FCC Test Report

Report No.: AGC02250190101FE03

FCC ID	:	2AREIB1381
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	TWS bluetooth headset
BRAND NAME	:	N/A
MODEL NAME	:	B1381, TS74
CLIENT	:	Dongguan SenDongLv Electronics Co.LTD
DATE OF ISSUE	:	Mar. 25, 2019
STANDARD(S) **TEST PROCEDURE(S)**	:	FCC Part 15 Subpart C Section 15.249
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Mar. 25, 2019	Valid	Initial release

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1. VERIFICATION OF CONFORMITY

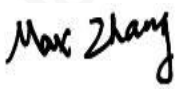
Applicant	Dongguan SenDongLv Electronics Co.LTD
Address	No.111st, Nanjiang Road, Daning, Humen Town, Dongguan City, Guangdong, China
Manufacturer	Dongguan SenDongLv Electronics Co.LTD
Address	No.111st, Nanjiang Road, Daning, Humen Town, Dongguan City, Guangdong, China
Factory	Dongguan SenDongLv Electronics Co.LTD
Address	No.111st, Nanjiang Road, Daning, Humen Town, Dongguan City, Guangdong, China
Product Designation	TWS bluetooth headset
Brand Name	N/A
Test Model	B1381
Series Model	TS74
Difference description	All the same except for the appearance color and model name
Date of test	Feb. 27, 2019 to Mar. 25, 2019
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BR/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 15.249. The test results of this report relate only to the tested sample identified in this report.

Tested By 

John Zeng(Zeng Weiqiang) Mar. 25, 2019

Reviewed By 

Max Zhang(Zhang Yi) Mar. 25, 2019

Approved By 

Forrest Lei(Lei Yonggang) Mar. 25, 2019
Authorized Officer

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
RF Output Power	102.73dBuV/m(peak)@3m
Bluetooth Version	V 5.0
Modulation	BR ☒GFSK, EDR ☒π /4-DQPSK, ☒8DPSK BLE ☐GFSK
Number of channels	79 for BR/EDR
Hardware Version	V0.1
Software Version	V2.0
Antenna Designation	Ceramic Antenna
Antenna Gain	6.62dBi
Power Supply	DC 3.7V by battery
Note: 1. The BT function of EUT didn't work when charging 2. The EUT comprises left and right channel headset, both are the same and have been tested. Only the test data of left headset recorded in this report.	

2.2. TABLE OF CARRIER FREQUENCYS

BR/EDR channel List

Frequency Band	Channel Number	Frequency
2400~2483.5MHz	00	2402MHz
	01	2403MHz
	:	:
	38	2440 MHz
	39	2441 MHz
	40	2442 MHz
	:	:
	77	2479 MHz
	78	2480 MHz

3. MEASUREMENT UNCERTAINTY

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

- Uncertainty of Conducted Emission, Uc = ±3.2 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.8 dB

4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel GFSK
2	Middle channel GFSK
3	High channel GFSK
4	Low channel π /4-DQPSK
5	Middle channel π /4-DQPSK
6	High channel π /4-DQPSK
7	Low channel 8DPSK
8	Middle channel 8DPSK
9	High channel 8DPSK
10	BT Link

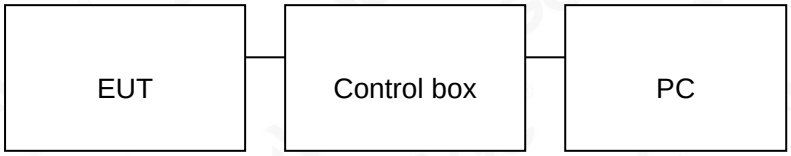
Note: 1. All the test modes can be supply by battery, only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. The EUT used fully-charged battery when tested.

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	Mfr/Brand	Model/Type No.	Remark
1	TWS bluetooth headset	N/A	B1381	EUT
2	Battery	BYT	501012	Accessory
3	PC	APPLE	A1465	A.E
4	Control box	DOFLY	LY-USB-TIL V2.2	A.E
5	USB Cable	N/A	1m unshielded	A.E
6	IPOD	APPLE	A1367	A.E

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.249(a) §15.209	Radiated Emission	Compliant
§15.249(d)	Band Edges	Compliant
§15.207	Conduction Emission	N/A
§15.215	Bandwidth	Compliant

Note: N/A means it's not applicable to this item.

6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

7. TEST METHOD

All measurements contained in this report were conducted with ANSI C63.10-2013

8. TEST EQUIPMENT LIST

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 12, 2018	Jun. 11, 2019
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 20, 2018	Dec. 19, 2019
2.4GHz Fliter	Micro-tronics	087	N/A	Jun. 12, 2018	Jun. 11, 2019
Attenuator	Weinachel Corp	58-30-33	N/A	Jun. 12, 2018	Jun. 11, 2019
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2017	Sep. 20, 2020
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Jun. 14, 2018	Jun. 13, 2020
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 26, 2018	May. 25, 2020
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Oct. 25, 2018	Oct. 24, 2019
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep. 28, 2017	Sep. 27, 2019

9. RADIATED EMISSION

9.1. 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	
		μV/m	dB(μV)/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(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark: (1) Emission level dBμV = 20 log Emission level μV/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.

9.2. MEASUREMENT PROCEDURE

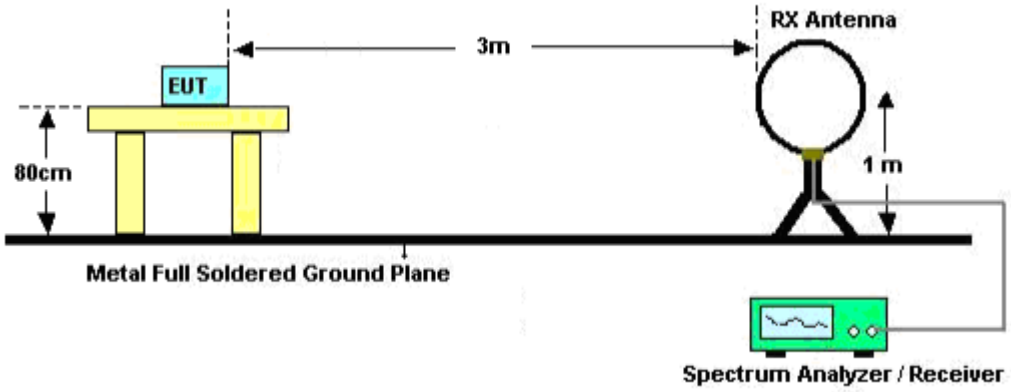
1. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation(Below 1GHz)
2. The measuring distance of 3m shall used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation(Above 1GHz)
3. The height of the test antenna shall vary between 1m to 4m.Both horizontal and vertical polarization Of the antenna are set to make the measurement.
4. The initial step in collecting radiated emission data is a receive peak detector mode. Pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
5. All readings are peak unless otherwise stated QP in column of Note. Peak denoted that the Peak reading compliance with the QP limits and then QP Mode measurement didn't perform(Below 1GHz)
6. All readings are Peak mode value unless otherwise stated AVG in column of Note. If the Peak mode measured value compliance with the Peak limits and lower than AVG Limits, the EUT shall be deemed to meet Peak & AVG limits and then only Peak mode was measured, but AVG mode didn't perform.(Above 1GHz)

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

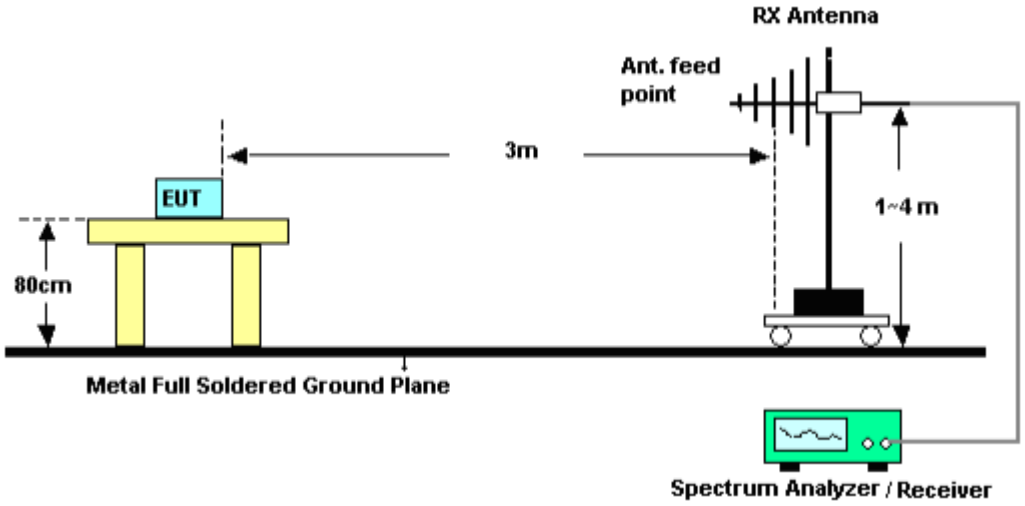
Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	Fundamental: 2.4~2.483GHz RBW 2MHz/ VBW 6MHz for Peak, RBW 2MHz/ VBW 10Hz for Average Harmonics: 1GHz~25GHz RBW 1MHz/ VBW 3MHz for Peak, RBW 1MHz/ VBW 10Hz for Average
Receiver Parameter	**Setting**
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

9.3. TEST SETUP

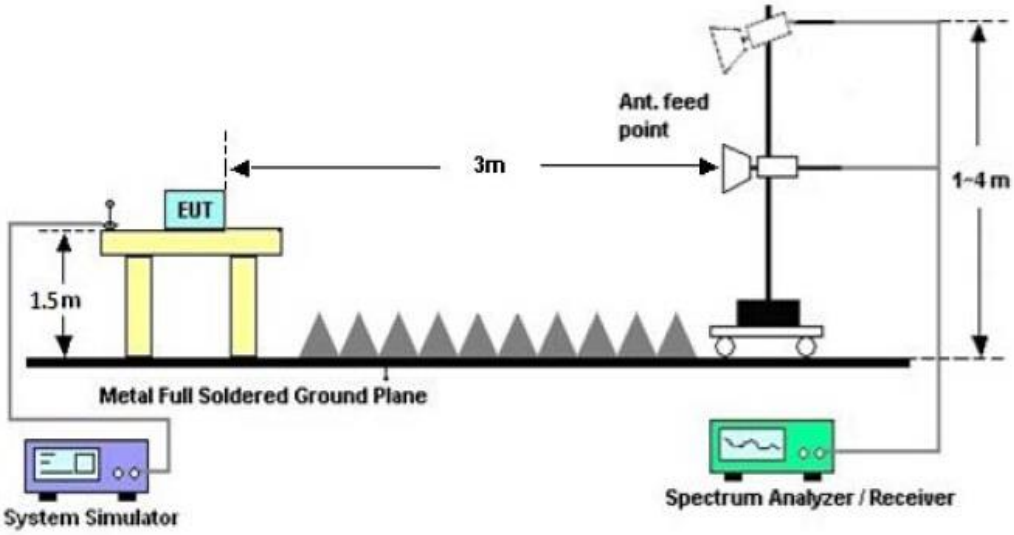
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



