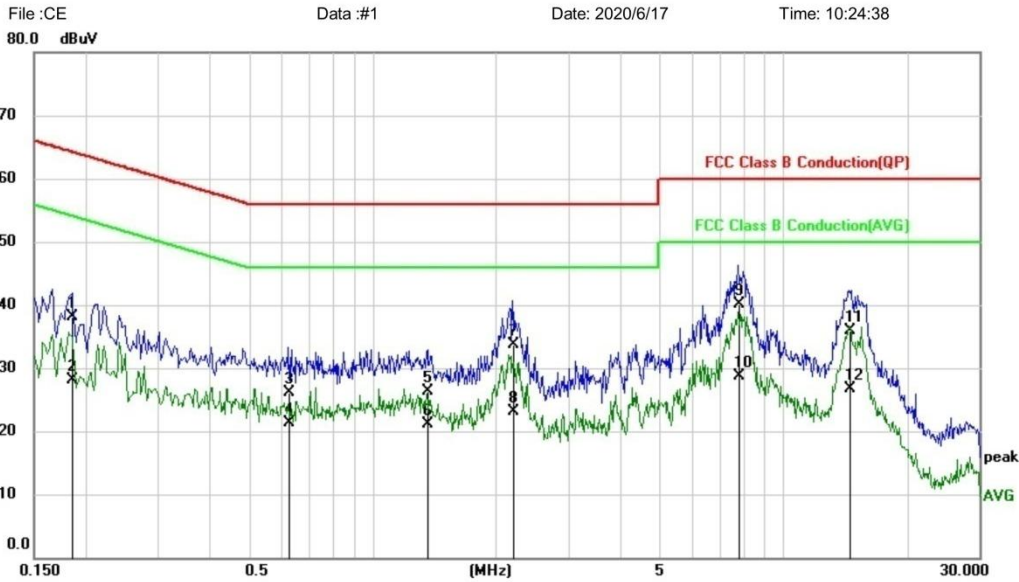


### 10.4 TEST DATA

[TestMode: TX]; [Line: Line]

Power:AC120V/60Hz

#### Conducted Emission Measurement



File :CE  
Data :#1  
Date: 2020/6/17  
Time: 10:24:38

Site  
Limit: FCC Class B Conduction(QP)  
EUT: Bluetooth Headset  
M/N: TrueCapsule2  
Mode: working mode  
Note:

Phase: **L1**  
Power:  
Temperature: 26  
Humidity: 60 %

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1860	28.29	9.88	38.17	64.21	-26.04	QP	
2	0.1860	18.30	9.88	28.18	54.21	-26.03	AVG	
3	0.6260	16.40	9.72	26.12	56.00	-29.88	QP	
4	0.6260	11.61	9.72	21.33	46.00	-24.67	AVG	
5	1.3619	16.51	9.83	26.34	56.00	-29.66	QP	
6	1.3619	11.18	9.83	21.01	46.00	-24.99	AVG	
7	2.1980	23.98	9.82	33.80	56.00	-22.20	QP	
8	2.1980	13.35	9.82	23.17	46.00	-22.83	AVG	
9 *	7.7780	30.21	9.87	40.08	60.00	-19.92	QP	
10	7.7780	18.79	9.87	28.66	50.00	-21.34	AVG	
11	14.5140	25.95	9.97	35.92	60.00	-24.08	QP	
12	14.5140	16.76	9.97	26.73	50.00	-23.27	AVG	

\*:Maximum data x:Over limit !:over margin

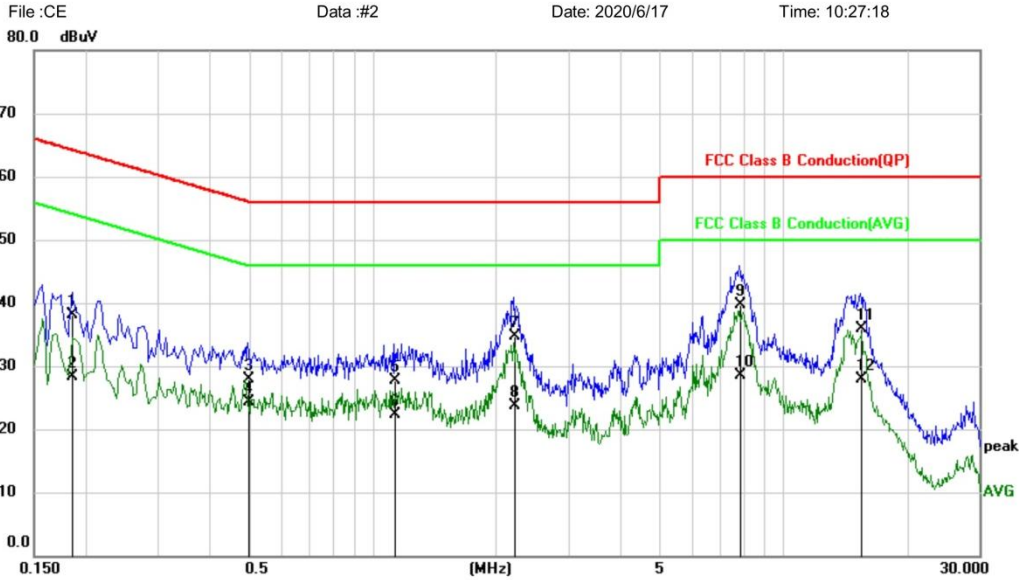
(Reference Only)

**Test Result: Pass**

[TestMode: TX]; [Line: Nutral]

Power:AC120V/60Hz

**Conducted Emission Measurement**



Site:      Phase: **N**      Temperature: 26  
 Limit: FCC Class B Conduction(QP)      Power:      Humidity: 60 %  
 EUT: Bluetooth Headset  
 M/N: TrueCapsule2  
 Mode: working mode  
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1860	28.27	9.88	38.15	64.21	-26.06	QP	
2		0.1860	18.41	9.88	28.29	54.21	-25.92	AVG	
3		0.4980	18.11	9.72	27.83	56.03	-28.20	QP	
4		0.4980	14.60	9.72	24.32	46.03	-21.71	AVG	
5		1.1300	17.95	9.81	27.76	56.00	-28.24	QP	
6		1.1300	12.58	9.81	22.39	46.00	-23.61	AVG	
7		2.2060	24.79	9.86	34.65	56.00	-21.35	QP	
8		2.2060	13.92	9.86	23.78	46.00	-22.22	AVG	
9	*	7.8500	29.91	9.86	39.77	60.00	-20.23	QP	
10		7.8500	18.64	9.86	28.50	50.00	-21.50	AVG	
11		15.4700	25.98	10.01	35.99	60.00	-24.01	QP	
12		15.4700	17.91	10.01	27.92	50.00	-22.08	AVG	

\*:Maximum data    x:Over limit    !:over margin

(Reference Only)

**Test Result: Pass**

## 11 RADIATED SPURIOUS EMISSIONS

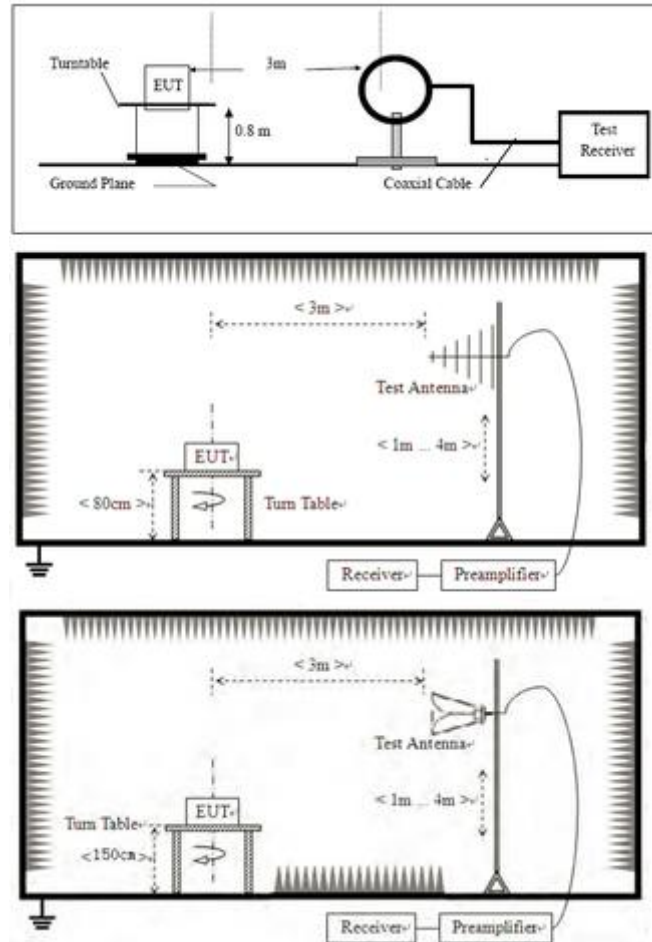
<b>Test Standard</b>	47 CFR Part 15, Subpart C 15.247
<b>Test Method</b>	ANSI C63.10 (2013) Section 6.4,6.5,6.6
<b>Test Mode (Pre-Scan)</b>	TX
<b>Test Mode (Final Test)</b>	TX
<b>Tester</b>	Eason
<b>Temperature</b>	26°C
<b>Humidity</b>	54%

### 11.1 LIMITS

<b>Frequency(MHz)</b>	<b>Field strength(microvolts/meter)</b>	<b>Measurement distance(meters)</b>
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

