RADIO TEST REPORT

Report No:1707109W01

Issued for

INTERACTIF VISUEL SYSTEME

19, RUE KLOCK , 92110 CLICHY, FRANCE

Product Name:	Eyeruler 2
Brand Name:	ACTIVISU
Model Name:	EXP000100ER
Series Model:	ER2-000100
FCC ID:	2ACTDEXP
Test Standard:	FCC Part 15.247

BZT Testing Technology Co., Ltd

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TEST RESULT CERTIFICATION

Applicant's name ..... :	INTERACTIF VISUEL SYSTEME
Address ..... :	19, RUE KLOCK , 92110 CLICHY, FRANCE
Manufacture's Name ..... :	SHANGHAI LIANKAI MACHINERY CO., LTD
Address ..... :	N°528, ZIDONG ROAD, MINHANG DISTRICT, SHANGHAI,CHINA

Product description

Product name ..... :	Eyeruler 2
Model and/or type reference :	EXP000100ER
Series Model ..... :	ER2-000100
Standards ..... :	FCC Part15.247
Test procedure	ANSI C63.10-2013

This device described above has been tested by BZT, 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.
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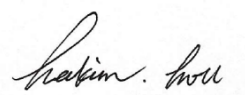
Date of Test ..... :	
Date (s) of performance of tests ..... :	11 July. 2017 ~13 July. 2017
Date of Issue ..... :	17 July. 2017
Test Result ..... :	**Pass**

Testing Engineer : 

(Sean she)

Technical Manager : 

(Hakim.hou)

Authorized Signatory : 

(Vita Li)

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	17 July. 2017	1707109W01	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
KDB 558074 D01 DTS Meas Guidance v04

FCC Part 15.247,Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.247 (a)(2)	6dB Bandwidth	PASS	--
15.247 (b)(3)	Output Power	PASS	--
15.247 (c)	Radiated Spurious Emission	PASS	--
15.247 (d)	Conducted Spurious & Band Edge Emission	PASS	--
15.247 (e)	Power Spectral Density	PASS	--
15.205	Restricted Band Edge Emission	PASS	--
Part 15.247(d)/part 15.209(a)	Band Edge Emission	PASS	--
15.203	Antenna Requirement	PASS	--

NOTE:

(1) ”N/A” denotes test is not applicable in this Test Report

(2) All tests are according to ANSI C63.10-2013

1.1 TEST FACTORY

BZT Testing Technology Co., Ltd.
Add. : Buliding 17, Xinghua Road Xingwei industrial Park Fuyong,
Baoan District, Shenzhen, Guangdong, China
FCC Registration No.: 701733

1.2 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** %。

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	±2.88dB
2	Conducted Emission (150KHz-30MHz)	±2.67dB
3	RF power,conducted	±0.70dB
4	Spurious emissions,conducted	±1.19dB
5	All emissions,radiated(<30M) (9KHz-30MHz)	±2.45dB
6	All emissions,radiated(<1G) 30MHz-200MHz	±2.83dB
7	All emissions,radiated(<1G) 200MHz-1000MHz	±2.94dB
8	All emissions,radiated(>1G)	±3.03dB
9	Temperature	±0.5°C
10	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Eyeruler 2</td></tr>
<tr><td>Trade Name</td><td>ACTIVISU</td></tr>
<tr><td>Model Name</td><td>EXP000100ER</td></tr>
<tr><td>Series Model</td><td>ER2-000100</td></tr>
<tr><td>Model Difference</td><td>Only different in model name.</td></tr>
<tr><td>Product Description</td><td>The EUT is a Eyeruler 2<table><tr><td>Operation Frequency:</td><td>2402~2480 MHz</td></tr><tr><td>Modulation Type:</td><td>GFSK</td></tr><tr><td>Radio Technology</td><td>BLE</td></tr><tr><td>Number Of Channel</td><td>40</td></tr><tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr><tr><td>Antenna Gain (dBi)</td><td>0.5 dbi</td></tr></table></td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Adapter</td><td>Input: AC100-240V, 0.5A, 50/60 Hz
Output: USB 1: 5V, 2.4A
USB2: 5V, 1A
USB1+USB2: 5V, 2.4AMAX</td></tr>
<tr><td>Battery</td><td>Rated Voltage: 3.7V
capacity :1150mAh</td></tr>
<tr><td>Hardware version number</td><td>V1.0</td></tr>
<tr><td>Software version number</td><td>V3.0</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2.

Channel List							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2402	11	2422	21	2442	31	2462
02	2404	12	2424	22	2444	32	2464
03	2406	13	2426	23	2446	33	2466
04	2408	14	2428	24	2448	34	2468
05	2410	15	2430	25	2450	35	2470
06	2412	16	2432	26	2452	36	2472
07	2414	17	2434	27	2454	37	2474
08	2416	18	2436	28	2456	38	2476
09	2418	19	2438	29	2458	39	2478
10	2420	20	2440	30	2460	40	2480

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	ACTIVISU	EXP000100ER	PCB Antenna	N/A	0.5	BT 4.0 ANT

2.2 DESCRIPTION OF TEST MODES

For conducted test items and radiated spurious emissions
Each of these EUT operation mode(s) or test configuration mode(s) mentioned below was evaluated respectively..

Worst Mode	Description	Data/Modulation
Mode 1	TX CH1(2402MHz)	1 MHz/GFSK
Mode 2	TX CH20(2440MHz)	1 MHz/GFSK
Mode 3	TX CH40(2480MHz)	1 MHz/GFSK

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

(2) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation.

(3) The EUT was programmed to be in continuously transmitting with a modulated carrier at maximum power on bottom/middle/top channels as required using the supported data rates/modulation types and the transmit duty cycle is not less than 98%.

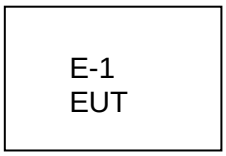
(4) Controlled using a bespoke application on the laptop PC supplied by the customer. The application was used to enable a continuous transmission mode and to select the test channels, data rates and modulation schemes as required.

For AC Conducted Emission

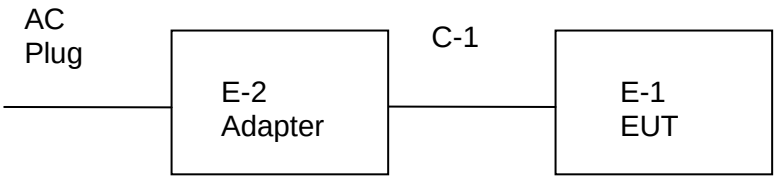
Test Case	
AC Conducted Emission	Mode 4 : Keeping BT TX

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
E-1	Eyeruler 2	ACTIVISU	EXP000100ER	N/A	EUT
E-2	Adapter	N/A	TS-C068	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
C-1	USB Cable shielded line (Charging)	NO	100cm	N/A