9.4. TEST RESULT

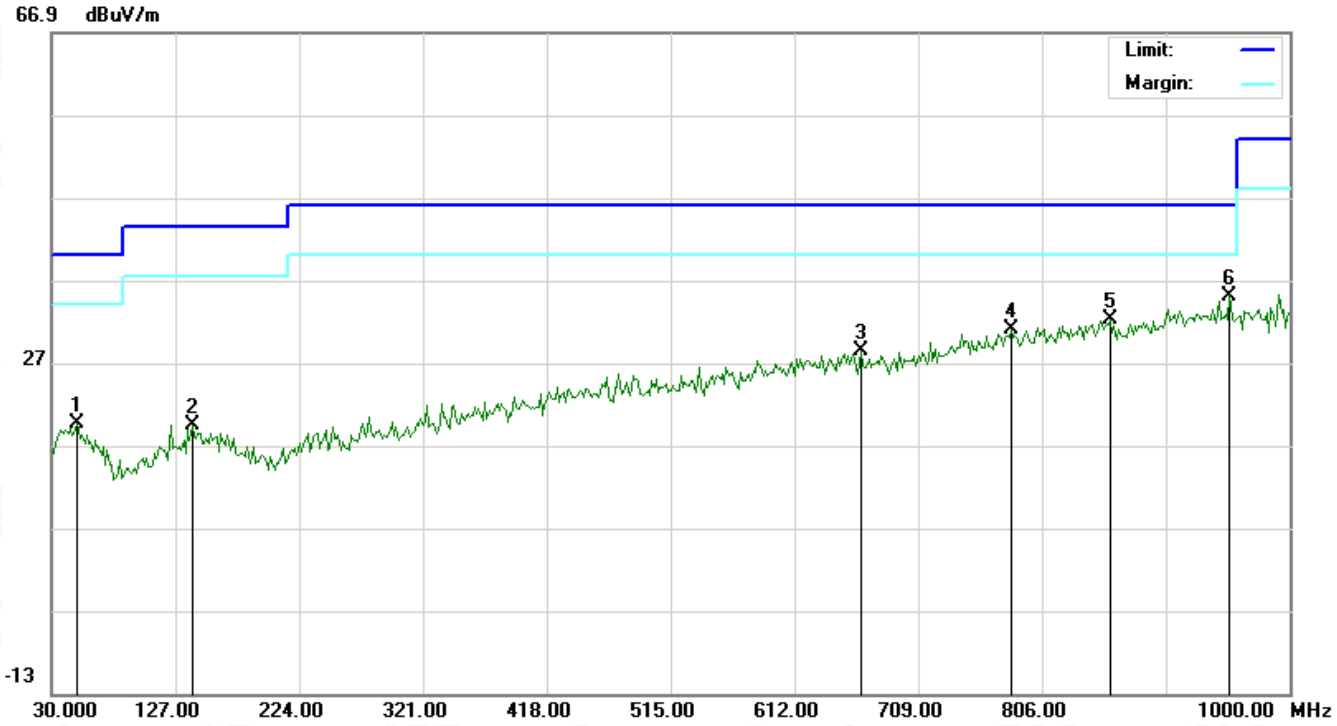
(Worst Modulation: 8DPSK)

RADIATED EMISSION BR/EDR OW 30MHz

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

RADIATED EMISSION BR/EDR OW 1GHz

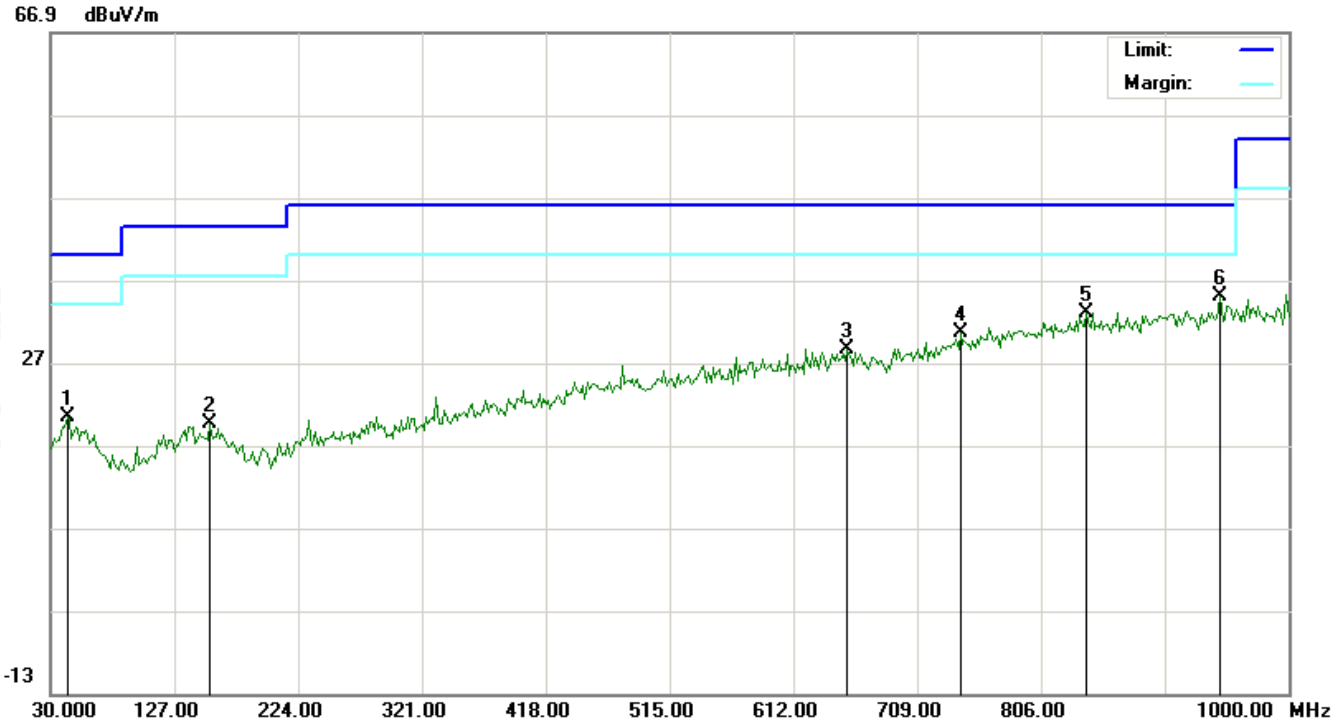
RADIATED EMISSION TEST- (30MHz-1GHz)-LOW CHANNEL-HORIZONTAL



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		49.4000	-0.13	19.75	19.62	40.00	-20.38	peak			
2		139.9333	0.20	19.23	19.43	43.50	-24.07	peak			
3		663.7333	0.66	27.71	28.37	46.00	-17.63	peak			
4		781.7500	1.02	30.00	31.02	46.00	-14.98	peak			
5		859.3500	1.02	31.18	32.20	46.00	-13.80	peak			
6	*	953.1167	2.94	32.16	35.10	46.00	-10.90	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHz-1GHz)-LOW CHANNEL -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		42.9333	0.36	19.98	20.34	40.00	-19.66	peak			
2		154.4832	0.33	19.20	19.53	43.50	-23.97	peak			
3		654.0333	1.06	27.60	28.66	46.00	-17.34	peak			
4		742.9500	1.40	29.12	30.52	46.00	-15.48	peak			
5		841.5667	2.10	30.95	33.05	46.00	-12.95	peak			
6	*	946.6500	2.82	32.10	34.92	46.00	-11.08	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.

3. The mode 10 is the worst case, and only the data of the worst case recorded in this test report.

FIELD STRENGTH OF FUNDAMENTAL FOR BR/EDR

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Modulation ：	GFSK	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2402.021	76.87	13.46	100.33	114	-13.67	peak
2402.021	65.35	13.46	88.81	94	-5.19	AVG
2441.021	75.99	13.88	99.87	114	-14.13	peak
2441.021	65.57	13.88	89.45	94	-4.55	AVG
2480.021	74.72	14.11	98.83	114	-15.17	peak
2480.021	66.97	14.11	91.08	94	-2.92	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Modulation ：	GFSK	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2402.021	74.73	13.46	98.19	114	-15.81	peak
2402.021	66.89	13.46	90.35	94	-3.65	AVG
2441.021	74.08	13.88	97.96	114	-16.04	peak
2441.021	65.48	13.88	89.36	94	-4.64	AVG
2480.021	72.21	14.11	96.32	114	-17.68	peak
2480.021	64.4	14.11	88.51	94	-5.49	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Modulation ：	π /4-DQPSK	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2402.021	78.42	13.46	101.88	114	-12.12	peak
2402.021	67.58	13.46	91.04	94	-2.96	AVG
2441.021	77.57	13.88	101.45	114	-12.55	peak
2441.021	68.89	13.88	92.77	94	-1.23	AVG
2480.021	75.34	14.11	99.45	114	-14.55	peak
2480.021	65.36	14.11	89.47	94	-4.53	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Modulation ：	π /4-DQPSK	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2402.021	77.44	13.46	100.9	114	-13.1	peak
2402.021	67.35	13.46	90.81	94	-3.19	AVG
2441.021	77.4	13.88	101.28	114	-12.72	peak
2441.021	65.58	13.88	89.46	94	-4.54	AVG
2480.021	75.79	14.11	99.9	114	-14.1	peak
2480.021	66.48	14.11	90.59	94	-3.41	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Modulation ：	8DPSK	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2402.021	79.27	13.46	102.73	114	-11.27	peak
2402.021	67.25	13.46	90.71	94	-3.29	AVG
2441.021	78.38	13.88	102.26	114	-11.74	peak
2441.021	66.78	13.88	90.66	94	-3.34	AVG
2480.021	76.42	14.11	100.53	114	-13.47	peak
2480.021	65.38	14.11	89.49	94	-4.51	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Modulation ：	8DPSK	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2402.021	78.91	13.46	102.37	114	-11.63	peak
2402.021	66.87	13.46	90.33	94	-3.67	AVG
2441.021	77.54	13.88	101.42	114	-12.58	peak
2441.021	65.48	13.88	89.36	94	-4.64	AVG
2480.021	75.83	14.11	99.94	114	-14.06	peak
2480.021	64.36	14.11	88.47	94	-5.53	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RADIATED EMISSION ABOVE 1GHZ FOR BR/EDR

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 7	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4804.026	47.14	3.76	50.9	74	-23.1	peak
4804.026	45.66	3.76	49.42	54	-4.58	AVG
7206.039	36.7	8.17	44.87	74	-29.13	peak
7206.039	32.69	8.17	40.86	54	-13.14	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 7	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4804.026	50	3.76	53.76	74	-20.24	peak
4804.026	44.14	3.76	47.9	54	-6.1	AVG
7206.039	39.26	8.17	47.43	74	-26.57	peak
7206.039	36.69	8.17	44.86	54	-9.14	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 8	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4882.032	47.75	3.78	51.53	74	-22.47	peak
4882.032	43.55	3.78	47.33	54	-6.67	AVG
7323.048	41.67	8.23	49.9	74	-24.1	peak
7323.048	40.2	8.23	48.43	54	-5.57	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 8	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4882.032	49.1	3.78	52.88	74	-21.12	peak
4882.032	44.68	3.78	48.46	54	-5.54	AVG
7323.048	40.66	8.23	48.89	74	-25.11	peak
7323.048	37.98	8.23	46.21	54	-7.79	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 9	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4960.042	46.89	3.81	50.7	74	-23.3	peak
4960.042	44.4	3.81	48.21	54	-5.79	AVG
7440.063	40.01	8.27	48.28	74	-25.72	peak
7440.063	37.25	8.27	45.52	54	-8.48	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 9	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4960.042	47.07	3.81	50.88	74	-23.12	peak
4960.042	45.38	3.81	49.19	54	-4.81	AVG
7440.063	41.23	8.27	49.5	74	-24.5	peak
7440.063	38.09	8.27	46.36	54	-7.64	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Note: Other emissions from 8G to 25 GHz are considered as ambient noise. 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.
The 8DPSK modulation was the worst case and only the data of worst recorded in this report.

