

Test Report No.:  
**FCC2021-0024-RF-1**

# RF Test Report

**EUT** : **Wireless on-ear headphones**  
**MODEL** : **TAH4205XT**  
**BRAND NAME** : **PHILIPS**  
**APPLICANT** : **MMD Hong Kong Holding Limited**  
**Classification Of Test** : **N/A**

**CVC Testing Technology Co., Ltd.**



<b>Applicant</b>		Name : MMD Hong Kong Holding Limited	
		Address : Unit 1006, 10th Floor, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong	
<b>Manufacturer</b>		Name : MMD Hong Kong Holding Limited	
		Address : Unit 1006, 10th Floor, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong	
<b>Equipment Under Test</b>		Name : Wireless on-ear headphones	
		Model/Type: TAH4205XT	
		Trade mark : PHILIPS	
		SerialNO.:N/A	
		Sample NO.:1-1	
Date of Receipt.	2021.07.23	Date of Testing	2021.08.03~2021.08.13
<b>Test Specification</b>		<b>Test Result</b>	
FCC Part 15, Subpart C, Section 15.247 Canada RSS-Gen Issue 5(2018-04), Amendment 1(2019-03), Amendment 2(2021-02) Canada RSS-247 Issue 2(2017-02)		PASS	
<b>Evaluation of Test Result</b>	The equipment under test was found to comply with the requirements of the standards applied.		
	<b>Issue Date: 2021.08.20</b>		
Tested by:	Reviewed by:	Approved by:	
<i>Xu ZhenFei</i>	<i>Liu Yonghai</i>	<i>chenhuawen</i>	
<b>Xu ZhenFei</b> Name      Signature	<b>Liu YongHai</b> Name      Signature	<b>Chen HuaWen</b> Name      Signature	
<b>Other Aspects: NONE.</b>			
Abbreviations:OK, Pass= passed      Fail = failed      N/A= not applicable      EUT= equipment, sample(s) under tested			

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



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**RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2021-0024-RF-1	Original release	2021.08.20



## 1 GENERAL INFORMATION

### 1.1 GENERAL PRODUCT INFORMATION

<b>PRODUCT</b>	Wireless on-ear headphones
<b>BRAND</b>	PHILIPS
<b>MODEL</b>	TAH4205XT
<b>ADDITIONAL MODEL</b>	N/A
<b>FCC ID</b>	2AR2STAH4205XT
<b>IC ID</b>	24589-TAH4205XT
<b>POWER SUPPLY</b>	DC 5V or DC 3.7V From Battery
<b>MODULATION TECHNOLOGY</b>	FHSS
<b>MODULATION TYPE</b>	GFSK, $\pi/4$ DQPSK, 8DPSK
<b>OPERATING FREQUENCY</b>	2402MHz~2480MHz
<b>NUMBER OF CHANNEL</b>	79
<b>PEAK OUTPUT POWER</b>	3.97dBm (Max. Measured)
<b>ANTENNA TYPE</b>	PCB Antenna, 0.81dBi Gain
<b>I/O PORTS</b>	Refer to user's manual
<b>CABLE SUPPLIED</b>	USB Line: Unshielded Detachable 0.7m

Remark:

1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Please refer to the EUT photo document for detailed product photo.



## 1.2 OTHER INFORMATION

Operation Frequency Each of Channel							
For BT (GFSK, $\pi/4$ DQPSK, 8 DPSK)							
CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	<b>78</b>	<b>2480</b>
19	2421	<b>39</b>	<b>2441</b>	59	2461		

## 1.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, xyz axis and antenna ports

The worst case was found when positioned on xaxis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	APPLICABLE TEST ITEMS				DESCRIPTION
	RSE<1G	RSE≥1G	PLC	APCM	
A	√	√	-	√	BT Function

Where **RSE<1G**: Radiated Emission below 1GHz.

**RSE≥1G**: Radiated Emission above 1GHz.

**PLC**: Power Line Conducted Emission.

**APCM**: Antenna Port Conducted Measurement.



### **RADIATED EMISSION TEST (BELOW 1 GHz):**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
A	0 to 78	39	FHSS	GFSK	DH5

For the test results, only the worst case was shown in test report.

### **RADIATED EMISSION TEST (ABOVE 1 GHz):**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
A	0 to 78	0, 39, 78	FHSS	GFSK	DH5
	0 to 78	0, 39, 78	FHSS	8DPSK	3DH5

### **POWER LINE CONDUCTED EMISSION TEST:**

N/A

### **ANTENNA PORT CONDUCTED MEASUREMENT:**

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
A	0 to 78	0, 39, 78	FHSS	GFSK	DH5
	0 to 78	0, 39, 78	FHSS	8DPSK	3DH5



**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RSE<1G	25deg. C, 55%RH	DC 5V From Adapter	Li JiaLing
RSE≥1G	25deg. C, 55%RH	DC 5V From Adapter	Li JiaLing
PLC	-	-	-
APCM	25deg. C, 60%RH	DC 3.7V From Full Battery	Liu ShiWei

## 1.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

- FCC PART 15, Subpart C. Section 15.247**
- KDB 558074 D01 15.247 Meas Guidance v05r02**
- ANSI C63.10-2013**
- Canada RSS-Gen Issue 5(2018-04), Amendment 1(2019-03), Amendment 2(2021-02)**
- Canada RSS-247 Issue 2(2017-02)**

All test items have been performed and recorded as per the above standards

## 1.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support Equipment							
NO	Description	Brand	Model No.	Serial Number	Supplied by		
1	Adapter	Amc	ECVF+18120-1500	N/A	Lab		
Support Cable							
NO	Description	Quantity (Number)	Length (m)	Detachable (Yes/ No)	Shielded (Yes/ No)	Cores (Number)	Supplied by
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A



## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C & RSS-Gen & RSS-247

FCC STANDARD SECTION	IC STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	RSS-Gen 8.8	AC Power Conducted Emission	N/A	N/A
15.247(a)(1) (iii)	RSS-247 5.1(d)	Number of Hopping Frequency Used	PASS	Meet the requirement of limit.
15.247(a)(1) (iii)	RSS-247 5.1(d)	Dwell Time on Each Channel	PASS	Meet the requirement of limit.
15.247(a)(1)	RSS-247 5.1(b)	1. Hopping Channel Separation 2. Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	PASS	Meet the requirement of limit.
/	RSS-Gen 6.7	Occupied Bandwidth Measurement	PASS	Meet the requirement of limit
15.247(b)	RSS-247 5.4(b)	Conducted Output Power	PASS	Meet the requirement of limit.
15.247(d)& 15.209	RSS-Gen 8.9 Table 5 & 8.10 Table 7	Radiated Spurious Emission and BANDEDGE MEASUREMENT	PASS	Meet the requirement of limit.
15.247(d)	RSS-247 5.5	Out of band Emission Measurement	PASS	Meet the requirement of limit.
15.203	/	Antenna Requirement	PASS	No antenna connector is used.

### 2.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Refer to Appendix A.

### 2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

No.	ITEM	FREQUENCY	UNCERTAINTY
1	Conducted Emissions	9kHz~30MHz	2.7dB
2	Radiated Spurious Emissions	9KHz ~ 30MHz	5.6dB
		30MHz ~ 1GMHz	4.6dB
		1GHz ~ 18GHz	4.4dB
		18GHz ~ 40GHz	4.6dB

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:



## 2.3 TEST LOCATION

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology Co., Ltd

Address: No.3,TiantaiyiRoad,KaitaiAvenue,ScienceCity,Guangzhou,China

Post Code: 510663 Tel: 020-32293888

FAX: 020-32293889 E-mail: [office@cvc.org.cn](mailto:office@cvc.org.cn)

Test Firm Registration Number: 937273

CN Number: 26239 Wireless Test Site Registration Number: CN0103



## 3 TEST TYPES AND RESULTS

### 3.1 RADIATED SPURIOUS EMISSION AND BANDEDGE MEASUREMENT

#### 3.1.1 Limits

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a). Other emissions shall be at least 20dB below the highest level of the desired power.

FREQUENCIES (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
Above 960	500	3

NOTE: 1. The lower limit shall apply at the transition frequencies.  
NOTE: 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).  
NOTE: 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

#### 3.1.2 Measurement procedure

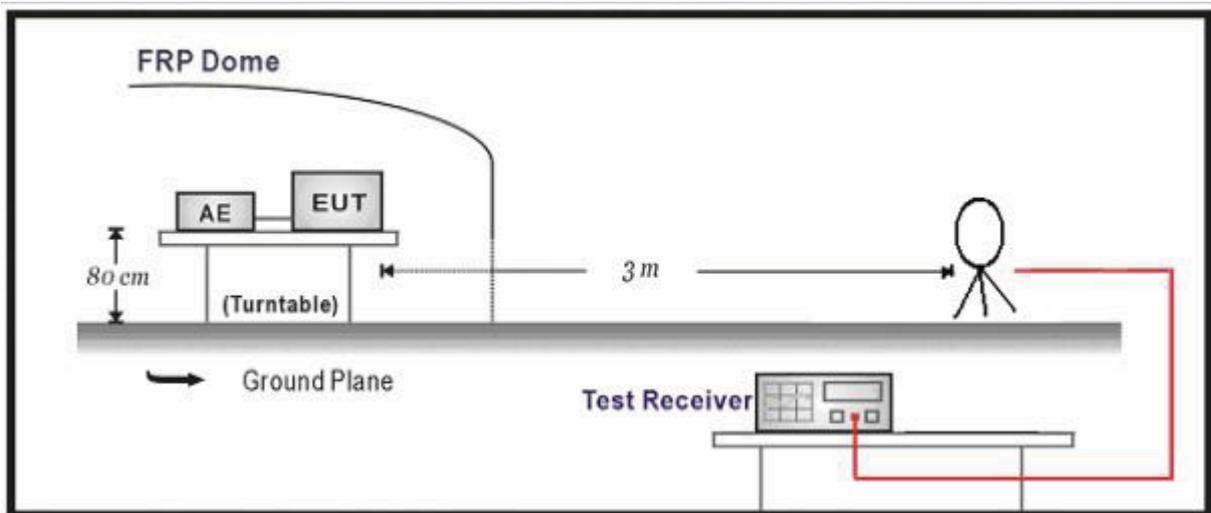
- a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. For below 1GHz was used bilog antenna, and above 1GHz was used horn antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- g. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

**NOTE:**

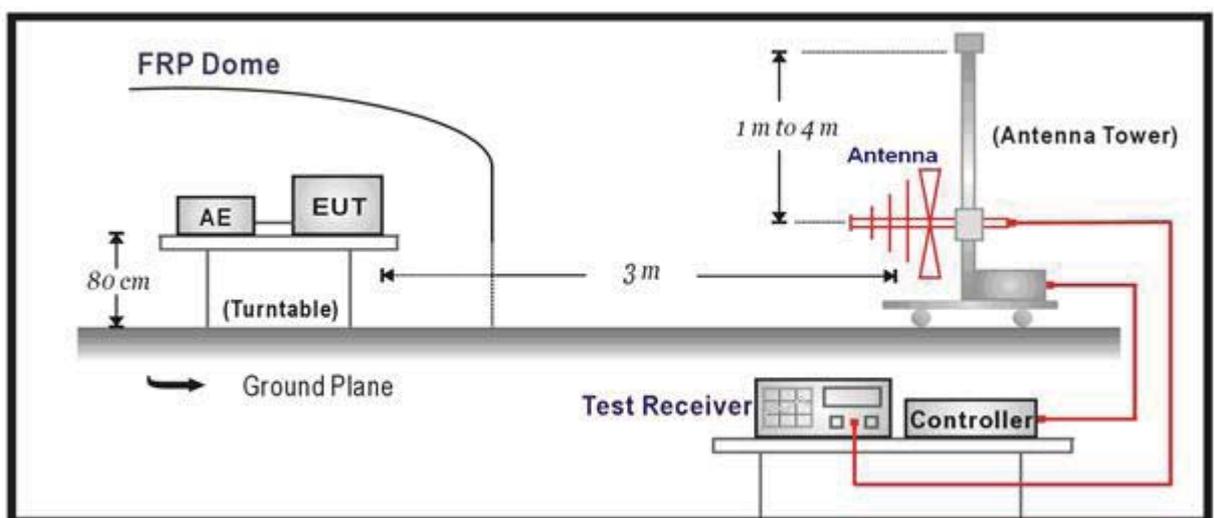
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

