

FCC RADIO TEST REPORT

FCC ID: 2AHNZ-CHICPI

Product : Electric Balancing Scooter

Trade Name :  骑客 CHIC,  **CHIC**

Model Name : CHIC-Pi Max

Serial Model : CHIC-Pi

Report No. : UNIA19031308FR-01

Prepared for

Hangzhou Chic Intelligent Technology Co Ltd
Liangzhu University Science & Technology Park,Jingyi
Road,Qixianqiao,Liangzhu, Hangzhou,Zhejiang 311113 CHINA

Prepared by

Shenzhen United Testing Technology Co., Ltd.
2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd, Tiegang
Community, Xixiang Str, Bao'an District, Shenzhen, China

TEST RESULT CERTIFICATION

Applicant's name : Hangzhou Chic Intelligent Technology Co Ltd
Liangzhu University Science & Technology Park,Jingyi
Address : Road,Qixianqiao,Liangzhu, Hangzhou,Zhejiang 311113
CHINA

Manufacture's Name : Hangzhou Chic Intelligent Technology Co Ltd
Liangzhu University Science & Technology Park,Jingyi
Address : Road,Qixianqiao,Liangzhu, Hangzhou,Zhejiang 311113
CHINA

Product description

Product name : Electric Balancing Scooter

Trade Mark :  , 

Model and/or type reference : CHIC-Pi Max, CHIC-Pi

Standards : FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10: 2013

This device described above has been tested by Shenzhen United Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of UNI, this document may be altered or revised by Shenzhen United Testing Technology Co., Ltd., personnel only, and shall be noted in the revision of the document.

Date of Test

Date (s) of performance of tests : Feb. 26, 2019 ~ Mar. 14, 2019

Date of Issue : Mar. 15, 2019

Test Result : Pass

Prepared by:

Kenn Yang/Editor

Reviewer:

Sherwin Qian/Supervisor

Approved & Authorized Signer:

Liuze/Manager

Table of Contents	Page
1 . TEST SUMMARY	1
2 . GENERAL INFORMATION	1
2.1 GENERAL DESCRIPTION OF EUT	1
2.2 Carrier Frequency of Channels	1
2.3 Operation of EUT during testing	1
2.4 DESCRIPTION OF TEST SETUP	1
2.5 MEASUREMENT INSTRUMENTS LIST	1
3 . CONDUCTED EMISSIONS TEST	1
3.1 Conducted Power Line Emission Limit	10
3.2 Test Setup	10
3.3 Test Procedure	10
3.4 Test Result	10
4 RADIATED EMISSION TEST	13
4.1 Radiation Limit	13
4.2 Test Setup	13
4.3 Test Procedure	14
4.4 Test Result	14
5 BAND EDGE	20
5.1 Limits	20
5.2 Test Procedure	20
5.3 Test Result	20
6 OCCUPIED BANDWIDTH MEASUREMENT	21
6.1 Test Limit	21
6.2 Test Procedure	21
6.3 Measurement Equipment Used	21
6.4 Test Result	21
7 POWER SPECTRAL DENSITY TEST	24
7.1 Test Limit	24
7.2 Test Procedure	24
7.3 Measurement Equipment Used	24
7.4 Test Result	24
8 PEAK OUTPUT POWER TEST	27
8.1 Test Limit	27
8.2 Test Procedure	27

Table of Contents	Page
8.3 Measurement Equipment Used	27
8.4 Test Result	27
9 OUT OF BAND EMISSIONS TEST	28
9.1 Test Limit	28
9.2 Test Procedure	28
9.3 Test Setup	28
9.4 Test Result	28
10 ANTENNA REQUIREMENT	30

1. TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

DESCRIPTION OF TEST	RESULT
CONDUCTED EMISSIONS TEST	COMPLIANT
RADIATED EMISSION TEST	COMPLIANT
BAND EDGE	COMPLIANT
OCCUPIED BANDWIDTH MEASUREMENT	COMPLIANT
POWER SPECTRAL DENSITY	COMPLIANT
PEAK OUTPUT POWER	COMPLIANT
OUT OF BAND EMISSIONS	COMPLIANT
ANTENNA REQUIREMENT	COMPLIANT

1.2 TEST FACILITY

Test Firm : Shenzhen United Testing Technology Co., Ltd.

Address : 2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd, Tiegang Community, Xixiang Str, Bao'an District, Shenzhen, China

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19. The testing quality system of our laboratory meets with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

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

CNAS-LAB Code: L6494

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of testing Laboratories.

Designation Number: CN1227

Test Firm Registration Number: 674885



The 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.

1.3 MEASUREMENT UNCERTAINTY

Measurement Uncertainty	
Conducted Emission Expanded Uncertainty	= 2.23dB, k=2
Radiated emission expanded uncertainty(9kHz-30MHz)	= 3.08dB, k=2
Radiated emission expanded uncertainty(30MHz-1000MHz)	= 4.42dB, k=2
Radiated emission expanded uncertainty(Above 1GHz)	= 4.06dB, k=2

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Electric Balancing Scooter
Trade Mark	 骑客 CHIC,  CHIC
Model Name	CHIC-Pi Max
Serial No.	CHIC-Pi
Model Difference	All model's the function, software and electric circuit are the same, only difference in motor size and power (6.5 " : 250W, 10" : 300W)
FCC ID	2AHNZ-CHICPI
Antenna Type	PCB Antenna
Antenna Gain	0dBi
Frequency Range	2402 MHz to 2480 MHz
Number of Channels	4.0
Modulation Type	GFSK
Battery	N/A
Power Source	INPUT:AC 100-240V 50/60Hz 2A, OUTPUT:DC42V 1.5A DC 36V from battery
Adapter	Input: AC 100-240V, 50/60Hz, 2.0A Output: DC 42V, 1.5A

2.2 Carrier Frequency of Channels

Description of Channel:			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2442
01	2404	21	2444
02	2406	22	2446
03	2408	23	2448
04	2410	24	2450
05	2412	25	2452
06	2414	26	2454
07	2416	27	2456
08	2418	28	2458
09	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

2.3 Operation of EUT during testing

Operating Mode

The mode is used:

Transmitting mode for TX 1Mbps Mode

Low Channel: 2402MHz

Middle Channel: 2440MHz

High Channel: 2480MHz

2.4 DESCRIPTION OF TEST SETUP

Operation of EUT during Conducted testing:



Operation of EUT during Radiation and Above1GHz Radiation testing:



Table for auxiliary equipment:

Equipment Description	Manufacturer	Model	Calibration Due Date
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

