FCC Test Report

Report No.: AGC00610141202FE03

FCC ID	:	2AC9LHW098-R
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	2.4G wireless receiver
BRAND NAME	:	N/A
MODEL NAME	:	HW098-R
CLIENT	:	Shenzhen Hastech industries Co., Ltd.
DATE OF ISSUE	:	Dec.11, 2014
STANDARD(S)	:	FCC Part 15 Rules
REPORT VERSION	:	V1.0

Attestation of ***G***lobal ***C***ompliance (Shenzhen) Co., Ltd

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec.11, 2014	Valid	Original Report

TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY

Applicant	Shenzhen Hastech industries Co., Ltd.
Address	G-A1 BLDG, Democracy West Industry Park, Shajing Town, Baoan District, Shenzhen, China
Manufacturer	Shenzhen Hastech industries Co., Ltd.
Address	G-A1 BLDG, Democracy West Industry Park, Shajing Town, Baoan District, Shenzhen, China
Product Designation	2.4G wireless receiver
Brand Name	N/A
Test Model	HW098-R
Date of test	Dec.05, 2014 to Dec.10, 2014
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BR/RF (2013-03-01)

We hereby certify that:
The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

Prepared By	Max Zhang	
	Max Zhang	Dec.11, 2014
Checked By	Kidd Yang	
	Kidd Yang	Dec.11, 2014
Authorized By	Solger Zhang	
	Solger Zhang	Dec.11, 2014

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is “2.4G wireless receiver” designed as a “RF Product”. It is designed by way of utilizing the FHSS technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2409MHz to 2476MHz
RF Output Power	1dBm(Max)
Modulation	MSK
Number of channels	8
Hardware Version	V1.4-0316
Software Version	V1.3-0511
Antenna Designation	PCB Antenna
Antenna Gain	-1dBi
Power Supply	DC5V

2.2. TABLE OF CARRIER FREQUENCYS

Channel	Frequency	Channel	Frequency
1	2409	5	2445
2	2417	6	2455
3	2426	7	2465
4	2440	8	2476

3. MEASUREMENT UNCERTAINTY

Conducted measurement: +/- 2.75dB
Radiated measurement: +/- 3.2dB

4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX

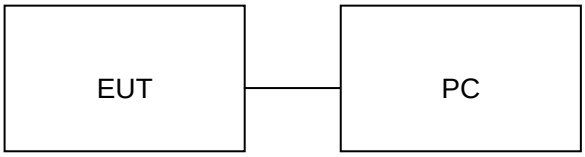
NOTE:

1. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configuration:



5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna Requirement	Compliant
§15.215(c)	20 dB Bandwidth	Compliant
§15.205	Restricted Band of Operation	Compliant
§15.209 §15.249(a)	Radiated Emission	Compliant
§15.249(d)	Out of Band Emission	Compliant
§15.207(a)	Conducted Emission	N/A

6. TEST FACILITY

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	B112-B113, Building 12, Baoan Building Materials Center, No.1 of Xixiang Inner Ring Road, Baoan District, Shenzhen, Guangdong, P.R.China
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2003.

ALL TEST EQUIPMENT LIST

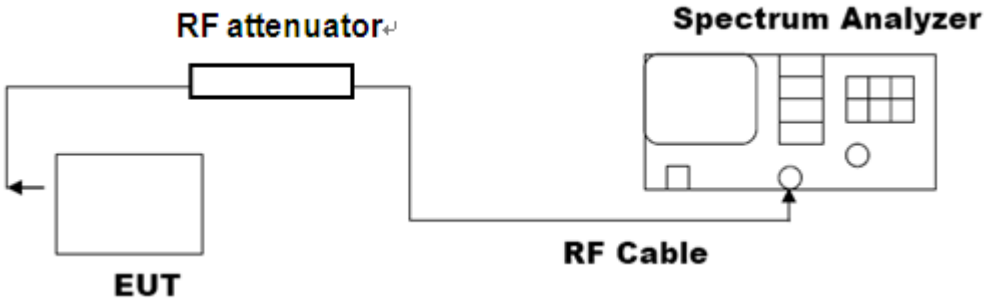
Description	Manufacturer	Model	Cal. Date	Cal. Due
Power Probe	R&S	URV5-Z2	07/30/2014	07/29/2015
RF attenuator	WEINSCHEL CORP	58-30-33	07/25/2014	07/24/2015
Spectrum Analyzer	Agilent	E4440A	07/16/2014	07/15/2015
EXA Signal Analyzer	Agilent	N9010A	10/24/2014	10/23/2015
Amplifier	EM	BBV 9718	07/30/2014	07/29/2015
HORN ANTENNA	Schwarzbeck	3117	08/17/2014	08/16/2015
HORN ANTENNA	A.H. SYSTEMS INC.	SAS-574	07/16/2014	07/15/2015
EMI Test Receiver	Rohde & Schwarz	ESCI	07/25/2014	07/24/2015
Bilogical Antenna	EMCO	3142C	08/17/2014	08/16/2015
Loop Antenna	LAPLACE	RF300	07/30/2014	07/29/2015
Isolation Transformer	LETEAC	LTBK	07/16/2014	07/15/2015
RF CABLE	SUIRONG	9KHZ-30MHZ	07/15/2014	07/14/2015
RF CABLE	SUIRONG	30MHZ-18GHZ	07/15/2014	07/14/2015
Conduction Cable	Sat	CE1	07/15/2014	07/14/2015
TEST RECEIVER	R&S	ESCI	04/01/2014	03/31/2015
LISN	R&S	ESH3-Z5	07/16/2014	07/15/2015

7. 20DB BANDWIDTH

7.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. RBW=100kHz, VBW ≥ RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

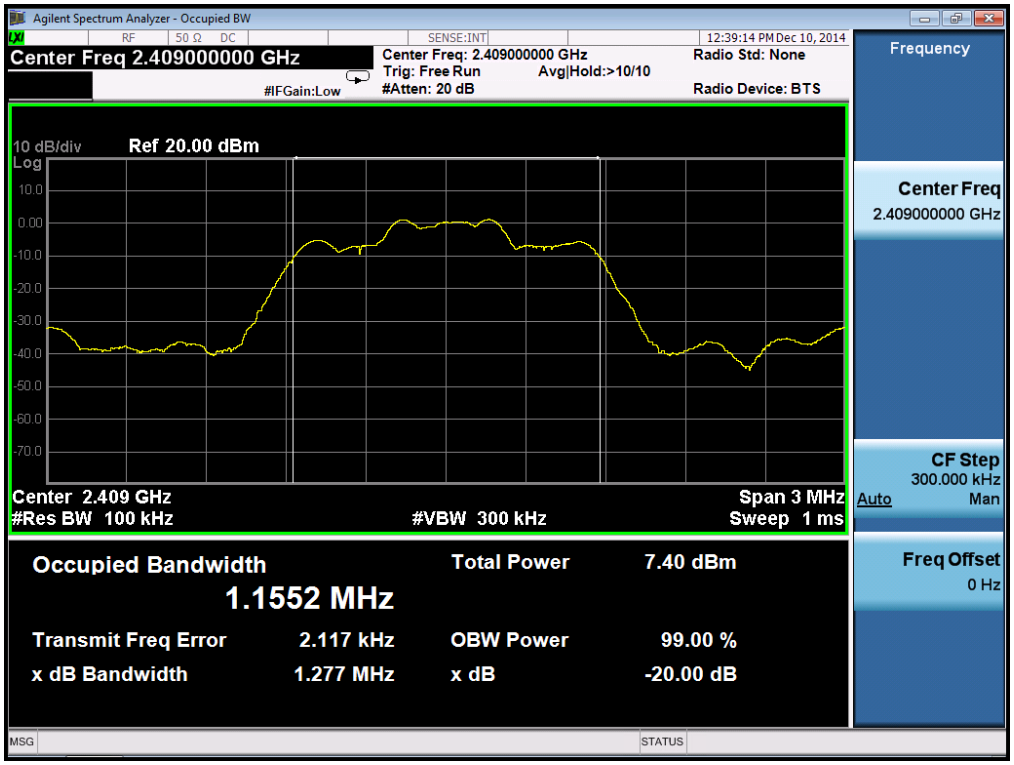


7.3. LIMITS AND MEASUREMENT RESULTS

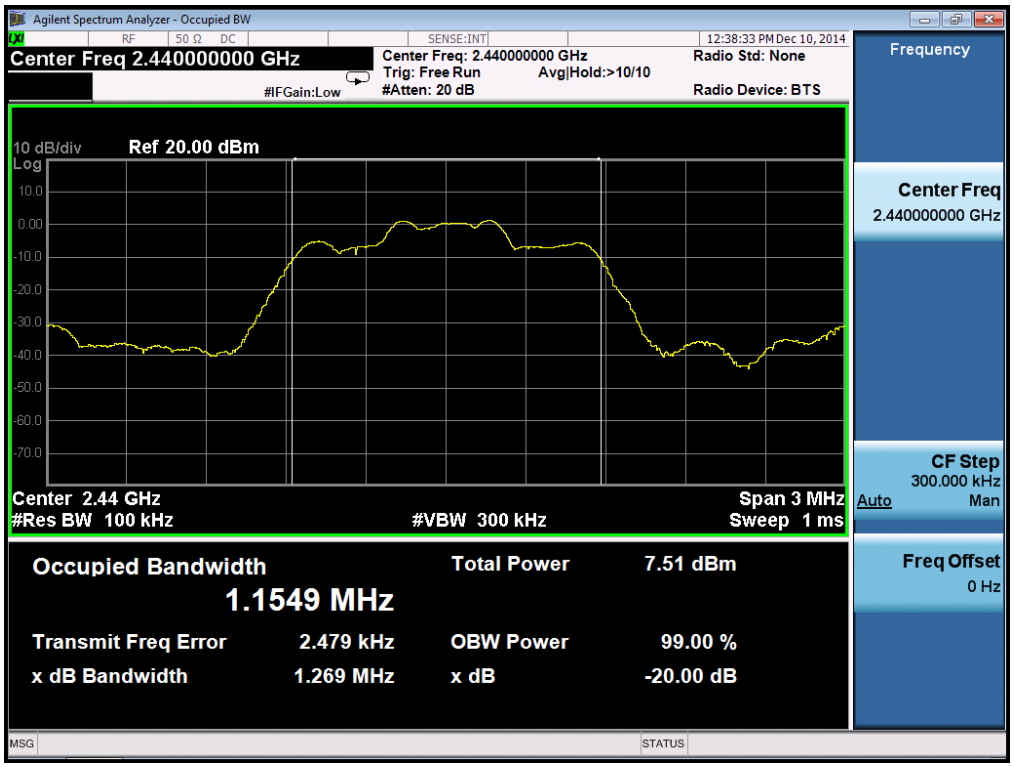
Channel	Channel Frequency(MHz)	20dB Bandwidth(MHz)
Low	2409	1.277
Middle	2440	1.269
High	2476	1.275

According to FCC 15.215(c),must be designed to ensure that the 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated .

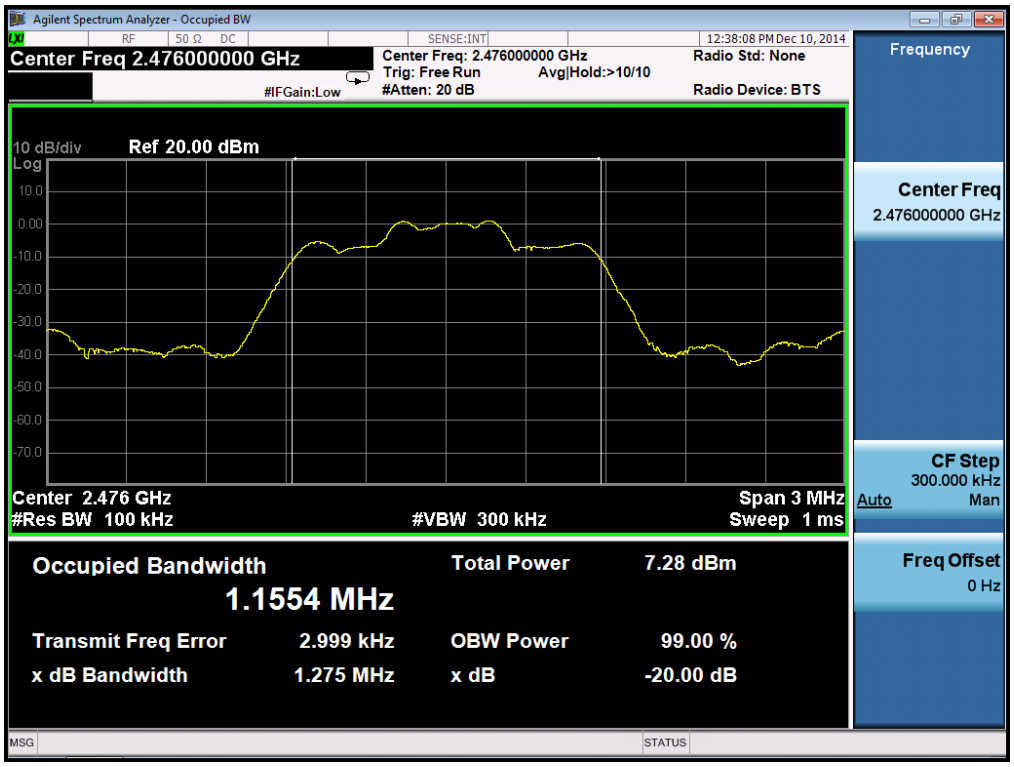
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



8. RADIATED EMISSION

8.1. MEASUREMENT PROCEDURE

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

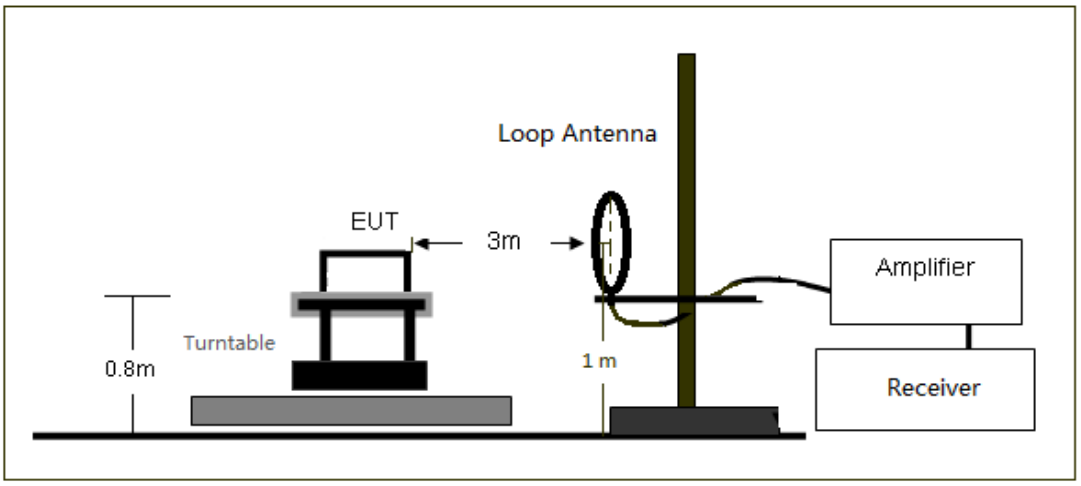
The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/1MHz for Peak, 1MHz/10Hz for Average

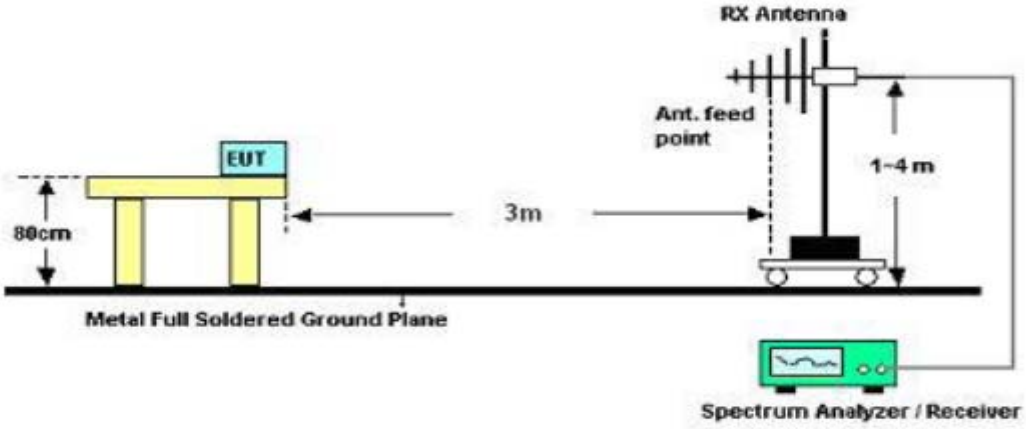
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

8.2. TEST SETUP

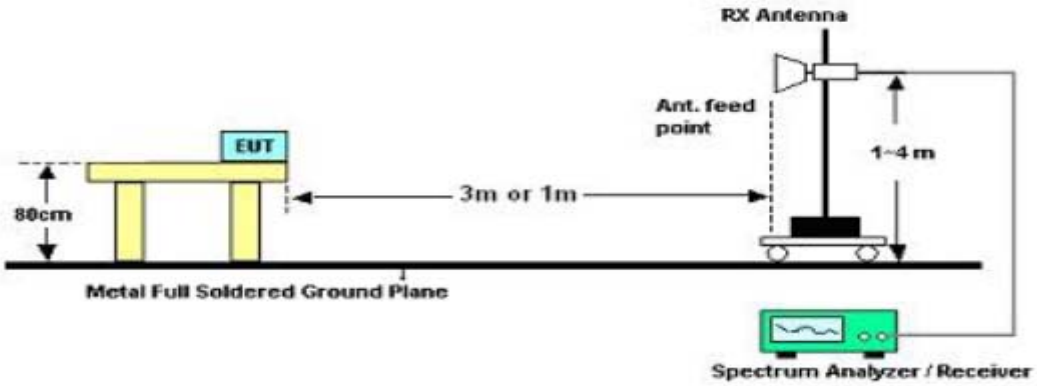
RADIATED EMISSION TEST SETUP BELOW 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



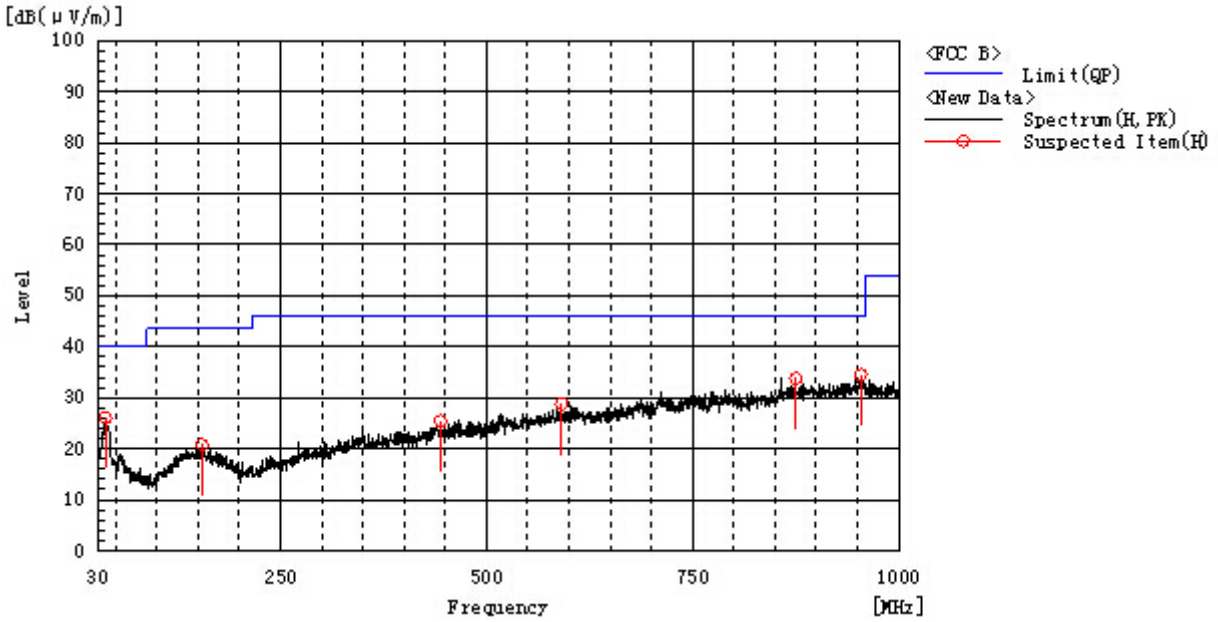
8.3. TEST RESULT

RADIATED EMISSION BELOW 30MHZ

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

Low Channel

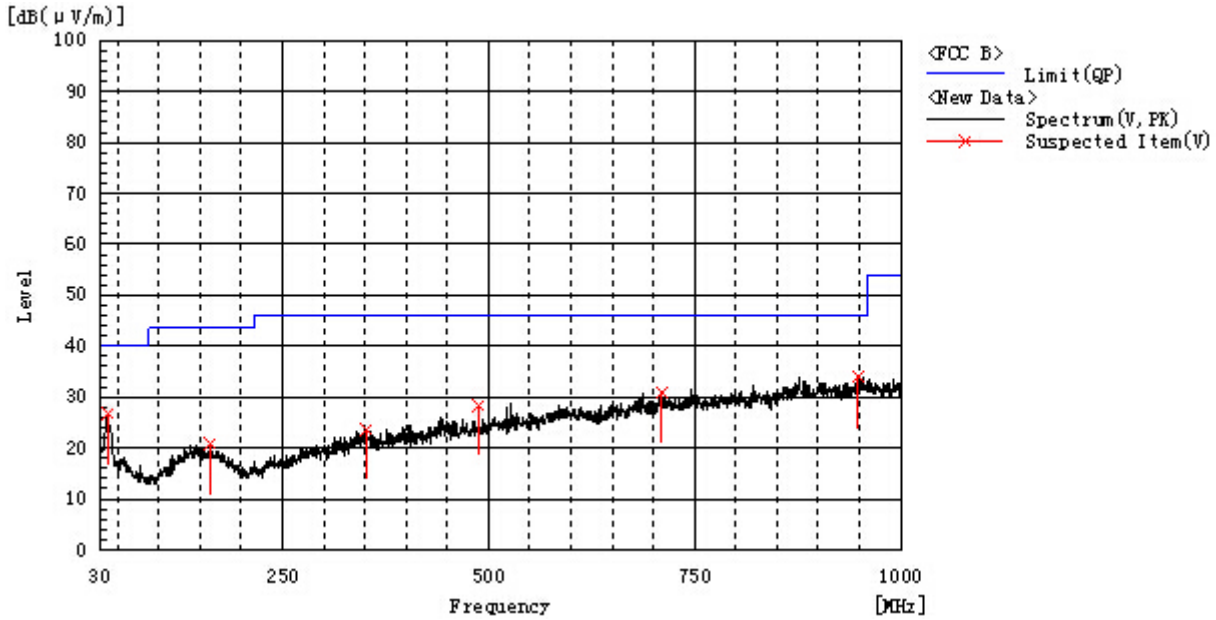
RADIATED EMISSION BELOW 1GHZ-Horizontal



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m) QP	Margin dB	Pass/Fail	Height cm	Angle deg
38.245	H	4.9	21.2	26.1	40.0	13.9	Pass	150.0	291.2
155.130	H	5.6	15.2	20.8	43.5	22.7	Pass	200.0	252.7
444.190	H	5.3	20.1	25.4	46.0	20.6	Pass	150.0	217.1
591.145	H	5.8	23.0	28.8	46.0	17.2	Pass	200.0	71.5
875.355	H	6.1	27.7	33.8	46.0	12.2	Pass	150.0	108.0
953.925	H	5.8	28.7	34.5	46.0	11.5	Pass	150.0	254.3

