



## Test Report

Product Name	Combo WiFi+Bluetooth 2+1
Model No.	WiBlue
FCC ID	VYXARGTEK-0004

Applicant	ARGtek Communication Inc.
Address	8F-9,NO.4,LANE 609,SEC.5,CHUNG HSIN RD.,SAN CHUNG CITY,TAIPEI HSIEN TAIWAN R.O.C.

Date of Receipt	Apr. 07, 2009
Issued Date	May 22, 2009
Report No.	094159R-RFUSP05V01
Report Version	V1.0

The test results relate only to the samples tested.

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# Test Report Certification

Issued Date: May 22, 2009

Report No.: 094159R-RFUSP05V01



Accredited by NIST (NVLAP)  
NVLAP Lab Code: 200533-0

Product Name	Combo WiFi+Bluetooth 2+1
Applicant	ARGtek Communication Inc.
Address	8F-9,NO.4,LANE 609,SEC.5,CHUNG HSIN RD.,SAN CHUNG CITY,TAIPEI HSIEN TAIWAN R.O.C.
Manufacturer	ARGtek Communication Inc.
Model No.	WiBlue
Rated Voltage	AC 120V/60Hz
Working Voltage	DC 5V(Power by USB)
Trade Name	None
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2008 ANSI C63.4: 2003
Test Result	Complied



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Testing Laboratory

0914

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Attachment 1: EUT Test Photographs

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## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	Combo WiFi+Bluetooth 2+1
Trade Name	None
Model No.	WiBlue
FCC ID	VYXARGTEK-0004
Frequency Range	2412-2462MHz
Channel Number	802.11b/g: 11
Data Speed	IEEE 802.11b – 1, 2, 5.5, 11Mbps IEEE 802.11g – 6, 9, 12, 18, 24, 36 48, 54Mbps
Type of Modulation	802.11b-DSSS (DBPSK, DQPSK, CCK) 802.11g-OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	Dipole
Type of Antenna joint	Reverse SMA
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto

#### Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	ARISTOTLE	RFA-02-5-C7M3-B70	5.0dBi for 2.4 GHz

#### Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	2412 MHz	Channel 5:	2432 MHz	Channel 9:	2452 MHz
Channel 2:	2417 MHz	Channel 6:	2437 MHz	Channel 10:	2457 MHz
Channel 3:	2422 MHz	Channel 7:	2442 MHz	Channel 11:	2462 MHz
Channel 4:	2427 MHz	Channel 8:	2447 MHz		

Note:

1. The EUT is a Combo WiFi+Bluetooth 2+1 with a built-in 2.4GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 11Mbps and 802.11g is 54Mbps)
4. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for direct sequence spread spectrum devices.

## 1.2. Operational Description

The EUT is a Combo WiFi+Bluetooth 2+1 with 11 channels. This device provides four kinds of transmitting speed 1, 2, 5.5 and 11Mbps. The modulation of device is BPSK, QPSK and CCK (IEEE 802.11b) and eight kinds of transmitting speed 6, 9, 12, 18, 24, 36, 48 and 54Mbps are provided. The technology of this device used is OFDM (IEEE 802.11g).

The device adapts direct sequence spread spectrum modulation.

This Combo WiFi+Bluetooth 2+1, compliant with IEEE 802.11b and IEEE 802.11g, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without being bound to the network wires. Operation in 2.4GHz Direct Sequence Spread Spectrum (DSSS) radio transmission, the Combo WiFi+Bluetooth 2+1 Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b and IEEE 802.11g network.

The user can simultaneously use WLAN&BT function under Normal operation.

Test Mode	Mode 1: Transmitter 802.11b
	Mode 2: Transmitter 802.11g

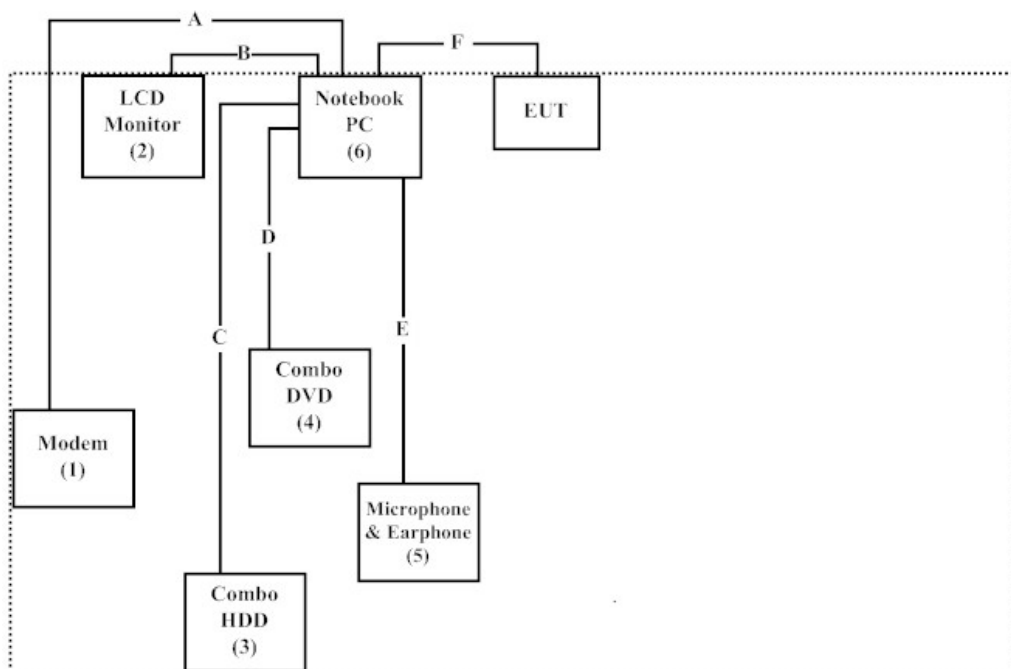
### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1.	Modem	ACEEX	DM-1414	0102027533	Non-Shielded, 1.8m
2.	LCD Monitor	CMV	CT-730D	FNC122F57CA1062	Non-Shielded, 1.8m
3.	Combo HDD	TeraSys	F12-UF	A0100215-63m0031	Non-Shielded 1.8m
4.	Combo DVD	DELL	PD01S	N/A	Non-Shielded, 0.5m
5.	Microphone & Earphone	PCHOME	N/A	N/A	N/A
6.	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m

	Signal Cable Type	Signal cable Description
A	RS-232 Cable	Non-Shielded, 1.2m
B	VGA Cable	Non-Shielded, 1.6m with two ferrite cores bonded
C	1394 Cable	Non-Shielded, 1.6m
D	Combo DVD Cable	Non-Shielded, 0.5m
E	Microphone & Earphone Cable	Non-Shielded, 1.2m
F	USB Cable	Shielded, 1.2m with one ferrite core bonded

### 1.4. Configuration of Test System



## 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute “3DSP Ver 3.0.9” Program on the EUT.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous Transmit.
- (5) Verify that the EUT works properly.



**1.6. Test Facility**

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation’s Web Site : <http://tw.quietek.com/modules/myalbum/>  
 The address and introduction of Quietek Corporation’s laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on  
 Federal Communications Commission  
 FCC Engineering Laboratory  
 7435 Oakland Mills Road  
 Columbia, MD 21046  
 Registration Number: 92195  
  
 Accreditation on NVLAP  
 NVLAP Lab Code: 200533-0



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FCC Accreditation Number: TW1014



## 2. Conducted Emission

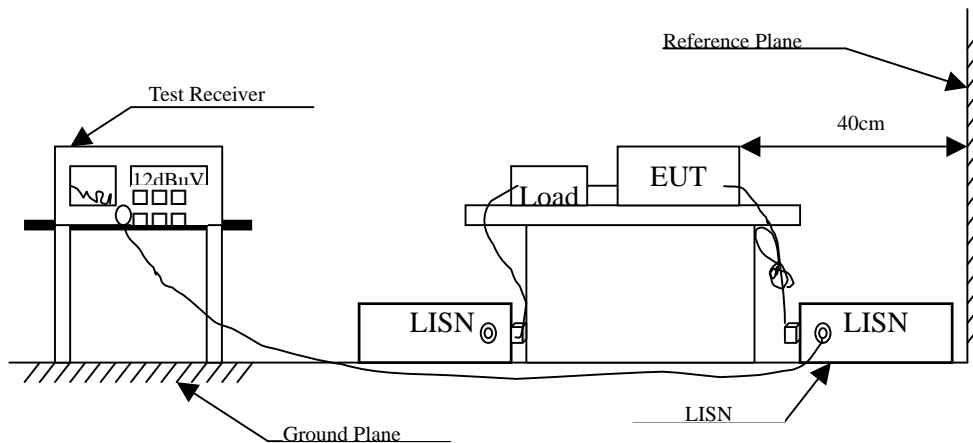
### 2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2009	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2009	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2009	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2009	
5	No.1 Shielded Room			N/A	

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 2.2. Test Setup



### 2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	uV	dBuV
0.15 - 0.50	66-56 <sub>(註)</sub>	56-46 <sub>(註)</sub>
0.50-5.0	56	46
5.0 - 30	60	50

## 2.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

## 2.5. Uncertainty

± 2.26 dB

## 2.6. Test Result of Conducted Emission

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.154	9.760	19.470	29.231	-36.655	65.886
0.170	9.740	25.270	35.010	-30.419	65.429
0.224	9.690	31.620	41.310	-22.576	63.886
0.279	9.657	19.520	29.177	-33.137	62.314
3.357	9.690	8.500	18.190	-37.810	56.000
10.037	9.830	21.190	31.020	-28.980	60.000
<b>Average</b>					
0.154	9.760	12.130	21.891	-33.995	55.886
0.170	9.740	13.380	23.120	-32.309	55.429
0.224	9.690	24.540	34.230	-19.656	53.886
0.279	9.657	10.570	20.227	-32.087	52.314
3.357	9.690	0.390	10.080	-35.920	46.000
10.037	9.830	10.810	20.640	-29.360	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.162	9.751	29.960	39.711	-25.946	65.657
0.220	9.703	25.240	34.943	-29.057	64.000
0.279	9.667	25.850	35.517	-26.797	62.314
2.072	9.680	27.980	37.660	-18.340	56.000
3.525	9.700	32.060	41.760	-14.240	56.000
15.611	10.000	22.400	32.400	-27.600	60.000
<b>Average</b>					
0.162	9.751	17.610	27.361	-28.296	55.657
0.220	9.703	12.380	22.083	-31.917	54.000
0.279	9.667	6.590	16.257	-36.057	52.314
2.072	9.680	15.510	25.190	-20.810	46.000
3.525	9.700	17.840	27.540	-18.460	46.000
15.611	10.000	14.710	24.710	-25.290	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.166	9.746	21.190	30.935	-34.608	65.543
0.236	9.682	16.890	26.572	-36.971	63.543
0.326	9.650	22.160	31.810	-29.161	60.971
0.509	9.640	20.690	30.330	-25.670	56.000
2.123	9.680	24.610	34.290	-21.710	56.000
3.462	9.690	30.130	39.820	-16.180	56.000
<b>Average</b>					
0.166	9.746	11.850	21.595	-33.948	55.543
0.236	9.682	7.020	16.702	-36.841	53.543
0.326	9.650	12.290	21.940	-29.031	50.971
0.509	9.640	8.990	18.630	-27.370	46.000
2.123	9.680	6.430	16.110	-29.890	46.000
3.462	9.690	9.830	19.520	-26.480	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.224	9.700	33.250	42.950	-20.936	63.886
0.334	9.660	30.580	40.240	-20.503	60.743
0.474	9.640	10.630	20.270	-36.473	56.743
0.892	9.670	19.950	29.620	-26.380	56.000
1.681	9.680	31.020	40.700	-15.300	56.000
3.587	9.700	35.600	45.300	-10.700	56.000
<b>Average</b>					
0.224	9.700	27.600	37.300	-16.586	53.886
0.334	9.660	24.300	33.960	-16.783	50.743
0.474	9.640	-3.120	6.520	-40.223	46.743
0.892	9.670	15.330	25.000	-21.000	46.000
1.681	9.680	25.610	35.290	-10.710	46.000
3.587	9.700	22.090	31.790	-14.210	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

### 3. Peak Power Output

#### 3.1. Test Equipment

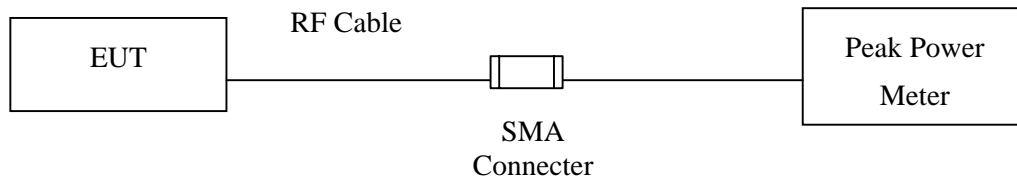
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2009
X	Power Sensor	Anritsu	MA2491A/034457	May, 2009

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with “X” are used to measure the final test results.

#### 3.2. Test Setup

Conducted Measurement



#### 3.3. Test procedures

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

#### 3.4. Limits

The maximum peak power shall be less 1 Watt.

