lighting Induced Transient Susceptibility	RTCA DO-160 E, F, G: Section 22
ESD	RTCA DO-160 E, F, G: Section 25	

**I. Electrical / EMC**

<b>FIELD OF TEST</b>	<b>TESTS OR PROPERTIES MEASURED</b>	<b>SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED</b>
Product Safety	All tests except sections 2.10.8 to 2.10.12, 3.2.5.1, 4.2.8, 4.3.6, 4.3.12, 4.3.13.3, 4.3.13.4, 4.3.13.5, 4.6.2, 4.6.5, 4.7.3.6, Annexes AA, A3 and H	IEC 60950-1 (2005); IEC 60950-1:2005+A1:2009; EN 60950-1 (2006); EN 60950-1:2006 + A11:2009; EN 60950-1:2006 + A1:2010; EN 60950-1:2006 + A2:2013; CAN/CSA-C22.2 NO. 60950-1-07 (R2012) CAN/CSA-C22.2 NO. 60950-1B-07 - A2:2014
	All tests except sections 6.7.1.2, 11.6, 11.7, 12.2.1, 12.3, 12.4, 12.5.2, 12.6 and 13.3	IEC/EN 61010-1:2010; UL 61010-1: 2010; CAN/CSA C22.2 NO. 61010-1-12
Product Safety	All test except 9.6.2 to 9.7.8, 9.8.3, 10.1 to 10.7, 11.2.2 to 11.2.3 and Annex G	IEC 60601-1:2005; EN 60601-1:2006; EN 60601-1:2006/A1:2013+A12:2014
	All tests except for clauses 21 to 24	EN60215:1989 + A1: 1992; +A2:1994
	All tests except sections 5.4.1.10 (Vicat test), 5.4.4.6.5, 5.4.1.5.3, 10, Annex G.7, Annex G.9, Annex G.13.6.2, Annex G.15, Annex J, Annex M.8.2, Annex P.4, Annex S.2, S.3, S.5, and Annex U	IEC/EN 62368-1 (2014); UL 62368-1 (2014); CAN/CSA-C22.2 NO. 62368-1-14
	All tests except for clauses 15, 22.3, 22.16, 24.1.3, 24.1.4 to 24.1.9, 30.2.1 to 30.2.4, 31 to 32, Annex C, Annex F, Annex G, Annex H, Annex I, Annex J, Annex N, and Annex R	EN 60335-1:2002 +A14:2010 IEC 60335-1:2001 +A2:2006 EN 60335-1:2012 EN 60335-2-2 – Vacuum Cleaner appliances EN 60335-2-29 – Battery chargers EN 60335-2-65 – Air Cleaning appliances EN 60335-2-80 – Fans EN 60335-2-109 UV radiation water treatment appliances
Telecommunications	Analog PSTN devices – physical layer tests, Hearing Aid Compatibility, Volume control	FCC/ACTA Part 68 – Analog & Digital Industry Canada CS-03 TIA/EIA TSB-31 TIA/EIA-968

**Notes:**

- \* = as applicable.
- This scope is formatted as part of a single document including Certificate of Accreditation No. AT-1945.

  
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 Vice President