### 3.1.3 Test setup

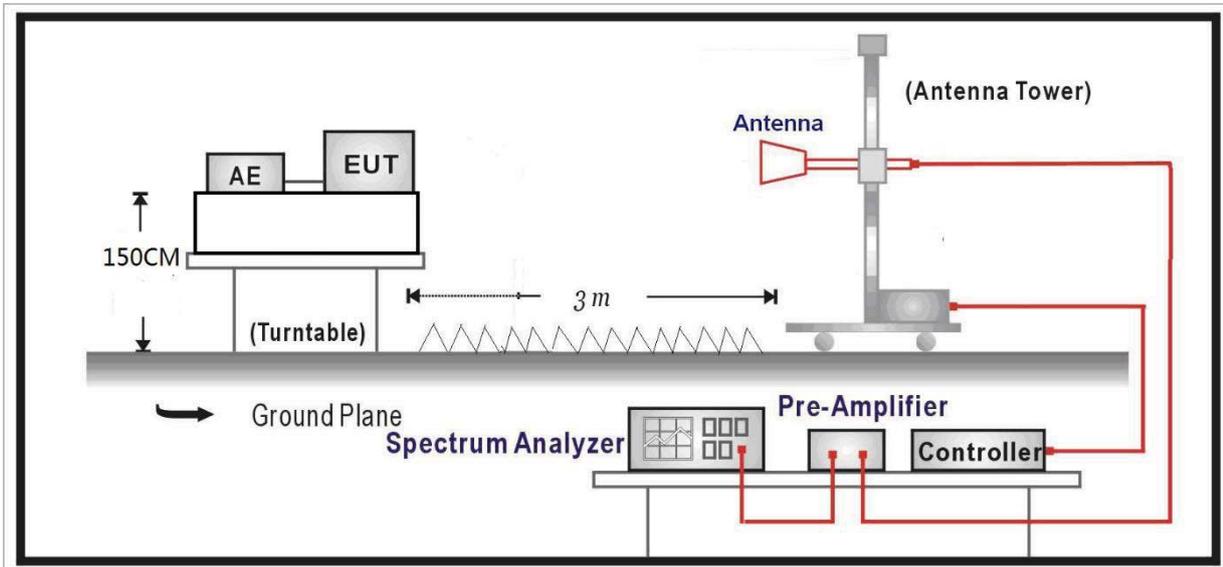
Below 30MHz Test Setup:



Below 1GHz Test Setup:



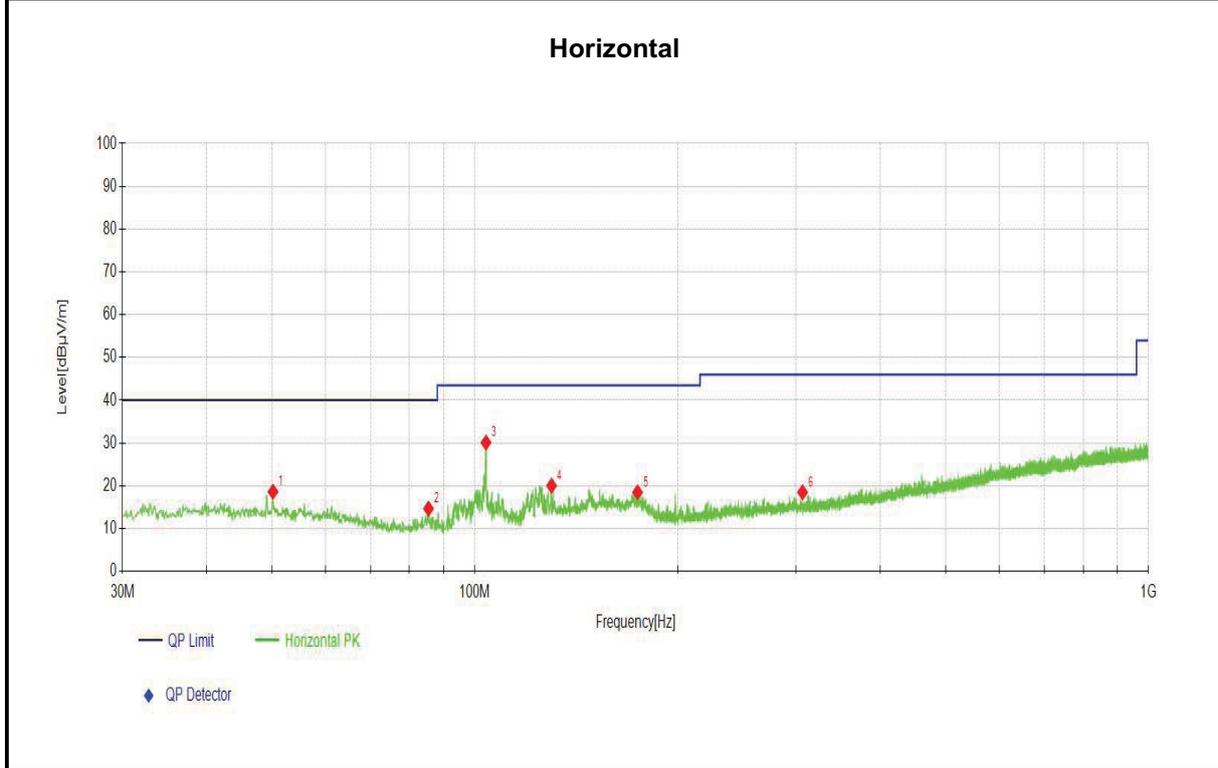
Above 1GHz Test Setup:



### 3.1.4 Test results

BELOW 1GHz WORST-CASE DATA:

<b>Worst Test Mode</b>	DH5	<b>Channel</b>	CH 0
<b>Frequency Range</b>	9KHz ~ 1GHz	<b>Detector Function</b>	Quasi-Peak (QP)

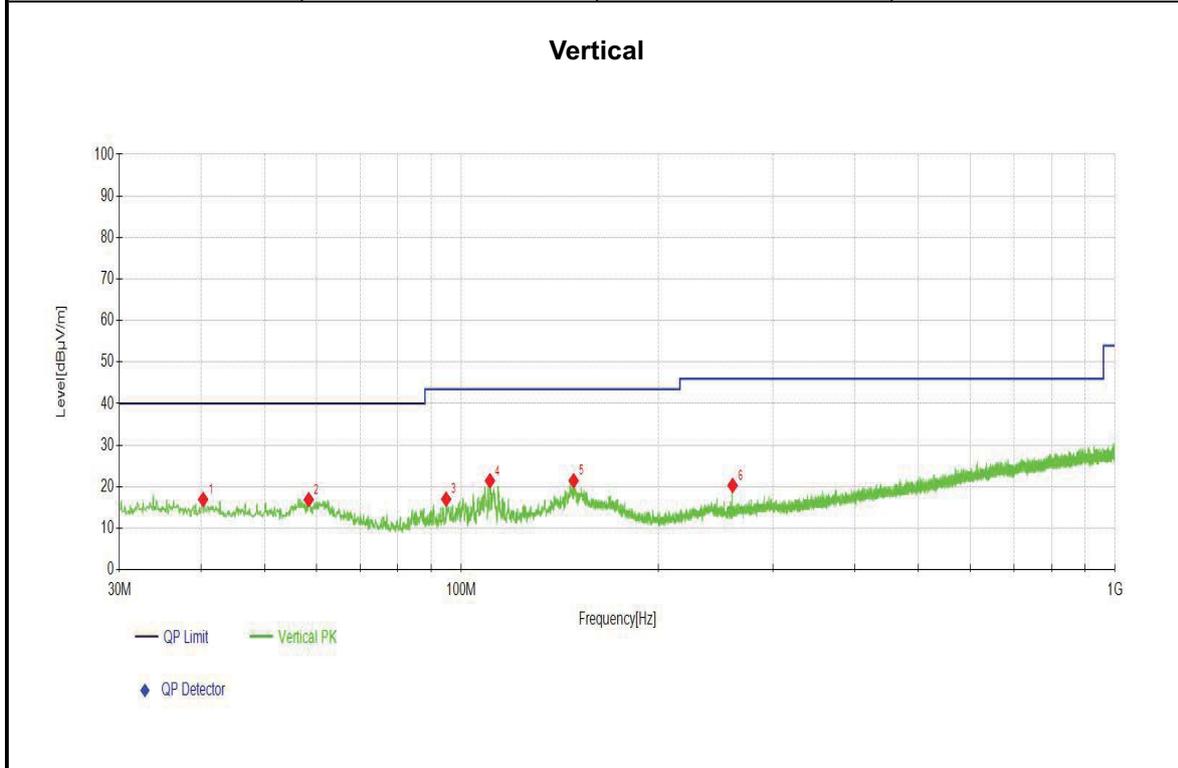


NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	50.1780	18.61	14.27	40.00	21.39	200	217	Horizontal
2	85.3925	14.65	10.43	40.00	25.35	200	180	Horizontal
3	103.9214	30.10	11.52	43.50	13.40	100	121	Horizontal
4	130.0170	20.03	13.77	43.50	23.47	200	277	Horizontal
5	174.4474	18.47	14.31	43.50	25.03	200	16	Horizontal
6	306.5747	18.47	14.94	46.00	27.53	100	2	Horizontal

Remark: 1. 9KHz~30MHz have been test and test data more than 20dB margin.  
 2. The emission levels of other frequencies were greater than 20dB margin.  
 3. Result (dBuV/m) = Reading (dBuV) + Factor (dB/m).  
 4. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
 5. Margin = Limit - Result.



<b>Worst Test Mode</b>	DH5	<b>Channel</b>	CH 0
<b>Frequency Range</b>	9KHz ~ 1GHz	<b>Detector Function</b>	Quasi-Peak (QP)



Suspected Data List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	40.2830	16.92	14.58	40.00	23.08	200	215	Vertical
2	58.4238	16.87	14.09	40.00	23.13	100	265	Vertical
3	94.8025	17.00	10.90	43.50	26.50	200	330	Vertical
4	110.6151	21.41	11.91	43.50	22.09	200	336	Vertical
5	148.5459	21.44	15.35	43.50	22.06	100	144	Vertical
6	260.0100	20.30	13.31	46.00	25.70	200	282	Vertical

Remark: 1. 9KHz~30MHz have been test and test data more than 20dB margin.  
 2. The emission levels of other frequencies were greater than 20dB margin.  
 3. Result (dBuV/m) = Reading (dBuV) + Factor (dB/m).  
 4. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
 5. Margin = Limit - Result.



**ABOVE 1GHz DATA**

Please refer to Appandix A

## 3.2 NUMBER OF HOPPING FREQUENCY USED

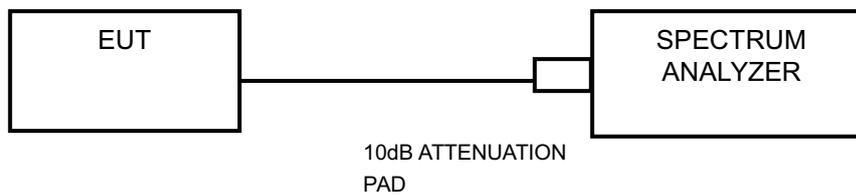
### 3.2.1 Limits

At least 15 channels frequencies, and should be equally spaced.

### 3.2.2 Measurement procedure

- a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- c. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
- d. Set the SA on View mode and then plot the result on SA screen.
- e. Repeat above procedures until all frequencies measured were completed.

### 3.2.3 Test setup

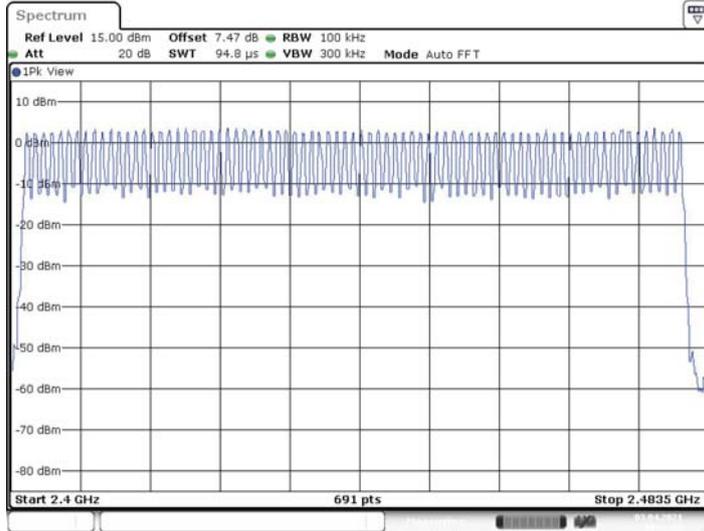




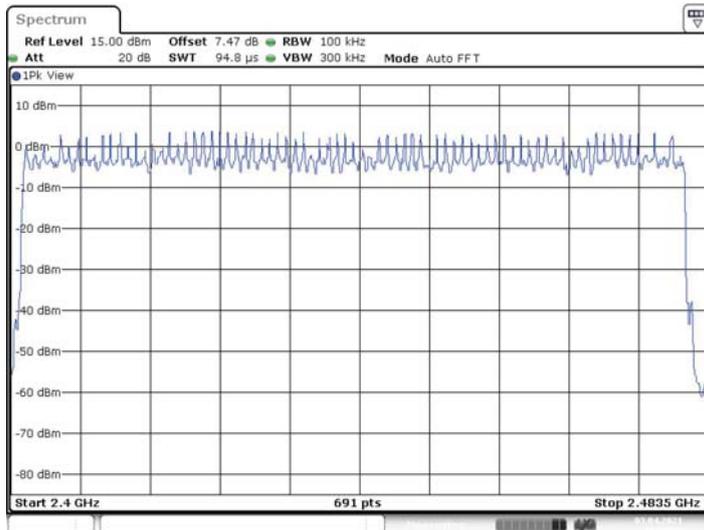
### 3.2.4 Test result

There are 79 hopping frequencies in the hopping mode. Please refer to next two pages for the test result. On the plots, it shows that the hopping frequencies are equally spaced.

