FCC PART 15.407
ISEDC RSS-248, ISSUE 2, DECEMBER 2022

TEST REPORT

For

Airvine Scientific, Inc.

1500 Wyatt Drive, Suite #9
Santa Clara, CA 95054, USA

FCC ID: 2BAAIWC-1000RH-US00
IC: 30790-1000RHUS

Report Type:	**Product Type:**
Original Report	Airvine WaveCore Indoor Wireless Bridge

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Report Number:	R2406141-407
Report Date:	2024-10-04
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ACCREDITED
CERTIFICATE #3297.02

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R2406141-407	Original Report	2024-10-04

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test report is prepared on behalf of *Airvine Scientific, Inc.*, and their product model: 1000RH-US, FCC ID: 2BAAIWC-1000RH-US00, IC: 30790-1000RHUS, the "EUT" as referred to in this report. The EUT is an Airvine WaveCore Indoor Wireless Bridge. The EUT has 2.4 GHz and 6 GHz Wi-Fi capabilities.

1.2 Mechanical Description of EUT

The UUT measures approximately 24.5 cm (L) x 6.5 cm (W) x 24.5 cm (H) and weighs approximately 1.95 kg.

The data gathered was from a production sample provided by Airvine Scientific, Inc. with S/N: 120-00020-01

1.3 Objective

This report is prepared on behalf of *Airvine Scientific, Inc.* in accordance with FCC CFR47 §15.407 and ISEDC RSS-248 Issue 2, December 2022.

The objective is to determine compliance with FCC Part 15.407 and ISEDC RSS-248 for RF Exposure, Antenna Requirement, AC Line Conducted Emissions, Radiated Spurious Emissions, Band Edges, Emission Masks, Emission Bandwidth, Maximum EIRP, Power Spectral Density EIRP, Frequency Stability, Automated Frequency Coordination (AFC), and Contention Based Protocol.

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)

FCC Part 15, Subpart C, Equipment Class: DTS with FCC ID: 2BAAIWC-1000RH-US00, IC: 30790-1000RHUS

1.5 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.10-2013, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz, FCC KDB 987594 D02 U-NII 6 GHz EMC Measurement v02r01 and FCC KDB 789033 D02 General UNII Test Procedure New Rules v02r01.

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 º 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-1, 3062A-2, and 3062A-3.

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-0027.

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 17025:2005 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 17025:2005 Scope of Accreditation includes a comprehensive suite of EMC Emissions, EMC Immunity, Radio, RF Exposure, Safety and wireline Telecommunications test methods applicable to a wide range of product categories. These product categories include Central Office Telecommunications Equipment [including NEBS - Network Equipment Building Systems], Unlicensed and Licensed Wireless and RF devices, Information Technology Equipment (ITE); Telecommunications Terminal Equipment (TTE); Medical Electrical Equipment; Industrial, Scientific and Medical Test Equipment; Professional Audio and Video Equipment; Industrial and Scientific Instruments and Laboratory Apparatus; Cable Distribution Systems, and Energy Efficient Lighting.

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 (Industry 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 Technical Standards (BETS) in the Category I Equipment Standards List.
- For Singapore (Info-Communications Development Authority (IDA)):
    1 All Line Terminal Equipment: All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2011, Annex 2
    2. All Radio-Communication Equipment: All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2011, Annex 2
- For the Hong Kong Special Administrative Region:
    1 All Radio Equipment, per KHCA 10XX-series Specifications;
    2 All GMDSS Marine Radio Equipment, per HKCA 12XX-series Specifications;
    3 All Fixed Network Equipment, per HKCA 20XX-series Specifications.
- 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 Electronics and Office Equipment:
- for Telephony (ver. 3.0)
- for Audio/Video (ver. 3.0)
- for Battery Charging Systems (ver. 1.1)
- for Set-top Boxes & Cable Boxes (ver. 4.1)
- for Televisions (ver. 6.1)
- for Computers (ver. 6.0)
- for Displays (ver. 6.0)
- for Imaging Equipment (ver. 2.0)
- for Computer Servers (ver. 2.0)

2 Commercial Food Service Equipment
- for Commercial Dishwashers (ver. 2.0)
- for Commercial Ice Machines (ver. 2.0)
- for Commercial Ovens (ver. 2.1)
- for Commercial Refrigerators and Freezers

3 Lighting Products
- For Decorative Light Strings (ver. 1.5)
- For Luminaires (including sub-components) and Lamps (ver. 1.2)
- For Compact Fluorescent Lamps (CFLs) (ver. 4.3)
- For Integral LED Lamps (ver. 1.4)

4 Heating, Ventilation, and AC Products
- for Residential Ceiling Fans (ver. 3.0)
- for Residential Ventilating Fans (ver. 3.2)

5 Other
- For Water Coolers (ver. 3.0)

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:*

- Australia: ACMA (Australian Communication and Media Authority) – APEC Tel MRA -Phase I;
- Canada: (Innovation, Science and Economic development Canada - ISEDC) Foreign Certification Body – FCB – APEC Tel MRA -Phase I & Phase II;
- Chinese Taipei (Republic of China – Taiwan):
  - BSMI (Bureau of Standards, Metrology and Inspection) APEC Tel MRA -Phase I;
  - NCC (National Communications Commission) APEC Tel MRA -Phase I;
- European Union:
  - EMC Directive 2014/30/EU US-EU EMC & Telecom MRA CAB (NB)
  - Radio Equipment (RE) Directive 2014/53/EU US-EU EMC & Telecom MRA CAB (NB)
  - Low Voltage Directive (LVD) 2014/35/EU
- Hong Kong Special Administrative Region: (Office of the Telecommunications Authority – OFTA) APEC Tel MRA -Phase I & Phase II
- Israel – US-Israel MRA Phase I
- Republic of Korea (Ministry of Communications - Radio Research Laboratory) APEC Tel MRA -Phase I
- Singapore: (Infocomm Media Development Authority - IMDA) APEC Tel MRA -Phase I & Phase II;
- Japan: VCCI - Voluntary Control Council for Interference US-Japan Telecom Treaty VCCI Side Letter-
- USA:
  - ENERGY STAR Recognized Test Laboratory – US EPA
  - Telecommunications Certification Body (TCB) – US FCC;
  - Nationally Recognized Test Laboratory (NRTL) – US OSHA

Vietnam: APEC Tel MRA -Phase I;

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.10-2013, FCC KDB 987594 D02 U-NII 6 GHz EMC Measurement v02r01, and FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

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 "Windows Command Prompt". The software is compliant with the standard requirements being tested against.

Radio	Mode	Band	Channel	Frequency (MHz)	Power Setting
6GHz Wi-Fi	802.11be80	U-NII-5	7	5985	-2
			39	6145	-3
			87	6385	-3
		U-NII-6	103	6465	-3
		U-NII-6/-7	119	6545	-3
		U-NII-7	151	6705	-3
		U-NII-7/-8	183	6865	-3
		U-NII-8	199	6945	-2
			215	7025	-3
	802.11be160	U-NII-5	15	6025	1
			47	6185	0
			79	6345	0
		U-NII-6/-7	111	6505	0
		U-NII-7	143	6665	0
		U-NII-7/-8	175	6825	1
		U-NII-8	207	6985	1
	802.11be320	U-NII-5	31	6105	3
			63	6265	2
		U-NII-5/-6/-7	95	6425	2
		U-NII-6/-7	127	6585	2
		U-NII-7/-8	159	6745	2
			191	6905	3

Data rates used:
802.11be: MCS0_EHT

2.3 Duty Cycle Correction Factor

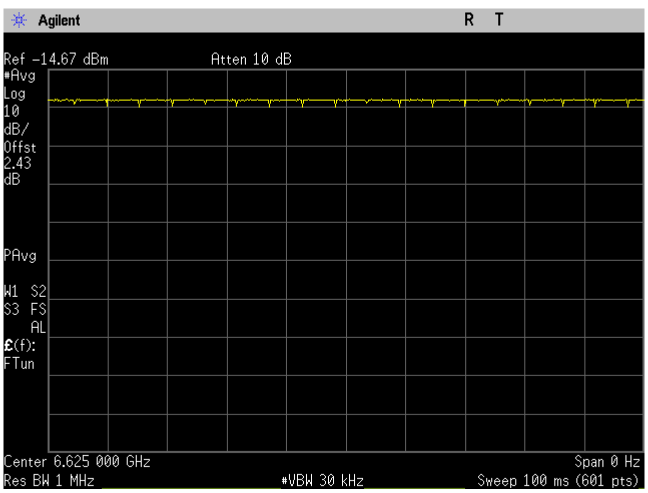
According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 section B:

All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.

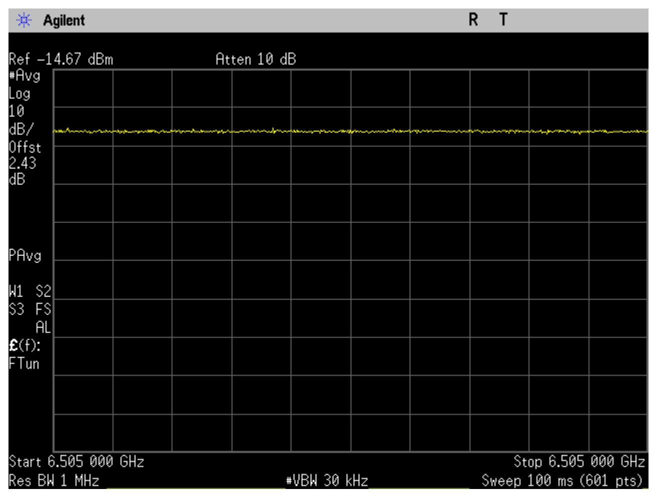
Radio Mode	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11be80	-	-	100	0
802.11be160	-	-	100	0
802.11be320	-	-	100	0

Note: Duty Cycle Correction Factor = 10*log(1/duty cycle)

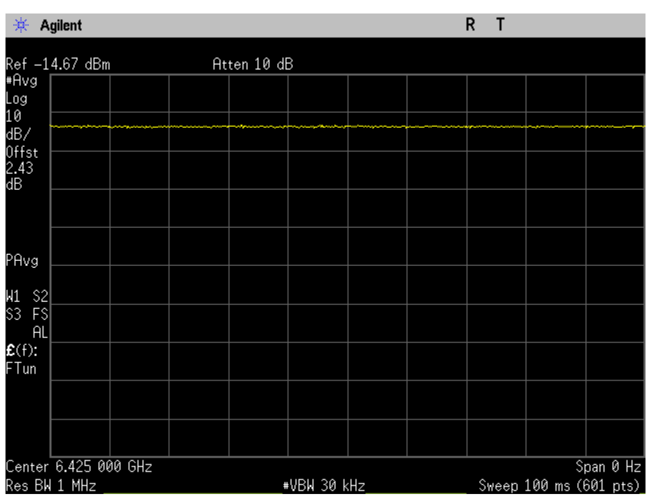
Please refer to the following plots for duty cycle.



802.11be80



802.11be160



802.11be320

2.4 Special Equipment

No special equipment were used during testing.

2.5 Equipment Modification

No modifications were made to the EUT during testing.

2.6 Local Support Equipment

None.

2.7 Remote Support Equipment

Manufacturer	Description	Model	Serial Number
Beelink	Mini PC	EQ	BN1004GF60611
Vilva	Portable Monitor	V156F1	V156F1A1A053240513723
Cherry	Keyboard	JK-85TKL	00000967-J33
Logitech	Mouse	MU0055	2314HS040RW8

2.8 Power Supply and Line Filters

Manufacturer	Description	Model	Serial Number
Mean Well	Power Adapter	GSM36B12	SC432K4355

2.9 Interface Ports and Cabling

Cable Description	Length (m)	From	To
Ethernet Cable	3	Mini PC	EUT
Power Cable	1	Power Adapter	EUT

3 Summary of Test Results

FCC & ISEDC Rules	Description of Test	Results
FCC §15.203 ISEDC RSS-Gen §6.8	Antenna Requirements	Compliant
FCC §2.1091, §15.407(f) ISEDC RSS-102	RF Exposure	Compliant
FCC §15.407(b), §15.207 ISEDC RSS-Gen §8.8	AC Power Line Conducted Emissions	Compliant
FCC §2.1053, §15.35(b), §15.205, §15.209, §15.407(b) ISEDC RSS-248 §4.6.2 ISEDC RSS-Gen §8.9, §8.10	Radiated Spurious Emissions	Compliant
FCC §2.1051, §15.407(b) (6,7,8,11), ISEDC RSS-248 §4.6.2	Spurious Emissions at Antenna Terminals (-27 dBm)	Compliant
FCC §2.1051, §15.407(b) (6,7,8,11), ISEDC RSS-248 §4.6.2	Emission Mask	Compliant
FCC §15.407(a)(11) ISEDC RSS-248 §4.4 RSS-Gen §6.7	Emission Bandwidth	Compliant
FCC §407(a)(5) ISEDC RSS-248 §4.5.2	Maximum EIRP	Compliant
FCC §15.407(a)(5) ISEDC RSS-248 §4.5.2	Power Spectral Density EIRP	Compliant
FCC §15.407(g)	Frequency Stability	Compliant
FCC §15.407(k) ISEDC RSS-248 §6	Automated Frequency Coordination (AFC)	N/A[1]
FCC §15.407(d)(6) RSS-248 §4.7	Contention-based Protocol	Compliant

Note[1]: The EUT is a 6ID device, thus does not require AFC testing.

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 §15.203 & ISEDC RSS-Gen §6.8 – 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.

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 isotropically 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.

4.2 Antenna Description

External/Internal/ Integral	Part Number	Antenna Type	Frequency Range (MHz)	Maximum Antenna Gain (dBi)
Internal	170-10010-001/2	4 Polarity, Directional, Panel Antenna	5925-7125	18.49

5 FCC §2.1091, FCC §15.407(f) & ISEDC RSS-102 – RF Exposure

5.1 Applicable Standards

As per FCC §15.407(f) 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. All equipment shall be considered to operate in a “general population/uncontrolled” environment. 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.

As per FCC §1.1310(d) (3), At operating frequencies above 6 GHz, the MPE limits listed in Table 1 in paragraph (e)(1) of this section shall be used in all cases to evaluate the environmental impact of human exposure to RF radiation as specified in §1.1307(b) of this part.

TABLE 1 TO §1.1310(E)(1)—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤ 6
3.0-30	1842/f	4.89/f	*(900/f^2)	< 6
30-300	61.4	0.163	1.0	< 6
300-1,500			f/300	< 6
1,500-100,000			5	< 6
(ii) 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
300-1,500			f/1500	< 30
1,500-100,000			1.0	< 30

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

According to ISEDC RSS-102 Issue 6 Section 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/ƒ0.5W (adjusted for tune-up tolerance), where ƒ 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 1.31×10−2f0.6834W (adjusted for tune-up tolerance), where ƒ 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 for FCC

Radio	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
2.4GHz Wi-Fi	2437	3.6	24.32	27.92	619.44	0.123	1.0
6 GHz Wi-Fi	6105	18.49	-	27.97	626.61	0.125	1.0

The device is compliant with the requirement MPE limit for uncontrolled exposure. The maximum power density at the distance of 20 cm is 0.116 mW/cm^2 for 2.4 GHz Wi-Fi and 0.125 for 6 GHz Wi-Fi. Limit is 1 mW/cm^2.

Worst Case Sum of Ratios:

2.4 GHz Wi-Fi + 6 GHz Wi-Fi = (0.123/1.0) + (0.125/1.0) = 0.248 < 1.0

For the different combination of transmitters, a separation distance of 20 cm complies with the SAR simultaneous transmission limit of ≤ 1.0.

5.4 IC Exemption

2.4 GHz Wi-Fi

The EIRP of this device is 27.92 dBm (619.44 mW) which is less than the exemption threshold, i.e., 1.31*10^(-2) * f^(0.6834) = 2.70 W. Therefore, the RF exposure evaluation is exempt.

6 GHz Wi-Fi

The EIRP of this device is 27.97 dBm (626.61 mW) which is less than the exemption threshold, i.e., 5 W. Therefore, the RF exposure evaluation is exempt.

Worst Case Sum of Ratios:

2.4 GHz Wi-Fi + 6 GHz Wi-Fi: (0.61944/2.7) + (0.62661/5) = 0.355 < 1.0

Therefore, RF exposure is not required.

6 FCC §15.407(b), §15.207 & ISEDC RSS-Gen §8.8 – AC Line Conducted Emissions

6.1 Applicable Standards

As per FCC §15.407(b)(9): Any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in § 15.207.

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 shield room, using the setup per ANSI C63.10-2013 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 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 and 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:

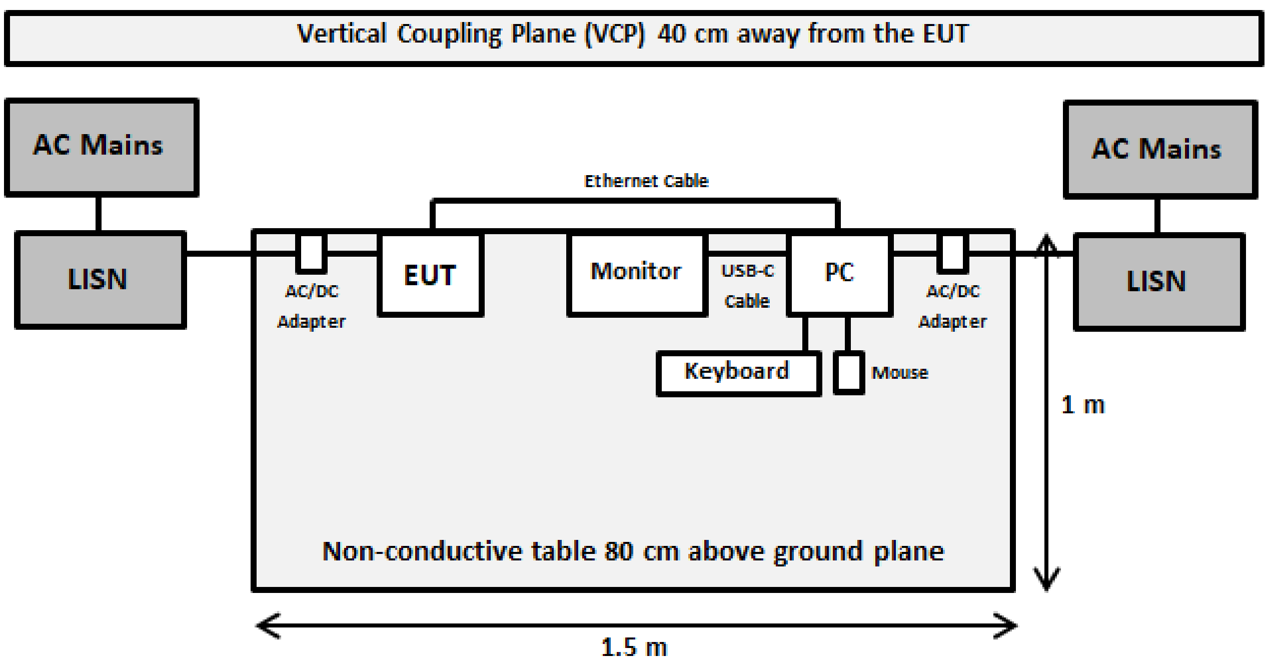
$$CA = Ai + CL + Atten$$

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:

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

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
00124	Rohde & Schwarz	Receiver, EMI Test	ESCI 1166.5950K03	100044	2024-06-19	1 year
00681	Rohde & Schwarz	Impulse Limiter	ESH3-Z2	101962	2024-03-22	6 months
00725	Solar Electronics Company	High Pass Filter	Type 7930-100	7930150203	2024-03-22	6 months
01425	Pasternack	Ground Plane RG58 Coaxial Cable	PE3441-500CM	NA	2024-07-12	6 months
00732	Fischer Custom Communications, Inc.	LISN	FCC-LISN-50-25-2-10-CISPR16	160129	2024-09-13	1 year
00734	Fischer Custom Communications, Inc.	LISN	FCC-LISN-50-25-2-10-CISPR16	160131	2024-03-05	1 year
00348	California Instruments	AC Power Source	5001ix-208	57079	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".*

6.7 Test Environmental Conditions

Temperature:	23 ºC
Relative Humidity:	52 %
ATM Pressure:	101.8 kPa

The testing was performed by Libass Thiaw on 2024-09-16 on the Ground Plane Test Site.

