

# FCC TEST REPORT

For

Flint Rehabilitation Devices LLC

FitMi Motion Interface

Model No.: FitMi Pucks, FMP001

Prepared For : Flint Rehabilitation Devices LLC  
Address : 18023 Sky Park Circle Ste. H2 Irvine CA 92614, United States

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited  
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Report Number : R0117020627W  
Date of Test : Feb. 22~Apr. 10, 2017  
Date of Report : Apr. 10, 2017

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# TEST REPORT

Applicant : Flint Rehabilitation Devices LLC  
Manufacturer : ShenZhen Tailhoo Technology Co., Ltd.  
Product Name : FitMi Motion Interface  
Model No. : FitMi Pucks, FMP001  
Trade Mark : Exercise Equipment  
Rating(s) : Input DC 5V, 1A (via adapter Input 100-240V~, 50/60Hz, output DC 5V, 1A) Battery  
Inside DC 3.7V, 700mAh

**Test Standard(s) : FCC Part15 Subpart C, Paragraph 15.249**

**Test Method(s) : ANSI C63.10: 2013**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Feb. 22~Apr. 10, 2017

Prepared by :



*Winkey Wang*

(Tested Engineer / Winkey Wang)

Reviewer :

*Brown Lu*

(Project Manager / Brown Lu)

Approved & Authorized Signer :

*Tom Chen*

(Manager / Tom Chen)

## 1. General Information

### 1.1. Client Information

Applicant	:	Flint Rehabilitation Devices LLC
Address	:	18023 Sky Park Circle Ste. H2 Irvine CA 92614, United States
Manufacturer	:	ShenZhen Tailhoo Technology Co., Ltd.
Address	:	Rm 1411 Guanlida Mansion (Noble plaza) Qianjin 1st Road, 30 Area of Baoan, Shenzhen, China

### 1.2. Description of Device (EUT)

Product Name	:	FitMi Motion Interface	
Model No.	:	FitMi Pucks, FMP001 (Note: All samples are the same except the model number and colour, so we prepare "FMP001" for test only.)	
Trade Mark	:	Exercise Equipment	
Test Power Supply	:	AC 120V, 60Hz / AC 240V, 60Hz DC 3.7V Battery inside	
Product Description	:	Operation Frequency:	2402-2480MHz
		Number of Channel:	79 Channels
		Modulation Type:	O-QPSK
		Antenna Type:	Ceramic Antenna
		Antenna Gain(Peak):	0.5 dBi
<b>Remark:</b> 1)For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.			

### 1.3. Auxiliary Equipment Used During Test

Adapter	:	Input: AC 100-240V, 50/60Hz Output: DC 5V, 1A
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#### 1.4. Description of Test Modes

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Charge Mode
Mode 2	CH00
Mode 3	CH39
Mode 4	CH78

For Conducted Emission	
Final Test Mode	Description
Mode 1	Charge Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH00
Mode 2	CH39
Mode 3	CH78

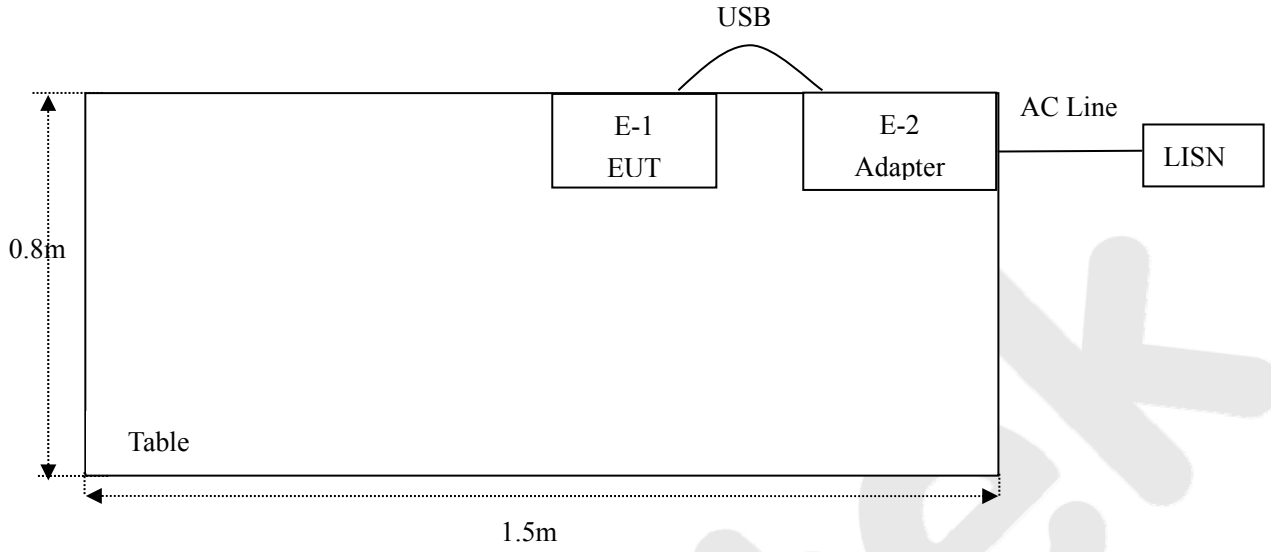
### 1.5. List of Channels

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
00	2402	17	2419	34	2436	51	2453	68	2470
01	2403	18	2420	35	2437	52	2454	69	2471
02	2404	19	2421	36	2438	53	2455	70	2472
03	2405	20	2422	37	2439	54	2456	71	2473
04	2406	21	2423	38	2440	55	2457	72	2474
05	2407	22	2424	39	2441	56	2458	73	2475
05	2408	23	2425	40	2442	57	2459	74	2476
07	2409	24	2426	41	2443	58	2460	75	2477
08	2410	25	2427	42	2444	59	2461	76	2478
09	2411	26	2428	43	2445	60	2462	77	2479
10	2412	27	2429	44	2446	61	2463	78	2480
11	2413	28	2430	45	2447	62	2464		
12	2414	29	2431	46	2448	63	2465		
13	2415	30	2432	47	2449	64	2466		
14	2416	31	2433	48	2450	65	2467		
15	2417	32	2434	49	2451	66	2468		
16	2418	33	2435	50	2452	67	2469		

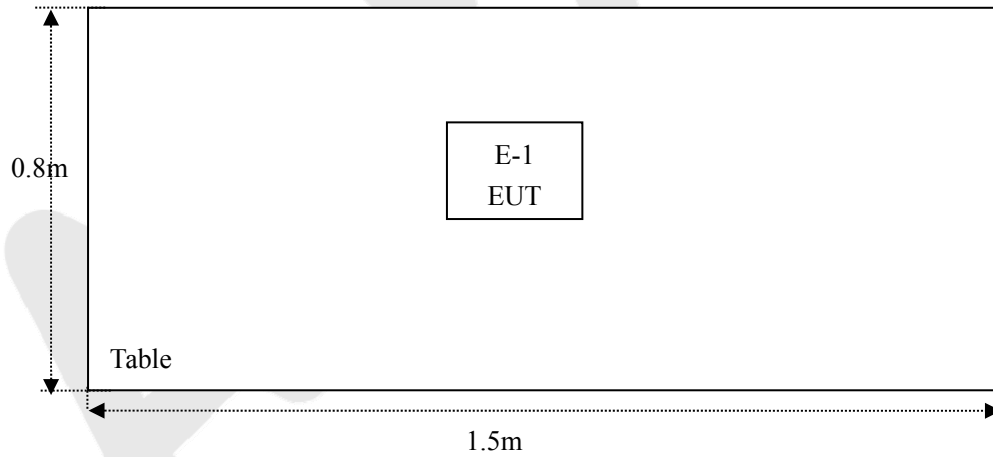


### 1.6. Description of Test Setup

CE



RE



### 1.7. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	100055	Jul. 19, 2016	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Jun. 17, 2016	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Jun. 17, 2016	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Jul. 12, 2016	1 Year
5.	Preamplifier	Instruments corporation	EMC011830	980100	Jun. 17, 2016	1 Year
6.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Jun. 17, 2016	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	May 06, 2016	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	May 06, 2016	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519	012	May 11, 2016	1 Year
10.	Pre-amplifier	SONOMA	310N	186860	Jun. 17, 2016	1 Year
11.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
12.	Power Sensor	Agilent	KFSW150502	15I00041SN045	Jun. 17, 2016	1 Year
13.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun. 17, 2016	1 Year
14.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun. 17, 2016	1 Year
15.	Signal Generator	Agilent	E4421B	MY41000743	Jun. 17, 2016	1 Year
16.	DC Power supply	IV	IV-8080	YQSB0096	Jun. 17, 2016	1 Year
17.	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-150 M8	SE-0137	Jun. 17, 2016	1 Year

### 1.8. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.1 dB (Horizontal)
		Ur = 4.3 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4dB



## 1.9. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

### FCC-Registration No.: 752021

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, July 06, 2016.

