FCC TEST REPORT

FCC ID : UC3R082G4000

Applicant : **INTECH ELECTRONICS CORP.**
Address : Hall B3 , Yuan-Hu Industry Park , Golf Blvd., Song-Yuan Village, Guan-Lan , Shenzhen , China

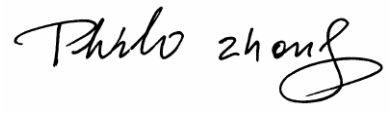
Equipment Under Test (EUT) :

Product description : 2.4G Wireless Laser Mouse
Model No. : R08

Standards : FCC 15 Paragraph 15.247

Date of Test : Aug. 31, 2008~Sept.2,2008

Test Engineer : Olic huang

Reviewed By : 

PERPARED BY:
Waltek Services (Shenzhen) Co., Ltd.
1/F, Fukangtai Building,West Baima Rd.,Songgang Street, Baoan District, Shenzhen 518105,China
Tel :86-755-27553488
Fax: 86-755-27553868

2 Contents

3 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 25GHz)	FCC PART 15: 2003	ANSI C63.4: 2003	N/A	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15: 2003	ANSI C63.4: 2003	N/A	N/A

4 General Information

4.1 Client Information

Applicant:	INTECH ELECTRONICS CORP.
Address of Applicant:	Hall B3 , Yuan-Hu Industry Park , Golf Blvd., Song-Yuan Village, Guan-Lan , Shenzhen , China
Manufacturer:	INTECH ELECTRONICS CORP.
Address of manufacturer:	Hall B3 , Yuan-Hu Industry Park , Golf Blvd., Song-Yuan Village, Guan-Lan , Shenzhen , China

4.2 General Description of E.U.T.

Product description:	2.4G Wireless Laser Mouse
Model No.:	R08

4.3 Details of E.U.T.

Power Supply:	DC 5.0V By USB Port

4.4 Description of Support Units

The EUT has been tested as an independent unit.

4.5 Standards Applicable for Testing

The customer requested FCC tests for a 2.4G Wireless Laser Mouse. The standards used were FCC 15 Paragraph 15.247,Paragraph 15.205, Paragraph 15.207,Paragraph 15.209, Paragraph 15.31,Paragraph 15.33, Paragraph 15.35.

4.6 Test Facility

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

- **FCC – Registration No.: 880581**

  Waltek Services(Shenzhen) Co., Ltd. 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 880581.June 24,2008.

- **IC – Registration No.:IC7760**

  Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration IC7760, July 24, 2008.

4.7 Test Location

All Emissions testswere performed at:-
1/F, Fukangtai Building,West Baima Rd.,Songgang Street, Baoan District, Shenzhen 518105,China

5 Equipment Used during Test

Equipment	Brand Name	Model	Related standards	Cal.Intal Months	Last Cal. Date	Serial No
3m Semi-Anechoic chamber						
EMC Analyzer	Agilent	E7405A	ISO9001:2000	12	Jan-08	MY45114943
TrilogBroadband Antenne30-3000 MHz	SCHWARZBECK MESSELEKTROM	VULB9163	EN/ISO/IEC 17025 DIN EN ISO9001	12	Jan-08	336
Broad-band Horn Antenna	SCHWARZBECK MESSELEKTROM	BBHA9120 D	EN/ISO/IEC 17025 DIN EN ISO9001	12	Jan-08	667
Broadband Preamplifier	SCHWARZBECK MESSELEKTROM	BBV 9718	EN/ISO/IEC 17025 DIN EN ISO9001	12	Jan-08	9718-148
10mCoaxialCable withN-male Connectors usable up to 18 GHz,	SCHWARZBECK MESSELEKTROM	AK 9515 H	EN/ISO/IEC 17025 DIN EN ISO9001	12	Jan-08	-
10m 50 Ohm Coaxial Cable with N-plug ,individual length, usable up to 3(5)GHz, Connectors	SCHWARZBECK MESSELEKTROM	AK 9513	EN/ISO/IEC 17025 DIN EN ISO9001	12	Jan-08	-
Positioning Controller	C&C LAB	CC-C-IF	ISO9001	12	Jan-08	MF7802108
Color Monitor	SUNSPO	SP-14C	ISO9001	12	Jan-08	-
EMI Shielded Room						
Test Receiver	ROHDE&SCHWARZ	ESPI	ISO9001	12	Jan-08	101155
Two-Line V-Network	ROHDE&SCHWARZ	ENV216	ISO9001 EN/ISO/IEC 17025	12	Jan-08	100115
Absorbing Clamp	ROHDE&SCHWARZ	MDS-21	ISO9001 EN/ISO/IEC 17025	12	Jan-08	100205
10m 50 Ohm Coaxial Cable with N-plug,individual length,usable up to 3(5)GHz, Connectors	SCHWARZBECK MESS-ELEKTROM	AK 9514	EN/ISO/IEC 17025 DIN EN ISO9001	12	Jan-08	-
Others						
Notebook	IBM	X31	-	-	-	-

6 Conducted Emission Test

Test Requirement:	FCC Part15 Paragraph 15.207
Test Method:	Based on FCC Part15 Paragraph 15.207
Test Date:	…….
Frequency Range:	150kHz to 30MHz
Class:	Class B
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

6.1 Test Equipment

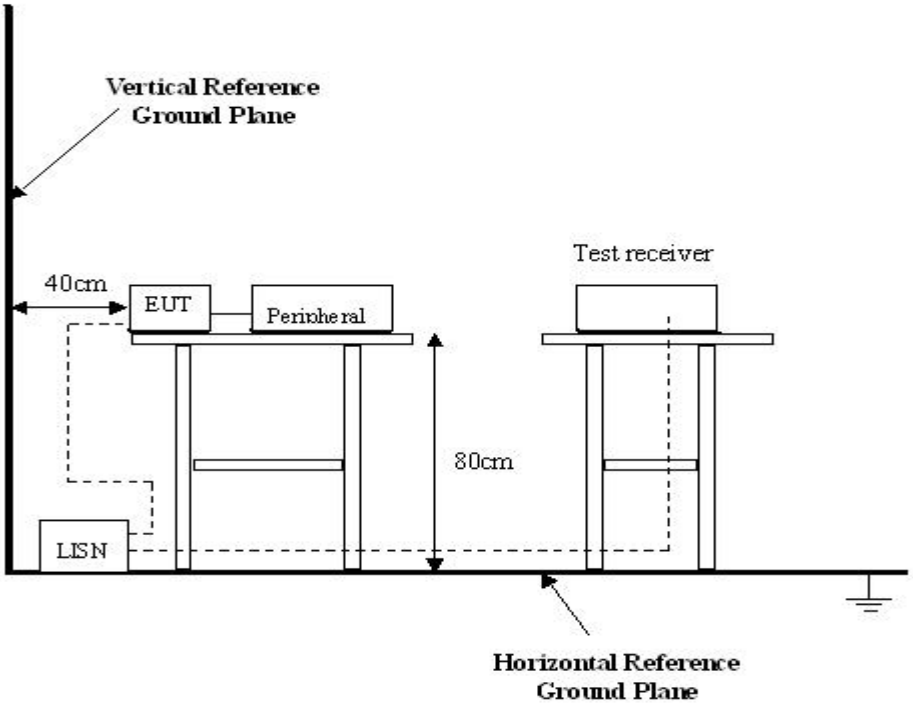
Please refer to Section 5 this report.

6.2 Test Procedure

1. The EUT was connected with signal generator and placed on a table.
2. The EUT was tested according to ANSI C63.4:2003. The frequency spectrum from 150kHz to 30MHz was investigated.
3. The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

6.3 Conducted Test Setup

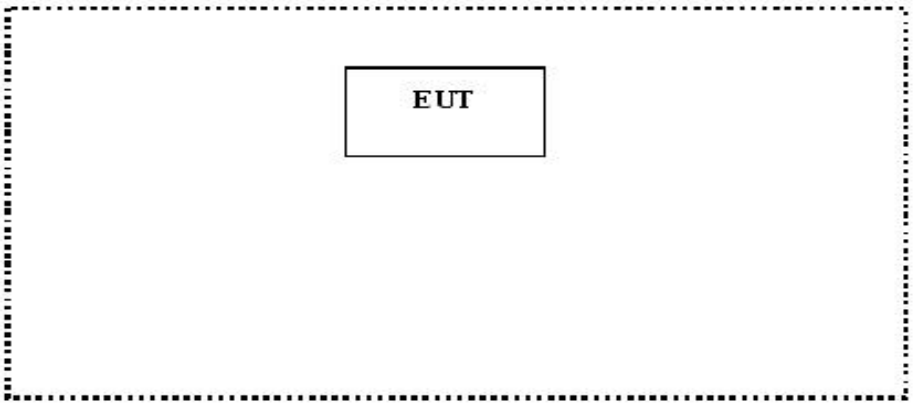
The conducted emission tests were performed using the setup accordance with the ANSI C63.4:2003, The specification used in this report was the FCC Part15 Paragraph 15.207 limits.



6.4 EUT Operating Condition

Operating condition is according to ANSI C63.4:2003.

