TEST REPORT

Product	:	Bluetooth Speaker
Trade mark	:	NUDE AUDIO
Model/Type reference	:	Nude SuperM, PS039STD, PS039BKG, PS039CLG, PS039MTG, PS039PTG, PS039PNG, PS039PLG, PS039YLE, PS039MTJ, PS039KCG, PS039KSG, PS039CPG, PS039DSG, PS039NLG
Serial number	:	N/A
Ratings	:	Charging input: 5V⎓, 1A lithium ion battery: 3,7V⎓, IPX5, Class III
FCC ID	:	2AACFPS039
Report number	:	EESZG07160009-1
Date	:	July 29, 2014
Regulations	:	See below

Test Standards	Results
☒ 47 CFR FCC Part 15 Subpart C 15.247: 2013	PASS

Prepared for:

Disruptive Hong Kong Limited
Room 2002, 20/F, King Palace Plaza, 52A Sha Tsui Road, Tsuen Wan, N.T. Hong Kong

Prepared by:

Centre Testing International (Shenzhen) Corporation
Hongwei Industrial Zone, 70 Area, Bao'an District, Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
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Tested by: _____ Reviewed by: _____

Approved by: _____ Date: July 29, 2014

Jimmy Li
Lab manager

Check No.: 1702005401

TABLE OF CONTENTS

N/A means not applicable.

1. GENERAL INFORMATION

Applicant:	Disruptive Hong Kong Limited Room 2002,20/F, King Palace Plaza,52A Sha Tsui Road, Tsuen Wan, N.T. Hong Kong
Manufacturer:	Disruptive Hong Kong Limited Room 2002,20/F, King Palace Plaza,52A Sha Tsui Road, Tsuen Wan, N.T. Hong Kong
FCC ID:	2AACFPS039
Product:	Bluetooth Speaker
Model/Type reference:	Nude SuperM, PS039STD, PS039BKG, PS039CLG, PS039MTG, PS039PTG, PS039PNG, PS039PLG, PS039YLE, PS039MTJ, PS039KCG, PS039KSG, PS039CPG, PS039DSG, PS039NLG
Trade Name:	NUDE AUDIO
Serial Number:	N/A
Report Number:	EESZG07160009-1
Sample Received Date:	July 19, 2014
Sample tested Date:	July 19, 2014 to July 28, 2014

The above equipment was tested by Centre Testing International (Shenzhen) Corporation for compliance with the requirements set forth in the IC/FCC Rules and the measurement procedure according to ANSI C63.4:2009.

2. TEST SUMMARY

No.	Test Item	Rule	Test Result
1	20dB / 99% Bandwidth	FCC 15.247(a)(1) & RSS-Gen 4.6.1	**PASS**
2	Carrier Frequency Separation	FCC15.247(a)(1) & RSS-210 A8.1(b)	**PASS**
3	Number of Hopping Frequency	FCC 15.247(a)(iii) & RSS-210 A8.4(2)	**PASS**
4	Time of Occupancy (Dwell Time)	FCC 15.247(a)(iii) & RSS-210 A8.1(d)	**PASS**
5	Maximum Peak Conducted Output Power	FCC 15.247(b)(1) & RSS-210 A8.1(b)	**PASS**
6	Conducted Bandedge Emission / Conducted Spurious Emission	FCC PART15.247(d) & RSS-210 A8.5	**PASS**
7	Radiated Bandedge Emission / Radiated Spurious Emission	FCC PART15.247(d) & RSS-210 A8.5	**PASS**
8	AC Conducted Emission	FCC PART15.207 & RSS-Gen 7.2.4	**PASS**
9	Antenna Requirements *	FCC PART15.203 & RSS-Gen 7.1.2	**PASS** (See Notes)

*: According to Section 15.203 and RSS-Gen 7.1.2, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The EUT has a built in antenna which is a short wire solder on the PCB, this is permanently attached antenna and meets the requirements of this section.

3. PRODUCT INFORMATION

Items	Description
Rating	Charging input: 5V⎓, 1A lithium ion battery: 3,7V⎓, IPX5, Class III
Type of Modulation	BT3.0: GFSK (1Mbps) , π/4-DQPSK (2Mbps), 8DPSK (3Mbps)
Antenna Type	Integral antenna
Frequency Range	2402 ~ 2480 MHz
Gain	-0.6dBi

All the models are same product just different model names and outer colors. The test model is PS039BKG, and test results are applicable to others.

4. MEASUREMENT UNCERTAINTY

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement items	Uncertainty
Conducted Emission Test	3.2 dB
Radiated Emissions / Bandedge Emission	4.5 dB

5. TEST EQUIPMENT LIST

Equipment	Manufacturer	Model	Serial No.	Due Date
3M Chamber & Accessory Equipment	ETS-LINDGREN	FACT-3	3510	07/12/2016
Spectrum Analyzer	Agilent	E4443A	MY45300910	01/15/2015
Receiver	R&S	ESCI	100435	07/19/2015
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	618	06/25/2015
Multi device Controller	ETS-LINGREN	2090	00057230	N/A
Horn Antenna	ETS-LINGREN	3117	00057407	07/19/2015
Microwave Preamplifier	Agilent	8449B	3008A02425	03/19/2015
Spectrum Analyzer	R&S	FSP40	100416	07/06/2015
Receiver	R&S	ESCI	100009	07/19/2015
LISN	R&S	ENV216	100098	07/19/2015

6. SUPPORT EQUIPMENT LIST

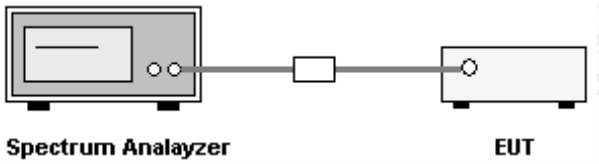
Device Type	Brand	Model	Series No.	Data Cable	Remark
Notebook	DELL	Vostro 3400	GYQTVP1	N/A	FCC DOC
Mouse	L.Selectron	M004	02284699	Un-shielded 1.2M	FCC DOC

7. 20dB / 99% Bandwidth Measurement

7.1. LIMITS

None

7.2. BLOCK DIAGRAM OF TEST SETUP



7.3. TEST PROCEDURE

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.

2. Set to the maximum power setting and enable the EUT transmit continuously.

3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel; RBW ≥ 1% of the 20 dB bandwidth; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.

4. Use the following spectrum analyzer settings for 99 % Bandwidth measurement. For 99% Bandwidth measurement, the RBW=30 kHz, and VBW = 100 kHz. Sweep = auto; Detector function = peak, Trace = max hold.

5. Measure and record the results in the test report.

7.4. TEST RESULT

The test data of worst case are below:

GFSK:

Frequency (MHz)	20dB BW (MHz)	99% BW (MHz)
2402	0.894	0.8385
2441	0.897	0.8355
2480	0.897	0.8355

Π/4-DQPSK:

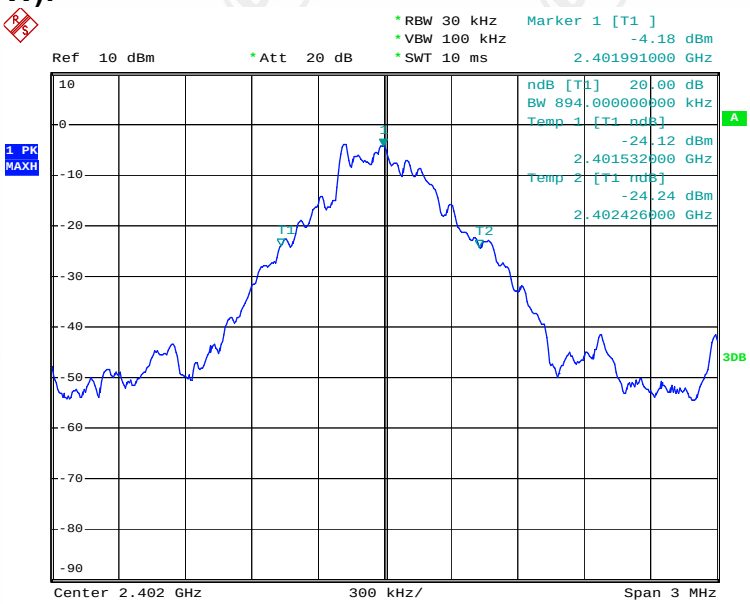
Frequency (MHz)	20dB BW (MHz)	99% BW (MHz)
2402	1.2165	1.1685
2441	1.2165	1.1835
2480	1.2180	1.1760

8DPSK:

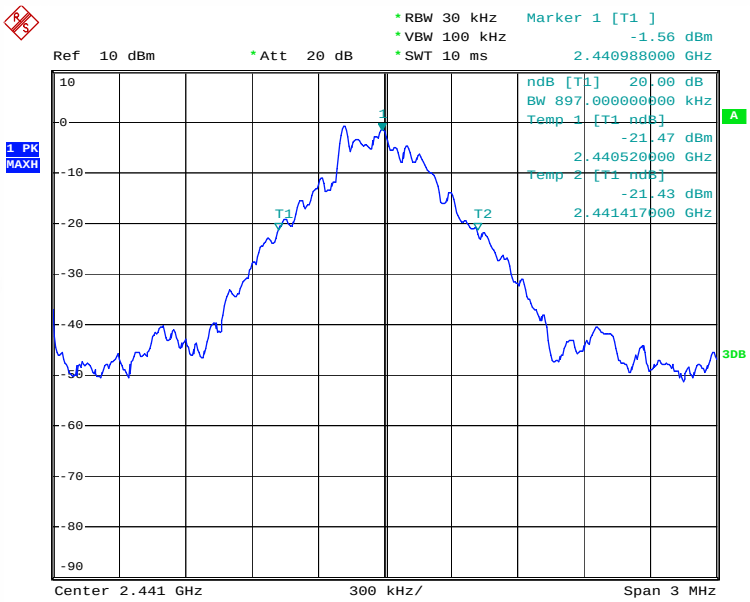
Frequency (MHz)	20dB BW (MHz)	99% BW (MHz)
2402	1.2105	1.1565
2441	1.2105	1.1700
2480	1.2105	1.1805

Please see the following plots (worst case):

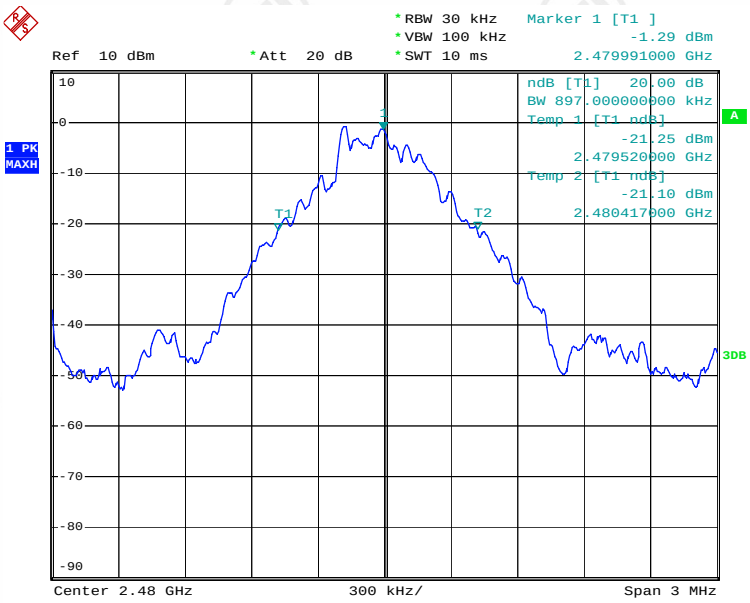
GFSK (20dB BW):



2402 MHz

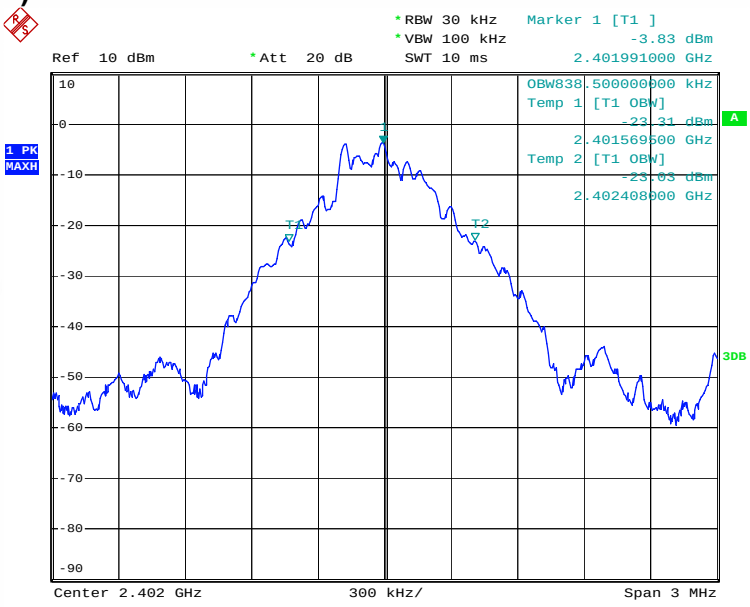


2441 MHz

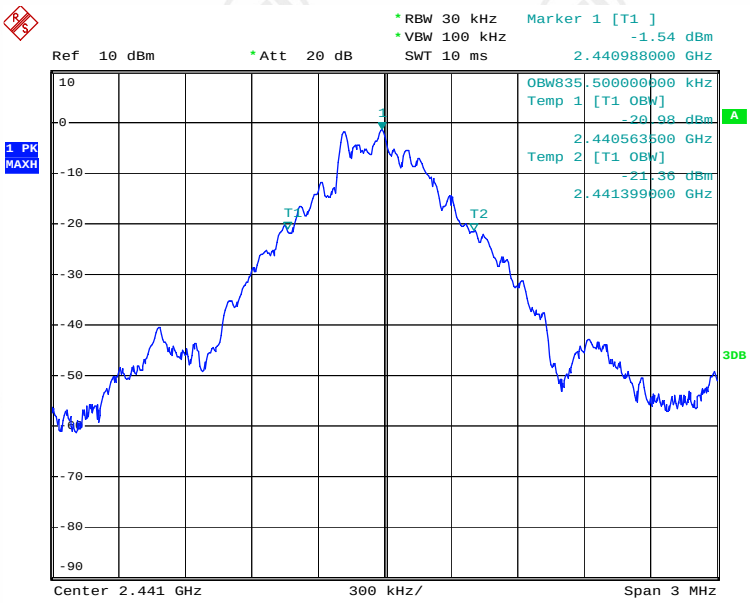


2480 MHz

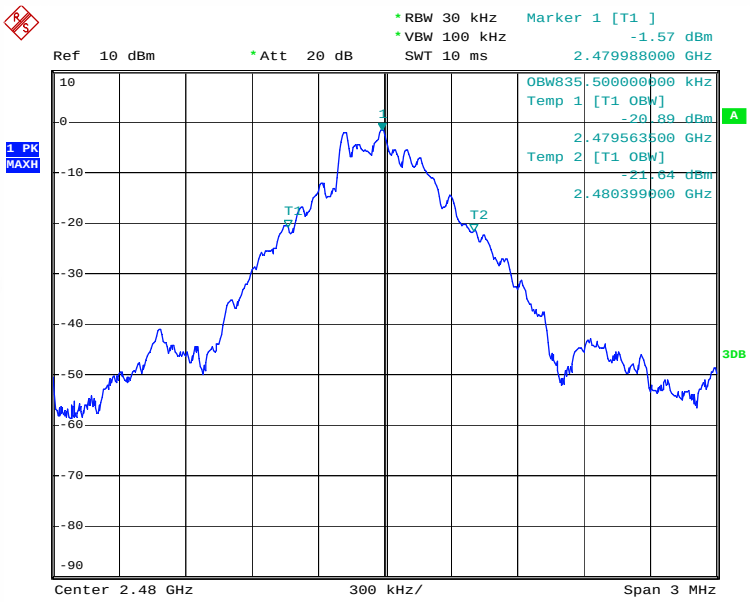
GFSK (99% BW):



