

---

# FCC Test Report

---

Report No.: AGC14G120401-2F2C

**FCC ID** : JJMORBIT

**PRODUCT DESIGNATION** : GSM mobile phone/Cell phone (Orbit)

**BRAND NAME** : NUQLEO

**MODEL NAME** : QM-G2GFQ2BK, QM-G2GFQ2BL, QM-G2GFQ2YL,  
QM-G2GFQ2RD, QM-G2GFQ2WH, QM-G2GFQ2SL,  
QM-G2GFQ2PR, QM-G2GFQ2GN, QM-G2GFQ2PK,  
QM-G2GFQ2OR

**CLIENT** : Accvent LLC

**DATE OF ISSUE** : Apr.18, 2012

**STANDARD(S)** : FCC Part 15 Rules

**REPORT VERSION** : V1.1

Attestation of Global Compliance Co., Ltd.

CAUTION: This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.

## VERIFICATION OF COMPLIANCE

Applicant	Accvent LLC 454 Holiday Drive Hallandale,Florida,33009.USA
Manufacturer	Accvent LLC 454 Holiday Drive Hallandale,Florida,33009.USA
Product Designation	GSM mobile phone/Cell phone (Orbit)
Brand Name	NUQLEO
Test Model	QM-G2GFQ2BK
Series Model	QM-G2GFQ2BL, QM-G2GFQ2YL, QM-G2GFQ2RD, QM-G2GFQ2WH, QM-G2GFQ2SL, QM-G2GFQ2PR, QM-G2GFQ2GN, QM-G2GFQ2PK, QM-G2GFQ2OR
Model Difference	All the same except for appearance.
FCC ID	JJMORBIT
Report Number	AGC14G120401-2F2C
Date of Test	Apr.10, 2012 to Apr.17, 2011

### WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.247.

Tested By:

*Curoky Chen*

Curoky Chen Apr.18, 2011

Reviewed By:

*Forrest Lei*

Forrest Lei Apr.18, 2011

Approved By:

*Solger Zhang*

Solger Zhang Apr.18, 2011

## TABLE OF CONTENTS

<b>1. GENERAL INFORMATION .....</b>	<b>4</b>
1.1 PRODUCT DESCRIPTION .....	4
1.2 TABLE OF CARRIER FREQUENCIES .....	4
1.3 RELATED SUBMITTAL(S) / GRANT (S) .....	5
1.4 TEST METHODOLOGY .....	5
1.5 TEST FACILITY .....	5
1.6 SPECIAL ACCESSORIES .....	5
1.7 EQUIPMENT MODIFICATIONS .....	5
<b>2. SYSTEM TEST CONFIGURATION .....</b>	<b>6</b>
2.1 CONFIGURATION OF EUT SYSTEM .....	6
2.2 EQUIPMENT USED IN EUT SYSTEM .....	6
<b>3. SUMMARY OF TEST RESULTS .....</b>	<b>7</b>
<b>4. DESCRIPTION OF TEST MODES .....</b>	<b>7</b>
<b>5 PEAK OUTPUT POWER .....</b>	<b>8</b>
5.1 MEASUREMENT PROCEDURE .....	8
5.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	8
5.3 MEASUREMENT EQUIPMENT USED .....	8
5.4 LIMITS AND MEASUREMENT RESULT .....	9
<b>6 6 DB BANDWIDTH .....</b>	<b>10</b>
6.1 MEASUREMENT PROCEDURE .....	10
6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	10
6.3 MEASUREMENT EQUIPMENT USED .....	10
6.4 LIMITS AND MEASUREMENT RESULTS .....	11
<b>7. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY .....</b>	<b>15</b>
7.1 MEASUREMENT PROCEDURE .....	15
7.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	15
7.3 MEASUREMENT EQUIPMENT USED .....	15
7.4 LIMITS AND MEASUREMENT RESULT .....	15
<b>8. RADIATED EMISSION MEASUREMENT .....</b>	<b>20</b>
8.1 MEASUREMENT PROCEDURE .....	20
8.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	20
8.3 MEASUREMENT EQUIPMENT USED .....	21
8.4 LIMITS AND MEASUREMENT RESULT .....	22
<b>9 BAND EDGE EMISSION .....</b>	<b>28</b>
9.1 MEASUREMENT PROCEDURE .....	28
9.2 TEST SET-UP .....	28
9.3 TEST RESULT .....	28
<b>10 FCC LINE CONDUCTED EMISSION TEST .....</b>	<b>36</b>
10.1 LIMITS OF LINE CONDUCTED EMISSION TEST .....	36
10.2 BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST .....	36
10.3 PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST .....	37
10.4 FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST .....	37
10.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST .....	38
<b>APPENDIX I .....</b>	<b>40</b>

<b>PHOTOGRAPHS OF THE EUT.....</b>	<b>40</b>
<b>APPENDIX II.....</b>	<b>48</b>
<b>PHOTOGRAPHS OF THE TEST SETUP .....</b>	<b>48</b>

## 1. GENERAL INFORMATION

### 1.1 PRODUCT DESCRIPTION

The EUT is a **GSM mobile phone/Cell phone (Orbit)** designed as an “WiFi Device”. It is designed by way of utilizing the DSSS and OFDM technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.412 GHz to 2.462GHz
Rated Output Power	11b:12.84dBm ,11g:12.81dBm
Modulation	DBPSK,DQPSK,CCK,16-QAM,64-QAM
Data Rate	DSSS(1/2/5.5/11),OFDM(6/9/12/18/24/36/48/54)
Number of channels	11
Antenna Designation	Integrated Antenna
Antenna Gain	0.9dBi(max)
Power Supply	DC3.7V by Built-in Li-ion Battery

### 1.2 TABLE OF CARRIER FREQUENCIES

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	1	2412MHZ
	2	2417MHZ
	3	2422 MHZ
	4	2427 MHZ
	5	2432 MHZ
	6	2437 MHZ
	7	2437 MHZ
	8	2447 MHZ
	9	2452 MHZ
	10	2457 MHZ
	11	2462MHZ

### **1.3 RELATED SUBMITTAL(S) / GRANT (S)**

This submittal(s) (test report) is intended for **FCC ID: JJMORBIT** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

### **1.4 TEST METHODOLOGY**

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

### **1.5 TEST FACILITY**

All measurement facilities used to collect the measurement data are located at  
Attestation of Global Compliance Co., Ltd.  
2F., No.2 Building, Huafeng No.1 Technical Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen  
The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003.  
FCC register No.: 259865

### **1.6 SPECIAL ACCESSORIES**

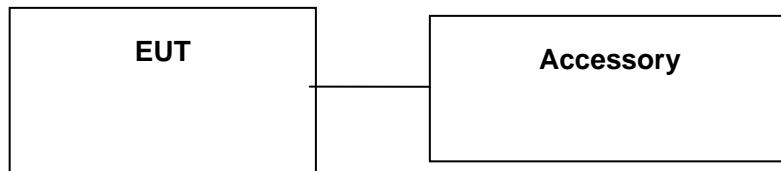
Not available for this EUT intended for grant.

### **1.7 EQUIPMENT MODIFICATIONS**

Not available for this EUT intended for grant.

## 2. SYSTEM TEST CONFIGURATION

### 2.1 CONFIGURATION OF EUT SYSTEM



### 2.2 EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Mfr/Brand	Model/Type No.	Remark
1	GSM mobile phone/Cell phone (Orbit)	NUQLEO	QM-G2GFQ2BK	EUT
2	Adapter	NUQLEO	Orbit	accessory
3	battery	NUQLEO	Orbit	accessory
4	USB Cable	N/A	N/A	accessory
5	Earphone	N/A	N/A	accessory

*Note: All the accessories have been used during the test. all the following "EUT" in setup diagram means EUT system.*

### 3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.207	Conduction Emission	Not applicable
§15.209	Radiated Emission	Compliant
§15.247	Maximum Output Power	Compliant
§15.247	6dB Bandwidth	Compliant
§15.247	Band Edges	Compliant
§15.247	Spurious Emission	Compliant
§15.247	Power Spectral Density	Compliant

### 4. DESCRIPTION OF TEST MODES

The following operating modes were applied for the related test items. For Radiated Emission, 3 axis were chosen for testing for each applicable modes.

TEST MODES
Transmit by 802.11b with Date rate( 1/2/5.5/11)
Transmit by 802.11g with Date rate (6/9/12/18/24/36/48/54)
Normal (WIFI)

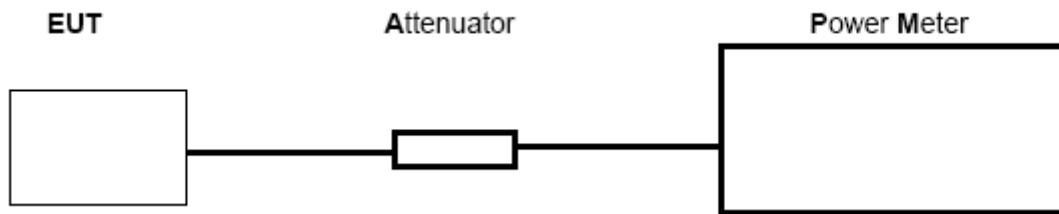
- 1 The EUT has been set to operate continuously on the lowest, middle and highest operation frequency individually.
- 2 All modes under which configure applicable have been tested and the worst mode test data recording in the test report.