6.8 Summary of Test Results

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

Worst Mode: 802.11be320, Channel 31, 6105 MHz

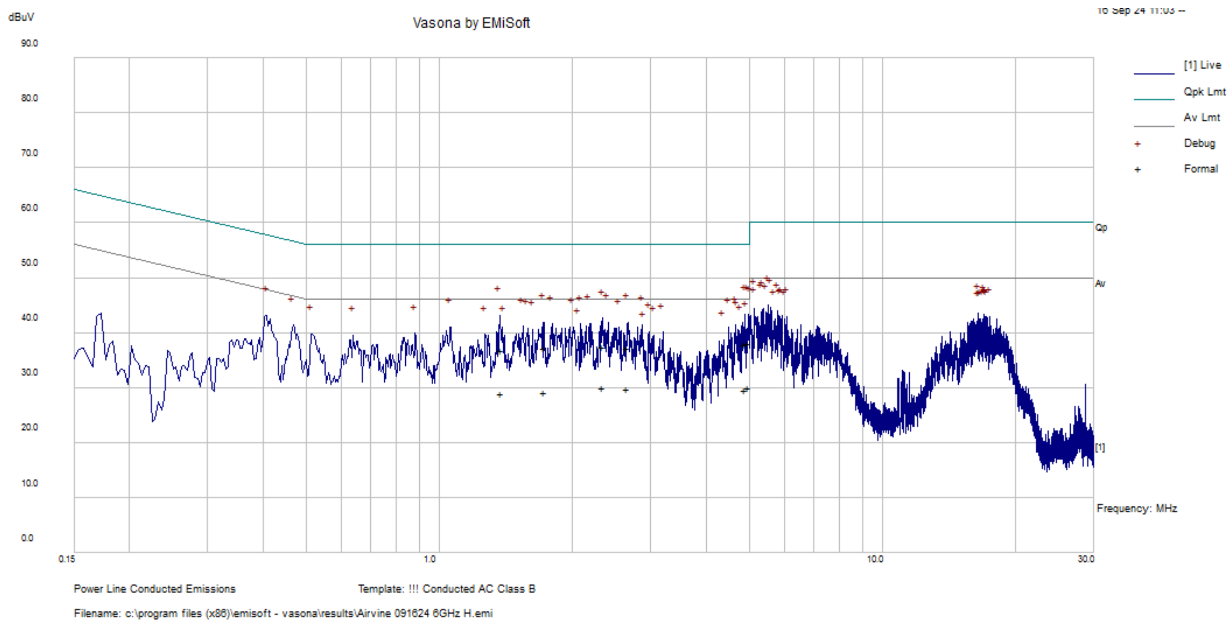
Worst Case – AC Line: 120V, 60Hz			
Margin (dB)	**Frequency (MHz)**	**Conductor Mode (Hot/Neutral)**	**Range (MHz)**
-14.28	0.467244	Neutral	0.15 to 30

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

6.9 Conducted Emissions Test Plots and Data

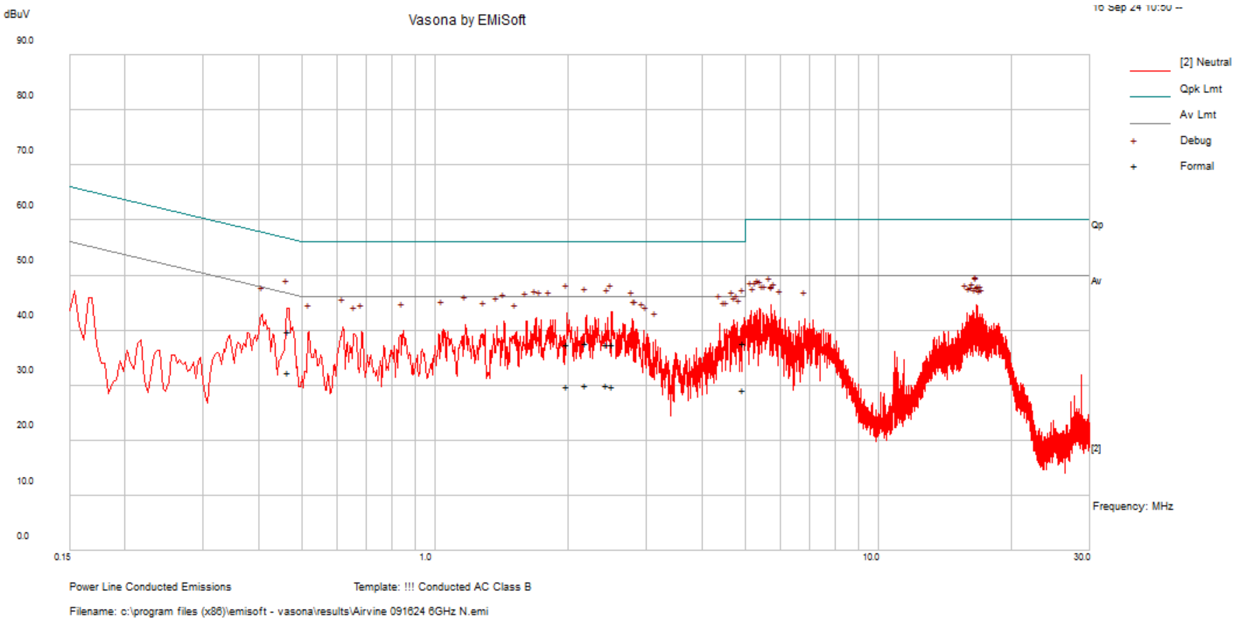
Worst Mode: 802.11be320, Channel 31, 6105 MHz

AC Line: 120V, 60Hz – Hot Conductor



Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBµV)	Limit (dBµV)	Margin (dB)	Detector
4.89197	27.71	10.14	37.85	56	-18.15	QP
4.986164	28.01	10.14	38.15	56	-17.85	QP
1.381625	26.56	10.13	36.69	56	-19.31	QP
2.342713	27.43	10.11	37.54	56	-18.46	QP
2.662614	27.14	10.12	37.26	56	-18.74	QP
1.733106	27.03	10.13	37.16	56	-18.84	QP
4.89197	19.4	10.13	29.53	46	-16.47	Ave
4.986164	19.83	10.14	29.97	46	-16.03	Ave
1.381625	18.86	10.13	28.99	46	-17.01	Ave
2.342713	19.89	10.11	30	46	-16.00	Ave
2.662614	19.64	10.12	29.76	46	-16.24	Ave
1.733106	19.04	10.13	29.17	46	-16.83	Ave

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
0.467244	29.67	10.1	39.77	56.56	-16.8	QP
2.517519	27.31	10.11	37.42	56	-18.58	QP
1.990992	27.29	10.12	37.41	56	-18.59	QP
2.182509	27.44	10.11	37.55	56	-18.45	QP
2.438416	27.38	10.11	37.49	56	-18.51	QP
4.95398	27.57	10.14	37.71	56	-18.29	QP
0.467244	**22.18**	**10.1**	**32.28**	**46.56**	**-14.28**	**Ave**
2.517519	19.69	10.11	29.8	46	-16.2	Ave
1.990992	19.75	10.12	29.87	46	-16.13	Ave
2.182509	19.94	10.12	30.06	46	-15.94	Ave
2.438416	19.87	10.11	29.98	46	-16.02	Ave
4.95398	18.98	10.13	29.11	46	-16.89	Ave

7 FCC §15.35(b), §15.205, §15.209, §15.407(b) & ISEDC RSS-248 §4.6.2, RSS-Gen §8.9, §8.10 – Radiated Spurious Emissions, Band Edges at Antenna Terminal (-27dBm) & Emission Masks

7.1 Applicable Standard

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: 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

Note 1: 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 §15.407 (b), undesirable emission limits. Except as shown in paragraph (b)(10) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

6) For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of −27 dBm/MHz
7) For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.
8) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
9) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
10) The provisions of §15.205 apply to intentional radiators operating under this section.
11) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

As per ISEDC RSS-248 §4.6.2 Unwanted emissions limits, The following unwanted emission limits shall apply:

a. any emissions outside of the 5925-7125 MHz frequency band shall not exceed –27 dBm/MHz e.i.r.p. spectral density
b. the e.i.r.p. spectral density of unwanted emissions falling into the 5925-7125 MHz frequency band shall be attenuated below the reference power spectral density by:
    i. 20 dB at 1 MHz away from the channel edges
    ii. a value, linearly interpolated in a dB scale, between 20 dB and 28 dB at frequencies between 1 MHz outside of channel edges and 1 channel bandwidth away from the operating channel centre, respectively
    iii. 28 dB at 1 channel bandwidth away from the operating channel centre
    iv. a value, linearly interpolated in a dB scale, between 28 dB and 40 dB at frequencies between 1 channel bandwidth away from the operating channel centre and 1.5 times the channel bandwidth away from the operating channel centre, respectively
    v. 40 dB at 1.5 times the channel bandwidth away from the operating channel centre
    vi. a minimum of 40 dB at frequencies that are further away than 1.5 times the channel bandwidth from the operating channel centre

As per ISEDC RSS-Gen §8.9, 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 ISEDC RSS-Gen §8.10(c),

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 Radiated Spurious Emissions Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.10-2013. The specification used was the FCC §15.407 and ISEDC RSS-248 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 Procedures

Radiated Spurious Emissions

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

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter or 1.5 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

The spectrum analyzer or receiver is set as:

Below 1000 MHz:

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

Above 1000 MHz:

(1) Peak: RBW = 1MHz / VBW = 3MHz / Sweep = 100ms
(2) Average: RBW = 1MHz / VBW = 10Hz or 1/T / Sweep = Auto

Band Edges at Antenna Terminal (-27dBm)

1) Set 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
2) Set RBW = 1 MHz
3) Set VBW = 3 MHz
4) Sweep = coupled
5) Detector function = peak
6) Trace = max hold

Emission Mask

1. Connect output of the antenna port to a spectrum analyzer or EMI receiver, with appropriate attenuation, as to not damage the instrumentation.
2. Set the reference level of the measuring equipment in accordance with procedure 4.1.5.2 of ANSI C63.10-2013.
3. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2013. (This will be used to determine the channel edge.)

4. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:
   a. Set the span to encompass the entire 26 dB EBW of the signal.
   b. Set RBW = same RBW used for 26 dB EBW measurement.
   c. Set VBW ≥ 3 X RBW
   d. Number of points in sweep ≥ [2 X span / RBW].
   e. Sweep time = auto.
   f. Detector = RMS (i.e., power averaging)
   g. Trace average at least 100 traces in power averaging (rms) mode.
   h. Use the peak search function on the instrument to find the peak of the spectrum.
5. For the purposes of developing the emission mask, the channel bandwidth is defined as the 26 dB EBW or 99% of the occupied bandwidth.
6. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
   a. Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
   b. Suppressed by 28 dB at one channel bandwidth from the channel center.
   c. Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
7. Adjust the span to encompass the entire mask as necessary.
8. Clear trace.
9. Trace average at least 100 traces in power averaging (rms) mode.
10. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

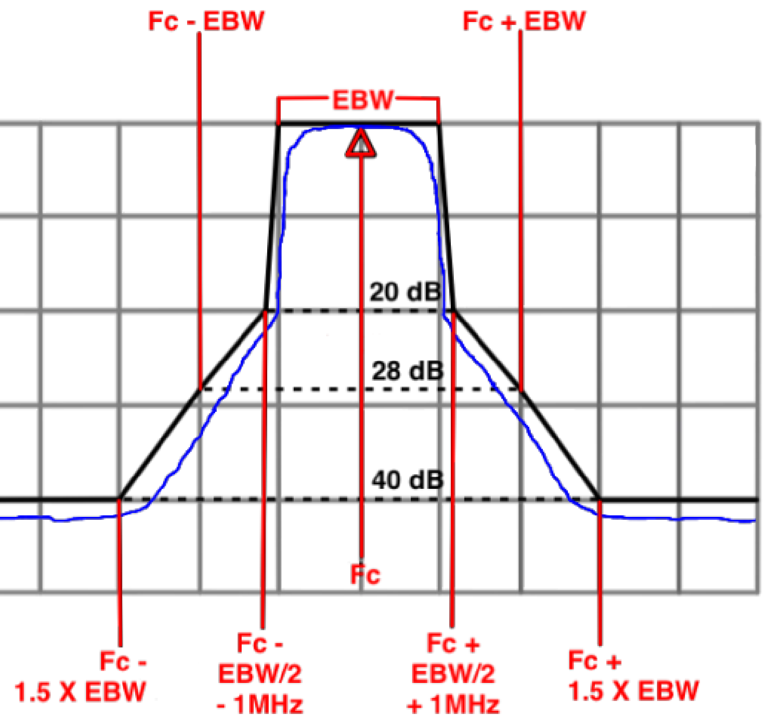


Figure 5. Generic Emission Mask

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 = 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

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 + Atten – Ga

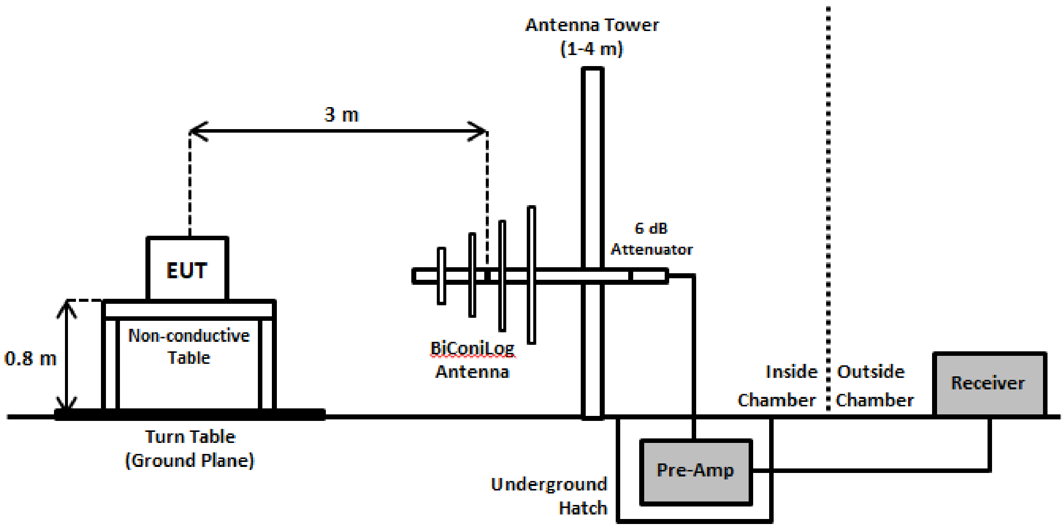
For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

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:

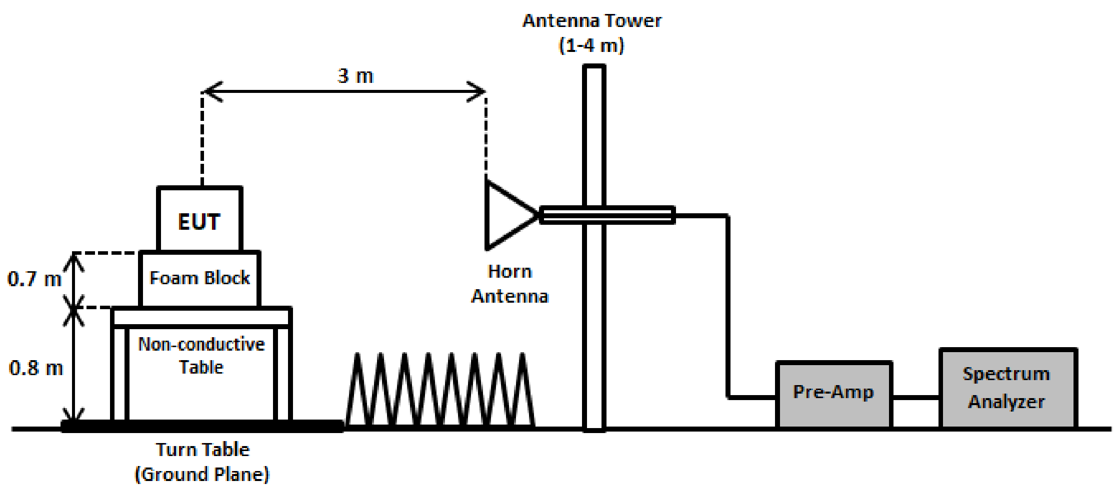
Margin = Corrected Amplitude – Limit

7.5 Test Setup Block Diagram

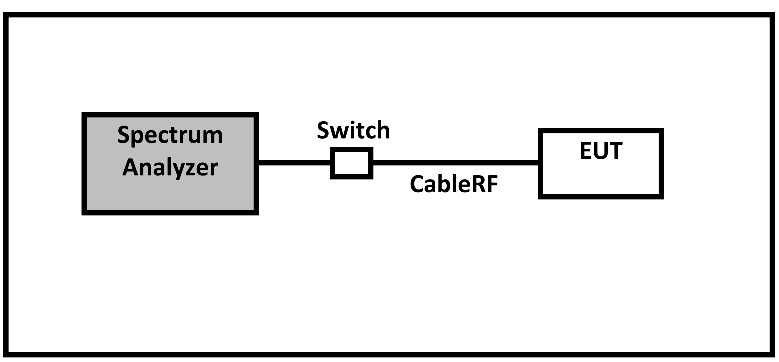
Radiated Below 1 GHz at 3 meters distance



Radiated Above 1 GHz at 3 meters distance



Conducted



7.6 Test Equipment List and Details

Radiated

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
310	Rohde & Schwarz	EMI test receiver	ESCI 1166.5950.03	100338	2024-05-29	1 year
624	Agilent	Spectrum Analyzer	E4446A	MY48250238	2024-06-14	1 year
327	Sunol Sciences	System Controller	SC110V	122303-1	N/R	N/A
1075	Sunol Sciences	Boresight Tower	TLT3	050119-7	N/R	N/A
1388	Sunol Sciences	Flush Mount Turntable	FM	112005-2	N/R	N/A
316	Sonoma Instruments	Preamplifier 10 kHz - 2.5 GHz	317	260406	2024-08-30	6 months
321	Sunol Sciences	Biconilog Antenna	JB3	A020106-2; 1504	2023-12-18	2 years
1245	-	6dB Attenuator	PE7390-6	01182018A	2023-12-18	2 years
1246	Hewlet Packard	RF Limiter	11867A	01734	2024-04-09	6 months
1248	Pasternack	RG214 COAX Cable	PE3062	-	2024-04-04	6 months
1249	Time microwave	LMR-400 Cable Dc-3 GHz	AE13684	2k80612-5 6fts	2024-04-09	6 months
1359	Pasternack	N 600in RF Cable	PE3496LF-600	-	2024-07-26	6 months
1192	ETS Lindgren	Horn Antenna	3117	00218973	2022-09-29	2 years
1355	Megaphase	2.92mm 236in RF Cable DC to 40GHz	GC12-K1K1-236-H	1 GVT4 20554701 001	2024-02-27	1 year
1397	Mini Circuit	CBL ASSY 2.92MM PLUG TO PLUG 12"	FL086-12KM+	QN2318110-2318	2024-08-16	6 months
1449	BACL	Preamplifier	BACL1313-A100M18G	4052472	2024-08-19	6 months
90	Wisewave	Horn Antenna	ARH-4223-02	10555-01	2023-05-02	2 years
92	Wisewave	Antenna, Horn	ARH-2823-02	10555-01	2024-06-26	2 years
1394	Mini Circuit	CBL ASSY 2.92MM PLUG TO PLUG 12"	FL086-12KM+	QN2318110-2318	2024-08-16	6 months
1451	BACL	Preamplifier	BACL-1313-A1840	4052432	2024-08-16	6 months
1362	Marvelous Microwave Inc	SMA Notch Filter, 5925MHz - 7125MHz	5925.7125.S1	D30002N	2024-04-14	1 year

Conducted

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
624	Spectrum Analyzer	Spectrum Analyzer	E4446A	MY48250238	2024-06-14	1 year
1213	Radiall	USB powered 8 port coaxial (SMA) Switch	R574F11801	31ASW20025760	Each Time	
-	-	RF Cables	-	-	Each Time[1]	-

Note[1]: cables and coaxial switch included in the test set-up were checked each time before testing.

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

Radiated

Temperature:	22.9 ºC
Relative Humidity:	47.2 %
ATM Pressure:	101.7 kPa

The testing was performed by Arturo Reyes from 2024-09-12 to 2024-09-18 in 5m chamber 3.

Conducted

Temperature:	22 to 23 ºC
Relative Humidity:	42 to 47 %
ATM Pressure:	101.7 kPa

The testing was performed by Libass Thiaw from 2024-09-25 to 2024-09-26 at RF test site.

