

TEST REPORT

Reference No. : WTD19S05034946W
FCC ID : CCRAH2K1
Applicant..... : Sam Ash Music Corporation
Address..... : 262 Duffy Avenue Hicksville, NY 11801 USA
Manufacturer : Sam Ash Music Corporation
Address..... : 262 Duffy Avenue Hicksville, NY 11801 USA
Product..... : Wireless Microphone System
Model(s) : TX: AH2, RX:AR2a
Standards..... : FCC CFR47 Part 74
Date of Receipt sample ... : 2019-06-05
Date of Test..... : 2019-06-05 to 2019-06-12
Date of Issue..... : 2019-06-13
Test Result..... : Pass

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

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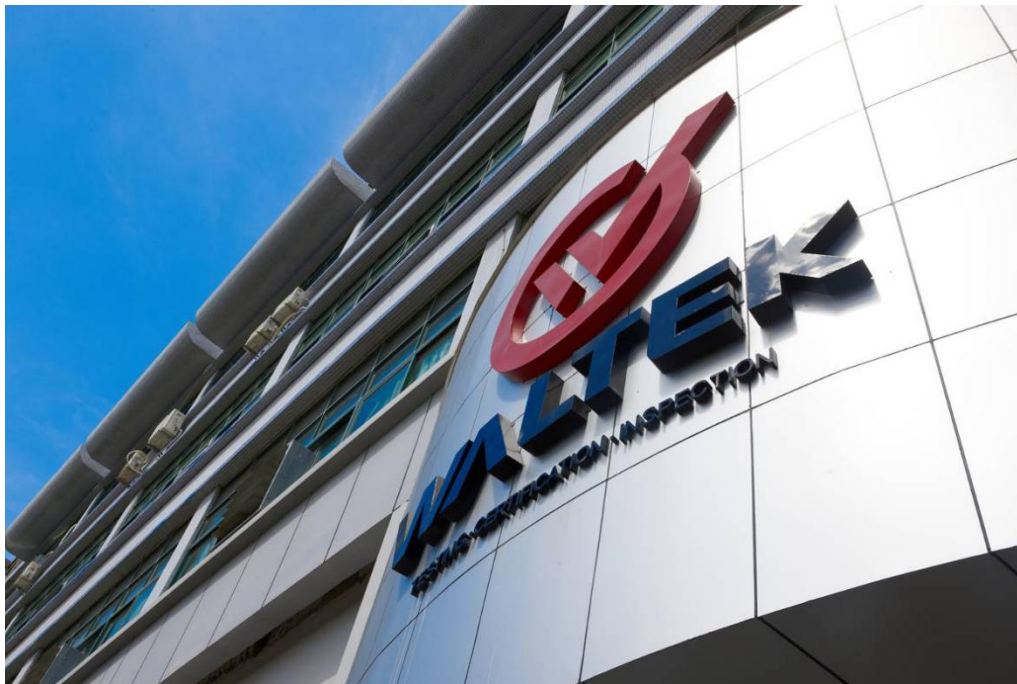


Philo Zhong

Philo Zhong / Manager

1. Laboratories Introduction

Waltek Services (Shenzhen) Co., Ltd is a professional third-party testing and certification laboratory with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by ILAC (International Laboratory Accreditation Cooperation) member. A2LA (American Association for Laboratory Accreditation, the certification number is 4243.01) of USA, CNAS (China National Accreditation Service for Conformity Assessment, the registration number is L3110) of China. Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC(The Federal Communications Commission), CEC(California energy efficiency), ISED (Innovation, Science and Economic Development Canada). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as Intertek(ETL-SEMKO), TÜV Rheinland, TÜV SÜD, etc.



Waltek Services (Shenzhen) Co., Ltd is one of the largest and the most comprehensive third party testing laboratory in China. Our test capability covered four large fields: safety test. ElectroMagnetic Compatibility(EMC), and energy performance, wireless radio. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

1.1 Test Facility

A. Accreditations for Conformity Assessment (International)

1. Procedures for Conformity Assessment (International)			
Country/Region	Scope Covered By	Scope	Note
USA	ISO/IEC 17025	FCC ID \ SDOC	1
Canada		IC ID \ VOC	2
Japan		MIC-T \ MIC-R	-
Europe		EMCD \ RED	-
Taiwan		NCC	-
Hong Kong		OFCA	-
Australia		RCM	-
India		WPC	-
Thailand		NTC	-
Singapore		IDA	-
Note:			
1. FCC Designation No.: CN1201. Test Firm Registration No.: 523476.			
2. ISED CAB identifier: CN0013.			

B.TCBs and Notify Bodies Recognized Testing Laboratory.

Recognized Testing Laboratory of ...	Notify body number
TUV Rheinland	Optional.
Intertek	
TUV SUD	
SGS	
Phoenix Testlab GmbH	0700
Element Materials Technology Warwick Ltd.	0891
Timco Engineering, Inc.	1177
Eurofins Product Service GmbH	0681

2. Test Summary

Test Items	Test Requirement	Test Method	Result
Conducted power	74.861(e)(1)(ii)	ANSI/TIA-603-E:2016	PASS
Modulation Characteristics	2.1047(a)	ANSI/TIA-603-E:2016	PASS
Occupied Bandwidth	2.1049(c)(1)	ANSI/TIA-603-E:2016	PASS
Radiated Emissions	2.1053 & 74.861(e)(6)	ANSI/TIA-603-E:2016	PASS
Spurious emissions at antenna terminals	2.1051	ANSI/TIA-603-E:2016	PASS
Frequencies Stability	2.1055(a)(1)	ANSI/TIA-603-E:2016	PASS
RF Exposure	1.1307(b)(1)	KDB 447498 D01	PASS
Remark: PASS means that the test results complies with related requirements. N/A means that the test is not applicable for the EUT.			

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4. Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD19S05034946W	2019-06-05	2019-06-05 to 2019-06-12	2019-06-13	original	-	Valid

5. General Information

5.1 General Description of E.U.T

Product Name: Wireless Microphone System
Model No.: TX: AH2, RX:AR2a
Operation Frequency: 477.525MHz~492.425MHz
Antenna installation: Integrated Antenna
Antenna Gain: 2.14dBi

5.2 Details of E.U.T

Ratings: TX: Input: DC 3.7V by battery, USB DC 5V 1A
RX: Input: DC 3.7V by battery, USB DC 5V 1A

5.3 Channel list

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	477.525	2	479.100	3	480.475	4	489.050
5	490.975	6	492.425	7	-	8	-

6. Equipment Used during Test

6.1 Equipments List

3m Semi-anechoic Chamber for Radiation Emissions						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Spectrum Analyzer	R&S	FSP30	100091	2019.04.28	2020.04.27
2	Broad-band Horn Antenna(1-18GHz)	SCHWARZBECK	BBHA 9120 D	667	2019.04.28	2020.04.27
3	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	2019.04.28	2020.04.27
4	Coaxial Cable (above 1GHz)	Top	1GHz-18GHz	EW02014-7	2019.04.28	2020.04.27
5	Spectrum Analyzer	R&S	FSP40	100501	2018.10.24	2019.10.23
6	Broad-band Horn Antenna(18-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170651	2018.10.24	2019.10.23
7	Microwave Broadband Preamplifier (18-40GHz)	SCHWARZBECK	BBV 9721	100472	2018.10.24	2019.10.23
8	Cable	Top	18-40GHz	-	2018.10.24	2019.10.23
3m Semi-anechoic Chamber for Radiation Emissions						
Item	Equipment	Manufacturer	Model No.	Serial No	Last Calibration Date	Calibration Due Date
1	Test Receiver	R&S	ESCI	101296	2019.04.19	2020.04.18
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2019.04.18	2020.04.17
3	Amplifier	ANRITSU	MH648A	M43381	2019.04.19	2020.04.18
4	Cable	HUBER+SUHNER	CBL2	525178	2019.04.19	2020.04.18
5	Active Loop Antenna	Com-Power Corp.	AL-130R	10160007	2019.04.16	2020.04.15
Conducted Emissions at Mains Terminals Disturbance Voltage						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	EMI Test Receiver	R&S	ESCI	100947	2018-09-15	2019-09-14
2	LISN	R&S	ENV216	100115	2018-09-15	2019-09-14
3	Cable	Top	TYPE16(3.5M)	-	2018-09-15	2019-09-14
RF Conducted Testing						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	EMC Analyzer	R&S	ESCI	101155	2018-09-15	2019-09-14
2	DC Power Supply	EVERFINE	WY305	1004002	2019-04-07	2020-04-06
3	Modulation Analyzer	HP	8920B	-	2019-04-07	2020-04-06

6.2 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-6}$
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious	± 5.03 dB (Bilog antenna 30M~1000MHz)
Emissions test	± 4.74 dB (Horn antenna 1000M~25000MHz)

6.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by GUANG ZHOU GRG METROLOGY & TEST CO., LTD. address is No.163, Pingyun Rd. West of Huangpu Ave, Tianhe District, Guangzhou, Guangdong, China.

7. Conducted power

Test requirement:	FCC CFR47 Part 74 Section 74.861(e)(1)(ii)
Test method:	Based on ANSI/TIA-603-E:2016
Limit:	According to Part 74.861(e)(1)(ii), the conducted power shall not exceed 250mW (23.98 dBm).

