

MEASUREMENT REPORT

FCC PART 15.247 Bluetooth

FCC ID: R5D4MOD734N

APPLICANT: 4MOD Technology

Application Type: Certification

Product: Remote Control

Model No.: 4MOD734N

Serial Model No.: 4MOD7XXN


Brand Name: VOXITV

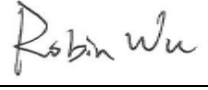
FCC Classification: Digital Transmission System (DTS)

FCC Rule Part(s): Part 15.247

Test Procedure(s): ANSI C63.10-2013, KDB 558074 D01v05r02

Test Date: July 10 ~ 16, 2019

Reviewed By : 
(Sunny Sun)

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 KDB 558074 D01v05. 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.

Revision History

Report No.	Version	Description	Issue Date	Note
1907RSU019-U1	Rev. 01	Initial report	07-28-2019	Valid

CONTENTS

Description	Page
1. INTRODUCTION	6
1.1. Scope	6
1.2. MRT Test Location	6
2. PRODUCT INFORMATION.....	7
2.1. Feature of Equipment under Test.....	7
2.2. Product Specification Subjective to this Report.....	7
2.3. Working Frequencies for this report	8
2.4. Test Software	8
2.5. Device Capabilities.....	8
2.6. Test Configuration	8
2.7. EMI Suppression Device(s)/Modifications.....	8
2.8. Labeling Requirements	9
3. DESCRIPTION OF TEST	10
3.1. Evaluation Procedure	10
3.2. AC Line Conducted Emissions.....	10
3.3. Radiated Emissions.....	11
4. ANTENNA REQUIREMENTS	12
5. TEST EQUIPMENT CALIBRATION DATE	13
6. MEASUREMENT UNCERTAINTY	15
7. TEST RESULT	16
7.1. Summary	16
7.2. 6dB Bandwidth Measurement	17
7.2.1. Test Limit	17
7.2.2. Test Procedure used	17
7.2.3. Test Setting.....	17
7.2.4. Test Setup	17
7.2.5. Test Result.....	18
7.3. Output Power Measurement	19
7.3.1. Test Limit	19
7.3.2. Test Procedure Used.....	19
7.3.3. Test Setting.....	19
7.3.4. Test Setup	19
7.3.5. Test Result.....	20

7.4.	Power Spectral Density Measurement	21
7.4.1.	Test Limit	21
7.4.2.	Test Procedure Used	21
7.4.3.	Test Setting.....	21
7.4.4.	Test Setup	21
7.4.5.	Test Result.....	22
7.5.	Conducted Band Edge and Out-of-Band Emissions	23
7.5.1.	Test Limit	23
7.5.2.	Test Procedure Used	23
7.5.3.	Test Setting.....	23
7.5.4.	Test Setup	24
7.5.5.	Test Result.....	25
7.6.	Radiated Spurious Emission Measurement	27
7.6.1.	Test Limit	27
7.6.2.	Test Procedure Used	27
7.6.3.	Test Setting.....	27
7.6.4.	Test Setup	29
7.6.5.	Test Result.....	30
7.7.	Radiated Restricted Band Edge Measurement	35
7.7.1.	Test Limit	35
7.7.2.	Test Procedure Used	36
7.7.3.	Test Setting.....	36
7.7.4.	Test Setup	37
7.7.5.	Test Result.....	38
7.8.	AC Conducted Emissions Measurement.....	46
7.8.1.	Test Limit	46
7.8.2.	Test Setup	46
7.8.3.	Test Result.....	47
8.	CONCLUSION.....	49
	Appendix A - Test Setup Photograph.....	50
	Appendix B - EUT Photograph	51

§2.1033 General Information

Applicant:	4MOD Technology
Applicant Address:	203, Avenue Carnot, 33150 Cenon, France
Manufacturer:	4MOD Technology
Manufacturer Address:	203, Avenue Carnot, 33150 Cenon, France
Test Site:	MRT Technology (Suzhou) Co., Ltd
Test Site Address:	D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China

Test Facility / Accreditations

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

- MRT facility is a FCC registered (MRT Reg. No. 893164) 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 Industry Canada 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	Remote Control
Model No.	4MOD734N, 4MOD7XXN
Brand Name	VOXITV
Bluetooth Specification	v4.0 (BLE Only)
Switching Adaptor	Model No.: CGSW-05010006 Input: 100 ~ 240V ~ 50/60Hz 0.2A Output: 5VDC, 1.0A

NOTE: The different models are only for marketing different clients. The PCBA configuration and software are the same for all models. All the materials used in different models are the same as well.

2.2. Product Specification Subjective to this Report

Bluetooth Frequency	2402~2480MHz
Bluetooth Version	v4.0
Data Rate	250kbps
Modulation	GFSK
Antenna Type	PCB Antenna
Antenna Gain	0dBi

2.3. 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	--	--	--	--

2.4. Test Software

The test utility software used during testing was “Tera Term”, and the version was “4.78”.

2.5. Device Capabilities

This device contains the following capabilities:

Bluetooth v4.0 (BLE Only)

2.6. Test Configuration

The EUT was tested per the guidance of KDB 558074 D01v05. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

2.7. EMI Suppression Device(s)/Modifications

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

2.8. 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.

3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in KDB 558074 D01v05r02 were used in the measurement.

Deviation from measurement procedure.....None

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 antenna of the **Remote Control** is **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT 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	2019/08/14
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	2019/08/13
PXA Signal Analyzer	Keysight	9030B	MRTSUE06395	1 year	2019/09/25
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2019/11/09
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2020/03/31
Broad Band Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2019/10/19
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06024	1 year	2019/12/17
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2019/11/16
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2020/06/11
Thermohygrometer	Testo	608-H1	MRTSUE06403	1 year	2019/08/14
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	2019/08/13
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2019/11/09
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2019/10/19
Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06171	1 year	2019/11/09
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06024	1 year	2019/12/17
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2019/11/16
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2020/06/11
Temperature/Humidity Meter	Minggao	ETH529	MRTSUE06170	1 year	2019/12/13
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	2019/11/16
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	2019/10/18
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2019/11/16
DC Power Supply	GWINSTEK	DPS-3303C	MRTSUE06064	N/A	N/A
Temperature & Humidity Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2019/11/16
Thermohygrometer	testo	608-H1	MRTSUE06401	1 year	2019/08/14

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 $k = 2$.

Conducted Emission Measurement - SR2

The maximum measurement uncertainty is evaluated as:

9kHz~150kHz: 3.84dB

150kHz~30MHz: 3.46dB

Radiated Emission Measurement - AC1

The maximum measurement uncertainty is evaluated as:

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

The maximum measurement uncertainty is evaluated as:

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 Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	6dB Bandwidth	$\geq 500\text{kHz}$	Conducted	Pass	Section 7.2
15.247(b)(3)	Output Power	$\leq 1\text{Watt}$		Pass	Section 7.3
15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$		Pass	Section 7.4
15.247(d)	Band Edge / Out-of-Band Emissions	$\leq 20\text{dBc(Peak)}$		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	Pass	Section 7.8

Note s:

- 1) 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.
- 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.

