

FCC TEST REPORT
for
WOXINGO TECHNOLOGY (HK) LIMITED
MID

Trade Name : WXG

Model No. : WXG7F

FCC ID : ZZWWXG7FBT-WIFI

Operating Frequency : 2412MHz - 2462MHz

Antenna gain : 1dBi

Applicant : WOXINGO TECHNOLOGY (HK) LIMITED
Floor 4, building, 4, B, block, YinTian Industrial area,
Xixiang, Baoan, Shenzhen, China

Regulation : ***FCC Part 15.247 Subpart C***

Prepared by : Shenzhen AOV Testing Technology Co., Ltd.
2-6/F, No.5, Yuantou Lane , Tanglang, Taoyuan Street,
Nanshan District, Shenzhen ,Guangdong, China

Test Date : September 01-09, 2011

Date of Report : September 13, 2011

TABLE OF CONTENT

Description	Page
Test Report Declaration	
1. GENERAL INFORMATION	4
1.1 General Information.....	4
1.2 Test Facility.....	4
1.3 Test Summary	4
1.4 Test Instrument Used.....	5
2. POWERLINE CONDUCTED EMISSION TEST	6
2.1. Test Standard.....	6
2.2. Limits	6
2.3. Test Procedure.....	6
2.4. Test Result.....	6
3. MAXIMUM PEAK OUTPUT POWER	9
3.1. Rules Part No.	9
3.2. Limits	9
3.3. Test Procedure.....	9
3.4. Test Result.....	9
4. BAND EDGE	11
4.1. Rules Part No.	11
4.2. Limits	12
4.3. Test Procedure.....	12
4.4. Test Result.....	12
5. RF ANTENNA CONDUCTED SPURIOUS EMISSIONS	14
5.1. Rules Part No.	14
5.2. Limits	14
5.3. Test Procedure.....	14
5.4. Test Result.....	14
6. 6DB BANDWIDTH	24
6.1. Rules Part No.	24
6.2. Limits	24
6.3. Test Procedure.....	24
6.4. Test Result.....	24
7. POWER DENSITY	30
7.1. Rules Part No.	30
7.2. Limits	30
7.3. Test Procedure.....	30
7.4. Test Result.....	30
8. RADIATION INTERFERENCE	36
8.1. Rules Part No.	36
8.2. Limits	36
8.3. Test Procedure.....	36
8.4. Test Result.....	36
9. RESTRICTED BANDS OF OPERATION	45
10. ANTENNA REQUIREMENT	46
11. PHOTOGRAPH OF TEST	47

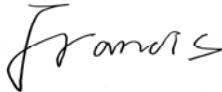

TEST REPORT DECLARATION

Applicant : WOXINGO TECHNOLOGY (HK) LIMITED
Manufacturer : WOXINGO TECHNOLOGY (HK) LIMITED
EUT Description : MID

Test Procedure Used:
FCC Part 15.247 Subpart C

The E. U. T. listed below has been completed RF testing by Shenzhen AOV Testing Technology Co., Ltd at the test site of Bontek Compliance Testing Laboratory Ltd. And the Interference emissions can pass FCC CLASS B limitations.

The test configurations and the facility comply with the radiated test site criteria in **ANSI C63.4-2009**.

Date of Test:	September 01-09, 2011
	
Prepared by:	Project Engineer
	
Reviewer :	Project Manager

1. GENERAL INFORMATION

1.1 General Information

Applicant : WOXINGO TECHNOLOGY (HK) LIMITED
Floor 4, building, 4, B, block, YinTian Industrial area,
Xixiang, Baoan, Shenzhen, China

Manufacturer : WOXINGO TECHNOLOGY (HK) LIMITED
Floor 4, building, 4, B, block, YinTian Industrial area,
Xixiang, Baoan, Shenzhen, China

1.2 Test Facility

Test Firm : Bontek Compliance Testing Laboratory Ltd.
Certificated by FCC, Registration No.: 338263
Address : FL.1, Building H-3, Hua Qiao Cheng East Industrial Area
Qiaocheng East Road, Nanshan, Shenzhen, P.R.China
Tel : 86-755-86337020
Fax : 86-755-86337028

1.3 Test Summary

FCC Rules	Description Of Test	Result
§15.247(a)(2)	6dB Bandwidth	Compliant
§15.247(b)(3)	Max peak output power test	Compliant
§15.247(e)	Power Density	Compliant
§15.247(d)	Band edge test	Compliant
§15.207	Power Line Conducted Emission	Compliant
§15.247(d), §15.209	Radiated interference	Compliant
§15.203	Antenna conducted Spurious Emissions	Compliant
§15.109	Antenna Requirement	Compliant

1.4 Test Instrument Used

No.	Equipment	Manufacturer	Model No.	S/N	Cal. Date	Cal. Due Date
1.	EMI Test Receiver	R&S	ESPI	100097	2010-11-22	2011-11-22
2.	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07101	2010-11-22	2011-11-22
3.	EMI Test Receiver	R&S	ESCI	100687	2010-11-22	2011-11-22
4.	EMI Test Receiver	R&S	FSU	BCT-019	2010-11-22	2011-11-22
5.	Amplifier	HP	8447D	1937A02492	2010-11-22	2011-11-22
6.	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2010-11-22	2011-11-22
7.	Horn Antenna	SCHWARZBECK	BBHA9120A	B08000991-0001	2010-11-22	2011-11-22
8.	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	166	2010-11-22	2011-11-22
9.	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	811	2010-11-22	2011-11-22
10.	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	304	2010-11-22	2011-11-22
11.	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	D-69250	2010-11-22	2011-11-22
12.	Positioning Controller	C&C	CC-C-1F	MF7802113	2010-11-22	2011-11-22
13.	Triple-Loop Antenna	EVERFINE	LLA-2	607004	2010-11-22	2011-11-22
14.	10dB attenuator	SCHWARZBECK	MTAIMP-136	R65.90.0001#06	2010-11-22	2011-11-22

2. POWERLINE CONDUCTED EMISSION TEST

2.1. Test Standard

15.207

2.2. Limits

Frequency MHz	Limits (dB μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes:

1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

2.3. Test Procedure

The EUT is put on the table that is 0.8m high above the ground and at least away from other Metallic surface 0.4m. The EUT is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohms coupling impedance for the testing equipment; and the peripheral equipment powers form other L.I.S.N. Please refer to the block diagram of the test setup and photographs. Both sides of AC line (Line & Neutral) are checked for maximum conducted interference. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables must be changed according to FCC part 15 B.

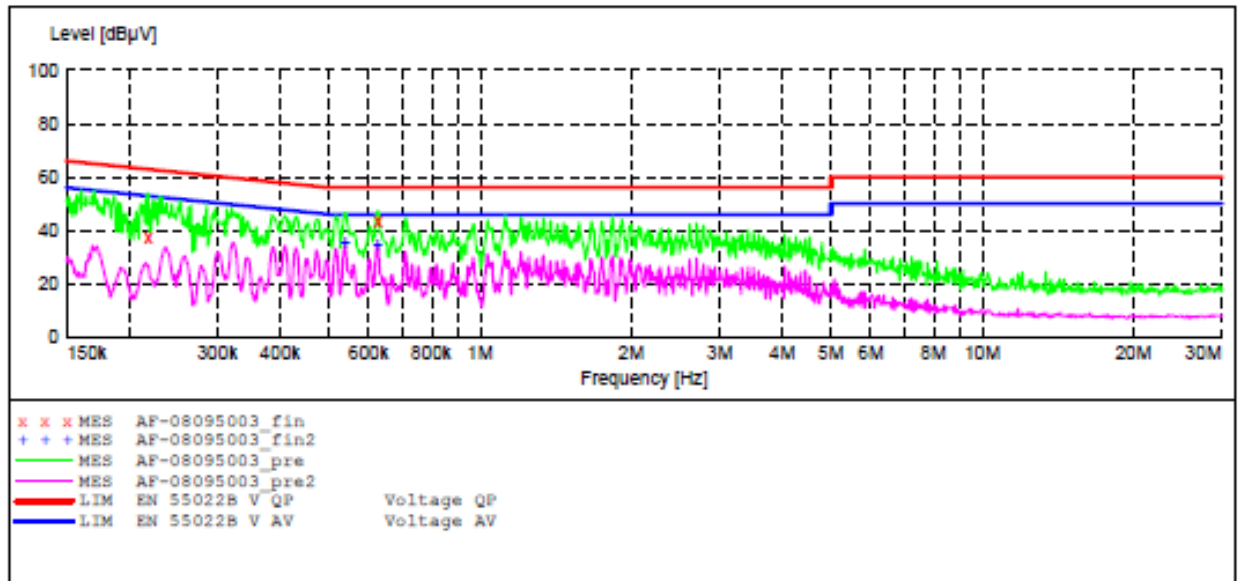
2.4. Test Result

PASS

Detailed information, Please refer to the following page.

Power Line Conducted Emission

Engineer : Andy	
EUT :MID	Time : 2011/09/02
Limit : FCC Part 15B	Comment : 22°C/55 %
MN: WXG7F	Note : L
Power : AC 120V, 60HZ	



MEASUREMENT RESULT:

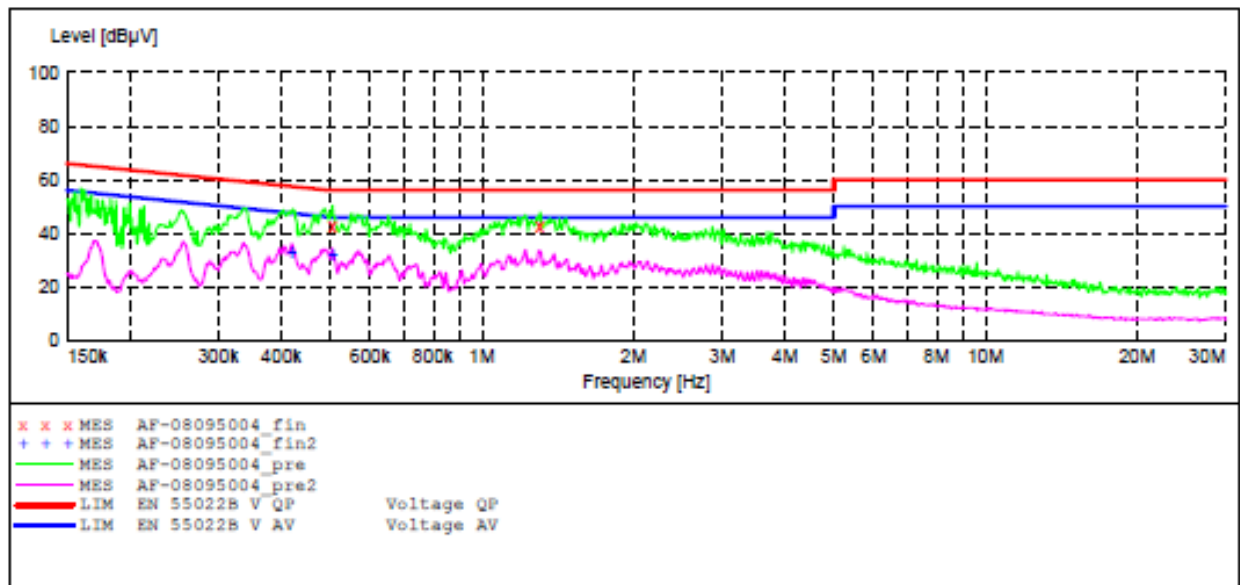
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.218303	37.10	11.3	63	25.8	QP	L1	GND
0.626268	43.00	11.9	56	13.0	QP	L1	GND

MEASUREMENT RESULT:

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.538120	35.80	12.0	46	10.2	AV	L1	GND
0.623773	35.10	11.9	46	10.9	AV	L1	GND

Power Line Conducted Emission

Engineer : Andy	
EUT :MID	Time : 2011/09/02
Limit : FCC Part 15B	Comment : 22°C/55 %
MN: WXG7F	Note : N
Power : AC 120V, 60HZ	



MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.504824	42.10	12.0	56	13.9	QP	N	GND
1.305460	42.10	11.8	56	13.9	QP	N	GND

MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.418461	32.70	11.9	48	14.8	AV	N	GND
0.504824	32.30	12.0	46	13.7	AV	N	GND

3. MAXIMUM PEAK OUTPUT POWER

3.1.Rules Part No.

15.247(b)

3.2.Limits

The maximum peak output power measurement is 1w (30dBm).

3.3.Test Procedure

The antenna of the EUT was connected to the RF input cord of power meter with a coaxial cable, power was read directly from the meter and cable loss was added to the reading to obtain power at the EUT antenna terminal. The EUT output power was set to maximum to produce the worse case test result.

3.4.Test Result

PASS

Detailed information, Please refer to the following page.