### IC-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A, June 13, 2016.

### Test Location

All Emissions tests were performed at

Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

## 2. Summary of Test Results

Standard Section	Test Item	Result
15.203	Antenna Requirement	PASS
15.207	Conducted Emission	PASS
15.249	Radiated Emission	PASS
15.215(c)	20dB Bandwidth	PASS
15.249(c)	Band Edge	PASS

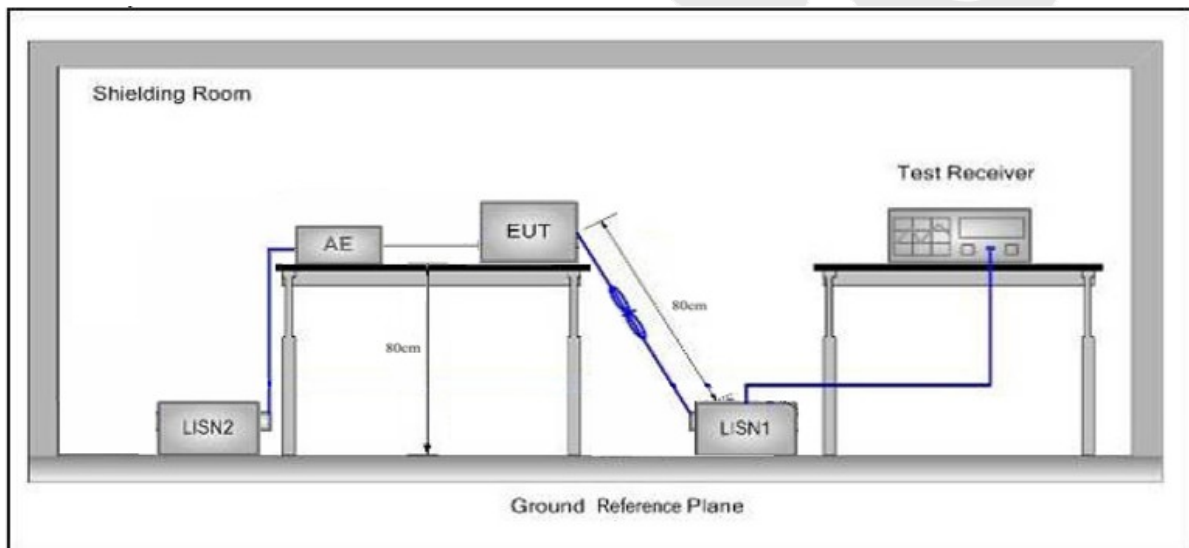
**Remark:** "N/A" is an abbreviation for Not Applicable.

### 3. Conducted Emission Test

#### 3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207		
Test Limit	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
	5MHz~30MHz	60	50
<b>Remark:</b> (1) *Decreasing linearly with logarithm of the frequency. (2) The lower limit shall apply at the transition frequency.			

#### 3.2. Test Setup



#### 3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

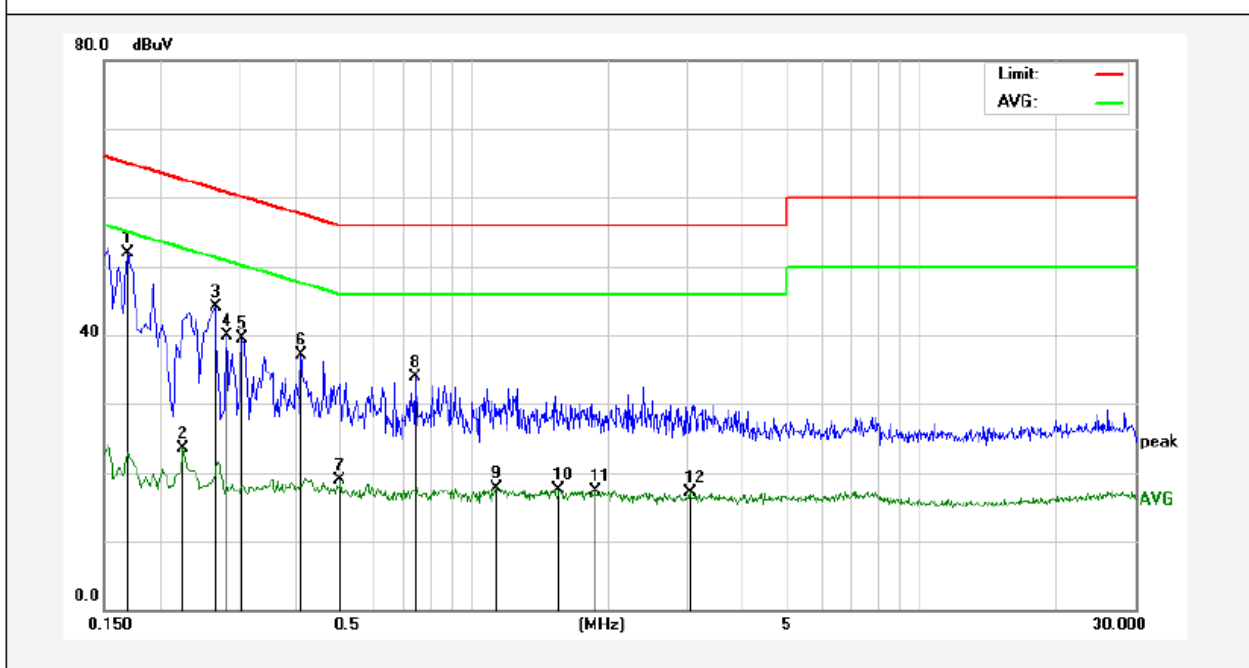
The frequency range from 150kHz to 30MHz is checked.

#### 3.4. Test Data

Please to see the following pages

**Conducted Emission Test Data**

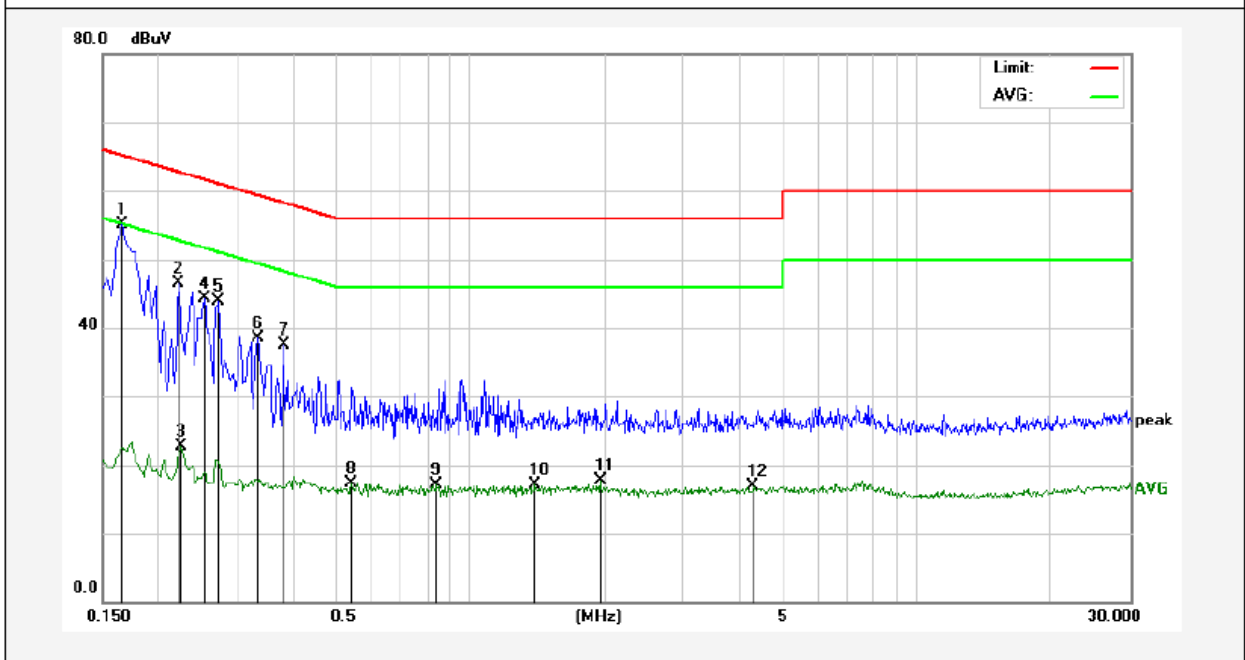
Test Site: 1# Shielded Room  
 Operating Condition: Charge Mode  
 Test Specification: AC 120V, 60Hz for adapter  
 Comment: Live Line  
 Tem.:25°C Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1700	32.08	19.90	51.98	64.96	-12.98	QP	
2	0.2260	3.65	19.89	23.54	52.59	-29.05	AVG	
3	0.2660	24.23	19.89	44.12	61.24	-17.12	QP	
4	0.2819	20.05	19.89	39.94	60.76	-20.82	QP	
5	0.3060	19.53	19.89	39.42	60.08	-20.66	QP	
6	0.4140	17.08	19.94	37.02	57.57	-20.55	QP	
7	0.5060	-1.14	19.98	18.84	46.00	-27.16	AVG	
8	0.7460	13.87	20.05	33.92	56.00	-22.08	QP	
9	1.1260	-2.32	20.12	17.80	46.00	-28.20	AVG	
10	1.5540	-2.55	20.13	17.58	46.00	-28.42	AVG	
11	1.8700	-2.85	20.14	17.29	46.00	-28.71	AVG	
12	3.0540	-2.99	20.16	17.17	46.00	-28.83	AVG	

