MEASUREMENT REPORT

FCC PART 15 Subpart C WLAN 802.11b/g/n

FCC ID:	2ALGLX2000
Applicant:	CASSIA NETWORKS INC
Application Type:	Certification
Product:	Cassia Bluetooth Router
Model No.:	X2000, X2000-10, X2000-20
Brand Name:	CASSIA
FCC Classification:	Digital Transmission System (DTS)
FCC Rule Part(s):	Part15 Subpart C (Section 15.247)
Test Procedure(s):	ANSI C63.10-2013
Received Date:	2012.12.23
Test Date:	2021.01.20 ~ 2021.03.02

Tested By : kevin ker
(Kevin Ker)

Reviewed By : Paddy Chen
(Paddy Chen)

Approved By : Chenz Ker
(Chenz Ker)

Testing Laboratory
3261

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2012TW0006-U1	1.0	Initial Report	2021-03-17	Valid

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General Information

Applicant	CASSIA NETWORKS INC
Applicant Address	1840 Majestic Way San Jose, CA 95132,USA
Manufacturer	CASSIA NETWORKS INC
Manufacturer Address	1840 Majestic Way San Jose, CA 95132,USA
Test Site	MRT Technology (Taiwan) Co., Ltd
Test Site Address	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.	291082
FCC Rule Part(s)	Part 15.247
Test Device Serial No.	N/A ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Taiwan, EU and TELEC Rules.

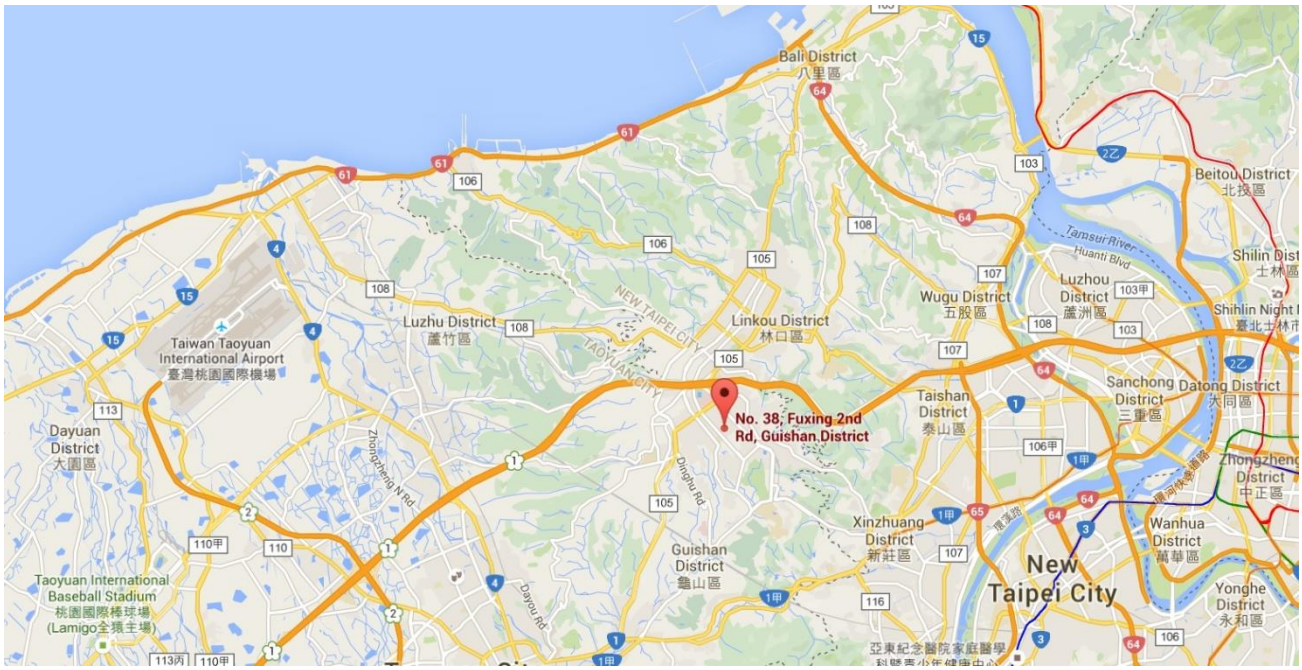
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada and Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



2. PRODUCT INFORMATION

2.1. Feature of Equipment under Test

Product Name	Cassia Bluetooth Router
Model No.	X2000, X2000-10, X2000-20
Chip 0 Bluetooth Version	V5.0 (Single Mode)
Chip 1 Bluetooth Version	V5.0 (Single Mode)
Wi-Fi Specification	802.11a/b/g/n/ac
Working Voltage	12Vdc 2.0A or 57Vdc 350mA (PoE)

Remark:

1. PoE adapter was selected by MRT for all testing, due to DC adapter and PoE adapter not selling with product.
2. The difference of models only for marketing different client, the other was the same. X2000 was selected for all testing.

2.2. Product Specification Subjective to this Report

Frequency Range	802.11b/g/n-HT20: 2412 ~ 2462MHz
Channel Number	802.11b/g/n-HT20: 11
Type of Modulation	802.11b: DSSS 802.11g/n: OFDM
Data Rate	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 72.2Mbps

Note: For other features of this EUT, test report will be issued separately.

2.3. Working Frequencies for this report

802.11b/g/n-HT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz	--	--

2.4. Description of Available Antennas

Antenna Type	Model No.	Manufacturer	Frequency Band (MHz)	T_X Paths	Ant Gain (dBi)
BLE (Internal Antenna)					
PCB	Q-24254M1-GHW-X2000	HL Tronics (Kunshan) Co., Ltd.	2402 ~ 2480	3	7.72
BLE (External Antenna)					
Directional	**DF24-30V14F**	DIPOLE COMMUNICATIONS LIMITED	2402 ~ 2480	1	**14.0**
Directional	DB24-40V14A				14.0
Directional	DB24-120VH14A				14.0
Directional	DB24-65V12A				12.0
Directional	DF24-60V12M				12.0
Directional	DB24-90V11A				11.0
Directional	DF24-90V11M				11.0
Directional	DF24-110V10F				10.0
Directional	DB24-120V10A				10.0
Directional	DB24-120VH09A				9.0
Directional	TDJ-2400BKC14				14.0
Directional	TDJ-2400BFE				14.0
Directional	KBT120VP13-24RT0				13.0
Directional	TDJ-2400BKCH70				11.0
Directional	SPDG16T2				12.2
Directional	OSCAR18				10.0
Wi-Fi (Internal Antenna)					
PCB	N2420DTS	Airgain	2412 ~ 2462	1	3.70
			5150 ~ 5725	1	6.60
			5725 ~ 5850	1	7.30

Note 1: Bluetooth and Wi-Fi 2.4G or Wi-Fi 5G can transmit simultaneously, but it can not transmit

simultaneously between the Bluetooth chips.

Note 2: Only the directional antenna (DF24-30V14F) was selected for all test, the same power setting with the different BLE external antennas.

Note 3: All messages as above are declared by manufacturer.

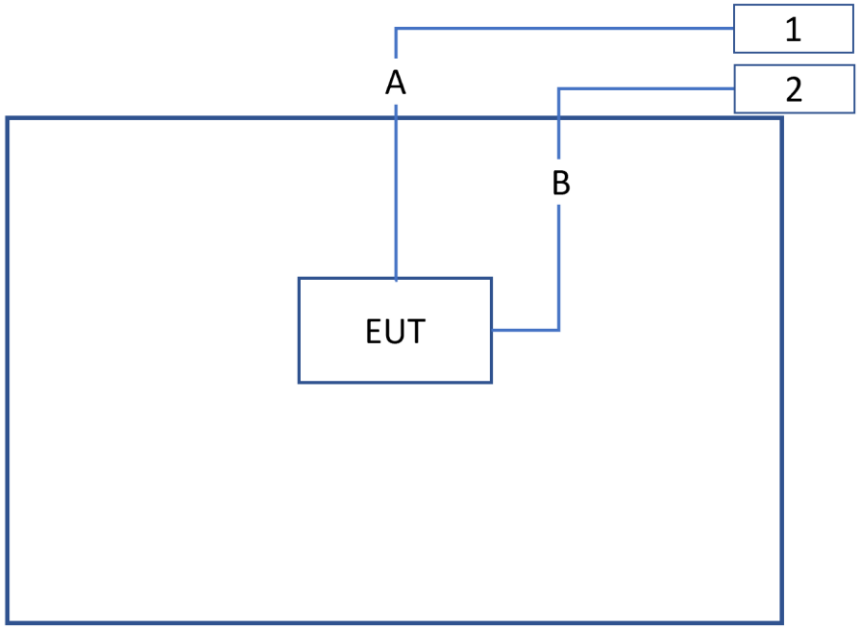
2.5. Test Mode

Test Mode	Mode 1: Transmit by 802.11b (1Mbps)
	Mode 2: Transmit by 802.11g (6Mbps)
	Mode 3: Transmit by 802.11n-HT20 (MCS0)

2.6. Configuration of Test System

The measurement procedures and appropriate EUT setup described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) was used in the measurement.

Connection Diagram



Cable Type		Cable Description
A	LAN Cable	Non-Shielded, ≥10m
B	Serial port cable	Non-Shielded, ≥1.5m

2.7. Test System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.
1	PoE Adapter	N/A	N/A
2	Notebook	DELL	Vostro 3300

2.8. Description of Test Software

The test utility software used during testing was “SecureCRT”.

Note: Final power setting please refer to operational description.

2.9. Applied Standards

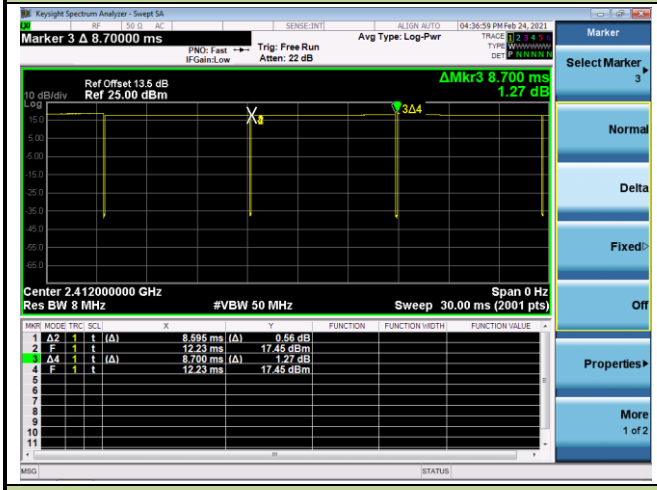
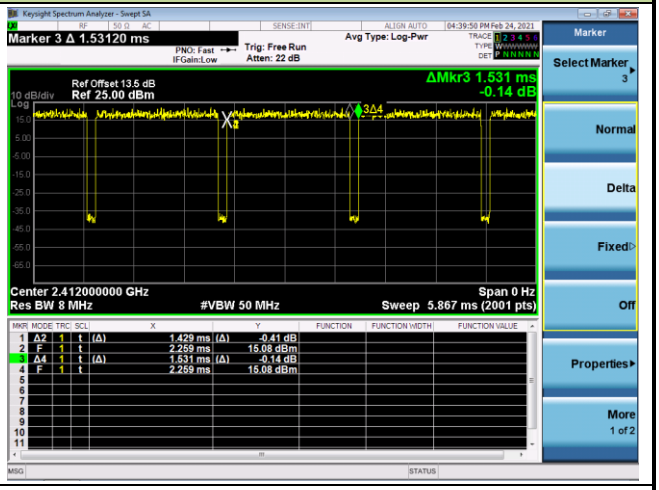
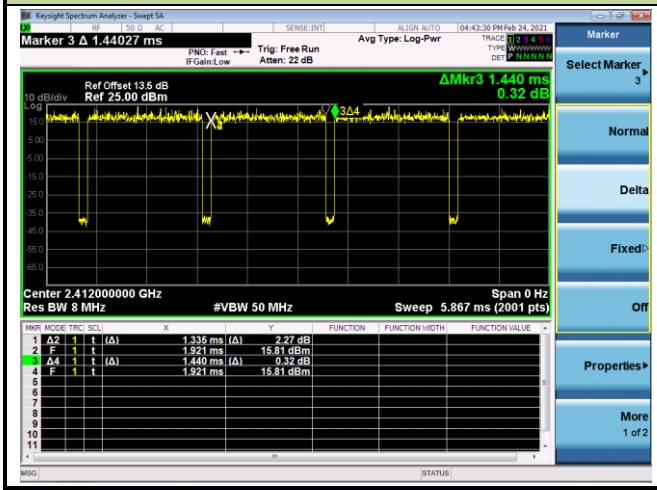
According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15.247
- KDB 558074 D01v05r02
- ANSI C63.10-2013

2.10. Duty Cycle

2.4GHz WLAN (DTS) operation is possible in 20MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Test Mode	Duty Cycle
802.11b	98.79%
802.11g	93.34%
802.11n-HT20	92.71%

Duty Cycle (T = Transmission Duration)	
802.11b (T=8.595ms)	802.11g (T=1.429ms)
	
802.11n-HT20 (T=1.335ms)	
	

2.11. Test Configuration

The device was tested per the guidance of ANSI C63.10-2013. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

2.12. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.13. Labeling Requirements

<u>Per 2.1074 & 15.19; Docket 95-19</u>

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase.

However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION of TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance was used in the measurement.

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 8'x4'x4' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying power lines, the mode of operation or data exchange speed, or support equipment whichever determined the worst-case emission. Once the worst-case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions. According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

4. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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."

Device is defined as a professional installation device that declared by manufacturer.

Conclusion:

The unit complies with the requirement of §15.203.

5. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2021/03/26
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2021/04/24
EMI Test Receiver	R&S	ESR3	MRTTWA00045	1 year	2021/05/26
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2021/05/28

Radiated Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2021/10/05
Acitve Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2021/04/27
Broadband Hornantenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2021/04/24
Breitband Hornantenna	SCHWARZBECK	BBHA 9170	MRTTWA00004	1 year	2021/04/24
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2021/04/24
Broadband Amplifier	SCHWARZBECK	BBV 9721	MRTTWA00006	1 year	2021/04/24
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2021/03/24
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2021/03/25
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2021/11/02
Antenna Cable	HUBERSUHNER	SF106	MRTTWE00010	1 year	2021/06/16
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00032	1 year	2021/05/28

Conducted Test Equipment

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
X-Series USB Peak and Average Power Sensor	KEYSIGHT	U2021XA	MRTTWA00014	1 year	2021/04/24
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2021/11/02
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2021/07/11
Attenuator	WTI	218FS-20	MRTTWE00026	1 year	2021/05/30
Attenuator	WTI	218FS-10	MRTTWE00027	1 year	2021/05/30
Attenuator	WTI	218FS-06	MRTTWE00028	1 year	2021/05/30
Temperature & Humidity Chamber	TEN BILLION	TTH-B3UP	MRTTWA00036	1 year	2021/06/10
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00033	1 year	2021/05/28

Software	**Version**	**Function**
e3	9.160520a	EMI Test Software

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

AC Conducted Emission Measurement
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 150kHz~30MHz: 2.53dB
Radiated Emission Measurement
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz ~ 1GHz: 4.25dB 1GHz ~ 40GHz: 4.45dB
Conducted Power
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ± 0.84dB
Conducted Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ± 2.65 dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 3.3%
Temp. / Humidity
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ±0.82°C/ ±3%

7. TEST RESULT

7.1. Summary

FCC Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	6dB Bandwidth	≥ 500kHz	Conducted	Pass	Section 7.2
15.247(b)(3)	Output Power	≤ 30dBm		Pass	Section 7.3
15.247(e)	Power Spectral Density	≤ 8dBm/3kHz		Pass	Section 7.4
15.247(d)	Band Edge / Out-of-Band Emissions	≥ 30dBc (Average)		Pass	Section 7.5
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209	Radiated	Pass	Section 7.6 & 7.7
15.207	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	N/A	Section 7.8

Notes:

1) Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.
2) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
3) Output power test was verified over all data rates of each mode (data refers to operational description), and then choose the maximum power output (low data rate) for the final test of each channel.
4) For radiated emission tests, the test results shown in the following sections represent the worst-case emissions.

7.2. 6dB Bandwidth Measurement

7.2.1.Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

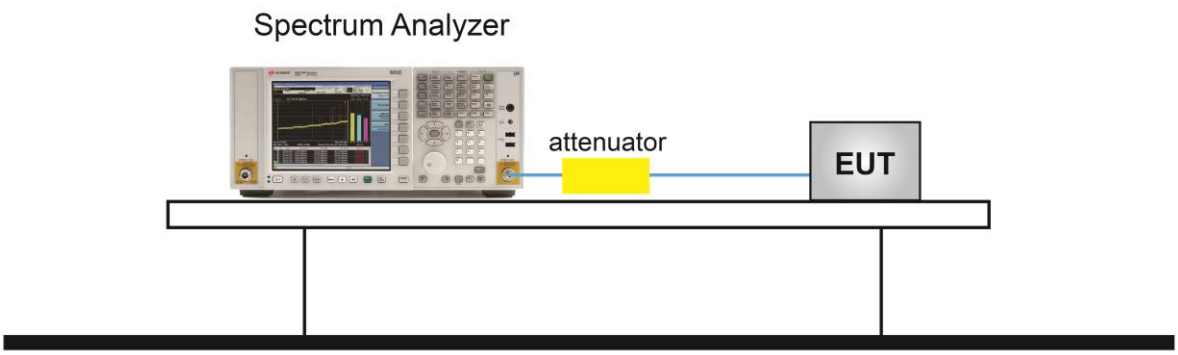
7.2.2.Test Procedure used

ANSI C63.10 - 2013 - Section 11.8

7.2.3.Test Setting

1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. Set RBW = 100 kHz
3. VBW ≥ 3 × RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace was allowed to stabilize

7.2.4.Test Setup



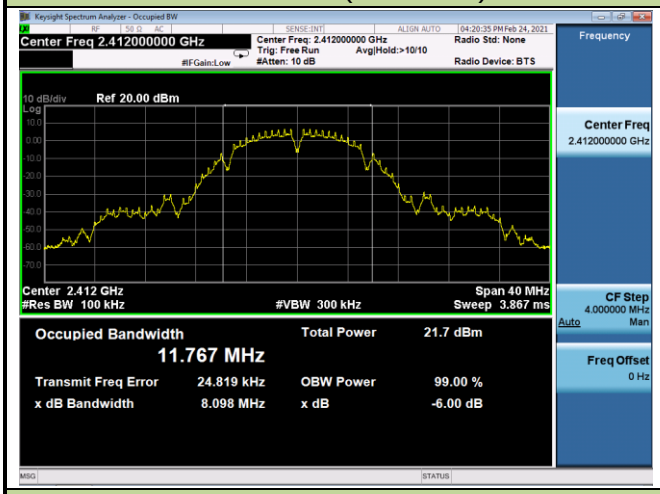
7.2.5.Test Result

Product	Cassia Bluetooth Router	Temperature	23 ~ 25°C
Test Engineer	Eric Lin	Relative Humidity	46 ~ 54%
Test Site	SR2	Test Date	2021/02/24

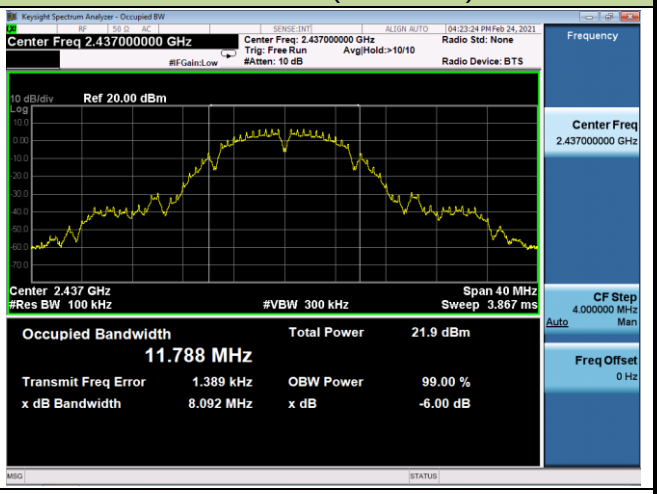
Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	1Mbps	01	2412	8.10	≥ 0.5	Pass
802.11b	1Mbps	06	2437	8.10	≥ 0.5	Pass
802.11b	1Mbps	11	2462	8.57	≥ 0.5	Pass
802.11g	6Mbps	01	2412	16.32	≥ 0.5	Pass
802.11g	6Mbps	06	2437	16.32	≥ 0.5	Pass
802.11g	6Mbps	11	2462	16.06	≥ 0.5	Pass
802.11n-HT20	MCS0	01	2412	17.31	≥ 0.5	Pass
802.11n-HT20	MCS0	06	2437	17.05	≥ 0.5	Pass
802.11n-HT20	MCS0	11	2462	16.91	≥ 0.5	Pass

802.11b 6dB Bandwidth

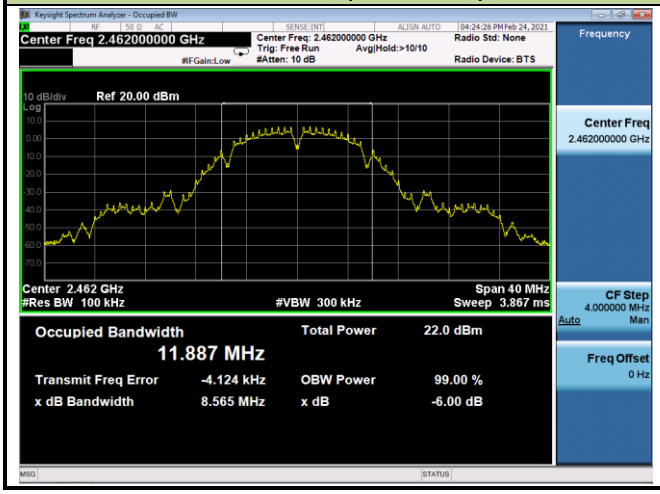
Channel 01 (2412MHz)



Channel 06 (2437MHz)

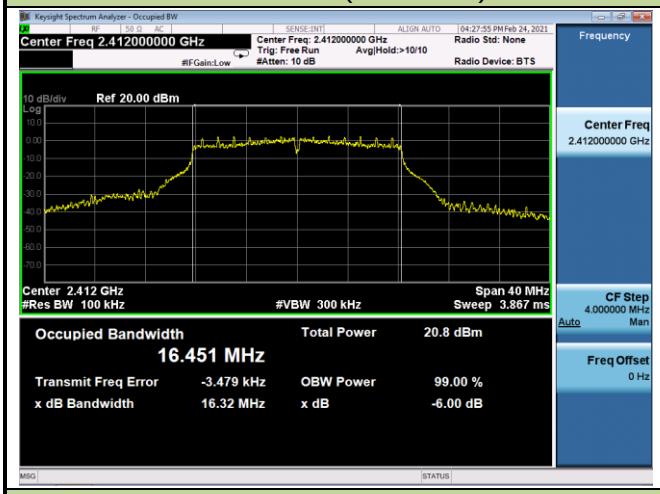


Channel 11 (2462MHz)

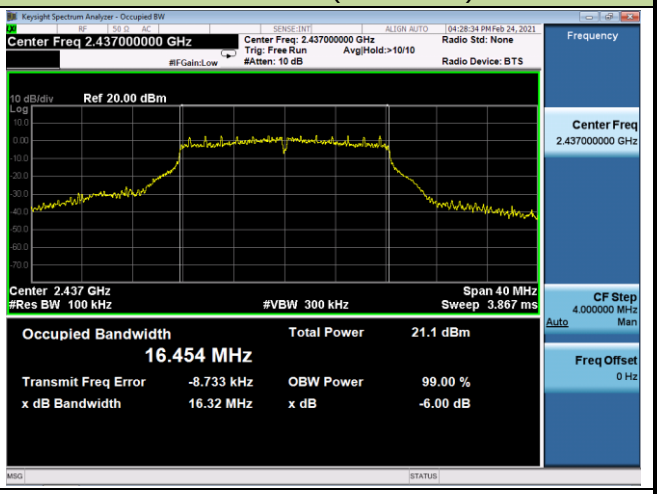


802.11g 6dB Bandwidth

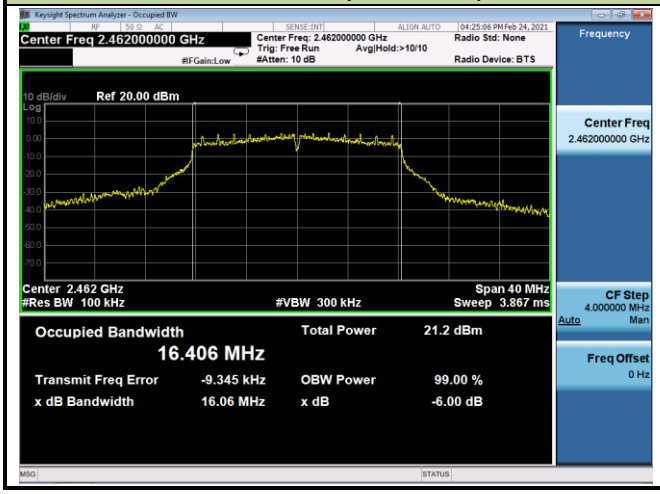
Channel 01 (2412MHz)



Channel 06 (2437MHz)

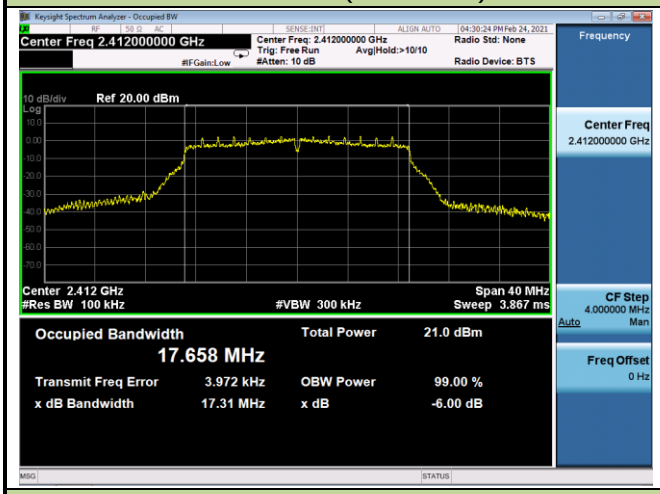


Channel 11 (2462MHz)

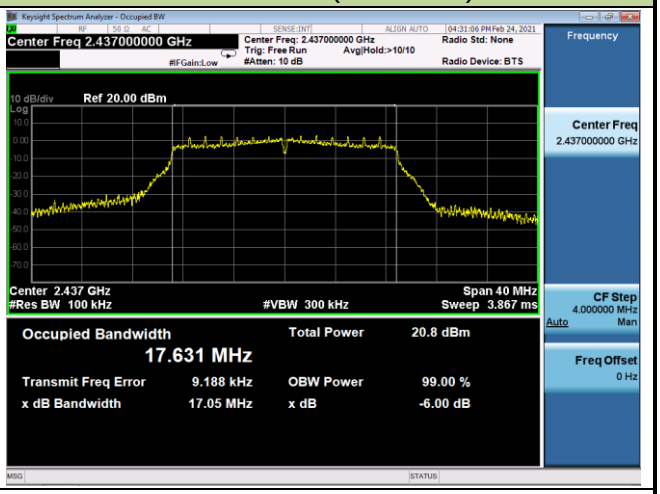


802.11n-HT20 6dB Bandwidth

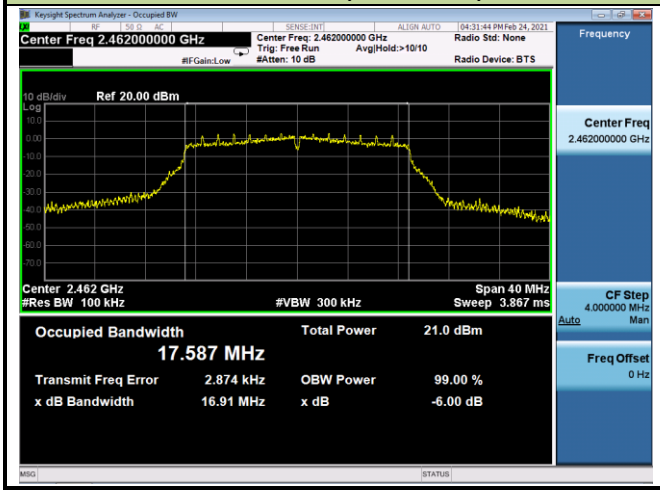
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



7.3. Output Power Measurement

7.3.1.Test Limit

The maximum output power shall be less 1 Watt (30dBm).