2402 MHz

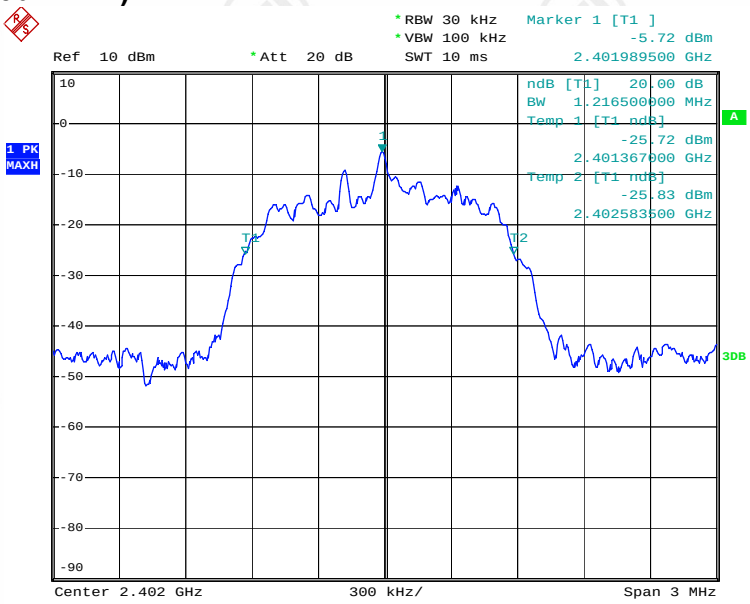


2441 MHz

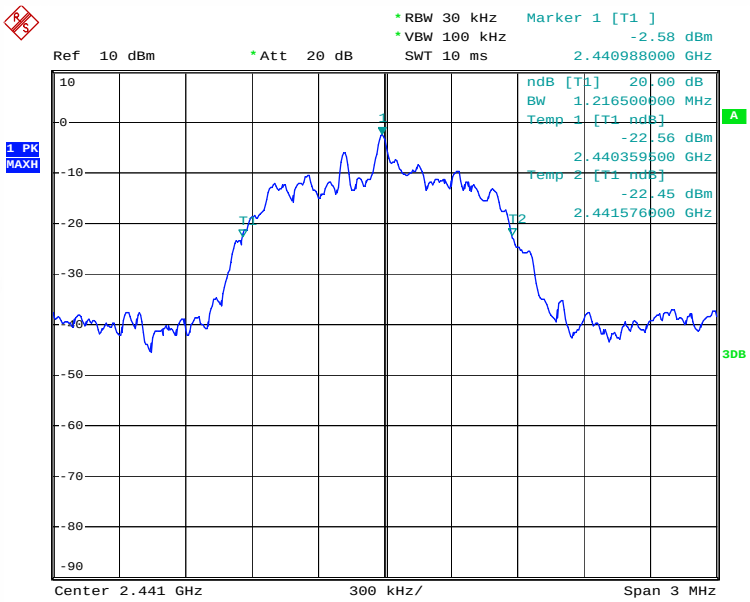


2480 MHz

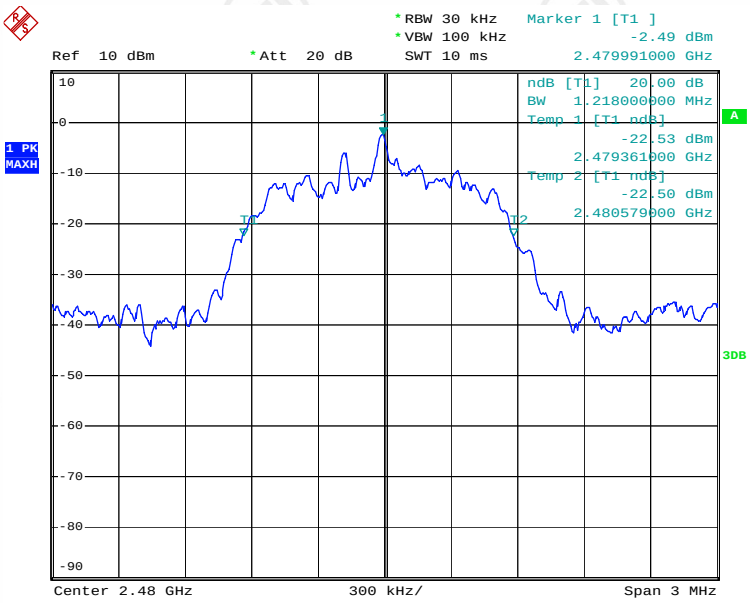
П/4-DQPSK (20dB BW):



2402 MHz

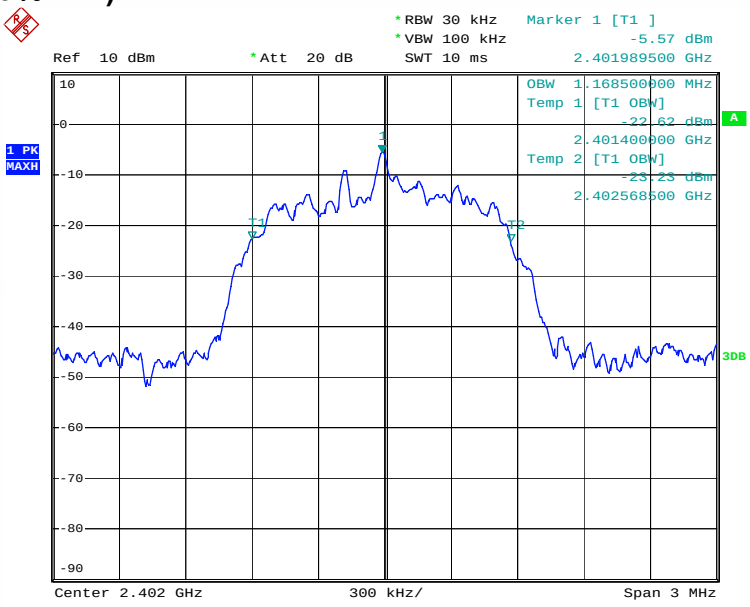


2441 MHz

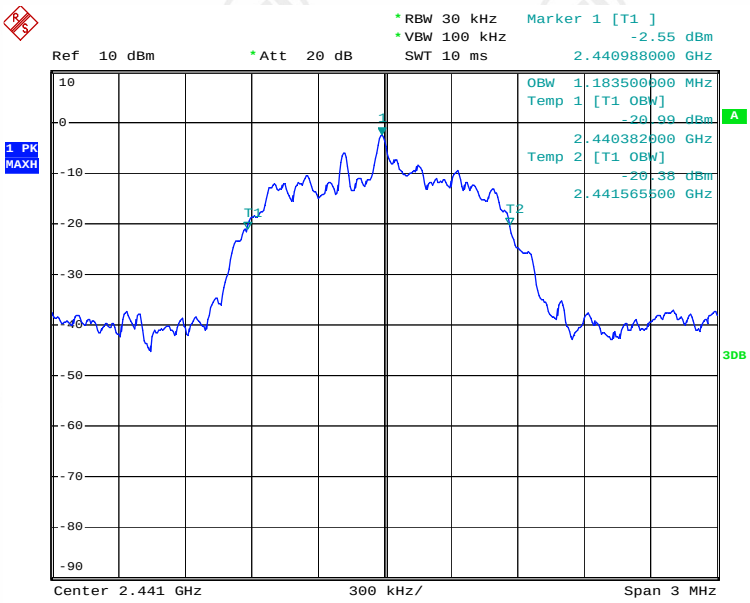


2480 MHz

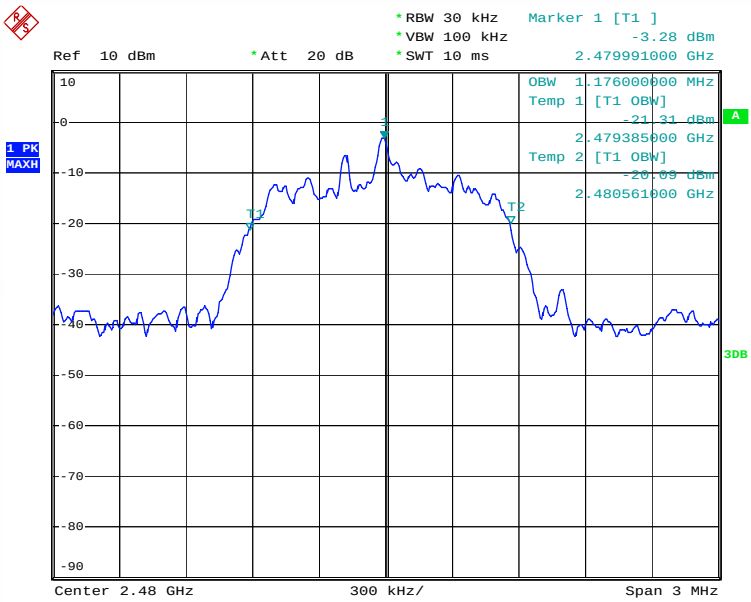
П/4-DQPSK (99% BW):



2402 MHz

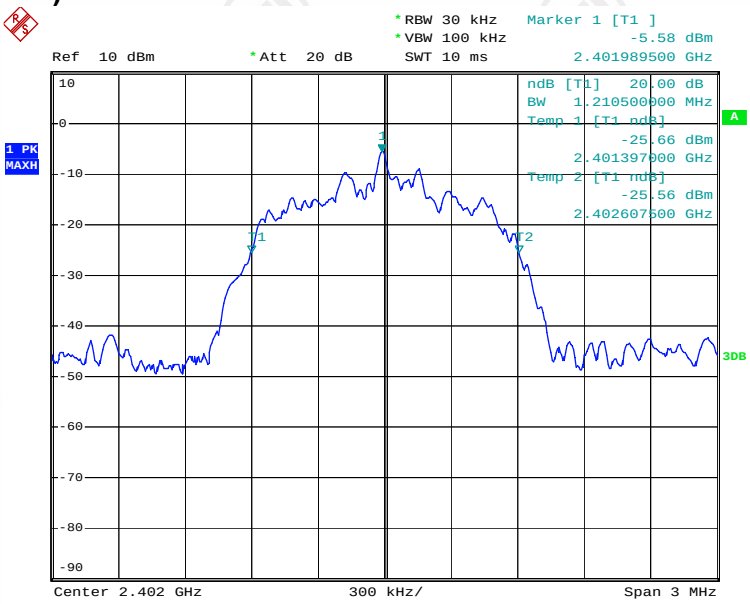


2441 MHz

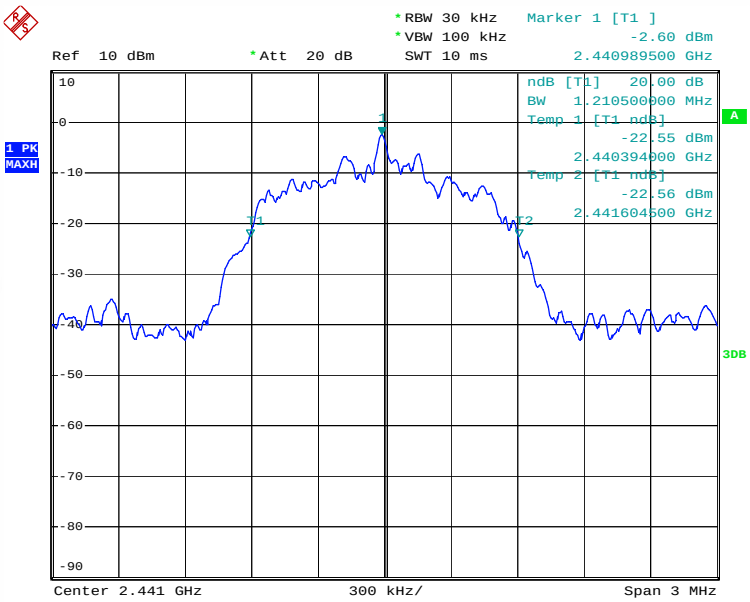


2480 MHz

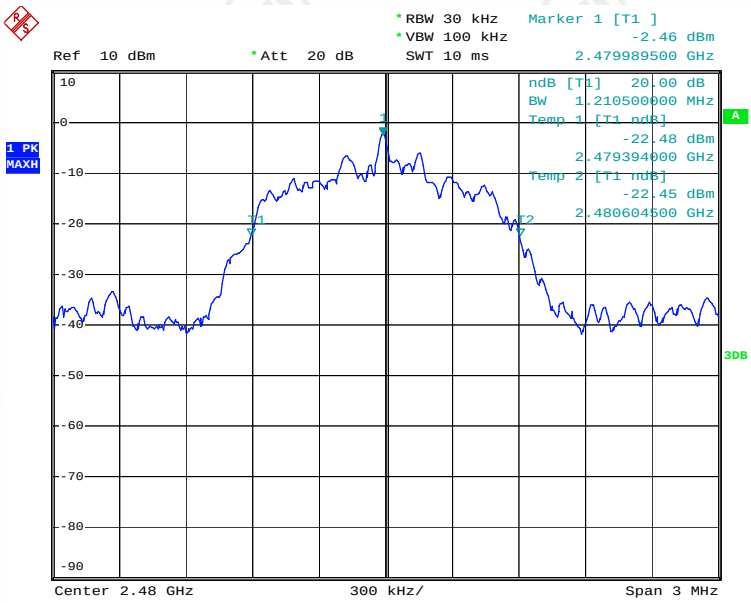
8DPSK (20dB BW):



2402 MHz

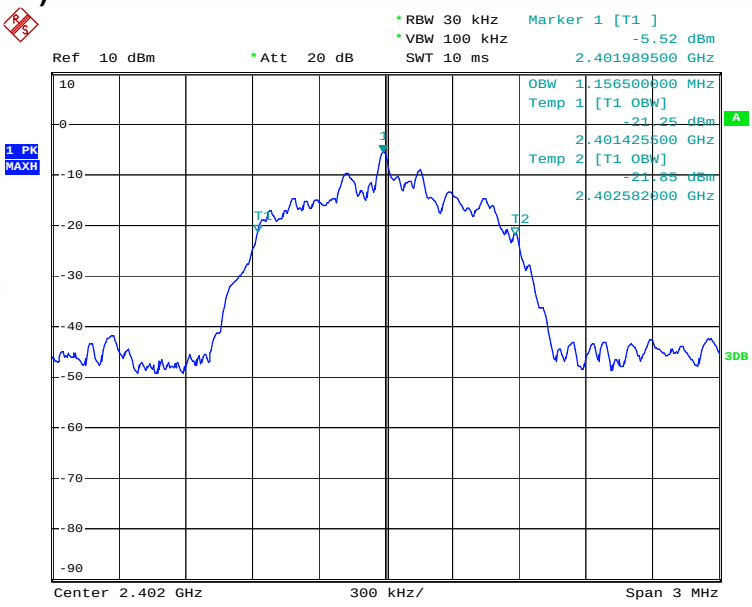


2441 MHz

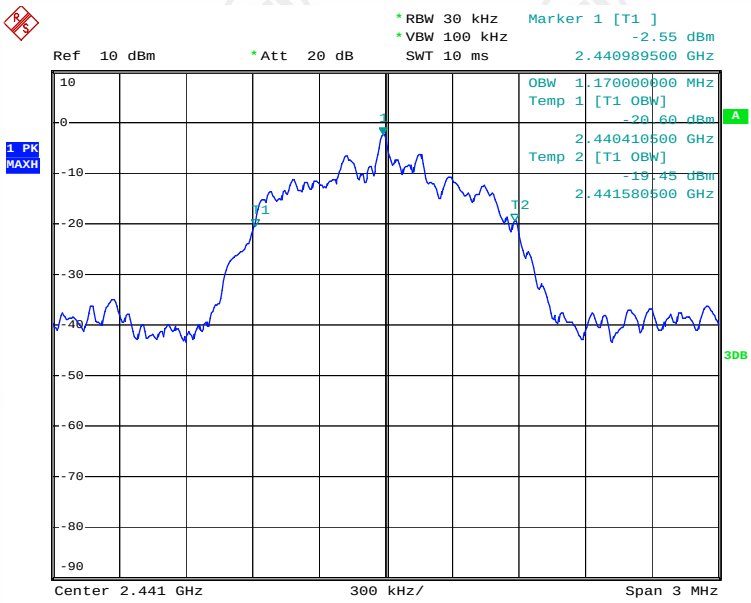


2480 MHz

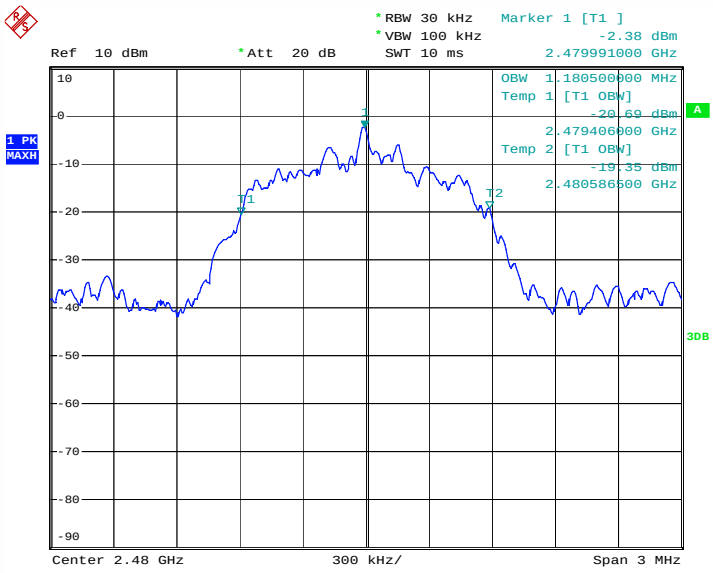
8DPSK (99% BW):