A. Setup the EUT and simulators as shown on follow.
B. Enable RF signal and confirm EUT active.
C. Modulate output capacity of EUT up to specification.



6.5 Conducted Emission Limits

66-56 dBμV between 0.15MHz & 0.5MHz
56 dBμV between 0.5MHz & 5MHz
60 dBμV between 5MHz & 30MHz

Note: In the above limits, the tighter limit applies at the band edges.

6.6 Conducted Emission Test Data

Owing to the DC operation of EUT, this test is not performed.

7 Radiation Emission Test

Test Requirement:	FCC Part15 Paragraph 15.247
Test Method:	Based on ANSI 63.4:2003
Test Date:	Aug. 31, 2008
Frequency Range:	30MHz to 25GHz
Measurement Distance:	3m
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
	Quasi-Peak if maximised peak within 6dB of limit

7.1 Test Equipment

Please refer to Section 5 this report.

7.2 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

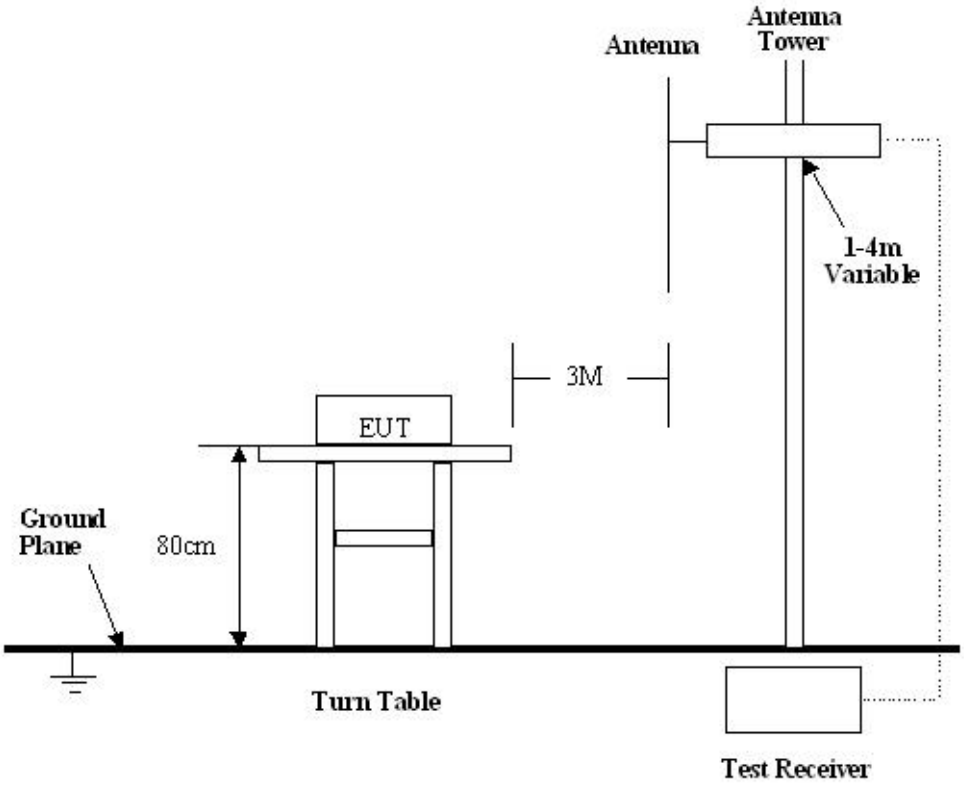
Based on ANSI C63.4:2003, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at WALTEK SERVICES EMC Lab is +/-2.9dB.

7.3 Test Procedure

1. The EUT was connected with signal generator and placed on a turntable.
2. Maximizing procedure was performed on the six (6) highest emissions to ensure EUT is compliant with all installation combinations.
3. All data was recorded in the peak and average detection mode.
4. The EUT was under normal mode during the final qualification test and the configuration was used to represent the worst case results.

7.4 Radiated Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4:2003, The specification used in this report was the FCC Part15 Paragraph 15.209 limits and Paragraph 15.247 limits.



7.5 Spectrum Analyzer Setup

According to FCC Part15 Paragraph 15.247 Rules, the system was tested to 25000 MHz.
Below 1G

Start Frequency.....30 MHz
Stop Frequency .....1000 MHz
Sweep Speed Auto
IF Bandwidth.....120 kHz
Video Bandwidth.....100KHz
Quasi-Peak Adapter Bandwidth .....120 kHz
Quasi-Peak Adapter Mode.....Normal
Resolution Bandwidth 100KHz

Above 1G

Start Frequency.....1000 MHz
Stop Frequency 25000MHz
Sweep Speed Auto
IF Bandwidth.....120 kHz
Video Bandwidth.....1MHz
Quasi-Peak Adapter Bandwidth .....120 kHz
Quasi-Peak Adapter Mode.....Normal
Resolution Bandwidth 1MHz

7.6 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dBμV means the emission is 7dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Class B Limit

7.7 Summary of Test Results

According to the data in section 7.11, the EUT complied with the FCC Part15 Paragraph 15.247 standards.

7.8 EUT Operating Condition

Same as section 6.4 of this report.

Let the EUT work in test mode and test it.

7.9 Radiated Emissions Limit on Paragraph 15.209

Frequency(MHZ)	Distance(m)	Field strength(dBuV/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note: (1) RF Voltage(dBuV)=20 log RF Voltage(uV)

(2) In the Above Table,the tighter limit applies at the band edges.

(3) Distance refers to the distance in meters between the measuring instrument antenna.

(4)The emission limit in this paragraph is based on measurement instrumentaion employing an average detector.Measurement using instrumentation with a peak detector function,corresponding to 20dB above the maximum permitted average limit.

(5)Above 1GHz,do a Peak and average measurements for all emissions,Limit for peak is 74dBuvV/m,According to Part15.35(b) and average is 54dBuvV/m.

7.10 Radiated Emissions Test Result

Formula of conversion factors:the field strength at 3m was egtablished by adding
The meter reading of the spectrum analyer (which is set to read in units of dBuV)
To the antenna correction factor supplied by the antenna manufacturer. The antenna
Correction factors are stared in terms of dB.The gain of the pressletor was accounted
For in the spectrum analyser meter reading.

Example:

Freq(MHz) Meter Reading +ACF=FS
33 20dBuV+10.36dB=30.36dBuV/m @3m

7.11 Radiated Emission Data

A. Test Item: Radiated Emission Data
Test Voltage: DC 5.0V
Test Mode: TX On
Temperature: 24 °C
Humidity: 52%RH
Test Result: PASS

Remarks: 30-1000MHz radiation test no significant emissions above the equipment noise floor were detected.

Frequency (MHz)	Detector	Antenna Polarization	Emission Level (dBuV/m)	FCC 15 Subpart C Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Turntable Angle (°)
Low frequency							
2402.00	AV	Vertical	88.69		(Fund.)	1.0	0
4804.00	AV	Vertical	41.01	54.00	12.99	1.0	0
7206.00	AV	Vertical	36.15	54.00	17.85	1.4	150
9608.00	AV	Vertical	33.75	54.00	20.25	1.4	90
12010.00	AV	Vertical	33.17	54.00	20.83	1.2	60
14412.00	AV	Vertical	32.21	54.00	21.79	1.5	60
16814.00	AV	Vertical	31.02	54.00	22.98	1.2	150
19216.00	AV	Vertical	30.10	54.00	23.90	1.2	120
21618.00	AV	Vertical	29.03	54.00	24.97	1.5	120
24020.00	AV	Vertical	28.21	54.00	25.79	1.6	45
2402.00	AV	Horizontal	88.02		(Fund.)	1.0	0

4804.00	AV	Horizontal	38.55	54.00	15.45	1.4	120
7206.00	AV	Horizontal	35.21	54.00	18.79	1.4	90
9608.00	AV	Horizontal	32.03	54.00	21.97	1.0	90
12010.00	AV	Horizontal	30.21	54.00	23.79	1.7	45
14412.00	AV	Horizonta	30.36	54.00	23.64	1.1	10
16814.00	AV	Horizontal	30.01	54.00	23.99	1.5	180
19216.00	AV	Horizontal	28.23	54.00	25.77	1.6	0
21618.00	AV	Horizontal	28.21	54.00	25.79	1.4	60
24020.00	AV	Horizontal	28.00	54.00	26.00	1.0	0
2402.00	PK	Vertical	102.24		(Fund.)	1.4	0
4804.00	PK	Vertical	44.21	74.00	29.79	1.3	150
7206.00	PK	Vertical	38.22	74.00	35.78	1.2	120
9608.00	PK	Vertical	37.42	74.00	36.58	1.3	150
12010.00	PK	Vertical	35.63	74.00	38.37	1.4	90
14412.00	PK	Vertical	34.22	74.00	39.78	1.5	0
16814.00	PK	Vertical	33.21	74.00	40.79	1.5	60
19216.00	PK	Vertical	31.03	74.00	42.97	1.3	150
21618.00	PK	Vertical	30.10	74.00	43.90	1.5	150
24020.00	PK	Vertical	28.02	74.00	25.98	1.5	30
2402.00	PK	Horizontal	100.10		(Fund.)	13	0
4804.00	PK	Horizontal	42.01	74.00	31.99	1.6	60
7206.00	PK	Horizontal	37.52	74.00	36.48	1.5	120
9608.00	PK	Horizontal	37.33	74.00	36.67	1.3	60
12010.00	PK	Horizontal	33.19	74.00	40.81	1.4	0
14412.00	PK	Horizontal	33.01	74.00	40.99	1.3	0
16814.00	PK	Horizontal	30.73	74.00	43.27	1.8	150
19216.00	PK	Horizontal	30.10	74.00	43.90	1.7	150
21618.00	PK	Horizontal	29.12	74.00	44.88	1.8	150
24020.00	PK	Horizontal	29.54	74.00	44.46	1.3	150
Middle frequency							
2448.00	AV	Vertical	89.36		(Fund.)	1.0	0
4896.00	AV	Vertical	38.21	54.00	15.79	1.5	30
7344.00	AV	Vertical	35.23	54.00	18.77	1.6	0
9792.00	AV	Vertical	32.69	54.00	21.31	1.0	150