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

## 11.2 BLOCK DIAGRAM OF TEST SETUP



## 11.3 PROCEDURE

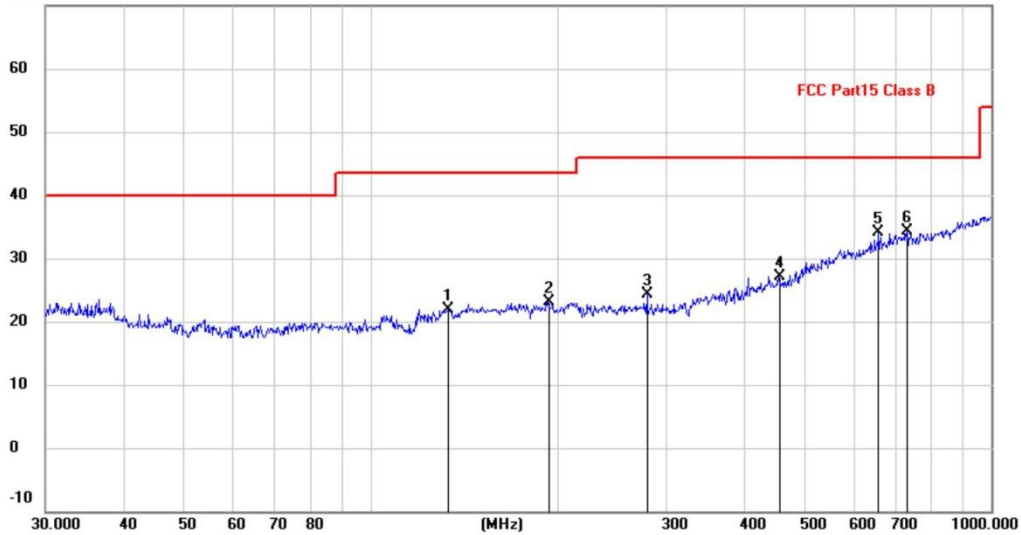
- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB 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 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark:

- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:  
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor + Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, the disturbance above 7GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

**11.4 TEST DATA**
**[TestMode: TX]; [Polarity: Horizontal]**
**Radiated Emission Measurement**

 File :RE (2)      Data :#15      Date: 2020/6/24 星期      Time: 上午 10:39:56  
 70.0 dBuV/m


Site	Polarization: <b>Horizontal</b>	Temperature:
Limit: FCC Part15 Class B	Power:	Humidity: %
EUT: Bluetooth Headset	Distance: 3m	
M/N: TrueCapsule2		
Mode: BT mode		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		133.6184	-1.11	23.10	21.99	43.50	-21.51	QP		
2		193.0945	2.66	20.36	23.02	43.50	-20.48	QP		
3		279.0436	0.99	23.29	24.28	46.00	-21.72	QP		
4		454.3100	-1.10	28.12	27.02	46.00	-18.98	QP		
5		658.8360	1.94	32.08	34.02	46.00	-11.98	QP		
6	*	731.9202	1.04	33.24	34.28	46.00	-11.72	QP		

\*:Maximum data    x:Over limit    !:over margin

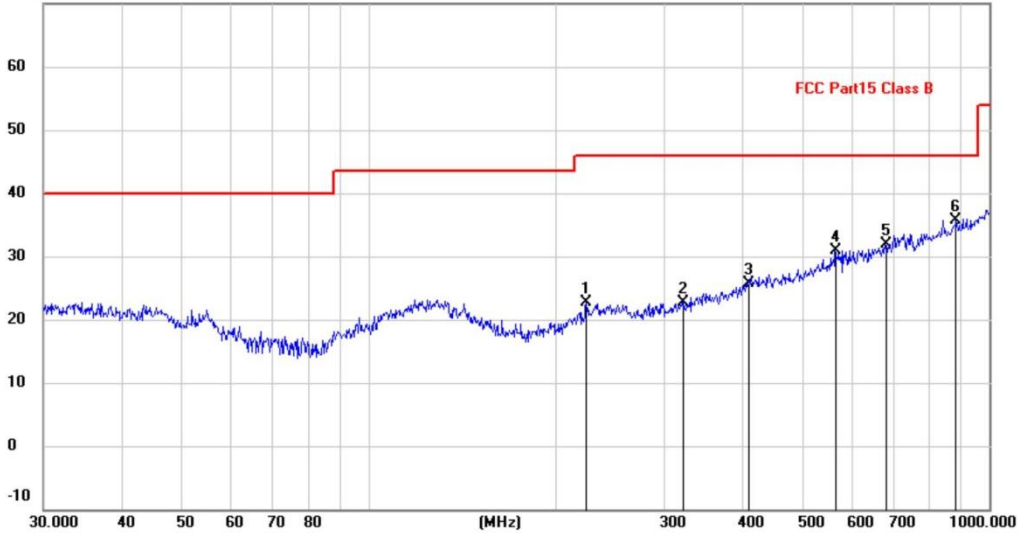
(Reference Only)

**Test Result: Pass**

[TestMode: TX]; [Polarity: Vertical]

**Radiated Emission Measurement**

File :RE (2)      Data :#16      Date: 2020/6/24 星期      Time: 上午 10:40:35  
 70.0 dBuV/m



Site:      Polarization: **Vertical**      Temperature:      Humidity: %  
 Limit: FCC Part15 Class B      Power:      Distance: 3m  
 EUT: Bluetooth Headset  
 M/N: TrueCapsule2  
 Mode: BT mode  
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		224.5192	0.71	21.90	22.61	46.00	-23.39	QP		
2		319.9370	-1.74	24.44	22.70	46.00	-23.30	QP		
3		408.9460	-1.58	27.21	25.63	46.00	-20.37	QP		
4		564.6389	0.48	30.44	30.92	46.00	-15.08	QP		
5		679.9600	-0.41	32.39	31.98	46.00	-14.02	QP		
6	*	884.5027	0.61	35.10	35.71	46.00	-10.29	QP		

\*:Maximum data    x:Over limit    !:over margin      <Reference Only

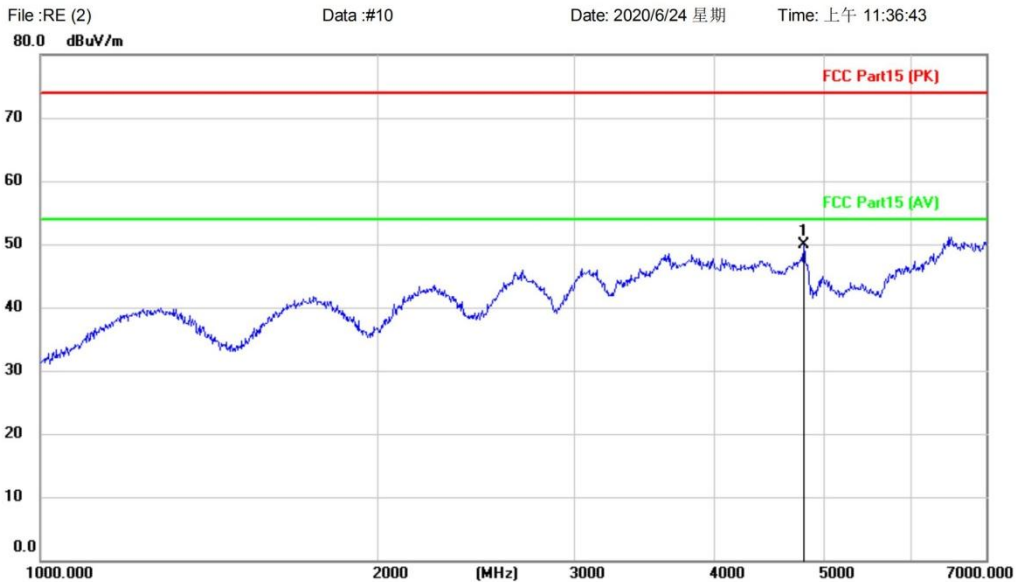
**Test Result: Pass**

Remark: During the test, pre-scan the GFSK, Pi/4QPSK, 8-DPSK modulation, and found the GFSK DH5 modulation which it is worse case.

[TestMode: TX]; [Polarity: Horizontal]

Test channel:lowest

### Radiated Emission Measurement



Site	Polarization: <b>Horizontal</b>	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: Bluetooth Headset	Distance: 3m	
M/N: TrueCapsule2		
Mode: DH5-L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4808.328	47.45	2.38	49.83	74.00	-24.17	peak		

\*:Maximum data    x:Over limit    !:over margin

⟨Reference Only

**Test Result: Pass**



[TestMode: TX]; [Polarity: Vertical]

Test channel:lowest;

**Radiated Emission Measurement**



Site	Polarization: <b>Vertical</b>	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: Bluetooth Headset	Distance: 3m	
M/N: TrueCapsule2		
Mode: DH5-L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4808.328	45.70	2.38	48.08	74.00	-25.92	peak		

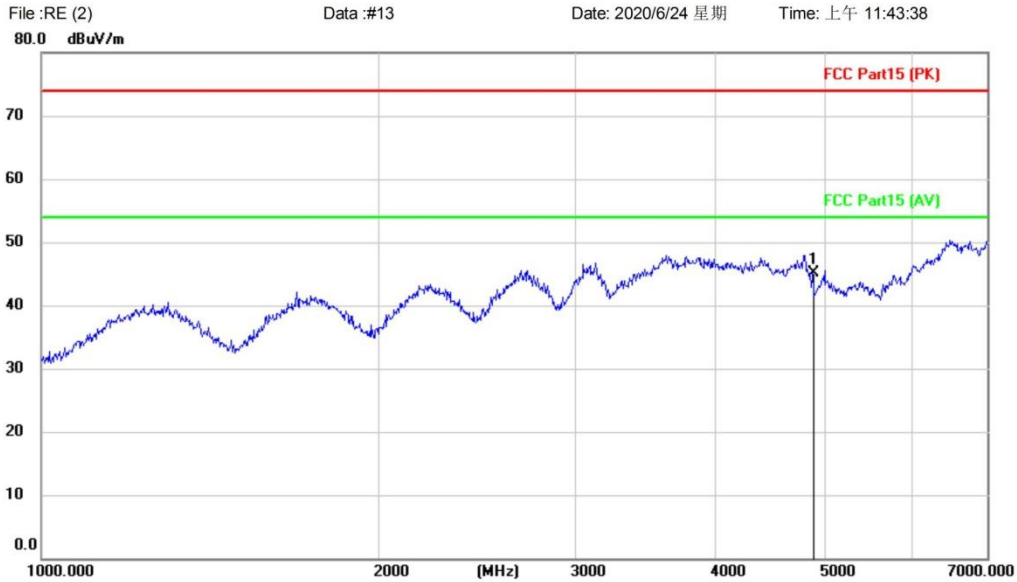
\*:Maximum data    x:Over limit    !:over margin    (Reference Only)

**Test Result: Pass**

[TestMode: TX]; [Polarity: Horizontal]