7.2. 6dB Bandwidth Measurement

7.2.1. Test Limit

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

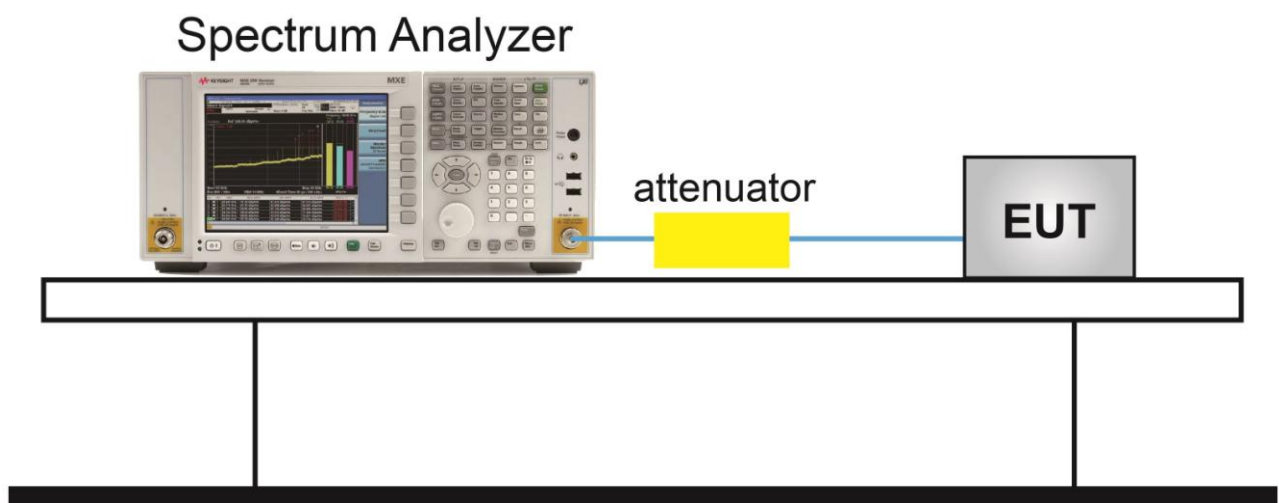
7.2.2. Test Procedure used

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

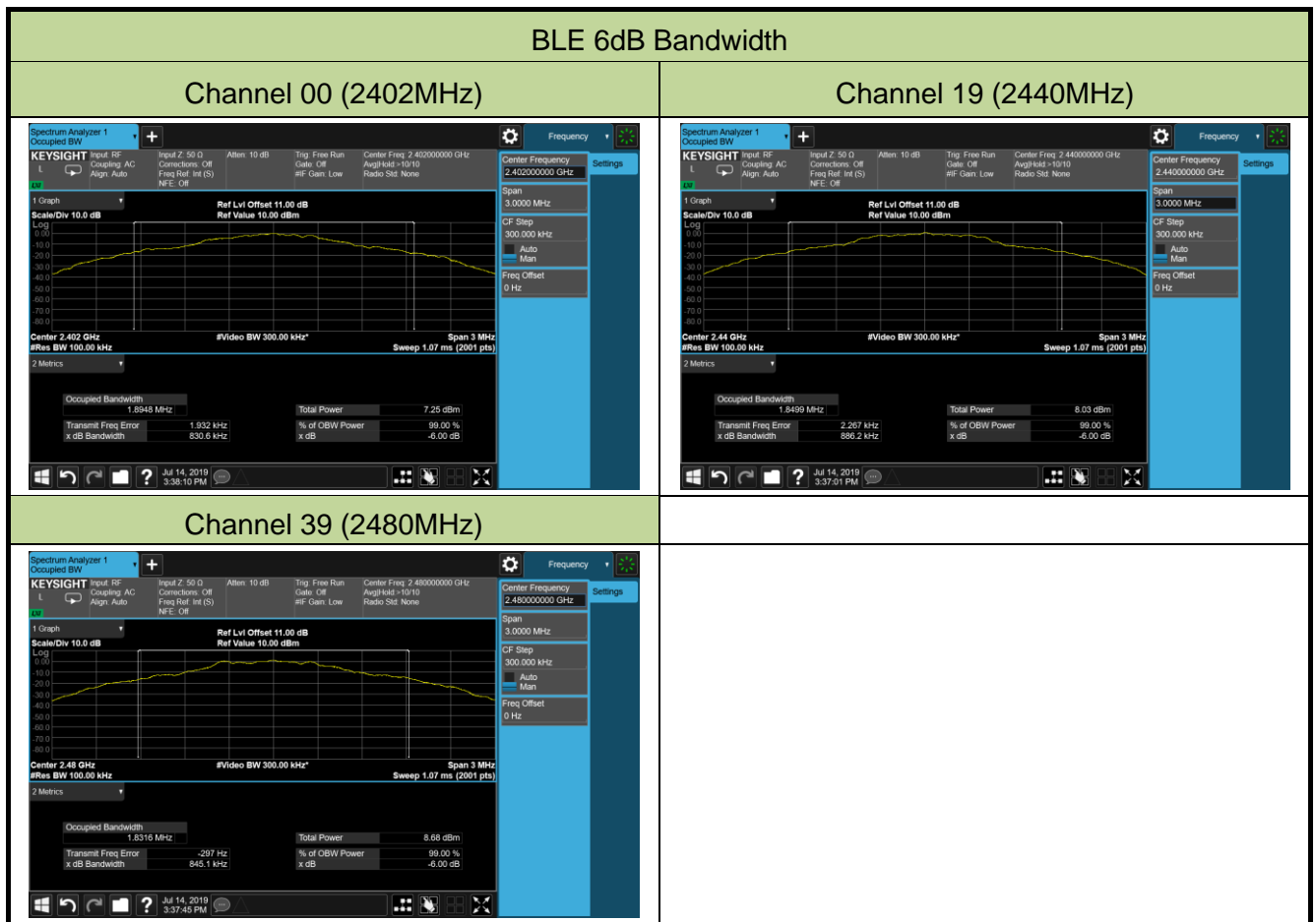
7.2.4. Test Setup



7.2.5. Test Result

Product	Remote Control	Temperature	25°C
Test Engineer	Snake Ni	Relative Humidity	52%
Test Site	TR3	Test Date	2019/07/14

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
BLE	1	00	2402	0.83	≥ 0.5	Pass
BLE	1	19	2440	0.89	≥ 0.5	Pass
BLE	1	39	2480	0.85	≥ 0.5	Pass



7.3. Output Power Measurement

7.3.1. Test Limit

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

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

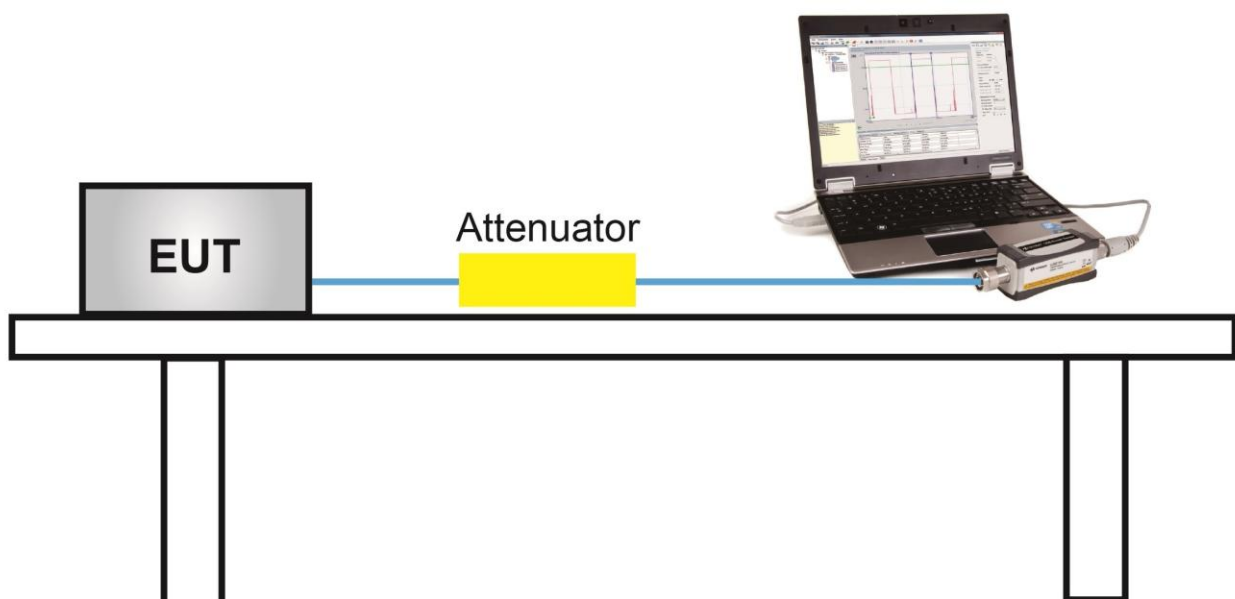
PKPM1 Peak-reading power meter method

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

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

Product	Remote Control	Temperature	25°C
Test Engineer	Snake Ni	Relative Humidity	52%
Test Site	TR3	Test Date	2019/07/14

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
Test Result of Peak Output Power						
BLE	1	00	2402	0.74	≤ 30	Pass
BLE	1	19	2440	2.08	≤ 30	Pass
BLE	1	39	2480	1.24	≤ 30	Pass
Test Result of Average Output Power (Reporting Only)						
BLE	1	00	2402	0.45	≤ 30	Pass
BLE	1	19	2440	1.85	≤ 30	Pass
BLE	1	39	2480	0.97	≤ 30	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.

