TEST REPORT

Dt&C

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 : DRTFCC2007-0220

2. Customer

- Name (FCC) : BLUEBIRD INC. / Name (IC) : BLUEBIRD INC.
- Address (FCC) : 3F, 115, Irwon-ro, Gangnam-gu, Seoul, South Korea
  Address (IC) : 3F, 115, Irwon-ro, Gangnam-gu Seoul 06355 Korea (Republic Of)

3. Use of Report : FCC & IC Original Grant

4. Product Name / Model Name : Enterprise-Value Full Touch Handheld Computer / VF550
   FCC ID : SS4VF550X / IC : 22515-VF550

5. Test Method Used : ANSI C63.10-2013, KDB 558074 D01v05r02
   Test Specification : FCC Part 15.247
   RSS-247 Issue 2, RSS-GEN Issue 5

6. Date of Test : 2020.06.23 ~ 2020.07.15

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.

Affirmation	Tested by Name : JaeHyeok Bang (Signature)	Reviewed by Name : GeunKi Son (Signature)

2020 . 07. 29.

DT&C Co., Ltd.

Not abided by KS Q ISO / IEC 17025 and KOLAS accreditation.

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

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Test Report Version

Test Report No.	Date	Description	Revised by	Reviewed by
DRTFCC2007-0220	Jul. 29, 2020	Initial issue	JaeHyeok Bang	GeunKi Son

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1. General Information

1.1 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 § 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

1.2 Testing Environment

Ambient Condition	
▪ Temperature	+20 ℃ ~ +25 ℃
▪ Relative Humidity	35 % ~ 45 %

1.3 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.

Test items	Measurement uncertainty
Transmitter Output Power	0.9 dB (The confidence level is about 95 %, k = 2)
Conducted spurious emission	0.9 dB (The confidence level is about 95 %, k = 2)
AC conducted emission	3.6 dB (The confidence level is about 95 %, k = 2)
Radiated spurious emission (1 GHz Below)	4.9 dB (The confidence level is about 95 %, k = 2)
Radiated spurious emission (1 GHz ~ 18 GHz)	5.1 dB (The confidence level is about 95 %, k = 2)
Radiated spurious emission (18 GHz Above)	5.3 dB (The confidence level is about 95 %, k = 2)

1.4 Details of Applicant

Applicant (FCC)	:	BLUEBIRD INC.
Applicant (IC)		BLUEBIRD INC.
Address (FCC)	:	3F, 115, Irwon-ro, Gangnam-gu, Seoul, South Korea
Address (IC)		3F, 115, Irwon-ro, Gangnam-gu Seoul 06355 Korea (Republic Of)
Contact person (FCC)	:	Yongsik Jang
Contact person (IC)	:	Yongsik Jang

1.5 Description of EUT

EUT	Enterprise-Value Full Touch Handheld Computer
Model Name	VF550
Add Model Name	NA
Hardware Version	Rev0.5
Software Version	R1.01
Serial Number	Conducted : VF550A4LCNETEBA045 Radiated: VF550A4LCNETEBA018
Power Supply	DC 3.85 V
Frequency Range	2 402 MHz ~ 2 480 MHz
Modulation Technique (data rate)	GFSK(1 Mbps), π/4DQPSK(2 Mbps), 8DPSK(3 Mbps)
Number of Channels	79
Antenna Type	PIFA Antenna
Antenna Gain	PK : 0.68 dBi

1.6 Declaration by the applicant / manufacturer

- NA

1.7 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 sequence 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.

1.8 Test Equipment List

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	19/12/16	20/12/16	MY50410357
Spectrum Analyzer	Agilent Technologies	N9020A	19/12/16	20/12/16	MY48011700
Spectrum Analyzer	Agilent Technologies	N9020A	19/12/16	20/12/16	MY48010133
DC Power Supply	Agilent Technologies	66332A	19/06/25 20/06/24	20/06/25 21/06/24	MY43000211
Multimeter	FLUKE	17B	19/12/16	20/12/16	26030065WS
Signal Generator	Rohde Schwarz	SMBV100A	19/12/16	20/12/16	255571
Signal Generator	ANRITSU	MG3695C	19/12/16	20/12/16	173501
Thermohygrometer	BODYCOM	BJ5478	19/12/18	20/12/18	120612-1
Thermohygrometer	BODYCOM	BJ5478	19/12/18	20/12/18	120612-2
Thermohygrometer	BODYCOM	BJ5478	19/07/03 20/07/01	20/07/03 21/07/01	N/A
HYGROMETER	TESTO	608-H1	20/01/21	21/01/21	34862883
Loop Antenna	ETS-Lindgren	6502	19/09/18	21/09/18	00226186
BILOG ANTENNA	Schwarzbeck	VULB 9160	19/04/23	21/04/23	9160-3362
Horn Antenna	ETS-Lindgren	3115	20/01/30	22/01/30	6419
Horn Antenna	Schwarzbeck	BBHA 9120C	19/12/04	21/12/04	9120C-561
PreAmplifier	tsj	MLA-0118-B01-40	19/12/16	20/12/16	1852267
PreAmplifier	tsj	MLA-1840-J02-45	19/06/27 20/06/24	20/06/27 21/06/24	16966-10728
PreAmplifier	H.P	8447D	19/12/16	20/12/16	2944A07774
Power Splitter	Anritsu	K241B	19/06/27 20/06/24	20/06/27 21/06/24	020611
BlueTooth Tester	Tescom	TC-3000C	19/06/24 20/06/24	20/06/24 21/06/24	3000C000563
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	19/06/26 20/06/24	20/06/26 21/06/24	8
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	19/06/26 20/06/24	20/06/26 21/06/24	1
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	19/06/27 20/06/24	20/06/27 21/06/24	3
Attenuator	Hefei Shunze	SS5T2.92-10-40	19/06/27 20/06/24	20/06/27 21/06/24	16012202
Attenuator	SRTechnology	F01-B0606-01	19/06/27 20/06/24	20/06/27 21/06/24	13092403
Attenuator	Aeroflex/Weinschel	56-3	19/06/27 20/06/24	20/06/27 21/06/24	Y2370
Attenuator	SMAJK	SMAJK-2-3	19/06/27 20/06/24	20/06/27 21/06/24	2
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2488B MA2491A	20/01/02	21/01/02	0910025 0845333
EMI Test Receiver	ROHDE&SCHWARZ	ESR	19/12/17	20/12/17	101767
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	19/09/17	20/09/17	101333
LISN	SCHWARZBECK	NSLK 8128 RC	19/11/04	20/11/04	8128 RC-387
Cable	Junkosha	MWX241	20/01/13	21/01/13	G-04
Cable	Junkosha	MWX241	20/01/13	21/01/13	G-07
Cable	DT&C	Cable	20/01/13	21/01/13	G-13
Cable	DT&C	Cable	20/01/13	21/01/13	G-14
Cable	HUBER+SUHNER	SUCOFLEX 104	20/01/13	21/01/13	G-15
Cable	Radiall	TESTPRO3	20/01/16	21/01/16	M-01
Cable	Junkosha	MWX315	20/01/16	21/01/16	M-05
Cable	Junkosha	MWX221	20/01/16	21/01/16	M-06
Cable	Radiall	TESTPRO3	20/01/16	21/01/16	RF-82
Test Software	tsj	Raidated Emission Measurement	NA	NA	Version 2.00.0177
Test Software	tsj	Noise Terminal Measurement	NA	NA	Version 2.00.0170

Note 1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.
Note 2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

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1.9 Summary of Test Results

FCC Part RSS Std.	Parameter	Limit (Using in 2400~ 2483.5 MHz)	Test Condition	Status Note 1
15.247(a) RSS-247(5.1)	Carrier Frequency Separation	>= 25 kHz or >= Two thirds of the 20 dB BW, whichever is greater.	Conducted	C
	Number of Hopping Frequencies	>= 15 hops		C
	20 dB Bandwidth	N/A		C
	Dwell Time	=< 0.4 seconds		C
15.247(b) RSS-247(5.4)	Transmitter Output Power	**For FCC** =< 1 Watt , if CHs >= 75 Others =< 0.125 W **For IC** if CHs >= 75 =< 1 Watt For Conducted Power =< 4 Watt For e.i.r.p, Others =< 0.125 W For Conducted Power. =< 0.5 Watt For e.i.r.p		C
15.247(d) RSS-247(5.5)	Conducted Spurious Emissions	The radiated emission to any 100 kHz of out-band shall be at least 20 dB below the highest in-band spectral density.		C
RSS Gen(6.7)	Occupied Bandwidth (99 %)	N/A		C
15.247(d) 15.205 & 209 RSS-247(5.5) RSS-Gen (8.9 & 8.10)	Radiated Spurious Emissions	FCC 15.209 Limits	Radiated	C
15.207 RSS-Gen(8.8)	AC Conducted Emissions	FCC 15.207 Limits	AC Line Conducted	C Note3
15.203	Antenna Requirements	FCC 15.203	-	C

Note 1 : **C** = Comply **NC** = Not Comply **NT** = Not Tested **NA** = Not Applicable
Note 2 : For radiated emission tests below 30 MHz were performed on semi-anechoic chamber which is correlated with OATS.
Note 3 : This test item was performed in each axis and the worst case data was reported.

1.10 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).

Tested frequency information,

- Hopping Function : Enable

	TX Frequency (MHz)	RX Frequency (MHz)
Hopping Band	2 402 ~ 2 480	2 402 ~ 2 480

- Hopping Function : Disable

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

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2. Maximum Peak Output Power Measurement

2.1 Test Setup

Refer to the APPENDIX I.