The conducted output power limit specified in paragraph FCC Part 15.247(b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs FCC Part 15.247(b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.3.2.Test Procedure Used

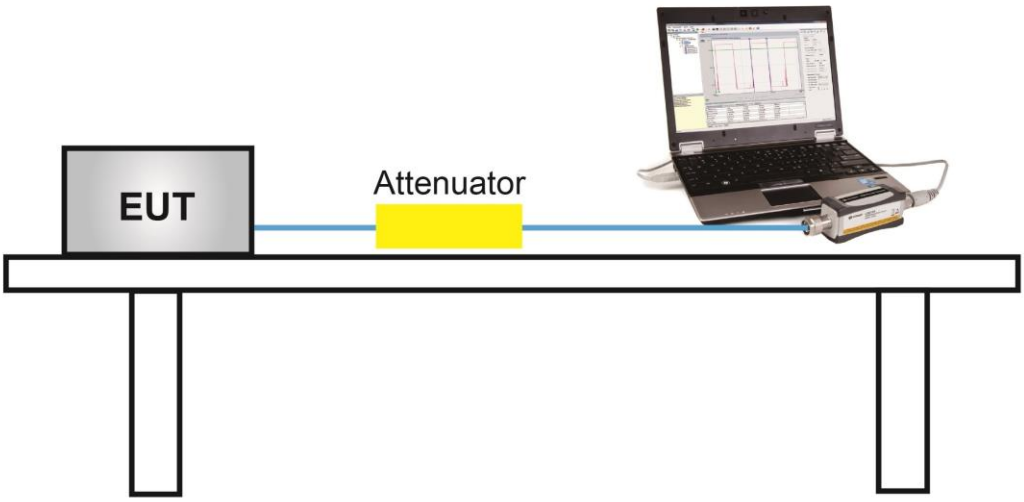
ANSI C63.10 - 2013 - Section 11.9.2.3.2

7.3.3.Test Setting

Average Power Measurement

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

7.3.4.Test Setup



7.3.5.Test Result

Product	Cassia Bluetooth Router	Temperature	22 ~ 25°C
Test Engineer	Kevin Ker	Relative Humidity	46 ~ 56%
Test Site	SR2	Test Date	2021/02/08

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)	Limit (dBm)	Result
802.11b	1Mbps	01	2412	24.05	≤ 30.00	Pass
802.11b	1Mbps	06	2437	24.23	≤ 30.00	Pass
802.11b	1Mbps	11	2462	24.27	≤ 30.00	Pass
802.11g	6Mbps	01	2412	23.05	≤ 30.00	Pass
802.11g	6Mbps	02	2417	24.24	≤ 30.00	Pass
802.11g	6Mbps	06	2437	24.22	≤ 30.00	Pass
802.11g	6Mbps	09	2452	23.09	≤ 30.00	Pass
802.11g	6Mbps	11	2462	24.26	≤ 30.00	Pass
802.11n-HT20	MCS0	01	2412	24.26	≤ 30.00	Pass
802.11n-HT20	MCS0	02	2417	24.05	≤ 30.00	Pass
802.11n-HT20	MCS0	06	2437	24.23	≤ 30.00	Pass
802.11n-HT20	MCS0	10	2457	24.27	≤ 30.00	Pass
802.11n-HT20	MCS0	11	2462	23.05	≤ 30.00	Pass

7.4. Power Spectral Density Measurement

7.4.1.Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

The same method of determining the conducted output power shall be used to determine the power spectral density.

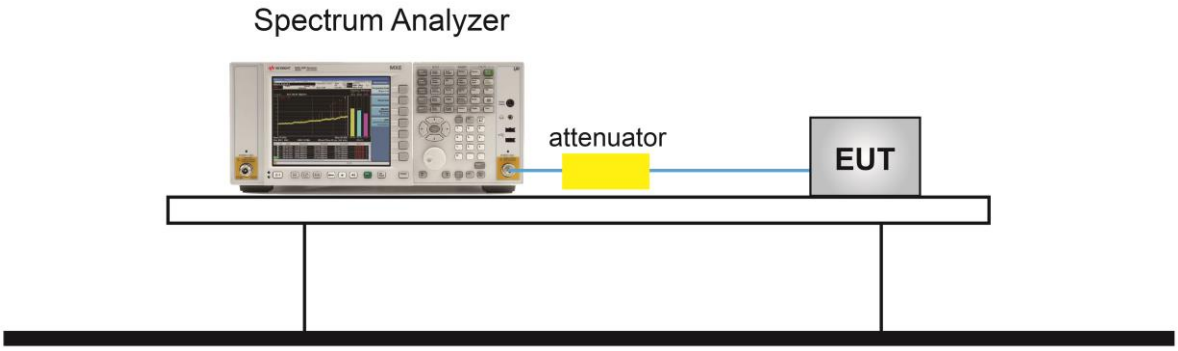
7.4.2.Test Procedure Used

ANSI C63.10 - 2013 - Section 11.10.5

7.4.3.Test Setting

1. Measure the duty cycle (x) of the transmitter output signal.
2. Set instrument center frequency to DTS channel center frequency.
3. Set span to at least 1.5 times the OBW.
4. RBW = 10 kHz.
5. VBW = 30 kHz.
6. Detector = RMS.
7. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
8. Sweep time = auto couple.
9. Don’t use sweep triggering. Allow sweep to “free run”.
10. Employ trace averaging (RMS) mode over a minimum of 100 traces.
11. Use the peak marker function to determine the maximum amplitude level.
12. Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time. If measured value exceeds requirement specified by regulatory agency, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).

7.4.4.Test Setup



7.4.5.Test Result

Product	Cassia Bluetooth Router	Temperature	23 ~ 25°C
Test Engineer	Kevin Ker	Relative Humidity	46 ~ 54%
Test Site	SR2	Test Date	2021/02/24

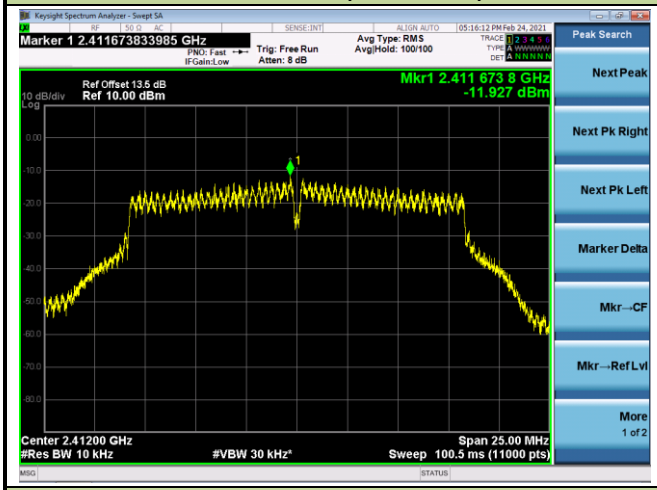
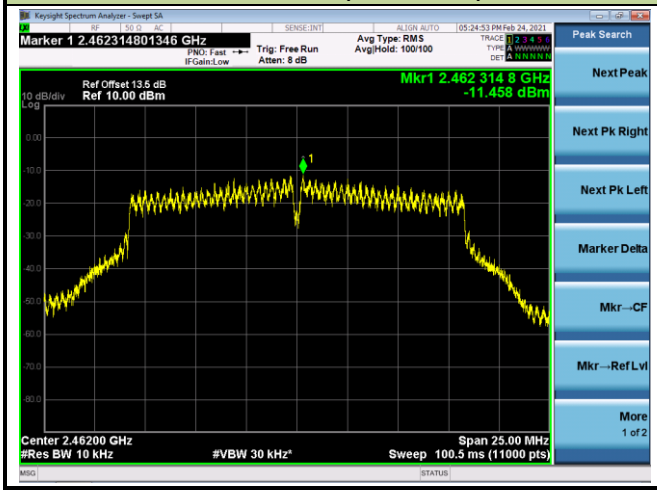
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	AVG PSD (dBm/ 10kHz)	Duty Cycle (%)	10*log (1/x)	Total PSD (dBm/ 10kHz)	Limit (dBm / 3kHz)	Result
11b	1Mbps	01	2412	-11.71	98.79	0.05	-11.66	≤ 8.0	Pass
11b	1Mbps	06	2437	-11.32	98.79	0.05	-11.27	≤ 8.0	Pass
11b	1Mbps	11	2462	-11.07	98.79	0.05	-11.02	≤ 8.0	Pass
11g	6Mbps	01	2412	-11.93	93.34	0.30	-11.63	≤ 8.0	Pass
11g	6Mbps	06	2437	-11.51	93.34	0.30	-11.21	≤ 8.0	Pass
11g	6Mbps	11	2462	-11.46	93.34	0.30	-11.16	≤ 8.0	Pass
11n-HT20	MCS0	01	2412	-13.51	92.71	0.33	-13.18	≤ 8.0	Pass
11n-HT20	MCS0	06	2437	-13.47	92.71	0.33	-13.14	≤ 8.0	Pass
11n-HT20	MCS0	11	2462	-13.13	92.71	0.33	-12.80	≤ 8.0	Pass

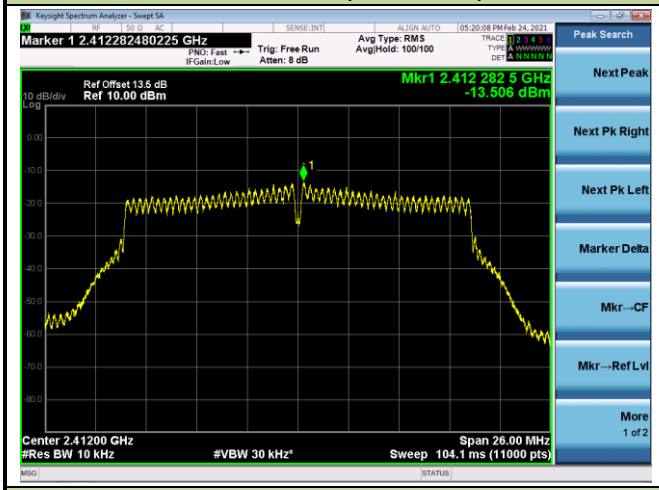
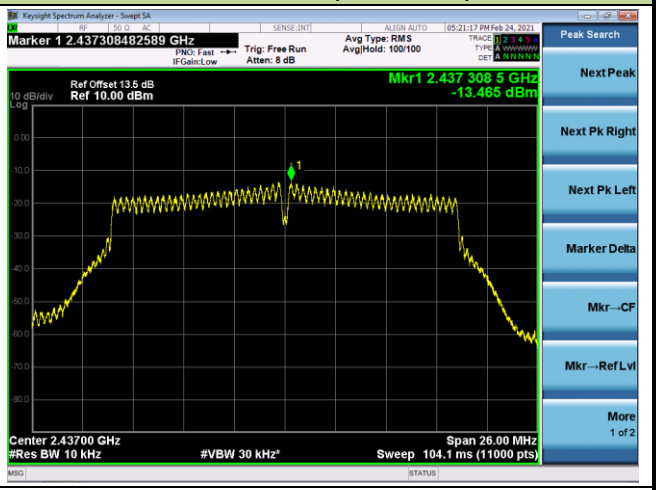
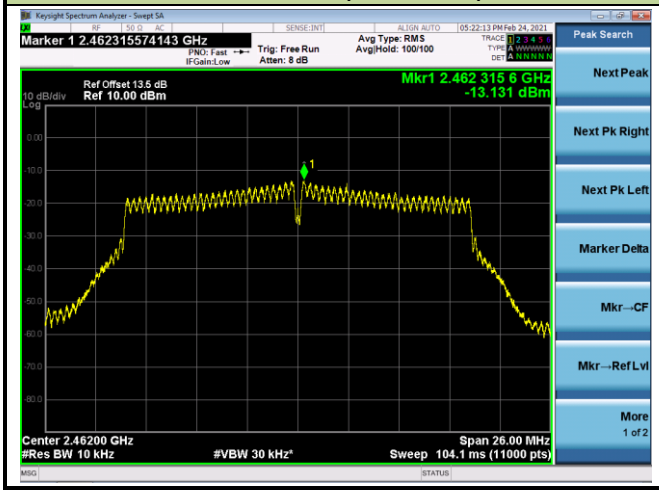
Note:

EUT duty cycle ≥ 98%, Total AVGPSD = AVG PSD

EUT duty cycle ≤ 98%, Total AVGPSD = AVG PSD+ 10*log (1/Duty Cycle).

802.11b AVGPSD	
Channel 01 (2412MHz)	Channel 06 (2437MHz)
Channel 11 (2462MHz)	

802.11g AVGPSD	
Channel 01 (2412MHz)	Channel 06 (2437MHz)
	
Channel 11 (2462MHz)	
	

802.11n-HT20 AVGPSD	
Channel 01 (2412MHz)	Channel 06 (2437MHz)
	
Channel 11 (2462MHz)	
	

7.5. Conducted Band Edge and Out-of-Band Emissions

7.5.1.Test Limit

The limit for out-of-band spurious emissions at the band edge is 30dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

7.5.2.Test Procedure Used

ANSI C63.10 - 2013 - Section 11.11

7.5.3.Test Setting

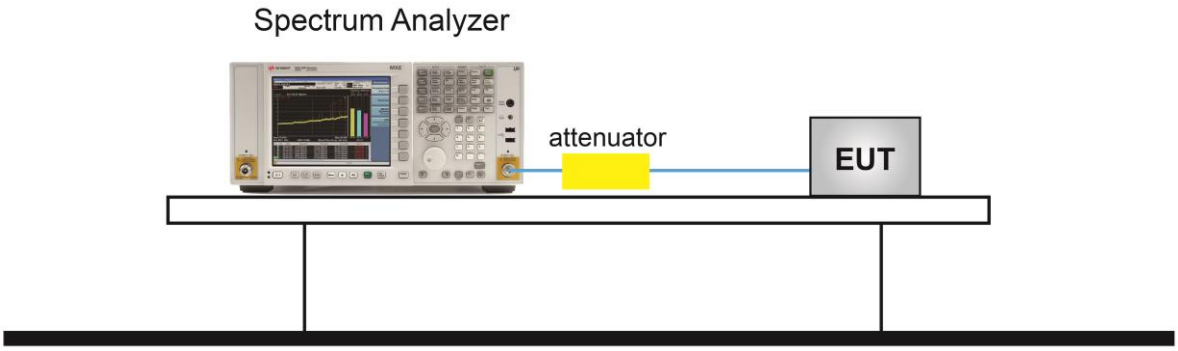
Reference level measurement

1. Set instrument center frequency to DTS channel center frequency
2. Set the span to ≥ 1.5 times the DTS bandwidth
3. Set the RBW = 100 kHz
4. Set the VBW ≥ 3 x RBW
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize

Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 100KHz
3. VBW = 300KHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

7.5.4.Test Setup



7.5.5.Test Result

Product	Cassia Bluetooth Router	Temperature	23 ~ 25°C
Test Engineer	Kevin Ker	Relative Humidity	46 ~ 54%
Test Site	SR2	Test Date	2021/02/24

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Limit (dBc)	Result
802.11b	1Mbps	01	2412	≤ 30	Pass
802.11b	1Mbps	06	2437	≤ 30	Pass
802.11b	1Mbps	11	2462	≤ 30	Pass
802.11g	6Mbps	01	2412	≤ 30	Pass
802.11g	6Mbps	06	2437	≤ 30	Pass
802.11g	6Mbps	11	2462	≤ 30	Pass
802.11n-HT20	MCS0	01	2412	≤ 30	Pass
802.11n-HT20	MCS0	06	2437	≤ 30	Pass
802.11n-HT20	MCS0	11	2462	≤ 30	Pass

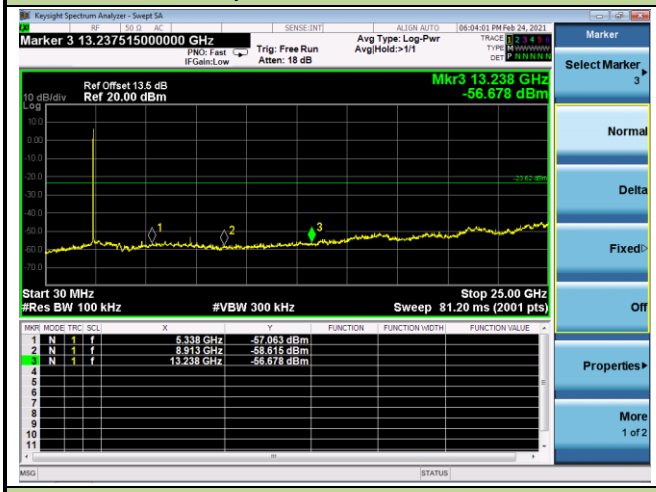
802.11b Out-of-Band Emissions

Channel 01 (2412MHz)

100kHz PSD reference Level

Low Band Edge

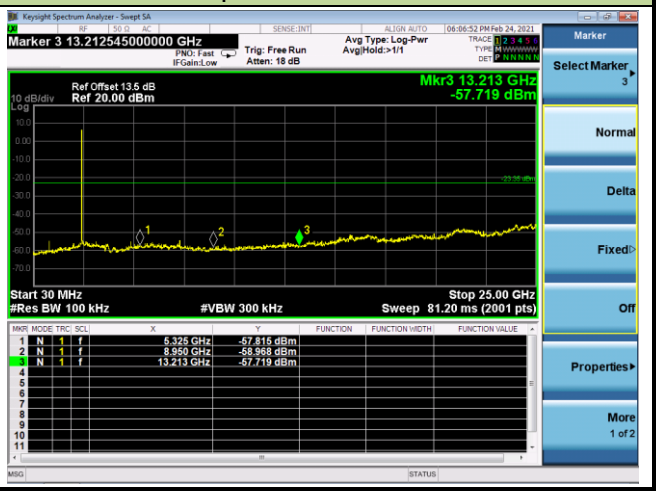
Spurious Emission

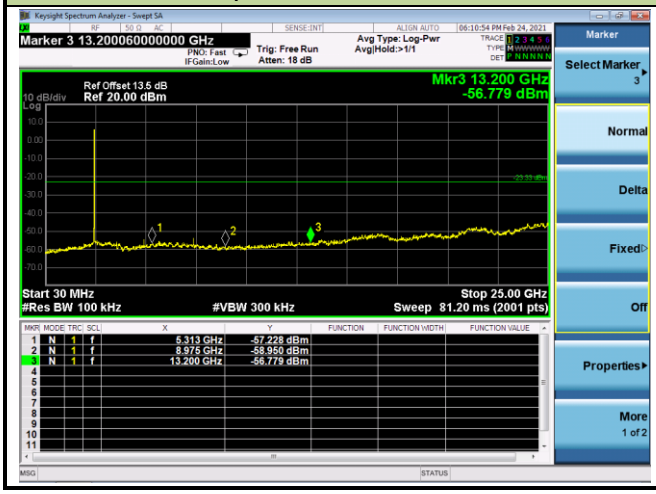


Channel 06 (2437MHz)

100kHz PSD reference Level

Spurious Emission



802.11b Out-of-Band Emissions	
Channel 11 (2462MHz)	
100kHz PSD reference Level	High Band Edge
Spurious Emission	
	

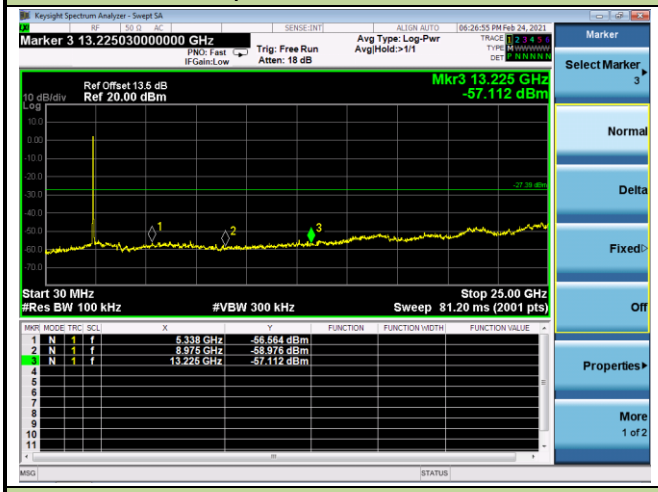
802.11g Out-of-Band Emissions

Channel 01 (2412MHz)

100kHz PSD reference Level

Low Band Edge

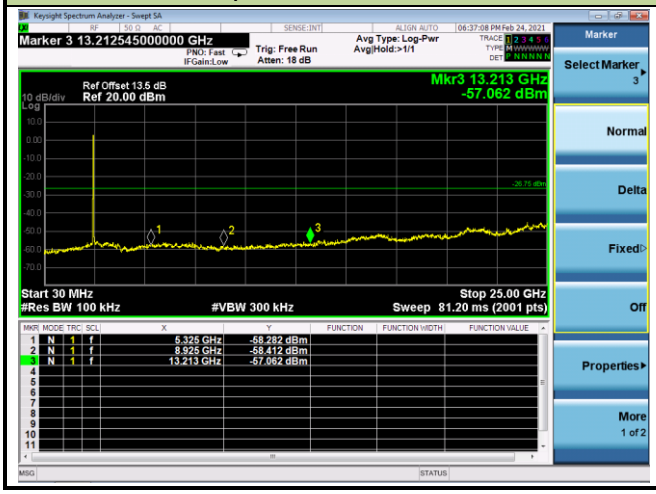
Spurious Emission



Channel 06 (2437MHz)

100kHz PSD reference Level

Spurious Emission

802.11g Out-of-Band Emissions	
Channel 11 (2462MHz)	
100kHz PSD reference Level	High Band Edge
Spurious Emission	
	

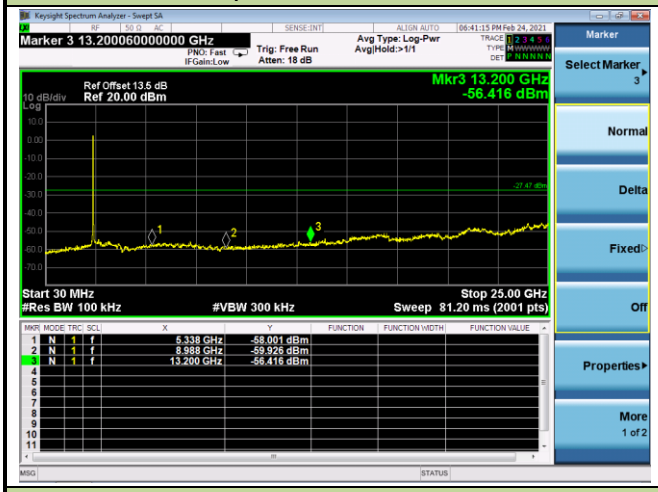
802.11n-HT20 Out-of-Band Emissions

Channel 01 (2412MHz)

100kHz PSD reference Level

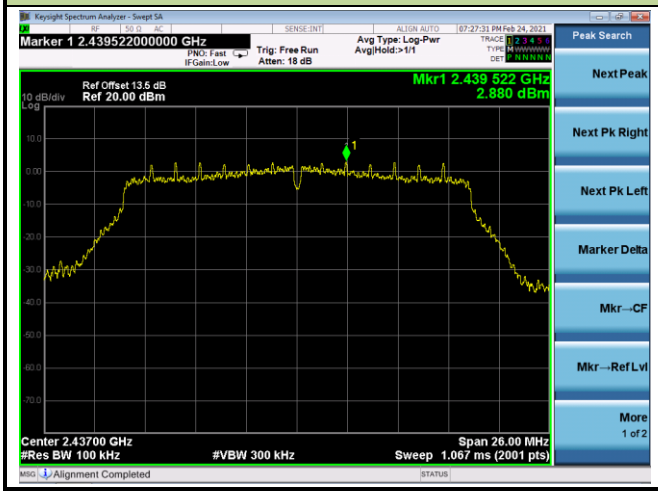
Low Band Edge

Spurious Emission

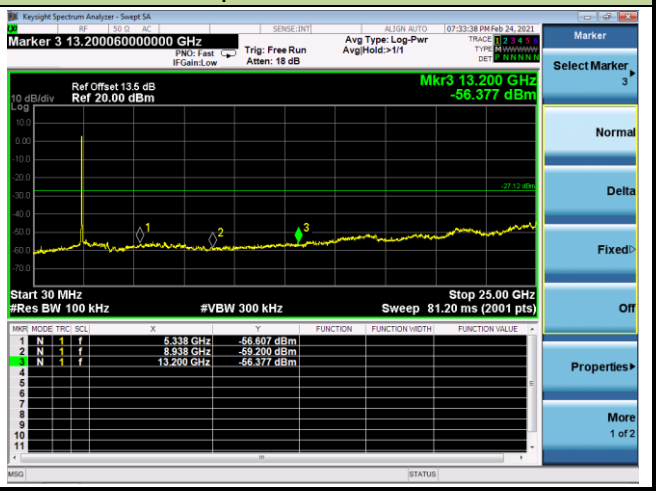


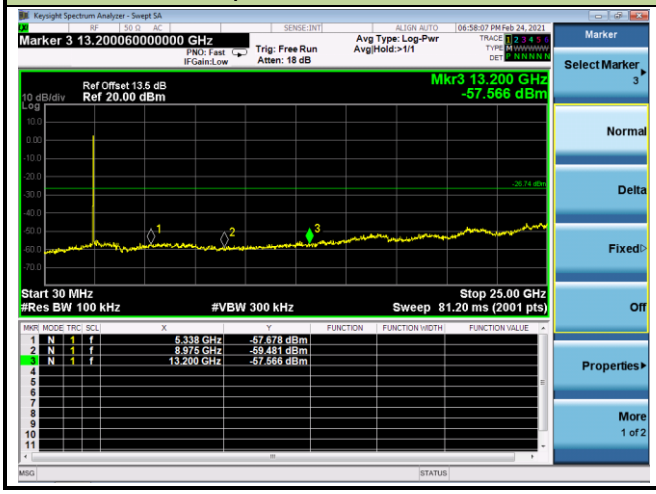
Channel 06 (2437MHz)

100kHz PSD reference Level



Spurious Emission



802.11 n-HT20 Out-of-Band Emissions	
Channel 11 (2462MHz)	
100kHz PSD reference Level	High Band Edge
Spurious Emission	
	

7.6. Radiated Spurious Emission Measurement

7.6.1.Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [Uv/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 – 30	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

7.6.2.Test Procedure Used

ANSI C63.10 - 2013 - Section 11.11 & 11.12

ANSI C63.10 - 2013 - Section 6.3 (General Requirements)

ANSI C63.10 - 2013 - Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 - 2013 - Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 - 2013 - Section 6.6 (Standard test method above 1GHz)

7.6.3.Test Setting

Table 1 – RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000MHz	1MHz

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. Span was set greater than 1MHz

3. RBW = as specified in Table 1

4. Detector = CISPR quasi-peak

5. Sweep time = auto couple

6. Trace was allowed to stabilize

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW = 3MHz

4. Detector = peak

5. Sweep time = auto couple

6. Trace mode = max hold

7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.