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Spectrum Analyzer	Agilent	E4407B	MY50140340	2017.3.11	2018.3.10
Test Receiver	R&S	ESCI	101427	2016.10.23	2017.10.22
Bilog Antenna	TESEQ	CBL6111D	34678	2017.03.24	2018.03.23
Horn Antenna	Schwarzbeck	BBHA 9120D(1201)	9120D-1343	2017.03.06	2018.03.05
Horn Antenna	Schwarzbeck	BBHA 9170	9170-0741	2017.05.02	2018.05.01
PreAmplifier	Agilent	8449B	60538	2016.10.23	2017.10.22
Loop Antenna	EMCO	6502	9003-2485	N/A	N/A
Low frequency cable	EM	R01	N/A	2017.03.12	2018.03.11
Low frequency cable	EM	R06	N/A	2017.03.12	2018.03.11
High frequency cable	SCHWARZBECK	AK9515H	SN-96286/96287	2017.03.12	2018.03.11
Semi-anechoic chamber	Changling	966	N/A	2016.10.23	2017.10.22

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESCI	101427	2016.10.23	2017.10.22
LISN	R&S	ENV216	101242	2016.10.26	2017.10.25
LISN	EMCO	3810/2NM	000-23625	2016.10.26	2017.10.25
Conduction Cable	EM	C01	N/A	2017.03.12	2018.03.11
Shielding Room	Changling	854	N/A	2016.10.23	2017.10.22

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2016.10.23	2017.10.22
Spectrum Analyzer	Agilent	E4407B	MY50140340	2017.03.11	2018.03.10
Signal Analyzer	Agilent	N9020A	MY49100060	2016.10.23	2017.10.22

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

operating frequency band. In case the emission fall within the restricted band specified on Part 207(a) limit in the table below has to be followed.

FREQUENCY (MHz)	Conducted Emission limit (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

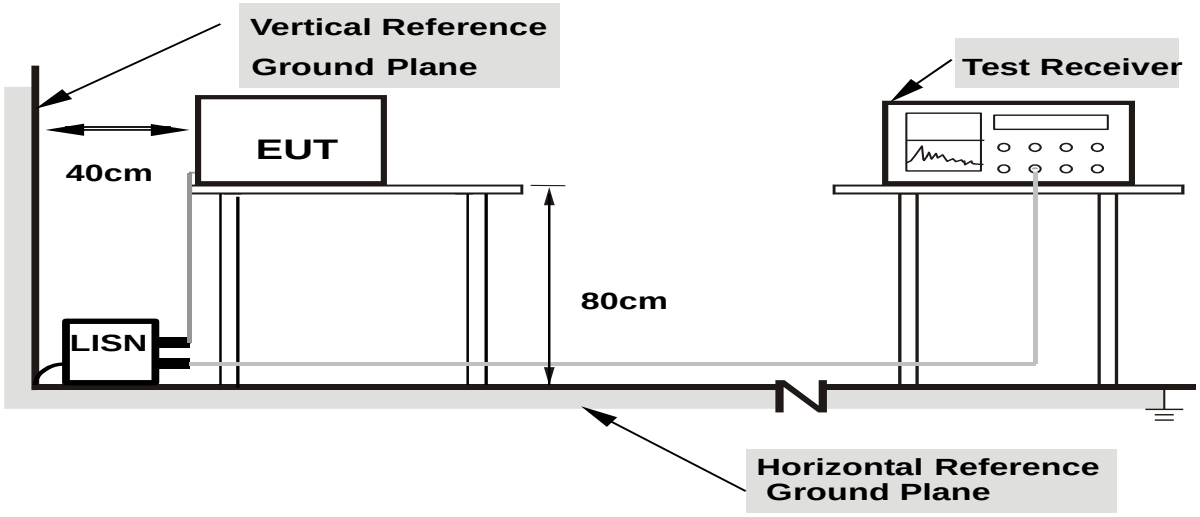
The following table is the setting of the receiver

Receiver Parameters	**Setting**
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.2 TEST PROCEDURE

a. The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.4 EUT OPERATING CONDITIONS

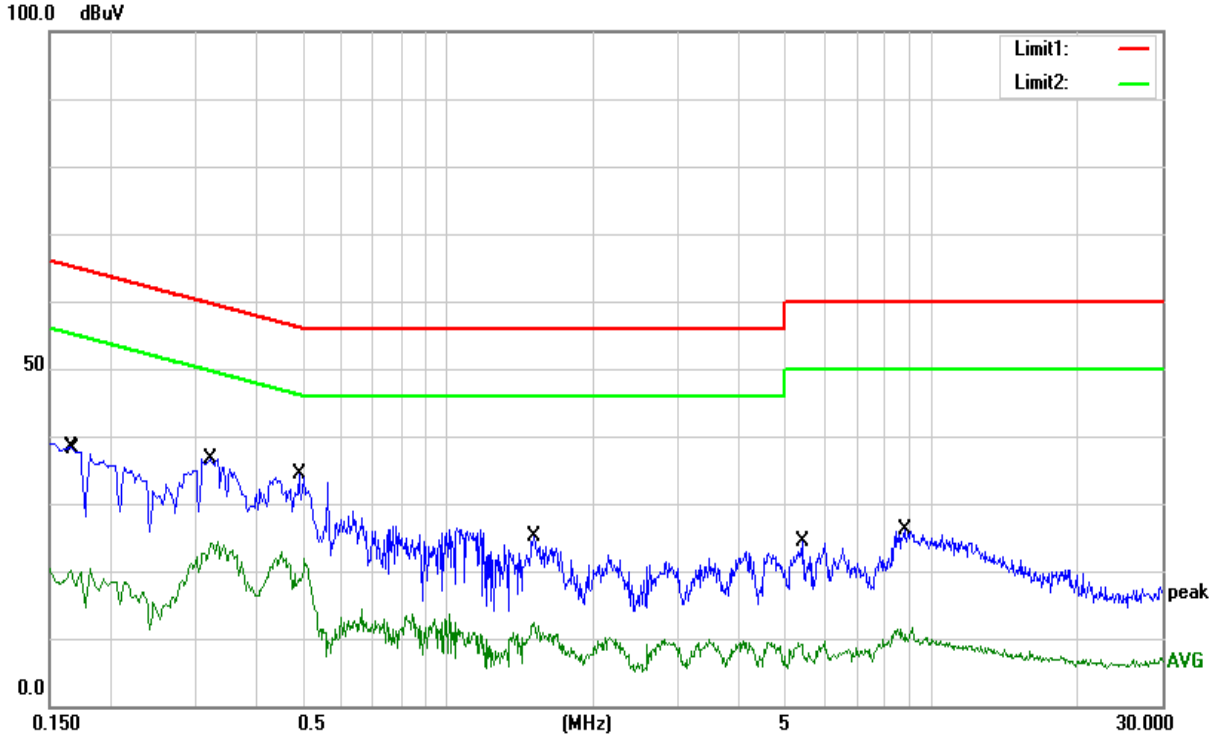
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.5 TEST RESULTS

Temperature:	25.4 ℃	Relative Humidity:	61%
Pressure:	1010hPa	Phase:	L
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 4