RESULT: PASS

RADIATED EMISSION BELOW 1GHZ-Vertical

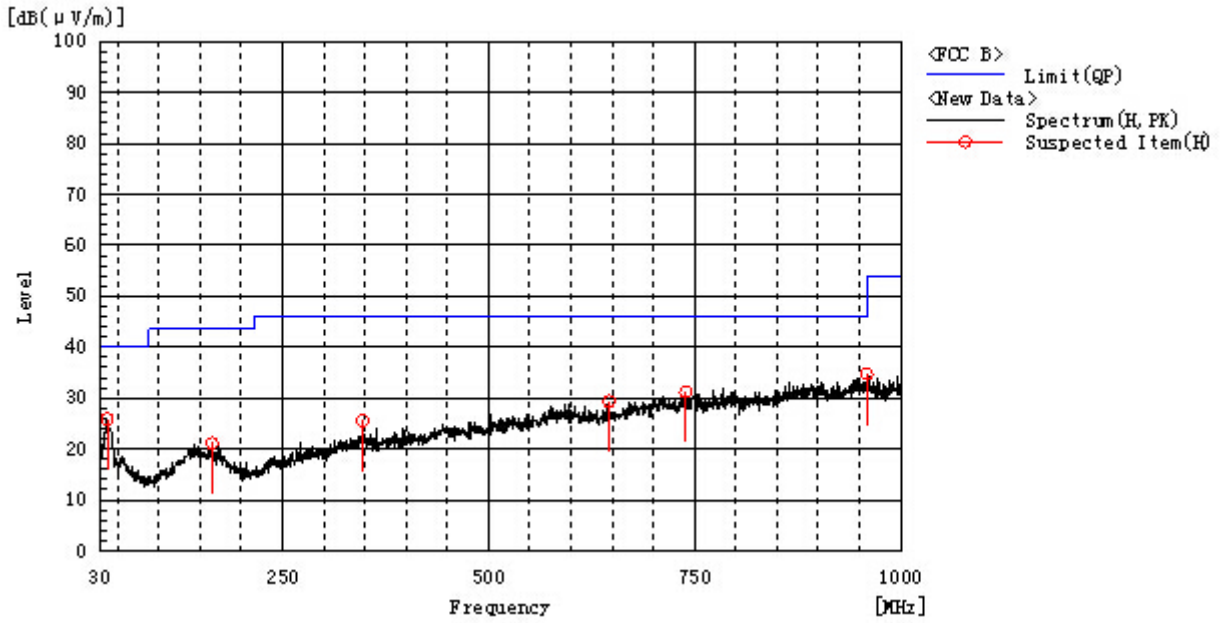


Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m) QP	Margin dB	Pass/Fail	Height cm	Angle deg
37.760	V	5.6	21.2	26.8	40.0	13.2	Pass	100.0	252.1
162.405	V	5.8	15.0	20.8	43.5	22.7	Pass	150.0	108.1
351.555	V	5.3	18.4	23.7	46.0	22.3	Pass	100.0	145.7
487.840	V	8.2	20.2	28.4	46.0	17.6	Pass	100.0	217.1
710.455	V	5.2	25.7	30.9	46.0	15.1	Pass	100.0	287.9
948.590	V	5.3	28.7	34.0	46.0	12.0	Pass	150.0	323.8

RESULT: PASS

Middle Channel

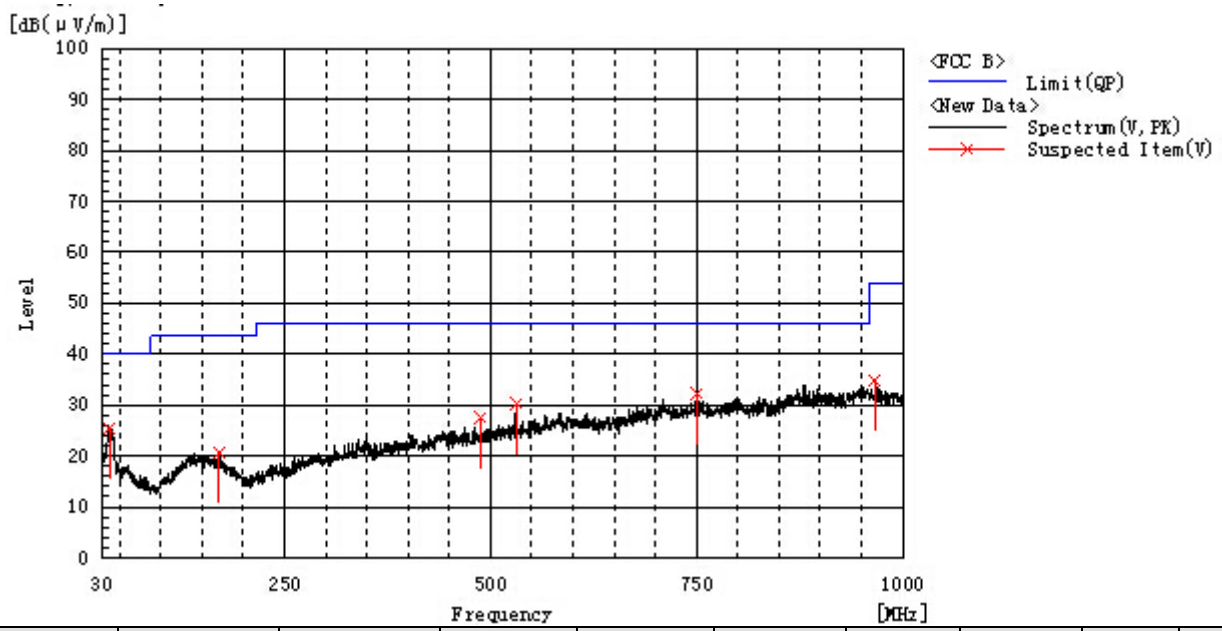
RADIATED EMISSION BELOW 1GHZ-Horizontal



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m) QP	Margin dB	Pass/Fail	Height cm	Angle deg
37.765	H	4.7	21.2	25.9	40.0	14.1	Pass	100.0	357.2
164.830	H	6.1	15.0	21.1	43.5	22.4	Pass	150.0	324.5
347.190	H	7.1	18.4	25.5	46.0	20.5	Pass	200.0	179.9
646.435	H	6.3	23.0	29.3	46.0	16.7	Pass	100.0	285.3
739.070	H	6.0	25.2	31.2	46.0	14.8	Pass	200.0	179.9
958.775	H	6.0	28.7	34.7	46.0	11.3	Pass	200.0	357.1

RESULT: PASS

RADIATED EMISSION BELOW 1GHZ-Vertical

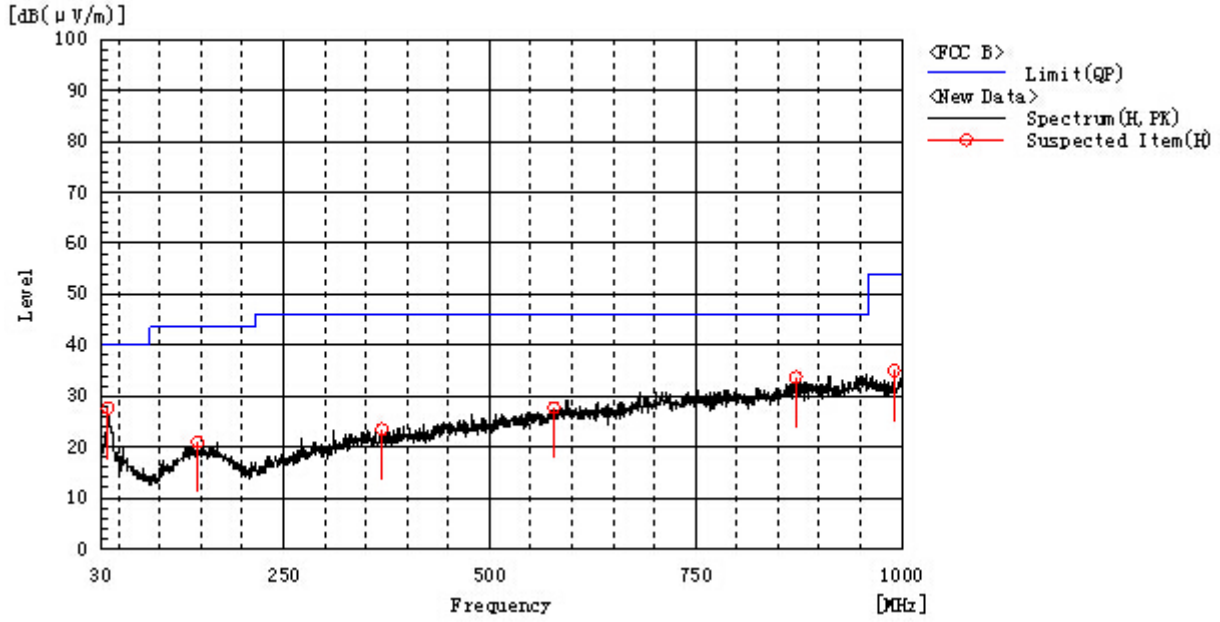


Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m) QP	Margin dB	Pass/Fail	Height cm	Angle deg
37.760	V	4.2	21.2	25.4	40.0	14.6	Pass	100.0	103.5
170.650	V	5.9	14.8	20.7	43.5	22.8	Pass	100.0	139.9
487.840	V	7.4	20.2	27.6	46.0	18.4	Pass	100.0	32.1
531.005	V	8.8	21.5	30.3	46.0	15.7	Pass	200.0	180.6
749.740	V	6.5	25.7	32.2	46.0	13.8	Pass	150.0	216.5
966.050	V	6.2	28.7	34.9	54.0	19.1	Pass	100.0	139.9

RESULT: PASS

High Channel

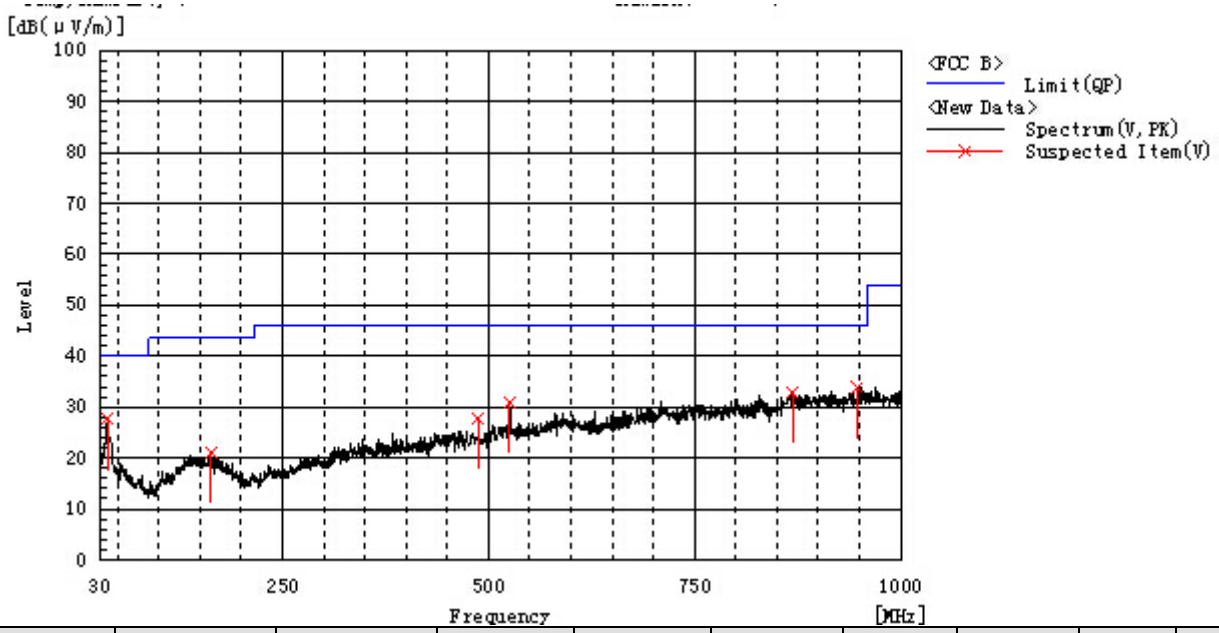
RADIATED EMISSION BELOW 1GHZ-Horizontal



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m) QP	Margin dB	Pass/Fail	Height cm	Angle deg
37.275	H	6.8	20.8	27.6	40.0	12.4	Pass	200.0	72.6
145.915	H	6.1	14.9	21.0	43.5	22.5	Pass	100.0	216.6
369.500	H	5.5	17.9	23.4	46.0	22.6	Pass	100.0	37.3
578.050	H	4.9	22.8	27.7	46.0	18.3	Pass	100.0	288.8
871.475	H	5.9	27.8	33.7	46.0	12.3	Pass	100.0	251.6
990.785	H	6.6	28.4	35.0	54.0	19.0	Pass	100.0	37.3

RESULT: PASS

RADIATED EMISSION BELOW 1GHZ-Vertical



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m) QP	Margin dB	Pass/Fail	Height cm	Angle deg
37.760	V	6.4	21.2	27.6	40.0	12.4	Pass	150.0	320.1
163.375	V	6.0	15.0	21.0	43.5	22.5	Pass	100.0	71.6
487.840	V	7.6	20.2	27.8	46.0	18.2	Pass	100.0	354.9
525.670	V	9.5	21.5	31.0	46.0	15.0	Pass	150.0	141.6
869.050	V	5.2	27.7	32.9	46.0	13.1	Pass	100.0	177.2
946.650	V	5.3	28.6	33.9	46.0	12.1	Pass	150.0	178.0