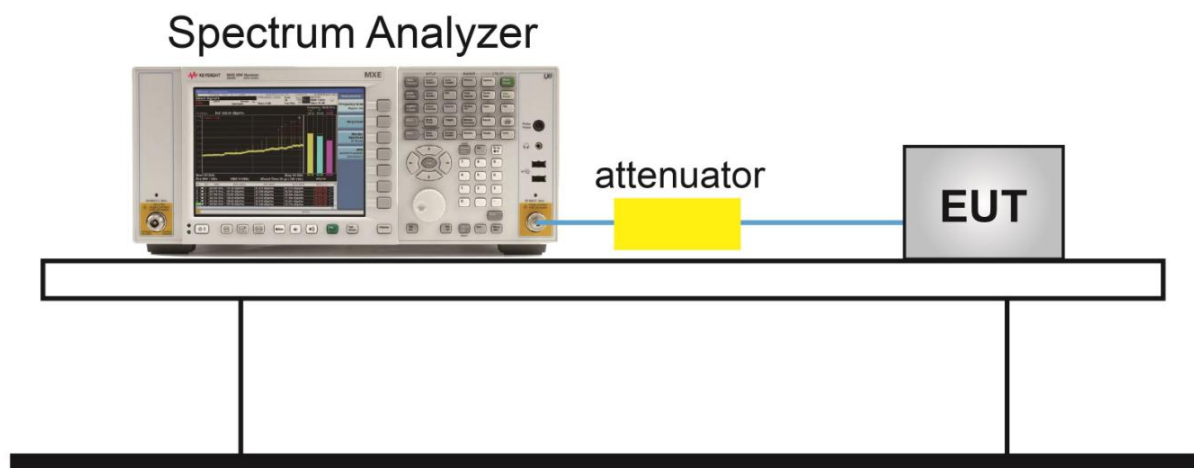
7.4.2. Test Procedure Used

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

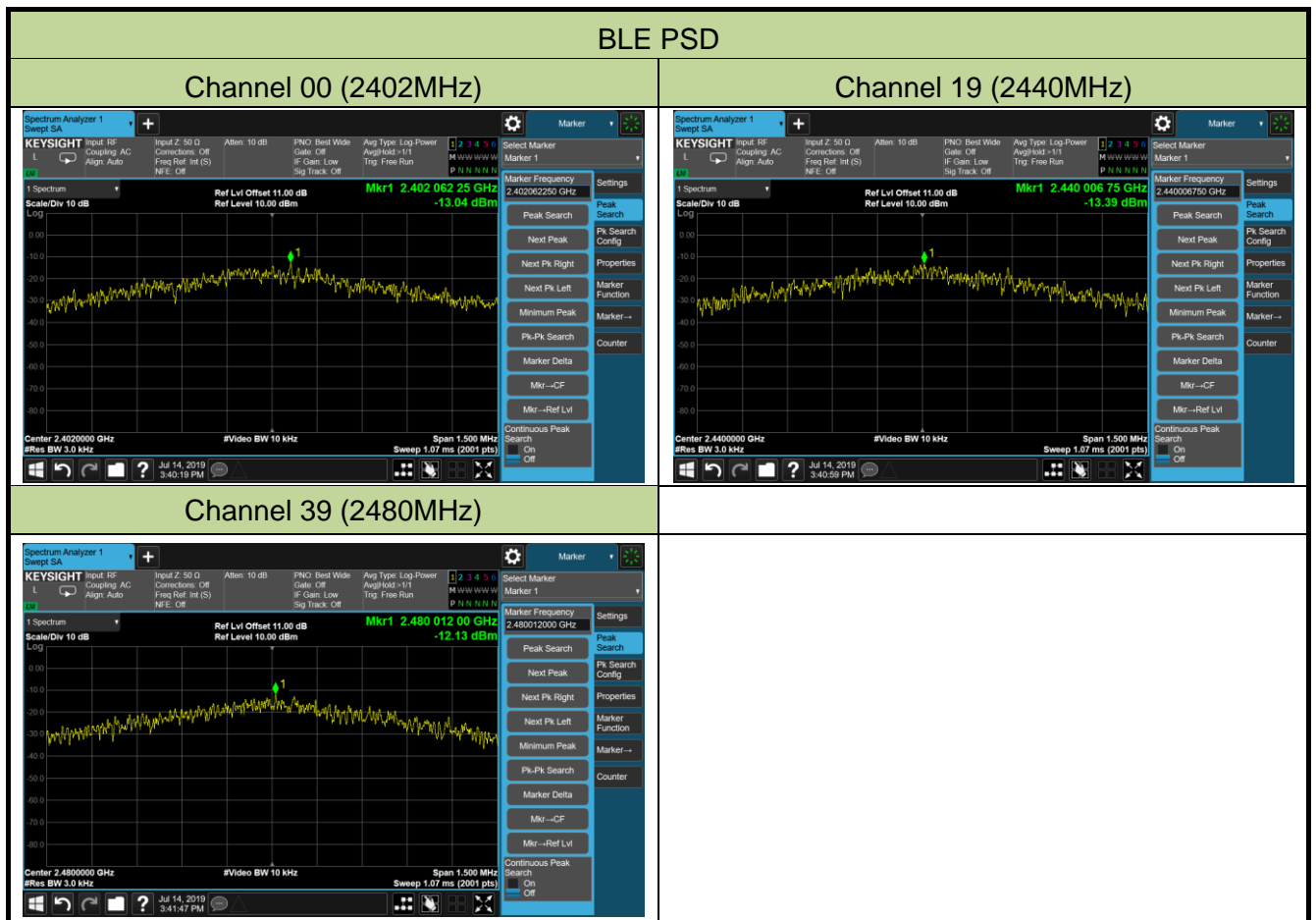
7.4.4. Test Setup



7.4.5. Test Result

Product	Remote Control	Temperature	25°C
Test Engineer	Snake Ni	Relative Humidity	52%
Test Site	TR3	Test Date	2019/07/14

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	PSD Result (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
BLE	1	00	2402	-13.04	≤ 8.00	Pass
BLE	1	19	2440	-13.39	≤ 8.00	Pass
BLE	1	39	2480	-12.13	≤ 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 ≥ 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

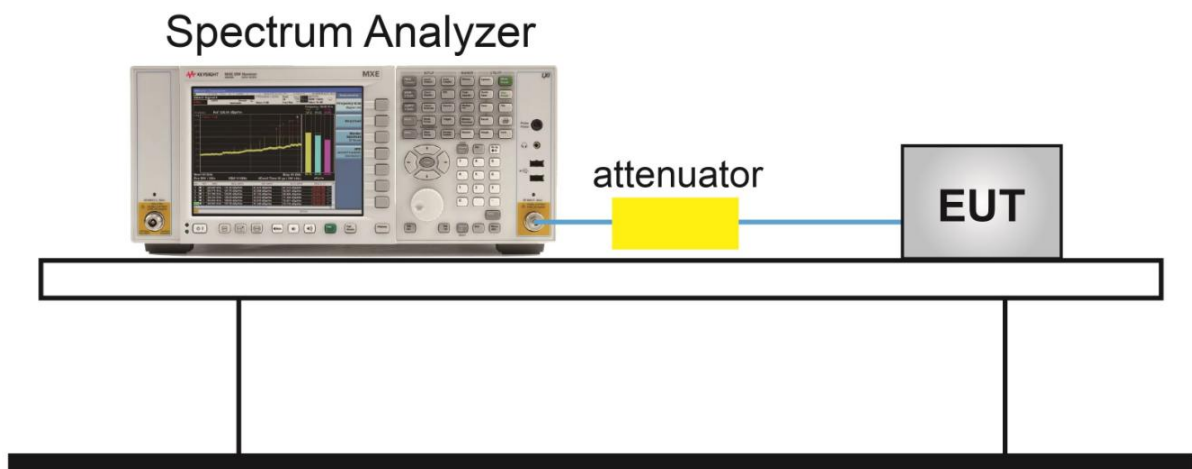
1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 1.3MHz
3. VBW = 4MHz
4. Detector = Peak
5. Number of sweep points $\geq 2 \times$ Span/RBW
6. Trace mode = max hold
7. Sweep time = auto couple

8. 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

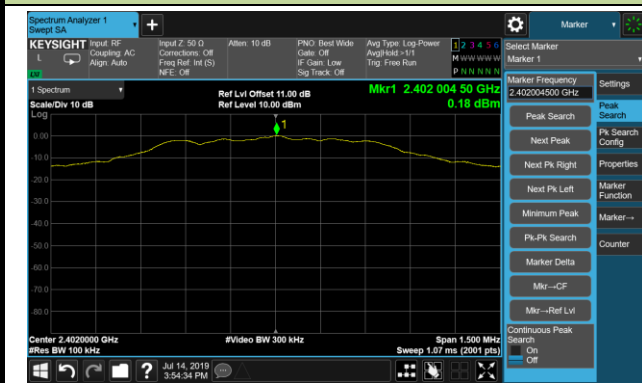
Product	Remote Control	Temperature	25°C
Test Engineer	Snake Ni	Relative Humidity	52%
Test Site	TR3	Test Date	2019/07/14

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

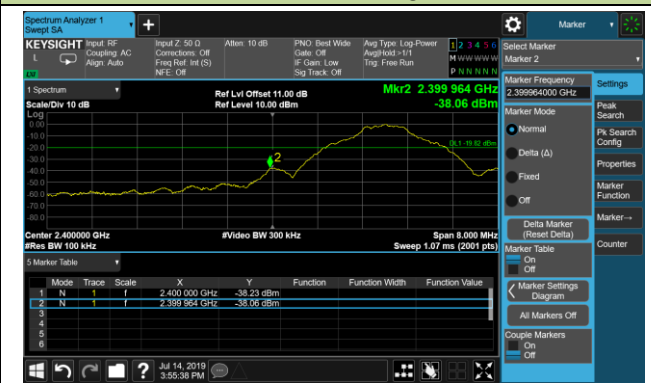
BLE Out-of-Band Emissions

Channel 00 (2402MHz)

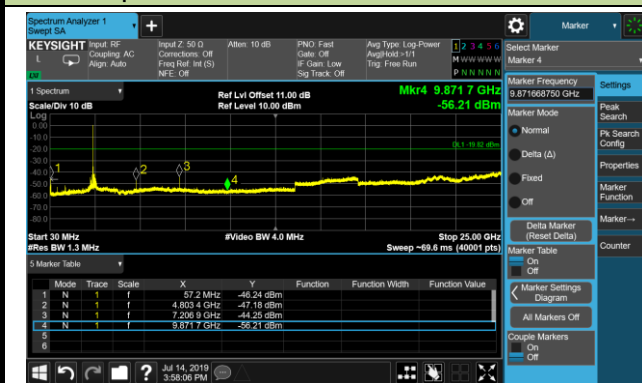
100kHz PSD reference Level



Low Band Edge

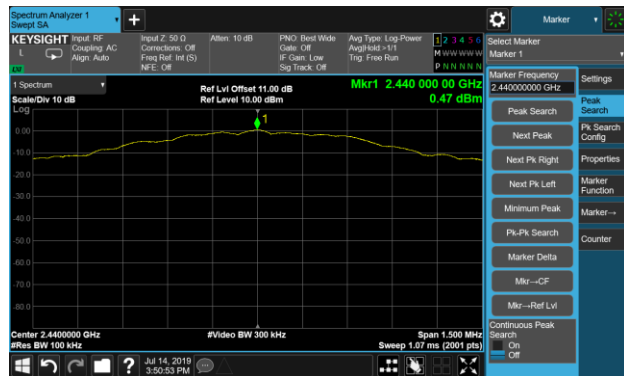


Spurious Emission 30MHz ~ 25GHz



Channel 19 (2440MHz)

100kHz PSD reference Level

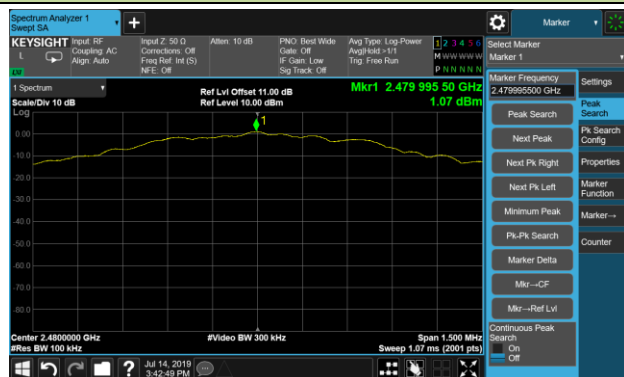


Spurious Emission 30MHz ~ 25GHz



Channel 39 (2480MHz)

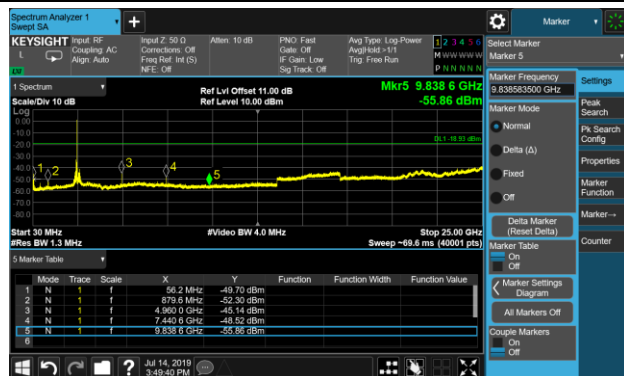
100kHz PSD reference Level



High Band Edge



Spurious Emission 30MHz ~ 25GHz



7.6. Radiated Spurious Emission Measurement

7.6.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 80	100**	3
80 ~ 216	150**	3
216 ~ 960	200**	3
Above 960	500	3

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

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m).

