TEST REPORT

Dt&C Co., Ltd.
42, Yurim-ro, 154Beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 17042
Tel : 031-321-2664, Fax : 031-321-1664

1. Report No : DRTFCC2307-0079(1)

2. Customer

- Name (FCC) : Point Mobile Co., LTD. / Name (IC) : POINTMOBILE CO.,LTD
- Address (FCC) : B-9F Kabul Great Valley, 32, Digital-ro 9-gil, Geumcheon-gu, Seoul, Korea, 08512
  Address (IC) : B-9F Kabul Great Valley, 32, Digital-ro 9-gil, Geumcheon-gu Seoul Korea (Republic Of)

3. Use of Report : Class II Permissive Change

4. Product Name / Model Name : Mobile Computer / PM560
   FCC ID : V2X-PM560
   IC : 10664A-PM560

5. FCC Regulation(s): Part 15.247
   IC Standard(s): RSS-247 Issue 2, RSS-Gen Issue 5
   Test Method used: KDB558074 D01v05r02, ANSI C63.10-2013

6. Date of Test : 2023.06.23 ~ 2023.07.05

7. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

8. Testing Environment : See appended test report.

9. Test Result : Refer to the attached test result.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test report is not related to KOLAS accreditation.

Affirmation	Tested by Name : SeungMin Gil (Signature)	Technical Manager Name : JaeJin Lee (Signature)

2023 . 07 . 13 .

Dt&C Co., Ltd.

If this report is required to confirmation of authenticity, please contact to report@dtnc.net

Test Report Version

Test Report No.	Date	Description	Revised by	Reviewed by
DRTFCC2307-0079	Jul. 12, 2023	Initial issue	SeungMin Gil	JaeJin Lee
DRTFCC2307-0079(1)	Jul. 13, 2023	Modified address and Revised section 3	SeungMin Gil	JaeJin Lee

Table of Contents

1. General Information

1.1. Description of EUT

Equipment Class	Part 15 Spread Spectrum Transmitter (DSS)
Product Name	Mobile Computer
Model Name	PM560
Add Model Name	-
Firmware Version Identification Number	56.00xx
EUT Serial Number	Conducted : 2223710235, Radiated: 2303310292
Power Supply	DC 3.63 V
Frequency Range	2 402 MHz ~ 2 480 MHz
Max. RF Output Power	6.74 dBm (0.005 W)
Modulation Technique (Data rate)	GFSK(1 Mbps), π/4DQPSK(2 Mbps), 8DPSK(3 Mbps)
Number of Channels	79
Antenna Specification	Antenna Type: LDS Antenna Gain: 1.979 dBi (PK)

1.2. Declaration by the applicant / manufacturer

- NA

1.3. Testing Laboratory

Dt&C Co., Ltd.		
The 3 m test site and conducted measurement facility used to collect the radiated data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042. The test site complies with the requirements of Part 2.948 according to ANSI C63.4-2014. **- FCC & IC MRA Designation No. : KR0034** **- ISED#: 5740A**		
www.dtnc.net		
Telephone	:	+ 82-31-321-2664
FAX	:	+ 82-31-321-1664

1.4. Testing Environment

Ambient Condition	
▪ Temperature	+21 ℃ ~ +24 ℃
▪ Relative Humidity	36 % ~ 40 %

1.5. Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with requirements of ANSI C63.4-2014 and ANSI C63.10-2013. All measurement uncertainty values are shown with a coverage factor of *k* = 2 to indicate a 95 % level of confidence.

Parameter	Measurement uncertainty
Antenna-port conducted emission	1.1 dB (The confidence level is about 95 %, k = 2)
Radiated emission (1 GHz Below)	4.8 dB (The confidence level is about 95 %, k = 2)
Radiated emission (1 GHz ~ 18 GHz)	5.0 dB (The confidence level is about 95 %, k = 2)
Radiated emission (18 GHz Above)	5.2 dB (The confidence level is about 95 %, k = 2)

1.6. Information about the FHSS characteristics

- This Bluetooth module has been tested by a Bluetooth Qualification Lab, and we confirm the following :

A) The hopping sequence is pseudorandom

Note 1 : Pseudorandom Frequency Hopping Sequence Table as below:

Channel: 08, 24, 40, 56, 42, 54, 72, 09, 01, 11, 33, 41, 34, 42, 65, 73, 53, 69, 06, 22, 04, 20, 36, 52, 38, 46, 70, 78, 68, 76, 21, 29, 10, 26, 41, 58, 44, 60, 76, 13, 03, 11, 35, 43, 37, 45, 69, 77, 52, 71, 08, 24, 06, 24, 48, 56, 45, 46, 70, 01, 72, 06, 25, 33, 12, 28, 49, 60, 45, 58, 74, 13, 05, 18, 37, 49 etc

The System receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchroniztation with the transmit ted signals.

B) All channels are used equally on average

C) The receiver input bandwidth equals the transmit bandwidth

D) The receiver hops in sequenc e with the transmit signal

- 15.247(g) : In accordance with the Bluetooth Industry Standard, the system is designed to comply with all of the regulations in Section 15.247 when the transmitter is presented with a continuous data (or information) system.
- 15.247(h) : In accordance with the Bluetooth Industry Standard, the system does not coordinate its channels selection / hopping sequence with other frequency hopping systems for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters.
- 15.247(h) : The EUT employs Adaptive Frequency Hopping (AFH) which identifies sources of interference namely devices operating in 802.11 WLAN and excludes them from the list of available channels. The process of re-mapping reduces the number of test channels from 79 channels to a minimum number of 20 channels.

1.7. Conclusion of worst-case and operation mode

The EUT has three types of modulation (GFSK, π/4DQPSK and 8DPSK).

Therefore all applicable requirements were tested with all the modulations.

And packet type was tested at the worst case(DH5).

EUT Operation test setup

Bluetooth tester was used to control the transmit parameters during test.

Tested frequency information

- Hopping Function : Enable

	Tested Frequency (MHz)
Hopping Band	2 402 ~ 2 480

- Hopping Function : Disable

	Tested Frequency (MHz)
Lowest Channel	2 402
Middle Channel	2 441
Highest Channel	2 480

1.8. Test Equipment List

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	KEYSIGHT	N9020A	22/12/16	23/12/16	MY53290984
Spectrum Analyzer	Agilent Technologies	N9020A	23/06/23	24/06/23	US47360812
Multimeter	FLUKE	17B+	22/12/16	23/12/16	36390701WS
BlueTooth Tester	TESCOM	TC-3000C	23/06/23	24/06/23	3000C000563
Power Splitter	Anritsu	K241B	22/12/16	23/12/16	1301183
Signal Generator	Rohde Schwarz	SMBV100A	22/12/16	23/12/16	255571
Signal Generator	ANRITSU	MG3695C	22/12/16	23/12/16	173501
Thermohygrometer	BODYCOM	BJ5478	22/12/16	23/12/16	120612-1
Thermohygrometer	BODYCOM	BJ5478	23/06/22	24/06/22	N/A
Horn Antenna	ETS-Lindgren	3117	23/06/23	24/06/23	00143278
Horn Antenna	A.H.Systems Inc.	SAS-574	23/06/23	24/06/23	155
PreAmplifier	tsj	MLA-0118-B01-40	22/12/16	23/12/16	1852267
PreAmplifier	tsj	MLA-1840-J02-45	23/06/23	24/06/23	16966-10728
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	23/06/23	24/06/23	8
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	23/06/23	24/06/23	1
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	23/06/23	24/06/23	3
Attenuator	Hefei Shunze	SS5T2.92-10-40	23/06/23	24/06/23	16012202
Attenuator	Aeroflex/Weinschel	56-3	23/06/23	24/06/23	Y2370
Attenuator	SMAJK	SMAJK-2-3	23/06/23	24/06/23	3
Attenuator	SMAJK	SMAJK-2-3	23/06/23	24/06/23	2
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2496A MA2411B	22/12/16	23/12/16	1338004 1911481
Cable	DT&C	Cable	23/01/04	24/01/04	G-2
Cable	HUBER+SUHNER	SUCOFLEX 100	23/01/04	24/01/04	G-3
Cable	DT&C	Cable	23/01/04	24/01/04	G-4
Cable	OMT	YSS21S	23/01/04	24/01/04	G-5
Cable	Junkosha	MWX241	23/01/08	24/01/08	mmW-1
Cable	Junkosha	MWX241	23/01/08	24/01/08	mmW-4
Cable	DT&C	Cable	23/01/04	24/01/04	RFC-03

Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017
Note2: The cable is not a regular calibration item, so it has been calibrated by Dt&C itself.

2. Antenna Requirement

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 use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions.

Conclusion: Comply

The antenna is attached on the device by means of unique coupling method (Spring Tension). Therefore this E.U.T complies with the requirement of Part 15.203

3. Summary of Test Results

FCC part section(s)	RSS section(s)	Test Description	Limit (Using in 2 400~ 2 483.5 MHz)	Test Condition	Status Note 1
15.247(a) 15.247(b)	RSS-247[5.1] RSS-247[5.4]	Maximum Peak Conducted Output Power	**For FCC** =< 0.125 W(conducted) **For IC** =< 0.125 W(conducted) =< 4 Watt(e.i.r.p)	Conducted	**C**
15.247(a)	RSS-247[5.1]	20 dB Bandwidth	NA		**C**
-	RSS-Gen[6.7]	Occupied Bandwidth (99 %)	NA		**C**
15.247(d) 15.205 15.209	RSS-247[5.5] RSS-Gen[8.9] RSS-Gen[8.10]	Unwanted Emissions (Radiated)	Part 15.209 Limits (Refer to section 6)	Radiated	**C**
15.203	-	Antenna Requirement	Part 15.203 (Refer to section 2)	-	**C**

Note 1: **C** = Comply **NC** = Not Comply **NT** = Not Tested **NA** = Not Applicable

Note 2: Output power and Bandwidth items were measured, and partial testing(worst case mode and channel) was performed for radiated test item. Partial test results showed that the spurious emissions did not increase compared to original filing.

4. Maximum Peak Conducted Output Power

4.1. Test Setup

Refer to the APPENDIX I.

4.2. Limit

▣ FCC Requirements

The maximum peak output power of the intentional radiator shall not exceed the following :

1. §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2 400 MHz - 2 483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
2. §15.247(b)(1), For frequency hopping systems operating in the 2 400 – 2 483.5 MHz employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5 725 MHz – 5 805 MHz band : 1 Watt. For all other frequency hopping systems in the 2 400 MHz – 2 483.5 MHz band: 0.125 watts.

▣ IC Requirements

1. RSS-247[5.1] (b), For FHSs shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, FHSs operating in the band 2 400-2 483.5 MHz 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 that the systems operate with an output power no greater than 0.125 W.
2. RSS-247[5.4] (b), For FHSS operating in the band 2 400 MHz – 2 483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channels, the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channels. The e.i.r.p shall not exceed 4 W, except as provided in section 5.4(e)

4.3. Test Procedure

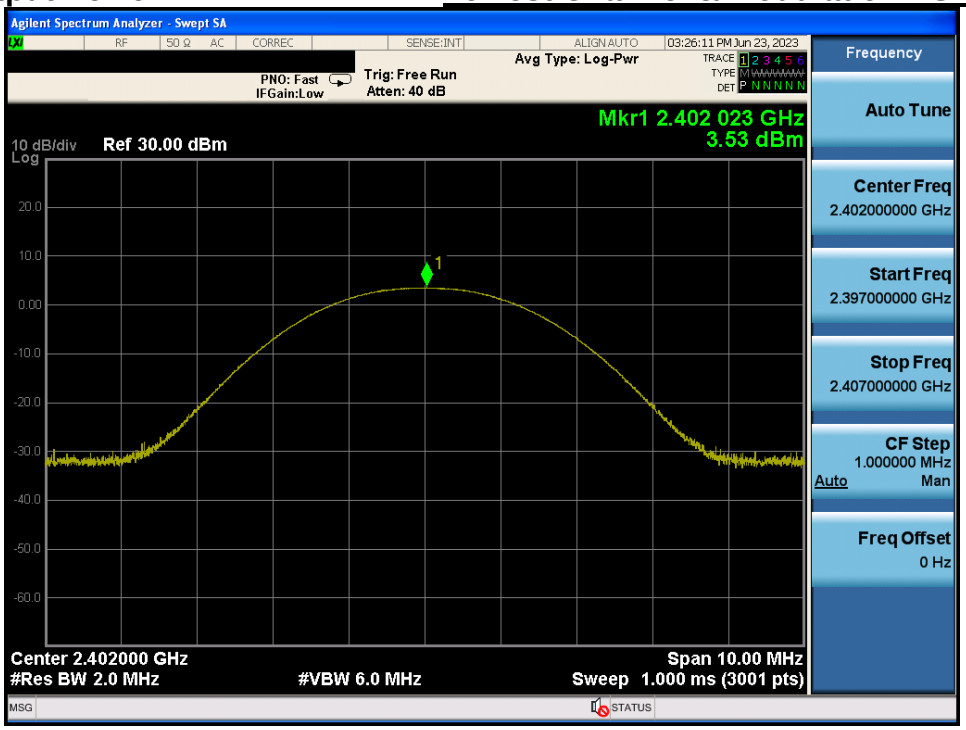
1. The RF output power was measured with a spectrum analyzer connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate center frequency, A spectrum analyzer was used to record the shape of the transmit signal.
2. The peak output power of the fundamental frequency was measured with the spectrum analyzer using ;
   Span = approximately 5 times of the 20 dB bandwidth, centered on a hopping channel
   RBW ≥ 20 dB BW
   VBW ≥ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold

