FCC PART 15.225
ISEDC RSS-210, ISSUE 11, June 2024

TEST REPORT

For

ChargePoint, Inc.

253 E Hacienda Ave.,
Campbell, CA 95008, USA

FCC ID: W38-CP800
IC: 8854A-CP800

Report Type: Original Report		**Product Type:** EV Charger
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CERTIFICATE #3297.02

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by A2LA*, NIST, or any agency of the Federal Government.
* This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*" (Rev.2)

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R2604201-225	Original Report	2026-09-11

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test report was prepared on behalf of ChargePoint, Inc., and their product model: CP800, FCC ID: W38-CP800, IC: 8854A-CP800 or the "EUT" as referred to in this report. The EUT is an EV charger capable of Near Field Communication (NFC) that operates at 13.56 MHz. The EUT also contains pre-certified BT + WLAN Module (FCC ID: W38-LB2AE, IC: 8854A-LB2AE) and Cellular Module (FCC ID: RI7LE910CXWWX, IC: 5131A-LE910CXWWX).

Note: Testing was performed on CPCM (Chargepoint AC board) installed within the EV charger.

BACL assigned serial number: R2603312-01.

Model Number	CP800
FCC ID	W38-CP800
IC	8854A-CP800
Operating Frequency	13.56 MHz
Antenna Gain	N/A

1.2 Objective

This report was prepared on behalf of ChargePoint, Inc. in accordance with Part 2, Subpart J, and Part 15, Subpart B & C of the Federal Communication Commission's rules and ISEDC RSS-210 Issue 11, June 2024.

The objective was to determine compliance with FCC Part 15.225 and ISEDC RSS-210 for Antenna Requirement, RF Exposure, AC Line Conducted Emissions, Radiated Field Strength, Frequency Tolerance, and Occupied Bandwidth.

1.3 Related Submittal(s)/Grant(s)

N/A

1.4 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.5 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Parameter	Measurement uncertainty
Occupied Channel Bandwidth	±5%
RF output power, conducted	±0.57 dB
Power Spectral Density, conducted	±1.48 dB
Unwanted Emissions, conducted	±1.57 dB
All emissions, radiated	±4.0 dB
AC power line Conducted Emission	±2.0 dB
Temperature	±2ºC
Humidity	±5%
DC and low frequency voltages	±1.0%
Time	±2%
Duty Cycle	±3%

1.6 Test Facility Registrations

BACLs test facilities that are used to perform Radiated and Conducted Emissions tests are currently recognized by the Federal Communications Commission as Accredited with NIST Designation Number US1129.

BACL's test facilities that are used to perform Radiated and Conducted Emissions tests are currently registered with Industry Canada under Registration Numbers: 3062A.

BACL is a Chinese Taipei Bureau of Standards Metrology and Inspection (BSMI) validated Conformity Assessment Body (CAB), under Appendix B, Phase I Procedures of the APEC Mutual Recognition Arrangement (MRA). BACL's BSMI Lab Code Number is: SL2-IN-E-1002R

BACL's test facilities that are used to perform AC Line Conducted Emissions, Telecommunications Line Conducted Emissions, Radiated Emissions from 30 MHz to 1 GHz, and Radiated Emissions from 1 GHz to 6 GHz are currently recognized as Accredited in accordance with the Voluntary Control Council for Interference [VCCI] Article 15 procedures under Registration Number A-0428.

1.7 Test Facility Accreditations

Bay Area Compliance Laboratories Corp. (BACL) is:

A- ***An independent, 3rd-Party, Commercial Test Laboratory accredited to ISO/IEC 17025:2017 by A2LA (Test Laboratory Accreditation Certificate Number 3297.02),*** in the fields of: Electromagnetic Compatibility and Telecommunications. Unless noted by an Asterisk (*) in the Compliance Matrix (See Section 3 of this Test Report), BACL's ISO/IEC 17025:2017 Scope of Accreditation includes all of the Test Method Standards and/or the Product Family Standards detailed in this Test Report..

BACL's ISO/IEC 17025:2017 Scope of Accreditation includes a comprehensive suite of EMC Emissions, EMC Immunity, Radio/Wireless, RF Exposure, Safety, and Wireline Telecommunications test methods applicable to a wide range of product categories. These product categories include, but are not limited to: Central Office Telecommunications Equipment [including NEBS – Network Equipment Building Systems], Information Technology Equipment (ITE); Telecommunications Terminal Equipment (TTE); Medical Electrical Equipment; Industrial, Scientific and Medical Test Equipment; Professional Audio and Video Equipment; Industrial Equipment, Scientific Instruments and Laboratory Apparatus; Cable Distribution Systems, Railway Equipment, Marine Equipment, and Energy Efficient Lighting. Additionally, BACL offers comprehensive test capabilities for both Unlicensed and Licensed Wireless and RF Devices, per the requirements of the FCC (USA), ISED Canada (Canada), the EU/EEA/EFTA Nations (per the ETSI Standards applicable under the Radio Equipment Directive), Singapore, MIC (Japan), South Korea, Vietnam, and Taiwan ROC.

B- ***A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3297.03)*** to certify

- For the USA (Federal Communications Commission):
  - 1- All Unlicensed radio frequency devices within FCC Scopes A1, A2, A3, and A4;
  - 2- All Licensed radio frequency devices within FCC Scopes B1, B2, B3, and B4;
  - 3- All Telephone Terminal Equipment within FCC Scope C.
- For the Canada (Innovation, Science and Economic Development Canada):
  - 1 All Scope 1-Licence-Exempt Radio Frequency Devices;
  - 2 All Scope 2-Licensed Personal Mobile Radio Services;
  - 3 All Scope 3-Licensed General Mobile & Fixed Radio Services;
  - 4 All Scope 4-Licensed Maritime & Aviation Radio Services;
  - 5 All Scope 5-Licensed Fixed Microwave Radio Services
  - 6 All Broadcasting Equipment Technical Standards (BETS) in the Category I Equipment Standards List.
  - 7. RSS-HAC Radio Scope 6 Hearing Aid Compatibility and Volume Control
- For Singapore (Info-Comm Media Development Authority (IMDA)):
  - 1 All Line Terminal Equipment: All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2011, Annex 2 IMDA Phase I
  - 2. All Radio-Communication Equipment: All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2011, Annex 2 IMDA Phase II
- For the Hong Kong Special Administrative Region & (Office of the Communications Authority-OFCA) – APEC Tel MRA- Phase I and Phase II:
  - 1 Radio Equipment, per KHCA 10XX-series Specifications; HKCA 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1010, 1015, 1016, 1019, 1020, 1022, 1026, 1033, 1034, 1035, 1036, 1037, 1039, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1052, 1053, 1054, 1056, 1057, 1061, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1080, 1081

2 GMDSS Marine Radio Equipment, per HKCA 12XX-series Specifications; HKCA 1218, 1223, 1224, 1225, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1277, 1281, 1282, 1283

3 Fixed Network Equipment, per HKCA 20XX-series Specifications; HKCA 2001, 2011, 2014, 2015, 2017, 2026, 2027, 2028, 2029, 2030, 2031

- For Japan:

1 MIC Telecommunication Business Law (Terminal Equipment):
- All Scope A1 - Terminal Equipment for the Purpose of Calls;
- All Scope A2 - Other Terminal Equipment

2 Radio Law (Radio Equipment):
- All Scope B1 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 1 of the Radio Law
- All Scope B2 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 2 of the Radio Law
- All Scope B3 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 3 of the Radio Law

C- ***A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3297.01)*** to certify Products to USA's Environmental Protection Agency (EPA) ENERGY STAR Product Specifications for:

1 Appliances:
- for Clothes Washers (ver. 8.1)
- for Residential Dishwashers (ver. 6.0)
- for Residential Refrigerators and/or Freezers (ver. 5.0)

2 Commercial Food Service Equipment:
- for Commercial Dishwashers (ver. 3.0)
- for Commercial Ice Machines (ver. 3.0)

3 Data Center Equipment:
- for Large Network Equipment (ver. 1.1)

4 Electronics and Office Equipment:
- for Audio/Video Equipment (ver. 3.0)
- for Computers (ver. 8.0)
- for Data Center Storage (ver. 2.1)
- for Displays (ver. 8.0)
- for Enterprise Servers (ver. 4.0)
- for Imaging Equipment (ver. 3.1)
- for Set-top Boxes & Cable Boxes (ver. 5.1)
- for Small Network Equipment (ver. 1.0)
- for Telephony (ver. 3.0)
- for Televisions (ver. 9.0), Title 10 Chapter II CFR Part 430 Subpart B –Appendix BB, Title 10 Chapter II CFR Part 430 Subpart B –Appendix DD

3 Lighting and Fans
- for Decorative Light Strings (ver. 1.5)
- for Downlights (ver. 1.0)
- for Lamps (Light Bulbs)(ver. 2.1)
- for Luminaires (including sub-components) (ver. 2.2)
- for Residential Ceiling Fans (ver. 4.0)
- for Residential Ventilating Fans (ver. 4.1)

4 Other
- for Residential Ceiling Fans (ver. 4.0)
- for Electric Vehicle Supply Equipment (ver. 1.2)(Electric Vehicle Supply Equipment Final Test Method for DC-output EVSE Rev March 2021)
- for Water Coolers (ver. 3.0)
- for Smart Home Energy Management Systems (ver. 1.1)

D- ***A NIST Designated Phase-I and Phase-II Conformity Assessment Body (CAB) for the following economies and regulatory authorities under the terms of the stated MRAs/Treaties:***

1. For the USA (Federal Communications Commission), as a Telecommunications Certification Body (TCB):
   - All Unlicensed radio frequency devices within FCC Scopes A1, A2, A3, and A4;
   - All Licensed radio frequency devices within FCC Scopes B1, B2, B3, and B4;
   - All Telephone Terminal Equipment within FCC Scope C.

