



FCC PART 15, SUBPART C ISED C RSS-247, ISSUE 4, July 2025

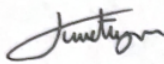
TEST REPORT

For

Alif Semiconductor, Inc

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Pleasanton, CA 94588

FCC ID: 2A58G-SKB1
IC: 35789-SKB1

Report Type: Original Report	Model: SK-B1
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Report Number: R2608263-247	
Report Date: 2026-09-25	
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Note: This test report was 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 test report shall not be used by the customer to claim product certification, approval, or endorsement by A2LA or any agency of the United States Government or any foreign government.

* This test report may contain data and test methods that are not covered by BACL's scope of accreditation as of the test report date shown above. These items are marked within the test report text with an asterisk "*"

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R2608263-247	Original Report	2026-09-25

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test report is prepared on behalf of *Alif Semiconductor, Inc*, and their product model: SK-B1, FCC ID: 2A58G-SKB1, IC: 35789-SKB1, HVIN: SK-B1, the “EUT” as referred to in this report. The EUT is an evaluation and prototyping board that features BLE and 802.15.4 technologies meant for industrial environments.

Model Number	SK-B1
FCC ID	2A58G-SKB1
IC	35789-SKB1
HVIN	SK-B1
Radio Type	BLE, 802.15.4 Zigbee
Operating Frequency	BLE 1M: 2402 – 2480 MHz BLE 2M: 2402 – 2478 MHz 802.15.4 Zigbee: 2405 – 2480 MHz
Antenna Gain	3 dBi

1.2 Mechanical Description of EUT

The UUT measures approximately 8.5 cm (L) x 7 cm (W) x 1.5 cm (H) and weighs approximately < 50g.

The data gathered was from a production sample provided by Alif Semiconductor, Inc with BACL assigned S/N: R2608263-1

1.3 Objective

This report is prepared on behalf of *Alif Semiconductor* in accordance with Part 2, Subpart J, and Part 15, Subpart C of the Federal Communication Commission’s rules and ISED RSS-247 Issue 4, July 2025.

The objective is to determine compliance with FCC Part 15.247 and ISED RSS-247 for Antenna Requirement, RF Exposure, AC Line Conducted Emissions, Radiated & Conducted Spurious Emissions, Emission Bandwidth, Maximum Output Power, Peak Power Spectral Density, and 100 kHz Band Edges.

In order to determine compliance, the manufacturer or a contracted laboratory makes measurements and takes the necessary steps to ensure that the equipment complies with the appropriate technical standards.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the immunity should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing and/or I/O cable changes, etc.).

1.4 Related Submittal(s)/Grant(s)

N/A

1.5 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 and FCC KDB 558074 D01 DTS Meas Guidance v05r02: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247.

1.6 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	±1.48dB
Unwanted Emissions, conducted	±1.57dB
All emissions, radiated	±4.0 dB
AC power line Conducted Emission	±2.0 dB
Temperature	±2 ° C
Humidity	±5 %
DC and low frequency voltages	±1.0 %
Time	±2 %
Duty Cycle	±3 %

1.7 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.

1.8 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 according to ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 and FCC KDB 558074 D01 DTS Meas Guidance v05r02.

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 “RF Commander” provided by Alif Semiconductor, Inc. The software is compliant with the standard requirements being tested against.

Radio	Mode	Channel	Frequency (MHz)	Power Setting
BLE	1M	Low	2402	Default
		Middle	2440	Default
		High	2480	Default
	2M	Low	2402	Default
		Middle	2440	Default
		High	2478	Default
802.15.4	Zigbee	Low	2405	Default
		Middle	2440	Default
		High	2480	Default

2.3 Equipment Modification

No modifications were made to the EUT during testing.

2.4 Local Support Equipment

Manufacturer	Description	Model	Serial Number
Dell	Laptop	Latitude 5401	HCJH3Z2

2.5 Remote Support Equipment

Manufacturer	Description	Model	Serial Number
-	RF Cable	-	-

Note: Customer provided RF cable and cable loss was verified to be 1.46 dB within the operational band.

2.6 Power Supply and Line Filters

Manufacturer	Description	Model	Serial Number
-	-	-	-

2.7 Interface Ports and Cabling

Cable Description	Length (m)	From	To
USB-C	1	Laptop	EUT
UART Cable	< 1	Laptop	EUT

2.8 Duty Cycle Correction Factor

According to KDB 558074 D01 DTS Meas Guidance v05r02 section 6.0:

Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%). When continuous operation cannot be realized, then the use of sweep triggering/signal gating techniques can be utilized to ensure that measurements are made only during transmissions at the maximum power control level. Such sweep triggering/signal gating techniques will require knowledge of the minimum transmission duration (T) over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. Sweep triggering/signal gating techniques can then be used if the measurement/sweep time of the analyzer can be set such that it does not exceed T at any time that data is being acquired (i.e., no transmitter off-time is to be considered).

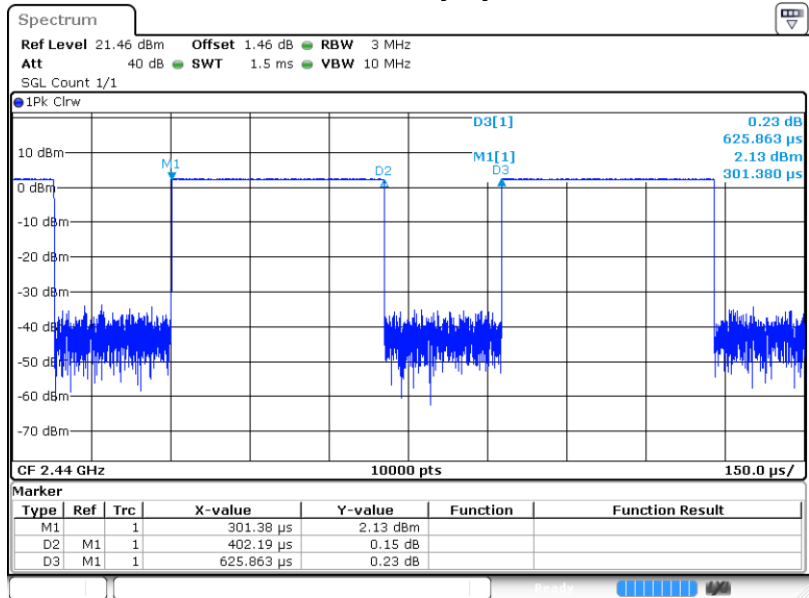
Radio	Radio Mode	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
BLE	1Mbps	0.40219	0.625863	64.261	1.920
	2Mbps	0.209121	0.625713	33.421	4.759
802.15.4	Zigbee	2.3901	60.276	3.965	14.017

Note: $Duty\ Cycle = On\ Time\ (ms) / Period\ (ms)$

$Duty\ Cycle\ Correction\ Factor = 10 * \log(1/duty\ cycle)$

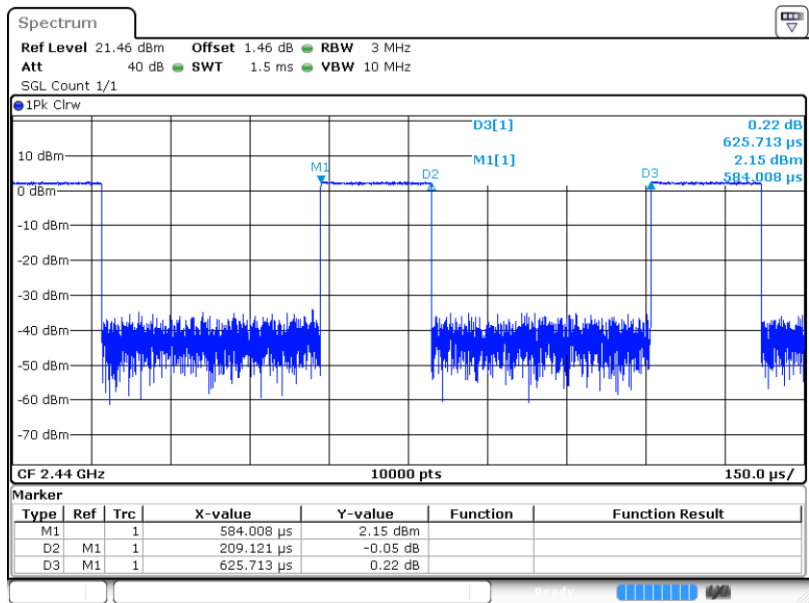
Please refer to the following plots.

BLE 1M Duty Cycle



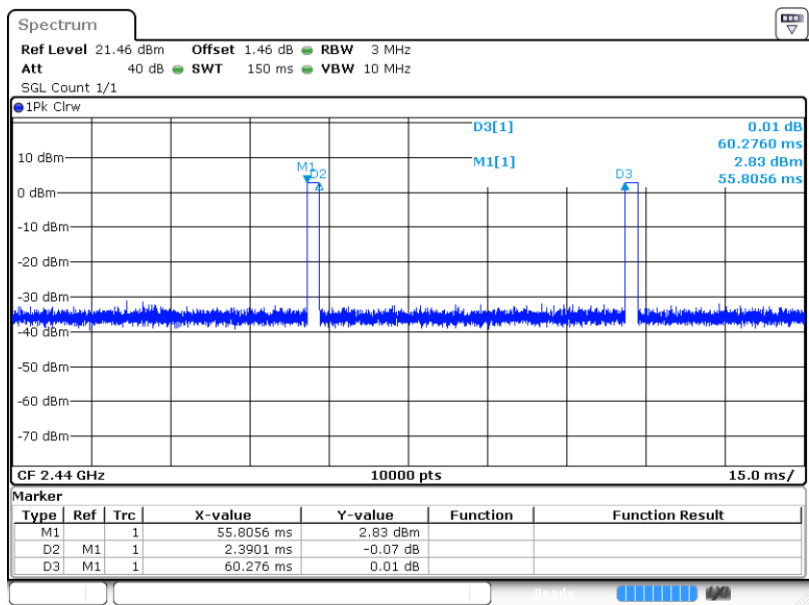
Project Number: R2608263; Tester Name: Justine Alagon
Date: 8.SEP.2026 09:53:54

BLE 2M Duty Cycle



Project Number: R2608263; Tester Name: Justine Alagon
Date: 8.SEP.2026 09:48:07

802.15.4 Zigbee Duty Cycle



Project Number: R2608263; Tester Name: Justine Alagon
Date: 16 SEP. 2026 13:15:59

3 Summary of Test Results

FCC & ISEDC Rules	Description of Test	Results
FCC §15.203 ISEDC RSS-Gen §5.2	Antenna Requirements	Compliant
FCC §2.1091, §15.247(i) ISEDC RSS-102	RF Exposure	Compliant
FCC §15.207 ISEDC RSS-Gen §7.4	AC Line Conducted Emissions	Compliant
FCC §2.1053, §15.35(b), §15.205, §15.209, §15.247(d) ISEDC RSS-247 §6.6 ISEDC RSS-Gen §7.4, §7.5	Radiated Spurious Emissions	Compliant
FCC §15.247(a)(2) ISEDC RSS-247 §6.3.1.a RSS-Gen §5.1	6 dB & 99% Emission Bandwidth	Compliant
FCC §15.247(b)(3) ISEDC RSS-247 §6.3.2	Maximum Output Power	Compliant
FCC §15.247(e) ISEDC RSS-247 §6.3.1.b	Peak Power Spectral Density	Compliant
FCC §2.1051, §15.247 (d) ISEDC RSS-247 §6.6	Spurious Emissions at Antenna Terminal (dBc)	Compliant
FCC §2.1051, §15.247(d) ISEDC RSS-247 §6.6	100 kHz Bandwidth of Frequency Band Edges	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, customer provided cable loss can affect the validity of results.

4 FCC §15.203 & ISEDC RSS-Gen §5.2 – Antenna Requirements

4.1 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.

And according to FCC §15.247 (b) (4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to ISEDC RSS-Gen §5.2: Detachable Transmitter Antenna

In the case of transmitters with detachable antenna(s), a list of all antenna types that are permitted to be used with the transmitter, indicating the maximum permissible antenna gain (and unit, e.g. dBi) and the required impedance, shall be provided for equipment certification. If the transmitter has multiple antenna ports, this list shall indicate the allowed port for each antenna in the list. The test report shall demonstrate the compliance of the transmitter with the limits specified in the applicable RSS when the transmitter is equipped with any antenna type from this list. If the tests were performed only on worst case configurations, the test report shall include the rationale for selecting the tested configurations and why they are worst-case. See also section 9.3.2.2.

4.2 Antenna Description

External/Internal/ Integral	Part Number	Antenna Type	Frequency Range (MHz)	Maximum Antenna Gain (dBi)
Integral	2450AT43A01000 01E	Chip Antenna	2400-2500	3

5 FCC §2.1091, FCC §15.247(i) & ISEDC RSS-102 – RF Exposure

5.1 Applicable Standards

According to FCC §15.247(i), Radio frequency devices operating under the provisions of this part are subject to the radio frequency radiation exposure requirements specified in §§ 1.1307(b), 1.1310, 2.1091, and 2.1093 of this chapter, as appropriate. Applications for equipment authorization of mobile or portable devices operating under this section must contain a statement confirming compliance with these requirements. Technical information showing the basis for this statement must be submitted to the Commission upon request.

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 (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP 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 EIRP 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 EIRP 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 EIRP 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 EIRP 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 EIRP was derived.

5.2 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

5.3 MPE Result

Worst Case: BLE, 1M High Channel, 2480 MHz

<u>Maximum output power at antenna input terminal (dBm):</u>	<u>2.92</u>
<u>Maximum output power at antenna input terminal (mW):</u>	<u>1.958</u>
<u>Prediction distance (cm):</u>	<u>20</u>
<u>Prediction frequency (MHz):</u>	<u>2480</u>
<u>Maximum Directional Antenna Gain, typical (dBi):</u>	<u>3</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>1.995</u>
<u>Power density of prediction frequency at 20.0 cm (mW/cm²):</u>	<u>0.00077</u>
<u>FCC MPE limit for uncontrolled exposure at prediction frequency (mW/cm²):</u>	<u>1.0</u>

The device is compliant with the requirement MPE limit for uncontrolled exposure. The maximum power density at the distance of 20 cm is 0.00077 mW/cm². Limit is 1 mW/cm².