12240.00	AV	Vertical	31.02	54.00	22.98	1.7	150
14688.00	AV	Vertical	30.73	54.00	23.27	1.2	120
17136.00	AV	Vertical	30.26	54.00	23.74	1.6	150
19584.00	AV	Vertical	30.17	54.00	23.83	1.4	180
22032.00	AV	Vertical	30.52	54.00	23.48	1.5	60
24480.00	AV	Vertical	29.63	54.00	24.37	1.0	1355
2448.00	AV	Horizontal	87.85		(Fund.)	1.0	0
4896.00	AV	Horizontal	36.33	54.00	17.67	1.3	180
7344.00	AV	Horizontal	32.38	54.00	21.62	1.4	60
9792.00	AV	Horizontal	32.52	54.00	21.48	1.0	150
12240.00	AV	Horizontal	31.45	54.00	22.55	1.8	120
14688.00	AV	Horizontal	30.67	54.00	23.33	1.6	90
17136.00	AV	Horizontal	30.24	54.00	23.76	1.5	45
19584.00	AV	Horizontal	30.32	54.00	23.68	1.4	180
22032.00	AV	Horizontal	30.59	54.00	23.41	1.4	120
24480.00	AV	Horizontal	30.71	54.00	23.29	1.0	120
2448.00	PK	Vertical	104.25		(Fund.)	1.0	0
4896.00	PK	Vertical	42.25	74.00	31.75	1.4	60
7344.00	PK	Vertical	39.33	74.00	34.67	1.5	90
9792.00	PK	Vertical	38.94	74.00	35.06	1.3	100
12240.00	PK	Vertical	37.87	74.00	36.13	1.5	120
14688.00	PK	Vertical	38.36	74.00	35.64	1.8	60
17136.00	PK	Vertical	39.47	74.00	34.53	1.7	180
19584.00	PK	Vertical	39.85	74.00	34.15	1.5	150
22032.00	PK	Vertical	32.21	74.00	41.79	1.5	45
24480.00	PK	Vertical	30.21	74.00	43.79	1.3	90
2448.00	PK	Horizontal	98.63		(Fund.)	1.0	0
4896.00	PK	Horizontal	40.00	74.00	34.00	1.6	45
7344.00	PK	Horizontal	38.56	74.00	35.44	1.5	0
9792.00	PK	Horizontal	38.01	74.00	35.99	1.5	90
12240.00	PK	Horizontal	39.36	74.00	34.64	1.4	100
14688.00	PK	Horizontal	38.74	74.00	35.26	1.0	180
17136.00	PK	Horizontal	36.82	74.00	37.18	1.8	150
19584.00	PK	Horizontal	35.21	74.00	38.79	1.3	150

22032.00	PK	Horizontal	36.21	74.00	37.79	1.4	120
24480.00	PK	Horizontal	35.62	74.00	38.38	1.6	135
High frequency							
2480.00	AV	Vertical	90.00		(Fund.)	1.0	0
4960.00	AV	Vertical	41.20	54.00	12.80	1.5	45
7440.00	AV	Vertical	35.25	54.00	18.75	1.6	120
9920.00	AV	Vertical	30.26	54.00	23.74	1.5	90
12400.00	AV	Vertical	30.55	54.00	23.45	1.7	135
14880.00	AV	Vertical	30.34	54.00	23.66	1.5	100
17360.00	AV	Vertical	30.62	54.00	23.38	1.6	120
19840.00	AV	Vertical	30.13	54.00	23.87	1.3	90
22320.00	AV	Vertical	30.27	54.00	23.73	1.5	0
24800.00	AV	Vertical	29.63	54.00	24.37	1.4	60
2480.00	AV	Horizontal	88.36		(Fund.)	1.0	0
4960.00	AV	Horizontal	35.62	54.00	18.38	1.5	150
7440.00	AV	Horizontal	33.32	54.00	20.68	1.5	90
9920.00	AV	Horizontal	31.47	54.00	22.53	1.0	90
12400.00	AV	Horizontal	31.89	54.00	22.11	1.6	0
14880.00	AV	Horizontal	30.46	54.00	23.54	1.4	100
17360.00	AV	Horizontal	31.17	54.00	22.83	1.5	120
19840.00	AV	Horizontal	30.55	54.00	23.45	1.5	180
22320.00	AV	Horizontal	30.14	54.00	23.86	1.4	120
24800.00	AV	Horizontal	29.21	54.00	24.79	1.6	60
2480.00	PK	Vertical	101.01		(Fund.)	1.0	30
4960.00	PK	Vertical	40.12	74.00	33.88	1.3	120
7440.00	PK	Vertical	38.32	74.00	35.68	1.4	120
9920.00	PK	Vertical	35.35	74.00	38.65	1.7	90
12400.00	PK	Vertical	35.56	74.00	38.44	1.0	90
14880.00	PK	Vertical	34.72	74.00	39.28	1.6	45
17360.00	PK	Vertical	36.87	74.00	37.13	1.8	135
19840.00	PK	Vertical	36.26	74.00	37.74	1.5	0
22320.00	PK	Vertical	36.73	74.00	37.27	1.5	30
24800.00	PK	Vertical	36.33	74.00	37.67	1.3	90
2480.00	PK	Horizontal	99.89		(Fund.)	1.0	30

4960.00	PK	Horizontal	41.02	74.00	32.98	1.7	0
7440.00	PK	Horizontal	38.64	74.00	35.36	1.5	120
9920.00	PK	Horizontal	35.37	74.00	38.63	1.4	0
12400.00	PK	Horizontal	35.52	74.00	38.48	1.5	135
14880.00	PK	Horizontal	35.26	74.00	38.74	1.3	0
17360.00	PK	Horizontal	36.41	74.00	37.59	1.8	180
19840.00	PK	Horizontal	33.52	74.00	40.48	1.4	180
22320.00	PK	Horizontal	30.25	74.00	43.75	1.4	120
24800.00	PK	Horizontal	29.39	74.00	44.61	1.1	0

8 Maximum Peak Output Power

Test Requirement: FCC Part15 Paragraph 15.247
Test Method: Based on ANSI 63.4:2003
Test Date: Sept.2, 2008
Test mode: Compliance test in the worse case: Tx Low/Tx Middle/Tx Up
Requirements: Regulation 15.247(b) The limit of Maximum Peak Output Power Measurement is 1W(30dBm)

Test procedure:

The following test procedure as below:

The transmitter output (antenna port) was connected to the spectrum analyzer.EUT and its simulators are placed on a table, let EUT working in test mode,then test it.

The bandwidth of the fundamental frequency was measured with the spectrum analyser using 100kHz RBW and 100kHz VBW.

Test Result: The unit does meet the FCC requirements.

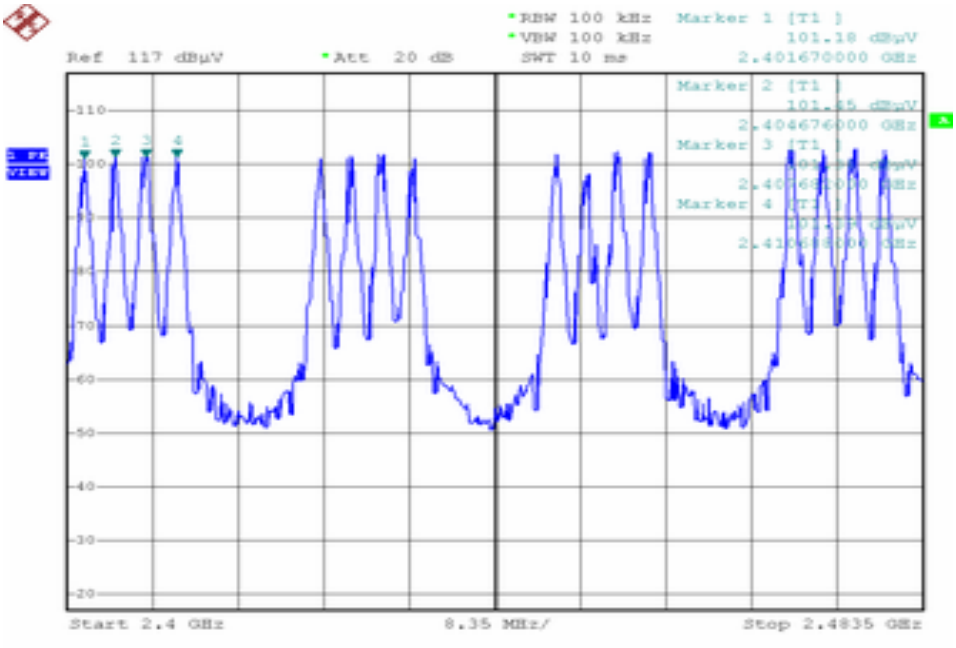
Test Channel	Fundamental Frequency(GHz)	Output Power (mW)	Limit (W)	Power output level
lower	2.402	0.321	1	ERP
middle	2.448	0.422	1	ERP
upper	2.480	0.354	1	ERP

