

## FCC Part 15C

### MEASUREMENT AND TEST REPORT

For

#### **Shenzhen Zgiem Technology Co., Ltd.**

The H Building, The 3rd Industry Zone Xinwei, Dalang Town, Bao'an District,  
Shenzhen, P.R.China.

**Model: 1210**

Sep. 25, 2009

<b>This Report Concerns:</b> <input checked="" type="checkbox"/> Original Report	<b>Equipment Type:</b> Notebook
<b>Test Engineer:</b>	<i>Cawen He</i>
<b>Report Number:</b>	MTI090919006RF
<b>Test Date:</b>	Sep. 19~Sep. 24, 2009
<b>Reviewed By:</b>	<i>Hebe Lee</i>
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**Note:** This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of MTI Technology Laboratory Ltd.

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# 1. GENERAL INFORMATION

## 1.1 Product Description for Equipment Under Test (EUT)

Applicant:	Shenzhen Zgiem Technology Co., Ltd.
Address of applicant:	The H Building, The 3rd Industry Zone Xinwei, Dalang Town, Bao'an District, Shenzhen, P.R.China.
Manufacturer:	Shenzhen Zgiem Technology Co., Ltd.
Address of manufacturer:	The H Building, The 3rd Industry Zone Xinwei, Dalang Town, Bao'an District, Shenzhen, P.R.China.
FCC ID:	XTH1210
Equipment Under Test:	Notebook
Tested Model No.:	1210
Supplementary Models No:	N/A
	Remark: supplementary models are only different in exterior with tested Model and with the same circuit construction
Type of Modulation:	DSSS for IEEE 802.11b; OFDM for IEEE 802.11g
Frequency Band:	2412 MHz ~ 2462MHz
Number of Channels:	11
Temperature Range (Operating):	-20 ~ 65 °C
Power Supply:	AC 120V/60Hz

Remark: \* The test data gathered are from the production sample provided by the manufacturer.

## 1.2 Related Submittal(s) / Grant (s)

This submittal(s) is a test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 - 2003.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.207, and 15.247 rules.

### **1.3 Test Methodology**

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 - 2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. Radiated testing was performed at an antenna to EUT distance 3 meters.

### **1.4 Test Facility**

All measurement required was performed at laboratory of MTI Technology Laboratory Ltd. at 10F, Yinxing Business Building, Xixiang Road, Bao'an District, Shenzhen, P.R.China.

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

#### **FCC – Registration No.: 167003**

MTI Technology Laboratory 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 167003, May 04, 2009.

## **2. SYSTEM TEST CONFIGURATION**

The tests documented in this report were performed in accordance with ANSI C63.4-2003 and FCC CFR 47 Part 15 Subpart C.

### **2.1 EUT Configuration**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

### **2.2 EUT Exercise**

The calibrated antennas used to sample the radiated field strength are mounted on a non-conductive, motorized antenna mast 3 or 10 meters from the leading edge of the turntable.

### **2.3 General Test Procedures**

**Conducted Emissions** The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 7.1 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak detector mode.

**Radiated Emissions** The EUT is placed on a turntable, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4-2003.

## 2.4 List of Measuring Equipments Used

Items	Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Calibration Period
1	EMI Test Receiver	ROHDE & SCHWARZ	ESI 26	100079	2009/6	1 year
2	Horn Antenna	R/S	CH14-H052	1091698	2009/6	1 year
3	3m Semi- Anechoic Chamber	ETS	N/A	N/A	2009/6	1 year
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100038	2008/11	1 year
2	EMI Test Receiver	ROHDE & SCHWARZ	ESI 26	100009	2008/11	1 year
3	Receiver/ Spectrum Analyzer	ROHDE & SCHWARZ	ESCI	100106	2008/11	1 year
4	Spectrum Analyzer	Agilent	E7405A	US41160415	2008/11	1 year
5	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2008/11	1 year
6	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100044	2008/11	1 year
7	LISN	COM Power	LI-200	12212	2008/11	1 year
8	LISN	COM Power	LI-200	12019	2008/11	1 year
9	3m/5m Semi- Anechoic Chamber	ETS	N/A	N/A	2008/11	1 year
10	Ultra-Broadband Antenna	R/S	HL562	100015	2008/11	1 year
11	Horn Antenna	R/S	HF906	100039	2008/11	1 year
12	RF Test Panel	R/S	TS / RSP	335015/ 0017	N/A	N/A
13	Turntable	ETS	2088	2149	N/A	N/A
14	Antenna Mast	ETS	2075	2346	N/A	N/A

### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
15.203/15.247(b)/(c)	Antenna Requirement	Pass
15.207	AC Power Line Conducted Emission	Pass
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System	Pass
15.247(e)	Power Spectral Density	Pass
15.247(b)(1)	Maximum Peak Output Power	Pass
15.247(d)	Band Edges Emission	Pass
15.247(d)	Radiated Emission	Pass



## **4. ANTENNA REQUIREMENT**

### **4.1 Standard Applicable**

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Section 15.247(b)/(c):

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

If the intentional radiator is used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

### **4.2 Antenna Connected Construction**

The antennas used in this product are PIFA. PIFA antenna with WNC connector, The maximum Gain of the antenna is 2.60dBi.

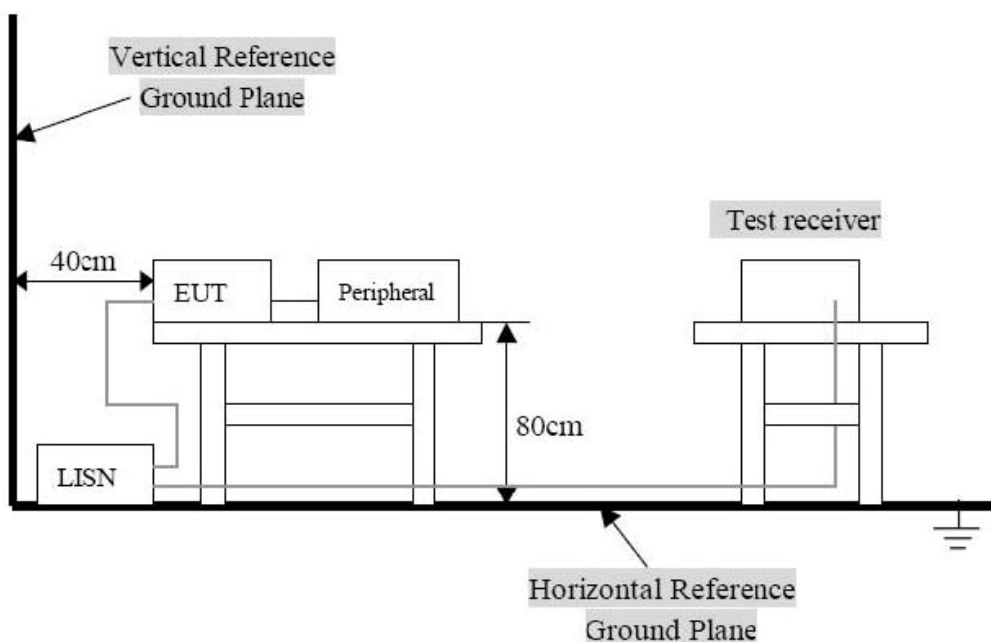
## 5. CONDUCTED EMISSION Measurement

### 5.1 Limits of Conducted Emission

Section 15.207: For a Low-power Radio-frequency Device is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency Range (MHz)	Limits ( dBuV)	
	Quasi-Peak	Average
0.150~0.500	66~56	56~46
0.500~5.000	56	46
5.000~30.00	60	50

### 5.2 Test Setup Diagram



### 5.3 Instrument Setting

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range.....150 KHz to 30 MHz  
Detector.....Peak & Quasi-Peak & Average  
Sweep Speed.....Auto  
IF Band Width.....9 KHz

## **5.4 Test Equipment List and Details**

See section 2.4 of this report.

## **5.5 Test Procedure**

1. Configure the EUT according to ANSI C63.4.
2. The EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN)
4. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
5. The frequency range from 150 KHz to 30 MHz was searched.
6. Use the Channel & Power Controlling software to make the EUT working on selected channel and expected output power, then use the "H" Patter Generator software to make the supporting equipments stay on working condition.
7. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
8. The measurement has to be done between each power line and ground at the power terminal for each RF channel. Only one RF channel has to be investigated since this test is independent with the RF channel selection.

## **5.6 Test Result**

PASS

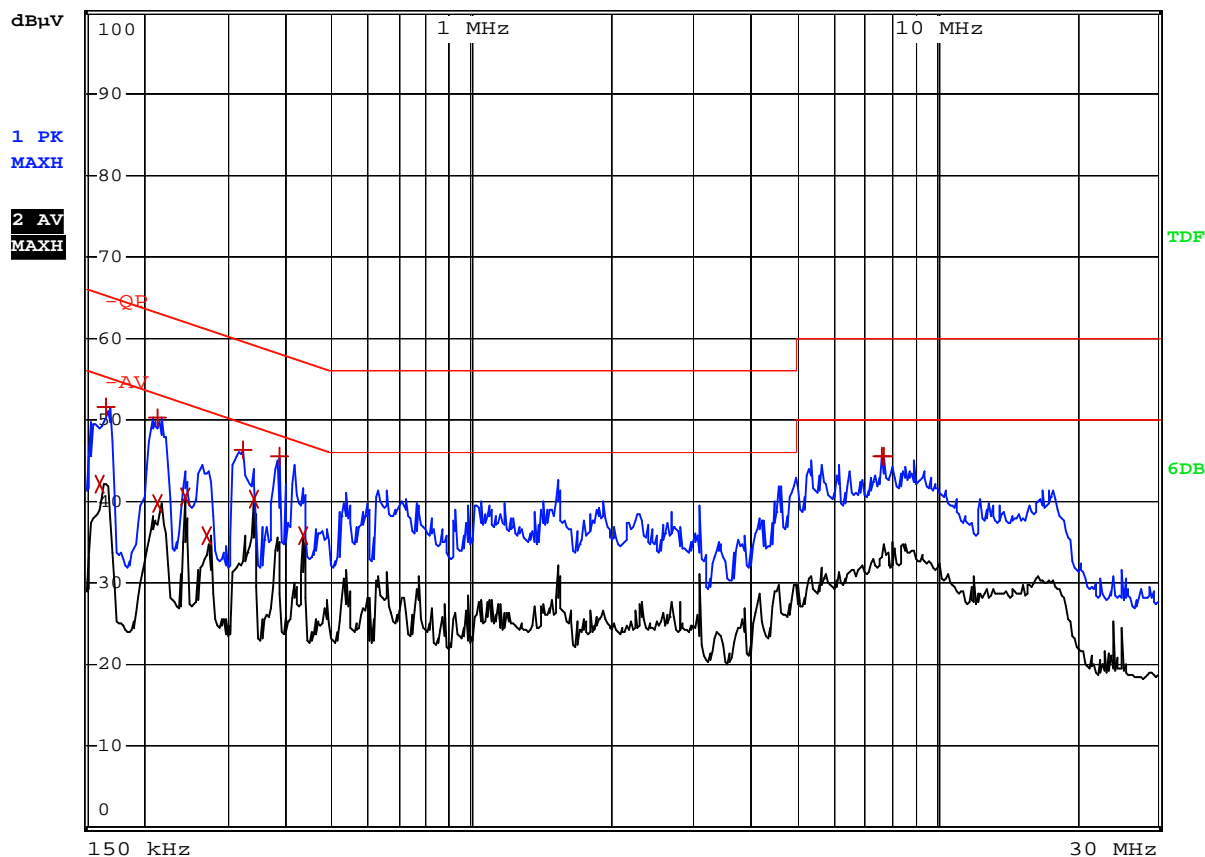
Detailed information, Please refer to the following pages.

EUT: Notebook  
M/N: 1210  
Operator: Amy  
Test Specification: L 802.11b



RBW 9 kHz  
MT 5 ms

Att 10 dB AUTO



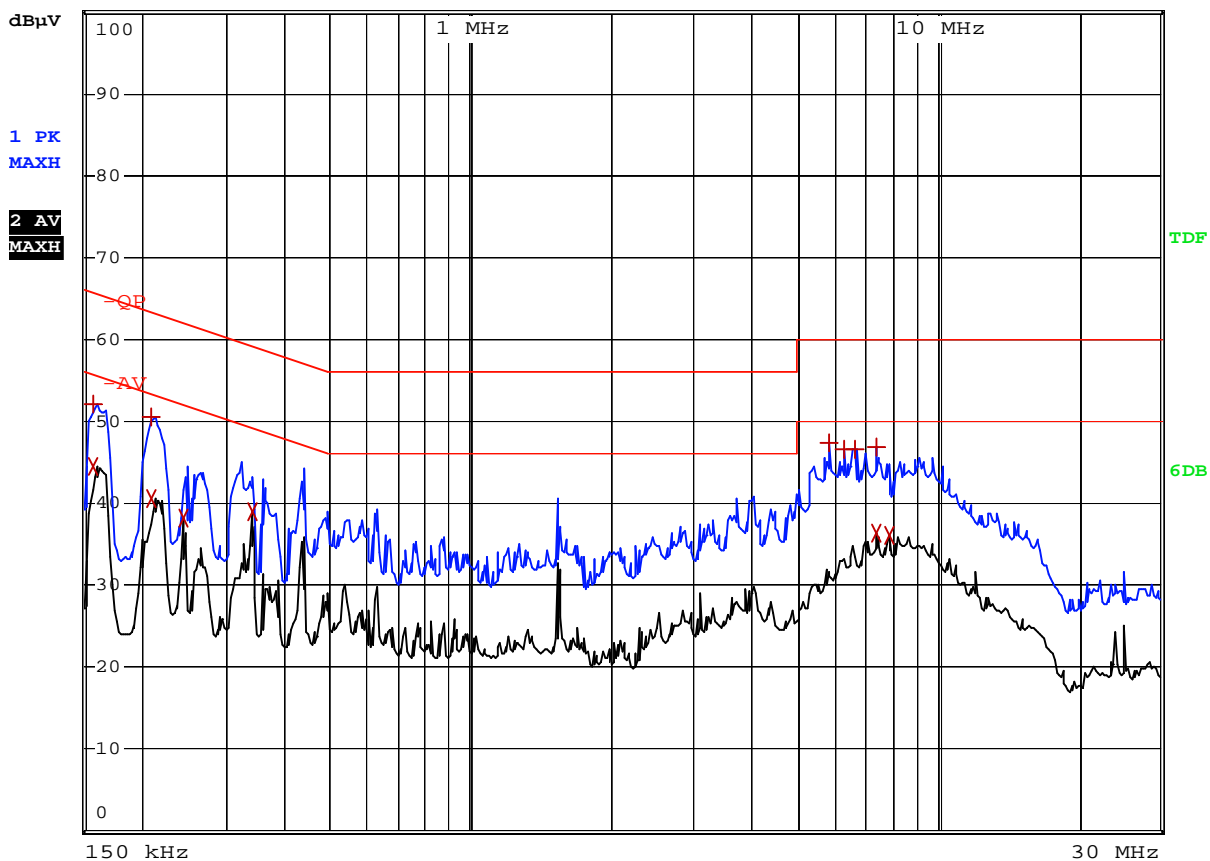
EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	162 kHz	42.18	-13.17
1 Max Peak	166 kHz	51.59	-13.56
1 Max Peak	214 kHz	50.35	-12.69
2 Average	214 kHz	39.71	-13.33
2 Average	242 kHz	40.54	-11.48
2 Average	274 kHz	35.86	-15.13
1 Max Peak	322 kHz	46.26	-13.39
2 Average	338 kHz	40.38	-8.87
1 Max Peak	386 kHz	45.43	-12.71
2 Average	434 kHz	35.91	-11.25
1 Max Peak	7.606 MHz	45.43	-14.56
1 Max Peak	7.73 MHz	45.62	-14.37