Worst Case: 802.15.4 Zigbee, High Channel, 2480 MHz

<u>Maximum output power at antenna input terminal (dBm):</u>	<u>3.08</u>
<u>Maximum output power at antenna input terminal (mW):</u>	<u>2.0323</u>
<u>Prediction distance (cm):</u>	<u>20</u>
<u>Prediction frequency (MHz):</u>	<u>2480</u>
<u>Maximum Directional Antenna Gain, typical (dBi):</u>	<u>3</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>1.995</u>
<u>Power density of prediction frequency at 20.0 cm (mW/cm²):</u>	<u>0.00081</u>
<u>FCC MPE limit for uncontrolled exposure at prediction frequency (mW/cm²):</u>	<u>1.0</u>

The device is compliant with the requirement MPE limit for uncontrolled exposure. The maximum power density at the distance of 20 cm is 0.00081 mW/cm². Limit is 1 mW/cm².

5.4 IC Exemption

Worst Case: BLE, 1M High, 2480 MHz

$$\text{EIRP} = 2.92 \text{ dBm} + 3 \text{ dBi} = 5.92 \text{ dBm} (3.9084 \text{ mW}) < 1.31 \times 10^{-2} \times 2402^{0.6834} \text{ W} (2.676 \text{ W})$$

Worst Case: 802.15.4 Zigbee, High Channel, 2480 MHz

$$\text{EIRP} = 3.08 \text{ dBm} + 3 \text{ dBi} = 6.08 \text{ dBm} (4.055 \text{ mW}) < 1.31 \times 10^{-2} \times 2405^{0.6834} \text{ W} (2.678 \text{ W})$$

The device is compliant with the requirement Field reference level exposure exemption limits for uncontrolled exposure.

6 FCC §15.207 & ISEDC RSS-Gen §7.4 – AC Line Conducted Emissions

6.1 Applicable Standards

As per FCC §15.207 and ISEDC RSS-Gen Section 7.4: 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 μ H/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 §7.4 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 host system was connected to the mains outlet of the LISN-1 and the power cords of support equipment were connected to LISN-2.

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:

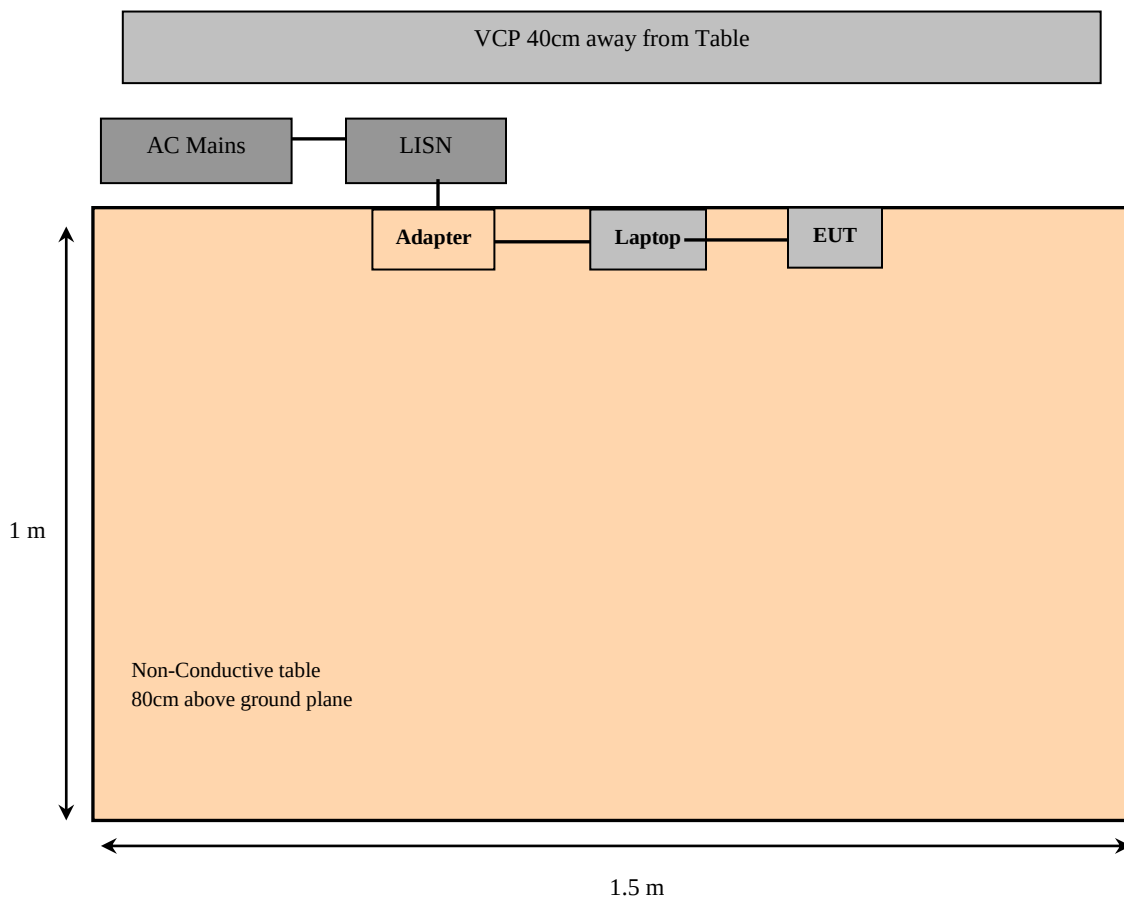
$$CA = Ai + CL + \text{Atten}$$

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:

$$\text{Margin} = \text{Corrected Amplitude} - \text{Limit}$$

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:	21 to 23 °C
Relative Humidity:	41 to 50 %
ATM Pressure:	101.2 kPa

The testing was performed by Justine Alagon on 2026-09-18 at the 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: 802.15.4, Zigbee High Channel, 2480 MHz

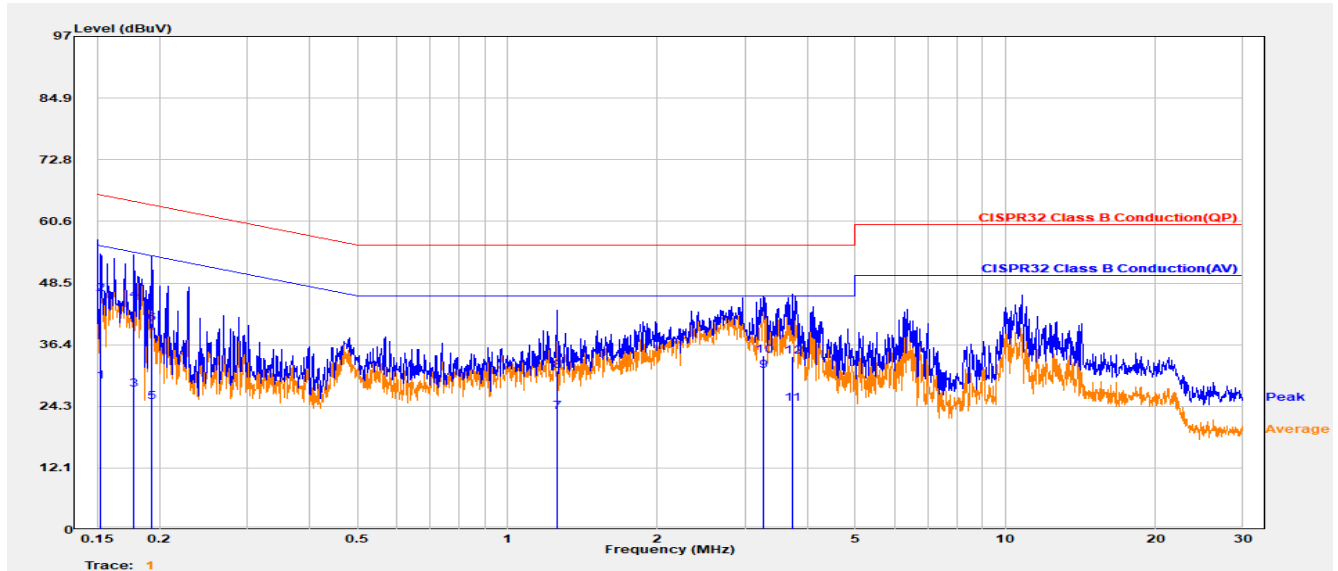
Worst Case – AC Line: 120V, 60Hz			
Margin (dB)	Frequency (MHz)	Conductor Mode (Hot/Neutral)	Range (MHz)
-12.48	2.707	Hot	0.15 to 30

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

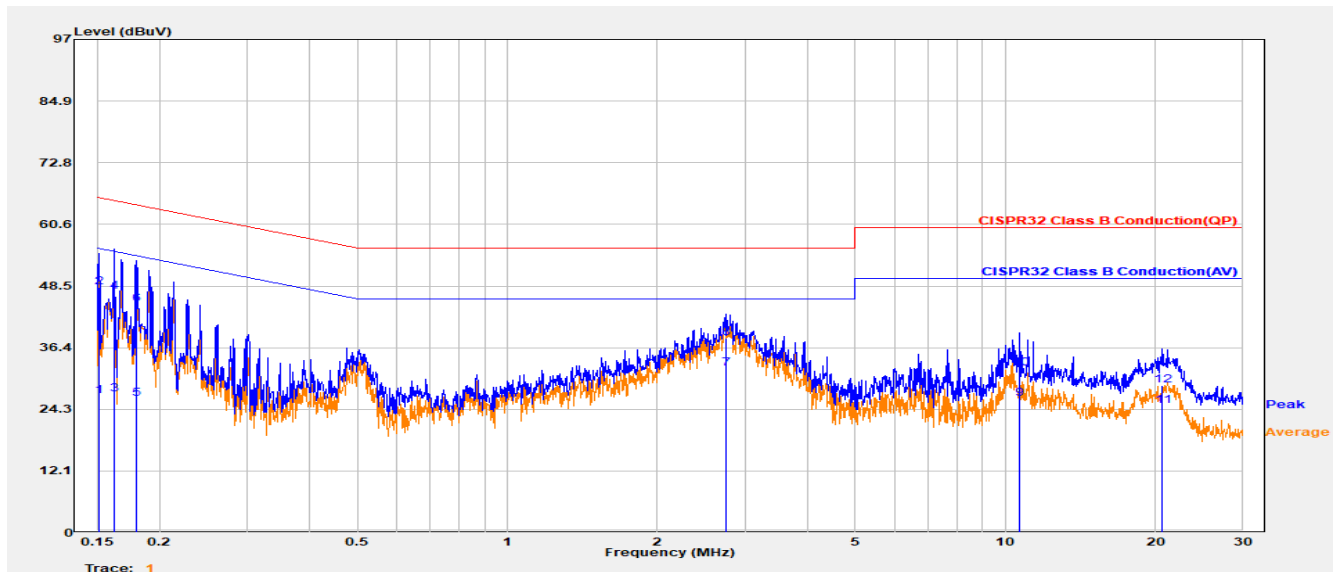
6.9 Conducted Emissions Test Plots and Data

Worst Mode: BLE 1M High Channel, 2480 MHz

AC Line: 120V, 60Hz – Hot Conductor



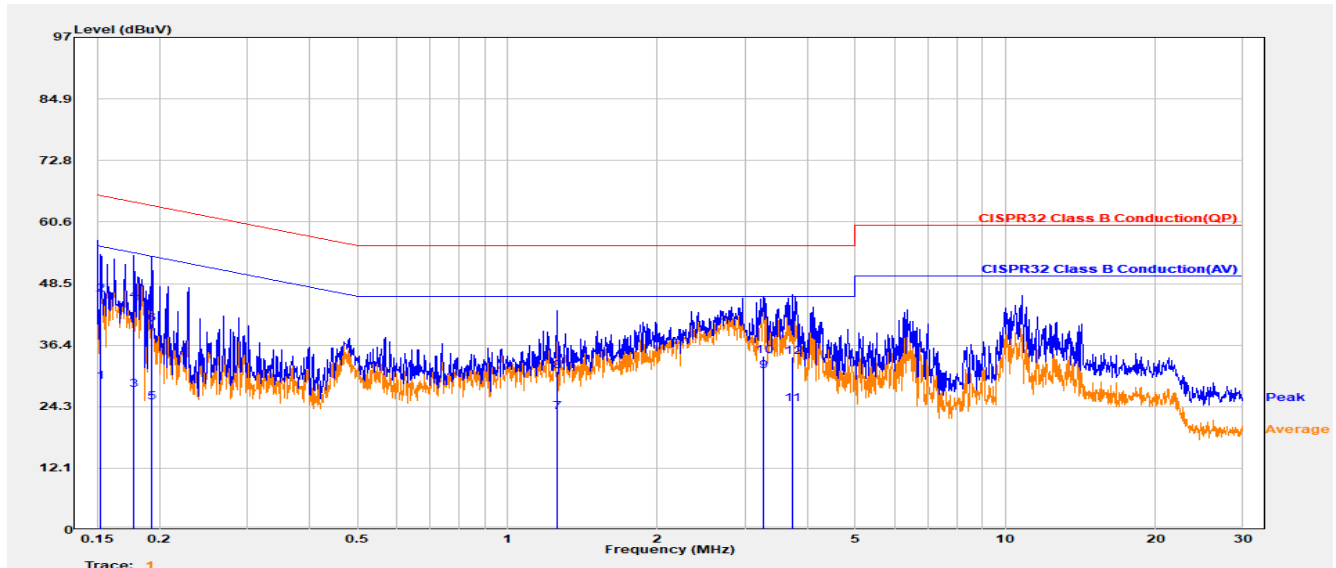
Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBμV)	Limit (dBμV)	Margin (dB)	Detector
0.153	15.63	13.40	29.03	55.85	-26.81	Average
0.153	32.97	13.40	46.37	65.85	-19.48	QP
0.178	14.46	13.01	27.47	54.59	-27.12	Average
0.178	32.09	13.01	45.10	64.59	-19.49	QP
0.193	12.35	12.78	25.12	53.89	-28.76	Average
0.193	27.72	12.78	40.50	63.89	-23.39	QP
1.259	12.77	10.33	23.10	46.00	-22.90	Average
1.259	20.87	10.33	31.20	56.00	-24.80	QP
3.276	21.01	10.21	31.22	46.00	-14.78	Average
3.276	23.94	10.21	34.15	56.00	-21.85	QP
3.740	14.55	10.21	24.76	46.00	-21.24	Average
3.740	23.76	10.21	33.97	56.00	-22.03	QP

