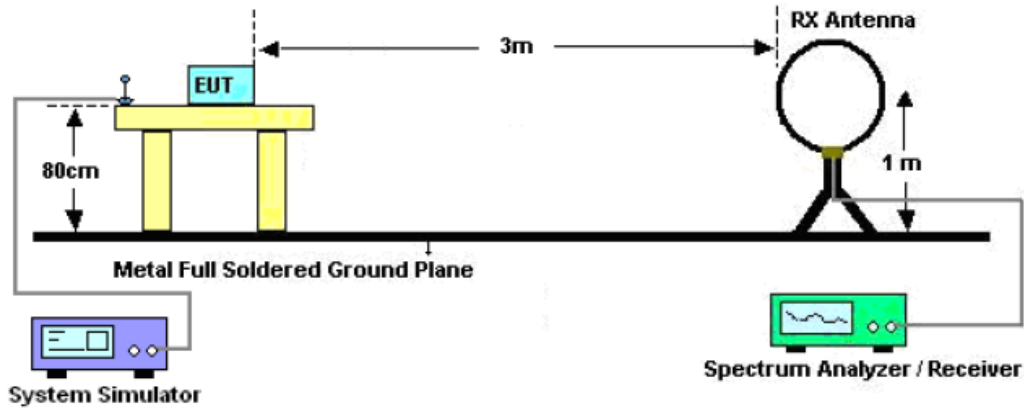
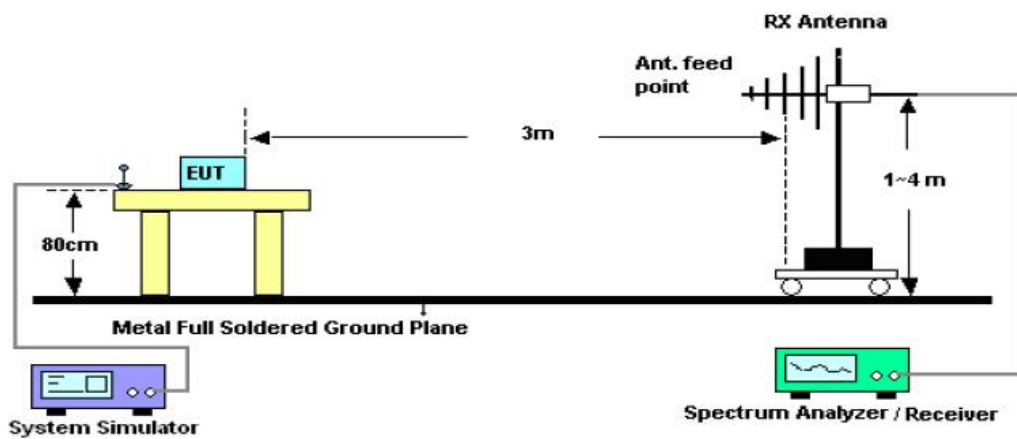


**10.2. TEST SETUP**

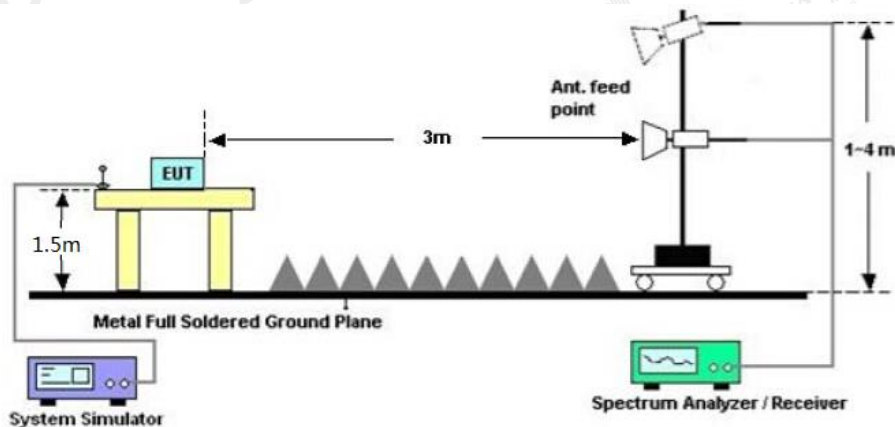
**Radiated Emission Test-Setup Frequency Below 30MHz**



**RADIATED EMISSION TEST SETUP 30MHz-1000MHz**



**RADIATED EMISSION TEST SETUP ABOVE 1000MHz**



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### 10.3. LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
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

Note: All modes were tested For restricted band radiated emission, the test records reported below are the worst result compared to other modes.

### 10.4. TEST RESULT

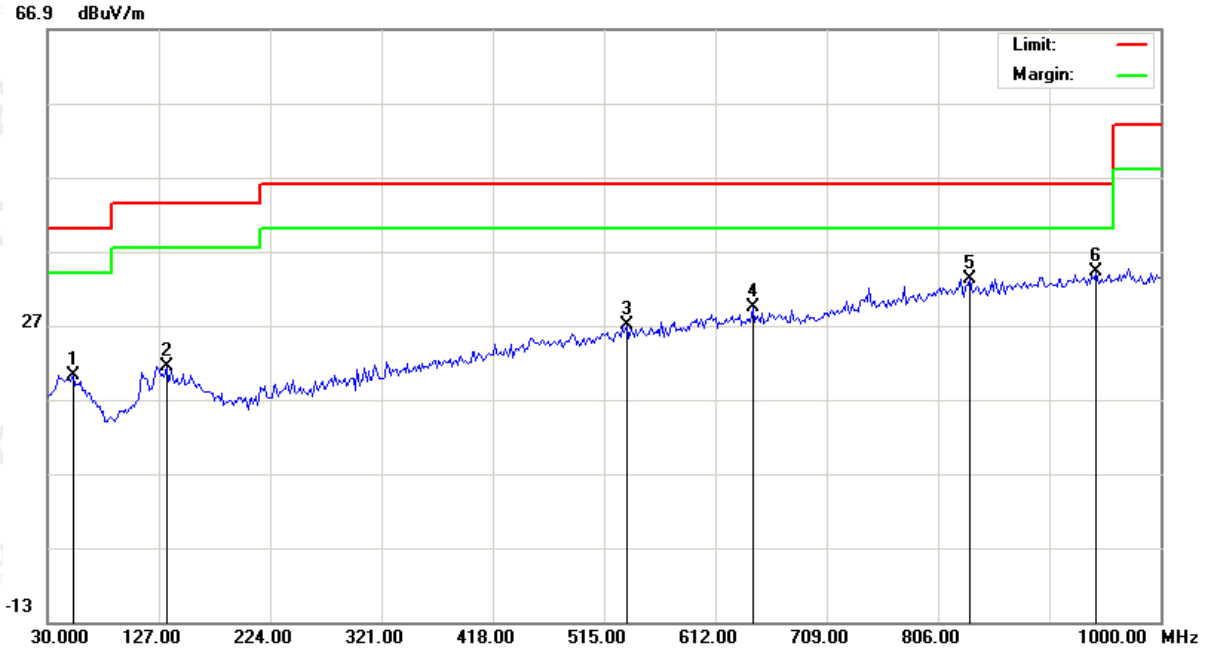
#### RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHZ.

