

# MEASUREMENT REPORT

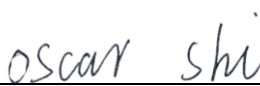
## FCC PART 15.247 / RSS-247 Bluetooth-LE

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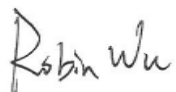
**FCC ID:** 2AQV6DRAGON  
**IC:** 24210-DRAGON  
**Application:** Suzhou Pairlink Network Technology Ltd.

**Application Type:** Certification  
**Product:** Bluetooth 5 BLE module  
**Model No.:** Dragon-B, Dragon-C  
**Brand Name:** Pairlink  
**FCC Classification:** Digital Transmission System (DTS)  
**FCC Rule Part(s):** Part15 Subpart C (Section 15.247)  
**ISED Rule(s):** RSS-247 Issue 2, RSS-GEN Issue 5  
**Test Procedure(s):** ANSI C63.10-2013  
**Test Date:** March 04 ~ March 24, 2020

Reviewed By:

  
( Oscar Shi )

Approved By:

  
( Robin Wu )



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 C63.10-2013. 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 (Suzhou) Co., Ltd.

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### Revision History

Report No.	Version	Description	Issue Date	Note
2002RSU008-U2	Rev. 01	Initial Report	03-26-2020	Valid

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## General Information

<b>Applicant:</b>	Suzhou Pairlink Network Technology Ltd.
<b>Applicant Address:</b>	Room 117, No. 55, Suhong West Road, Suzhou Industrial Park, Suzhou, China
<b>Manufacturer:</b>	Suzhou Pairlink Network Technology Ltd.
<b>Manufacturer Address:</b>	Room 117, No. 55, Suhong West Road, Suzhou Industrial Park, Suzhou, China
<b>Test Site:</b>	MRT Technology (Suzhou) Co., Ltd
<b>Test Site Address:</b>	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
<b>Test Device Serial No.:</b>	N/A <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

## Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Designation No. CN1166) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



## 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 Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The measurement facility compliant with the test site requirements specified in ANSI C63.4-2014.



## 2. PRODUCT INFORMATION

### 2.1. Feature of Equipment under Test

Product Name:	Bluetooth 5 BLE module
Model No.:	Dragon-B, Dragon-C
Brand Name:	Pairlink
Bluetooth Specification:	V5.0(BR/EDR+BLE 1M)
Operating Temperature:	-30 ~ 105°C
Power Type:	DC input(3.0~3.6V)

Note : Different models are only to different antennas, Dragon-B is multilayer ceramic antenna and Dragon-C is antenna connector which connect to external antenna. Schematics of other parts are identical, the antenna gain of Dragon-B is larger than Dragon-C, so choose Dragon-B to conducted test. Dragon-B and Dragon-C both test Radiated Emission.

### 2.2. Product Specification Subjective to this Report

Bluetooth Frequency:	2402~2480MHz
Channel Number:	40
Type of modulation:	GFSK
Data Rate:	1Mbps

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

### 2.3. Description of Available Antennas

Model No.	Antenna Type	Manufacturer	Frequency Band (GHz)	Max Peak Gain (dBi)
Dragon-B	Ceramic Antenna	Walsin	2.4 ~ 2.5	2.0
Dragon-C	FPC antenna	Zhaodong	2.4 ~ 2.5	0.0

Note: The antenna for Dragon-C is supplied by customer for Radiated Emission testing.

## 2.4. Working Frequencies for this Report

Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2404 MHz	02	2406 MHz
03	2408 MHz	04	2410 MHz	05	2412 MHz
06	2414 MHz	07	2416 MHz	08	2418 MHz
09	2420 MHz	10	2422 MHz	11	2424 MHz
12	2426 MHz	13	2428 MHz	14	2430 MHz
15	2432 MHz	16	2434 MHz	17	2436 MHz
18	2438 MHz	19	2440 MHz	20	2442 MHz
21	2444 MHz	22	2446 MHz	23	2448 MHz
24	2450 MHz	25	2452 MHz	26	2454 MHz
27	2456 MHz	28	2458 MHz	29	2460 MHz
30	2462 MHz	31	2464 MHz	32	2466 MHz
33	2468 MHz	34	2470 MHz	35	2472 MHz
36	2474 MHz	37	2476 MHz	38	2478 MHz
39	2480 MHz	--	--	--	--

## 2.5. Test Mode

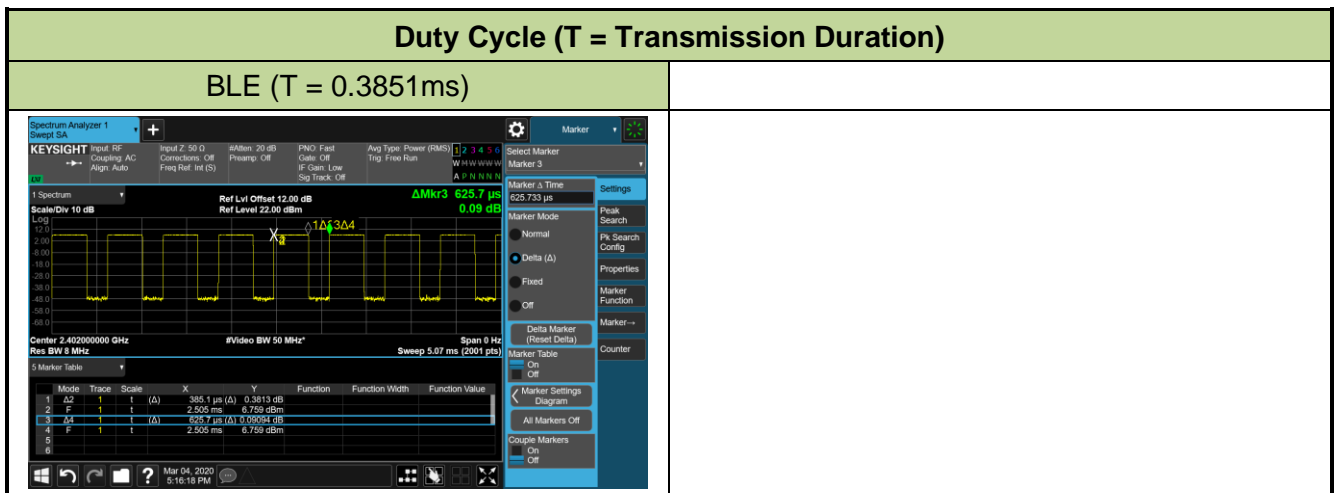
Test Mode	Mode 1: Transmit by BLE
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## 2.6. Duty Cycle

The maximum achievable duty cycles was 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
BLE	61.54%



## 2.7. Test Configuration

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

## 2.8. EMI Suppression Device(s)/Modifications

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

## 2.9. Description of Test Software

The test utility software used during testing was “BlueTool”, and the version was 1.6.0.5.

## **2.10. Labeling Requirements**

Per 2.1074 & 15.19; Docket 95-19

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.

### RSS-GEN 4.1

In addition to complying with the applicable RSSs and RSP-100, each unit of a product model (i.e. of a radio apparatus) shall meet the labelling requirements set out in this section prior to being marketed in Canada or imported into Canada.

If the dimensions of the product are extremely small or it is not practical to place the label or marking on the product, and if electronic labelling cannot be implemented, the label shall be placed in a prominent location in the user manual supplied with the product, as agreed upon with ISED prior to the certification application. The user manual may be in an electronic format; if it is not supplied to the user, the user manual must be readily available.

### **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 were 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 were 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.”

- The antenna of the device Dragon-B is **permanently attached**.
- The antenna connector for Dragon-C is **IPEX connector**.

### **Conclusion:**

The unit complies with the requirement of §15.203.

## 5. TEST EQUIPMENT CALIBRATION DATE

### Conducted Emissions - SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2020/04/15
Two-Line V-Network	R&S	ENV 216	MRTSUE06002	1 year	2020/06/13
Two-Line V-Network	R&S	ENV 216	MRTSUE06003	1 year	2020/06/13
Thermohygrometer	Testo	608-H1	MRTSUE06404	1 year	2020/08/08
Shielding Room	MIX-BEP	Chamber-SR2	MRTSUE06215	N/A	N/A

### Radiated Emissions - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2020/08/01
PXA Signal Analyzer	Keysight	9030B	MRTSUE06395	1 year	2020/09/03
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2020/11/13
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2020/03/31
Broad Band Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2020/10/13
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06024	1 year	2020/12/29
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2020/11/15
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2020/06/11
Thermohygrometer	Testo	608-H1	MRTSUE06403	1 year	2020/08/08
Anechoic Chamber	TDK	Chamber-AC1	MRTSUE06212	1 year	2020/04/30

### Radiated Emission - AC2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	Keysight	N9038A	MRTSUE06125	1 year	2020/08/01
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2020/11/13
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2020/10/13
Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06171	1 year	2020/10/27
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06024	1 year	2020/12/29
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2020/11/15
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2020/06/11
Temperature/Humidity Meter	Minggao	ETH529	MRTSUE06170	1 year	2020/12/15
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2020/04/30

## Conducted Test Equipment - TR3

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2020/04/15
EXA Signal Analyzer	Keysight	N9010B	MRTSUE06452	1 year	2020/07/11
Signal Analyzer	R&S	FSV40	MRTSUE06218	1 year	2020/04/15
Power Meter	Agilent	U2021XA	MRTSUE06030	1 year	2020/11/17
USB wideband power sensor	Keysight	U2021XA	MRTSUE06446	1 year	2020/06/30
USB wideband power sensor	Keysight	U2021XA	MRTSUE06447	1 year	2020/06/30
Bluetooth Test Set	Anritsu	MT8852B-042	MRTSUE06389	1 year	2020/06/13
Audio Analyzer	Agilent	U8903B	MRTSUE06143	1 year	2020/06/13
Modulation Analyzer	HP	8901A	MRTSUE06098	1 year	2020/10/10
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2020/11/07
DC Power Supply	GWINSTEK	DPS-3303C	MRTSUE06064	N/A	N/A
Temperature & Humidity Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2020/11/07
Thermohygrometer	testo	608-H1	MRTSUE06401	1 year	2020/08/08

Software	Version	Function
EMI Software	V3	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 - SR2
Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): 9kHz~150kHz: 3.84dB 150kHz~30MHz: 3.46dB
Radiated Emission Measurement - AC1
Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): Horizontal: 30MHz~300MHz: 4.07dB 300MHz~1GHz: 3.63dB 1GHz~18GHz: 4.16dB Vertical: 30MHz~300MHz: 4.18dB 300MHz~1GHz: 3.60dB 1GHz~18GHz: 4.76dB
Radiated Emission Measurement - AC2
Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): Horizontal: 30MHz~300MHz: 3.75dB 300MHz~1GHz: 3.53dB 1GHz~18GHz: 4.28dB Vertical: 30MHz~300MHz: 3.86dB 300MHz~1GHz: 3.53dB 1GHz~18GHz: 4.33dB



## 7. TEST RESULT

### 7.1. Summary

FCC Part Section(s)	ISED Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	RSS-247 [5.2]	6dB Bandwidth	$\geq 500\text{kHz}$	Conducted	Pass	Section 7.2
N/A	RSS-Gen [6.7]	99% Bandwidth	N/A		Pass	
15.247(b)(3)	RSS-247 [5.4(d)]	Output Power	$\leq 1\text{Watt}$ & $\text{EIRP} \leq 4\text{Watt}$		Pass	Section 7.3
15.247(e)	RSS-247 [5.2]	Power Spectral Density	$\leq 8\text{dBm} / 3\text{kHz}$		Pass	Section 7.4
15.247(d)	RSS-247 [5.5]	Band Edge / Out-of-Band Emissions	$\geq 20\text{dBc(Peak)}$		Pass	Section 7.5
15.205 15.209	RSS-247 [5.5]	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 Section 7.7
15.207	RSS-Gen [8.8]	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	Pass	Section 7.8

#### Notes:

- 1) 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.
- 2) All modes of operation and data rates were investigated. For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst case emissions.

## **7.2. 6dB and 99% 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

ANSI C63.10-2013 - Section 6.9.3

### **7.2.3. Test Setting**

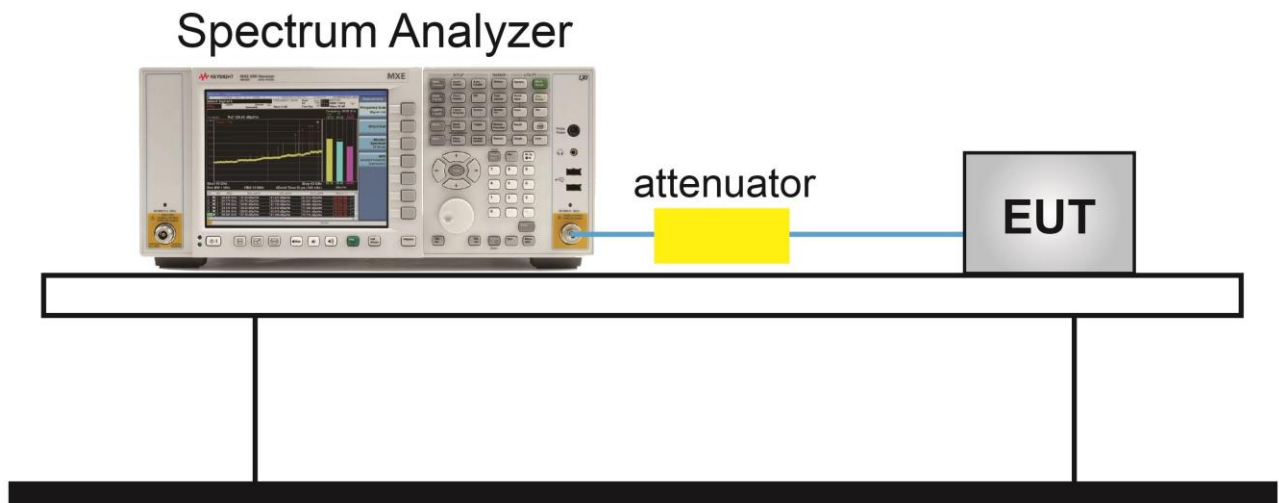
#### **For 6dB bandwidth**

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.  $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace was allowed to stabilize

#### **For 99% bandwidth**

1. Span = 1.5 times to 5 times the OBW
2. Set RBW = 1% to 5% the OBW
3.  $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace was allowed to stabilize

