

---

# FCC Test Report

---

Report No.: AGC00931150411FE03

**FCC ID** : OYC70202B  
**APPLICATION PURPOSE** : Original Equipment  
**PRODUCT DESIGNATION** : Bluetooth Headset  
**BRAND NAME** : N/A  
**MODEL NAME** : 70202B,70203B,H013  
**CLIENT** : Dongguan Taide Industrial Co., Ltd  
**DATE OF ISSUE** : May 12,2015  
**STANDARD(S)**  
**TEST PROCEDURE(S)** : FCC Part 15 Rules  
**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



**CAUTION:**

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



### Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 12,2015	Valid	Original Report

## TABLE OF CONTENTS

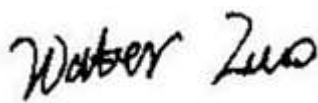


<b>1. VERIFICATION OF CONFORMITY .....</b>	<b>4</b>
<b>2. GENERAL INFORMATION .....</b>	<b>5</b>
2.1. PRODUCT DESCRIPTION .....	5
2.2. TABLE OF CARRIER FREQUENCYS .....	5
<b>3. MEASUREMENT UNCERTAINTY.....</b>	<b>7</b>
<b>4. DESCRIPTION OF TEST MODES.....</b>	<b>7</b>
<b>5. SYSTEM TEST CONFIGURATION .....</b>	<b>8</b>
5.1. CONFIGURATION OF EUT SYSTEM.....	8
5.2. EQUIPMENT USED IN EUT SYSTEM.....	8
5.3. SUMMARY OF TEST RESULTS.....	8
<b>6. TEST FACILITY .....</b>	<b>9</b>
<b>7 ALL TEST EQUIPMENT LIST .....</b>	<b>9</b>
<b>8. RADIATED EMISSION .....</b>	<b>10</b>
8.1TEST LIMIT.....	10
8.2. MEASUREMENT PROCEDURE.....	11
8.3. TEST SETUP.....	13
8.4. TEST RESULT(Worst modulation:GFSK).....	15
<b>9. BAND EDGE EMISSION .....</b>	<b>41</b>
9.1. MEASUREMENT PROCEDURE.....	41
9.2 TEST SETUP.....	41
9.3 RADIATED TEST RESULT(Worst modulation:GFSK) .....	42
<b>10. 20DB BANDWIDTH.....</b>	<b>50</b>
10.1. MEASUREMENT PROCEDURE.....	50
10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	50
10.3. LIMITS AND MEASUREMENT RESULTS.....	50
<b>11. FCC LINE CONDUCTED EMISSION TEST .....</b>	<b>59</b>
11.1. LIMITS OF LINE CONDUCTED EMISSION TEST .....	59
11.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST .....	59
11.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST .....	60
11.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST .....	60
11.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST .....	61
<b>APPENDIX A: PHOTOGRAPHS OF TEST SETUP .....</b>	<b>65</b>
<b>APPENDIX B: PHOTOGRAPHS OF EUT .....</b>	<b>67</b>

### 1. VERIFICATION OF CONFORMITY

<b>Applicant</b>	Dongguan Taide Industrial Co., Ltd.
<b>Address</b>	Taide Technology Park, Jinfenghuang Industrial Distrial, Fenggang Town,Dongguan City,China
<b>Manufacturer</b>	Dongguan Taide Industrial Co., Ltd.
<b>Address</b>	Taide Technology Park, Jinfenghuang Industrial Distrial, Fenggang Town,Dongguan City,China
<b>Product Designation</b>	Bluetooth Headset
<b>Brand Name</b>	N/A
<b>Test Model</b>	70202B
<b>Series Model</b>	70203B,H013
<b>Different Description</b>	All the same except for the model name
<b>Date of test</b>	May 04,2015 to May 07,2015
<b>Deviation</b>	None
<b>Condition of Test Sample</b>	Normal
<b>Report Template</b>	AGCRT-US-BR/RF

We hereby certify that:

The above equipment was tested by Compliance Certification Service(Shenzhen) Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

Prepared By	
	_____ Water Zuo      May 12,2015
Checked By	
	_____ Forrest Lei      May 12,2015
Authorized By	
	_____ Solger Zhang      May 12,2015

## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

<b>Operation Frequency</b>	2.402 GHz to 2.480GHz
<b>RF Output Power</b>	3.05dBm(Max)
<b>Bluetooth Version</b>	V4.0
<b>Modulation</b>	GFSK, $\pi/4$ -DQPSK, 8DPSK
<b>Number of channels</b>	79 for traditional BT 40 for BLE
<b>Hardware Version</b>	V1.0
<b>Software Version</b>	V1.0
<b>Antenna Designation</b>	PCB Antenna (Met 15.203 Antenna requirement)
<b>Antenna Gain</b>	0dBi
<b>Power Supply</b>	DC 3.7V
Note: The USB port only used for charging and can't be used to transfer data with PC.	

### 2.2. TABLE OF CARRIER FREQUENCIES

Traditional Bluetooth channel List

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2403MHZ
	:	:
	38	2440 MHZ
	39	2441 MHZ
	40	2442 MHZ
	:	:
	77	2479 MHZ
	78	2480 MHZ

BLE Channel List

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2404MHZ
	:	:
	38	2478 MHZ
	39	2480 MHZ

### 3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 3.18$ dB
2	All emissions, radiated	$\pm 3.91$ dB
3	Temperature	$\pm 0.5$ °C
4	Humidity	$\pm 2$ %

### 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel GFSK
2	Middle channel GFSK
3	High channel GFSK
4	Low channel $\pi/4$ -DQPSK
5	Middle channel $\pi/4$ -DQPSK
6	High channel $\pi/4$ -DQPSK
7	Low channel 8DPSK
8	Middle channel 8DPSK
9	High channel 8DPSK
10	Normal operation (BT)

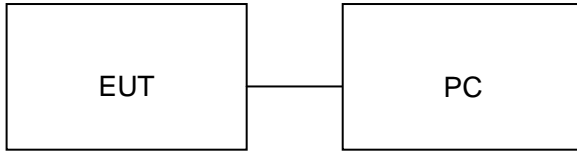
**Note:**

1. All the test modes can be supply by battery, only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

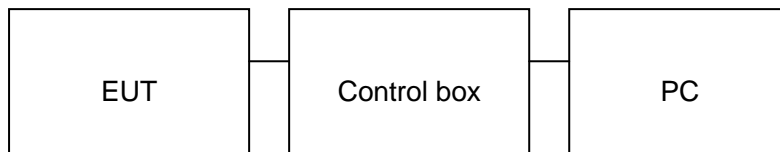
## 5. SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF EUT SYSTEM

Configure 1: (Normal hopping)



Configure 2: (Control continuous TX)



### 5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Bluetooth Headset	N/A	70202B	EUT
2	PC	Dell	A1465	A.E
3	Control box	N/A	N/A	A.E

### 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.249	Radiated Emission	Compliant
§15.249	Band Edges	Compliant
§15.207	Conduction Emission	Compliant
N/A	BANDWIDTH	Compliant



## 6. TEST FACILITY

<b>Site</b>	Compliance Certification Service(Shenzhen) Inc.
<b>Location</b>	No.10-1 Mingkeda Logistics Park, No.18 Huanguan South RD. Guan lan Town,Baoan Distr
<b>FCC Registration No.</b>	441872
<b>Description</b>	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009.

## 7 ALL TEST EQUIPMENT LIST

Radiated Emission Test Site 966(2)					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2015	03/01/2016
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	03/09/2015	03/08/2016
Amplifier	MITEQ	AM-1604-3000	1123808	03/18/2015	03/17/2016
High Noise Amplifier	Agilent	8449B	3008A01838	03/18/2015	03/17/2016
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	07/10/2014	07/09/2015
Bilog Antenna	SCHAFFNER	CBL6143	5082	03/01/2015	03/01/2016
Horn Antenna	SCHWARZBECK	BBHA9120	D286	03/01/2015	03/01/2016
Loop Antenna	COM-POWER	AL-130	121044	09/27/2014	09/26/2015
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/28/2015	02/27/2016
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

Conducted Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	03/09/2015	03/08/2016
LISN(EUT)	ROHDE&SCHWARZ	ENV216	101543-WX	03/09/2015	03/08/2016
LISN	EMCO	3825/2	8901-1459	03/09/2015	03/08/2016
Temp. / Humidity Meter	VICTOR	HTC-1	N/A	03/04/2015	03/03/2016
Test S/W	FARAD	EZ-EMC/ CCS-3A1-CE			

## 8. RADIATED EMISSION

### 8.1 TEST LIMIT

#### Standard FCC15.249

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
900-928MHz	50	500
2400-2483.5MHz	50	500
5725-5875MHz	50	500
24.0-24.25GHz	250	2500

#### Standard FCC 15.209

Frequency (MHz)	Distance Meters	Field Strengths Limit	
		$\mu$ V/m	dB( $\mu$ V)/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	Other:74.0 dB( $\mu$ V)/m (Peak) 54.0 dB( $\mu$ V)/m (Average)	

Remark: (1) Emission level  $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$   
(2) The smaller limit shall apply at the cross point between two frequency bands.  
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

## 8.2. MEASUREMENT PROCEDURE

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

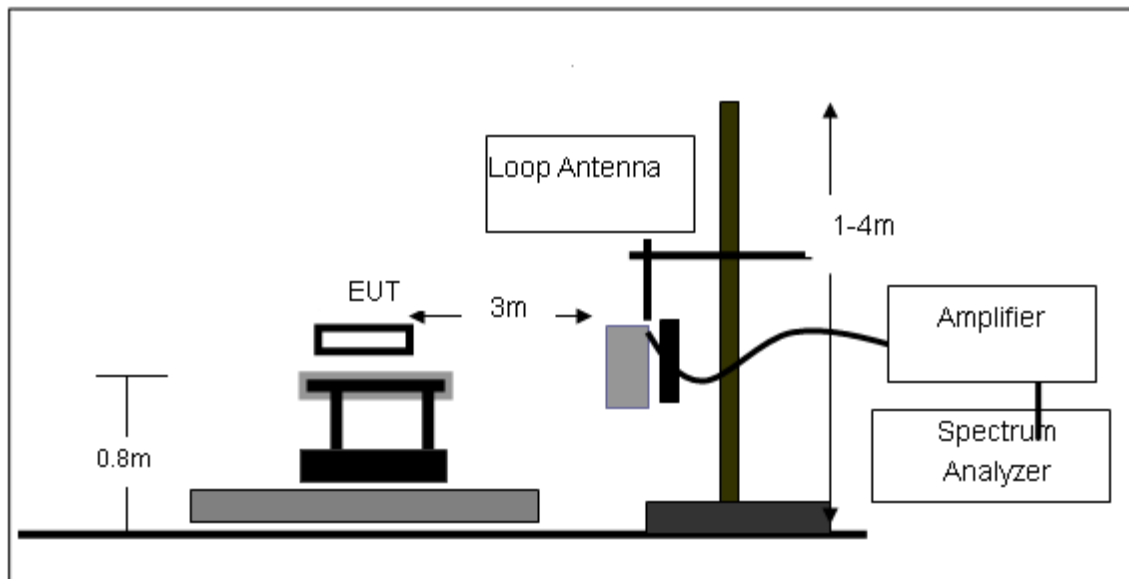
The following table is the setting of spectrum analyzer and receiver.

<b>Spectrum Parameter</b>	<b>Setting</b>
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/1MHz for Peak, 1MHz/10Hz for Average

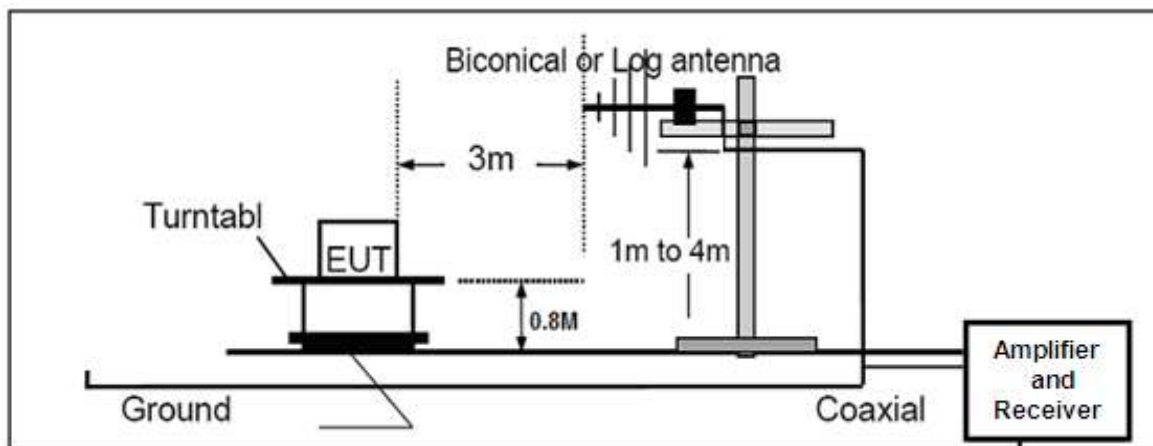
<b>Receiver Parameter</b>	<b>Setting</b>
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

### 8.3. TEST SETUP

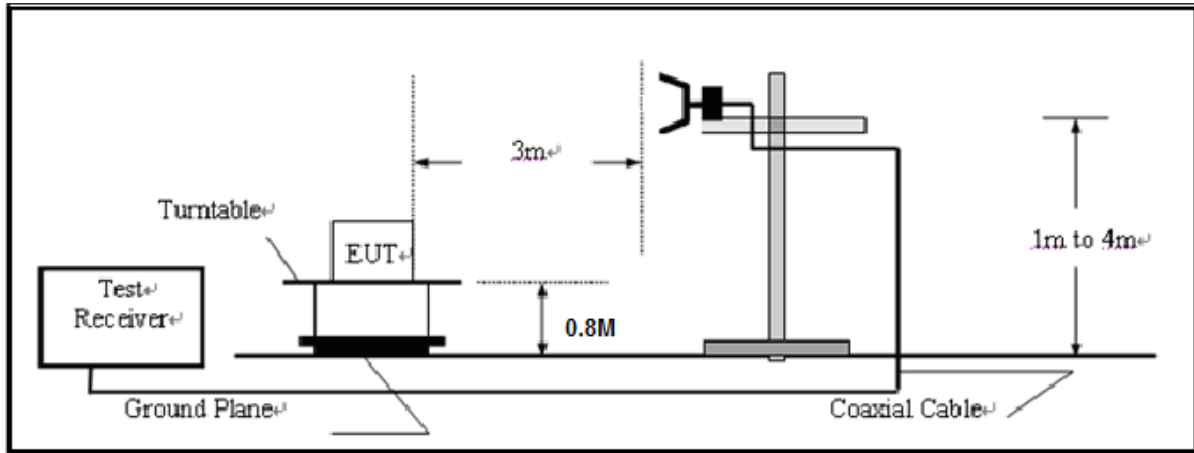
#### Radiated Emission Test-Setup Frequency Below 30MHz



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



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



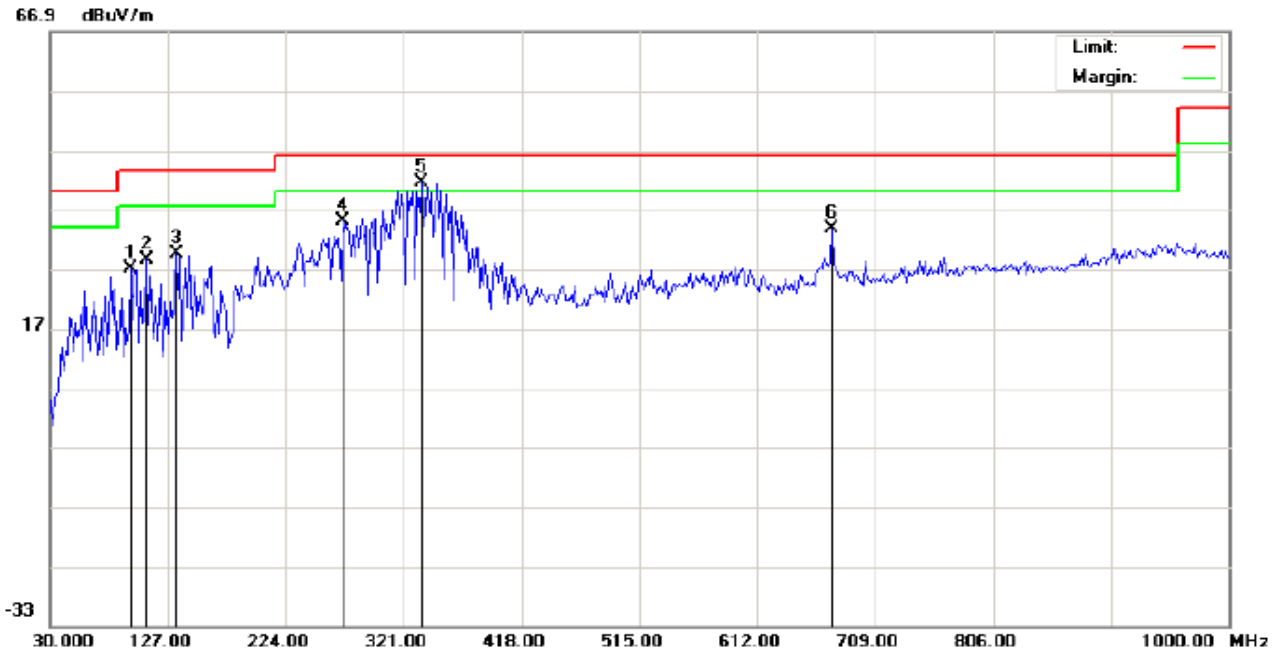
**8.4. TEST RESULT(Worst modulation:GFSK)  
FOR TRADITIONAL BLUETOOTH**

**RADIATED EMISSION BELOW 30MHZ**

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

**RADIATED EMISSION BELOW 1GHZ**

**RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL-HORIZONTAL**



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: Low Channel TX  
Note:

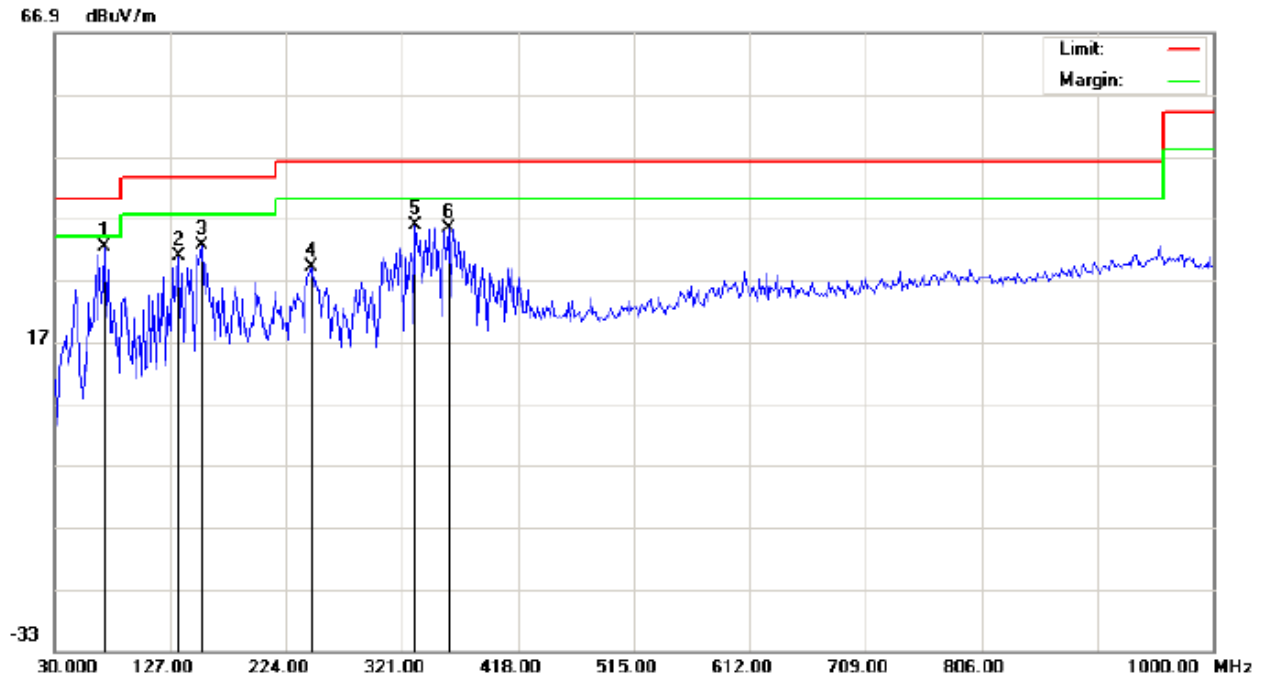
Polarization: *Horizontal*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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		96.2833	16.86	10.07	26.93	43.50	-16.57	peak			
2		109.2167	17.51	11.12	28.63	43.50	-14.87	peak			
3		133.4667	15.30	14.11	29.41	43.50	-14.09	peak			
4		270.8833	20.45	14.53	34.98	46.00	-11.02	peak			
5	*	335.5500	23.81	17.78	41.59	46.00	-4.41	peak			
6		673.4333	9.29	24.48	33.77	46.00	-12.23	peak			

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL -VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: Low Channel TX  
Note:

Polarization: *Vertical*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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	*	72.0333	28.47	3.76	32.23	40.00	-7.77	peak			
2		133.4667	18.18	12.48	30.66	43.50	-12.84	peak			
3		152.8667	17.32	15.28	32.60	43.50	-10.90	peak			
4		245.0167	15.74	13.41	29.15	46.00	-16.85	peak			
5		332.3167	18.22	17.56	35.78	46.00	-10.22	peak			
6		359.8000	16.39	18.80	35.19	46.00	-10.81	peak			