#### 3.5. Uncertainty

± 1.27 dB



### 3.6. Test Result of Peak Power Output

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

Cable loss=0.5dB		Peak Power Output Value (dBm)				
Channel No.	Frequency (MHz)	Data Rate				Required Limit
		1 Mbps	2Mbps	5.5Mbps	11Mbps	
1	2412.00	--	--	--	16.19	1Watt= 30 dBm
6	2437.00	16.07	15.77	15.68	16.14	1Watt= 30 dBm
11	2462.00	--	--	--	16.23	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

Cable loss=0.5dB		Peak Power Output Value (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps	
1	2412.00	--	--	--	--	--	--	--	14.35	1Watt= 30 dBm
6	2437.00	14.12	14.15	14.11	14.05	14.01	13.95	14.26	14.28	1Watt= 30 dBm
11	2462.00	--	--	--	--	--	--	--	14.21	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

## 4. Radiated Emission

### 4.1. Test Equipment

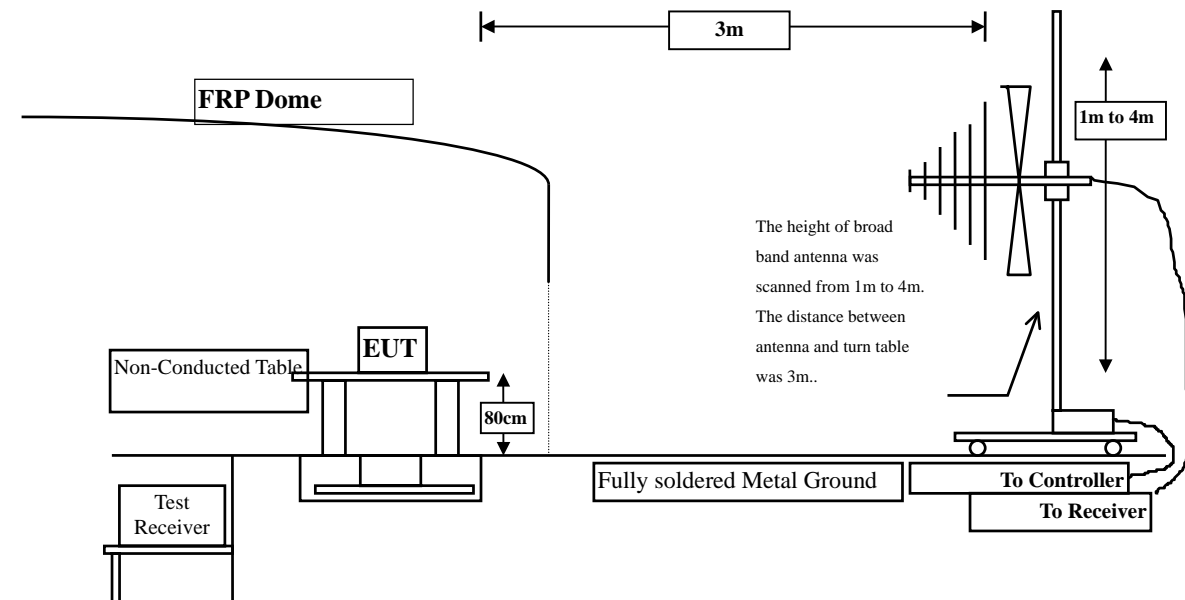
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2008
	X	Pre-Amplifier	AGILENT	8447D/2944A09549	Sep., 2008
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2008
	X	Spectrum Analyzer	Advantest	R3162/91700283	Oct., 2008
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

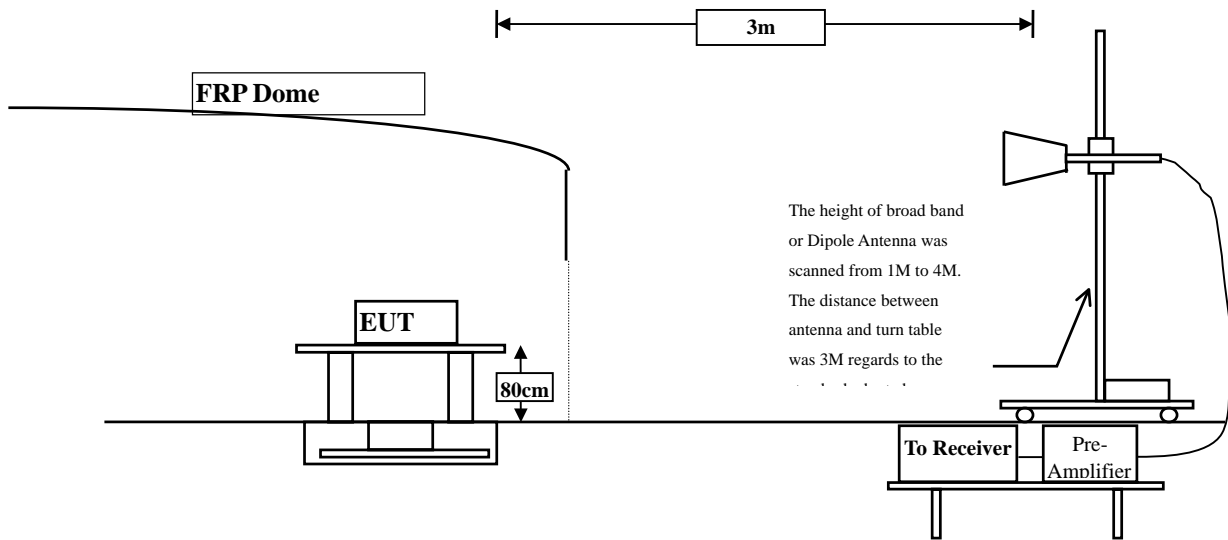
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with "X" are used to measure the final test results.

### 4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



**4.3. Limits**

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

#### 4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 30MHz - 10th Harmonic of fundamental was investigated.

#### 4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

#### 4.6. Test Result of Radiated Emission

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4824.000	3.479	51.850	55.329	-18.671	74.000
7236.000	7.874	42.550	50.424	-23.576	74.000
9648.000	13.286	43.290	56.575	-17.425	74.000
<b>Average Detector:</b>					
4824.000	3.479	36.400	39.879	-14.121	54.000
9648.000	13.286	33.830	47.115	-6.885	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
4824.000	3.571	57.580	61.151	-12.849	74.000
7236.000	8.819	42.570	51.388	-22.612	74.000
9648.000	13.764	41.440	55.204	-18.796	74.000
<b>Average Detector:</b>					
4824.000	3.571	38.960	42.531	-11.469	54.000
9648.000	13.764	31.410	45.174	-8.826	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	3.103	49.030	52.133	-21.867	74.000
7311.000	7.419	41.190	48.609	-25.391	74.000
9748.000	13.320	42.300	55.620	-18.380	74.000
<b>Average Detector:</b>					
9748.000	47.636	33.030	46.350	-7.650	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	3.578	57.520	61.098	-12.902	74.000
7311.000	8.231	41.730	49.960	-24.040	74.000
9748.000	13.425	40.290	53.715	-20.285	74.000
<b>Average Detector:</b>					
4874.000	3.578	38.990	42.568	-11.432	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	3.365	47.710	51.075	-22.925	74.000
7386.000	6.626	40.500	47.126	-26.874	74.000
9848.000	13.627	41.880	55.507	-18.493	74.000
<b>Average Detector:</b>					
9848.000	13.627	31.630	45.257	-8.743	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	4.222	57.160	61.382	-12.618	74.000
7386.000	7.306	41.140	48.446	-25.554	74.000
9848.000	13.601	41.170	54.771	-19.229	74.000
<b>Average Detector:</b>					
4924.000	4.222	38.790	43.012	-10.988	54.000
9848.000	13.601	31.070	44.671	-9.329	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2462 MHz + BT Hopping)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
3600.000	0.263	35.730	35.993	-37.977	74.000
7134.000	9.169	32.540	41.708	-32.262	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
3288.000	-0.497	35.170	34.673	-39.297	74.000
7188.000	9.057	32.170	41.227	-32.743	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4824.000	3.479	50.100	53.579	-20.421	74.000
7236.000	7.874	41.930	49.804	-24.196	74.000
9648.000	13.286	44.070	57.355	-16.645	74.000
<b>Average Detector:</b>					
9648.000	13.764	35.900	49.664	-4.336	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
4824.000	3.571	52.900	56.471	-17.529	74.000
7236.000	8.819	42.140	50.958	-23.042	74.000
9648.000	13.764	43.050	56.814	-17.186	74.000
<b>Average Detector:</b>					
4824.000	3.571	32.190	35.761	-18.239	54.000
9648.000	13.764	34.330	48.094	-5.906	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	3.103	49.690	52.793	-21.207	74.000
7311.000	7.419	41.110	48.529	-25.471	74.000
9748.000	13.320	43.360	56.680	-17.320	74.000
<b>Average Detector:</b>					
9748.000	13.320	36.750	50.070	-3.930	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	3.578	52.140	55.718	-18.282	74.000
7311.000	8.231	41.700	49.930	-24.070	74.000
9748.000	13.425	42.900	56.325	-17.675	74.000
<b>Average Detector:</b>					
4874.000	3.578	35.560	39.138	-14.862	54.000
9748.000	13.425	35.370	48.795	-5.205	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	3.365	50.260	53.625	-20.375	74.000
7386.000	6.626	41.170	47.796	-26.204	74.000
9848.000	13.627	43.090	56.717	-17.283	74.000
<b>Average Detector:</b>					
9848.000	47.621	36.120	49.747	-4.253	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	4.222	51.260	55.482	-18.518	74.000
7386.000	7.306	40.950	48.256	-25.744	74.000
9848.000	13.601	42.520	56.121	-17.879	74.000
<b>Average Detector:</b>					
4924.000	4.222	37.040	41.262	-12.738	54.000
9648.000	13.764	31.750	45.514	-8.486	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2462 MHz + BT Hopping)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
3666.000	0.266	35.680	35.946	-38.024	74.000
6996.000	8.525	31.660	40.185	-33.785	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
3528.000	-0.151	35.980	35.829	-38.141	74.000
8676.000	11.123	31.480	42.603	-31.367	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
130.880	-7.387	34.437	27.049	-16.451	43.500
241.460	-6.645	46.386	39.741	-6.259	46.000
307.420	-4.268	45.364	41.096	-4.904	46.000
565.440	1.727	27.844	29.571	-16.429	46.000
720.640	3.666	30.879	34.546	-11.454	46.000
961.200	6.594	34.077	40.671	-13.329	54.000
<b>Vertical</b>					
78.500	-5.538	35.622	30.084	-9.916	40.000
338.460	-1.611	31.160	29.548	-16.452	46.000
600.360	1.065	25.941	27.006	-18.994	46.000
720.640	-0.914	28.990	28.077	-17.923	46.000
802.120	2.889	24.752	27.641	-18.359	46.000
961.200	3.094	27.305	30.399	-23.601	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
237.580	-7.742	48.769	41.027	-4.973	46.000
369.500	0.598	38.461	39.059	-6.941	46.000
567.380	1.729	29.366	31.095	-14.905	46.000
716.760	3.656	27.309	30.966	-15.034	46.000
961.200	6.594	34.199	40.793	-13.207	54.000
1000.000	9.421	24.509	33.930	-20.070	54.000
<b>Vertical</b>					
74.620	-7.701	34.647	26.946	-13.054	40.000
334.580	-2.202	32.984	30.782	-15.218	46.000
499.480	-0.382	25.287	24.904	-21.096	46.000
536.340	1.387	25.956	27.343	-18.657	46.000
720.640	-0.914	28.445	27.532	-18.468	46.000
961.200	3.094	25.997	29.091	-24.909	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

**5. RF antenna conducted test**

**5.1. Test Equipment**

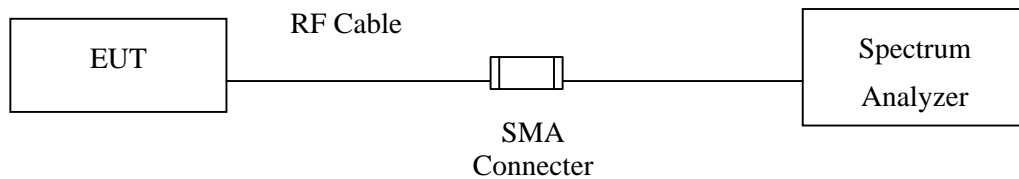
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
	Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2009
	Spectrum Analyzer	Agilent	N9010A / MY48030495	April, 2009

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with “X” are used to measure the final test results.