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**RADIATED EMISSION BELOW 1GHZ**

<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 4	<b>Antenna</b>	Horizontal

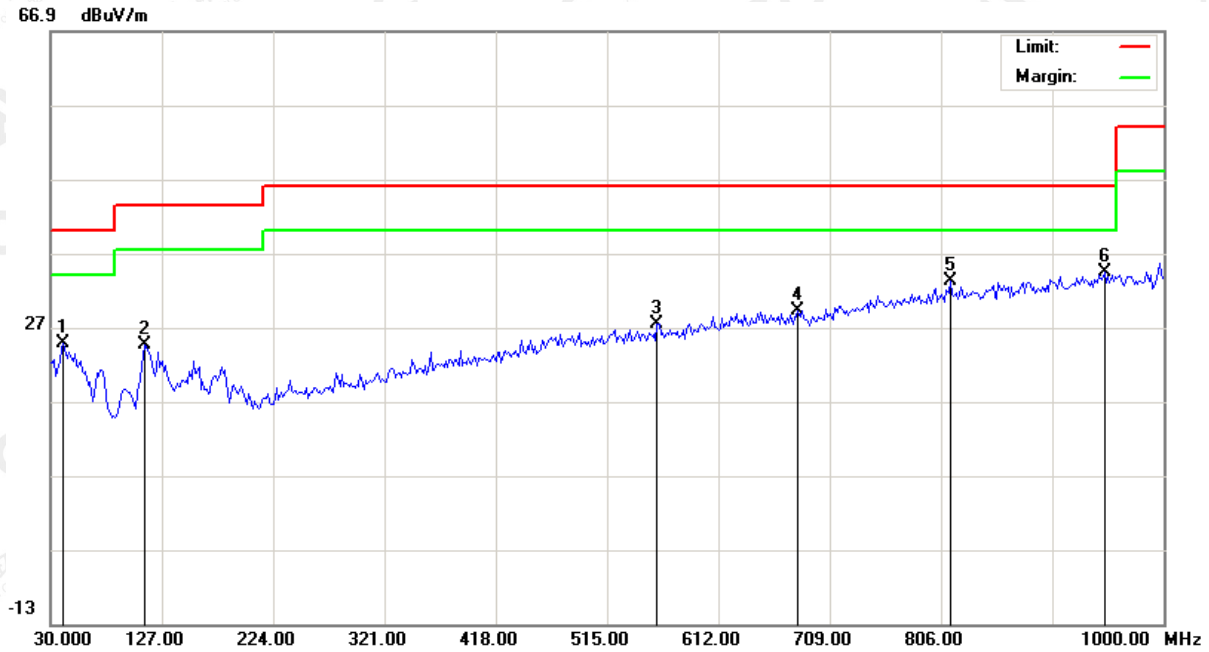


No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		52.6333	0.68	19.50	20.18	40.00	-19.82	peak			
2		133.4667	2.62	18.82	21.44	43.50	-22.06	peak			
3		534.4000	1.42	25.66	27.08	46.00	-18.92	peak			
4		644.3333	1.86	27.48	29.34	46.00	-16.66	peak			
5		833.4833	2.38	30.84	33.22	46.00	-12.78	peak			
6	*	943.4167	2.04	32.07	34.11	46.00	-11.89	peak			

**RESULT: PASS**

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<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 4	<b>Antenna</b>	Vertical



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		41.3167	4.68	20.04	24.72	40.00	-15.28	peak			
2		112.4500	7.39	17.23	24.62	43.50	-18.88	peak			
3		558.6500	1.21	26.14	27.35	46.00	-18.65	peak			
4		681.5167	1.26	27.93	29.19	46.00	-16.81	peak			
5		814.0833	2.58	30.59	33.17	46.00	-12.83	peak			
6	*	948.2667	2.31	32.12	34.43	46.00	-11.57	peak			

**RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. All test modes had been pre-tested. The mode 4 is the worst case and recorded in the report.

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**RADIATED EMISSION ABOVE 1GHZ**

<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 1	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4804.062	48.02	3.76	51.78	74.00	-22.22	peak
4804.062	44.01	3.76	47.77	54.00	-6.23	AVG
7206.093	36.88	8.17	45.05	74.00	-28.95	peak
7206.093	33.62	8.17	41.79	54.00	-12.21	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 1	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4804.062	49.99	3.76	53.75	74.00	-20.26	peak
4804.062	43.29	3.76	47.05	54.00	-6.95	AVG
7206.093	38.28	8.17	46.45	74.00	-27.56	peak
7206.093	35.83	8.17	44.00	54.00	-10.00	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 2	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Value Type
4882.062	46.54	3.78	50.32	74.00	-23.68	peak
4882.062	42.98	3.78	46.76	54.00	-7.24	AVG
7323.093	39.95	8.23	48.18	74.00	-25.82	peak
7323.093	38.62	8.23	46.85	54.00	-7.15	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 2	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Value Type
4882.062	48.00	3.78	51.78	74.00	-22.22	peak
4882.062	45.21	3.78	48.99	54.00	-5.01	AVG
7323.093	40.39	8.23	48.62	74.00	-25.38	peak
7323.093	36.79	8.23	45.02	54.00	-8.98	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.062	46.67	3.81	50.48	74.00	-23.52	peak
4960.062	45.11	3.81	48.92	54.00	-5.08	AVG
7440.093	39.78	8.27	48.05	74.00	-25.95	peak
7440.093	37.32	8.27	45.59	54.00	-8.42	AVG

Remark:  
 Factor = Antenna Factor + Cable Loss – Pre-amplifier.

<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.062	47.64	3.81	51.45	74.00	-22.55	peak
4960.062	44.64	3.81	48.45	54.00	-5.55	AVG
7440.093	38.78	8.27	47.05	74.00	-26.95	peak
7440.093	37.28	8.27	45.55	54.00	-8.45	AVG

Remark:  
 Factor = Antenna Factor + Cable Loss – Pre-amplifier.

### RESULT: PASS

#### Note:

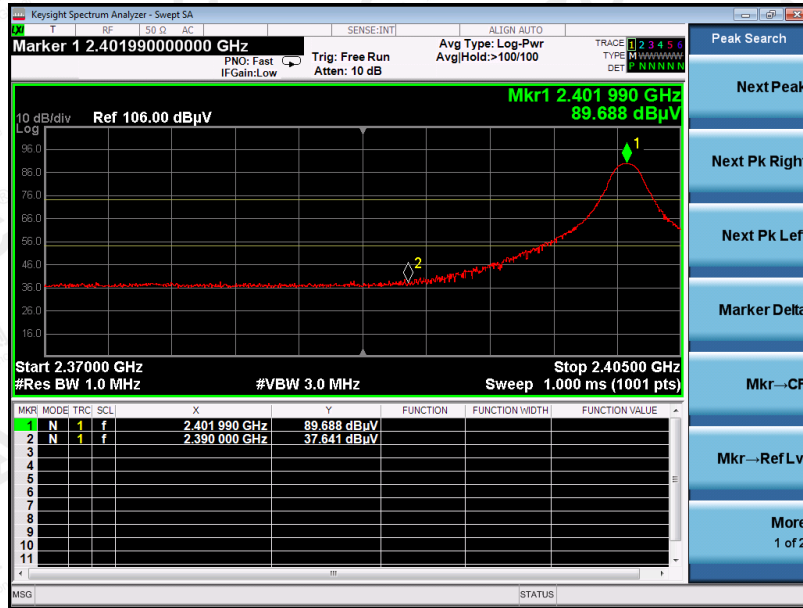
- Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report.
- Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.
- The "Factor" value can be calculated automatically by software of measurement system.
- All test modes had been tested. The GFSK modulation is the worst case and recorded in the report.