Worst Mode: BLE 1M High Channel, 2480 MHz**AC Line: 120V, 60Hz – Neutral Conductor**

Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBμV)	Limit (dBμV)	Margin (dB)	Detector
0.152	13.49	13.4	26.89	55.91	-29.02	Average
0.152	34.86	13.4	48.26	65.91	-17.65	QP
0.162	13.94	13.23	27.16	55.34	-28.18	Average
0.162	34.14	13.23	47.37	65.34	-17.97	QP
0.18	13.33	12.97	26.29	54.5	-28.21	Average
0.18	31.9	12.97	44.87	64.5	-19.64	QP
2.75	22.11	10.21	32.32	46	-13.68	Average
2.75	28.03	10.21	38.23	56	-17.77	QP
10.705	15.94	10.36	26.3	50	-23.7	Average
10.705	21.84	10.36	32.19	60	-27.81	QP
20.704	14.09	10.76	24.85	50	-25.15	Average
20.704	18.12	10.76	28.88	60	-31.12	QP

Worst Mode: 802.15.4, Zigbee High Channel, 2480 MHz

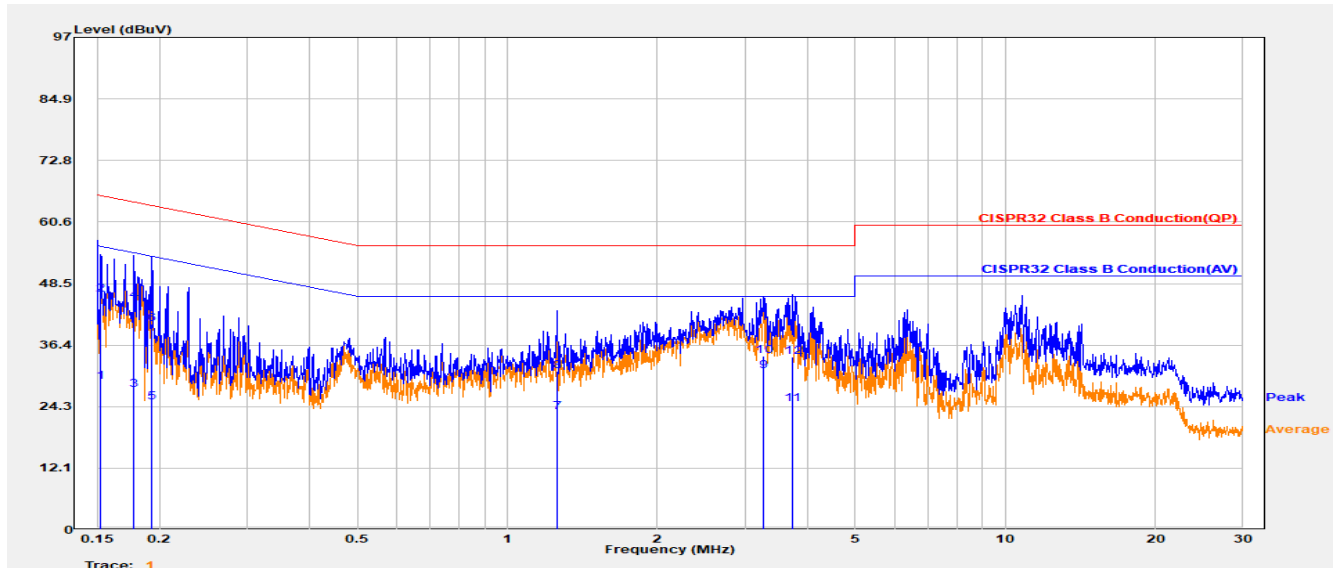
AC Line: 120V, 60Hz – Hot Conductor



Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBμV)	Limit (dBμV)	Margin (dB)	Detector
0.17	18.23	13.12	31.35	54.94	-23.59	Average
0.17	34.45	13.12	47.57	64.94	-17.37	QP
0.274	12.78	11.64	24.43	51.01	-26.58	Average
0.274	22.75	11.64	34.39	61.01	-26.61	QP
0.467	15.67	10.85	26.52	46.56	-20.04	Average
0.467	21.85	10.85	32.7	56.56	-23.86	QP
2.707	23.3	10.22	33.52	46	-12.48	Average
2.707	28.64	10.22	38.86	56	-17.14	QP
3.276	20.16	10.21	30.37	46	-15.63	Average
3.276	25.3	10.21	35.51	56	-20.49	QP
10.397	16.56	10.36	26.91	50	-23.09	Average
10.397	24.84	10.36	35.19	60	-24.81	QP

Worst Mode: 802.15.4, Zigbee High Channel, 2480 MHz

AC Line: 120V, 60Hz – Neutral Conductor



Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBμV)	Limit (dBμV)	Margin (dB)	Detector
0.182	10.71	12.93	23.64	54.39	-30.75	Average
0.182	30.19	12.93	43.12	64.39	-21.27	QP
0.215	11.4	12.45	23.84	53.01	-29.16	Average
0.215	25.39	12.45	37.84	63.01	-25.17	QP
0.286	4.52	11.47	15.99	50.65	-34.67	Average
0.286	19.46	11.47	30.92	60.65	-29.73	QP
3.399	19	10.2	29.2	46	-16.8	Average
3.399	24.65	10.2	34.86	56	-21.14	QP
4.049	12.69	10.2	22.89	46	-23.11	Average
4.049	21.98	10.2	32.18	56	-23.82	QP
9.861	14.48	10.33	24.81	50	-25.19	Average
9.861	21.73	10.33	32.05	60	-27.95	QP

7 FCC §15.35(b), §15.205, §15.209, §15.247(d) & ISEDC RSS-247 §6.6, RSS-Gen §7.4, §7.5 – Spurious Radiated Emissions

7.1 Applicable Standards

As per FCC §15.35(b): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	960 – 1240	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	1300 – 1427	5.35 – 5.46
2.1735 – 2.1905	25.5 – 25.67	1435 – 1626.5	7.25 – 7.75
4.125 – 4.128	37.5 – 38.25	1645.5 – 1646.5	8.025 – 8.5
4.17725 – 4.17775	73 – 74.6	1660 – 1710	9.0 – 9.2
4.20725 – 4.20775	74.8 – 75.2	1718.8 – 1722.2	9.3 – 9.5
6.215 – 6.218	108 – 121.94	2200 – 2300	10.6 – 12.7
6.26775 – 6.26825	123 – 138	2310 – 2390	13.25 – 13.4
6.31175 – 6.31225	149.9 – 150.05	2483.5 – 2500	14.47 – 14.5
8.291 – 8.294	156.52475 – 156.52525	2690 – 2900	15.35 – 16.2
8.362 – 8.366	156.7 – 156.9	3260 – 3267	17.7 – 21.4
8.37625 – 8.38675	162.0125 – 167.17	3.332 – 3.339	22.01 – 23.12
8.41425 – 8.41475	167.72 – 173.2	3.3458 – 3.358	23.6 – 24.0
12.29 – 12.293	240 – 285	3.600 – 4.400	31.2 – 31.8
12.51975 – 12.52025	322 – 335.4		36.43 – 36.5
12.57675 – 12.57725	399.9 – 410		Above 38.6
13.36 – 13.41	608 – 614		

As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

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 §15.247 (d),

in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

As per ISED RSS-247 §6.6,

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum device, digitally modulated device, or hybrid system is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power – based on either an RF conducted or a radiated measurement – provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 6.3.2, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

As per ISED RSS-Gen §7.4,

Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

Table 5 – General field strength limits at frequencies above 30 MHz

Frequency (MHz)	Field Strength (µV/m at 3 m)
30 – 88	100
88 – 216	150
216 – 960	200
Above 960	500

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Field Strength (micro volts/meter)	Measurement Distance (meters)
9 – 490 kHz ^{Note 1}	6.37/F (F in kHz)	300
490 – 1705 kHz	63.7/F (F in kHz)	30
1.705 – 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

As per ISED RSS-Gen §7.5

Unwanted emissions that do not fall within the restricted frequency bands listed in table 7 shall comply either with the limits specified in the applicable RSS or with those specified in table 5 and table 6.

Table 7 – Restricted frequency bands^{Note 1}

MHz	MHz	GHz
0.090 – 0.110	149.9 – 150.05	9.0 – 9.2
0.495 – 0.505	156.52475 – 156.52525	9.3 – 9.5
2.1735 – 2.1905	156.7 – 156.9	10.6 – 12.7
3.020 – 3.026	162.0125 – 167.17	13.25 – 13.4
4.125 – 4.128	167.72 – 173.2	14.47 – 14.5
4.17725 – 4.17775	240 – 285	15.35 – 16.2
4.20725 – 4.20775	322 – 335.4	17.7 – 21.4
5.677 – 5.683	399.9 – 410	22.01 – 23.12
6.215 – 6.218	608 – 614	23.6 – 24.0
6.26775 – 6.26825	960 – 1427	31.2 – 31.8
6.31175 – 6.31225	1435 – 1626.5	36.43 – 36.5
8.291 – 8.294	1645.5 – 1646.5	Above 38.6
8.362 – 8.366	1660 – 1710	
8.37625 – 8.38675	1718.8 – 1722.2	
8.41425 – 8.41475	2200 – 2300	
12.29 – 12.293	2310 – 2390	
12.51975 – 12.52025	2483.5 – 2500	
12.57675 – 12.57725	2655 – 2900	
13.36 – 13.41	3260 – 3267	
16.42 – 16.423	3332 – 3339	
16.69475 – 16.69525	3345.8 – 3358	
16.80425 – 16.80475	3500 – 4400	
25.5 – 25.67	4500 – 5150	
37.5 – 38.25	5350 – 5460	
73 – 74.6	7250 – 7750	
74.8 – 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

7.2 Test Setup

The radiated emissions tests were performed in the 5-meter chamber, using the setup in accordance with ANSI C63.10. The specification used was the FCC §15.247 and ISED RSS-247 limits.

The spacing between the peripherals was 10 centimeters.

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

7.3 Test Procedure

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 meters, and the EUT was placed on a turntable, which was 0.8 meters and 1.5 meters 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. The receiving antenna's polarity should be changed between horizontal and vertical.

The spectrum analyzer or receiver was set as:

9 kHz-150 kHz

RBW = 200Hz /VBW = 1kHz

150 kHz-30 MHz

RBW = 9kHz /VBW = 30kHz

Below 1000 MHz:

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

(1) Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto

(2) Average: RBW = 1MHz / VBW = 10Hz or 1/T / Sweep = Auto

7.4 Corrected Amplitude and 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:

$$CA = \text{S.A. Reading} + \text{Correction Factor}$$

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:

$$\text{Correction Factor} = AF + CL + \text{Atten} - Ga$$

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:

$$\text{Margin} = \text{Corrected Amplitude} - \text{Limit}$$

For emission above 1 GHz,

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

$$CA = Ai + AF + CL + \text{Atten} - Ga$$

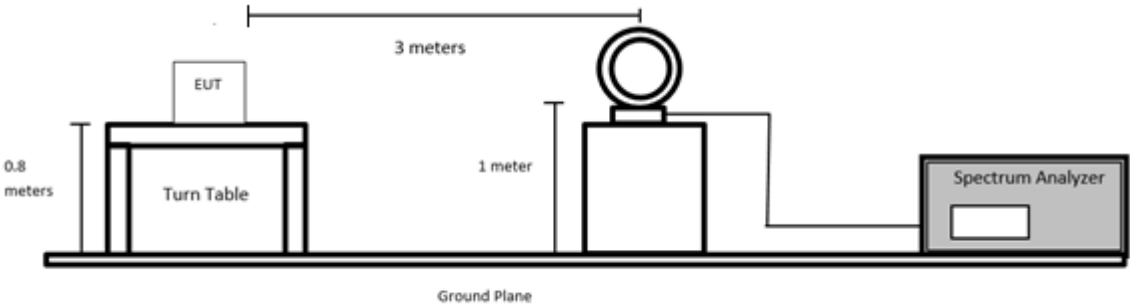
For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

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:

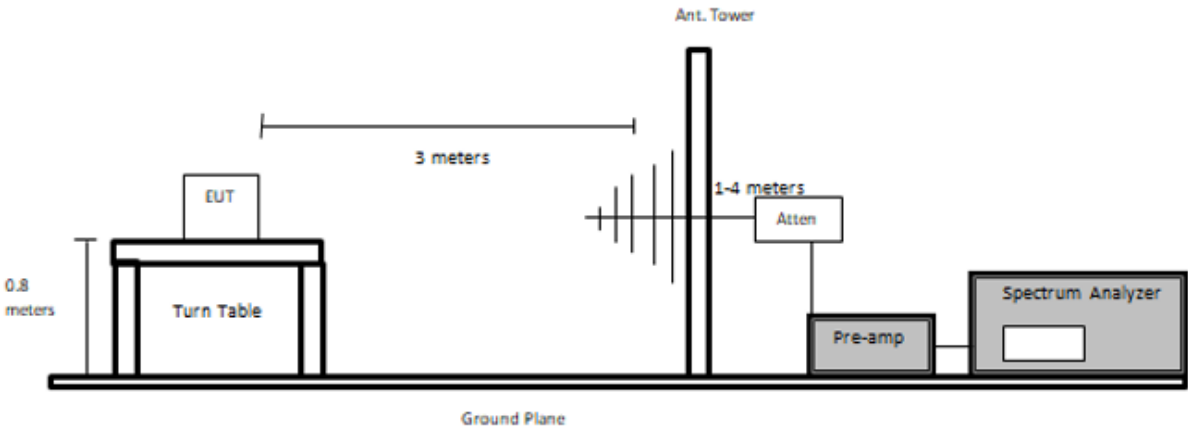
$$\text{Margin} = \text{Corrected Amplitude} - \text{Limit}$$

