5.5. Test Result of RF Antenna Conducted Test

Product	:	Bluetooth Headset
Test Item	:	RF Antenna Conducted Test
Test date	:	2019/11/09
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Figure Channel 00:

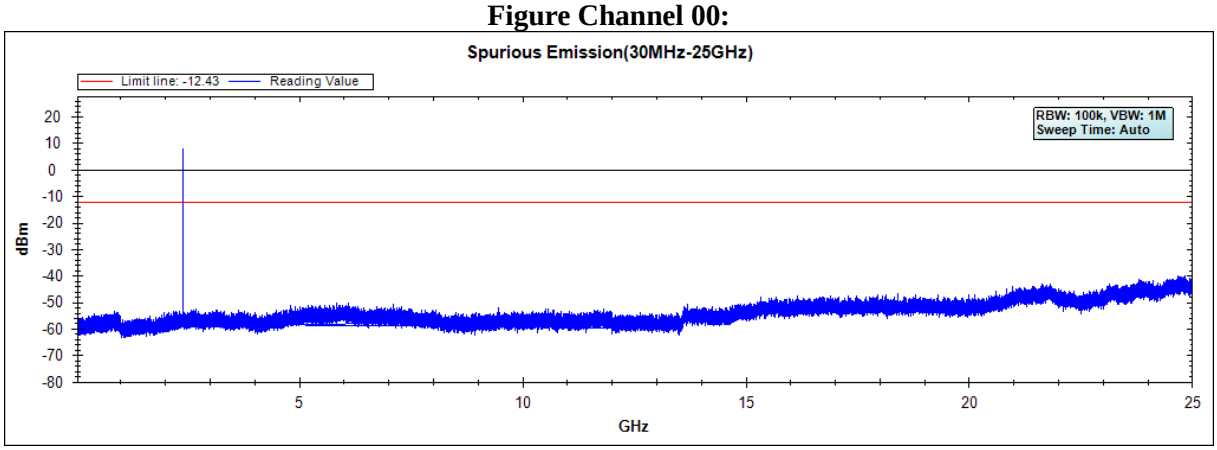


Figure Channel 39:

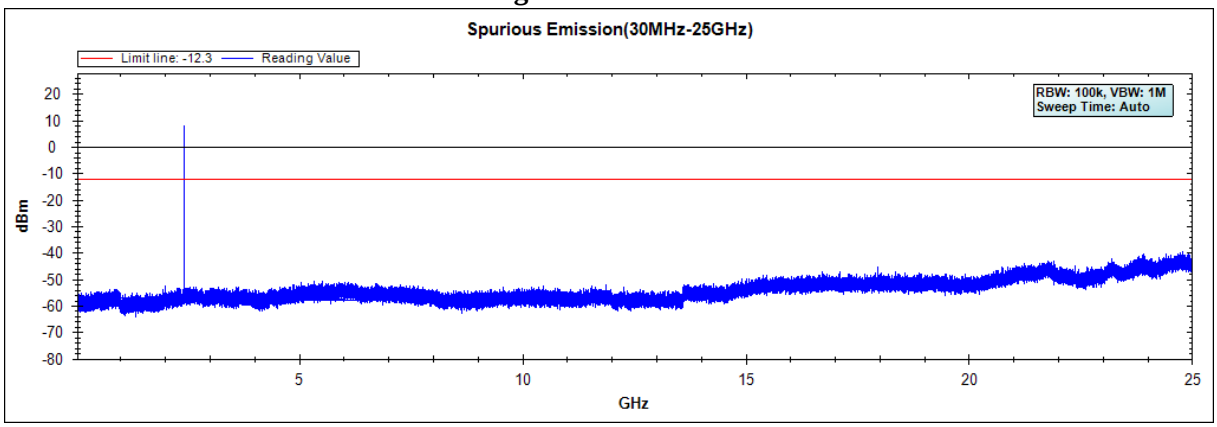
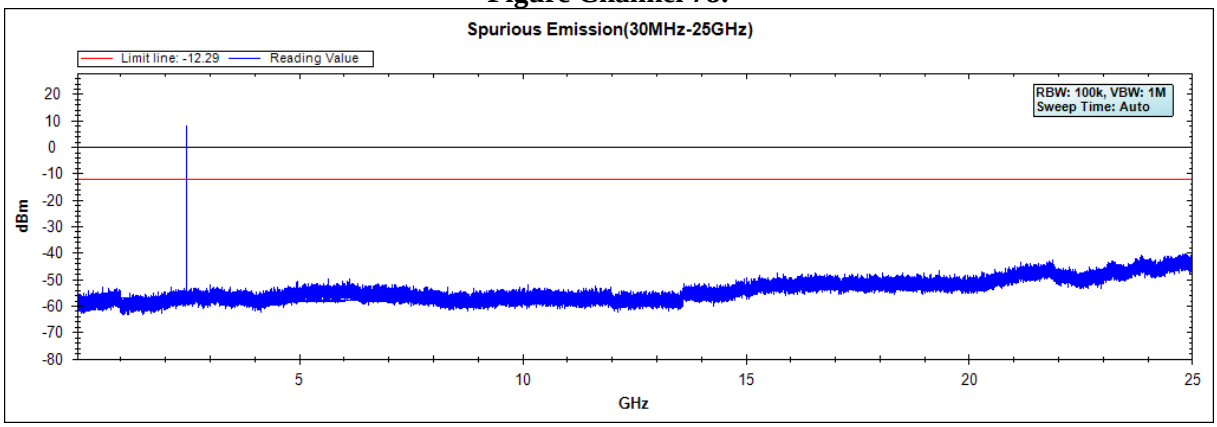


Figure Channel 78:



Note: The above test pattern is synthesized by multiple of the frequency range.

Product	:	Bluetooth Headset
Test Item	:	RF Antenna Conducted Test
Test date	:	2019/11/09
Test Mode	:	Mode 2: Transmit - 2Mbps (π/4DQPSK)

Figure Channel 00:

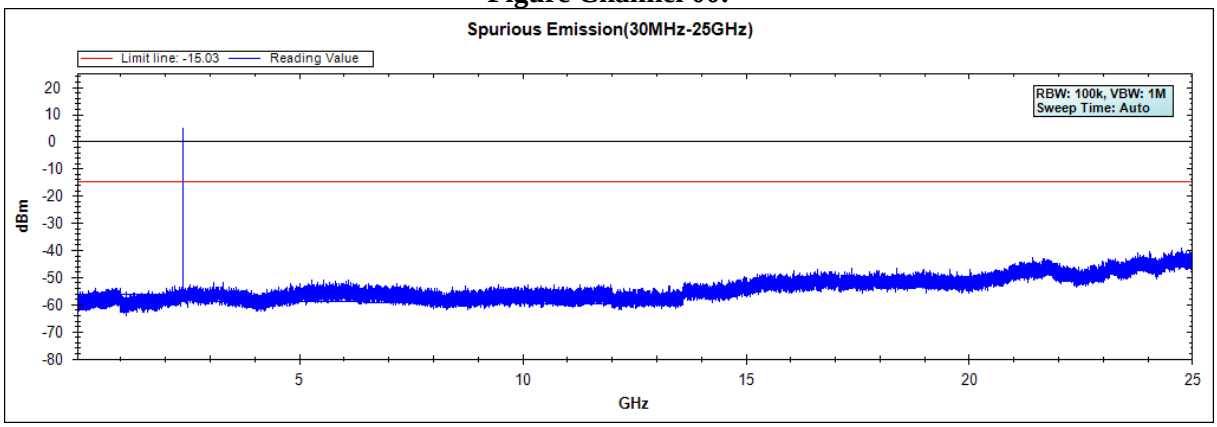


Figure Channel 39:

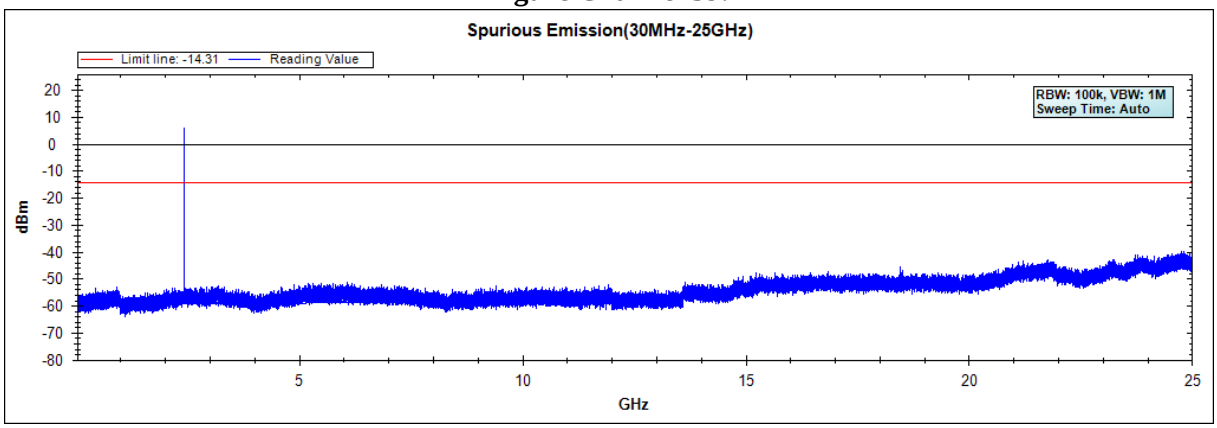
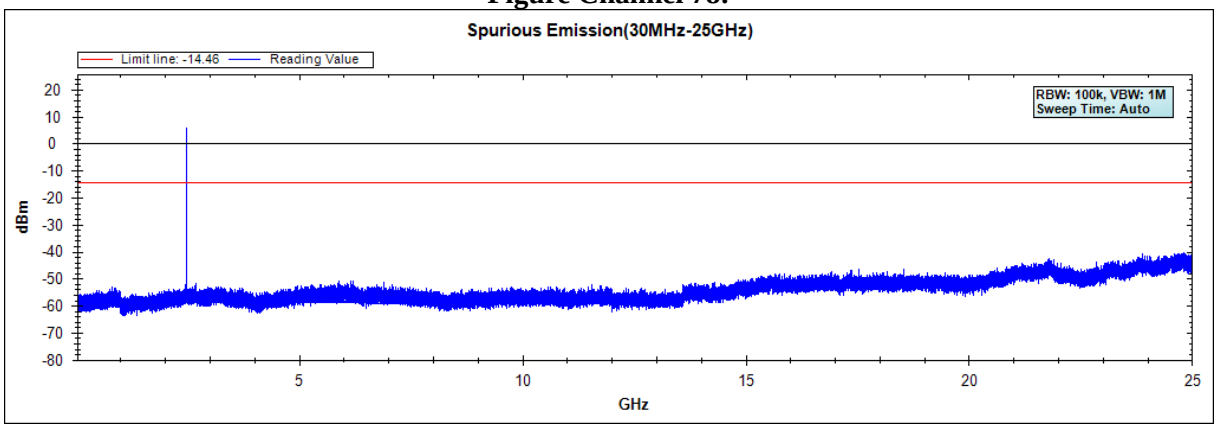


Figure Channel 78:



Note: The above test pattern is synthesized by multiple of the frequency range.

Product	:	Bluetooth Headset
Test Item	:	RF Antenna Conducted Test
Test date	:	2019/11/09
Test Mode	:	Mode 3: Transmit - 3Mbps (8DPSK)

Figure Channel 00:

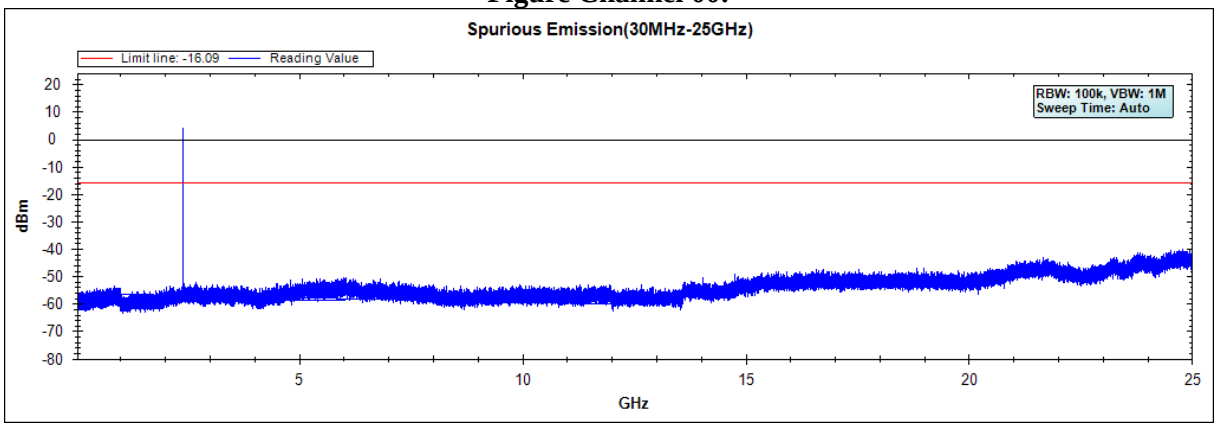


Figure Channel 39:

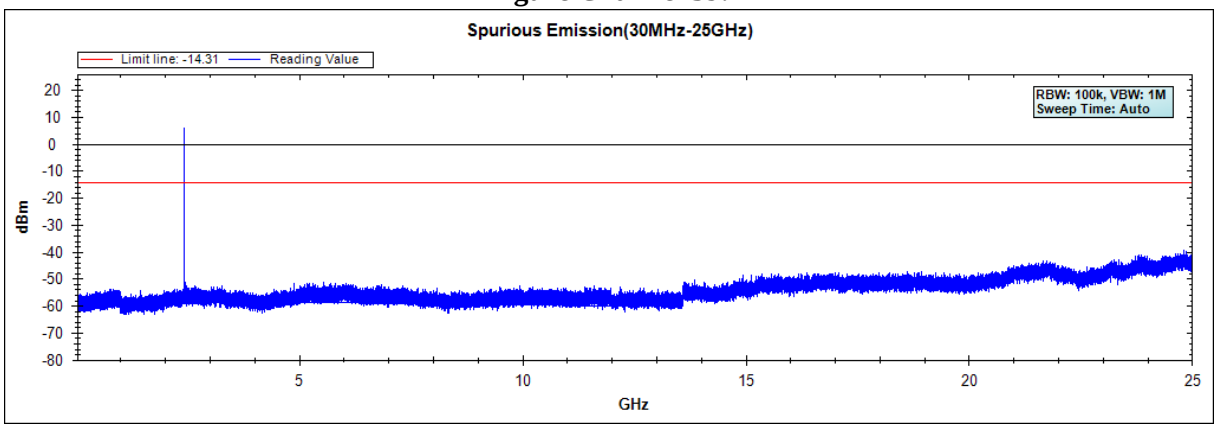
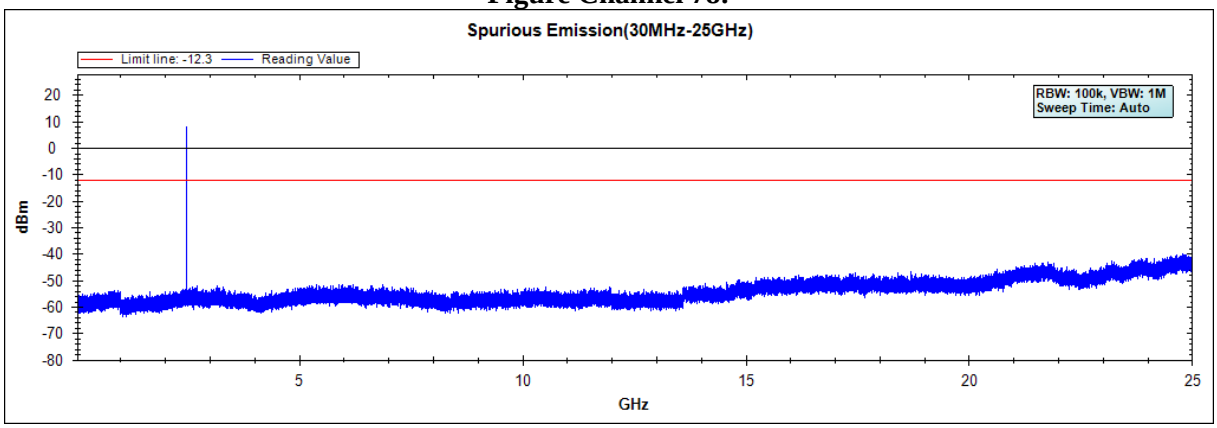


Figure Channel 78:



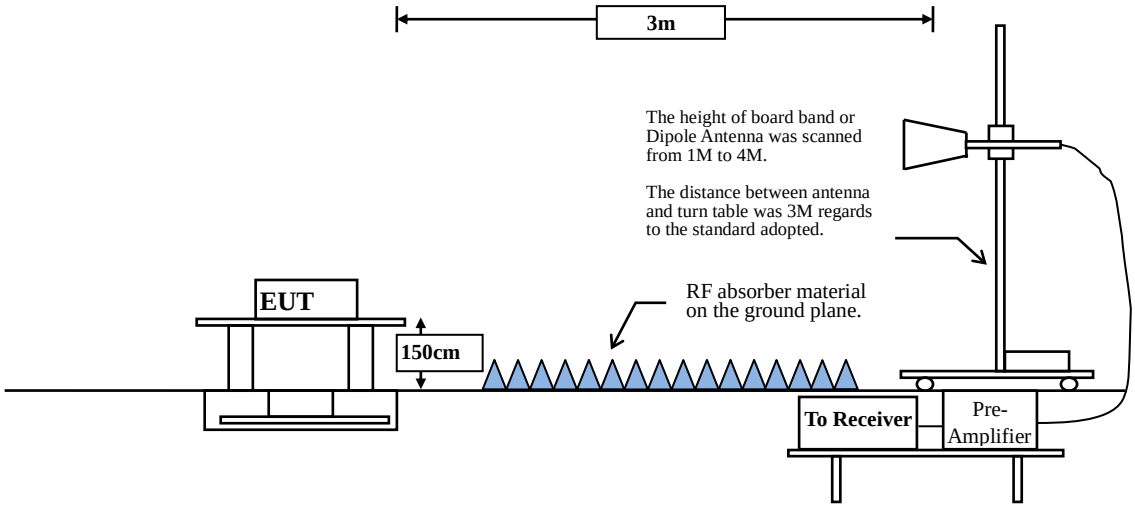
Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

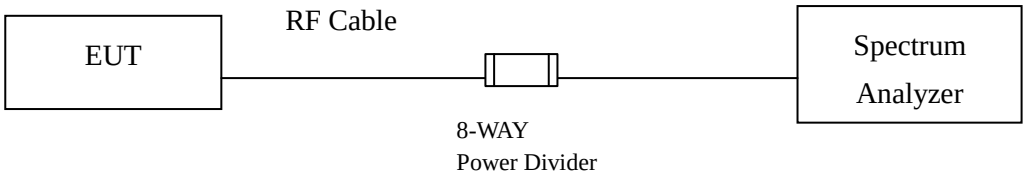
6.1. Test Setup

RF Radiated Measurement:

Above 1GHz



RF Conducted Measurement



6.2. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

The bandwidth setting below 1GHz and above 1GHz on the field strength meter is 120 kHz and 1MHz, respectively.