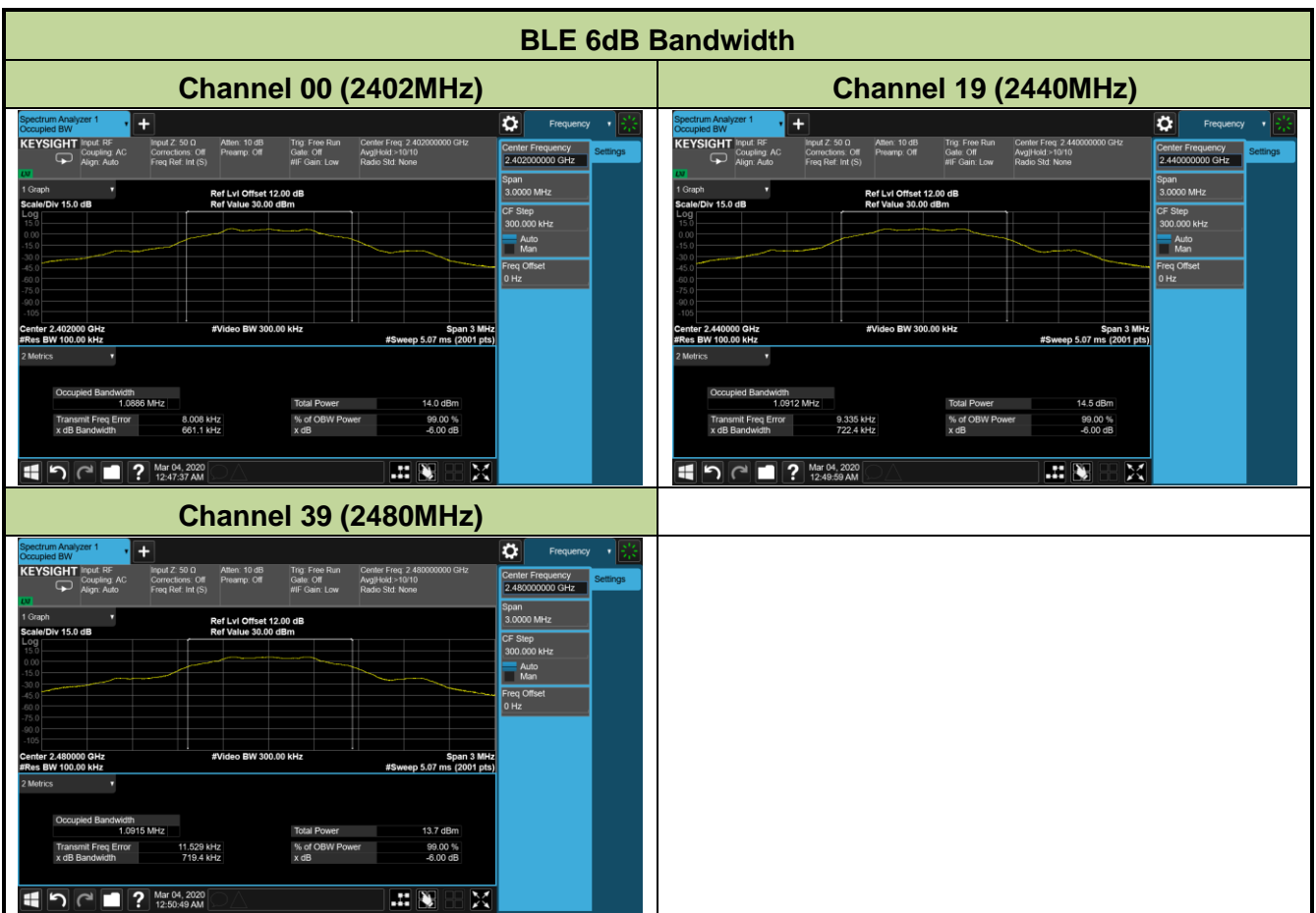
### 7.2.4. Test Setup

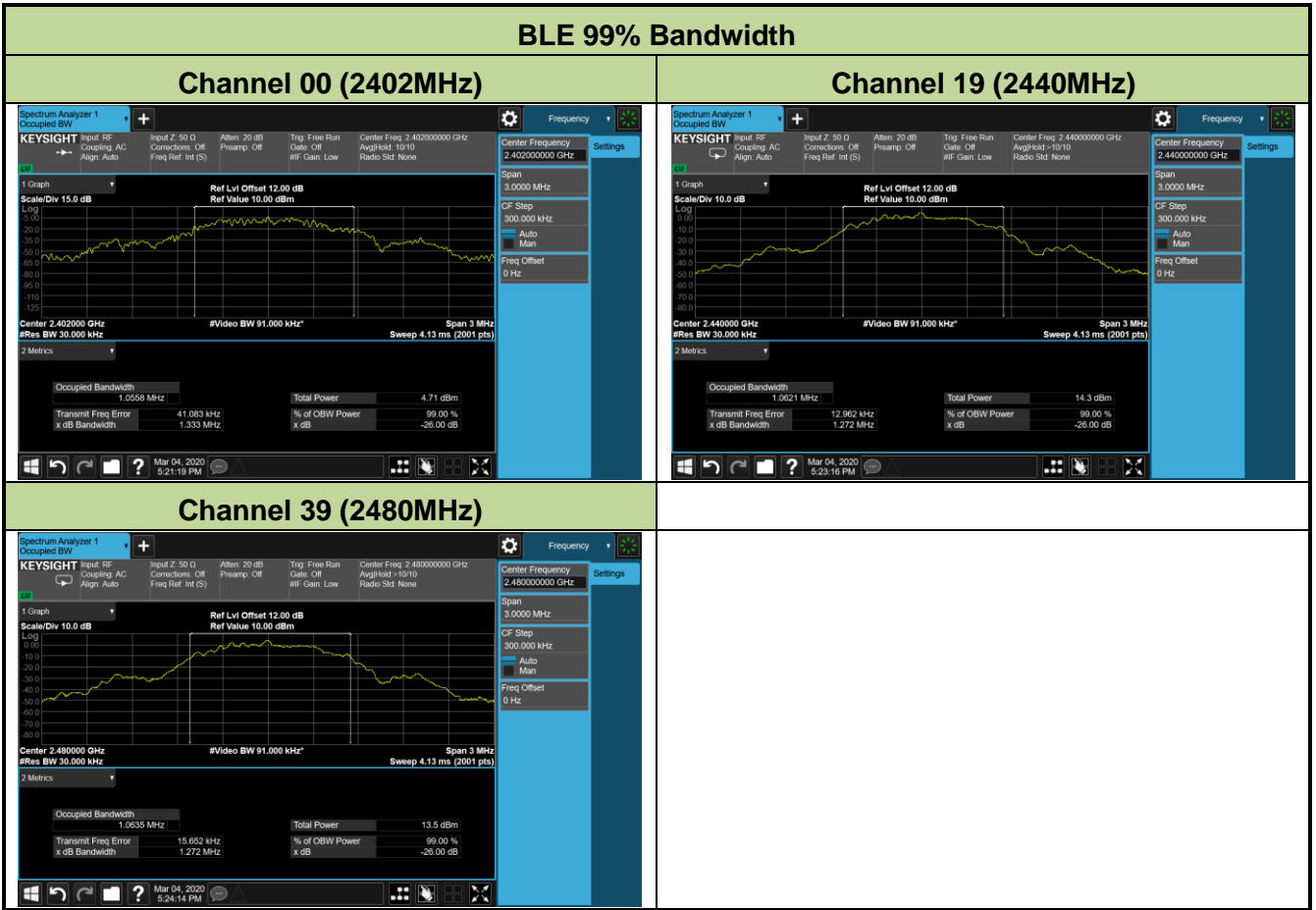


### 7.2.5. Test Result

Product	Bluetooth 5 BLE module	Temperature	25 °C
Test Engineer	Gordon Qi	Relative Humidity	52%
Test Site	TR3	Test Date	2020/03/04

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	99% Bandwidth (MHz)	Result
BLE	1	00	2402	0.661	≥ 0.5	1.056	Pass
BLE	1	19	2440	0.722	≥ 0.5	1.062	Pass
BLE	1	39	2480	0.719	≥ 0.5	1.064	Pass





### **7.3. Output Power Measurement**

#### **7.3.1. Test Limit**

The maximum out power shall be less 1 Watt (30dBm) and the E.I.R.P shall not exceed 4 Watt (36dBm).

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 - Section 11.9.1.3

ANSI C63.10 - Section 11.9.2.3.2

#### **7.3.3. Test Setting**

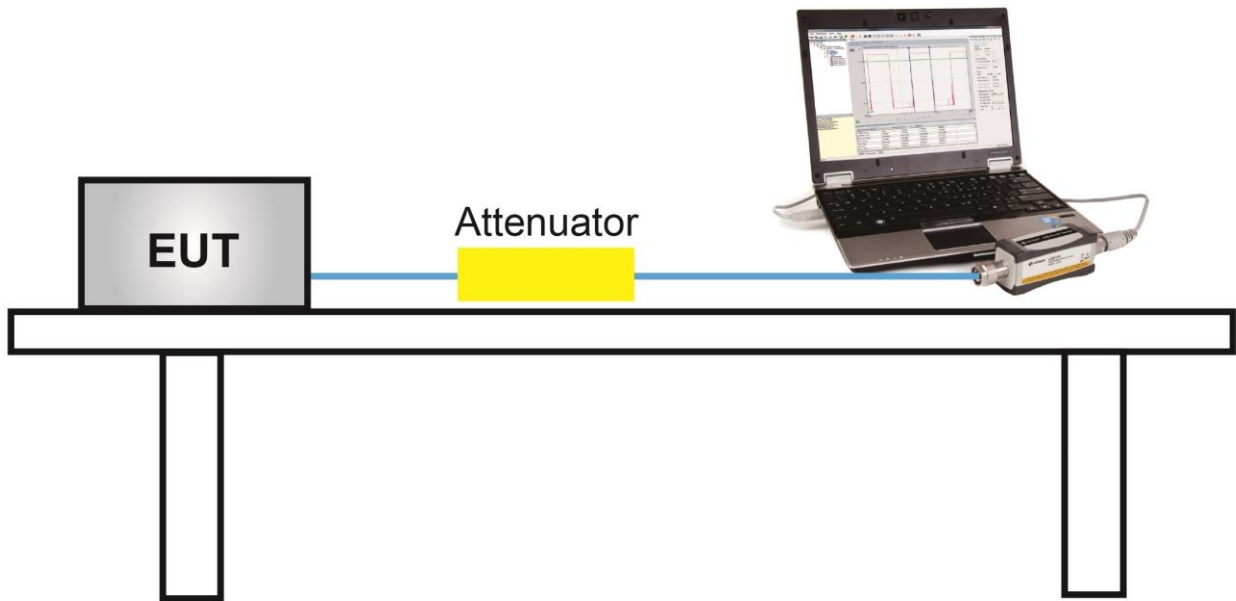
##### **Method PKPM1 (Peak Power Measurement)**

Peak 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 pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

##### **Method AVGPM-G (Measurement using a gated RF average-reading power meter)**

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

### 7.3.4. Test Setup



### 7.3.5. Test Result of Output Power

Product	Bluetooth 5 BLE module	Temperature	25 °C
Test Engineer	Gordon Qi	Relative Humidity	52%
Test Site	TR3	Test Date	2020/03/04

### Test Result of Peak Output Power

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	E.I.R.P (dBm)	E.I.R.P Limit (dBm)	Result
BLE	1	00	2402	7.65	≤ 30.00	9.65	≤ 36.00	Pass
BLE	1	19	2440	8.47	≤ 30.00	10.47	≤ 36.00	Pass
BLE	1	39	2480	7.87	≤ 30.00	9.87	≤ 36.00	Pass

Note: EIRP (dBm) = Peak Power (dBm) + Antenna Gain (dBi), Antenna Gain = 2.00 dBi.

### Test Result of Average Output Power (Reporting Only)

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	Average Power (dBm)	Limit (dBm)	E.I.R.P (dBm)	E.I.R.P Limit (dBm)	Result
BLE	1	00	2402	7.19	≤ 30.00	9.19	≤ 36.00	Pass
BLE	1	19	2440	7.95	≤ 30.00	9.95	≤ 36.00	Pass
BLE	1	39	2480	7.43	≤ 30.00	9.43	≤ 36.00	Pass

Note: EIRP (dBm) = Average Power (dBm) + Antenna Gain (dBi), Antenna Gain = 2.00 dBi.



## 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.

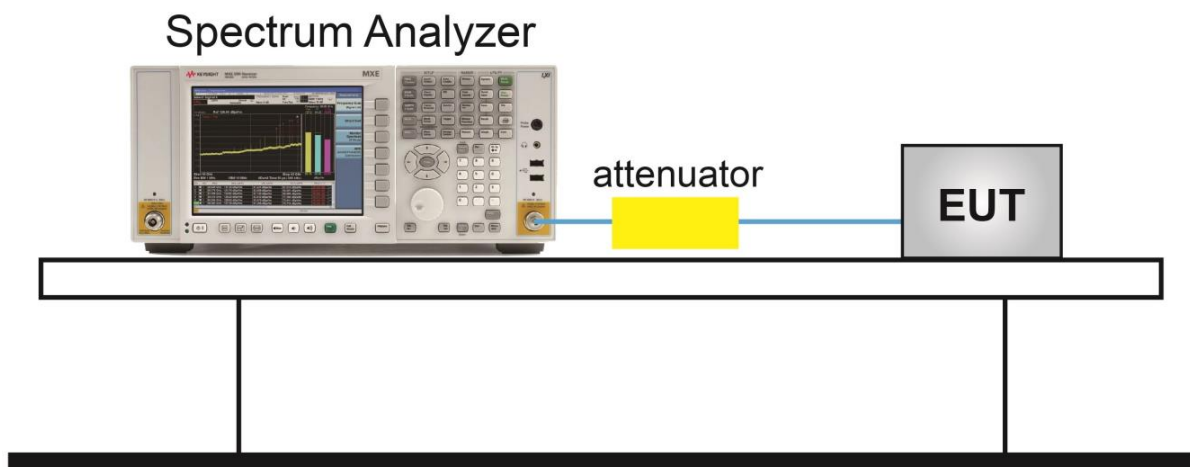
### 7.4.2. Test Procedure Used

ANSI C63.10 - Section 11.10.2

### 7.4.3. Test Setting

1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Span = 1.5 times the DTS channel bandwidth
3. RBW = 3kHz
4. VBW = 10kHz
5. Detector = Peak
6. Sweep time = Auto couple
7. Trace mode = Max hold
8. Trace was allowed to stabilize

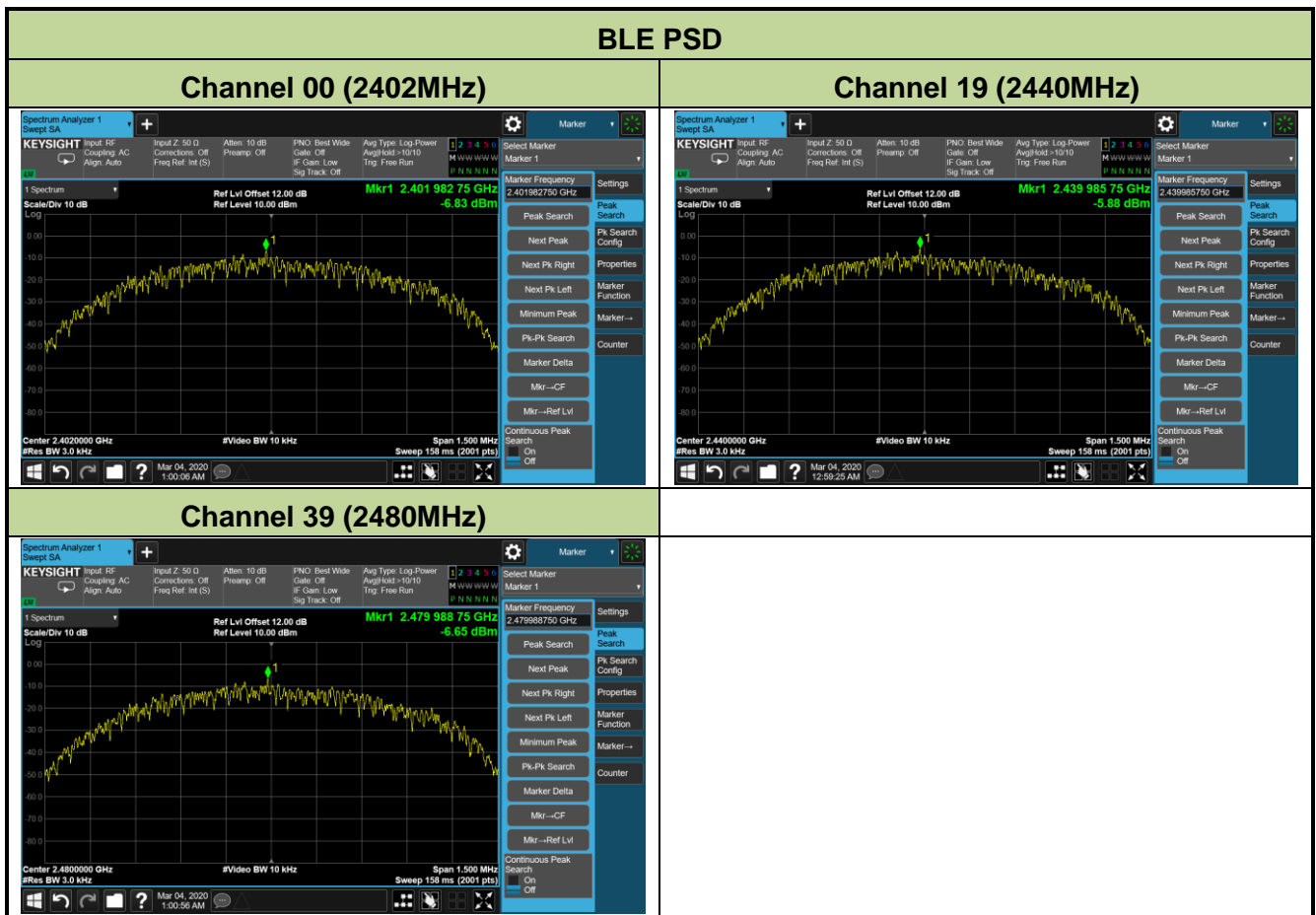
### 7.4.4. Test Setup



**7.4.5. Test Result**

Product	Bluetooth 5 BLE module	Temperature	25°C
Test Engineer	Gordon Qi	Relative Humidity	52%
Test Site	TR3	Test Date	2020/03/04

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	PSD Result (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
BLE	1	00	2402	-6.83	≤ 8.00	Pass
BLE	1	19	2440	-5.88	≤ 8.00	Pass
BLE	1	39	2480	-6.65	≤ 8.00	Pass



## **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 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the PSD procedure.