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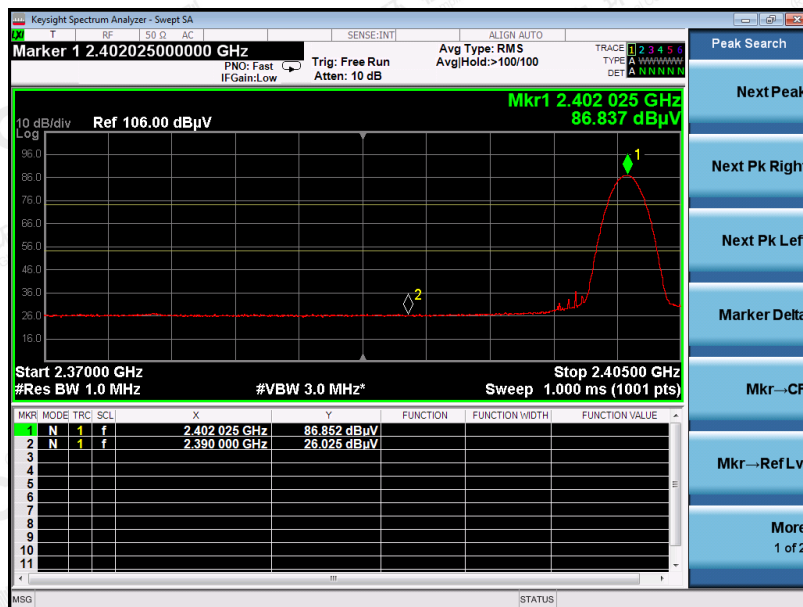
**TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS**

<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 1	<b>Antenna</b>	Horizontal

PK



AV



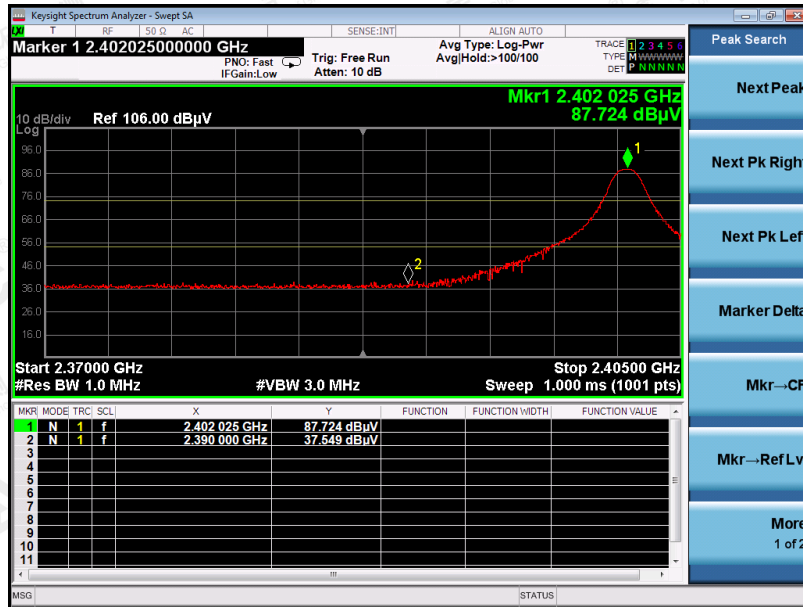
**RESULT: PASS**

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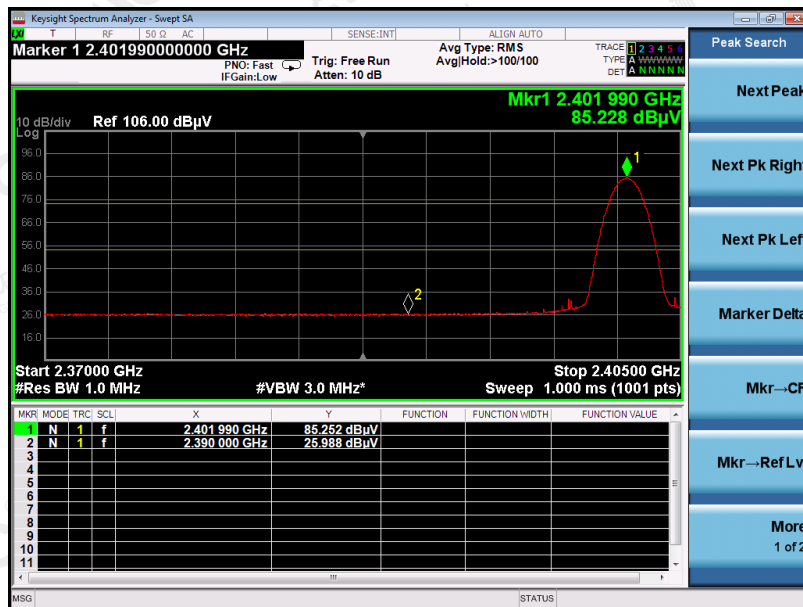


<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 1	<b>Antenna</b>	Vertical

PK



AV

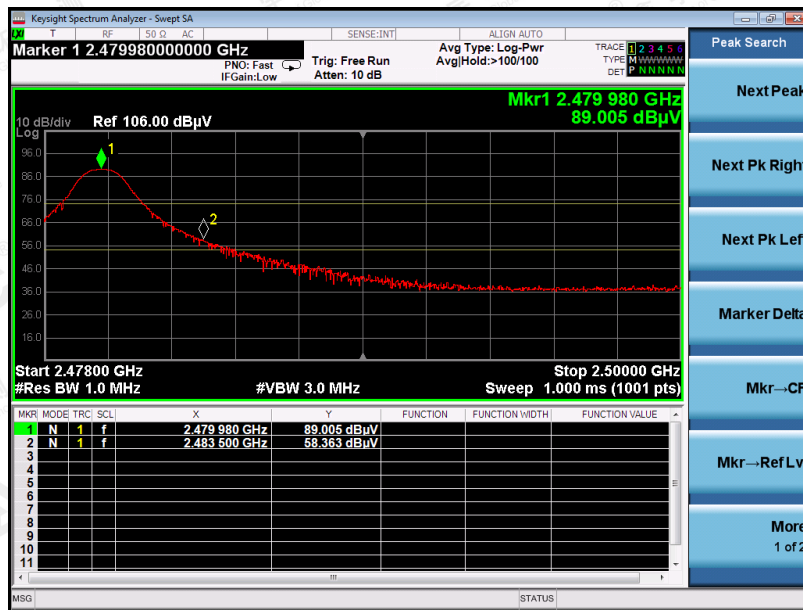


**RESULT: PASS**

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<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Horizontal

PK



AV

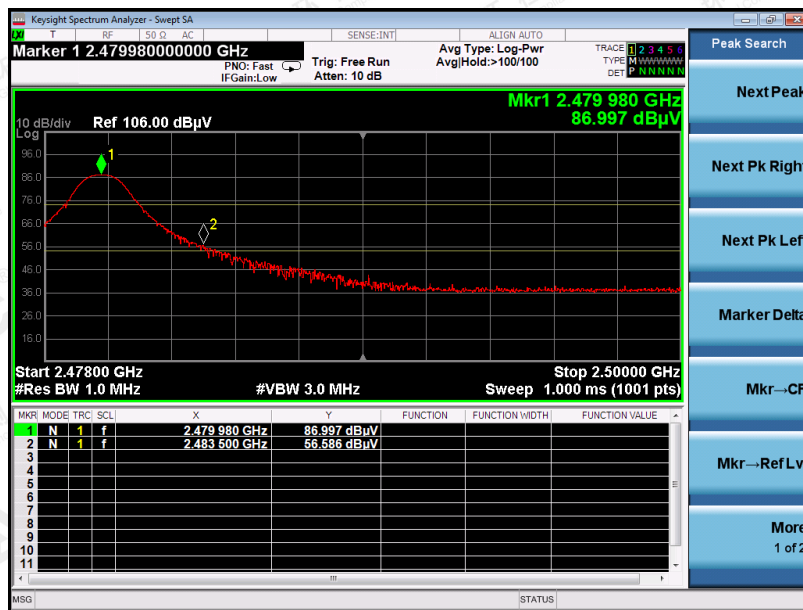


**RESULT: PASS**

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<b>EUT</b>	Bluetooth 5.0 In-ear Earphones with Built-in and Multimedia Function	<b>Model Name</b>	18LY09
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Vertical

PK



AV



**RESULT: PASS**

**Note:** The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F. All test modes had been pre-tested. The GFSK modulation is the worst case and recorded in the report.