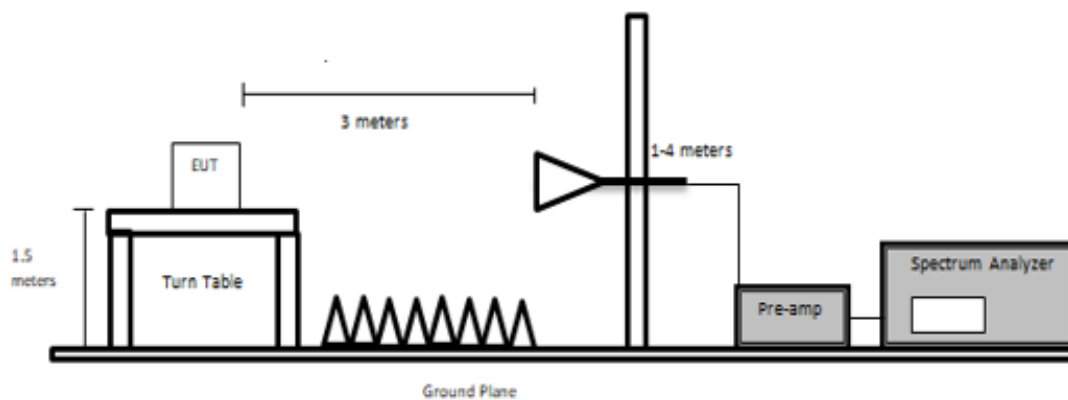
7.5 Test Setup Block Diagram

9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz, with external preamplifier

7.6 Test Equipment List and Details

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
327	Sunol Sciences	System Controller	SC110V	122303-1	N/R	N/R
1075	Sunol Sciences	Boresight Antenna Tower	TLT3	050119-7	N/R	N/R
1388	Sunol Sciences	Flush Mount Turntable	FM	112005-2	N/R	N/R
1432	Keysight Technologies	MXE EMI Receiver, Multi-touch	N9038B	MY60180008	2026-01-22	1 year
393	Com-Power	Loop Antenna, Active	AL-130	17043	2025-05-06	2 years
321	Sunol Sciences	Biconilog Antenna	JB3	A020106-2	2025-12-16	2 years
1245	Pasternack	Attenuator	PE7390-6	01182018A	2025-12-16	2 years
316	Sonoma Instruments	Preamplifier	317	260406	2026-05-13	6 months
1248	Pasternack	RG214 COAX Cable	PE3062	BACL01248A	2025-10-03	1 year
1246	Hewlet Packard	RF Limiter	11867A	01734	2026-03-05	1 year
1192	ETS Lindgren	Horn Antenna	3117	00218973	2024-10-23	2 years
1545	Megaphase	K-type coax cable	TM40-K1K3-12	20869601 001	2026-02-17	1 year
1449	BACL	Preamplifier	BACL-1313-A100M18G	4052472	2026-02-17	1 year
1628	Global Engineering Services Corp	2.92mm 10m coax cable	XH400A-2.92/J-2.92/J-10M-A	BACL01628A	2026-04-24	6 months
672	Micro-Tronics	Notch Filter 2.5 GHz	BRM50701	160	2026-03-05	1 year
1546	Megaphase	SMA coax cable	TM26-S1S3-12	20869602 001	2026-02-27	1 year
1451	BACL	Preamplifier	BACL-1313-A1840	4052432	2026-02-17	1 year
90	Wisewave	Horn antenna	00090	10555-01	2025-05-06	2 years

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:	21 to 23 °C
Relative Humidity:	41 to 50 %
ATM Pressure:	101.2 kPa

The testing was performed by Justine Alagon and Arturo Reyes from 2026-08-26 to 2026-09-18 in 5m chamber 3.

7.8 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15.209, 15.247 and ISEDC RSS-247 standards’ radiated emissions limits, and had the worst margin of:

Worst Case – Mode: Transmitting			
Margin (dB)	Frequency (MHz)	Polarization (Horizontal/Vertical)	Configuration
-4.94	17358.51	Vertical	BLE, 1M High Channel

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

7.9 Radiated Emissions Test Results

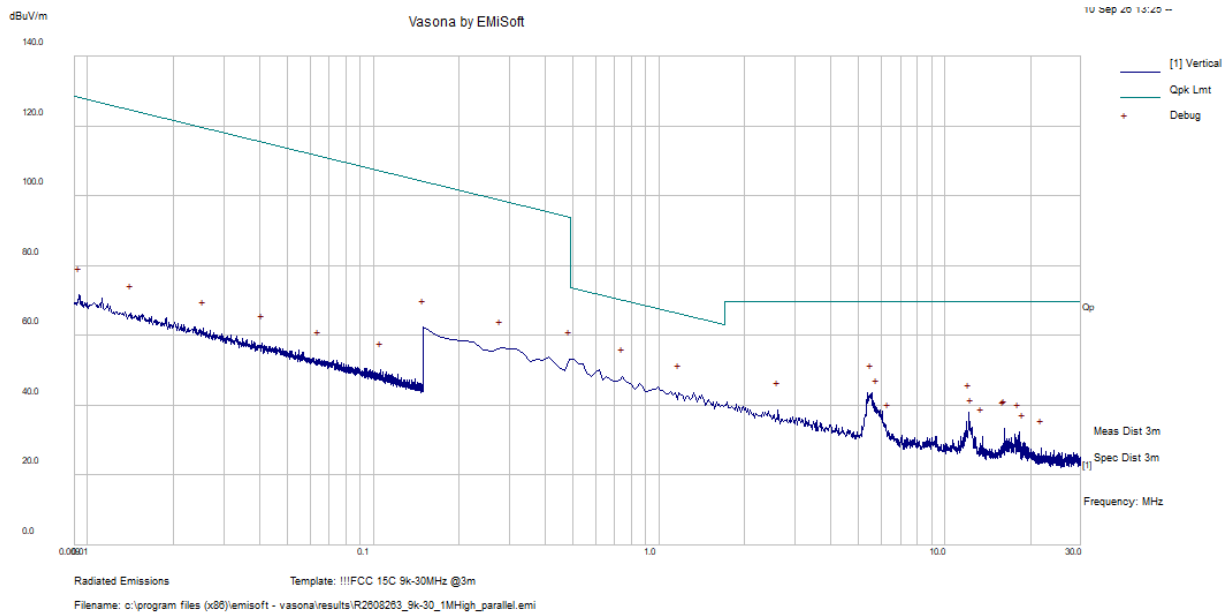
Note 1: Pre-scan was performed in order to determine worst-case orientation of device with respect to measurement antenna in the X/Y/Z axis. Plots/data shown represent measurements made in worst-case orientation.

Note 2: The worst case configuration (with respect to power) was chosen to show compliance for below 1GHz.

Note 3: Please refer to Annex E for band edge measurements.

1) 9 kHz – 30 MHz, Measured at 3 meters

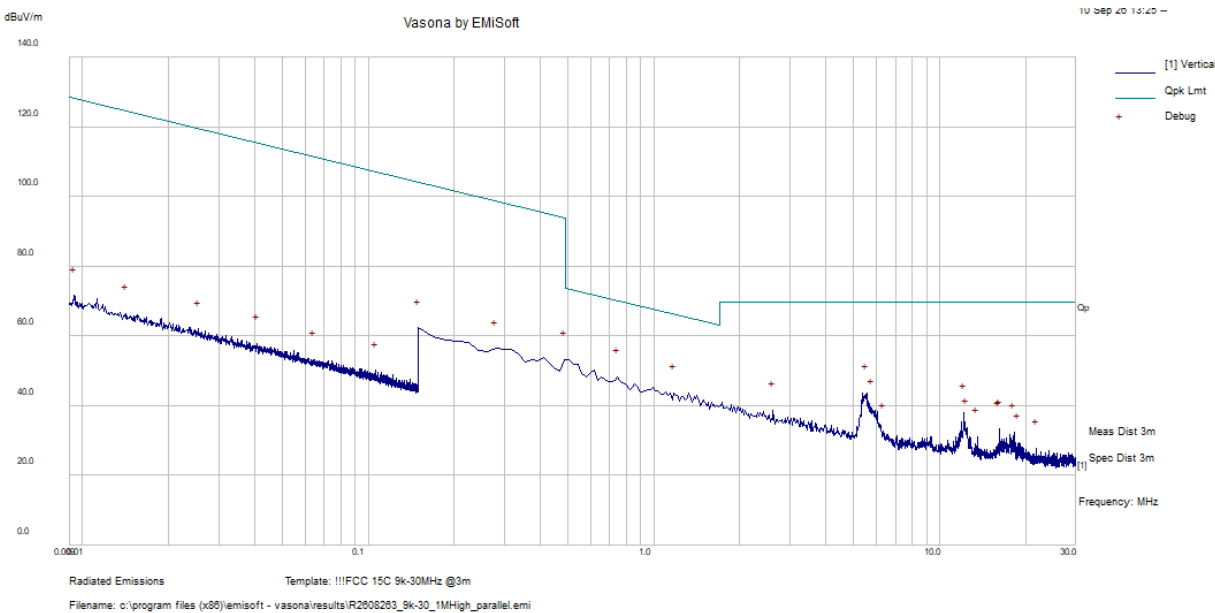
BLE, 1M High Channel, 2480 MHz, Parallel



Frequency (MHz)	S.A. Reading (dBμV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Polarity	Limit (dBμV/m)	Margin (dB)	Detector
0.747	38.17	10.06	48.23	Parallel	70.14	-21.91	Peak
1.176094	33.67	10.06	43.73	Parallel	66.2	-22.47	Peak
5.560313	33.27	10.34	43.6	Parallel	69.54	-25.94	Peak
5.802844	28.94	10.39	39.33	Parallel	69.54	-30.21	Peak
2.612625	28.41	10.34	38.75	Parallel	69.54	-30.79	Peak
12.20194	27.4	10.52	37.92	Parallel	69.54	-31.62	Peak

Note: Peak detector was compared against a Quasi-Peak limit to show compliance below 30MHz.

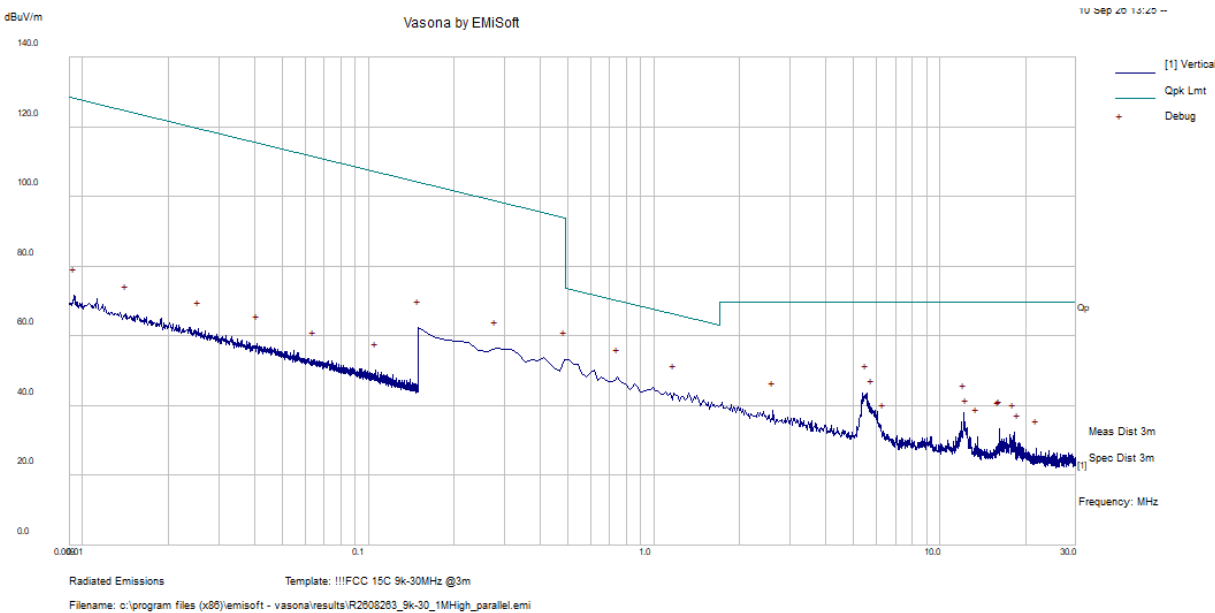
BLE, 1M High Channel, 2480 MHz, Perpendicular



Freque ncy (MHz)	S.A. Reading (dBμV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Polarity	Limit (dBμV/m)	Margin (dB)	Detector
1.698469	32.3	10.21	42.52	Perpendicular	63	-20.49	Peak
0.728344	36.63	10.07	46.7	Perpendicular	70.36	-23.66	Peak
5.728219	29.94	10.38	40.31	Perpendicular	69.54	-29.23	Peak
2.332781	28.24	10.31	38.56	Perpendicular	69.54	-30.98	Peak
6.138656	24.46	10.41	34.87	Perpendicular	69.54	-34.67	Peak
16.23169	22.17	10.4	32.57	Perpendicular	69.54	-36.97	Peak

Note: Peak detector was compared against a Quasi-Peak limit to show compliance below 30MHz.

