FCC TEST REPORT

For

Mobile Phone

Model Number: HY1-5137

FCC ID: 2AFRUHY1-5137

Report Number : WT168000320

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection National Digital Electronic Product Testing Center
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Test report declaration

Applicant	:	Solnik S.A.
Address	:	Dr. Emilio Ravignani 1724 Ciudad Autonoma de Buenos Aires Zip Code 1414 Argentina
Manufacturer	:	Gionee Communication Equipment Co.,Ltd.
Address	:	21/F,Times Technology Building,No. 7028,Shennan Avenue, Futian District,Shenzhen,China
EUT Description	:	Mobile Phone
Model No	:	HY1-5137
Trade mark	:	HYUNDAI
Serial Number	:	/
FCC ID	:	2AFRUHY1-5137

Test Standards:

FCC Part 15 15.207, 15.209, 15.247(2015)

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with FCC Rules Part 15.207, 15.209 and 15.247.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Project Engineer:	(Chen Silin 陈司林)	Date:	Mar.01, 2016
Checked by:	(Lin Yixiang 林奕翔)	Date:	Mar.01, 2016
Approved by:	(Lin Bin 林斌)	Date:	Mar.01, 2016

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1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
20dB bandwidth measurement	15.247 (a) (1)	Pass
Carrier frequency separation measurement	15.247 (a) (1)	Pass
Number of hopping channel	15.247 (a) (1) III	Pass
Time of occupancy	15.247 (a) (1) III	Pass
Peak output power	15.247 (b) (1)	Pass
Band edge compliance measurement	15.247 (d)	Pass
Radiated spurious emission & Radiated restricted band measurement	15.247 (d) / 15.205 & 15.209	Pass
Conducted emission test for power port	15.207	Pass

Remark: “N/A” means “Not applicable.”

2. GENERAL INFORMATION

2.1. Report information

2.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

2.1.2. The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at Bldg. of Metrology & Quality Inspection, Longzhu Road, Nanshan District, Shenzhen, Guangdong, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.
The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number are 446246 806614 994606(semi anechoic chamber).

The Laboratory is listed in Voluntary Control Council for Interference by Information Technology Equipment (VCCI), and the registration number are R-1974(open area test site) , R-1966(semi anechoic chamber),C-2117(mains ports conducted interference measurement) and T-180(telecommunication ports conducted interference measurement).

The Laboratory is registered to perform emission tests with Industry Canada (IC), and the registration number is 11177A-1 11177A-2.

TUV Rhineland accredits the Laboratory for conformance to IEC and EN standards, the registration number is E2024086Z02.

2.3. Measurement Uncertainty

For a 95% confidence level (k = 2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Conducted Emission

9kHz~30MHz 3.5dB

Radiated Emission

30MHz~1000MHz 4.5dB

1GHz~26.5GHz 4.6dB

3. PRODUCT DESCRIPTION

3.1. EUT Description

Description	:	Mobile Phone
Manufacturer	:	Gionee Communication Equipment Co.,Ltd.
Model Number	:	HY1-5137
Operate Frequency	:	2.402GHz~2.480GHz
Antenna Designation	:	WLAN/BT: PIFA Antenna 0.6dBi

Remark: /

3.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **2AFRUHY1-5137**, filing to comply with Section 15.207，15.209，15.247 of the FCC Part 15, Subpart C Rules.

3.3. Block Diagram of EUT Configuration

Figure 1 EUT setup

3.4. Operating Condition of EUT

The transmitter has a maximum peak conducted output power of Basic rate GFSK modulation and EDR mode 8DPSK modulation. Tests were performed with Basic rate GFSK modulation and EDR mode 8DPSK modulation.

3.5. Support Equipment List

Table 2 Support Equipment List

Name	Model No	S/N	Manufacturer
Adaptor for EUT	DDC-0001	--	Gionee Communication Equipment Co.,Ltd.

3.6. Test Conditions

Date of test：Jan.20,2016- Mar.01, 2016
Date of EUT Receive：Jan.20,2016
Temperature: -30-50 ℃
Relative Humidity: 36-48%

3.7. Special Accessories

Not available for this EUT intended for grant.

3.8. Equipment Modifications

Not available for this EUT intended for grant.

4. TEST EQUIPMENT USED

Table 3 Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB3319	EMI Test Receiver	Rohde & Schwarz	ESCS30	Dec.11, 2015	1 Year
SB3321	AMN	Rohde & Schwarz	ENV216	Sep.25, 2015	1 Year
SB3996	AMN	Rohde & Schwarz	ESH3-Z5	Nov.5, 2015	1 Year
SB8501/09	EMI Test Receiver	Rohde & Schwarz	ESU40	Mar.24, 2015	1 Year
SB8501/04	Bilog Antenna	Schwarzbeck	VULB9163	Mar.23, 2015	1 Year
SB8501/01	Horn Antenna	Rohde & Schwarz	HF906	Mar.23, 2015	1 Year
SB8501/11	Horn Antenna	Rohde & Schwarz	3160-09	Mar.28, 2014	3 Year
SB3450/01	3m Semi-anechoic chamber	Albatross Projects	9X6X6	Oct.09, 2014	2 Years
SB3345	Loop Antenna	Schwarzbeck	FMZB1516	Jan.07, 2016	2 Years
SB9721/02	Signal Analyzer	Agilent	N9020A	Dec.28, 2015	1 Year
SB8501/17	Preamplifier	Rohde & Schwarz	SCU-18	Mar.23, 2015	1 Year
SB8501/16	Preamplifier	Rohde & Schwarz	SCU-26	Mar.23, 2015	1 Year

5. CONDUCTED DISTURBANCE TEST

5.1. Test Standard and Limit

5.1.1. Test Standard

FCC Part 15 15.207

5.1.2. Test Limit

Table 4 Conducted Disturbance Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

* Decreasing linearly with logarithm of the frequency
* The lower limit shall apply at the transition frequency.

5.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.4-2003.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.
The bandwidth of EMI test receiver is set at 9kHz.

5.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

5.4. Test Data

The emissions don't show in below are too low against the limits. Refer to the test curves.

Table 5 Conducted Disturbance Test Data

Model No.: HY1-5137

Test mode: Charging and transmitter

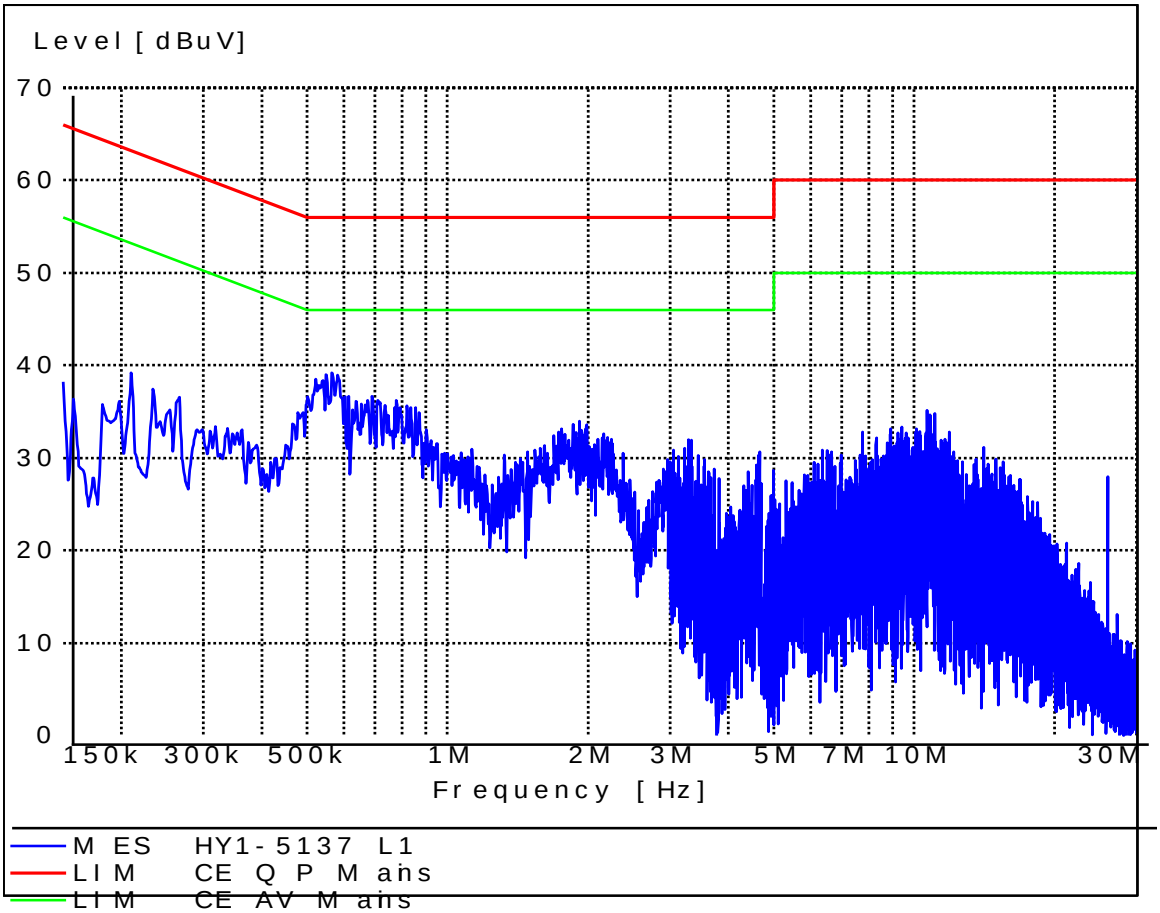
	Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
			Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
Line	0.162	9.7	27.5	37.2	63.4	18.9	28.6	53.4
	0.218	9.8	26.7	36.5	56	19.5	29.3	46
	0.238	9.9	20.7	30.6	60	15.5	25.4	50
Neutral	0.3	9.7	24.6	34.3	60.2	16.4	26.1	50.2
	0.523	9.8	23.9	33.7	56	14.7	24.5	46
	9.531	10.0	18.1	28.1	60	10.3	20.3	50

REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)

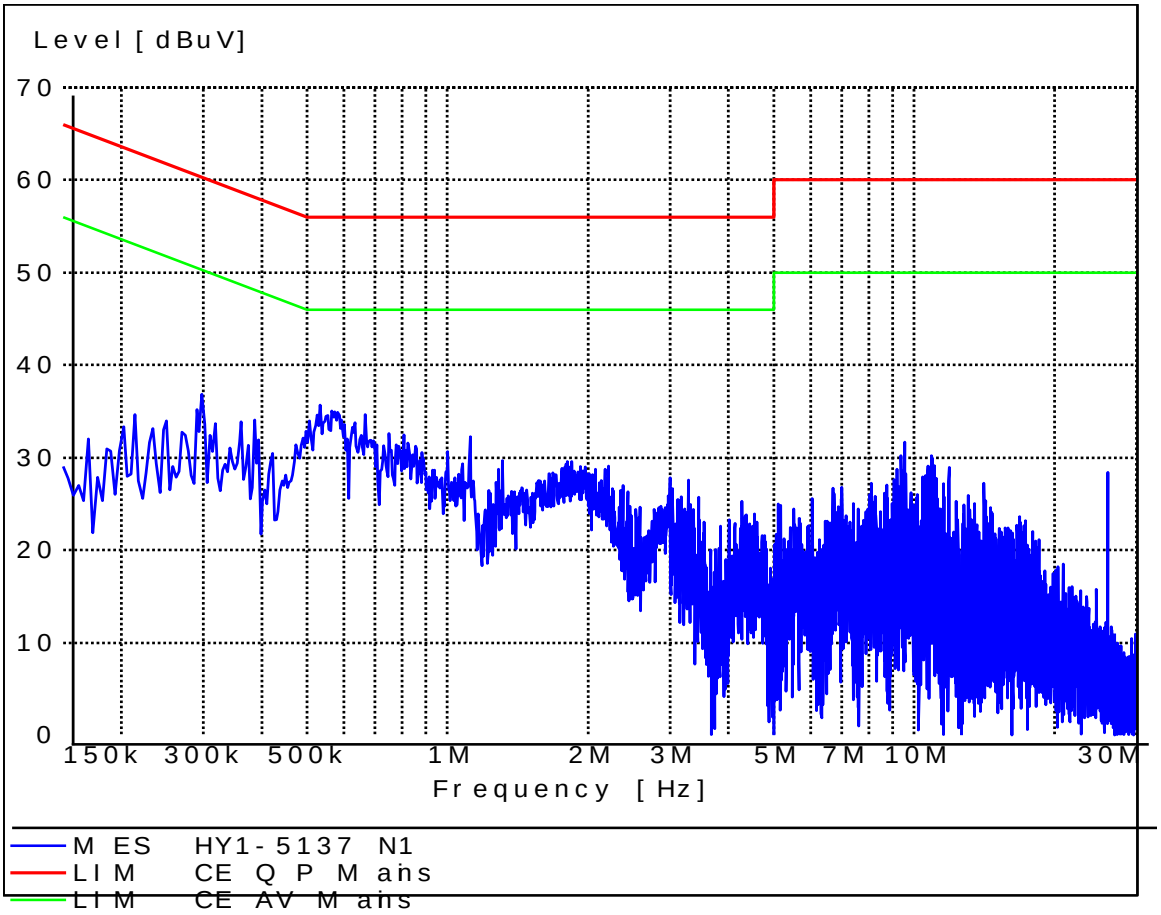
2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)

3. The other emission levels were very low against the limit.

EUT: HY1-5137
Manufacturer:
Operating Condition: Charging and transmitter
Test Site:
Operator:
Test Specification: L
Comment: AC 120V/60Hz



EUT: HY1-5137
Manufacturer:
Operating Condition: Charging and transmitter
Test Site:
Operator:
Test Specification: N
Comment: AC 120V/60Hz



6. RADIATED DISTURBANCE TEST

6.1.Test Standard and Limit

6.1.1.Test Standard

FCC Part 15 15.209

6.1.2.Test Limit

Table 6 Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Table 7 Radiation Disturbance Test Limit for FCC (Class B)(Above 1G)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	PEAK	AVERAGE
Above 1000	74	54

* The lower limit shall apply at the transition frequency.
* The test distance is 3m.

6.2.Test Procedure

The EUT is placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. In order to find out the max emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.4-2003.