### **7.5.2. Test Procedure Used**

ANSI C63.10 - 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  $\geq 1.5$  times the DTS bandwidth
3. Set the RBW = 100 kHz
4. Set the VBW  $\geq 3 \times$  RBW
5. Detector = Peak
6. Sweep time = Auto couple
7. Trace mode = Max hold
8. Allow trace to fully stabilize

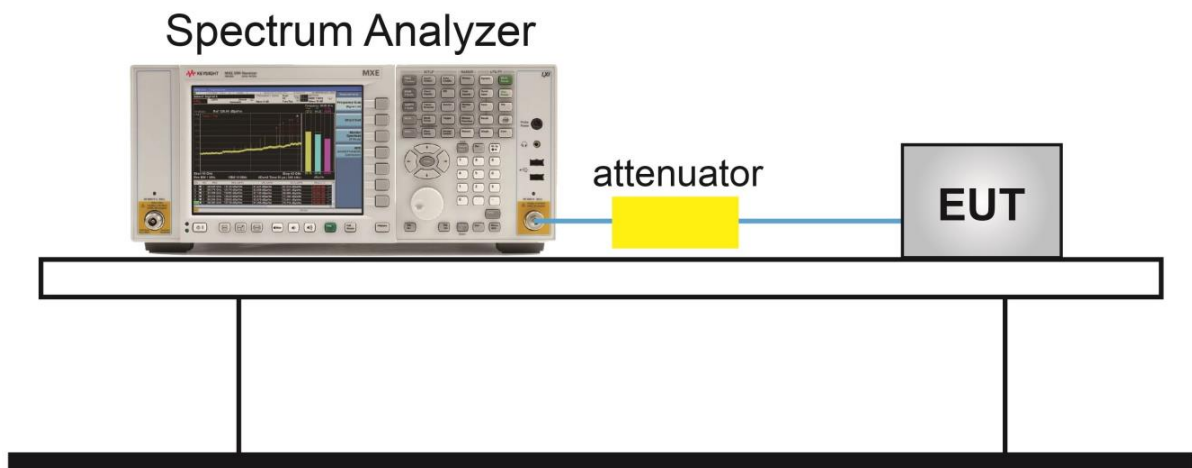
#### **Emission level measurement**

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 1.3MHz
3. VBW = 4MHz
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep time = Auto couple
7. The trace was allowed to stabilize

### Test Notes

1. RBW was set to 1.3MHz rather than 100 kHz in order to increase the measurement speed; meanwhile, the VBW was set to 4MHz instead of 300 kHz.
2. The display line shown in the following plots denotes the limit at 20dB below the fundamental emission level measured in a 100 kHz bandwidth. However, since the traces in the following plots are measured with a 1.3 MHz RBW, the display line may not necessarily appear to be 20 dB below the level of the fundamental measured in a 1.3 MHz bandwidth.
3. For plots showing conducted spurious emissions near the limit, the frequencies were investigated with a reduced RBW to ensure that no emissions were present.

### 7.5.4. Test Setup



### 7.5.5. Test Result

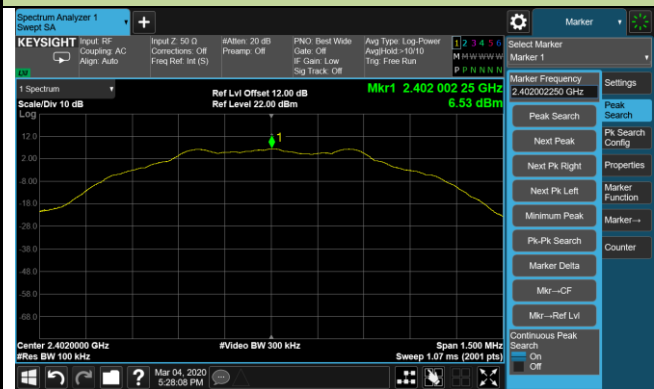
Product	Bluetooth 5 BLE module	Temperature	25 °C
Test Engineer	Gordon Qi	Relative Humidity	52%
Test Site	TR3	Test Date	2020/03/04

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	Limit	Result
BLE	1	00	2402	20dBc	Pass
BLE	1	19	2440	20dBc	Pass
BLE	1	39	2480	20dBc	Pass

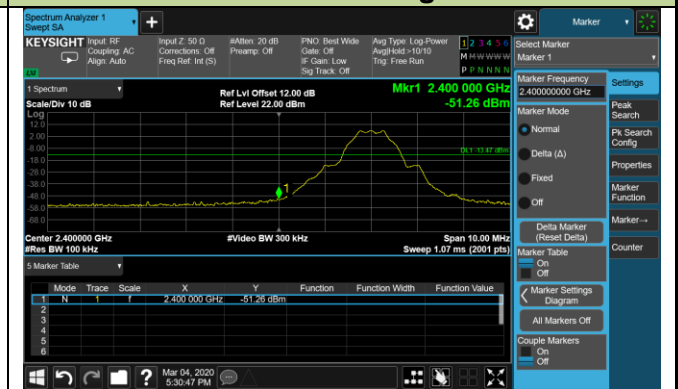
### BLE Out-of-Band Emissions

#### Channel 00 (2402MHz)

##### 100kHz PSD reference Level



##### Low Band Edge



##### Spurious Emission 30MHz ~ 25GHz



### Channel 19 (2440MHz)

#### 100kHz PSD reference Level



#### Spurious Emission 30MHz ~ 25GHz



### Channel 39 (2480MHz)

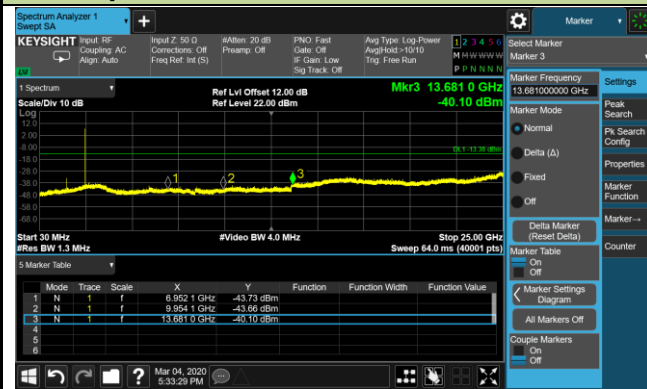
#### 100kHz PSD reference Level



#### High Band Edge



#### Spurious Emission 30MHz ~ 25GHz



## 7.6. Radiated Spurious Emission Measurement

### 7.6.1. Test Limit

All out of band emissions appearing in a restricted band as defined in Section 8.10 of RSS-Gen, must also comply with the radiated emission limits specified in Section 8.9.

RSS-Gen Section 8.9			
Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Magnetic Field Strength (H-Field) ( $\mu\text{A/m}$ )	Measured Distance (m)
0.009 - 0.490	--	6.37/F (F in kHz)	300
0.490 - 1.705	--	6.37/F (F in kHz)	30
1.705 - 30	--	0.08	30
30 - 88	100	--	3
88 - 216	150	--	3
216 - 960	200	--	3
Above 960	500	--	3

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

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Measured Distance (m)
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 - Section 6.3 (General Requirements)

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

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

ANSI C63.10 - 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
> 1000 MHz	1 MHz

#### 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  $\geq 98\%$ , set VBW = 10Hz

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

4. Detector = Peak

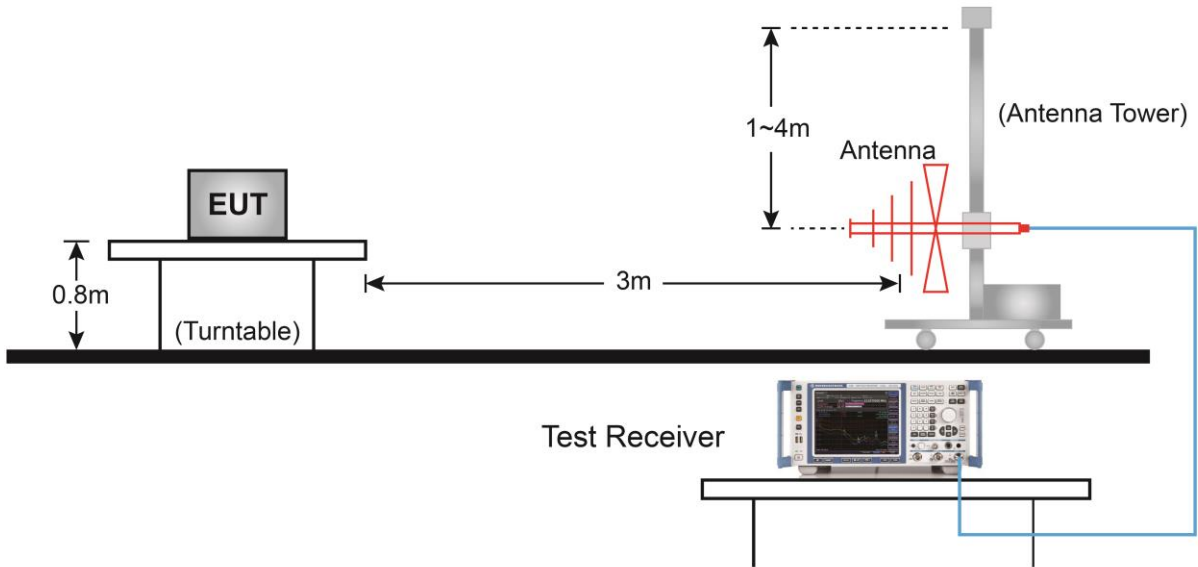
5. Sweep time = auto

6. Trace mode = max hold

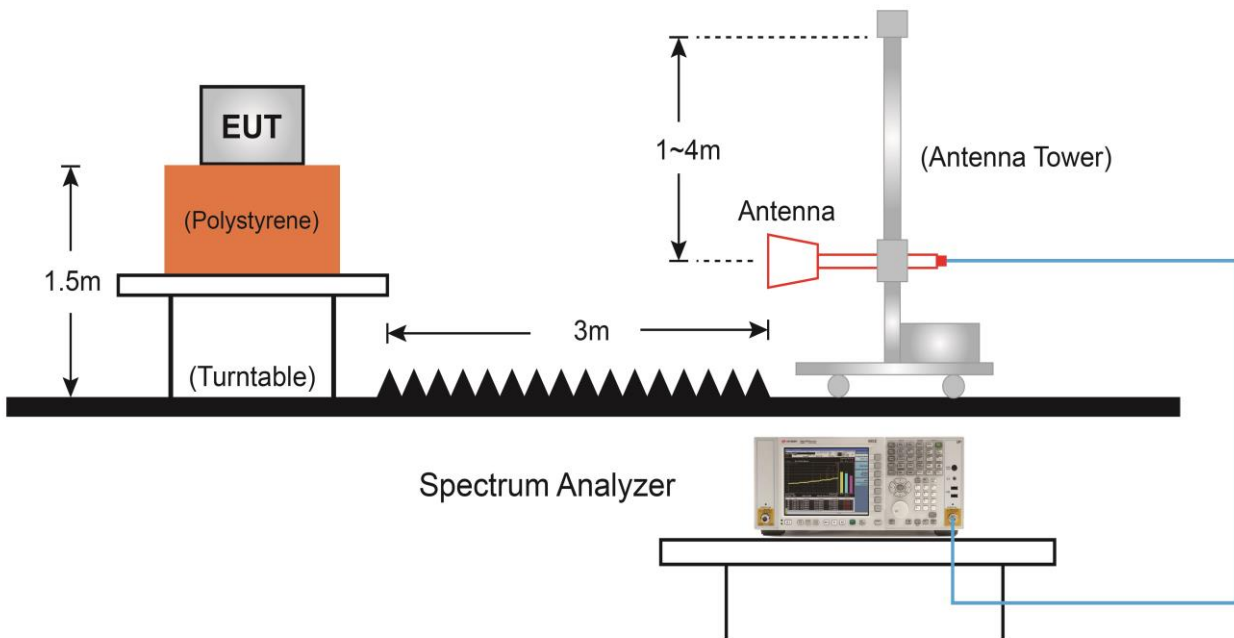
7. Trace was allowed to stabilize

### 7.6.4. Test Setup

#### Below 1GHz Test Setup:



#### Above 1GHz Test Setup:



### 7.6.5. Test Result

Product	Bluetooth 5 BLE module	Temperature	25°C
Test Engineer	Yeto Yin	Relative Humidity	54%
Test Site	AC2	Test Date	2020/03/07
Test Mode	BLE	Test Channel:	00
Model No.	Dragon-B		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-25GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	9602.0	30.7	14.2	44.9	74.5	-29.6	Peak	Horizontal
*	10214.0	30.2	15.9	46.1	74.5	-28.4	Peak	Horizontal
	11140.5	27.7	18.1	45.8	74.0	-28.2	Peak	Horizontal
	12135.0	26.9	20.2	47.1	74.0	-26.9	Peak	Horizontal
*	9729.5	29.2	14.6	43.8	74.5	-30.7	Peak	Vertical
*	10103.5	30.3	14.8	45.1	74.5	-29.4	Peak	Vertical
	11115.0	27.1	18.5	45.6	74.0	-28.4	Peak	Vertical
	11676.0	26.5	19.6	46.1	74.0	-27.9	Peak	Vertical

Note 1: "\*" is not in restricted band, its limit is 20dBc of the fundamental emission level (94.6dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	Bluetooth 5 BLE module	Temperature	25°C
Test Engineer	Yeto Yin	Relative Humidity	54%
Test Site	AC2	Test Date	2020/03/07
Test Mode	BLE	Test Channel:	19
Model No.	Dragon-B		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-25GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	9721.0	30.0	14.6	44.6	75.4	-30.8	Peak	Horizontal
*	10205.5	30.7	15.8	46.5	75.4	-28.9	Peak	Horizontal
	11293.5	27.0	18.9	45.9	74.0	-28.1	Peak	Horizontal
	12092.5	26.4	20.1	46.5	74.0	-27.5	Peak	Horizontal
*	9721.0	29.3	14.6	43.9	75.4	-31.5	Peak	Vertical
*	10120.5	29.2	15.0	44.2	75.4	-31.2	Peak	Vertical
	11684.5	23.8	19.8	43.6	74.0	-30.4	Peak	Vertical
	12441.0	27.9	19.1	47.0	74.0	-27.0	Peak	Vertical

Note 1: "\*" is not in restricted band, its limit is 20dBc of the fundamental emission level (95.4dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	Bluetooth 5 BLE module	Temperature	25°C
Test Engineer	Yeto Yin	Relative Humidity	54%
Test Site	AC2	Test Date	2020/03/07
Test Mode	BLE	Test Channel:	39
Model No.	Dragon-B		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-25GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	9602.0	30.8	14.2	45.0	76.4	-31.4	Peak	Horizontal
*	10137.5	30.5	15.0	45.5	76.4	-30.9	Peak	Horizontal
	11157.5	27.9	18.4	46.3	74.0	-27.7	Peak	Horizontal
	11752.5	26.6	19.9	46.5	74.0	-27.5	Peak	Horizontal
*	9593.5	29.6	14.2	43.8	76.4	-32.6	Peak	Vertical
*	10248.0	30.0	16.2	46.2	76.4	-30.2	Peak	Vertical
	11200.0	28.7	18.1	46.8	74.0	-27.2	Peak	Vertical
	12058.5	27.2	19.6	46.8	74.0	-27.2	Peak	Vertical

Note 1: "\*" is not in restricted band, its limit is 20dBc of the fundamental emission level (96.4dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	Bluetooth 5 BLE module	Temperature	25°C
Test Engineer	Yeto Yin	Relative Humidity	54%
Test Site	AC2	Test Date	2020/03/20
Test Mode	BLE	Test Channel:	00
Model No.	Dragon-C		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-25GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	9806.0	28.6	16.8	45.4	80.8	-35.4	Peak	Horizontal
*	10248.0	27.7	17.1	44.8	80.8	-36.0	Peak	Horizontal
	10945.0	27.9	18.0	45.9	74.0	-28.1	Peak	Horizontal
	11659.0	28.7	17.0	45.7	74.0	-28.3	Peak	Horizontal
*	9772.0	27.5	16.7	44.2	80.8	-36.6	Peak	Vertical
*	10435.0	27.5	17.7	45.2	80.8	-35.6	Peak	Vertical
	11259.5	28.0	17.6	45.5	74.0	-28.5	Peak	Vertical
	11608.0	28.8	17.5	46.3	74.0	-27.7	Peak	Vertical

Note 1: "\*" is not in restricted band, its limit is 20dBc of the fundamental emission level (100.8dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	Bluetooth 5 BLE module	Temperature	25°C
Test Engineer	Yeto Yin	Relative Humidity	54%
Test Site	AC2	Test Date	2020/03/20
Test Mode	BLE	Test Channel:	19
Model No.	Dragon-C		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-25GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	9602.0	28.0	16.2	44.2	79.7	-35.5	Peak	Horizontal
*	10401.0	27.7	17.6	45.3	79.7	-34.4	Peak	Horizontal
	11591.0	27.4	17.4	44.9	74.0	-29.1	Peak	Horizontal
	12220.0	25.7	17.1	42.8	74.0	-31.2	Peak	Horizontal
*	9916.5	28.9	16.9	45.7	79.7	-34.0	Peak	Vertical
*	10452.0	29.0	17.7	46.7	79.7	-33.0	Peak	Vertical
	11514.5	27.8	17.7	45.6	74.0	-28.4	Peak	Vertical
	12067.0	28.6	16.9	45.5	74.0	-28.5	Peak	Vertical

Note 1: "\*" is not in restricted band, its limit is 20dBc of the fundamental emission level (99.7dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	Bluetooth 5 BLE module	Temperature	25°C
Test Engineer	Yeto Yin	Relative Humidity	54%
Test Site	AC2	Test Date	2020/03/20
Test Mode	BLE	Test Channel:	39
Model No.	Dragon-C		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-25GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	9721.0	28.8	16.7	45.4	79.1	-33.7	Peak	Horizontal
*	10214.0	28.2	17.0	45.2	79.1	-33.9	Peak	Horizontal
	10979.0	27.6	18.0	45.6	74.0	-28.4	Peak	Horizontal
	11523.0	27.4	17.7	45.1	74.0	-28.9	Peak	Horizontal
*	9797.5	28.3	16.8	45.1	79.1	-34.0	Peak	Vertical
*	10350.0	27.7	17.4	45.2	79.1	-33.9	Peak	Vertical
	10919.5	27.5	18.1	45.6	74.0	-28.4	Peak	Vertical
	11803.5	28.9	16.6	45.6	74.0	-28.4	Peak	Vertical

Note 1: "\*" is not in restricted band, its limit is 20dBc of the fundamental emission level (99.1dBμV/m) or 15.209 which is higher.