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1677	28.23	9.79	38.02	65.07	-27.05	QP
0.1685	8.91	9.79	18.70	55.03	-36.33	AVG
0.3220	26.50	10.18	36.68	59.66	-22.98	QP
0.3260	14.02	10.18	24.20	49.55	-25.35	AVG
0.4940	24.39	10.03	34.42	56.10	-21.68	QP
0.4980	8.48	10.03	18.51	46.03	-27.52	AVG
1.5060	15.34	9.79	25.13	56.00	-30.87	QP
1.5260	1.67	9.79	11.46	46.00	-34.54	AVG
5.4460	14.57	9.85	24.42	60.00	-35.58	QP
5.5020	-2.70	9.86	7.16	50.00	-42.84	AVG
8.8100	16.12	10.08	26.20	60.00	-33.80	QP
8.8420	-0.38	10.08	9.70	50.00	-40.30	AVG

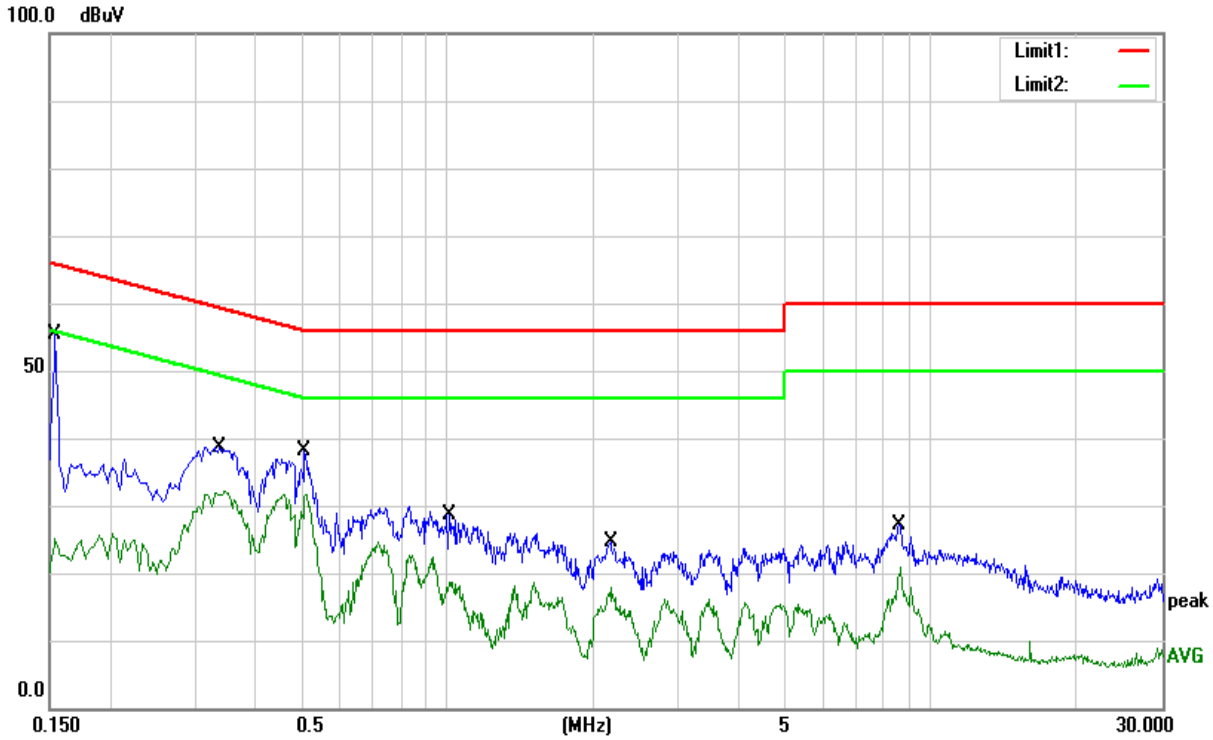
Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	25.4 ℃	Relative Humidity:	61%
Pressure:	1010hPa	Phase:	N
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 4

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1540	45.53	9.79	55.32	65.78	-10.46	QP
0.1540	14.38	9.79	24.17	55.78	-31.61	AVG
0.3380	28.59	10.15	38.74	59.25	-20.51	QP
0.3380	21.57	10.15	31.72	49.25	-17.53	AVG
0.5060	28.07	10.02	38.09	56.00	-17.91	QP
0.5060	21.59	10.02	31.61	46.00	-14.39	AVG
1.0060	18.94	9.80	28.74	56.00	-27.26	QP
1.0060	8.89	9.80	18.69	46.00	-27.31	AVG
2.1700	14.89	9.79	24.68	56.00	-31.32	QP
2.1700	6.11	9.79	15.90	46.00	-30.10	AVG
8.5900	17.06	10.05	27.11	60.00	-32.89	QP
8.5900	8.38	10.05	18.43	50.00	-31.57	AVG

Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMITS

in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (Frequency Range 9kHz-1000MHz)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier hamonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 3 MHz

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 to 2403 MHz Upper Band Edge: 2479 to 2500 MHz
RB / VB (emission in restricted band)	1 MHz / 3 MHz

Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.2 TEST PROCEDURE

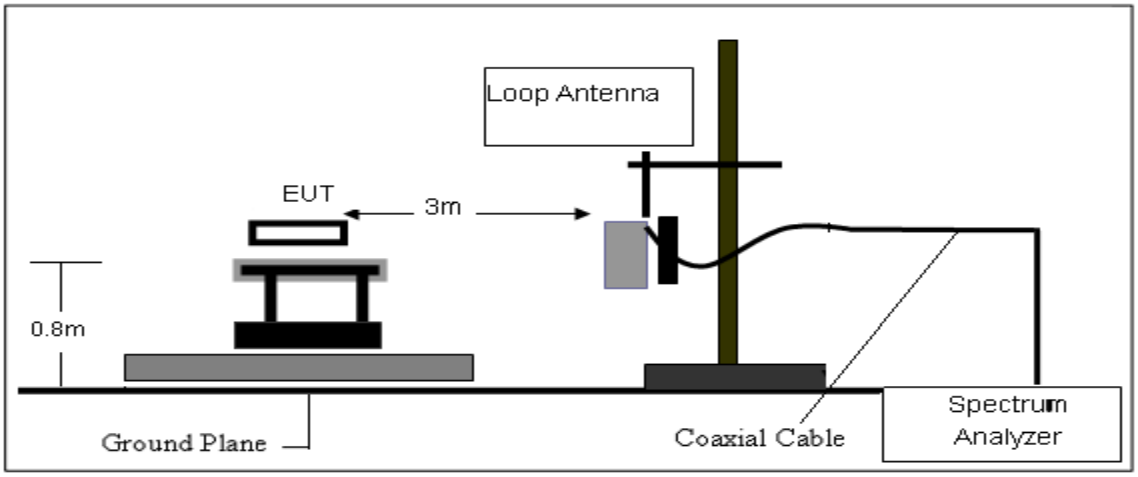
a. The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
b. The EUT was placed on the top of a rotating table 0.8 meters(above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment shall be 0.8 m(above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarizations of the antenna are set to make the measurement
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