Test channel: Middle

**Radiated Emission Measurement**



Site	Polarization: <b>Horizontal</b>	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: Bluetooth Headset	Distance: 3m	
M/N: TrueCapsule2		
Mode: DH5-M		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4883.767	44.89	0.17	45.06	74.00	-28.94	peak		

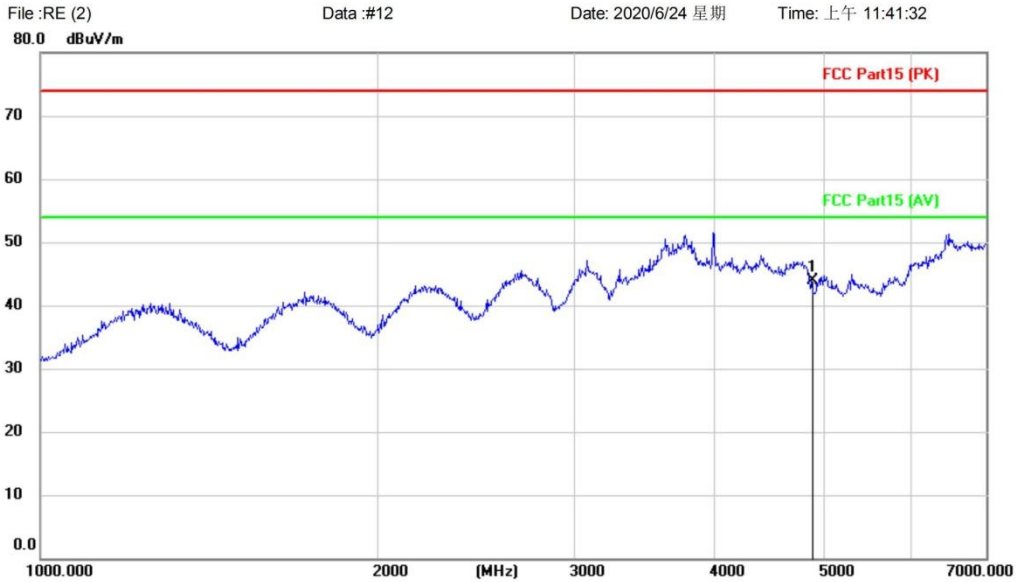
\*:Maximum data    x:Over limit    !:over margin      (Reference Only)

**Test Result: Pass**

[TestMode: TX]; [Polarity: Vertical]

Test channel: Middle

**Radiated Emission Measurement**



Site	Polarization: <i>Vertical</i>	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: Bluetooth Headset	Distance: 3m	
M/N: TrueCapsule2		
Mode: DH5-M		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4883.767	43.71	0.17	43.88	74.00	-30.12	peak		

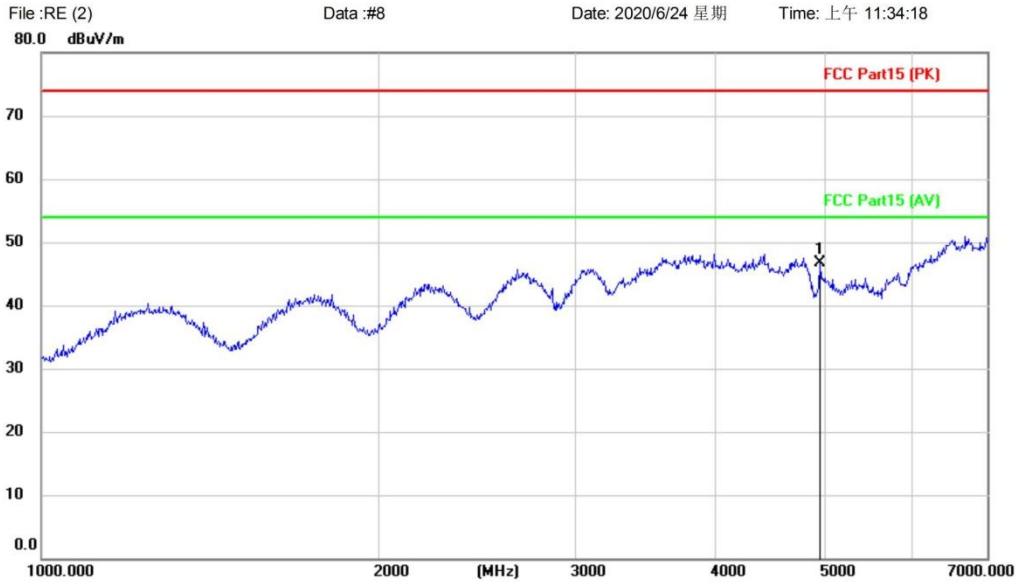
\*:Maximum data    x:Over limit    !:over margin      (Reference Only)

**Test Result: Pass**

[TestMode: TX]; [Polarity: Horizontal]

Test channel:Highest

**Radiated Emission Measurement**



Site	Polarization: <b>Horizontal</b>	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: Bluetooth Headset	Distance: 3m	
M/N: TrueCapsule2		
Mode: DH5-H		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4960.388	45.62	1.04	46.66	74.00	-27.34	peak		

\*:Maximum data    x:Over limit    !:over margin

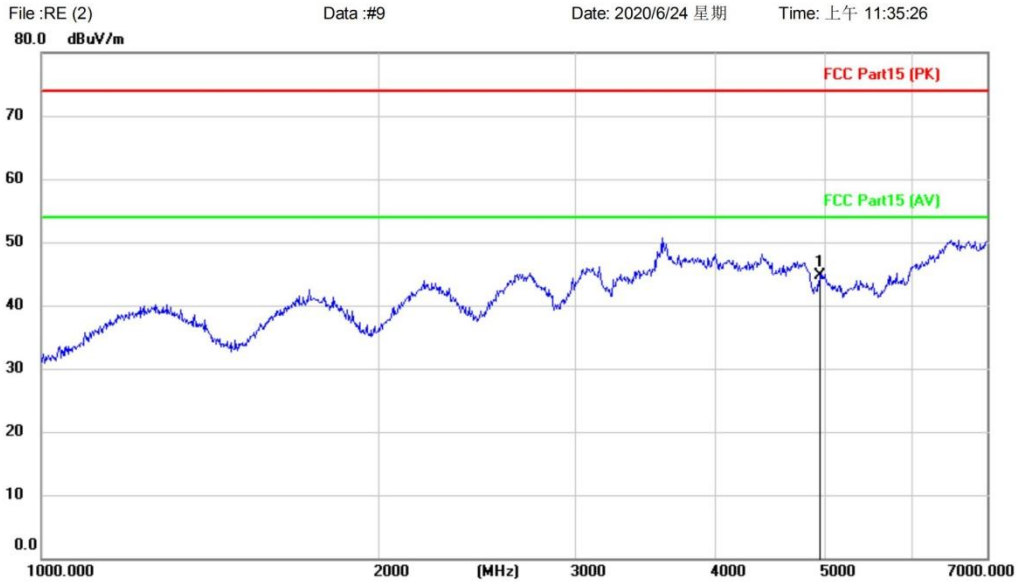
⟨Reference Only⟩

**Test Result: Pass**

[TestMode: TX]; [Polarity: Vertical]

Test channel:Highest

**Radiated Emission Measurement**



Site	Polarization: <i>Vertical</i>	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: Bluetooth Headset	Distance: 3m	
M/N: TrueCapsule2		
Mode: DH5-H		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4960.388	43.58	1.04	44.62	74.00	-29.38	peak		

\*:Maximum data    x:Over limit    !:over margin      (Reference Only)

**Test Result: Pass**

## 10 APPENDIX

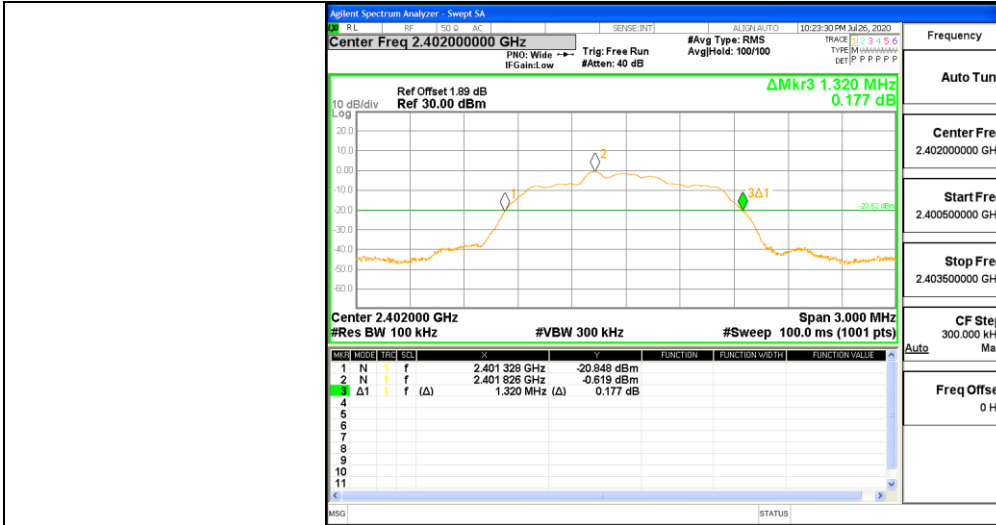
### 10.1 APPENDIXA: 20DBEMISSION BANDWIDTH