2.2 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 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, 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 2400 – 2483.5 MHz employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725 – 5805 MHz band : 1 Watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

▣ IC Requirements

1. RSS-247(5.4) (b), For FHSS operating in the band 2400 MHz - 2483.5 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)

2.3 Test Procedure

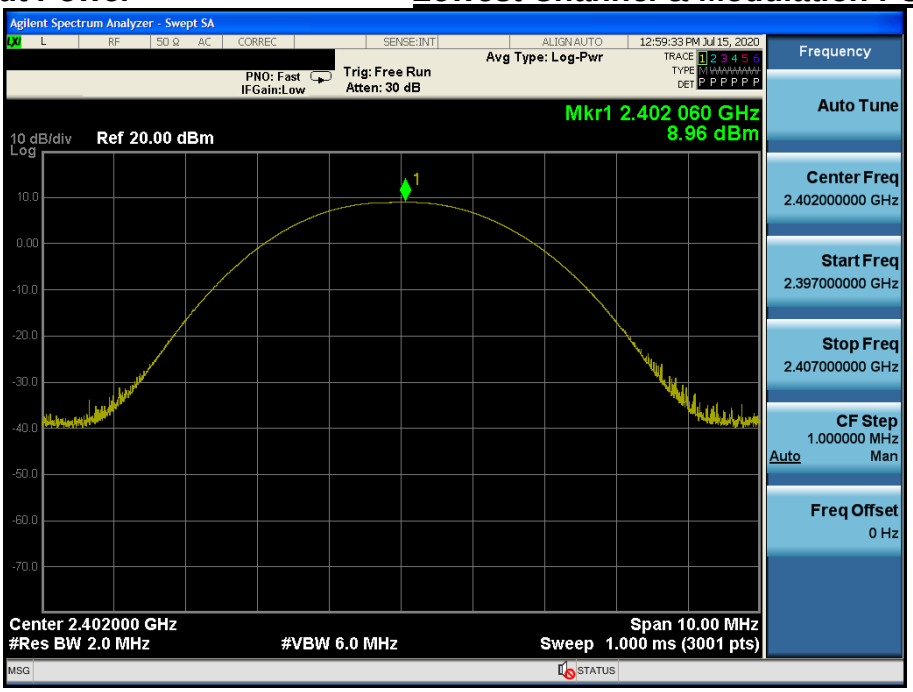
1. The RF output power was measured with a spectrum analyzer connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate center frequency, A spectrum analyzer was used to record the shape of the transmit signal.
2. The peak output power of 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

2.4 Test Results

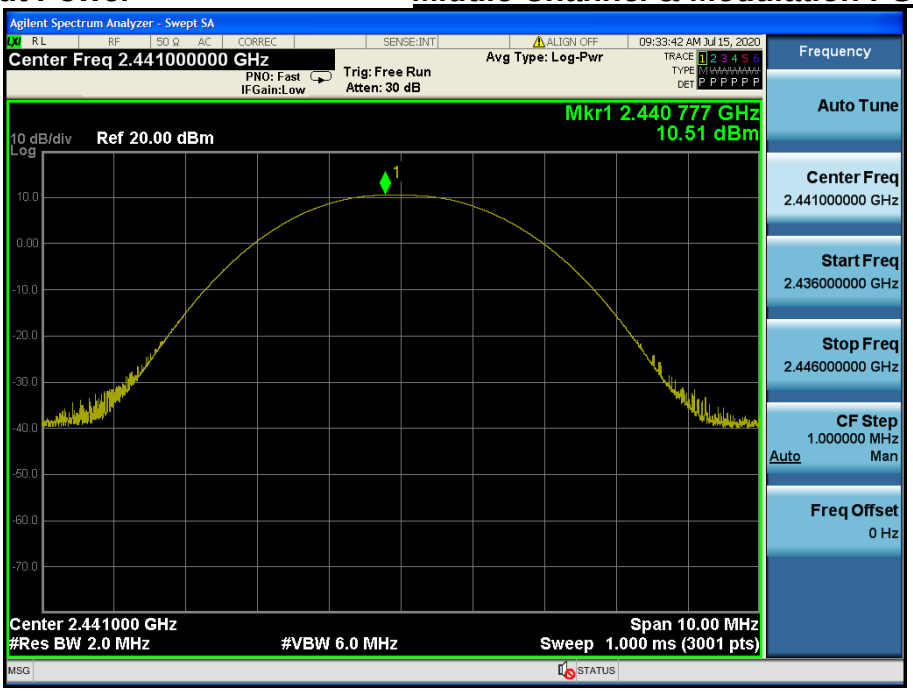
Modulation	Tested Channel	Burst Average Output Power		Peak Output Power	
		dBm	mW	dBm	mW
GFSK	**Lowest**	8.62	7.28	8.96	7.87
	Middle	**10.22**	**10.52**	**10.51**	**11.25**
	Highest	7.06	5.08	7.93	6.21
π/4DQPSK	**Lowest**	6.26	4.23	8.66	7.35
	Middle	**7.85**	**6.10**	**10.90**	**12.30**
	Highest	4.68	2.94	7.91	6.18
8DPSK	**Lowest**	6.25	4.22	8.90	7.76
	Middle	**7.84**	**6.08**	**10.74**	**11.86**
	Highest	4.67	2.93	8.28	6.73

Note 1: The burst average output power was tested using an average power meter for reference only.
Note 2: See next pages for actual measured spectrum plots.

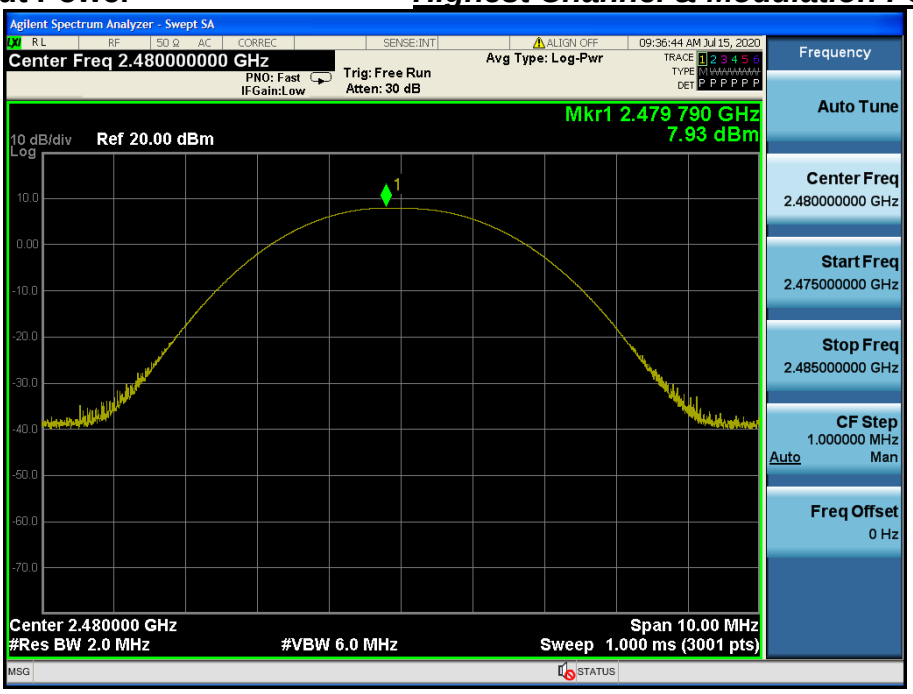
Peak Output Power ***Lowest Channel & Modulation : GFSK***



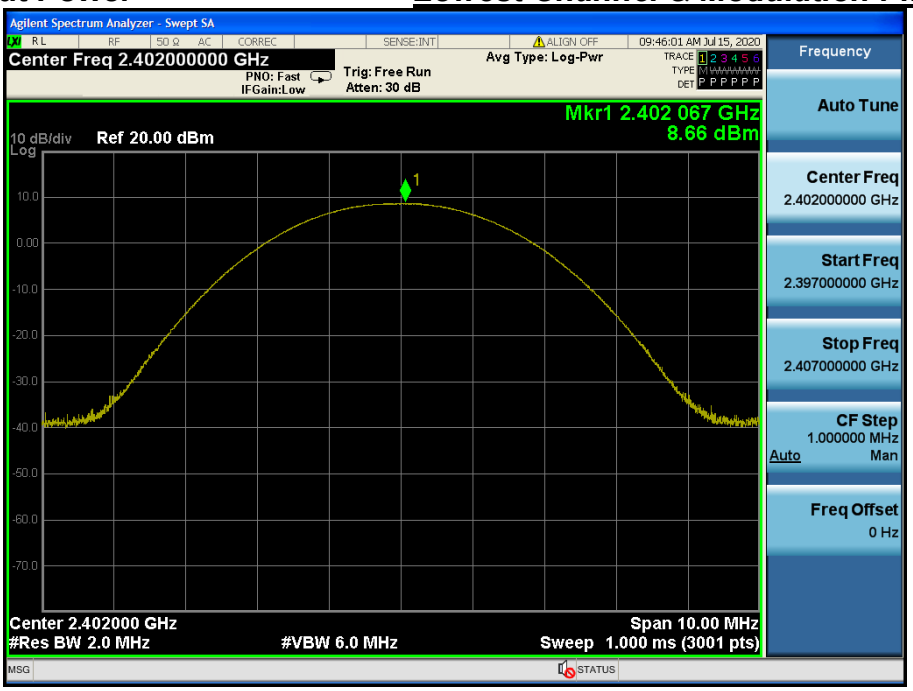
Peak Output Power ***Middle Channel & Modulation : GFSK***



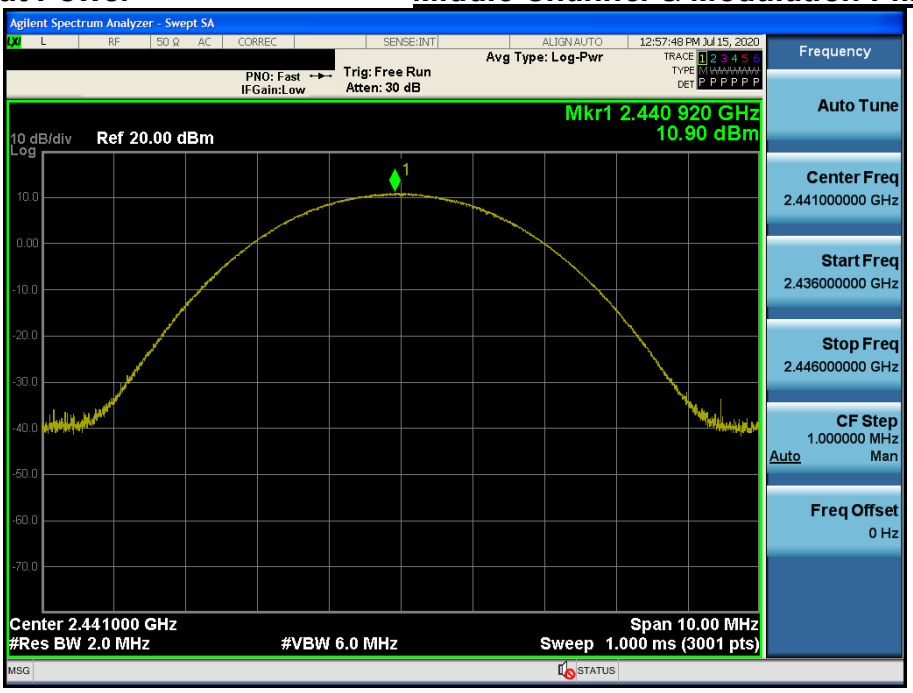
Peak Output Power ***Highest Channel & Modulation : GFSK***