4. Detector = Peak

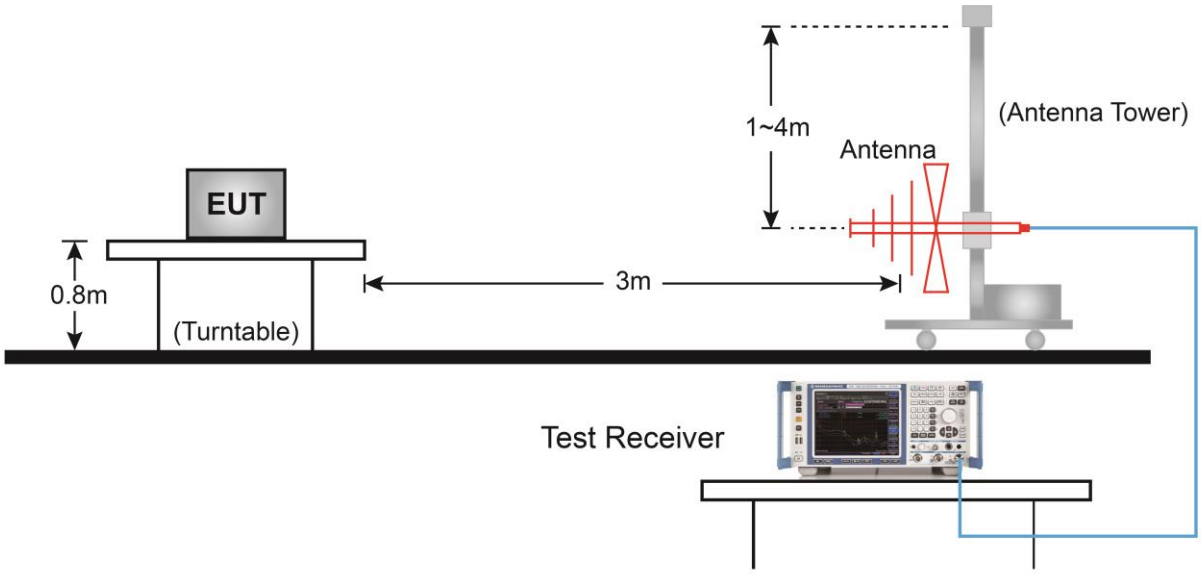
5. Sweep time = auto

6. Trace mode = max hold

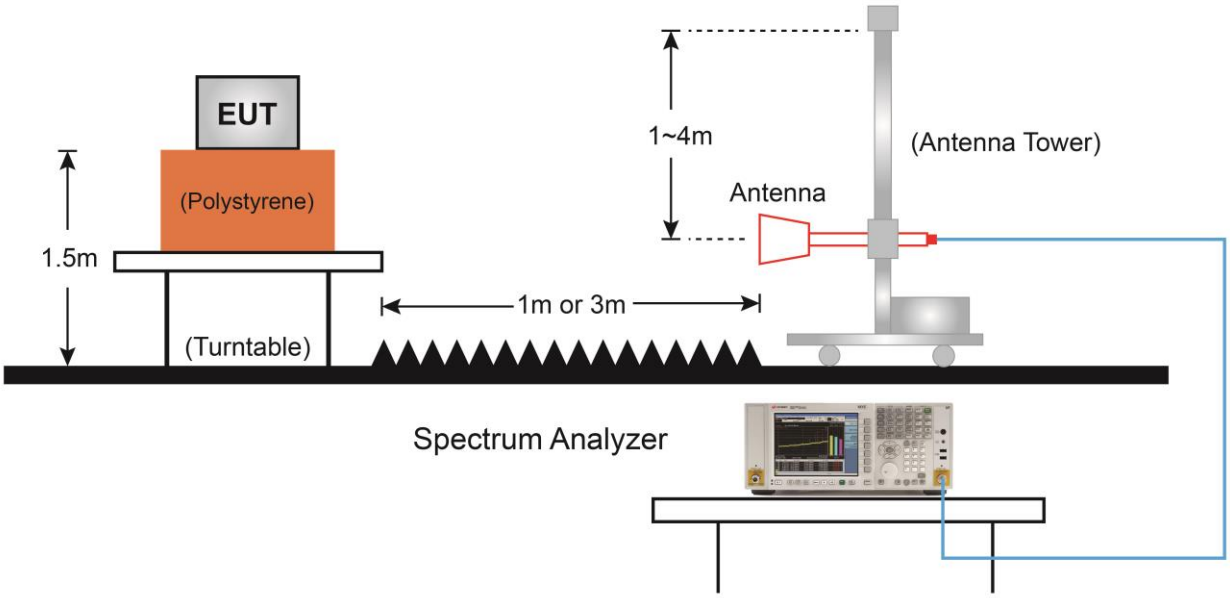
7. Trace was allowed to stabilize

7.6.4.Test Setup

Below 1GHz Test Setup:

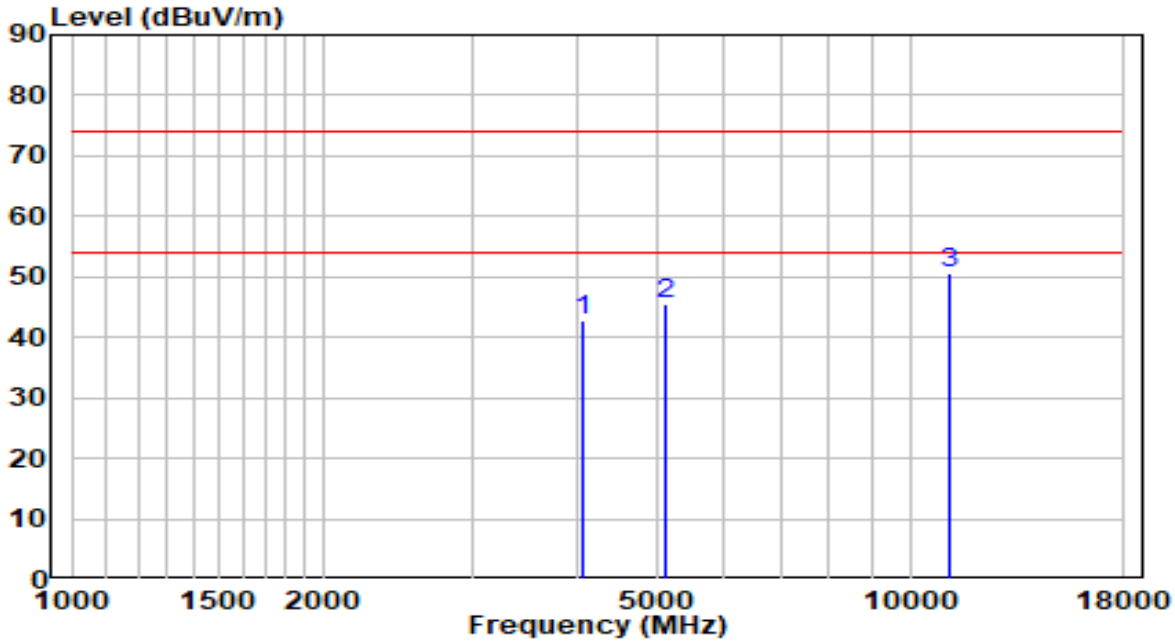


Above 1GHz Test Setup:



7.6.5.Test Result

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2412MHz	Test Voltage	120V/60Hz

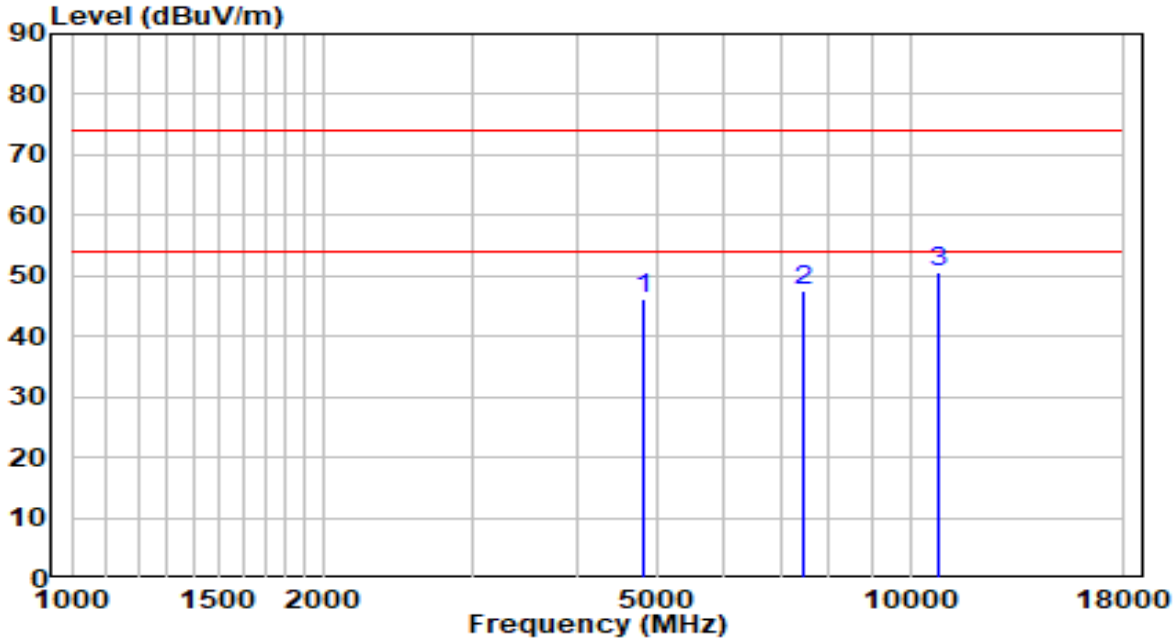


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4068.500	41.63	1.11	42.73	-31.27	74.00	Peak
2		5097.000	41.64	3.85	45.49	-28.51	74.00	Peak
3	*	11132.000	32.79	17.96	50.75	-23.25	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2412MHz	Test Voltage	120V/60Hz

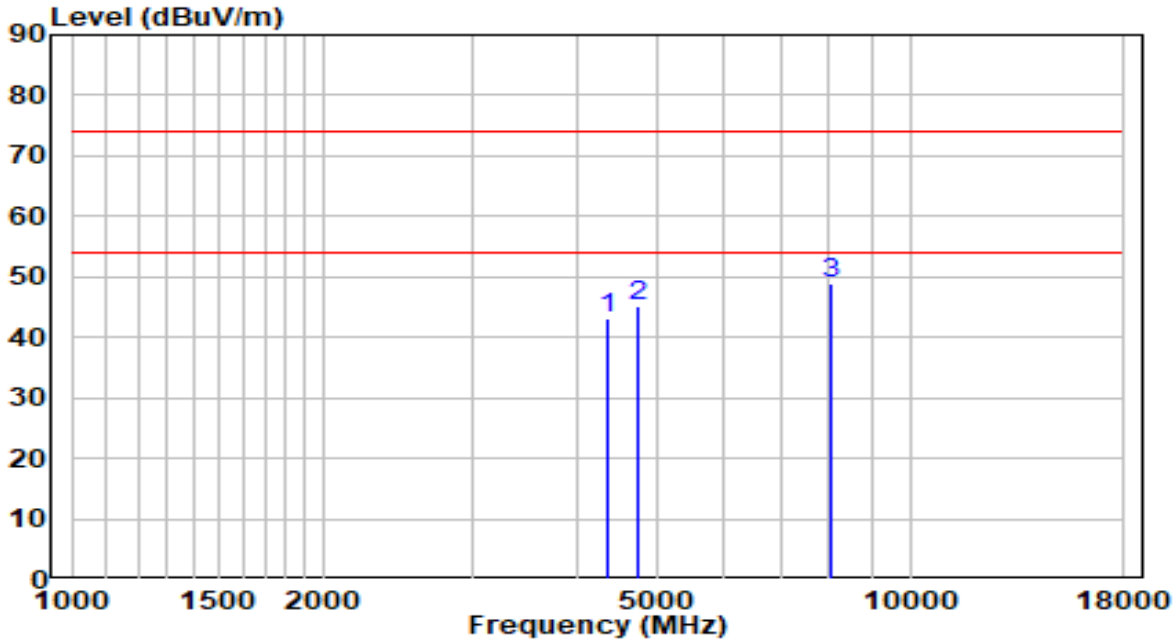


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4825.000	42.76	3.33	46.09	-27.91	74.00	Peak
2		7460.000	36.05	11.60	47.65	-26.35	74.00	Peak
3	*	10800.500	33.09	17.50	50.58	-23.42	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2437MHz	Test Voltage	120V/60Hz

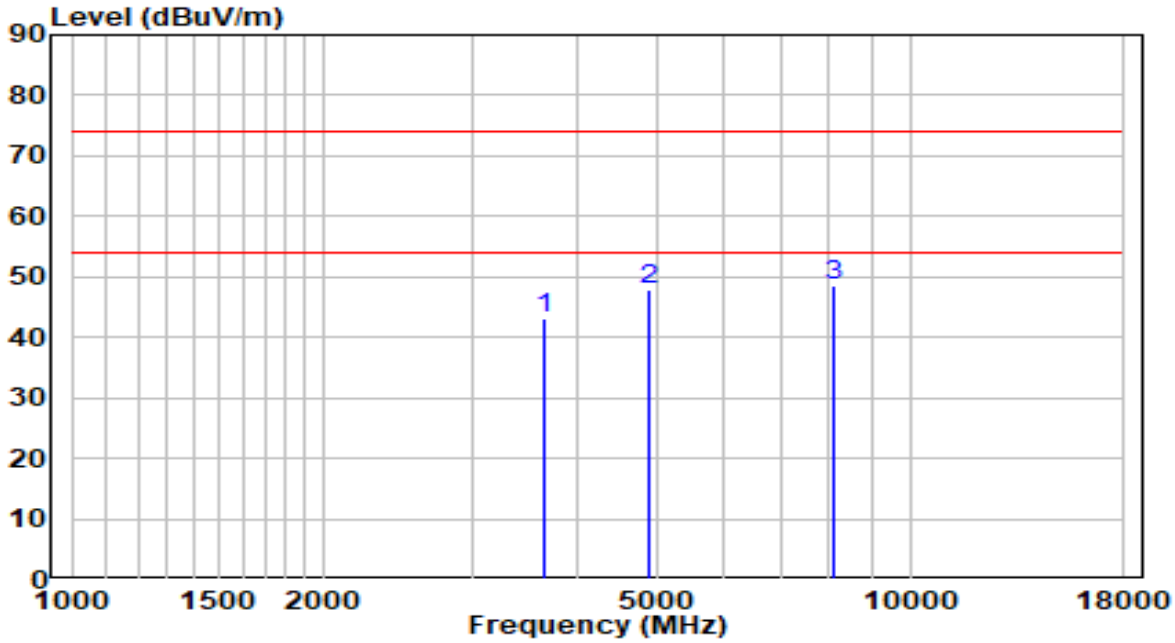


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4357.500	41.14	2.07	43.21	-30.79	74.00	Peak
2		4723.000	42.04	3.09	45.13	-28.87	74.00	Peak
3	*	8046.500	36.46	12.52	48.98	-25.02	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2437MHz	Test Voltage	120V/60Hz

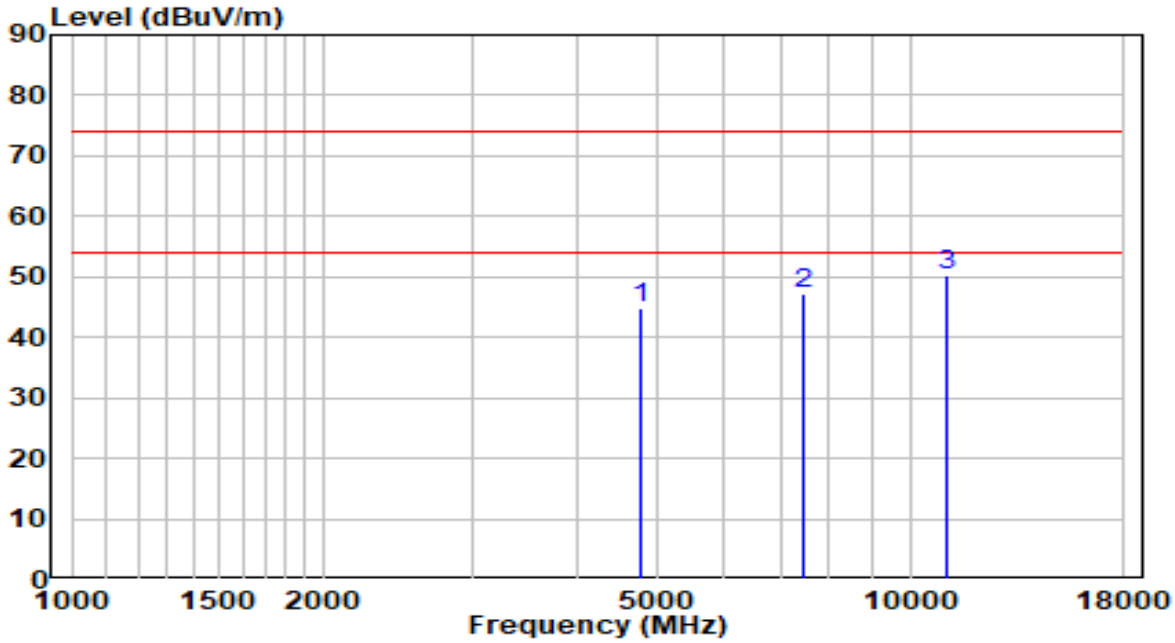


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		3652.000	43.54	-0.32	43.22	-30.78	74.00	Peak
2		4876.000	44.56	3.45	48.01	-25.99	74.00	Peak
3	*	8097.500	35.98	12.52	48.49	-25.51	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2462MHz	Test Voltage	120V/60Hz

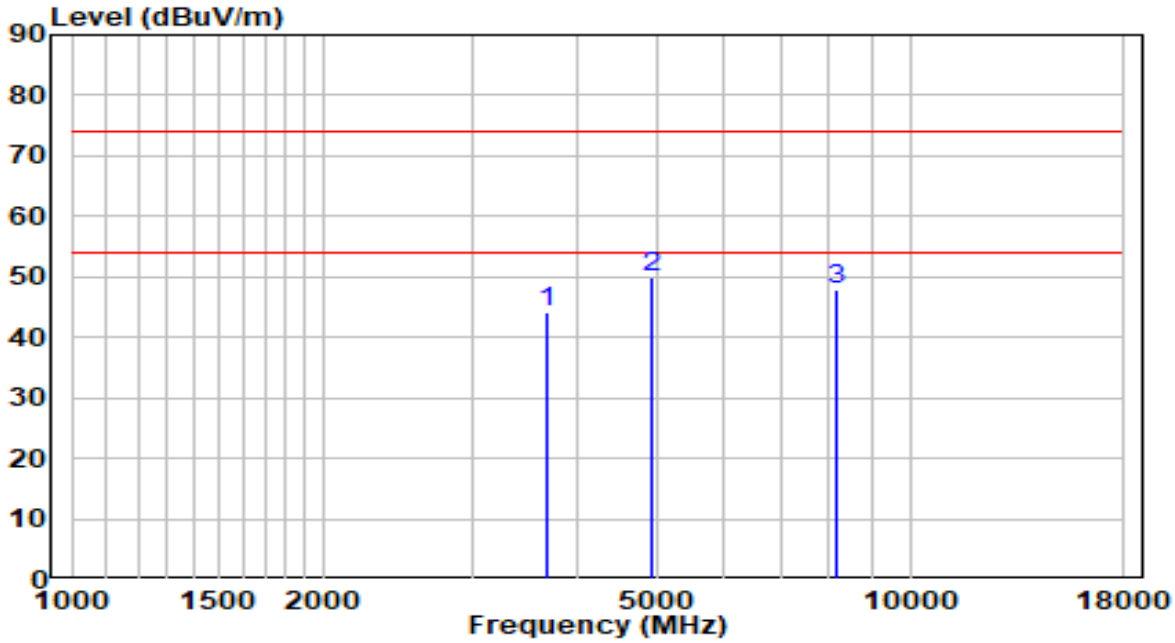


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4774.000	41.75	3.21	44.96	-29.04	74.00	Peak
2		7468.500	35.68	11.63	47.31	-26.69	74.00	Peak
3	*	11081.000	32.21	17.89	50.10	-23.90	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2462MHz	Test Voltage	120V/60Hz

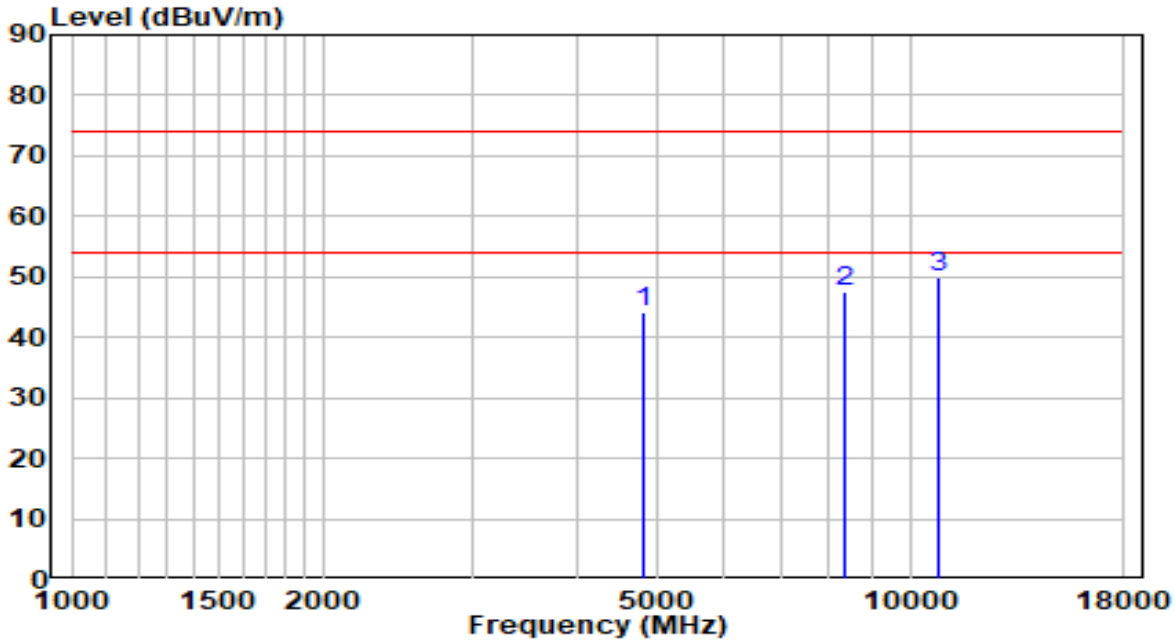


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		3694.500	44.28	-0.17	44.11	-29.89	74.00	Peak
2	*	4927.000	46.36	3.57	49.94	-24.06	74.00	Peak
3		8140.000	35.25	12.51	47.76	-26.24	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2412MHz	Test Voltage	120V/60Hz

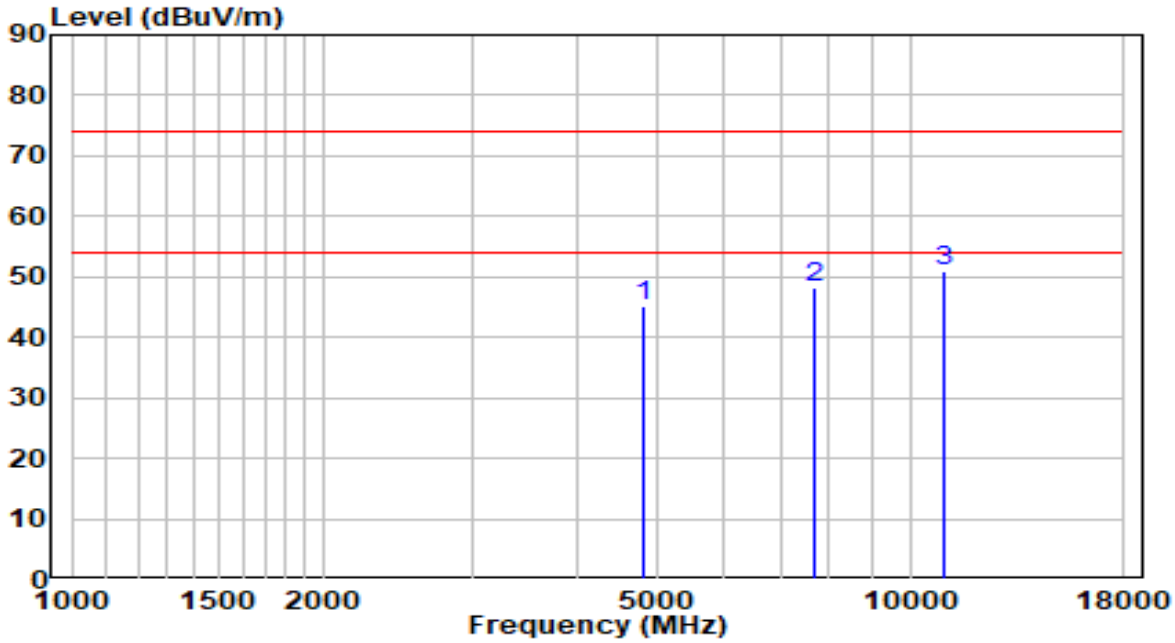


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4799.500	40.97	3.27	44.24	-29.76	74.00	Peak
2		8344.000	35.17	12.48	47.65	-26.35	74.00	Peak
3	*	10843.000	32.26	17.56	49.81	-24.19	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2412MHz	Test Voltage	120V/60Hz

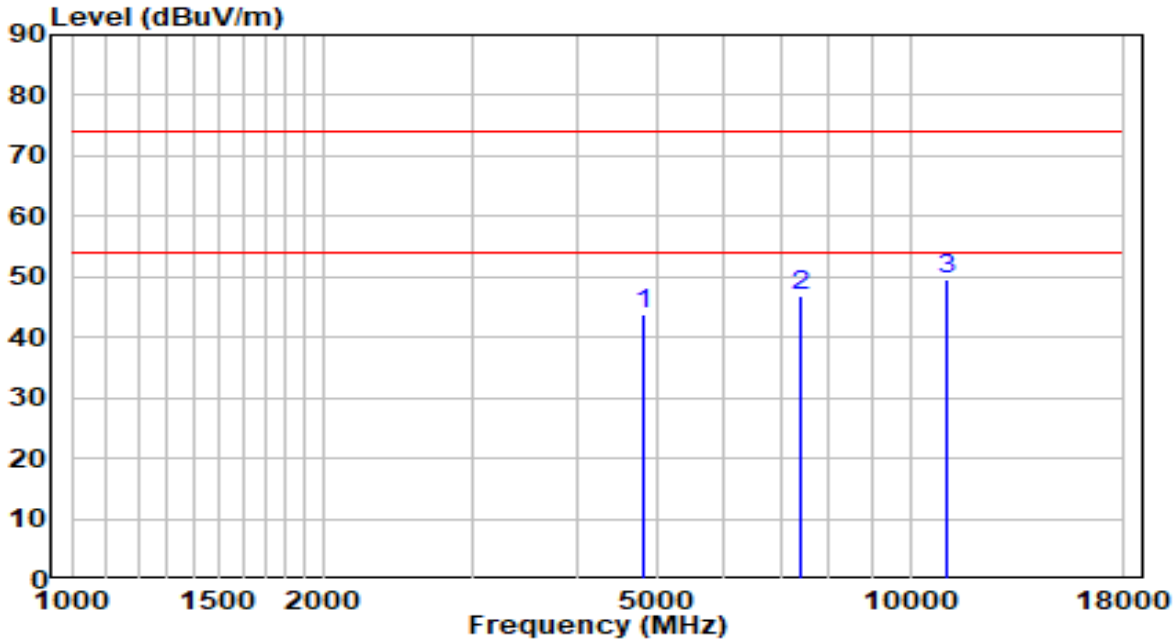


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4825.000	41.76	3.33	45.09	-28.91	74.00	Peak
2		7715.000	36.08	12.07	48.15	-25.85	74.00	Peak
3	*	10962.000	33.07	17.73	50.80	-23.20	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2437MHz	Test Voltage	120V/60Hz