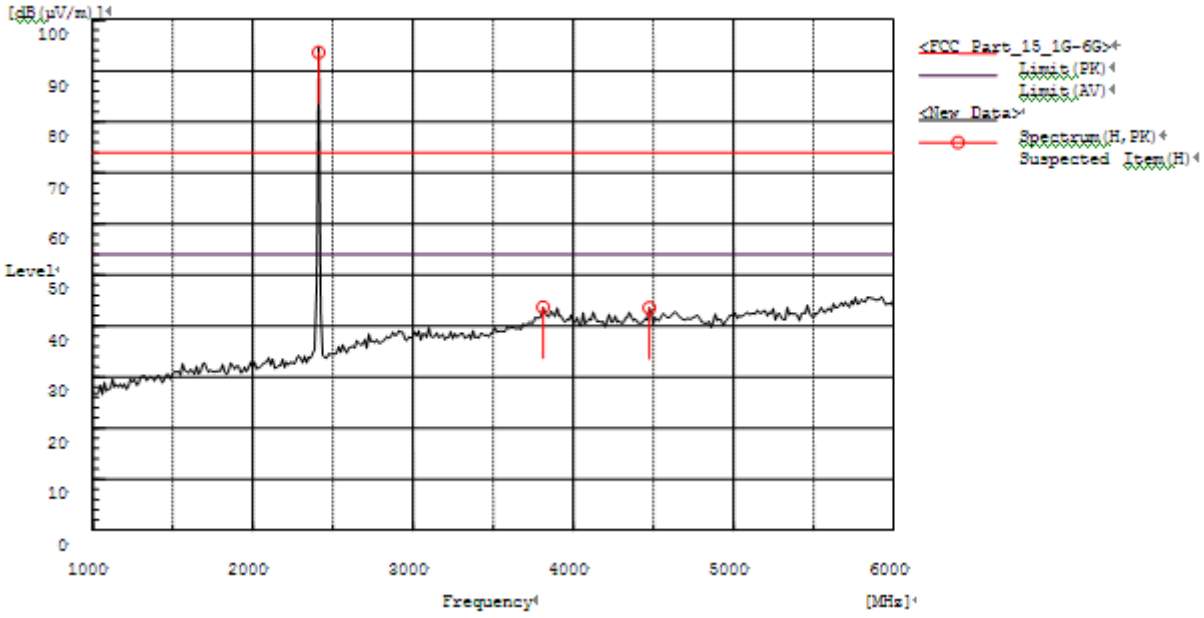
RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

Low Channel

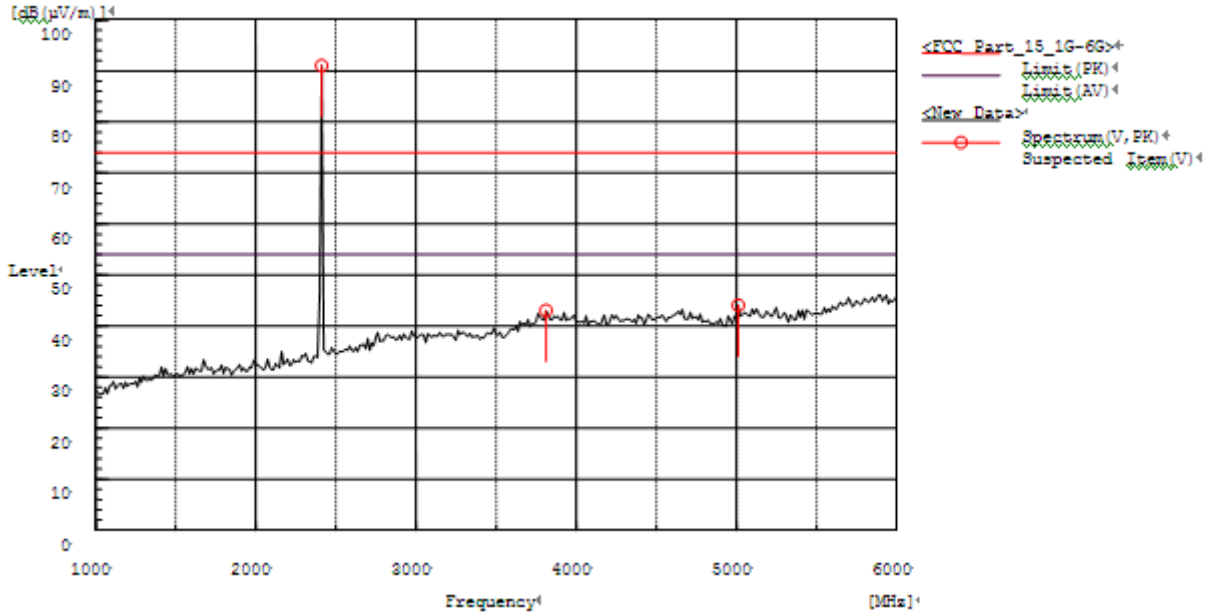
RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics) -Horizontal



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m)	Margin dB	Pass/Fail	Height cm	Angle deg
2409.500	H	94.0	-0.4	93.6	94.0	0.4	Pass	200.0	74.0
3812.500	H	37.7	6.0	43.7	74.0	30.3	Pass	200.0	217.6
4475.000	H	36.2	7.3	43.5	74.0	30.5	Pass	200.0	145.4

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics) -Vertical

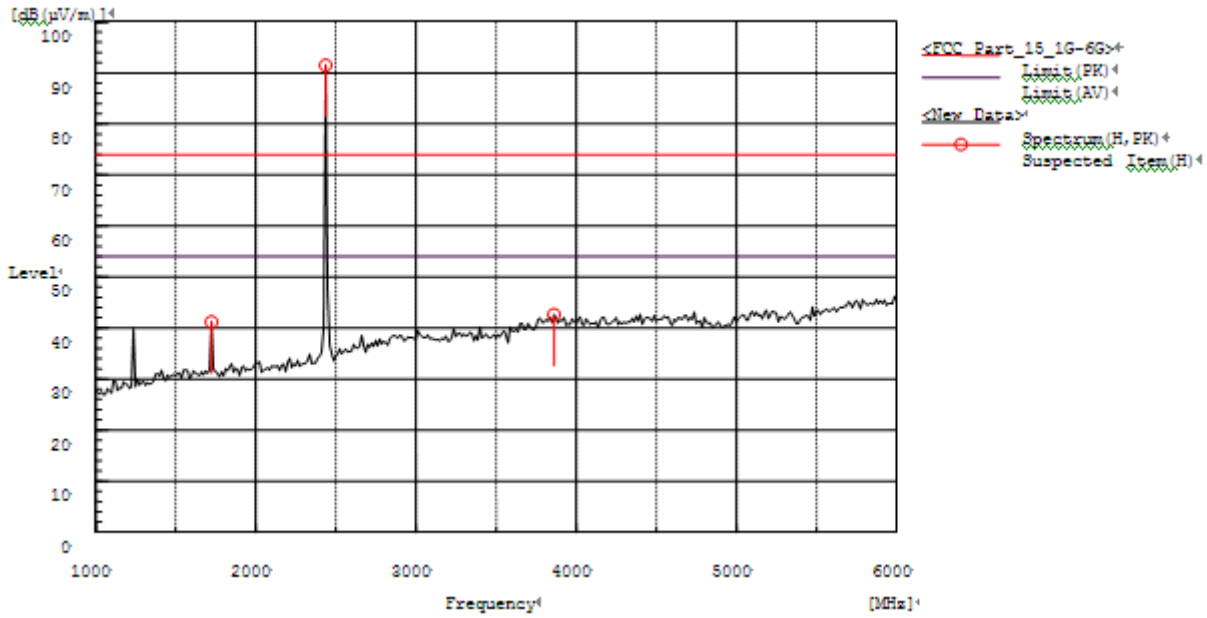


Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m)	Margin dB	Pass/Fail	Height cm	Angle deg
2409.500	H	91.4	-0.4	91.0	94.0	3.0	Pass	200.0	122.4
3812.500	H	37.0	6.0	43.0	74.0	31.0	Pass	200.0	193.8
5012.500	H	34.8	9.2	44.0	74.0	30.0	Pass	100.0	75.7

RESULT: PASS

Middle Channel

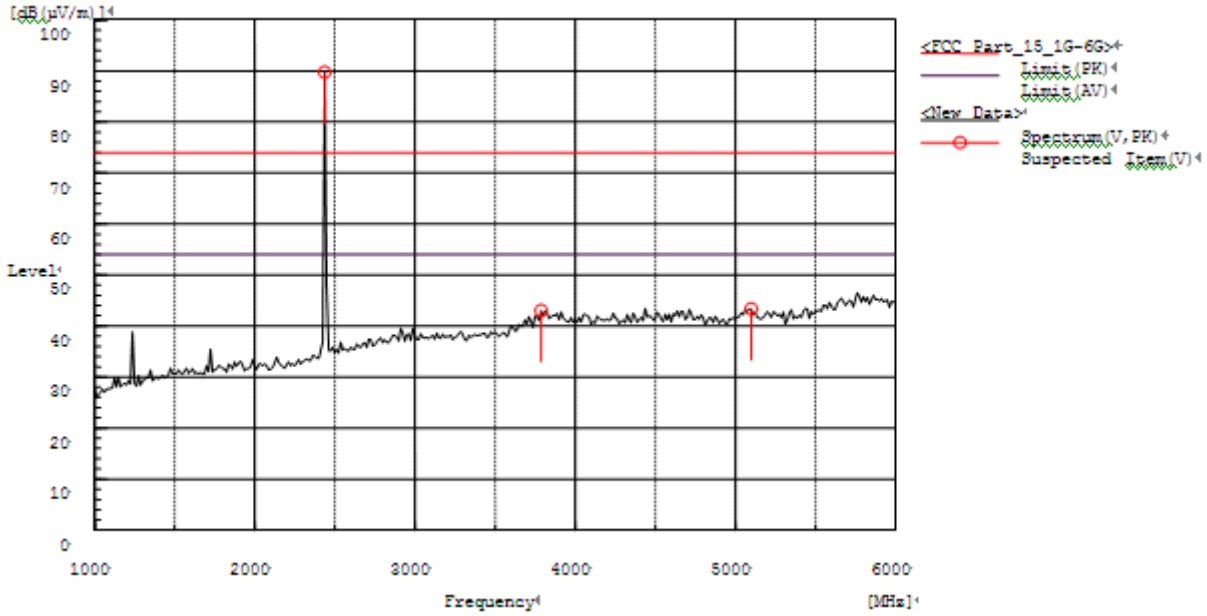
RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics) –Horizontal



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m)	Margin dB	Pass/Fail	Height cm	Angle deg
2440.500	H	91.8	-0.3	91.5	94.0	2.5	Pass	200.0	321.9
1725.000	H	44.6	-3.4	41.2	74.0	32.8	Pass	200.0	286.9
3862.500	H	36.4	6.2	42.6	74.0	31.4	Pass	100.0	342.7

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics) -Vertical

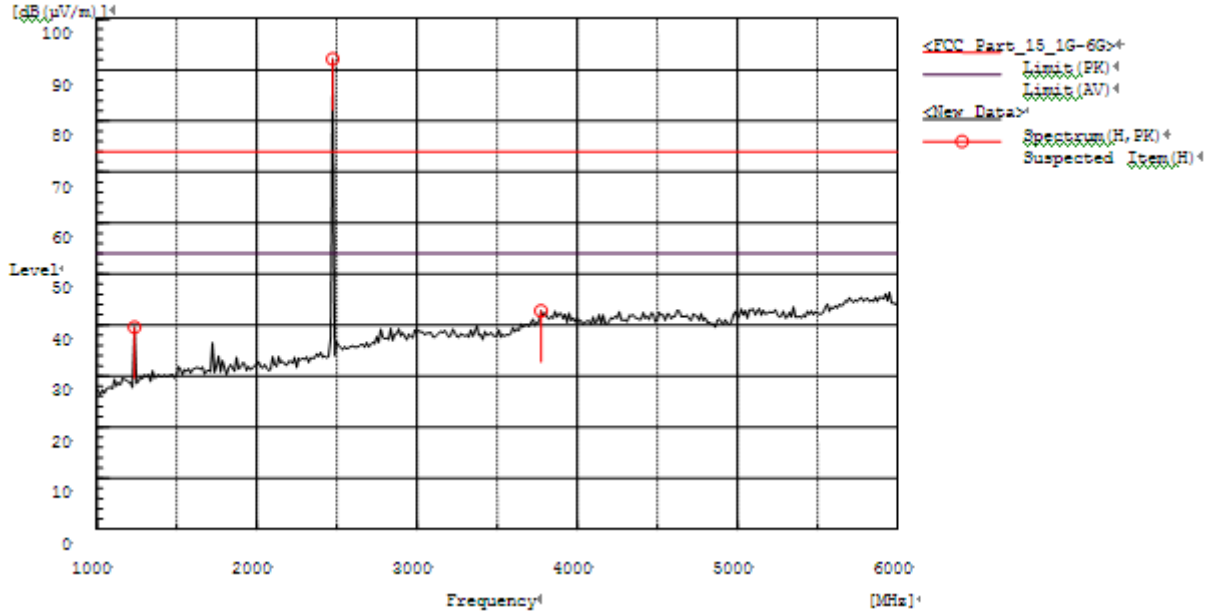


Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m)	Margin dB	Pass/Fail	Height cm	Angle deg
2440.500	V	90.0	-0.3	89.7	94.0	4.3	Pass	100.0	237.7
3787.500	V	37.2	5.8	43.0	74.0	31.0	Pass	100.0	165.5
5100.000	V	34.0	9.3	43.3	74.0	30.7	Pass	100.0	165.5