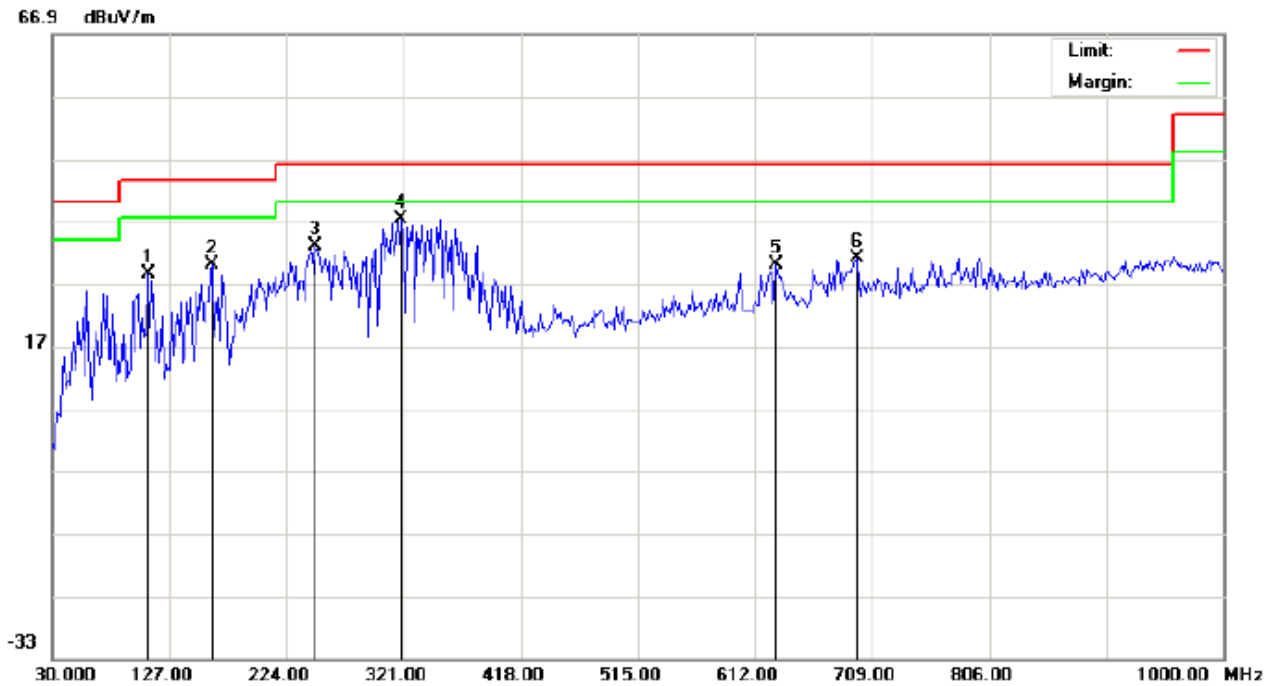
**RESULT: PASS**

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

2. The "Factor" value can be calculated automatically by software of measurement system.



RADIATED EMISSION TEST- (30MHZ-1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1  
 Limit: FCC Class B 3M Radiation  
 EUT: Bluetooth Headset  
 M/N: 70202B  
 Mode: Middle Channel TX  
 Note:

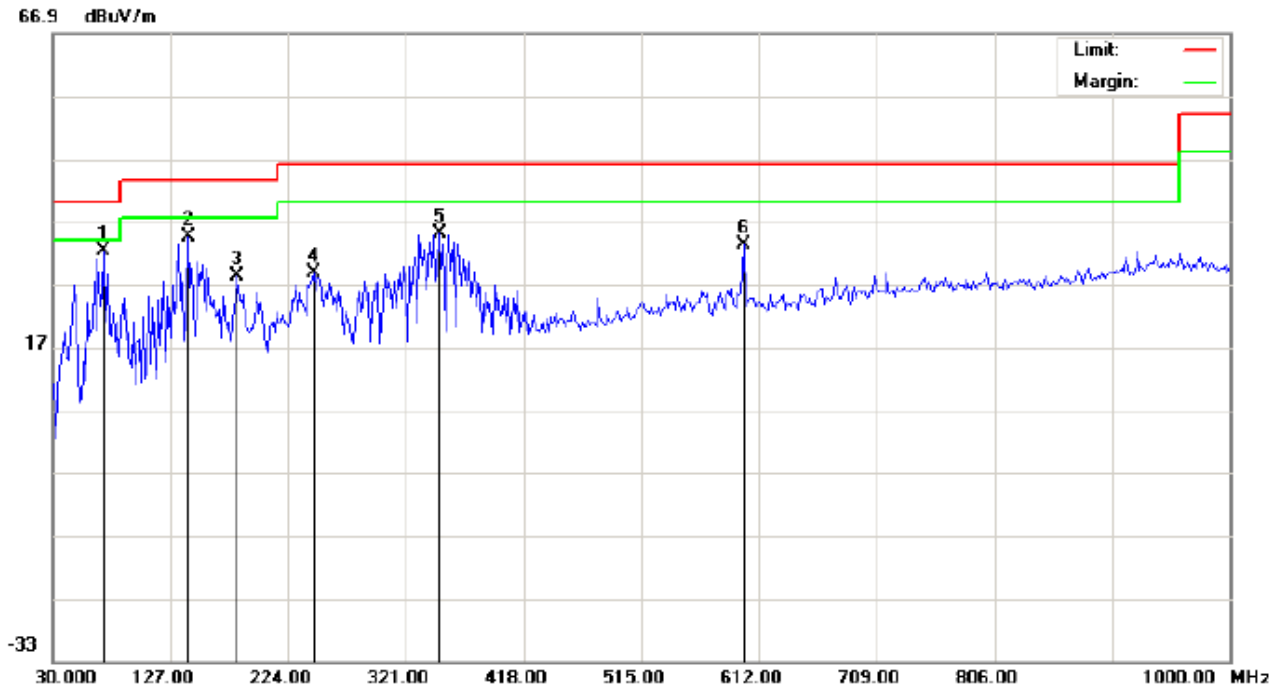
Polarization: *Horizontal*  
 Power:  
 Distance: 3m

Temperature: 26  
 Humidity: 60 %

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		109.2167	17.48	11.12	28.60	43.50	-14.90	peak			
2		162.5667	15.35	14.78	30.13	43.50	-13.37	peak			
3		248.2500	19.10	13.83	32.93	46.00	-13.07	peak			
4	*	319.3833	20.57	16.70	37.27	46.00	-8.73	peak			
5		629.7833	6.29	23.80	30.09	46.00	-15.91	peak			
6		696.0667	6.04	25.08	31.12	46.00	-14.88	peak			

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)- MIDDLE CHANNEL -VERTICAL



Site: site #1  
 Limit: FCC Class B 3M Radiation  
 EUT: Bluetooth Headset  
 M/N: 70202B  
 Mode: Middle Channel TX  
 Note:

Polarization: *Vertical*  
 Power:  
 Distance: 3m

Temperature: 26  
 Humidity: 60 %

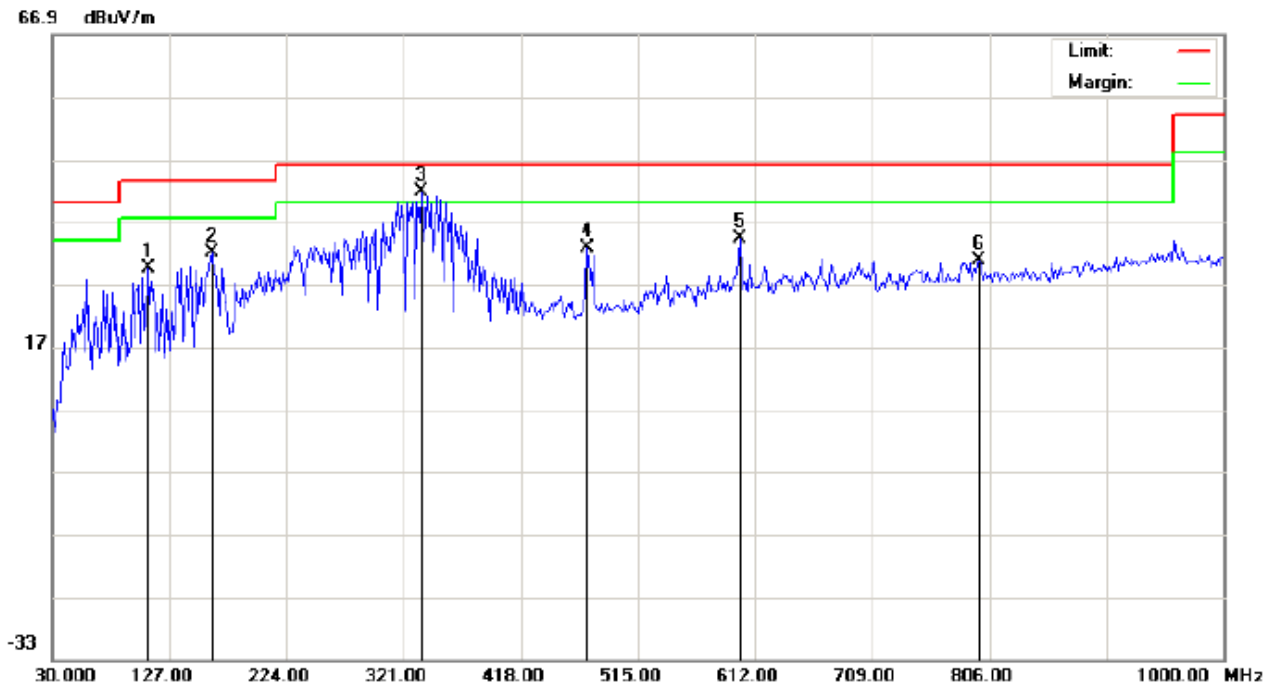
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	72.0333	28.49	3.76	32.25	40.00	-7.75	peak			
2		141.5500	19.26	15.21	34.47	43.50	-9.03	peak			
3		181.9667	14.70	13.57	28.27	43.50	-15.23	peak			
4		245.0167	15.41	13.41	28.82	46.00	-17.18	peak			
5		348.4833	16.34	18.64	34.98	46.00	-11.02	peak			
6		599.0667	10.60	22.73	33.33	46.00	-12.67	peak			

**RESULT: PASS**

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

2. The "Factor" value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: High Channel TX  
Note:

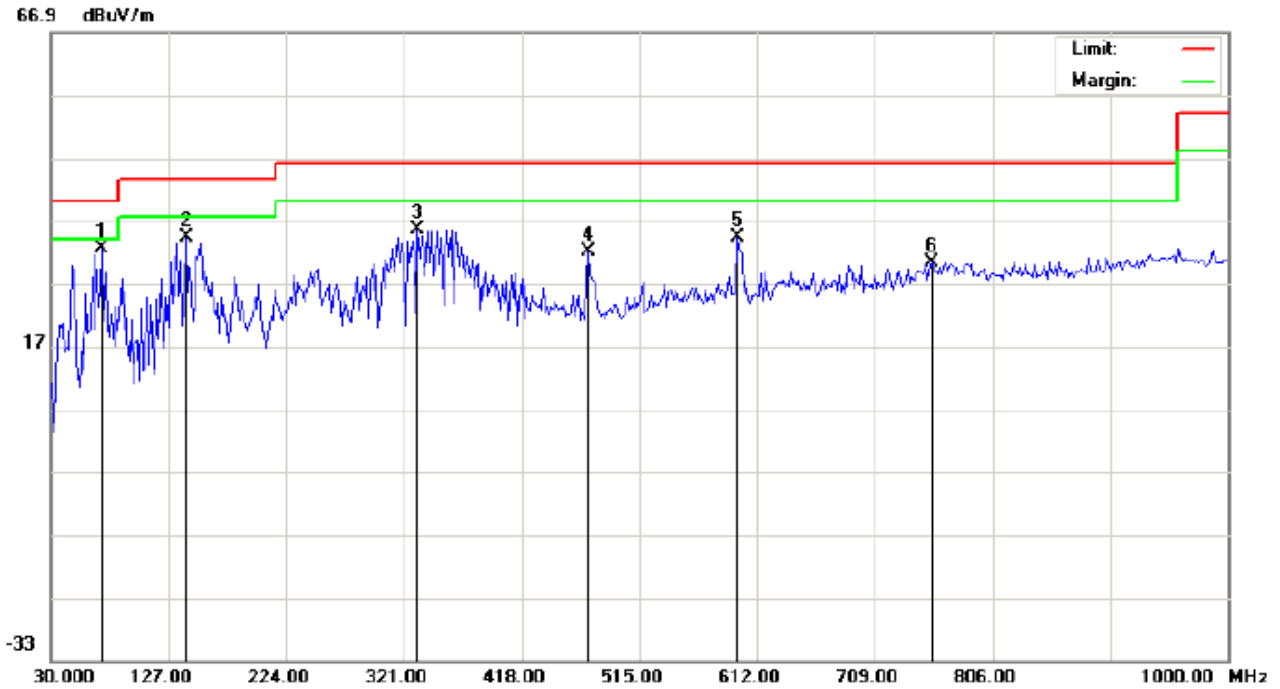
Polarization: *Horizontal*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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		109.2167	18.47	11.12	29.59	43.50	-13.91	peak			
2		162.5667	17.20	14.78	31.98	43.50	-11.52	peak			
3	*	335.5500	23.90	17.78	41.68	46.00	-4.32	peak			
4		472.9667	11.89	20.84	32.73	46.00	-13.27	peak			
5		599.0667	10.54	23.71	34.25	46.00	-11.75	peak			
6		797.9167	3.52	27.29	30.81	46.00	-15.19	peak			

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL -VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: High Channel TX  
Note:

Polarization: *Vertical*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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	*	72.0333	28.70	3.76	32.46	40.00	-7.54	peak			
2		141.5500	18.96	15.21	34.17	43.50	-9.33	peak			
3		332.3167	18.02	17.56	35.58	46.00	-10.42	peak			
4		472.9667	11.12	20.84	31.96	46.00	-14.04	peak			
5		595.8333	11.52	22.71	34.23	46.00	-11.77	peak			
6		755.8832	3.63	26.71	30.34	46.00	-15.66	peak			

**RESULT: PASS**

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

2. The "Factor" value can be calculated automatically by software of measurement system.

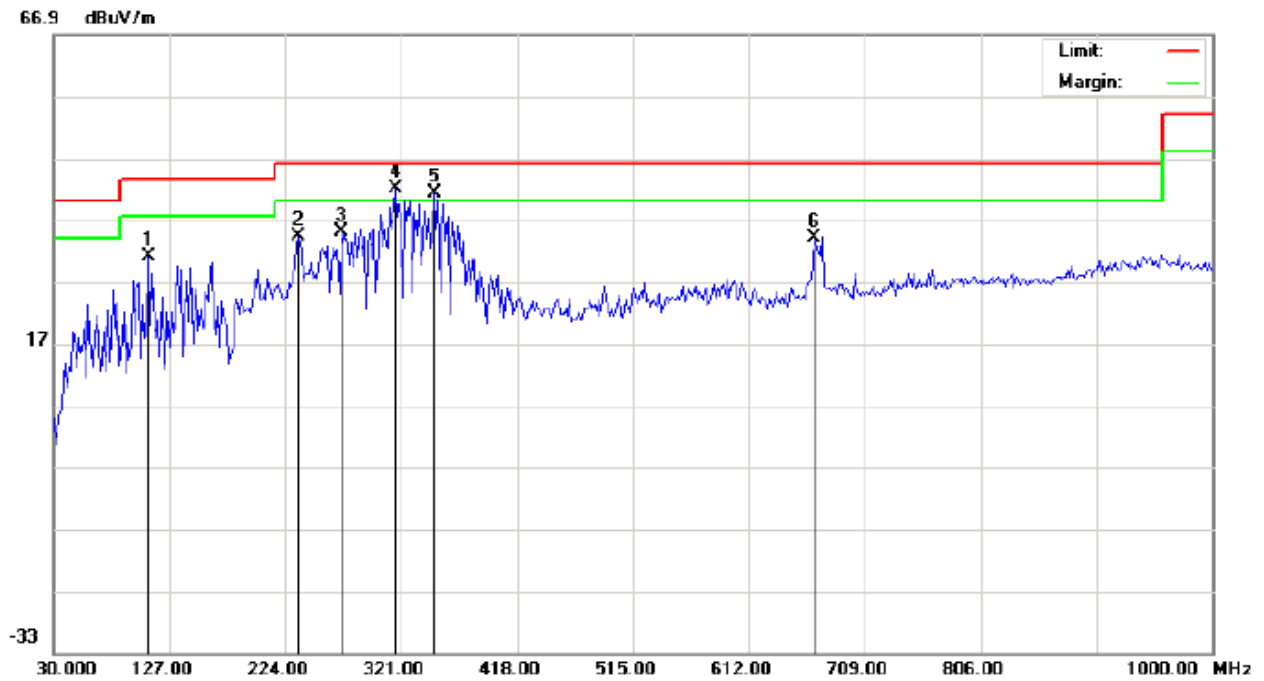
FOR BLE

**RADIATED EMISSION BELOW 30MHZ**

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

**RADIATED EMISSION BELOW 1GHZ**

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL-HORIZONTAL

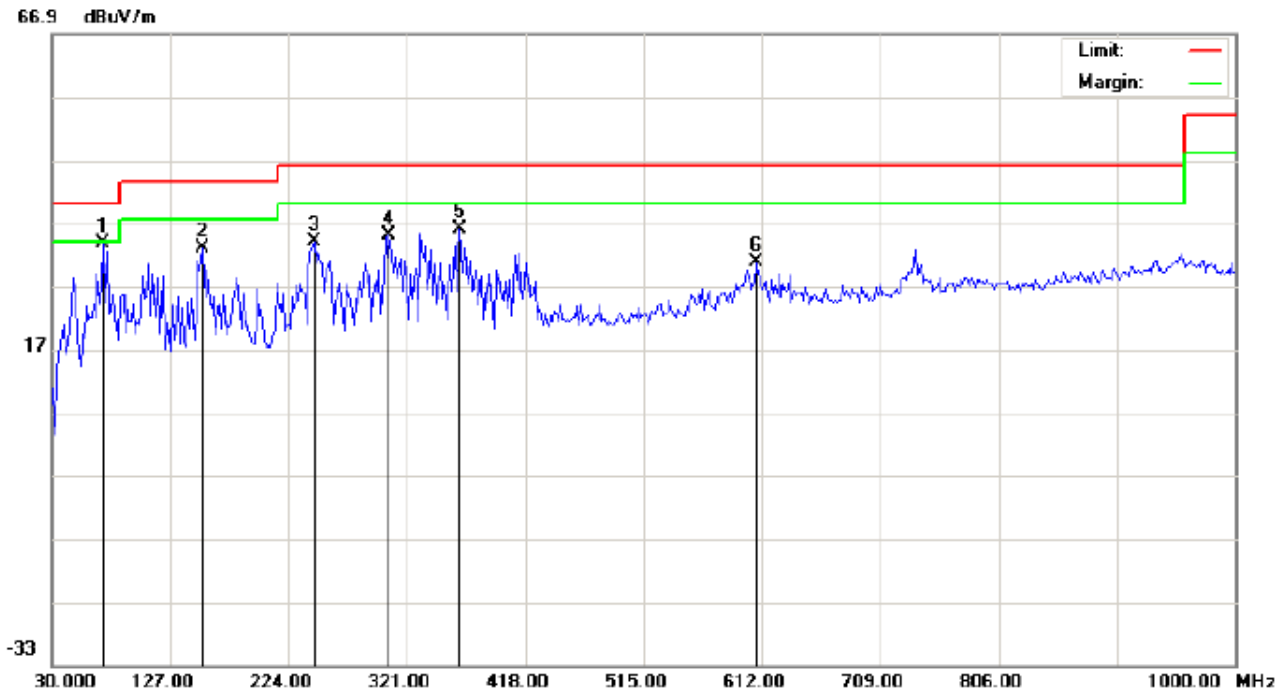


Site: site #1	Polarization: <i>Horizontal</i>	Temperature: 26
Limit: FCC Class B 3M Radiation	Power:	Humidity: 60 %
EUT: Bluetooth Headset	Distance: 3m	
M/N: 70202B		
Mode: Low Channel TX		
Note:		

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		109.2167	20.01	11.12	31.13	43.50	-12.37	peak			
2		235.3166	20.95	13.34	34.29	46.00	-11.71	peak			
3		270.8833	20.45	14.53	34.98	46.00	-11.02	peak			
4	*	316.1499	25.46	16.49	41.95	46.00	-4.05	peak			
5	!	348.4832	22.57	18.64	41.21	46.00	-4.79	peak			
6		666.9666	9.65	24.30	33.95	46.00	-12.05	peak			

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL -VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: Low Channel TX  
Note:

Polarization: *Vertical*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

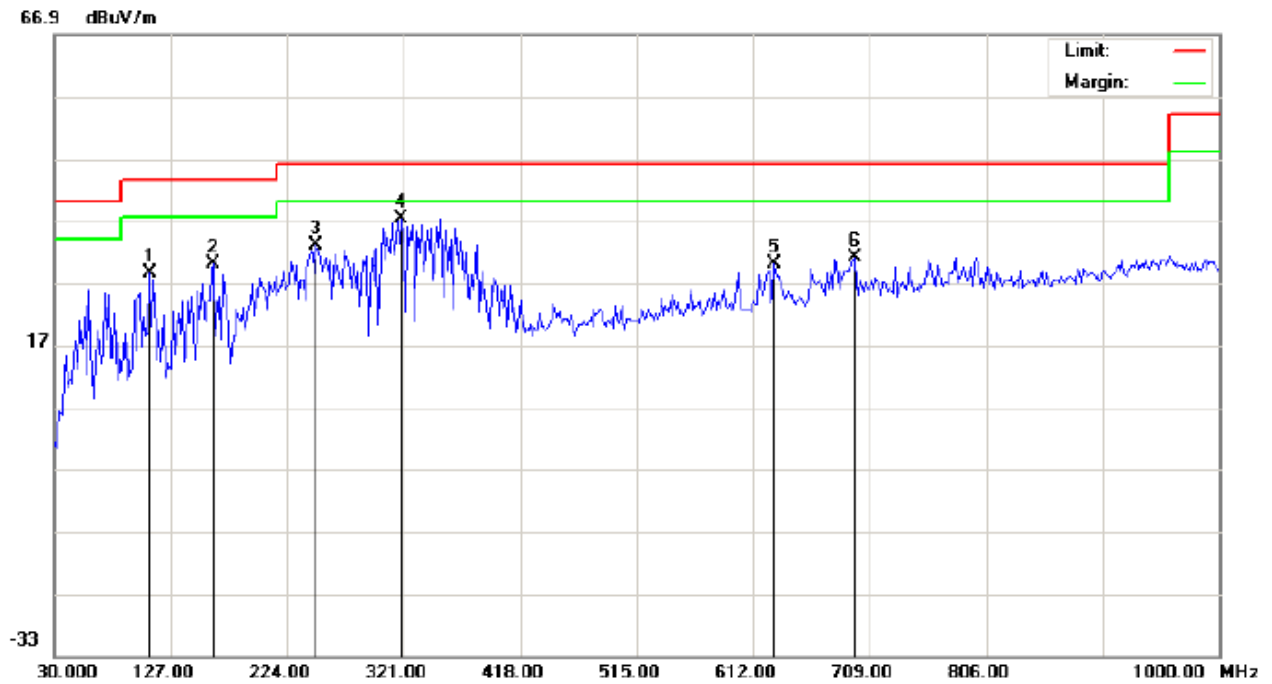
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	72.0331	29.97	3.76	33.73	40.00	-6.27	peak			
2		152.8667	17.82	15.28	33.10	43.50	-10.40	peak			
3		245.0166	20.74	13.41	34.15	46.00	-11.85	peak			
4		306.4499	19.20	15.84	35.04	46.00	-10.96	peak			
5		364.6499	17.07	18.84	35.91	46.00	-10.09	peak			
6		607.1499	7.90	22.89	30.79	46.00	-15.21	peak			