4.4. Test Results

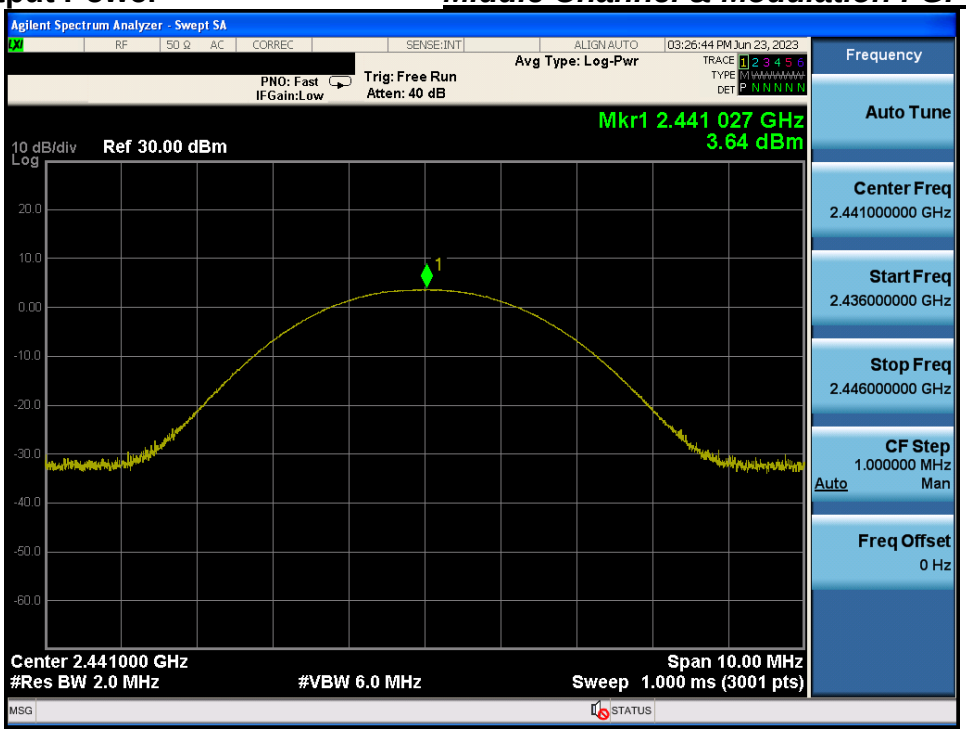
Modulation	Tested Channel	Burst Average Output Power		Peak Output Power		Antenna Gain	e.i.r.p[Note3]
		dBm	mW	dBm	mW	(dBi)	(dBm)
GFSK	**Lowest**	3.46	2.22	3.53	2.25	1.98	5.51
	Middle	3.52	2.25	3.64	2.31	1.98	5.62
	Highest	2.75	1.88	3.05	2.02	1.98	5.03
π/4DQPSK	**Lowest**	4.43	2.77	6.24	4.21	1.98	8.22
	Middle	3.80	2.40	5.79	3.79	1.98	7.77
	Highest	2.59	1.82	4.66	2.92	1.98	6.64
8DPSK	**Lowest**	4.42	2.77	**6.74**	4.72	1.98	8.72
	Middle	3.43	2.20	6.28	4.25	1.98	8.26
	Highest	2.59	1.82	5.16	3.28	1.98	7.14

Note 1: The average output power was tested using an average power meter for reference only.
Note 2: See next pages for actual measured spectrum plots.
Note 3: e.i.r.p = P_{cond} + G_{EUT}
P_{cond} = measured power at feedpoint of the EUT antenna, in dBm (Peak Conducted Output Power)
G_{EUT} = gain of the EUT radiating element (antenna), in dBi

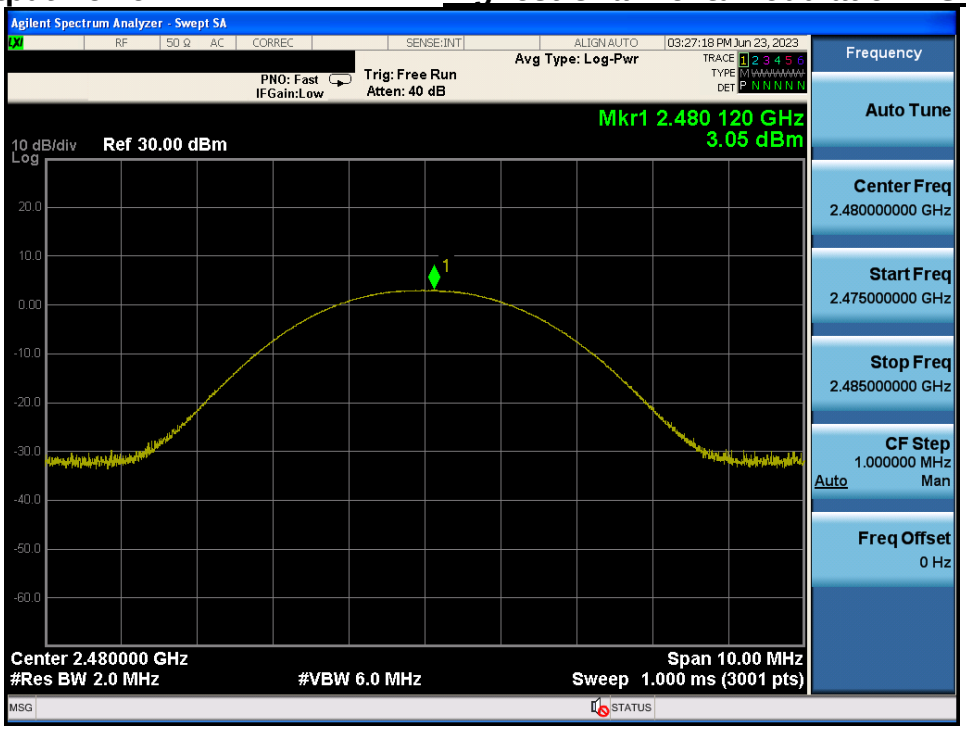
Peak Output Power ***Lowest Channel & Modulation : GFSK***



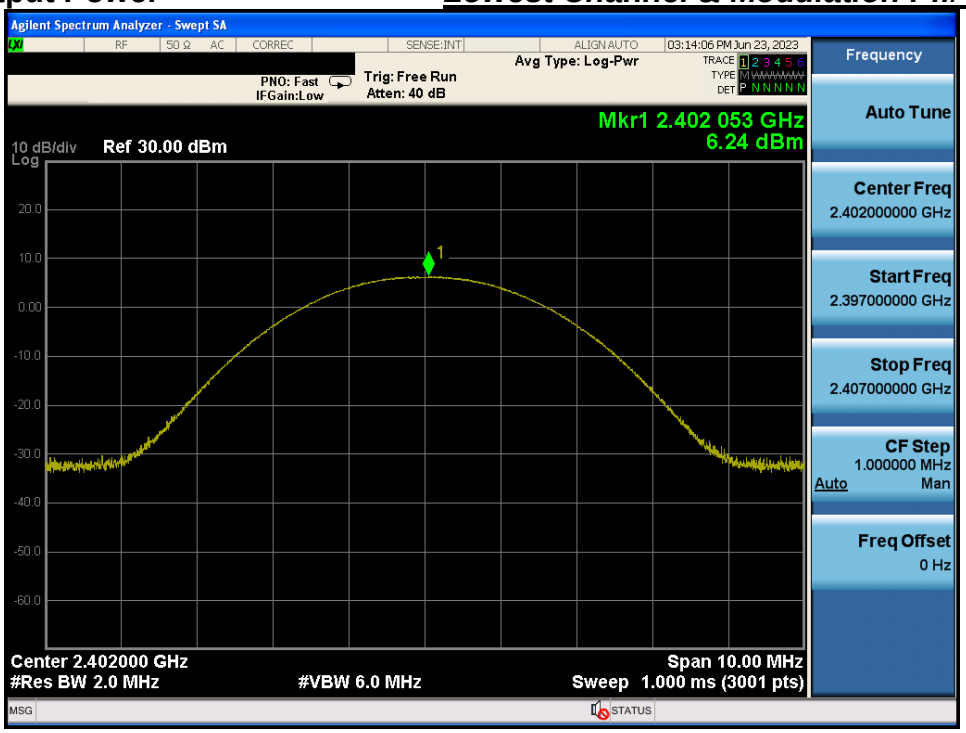
Peak Output Power ***Middle Channel & Modulation : GFSK***