Operation Mode:802.11b

Channel	Frequency (MHz)	Peak output power (dBm)	Limit (dBm)
1	2412	11.24	30
6	2437	10.37	30
11	2462	10.06	30

Operation Mode:802.11g

Channel	Frequency (MHz)	Peak output power (dBm)	Limit (dBm)
1	2412	5.67	30
6	2437	6.27	30
11	2462	6.18	30

Operation Mode:802.11n

Channel	Frequency (MHz)	Peak output power (dBm)	Limit (dBm)
1	2412	3.28	30
6	2437	2.87	30
11	2462	3.16	30

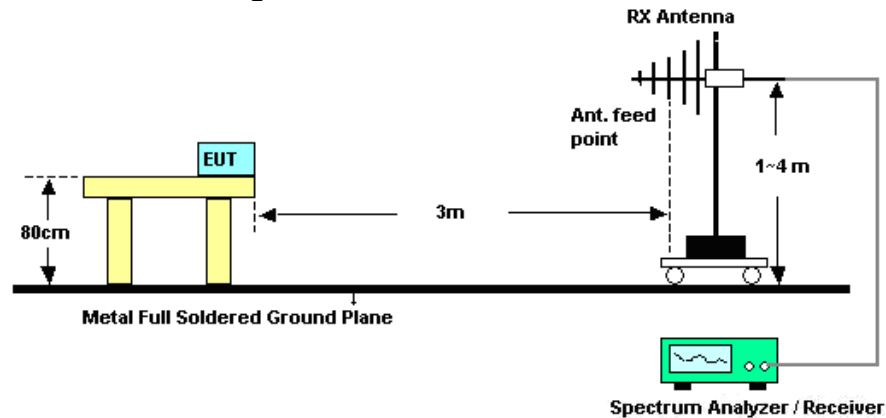
4. BAND EDGE

4.1. Rules Part No.

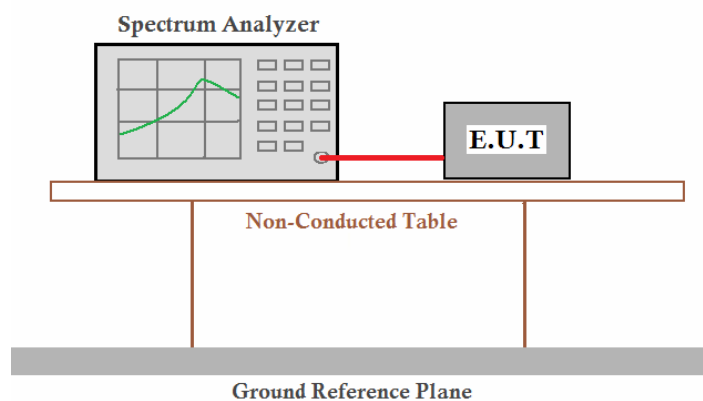
15.247(c) Test Method: ANSI C63.4:2003 and KDB DA00-705

Test setup:

<Radiated Band Edges>



<Conducted Band Edges>



Test mode: Transmitting mode

Temperature: 25~27°C

Relative Humidity: 48~51%

4.2.Limits

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.

4.3.Test Procedure

1. The testing follows the guidelines in ANSI C63.4-2003 and FCC Public Notice DA 00-705 Measurement Guidelines.
2. RF antenna conducted test: Set RBW = 300kHz, Video bandwidth (VBW) = RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 300k Hz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. Radiated emission test: Applies to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 1MHz, Sweep: Auto for Peak; set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto for Average. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation. See FCC Section 15.35(b) and (c).
4. In case the emission is fail due to the used RBW / VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

4.4.Test Result

PASS

Detailed information, Please refer to the following page.

Test Result of Radiated Band Edges

Test Mode:802.11b								
channel	ANTENNA POLARITY	Frequency (MHz)	AV (dBuV/m)	PK (dBuV/m)	Average Limit (dBuV/m)	Peak Limit (dBuV/m)	Average Margin (dBuV/m)	Peak Margin (dBuV/m)
1	H	2395.45	32.54	47.85	54	74	21.46	26.15
1	V	2388.76	31.48	45.46	54	74	22.52	28.54
11	H	2463.19	31.63	46.36	54	74	22.37	27.64
11	V	2464.17	32.37	47.14	54	74	21.63	26.86

Test Mode:802.11g								
channel	ANTENNA POLARITY	Frequency (MHz)	AV (dBuV/m)	PK (dBuV/m)	Average Limit (dBuV/m)	Peak Limit (dBuV/m)	Average Margin (dBuV/m)	Peak Margin (dBuV/m)
1	H	2392.27	31.67	47.24	54	74	22.33	26.76
1	V	2386.84	32.46	46.08	54	74	21.54	27.92
11	H	2467.92	31.27	46.96	54	74	22.73	27.04
11	V	2466.46	31.34	47.16	54	74	22.66	26.84

Test Mode:802.11n								
channel	ANTENNA POLARITY	Frequency (MHz)	AV (dBuV/m)	PK (dBuV/m)	Average Limit (dBuV/m)	Peak Limit (dBuV/m)	Average Margin (dBuV/m)	Peak Margin (dBuV/m)
1	H	2391.37	31.57	47.09	54	74	22.43	26.91
1	V	2385.72	32.52	48.32	54	74	21.48	25.68
11	H	2466.25	31.68	46.86	54	74	22.32	27.14
11	V	2461.69	30.09	47.58	54	74	23.91	26.42

5. RF ANTENNA CONDUCTED SPURIOUS EMISSIONS

5.1.Rules Part No.

FCC Part15 C Section 15.247 (d)

5.2.Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

5.3.Test Procedure

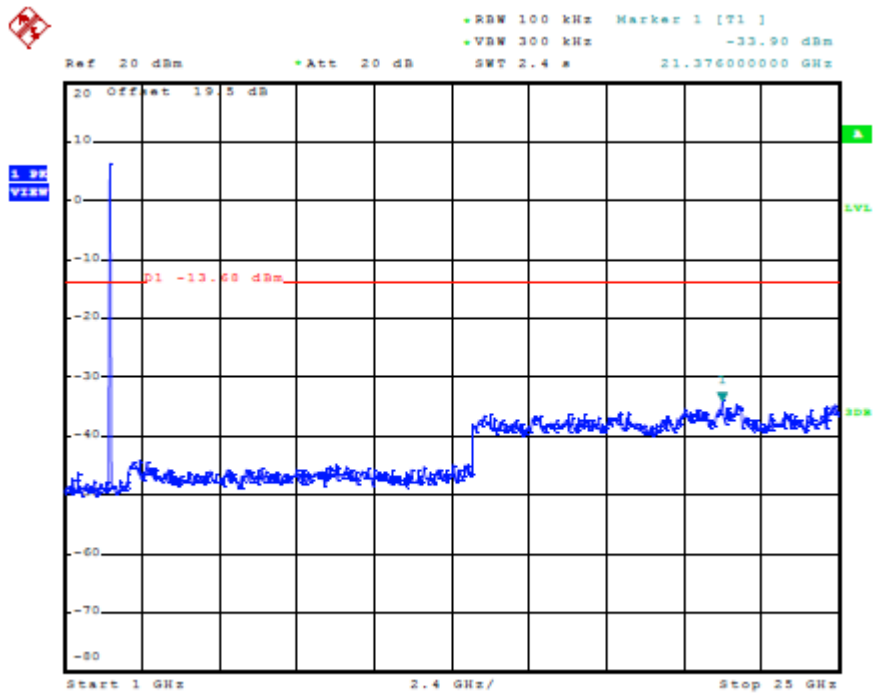
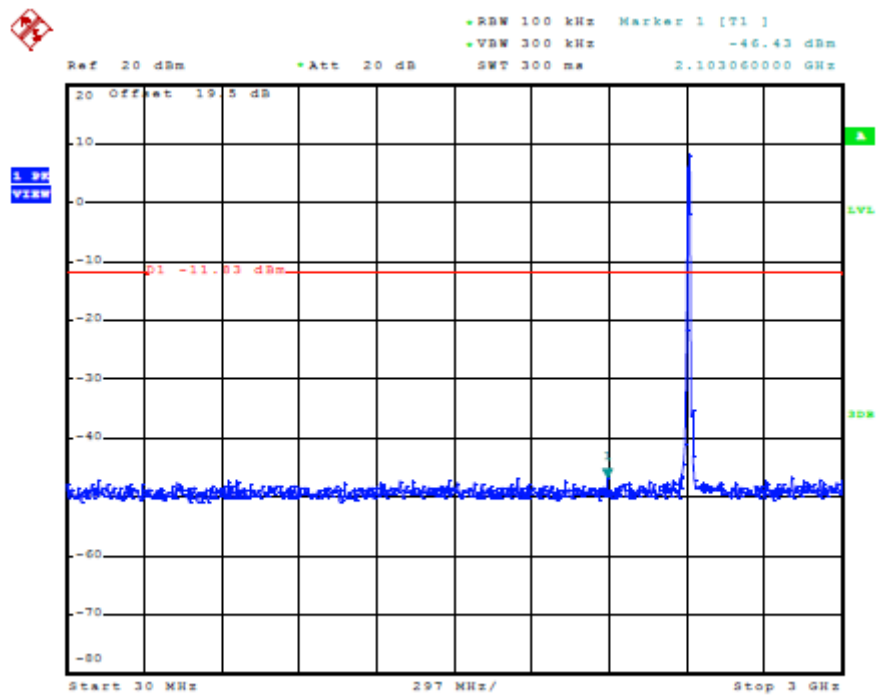
- 1,Conducted Measurement EUT was set for low, mid, high channel with modulated mode and highest RF output power. The spectrum analyzer was connected to the antenna terminal.
2. Conducted Emissions Measurement Uncertainty All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is $\pm 1.5\text{dB}$.

5.4.Test Result

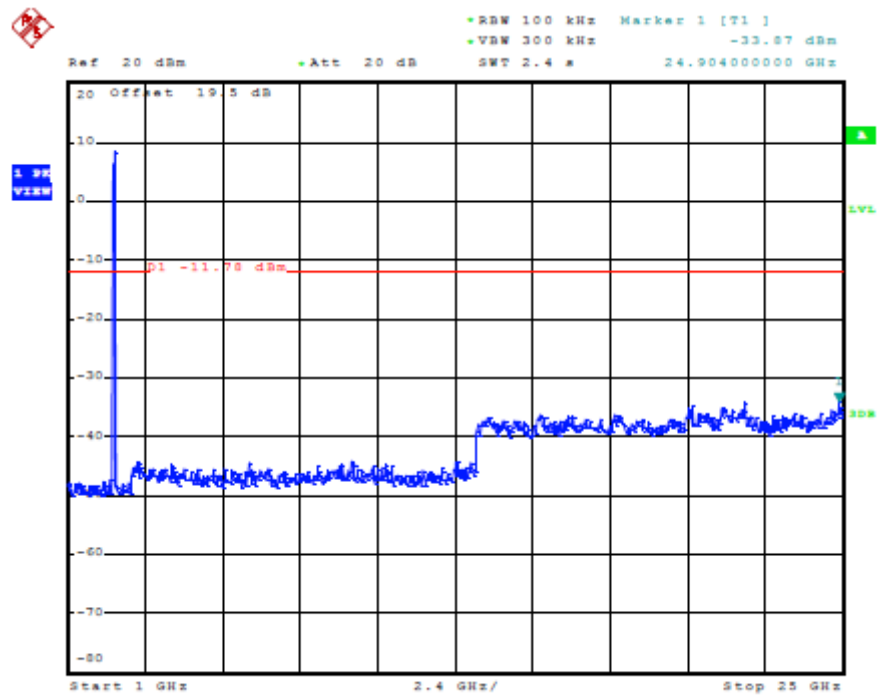
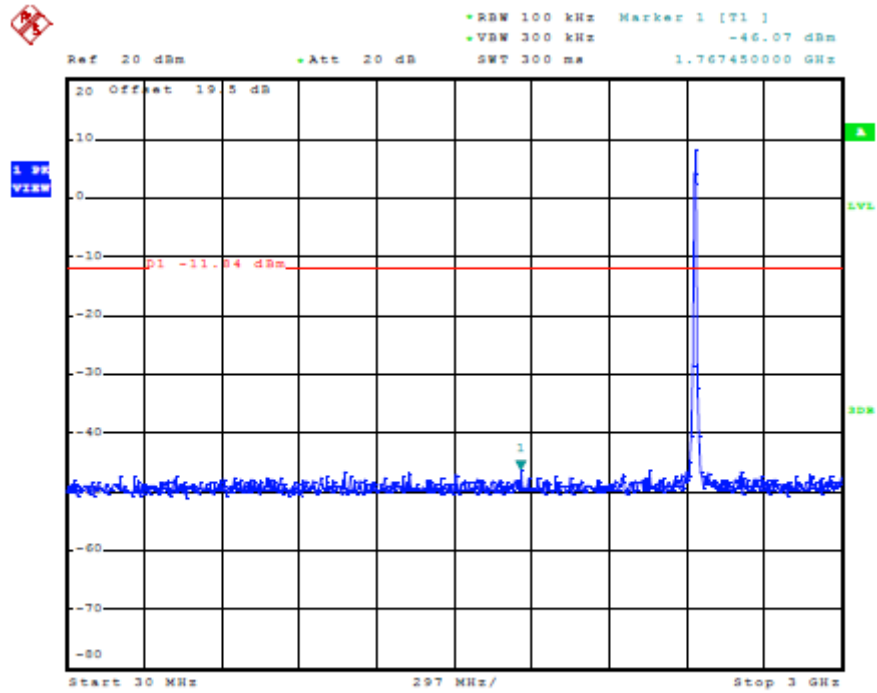
PASS

Detailed information, Please refer to the following page.