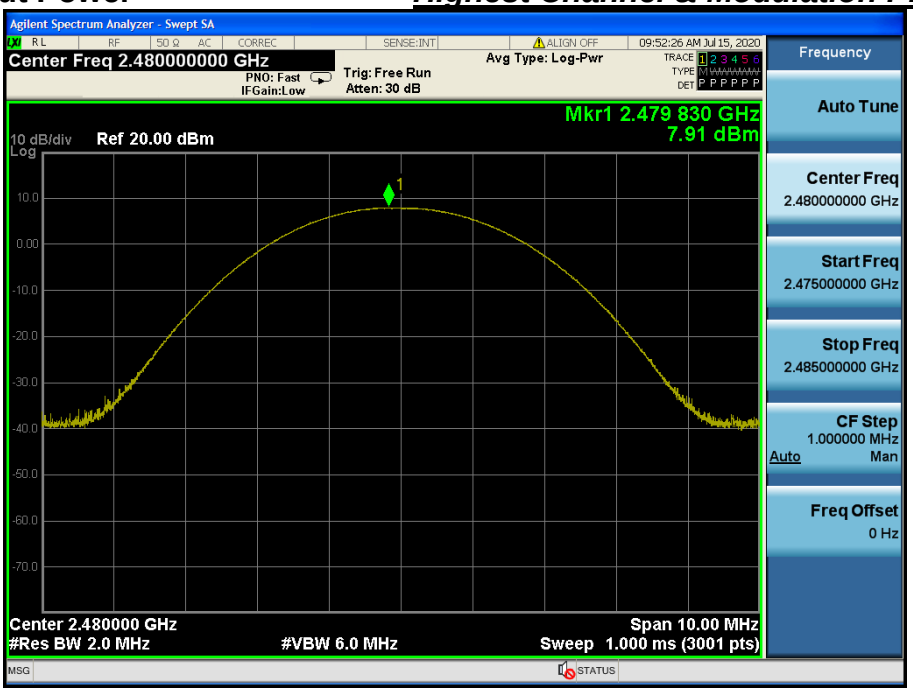
Peak Output Power ***Lowest Channel & Modulation : π/4DQPSK***



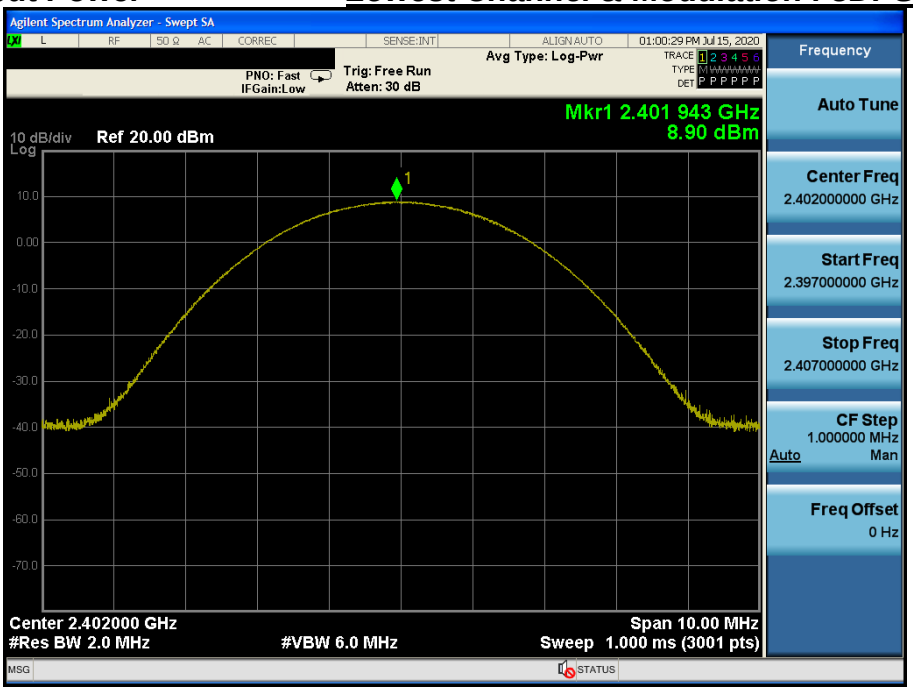
Peak Output Power ***Middle Channel & Modulation : π/4DQPSK***



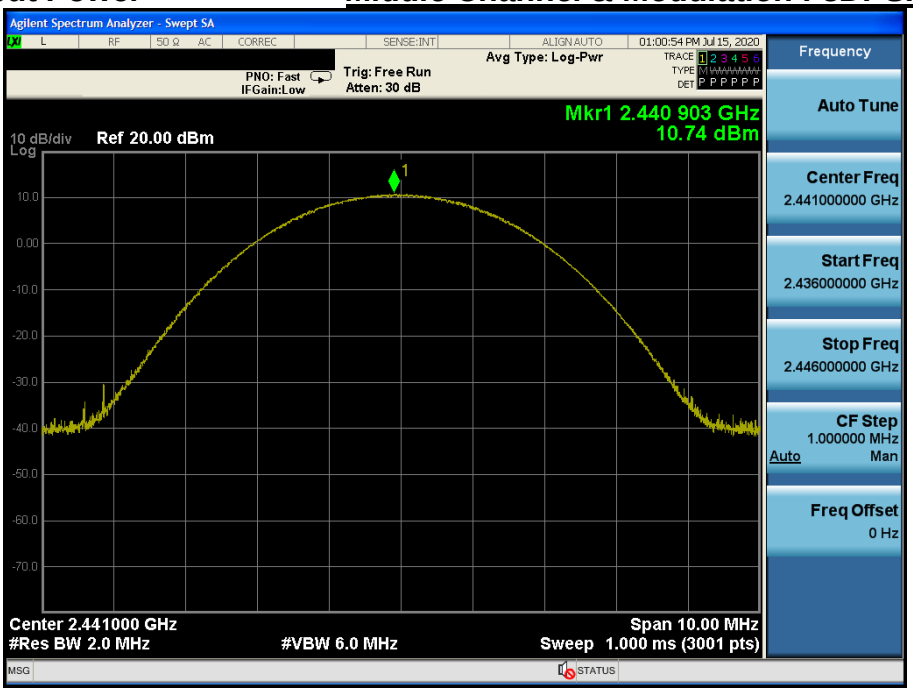
Peak Output Power ***Highest Channel & Modulation : π/4DQPSK***



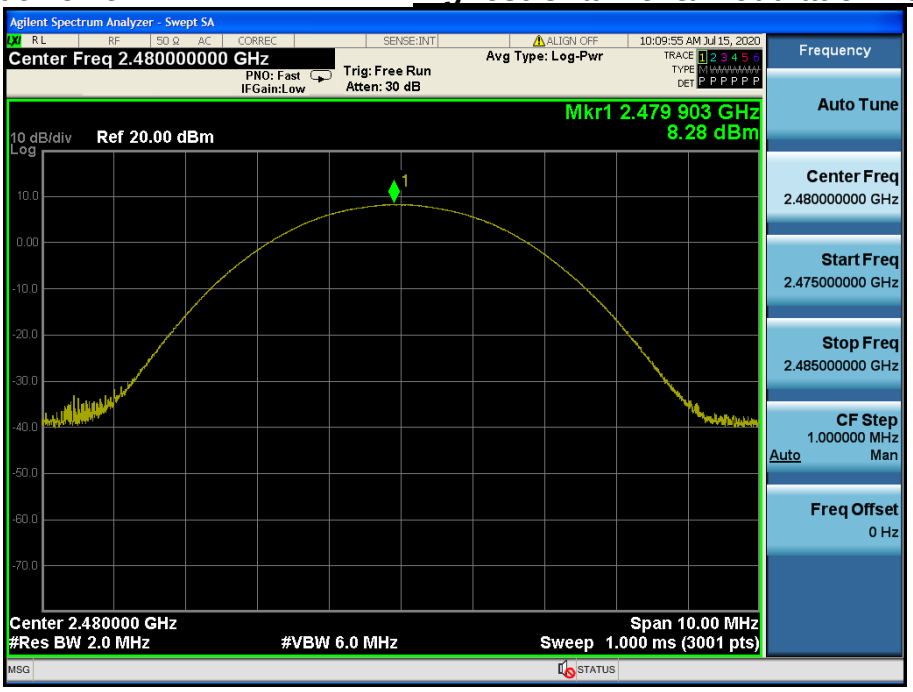
Peak Output Power ***Lowest Channel & Modulation : 8DPSK***



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



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



3. 20 dB BW & Occupied BW

3.1 Test Setup

Refer to the APPENDIX I.

3.2 Limit

Limit : Not Applicable

3.3 Test Procedure

1. The 20 dB bandwidth & Occupied bandwidth were 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

3.4 Test Results

Modulation	Tested Channel	20 dB BW (MHz)	Occupied BW (MHz)
GFSK	**Lowest**	0.920	0.892
	Middle	0.920	0.888
	Highest	0.930	0.893
π/4DQPSK	**Lowest**	1.320	1.175
	Middle	1.310	1.174
	Highest	1.310	1.173
8DPSK	**Lowest**	1.280	1.177
	Middle	1.310	1.176
	Highest	1.310	1.175

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

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

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

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

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

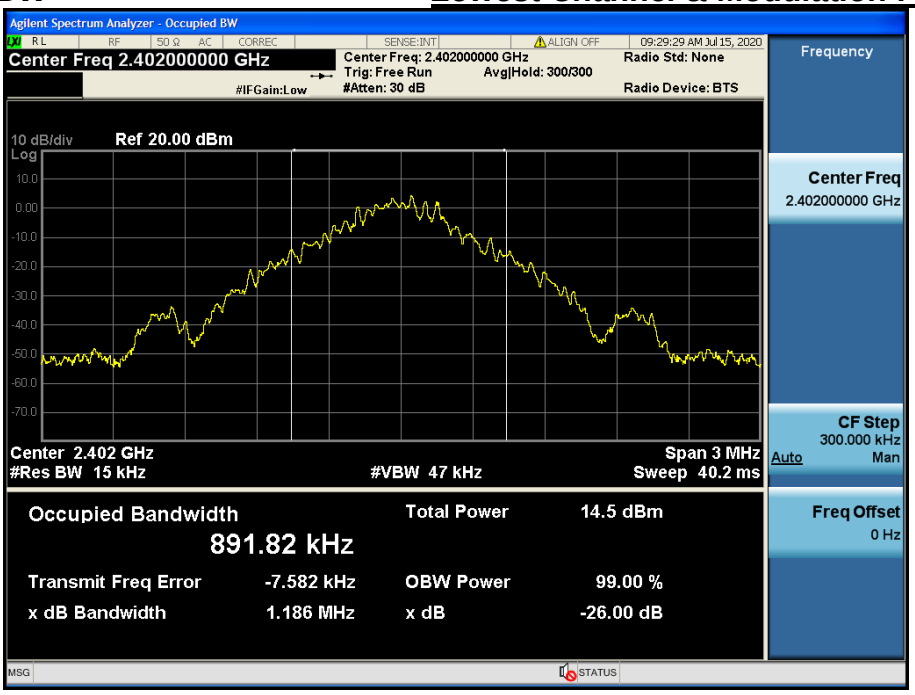
20 dB BW ***Highest Channel & Modulation : π/4DQPSK***