**RESULT: PASS**

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

2. The "Factor" value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1  
 Limit: FCC Class B 3M Radiation  
 EUT: Bluetooth Headset  
 M/N: 70202B  
 Mode: Middle Channel TX  
 Note:

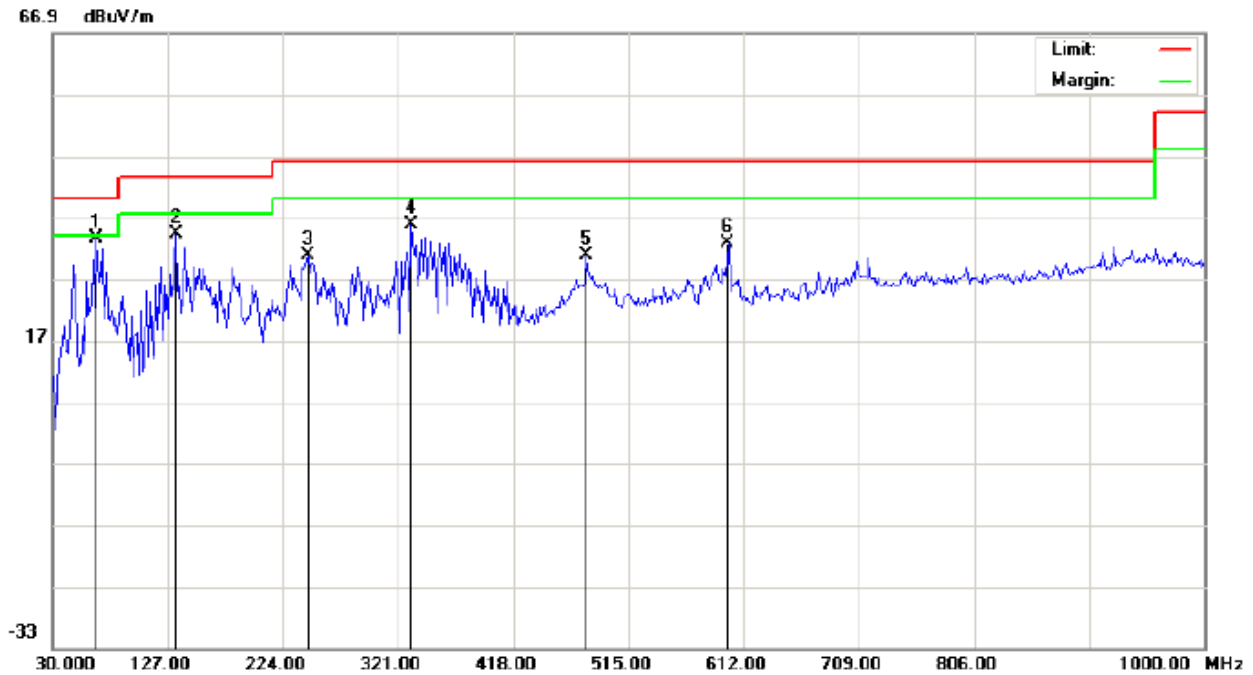
Polarization: *Horizontal*  
 Power:  
 Distance: 3m

Temperature: 26  
 Humidity: 60 %

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		109.2167	17.48	11.12	28.60	43.50	-14.90	peak			
2		162.5667	15.35	14.78	30.13	43.50	-13.37	peak			
3		248.2500	19.10	13.83	32.93	46.00	-13.07	peak			
4	*	319.3833	20.57	16.70	37.27	46.00	-8.73	peak			
5		629.7833	6.29	23.80	30.09	46.00	-15.91	peak			
6		696.0667	6.04	25.08	31.12	46.00	-14.88	peak			

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)- MIDDLE CHANNEL -VERTICAL



Site: site #1 Polarization: *Vertical* Temperature: 26  
Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
EUT: Bluetooth Headset Distance: 3m  
M/N: 70202B  
Mode: Middle Channel TX  
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna	Table	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		Height	Degree	
									cm	degree	
1	*	67.1833	28.10	5.36	33.46	40.00	-6.54	peak			
2		133.4667	21.77	12.48	34.25	43.50	-9.25	peak			
3		245.0166	17.41	13.41	30.82	46.00	-15.18	peak			
4		332.3167	18.19	17.56	35.75	46.00	-10.25	peak			
5		479.4332	9.81	20.91	30.72	46.00	-15.28	peak			
6		599.0666	10.10	22.73	32.83	46.00	-13.17	peak			

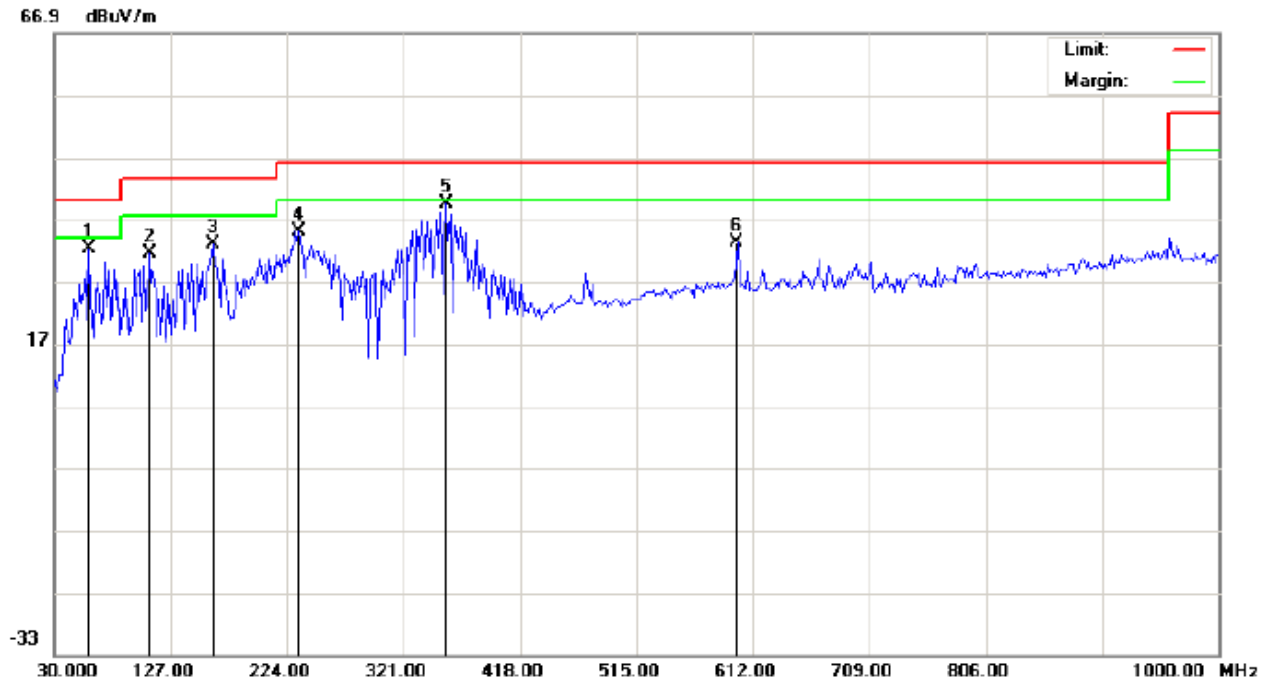
**RESULT: PASS**

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

2. The "Factor" value can be calculated automatically by software of measurement system.



RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1  
 Limit: FCC Class B 3M Radiation  
 EUT: Bluetooth Headset  
 M/N: 70202B  
 Mode: High Channel TX  
 Note:

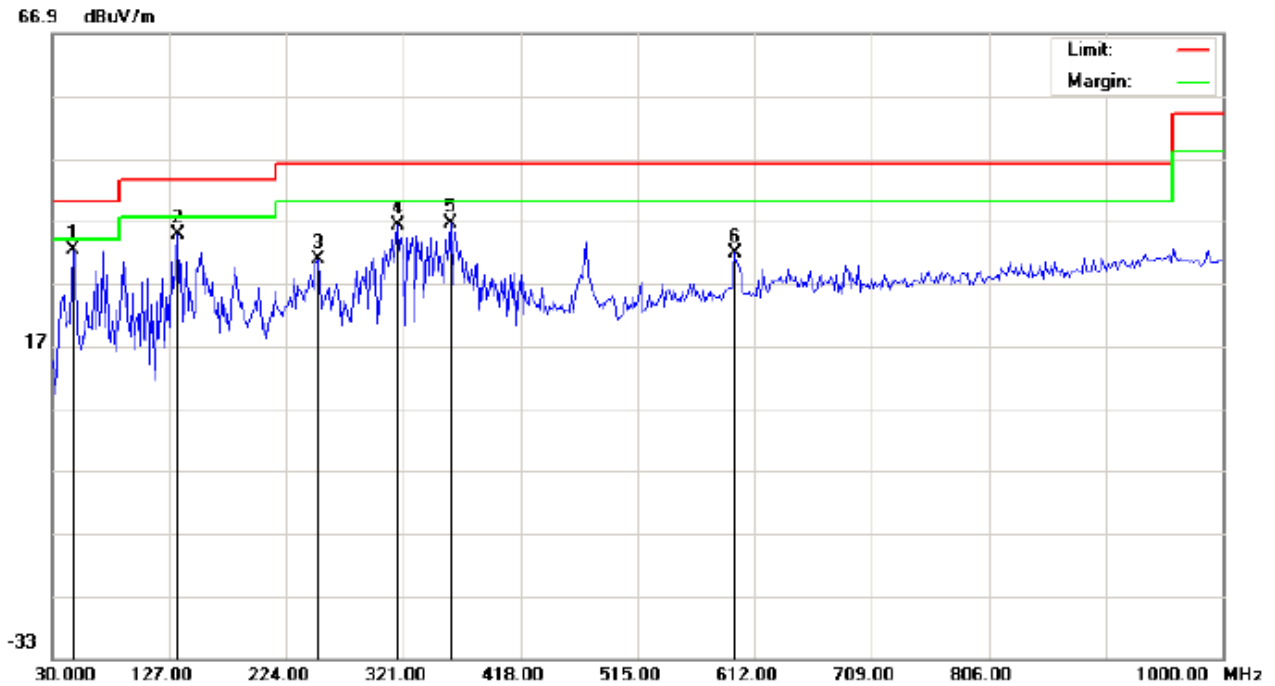
Polarization: *Horizontal*  
 Power:  
 Distance: 3m

Temperature: 26  
 Humidity: 60 %

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		59.1000	21.15	11.16	32.31	40.00	-7.69	peak			
2		109.2167	20.47	11.12	31.59	43.50	-11.91	peak			
3		162.5666	18.20	14.78	32.98	43.50	-10.52	peak			
4		233.6999	21.83	13.28	35.11	46.00	-10.89	peak			
5	*	356.5667	20.80	18.78	39.58	46.00	-6.42	peak			
6		599.0666	9.54	23.71	33.25	46.00	-12.75	peak			

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL -VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: High Channel TX  
Note:

Polarization: *Vertical*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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	*	47.7832	23.98	8.39	32.37	40.00	-7.63	peak			
2		133.4667	22.22	12.48	34.70	43.50	-8.80	peak			
3		249.8667	16.78	13.89	30.67	46.00	-15.33	peak			
4		316.1499	19.86	16.49	36.35	46.00	-9.65	peak			
5		359.8000	17.75	18.80	36.55	46.00	-9.45	peak			
6		595.8333	9.02	22.71	31.73	46.00	-14.27	peak			

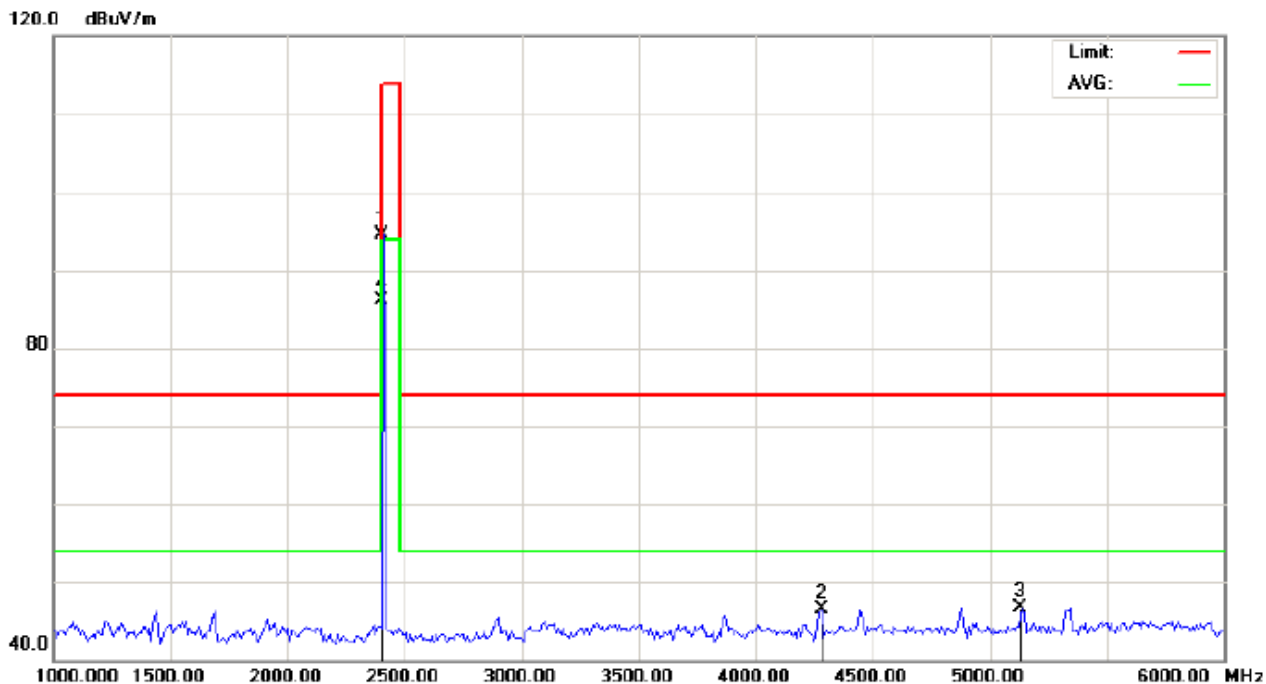
**RESULT: PASS**

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

2. The "Factor" value can be calculated automatically by software of measurement system.

**RADIATED EMISSION ABOVE 1GHZ  
 FOR TRADITIONAL BLUETOOTH**

**RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL-HORIZONTAL**

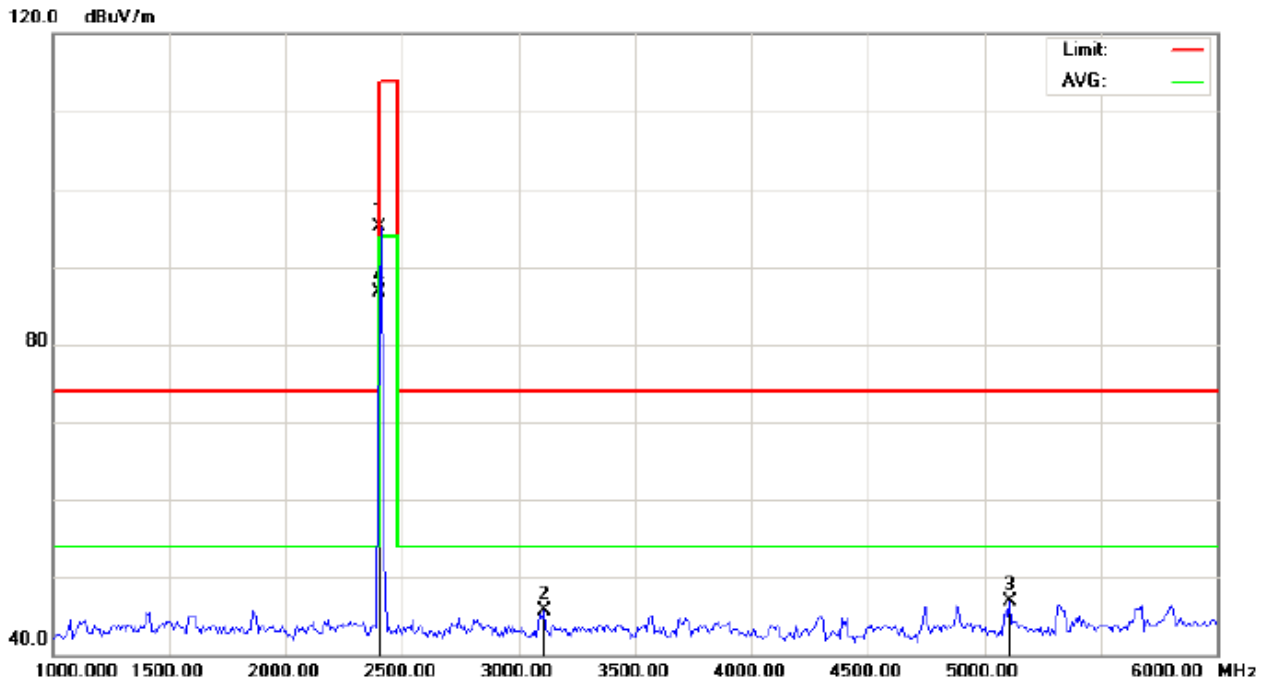


Site: site #1    Polarization: *Horizontal*    Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)-    Power:    Humidity: 60 %  
 EUT: Bluetooth Headset    Distance: 3m  
 M/N: 70202B  
 Mode: Low Channel TX  
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna	Table	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		Height	Degree	
									cm	degree	
1		2402.000	104.26	-9.68	94.58	114.00	-19.42	peak			
2		4283.333	50.43	-3.85	46.58	74.00	-27.42	peak			
3		5133.333	48.57	-1.80	46.77	74.00	-27.23	peak			
4	*	2402.000	95.86	-9.68	86.18	94.00	-7.82	AVG	150	0	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL- VERTICAL

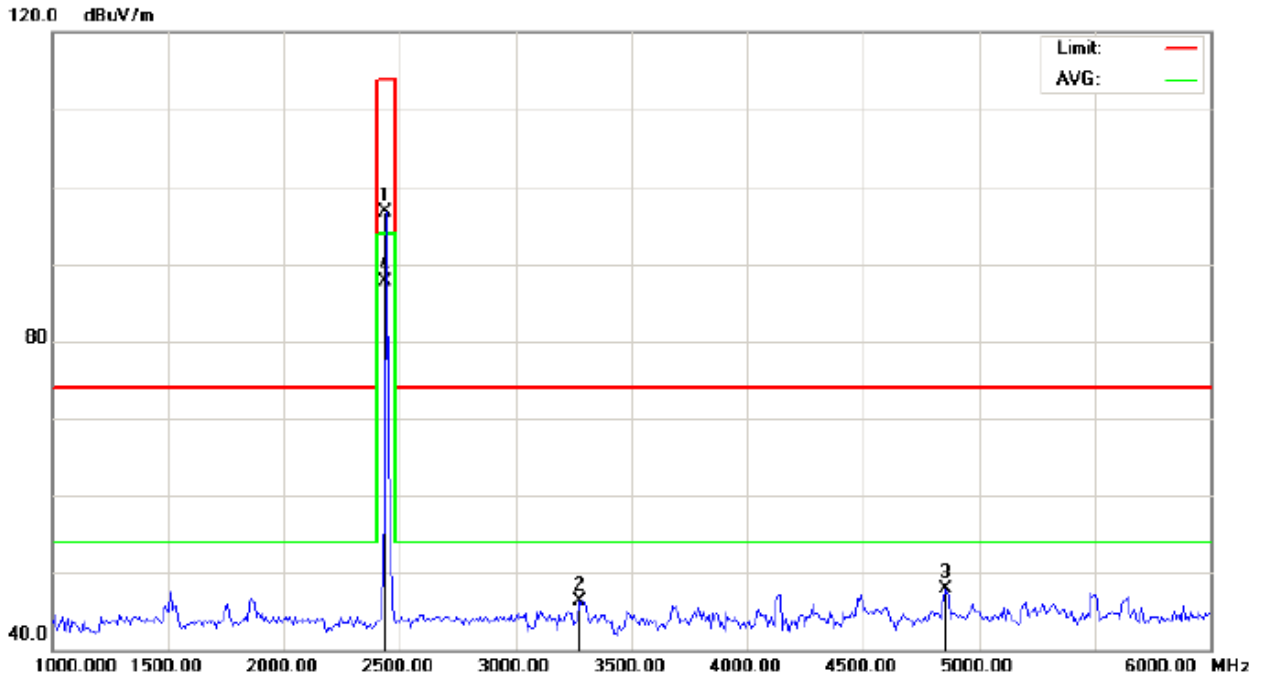


Site: site #1 Polarization: *Vertical* Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %  
 EUT: Bluetooth Headset Distance: 3m  
 M/N: 70202B  
 Mode: Low Channel TX  
 Note:

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		2402.000	104.70	-9.68	95.02	114.00	-18.98	peak			
2		3108.333	53.88	-8.26	45.62	74.00	-28.38	peak			
3		5108.333	48.74	-1.80	46.94	74.00	-27.06	peak			
4	*	2402.000	96.34	-9.68	86.66	94.00	-7.34	AVG	150	51	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)-  
 EUT: Bluetooth Headset  
 M/N: 70202B  
 Mode: Middle Channel TX  
 Note:

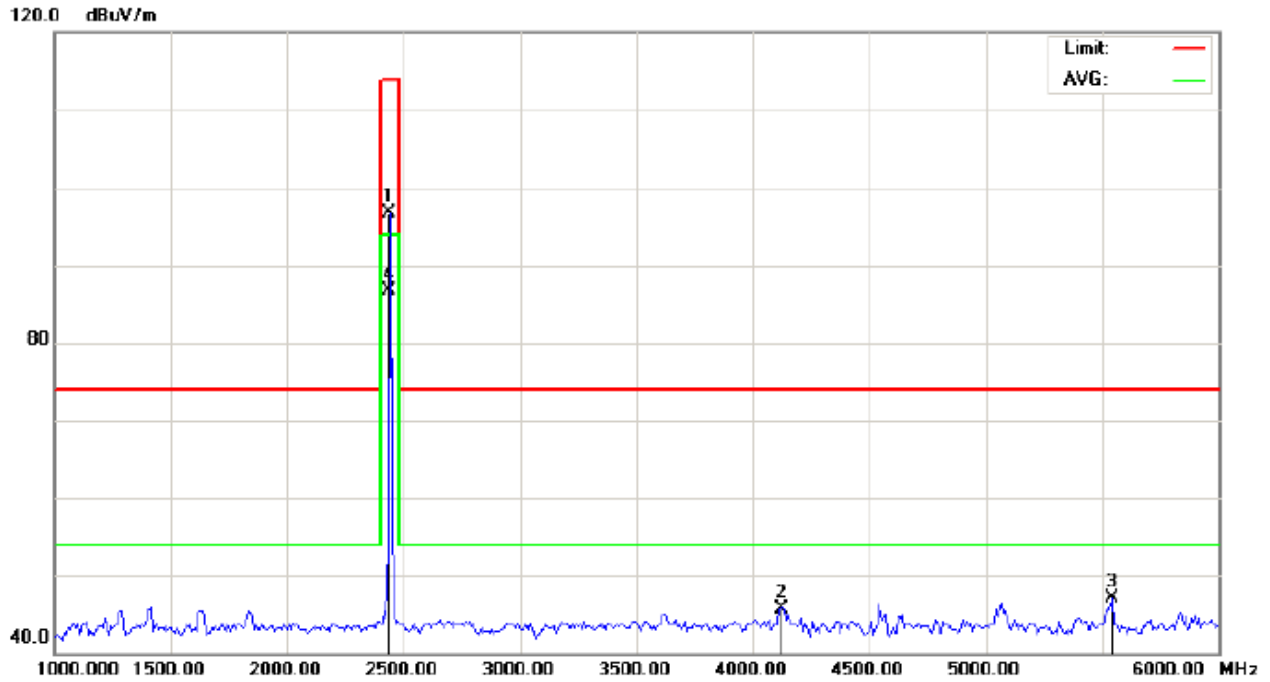
Polarization: *Horizontal*  
 Power:  
 Distance: 3m

