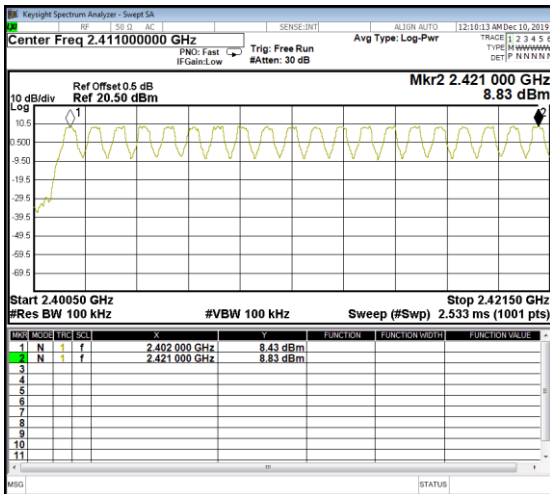


### 7.5. Test Result of Channel Number

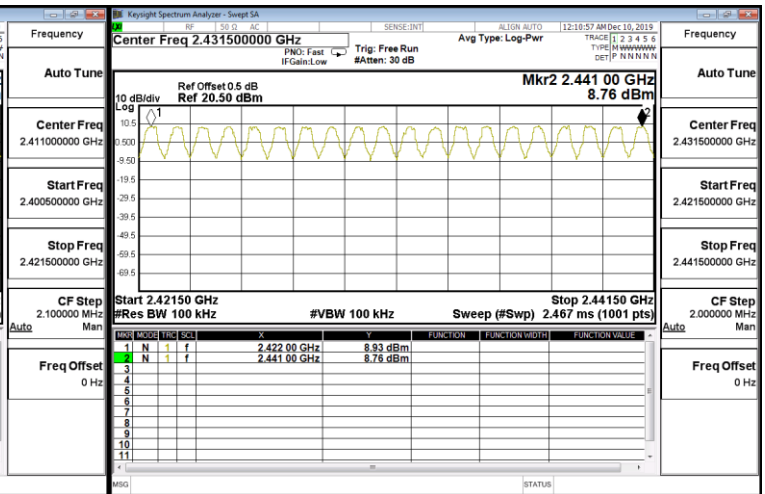
Product : Bluetooth Speakerphone  
 Test Item : Channel Number  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

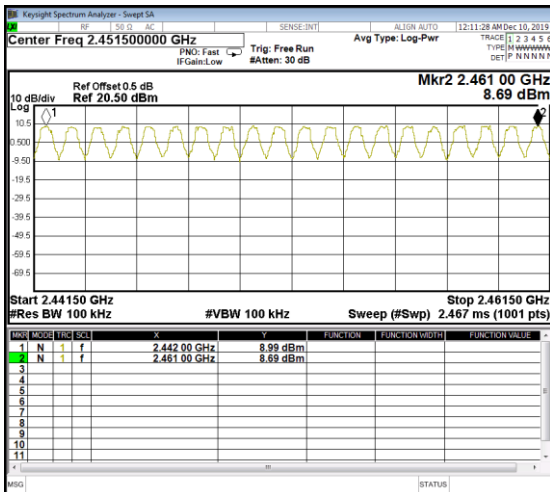
2402-2421MHz



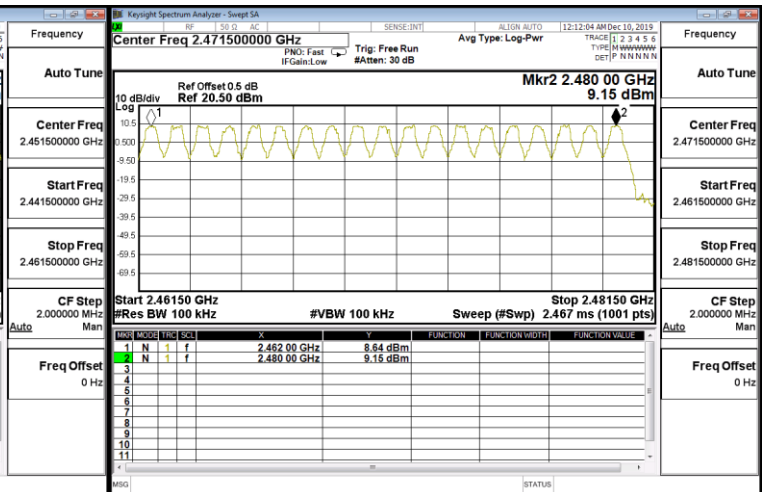
2422-2441MHz



2442-2461MHz



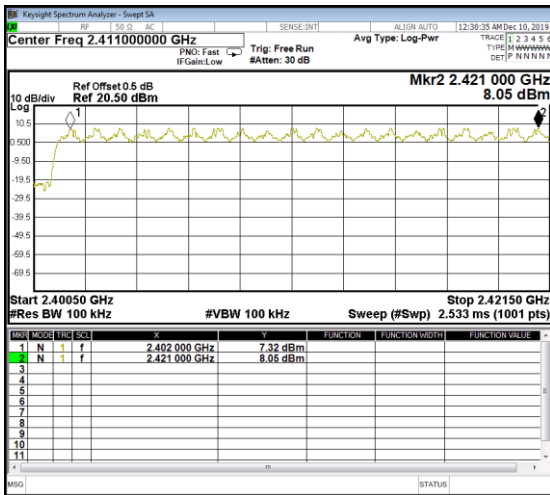
2462-2480MHz



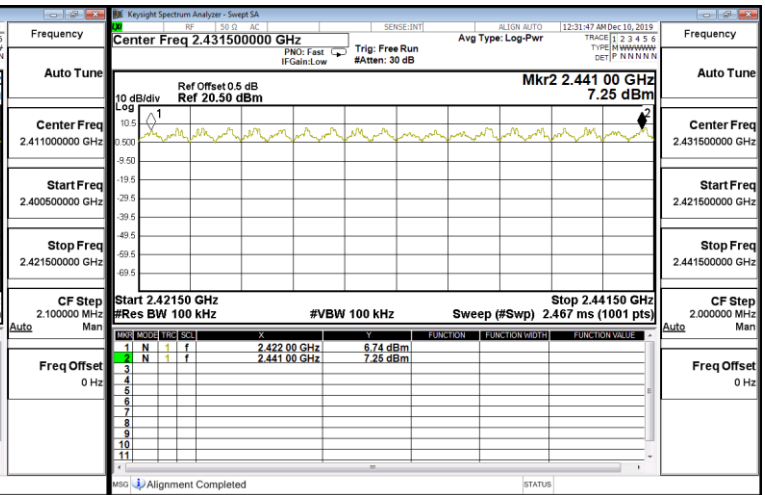
Product : Bluetooth Speakerphone  
 Test Item : Channel Number  
 Test Mode : Mode 2: Transmit - 2Mbps ( $\pi/4$ DQPSK)

Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

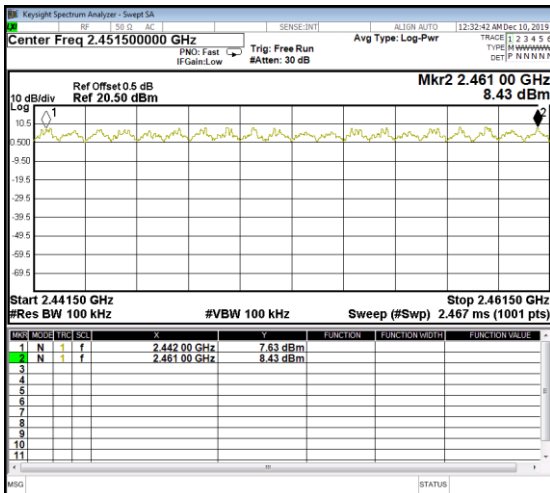
2402-2421MHz



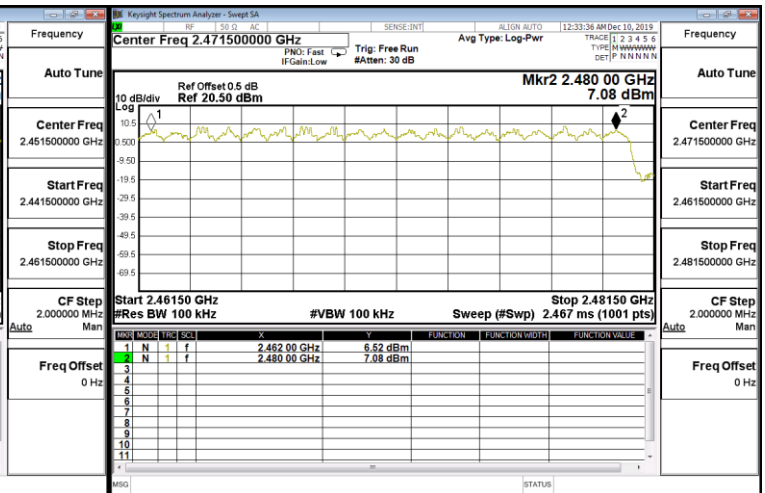
2422-2441MHz



2442-2461MHz



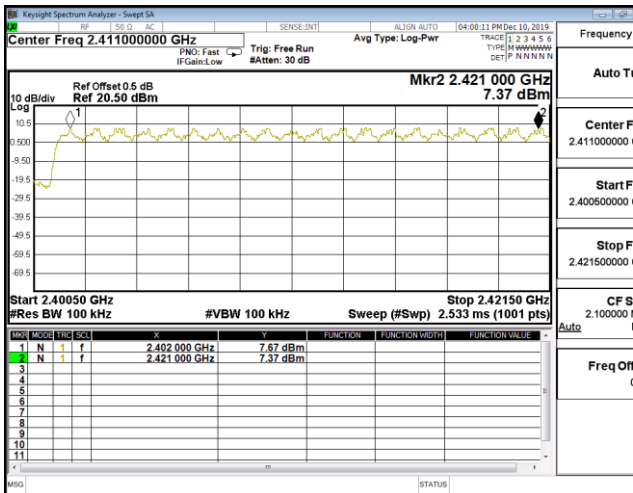
2462-2480MHz



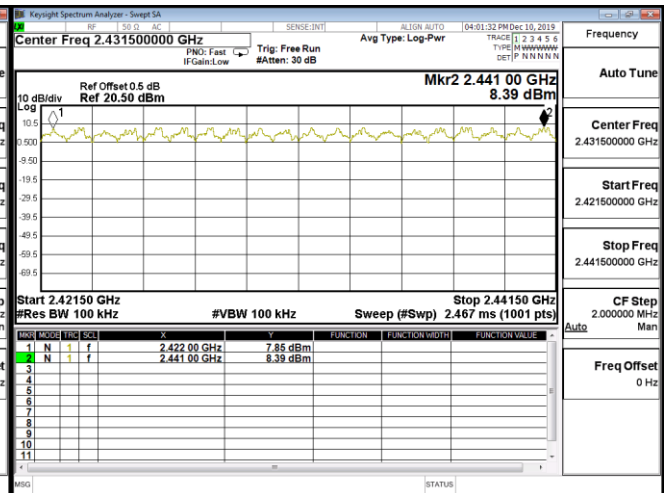
Product : Bluetooth Speakerphone  
 Test Item : Channel Number  
 Test Mode : Mode 3: Transmit - 3Mbps (8DPSK)

Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

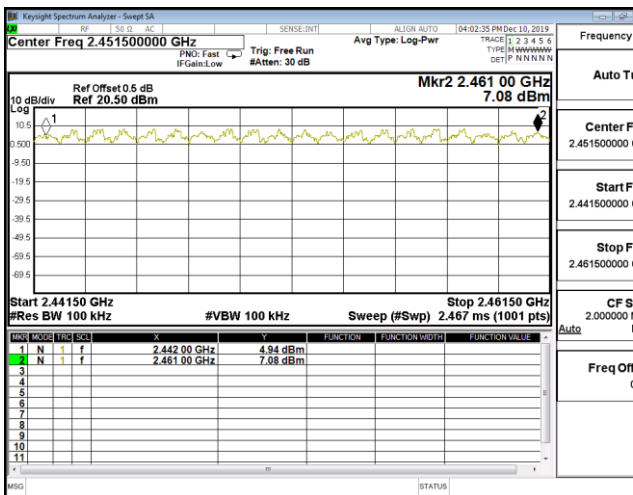
2402-2421MHz



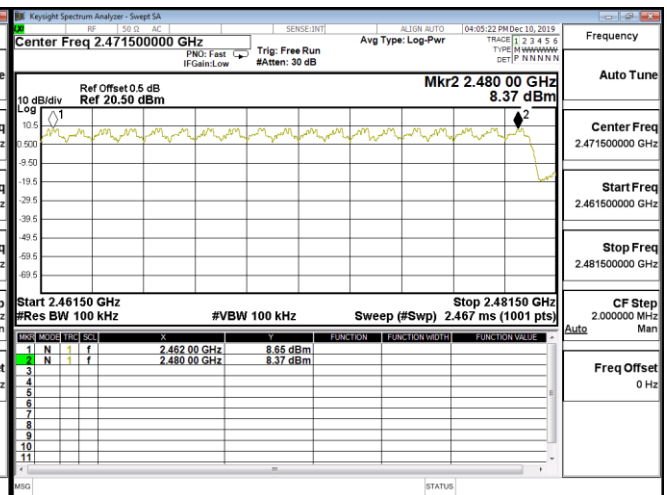
2422-2441MHz



2442-2461MHz

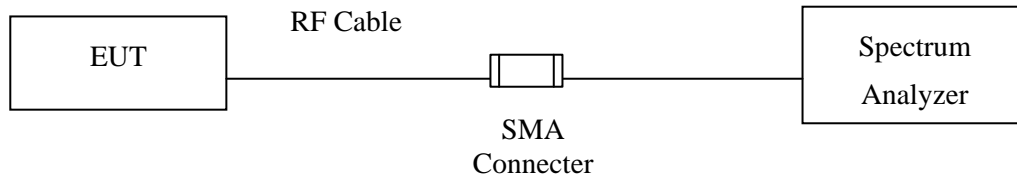


2462-2480MHz



## 8. Channel Separation

### 8.1. Test Setup



### 8.2. Limit

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.

### 8.3. Test Procedure

Tested according to FHSS test procedure of KDB558074 section 9 (b for compliance to FCC 47CFR 15.247 requirements).

### 8.4. Uncertainty

$\pm 283\text{Hz}$

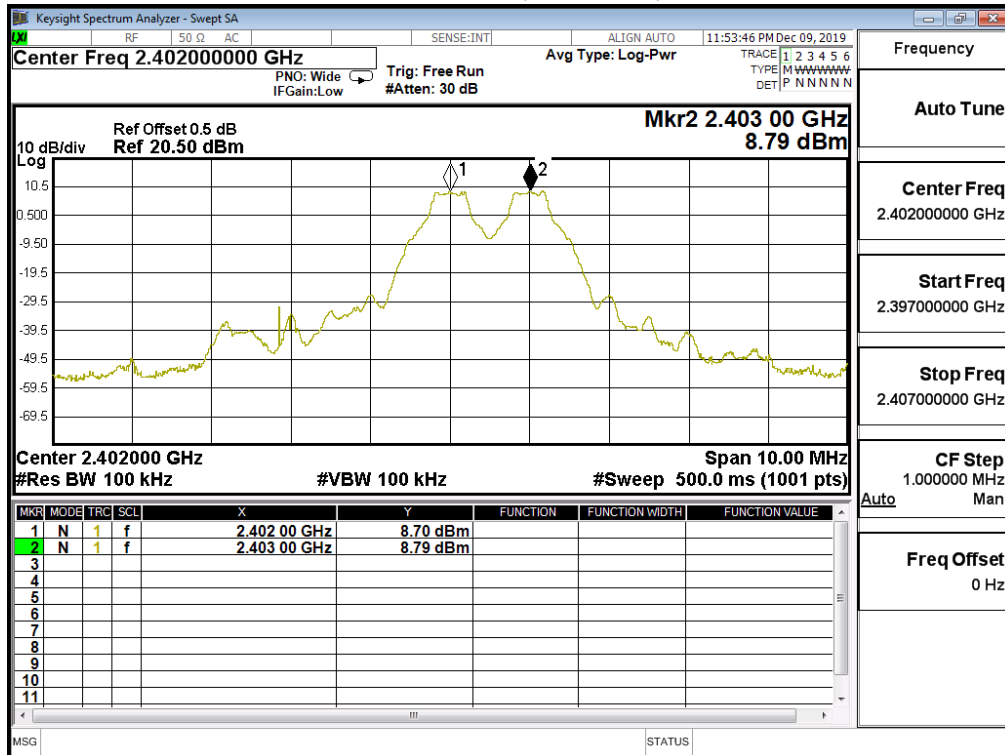
### 8.5. Test Result of Channel Separation

Product : Bluetooth Speakerphone  
 Test Item : Channel Separation  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

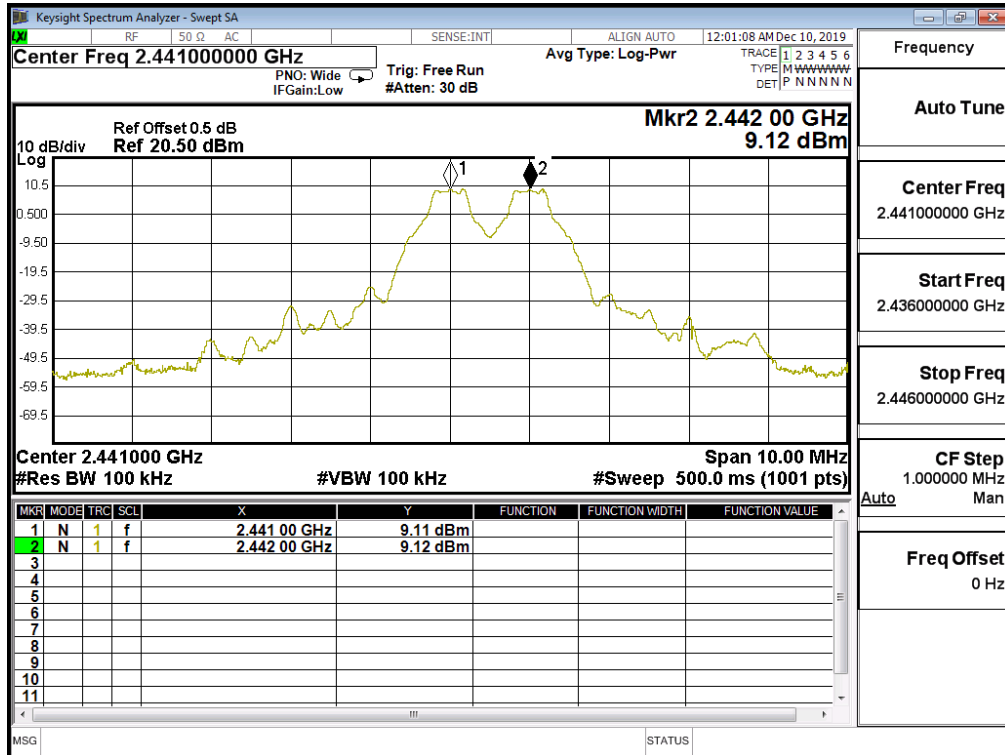
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	628.0	Pass
39	2441	1000	>25 kHz	628.0	Pass
78	2480	1000	>25 kHz	628.0	Pass

NOTE: The 20dB Bandwidth is refer to section 10.

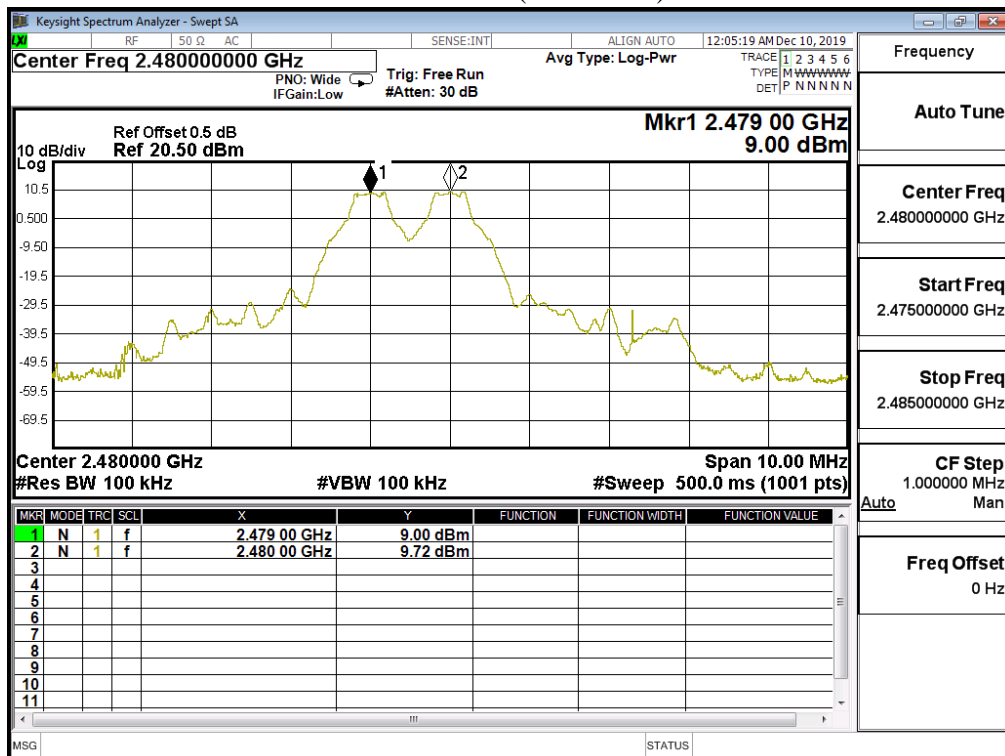
Channel 00 (2402MHz)



