



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

MiCOM LABS ^{1,2}
575 Boulder Court
Pleasanton, CA 94566
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ELECTRICAL (EMC)

Valid to: February 29, 2020

Certificate Number: 2381.01

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 Electromagnetic Compatibility Testing (EMC) on Information Technology, Medical and Radio Communication Equipment:

<u>Test:</u>	<u>Test Method(s):</u>
<i>Emissions</i>	
Radiated and Conducted <i>Unintentional</i> (up to 6 GHz)	47 CFR Part 15B (using ANSI C63.4:2014); 47 CFR Part 18 (using MP-5:1986); CISPR 32 (excluding equipment within the scope of CISPR 13); EN 55032; AS/NZS CISPR 32:2015; ICES-003; KN 22; KN 32 (excluding broadcast receivers); EN 55011; CISPR 11; ICES-001; KN 11; VCCI-CISPR 32 (up to 6 GHz)
Harmonic Current Emissions	IEC 61000-3-2; EN 61000-3-2
Flicker	IEC 61000-3-3; EN 61000-3-3
<i>Immunity</i>	
Electrostatic Discharge (ESD)	EN 61000-4-2; IEC 61000-4-2; KN 61000-4-2
Radiated Immunity	EN 61000-4-3; IEC 61000-4-3; KN 61000-4-3
Electrical Fast Transients/ Bursts	EN 61000-4-4; IEC 61000-4-4; KN 61000-4-4
Surge Immunity	EN 61000-4-5; IEC 61000-4-5; KN 61000-4-5
Conducted Immunity	EN 61000-4-6; IEC 61000-4-6; KN 61000-4-6
Magnetic Fields Immunity	EN 61000-4-8; IEC 61000-4-8; KN 61000-4-8
Voltage Dips and Interrupts	EN 61000-4-11; IEC 61000-4-11; KN 61000-4-11
Generic or Product Specific Standards	EN 61000-6-1; IEC 61000-6-1; EN 61000-6-2; IEC 61000-6-2; EN 61000-6-3; IEC 61000-6-3; AS/NZS 4251.1; EN 61000-6-4; IEC 61000-6-4; AS/NZS 4251.2; EN 61326-1; IEC 61326-1; EN 55024; CISPR 24; KN 24; KN 35 (excluding broadcast receivers)

<u>Test:</u>	<u>Test Method(s):</u>
<i>Radio</i>	
General	RSS-GEN; RSS-102 (<i>RF Exposure only</i>)
Licensed Transmitter / Receiver Emissions	47 CFR Parts 2, 11, 20, 21, 22, 24, 25, 27, 73, 74, 80, 87, 90, 95, 96, 97, and 101 (using ANSI/TIA-603-E or ANSI C63.26:2015); EN 301 126-1; EN 301 390; EN 301 751; EN 302 217-1; EN 302 217-2-1; EN 302 217-2-2; EN 302 217-3; EN 302 326-2; EN 301 997-1; EN 301 997-2; RSS-111; RSS-117; RSS-119; RSS-123; RSS-125; RSS-127; RSS-131; RSS-135; RSS-137; RSS-141; RSS-142; RSS-181; RSS-182; RSS-191; RSS-192; RSS-194; RSS-195; RSS-196; RSS-197; RSS-199
Land Mobile	CFR 47 Part 90 (using ANSI/TIA 603-E or ANSI C63.26:2015); EN 300 113-1; EN 300 113-2; EN 301 166-1; EN 301 166-2; EN 300 390-1; EN 300 390-2; EN 300 471-1; EN 300 471-2; RSS-112; RSS-130
Short Range	EN 300 330-1; EN 300 330-2; EN 300 220-1; EN 300 220-2; EN 300 220-3; EN 300 440-1; EN 300 440-2; EN 300 328; EN 301 893 (<i>Includes on-site DFS</i>); EN 302 502 (<i>Includes on-site DFS</i>); EN 202 131; EN 300 674-1; EN 300 674-2-1; EN 300 674-2-2; EN 302 544-1; EN 302 544-2; EN 302 774; EN 301 091-1; EN 301 091-2; EN 302 208-1; EN 302 208-2; EN 302 291-1; EN 302 291-2; EN 303 204-1; EN 303 204-2; EN 302 065; 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-252; RSS-287; RSS-288
Unlicensed Transmitter / Receiver Emissions	47 CFR Parts 15C, F, G, H (using ANSI C63.10:2013); 47 CFR Part 15E (using ANSI C63.10-2013 or FCC KDB 905462 D02 (v02)); 47 CFR Part 15D (using ANSI C63.17:2013); RSS-210
Cellular/PCS	47 CFR Part 22; 47 CFR Part 24; 47 CFR Part 27; EN 301 908-1; EN 301 908-2; EN 301 908-3; EN 301 908-13; EN 301 908-14; EN 301 511; RSS-132; RSS-133; RSS-134; RSS-139; RSS-170
Generic and Product Specific Standards	EN 300 386; EN 60601-1-2; IEC 60601-1-2; EN 60601-2-35; EN 301 489-1; KN 301 489-1; EN 301 489-2; EN 301 489-3; KN 301 489-3; EN 301 489-4; EN 301 489-5; EN 301 489-6; EN 301 489-7; KN 301 489-07; EN 301 489-8; EN 301 489-9; EN 301 489-10; EN 301 489-12; EN 301 489-13; EN 301 489-15; EN 301 489-16; EN 301 489-17; KN 301 489-17; EN 301 489-18; EN 301 489-19; EN 301 489-20; EN 301 489-22; EN 301 489-52; RSS 310
<i>Product Safety</i>	
ITE	EN 60950-1 (<i>humidity conditioning, thermal cycling, and thermal aging only</i>); IEC 60950-1