6.4. Uncertainty

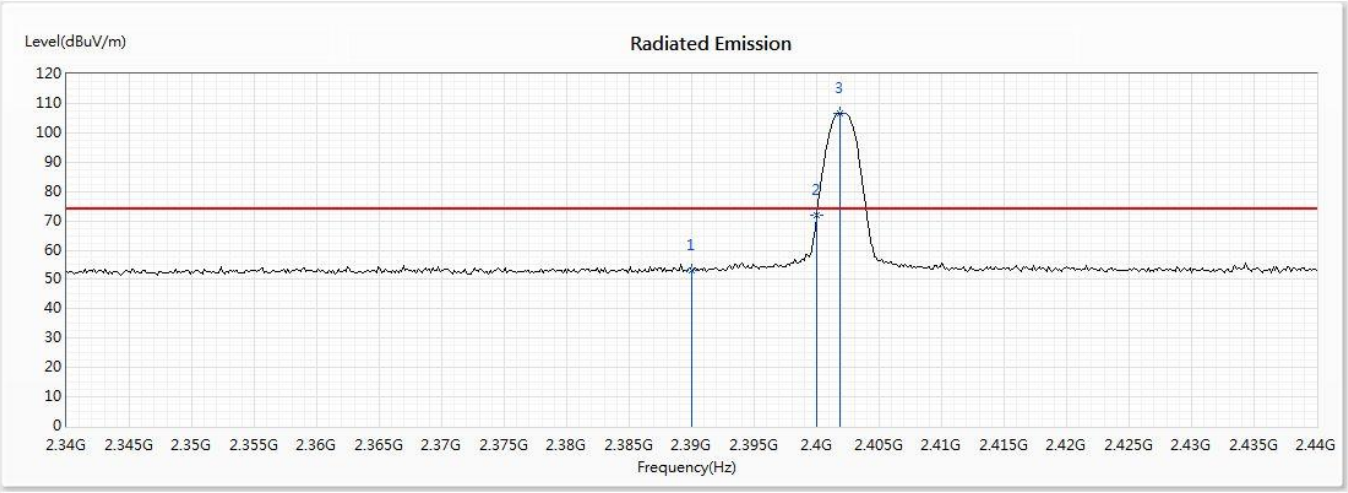
± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

6.5. Test Result of Band Edge

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2402MHz)

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	53.14	74.00	-20.86	40.25	12.89	PK
2	2400	71.83	--	--	58.87	12.96	PK
! 3	2401.884	106.62	--	--	93.65	12.97	PK

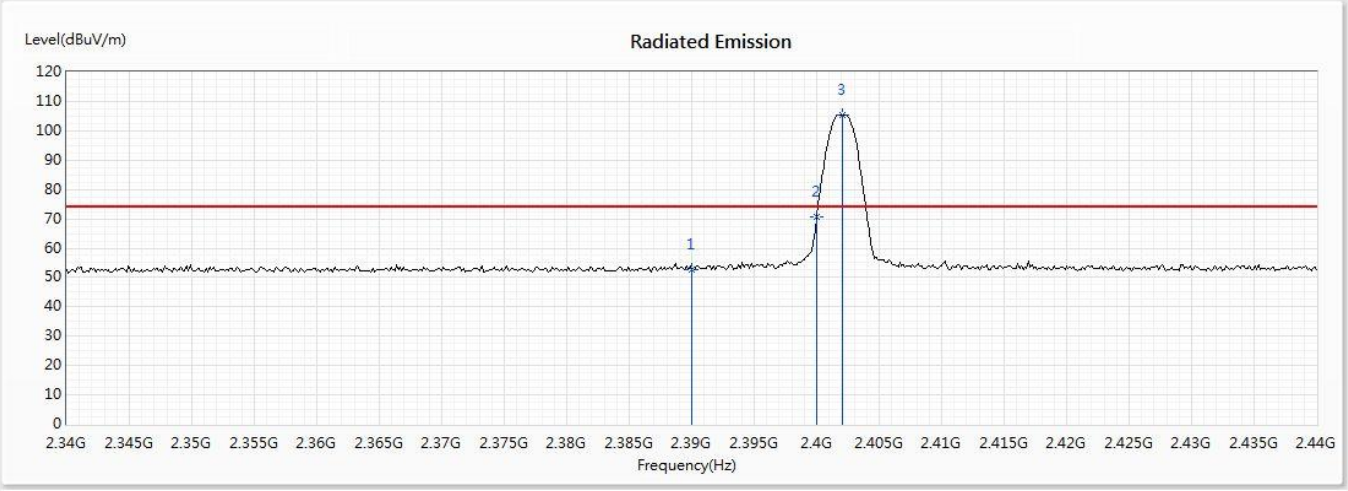
Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
00 (Average)	2390	53.14	-24.734	28.406	-25.594	54.000
00 (Average)	2400	71.83	-24.734	47.096	--	--
00 (Average)	2401.884	106.62	-24.734	81.886	--	--

Note:
1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product	:	Bluetooth Headset
Test Item	:	Band Edge
Test date	:	2019/11/14
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK) (2402MHz)

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	52.50	74.00	-21.50	39.61	12.89	PK
2	2400	70.52	--	--	57.56	12.96	PK
! 3	2402.029	105.42	--	--	92.45	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

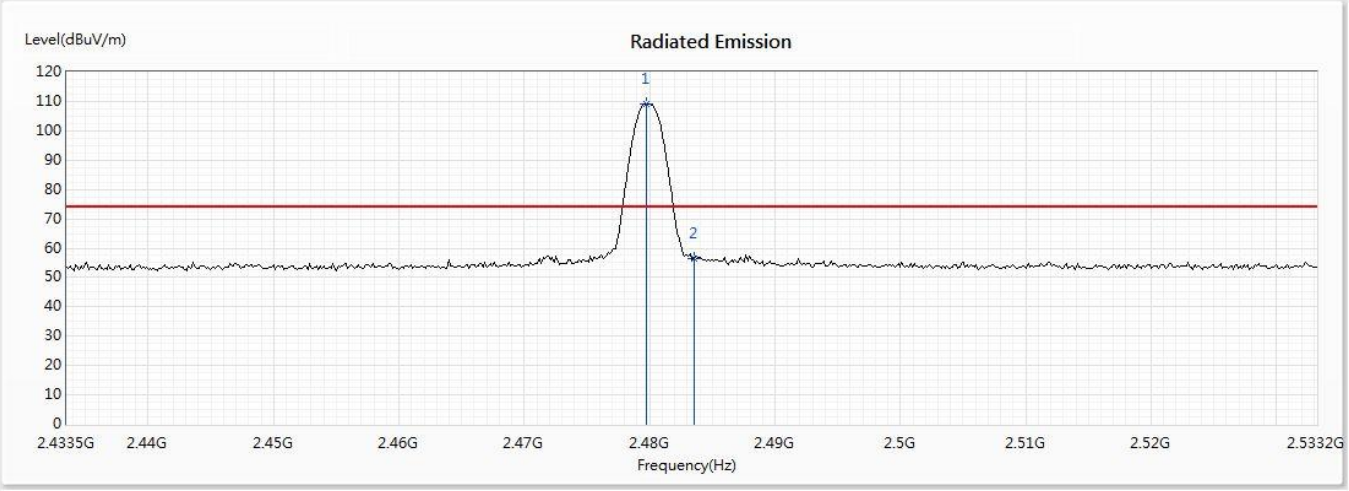
Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
00 (Average)	2390	52.5	-24.734	27.766	-26.234	54.000
00 (Average)	2400	70.52	-24.734	45.786	--	--
00 (Average)	2402.029	105.42	-24.734	80.686	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2480MHz)

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
! 1	2479.738	109.01	--	--	95.64	13.37	PK
2	2483.5	56.45	74.00	-17.55	43.07	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

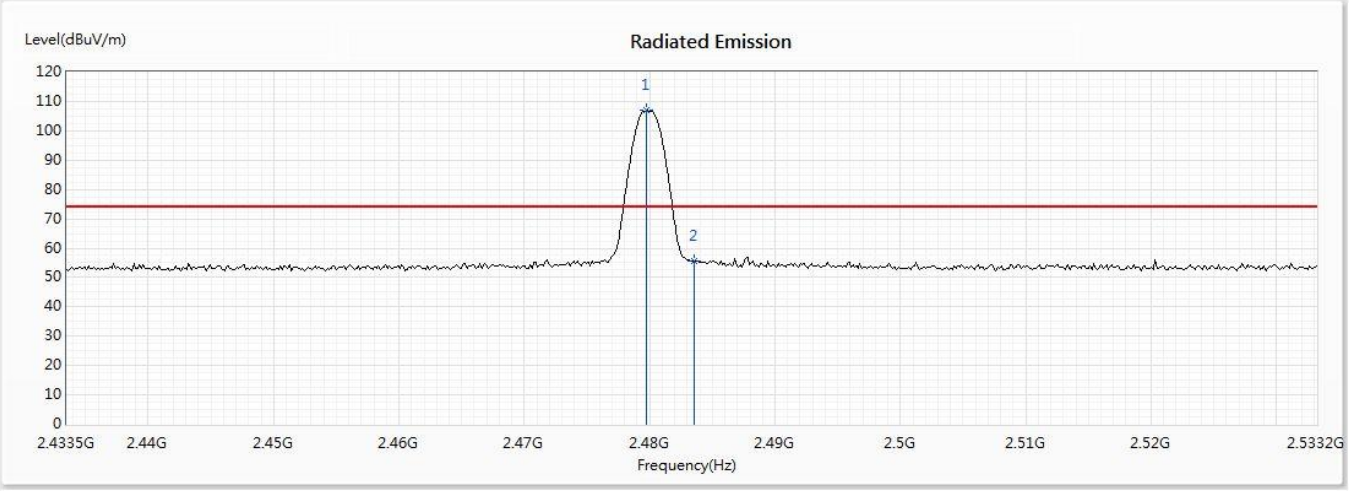
Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
78 (Average)	2479.738	109.01	-24.734	84.276	--	--
78 (Average)	2483.5	56.45	-24.734	31.716	-22.284	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2480MHz)

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
! 1	2479.738	106.83	--	--	93.46	13.37	PK
2	2483.5	55.60	74.00	-18.40	42.22	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

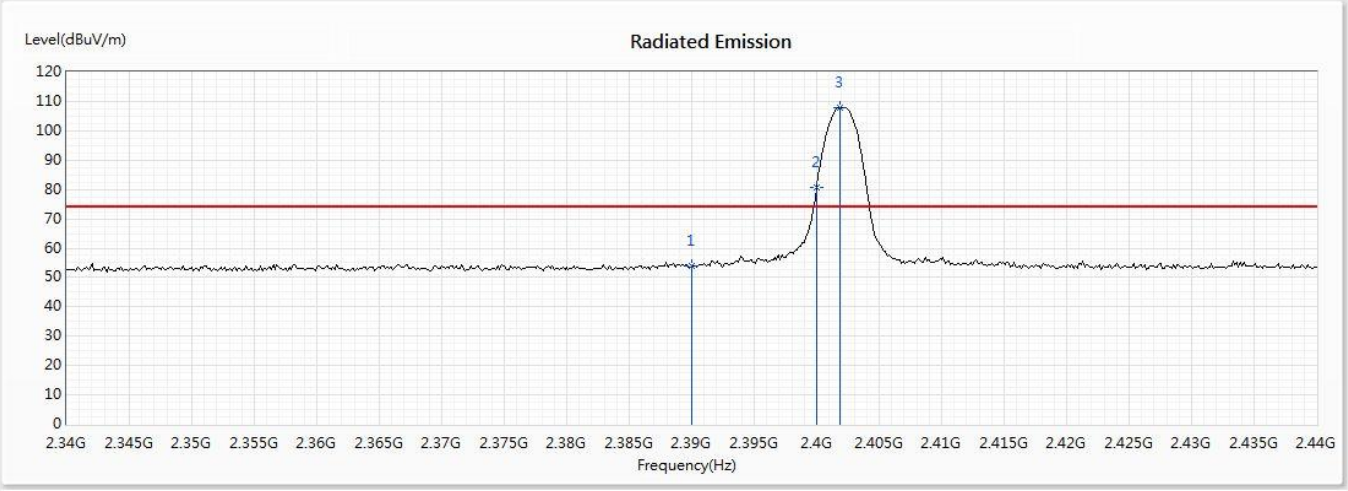
Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
78 (Average)	2479.738	106.83	-24.734	82.096	--	--
78 (Average)	2483.5	55.6	-24.734	30.866	-23.134	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK) (2402MHz)

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	53.94	74.00	-20.06	41.05	12.89	PK
! 2	2400	80.67	--	--	67.71	12.96	PK
! 3	2401.884	107.86	--	--	94.89	12.97	PK

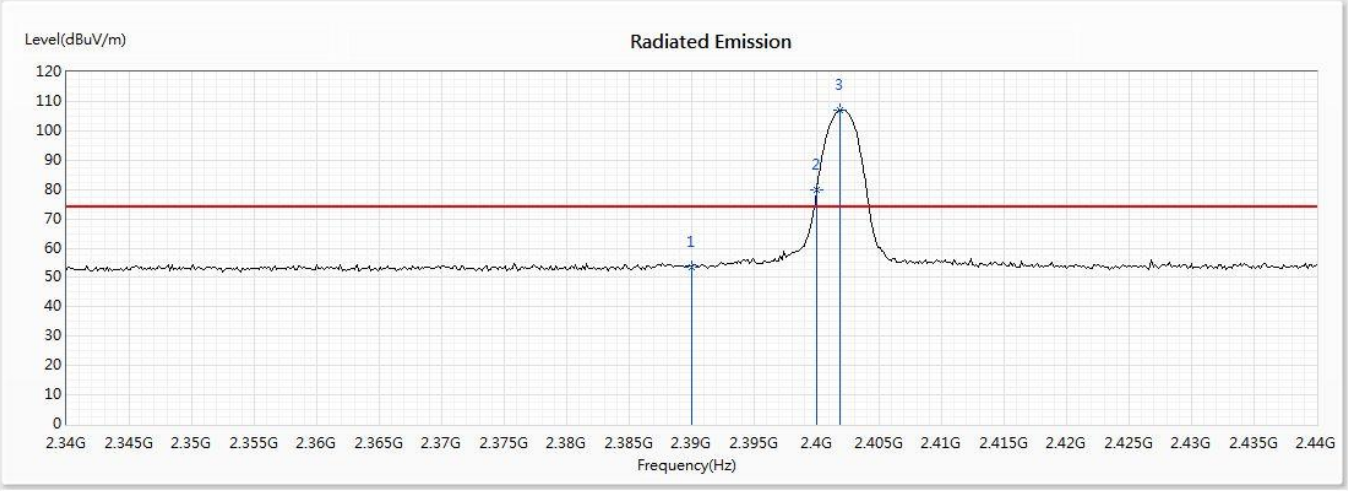
Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
00 (Average)	2390	53.94	-24.954	28.986	-25.014	54.000
00 (Average)	2400	80.67	-24.954	55.716	--	--
00 (Average)	2401.884	107.86	-24.954	82.906	--	--

Note:
1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK) (2402MHz)

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	53.67	74.00	-20.33	40.78	12.89	PK
! 2	2400	79.88	--	--	66.92	12.96	PK
! 3	2401.884	106.90	--	--	93.93	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

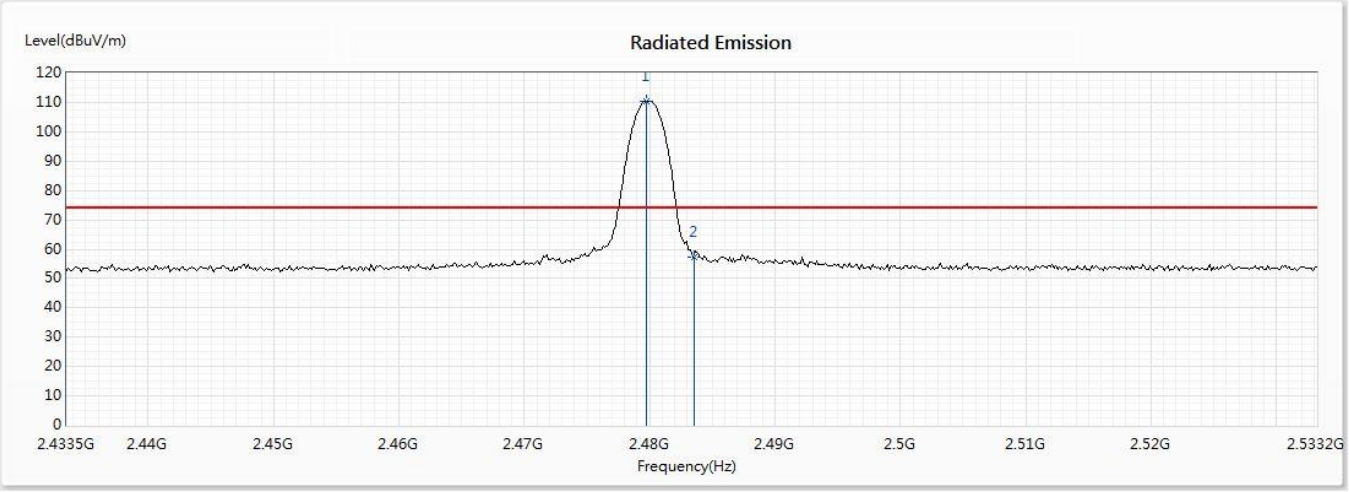
Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
00 (Average)	2390	53.67	-24.954	28.716	-25.284	54.000
00 (Average)	2400	79.88	-24.954	54.926	--	--
00 (Average)	2401.884	106.9	-24.954	81.946	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK) (2480MHz)

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
! 1	2479.738	110.39	--	--	97.02	13.37	PK
2	2483.5	57.40	74.00	-16.60	44.02	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

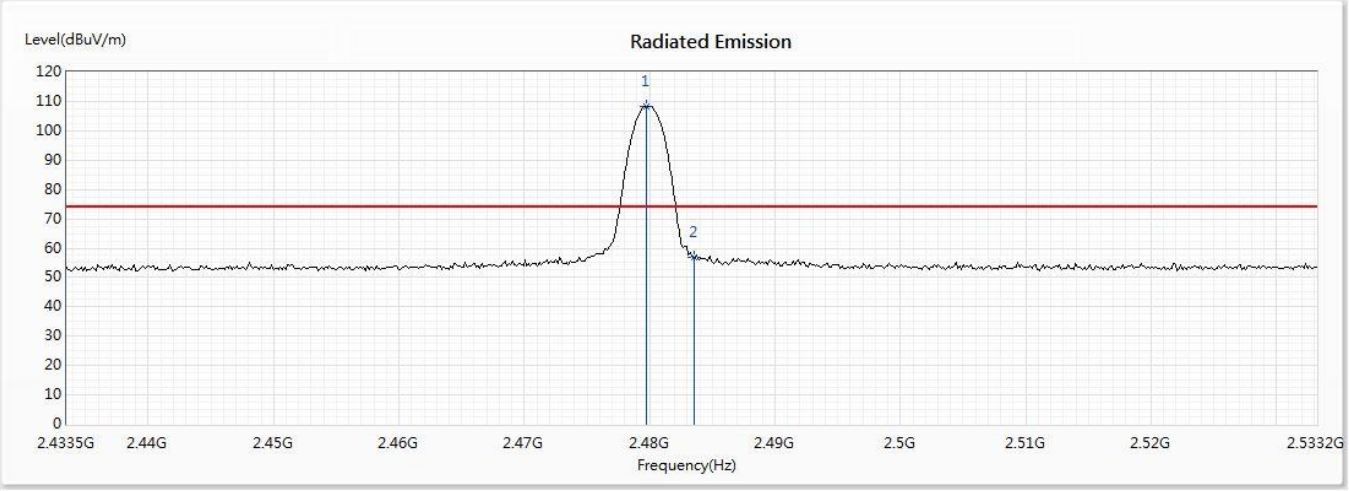
Channel No.	**Frequency (MHz)**	**Peak Measurement (dBμV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBμV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
78 (Average)	2479.738	110.39	-24.954	85.436	--	--
78 (Average)	2483.5	57.4	-24.954	32.446	-21.554	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK) (2480MHz)

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
! 1	2479.738	108.23	--	--	94.86	13.37	PK
2	2483.5	56.89	74.00	-17.11	43.51	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

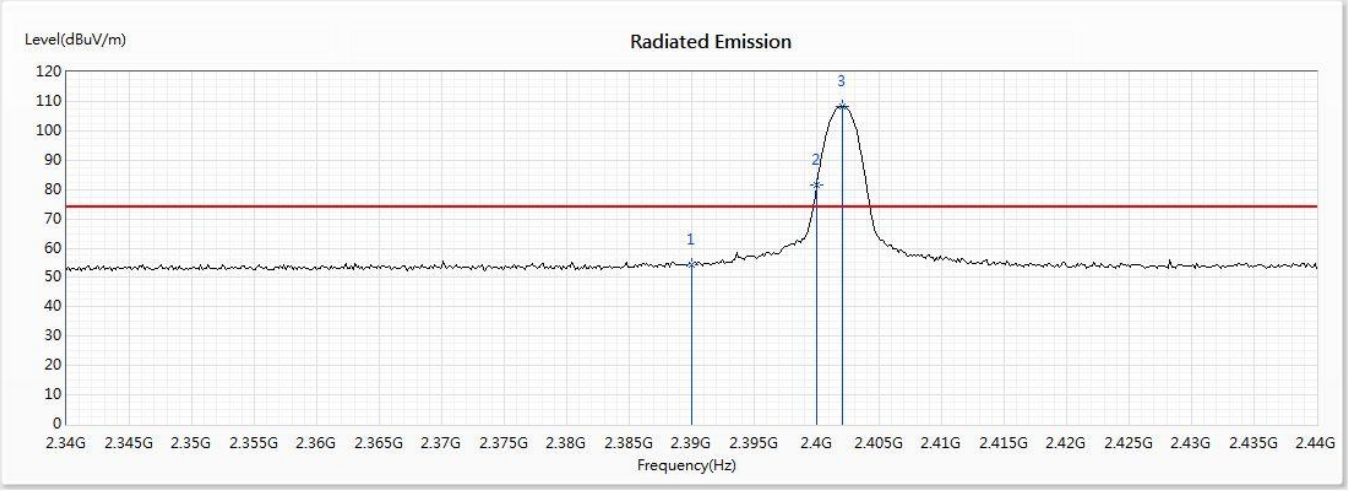
Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
78 (Average)	2479.738	108.23	-24.954	83.276	--	--
78 (Average)	2483.5	56.89	-24.954	31.936	-22.064	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK) (2402MHz)