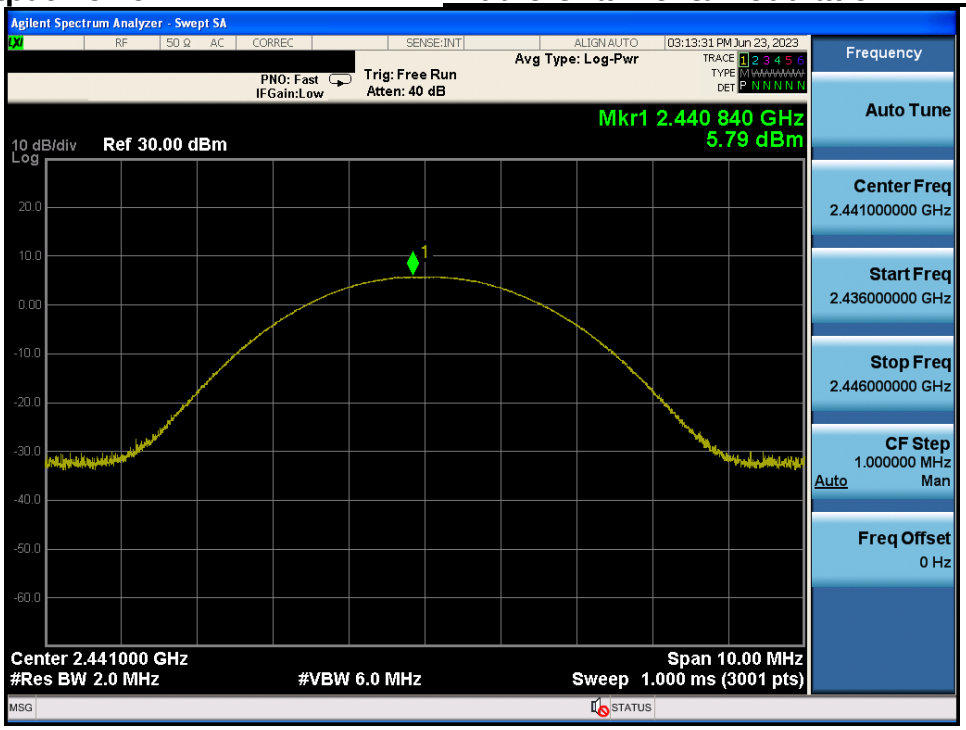
Peak Output Power ***Highest Channel & Modulation : GFSK***



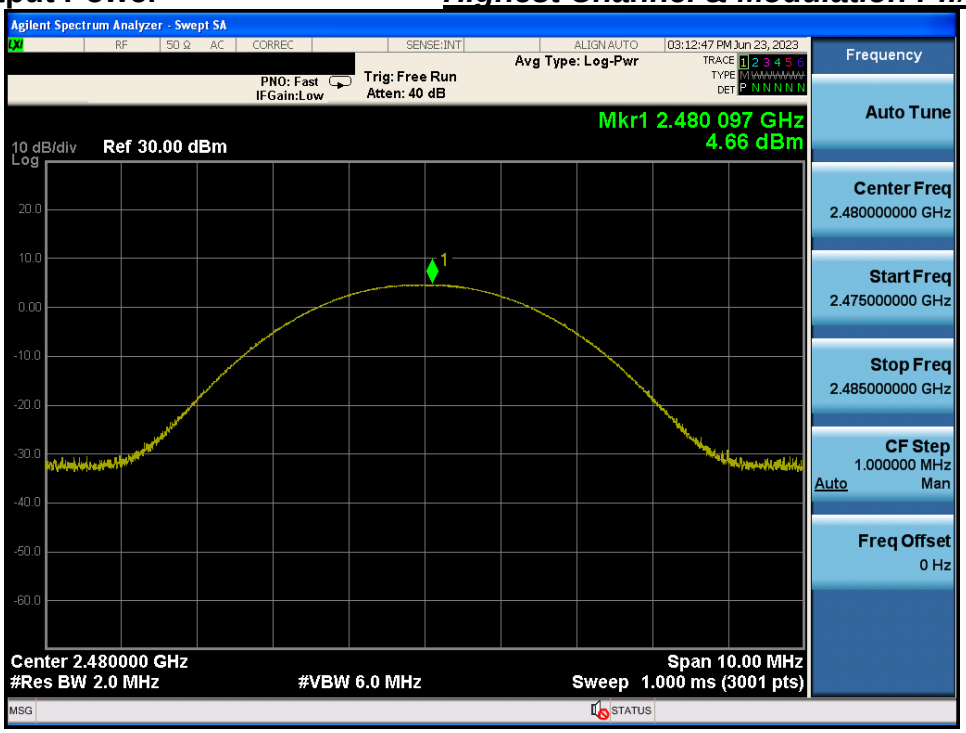
Peak Output Power ***Lowest Channel & Modulation : π/4DQPSK***



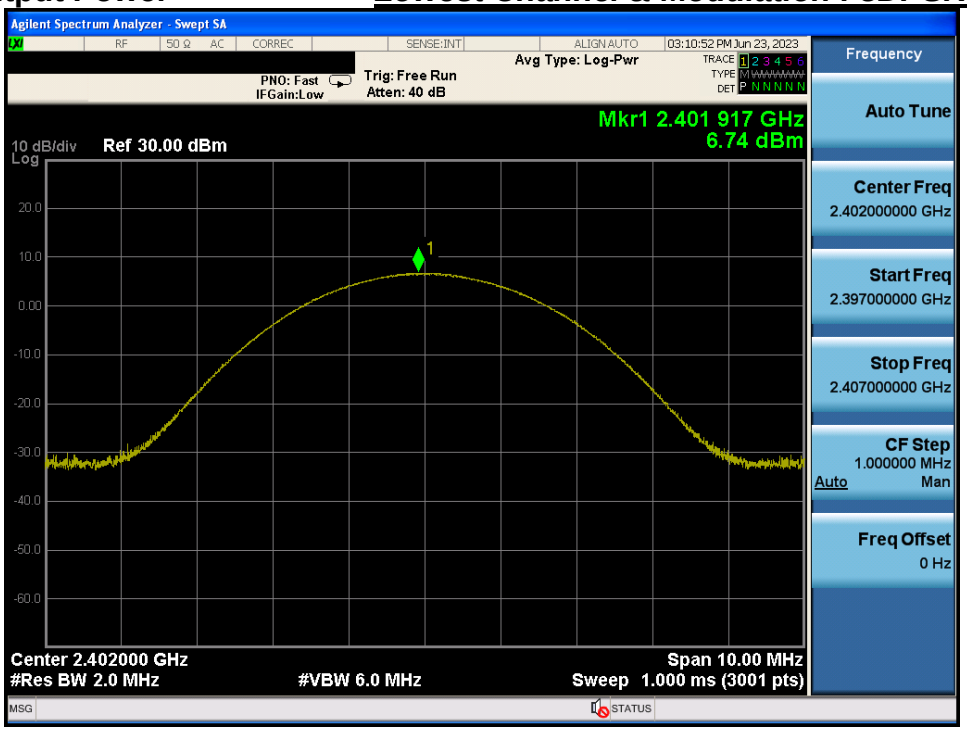
Peak Output Power ***Middle Channel & Modulation : π/4DQPSK***