## 5 PEAK OUTPUT POWER

### 5.1 MEASUREMENT PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to power meter through an RF attenuator
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Set the RBW greater than 6DB bandwidth of emission.
5. Record the maximum power from the power meter.

### 5.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



### 5.3 MEASUREMENT EQUIPMENT USED

Description	Manufacturer	Model	SERIAL NUMBER	Cal. Date	Cal. Due
Power meter	Agilent	N1911A	N/A	06/27/2011	06/26/2012
Power sensor	Agilent	N192XA	N/A	06/27/2011	06/26/2012
RF attenuator	N/A	RFA20db	N/A	N/A	N/A

#### 5.4 LIMITS AND MEASUREMENT RESULT

802.11b

LIMITS AND MEASUREMENT RESULT			
Frequency (GHz)	Result (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	12.83	30	Pass
2.442	12.79	30	Pass
2.462	12.84	30	Pass

802.11g

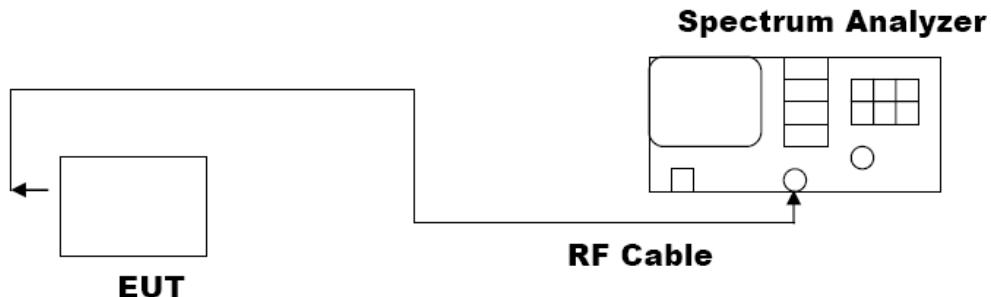
LIMITS AND MEASUREMENT RESULT			
Frequency (GHz)	Result (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	12.81	30	Pass
2.442	12.79	30	Pass
2.462	12.80	30	Pass

## 6 6 DB BANDWIDTH

### 6.1 MEASUREMENT PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz,  
VBW= 100 KHz.
4. Set SPA Trace 1 Max hold, then View.

### 6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



### 6.3 MEASUREMENT EQUIPMENT USED

SHIELDING ROOM					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4440A	N/A	06/27/2011	06/26/2012
Spectrum Analyzer	Agilent	E4446A	N/A	06/27/2011	06/26/2012

#### 6.4 LIMITS AND MEASUREMENT RESULTS

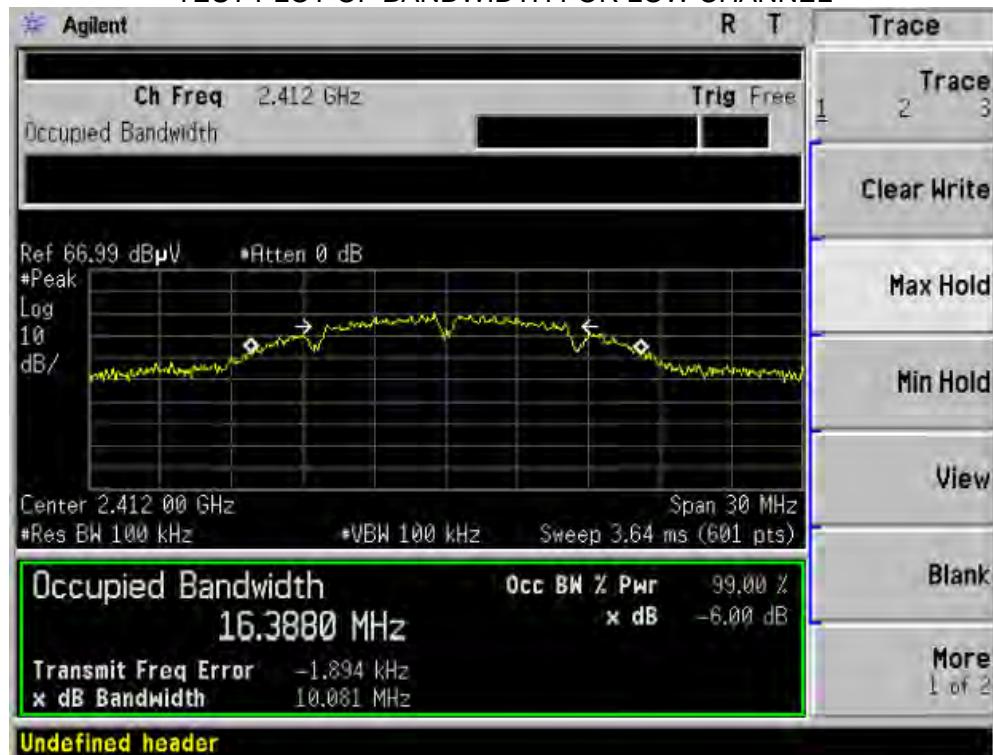
802.11b

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
>500KHZ	Low Channel	10.08	PASS
	Middle Channel	9.42	PASS
	High Channel	10.13	PASS

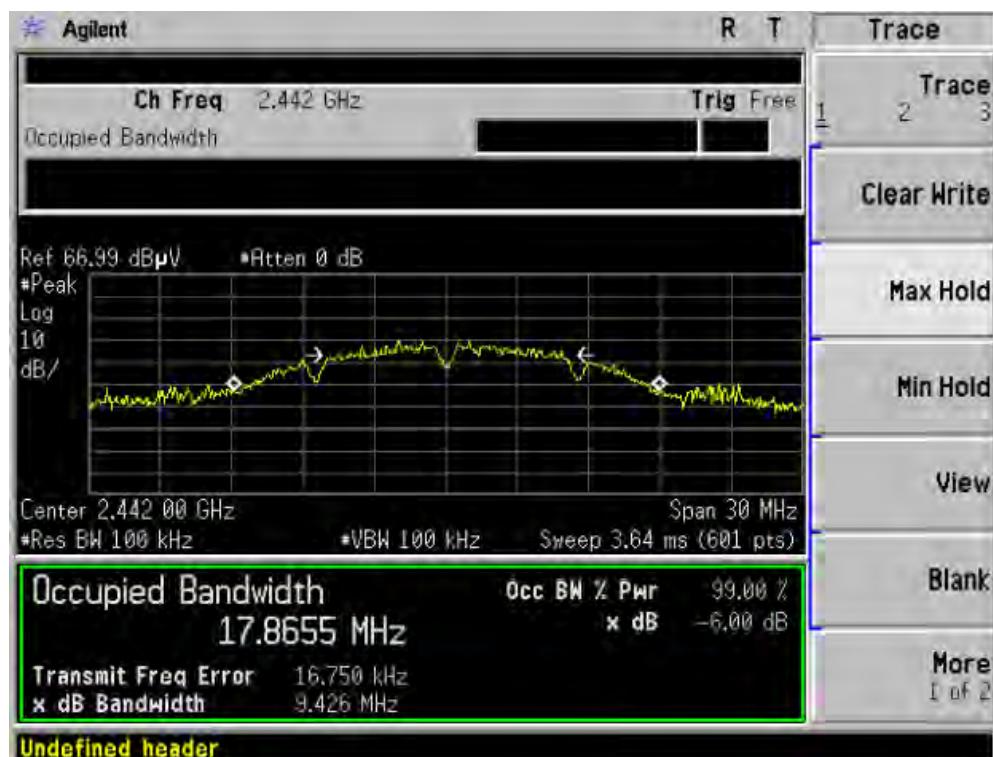
802.11g

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
>500KHZ	Low Channel	16.42	PASS
	Middle Channel	16.40	PASS
	High Channel	16.42	PASS