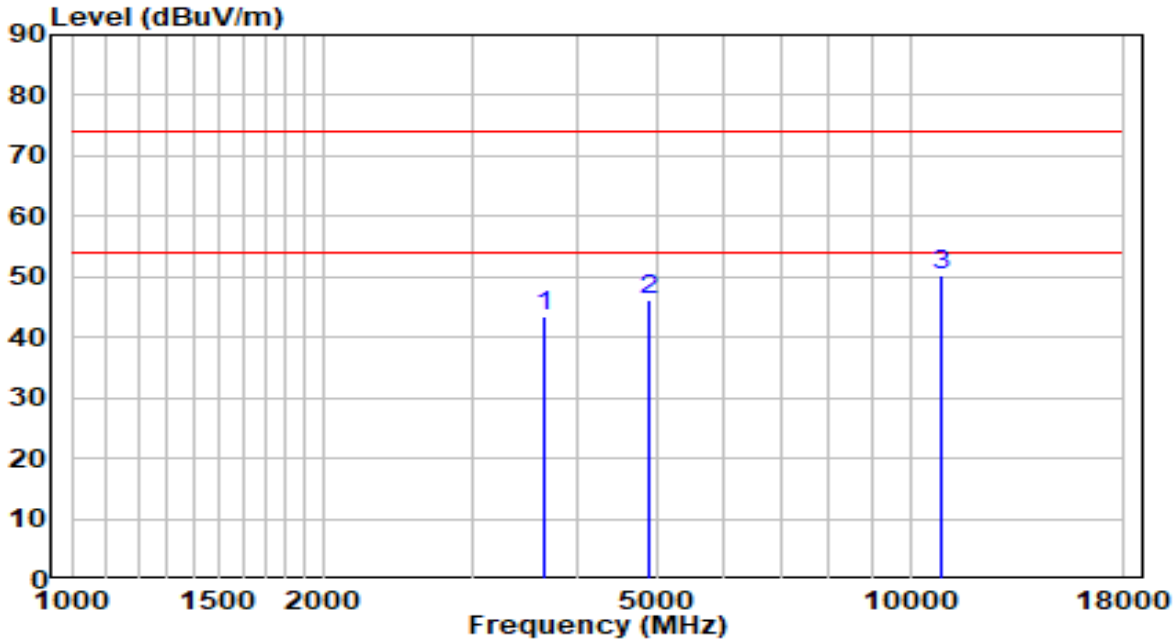


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4791.000	40.68	3.25	43.93	-30.07	74.00	Peak
2		7409.000	35.38	11.46	46.84	-27.16	74.00	Peak
3	*	11098.000	31.51	17.91	49.42	-24.58	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	20.9°C/36.3%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2437MHz	Test Voltage	120V/60Hz

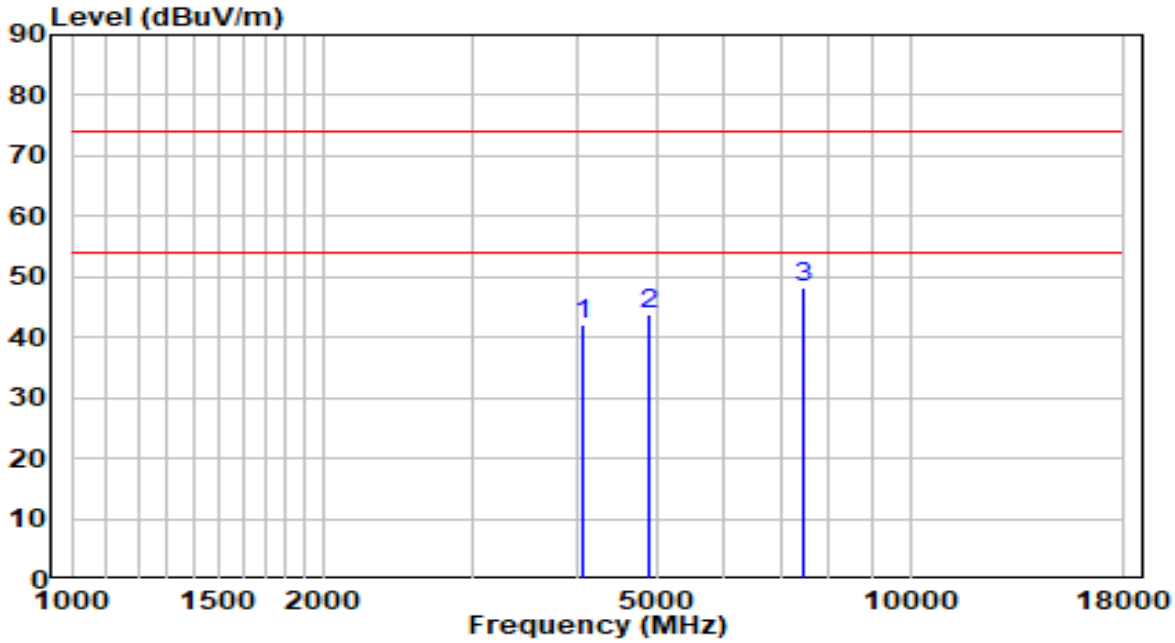


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		3652.000	43.75	-0.32	43.43	-30.57	74.00	Peak
2		4876.000	42.81	3.45	46.27	-27.73	74.00	Peak
3	*	10877.000	32.49	17.61	50.09	-23.91	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	22.2°C/35.9%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2462MHz	Test Voltage	120V/60Hz

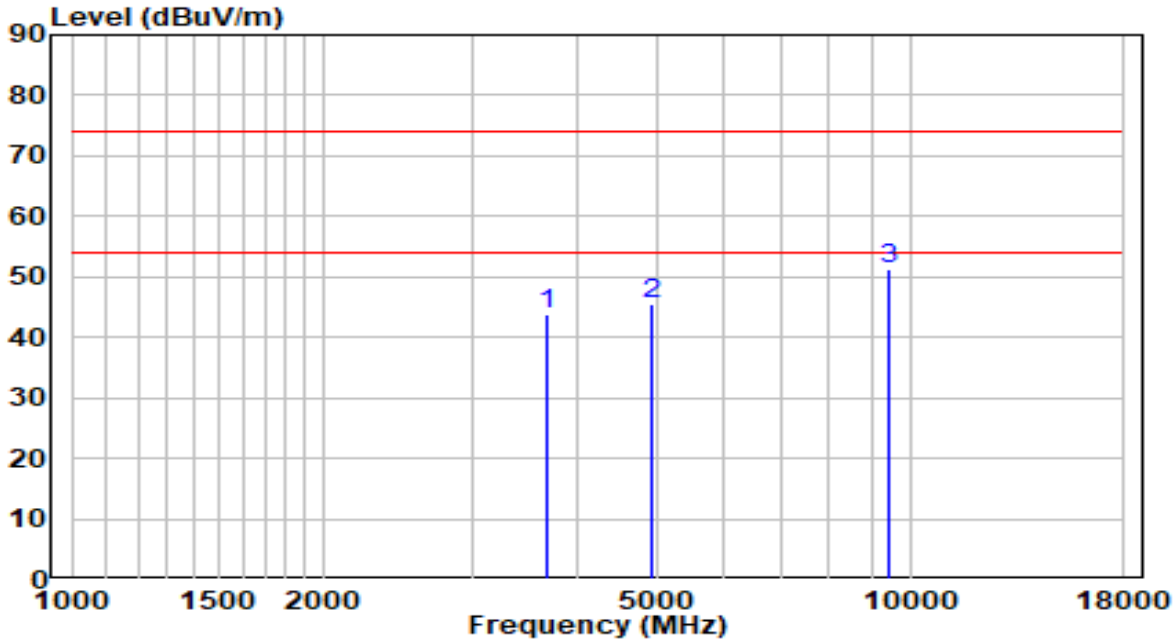


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4068.500	40.89	1.11	42.00	-32.00	74.00	Peak
2		4867.500	40.35	3.43	43.78	-30.22	74.00	Peak
3	*	7460.000	36.70	11.60	48.31	-25.69	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	22.2°C/35.9%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2462MHz	Test Voltage	120V/60Hz

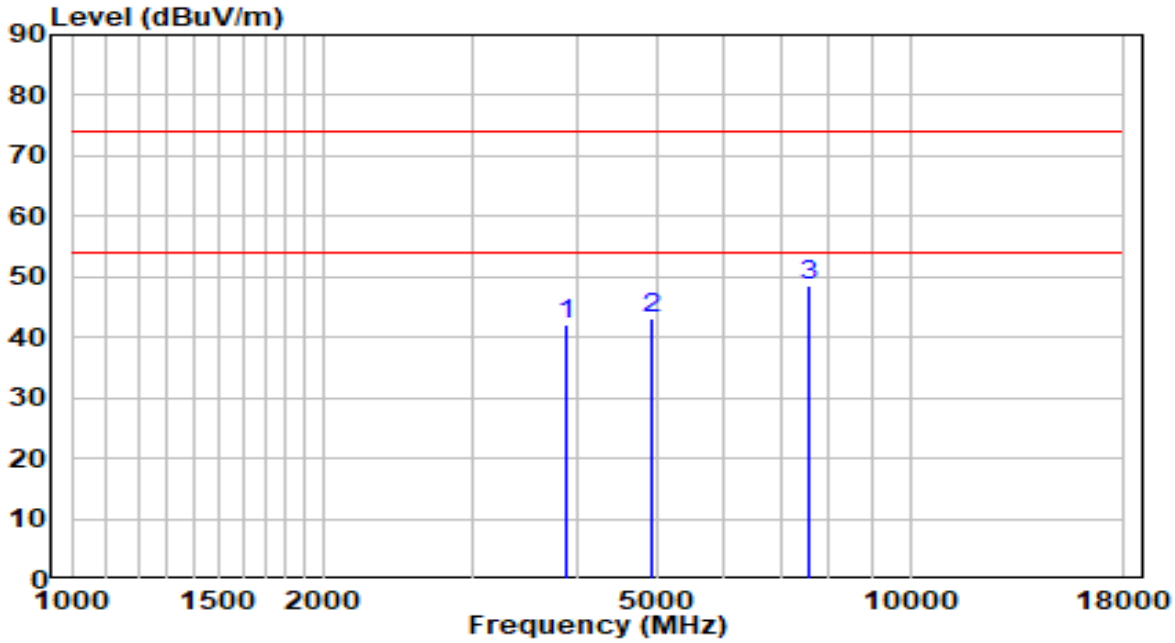


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		3694.500	43.90	-0.17	43.72	-30.28	74.00	Peak
2		4927.000	41.92	3.57	45.50	-28.50	74.00	Peak
3	*	9457.500	37.06	14.36	51.42	-22.58	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	22.2°C/35.9%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2412MHz	Test Voltage	120V/60Hz

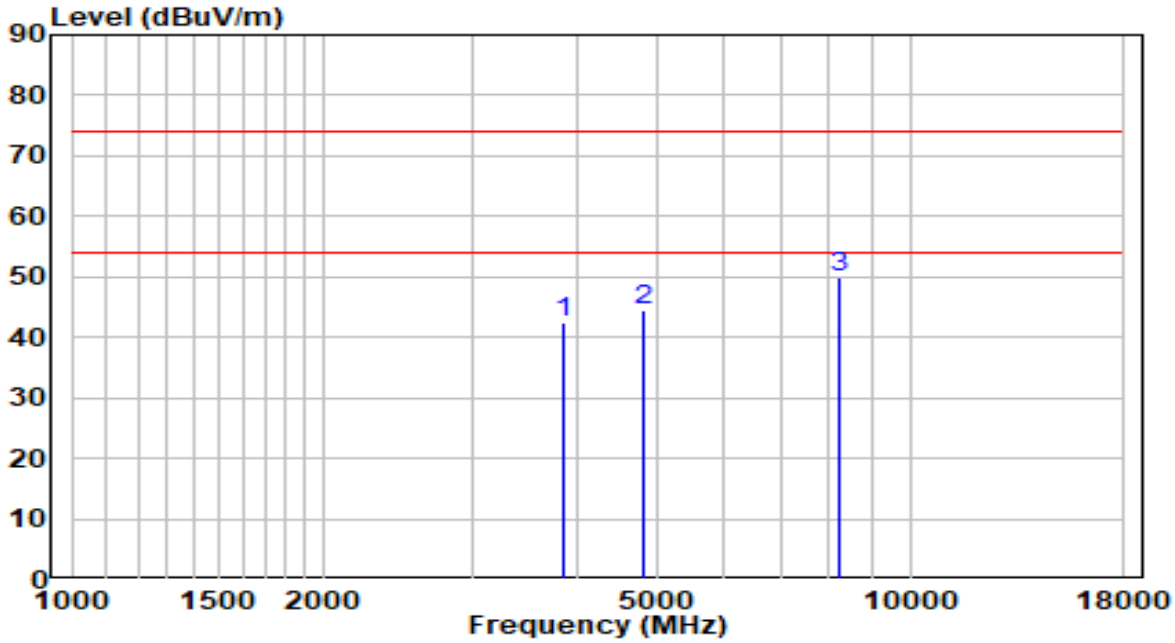


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		3890.000	41.68	0.50	42.18	-31.82	74.00	Peak
2		4935.500	39.48	3.60	43.08	-30.92	74.00	Peak
3	*	7570.500	36.89	11.83	48.72	-25.28	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	22.2°C/35.9%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2412MHz	Test Voltage	120V/60Hz

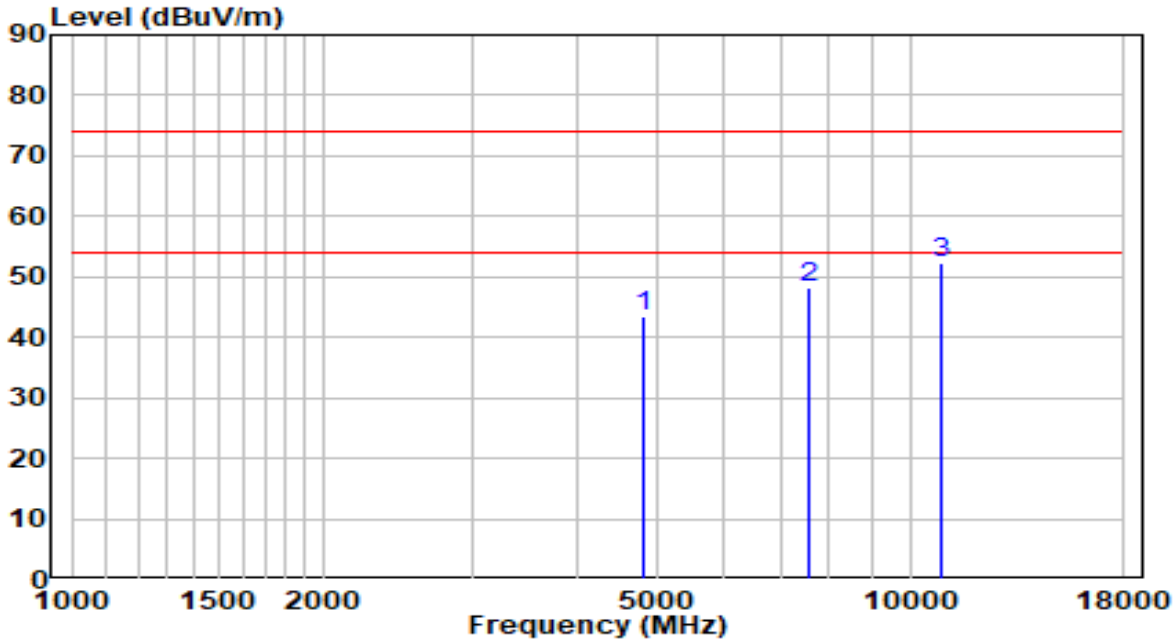


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		3873.000	42.07	0.44	42.51	-31.49	74.00	Peak
2		4825.000	41.09	3.33	44.42	-29.58	74.00	Peak
3	*	8250.500	37.39	12.49	49.88	-24.12	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	22.2°C/35.9%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2437MHz	Test Voltage	120V/60Hz

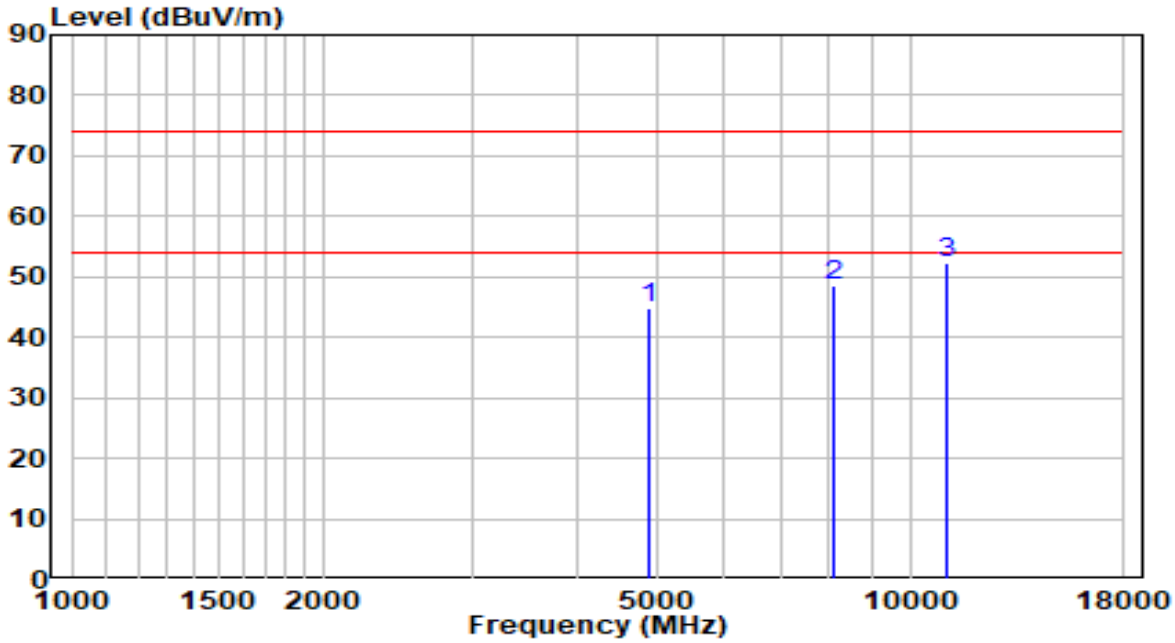


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4808.000	40.24	3.29	43.53	-30.47	74.00	Peak
2		7562.000	36.29	11.82	48.11	-25.89	74.00	Peak
3	*	10868.500	34.86	17.59	52.45	-21.55	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	22.2°C/35.9%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2437MHz	Test Voltage	120V/60Hz

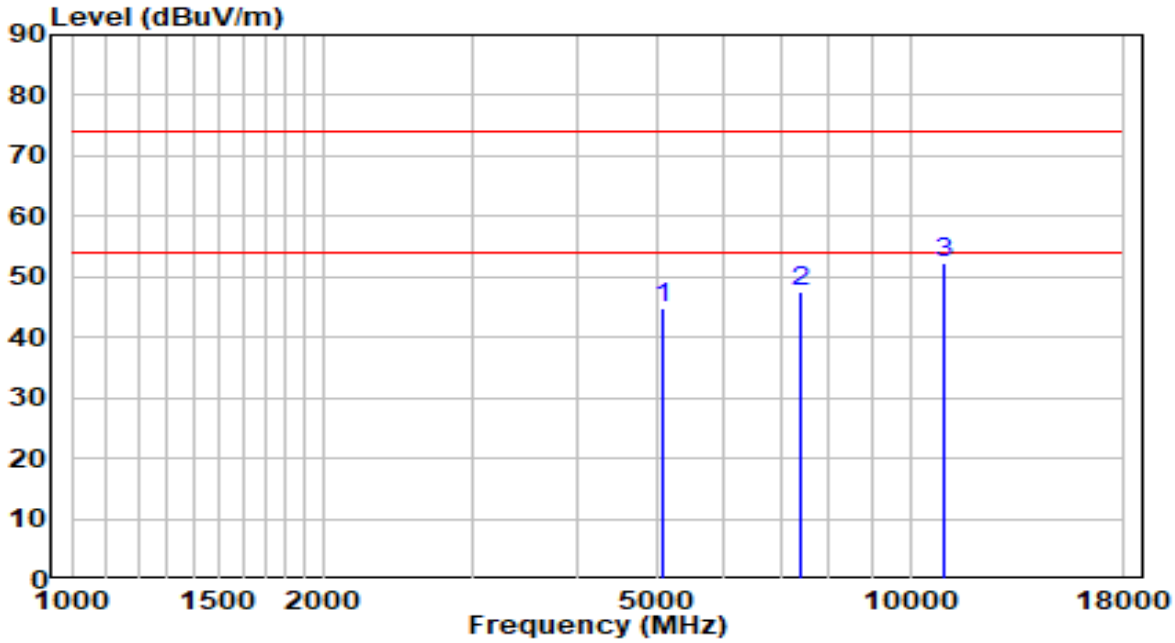


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4876.000	41.39	3.45	44.84	-29.16	74.00	Peak
2		8106.000	36.13	12.51	48.65	-25.35	74.00	Peak
3	*	11047.000	34.61	17.84	52.45	-21.55	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	22.2°C/35.9%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2462MHz	Test Voltage	120V/60Hz

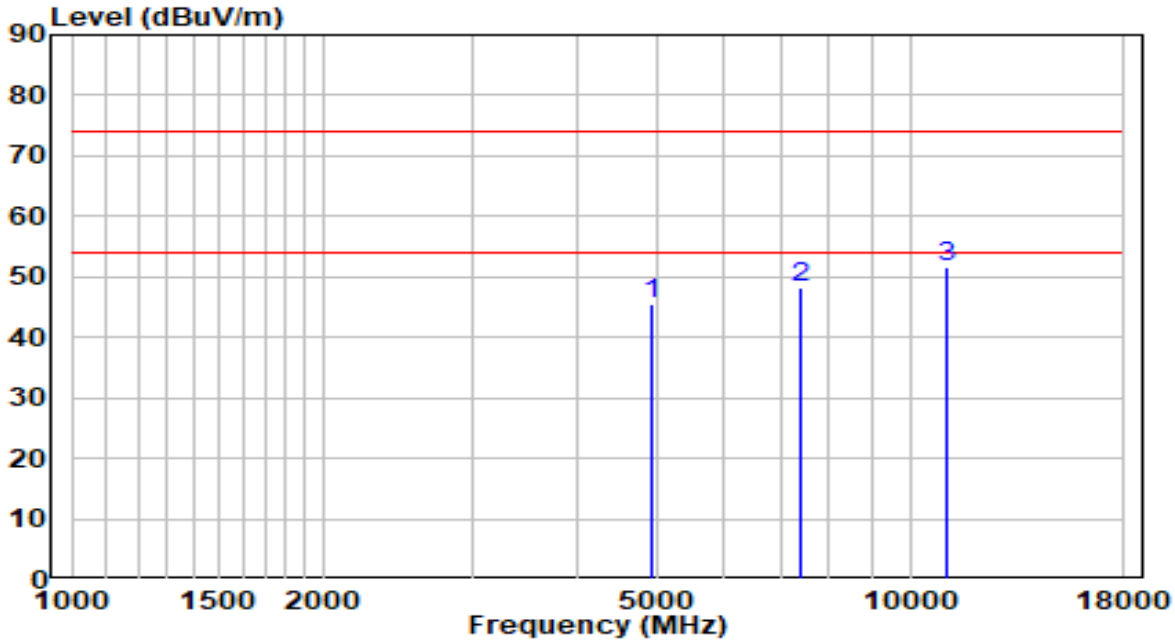


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		5054.500	41.19	3.81	45.00	-29.00	74.00	Peak
2		7383.500	36.26	11.39	47.65	-26.35	74.00	Peak
3	*	10962.000	34.74	17.73	52.47	-21.53	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	22.2°C/35.9%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2462MHz	Test Voltage	120V/60Hz



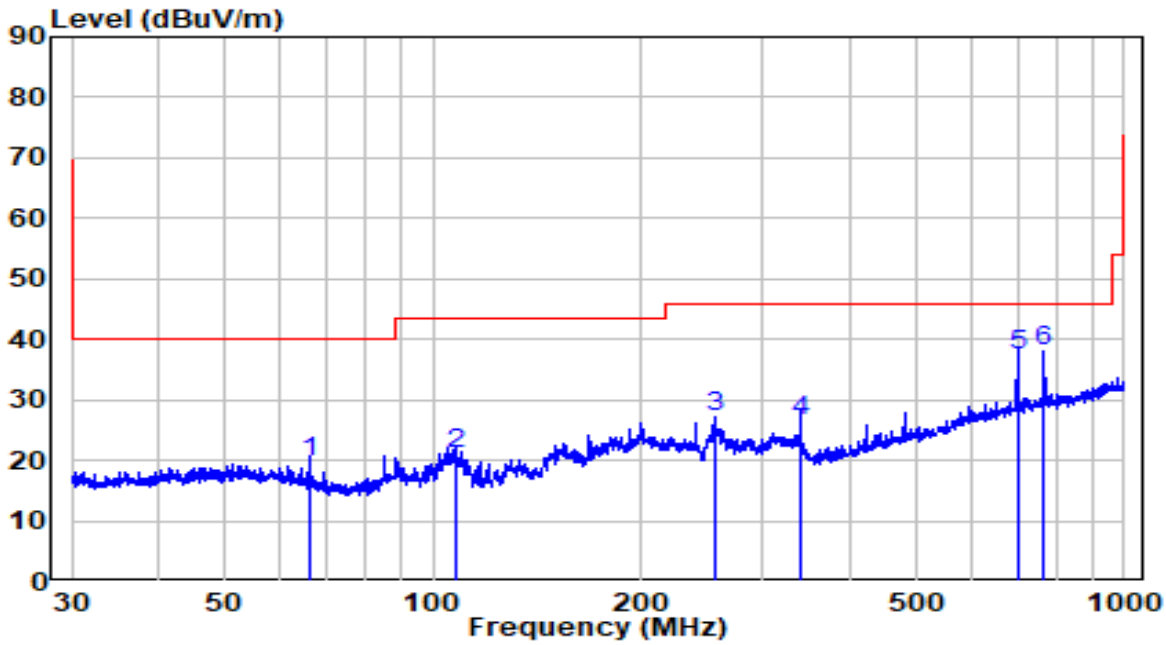
No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		4918.500	41.87	3.55	45.43	-28.57	74.00	Peak
2		7383.500	36.80	11.39	48.19	-25.81	74.00	Peak
3	*	11081.000	33.89	17.89	51.78	-22.22	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB)– Preamplifier(dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

The Worst Case of Radiated Emission below 1GHz:

EUT	Cassia Bluetooth Router	Date of Test	2021-03-02
Factor	VULB 9162	Temp. / Humidity	21.3°C /55%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at channel 2412MHz	Test Voltage	120V/60Hz