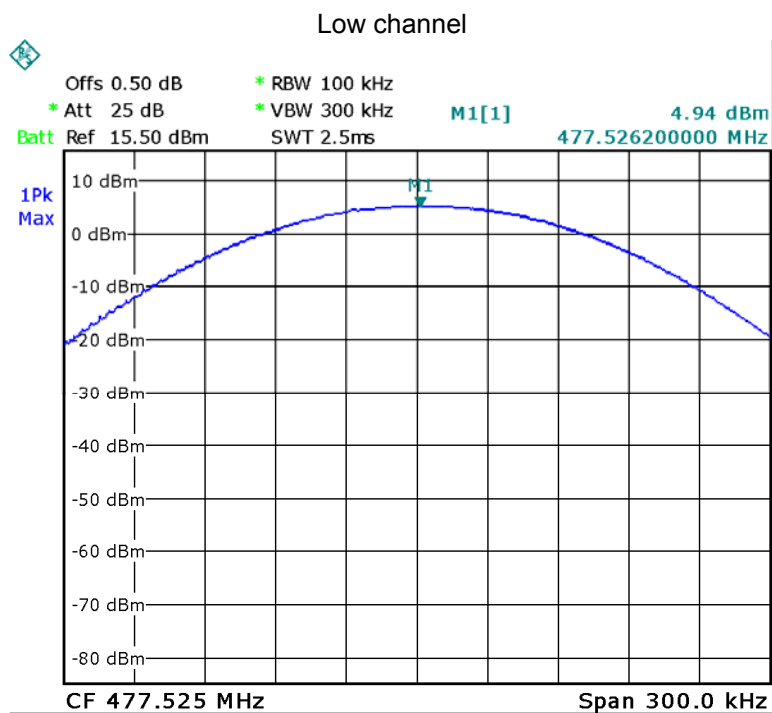
7.1 Test Procedure

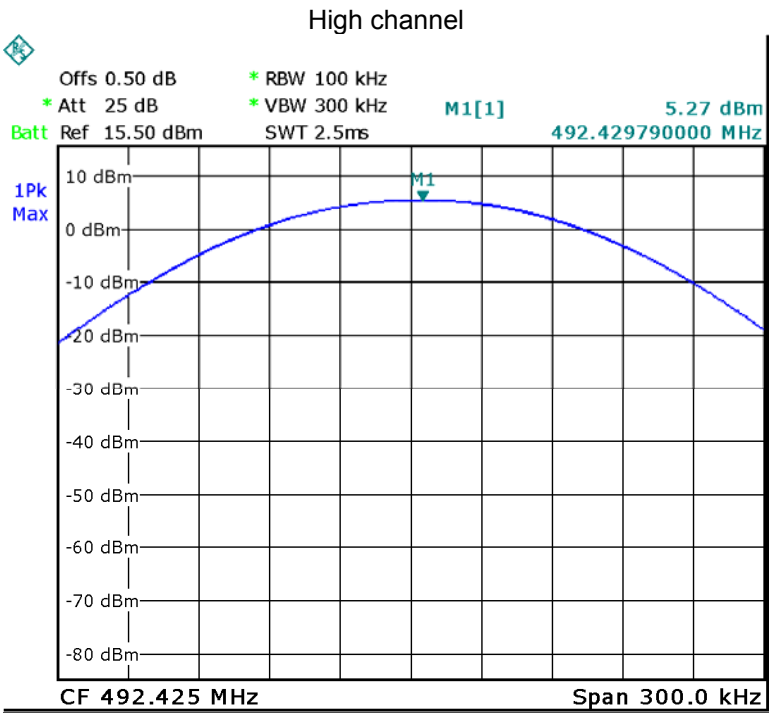
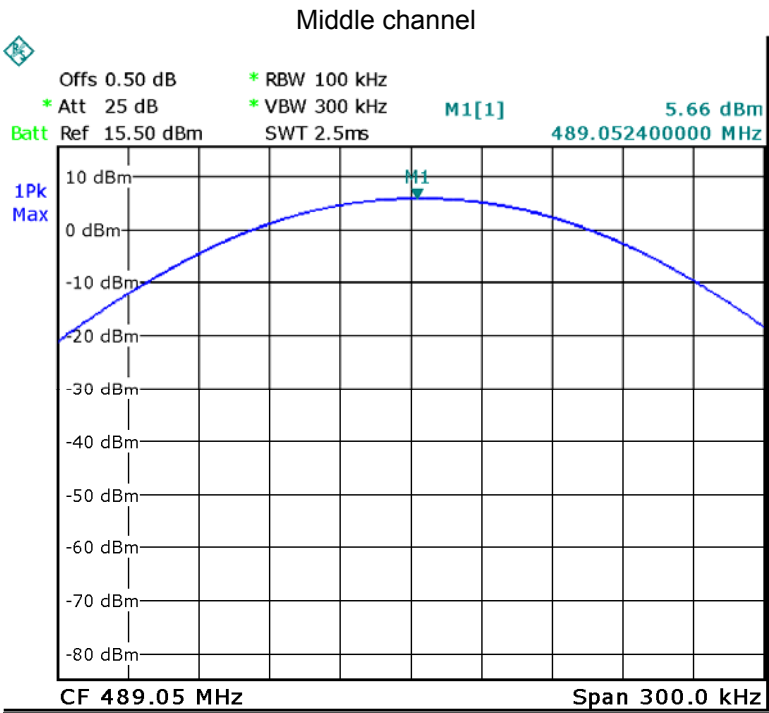
The maximum peak output power was measured with a spectrum analyzer connected to the antenna terminal (conducted measurement) while EUT was operating in normal situation.

7.2 Test result

Frequency (MHz)	RF Output Power (dBm)	Limit (dBm)	Result
477.525	4.94	23.98	PASS
489.050	5.66	23.98	PASS
492.425	5.27	23.98	PASS

Please refer to following plot:



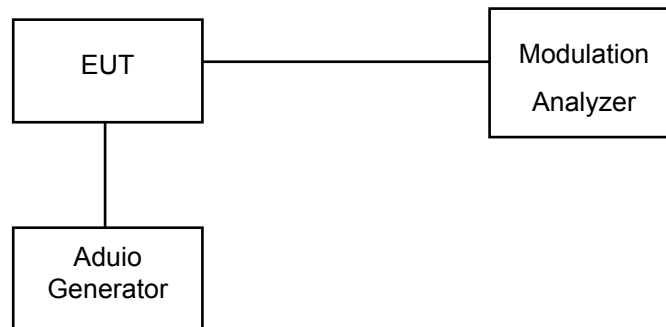


8. Modulation Characteristics

Test requirement:	FCC CFR47 Part 2 Section 2.1047(a)
Test method:	Based on ANSI/TIA-603-E:2016
Requirement:	According to Part 2.1047(a), for Voice Modulated Communication Equipment, the frequency response of the audio modulating circuit over a range of 100Hz to 5000Hz shall be measured.

8.1 Test Procedure

(a) Test Configuration



(b) Audio Frequency Response:

- 1) Apply a 1000 Hz tone and adjust the audio frequency generator to produce 20% of the rated system deviation.
- 2) Set the test receiver to measure rms deviation and record the deviation reading as DEV_{REF} .
- 3) Set the audio frequency generator to the desired test frequency between 100 Hz and 5000 Hz.
- 4) Record the test receiver deviation reading as DEV_{FREQ} .
- 5) Calculate the audio frequency response at the present frequency as:
$$\text{audio frequency response} = 20\lg(DEV_{FREQ} / DEV_{REF})$$
- 6) Repeat steps 4) through 5) for all the desired test frequencies.

(c) Modulation Limiting:

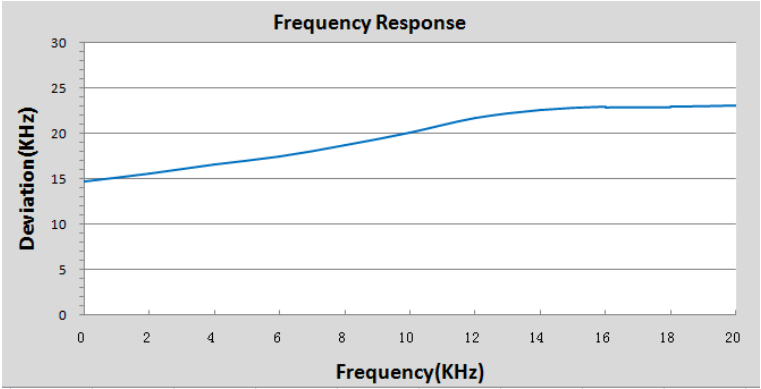
- 1) Apply a 1000 Hz modulating signal to the transmitter from the audio frequency generator, and adjust the level to obtain 60% of full rated system deviation.
- 2) Measure both the instantaneous and steady-state deviation at and after the time of increasing the audio input level.
- 3) With the level from the audio frequency generator held constant at the level obtained in step e), slowly vary the audio frequency from 300 Hz to 3000 Hz and observe the steady-state deviation. Record the maximum deviation.
- 4) Set the test receiver to measure peak negative deviation and repeat steps 1) through 3).
- 5) The values recorded in steps 3) and 4) are the modulation limiting.