Mode	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Hop	79	≥15	PASS



Mode	Channel	Result[Num]	Limit[Num]	Verdict
3DH5	Hop	79	≥15	PASS



## 3.3 DWELL TIME ON EACH CHANNEL

### 3.3.1 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.

### 3.3.2 Measurement procedure

- a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- c. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
- d. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
- e. Repeat above procedures until all different time-slot modes have been completed.

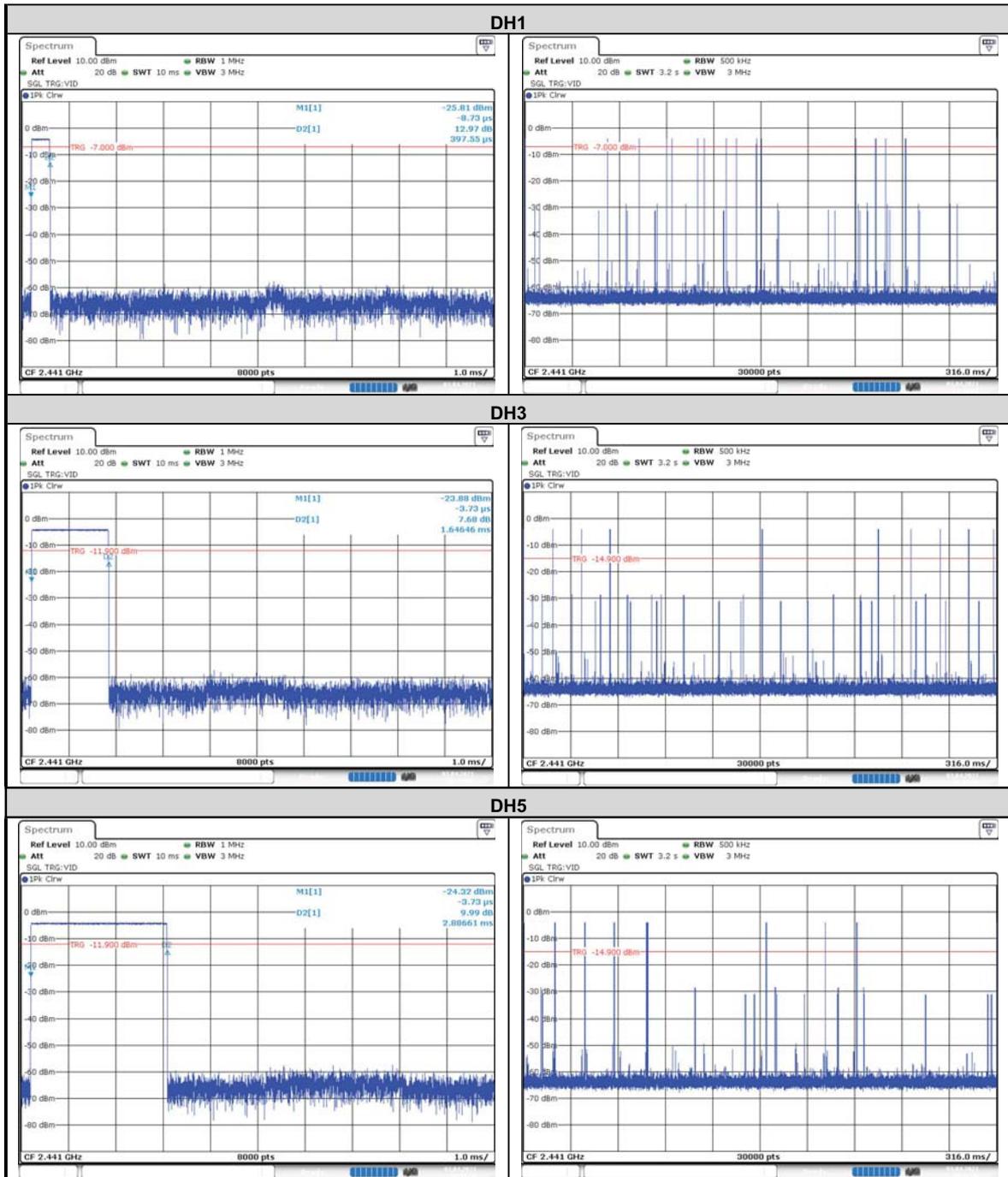
### 3.3.3 Test setup





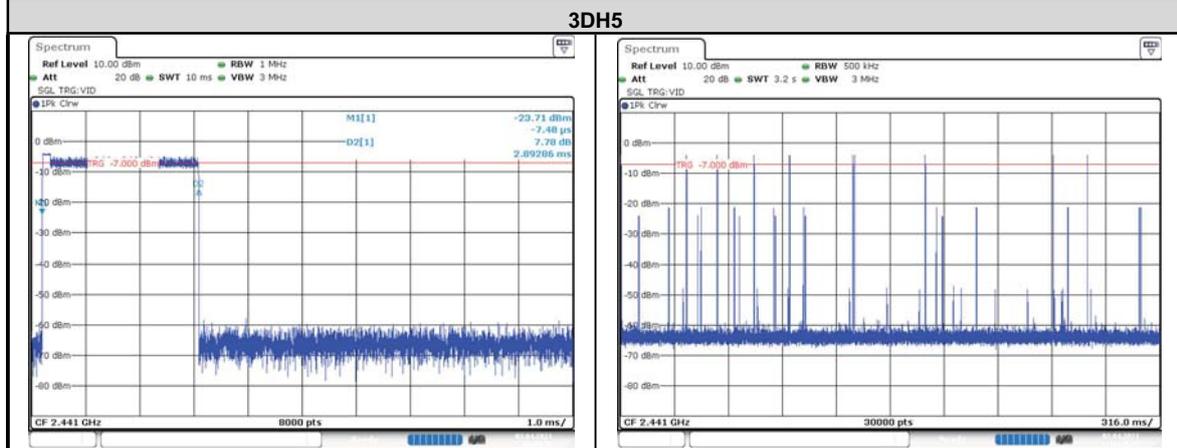
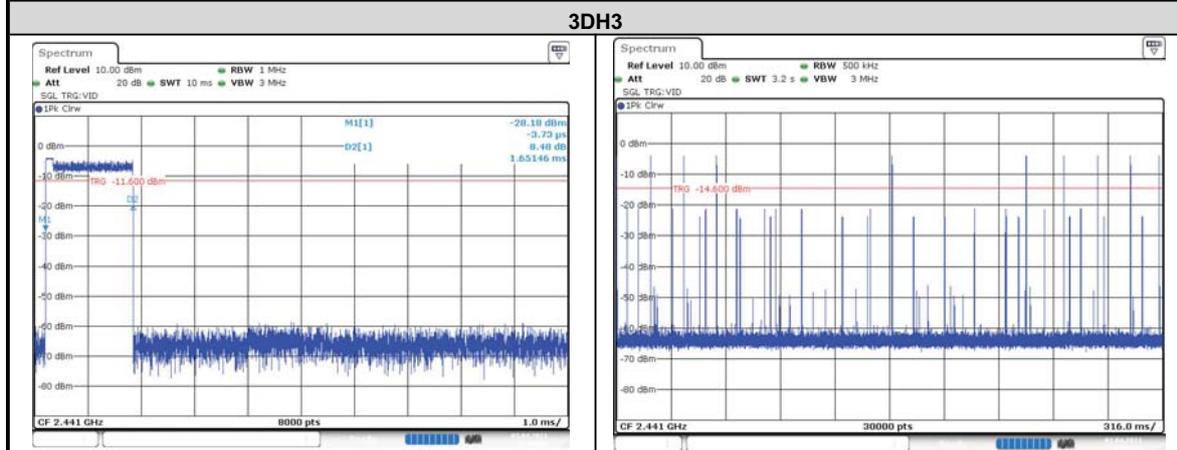
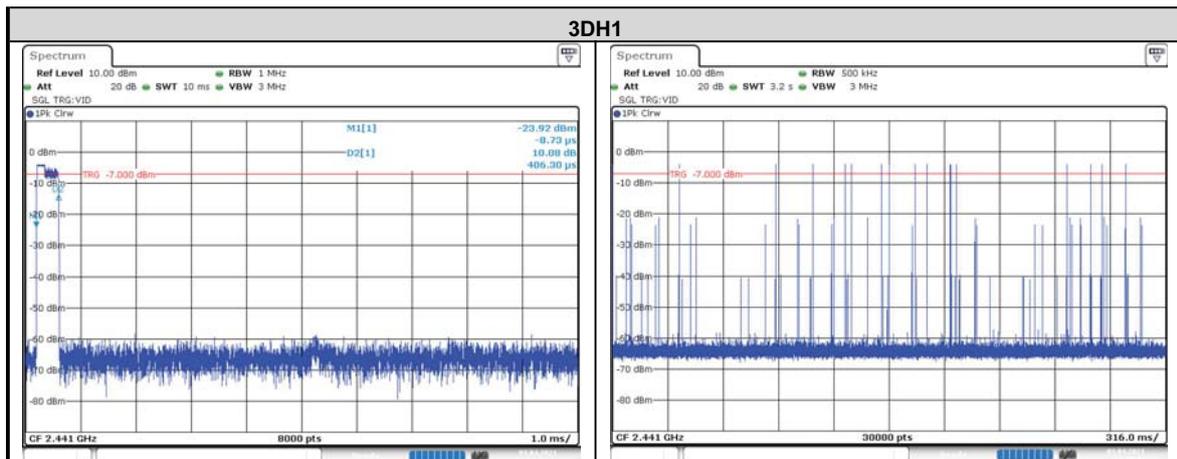
### 3.3.4 Test result

Mode	Number of Hopping Channel	Number of transmission in a period(channel number*0.4 sec)	Length of transmission time (msec)	Result (msec)	Limit (msec)	Verdict
DH1	79	$79 \times 0.4 \div 3.2 \times 14 = 138.25$	0.38	0.116	$\leq 0.4$	PASS
DH3	79	$79 \times 0.4 \div 3.2 \times 20 = 88.88$	1.65	0.147	$\leq 0.4$	PASS
DH5	79	$79 \times 0.4 \div 3.2 \times 7 = 69.13$	2.90	0.201	$\leq 0.4$	PASS





Mode	Number of Hopping Channel	Number of transmission in a period(channel number*0.4 sec)	Length of transmission time (msec)	Result (msec)	Limit (msec)	Verdict
3DH1	79	$79 \times 0.4 \div 3.2 \times 15 = 148.13$	0.41	0.607	$\leq 0.4$	PASS
3DH3	79	$79 \times 0.4 \div 3.2 \times 9 = 88.88$	1.65	0.147	$\leq 0.4$	PASS
3DH5	79	$79 \times 0.4 \div 3.2 \times 9 = 88.88$	2.89	0.257	$\leq 0.4$	PASS



## 3.4 CHANNEL BANDWIDTH

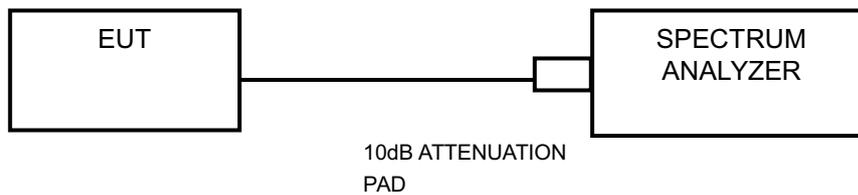
### 3.4.1 Limits

For frequency hopping system operating in the 2400-2483.5MHz, If the 20dB bandwidth of hopping channel is greater than 25kHz, two-thirds 20dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

### 3.4.2 Measurement procedure

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.