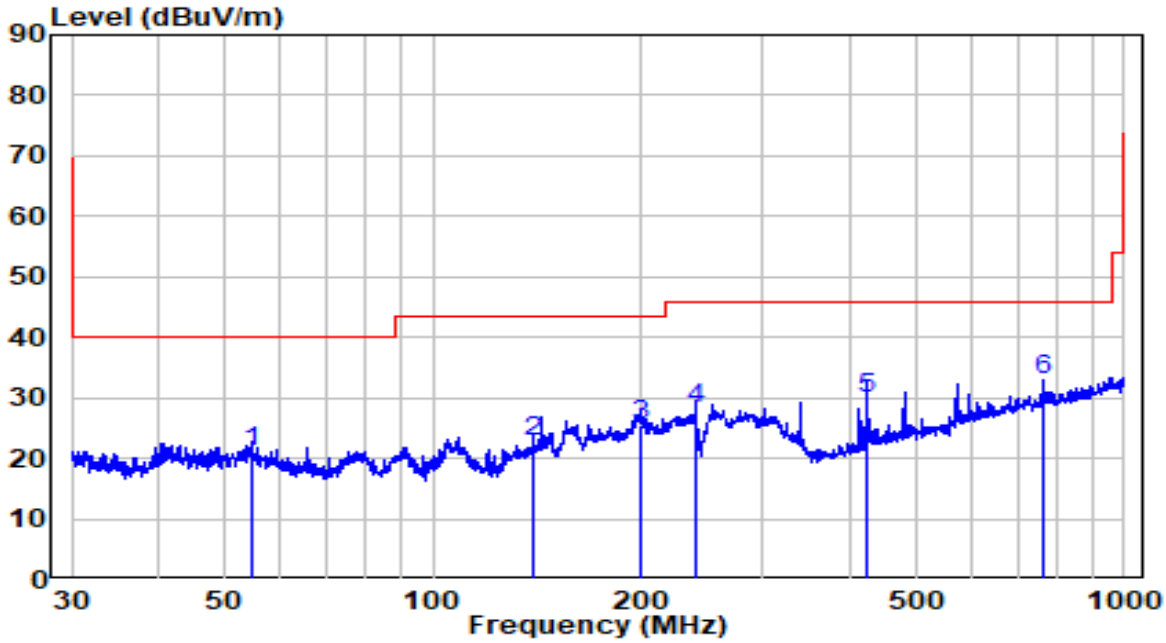


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		66.382	1.52	18.14	19.66	-20.34	40.00	QP
2		107.699	2.27	18.82	21.09	-22.41	43.50	QP
3		255.175	6.56	20.56	27.12	-18.88	46.00	QP
4		340.185	3.68	22.89	26.57	-19.43	46.00	QP
5		700.532	8.00	29.33	37.33	-8.67	46.00	QP
6	*	766.057	7.94	30.24	38.18	-7.82	46.00	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. The amplitude of Radiated emissions (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-02
Factor	VULB 9162	Temp. / Humidity	21.3°C /55%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at channel 2412MHz	Test Voltage	120V/60Hz



No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		54.643	-0.21	21.20	20.99	-19.01	40.00	QP
2		139.606	6.58	16.04	22.62	-20.88	43.50	QP
3		200.337	6.31	19.23	25.54	-17.96	43.50	QP
4		239.987	7.88	20.20	28.08	-17.92	46.00	QP
5		425.028	5.50	24.48	29.98	-16.02	46.00	QP
6	*	766.057	2.58	30.24	32.82	-13.18	46.00	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. The amplitude of Radiated emissions (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

7.7. Radiated Restricted Band Edge Measurement

7.7.1.Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1] 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41	--	--	--

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.7.2.Test Procedure Used

ANSI C63.10 - 2013 - Section 11.12

ANSI C63.10 - 2013 - Section 6.3 (General Requirements)

ANSI C63.10 - 2013 - Section 6.6 (Standard test method above 1GHz)

7.7.3.Test Setting

Peak Field Strength Measurements

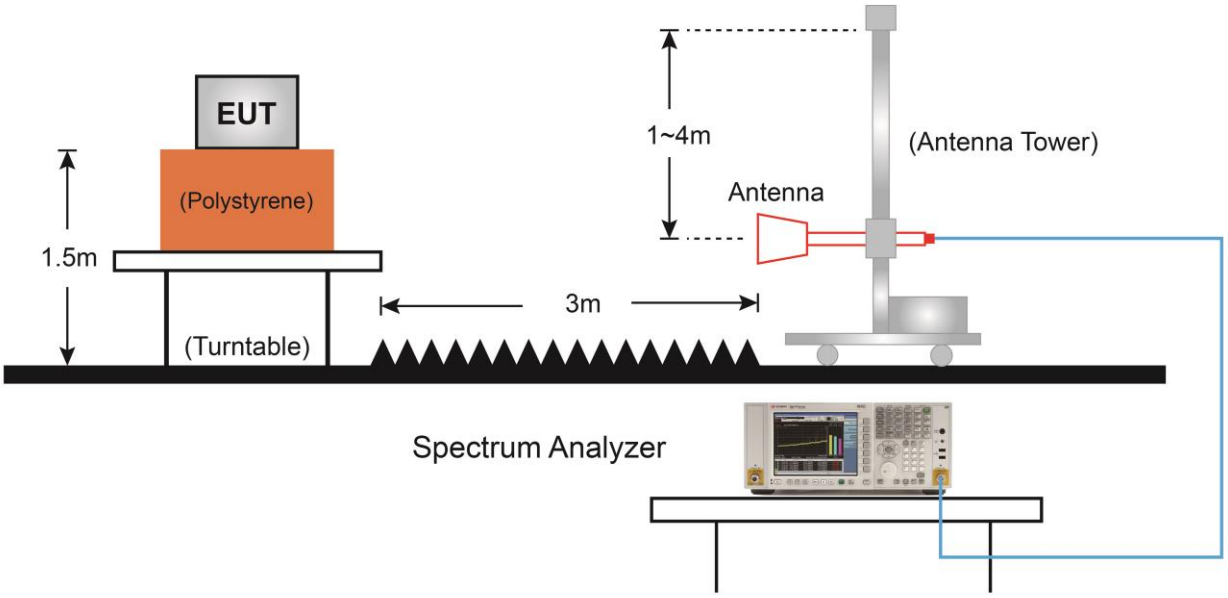
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

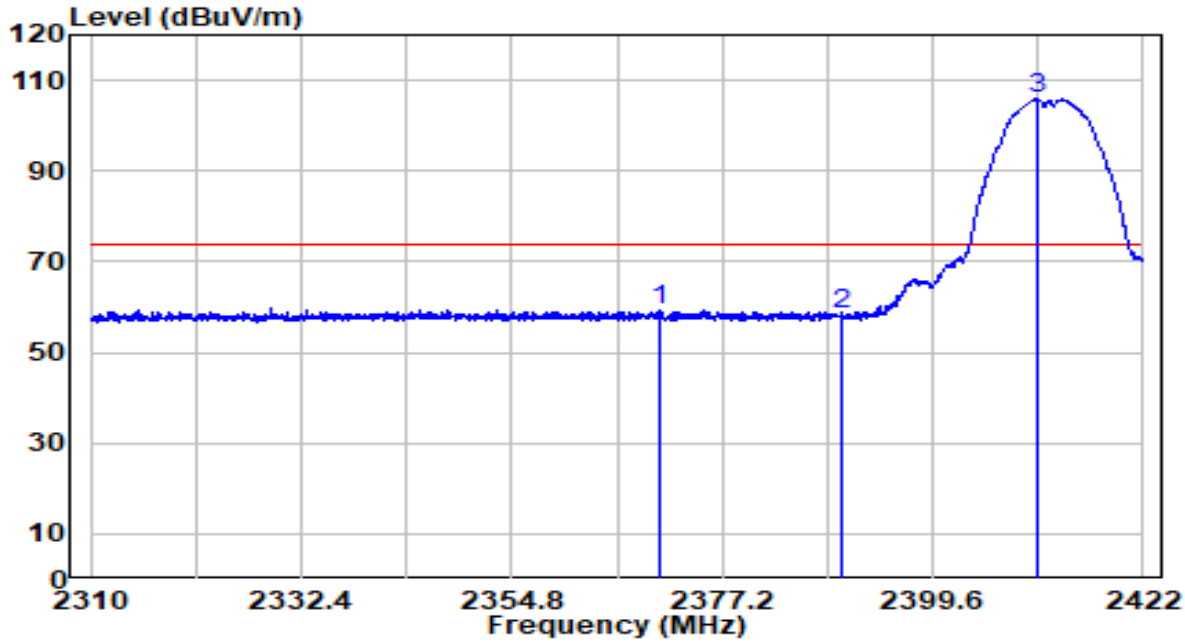
   If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

7.7.4.Test Setup



7.7.5.Test Result

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2412MHz	Test Voltage	120V/60Hz

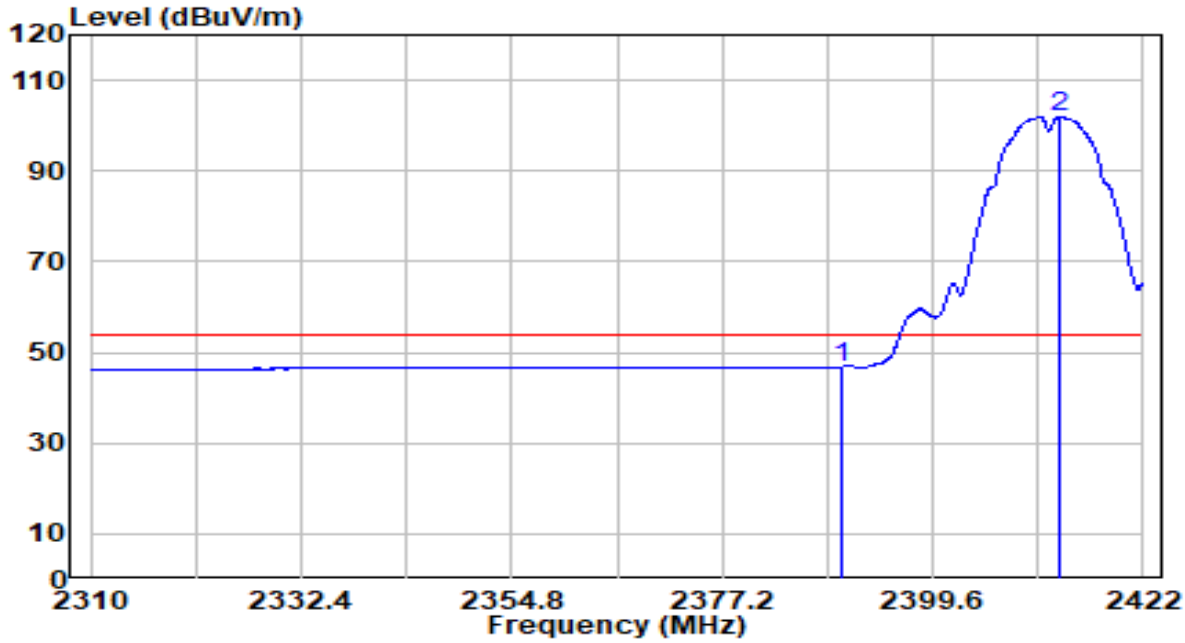


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2370.424	27.29	32.21	59.50	-14.50	74.00	Peak
2		2390.000	26.09	32.30	58.39	-15.61	74.00	Peak
3	*	2410.744	73.41	32.39	105.80	N/A	N/A	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2412MHz	Test Voltage	120V/60Hz

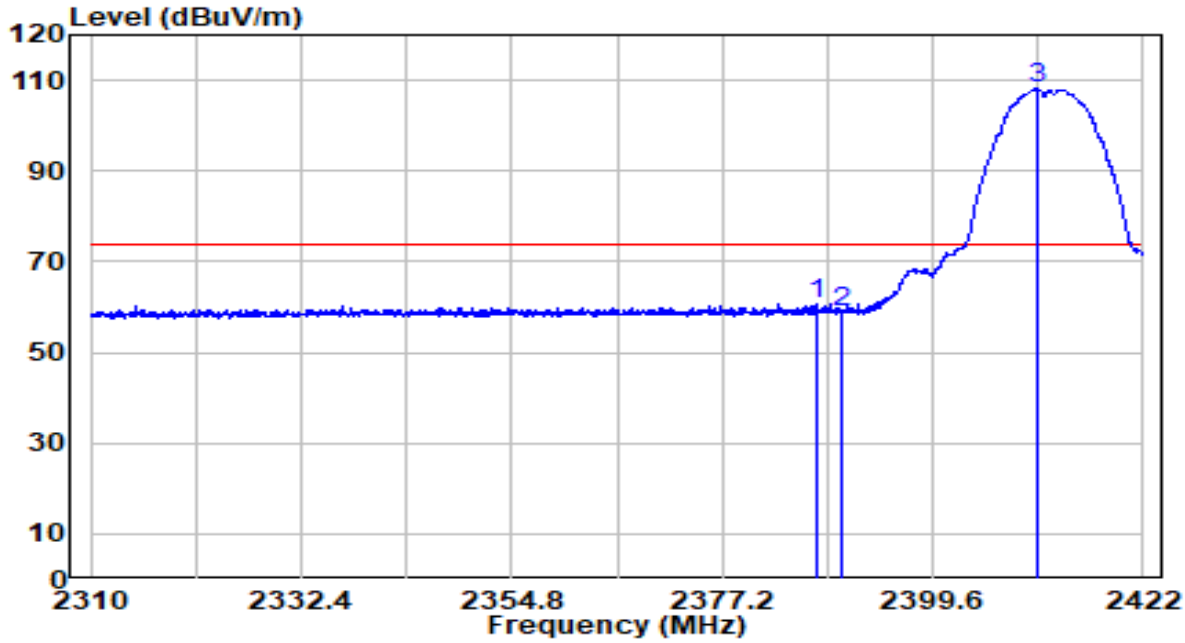


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	14.56	32.30	46.86	-7.14	54.00	Average
2	*	2413.208	69.46	32.40	101.86	N/A	N/A	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2412MHz	Test Voltage	120V/60Hz

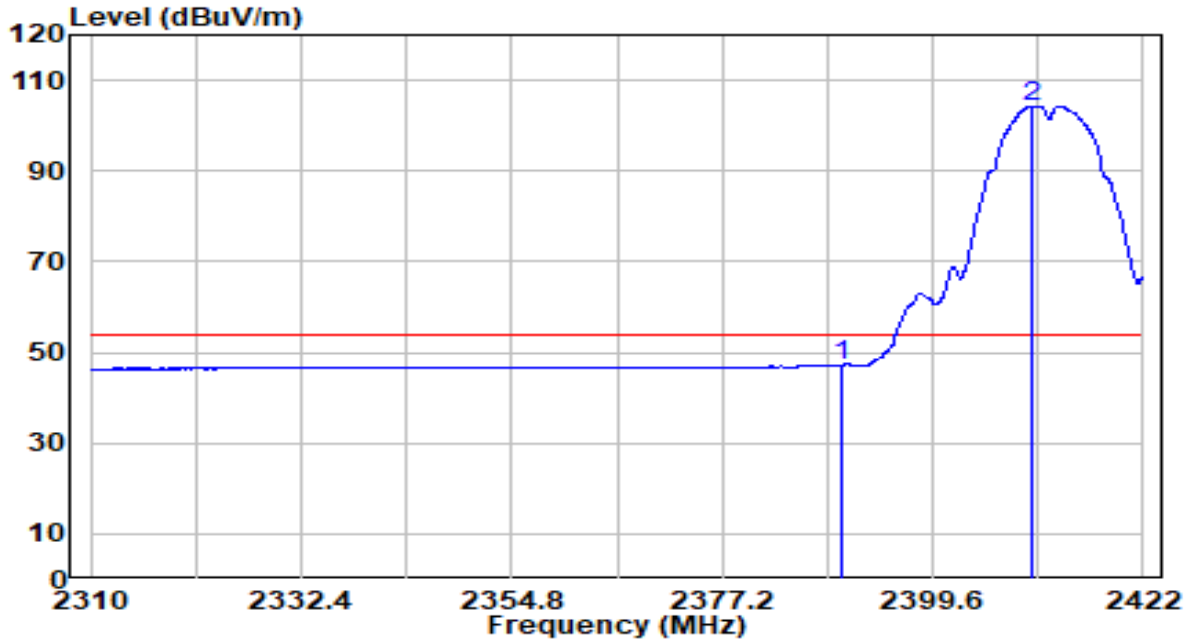


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2387.280	28.46	32.28	60.74	-13.26	74.00	Peak
2		2390.000	26.63	32.30	58.93	-15.07	74.00	Peak
3	*	2410.632	75.64	32.39	108.03	N/A	N/A	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2412MHz	Test Voltage	120V/60Hz

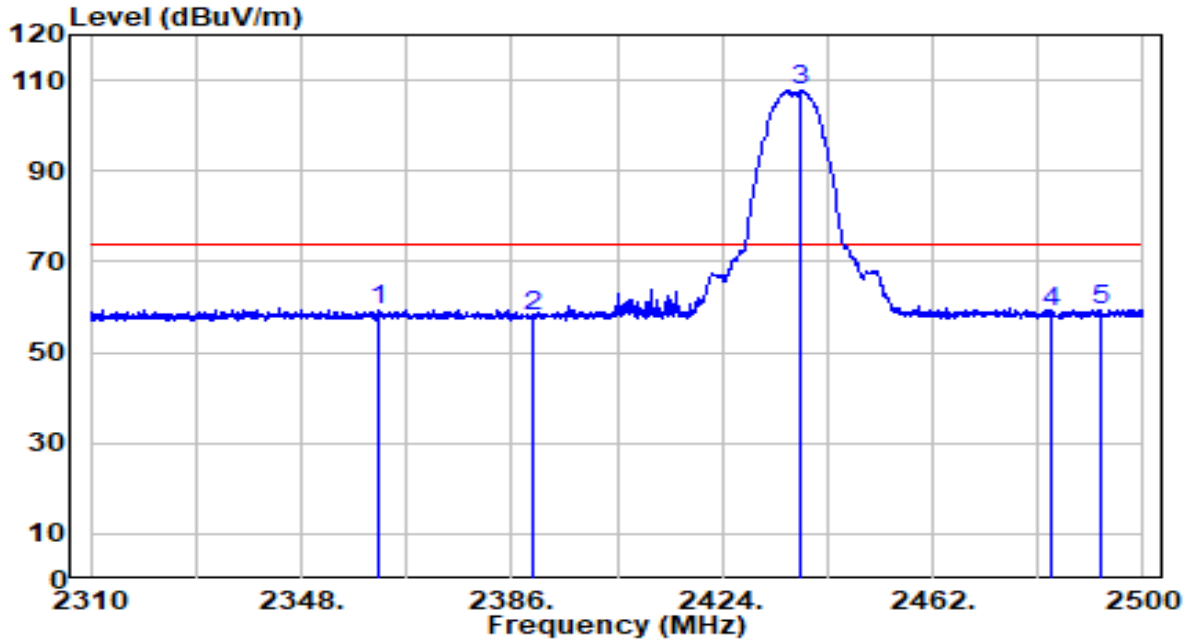


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	14.98	32.30	47.28	-6.72	54.00	Average
2	*	2410.184	71.92	32.38	104.30	N/A	N/A	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2437MHz	Test Voltage	120V/60Hz

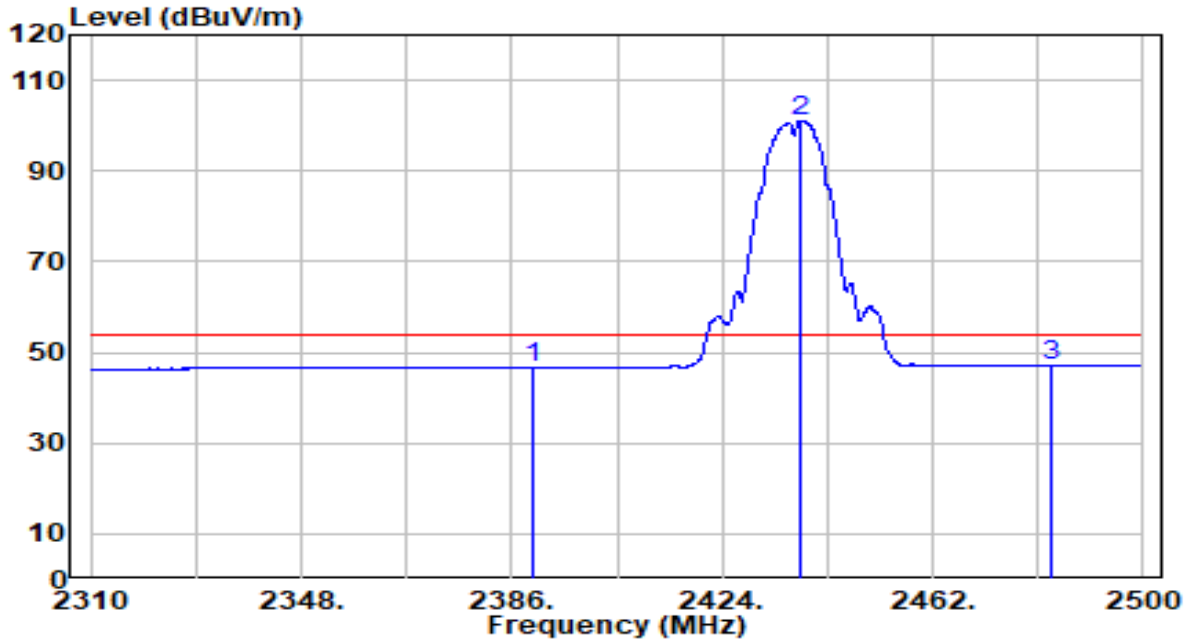


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2361.870	27.21	32.17	59.38	-14.62	74.00	Peak
2		2390.000	25.62	32.30	57.91	-16.09	74.00	Peak
3	*	2438.345	75.30	32.51	107.81	N/A	N/A	Peak
4		2483.500	26.04	32.71	58.75	-15.25	74.00	Peak
5		2492.400	26.65	32.75	59.39	-14.61	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2437MHz	Test Voltage	120V/60Hz

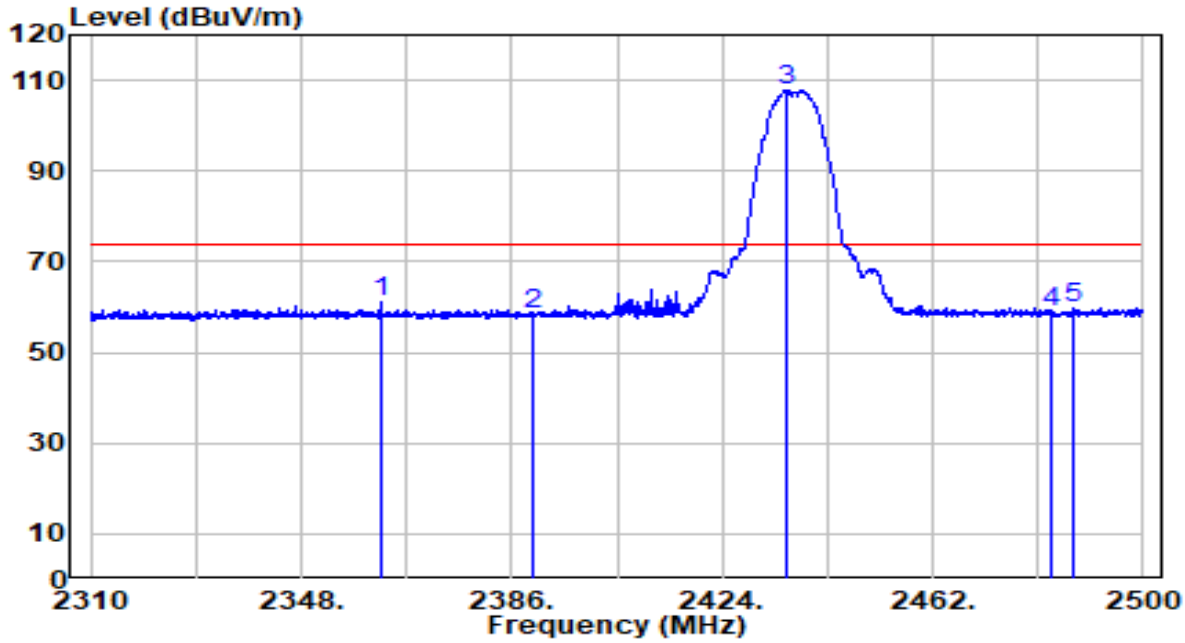


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	14.35	32.30	46.65	-7.35	54.00	Average
2	*	2438.250	68.48	32.51	100.99	N/A	N/A	Average
3		2483.500	14.26	32.71	46.97	-7.03	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2437MHz	Test Voltage	120V/60Hz

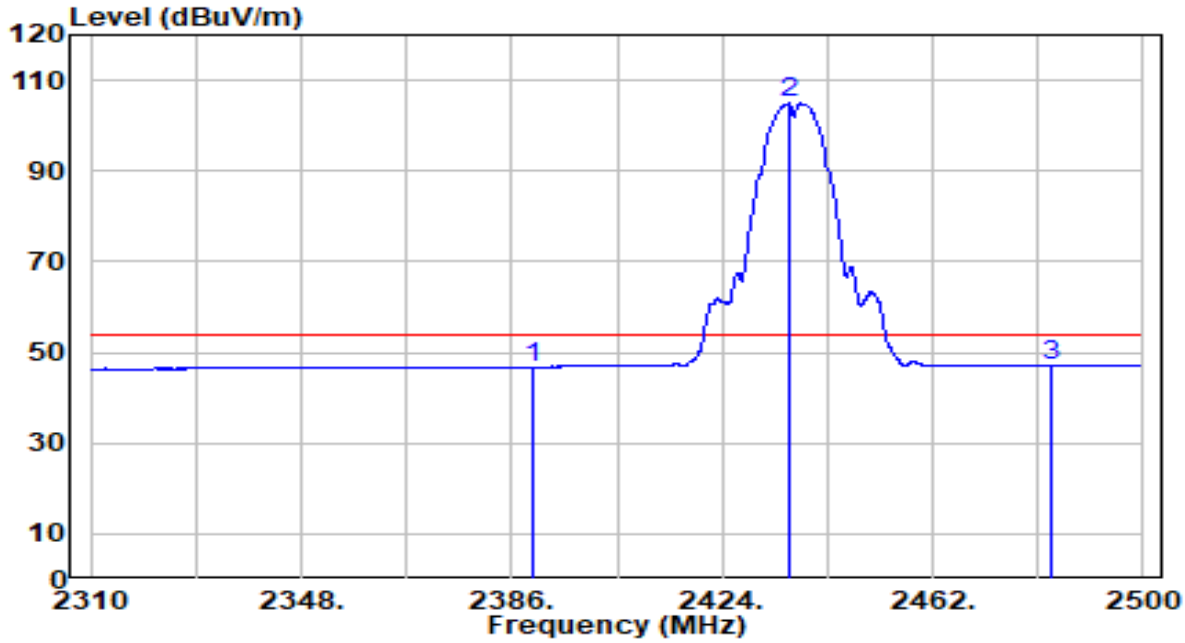


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2362.535	29.04	32.18	61.21	-12.79	74.00	Peak
2		2390.000	26.21	32.30	58.51	-15.49	74.00	Peak
3	*	2435.685	75.34	32.50	107.84	N/A	N/A	Peak
4		2483.500	26.04	32.71	58.75	-15.25	74.00	Peak
5		2487.365	26.92	32.72	59.64	-14.36	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2437MHz	Test Voltage	120V/60Hz

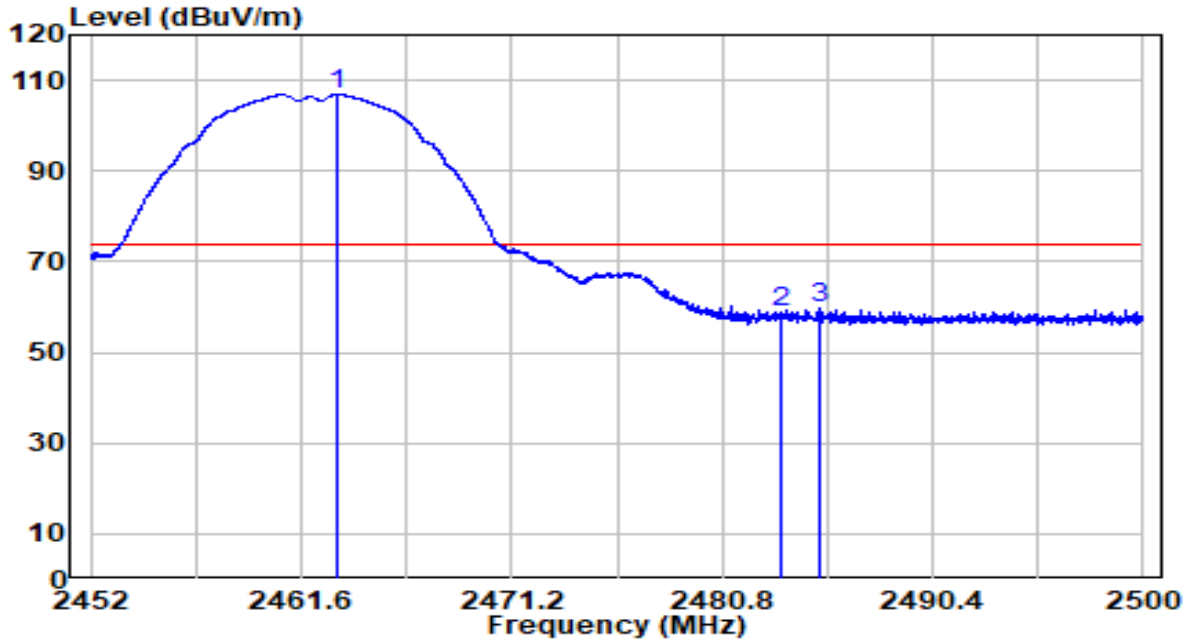


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	14.54	32.30	46.83	-7.17	54.00	Average
2	*	2436.065	72.36	32.50	104.85	N/A	N/A	Average
3		2483.500	14.39	32.71	47.10	-6.90	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2462MHz	Test Voltage	120V/60Hz