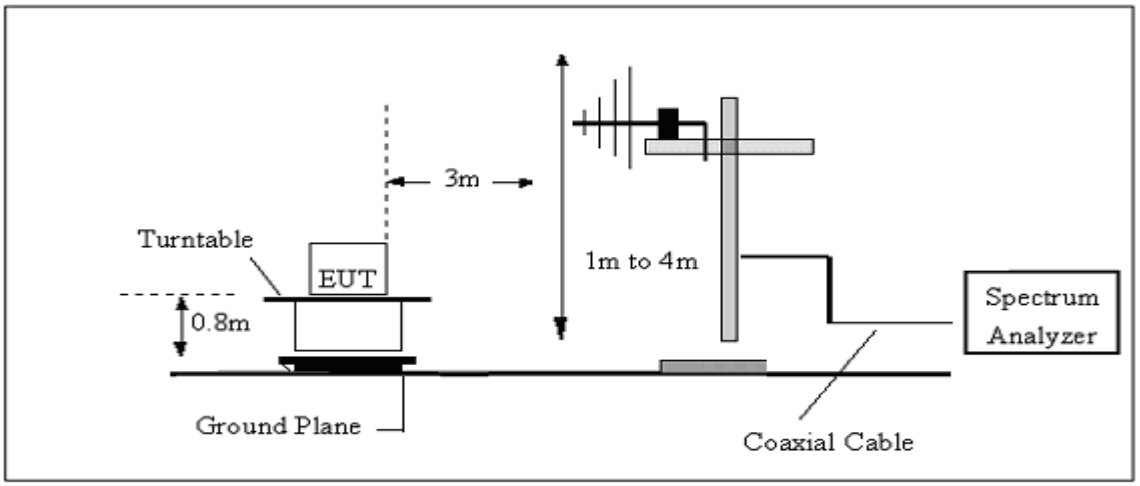
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

4.3 TEST SETUP

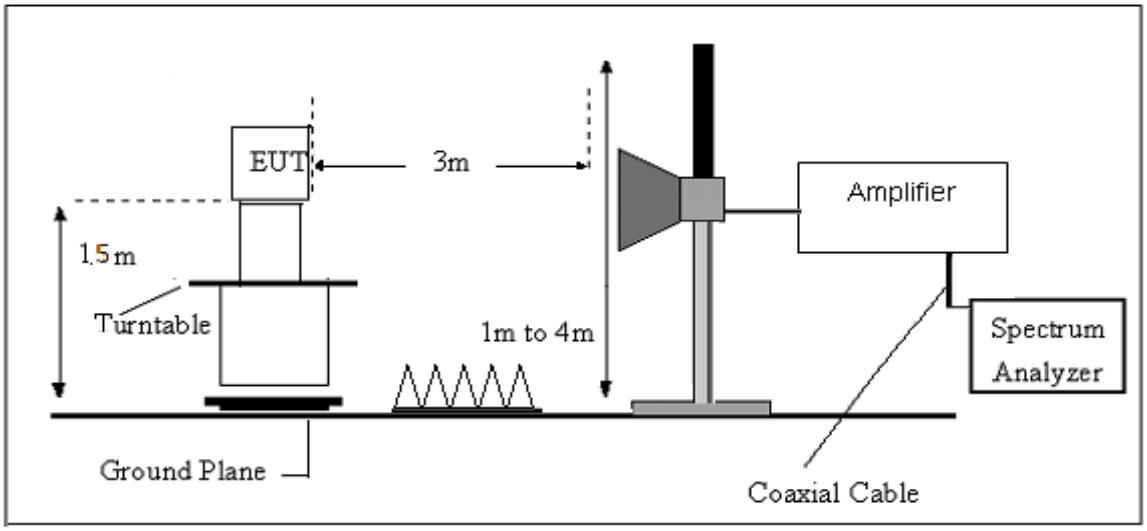
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



4.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

4.5 TEST RESULTS

(Between 9KHz – 30 MHz)

Temperature:	25.4 ℃	Relative Humidtity:	61%
Pressure:	1010 hPa	Test Voltage:	3.7V from Battery
Test Mode:	TX Mode	Polarization:	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

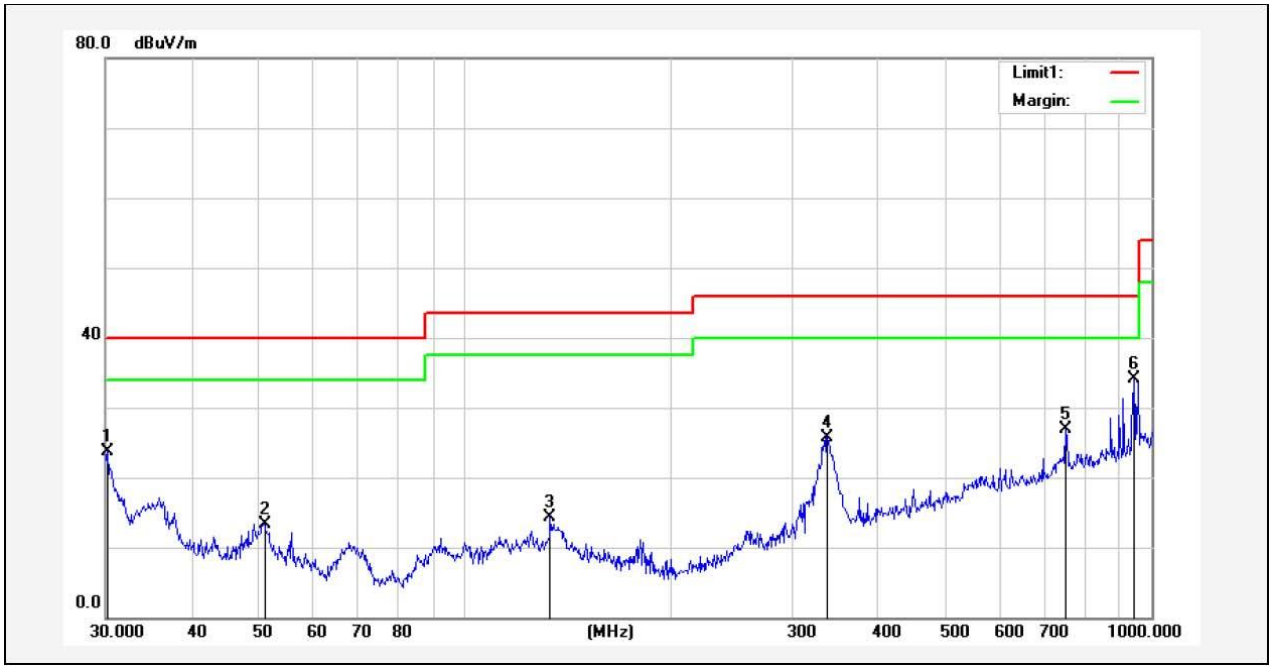
Limit line = specific limits(dBuv) + distance extrapolation factor.