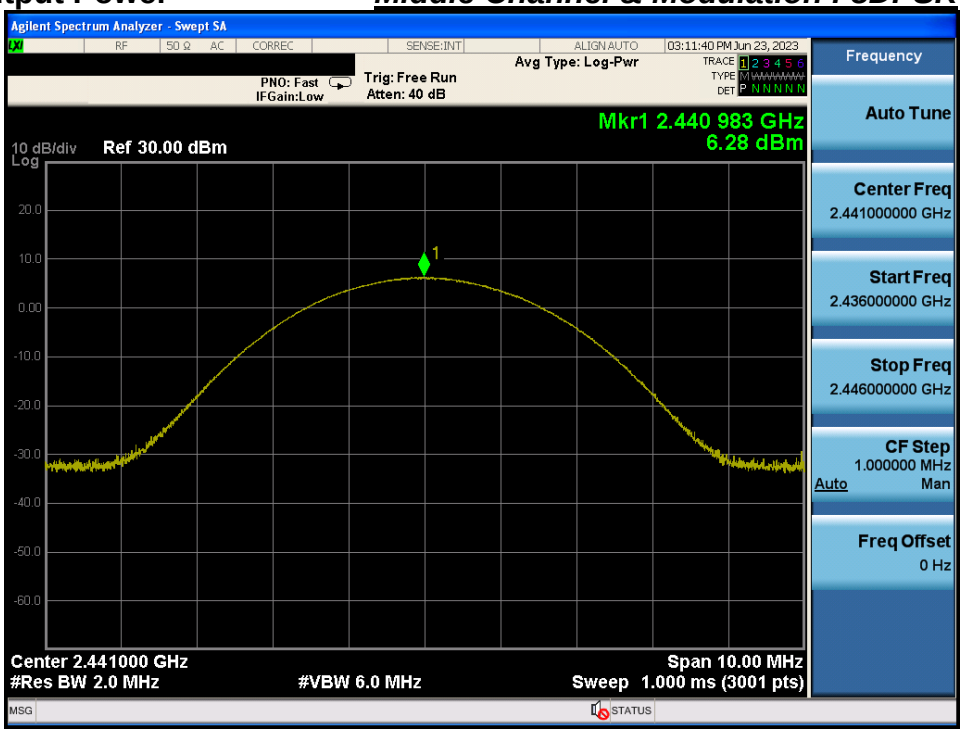
Peak Output Power ***Highest Channel & Modulation : π/4DQPSK***



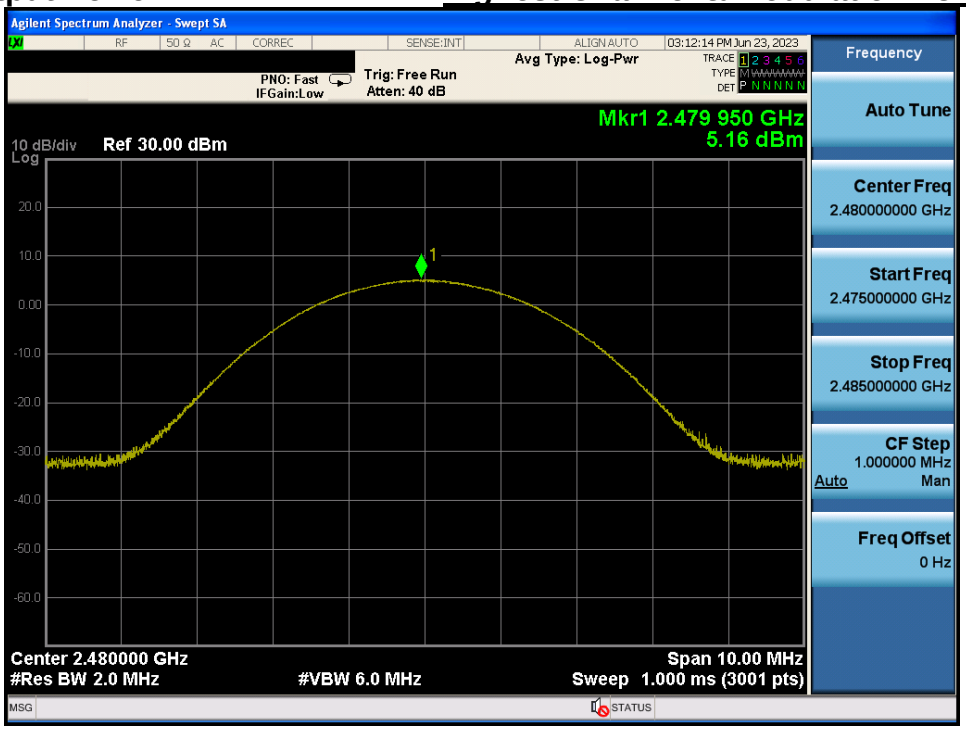
Peak Output Power ***Lowest Channel & Modulation : 8DPSK***



Peak Output Power ***Middle Channel & Modulation : 8DPSK***



Peak Output Power ***Highest Channel & Modulation : 8DPSK***



5. 20 dB BW & Occupied BW

5.1. Test Setup

Refer to the APPENDIX I.

5.2. Limit

Limit : Not Applicable

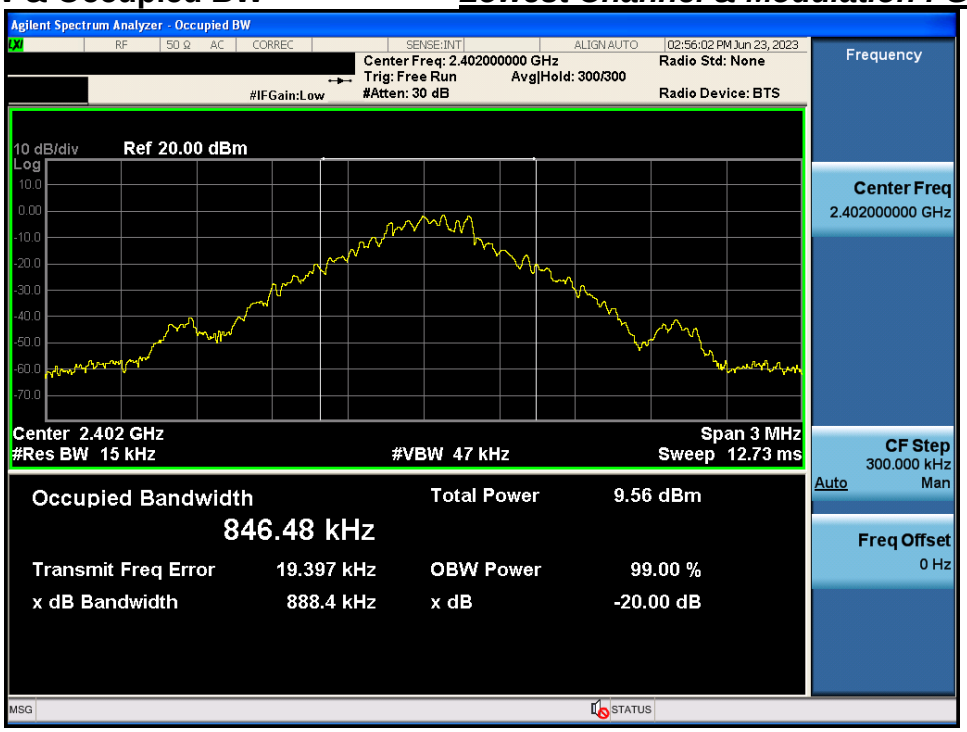
5.3. Test Procedure

1. The 20 dB bandwidth was measured with a spectrum analyzer connected to RF antenna Connector (conducted measurement) while EUT was operating in transmit mode. The analyzer center frequency was set to the EUT carrier frequency, using the analyzer.
2. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using below setting:
   RBW = 1 % to 5 % of the 20 dB BW & Occupied BW
   VBW ≥ 3 × RBW
   Span = between two times and five times the 20 dB bandwidth & Occupied BW
   Sweep = auto
   Detector function = peak
   Trace = max hold