2.5 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
CONDUCTED EMISSIONS TEST					
1	AMN	Schwarzbeck	NNLK8121	8121370	2019.9.9
2	AMN	ETS	3810/2	00020199	2019.9.9
3	EMI TEST RECEIVER	Rohde&Schwarz	ESCI	101210	2019.9.9
4	AAN	TESEQ	T8-Cat6	38888	2019.9.9
RADIATED EMISSION TEST					
1	Horn Antenna	Sunol	DRH-118	A101415	2019.9.29
2	BicoNILog Antenna	Sunol	JB1 Antenna	A090215	2019.9.29
3	PREAMP	HP	8449B	3008A00160	2019.9.9
4	PREAMP	HP	8447D	2944A07999	2019.9.9
5	EMI TEST RECEIVER	Rohde&Schwarz	ESR3	101891	2019.9.9
6	VECTOR Signal Generator	Rohde&Schwarz	SMU200A	101521	2019.9.28
7	Signal Generator	Agilent	E4421B	MY4335105	2019.9.28
8	MXA Signal Analyzer	Agilent	N9020A	MY50510140	2019.9.28
9	MXA Signal Analyzer	Agilent	N9020A	MY51110104	2019.9.9
10	ANT Tower&Turn table Controller	Champro	EM 1000	60764	2019.9.28
11	Anechoic Chamber	Taihe Maorui	9m*6m*6m	966A0001	2019.9.9
12	Shielding Room	Taihe Maorui	6.4m*4m*3m	643A0001	2019.9.9
13	RF Power sensor	DARE	RPR3006W	15I00041SNO88	2020.3.14
14	RF Power sensor	DARE	RPR3006W	15I00041SNO89	2020.3.14
15	RF power divider	Anritsu	K241B	992289	2019.9.28
16	Wideband radio communication tester	Rohde&Schwarz	CMW500	154987	2019.9.28
17	Biconical antenna	Schwarzbeck	VHA 9103	91032360	2019.9.8
18	Biconical antenna	Schwarzbeck	VHA 9103	91032361	2019.9.8
19	Broadband Hybrid Antennas	Schwarzbeck	VULB9163	VULB9163#958	2019.9.8
20	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1680	2020.1.12
21	Active Receive Loop Antenna	Schwarzbeck	FMZB 1919B	00023	2019.9.8
22	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170651	2020.03.14
23	Microwave Broadband Preamplifier	Schwarzbeck	BBV 9721	100472	2019.9.8
24	Active Loop Antenna	Com-Power	AL-130R	10160009	2019.05.10
25	Power Meter	KEYSIGHT	N1911A	MY50520168	2019.05.10
26	Frequency Meter	VICTOR	VC2000	997406086	2019.05.10
27	DC Power Source	HYELEC	HY5020E	055161818	2019.05.10

3. CONDUCTED EMISSIONS TEST

3.1 Conducted Power Line Emission Limit

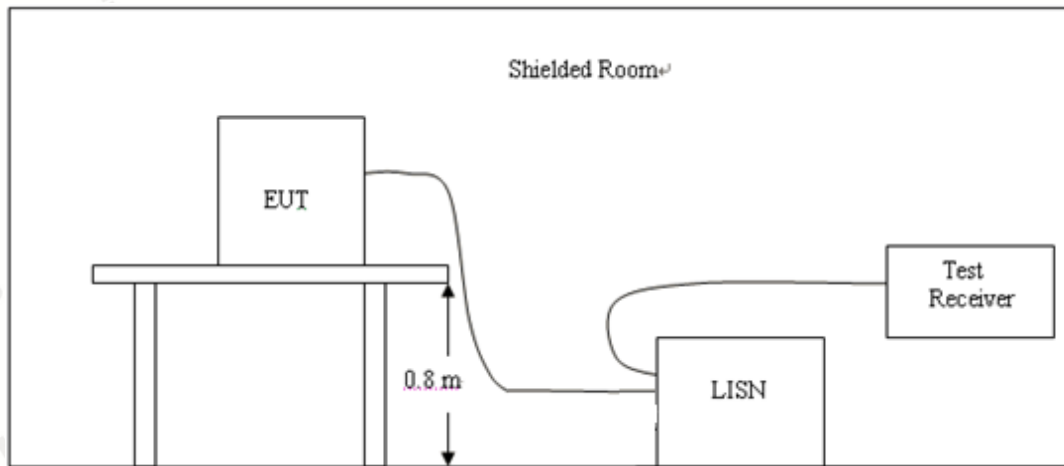
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following

Frequency (MHz)	Maximum RF Line Voltage(dB V)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15~0.50	79	66	66~56*	56~46*
0.50~5.00	73	60	56	46
5.00~30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

3.2 Test Setup



3.3 Test Procedure

- 1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. A wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2, Support equipment, if needed, was placed as per ANSI C63.10.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5, All support equipments received AC power from a second LISN, if any.
- 6, The EUT 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.

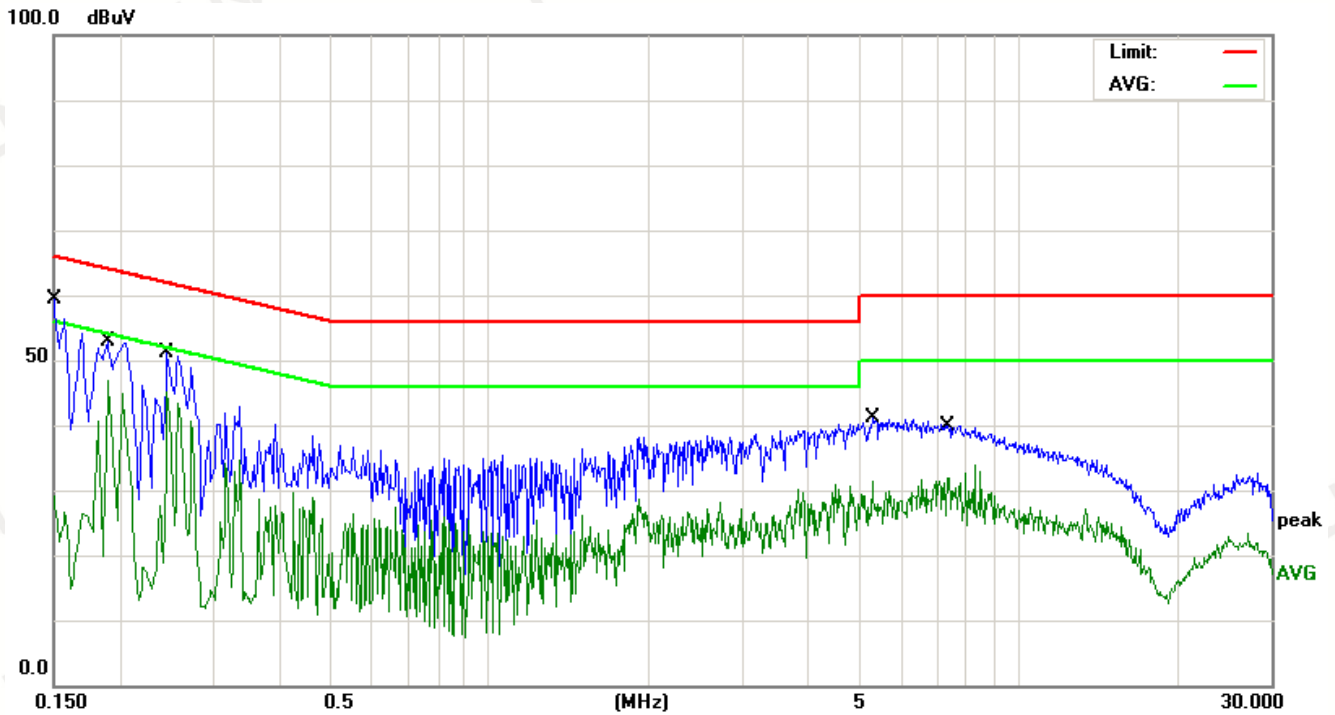
3.4 Test Result

Pass

Remark:

1. All modes were tested at AC 120V and 240V, only the worst result of AC 120V was reported.
2. All modes were tested at Low, Middle, and High channel, only the worst result of Low Channel was reported as below:

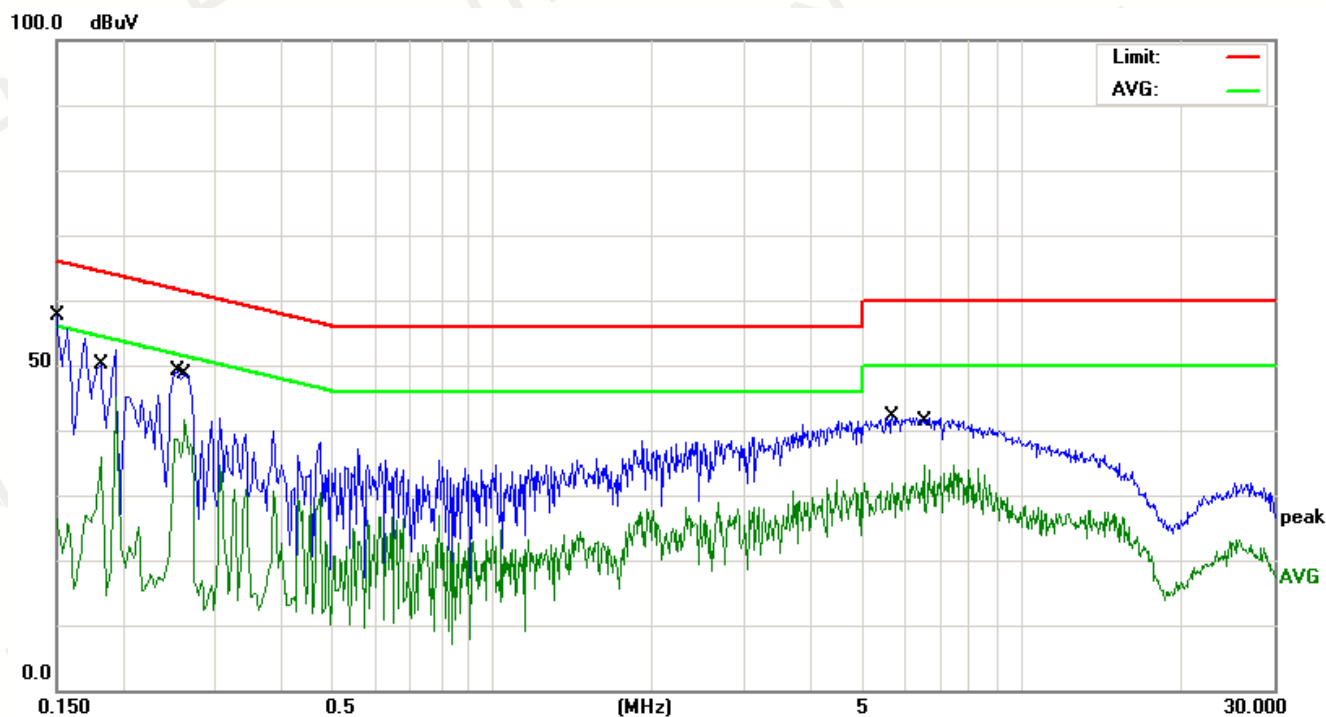
Temperature:	24°C	Relative Humidity:	48%
Test Date:	Mar. 06, 2019	Pressure:	1010hPa
Test Voltage:	AC 120V, 60Hz	Phase:	Line
Test Mode:	TX (1Mbps) CH00 (worst case)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1500	47.37	11.94	59.31	65.99	-6.68	QP
2		0.1900	35.72	11.26	46.98	54.03	-7.05	AVG
3		0.2460	40.15	10.90	51.05	61.89	-10.84	QP
4		0.2460	34.30	10.90	45.20	51.89	-6.69	AVG
5		5.3300	30.95	10.12	41.07	60.00	-18.93	QP
6		7.3900	21.75	10.18	31.93	50.00	-18.07	AVG

Remark: Factor = Insertion Loss + Cable Loss, Result = Reading + Factor, Margin = Result – Limit.

Temperature:	24°C	Relative Humidity:	48%
Test Date:	Mar. 06, 2019	Pressure:	1010hPa
Test Voltage:	AC 120V, 60Hz	Phase:	Neutral
Test Mode:	TX (1Mbps) CH00 (worst case)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1500	45.63	11.94	57.57	65.99	-8.42	QP
2		0.1819	24.60	11.36	35.96	54.39	-18.43	AVG
3		0.2540	38.15	10.88	49.03	61.62	-12.59	QP
4		0.2620	30.81	10.85	41.66	51.36	-9.70	AVG
5		5.6940	32.05	10.11	42.16	60.00	-17.84	QP
6		6.5540	24.39	10.14	34.53	50.00	-15.47	AVG

Remark: Factor = Insertion Loss + Cable Loss, Result = Reading + Factor, Margin = Result – Limit.

4 RADIATED EMISSION TEST

4.1 Radiation Limit

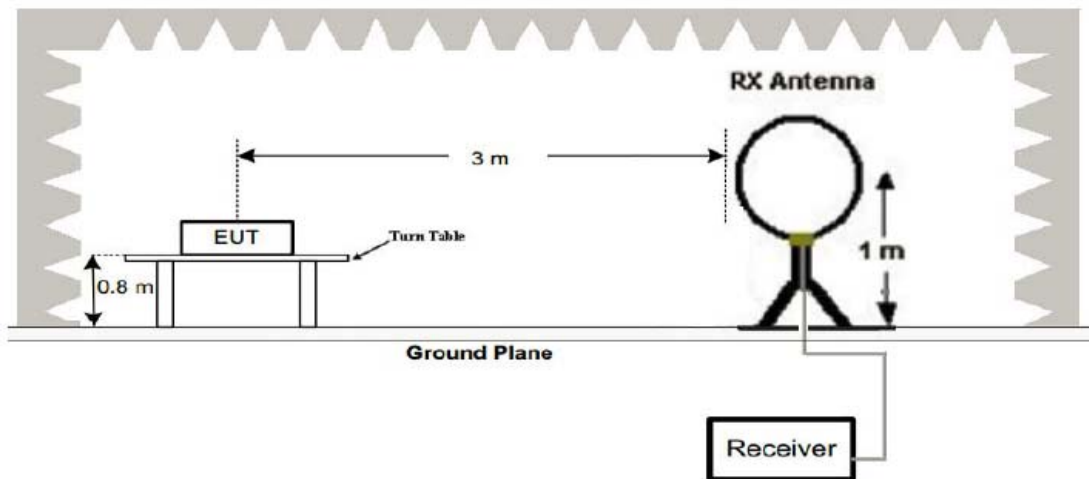
For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
30-88	3	40	100
88-216	3	43.5	150
216-960	3	46	200
Above 960	3	54	500