**5.2. Test Setup**

**RF antenna Conducted Measurement:**



**5.3. 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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

**5.4. Test Procedure**

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

**5.5. Uncertainty**

The measurement uncertainty

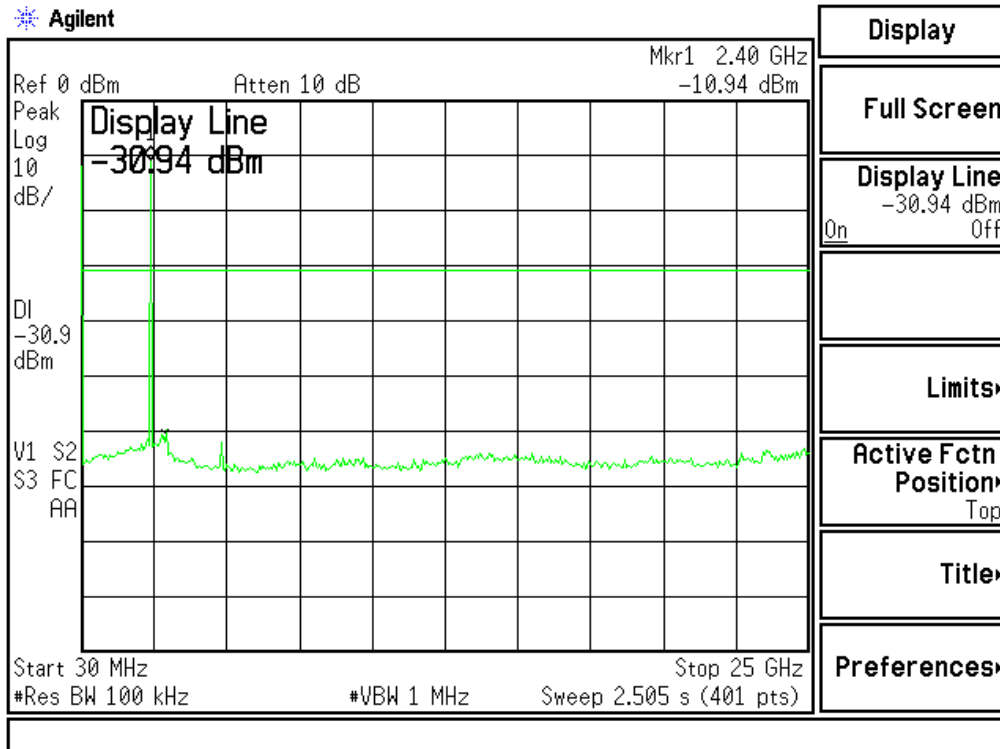
Conducted is defined as  $\pm 1.27\text{dB}$



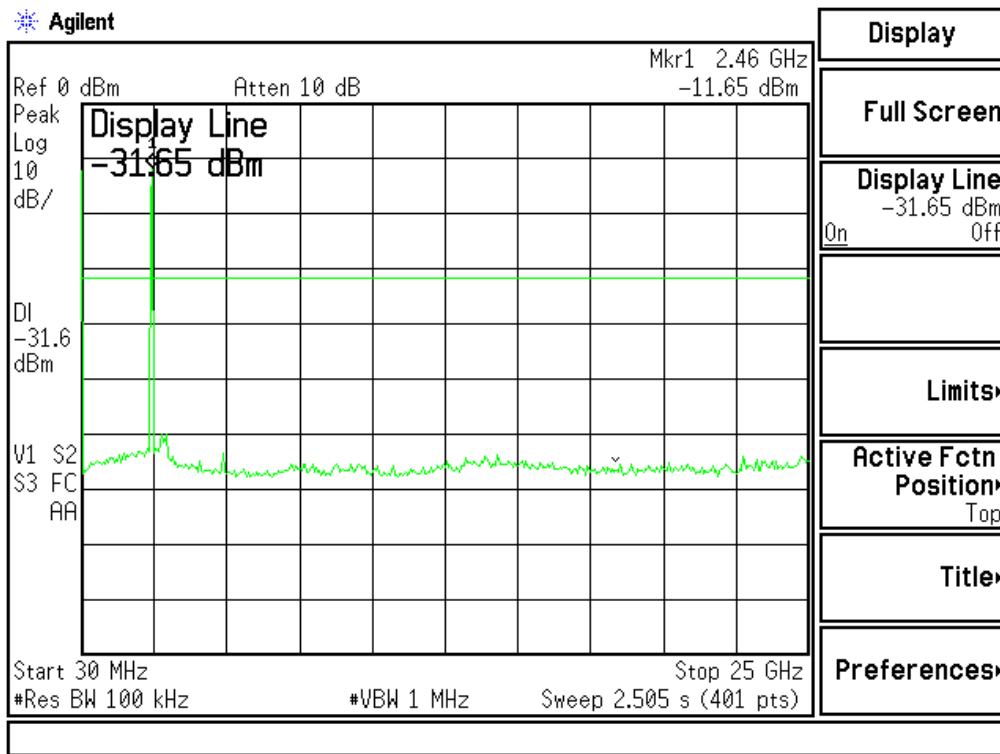
**5.6. Test Result of RF antenna conducted test**

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : RF antenna conducted test  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

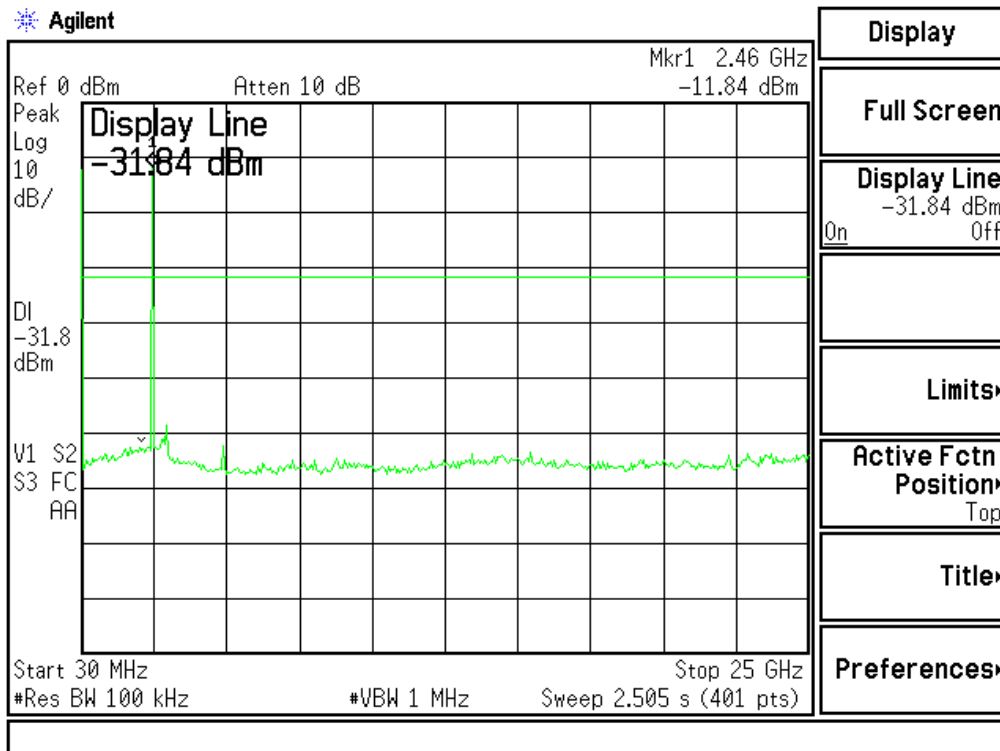
**Channel 01 (2412MHz)**



**Channel 06 (2437MHz)**

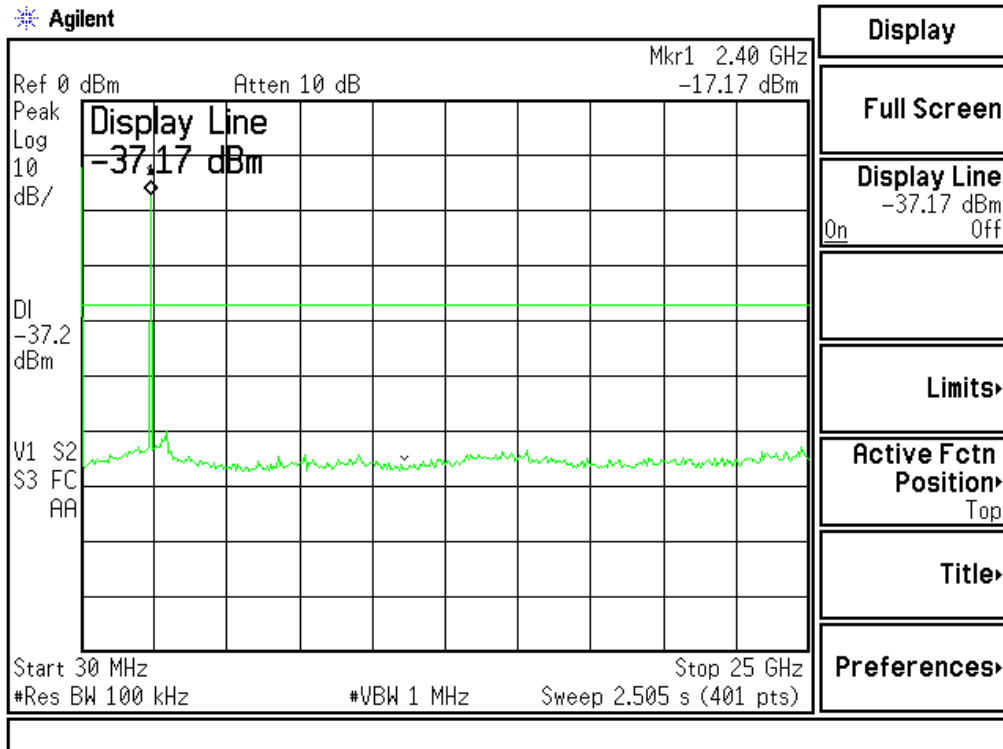


**Channel 11 (2462MHz)**

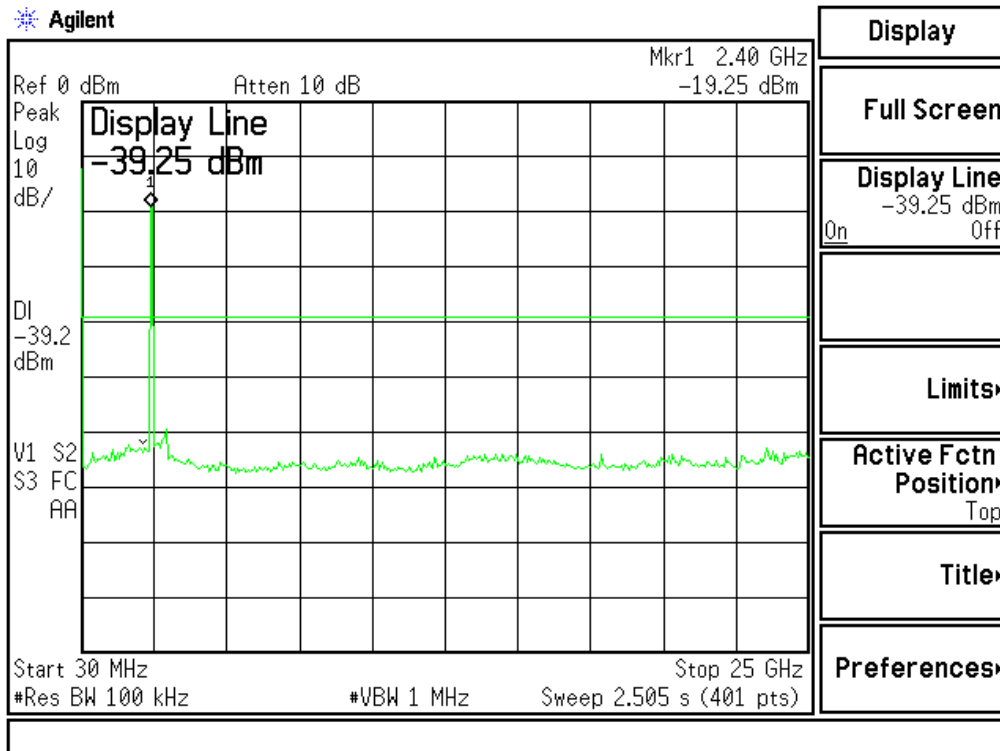


Product : Combo WiFi+Bluetooth 2+1  
 Test Item : RF Antenna Conducted Spurious  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