10. BAND EDGE EMISSION

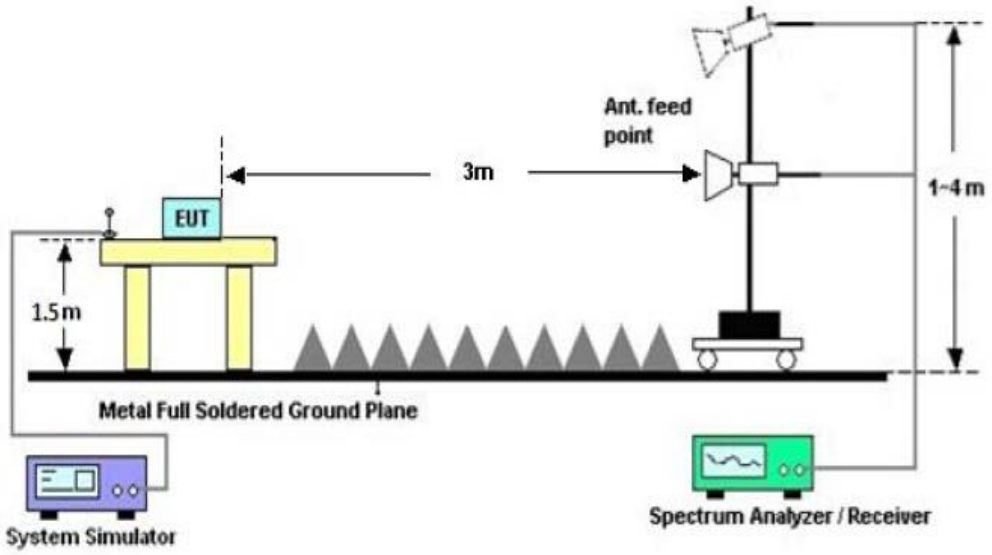
10.1. MEASUREMENT PROCEDURE

1. The 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.
2. Max hold the trace of the setup 1, and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.
3. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission.

Start frequency(MHz)	Stop frequency(MHz)
2200	2405
2478	2500

10.2 TEST SETUP

RADIATED EMISSION TEST SETUP

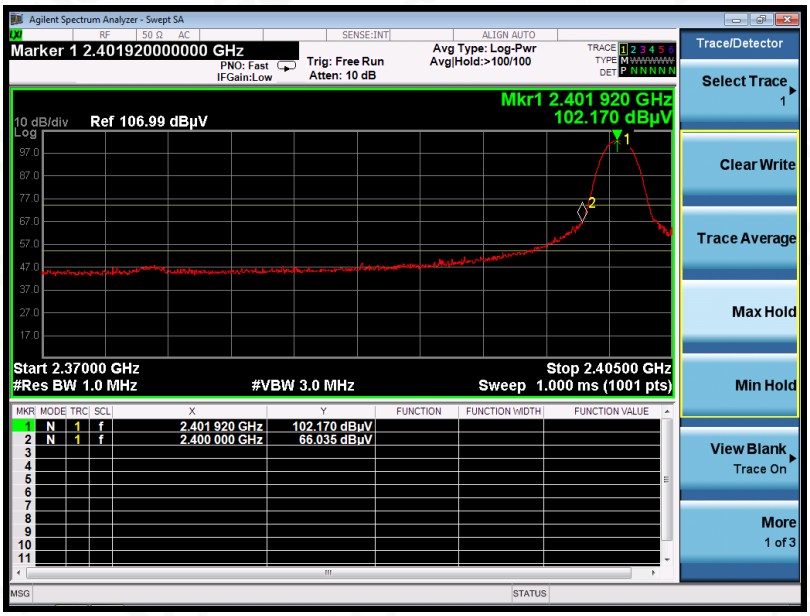


10.3 RADIATED TEST RESULT

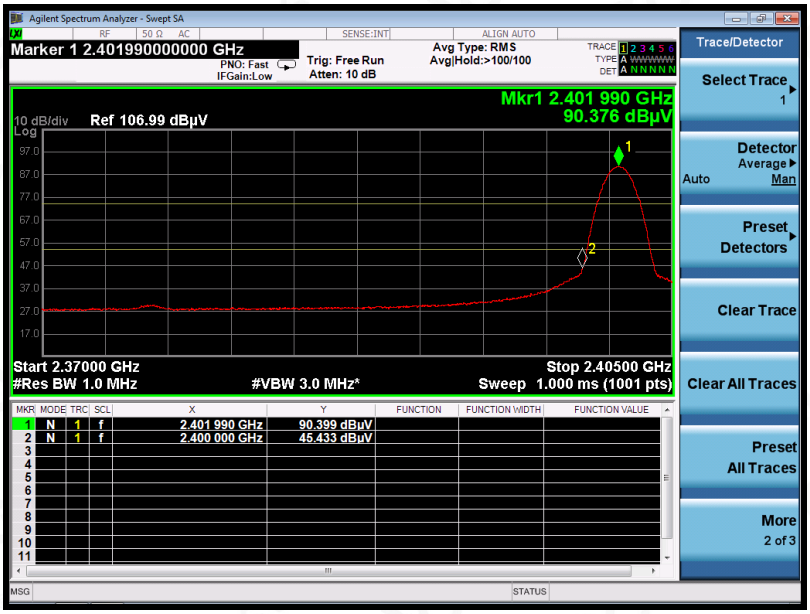
FOR BR/EDR:

EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 7	Polarization :	Horizontal

PK Value



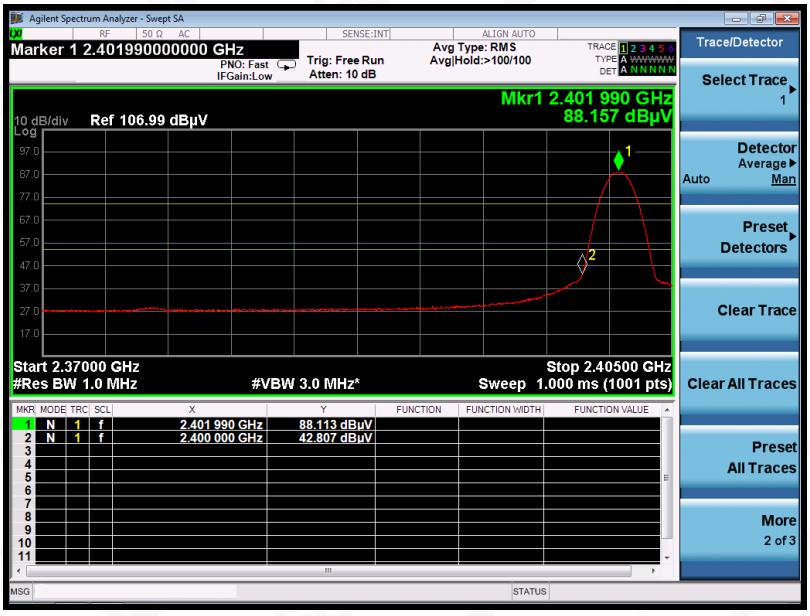
AV Value



EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 7	Polarization：	Vertical

PK Value

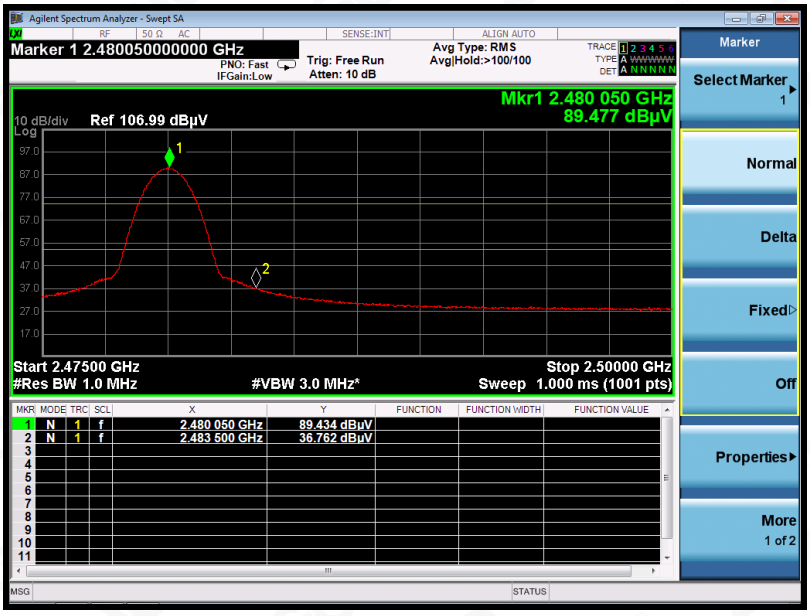
AV Value



EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 9	Polarization：	Horizontal

PK Value

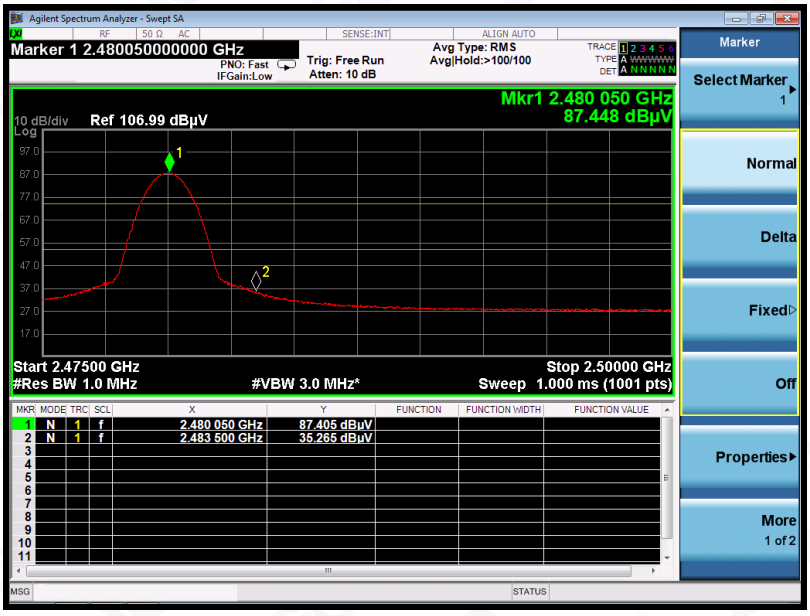
AV Value



EUT：	TWS bluetooth headset	Model Name. ：	B1381
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Mode 9	Polarization：	Vertical

PK Value

AV Value



RESULT: PASS

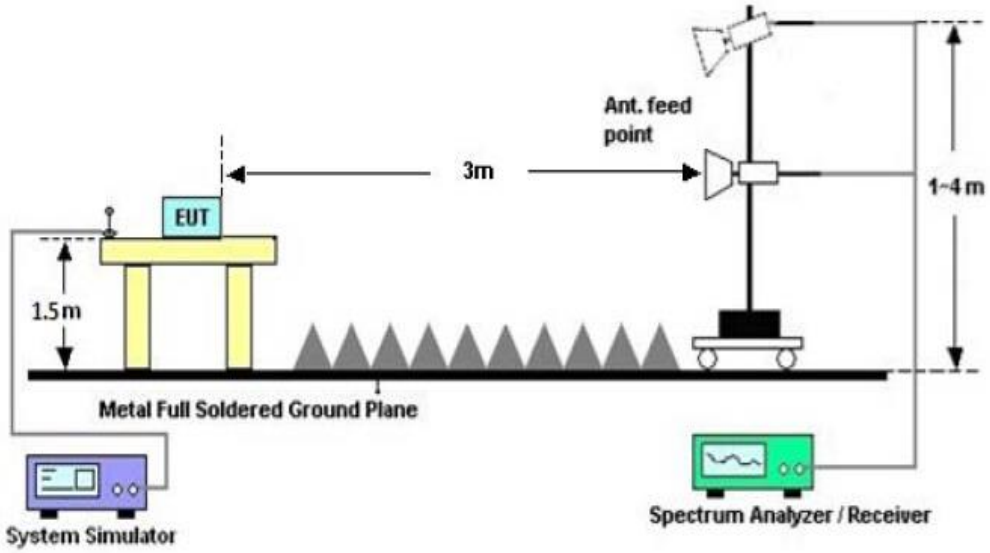
Note: The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(µV) to represent the Amplitude. Use the F dB(µV/m) to represent the Field Strength. So A=F. All test modes had been pre-tested. The 8DPSK modulation is the worst case and recorded in the report.