Temperature: 26  
 Humidity: 60 %

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		2440.000	106.30	-9.64	96.66	114.00	-17.34	peak			
2		3275.000	54.49	-8.10	46.39	74.00	-27.61	peak			
3		4858.333	50.05	-2.17	47.88	74.00	-26.12	peak			
4	*	2440.000	97.25	-9.64	87.61	94.00	-6.39	AVG	150	168	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-MIDDLE CHANNEL- VERTICAL

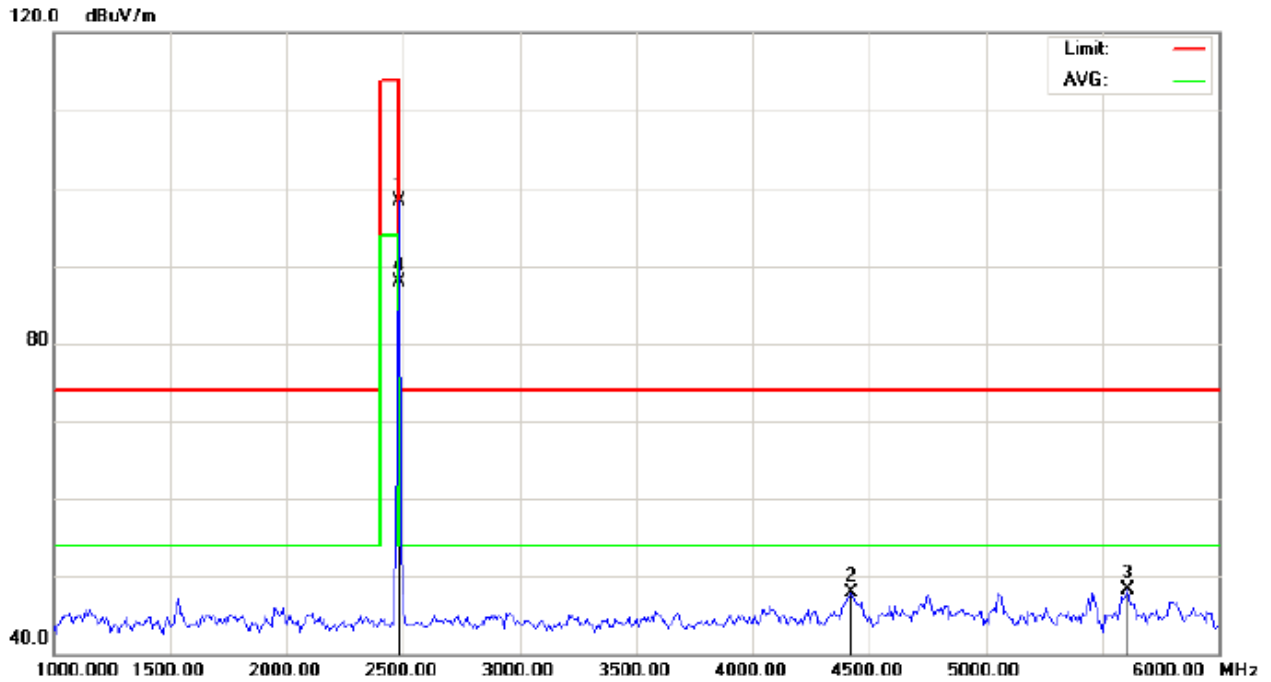


Site: site #1      Polarization: *Vertical*      Temperature: 26  
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-      Power:      Humidity: 60 %  
EUT: Bluetooth Headset      Distance: 3m  
M/N: 70202B  
Mode: Middle Channel TX  
Note:

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		2440.000	106.26	-9.64	96.62	114.00	-17.38	peak			
2		4125.000	50.18	-4.38	45.80	74.00	-28.20	peak			
3		5541.667	48.80	-1.79	47.01	74.00	-26.99	peak			
4	*	2440.000	96.26	-9.64	86.62	94.00	-7.38	AVG	150	112	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-HIGH CHANNEL-HORIZONTAL

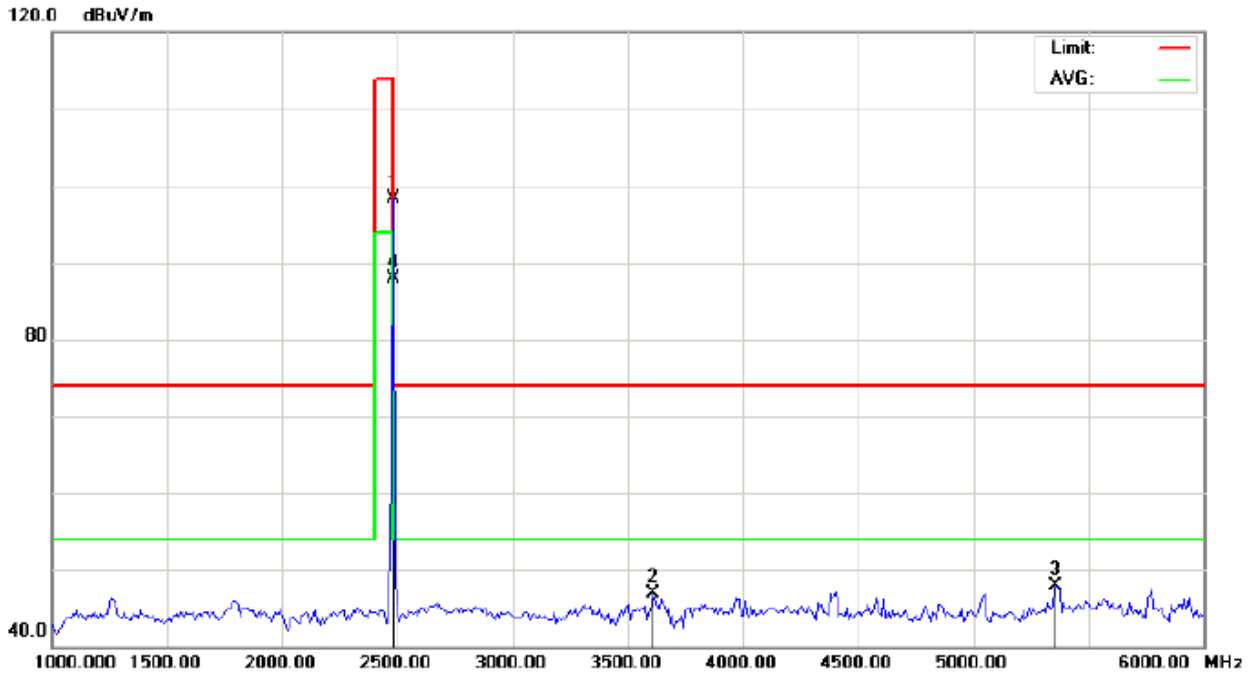


Site: site #1 Polarization: *Horizontal* Temperature: 26  
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %  
EUT: Bluetooth Headset Distance: 3m  
M/N: 70202B  
Mode: High Channel TX  
Note:

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		2480.000	107.89	-9.59	98.30	114.00	-15.70	peak			
2		4425.000	51.26	-3.36	47.90	74.00	-26.10	peak			
3		5608.333	50.03	-1.76	48.27	74.00	-25.73	peak			
4	*	2480.000	97.41	-9.59	87.82	94.00	-6.18	AVG	150	226	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-HIGH CHANNEL- VERTICAL



Site: site #1 Polarization: *Vertical* Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %  
 EUT: Bluetooth Headset Distance: 3m  
 M/N: 70202B  
 Mode: High Channel TX  
 Note:

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		2480.000	107.86	-9.59	98.27	114.00	-15.73	peak			
2		3608.333	54.22	-7.22	47.00	74.00	-27.00	peak			
3		5358.333	49.75	-1.81	47.94	74.00	-26.06	peak			
4	*	2480.000	97.58	-9.59	87.99	94.00	-6.01	AVG	150	310	

**RESULT: PASS**

**Note:** 6~25GHz at least have 20dB margin. No recording in the test report.

Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.

The "Factor" value can be calculated automatically by software of measurement system.



**Field strength of the fundamental signal**

**Peak value**

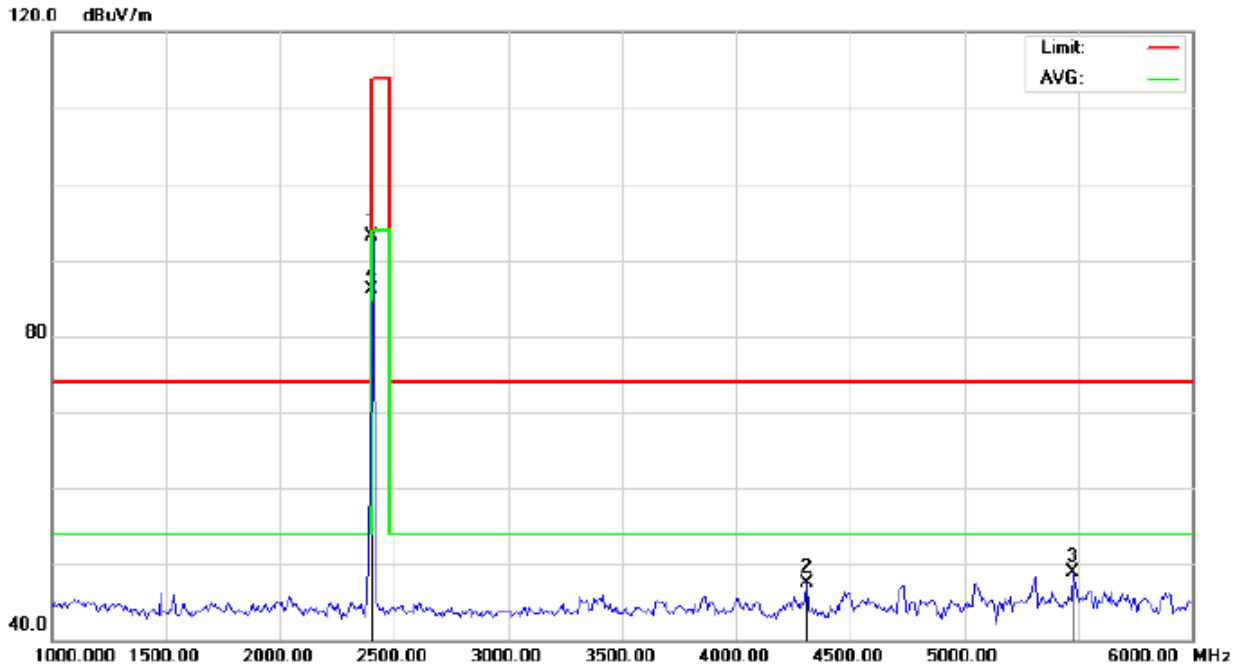
Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	104.26	-9.68	94.58	114	-19.42	Horizontal
2402	104.70	-9.68	95.02	114	-18.98	Vertical
2440	106.30	-9.64	96.66	114	-17.34	Horizontal
2440	106.26	-9.64	96.62	114	-17.38	Vertical
2480	107.89	-9.59	98.30	114	-15.70	Horizontal
2480	107.86	-9.59	98.27	114	-15.72	Vertical

**Average value**

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	95.86	-9.68	86.18	94	-7.82	Horizontal
2402	96.34	-9.68	86.66	94	-7.34	Vertical
2440	97.25	-9.64	87.61	94	-6.39	Horizontal
2440	96.26	-9.64	86.62	94	-7.38	Vertical
2480	97.41	-9.59	87.82	94	-6.18	Horizontal
2480	97.58	-9.59	87.99	94	-6.01	Vertical

**FOR BLE**

**RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL-HORIZONTAL**



Site: site #1  
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: Low Channel TX  
Note:

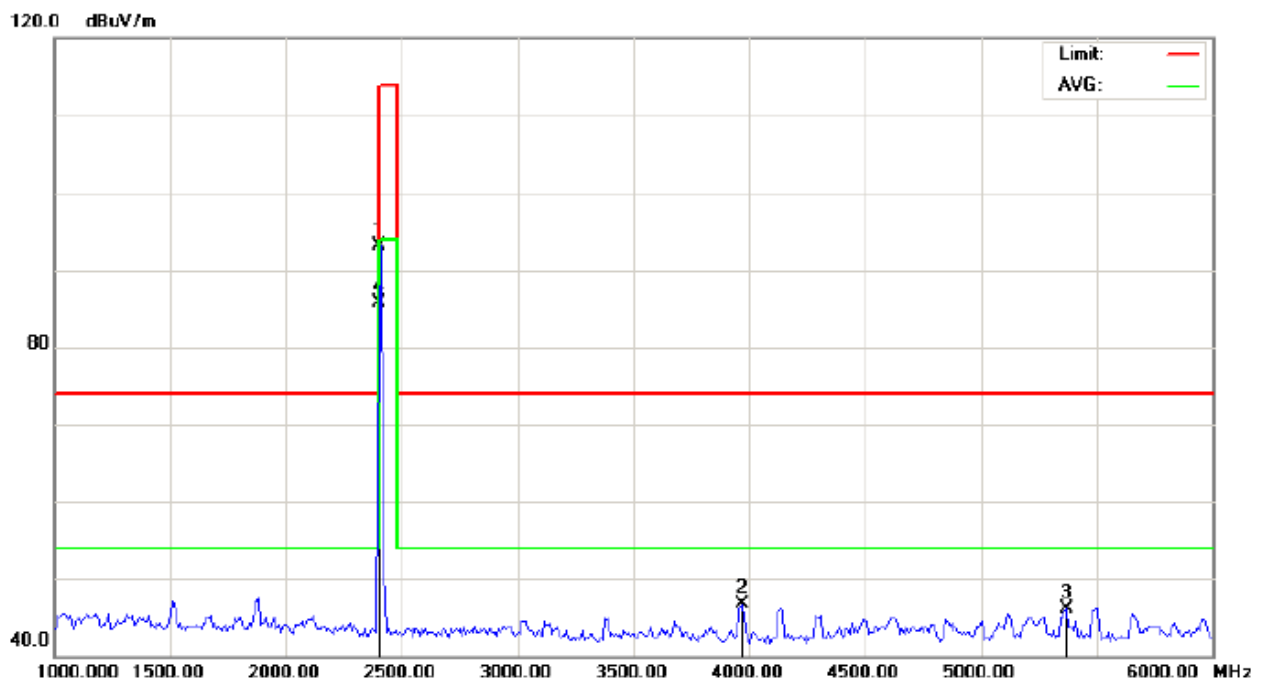
Polarization: *Horizontal*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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		2402.000	102.71	-9.68	93.03	114.00	-20.97	peak			
2		4308.333	51.20	-3.76	47.44	74.00	-26.56	peak			
3		5475.000	50.71	-1.81	48.90	74.00	-25.10	peak			
4	*	2402.000	95.78	-9.68	86.10	94.00	-7.90	AVG	150	0	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL- VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: Low Channel TX  
Note:

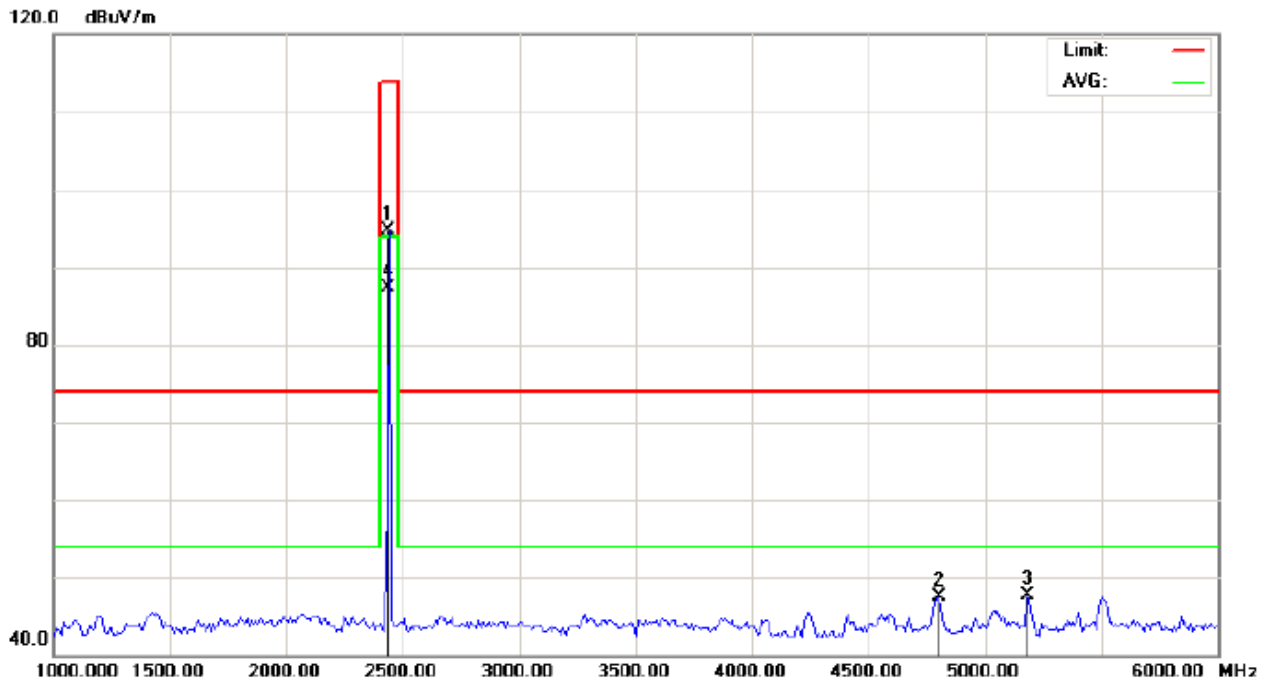
Polarization: **Vertical**  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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		2402.000	102.69	-9.68	93.01	114.00	-20.99	peak			
2		3966.667	51.64	-5.02	46.62	74.00	-27.38	peak			
3		5366.667	47.99	-1.81	46.18	74.00	-27.82	peak			
4	*	2402.000	95.47	-9.68	85.79	94.00	-8.21	AVG	150	41	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)-  
 EUT: Bluetooth Headset  
 M/N: 70202B  
 Mode: Middle Channel TX  
 Note:

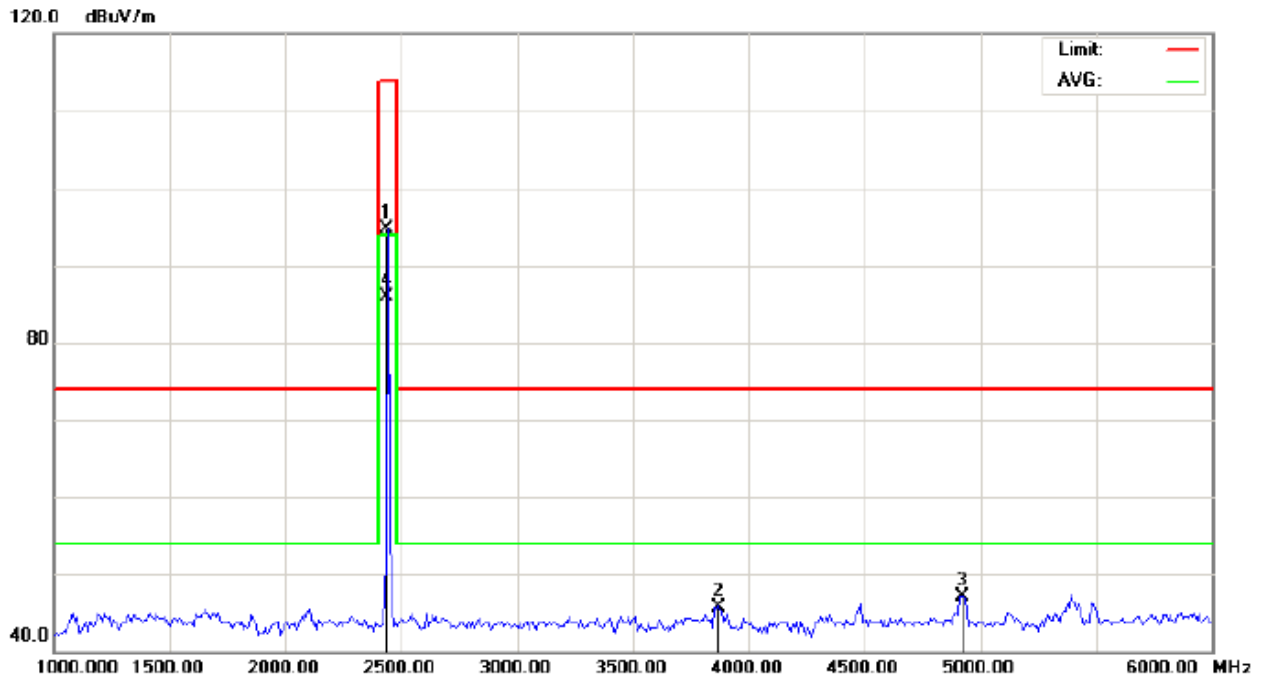
Polarization: *Horizontal*  
 Power:  
 Distance: 3m

Temperature: 26  
 Humidity: 60 %

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		2440.000	104.33	-9.64	94.69	114.00	-19.31	peak			
2		4800.000	49.84	-2.32	47.52	74.00	-26.48	peak			
3		5183.333	49.41	-1.80	47.61	74.00	-26.39	peak			
4	*	2440.000	96.87	-9.64	87.23	94.00	-6.77	AVG	150	171	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-MIDDLE CHANNEL- VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: Middle Channel TX  
Note:

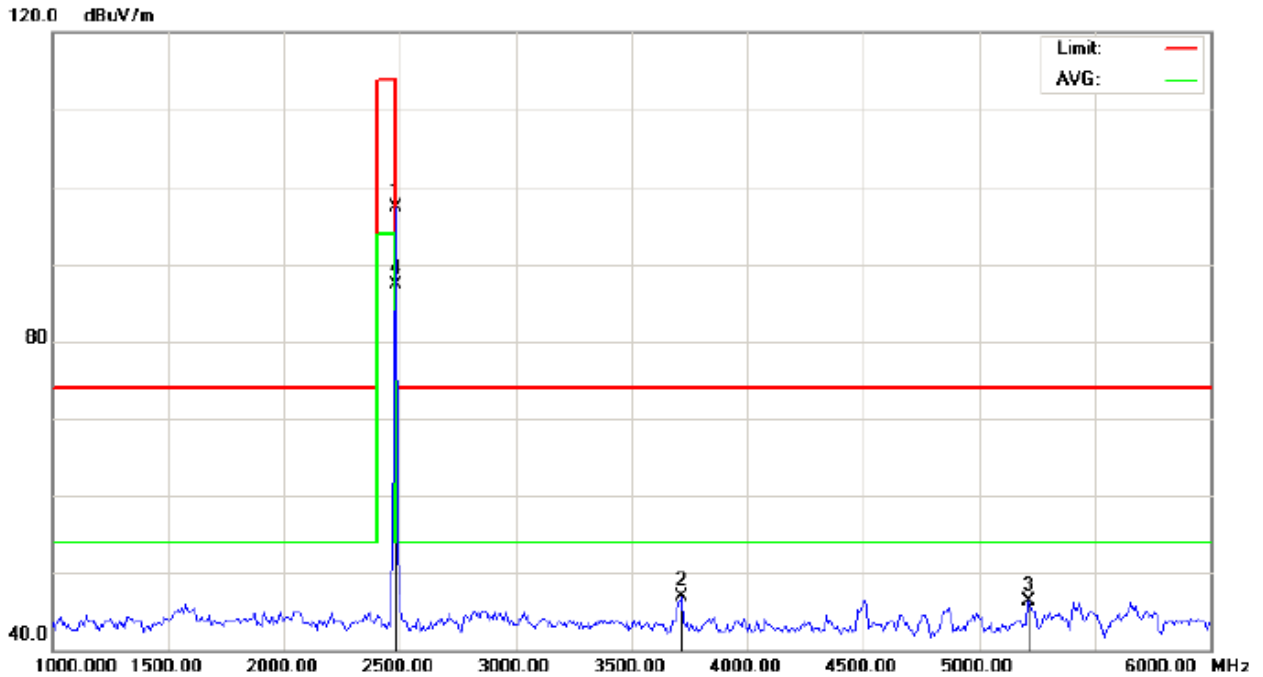
Polarization: *Vertical*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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		2440.000	104.27	-9.64	94.63	114.00	-19.37	peak			
2		3866.667	51.43	-5.63	45.80	74.00	-28.20	peak			
3		4925.000	49.05	-2.00	47.05	74.00	-26.95	peak			
4	*	2440.000	95.56	-9.64	85.92	94.00	-8.08	AVG	150	108	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-HIGH CHANNEL-HORIZONTAL

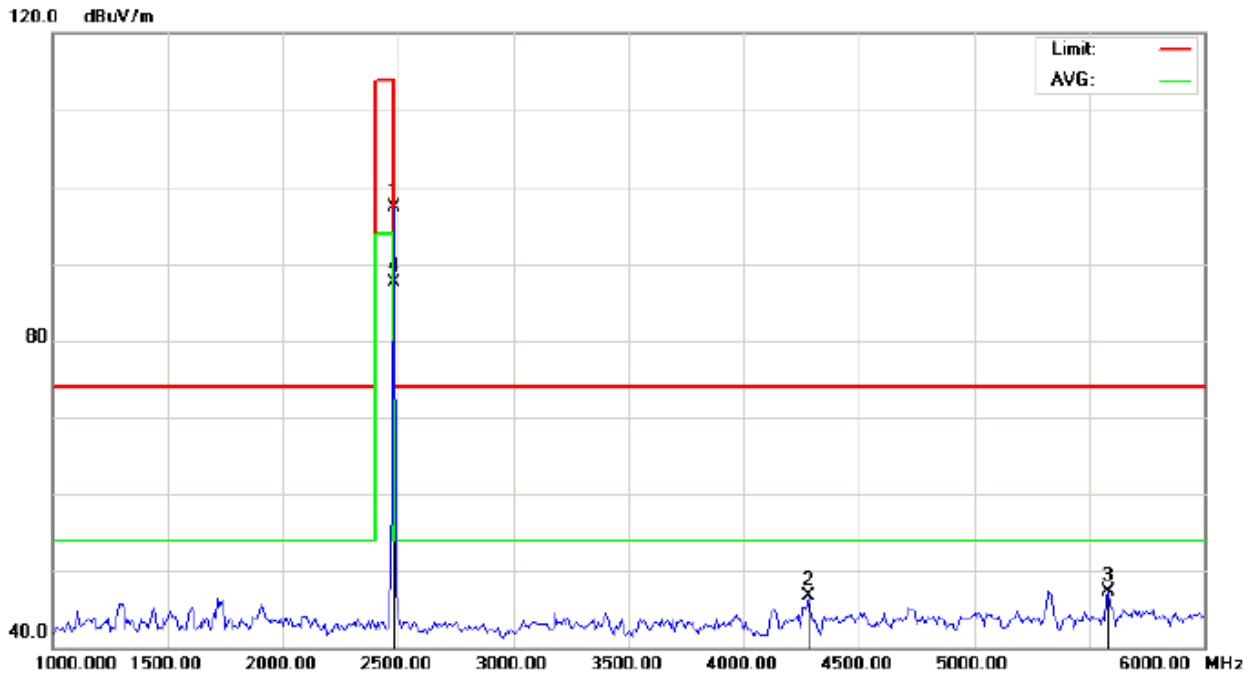


Site: site #1	Polarization: <i>Horizontal</i>	Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-	Power:	Humidity: 60 %
EUT: Bluetooth Headset	Distance: 3m	
M/N: 70202B		
Mode: High Channel TX		
Note:		

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		2480.000	106.86	-9.59	97.27	114.00	-16.73	peak			
2		3716.667	53.41	-6.56	46.85	74.00	-27.15	peak			
3		5216.667	48.08	-1.80	46.28	74.00	-27.72	peak			
4	*	2480.000	96.93	-9.59	87.34	94.00	-6.66	AVG	150	222	

**RESULT: PASS**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-HIGH CHANNEL- VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-  
EUT: Bluetooth Headset  
M/N: 70202B  
Mode: High Channel TX  
Note:

Polarization: *Vertical*  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

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		2480.000	106.89	-9.59	97.30	114.00	-16.70	peak			
2		4283.333	50.56	-3.85	46.71	74.00	-27.29	peak			
3		5583.333	49.09	-1.77	47.32	74.00	-26.68	peak			
4	*	2480.000	97.14	-9.59	87.55	94.00	-6.45	AVG	150	342	

**RESULT: PASS**

**Note:** 6~25GHz at least have 20dB margin. No recording in the test report.

Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

**Field strength of the fundamental signal**

**Peak value**

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Polarization
2402	102.71	-9.68	93.03	114	-20.97	Horizontal
2402	102.69	-9.68	93.01	114	-20.99	Vertical
2440	104.33	-9.64	94.69	114	-19.31	Horizontal
2440	104.27	-9.64	94.63	114	-19.37	Vertical
2480	106.86	-9.59	97.27	114	-16.73	Horizontal
2480	106.89	-9.59	97.30	114	-16.70	Vertical

**Average value**

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Polarization
2402	95.78	-9.68	86.10	94	-7.90	Horizontal
2402	95.47	-9.68	85.79	94	-8.21	Vertical
2440	96.87	-9.64	87.23	94	-6.77	Horizontal
2440	95.56	-9.64	85.92	94	-8.80	Vertical
2480	96.93	-9.59	87.34	94	-6.66	Horizontal
2480	97.14	-9.59	87.55	94	-6.45	Vertical



## 9. BAND EDGE EMISSION

### 9.1. MEASUREMENT PROCEDURE

1The EUT operates at hopping-off test mode. The lowest or highest channels are tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

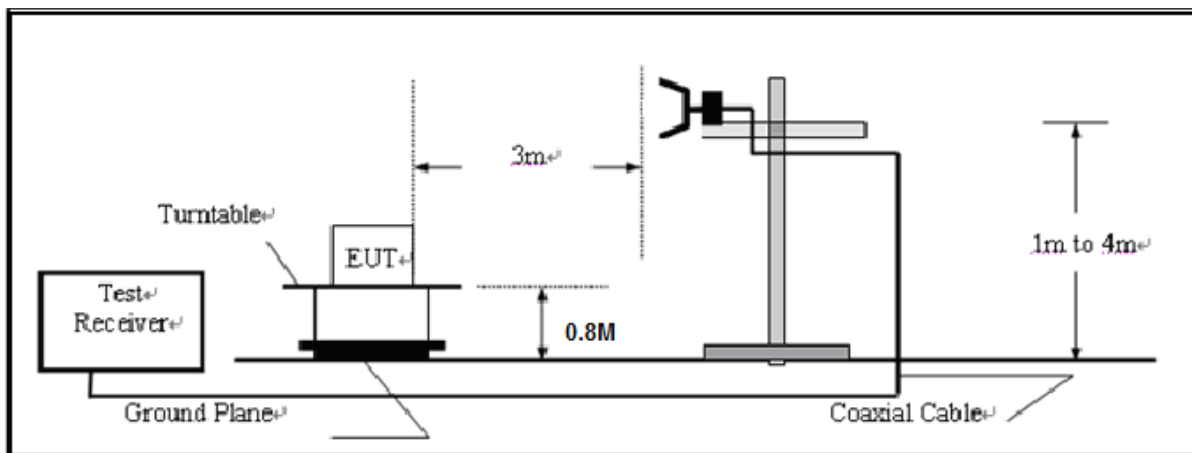
2Max hold the trace of the setp 1,and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.

3Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

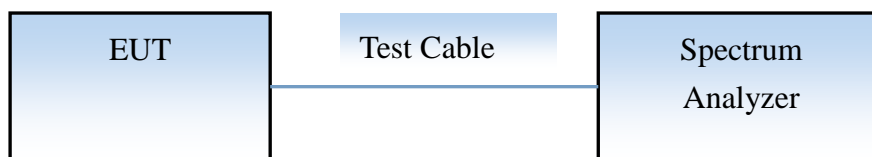
(b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO

### 9.2 TEST SETUP

RADIATED EMISSION TEST SETUP

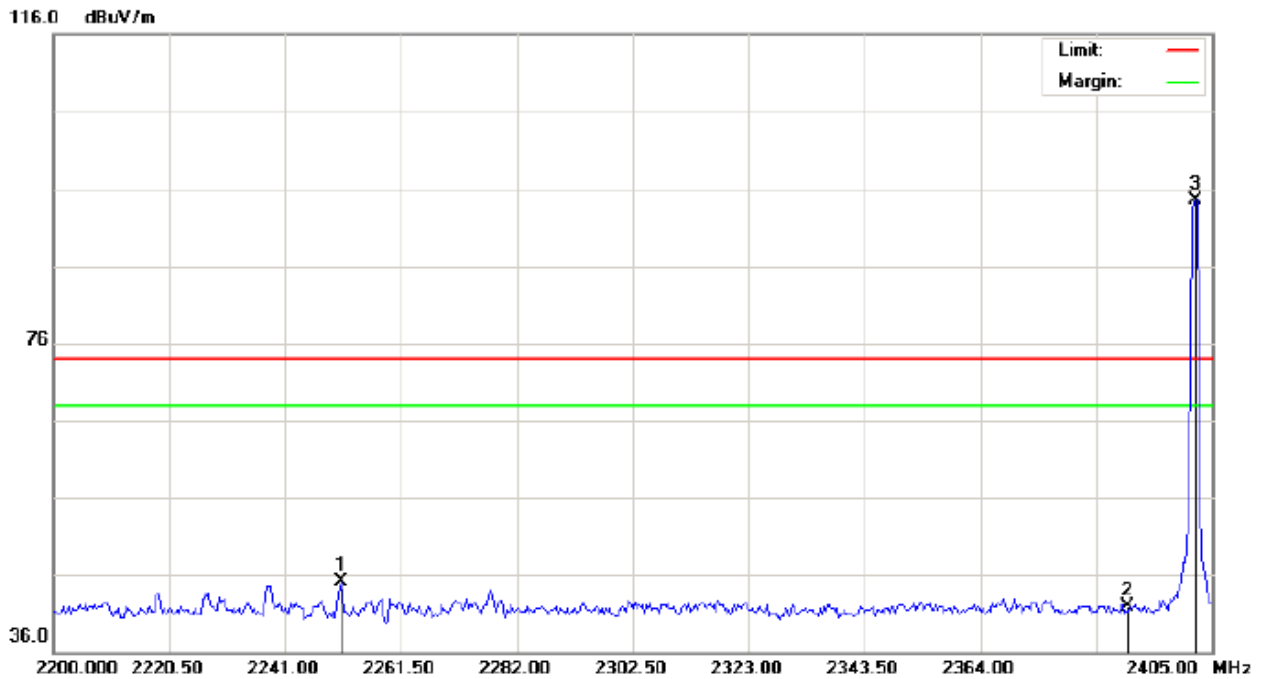


CONDUCTED TEST SETUP



**9.3 RADIATED TEST RESULT(Worst modulation:GFSK)  
FOR TRADITIONAL BLEUTOOTH**

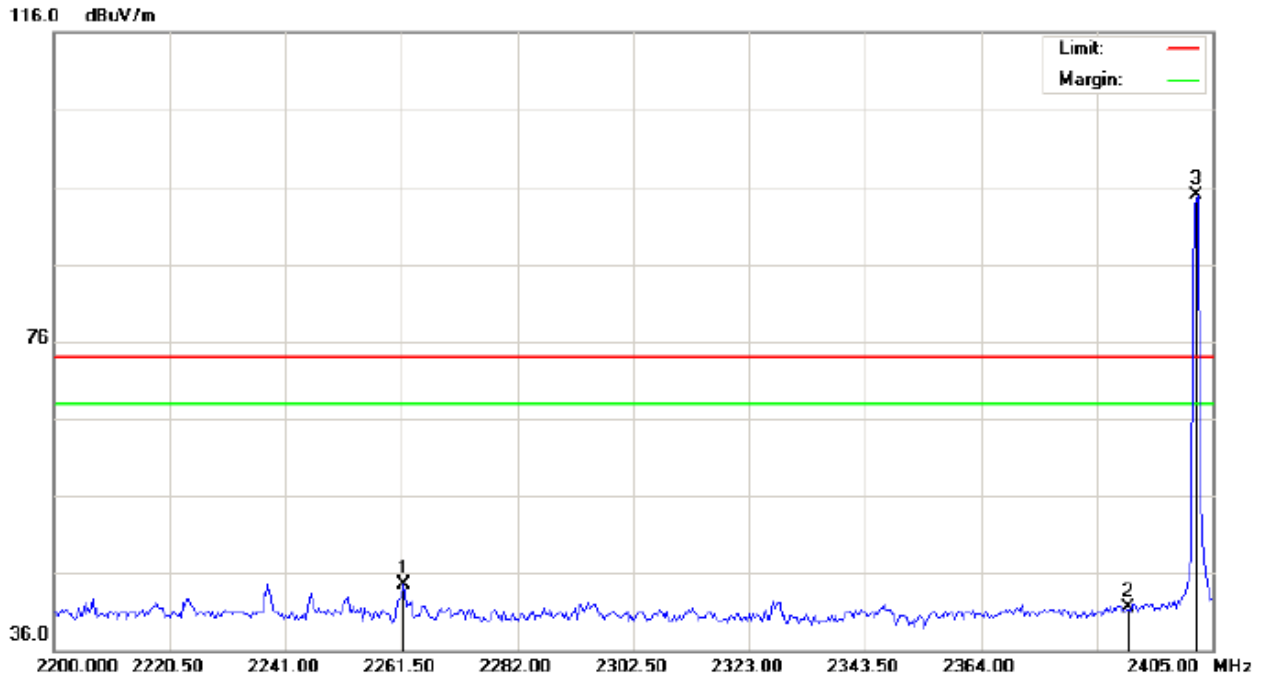
TEST PLOT OF BAND EDGE FOR LOW CHANNEL-Horizontal



Site: site #1      Polarization: *Horizontal*      Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)      Power:      Humidity: 60 %  
 EUT: Bluetooth Headset      Distance:  
 M/N: 70202B  
 Mode: Low Channel TX  
 Note:

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		2250.908	35.02	10.16	45.18	74.00	-28.82	peak			
2		2390.000	31.50	10.31	41.81	74.00	-32.19	peak			
3	*	2402.000	84.25	10.32	94.57	74.00	20.57	peak			

TEST PLOT OF BAND EDGE FOR LOW CHANNEL -Vertical

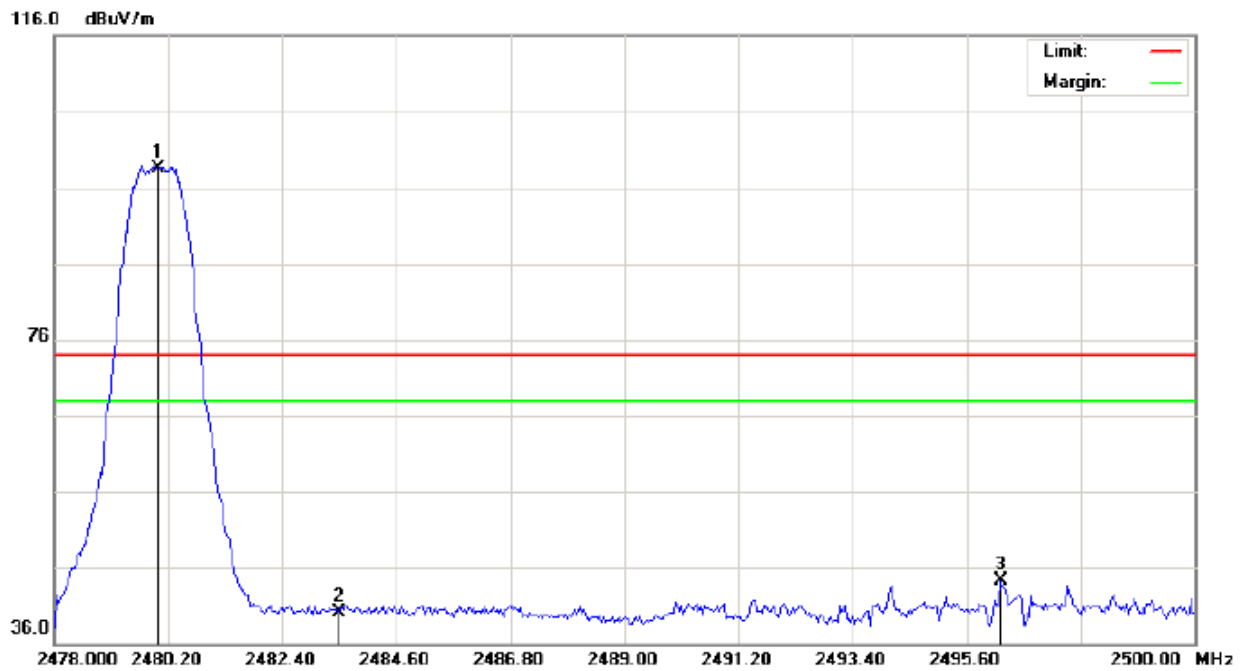


Site: site #1  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)  
 EUT: Bluetooth Headset  
 M/N: 70202B  
 Mode: Low Channel TX  
 Note:

Polarization: *Vertical*  
 Power:  
 Distance:  
 Temperature: 26  
 Humidity: 60 %

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		2261.842	34.30	10.17	44.47	74.00	-29.53	peak			
2		2390.000	31.21	10.31	41.52	74.00	-32.48	peak			
3	*	2402.000	84.57	10.32	94.89	74.00	20.89	peak			

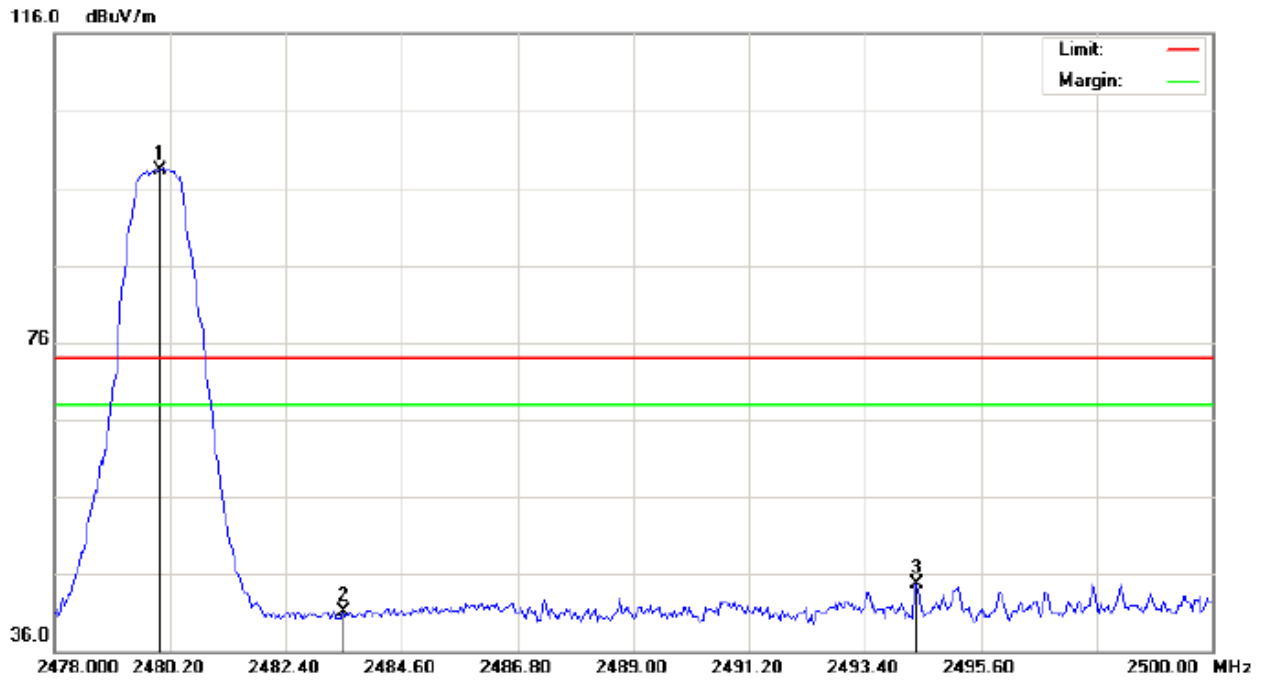
TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Horizontal



Site: site #1 Polarization: *Horizontal* Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %  
 EUT: Bluetooth Headset Distance:  
 M/N: 70202B  
 Mode: High Channel TX  
 Note:

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	*	2480.000	88.05	10.41	98.46	74.00	24.46	peak			
2		2483.500	29.69	10.41	40.10	74.00	-33.90	peak			
3		2496.260	33.94	10.43	44.37	74.00	-29.63	peak			

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL-Vertical



Site: site #1      Polarization: *Vertical*      Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)      Power:      Humidity: 60 %  
 EUT: Bluetooth Headset      Distance:  
 M/N: 70202B  
 Mode: High Channel TX  
 Note:

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	*	2480.000	87.84	10.41	98.25	74.00	24.25	peak			
2		2483.500	30.76	10.41	41.17	74.00	-32.83	peak			
3		2494.390	34.21	10.42	44.63	74.00	-29.37	peak			

**RESULT: PASS**

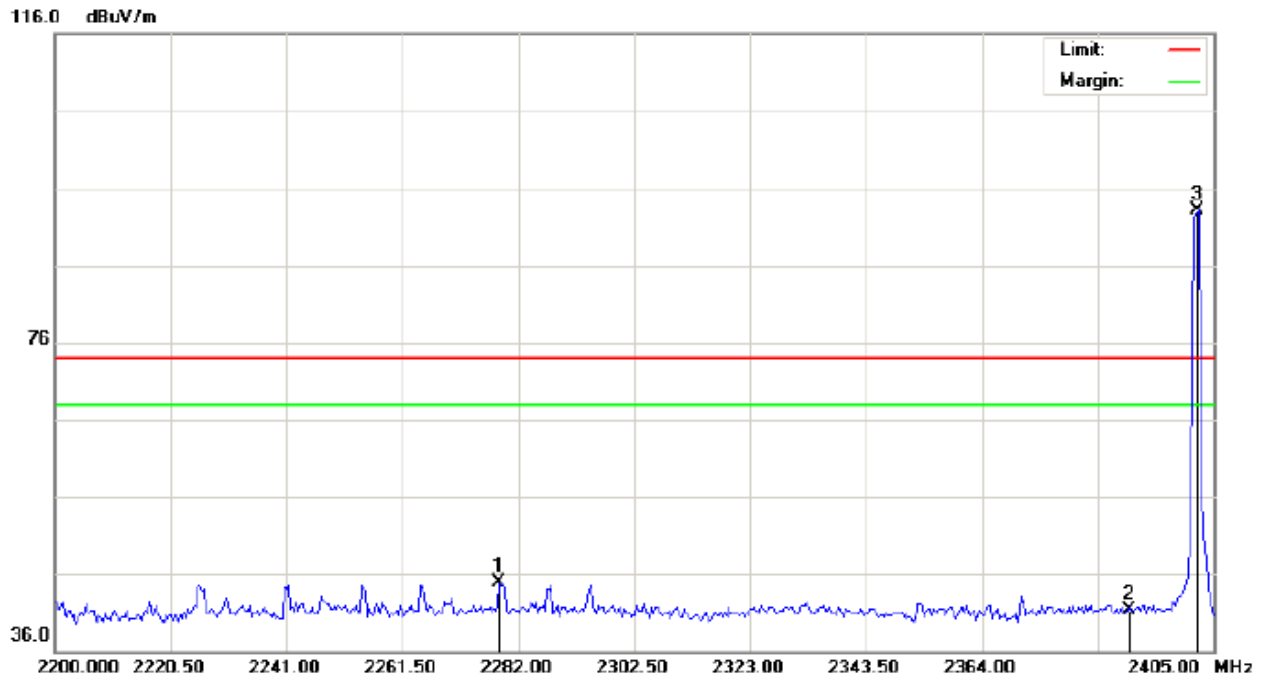
**Note:** The other modes radiation emission have enough 20dB margin.