### Channel 39 (2441MHz)



### Channel 78 (2480MHz)

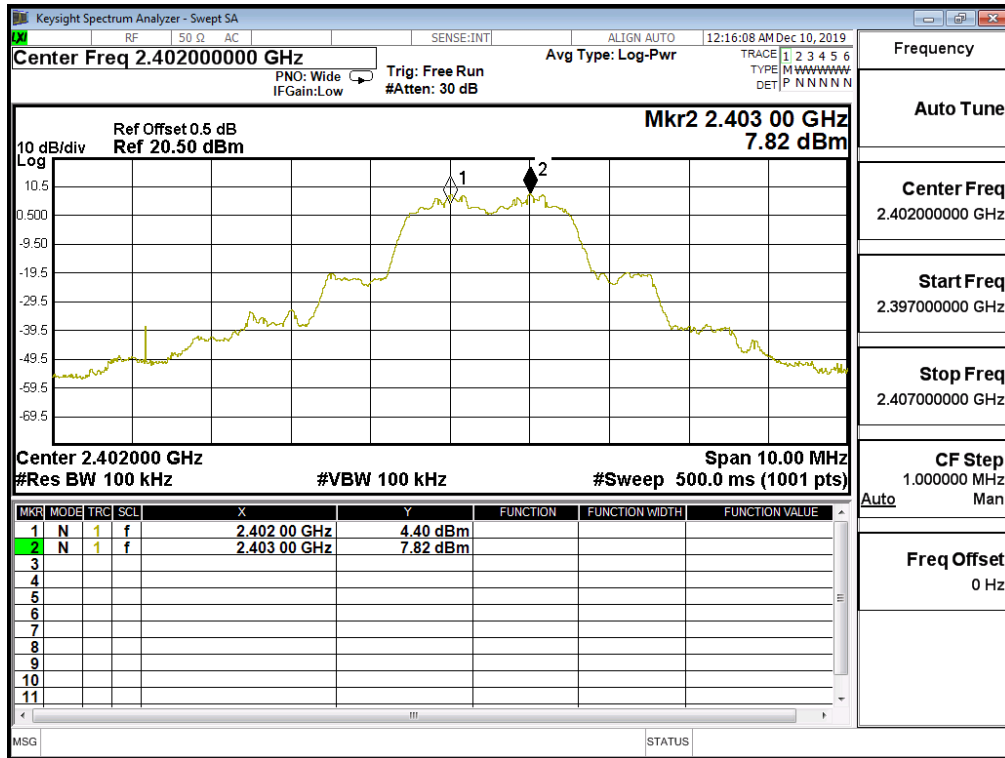


Product : Bluetooth Speakerphone  
 Test Item : Channel Separation  
 Test Mode : Mode 2: Transmit - 2Mbps ( $\pi/4$ DQPSK)

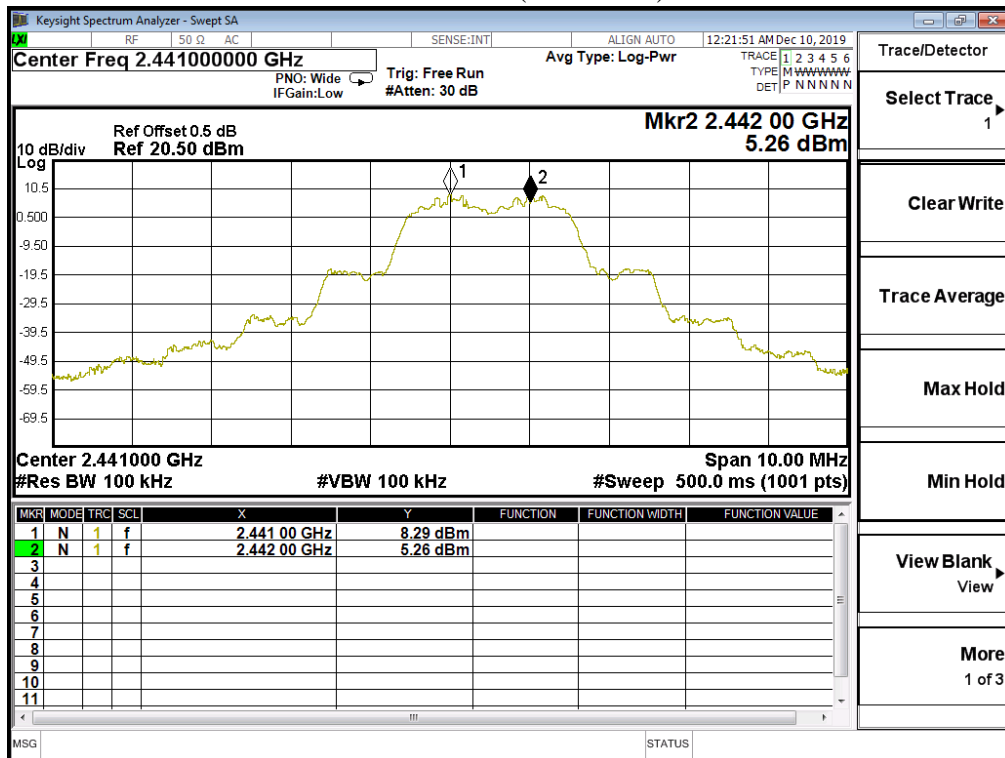
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	830.0	Pass
39	2441	1000	>25 kHz	842.0	Pass
78	2480	1000	>25 kHz	850.0	Pass

NOTE: The 20dB Bandwidth is refer to section 10.

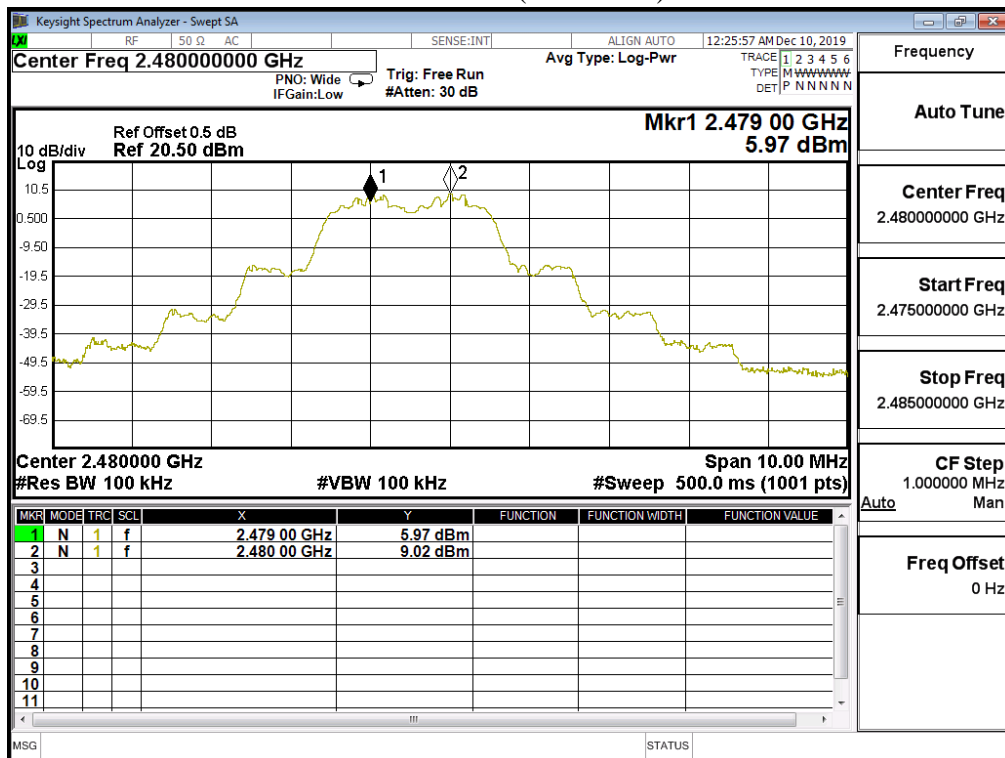
Channel 00 (2402MHz)



### Channel 39 (2441MHz)



### Channel 78 (2480MHz)



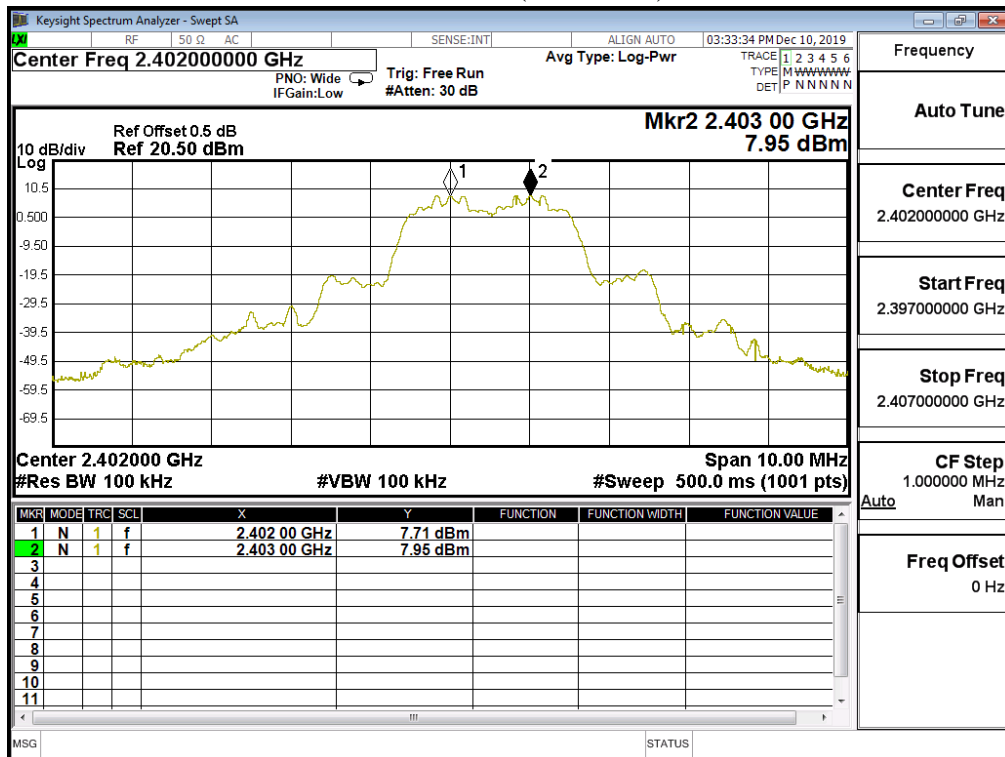


Product : Bluetooth Speakerphone  
 Test Item : Channel Separation  
 Test Mode : Mode 3: Transmit - 3Mbps (8DPSK)

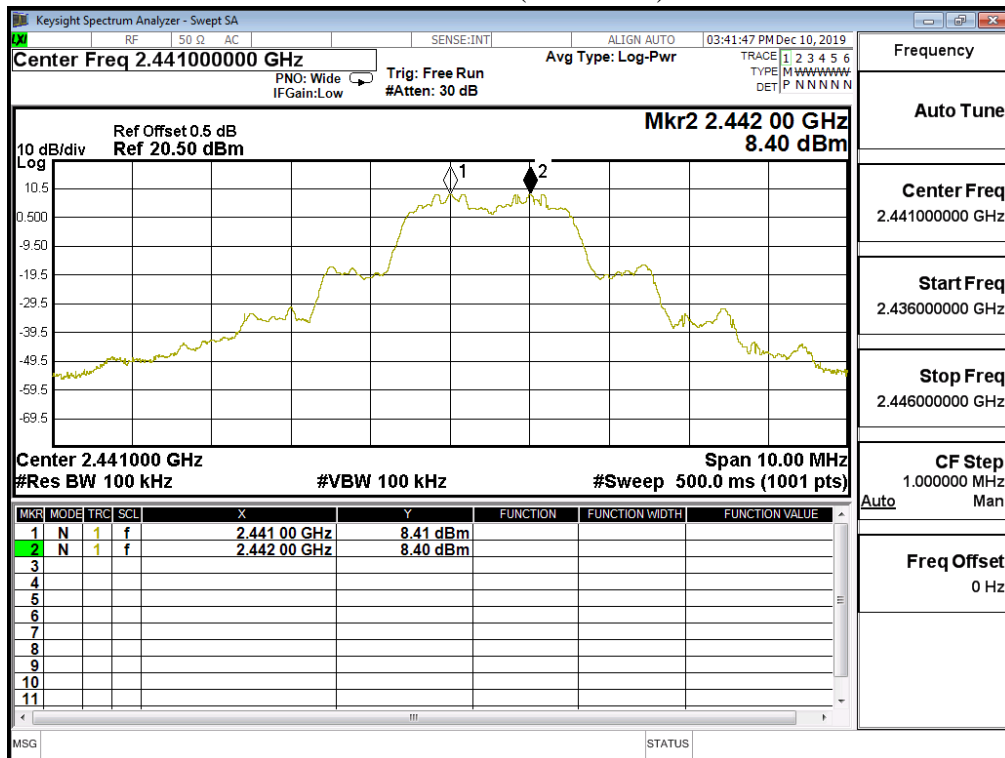
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	848.0	Pass
39	2441	1000	>25 kHz	854.0	Pass
78	2480	1000	>25 kHz	856.0	Pass

NOTE: The 20dB Bandwidth is refer to section 10.