<u>Test:</u>	<u>Test Method(s):</u>
<i>Country Specific Requirements</i>	
<i>Korea</i>	
Regulations on Radio Equipment	Enforcement Decree of MSIT NO.1, Jul 26 2017
Unlicensed Radio Equipment Established Without Notice	MSIT Public Notification 2018-90, Dec 27, 2018
Conformity Assessment Procedure of Radio Equipment	KS X 3123 Conformity Assessment Test Methods for Radio Equipment
Technical Requirements for Measurement of Electromagnetic Field Strength	RRA Public Notification 2019-3, Mar 4, 2019
Technical Requirements for Radio Equipment for Telecommunication Services	RRA Public Notification 2018-20 Oct 22, 2018
Technical Requirements for Telecommunications Terminal Equipment	RRA Public Notification 2019-4 Feb 25, 2019
Technical Requirements for Electromagnetic Compatibility	RRA Public Notification 2018-19, Oct 19, 2018
Test Methods for Electromagnetic Compatibility	RRA Announce 2018-128, Dec 24, 2018
<i>Hong Kong</i>	HKCA 1039 Issue 6; HKTA 1042 Issue 2; HKTA 1049 Issue 1
<i>Singapore</i>	IMDA TS WBA (October 2016); IMDA TS SRD (October 2016); IMDA TS LMR (October 2016)
<i>Taiwan</i>	DGT C-IS2031-0; DGT C-IS2034-0; DGT LP0002; CNS 13438 (up to 6 GHz)
<i>Australia</i>	
ACMA Radiocommunications (Short range devices) Standard 2014	AS/NZS 4268:2017
<i>Vietnam</i>	
QCVN 54:2011/BTTTT	RF 2.4 GHz Spread Spectrum
QCVN 65:2013/BTTTT	National technical regulation on radio access equipment operating in the 5 GHz band
TCVN 7317:2003 QCVN 118:2018/BTTTT TCVN 7317:2003	TTE Immunity Requirements Technical regulation on Electromagnetic compatibility of multimedia equipment – Emission requirements