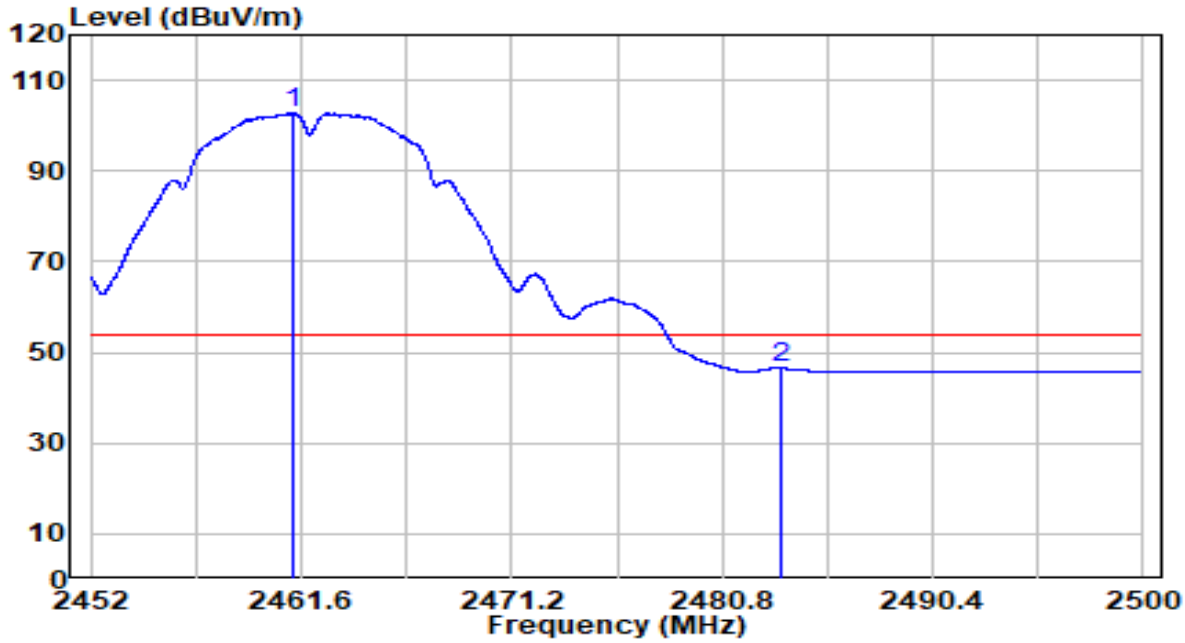


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2463.184	74.16	32.62	106.77	N/A	N/A	Peak
2		2483.500	26.04	32.71	58.74	-15.26	74.00	Peak
3		2485.216	26.91	32.71	59.62	-14.38	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2462MHz	Test Voltage	120V/60Hz

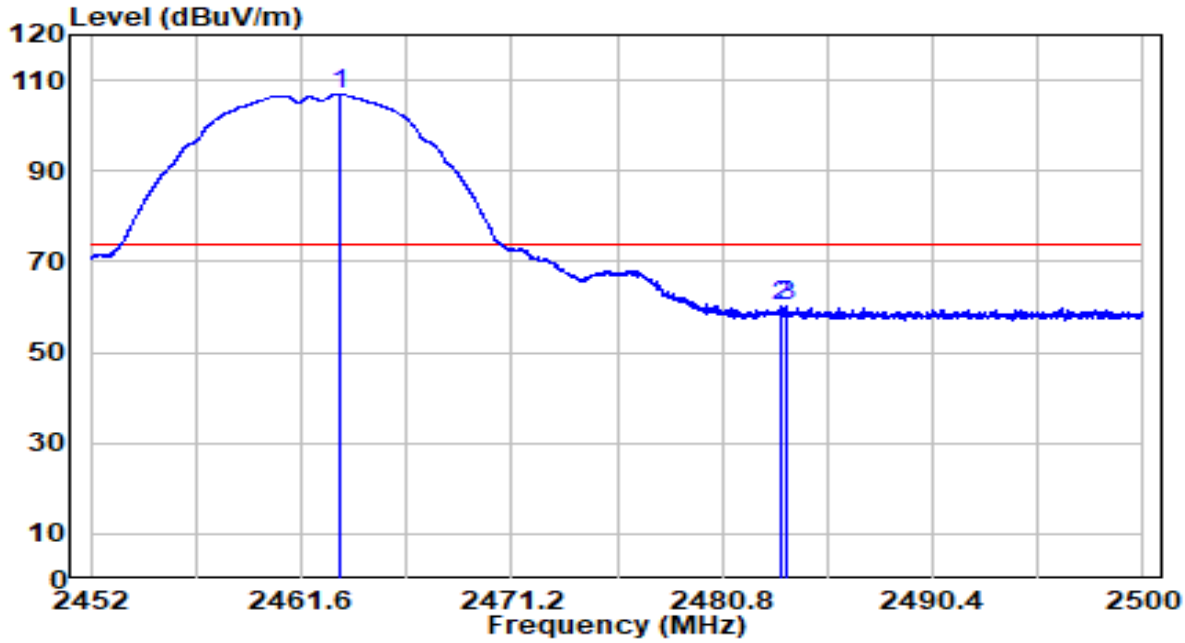


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2461.216	70.25	32.61	102.85	N/A	N/A	Average
2		2483.500	13.80	32.71	46.51	-7.49	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2462MHz	Test Voltage	120V/60Hz

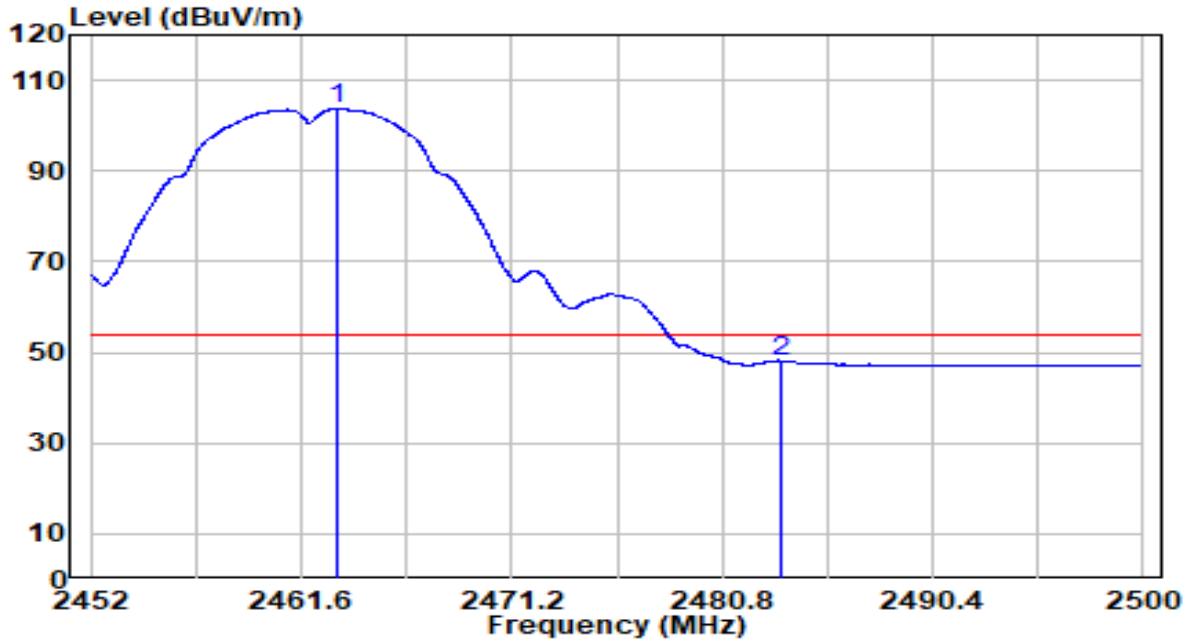


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2463.352	74.17	32.62	106.79	N/A	N/A	Peak
2		2483.500	27.34	32.71	60.05	-13.95	74.00	Peak
3		2483.704	27.74	32.71	60.45	-13.55	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11b at Channel 2462MHz	Test Voltage	120V/60Hz

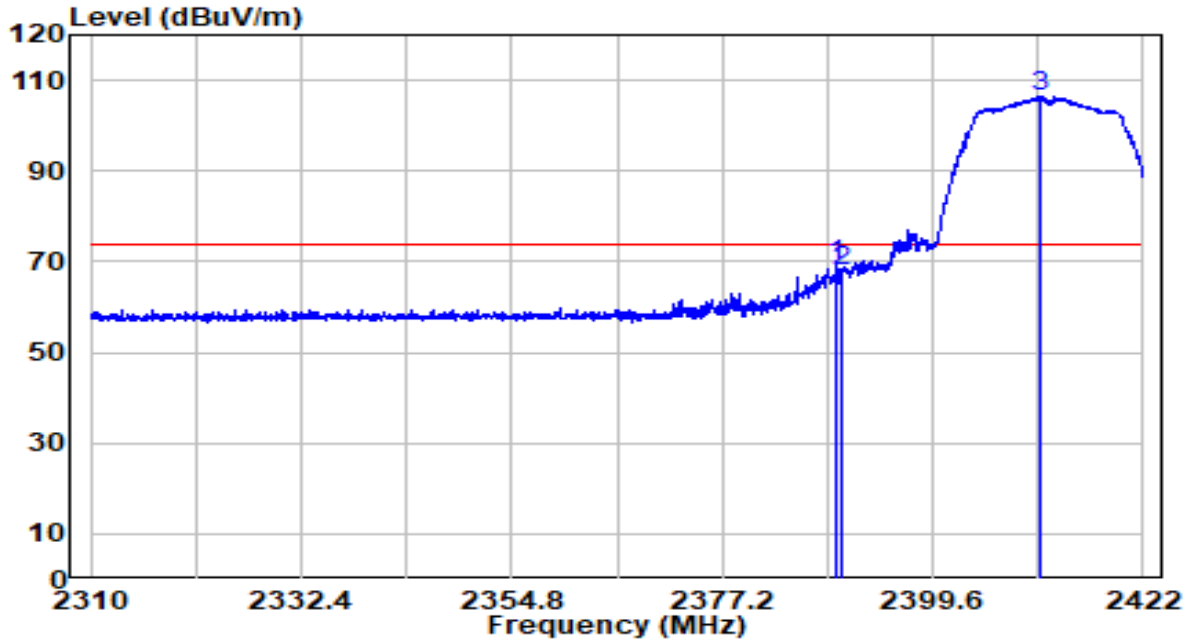


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2463.232	70.98	32.62	103.60	N/A	N/A	Average
2		2483.500	15.47	32.71	48.18	-5.82	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2412MHz	Test Voltage	120V/60Hz

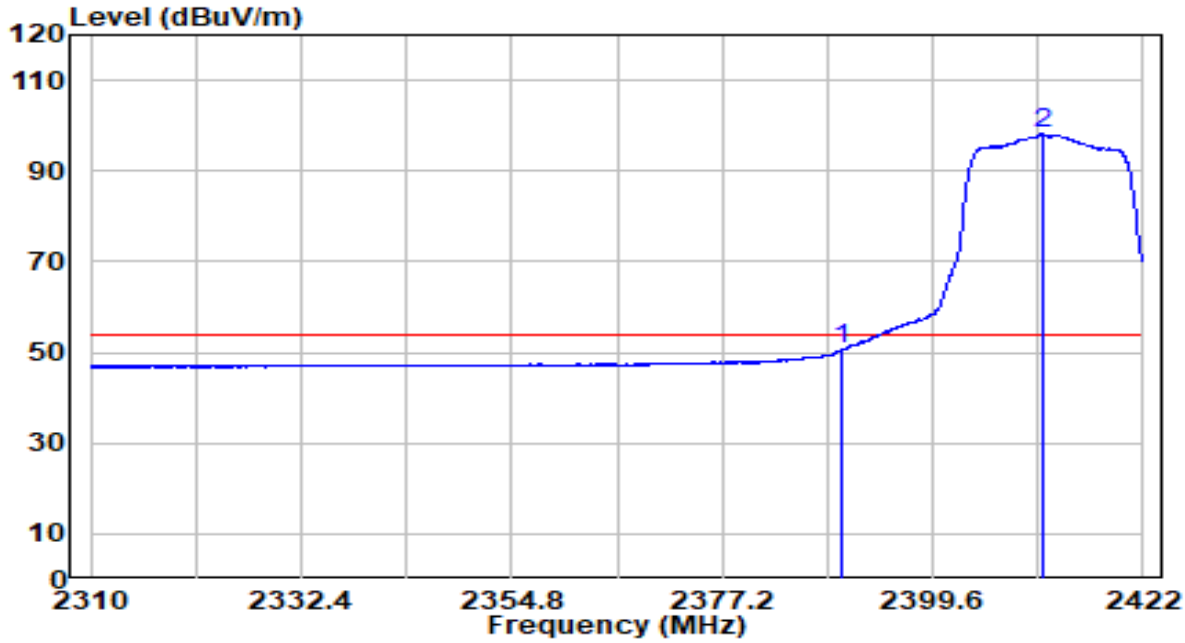


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2389.464	36.78	32.29	69.08	-4.92	74.00	Peak
2		2390.000	35.55	32.30	67.84	-6.16	74.00	Peak
3	*	2411.136	74.10	32.39	106.49	N/A	N/A	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2412MHz	Test Voltage	120V/60Hz

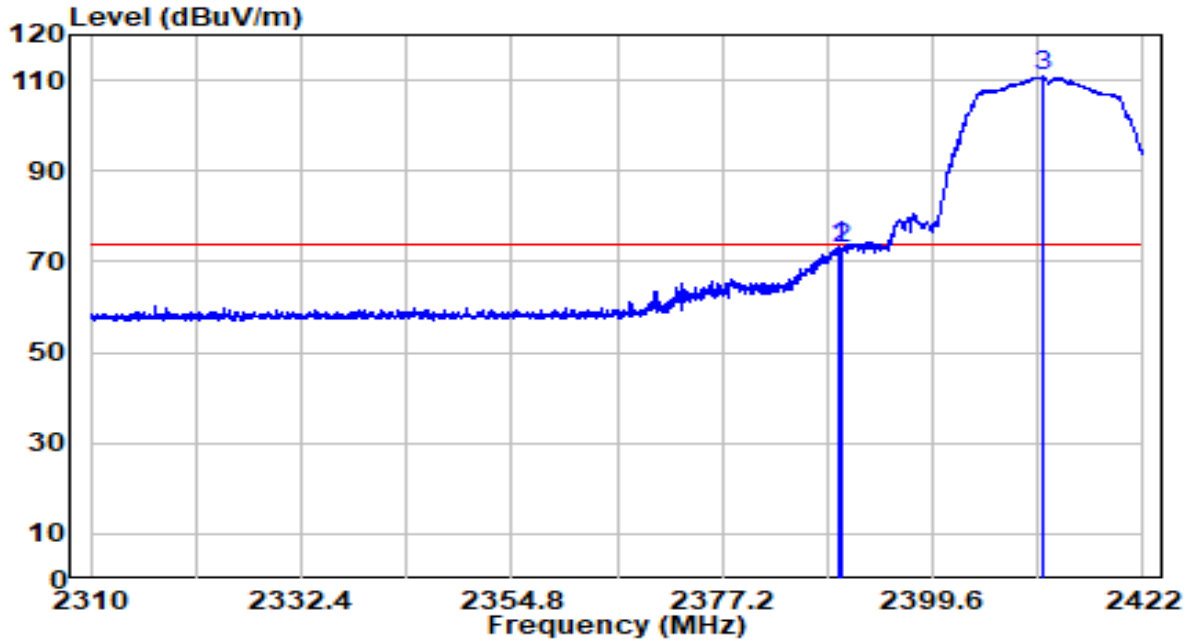


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	18.34	32.30	50.63	-3.37	54.00	Average
2	*	2411.360	65.83	32.39	98.22	N/A	N/A	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2412MHz	Test Voltage	120V/60Hz

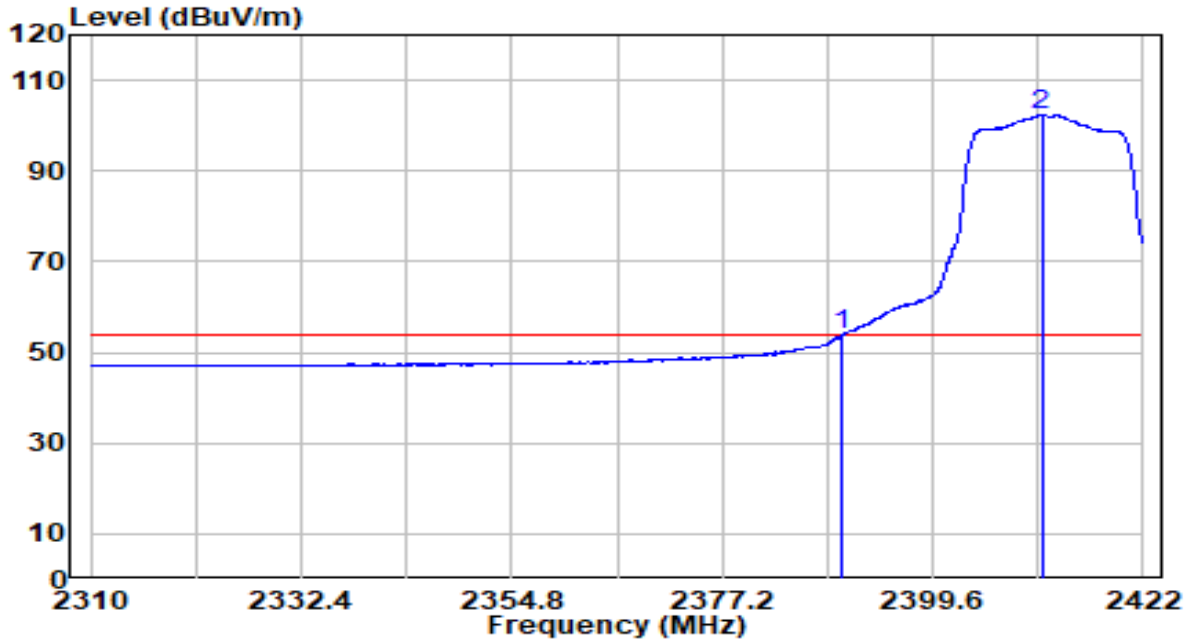


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2389.744	40.87	32.29	73.16	-0.84	74.00	Peak
2		2390.000	40.53	32.30	72.83	-1.17	74.00	Peak
3	*	2411.248	78.44	32.39	110.83	N/A	N/A	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2412MHz	Test Voltage	120V/60Hz

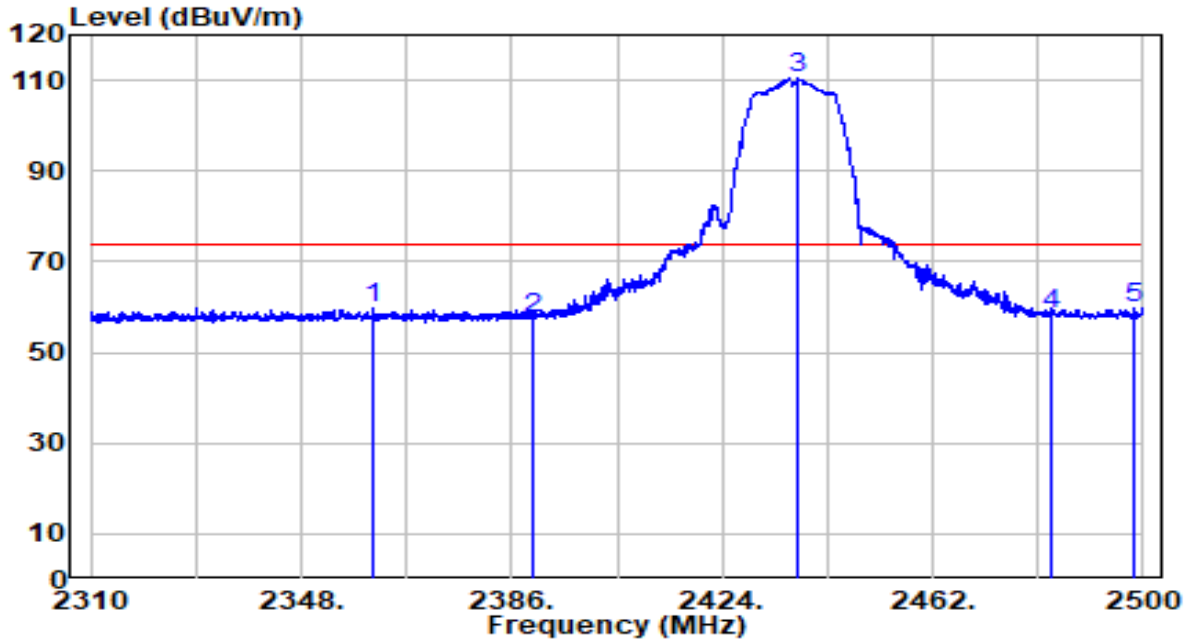


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	21.42	32.30	53.72	-0.28	54.00	Average
2	*	2411.192	70.12	32.39	102.51	N/A	N/A	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2437MHz	Test Voltage	120V/60Hz

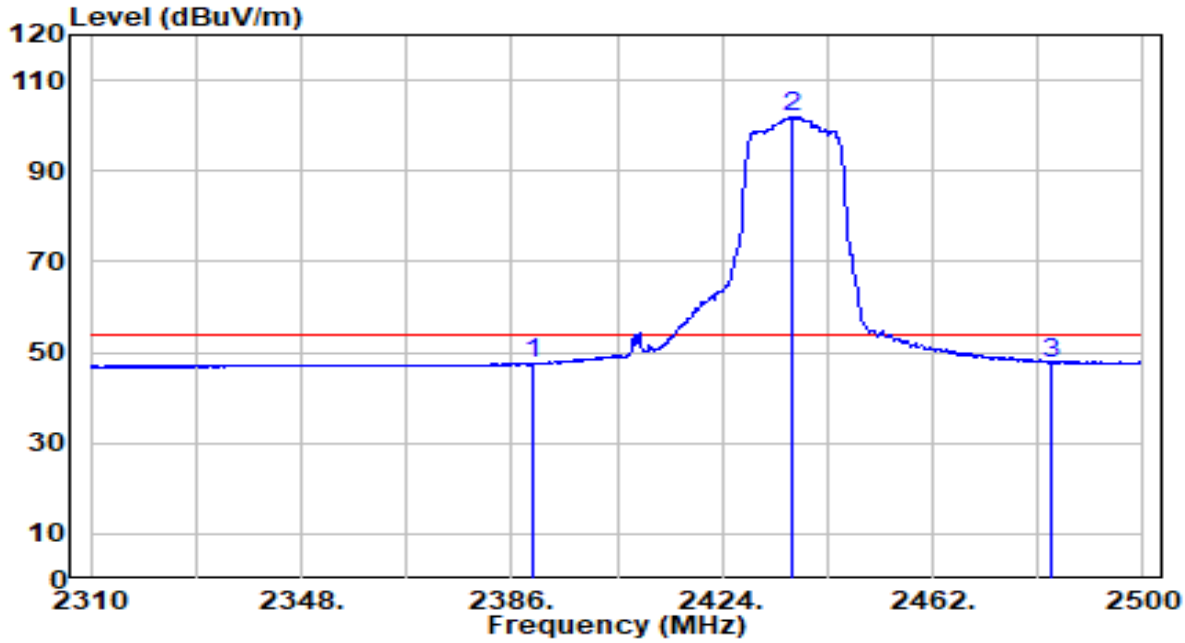


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2360.920	27.42	32.17	59.59	-14.41	74.00	Peak
2		2390.000	25.24	32.30	57.54	-16.46	74.00	Peak
3	*	2437.585	77.98	32.51	110.48	N/A	N/A	Peak
4		2483.500	25.81	32.71	58.52	-15.48	74.00	Peak
5		2498.290	27.14	32.77	59.92	-14.08	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2437MHz	Test Voltage	120V/60Hz

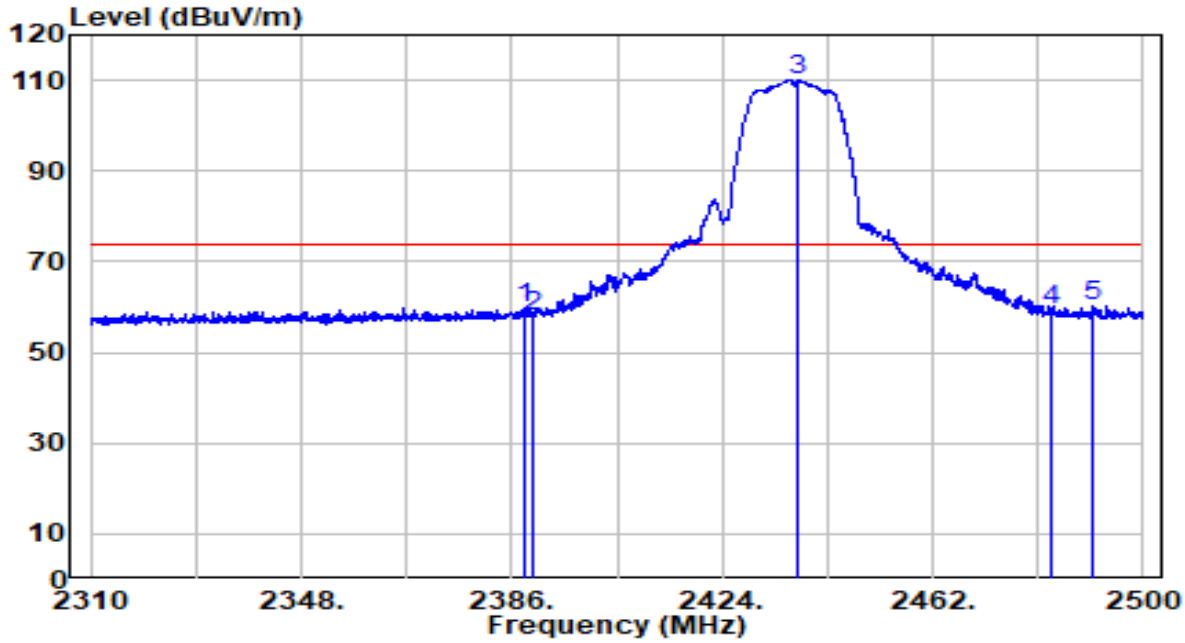


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	15.10	32.30	47.40	-6.60	54.00	Average
2	*	2436.730	69.30	32.50	101.80	N/A	N/A	Average
3		2483.500	15.04	32.71	47.75	-6.25	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2437MHz	Test Voltage	120V/60Hz