#### Test Result

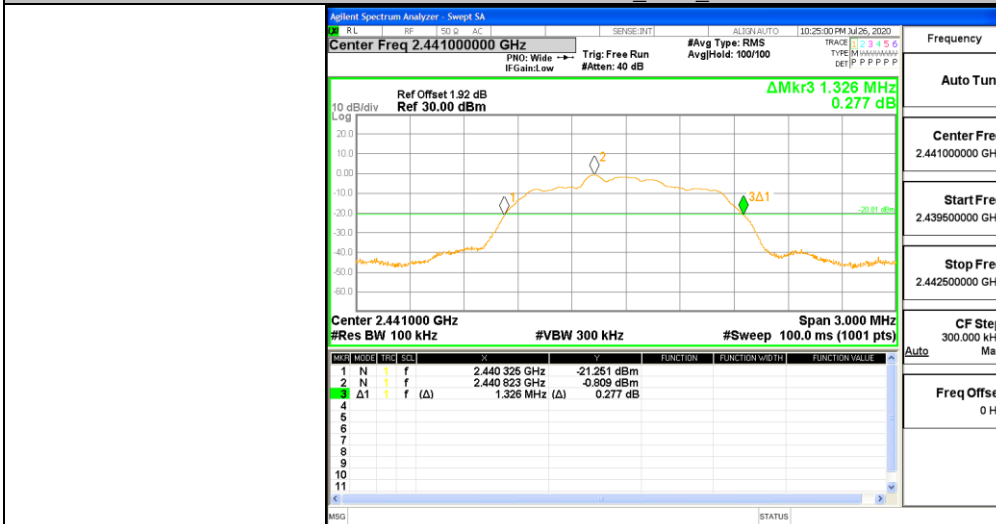
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	1.086	2401.451	2402.537	---	PASS
		2441	1.086	2440.451	2441.537	---	PASS
		2480	1.086	2479.445	2480.531	---	PASS
2DH1	Ant1	2402	1.320	2401.328	2402.648	---	PASS
		2441	1.326	2440.325	2441.651	---	PASS
		2480	1.323	2479.328	2480.651	---	PASS
3DH1	Ant1	2402	1.308	2401.337	2402.645	---	PASS
		2441	1.305	2440.337	2441.642	---	PASS
		2480	1.311	2479.334	2480.645	---	PASS

### Test Graphs

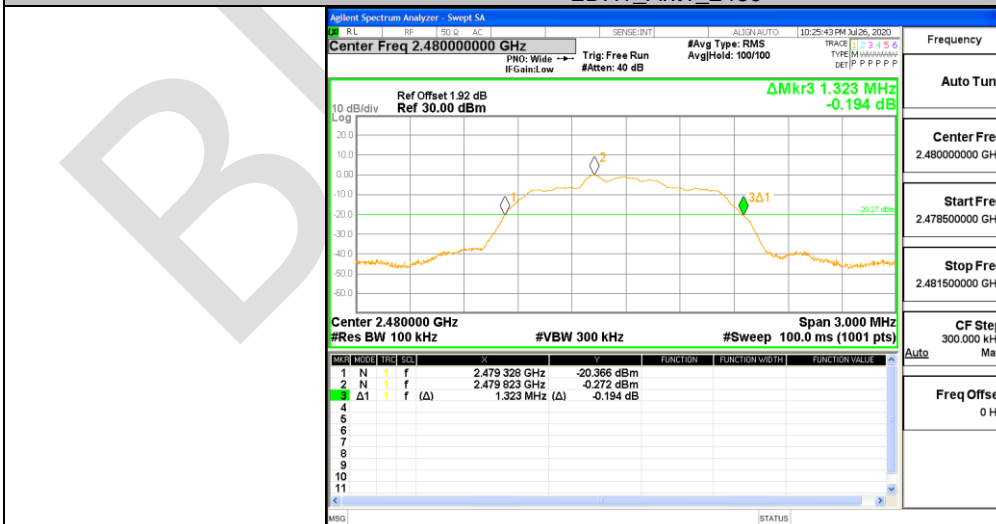




2DH1\_Ant1\_2441

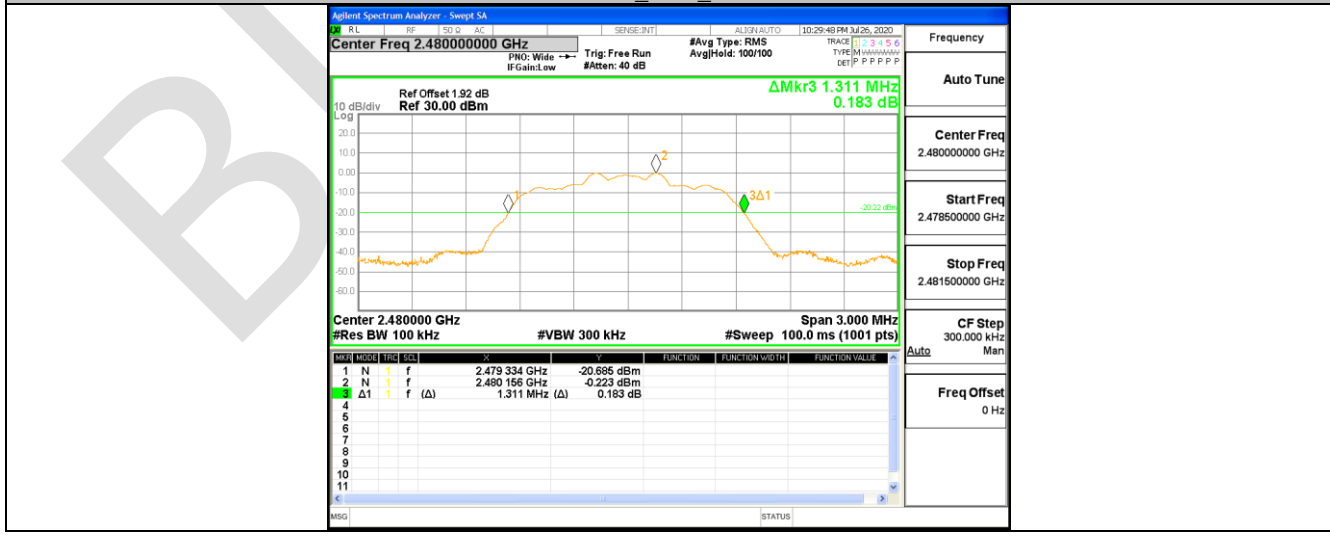
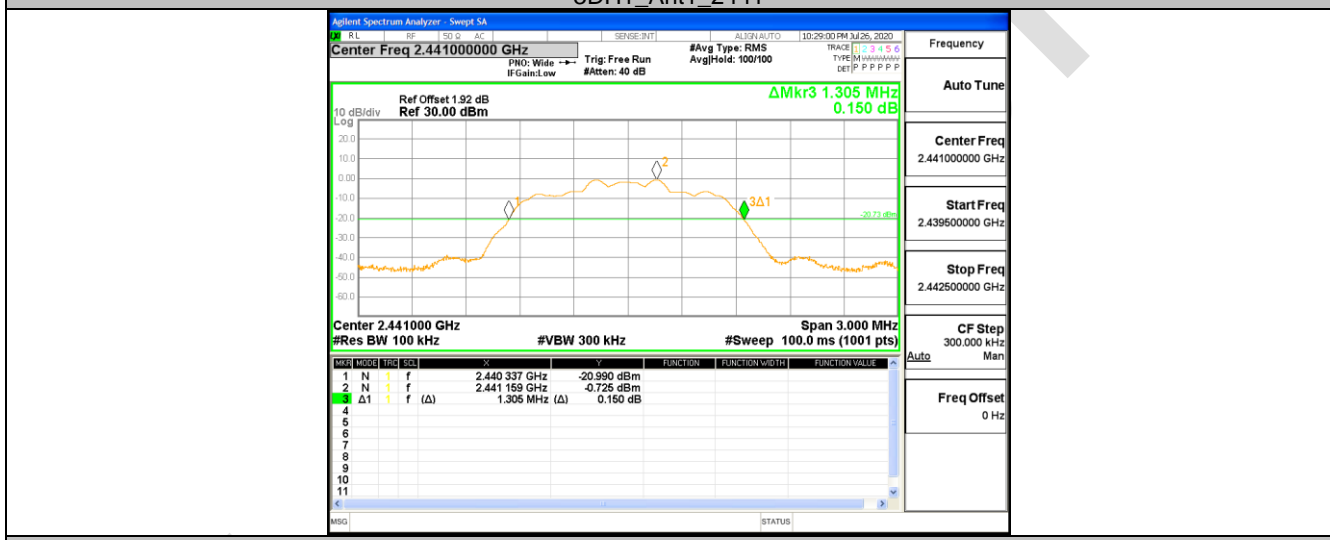
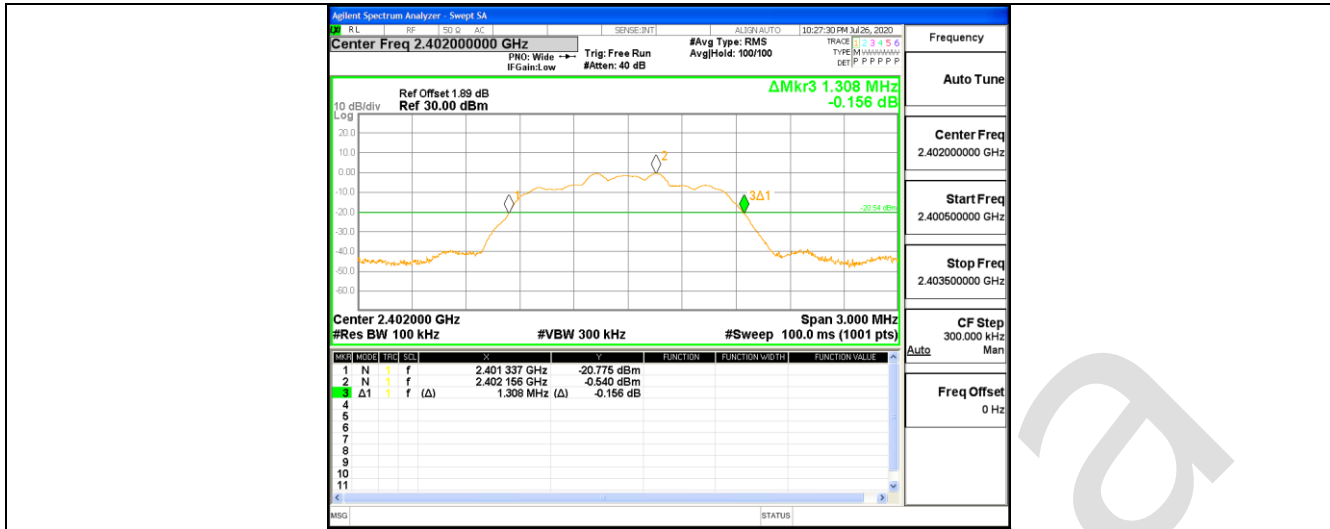