8.2 Test Result

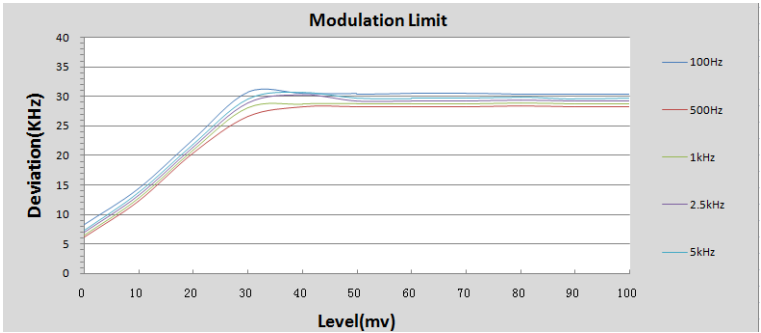
The test data of modulation characteristic is showing as below:

Audio Frequency Response

Low Channel



Level(mv)	100Hz	500Hz	1kHz	2.5kHz	5kHz	Limit(kHz)
0	8.23	6.12	6.57	6.97	7.40	± 75.00
10	14.35	12.29	12.71	13.19	13.63	± 75.00
20	22.65	20.45	20.93	21.43	21.90	± 75.00
30	30.66	26.66	28.12	28.83	29.56	± 75.00
40	30.44	28.29	28.72	30.20	30.70	± 75.00
50	30.43	28.31	28.76	29.25	29.75	± 75.00
60	30.44	28.29	28.78	29.26	29.66	± 75.00
70	30.46	28.27	28.77	29.23	29.66	± 75.00
80	30.43	28.39	28.86	29.35	29.79	± 75.00
90	30.33	28.28	28.77	29.19	29.60	± 75.00
100	30.31	28.20	28.67	29.16	29.65	± 75.00



9. Occupied Bandwidth of Emission

Test requirement:	FCC CFR47 Part 2 Section 2.1049©(1)
Test method:	Based on ANSI/TIA-603-E:2016
Limit:	According to FCC 74.861 (e)(5), the frequency emission bandwidth shall not exceed 200 kHz.

9.1 Test Procedure

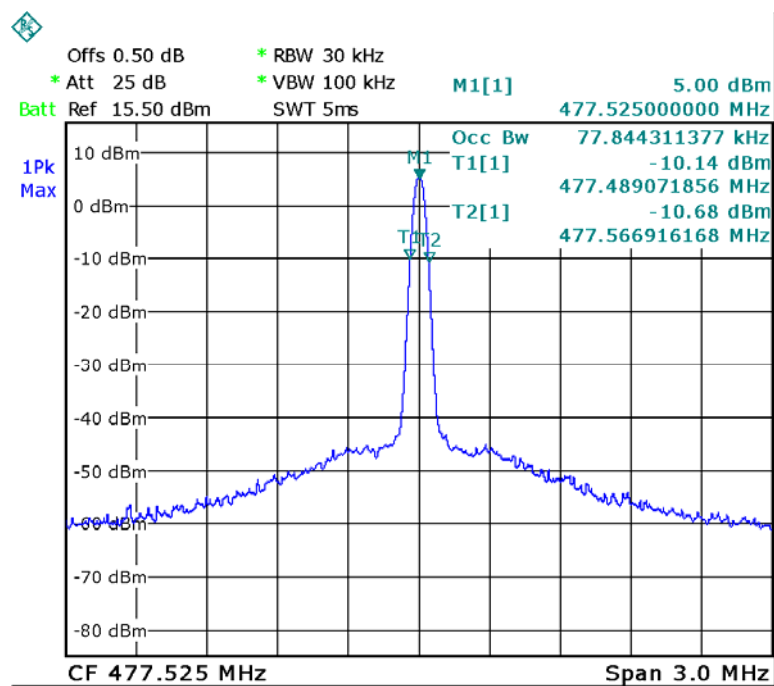
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and set it to any one convenient frequency within its operating range.

9.2 Test Result

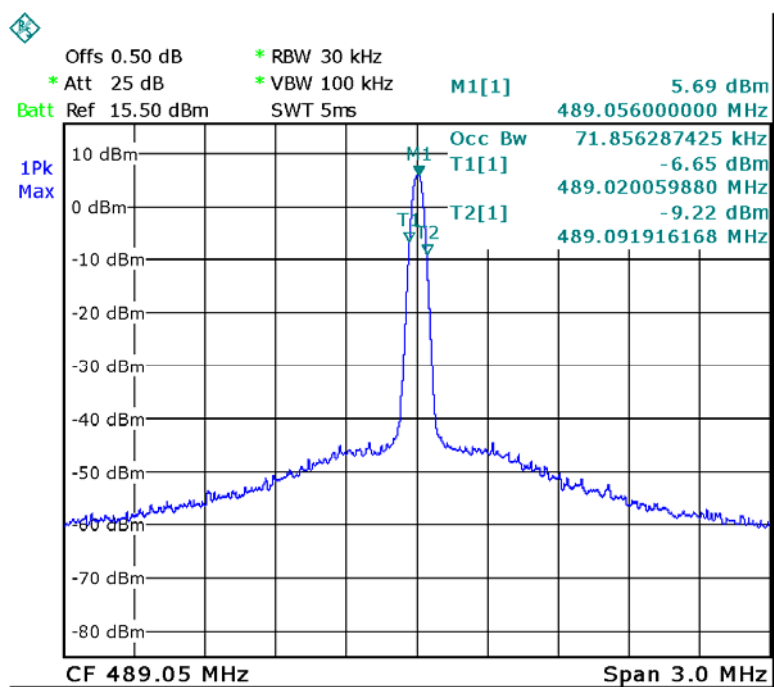
Frequency (MHz)	99% Bandwidth (kHz)	Limit (kHz)	Result
477.525	77.844	200	PASS
489.050	71.856	200	PASS
492.425	71.856	200	PASS

Test Plot:

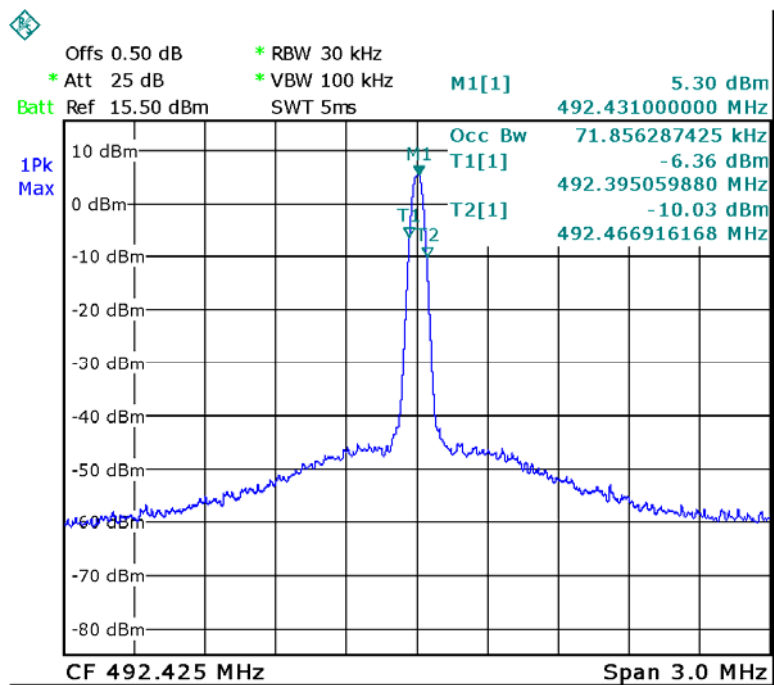
Low channel



Middle channel



High channel



10. Spurious Emissions at Antenna Terminals

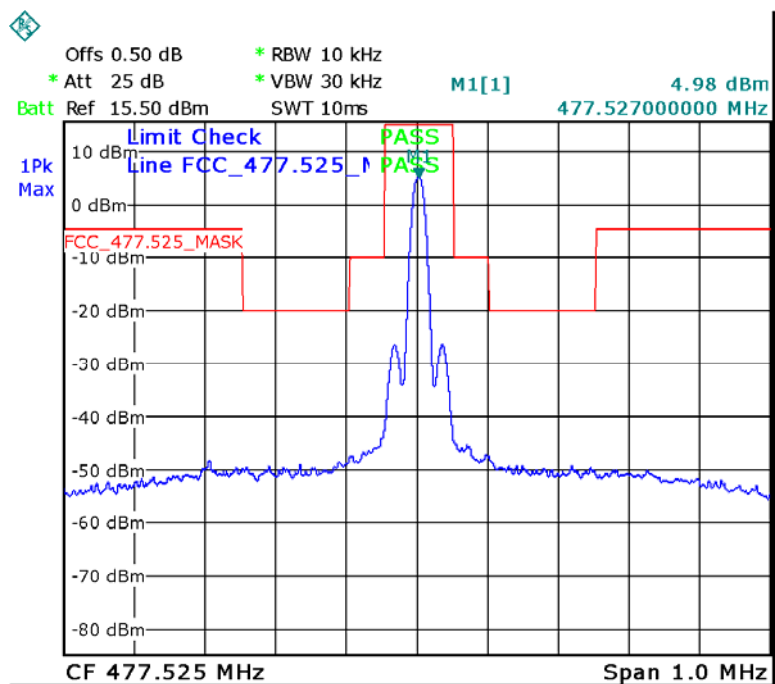
Test requirement:	FCC CFR47 Part 2 Section 2.1053
Test method:	Based on ANSI/TIA-603-E:2016
Limit:	According to Part 74.861 (e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule: (i) on any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB. (ii) on any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB. (iii) on any frequency removed from the operating frequency by more than 250 percent up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least $43 + 10 \log$ (output power in watts)dB.