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

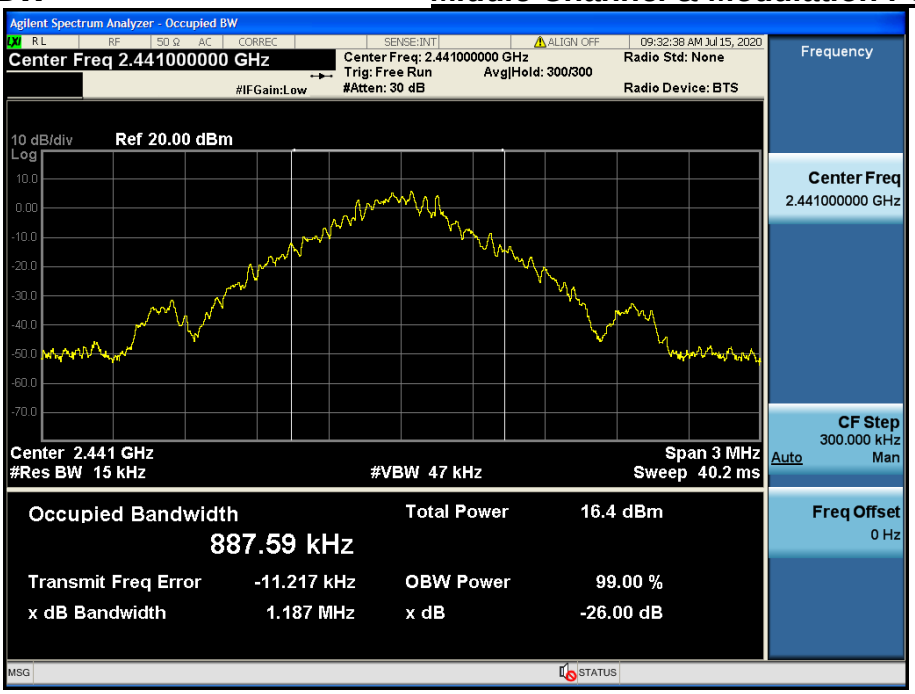
20 dB BW ***Middle Channel & Modulation : 8DPSK***

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

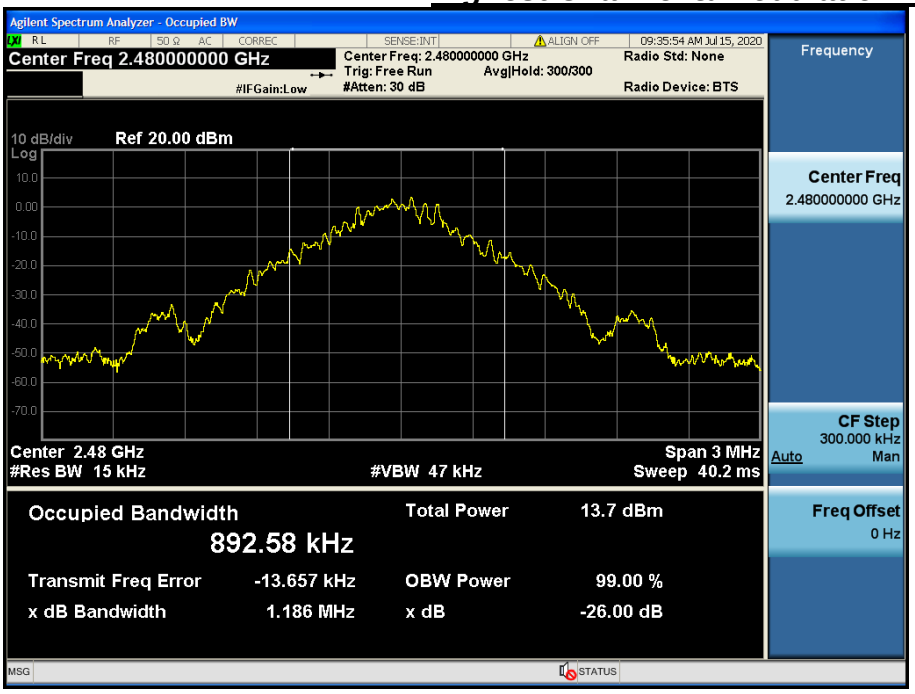
Occupied BW *Lowest Channel & Modulation : GFSK*



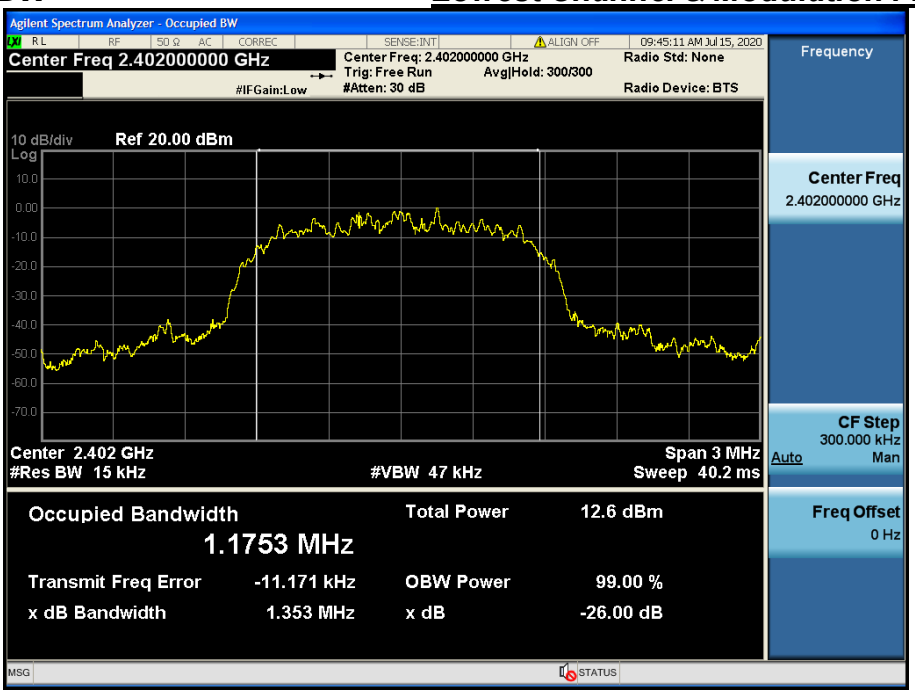
Occupied BW *Middle Channel & Modulation : GFSK*



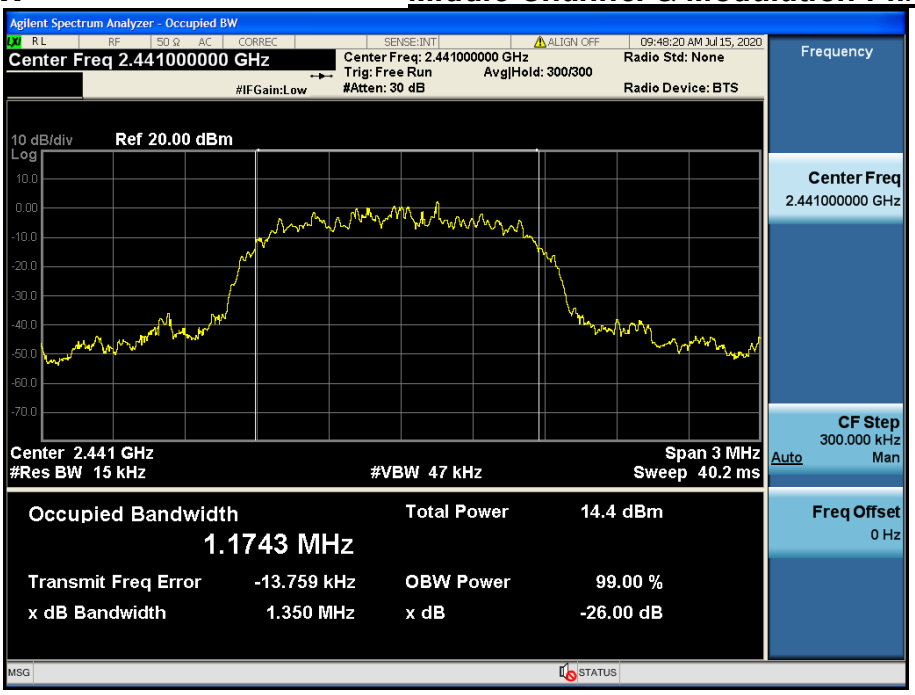
Occupied BW ***Highest Channel & Modulation : GFSK***



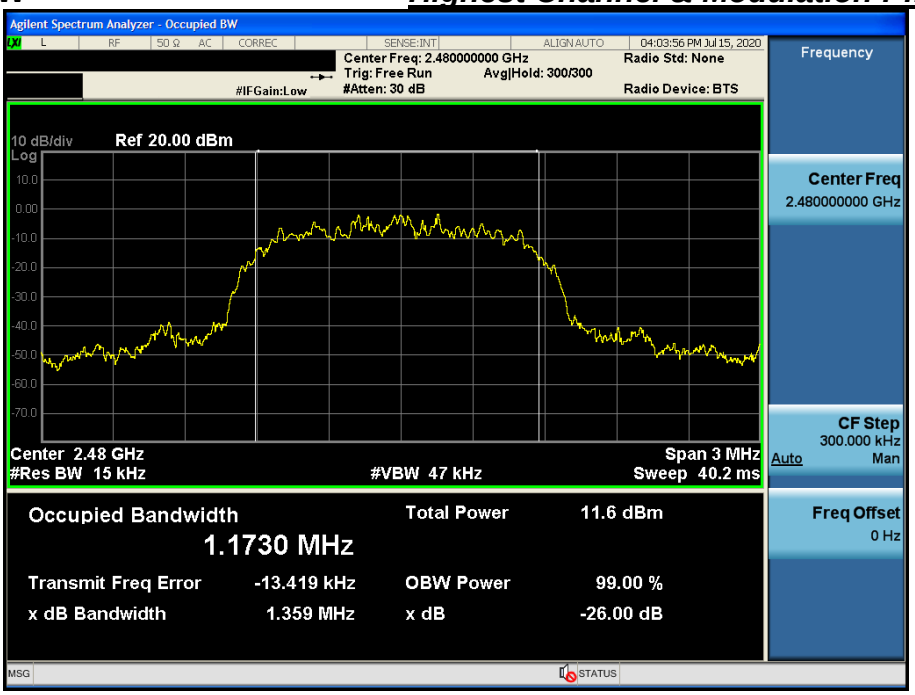
Occupied BW ***Lowest Channel & Modulation : π/4DQPSK***