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## 11. NUMBER OF HOPPING FREQUENCY

### 11.1. MEASUREMENT PROCEDURE

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
2. 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.
3. VBW  $\geq$  RBW. Sweep: Auto. Detector function: Peak. Trace: Max hold.
4. Allow the trace to stabilize.

### 11.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 8.2

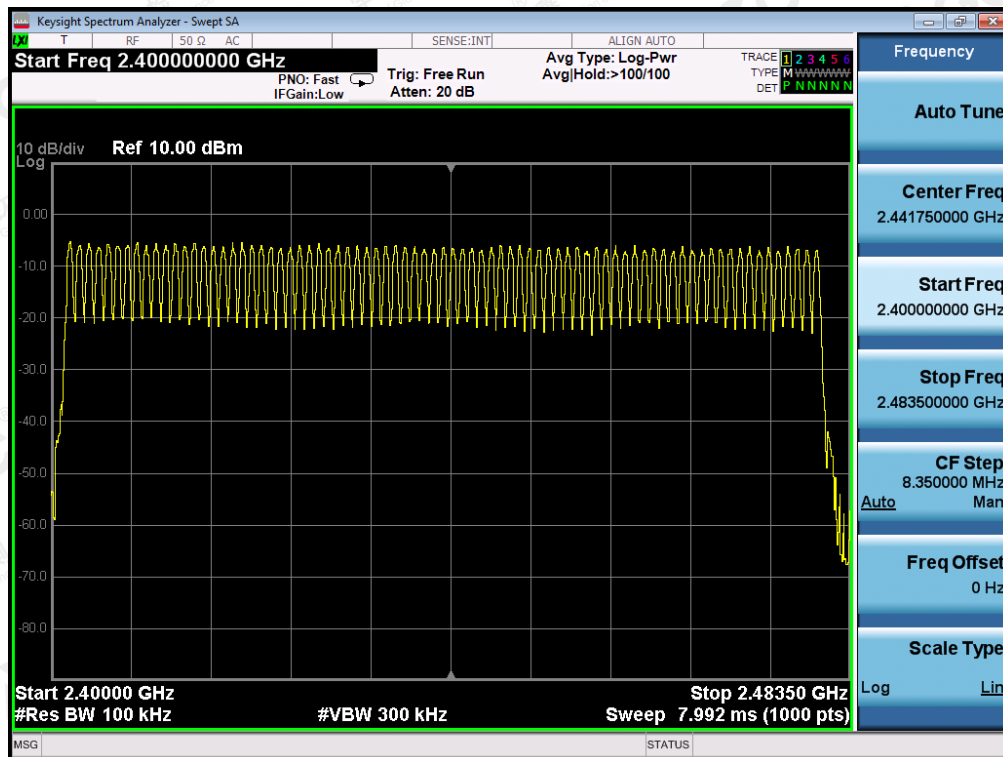
### 11.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

### 11.4. LIMITS AND MEASUREMENT RESULT

TOTAL NO. OF HOPPING CHANNEL	LIMIT (NO. OF CH)	MEASUREMENT (NO. OF CH)	RESULT
	$\geq 15$	79	PASS

TEST PLOT FOR NO. OF TOTAL CHANNELS



Note: The GFSK modulation is the worst case and recorded in the report.

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## 12. TIME OF OCCUPANCY (DWELL TIME)

### 12.1. MEASUREMENT PROCEDURE

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span: Zero span, centered on a hopping channel.
2. RBW shall be  $\leq$  channel spacing and where possible RBW should be set  $\gg 1/T$ , where T is the expected dwell time per channel.
3. Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.
4. Detector function: Peak. Trace: Max hold.
5. Use the marker-delta function to determine the transmit time per hop.
6. Repeat the measurement using a longer sweep time to determine the number of hops over the period specified in the requirements. The sweep time shall be equal to, or less than, the period specified in the requirements. Determine the number of hops over the sweep time and calculate the total number of hops in the period specified in the requirements, using the following equation:

$$(\text{Number of hops in the period specified in the requirements}) = (\text{number of hops on spectrum analyzer}) \times (\text{period specified in the requirements} / \text{analyzer sweep time})$$

7. The average time of occupancy is calculated from the transmit time per hop multiplied by the number of hops in the period specified in the requirements.

### 12.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 8.2

### 12.3. MEASUREMENT EQUIPMENT USED

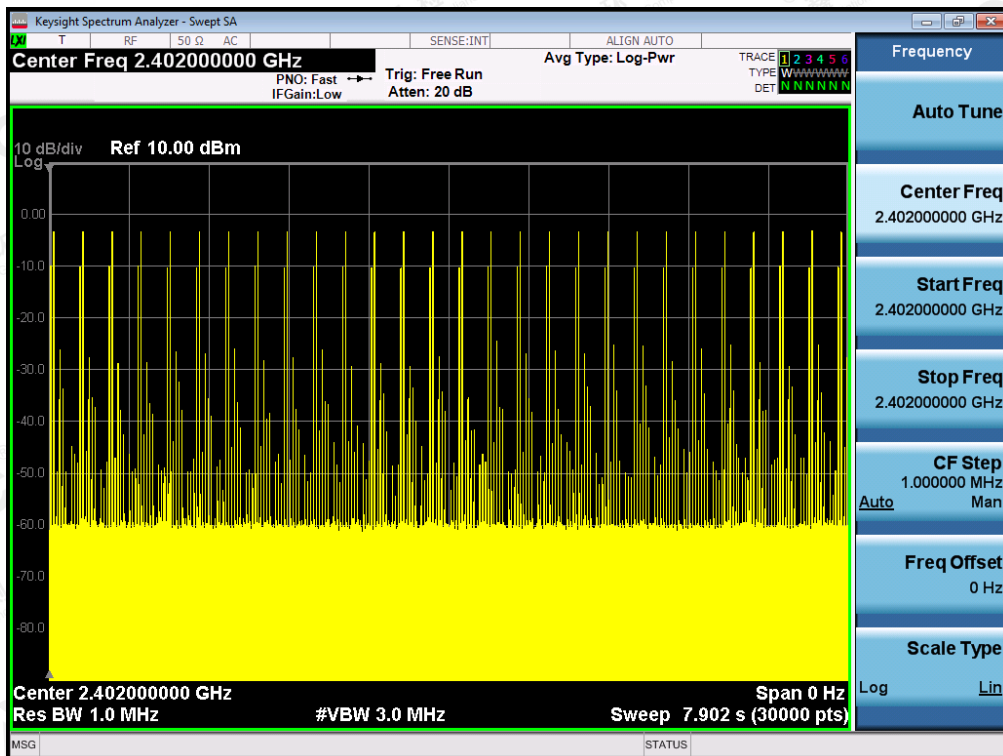
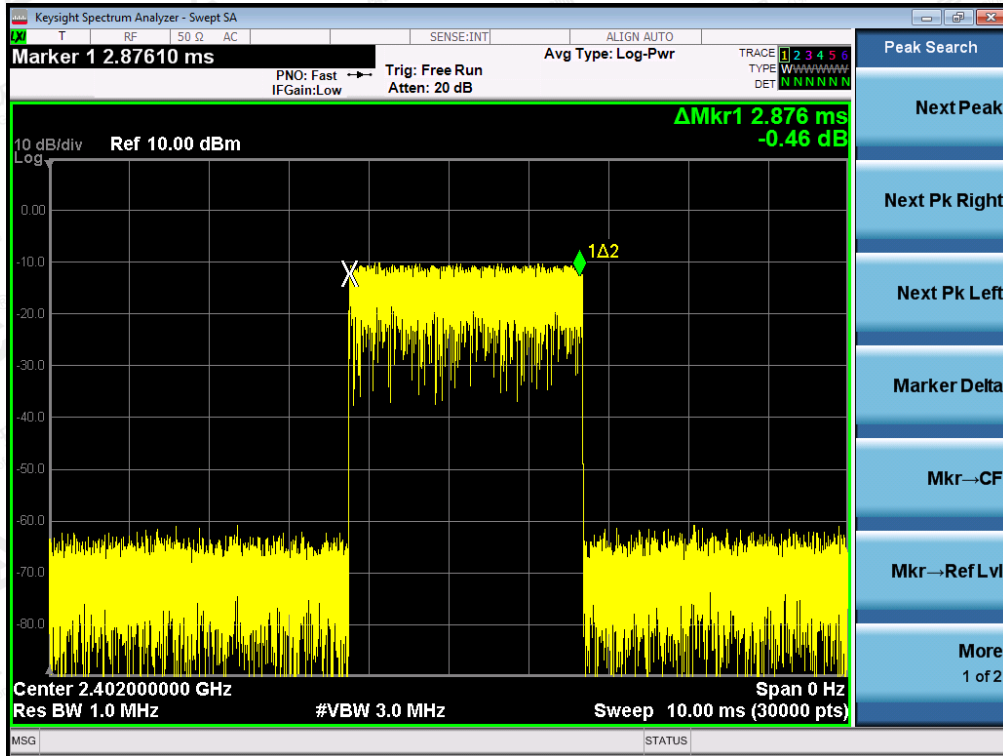
The same as described in section 6