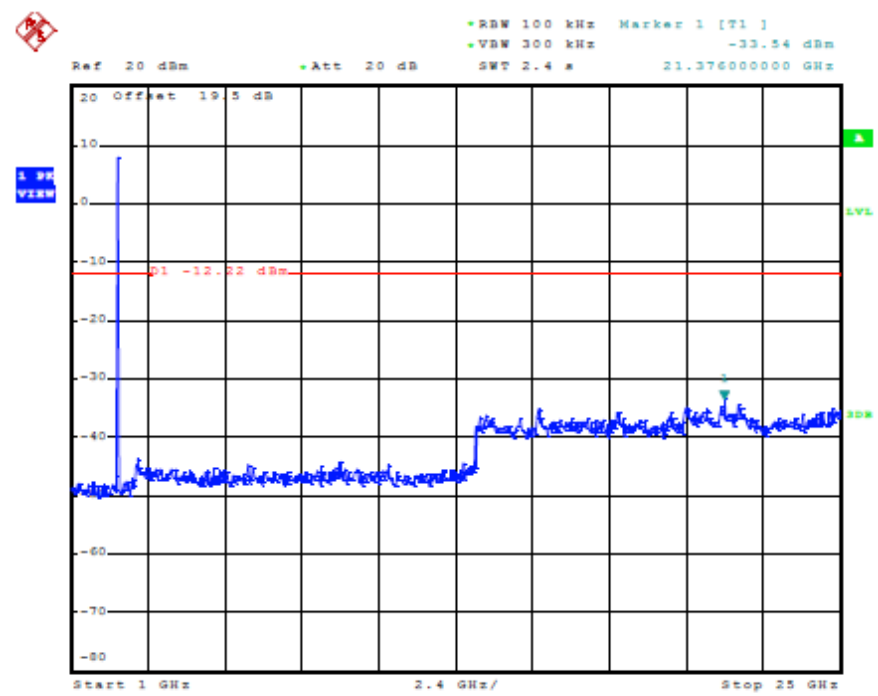
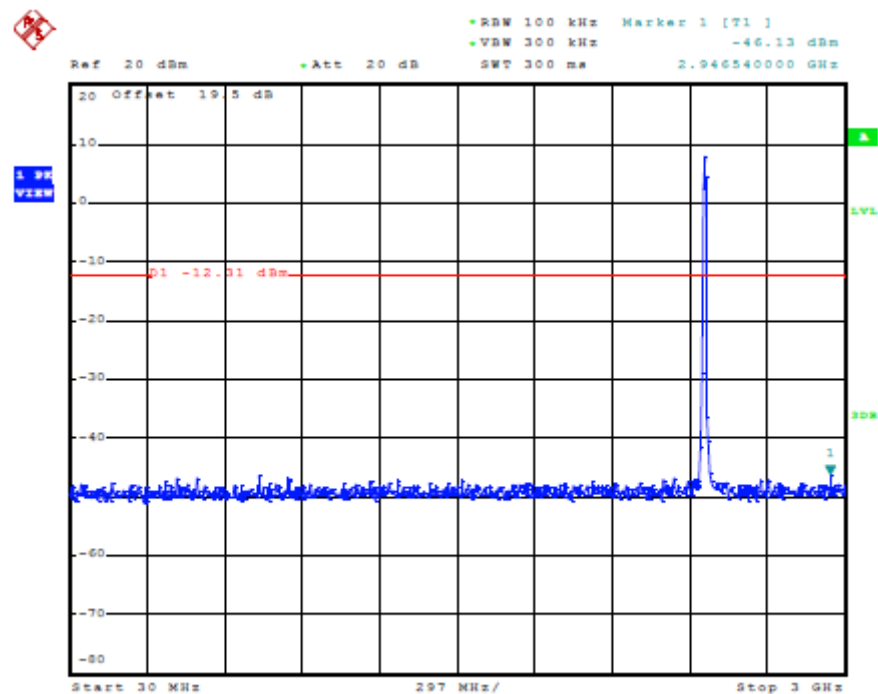
802.11b Low Channel:1



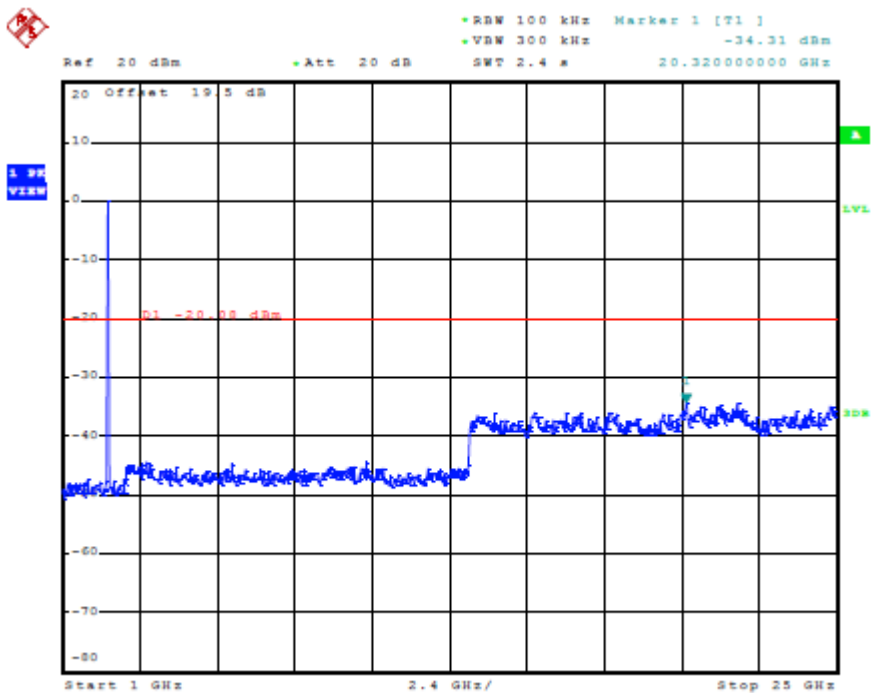
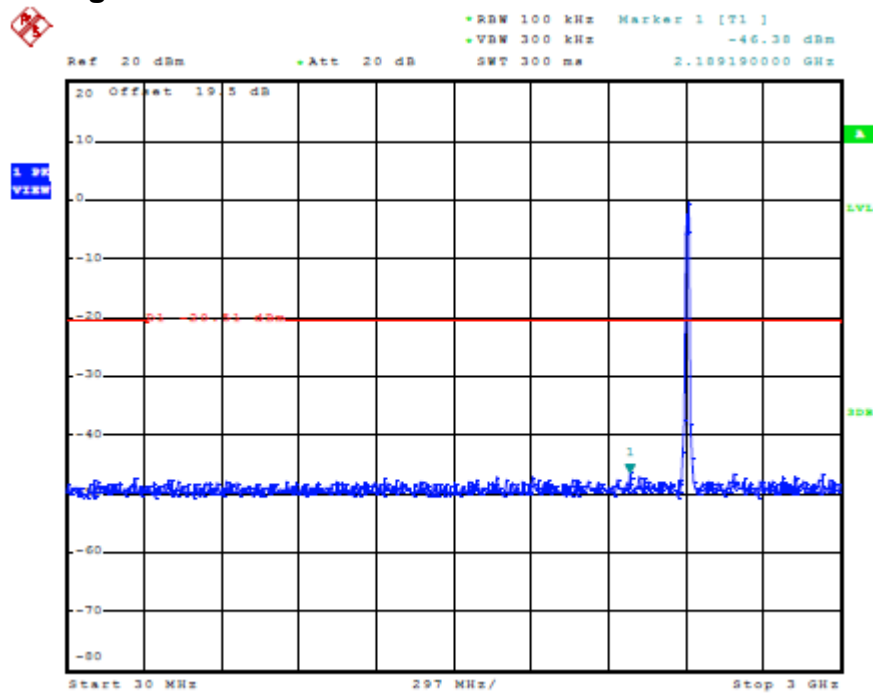
802.11b Middle Channel:6



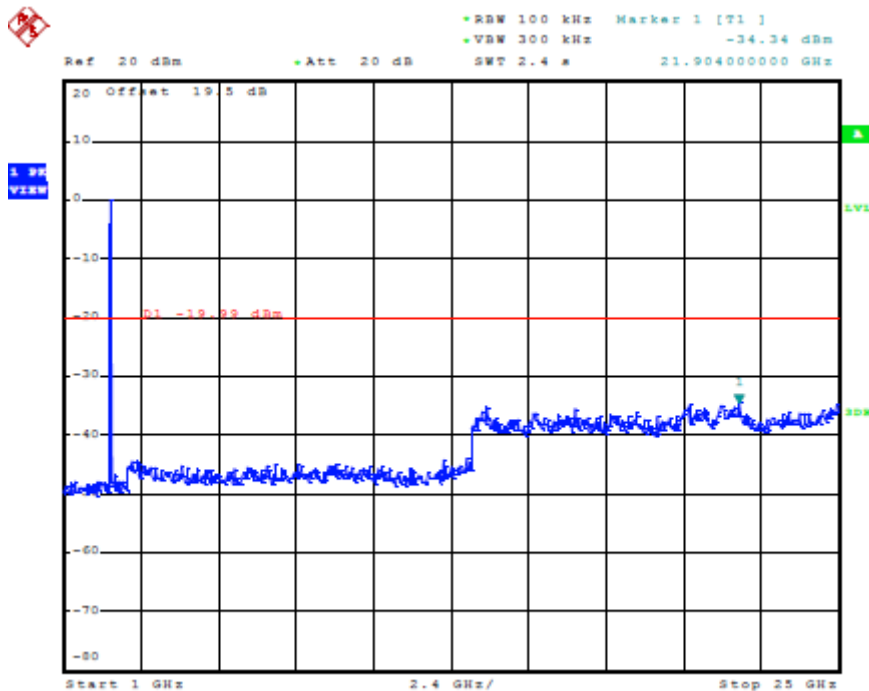
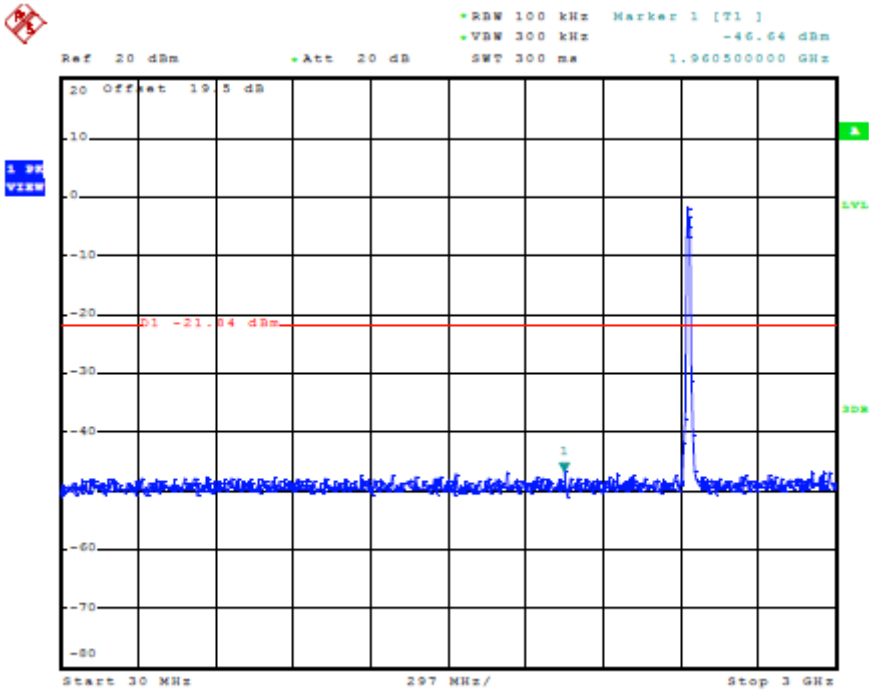
802.11b High Channel:11