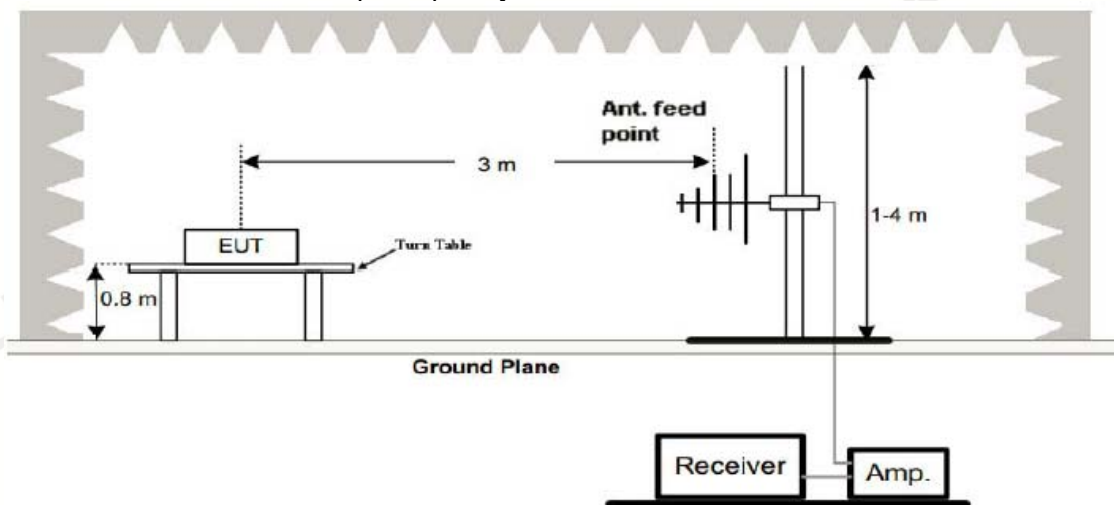
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

4.2 Test Setup

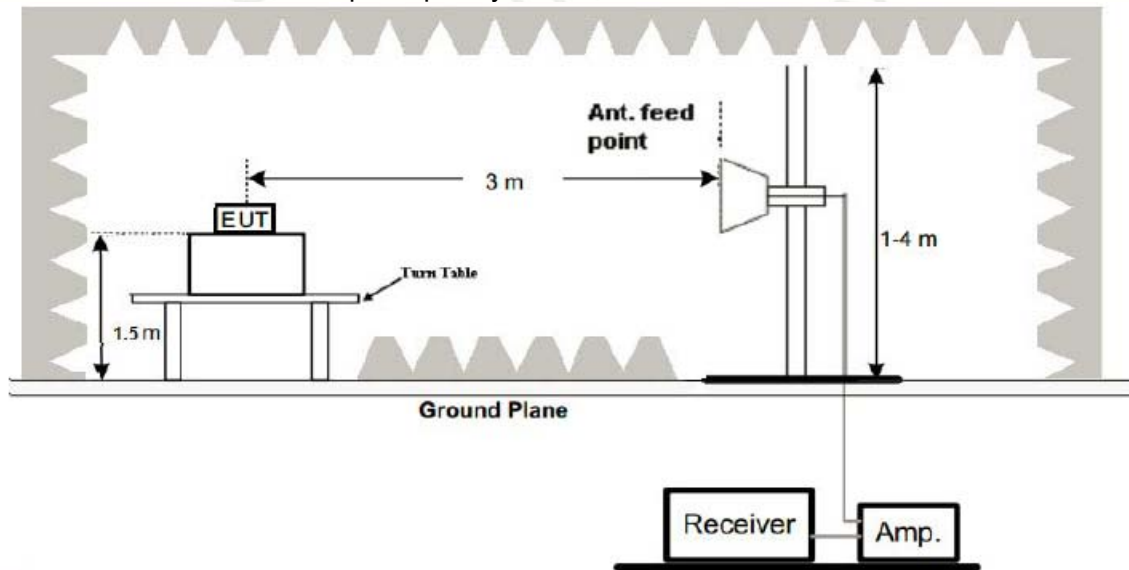
1. Radiated Emission Test-Up Frequency Below 30MHz



2. Radiated Emission Test-Up Frequency 30MHz~1GHz



3. Radiated Emission Test-Up Frequency Above 1GHz



4.3 Test Procedure

- Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
- The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Repeat above procedures until the measurements for all frequencies are complete.
- The test frequency range from 9KHz to 25GHz per FCC PART 15.33(a).

Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

4.4 Test Result

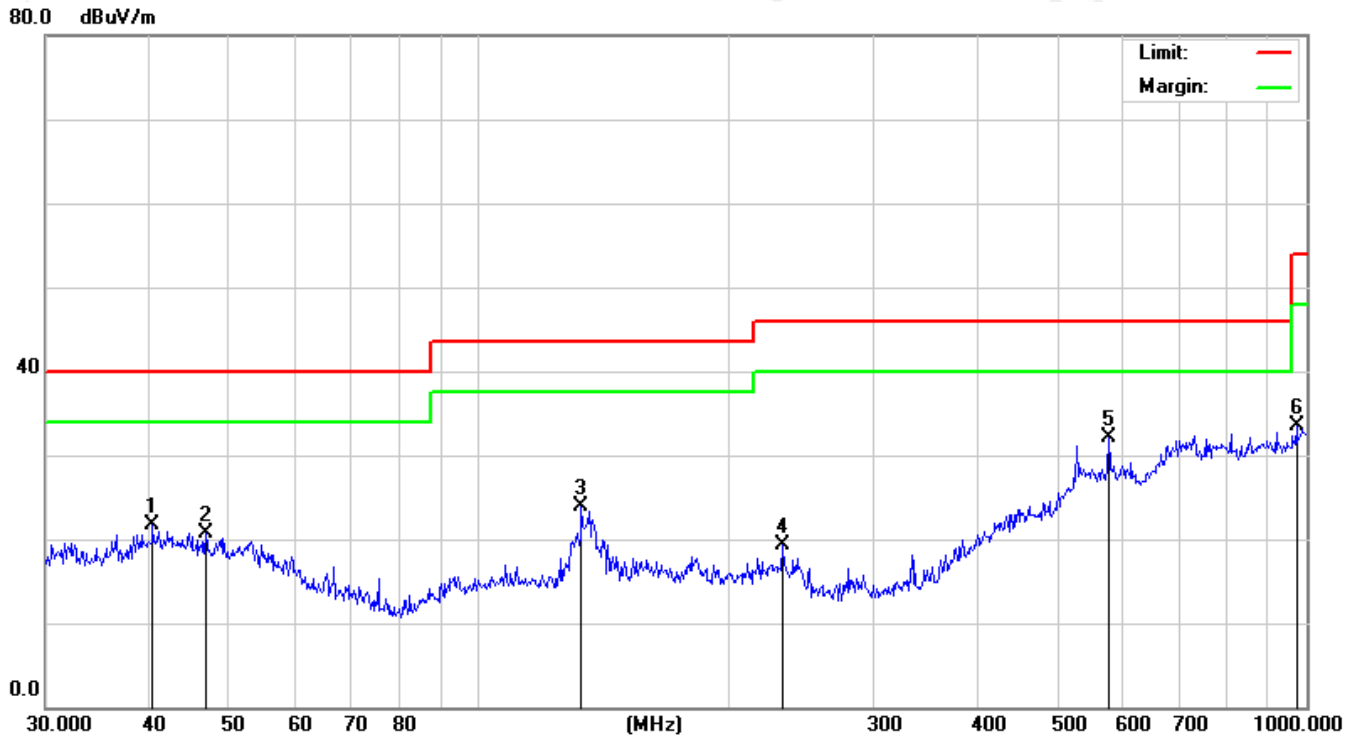
PASS

Remark:

- Only the worst result of Low Channel was reported for below 1GHz test.
- By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "Z axis" position was the worst, and test data recorded in this report.