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

Peak Field Strength Measurements

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

Table 1 - RBW as a function of frequency

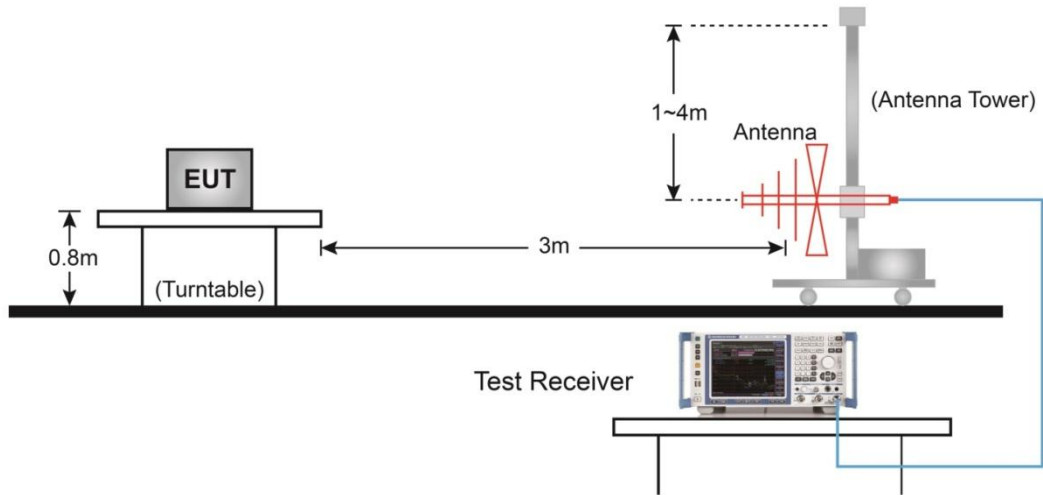
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

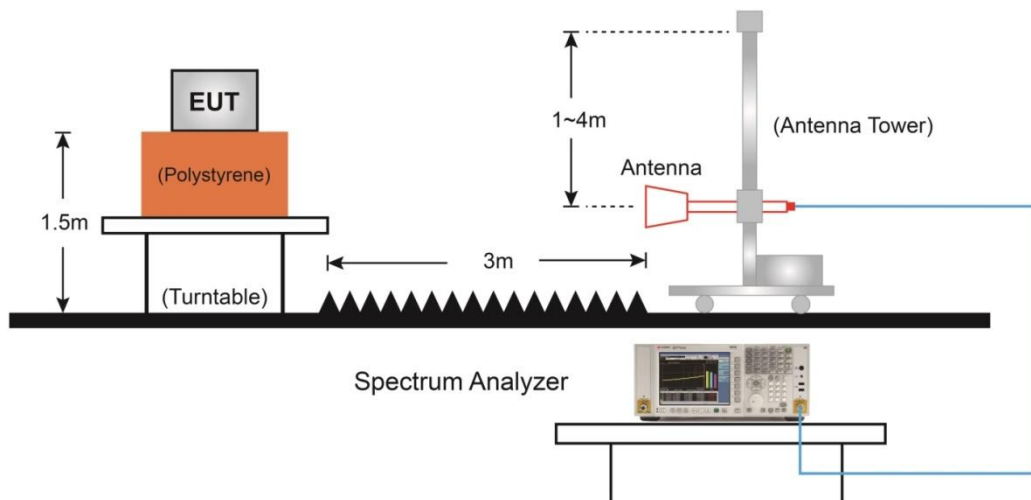
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW $\geq 1/T$
4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). 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

7.6.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



7.6.5. Test Result

Test Mode:	BLE	Test Site:	AC1
Test Channel:	00	Test Engineer:	Bacon Dong
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, 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
	4808.0	45.1	5.6	50.7	74.0	-23.3	Peak	Horizontal
*	6270.0	36.8	8.4	45.2	76.5	-31.3	Peak	Horizontal
*	7205.0	45.9	11.6	57.5	76.5	-19.0	Peak	Horizontal
	8242.0	36.6	12.3	48.9	74.0	-25.1	Peak	Horizontal
	4825.0	37.7	5.5	43.2	74.0	-30.8	Peak	Vertical
*	5981.0	37.6	7.3	44.9	76.5	-31.6	Peak	Vertical
*	7205.0	45.7	11.6	57.3	76.5	-19.2	Peak	Vertical
	7655.5	36.3	11.6	47.9	74.0	-26.1	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (96.5dBμV/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)

Test Mode:	BLE	Test Site:	AC1
Test Channel:	19	Test Engineer:	Bacon Dong
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, 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
	4876.0	44.0	5.7	49.7	74.0	-24.3	Peak	Horizontal
*	5760.0	37.4	7.2	44.6	79.6	-35.0	Peak	Horizontal
*	6550.5	36.6	9.5	46.1	79.6	-33.5	Peak	Horizontal
	7315.5	43.6	11.7	55.3	74.0	-18.7	Peak	Horizontal
	7320.1	36.6	11.7	48.3	54.0	-5.7	Average	Horizontal
	4884.5	39.6	5.7	45.3	74.0	-28.7	Peak	Vertical
*	5870.5	36.4	7.4	43.8	79.6	-35.8	Peak	Vertical
*	6508.0	35.5	9.4	44.9	79.6	-34.7	Peak	Vertical
	7315.5	43.9	11.7	55.6	74.0	-18.4	Peak	Vertical
	7320.0	36.5	11.7	48.2	54.0	-5.8	Average	Vertical

Note 1: “*” is not in restricted band, its limit is 20dBc of the fundamental emission level (99.6dBμV/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)

Test Mode:	BLE	Test Site:	AC1
Test Channel:	39	Test Engineer:	Bacon Dong
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, 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
	4961.0	41.5	5.9	47.4	74.0	-26.6	Peak	Horizontal
*	5811.0	34.9	7.1	42.0	78.9	-36.9	Peak	Horizontal
*	6593.0	36.3	9.8	46.1	78.9	-32.8	Peak	Horizontal
	7440.0	37.0	11.9	48.9	54.0	-5.1	Average	Horizontal
	7443.0	43.3	11.9	55.2	74.0	-18.8	Peak	Horizontal
	4961.0	38.8	5.9	44.7	74.0	-29.3	Peak	Vertical
*	5751.5	36.2	7.1	43.3	78.9	-35.6	Peak	Vertical
*	6771.5	35.9	9.5	45.4	78.9	-33.5	Peak	Vertical
	7440.0	35.4	11.9	47.3	54.0	-6.7	Average	Vertical
	7443.0	42.6	11.9	54.5	74.0	-19.5	Peak	Vertical

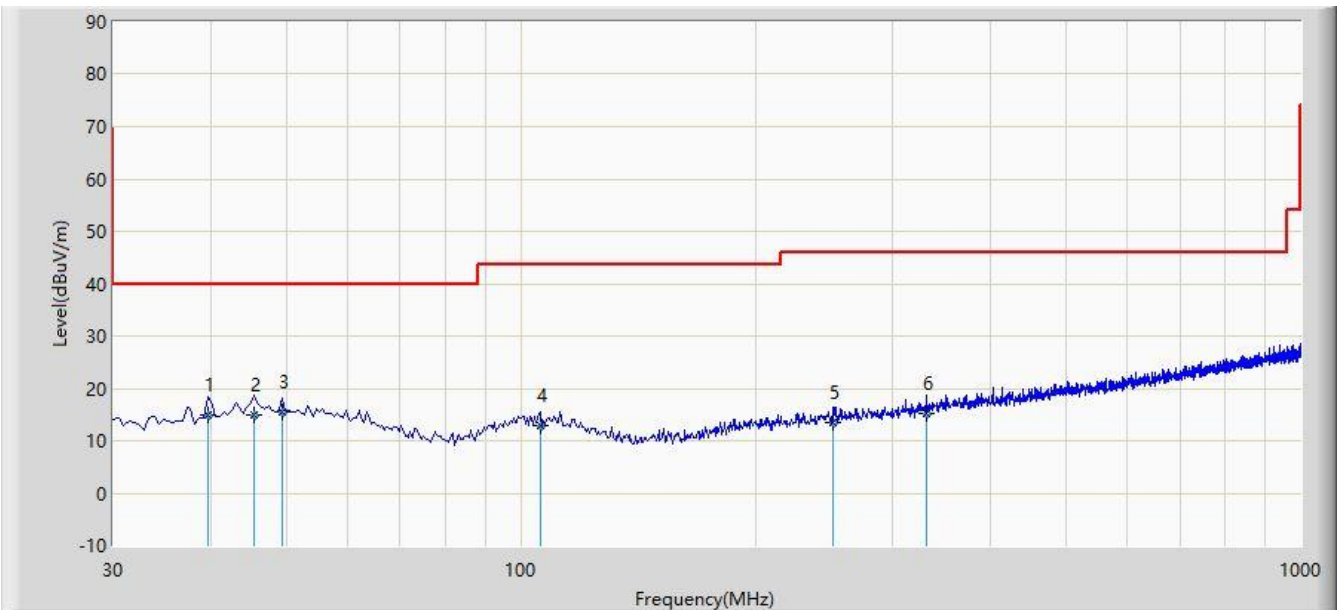
Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (98.9dBμV/m) or 15.209 which is higher.