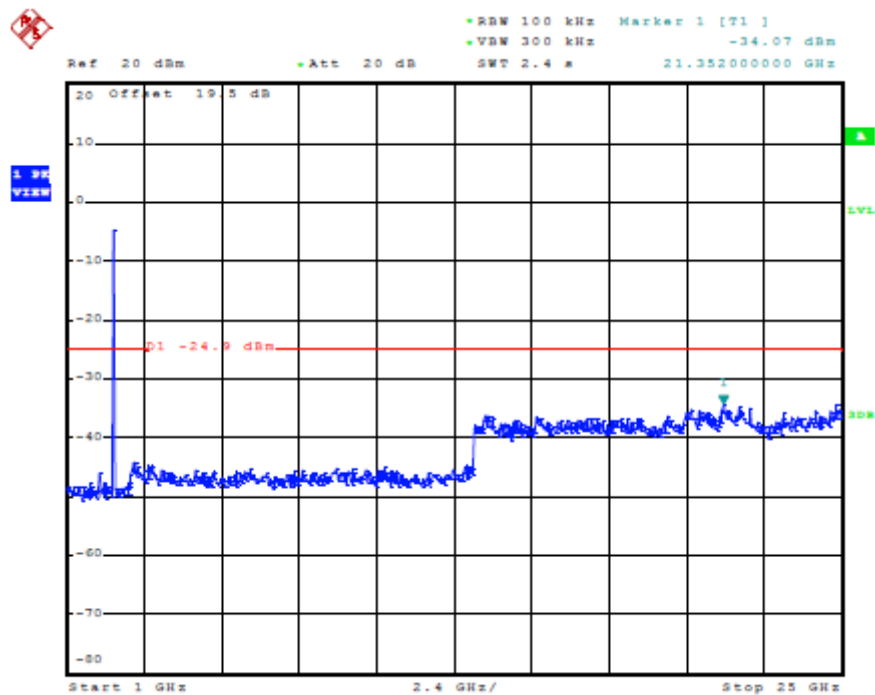
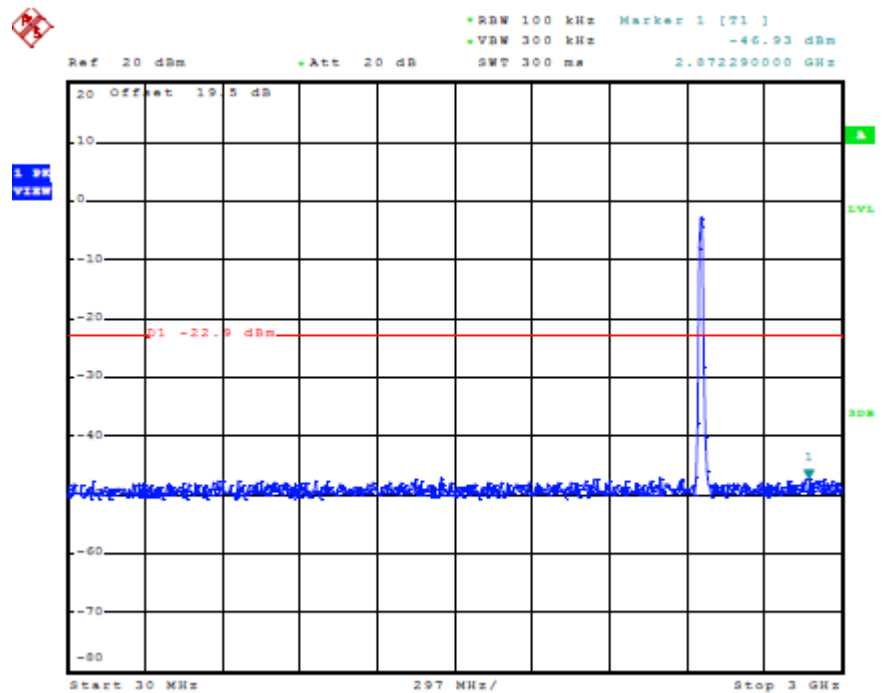
802.11g Low Channel:1



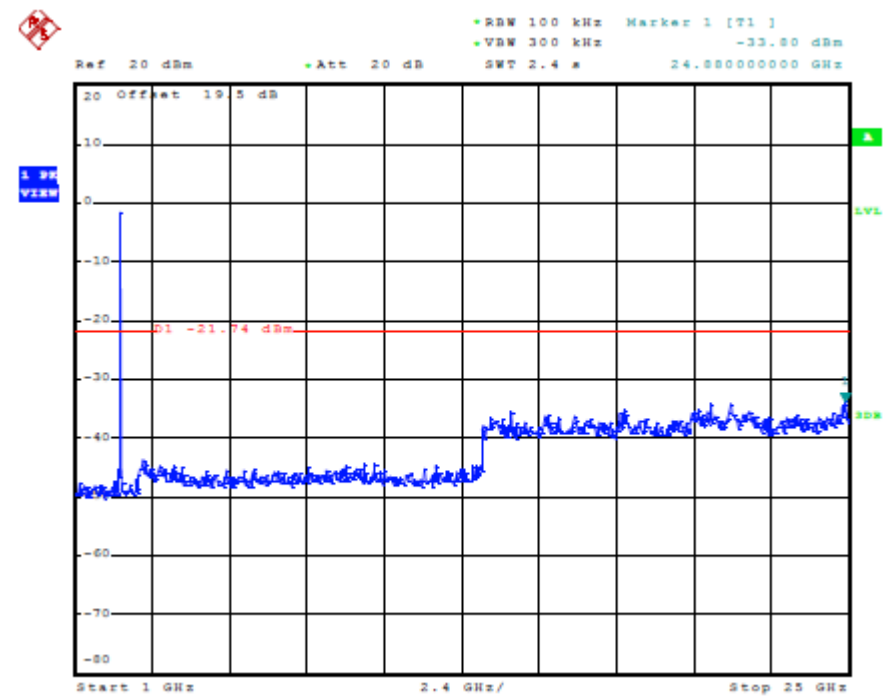
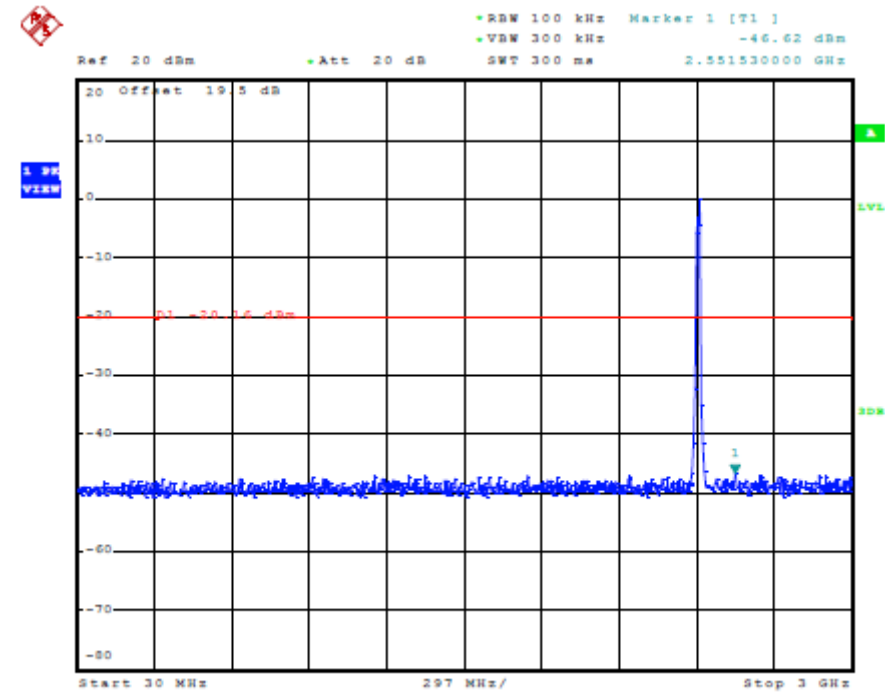
802.11g Middle Channel:6



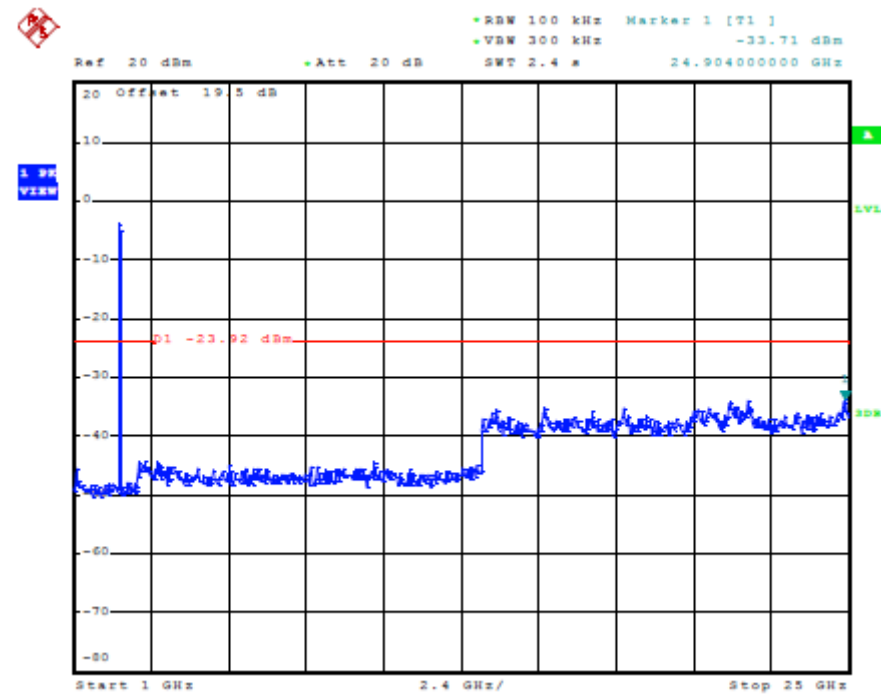
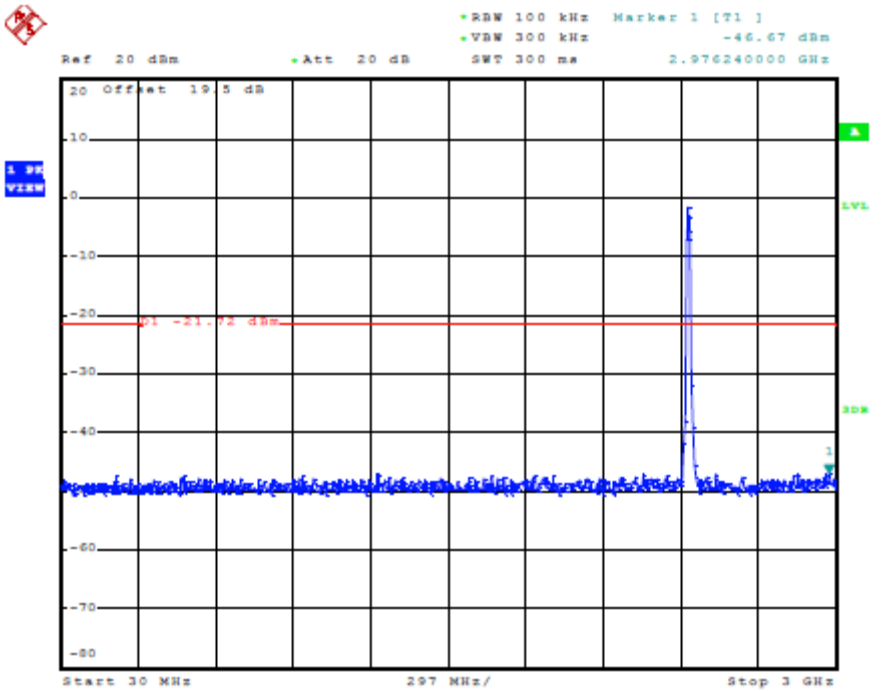
802.11g High Channel:11



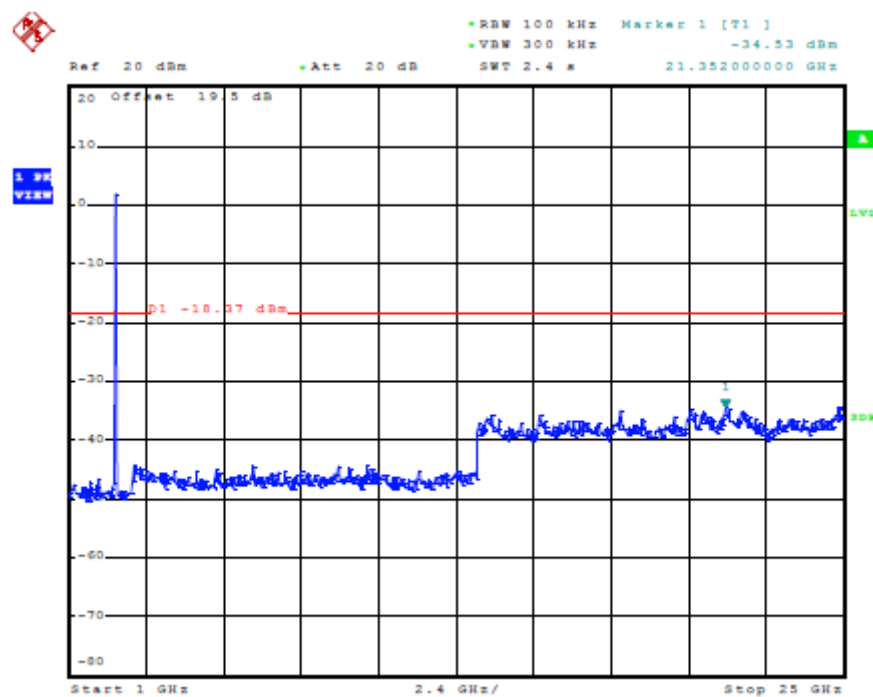
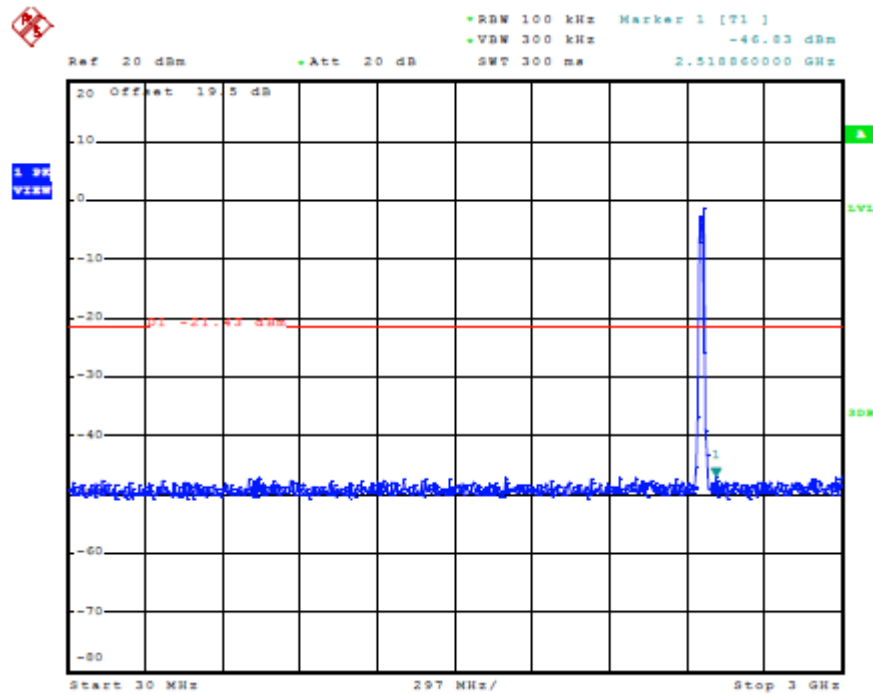
802.11n Low Channel:1



802.11n Middle Channel:6



802.11n High Channel:11



6. 6DB BANDWIDTH

6.1.Rules Part No.