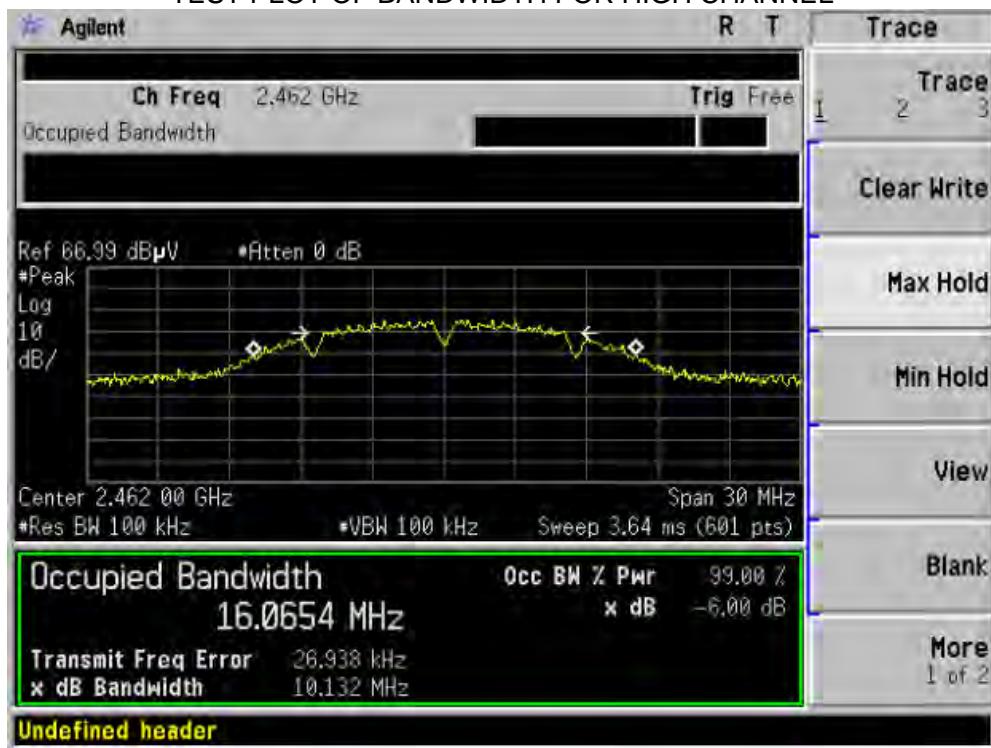
802.11b TEST RESULT  
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



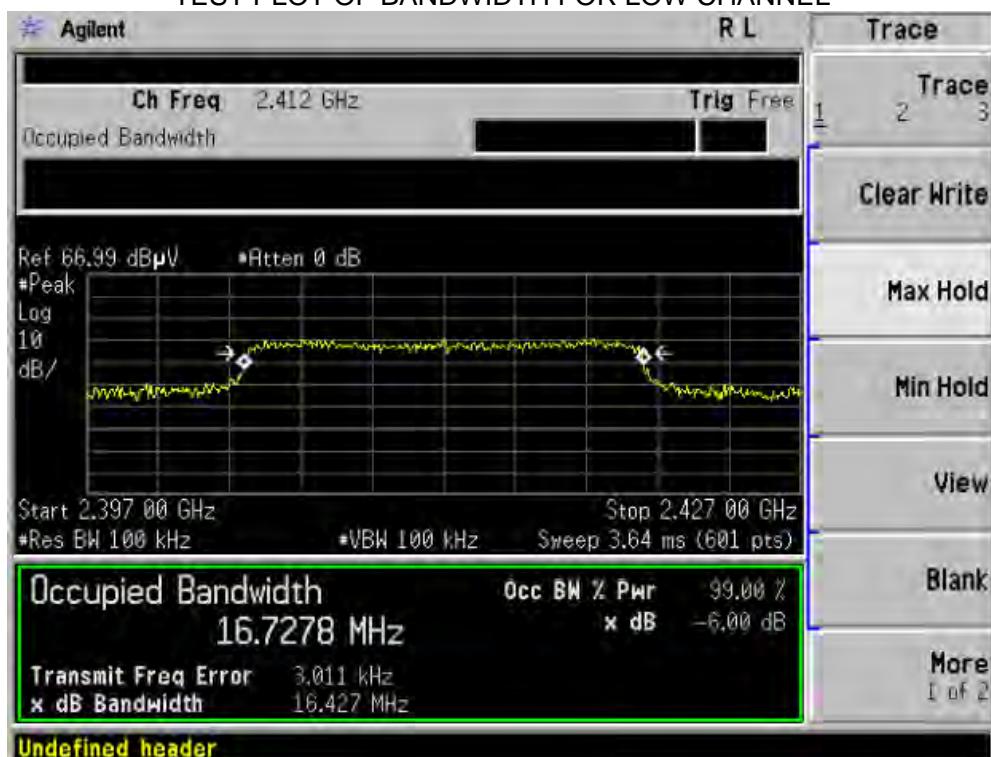
TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



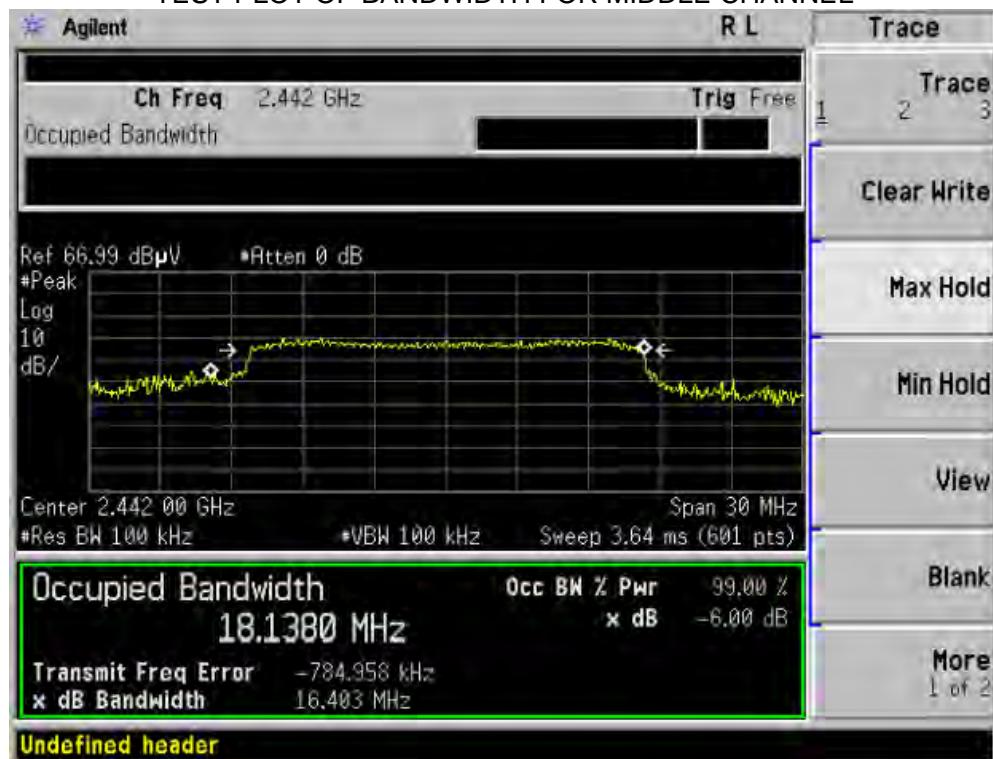
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



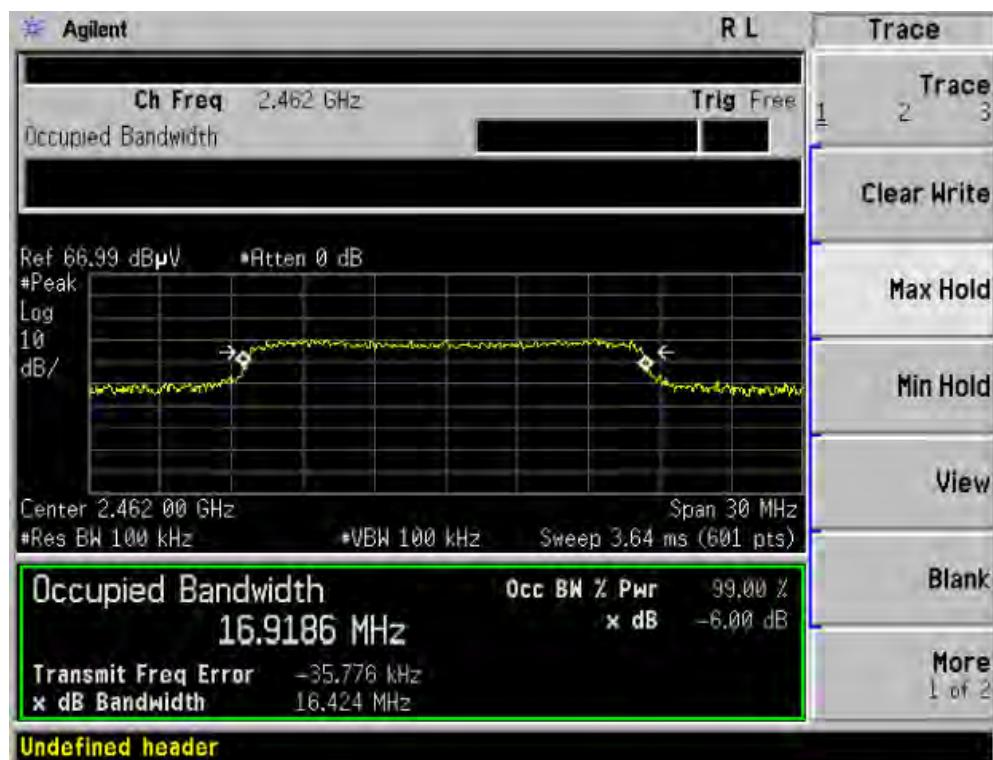
802.11g TEST RESULT  
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