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

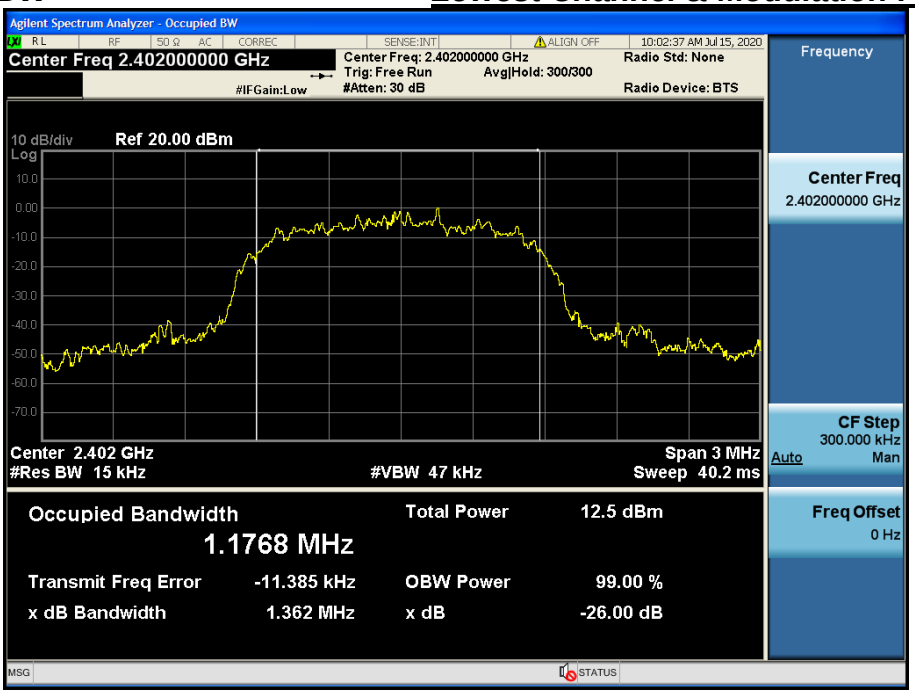


Occupied BW ***Highest Channel & Modulation : π/4DQPSK***



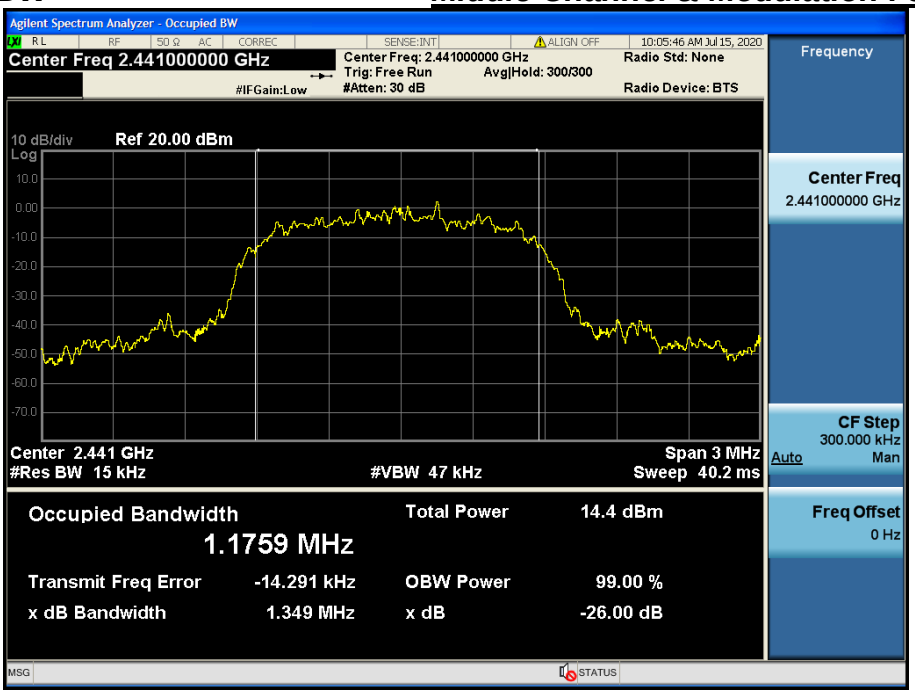
Occupied BW

Lowest Channel & Modulation : 8DPSK



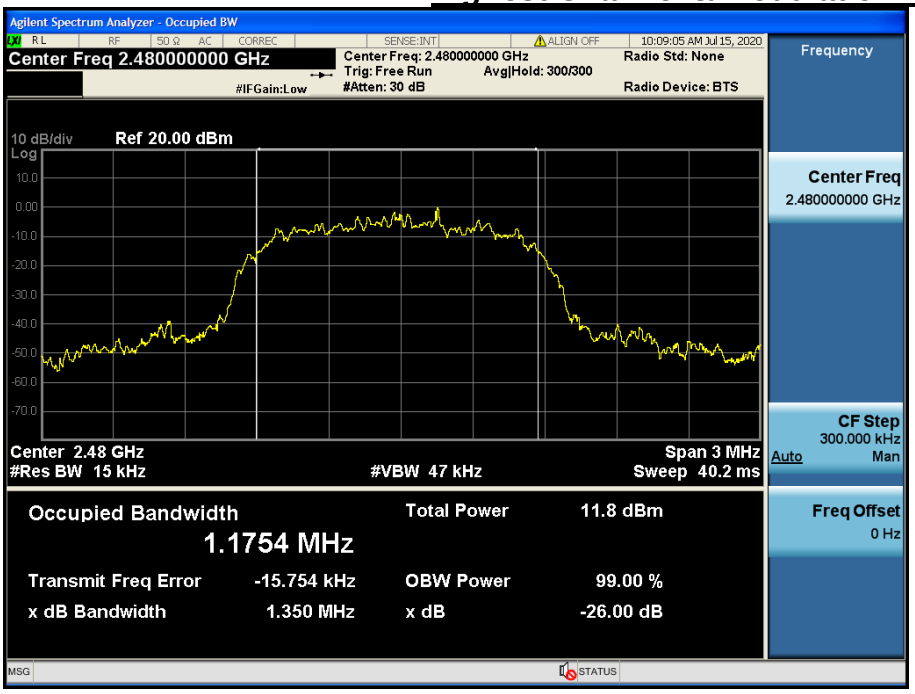
Occupied BW

Middle Channel & Modulation : 8DPSK



Occupied BW

Highest Channel & Modulation : 8DPSK



4. Carrier Frequency Separation

4.1 Test Setup

Refer to the APPENDIX I.

4.2 Limit

Limit : ≥ 25 kHz or ≥ Two-Thirds of the 20 dB BW whichever is greater.

4.3 Procedure

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.
After the trace being stable, the reading value between the peaks of the adjacent channels using the marker-delta function was recorded as the measurement results.

The spectrum analyzer is set to :

Span = wide enough to capture the peaks of two adjacent channels
RBW = Start with the RBW set to approximately 30 % of the channel spacing; adjust as necessary to best identify the center of each individual channel.
VBW ≥ RBW Sweep = auto
Detector function = peak Trace = max hold

4.4 Test Results

FH mode

Hopping Mode	Modulation	Peak of reference channel (MHz)	Peak of adjacent Channel (MHz)	Test Result (MHz)
Enable	GFSK	2 439.882	2 440.883	1.001
	π/4DQPSK	2 440.981	2 441.985	1.004
	8DPSK	2 440.986	2 441.981	0.995

AFH mode

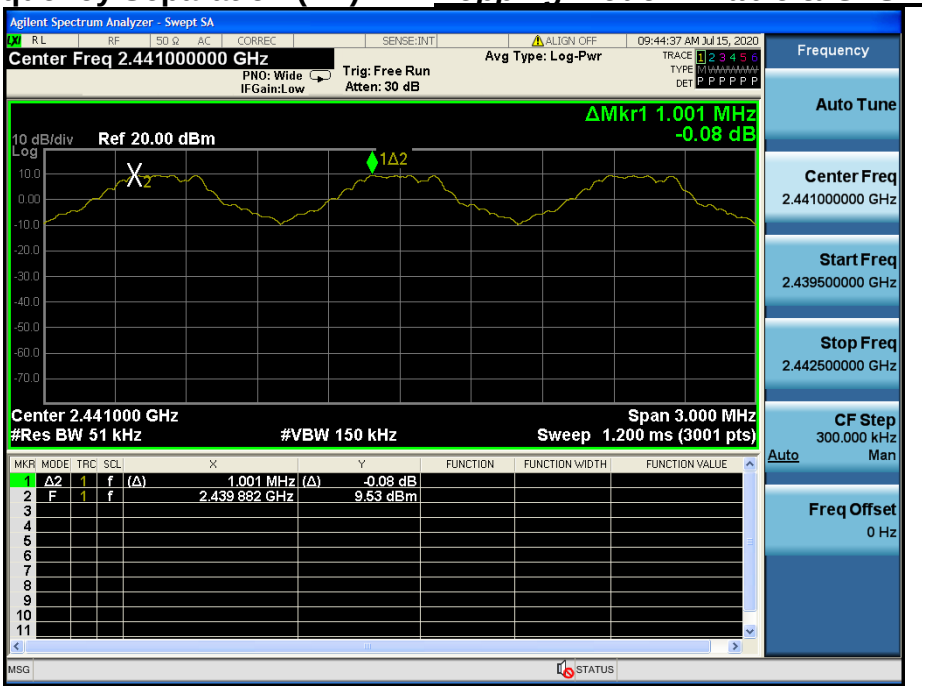
Hopping Mode	Modulation	Peak of reference channel (MHz)	Peak of adjacent Channel (MHz)	Test Result (MHz)
Enable	GFSK	2 440.882	2 441.882	1.000
	π/4DQPSK	2 439.984	2 440.987	1.003
	8DPSK	2 440.982	2 441.983	1.001