9 Hopping Channel Number

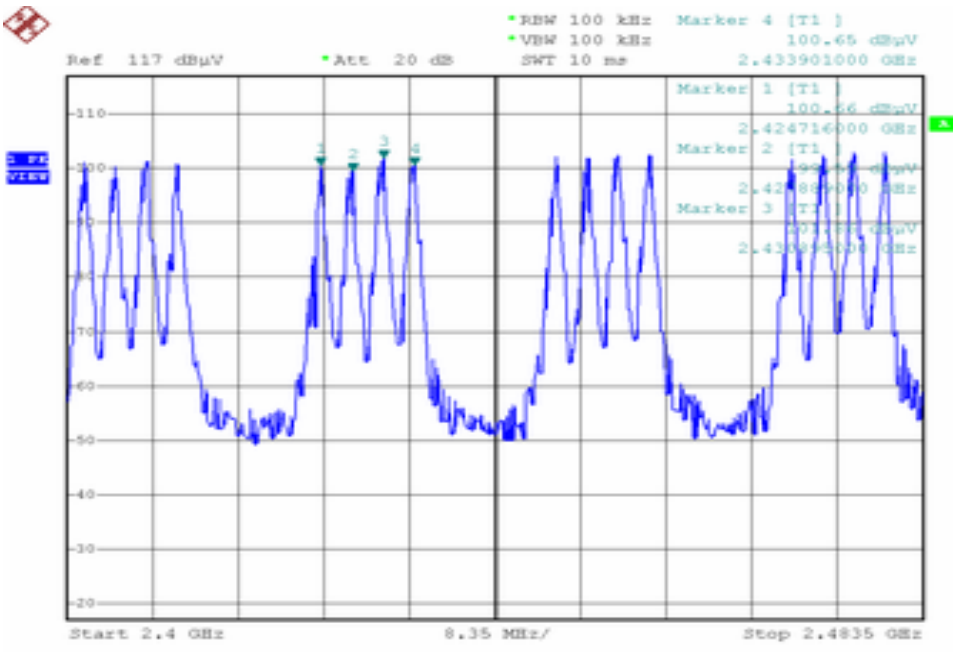
Test Requirement:	FCC Part15 C
Test Method:	Based on FCC Part15 Paragraph 15.247
Test Date:	Sept. 2, 2008
Test mode:	The EUT work in test mode(Tx) and test it
Requirements:	Regulation 15.247(b) For frequency hopping systems operating In the 2400-2483.5MHz band employing at least 15 hopping channels.
Test result:	The total number of channels would be 16 channels. The unit does meet the FCC requirements.

Please refer the graph as below:

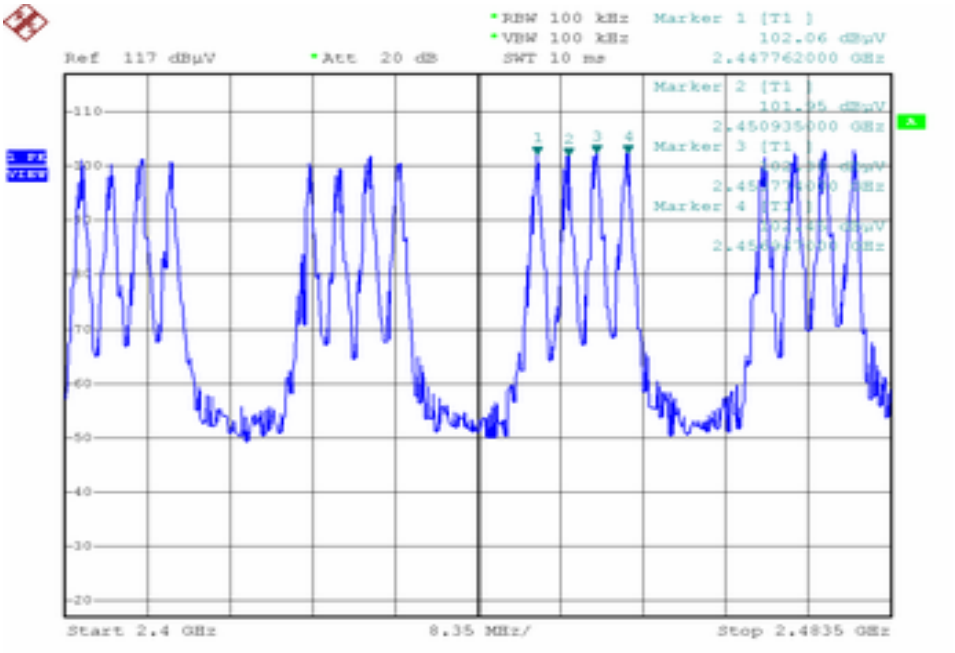
Channel 1 to Channel 4:



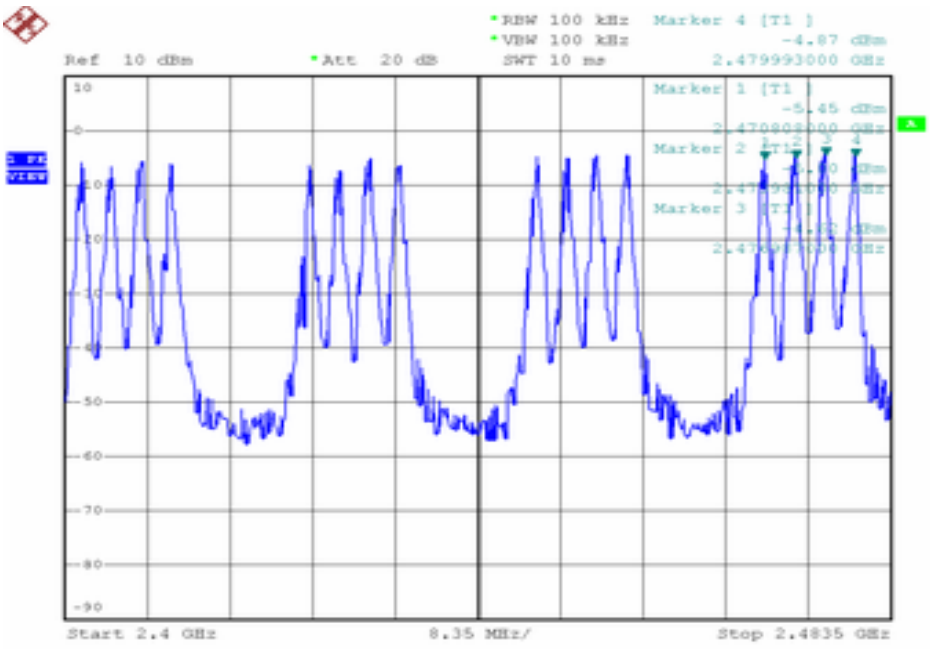
Channel 5 to Channel 8:



Channel 9 to Channel 12:



Channel 13 to Channel 16:



10 Frequency Separated

The requirements in this clause are only applicable to equipment using frequency hopping spread spectrum (FHSS) modulation.