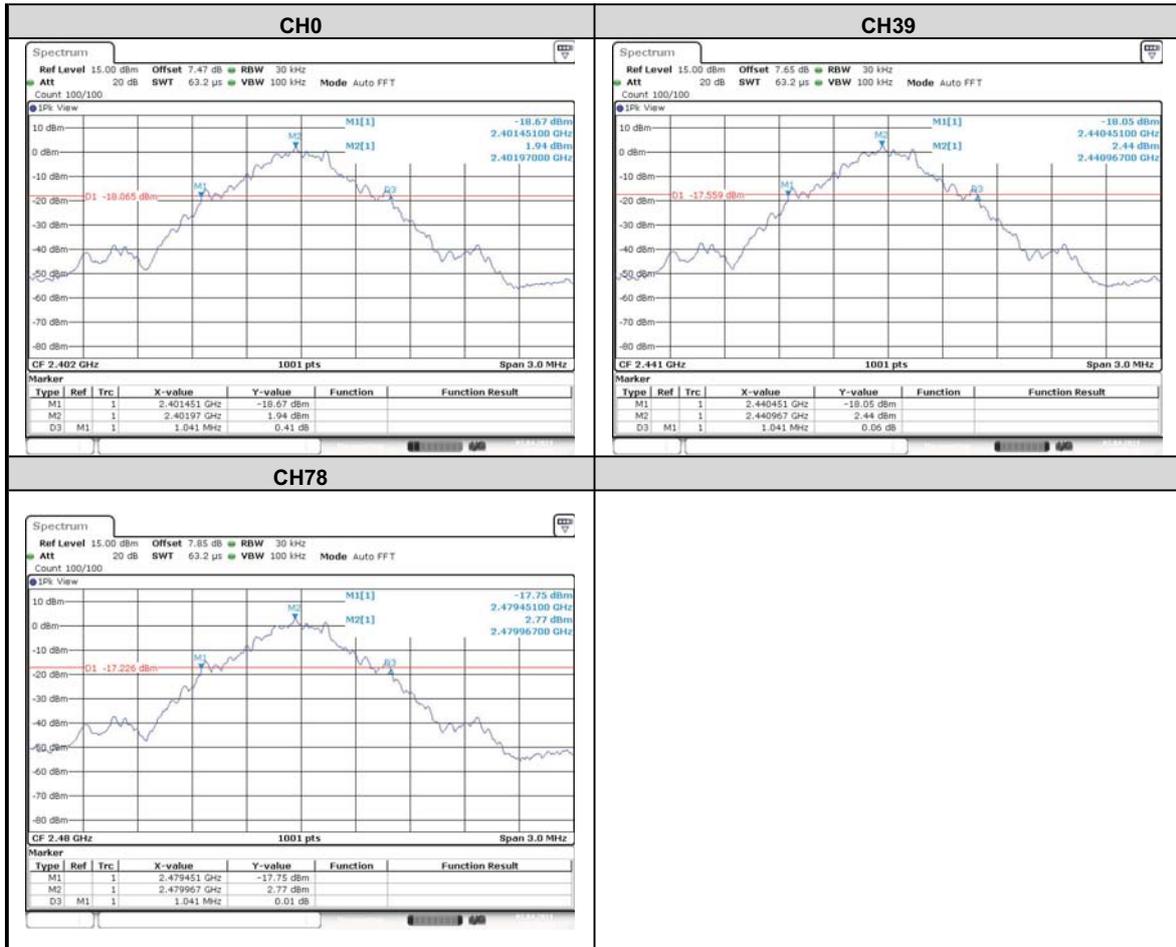
### 3.4.3 Test setup





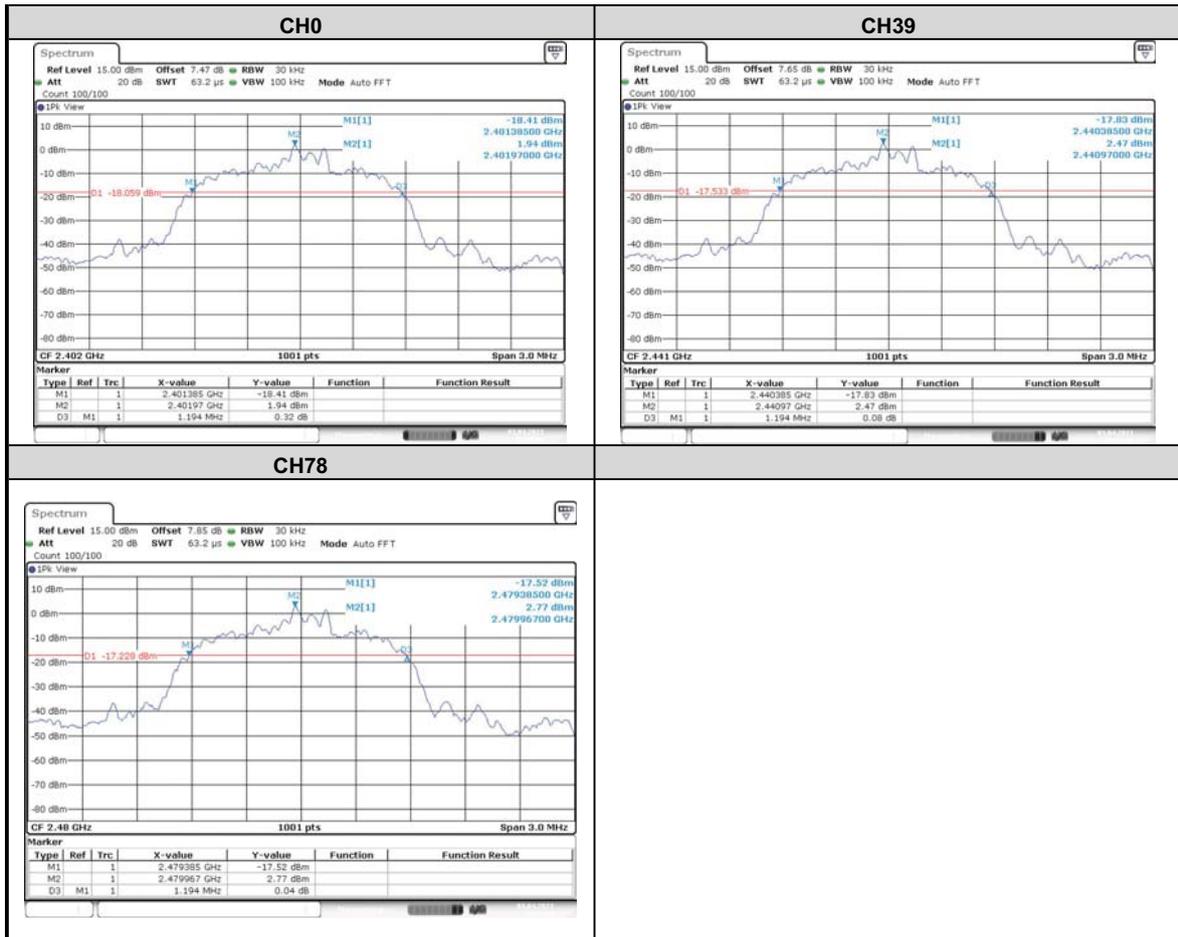
### 3.4.4 Test result

Mode	Channel	Channel Frequency (MHz)	20dB Bandwidth(MHz)
DH5	0	2402	1.041
	39	2441	1.041
	78	2480	1.041





Mode	Channel	Channel Frequency (MHz)	20dB Bandwidth(MHz)
3DH5	0	2402	1.194
	39	2441	1.194
	78	2480	1.194



## 3.5 OCCUPIED BANDWIDTH MEASUREMENT

### 3.5.1 Measurement procedure

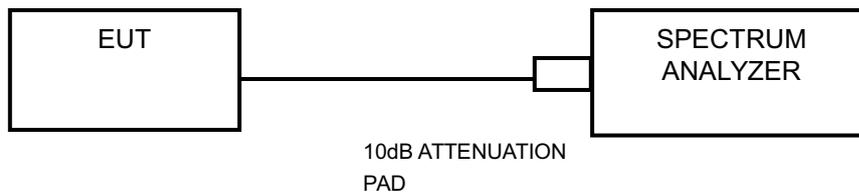
The transmitter antenna output was connected to the spectrum analyzer through an attenuator. The resolution bandwidth shall be set to the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3 x the resolution bandwidth.

Below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

### 3.5.2 DEVIATION FROM TEST STANDARD

No deviation.

### 3.5.3 TEST SETUP



### 3.5.4 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



### 3.5.5 TEST RESULTS

#### GFSK DH5

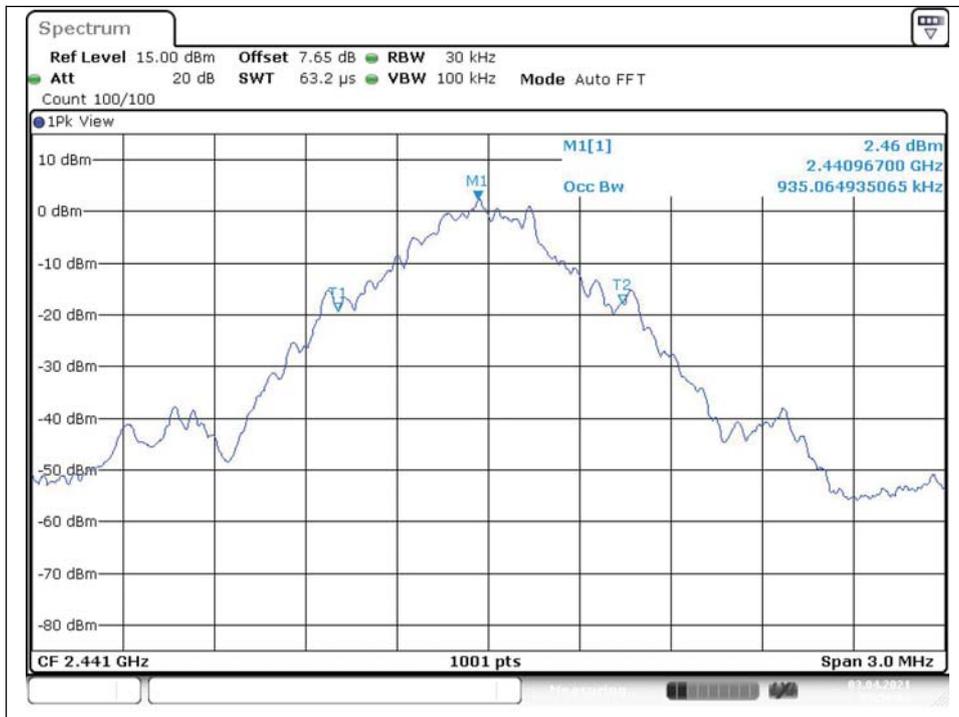
CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
Low	2402	0.93	PASS
Middle	2441	0.94	PASS
High	2480	0.93	PASS