2DH1\_Ant1\_2480



3DH1\_Ant1\_2402



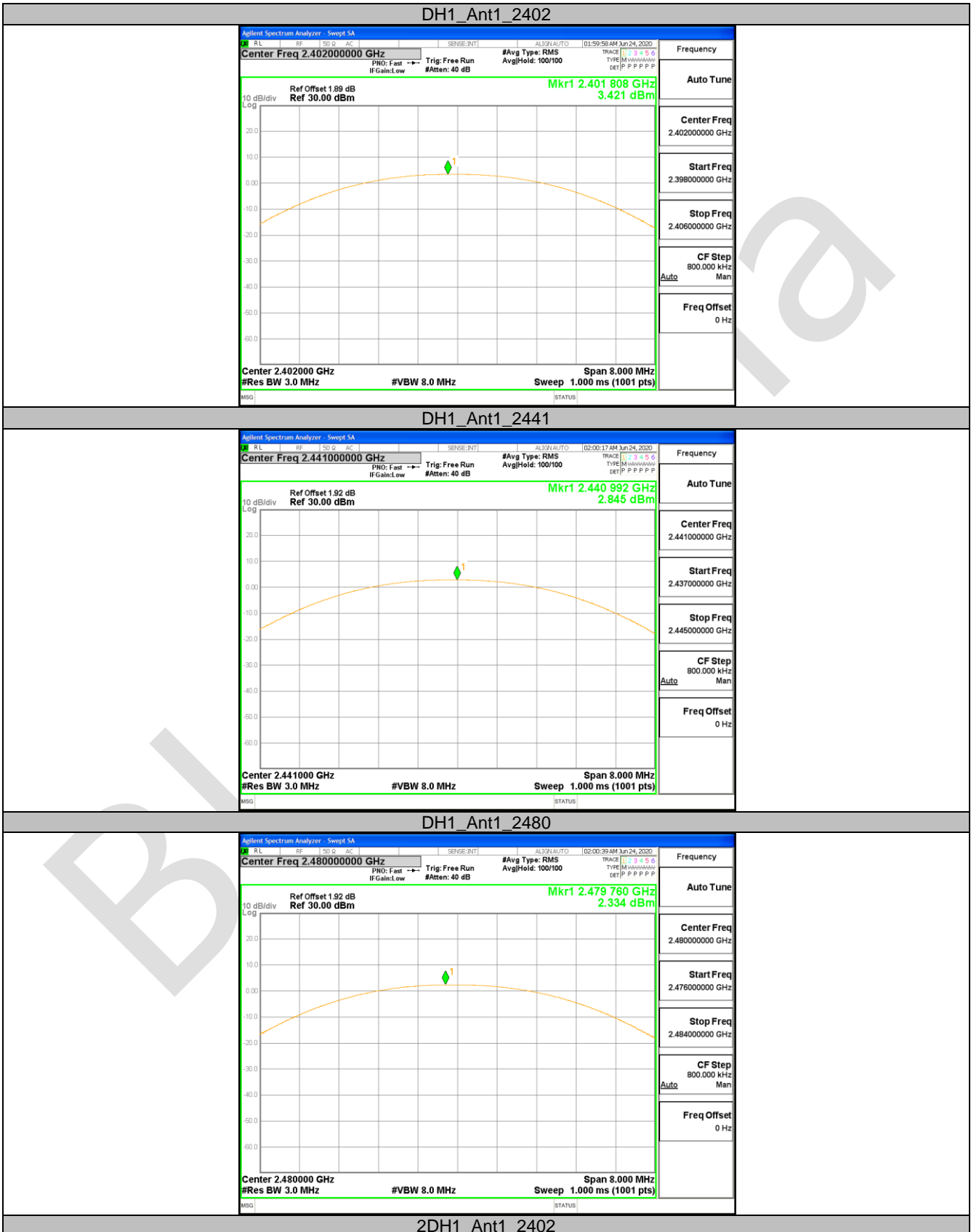


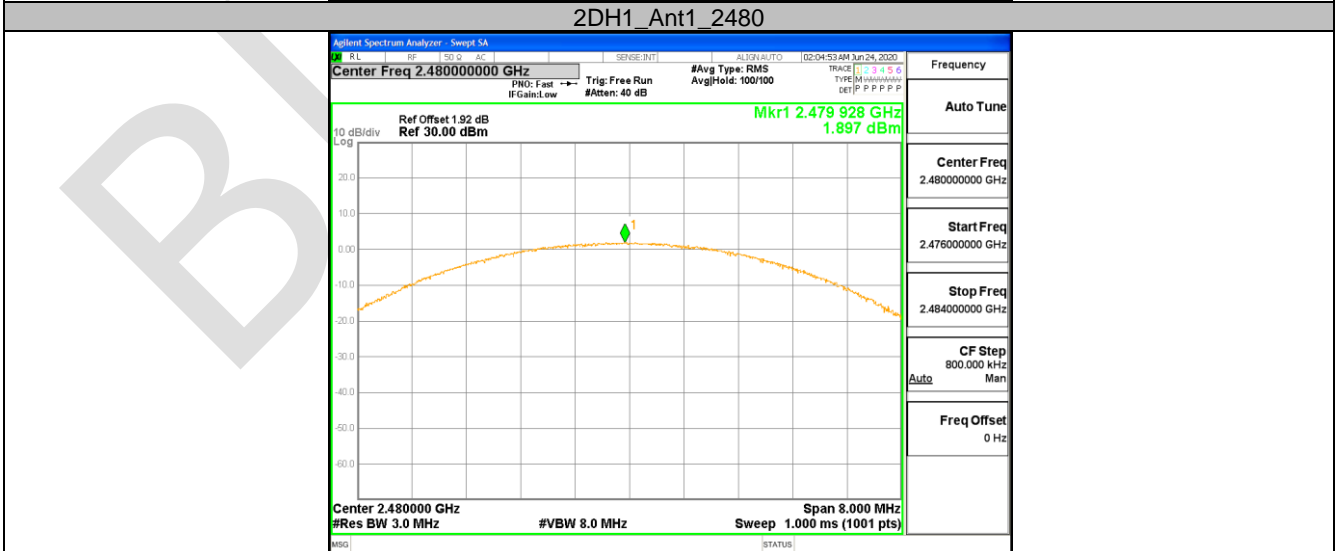
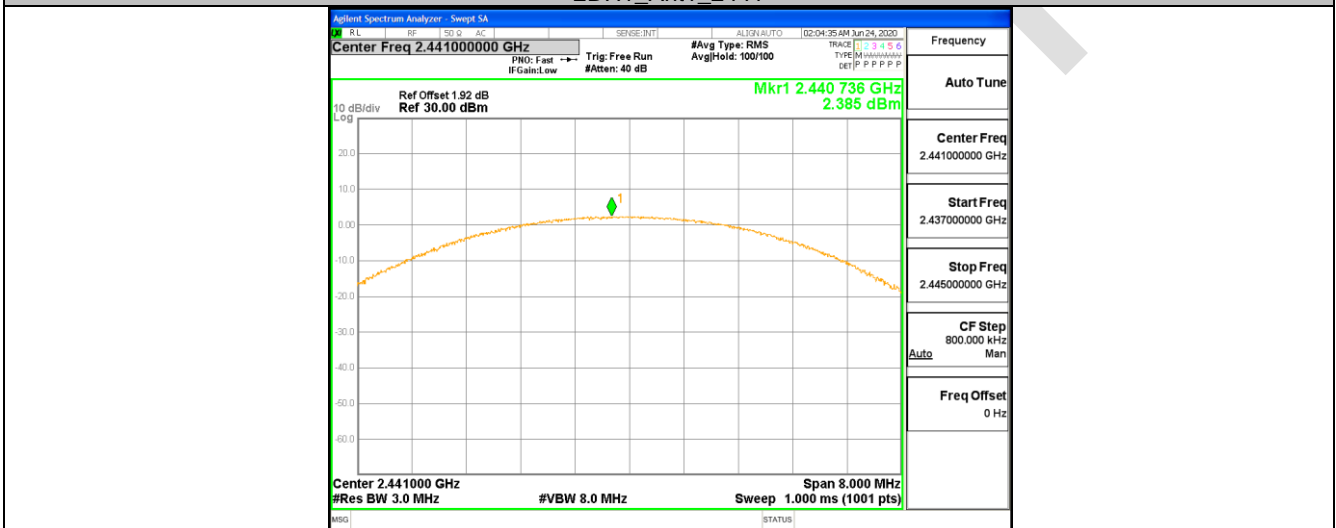
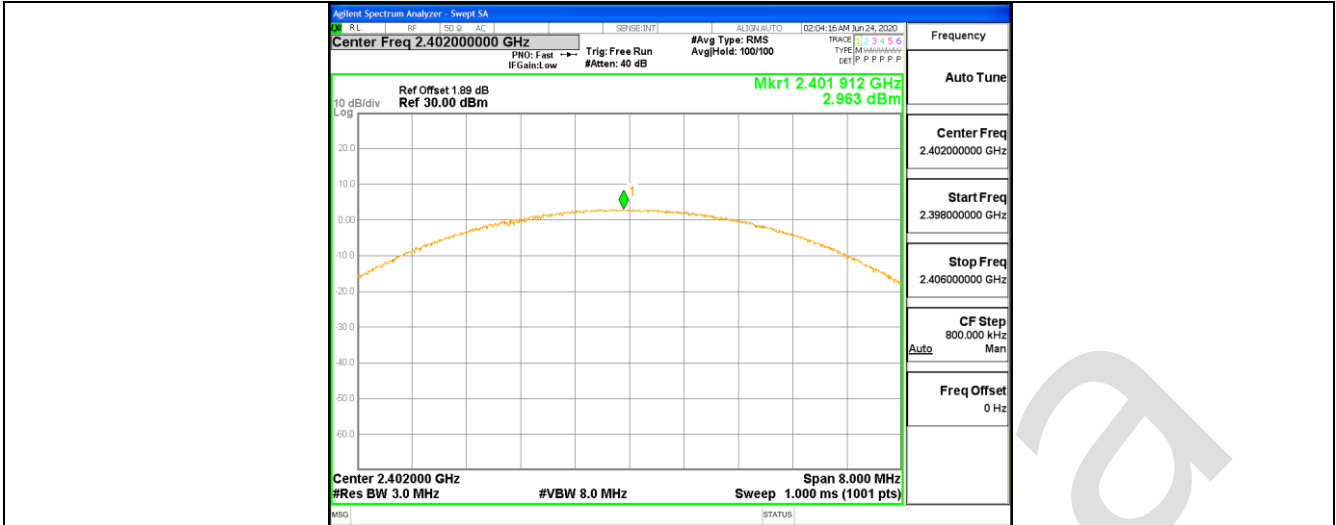
## 10.2 APPENDIX: MAXIMUM CONDUCTED OUTPUT POWER