2402 MHz



2441 MHz



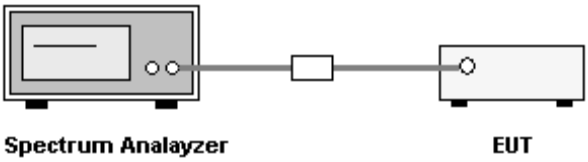
2480 MHz

8. CARRIER FREQUENCY SEPARATION

8.1. LIMITS

Frequency hopping systems operating in the 2400-2483.5MHz 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, provided the systems operate with an output power no greater than 125mW.

8.2. BLOCK DIAGRAM OF TEST SETUP



8.3. TEST PROCEDURE

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.

2. Set to the maximum power setting and enable the EUT transmit continuously.

3. Enable the EUT hopping function.

4. Use the following spectrum analyzer settings: Span = wide enough to capture the peaks of two adjacent channels; RBW ≥ 1% of the span; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.

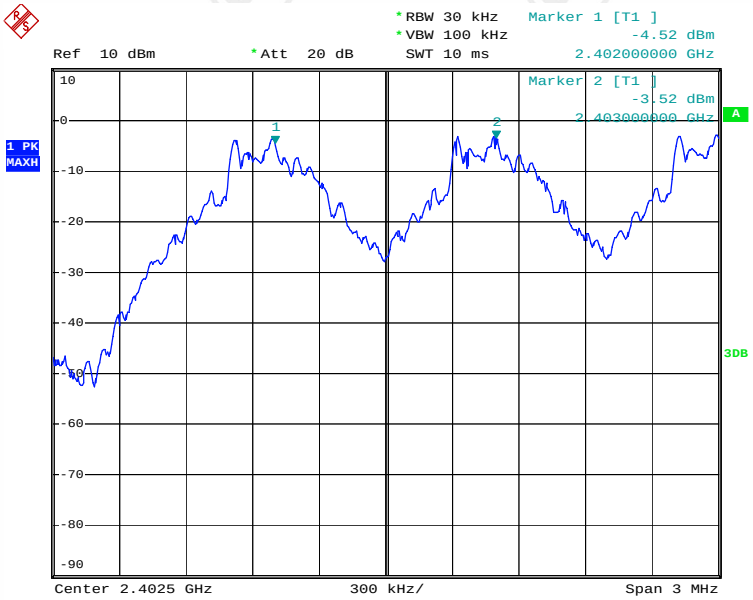
5. Measure and record the results in the test report.

8.4. TEST RESULT

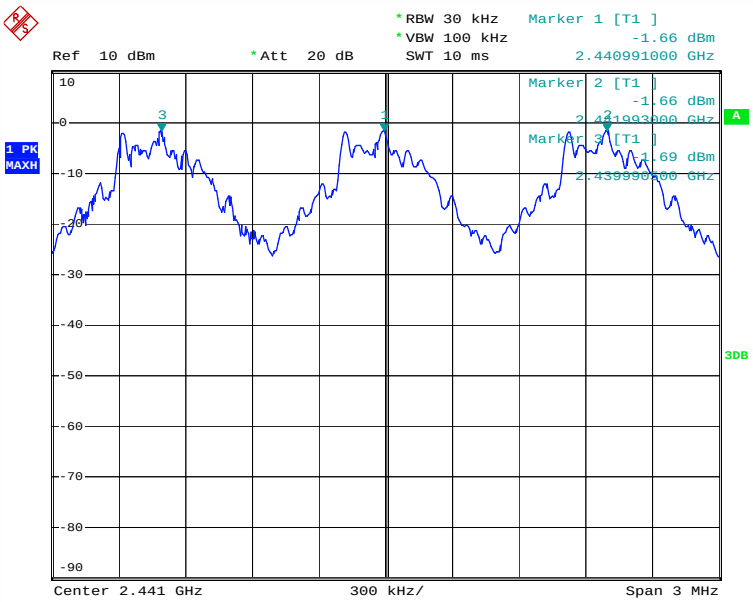
Carrier Frequency Separation: 1 MHz

Please see the following plots (worst case):

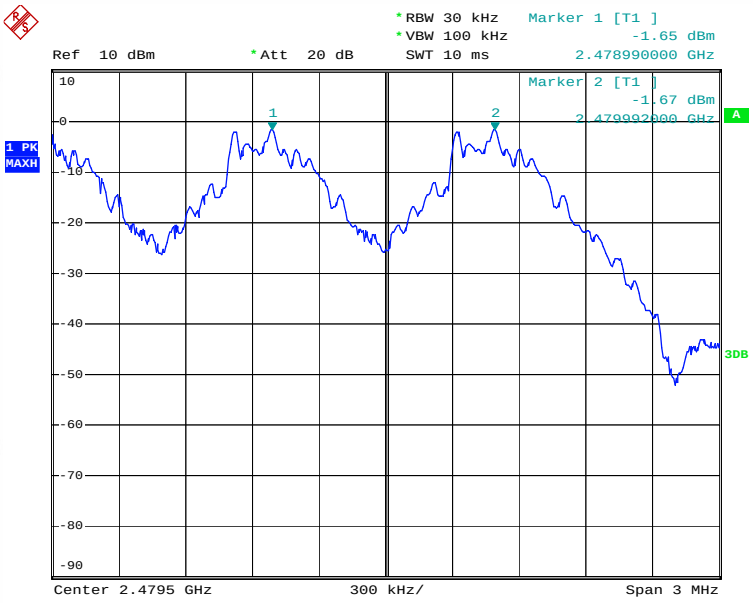
GFSK:



2402 MHz

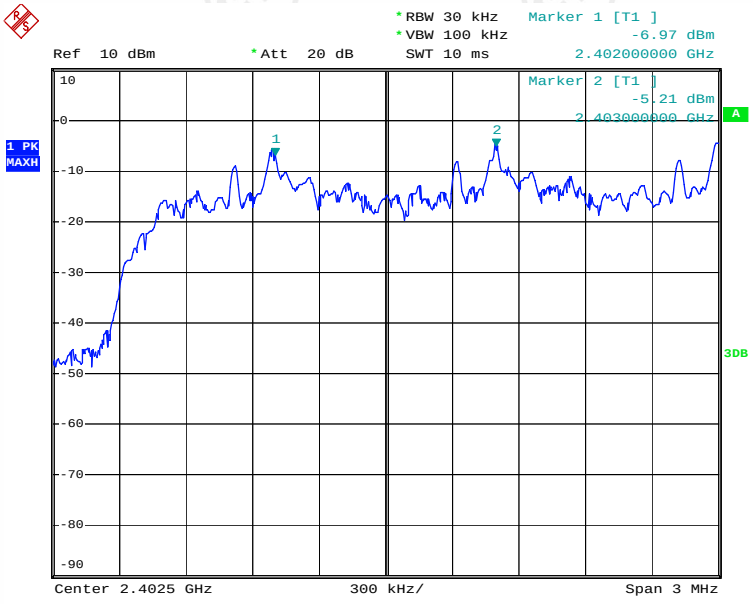


2441 MHz

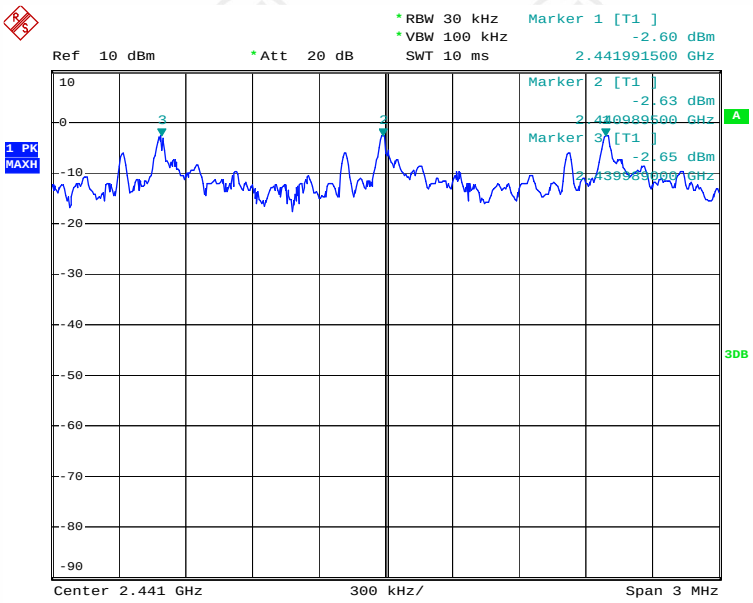


2480 MHz

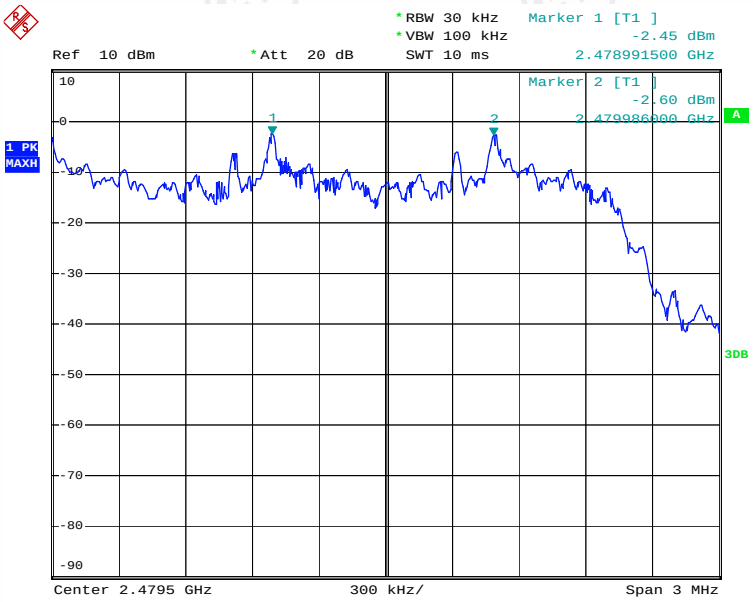
П/4-DQPSK:



2402 MHz

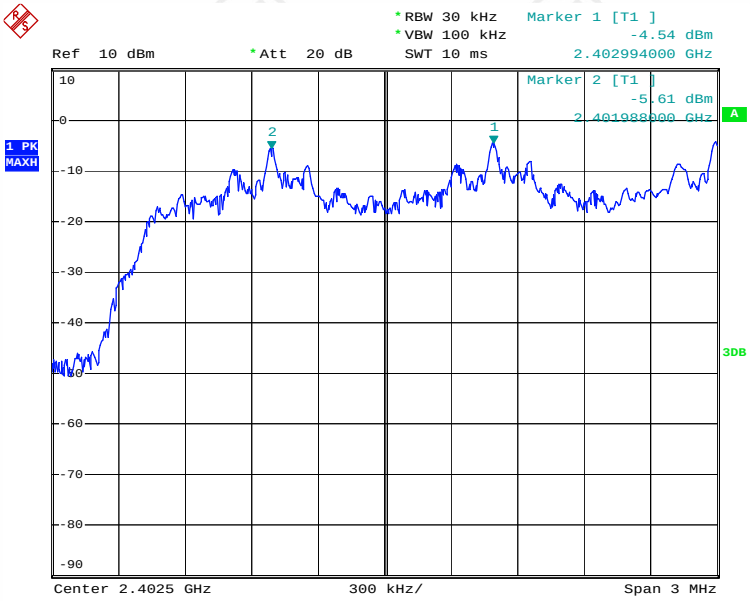


2441 MHz

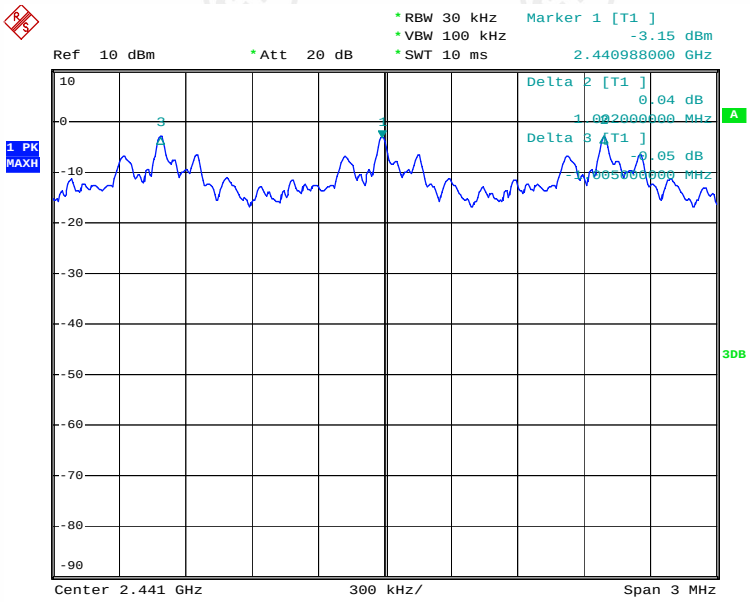


2480 MHz

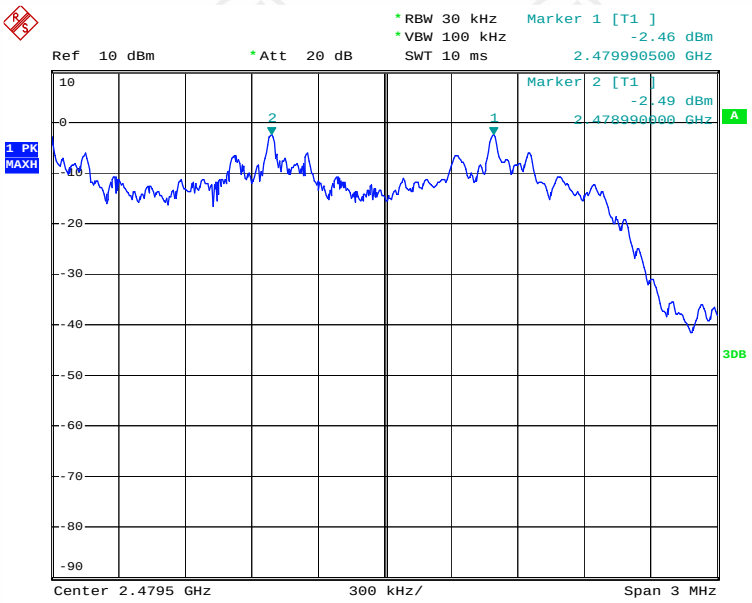
8DPSK:



2402 MHz



2441 MHz


RBW 30 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-2.46 dBm
2.479990500 GHz
Ref 10 dBm
Att 20 dB
Marker 2 [T1]
-2.49 dBm
2.478990000 GHz
1 PK
MAXH
A
3DB
Center 2.4795 GHz
300 kHz/
Span 3 MHz

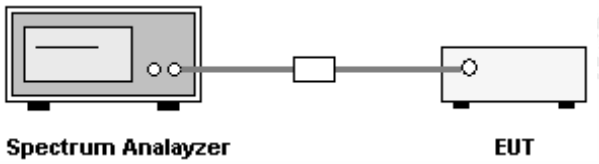
2480 MHz

9. NUMBER OF HOPPING FREQUENCY

9.1. LIMITS

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

9.2. BLOCK DIAGRAM OF TEST SETUP



9.3. TEST PROCEDURE

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.