(30MHz -1000MHz)

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	3.7V from Battery	Test Mode:	Mode1/2/3 (Mode 1-1M worst mode)

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
30.2111	35.05	-11.30	23.75	40.00	-16.25	QP
51.1210	35.19	-21.80	13.39	40.00	-26.61	QP
133.1511	31.94	-17.54	14.40	43.50	-29.10	QP
337.2155	39.83	-14.04	25.79	46.00	-20.21	QP
750.1083	30.40	-3.56	26.84	46.00	-19.16	QP
942.1305	34.77	-0.65	34.12	46.00	-11.88	QP

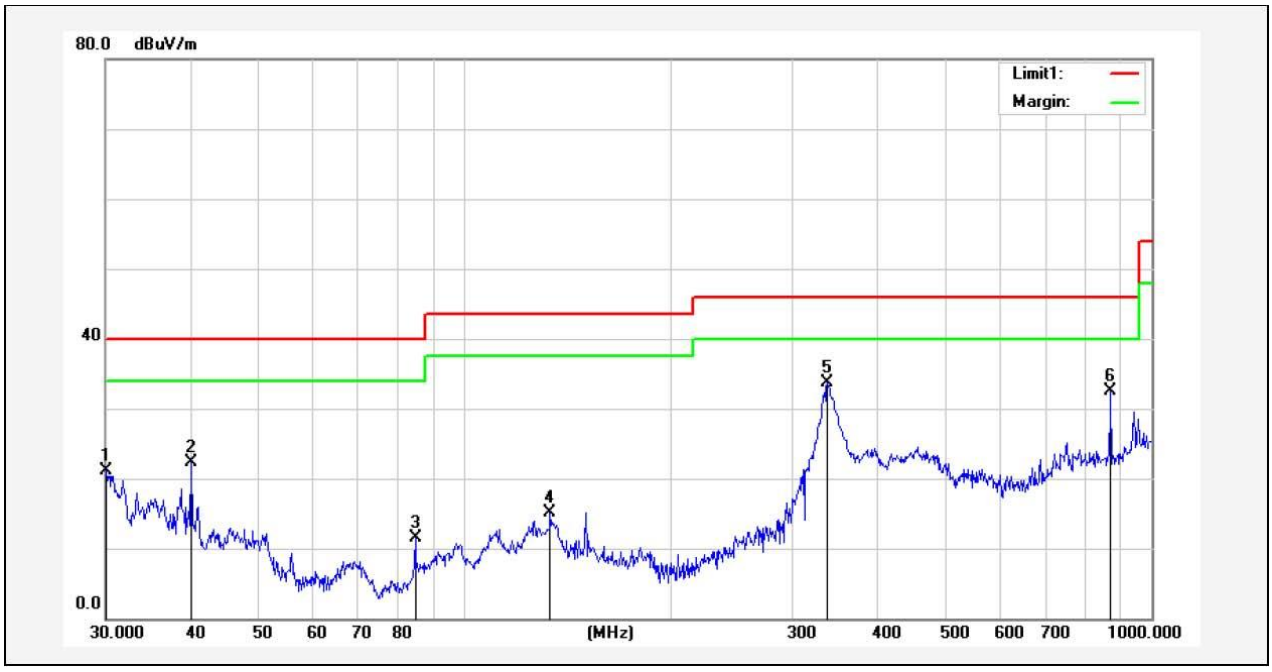
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	3.7V from Battery	Test Mode:	Mode1/2/3 (Mode 1-1M worst mode)

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
30.1054	32.33	-11.24	21.09	40.00	-18.91	QP
39.9942	38.69	-16.32	22.37	40.00	-17.63	QP
84.7020	32.93	-21.52	11.41	40.00	-28.59	QP
133.1511	32.66	-17.54	15.12	43.50	-28.38	QP
337.2155	47.78	-14.04	33.74	46.00	-12.26	QP
872.1832	35.17	-2.59	32.58	46.00	-13.42	QP

Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



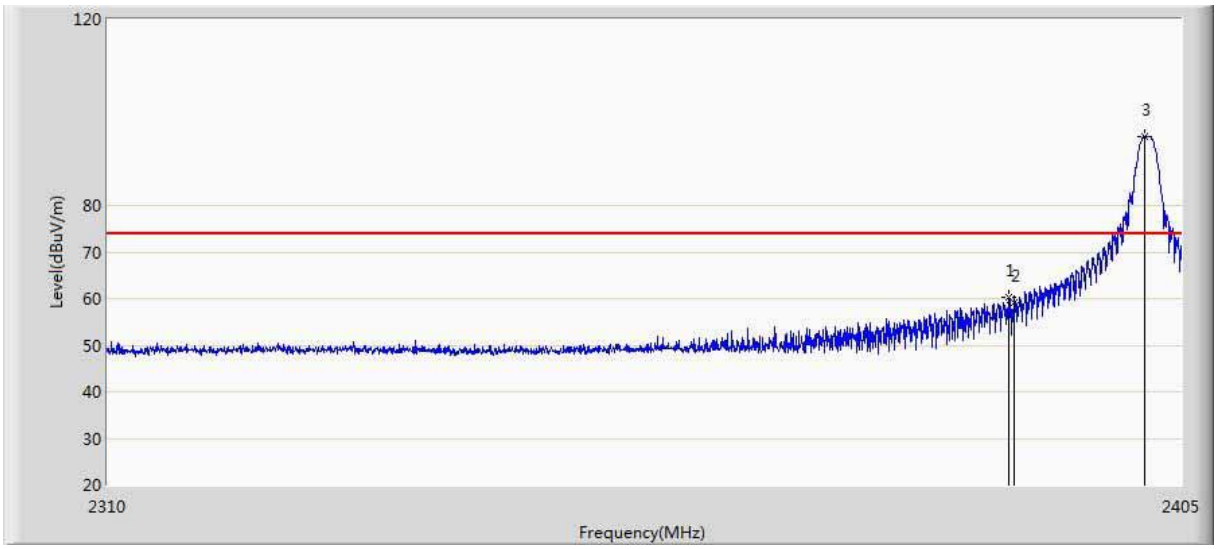
(1GHz-25GHz)Restricted band and Spurious emission Requirements

Chain	CH	Antenna	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBV/m)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Detector
Ant 0	0	H	4804.000	46.809	38.828	-27.191	74.000	7.981	PK
		H	7206.000	47.498	34.694	-26.502	74.000	12.803	PK
		H	9608.000	46.902	30.833	-27.098	74.000	16.069	PK
		V	4804.000	47.405	39.424	-26.595	74.000	7.981	PK
		V	7206.000	45.305	32.501	-28.695	74.000	12.803	PK
		V	9608.000	46.900	30.831	-27.100	74.000	16.069	PK
	19	H	4880.000	46.539	38.355	-27.461	74.000	8.184	PK
		H	7320.000	49.915	37.037	-24.085	74.000	12.878	PK
		H	9760.000	47.218	31.137	-26.782	74.000	16.081	PK
		V	4880.000	47.027	38.843	-26.973	74.000	8.184	PK
		V	7320.000	45.519	32.641	-28.481	74.000	12.878	PK
		V	9760.000	46.497	30.416	-27.503	74.000	16.081	PK
	39	H	4960.000	47.258	38.719	-26.742	74.000	8.539	PK
		H	7440.000	53.035	39.815	-20.965	74.000	13.219	PK
		H	9920.000	45.956	29.893	-28.044	74.000	16.062	PK
		V	4960.000	45.078	36.539	-28.922	74.000	8.539	PK
		V	7440.000	46.137	32.917	-27.863	74.000	13.219	PK
		V	9920.000	46.080	30.017	-27.920	74.000	16.062	PK