FCC Part15 C Section 15.247 (a)(2)

6.2.Limits

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

6.3.Test Procedure

1. Set EUT in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as
RBW=100KHz,VBW≥RBW,Span=40MHz,Sweep=auto.
4. Mark the peak frequency and -6dB(upper and lower)frequency.
5. Repeat until all the rest channels are investigated.

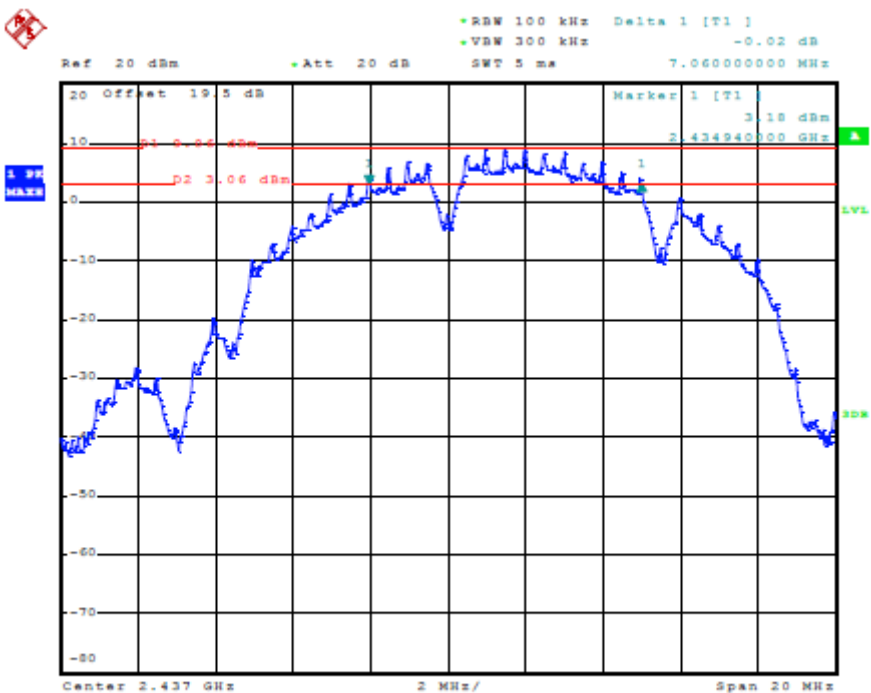
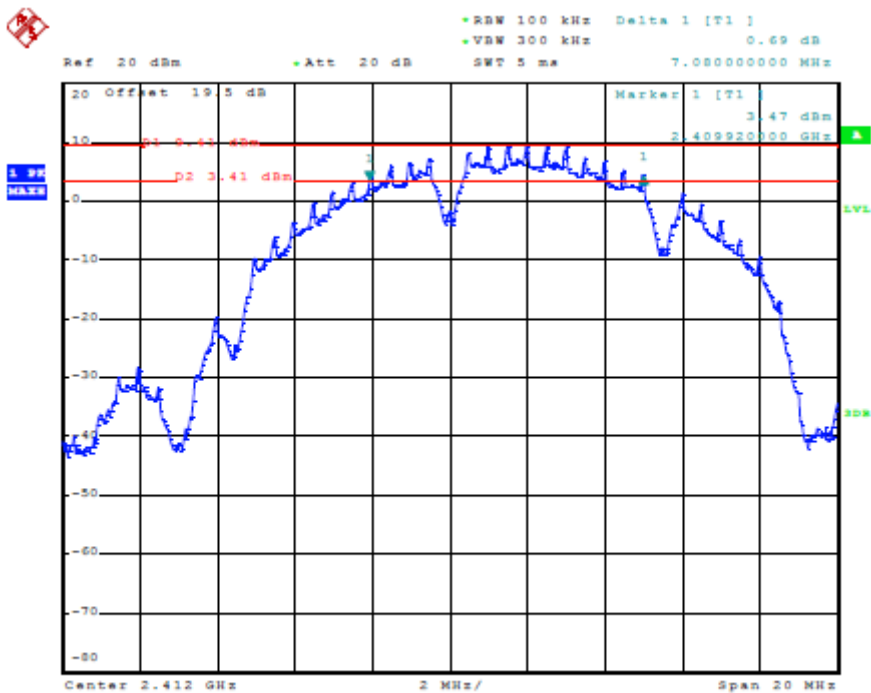
6.4.Test Result

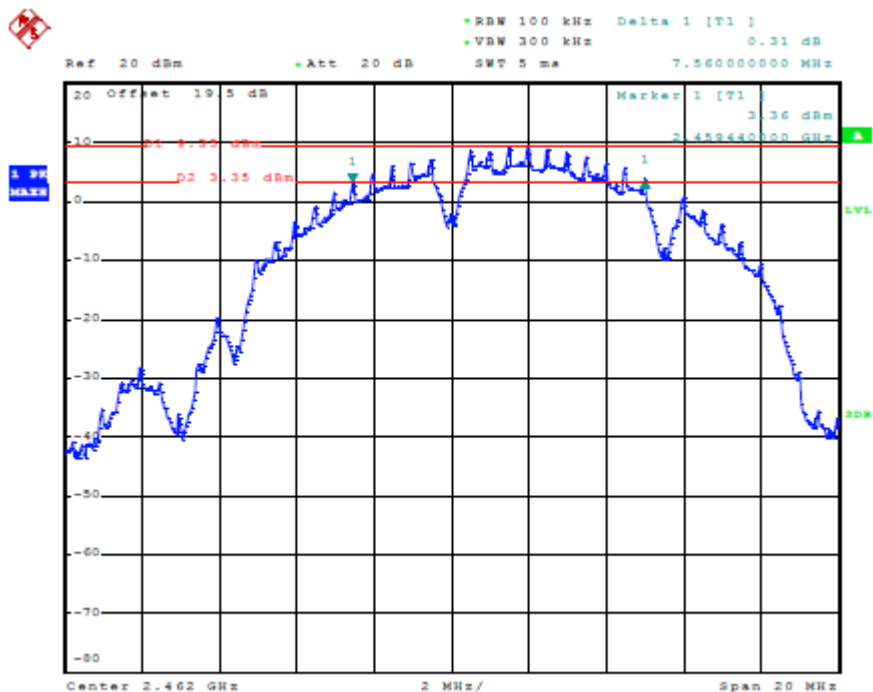
PASS

Detailed information, Please refer to the following page.

Operation Mode:802.11b

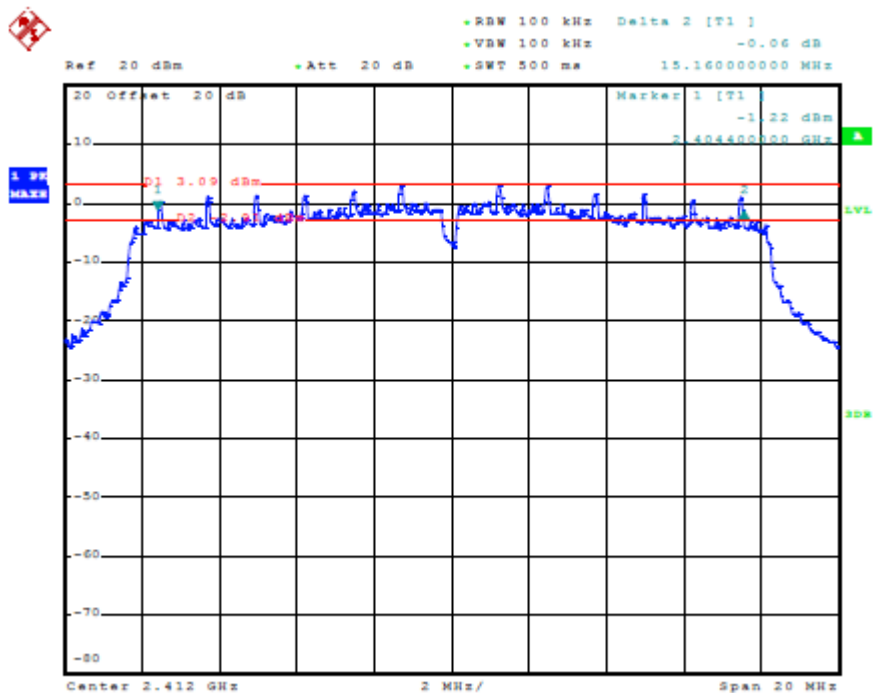
Channel number	Channel frequency	Measurement Level (MHz)	Required Limit (kHz)
1	2412	7.00	>500
6	2437	7.04	>500
11	2462	7.56	>500

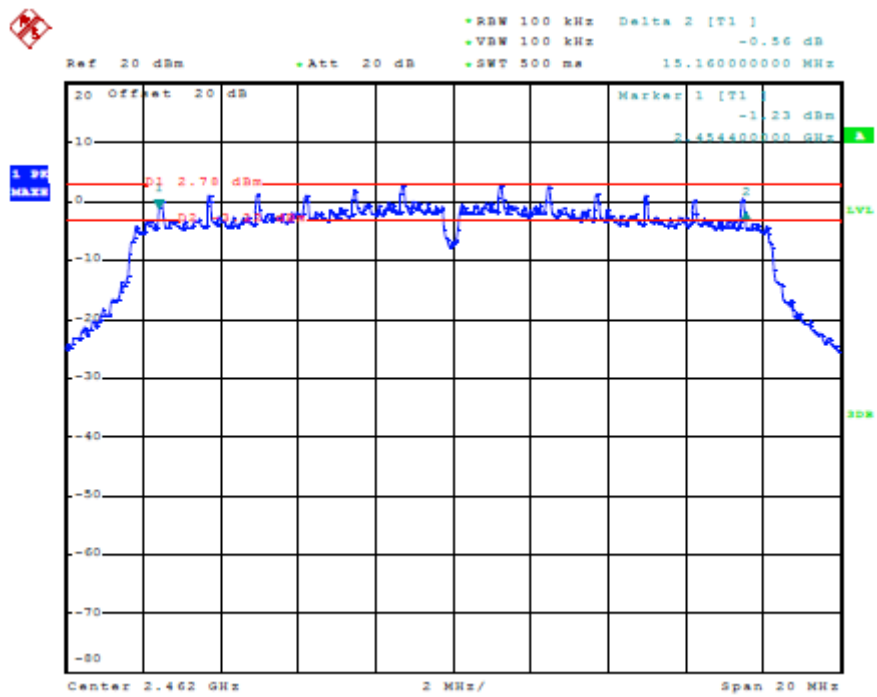
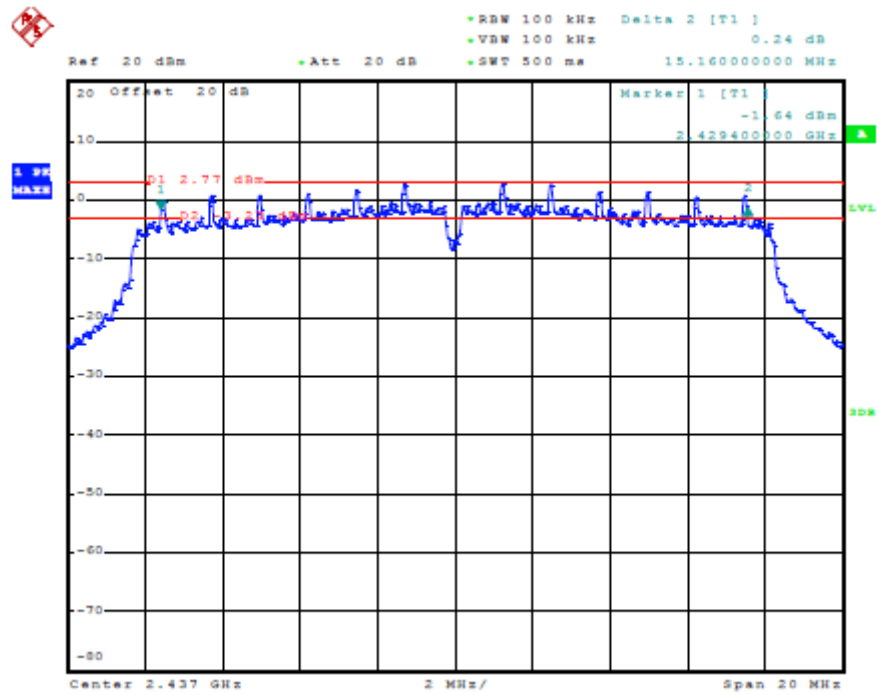