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	54.27	74.00	-19.73	41.38	12.89	PK
! 2	2400	81.53	--	--	68.57	12.96	PK
! 3	2402.029	108.25	--	--	95.28	12.97	PK

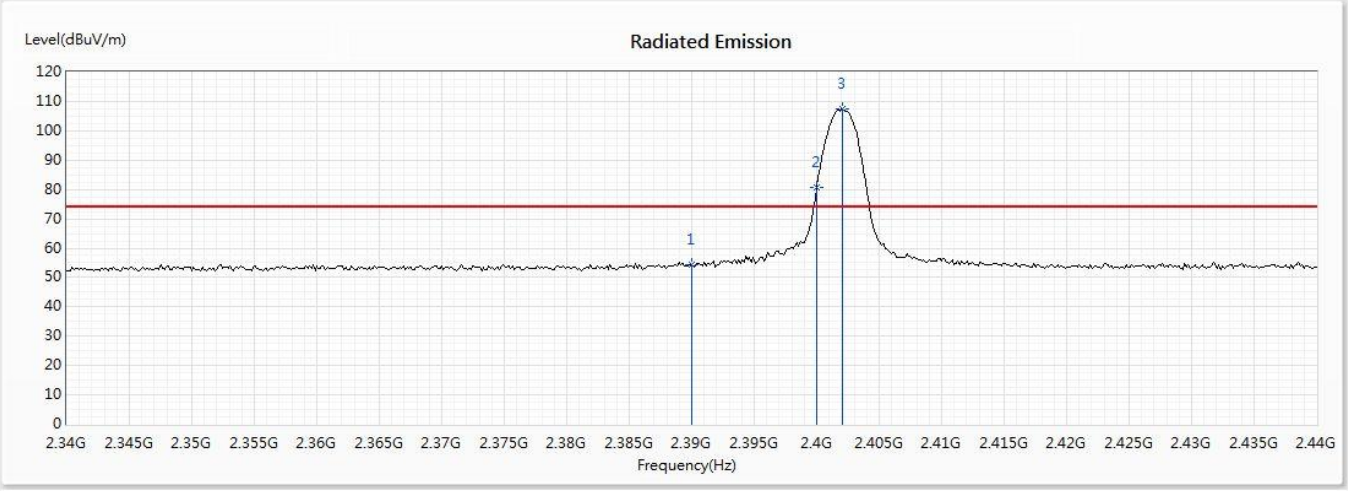
Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
00 (Average)	2390	54.27	-24.954	29.316	-24.684	54.000
00 (Average)	2400	81.53	-24.954	56.576	--	--
00 (Average)	2402.029	108.25	-24.954	83.296	--	--

Note:
1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK) (2402MHz)

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2390	54.47	74.00	-19.53	41.58	12.89	PK
! 2	2400	80.66	--	--	67.70	12.96	PK
! 3	2402.029	107.29	--	--	94.32	12.97	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

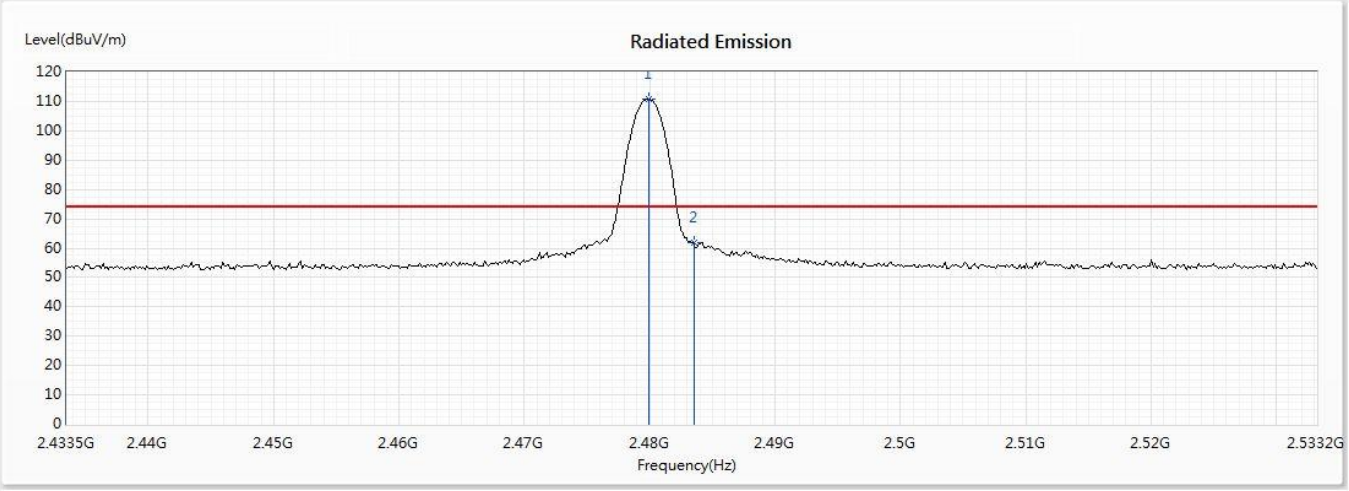
Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
00 (Average)	2390	54.47	-24.954	29.516	-24.484	54.000
00 (Average)	2400	80.66	-24.954	55.706	--	--
00 (Average)	2402.029	107.29	-24.954	82.336	--	--

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK) (2480MHz)

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
! 1	2479.882	110.76	--	--	97.39	13.37	PK
2	2483.5	61.71	74.00	-12.29	48.33	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

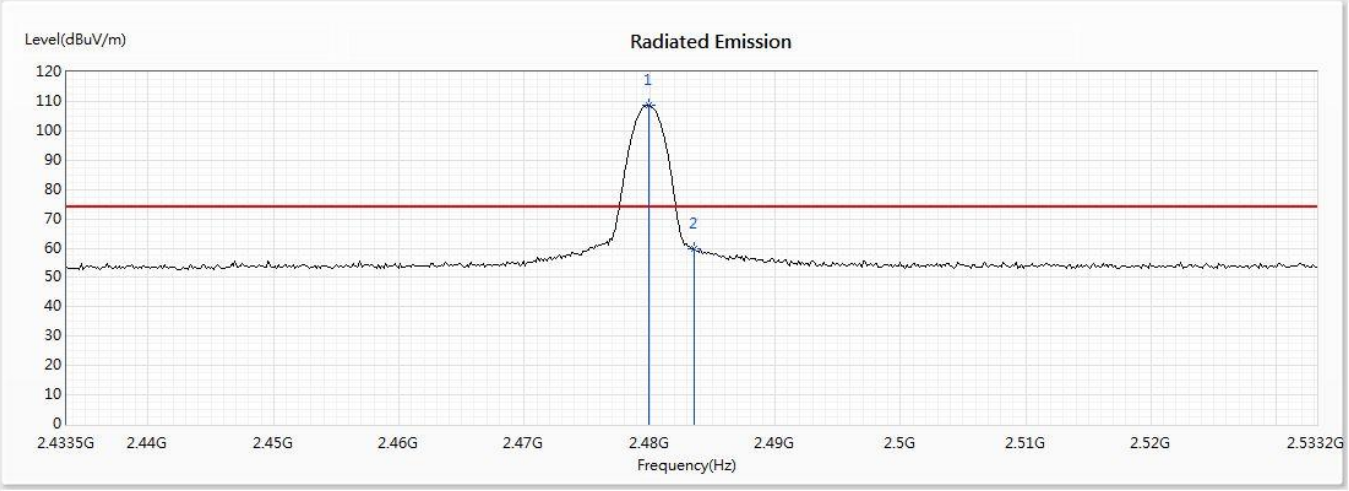
Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
78 (Average)	2479.882	110.76	-24.954	85.806	--	--
78 (Average)	2483.5	61.71	-24.954	36.756	-17.244	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test date : 2019/11/14
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK) (2480MHz)

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
! 1	2479.882	108.62	--	--	95.25	13.37	PK
2	2483.5	59.69	74.00	-14.31	46.31	13.38	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Emission Level = Reading Level + Correct Factor.

Channel No.	**Frequency (MHz)**	**Peak Measurement (dBµV/m)**	**Duty Cycle Factor (dB)**	**Measurement (dBµV/m)**	**Margin (dB)**	**Limit (dBuV/m)**
78 (Average)	2479.882	108.62	-24.954	83.666	--	--
78 (Average)	2483.5	59.69	-24.954	34.736	-19.264	54.000

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : Bluetooth Headset
Test Item : Band Edge
Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(Hopping off)

Measurement Level Δ (dB)	Result
> 20	PASS

Figure Channel 00:

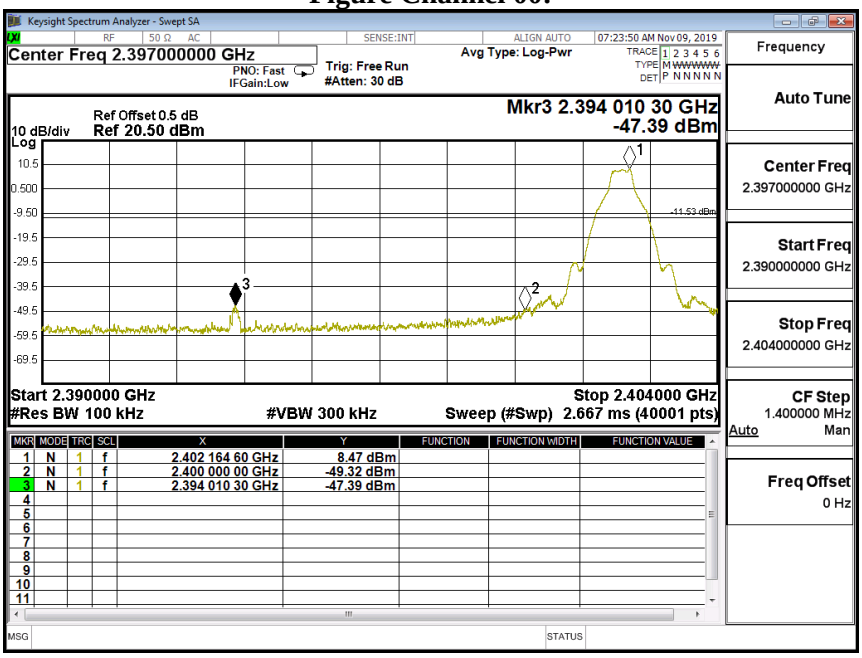
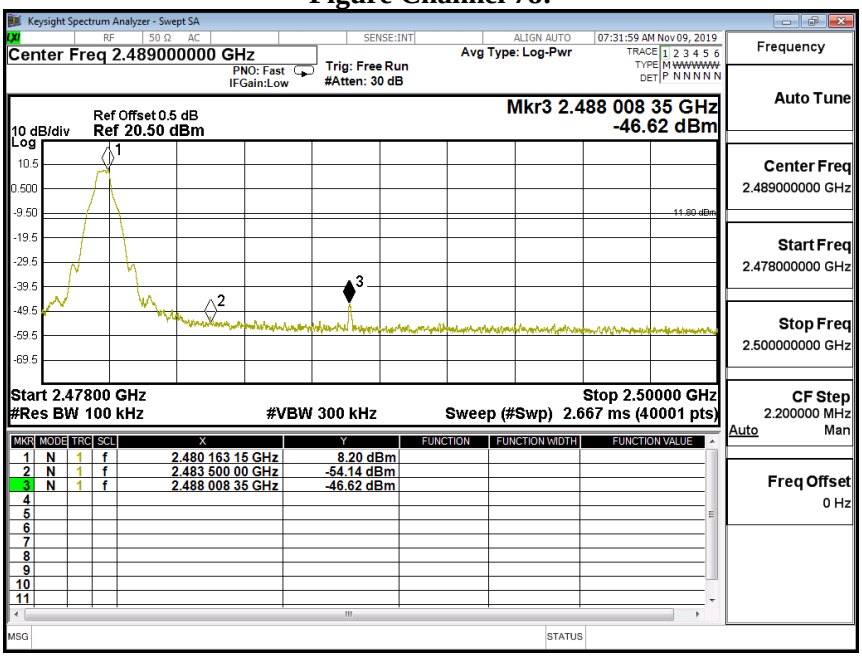


Figure Channel 78:



Product : Bluetooth Headset
Test Item : Band Edge
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK)(Hopping off)

Measurement Level Δ (dB)	Result
> 20	PASS

Figure Channel 00:

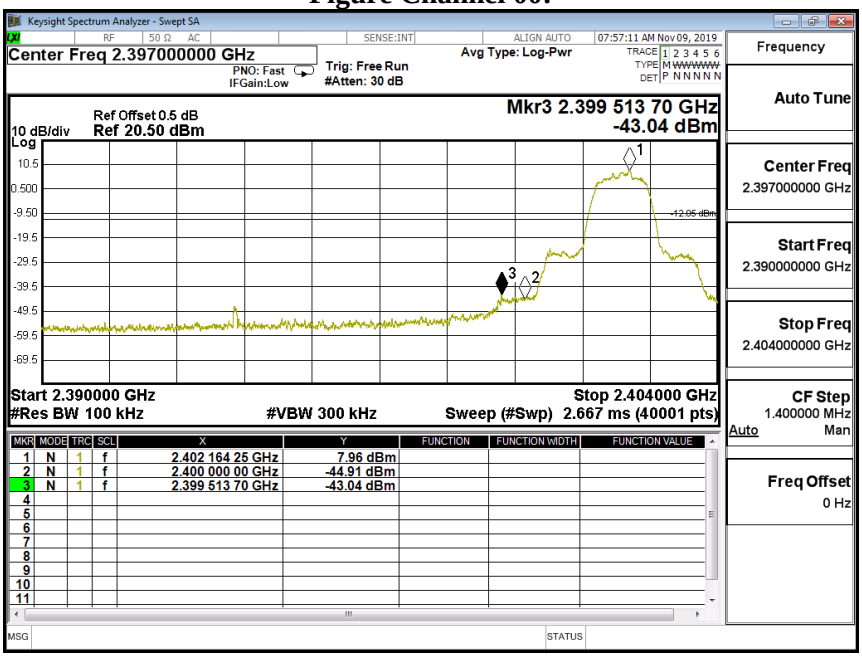
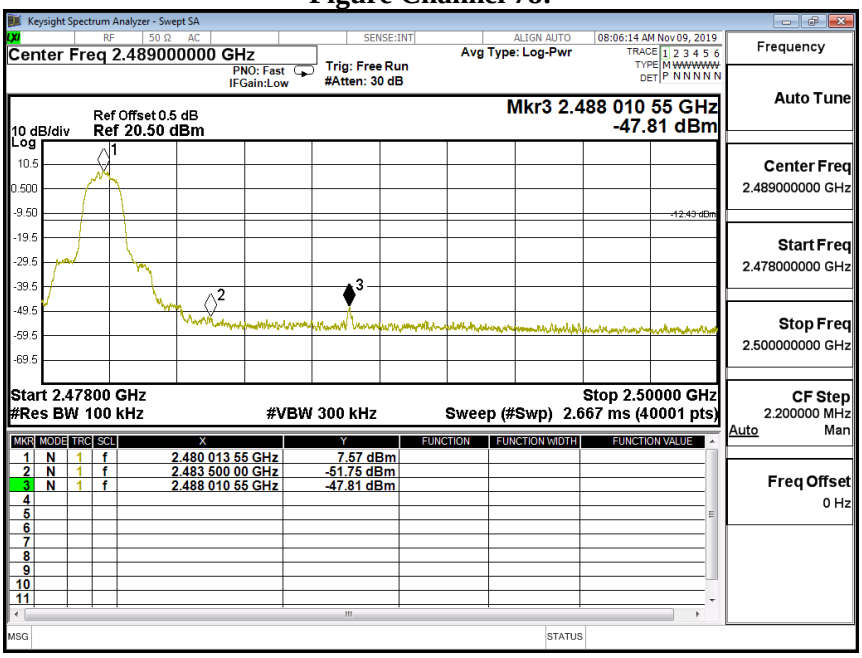


Figure Channel 78:



Product : Bluetooth Headset
Test Item : Band Edge
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK) (Hopping off)

Measurement Level Δ (dB)	Result
> 20	PASS

Figure Channel 00:

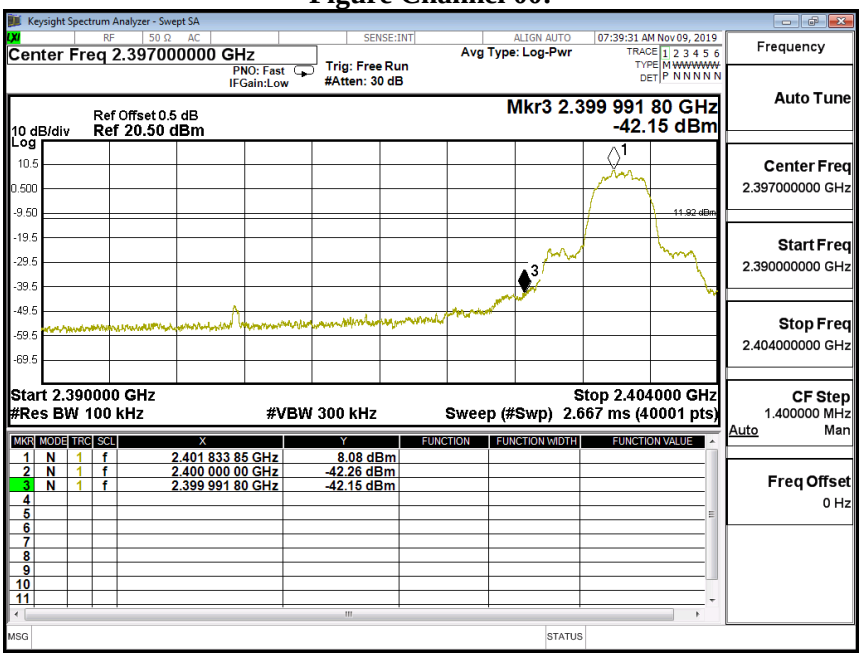
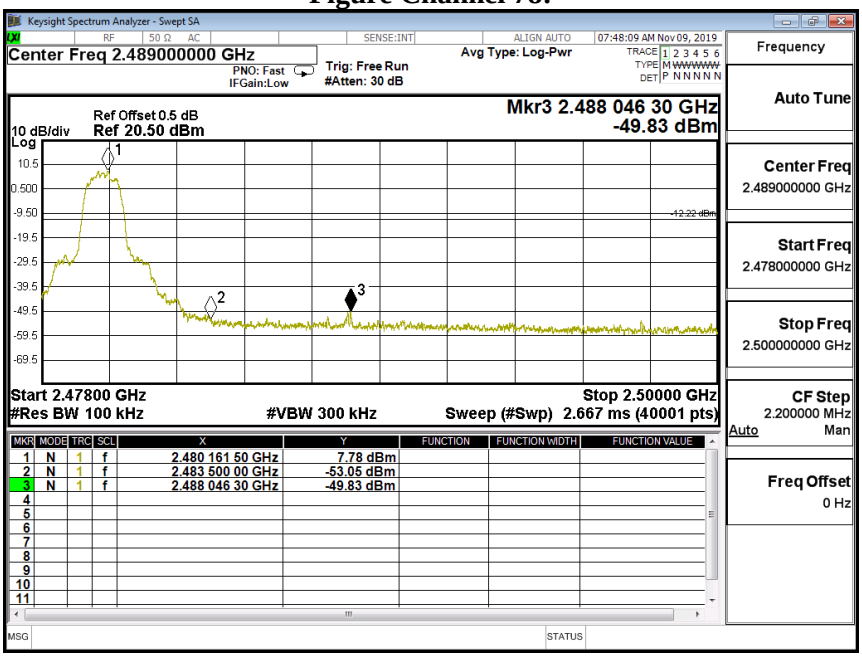


Figure Channel 78:



Product : Bluetooth Headset
Test Item : Band Edge
Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(Hopping on)

Measurement Level Δ (dB)	Result
> 20	PASS

Figure Channel 00 Hopping:

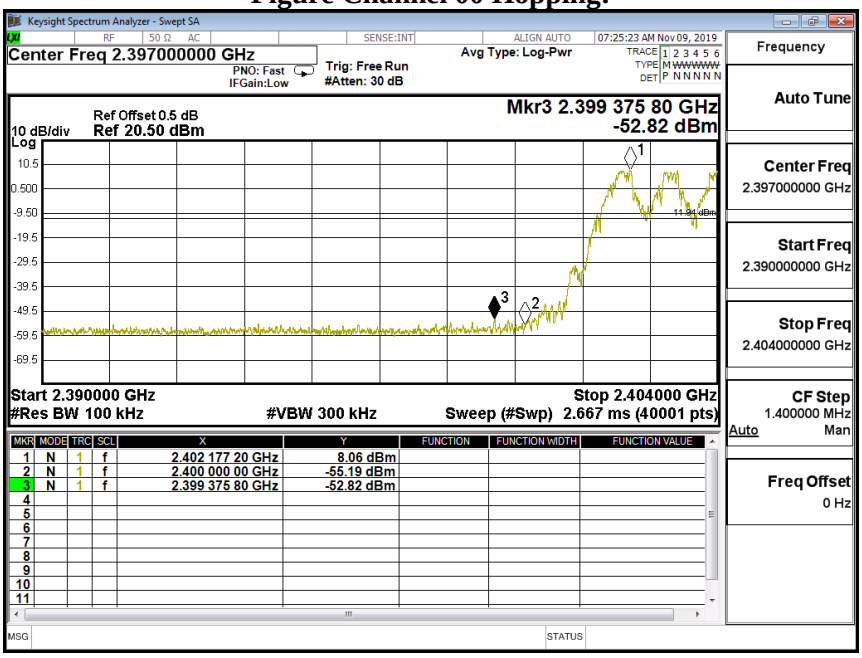
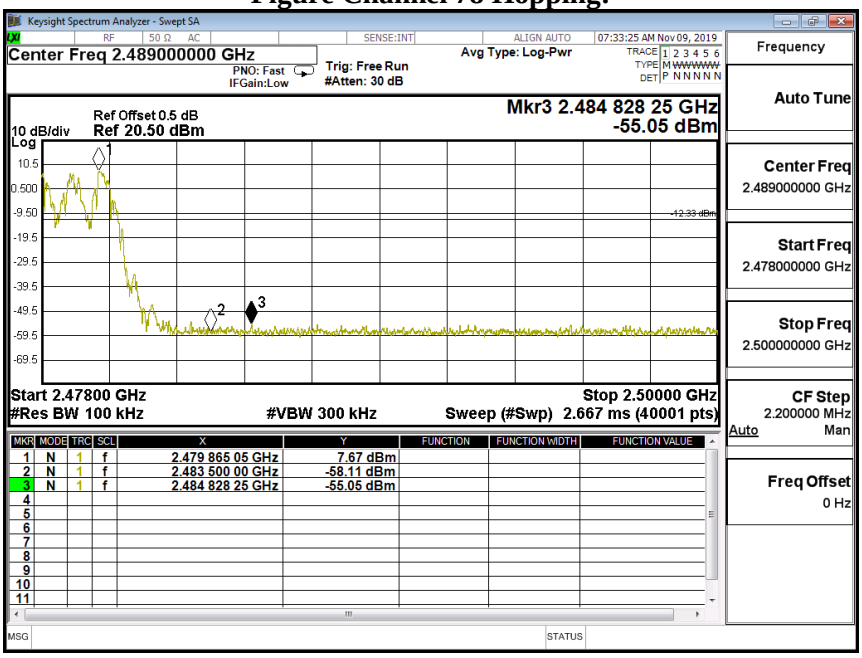


Figure Channel 78 Hopping:



Product : Bluetooth Headset
Test Item : Band Edge
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK)(Hopping on)

Measurement Level Δ (dB)	Result
> 20	PASS

Figure Channel 00 Hopping:

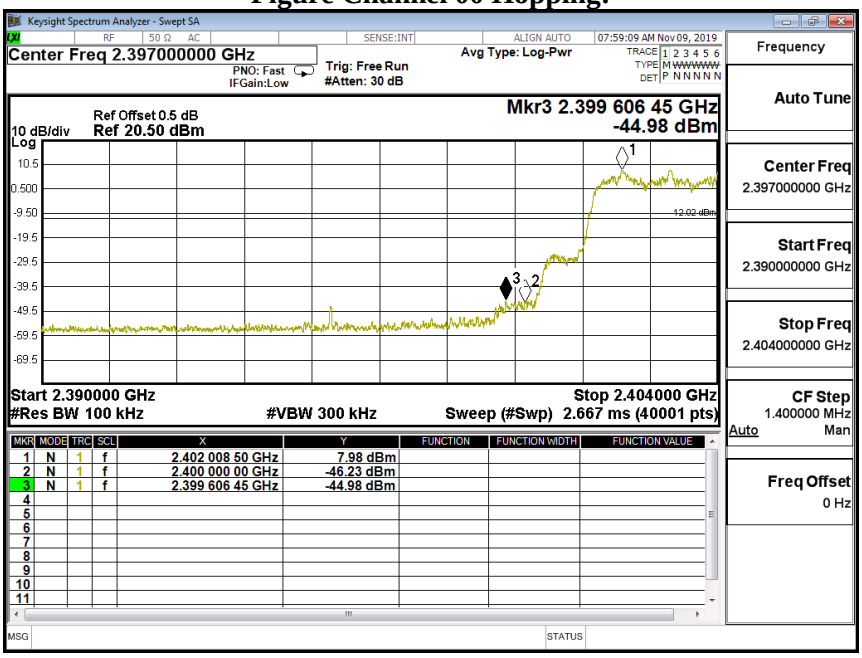
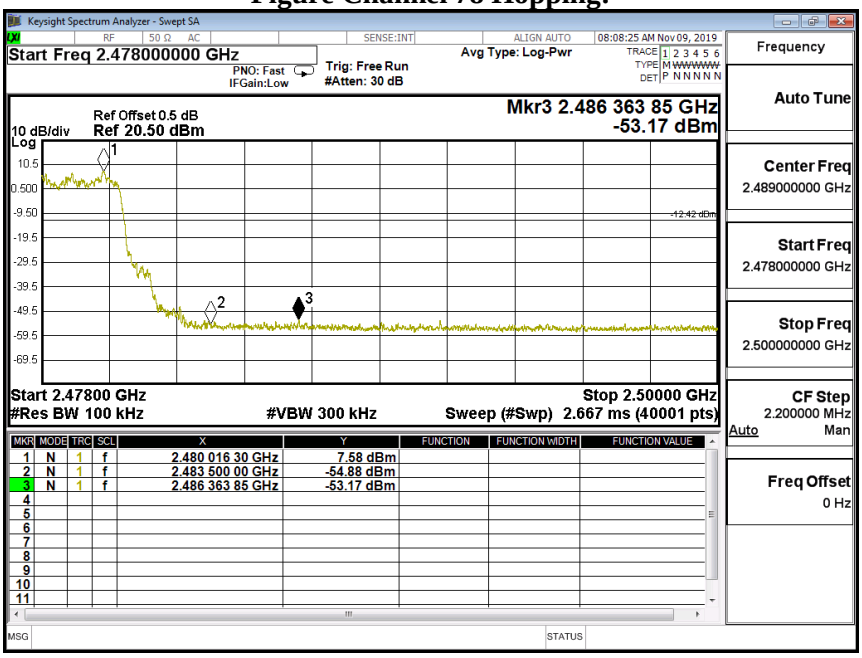


Figure Channel 78 Hopping:



Product : Bluetooth Headset
Test Item : Band Edge
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK) (Hopping on)

Measurement Level Δ (dB)	Result
> 20	PASS

Figure Channel 00 Hopping:

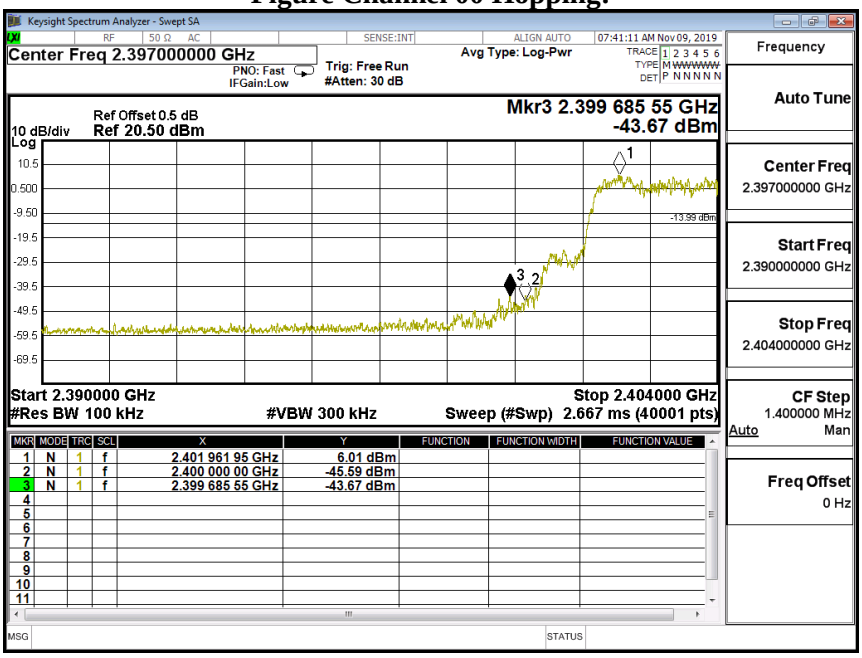
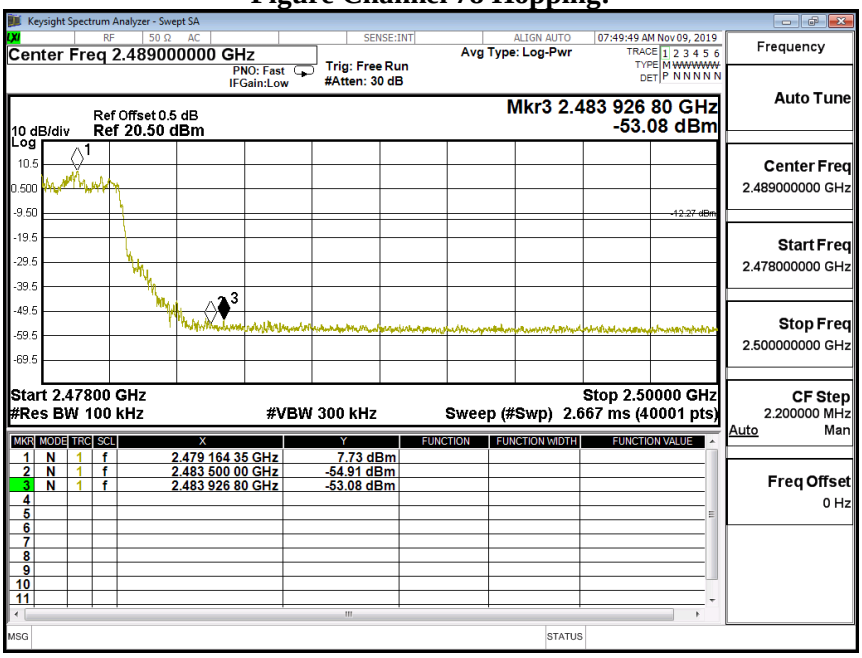
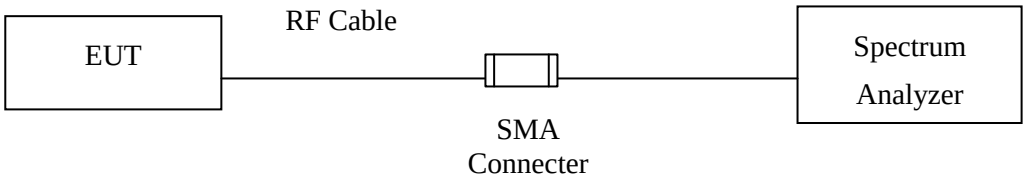


Figure Channel 78 Hopping:



7. Channel Number

7.1. Test Setup



7.2. Limit

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

7.3. Test Procedure

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

7.4. Uncertainty

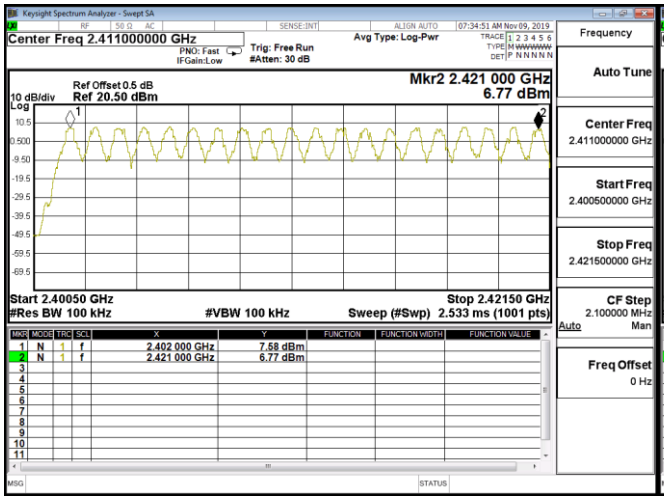
N/A

7.5. Test Result of Channel Number

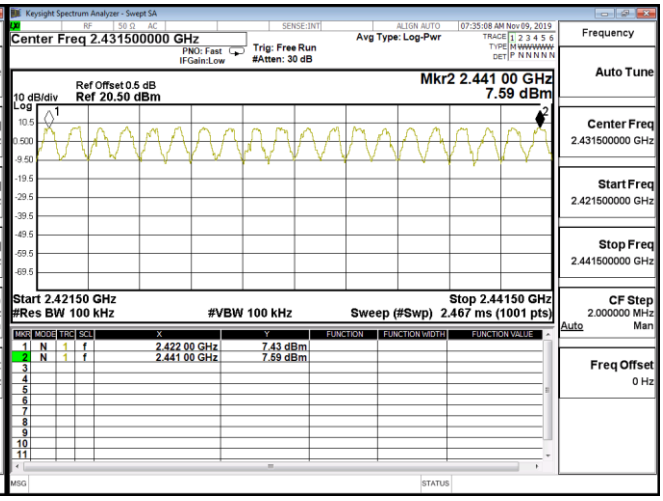
Product : Bluetooth Headset
Test Item : Channel Number
Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

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

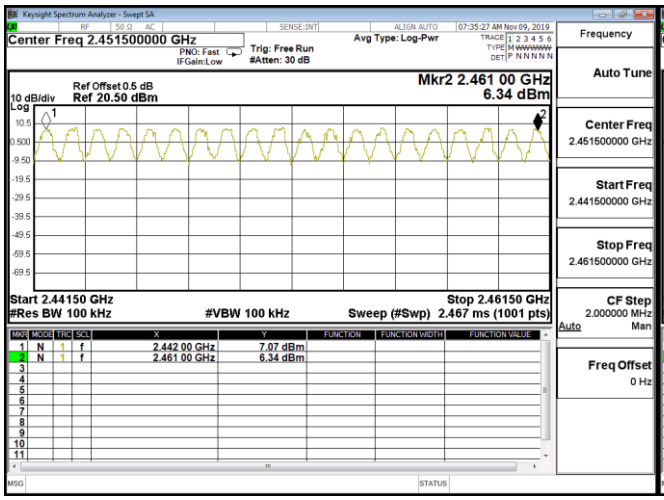
2402-2421MHz



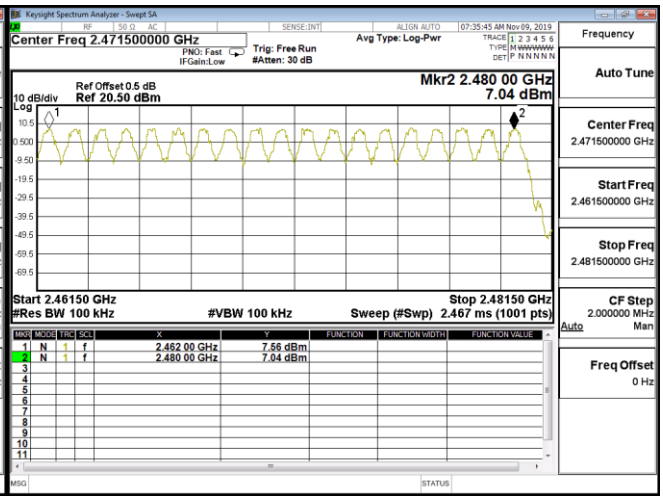
2422-2441MHz



2442-2461MHz



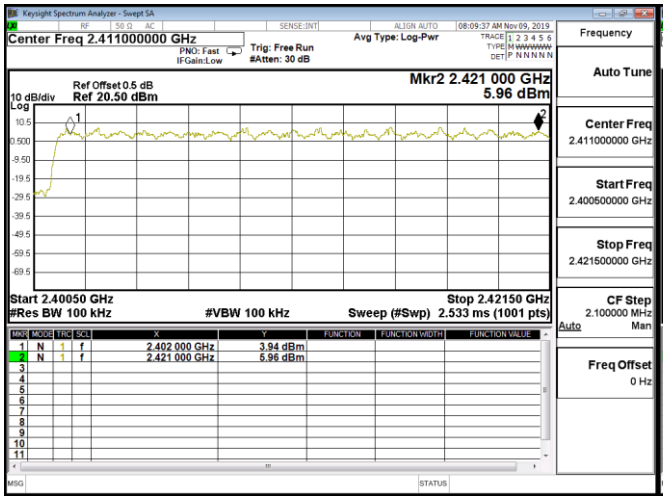
2462-2480MHz



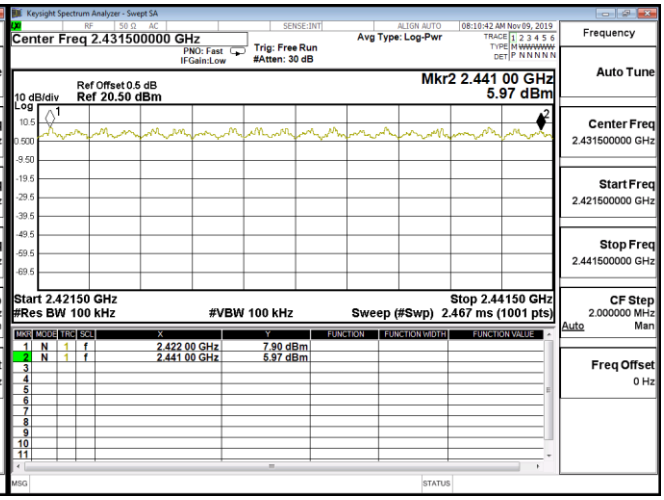
Product : Bluetooth Headset
Test Item : Channel Number
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK)