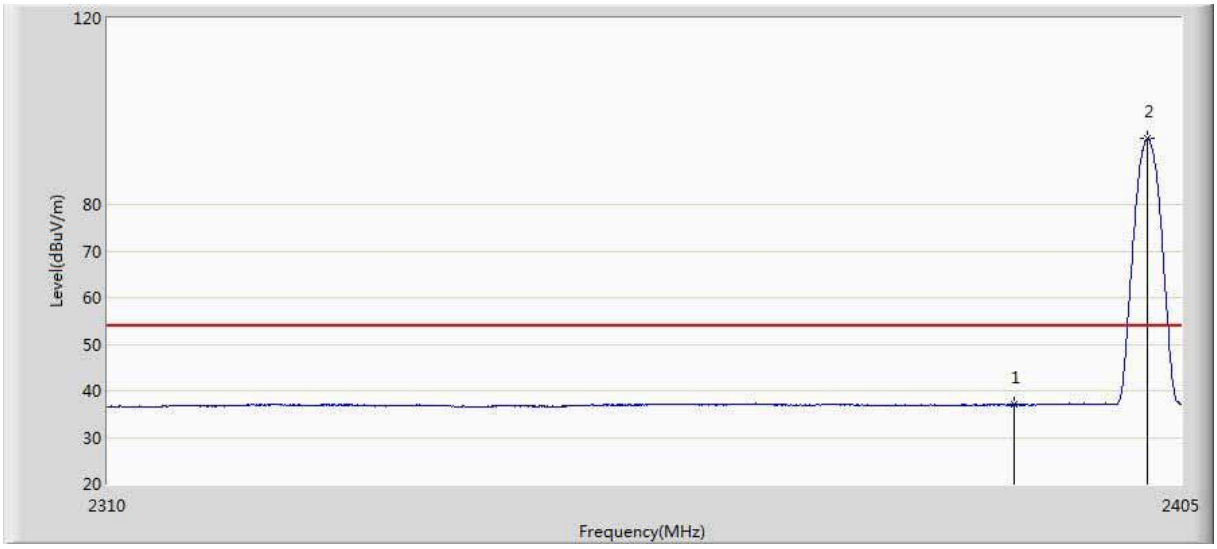
Note: 1. Measure Level = Reading Level + Factor. Note: 2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report. Note: 3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed. Note: 4. The RBW set up, see Clause 6.6.

4.6 TEST RESULTS (Restricted Bands Requirements)

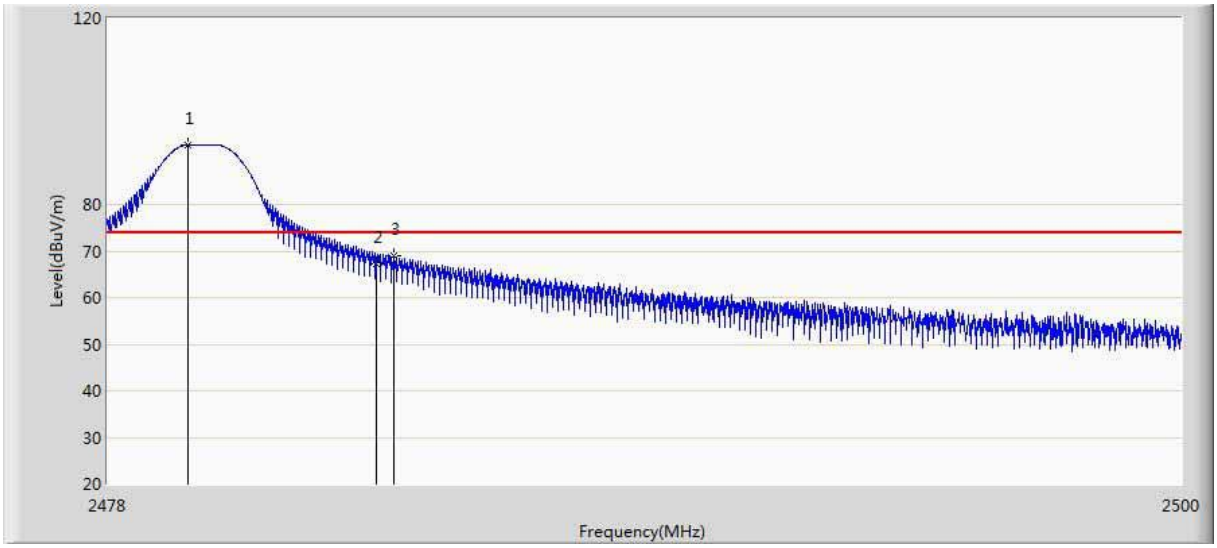
No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	2389.468	60.359	23.003	-13.641	74.000	37.355	PK
2	2390.000	59.165	21.810	-14.835	74.000	37.355	PK
3	2401.770	94.771	57.429	N/A	N/A	37.342	PK



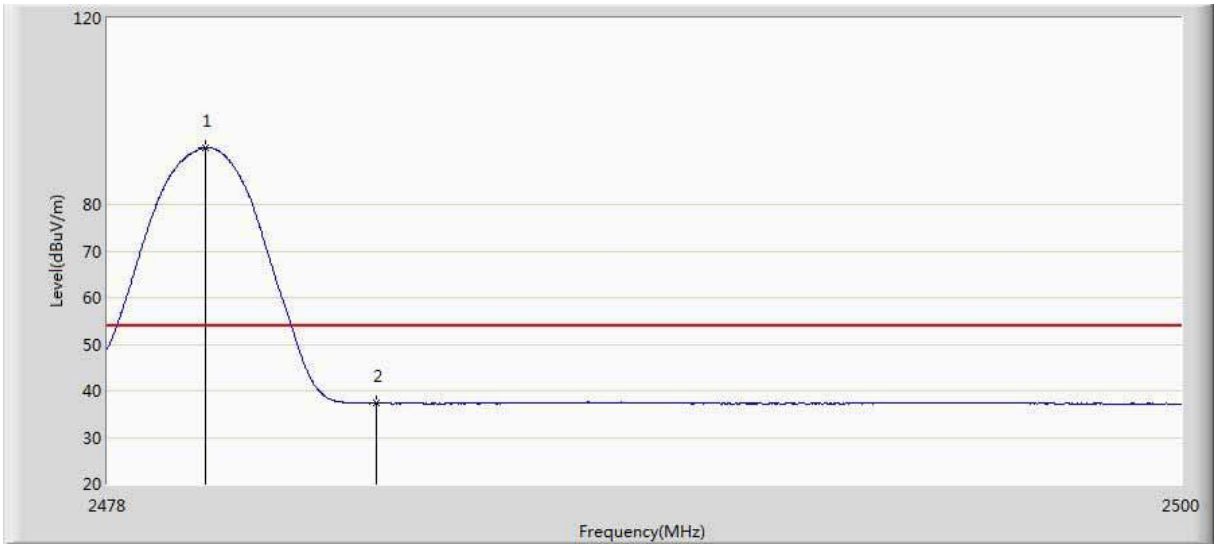
No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	2390.000	36.970	-0.385	-17.030	54.000	37.355	AV
2	2401.960	94.070	56.728	N/A	N/A	37.341	AV



No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	2479.650	92.831	55.347	N/A	N/A	37.484	PK
2	2483.500	67.293	29.782	-6.707	74.000	37.511	PK
3	2483.852	69.005	31.491	-4.995	74.000	37.514	PK



No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	2480.013	92.240	54.754	N/A	N/A	37.486	AV
2	2483.500	37.306	-0.205	-16.694	54.000	37.511	AV



5. BAND EDGE EMISSION

5.1 REQUIREMENT

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.2 TEST PROCEDURE

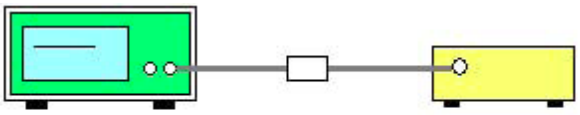
Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

.