#### Test Data: Low channel

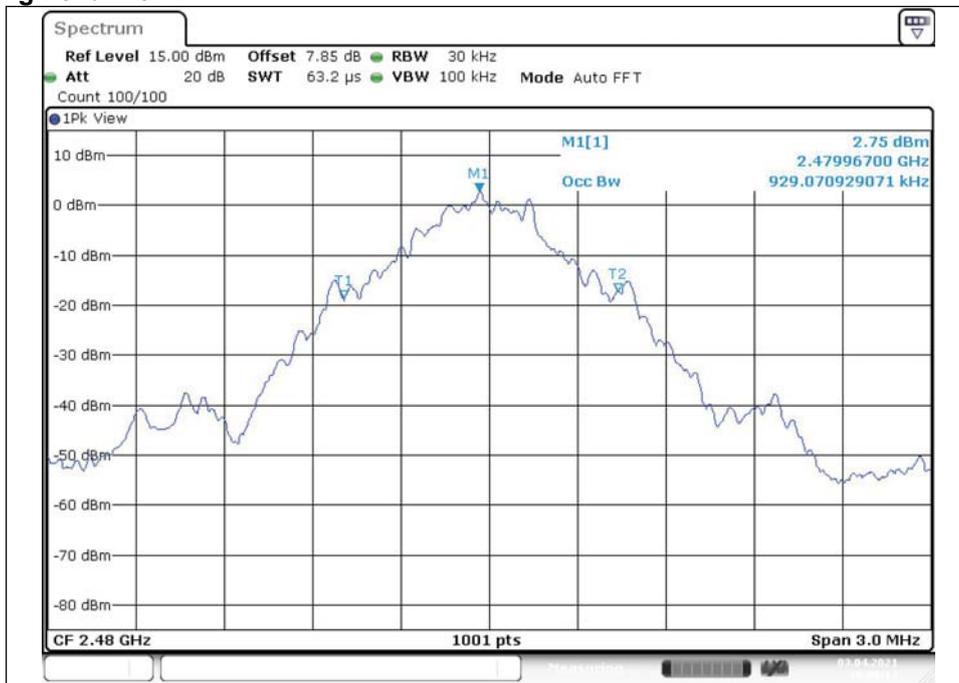




## Test Data: Middle channel



## Test Data: High channel

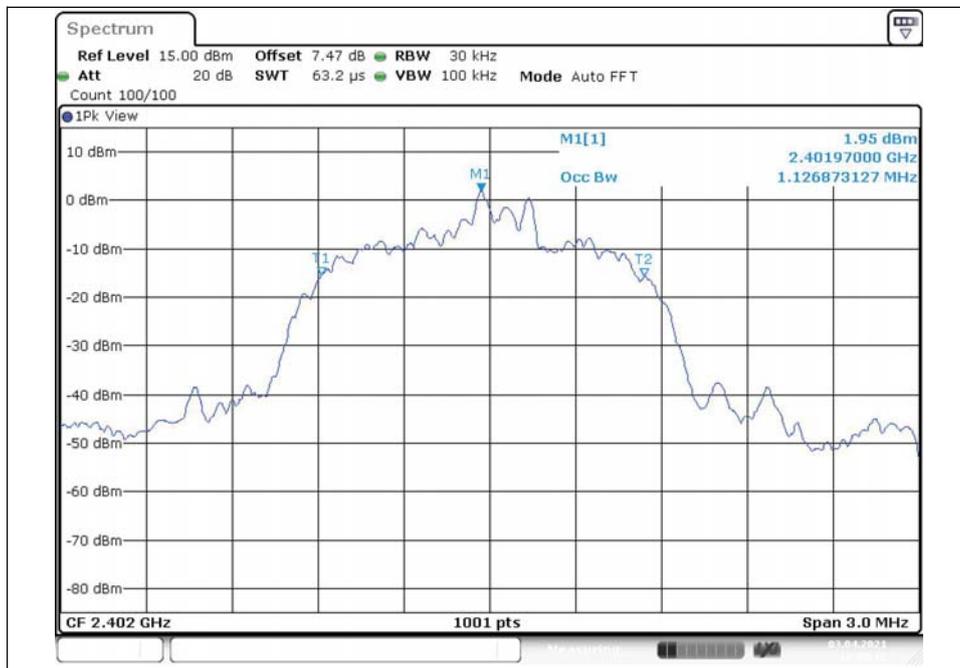




## 8DPSK 3DH5

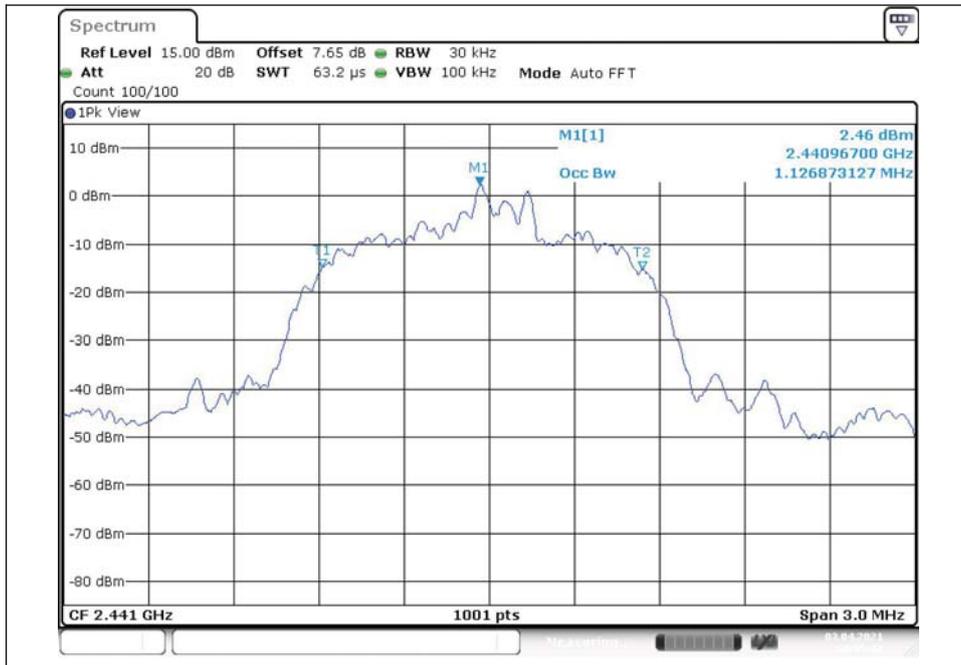
CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
Low	2402	1.13	PASS
Middle	2441	1.13	PASS
High	2480	1.13	PASS

### Test Data: Low channel

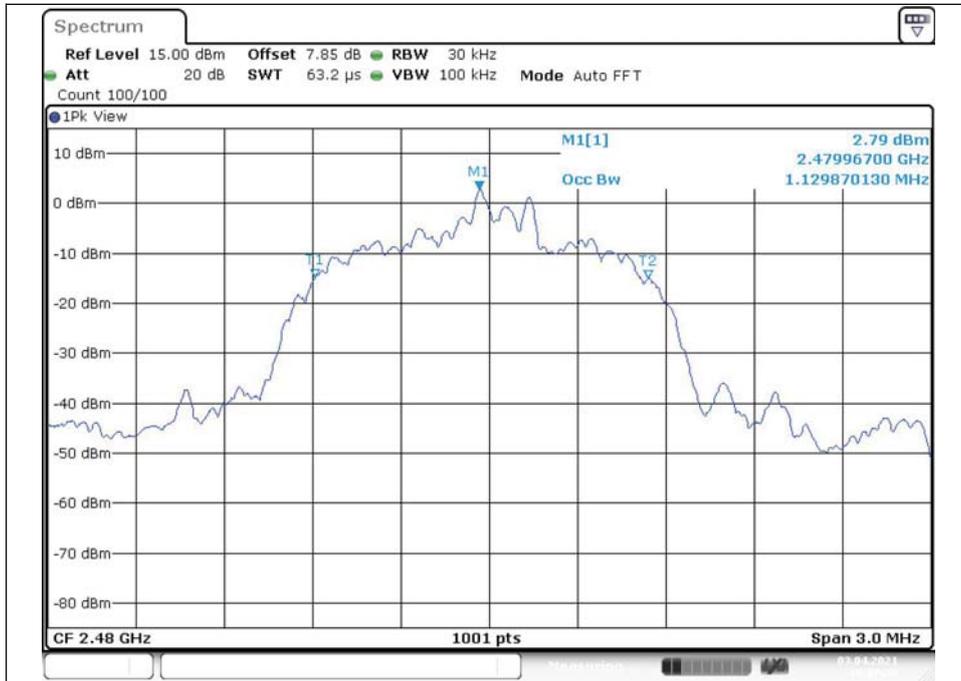




### Test Data: Middle channel



### Test Data: High channel



## 3.6 HOPPING CHANNEL SEPARATION

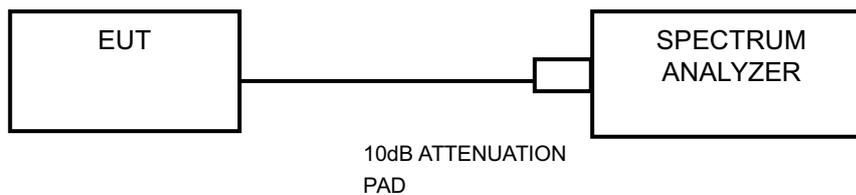
### 3.6.1 Limits

At least 25kHz or two-third of 20dB hopping channel bandwidth (whichever is greater).

### 3.6.2 Measurement procedure

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
- c. By using the MaxHold function record the separation of two adjacent channels.
- d. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
- e. Repeat above procedures until all frequencies measured were complete.