10.1 Test Procedure

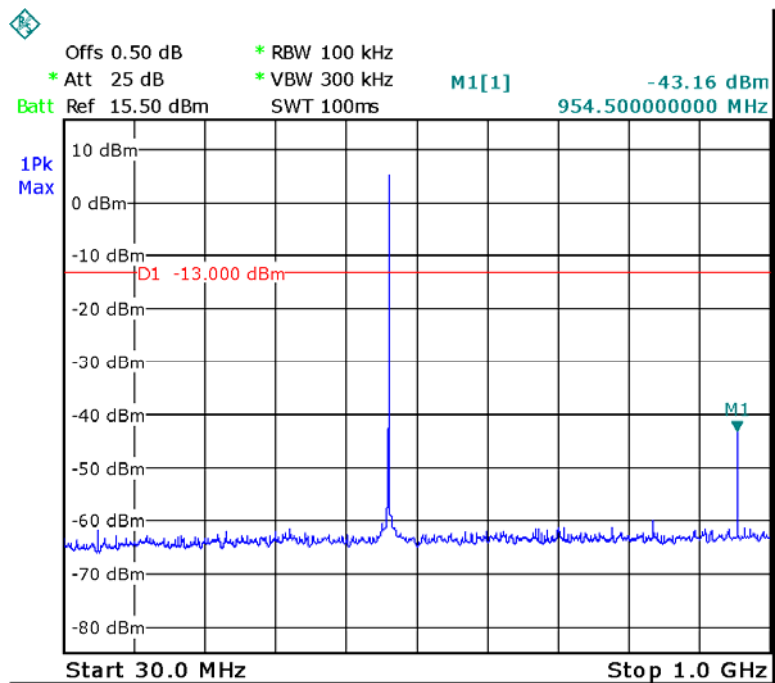
1. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
2. Set the SA on Max-Hold Mode, and then keep the EUT in transmitting mode. Record all the signals from each channel until each one has been recorded.
3. Set the SA on View mode and then plot the result on SA screen.
4. Repeat above procedures until all frequencies measured were complete.

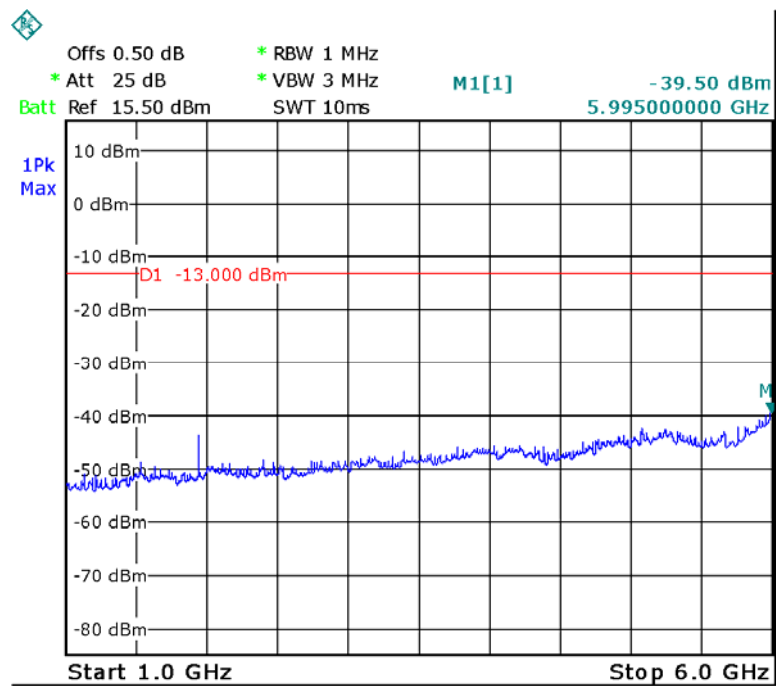
10.2 Test Data

Emission Mask Low Channel

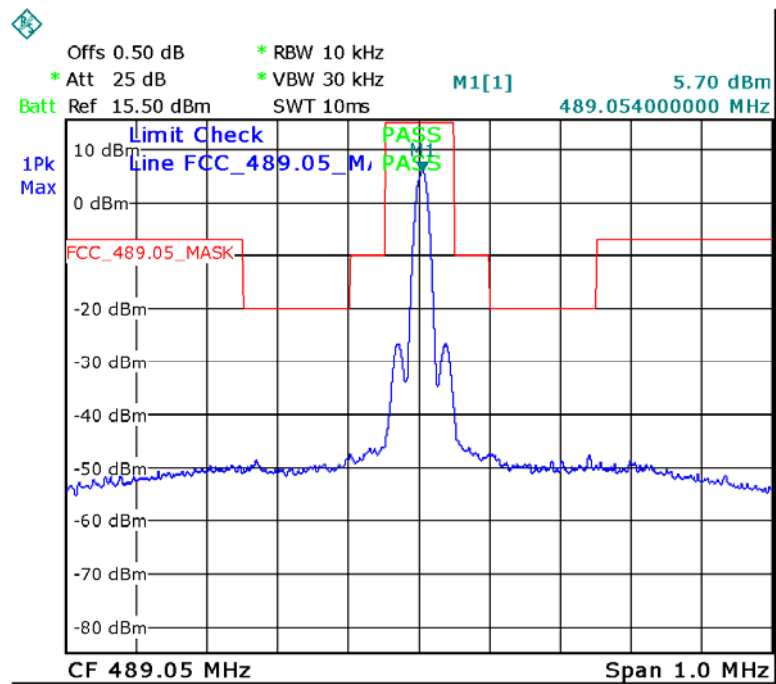


Low channel 30M-6G

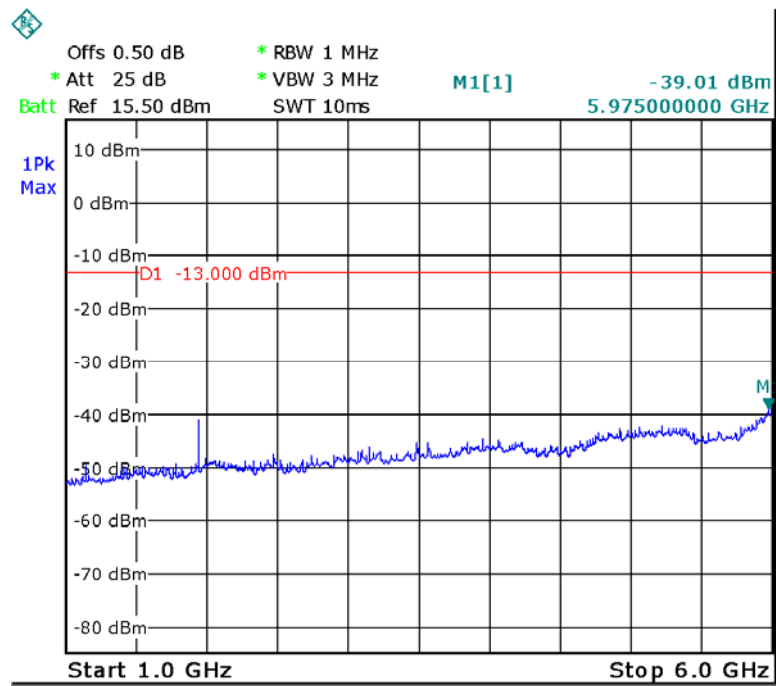
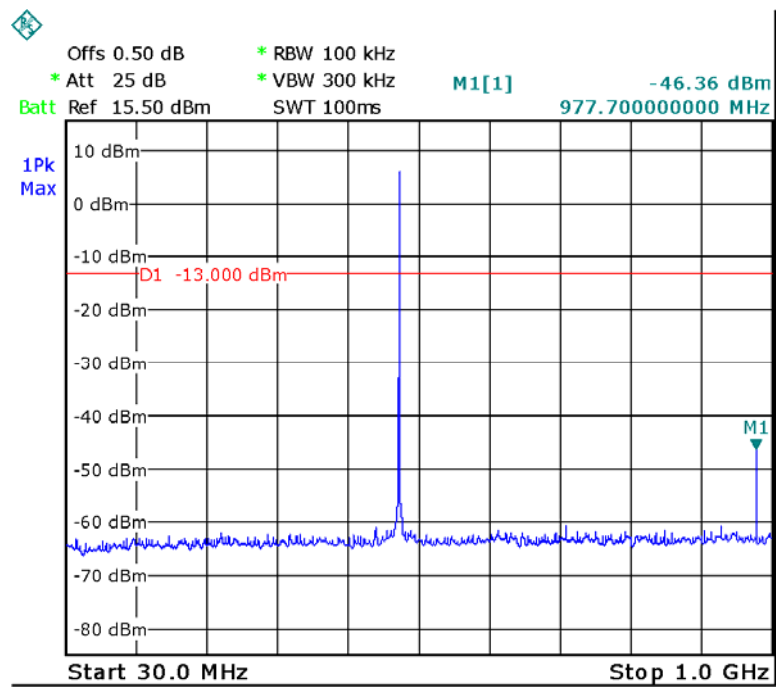