RESULT: PASS

High Channel

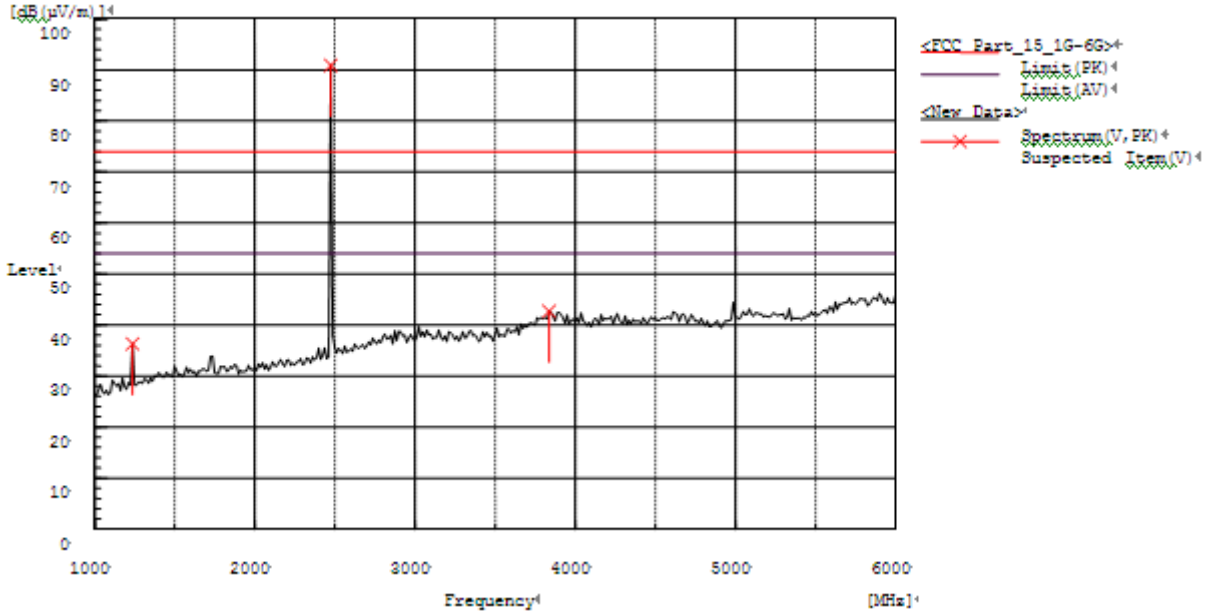
RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics) –Horizontal



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m)	Margin dB	Pass/Fail	Height cm	Angle deg
2476.000	H	92.2	-0.1	92.1	94.0	1.9	Fail	100.0	288.8
1237.500	H	45.4	-5.9	39.5	74.0	34.5	Pass	100.0	181.7
3775.000	H	37.1	5.7	42.8	74.0	31.2	Pass	200.0	270.7

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics) -Vertical



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m)	Margin dB	Pass/Fail	Height cm	Angle deg
2476.000	V	91.0	-0.1	90.9	94.0	3.1	Pass	200.0	235.7
1237.500	V	42.2	-5.9	36.3	74.0	37.7	Pass	200.0	270.7
3837.500	V	36.6	6.1	42.7	74.0	31.3	Pass	100.0	288.2

RESULT: PASS

Note: 6~25GHz at least have 20dB margin. No recording in the test report.

Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

9. BAND EDGE EMISSION

9.1. MEASUREMENT PROCEDURE

As the radiation test, set the Lowest and Highest Transmitting Channel, observed the outside band of 2400MHz to2483.5MHz, than mart the higher-lever emission for comparing with the FCC rules.

9.2. TEST SET-UP

Refer to 8.2

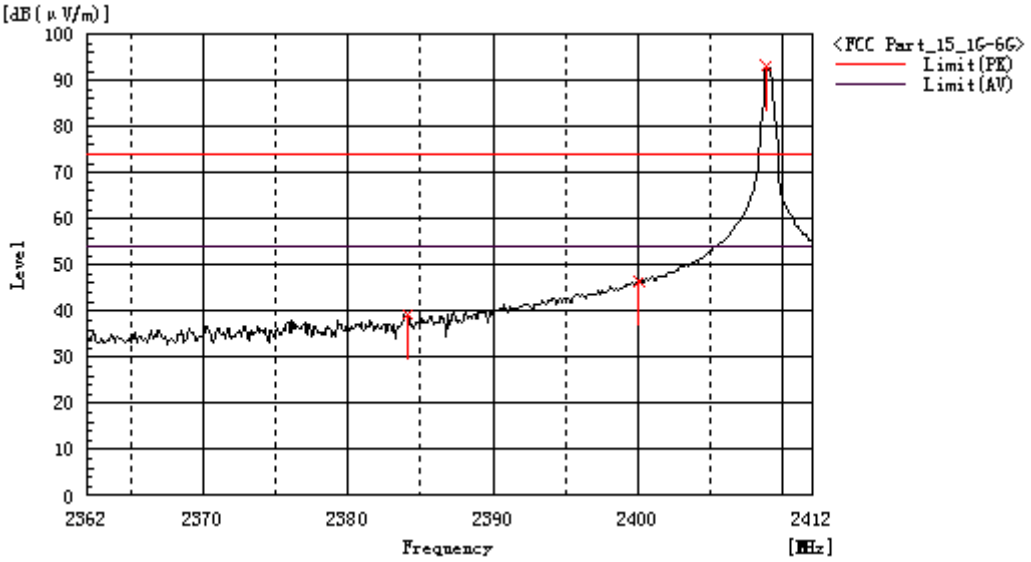
9.3 TEST RESULT

Frequency(MHz)	Limit(dBuv)	Result
Low Edge	＜54	Pass
High Edge	＜54	Pass

The edge emissions are shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

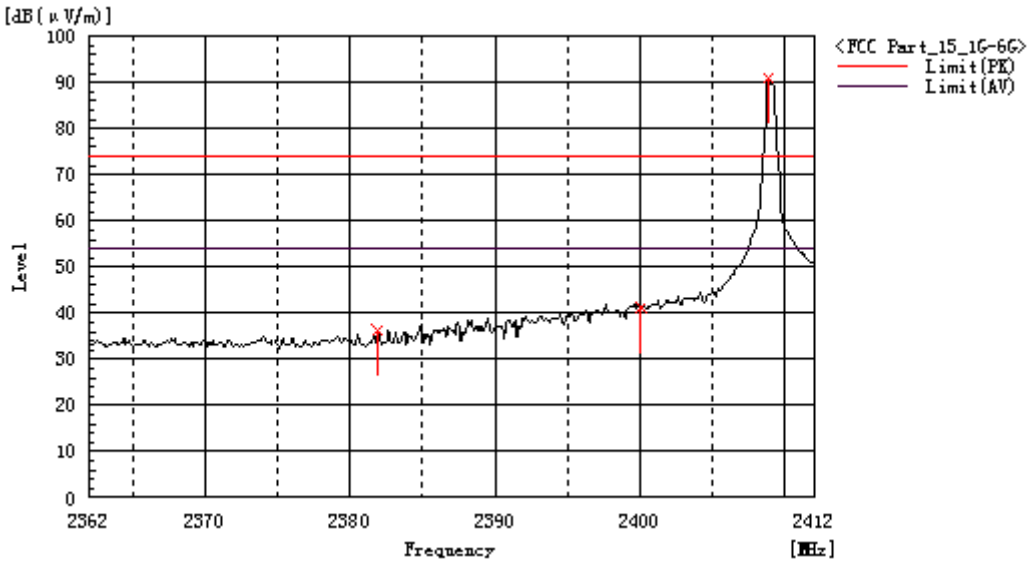
Please refer to the test plots below.

BAND EDGE EMISSION Low Channel –Horizontal



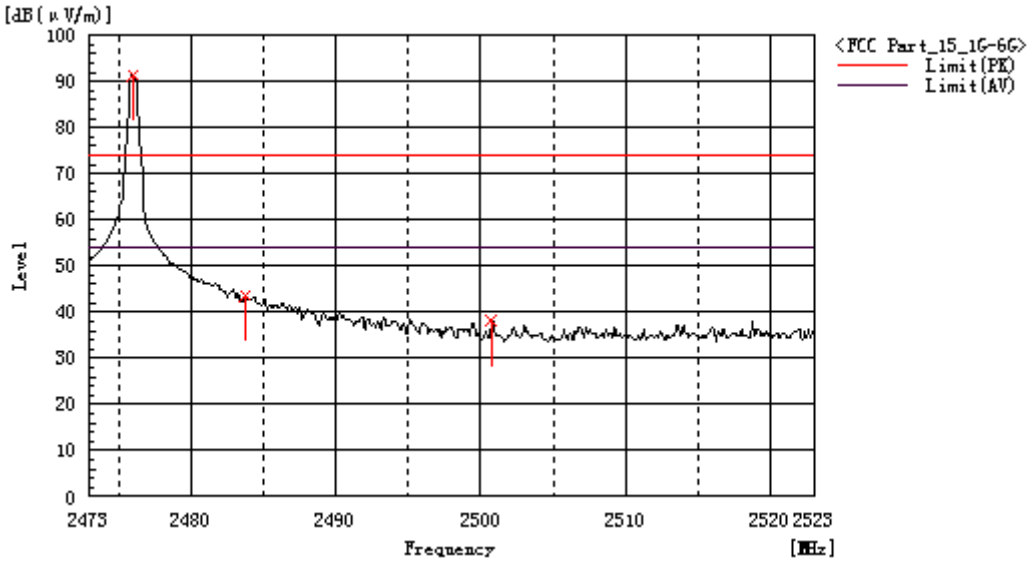
Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m)	Margin dB	Pass/Fail	Height cm	Angle deg
2408.875	H	93.7	-0.4	93.3	94.0	0.7	Pass	100.0	26.5
2400.000	H	46.9	-0.4	46.5	74.0	27.5	Pass	100.0	194.9
2384.125	H	40.0	-0.6	39.4	74.0	34.6	Pass	100.0	255.7

BAND EDGE EMISSION Low Channel –Vertical



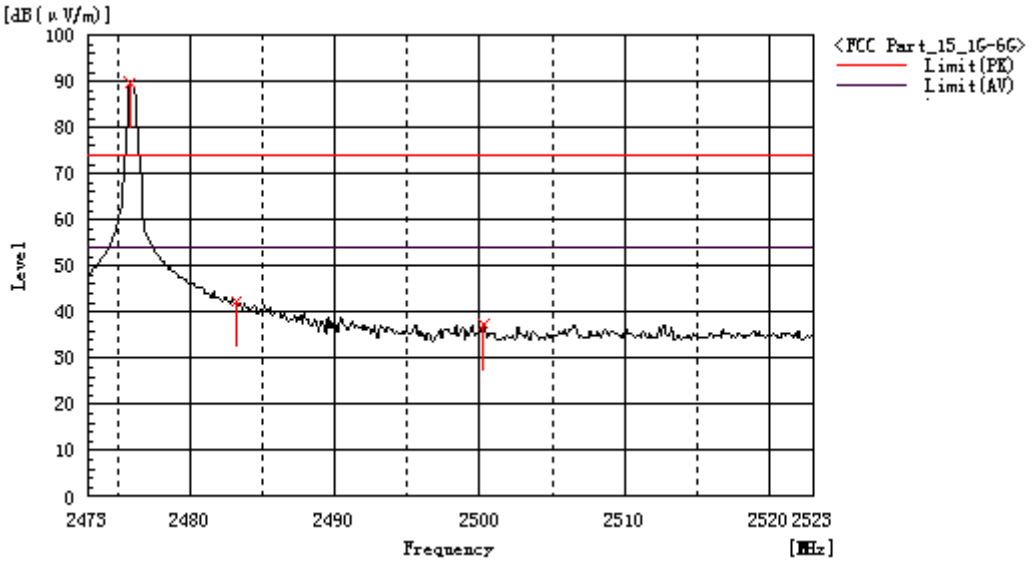
Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m)	Margin dB	Pass/Fail	Height cm	Angle deg
2408.875	V	91.3	-0.4	90.9	94.0	3.1	Pass	100.0	111.3
2400.000	V	41.6	-0.4	41.2	74.0	32.8	Pass	100.0	50.7
2381.875	V	37.1	-0.6	36.5	74.0	37.5	Pass	100.0	124.5