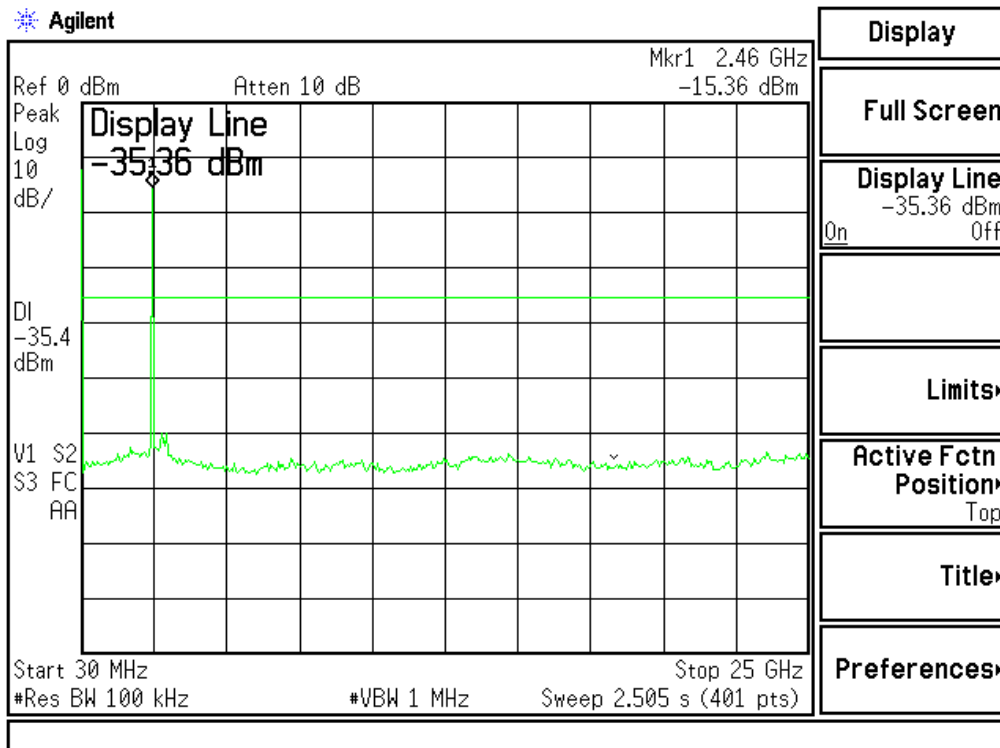
**Channel 01 (2412MHz)**



**Channel 06 (2437MHz)**



**Channel 11 (2462MHz)**



## 6. Radiated Emission Band Edge

### 6.1. Test Equipment

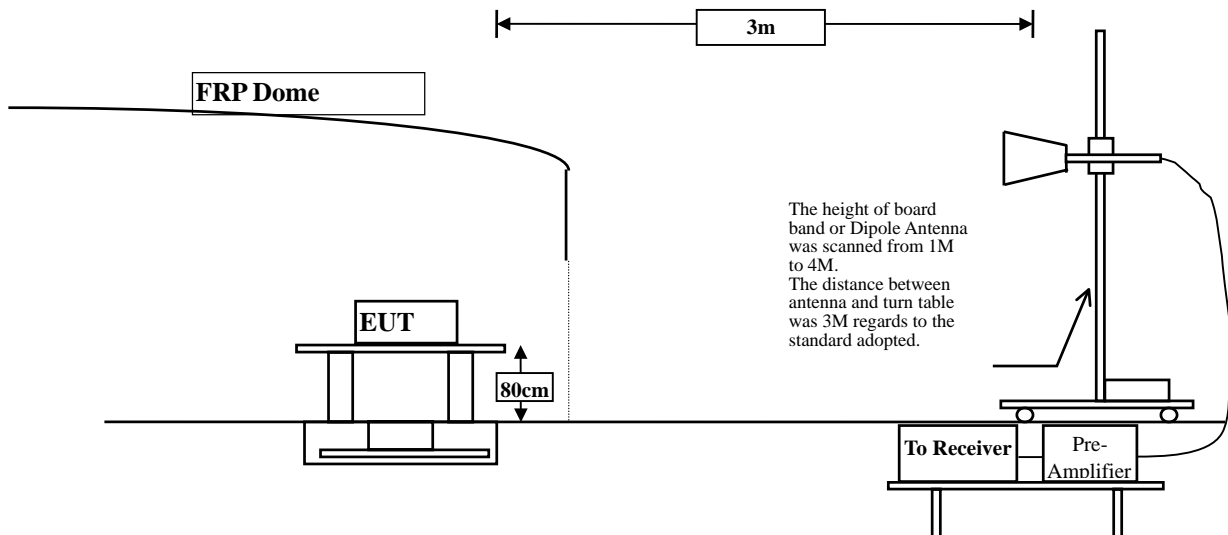
The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2009
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2009
X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2008
X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2008
X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2008
X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2009
X	Pre-Amplifier	HP	8449B / 3008A01123	July, 2008

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with “X” are used to measure the final test results.

### 6.2. Test Setup

#### RF Radiated Measurement:



### 6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

#### **6.4. Test Procedure**

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

#### **6.5. Uncertainty**

± 3.9 dB above 1GHz

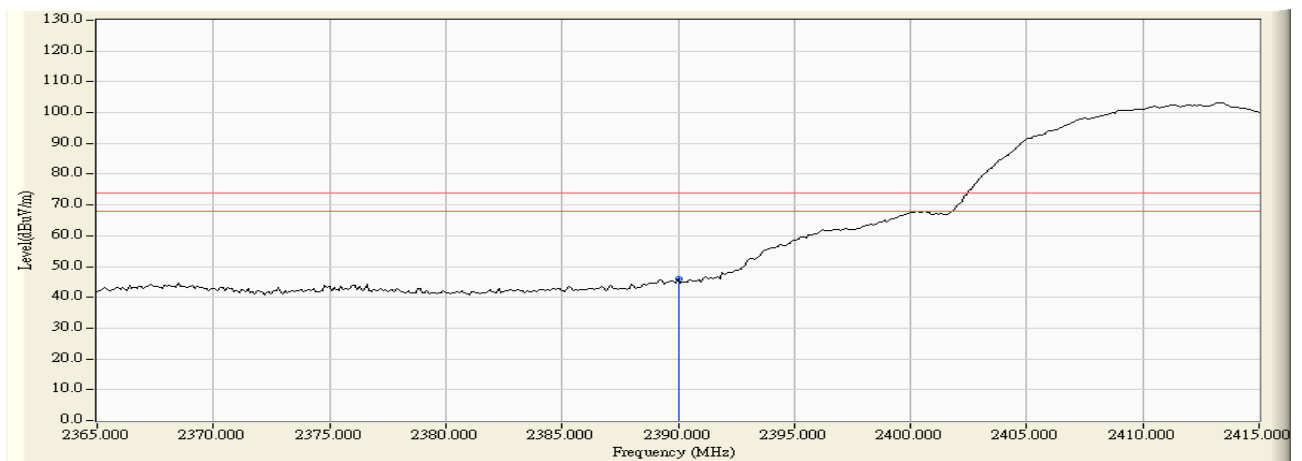
### 6.6. Test Result of Band Edge

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

#### RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2390.000	-1.615	47.612	45.998	74.00	54.00	Pass

**Figure Channel 1: Horizontal (Peak)**



**Note:**

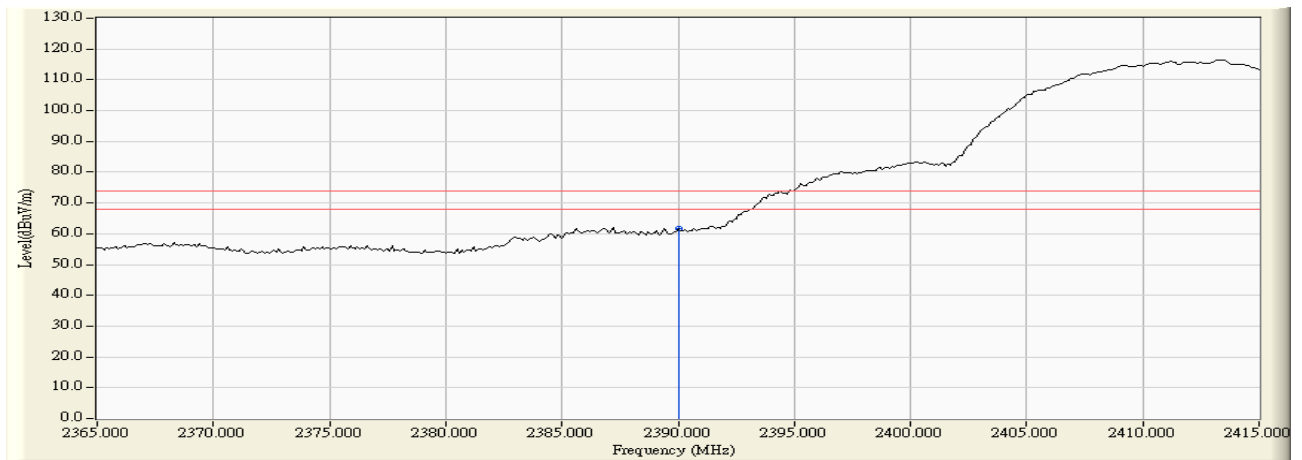
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

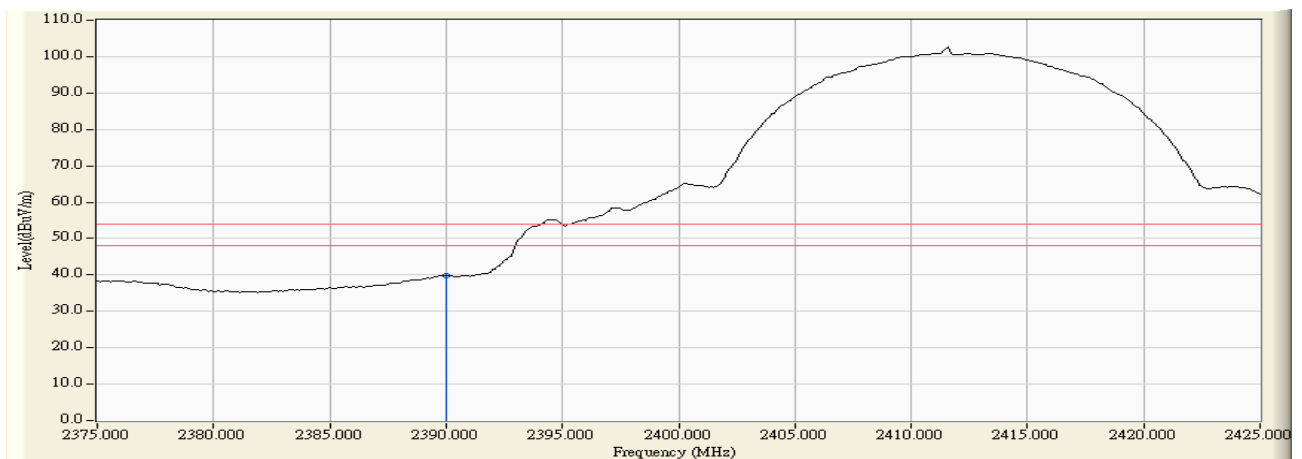
**RF Radiated Measurement (Vertical):**

Channel	Frequency (MHz)	Correct Fcator (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2390.000	-2.386	64.213	61.827	74.00	54.00	Pass
1(Average)	2390.000	-2.386	42.145	39.759	74.00	54.00	Pass

**Figure Channel 1: Vertical (Peak)**



**Figure Channel 1: Vertical (Average)**



**Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

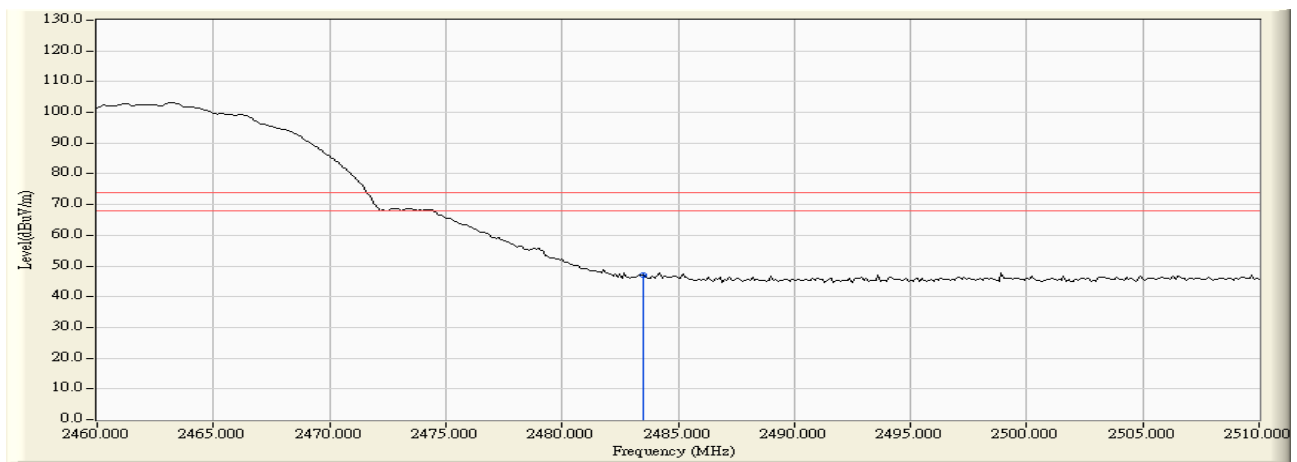


Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

**RF Radiated Measurement (Horizontal):**

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2483.500	-1.022	48.063	47.041	74.00	54.00	Pass