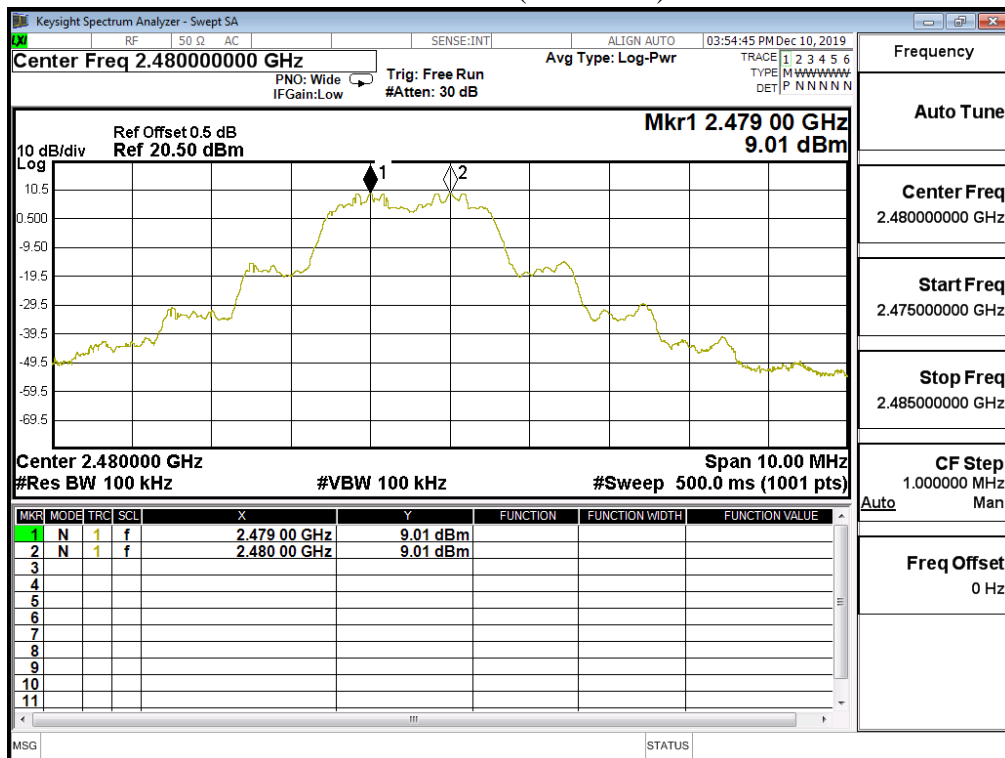
Channel 00 (2402MHz)



### Channel 39 (2441MHz)

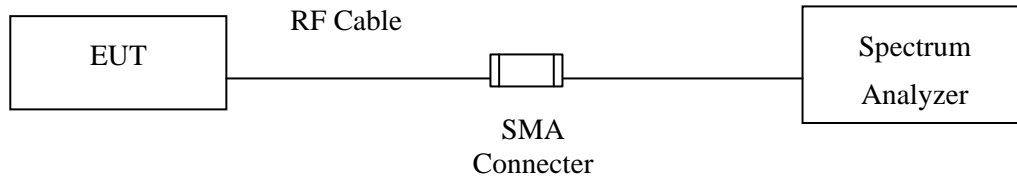


### Channel 78 (2480MHz)



## 9. Dwell Time

### 9.1. Test Setup



### 9.2. Limit

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.

### 9.3. Test Procedure

Tested according to FHSS test procedure of KDB558074 section 9 (b for compliance to FCC 47CFR 15.247 requirements).

### 9.4. Uncertainty

± 25msec

### 9.5. Test Result of Dwell Time

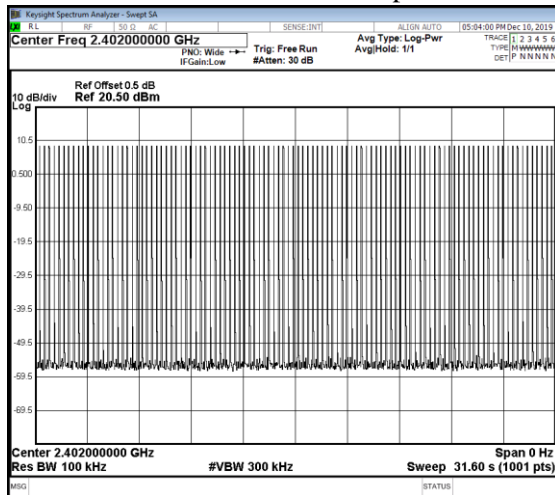
Product : Bluetooth Speakerphone  
 Test Item : Dwell Time  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.910	113	31600	328.830	400	Pass
2441	2.900	117	31600	339.300	400	Pass
2480	2.910	114	31600	331.740	400	Pass

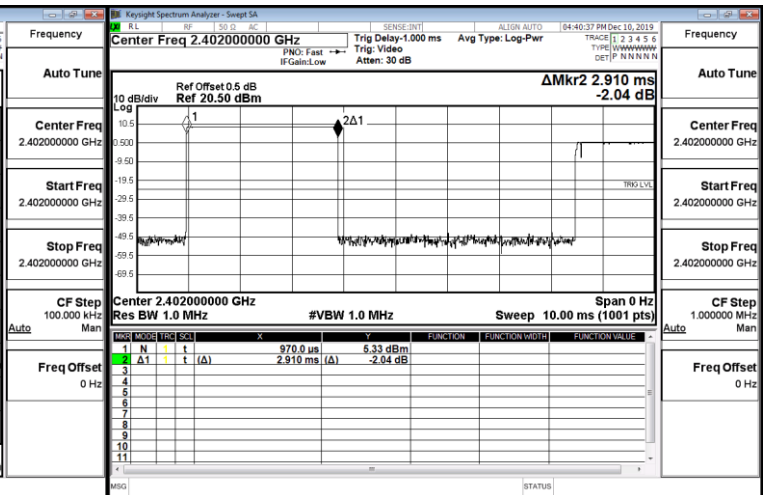
Dwell time = Time slot length\*Hopping of number

Sweep time= 79 Channel \* 0.4

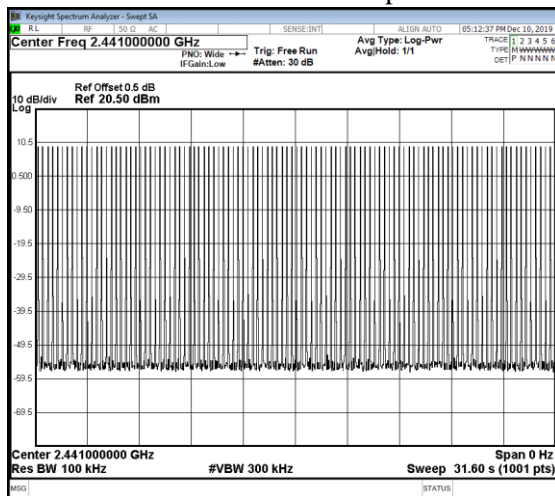
CH 00 Time Interval between hops



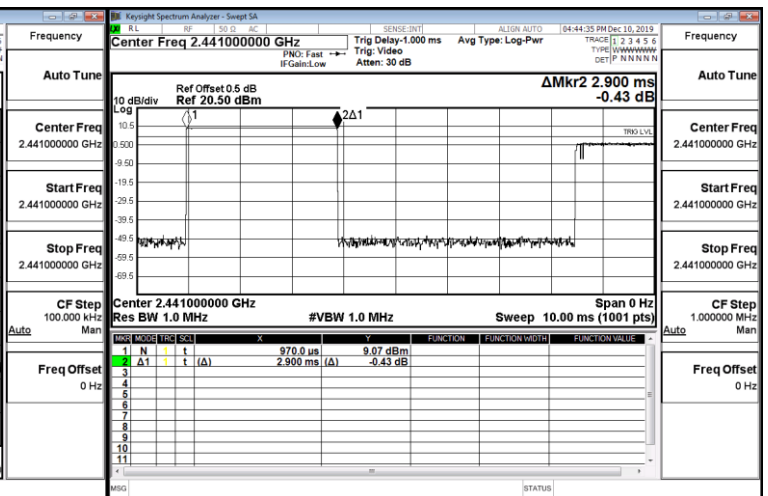
CH 00 Transmission Time



CH39 Time Interval between hops

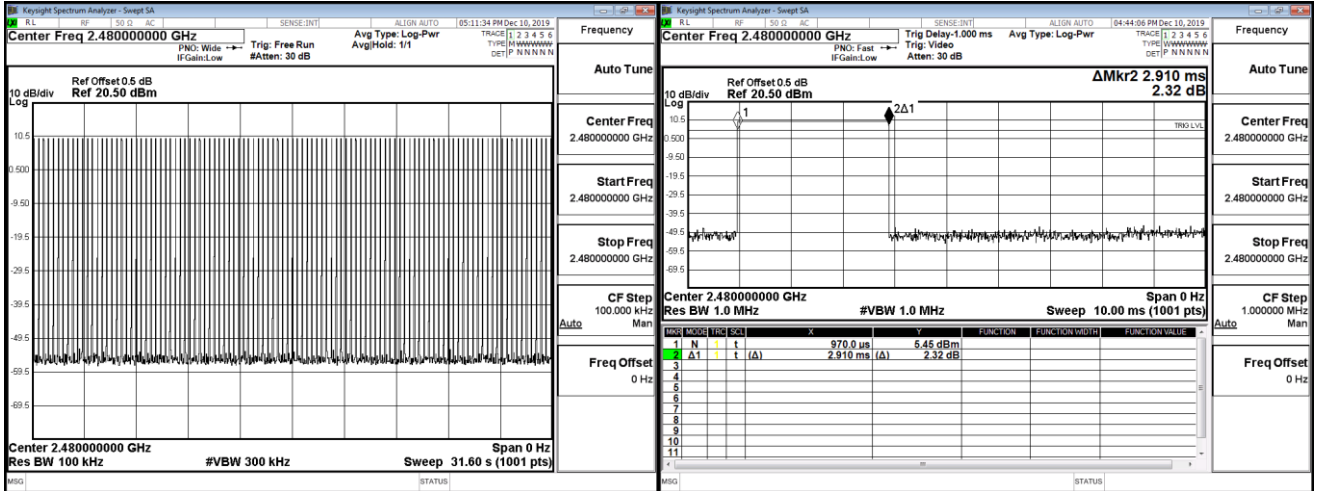


CH 39Transmission Time



CH 78 Time Interval between hops

CH 78 Transmission Time



Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

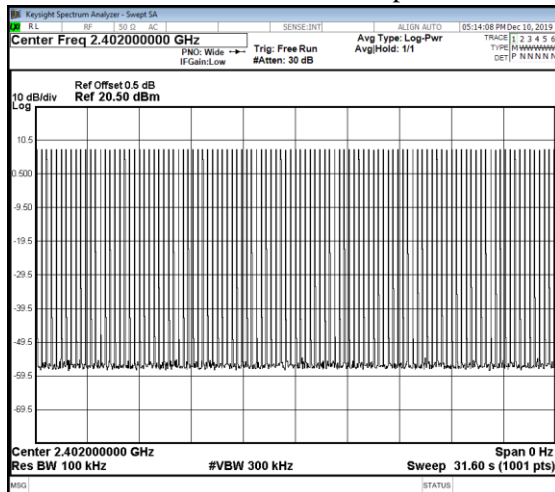
Product : Bluetooth Speakerphone  
 Test Item : Dwell Time  
 Test Mode : Mode 2: Transmit - 2Mbps ( $\pi/4$ DQPSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.900	107	31600	310.300	400	Pass
2441	2.910	106	31600	308.460	400	Pass
2480	2.910	106	31600	308.460	400	Pass