Radiated measurements were performed on the frequency range from 30MHz to 25GHz. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz , VBW≥ RBW. All readings above 1 GHz are AV and PK values。RBW=1MHz and VBW=10Hz for AV value , RBW=1MHz and VBW≥ RBW for peak value. Measurements were made at 3 meters

6.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

6.4. Test Data

The emissions don't show in following result tables are more than 20dB below the limits.
Bluetooth basic rate and Bluetooth EDR mode were tested, below only shows worst case result of Bluetooth basic rate.
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

Table 8 General Radiated Emission Data

Model No.: HY1-5137 Test mode: Channel B						
Below 1GHz						
Frequency MHz	Emission (dBuV/m)	Read Value (dBuV)	Correction Factor (dB/m)	Polarization	Limits (dBuV/m)	Note
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
Above 1GHz						

Frequency MHz	Emission (dBuV/m)	Read Value (dBuV)	Correction Factor (dB/m)	Polarization	Limits (dBuV/m)	Note
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--

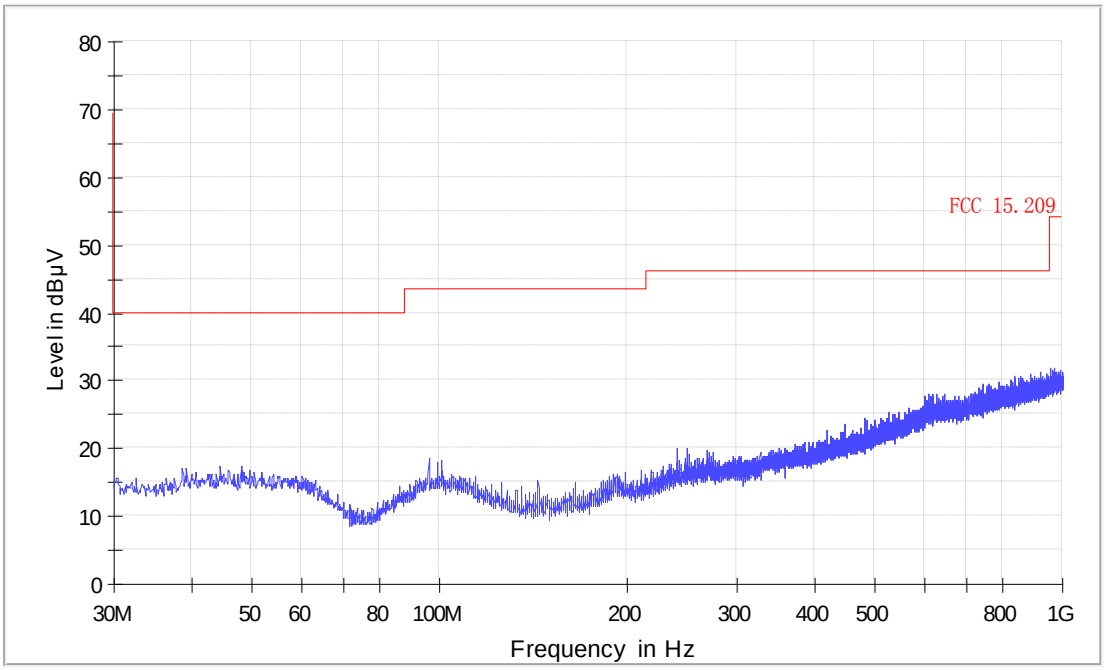
REMARKS: 1. Emission level(dBuV/m)=Read Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)

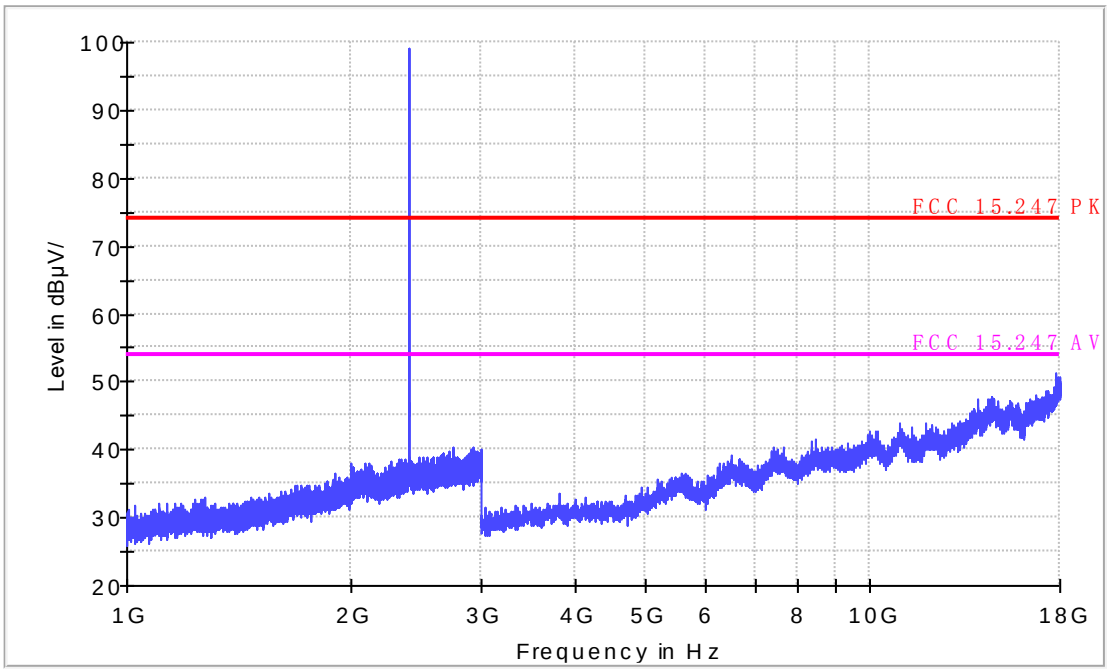
3. The other emission levels were very low against the limit.

Horizontal

Electric Field Strength 30M-1GHz

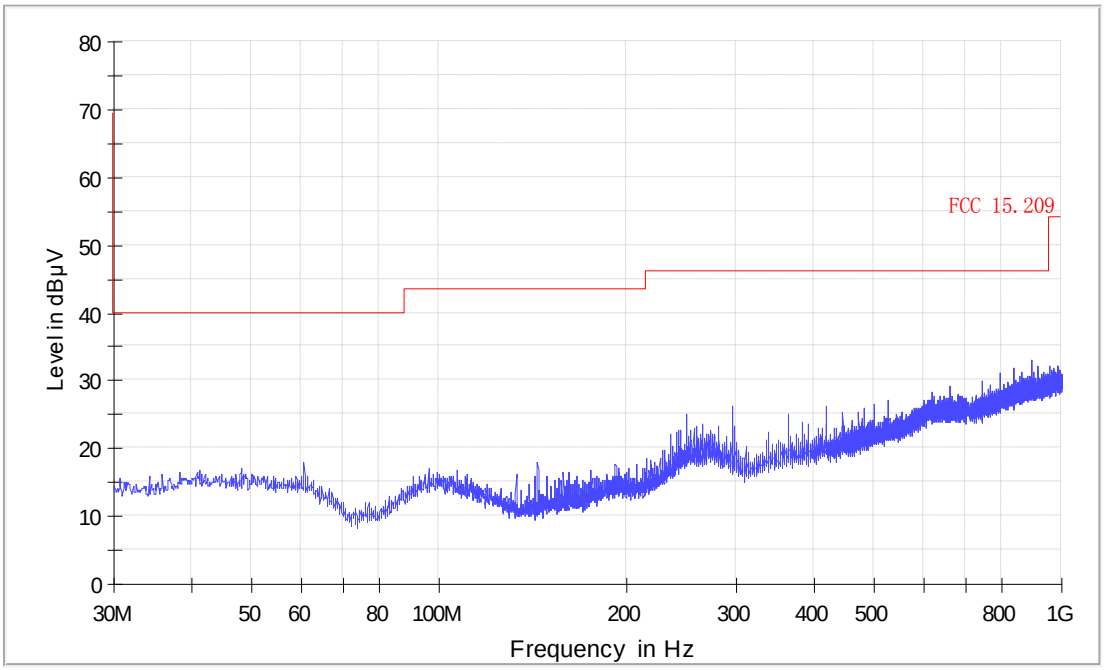


FCC Electric Field Strength 1-18GHz operate on 2.4GHz

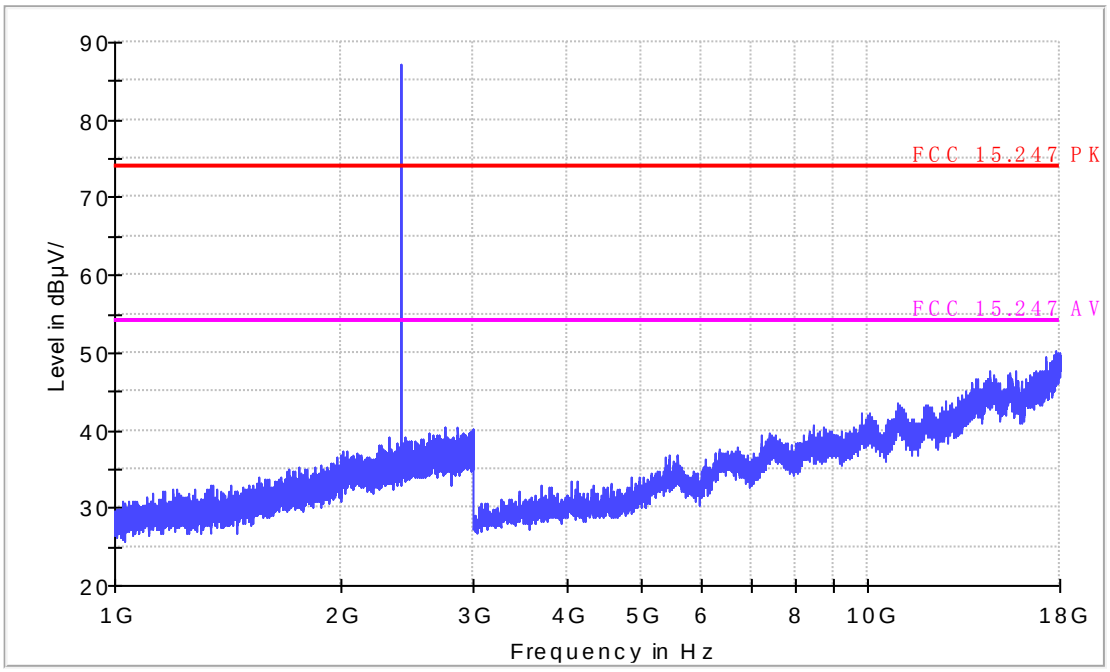


Vertical

Electric Field Strength 30M-1GHz



FCC Electric Field Strength 1-18GHz operate on 2.4GHz



Model No.: HY1-5137 Test mode: Channel M						
Below 1GHz						
Frequency MHz	Emission (dBuV/m)	Read Value (dBuV)	Correction Factor (dB/m)	Polarization	Limits (dBuV/m)	Note
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
Above 1GHz						

Frequency MHz	Emission (dBuV/m)	Read Value (dBuV)	Correction Factor (dB/m)	Polarization	Limits (dBuV/m)	Note
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--

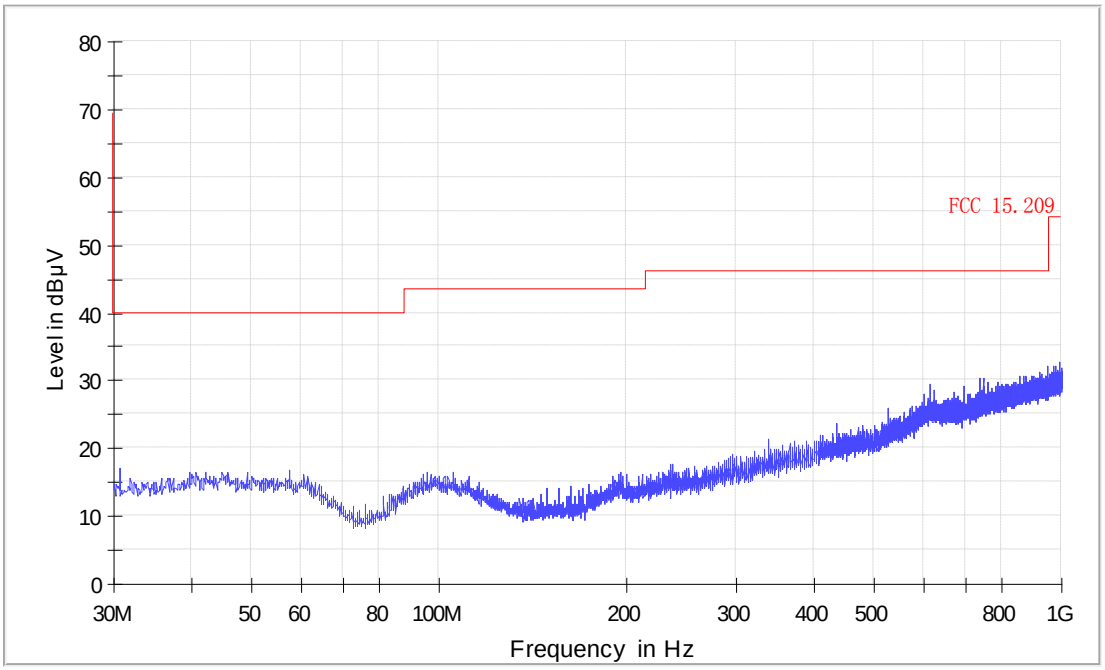
REMARKS: 1. Emission level(dBuV/m)=Read Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)

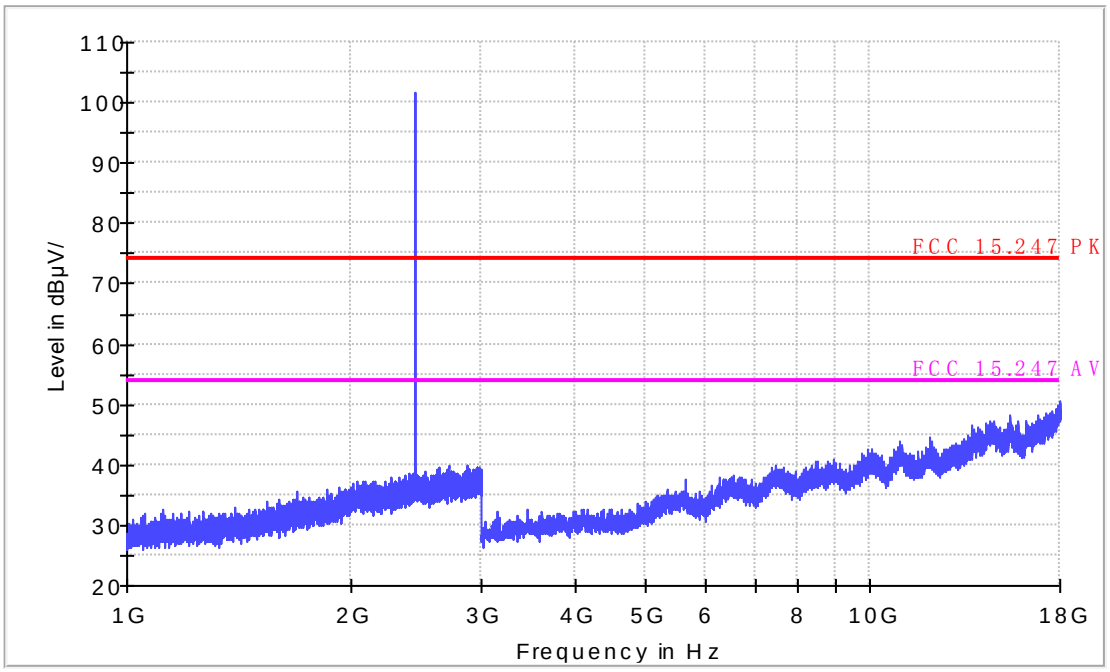
3. The other emission levels were very low against the limit.