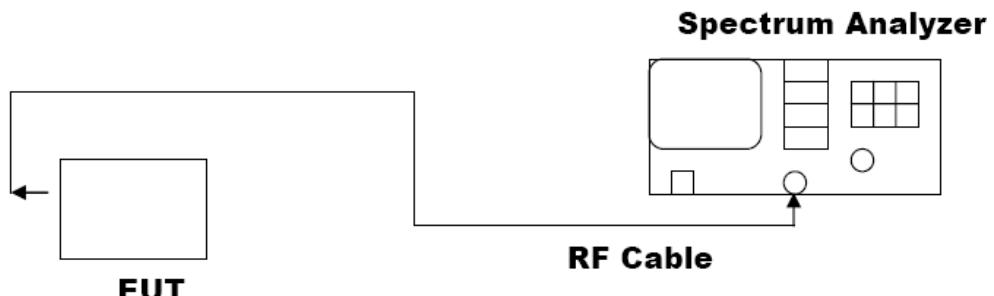


## 7 MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

### 7.1 MEASUREMENT PROCEDURE

- (1). The EUT was placed on a turn table which is 0.8m above ground plane.
- (2). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (3). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (4). Set SPA Centre Frequency = Operation Frequency, RBW= 3 KHz,  
VBW= 30 KHz., Sweep time= Auto
- (5). Set SPA Trace 1 Max hold, then View.

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



### 7.3 MEASUREMENT EQUIPMENT USED

SHIELDING ROOM					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4440A	N/A	06/27/2011	06/26/2012

### 7.4 LIMITS AND MEASUREMENT RESULT

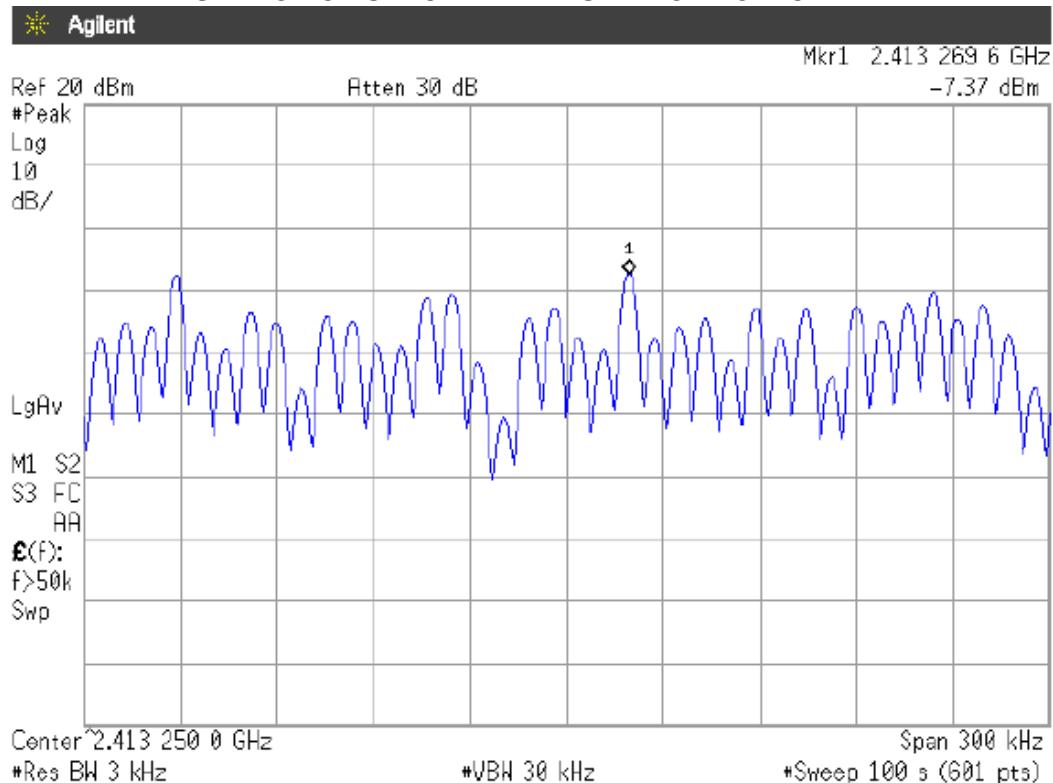
802.11b

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (dBm/3KHz)		Criteria
8 dBm / 3KHz	Low Channel	-7.37	Pass
	Middle Channel	-8.13	Pass
	High Channel	-9.22	Pass

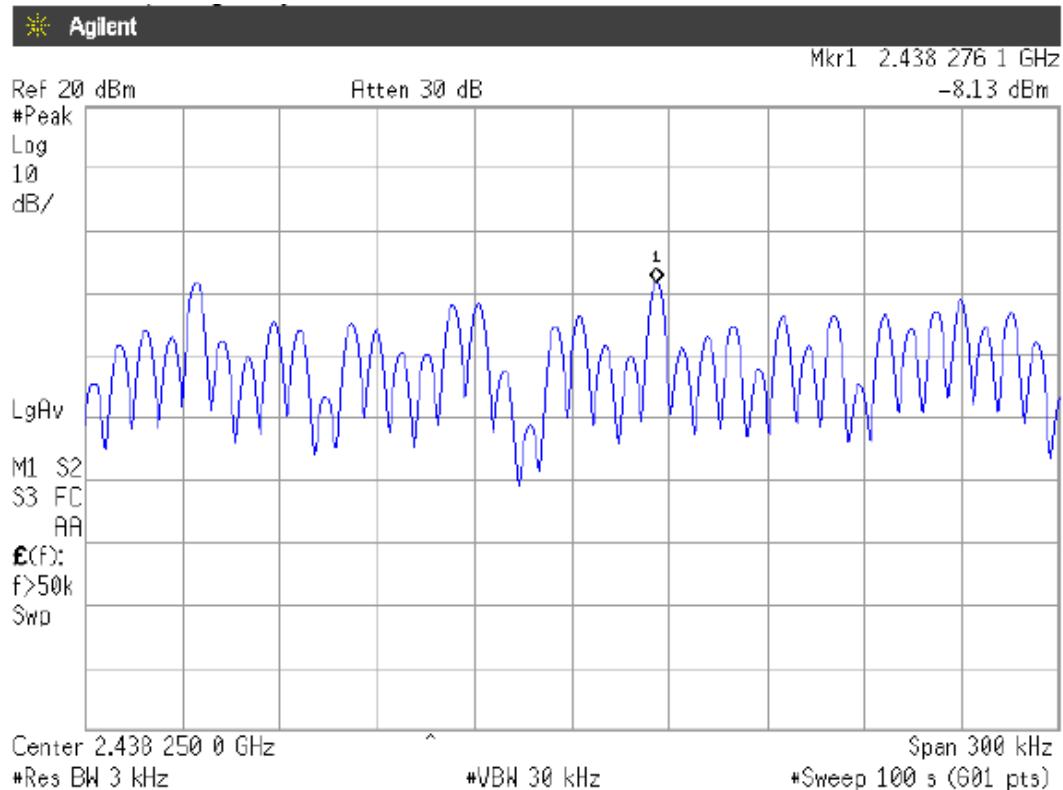
802.11g

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (dBm/3KHz)	Criteria	
8 dBm / 3KHz	Low Channel	-13.46	Pass
	Middle Channel	-15.09	Pass
	High Channel	-15.23	Pass