2. Set to the maximum power setting and enable the EUT transmit continuously.

3. Enable the EUT hopping function.

4. Use the following spectrum analyzer settings: Span = the frequency band of operation; RBW ≥ 1% of the span; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.

5. The number of hopping frequency used is defined as the number of total channel.

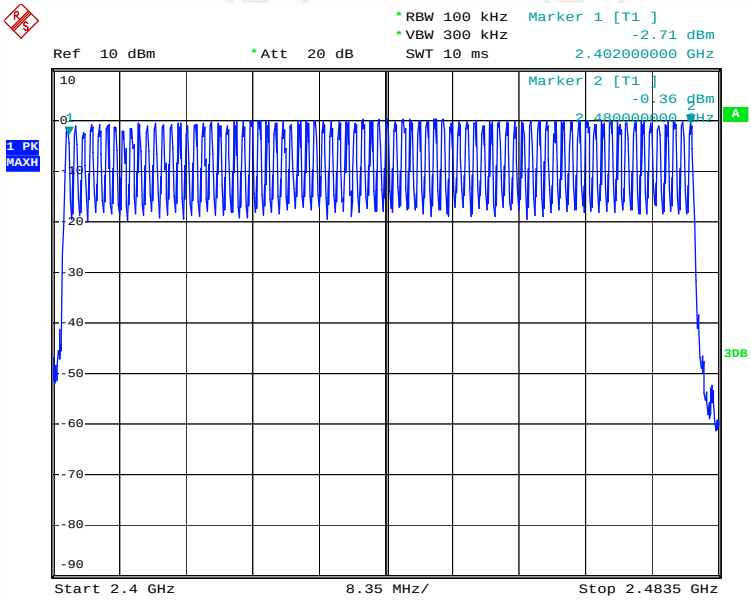
6. Record the measurement data derived from spectrum analyzer.

9.4. TEST RESULT

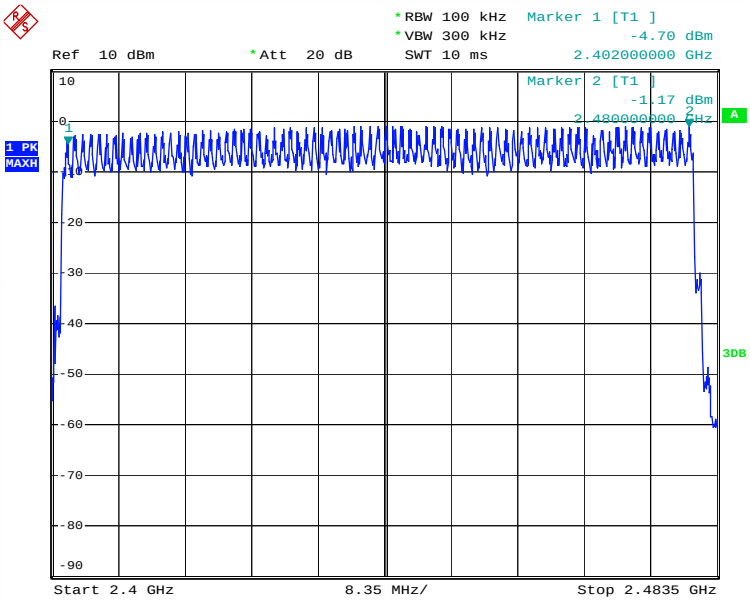
Number of Hopping Frequency is 79, with frequency space = 1MHz.

Please see the following plots (worst case):

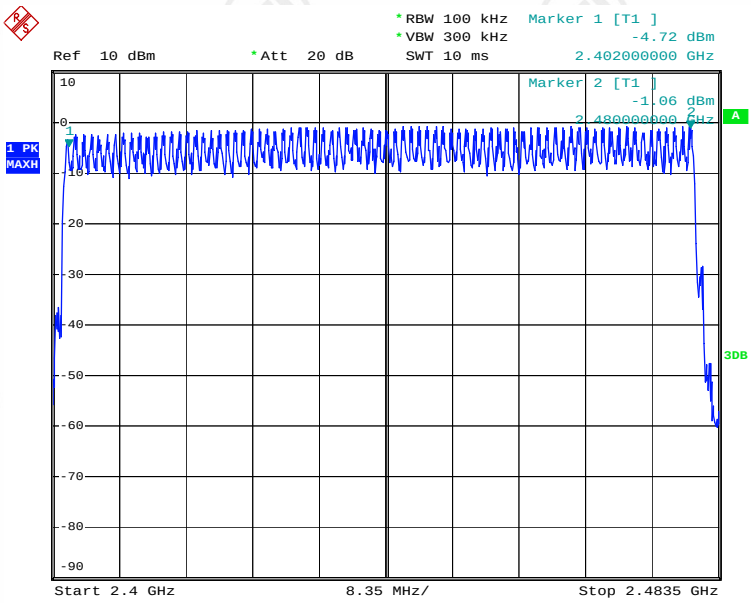
GFSK:



П/4-DQPSK:



8DPSK:

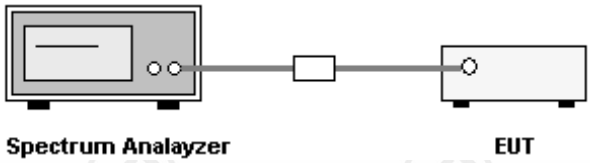

*RBW 100 kHz
*VBW 300 kHz
SWT 10 ms
Marker 1 [T1]
-4.72 dBm
2.402000000 GHz
Ref 10 dBm
*Att 20 dB
Marker 2 [T1]
-1.06 dBm
2.480000000 GHz
1 PK
MAXH
A
3DB
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Start 2.4 GHz
8.35 MHz/
Stop 2.4835 GHz

10. TIME OF OCCUPANCY (DWELL TIME)

10.1. LIMITS

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.

10.2. BLOCK DIAGRAM OF TEST SETUP



10.3. TEST PROCEDURE

1. The RF output of EUT was connected to the spectrum analyzer by RF cable.

The path loss was compensated to the results for each measurement.

2. Set to the maximum power setting and enable the EUT transmit continuously.

3. Enable the EUT hopping function.

4. Use the following spectrum analyzer settings: Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW ≥ RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold.

5. Measure and record the results in the test report.

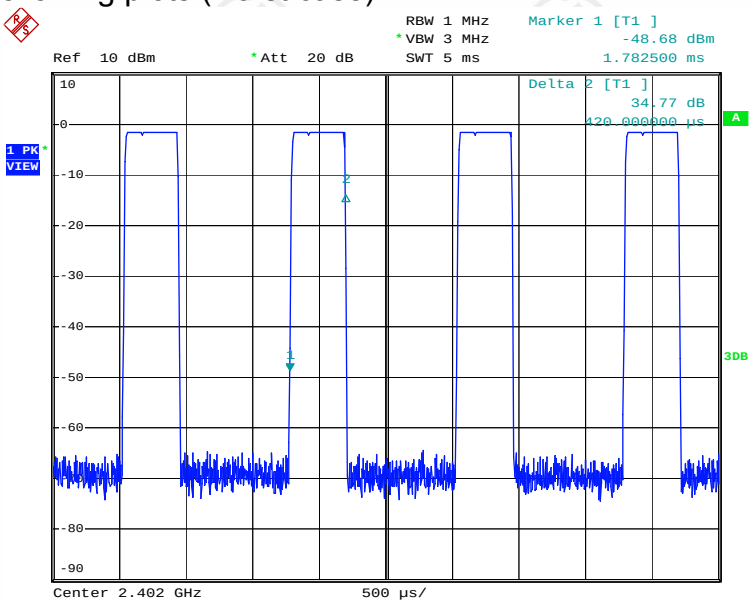
10.4. TEST RESULT

The test data of worst case (GFSK mode) are below:

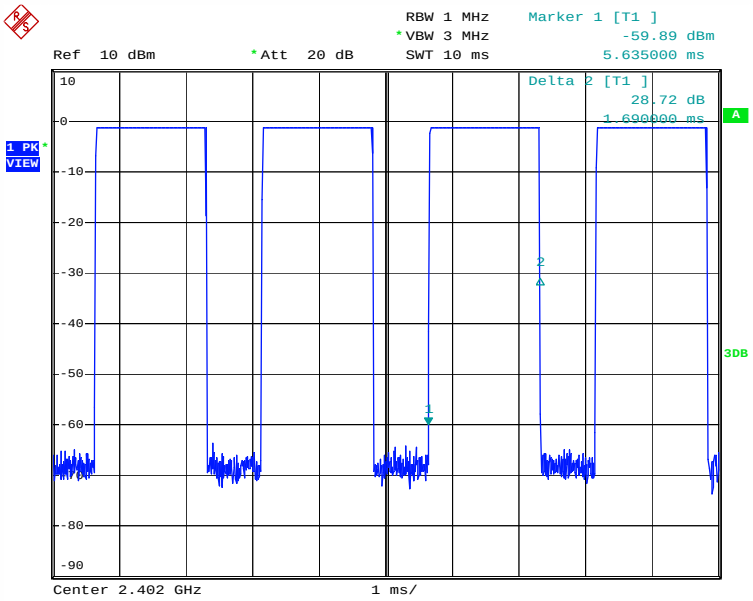
Frequency (MHz)	Pulse Wide(ms)		Dwell Time (ms)	Limit (s)	Result (Pass / Fail)
2402	DH1	0.42	134.4	0.4	Pass
	DH3	1.69	270.4		
	DH5	2.92	311.5		
2441	DH1	0.42	134.4	0.4	Pass
	DH3	1.66	265.6		
	DH5	2.92	311.5		
2480	DH1	0.42	134.4	0.4	Pass
	DH3	1.66	265.6		
	DH5	2.92	311.5		

Remark:
DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot RX, 1 time slot TX). So, total hops is 10.12 x 31.6 = 320
DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). So, total hops is 5.06 x 31.6 = 160
DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, total hops is 3.37 x 31.6 = 106.67

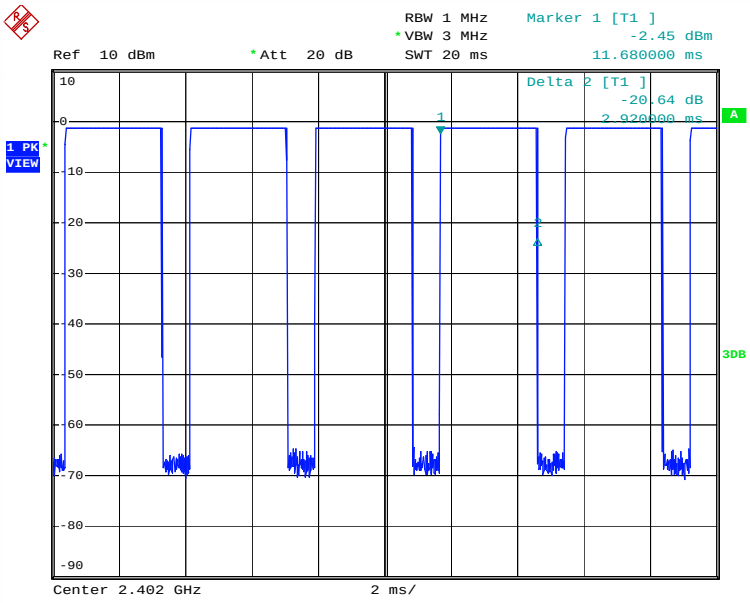
Please see the following plots (worst case):