5.4. Test Results

Modulation	Tested Channel	20 dB BW (MHz)	Occupied BW (MHz)
GFSK	**Lowest**	**0.888**	0.846
	Middle	**0.888**	**0.853**
	Highest	**0.888**	0.843
π/4DQPSK	**Lowest**	**1.321**	1.196
	Middle	**1.321**	1.195
	Highest	**1.321**	**1.199**
8DPSK	**Lowest**	1.337	1.204
	Middle	**1.341**	**1.207**
	Highest	1.314	1.200

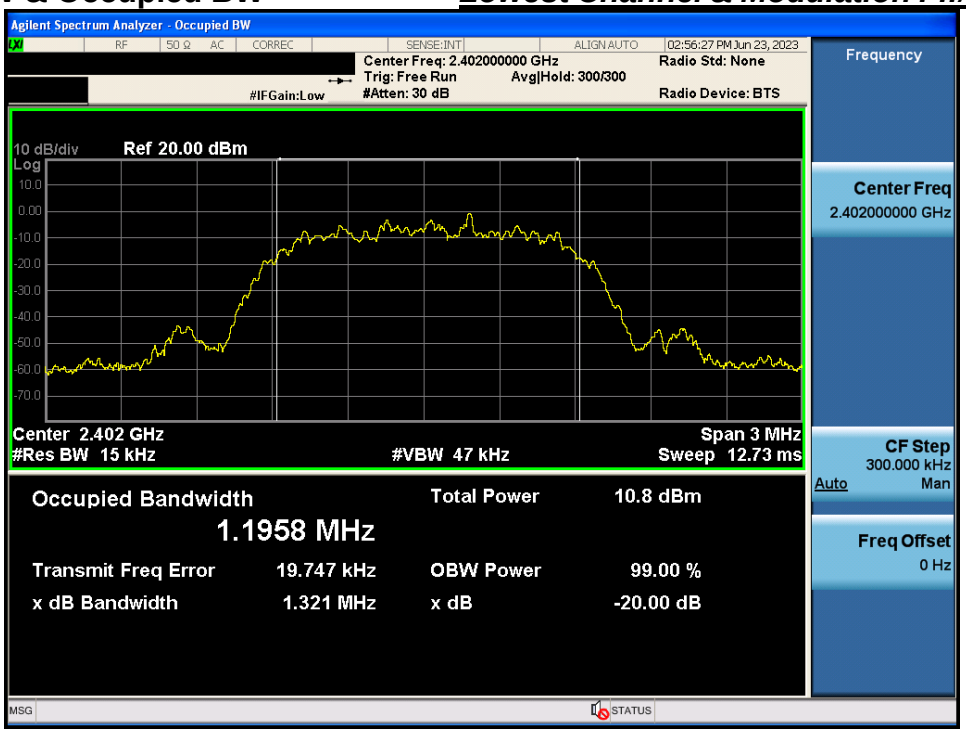
20 dB BW & Occupied BW ***Lowest Channel & Modulation : GFSK***



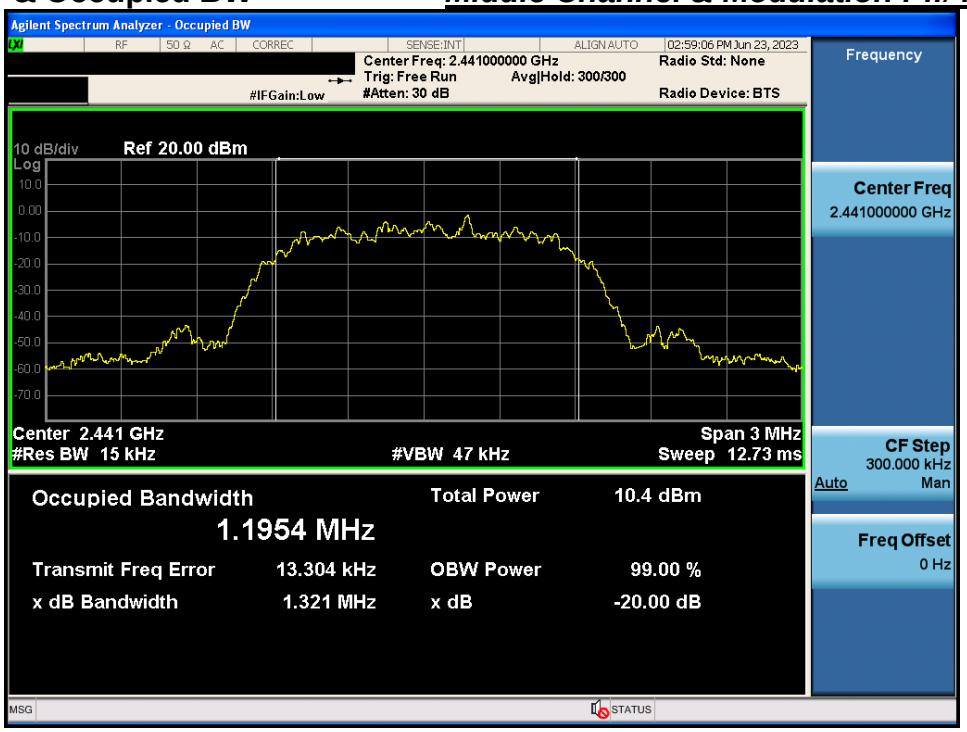
20 dB BW & Occupied BW ***Middle Channel & Modulation : GFSK***