BAND EDGE EMISSION High Channel –Horizontal



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m) PK	Margin dB PK	Pass/Fail	Height cm	Angle deg
2476.000	H	91.5	-0.1	91.5	74.0	2.5	Pass	100.0	32.0
2483.750	H	43.6	-0.1	43.5	74.0	30.5	Pass	100.0	253.8
2500.750	H	38.0	0.2	38.2	74.0	35.8	Pass	100.0	153.3

BAND EDGE EMISSION High Channel –Vertical



Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) PK	Limit dB(uV/m) PK	Margin dB PK	Pass/Fail	Height cm	Angle deg
2475.875	V	89.9	-0.1	89.8	94.0	4.2	Pass	100.0	6.3
2483.250	V	42.5	-0.1	42.4	74.0	31.6	Pass	100.0	174.0
2500.250	V	37.2	0.2	37.4	74.0	36.6	Pass	100.0	225.9

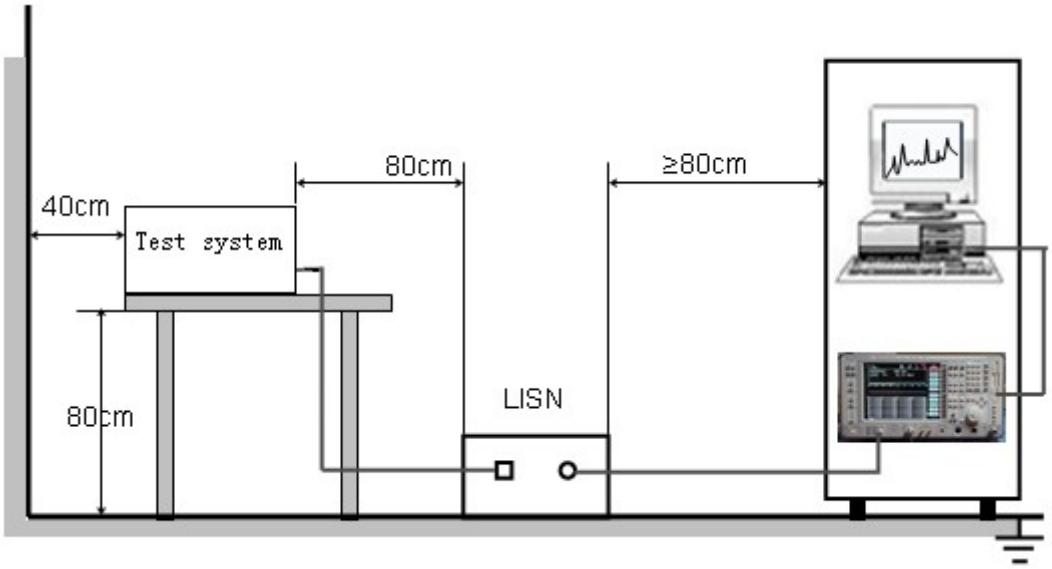
10. CONDUCTED EMISSION

10.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

Note:
1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.

10.2. BLOCK DIAGRAM OF TEST SETUP



10.3. PROCEDURE OF LINE CONDUCTED EMISSION TEST

(1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.

(2) Support equipment, if needed, was placed as per ANSI C63.4.

(3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

(4) The EUT received DC 5V from PC which received AC120V/60Hz power from a LISN.

(5) 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.

(6) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

(7) During the above scans, the emissions were maximized by cable manipulation.

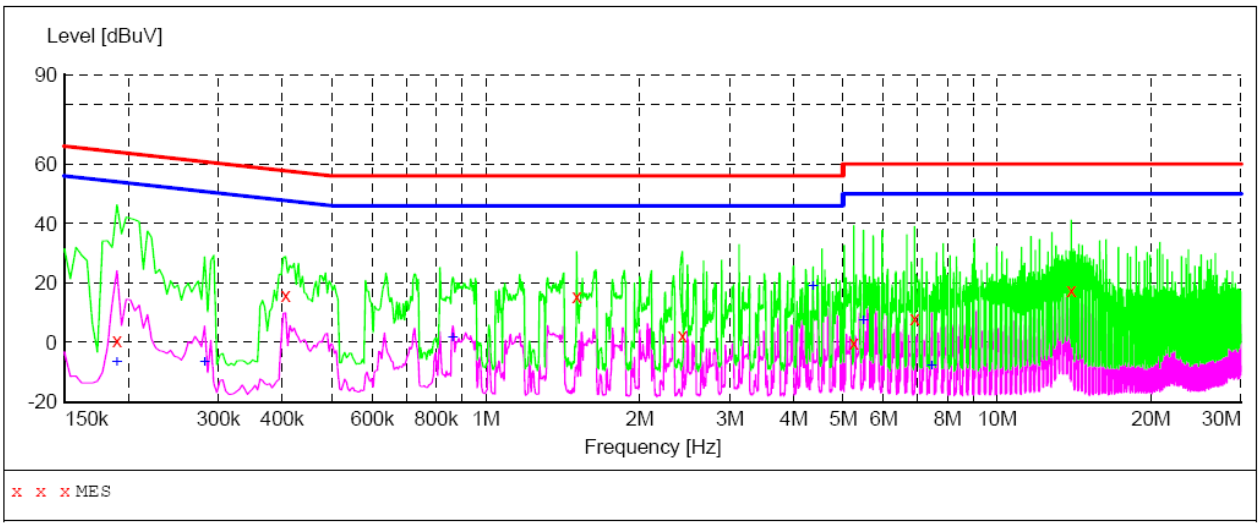
(8) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.

(9) Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition (mode 1) was reported on the Summary Data page.

10.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST-L



MEASUREMENT RESULT:

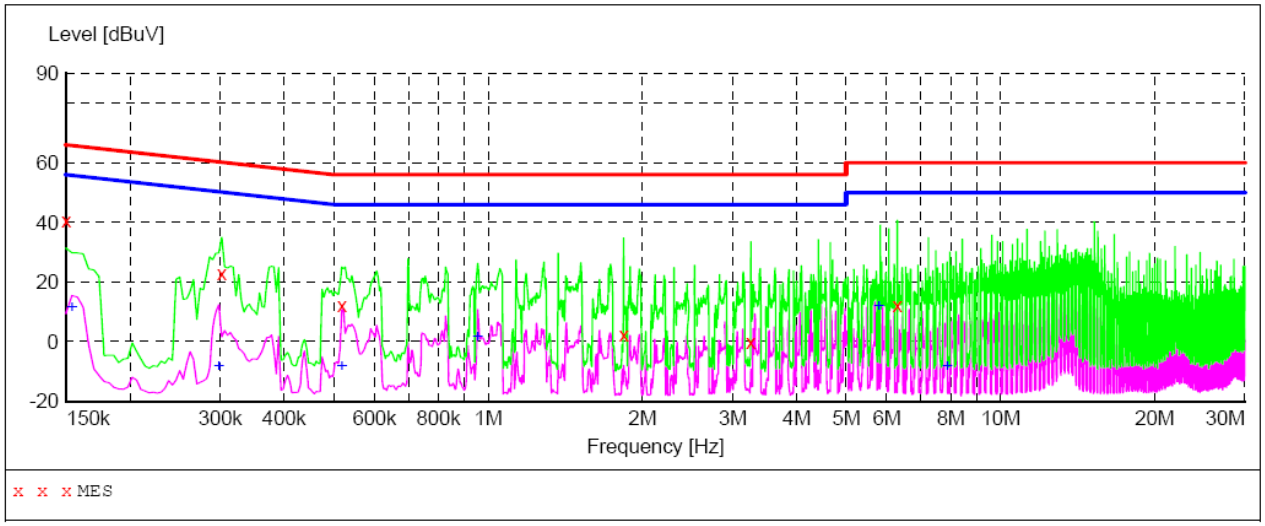
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.190000	0.50	0.2	64	63.5	PK	L1	FLO
0.406000	15.90	0.2	58	41.8	PK	L1	FLO
1.506000	15.70	0.2	56	40.3	PK	L1	FLO
2.426000	2.30	0.3	56	53.7	PK	L1	FLO
5.246000	0.00	0.4	60	60.0	PK	L1	FLO
6.894000	8.20	0.4	60	51.8	PK	L1	FLO
13.970000	17.40	0.6	60	42.6	PK	L1	FLO

MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.190000	-6.80	0.2	54	60.8	AV	L1	FLO
0.282000	-6.80	0.2	51	57.6	AV	L1	FLO
0.862000	1.60	0.2	46	44.4	AV	L1	FLO
4.366000	18.90	0.3	46	27.1	AV	L1	FLO
5.482000	7.40	0.4	50	42.6	AV	L1	FLO
7.458000	-8.10	0.4	50	58.1	AV	L1	FLO

RESULT: PASS

LINE CONDUCTED EMISSION TEST-N



MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	40.80	0.2	66	25.2	PK	N	FLO
0.302000	22.80	0.2	60	37.4	PK	N	FLO
0.518000	12.20	0.2	56	43.8	PK	N	FLO
1.838000	2.30	0.3	56	53.7	PK	N	FLO
3.258000	-0.30	0.3	56	56.3	PK	N	FLO
6.294000	12.30	0.4	60	47.7	PK	N	FLO

MEASUREMENT RESULT:

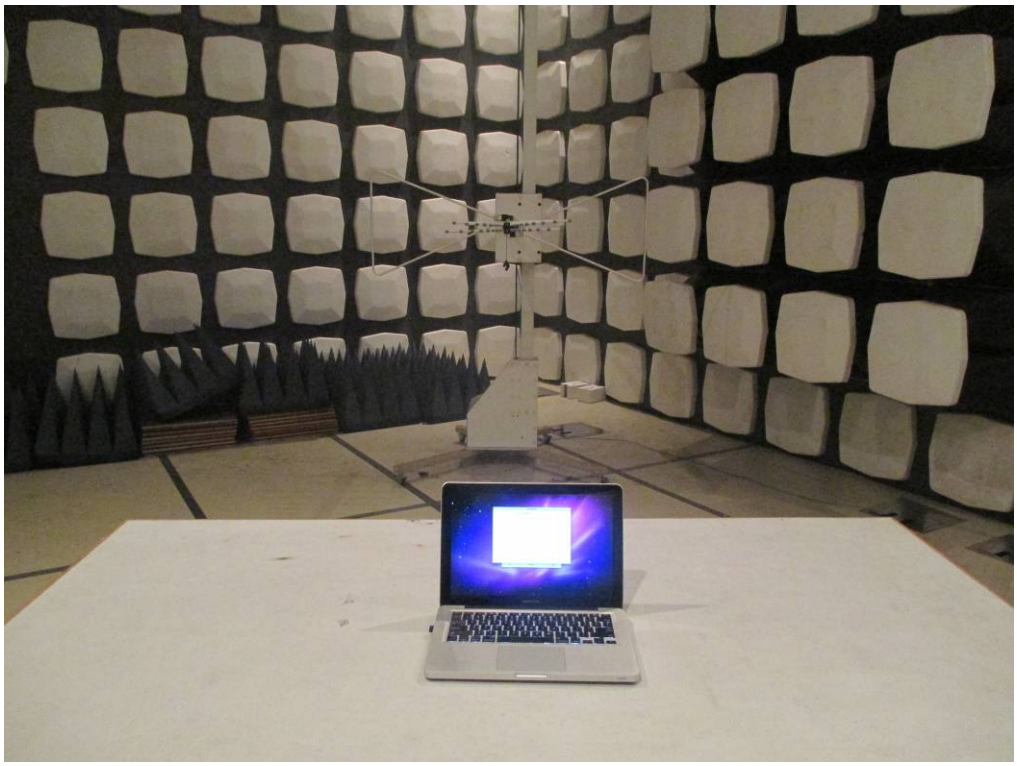
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.154000	11.50	0.2	56	44.3	AV	N	FLO
0.298000	-8.20	0.2	50	58.5	AV	N	FLO
0.518000	-8.60	0.2	46	54.6	AV	N	FLO
0.954000	1.60	0.2	46	44.4	AV	N	FLO
5.790000	11.90	0.4	50	38.1	AV	N	FLO
7.870000	-8.20	0.4	50	58.2	AV	N	FLO