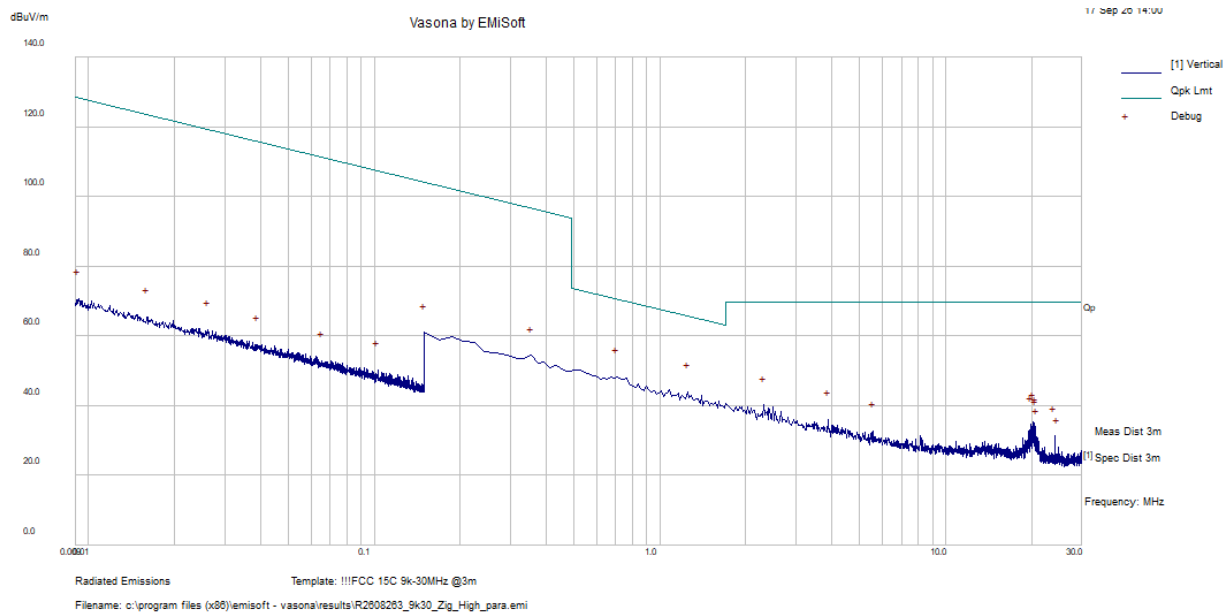
BLE, 1M High Channel, 2480 MHz, Ground Parallel



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBuV/m)	Antenna Polarity	Limit (dBuV/m)	Margin (dB)	Detector
1.362656	33.53	10.12	43.65	Ground Parallel	64.92	-21.26	Peak
0.541781	41.45	10.12	51.57	Ground Parallel	72.93	-21.36	Peak
0.840281	37.54	10.03	47.57	Ground Parallel	69.12	-21.54	Peak
5.429719	36.18	10.3	46.48	Ground Parallel	69.54	-23.06	Peak
5.97075	29.42	10.43	39.86	Ground Parallel	69.54	-29.68	Peak
13.35863	29.34	10.48	39.82	Ground Parallel	69.54	-29.72	Peak

Note: Peak detector was compared against a Quasi-Peak limit to show compliance below 30MHz.

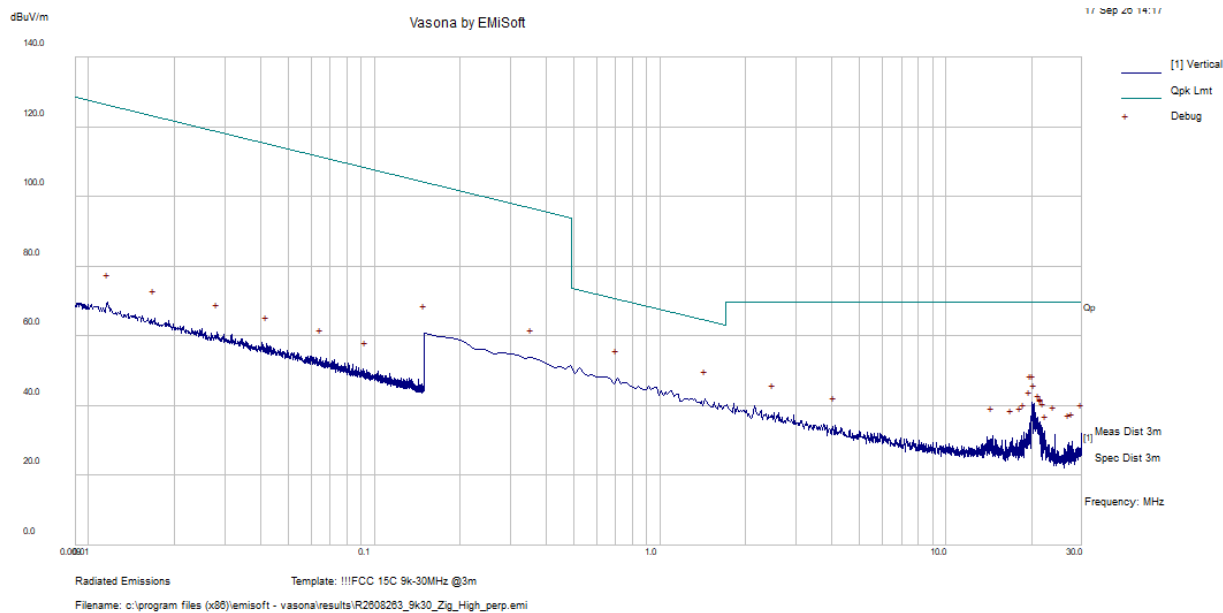
802.15.4, Zigbee High Channel, 2480 MHz, Parallel



Frequency (MHz)	S.A. Reading (dBμV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Polarity	Limit (dBμV/m)	Margin (dB)	Detector
1.250719	33.95	10.09	44.03	Parallel	65.66	-21.63	Peak
0.709688	38.19	10.08	48.27	Parallel	70.58	-22.32	Peak
2.314125	29.81	10.31	40.13	Parallel	69.54	-29.42	Peak
3.88125	25.7	10.33	36.03	Parallel	69.54	-33.51	Peak
20.33606	25.86	9.45	35.31	Parallel	69.54	-34.23	Peak
19.96294	24.9	9.58	34.49	Parallel	69.54	-35.05	Peak

Note: Peak detector was compared against a Quasi-Peak limit to show compliance below 30MHz.

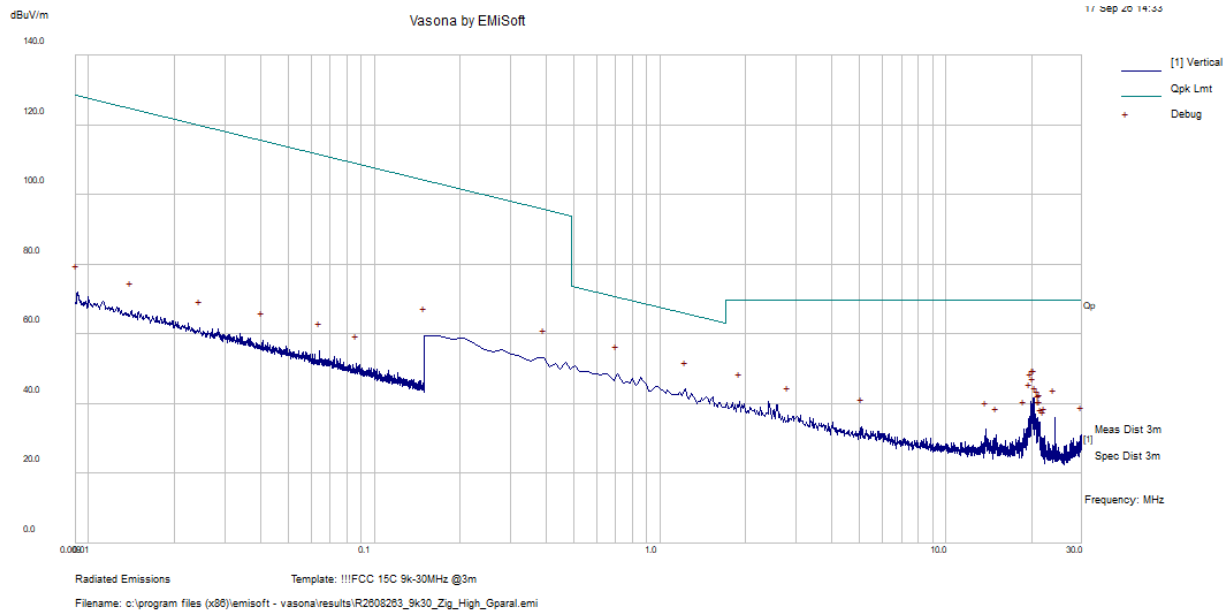
802.15.4, Zigbee High Channel, 2480 MHz, Perpendicular



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBuV/m)	Antenna Polarity	Limit (dBuV/m)	Margin (dB)	Detector
1.437281	31.88	10.15	42.03	Perpendicular	64.45	-22.43	Peak
0.709688	37.85	10.08	47.93	Perpendicular	70.58	-22.66	Peak
20.018906	31.22	9.57	40.79	Perpendicular	69.54	-28.75	Peak
20.373375	31.19	9.44	40.62	Perpendicular	69.54	-28.92	Peak
20.578594	28.67	9.36	38.02	Perpendicular	69.54	-31.52	Peak
2.500688	27.62	10.33	37.95	Perpendicular	69.54	-31.59	Peak

Note: Peak detector was compared against a Quasi-Peak limit to show compliance below 30MHz.

802.15.4, Zigbee High Channel, 2480 MHz, Ground Parallel

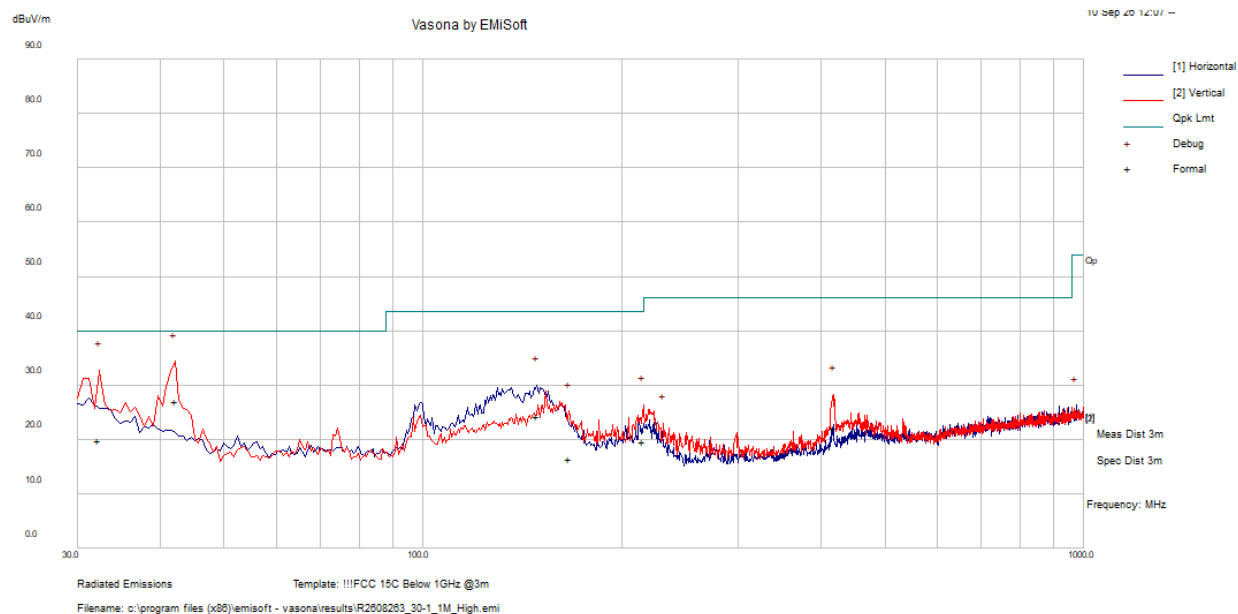


Frequency (MHz)	S.A. Reading (dBμV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Polarity	Limit (dBμV/m)	Margin (dB)	Detector
1.232063	34.06	10.08	44.14	Ground Parallel	65.79	-21.65	Peak
0.709688	38.58	10.08	48.66	Ground Parallel	70.58	-21.92	Peak
20.503969	32.34	9.39	41.73	Ground Parallel	69.54	-27.81	Peak
20.317406	32.09	9.46	41.54	Ground Parallel	69.54	-28	Peak
19.962938	31.17	9.58	40.75	Ground Parallel	69.54	-28.79	Peak
1.903688	30.35	10.27	40.62	Ground Parallel	69.54	-28.92	Peak

Note: Peak detector was compared against a Quasi-Peak limit to show compliance below 30MHz.