### 12.4. LIMITS AND MEASUREMENT RESULT

Channel	Time of Pulse for DH5 (ms)	Number of hops in the period specified in the requirements	Sweep Time (ms)	Limit (ms)
Low	2.876	28*4	322.112	400
Middle	2.918	27*4	315.144	400
High	2.917	28*4	326.704	400

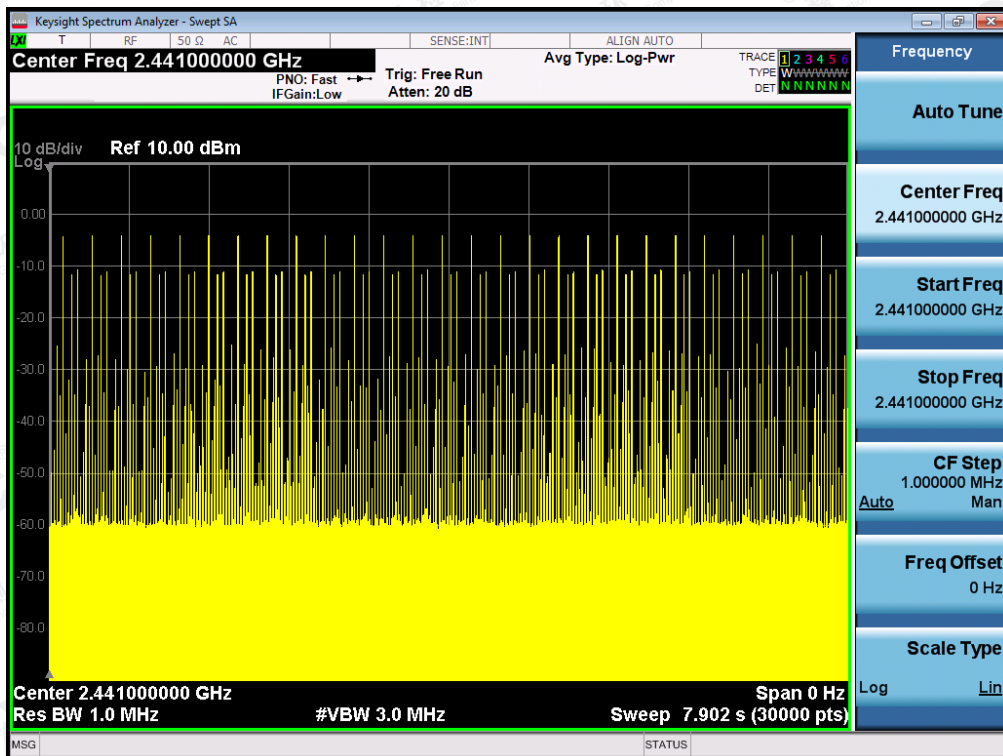
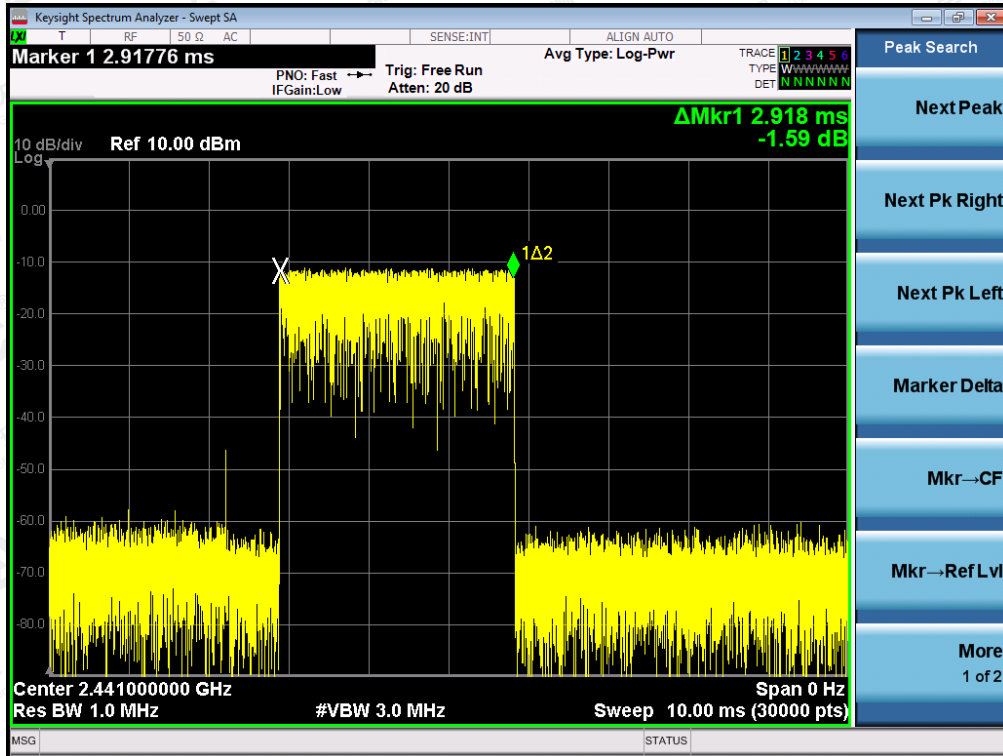
Note: The 8-DPSK modulation is the worst case and recorded in the report.