Horizontal

Electric Field Strength 30M-1GHz

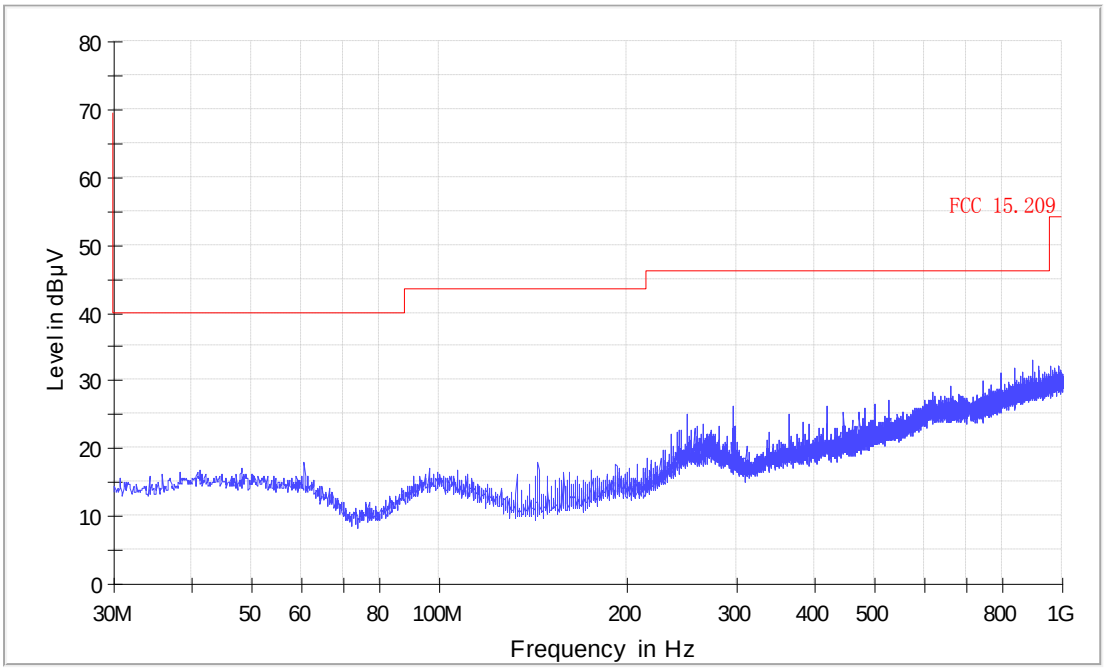


FCC Electric Field Strength 1-18GHz operate on 2.4GHz

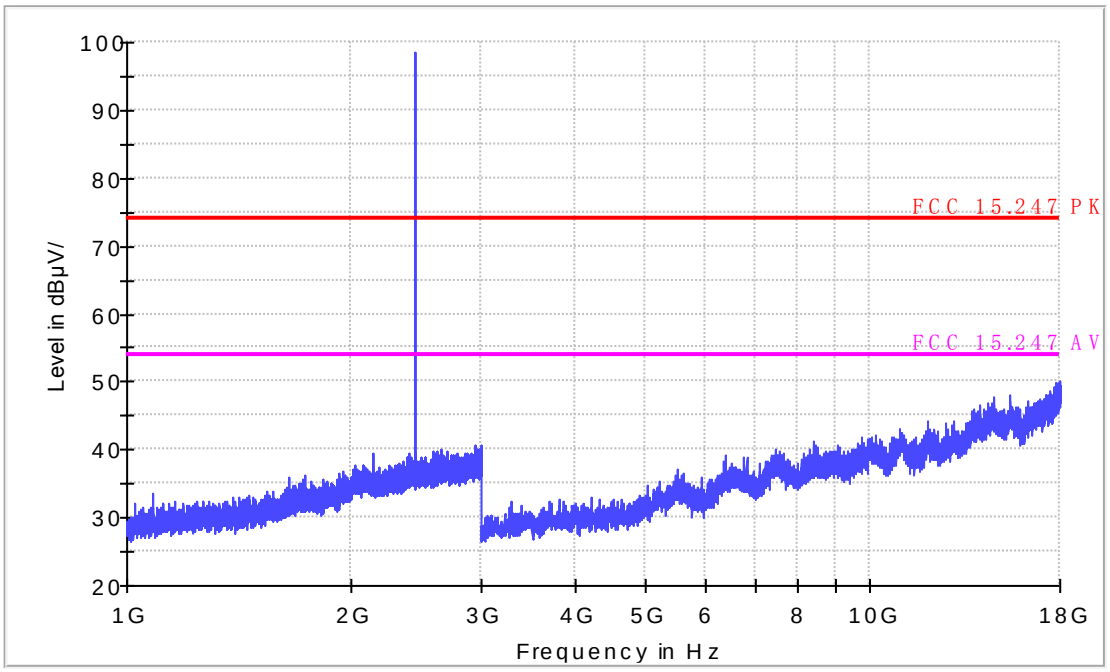


Vertical

Electric Field Strength 30M-1GHz



FCC Electric Field Strength 1-18GHz operate on 2.4GHz



Model No.: HY1-5137 Test mode: Channel T						
Below 1GHz						
Frequency MHz	Emission (dBuV/m)	Read Value (dBuV)	Correction Factor (dB/m)	Polarization	Limits (dBuV/m)	Note
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
Above 1GHz						

Frequency MHz	Emission (dBuV/m)	Read Value (dBuV)	Correction Factor (dB/m)	Polarization	Limits (dBuV/m)	Note
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--

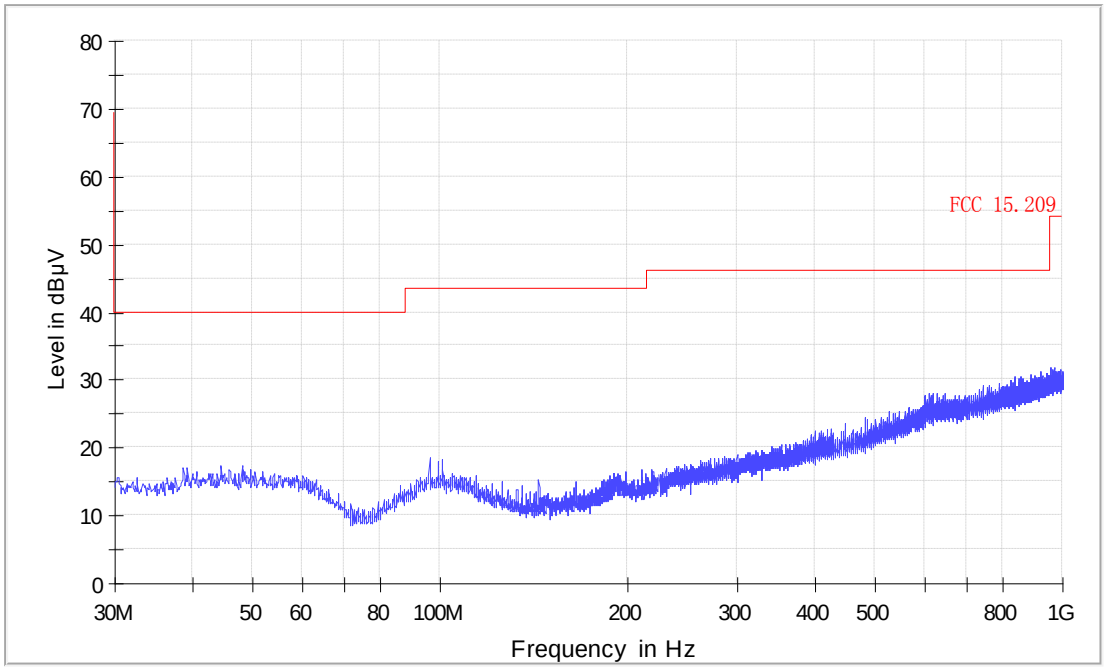
REMARKS: 1. Emission level(dBuV/m)=Read Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)

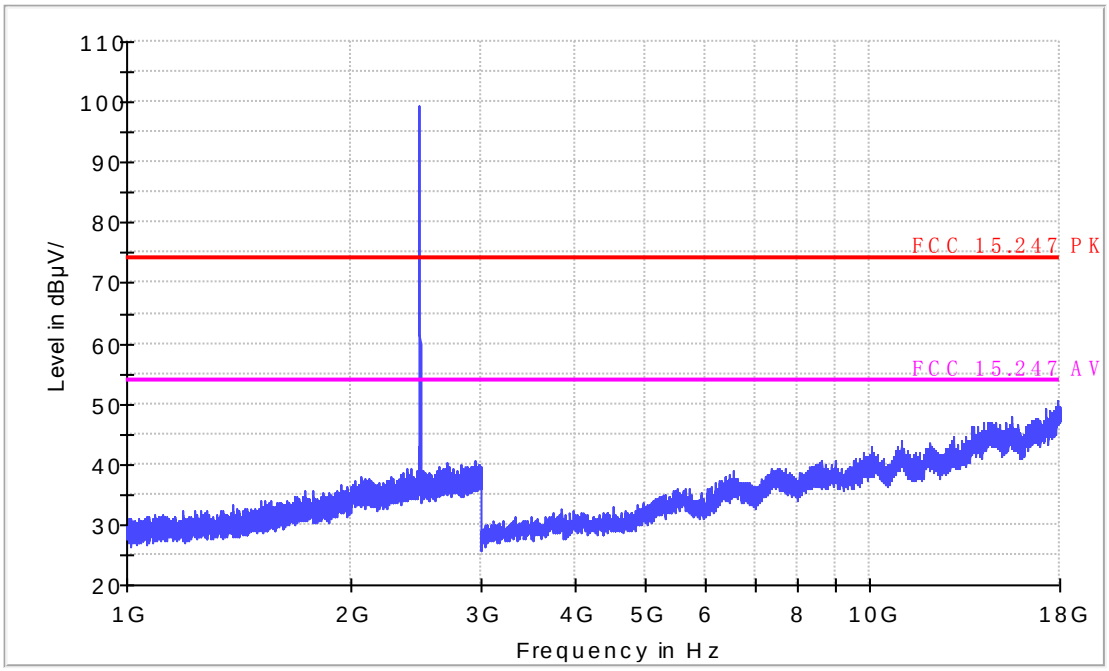
3. The other emission levels were very low against the limit.

Horizontal

Electric Field Strength 30M-1GHz

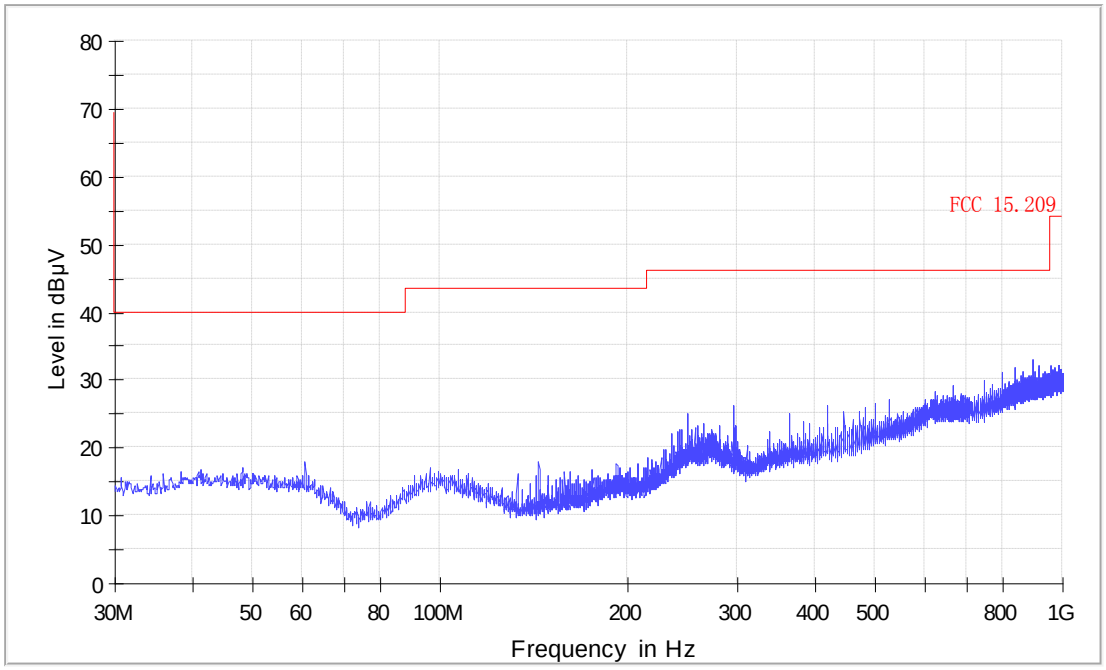


FCC Electric Field Strength 1-18GHz operate on 2.4GHz

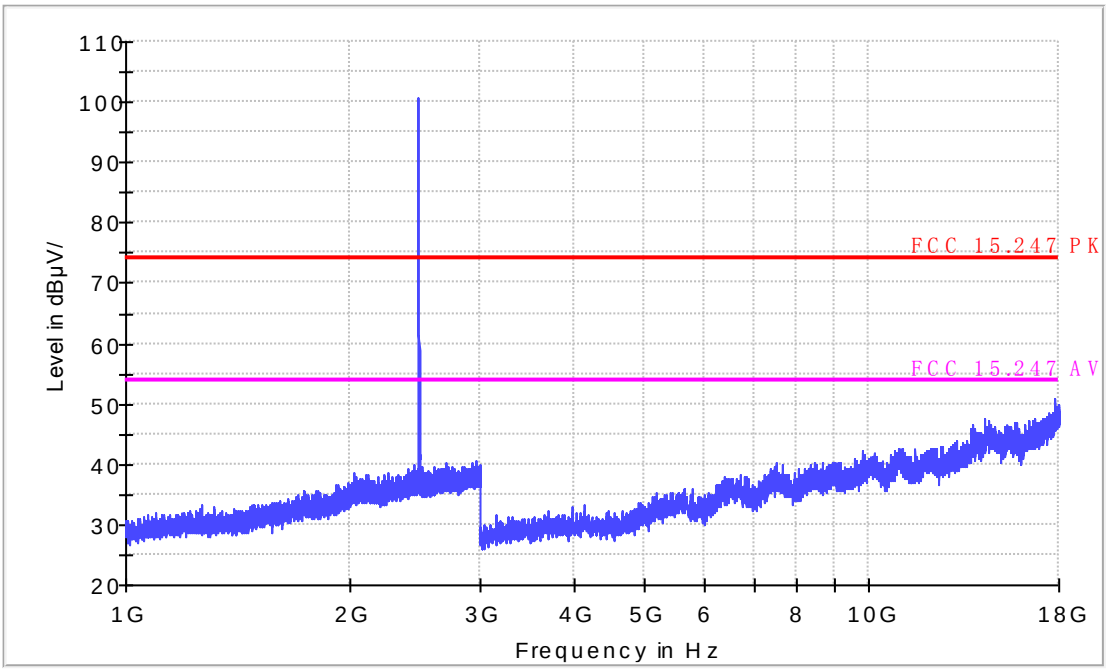


Vertical

Electric Field Strength 30M-1GHz



FCC Electric Field Strength 1-18GHz operate on 2.4GHz



18-26.5GHz

No Peak found in pre-scan, only worst case result is listed in this report.

FCC Electric Field Strength 18-26.5GHz

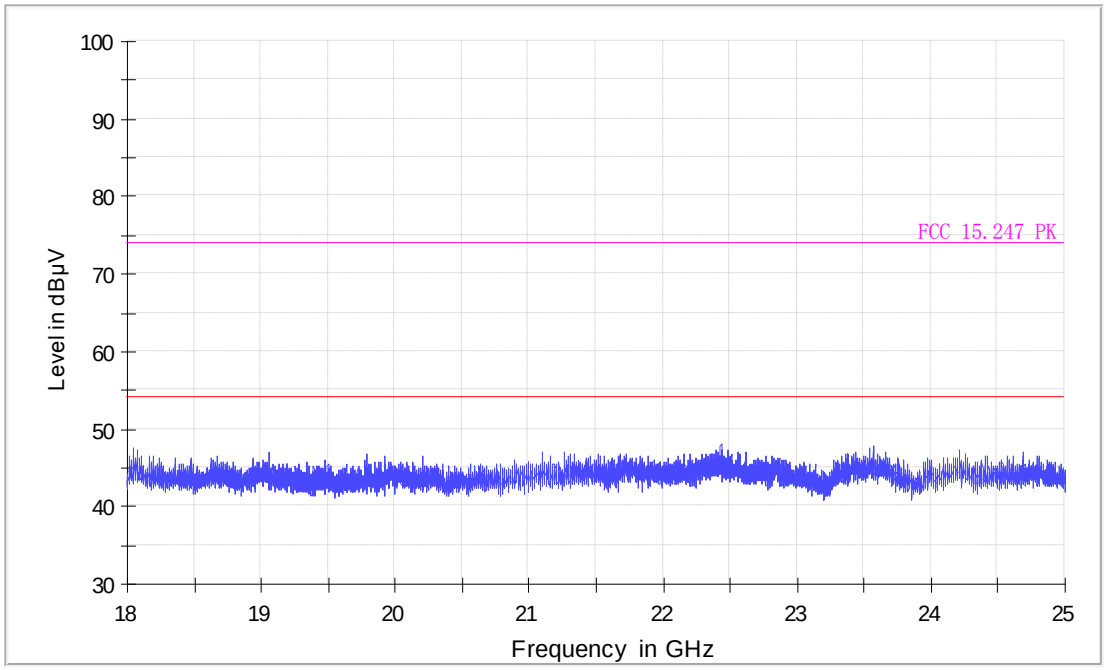


Table 9 Restricted Band Radiated Emission Data

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
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	
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	
6.31175 - 6.31225	123 - 138	2200 - 2300	
8.291 - 8.294	149.9 - 150.05	2310 - 2390	
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	
12.29 - 12.293	167.72 - 173.2	3332 - 3339	
12.51975 - 12.52025	240 - 285	3345.8 - 3358	
12.57675 - 12.57725	322 - 335.4	3600 - 4400	
13.36 - 13.41			

Except as shown in table 9 to table 15, all other emission of the above band were less than the limit 20dB.