**Conducted Emission Test Data**

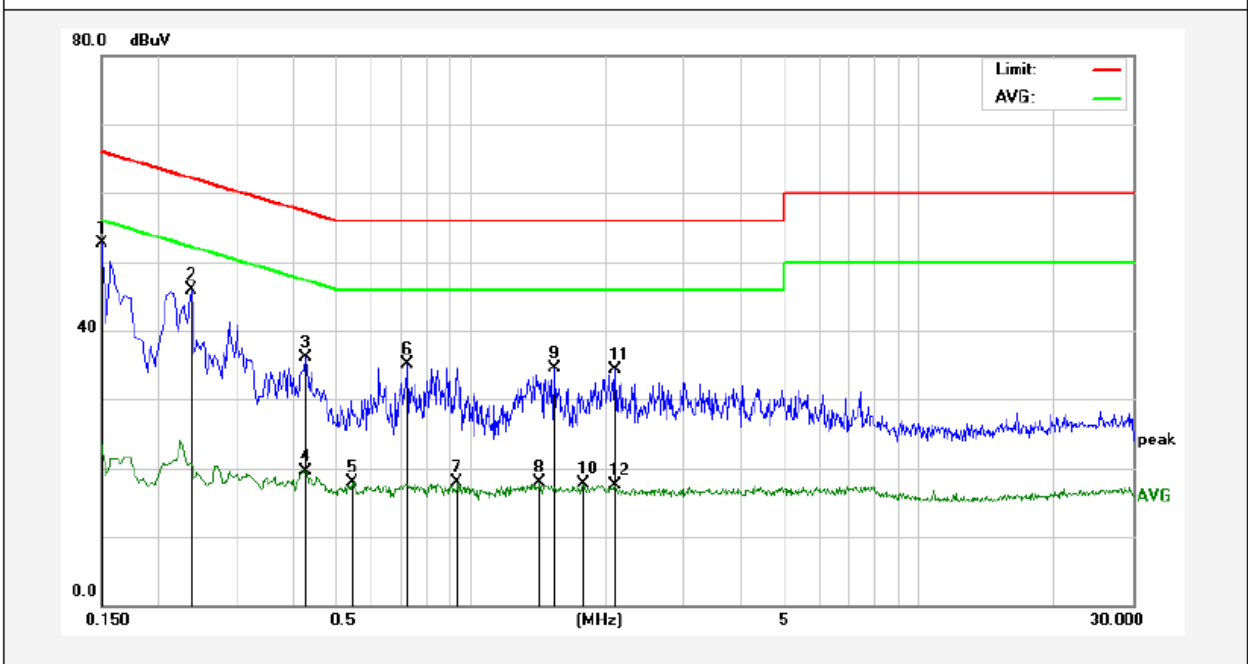
Test Site: 1# Shielded Room  
 Operating Condition: Charge Mode  
 Test Specification: AC 120V, 60Hz for adapter  
 Comment: Neutral Line  
 Tem.:25°C Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1660	35.21	19.90	55.11	65.15	-10.04	QP	
2	0.2220	26.69	19.89	46.58	62.74	-16.16	QP	
3	0.2260	2.87	19.89	22.76	52.59	-29.83	AVG	
4	0.2540	24.37	19.89	44.26	61.62	-17.36	QP	
5	0.2740	24.10	19.89	43.99	60.99	-17.00	QP	
6	0.3339	18.52	19.91	38.43	59.35	-20.92	QP	
7	0.3820	17.53	19.93	37.46	58.23	-20.77	QP	
8	0.5420	-2.60	19.99	17.39	46.00	-28.61	AVG	
9	0.8420	-3.06	20.08	17.02	46.00	-28.98	AVG	
10	1.4020	-3.04	20.13	17.09	46.00	-28.91	AVG	
11	1.9580	-2.46	20.14	17.68	46.00	-28.32	AVG	
12	4.3020	-3.37	20.19	16.82	46.00	-29.18	AVG	

**Conducted Emission Test Data**

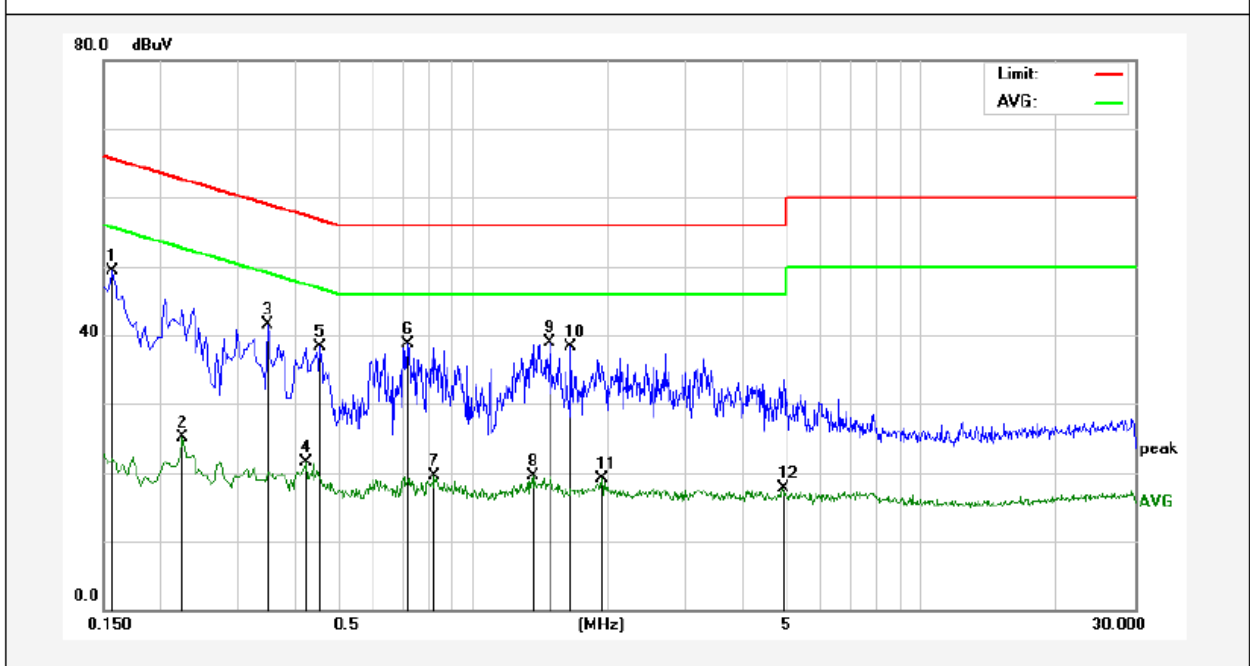
Test Site: 1# Shielded Room  
 Operating Condition: Charge Mode  
 Test Specification: AC 240V, 60Hz for adapter  
 Comment: Live Line  
 Tem.:25°C Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	32.78	19.90	52.68	65.99	-13.31	QP	
2	0.2380	25.93	19.89	45.82	62.16	-16.34	QP	
3	0.4300	16.15	19.95	36.10	57.25	-21.15	QP	
4	0.4300	-0.39	19.95	19.56	47.25	-27.69	AVG	
5	0.5460	-2.04	19.99	17.95	46.00	-28.05	AVG	
6	0.7260	14.98	20.05	35.03	56.00	-20.97	QP	
7	0.9340	-2.11	20.10	17.99	46.00	-28.01	AVG	
8	1.4260	-2.32	20.13	17.81	46.00	-28.19	AVG	
9	1.5380	14.44	20.13	34.57	56.00	-21.43	QP	
10	1.7820	-2.44	20.14	17.70	46.00	-28.30	AVG	
11	2.1060	14.13	20.14	34.27	56.00	-21.73	QP	
12	2.1060	-2.55	20.14	17.59	46.00	-28.41	AVG	

**Conducted Emission Test Data**

Test Site: 1# Shielded Room  
 Operating Condition: Charge Mode  
 Test Specification: AC 240V, 60Hz for adapter  
 Comment: Neutral Line  
 Tem.:25°C Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1580	29.49	19.90	49.39	65.56	-16.17	QP	
2	0.2260	5.24	19.89	25.13	52.59	-27.46	AVG	
3	0.3500	21.60	19.91	41.51	58.96	-17.45	QP	
4	0.4260	1.62	19.95	21.57	47.33	-25.76	AVG	
5	0.4580	18.41	19.96	38.37	56.73	-18.36	QP	
6	0.7180	18.68	20.04	38.72	56.00	-17.28	QP	
7	0.8260	-0.54	20.07	19.53	46.00	-26.47	AVG	
8	1.3700	-0.62	20.13	19.51	46.00	-26.49	AVG	
9	1.4900	18.69	20.13	38.82	56.00	-17.18	QP	
10	1.6540	18.17	20.13	38.30	56.00	-17.70	QP	
11	1.9420	-0.97	20.14	19.17	46.00	-26.83	AVG	
12	4.9060	-2.54	20.20	17.66	46.00	-28.34	AVG	

## 4. Radiated Emission and Band Edge

### 4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.209 and 15.205				
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	960MHz~1000MHz	500	54.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
-		74.0	Peak	3	

**Remark:**

(1)The lower limit shall apply at the transition frequency.

(2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Test Standard	FCC Part15 C Section 15.249					
Test Limit	Frequency (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	2400~2483.5	50	-	114.0	Peak	3
	2400~2483.5	50	-	94.0	Average	3
	2400~2483.5	-	500	74.0	Peak	3
	2400~2483.5	-	500	54.0	Average	3