Operation Mode:802.11g

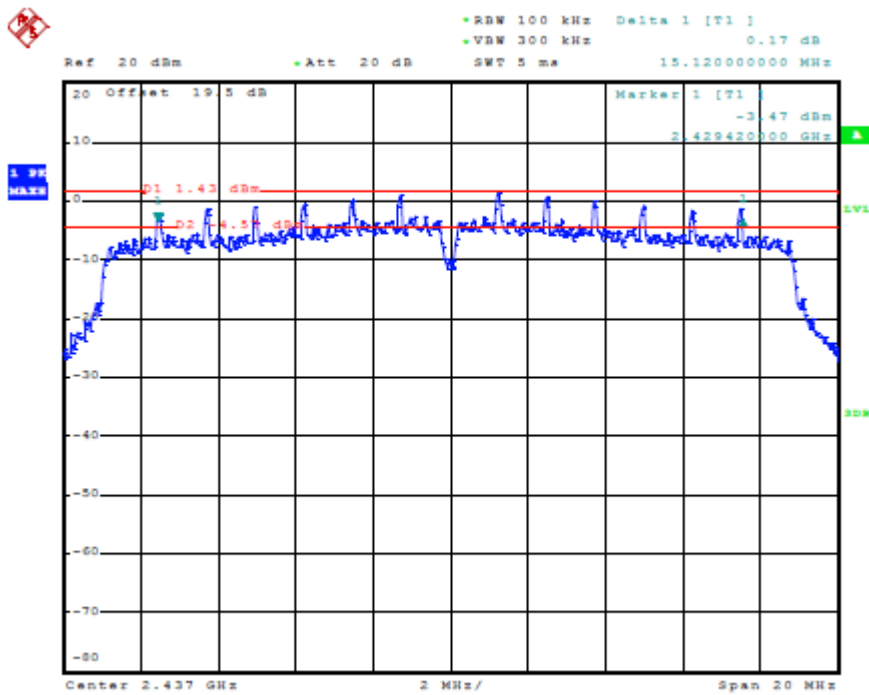
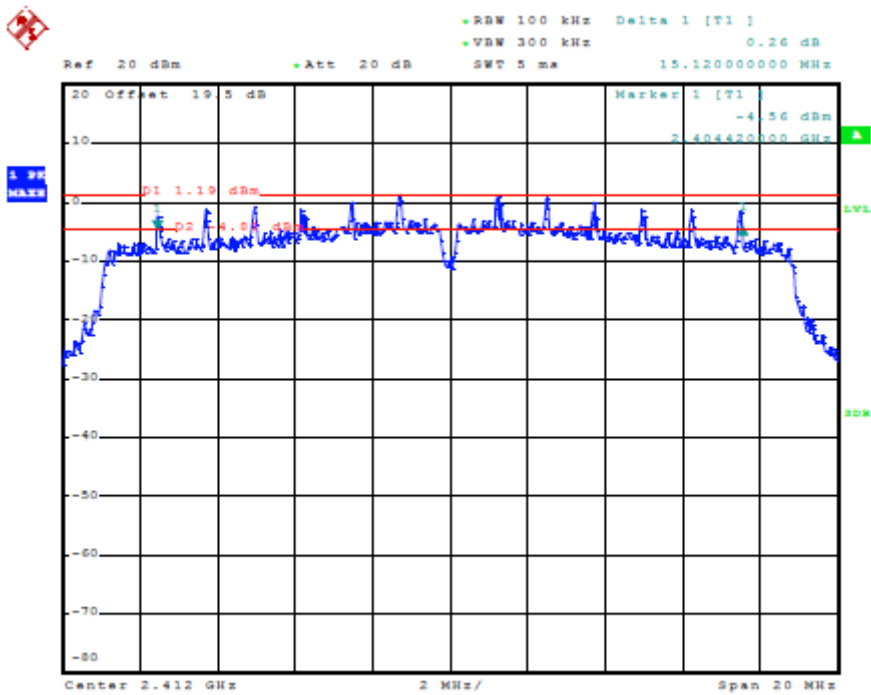
Channel number	Channel frequency	Measurement Level (MHz)	Required Limit (kHz)
1	2412	15.14	>500
6	2437	15.14	>500
11	2462	15.14	>500

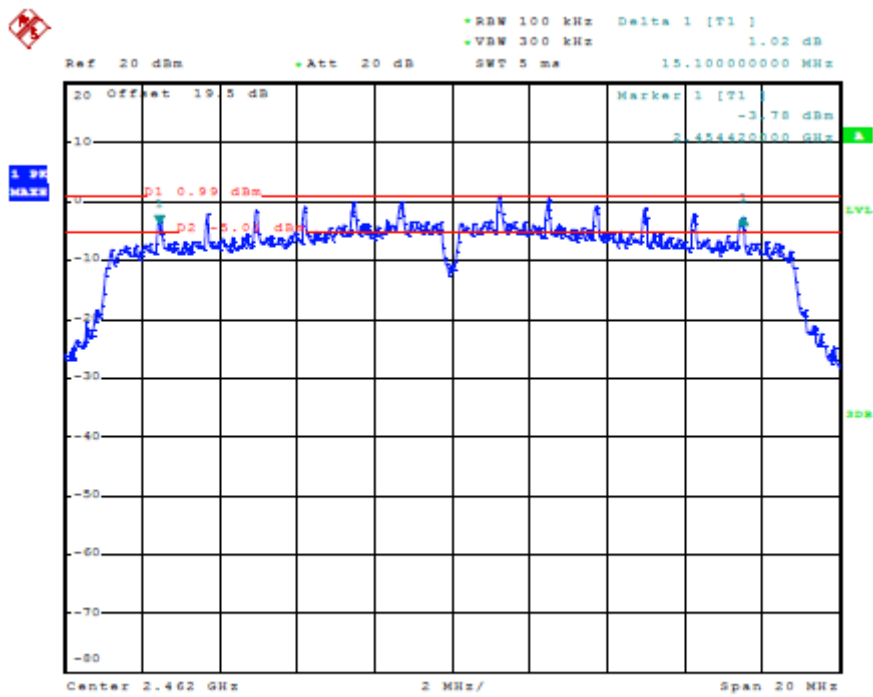




Operation Mode:802.11n

Channel number	Channel frequency	Measurement Level (MHz)	Required Limit (kHz)
1	2412	15.12	>500
6	2437	15.12	>500
11	2462	15.10	>500





7. POWER DENSITY

7.1. Rules Part No.

FCC Part15 C Section 15.247 (e)

7.2. Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

7.3. Test Procedure

Set EUT in the transmitting mode. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer. Set the spectrum analyzer as RBW=3KHz, VBW=10KHz, Span=1.5MHz, Sweep=500S. Record the max. reading Repeat the above procedure until the measurements for all frequencies are completed.

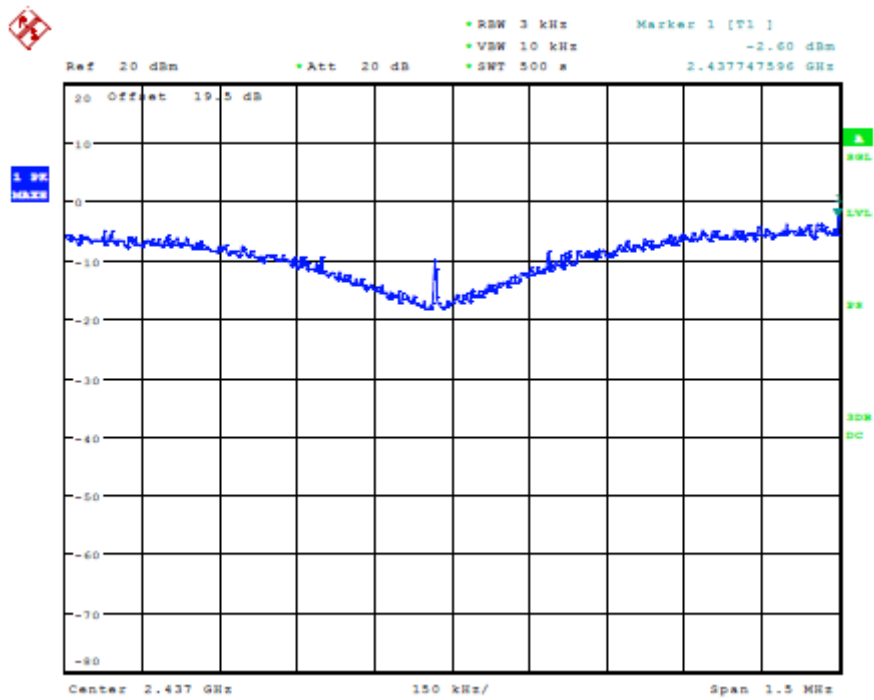
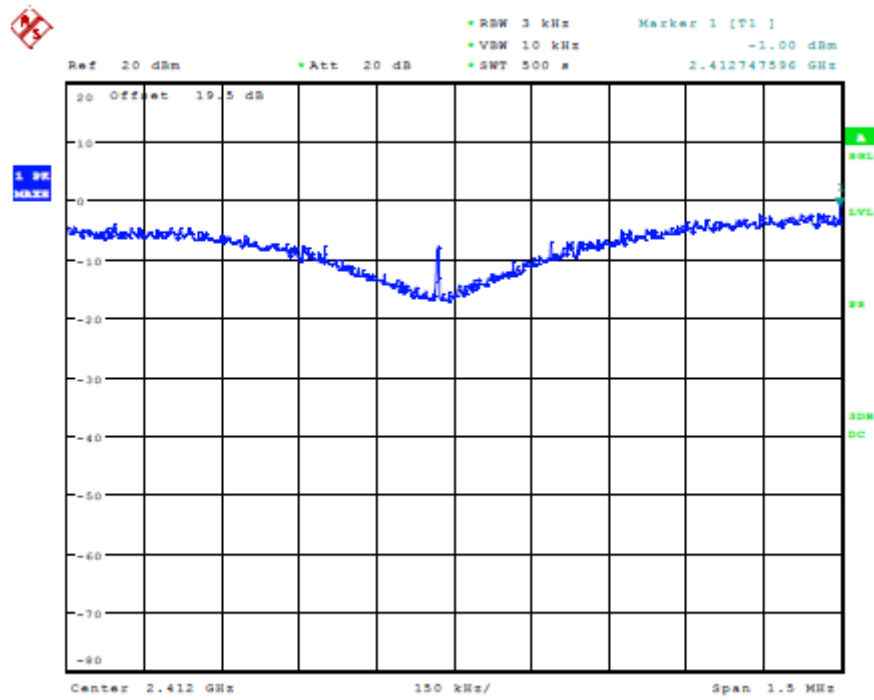
7.4. Test Result

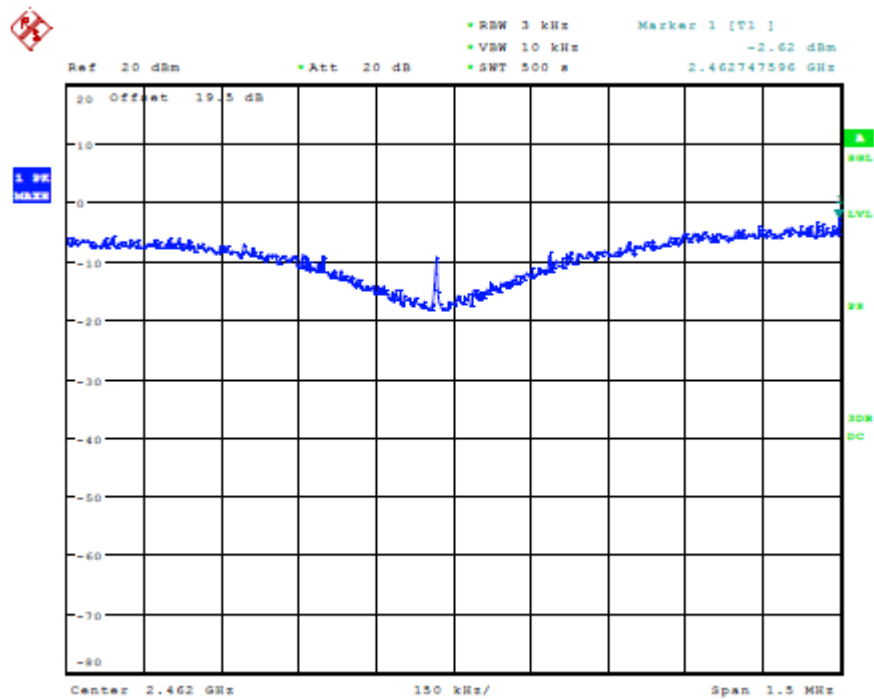
PASS

Detailed information, Please refer to the following page.