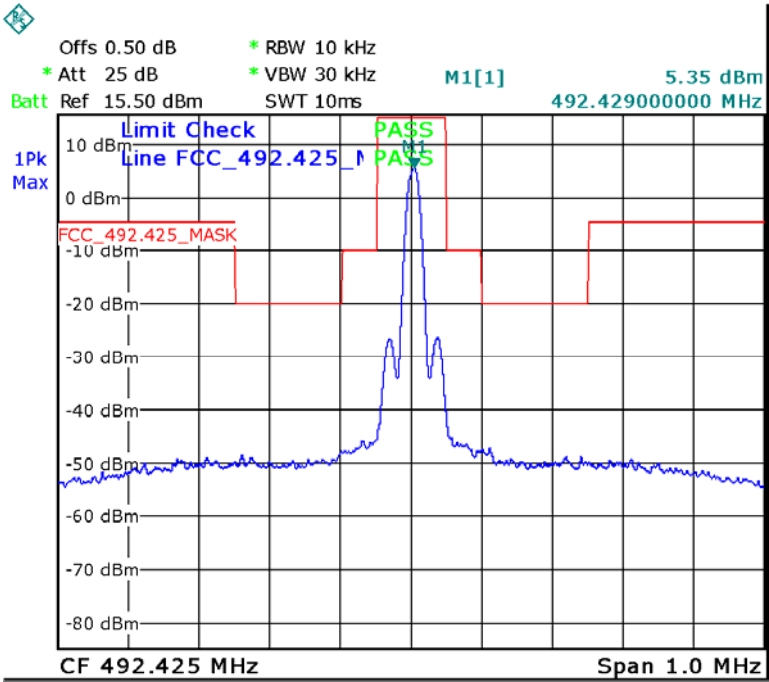
Emission Mask Middle Channel



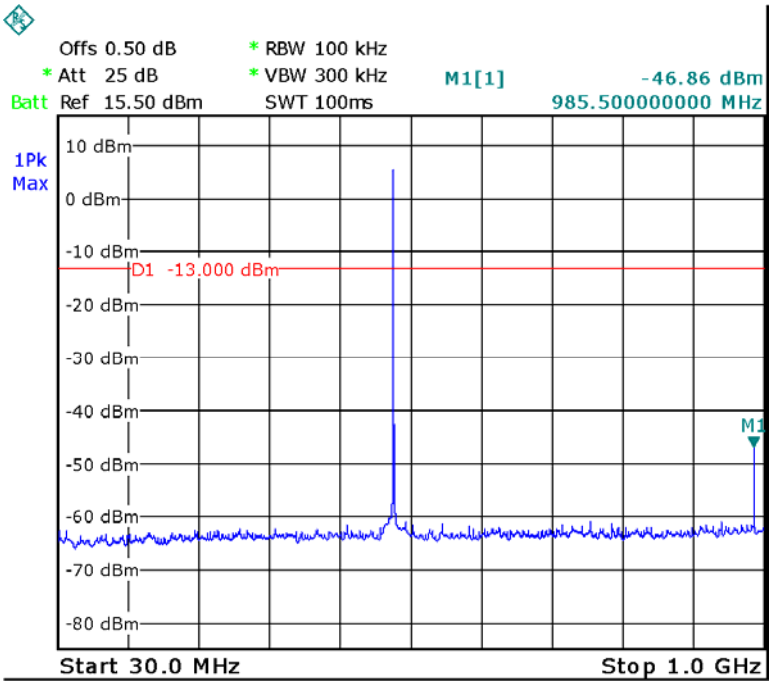
High channel 30M-6G

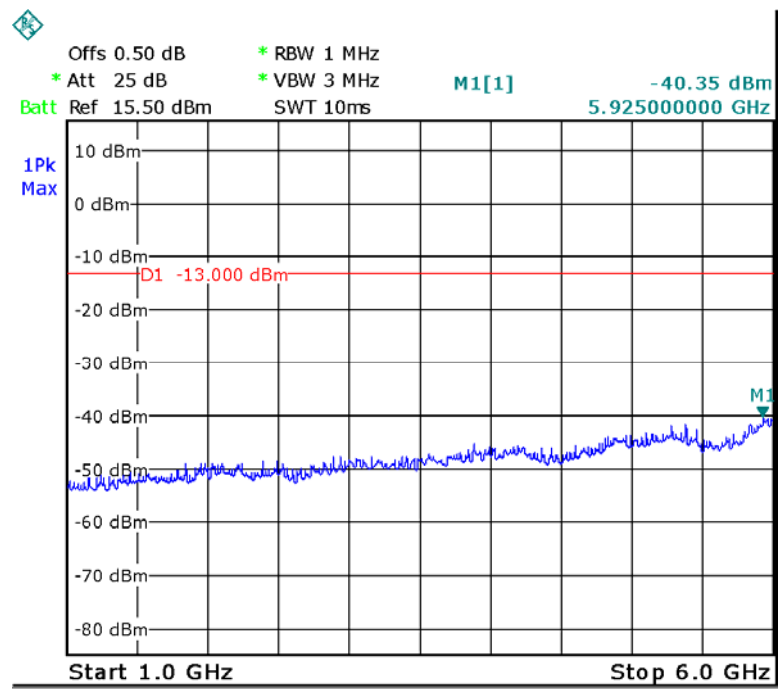


Emission Mask High Channel



High channel 30M-6G





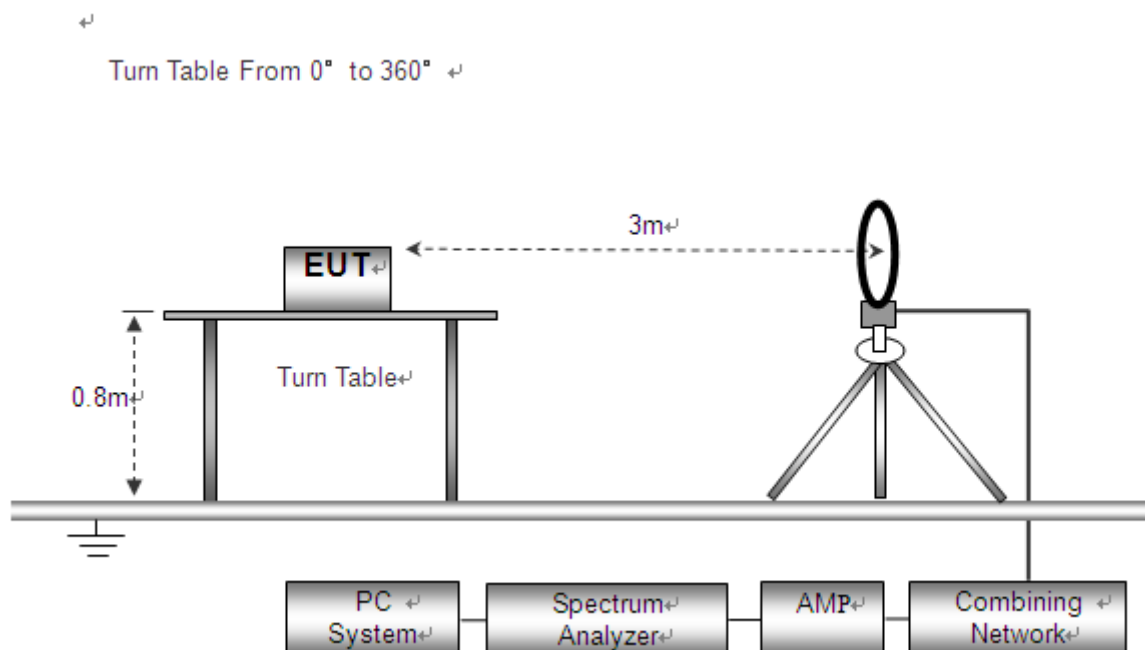
11. Radiated Emission Test

Test requirement:	FCC CFR47 Part 2 Section 2.1053
Test method:	Based on ANSI/TIA-603-E:2016
Limit:	According to Part 74.861 (e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule: (i) on any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB. (ii) on any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB. (iii) on any frequency removed from the operating frequency by more than 250 percent up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least $43 + 10 \log$ (output power in watts)dB.

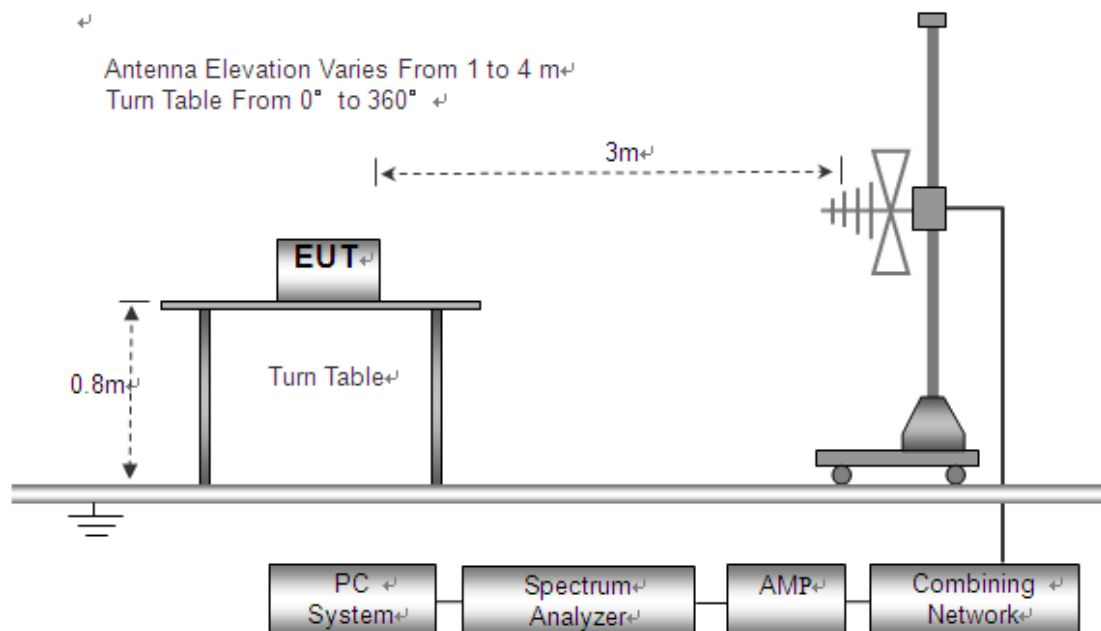
11.1 EUT Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4

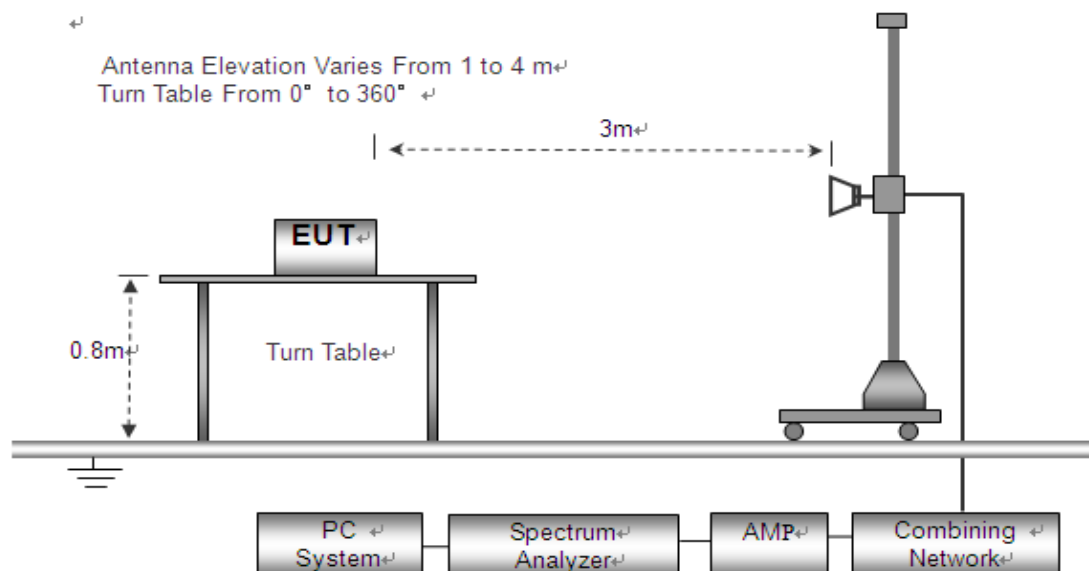
The test setup for emission measurement below 30MHz.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz Emissions.