Factor=Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

FOR BLE

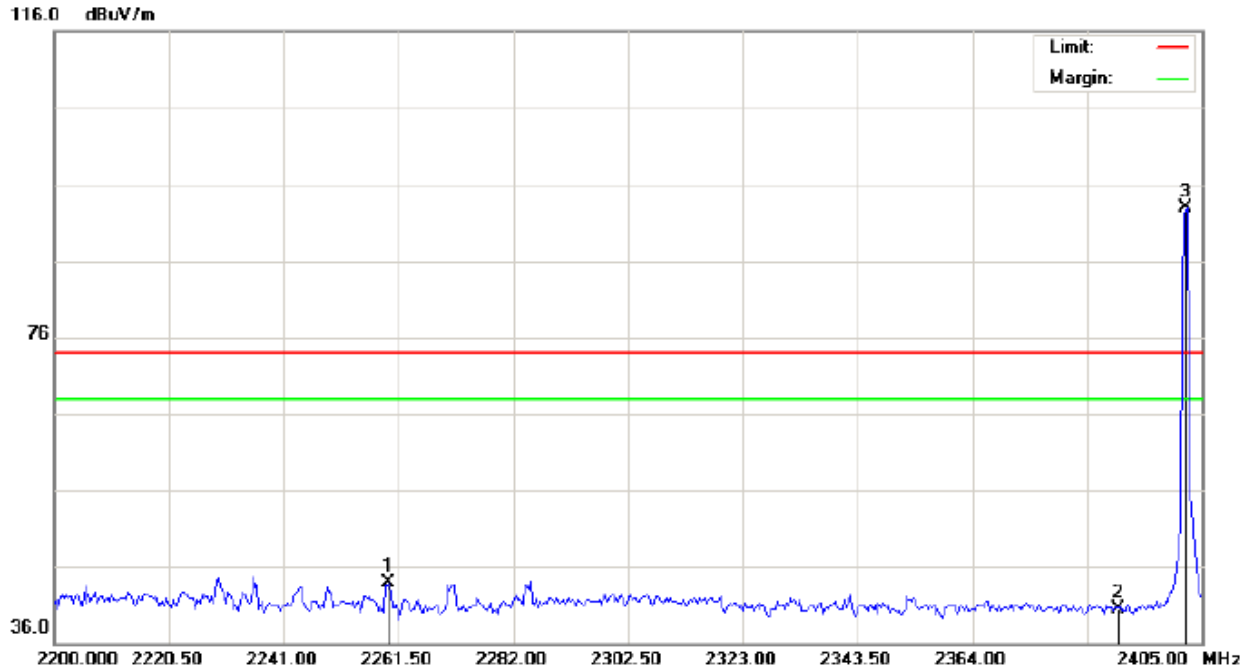
TEST PLOT OF BAND EDGE FOR LOW CHANNEL-Horizontal



Site: site #1      Polarization: *Horizontal*      Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)      Power:      Humidity: 60 %  
 EUT: Bluetooth Headset      Distance:  
 M/N: 70202B  
 Mode: Low Channel TX  
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna	Table	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		Height	Degree	
									cm	degree	
1		2278.583	34.66	10.19	44.85	74.00	-29.15	peak			
2		2390.000	31.00	10.31	41.31	74.00	-32.69	peak			
3	*	2402.000	82.70	10.32	93.02	74.00	19.02	peak			

TEST PLOT OF BAND EDGE FOR LOW CHANNEL -Vertical



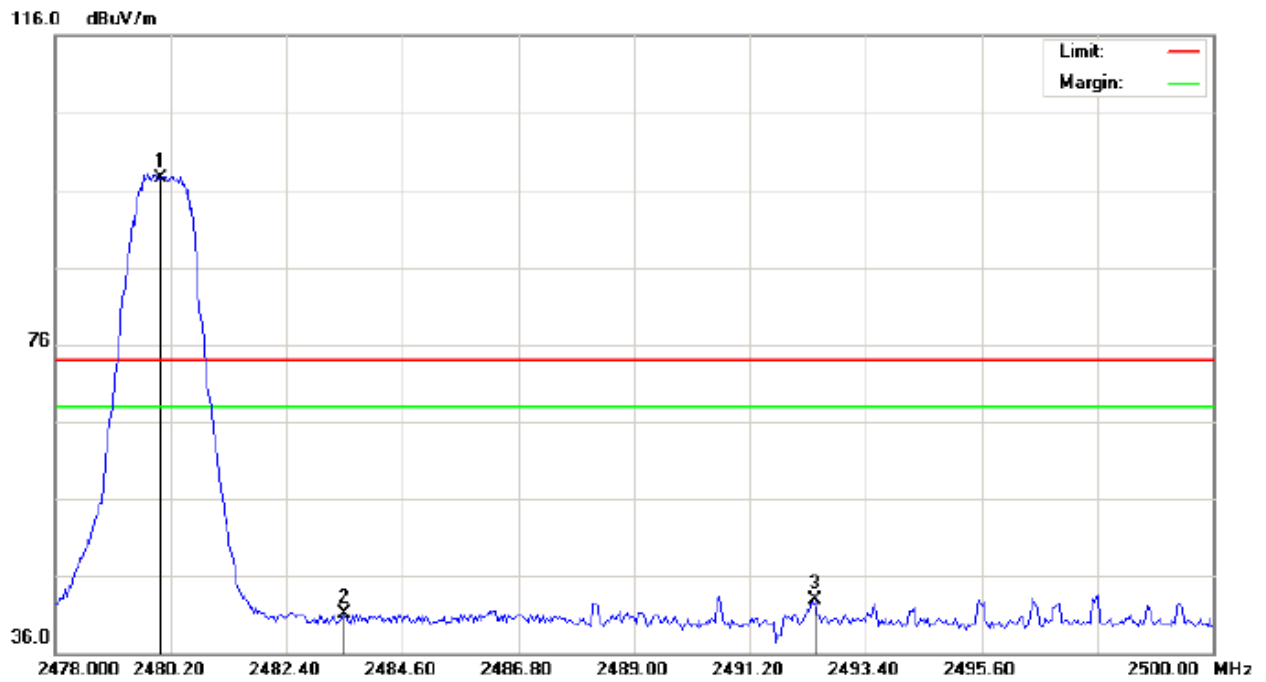
Site: site #1  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)  
 EUT: Bluetooth Headset  
 M/N: 70202B  
 Mode: Low Channel TX  
 Note:

Polarization: *Vertical*  
 Power:  
 Distance:

Temperature: 26  
 Humidity: 60 %

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		2259.792	33.79	10.17	43.96	74.00	-30.04	peak			
2		2390.000	30.21	10.31	40.52	74.00	-33.48	peak			
3	*	2402.000	82.58	10.32	92.90	74.00	18.90	peak			

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Horizontal



Site: site #1                      Polarization: *Horizontal*                      Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK)      Power:                      Humidity: 60 %  
 EUT: Bluetooth Headset                      Distance:  
 M/N: 70202B  
 Mode: High Channel TX  
 Note:

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	*	2480.000	87.03	10.41	97.44	74.00	23.44	peak			
2		2483.500	30.69	10.41	41.10	74.00	-32.90	peak			
3		2492.447	32.49	10.42	42.91	74.00	-31.09	peak			



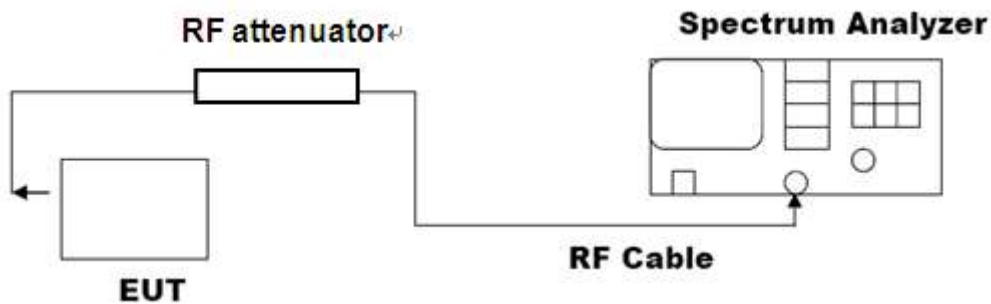


## 10. 20DB BANDWIDTH

### 10.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel  
RBW  $\geq$  1% of the 20 dB bandwidth, VBW  $\geq$  RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

### 10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

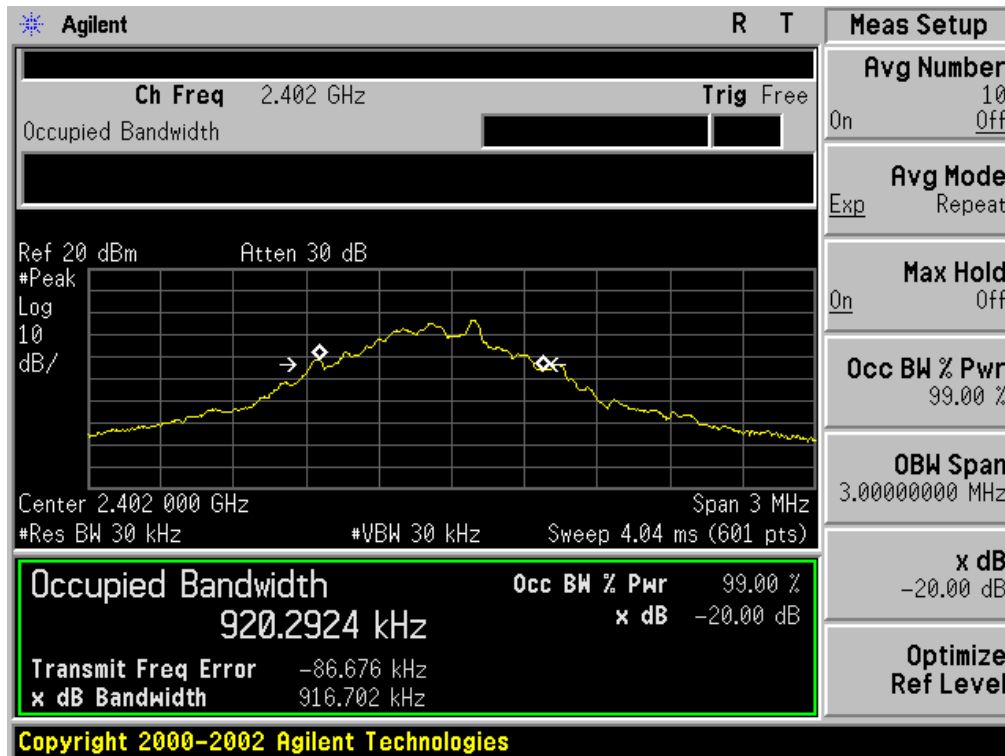


### 10.3. LIMITS AND MEASUREMENT RESULTS

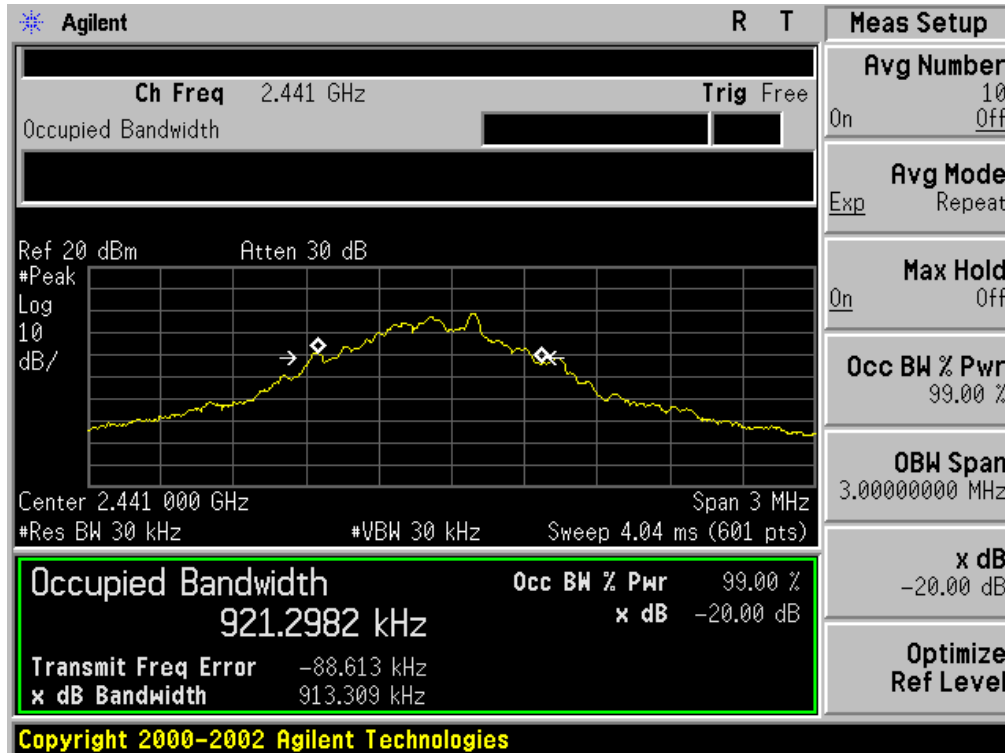
#### FOR TRADITIONAL BLUETOOTH

BLUETOOTH 1MBPS LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	0.917	PASS
	Middle Channel	0.913	PASS
	High Channel	0.921	PASS

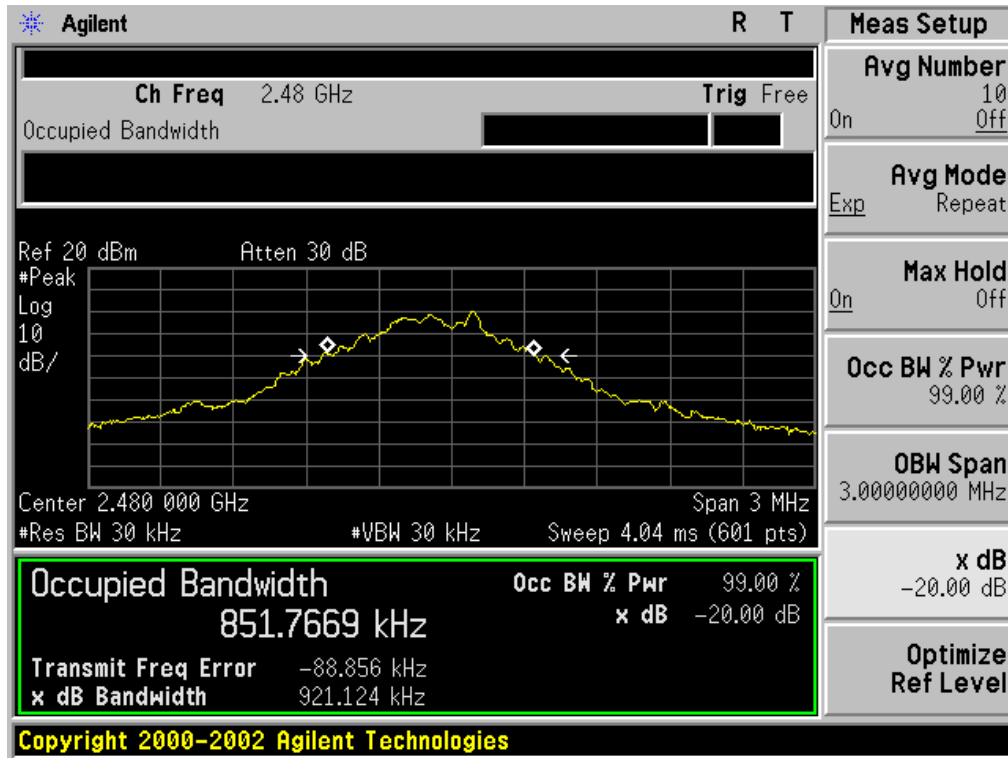
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

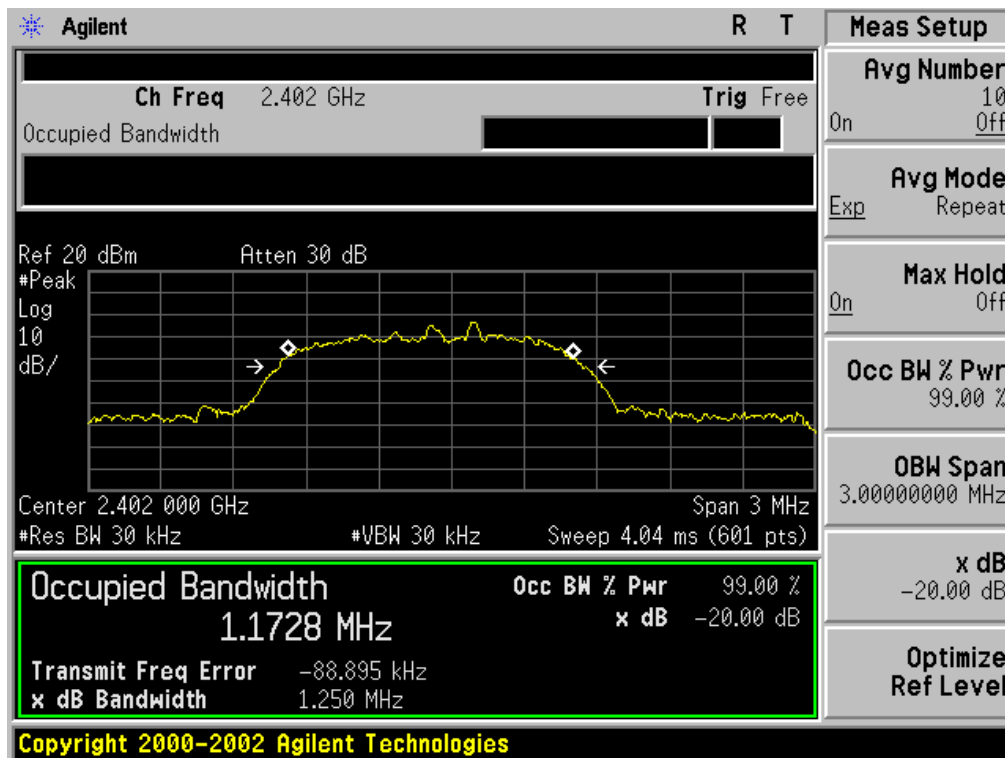


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

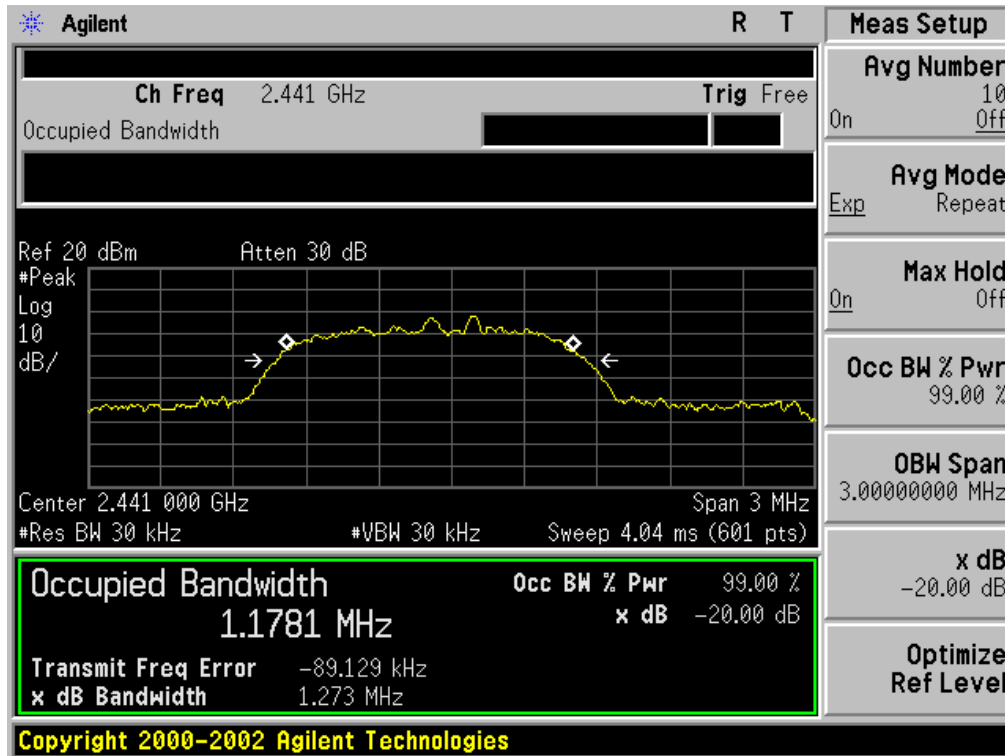


BLUETOOTH 2Mbps LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	1.250	PASS
	Middle Channel	1.273	PASS
	High Channel	1.266	PASS