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

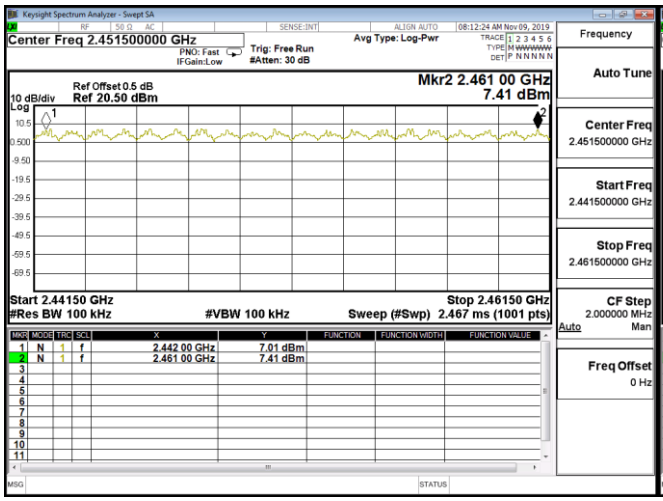
2402-2421MHz



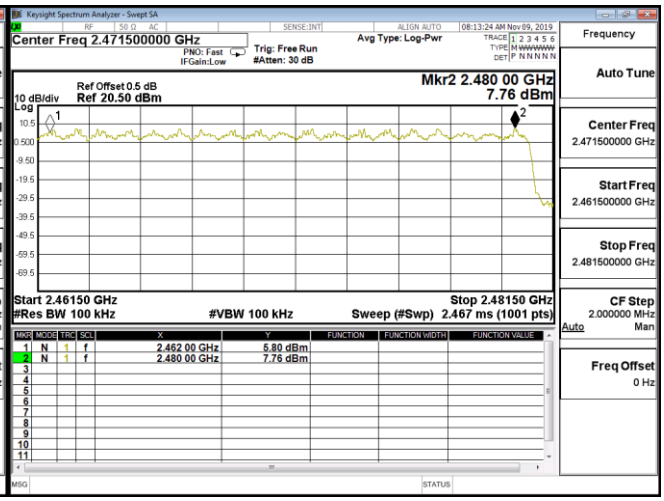
2422-2441MHz



2442-2461MHz



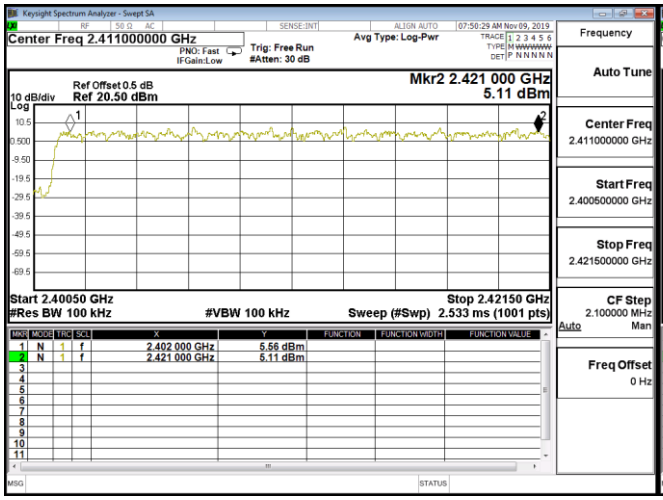
2462-2480MHz



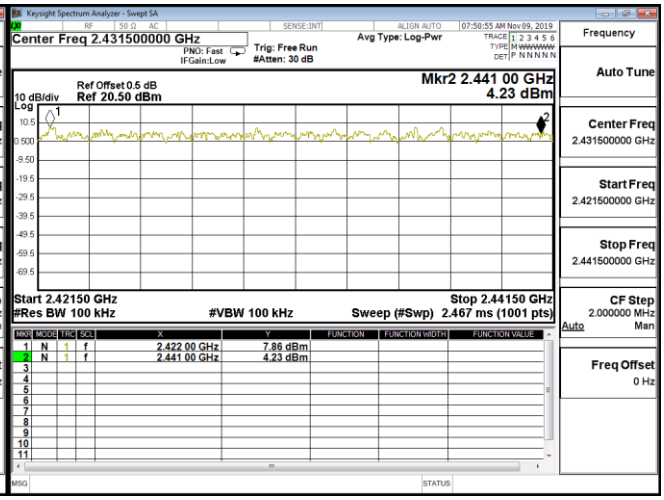
Product : Bluetooth Headset
Test Item : Channel Number
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK)

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

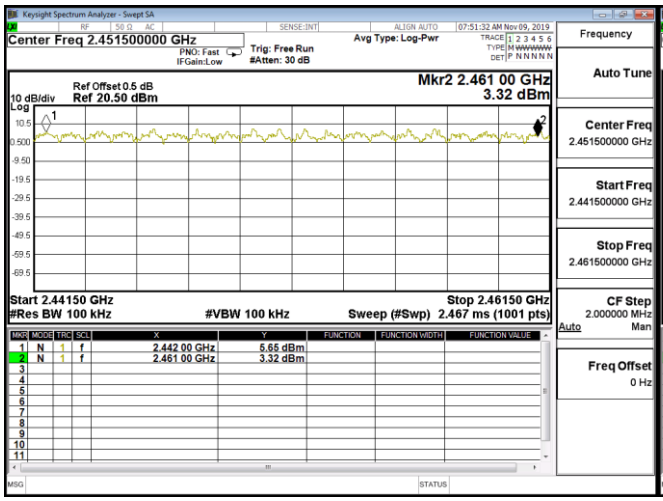
2402-2421MHz



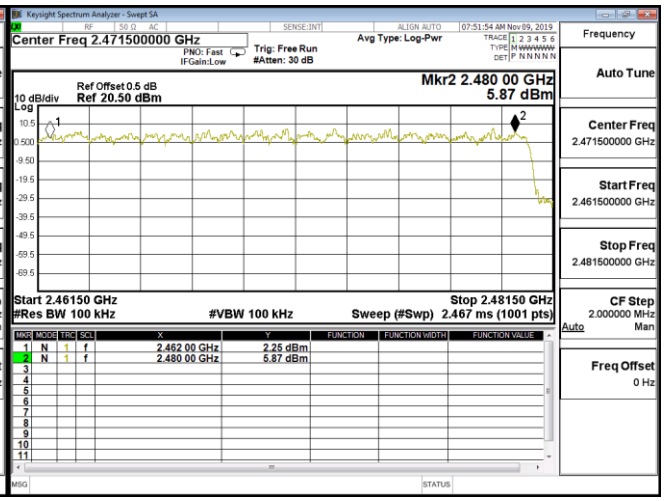
2422-2441MHz



2442-2461MHz

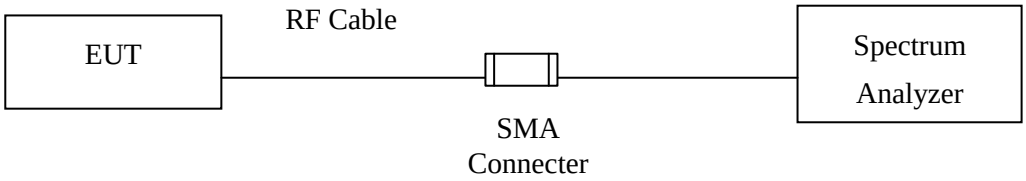


2462-2480MHz



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

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

8.4. Uncertainty

± 283Hz

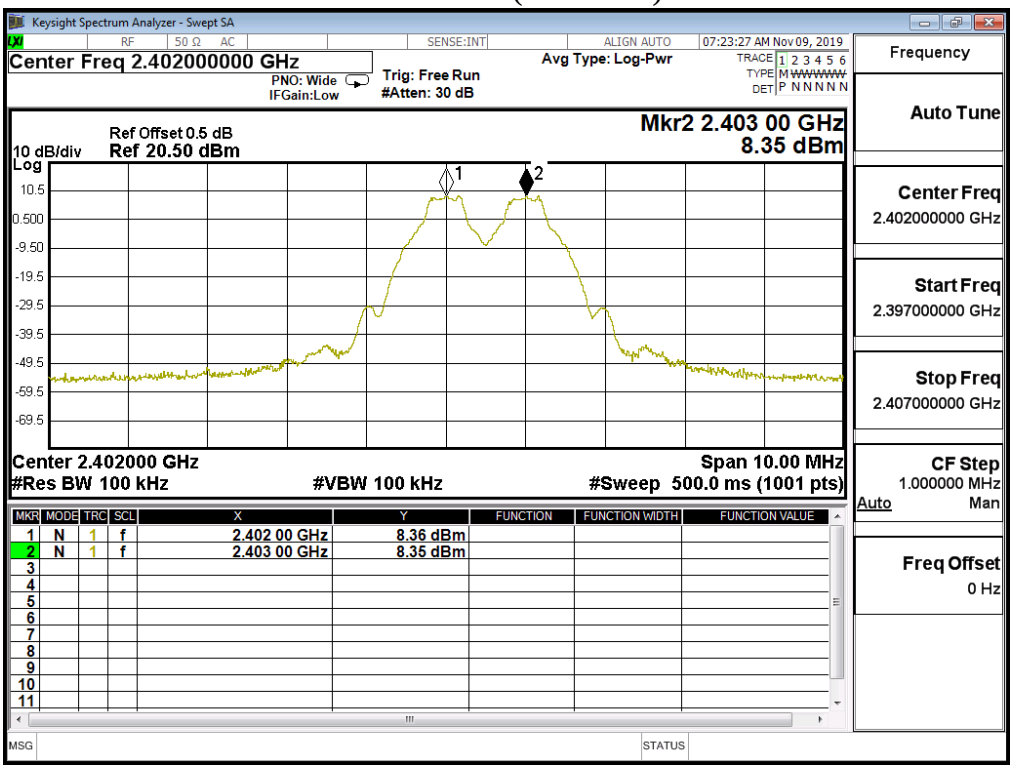
8.5. Test Result of Channel Separation

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

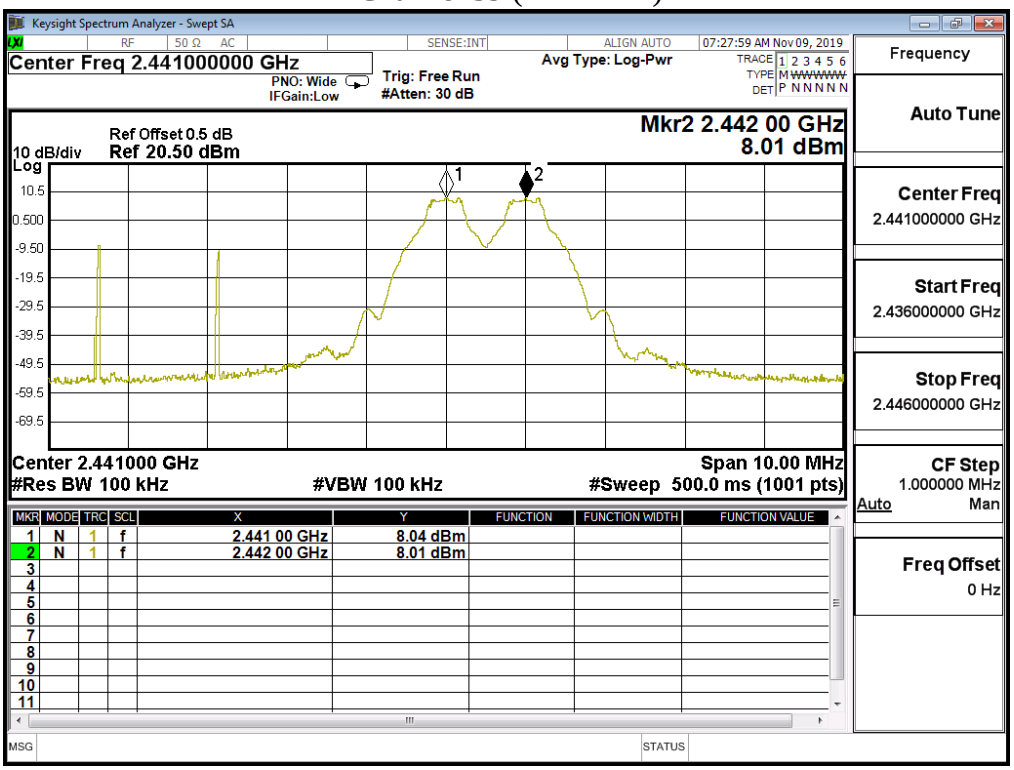
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	644.0	Pass
39	2441	1000	>25 kHz	644.0	Pass
78	2480	1000	>25 kHz	642.0	Pass

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

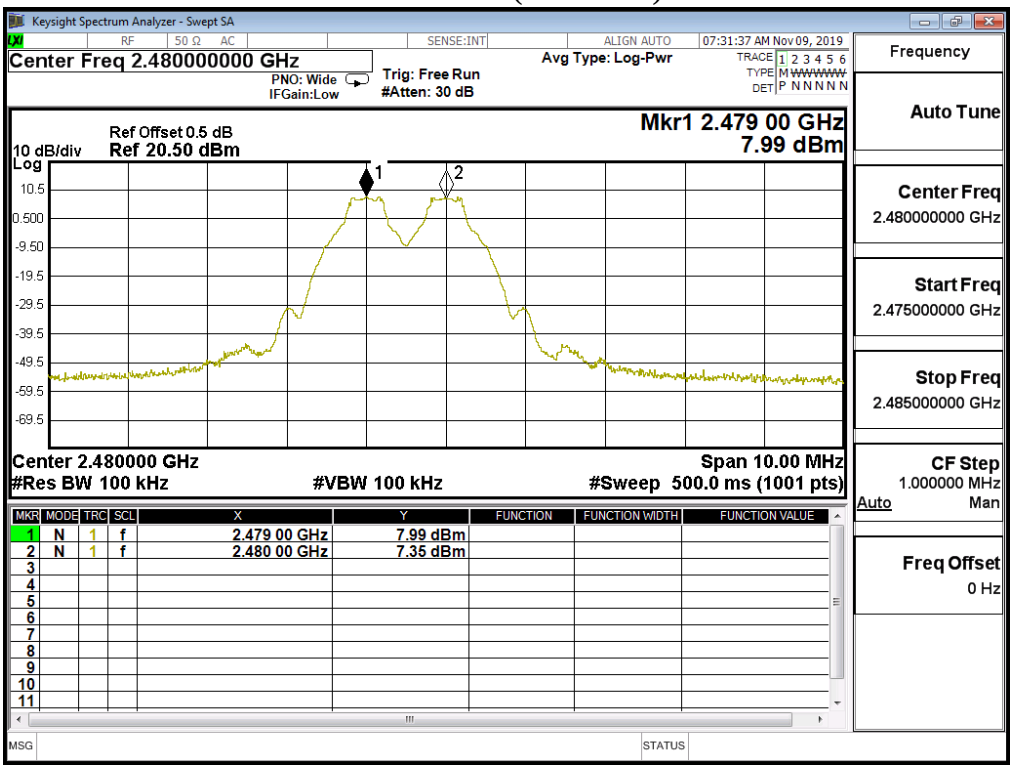
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)

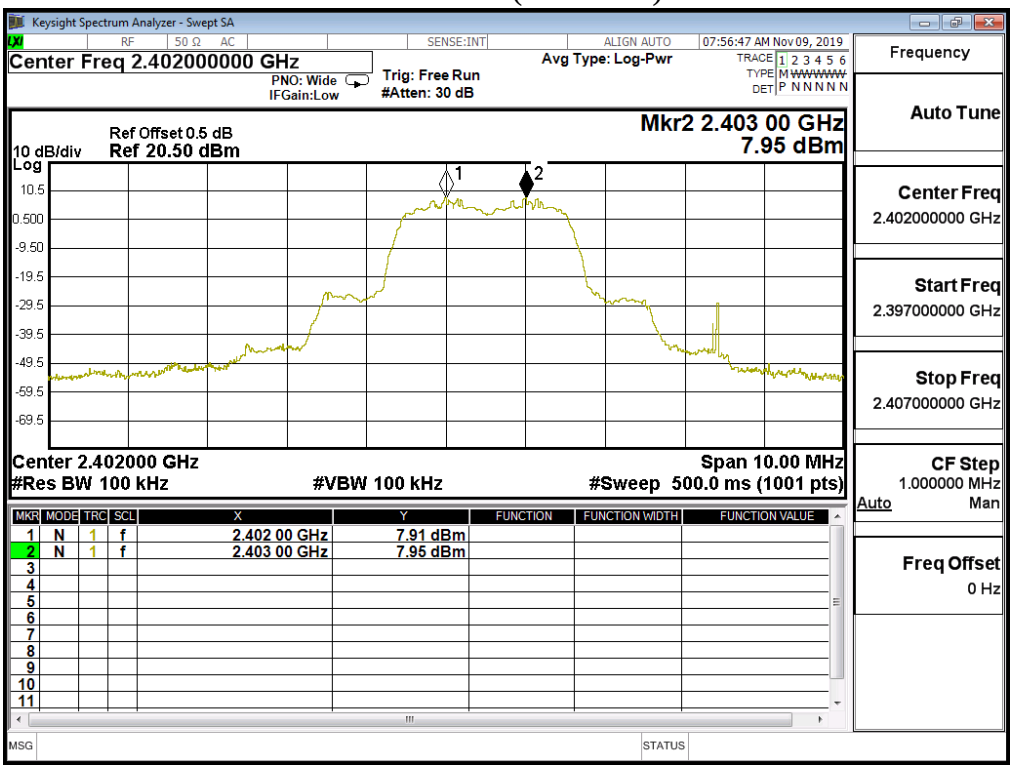


Product : Bluetooth Headset
Test Item : Channel Separation
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK)

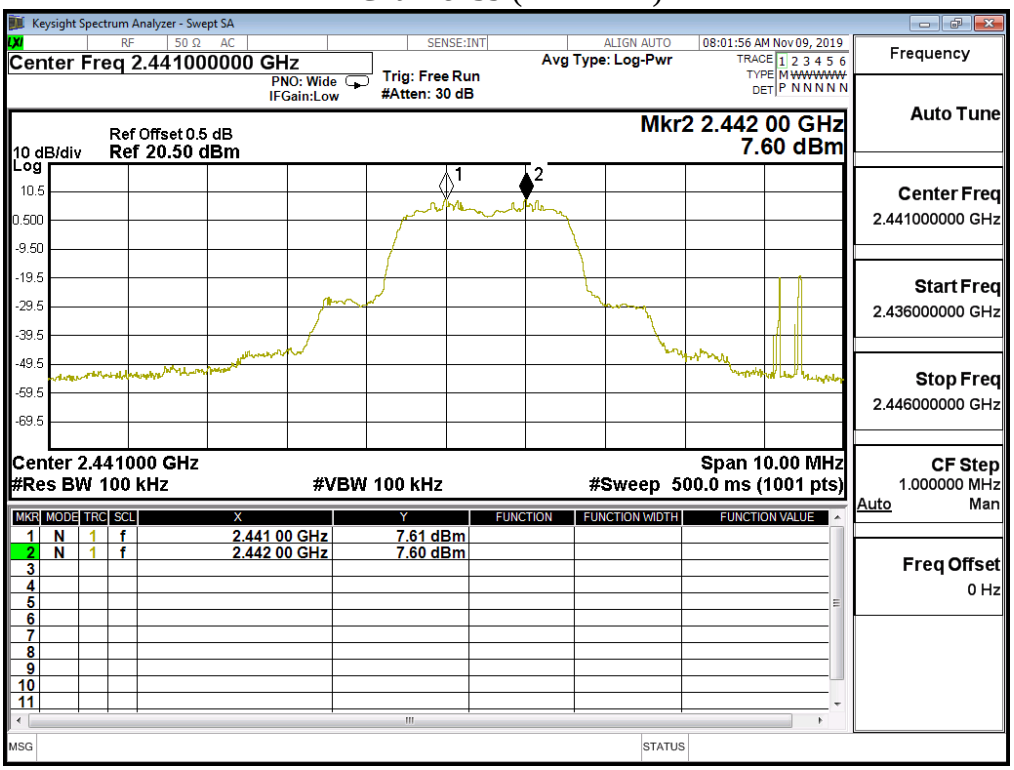
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	894.0	Pass
39	2441	1000	>25 kHz	892.0	Pass
78	2480	1000	>25 kHz	894.0	Pass

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

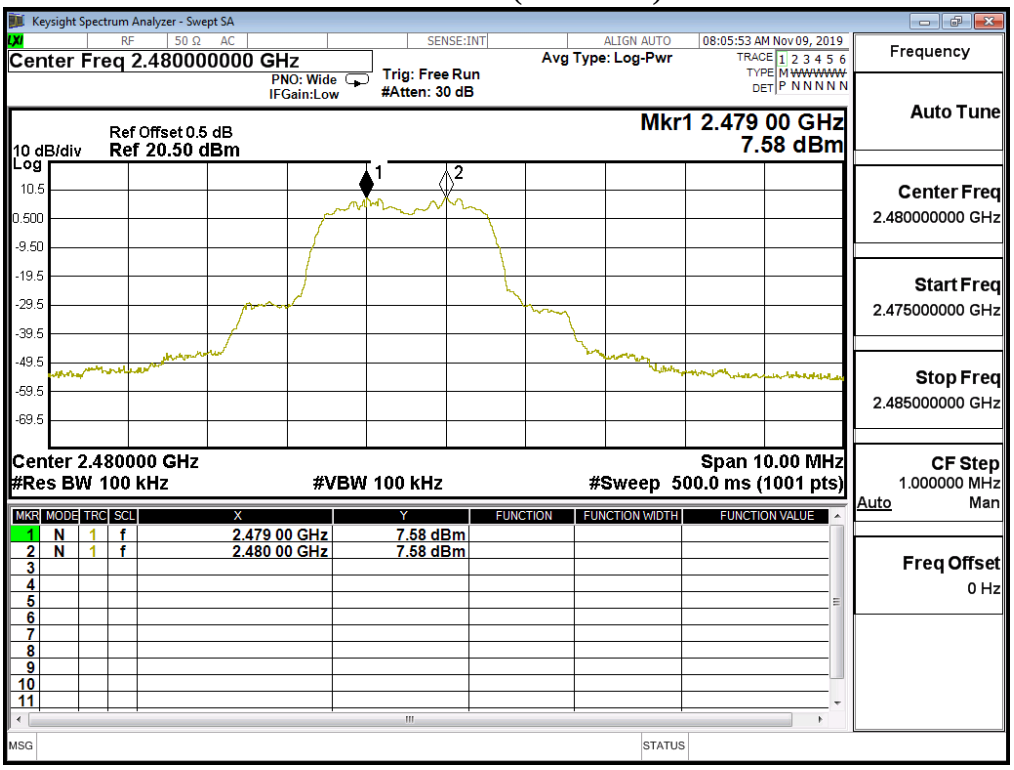
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)