EUT: Notebook  
M/N: 1210  
Operator: Amy  
Test Specification: N 802.11b



RBW 9 kHz  
MT 5 ms

Att 10 dB AUTO



#### EDIT PEAK LIST (Prescan Results)

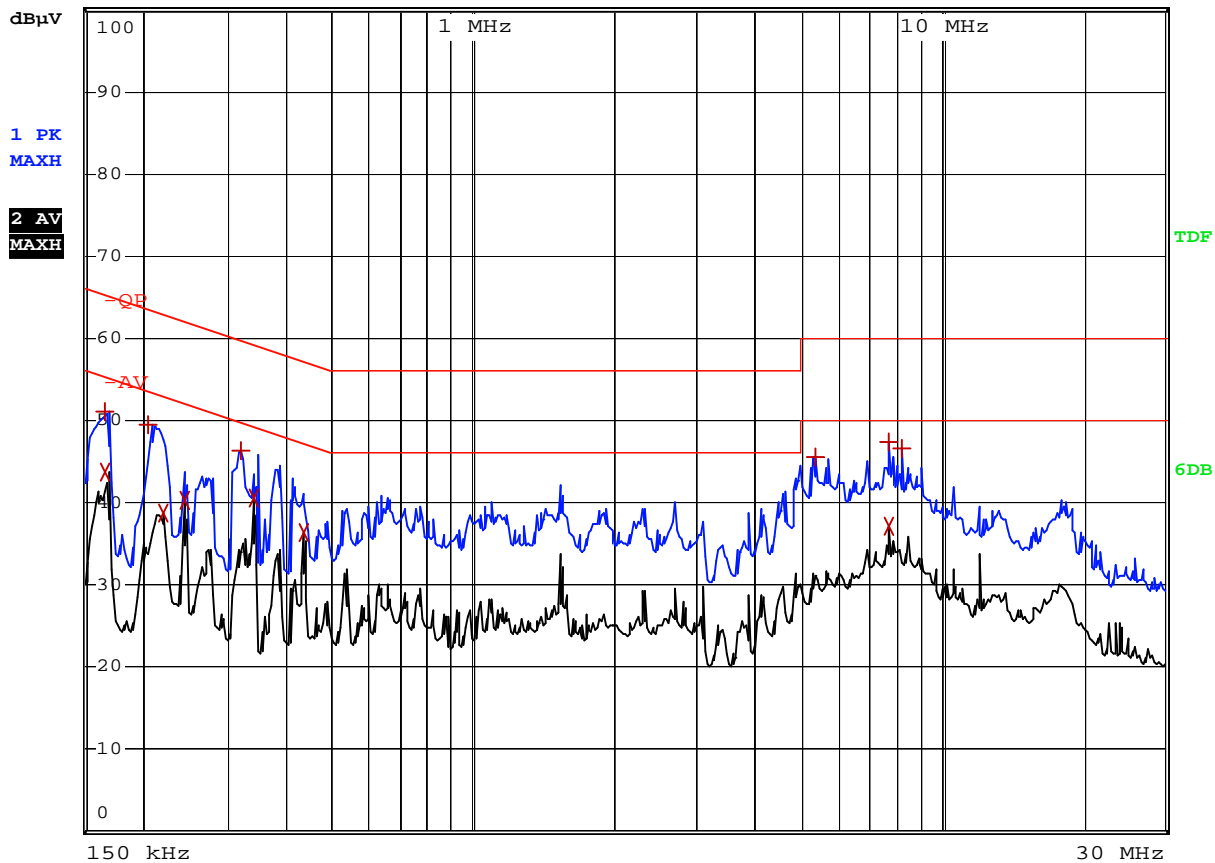
Trace1:	-QP			
Trace2:	-AV			
Trace3:	---			
TRACE		FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1	Max Peak	158 kHz	52.15	-13.41
2	Average	158 kHz	44.60	-10.96
1	Max Peak	210 kHz	50.47	-12.72
2	Average	210 kHz	40.62	-12.57
2	Average	242 kHz	38.19	-13.82
2	Average	338 kHz	38.92	-10.33
1	Max Peak	5.834 MHz	47.31	-12.69
1	Max Peak	6.326 MHz	46.68	-13.31
1	Max Peak	6.682 MHz	46.67	-13.32
1	Max Peak	7.434 MHz	46.80	-13.19
2	Average	7.434 MHz	36.24	-13.75
2	Average	7.858 MHz	35.98	-14.01

EUT: Notebook  
M/N: 1210  
Operator: Amy  
Test Specification: L 802.11g



RBW 9 kHz  
MT 5 ms

Att 10 dB AUTO



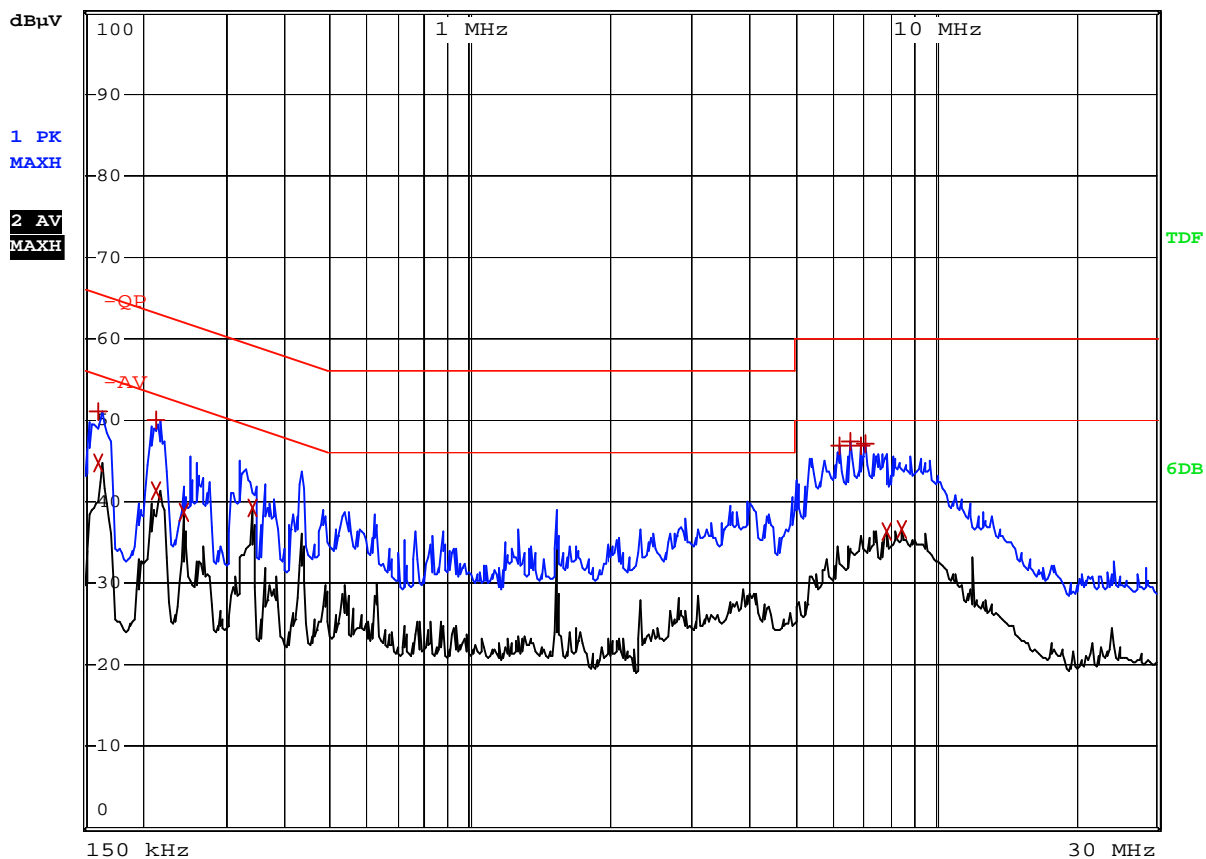
EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Max Peak	166 kHz	51.07	-14.08
2 Average	166 kHz	43.60	-11.55
1 Max Peak	206 kHz	49.44	-13.91
2 Average	218 kHz	38.81	-14.08
2 Average	242 kHz	40.37	-11.65
1 Max Peak	318 kHz	46.27	-13.48
2 Average	338 kHz	40.46	-8.79
2 Average	434 kHz	36.32	-10.85
1 Max Peak	5.398 MHz	45.59	-14.40
1 Max Peak	7.734 MHz	47.35	-12.64
2 Average	7.734 MHz	37.16	-12.83
1 Max Peak	8.246 MHz	46.50	-13.49

EUT: Notebook  
M/N: 1210  
Operator: Amy  
Test Specification: N 802.11g



RBW 9 kHz  
MT 5 ms

Att 10 dB AUTO



#### EDIT PEAK LIST (Prescan Results)

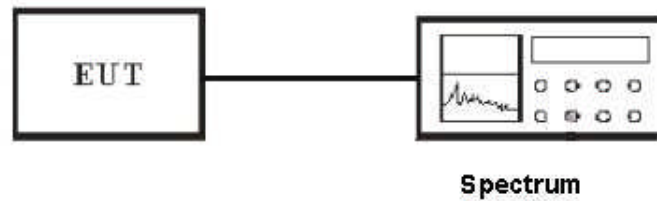
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Max Peak	162 kHz	51.12	-14.23
2 Average	162 kHz	44.70	-10.66
1 Max Peak	214 kHz	50.11	-12.93
2 Average	214 kHz	41.41	-11.63
2 Average	242 kHz	38.69	-13.33
2 Average	338 kHz	39.25	-9.99
1 Max Peak	6.262 MHz	46.72	-13.27
1 Max Peak	6.562 MHz	47.26	-12.74
1 Max Peak	6.962 MHz	46.79	-13.20
1 Max Peak	7.122 MHz	47.08	-12.91
2 Average	7.89 MHz	36.38	-13.61
2 Average	8.502 MHz	36.66	-13.34

## 6. 6dB Bandwidth Measurement

### 6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

### 6.2 EUT Setup



### 6.3 Test Equipment List and Details

See section 2.4.

### 6.4 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

### 6.5 Test Result

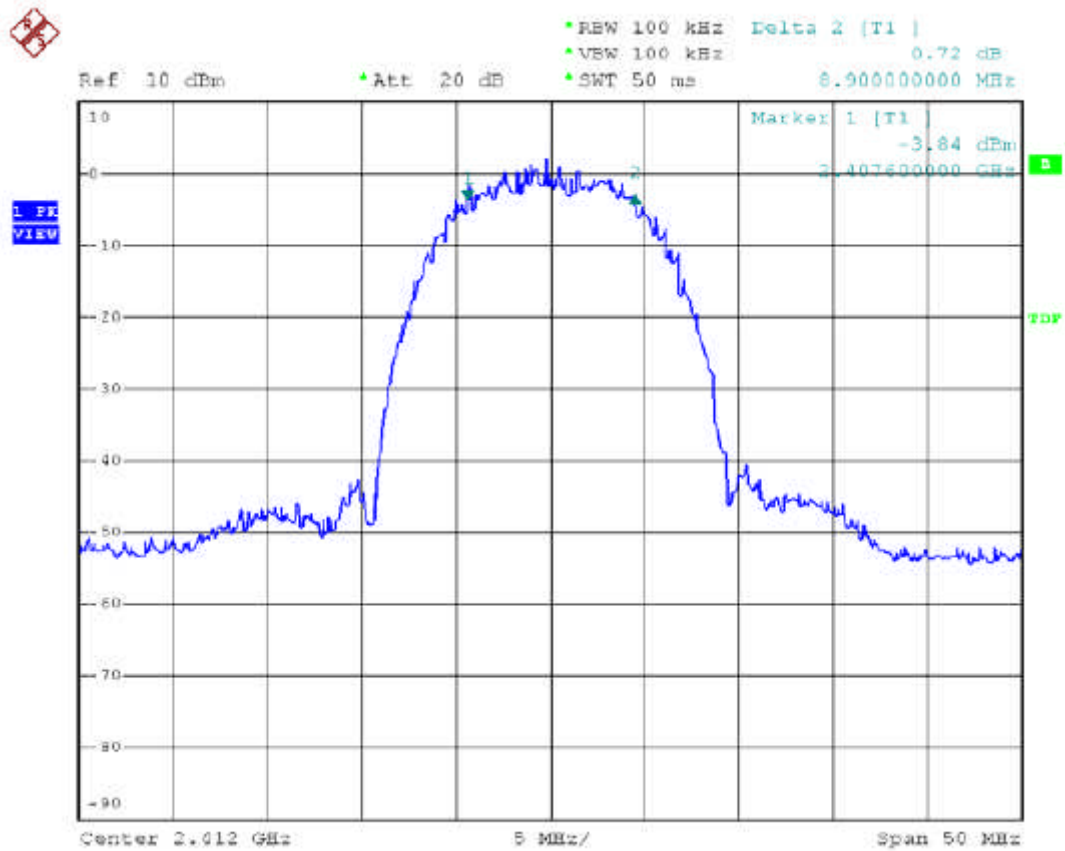
PASS

Detailed information, Please refer to the following pages.