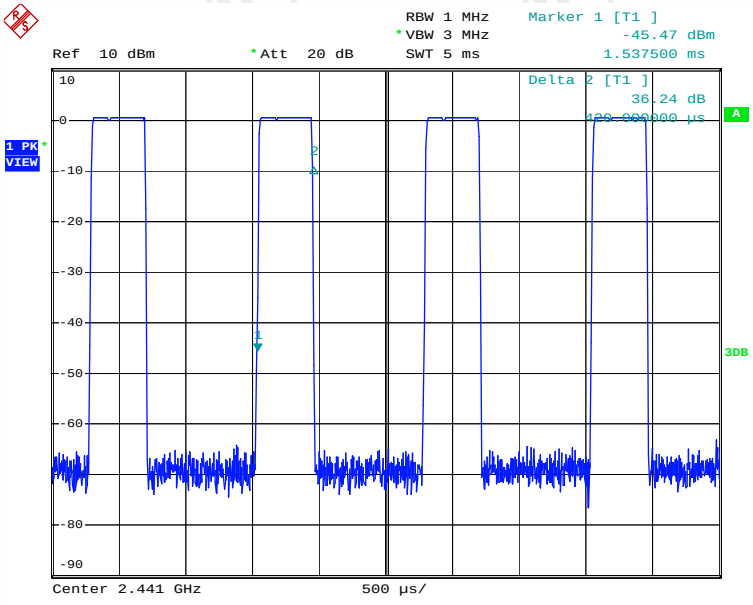
2402 MHz_DH1



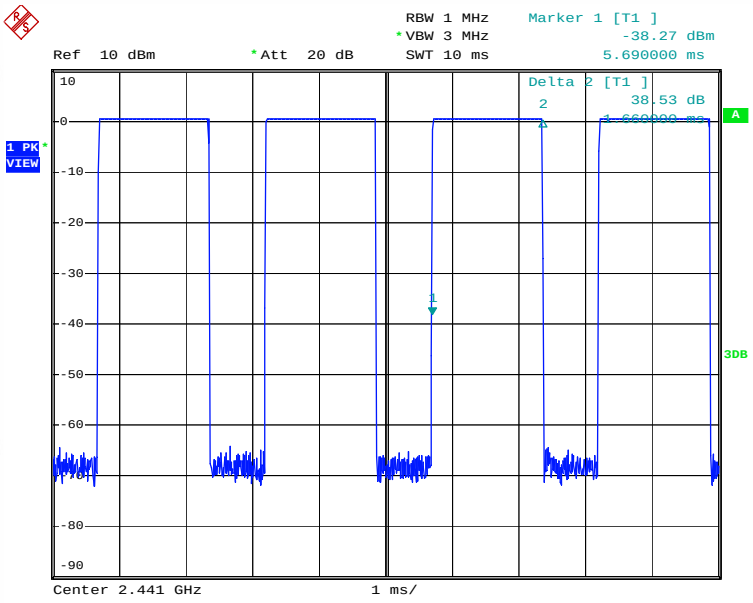
2402 MHz_DH3



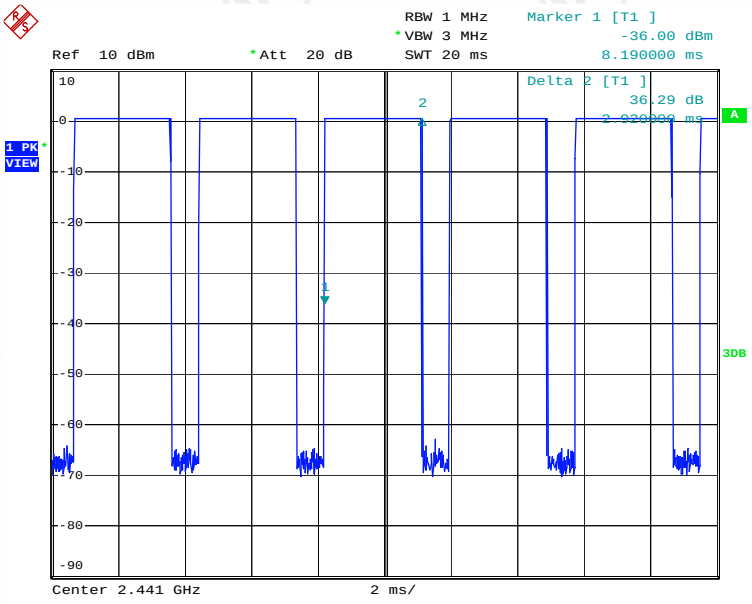
2402 MHz_DH5



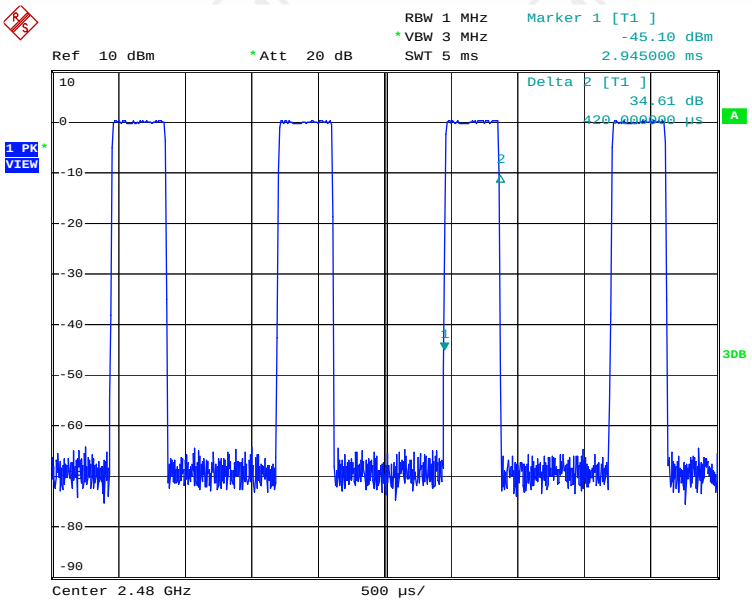
2441 MHz_DH1



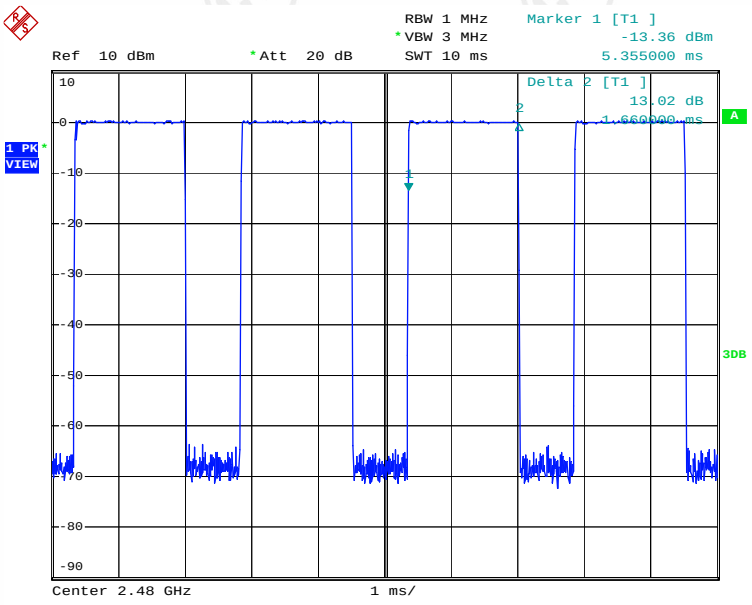
2441 MHz_DH3



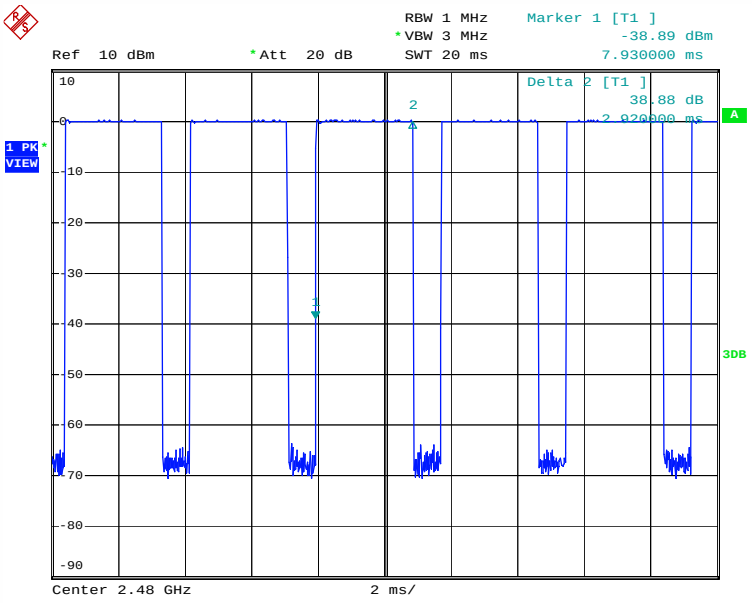
2441 MHz_DH5



2480 MHz_DH1



2480 MHz_DH3


RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-38.89 dBm
7.930000 ms
Ref 10 dBm
*Att 20 dB
Delta 2 [T1]
38.88 dB
2.920000 ms
1 PK*
VIEW
A
3DB
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Center 2.48 GHz
2 ms/

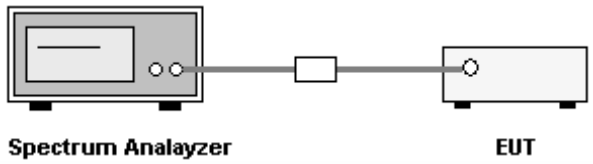
2480 MHz_DH5

11. MAXIMUM PEAK CONDUCTED OUTPUT POWER MEASUREMENT

11.1. LIMITS

The limit for peak output power is 0.125Watt (21 dBm).

11.2. BLOCK DIAGRAM OF TEST SETUP



11.3. TEST PROCEDURE

1. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.

2. Set to the maximum power setting and enable the EUT transmit continuously.

3. Measure the conducted output power with cable loss and record the results in the test report.

4. Measure and record the results in the test report.

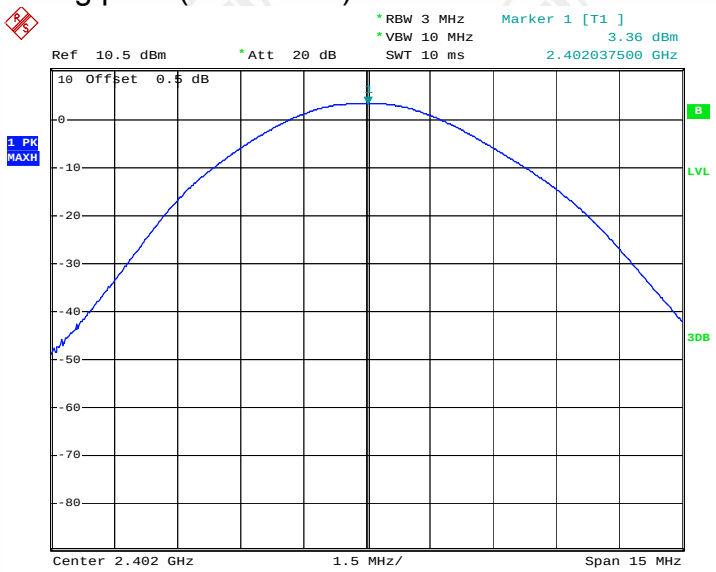
11.4. TEST RESULT

All the modes of GFSK, π/4-DQPSK and 8DPSK have been tested. The worst case is GFSK mode, and the worst data of GFSK mode are below:

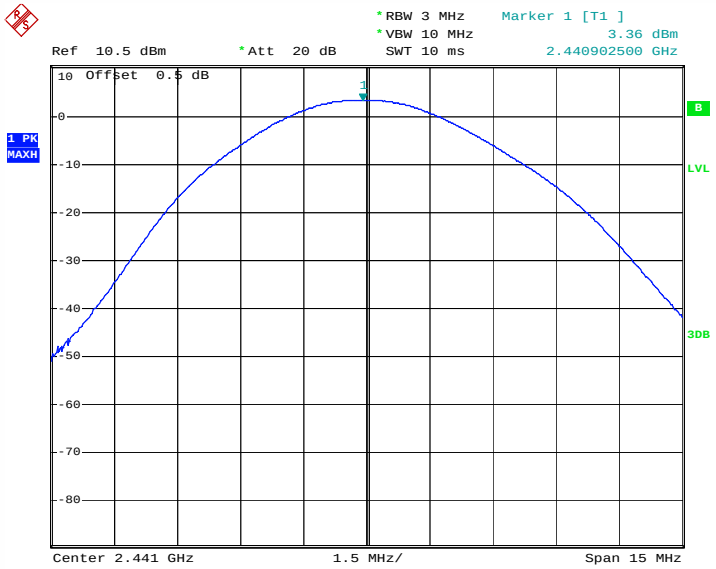
Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Result (Pass / Fail)
2402	3.36	21	Pass
2441	3.36	21	Pass
2480	2.60	21	Pass

Remark:
Antenna Gain: -0.6dBi

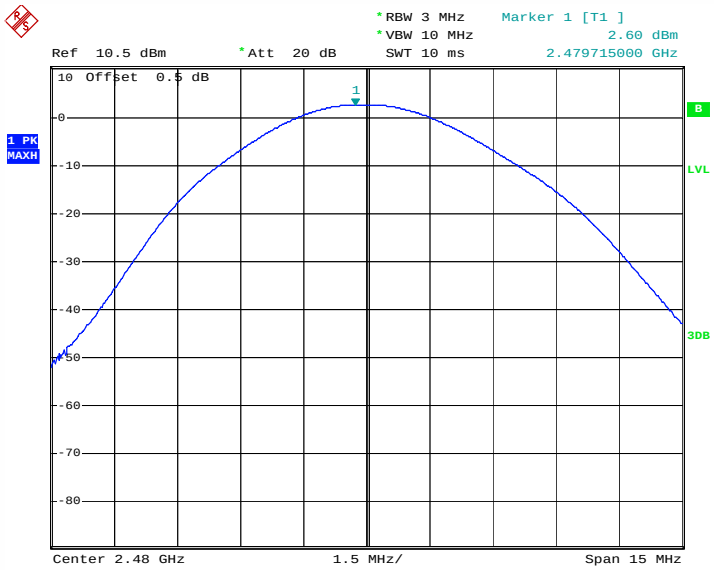
Please see the following plots (worst case):



2402MHz



2441MHz


*RBW 3 MHz
*VBW 10 MHz
SWT 10 ms
Marker 1 [T1]
2.60 dBm
2.479715000 GHz
Ref 10.5 dBm
*Att 20 dB
10 Offset 0.5 dB
1 PK MAXH
B
LVL
3DB
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.48 GHz
1.5 MHz/
Span 15 MHz

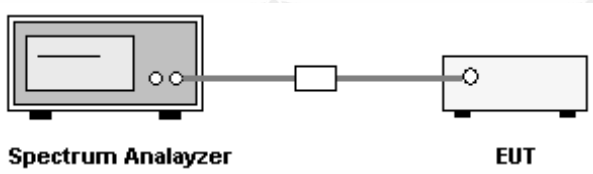
2480MHz

12. CONDUCTED BANDEDGE EMISSION MEASUREMENT

12.1. LIMITS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

12.2. BLOCK DIAGRAM OF TEST SETUP



12.3. TEST PROCEDURE

1. Set to the maximum power setting and enable the EUT transmit continuously.

2. Set RBW = 100 kHz, VBW = 300 kHz (≥ RBW). Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

3. Enable hopping function of the EUT and then repeat step 1 and 2.

4. Measure and record the results in the test report.

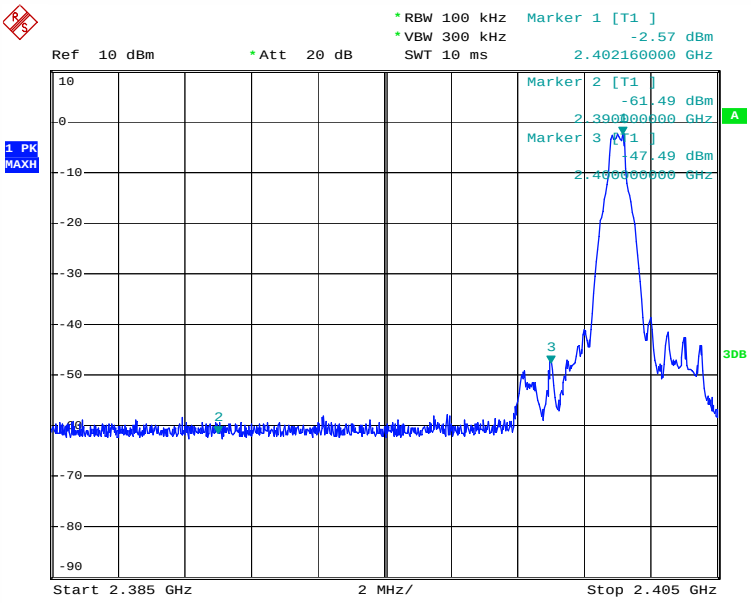
12.4. TEST RESULT

Pass.