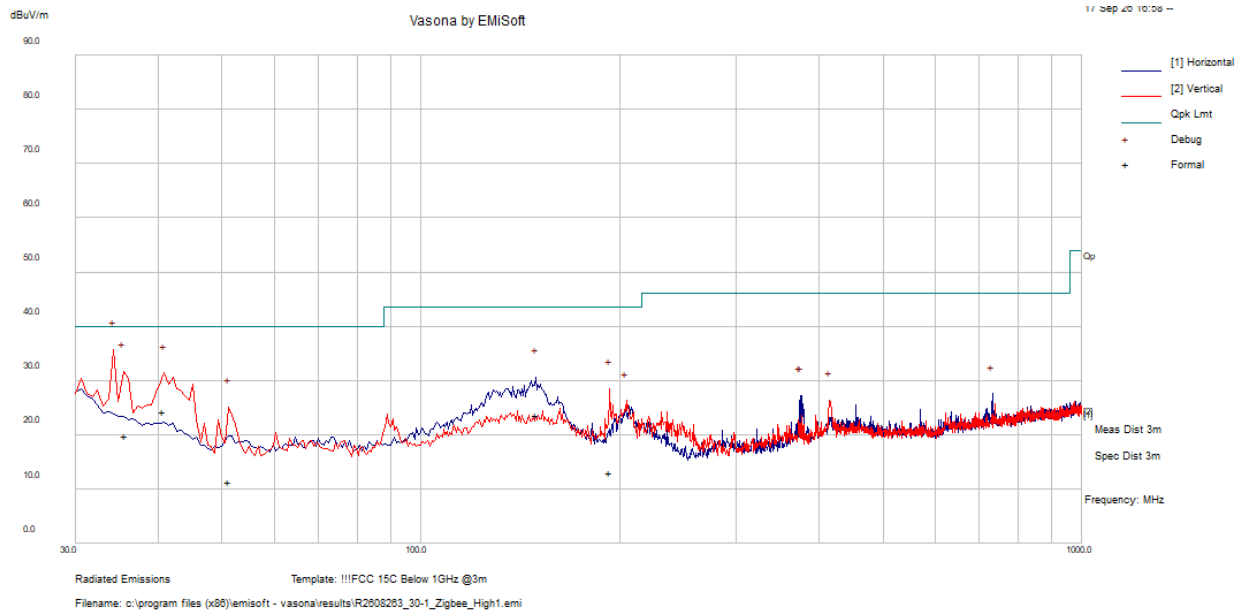
2) 30 MHz – 1 GHz, Measured at 3 meters

BLE, 1M High Channel, 2480 MHz



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBμV/m)	Margin (dB)	Detector
42.30281	47.51	-20.53	26.98	128	V	304	40	-13.02	QP
32.2475	32.63	-12.82	19.81	270	V	327	40	-20.2	QP
148.6141	44.36	-20.09	24.27	199	H	311	43.5	-19.24	QP
215.3338	42.09	-22.49	19.59	121	V	182	43.5	-23.91	QP
418.3753	39.23	-17.17	22.07	101	V	286	46	-23.93	QP
166.3878	37.33	-20.87	16.46	141	V	146	43.5	-27.04	QP

802.15.2, Zigbee High Channel, 2480 MHz



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBuV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBuV/m)	Margin (dB)	Detector
34.004063	32.71	-14.13	18.57	164	V	0	40	-21.43	QP
35.648125	35.3	-15.45	19.85	114	V	158	40	-20.15	QP
40.699688	43.65	-19.3	24.36	129	V	92	40	-15.64	QP
149.55375	43.77	-20.19	23.59	178	H	56	43.5	-19.91	QP
51.111563	36.35	-24.96	11.39	285	V	248	40	-28.61	QP
192.88594	33.98	-20.98	13	300	V	185	43.5	-30.5	QP

FCC/IC Limits for 1 GHz to 26.5 GHz			
Applicability	(dBm)	(uV/m at 3meters)	(dBuV/m at 3meters)
Restricted Band Average Limit	-	500	54 ²
Restricted Band Peak Limit ¹	-	-	74

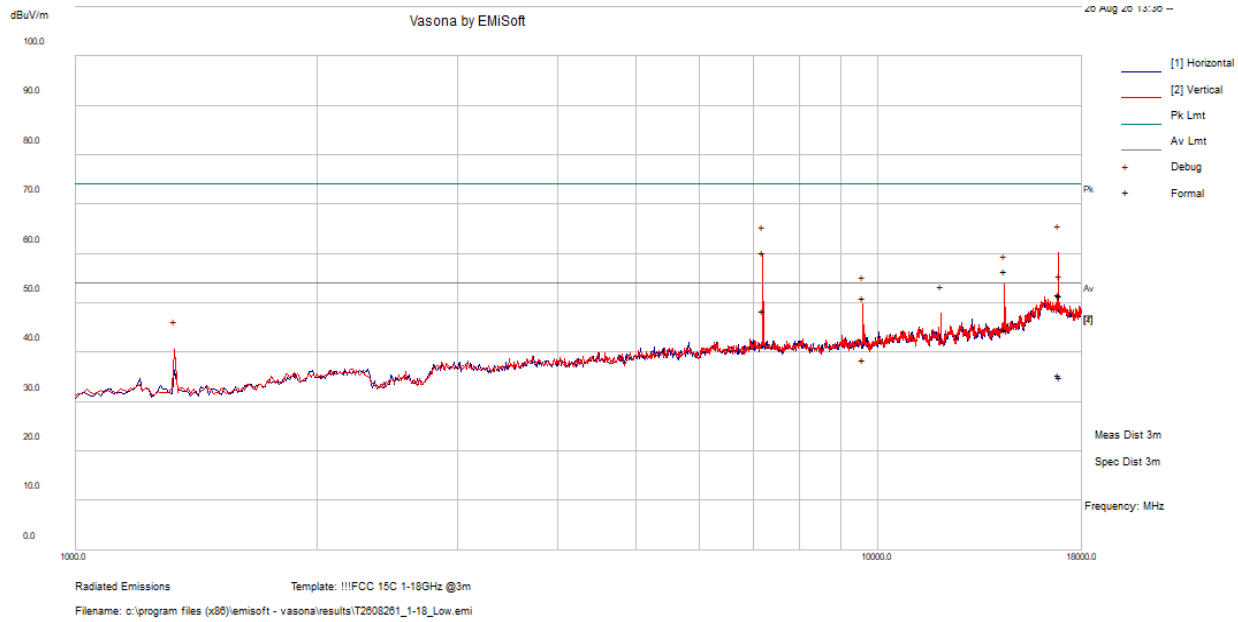
Note 1: Restricted Band Peak Limit is defined to be 20dB higher than Average Limit.

Note 2: Above 1GHz limit calculation:

$$\text{dBuV/m} = 20 \cdot \log(\text{V/m}) + 120 = 20 \cdot \log((500 \text{ [uV/m]}/1000000)) + 120 = 54 \text{ [dBuV/m]}$$

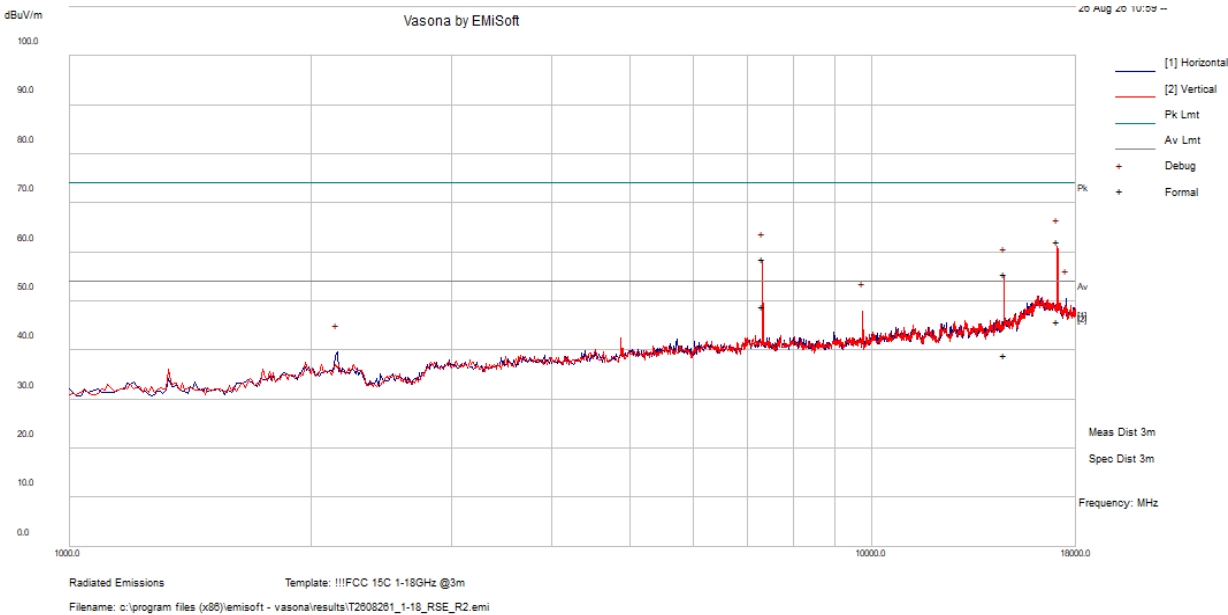
3) 1 GHz – 18 GHz, Measured at 3 meter

BLE, 1M Low Channel, 2402 MHz

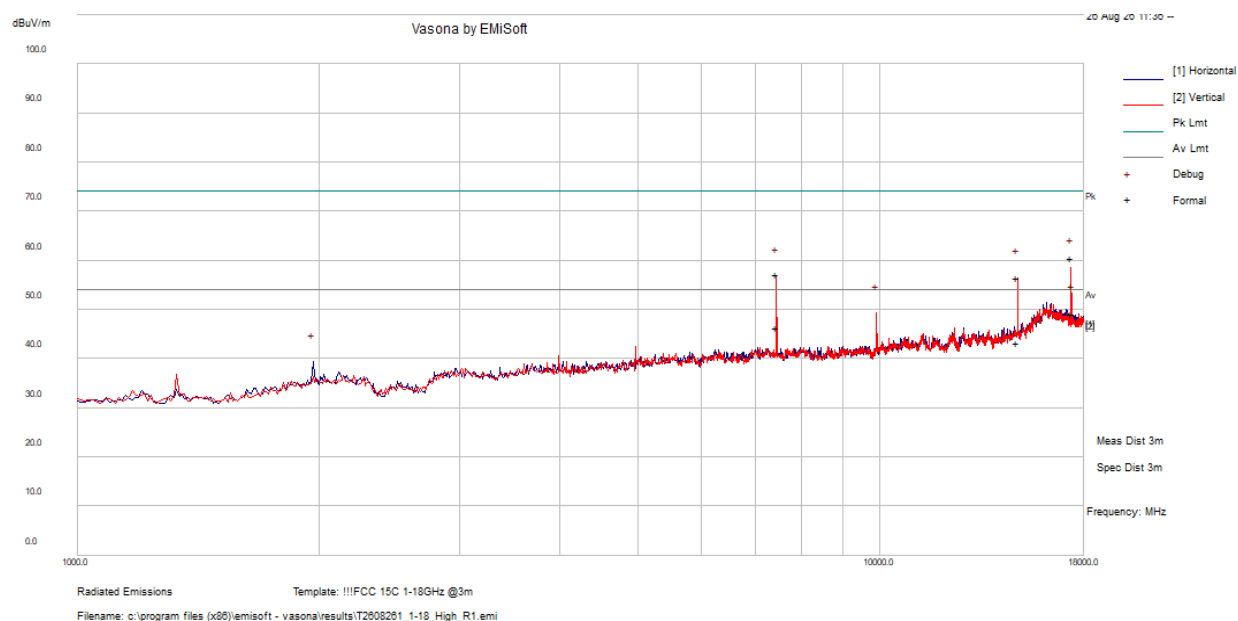


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBuV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBuV/m)	Margin (dB)	Detector
16822.17	36.43	15.24	51.68	190	V	233	74	-22.33	Peak
7206.043	58.23	1.97	60.2	294	V	136	74	-13.8	Peak
14410.6	46.39	10.17	56.56	300	V	201	74	-17.45	Peak
16907.57	36.65	14.86	51.5	101	V	173	74	-22.5	Peak
9606.898	46.06	4.95	51.02	250	V	188	74	-22.99	Peak
16822.17	20.14	15.24	35.39	190	V	233	54	-18.61	Average
7206.043	46.57	1.97	48.54	294	V	136	54	-5.46	Average
14410.6	34.44	10.17	44.61	300	V	201	54	-9.39	Average
16907.57	20.11	14.86	34.96	101	V	173	54	-19.04	Average
9606.898	33.61	4.95	38.56	250	V	188	54	-15.44	Average

BLE, 1M Mid Channel, 2440 MHz

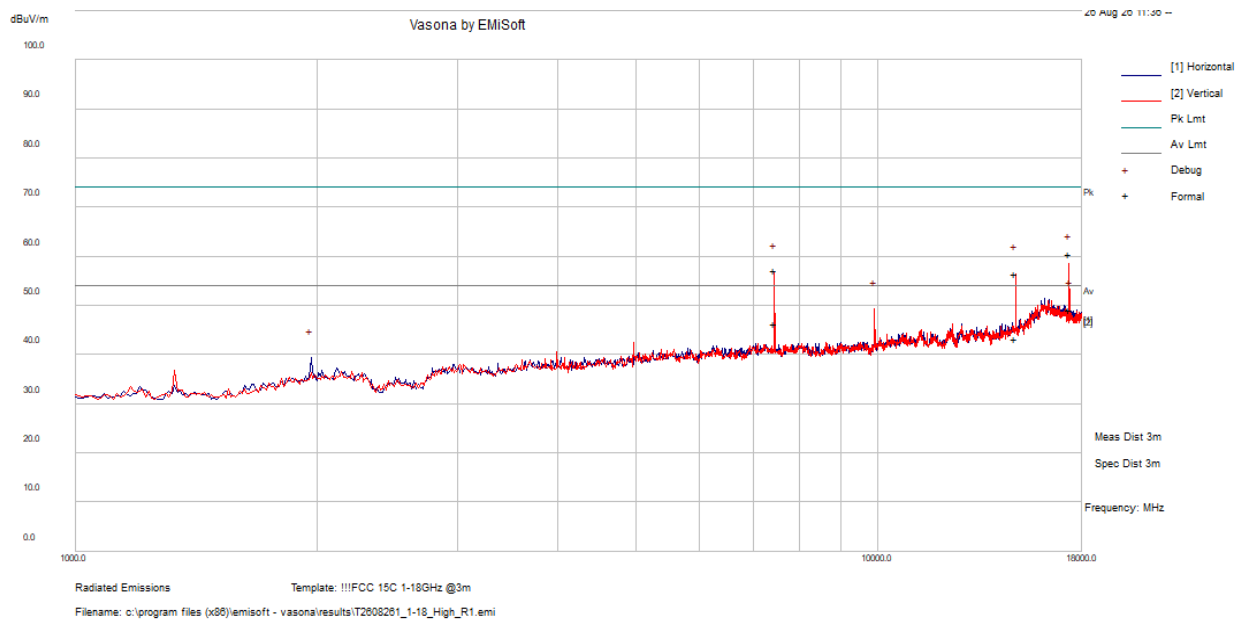


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
17080.03	47.23	14.87	62.1	289	V	337	74	-11.9	Peak
7319.39	55.82	2.71	58.53	277	V	63	74	-15.47	Peak
14640.09	44.69	10.82	55.5	271	V	6	74	-18.5	Peak
17080.03	31.05	14.87	45.93	289	V	337	54	-8.07	Average
7319.39	46.19	2.71	48.9	277	V	63	54	-5.1	Average
14640.09	28.24	10.82	39.06	271	V	6	54	-14.94	Average