TEST PLOT OF LOW CHANNEL



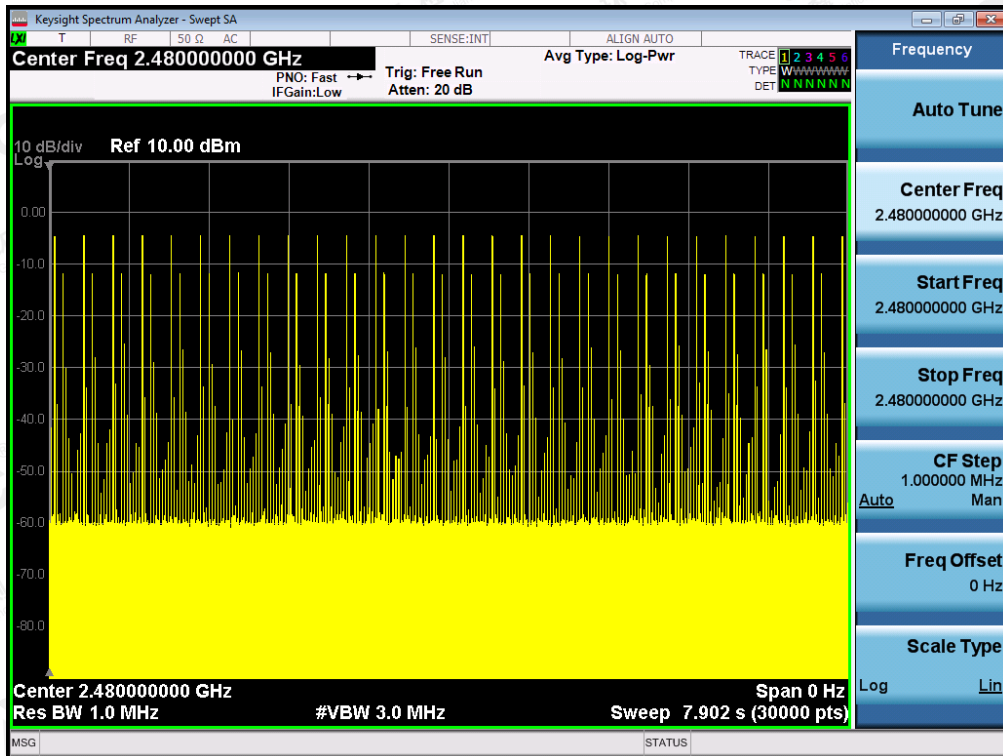
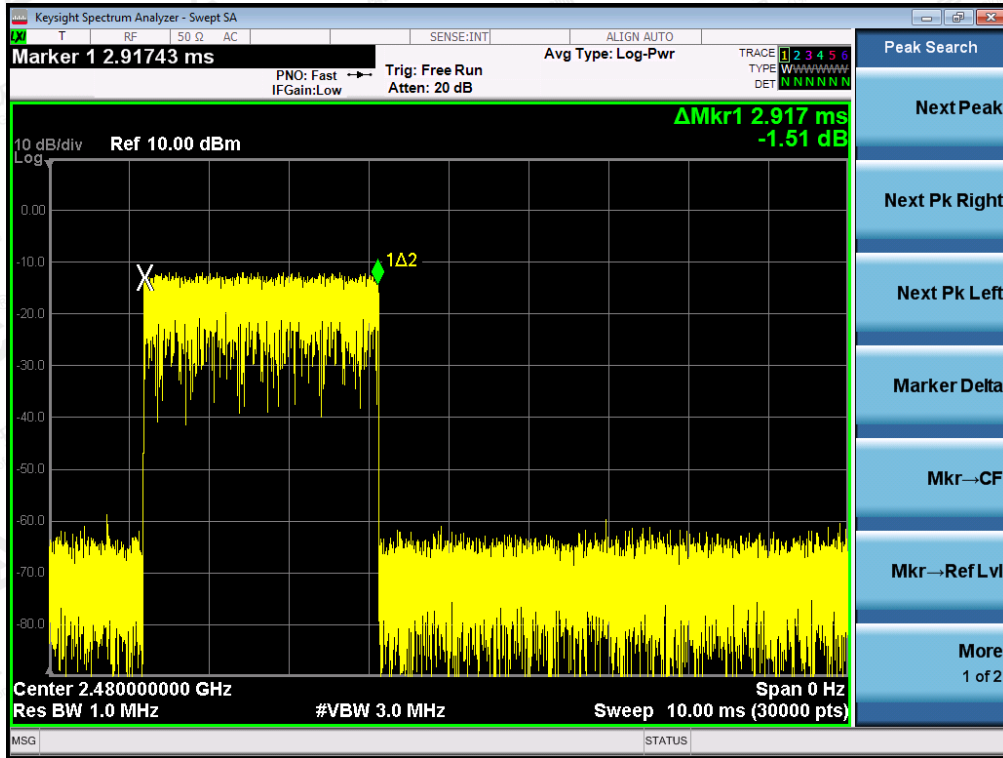
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TEST PLOT OF MIDDLE CHANNEL



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TEST PLOT OF HIGH CHANNEL



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### 13. FREQUENCY SEPARATION

#### 13.1. MEASUREMENT PROCEDURE

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span: Wide enough to capture the peaks of two adjacent channels.
2. 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.
3. Video (or average) bandwidth (VBW)  $\geq$  RBW.
4. Sweep: Auto. e) Detector function: Peak. f) Trace: Max hold. g) Allow the trace to stabilize.

Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

#### 13.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2

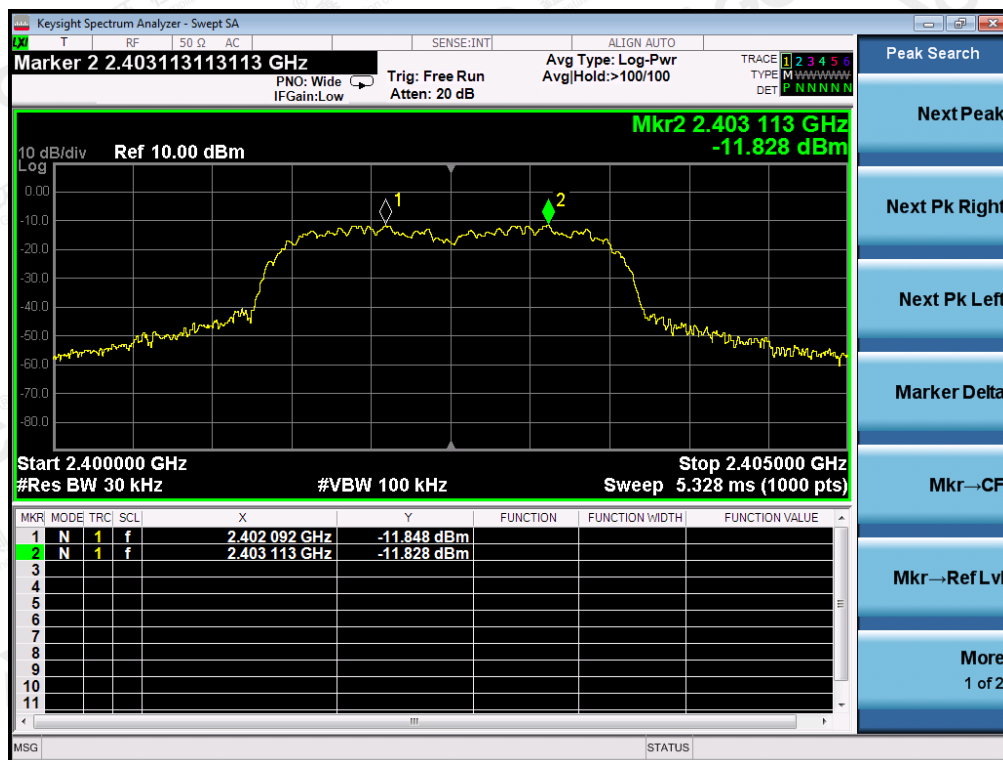
#### 13.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