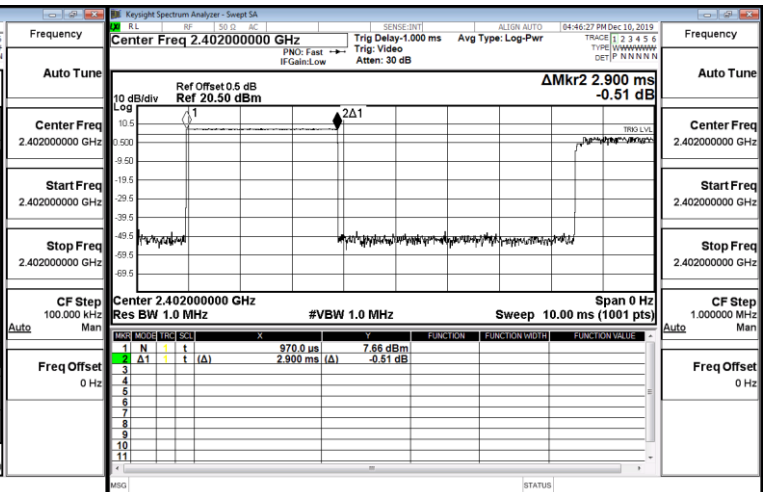
Dwell time = Time slot length\*Hopping of number

Sweep time= 79 Channel \* 0.4

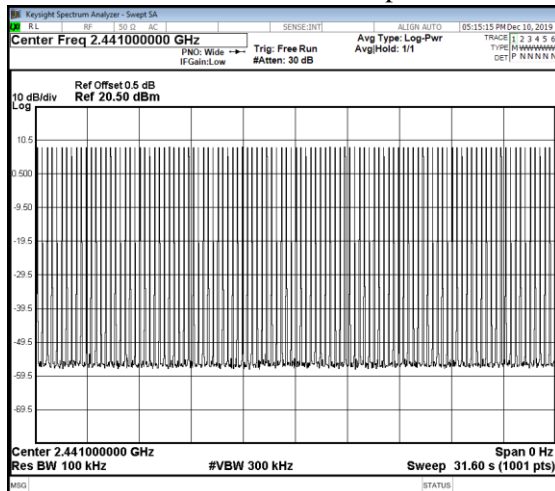
CH 00 Time Interval between hops



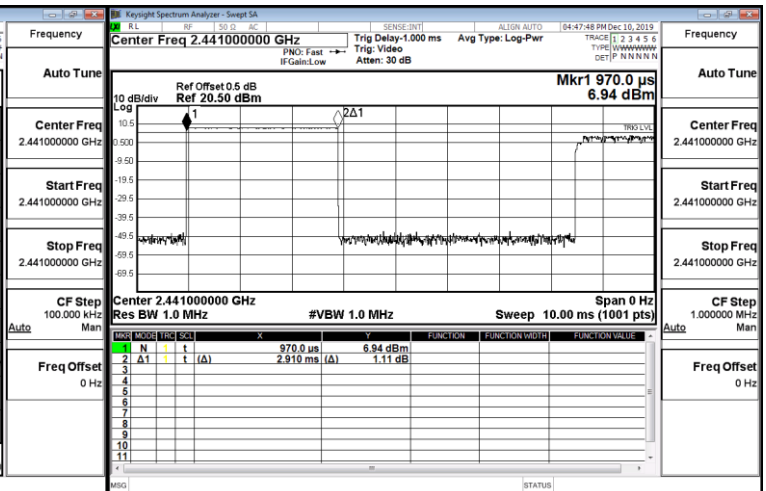
CH 00 Transmission Time



CH39 Time Interval between hops

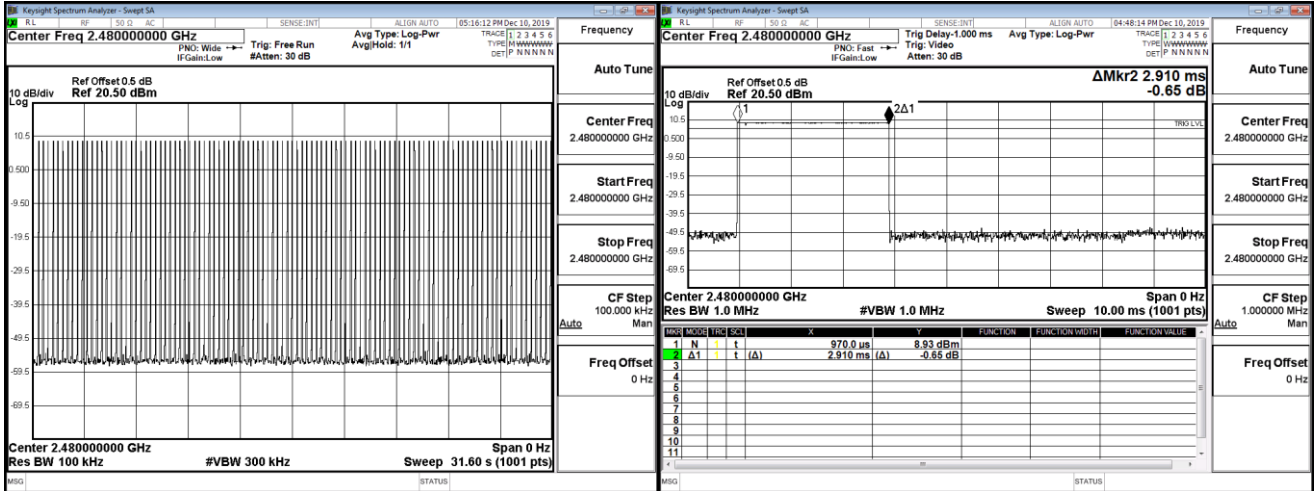


CH 39Transmission Time



CH 78 Time Interval between hops

CH 78 Transmission Time



Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

Product : Bluetooth Speakerphone  
 Test Item : Dwell Time  
 Test Mode : Mode 3: Transmit - 3Mbps (8DPSK) (Channel 00,39,78 –DH5)

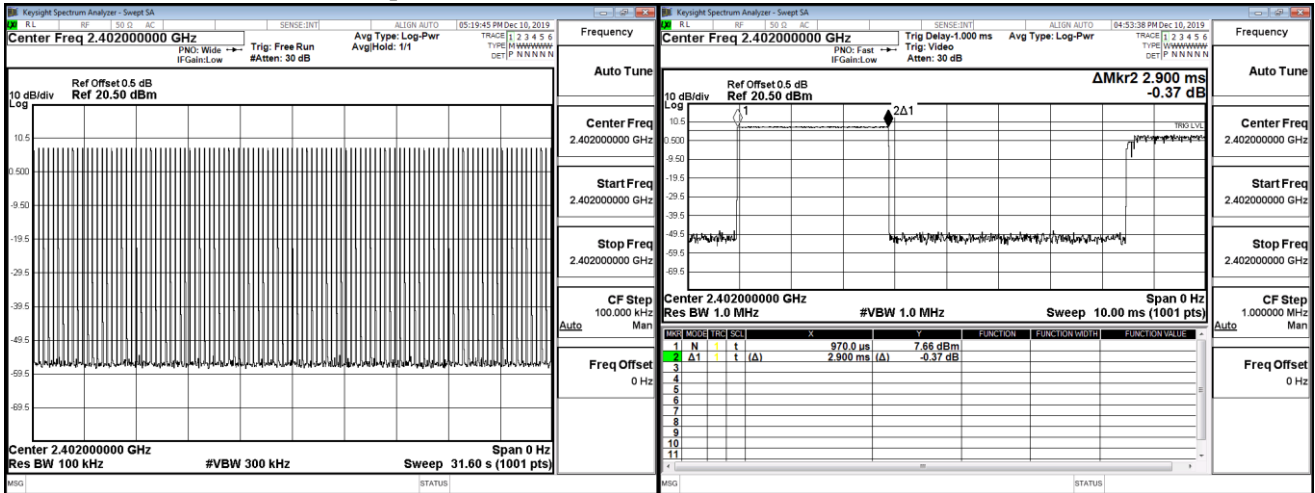
Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.900	118	31600	342.200	400	Pass
2441	2.900	106	31600	307.400	400	Pass
2480	2.910	119	31600	346.290	400	Pass