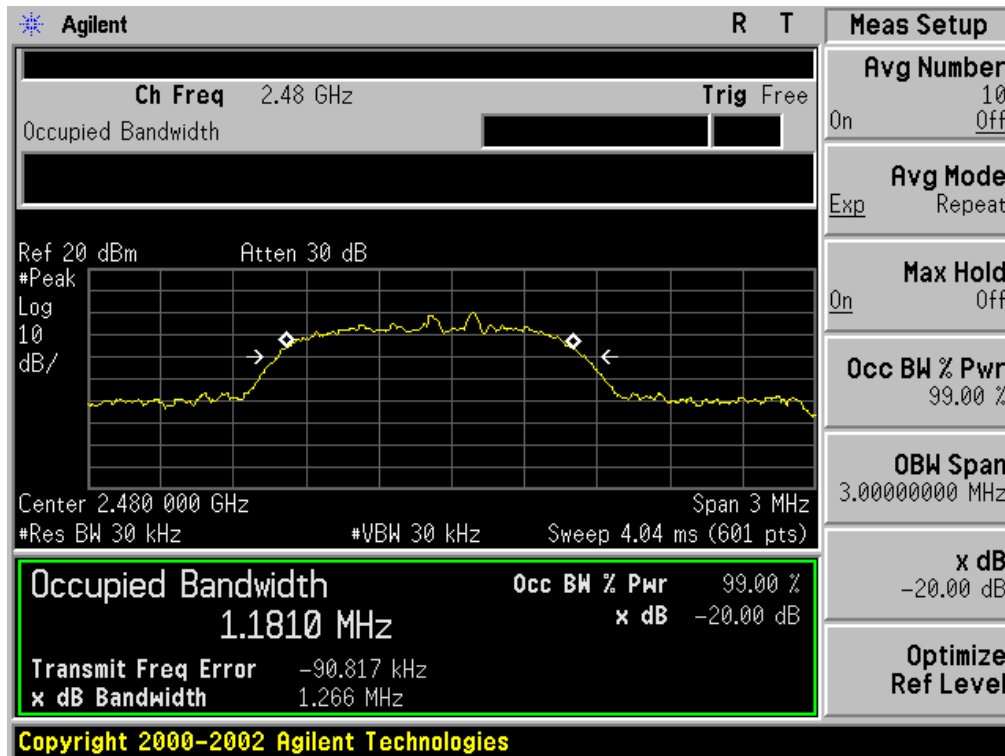
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

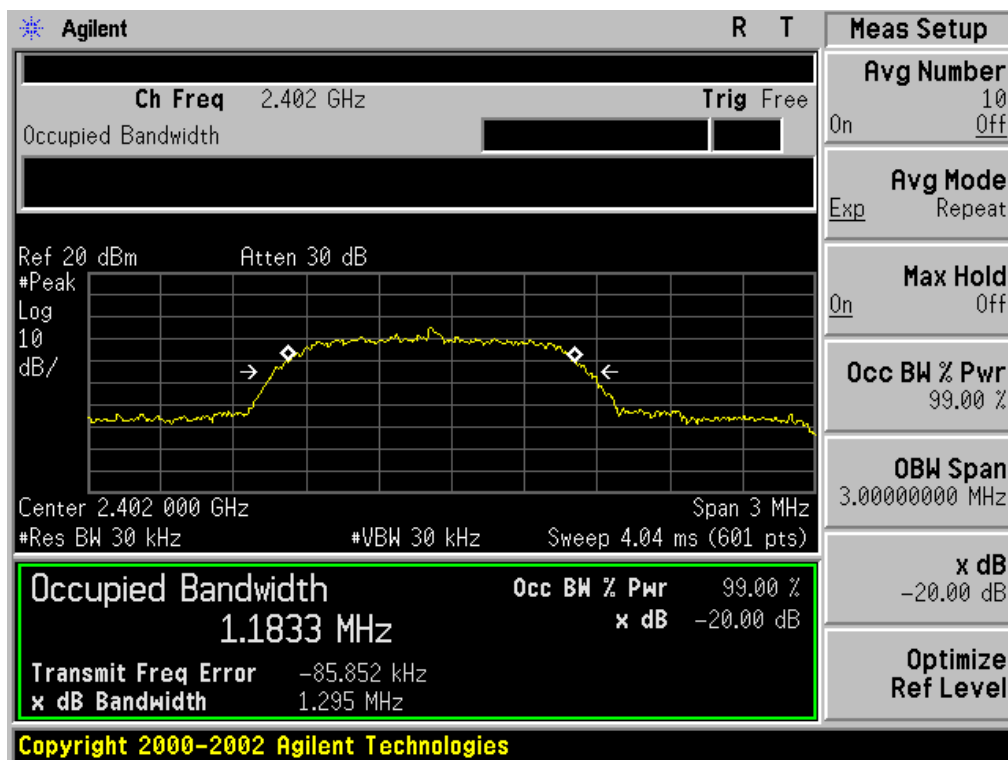


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

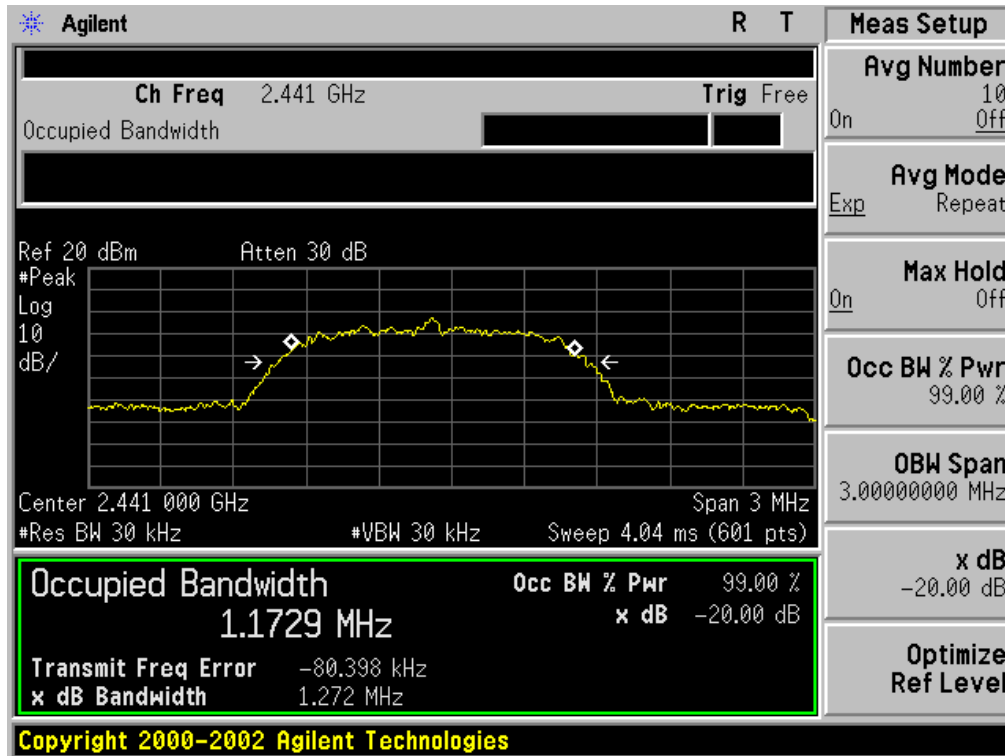


BLUETOOTH 3MBPS LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	1.295	PASS
	Middle Channel	1.272	PASS
	High Channel	1.280	PASS

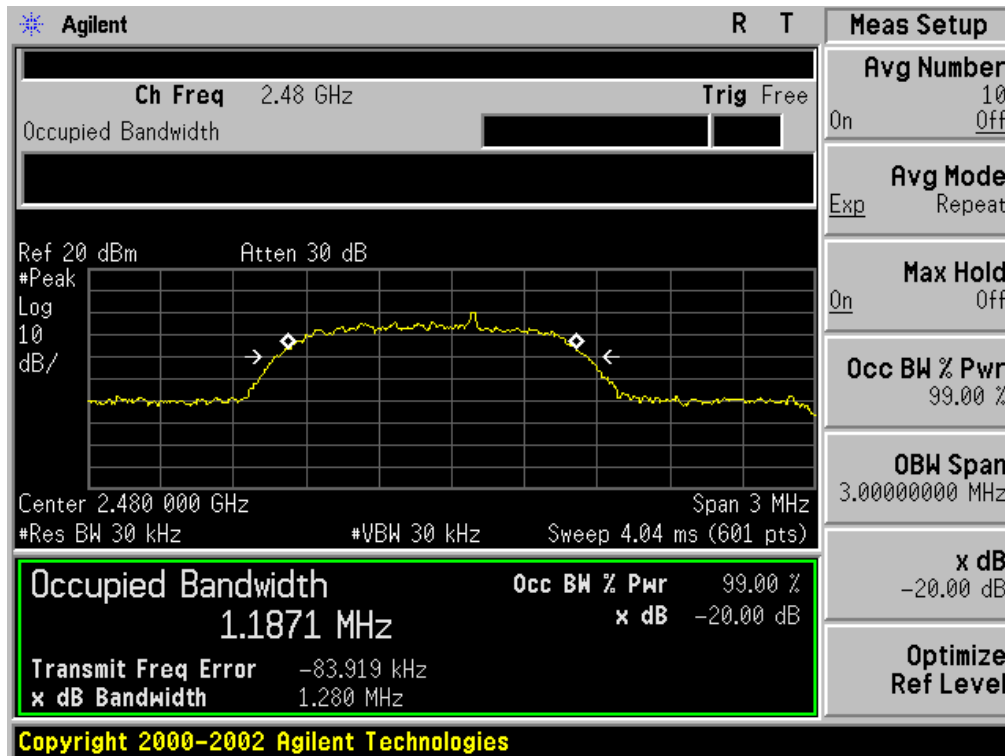
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

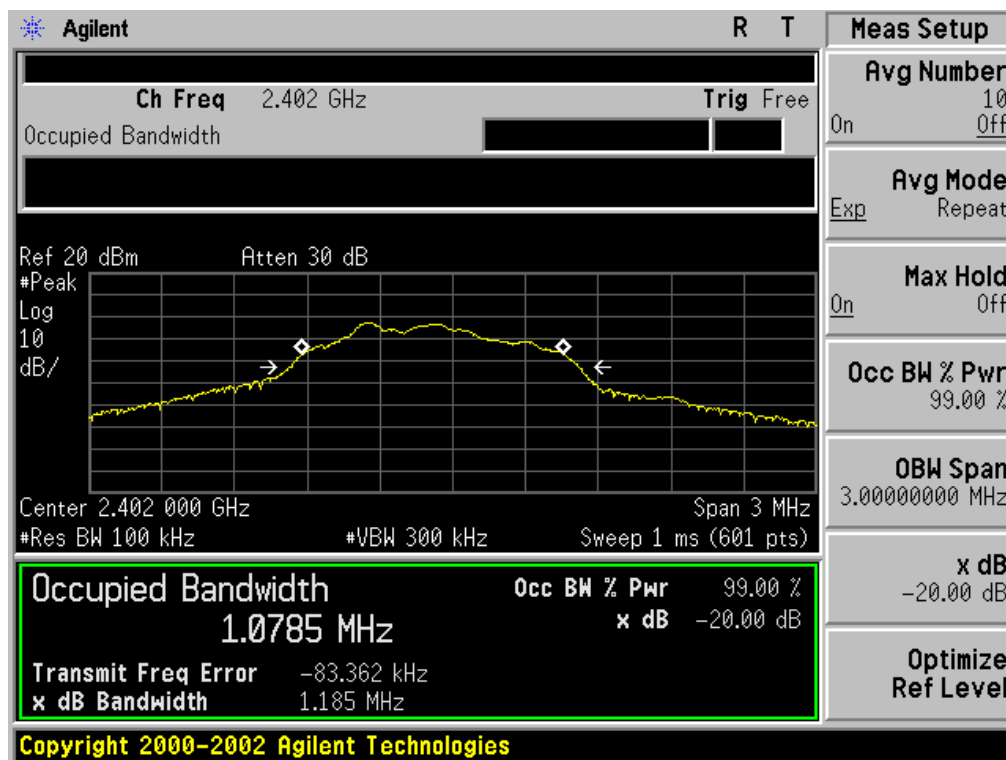




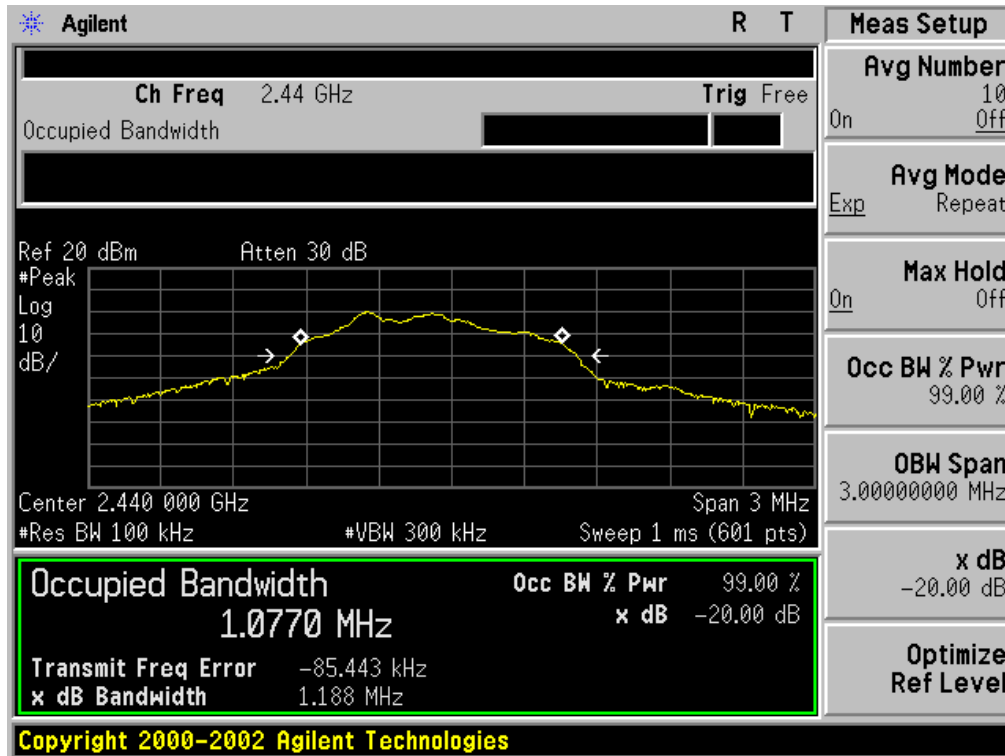
FOR BLE

BLUETOOTH 1Mbps LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	1.185	PASS
	Middle Channel	1.188	PASS
	High Channel	1.198	PASS

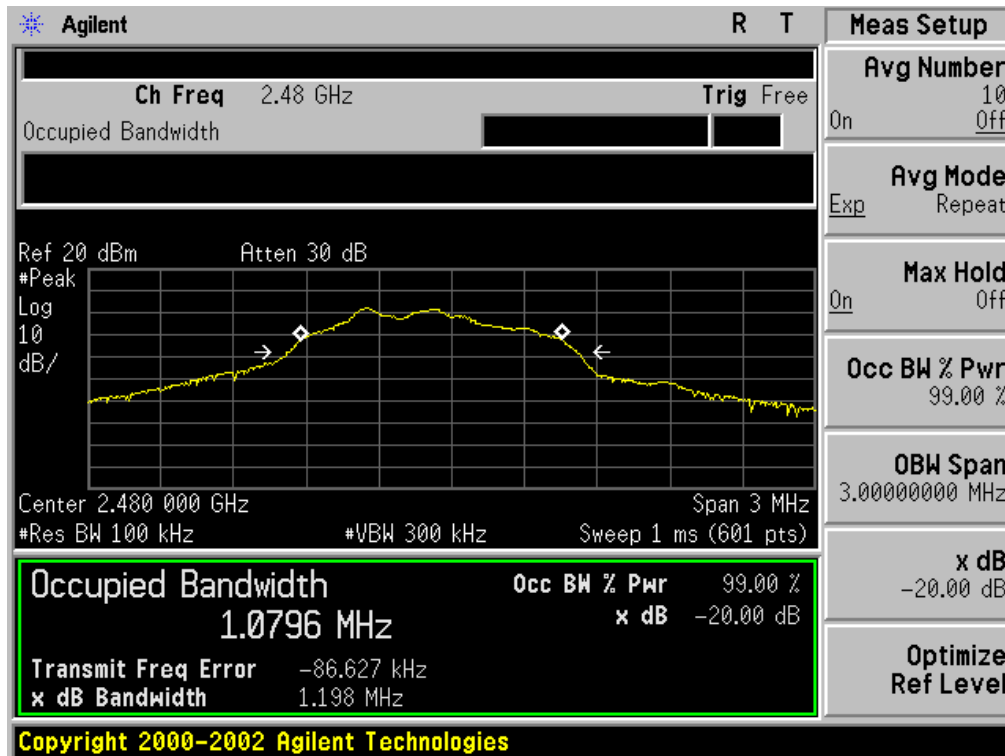
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



## 11. FCC LINE CONDUCTED EMISSION TEST

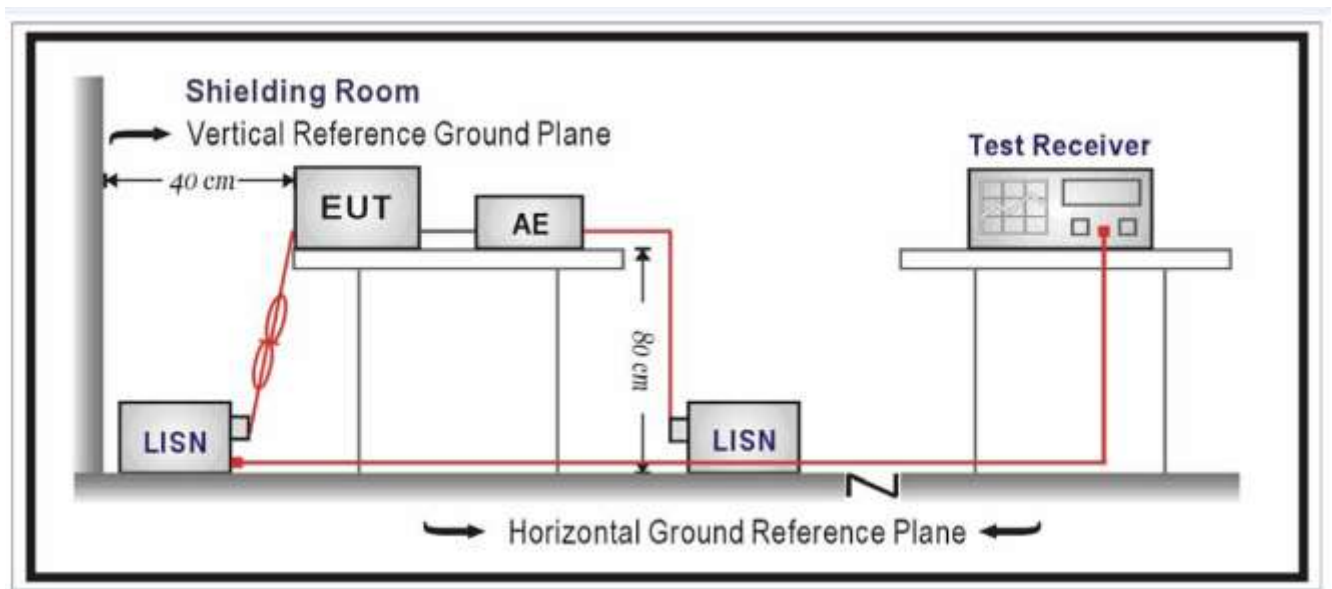
### 11.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.( dBuV)	Average( dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### 11.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



### **11.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST**

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.4.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC charging voltage by PC which received 120V/60Hz power by a LISN..
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

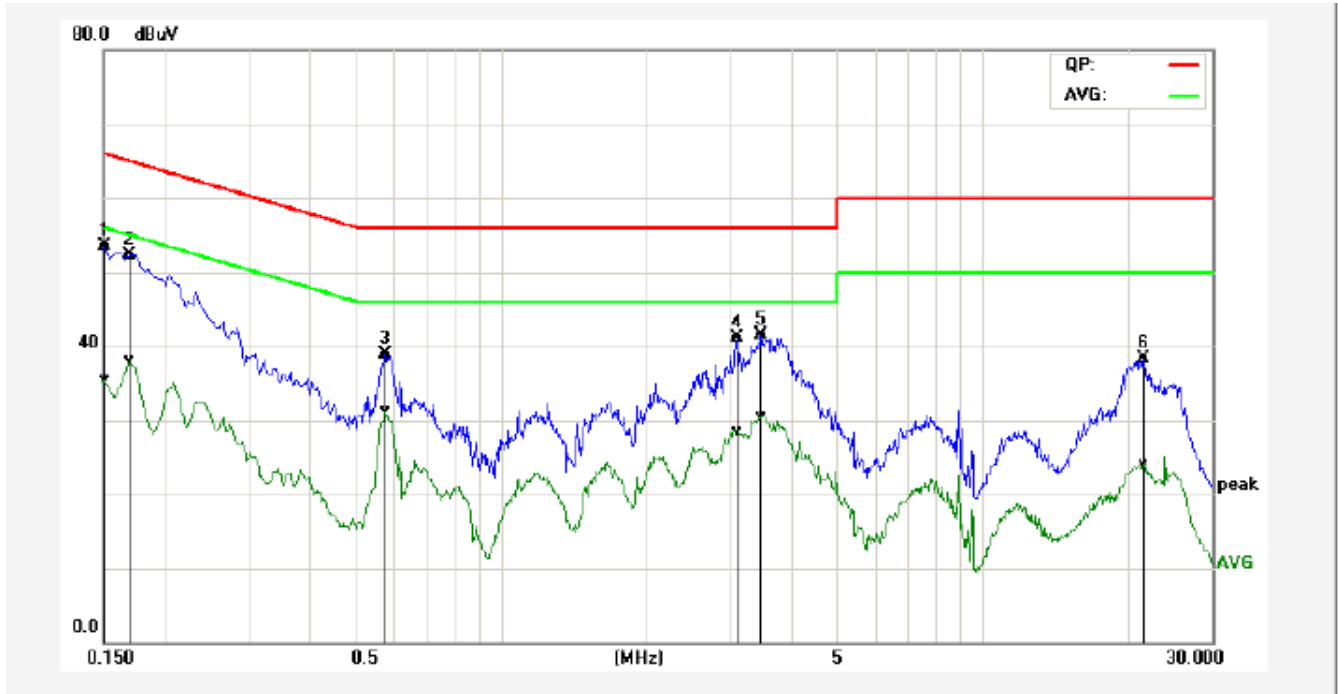
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