Note 1 : See next pages for actual measured spectrum

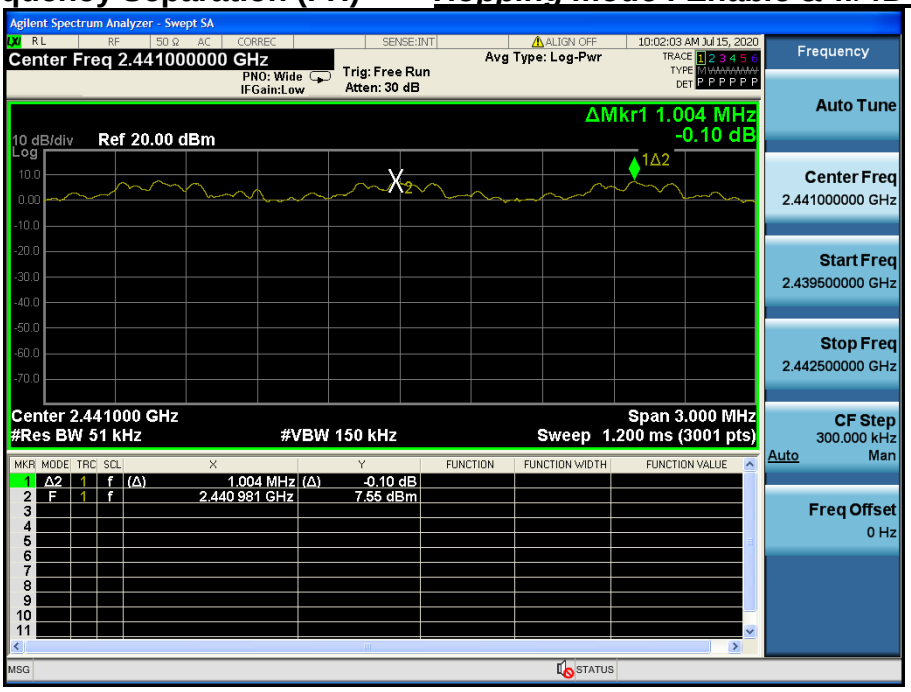
- **Minimum Standard :**

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400 - 2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW

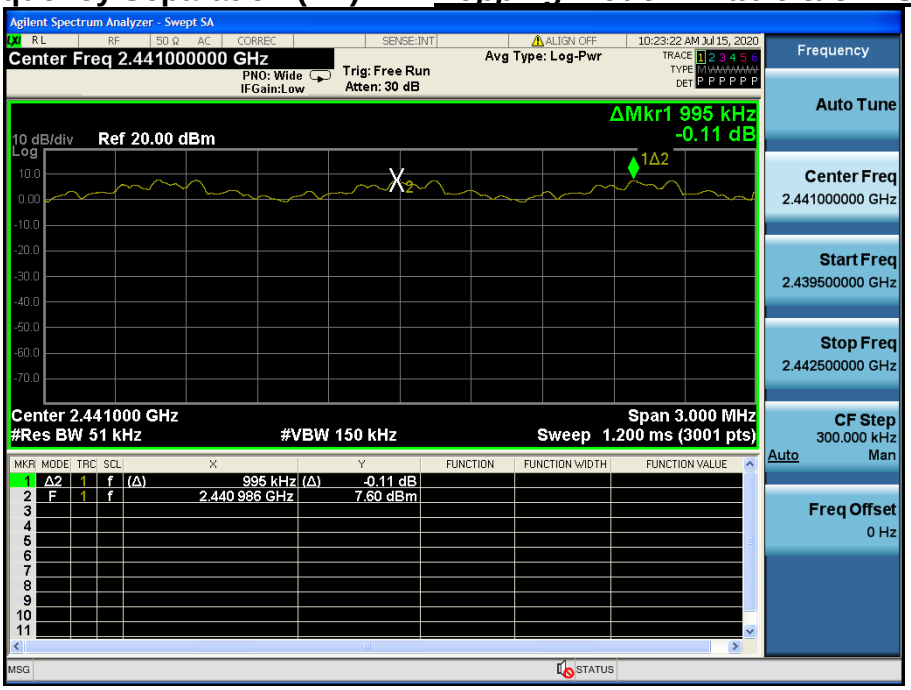
Carrier Frequency Separation (FH) ***Hopping mode : Enable & GFSK***



Carrier Frequency Separation (FH) ***Hopping mode : Enable & π/4DQPSK***

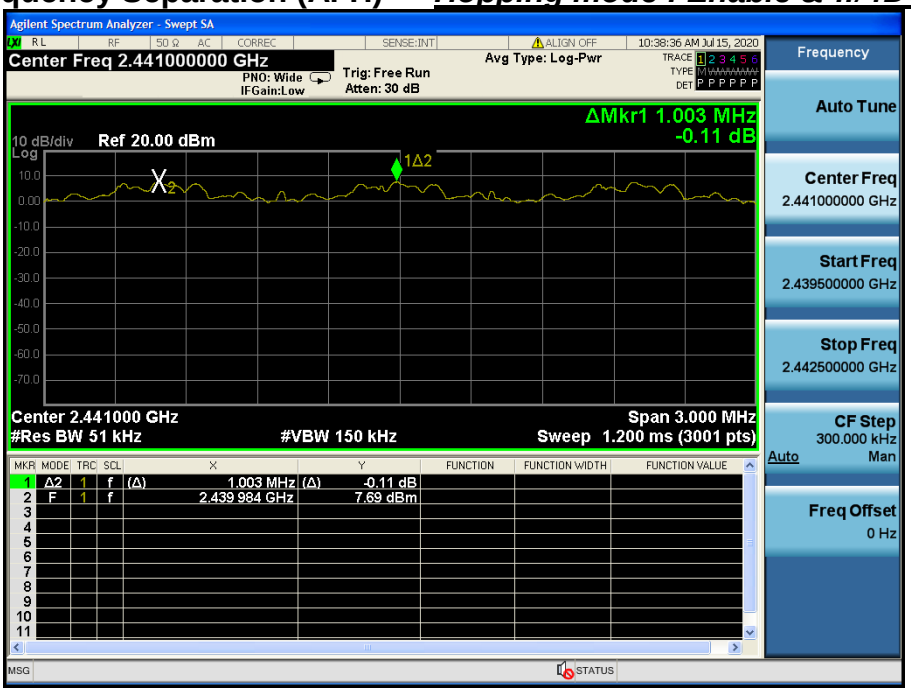


Carrier Frequency Separation (FH) ***Hopping mode : Enable & 8DPSK***

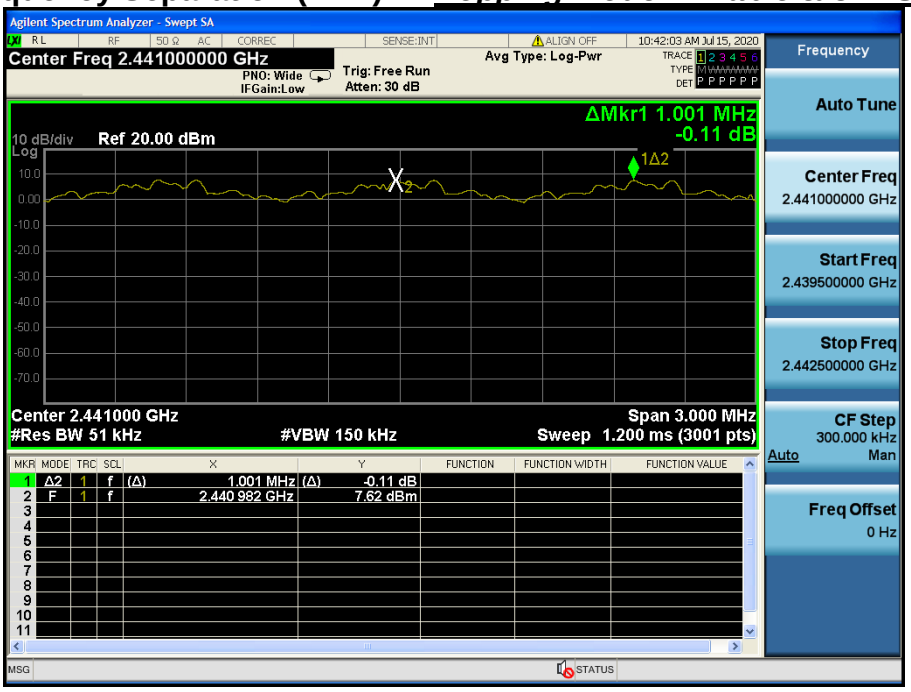


Carrier Frequency Separation (AFH) ***Hopping mode : Enable & GFSK***

Carrier Frequency Separation (AFH) ***Hopping mode : Enable & π/4DQPSK***



Carrier Frequency Separation (AFH) ***Hopping mode : Enable & 8DPSK***



5. Number of Hopping Frequencies

5.1 Test Setup

Refer to the APPENDIX I.

5.2 Limit

Limit : >= 15 hops

5.3 Procedure

The number of hopping frequencies was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

To get higher resolution, two frequency ranges for FH mode within the 2 400 MHz ~ 2 483.5 MHz were examined.

The spectrum analyzer is set to :

Span for FH mode = 50 MHz Start Frequency = 2 391.5 MHz, Stop Frequency = 2 441.5 MHz
Start Frequency = 2 441.5 MHz, Stop Frequency = 2 491.5 MHz

Span for AFH mode = 30 MHz Start Frequency = 2 396.0 MHz, Stop Frequency = 2 426.0 MHz

RBW = To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.

VBW ≥ RBW Sweep = auto

Detector function = peak Trace = max hold

5.4 Test Results

FH mode

Hopping mode	Modulation	Test Result (Total Hops)
Enable	GFSK	79
	π/4DQPSK	79
	8DPSK	79

AFH mode

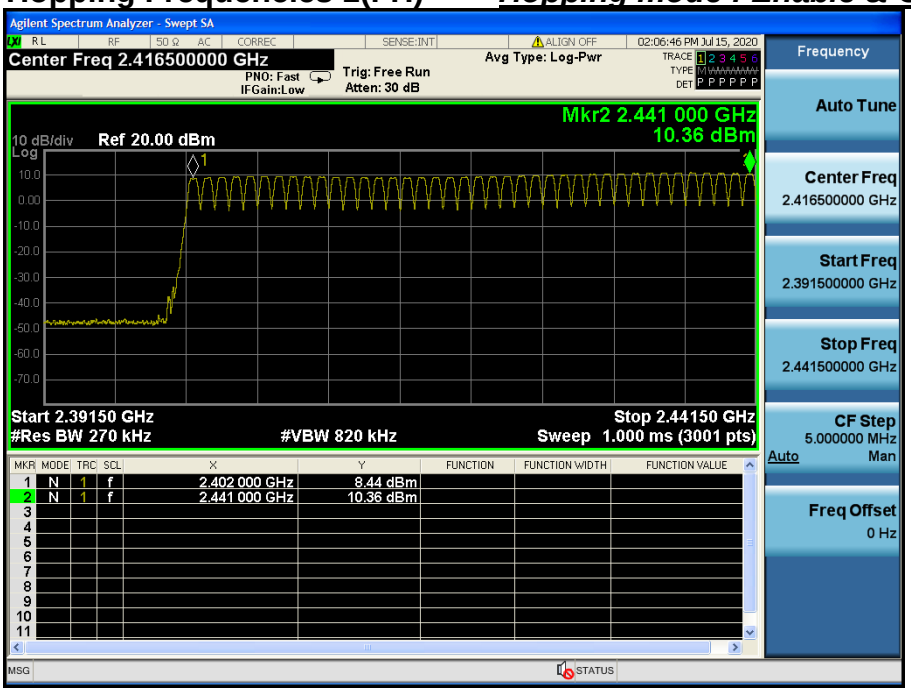
Hopping mode	Modulation	Test Result (Total Hops)
Enable	GFSK	20
	π/4DQPSK	20
	8DPSK	20

Note 1 : See next pages for actual measured spectrum plots.