#### 13.4. LIMITS AND MEASUREMENT RESULT

CHANNEL	CHANNEL SEPARATION	LIMIT	RESULT
	KHz	KHz	
CH01-CH02	1000	$\geq$ 25 KHz or 2/3 20 dB BW	Pass

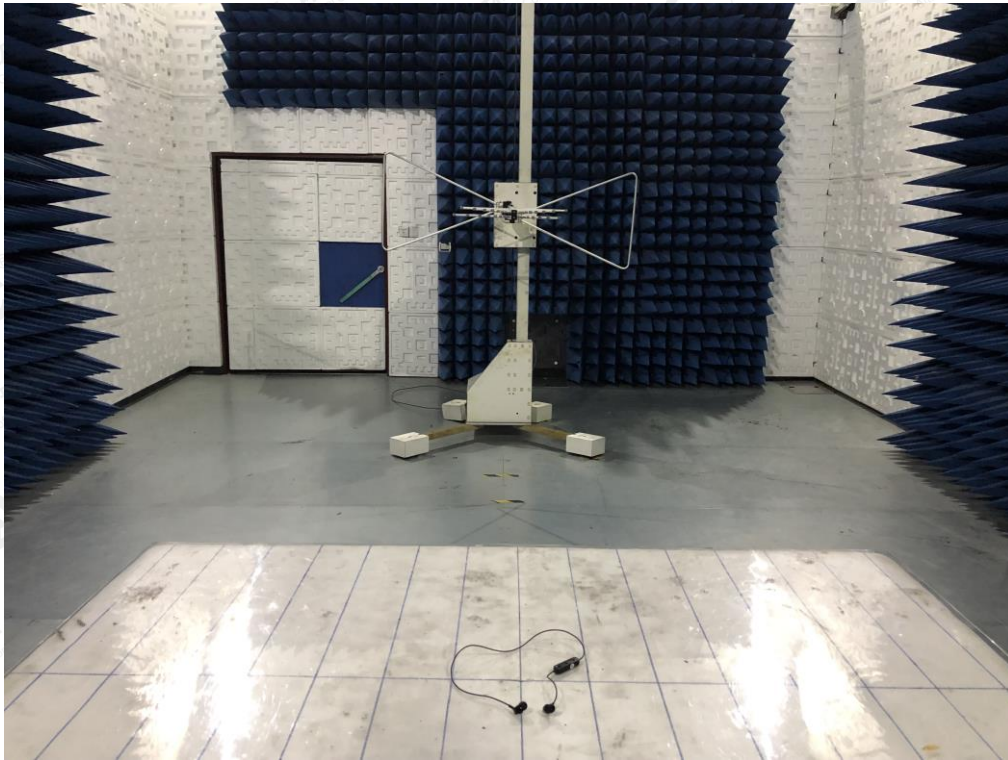
TEST PLOT FOR FREQUENCY SEPARATION



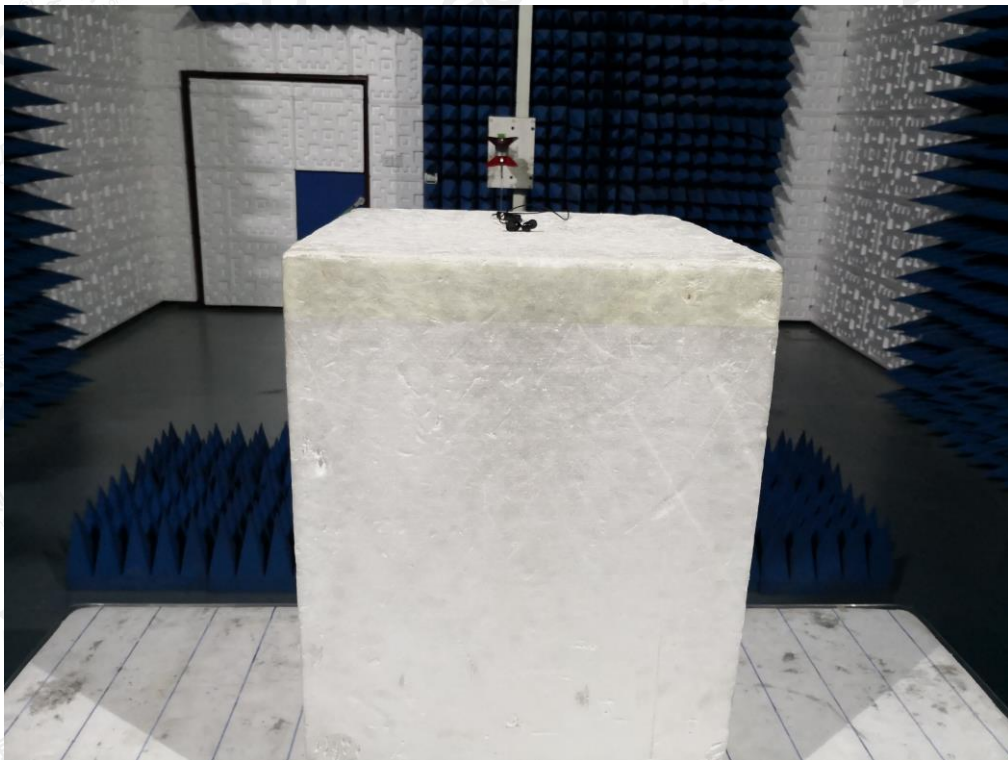
Note: The 8-DPSK modulation is the worst case and recorded in the report.

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**APPENDIX A: PHOTOGRAPHS OF TEST SETUP**  
RADIATED EMISSION TEST SETUP BELOW 1GHZ



RADIATED EMISSION TEST SETUP ABOVE 1GHZ



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**APPENDIX B: PHOTOGRAPHS OF EUT**  
ALL VIEW OF EUT



TOP VIEW OF EUT



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BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