2. Canada (ISED Canada) Foreign Certification Body – FCB – APEC Tel MRA -Phase I & Phase II:
   - Phase I Designation Letter
   - Phase II ISED Canada recognition as a Product Certification Body for unlicensed wireless devices, licensed radios, radars, etc.:

3. For Singapore (InfoComm Media Development Authority (IMDA)) APEC Tel MRA -Phase I & Phase II:
   - All Line Terminal Equipment: All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2011, Annex 2 IMDA Phase I
   - All Radio-Communication Equipment: All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2011, Annex 2 IMDA Phase II

4. For the Hong Kong Special Administrative Region & (Office of the Communications Authority – OFCA) – APEC Tel MRA -Phase I & Phase II:
   - NIST Phase I Scope Recognition Letter from OFCA for BACL –US0057
   - OFCA Phase II Designation Letter

5. For Japan (Ministry of Communications):
   - NIST Japan Recognition
   - MIC Telecommunication Business Law (Terminal Equipment):
     1. All Scope A1 – Terminal Equipment for the Purpose of Calls;
     2. All Scope A2 – Other Terminal Equipment
   - Radio Law (Radio Equipment):
     1. All Scope B1 – Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 1 of the Radio Law
     2. All Scope B2 – Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 2 of the Radio Law
     3. All Scope B3 – Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 3 of the Radio Law

   - Japan VCCI – Voluntary Control Council for Interference US-Japan Telecom Treaty (VCCI Side Letter)
     1. VCCI Certificate
   - Japan Registered Certification Body
     1. RCB Recognition Letter

6. European Union:
   - Radio Equipment Directive [RED] 2014/53/EU US-EU EMC & Telecom MRA CAB (NB)
   - EMC Directive [EMCD] 2014/30/EU US-EU EMC & Telecom MRA CAB (NB):

7. Australia ACMA (Australian Communication and Media Authority) – APEC Tel MRA -Phase I:
   - Phase I Designation Letter

8. Chinese Taipei (Republic of China – Taiwan):
   - NCC (National Communications Commission) APEC Tel MRA -Phase I

9. Republic of Korea (Ministry of Communications – Radio Research Laboratory) APEC Tel MRA - Phase I:
   - NIST Phase I Scope Update Notification Letter from Korea for BACL

10. Vietnam APEC Tel MRA -Phase I (page 13)
    - Vietnam (MIC) NIST Phase I Scope

11. Indonesia SDPPI (page 6)
    - Phase I Listing

12. Israel Phase I
    - NIST Phase I Scope Update Recognition Letter from Israel for BACL –US0057

13. UK Radio and EMC NIST Designation Letters
    - UK website: https://www.gov.uk/uk-market-conformity-assessment-bodies/bay-area-compliance-laboratories-corp-bacl

        1. Electromagnetic Compatibility Regulations (SI 2016/1091)
        https://assets.publishing.service.gov.uk/media/5fe1e344e90e07452fce4e5a/AB_1313_BACL_UK_EMC_Regs_NIST_Designation_Extended.pdf

        2. Radio Equipment Regulations 2017 (SI 2017/1206)
        https://assets.publishing.service.gov.uk/media/5fe1e351e90e074525bf7be6/AB_1313_BACL_UK_Radio_Regs_NIST_Designation_Extended.pdf

14. IFT Mexico Phase I
    - NIST Phase I New Recognition Letter from Mexico for BACL – US0057

15. Taiwan (BSMI) Phase 1 Designation Letter and designation form.
    - NIST Phase I Scope Update Designation Letter to BSMI for BACL – US0057
    - NIST Phase I Scope Update Designation Form to BSMI for BACL – US0057

2 System Test Configuration

2.1 Justification

The EUT was configured for testing in accordance to ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024.
The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

2.2 EUT Exercise Software

The exercising software used during testing was "Tera Term". The software is compliant with the standard requirements being tested against.

2.3 Equipment Modifications

No modifications were made to the EUT during testing.

2.4 Local Support Equipment

Manufacturer	Description	Model	Serial Number
Dell	Laptop	Latitude E7440	GCP3P

2.5 Remote Support Equipment

Manufacturer	Description	Model
ChargePoint, Inc.	Universal Controller Board	-
ChargePoint, Inc.	RFID passive tag	-

Note: pre-testing was performed with and without RFID passive tag. After pretesting, it was confirmed that worst-case config is without passive tag and thus the results of the report are reflective of this setup.

2.6 Power Supply and Line Filters

Manufacturer	Description	Model	Serial Number
OpenPeak	5VDC 4A Wall Adapter Switching Power Supply	LFS054000D-A8S	EPS050400H-PSRP-FL

2.7 Interface Ports and Cabling

Cable Description	Length (m)	To	From
USB-A to USB Micro B	1.5	Universal Controller Board	Laptop
USB-C to USB-C	< 1	Universal Controller Board	EUT

3 Summary of Test Results

Results reported relate only to the product tested.

FCC/ISEDC Rules	Description of Test	Results
FCC §15.203 ISEDC RSS-Gen §6.8	Antenna Requirements	Compliant
FCC §2.1091 ISEDC RSS-102	RF Exposure	Compliant
FCC §15.207 ISEDC RSS-Gen §8.8	AC Line Conducted Emissions	Compliant
FCC §15.225 (a) (b) (c) (d) FCC §15.205, FCC §15.209 ISED RSS-210 Annex B.6	Radiated Field Strength (9 kHz – 1 GHz)	Compliant
FCC §15.225 (e) ISED RSS-210-Annex B.6	Frequency Tolerance	Compliant
FCC §15.215 (c) ISED RSS-Gen §6.7	Occupied Bandwidth	Compliant

BACL is responsible for all the information provided in this report, except when information is provided by the customer as identified in this report. Information provided by the customer, e.g., antenna gain, can affect the validity of results.

4 FCC §2.1091, §1.1310 & ISEDC RSS-102 - RF Exposure

4.1 Applicable Standards

According to FCC §2.1091, and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	* (100)	30
1.34-30	824/f	2.19/f	* ($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

According to ISED RSS-102 Issue 6:

6.6 Field reference level exposure exemption limits

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz Footnote6 and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

4.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density
P = power input to antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

4.3 MPE Results for FCC

Band	Frequency (MHz)	Maximum ERP (dBm)	Maximum ERP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
NFC	13.56	-29.91	0.001	0.0000002031	0.979

4.4 IC Exemption

NFC

Maximum NFC e.r.p. = -29.91 dBm (0.001 mW), which is less than the exemption threshold, i.e., 1W.

Therefore, the RF exposure evaluation is exempt for NFC.

Note: Per ANSI C63.10 Sections 10.3.9 and G.4, Max ERP was determined by the following calculation:

67.44 dBuV/m @ 3m – 95.2 -2.15 dB = -29.91 dBm [ERP]

5 FCC §15.203 & ISEDC RSS-Gen §6.8 - Antenna Requirements

5.1 Applicable Standards

According to FCC §15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

According to ISEDC RSS-Gen §6.8: Transmitter Antenna

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotopically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For license-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

5.2 Antenna Description

External/Internal/ Integral	Antenna Type	Frequency Range (MHz)	Maximum Antenna Gain (dBi)
Internal	Coil	13.56 MHz	N/A

6 FCC §15.207 & ISEDC RSS-Gen §8.8 – AC Line Conducted Emissions

6.1 Applicable Standards

As per FCC §15.207 and ISEDC RSS-Gen Section 8.8: Conducted limits

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note1	56 to 46 Note2
0.5-5	56	46
5-30	60	50

Note1: Decreases with the logarithm of the frequency.
Note2: A linear average detector is required

6.2 Test Setup

The measurement was performed at ground plane, using the setup per ANSI C63.10 measurement procedure. The specification used were FCC §15.207 and ISEDC RSS-Gen §8.8 limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The AC/DC power adapter of the EUT was connected with LISN-1 which provided 120 V / 60 Hz AC power.

6.3 Test Procedure

During the conducted emissions test, the power cord of the EUT was connected to the mains outlet of the LISN-1.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data were recorded in the peak, quasi-peak, and average detection mode. Quasi-Peak readings are distinguished with a “QP.” Average readings are distinguished with an “Ave”.

6.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Cable Loss (CL), the Attenuator Factor (Atten) to indicated Amplitude (Ai) reading. The basic equation is as follows:

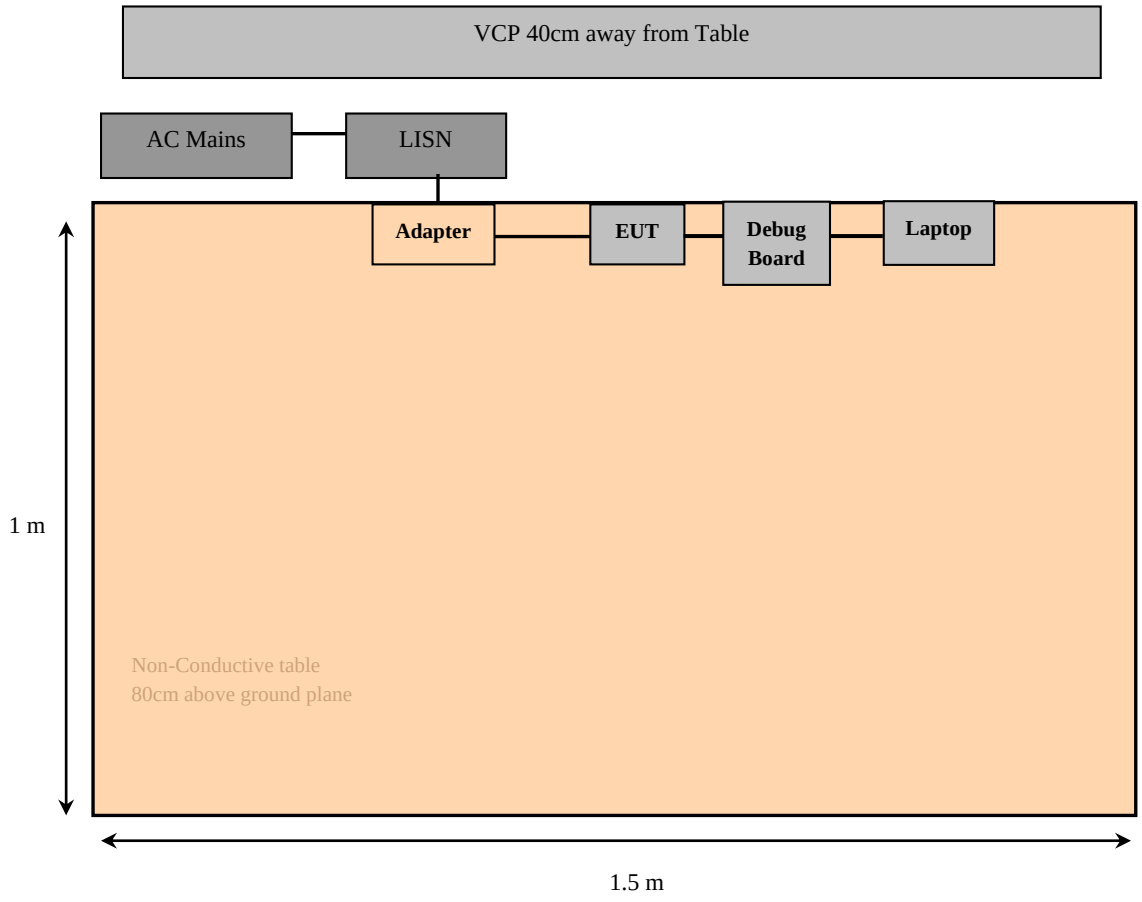
$$CA = Ai + CL + Atten$$

For example, a corrected amplitude of 46.2 dBuV = Indicated Reading (32.5 dBuV) + Cable Loss (3.7 dB) + Attenuator (10 dB)

The "Margin" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

$$Margin = Corrected\ Amplitude - Limit$$

6.5 Test Setup Block Diagram



6.6 Test Equipment List and Details

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
1615	Rohde & Schwarz	EMI Test Receiver	ESCI	101316	2026-04-06	1 year
733	FCC	LISN	FCC-LISN-50-25-2-10-CISPR16	160130	2026-03-09	1 year
681	Rohde & Schwarz	Impulse Limiter	ESH3-Z2	101962	2026-03-19	6 months
725	Solar Electronics Company	High Pass Filter	Type 7930-100	7930150203	2026-03-19	6 months
1599	Pasternack	N-type RG58 Coax Cable, 5m	PE3441-500CM	W383627	2026-05-13	6 months

Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

6.7 Test Environmental Conditions

Temperature:	23 ºC
Relative Humidity:	42%
ATM Pressure:	101.4 kPa

The testing was performed by Arturo Reyes on 2026-05-19 and 2026-09-11 at Ground Plane.