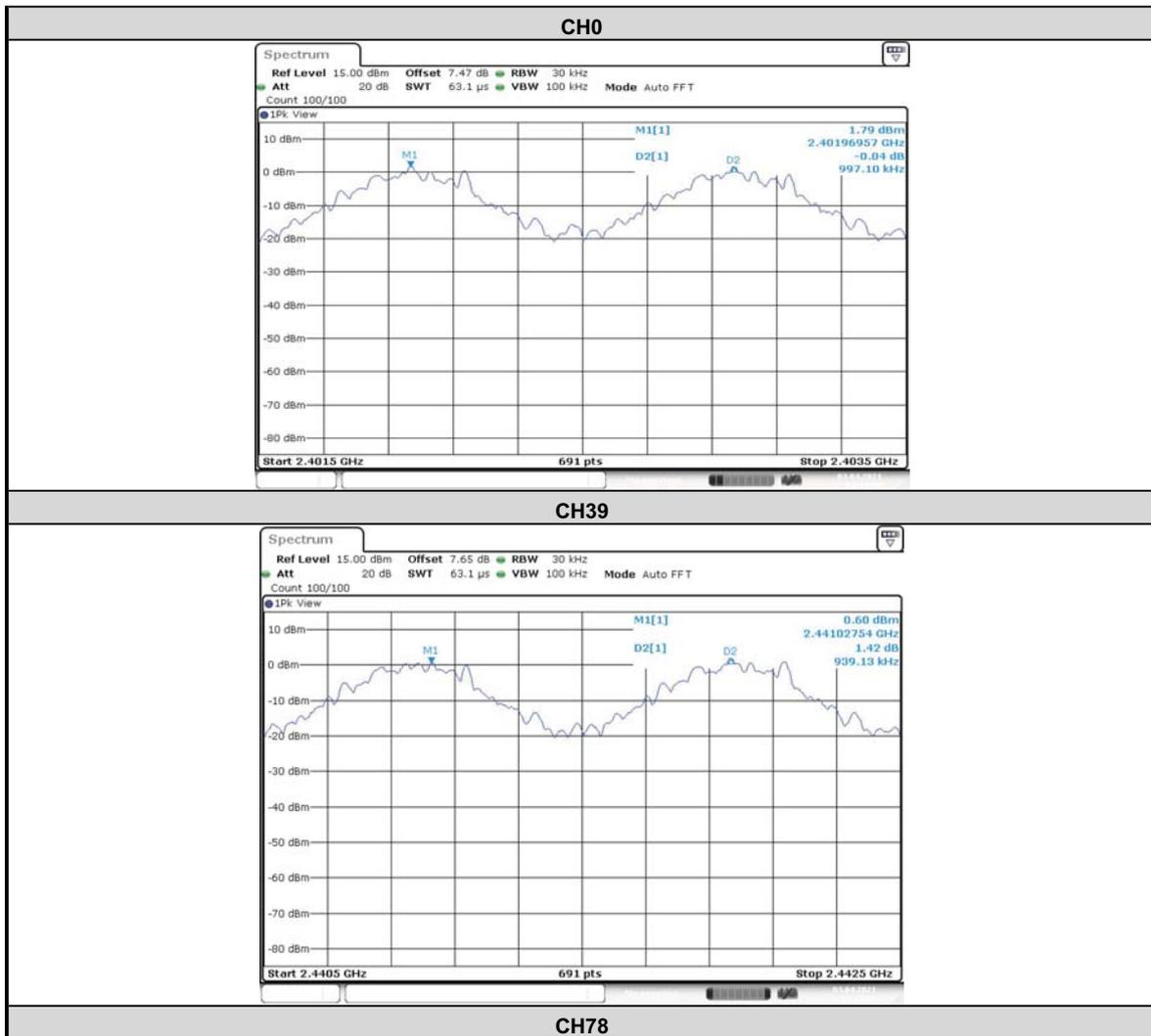
### 3.6.3 Test setup





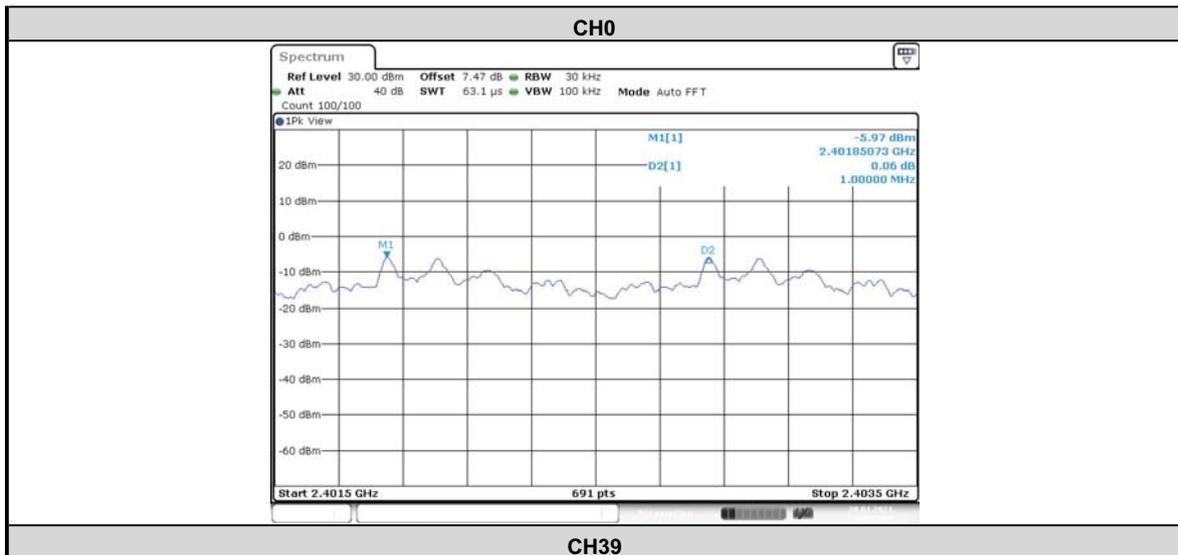
### 3.6.4 Test result

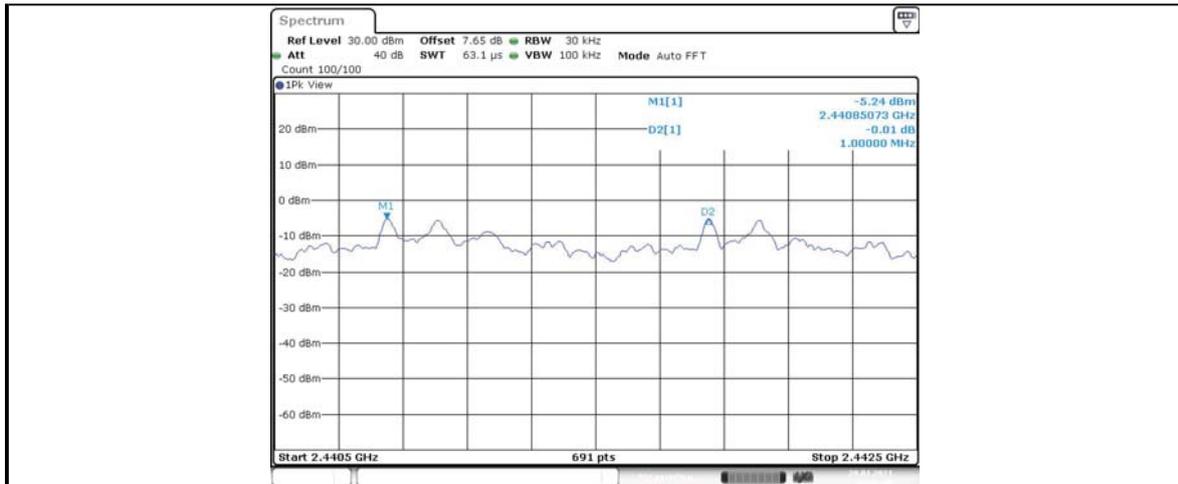
Mode	Channel	Channel Frequency (MHz)	Adjacent Channel Separation (MHz)	Minimum Limit 2/3 20dB Bandwidth (MHz)	Verdict
DH5	0	2402	1.00	0.694	PASS
	39	2441	0.94	0.694	PASS
	78	2480	1.06	0.694	PASS



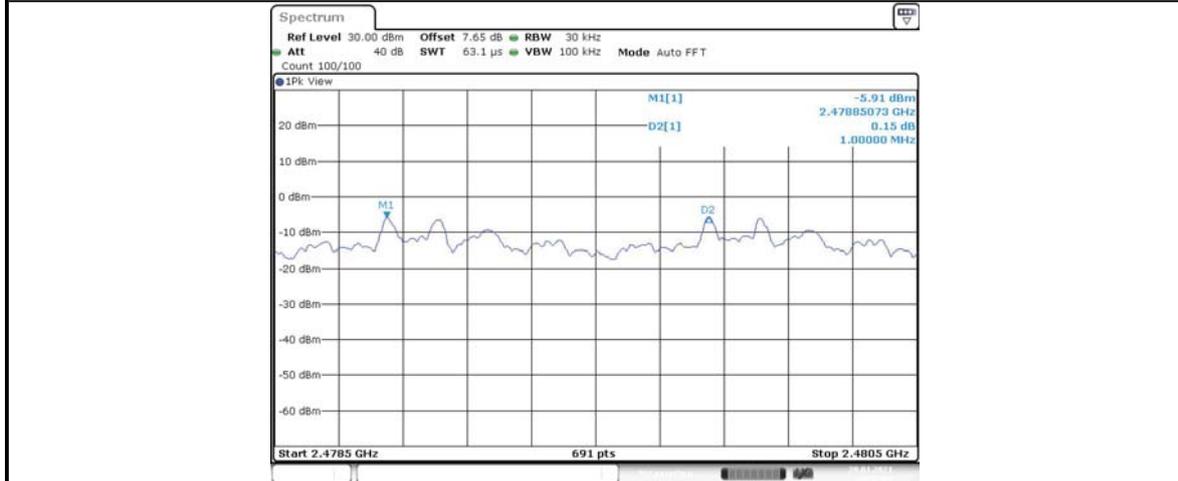


Mode	Channel	Channel Frequency (MHz)	Adjacent Channel Separation (MHz)	Minimum Limit 2/3 20dB Bandwidth (MHz)	Verdict
3DH5	0	2402	1.00	0.796	PASS
	39	2441	1.00	0.796	PASS
	78	2480	1.00	0.796	PASS





### CH78



## 3.7 CONDUCTED OUTPUT POWER

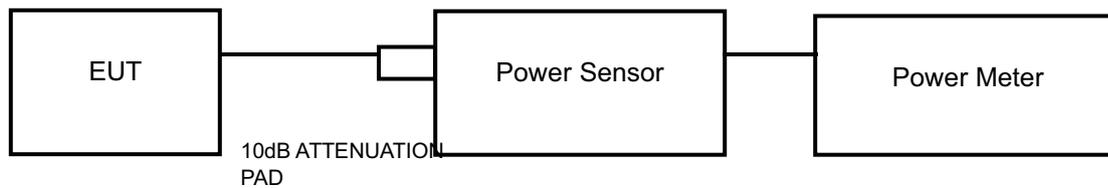
### 3.7.1 Limits

The Maximum Output Power Measurement is 125mW.

### 3.7.2 Measurement procedure

- a. A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor and set the detector to PEAK. Record the power level.
- b. An average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor and set the detector to AVERAGE. Record the power level.

### 3.7.3 Test setup





## 3.7.4 Test result

### PEAK OUTPUT POWER

#### GFSK

Mode	Channel Frequency (MHz)	Peak Power (dBm)	Peak Power (mW)	Peak Power Limit (mW)	Verdict
DH5	2402	3.16	2.07	125	PASS
	2441	3.68	2.333	125	PASS
	2480	3.97	2.495	125	PASS

#### 8DPSK

Mode	Channel Frequency (MHz)	Peak Power (dBm)	Peak Power (mW)	Peak Power Limit (mW)	Verdict
3DH5	2402	3.09	2.037	125	PASS
	2441	3.57	2.275	125	PASS
	2480	3.88	2.443	125	PASS

### AVERAGE OUTPUT POWER

#### GFSK

Mode	Channel Frequency (MHz)	Average Power (dBm)	Average Power (mW)	Average Power Limit (mW)	Verdict
DH5	2402	1.24	1.33	125	PASS
	2441	1.84	1.528	125	PASS
	2480	2.10	1.622	125	PASS

#### 8DPSK

Mode	Channel Frequency (MHz)	Average Power (dBm)	Average Power (mW)	Average Power Limit (mW)	Verdict
3DH5	2402	1.21	1.321	125	PASS
	2441	1.75	1.496	125	PASS
	2480	1.98	1.578	125	PASS

## 3.8 OUT OF BAND EMISSION MEASUREMENT

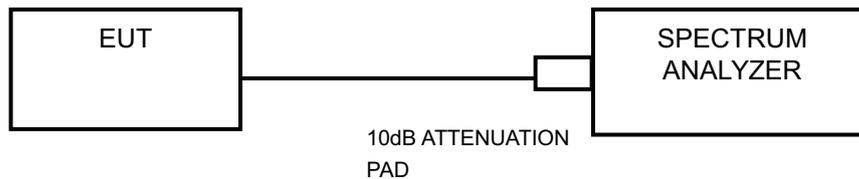
### 3.8.1 Limits

Below  $-20\text{dB}$  of the highest emission level of operating band (in 100KHz RBW).

### 3.8.2 Measurement procedure

The transmitter output was connected to the spectrum analyzer via a low loss cable. of Spectrum Analyzer was set RBW to 100 kHz and VBW to 300 kHz with suitable frequency span including 100 MHz bandwidth from band edge. Detector = PEAK and Trace mode = Max Hold. The band edges was measured and recorded.

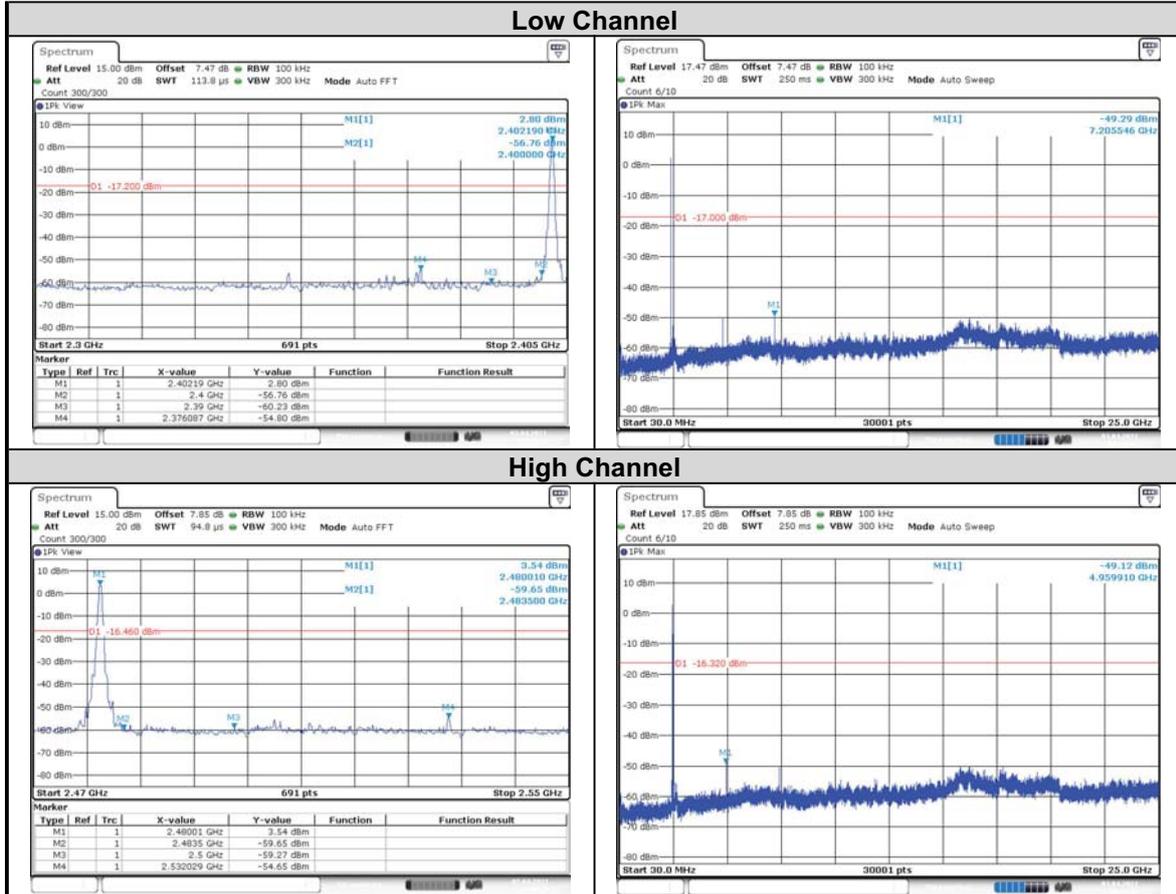
### 3.8.3 Test setup



### 3.8.4 Test result

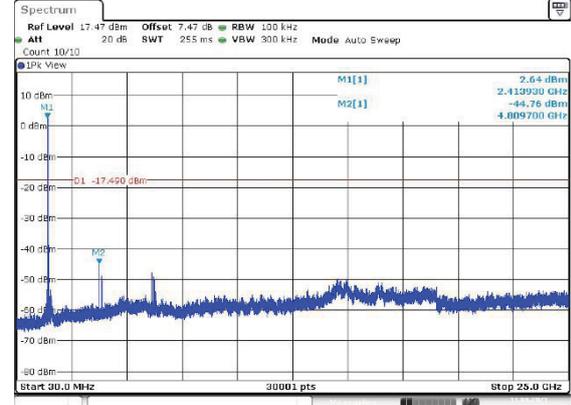
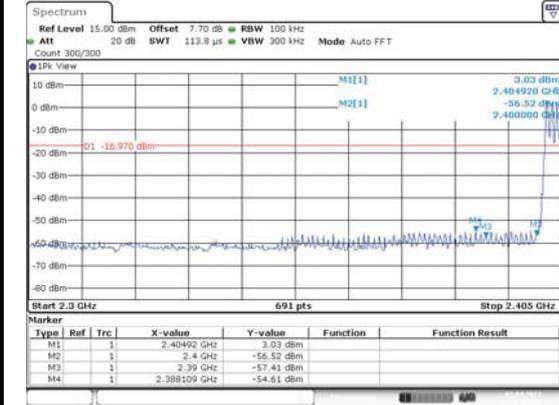
The spectrum plots are attached on the following images.