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BACK VIEW OF EUT



LEFT VIEW OF EUT



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RIGHT VIEW OF EUT

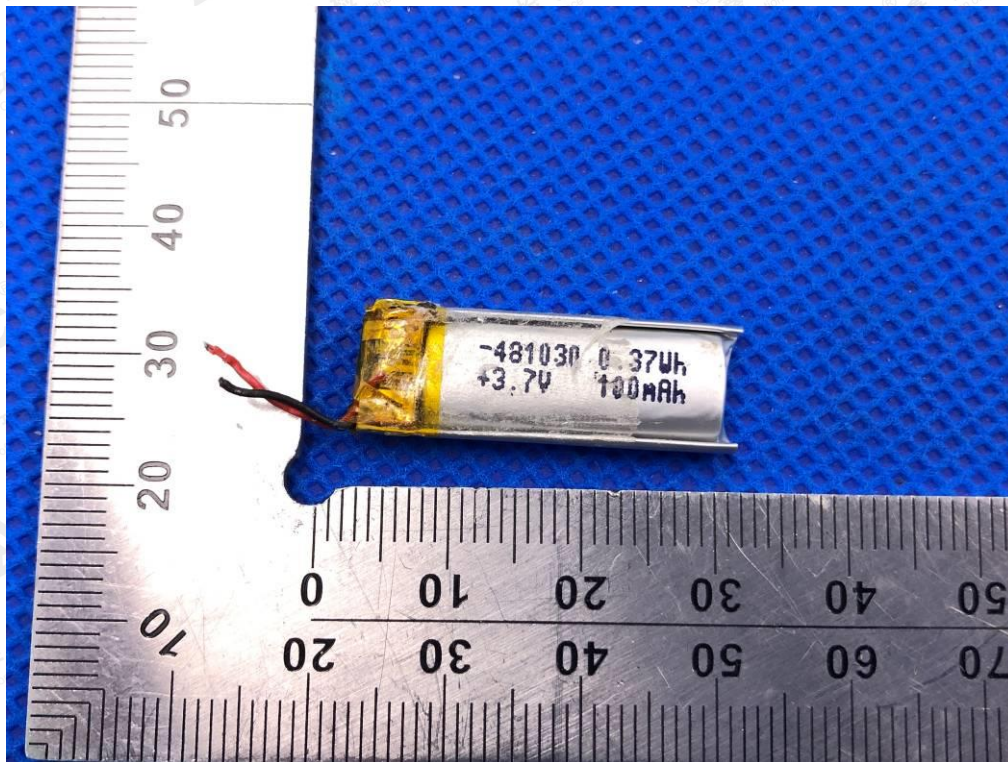


OPEN VIEW OF EUT

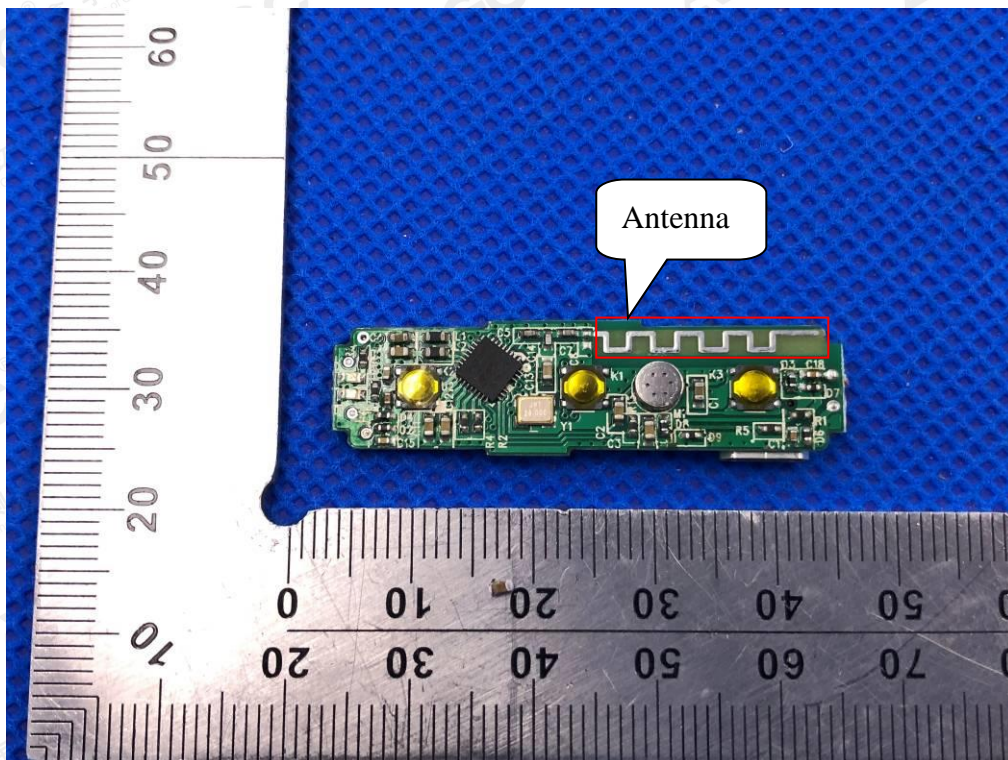


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VIEW OF BATTERY

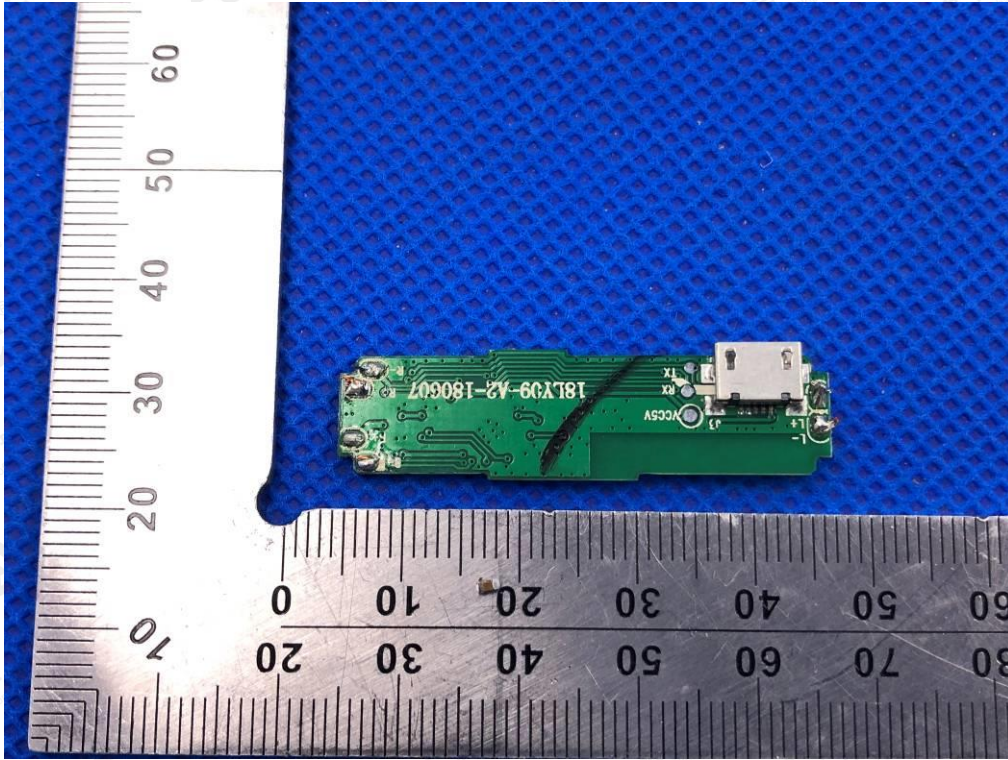


INTERNAL VIEW OF EUT-1

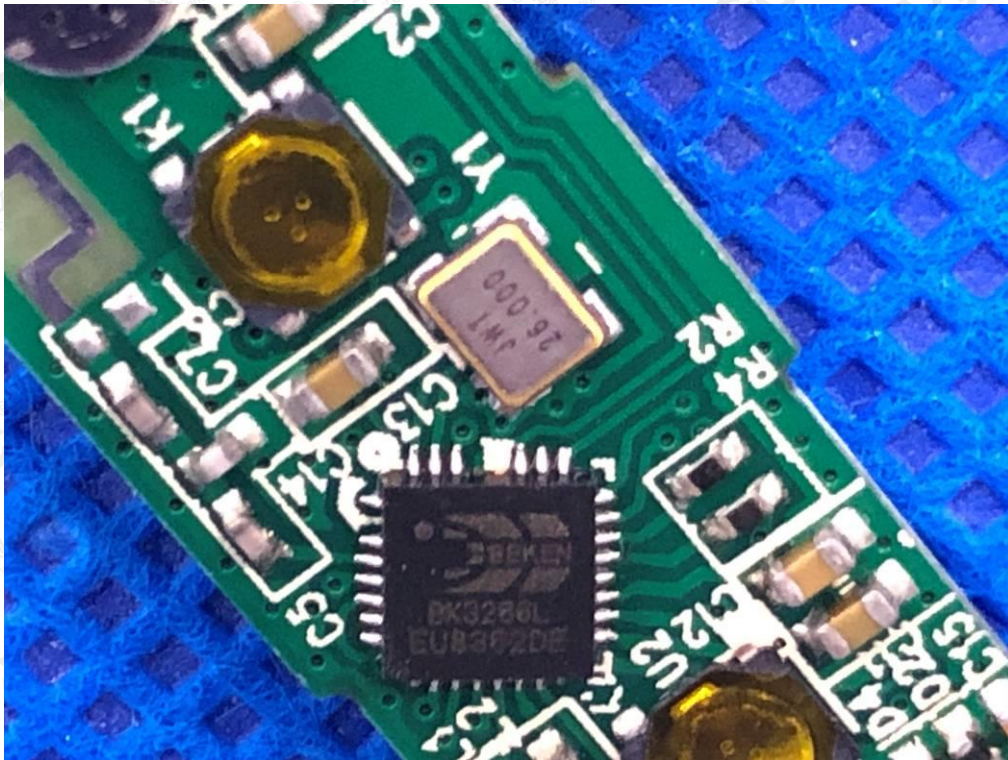


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INTERNAL VIEW OF EUT-2



INTERNAL VIEW OF EUT-3



---END OF REPORT---

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