Below 1GHz Test Results:

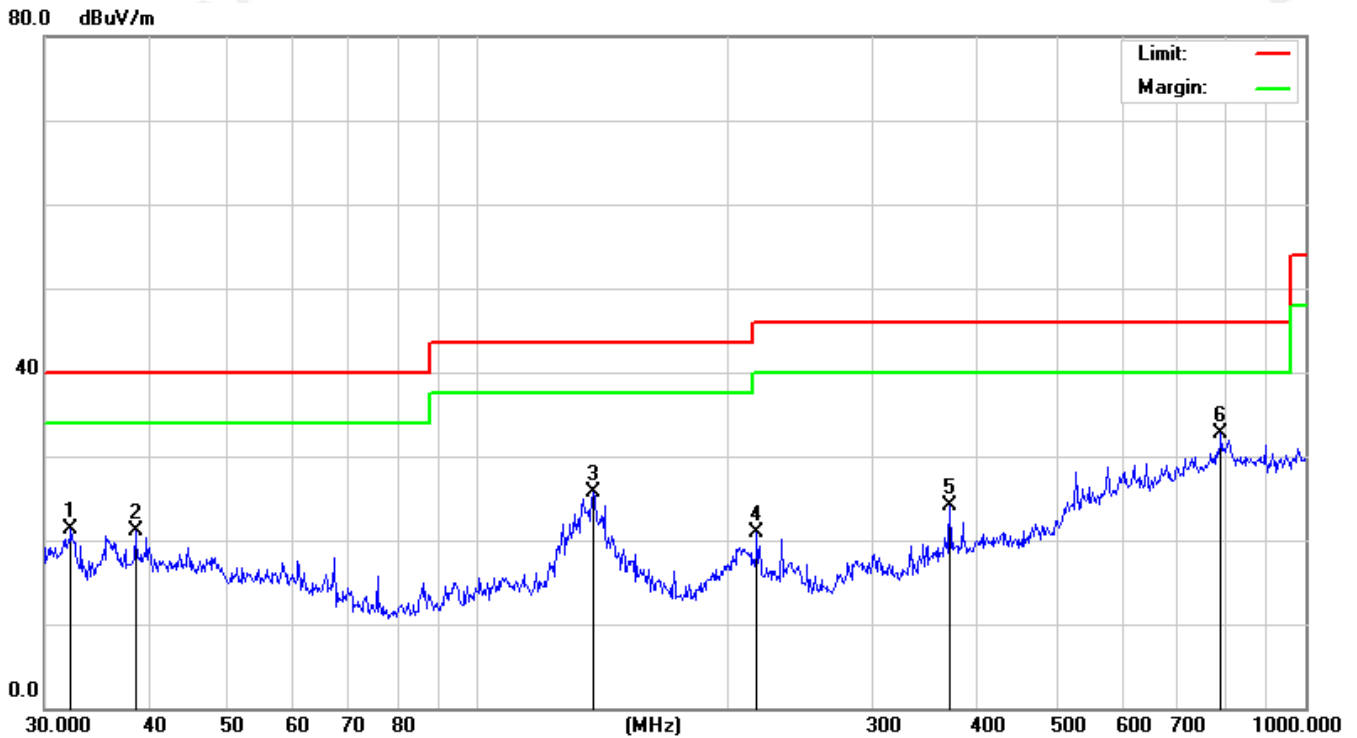
Temperature:	22°C	Relative Humidity:	48%
Test Date:	Mar. 06, 2019	Pressure:	1010hPa
Test Voltage:	AC 120V, 60Hz	Polarization:	Horizontal
Test Mode:	TX (1Mbps) CH00 (worst case)		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		40.4172	23.58	-1.89	21.69	40.00	-18.31	QP
2		46.8303	23.30	-2.65	20.65	40.00	-19.35	QP
3		133.1511	31.64	-7.76	23.88	43.50	-19.62	QP
4		232.5318	26.01	-6.71	19.30	46.00	-26.70	QP
5	*	576.6443	27.87	4.31	32.18	46.00	-13.82	QP
6		972.3374	25.33	8.25	33.58	54.00	-20.42	QP

Remark: Absolute Level = Reading Level + Factor, Margin = Absolute Level – Limit
Factor = Ant. Factor + Cable Loss – Pre-amplifier

Temperature:	22°C	Relative Humidity:	48%
Test Date:	Mar. 06, 2019	Pressure:	1010hPa
Test Voltage:	AC 120V, 60Hz	Polarization:	Vertical
Test Mode:	TX (1Mbps) CH00 (worst case)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		32.2925	26.51	-5.17	21.34	40.00	-18.66	QP
2		38.6160	25.50	-4.36	21.14	40.00	-18.86	QP
3		137.9028	33.81	-8.06	25.75	43.50	-17.75	QP
4		217.5443	26.60	-5.73	20.87	46.00	-25.13	QP
5		372.0045	28.30	-4.28	24.02	46.00	-21.98	QP
6	*	790.6188	25.11	7.69	32.80	46.00	-13.20	QP

Remark: Absolute Level = Reading Level + Factor, Margin = Absolute Level – Limit
Factor = Ant. Factor + Cable Loss – Pre-amplifier

Remark:

- (1) Measuring frequencies from 9 KHz to the 1 GHz, Radiated emission test from 9KHz to 30MHz was verified, and no any emission was found except system noise floor.
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

Above 1 GHz Test Results:

CH Low of 2402MHz

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
4804	51.28	5.06	56.34	74	-17.66	PK
4804	40.65	5.06	45.71	54	-8.29	AV
7206	42.33	7.03	49.36	74	-24.64	PK
7206	30.17	7.03	37.2	54	-16.80	AV

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
4804	51.63	5.06	56.69	74	-17.31	PK
4804	40.14	5.06	45.2	54	-8.8	AV
7206	42.37	7.03	49.4	74	-24.6	PK
7206	31.09	7.03	38.12	54	-15.88	AV

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit

CH Middle of 2440MHz

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
4880	52.87	5.14	58.01	74	-15.99	PK
4880	41.54	5.14	46.68	54	-7.32	AV
7320	43.16	7.52	50.68	74	-23.32	PK
7320	31.97	7.52	39.49	54	-14.51	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit						

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
4880	50.16	5.14	55.3	74	-18.7	PK
4880	38.55	5.14	43.69	54	-10.31	AV
7320	41.47	7.52	48.99	74	-25.01	PK
7320	30.42	7.52	37.94	54	-16.06	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit						

CH High of 2480MHz

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
4960	51.97	5.22	57.19	74	-16.81	PK
4960	40.73	5.22	45.95	54	-8.05	AV
7440	42.36	8.06	50.42	74	-23.58	PK
7440	32.02	8.06	40.08	54	-13.92	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit						

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
4960	51.78	5.22	57	74	-17	PK
4960	41.52	5.22	46.74	54	-7.26	AV
7440	42.29	8.06	50.35	74	-23.65	PK
7440	30.55	8.06	38.61	54	-15.39	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit						

Remark :

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" 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.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

5.1 Limits

15.209 15.205.