**Remark:**

(1) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

### 4.2. Test Setup

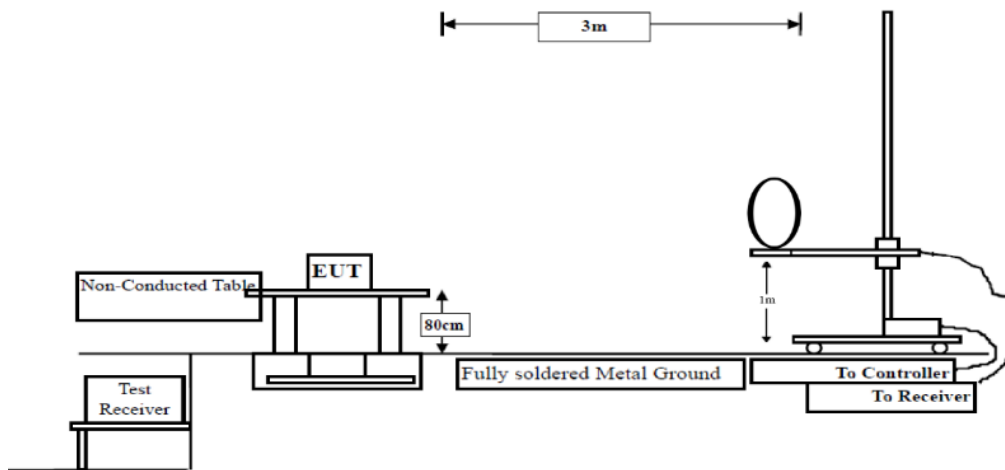


Figure 1. Below 30MHz

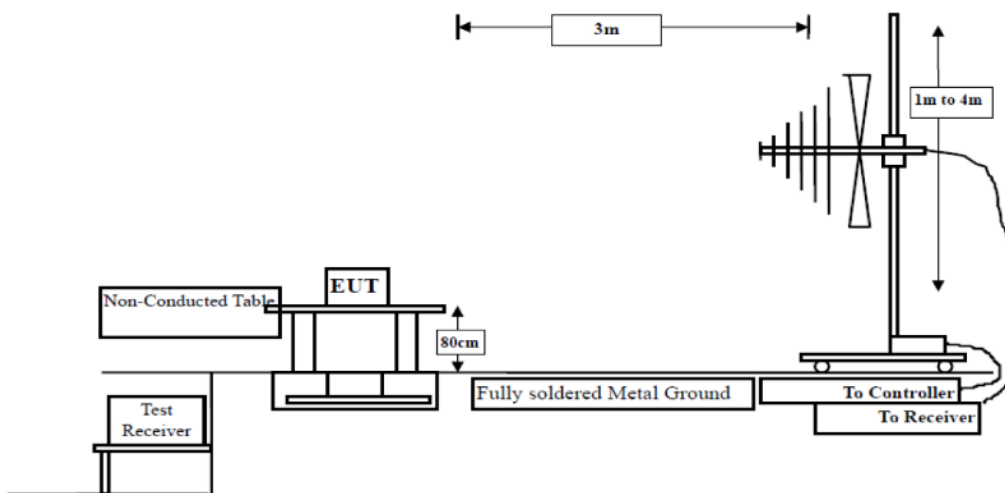


Figure 2. 30MHz to 1GHz

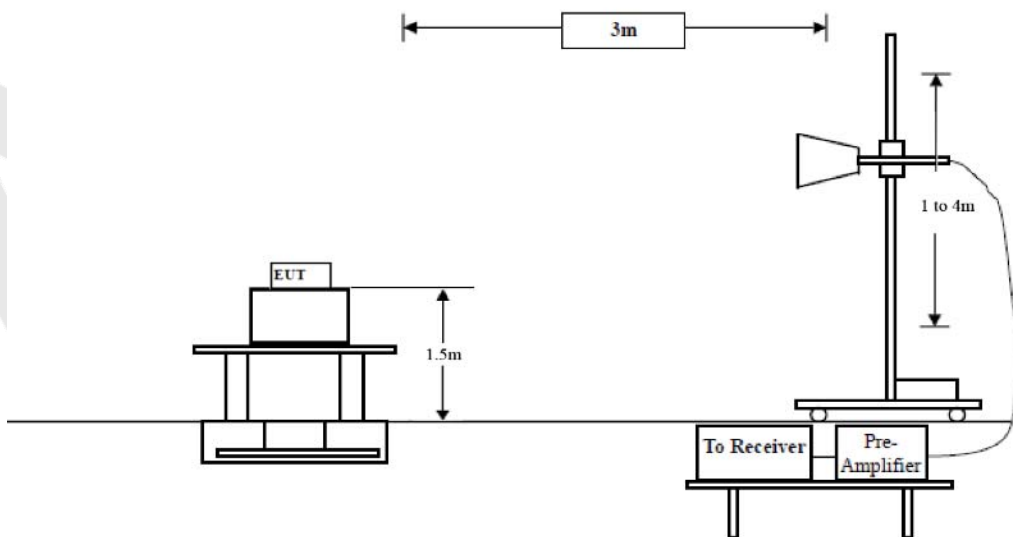


Figure 3. Above 1 GHz



### 4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9\*6\*6 Chamber. The device is evaluated in xyz orientation.

For 9kHz to 150kHz, Set the spectrum analyzer as:

RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:

RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:

RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For above 1GHz,Set the spectrum analyzer as:

RBW =1MHz, VBW =1MHz, Detector= Peak, Trace mode= Max hold, Sweep- auto couple.

RBW =1MHz, VBW =10Hz, Detector= Average, Trace mode= Max hold, Sweep- auto couple.

### 4.4. Test Data

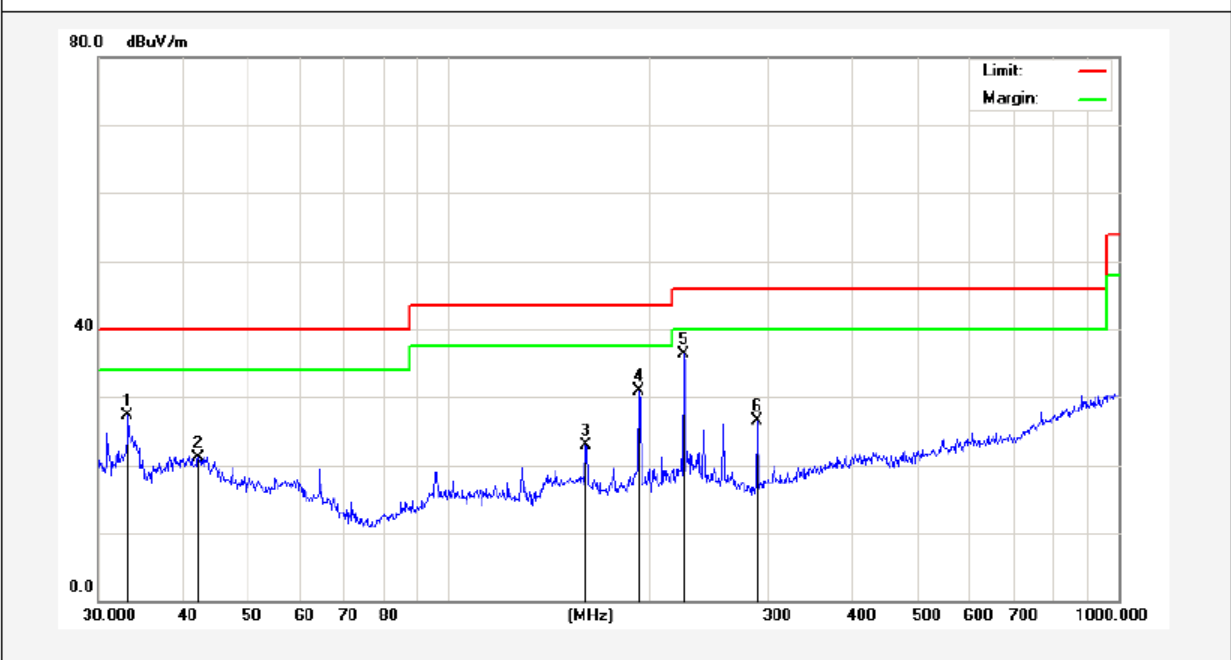
#### PASS

During the test, Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis is the worst case.

The test results of 9kHz-30MHz and above 18000MHz are attenuated more than 20dB below the permissible limits, so the results don't record in the report.

**Test Results (30~1000MHz)**

Job No.: 0117020627W Temp.(°C)/Hum.(%RH): 24.3°C/55%RH  
 Standard: FCC PART 15C Power Source: AC120V/60Hz  
 Test Mode: TX Mode Polarization: Horizontal

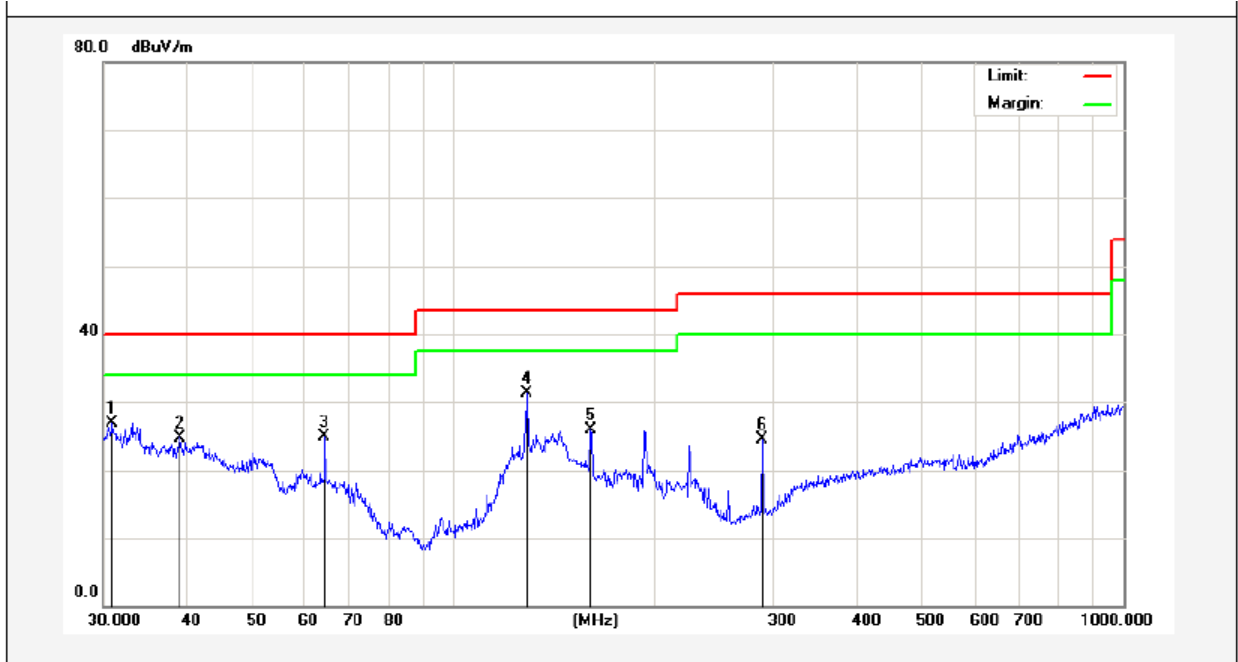


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	33.2112	42.55	-15.24	27.31	40.00	-12.69	peak			
2	42.3022	32.36	-11.27	21.09	40.00	-18.91	peak			
3	160.3456	45.77	-22.86	22.91	43.50	-20.59	peak			
4	192.4186	51.90	-20.91	30.99	43.50	-12.51	peak			
5	224.5193	56.02	-19.65	36.37	46.00	-9.63	peak			
6	289.0021	44.39	-17.98	26.41	46.00	-19.59	peak			



**Test Results (30~1000MHz)**

Job No.: 0117020627W Temp.(°C)/Hum.(%RH): 24.3°C/55%RH  
 Standard: FCC PART 15C Power Source: AC120V/60HZ  
 Test Mode: TX Mode Polarization: Vertical