11.2 Spectrum Analyzer Setup

According to FCC Part 2 Section 2.1053 Rules, the system was tested 9KHz to 6000MHz.

Below 30MHz

Sweep SpeedAuto
 IF Bandwidth.....10kHz
 Video Bandwidth.....10kHz
 Resolution Bandwidth.....10kHz

30MHz ~ 1GHz

Start Frequency30 MHz
 Stop Frequency.....1000MHz
 Sweep Speed.....Auto
 IF Bandwidth120 KHz
 Video Bandwidth300KHz
 Quasi-Peak Adapter Bandwidth.....120 KHz
 Quasi-Peak Adapter ModeNormal
 Resolution Bandwidth100KHz

Above 1GHz

Start Frequency1000 MHz
 Stop Frequency.....7000MHz
 Sweep Speed.....Auto
 IF Bandwidth120 KHz
 Video Bandwidth3MHz
 Quasi-Peak Adapter Bandwidth.....120 KHz
 Quasi-Peak Adapter ModeNormal
 Resolution Bandwidth1MHz

11.3 Test Procedure

1. Place the transmitter to be tested on the turntable in the standard test site. The transmitter is Transmitting into a non-radiating load, which is placed on the turntable.
2. The output of the antenna was connected to the measuring receiver and a peak detector was used for the measurement as indicated on the report.
3. The transmitter was switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
4. The test antenna shall be raised and Lowed through the specified range of height until the measuring receiver detects a maximum signal level.
5. The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
6. The test antenna shall be raised and Lowed again through the specified range of height until the measuring receiver detects a maximum signal level.
7. The maximum signal level detected by the measuring receiver shall be noted.
8. The measurement shall be repeated with the test antenna set to horizontal polarization.

9. Replace the antenna with a proper antenna (substitution antenna).
10. The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
11. The substitution antenna shall be connected to a calibrated signal generator.
12. If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
13. The test antenna shall be raised and Lowered through the specified range of the height to ensure that the maximum signal is received.
14. The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
15. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
16. The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.
17. The radiation emission was tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.
18. The EUT was under working mode during the final qualification test and the configuration was used to represent the worst case results.

11.4 Test Result

Test Frequency : 9kHz ~ 30MHz

The measurements were more than 20 dB below the limit and not reported.

Test Frequency : 30MHz ~ 1GHz

Frequency	Detector	Ant.	Antenna Height	Turntable Angle	Emission Level	Limit	Margin
(MHz)		Pol	(m)	(°)	(dBm)	(dBm)	(dB)
Low Channel							
955.05	Peak	H	1.1	10	-32.32	-13	-19.32
955.05	Peak	V	1.5	230	-36.95	-13	-23.95
1432.58	Peak	H	1.4	26	-50.79	-13	-37.79
1432.58	Peak	V	1.9	347	-52.46	-13	-39.46
1910.10	Peak	H	1.6	224	-50.41	-13	-37.41
1910.10	Peak	V	1.9	56	-52.03	-13	-39.03
Middle Channel							
978.10	Peak	H	1.8	227	-35.96	-13	-22.96
978.10	Peak	V	1.9	310	-37.67	-13	-24.67
1467.15	Peak	H	2.0	253	-50.73	-13	-37.73
1467.15	Peak	V	1.8	135	-51.73	-13	-38.73
1956.20	Peak	H	1.1	151	-50.64	-13	-37.64
1956.20	Peak	V	2.0	72	-52.50	-13	-39.50
High Channel							
984.85	Peak	H	1.5	330	-38.70	-13	-25.70
984.85	Peak	V	1.4	308	-40.29	-13	-27.29
1477.28	Peak	H	1.2	315	-51.14	-13	-38.14
1477.28	Peak	V	1.2	349	-51.65	-13	-38.65
1969.70	Peak	H	1.6	262	-50.77	-13	-37.77
1969.70	Peak	V	1.6	174	-52.31	-13	-39.31

Test Frequency : 1GHz ~ 5GHz

The measurements above 1G were more than 20 dB below the limit and not reported.

12. Frequency Stability

Test requirement:	FCC CFR47 Part 2 Section 2.1055(a)(a)
Test method:	Based on ANSI/TIA-603-E:2016
Limit:	According to FCC 74.86(e)(4), the frequency tolerance of the transmitter shall be 0.005 percent.

12.1 Test Configuration

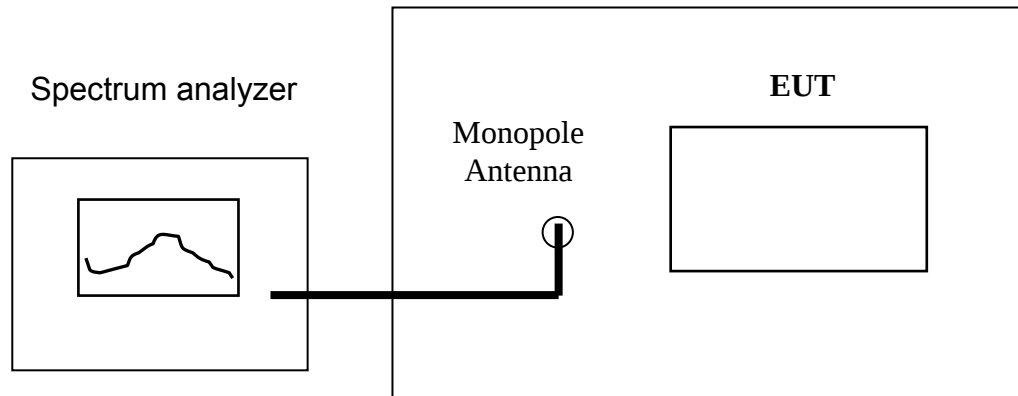


Figure 1

12.2 Test Procedure

A) Frequency stability versus input voltage

1. Setup the configuration per figure 1 for frequencies measured at an environmental chamber whose temperature is set to 20 °C. Install new batteries in the EUT.
2. Set SA center frequency to the EUT operation frequency. Then set SA RBW to 30 kHz, VBW to 100kHz and frequency span to 500 kHz. Record this frequency to be a reference.
3. Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

B) Frequency stability versus environmental temperature

1. Setup the configuration per figure 1 for frequencies measured at an environmental chamber, Install new batteries in the EUT.
2. Turn on EUT and set SA center frequency to the EUT operation frequency, then set SA RBW to 30kHz, VBW to 100kHz and frequency span to 500 kHz. Record this frequency to be a reference.
3. Set the temperature of chamber to 50°C. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a 10°C decreased per stage until the lowest temperature -30°C is measured, record all measurement frequencies.

12.3 Test Result

a) Frequency stability versus input voltage

Low channel

Power Supply	Reference Frequency (MHz)	Environment Temperature (°C)	Frequency Measured	Frequency Tolerance (%)
3.7V, DC	477.525	20	477.524	0.0001
3.33V, DC	477.525	20	477.529	0.0009

Middle channel

Power Supply	Reference Frequency (MHz)	Environment Temperature (°C)	Frequency Measured	Frequency Tolerance (%)
3.7V, DC	489.050	20	489.055	0.0010
3.33V, DC	489.050	20	489.054	0.0009

High channel

Power Supply	Reference Frequency (MHz)	Environment Temperature (°C)	Frequency Measured	Frequency Tolerance (%)
3.7V, DC	492.425	20	492.422	0.0006
3.33V, DC	492.425	20	492.421	0.0008

Remark: The 3.33V is the end point voltage which is specified by the manufacturer.

b) Frequency stability versus environmental temperature

Low Channel Limit: 0.005%			
Environment Temperature(°C)	Power Supply	Frequency Deviation measured with time Elapse(30 minutes)	
		MHz	%
50	3.7V, DC	477.529	0.00094
40	3.7V, DC	477.525	0.00007
30	3.7V, DC	477.520	0.00102
20	3.7V, DC	477.528	0.00055
10	3.7V, DC	477.524	0.00031
0	3.7V, DC	477.522	0.00064
-10	3.7V, DC	477.530	0.00104
-20	3.7V, DC	477.524	0.00025
-30	3.7V, DC	477.525	0.00001

Middle channel Limit: 0.005%			
Environment Temperature(°C)	Power Supply	Frequency Deviation measured with time Elapse(30 minutes)	
		MHz	%
50	3.7V, DC	489.053	0.00060
40	3.7V, DC	489.055	0.00098
30	3.7V, DC	489.054	0.00080
20	3.7V, DC	489.056	0.00114
10	3.7V, DC	489.051	0.00022
0	3.7V, DC	489.055	0.00106
-10	3.7V, DC	489.052	0.00049
-20	3.7V, DC	489.051	0.00020
-30	3.7V, DC	489.046	0.00087

High channel Limit: 0.005%			
Environment Temperature(°C)	Power Supply	Frequency Deviation measured with time Elapse(30 minutes)	
		MHz	%
50	3.7V, DC	492.424	0.00030
40	3.7V, DC	492.420	0.00097
30	3.7V, DC	492.430	0.00101
20	3.7V, DC	492.424	0.00022
10	3.7V, DC	492.420	0.00102
0	3.7V, DC	492.420	0.00108
-10	3.7V, DC	492.420	0.00102
-20	3.7V, DC	492.420	0.00102
-30	3.7V, DC	492.430	0.00098

Test Result: The max frequency tolerance rating is 0.00114% < 0.005%. Passed.