7.8 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15.209, 15.407 and ISEDC RSS-248 standards' radiated emissions limits, and had the worst margin of:

Worst Case – Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Configuration**
-0.42	9648.75	Vertical	6545MHz, 802.11be80

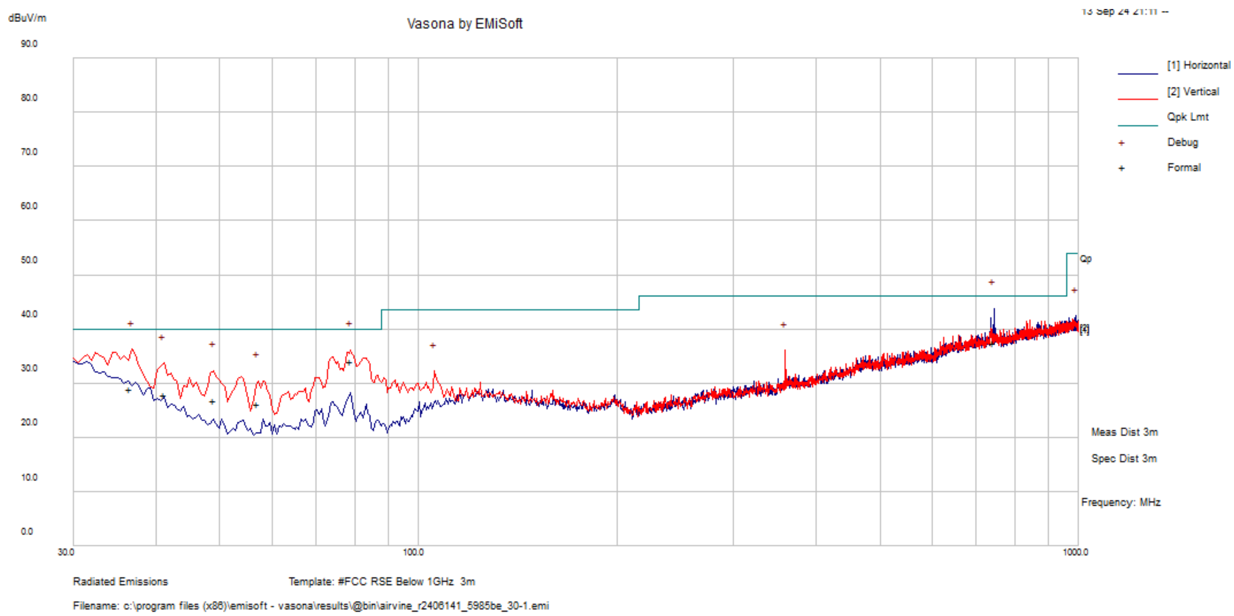
Band Edges at Antenna Terminal (-27dBm) Test Result: Pass
Emission Masks Test Result: Pass

7.9 Emissions Test Results

Note 1: The data presented below are for Radiated Spurious Emissions. Please refer to Annex D for Band Edges at Antenna Terminal (-27dBm) test data and plots. Please refer to Annex E for Emissions Masks test data and plots.
Note 2: The EUT is not transmitting at below 30 MHz, thus 9 kHz to 30 MHz was not evaluated for Spurious Emissions.
Note 3: 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 4: As per ANSI C63.10 Clause 5.6.2.2, 802.11be80 was determined to be the worst-case mode per modulation family and was used for the following testing.
Note 5: In cases where Peak emissions were shown to comply with average/QP limits, such emissions' measurements positions (i.e. azimuth and height) are shown in nearest step size since scan was performed with a peak/maxhold trace at all positions.

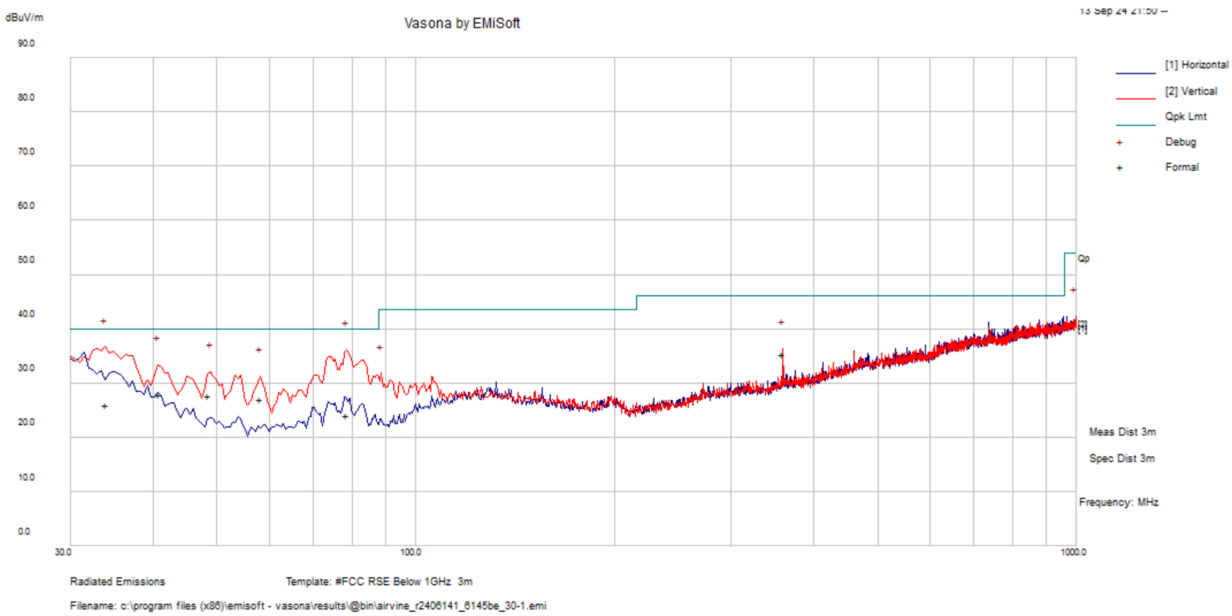
1) 30 MHz – 1 GHz, Measured at 3 meters

5985MHz, 802.11be80



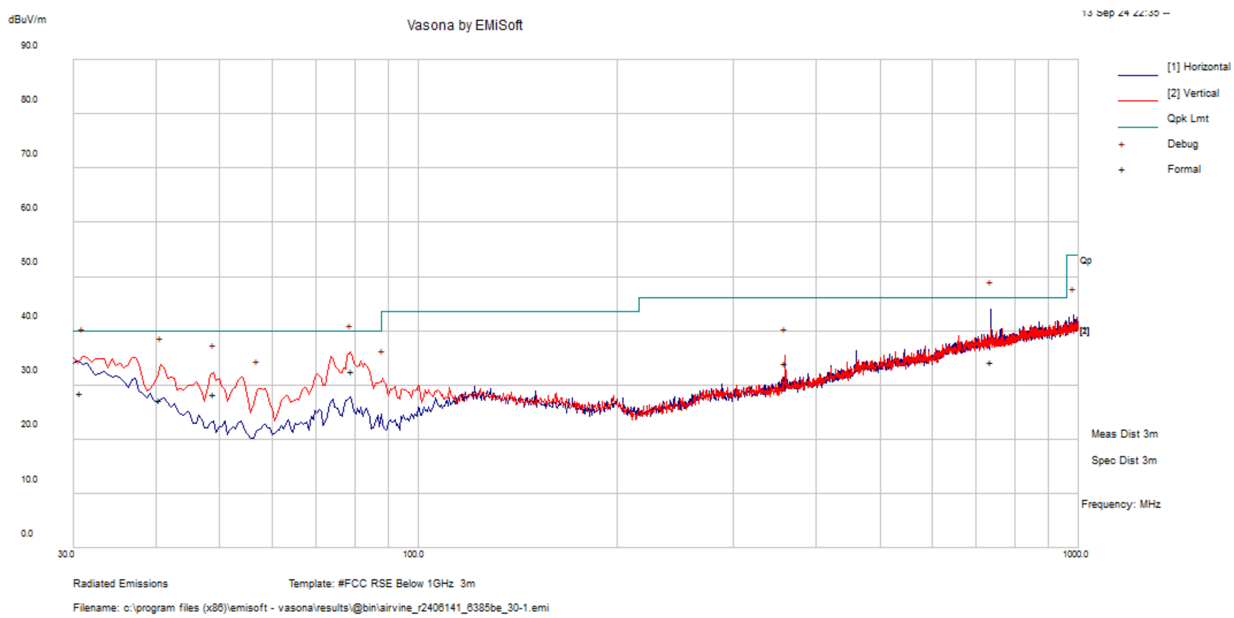
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
743.6708	33.08	4.42	37.5	121	H	278	46	-8.5	QP
36.63575	33.95	-5.08	28.87	107	V	319	40	-11.13	QP
78.919	47.67	-13.55	34.12	140	V	122	40	-5.88	QP
41.2425	36.09	-8.31	27.78	107	V	333	40	-12.22	QP
49.0915	39.83	-12.94	26.89	130	V	166	40	-13.11	QP
57.1325	39.91	-13.66	26.25	145	V	106	40	-13.75	QP

6145MHz, 802.11be80



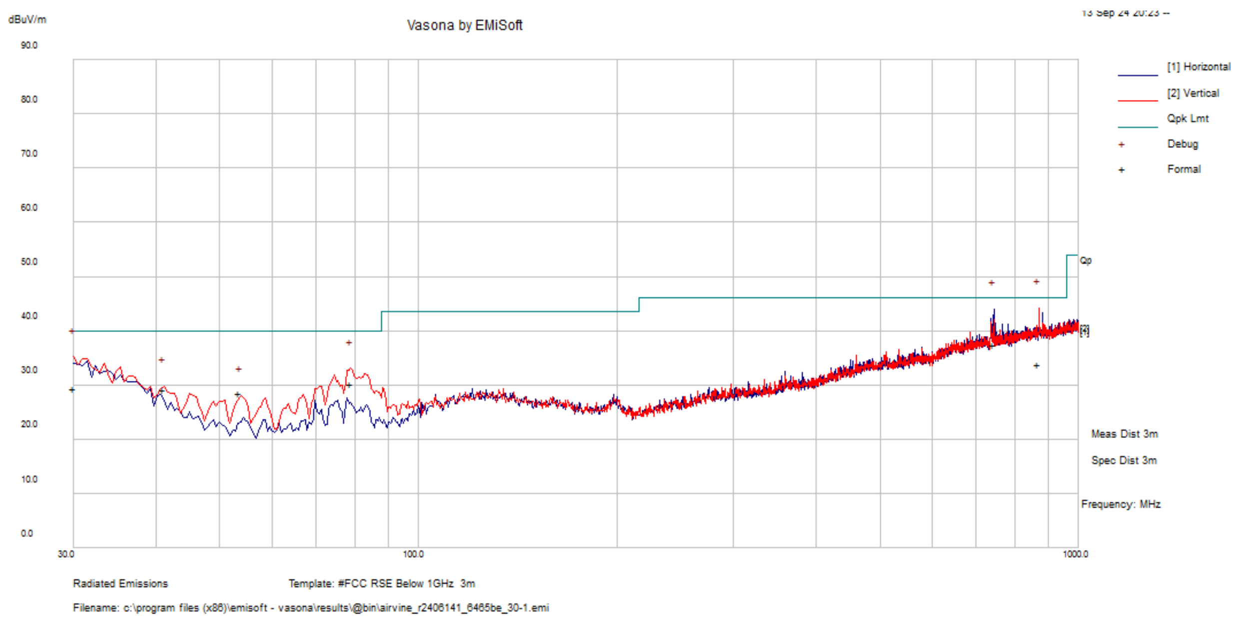
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBμV/m)	Margin (dB)	Detector
33.997	29.39	-3.43	25.96	100	V	32	40	-14.04	QP
78.5155	37.64	-13.54	24.1	214	V	120	40	-15.9	QP
40.86325	35.92	-8.06	27.86	137	V	35	40	-12.14	QP
48.6965	40.33	-12.76	27.57	154	V	119	40	-12.43	QP
58.2585	40.56	-13.57	26.99	154	V	113	40	-13.01	QP
359.3713	39.03	-3.78	35.25	100	V	171	46	-10.75	QP

6385MHz, 802.11be80



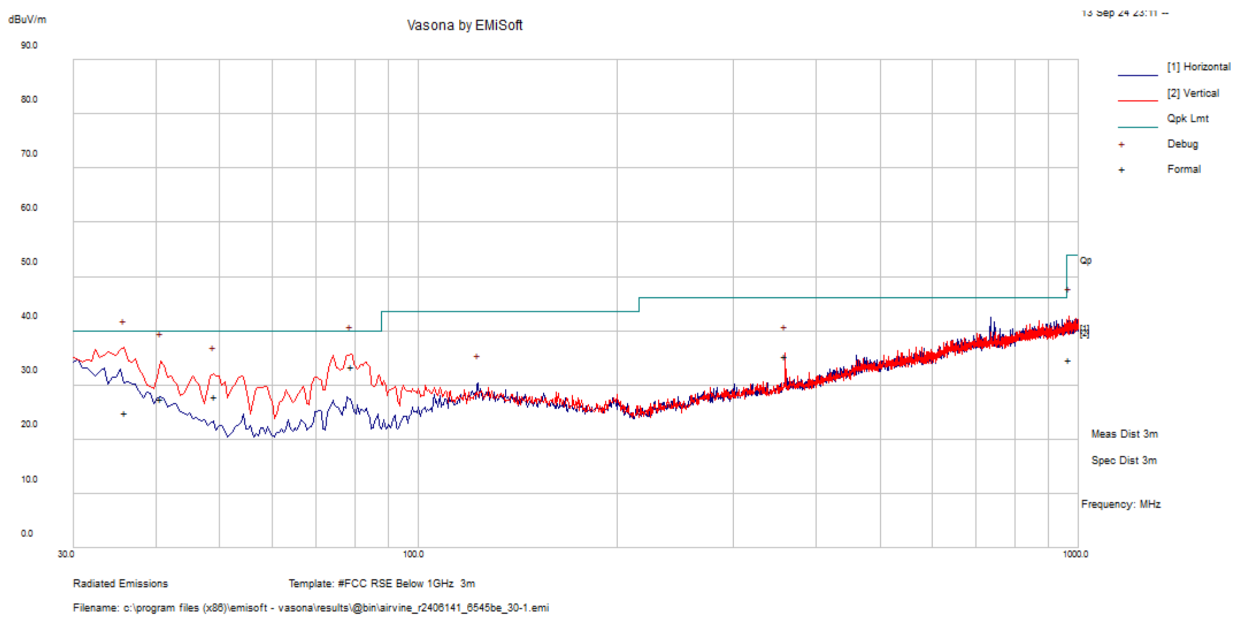
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
736.1855	29.87	4.34	34.21	226	H	258	46	-11.79	QP
79.186	46.07	-13.54	32.53	128	V	101	40	-7.47	QP
30.76625	29.62	-1.2	28.42	168	V	181	40	-11.58	QP
40.654	35.08	-7.93	27.15	116	V	326	40	-12.85	QP
48.964	41.1	-12.88	28.22	121	V	63	40	-11.78	QP
359.3648	37.74	-3.78	33.96	107	V	166	46	-12.04	QP

6465MHz, 802.11be80



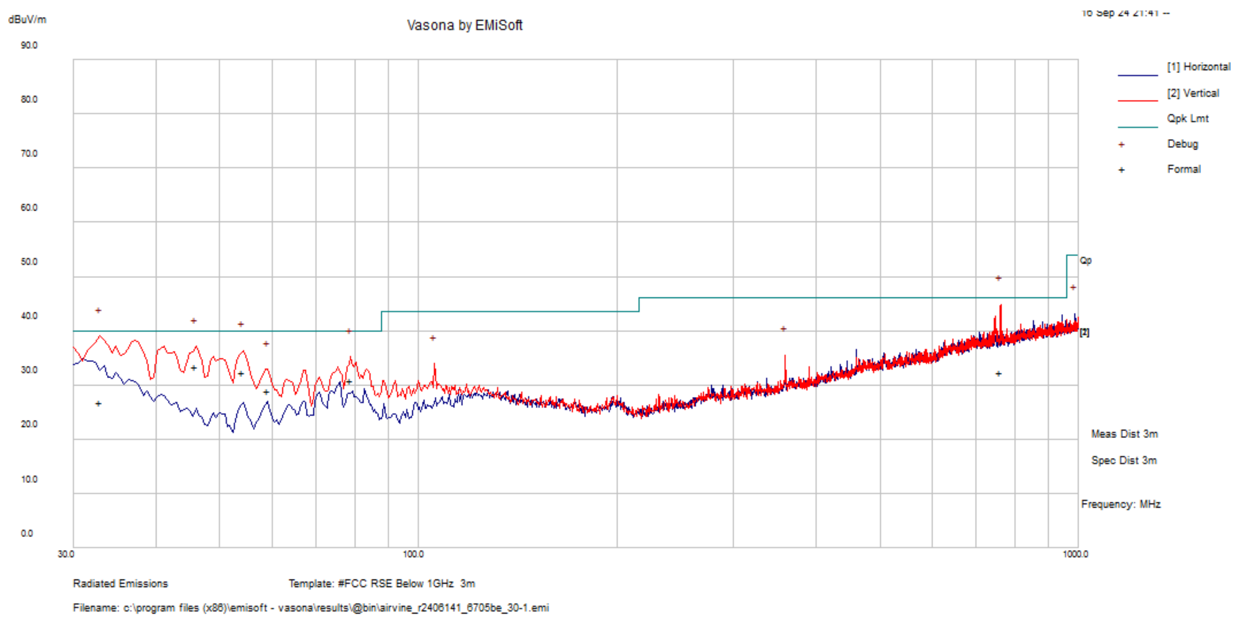
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
870.2605	27.59	6.17	33.76	221	V	352	46	-12.24	QP
743.6835	32.97	4.42	37.39	170	H	154	46	-8.61	QP
30.00067	30.05	-0.61	29.44	184	V	60	40	-10.56	QP
78.876	43.73	-13.55	30.18	131	V	338	40	-9.82	QP
41.07575	37.34	-8.2	29.14	102	V	80	40	-10.86	QP
53.5415	42.31	-13.74	28.57	124	V	121	40	-11.43	QP

6545MHz, 802.11be80



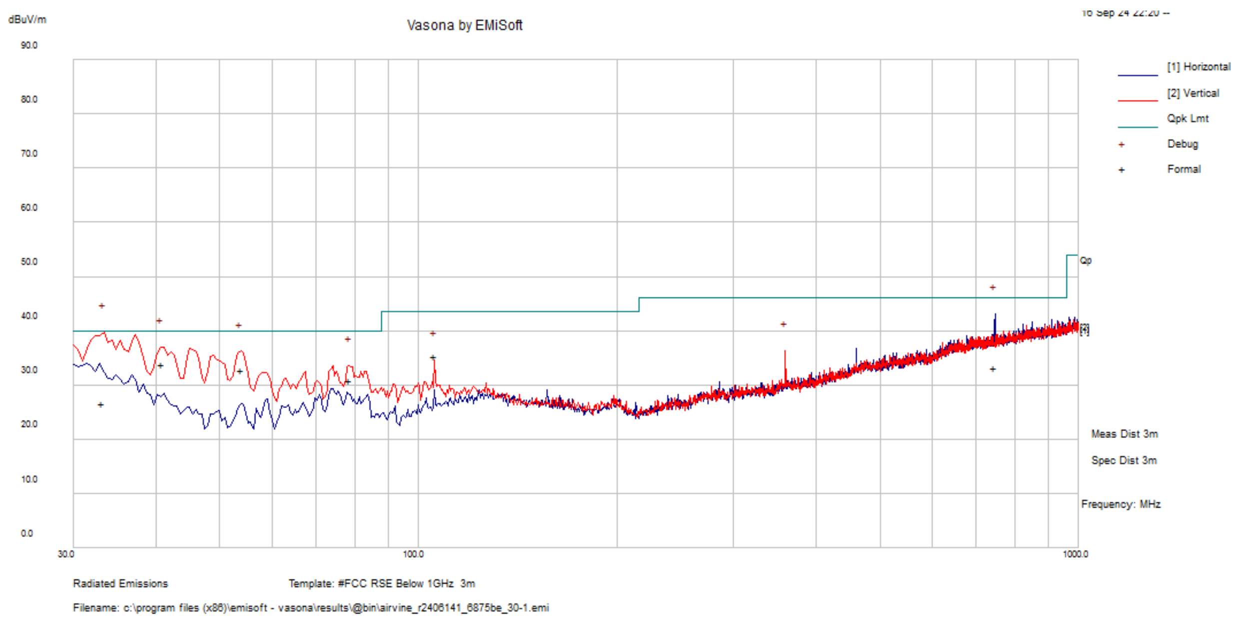
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
36.0375	29.5	-4.69	24.81	180	V	190	40	-15.19	QP
79.1495	46.9	-13.55	33.35	146	V	128	40	-6.65	QP
40.81375	35.5	-8.04	27.46	156	V	104	40	-12.54	QP
49.15325	40.89	-12.96	27.93	174	V	109	40	-12.07	QP
359.3953	39.03	-3.78	35.25	100	V	184	46	-10.75	QP
966.665	27.45	7.19	34.64	205	V	141	54	-19.36	QP