5.2 Test Procedure

RBW 1MHz VBW 3MHz PK detector is for PK value , RMS detector is for AV value.

5.3 Test Result

PASS

Operation Mode: TX 1Mbps Mode

Test Mode	Ant.Pol. H/V	Freq. (MHz)	Reading		Ant/CF CF(dB)	Act		Limit	
			Peak (dBuv)	AV (dBuv)		Peak (dBuv/m)	AV (dBuv/m)	Peak (dBuv/m)	AV (dBuv/m)
TX Data rate 1Mbps	H	2390.00	41.74	30.61	-5.79	35.95	24.82	74.00	54.00
	V	2390.00	40.27	28.94	-5.79	34.48	23.15	74.00	54.00
	H	2483.50	42.36	31.23	-4.98	37.38	26.25	74.00	54.00
	V	2483.50	41.55	31.41	-4.98	36.57	26.43	74.00	54.00

6 OCCUPIED BANDWIDTH MEASUREMENT

6.1 Test Limit

FCC Part15(15.247), Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

6.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation.
3. Based on FCC Part15 C Section 15.247: RBW=100KHz, VBW=300KHz.
4. The useful radiated emission from the EUT was detected by the spectrum analyzer with peak detector.

6.3 Measurement Equipment Used

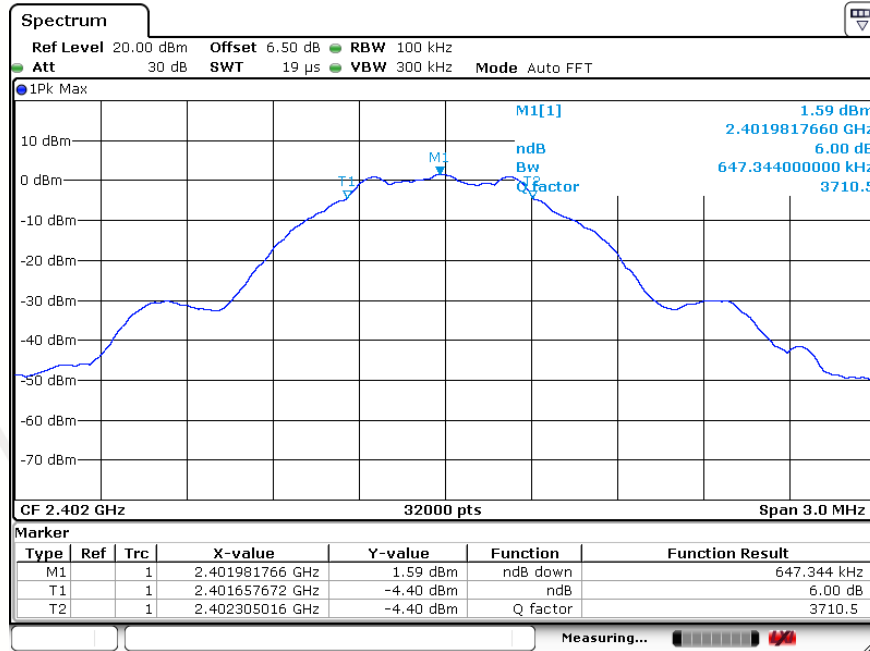
Same as Radiated Emission Measurement

6.4 Test Result

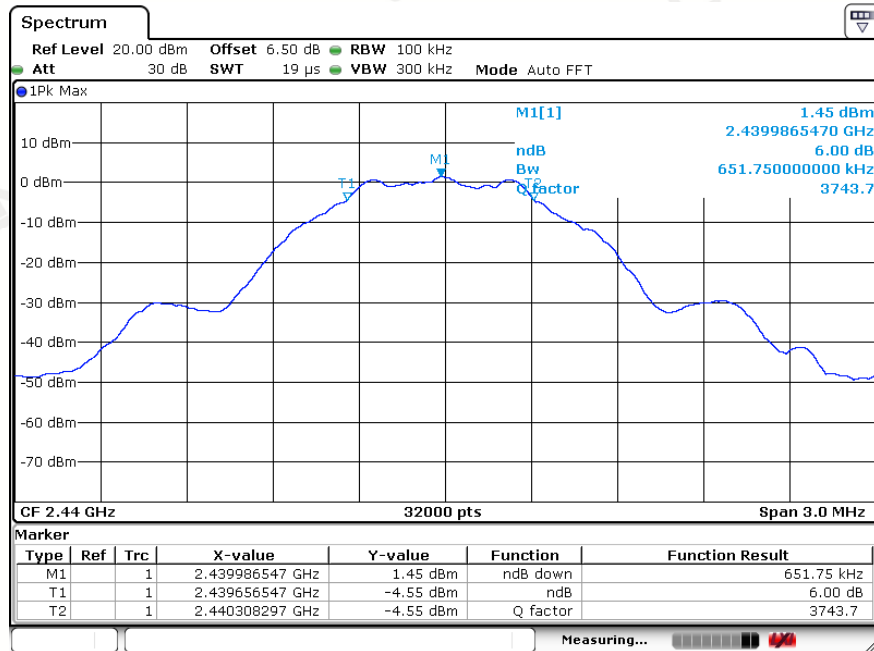
PASS

TX 1Mbps Mode			
Frequency (MHz)	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2402	0.64734	>=500KHz	PASS
2440	0.65175	>=500KHz	PASS
2480	0.65775	>=500KHz	PASS

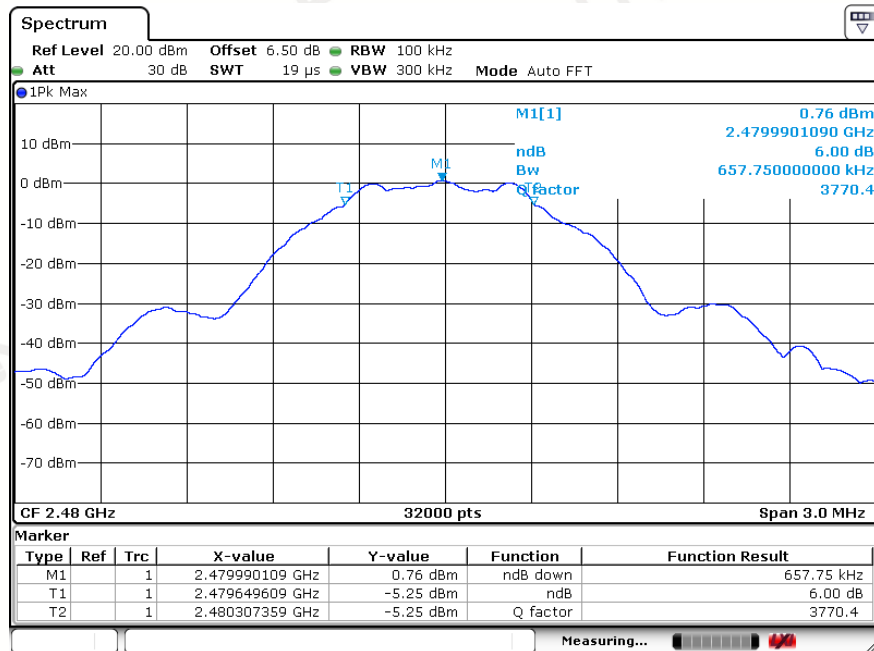
CH: 2402MHz



CH: 2440MHz



CH: 2480MHz



7 POWER SPECTRAL DENSITY TEST

7.1 Test Limit

FCC Part15(15.247), Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

7.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation.
3. Based on FCC Part15 C Section 15.247: RBW=3KHz, VBW=10KHz.
4. The useful radiated emission from the EUT was detected by the spectrum analyzer with peak detector.