7. 20DB BANDWIDTH MEASUREMENT

7.1. LIMITS OF 20dB BANDWIDTH MEASUREMENT

CFR 47 (FCC) part 15.247 (a) (1) and DA 00-705

7.2. TEST PROCEDURE

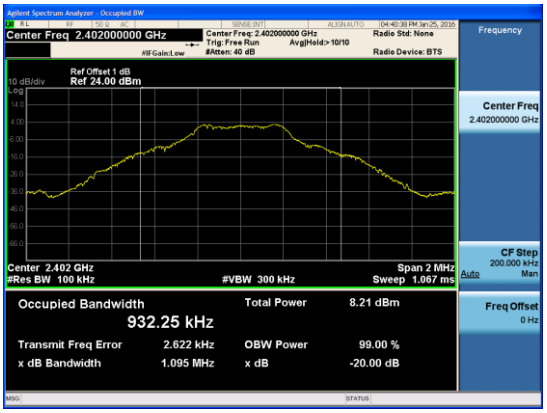
The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and VBW≥ RBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

7.3. TEST SETUP

7.4. Test Data

Table 10 20dB Bandwidth Test Data Modulation: GFSK

CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)	results
2402	1.095	Pass
2441	1.084	Pass
2480	1.105	Pass



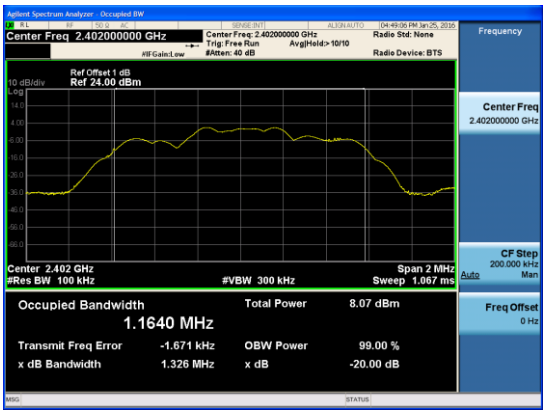
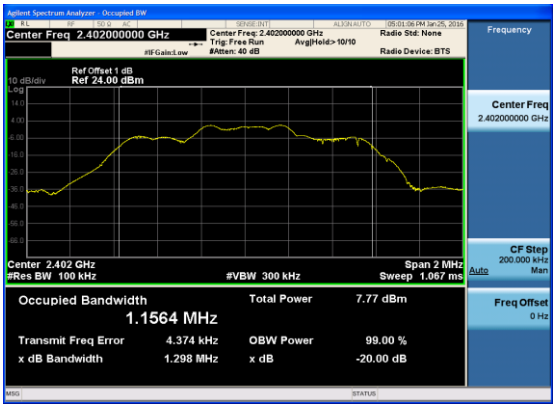
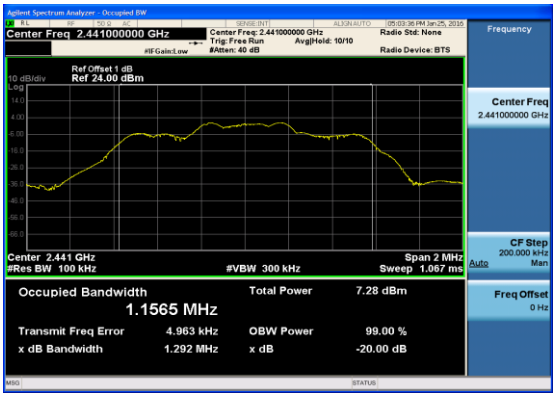
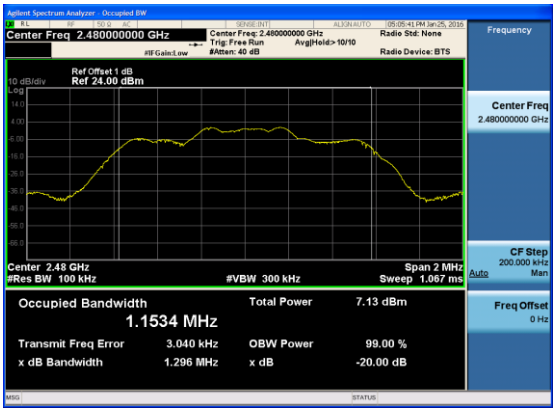


Table 11 20dB Bandwidth Test Data Modulation: 8DPSK

CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)	results
2402	1.298	Pass
2441	1.292	Pass
2480	1.296	Pass







8. CARRIER FREQUENCY SEPARATION MEASUREMENT

8.1. LIMITS OF Carrier frequency separation measurement

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency
hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

8.2. TEST PROCEDURES

(a) Connect test port of Mobile Phone to spectrum analyzer and universal communication tester.
(b) Set the Mobile Phone to transmit maximum output power at 2.4GHz and switch off frequency
hopping function, then set the measured frequency number to two adjacent channels separately and
test the carrier frequency separation with spectrum analyzer.

8.3. TEST SETUP

8.4. Test Data

Basic Rate

Frequency [GHz]	Frequency [GHz]	frequency separation [MHz]	Limit [MHz]	Result
2.403	2.404	1.023	0.737	Pass
2.441	2.442	1.155	0.737	Pass
2.478	2.479	1.002	0.737	Pass

EDR

Frequency	Frequency	frequency	Limit	Result
[GHz]	[GHz]	separation		
		[MHz]	[MHz]	
2.403	2.404	1.022	0.866	Pass
2.441	2.442	1.311	0.866	Pass
2.478	2.479	1.010	0.866	Pass

9. NUMBER OF HOPPING CHANNEL

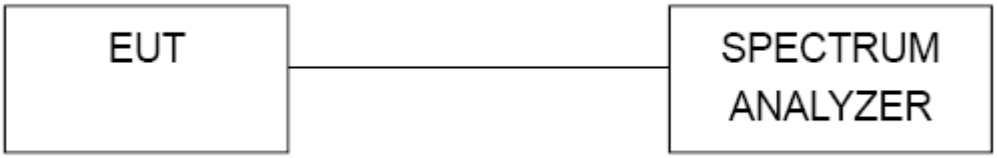
9.1. LIMITS OF 9. NUMBER OF HOPPING CHANNEL

Number of hopping channel should be compliance with the requirements in part15.247 (a) (1) iii.

9.2. TEST PROCEDURE

(a) Connect test port of Mobile Phone to spectrum analyzer and universal communication tester.
(b) Set the Mobile Phone to transmit maximum output power at 2.4GHz and switch on frequency
hopping function, then set enough count time (larger than 5000 times) to get all the hopping frequency
channel displayed on the screen of spectrum analyzer.
(c) Count the quantity of peaks to get the number of hopping channels.

9.3. TEST SETUP

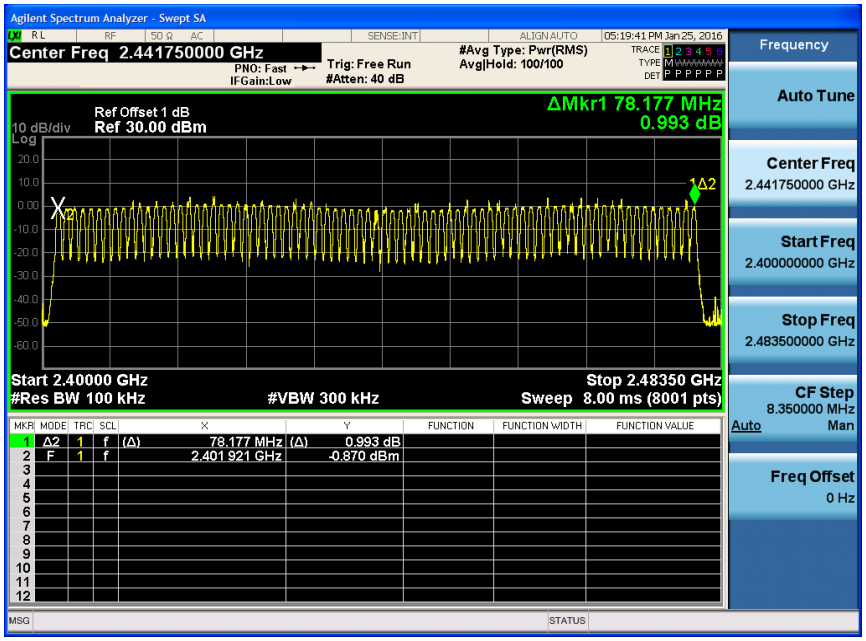


9.4. Test Data

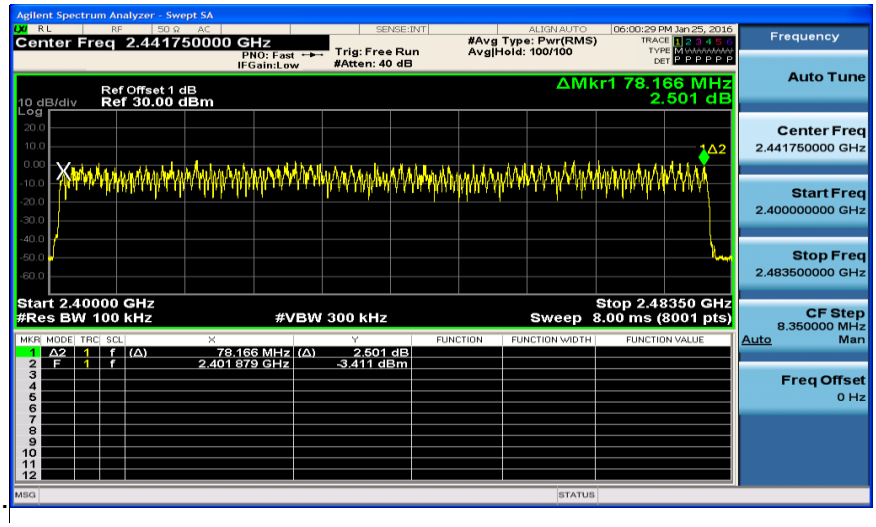
Table 12 Hopping channel number Test Data

Hopping numbers	LIMIT	results
79	>15	Pass

Basic



EDR



10. TIME OF OCCUPANCY

10.1. LIMITS OF TIME OF OCCUPANCY

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of
0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may
avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

10.2. TEST PROCEDURE

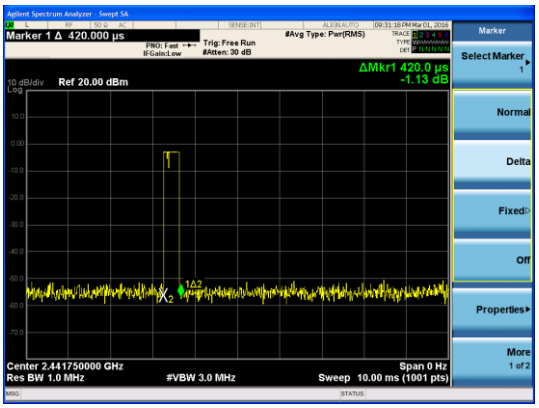
(a) Connect test port of Mobile Phone to spectrum analyzer and universal communication tester.
(b) Set the Mobile Phone to transmit maximum output power at 2.4GHz and switch on frequency hopping function.
(c) Set the span of spectrum analyzer to 0 Hz, and set the resolution bandwidth to1 MHz and the vedio bandwidth to 1 MHz, then get the time domain measured diagram. and set sweep time to 2 times of one burst occupancy time, and measure the time of occupancy of one burst.
(d) Set the resolution bandwidth to1 MHz and the vedio bandwidth to 3 MHz ,and set the sweep time to a period (0.4 seconds multiplied by the number of hopping channels employed), and count the number of the bursts.
(e) Calculate the time of occupancy in a period with time occupancy of a burst and quantity of bursts.

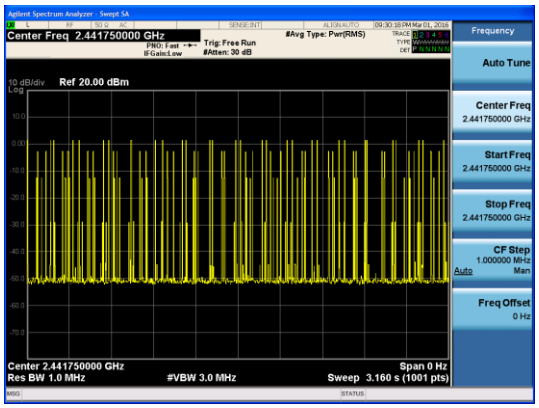
10.3.TEST RESULTS

GFSK

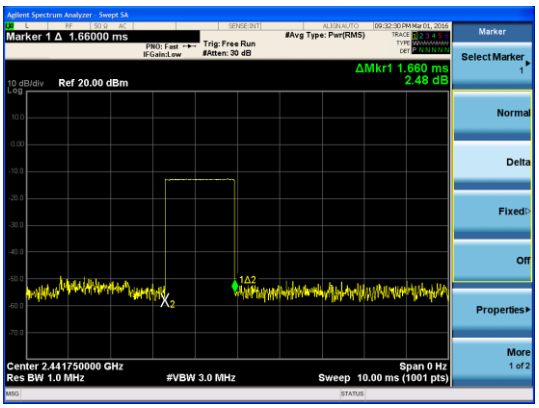
	Time of Single Slot [ms]	Numbers of slots in a period	Time of occupied in a period [s]	Limit [s]	Result
DH1	0.420	31	0.1302	≤ 0.4	Pass
DH3	1.660	18	0.2988	≤ 0.4	Pass
DH5	2.90	11	0.319	≤ 0.4	Pass