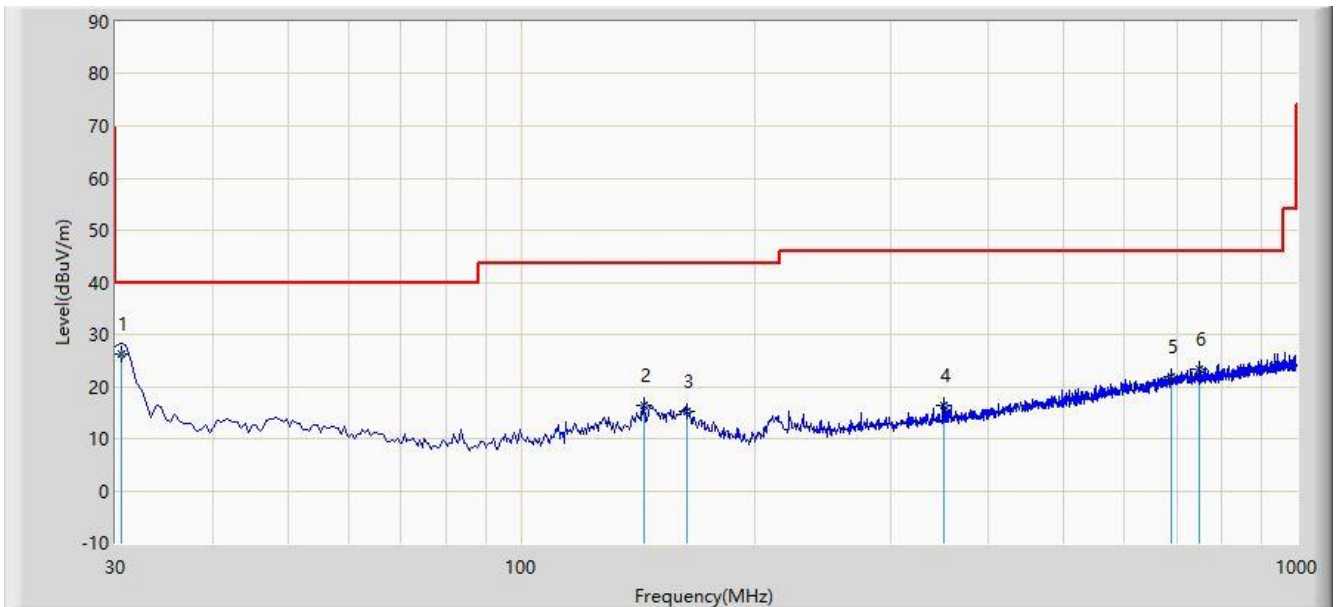
Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)



**The Worst Case of Radiated Emission below 1GHz:**

Site: AC2	Time: 2020/03/20 - 17:48
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_VULB9162_0.03-7GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
<b>Worst Case Mode:</b> Transmit by Bluetooth LE at Channel 2440MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	30.485	26.291	15.549	-13.709	40.000	10.742	QP
2			143.975	16.339	7.246	-27.161	43.500	9.093	QP
3			163.375	15.312	5.472	-28.188	43.500	9.840	QP
4			350.100	16.335	-0.520	-29.665	46.000	16.855	QP
5			689.115	21.927	-0.512	-24.073	46.000	22.439	QP
6			749.740	23.336	-0.172	-22.664	46.000	23.507	QP

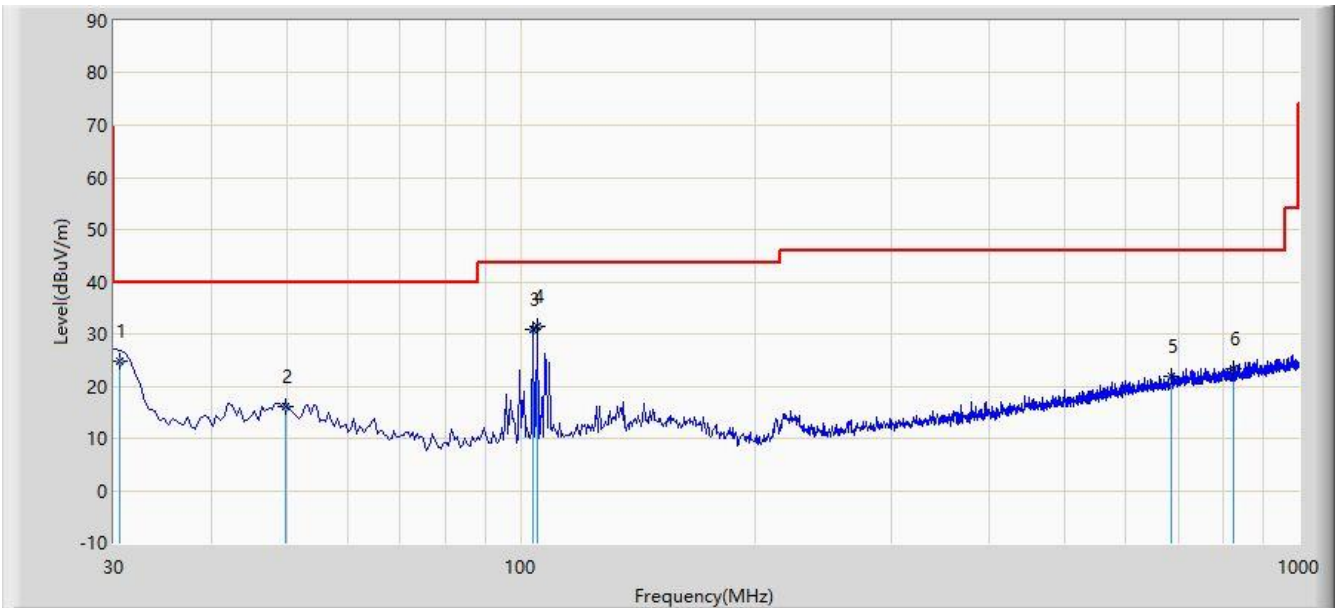
Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: 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.

Site: AC2	Time: 2020/03/20 - 17:50
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_VULB9162_0.03-7GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
<b>Worst Case Mode:</b> Transmit by Bluetooth LE at Channel 2440MHz	



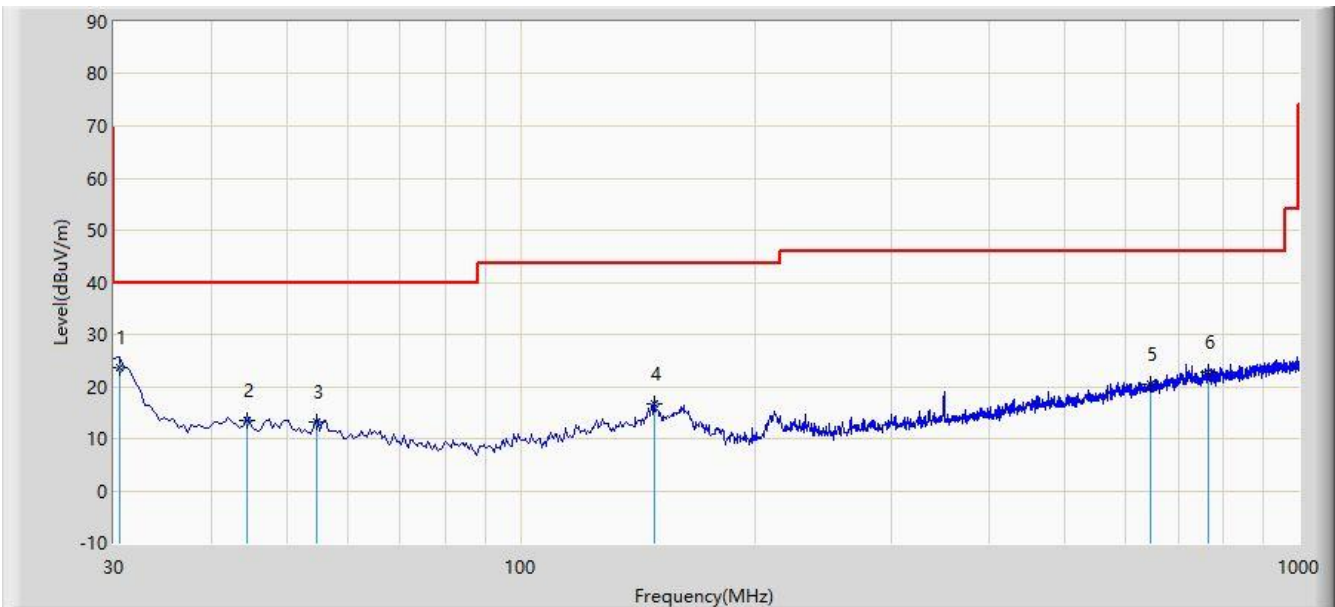
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			30.483	24.903	14.162	-15.097	40.000	10.741	QP
2		*	49.885	16.016	1.528	-23.984	40.000	14.488	QP
3			103.720	30.851	18.391	-12.649	43.500	12.459	QP
4			105.175	31.433	18.984	-12.067	43.500	12.449	QP
5			685.720	21.837	-0.570	-24.163	46.000	22.407	QP
6			826.370	23.367	-0.934	-22.633	46.000	24.300	QP

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: 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.

Site: AC2	Time: 2020/03/20 - 17:53
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_VULB9162_0.03-7GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
<b>Worst Case Mode:</b> Transmit by Bluetooth LE at Channel 2440MHz	



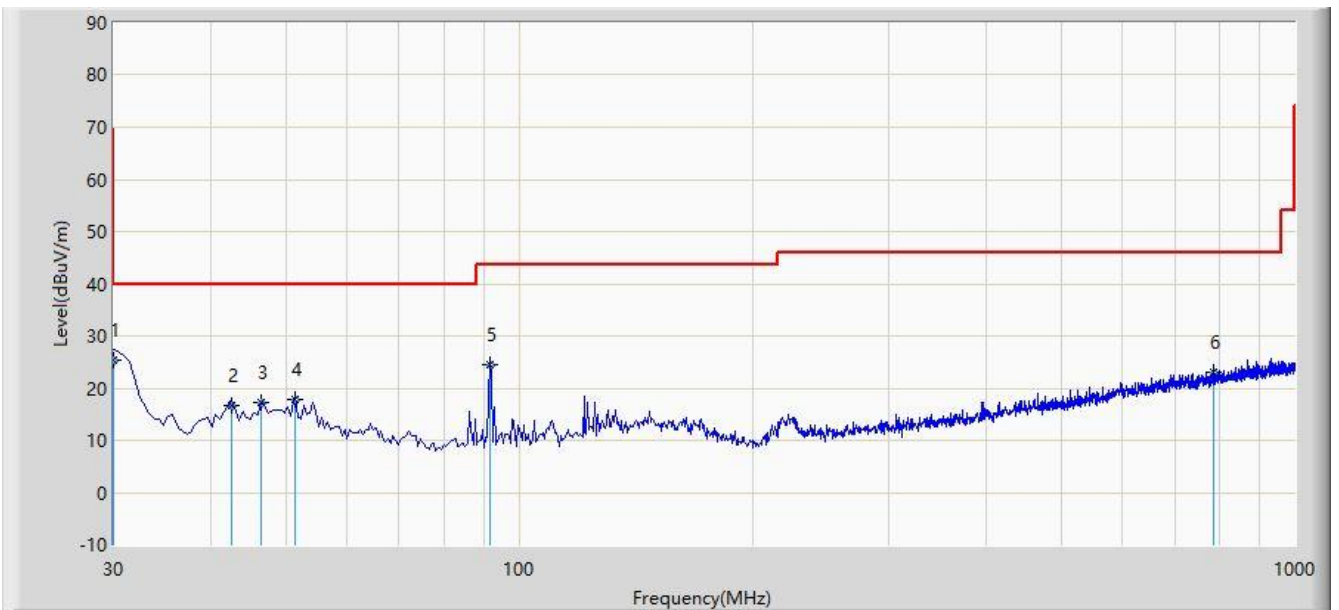
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	30.485	23.759	13.017	-16.241	40.000	10.742	QP
2			44.550	13.618	-0.879	-26.382	40.000	14.497	QP
3			54.735	13.151	-0.924	-26.849	40.000	14.075	QP
4			148.340	16.807	7.639	-26.693	43.500	9.168	QP
5			646.435	20.424	-1.124	-25.576	46.000	21.548	QP
6			766.230	22.733	-0.887	-23.267	46.000	23.619	QP

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: 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.

Site: AC2	Time: 2020/03/20 - 17:55
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_VULB9162_0.03-7GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
<b>Worst Case Mode:</b> Transmit by Bluetooth LE at Channel 2440MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			30.000	25.505	14.882	-14.495	40.000	10.623	QP
2		*	42.610	16.772	2.700	-23.228	40.000	14.072	QP
3			46.490	17.360	2.847	-22.640	40.000	14.513	QP
4			51.340	17.887	3.435	-22.113	40.000	14.452	QP
5			91.595	24.442	13.449	-19.058	43.500	10.993	QP
6			784.175	22.945	-0.498	-23.055	46.000	23.442	QP

Note 1: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: 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
<sup>1</sup> 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	( <sup>2</sup> )
13.36 - 13.41	--	--	--

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

<b>FCC Part 15 Subpart C Paragraph 15.209</b>		
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

**For RSS-Gen Section 8.10 requirement:**

Radiated emissions which fall in the restricted bands, as defined in Section 8.10 of RSS-Gen, must also comply with the radiated emission limits specified in Section 8.9.

Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.009 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	* Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for license exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138		

All out of band emissions appearing in a restricted band as specified in Section 8.10 of the RSS-Gen must not exceed the limits shown in Table per Section 8.9.