Operation Mode:802.11b

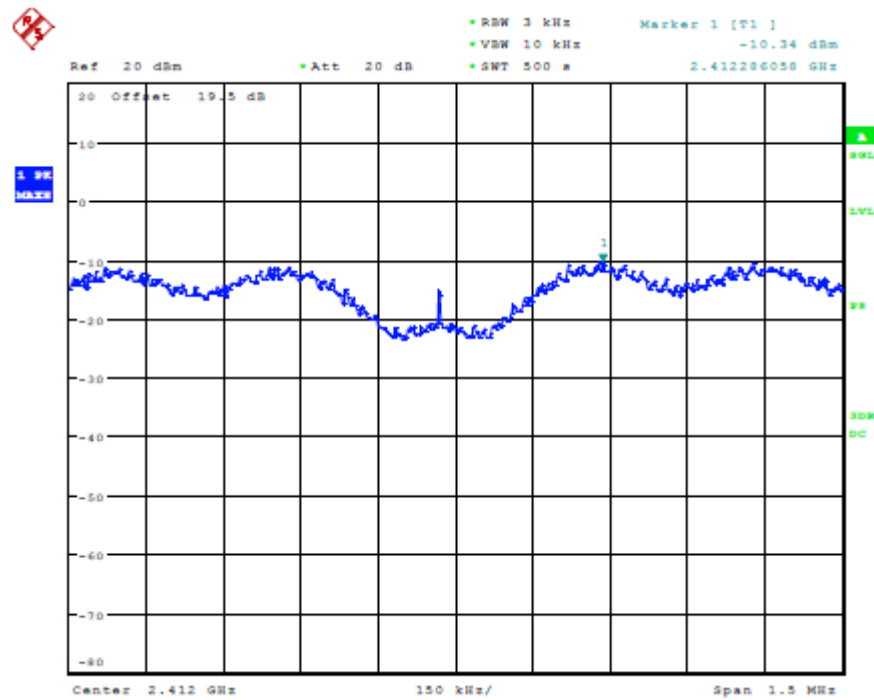
Channel	Measurement Level (dBm)	Required Limit (dBm)
1	-1.00	<8dBm
6	-2.60	<8dBm
11	-2.42	<8dBm

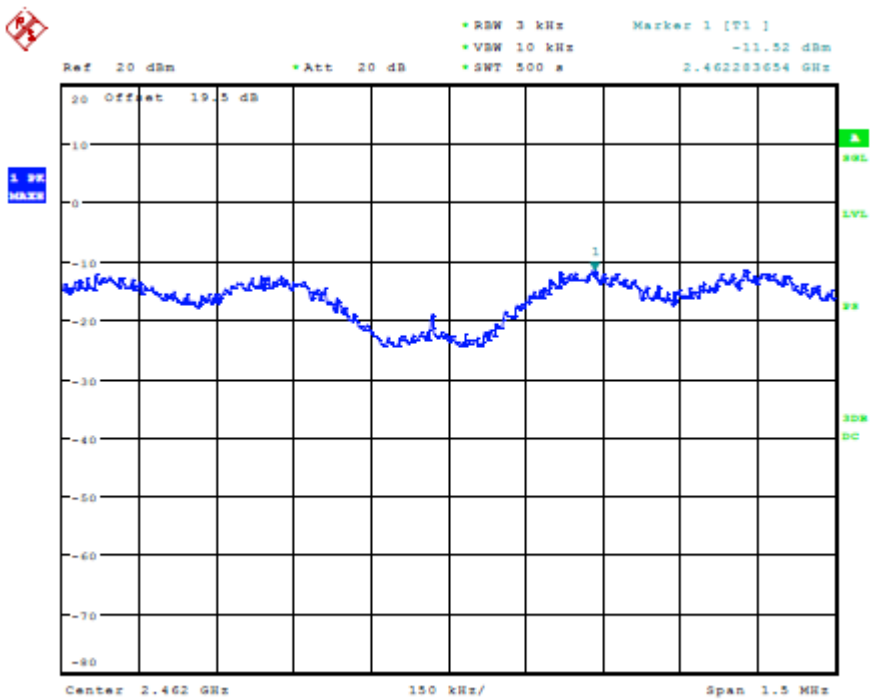
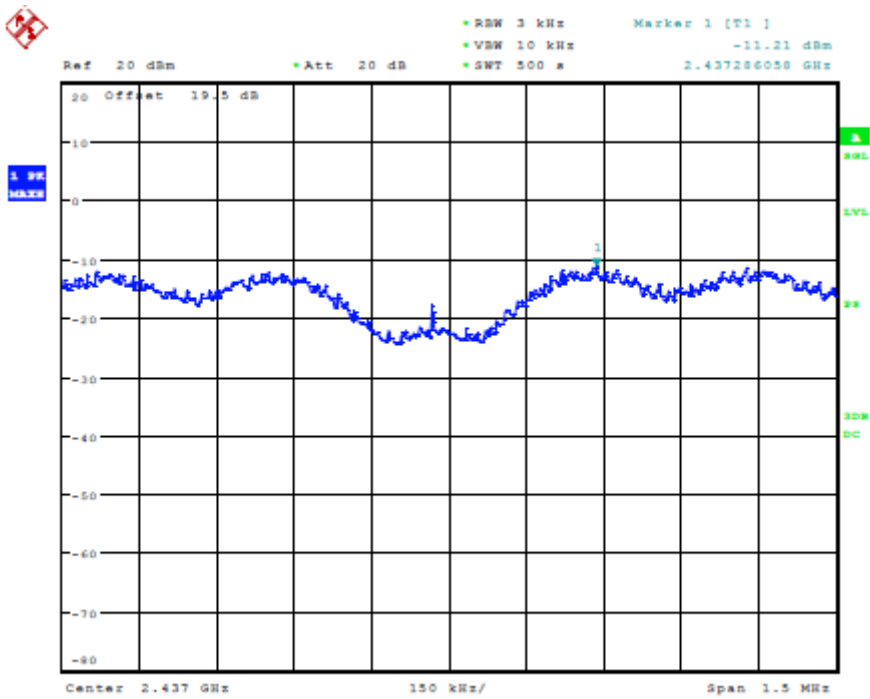




Operation Mode:802.11g

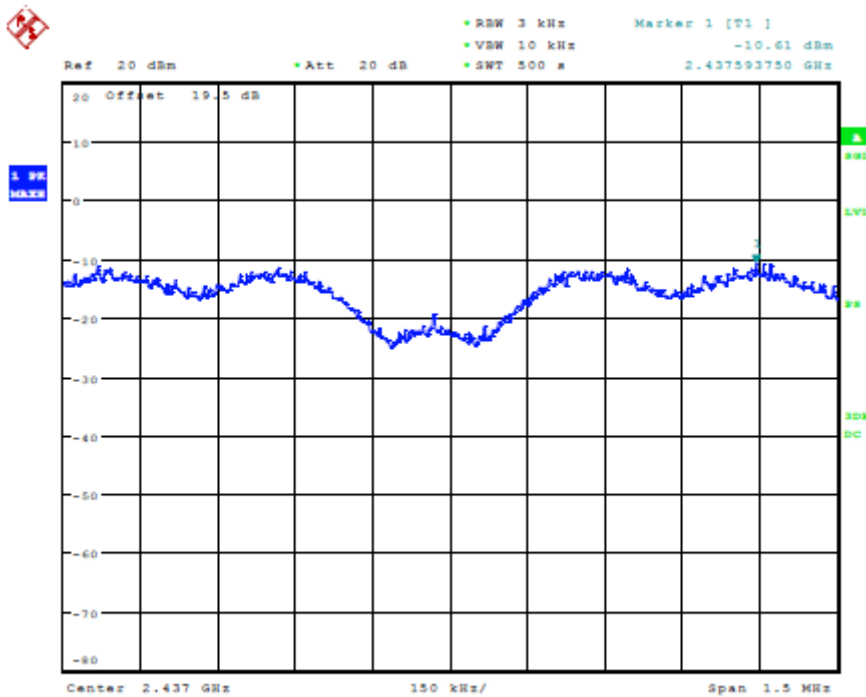
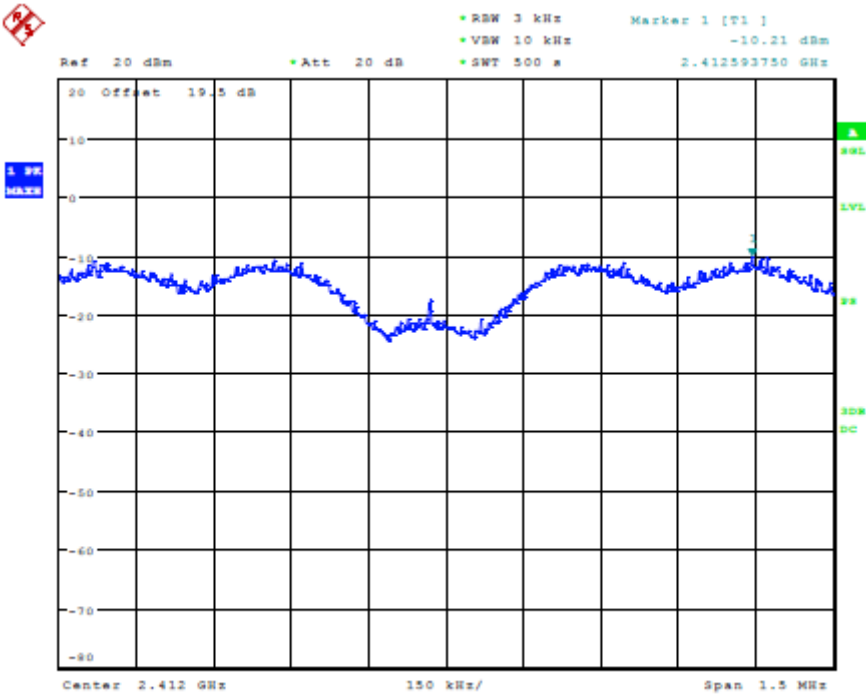
Channel	Measurement Level (dBm)	Required Limit (dBm)
1	-10.34	<8dBm
6	-11.21	<8dBm
11	-11.52	<8dBm

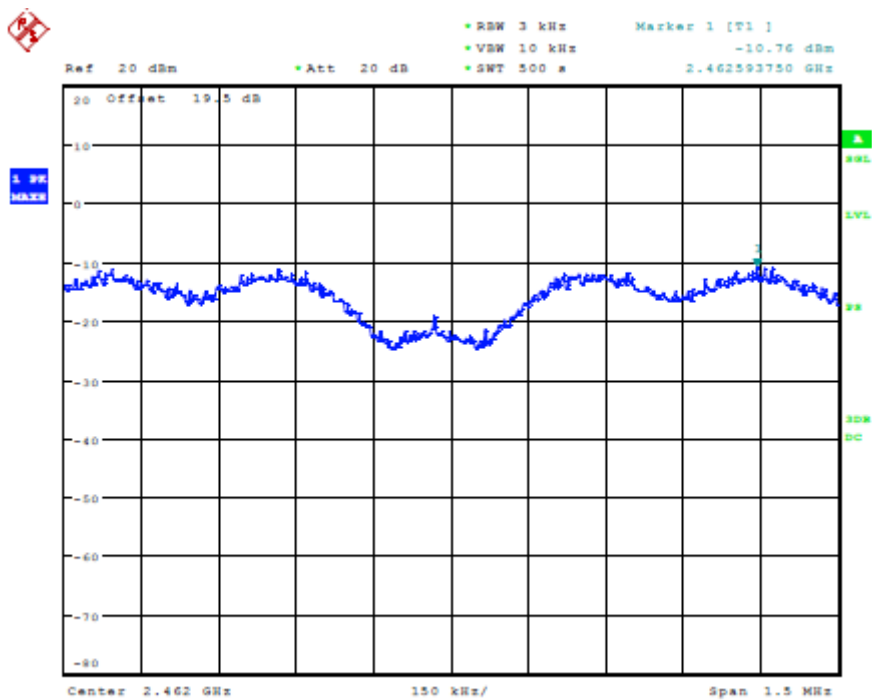




Operation Mode:802.11n

Channel	Measurement Level (dBm)	Required Limit (dBm)
1	-10.21	<8dBm
6	-10.61	<8dBm
11	-10.76	<8dBm





8. RADIATION INTERFERENCE

8.1.Rules Part No.

15.209

8.2.Limits

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency of (MHz)	Emission Field Strength (microvolts/meter)
30 - 88	100 (40)
88 - 216	150 (43.5)
216 - 960	200 (46.0)
Above 960	500 (54.0)

8.3.Test Procedure

ANSI STANDARD C63.4-2009, 10.1.7 MEASUREMENT PROCEDURES:

The EUT is placed on a turned table that is 0.8 meter above the ground. The turned table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna that is mounted on the antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (log periodical antenna and horn antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz.

The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

8.4.Test Result

PASS

The frequency range from 30MHz to 25GHz is investigated.

Detailed information, Please refer to the following page.