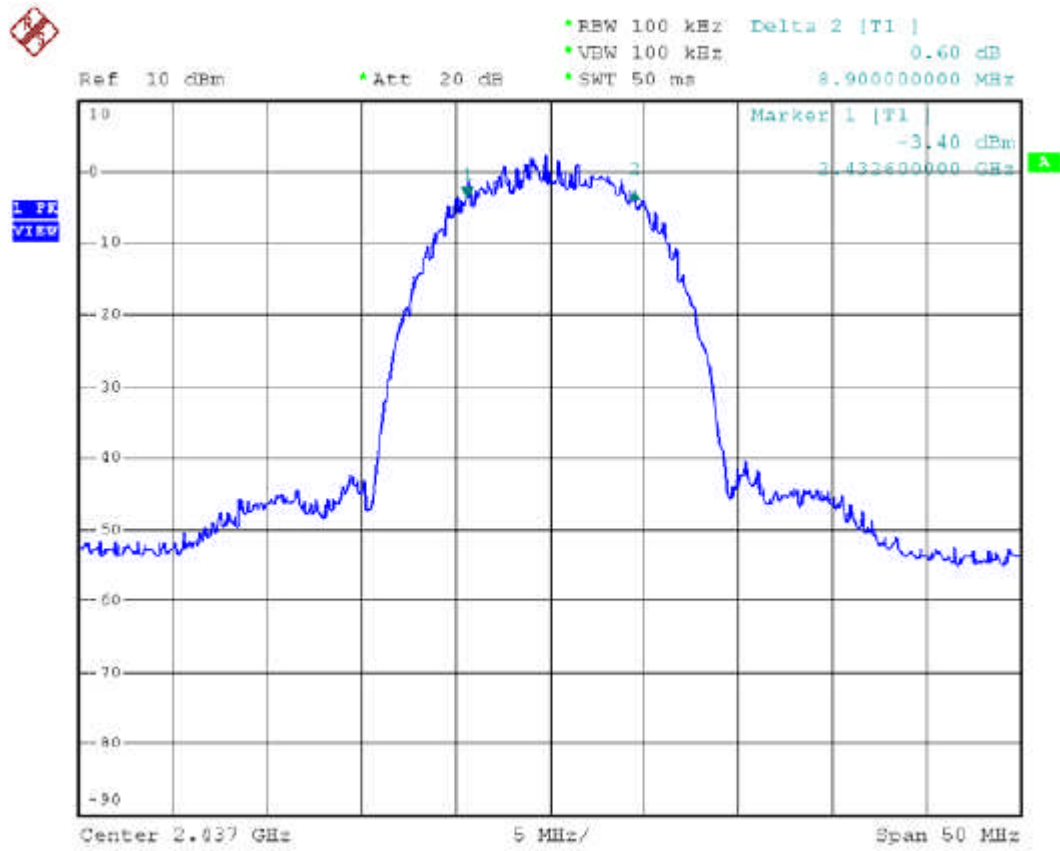


## IEEE 802.11b

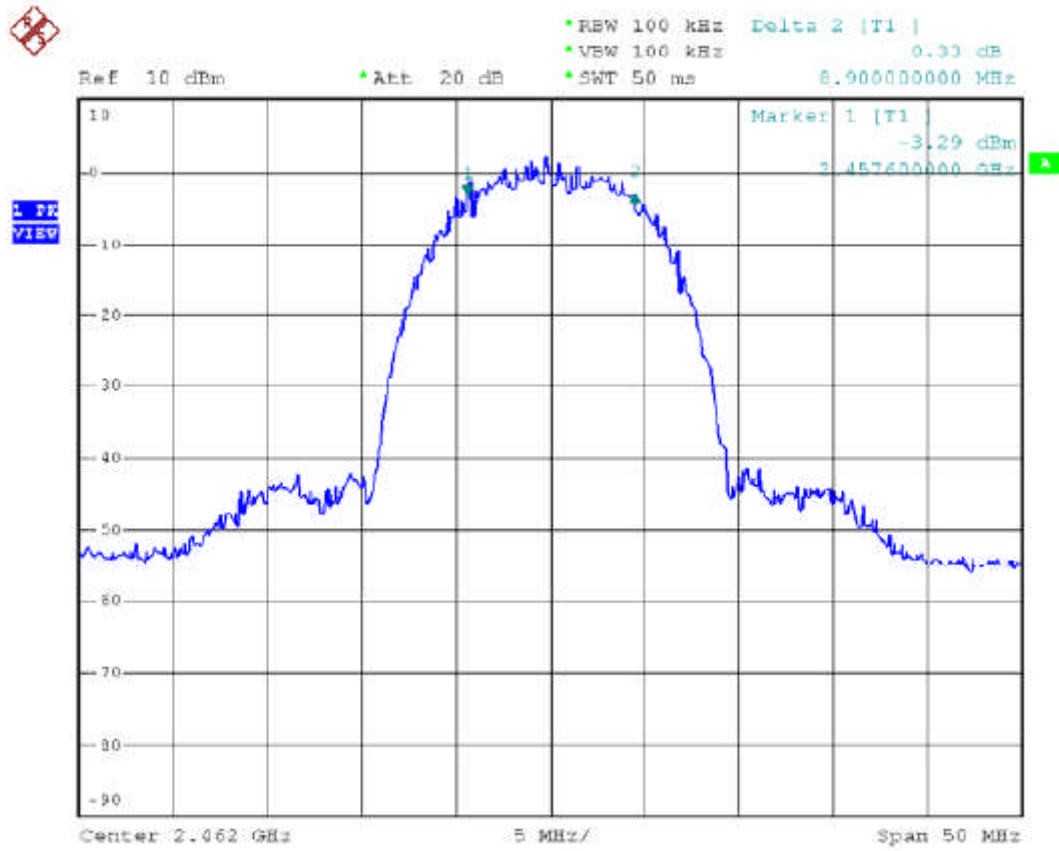
Low Channel: 2412MHz



Middle Channel: 2437MHz

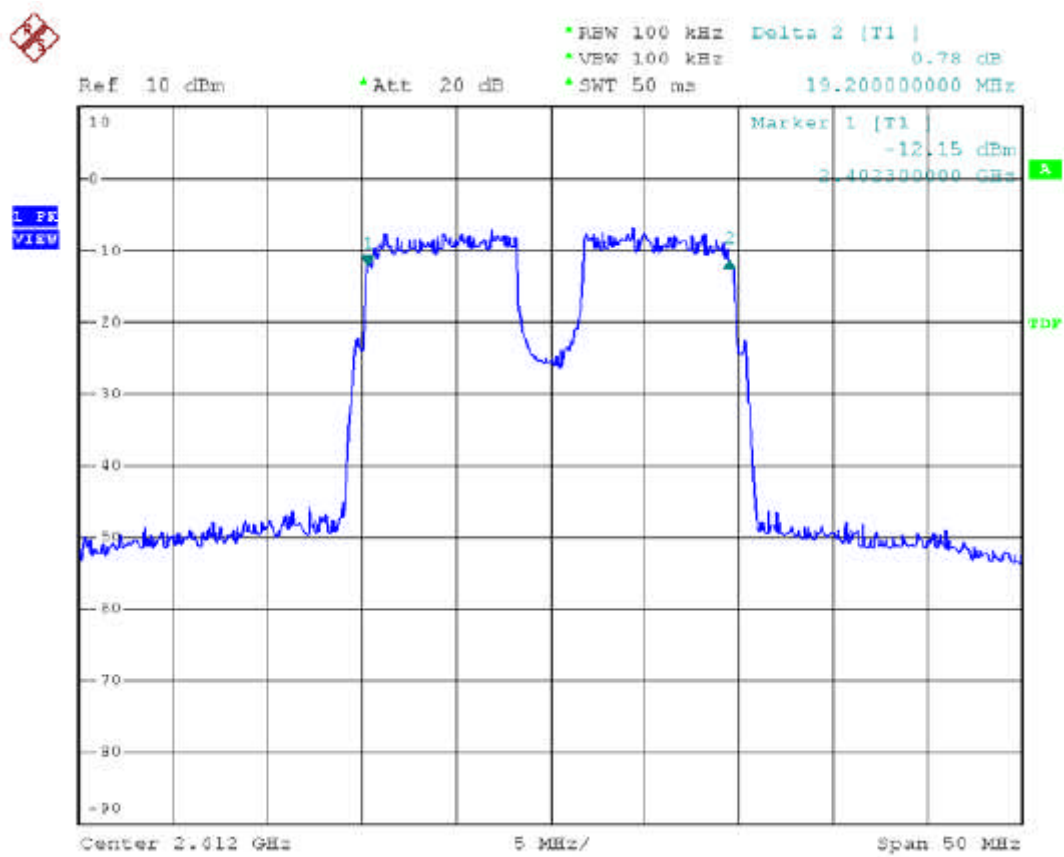


High Channel: 2462MHz

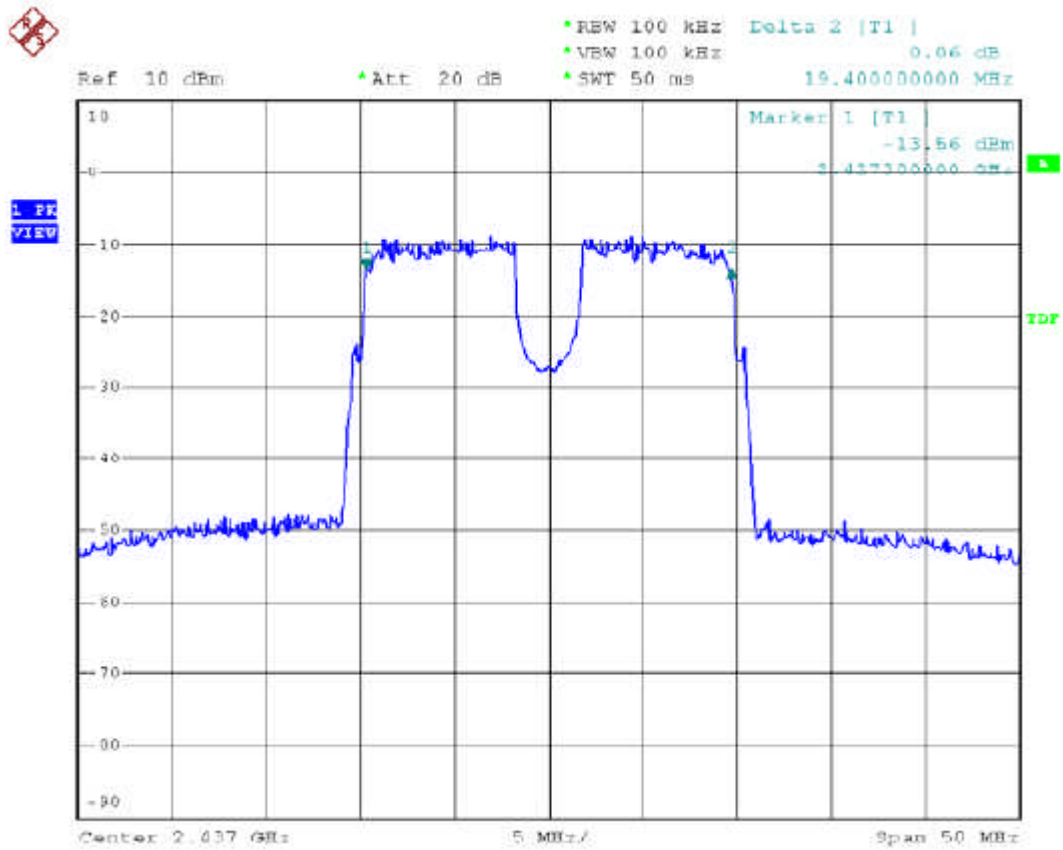


IEEE 802.11g

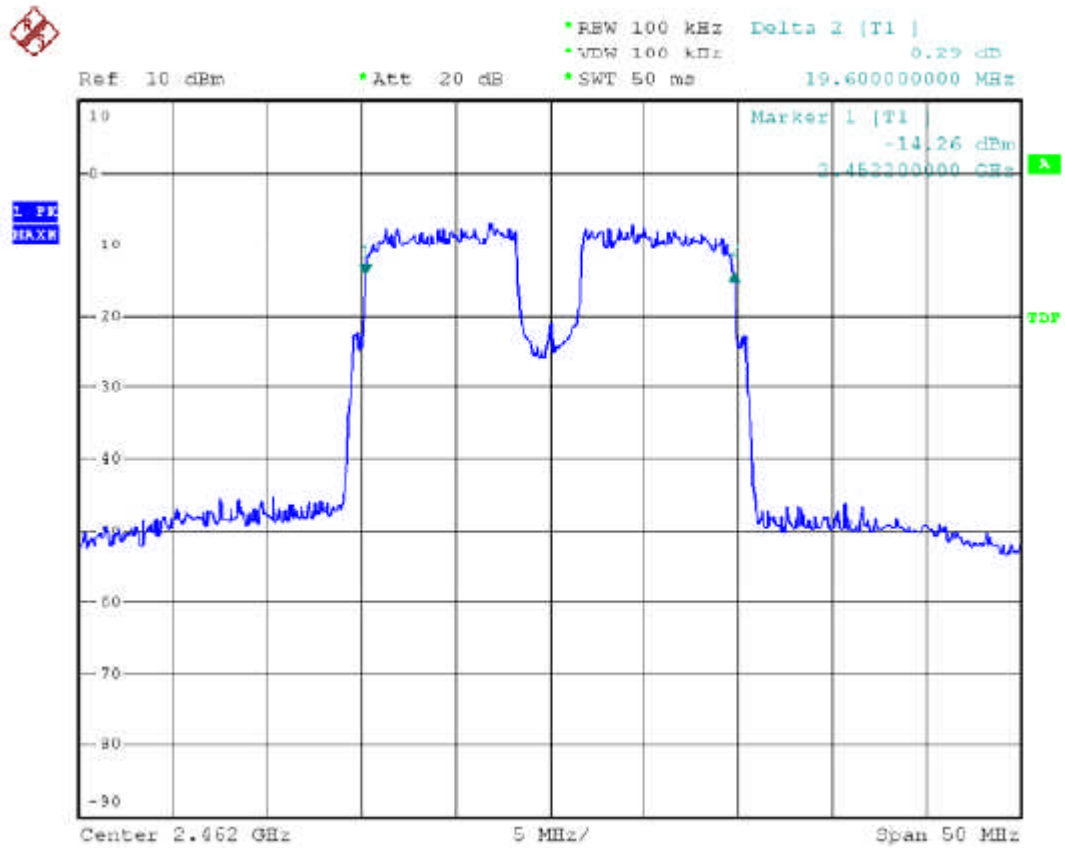
Low Channel: 2412MHz



Middle Channel: 2437MHz



High Channel: 2462MHz

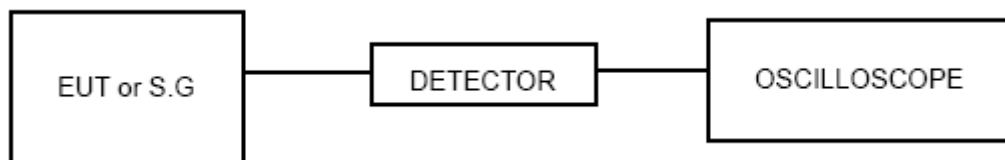


## 7. Maximum Peak Output Power

### 7.1 Limits of Maximum Peak Output Power Measurement

The Maximum Peak Output Power Measurement is 30dBm.

### 7.2 EUT Setup



### 7.3 Test Equipment List and Details

See section 2.4.

### 7.4 Test Procedure

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

### 7.5 Test Result

PASS

802.11b:

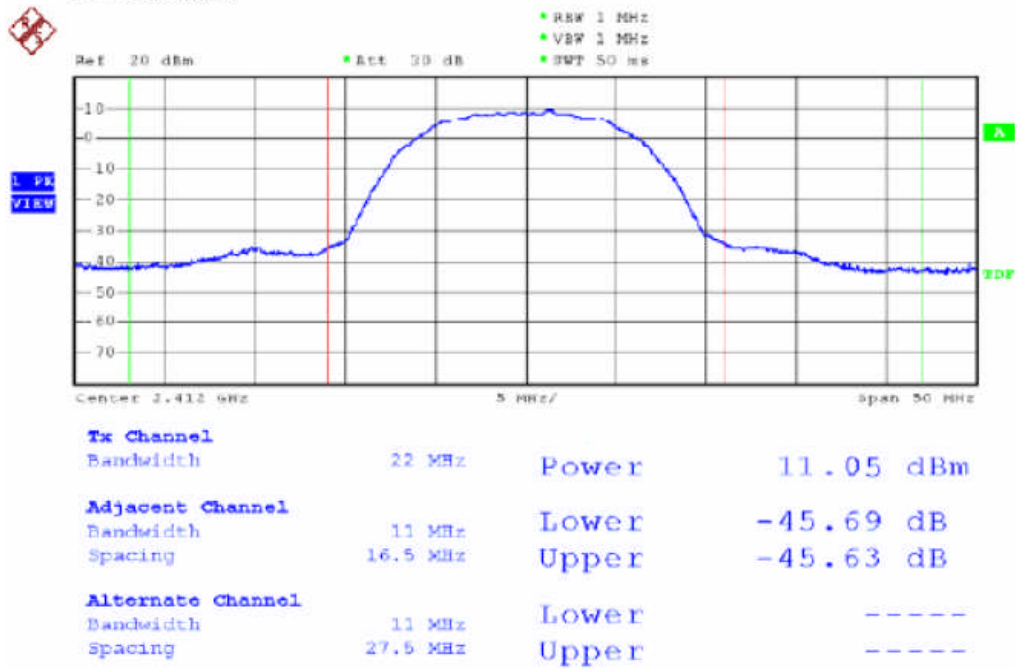
Channel No.	Frequency (MHz)	PEAK POWEROUTPUT (mW)	PEAK POWEROUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
LOW	2412	12.735	11.05	30	PASS
Mid	2437	12.823	11.08	30	PASS
High	2462	12.764	11.06	30	PASS

802.11g:

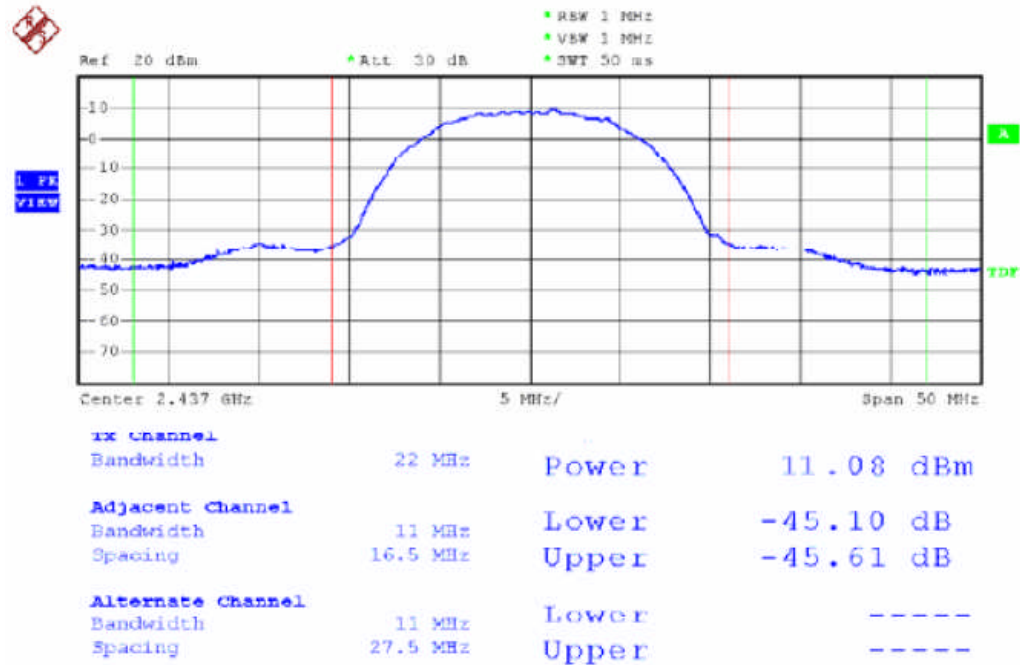
Channel No.	Frequency (MHz)	PEAK POWEROUTPUT (mW)	PEAK POWEROUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
LOW	2412	13.365	11.26	30	PASS
Mid	2437	13.458	11.29	30	PASS
High	2462	13.304	11.24	30	PASS

## IEEE 802.11b

Low Channel:

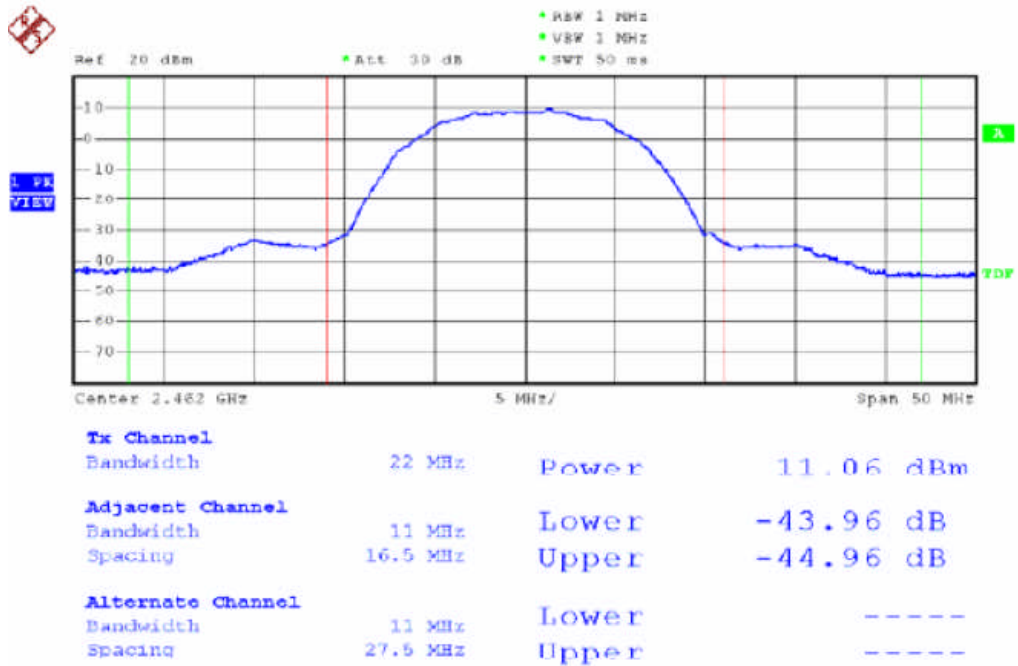


Middle Channel:



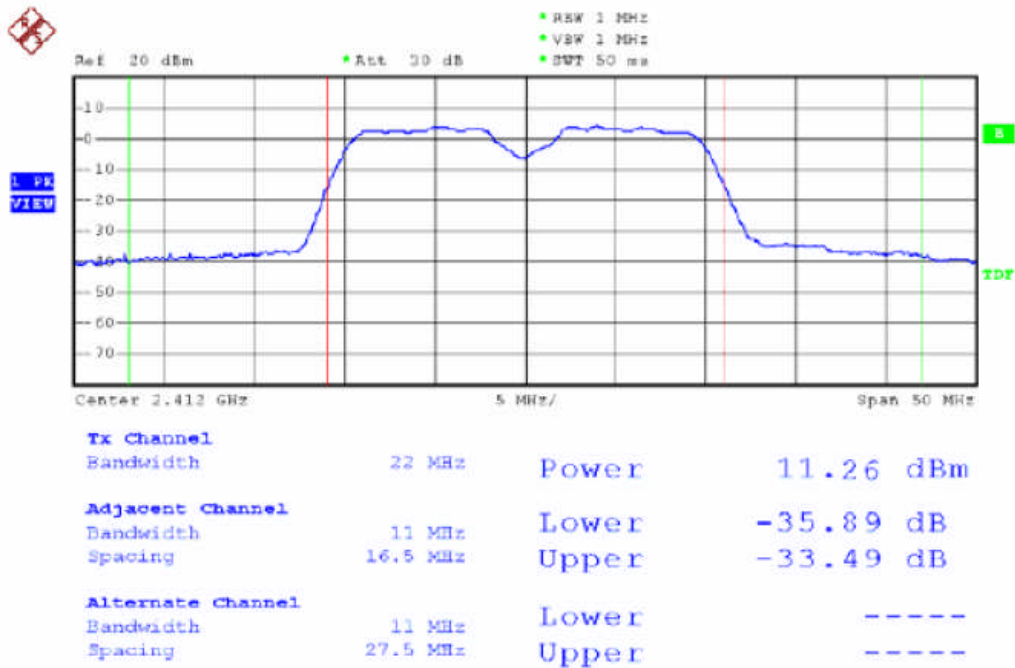


### High Channel:

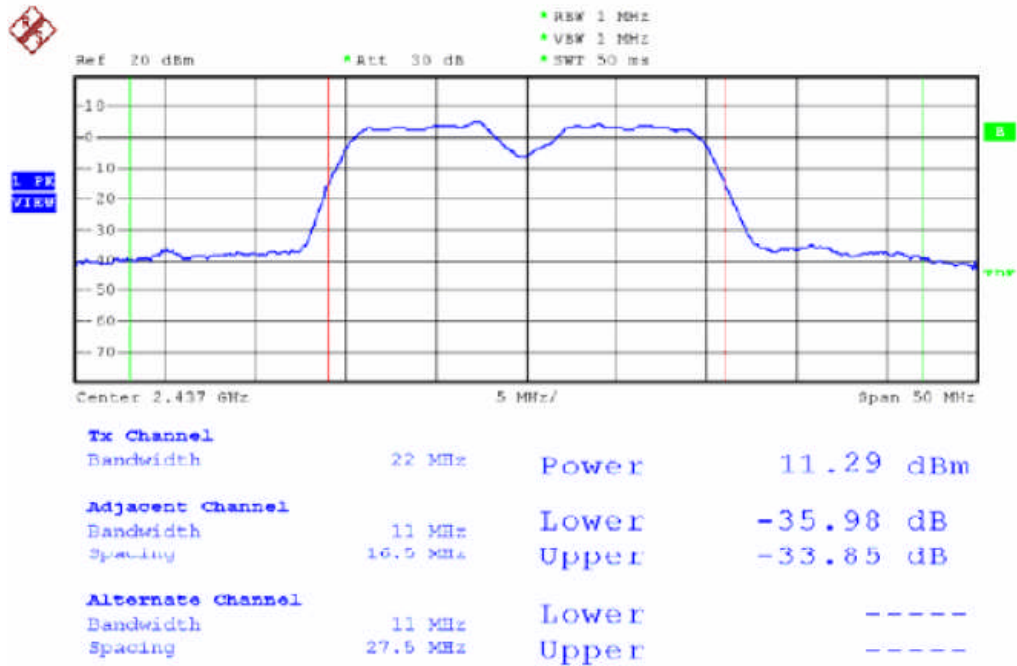


### IEEE 802.11g

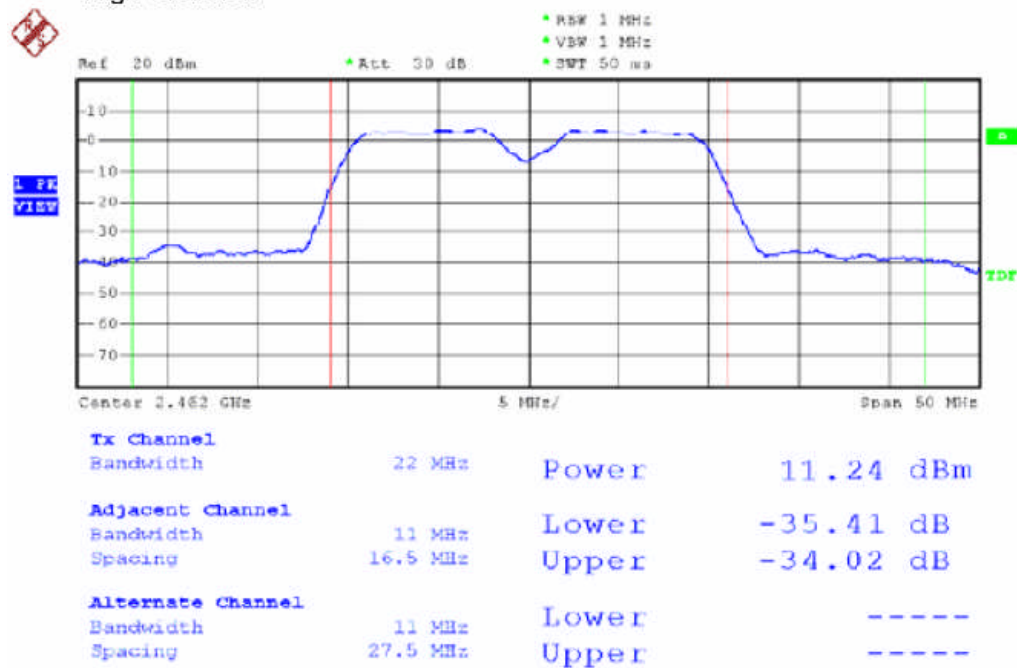
### Low Channel:



### Middle Channel:



### High Channel:

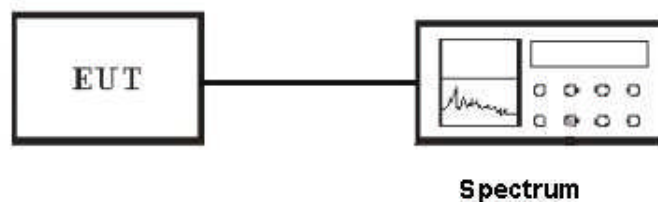


## 8. Power Spectral Density Measurement

### 8.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

### 8.2 EUT Setup



### 8.3 Test Equipment List and Details

See section 2.4.

### 8.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

### 8.5 Test Result

PASS

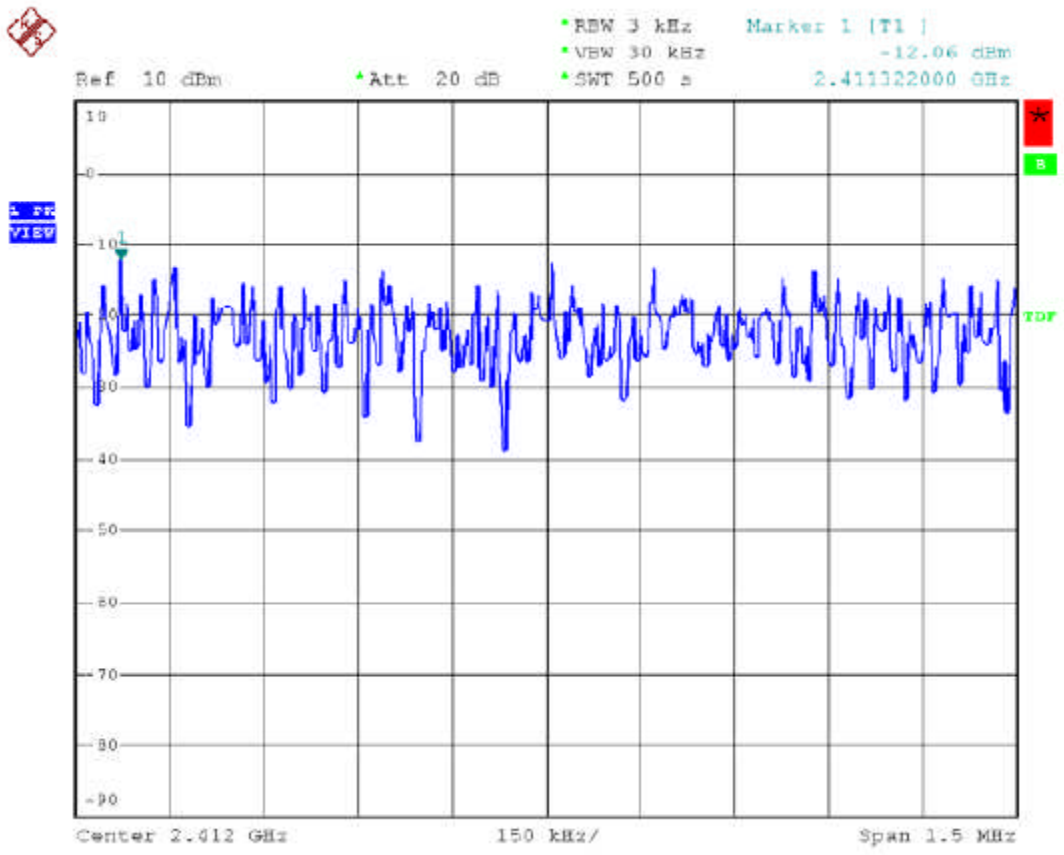
#### IEEE 802.11b

Channel	Frequency (MHz)	Max power density of 3kHz bandwidth (dBm)
Low	2412	-12.06
Middle	2437	-11.67
High	2462	-11.74

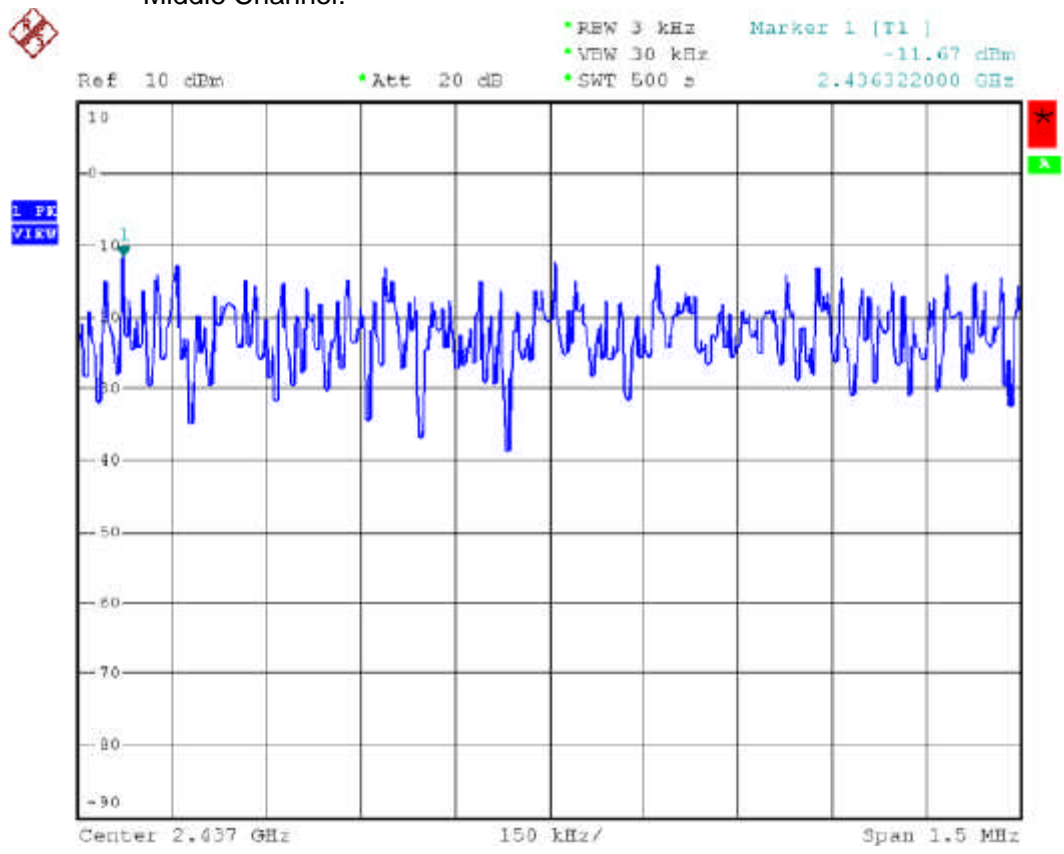
#### IEEE 802.11g

Channel	Frequency (MHz)	Max power density of 3kHz bandwidth (dBm)
Low	2412	-34.52
Middle	2437	-36.09
High	2462	-25.35

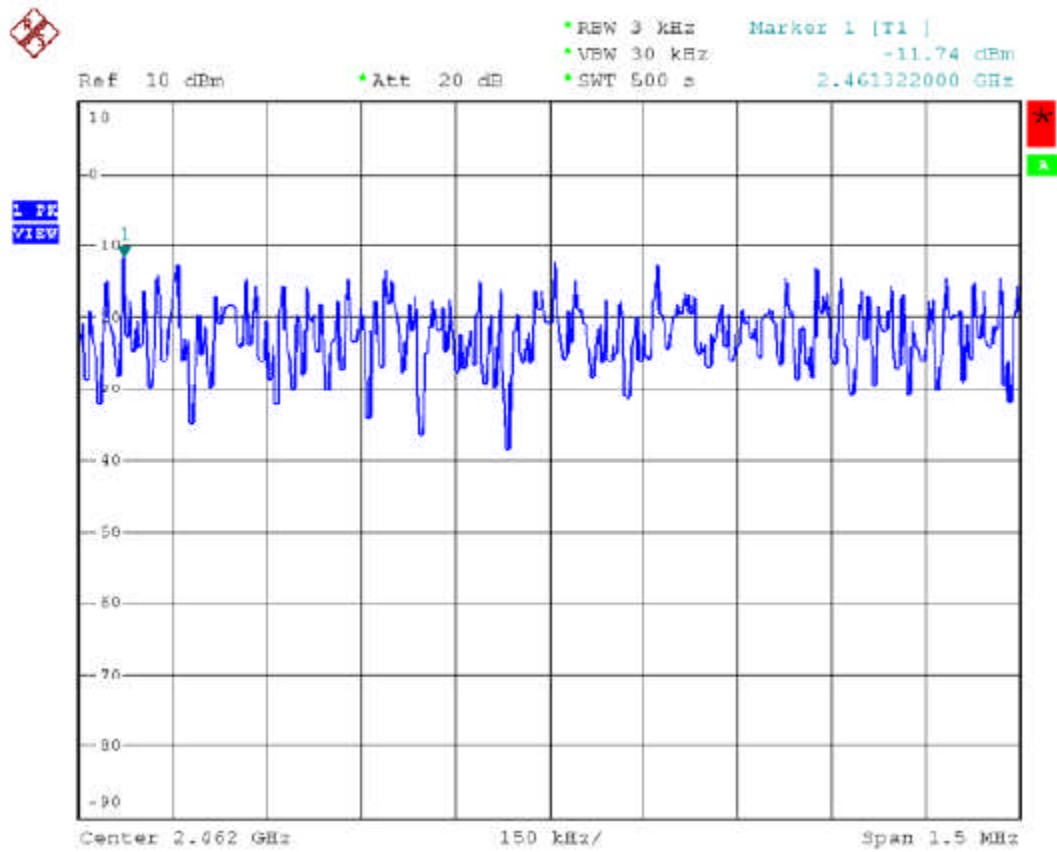
IEEE 802.11b  
Low Channel:



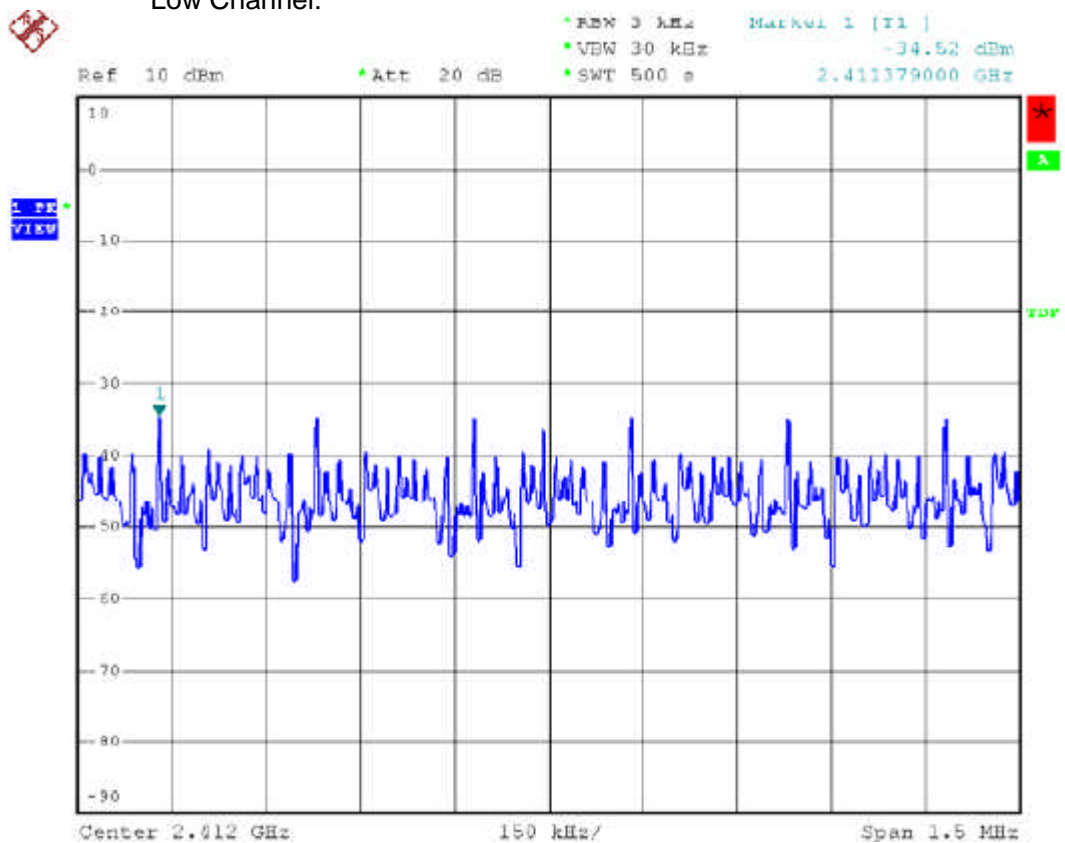
Middle Channel:



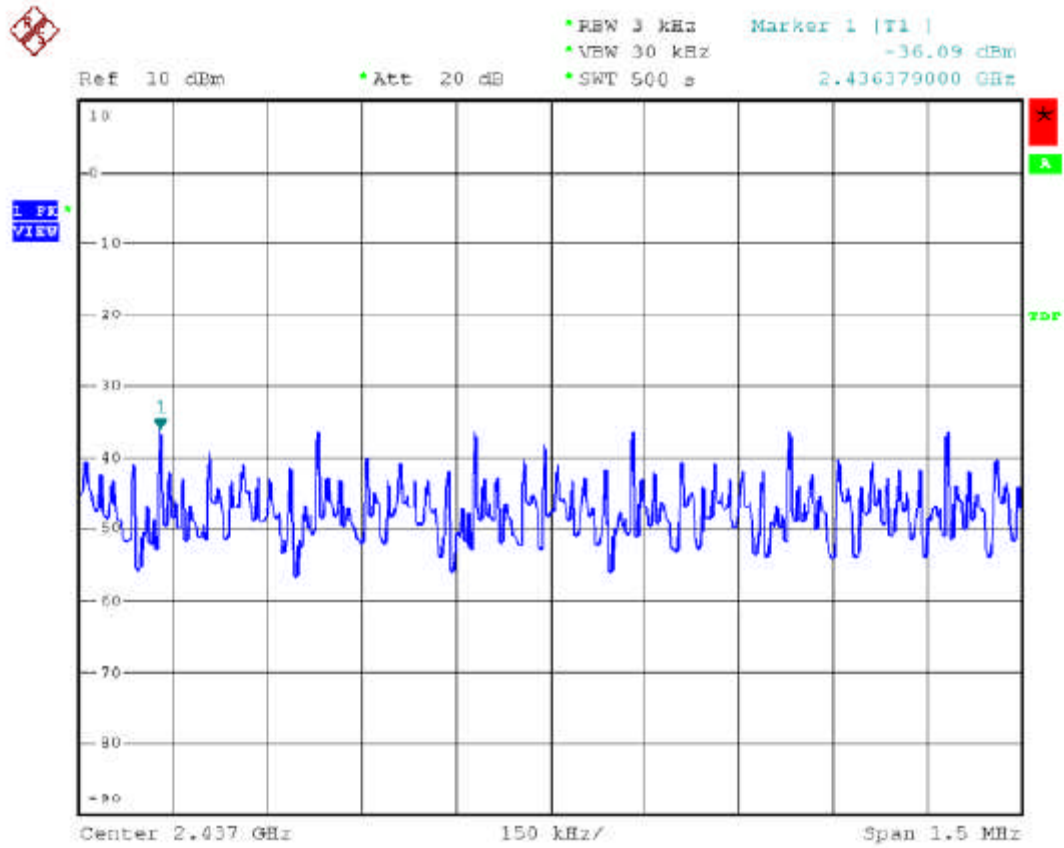
High Channel:



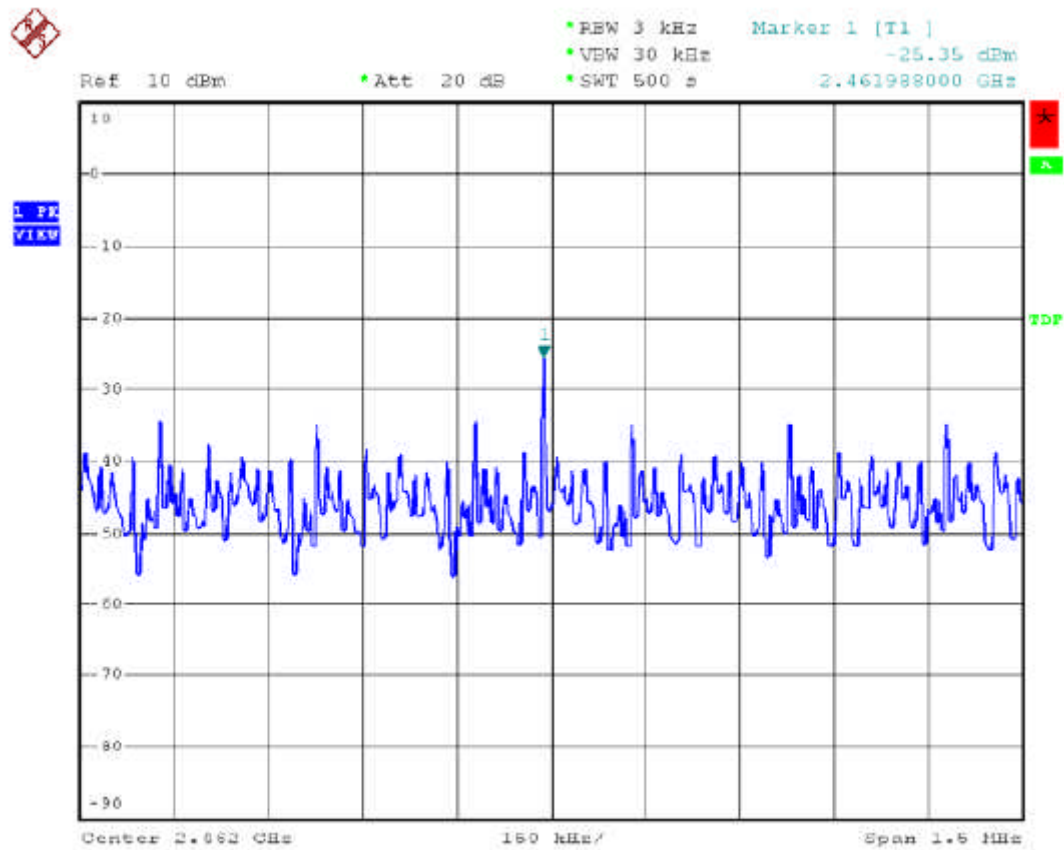
IEEE 802.11g  
Low Channel:



### Middle Channel:



### High Channel:



## 9. Band Edges Measurement

### 9.1 Limits of Band Edges Measurement

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 9.2 Test Equipment List and Details

See section 2.4.

### 9.3 Test Procedure

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded. The spectrum plots (Peak RBW=VBW=100kHz; Average RBW=1MHz, VBW=10Hz) are attached on the following pages.

### 9.4 Test Result

PASS

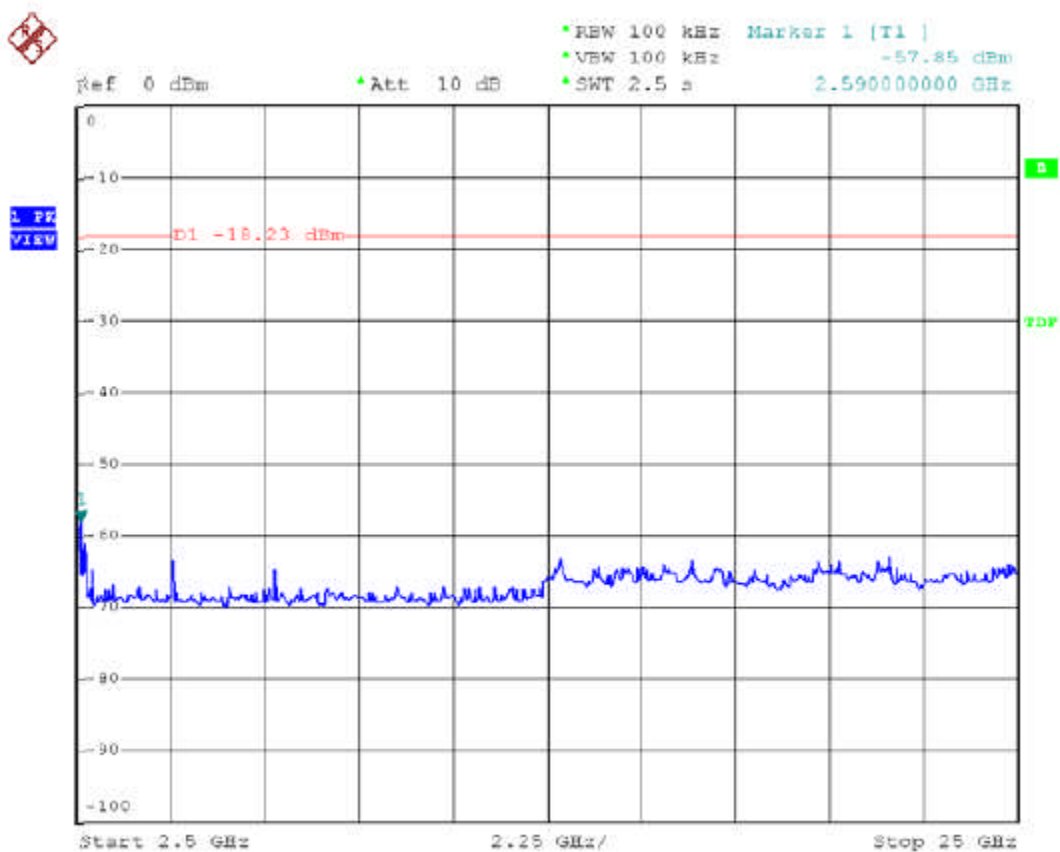
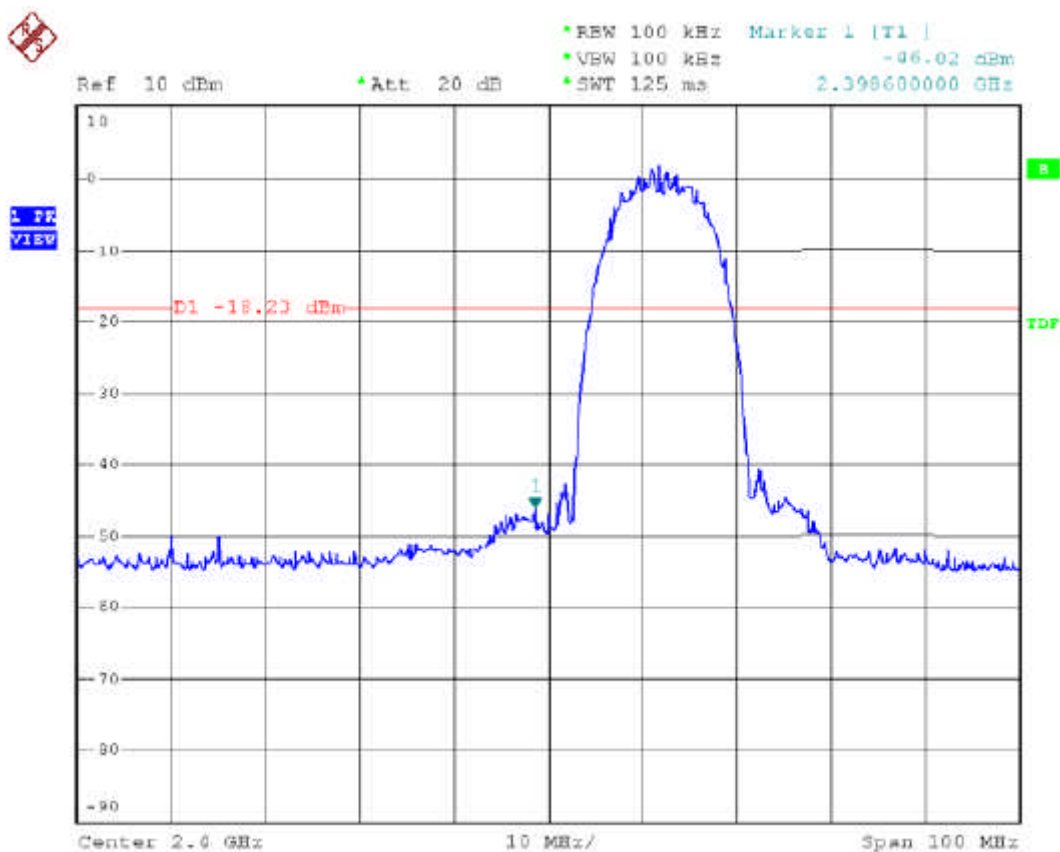
#### IEEE 802.11b (11Mbps)

Channel	Frequency (MHz)	Max value in frequency (MHz)	Max value (dBm)
Low	2412	2398	-46.02
High	2462	2487	-52.93