Dwell time = Time slot length\*Hopping of number

Sweep time= 79 Channel \* 0.4

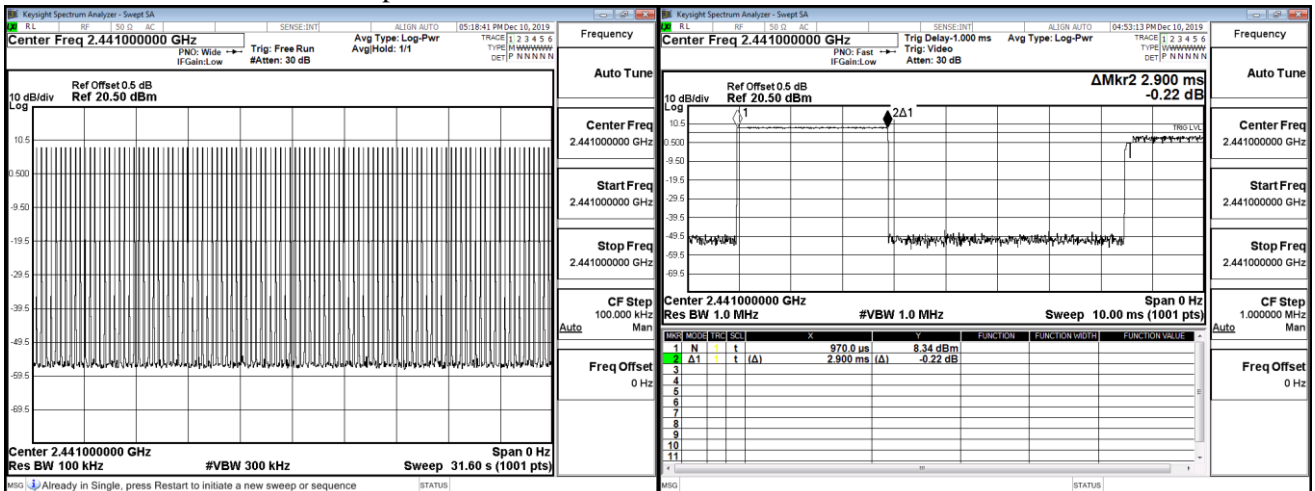
CH 00 Time Interval between hops

CH 00 Transmission Time



CH39 Time Interval between hops

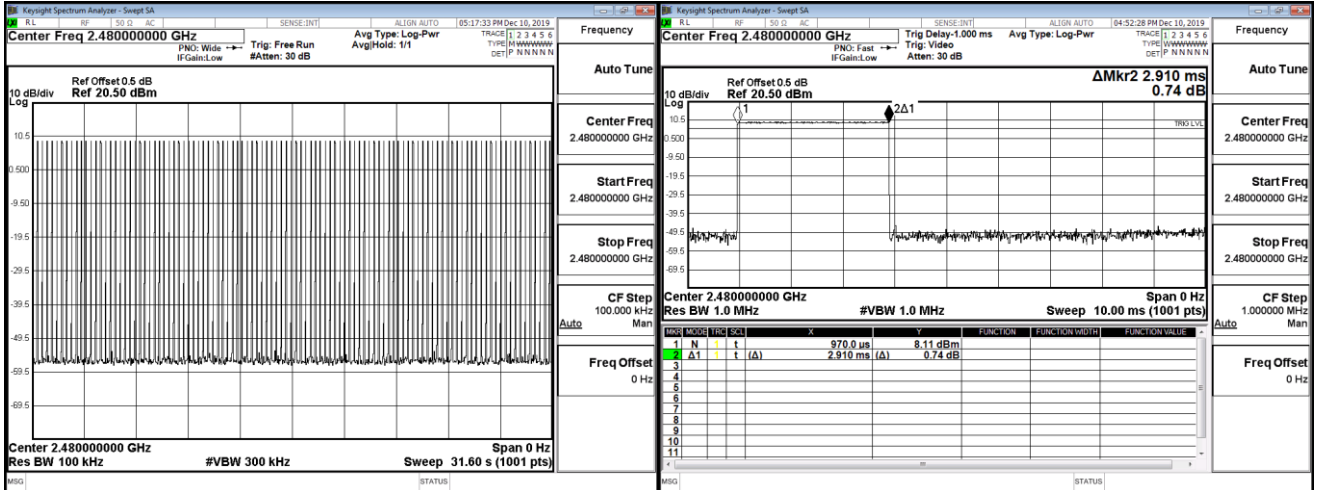
CH 39 Transmission Time





CH 78 Time Interval between hops

CH 78 Transmission Time

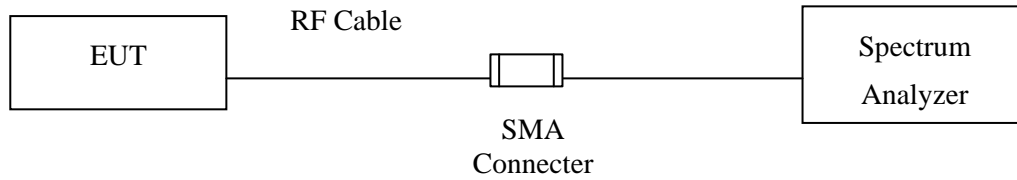


Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

## 10. Occupied Bandwidth

### 10.1. Test Setup



### 10.2. Limits

N/A

### 10.3. Test Procedure

Tested according to FHSS test procedure of KDB558074 section 9 (b for compliance to FCC 47CFR 15.247 requirements.

### 10.4. Uncertainty

$\pm 283\text{Hz}$

### 10.5. Test Result of Occupied Bandwidth

Product : Bluetooth Speakerphone  
 Test Item : Occupied Bandwidth Data  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	942	--	NA
39	2441	942	--	NA
78	2480	942	--	NA

Figure Channel 00:

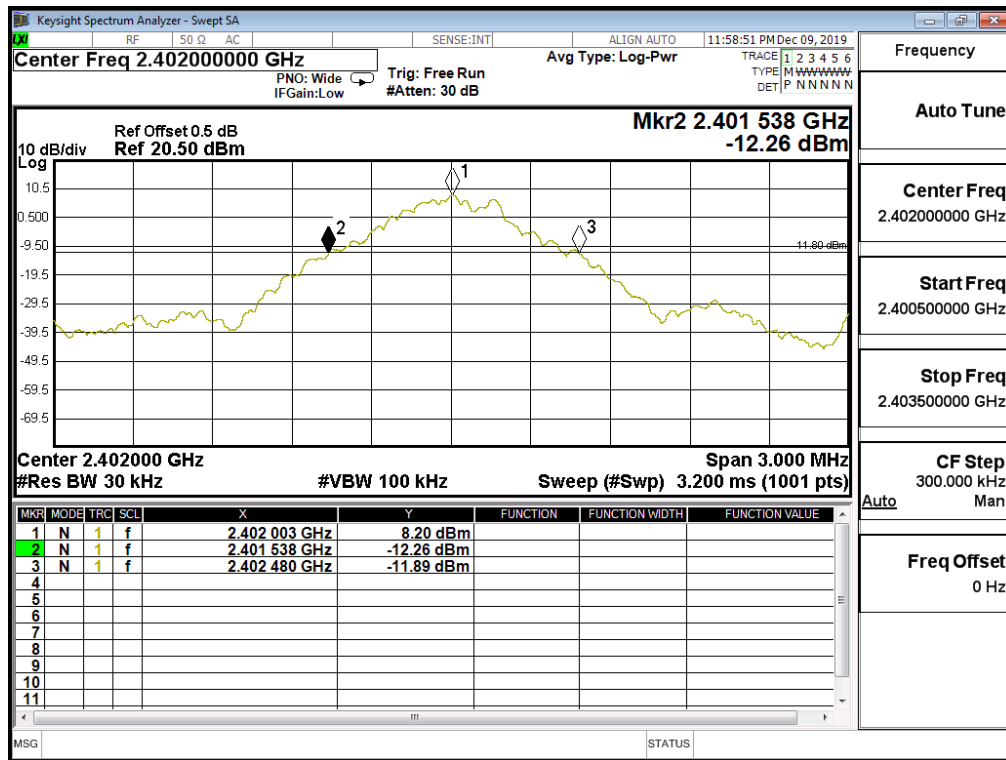


Figure Channel 39:

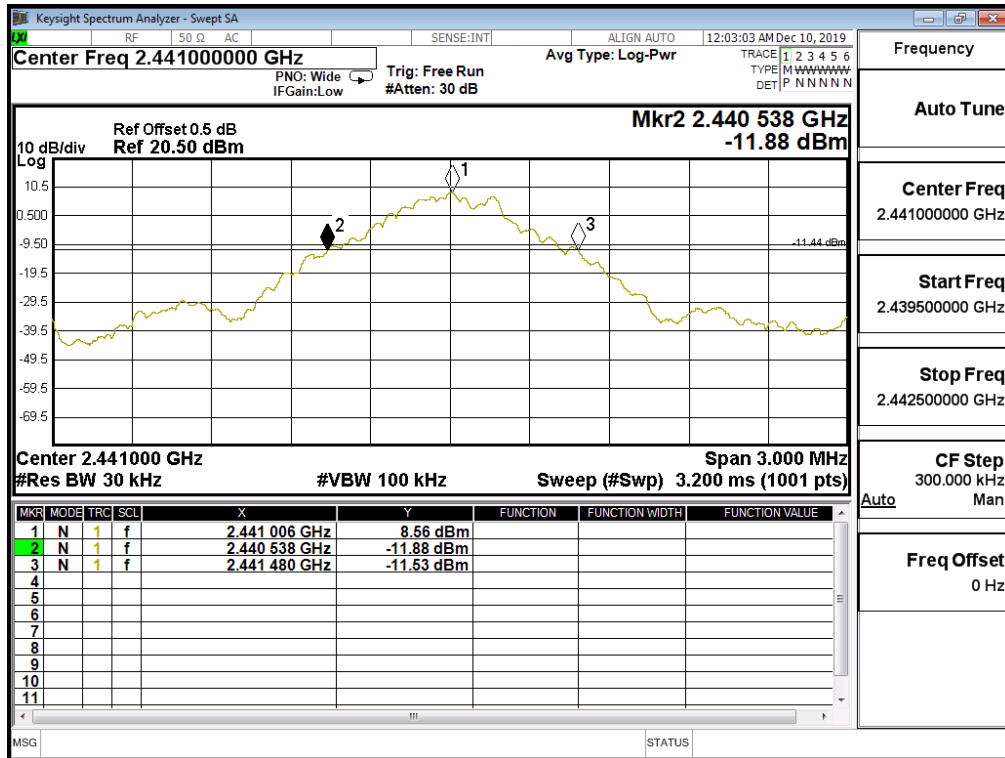
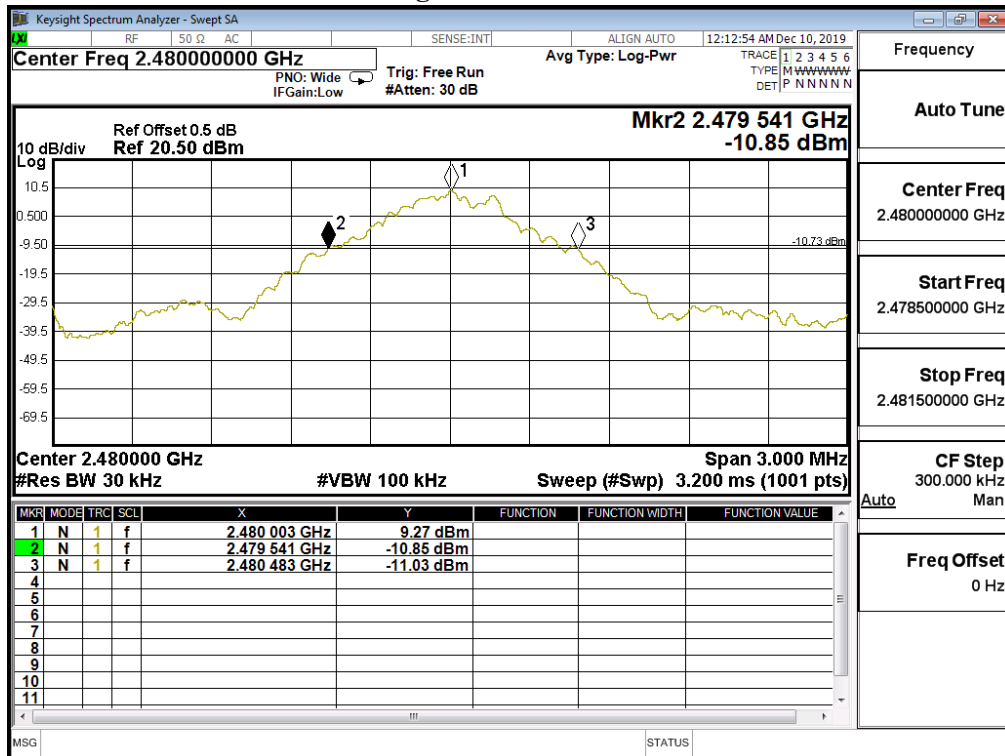


Figure Channel 78:



Product : Bluetooth Speakerphone  
 Test Item : Occupied Bandwidth Data  
 Test Mode : Mode 2: Transmit - 2Mbps ( $\pi/4$ DQPSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1245	--	NA
39	2441	1263	--	NA
78	2480	1275	--	NA

Figure Channel 00:

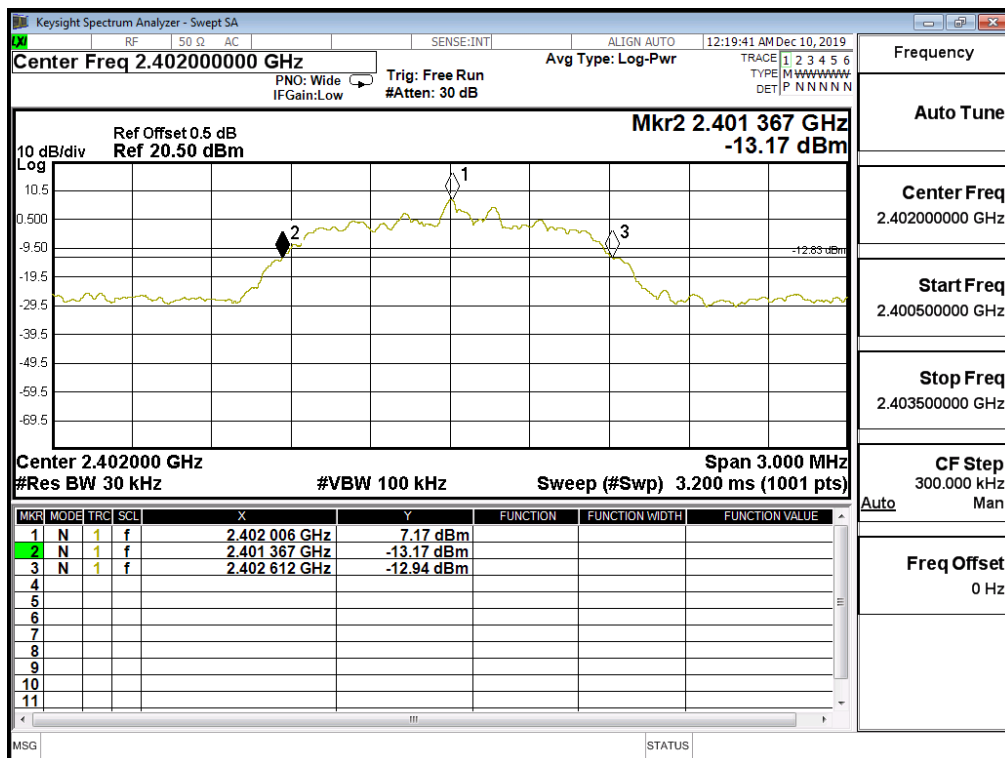


Figure Channel 39:

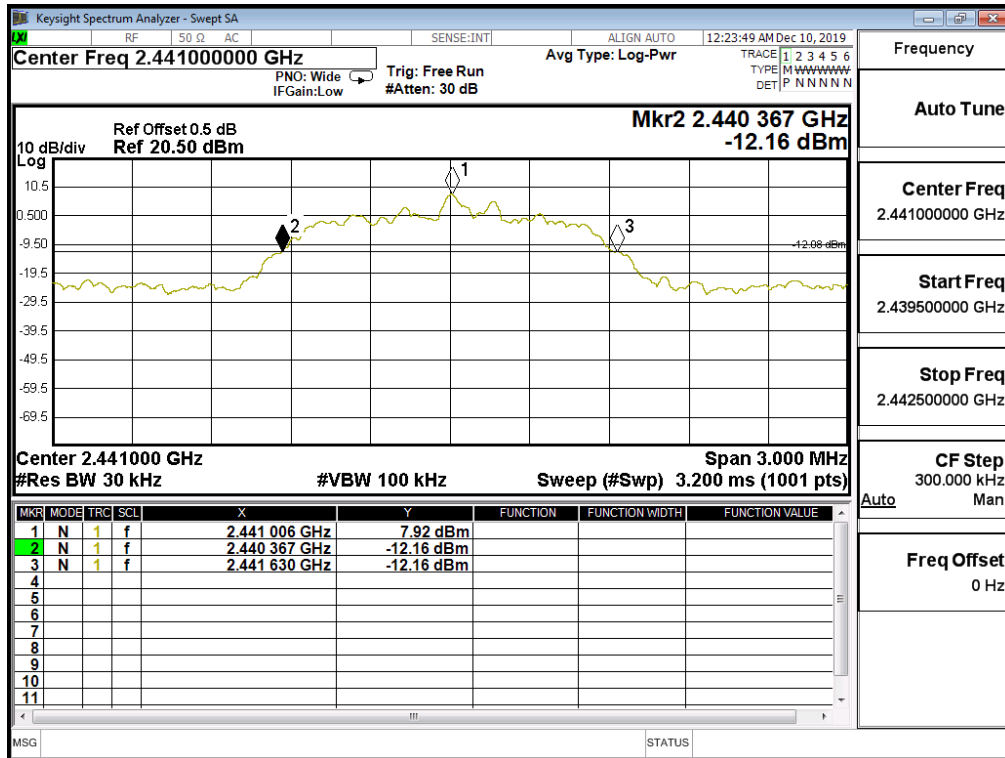
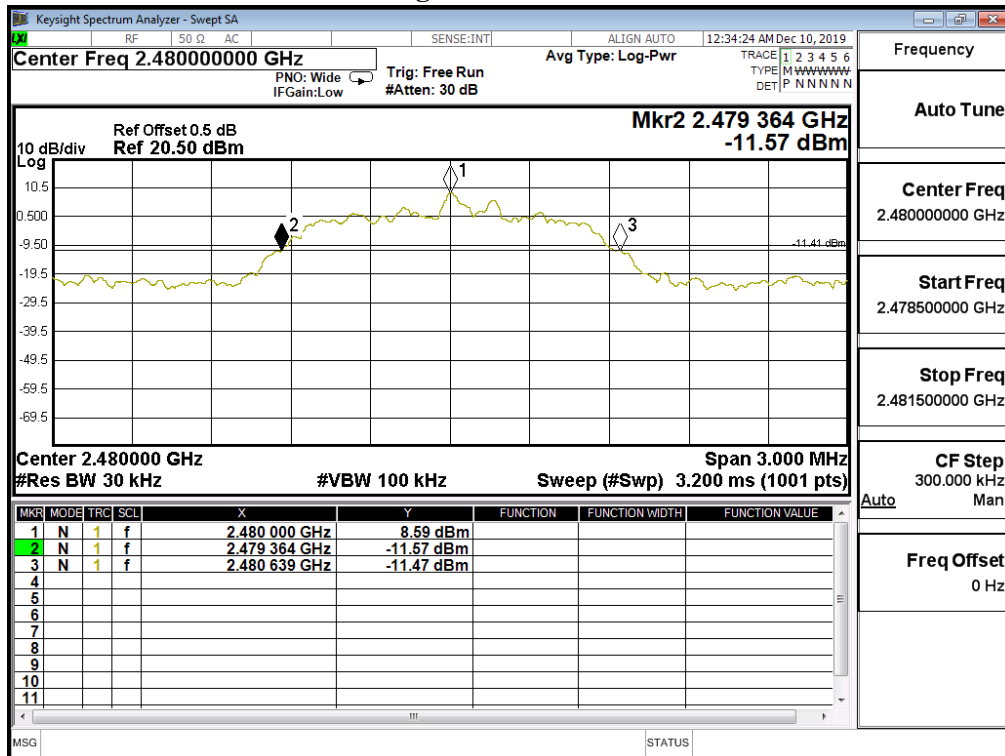


Figure Channel 78:



Product : Bluetooth Speakerphone  
 Test Item : Occupied Bandwidth Data  
 Test Mode : Mode 3: Transmit - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1272	--	NA
39	2441	1281	--	NA
78	2480	1284	--	NA

Figure Channel 00:

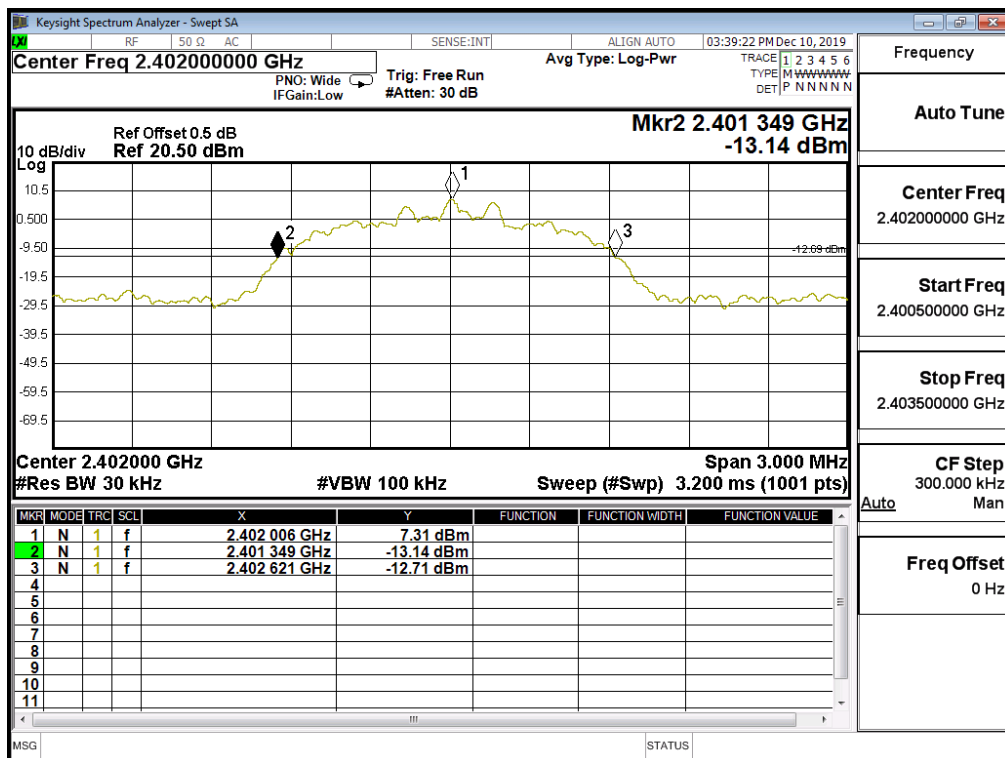


Figure Channel 39:

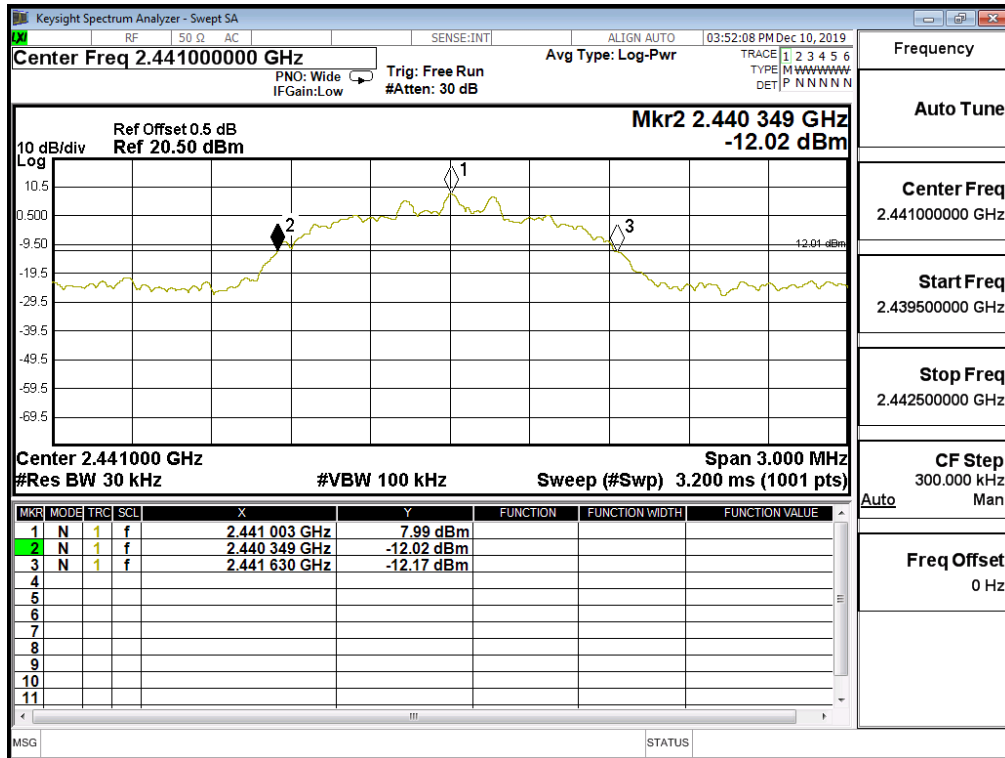
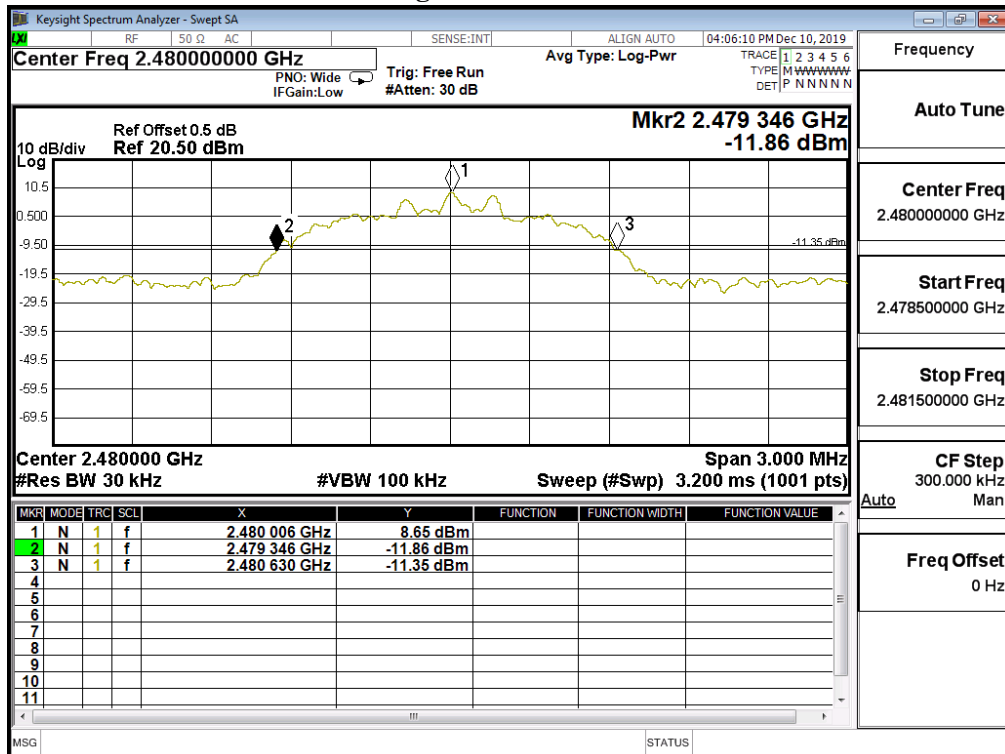