#### GFSK

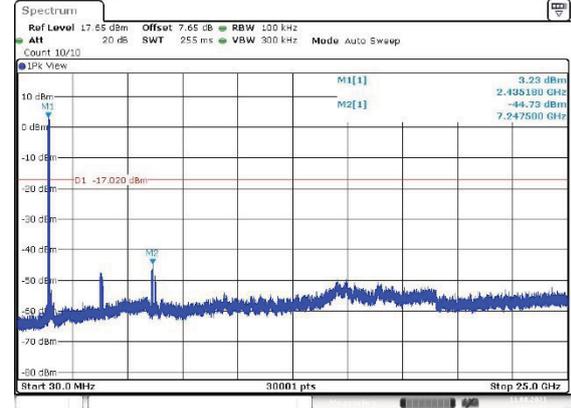
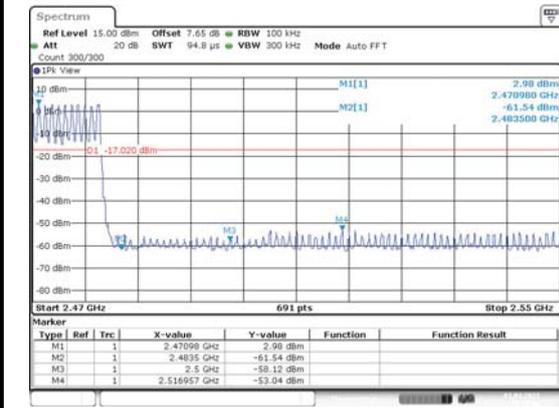




### Hopping on Low Channel



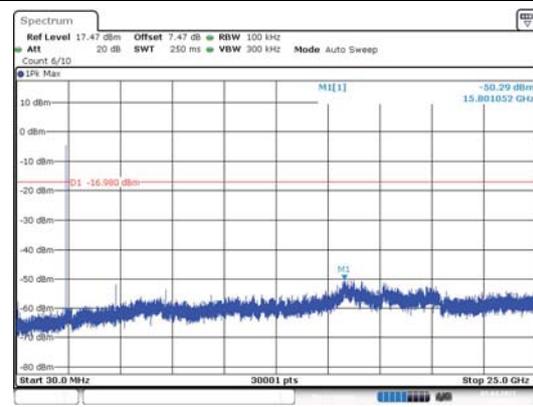
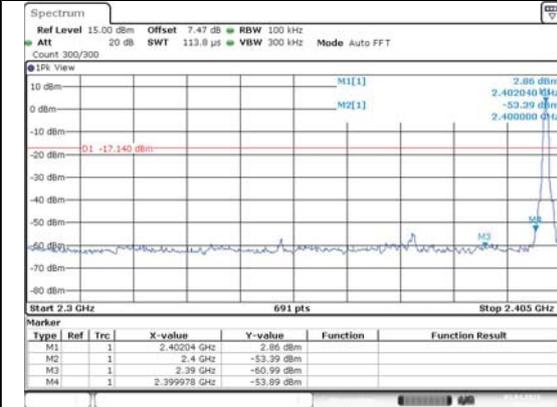
### Hopping on High Channel



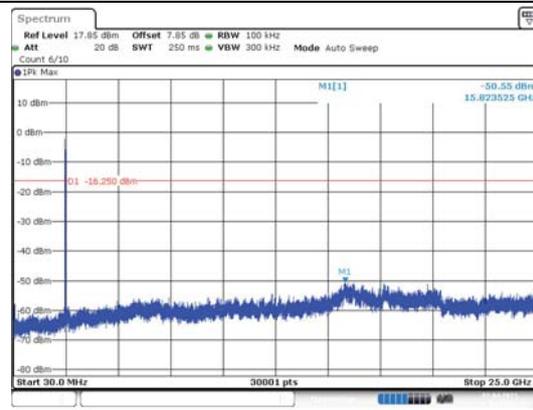
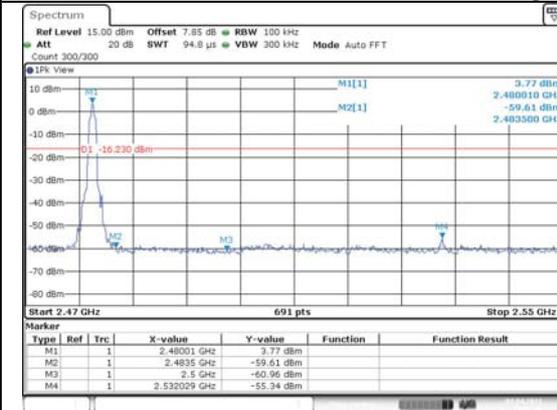


## 8DPSK

### Low Channel

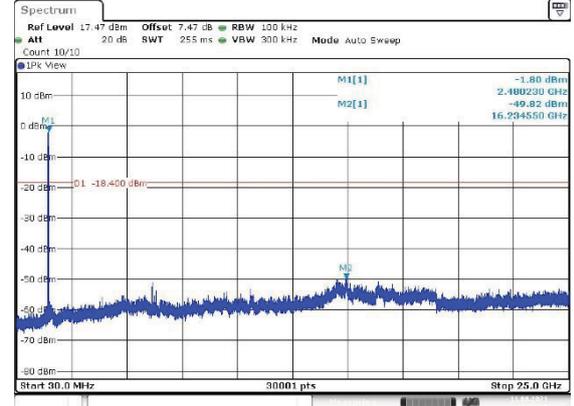
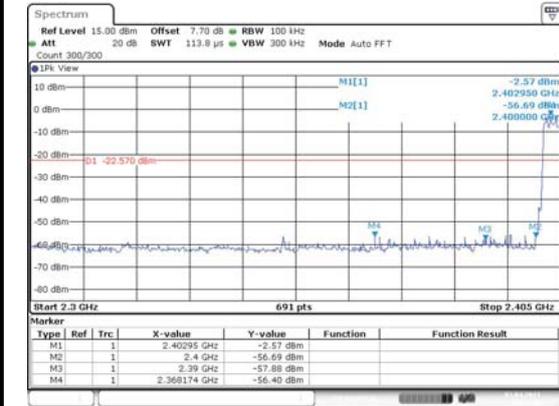


### High Channel

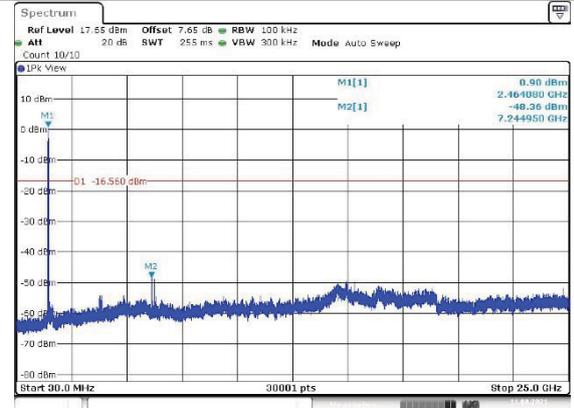
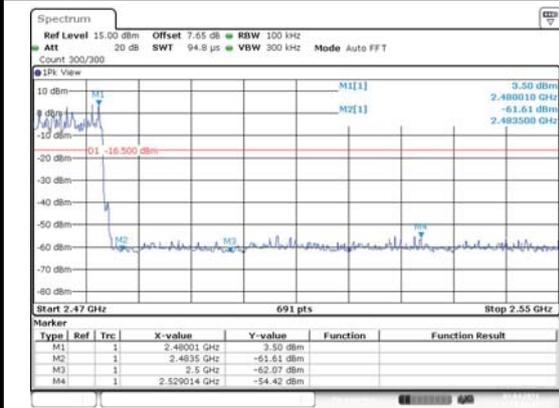




### Hopping on Low Channel



### Hopping on High Channel





#### **4 PHOTOGRAPHS OF TEST SETUP**

Please refer to the attached file (Test Photos).



## **5 PHOTOGRAPHS OF THE EUT**

Please refer to the attached file (External Photos report and Internal Photos).



**Appendix A**

**RADIATED SPURIOUS EMISSION AND BANDEDGE MEASUREMENT TEST RESULT**

**ABOVE 1GHz DATA:**

**BT\_GFSK**

Test Mode		DH5			Channel		CH0		
Frequency Range		1GHz ~ 26.5GHz			Detector Function		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	1901.6902	45.34	8.23	74.00	28.66	100	340	Horizontal	PK
2	1901.6902	37.78	8.23	54.00	16.22	100	285	Horizontal	AV
3	2390.0000	45.77	10.16	54.00	8.23	200	275	Horizontal	AV
4	2390.0000	56.17	10.16	74.00	17.83	200	166	Horizontal	PK
5	*2401.8239	99.53	10.21			200	224	Horizontal	PK
6	*2401.9973	99.03	10.21			200	224	Horizontal	AV
7	5955.1155	58.06	20.99	74.00	15.94	200	312	Horizontal	PK
8	6033.0033	50.46	21.61	54.00	3.54	200	209	Horizontal	AV
9	17039.3339	49.03	26.03	74.00	24.97	100	82	Horizontal	PK
10	17384.5185	42.15	26.13	54.00	11.85	100	253	Horizontal	AV

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.
4. " \* ": Fundamental frequency.



Test Mode		DH5		Channel		CH0			
Frequency Range		1GHz ~ 26.5GHz		Detector Function		Peak (PK) Average (AV)			
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	1898.2898	45.05	8.19	74.00	28.95	100	353	Vertical	PK
2	2002.5003	38.75	9.01	54.00	15.25	100	306	Vertical	AV
3	2390.0000	56.17	10.16	74.00	17.83	100	102	Vertical	PK
4	2390.0000	46.00	10.16	54.00	8.00	100	153	Vertical	AV
5	*2401.9973	96.04	10.21			200	234	Vertical	AV
6	*2402.1707	96.53	10.21			200	234	Vertical	PK
7	5334.6535	56.66	19.69	74.00	17.34	100	32	Vertical	PK
8	5435.6436	49.53	20.16	54.00	4.47	100	250	Vertical	AV
9	8819.2619	43.40	13.59	74.00	30.60	200	320	Vertical	PK
10	8846.1746	36.62	13.22	54.00	17.38	200	158	Vertical	AV

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.
4. " \* ": Fundamental frequency.



Test Mode		DH5			Channel		CH39		
Frequency Range		1GHz ~ 26.5GHz			Detector Function		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	2039.5040	45.83	8.91	74.00	28.17	100	49	Horizontal	PK
2	2092.3092	39.12	8.75	54.00	14.88	100	148	Horizontal	AV
3	6033.9934	58.05	21.61	74.00	15.95	200	106	Horizontal	PK
<b>4</b>	<b>6256.4356</b>	<b>50.93</b>	<b>22.24</b>	<b>54.00</b>	<b>3.07</b>	<b>200</b>	<b>72</b>	Horizontal	<b>AV</b>
5	12493.4293	45.49	17.80	74.00	28.51	100	300	Horizontal	PK
6	12610.4410	38.14	17.74	54.00	15.86	100	326	Horizontal	AV

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.



<b>Test Mode</b>		DH5			<b>Channel</b>		CH39		
<b>Frequency Range</b>		1GHz ~ 26.5GHz			<b>Detector Function</b>		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	1910.0910	45.59	8.26	74.00	28.41	100	216	Vertical	PK
2	1990.4991	38.15	8.91	54.00	15.85	100	71	Vertical	AV
3	6210.5611	58.73	21.76	74.00	15.27	100	3	Vertical	PK
4	6255.7756	50.41	22.24	54.00	3.59	100	117	Vertical	AV
5	12488.7489	37.87	17.80	54.00	16.13	200	154	Vertical	AV
6	12839.7840	45.31	17.76	74.00	28.69	200	181	Vertical	PK

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.