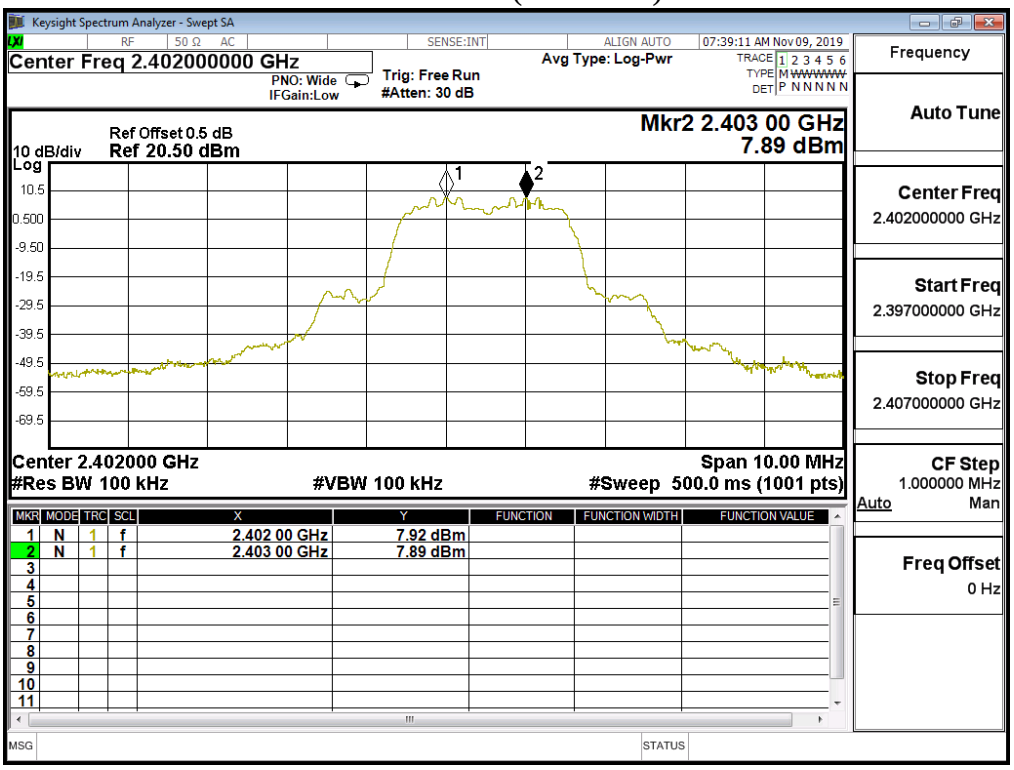


Product : Bluetooth Headset
Test Item : Channel Separation
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK)

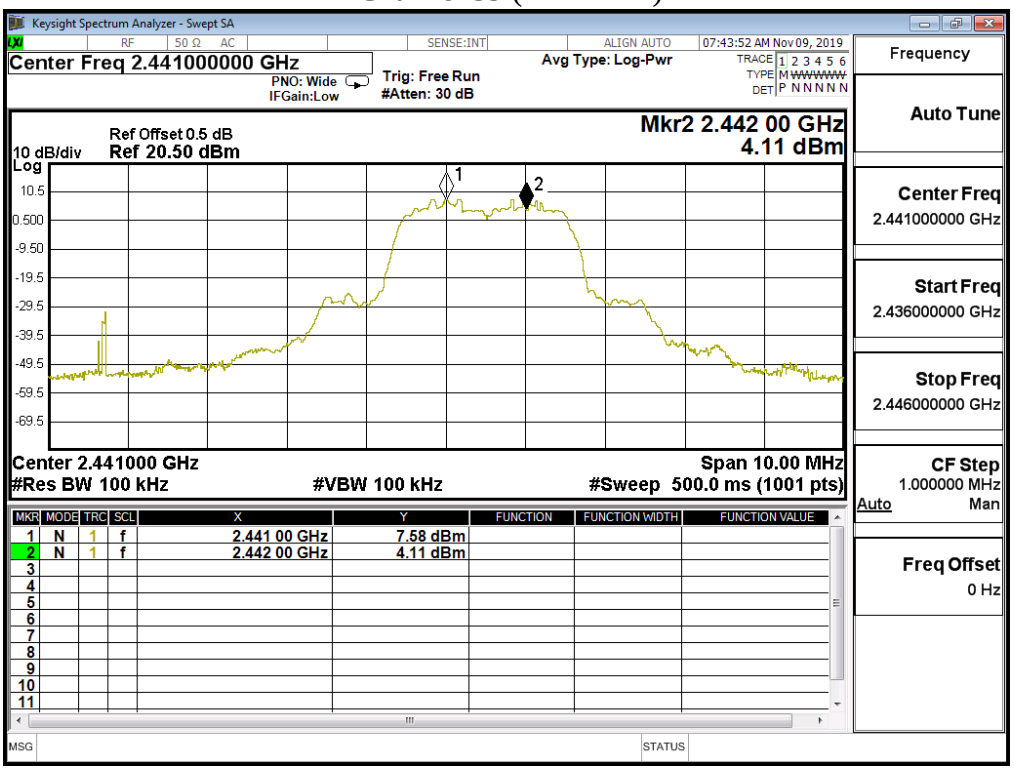
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	876.0	Pass
39	2441	1000	>25 kHz	878.0	Pass
78	2480	1000	>25 kHz	876.0	Pass

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

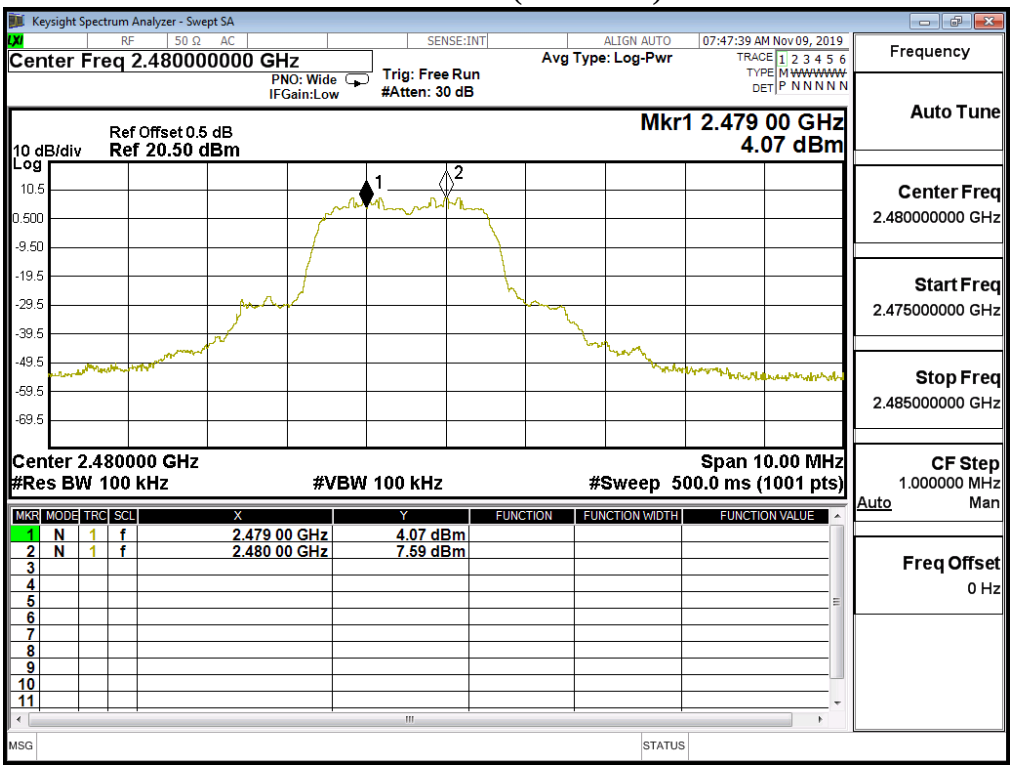
Channel 00 (2402MHz)



Channel 39 (2441MHz)

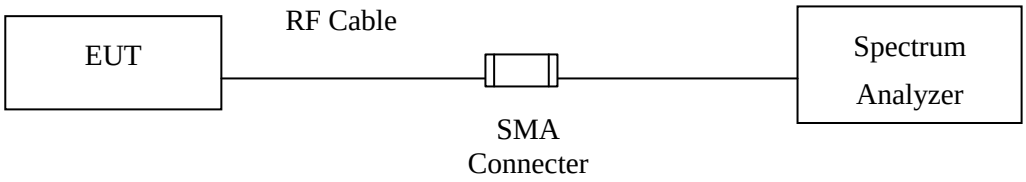


Channel 78 (2480MHz)



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

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

9.4. Uncertainty

± 25msec

9.5. Test Result of Dwell Time

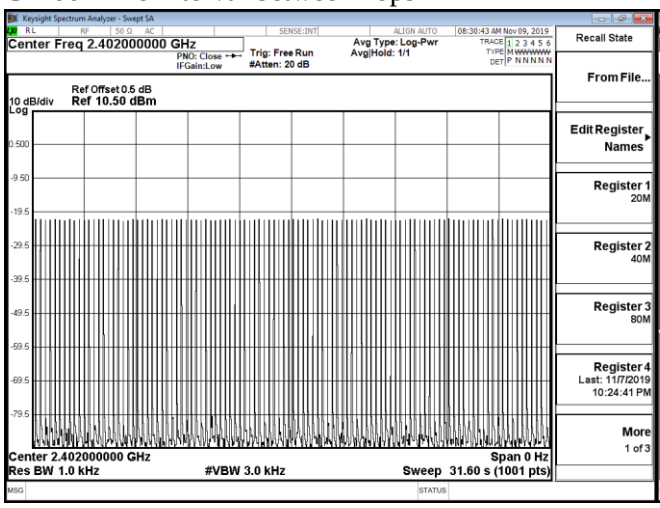
Product : Bluetooth Headset
Test Item : Dwell Time
Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.880	106	31600	305.280	400	Pass
2441	2.880	108	31600	311.040	400	Pass
2480	2.880	106	31600	305.280	400	Pass

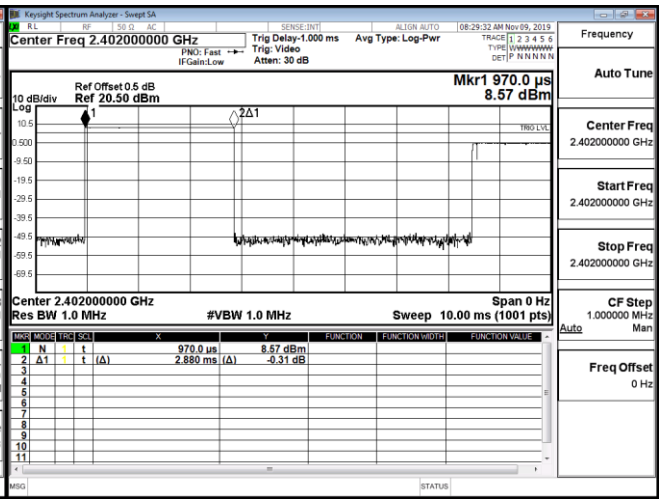
Dwell time = Time slot length*Hopping of number

Sweep time= 79 CHannel * 0.4

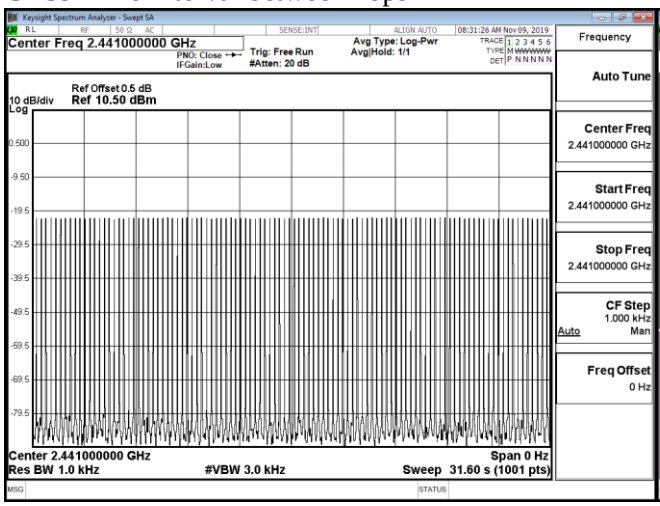
CH 00 Time Interval between hops



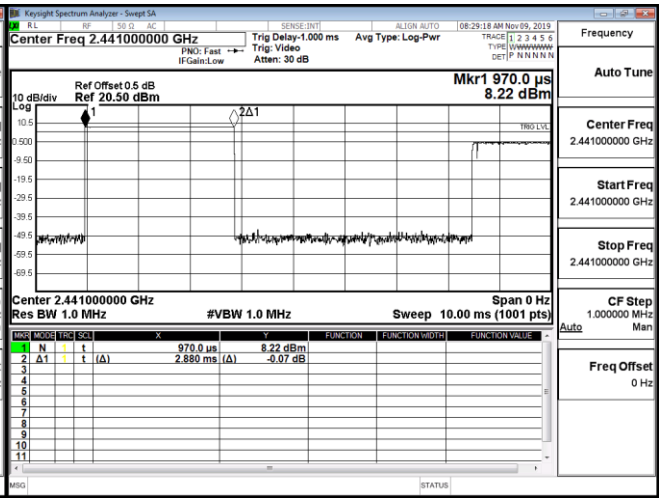
CH 00 Transmission Time



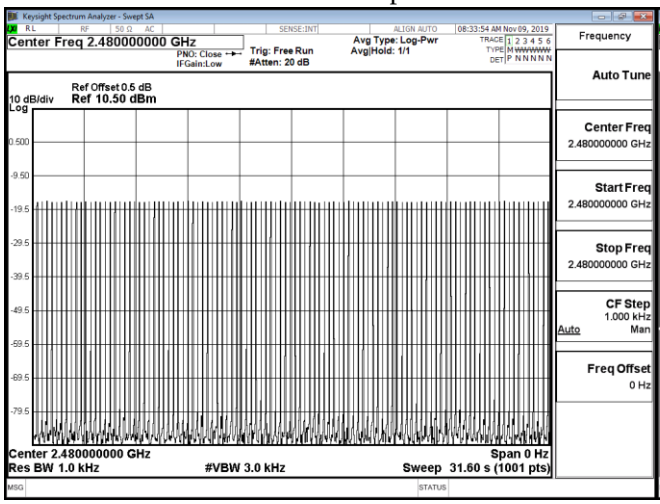
CH39 Time Interval between hops



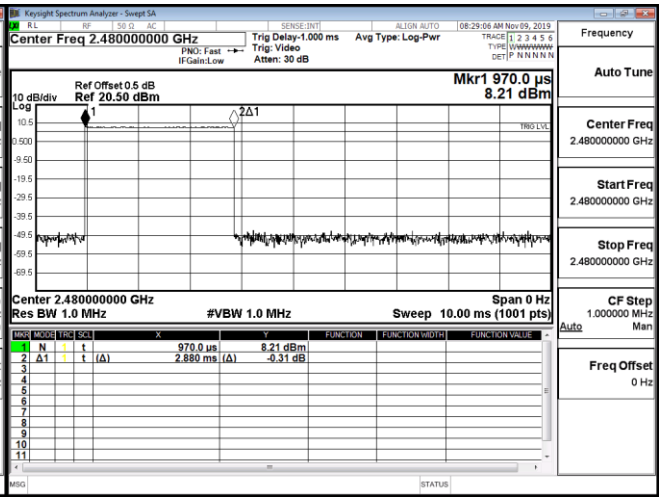
CH 39Transmission Time



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.

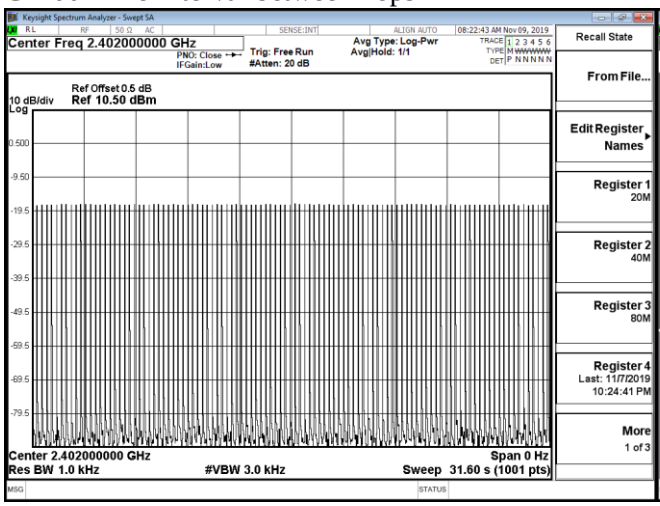
Product : Bluetooth Headset
Test Item : Dwell Time
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.890	106	31600	306.340	400	Pass
2441	2.890	106	31600	306.340	400	Pass
2480	2.890	107	31600	309.230	400	Pass

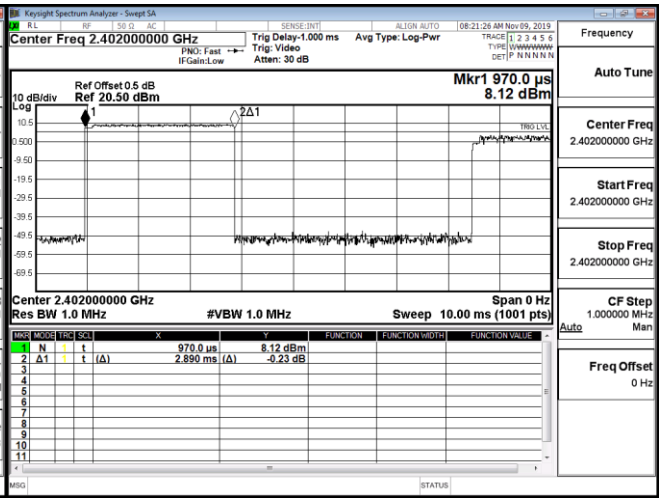
Dwell time = Time slot length*Hopping of number

Sweep time= 79 CHannel * 0.4

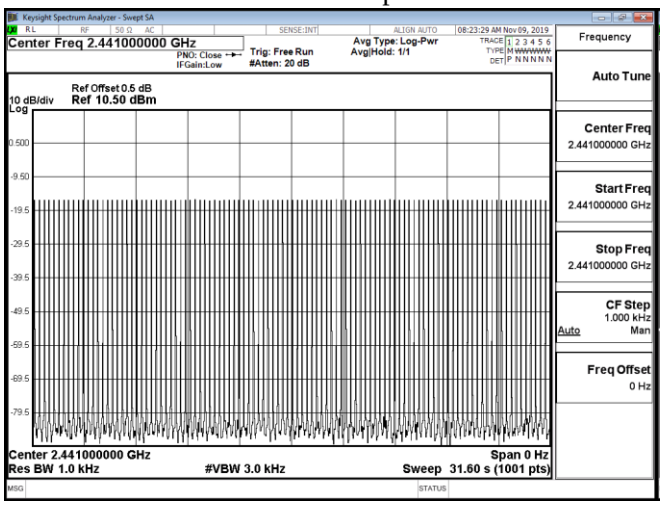
CH 00 Time Interval between hops



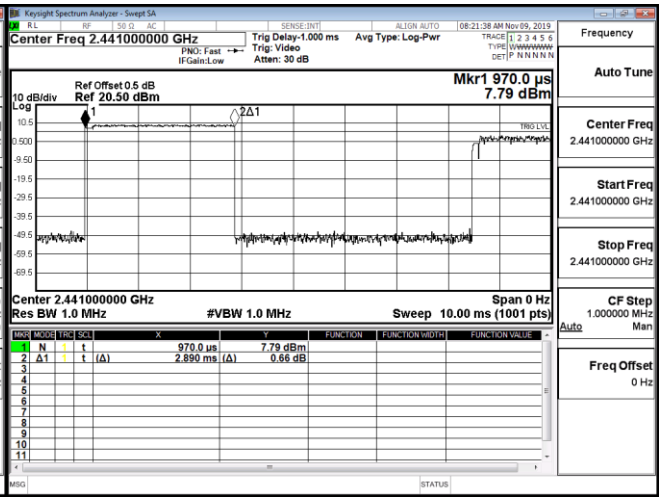
CH 00 Transmission Time



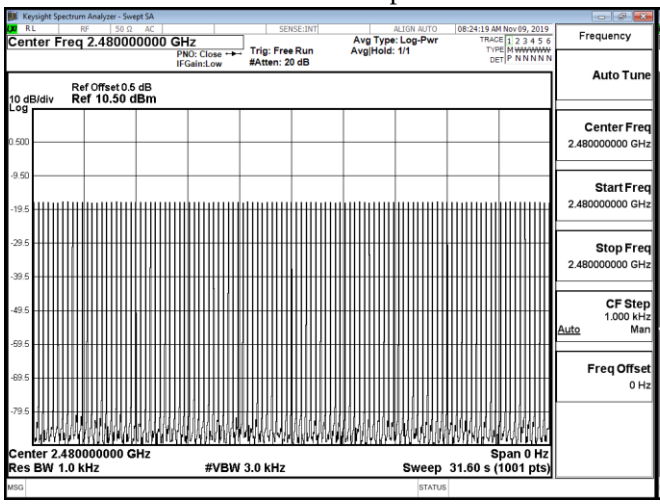
CH39 Time Interval between hops



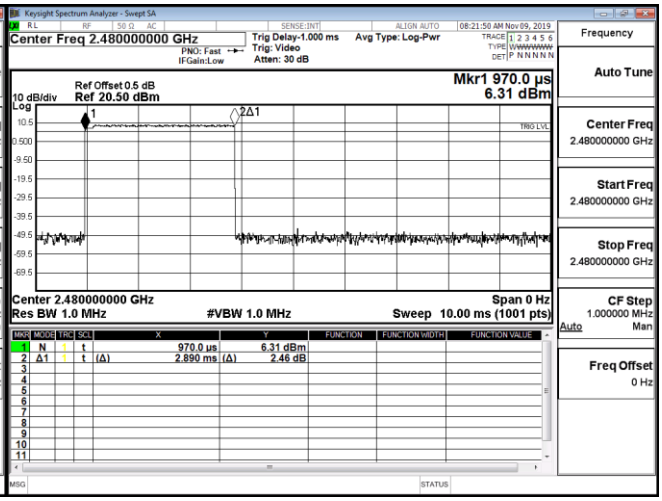
CH 39Transmission Time



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.