13. RF Exposure

Test Requirement: FCC Part 1.1307

Evaluation Method 447498 D01 General RF Exposure Guidance v06

13.1 Requirements

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR where}$$

1. $f(\text{GHz})$ is the RF channel transmit frequency in GHz
2. Power and distance are rounded to the nearest mW and mm before calculation
3. The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

13.2 The procedures / limit

Frequency (GHz)	conducted power (dBm)	conducted power (mW)	Duty cycle	Source-based time-averaged maximum conducted output power (mW)	Minimum test separation distance required for the exposure conditions (mm)	Computed value	SAR Test Exclusion Thresholds(mW)
0.489	5.66	3.68	1.00	3.68	5	0.515	3

Remark: Max. duty factor is 100%

Calculation formula: Source-based time-averaged maximum conducted output power(mW)
 =Conducted peak power(mW)*Duty factor

14. Photographs – Test Setup

14.1 Photograph – Radiation Spurious Emission Test Setup

Below 30MHz



30MHz-1GHz



Above 1GHz



15. Photographs – Constructional Details

15.1 EUT – External Photos

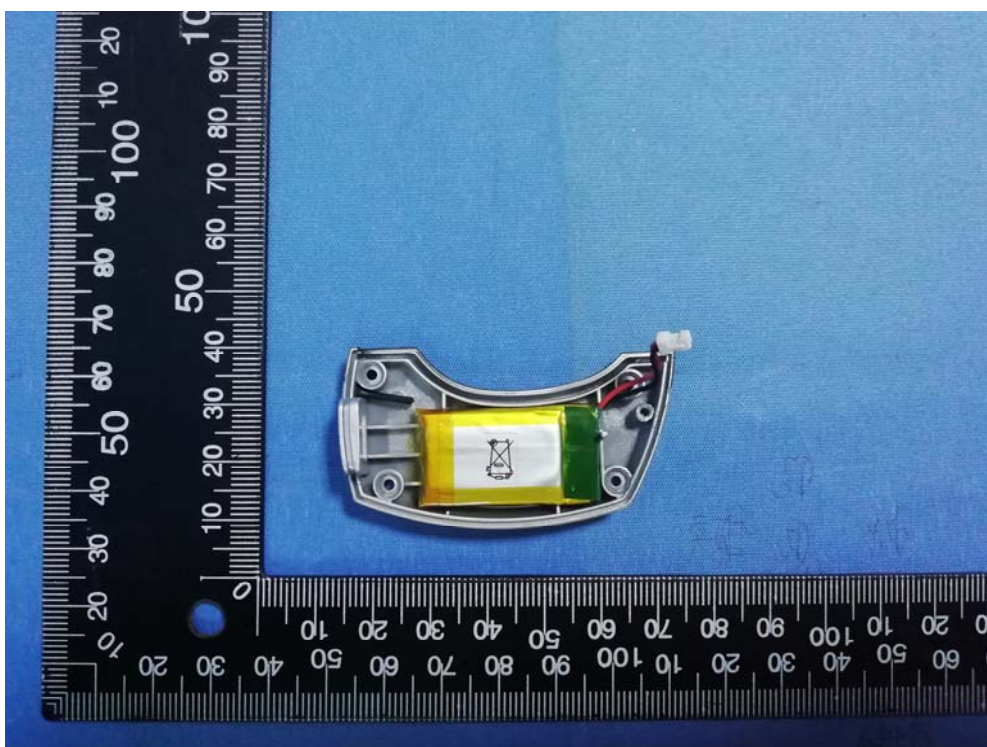
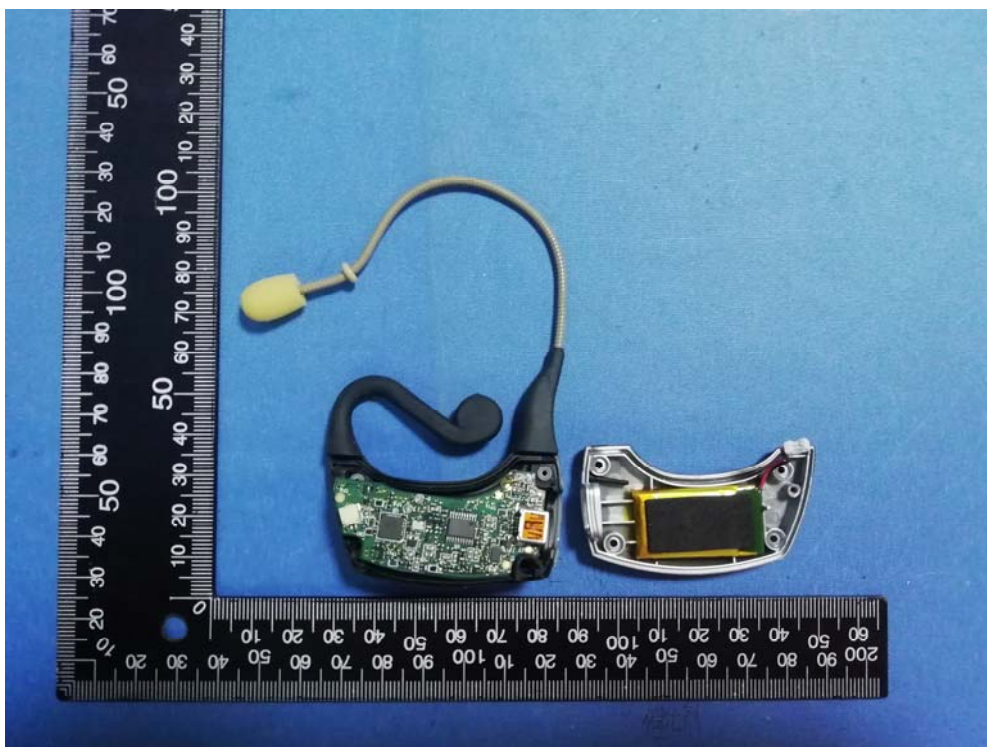


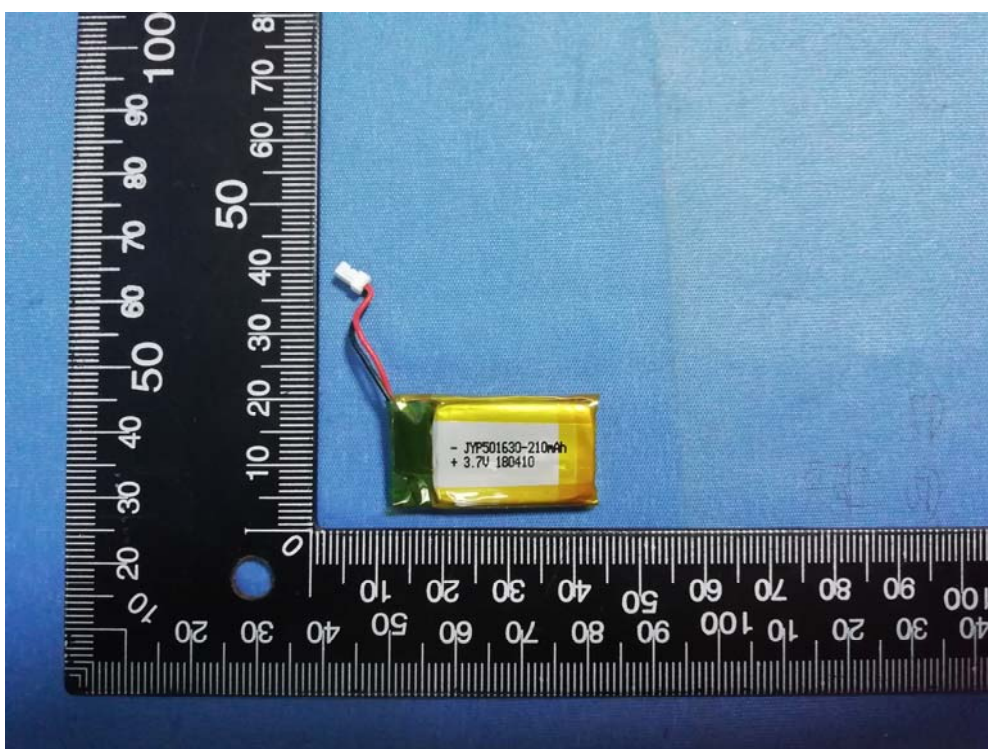
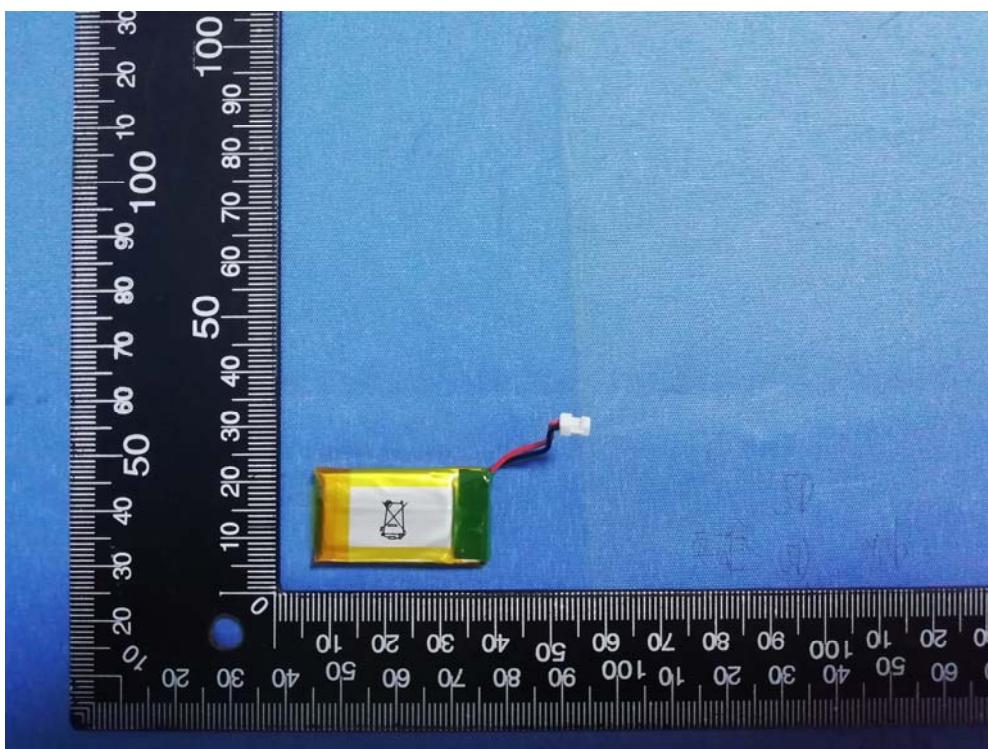