6.8 Summary of Test Results

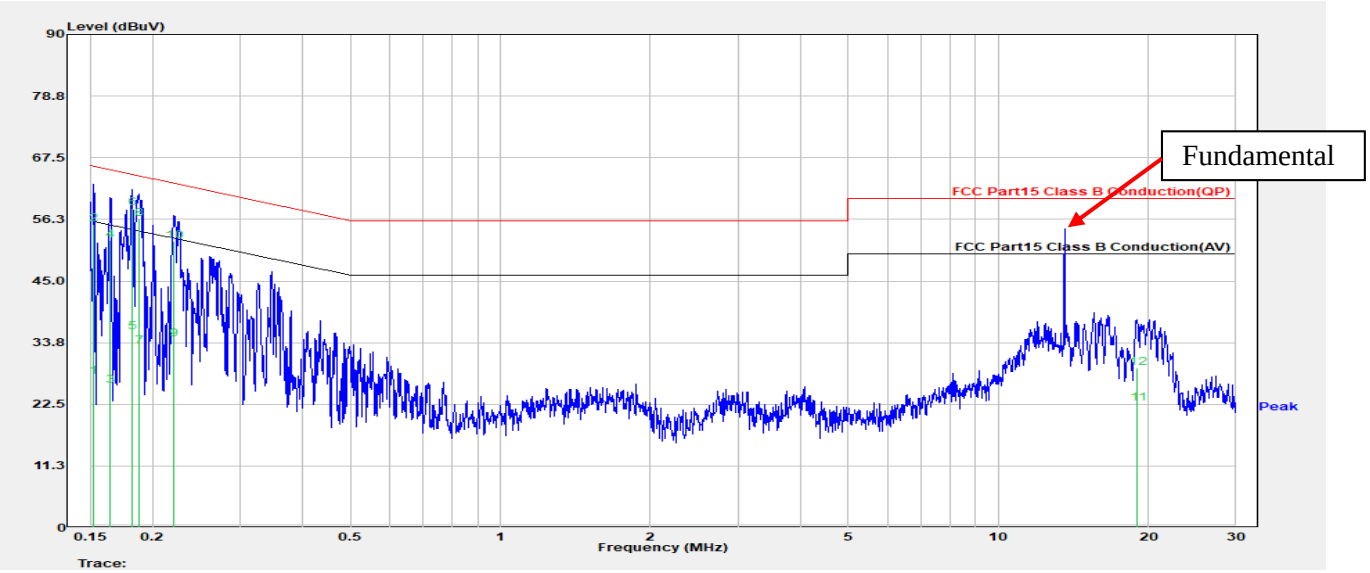
According to the recorded data in following table, the EUT complied with the FCC 15C and ISEDC RSS-Gen standard's conducted emissions limits, with the margin reading of:

Worst Case – AC Line: 120V, 60Hz			
Margin (dB)	**Frequency (MHz)**	**Conductor Mode (Hot/Neutral)**	**Range (MHz)**
-5.46	0.187	Hot	0.15 to 30

Please refer to the tables and plots in the next section for detailed test results.

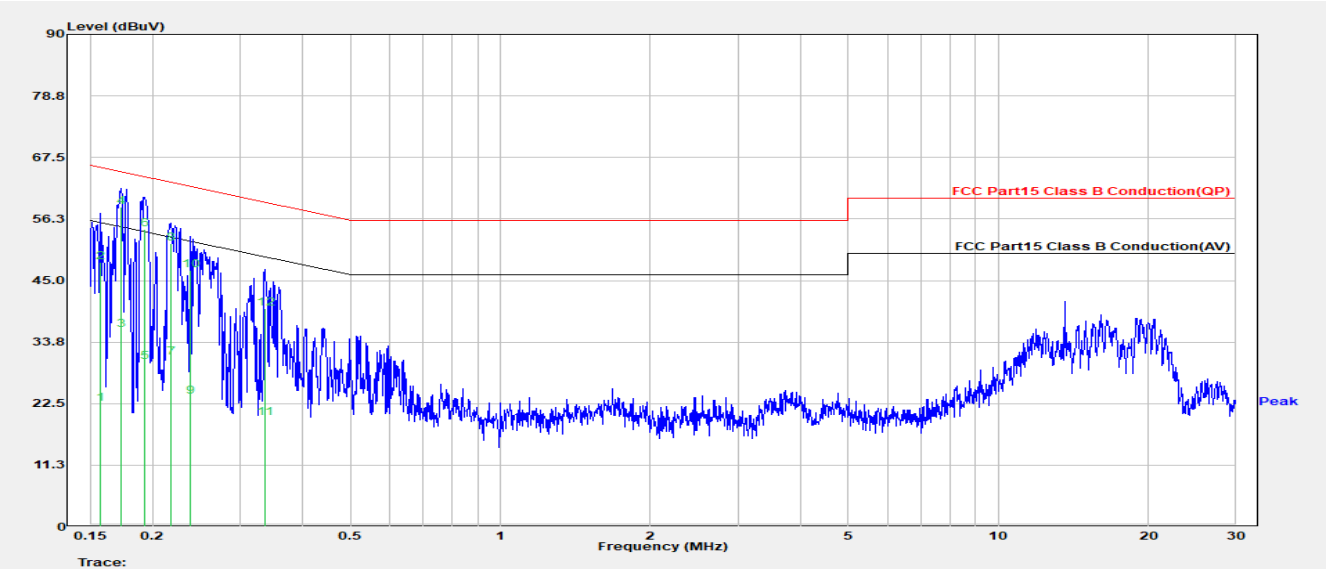
6.9 Conducted Emissions Test Plots and Data

AC Line (via AC/DC Adapter): 120V, 60Hz – Hot Conductor



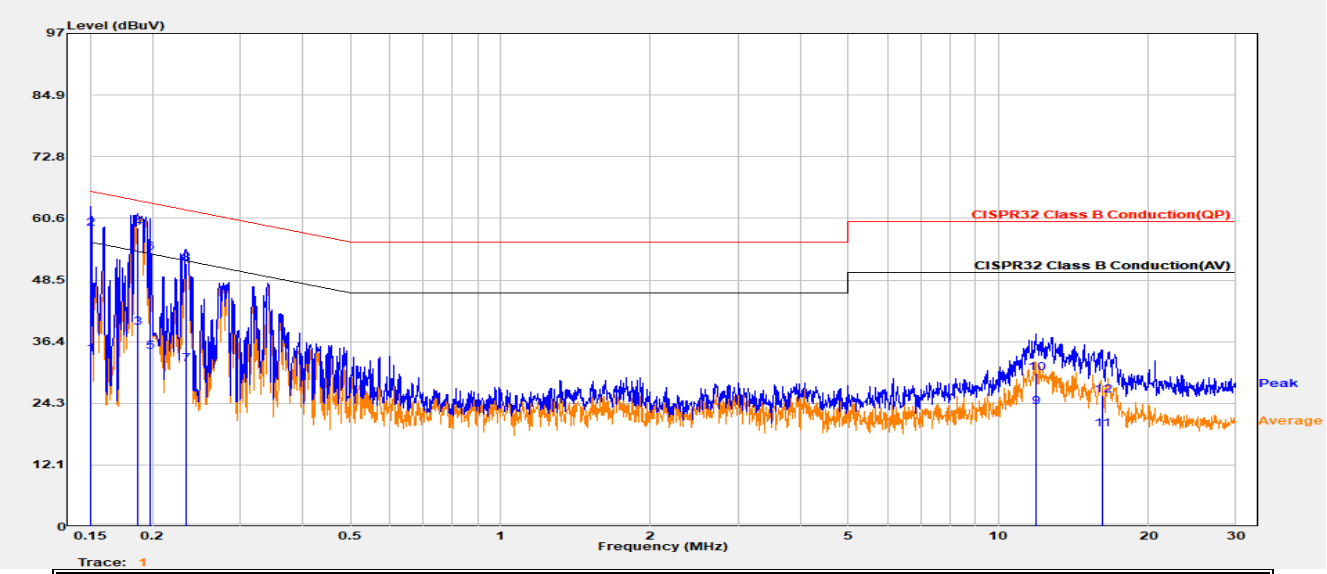
Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBµV)	Limit (dBµV)	Margin (dB)	Detector
0.153	14.10	13.49	27.58	55.85	-28.26	Ave
0.153	41.80	13.49	55.28	65.85	-10.56	QP
0.165	12.66	13.29	25.95	55.21	-29.26	Ave
0.165	39.14	13.29	52.44	65.21	-12.77	QP
0.182	22.64	13.03	35.67	54.37	-18.70	Ave
0.182	45.28	13.03	58.31	64.37	-6.06	QP
0.188	20.12	12.95	33.07	54.13	-21.06	Ave
0.188	43.38	12.95	56.33	64.13	-7.80	QP
0.221	21.92	12.47	34.38	52.77	-18.38	Ave
0.221	39.70	12.47	52.17	62.77	-10.59	QP
19.021	11.09	11.53	22.61	50.00	-27.39	Ave
19.021	17.61	11.53	29.14	60.00	-30.86	QP

AC Line (via AC/DC Adapter): 120V, 60Hz – Neutral Conductor



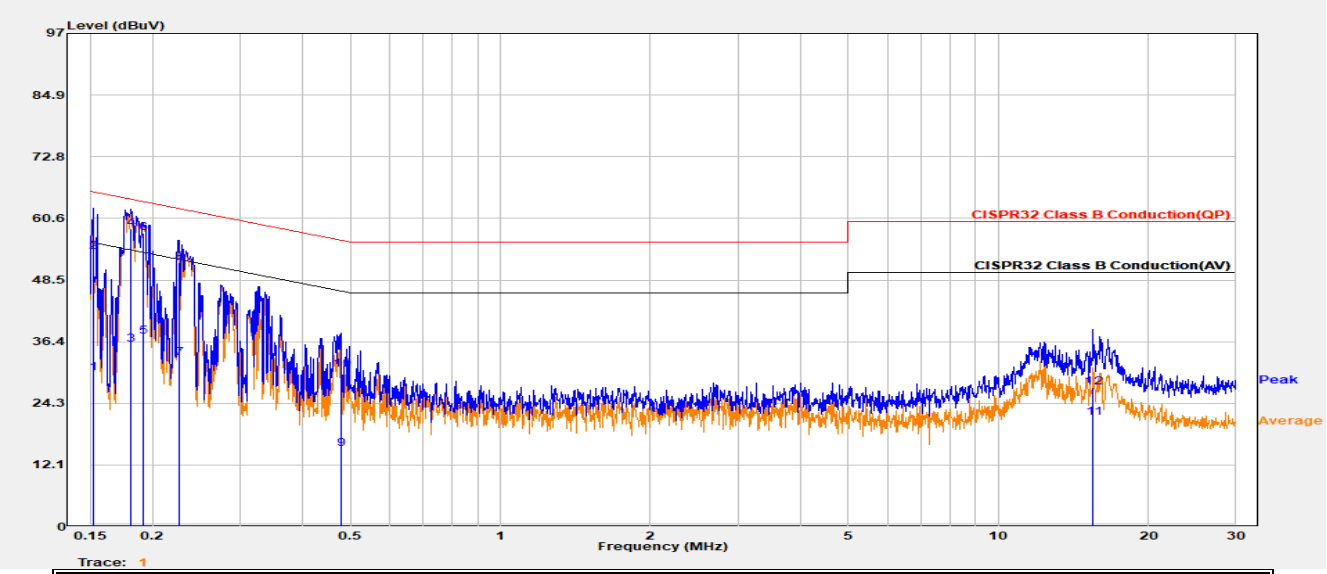
Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBµV)	Limit (dBµV)	Margin (dB)	Detector
0.157	9.17	13.34	22.51	55.63	-33.11	Ave
0.157	35.07	13.34	48.41	65.63	-17.22	QP
0.174	22.95	13.08	36.04	54.79	-18.75	Ave
0.174	45.33	13.08	58.41	64.79	-6.38	QP
0.193	17.27	12.79	30.06	53.91	-23.85	Ave
0.193	41.62	12.79	54.42	63.91	-9.49	QP
0.218	18.53	12.44	30.97	52.90	-21.93	Ave
0.218	39.33	12.44	51.77	62.90	-11.13	QP
0.239	11.58	12.14	23.72	52.13	-28.41	Ave
0.239	34.70	12.14	46.84	62.13	-15.29	QP
0.337	8.63	11.20	19.83	49.29	-29.46	Ave
0.337	28.69	11.20	39.89	59.29	-19.40	QP