Definition: A hopping channel is any of the centre frequencies defined within the hopping sequence of a FHSS system.
Limit: Non-adaptive frequency hopping system shall make use of non-overlapping channels separated by the channel bandwidth as measured at 20dB below peak power.
The hopping channels defined within a hopping sequence shall be at least 1MHz apart(channel separation)

Operating Environment:

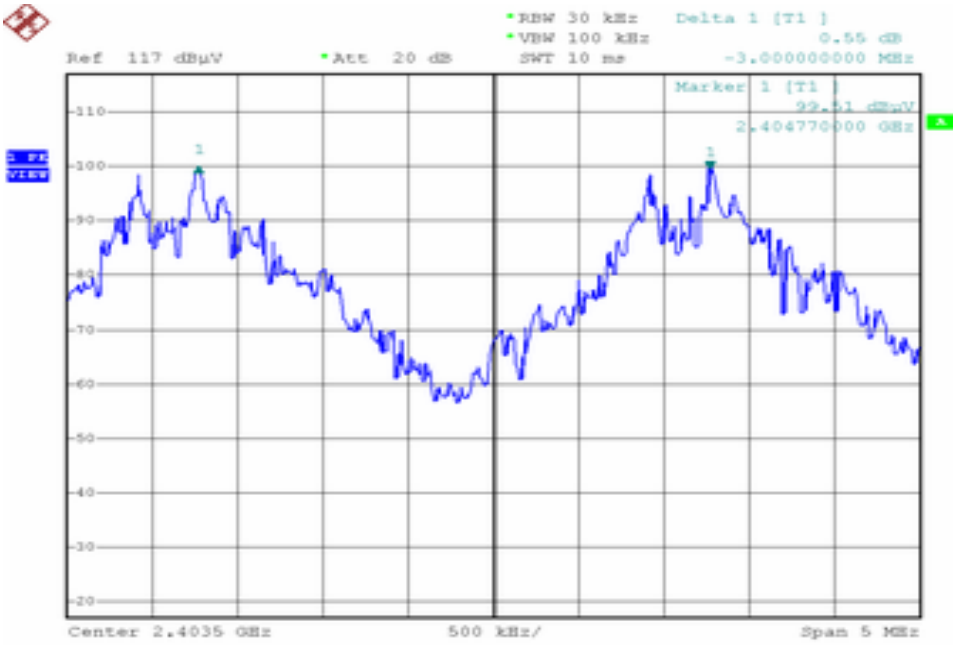
Temperature:	22.0 °C
Humidity:	55 % RH
Barometric Pressure:	1012 mbar

EUT Operation Condition:
The EUT was programmed to be in continuously transmitting mode.

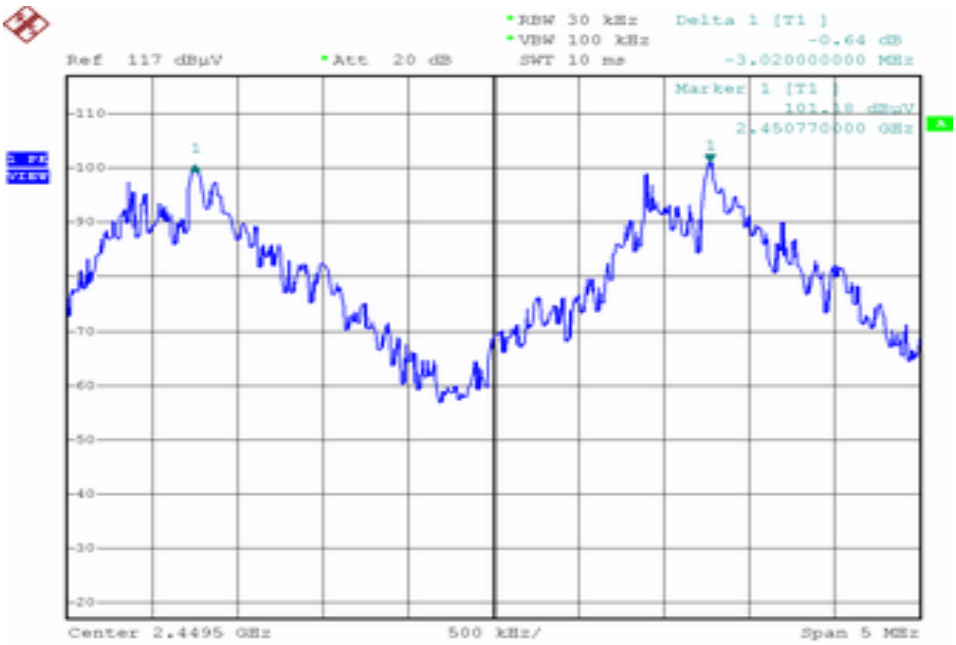
Test Result: PASS

Please refer to the below photos for more details

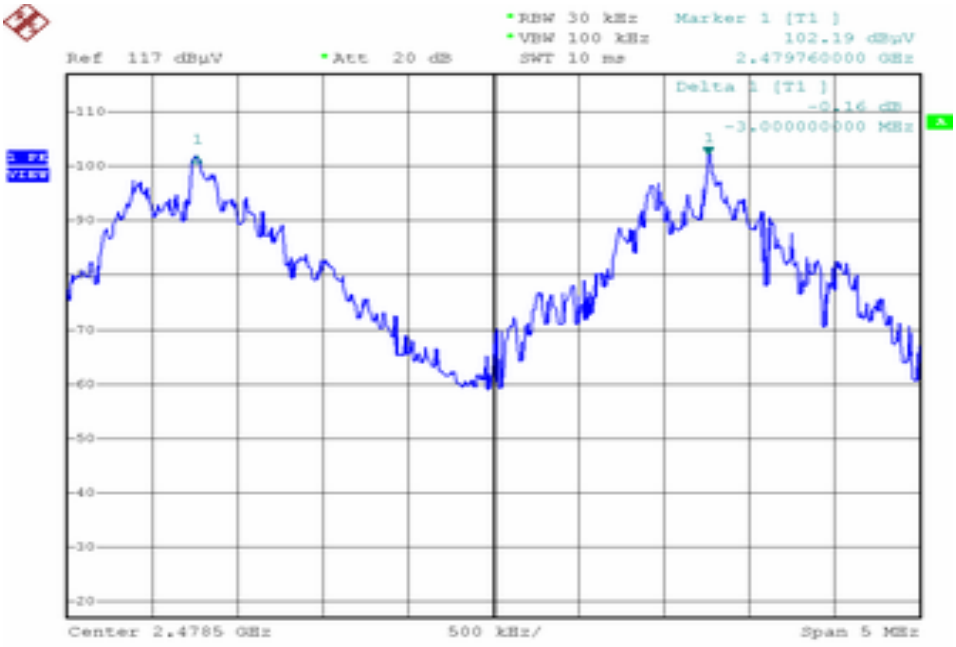
Lower Channel 2402MHz



Middle Channel 2448MHz



Upper Channel 2480MHz



11 Dwell time

11.1 Definition:

The dwell time is the time spent at a particular frequency during any single hop.

Limit: the maximum dwell time shall be less than 0.4s.

Operating Environment:

Temperature: 22.0 °C

Humidity: 55 % RH

Barometric Pressure: 1012 mbar

EUT Operation Condition:

The EUT was programmed to be in continuously transmitting mode.

11.2 Test Procedure

The EUT output antenna port was connected to the spectrum analyzer. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz,and the frequency span to zero span,measure the maximum time duration of one single pulse. So,the Dwell Time can be calculated as follows:

$T=T_{on\text{-}time} * N_{times}/1S*0.4*16 \leqslant 0.4S$.

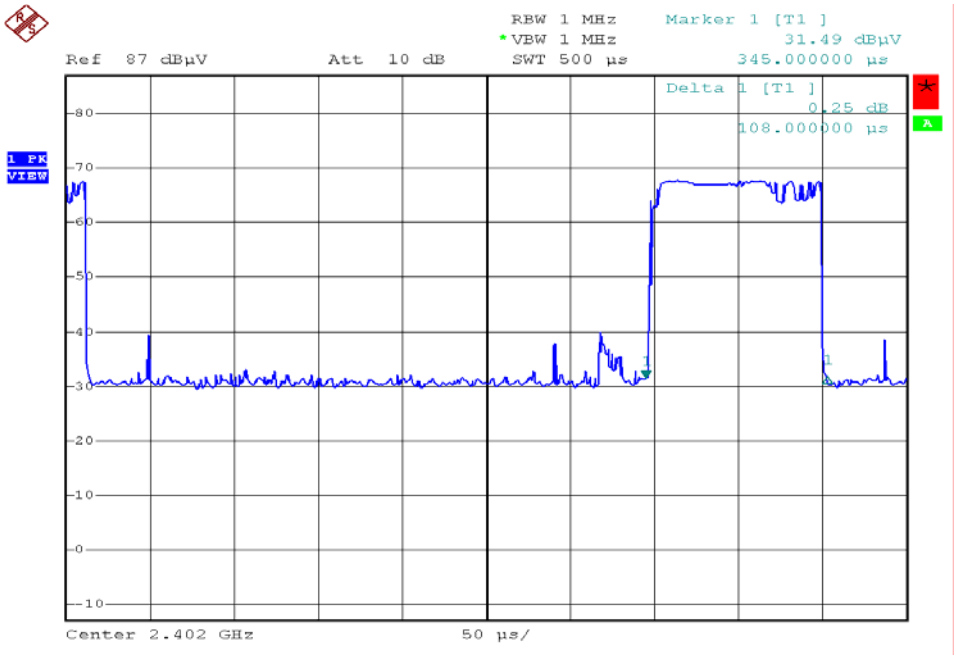
11.3 Test Result: PASS

Please refer to the below photos for more details.