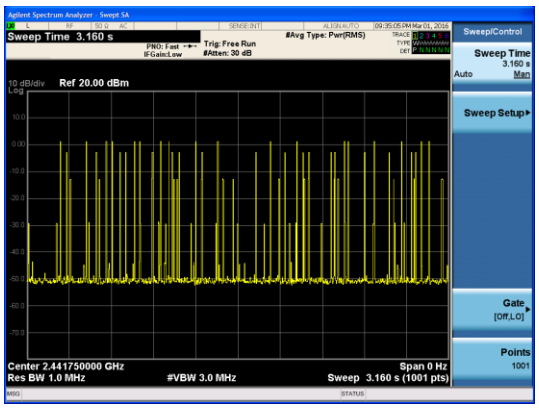
DH1



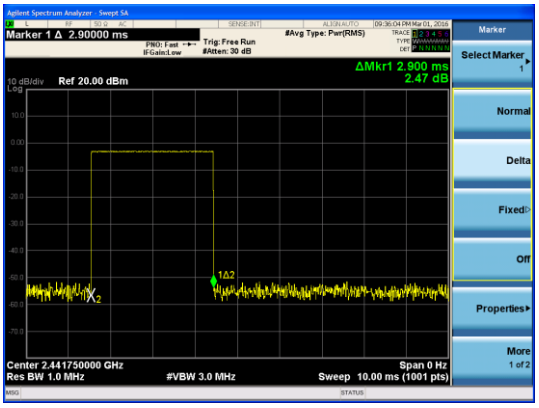


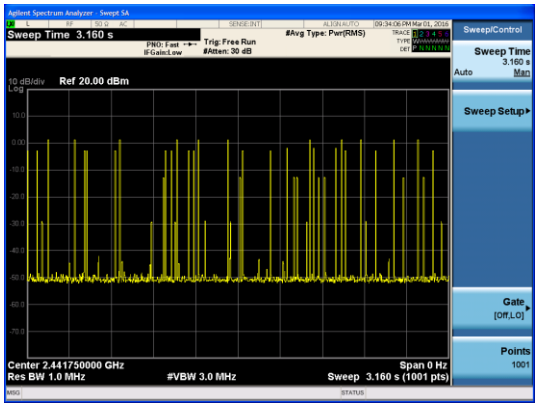
DH3





DH5

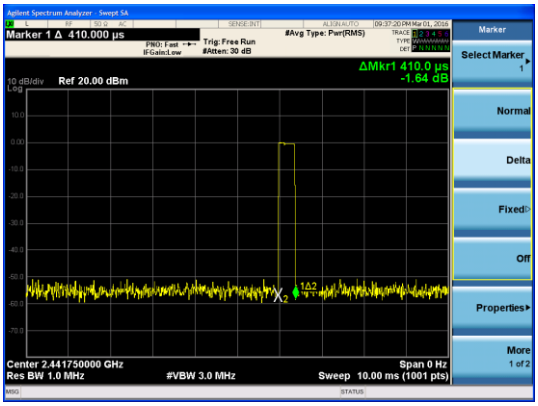


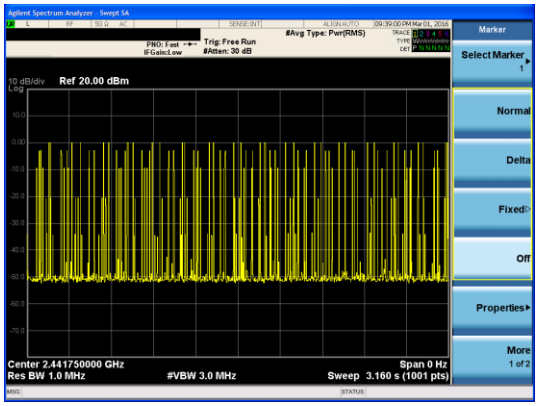


8DPSK

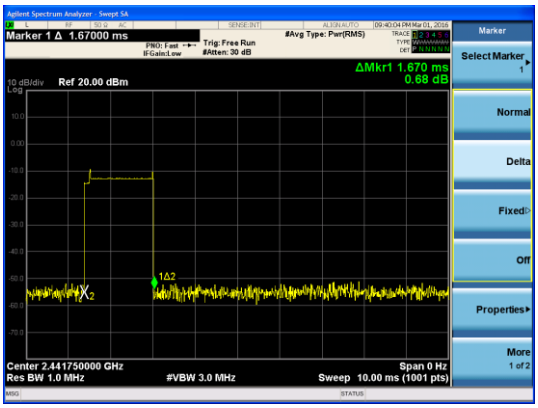
	Time of Single Slot [ms]	Numbers of slots in a period	Time of occupied in a period [s]	Limit [s]	Result
3-DH1	0.41	30	0.123	≤ 0.4	Pass
3-DH3	1.67	19	0.3173	≤ 0.4	Pass
3-DH5	2.92	11	0.3212	≤ 0.4	Pass

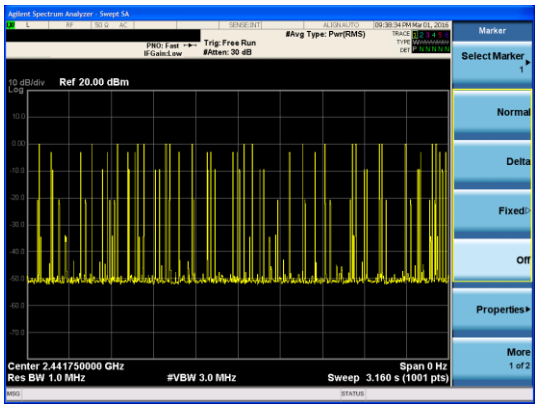
3-DH1



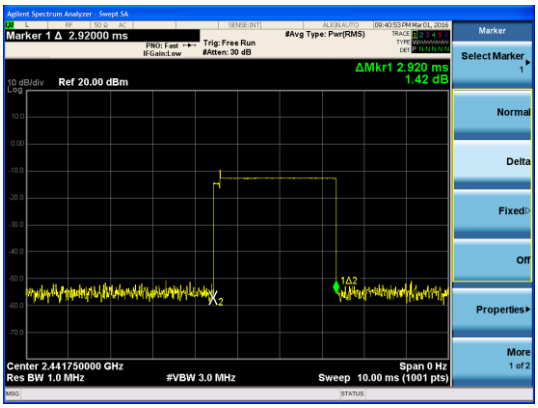


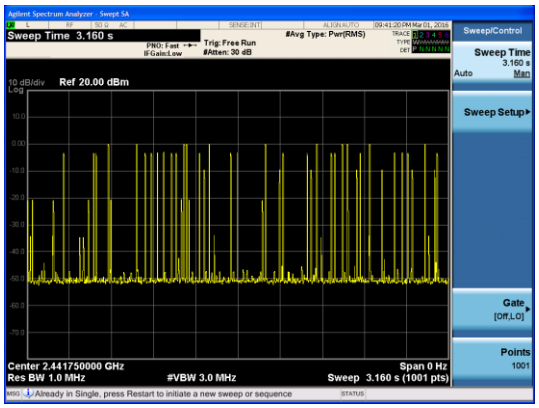
3-DH3





3-DH5





11. PEAK POWER

11.1. LIMITS OF Peak Power

Compliance with part 15.247 (b) (1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt.
For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watt.

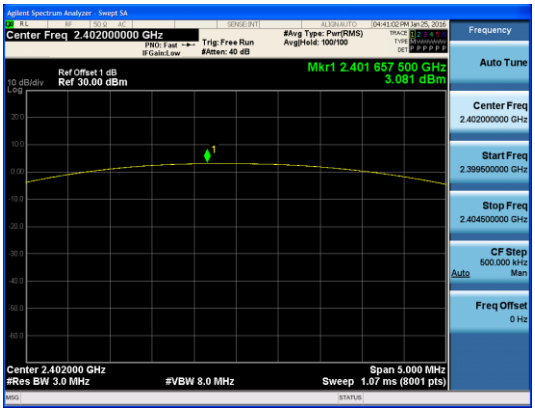
11.2. TEST PROCEDURE

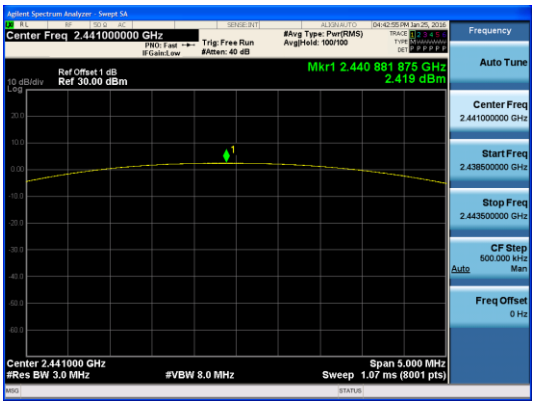
(a) Connect test port of Mobile Phone to universal communication tester.
(b) Set the Mobile Phone to transmit maximum output power at 2.4GHz and switch off frequency hopping function.
(c) Then set the Mobile Phone to transmit at high, middle and low frequency and measure theconducted output power separately.

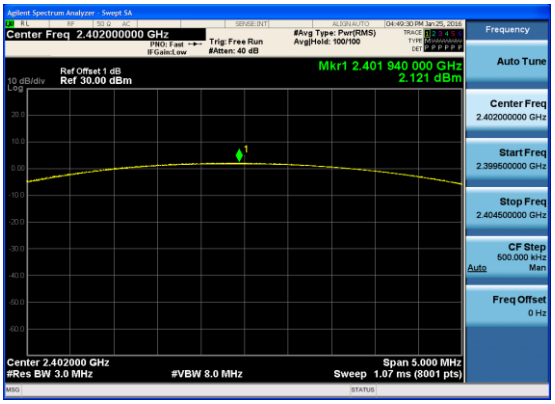
11.3. TEST RESULTS

Measurement Results（Modulation:GFSK）

Channel	Channel No.	Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
Bottom	0	2402	3.081	< 30	Pass
Middle	39	2441	2.419	< 30	Pass
Top	78	2480	2.849	< 30	Pass

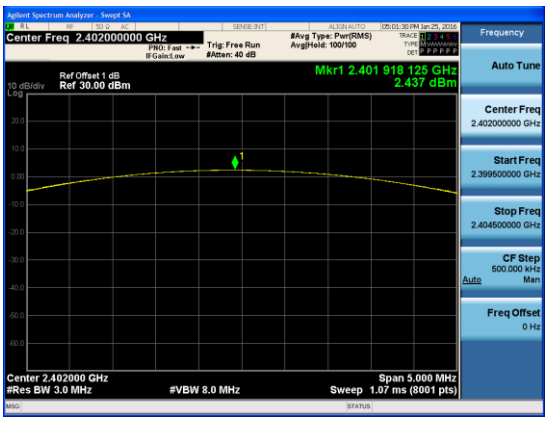


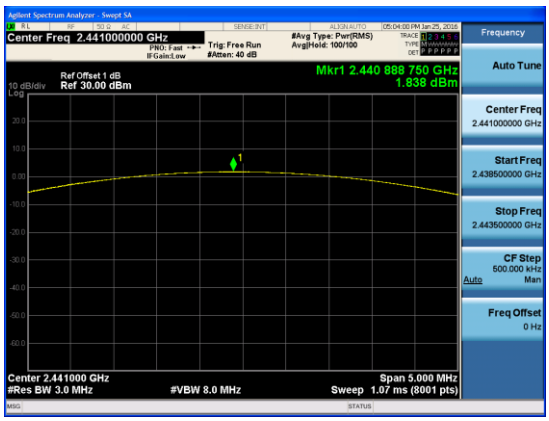


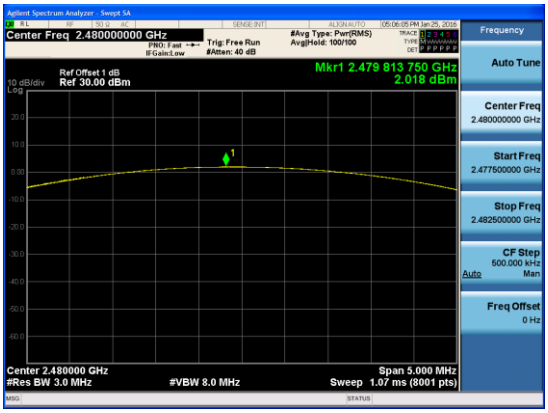


Measurement Results（Modulation: 8DPSK）

Channel	Channel No.	Center Freq. [MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
Bottom	0	2402	2.437	< 21	Pass
Middle	39	2441	1.838	< 21	Pass
Top	78	2480	2.018	< 21	Pass







12. BAND EDGES MEASUREMENT

12.1. Limits of Band Edges Measurement

Below –20dB of the highest emission level of operating band (in 100kHz resolution bandwidth).

12.2. TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

12.3. Test Results

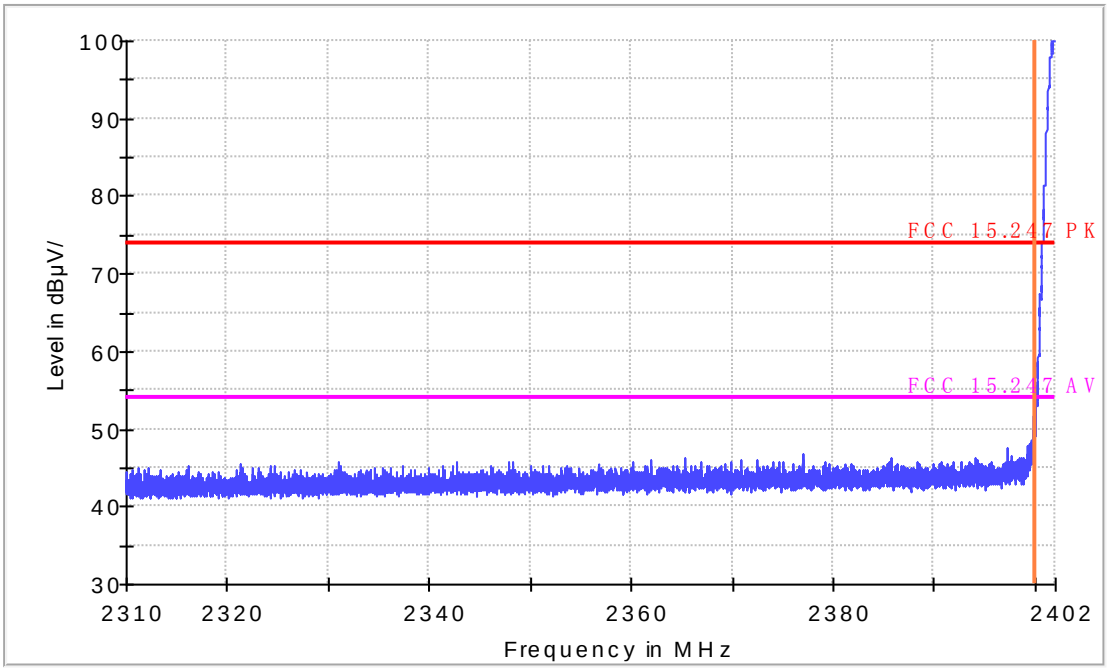
The measured plots are attached on the following. Test data shows compliance with the band edge requirement in part 15.247(d).