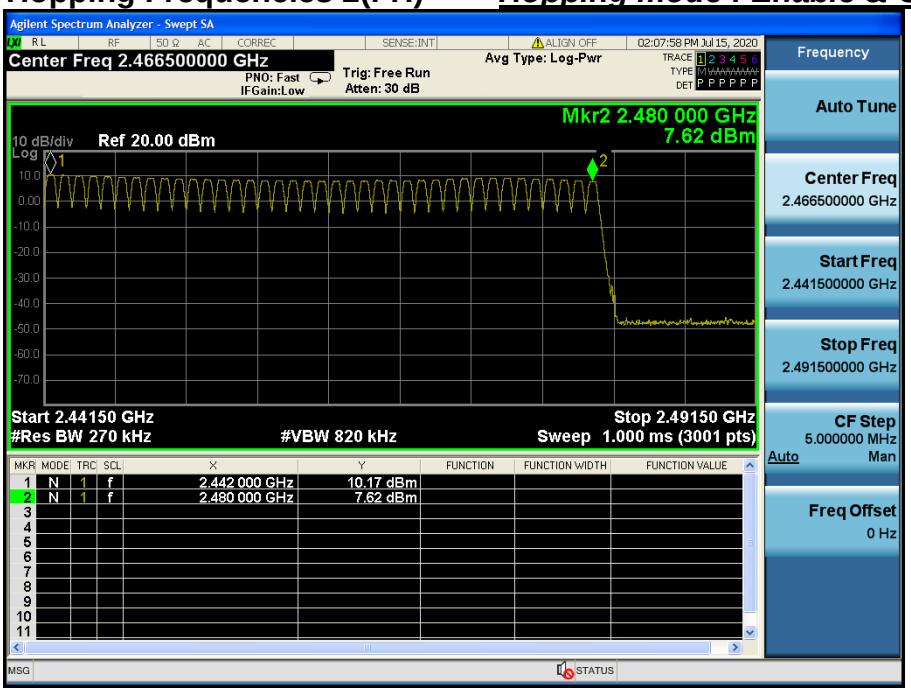
- Minimum Standard :

At least 15 hopes

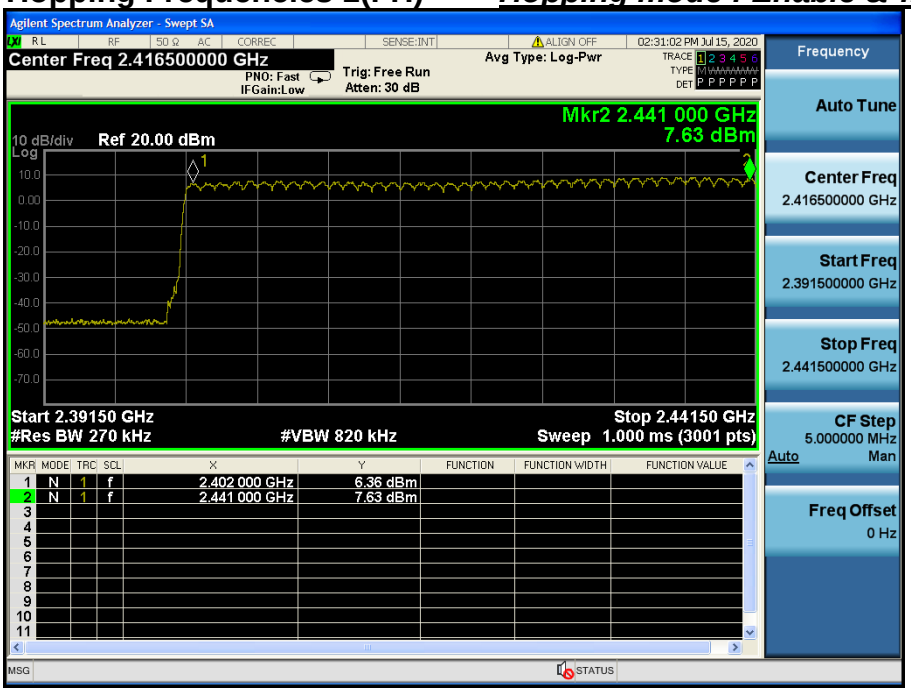
Number of Hopping Frequencies 1(FH) ***Hopping mode : Enable & GFSK***



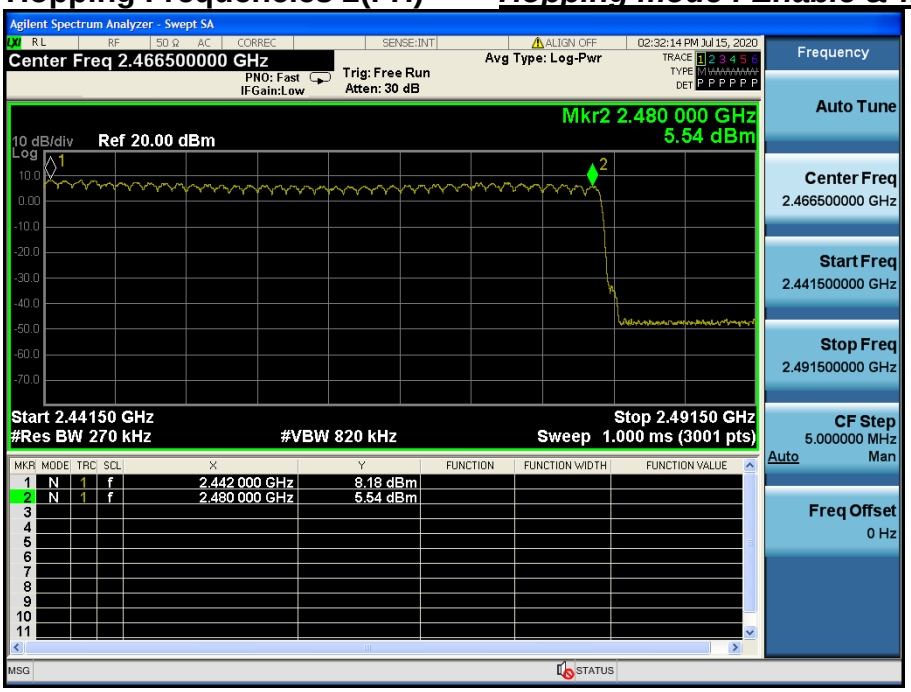
Number of Hopping Frequencies 2(FH) ***Hopping mode : Enable & GFSK***



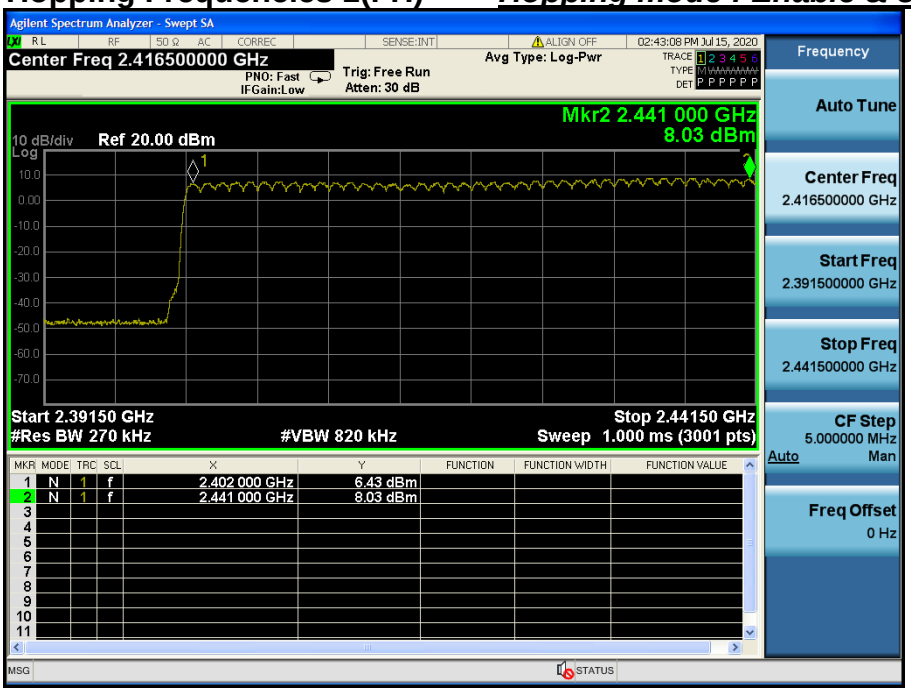
Number of Hopping Frequencies 1(FH) ***Hopping mode : Enable & π/4DQPSK***



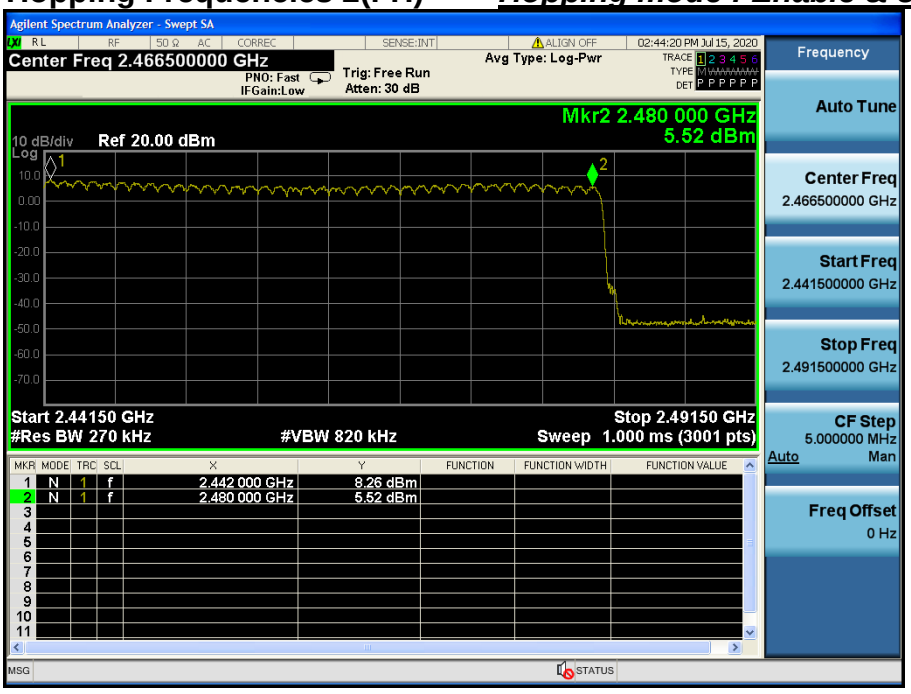
Number of Hopping Frequencies 2(FH) ***Hopping mode : Enable & π/4DQPSK***