6705MHz, 802.11be80



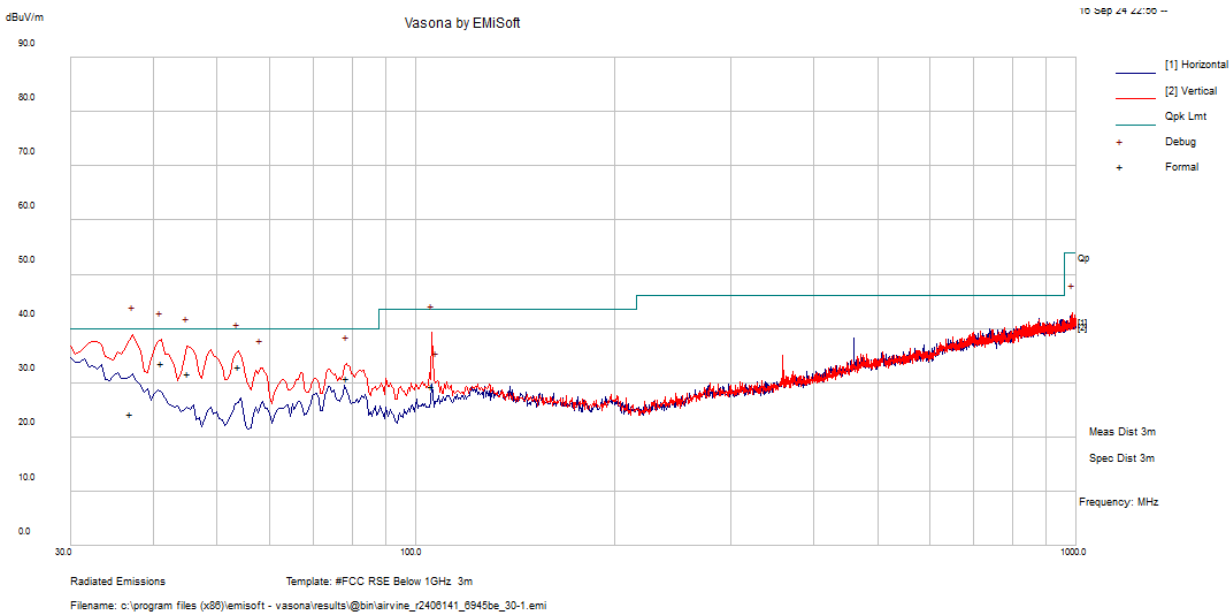
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
32.99175	29.72	-2.83	26.89	251	V	219	40	-13.11	QP
761.7305	27.86	4.53	32.39	250	V	173	46	-13.61	QP
45.865	44.83	-11.34	33.49	109	V	69	40	-6.51	QP
54.215	46.04	-13.8	32.24	171	V	163	40	-7.76	QP
79.0255	44.48	-13.56	30.92	112	V	246	40	-9.08	QP
59.12525	42.45	-13.51	28.94	135	V	149	40	-11.06	QP

6865MHz, 802.11be80



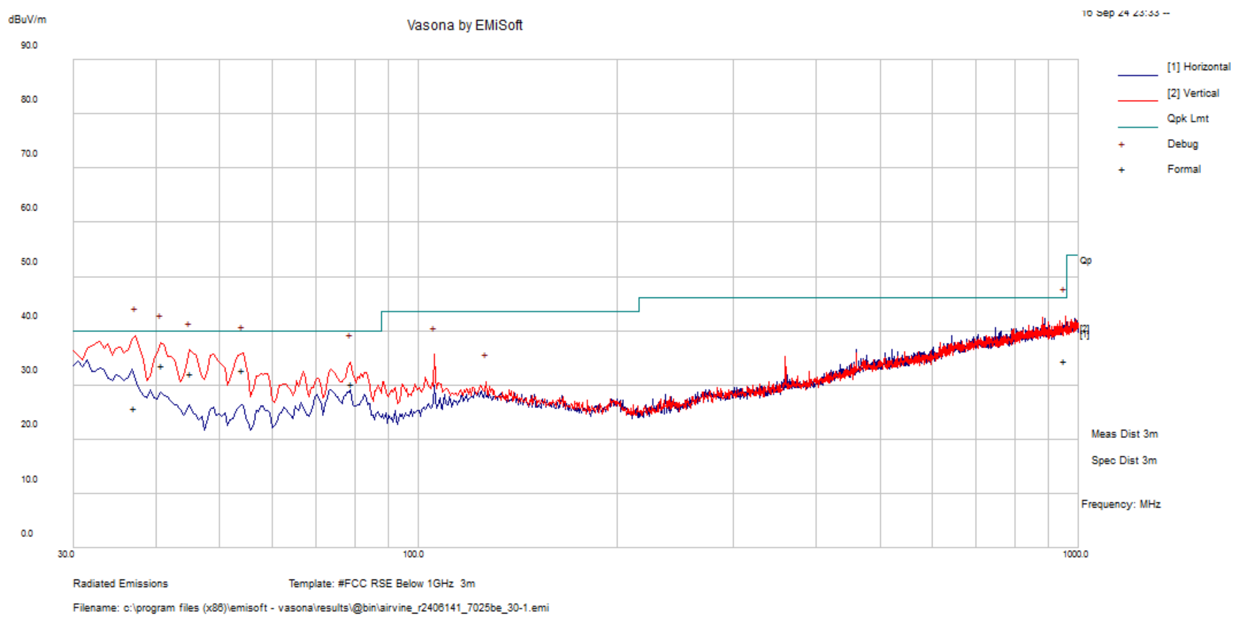
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
33.16275	29.44	-2.94	26.5	298	V	323	40	-13.5	QP
746.7445	28.73	4.46	33.19	238	H	242	46	-12.81	QP
40.86725	41.81	-8.07	33.74	100	V	84	40	-6.26	QP
53.9615	46.5	-13.8	32.7	105	V	352	40	-7.3	QP
78.6185	44.36	-13.54	30.82	104	V	208	40	-9.18	QP
105.6795	43.57	-8.3	35.27	102	V	30	43.5	-8.23	QP

6945MHz, 802.11be80



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
37.072	29.68	-5.37	24.31	198	V	116	40	-15.69	QP
41.26325	41.95	-8.33	33.62	100	V	168	40	-6.38	QP
45.282	42.83	-11.06	31.77	119	V	186	40	-8.23	QP
54.01425	46.81	-13.8	33.01	113	V	76	40	-6.99	QP
105.7085	37.66	-8.29	29.37	192	V	134	43.5	-14.13	QP
78.58825	44.31	-13.54	30.77	112	V	201	40	-9.23	QP

7025MHz, 802.11be80



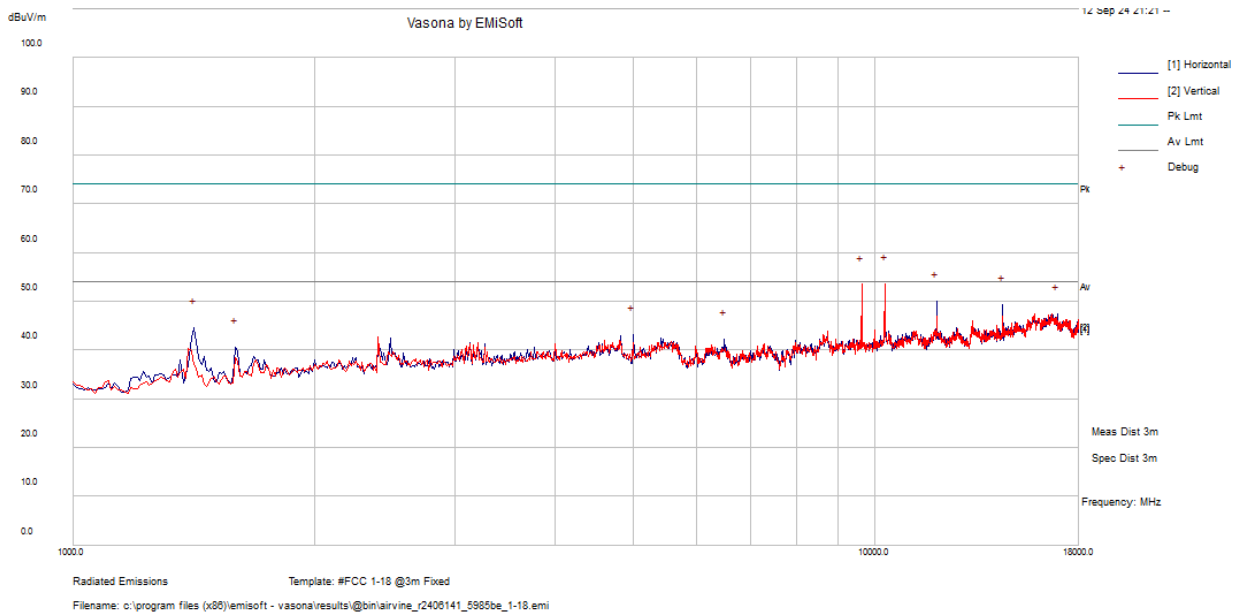
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
37.20375	31.19	-5.47	25.72	140	V	222	40	-14.28	QP
40.84575	41.74	-8.06	33.68	106	V	121	40	-6.32	QP
954.0525	27.5	6.94	34.44	247	V	304	46	-11.56	QP
45.284	43.16	-11.05	32.11	118	V	89	40	-7.89	QP
54.132	46.56	-13.8	32.76	119	V	353	40	-7.24	QP
79.17325	43.73	-13.55	30.18	137	V	182	40	-9.82	QP

FCC/IC Limits for 1 GHz to 40 GHz			
Applicability	**(dBm)**	**(uV/m at 3meters)**	**(dBuV/m at 3meters)**
Restricted Band Average Limit	-	500	54[2]
Restricted Band Peak Limit[1]	-	-	74
FCC §15.407(b)/ ISEDC RSS-248 §4.6.2 Defined Unwanted Emissions Limit	-27	-	68

Note 1: Restricted Band Peak Limit is defined to be 20dB higher than Average Limit.
Note 2: Above 1GHz limit calculation:
dBuV/m = 20*log(V/m) + 120 = 20*log((500 [uV/m]/1000000)) + 120 = 54 [dBuV/m]

2) 1 GHz – 18 GHz, Measured at 3 meters

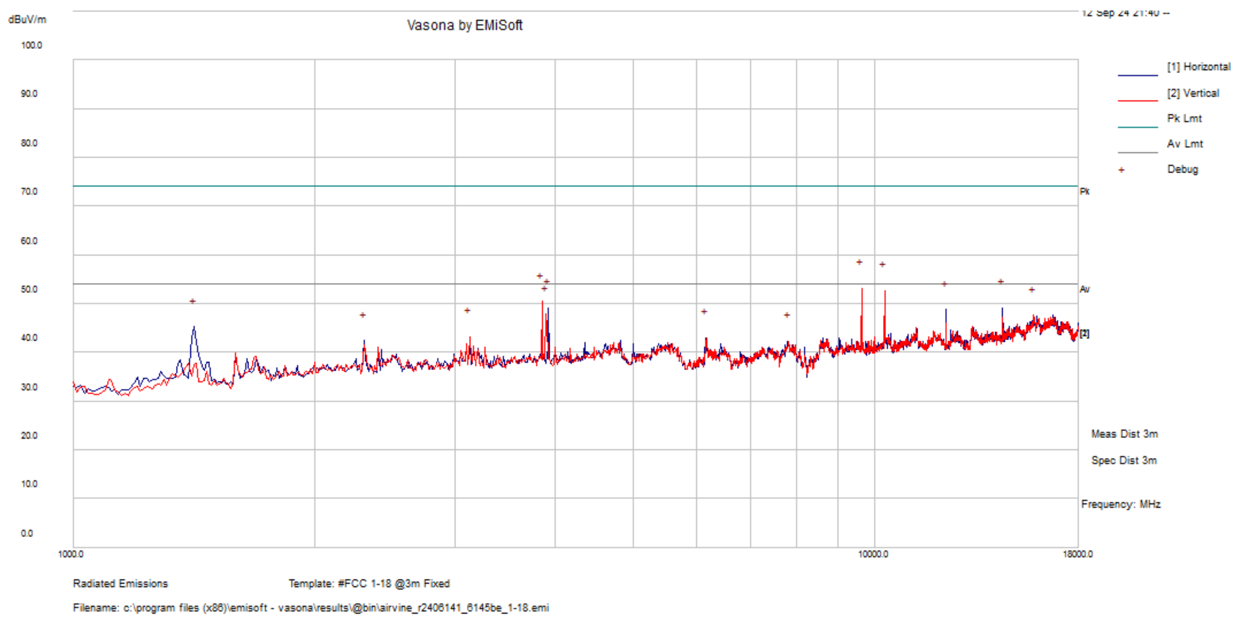
5985MHz, 802.11be80



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
10318.13	53.22	0.34	53.56	200	V	360	54	-0.44	Peak
9648.75	53.79	-0.33	53.46	300	V	360	54	-0.54	Peak
11965.00	47.39	2.67	50.06	100	H	360	54	-3.94	Peak
14472.50	46.04	3.35	49.39	200	H	360	54	-4.61	Peak
16926.88	41.01	6.50	47.51	300	H	360	54	-6.49	Peak
1414.38	56.48	-11.84	44.64	100	H	360	54	-9.36	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

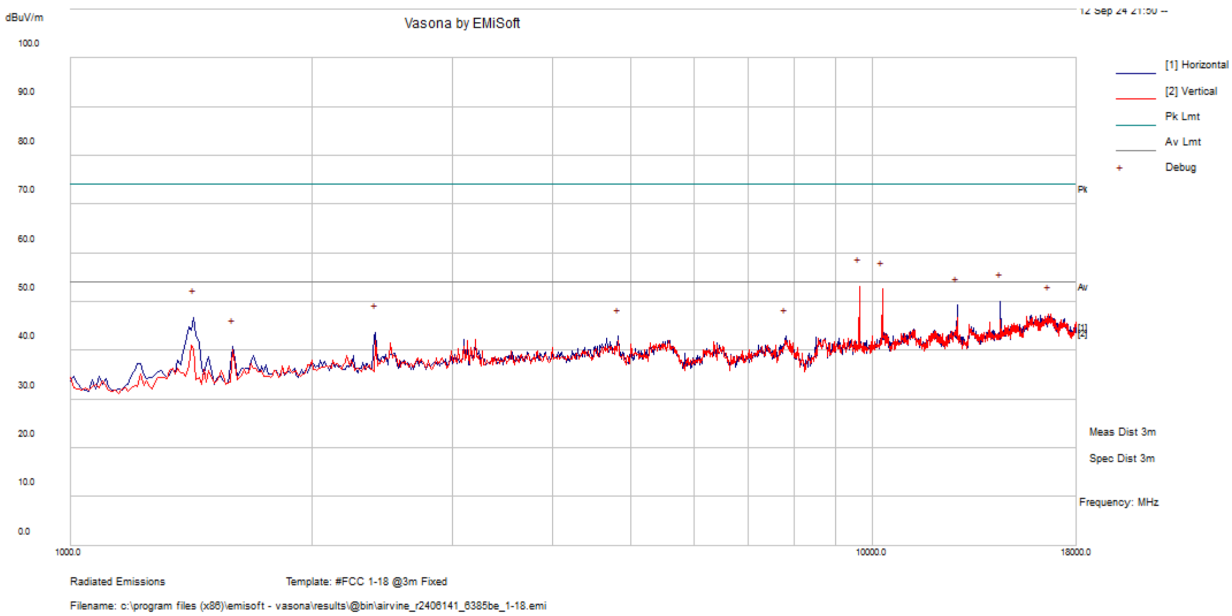
6145MHz, 802.11be80



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
9648.75	53.39	-0.33	53.06	300	V	360	54	-0.94	Peak
10307.50	52.29	0.34	52.63	200	V	360	54	-1.37	Peak
3847.50	55.97	-5.56	50.41	200	V	360	54	-3.59	Peak
14472.50	45.79	3.35	49.14	200	H	360	54	-4.86	Peak
3921.88	54.86	-5.79	49.07	200	H	360	54	-4.93	Peak
12294.38	46.49	2.31	48.80	200	H	360	54	-5.20	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

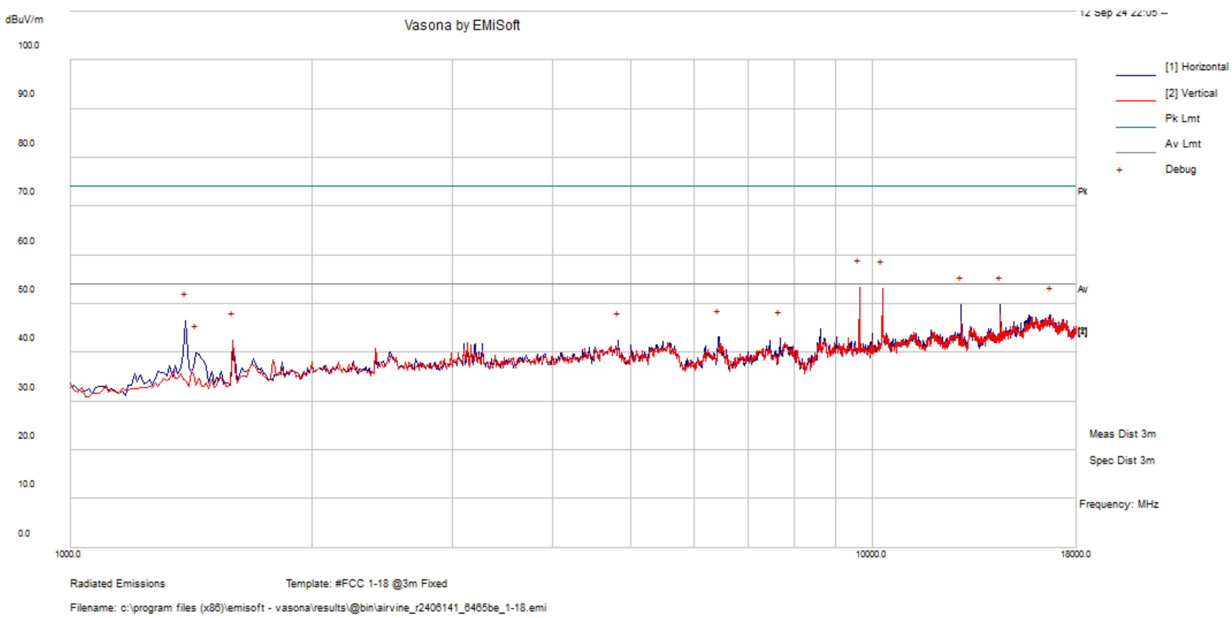
6385MHz, 802.11be80



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
9648.75	53.48	-0.33	53.15	300	V	360	54	-0.85	Peak
10307.50	52.22	0.34	52.56	200	V	360	54	-1.44	Peak
14472.50	46.67	3.35	50.02	300	H	360	54	-3.98	Peak
12772.50	46.30	2.97	49.27	200	H	360	54	-4.73	Peak
16618.75	40.31	7.20	47.51	200	V	360	54	-6.49	Peak
1425.00	58.37	-11.67	46.70	100	H	360	54	-7.30	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

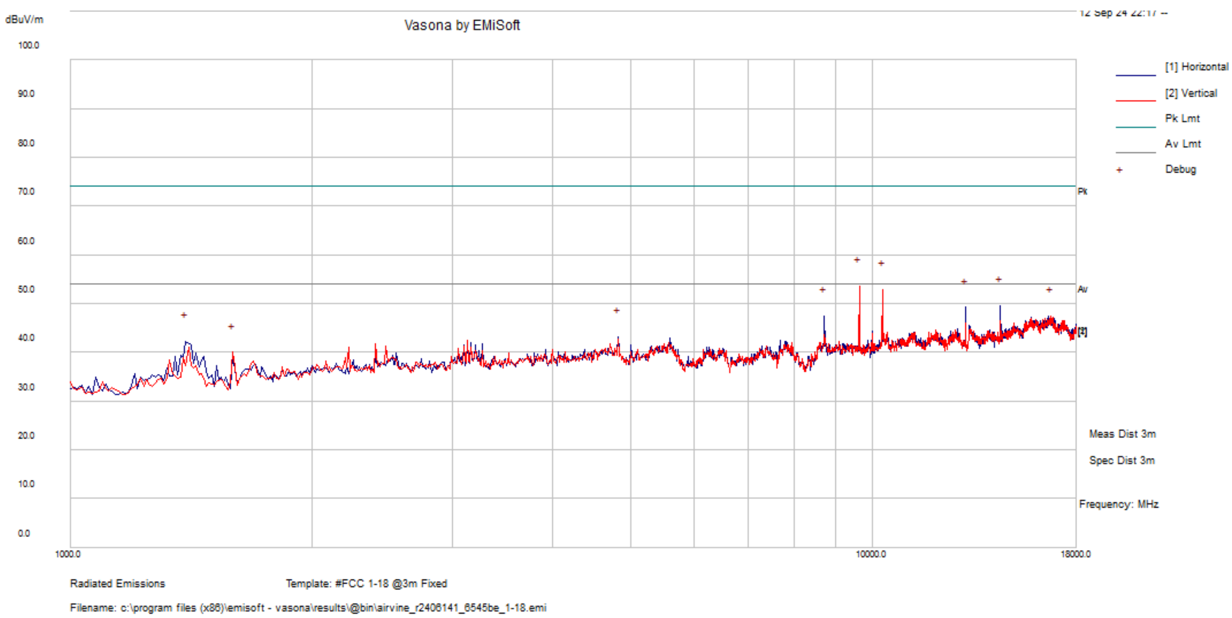
6465MHz, 802.11be80



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
9648.75	53.69	-0.33	53.36	300	V	360	54	-0.64	Peak
10307.50	52.76	0.34	53.10	200	V	360	54	-0.90	Peak
12931.88	47.15	2.74	49.89	300	H	360	54	-4.11	Peak
14472.50	46.50	3.35	49.85	200	H	360	54	-4.15	Peak
16714.38	40.72	7.03	47.75	300	V	360	54	-6.25	Peak
1393.13	58.48	-11.93	46.55	300	H	360	54	-7.45	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