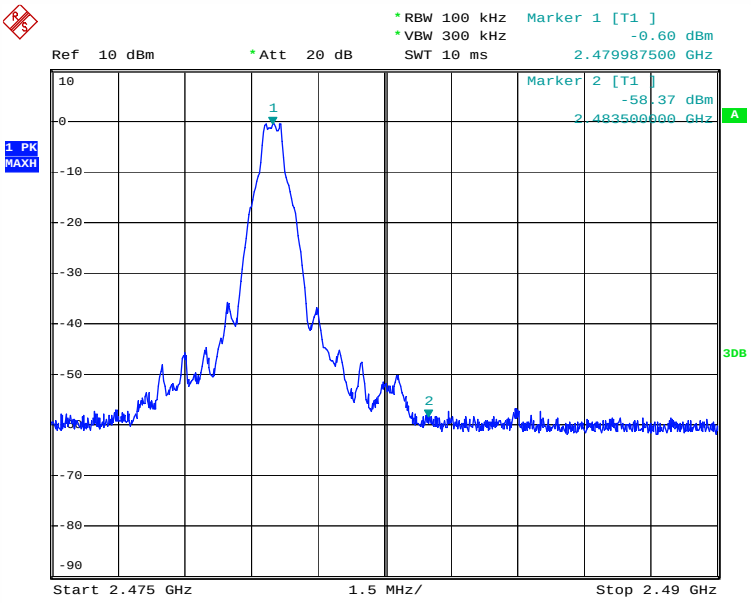
The test data of worst case are below:

GFSK:

Hopping off mode:

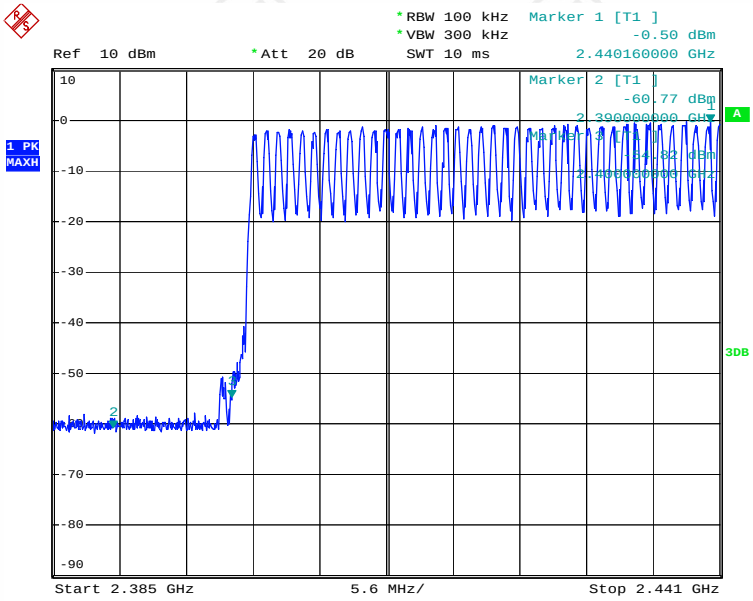


Low channel

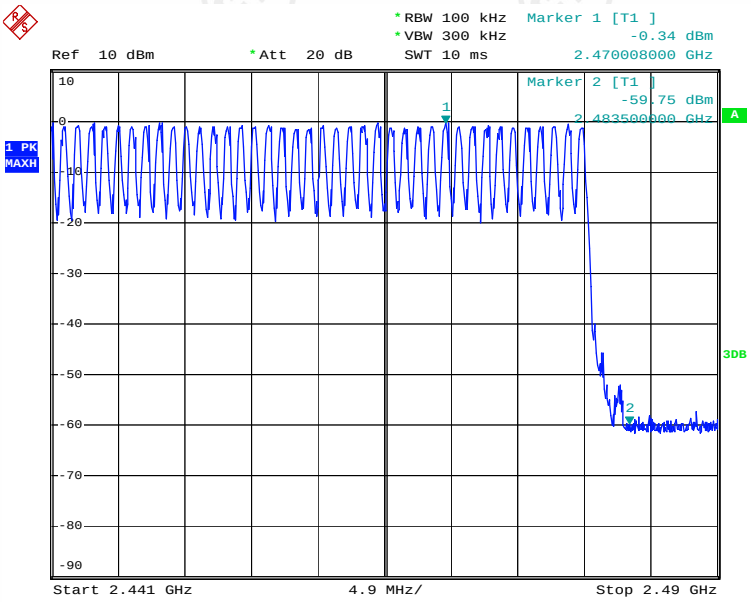


High channel

Hopping mode:

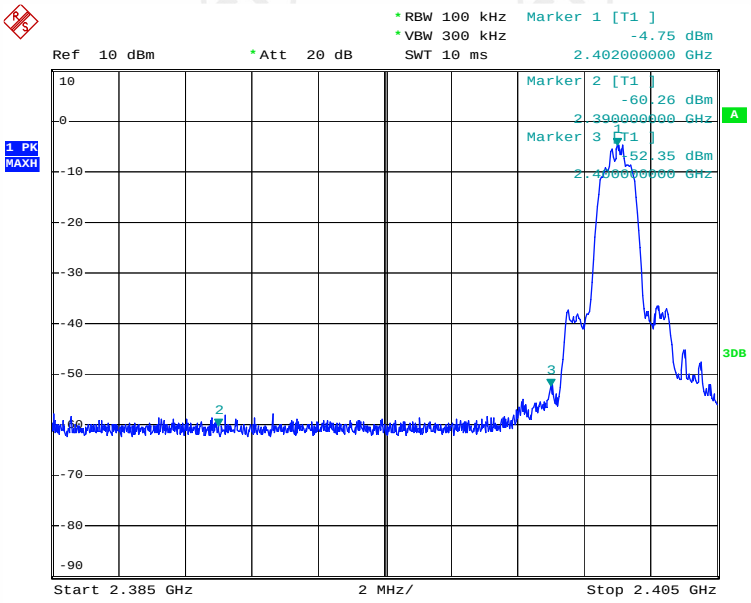


Low channel

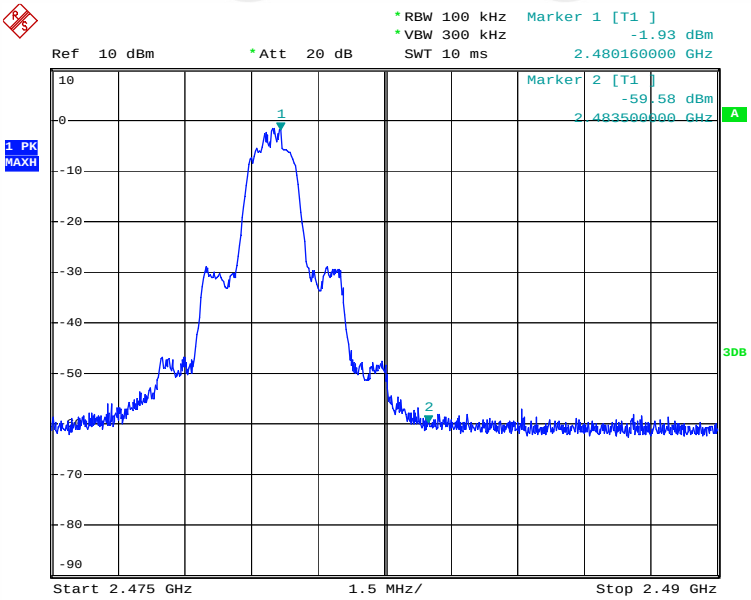


High channel

П/4-DQPSK:
Hopping off mode:

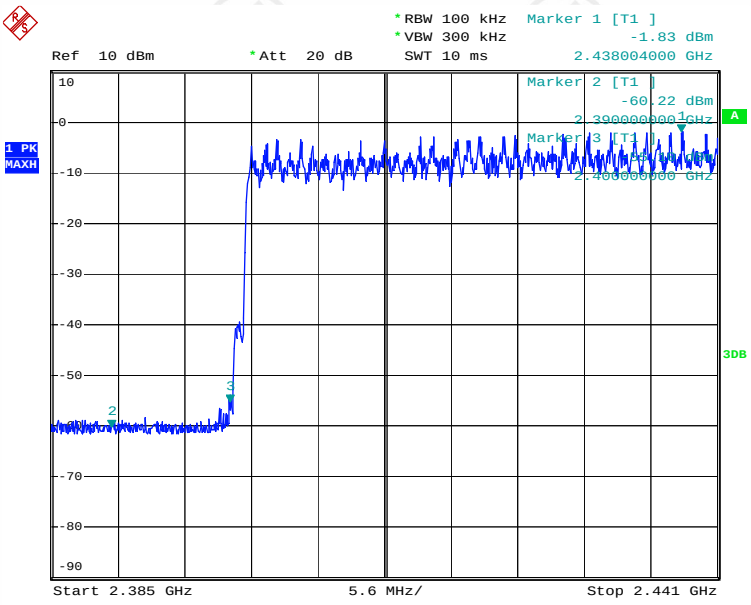


Low channel

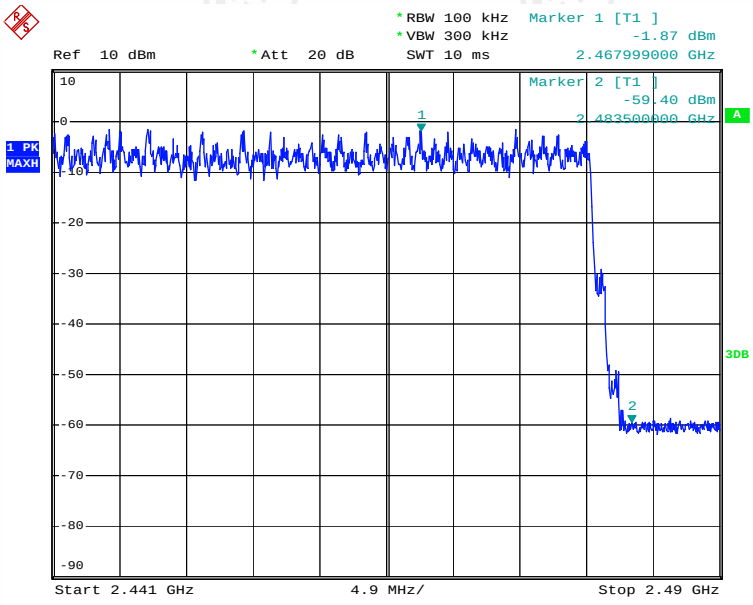


High channel

Hopping mode:



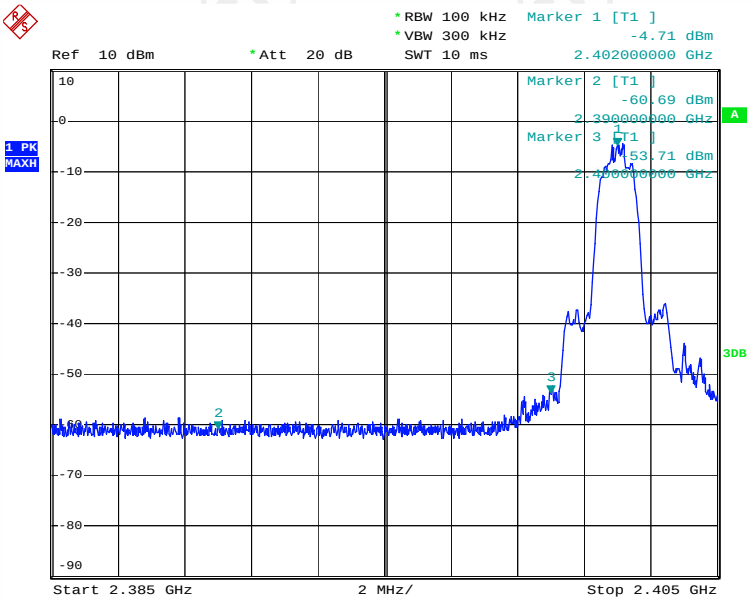
Low channel



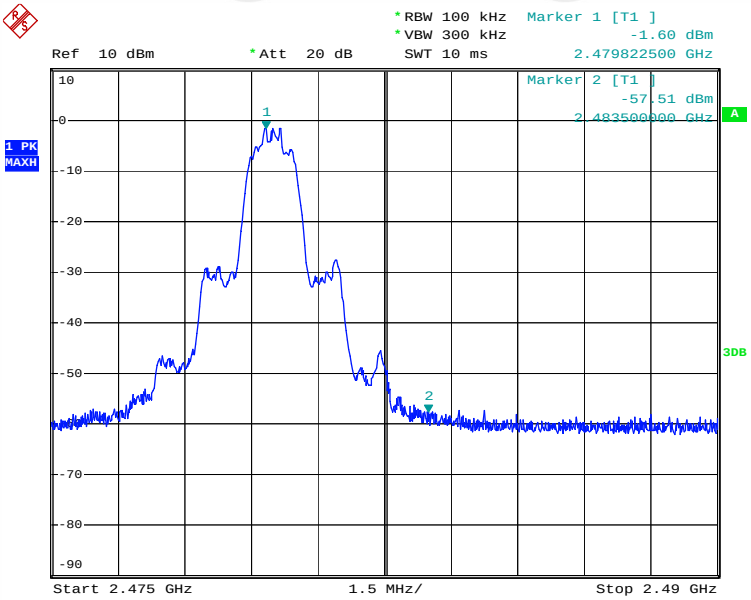
High channel

8DPSK:

Hopping off mode:

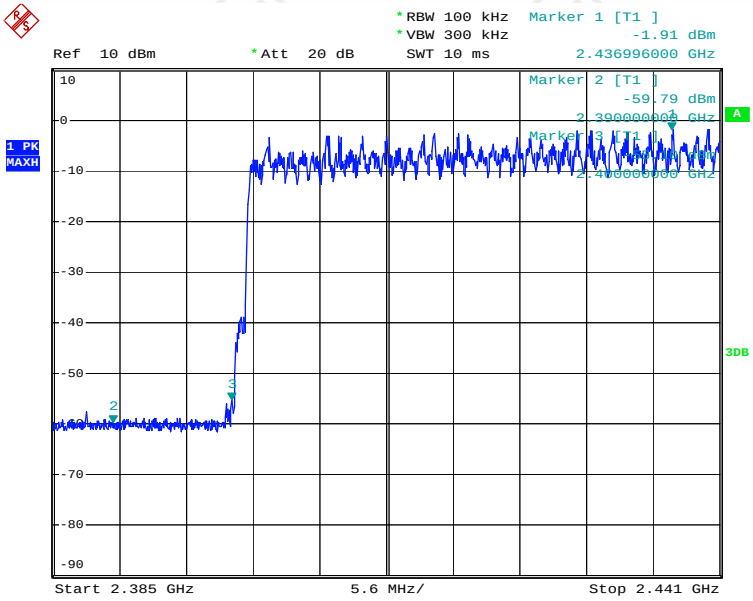


Low channel

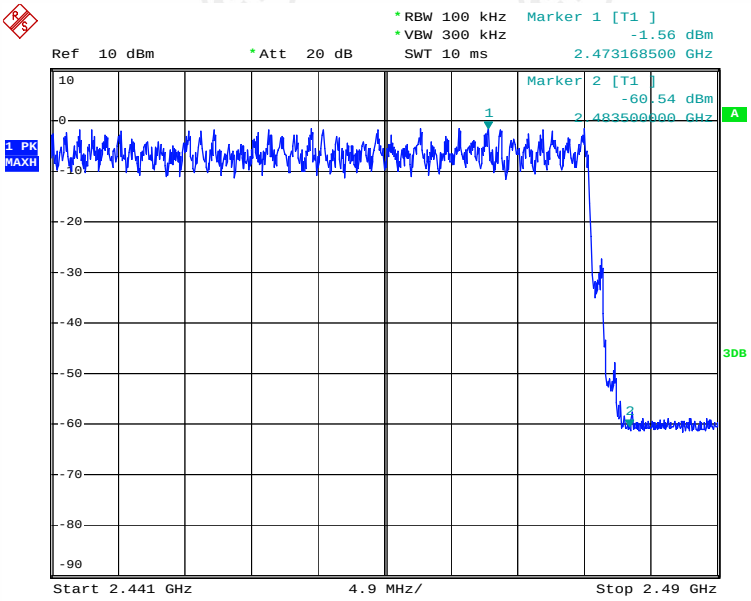


High channel

Hopping mode:



Low channel



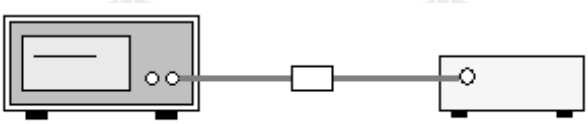
High channel

13. CONDUCTED SPURIOUS EMISSION MEASUREMENT

13.1. LIMITS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

13.2. BLOCK DIAGRAM OF TEST SETUP



13.3. TEST PROCEDURE

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.

2. Set to the maximum power setting and enable the EUT transmit continuously.

3. Set RBW = 100 kHz, VBW = 300 kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

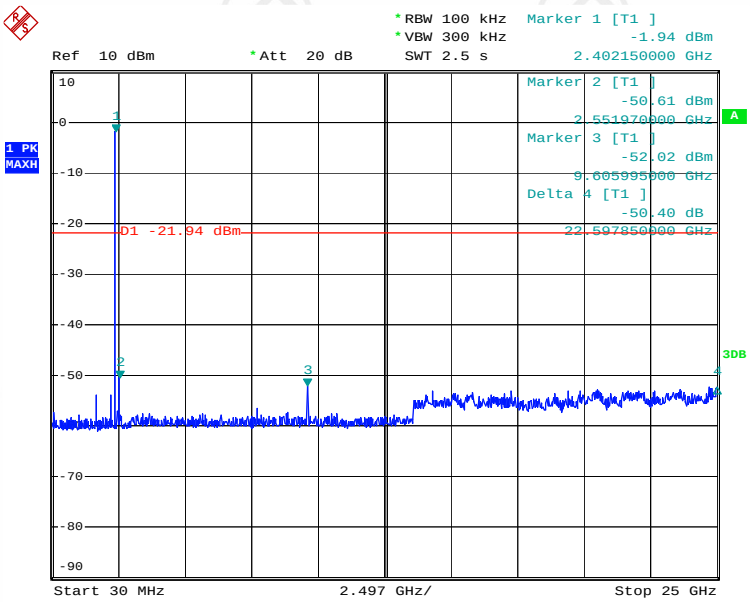
4. Measure and record the results in the test report.