Bluetooth Basic Rate

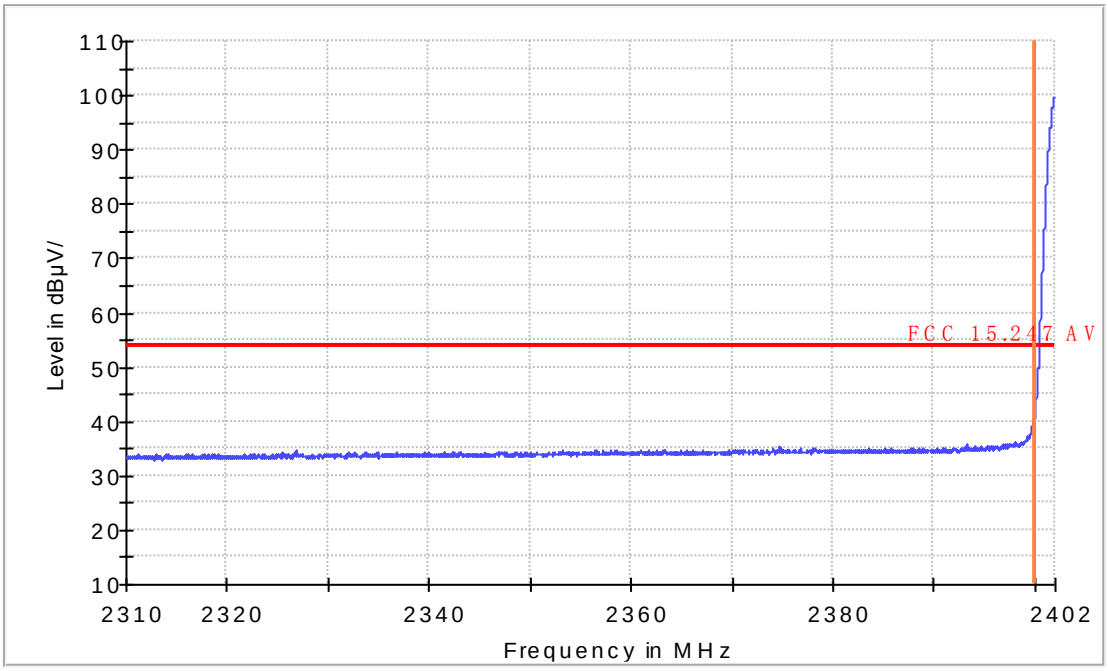
Low edge

Horizontal

FCC Electric Field Strength 2.4GHz Bandedge-PK

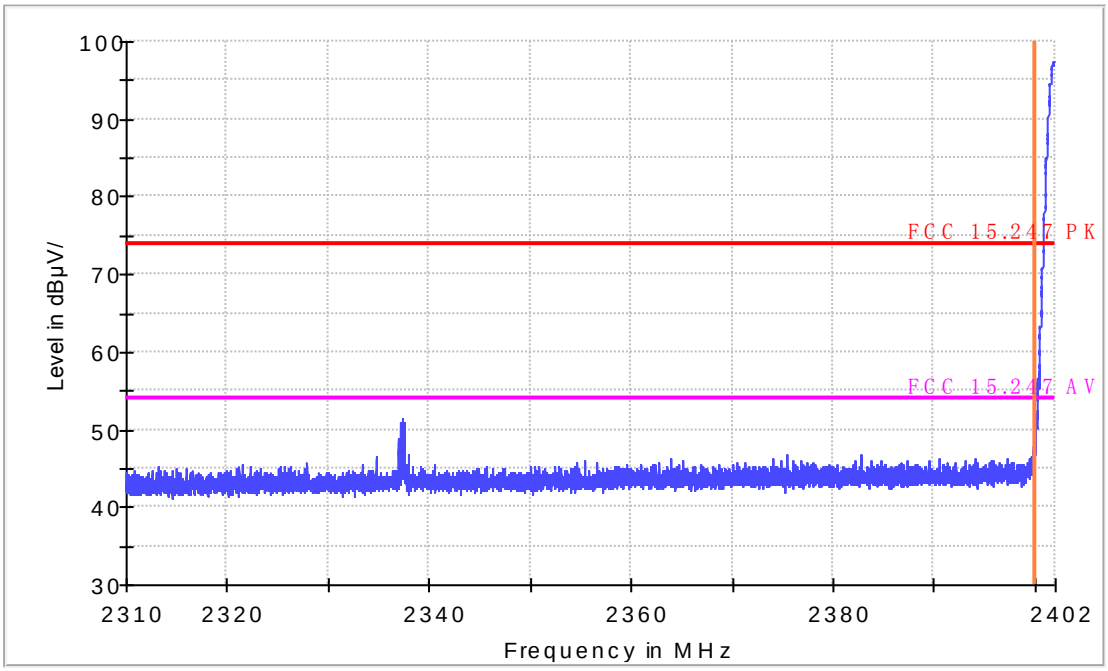


FCC Electric Field Strength 2.4GHz Bandedge-AV

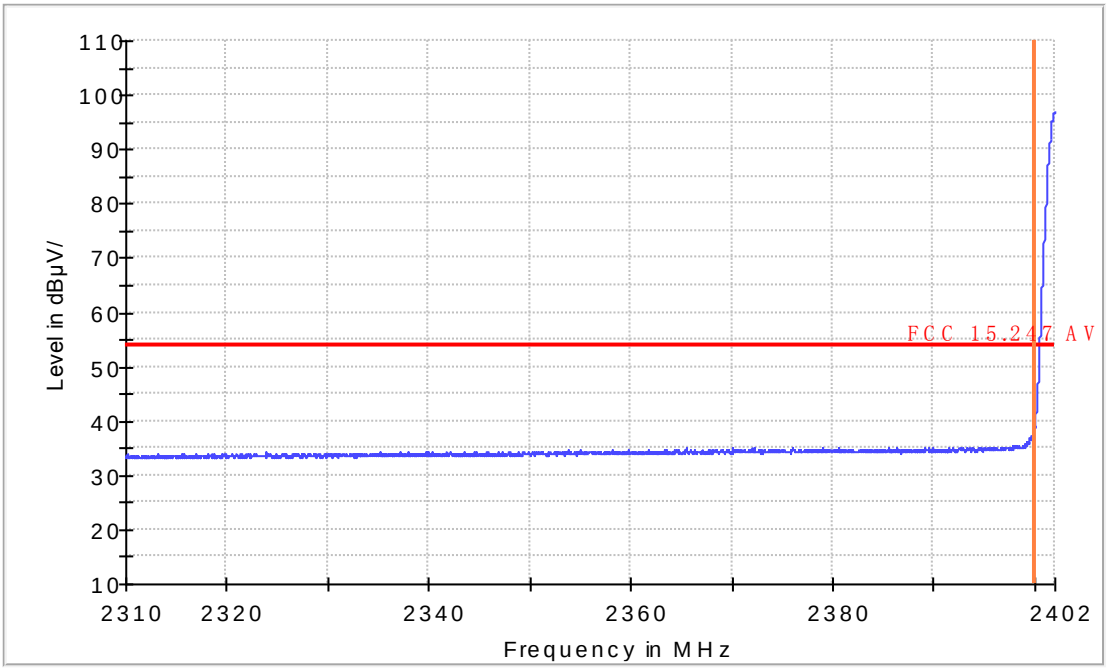


Vertical

FCC Electric Field Strength 2.4GHz Bandedge-PK



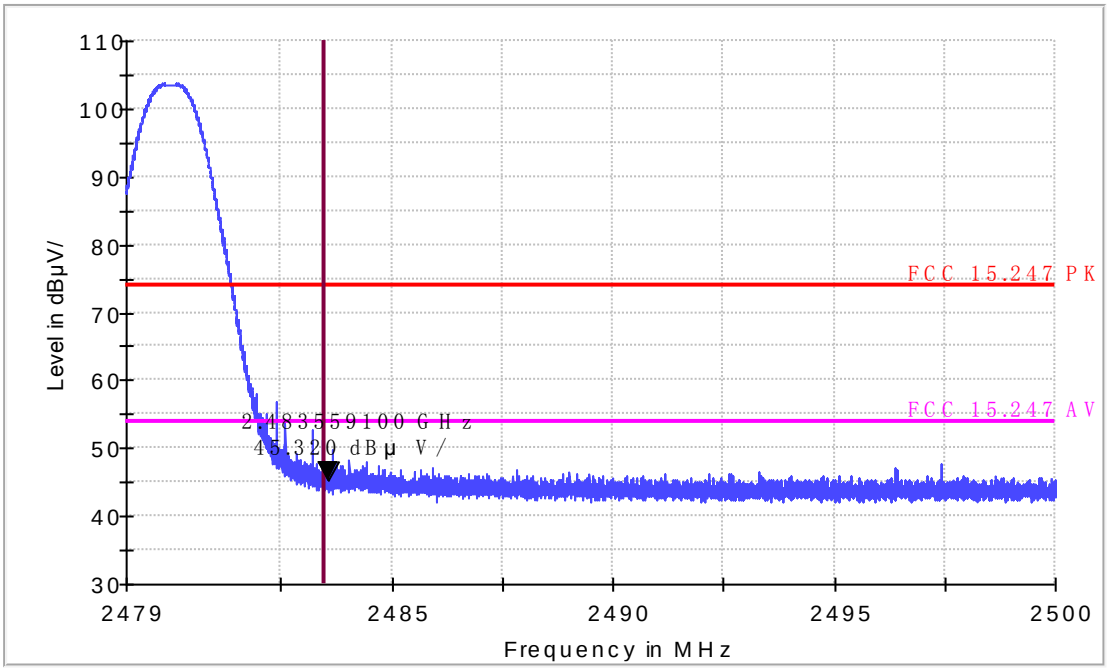
FCC Electric Field Strength 2.4GHz Bandedge-AV



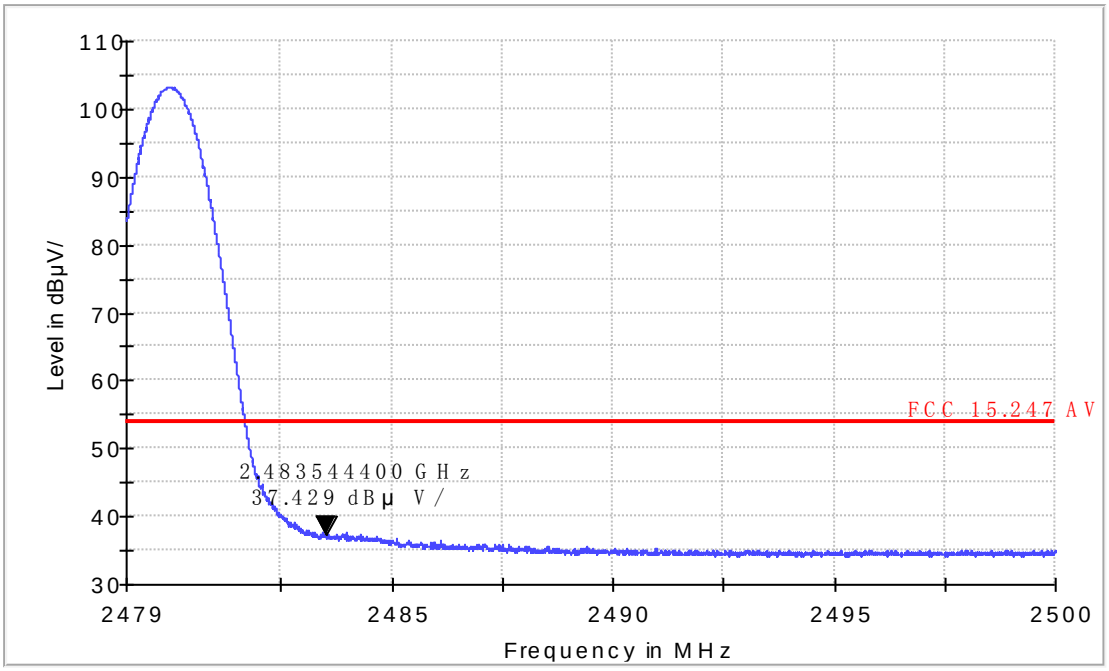
Upper Edge

Horizontal

FCC Electric Field Strength 2.4GHz Bandedge-PK

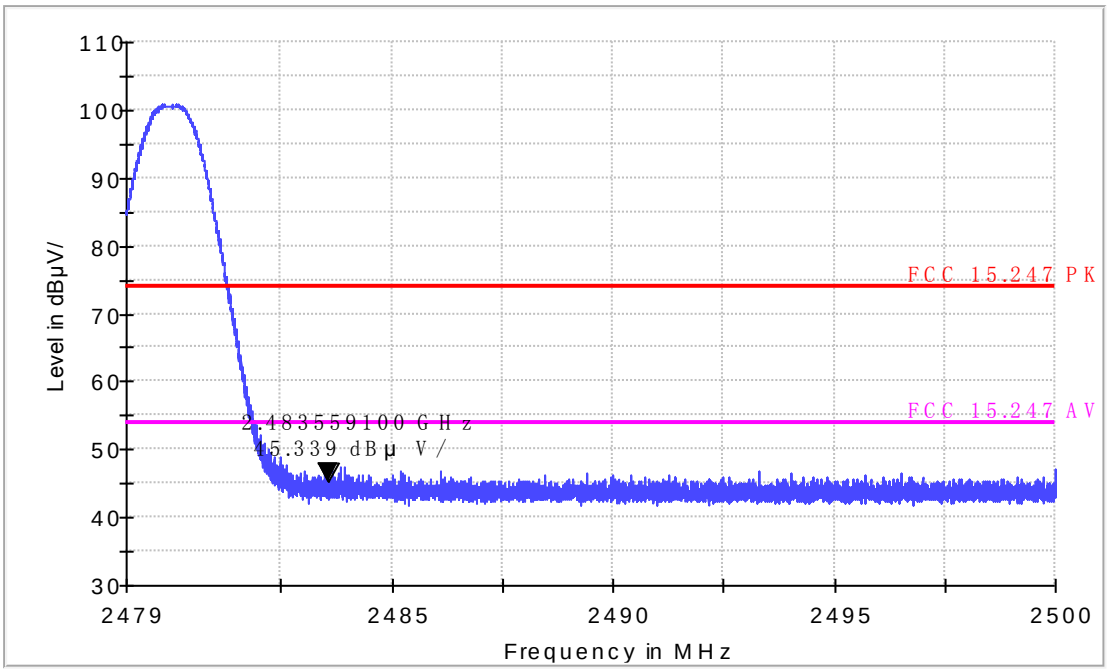


FCC Electric Field Strength 2.4GHz Bandedge-AV

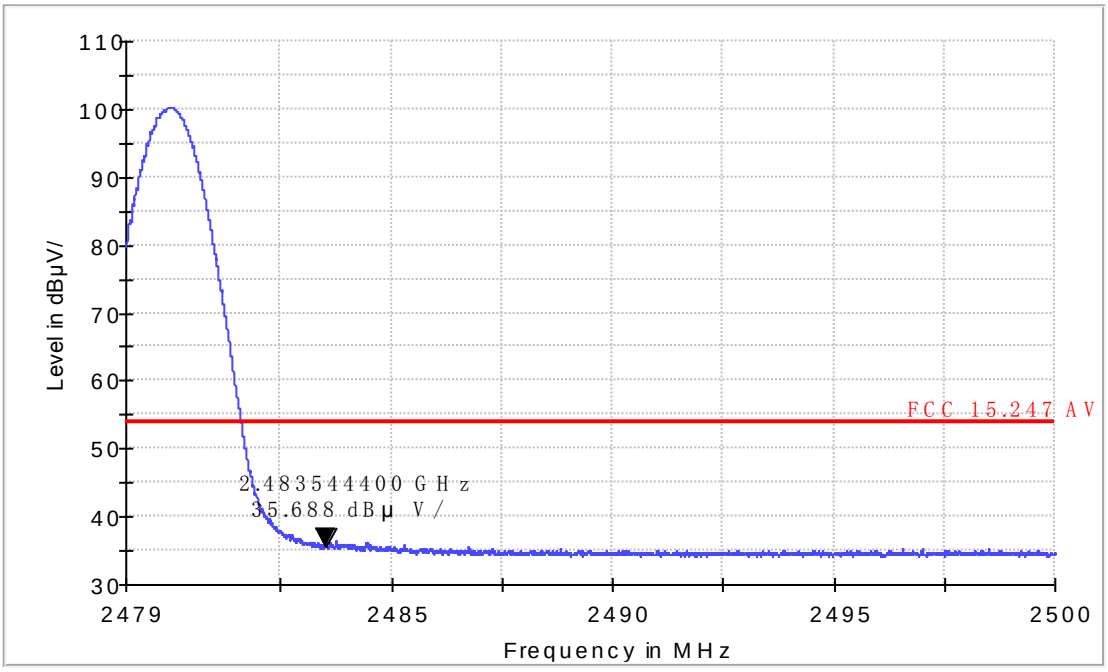


Vertical

FCC Electric Field Strength 2.4GHz Bandedge-PK



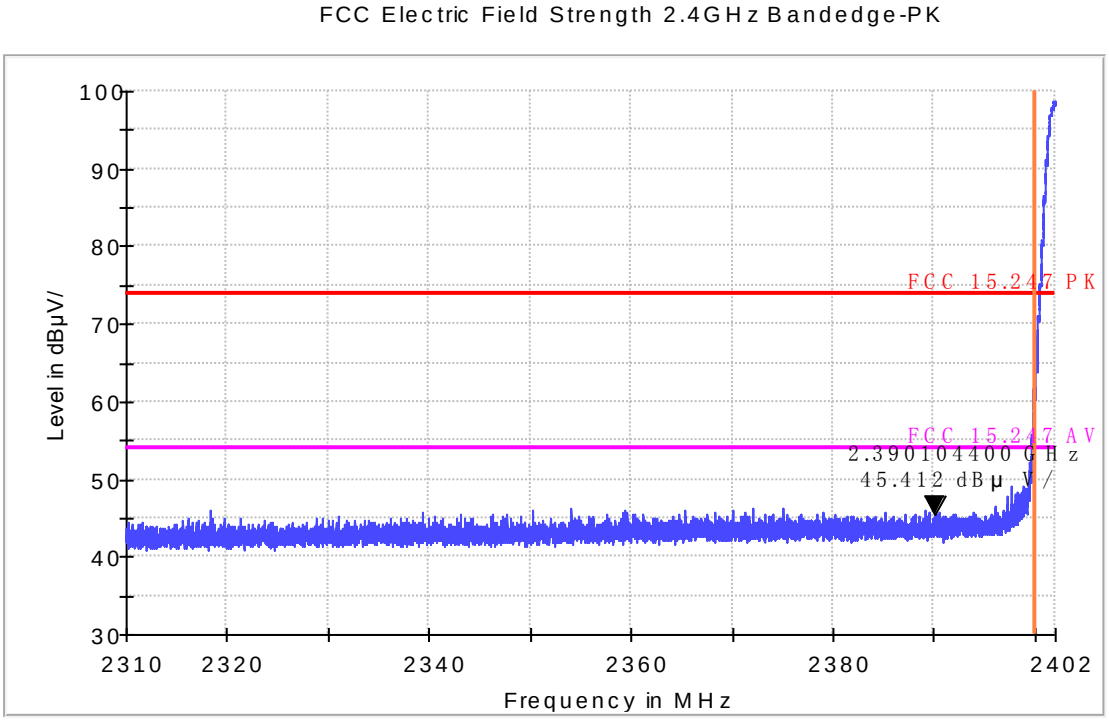
FCC Electric Field Strength 2.4GHz Bandedge-AV