<u>Test:</u>	<u>Test Method(s):</u>
<i>Vietnam (continued)</i>	
QCVN 14:2010/BTTTT QCVN 16:2018/BTTTT QCVN 18:2014/BTTTT QCVN 23:2011/BTTTT QCVN 25:2011/BTTTT QCVN 37:2018/BTTTT QCVN 41:2016/BTTTT QCVN 42:2011/BTTTT QCVN 43:2011/BTTTT QCVN 44:2018/BTTTT QCVN 45:2011/BTTTT QCVN 46:2011/BTTTT QCVN 48:2011/BTTTT QCVN 49:2011/BTTTT QCVN 54:2011/BTTTT QCVN 65:2013/BTTTT QCVN 66:2018/BTTTT	Radio equipment for fixed or land portable services
QCVN 18:2014/BTTTT QCVN 55:2011/BTTTT	RFID Equipment
QCVN 53:2017/BTTTT	Point-to-point SDH radio equipment
QCVN 11:2010/BTTTT	Mobile Station
QCVN 73:2013/BTTTT	Technical Regulation on Short Range Devices (SRD) - Radio Equipment to be used in the 25 MHz to 1 GHz Frequency Range
QCVN 74:2013/BTTTT	Technical Regulation on Short Range Devices (SRD) - Radio Equipment to be used in the 1 GHz to 40 GHz Frequency Range
QCVN 95:2015/BTTTT	Technical Regulation on Radio Frequency Identification Equipment (RFID) Operating in the band 866 MHz to 868 MHz
QCVN 96:2015/BTTTT	Technical Regulation on the Electromagnetic Compatibility for Short Range Devices (SRD) Operating on Frequencies between 9 kHz and 40 GHz
<i>Japan</i>	(Specified Radio Equipment Article 38-2-2, paragraph 1), Item 1 of Radio Law; (Specified Radio Equipment Article 38-2-2, paragraph 1), Item 2 of Radio Law; (Specified Radio Equipment Article 38-2-2, paragraph 1), Item 3 of Radio Law
<i>Mexico</i>	
Technical Provision IFT-015-2018. Technical specifications of transmitter equipment used in specialized fleet radiocommunication mobile services.	IFT-015-2018
Technical Provision IFT-014-2018. Microwave equipment for point-to-point and point-to-multipoint multichannel fixed service systems. Part I: multiple access radio.	IFT-014-2018: Part 1



<u>Test:</u>	<u>Test Method(s):</u>
Technical Provision IFT-014-2018. Microwave equipment for point-to-point and point-to-multipoint multichannel fixed service systems. Part II: transportation	IFT-014-2018: Part 2
Radiocommunication systems using the spread spectrum technique-Radio frequency communication equipment with frequency hopping and digital modulation to operate in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz- Specifications and test methods.	NOM-208-SCFI-2016 and Technical Provision IFT-008- 2015

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

8000 Foothills Boulevard
Roseville, CA 95747

<u>Test:</u>	<u>Test Method:</u>
Radiated Emissions (10 Meter Chamber)	KN 32 (excluding broadcast receivers); EN 55032; CISPR 32

² On-site test services are available for the standards listed under unlicensed ISM & UNII bands, Fixed Radio Services, Point-to-Point and Point-to-Multipoint and DFS

³ When the date, revision or edition of a test method standard is not identified on the scope of accreditation, the laboratory is expected to be using the current version within one year of the date of publication, per part C., Section 1 of the 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.1⁴

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



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.1⁴

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
<u>Unlicensed Personal Communication Systems Devices</u> Part 15D	ANSI C63.17:2013	40000
<u>U-NIII without DFS Intentional Radiators</u> Part 15E	ANSI C63.10:2013	40000
<u>U-NIII with DFS Intentional Radiators</u> Part 15E	FCC KDB 905462 D02 (v02)	40000
<u>UWB Intentional Radiators</u> Part 15F	ANSI C63.10:2013	40000
<u>BPL Intentional Radiators</u> Part 15G	ANSI C63.10:2013	40000
<u>White Space Device Intentional Radiators</u> Part 15H	ANSI C63.10:2013	40000
<u>Commercial Mobile Services (FCC Licensed Radio Service Equipment)</u> Parts 22 (cellular), 24, 25 (non-microwave), and 27	ANSI/TIA-603-E; ANSI C63.26:2015	40000
<u>General Mobile Radio Services (FCC Licensed Radio Service Equipment)</u> Parts 22 (non-cellular), 90 (non-microwave), 95, 97, and 101 (non-microwave)	ANSI/TIA-603-E; ANSI C63.26:2015	110000
<u>Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment)</u> Part 96	ANSI/TIA-603-E; ANSI C63.26:2015	40000
<u>Maritime and Aviation Radio Services</u> Parts 80 and 87	ANSI/TIA-603-E; ANSI C63.26:2015	40000
<u>Microwave and Millimeter Bands Radio Services</u> Parts 25, 74, 90 (90Y, 90Z, DSRC), and 101	ANSI/TIA-603-E; ANSI C63.26:2015	110000
<u>Broadcast Radio Services</u> Parts 73 and 74 (non-microwave)	ANSI/TIA-603-E; ANSI C63.26:2015	40000

⁴Accreditation 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

MICOM LABS

Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *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 14th day of May 2018.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.01
Valid to February 29, 2020
Revised November 7, 2019

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