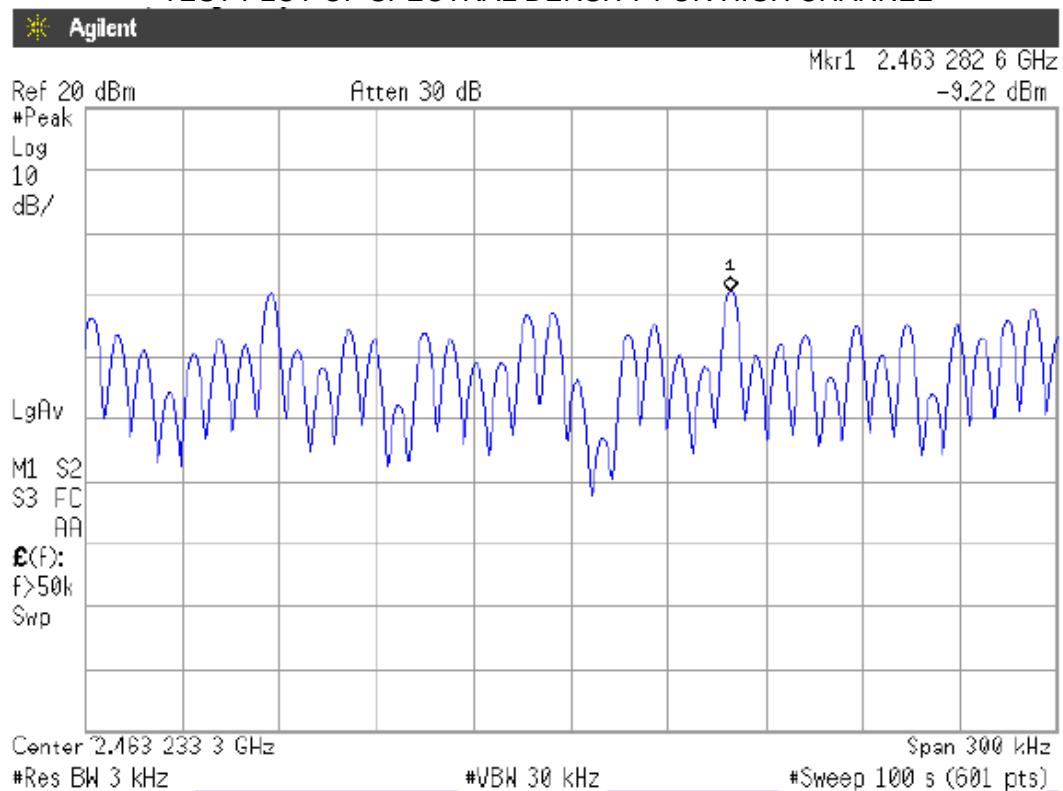
802.11b TEST RESULT  
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



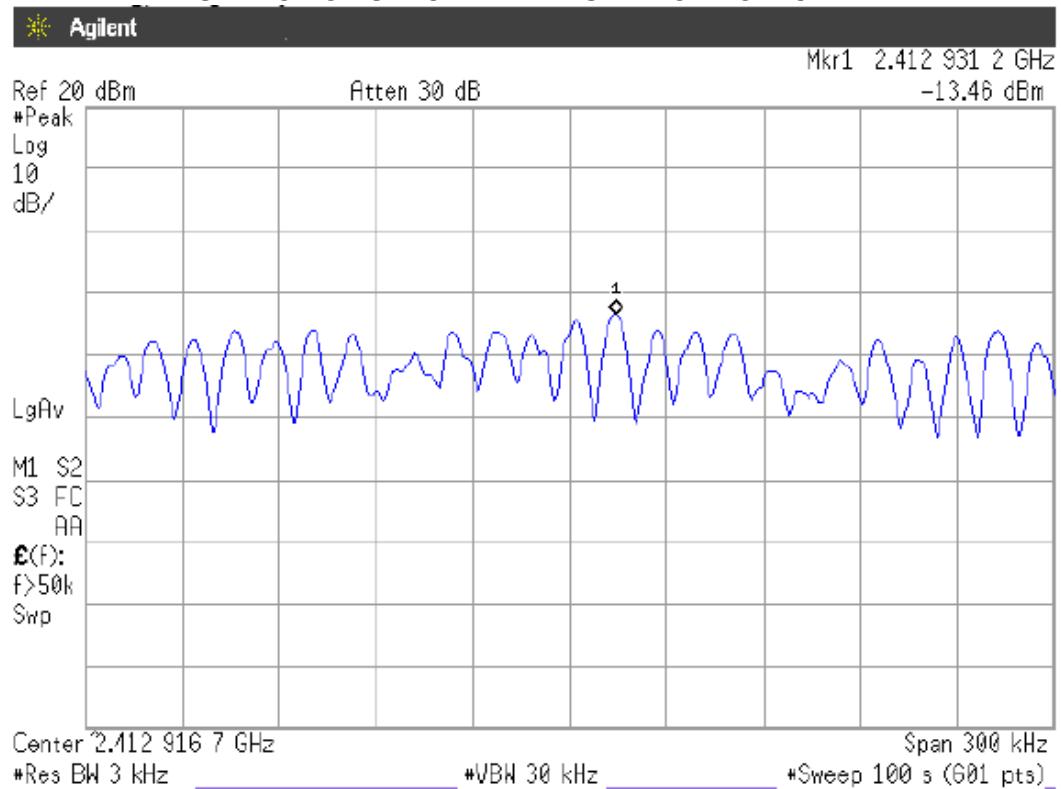
TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



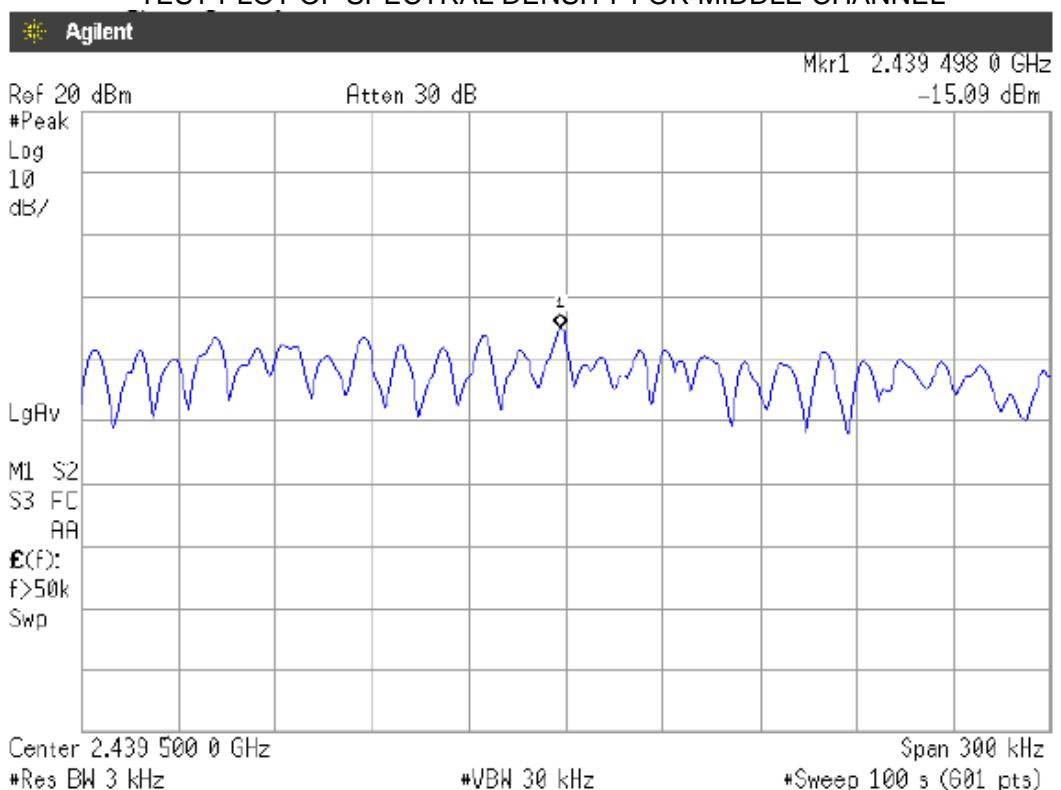
TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