AC Line (via AC/DC Adapter): 120V, 60Hz – Hot Conductor, antenna terminated



Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBµV)	Limit (dBµV)	Margin (dB)	Detector
0.150	20.26	13.52	33.79	56.00	-22.21	Ave
0.150	45.02	13.52	58.54	66.00	-7.46	QP
0.187	26.16	12.95	39.11	54.17	-15.06	Ave
0.187	45.76	12.95	58.71	64.17	-5.46	QP
0.198	21.60	12.79	34.38	53.69	-19.31	Ave
0.198	41.02	12.79	53.80	63.69	-9.89	QP
0.233	19.71	12.28	31.99	52.33	-20.34	Ave
0.233	39.44	12.28	51.73	62.33	-10.60	QP
11.901	12.63	10.96	23.58	50.00	-26.42	Ave
11.901	19.14	10.96	30.10	60.00	-29.90	QP
16.183	7.76	11.37	19.13	50.00	-30.87	Ave
16.183	14.39	11.37	25.76	60.00	-34.24	QP

AC Line (via AC/DC Adapter): 120V, 60Hz – Neutral Conductor, antenna terminated



Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBµV)	Limit (dBµV)	Margin (dB)	Detector
0.152	16.65	13.46	30.12	55.89	-25.77	Ave
0.152	40.62	13.46	54.08	65.89	-11.81	QP
0.181	22.77	13.01	35.78	54.44	-18.65	Ave
0.181	45.60	13.01	58.62	64.44	-5.82	QP
0.191	24.52	12.86	37.38	53.98	-16.60	Ave
0.191	44.83	12.86	57.69	63.98	-6.28	QP
0.226	20.73	12.36	33.09	52.59	-19.49	Ave
0.226	39.55	12.36	51.91	62.59	-10.68	QP
0.479	4.32	10.89	15.21	46.36	-31.16	Ave
0.479	19.98	10.89	30.87	56.36	-25.50	QP
15.511	10.12	11.31	21.43	50.00	-28.57	Ave
15.511	16.05	11.31	27.36	60.00	-32.64	QP

7 FCC §15.225 (a) (b) (c) (d), FCC §15.205, FCC §15.209, ISEDC RSS-210 Annex B.6 – Radiated Field Strength

7.1 Applicable Standards

As per FCC §15.225 Operation within the band 13.110-14.010 MHz:

a. The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
b. Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
c. Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
d. The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

As per FCC §15.35 Measurement detector functions and bandwidths:

a. On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a CISPR quasi-peak detector function and related measurement bandwidths, unless otherwise specified. The specifications for the measuring instrumentation using the CISPR quasi-peak detector can be found in ANSI C63.4–2014, clause 4 (incorporated by reference, see § 15.38). As an alternative to CISPR quasi-peak measurements, the responsible party, at its option, may demonstrate compliance with the emission limits using measuring equipment employing a peak detector function as long at the same bandwidth as indicated for CISPR quasi-peak measurements are employed.

Note: For pulse modulated devices with a pulse-repetition frequency of 20 Hz or less and for which CISPR quasi-peak measurements are specified, compliance with the regulations shall be demonstrated using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, using the same measurement bandwidths that are indicated for CISPR quasi-peak measurements.

As per ISEDC RSS-210 Annex B.6 Band 13.110-14.010 MHz:

a. the field strength of any emission shall not exceed the following limits:
   i. 15.848 mV/m (84 dBµV/m) at 30 m, within the band 13.553-13.567 MHz
   ii. 334 µV/m (50.5 dBµV/m) at 30 m, within the bands 13.410-13.553 MHz and 13.567-13.710 MHz
   iii. 106 µV/m (40.5 dBµV/m) at 30 m, within the bands 13.110-13.410 MHz and 13.710-14.010 MHz
   iv. RSS-Gen general field strength limits for frequencies outside the band 13.110-14.010 MHz

7.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.10-2020. The specifications used were the FCC §15.225, FCC §15.209 and ISEDC RSS-210 limits.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test Table and bundle when necessary.

7.3 Test Procedure

For the radiated emissions test, the EUT, and all support equipment power cords was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT was set 3 meter away from the testing antenna, which was varied from 1-4 meter, and the EUT was placed on a turntable, which was 0.8 meter and 1.5 meter above the ground plane for below and above 1000 MHz measurements, the Table shall be rotated for 360 degrees to find out the highest emission. For below 30 MHz measurement, the receiving antenna should be changed the polarization both of perpendicular and parallel. For above 30 MHz measurement, the receiving antenna should be changed the polarization both of horizontal and vertical.

The spectrum analyzer or receiver is set as:

Below 150 kHz:

RBW = 200 Hz / VBW = 600 Hz / Sweep = Auto / Quasi Peak

From 150 kHz to 30 MHz:

RBW = 9 kHz / VBW = 27 kHz / Sweep = Auto / Quasi Peak

From 30MHz to 1GHz:

RBW = 120 kHz / VBW = 300 kHz / Sweep = Auto / Quasi Peak

7.4 Corrected Amplitude & Margin Calculation

For emissions below 1 GHz,

The Corrected Amplitude (CA) is calculated by adding the Correction Factor to the S.A. Reading. The basic equation is as follows:

CA = S.A. Reading + Correction Factor

For example, a corrected amplitude of 40.3 dBuV/m = S.A. Reading (32.5 dBuV) + Correction Factor (7.8 dB/m)

The Correction Factor is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) together. This calculation is done in the measurement software, and reported in the test result section. The basic equation is as follows:

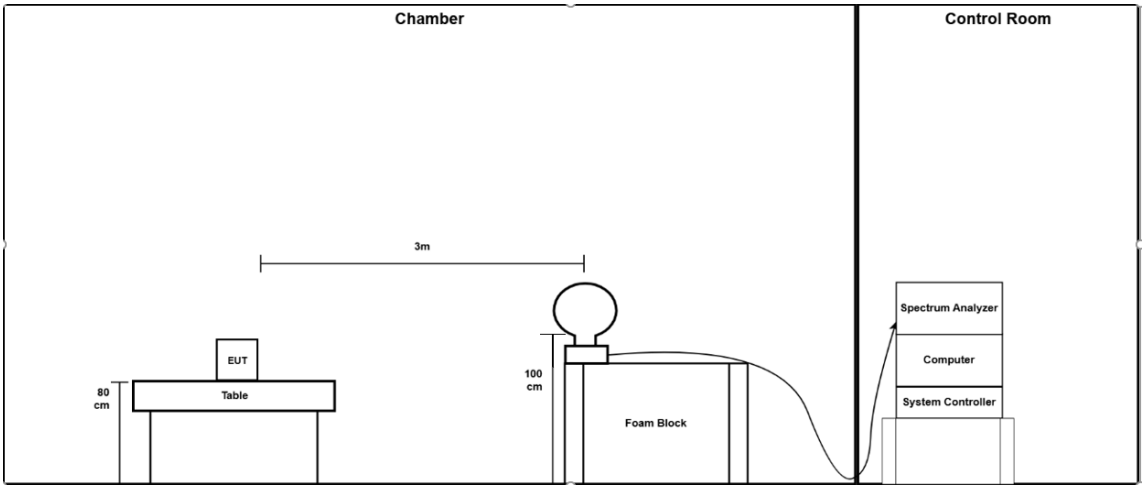
Correction Factor = AF + CL + Atten – Ga

The "**Margin**" column of the following data Tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

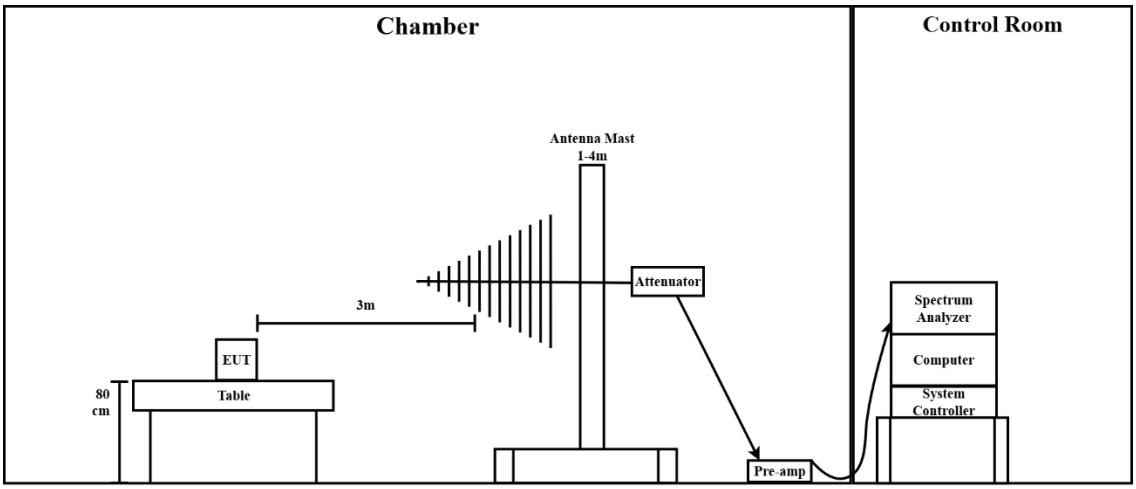
Margin = Corrected Amplitude – Limit

7.5 Test Setup Block Diagram

9 kHz to 30 MHz:



30MHz to 1GHz:



7.6 Test Equipment List and Details

BACL No.	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
1432	Keysight Technologies	MXE EMI Receiver, Multi-touch	N9038B	MY60180008	2026-01-22	1 year
393	Com-Power	Active Loop Antenna	AL-130	17043	2025-05-06	2 years
321	Sunol Sciences	Biconilog Antenna	JB3	A020106-2; 1504	2025-12-16	2 years
1245	Pasternack	6dB Attenuator	PE7390-6	01182018A	2025-12-16	2 years
316	Sonoma Instruments	Preamplifier	317	260406	2025-11-13	6 months
1626	Global Engineering Services Corp	N-type 15m coax cable	XH500A-N/J-N/J-15M-A	BACL01626A	2026-04-24	6 months
1246	Hewlet Packard	RF Limiter	11867A	01734	2026-03-05	6 months
1248	Pasternack	RG214 COAX Cable	PE3062	NA	2026-04-06	6 months
327	Sunol Sciences	System Controller	SC110V	122303-1	N/R	N/R
1075	Sunol Sciences	Boresight Tower	TLT3	050119-7	N/R	N/R
1388	Sunol Sciences	Flush Mount Turntable	FM	112005-2	N/R	N/R

Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

7.7 Test Environmental Conditions

Temperature:	20 to 22 °C
Relative Humidity:	45 to 53 %
ATM Pressure:	102 kPa

The testing was performed by Arturo Reyes on 2026-05-06 in 5m chamber 3.