7.3 Measurement Equipment Used

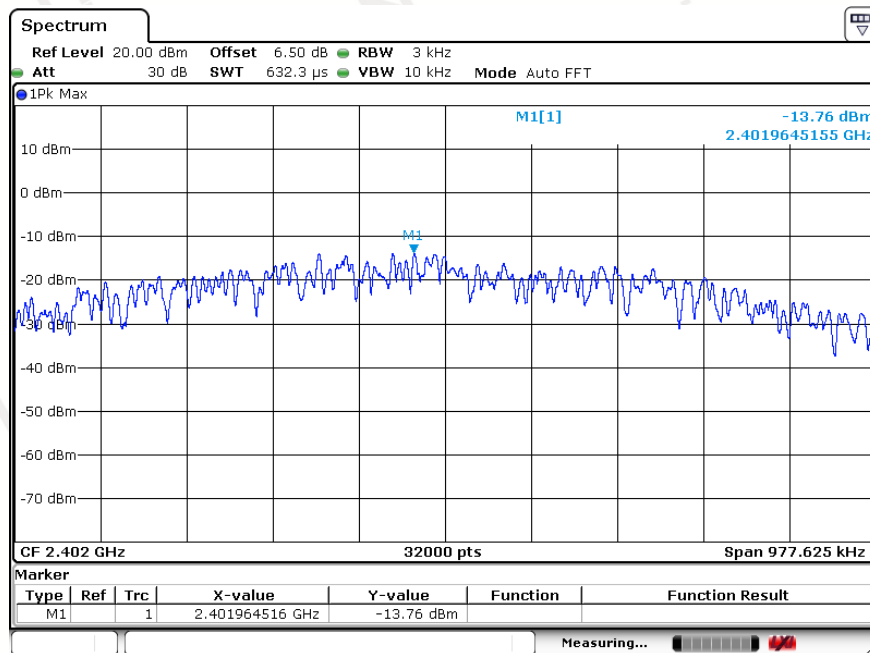
Same as Radiated Emission Measurement

7.4 Test Result

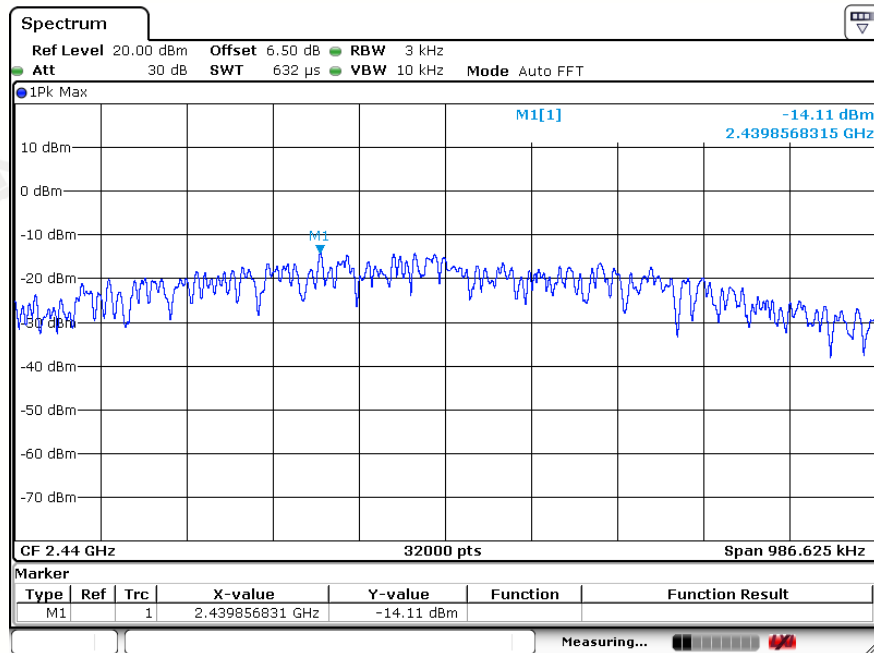
PASS

TX 1Mbps Mode			
Frequency (MHz)	Power Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
2402	-13.76	8	PASS
2440	-14.11	8	PASS
2480	-14.55	8	PASS

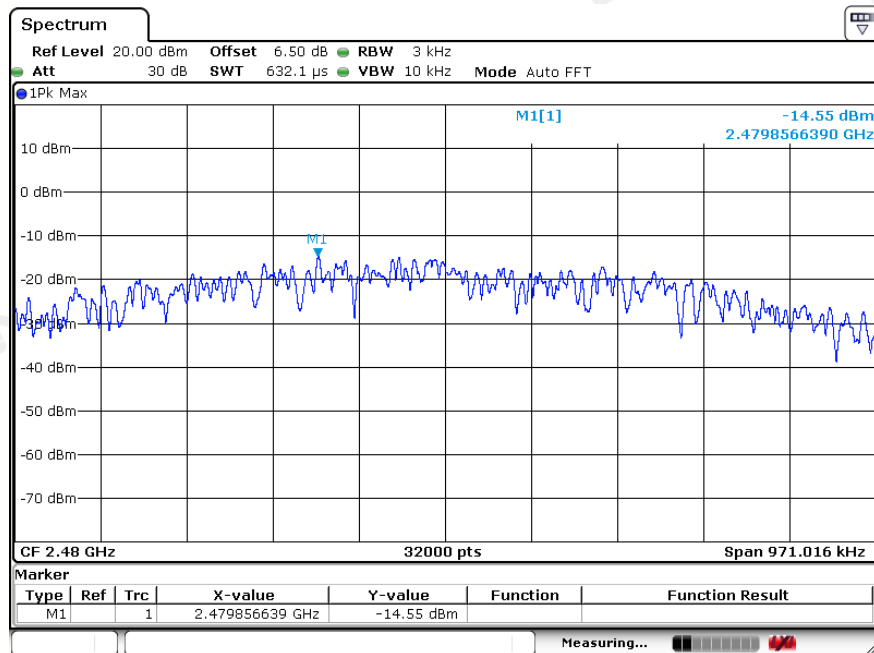
CH: 2402MHz



CH: 2440MHz



CH: 2480MHz



8 PEAK OUTPUT POWER TEST

8.1 Test Limit

FCC Part15(15.247), Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

8.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The EUT was directly connected to the Power meter.