Channel 2402MHz

Dwell time of each occupation in this channel as follows:
0.000108*312/1S*0.4*16=0.221184<0.4S

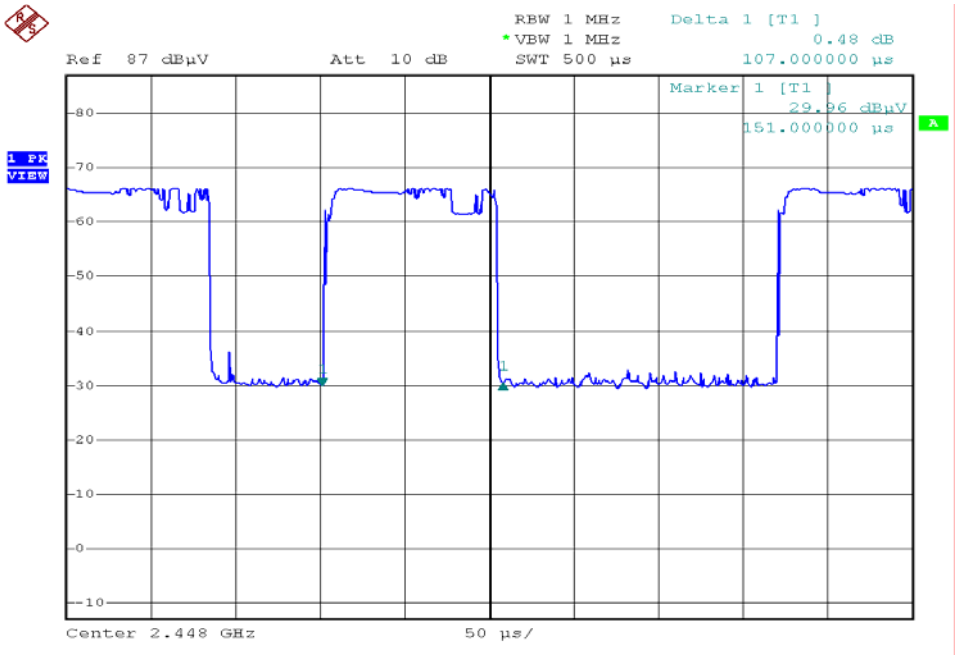
Test Result: PASS
The Results are not be greater than 0.4 seconds.



Channel 2448MHz

Dwell time of each occupation in this channel as follows:
0.000107*315/1S*0.4*16=0.21712<0.4S.

Test Result: PASS
The Results are not be greater than 0.4 seconds.

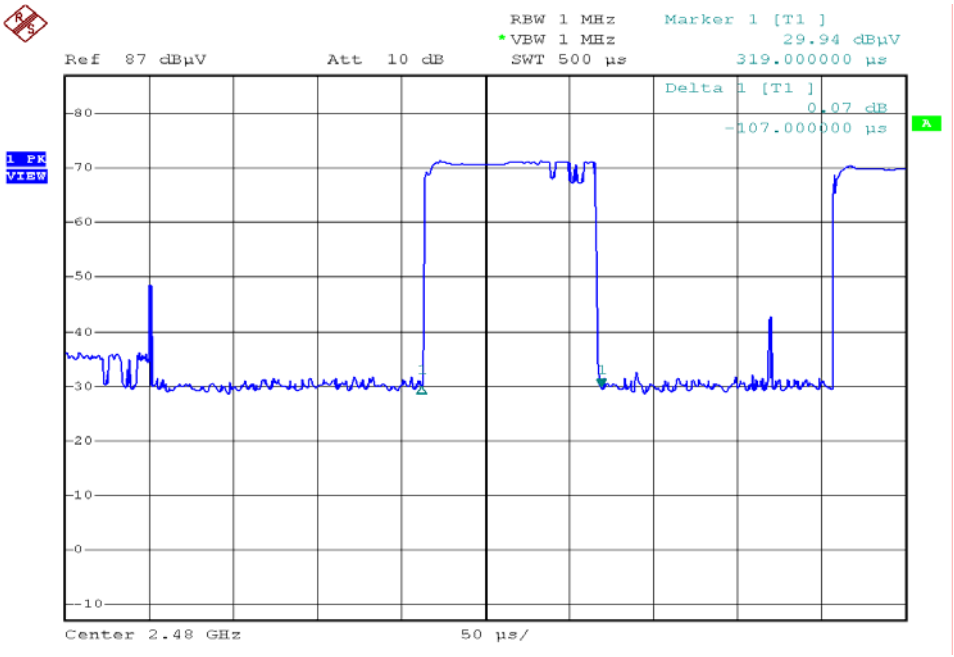


Channel 2480MHz

Dwell time of each occupation in this channel as follows:
0.000107*318/1S*0.4*16=0.20555<0.4S

Test Result: PASS

The Results are not be greater than 0.4 seconds.



12 20-dB Bandwidth

Test Requirement:	FCC Part15 C
Test Method:	Based on FCC Part15 Paragraph 15.247
Test Date:	Sept.2, 2008
Test mode:	The EUT work in test mode(Tx) and test it

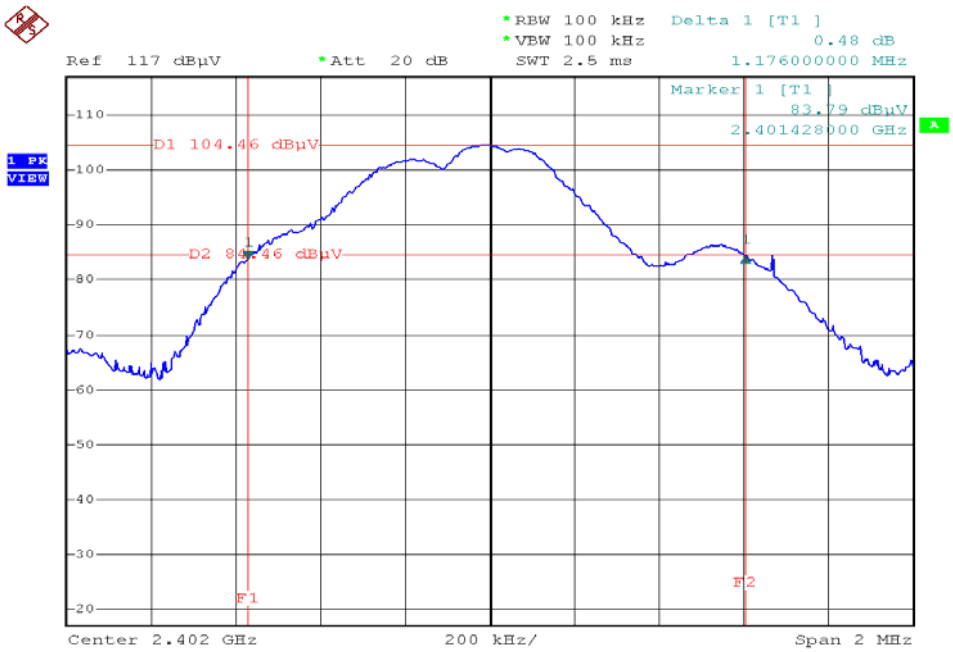
12.1 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. The bandwidth of the fundamental frequency was measure by spectrum analyser with 100KHz RBW and 100KHz VBW.The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power 20dB.

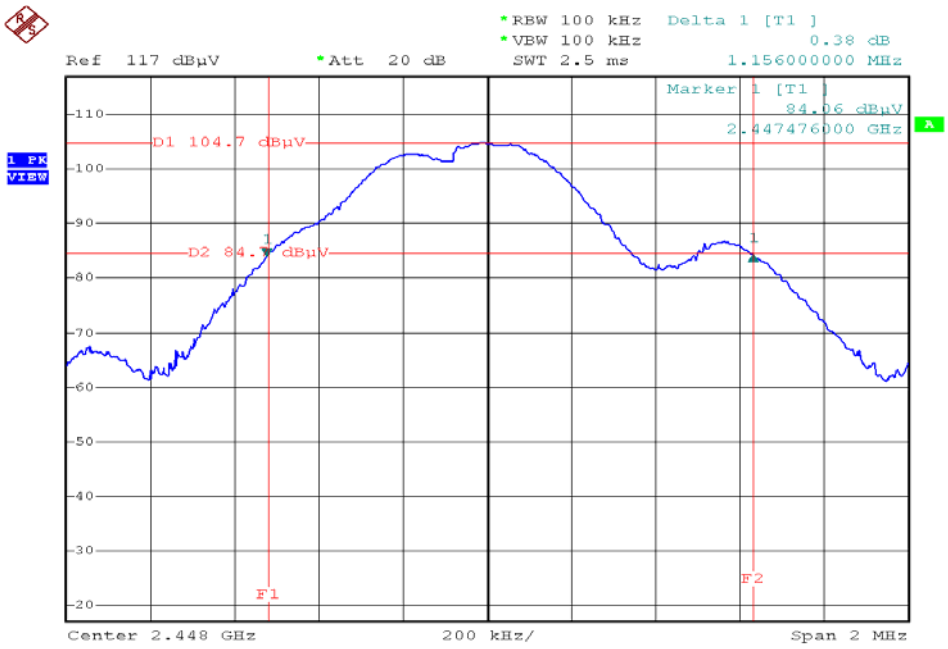
12.2 Test Result

Please refer the graph as below:

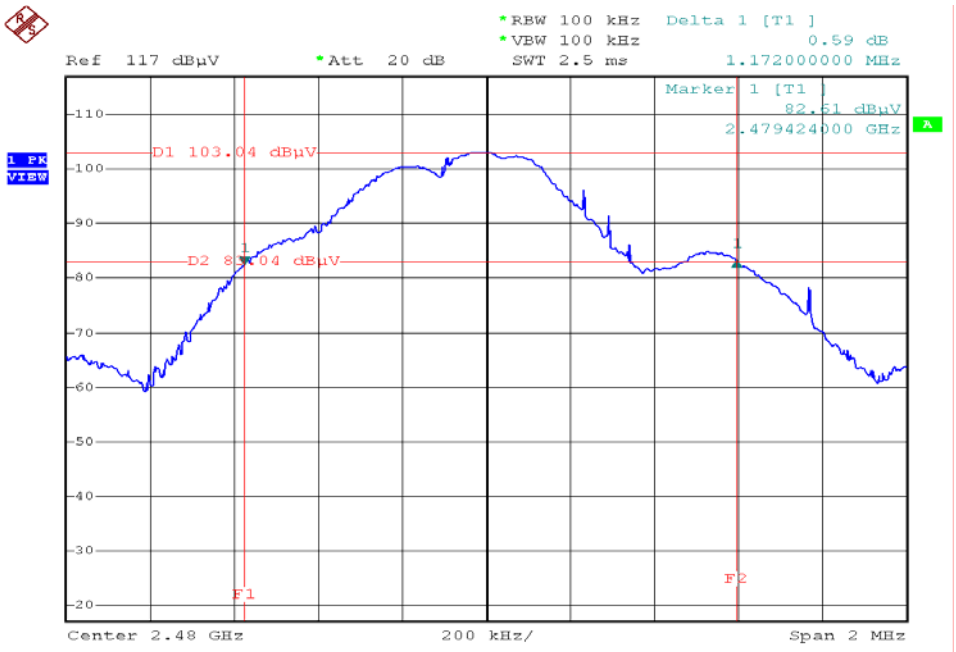
Lower



Middle



Upper



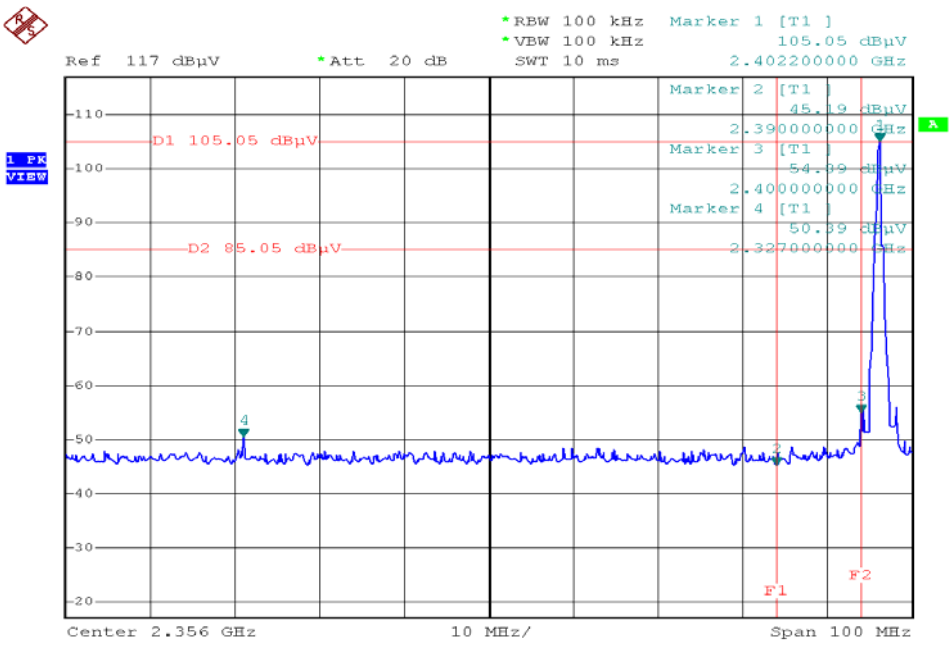
13 Radiated spurious emissions into adjacent restricted band

Test Requirement:	FCC Part15 Paragraph 15.205
Test Method:	Based on FCC Part 15 Paragraph 15.247
Test Date:	Sept.2, 2008
Requirements:	The EUT work in test mode(Tx) and test it

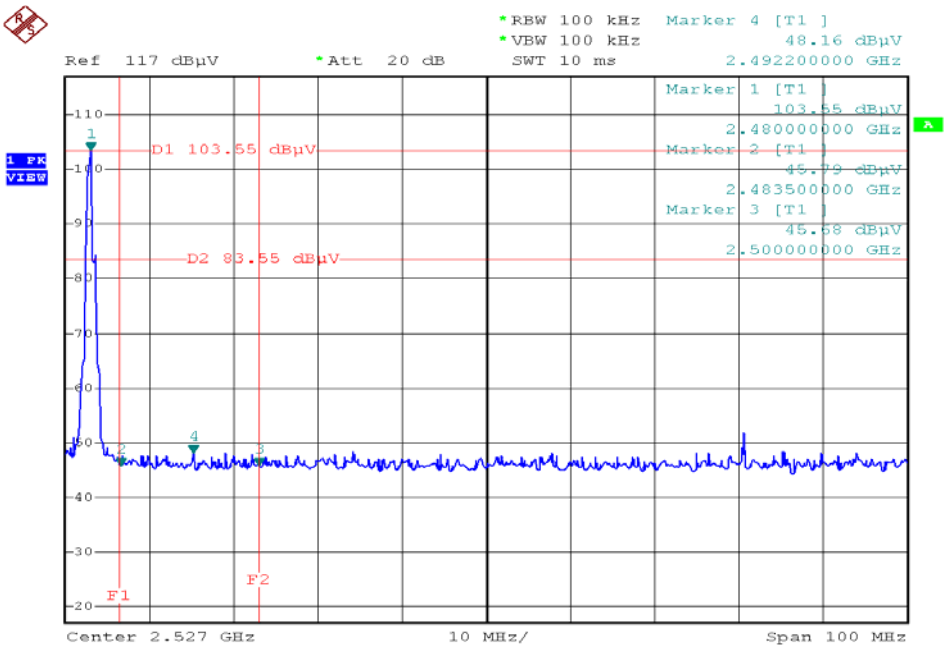
Requiments:emissions that fall in the restricted bands(15.205).Above 1000MHz, compliance with the emissions limits in section 15.209 shall be demonstrated based on the average value of the measured emissions,The provisions in section 15.35apply to these measurements.

Test procedure: An in band field strength measurement of the fundamental emission using the RBW and detector function required by C63.4-2003 and FCC Rules.The procedure was repeated with an average detector and a plot made.The calculated field strength in the adjacent restricted band is presented below.

lower bandedge/ restricted band (peak value)



upper bandedge/ restricted band (peak value)



14 RF Exposure Test

Test Requirement:	FCC Part 2 Subpart J
Test Method:	Based on FCC Part 15 Paragraph 15.247
Test Date:	Sept.2, 2008
Requirements:	The EUT work in test mode(Tx) and test it

Requiments: Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

MPE Calculation Method

E (V/m) $= \frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) $= \frac{E^2}{377}$

E = Electric field (V/m)
P = Peak RF output power (W)
G = EUT Antenna numeric gain (numeric)
d = Separation distance between radiator and human body (m)
The formula can be changed to

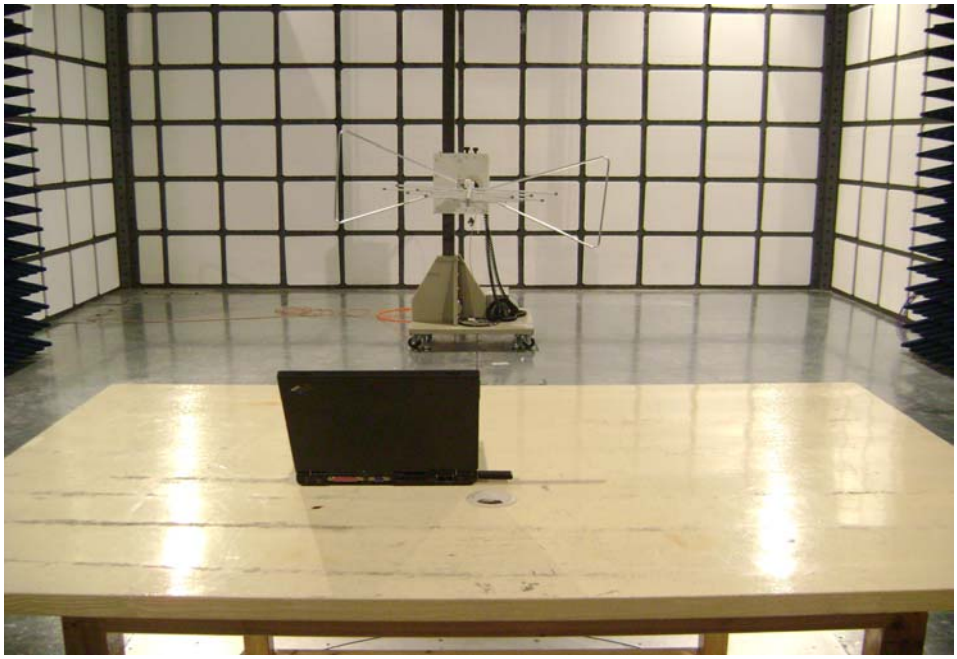
Pd $= \frac{30 \times P \times G}{377 \times d^2}$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