7.8 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15C and ISEDC RSS-210 standards' radiated emissions limits, and had the worst margin of:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization**	**Frequency Range**
-15.58	20.55994	Ground Parallel	9 kHz to 30 MHz
-4.15	45.015984	Vertical	30 MHz to 1000 MHz

Note: Pre-scan was performed in order to determine worst-case orientation of device with respect to measurement antenna in the X/Y/Z axis. Plots/data shown represent measurements made in worst-case orientation.

Please refer to the Table and plots in the Section 5.9 of this test report for detailed test data.

7.9 Radiated Emissions Test Results

9 kHz to 30 MHz, Measured at 3 meters (Parallel Polarization)

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna		Cable Loss (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments
			Height (cm)	Factor (dB/m)			Limit (dBµV/m)	Margin (dB)	
13.56	56.22	69	100	10.36	0.125	66.71	124	-57.30	QP
13.553	41.61	69	100	10.36	0.125	52.10	90.47	-38.38	QP
13.567	42.2	69	100	10.36	0.125	52.69	90.47	-37.79	QP
13.347	15.01	360	100	10.36	0.125	25.50	80.51	-55.02	QP
13.771	15.06	360	100	10.36	0.125	25.55	80.51	-54.97	QP
21.079	37.69	107	100	8.99	0.205	46.89	69.54	-22.66	QP

9 kHz to 30 MHz, Measured at 3 meters (Perpendicular Polarization)

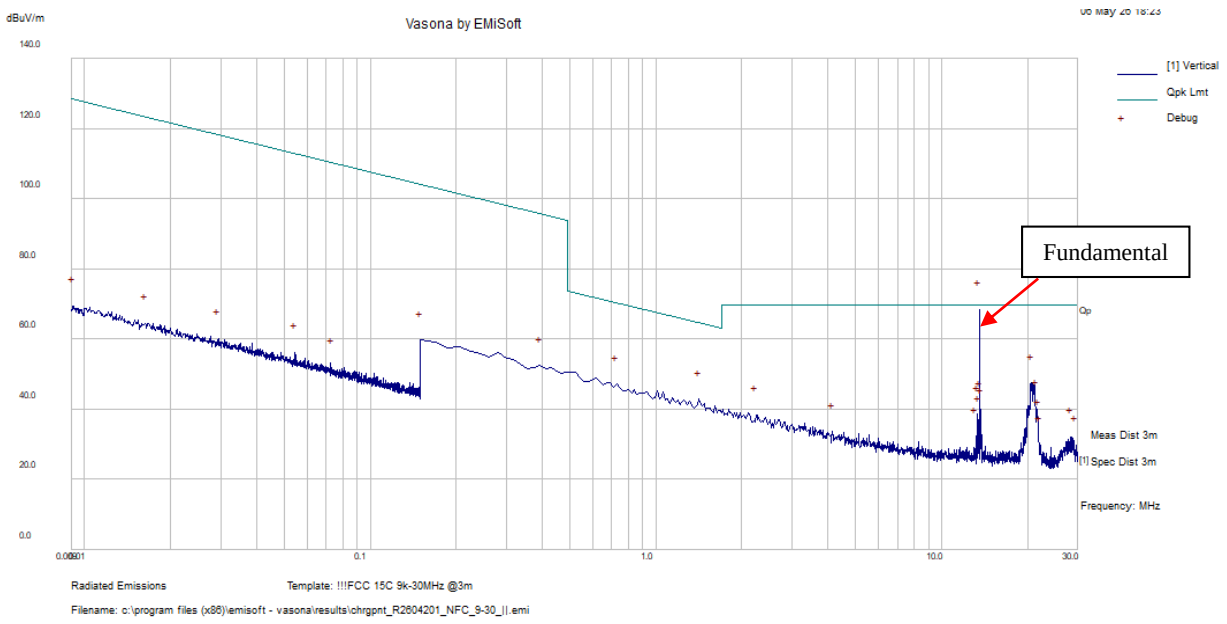
Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna		Cable Loss (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments
			Height (cm)	Factor (dB/m)			Limit (dBµV/m)	Margin (dB)	
13.56	56.95	350	100	10.36	0.125	67.44	124	-56.57	QP
13.553	42.36	350	100	10.36	0.125	52.85	90.47	-37.63	QP
13.567	42.83	350	100	10.36	0.125	53.32	90.47	-37.16	QP
13.348	22.63	360	100	10.36	0.125	33.12	80.51	-47.40	QP
13.776	21.17	360	100	10.36	0.125	31.66	80.51	-48.86	QP
20.479	40.76	55	100	8.99	0.205	49.96	69.54	-19.59	QP

9 kHz to 30 MHz, Measured at 3 meters (Ground Parallel Polarization)

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna		Cable Loss (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments
			Height (cm)	Factor (dB/m)			Limit (dBµV/m)	Margin (dB)	
13.56	53.91	39	100	10.36	0.125	64.40	124	-59.61	QP
13.553	39.28	39	100	10.36	0.125	49.77	90.47	-40.71	QP
13.567	39.77	39	100	10.36	0.125	50.26	90.47	-40.22	QP
13.349	19.04	360	100	10.36	0.125	29.53	80.51	-50.99	QP
13.775	17.06	360	100	10.36	0.125	27.55	80.51	-52.97	QP
20.599	43.57	63	100	8.99	0.205	52.77	69.54	-16.78	QP

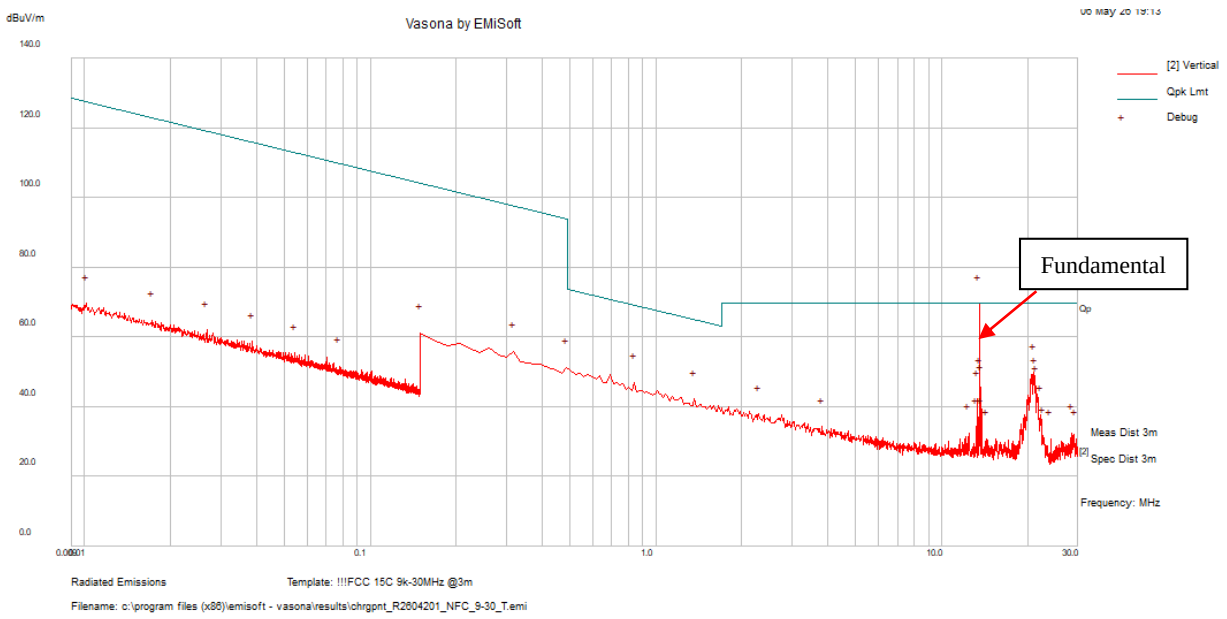
Note: the distance extrapolation factor (40 dB/decade) is used for below 30 MHz.

9 kHz to 30 MHz Spurious Emissions, Measured at 3 meters (Parallel Polarization)



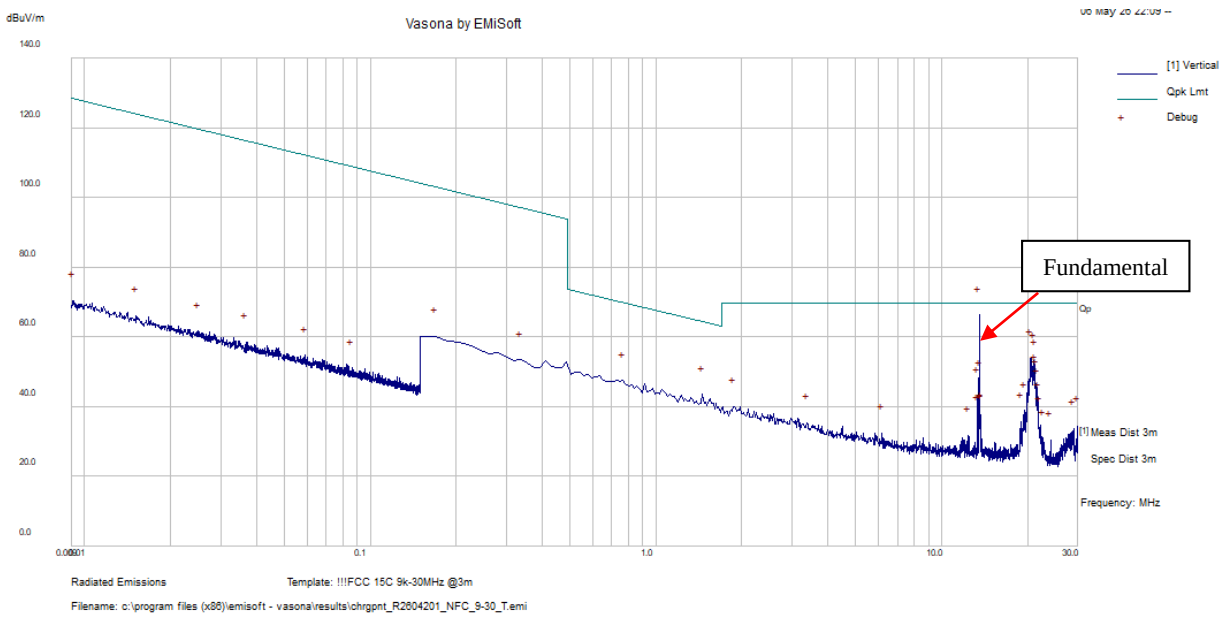
Note: Peak measurement was used to compare to the quasi-peak limit to show compliance.