11. 20DB BANDWIDTH

11.1. MEASUREMENT PROCEDURE

1. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
2. Set Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hoping channel RBW ≥ 1% of the 20 dB bandwidth, VBW ≥ 3RBW; Sweep = auto; Detector function = peak
3. Set SPA Trace 1 Max hold, then View.

11.2. TEST SET-UP

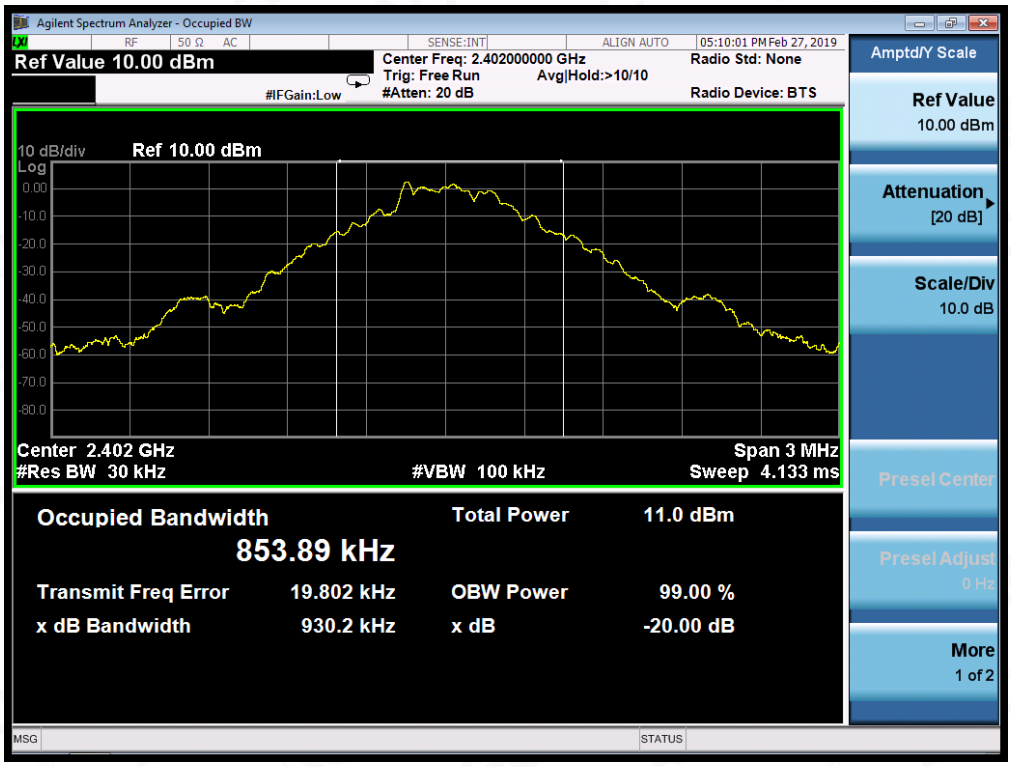


11.3. LIMITS AND MEASUREMENT RESULTS

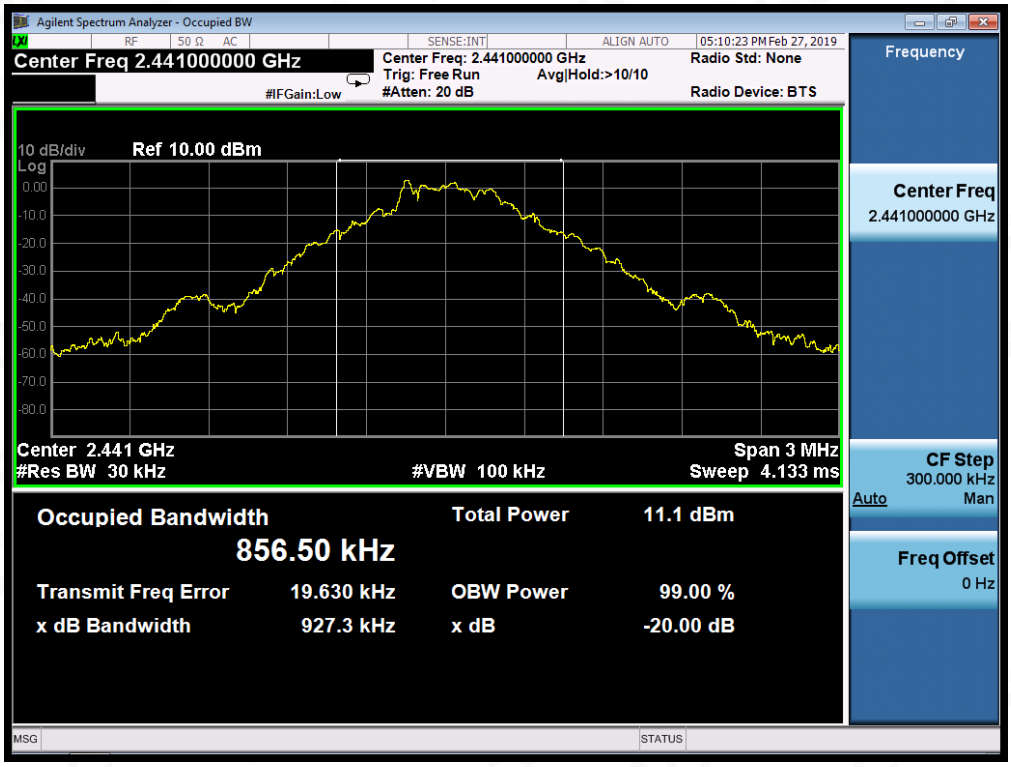
FOR BR/EDR

BLUETOOTH 1MBPS LIMITS AND MEASUREMENT RESULT				
Applicable Limits	Measurement Result			
	Test Data (MHz)			Result
		99%OBW (MHz)	-20dB BW(MHz)	
N/A	Low Channel	0.854	0.930	PASS
	Middle Channel	0.857	0.927	PASS
	High Channel	0.852	0.928	PASS

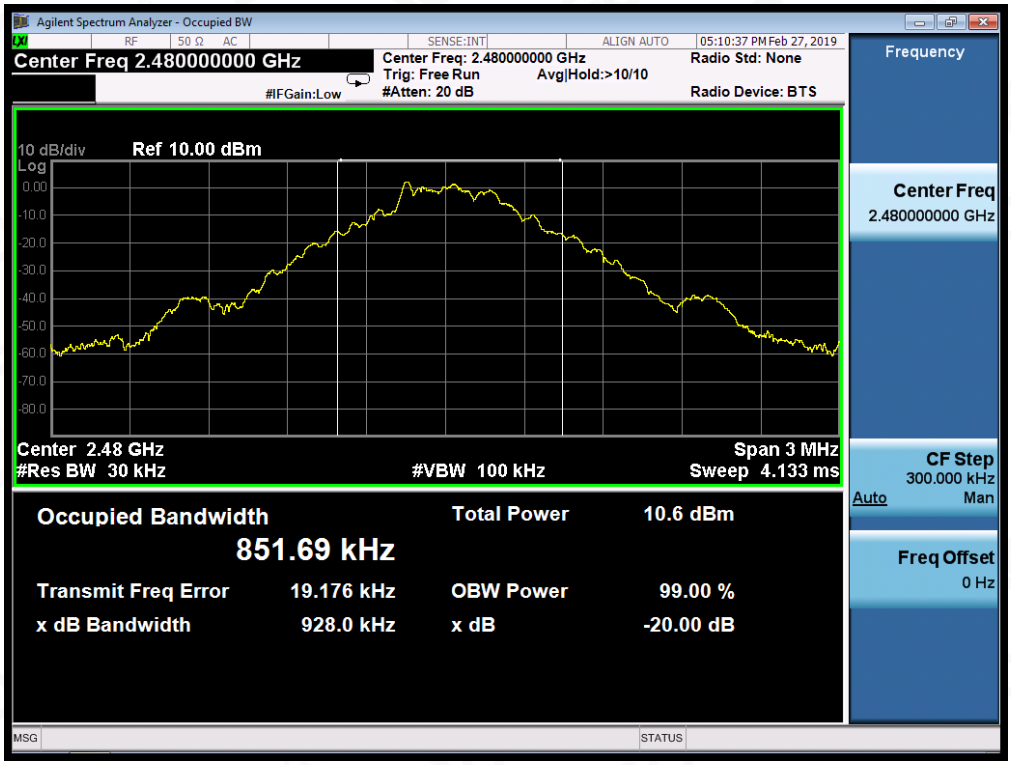
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