20 dB BW & Occupied BW ***Highest Channel & Modulation : GFSK***

20 dB BW & Occupied BW ***Lowest Channel & Modulation : π/4DQPSK***

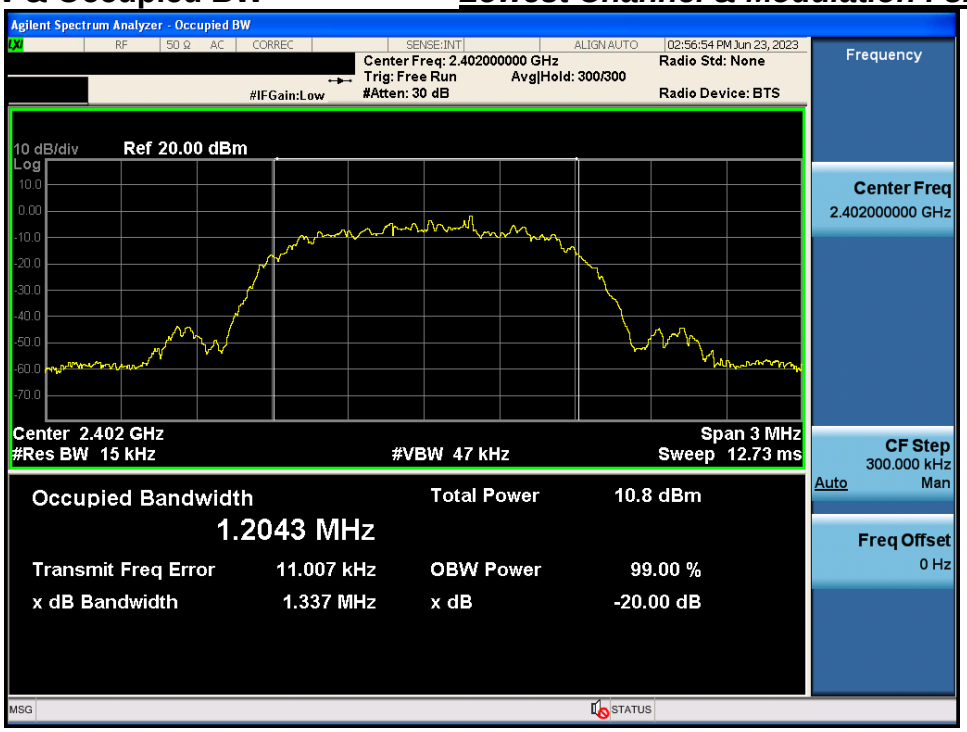


20 dB BW & Occupied BW ***Middle Channel & Modulation : π/4DQPSK***



20 dB BW & Occupied BW ***Highest Channel & Modulation : π/4DQPSK***

20 dB BW & Occupied BW ***Lowest Channel & Modulation : 8DPSK***



20 dB BW & Occupied BW ***Middle Channel & Modulation : 8DPSK***

20 dB BW & Occupied BW ***Highest Channel & Modulation : 8DPSK***

6. Unwanted Emissions

6.1. Test Setup

Refer to the APPENDIX I.

6.2. Limit

Part 15.247(d), Part 15.205, Part 15.209 & RSS-247 [5.5], RSS-Gen [8.9], RSS-Gen [8.10]

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 Part 15.247 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) (see §15.205(c)).

- Part 15.209 & RSS-Gen[8.9]: General requirement

Frequency (MHz)	FCC Limit (uV/m)	IC Limit (μA/m)	Measurement Distance (m)
0.009 – 0.490	2 400 / F (kHz)	6.37/F (F in kHz)	300
0.490 – 1.705	24 000 / F (kHz)	63.7/F (F in kHz)	30
1.705 – 30.0	30	0.08	30

Frequency (MHz)	FCC Limit (uV/m)	IC Limit (uV/m)	Measurement Distance (m)
30 ~ 88	100 **	100	3
88 ~ 216	150 **	150	3
216 ~ 960	200 **	200	3
Above 960	500	500	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §15.231 and 15.241.

- Part 15.205(a): Restricted band of operation

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.414 25 ~ 8.414 75	108 ~ 121.94	1 300 ~ 1 427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1 435 ~ 1 626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.173 5 ~ 2.190 5	12.519 75 ~ 12.520 25	149.9 ~ 150.05	1 645.5 ~ 1 646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.576 75 ~ 12.577 25	156.524 75 ~ 156.525 25	1 660 ~ 1 710	8.025 ~ 8.5	22.01 ~ 23.12
4.177 25 ~ 4.177 75	13.36 ~ 13.41	156.7 ~ 156.9	1 718.8 ~ 1 722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.207 25 ~ 4.207 75	16.42 ~ 16.423	162.012 5 ~ 167.17	2 200 ~ 2 300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.694 75 ~ 16.695 25	167.72 ~ 173.2	2 310 ~ 2 390	10.6 ~ 12.7	36.43 ~ 36.5
6.267 75 ~ 6.268 25	16.804 25 ~ 16.804 75	240 ~ 285	2 483.5 ~ 2 500	13.25 ~ 13.4	Above 38.6
6.311 75 ~ 6.312 25	25.5 ~ 25.67	322 ~ 335.4	2 655 ~ 2 900		
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3 260 ~ 3 267		
8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3 332 ~ 3 339		
8.376 25 ~ 8.386 75	74.8 ~ 75.2	960 ~ 1 240	3 345.8 ~ 3 358		
			3 600 ~ 4 400		

- RSS-Gen[8.10]: Restricted frequency bands

MHz	MHz	MHz	MHz	MHz	GHz
0.090 ~ 0.110	8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3 345.8 ~ 3 358	9.0 ~ 9.2
0.495 ~ 0.505	8.376 25 ~ 8.386 75	74.8 ~ 75.2	960 ~ 1 427	3 500 ~ 4 400	9.3 ~ 9.5
2.173 5 ~ 2.190 5	8.414 25 ~ 8.414 75	108 ~ 138	1 435 ~ 1 626.5	4 500 ~ 5 150	10.6 ~ 12.7
3.020 ~ 3.026	12.29 ~ 12.293	149.9 ~ 150.05	1 645.5 ~ 1 646.5	5 350 ~ 5 460	13.25 ~ 13.4
4.125 ~ 4.128	12.519 75 ~ 12.520 25	156.524 75 ~	1 660 ~ 1 710	7 250 ~ 7 750	14.47 ~ 14.5
4.177 25 ~ 4.177 75	12.576 75 ~ 12.577 25	156.525 25	1 718.8 ~ 1 722.2	8 025 ~ 8 500	15.35 ~ 16.2
4.207 25 ~ 4.207 75	13.36 ~ 13.41	156.7 ~ 156.9	2 200 ~ 2 300		17.7 ~ 21.4
5.677 ~ 5.683	16.42 ~ 16.423	162.01 25 ~ 167.17	2 310 ~ 2 390		22.01 ~ 23.12
6.215 ~ 6.218	16.694 75 ~ 16.695 25	167.72 ~ 173.2	2 483.5 ~ 2 500		23.6 ~ 24.0
6.267 75 ~ 6.268 25	16.804 25 ~ 16.804 75	240 ~ 285	2 655 ~ 2 900		31.2 ~ 31.8
6.311 75 ~ 6.312 25	25.5 ~ 25.67	322 ~ 335.4	3 260 ~ 3 267		36.43 ~ 36.5
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3 332 ~ 3 339		Above 38.6

6.3. Test Procedures

6.3.1. Test Procedures for Unwanted Emissions(Radiated)

1. The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements above 1 GHz, the table height is 1.5 m.
   The table was rotated 360 degrees to determine the position of the highest radiation.
2. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 1 or 3 meter away from the interference-receiving antenna.
3. For measurements above 1 GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 GHz, the absorbers are removed.
4. The antenna is a broadband 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.
5. 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 table was turned from 0 degrees to 360 degrees to find the maximum reading.
6. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Measurement Instrument Setting

- Frequencies less than or equal to 1 000 MHz
  The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.

- Frequencies above 1 000 MHz
  The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1 GHz.
  The result of Average measurement is calculated using PK result and duty correction factor.