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: AC1	Time: 2019/07/12 - 15:59
Limit: FCC_Part15.209_RSE(3m)	Engineer: Bacon Dong
Probe: VULB 9168 _20-2000MHz	Polarity: Horizontal
EUT: Remote Control	Power: By Battery
Worse Case Mode: Transmit by BLE at channel 2402MHz	



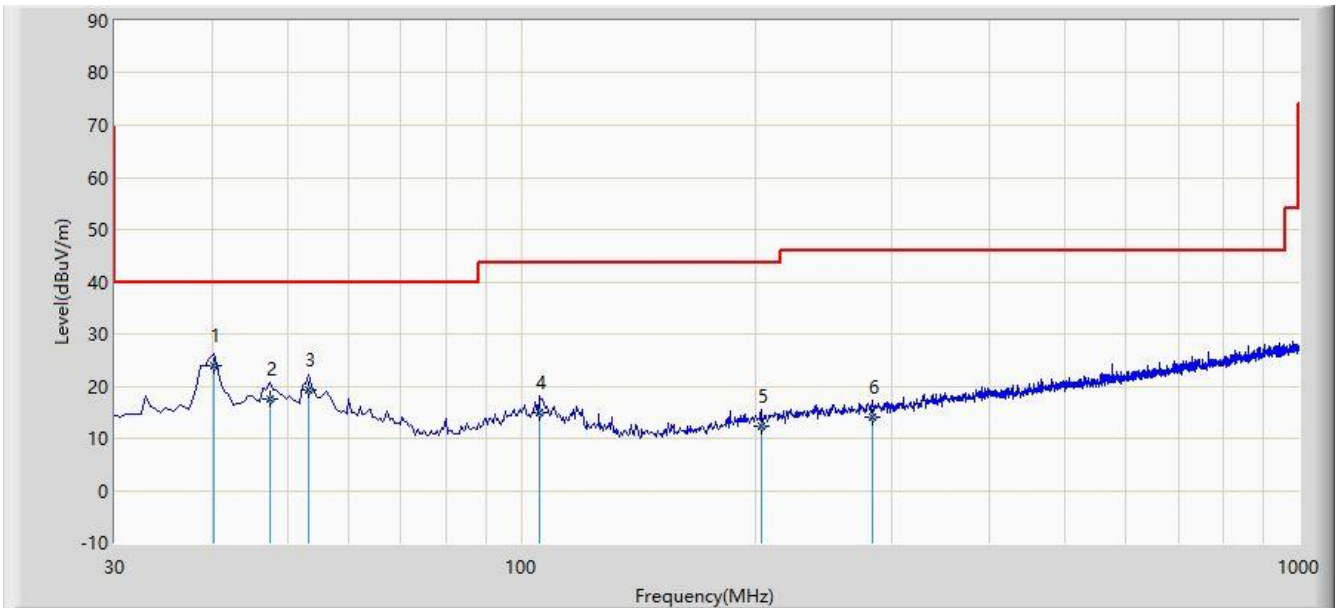
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			39.700	15.029	1.295	-24.971	40.000	13.734	QP
2			45.520	14.997	0.169	-25.003	40.000	14.828	QP
3		*	49.400	15.451	0.598	-24.549	40.000	14.853	QP
4			106.159	12.781	-0.156	-30.719	43.500	12.937	QP
5			251.648	13.508	0.026	-32.492	46.000	13.482	QP
6			331.185	15.292	0.156	-30.708	46.000	15.136	QP

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

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

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

Site: AC1	Time: 2019/07/12 - 16:03
Limit: FCC_Part15.209_RSE(3m)	Engineer: Bacon Dong
Probe: VULB 9168 _20-2000MHz	Polarity: Vertical
EUT: Remote Control	Power: By Battery
Worse Case Mode: Transmit by BLE at channel 2402MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	40.185	23.837	10.015	-16.163	40.000	13.822	QP
2			47.460	17.480	2.598	-22.520	40.000	14.882	QP
3			53.180	19.379	4.596	-20.621	40.000	14.783	QP
4			105.660	14.969	2.016	-28.531	43.500	12.953	QP
5			203.630	12.237	0.096	-31.263	43.500	12.141	QP
6			282.680	14.157	0.165	-31.843	46.000	13.993	QP

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

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

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear 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 - 156.525	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		
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 - 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 = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

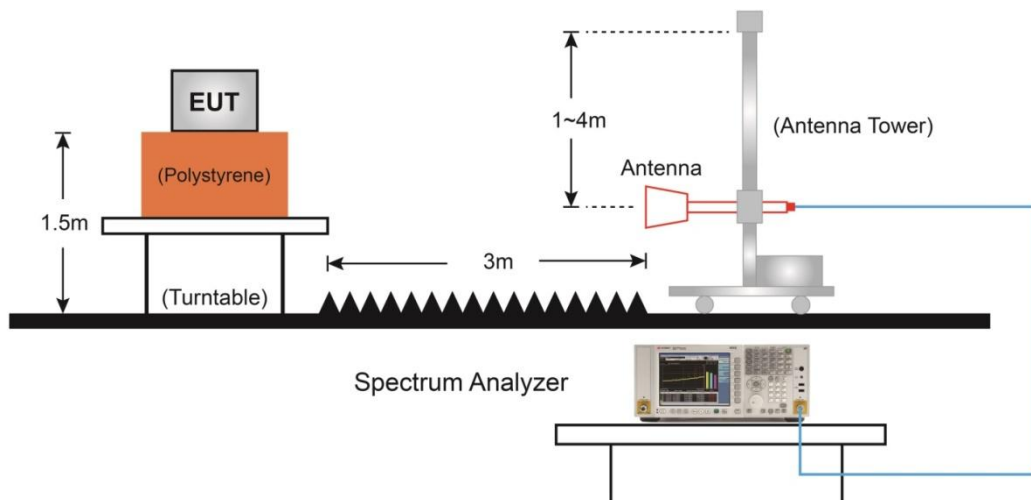
Average Field Strength Measurements

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

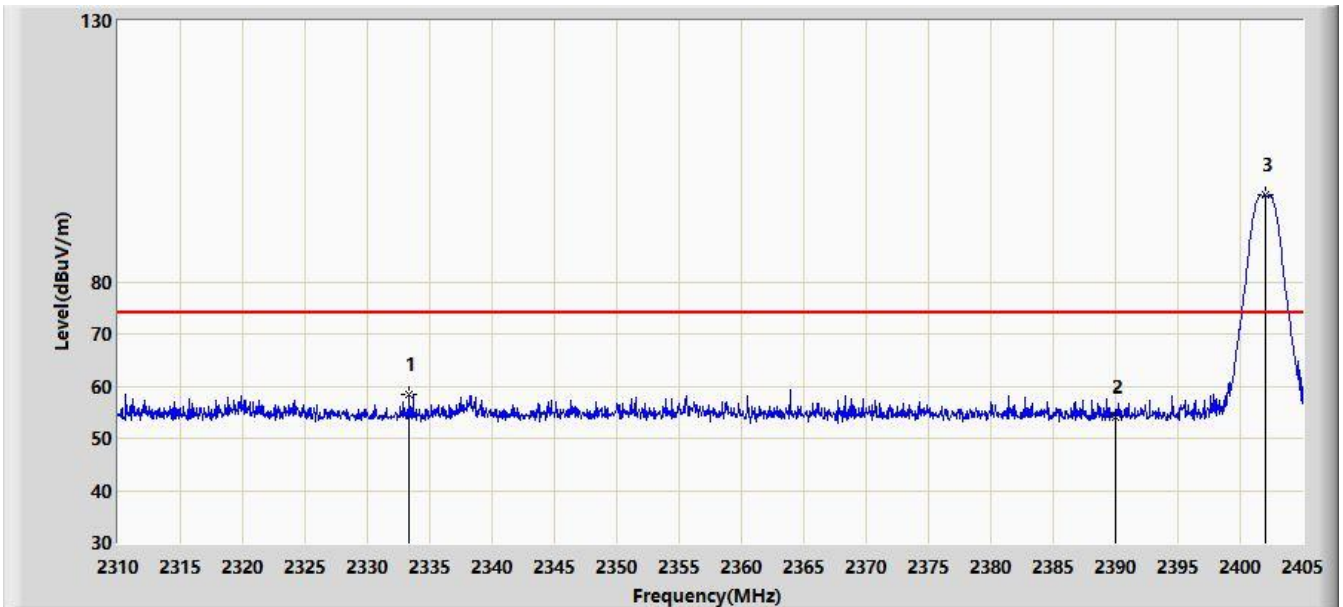
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

7.7.4. Test Setup



7.7.5.Test Result

Site: AC1	Time: 2019/07/14 - 10:58
Limit: FCC_Part15.209_RE(3m)	Engineer: Bacon Dong
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Remote Control	Power: By Battery
Test Mode: Transmit by BLE at channel 2402MHz	

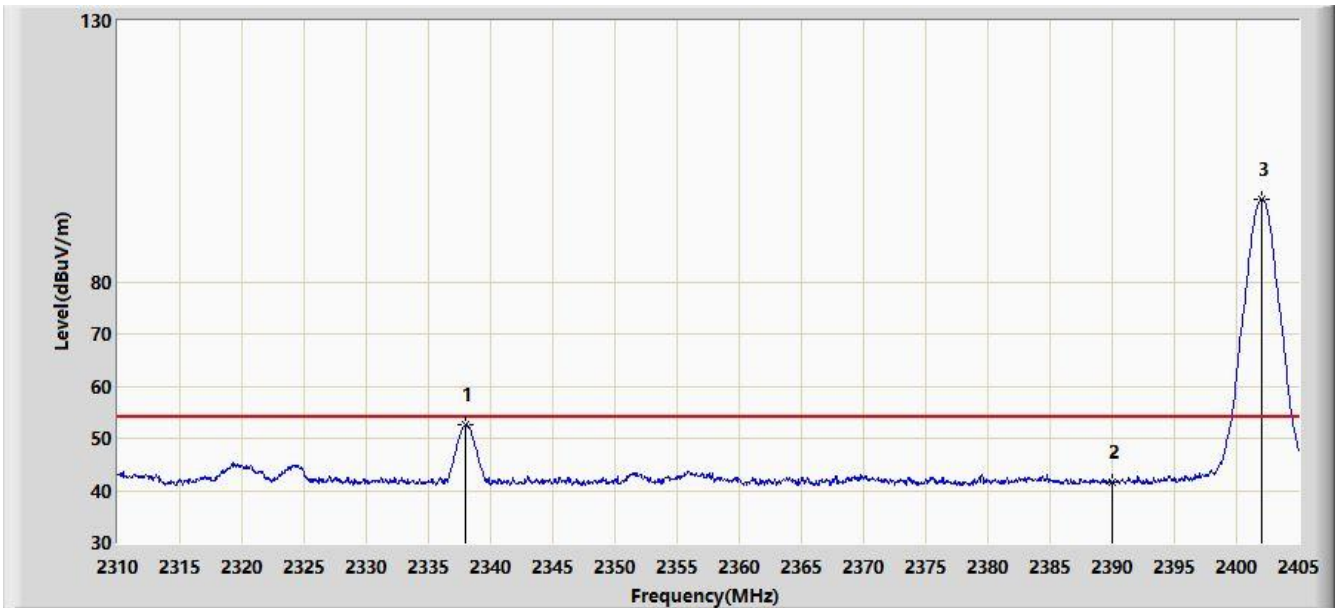


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2333.370	58.419	25.841	-15.581	74.000	32.578	PK
2			2390.000	53.941	21.528	-20.059	74.000	32.413	PK
3		*	2402.008	96.523	64.127	N/A	N/A	32.396	PK