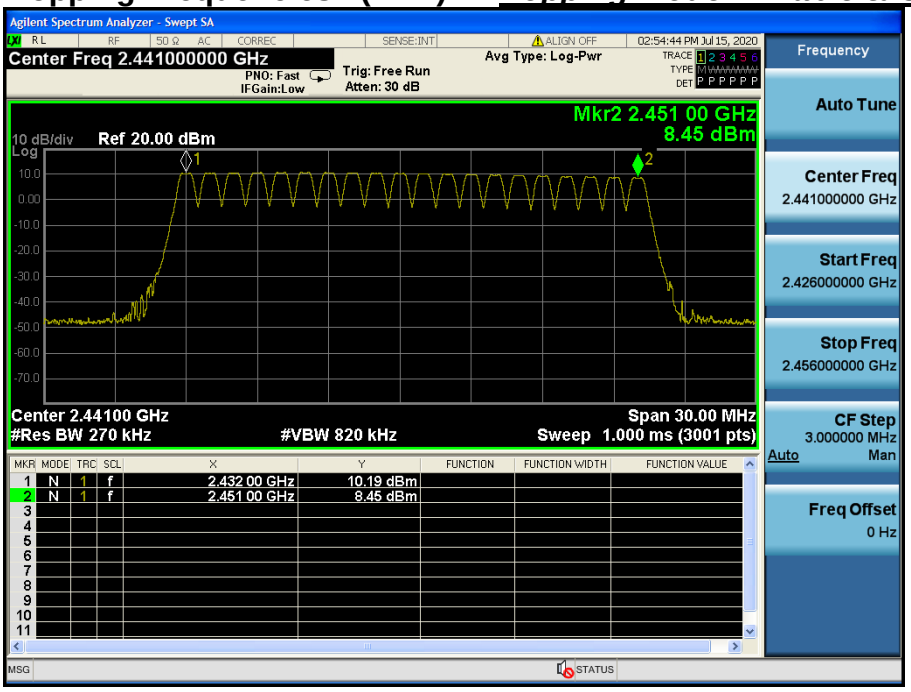
Number of Hopping Frequencies 1(FH) ***Hopping mode : Enable & 8DPSK***



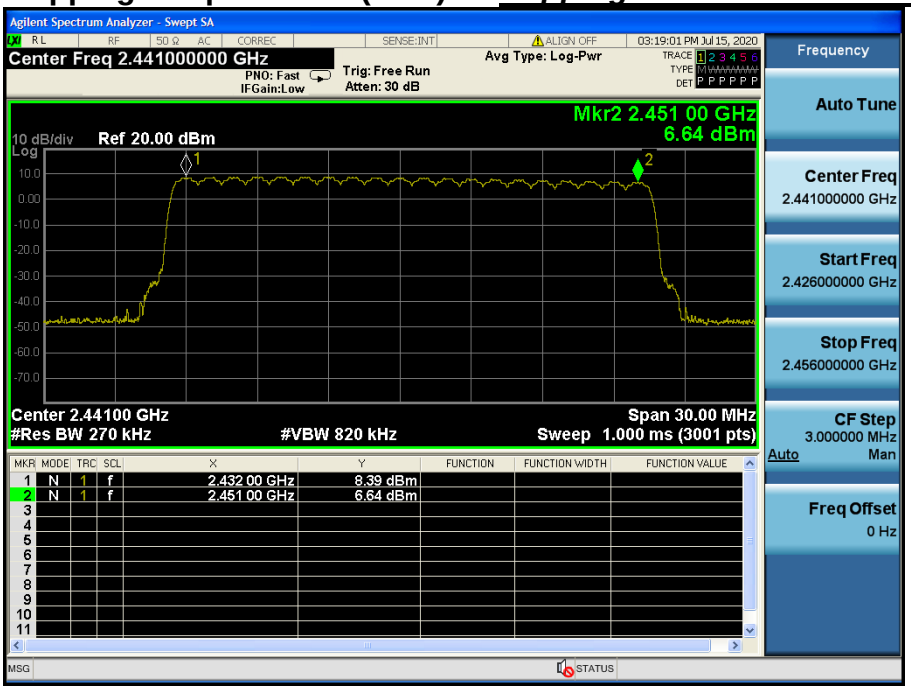
Number of Hopping Frequencies 2(FH) ***Hopping mode : Enable & 8DPSK***



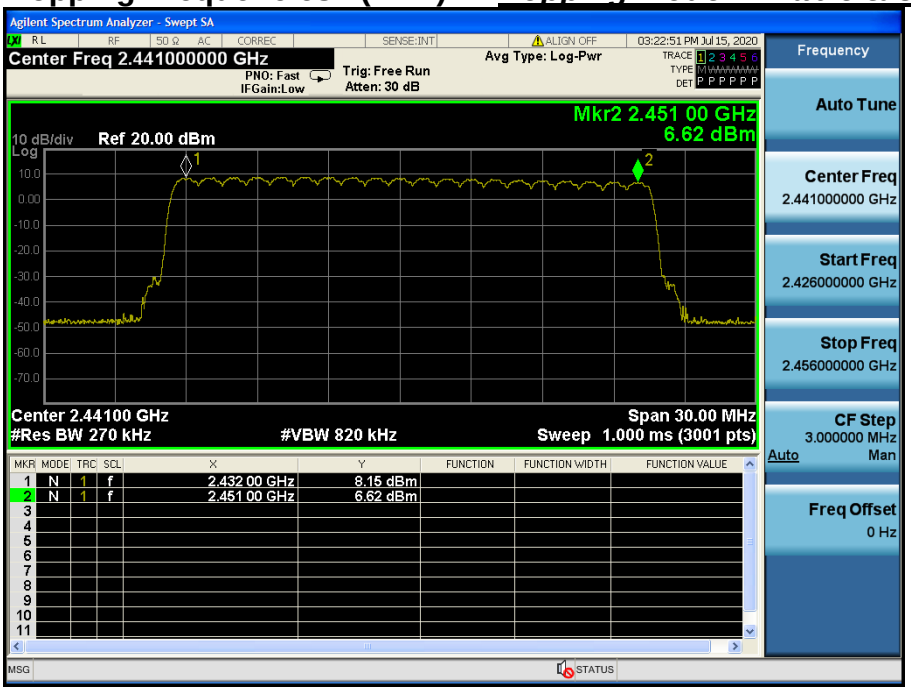
Number of Hopping Frequencies 1(AFH) ***Hopping mode : Enable & GFSK***



Number of Hopping Frequencies 1(AFH) ***Hopping mode : Enable & π/4DQPSK***



Number of Hopping Frequencies 1(AFH) ***Hopping mode : Enable & 8DPSK***



6. Time of Occupancy (Dwell Time)

6.1 Test Setup

Refer to the APPENDIX I.

6.2 Limit

The maximum permissible time of occupancy is 400 ms within a period of 400 ms multiplied by the number of hopping channels employed.

6.3 Test Procedure

The dwell time was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

The spectrum analyzer is set to :

Center frequency = 2 441 MHz Span = zero

RBW = 1 MHz (RBW shall be ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel)

VBW ≥ RBW Detector function = peak

Trace = max hold

6.4 Test Results

FH mode

Hopping mode	Packet Type	Number of hopping Channels	Burst On Time (ms)	Period (ms)	Test Result (sec)
Enable	DH 5	79	2.880	3.750	0.307
	2 DH 5	79	2.880	3.750	0.307
	3 DH 5	79	2.880	3.750	0.307

AFH mode

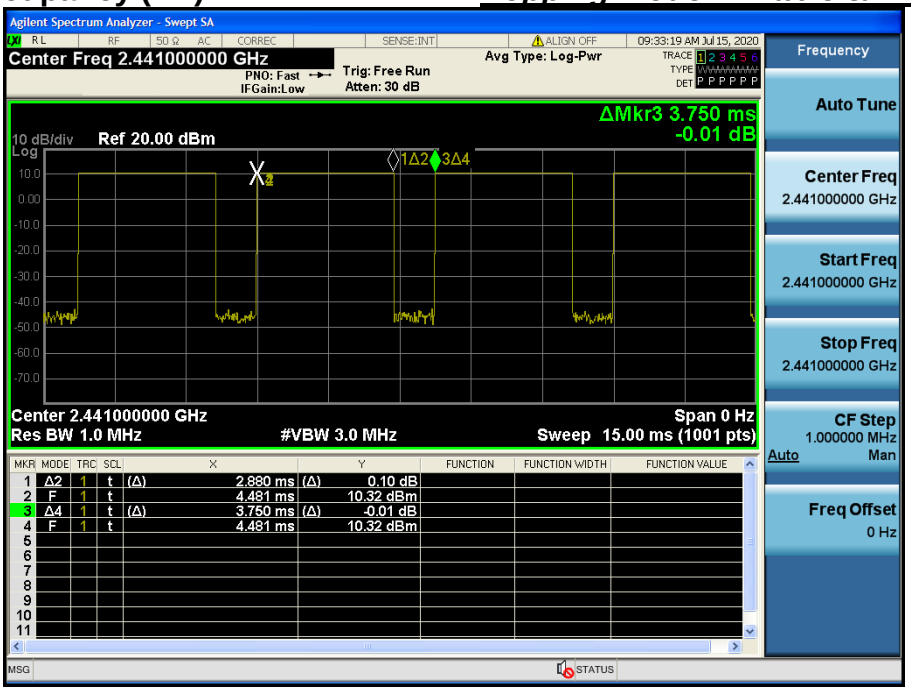
Hopping mode	Packet Type	Number of hopping Channels	Burst On Time (ms)	Period (ms)	Test Result (sec)
Enable	DH 5	20	2.880	3.750	0.154
	2 DH 5	20	2.880	3.750	0.154
	3 DH 5	20	2.880	3.750	0.154

Note 1 : Dwell Time = 0.4 × Hopping channel × Burst ON time ×
((Hopping rate ÷ Time slots) ÷ Hopping channel)

- Time slots for DH5 = 6 slots (TX = 5 slot / RX = 1 slot)
- Hopping Rate = 1 600 for FH mode & 800 for AFH mode

Note 2 : See next pages for actual measured spectrum plots.

Time of Occupancy (FH) ***Hopping mode : Enable & DH5***



Time of Occupancy (FH) ***Hopping mode : Enable & 2-DH5***