<b>Test Mode</b>		DH5			<b>Channel</b>		CH78		
<b>Frequency Range</b>		1GHz ~ 26.5GHz			<b>Detector Function</b>		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	2038.1038	45.89	8.91	74.00	28.11	100	256	Horizontal	PK
2	2172.5173	38.50	9.20	54.00	15.50	100	342	Horizontal	AV
3	2480.0133	103.41	10.89			200	237	Horizontal	PK
4	2480.0734	103.91	10.89			200	237	Horizontal	AV
5	2483.5000	52.53	10.88	74.00	21.47	200	261	Horizontal	PK
6	2483.5000	41.90	10.88	54.00	12.10	200	115	Horizontal	AV
7	5392.0792	49.42	20.23	54.00	4.58	100	256	Horizontal	AV
8	5409.2409	56.34	20.26	74.00	17.66	100	97	Horizontal	PK
9	8801.7102	43.62	13.72	74.00	30.38	300	249	Horizontal	PK
10	8812.2412	36.70	13.67	54.00	17.30	300	224	Horizontal	AV

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.
4. " \* ": Fundamental frequency.



Test Mode		DH5		Channel		CH78			
Frequency Range		1GHz ~ 26.5GHz		Detector Function		Peak (PK) Average (AV)			
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	2038.3038	46.06	8.91	74.00	27.94	100	289	Vertical	PK
2	2087.9088	38.91	8.76	54.00	15.09	100	359	Vertical	AV
3	*2479.9933	97.80	10.89			100	235	Vertical	AV
4	*2480.1934	98.40	10.89			100	228	Vertical	PK
5	2483.5000	51.64	10.88	74.00	22.36	200	111	Vertical	PK
6	2483.5000	41.53	10.88	54.00	12.47	200	330	Vertical	AV
7	5394.0594	56.57	20.25	74.00	17.43	100	45	Vertical	PK
8	5422.7723	49.52	20.21	54.00	4.48	100	266	Vertical	AV
9	12542.5743	38.22	17.69	54.00	15.78	200	357	Vertical	AV
10	12658.4158	45.28	17.63	74.00	28.72	200	101	Vertical	PK

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.
4. " \* ": Fundamental frequency.



**BT\_8DPSK**

<b>Test Mode</b>		3DH5			<b>Channel</b>		CH0		
<b>Frequency Range</b>		1GHz ~ 26.5GHz			<b>Detector Function</b>		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	2038.5039	45.70	8.91	74.00	28.30	100	23	Horizontal	PK
2	2091.7092	38.72	8.75	54.00	15.28	100	282	Horizontal	AV
3	2390.0000	45.61	10.16	54.00	8.39	200	212	Horizontal	AV
4	2390.0000	56.23	10.16	74.00	17.77	200	104	Horizontal	PK
5	*2402.0407	98.67	10.21			200	173	Horizontal	AV
6	*2402.2574	98.54	10.21			200	220	Horizontal	PK
7	5418.1518	57.27	20.22	74.00	16.73	200	1	Horizontal	PK
8	5420.7921	49.74	20.21	54.00	4.26	200	12	Horizontal	AV
9	8761.9262	36.44	13.34	54.00	17.56	200	308	Horizontal	AV
10	8766.6067	43.50	13.39	74.00	30.50	200	181	Horizontal	PK

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.
4. " \* ": Fundamental frequency.



<b>Test Mode</b>		3DH5			<b>Channel</b>		CH0		
<b>Frequency Range</b>		1GHz ~ 26.5GHz			<b>Detector Function</b>		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	2044.5045	46.09	8.90	74.00	27.91	100	164	Vertical	PK
2	2083.9084	38.84	8.77	54.00	15.16	100	137	Vertical	AV
3	2390.0000	45.70	10.16	54.00	8.30	200	19	Vertical	AV
4	2390.0000	55.36	10.16	74.00	18.64	200	188	Vertical	PK
5	*2401.8239	95.14	10.21			200	228	Vertical	AV
6	*2401.8239	96.55	10.21			200	228	Vertical	PK
7	5372.9373	49.20	20.08	54.00	4.80	100	162	Vertical	AV
8	5403.6304	56.60	20.28	74.00	17.40	100	328	Vertical	PK
9	12640.8641	38.44	17.65	54.00	15.56	200	39	Vertical	AV
10	12649.0549	45.83	17.67	74.00	28.17	200	327	Vertical	PK

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.
4. " \* ": Fundamental frequency.



<b>Test Mode</b>		3DH5			<b>Channel</b>		CH39		
<b>Frequency Range</b>		1GHz ~ 26.5GHz			<b>Detector Function</b>		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	1999.5000	38.98	9.01	54.00	15.02	100	218	Horizontal	AV
2	2035.5036	45.77	8.92	74.00	28.23	100	85	Horizontal	PK
3	5387.1287	56.81	20.19	74.00	17.19	200	142	Horizontal	PK
4	5393.7294	49.20	20.25	54.00	4.80	200	308	Horizontal	AV
5	12172.8173	37.95	16.90	54.00	16.05	100	12	Horizontal	AV
6	12563.6364	45.69	17.73	74.00	28.31	100	38	Horizontal	PK

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.



<b>Test Mode</b>		3DH5			<b>Channel</b>		CH39		
<b>Frequency Range</b>		1GHz ~ 26.5GHz			<b>Detector Function</b>		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	2128.1128	47.03	9.01	74.00	26.97	100	359	Vertical	PK
2	2178.3178	38.94	9.19	54.00	15.06	100	236	Vertical	AV
3	5363.3663	49.38	20.00	54.00	4.62	200	98	Vertical	AV
4	5421.4521	56.81	20.21	74.00	17.19	200	152	Vertical	PK
5	12604.5905	38.52	17.71	54.00	15.48	100	8	Vertical	AV
6	13062.1062	46.28	17.87	74.00	27.72	100	61	Vertical	PK

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.



Test Mode		3DH5			Channel		CH78		
Frequency Range		1GHz ~ 26.5GHz			Detector Function		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	2087.1087	46.28	8.76	74.00	27.72	100	103	Horizontal	PK
2	2126.3126	38.85	8.99	54.00	15.15	100	203	Horizontal	AV
3	2479.7733	103.88	10.89			200	162	Horizontal	PK
4	*2480.1334	102.69	10.89			200	254	Horizontal	AV
5	*2483.5000	52.75	10.88	74.00	21.25	100	233	Horizontal	PK
6	2483.5000	42.15	10.88	54.00	11.85	100	222	Horizontal	AV
7	5395.3795	56.79	20.26	74.00	17.21	200	262	Horizontal	PK
8	5409.9010	49.23	20.26	54.00	4.77	200	104	Horizontal	AV
9	12268.7669	37.97	16.85	54.00	16.03	200	181	Horizontal	AV
10	12652.5653	45.13	17.66	74.00	28.87	200	208	Horizontal	PK

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.
4. " \* ": Fundamental frequency.



<b>Test Mode</b>		3DH5			<b>Channel</b>		CH78		
<b>Frequency Range</b>		1GHz ~ 26.5GHz			<b>Detector Function</b>		Peak (PK) Average (AV)		
NO.	Frequency (MHz)	Result (dBuV/m)	Factor [dB]	Limit (dBuV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarity	Remark
1	2133.5134	46.02	9.06	74.00	27.98	100	143	Vertical	PK
2	2268.1268	39.01	9.68	54.00	14.99	100	97	Vertical	AV
1	2480.0133	98.53	10.89			200	227	Vertical	PK
2	2480.0333	97.30	10.89			200	227	Vertical	AV
3	*2483.5000	52.31	10.88	74.00	21.69	200	13	Vertical	PK
4	*2483.5000	41.60	10.88	54.00	12.40	200	347	Vertical	AV
3	5874.2574	57.75	20.39	74.00	16.25	200	102	Vertical	PK
4	6157.0957	50.66	21.51	54.00	3.34	200	181	Vertical	AV
5	16974.9775	48.74	25.99	74.00	25.26	100	72	Vertical	PK
6	17712.1512	42.23	27.59	54.00	11.77	100	52	Vertical	AV

**REMARKS:**

1. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
2. The emission levels of other frequencies were greater than 20dB margin.
3. Margin value = Result – Limit value.
4. " \* ": Fundamental frequency.



## Appendix B

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due	Used
<b>Conducted emission</b>						
EMI Test Receiver	ESCI	100857	WKNB-0081	R&S	2021-12-08	<input checked="" type="checkbox"/>
EMI Test Receiver	ESR3	102394	VGDY-0705	R&S	2022-03-05	<input type="checkbox"/>
LISN	NSLK 8127	8127644	VGDY-0150	SCHWARZBECK	2021-09-04	<input type="checkbox"/>
LISN	NSLK 8128	8128-316	VGDY-0149	SCHWARZBECK	2021-09-04	<input checked="" type="checkbox"/>
DC LISN	PVDC8301-017	PVDC8301#17	VGDY-0692	SCHWARZBECK	2022-06-07	<input type="checkbox"/>
LISN	NSLK 8129	8129-268	EM-000388	SCHWARZBECK	2022-03-05	<input type="checkbox"/>
Plus Limiter (#1)	VTSD 9561 F-N	00515	VGDY-0808	SCHWARZBECK	2022-03-05	<input checked="" type="checkbox"/>
Plus Limiter (#2)	VTSD 9561	9561-F017	VGDY-0152	SCHWARZBECK	2021-10-09	<input type="checkbox"/>
Impedance Stabilization Network	ISN T800	27095	WKNE-0195	TESEQ	2021-09-04	<input type="checkbox"/>
Impedance Stabilization Network	NTFM8158	8158-0092	VGDY-0356	SCHWARZBECK	2022-06-07	<input type="checkbox"/>
Impedance Stabilization Network	NTFM8131	#184	EM-000498	SCHWARZBECK	2022-06-05	<input type="checkbox"/>
Voltage Probe	TK9420	9420-499	VGDY-0128	SCHWARZBECK	2022-03-05	<input type="checkbox"/>
Power Divider	4901.17.B	22643830	DB-0016	HUBER+SUHNER	2021-11-08	<input type="checkbox"/>
Video Signal Generator	GV-798+	151064920001	VGDS-0215	PROMAX	2022-06-07	<input type="checkbox"/>
Audio Signal Generator	GAG-810	EK871591	EM-000309	GW	2021-12-11	<input type="checkbox"/>
Shielding Room(#1)	GP1A	002	WKNF-0001	LEINING	2024-08-08	<input checked="" type="checkbox"/>
Shielding Room(#2)	GP1A	/	WKNF-0006	LEINING	2024-08-08	<input type="checkbox"/>

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due	Used
<b>Radiated Spurious Emission Test</b>						
3m Semi-Anechoic Chamber	FACT-4	ST08035	WKNA-0024	ETS	2024-12-12	<input checked="" type="checkbox"/>
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIGHT	2022-03-05	<input checked="" type="checkbox"/>
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	2022-03-05	<input checked="" type="checkbox"/>
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2022-06-30	<input checked="" type="checkbox"/>
Waveguide Horn Antenna	HF906	360306/008	WKNA-0024-8	R&S	2021-09-04	<input checked="" type="checkbox"/>
Waveguide Horn Antenna	BBHA9170	00949	EM-000383	SCHWARZBECK	2021-12-16	<input checked="" type="checkbox"/>
Preamplifier	BBV 9721	9721-050	VGDS-0667-1	SCHWARZBECK	2022-07-20	<input checked="" type="checkbox"/>
Bandstop Filters	SW-BSF-2400-100-7-A1	/	EM-000495	/	2022-07-20	<input checked="" type="checkbox"/>

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due	Used
<b>Antenna Port Conducted Test</b>						
Communication Shielded Room 2	4m*3m*3m	CRTDSWKS R 44301	/	CRT	2023-04-05	<input checked="" type="checkbox"/>



Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due	Used
Spectrum Analyzer	FSV40	101580	DZ-000238-3	R&S	2022-06-30	<input checked="" type="checkbox"/>
Comprehensive Test Instrument	CMW270	100304	DZ-000240-1	R&S	2021-12-08	<input checked="" type="checkbox"/>
Analog Signal Generator	SMB100A	181858	DZ-000238-2	R&S	2022-06-30	<input checked="" type="checkbox"/>
Vector Signal Generator	SGT100A	111661	DZ-000238-1	R&S	2022-06-30	<input checked="" type="checkbox"/>
RF Radio Frequency Switch	JS0806-2	19H9080187	DZ-000241	Tonscend	2022-06-30	<input checked="" type="checkbox"/>
Programmable DC Power Supply	E3644A	MY58036222	DZ-000178	KEYSIGHT	2022-04-22	<input checked="" type="checkbox"/>



### Important

- (1) The test report is valid with the official seal of the laboratory and the signatures of Test engineer, Author and Reviewer simultaneously.
- (2) The test report is invalid if altered.
- (3) Any photocopies or part photocopies in the test report are forbidden without the written permission from the laboratory.
- (4) Objections to the test report must be submitted to the laboratory within 15 days.
- (5) Generally, commission test is responsible for the tested samples only.

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