BLE, 1M High Channel, 2480 MHz

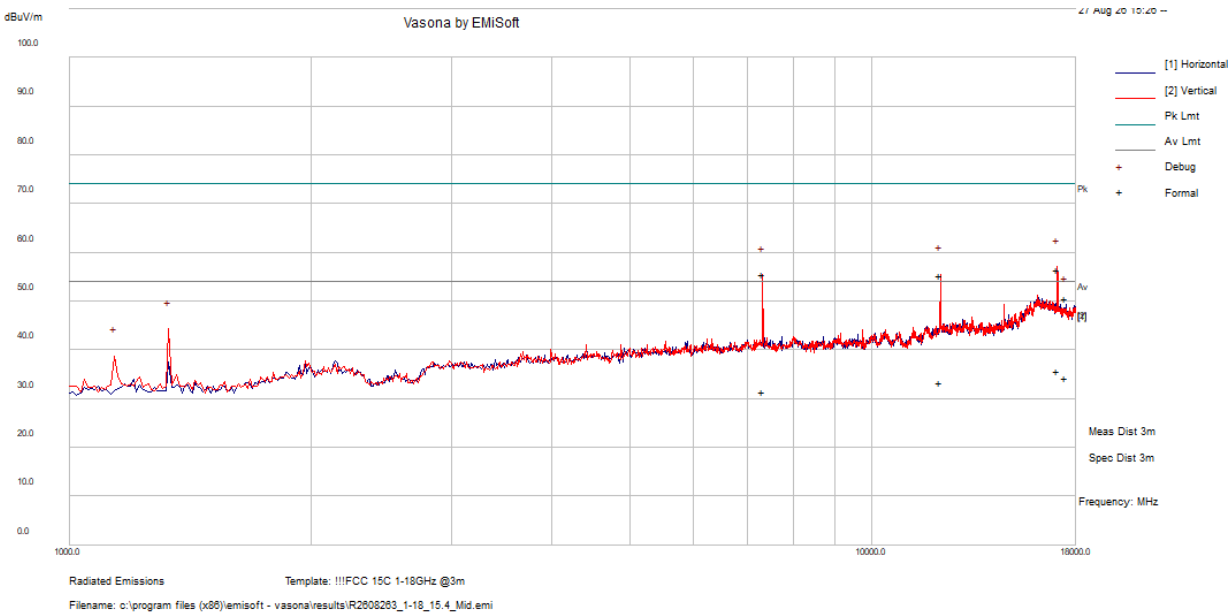
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBμV/m)	Margin (dB)	Detector
17358.51	46.68	13.89	60.57	285	V	218	74	-13.43	Peak
7440.28	54.68	2.61	57.3	300	V	318	74	-16.7	Peak
14878.24	45.21	11.27	56.48	266	V	29	74	-17.52	Peak
17358.51	35.17	13.89	49.06	285	V	218	54	-4.94	Average
7440.28	43.64	2.61	46.25	300	V	318	54	-7.75	Average
14878.24	32.08	11.27	43.36	266	V	29	54	-10.64	Average

802.15.4 Zigbee Low Channel, 2405 MHz

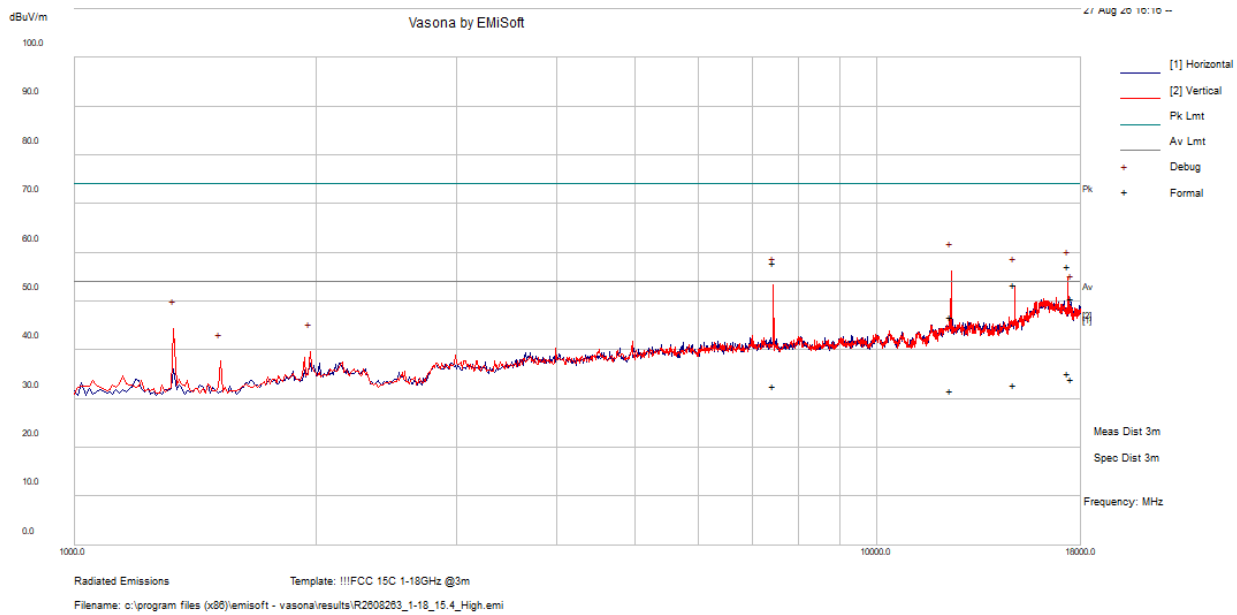


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBμV/m)	Margin (dB)	Detector
16831.96	43.67	15.2	58.87	298	V	93	74	-15.13	Peak
7213.745	54.97	2.02	56.99	257	V	139	74	-17.01	Peak
12019.21	36.43	9.11	45.54	230	V	360	74	-28.46	Peak
14430.13	41.77	10.17	51.94	293	V	152	74	-22.06	Peak
17095.35	36.82	14.79	51.62	118	V	185	74	-22.38	Peak
16831.96	21.67	15.2	36.87	298	V	93	54	-17.14	Average
7213.745	30.17	2.02	32.19	257	V	139	54	-21.81	Average
12019.21	21.24	9.11	30.35	230	V	360	54	-23.66	Average
14430.13	21	10.17	31.17	293	V	152	54	-22.83	Average
17095.35	19.87	14.79	34.66	118	V	185	54	-19.34	Average

802.15.4 Zigbee Mid Channel, 2440 MHz



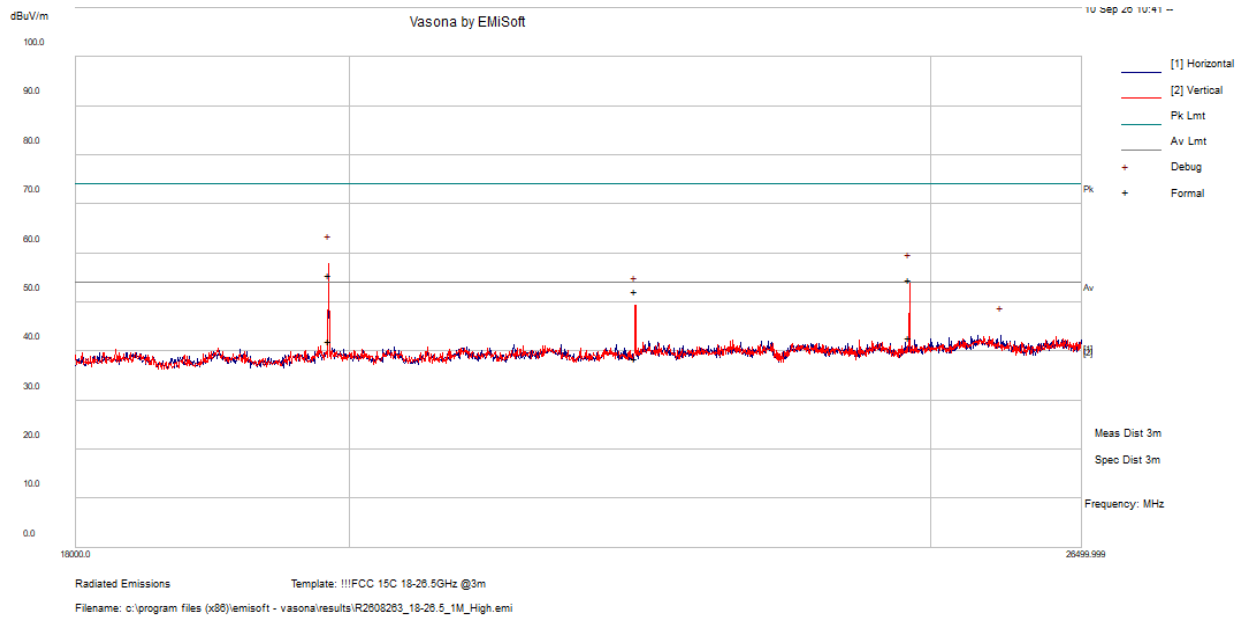
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBuV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBuV/m)	Margin (dB)	Detector
17076.99	41.66	14.9	56.56	289	V	75	74	-17.44	Peak
12197.85	46.24	9.16	55.4	297	V	108	74	-18.6	Peak
7321.775	52.76	2.72	55.48	271	V	141	74	-18.52	Peak
17490.55	36.63	13.89	50.52	178	H	103	74	-23.48	Peak
17076.99	20.9	14.9	35.79	289	V	75	54	-18.21	Average
12197.85	24.13	9.16	33.29	297	V	108	54	-20.71	Average
7321.775	28.68	2.72	31.4	271	V	141	54	-22.6	Average
17490.55	20.34	13.89	34.24	178	H	103	54	-19.76	Average

802.15.4 Zigbee High Channel, 2480 MHz

Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBuV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBuV/m)	Margin (dB)	Detector
12402.45	36.81	10.05	46.86	245	V	150	74	-27.14	Peak
17363.61	43.38	13.91	57.29	229	V	199	74	-16.71	Peak
7438.75	55.36	2.62	57.99	100	V	215	74	-16.01	Peak
14877.59	42.04	11.27	53.31	194	V	222	74	-20.69	Peak
17532.1	37.04	13.64	50.68	230	H	262	74	-23.32	Peak
12402.45	21.67	10.05	31.71	245	V	150	54	-22.29	Average
17363.61	21.25	13.91	35.16	229	V	199	54	-18.84	Average
7438.75	29.98	2.62	32.6	100	V	215	54	-21.4	Average
14877.59	21.63	11.27	32.91	194	V	222	54	-21.09	Average
17532.1	20.32	13.64	33.96	230	H	262	54	-20.04	Average

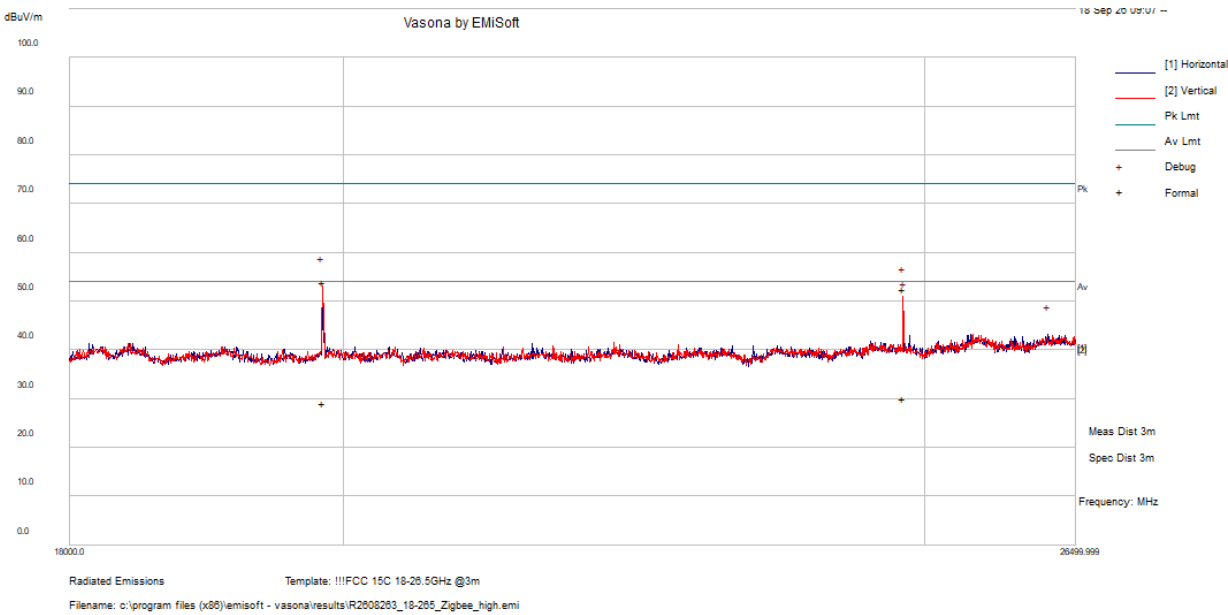
4) 18 GHz – 26.5 GHz, Measured at 3 meter

BLE, 1M High Channel, 2480 MHz



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBuV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBuV/m)	Margin (dB)	Detector
19842.15	61.15	-5.7	55.45	300	V	130	74	-18.55	Peak
24798.16	55.59	-0.99	54.6	100	V	116	74	-19.4	Peak
22322.55	55.37	-3.25	52.12	105	V	100	74	-21.89	Peak
19842.15	47.7	-5.7	42	300	V	130	54	-12	Average
24798.16	43.85	-0.99	42.86	100	V	116	54	-11.14	Average
22322.55	41.69	-3.25	38.44	105	V	100	54	-15.56	Average

802.15.4, Zigbee High Channel, 2480 MHz



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBuV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntabl e Azimuth (degrees)	Limit (dBuV/m)	Margin (dB)	Detector
19840.065	59.42	-5.58	53.85	300	V	140	74	-20.16	Peak
24795.41	53.23	-0.73	52.5	181	V	120	74	-21.5	Peak
19840.065	34.56	-5.58	28.99	300	V	140	54	-25.01	Average
24795.41	30.73	-0.73	30	181	V	120	54	-24	Average

8 FCC §15.247(a) (2) & ISEDC RSS-247 §6.3.1.a, RSS-Gen §5.1 – Emission Bandwidth

8.1 Applicable Standards

According to FCC §15.247(a) (2) and ISEDC RSS-247 §6.3.1.a: the minimum 6 dB bandwidth shall be 500 kHz.