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

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

Site: AC1	Time: 2019/07/14 - 11:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Bacon Dong
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Remote Control	Power: By Battery
Test Mode: Transmit by BLE at channel 2402MHz	

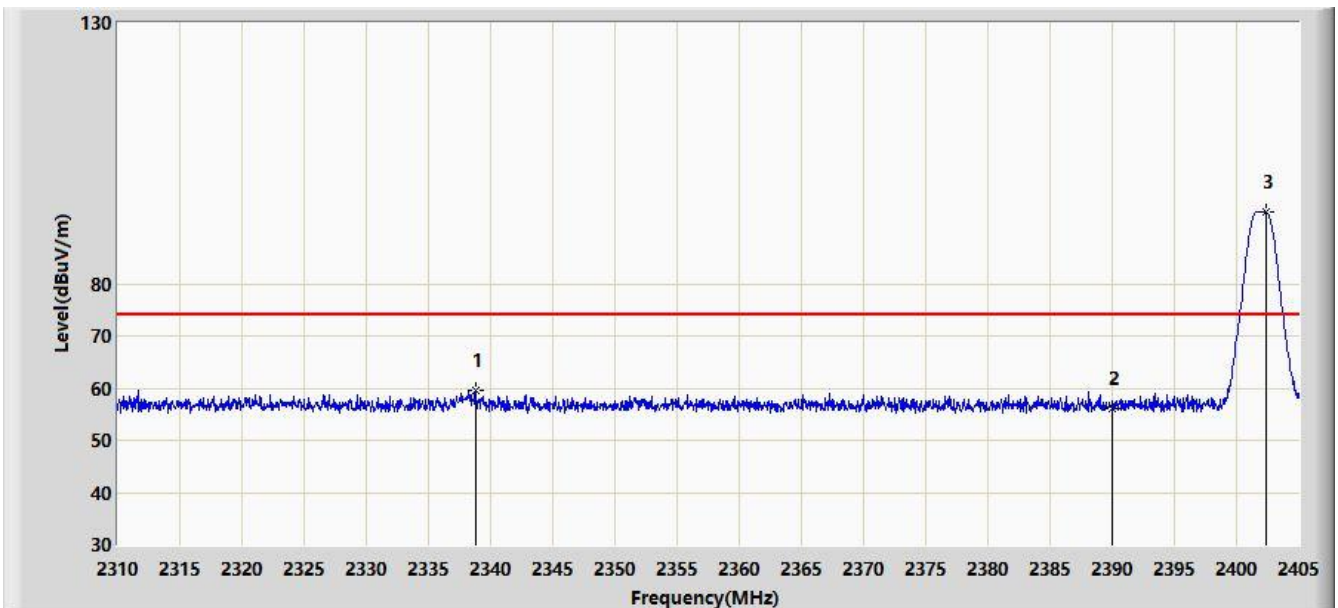


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2338.025	52.598	20.040	-1.402	54.000	32.558	AV
2			2390.000	41.460	9.047	-12.540	54.000	32.413	AV
3		*	2402.008	95.781	63.385	N/A	N/A	32.396	AV

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

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

Site: AC1	Time: 2019/07/14 - 11:20
Limit: FCC_Part15.209_RE(3m)	Engineer: Bacon Dong
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Remote Control	Power: By Battery
Test Mode: Transmit by BLE at channel 2402MHz	

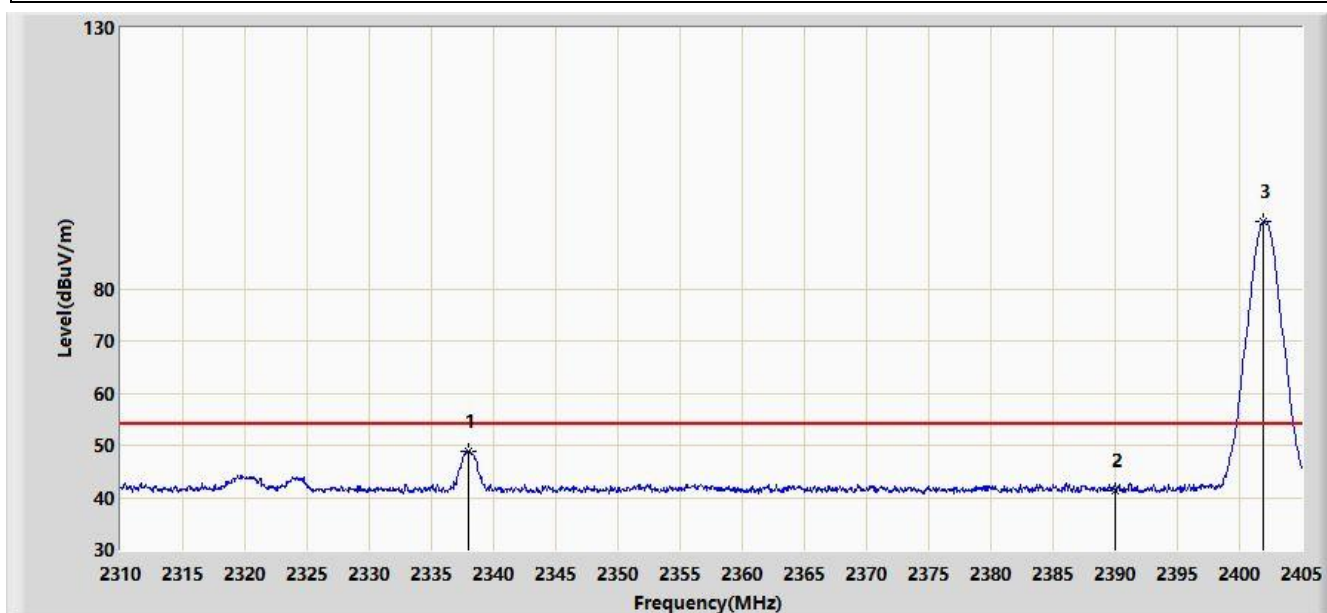


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2338.785	59.536	26.981	-14.464	74.000	32.555	PK
2			2390.000	56.033	23.620	-17.967	74.000	32.413	PK
3		*	2402.340	93.825	61.429	N/A	N/A	32.396	PK

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

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

Site: AC1	Time: 2019/07/14 - 11:21
Limit: FCC_Part15.209_RE(3m)	Engineer: Bacon Dong
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Remote Control	Power: By Battery
Test Mode: Transmit by BLE at channel 2402MHz	

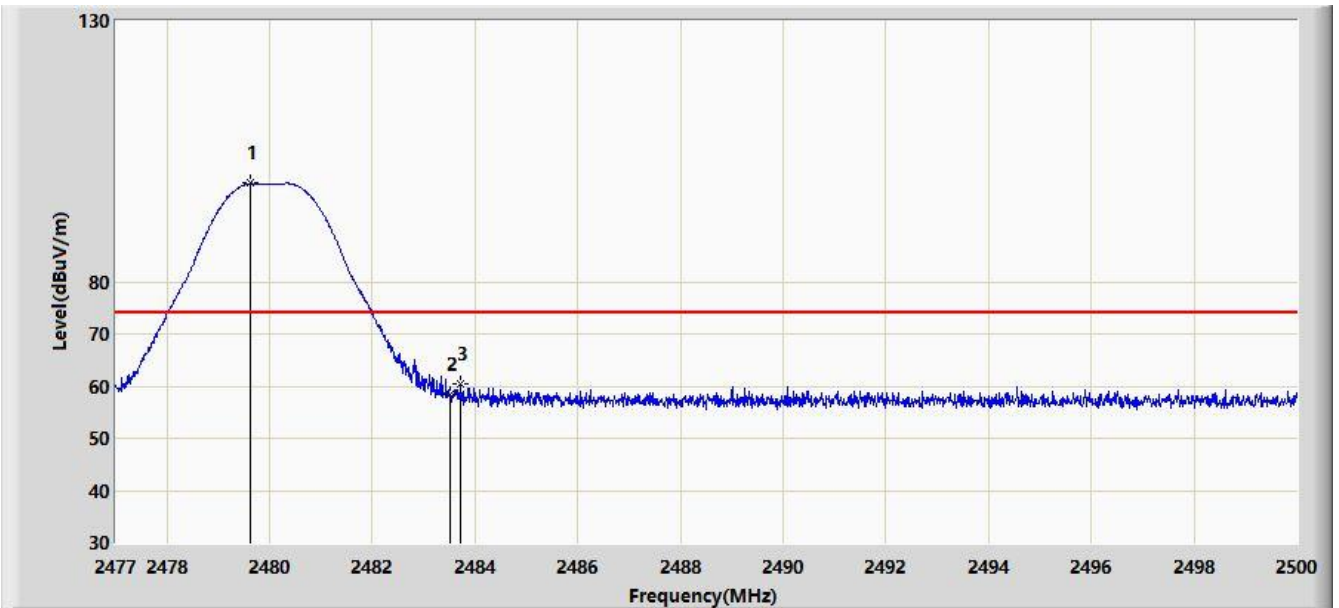


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2338.025	48.842	16.284	-5.158	54.000	32.558	AV
2			2390.000	41.324	8.911	-12.676	54.000	32.413	AV
3		*	2401.913	92.894	60.498	N/A	N/A	32.396	AV