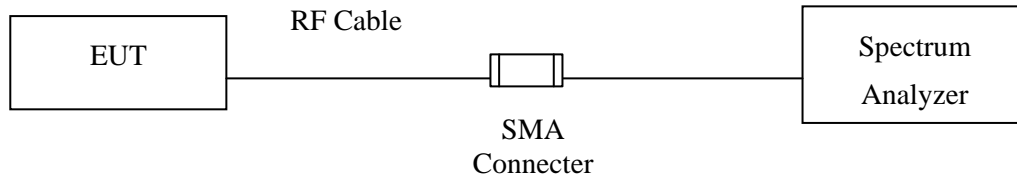
Figure Channel 78:





## 11. Duty Cycle

### 11.1. Test Setup

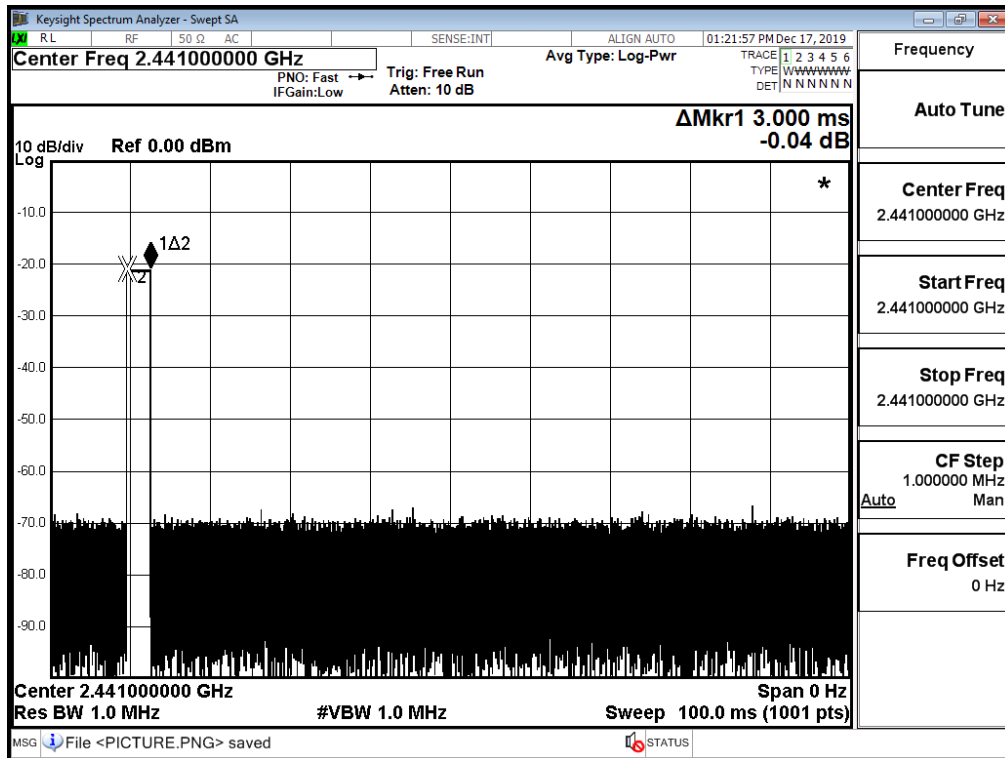


### 11.2. Uncertainty

± 25msec

### 11.3. Test Result of Duty Cycle

Product : Bluetooth Speakerphone  
 Test Item : Duty Cycle  
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)



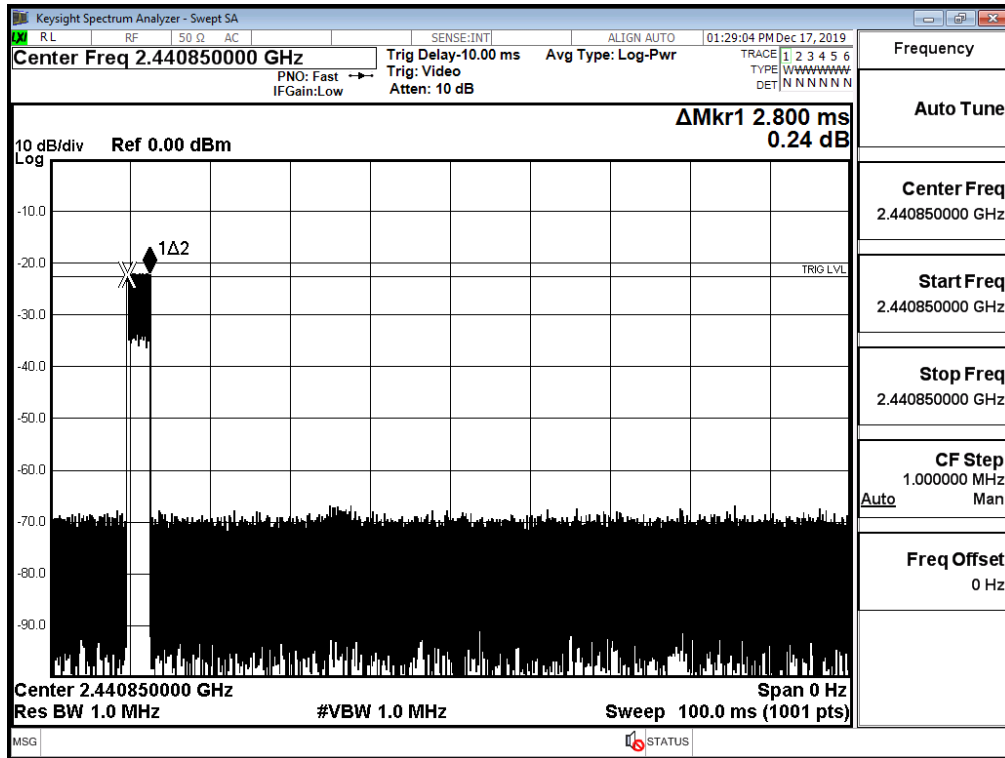
Time on of 100ms=3.000ms

Duty Cycle=3.000ms / 100ms= 0.03

Duty Cycle correction factor= 20 LOG 0.03= -30.458 dB

Duty Cycle correction factor	-30.458	dB
------------------------------	---------	----

Product : Bluetooth Speakerphone  
 Test Item : Duty Cycle  
 Test Mode : Mode 2: Transmit - 2Mbps ( $\pi/4$ DQPSK)



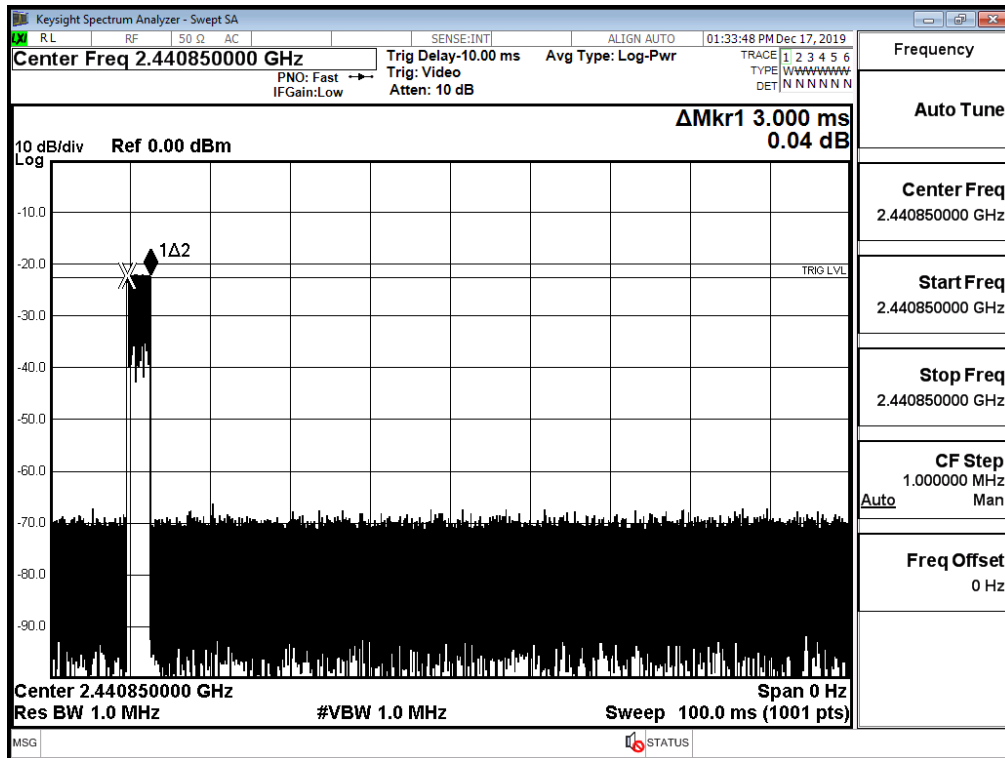
Time on of 100ms=2.800ms

Duty Cycle= $2.800\text{ms} / 100\text{ms} = 0.028$

Duty Cycle correction factor= $20 \text{ LOG } 0.028 = -31.057 \text{ dB}$

Duty Cycle correction factor	-31.057	dB
------------------------------	---------	----

Product : Bluetooth Speakerphone  
 Test Item : Duty Cycle  
 Test Mode : Mode 3: Transmit - 3Mbps (8DPSK)



Time on of 100ms=3.000ms

Duty Cycle= $3.000\text{ms} / 100\text{ms} = 0.03$

Duty Cycle correction factor= $20 \text{ LOG } 0.03 = -30.458 \text{ dB}$

Duty Cycle correction factor	-30.458	dB
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## **12. EMI Reduction Method During Compliance Testing**

No modification was made during testing.