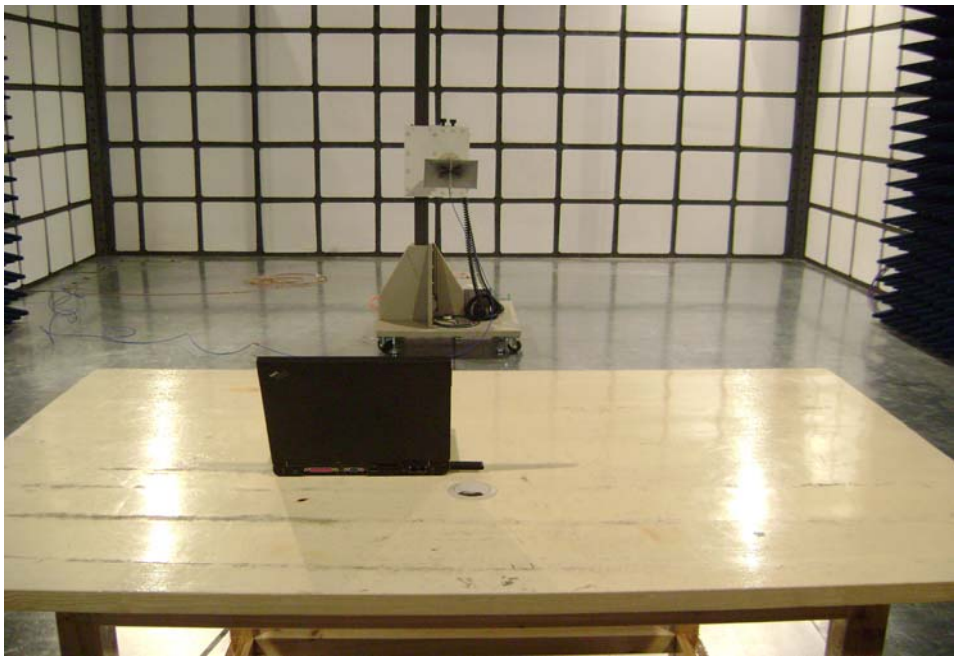
Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Test Result
-2.21	0.601	-4.94	0.321	0.000039	1	Complies
-.2.21	0.601	-3.75	0.422	0.000051	1	Complies
-2.21	0.601	-4.51	0.354	0.000042	1	Complies

15 Photographs of Testing

15.1 Radiation Emission Test View For 30MHz-1000MHz



15.2 Radiation Emission Test View For 1GHz-25GHz

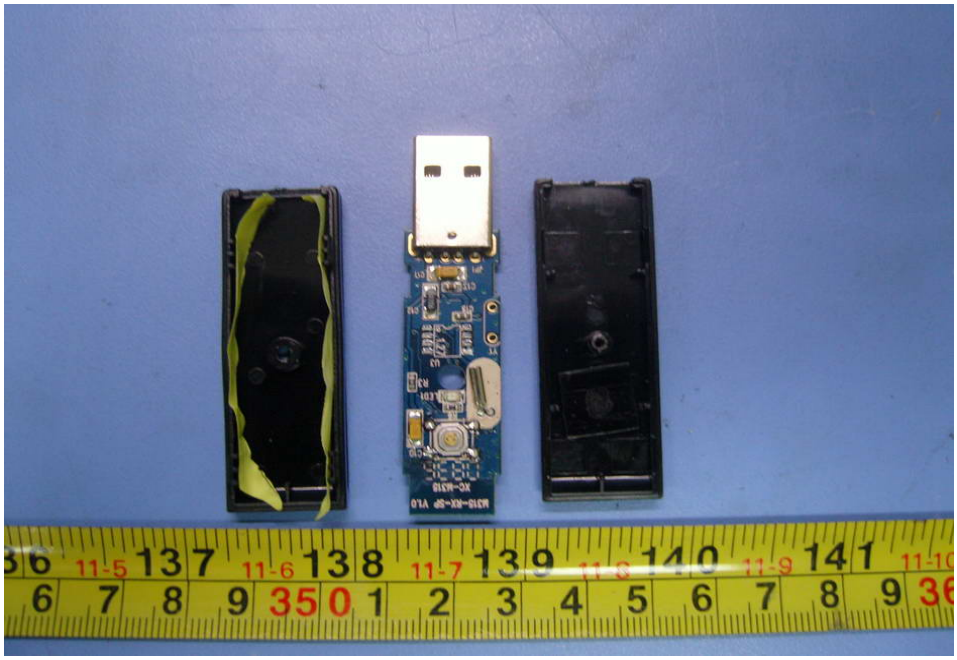


16 Photographs - Constructional Details

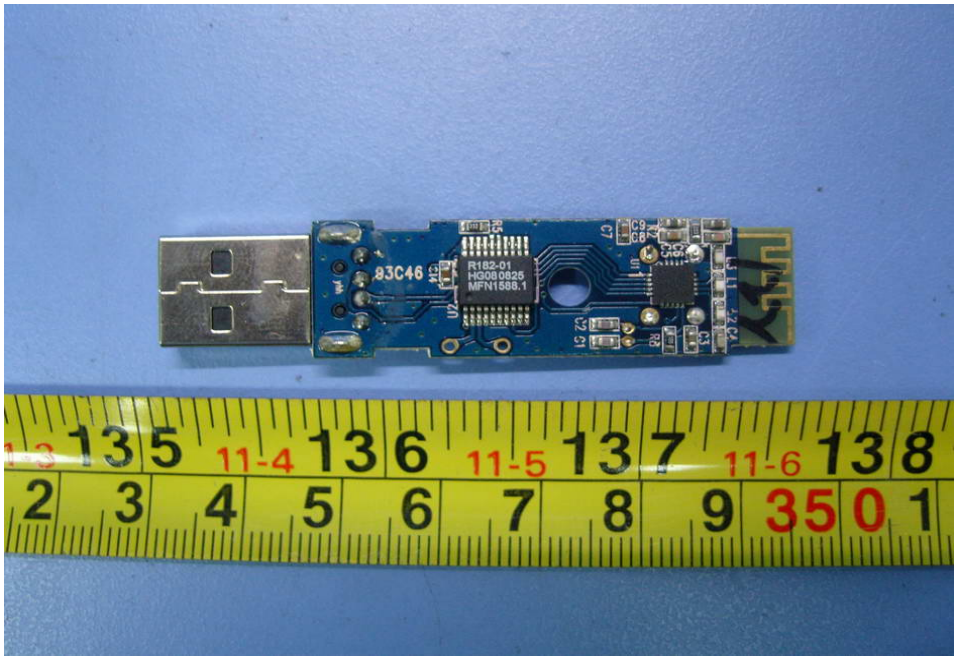
16.1 EUT - Front View

16.2 EUT - Back View

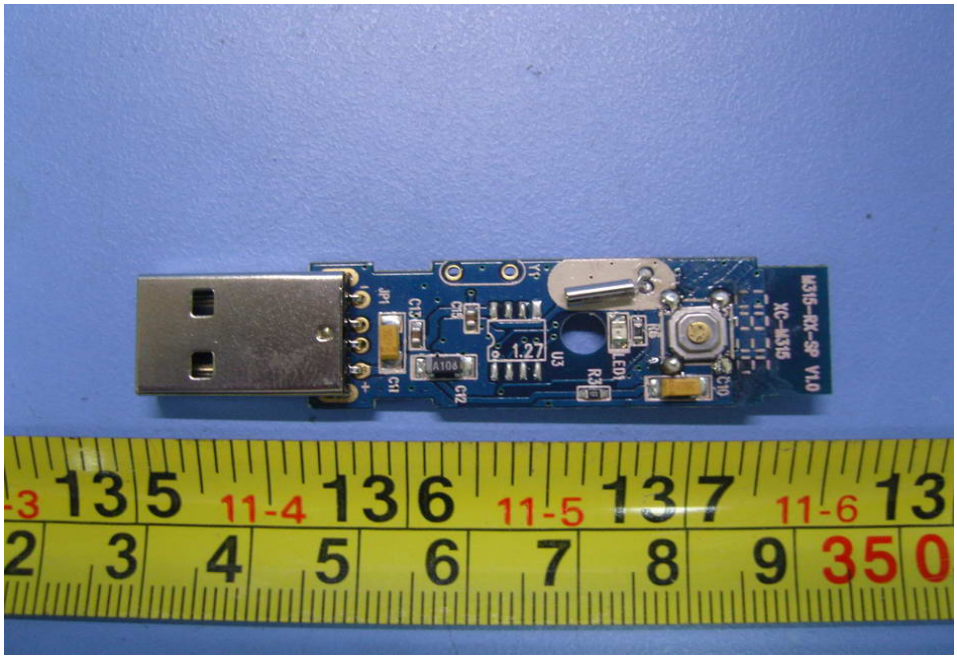
16.3 EUT - Open View



16.4 PCB– Front View



16.5 PCB - Back View



17 FCC ID Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1)this device may not cause harmful interference,and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT

EUT Bottom View/proposed FCC ID Label Location