8.2 Measurement Procedure

The measurements are based on FCC KDB 558074 D01 DTS Meas Guidance v05r02: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 8: DTS bandwidth.

As per ANSI C63.10 Clause 6.9.3: Occupied bandwidth—power bandwidth (99%) measurement procedure

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring 99% power bandwidth:

- a. The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b. The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- c. Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW}/\text{RBW})]$ below the reference level. Specific guidance is given in 4.1.5.2.
- d. Step a) through step c) might require iteration to adjust within the specified range.
- e. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f. Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g. If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power 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; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h. The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

As per ANSI C63.10 Clause 11.8: DTS bandwidth

One of the following procedures may be used to determine the modulated DTS bandwidth.

Option 1:

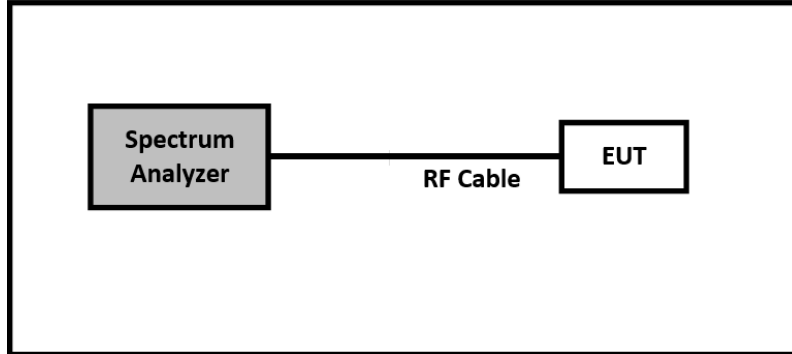
- a. Set RBW = 100 kHz.
- b. Set the VBW $\geq [3 \times \text{RBW}]$.
- c. Detector = peak.
- d. Trace mode = max hold.
- e. Sweep = auto couple.
- f. Allow the trace to stabilize.
- g. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Option 2:

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW $\geq 3 \times \text{RBW}$, and peak detector with maximum hold) is implemented by the instrumentation function.

When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

8.3 Test Setup Block Diagram



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	101203-uw	2026-08-27	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:	21 to 23 °C
Relative Humidity:	41 to 50 %
ATM Pressure:	101.2 kPa

The testing was performed by Justine Alagon on 2026-09-08 to 2026-09-18 at RF test site.

8.6 Test Results

2.4 GHz BLE

Channel	Frequency (MHz)	99% OBW (MHz)	6 dB OBW (MHz)	6 dB OBW Limit (kHz)	Result
1M					
Low	2402	1.044	0.684	≥ 500	Pass
Middle	2440	1.044	0.672	≥ 500	Pass
High	2480	1.048	0.688	≥ 500	Pass
2M					
Low	2402	2.058	0.75	≥ 500	Pass
Middle	2440	2.088	0.75	≥ 500	Pass
High	2478	2.094	0.708	≥ 500	Pass

802.15.4 Zigbee

Channel	Frequency (MHz)	99% OBW (MHz)	6 dB OBW (MHz)	6 dB OBW Limit (kHz)	Result
Low	2405	2.058	1.122	≥ 500	Pass
Middle	2440	2.172	1.440	≥ 500	Pass
High	2480	2.178	1.128	≥ 500	Pass

Please refer to Annex A for detailed Emissions Bandwidth test results.

9 FCC §15.247(b)(3) & ISEDC RSS-247 §6.3.2 – Maximum Output Power

9.1 Applicable Standards

According to FCC §15.247(b)(3): For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

According to RSS-247 §6.3.2: For DTS operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W.
For DTS operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W, except as provided in section 6.5 a) and b).
As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power.

9.2 Measurement Procedure

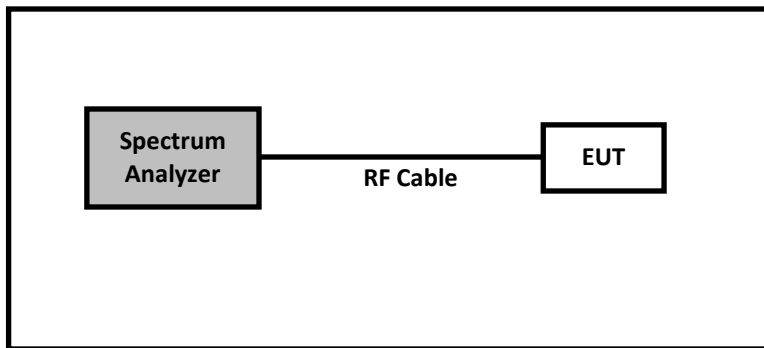
The measurements are based on ANSI C63.10-2020, Section 11.9.1.1

11.9.1.1 Maximum peak conducted output power $RBW \geq DTS$ bandwidth

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

- a) Set the $RBW \geq DTS$ bandwidth.
- b) Set $VBW \geq [3 \times RBW]$.
- c) Set $span \geq [3 \times RBW]$.
- d) Sweep time = No faster than coupled (auto) time.
- e) Detector = peak.
- f) Trace mode = max-hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

9.3 Test Setup Block Diagram



9.4 Test Equipment List and Details

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	101203-uw	2026-08-27	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”.

9.5 Test Environmental Conditions

Temperature:	21 to 23 °C
Relative Humidity:	41 to 50 %
ATM Pressure:	101.2 kPa

The testing was performed by Justine Alagon on 2026-09-08 to 2026-09-18 at RF test site.

9.6 Test Results

2.4 GHz BLE

Channel	Frequency (MHz)	Antenna Gain (dBi)	Conducted Output Power (dBm)	Conducted Output Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
1M							
Low	2402	3.00	2.82	< 30	5.82	< 36	Pass
Middle	2440	3.00	2.77	< 30	5.77	< 36	Pass
High	2480	3.00	2.92	< 30	5.92	< 36	Pass
2M							
Low	2402	3.00	2.55	< 30	5.55	< 36	Pass
Middle	2440	3.00	2.60	< 30	5.60	< 36	Pass
High	2478	3.00	2.78	< 30	5.78	< 36	Pass

802.15.4 Zigbee

Channel	Frequency (MHz)	Antenna Gain (dBi)	Conducted Output Power (dBm)	Conducted Output Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
1M							
Low	2405	3.00	2.84	< 30	5.84	< 36	Pass
Middle	2440	3.00	2.89	< 30	5.89	< 36	Pass
High	2480	3.00	3.08	< 30	6.08	< 36	Pass

Note 1: EIRP [dBm] = Conducted Output Power [dBm] + Antenna Gain [dBi].

Note 2: Conducted Output Power Limit [dBm] = $10 \cdot \log(\text{Power}[\text{mW}]/1\text{mW}) = 10 \cdot \log(1000\text{mW}/1\text{mW}) = 30 \text{ dBm}$

Note 3: EIRP Limit [dBm] = $10 \cdot \log(\text{Power}[\text{mW}]/1\text{mW}) = 10 \cdot \log(4000\text{mW}/1\text{mW}) = 36 \text{ dBm}$

Please refer to Annex B for detailed Maximum Output Power test results.

10 FCC §15.247(e) & ISEDC RSS-247 §6.3.1.b – Peak Power Spectral Density

10.1 Applicable Standards

According to ECFR §15.247(e) and RSS-247 §6.3.1.b: the transmitter power spectral density conducted from the transmitter to the antenna(s) shall not be greater than 8 dBm/3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 6.3.2 The power spectral density shall be determined using the same method as is used to determine the maximum conducted output power.

10.2 Measurement Procedure

The measurements are based on FCC KDB 558074 D01 DTS Meas Guidance v05r02: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 8.4: Maximum power spectral density level in the fundamental emission.

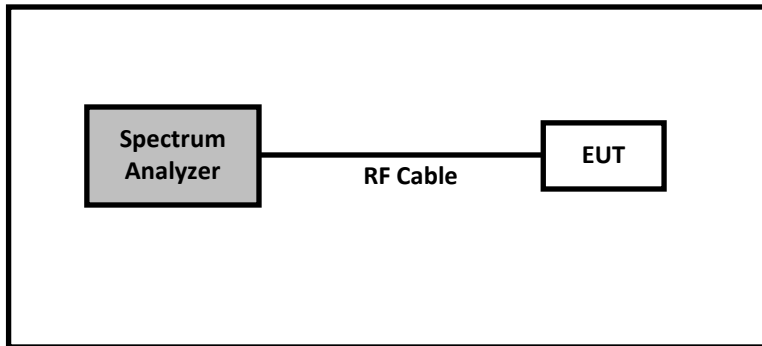
As per ANSI C63.10 Clause 11.10: Maximum power spectral density level in the fundamental emission

Some regulatory requirements specify a conducted PSD limit within the DTS bandwidth during any time interval of continuous transmission.⁸⁸ Such specifications require that the same method as used to determine the conducted output power shall be used to determine the power spectral density. If maximum peak conducted output power was measured, then the peak PSD procedure 11.10.2 (method PKPSD) shall be used. If maximum conducted output power was measured, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option):

Method PKPSD (peak PSD): The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

- a. Set analyzer center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d. Set the VBW $\geq [3 \times \text{RBW}]$.
- e. Detector = peak.
- f. Sweep time = auto couple.
- g. Trace mode = max hold.
- h. Allow trace to fully stabilize.
- i. Use the peak marker function to determine the maximum amplitude level within the RBW.
- j. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

10.3 Test Setup Block Diagram



10.4 Test Equipment List and Details

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	101203-uw	2026-08-27	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”.

10.5 Test Environmental Conditions

Temperature:	21 to 23 °C
Relative Humidity:	41 to 50 %
ATM Pressure:	101.2 kPa

The testing was performed by Justine Alagon on 2026-09-08 to 2026-09-18 at RF test site.

10.6 Test Results

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1M				
Low	2402	-12.50	< 8	Pass
Middle	2440	-12.58	< 8	Pass
High	2480	-12.43	< 8	Pass
2M				
Low	2402	-15.23	< 8	Pass
Middle	2440	-15.26	< 8	Pass
High	2478	-14.91	< 8	Pass

805.15.4 Zigbee

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	2405	-9.85	< 8	Pass
Middle	2440	-10.42	< 8	Pass
High	2480	-9.45	< 8	Pass

Please refer to Annex C for detailed Peak Power Spectral Density test results.

11 FCC §15.247(d) & ISEDC RSS-247 §6.6 – 100 kHz Spurious Emissions and Band Edges at Antenna Terminal (dBc)

11.1 Applicable Standards

According to FCC §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emissions limits specified in §15.209(a) see §15.205(c).

According to ISEDC RSS-247 §6.6. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum device, digitally modulated device, or hybrid system is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power – based on either an RF conducted or a radiated measurement – provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 6.3.2, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

11.2 Measurement Procedure

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation

RBW = 100 kHz

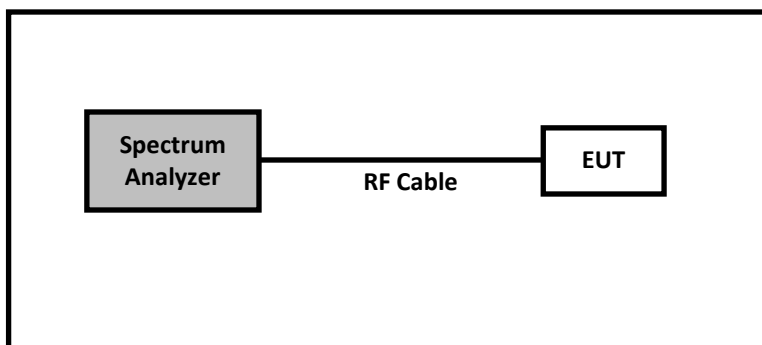
VBW = 300 kHz

Sweep = coupled

Detector function = peak

Trace = max hold

11.3 Test Setup Block Diagram



11.4 Test Equipment List and Details

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	101203-uw	2026-08-27	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”.

11.5 Test Environmental Conditions

Temperature:	21 to 23 °C
Relative Humidity:	41 to 50 %
ATM Pressure:	101.2 kPa

The testing was performed by Justine Alagon on 2026-09-08 to 2026-09-18 at RF test site.

11.6 Test Results

Test Result: Pass

Please refer to Annex D for detailed 100 kHz Spurious Emissions at Antenna Terminal (dBc) test results.

12 Annex A – Emission Bandwidth

Please refer to the attachment.

13 Annex B – Maximum Output Power

Please refer to the attachment.

14 Annex C – Peak Power Spectral Density

Please refer to the attachment.

15 Annex D – 100 kHz Spurious Emissions at Antenna Terminal (dBc)

Please refer to the attachment.

16 Annex E – FCC §15.209 Band Edges Measurement

Please refer to the attachment.

17 Appendix A (Normative) – EUT Test Setup Photographs

Please refer to the attachment.

18 Appendix B (Normative) – EUT Photographs

Please refer to the attachment

19 Appendix C (Normative) – A2LA Electrical Testing Certificate



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

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

--- END OF REPORT ---