5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

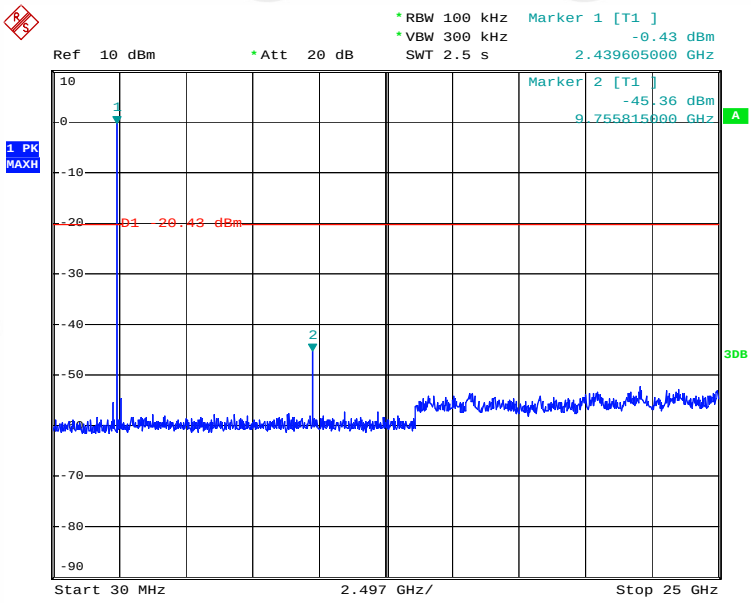
13.4. TEST RESULT

Pass.

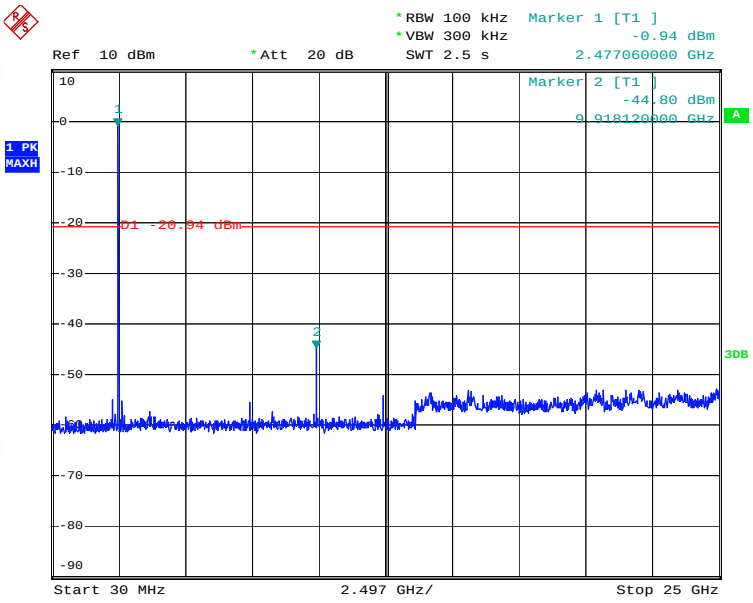
Please see the following plots (worst case, GFSK mode):



2402MHz



2441MHz


*RBW 100 kHz
*VBW 300 kHz
Ref 10 dBm
*Att 20 dB
SWT 2.5 s
Marker 1 [T1]
-0.94 dBm
2.477060000 GHz
Marker 2 [T1]
-44.80 dBm
9.918120000 GHz
1 PK
MAXH
A
3DB
D1 -20.94 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

2480MHz

14. RADIATED BANDEDGE EMISSION / RADIATED SPURIOUS EMISSION MEASUREMENT

14.1. LIMITS

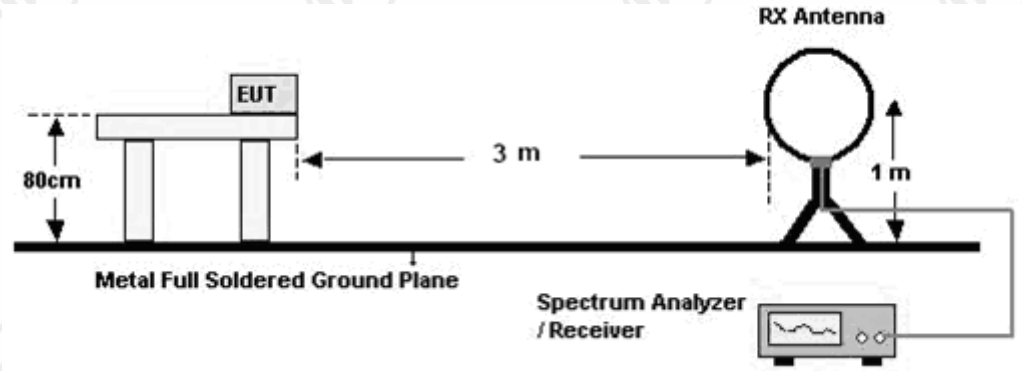
The field strength of any emissions, which appear outside of operating frequency band and restricted band specified on FCC 15.205(a), shall not exceed the general radiated emission limits as below.

Frequency (MHz)	Field strength (μV/m)	Distance (m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

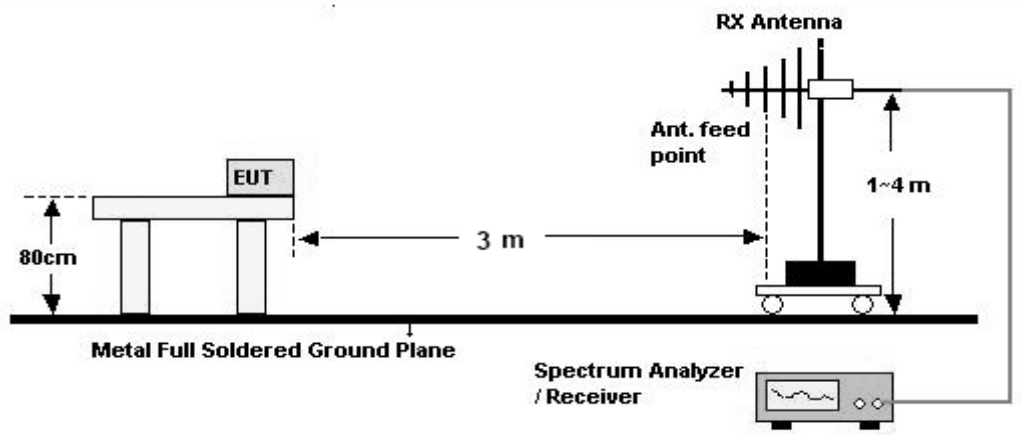
Note: the tighter limit applies at the band edges.

14.2. BLOCK DIAGRAM OF TEST SETUP

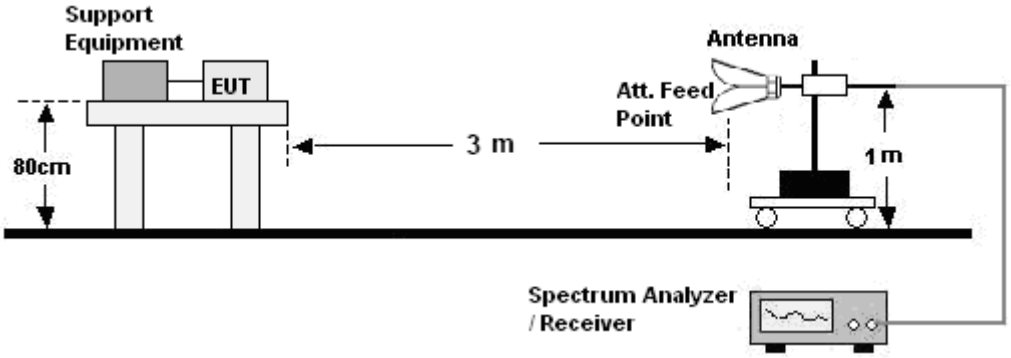
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30 - 1000MHz



For radiated emissions from 1GHz to 25GHz



14.3. TEST PROCEDURE

Below 30MHz

a. The Product is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The maximum values of the field strength are recorded by adjusting the polarizations of the test antenna and rotating the turntable.

b. For each suspected emission, the Product was arranged to its worst case and then turn table was turned from 0 degrees to 360 degrees to find the maximum reading.

c. The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

30MHz ~ 1GHz:

a. The Product was placed on the non-conductive turntable 0.8m above the ground at a chamber.

b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 100 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.

c. For each frequency whose maximum record was higher or close to limit, measure its QP value (120 kHz RBW): vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

Above 1GHz:

a. The EUT was placed on the non-conductive turntable 0.8 m above the ground at a chamber.

b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.

c. For AV vale testing, set the spectrum analyzer/receiver in RMS detector, Max Hold mode, and 1MHz RBW, VBW 3MHz.

14.4. TEST RESULT

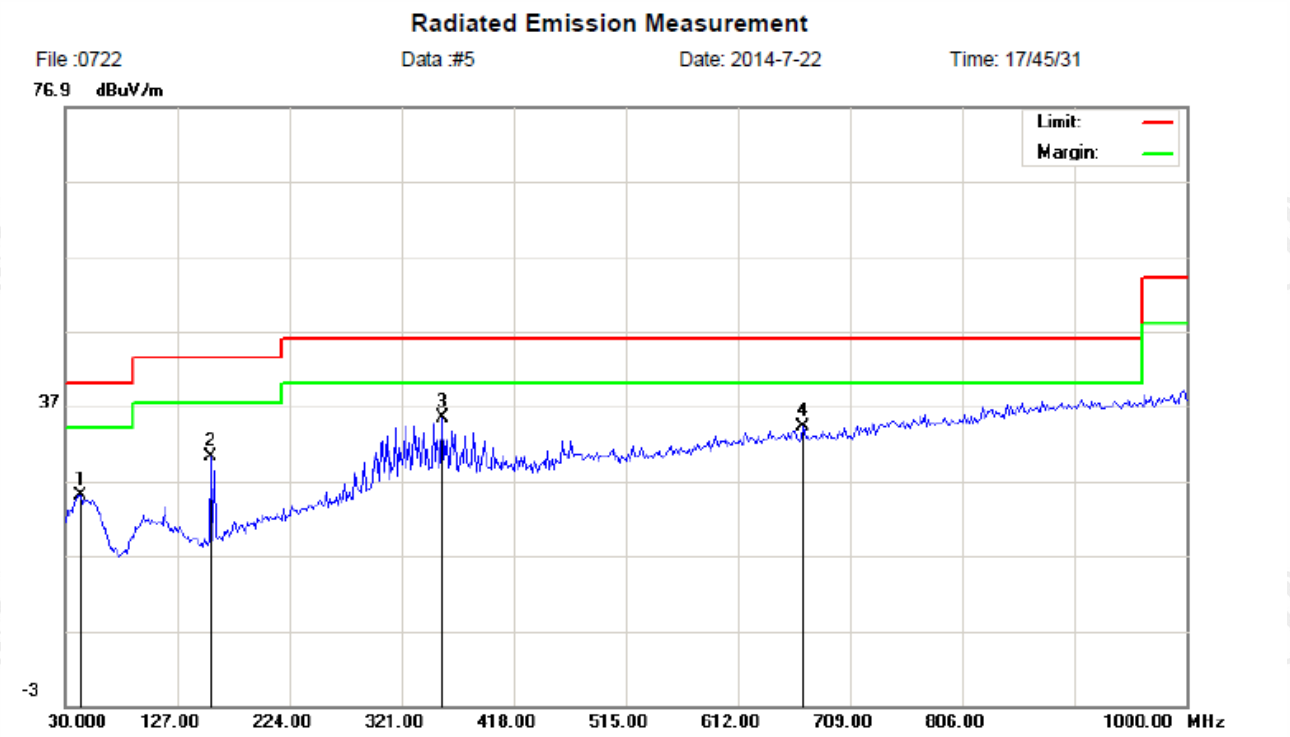
A. Below 30MHz:

No emissions were found higher than the background below 30MHz and background is lower than the limit, so it deems to compliance with the limit without recorded.

B. 30MHz ～ 1GHz:

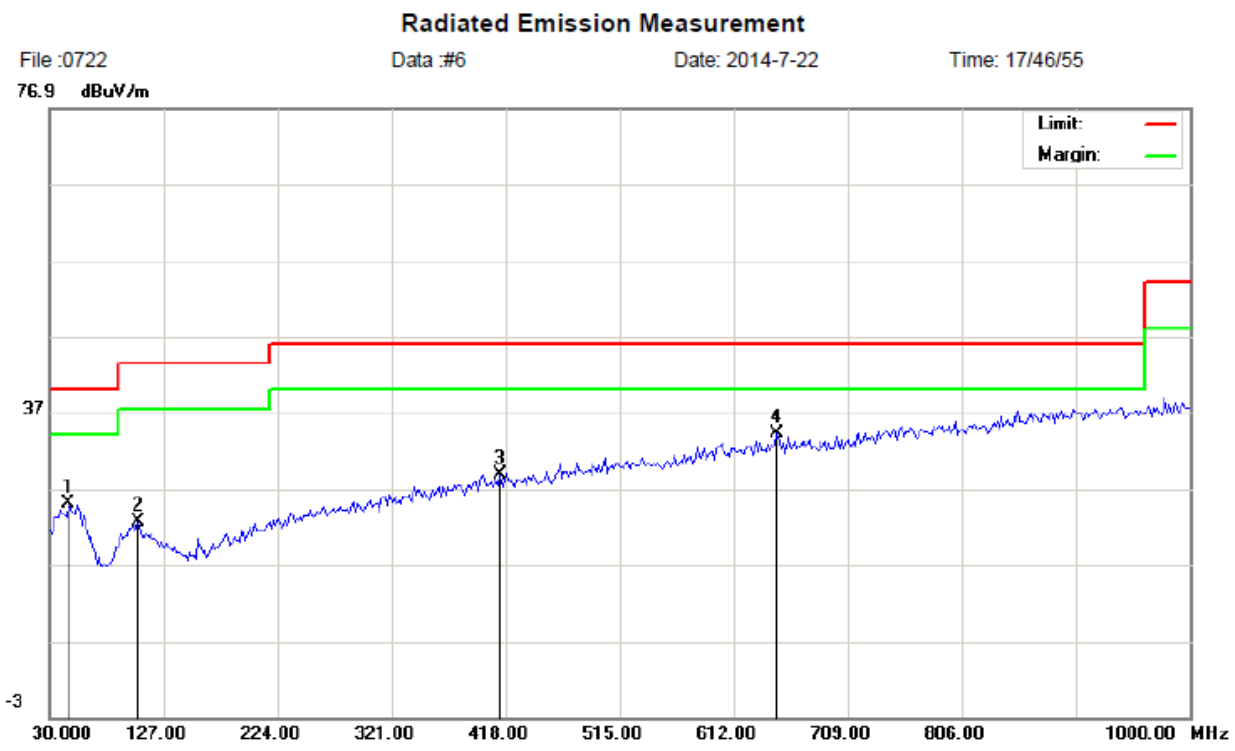
The test data of low channel, middle channel and high channel are almost same in frequency bands 30MHz to 1GHz, and the data of middle channel (GFSK mode) are chosen as representative in below:

H:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	42.9333	8.50			16.46	24.96			40.00		-15.04		P	
2	156.1000	19.27			10.87	30.14			43.50		-13.36		P	
3	356.5667	16.98			18.36	35.34			46.00		-10.66		P	
4	668.5833	9.86			24.31	34.17			46.00		-11.83		P	

V:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	46.1667	8.40			16.52	24.92			40.00		-15.08		P	
2	105.9833	8.83			13.76	22.59			43.50		-20.91		P	
3	413.1500	9.18			19.53	28.71			46.00		-17.29		P	
4	649.1833	10.04			24.19	34.23			46.00		-11.77		P	