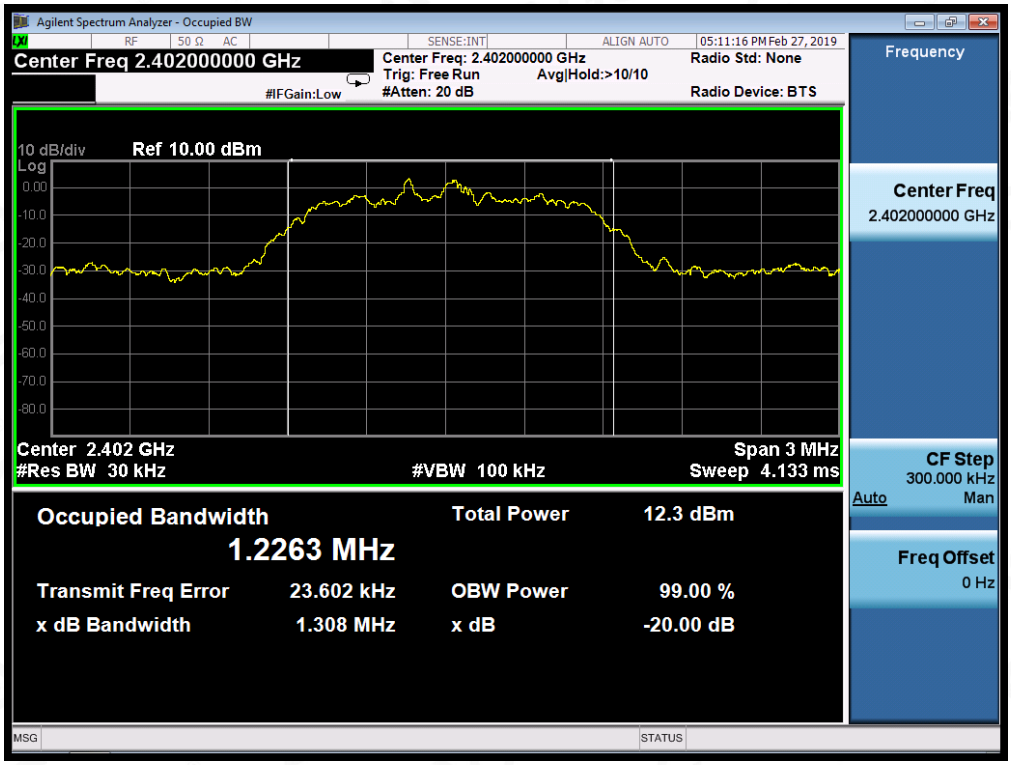


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

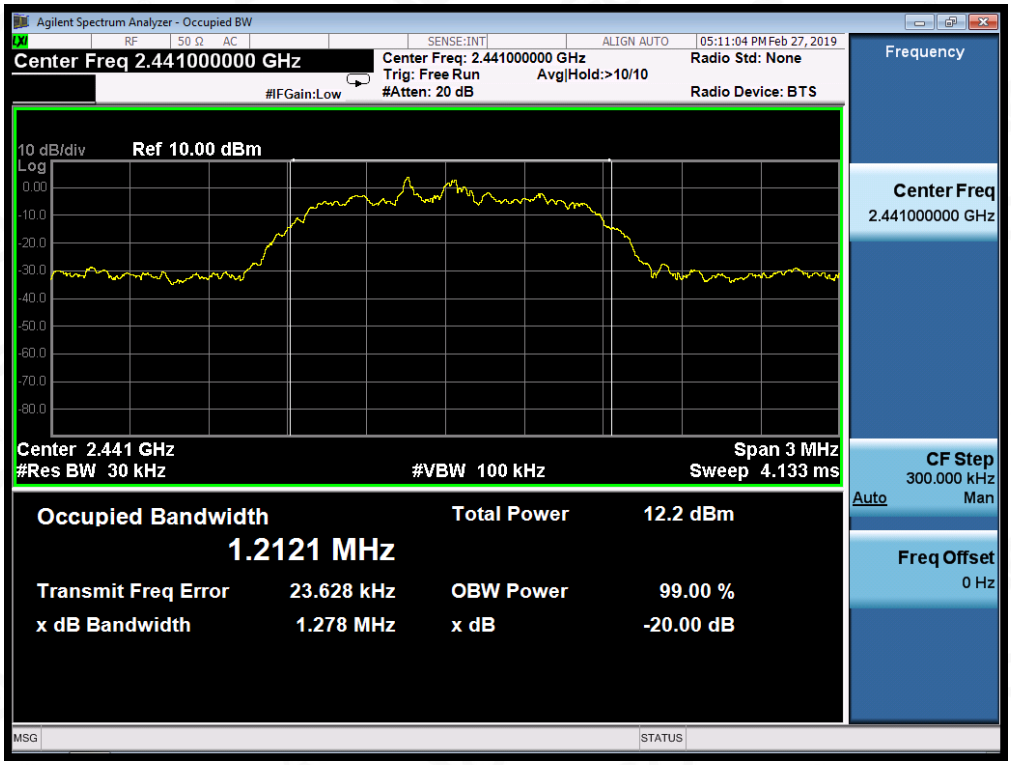


BLUETOOTH 2MBPS LIMITS AND MEASUREMENT RESULT				
Applicable Limits	Measurement Result			
	Test Data (MHz)			Result
		99%OBW (MHz)	-20dB BW(MHz)	
N/A	Low Channel	1.226	1.308	PASS
	Middle Channel	1.212	1.278	PASS
	High Channel	1.182	1.274	PASS

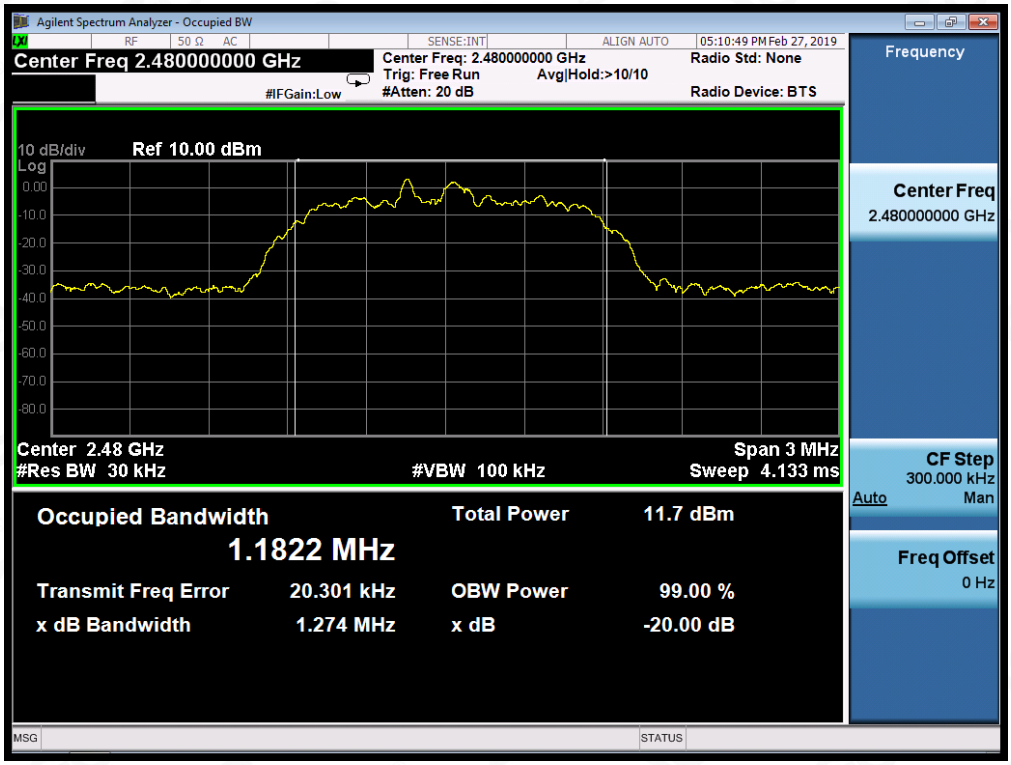
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

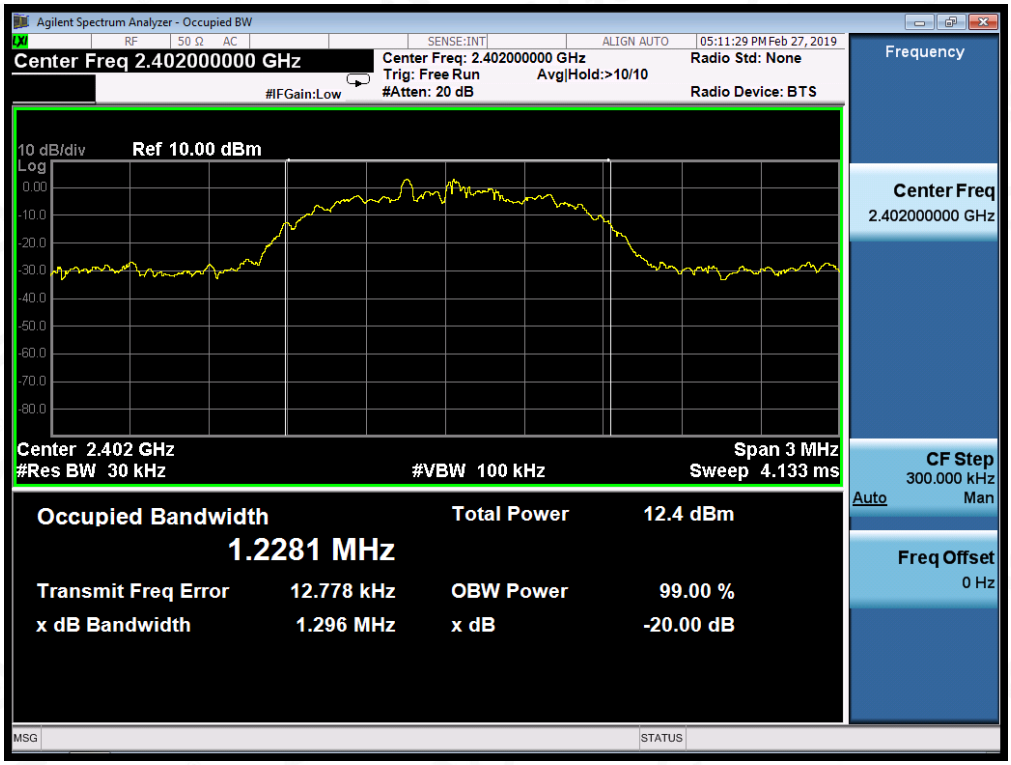


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

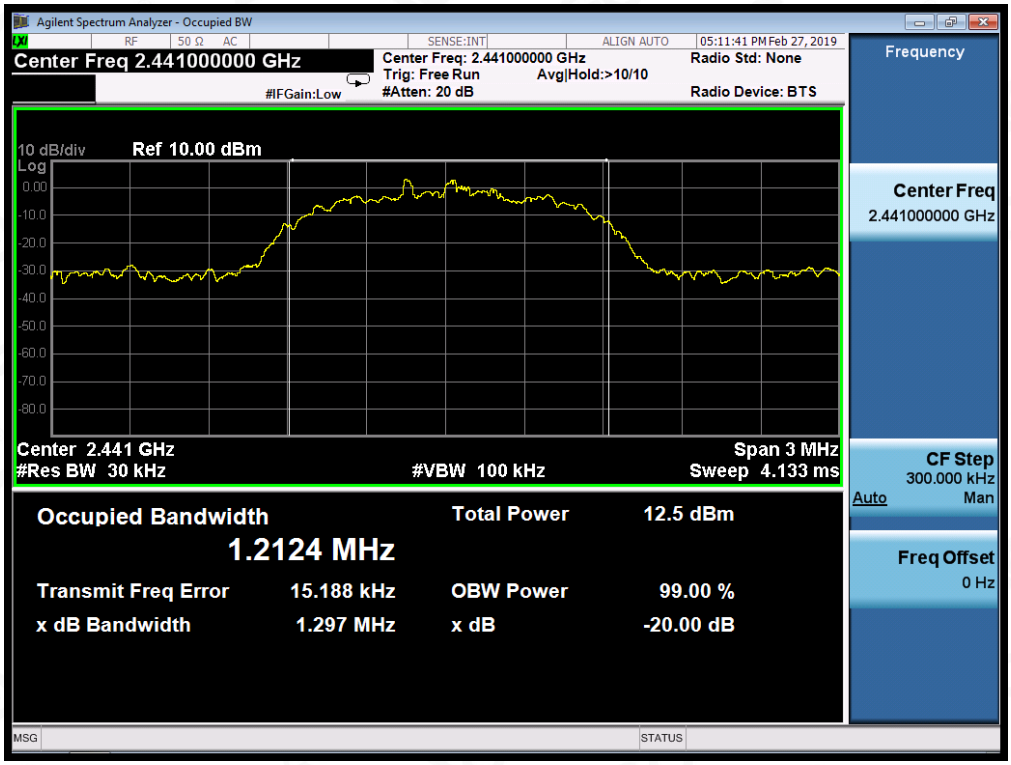


BLUETOOTH 3MBPS LIMITS AND MEASUREMENT RESULT				
Applicable Limits	Measurement Result			
	Test Data (MHz)			Result
		99%OBW (MHz)	-20dB BW(MHz)	
N/A	Low Channel	1.228	1.296	PASS
	Middle Channel	1.212	1.297	PASS
	High Channel	1.190	1.300	PASS

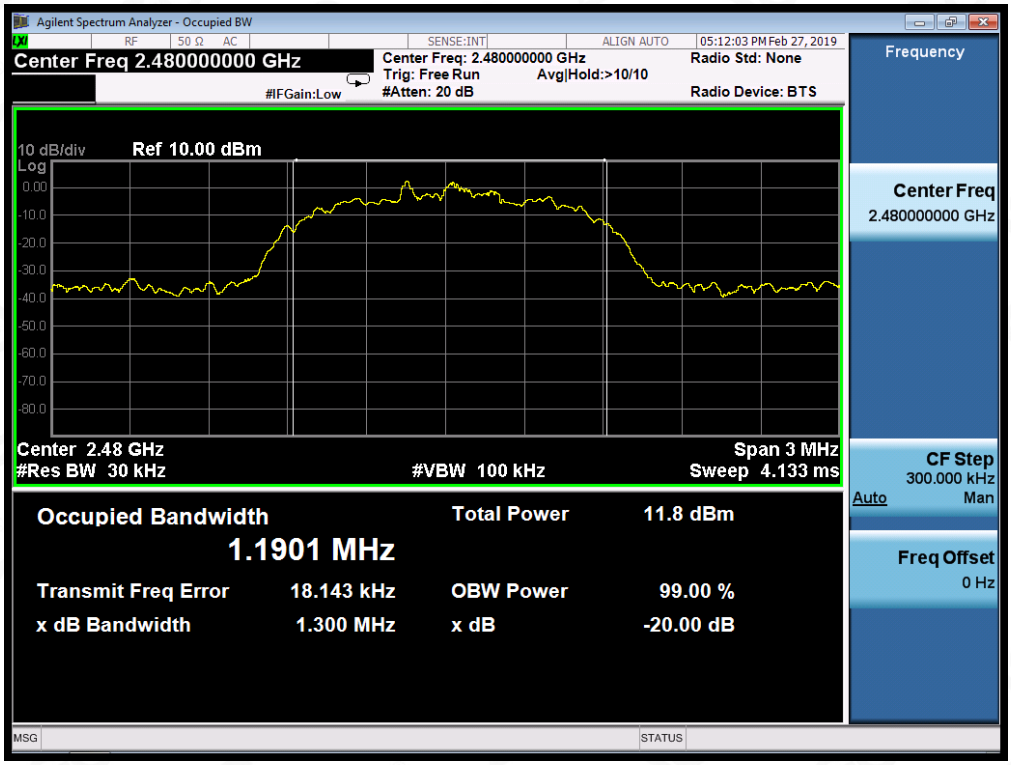
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