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 – 2403 MHz Upper Band Edge: 2479 – 2500 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

5.3 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth(RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

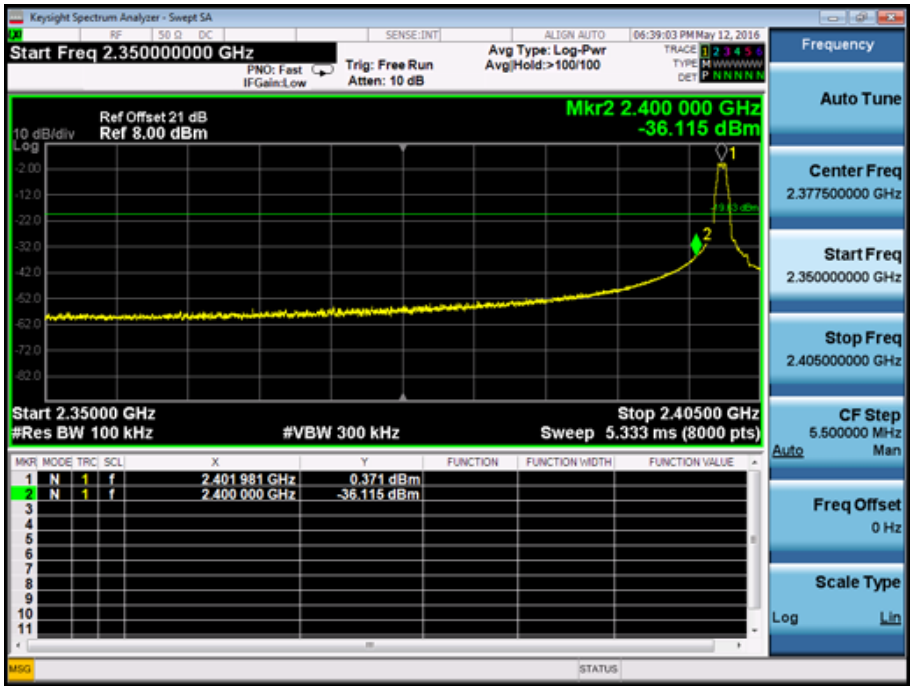
5.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

5.5 TEST RESULTS

For Band edge

Mode	Channel	Test Frequency (MHz)	In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	01	2402	0.371	2400.00	-36.115	36.486	>20	Pass
1	40	2480	-0.500	2483.50	-42.991	42.491	>20	Pass
Note: The worst case of Emissions in non-restricted frequency bands as below:								
Mode 1 CH01(2402MHz)								



6. POWER SPECTRAL DENSITY TEST

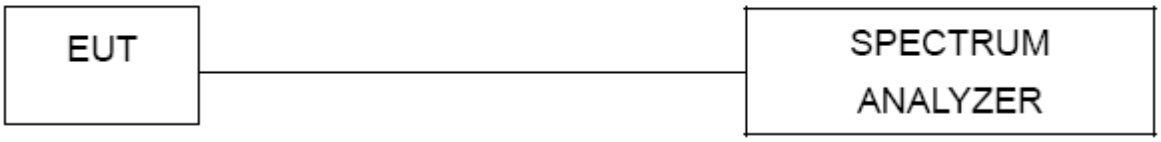
6.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247,Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	≤8 dBm (RBW≥3KHz)	2400-2483.5	PASS

6.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW to: 100 kHz ≥ RBW ≥ 3 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.3 TEST SETUP

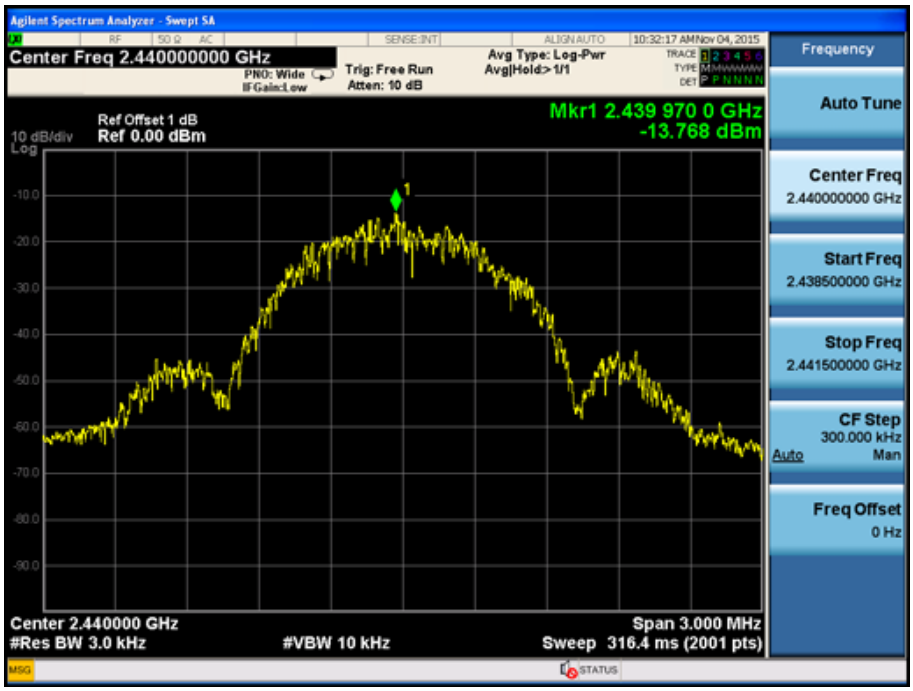


6.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

6.5 TEST RESULTS

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz) Ant 0	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	01	2402	-14.498	-14.498	8	Pass
1	20	2440	-13.768	-13.768	8	Pass
1	40	2480	-15.421	-15.421	8	Pass
Note : The worst case of Power Spectral Density as below:						
Mode 1 CH20(2440MHz)						



7. BANDWIDTH TEST

7.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247,Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

7.2 TEST PROCEDURE

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW≥3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be≥6 dB.