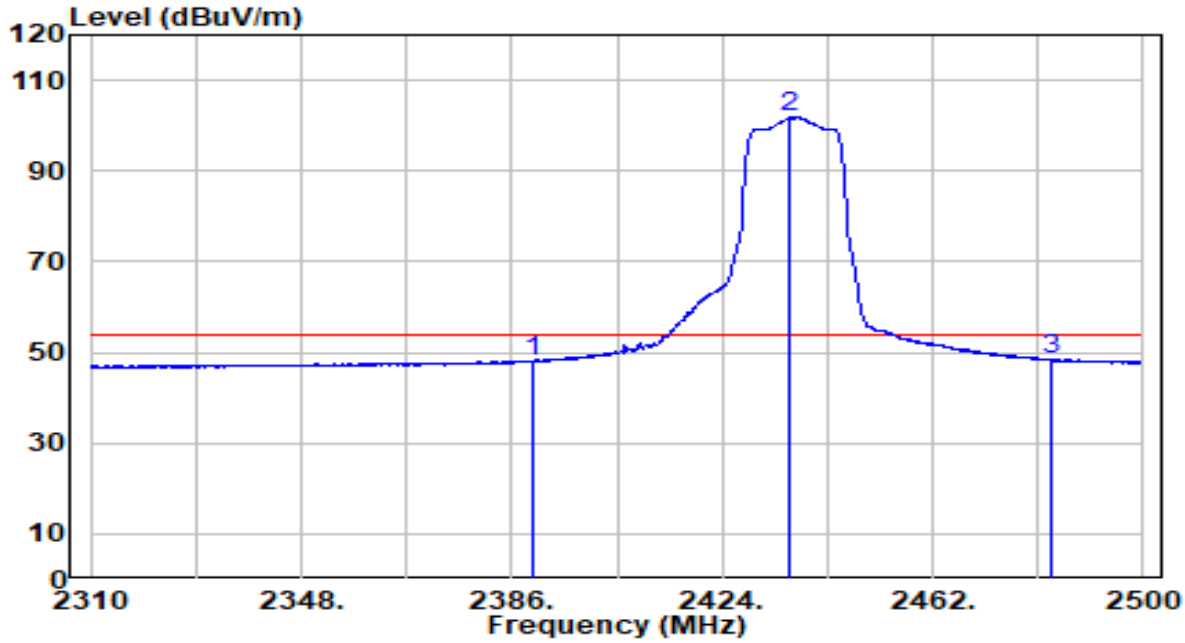


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2388.280	27.40	32.29	59.69	-14.31	74.00	Peak
2		2390.000	25.84	32.30	58.14	-15.86	74.00	Peak
3	*	2437.680	77.73	32.51	110.24	N/A	N/A	Peak
4		2483.500	26.60	32.71	59.31	-14.69	74.00	Peak
5		2491.070	27.59	32.74	60.33	-13.67	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2437MHz	Test Voltage	120V/60Hz

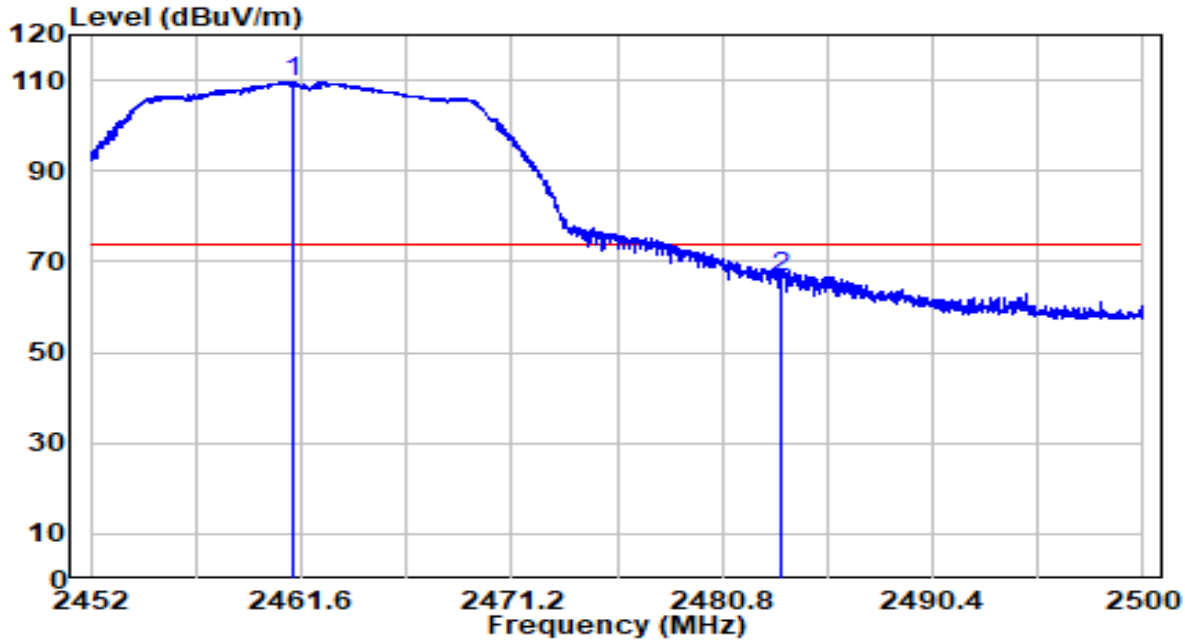


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	15.91	32.30	48.20	-5.80	54.00	Average
2	*	2436.350	69.44	32.50	101.94	N/A	N/A	Average
3		2483.500	15.59	32.71	48.30	-5.70	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2462MHz	Test Voltage	120V/60Hz

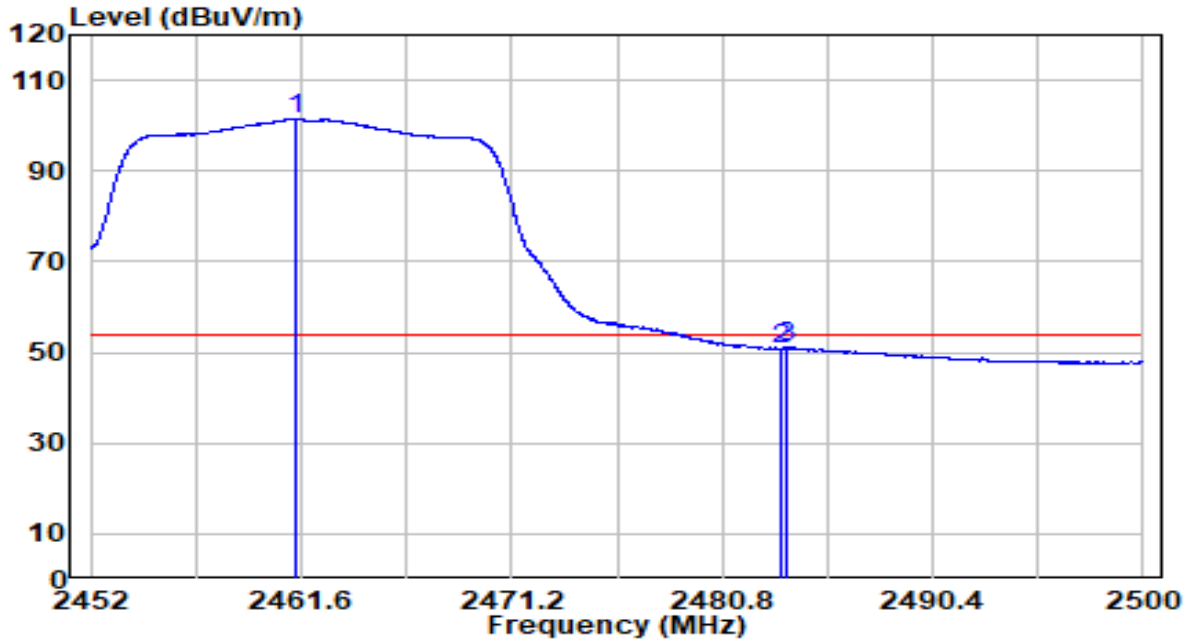


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2461.168	77.07	32.61	109.68	N/A	N/A	Peak
2		2483.500	33.97	32.71	66.68	-7.32	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2462MHz	Test Voltage	120V/60Hz

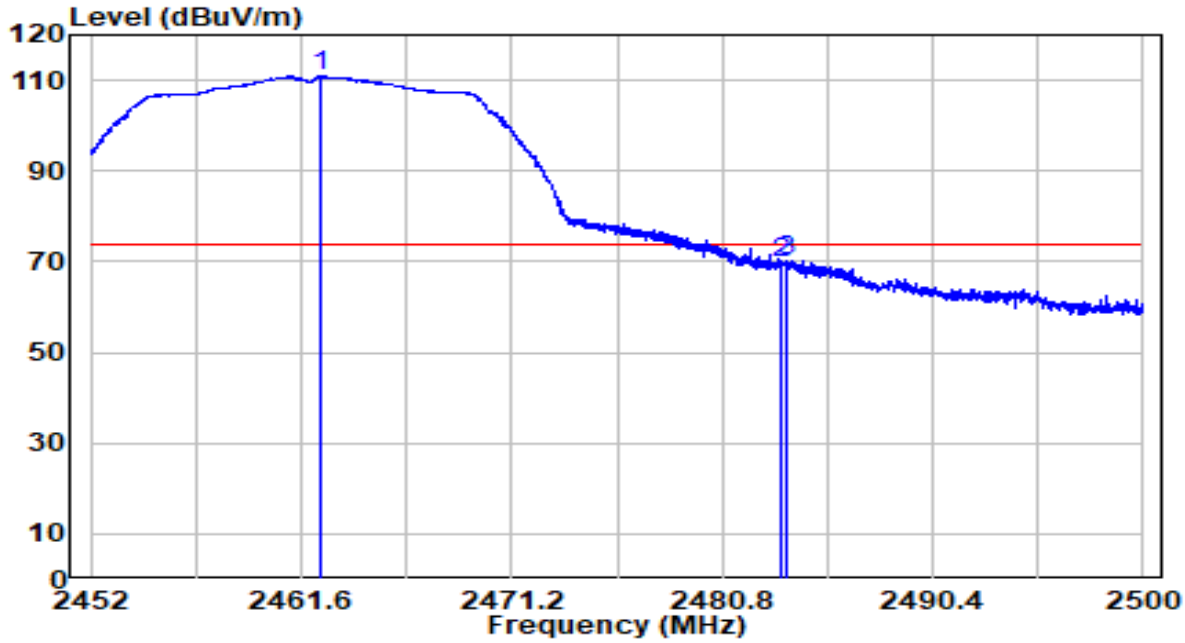


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2461.384	68.88	32.61	101.49	N/A	N/A	Average
2		2483.500	18.17	32.71	50.87	-3.13	54.00	Average
3		2483.752	18.32	32.71	51.03	-2.97	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2462MHz	Test Voltage	120V/60Hz

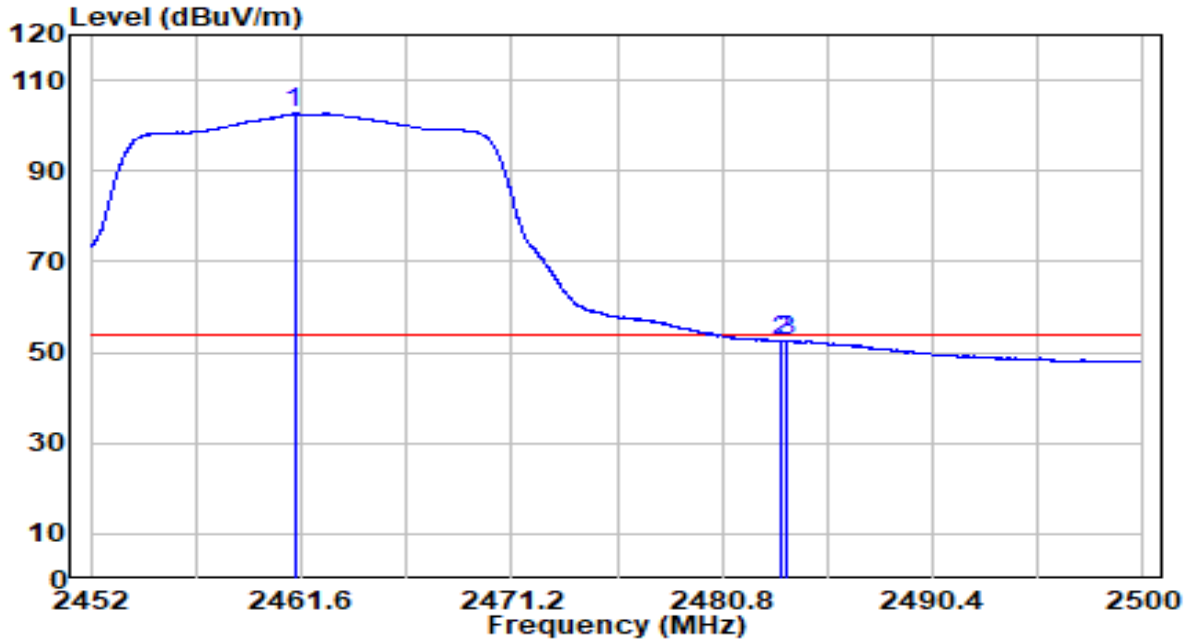


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2462.536	78.40	32.62	111.01	N/A	N/A	Peak
2		2483.500	37.13	32.71	69.84	-4.16	74.00	Peak
3		2483.752	37.64	32.71	70.35	-3.65	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11g at Channel 2462MHz	Test Voltage	120V/60Hz

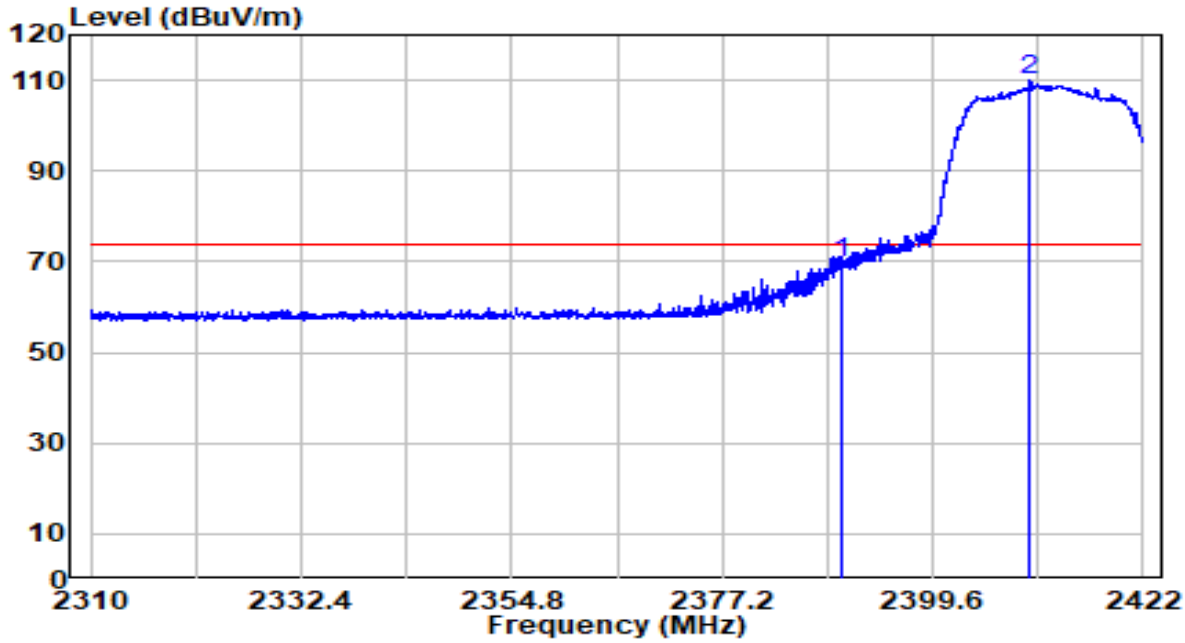


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2461.288	70.00	32.61	102.61	N/A	N/A	Average
2		2483.500	19.91	32.71	52.61	-1.39	54.00	Average
3		2483.752	19.88	32.71	52.58	-1.42	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2412MHz	Test Voltage	120V/60Hz

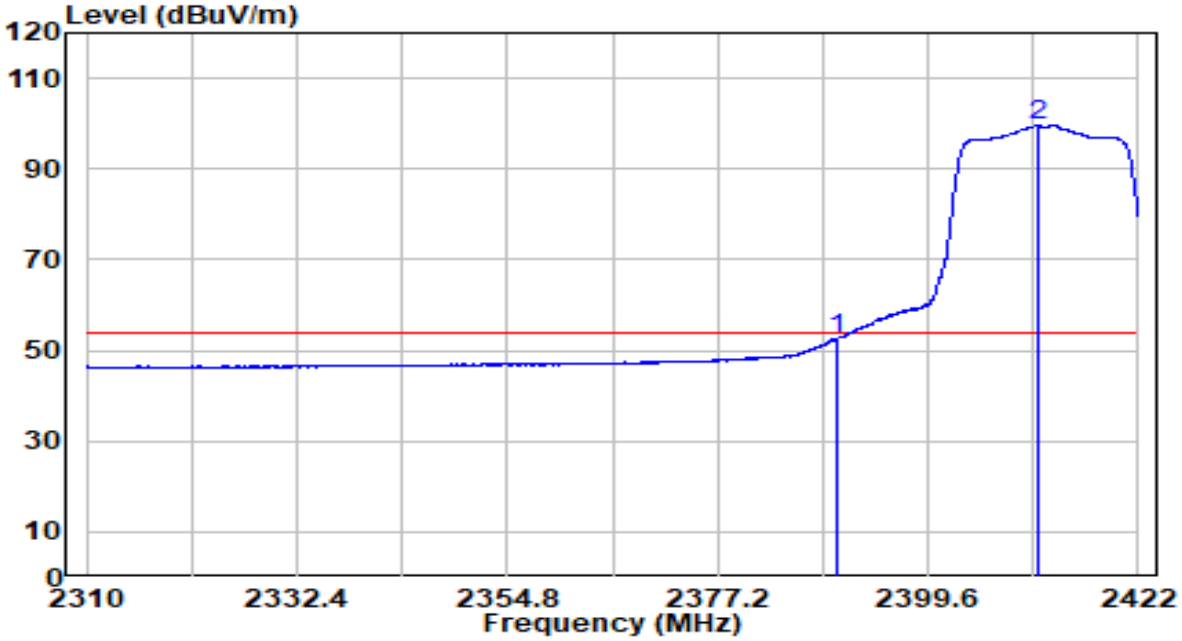


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	37.61	32.30	69.91	-4.09	74.00	Peak
2	*	2409.848	77.84	32.38	110.22	N/A	N/A	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2412MHz	Test Voltage	120V/60Hz

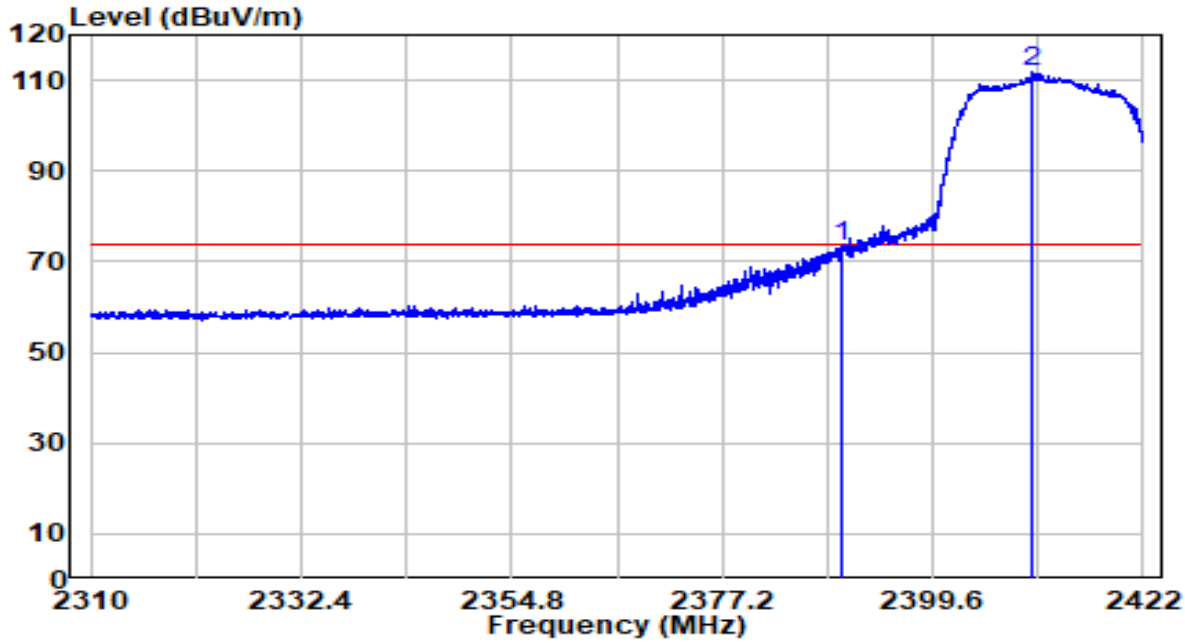


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	20.26	32.47	52.73	-1.27	54.00	Average
2	*	2411.248	67.04	32.59	99.63	N/A	N/A	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2412MHz	Test Voltage	120V/60Hz

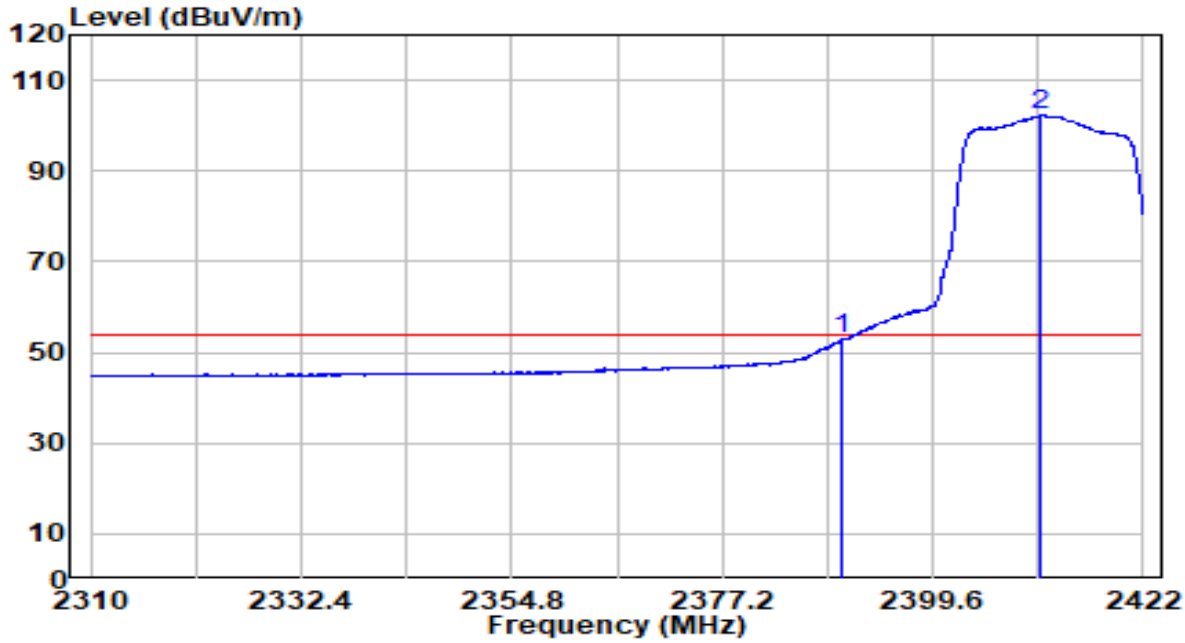


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	41.27	32.30	73.57	-0.43	74.00	Peak
2	*	2410.296	79.56	32.39	111.94	N/A	N/A	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2412MHz	Test Voltage	120V/60Hz

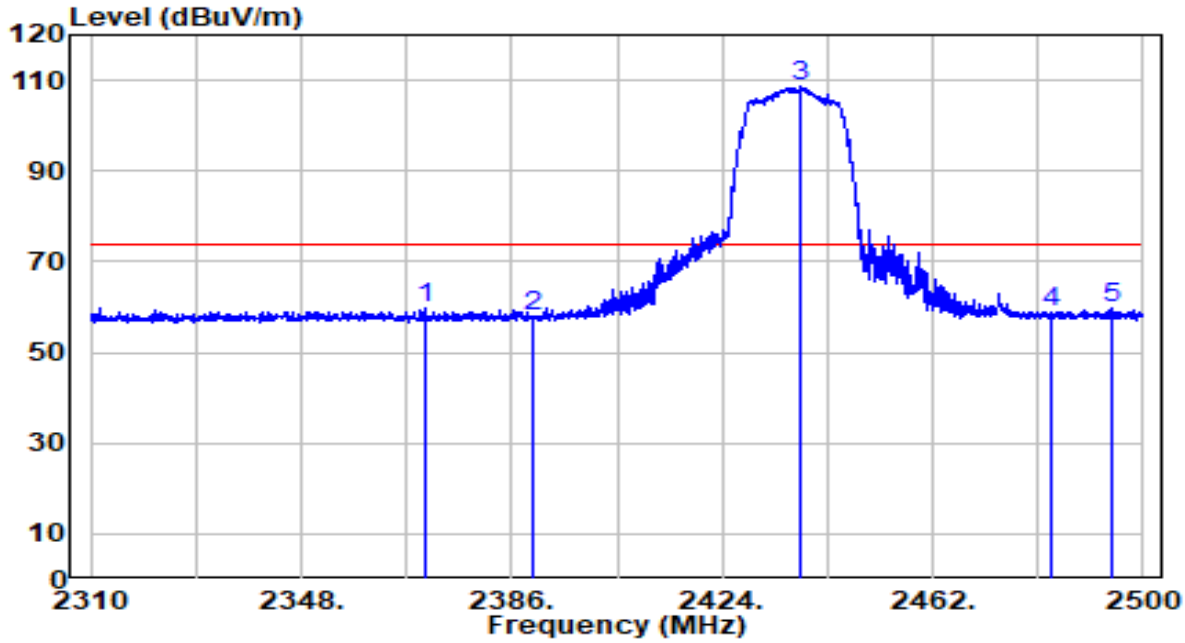


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	20.46	32.30	52.76	-1.24	54.00	Average
2	*	2411.136	69.87	32.39	102.26	N/A	N/A	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2437MHz	Test Voltage	120V/60Hz

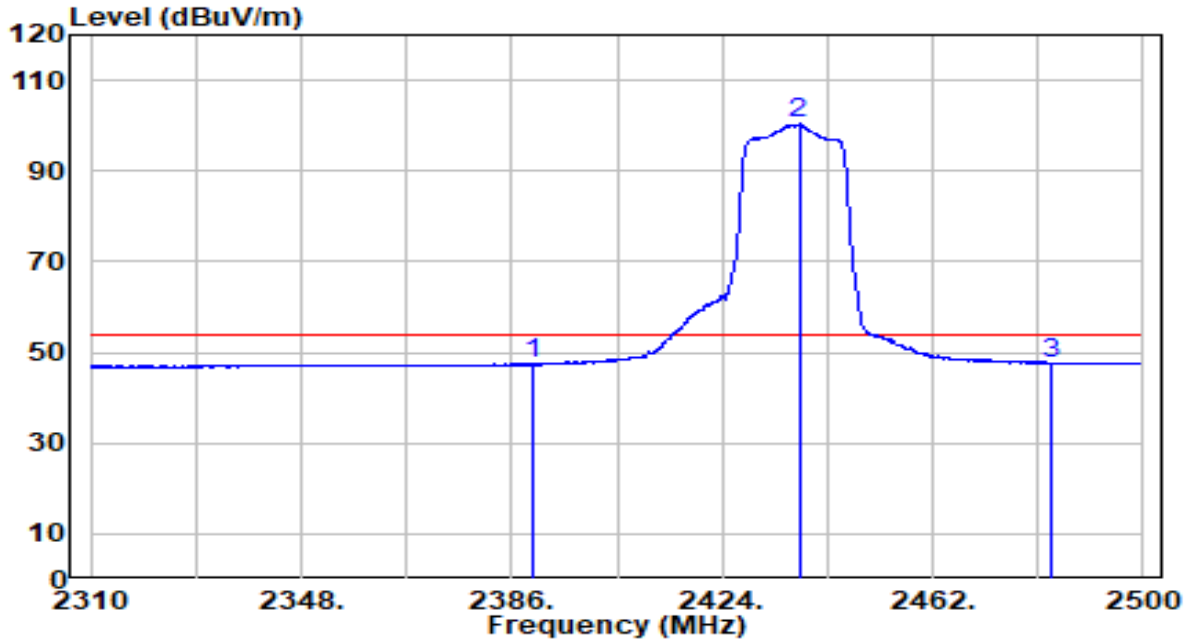


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2370.230	27.46	32.21	59.67	-14.33	74.00	Peak
2		2390.000	25.70	32.30	58.00	-16.00	74.00	Peak
3	*	2438.345	75.95	32.51	108.46	N/A	N/A	Peak
4		2483.500	26.06	32.71	58.77	-15.23	74.00	Peak
5		2494.205	26.80	32.75	59.56	-14.44	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2437MHz	Test Voltage	120V/60Hz