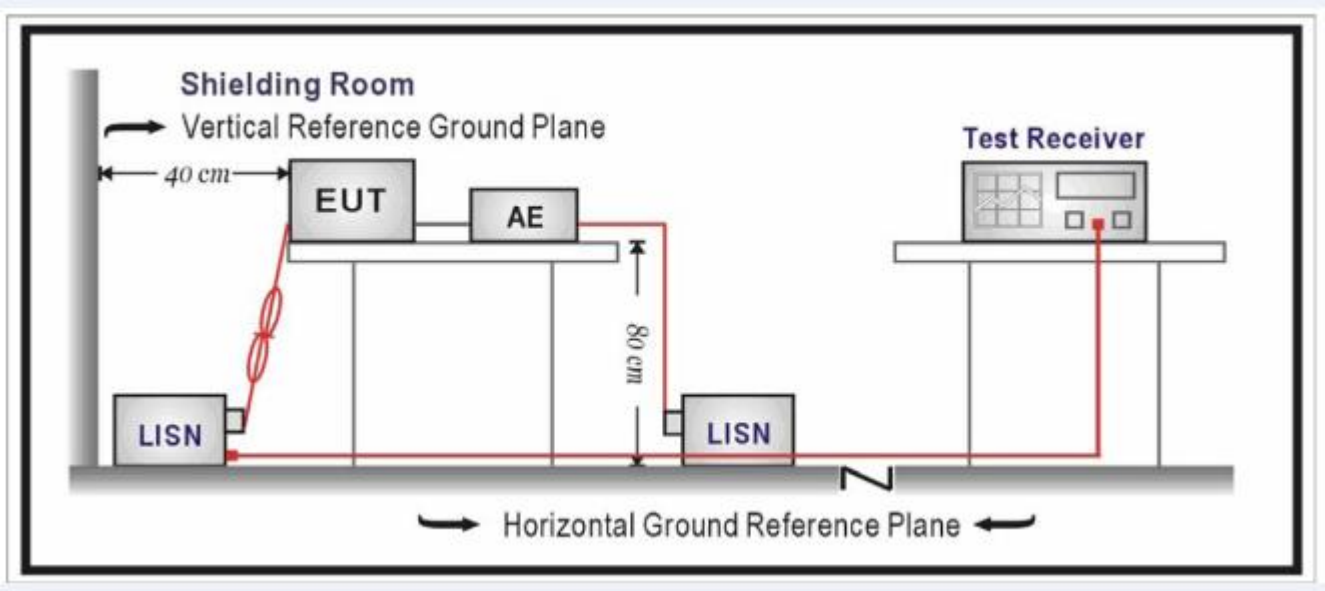
12. FCC LINE CONDUCTED EMISSION TEST

12.1. 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.

12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



12.3. 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 C63.10-2013 (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 C63.10-2013.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC voltage by adapter or PC which received 120V/60Hzpower 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.

12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. 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.

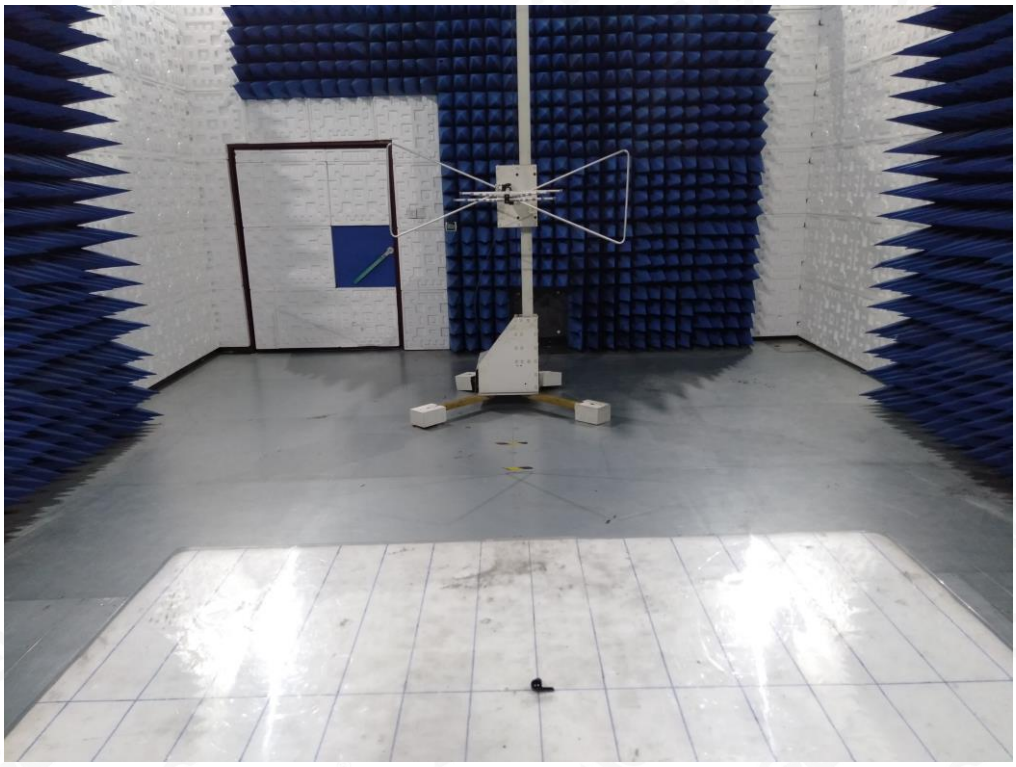
12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

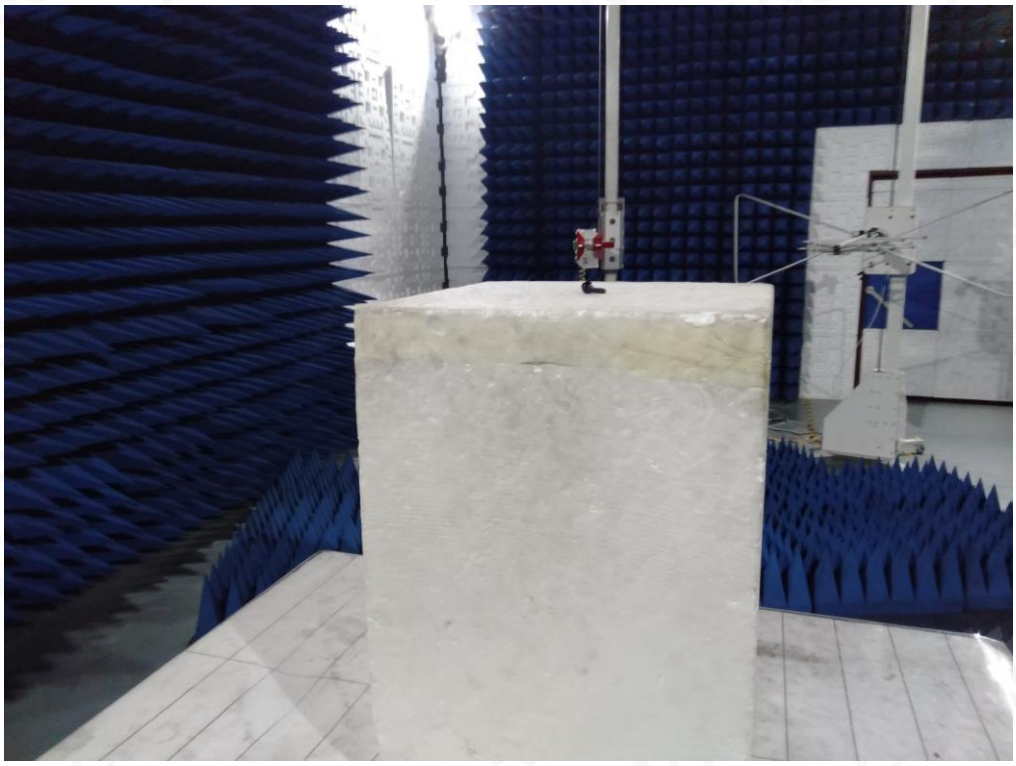
N/A

Note: The BT function of EUT didn't work when charging.