**Figure Channel 11: Horizontal (Peak)**



**Note:**

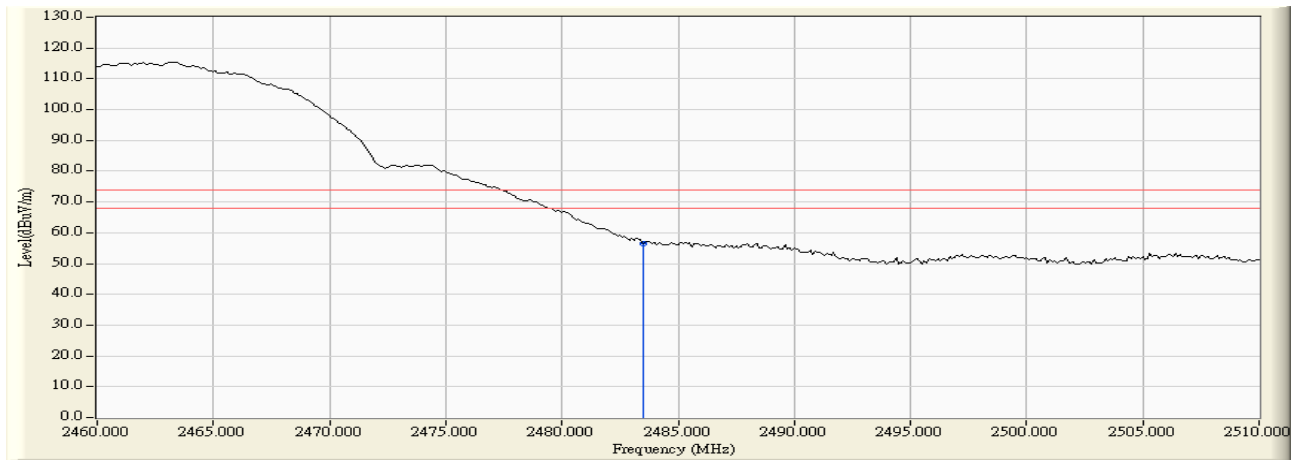
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

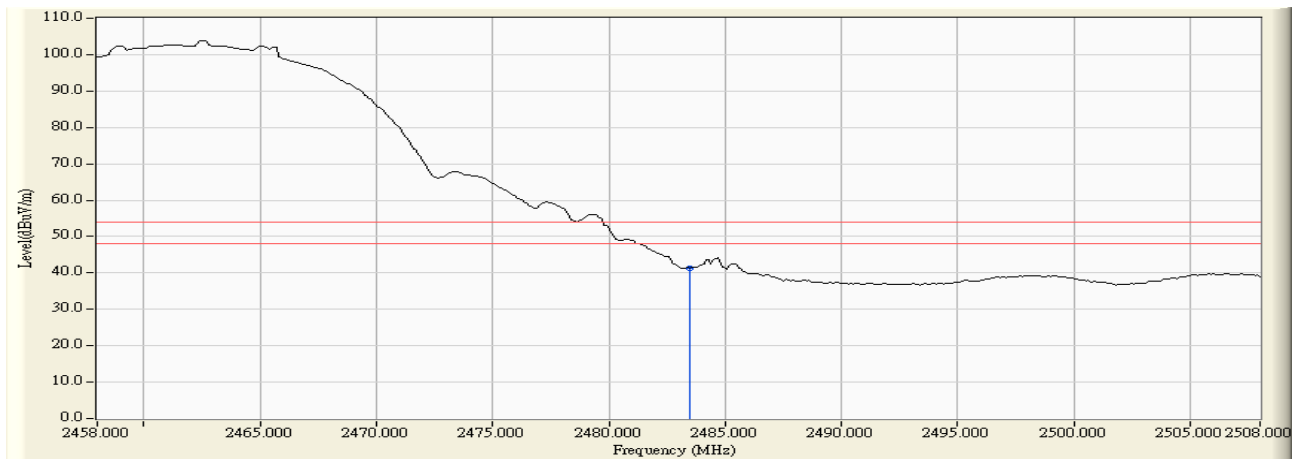
**RF Radiated Measurement (Vertical):**

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2483.500	-1.312	57.862	56.550	74.00	54.00	Pass
11(Average)	2483.500	-1.312	42.717	41.405	74.00	54.00	Pass

**Figure Channel 11: Vertical (Peak)**



**Figure Channel 11: Vertical (Average)**



**Note:**

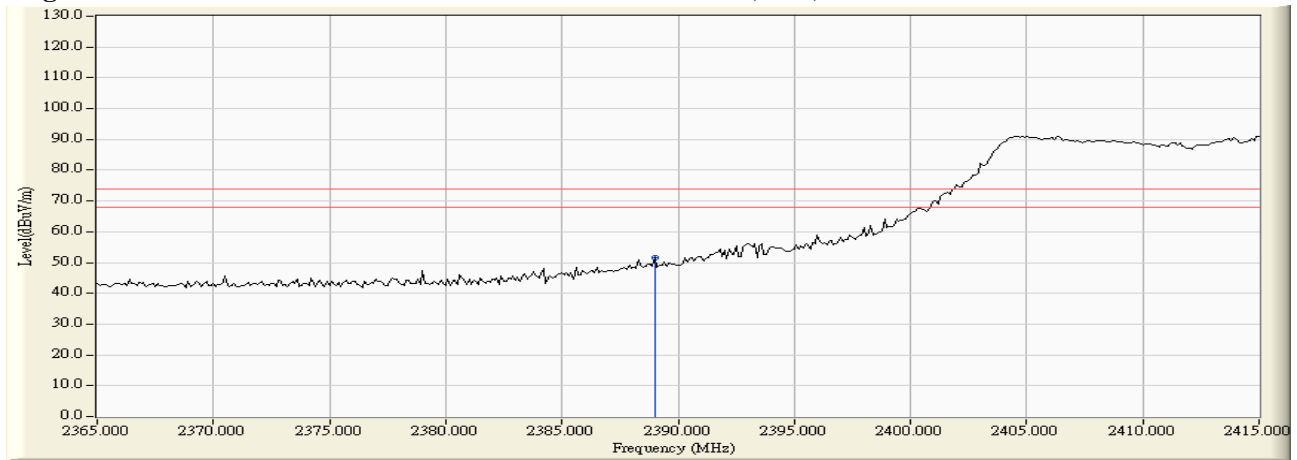
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

**RF Radiated Measurement (Horizontal):**

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2389.000	-1.615	53.246	51.631	74.00	54.00	Pass

**Figure Channel 1: Horizontal (Peak)**



Note:

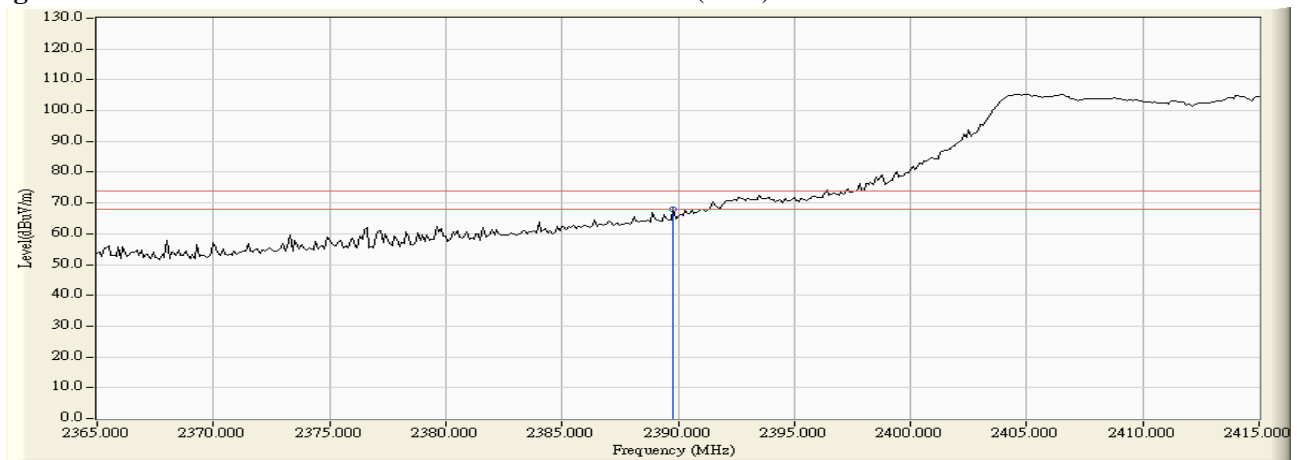
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

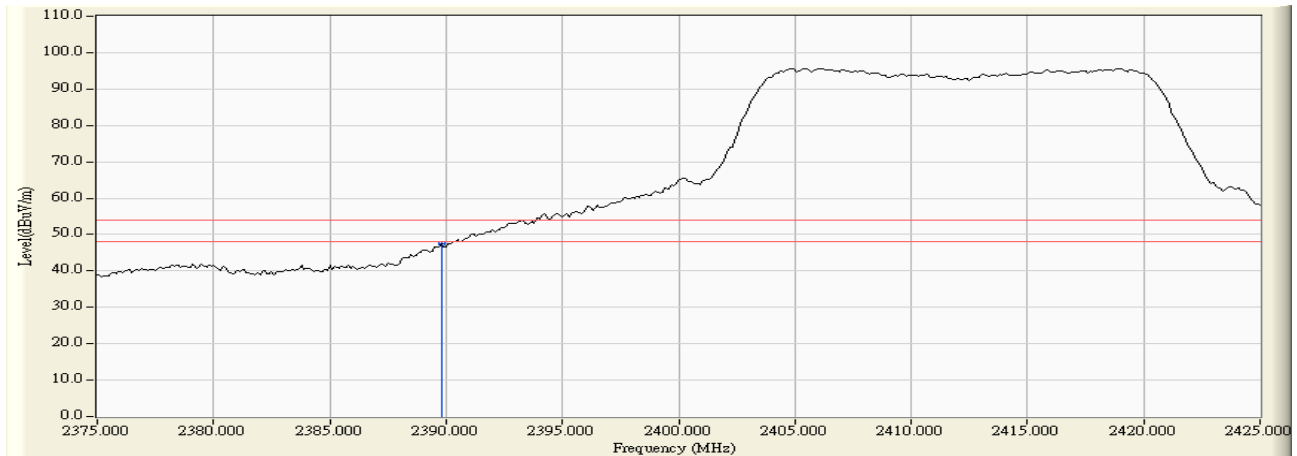
**RF Radiated Measurement (Vertical):**

Channel	Frequency (MHz)	Correct Fcator (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2389.800	-2.384	70.231	67.846	74.00	54.00	Pass
1 (Average)	2389.800	-2.384	49.985	47.600	74.00	54.00	Pass

**Figure Channel 1: Vertical (Peak)**



**Figure Channel 1: Vertical (Average)**



**Note:**

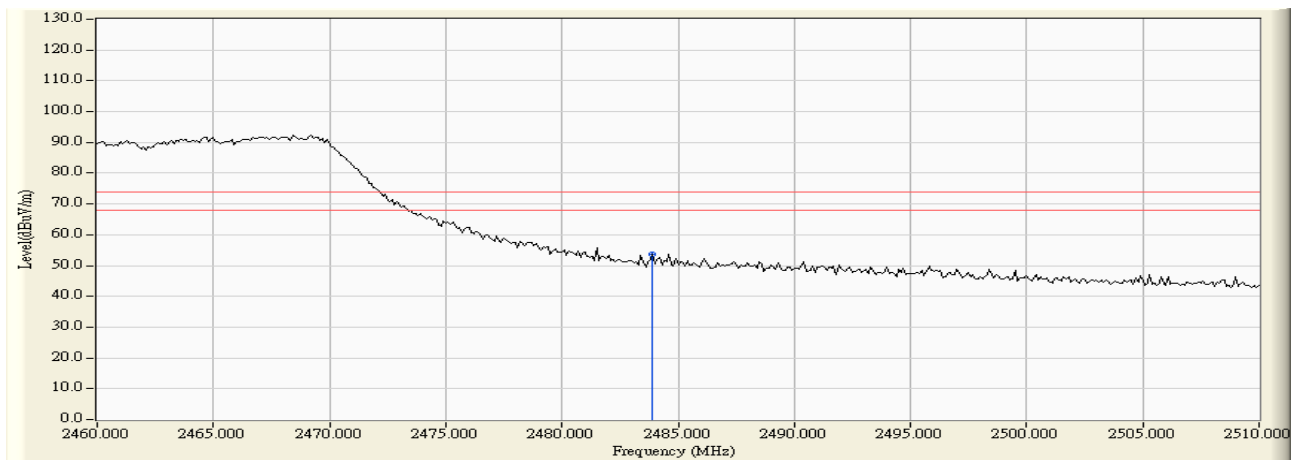
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

**RF Radiated Measurement (Horizontal):**

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2483.900	-1.019	54.567	53.548	74.00	54.00	Pass