9 kHz to 30 MHz Worst Case, Measured at 3 meters (Perpendicular Polarization)



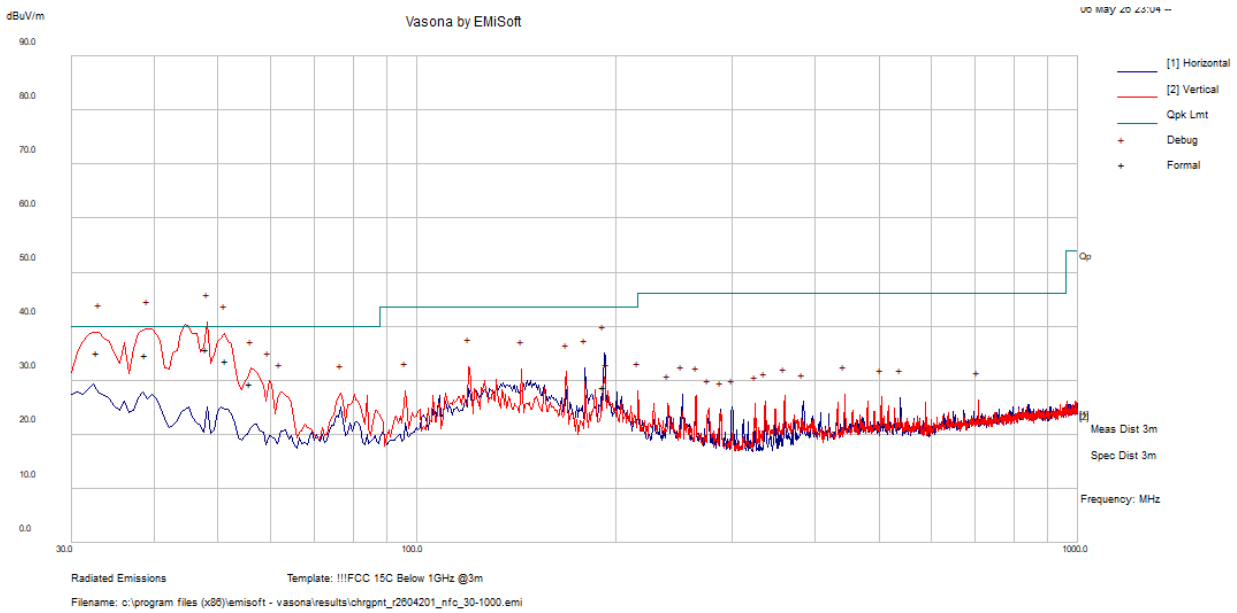
Note: Peak measurement was used to compare to the quasi-peak limit to show compliance.

9 kHz to 30 MHz Spurious Emissions, Measured at 3 meters (Ground Parallel Polarization)



Note: Peak measurement was used to compare to the quasi-peak limit to show compliance.

30 MHz to 1000 MHz, Measured at 3 meters



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Polarity (H/V)	Antenna Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (Peak/QP/ Average)
48.052188	59.79	-24	35.79	V	113	296	40	-4.21	QP
45.015984	58.26	-22.41	35.85	V	110	290	40	-4.15	QP
38.884688	52.66	-17.99	34.67	V	116	176	40	-5.33	QP
32.860625	48.56	-13.37	35.19	V	130	145	40	-4.81	QP
51.430938	58.6	-25	33.6	V	124	140	40	-6.4	QP
55.89125	54.71	-25.28	29.43	V	100	33	40	-10.57	QP
191.9375	49.84	-21.08	28.76	H	195	134	43.5	-14.74	QP

8 FCC §15.225 (e), ISEDC RSS-210 Annex B.6 – Frequency Tolerance

8.1 Applicable Standards

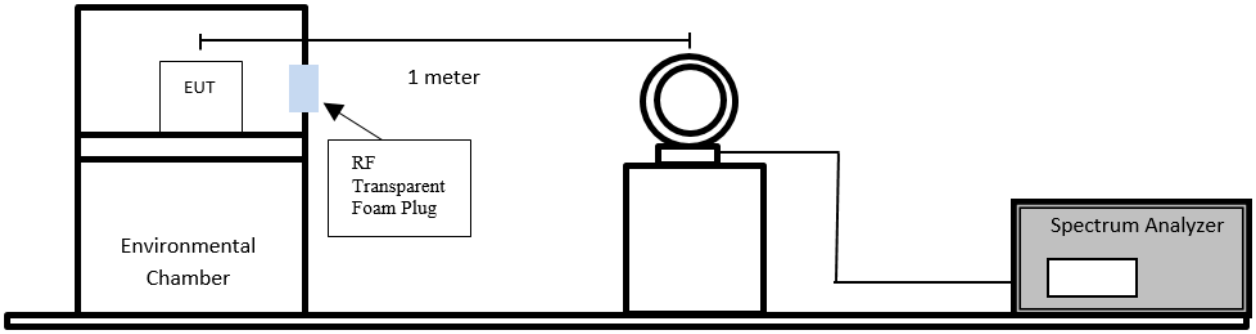
As per FCC §15.225 Operation within the band 13.110-14.010 MHz:

e. The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

As per ISEDC RSS-210 Annex B.6 Band 13.110-14.010 MHz:

b. the carrier frequency stability shall not exceed ±100 ppm

8.2 Test Setup Block Diagram



8.3 Test Procedure

Following the test procedure in ANSI C63.10-2020 section 6.8.1:

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.
NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 min, 5 min, and 10 min after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more than 10 °C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

8.4 Test Equipment List and Details

BACL No.	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	1321.3008k39-101203-UW	2025-08-04	1 year
1060	BACL	Temp Chamber	BTH-150-40	30078	2025-11-20	1 year
393	Com-Power	Active Loop Antenna	AL-130	17043	2025-05-06	2 years
1549	-	SMA coax cable 1.5m	SMA-J/SWA-500/SMA-J/1.5m	BACL01549A	2026-03-06	6 months
1442	Preen	Programmable AC Power Source	AFV-P-5000	F123100017	2025-09-29	1 year

Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

8.5 Test Environmental Conditions

Temperature:	-20 to 50 ºC
Relative Humidity:	45 to 60 %
ATM Pressure:	102.3 kPa

The testing was performed by Libass Thiaw on 2026-05-06 in the RF test site.

8.6 Test Results

Normal Voltage (120 V)

Temp. °C	Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance (%)	Frequency Tolerance (ppm)	FCC Limit (%)	IC Limit (ppm)	Result
-30	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
-20	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
-10	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
0	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
10	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
20	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
30	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
40	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
50	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass

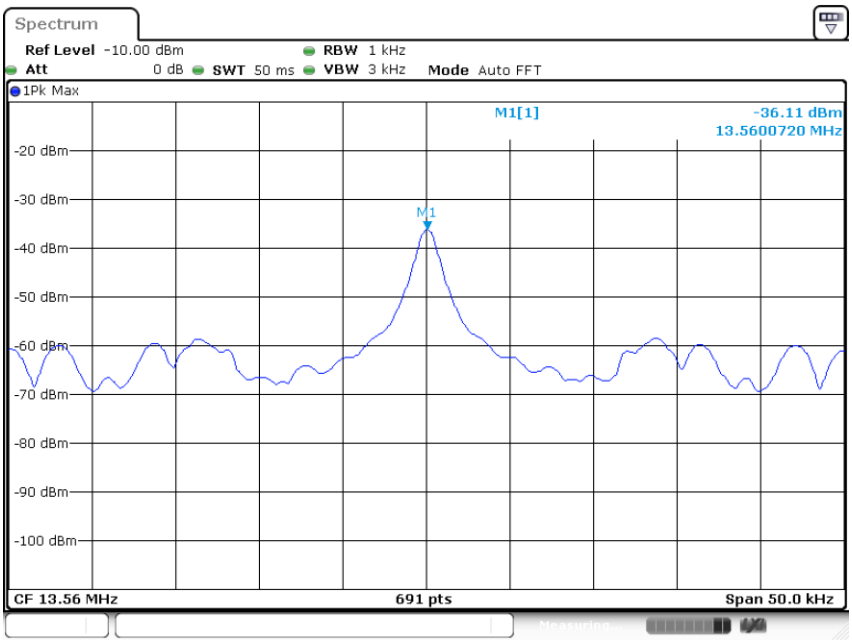
Normal Temperature (20 °C)

Voltage (V)	Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance (%)	Frequency Tolerance (ppm)	FCC Limit (%)	IC Limit (ppm)	Result
102 (85%)	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass
138 (115%)	13.56	13.560072	0.000531	5.31	±0.01	±100	Pass

Please refer to the following plots for detailed test data.

Normal Voltage (5 V)