7.3 TEST SETUP

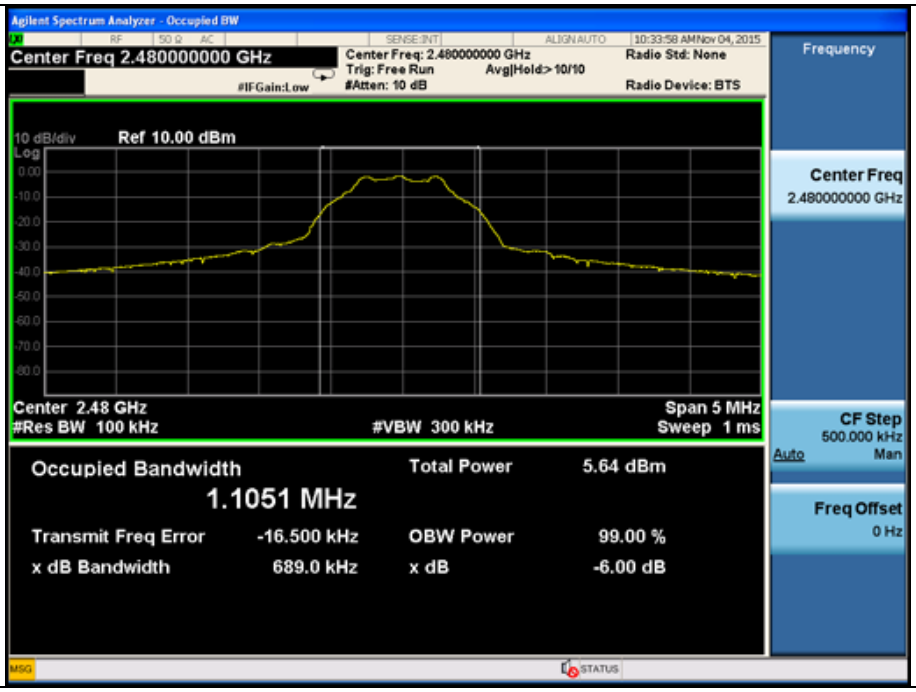
7.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

7.5 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Pressure:	1012 hPa	Test Voltage:	DC 3.7V
Test Mode:	TX Mode /CH01, CH20, CH40		

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
1	01	2402	1104.6	706.1	>500	Pass
1	20	2440	1107.1	718.4	>500	Pass
1	40	2480	1105.1	689.0	>500	Pass
Note : The worst case of Occupied Bandwidth as below:						
Mode 1 CH40 (2480MHz)						



8. PEAK OUTPUT POWER TEST

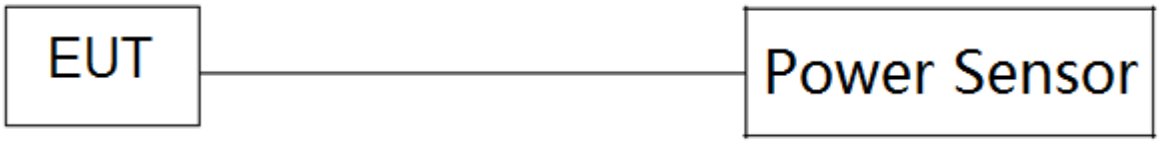
8.1 APPLIED PROCEDURES / LIMIT

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

8.2 TEST PROCEDURE

a. The EUT was directly connected to the Power Sensor&PC

8.3 TEST SETUP



8.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

8.5 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Pressure:	1012 hPa	Test Voltage:	DC 3.7V
Test Mode:	TX Mode /CH01, CH20, CH40		

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
1	01	2402	0.46	30	Pass
1	20	2440	0.33	30	Pass
1	40	2480	0.28	30	Pass

9. ANTENNA REQUIREMENT

9.1 STANDARD REQUIREMENT

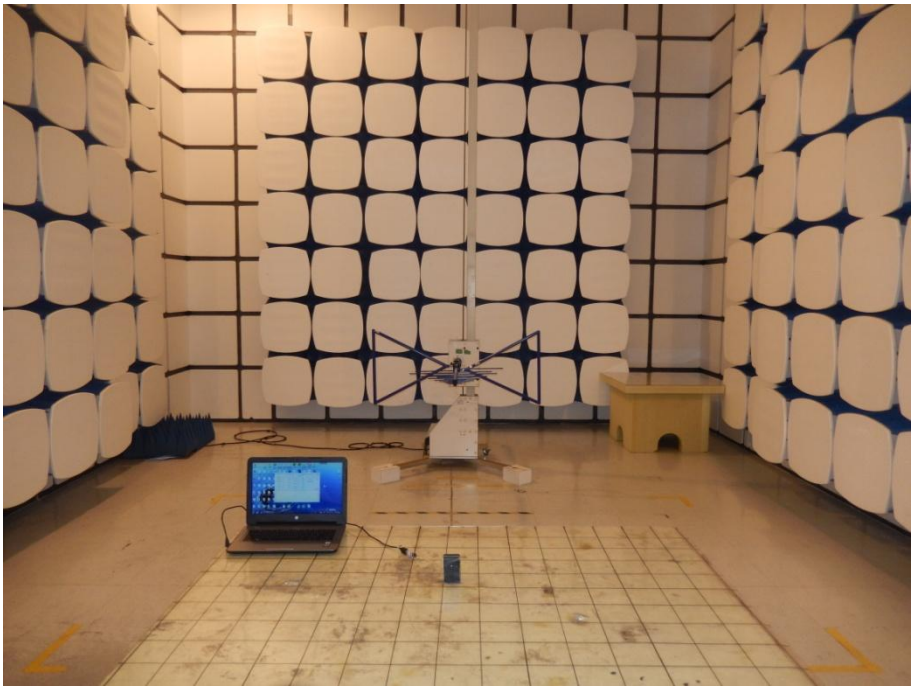
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

9.2 EUT ANTENNA

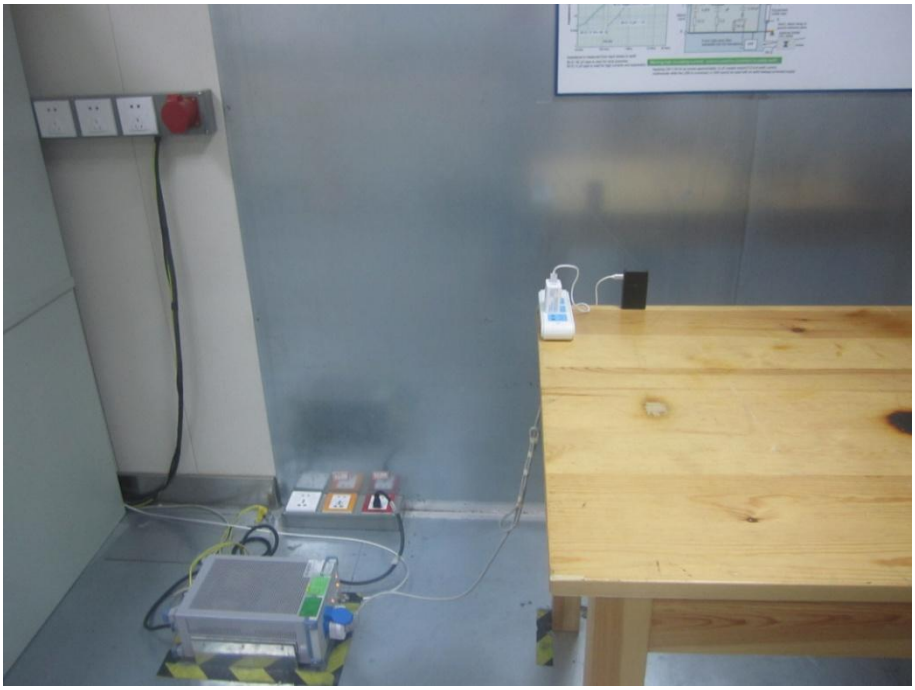
The EUT antenna is Internal PCB Antenna. It comply with the standard requirement.

10. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos



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