RESULT: PASS

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

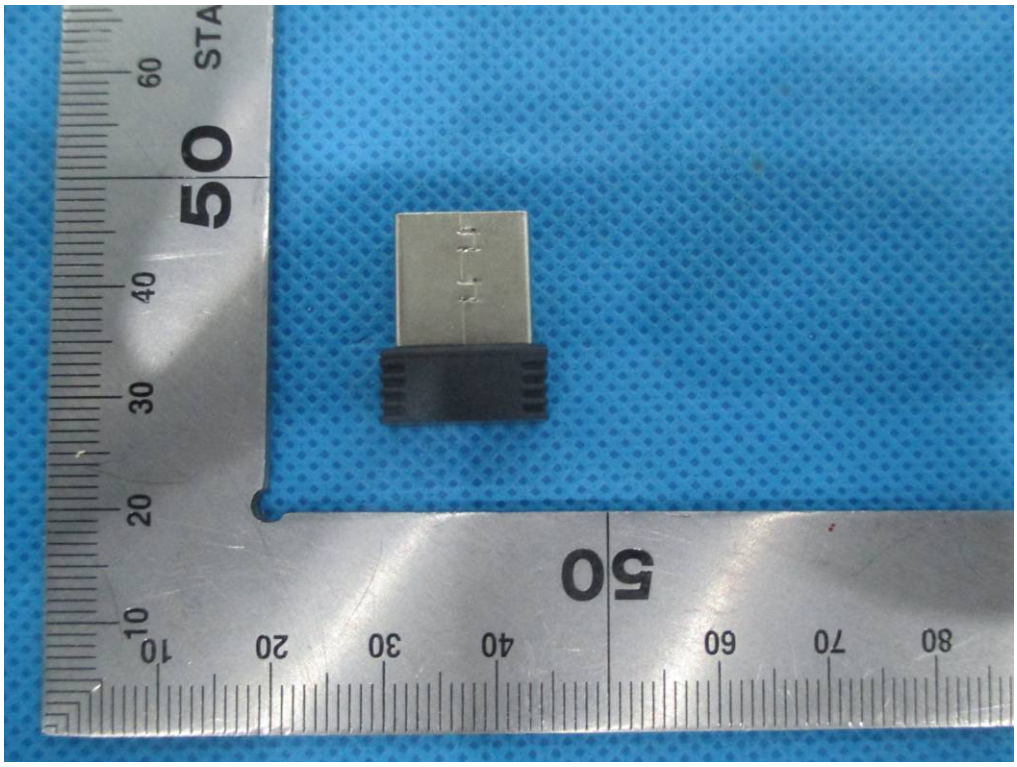
FCC CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP

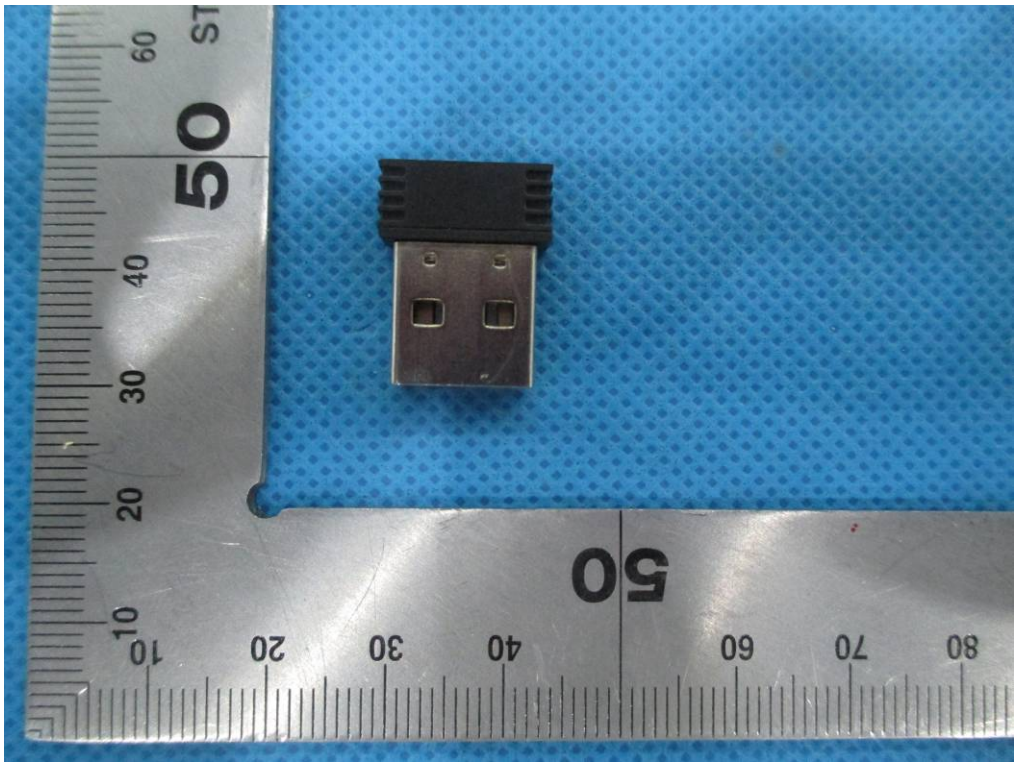


APPENDIX B: PHOTOGRAPHS OF EUT

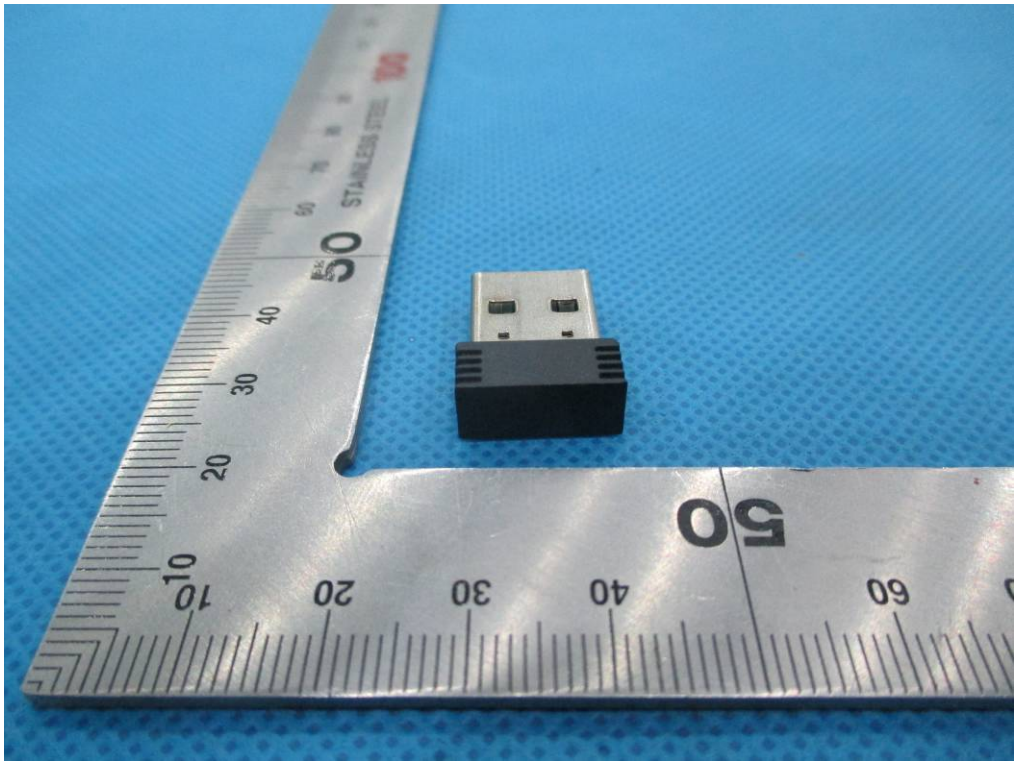
TOP VIEW OF EUT



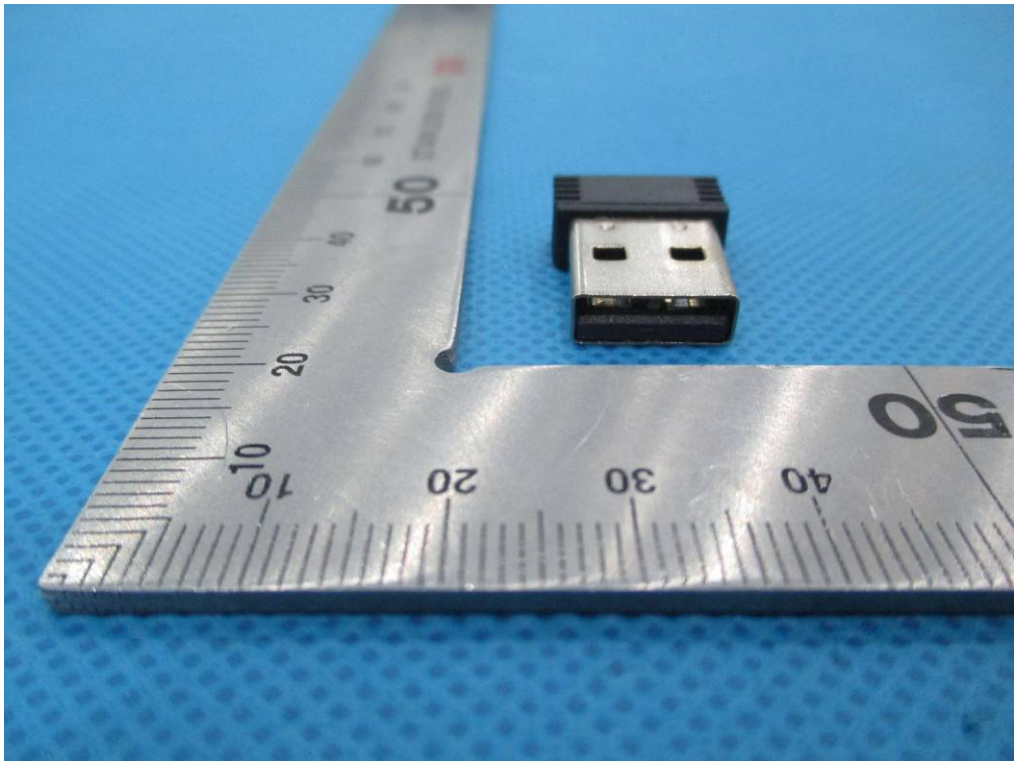
BOTTOM VIEW OF EUT



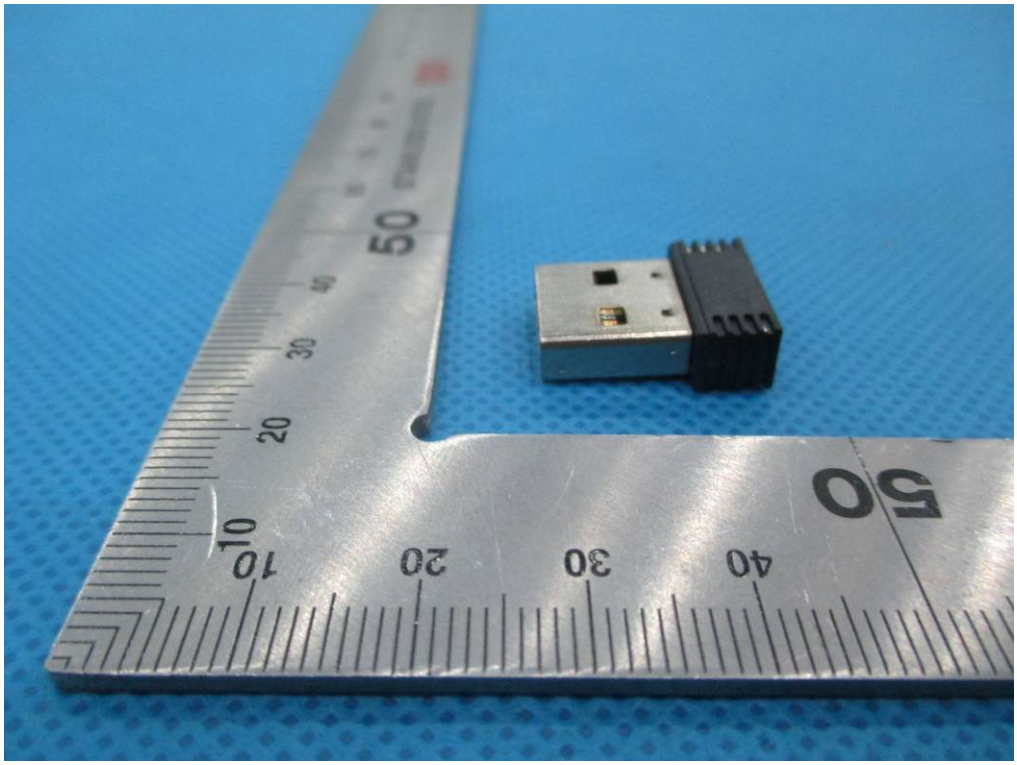
FRONT VIEW OF EUT



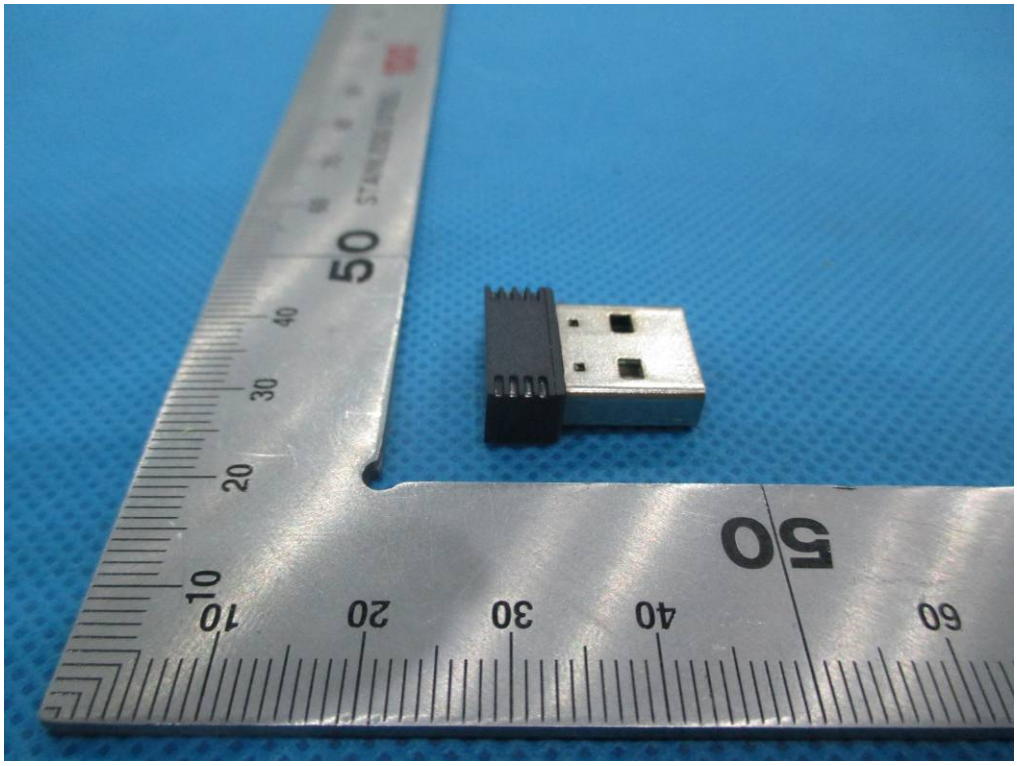
BACK VIEW OF EUT



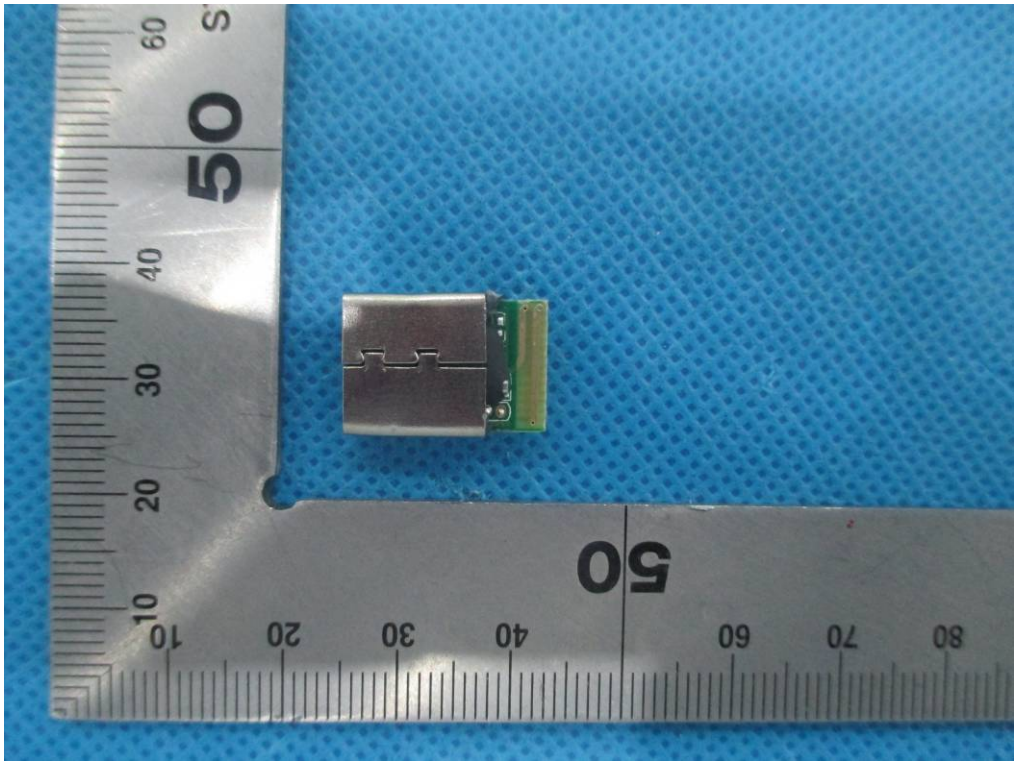
LEFT VIEW OF EUT



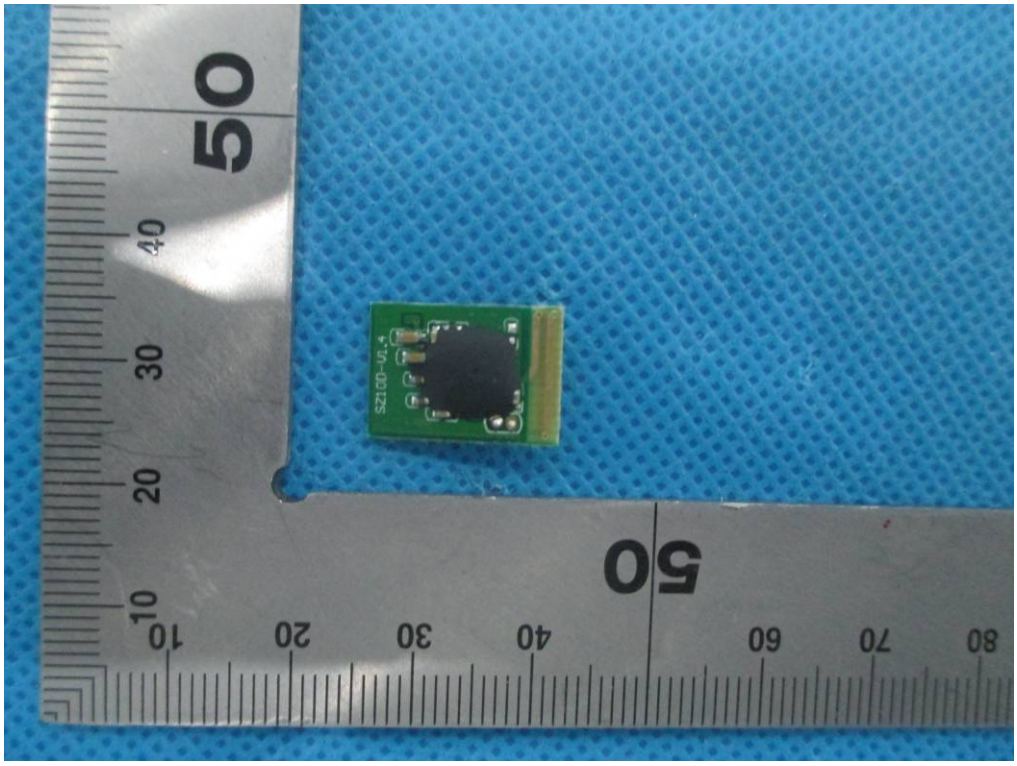
RIGHT VIEW OF EUT



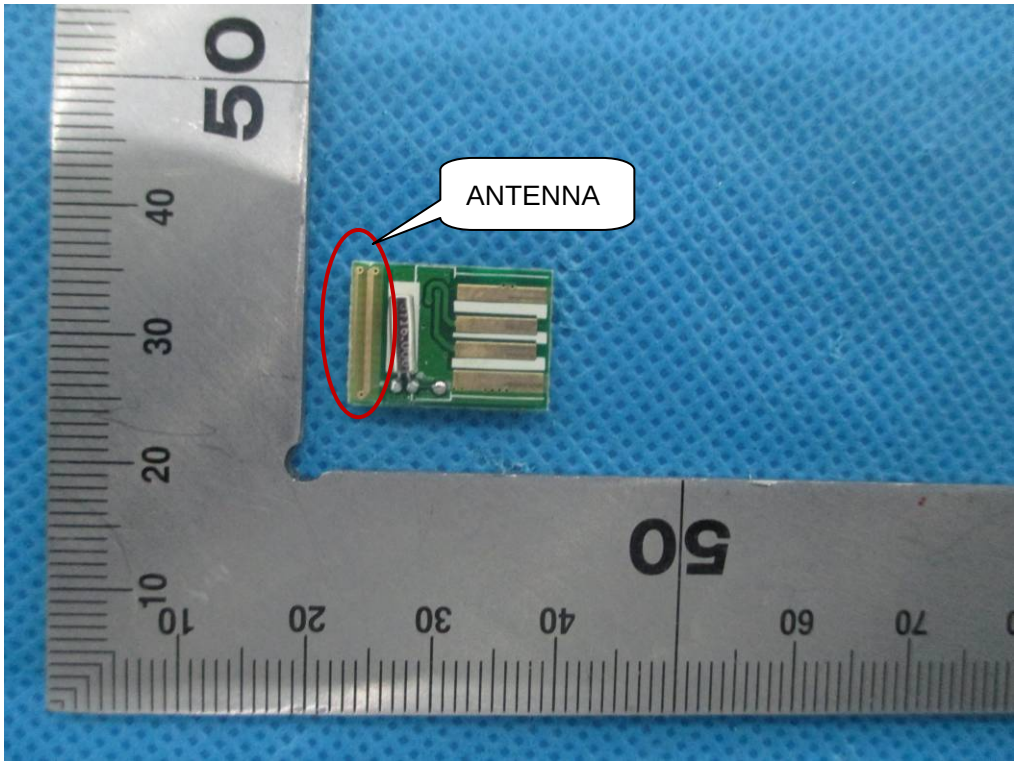
INTERNAL VIEW OF EUT-1



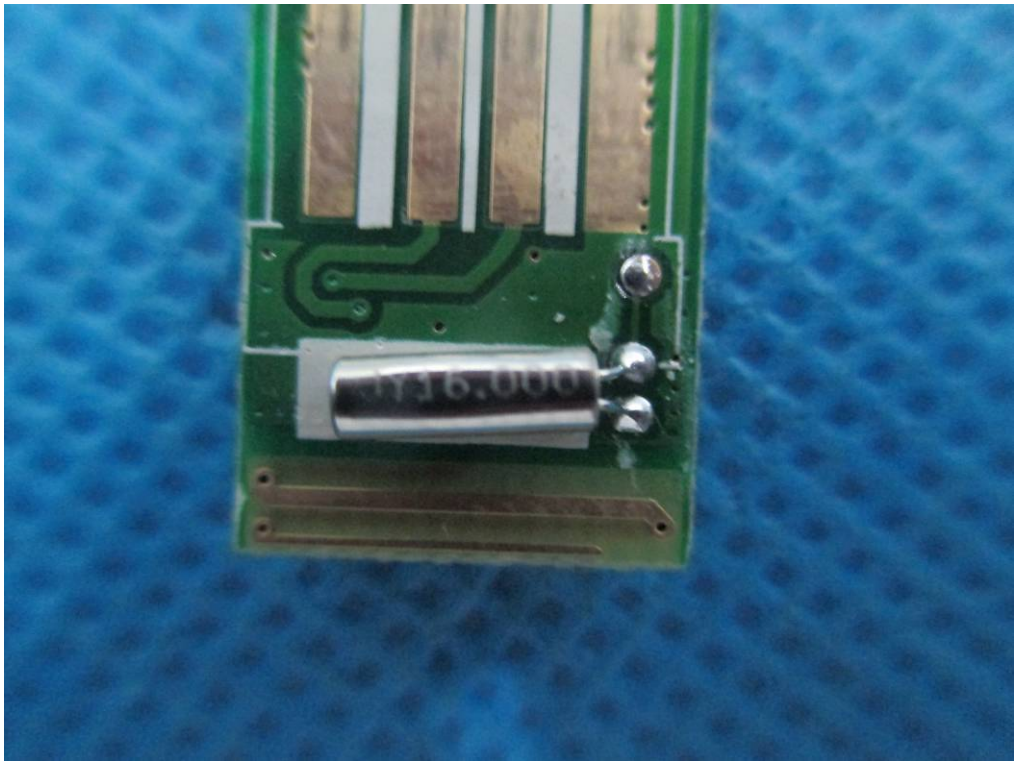
INTERNAL VIEW OF EUT-2



INTERNAL VIEW OF EUT-3



INTERNAL VIEW OF EUT-4



----END OF REPORT----