### **11.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST**

- EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

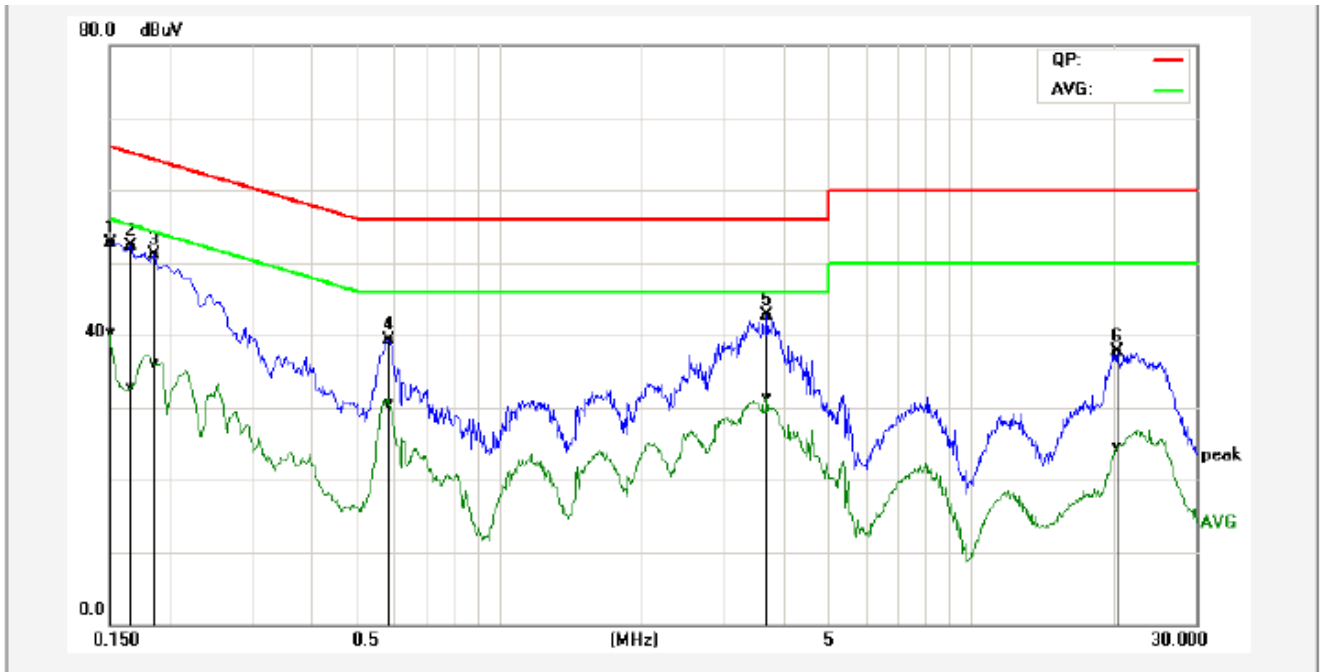
**11.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST  
FOR TRADITIONAL BLUETOOTH**

Line Conducted Emission Test Line 1-L



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.1500	43.99	25.83	9.58	53.57	35.41	65.99	56.00	-12.42	-20.59	Pass
2P	0.1700	42.69	28.46	9.62	52.31	38.08	64.96	54.96	-12.65	-16.88	Pass
3P	0.5780	29.26	21.51	9.72	38.98	31.23	56.00	46.00	-17.02	-14.77	Pass
4P	3.1060	31.30	18.74	9.71	41.01	28.45	56.00	46.00	-14.99	-17.55	Pass
5P	3.4780	31.74	20.77	9.70	41.44	30.47	56.00	46.00	-14.56	-15.53	Pass
6P	21.6299	28.36	14.30	9.85	38.21	24.15	60.00	50.00	-21.79	-25.85	Pass

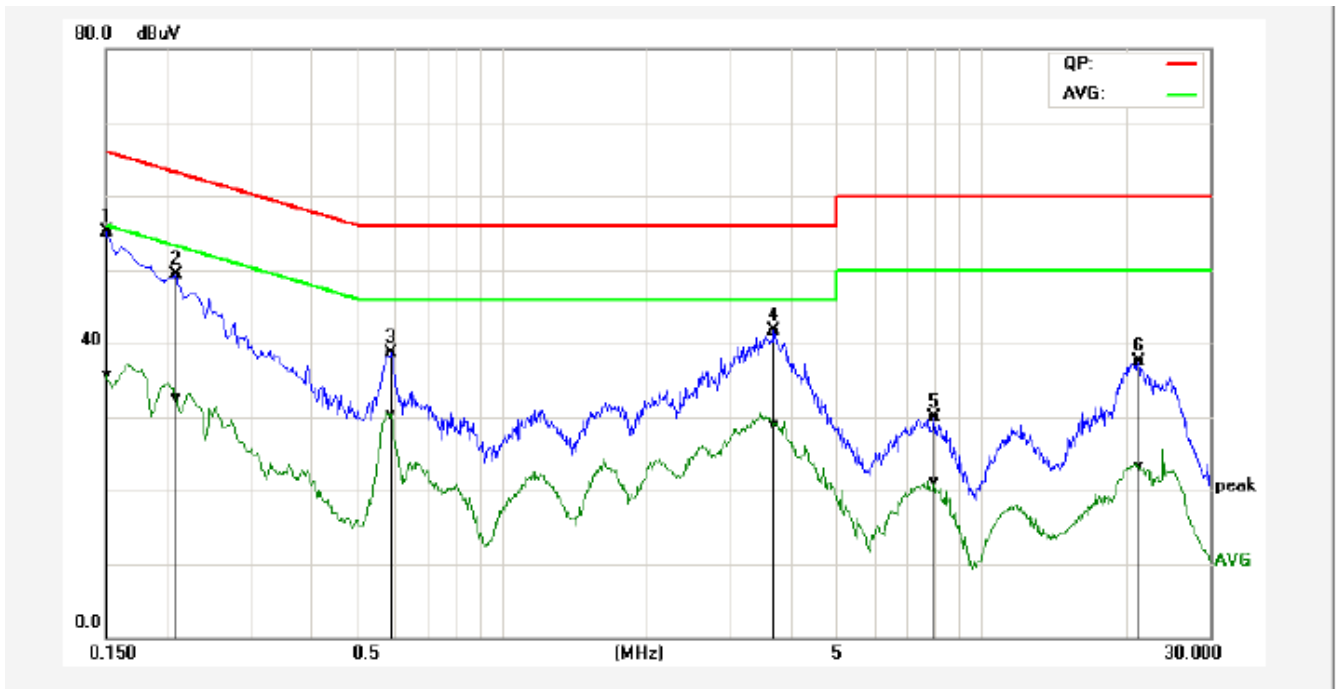
Line Conducted Emission Test Line 2-N



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1P	0.1500	42.94	30.62	9.78	52.72	40.40	65.99	56.00	-13.27	-15.60	Pass
2*	0.1660	42.59	22.98	9.78	52.37	32.76	65.15	55.16	-12.78	-22.40	Pass
3P	0.1860	41.33	26.22	9.79	51.12	36.01	64.21	54.21	-13.09	-18.20	Pass
4P	0.5860	29.58	20.91	9.68	39.26	30.59	56.00	46.00	-16.74	-15.41	Pass
5P	3.7060	32.94	21.45	9.76	42.70	31.21	56.00	46.00	-13.30	-14.79	Pass
6P	20.4619	27.88	14.80	9.74	37.62	24.54	60.00	50.00	-22.38	-25.46	Pass

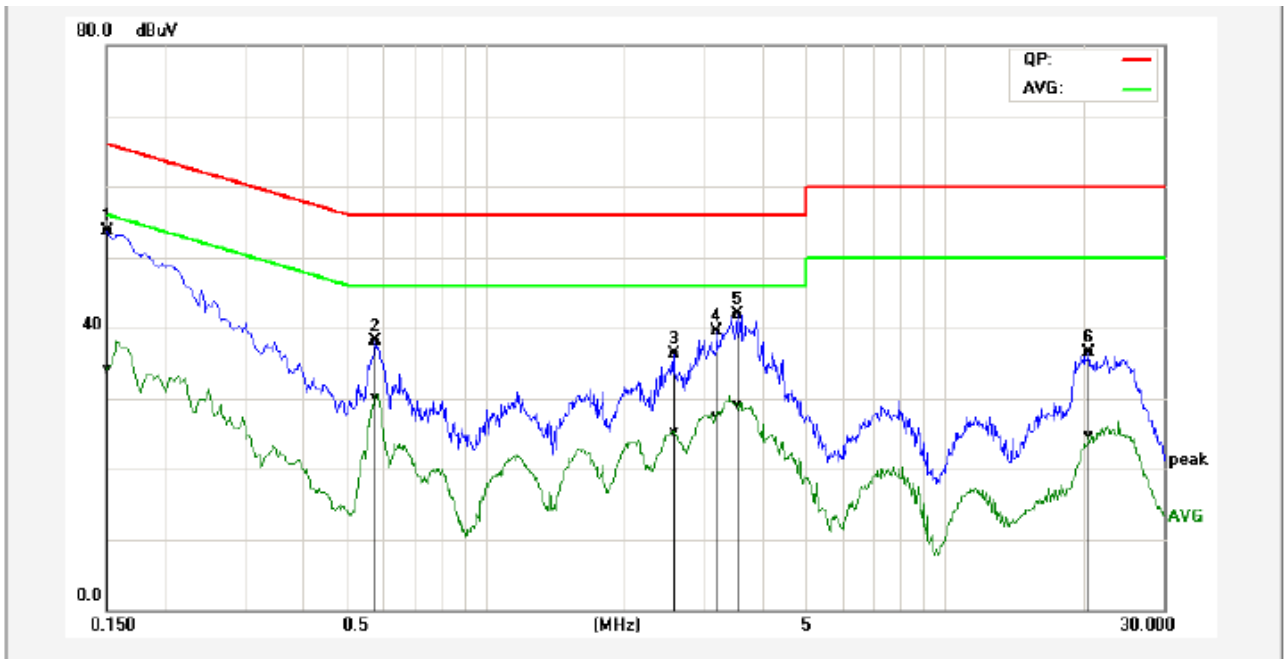
FOR BLE

Line Conducted Emission Test Line 1-L



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.1500	45.43	26.07	9.58	55.01	35.65	65.99	56.00	-10.98	-20.35	Pass
2P	0.2100	39.56	22.82	9.69	49.25	32.51	63.20	53.21	-13.95	-20.70	Pass
3P	0.5899	28.94	20.60	9.72	38.66	30.32	56.00	46.00	-17.34	-15.68	Pass
4P	3.7100	31.92	19.12	9.70	41.62	28.82	56.00	46.00	-14.38	-17.18	Pass
5P	8.0060	20.07	11.36	9.81	29.88	21.17	60.00	50.00	-30.12	-28.83	Pass
6P	21.2979	27.71	13.45	9.85	37.56	23.30	60.00	50.00	-22.44	-26.70	Pass

Line Conducted Emission Test Line 2-N



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.1500	43.94	24.26	9.78	53.72	34.04	65.99	56.00	-12.27	-21.96	Pass
2P	0.5780	28.47	20.34	9.68	38.15	30.02	56.00	46.00	-17.85	-15.98	Pass
3P	2.5740	26.55	15.47	9.74	36.29	25.21	56.00	46.00	-19.71	-20.79	Pass
4P	3.1980	29.69	17.84	9.75	39.44	27.59	56.00	46.00	-16.56	-18.41	Pass
5P	3.5340	32.10	19.41	9.76	41.86	29.17	56.00	46.00	-14.14	-16.83	Pass
6P	20.6780	26.81	14.92	9.74	36.55	24.66	60.00	50.00	-23.45	-25.34	Pass

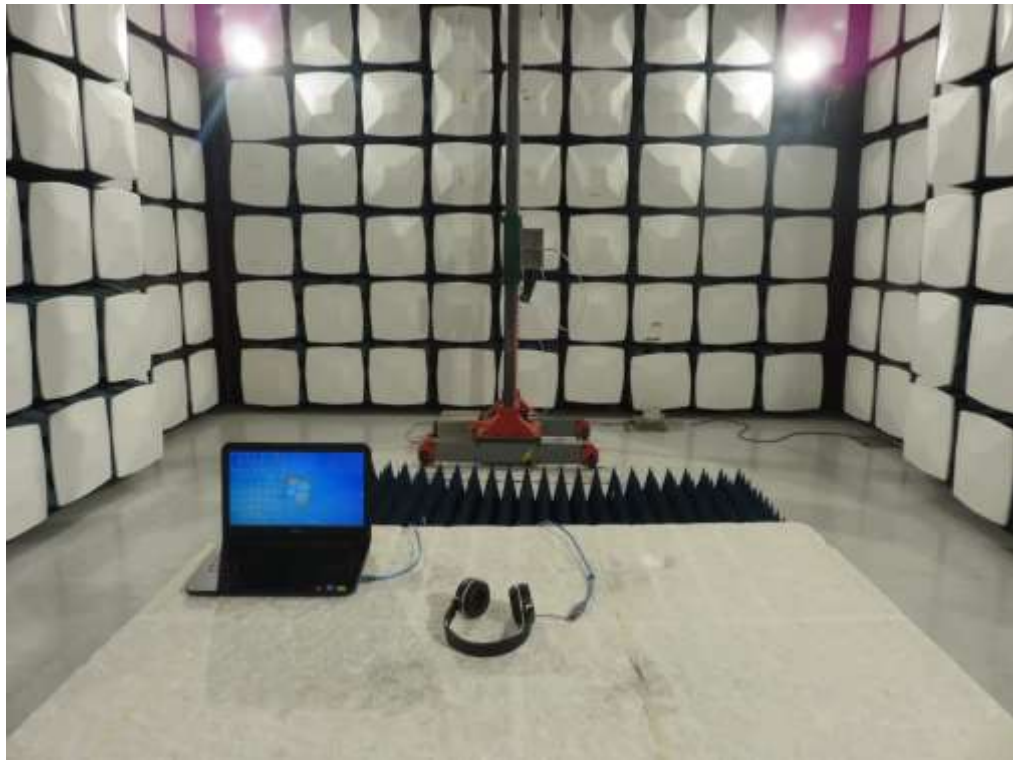


**APPENDIX A: PHOTOGRAPHS OF TEST SETUP**  
FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP





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



TOP VIEW OF EUT



BOTTOM VIEW OF EUT



FRONT VIEW OF EUT





BACK VIEW OF EUT



LEFT VIEW OF EUT



RIGHT VIEW OF EUT



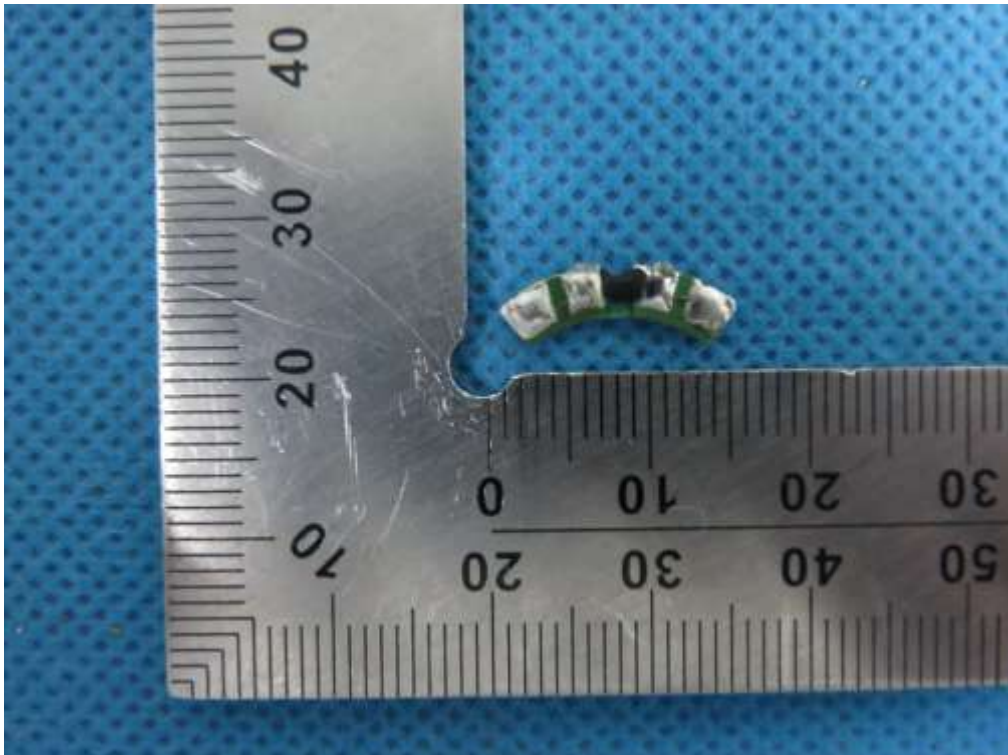
VIEW OF EUT (PORT)



OPEN VIEW OF EUT



INTERNAL VIEW OF EUT-1

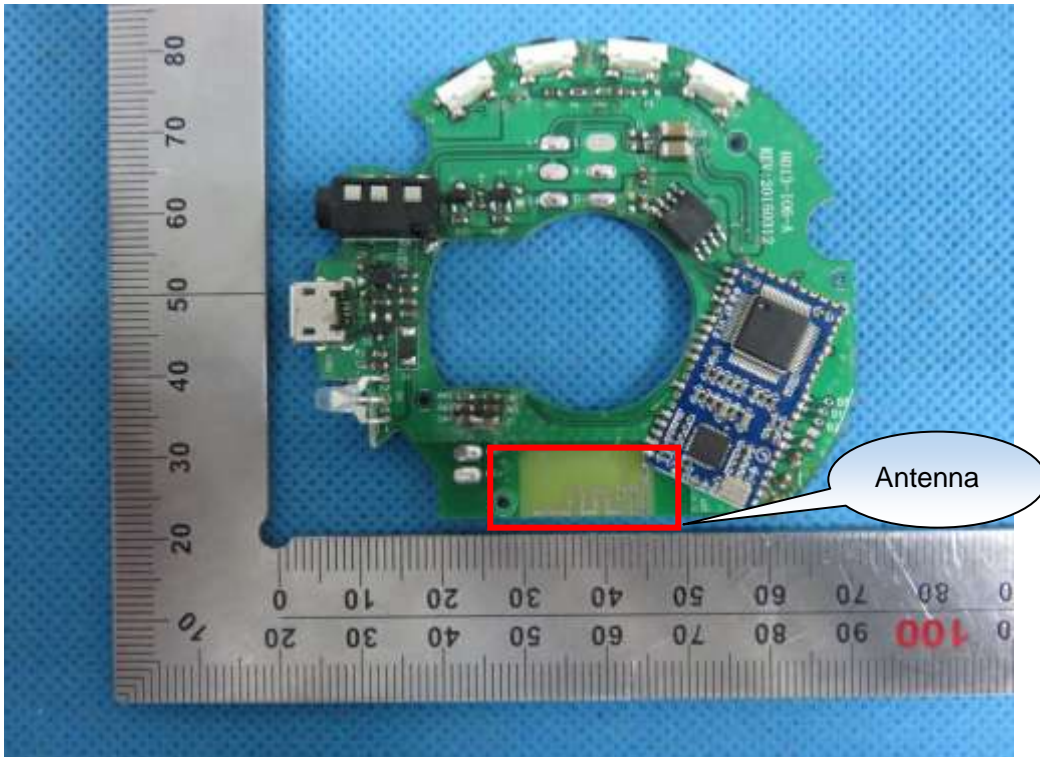




INTERNAL VIEW OF EUT-2

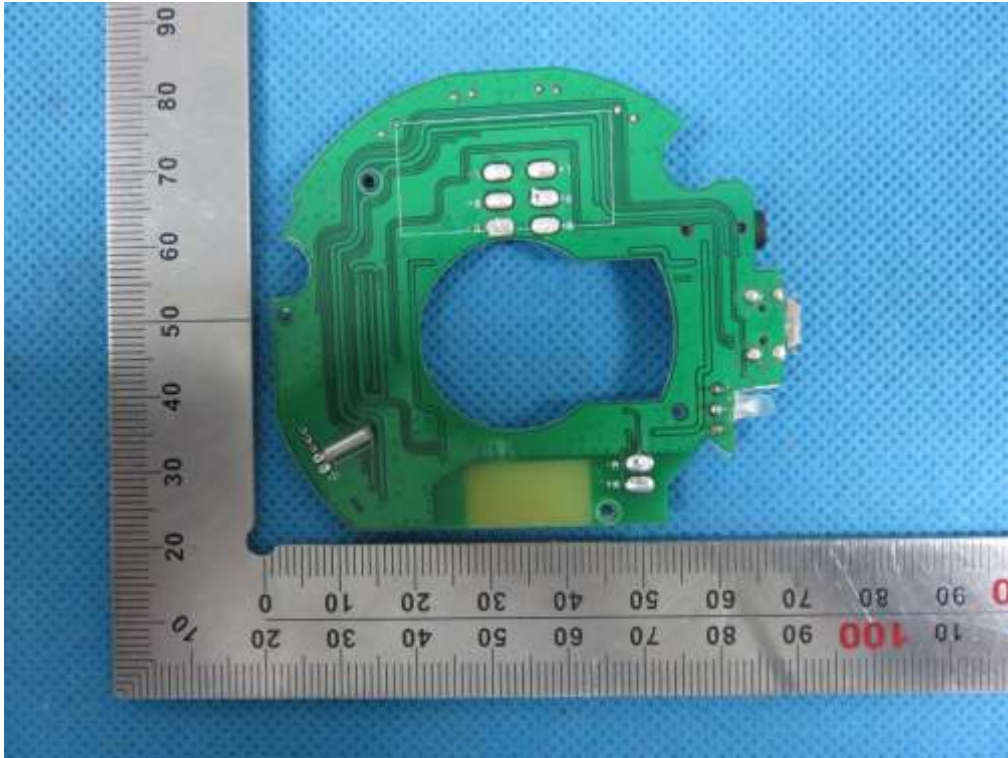


INTERNAL VIEW OF EUT-3





INTERNAL VIEW OF EUT-4



INTERNAL VIEW OF EUT-5



----END OF REPORT----