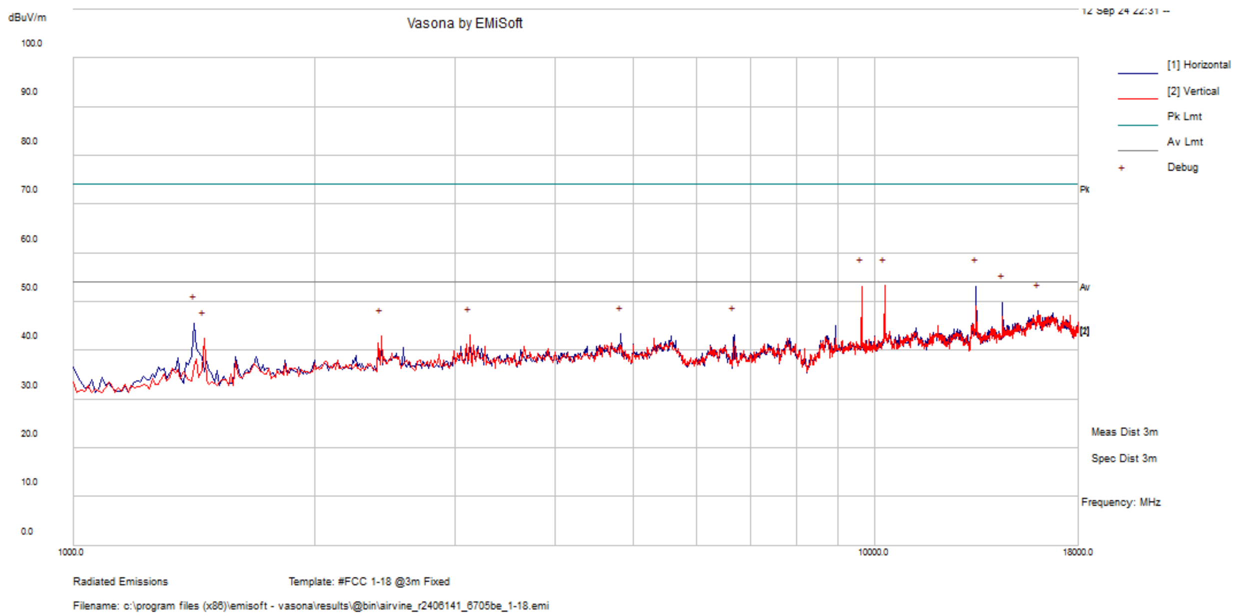
6545MHz, 802.11be80



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
9648.75	**53.91**	**-0.33**	**53.58**	**300**	**V**	**360**	**54**	**-0.42**	**Peak**
10318.13	52.54	0.34	52.88	200	V	360	54	-1.12	Peak
14472.50	46.20	3.35	49.55	300	H	360	54	-4.45	Peak
13091.25	46.05	3.18	49.23	300	H	360	54	-4.77	Peak
16735.63	40.55	6.98	47.53	200	V	360	54	-6.47	Peak
8724.38	49.03	-1.54	47.49	100	H	360	54	-6.51	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

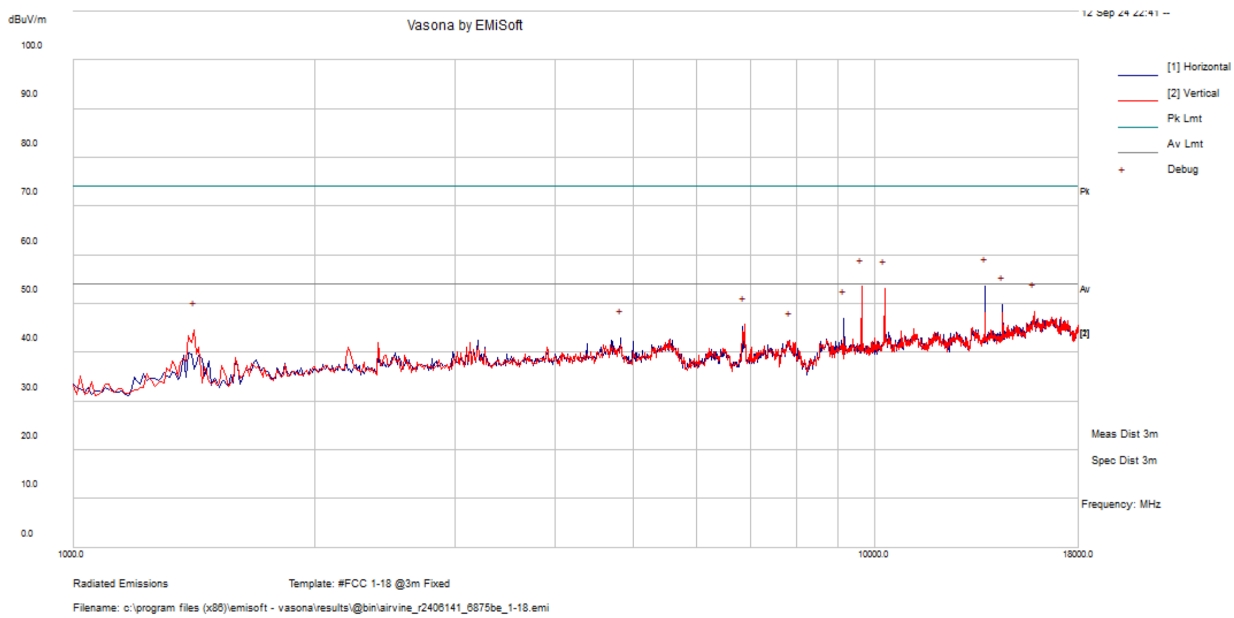
6705MHz, 802.11be80



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
10307.50	52.93	0.34	53.27	200	V	360	54	-0.73	Peak
13410.00	49.84	3.35	53.19	300	H	360	54	-0.81	Peak
9648.75	53.42	-0.33	53.09	300	V	360	54	-0.91	Peak
14472.50	46.54	3.35	49.89	200	H	360	54	-4.11	Peak
16023.75	41.30	6.75	48.05	200	H	360	54	-5.95	Peak
1414.38	57.34	-11.84	45.50	100	H	360	54	-8.50	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

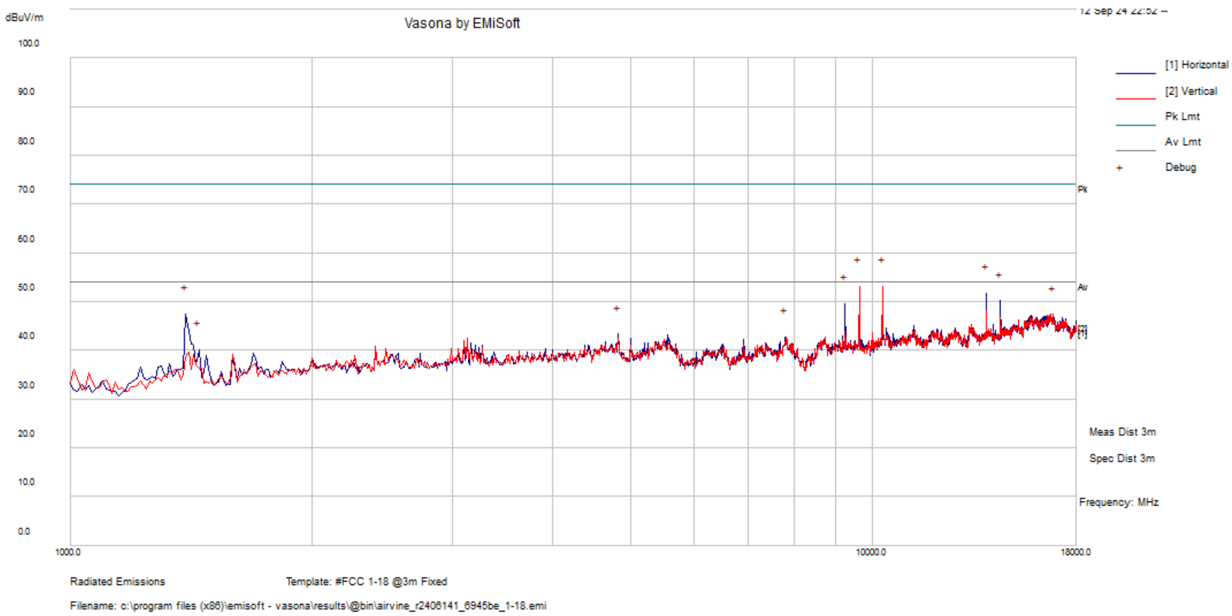
6865Mhz, 802.11be80



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
13750.00	51.13	2.44	53.57	200	H	360	54	-0.43	Peak
9648.75	53.79	-0.33	53.46	300	V	360	54	-0.54	Peak
10307.50	52.83	0.34	53.17	200	V	360	54	-0.83	Peak
14472.50	46.48	3.35	49.83	200	H	360	54	-4.17	Peak
15832.50	41.69	6.67	48.36	300	V	360	54	-5.64	Peak
9170.63	48.20	-1.19	47.01	100	H	360	54	-6.99	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

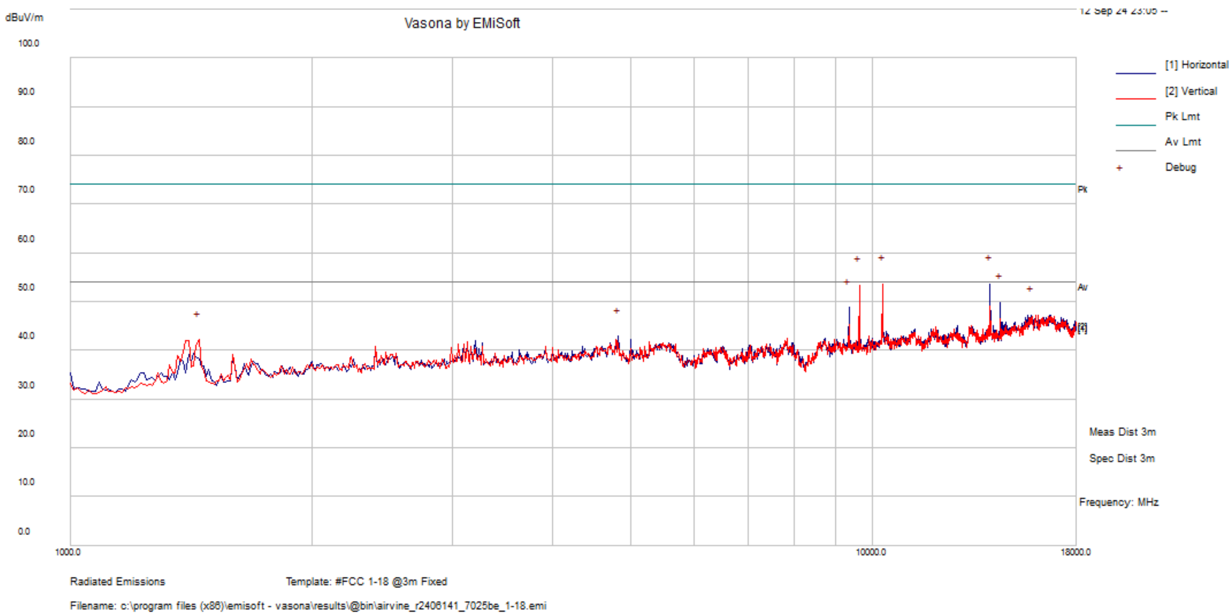
6945MHz, 802.11be80



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
10318.13	52.76	0.34	53.10	200	V	360	54	-0.90	Peak
9648.75	53.41	-0.33	53.08	300	V	360	54	-0.92	Peak
13888.13	48.97	2.80	51.77	100	H	360	54	-2.23	Peak
14472.50	46.86	3.35	50.21	300	H	360	54	-3.79	Peak
9255.63	50.78	-1.18	49.60	100	H	360	54	-4.40	Peak
1393.13	59.46	-11.93	47.53	100	H	360	54	-6.47	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

7025MHz, 802.11be80

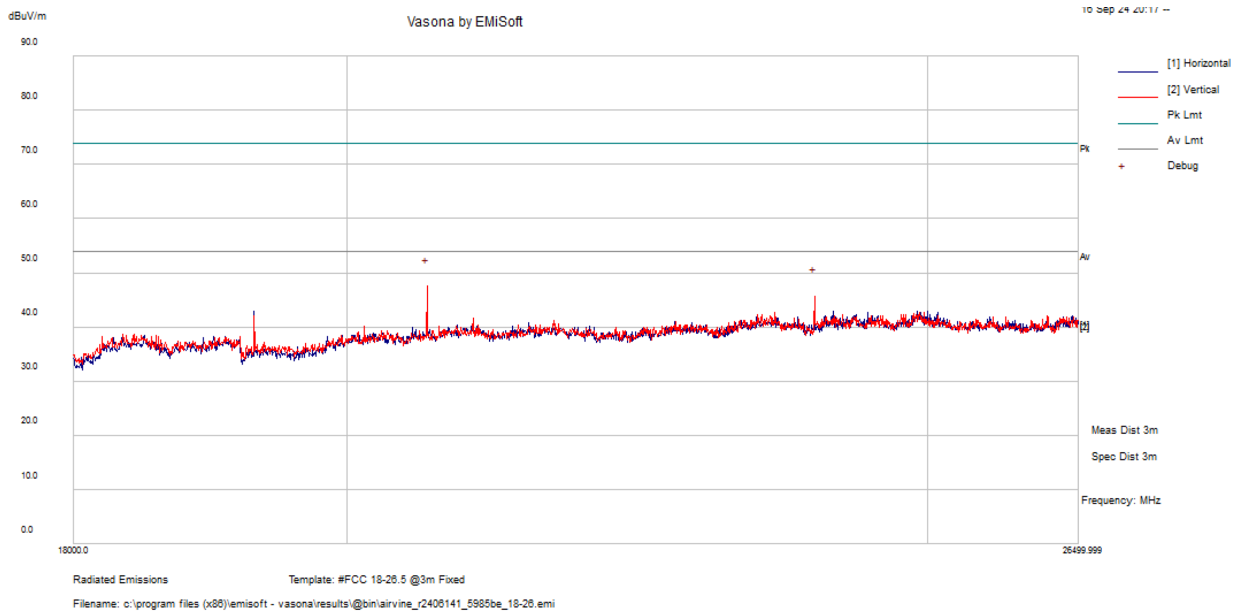


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector
14047.50	50.36	3.20	53.56	100	H	360	54	-0.44	Peak
10318.13	53.18	0.34	53.52	200	V	360	54	-0.48	Peak
9648.75	53.75	-0.33	53.42	300	V	360	54	-0.58	Peak
14472.50	46.54	3.35	49.89	200	H	360	54	-4.11	Peak
9361.88	49.83	-1.06	48.77	100	H	360	54	-5.23	Peak
15811.25	40.52	6.74	47.26	300	H	360	54	-6.74	Peak

Note: The plot above shows that all peak emissions below 18GHz passed the average limits.

3) 18 GHz – 26.5 GHz, Measured at 3 meters

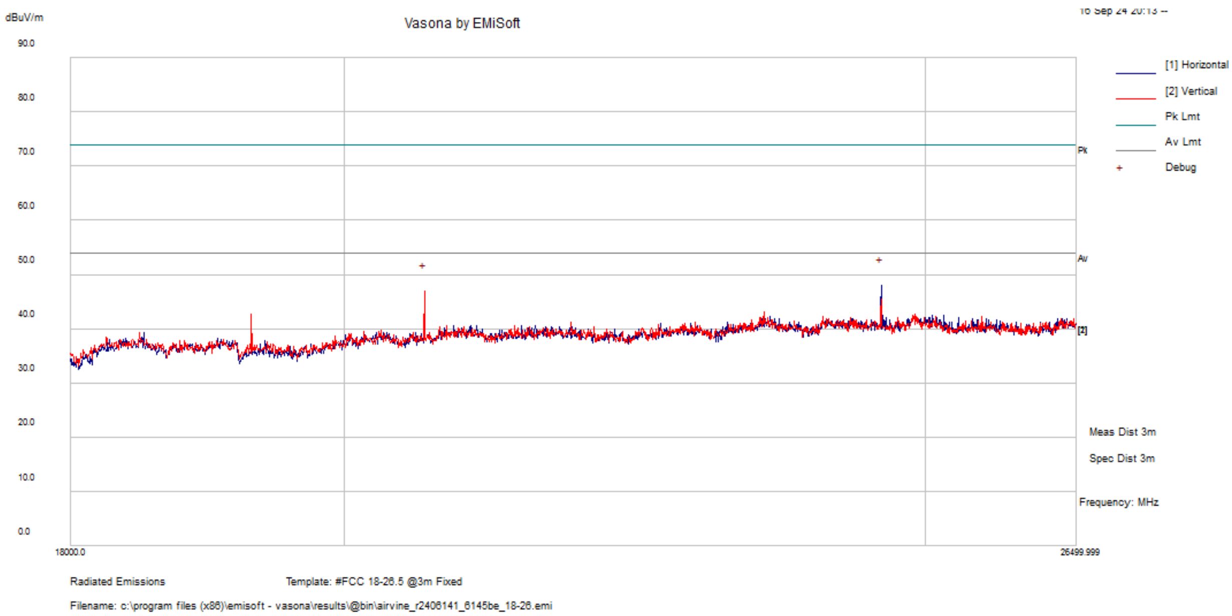
5985MHz, 802.11be80



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
20624.38	60.38	-12.85	47.53	200	V	360	54	-6.47	Peak
23939.37	55.26	-9.51	45.75	200	H	360	54	-8.25	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

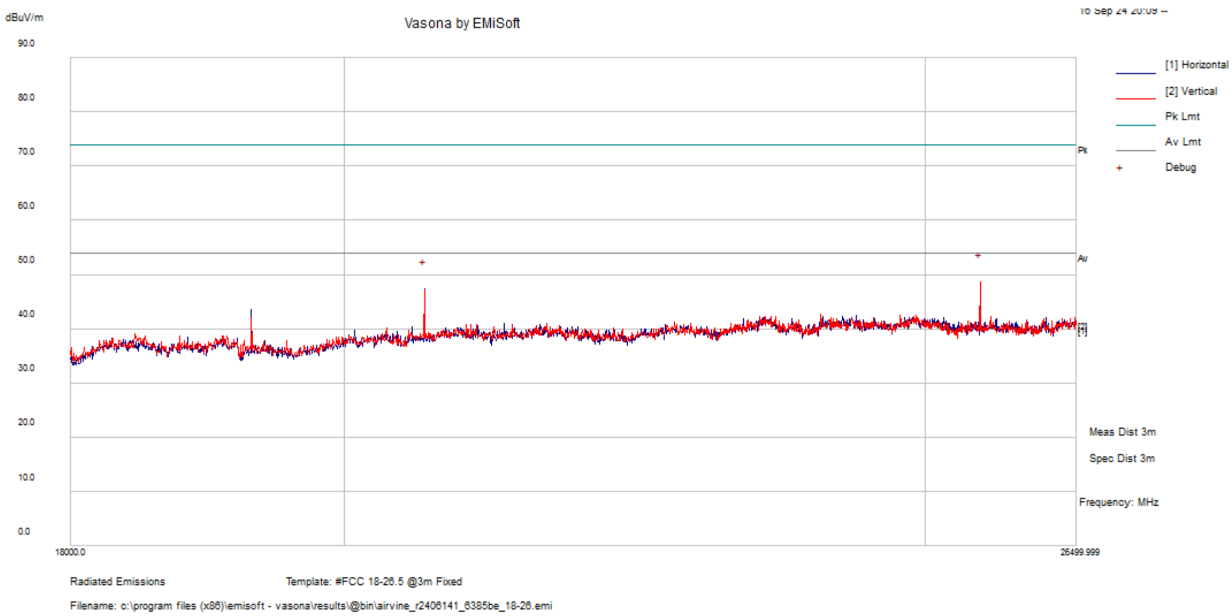
6145MHz, 802.11be80



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
24582.19	57.03	-9.12	47.91	200	H	360	54	-6.09	Peak
20624.38	59.67	-12.85	46.82	200	V	360	54	-7.18	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