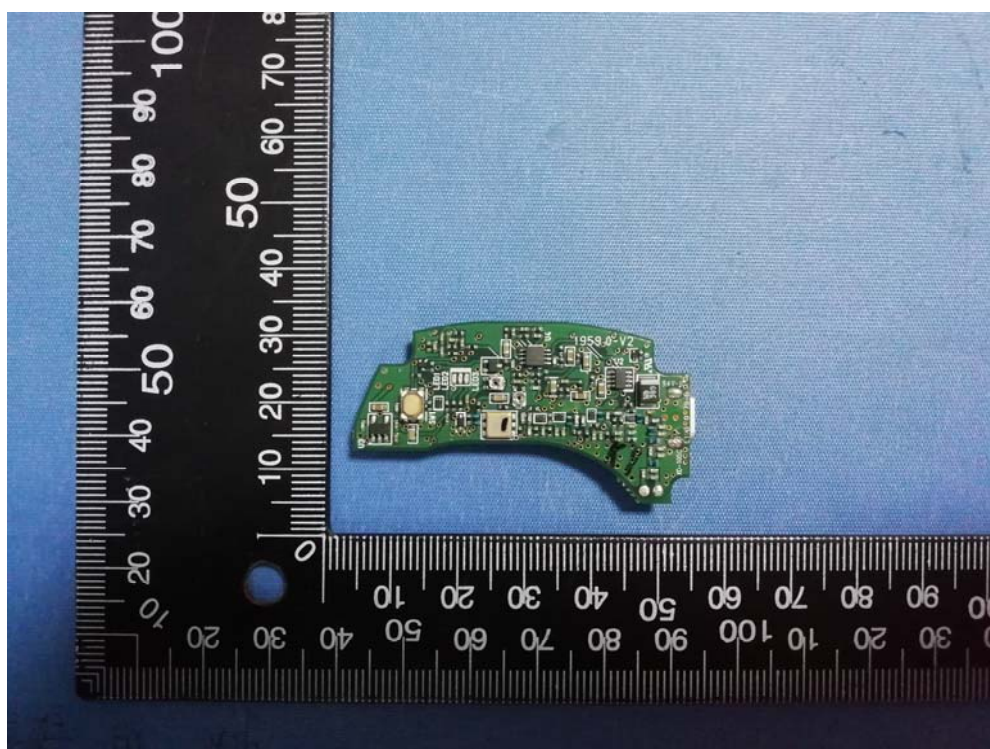
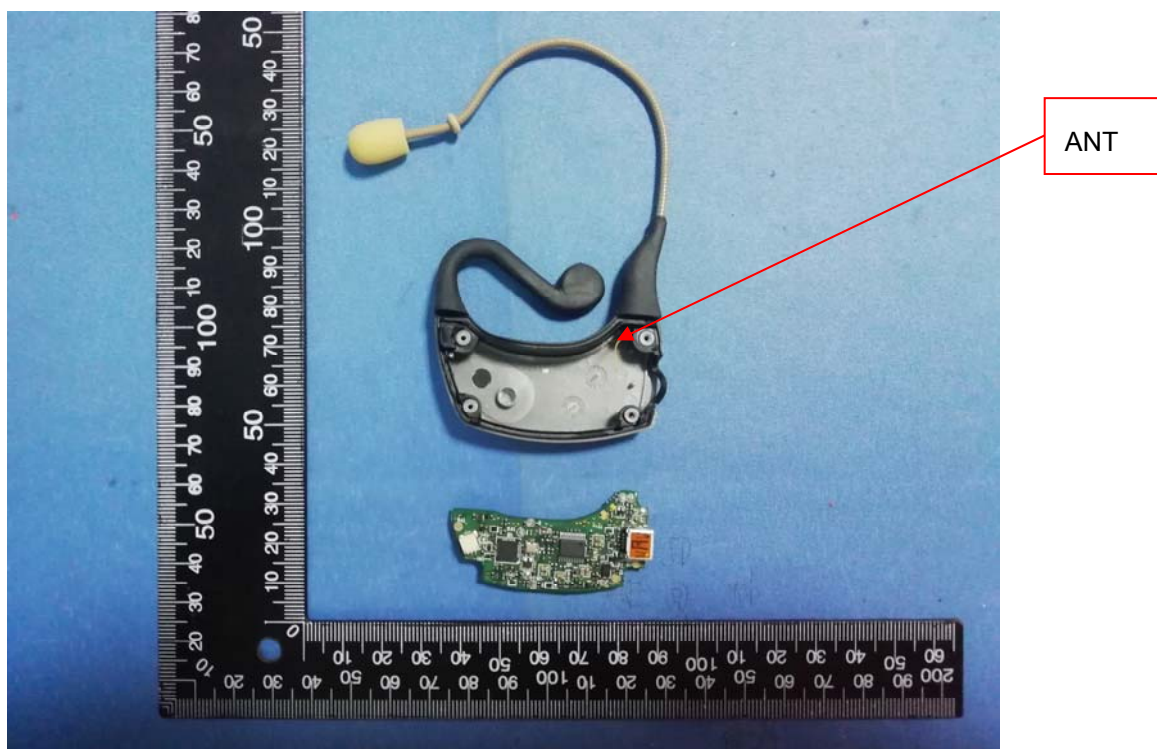


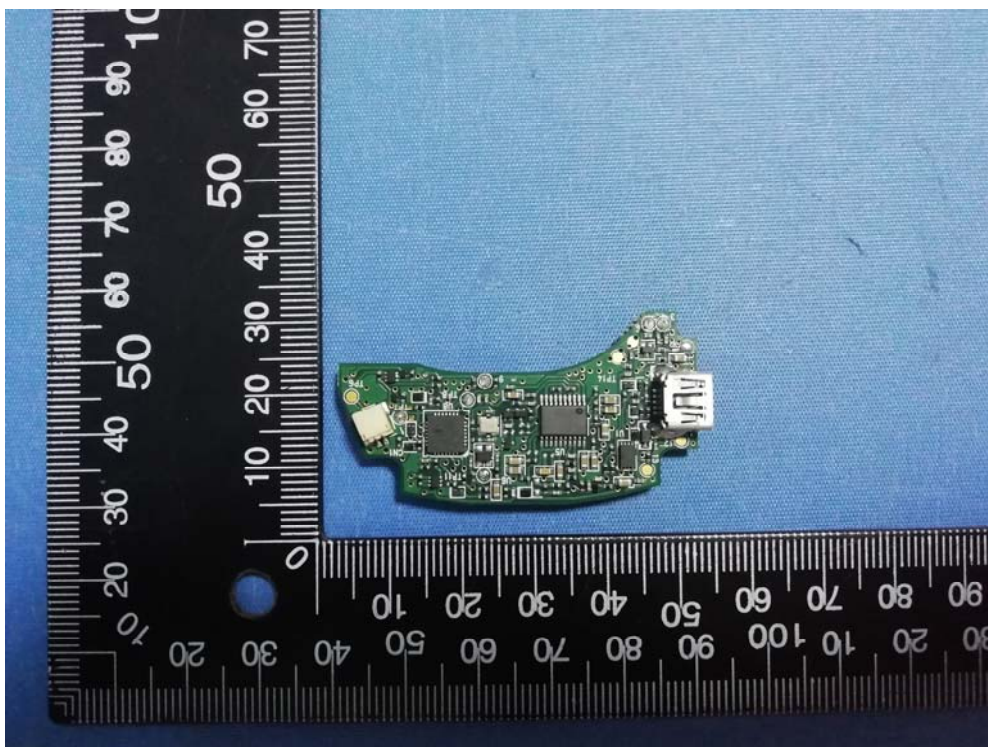


15.2 EUT – Internal Photos









=====End of Report=====