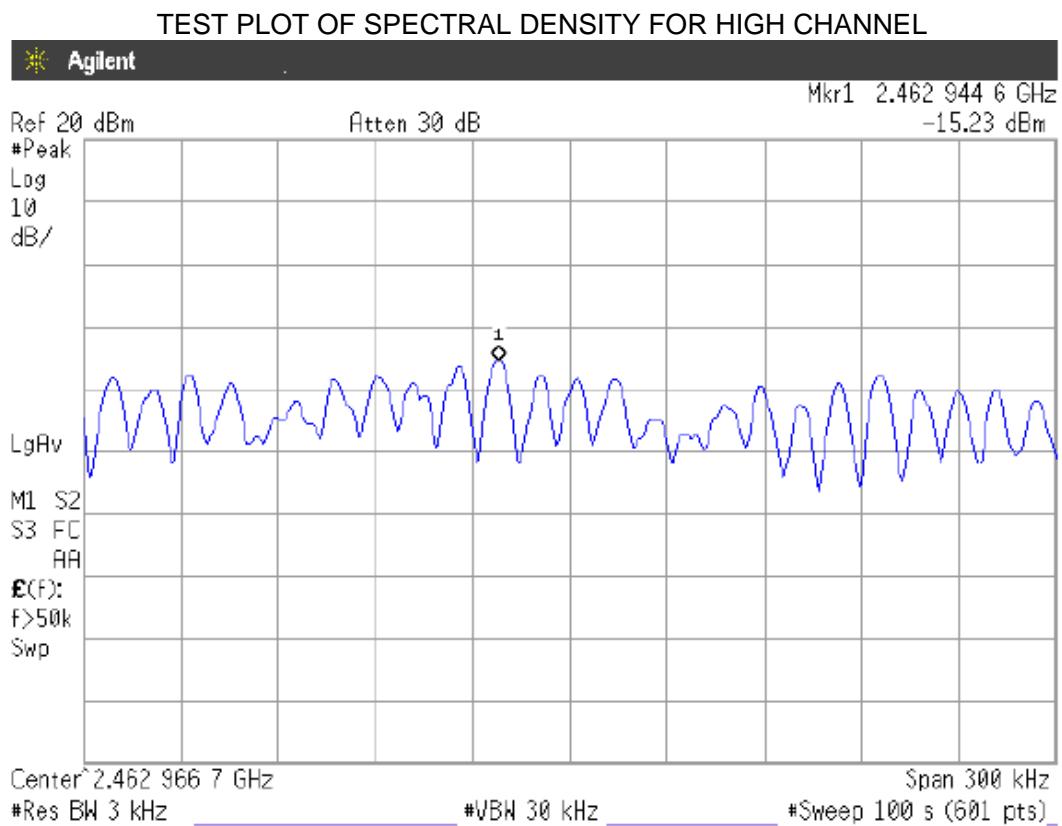


802.11g TEST RESULT  
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL





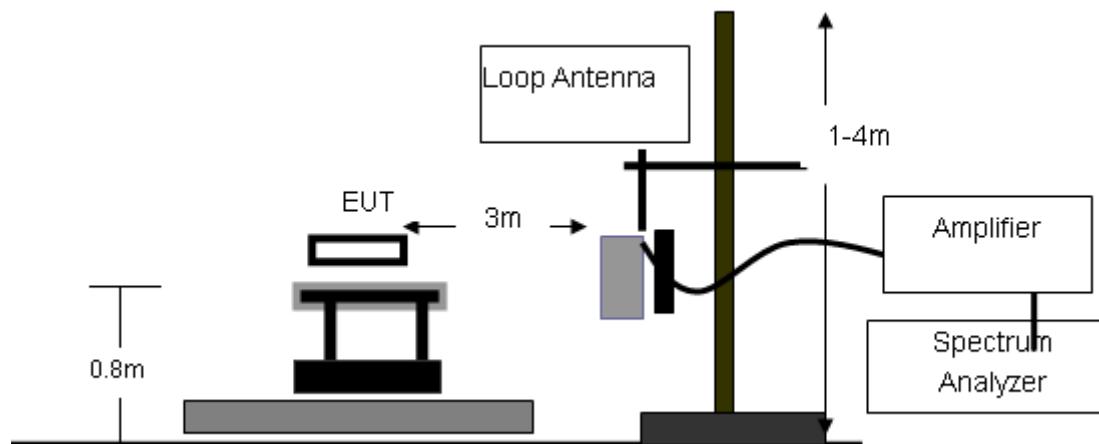
## 8 RADIATED EMISSION MEASUREMENT

### 8.1 MEASUREMENT PROCEDURE

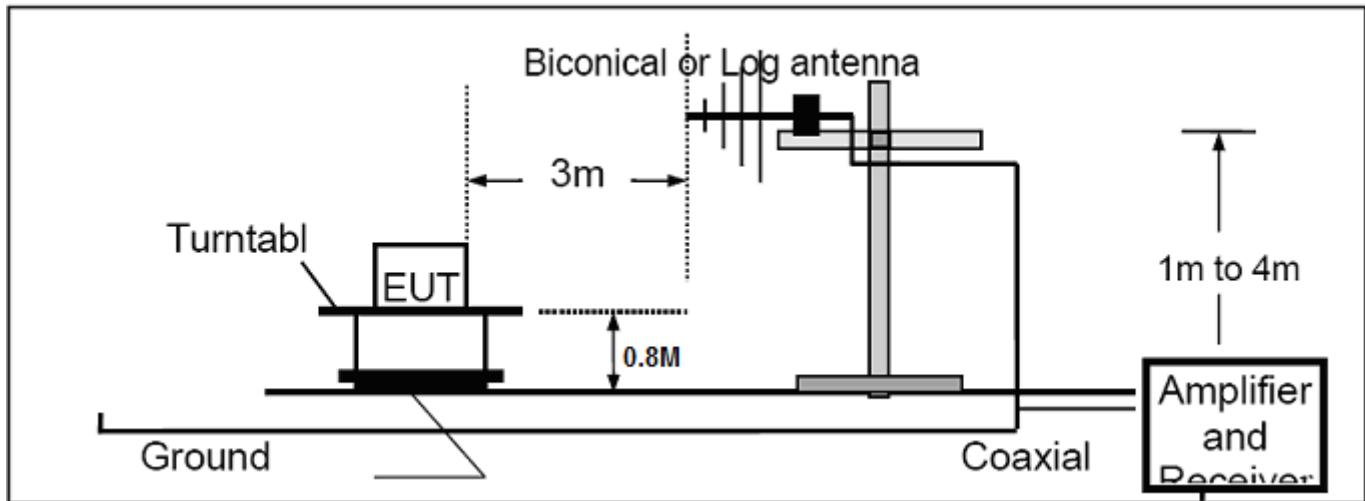
- 1 Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 Meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2 Power on the EUT and all the supporting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

### 8.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

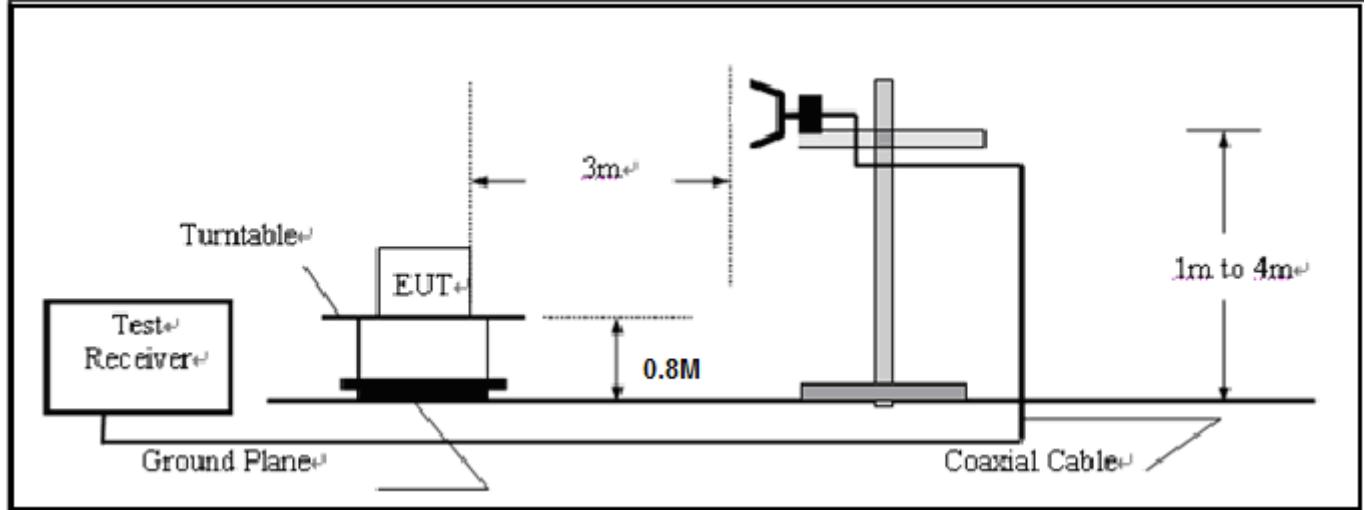
RADIATED EMISSION TEST SETUP BELOW 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



**8.3 MEASUREMENT EQUIPMENT USED**

Description	Manufacturer	Model	SERIAL NUMBER	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	N/A	06/27/2011	06/26/2012
Amplifier	EM	EM30180	0607030	06/27/2011	06/26/2012
Horn Antenna	EM	EM-AH-10180	N/A	06/27/2011	06/26/2012
Amplifier	EM	EM30180	N/A	06/27/2011	06/26/2012
Biological Antenna	A.H. Systems Inc.	SAS-521-4	N/A	06/27/2011	06/26/2012
Loop Antenna	Daze	ZN30900N	SEL0097	06/27/2011	06/26/2012
Isolation Transformer	LETEAC	LTBK	--	06/27/2011	06/26/2012

#### 8.4 LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test Data	Criteria
<p>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 100KHz bandwidth within the band that contains the highest level of the desired power.</p> <p>In addition, radiation emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in§15.209(a))</p>	At least -20dBc than the limit Specified on the BOTTOM Channel	PASS
	At least -20dBc than the limit Specified on the TOP Channel	PASS