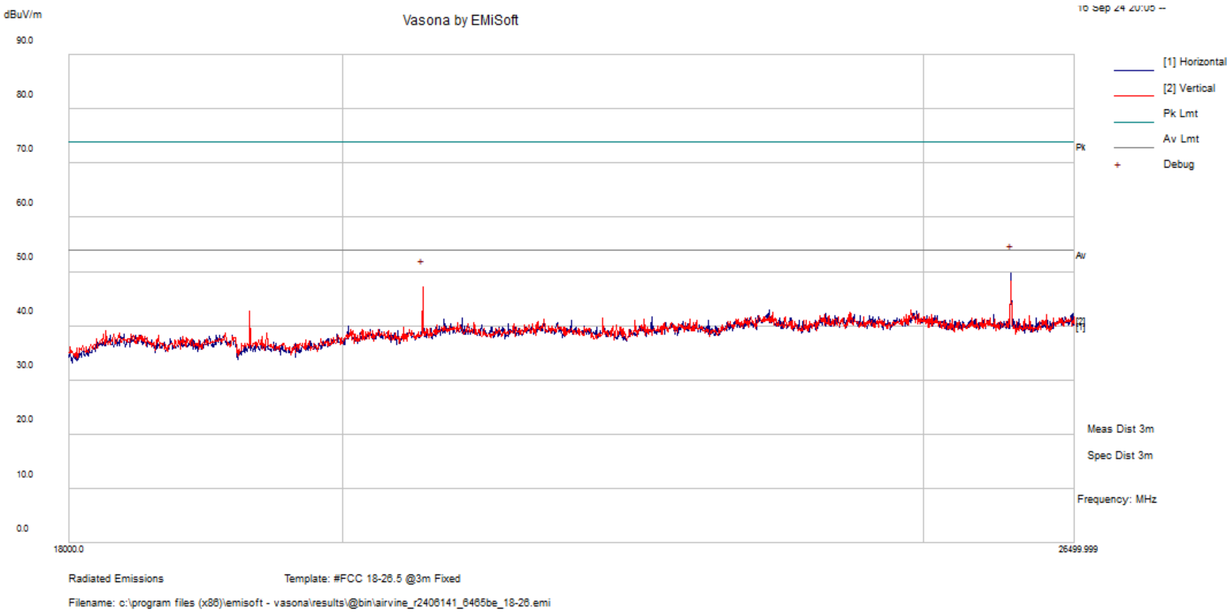
6385MHz, 802.11be80



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
25538.44	57.24	-8.65	48.59	200	V	360	54	-5.41	Peak
20624.38	60.28	-12.85	47.43	200	H	360	54	-6.57	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

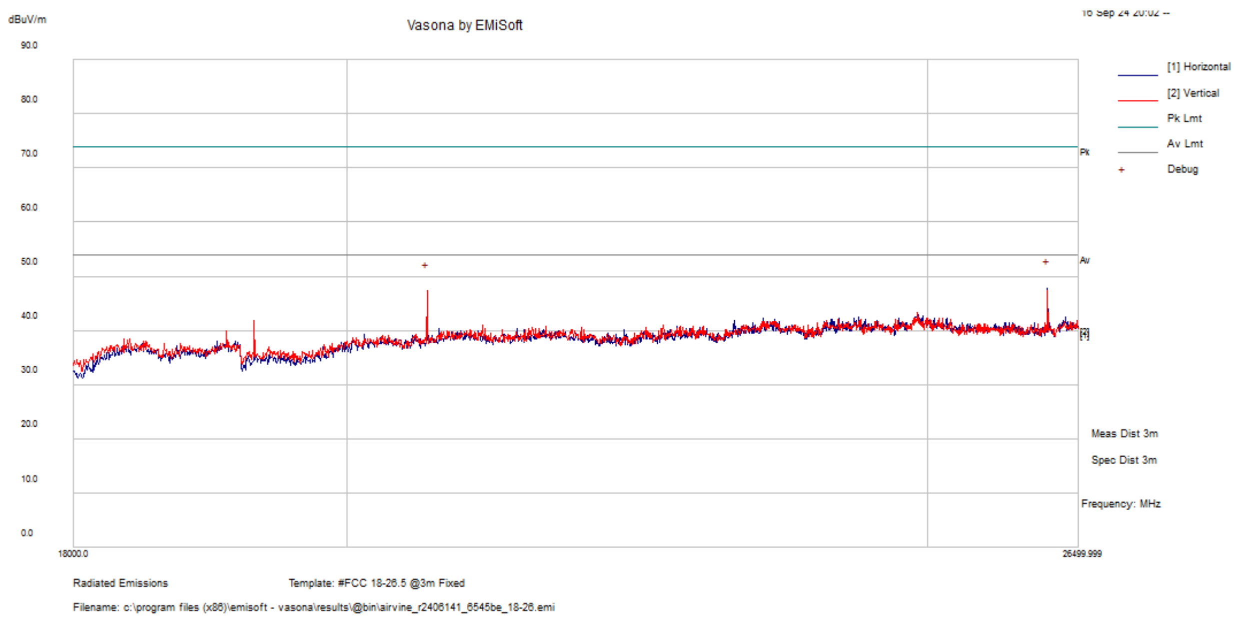
6465MHz, 802.11be80



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
25862.50	58.75	-8.97	49.78	200	H	360	54	-4.22	Peak
20624.38	59.90	-12.85	47.05	200	V	360	54	-6.95	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

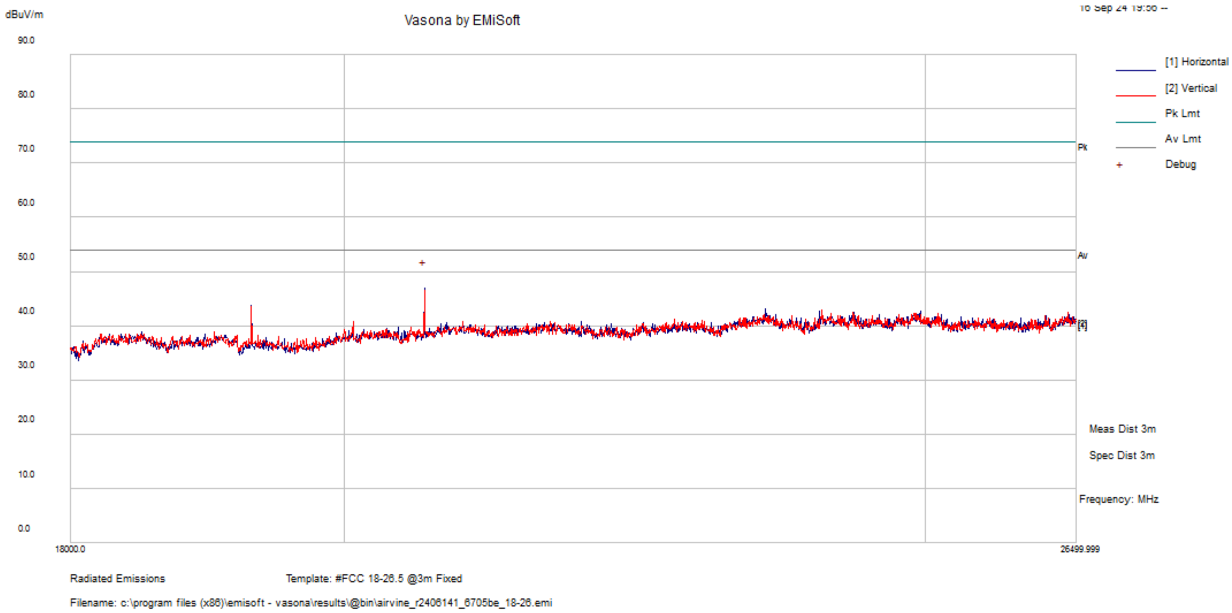
6545MHz, 802.11be80



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
26181.25	56.52	-8.75	47.77	200	H	360	54	-6.23	Peak
20624.38	60.10	-12.85	47.25	200	V	360	54	-6.75	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

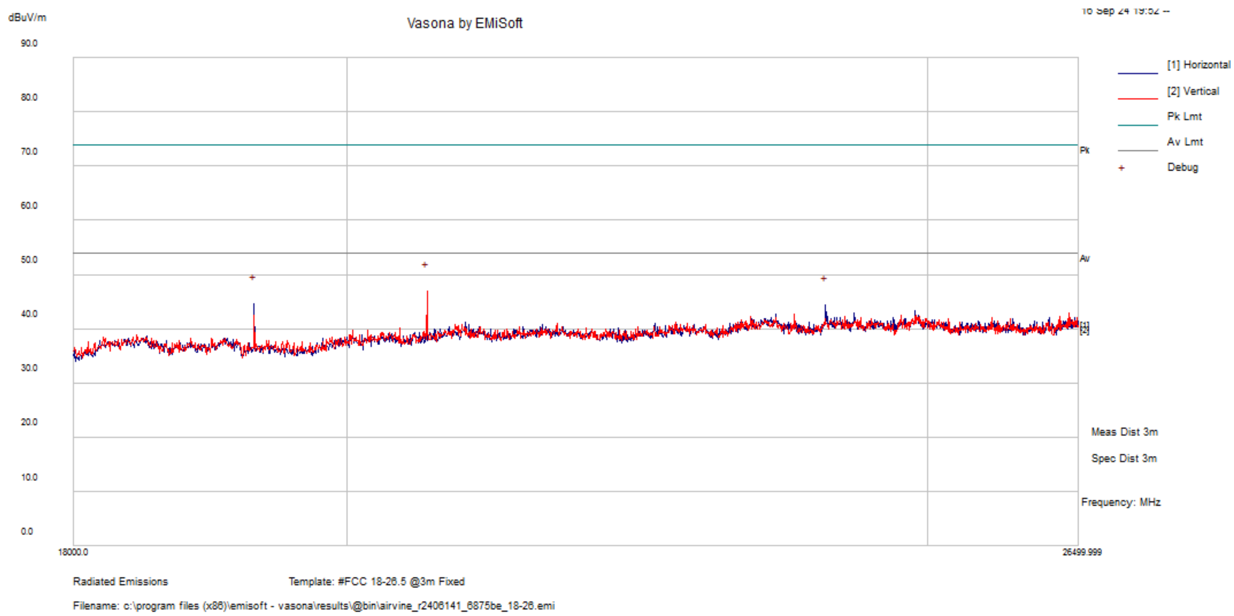
6705MHz, 802.11be80



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
20624.38	59.71	-12.85	46.86	200	H	360	54	-7.14	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

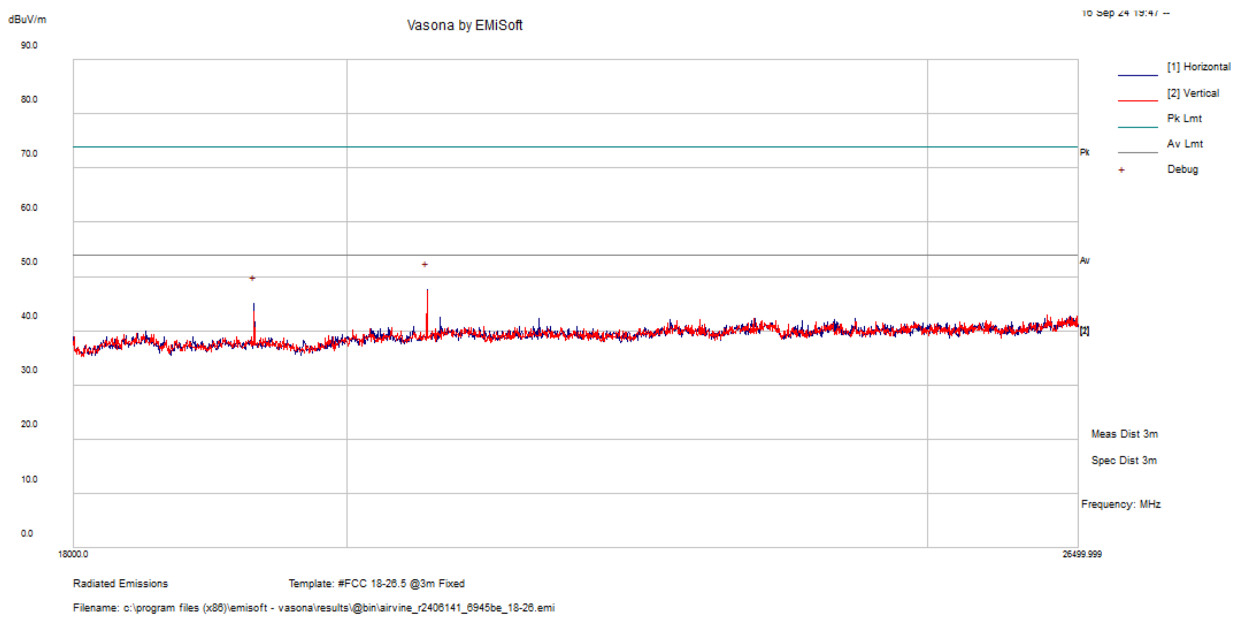
6865MHz, 802.11be80



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
20624.38	59.83	-12.85	46.98	200	H	360	54	-7.02	Peak
19296.25	60.09	-15.46	44.63	200	H	360	54	-9.37	Peak
24040.31	53.69	-9.24	44.45	200	H	360	54	-9.55	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

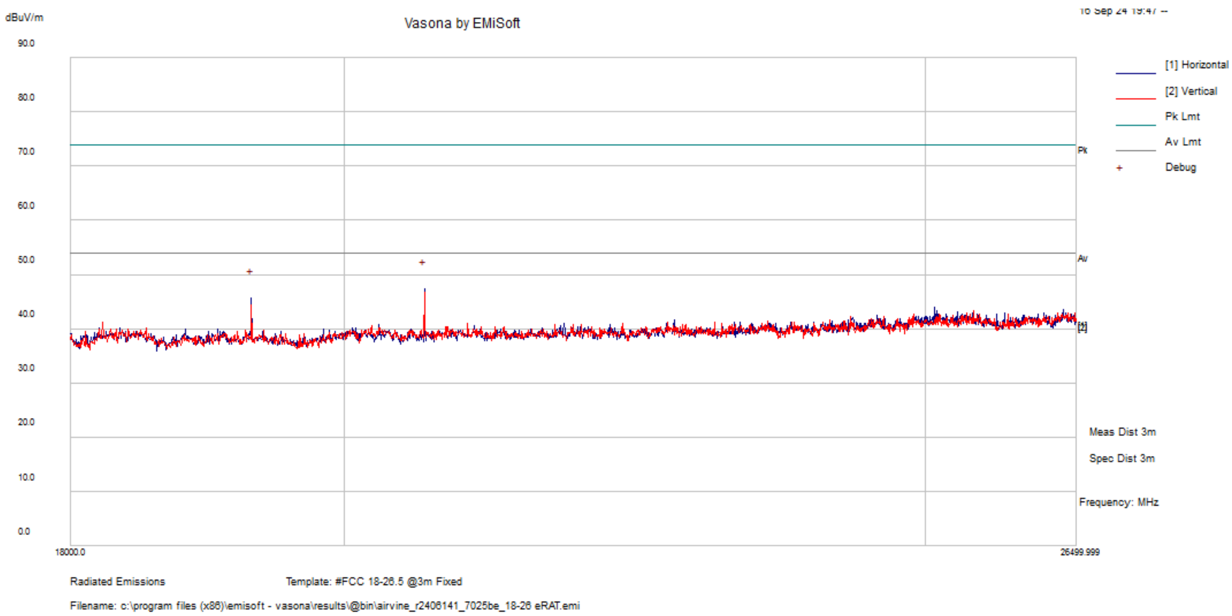
6945MHz, 802.11be80



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
20624.38	60.33	-12.85	47.48	200	H	360	54	-6.52	Peak
19296.25	60.42	-15.46	44.96	200	H	360	54	-9.04	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

7025MHz, 802.11be80

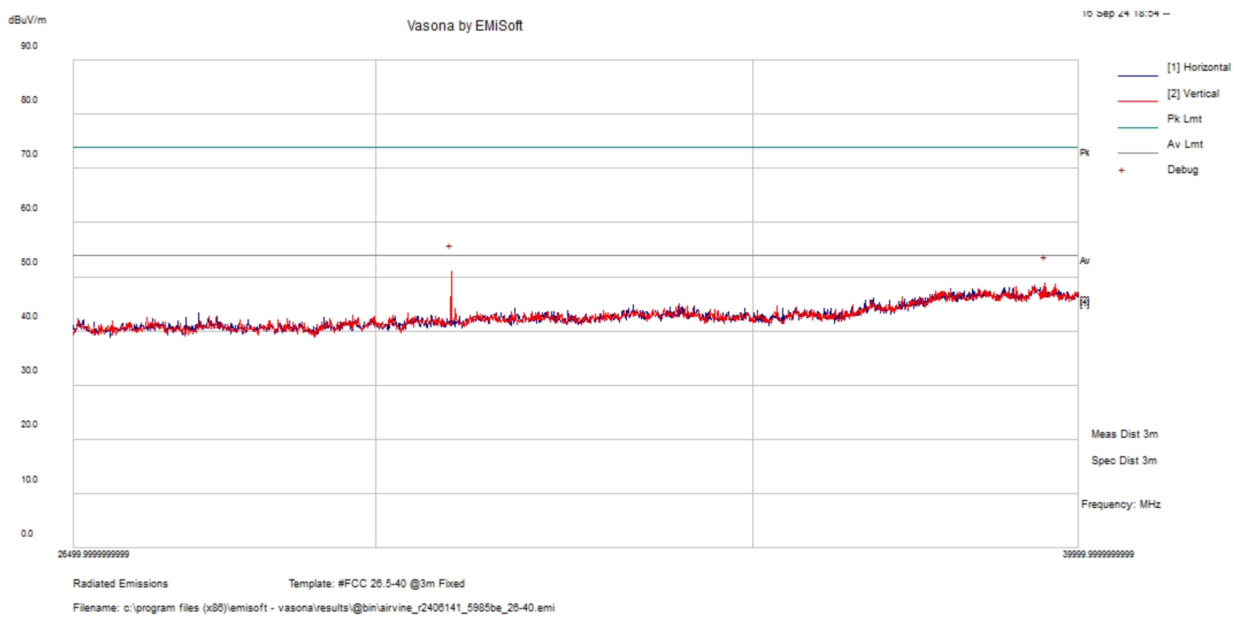


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBμV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBμV/m)	Margin (dB)	Detector
20624.38	60.30	-12.85	47.45	200	H	360	54	-6.55	Peak
19296.25	61.13	-15.46	45.67	200	H	360	54	-8.33	Peak

Note: The plot above shows that all peak emissions from 18 to 26.5GHz passed the average limits.

4) 26.5 GHz – 40 GHz, Measured at 3 meters

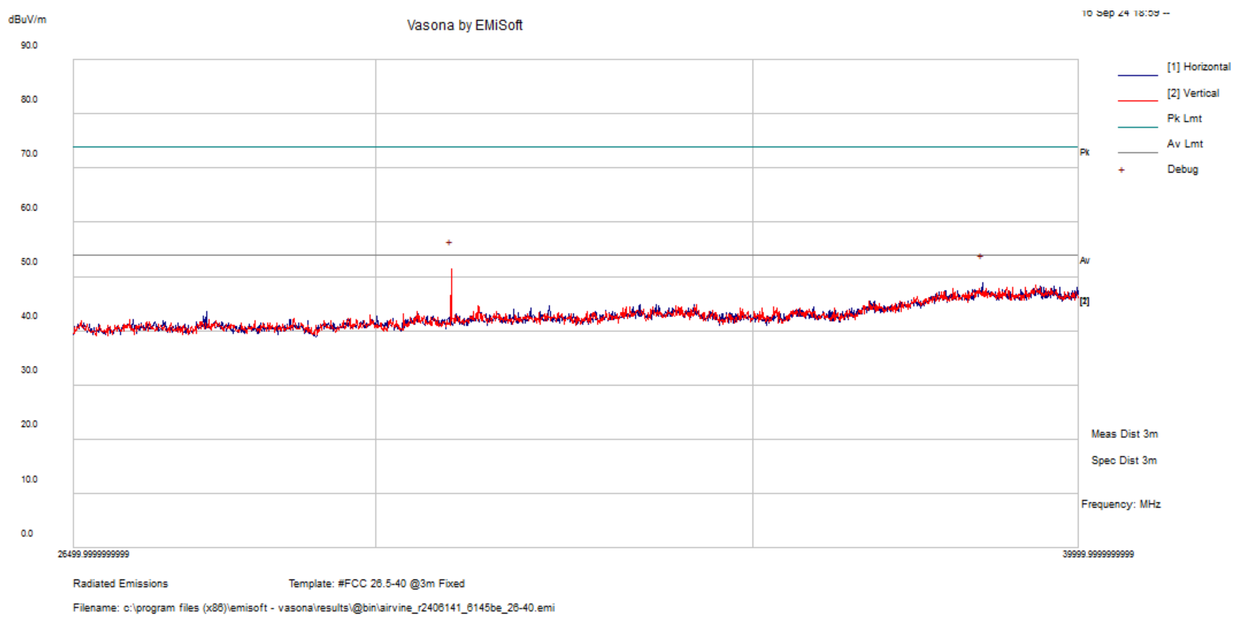
5985MHz, 802.11be80



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
30938.13	58.59	-7.72	50.87	200	V	360	54	-3.13	Peak
39451.56	53.77	-5.02	48.75	200	V	360	54	-5.25	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