### Test Result

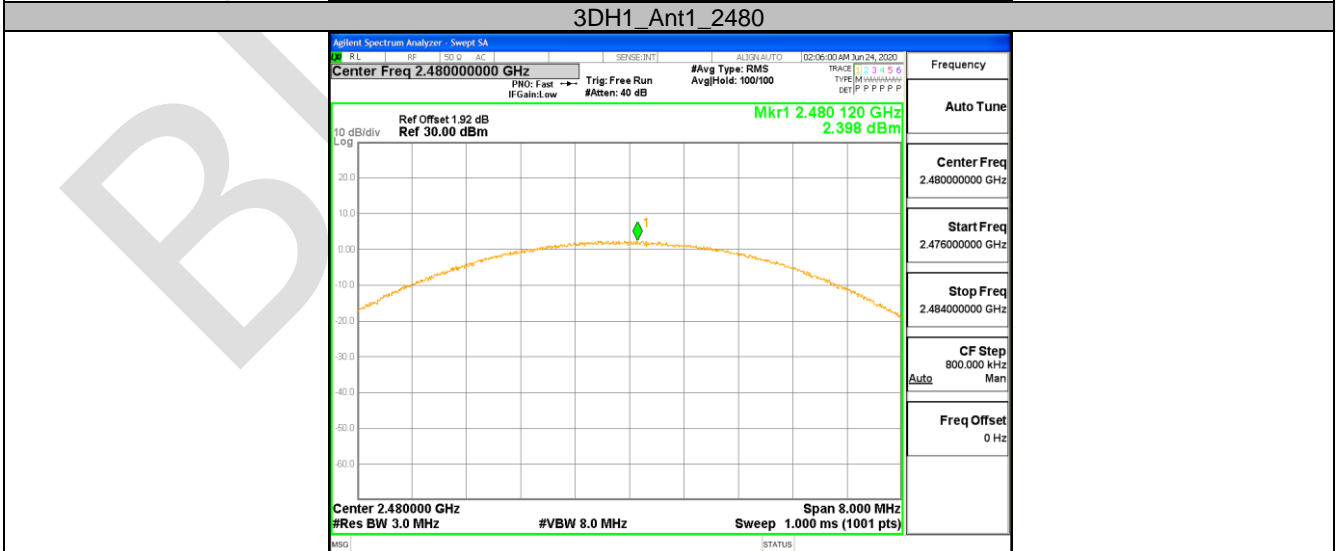
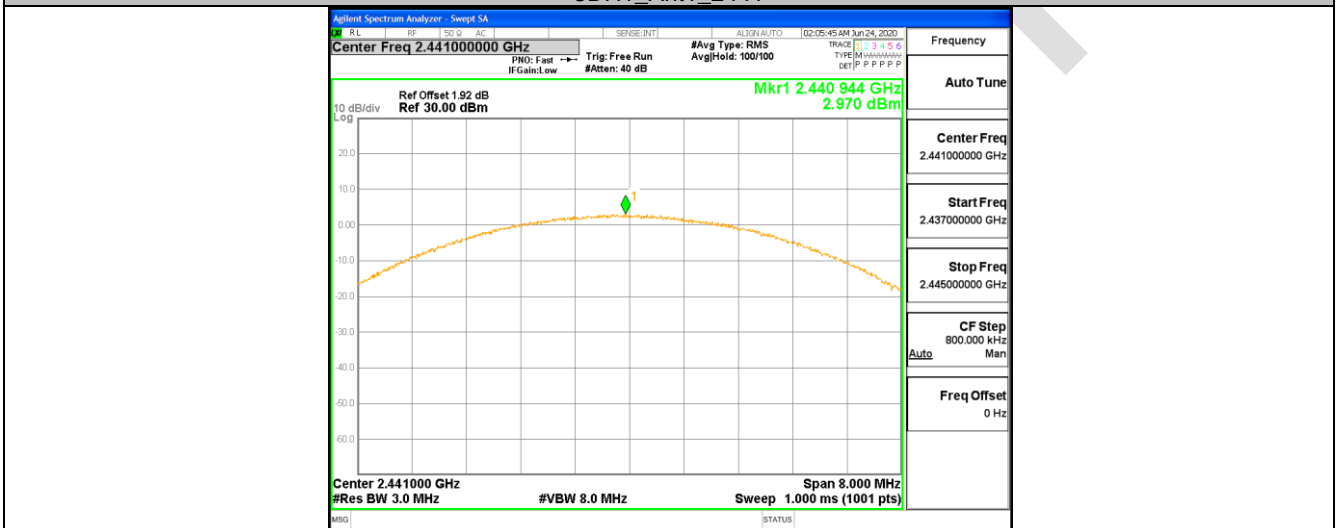
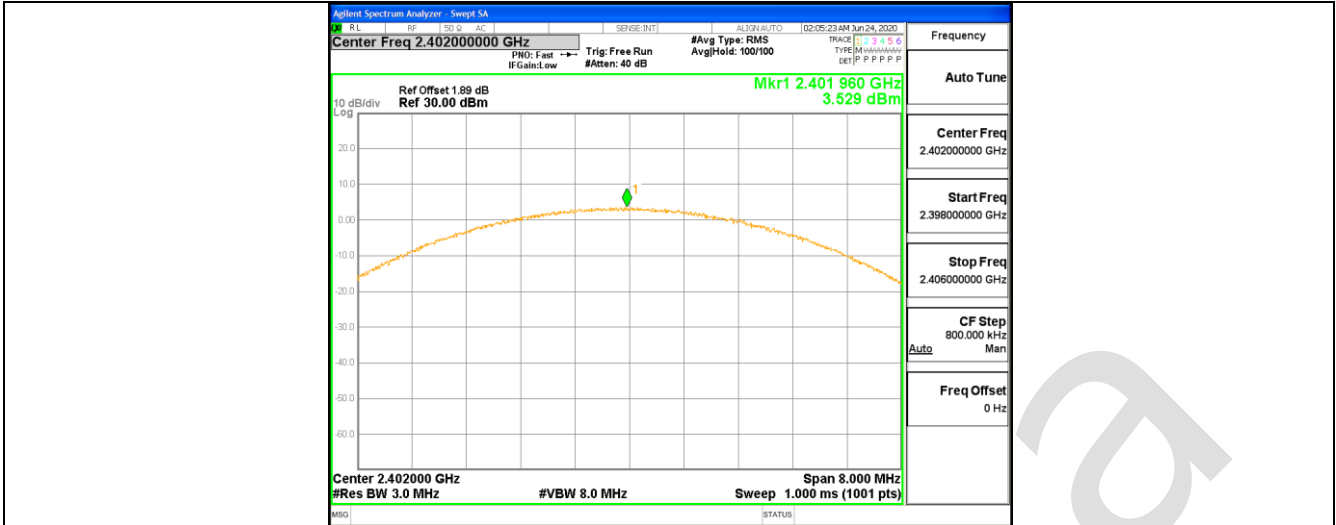
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH1	Ant1	2402	3.42	<=20.97	PASS
		2441	2.85	<=20.97	PASS
		2480	2.33	<=20.97	PASS
2DH1	Ant1	2402	2.96	<=20.97	PASS
		2441	2.38	<=20.97	PASS
		2480	1.90	<=20.97	PASS
3DH1	Ant1	2402	3.53	<=20.97	PASS
		2441	2.97	<=20.97	PASS
		2480	2.40	<=20.97	PASS

### Test Graphs





**3DH1\_Ant1\_2402**



### 10.3 APPENDIX: CARRIER FREQUENCY SEPARATION

#### Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop	1.018	$\geq 0.748$	PASS
2DH1	Ant1	Hop	1.158	$\geq 0.918$	PASS
3DH1	Ant1	Hop	0.992	$\geq 0.926$	PASS

### Test Graphs



#### 10.4 APPENDIX: TIME OF OCCUPANCY

##### Test Result

Frequency	Packet	Dwell time(ms)	Limit(ms)	Result
2441MHz	DH1/2-DH1/3-DH1	128.00	400	Pass
2441MHz	DH3/2-DH3/3-DH3	267.20	400	Pass
2441MHz	DH5/2-DH5/3-DH5	308.26	400	Pass

The test period:  $T = 0.4 \text{ Second/Channel} \times 79 \text{ Channel} = 31.6 \text{ s}$

Test channel: 2441MHz as blow

DH1/2-DH1/3-DH1 time slot =  $0.40(\text{ms}) \times (1600 / (2 \times 79)) \times 31.6 = 128.00\text{ms}$

DH3/2-DH3/3-DH3 time slot =  $1.67(\text{ms}) \times (1600 / (4 \times 79)) \times 31.6 = 267.20\text{ms}$

DH5/2-DH5/3-DH5 time slot =  $2.89(\text{ms}) \times (1600 / (6 \times 79)) \times 31.6 = 308.26\text{ms}$



### Test Graphs



## 10.5 APPENDIX F: NUMBER OF HOPPING CHANNELS

### Test Result

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH1	Ant1	Hop	79	$\geq 15$	PASS
2DH1	Ant1	Hop	79	$\geq 15$	PASS
3DH1	Ant1	Hop	79	$\geq 15$	PASS