RSS-Gen Section 8.9			
Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Magnetic Field Strength (H-Field) ( $\mu\text{A/m}$ )	Measured Distance (m)
0.009 - 0.490 1	--	6.37/F (F in kHz)	300
0.490 - 1.705	--	6.37/F (F in kHz)	30
1.705 - 30	--	0.08	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 - Section 6.3 (General Requirements)

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

### 7.7.3. Test Setting

#### Peak Field Strength Measurements

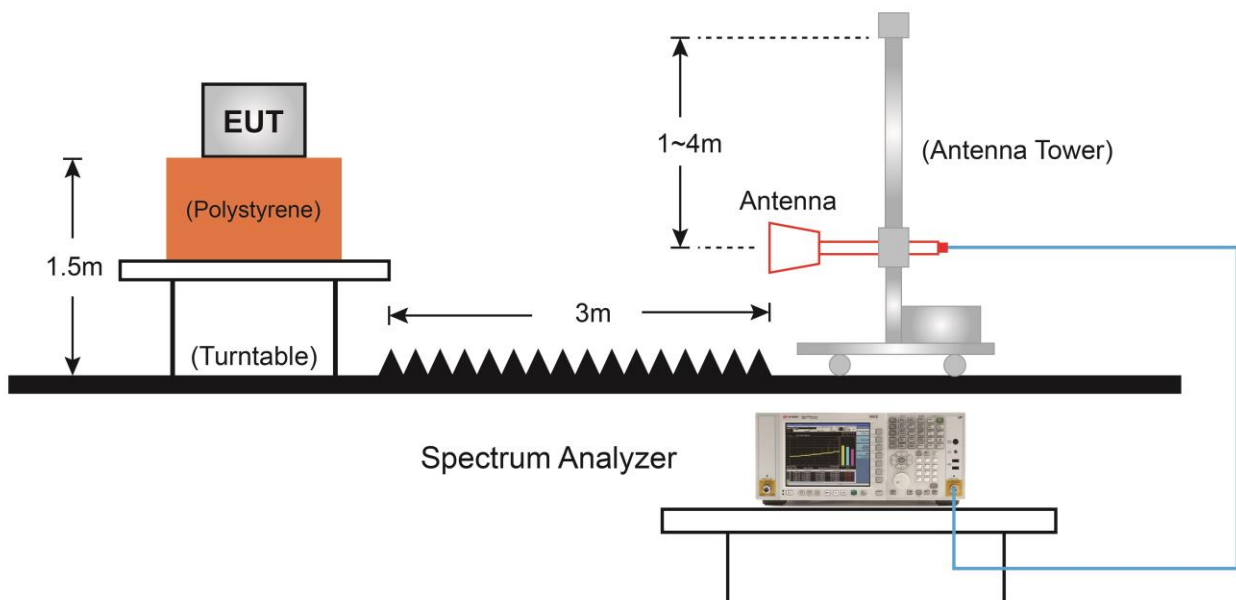
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize



### Average Field Strength Measurements

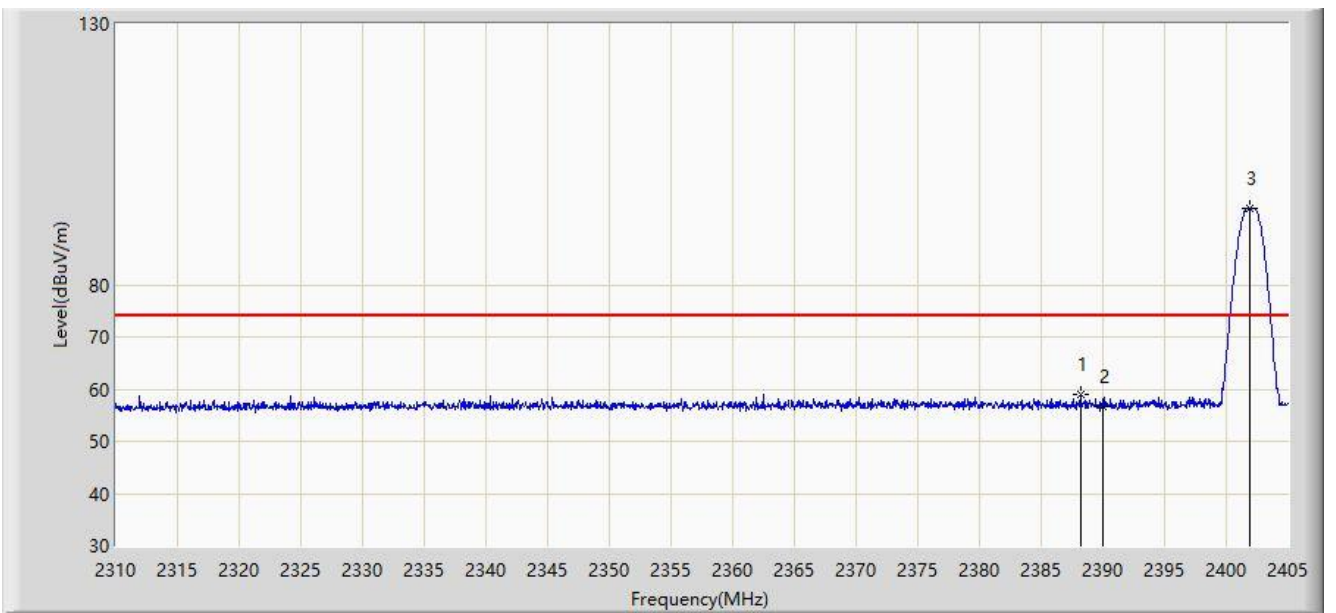
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW  $\geq 1/T$
4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

#### 7.7.4. Test Setup



### 7.7.5. Test Result

Site: AC2	Time: 2020/03/07 - 13:29
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2402 MHz	

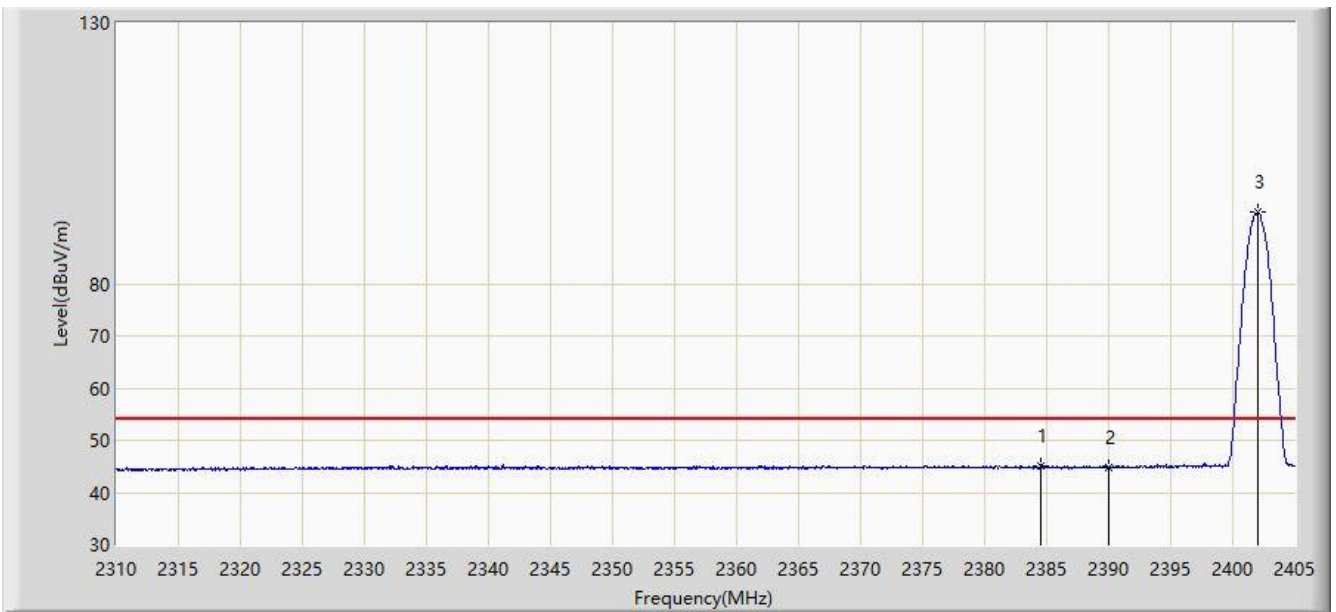


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2388.185	59.063	26.580	-14.937	74.000	32.483	PK
2			2390.000	56.570	24.085	-17.430	74.000	32.485	PK
3		*	2401.913	94.556	62.043	N/A	N/A	32.513	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/07 - 13:36
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2402 MHz	

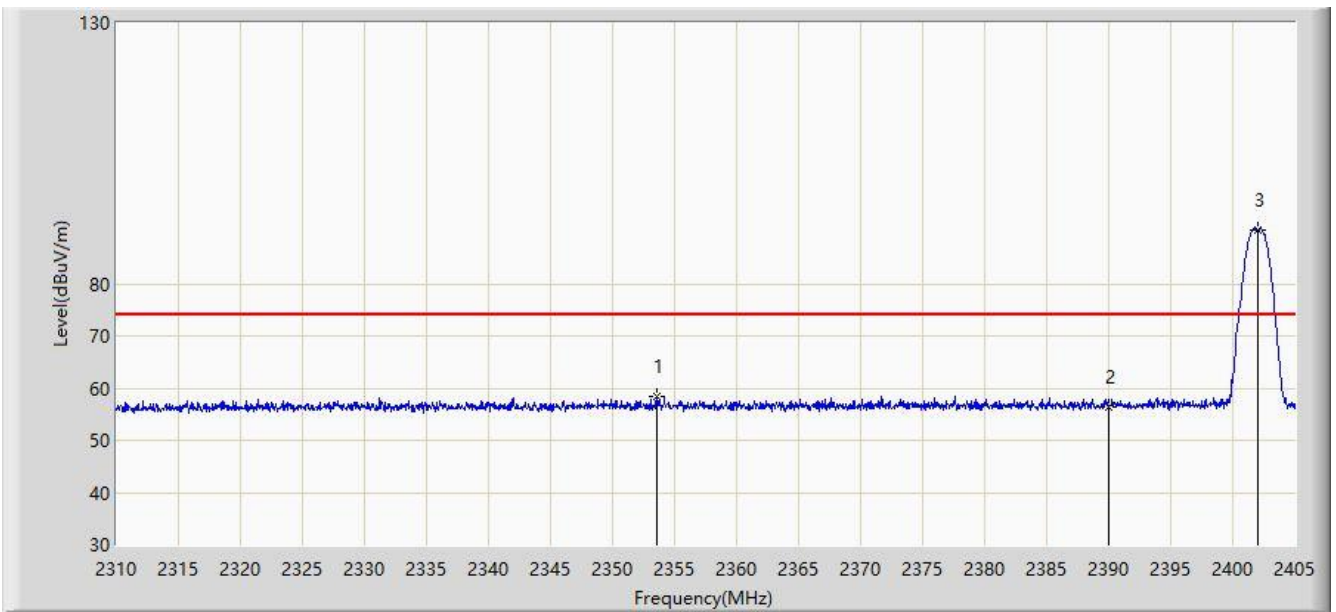


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2384.480	45.066	12.587	-8.934	54.000	32.479	AV
2			2390.000	44.852	12.367	-9.148	54.000	32.485	AV
3		*	2402.008	93.694	61.181	N/A	N/A	32.513	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/07 - 13:38
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2402 MHz	

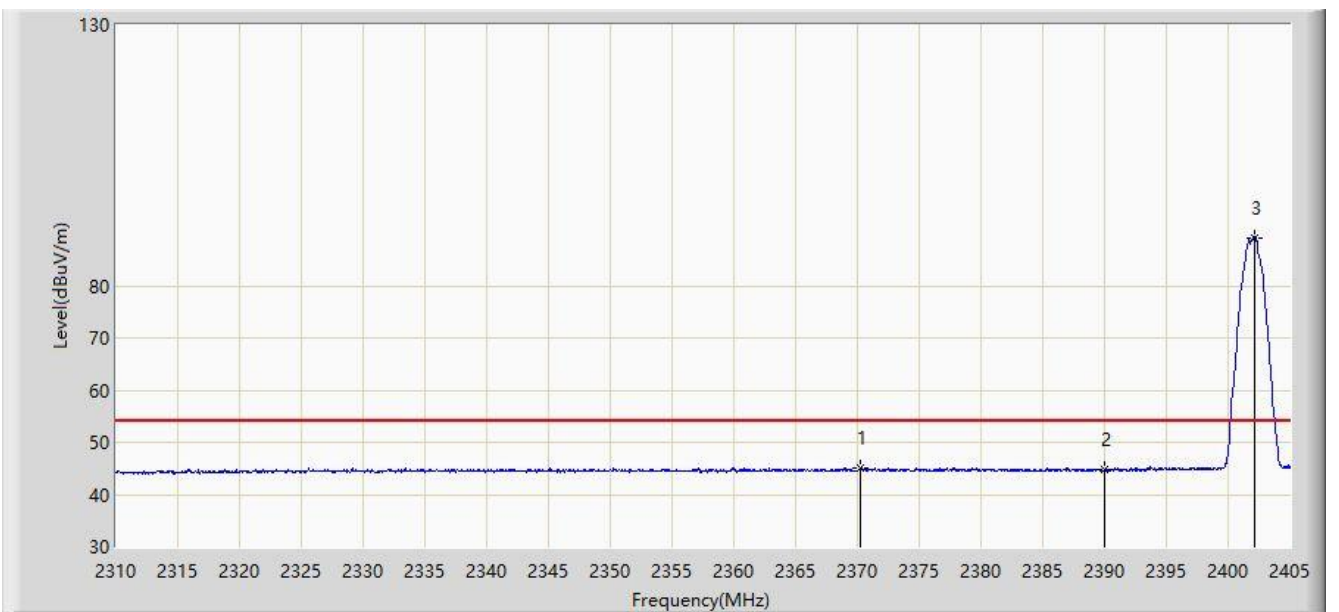


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2353.558	58.528	25.930	-15.472	74.000	32.597	PK
2			2390.000	56.289	23.804	-17.711	74.000	32.485	PK
3		*	2402.055	90.421	57.907	N/A	N/A	32.514	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/07 - 13:38
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2402 MHz	

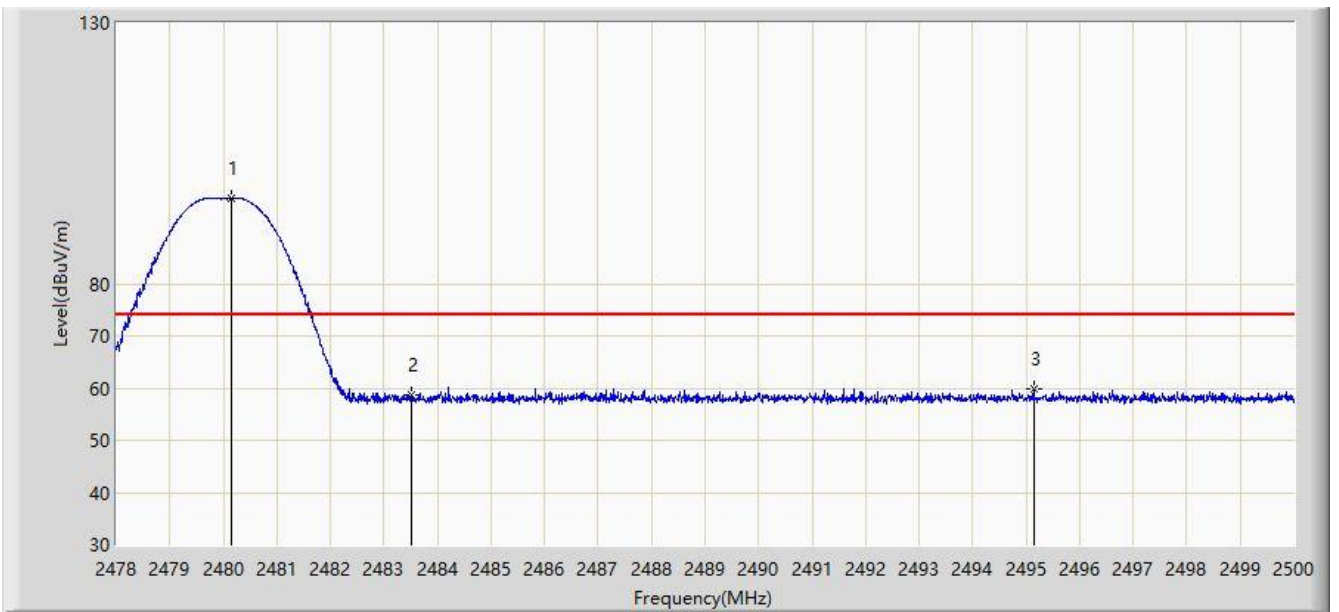


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2370.183	44.942	12.426	-9.058	54.000	32.516	AV
2			2390.000	44.740	12.255	-9.260	54.000	32.485	AV
3		*	2402.103	89.262	56.748	N/A	N/A	32.514	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/07 - 13:41
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2480 MHz	