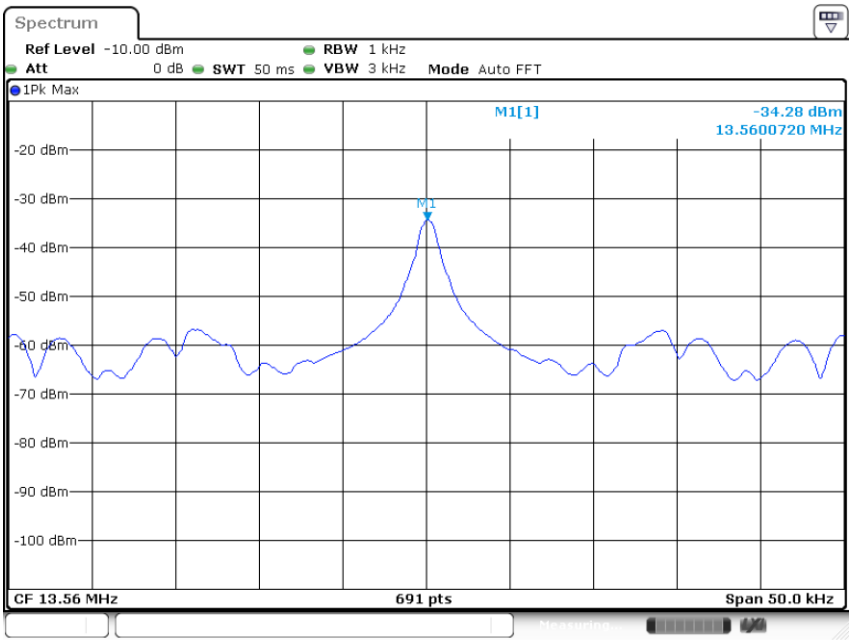
13.56 MHz at -30 °C



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 11:53:39

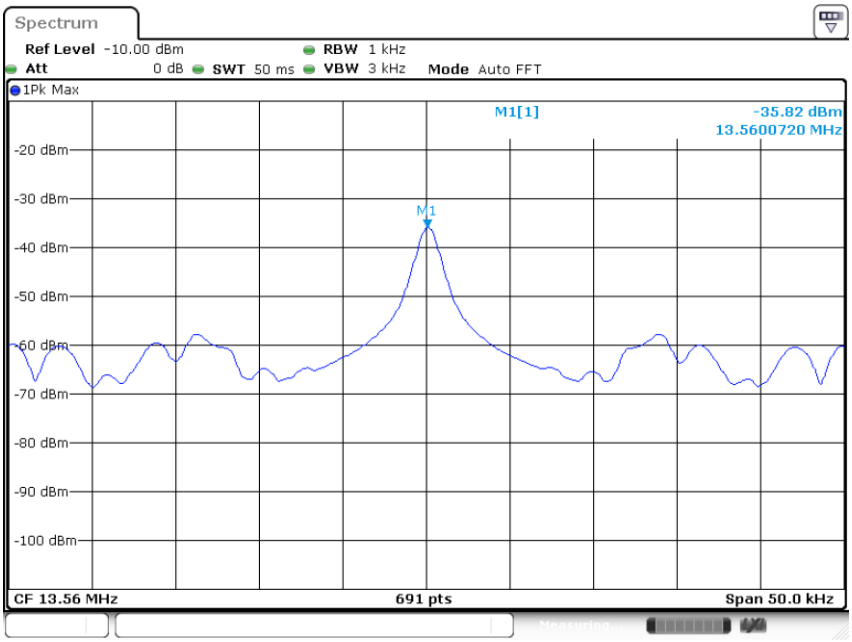
13.56 MHz at -20 °C



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 13:31:59

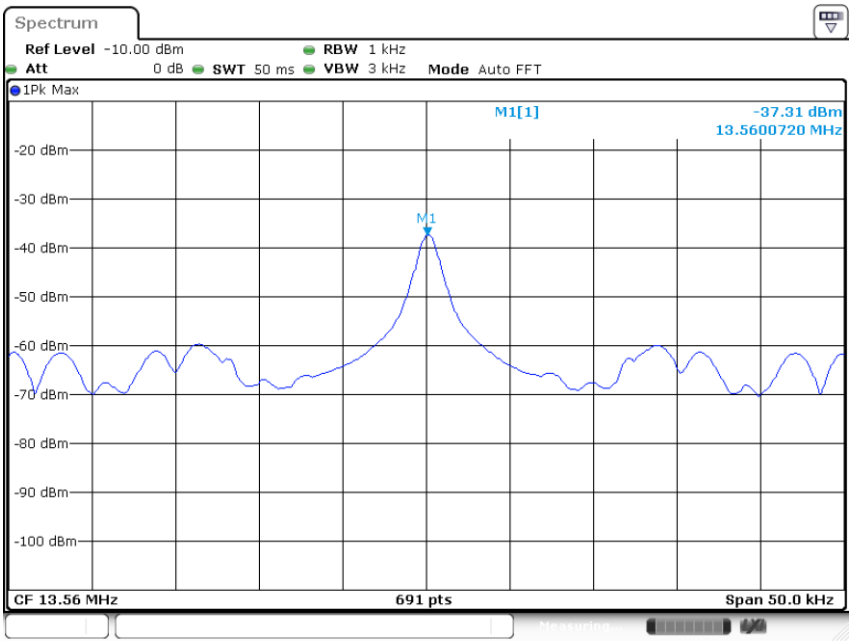
13.56 MHz at -10 °C



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 13:33:14

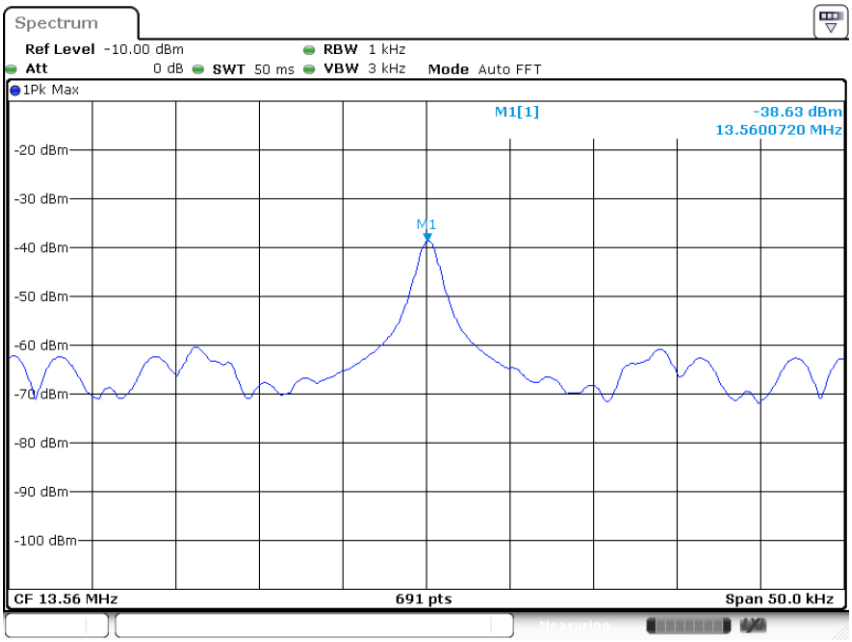
13.56 MHz at 0 °C



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 13:40:04

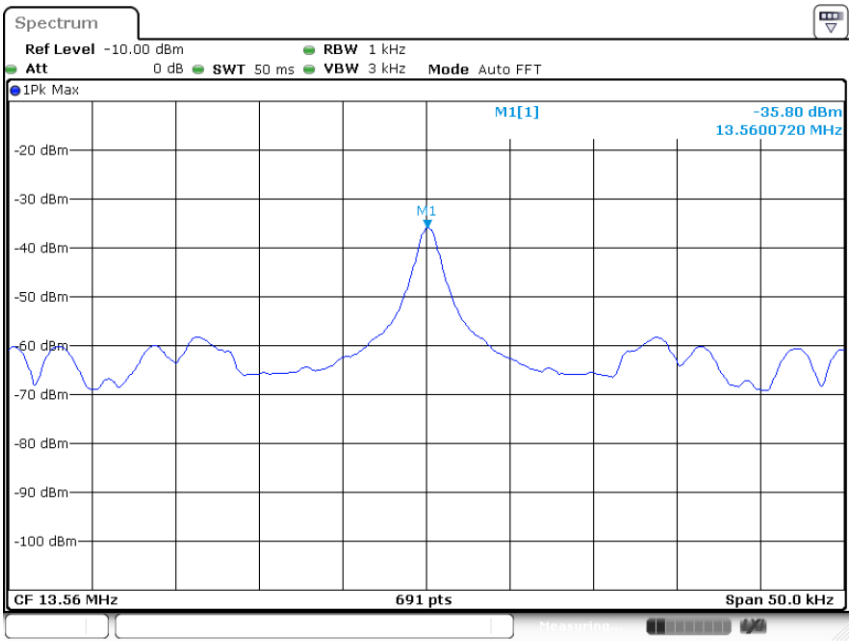
13.56 MHz at 10 °C



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 13:49:06

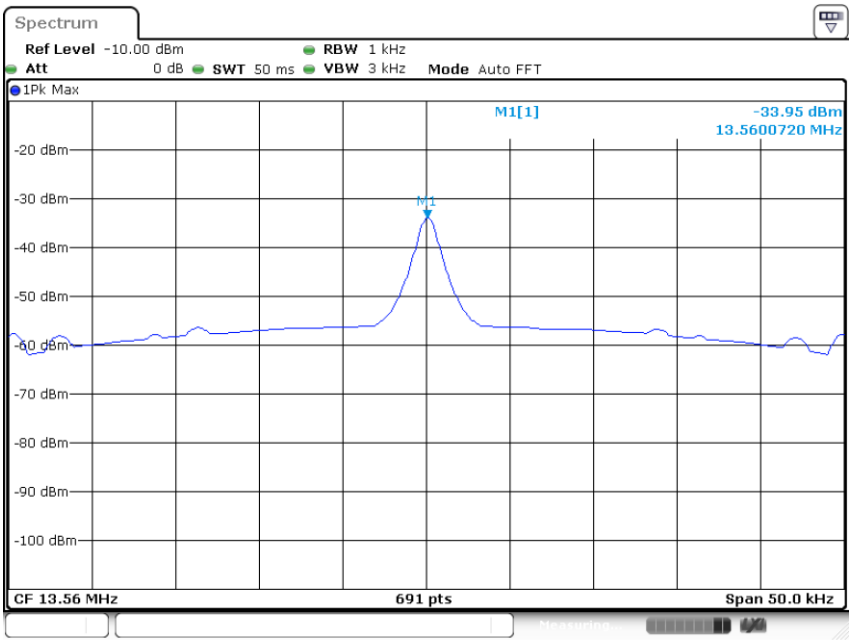
13.56 MHz at 20 °C



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 14:24:32

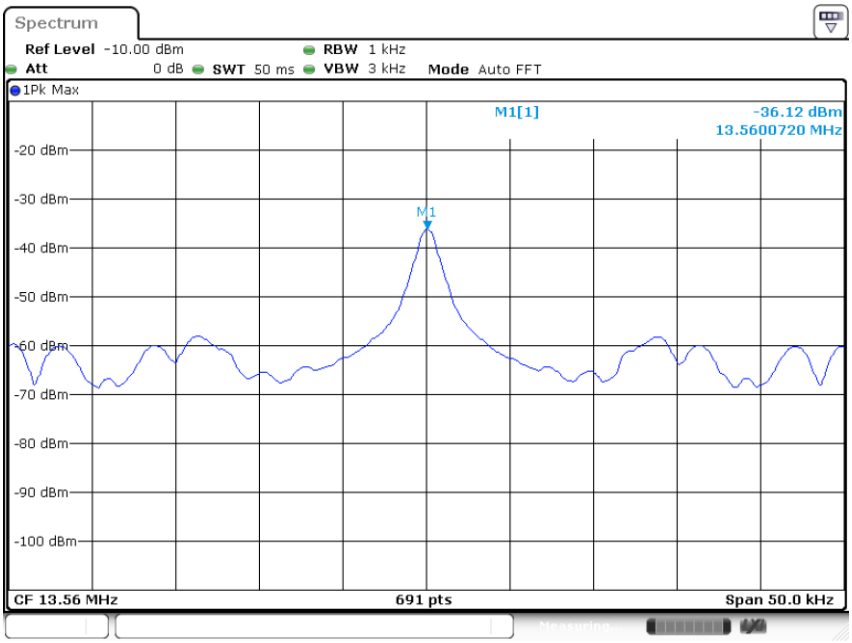
13.56 MHz at 30 °C



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 14:44:00

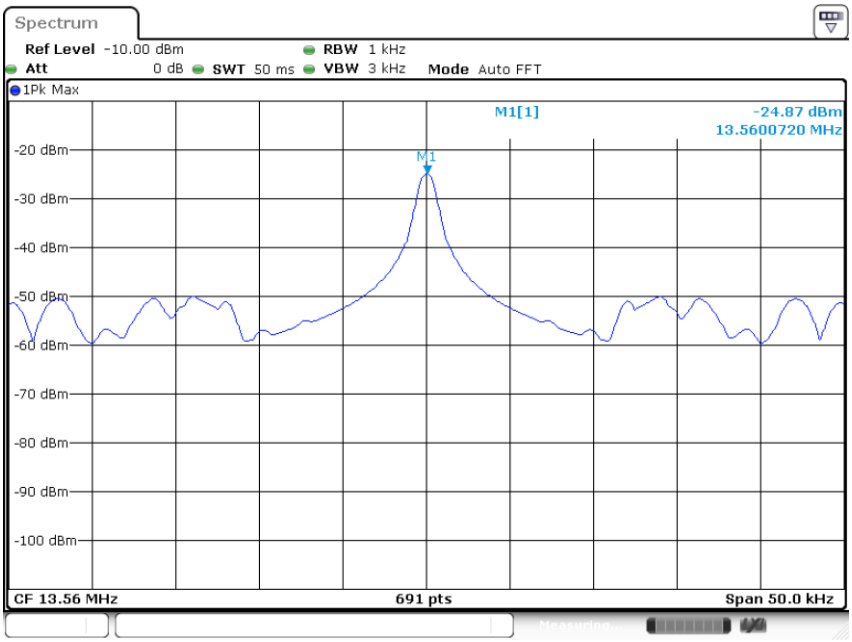
13.56 MHz at 40 °C



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 14:50:55

13.56 MHz at 50 °C

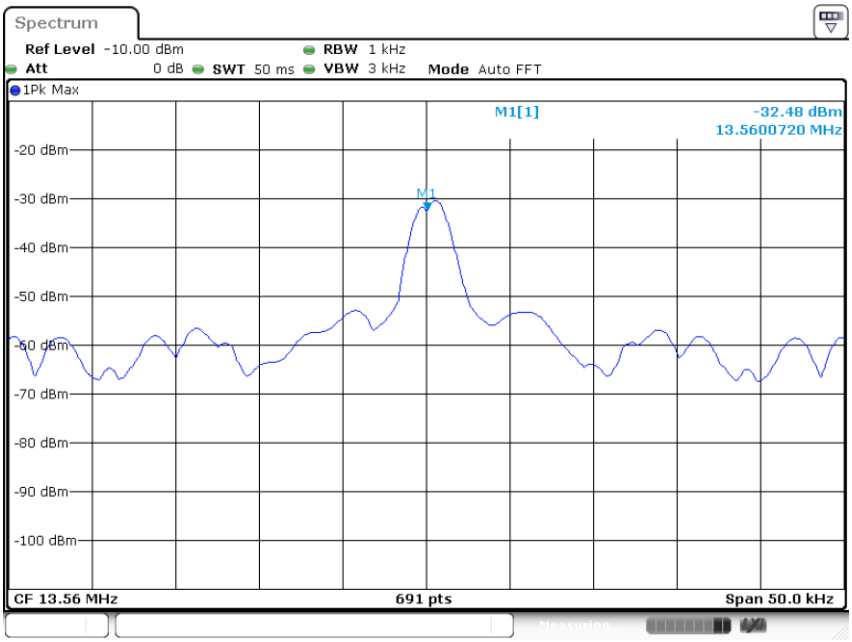


Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 15:13:47

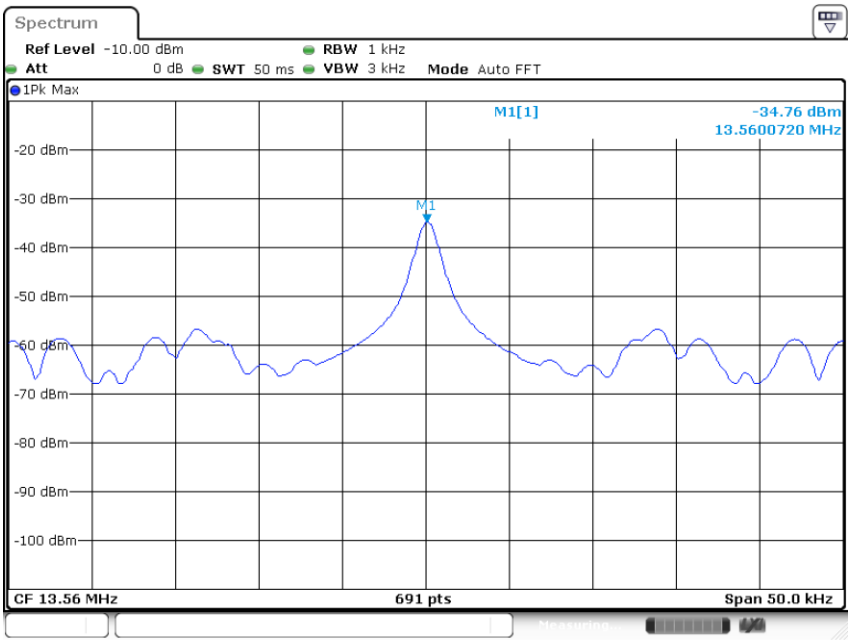
Normal Temperature (20 °C)

13.56 MHz at 102 V



Project Number: R2604201; Tester Name: Libass Thiaw
Date: 6.MAY.2026 14:31:55

13.56 MHz at 138 V



Project Number: R2604201; Tester Name: Libass Thiaw
Date: 6.MAY.2026 14:33:55

9 FCC §15.215 (c), ISED RSS-Gen §6.7 – Occupied Bandwidth

9.1 Applicable Standards and Procedures

As per FCC §15.215 Additional provisions to the general radiated emission limitations:

c. Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

As per ISEDC RSS-GEN §6.7 Occupied bandwidth (or 99% emission bandwidth) and x dB bandwidth:

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

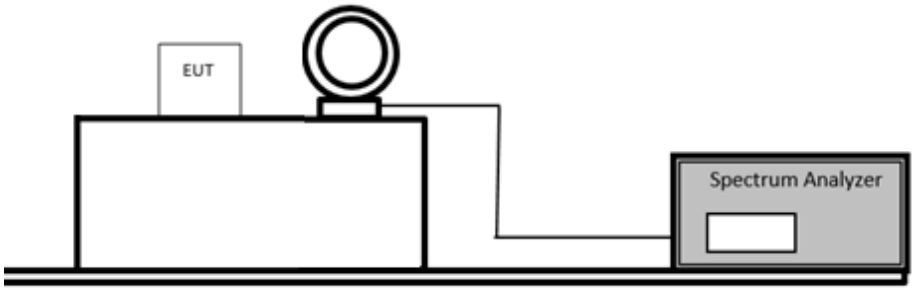
The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