C. Above 1GHz:

Test Results-(Measurement Distance: 3m)_Channel low_2402MHz_GFSK mode:

Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limit (dBuV/m)	Detector Type	Antenna (H/V)	Result (P/F)
2390.0	42.50	1.99	44.49	74	PK	H	P
2400.0	48.20	2.01	50.21	74	PK	H	P
2402.0*	84.68	2.01	86.69	---	PK	H	P
4804.0	42.28	6.13	48.41	74	PK	H	P
7206.0	47.73	11.6	59.33	74	PK	H	P
7206.0	36.37	11.6	47.97	54	AV	H	P
2390.0	42.52	1.99	44.51	74	PK	V	P
2400.0	49.03	2.01	51.04	74	PK	V	P
2402.0*	86.43	2.01	88.44	---	PK	V	P
4804.0	45.49	6.13	51.62	74	PK	V	P
7206.0	49.73	11.6	61.33	74	PK	V	P
7206.0	38.62	11.6	50.22	54	AV	V	P

*: fundamental frequency

Test Results-(Measurement Distance: 3m)_Channel middle_2441MHz_GFSK mode:

Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limit (dBuV/m)	Detector Type	Antenna (H/V)	Result (P/F)
2441.0*	86.09	2.11	88.20	---	PK	H	P
4882.0	44.74	6.18	50.92	74	PK	H	P
7322.0	49.38	11.9	61.28	74	PK	H	P
7322.0	36.36	11.9	48.26	54	AV	H	P
2441.0*	86.22	2.11	88.33	---	PK	V	P
4882.0	45.33	6.18	51.51	74	PK	V	P
7322.0	53.73	11.9	65.63	74	PK	V	P
7322.0	38.14	11.9	50.04	54	AV	V	P

*: fundamental frequency

Test Results-(Measurement Distance: 3m)_Channel high_2480MHz_GFSK mode:

Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limit (dBuV/m)	Detector Type	Antenna (H/V)	Result (P/F)
2480.0*	87.50	2.18	89.68	---	PK	H	P
2483.5	50.32	2.18	52.50	74	PK	H	P
4960.0	44.51	6.21	50.72	74	PK	H	P
7440.0	50.23	12.3	62.53	74	PK	H	P
7440.0	35.58	12.3	47.88	54	AV	H	P
2480.0*	88.45	2.18	90.63	---	PK	V	P
2483.5	51.19	2.18	53.37	74	PK	V	P
4960.0	39.91	6.21	46.12	74	PK	V	P
7440.0	54.17	12.3	66.47	74	PK	V	P
7440.0	37.47	12.3	49.77	54	AV	V	P

*: fundamental frequency

Remark:

1. The above tables show that the frequencies peak data are all below the average limit, so the average data of these frequencies are deems to fulfill the average limits and not reported.
2. All the modes of GFSK, π/4-DQPSK and 8DPSK have been tested. The worst case is GFSK mode, and the worst data of GFSK mode are chosen as above.
3. No emission found from 18GHz to 25GHz.
4. All outside of operating frequency band and restricted band specified are below 15.209.

15. AC CONDUCTED EMISSION TEST

15.1. LIMITS

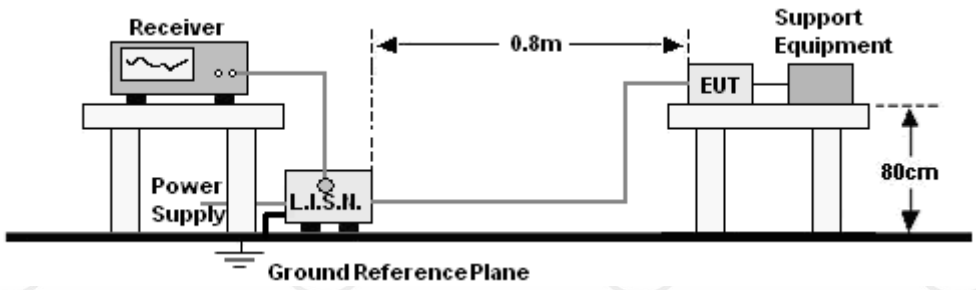
Limits for Class B digital devices

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

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

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

15.2. BLOCK DIAGRAM OF TEST SETUP



15.3. PROCEDURE OF CONDUCTED EMISSION TEST

a. The Product was placed on a nonconductive table above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

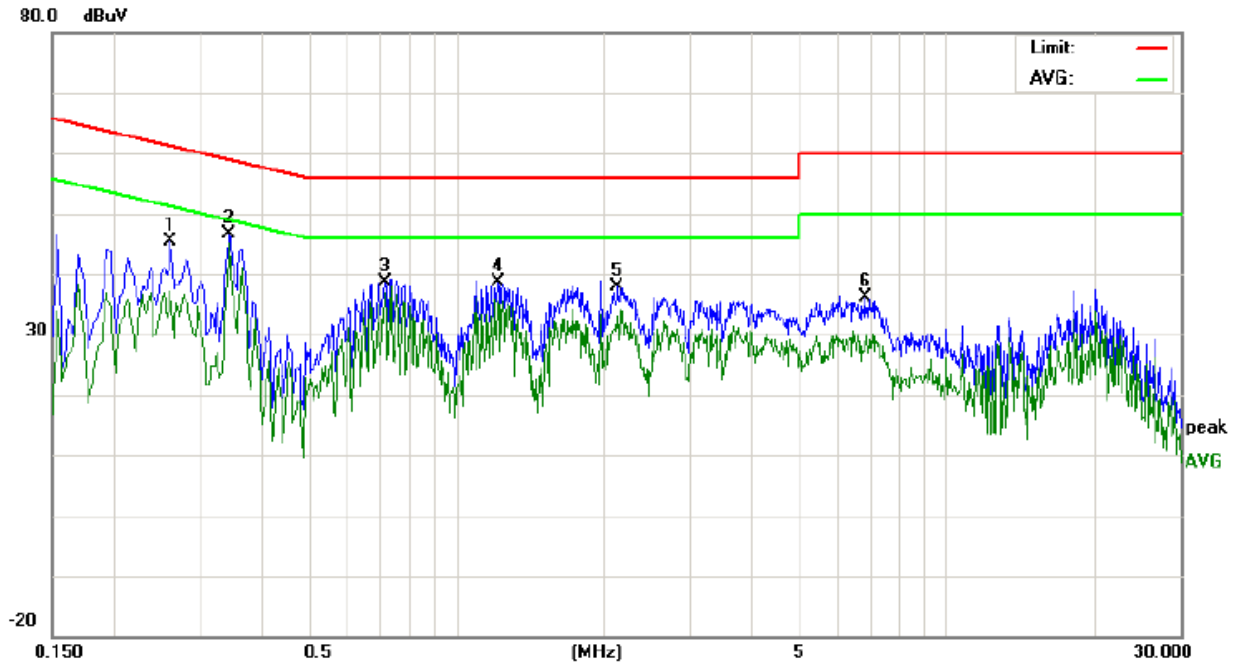
b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

15.4. GRAPHS AND DATA

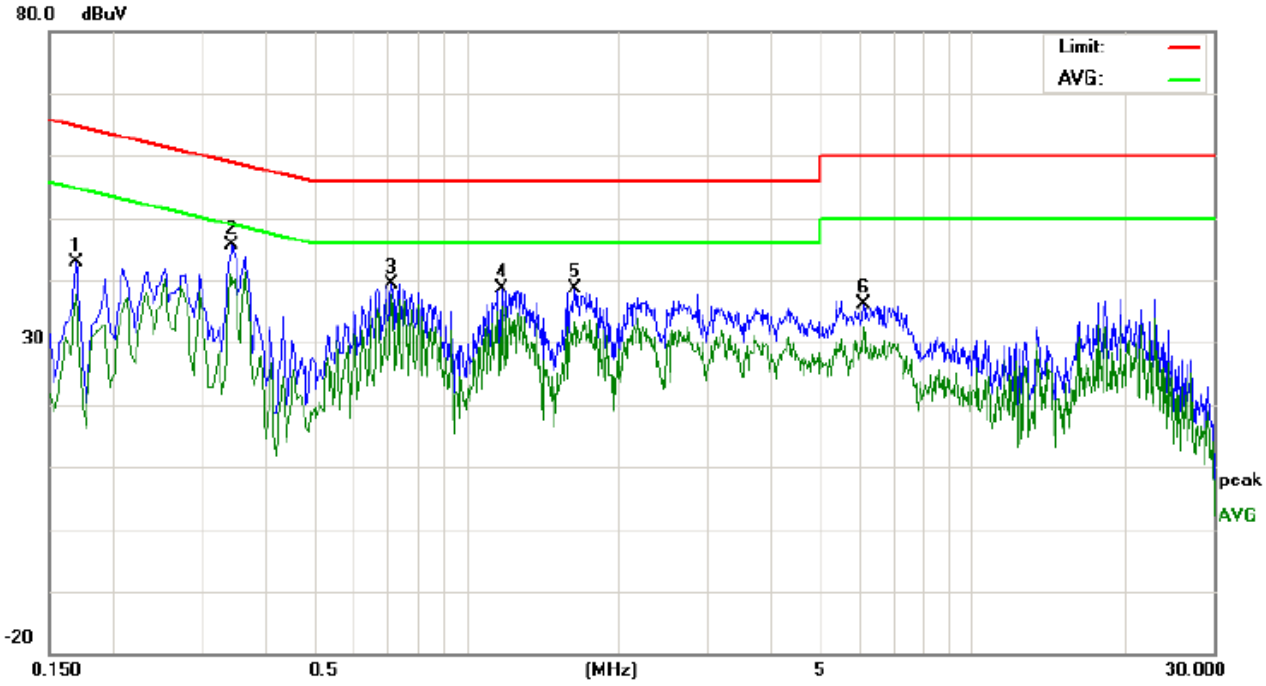
Product	:	Bluetooth Speaker	**Model/Type reference**	:	PS039BKG
Power	:	DC 5V	**Temperature**	:	23℃
Mode	:	Keeping TX	**Humidity**	:	52%

L:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.2620	35.59		27.37	9.80	45.39		37.17	61.36	51.36	-15.97	-14.19	P	
2	0.3460	36.84		35.25	9.80	46.64		45.05	59.06	49.06	-12.42	-4.01	P	
3	0.7180	28.94		26.98	9.80	38.74		36.78	56.00	46.00	-17.26	-9.22	P	
4	1.2220	28.70		25.52	9.82	38.52		35.34	56.00	46.00	-17.48	-10.66	P	
5	2.1380	28.06		23.34	9.90	37.96		33.24	56.00	46.00	-18.04	-12.76	P	
6	6.8100	26.16		17.09	10.00	36.16		27.09	60.00	50.00	-23.84	-22.91	P	

N:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1700	33.02		27.90	9.77	42.79		37.67	64.96	54.96	-22.17	-17.29	P	
2	0.3460	35.80		29.46	9.80	45.60		39.26	59.06	49.06	-13.46	-9.80	P	
3	0.7140	29.58		27.78	9.80	39.38		37.58	56.00	46.00	-16.62	-8.42	P	
4	1.1740	28.80		26.03	9.82	38.62		35.85	56.00	46.00	-17.38	-10.15	P	
5	1.6420	28.75		23.64	9.86	38.61		33.50	56.00	46.00	-17.39	-12.50	P	
6	6.1140	21.34		12.00	10.00	31.34		22.00	60.00	50.00	-28.66	-28.00	P	

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

TEST SETUP OF RADIATED EMISSION (30MHz-1GHz)

TEST SETUP OF RADIATED EMISSION (above 1GHz)

TEST SETUP OF CONDUCTED EMISSION

APPENDIX 2 EXTERNAL PHOTOGRAPHS OF PRODUCT

External View of product-1

External View of product-2

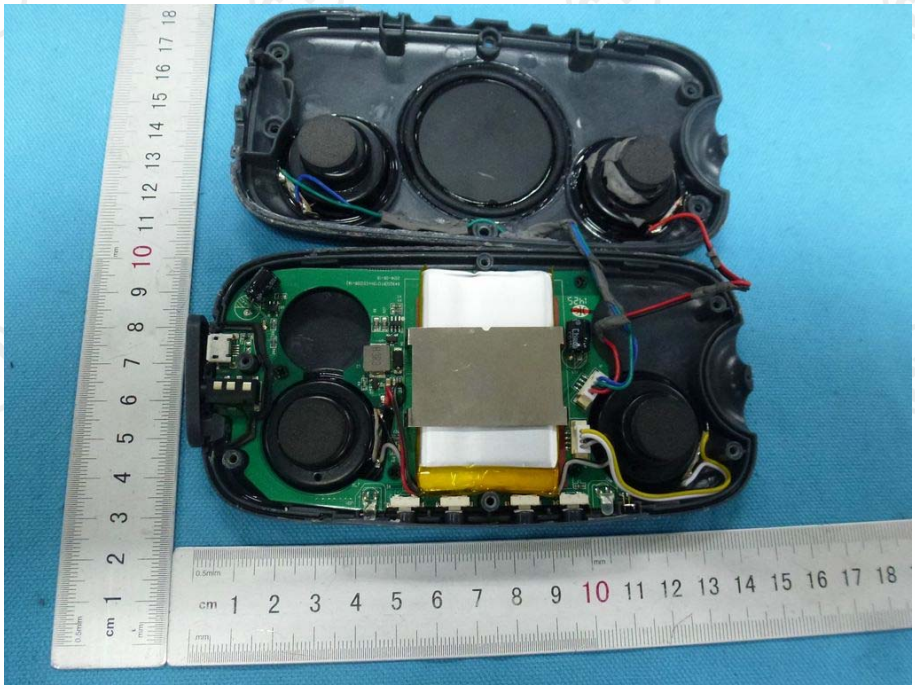
External View of product-3

APPENDIX 3 INTERNAL PHOTOGRAPHS OF PRODUCT

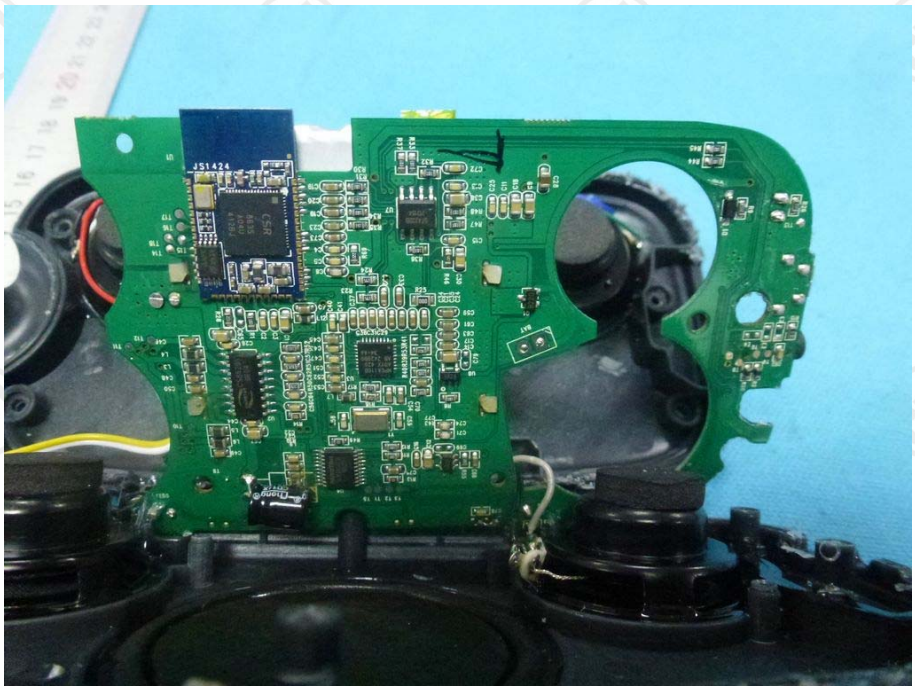
Internal View of product-1

Internal View of product-2

Internal View of product-3



Internal View of product-4



Internal View of product-5

*** End of Report ***

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