**Figure Channel 11: Horizontal (Peak)**



**Note:**

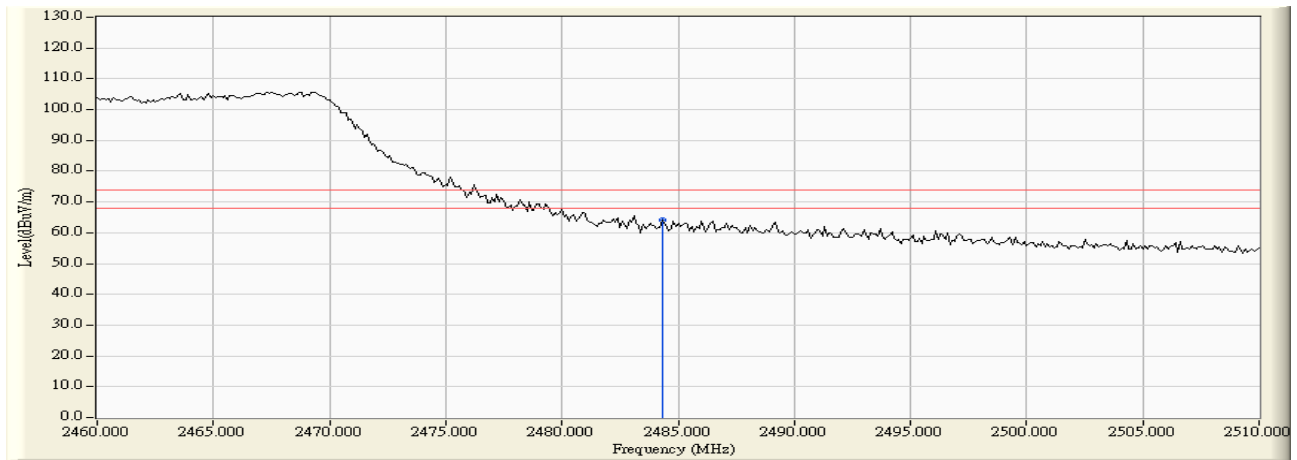
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

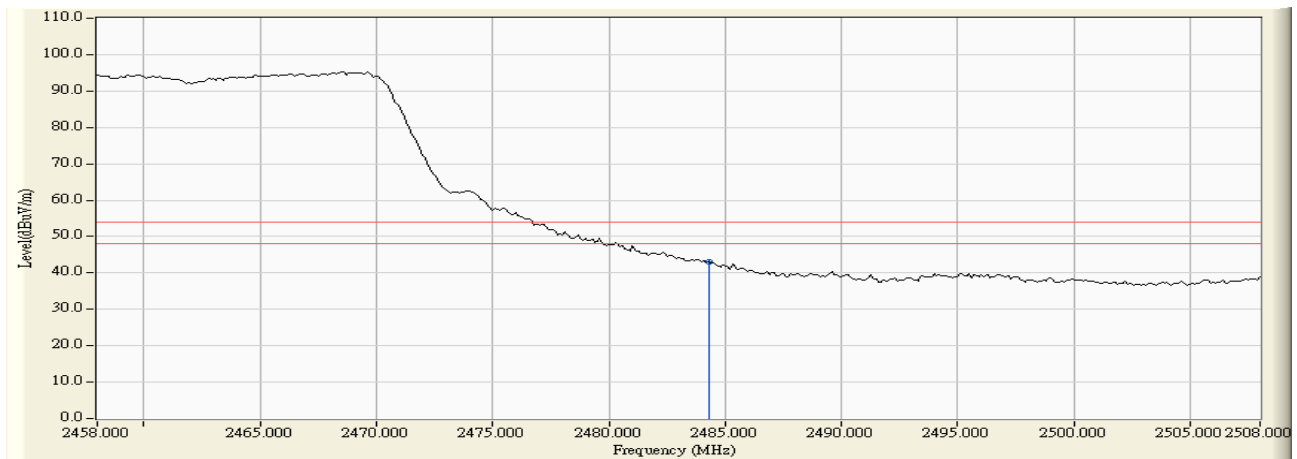
**RF Radiated Measurement (Vertical):**

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2484.300	-1.301	65.571	64.269	74.00	54.00	Pass
11(Average)	2484.300	-1.301	44.352	43.050	74.00	54.00	Pass

**Figure Channel 11: Vertical (Peak)**



**Figure Channel 11: Vertical (Average)**



**Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

**7. Occupied Bandwidth**

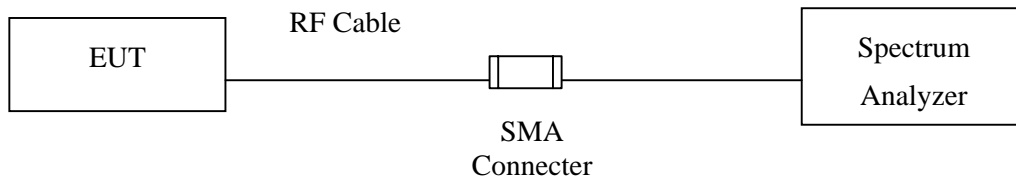
**7.1. Test Equipment**

The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2009
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
Spectrum Analyzer	Agilent	N9010A / MY48030495	April, 2009

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with “X” are used to measure the final test results.

**7.2. Test Setup**



**7.3. Test Procedures**

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.  
 Set RBW = 100 kHz, Span greater than RBW.

**7.4. Limits**

The 6 dB bandwidth must be greater than 500 kHz.

**7.5. Uncertainty**

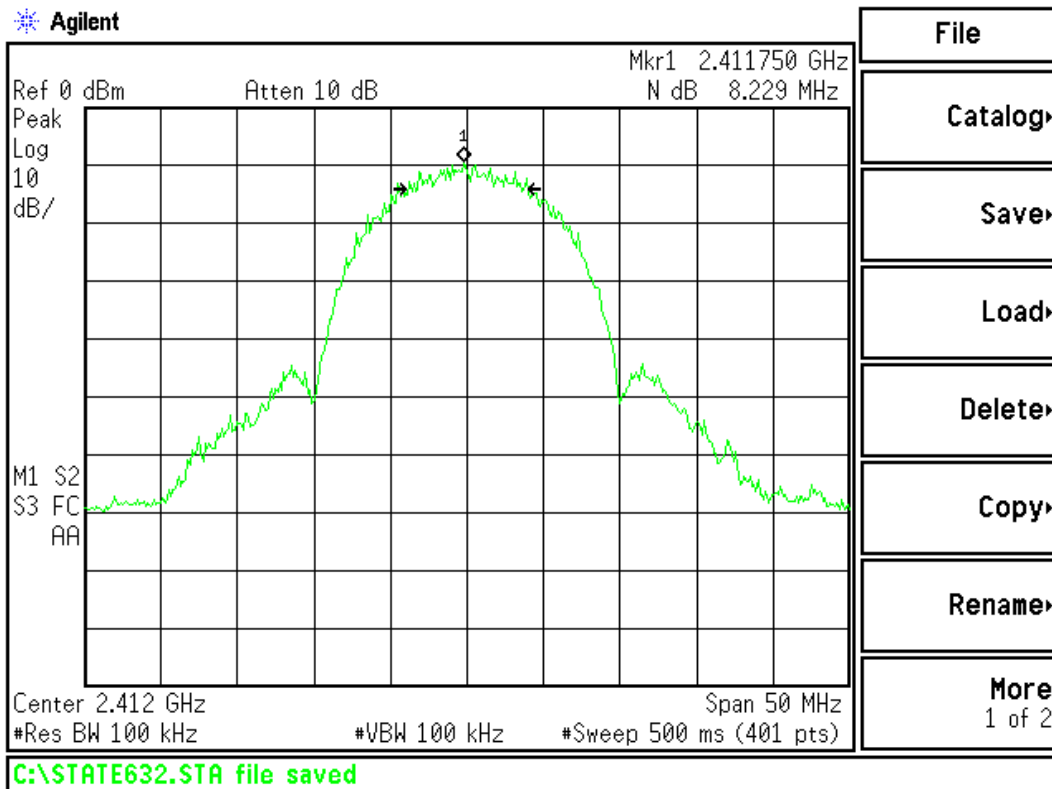
± 150Hz

**7.6. Test Result of Occupied Bandwidth**

Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

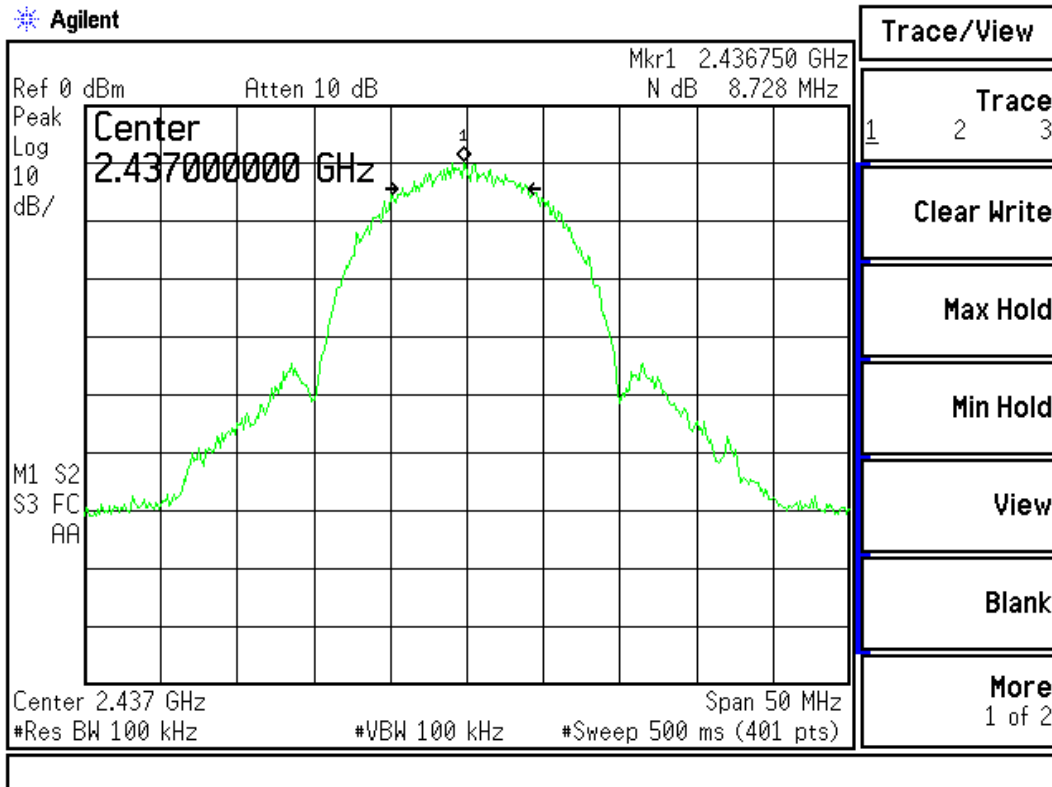
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	8229	>500	Pass
6	2437.00	8728	>500	Pass
11	2462.00	8229	>500	Pass