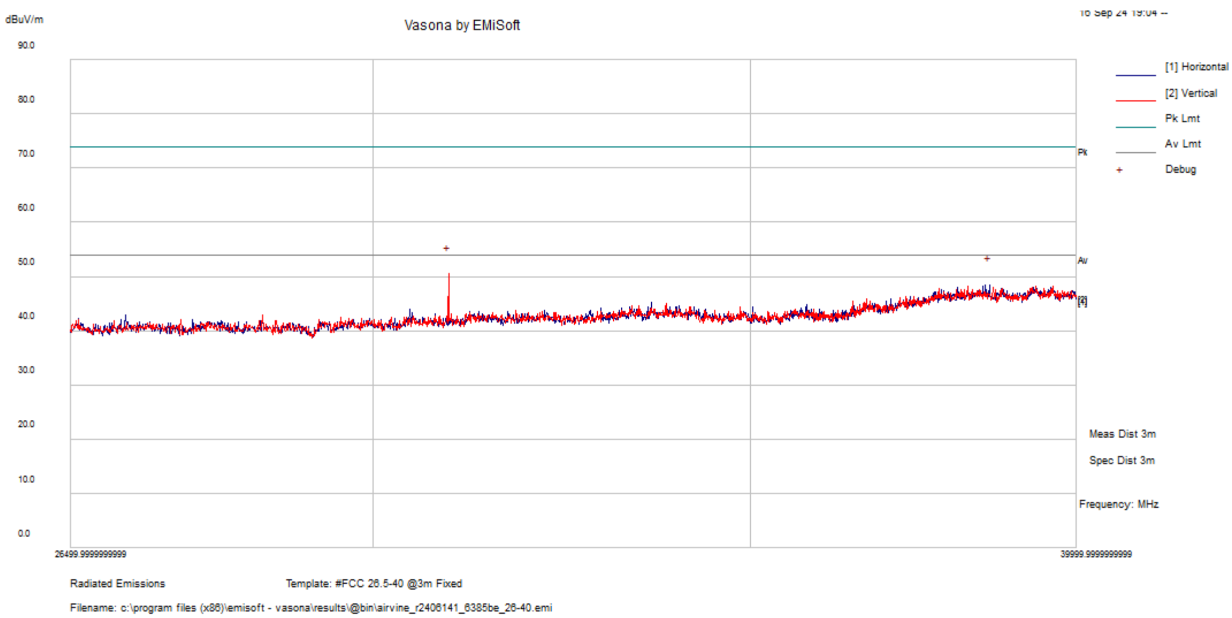
6145MHz, 802.11be80



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
30938.13	59.11	-7.72	51.39	200	V	360	54	-2.61	Peak
38455.94	53.52	-4.69	48.83	200	H	360	54	-5.17	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

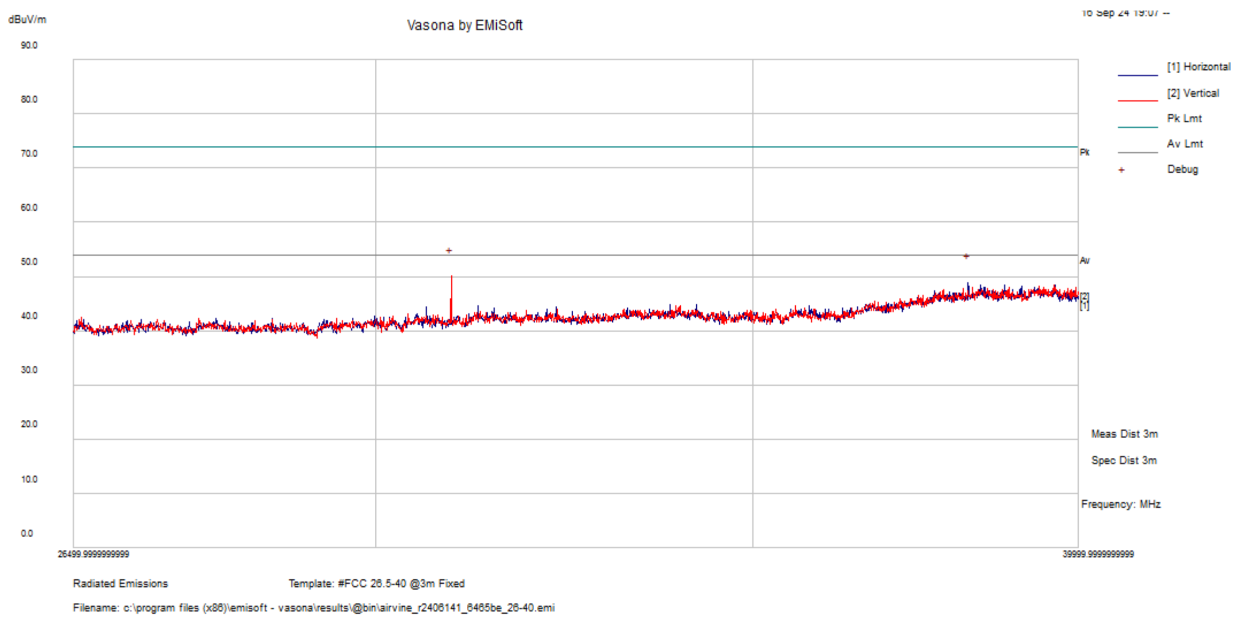
6385MHz, 802.11be80



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
38599.38	53.49	-5.07	48.42	200	H	360	54	-5.58	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

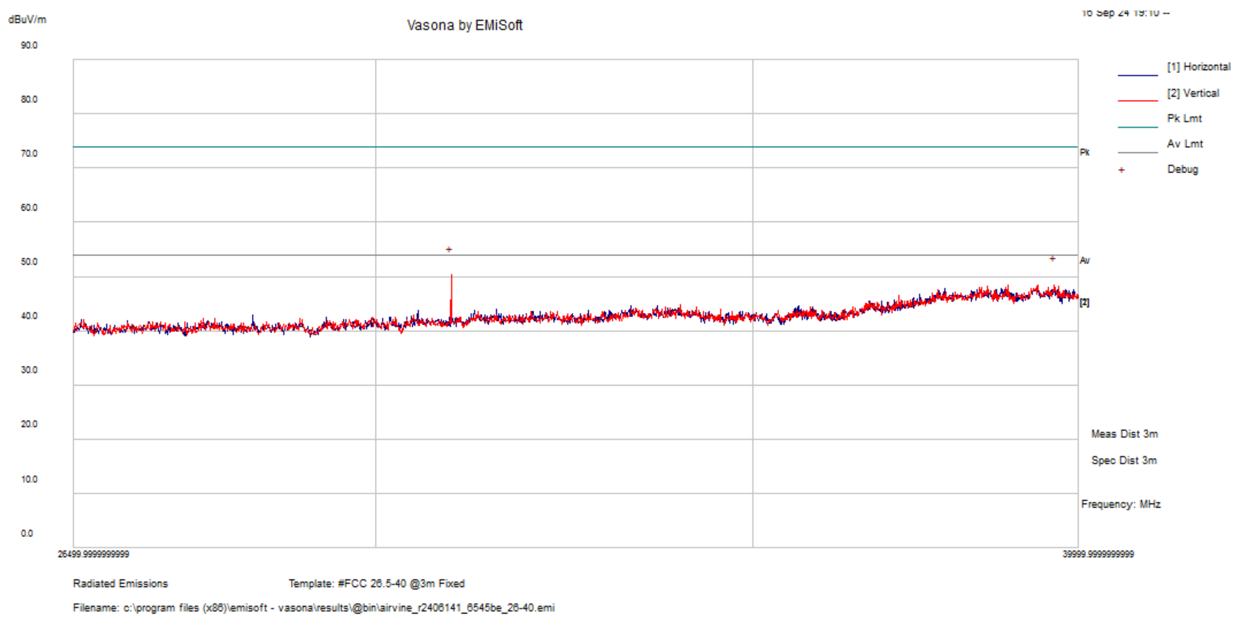
6465MHz, 802.11be80



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
30938.13	57.77	-7.72	50.05	200	V	360	54	-3.95	Peak
38228.13	54.07	-5.17	48.90	200	H	360	54	-5.10	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

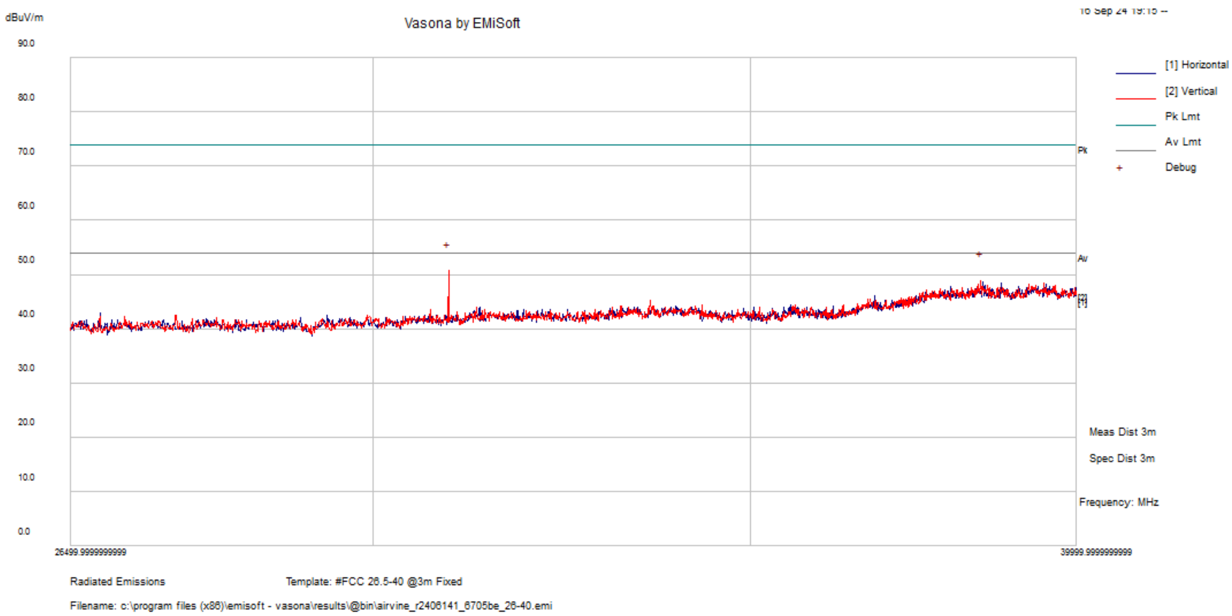
6545MHz, 802.11be80



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
30938.13	57.98	-7.72	50.26	200	V	360	54	-3.74	Peak
39603.44	53.08	-4.59	48.49	200	V	360	54	-5.51	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

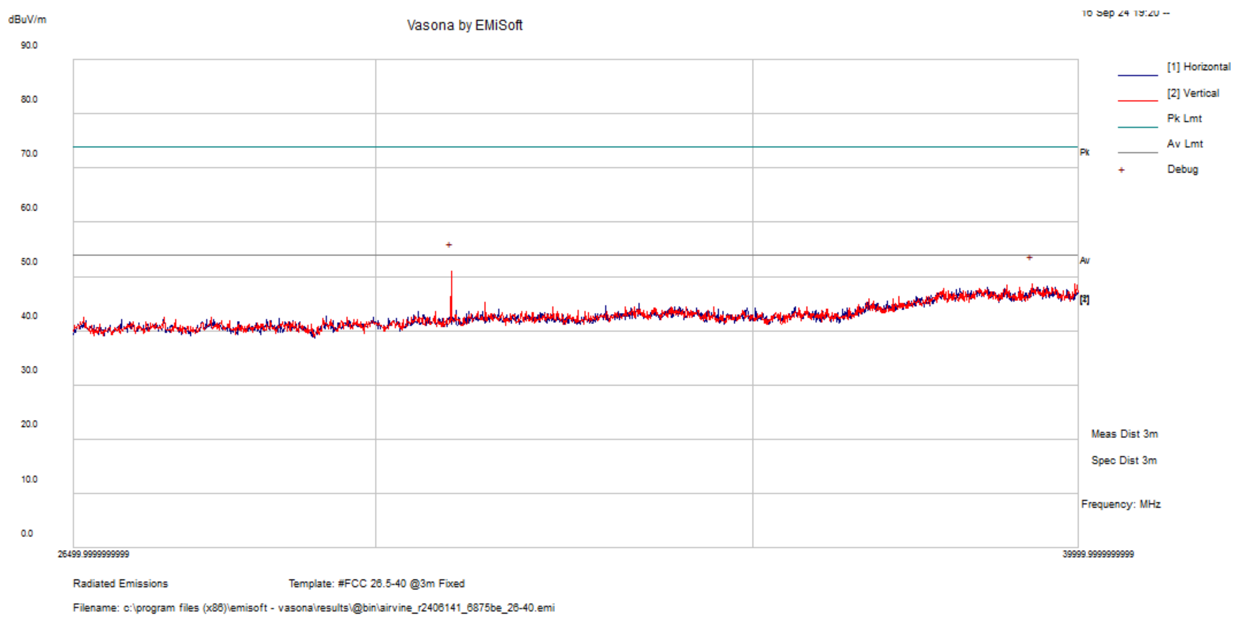
6705MHz, 802.11be80



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
30938.13	58.43	-7.72	50.71	200	V	360	54	-3.29	Peak
38464.38	53.62	-4.72	48.90	200	V	360	54	-5.10	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

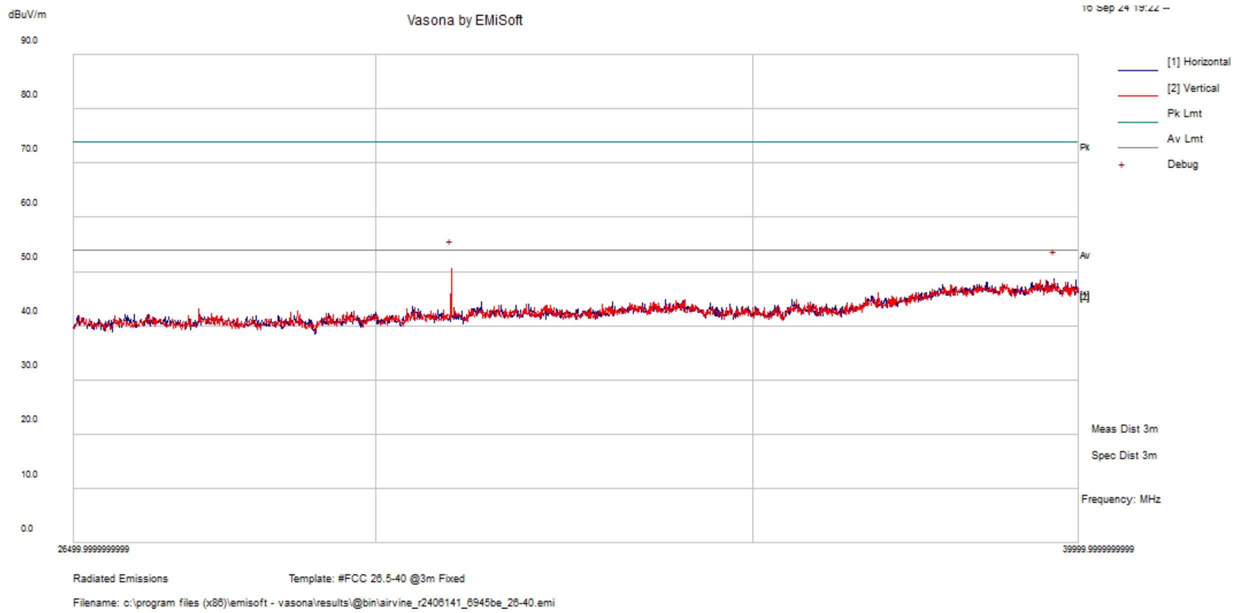
6865MHz, 802.11be80



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
30938.13	58.72	-7.72	51.00	200	V	360	54	-3.00	Peak
39240.63	53.42	-4.77	48.65	200	V	360	54	-5.35	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

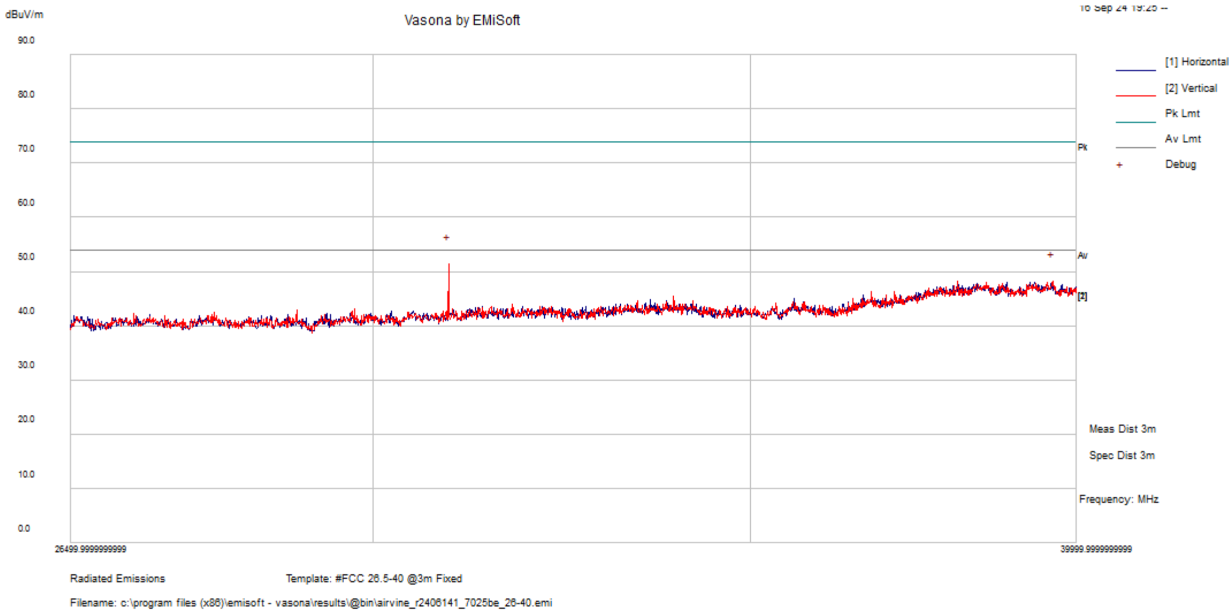
6945MHz, 802.11be80



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
30938.13	58.27	-7.72	50.55	200	V	360	54	-3.45	Peak
39603.44	53.23	-4.59	48.64	200	H	360	54	-5.36	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

7025MHz, 802.11be80



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
30938.13	59.14	-7.72	51.42	200	V	360	54	-2.58	Peak
39611.88	52.94	-4.64	48.30	200	V	360	54	-5.70	Peak

Note: The plot above shows that all peak emissions from 26.5 to 40GHz passed the average limits.

8 FCC §15.407(a)(11) & ISEDC RSS-248 §4.4 – Emission Bandwidth

8.1 Applicable Standards

As per FCC §15.407(e): The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz

As per ISEDC RSS-248 4.4: The occupied bandwidth of an RLAN device shall not exceed 320 MHz.

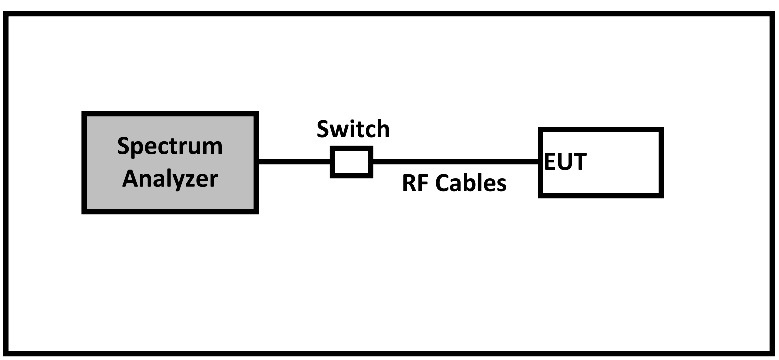
According to the Review of TCB PAG Submissions, October 25, 2023:

For channels with a nominal bandwidth less than 320 MHz, (e.g., 20, 40, 80, and 160 MHz), compliance is demonstrated by way of the 26 dB EBW. For channels with a nominal bandwidth of 320 MHz, compliance is demonstrated by way of the 99% BW. Measurements of both the 26 dB and 99% BW are to be made on all channels regardless of the nominal BW

8.2 Measurement Procedure

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1% to 5% of the OBW
4. Set VBW ≥ 3 × RBW
5. 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.
6. Use the 99% power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. 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% occupied bandwidth is the difference between these two frequencies.

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
624	Spectrum Analyzer	Spectrum Analyzer	E4446A	MY48250238	2024-06-14	1 year
1213	Radiall	USB powered 8 port coaxial (SMA) Switch	R574F11801	31ASW200257 60	Each Time[1]	-
-	-	RF Cables	-	-	Each Time[1]	-

Note[1]: cables and coaxial switch included in the test set-up were checked each time before testing.

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:	22 to 23 ºC
Relative Humidity:	42 to 47 %
ATM Pressure:	101.7 kPa

The testing was performed by Libass Thiaw from 2024-09-25 to 2024-09-26 at RF test site.