6.4. Test Results

6.4.1. Unwanted Emissions(Radiated)

▪ **Test Notes.**

1. The radiated emissions were investigated 9 kHz to 25 GHz. And no other spurious and harmonic emissions were found below listed frequencies.
2. Information of Distance Correction Factor
   For finding emissions, measurements may be performed at a distance closer than that specified in the regulations.
   In this case, the distance correction factor is applied to the result.
   - Calculation of distance factor
   At frequencies below 30 MHz = 40 log(tested distance / specified distance)
   At frequencies at or above 30 MHz = 20 log(tested distance / specified distance)
   When distance factor is “N/A”, the measurements were performed at the specified distance and distance factor is not applied.
3. DCCF Calculation. (DCCF = Duty Cycle Correction Factor)
   - Time to cycle through all channels = Δt = T [ms] X 20 minimum hopping channels , where T = pulse width = **2.88 ms**
   - 100 ms / Δt [ms] = H -> Round up to next highest integer, to account for worst case, H' = **100 / (2.88 X 20)** = **1.74** ≒ **2**
   - The Worst Case Dwell Time = T [ms] x H' = **2.88 ms X 2** = **5.76 ms**
   - DCCF = 20 Log(The Worst Case Dwell Time / 100 ms) dB = **20 log(5.76 / 100)** = **-24.79 dB**
   Note: Please rerer to the original filling for duty cycle.
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + TF+ DCCF + DCF / TF = AF + CL + HL + AL – AG
   Where, TF = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain, HL = High pass filter Loss,
   AL = Attenuator Loss, DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

9 kHz ~ 25 GHz Data (Modulation : *8DPSK*)

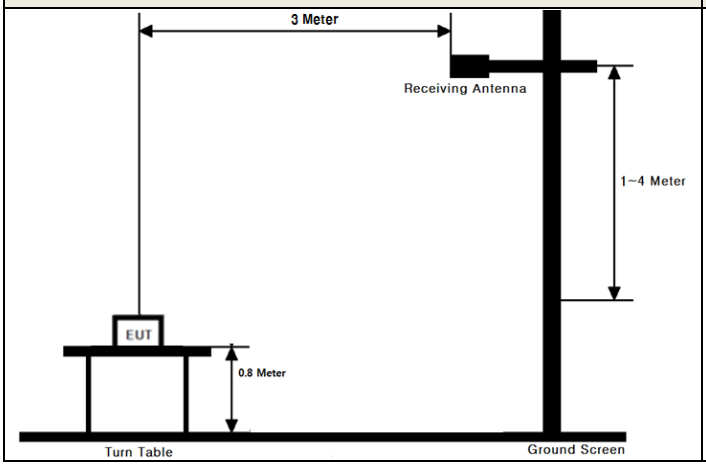
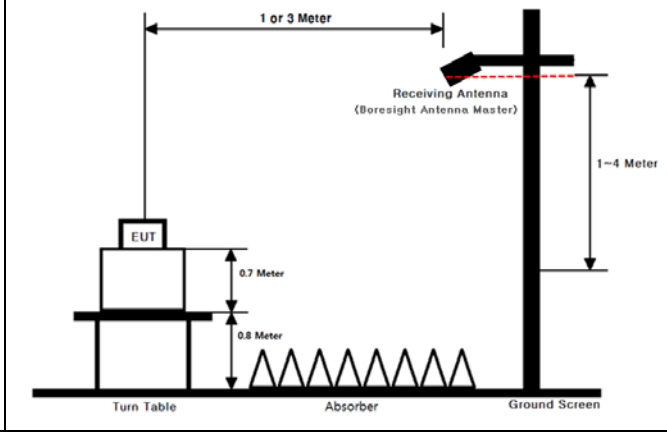
▪ Highest Channel

Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	TF (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2 485.82	H	X	PK	51.09	5.65	N/A	N/A	56.74	74.00	17.26
2 485.82	H	X	AV	51.09	5.65	-24.79	N/A	31.95	54.00	22.05
4 958.28	H	Y	PK	49.69	2.67	N/A	N/A	52.36	74.00	21.64
4 958.28	H	Y	AV	49.69	2.67	-24.79	N/A	27.57	54.00	26.43

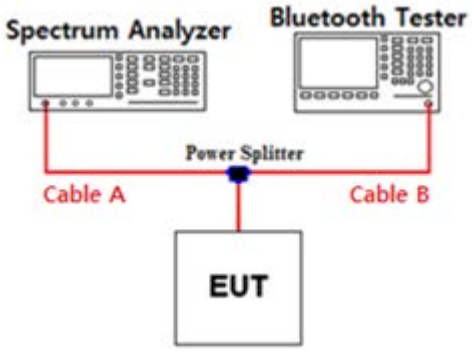
APPENDIX I

Test set up diagrams

▪ Radiated Measurement

Below 1 GHz	Above 1 GHz
	

▪ Conducted Measurement



Path loss information

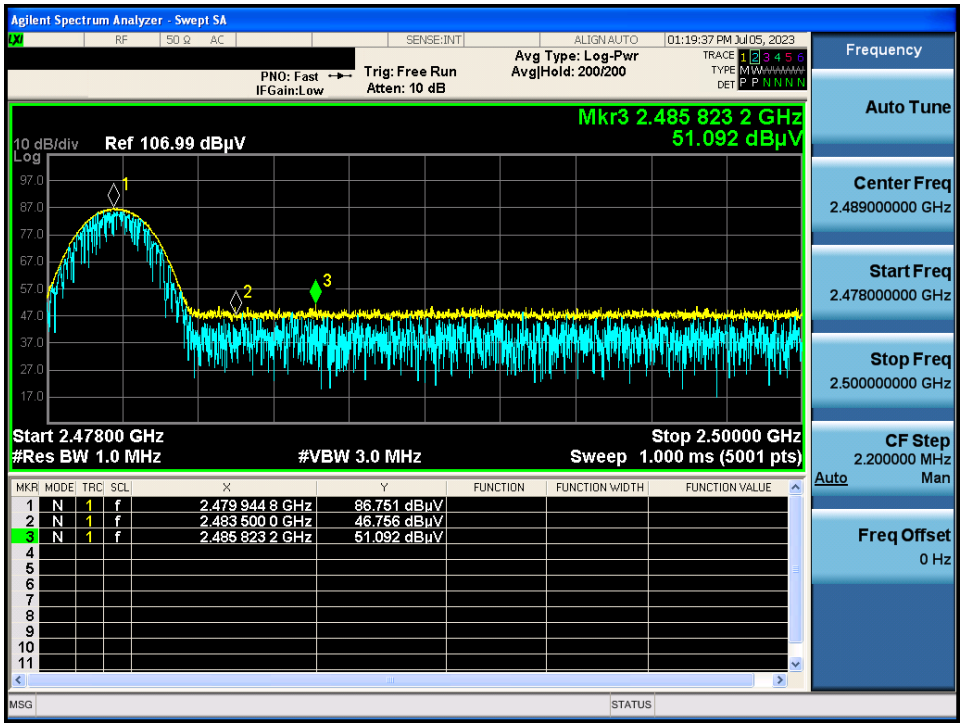
Frequency (GHz)	Path Loss (dB)	Frequency (GHz)	Path Loss (dB)
0.03	5.89	15	6.32
1	6.00	20	6.41
2.402 & 2.441 & 2.480	6.21	25	6.93
5	6.25	-	-
10	6.26	-	-

Note 1: The path loss from EUT to Spectrum analyzer was measured and used for test.
Path loss (S/A's correction factor) = Cable A + Power Splitter

APPENDIX II

Unwanted Emissions (Radiated) Test Plot

8DPSK & Highest & X & Hor **Detector Mode : PK**



8DPSK & Highest & Y & Hor **Detector Mode : PK**