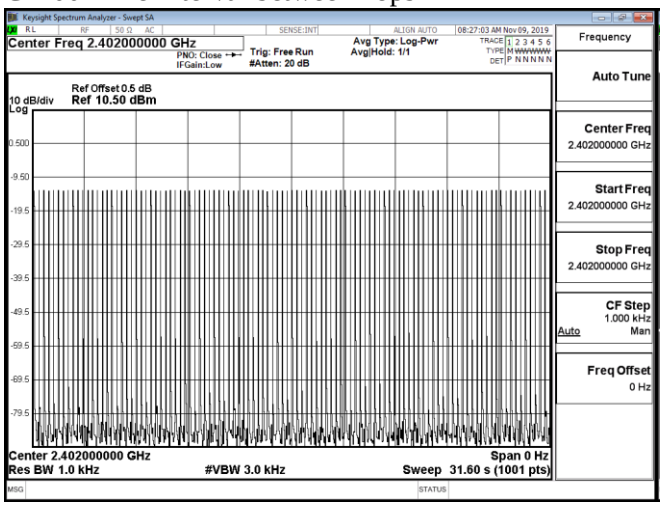
Product : Bluetooth Headset
Test Item : Dwell Time
Test Mode : Mode 3: Transmit - 3Mbps (8DPSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.890	107	31600	309.230	400	Pass
2441	2.890	106	31600	306.340	400	Pass
2480	2.890	106	31600	306.340	400	Pass

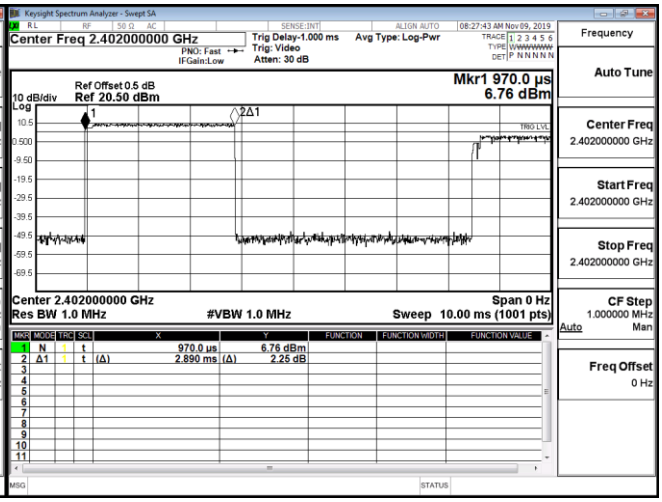
Dwell time = Time slot length*Hopping of number

Sweep time= 79 CHannel * 0.4

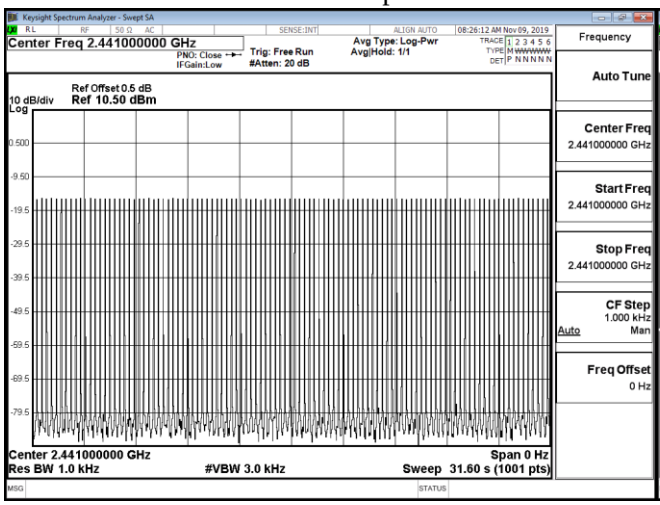
CH 00 Time Interval between hops



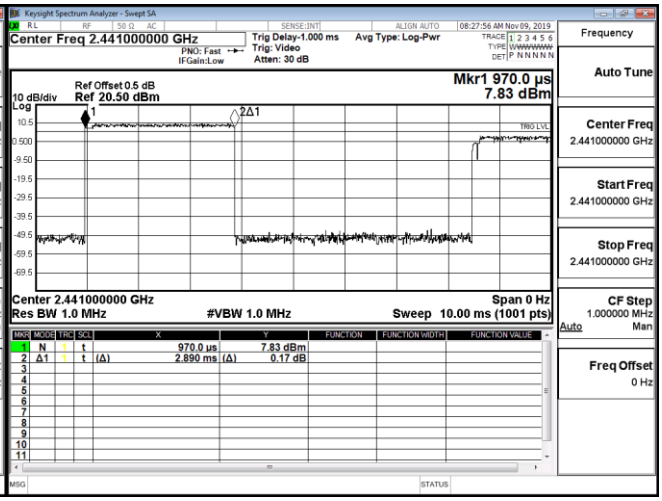
CH 00 Transmission Time



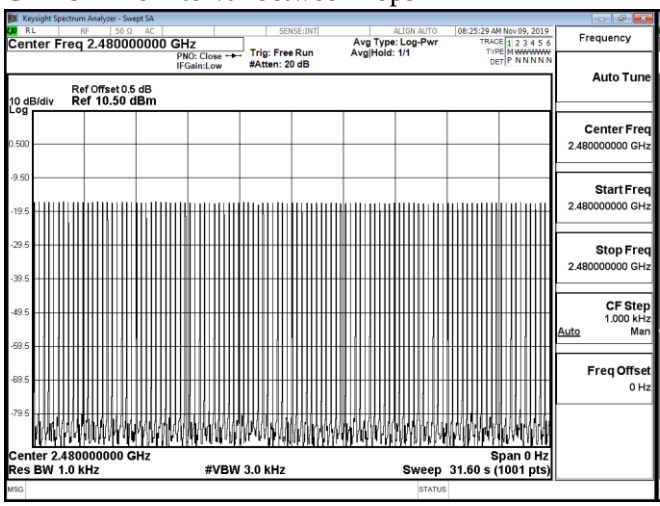
CH39 Time Interval between hops



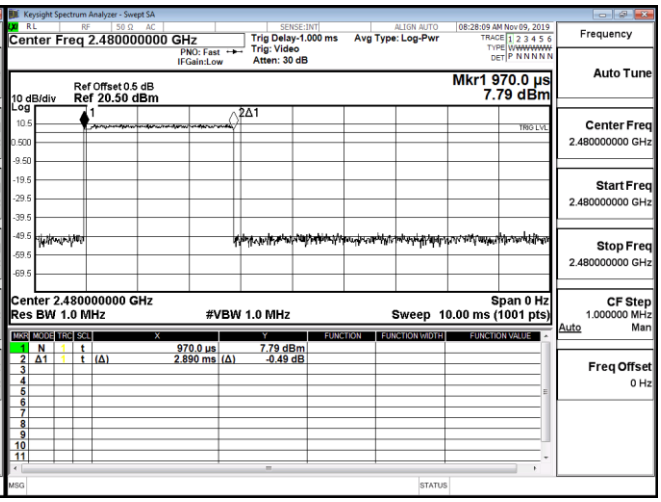
CH 39Transmission Time



CH 78 Time Interval between hops



CH 78 Transmission Time

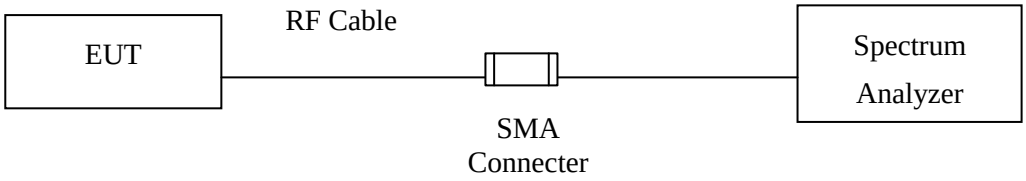


Note:

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

10. Occupied Bandwidth

10.1. Test Setup



10.2. Limits

N/A

10.3. Test Procedure

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

10.4. Uncertainty

± 283Hz

10.5. Test Result of Occupied Bandwidth

Product : Bluetooth Headset
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	966	--	NA
39	2441	966	--	NA
78	2480	966	--	NA

Figure Channel 00:

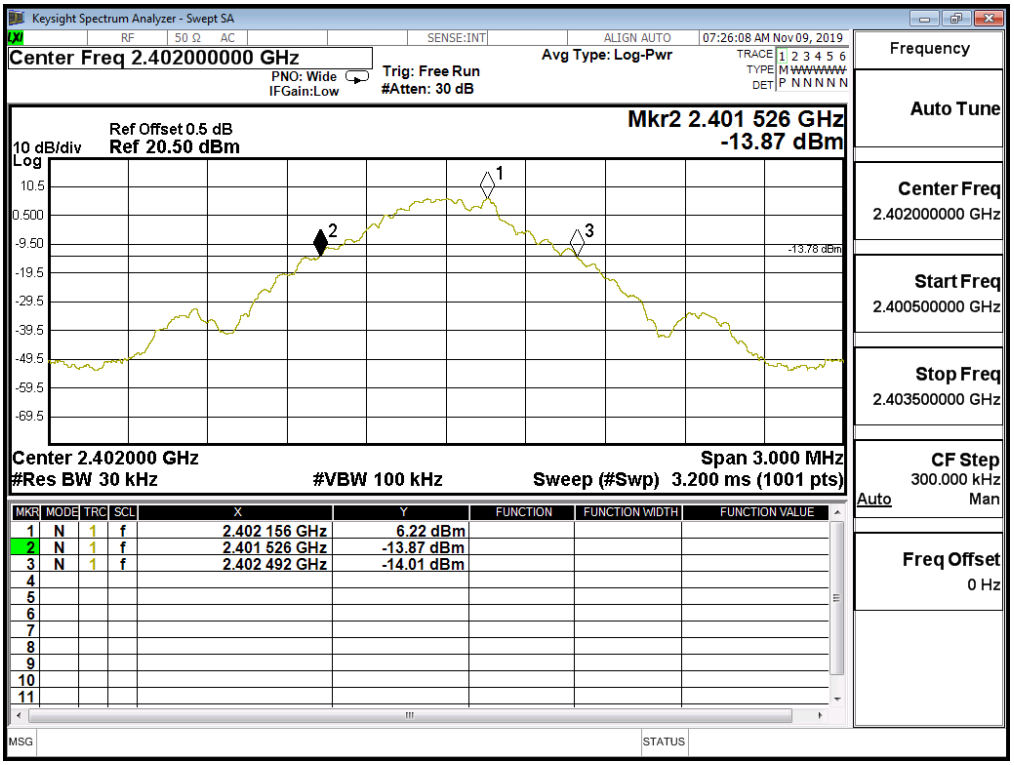


Figure Channel 39:

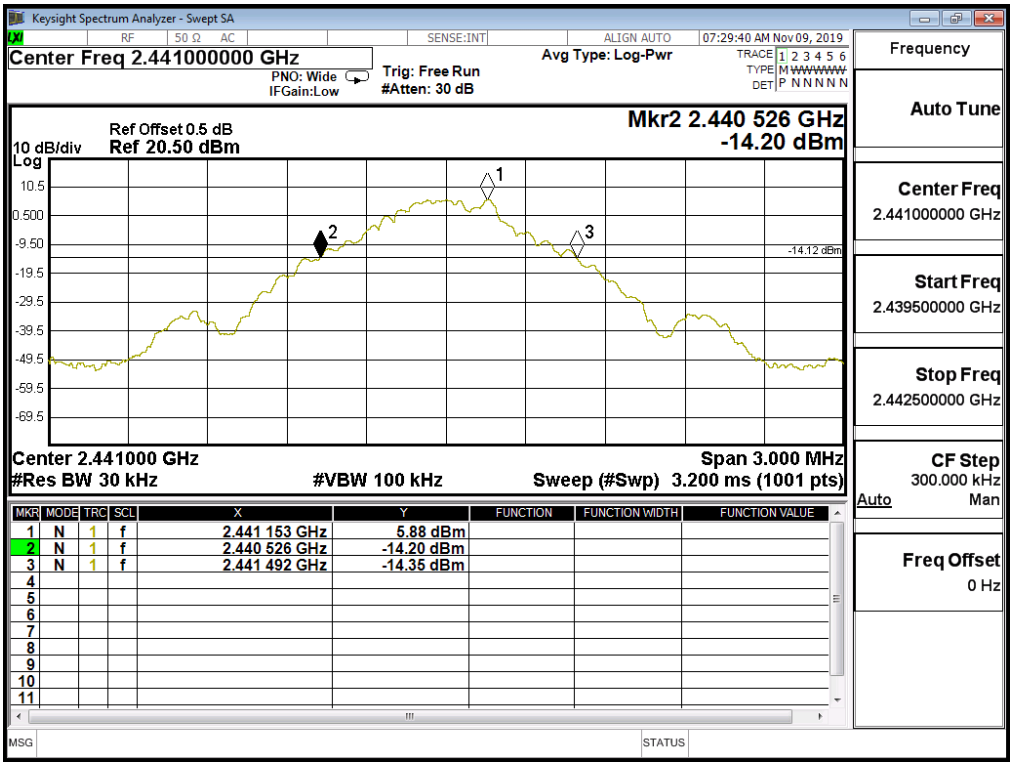
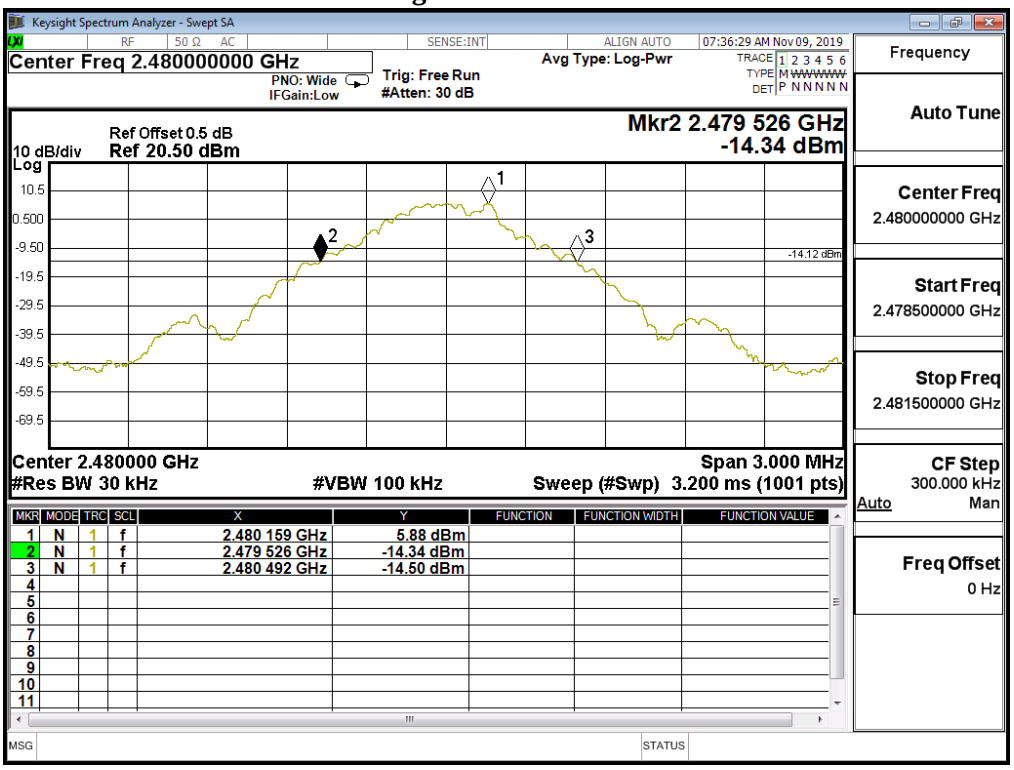


Figure Channel 78:



Product : Bluetooth Headset
Test Item : Occupied Bandwidth Data
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1341	--	NA
39	2441	1341	--	NA
78	2480	1388	--	NA

Figure Channel 00:

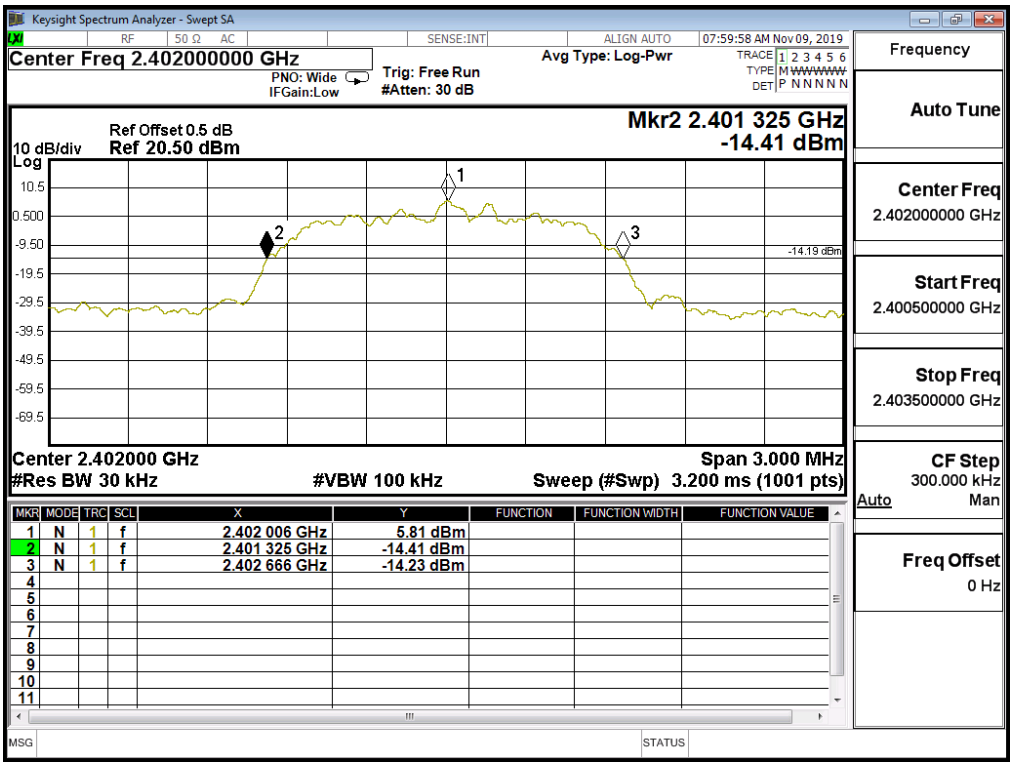


Figure Channel 39:

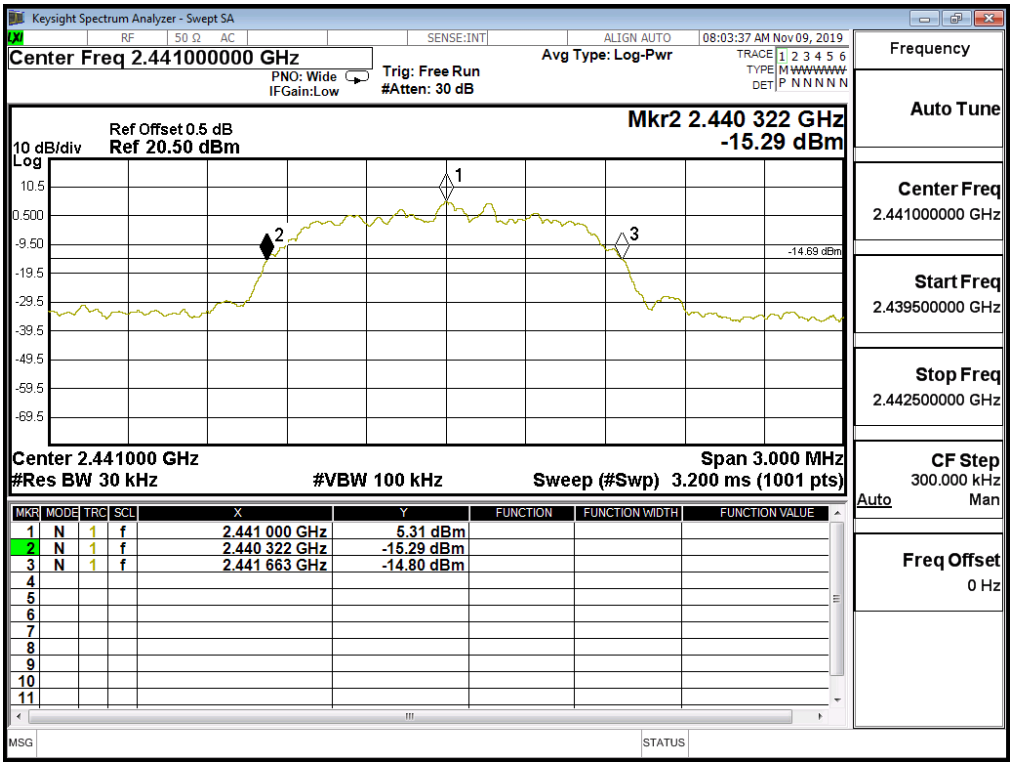
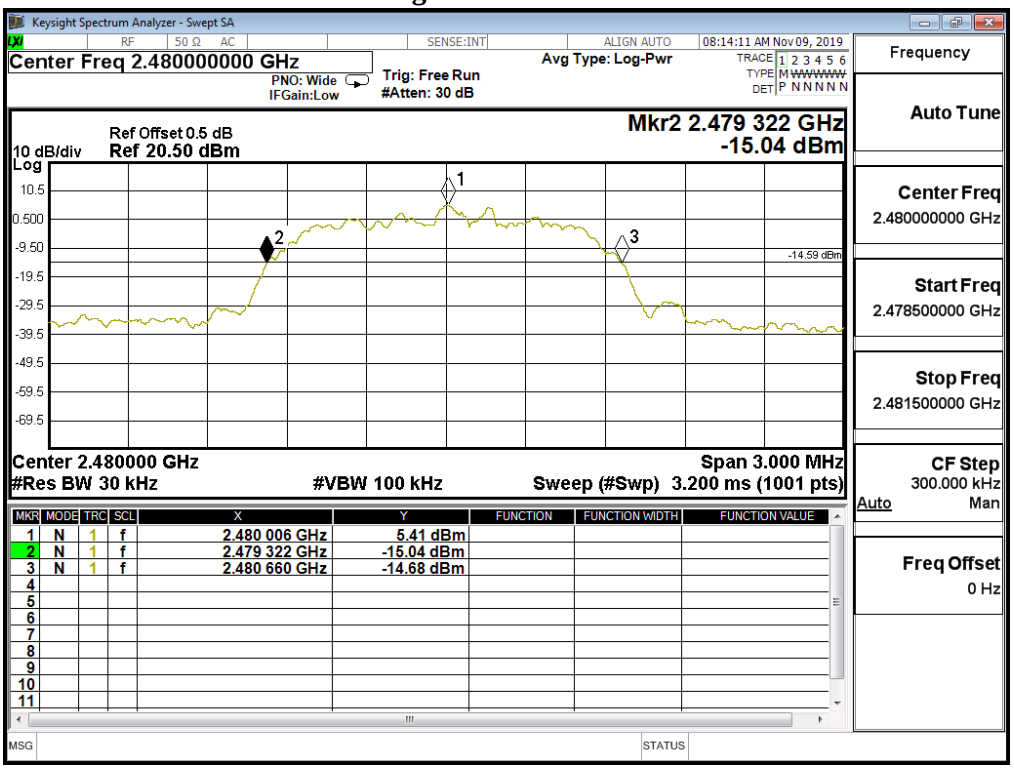


Figure Channel 78:



Product : Bluetooth Headset
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	1317	--	NA
39	2441	1317	--	NA
78	2480	1317	--	NA

Figure Channel 00:

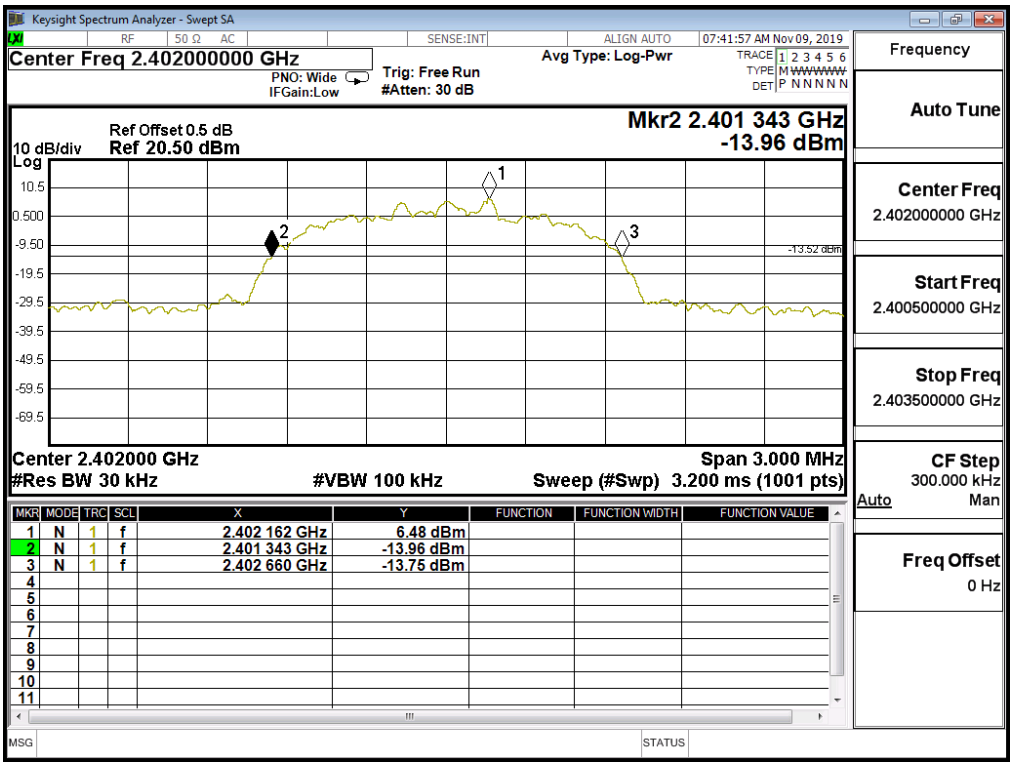


Figure Channel 39:

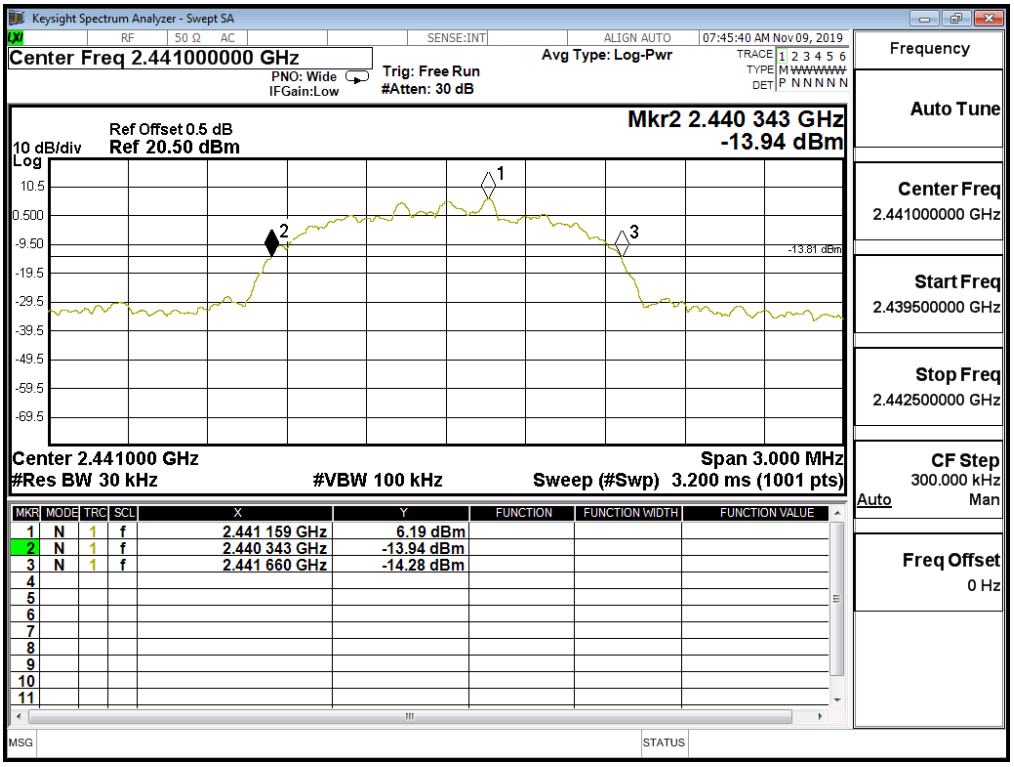
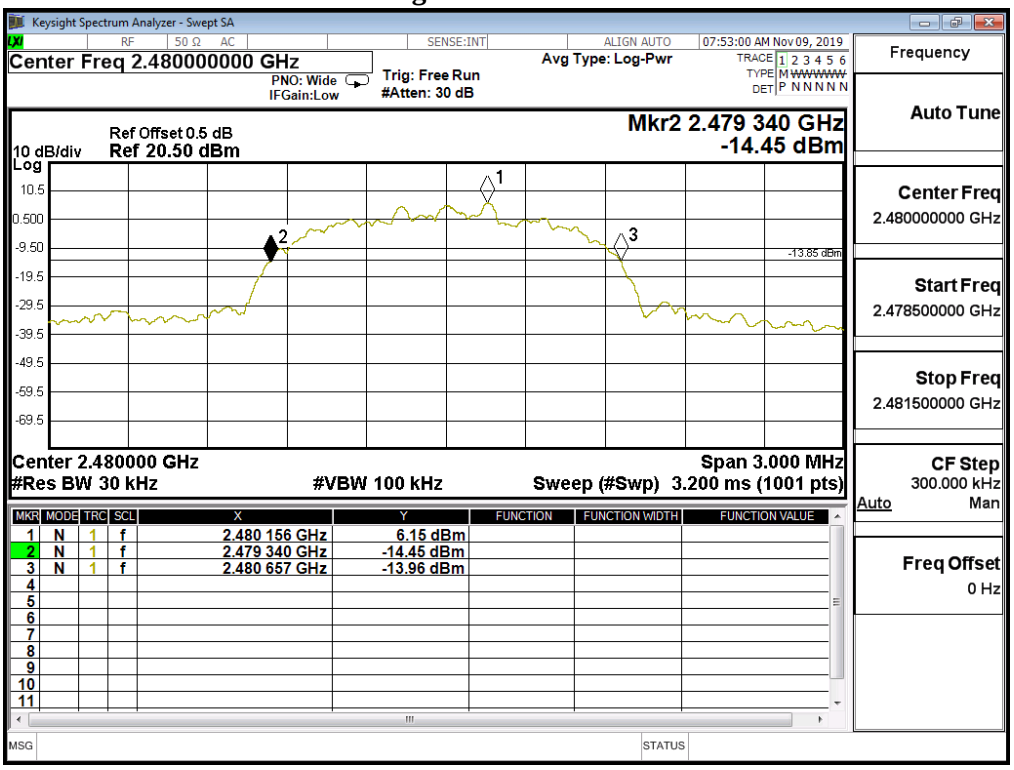
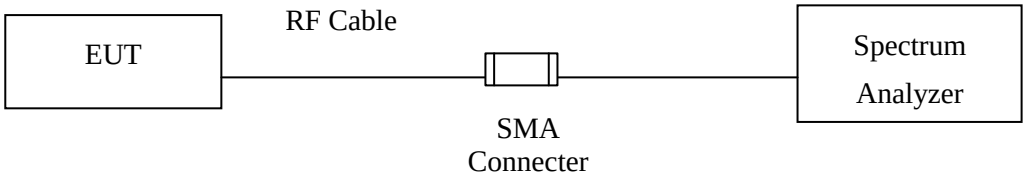


Figure Channel 78:



11. Duty Cycle

11.1. Test Setup

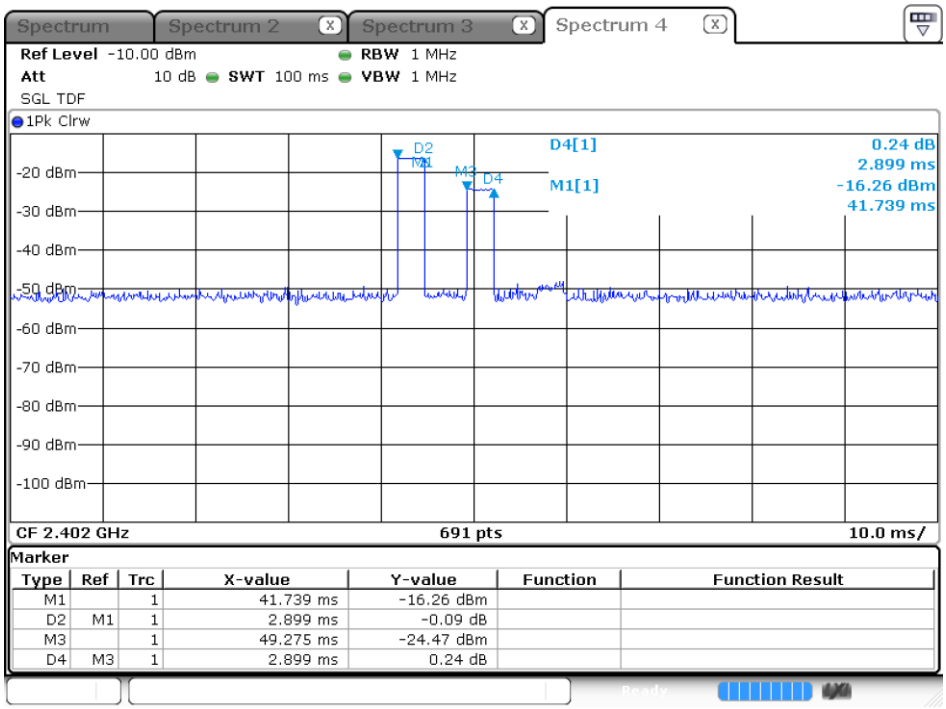


11.2. Uncertainty

± 25msec

11.3. Test Result of Duty Cycle

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



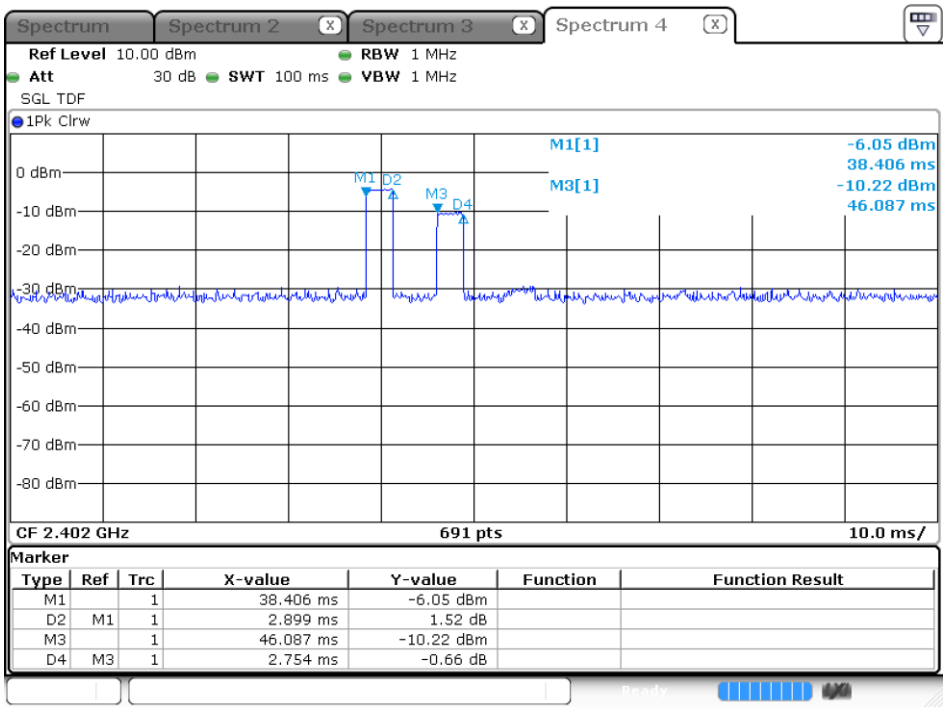
Time on of 100ms=2.899ms*2= 5.798ms

Duty Cycle=5.798ms / 100ms= 0.05798

Duty Cycle correction factor= 20 LOG 0.05798= -24.734 dB

Duty Cycle correction factor	**-24.734**	**dB**

Product : Bluetooth Headset
Test Item : Duty Cycle
Test Mode : Mode 2: Transmit - 2Mbps (π/4DQPSK)



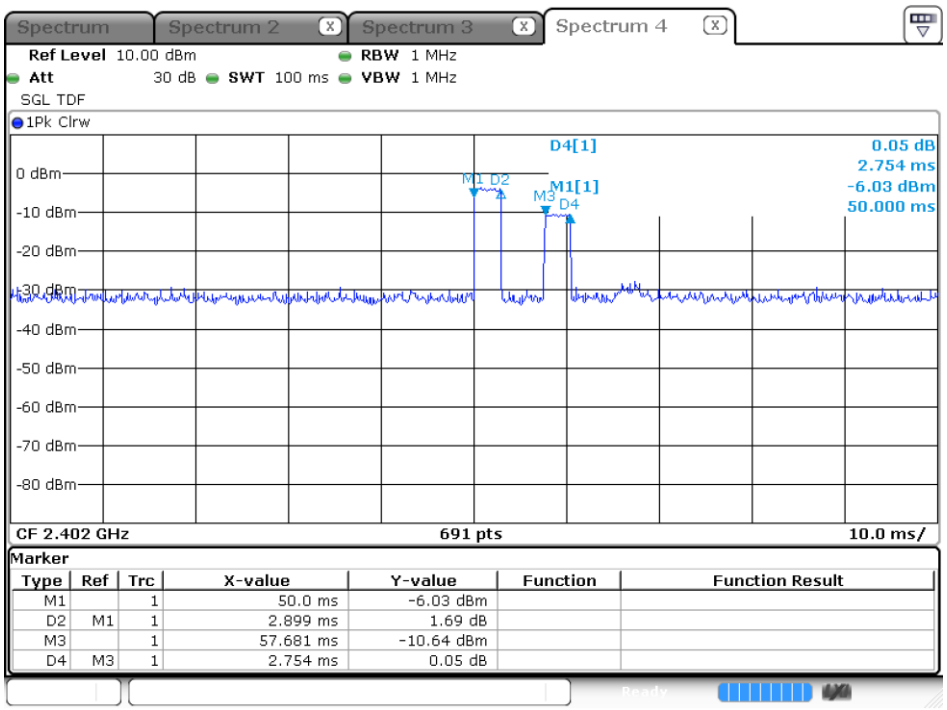
Time on of 100ms=2.899ms+2.754ms= 5.653ms

Duty Cycle=5.653ms / 100ms= 0.05653

Duty Cycle correction factor= 20 LOG 0.05653= -24.954 dB

Duty Cycle correction factor	**-24.954**	**dB**

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



Time on of 100ms=2.899ms+2.754ms= 5.653ms

Duty Cycle=5.653ms / 100ms= 0.05653

Duty Cycle correction factor= 20 LOG 0.05653= -24.954 dB

Duty Cycle correction factor	**-24.954**	**dB**

12. EMI Reduction Method During Compliance Testing

No modification was made during testing.