Operation Mode:802.11b TX Channel 1**Frequency range:30~1000MHz**

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
74.62	V	31.25	40.00	-8.75
152.36	V	30.26	43.50	-13.24
191.35	V	33.46	43.50	-10.04
207.26	V	32.84	43.50	-10.66
234.63	V	30.69	46.00	-16.81
518.96	V	33.17	46.00	-12.83
75.36	H	32.27	40.00	-7.73
227.45	H	34.61	46.00	-11.39
294.64	H	34.23	46.00	-11.77
350.26	H	35.84	46.00	-10.16
471.39	H	36.15	46.00	-9.85
501.62	H	33.08	46.00	-12.92

Operation Mode:802.11b TX Channel 6**Frequency range:30~1000MHz**

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
73.26	V	31.26	40.00	-8.74
158.62	V	32.45	43.50	-11.05
183.65	V	32.65	43.50	-10.85
212.37	V	30.48	43.50	-13.02
259.69	V	33.61	46.00	-16.80
511.34	V	34.84	46.00	-12.39
72.29	H	31.54	40.00	-8.46
274.35	H	30.56	46.00	-15.44
365.39	H	34.35	46.00	-11.65
437.64	H	35.82	46.00	-10.18
520.36	H	36.40	46.00	-9.60

Operation Mode:802.11b TX Channel 11

Frequency range:30~1000MHz

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
72.54	V	30.21	40.00	-9.79
142.58	V	29.98	43.50	-13.52
189.36	V	31.48	43.50	-12.02
208.34	V	32.95	43.50	-10.55
285.94	V	31.61	46.00	-14.39
511.52	V	30.49	46.00	-15.51
75.68	H	30.75	40.00	-9.25
247.51	H	33.65	46.00	-12.35
280.36	H	35.49	46.00	-10.51
342.63	H	34.59	46.00	-11.41
408.09	H	33.68	46.00	-12.32
527.29	H	30.48	46.00	-15.52

Operation Mode:802.11g TX Channel 1

Frequency range:30~1000MHz

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
78.62	V	31.10	40.00	-8.91
141.23	V	32.24	43.50	-11.26
189.65	V	31.57	43.50	-11.93
215.32	V	30.56	43.50	-12.94
285.69	V	31.95	46.00	-14.05
511.28	V	34.67	46.00	-11.33
77.95	H	30.65	40.00	-9.35
254.36	H	31.47	46.00	-14.53
280.61	H	32.85	46.00	-13.15
330.57	H	35.01	46.00	-10.99
411.31	H	33.61	46.00	-12.39
510.29	H	35.06	46.00	-10.94

Operation Mode:802.11g TX Channel 6

Frequency range:30~1000MHz

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
79.36	V	30.51	40.00	-9.49
147.32	V	31.82	43.50	-11.68
196.35	V	31.05	43.50	-12.45
211.84	V	30.19	43.50	-13.31
279.61	V	32.95	46.00	-13.05
512.69	V	35.06	46.00	-10.94
77.35	H	30.82	40.00	-9.18
241.36	H	35.67	46.00	-10.33
294.39	H	34.83	46.00	-11.17
342.86	H	35.13	46.00	-10.87
411.91	H	35.98	46.00	10.02
509.92	H	33.07	46.00	12.93

Operation Mode:802.11g TX Channel 11

Frequency range:30~1000MHz

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
77.24	V	30.19	40.00	-9.81
145.38	V	31.26	43.50	-12.24
194.29	V	32.54	43.50	-10.96
207.83	V	32.65	43.50	-10.85
281.34	V	31.58	46.00	-14.42
509.61	V	35.86	46.00	-10.14
80.21	H	30.47	40.00	-9.53
251.26	H	31.59	46.00	-14.41
292.58	H	32.67	46.00	-13.33
341.34	H	33.05	46.00	-12.95
408.86	H	34.19	46.00	-11.81
514.39	H	33.64	46.00	-12.36

Operation Mode:802.11n TX Channel 1

Frequency range:30~1000MHz

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
77.02	V	30.24	40.00	-9.76
143.65	V	31.46	43.50	-12.02
196.37	V	31.09	43.50	-12.41
213.61	V	32.64	43.50	-10.86
291.36	V	33.79	46.00	-12.21
504.27	V	35.18	46.00	-10.82
75.92	H	30.65	40.00	-9.35
248.92	H	33.92	46.00	-12.08
281.31	H	35.81	46.00	-10.19
337.62	H	34.68	46.00	-11.32
409.52	H	35.70	46.00	-10.30
510.48	H	36.00	46.00	-10.00

Operation Mode:802.11n TX Channel 6

Frequency range:30~1000MHz

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
79.06	V	30.52	40.00	-9.48
144.67	V	31.08	43.50	-12.42
201.08	V	31.29	43.50	-10.66
215.58	V	32.85	43.50	-10.65
282.39	V	32.49	46.00	-13.51
507.37	V	35.09	46.00	-10.91
80.05	H	30.86	40.00	-9.14
233.34	H	35.69	46.00	-10.31
281.57	H	36.85	46.00	-9.15
341.28	H	35.04	46.00	-10.94
407.68	H	36.09	46.00	-9.91
509.32	H	33.54	46.00	-12.46

Operation Mode:802.11n TX Channel 11

Frequency range:30~1000MHz

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
76.53	V	30.26	40.00	-9.74
139.82	V	31.09	43.50	-12.41
184.63	V	30.27	43.50	-13.23
209.36	V	32.84	43.50	-10.66
284.35	V	35.68	46.00	-10.32
506.29	V	34.67	46.00	-11.33
80.27	H	30.84	40.00	-9.16
244.68	H	33.69	46.00	-12.31
282.69	H	35.64	46.00	-10.36
341.94	H	35.19	46.00	-10.81
408.64	H	34.81	46.00	-11.19
504.41	H	33.62	46.00	-12.38

Operation Mode:802.11b TX Channel 1

Frequency range:Above 1G

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4581.45	V	50.45	37.68	74	54	-23.55	-16.32
5293.98	V	50.26	36.45	74	54	-23.74	-17.55
5919.08	V	52.24	36.14	74	54	-21.76	-17.86
4589.32	H	50.96	36.25	74	54	-23.04	-17.75
5289.54	H	51.76	37.67	74	54	-22.24	-16.33
5918.86	H	50.84	36.75	74	54	-23.16	-17.25

Operation Mode:802.11b TX Channel 6**Frequency range:Above 1G**

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4598.01	V	52.92	37.29	74	54	-21.08	-16.71
5304.32	V	49.54	37.59	74	54	-24.46	-16.41
5898.47	V	53.61	37.36	74	54	-20.39	-16.64
4600.24	H	50.26	37.93	74	54	-23.74	-16.07
5304.37	H	51.42	39.64	74	54	-22.58	-14.36
5931.08	H	49.63	38.37	74	54	-24.31	-15.63

Operation Mode:802.11b TX Channel 11**Frequency range:Above 1G**

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4594.82	V	51.26	37.29	74	54	-22.74	-16.71
5303.75	V	50.24	36.98	74	54	-23.76	-17.02
5908.26	V	52.62	35.67	74	54	-21.38	-18.33
4590.73	H	52.40	37.56	74	54	-21.60	-16.44
5300.34	H	51.53	38.70	74	54	-22.47	-15.30
5935.46	H	49.95	35.18	74	54	-24.05	-18.82

Operation Mode:802.11g TX Channel 1**Frequency range:Above 1G**

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4578.03	V	51.21	38.27	74	54	-22.79	-15.73
5300.87	V	52.36	36.94	74	54	-21.64	-17.06
5908.23	V	50.87	35.67	74	54	-23.13	-18.33
4598.38	H	53.21	37.63	74	54	-20.79	-16.37
5297.24	H	52.64	38.24	74	54	-21.36	-15.76
5952.59	H	50.42	36.52	74	54	-23.58	-17.48

Operation Mode:802.11g TX Channel 6

Frequency range:Above 1G

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4586.06	V	50.28	38.24	74	54	-23.72	-15.76
5312.15	V	54.94	38.64	74	54	-19.06	-15.36
5888.68	V	54.67	35.37	74	54	-19.33	-18.63
4600.48	H	53.61	38.85	74	54	-20.39	-15.15
5315.18	H	53.27	36.82	74	54	-20.73	-17.18
5967.39	H	52.76	36.43	74	54	-21.24	-17.57

Operation Mode:802.11g TX Channel 11

Frequency range:Above 1G

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4586.52	V	52.27	38.25	74	54	-21.73	-15.75
5307.08	V	51.21	35.37	74	54	-22.79	-18.63
5897.64	V	52.47	34.34	74	54	-21.53	-19.66
4608.83	H	51.56	38.45	74	54	-22.44	-15.55
5308.76	H	52.31	39.29	74	54	-21.69	-14.71
5972.34	H	53.67	34.58	74	54	-20.33	-19.42

Operation Mode:802.11n TX Channel 1

Frequency range:Above 1G

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4578.21	V	51.35	39.28	74	54	-22.65	-14.72
5300.86	V	51.71	37.73	74	54	-22.29	-16.27
5909.19	V	51.64	34.87	74	54	-22.36	-19.13
4598.54	H	52.19	37.53	74	54	-21.81	-16.47
5298.17	H	52.75	39.42	74	54	-21.25	-14.58
5951.37	H	51.53	36.81	74	54	-22.47	-17.19

Operation Mode:802.11n TX Channel 6

Frequency range:Above 1G

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4587.24	V	51.35	37.96	74	54	-22.35	-16.04
5312.68	V	53.28	38.34	74	54	-20.72	-15.66
5887.75	V	54.84	35.49	74	54	-19.16	-18.51
4601.24	H	53.16	38.09	74	54	-20.84	-15.91
5314.63	H	53.37	36.76	74	54	-20.63	-17.24
5968.47	H	54.95	37.72	74	54	-19.05	-16.28

Operation Mode:802.11n TX Channel 11

Frequency range:Above 1G

Frequency (MHz)	ANTENNA POLARITY H/V	PK (dBuV/m)	AV (dBuV)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dBuV/m)	AV Margin (dBuV/m)
4586.48	V	51.68	36.09	74	54	-22.32	-17.91
5308.39	V	51.43	34.61	74	54	-22.57	-19.39
5897.19	V	53.91	34.83	74	54	-20.09	-19.17
4608.84	H	53.08	38.64	74	54	-20.92	-15.36
5308.29	H	52.74	38.67	74	54	-21.26	-15.33
5971.27	H	53.49	34.74	74	54	-20.51	-19.26

9. RESTRICTED BANDS OF OPERATION

Section 15.205:

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
¹ 0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
2. 17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
2. 20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 –	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.52525	2655 – 2900	22.01 – 23.12
8.41425 – 8.41475	156.7 – 156.9	3260 – 3267	23.6 – 24.0
12.29 – 12.293	162.0125 – 167.17	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	167.72 – 173.2	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	240 – 285	3600 – 4400	(²)
13.36 – 13.41	322 – 335.4		

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

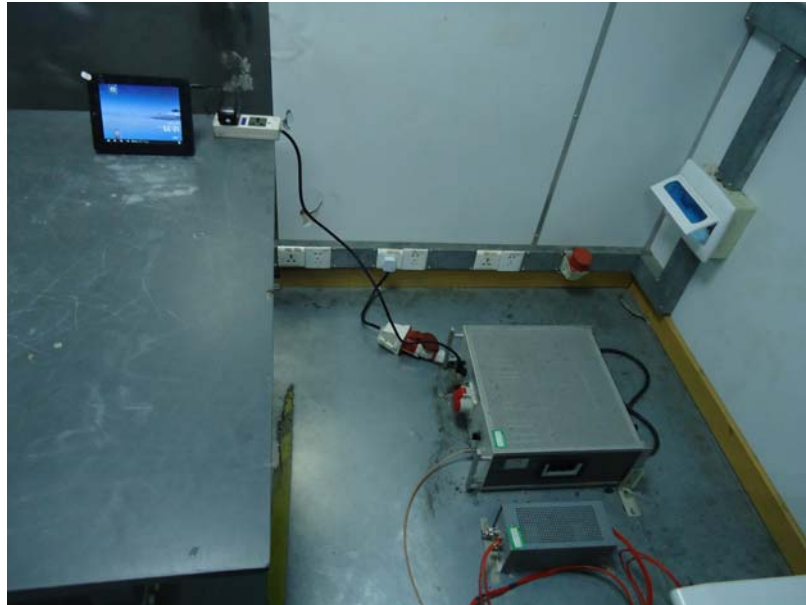
² Above 38.6

10.ANTENNA REQUIREMENT

According to 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 is fixed by PCB, can not be changed except take apart the product. Therefore the EUT complies with Section 15.203 of the FCC rules.

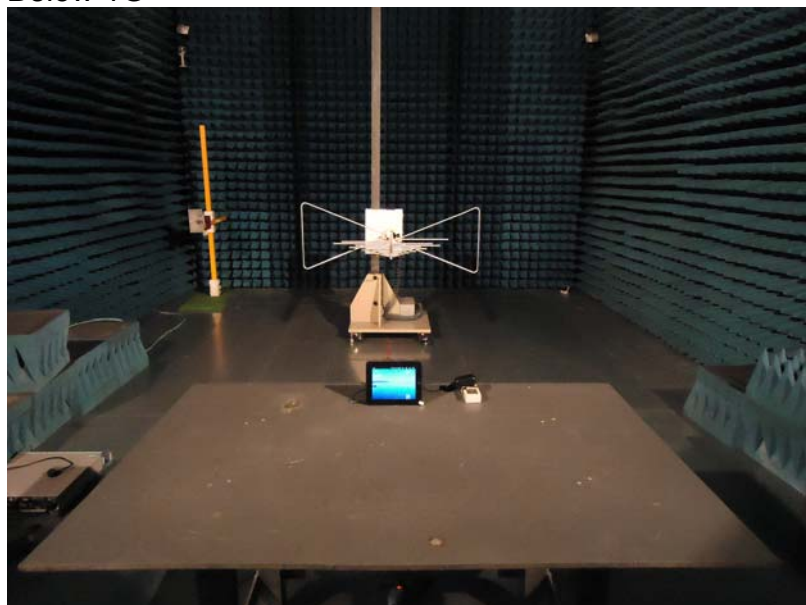
11.PHOTOGRAPH OF TEST

Powerline Conducted Emission



Radiated Emission

Below 1G



Above 1G