**Channel 1:**

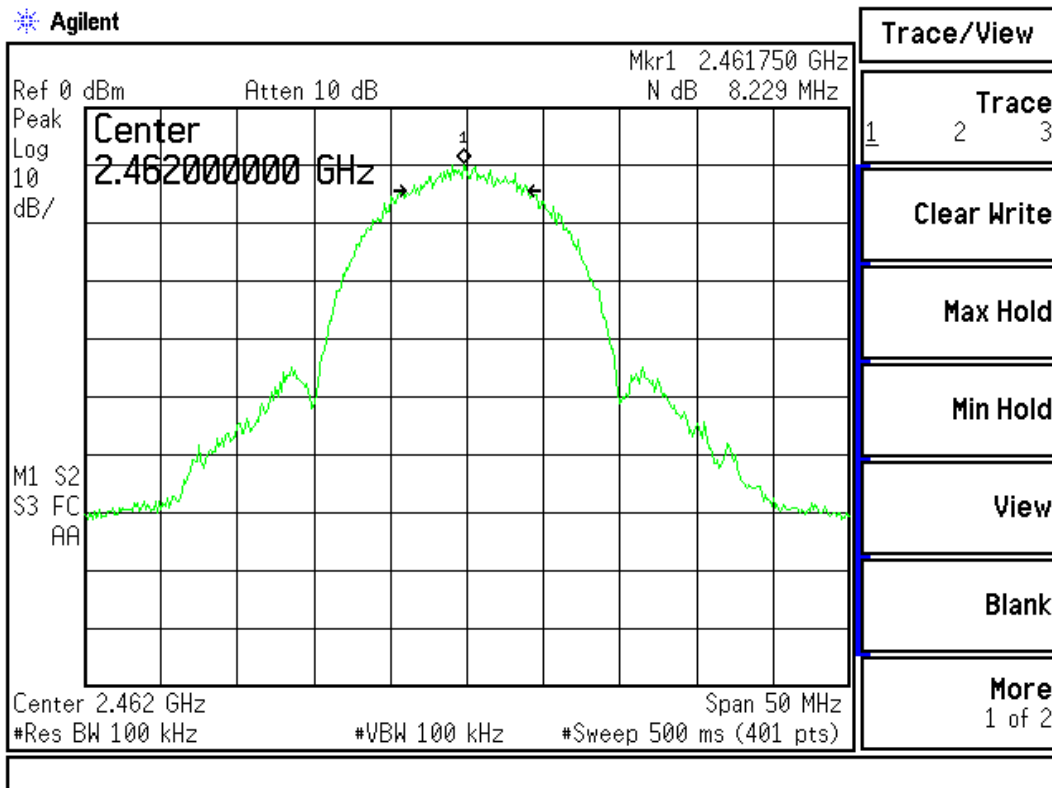




**Channel 6:**



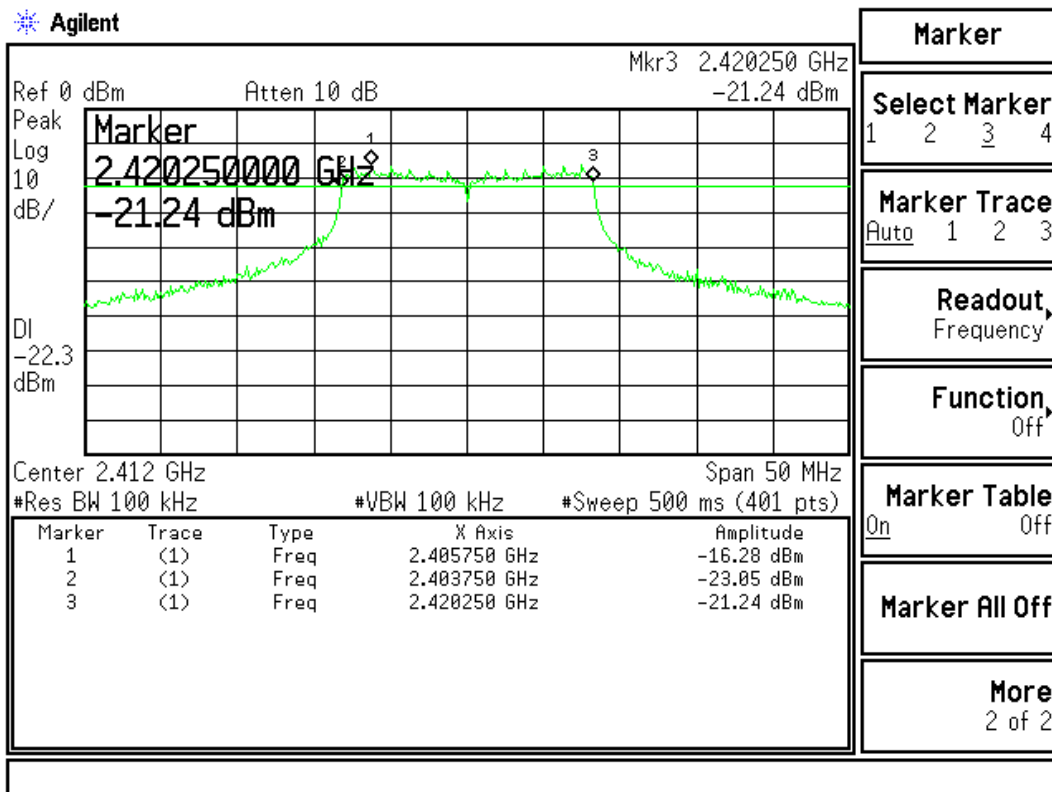
**Channel 11:**



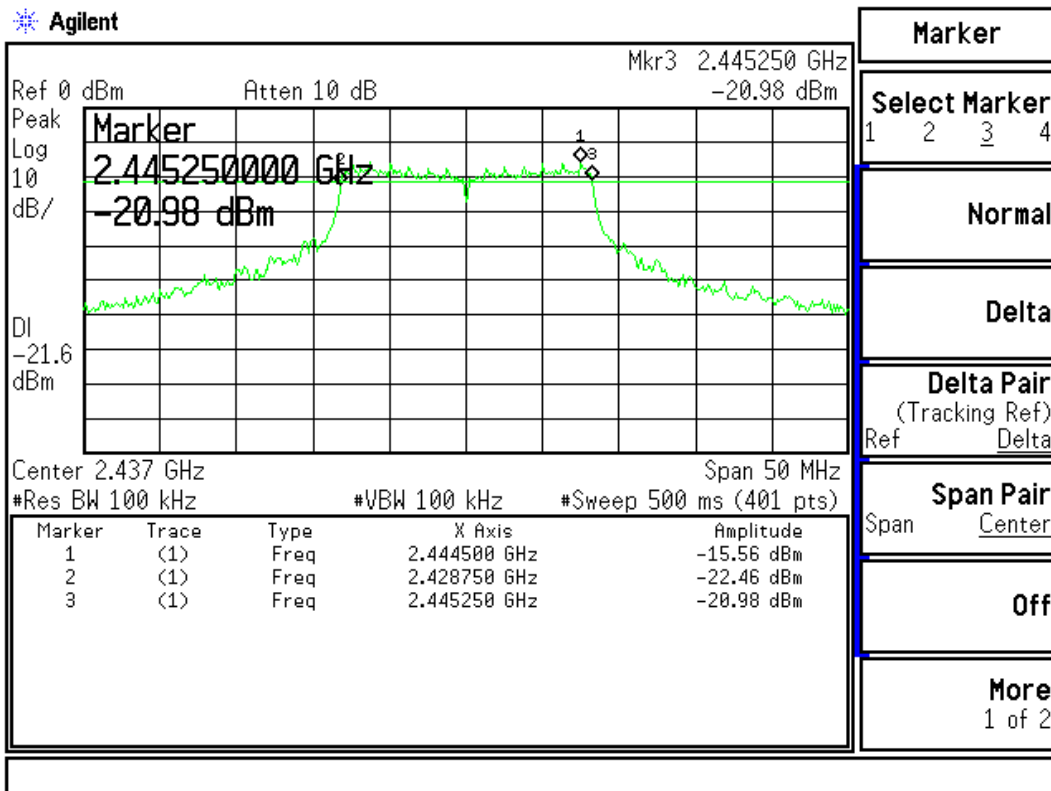
Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	16500	>500	Pass
6	2437.00	16500	>500	Pass
11	2462.00	16500	>500	Pass

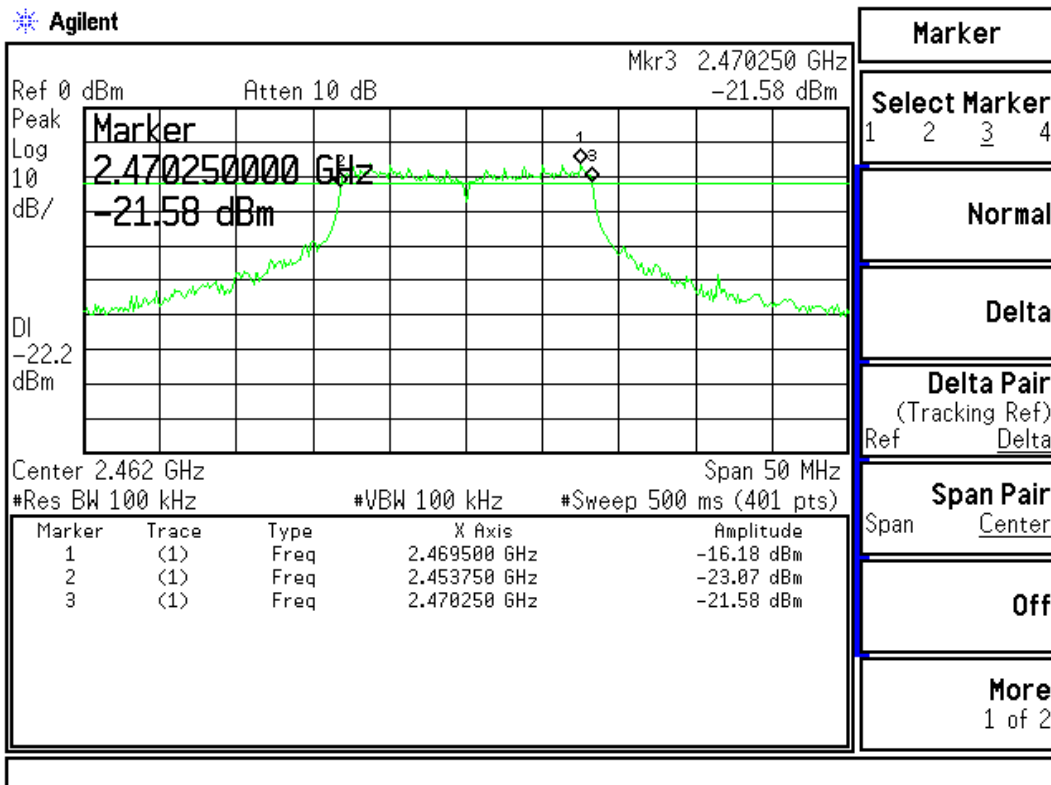
**Channel 1:**



**Channel 6:**



**Figure Channel 11:**



**8. Power Density**

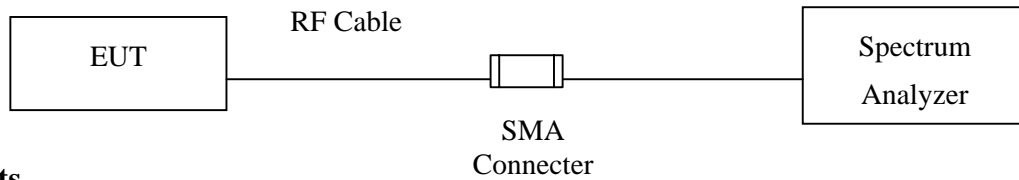
**8.1. Test Equipment**

The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2009
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
Spectrum Analyzer	Agilent	N9010A / MY48030495	April, 2009

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.  
 2. The test instruments marked with “X” are used to measure the final test results.

**8.2. Test Setup**



**8.3. Limits**

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

**8.4. Test Procedures**

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 3 kHz, VBW=10KHz, Sweep time=(SPAN/3KHz), detector=Peak detector

**8.5. Uncertainty**

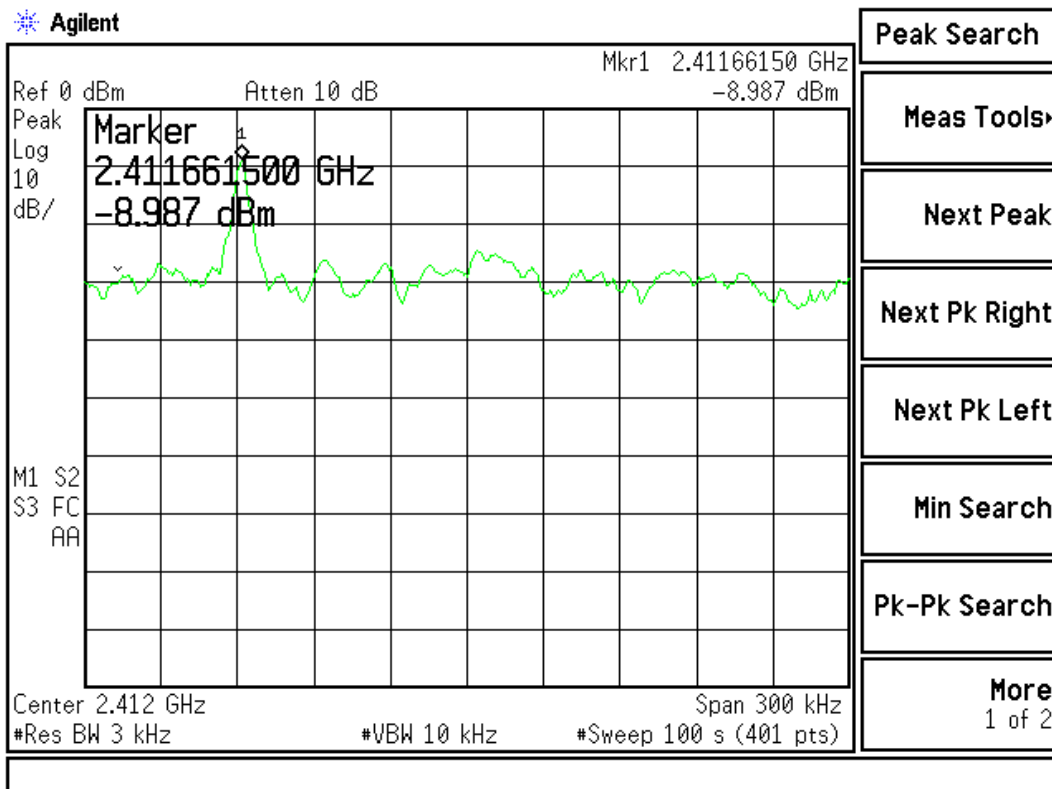
± 1.27 dB

**8.6. Test Result of Power Density**

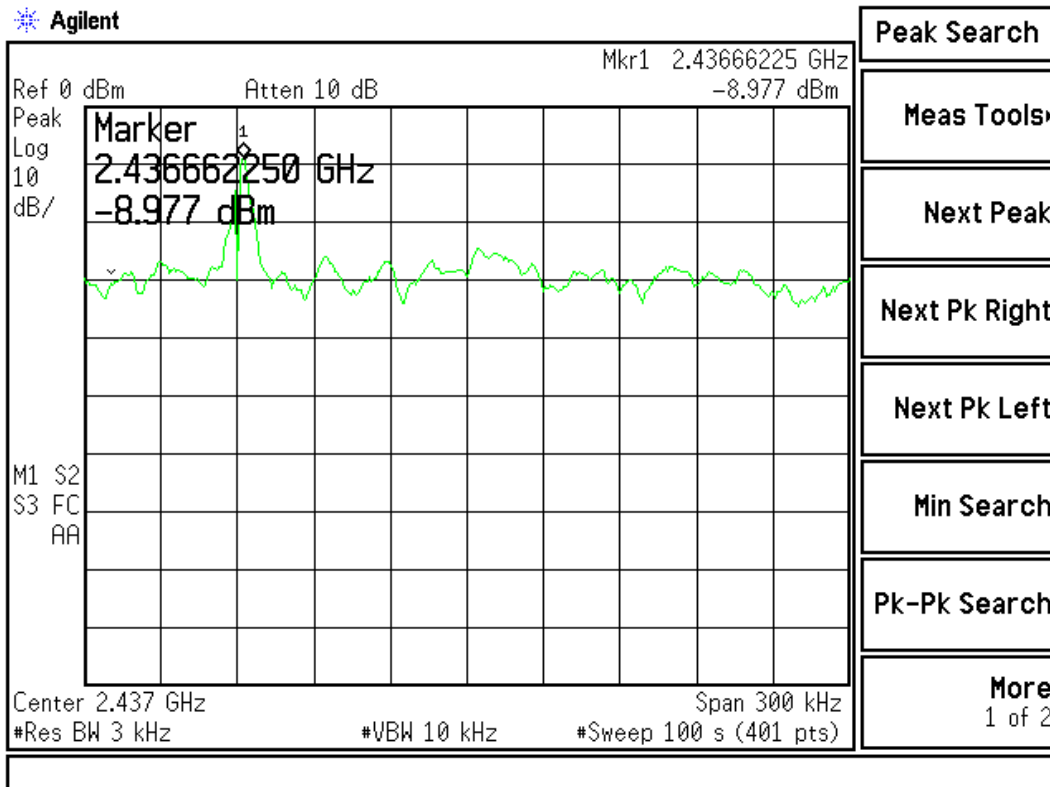
Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
1 (11Mbps)	2412.00	-8.987	< 8dBm	Pass
6 (11Mbps)	2437.00	-8.977	< 8dBm	Pass
11 (11Mbps)	2462.00	-9.016	< 8dBm	Pass