#### IEEE 802.11g (54Mbps)

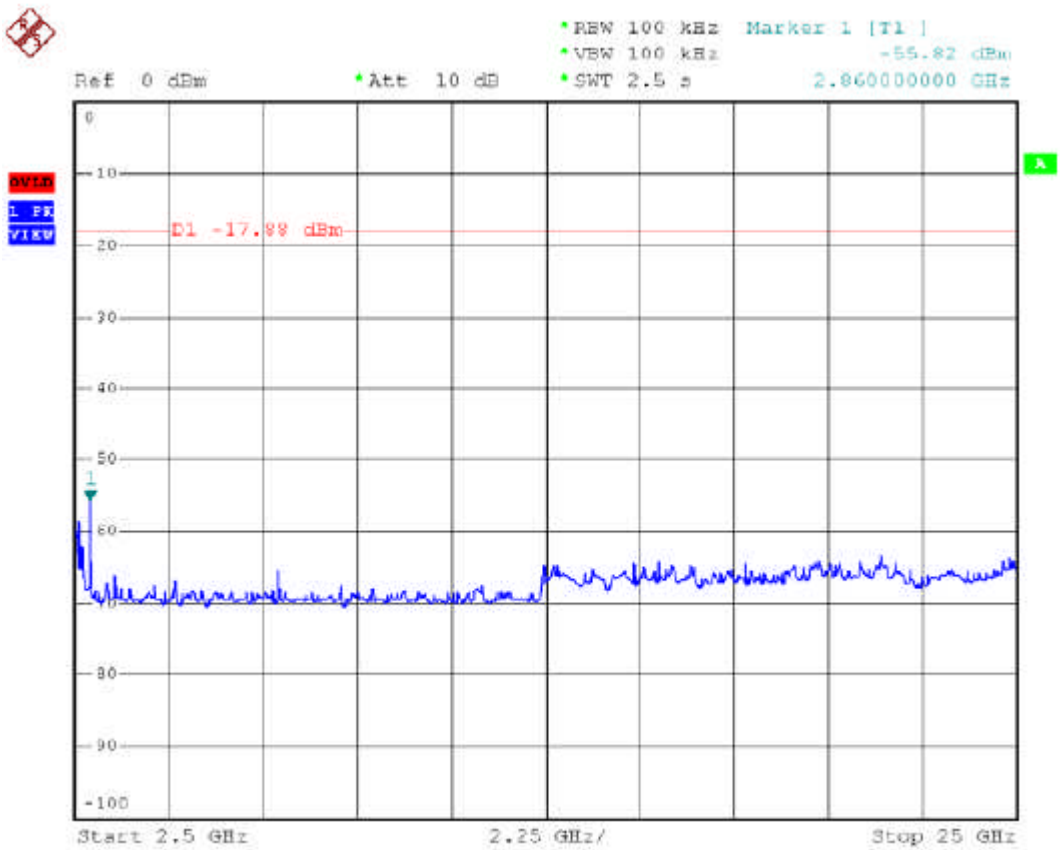
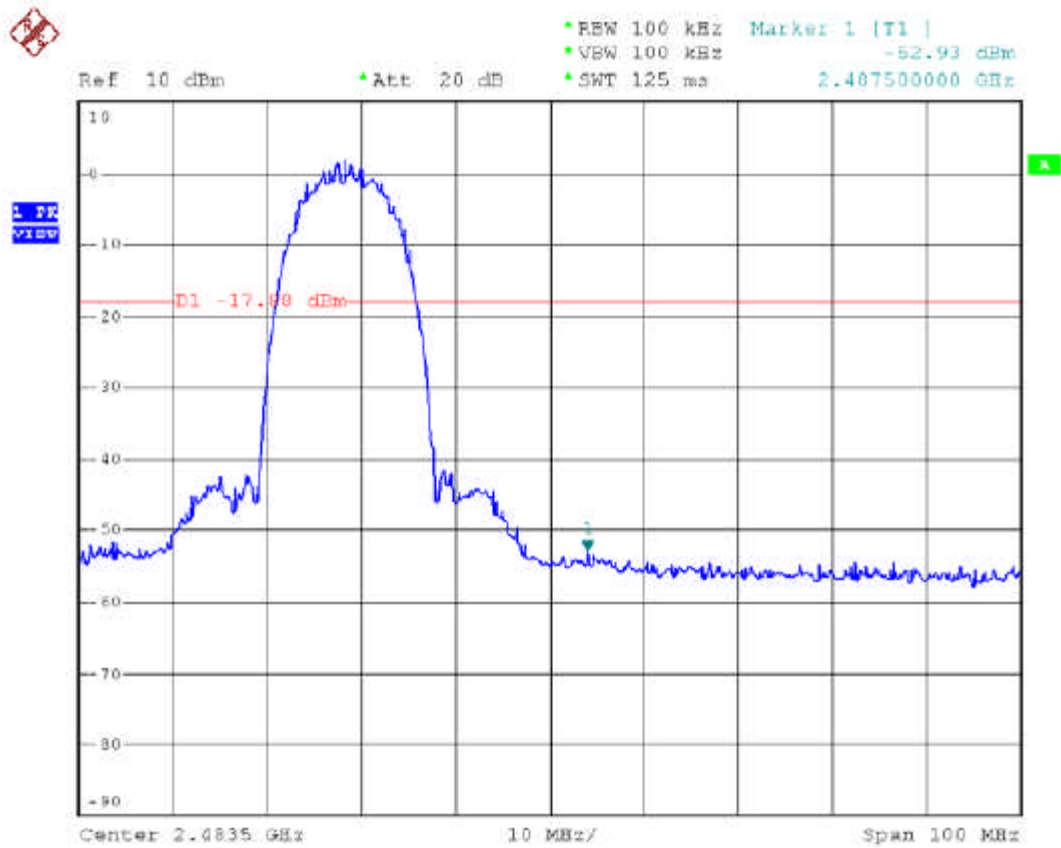
Channel	Frequency (MHz)	Max value in frequency (MHz)	Max value (dBm)
Low	2412	2398	-46.26
High	2462	2484	-50.79

# IEEE 802.11b Low Channel:

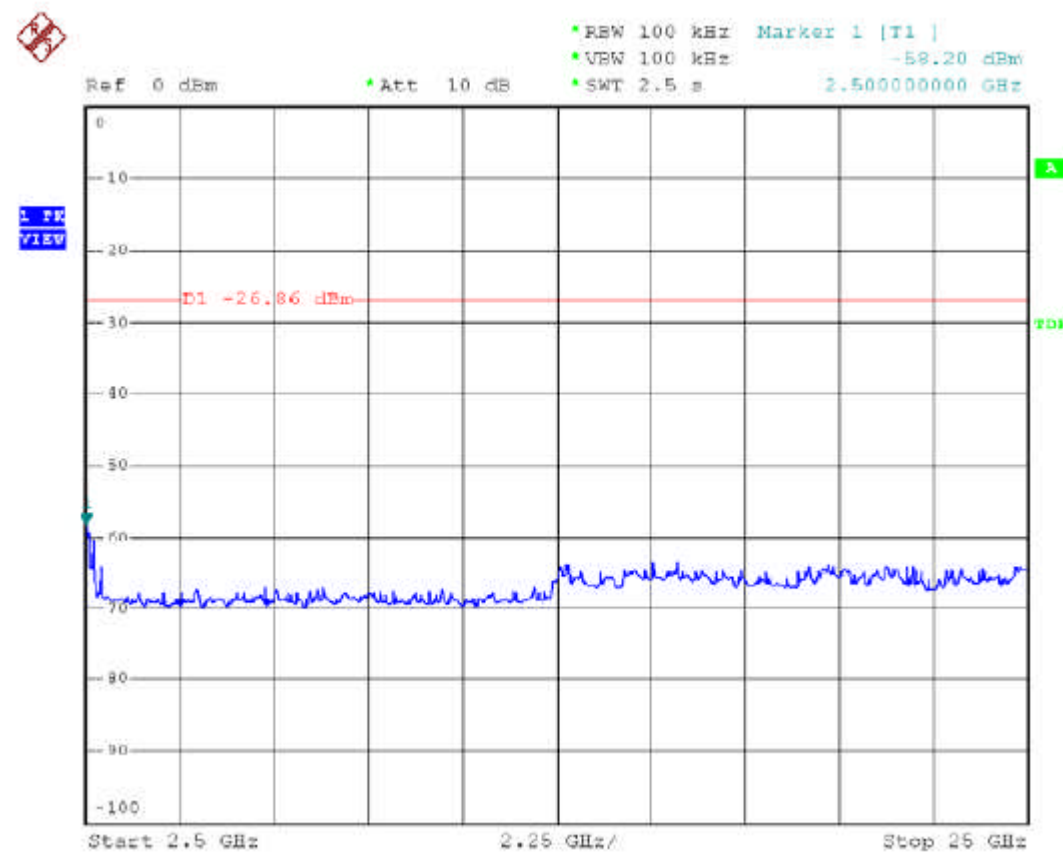
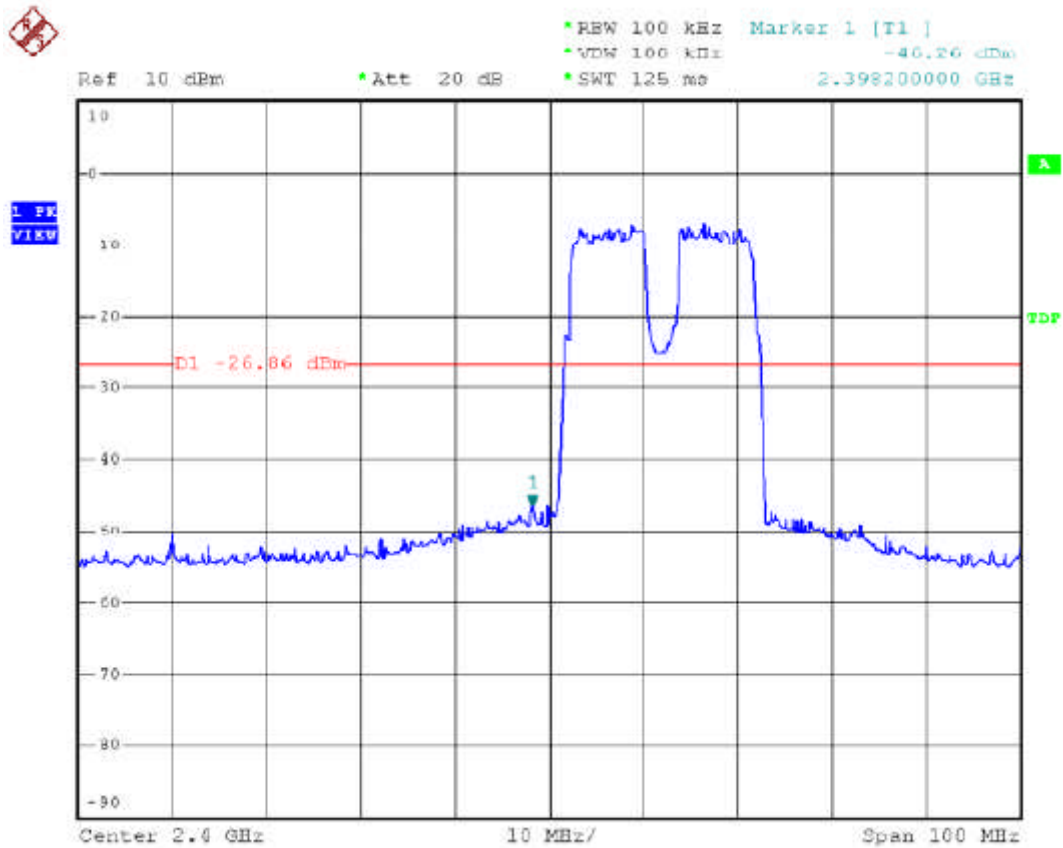




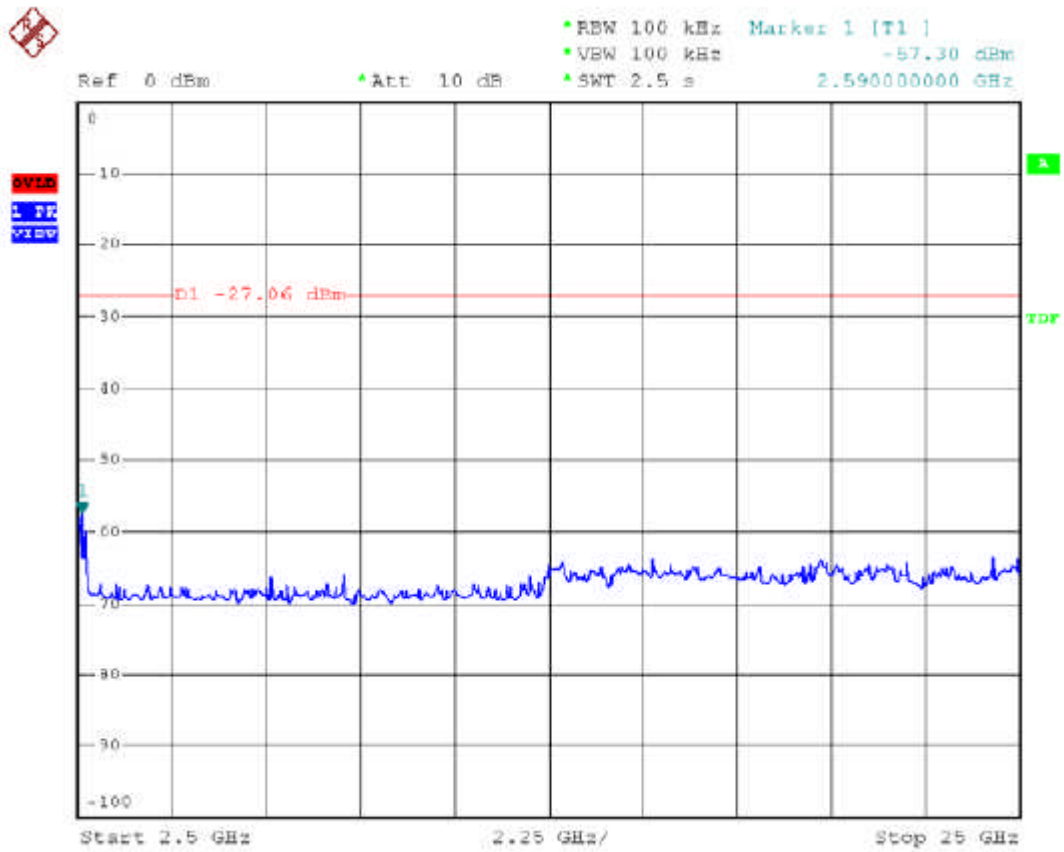
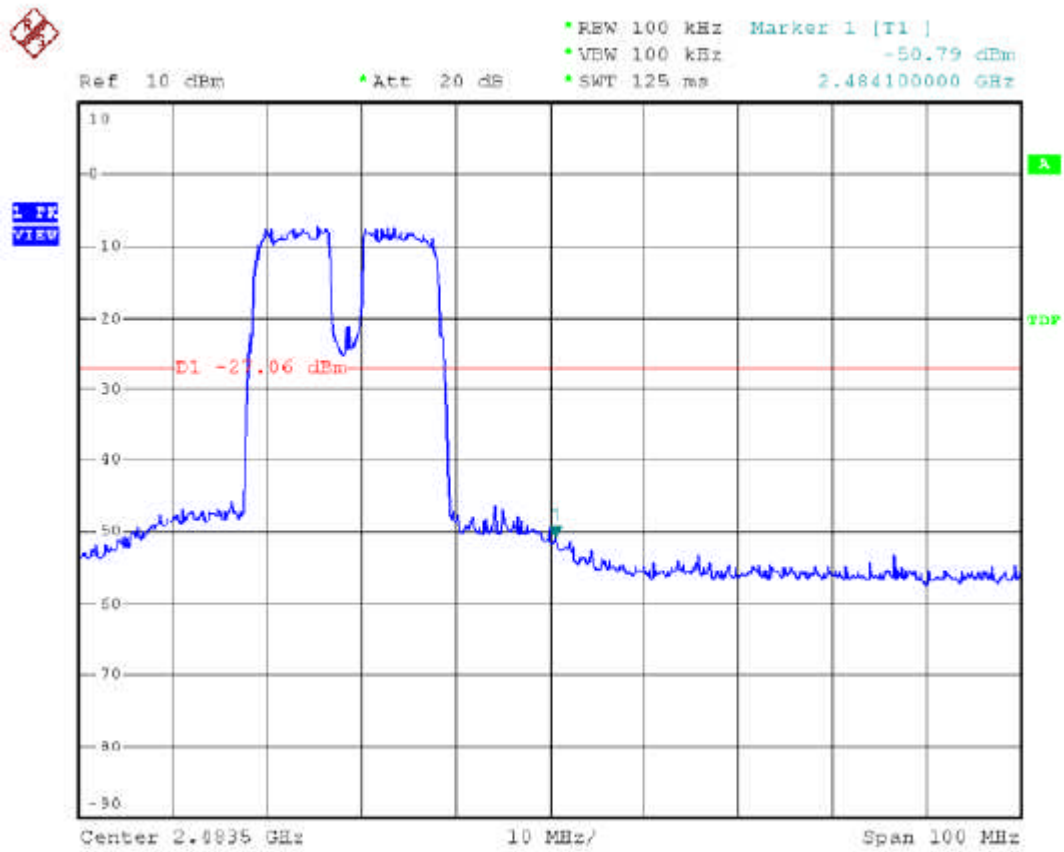
High Channel:



# IEEE 802.11g Low Channel:



# High Channel:



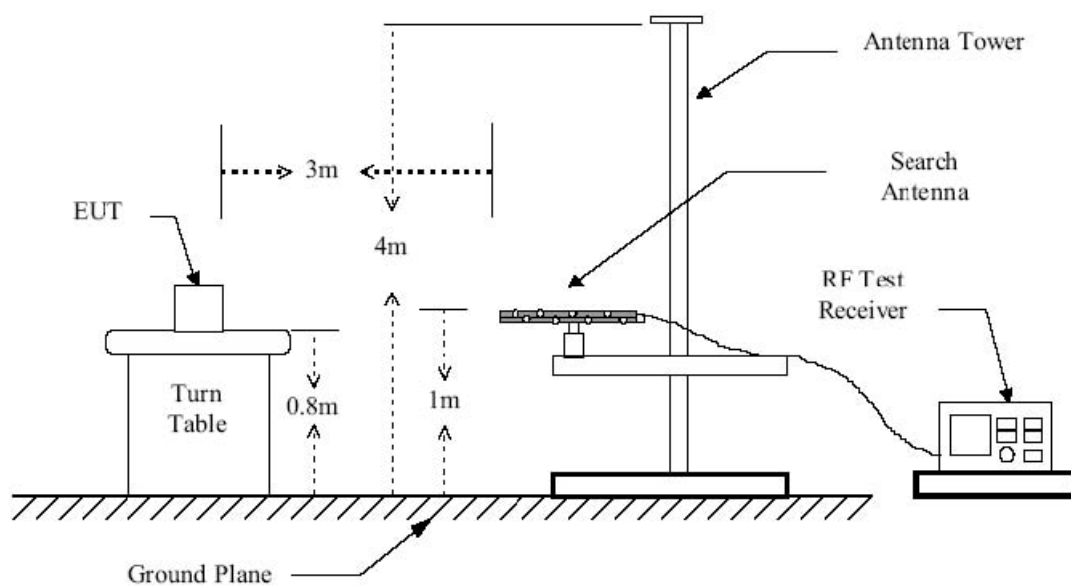
## 10. Radiated Emission Measurement

### 10.1 Limits of Radiated Emission Measurement

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209

### 10.2 EUT Setup

#### Radiated Measurement Setup



### 10.3 Test Equipment List and Details

See section 2.4.

### 10.4 Test Procedure

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

## **10.5 Test Result**

PASS

Detailed information, Please refer to the following pages.

## IEEE 802.11b Low Channel: 2412MHz

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
253.12	35.7	34.5	46.0	11.5
278.22	32.6	31.3	46.0	14.7
300.58	33.9	32.6	46.0	13.4
363.41	34.2	32.8	46.0	13.2
909.10	35.2	33.9	46.0	12.1
4828.78	46.3	37.12	54.0	16.88 (AV)

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
31.22	28.2	25.6	40.0	14.4
53.37	28.6	26.8	40.0	13.2
305.81	33.9	32.3	46.0	13.7
363.78	35.3	28.0	46.0	18.0
875.45	36.7	35.2	46.0	10.8
4821.38	47.22	41.13	54.0	12.87 (AV)

## Middle Channel: 2437MHz

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
42.78	27.3	25.5	40.0	14.5
256.02	36.1	34.6	46.0	11.4
296.42	32.8	31.3	46.0	14.7
315.68	35.3	33.9	46.0	12.1
384.65	31.7	30.9	46.0	15.1
4889.00	47.23	35.85	54.0	18.15 (AV)

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
24.36	33.9	30.6	40.0	9.4
61.75	31.5	29.7	40.0	10.3
102.12	32.9	29.5	43.5	14.0
278.02	31.8	30.2	46.0	15.8
381.47	36.1	34.5	46.0	11.5
4872.11	49.21	40.02	54.0	13.98 (AV)

## High Channel: 2462MHz

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
252.79	33.5	32.7	46.0	13.3
284.98	33.9	31.2	46.0	14.8
325.45	34.8	32.9	46.0	13.1
386.02	35.7	32.4	46.0	13.6
4903.00	49.13	38.52	54.0	15.48 (AV)

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
42.23	30.9	29.6	40.0	10.4
50.24	32.1	31.0	40.0	9.0
112.52	32.5	30.9	43.5	12.6
312.89	36.1	34.5	46.0	11.5
423.02	36.1	34.9	46.0	11.1
4891.25	48.57	40.22	54.0	13.78 (AV)



## IEEE 802.11g Low Channel: 2412MHz

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
35.01	33.1	30.8	40.0	9.2
291.22	34.5	33.0	46.0	13.0
301.51	35.2	33.5	46.0	12.5
354.47	33.8	32.4	46.0	13.6
412.25	35.9	33.7	46.0	12.3
4842.74	46.97	37.56	54.0	16.44 (AV)

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
42.41	31.9	30.1	40.0	9.9
53.51	34.2	33.1	40.0	6.9
124.25	35.1	33.4	43.5	10.1
321.78	36.2	35.0	46.0	11.0
391.25	35.2	33.7	46.0	12.3
832.36	37.6	36.3	46.0	9.7
4848.42	49.2	42.65	54.0	11.35 (AV)

### Middle Channel: 2437MHz

#### Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
32.58	30.2	29.1	40.0	10.9
291.57	35.6	33.5	46.0	12.5
302.74	34.1	33.0	46.0	13.0
359.12	33.6	32.2	46.0	13.8
365.95	35.2	34.1	46.0	11.9
4890.21	42.25	35.56	54.0	18.44 (AV)

#### Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
46.03	34.0	32.5	40.0	7.5
132.00	33.8	31.2	43.5	12.3
321.75	33.1	32.0	46.0	14.0
397.89	35.4	34.3	46.0	11.7
4881.25	54.74	43.82	54.0	10.18 (AV)

High Channel: 2462MHz

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
36.02	29.8	27.1	40.0	12.9
299.74	34.8	33.2	46.0	12.8
342.62	32.5	31.6	46.0	14.4
386.48	35.2	33.8	46.0	12.2
485.26	35.9	34.0	46.0	12.0
4909.74	50.65	39.25	54.0	14.75 (AV)

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
30.67	32.5	29.9	40.0	10.1
46.85	32.9	31.0	40.0	9.0
123.12	35.6	34.2	43.5	9.3
333.55	34.1	33.2	46.0	12.8
421.58	34.2	33.6	46.0	12.4
4902.84	54.99	42.76	54.0	11.24 (AV)

## APPENDIX A - PRODUCT LABELING

### ID Label Specification

Specification: Text is Black or white in color and is left justified. Labels are printed in indelible ink on permanent adhesive backing and shall be affixed at a conspicuous location on the EUT or silk-screened onto the EUT.

### Proposed Label Location on EUT

Proposed ID Label Location on the EUT



## APPENDIX B - EUT PHOTOGRAPHS

### EUT - Front View



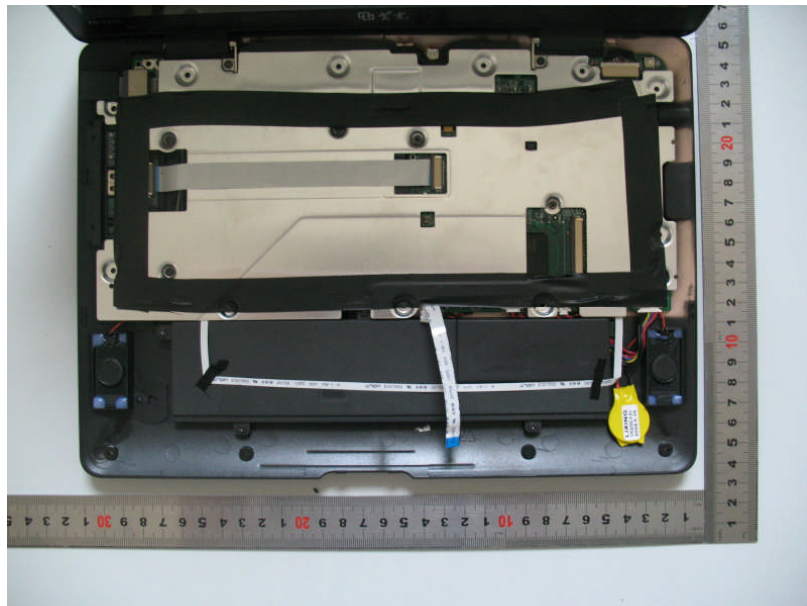
### EUT - Rear View



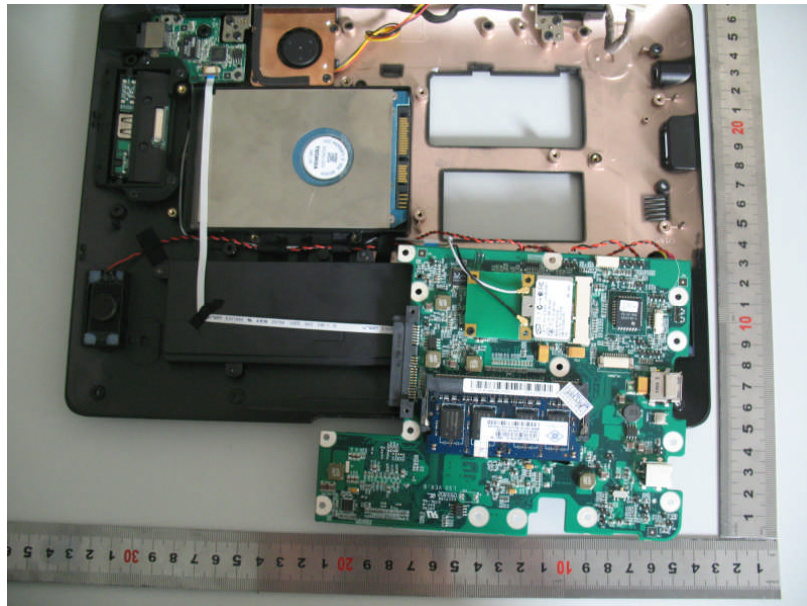
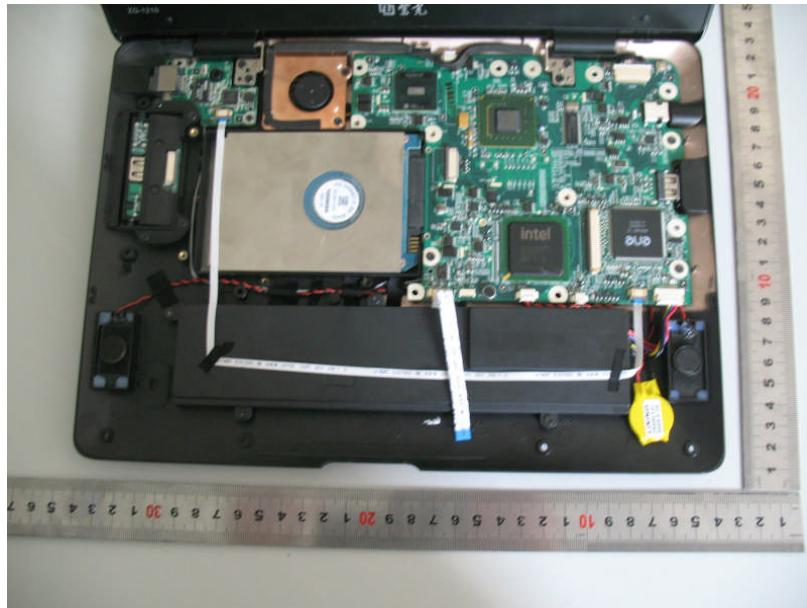
## EUT – Open View



## EUT – Inside View



## EUT – PCB View





## APPENDIX C - TEST SETUP PHOTOGRAPHS

### Conducted Emission



### Radiated Emission