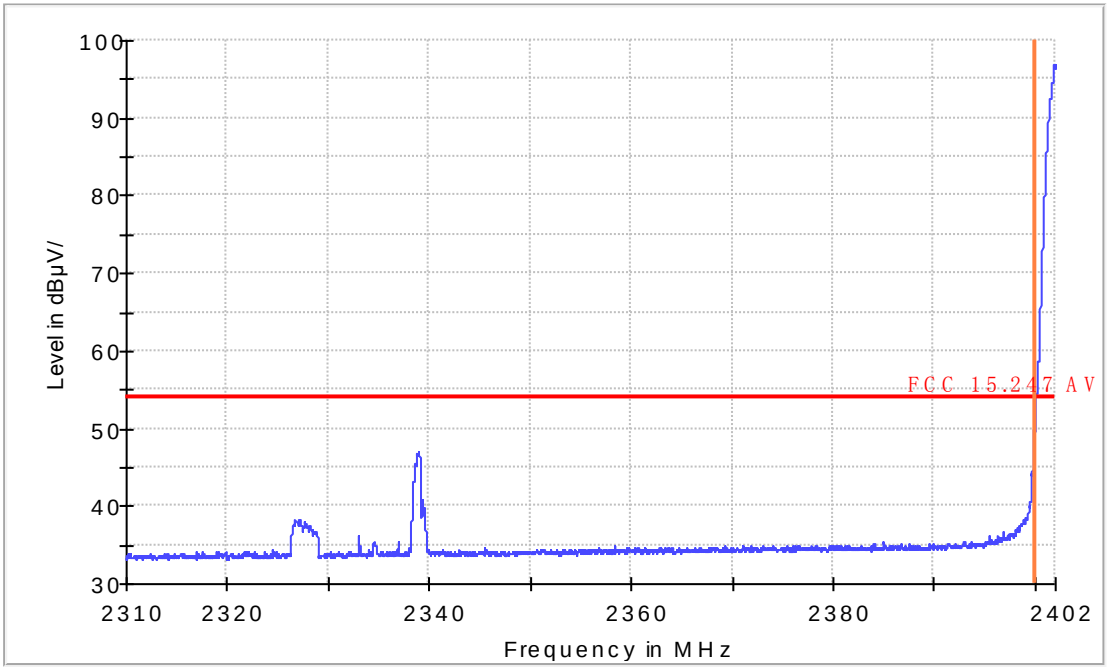


Bluetooth EDR

Low edge

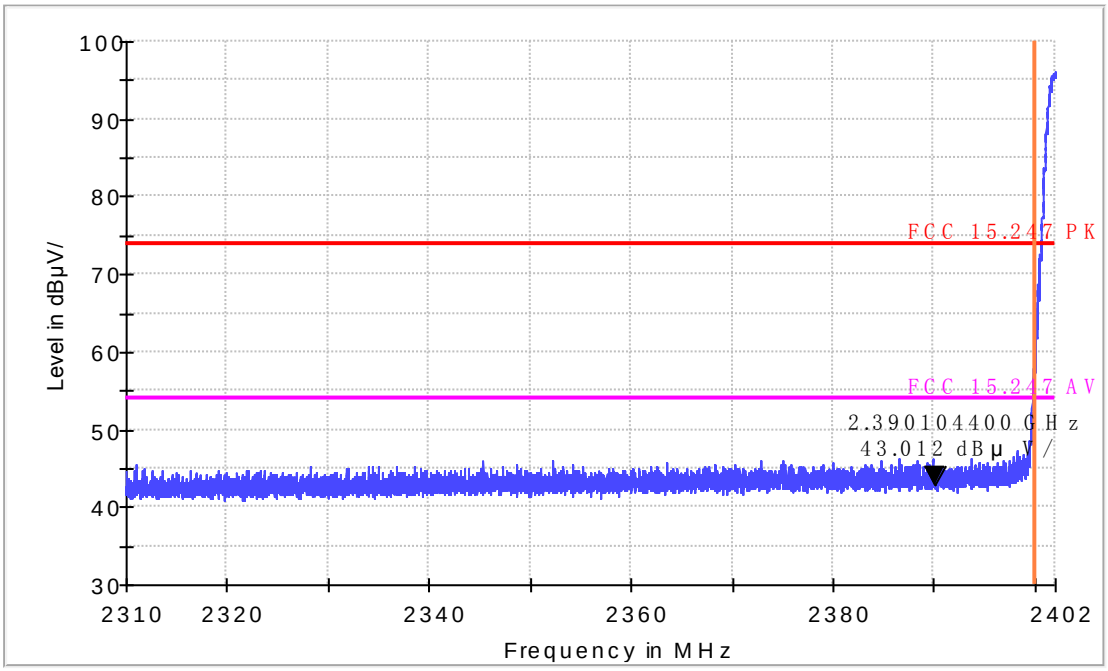
Horizontal



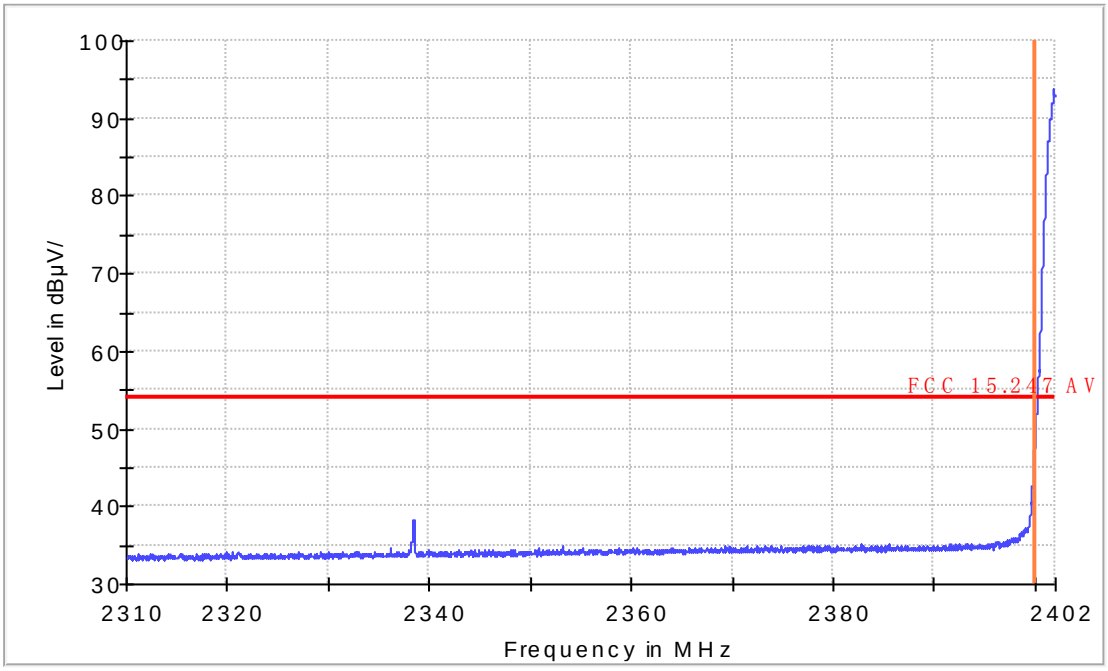


Vertical

FCC Electric Field Strength 2.4GHz Bandedge-PK



FCC Electric Field Strength 2.4GHz Bandedge-AV

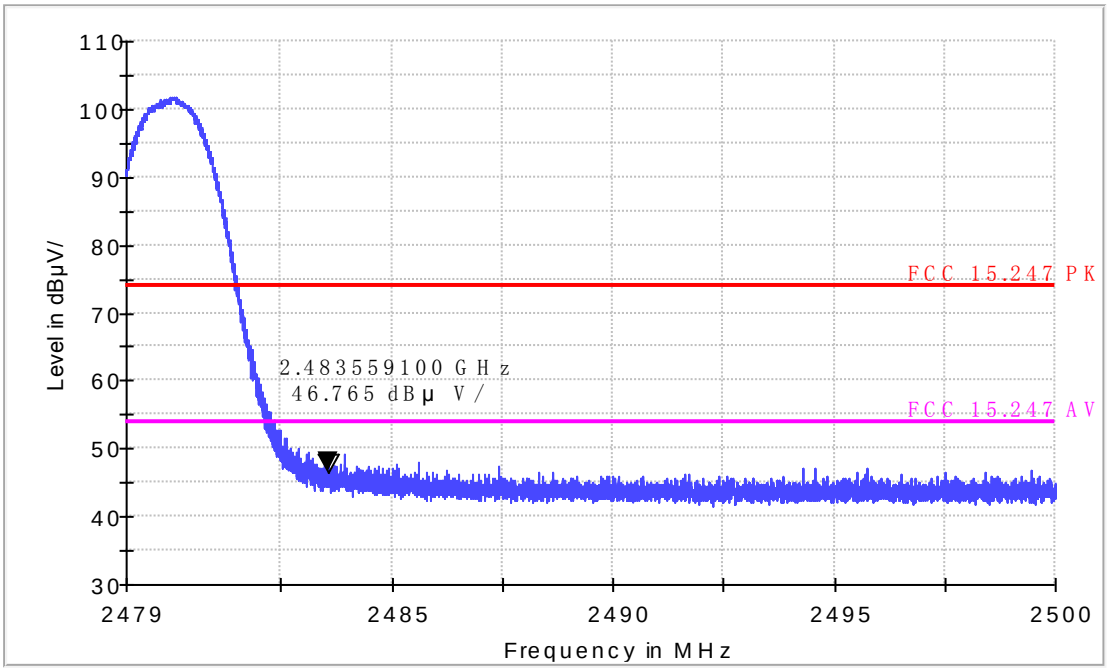


Bluetooth EDR

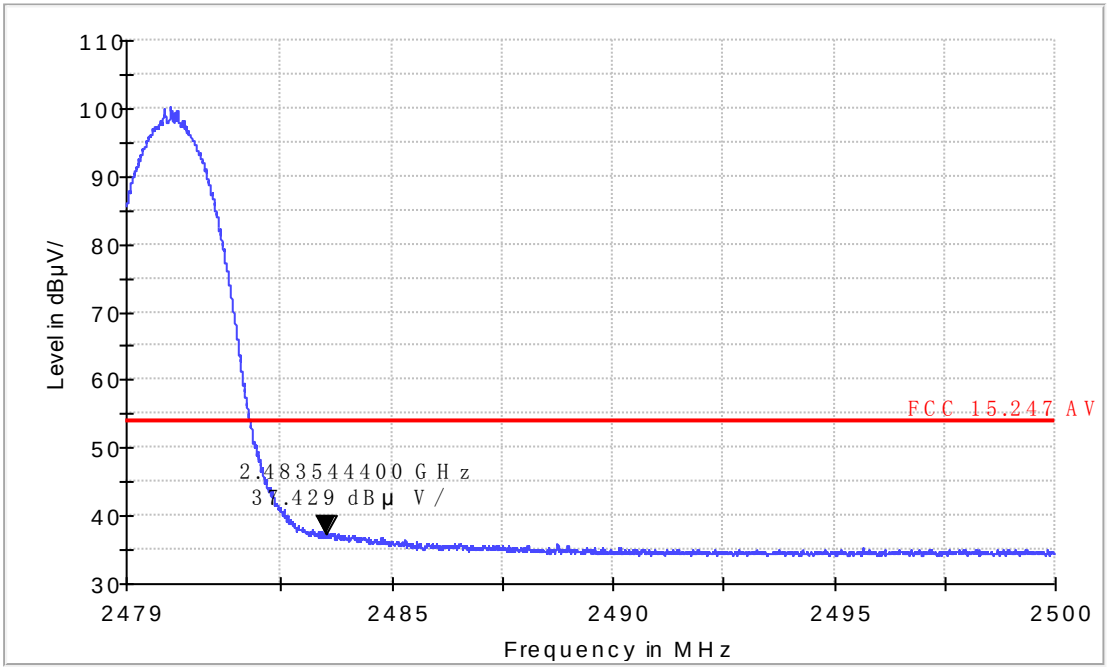
Upper edge

Horizontal

FCC Electric Field Strength 2.4GHz Bandedge-PK

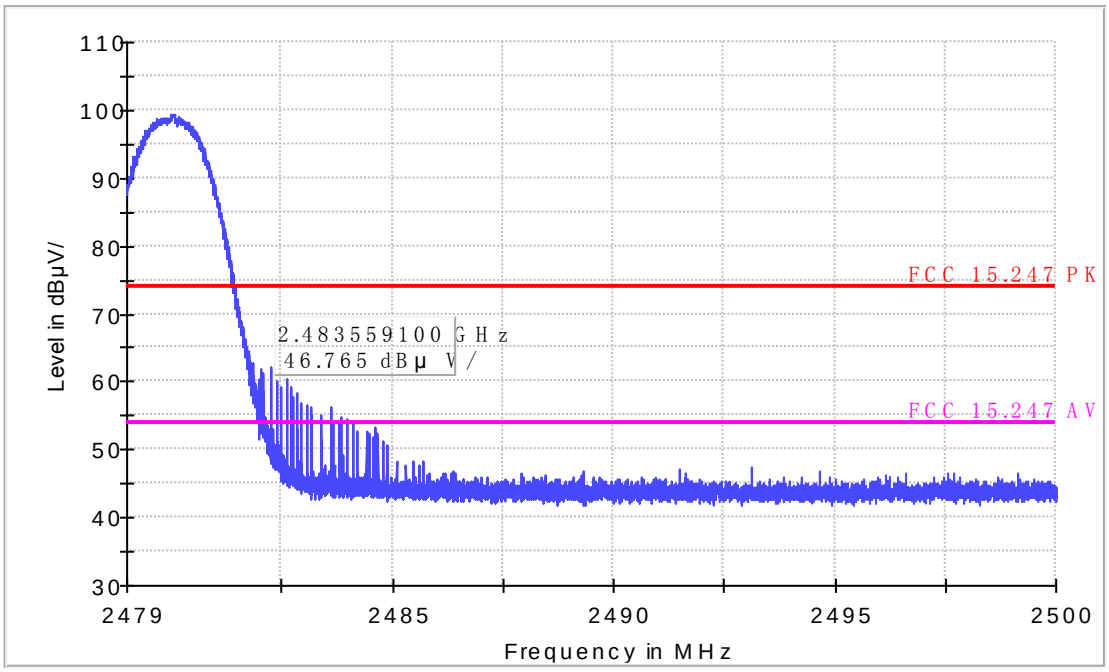


FCC Electric Field Strength 2.4GHz Bandedge-AV

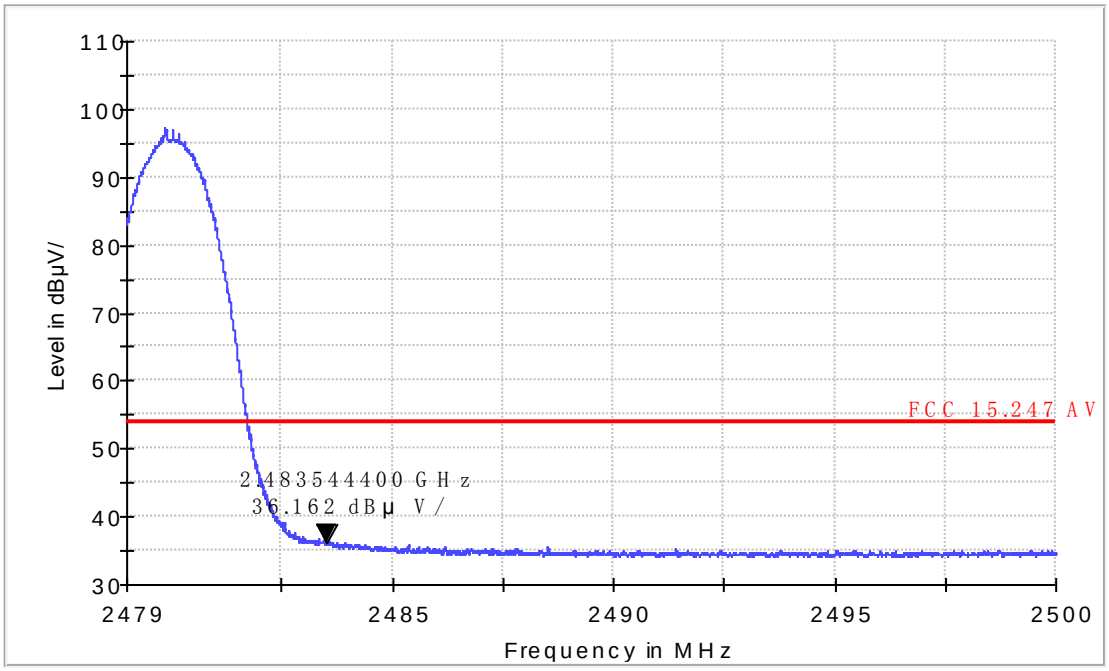


Vertical

FCC Electric Field Strength 2.4GHz Bandedge-PK



FCC Electric Field Strength 2.4GHz Bandedge-AV



13. CONDUCTED SPURIOUS EMISSIONS

13.1. Limits of Band Edges Measurement

Below –20dB of the highest emission level of operating band (in 100kHz resolution bandwidth).