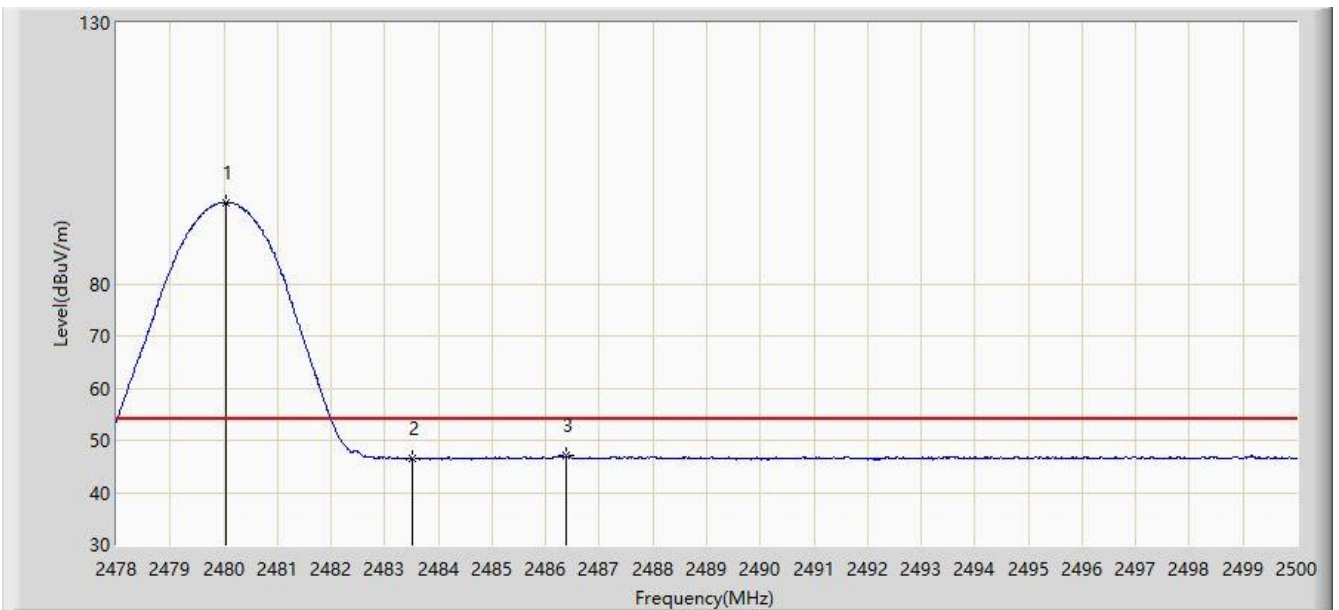


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2480.156	96.353	63.971	N/A	N/A	32.382	PK
2			2483.500	58.555	26.180	-15.445	74.000	32.375	PK
3			2495.138	59.871	27.523	-14.129	74.000	32.348	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/07 - 13:43
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2480 MHz	

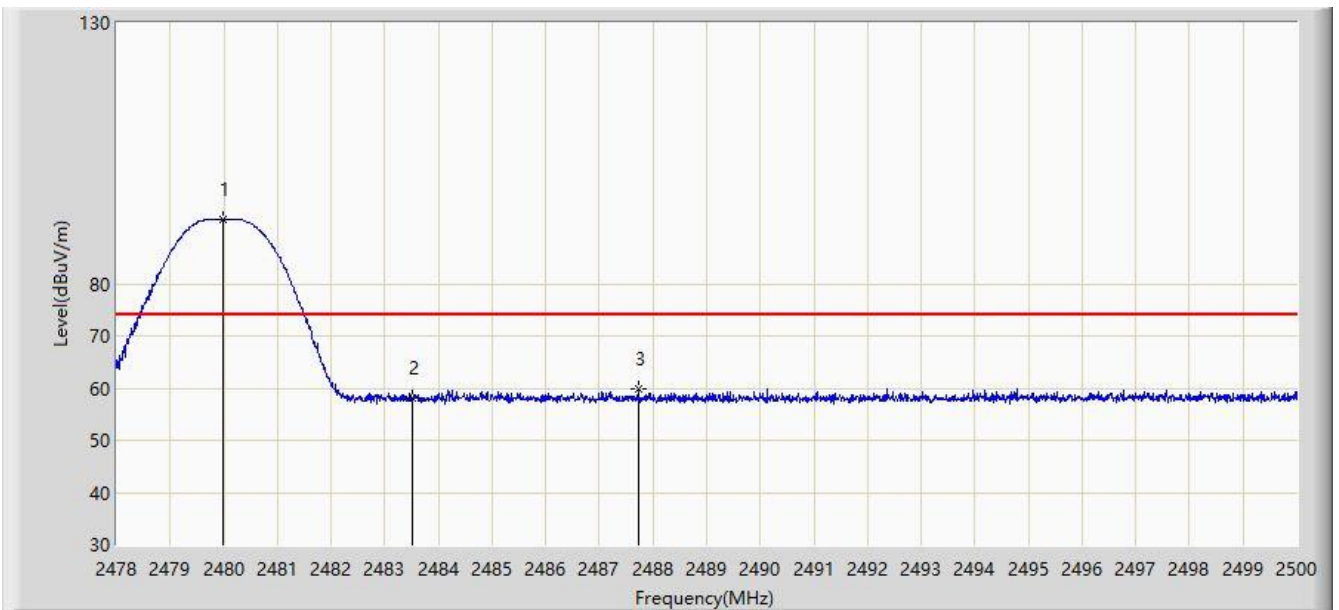


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2480.035	95.562	63.179	N/A	N/A	32.383	AV
2			2483.500	46.570	14.195	-7.430	54.000	32.375	AV
3			2486.382	46.981	14.613	-7.019	54.000	32.368	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/07 - 13:44
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2480 MHz	



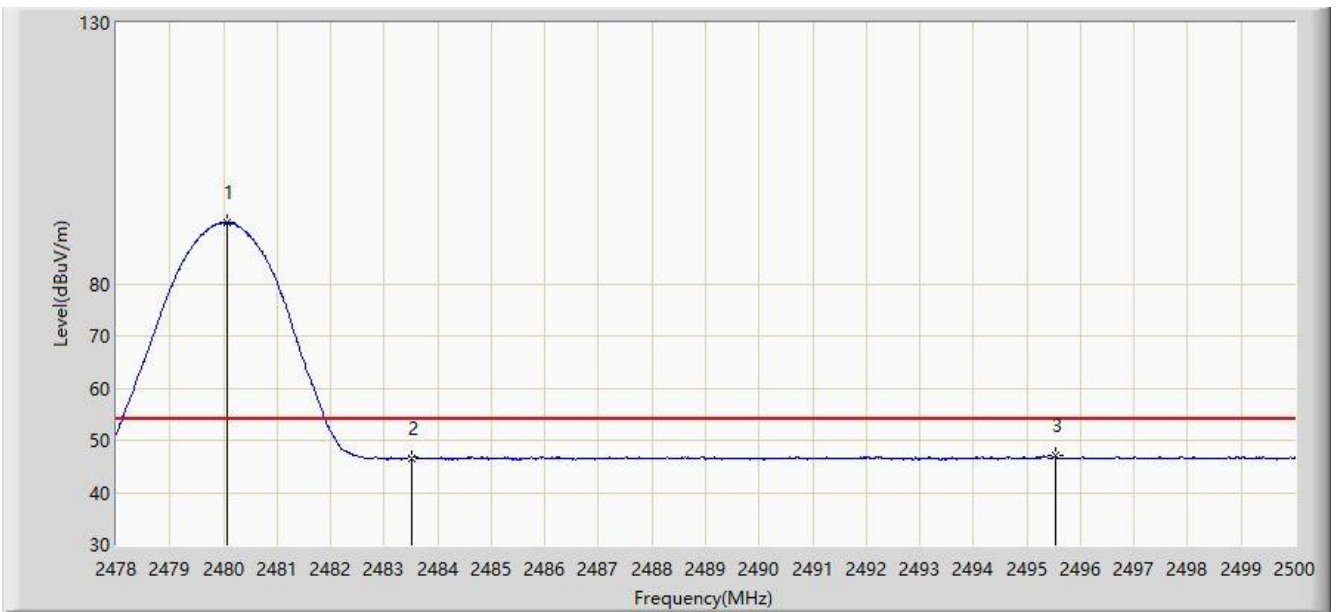
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2479.980	92.292	59.909	N/A	N/A	32.383	PK
2			2483.500	58.208	25.833	-15.792	74.000	32.375	PK
3			2487.724	59.895	27.530	-14.105	74.000	32.365	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



Site: AC2	Time: 2020/03/07 - 13:44
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2480 MHz	

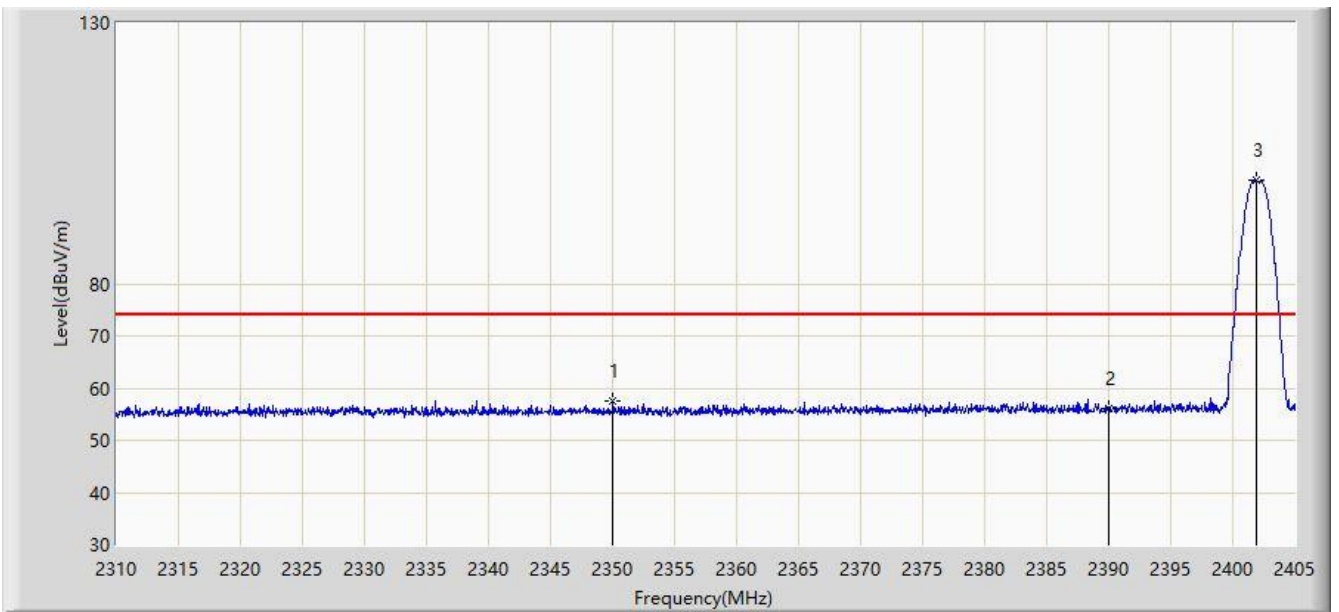


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2480.057	91.650	59.267	N/A	N/A	32.383	AV
2			2483.500	46.629	14.254	-7.371	54.000	32.375	AV
3			2495.523	46.966	14.619	-7.034	54.000	32.347	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/20 - 16:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2402 MHz	

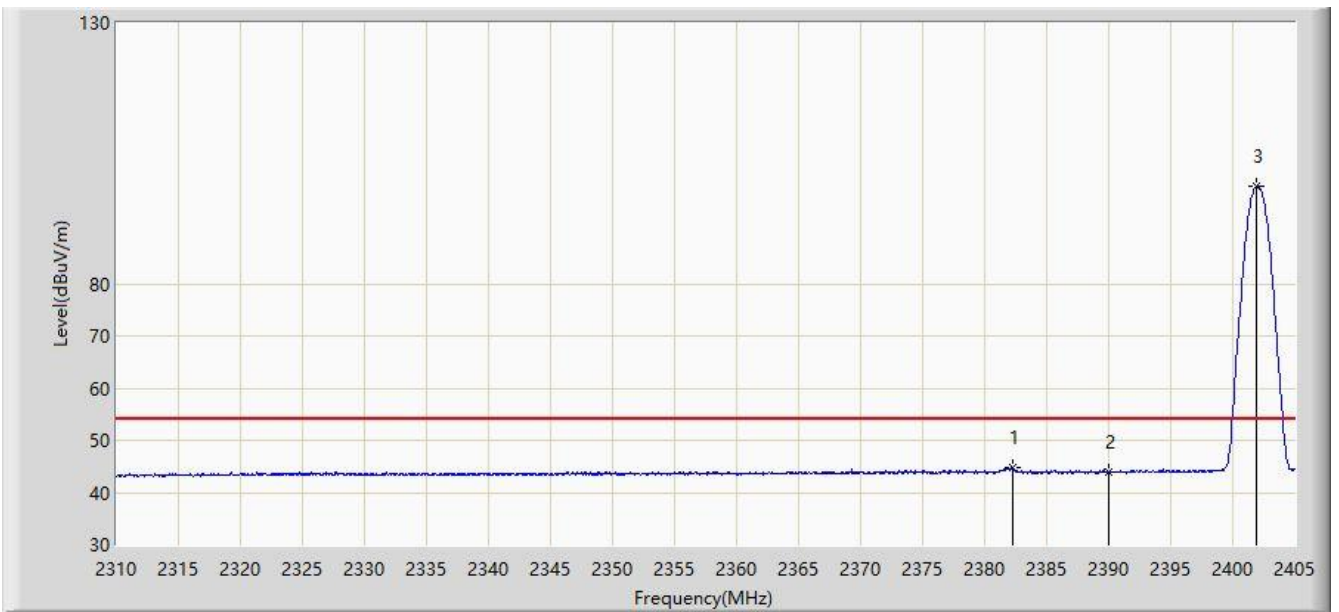


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2350.042	57.393	25.263	-16.607	74.000	32.130	PK
2			2390.000	56.166	24.094	-17.834	74.000	32.072	PK
3		*	2401.865	99.727	67.652	N/A	N/A	32.075	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/20 - 16:21
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2402 MHz	

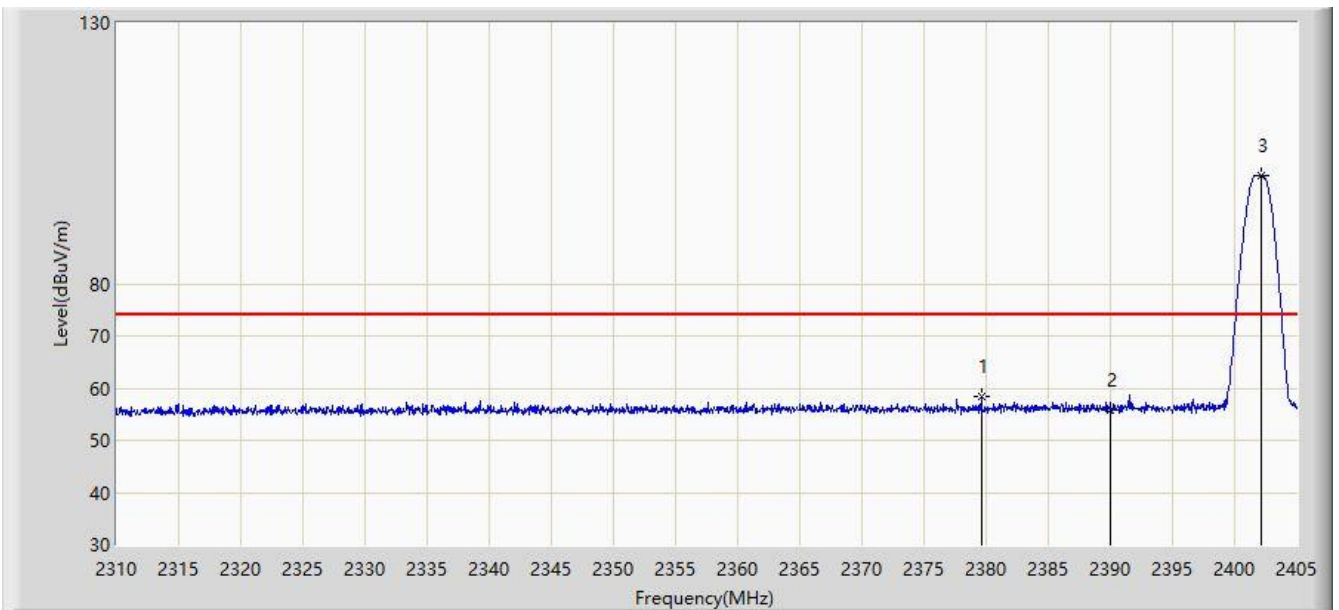


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2382.295	44.778	12.704	-9.222	54.000	32.074	AV
2			2390.000	43.818	11.746	-10.182	54.000	32.072	AV
3		*	2401.865	98.654	66.579	N/A	N/A	32.075	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/20 - 16:22
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2402 MHz	