No.	Freq. (MHz)	Reading (dBUV/m)	Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	30.9619	43.35	-16.44	26.91	40.00	-13.09	peak			
2	39.0245	35.94	-11.14	24.80	40.00	-15.20	peak			
3	64.2074	42.10	-17.15	24.95	40.00	-15.05	peak			
4	128.5630	48.81	-17.60	31.21	43.50	-12.29	peak			
5	160.3456	43.77	-17.86	25.91	43.50	-17.59	peak			
6	289.0021	39.40	-14.98	24.42	46.00	-21.58	peak			

**Test Results (Above 1000MHz)**

Horizontal  
CH Low (2402MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dB $\mu$ V	Level dB $\mu$ V/m	Limit dB $\mu$ V/m	Over Limit dB	Remark
2402.000	2.17	31.21	35.30	86.14	84.22	114.00	-29.78	Peak
2402.000	2.17	31.21	35.30	77.89	75.97	94.00	-18.03	AV
4804.240	2.56	34.01	34.71	48.21	50.07	74.00	-23.93	Peak
4804.240	2.56	34.01	34.71	32.77	34.63	54.00	-19.37	AV
7206.510	2.98	36.16	35.15	40.16	44.15	74.00	-29.85	Peak
7206.510	2.98	36.16	35.15	25.98	29.97	54.00	-24.03	AV
9608.000	---	---	---	---	---	---	---	---
12010.00	---	---	---	---	---	---	---	---
14412.00	---	---	---	---	---	---	---	---
16814.00	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

Vertical  
CH Low (2402MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dB $\mu$ V	Level dB $\mu$ V/m	Limit dB $\mu$ V/m	Over Limit dB	Remark
2402.000	2.17	31.21	35.30	86.79	84.87	114.00	-29.13	Peak
2402.000	2.17	31.21	35.30	79.88	77.96	94.00	-16.04	AV
4804.240	2.56	34.01	34.71	46.51	48.37	74.00	-25.63	Peak
4804.240	2.56	34.01	34.71	34.32	36.18	54.00	-17.82	AV
7206.510	2.98	36.16	35.15	38.13	42.12	74.00	-31.88	Peak
7206.510	2.98	36.16	35.15	33.41	37.4	54.00	-16.60	AV
9608.000	---	---	---	---	---	---	---	---
12010.00	---	---	---	---	---	---	---	---
14412.00	---	---	---	---	---	---	---	---
16814.00	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

Horizontal

CH Middle (2441MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dB $\mu$ V	Level dB $\mu$ V/m	Limit dB $\mu$ V/m	Over Limit dB	Remark
2441.000	2.19	31.22	34.60	89.46	88.27	114.00	-25.73	Peak
2441.000	2.19	31.22	34.60	82.51	81.32	94.00	-12.68	AV
4882.730	2.57	35.00	34.58	43.68	46.67	74.00	-27.33	Peak
4882.730	2.57	35.00	34.58	36.84	39.83	54.00	-14.17	AV
7323.270	3.00	36.17	35.14	40.55	44.58	74.00	-29.42	Peak
7323.270	3.00	36.17	35.14	38.12	42.15	54.00	-11.85	AV
9764.000	---	---	---	---	---	---	---	---
12205.00	---	---	---	---	---	---	---	---
14646.00	---	---	---	---	---	---	---	---
17087.00	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

Vertical

CH Middle (2441MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dB $\mu$ V	Level dB $\mu$ V/m	Limit dB $\mu$ V/m	Over Limit dB	Remark
2441.000	2.19	31.22	34.60	89.34	88.15	114.00	-25.85	Peak
2441.000	2.19	31.22	34.60	80.23	79.04	94.00	-14.96	AV
4882.730	2.57	35.00	34.58	46.59	49.58	74.00	-24.42	Peak
4882.730	2.57	35.00	34.58	42.18	45.17	54.00	-8.83	AV
7323.270	3.00	36.17	35.14	41.67	45.7	74.00	-28.30	Peak
7323.270	3.00	36.17	35.14	37.25	41.28	54.00	-12.72	AV
9764.000	---	---	---	---	---	---	---	---
12205.00	---	---	---	---	---	---	---	---
14646.00	---	---	---	---	---	---	---	---
17087.00	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

Horizontal

CH High (2480MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2480.000	2.20	31.65	36.00	93.56	91.41	114.00	-22.59	Peak
2480.000	2.20	31.65	36.00	82.42	80.27	94.00	-13.73	AV
4960.430	2.58	35.06	34.79	43.64	46.49	74.00	-27.51	Peak
4960.430	2.58	35.06	34.79	39.56	42.41	54.00	-11.59	AV
7440.860	3.02	36.19	34.90	48.41	52.72	74.00	-21.28	Peak
7440.860	3.02	36.20	35.20	39.55	43.57	54.00	-10.43	AV
9920.00	---	---	---	---	---	---	---	---
12400.00	---	---	---	---	---	---	---	---
14480.00	---	---	---	---	---	---	---	---
17360.00	---	---	---	---	---	---	---	---
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Vertical

CH High (2480MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2480.000	2.20	31.65	36.00	94.88	92.73	114.00	-21.27	Peak
2480.000	2.20	31.65	36.00	82.23	80.08	94.00	-13.92	AV
4960.430	2.58	35.06	34.79	44.31	47.16	74.00	-26.84	Peak
4960.430	2.58	35.06	34.79	38.67	41.52	54.00	-12.48	AV
7440.860	3.02	36.19	34.90	42.69	47.00	74.00	-27.00	Peak
7440.860	3.02	36.20	35.20	41.12	45.14	54.00	-8.86	AV
9920.00	---	---	---	---	---	---	---	---
12400.00	---	---	---	---	---	---	---	---
14480.00	---	---	---	---	---	---	---	---
17360.00	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

**NOTE: “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.**

**The results of different modulations are the same.**

**Radiated Band Edge:**

Test Mode:					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
2390.00	45.40	29.15	3.41	34.01	43.95	74.00	-30.05	H
2400.00	62.55	29.16	3.43	34.01	61.13	74.00	-12.87	H
2390.00	46.19	29.15	3.41	34.01	44.74	74.00	-29.26	V
2400.00	64.86	29.16	3.43	34.01	63.44	74.00	-10.56	V
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
2390.00	35.38	29.15	3.41	34.01	33.93	54.00	-20.07	H
2400.00	46.77	29.16	3.43	34.01	45.35	54.00	-8.65	H
2390.00	35.51	29.15	3.41	34.01	34.06	54.00	-19.94	V
2400.00	48.66	29.16	3.43	34.01	47.24	54.00	-6.76	V

Test Mode:					Test channel: Highest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
2483.50	47.81	29.28	3.53	34.03	46.59	74.00	-27.41	H
2500.00	46.50	29.30	3.56	34.03	45.33	74.00	-28.67	H
2483.50	49.07	29.28	3.53	34.03	47.85	74.00	-26.15	V
2500.00	47.74	29.30	3.56	34.03	46.57	74.00	-27.43	V
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
2483.50	38.24	29.28	3.53	34.03	37.02	54.00	-16.98	H
2500.00	35.88	29.30	3.56	34.03	34.71	54.00	-19.29	H
2483.50	39.66	29.28	3.53	34.03	38.44	54.00	-15.56	V
2500.00	36.01	29.30	3.56	34.03	34.84	54.00	-19.16	V

Remark:

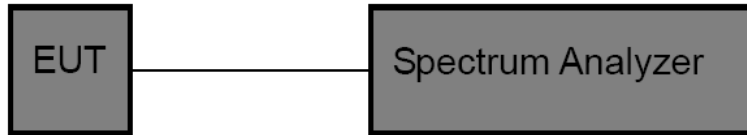
- Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor

## 5. 20dB Bandwidth Test

### 5.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.249
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### 5.2. Test Setup



### 5.3. Test Procedure

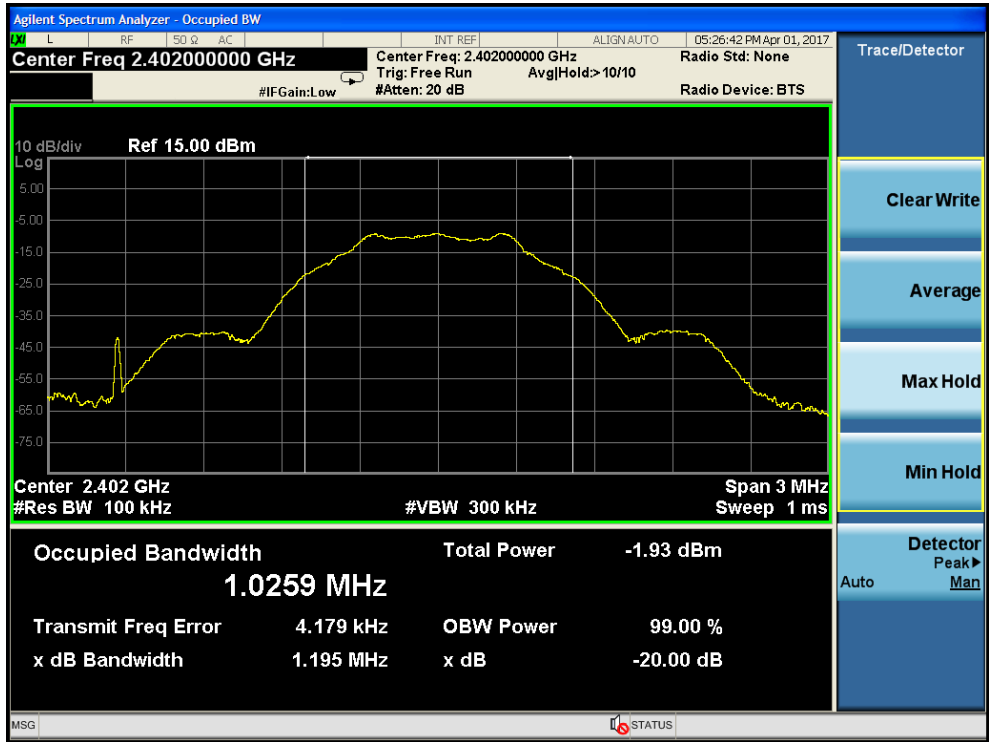
1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as:  
 RBW = 100kHz, VBW  $\geq$  3\*RBW = 300kHz,  
 Detector= Average  
 Trace mode= Max hold.  
 Sweep- auto couple.
4. Mark the peak frequency and -20dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