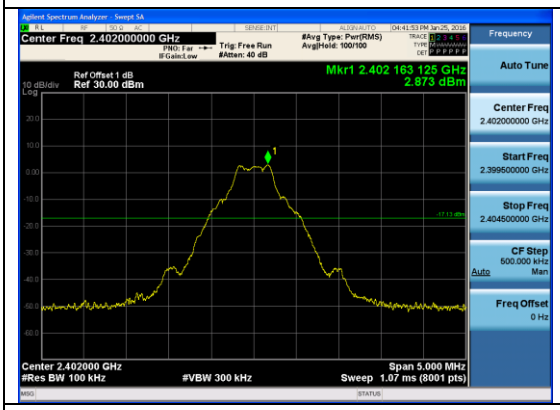
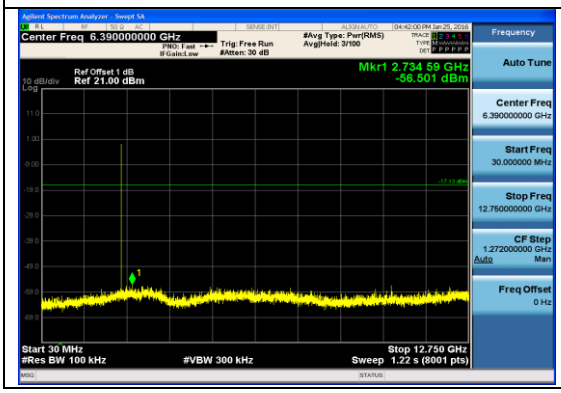
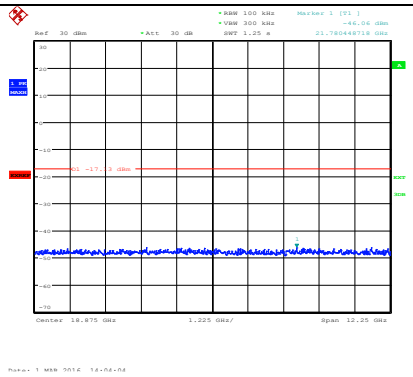
13.2. Test Procedure

The transmitter output and CBT output were connected to the spectrum analyzer through a power divider. The resolution bandwidth is set to100 kHz. The video bandwidth is set to 300 kHz.
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.
The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal

13.3. TEST RESULTS

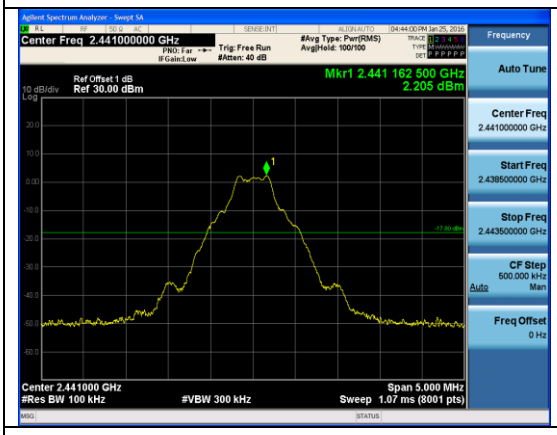
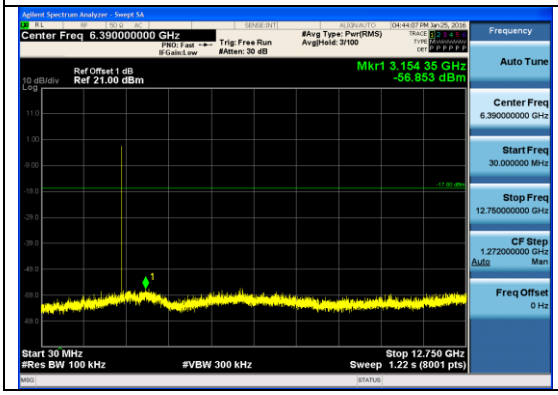
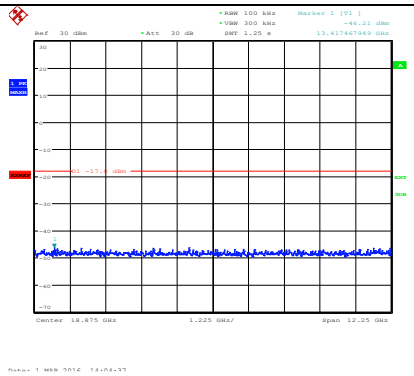
Bluetooth Basic

Low channel

Pref	
	
30MHz-12.75GHz	12.75GHz-25GHz
	

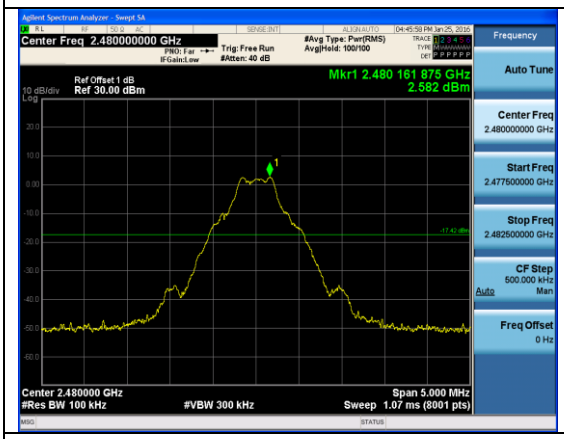
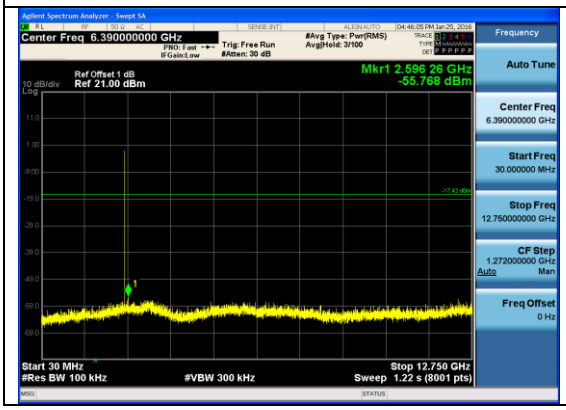
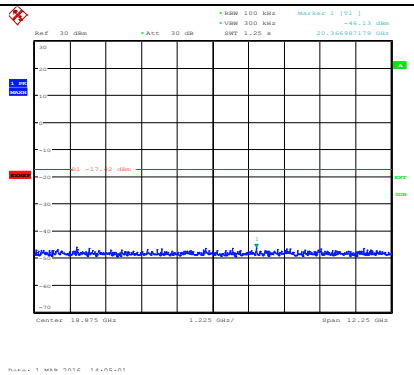
Bluetooth Basic

Mid channel

Pref	
	
30MHz-12.75GHz	12.75GHz-25GHz
	

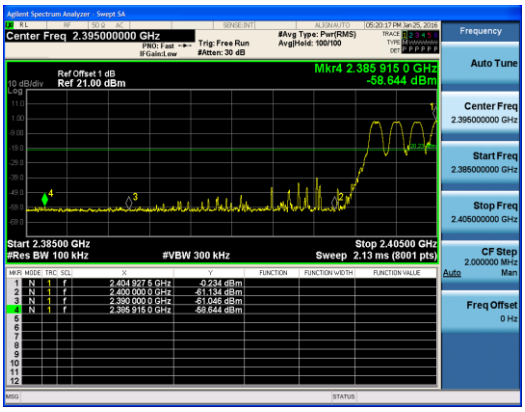
Bluetooth Basic

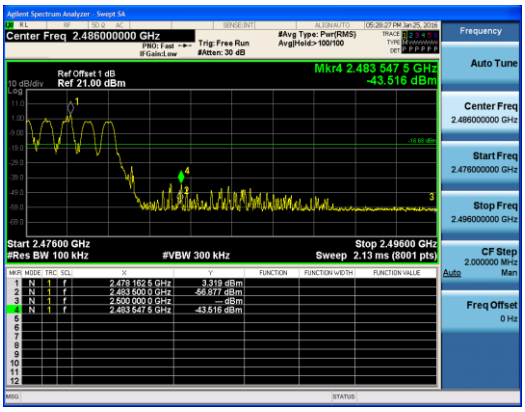
High Channel

Pref	
	
30MHz-12.75GHz	12.75GHz-25GHz
	

Bluetooth Basic

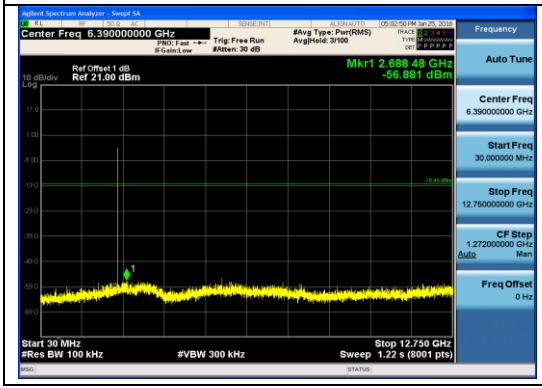
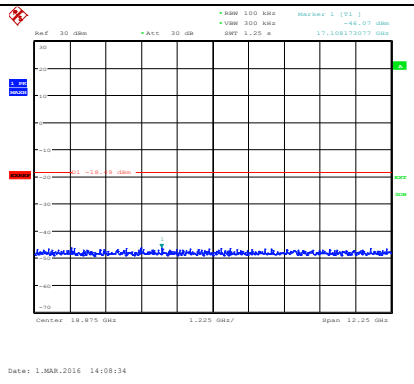
Bandedge hopping On





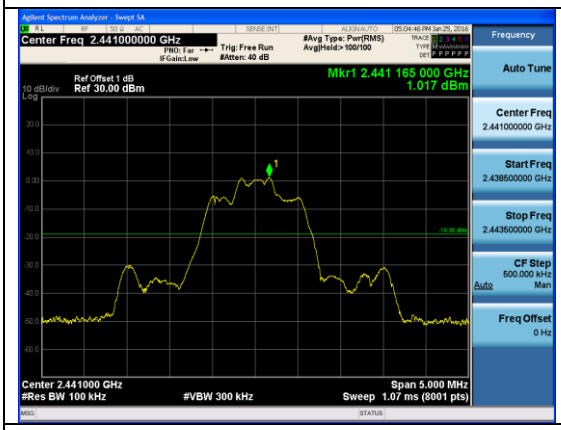
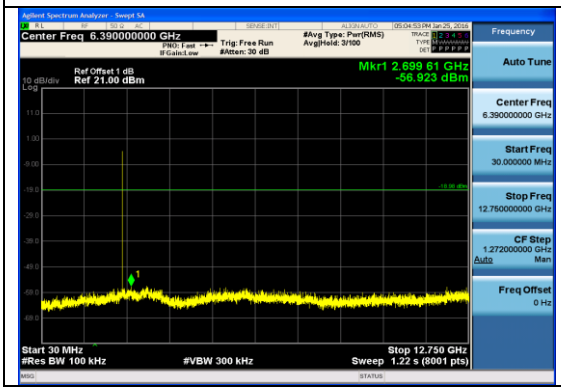
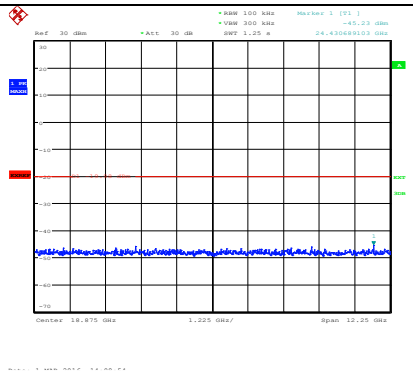
Bluetooth EDR

Low Channel

Pref	
	
30MHz-12.75GHz	12.75GHz-25GHz
	

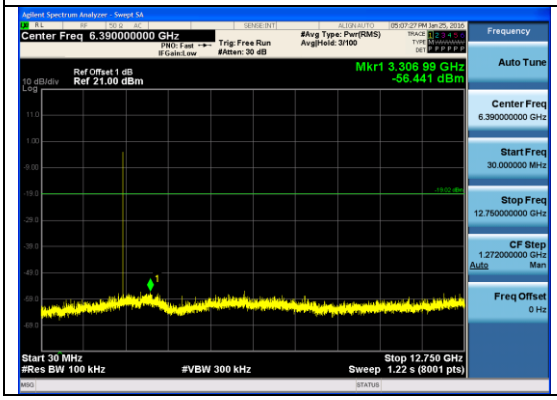
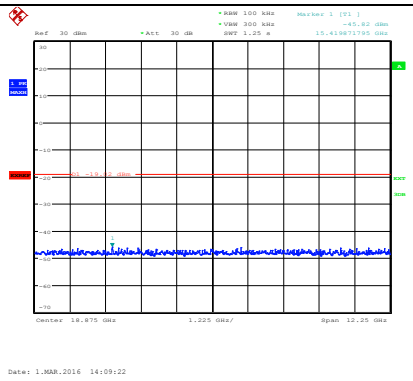
Bluetooth EDR

Mid Channel

Pref	
	
30MHz-12.75GHz	12.75GHz-25GHz
	

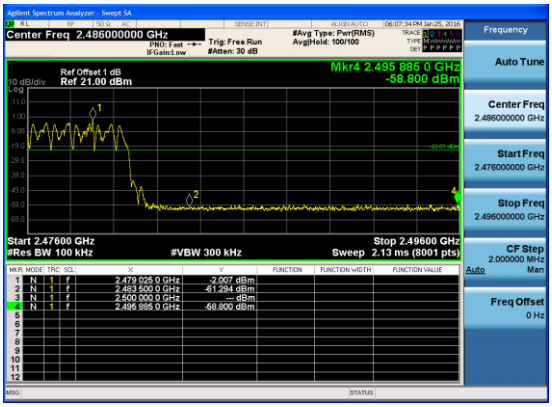
Bluetooth EDR

High Channel

Pref	
	
30MHz-12.75GHz	12.75GHz-25GHz
	

Bluetooth EDR

Bandedge



14. ANTENNA REQUIREMENTS

14.1. Applicable requirements

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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 FCC rule.

14.2. Antenna Connector

Antenna Connector is on the PCB within enclosure and not accessible to user.

14.3. Antenna Gain

The antenna gain of EUT is less than 6 dBi.