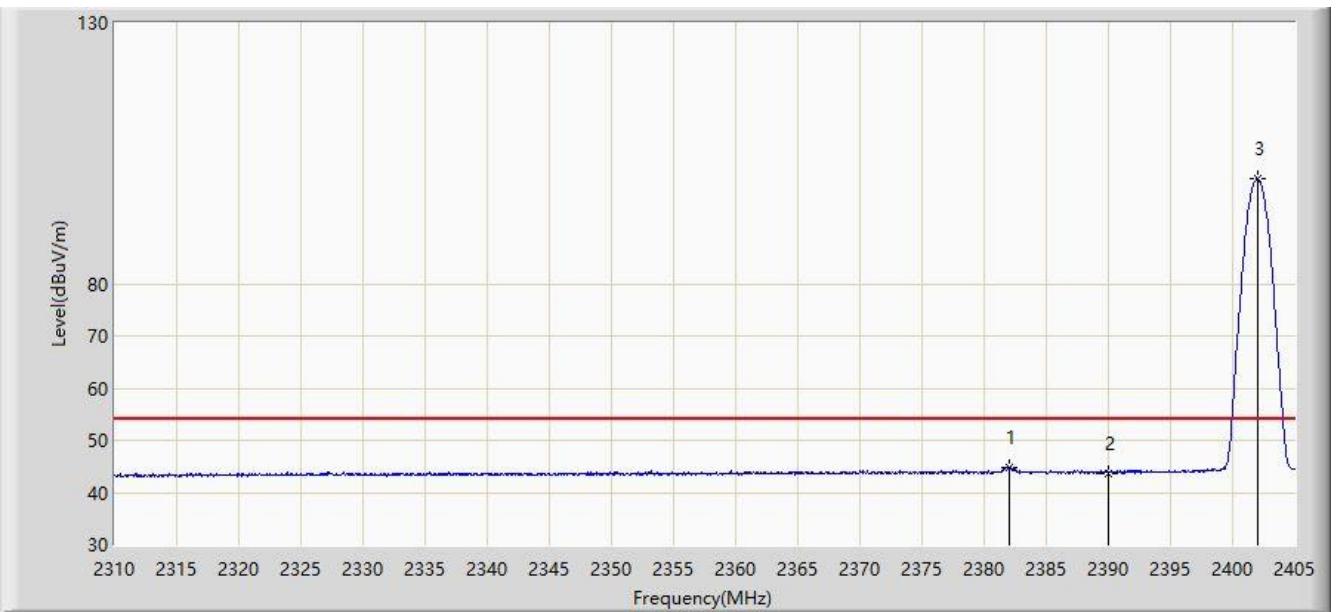


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2379.587	58.487	26.412	-15.513	74.000	32.075	PK
2			2390.000	55.886	23.814	-18.114	74.000	32.072	PK
3		*	2402.150	100.792	68.717	N/A	N/A	32.076	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/20 - 16:22
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2402 MHz	

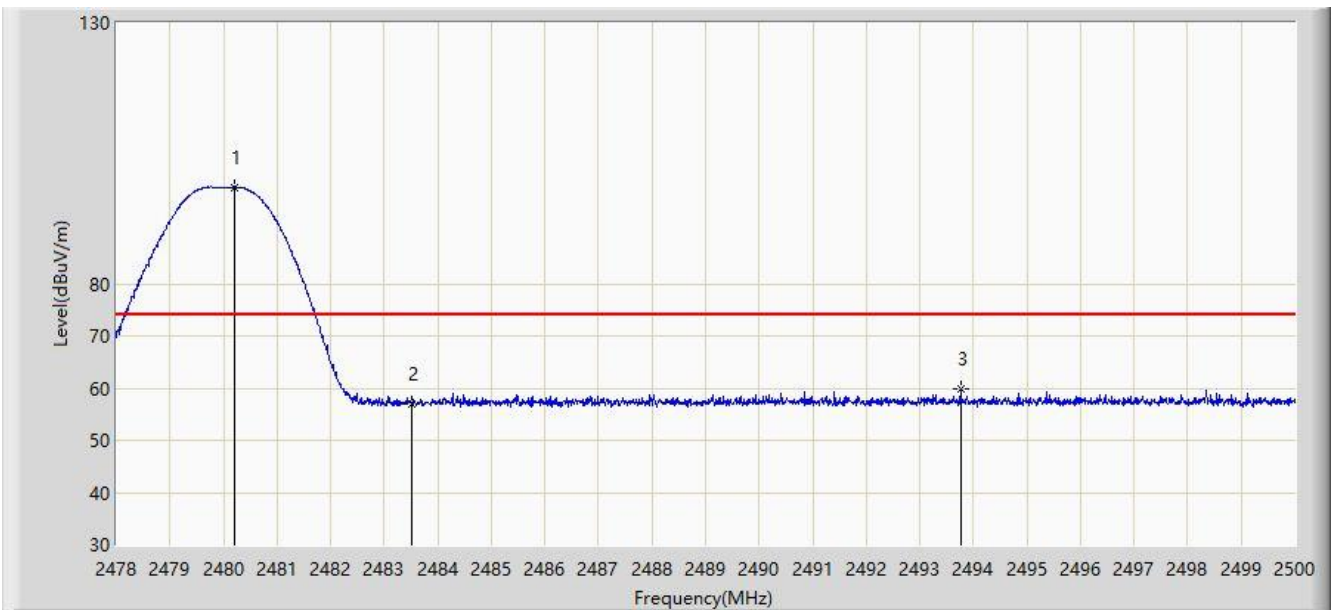


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2382.058	44.836	12.761	-9.164	54.000	32.075	AV
2			2390.000	43.707	11.635	-10.293	54.000	32.072	AV
3		*	2402.008	100.043	67.968	N/A	N/A	32.076	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/20 - 16:25
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2480 MHz	

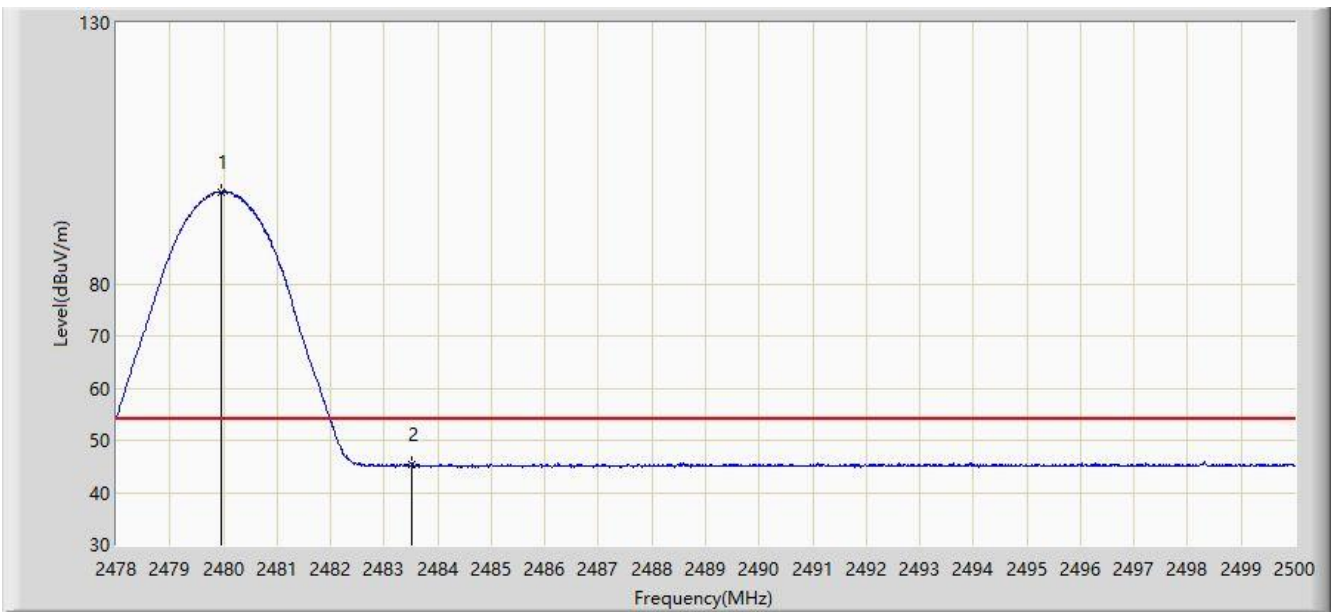


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2480.211	98.532	66.489	N/A	N/A	32.043	PK
2			2483.500	57.003	24.966	-16.997	74.000	32.037	PK
3			2493.763	59.878	27.860	-14.122	74.000	32.017	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/20 - 16:26
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Horizontal
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2480 MHz	

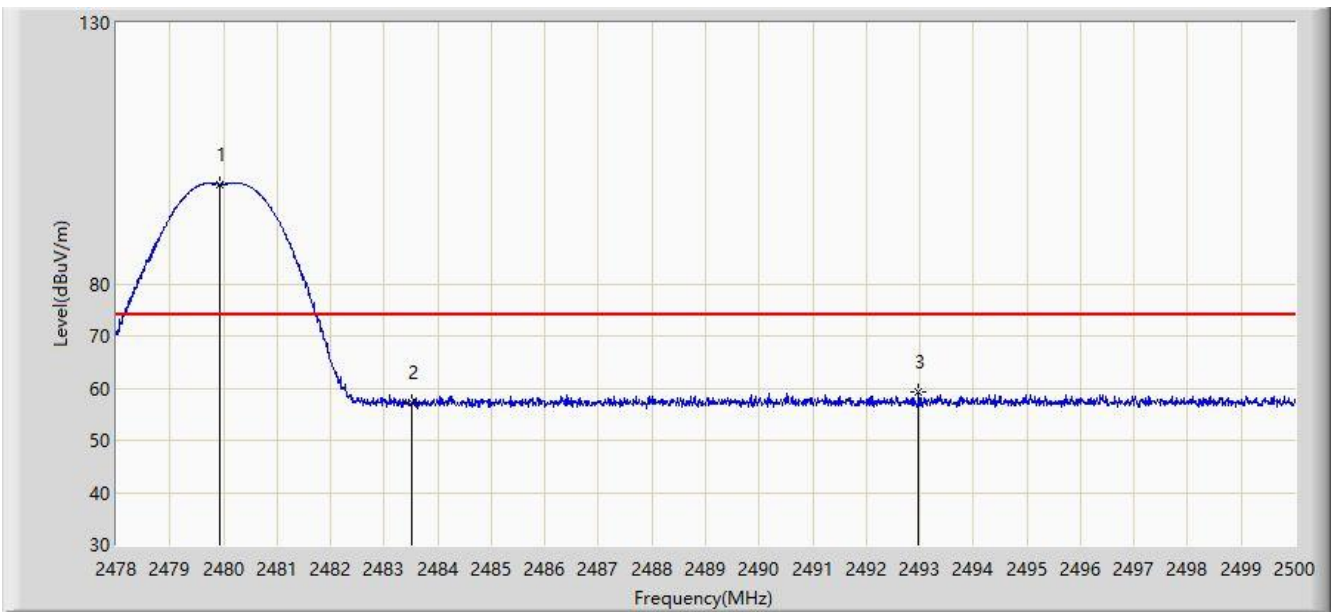


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2479.969	97.547	65.503	N/A	N/A	32.044	AV
2			2483.500	45.322	13.285	-8.678	54.000	32.037	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2020/03/20 - 16:28
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2480 MHz	



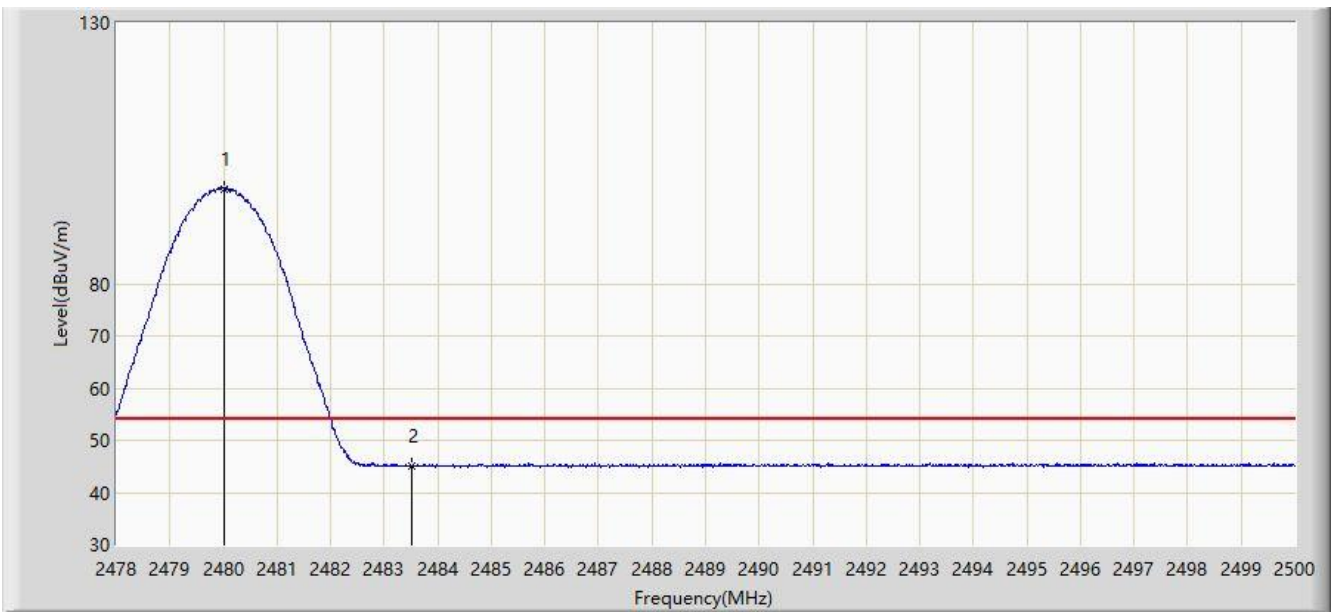
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2479.936	99.115	67.071	N/A	N/A	32.044	PK
2			2483.500	57.367	25.330	-16.633	74.000	32.037	PK
3			2492.982	59.313	27.294	-14.687	74.000	32.019	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



Site: AC2	Time: 2020/03/20 - 16:28
Limit: FCC_Part15.209_RE(3m)	Engineer: Yeto Yin
Probe: AC2_BBHA9120D_1-25GHz	Polarity: Vertical
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
Test Mode: Transmit by BLE at Channel 2480 MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2480.013	98.186	66.142	N/A	N/A	32.044	AV
2			2483.500	45.062	13.025	-8.938	54.000	32.037	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

## 7.8. AC Conducted Emissions Measurement

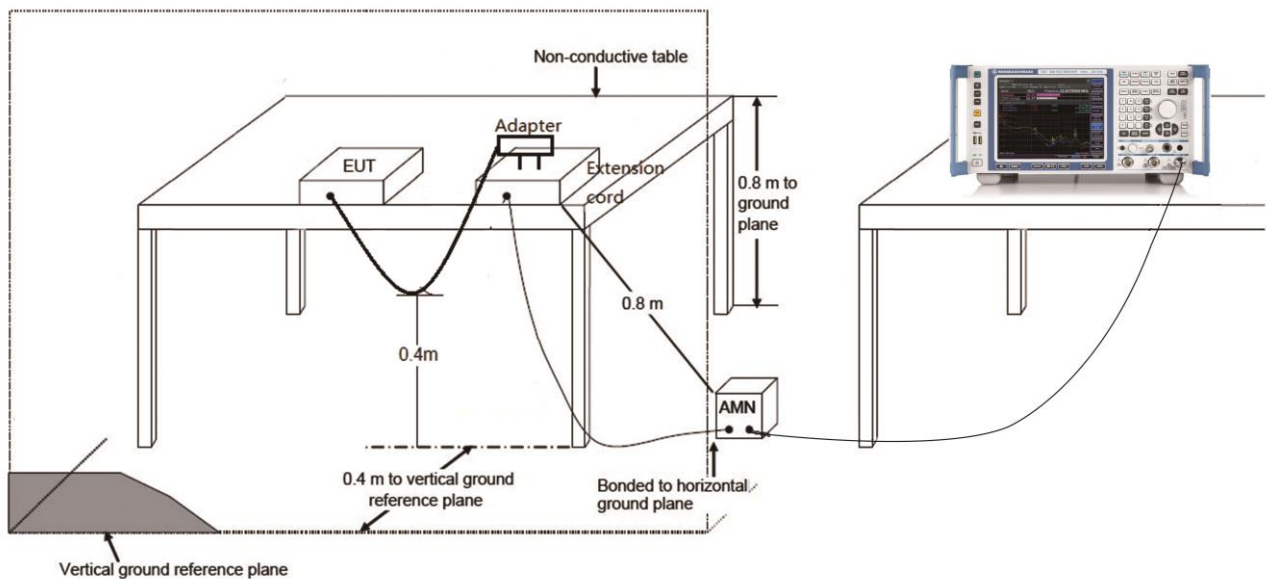
### 7.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 & RSS-Gen Paragraph 8.8 Limits		
Frequency (MHz)	QP (dB $\mu$ V)	Average (dB $\mu$ V)
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.