### 5.4. Test Data

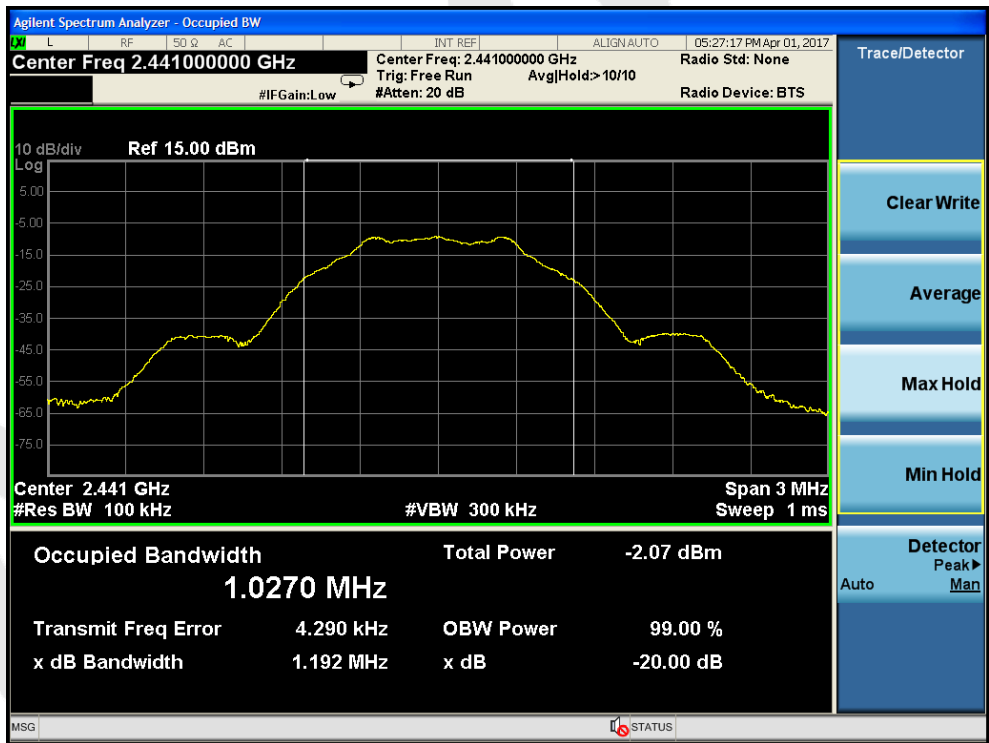
Test Item	: 20dB Bandwidth	Test Mode	: TX Mode
Test Voltage	: AC 120V, 60Hz for adapter	Temperature	: 24°C
Test Result	: PASS	Humidity	: 55%RH

Frequency (MHz)	Bandwidth (kHz)	Result
2402MHZ	1195.0	PASS
2441MHZ	1193.0	PASS
2480MHZ	1194.0	PASS

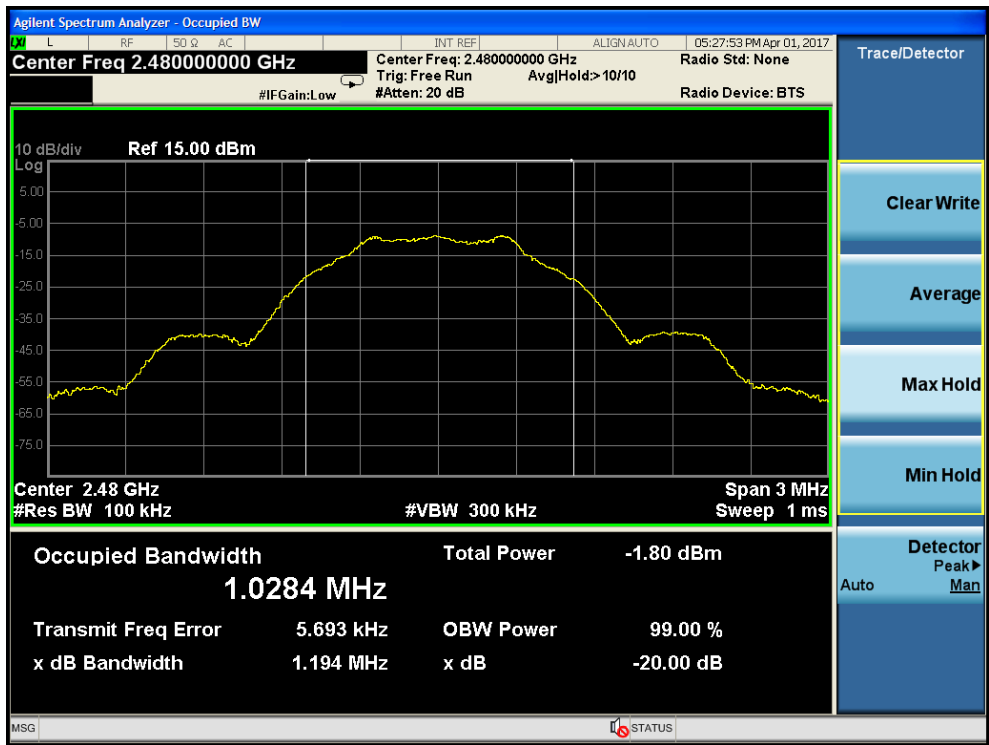




Test Mode: Low



Test Mode: Middle



Test Mode: High

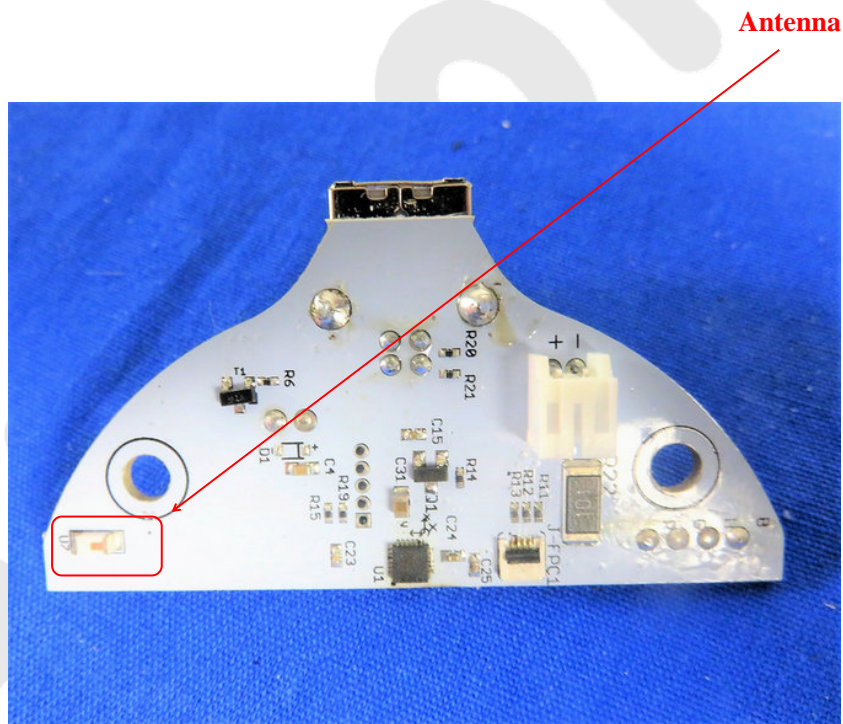
## 6. Antenna Requirement

### 6.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203
Requirement	1) 15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### 6.2. Antenna Connected Construction

The antenna is a Ceramic Antenna which permanently attached, and the best case gain of the antenna is 0.5dBi. It complies with the standard requirement.



### APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

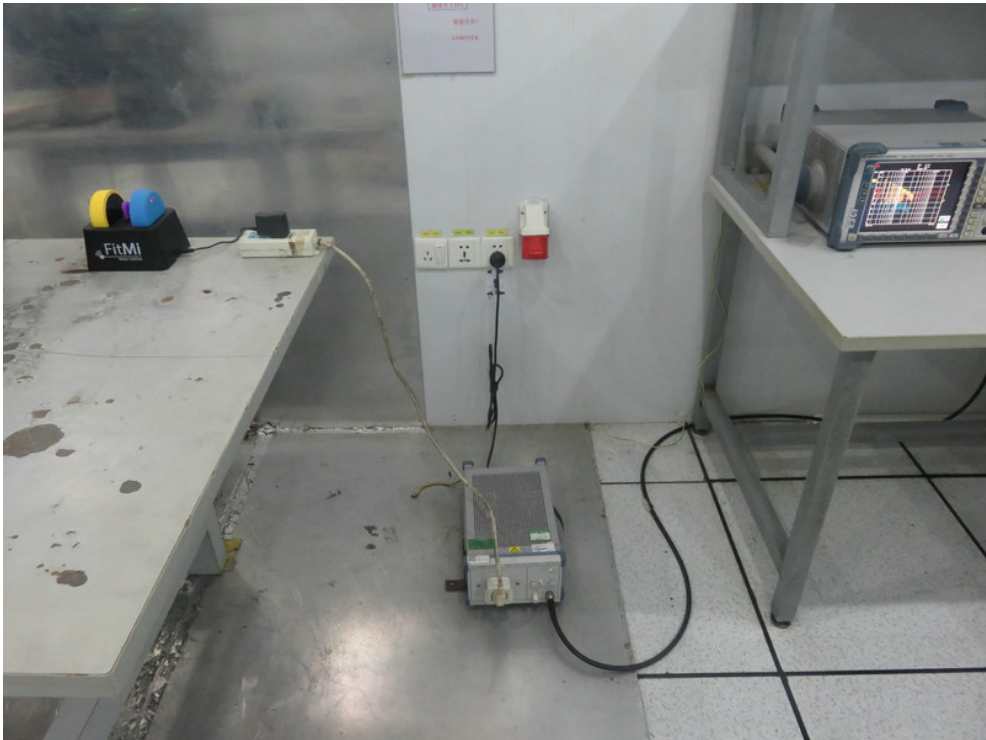
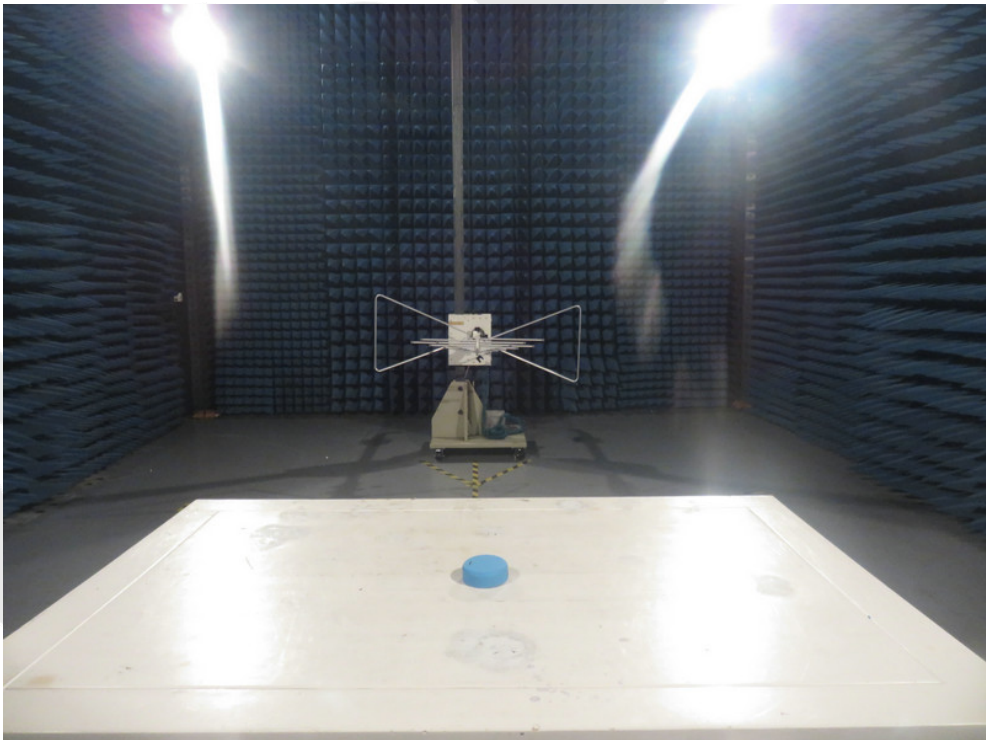
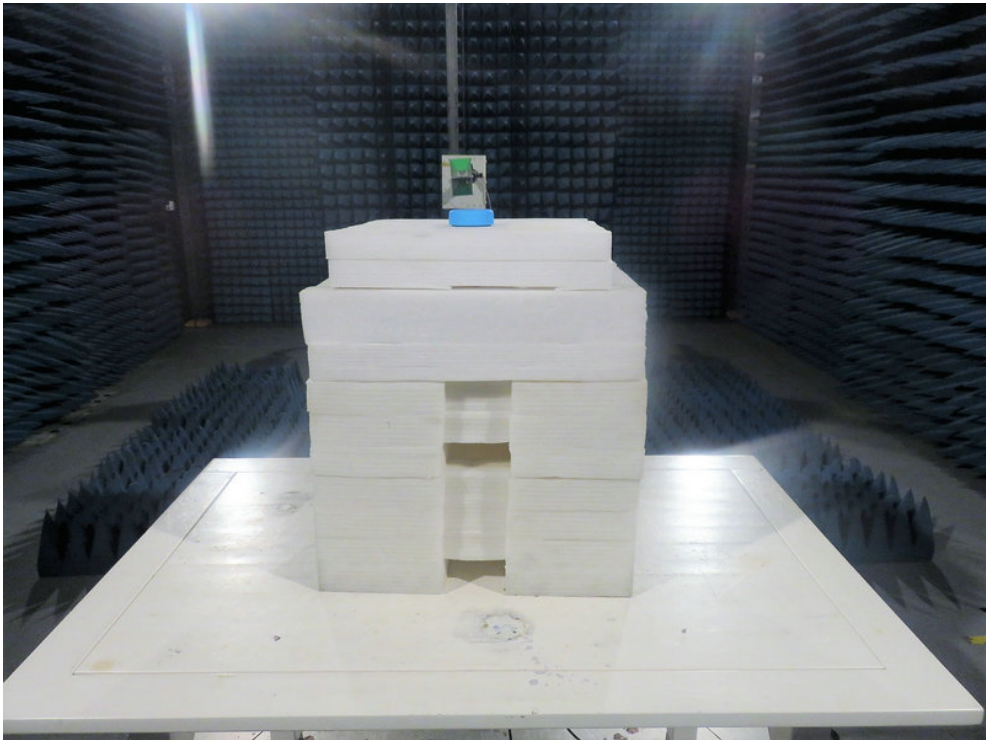