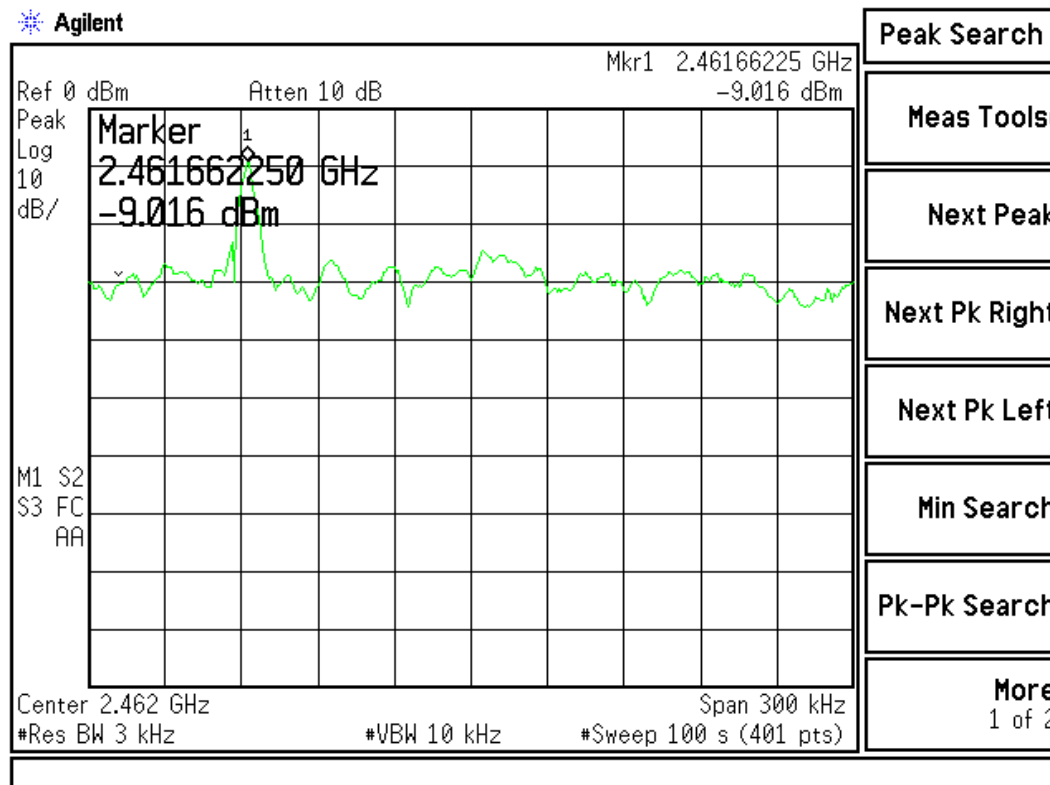
**Channel 1:**



**Channel 6:**



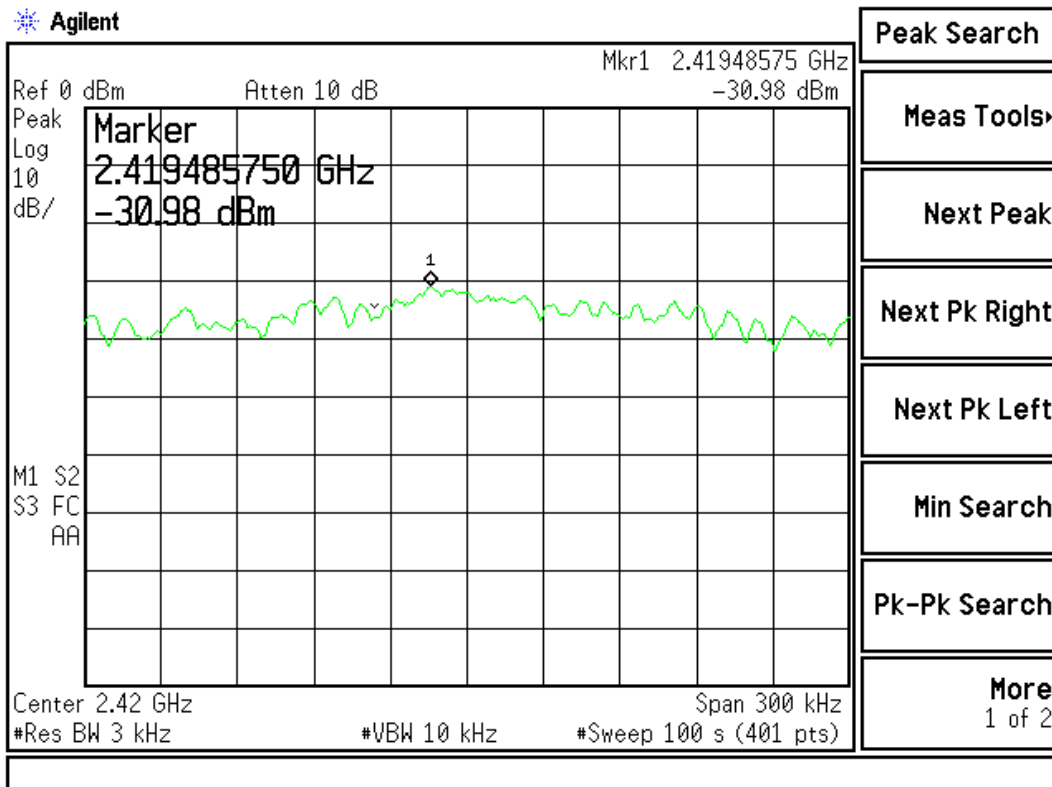
**Channel 11:**



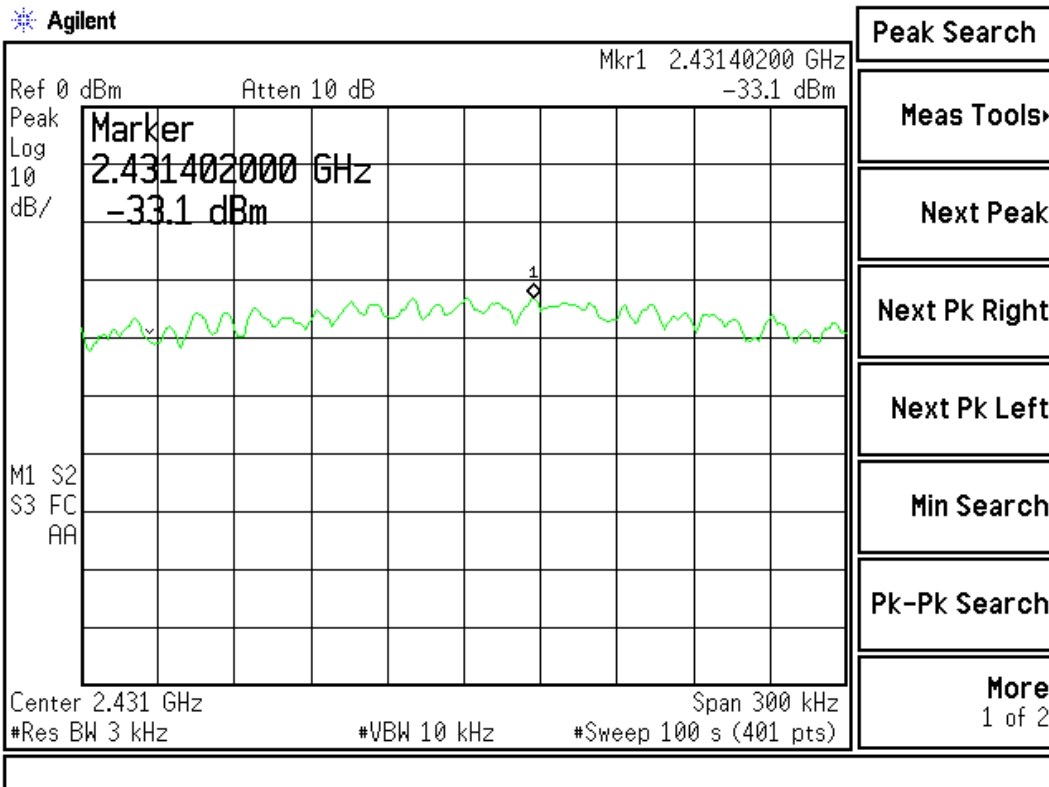
Product : Combo WiFi+Bluetooth 2+1  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
1 (54Mbps)	2412.00	-30.98	< 8dBm	Pass
6 (54Mbps)	2437.00	-33.10	< 8dBm	Pass
11 (54Mbps)	2462.00	-31.15	< 8dBm	Pass

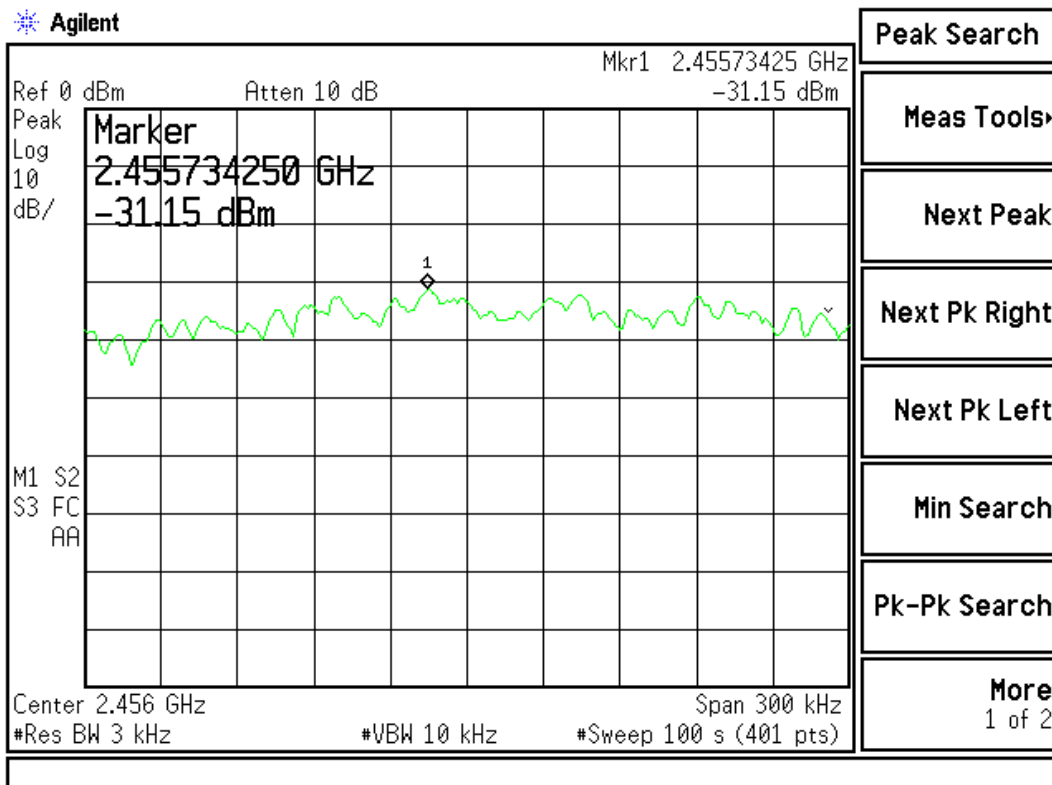
**Channel 1:**



**Channel 6:**



**Channel 11:**





## 9. EMI Reduction Method During Compliance Testing

No modification was made during testing.