APPENDIX A: PHOTOGRAPHS OF 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

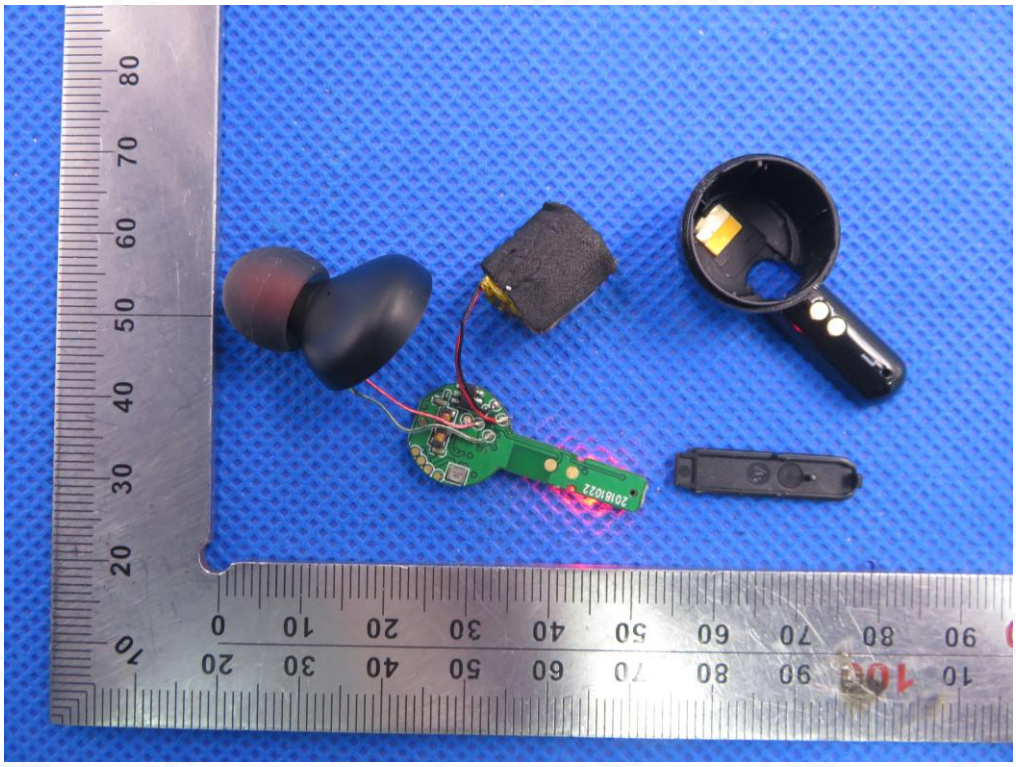
LEFT VIEW OF EUT

RIGHT VIEW OF EUT

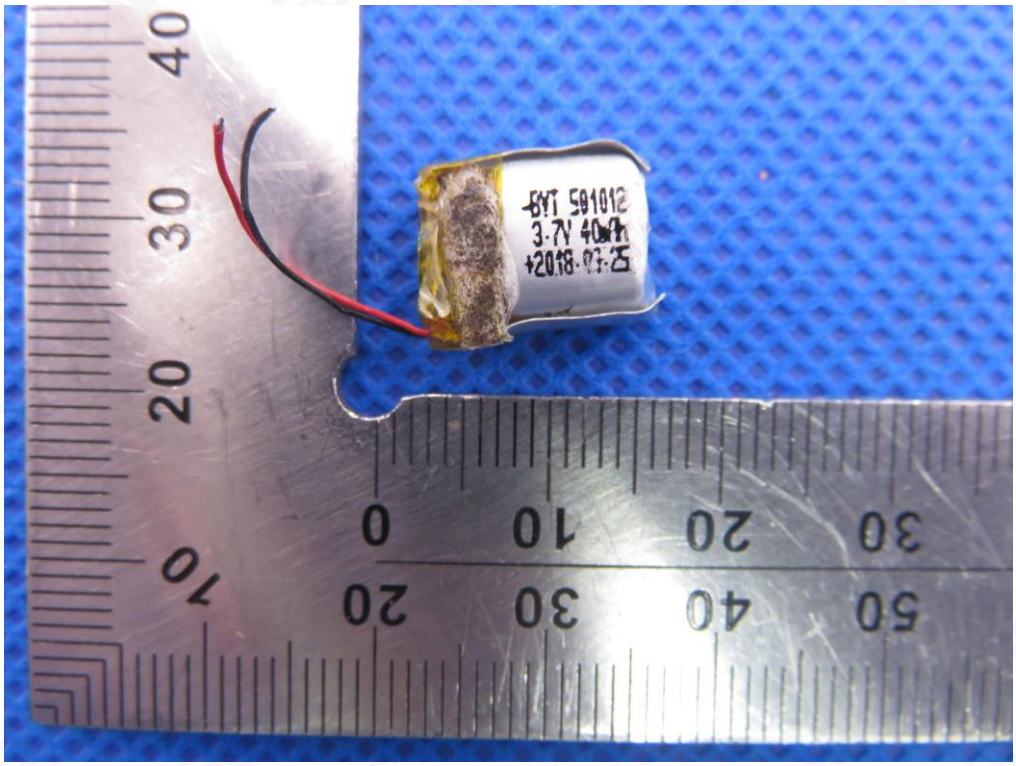
VIEW OF EUT (PORT)

Left

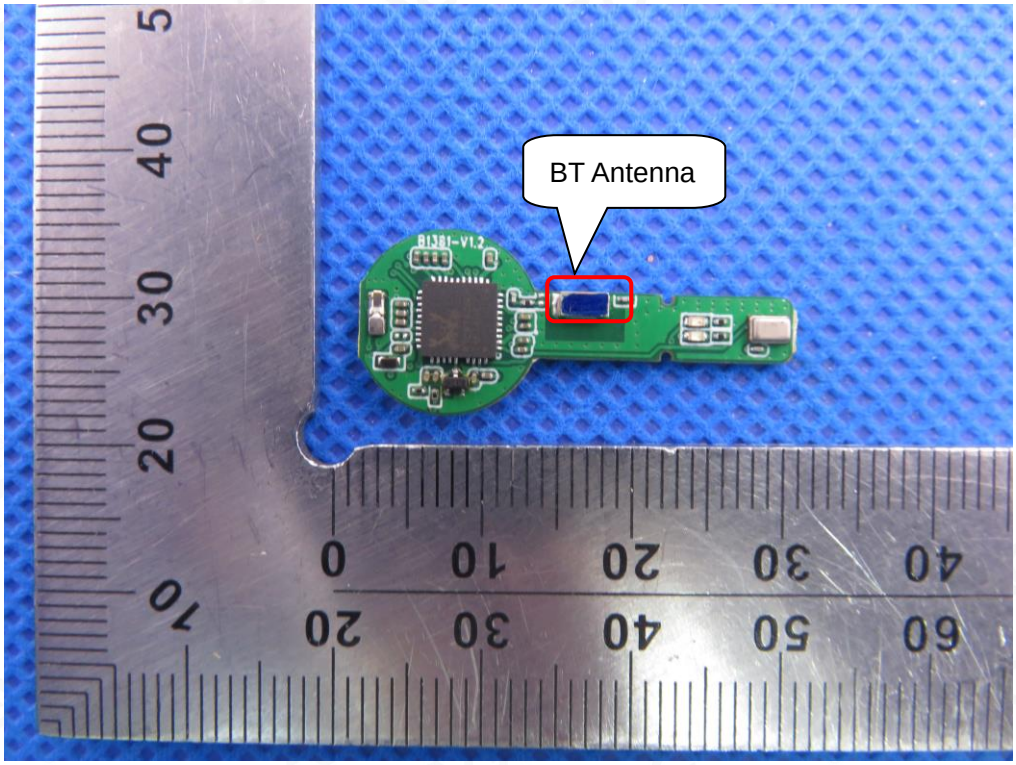
OPEN VIEW OF EUT



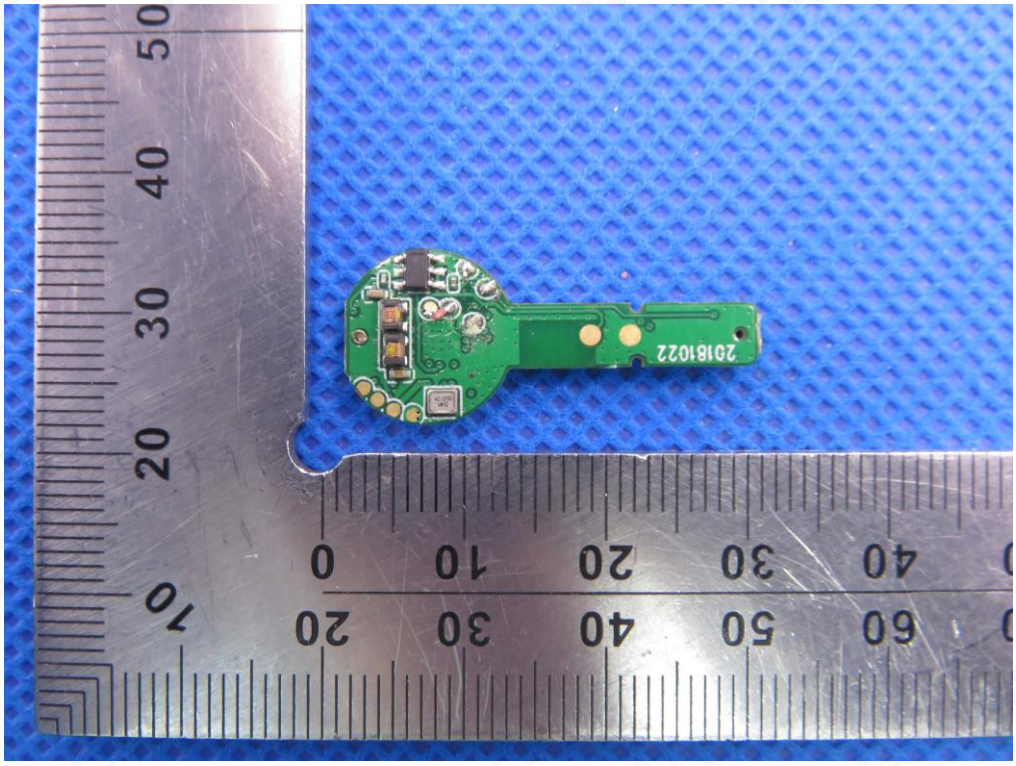
VIEW OF BATTERY



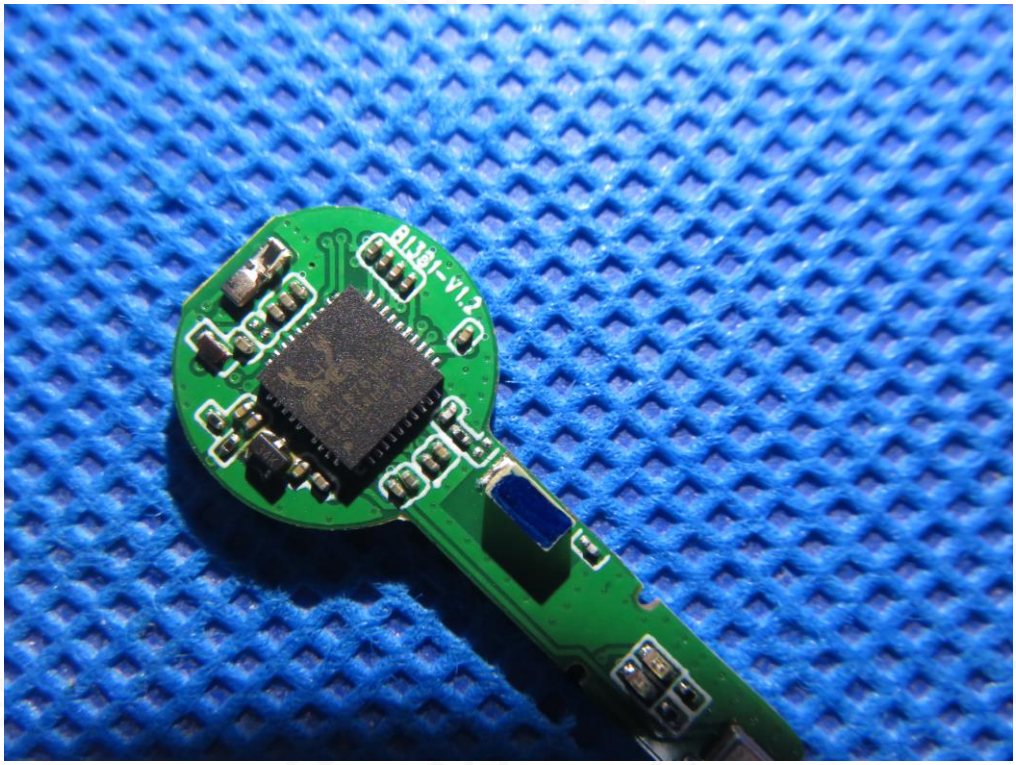
INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2