- The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

9.2 Test Setup Block Diagram



9.3 Test Equipment List and Details

BACL No.	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	1321.3008k39-101203-UW	2025-08-04	1 year
393	Com-Power	Active Loop Antenna	AL-130	17043	2025-05-06	2 years
1549	-	SMA coax cable 1.5m	SMA-J/SWA-500/SMA-J/1.5m	BACL01549A	2026-03-06	6 months

Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

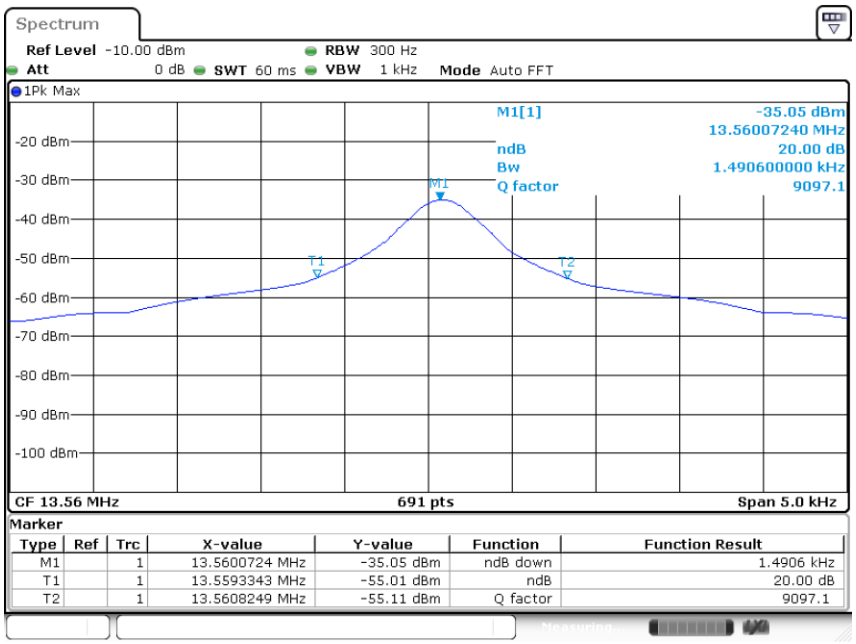
9.4 Test Environmental Conditions

Temperature:	20 - 22 ºC
Relative Humidity:	40 - 47%
ATM Pressure:	101.2 kPa

The testing was performed by Libass Thiaw and Arturo Reyes from 2026-05-06 to 2026-07-08 in the RF test site.

9.5 Test Results

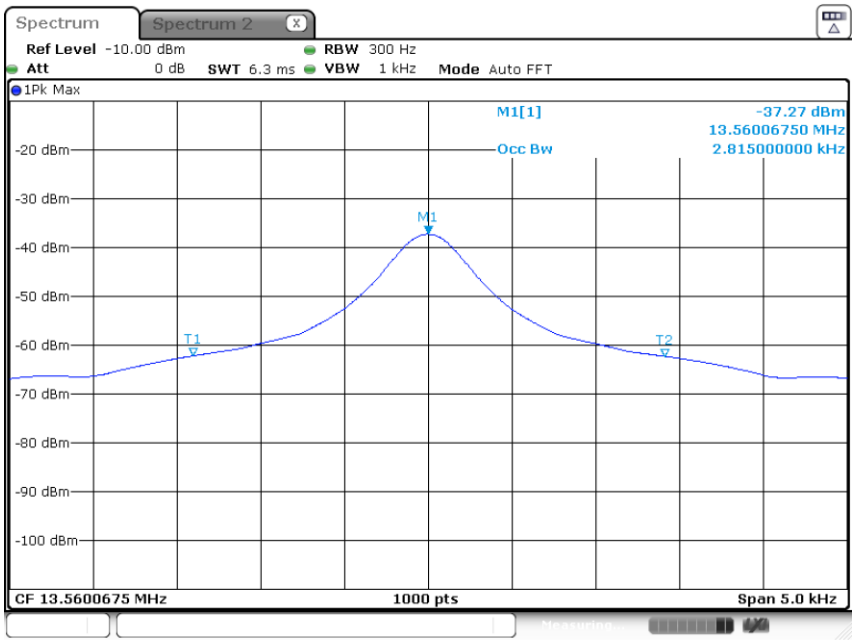
20 dB Bandwidth: 1.4906 kHz



Project Number: R2604201; Tester Name: Libass Thiaw

Date: 6.MAY.2026 15:31:13

99% OBW: 2.815 kHz



Project Number: R2604201; Tester Name: Arturo R.

Date: 8.JUL.2026 18:43:33

10 Annex A (Normative) – Test Setup Photographs

Please refer to Annex A.

11 Annex B (Normative) – EUT External Photographs

Please refer to Annex B.

12 Annex C (Normative) – EUT Internal Photographs

Please refer to Annex C.

13 Annex D (Normative) – A2LA Electrical Testing Certificate

Accredited Laboratory

A2LA has accredited

BAY AREA COMPLIANCE LABORATORIES CORP.

Sunnyvale, CA

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 laboratory also meets A2LA R222 - Specific Requirements EPA ENERGY STAR Accreditation Program. 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 13th day of September 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3297.02
Valid to September 30, 2026

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

Please follow the web link below for a full ISO 17025 scope

https://www.a2la.org/scopepdf/3297-02.pdf

--- END OF REPORT ---