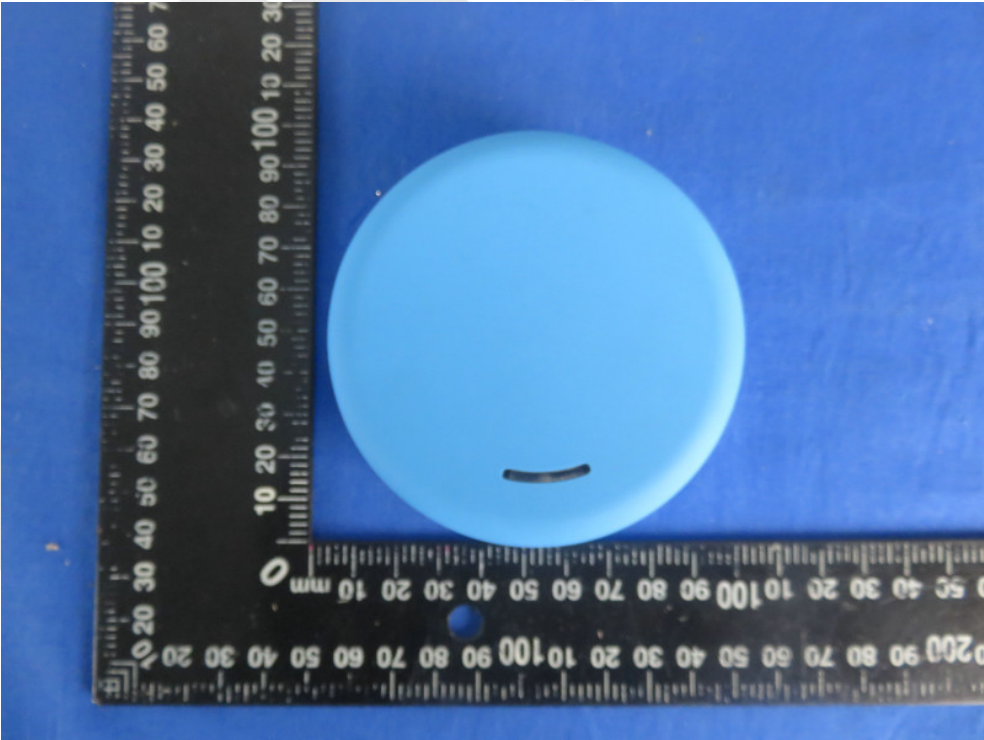
Photo of Radiation Emission Test

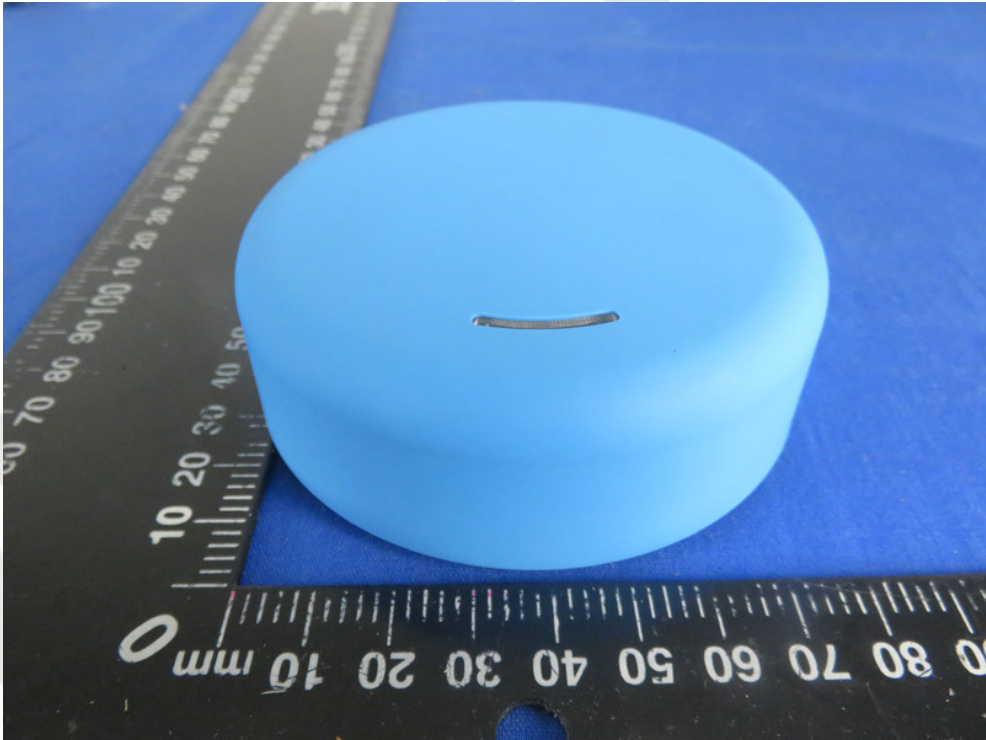
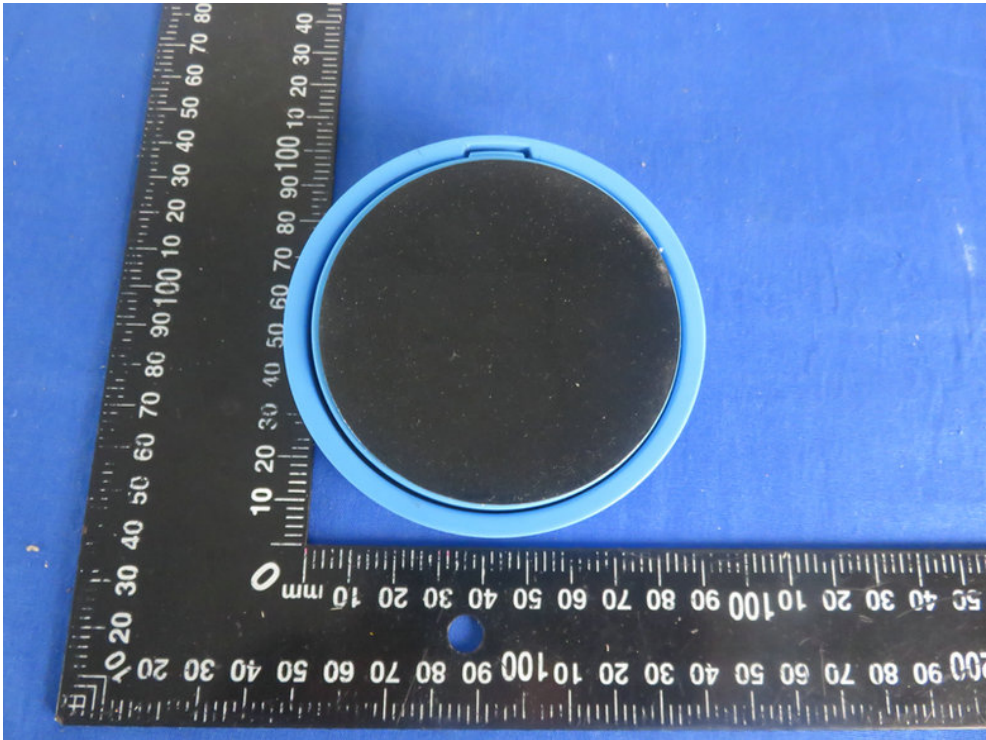


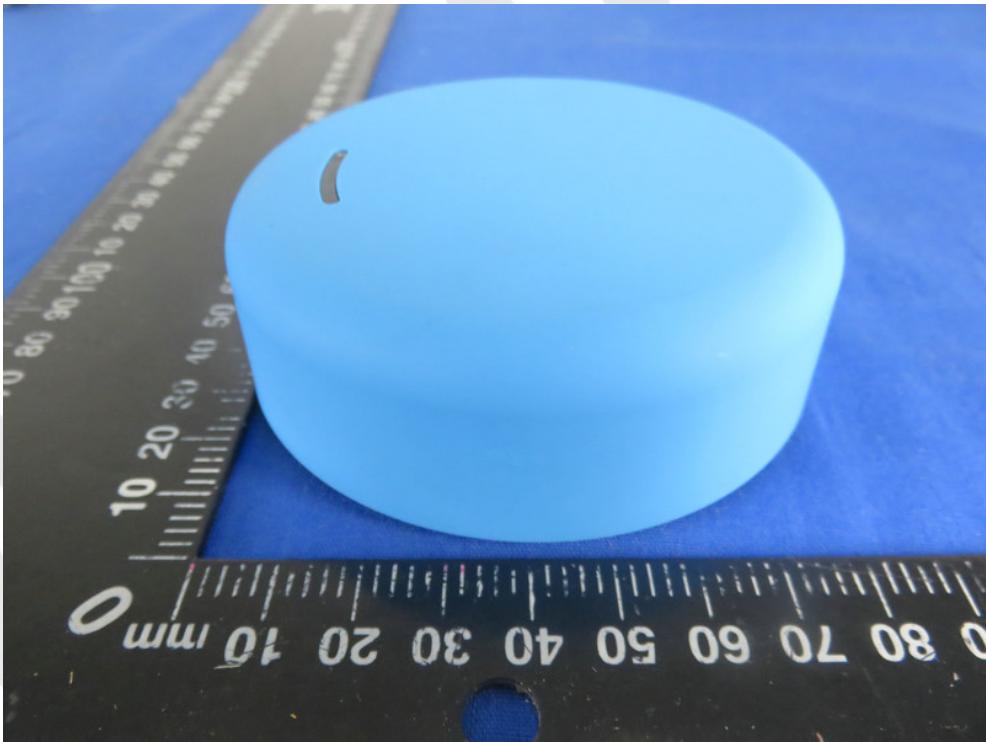
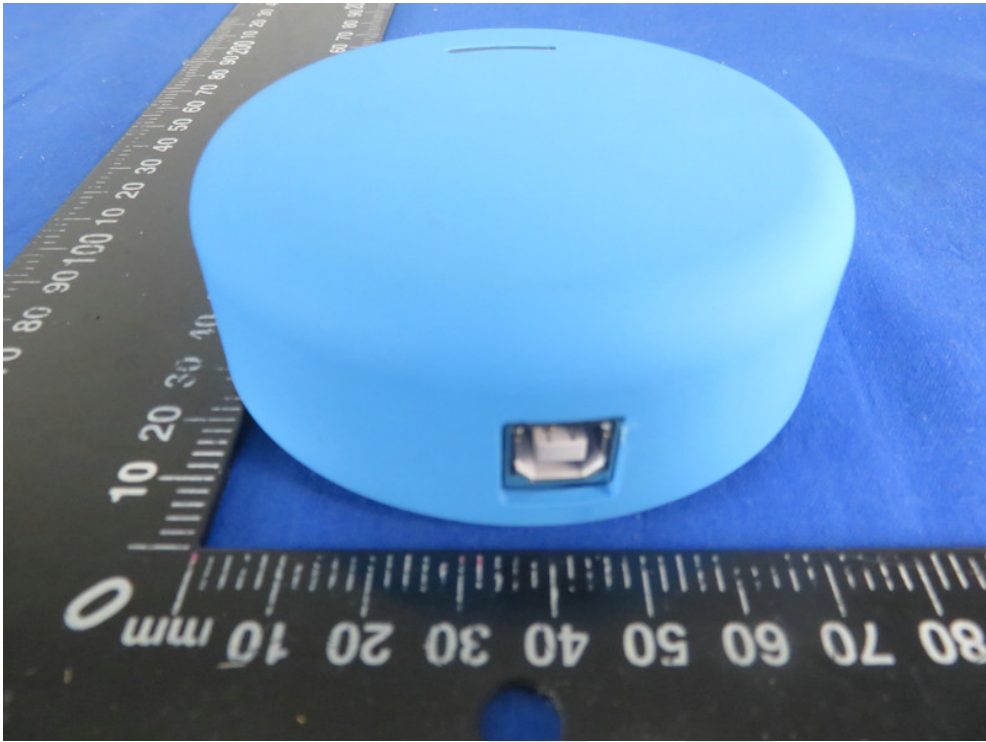


Anbotek

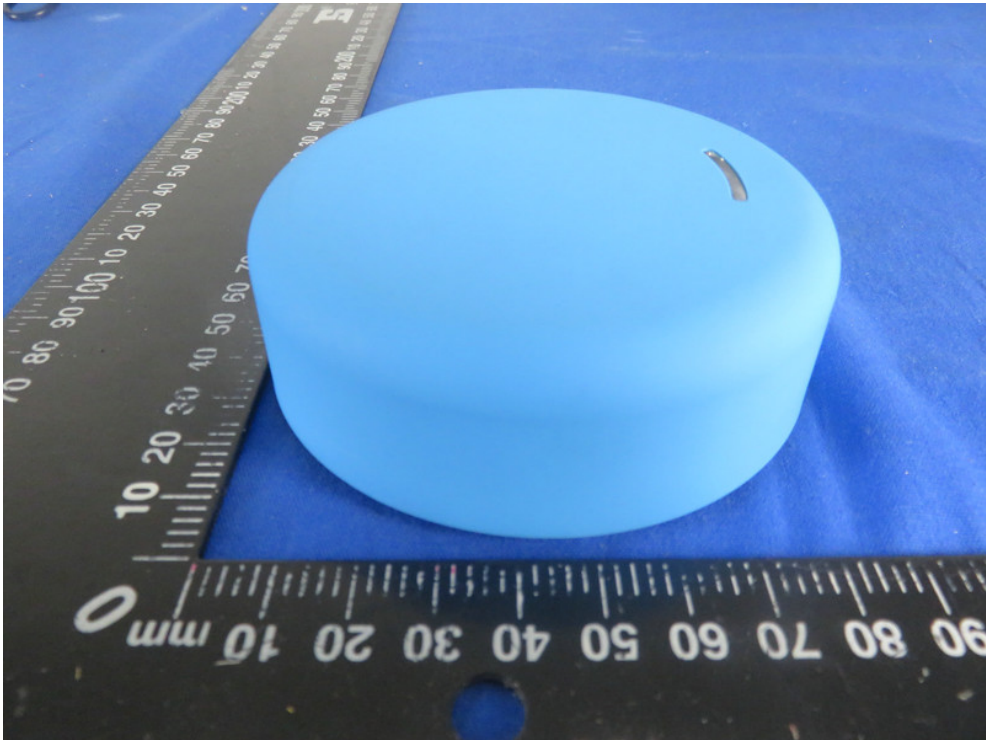
**APPENDIX II -- EXTERNAL PHOTOGRAPH**











**APPENDIX III -- INTERNAL PHOTOGRAPH**