### Test Graphs



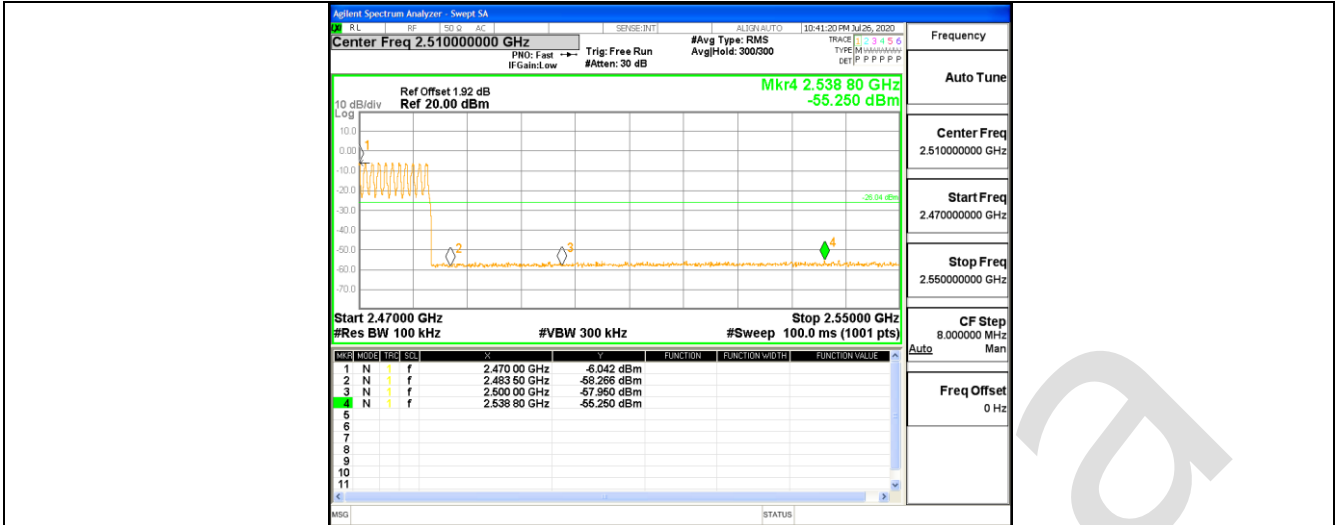
## 10.6 APPENDIX: BAND EDGE MEASUREMENTS

### Test Result

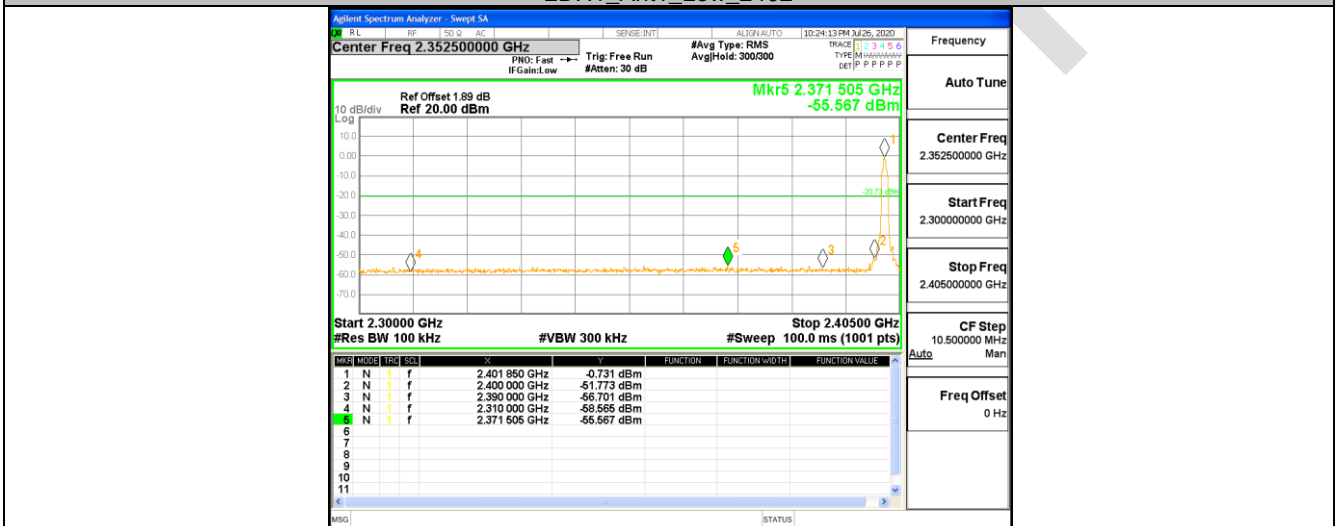
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	-0.73	-55.34	<=-20.73	PASS
		High	2480	-0.36	-54.69	<=-20.36	PASS
		Low	Hop_2402	-6.23	-55.73	-26.23	PASS
		High	Hop_2480	-6.04	-55.25	-26.04	PASS
2DH1	Ant1	Low	2402	-0.73	-55.57	<=-20.73	PASS
		High	2480	-0.33	-55.05	<=-20.33	PASS
		Low	Hop_2402	-7.55	-55.53	-27.55	PASS
		High	Hop_2480	-0.09	-54.81	-20.09	PASS
3DH1	Ant1	Low	2402	-0.63	-55.45	<=-20.63	PASS
		High	2480	-0.27	-55.39	<=-20.27	PASS
		Low	Hop_2402	-6.65	-56.46	-26.65	PASS
		High	Hop_2480	-7.24	-54.71	-27.24	PASS

### Test Graphs

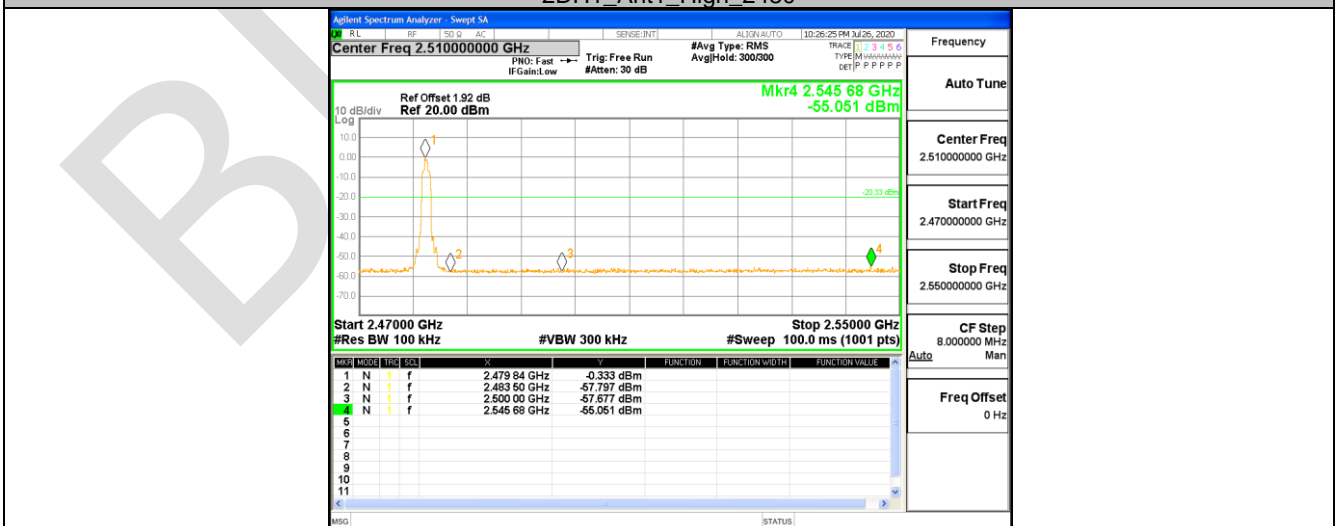




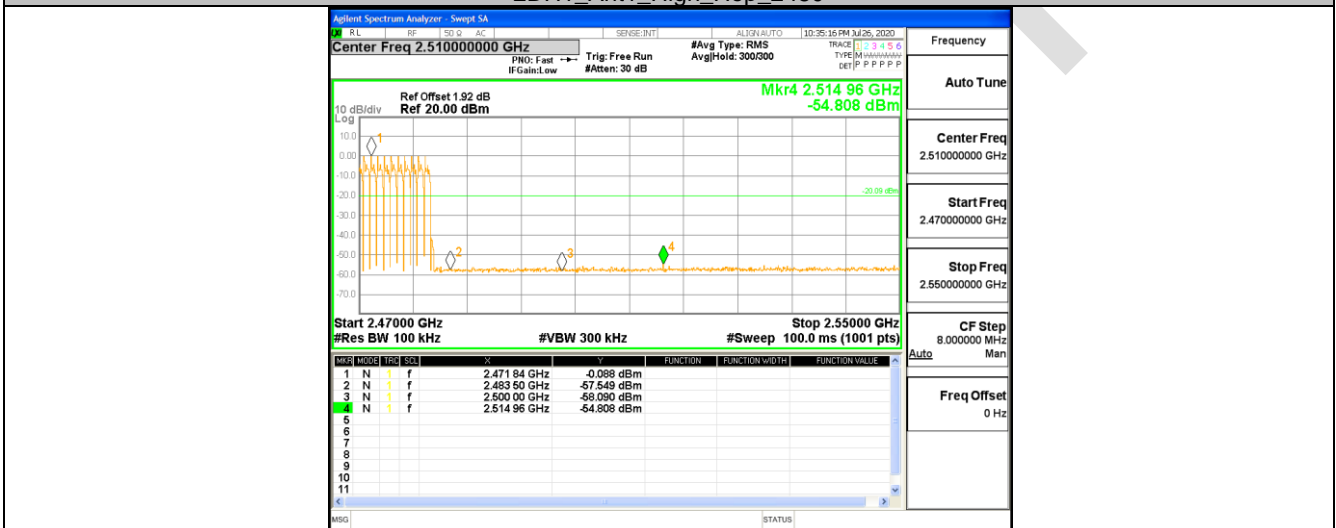
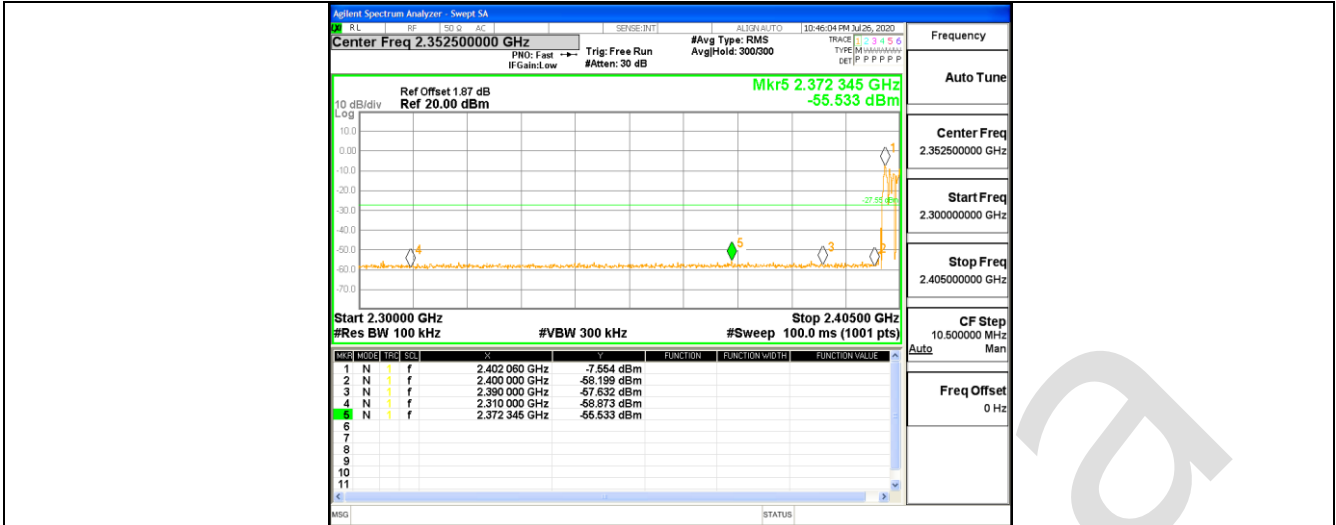
2DH1\_Ant1\_Low\_2402