8.6 Test Results

Channel	Frequency (MHz)	99% OBW (MHz)				26 dB OBW (MHz)				99% OBW Limit (MHz)
		Chain0	Chain1	Chain2	Chain3	Chain0	Chain1	Chain2	Chain3	
802.11be80										
7	5985	77.73	77.69	77.93	77.71	87.61	89.25	88.73	87.30	< 320
39	6145	77.80	77.63	77.64	77.65	89.97	90.92	87.03	88.66	< 320
87	6385	77.77	77.57	77.79	77.72	89.39	87.93	89.00	89.74	< 320
103	6465	77.66	77.71	77.59	77.72	88.53	87.47	86.28	88.65	< 320
119	6545	77.82	77.68	77.85	77.63	88.61	88.59	89.64	89.17	< 320
151	6705	77.51	77.63	77.61	77.67	87.04	88.03	87.51	88.25	< 320
183	6865	77.67	77.68	77.53	77.83	88.13	88.77	88.06	91.16	< 320
199	6945	77.65	77.64	77.74	77.73	90.11	90.11	90.18	88.71	< 320
215	7025	77.52	77.82	77.64	77.64	86.83	88.20	88.30	89.60	< 320
802.11be160										
15	6025	157.01	156.88	157.15	156.68	173.66	172.23	169.93	172.37	< 320
37	6185	156.90	156.69	156.66	156.73	170.95	170.08	172.14	171.05	< 320
79	6345	157.08	157.24	156.88	156.80	172.53	170.94	170.08	171.78	< 320
111	6505	157.02	156.75	156.81	156.66	171.52	171.50	169.61	172.16	< 320
143	6665	156.67	156.91	156.84	156.99	170.80	168.94	174.13	170.82	< 320
175	6825	157.29	156.85	156.95	157.21	171.75	173.90	171.66	170.05	< 320
207	6985	156.60	156.64	156.87	156.80	172.59	170.78	171.55	171.05	< 320
802.11be320										
31	6105	314.56	314.67	314.60	314.84	335.79	335.52	333.40	333.27	< 320
63	6265	315.03	314.62	314.79	314.54	333.87	335.21	336.62	333.05	< 320
95	6425	315.04	314.77	314.98	314.70	339.18	336.68	333.88	336.73	< 320
127	6585	314.37	313.47	313.77	313.66	337.25	332.64	331.98	335.99	< 320
159	6745	315.47	314.86	314.98	315.22	335.41	332.65	334.18	338.16	< 320
191	6905	315.49	315.59	315.95	315.52	342.31	338.42	334.69	337.12	< 320

Test Result: Pass

Note 1: Channel allocations for U-NII-5/-6/-7/-8 bands are declared in Section 2.2 of this test report.
Note 2: Measurements of both the 26 dB and 99% BW were made on all channels regardless of the nominal BW.
Note 3: The < 320 MHz limit is applicable only for 99% OBW measurements, the 26 dB OBW data measurements are for informative purpose.

Please refer to the plots in Annex A for detailed Emission Bandwidth test results.

9 FCC §407(a)(5) & ISEDC RSS-248 §4.5.2 – Maximum EIRP

9.1 Applicable Standards

According to FCC §15.407(a)(5):

For an indoor access point operating in the 5.925-7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.

According to ISEDC RSS-248 §4.5.2:

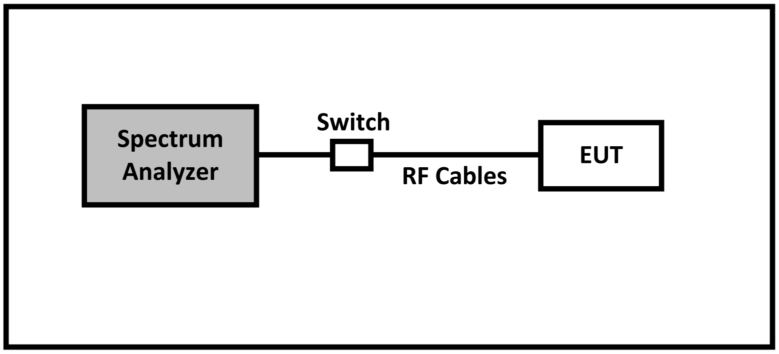
For low-power indoor access-points and indoor subordinate devices:

a. the maximum e.i.r.p. spectral density shall not exceed 5 dBm/MHz and
b. the maximum e.i.r.p. over the 5925-7125 MHz frequency band shall not exceed 30 dBm.

9.2 Measurement Procedure

1. Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
2. Set RBW = 1 MHz.
3. Set VBW ≥ 3 MHz.
4. Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
5. Sweep time = auto.
6. Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
7. If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”
8. Trace average at least 100 traces in power averaging (rms) mode.
9. Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

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
624	Spectrum Analyzer	Spectrum Analyzer	E4446A	MY48250238	2024-06-14	1 year
1213	Radiall	USB powered 8 port coaxial (SMA) Switch	R574F11801	31ASW200257 60	Each Time[1]	-
-	-	RF Cables	-	-	Each Time[1]	-

Note[1]: cables and coaxial switch included in the test set-up were checked each time before testing.

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:	22 to 23 ºC
Relative Humidity:	42 to 47 %
ATM Pressure:	101.7 kPa

The testing was performed by Libass Thiaw from 2024-09-25 to 2024-09-26 at RF test site.

9.6 Test Results

Channel	Frequency (MHz)	Conducted Output Power (dBm)				Antenna Gain (dBi)	Total e.i.r.p (dBm)	e.i.r.p Limit (dBm)	Result
		Chain0	Chain1	Chain2	Chain3				
802.11be80									
7	5985	-2.56	-2.14	-2.19	-2.28	18.49	22.22	< 30	Pass
39	6145	-2.61	-2.19	-2.71	-2.34	18.49	22.05	< 30	Pass
87	6385	-2.61	-2.51	-1.90	-2.32	18.49	22.18	< 30	Pass
103	6465	-1.78	-2.01	-1.45	-1.84	18.49	22.75	< 30	Pass
119	6545	-2.00	-1.81	-2.18	-1.36	18.49	22.68	< 30	Pass
151	6705	-2.21	-1.98	-3.02	-1.53	18.49	22.36	< 30	Pass
183	6865	-2.98	-3.28	-3.25	-4.37	18.49	21.07	< 30	Pass
199	6945	-2.26	-2.26	-1.79	-3.22	18.49	22.16	< 30	Pass
215	7025	-2.82	-2.54	-2.28	-3.01	18.49	21.86	< 30	Pass
802.11be160									
15	6025	0.43	0.94	1.03	1.30	18.49	25.45	< 30	Pass
47	6185	0.54	1.26	0.52	0.92	18.49	25.33	< 30	Pass
79	6345	0.50	0.35	1.09	0.52	18.49	25.13	< 30	Pass
111	6505	0.77	0.95	0.52	1.19	18.49	25.38	< 30	Pass
143	6665	0.80	1.16	-0.03	1.41	18.49	25.38	< 30	Pass
175	6825	0.85	0.67	0.73	-0.31	18.49	25.02	< 30	Pass
207	6985	0.70	1.01	1.40	0.50	18.49	25.43	< 30	Pass
802.11be320									
31	6105	3.25	3.83	3.25	3.49	18.49	27.97	< 30	Pass
63	6265	2.94	3.40	3.45	2.87	18.49	27.68	< 30	Pass
95	6425	3.23	2.96	3.45	2.95	18.49	27.66	< 30	Pass
127	6585	2.93	3.01	2.21	3.53	18.49	27.46	< 30	Pass
159	6745	3.04	3.21	2.39	2.51	18.49	27.31	< 30	Pass
191	6905	3.06	2.92	3.63	2.01	18.49	27.45	< 30	Pass

Note 1: Channel allocations for U-NII-5/-6/-7/-8 bands are declared in Section 2.2 of this test report.
Note 2: Total e.i.r.p (dBm) = 10*log(10^(e.i.r.p._Chain0/10)+10^(e.i.r.p._Chain1/10)+10^(e.i.r.p._Chain2/10)+10^(e.i.r.p._Chain3/10)).
Note 3: e.i.r.p._ChainX (dBm) = Conducted Output Power ChainX (dBm) + Antenna Gain (dBi), where X is from 0-3.
Note 4: Antenna gain was provided by customer.

Please refer to the plots in Annex B for detailed Maximum EIRP test results.

10 FCC §15.407(a)(5) & ISEDC RSS-248 §4.5.2 – Power Spectral Density EIRP

10.1 Applicable Standards

According to FCC §15.407(a)(5):

For an indoor access point operating in the 5.925-7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.

According to ISEDC RSS-248 §4.5.2:

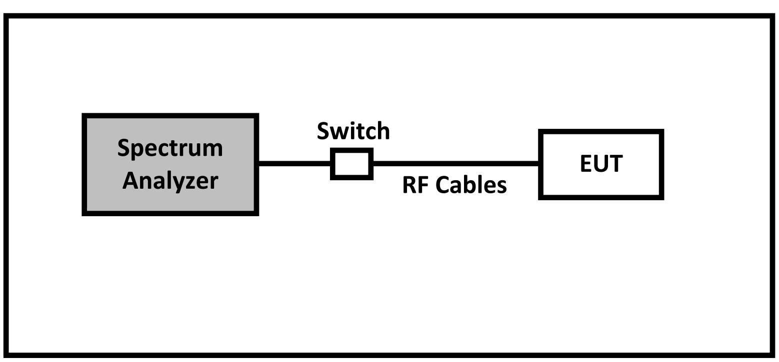
For low-power indoor access-points and indoor subordinate devices:

a. the maximum e.i.r.p. spectral density shall not exceed 5 dBm/MHz and
b. the maximum e.i.r.p. over the 5925-7125 MHz frequency band shall not exceed 30 dBm.

10.2 Measurement Procedure

1. Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
2. Set RBW = 1 MHz.
3. Set VBW ⩾ 3 MHz.
4. Number of points in sweep ⩾ 2 × span / RBW. (This ensures that bin-to-bin spacing is ⩽ RBW/2, so that narrowband signals are not lost between frequency bins.)
5. Sweep time = auto.
6. Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
7. If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ⩾ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”
8. Trace average at least 100 traces in power averaging (rms) mode.
9. Use the peak search function on the instrument to find the peak of the spectrum and record its value

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
624	Spectrum Analyzer	Spectrum Analyzer	E4446A	MY48250238	2024-06-14	1 year
1213	Radiall	USB powered 8 port coaxial (SMA) Switch	R574F11801	31ASW200257 60	Each Time	
-	-	RF Cables	-	-	Each Time[1]	-

Note[1]: cables and coaxial switch included in the test set-up were checked each time before testing.

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:	22 to 23 ºC
Relative Humidity:	42 to 47 %
ATM Pressure:	101.7 kPa

The testing was performed by Libass Thiaw from 2024-09-25 to 2024-09-26 at RF test site.

10.6 Test Results

Channel	Frequency (MHz)	Conducted PSD (dBm/MHz)				Antenna Gain (dBi)	Total e.i.r.p PSD (dBm/MHz)	e.i.r.p PSD Limit (dBm/MHz)	Result
		Chain0	Chain1	Chain2	Chain3				
802.11be80									
7	5985	-20.38	-19.99	-20.00	-20.28	18.49	4.35	< 5	Pass
39	6145	-20.48	-20.04	-20.67	-20.33	18.49	4.14	< 5	Pass
87	6385	-20.46	-20.05	-19.64	-19.93	18.49	4.50	< 5	Pass
103	6465	-19.59	-19.97	-19.36	-19.79	18.49	4.84	< 5	Pass
119	6545	-20.09	-19.85	-20.33	-19.35	18.49	4.62	< 5	Pass
151	6705	-19.87	-19.29	-20.69	-19.25	18.49	4.77	< 5	Pass
183	6865	-20.85	-20.81	-21.03	-22.37	18.49	3.29	< 5	Pass
199	6945	-20.25	-19.84	-19.78	-20.94	18.49	4.33	< 5	Pass
215	7025	-20.94	-20.55	-20.43	-21.06	18.49	3.77	< 5	Pass
802.11be160									
15	6025	-20.28	-19.88	-19.72	-19.56	18.49	4.66	< 5	Pass
47	6185	-20.15	-19.31	-20.17	-19.77	18.49	4.67	< 5	Pass
79	6345	-20.36	-20.42	-19.74	-20.13	18.49	4.36	< 5	Pass
111	6505	-20.13	-20.07	-20.43	-19.55	18.49	4.48	< 5	Pass
143	6665	-20.19	-19.31	-20.00	-20.60	18.49	4.51	< 5	Pass
175	6825	-19.97	-20.01	-19.66	-20.41	18.49	4.51	< 5	Pass
207	6985	-20.16	-19.65	-19.52	-20.42	18.49	4.59	< 5	Pass
802.11be320									
31	6105	-20.31	-20.23	-20.95	-20.28	18.49	4.08	< 5	Pass
63	6265	-20.71	-20.06	-20.10	-20.77	18.49	4.11	< 5	Pass
95	6425	-20.42	-20.74	-20.21	-20.88	18.49	3.96	< 5	Pass
127	6585	-20.71	-20.30	-21.38	-20.01	18.49	3.94	<5	Pass
159	6745	-19.77	-19.39	-20.21	-20.46	18.49	4.57	<5	Pass
191	6905	-20.62	-20.96	-20.04	-21.52	18.49	3.76	< 5	Pass

Note 1: Channel allocations for U-NII-5/-6/-7/-8 bands are declared in Section 2.2 of this test report.
Note 2: Total e.i.r.p. PSD (dBm/MHz) = 10*log(10^(e.i.r.p. PSD_Chain0/10)+10^(e.i.r.p. PSD_Chain1/10)+10^(e.i.r.p. PSD_Chain2/10) +10^(e.i.r.p. PSD_Chain3/10)).
Note 3: e.i.r.p. PSD_ChainX (dBm/MHz) = Conducted PSD_ChainX (dBm/MHz) + Antenna Gain (dBi), where X is from 0-3..
Note 4: Antenna gain was provided by customer.

Please refer to the plots in Annex C for detailed Power Spectral Density EIRP test results.

11 FCC §15.407(g) – Frequency Stability

11.1 Applicable Standards

According to FCC §15.407(g): Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

11.2 Evaluation Results

Customer confirmed an emission is maintained within the band of operation under all conditions of normal operation as specified in the user’s manual.

12 FCC §15.407(d)(6) & ISEDC RSS-248 §4.7 – Contention-based Protocol

12.1 Applicable Standards

According to FCC §15.407(d)(6): All U-NII transmitters, except for standard power access points and fixed client devices, operating in the 5.925-7.125 GHz band must employ a contention-based protocol.

According to ISEDC RSS-248 Section 4.7: Low-power indoor access points, indoor subordinate devices, and low-power client devices shall employ a contention-based protocol.

According to FCC KDB 987594 D02:

Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band (herein referred to as unlicensed devices) are required to use technologies that include a contention-based protocol to avoid co-channel interference with incumbent devices sharing the band. To ensure incumbent co-channel operations are detected in a technology-agnostic manner, unlicensed devices are required to detect co-channel radio frequency energy (energy detect) and avoid simultaneous transmission.

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel (in which incumbent signal is transmitted) and stay off the incumbent channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm)1 . The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain.

To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 MHz- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty

Table 1. Criteria to determine number of times detection threshold test may be performed

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Tune incumbent and EUT transmissions ($f_{c1} = f_{c2}$)
$BW_{Inc} < BW_{EUT} \leq 2BW_{Inc}$	Once	Incumbent transmission is contained within BW_{EUT}
$2BW_{Inc} < BW_{EUT} \leq 4BW_{Inc}$	Twice. Incumbent transmission is contained within BW_{EUT}	Incumbent transmission is located as closely as possible to the lower edge and upper edge, respectively, of the EUT channel
$BW_{EUT} > 4BW_{Inc}$	Three times	Incumbent transmission is located as closely as possible to the lower edge of the EUT channel, in the middle of EUT channel, and as closely as possible to the upper edge of the EUT channel

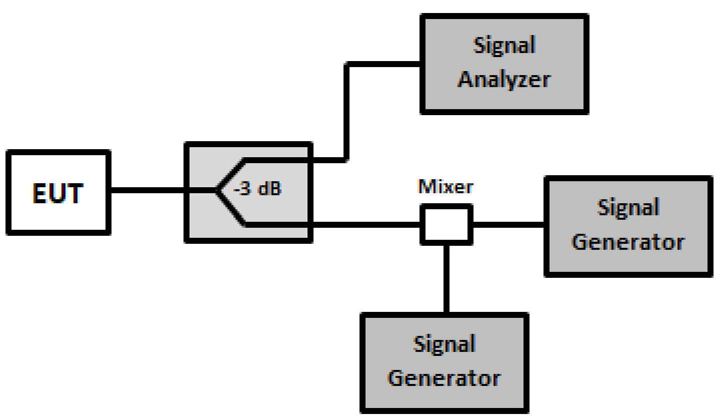
where:

BW_{EUT}: Transmission bandwidth of EUT signal
BW_{Inc}: Transmission bandwidth of the simulated incumbent signal (10 MHz wide AWGN signal)
f_{c1}: Center frequency of EUT transmission
f_{c2}: Center frequency of simulated incumbent signal

12.2 Measurement Procedure

1. Configure the EUT to transmit with a constant duty cycle.
2. Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.
3. Set the signal analyzer center frequency to the nominal EEUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2, as shown in Figure 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
4. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two.
5. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
6. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT as shown in Figure 2.
7. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
8. Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
9. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.
10. Refer to Table 1 to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal and repeat the process.

12.3 Test Setup Block Diagram



12.4 Test Equipment List and Details

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
1128	Agilent	EXA Signal Analyzer	N9010A	MY48030852	2024-05-23	1 year
1130	Keysight	Vector Signal Generator	N5183A	MY50140453	2023-10-31	1 year
688	Keysight	Vector Signal Generator	N5182B	MY51350070	2023-10-09	1 year
-	Mini Circuits	Mixer	ZMX-8GLH	-	Each Time[1]	-
-	Mini Circuits	Combiner	15542	-	Each Time[1]	-
-	-	RF cables	-	-	Each Time[1]	-

Note[1]: cables, mixer and combiner included in the test set-up were checked each time before testing.

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".*

12.5 Test Environmental Conditions

Temperature:	24.1 ºC
Relative Humidity:	49.1 %
ATM Pressure:	102.2 kPa

The testing was performed by Christian McCaig on 2024-10-03 at the RF test site.

12.6 Test Results

Channel	Freq (MHz)	BW (MHz)	Inc #	Inc_Freq (MHz)	SG Power @ EUT (dBm)	Detection Limit (dBm)	Result
7	5985	80	1	5985	-63	-62	Pass
			2	6020	-63	-62	Pass
			3	5950	-63	-62	Pass
103	6465		1	6465	-63	-62	Pass
			2	6500	-63	-62	Pass
			3	6430	-63	-62	Pass
135	6625		1	6625	-63	-62	Pass
			2	6660	-63	-62	Pass
			3	6590	-63	-62	Pass
199	6945		1	6945	-63	-62	Pass
			2	6980	-63	-62	Pass
			3	6910	-63	-62	Pass
31	6105	320	1	6105	-63	-62	Pass
			2	6260	-63	-62	Pass
			3	5950	-63	-62	Pass
95	6425		1	6425	-63	-62	Pass
			2	6580	-63	-62	Pass
			3	6270	-63	-62	Pass
159	6745		1	6745	-63	-62	Pass
			2	6900	-63	-62	Pass
			3	6590	-63	-62	Pass
191	6905		1	6905	-63	-62	Pass
			2	7060	-63	-62	Pass
			3	6750	-63	-62	Pass

Note 1: All testing were done on Chain0 port.
Note 2: AG Power @EUT already considered antenna gain.
Note 3: -63dBm was used to show minimum compliance met across all configurations.

Channel	Freq (MHz)	BW (MHz)	Inc #	Detected Number	Percentage Detected (%)	Limit (%)	Result
7	5985	80	1	10	100	90	Pass
			2	10	100	90	Pass
			3	10	100	90	Pass
103	6465		1	10	100	90	Pass
			2	10	100	90	Pass
			3	10	100	90	Pass
135	6625		1	10	100	90	Pass
			2	10	100	90	Pass
			3	10	100	90	Pass
199	6945		1	10	100	90	Pass
			2	10	100	90	Pass
			3	10	100	90	Pass
31	6105	320	1	10	100	90	Pass
			2	10	100	90	Pass
			3	10	100	90	Pass
95	6425		1	10	100	90	Pass
			2	10	100	90	Pass
			3	10	100	90	Pass
159	6745		1	10	100	90	Pass
			2	10	100	90	Pass
			3	10	100	90	Pass
191	6905		1	10	100	90	Pass
			2	10	100	90	Pass
			3	10	100	90	Pass

Please refer to the plots in Annex F for detailed Contention-based Protocol test results.

13 Annex A – Emission Bandwidth

Please refer to the attachment.

14 Annex B – Maximum EIRP

Please refer to the attachment.

15 Annex C – Power Spectral Density EIRP

Please refer to the attachment.

16 Annex D – Band Edges at Antenna Terminals (-27 dBm)

Please refer to the attachment.

17 Annex E – Emission Masks

Please refer to the attachment.

18 Annex F – Contention-based Protocol

Please refer to the attachment.

19 Appendix A (Normative) – EUT Test Setup Photographs

Please refer to the attachment.

20 Appendix B (Normative) – EUT External Photographs

Please refer to the attachment.

21 Appendix C (Normative) – EUT Internal Photographs

22 Appendix D (Normative) – A2LA Electrical Testing Certificate

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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

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