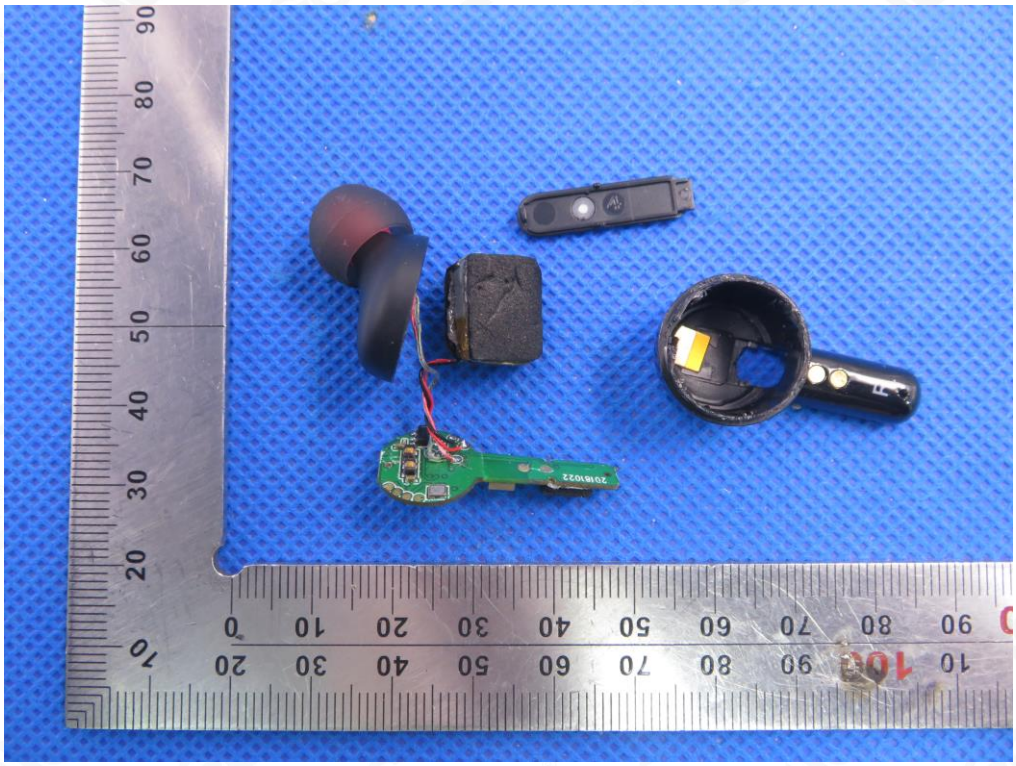


INTERNAL VIEW OF EUT-3

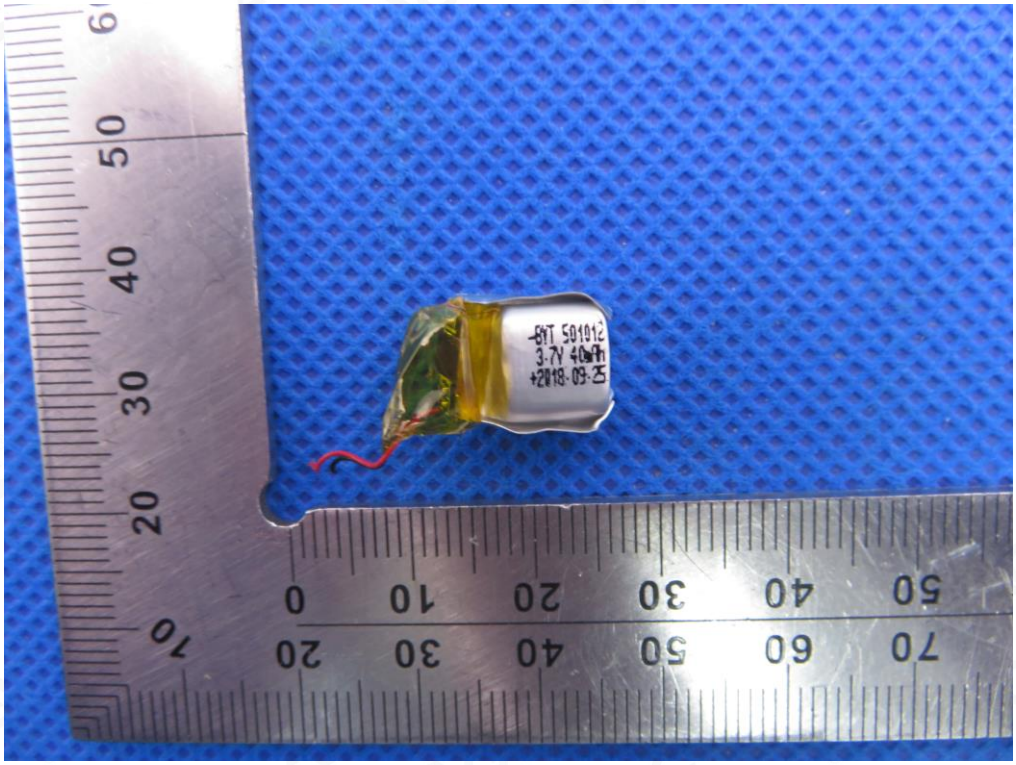


Right

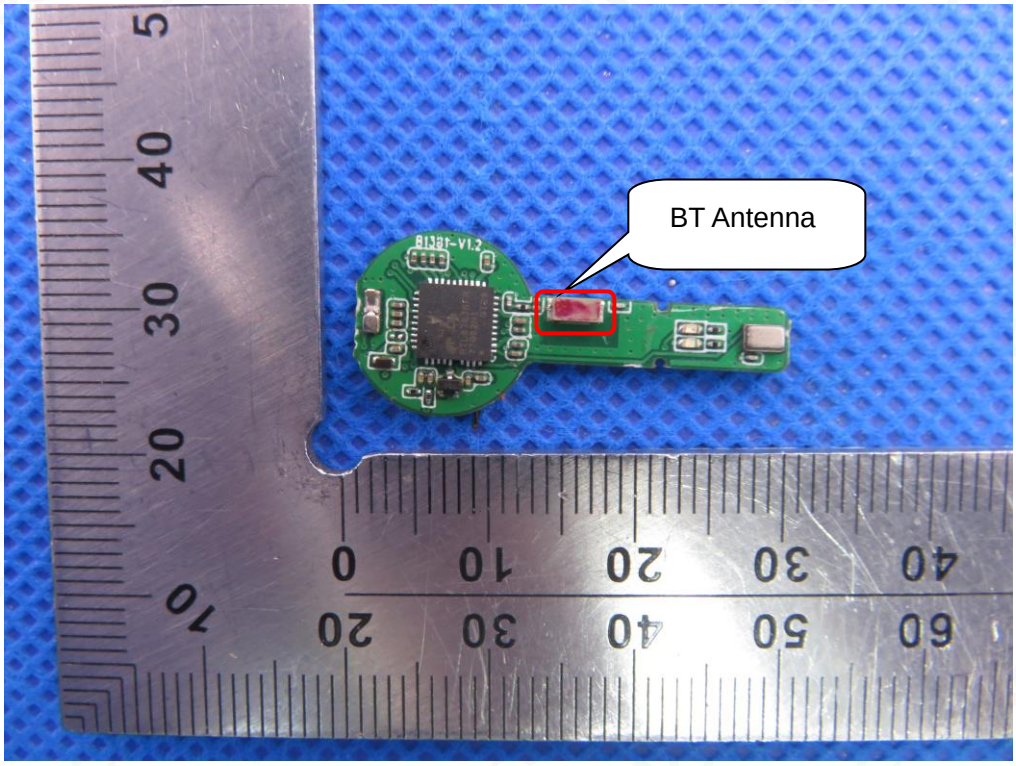
OPEN VIEW OF EUT



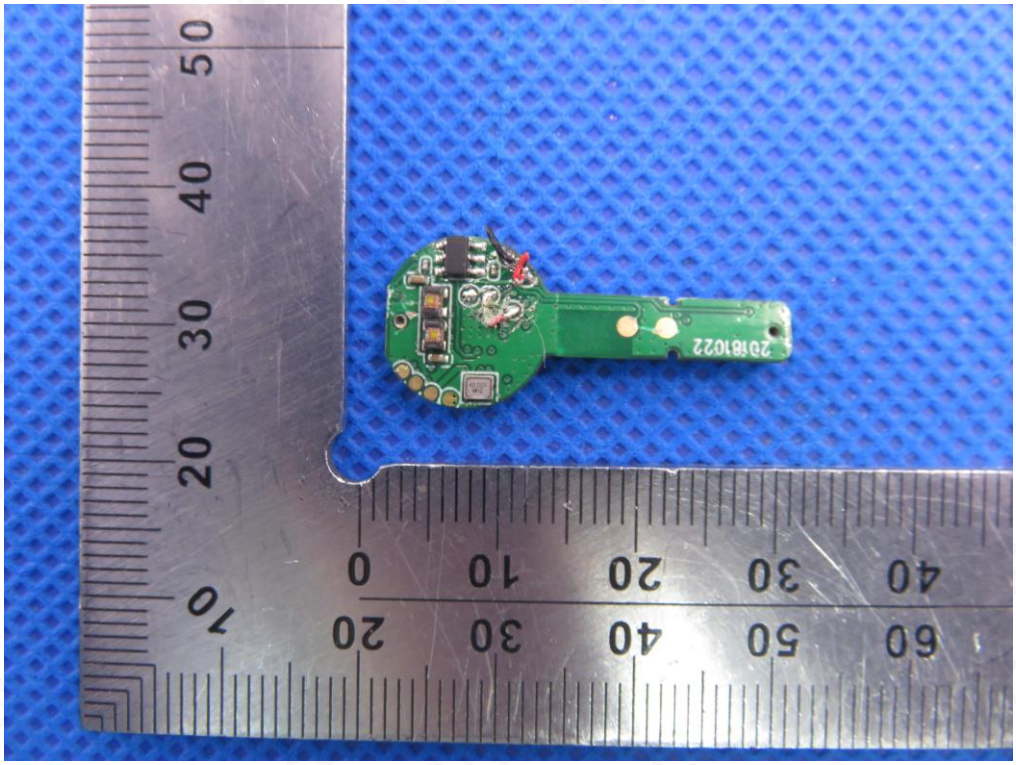
VIEW OF BATTERY



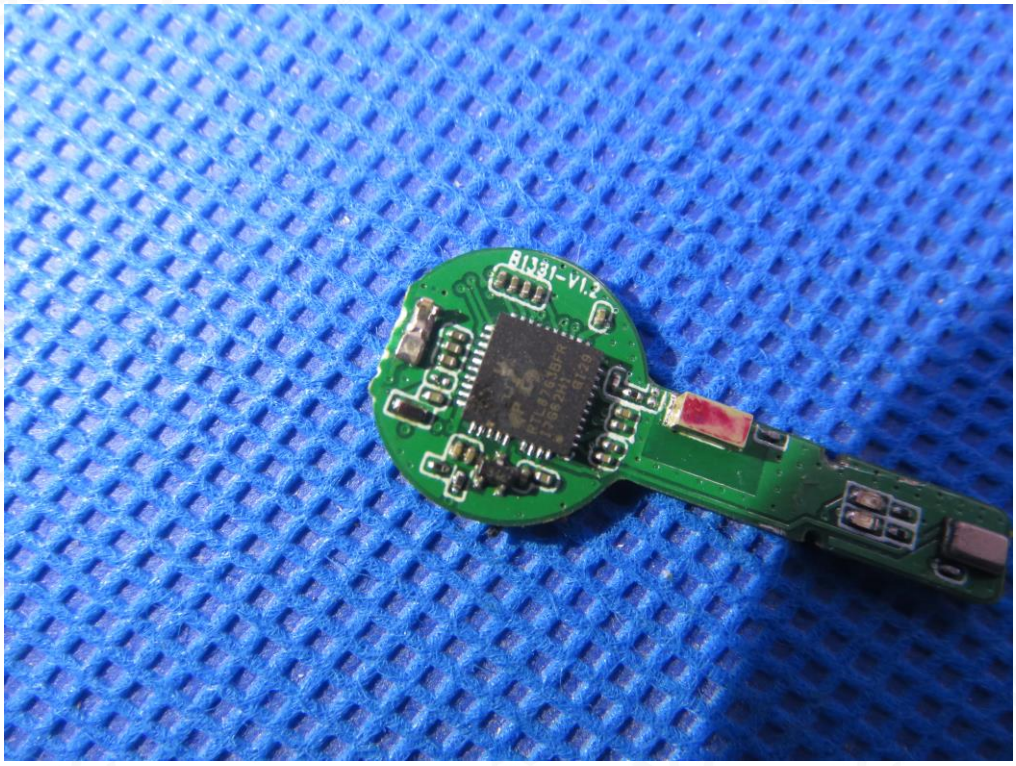
INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



INTERNAL VIEW OF EUT-3



Charging Dock

VIEW OF EUT (PORT)-1

VIEW OF EUT (PORT)-2

----END OF REPORT----