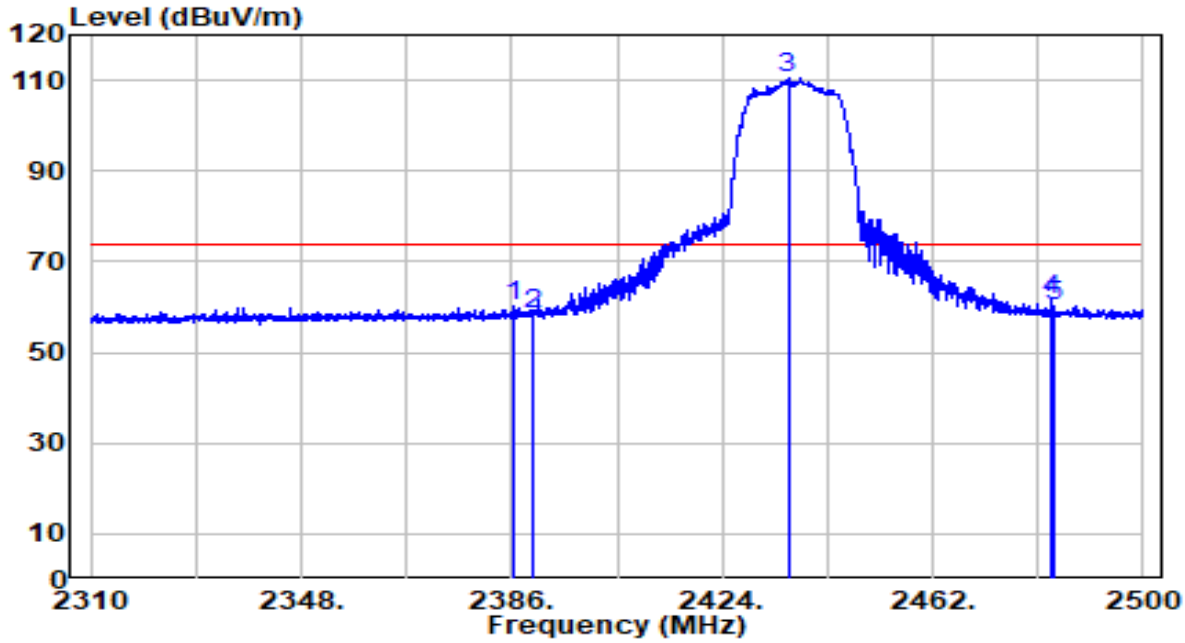


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	15.18	32.30	47.48	-6.52	54.00	Average
2	*	2437.870	67.84	32.51	100.35	N/A	N/A	Average
3		2483.500	14.83	32.71	47.54	-6.46	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2437MHz	Test Voltage	120V/60Hz

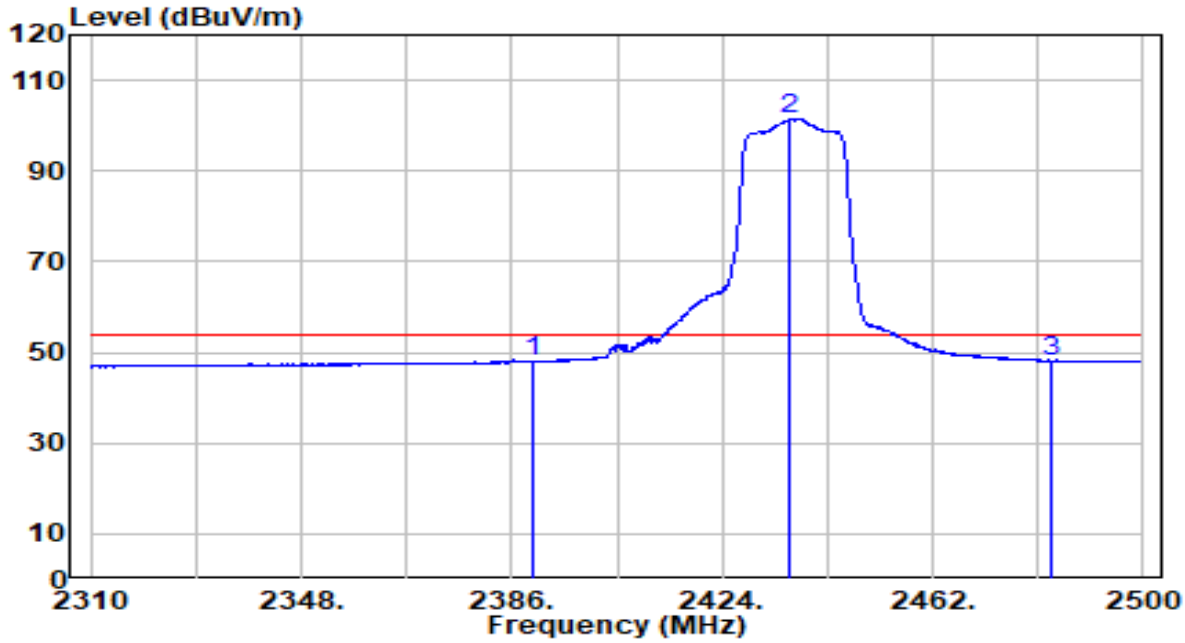


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2386.380	27.81	32.28	60.09	-13.91	74.00	Peak
2		2390.000	26.33	32.30	58.63	-15.37	74.00	Peak
3	*	2435.875	78.09	32.50	110.58	N/A	N/A	Peak
4		2483.500	28.70	32.71	61.40	-12.60	74.00	Peak
5		2483.945	27.38	32.71	60.08	-13.92	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2437MHz	Test Voltage	120V/60Hz

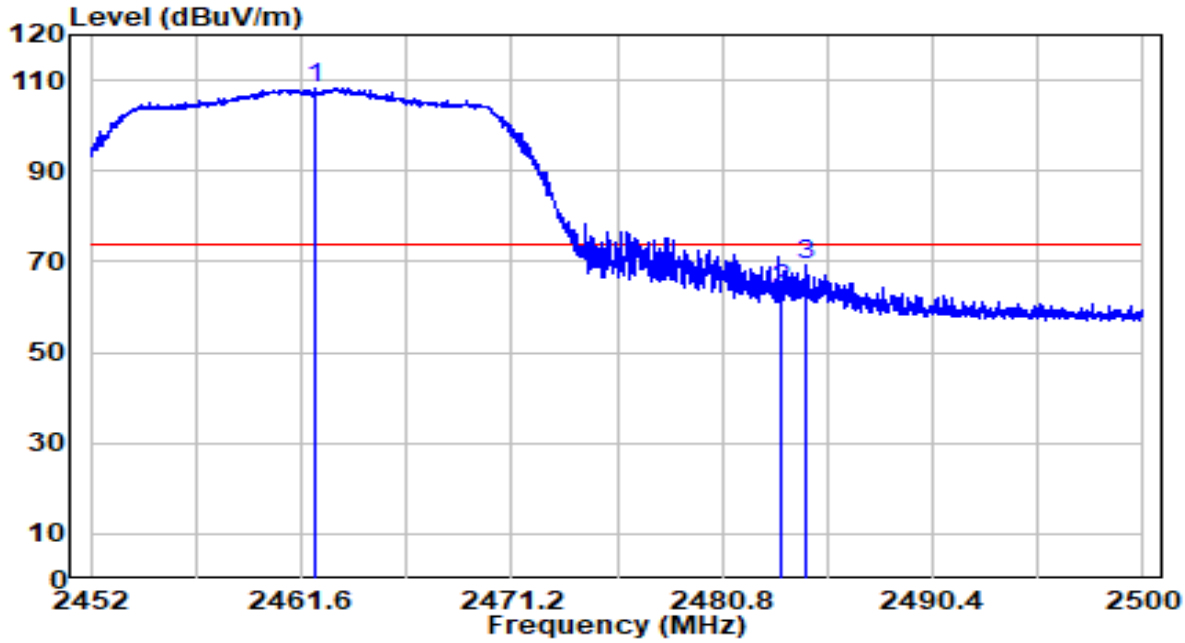


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1		2390.000	15.66	32.30	47.95	-6.05	54.00	Average
2	*	2436.255	69.04	32.50	101.54	N/A	N/A	Average
3		2483.500	15.41	32.71	48.11	-5.89	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2462MHz	Test Voltage	120V/60Hz

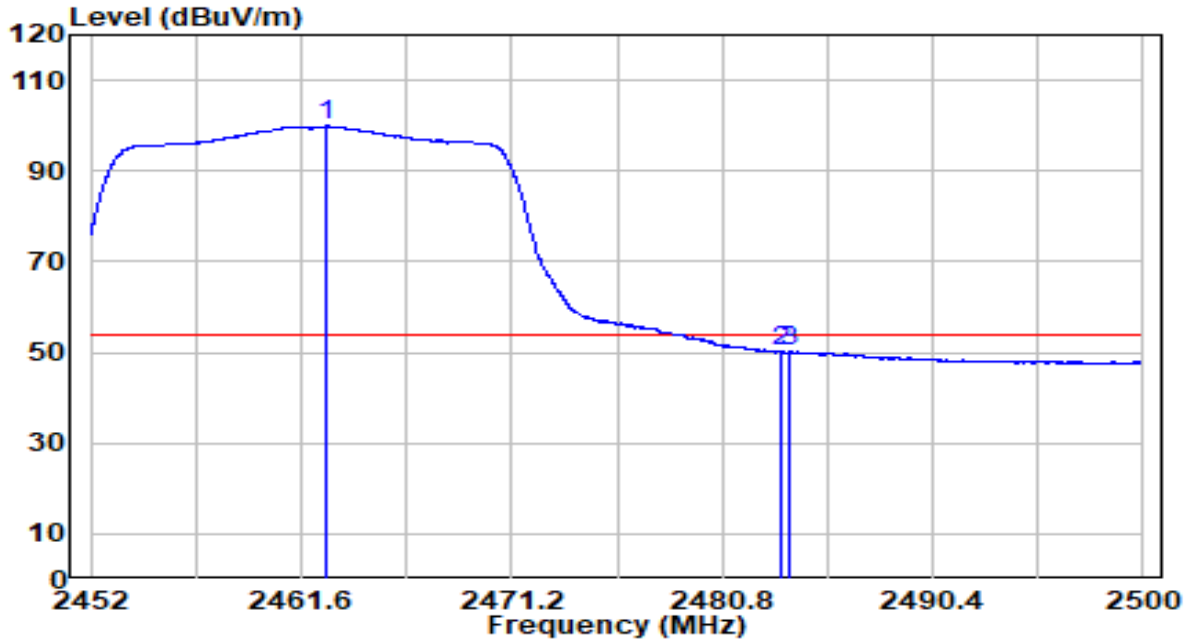


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2462.224	75.76	32.61	108.38	N/A	N/A	Peak
2		2483.500	31.16	32.71	63.86	-10.14	74.00	Peak
3		2484.664	36.58	32.71	69.29	-4.71	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Horizontal	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2462MHz	Test Voltage	120V/60Hz

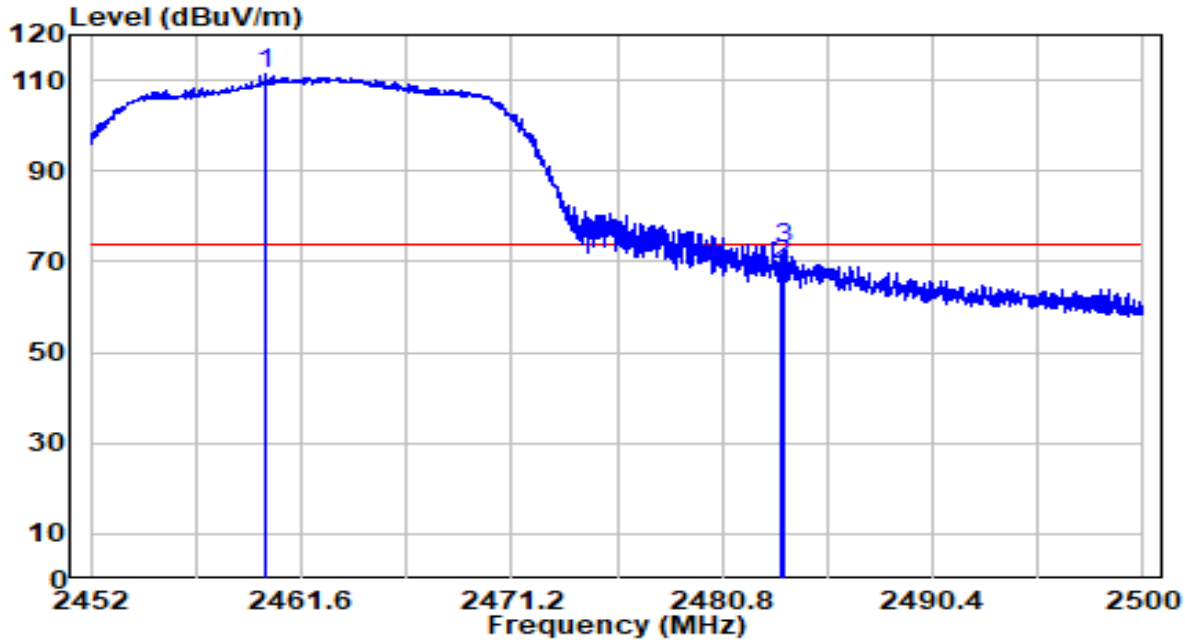


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2462.776	67.31	32.62	99.92	N/A	N/A	Average
2		2483.500	17.35	32.71	50.06	-3.94	54.00	Average
3		2483.896	17.48	32.71	50.19	-3.81	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2462MHz	Test Voltage	120V/60Hz

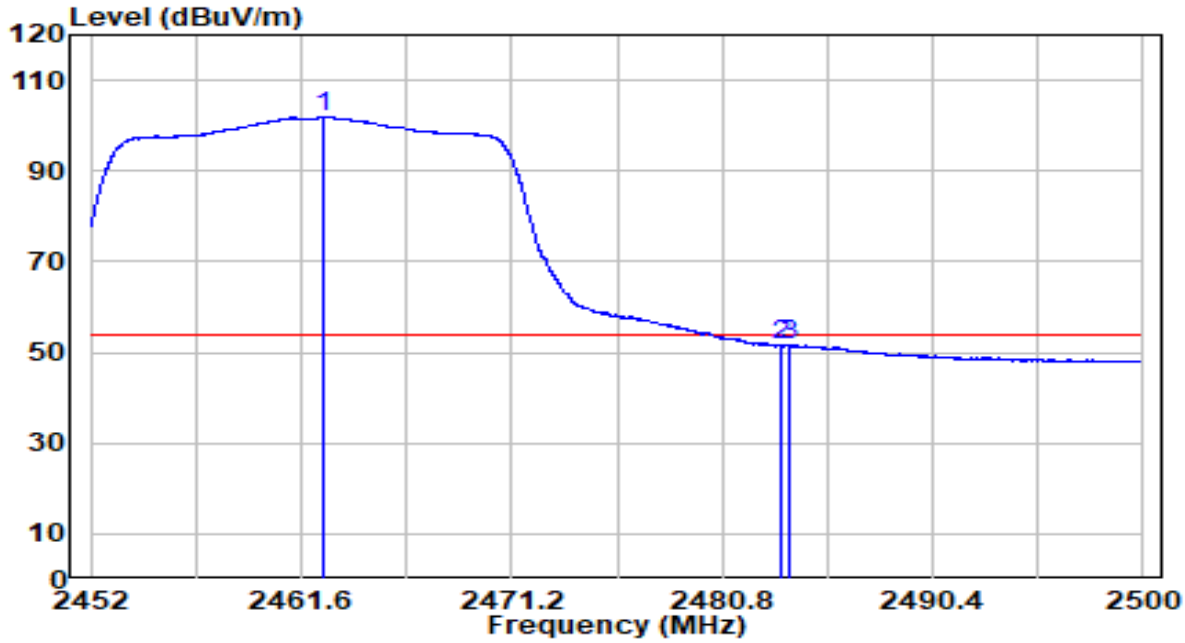


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2459.968	78.81	32.60	111.41	N/A	N/A	Peak
2		2483.500	36.50	32.71	69.21	-4.79	74.00	Peak
3		2483.560	40.01	32.71	72.72	-1.28	74.00	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Cassia Bluetooth Router	Date of Test	2021-03-01
Factor	BBHA 9120D	Temp. / Humidity	21.8°C/38.2%
Polarity	Vertical	Site / Test Engineer	AC1 / Jay Chou
Test Mode	Transmit by 802.11n-HT20 at Channel 2462MHz	Test Voltage	120V/60Hz



No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	2462.584	69.22	32.62	101.84	N/A	N/A	Average
2		2483.500	18.88	32.71	51.59	-2.41	54.00	Average
3		2483.872	19.03	32.71	51.73	-2.27	54.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4.The emission levels of other frequencies are very lower than the limit and not show in test report.

7.8. AC Conducted Emissions Measurement

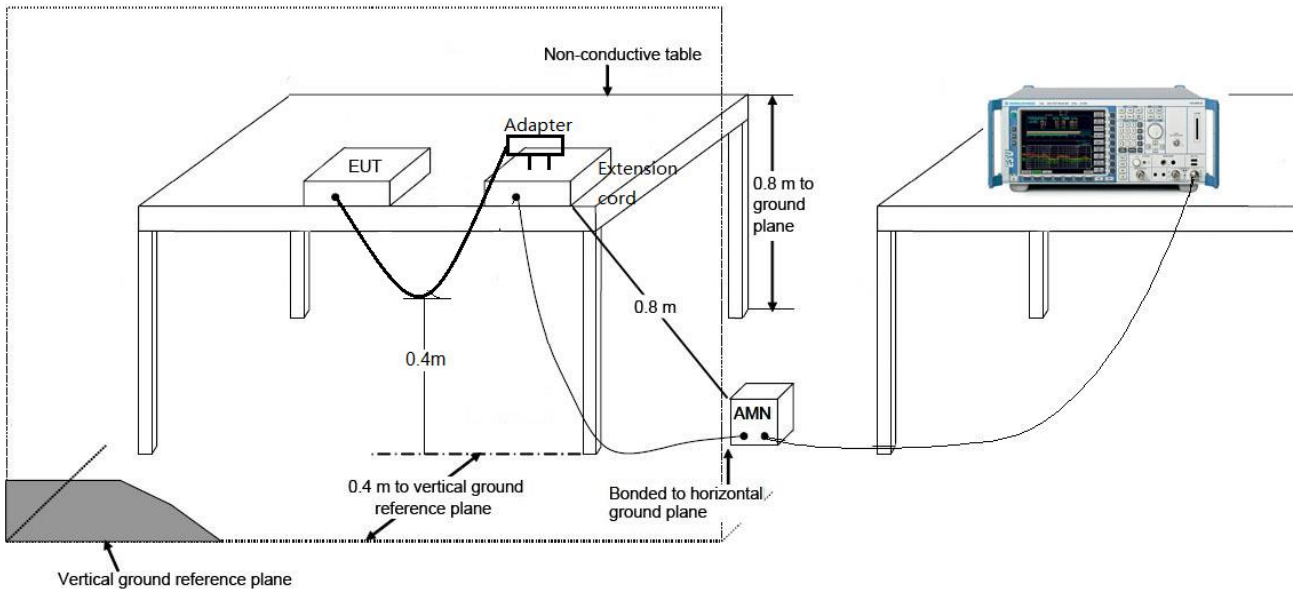
7.8.1.Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

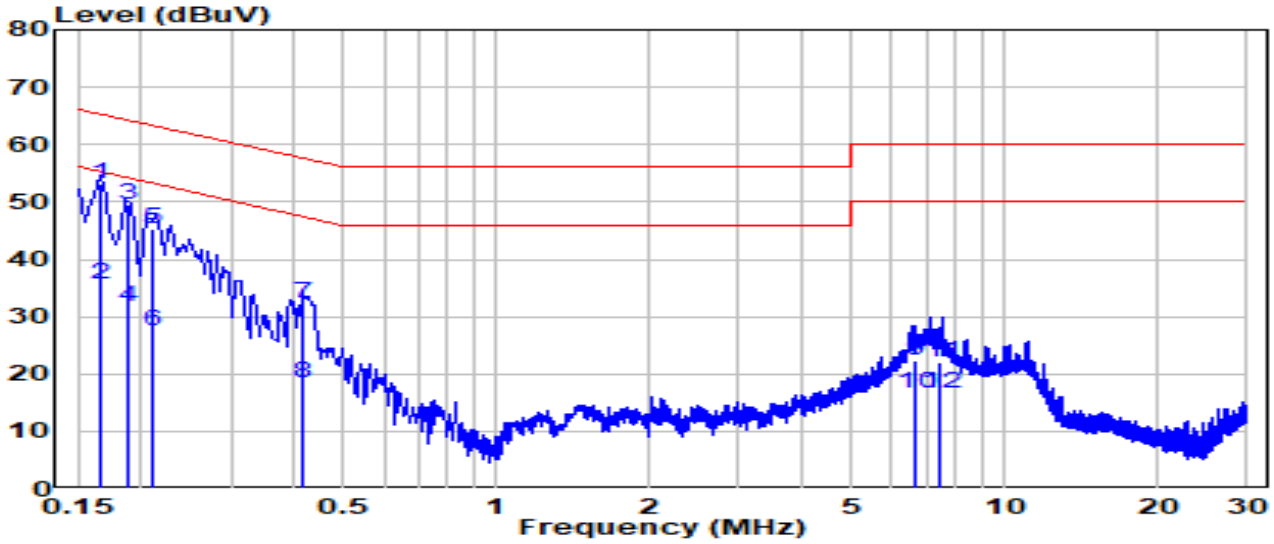
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.8.2.Test Setup



7.8.3.Test Result

EUT	Cassia Bluetooth Router	Date of Test	2021-03-02
Factor	CE_ENV216-L1 (Filter ON)	Temp. / Humidity	20.3°C /42%
Polarity	Line1	Site / Test Engineer	SR2 / Peter Xu
Test Mode	Transmit by 802.11b at channel 2412MHz	Test Voltage	120V/60Hz

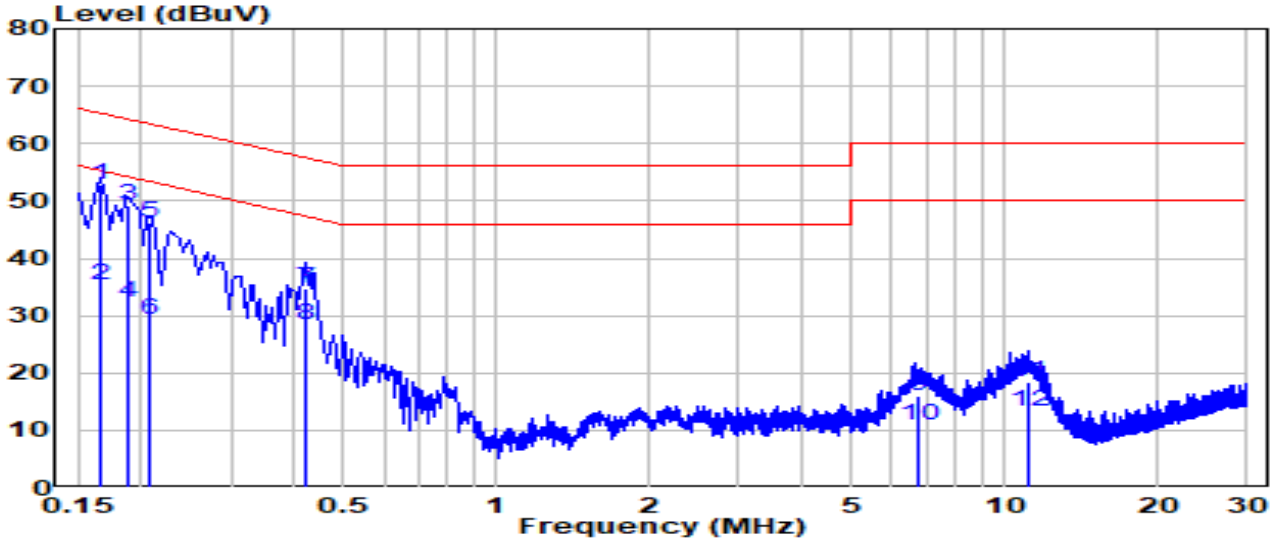


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	0.166	43.61	9.61	53.22	-11.94	65.16	QP
2		0.166	26.01	9.61	35.62	-19.54	55.16	Average
3		0.188	39.92	9.61	49.53	-14.61	64.15	QP
4		0.188	22.22	9.61	31.83	-22.31	54.15	Average
5		0.211	35.63	9.61	45.24	-17.91	63.15	QP
6		0.211	17.83	9.61	27.44	-25.71	53.15	Average
7		0.417	22.56	9.63	32.18	-25.33	57.51	QP
8		0.417	8.76	9.63	18.38	-29.13	47.51	Average
9		6.652	12.45	9.79	22.24	-37.76	60.00	QP
10		6.652	6.95	9.79	16.74	-33.26	50.00	Average
11		7.471	12.26	9.81	22.07	-37.93	60.00	QP
12		7.471	6.86	9.81	16.67	-33.33	50.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

EUT	Cassia Bluetooth Router	Date of Test	2021-03-02
Factor	CE_ENV216-N (Filter ON)	Temp. / Humidity	20.3°C /42%
Polarity	Neutral	Site / Test Engineer	SR2 / Peter Xu
Test Mode	Transmit by 802.11b at channel 2412MHz	Test Voltage	120V/60Hz



No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	*	0.165	43.19	9.62	52.81	-12.38	65.19	QP
2		0.165	25.79	9.62	35.41	-19.78	55.19	Average
3		0.188	39.50	9.62	49.13	-15.02	64.14	QP
4		0.188	22.60	9.62	32.23	-21.92	54.14	Average
5		0.208	36.51	9.62	46.13	-17.16	63.29	QP
6		0.208	19.71	9.62	29.33	-23.96	53.29	Average
7		0.421	25.04	9.64	34.67	-22.76	57.43	QP
8		0.421	18.84	9.64	28.47	-18.96	47.43	Average
9		6.747	6.33	9.80	16.13	-43.87	60.00	QP
10		6.747	1.03	9.80	10.83	-39.17	50.00	Average
11		11.110	8.37	9.91	18.28	-41.72	60.00	QP
12		11.110	3.27	9.91	13.18	-36.82	50.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement(dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

8. CONCLUSION

The data collected relate only the item(s) tested and show that the device is in compliance with Part 15C of the FCC Rules.

The End

Appendix A - Test Setup Photograph

Refer to “2012TW0006-Setup Photo” file.

Appendix B - External Photograph

Refer to “2012TW0006-External Photo” file.

Appendix C - Internal Photograph

Refer to “2012TW0006-Internal Photo” file.