8.3 Measurement Equipment Used

Same as Radiated Emission Measurement

8.4 Test Result

PASS

All the test modes completed for test.

TX 1Mbps Mode			
Test	Frequency	Maximum Peak Conducted Output Power	LIMIT
Channel	(MHz)	(dBm)	(dBm)
LOW	2402	1.61	30
MID	2440	1.44	30
HIGH	2480	0.77	30

9 OUT OF BAND EMISSIONS TEST

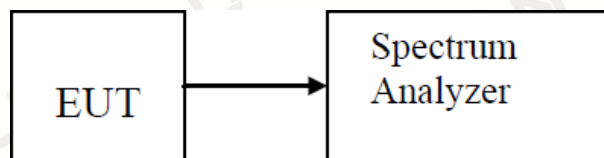
9.1 Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

9.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as TX operation and connect directly to the spectrum analyzer.
3. Based on FCC Part15 C Section 15.247: RBW=100KHz, VBW=300KHz.
4. Set detected by the spectrum analyzer with peak detector.

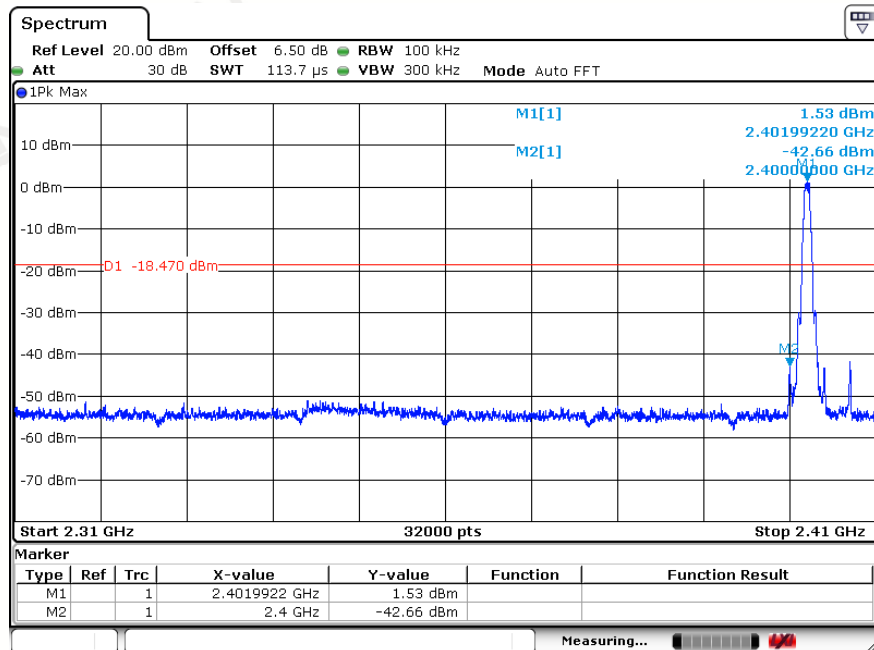
9.3 Test Setup



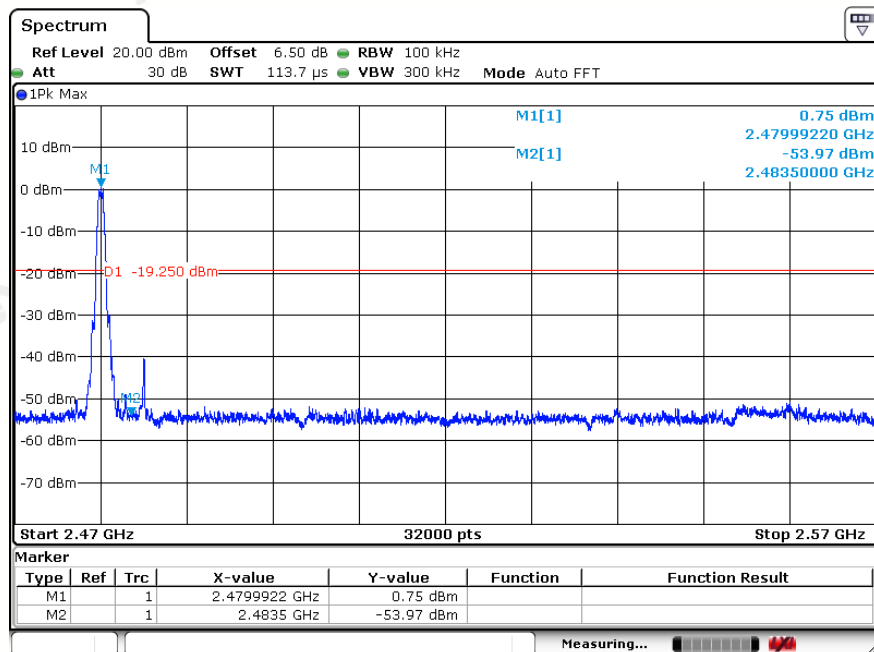
9.4 Test Result

PASS

CH: 2402MHz



CH: 2480MHz



10 ANTENNA REQUIREMENT

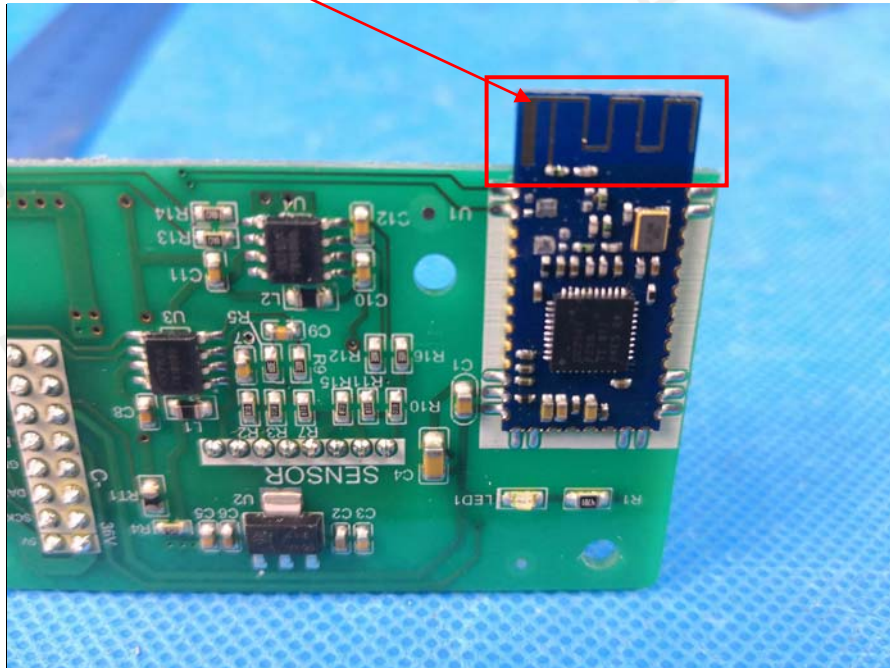
Standard Applicable:

For intentional device, according to FCC 47 CFR Section 15.203, 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.

Antenna Connected Construction

The antenna used in this product is an Integration Antenna, The directional gains of antenna used for transmitting is 0dBi.

ANTENNA:



End of Report