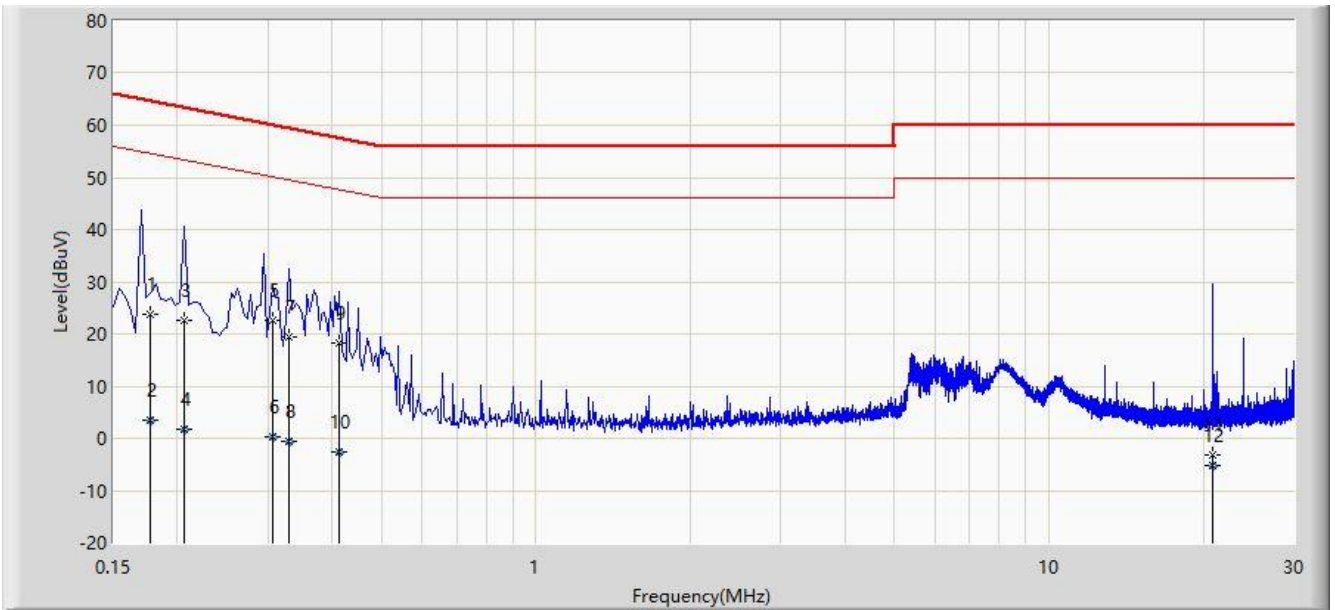
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

### 7.8.2. Test Setup



### 7.8.3. Test Result

Site: SR2	Time: 2020/03/24 - 19:26
Limit: FCC_Part15.207_CE_AC Power	Engineer: Andy Zhu
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
<b>Test Mode:</b> Transmit by BLE at Channel 2402MHz	

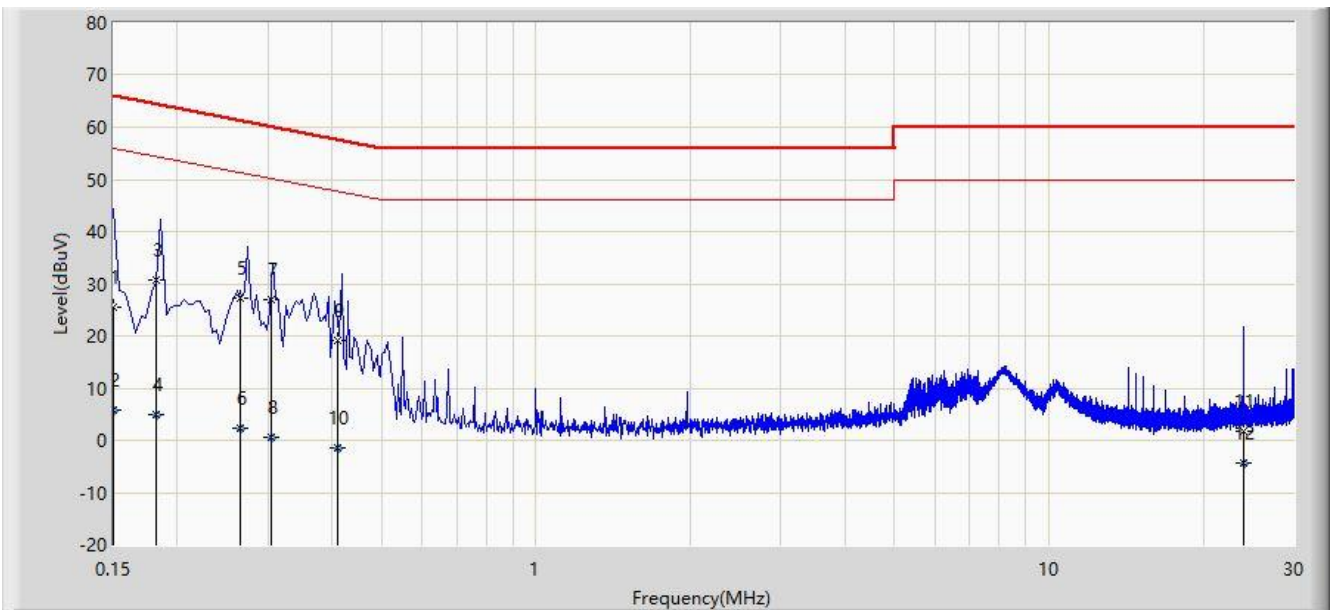


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.177	23.805	13.765	-40.821	64.625	10.039	QP
2			0.177	3.528	-6.511	-51.097	54.625	10.039	AV
3			0.206	22.564	12.595	-40.801	63.365	9.969	QP
4			0.206	1.659	-8.309	-51.706	53.365	9.969	AV
5			0.306	22.612	12.597	-37.466	60.078	10.015	QP
6			0.306	0.410	-9.605	-49.668	50.078	10.015	AV
7			0.330	19.326	9.286	-40.125	59.451	10.039	QP
8			0.330	-0.708	-10.747	-50.159	49.451	10.039	AV
9		*	0.414	18.286	8.179	-39.282	57.568	10.107	QP
10			0.414	-2.506	-12.613	-50.073	47.568	10.107	AV
11			20.850	-3.210	-13.290	-63.210	60.000	10.080	QP
12			20.850	-5.355	-15.436	-55.355	50.000	10.080	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SR2	Time: 2020/03/24 - 19:33
Limit: FCC_Part15.207_CE_AC Power	Engineer: Andy Zhu
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: Bluetooth 5 BLE module (Dragon-B)	Power: DC 3.3V
<b>Test Mode:</b> Transmit by BLE at Channel 2402MHz	

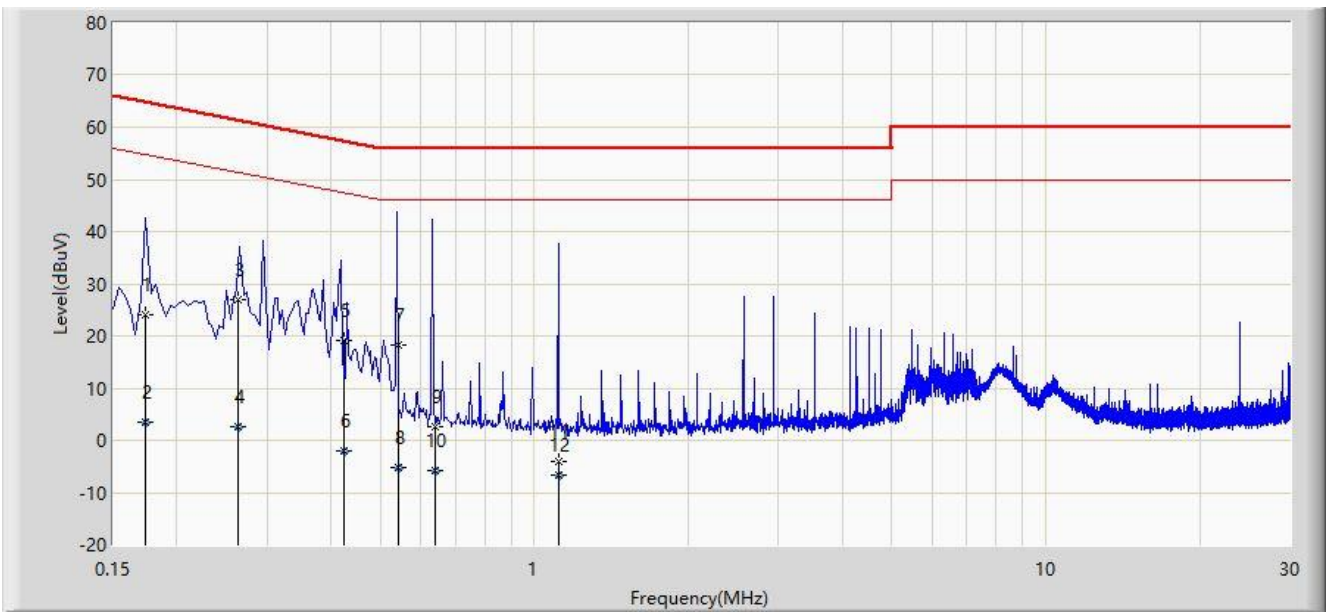


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.150	25.568	14.423	-40.432	66.000	11.146	QP
2			0.150	5.845	-5.301	-50.155	56.000	11.146	AV
3			0.182	30.660	20.618	-33.734	64.394	10.042	QP
4			0.182	4.846	-5.196	-49.548	54.394	10.042	AV
5			0.266	27.168	17.171	-34.074	61.242	9.997	QP
6			0.266	2.181	-7.817	-49.061	51.242	9.997	AV
7		*	0.304	26.854	16.824	-33.279	60.133	10.030	QP
8			0.304	0.617	-9.413	-49.516	50.133	10.030	AV
9			0.410	19.056	8.927	-38.592	57.648	10.129	QP
10			0.410	-1.539	-11.668	-49.187	47.648	10.129	AV
11			24.010	1.659	-8.543	-58.341	60.000	10.202	QP
12			24.010	-4.395	-14.597	-54.395	50.000	10.202	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SR2	Time: 2020/03/24 - 19:57
Limit: FCC_Part15.207_CE_AC Power	Engineer: Andy Zhu
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
<b>Test Mode:</b> Transmit by BLE at Channel 2402MHz	

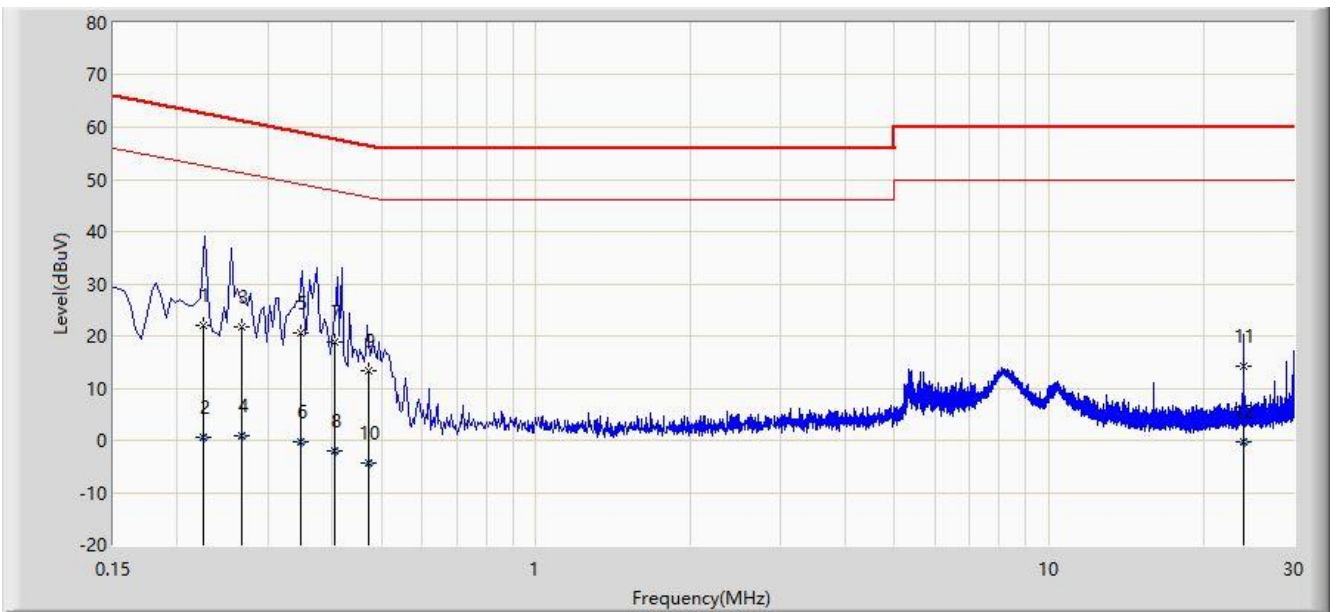


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.174	24.063	14.017	-40.705	64.767	10.045	QP
2			0.174	3.524	-6.522	-51.243	54.767	10.045	AV
3			0.264	27.072	17.091	-34.233	61.305	9.981	QP
4			0.264	2.744	-7.237	-48.561	51.305	9.981	AV
5			0.423	19.220	9.107	-38.169	57.389	10.113	QP
6			0.423	-1.923	-12.036	-49.312	47.389	10.113	AV
7			0.541	18.401	8.235	-37.599	56.000	10.166	QP
8			0.541	-5.081	-15.247	-51.081	46.000	10.166	AV
9		*	0.638	2.567	-7.550	-53.433	56.000	10.116	QP
10			0.638	-5.798	-15.914	-51.798	46.000	10.116	AV
11			1.115	-4.005	-13.954	-60.005	56.000	9.949	QP
12			1.115	-6.683	-16.632	-52.683	46.000	9.949	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SR2	Time: 2020/03/25 - 09:37
Limit: FCC_Part15.207_CE_AC Power	Engineer: Andy Zhu
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: Bluetooth 5 BLE module (Dragon-C)	Power: DC 3.3V
<b>Test Mode:</b> Transmit by BLE at Channel 2402MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.224	22.031	12.078	-40.638	62.669	9.953	QP
2			0.224	0.558	-9.396	-52.112	52.669	9.953	AV
3			0.267	21.848	11.849	-39.363	61.211	9.998	QP
4			0.267	1.006	-8.992	-50.205	51.211	9.998	AV
5			0.347	20.543	10.468	-38.491	59.034	10.075	QP
6			0.347	-0.158	-10.232	-49.192	49.034	10.075	AV
7		*	0.405	18.782	8.656	-38.968	57.750	10.126	QP
8			0.405	-1.944	-12.071	-49.694	47.750	10.126	AV
9			0.471	13.330	3.149	-43.167	56.496	10.181	QP
10			0.471	-4.219	-14.400	-50.715	46.496	10.181	AV
11			24.001	14.282	4.080	-45.718	60.000	10.202	QP
12			24.001	-0.364	-10.566	-50.364	50.000	10.202	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

## 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 and ISED rules.

————— The End —————

## **Appendix A - Test Setup Photograph**

Refer to "2002RSU008-UT" file.



## **Appendix B - EUT Photograph**

Refer to "2002RSU008-UE" file.