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

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

Site: AC1	Time: 2019/07/14 - 11:22
Limit: FCC_Part15.209_RE(3m)	Engineer: Bacon Dong
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Remote Control	Power: By Battery
Test Mode: Transmit by BLE at channel 2480MHz	

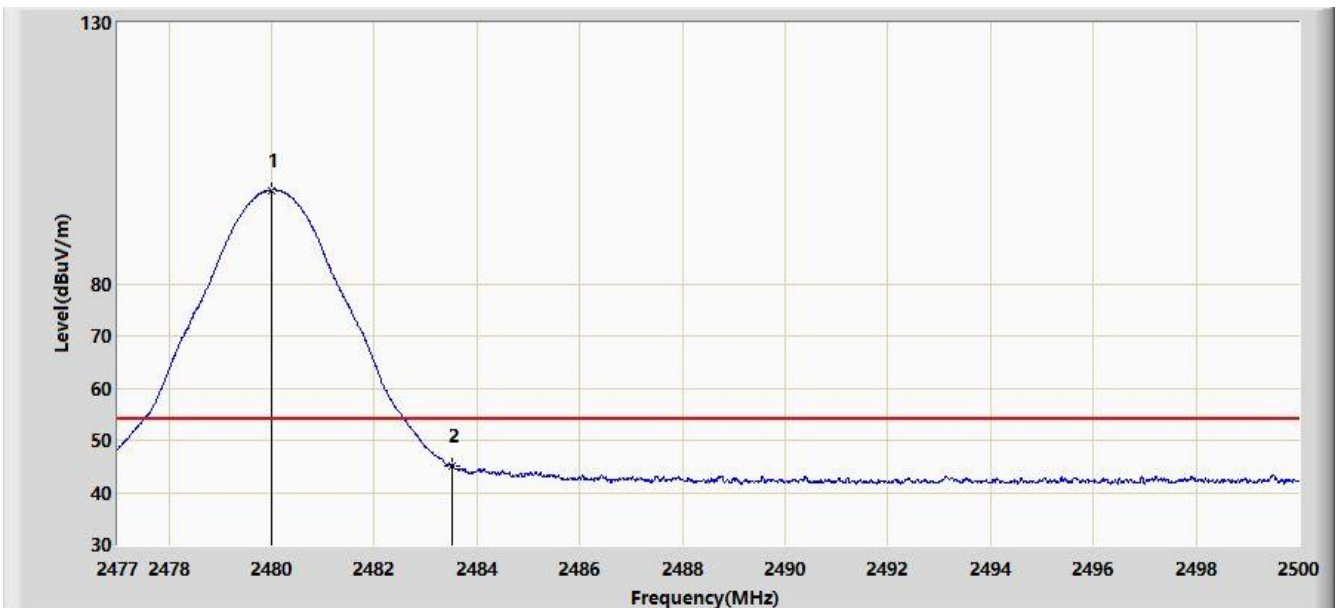


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2479.634	98.855	66.447	N/A	N/A	32.408	PK
2			2483.500	58.437	26.022	-15.563	74.000	32.416	PK
3			2483.728	60.300	27.884	-13.700	74.000	32.416	PK

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

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

Site: AC1	Time: 2019/07/14 - 11:24
Limit: FCC_Part15.209_RE(3m)	Engineer: Bacon Dong
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Remote Control	Power: By Battery
Test Mode: Transmit by BLE at channel 2480MHz	

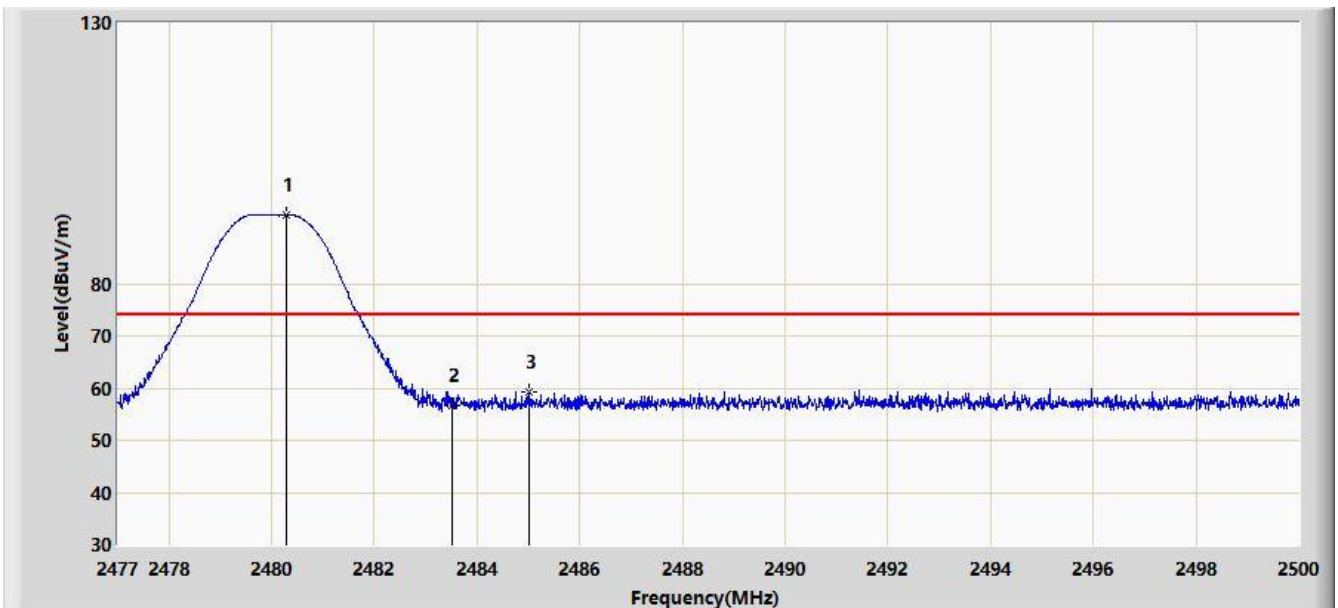


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2479.990	97.936	65.528	N/A	N/A	32.408	AV
2			2483.500	45.127	12.712	-8.873	54.000	32.416	AV

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

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

Site: AC1	Time: 2019/07/14 - 11:26
Limit: FCC_Part15.209_RE(3m)	Engineer: Bacon Dong
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Remote Control	Power: By Battery
Test Mode: Transmit by BLE at channel 2480MHz	

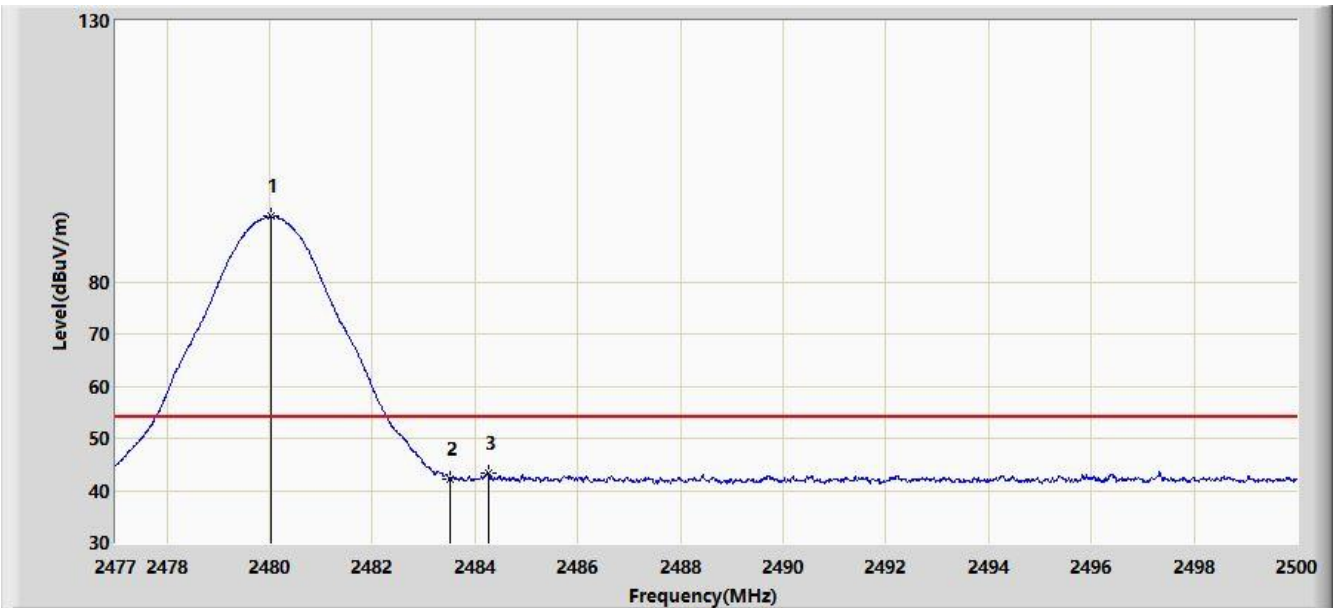


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2480.278	93.249	60.840	N/A	N/A	32.409	PK
2			2483.500	56.715	24.300	-17.285	74.000	32.416	PK
3			2485.015	59.362	26.944	-14.638	74.000	32.418	PK

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

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

Site: AC1	Time: 2019/07/14 - 11:27
Limit: FCC_Part15.209_RE(3m)	Engineer: Bacon Dong
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Remote Control	Power: By Battery
Test Mode: Transmit by BLE at channel 2480MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2480.024	92.479	60.070	N/A	N/A	32.408	AV
2			2483.500	42.227	9.812	-11.773	54.000	32.416	AV
3			2484.257	43.201	10.784	-10.799	54.000	32.417	AV