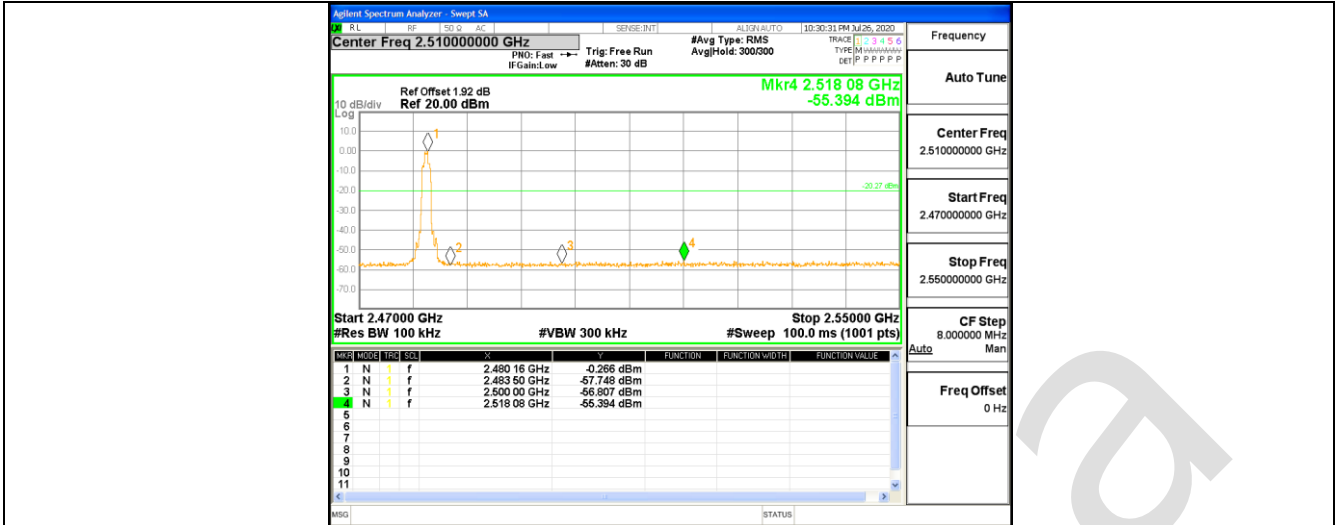


2DH1\_Ant1\_High\_2480

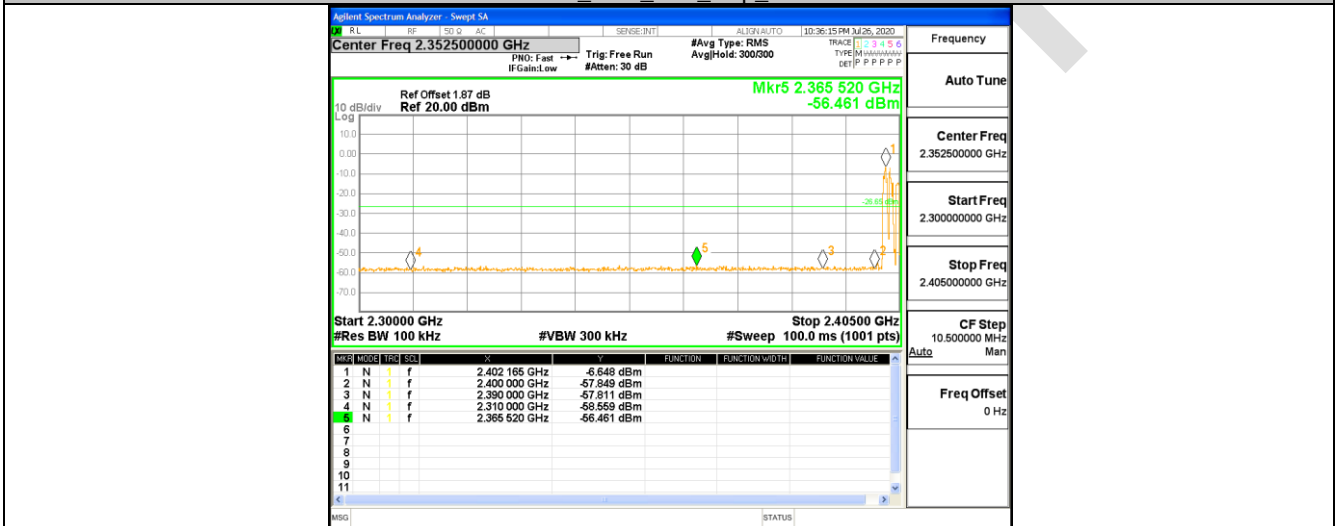


2DH1\_Ant1\_Low\_Hop\_2402

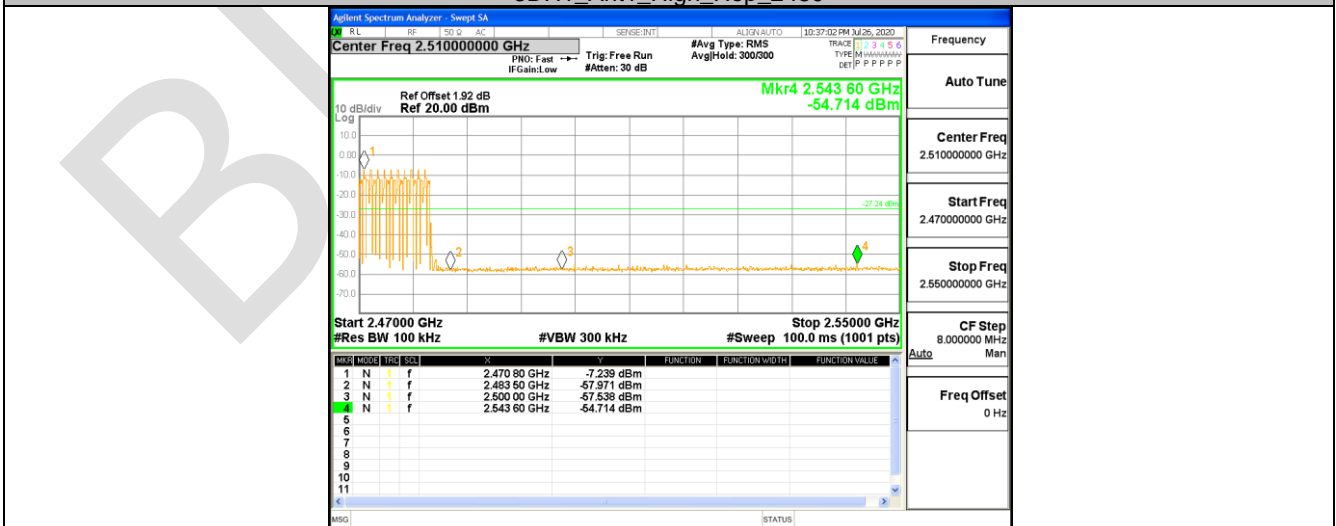




3DH1\_Ant1\_Low\_Hop\_2402



3DH1\_Ant1\_High\_Hop\_2480





**10.7 APPENDIX: CONDUCTED SPURIOUS EMISSION**
**Test Result**

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	-5.89	-5.89	---	PASS
			30~1000	30~1000	-62.236	<=-25.888	PASS
			1000~26500	1000~26500	-47.216	<=-25.888	PASS
		2441	Reference	-6.39	-6.39	---	PASS
			30~1000	30~1000	-66.657	<=-26.386	PASS
			1000~26500	1000~26500	-49.349	<=-26.386	PASS
		2480	Reference	-5.99	-5.99	---	PASS
			30~1000	30~1000	-66.856	<=-25.992	PASS
			1000~26500	1000~26500	-47.836	<=-25.992	PASS
2DH1	Ant1	2402	Reference	-0.83	-0.83	---	PASS
			30~1000	30~1000	-66.541	<=-20.826	PASS
			1000~26500	1000~26500	-53.358	<=-20.826	PASS
		2441	Reference	-0.96	-0.96	---	PASS
			30~1000	30~1000	-67.103	<=-20.964	PASS
			1000~26500	1000~26500	-53.69	<=-20.964	PASS
		2480	Reference	-0.47	-0.47	---	PASS
			30~1000	30~1000	-65.381	<=-20.472	PASS
			1000~26500	1000~26500	-51.445	<=-20.472	PASS
3DH1	Ant1	2402	Reference	-0.77	-0.77	---	PASS
			30~1000	30~1000	-67.417	<=-20.768	PASS
			1000~26500	1000~26500	-48.577	<=-20.768	PASS
		2441	Reference	-0.91	-0.91	---	PASS
			30~1000	30~1000	-65.414	<=-20.91	PASS
			1000~26500	1000~26500	-53.507	<=-20.91	PASS
		2480	Reference	-0.41	-0.41	---	PASS
			30~1000	30~1000	-64.946	<=-20.413	PASS
			1000~26500	1000~26500	-52.006	<=-20.413	PASS