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

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

7.8. AC Conducted Emissions Measurement

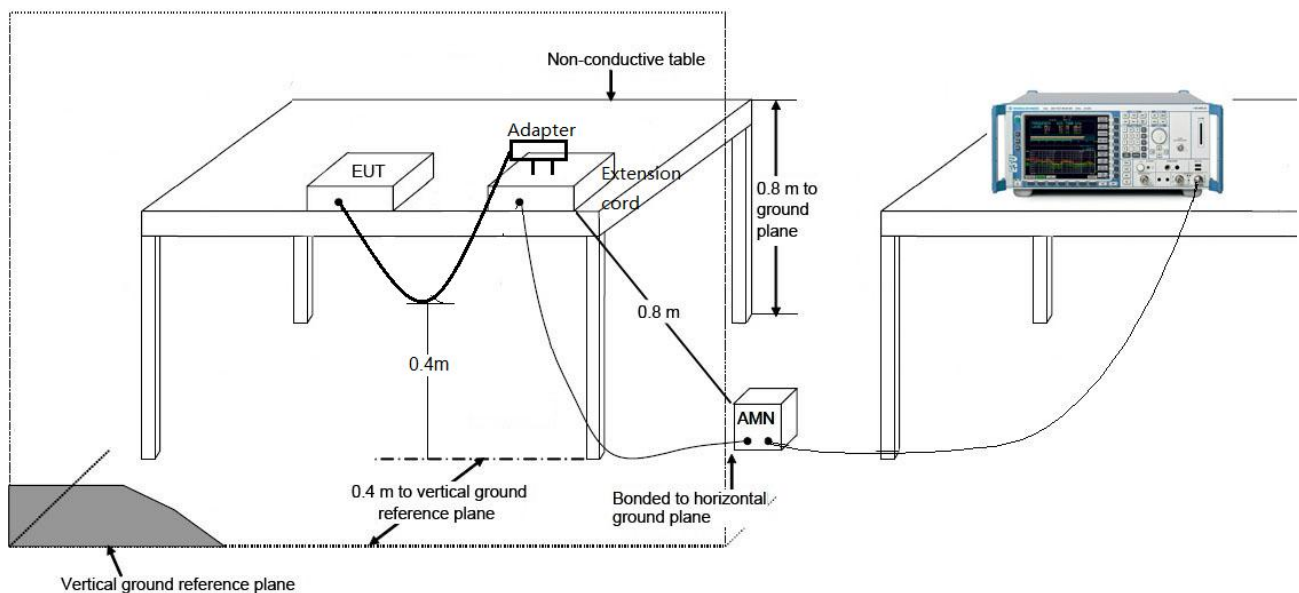
7.8.1. Test Limit

FCC 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.

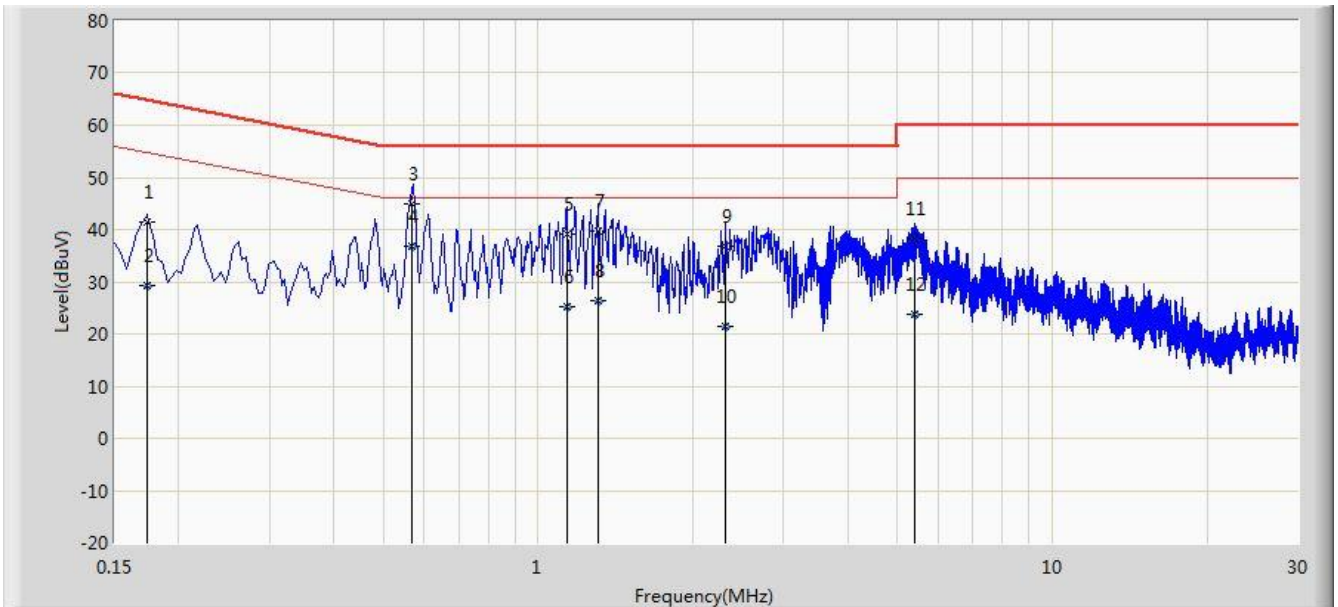
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.8.2. Test Setup



7.8.3.Test Result

Site: SR2	Time: 2019/07/15 - 14:24
Limit: FCC_Part15.207_CE_AC Power	Engineer: Liz Yuan
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: Remote Control	Power: AC 120V/60Hz
Test Mode: Transmit by BLE at channel 2480MHz	

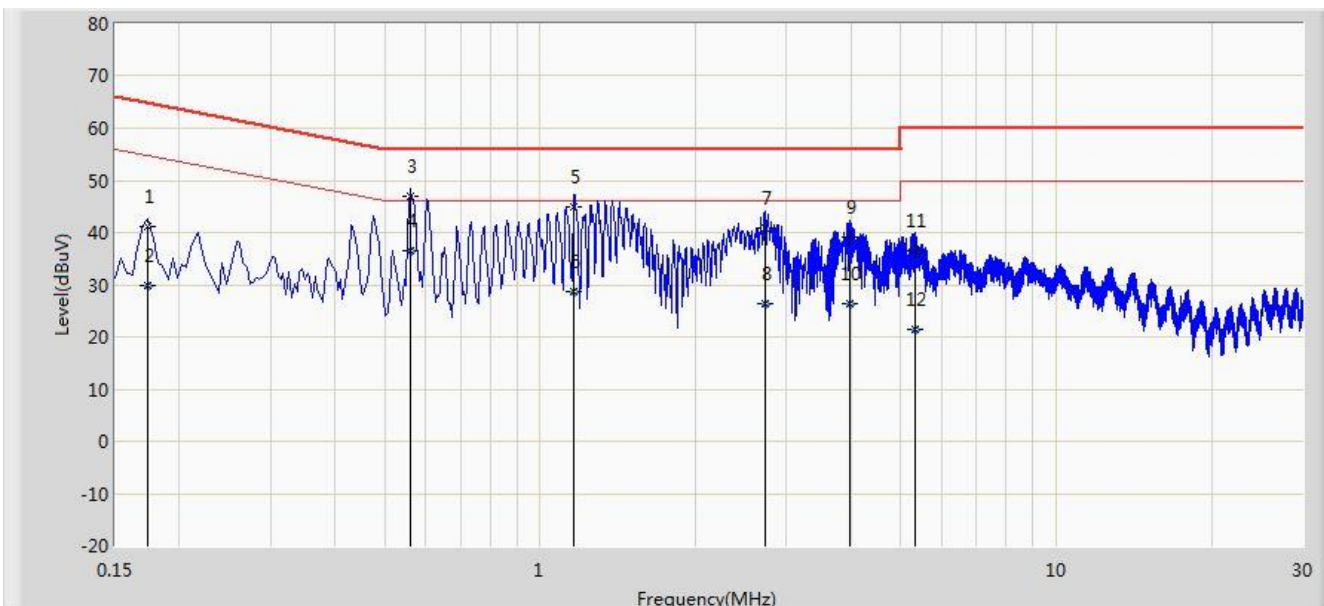


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.174	41.491	31.424	-23.276	64.767	10.068	QP
2			0.174	29.328	19.260	-25.439	54.767	10.068	AV
3			0.567	44.832	34.700	-11.168	56.000	10.132	QP
4		*	0.567	36.732	26.600	-9.268	46.000	10.132	AV
5			1.138	39.169	29.265	-16.831	56.000	9.904	QP
6			1.138	25.333	15.429	-20.667	46.000	9.904	AV
7			1.306	39.569	29.673	-16.431	56.000	9.897	QP
8			1.306	26.473	16.576	-19.527	46.000	9.897	AV
9			2.318	36.860	26.997	-19.140	56.000	9.863	QP
10			2.318	21.358	11.495	-24.642	46.000	9.863	AV
11			5.414	38.355	28.284	-21.645	60.000	10.071	QP
12			5.414	23.752	13.681	-26.248	50.000	10.071	AV

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

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

Site: SR2	Time: 2019/07/15 - 14:30
Limit: FCC_Part15.207_CE_AC Power	Engineer: Liz Yuan
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: Remote Control	Power: AC 120V/60Hz
Test Mode: Transmit by BLE at channel 2480MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.174	41.172	31.115	-23.595	64.767	10.057	QP
2			0.174	29.762	19.705	-25.005	54.767	10.057	AV
3		*	0.562	46.936	36.784	-9.064	56.000	10.152	QP
4			0.562	36.456	26.304	-9.544	46.000	10.152	AV
5			1.162	44.860	34.956	-11.140	56.000	9.904	QP
6			1.162	28.621	18.718	-17.379	46.000	9.904	AV
7			2.722	40.877	31.023	-15.123	56.000	9.854	QP
8			2.722	26.518	16.663	-19.482	46.000	9.854	AV
9			3.970	38.999	29.030	-17.001	56.000	9.969	QP
10			3.970	26.375	16.406	-19.625	46.000	9.969	AV
11			5.310	36.595	26.531	-23.405	60.000	10.065	QP
12			5.310	21.391	11.327	-28.609	50.000	10.065	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 unit is in compliance with Part 15C of the FCC Rules.

The End

Appendix A - Test Setup Photograph

Refer to “1907RSU019-UT” file.

Appendix B - EUT Photograph

Refer to "1907RSU019-UE" file.