15.209(a) Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

### RADIATED EMISSION BELOW 30MHZ

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

### RADIATED EMISSION BELOW 1GHZ

EUT	GSM mobile phone/Cell phone (Orbit)	Model Name	QM-G2GFQ2BK
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	2412MHZ	Modulation	802.11b

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
80.12	H	Peak	14.58	14.22	29.80	40	-11.2
114.36	H	Peak	15.86	12.41	29.74	43.5	-15.23
143.26	H	Peak	12.00	14.65	28.66	43.5	-16.85
220.63	H	Peak	13.75	18.55	33.30	46	-13.7
300.12	H	Peak	9.93	21.27	34.20	46	-14.8
412.03	H	Peak	8.41	19.15	34.56	46	-18.44
81.69	V	Peak	17.21	10.12	25.71	40	-12.67
126.53	V	Peak	18.16	11.36	26.93	43.5	-13.98
135.01	V	Peak	16.38	14.00	32.75	43.5	-13.12
245.13	V	Peak	15.31	17.14	32.05	46	-13.55
270.62	V	Peak	5.79	21.29	30.90	46	-18.92
506.35	V	Peak	4.86	22.42	30.62	46	-18.72

EUT	GSM mobile phone/Cell phone (Orbit)	Model Name	QM-G2GFQ2BK
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	2442MHZ	Modulation	802.11b

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
--	H	Peak	--	--	--	--	--
--	H	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--

EUT	Mobile Phone	Model Name	NERO
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	2462MHZ	Modulation	802.11b

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
--	H	Peak	--	--	--	--	--
--	H	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--

EUT	GSM mobile phone/Cell phone (Orbit)	Model Name	QM-G2GFQ2BK
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	2412/2437/2462MHZ	Modulation	802.11g

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
--	H	Peak	--	--	--	--	--
--	H	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--

**Note:** 802.11B the data rate 1Mbps, 802.11g the data rate 6Mbps for worst condition. The worst test result was 802.11B with data rate 1Mbps for channel 1, only the worst test result was reported.

--“means the mode other frequencies at least have 20dB margin.

## RADIATED EMISSION ABOVE 1GHZ

EUT	GSM mobile phone/Cell phone (Orbit)	Model Name	QM-G2GFQ2BK
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	2412MHZ	Modulation	802.11b

EUT	GSM mobile phone/Cell phone (Orbit)	Model Name	QM-G2GFQ2BK
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	2442MHZ	Modulation	802.11b

EUT	GSM mobile phone/Cell phone (Orbit)		Model Name		QM-G2GFQ2BK	
Temperature	25° C		Relative Humidity		55.4%	
Pressure	960hPa		Test Voltage		DC3.7V	
Test Mode	2462MHZ		Modulation		802.11b	

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
--	H	--	--	--	--	--	--	--	--
--	H	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--

EUT	GSM mobile phone/Cell phone (Orbit)		Model Name		NERO	
Temperature	25° C		Relative Humidity		55.4%	
Pressure	960hPa		Test Voltage		DC3.7V	
Test Mode	2412/2437/2462MHZ		Modulation		802.11g	

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
--	H	--	--	--	--	--	--	--	--
--	H	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--

**Note:** 802.11B the data rate 1Mbps, 802.11g the data rate 6Mbps for worst condition. The worst test result was 802.11B with data rate 1Mbps for channel 1, only the worst test result was reported.

--"means the mode at least have 20dB margin.

## 9 BAND EDGE EMISSION

### 9.1 MEASUREMENT PROCEDURE

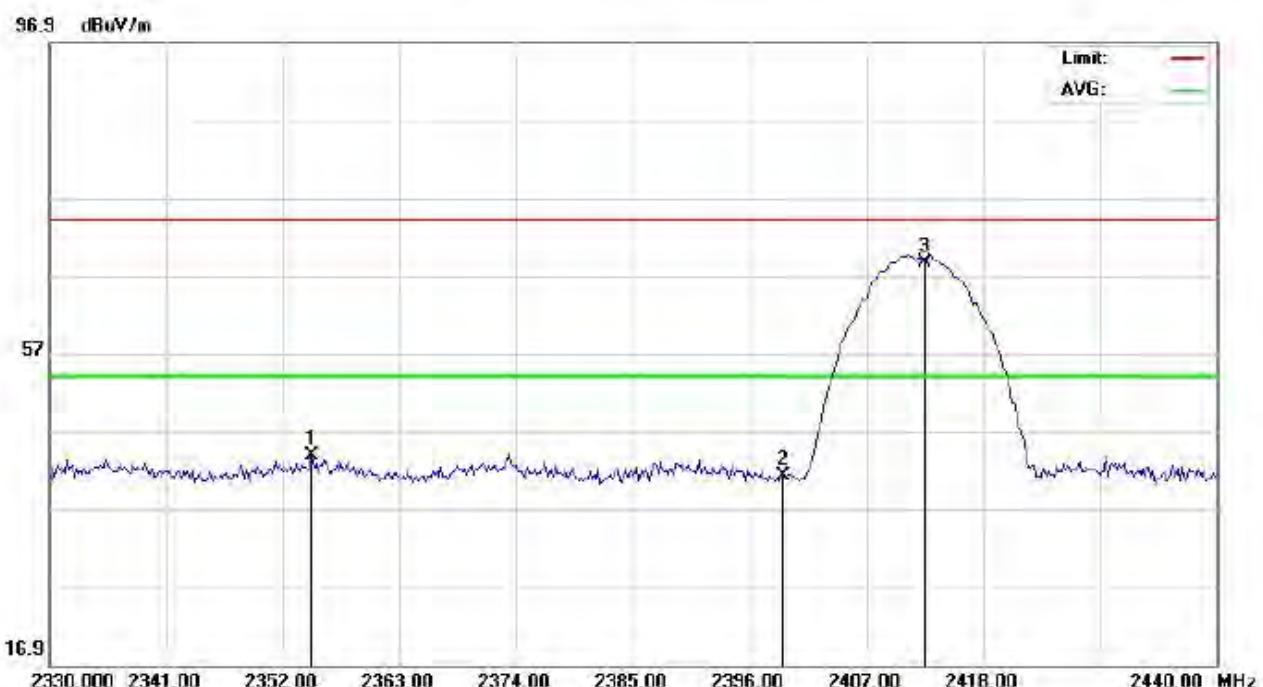
1. Set the EUT Work on the top, the bottom operation frequency individually.
2. Set SPA Start or Stop Frequency = Operation Frequency, RBW= 1MHz, VBW= 1MHz.
3. The band edges was measured and recorded.

### 9.2 TEST SET-UP

The Same as described in section 8.2

### 9.3 TEST RESULT

802.11b TEST PLOT OF BAND EDGE FOR LOW CHANNEL-VERTICAL  
Radiated Emission Measurement



Site: site #1 Polarization: **Vertical** Temperature: 26

Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT: Distance: 3m

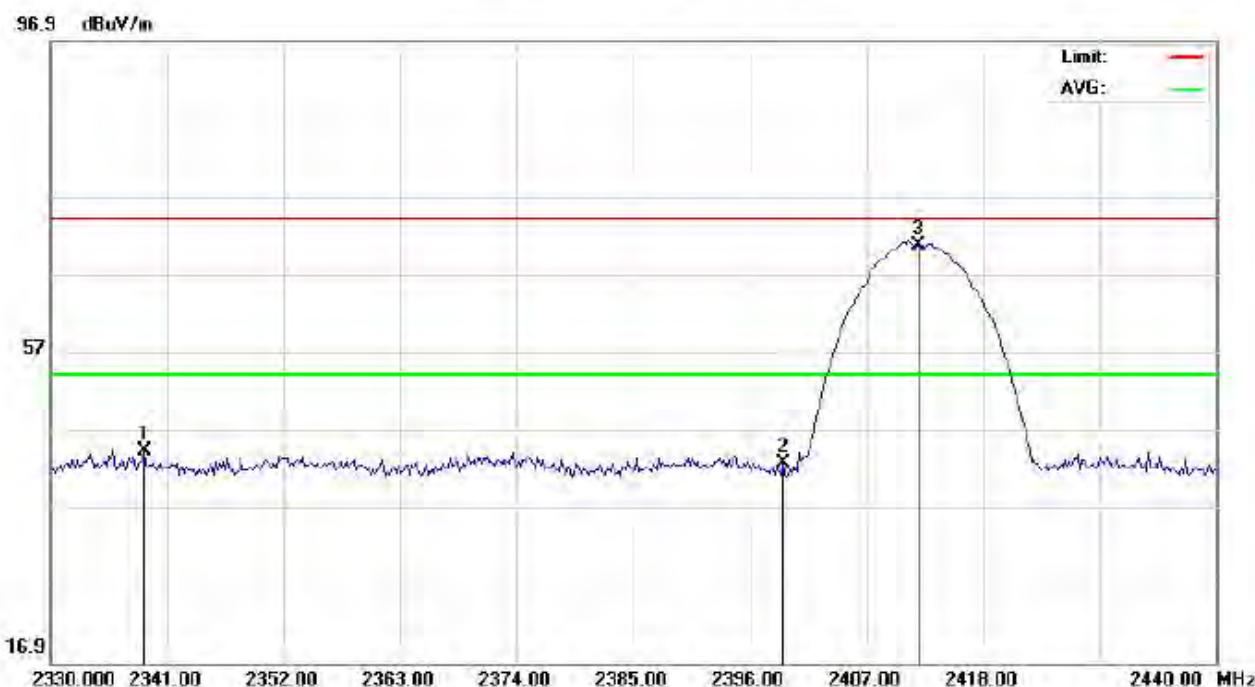
M/N:

Mode:802.11B Channel1

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2354.750	43.56	0.27	43.83	74.00	-30.17	peak			
2		2399.117	40.88	0.32	41.20	74.00	-32.80	peak			
3	*	2412.500	68.21	0.33	68.54	74.00	-5.46	peak			

802.11b TEST PLOT OF BAND EDGE FOR LOW CHANNEL-HORIZONTAL  
Radiated Emission Measurement

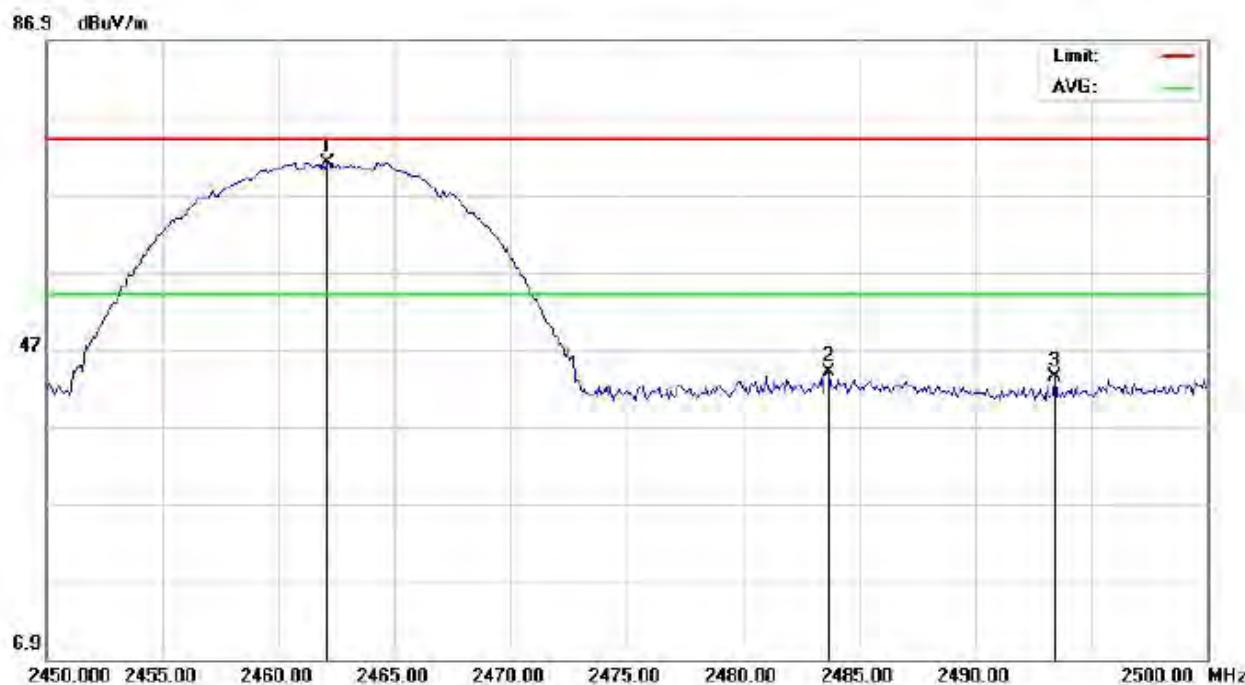


Site: site #1 Polarization: *Horizontal* Temperature: 26  
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %  
EUT: Distance: 3m  
M/N:  
Mode:802.11B Channel 1  
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2338.800	43.89	0.25	44.14	74.00	-29.86	peak			
2		2399.117	42.26	0.32	42.58	74.00	-31.42	peak			
3	*	2411.950	70.32	0.33	70.65	74.00	-3.35	peak			

802.11bTEST PLOT OF BAND EDGE FOR HIGH CHANNEL-VERTIACAL

Radiated Emission Measurement



---

Site: site #1 Polarization: **Vertical** Temperature: 26  
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %  
EUT: Distance: 3m  
M/N:  
Mode: 802.11B channel 11  
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2462.083	70.70	0.39	71.09	74.00	-2.91	peak			
2		2483.667	43.54	0.41	43.95	74.00	-30.05	peak			
3		2493.417	43.00	0.42	43.42	74.00	-30.58	peak			

802.11b TEST PLOT OF BAND EDGE FOR HIGH CHANNEL-HORIZONTAL

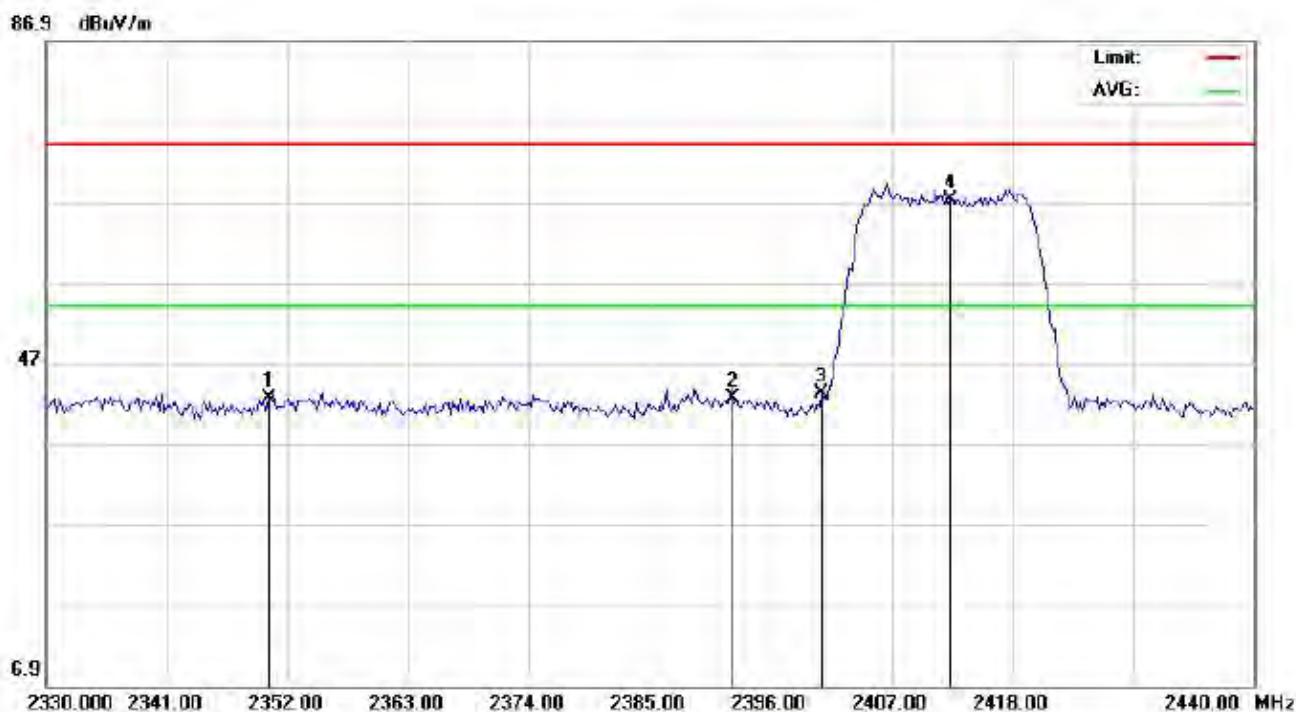
Radiated Emission Measurement



Site: site #1 Polarization: *Horizontal* Temperature: 26  
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %  
EUT: Distance: 3m  
M/N:  
Mode: 802.11B Channel11  
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2462.000	66.04	0.39	66.43	74.00	-7.57	peak			
2		2483.417	42.46	0.41	42.87	74.00	-31.13	peak			
3		2496.917	43.46	0.43	43.89	74.00	-30.11	peak			

802.11g TEST PLOT OF BAND EDGE FOR LOW CHANNEL-VERTICAL  
Radiated Emission Measurement



Site: site #1 Polarization: **Vertical** Temperature: 26

Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT: Distance: 3m

M/N:

Mode: 802.11G Channel 1

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2350.350	42.26	0.27	42.53	74.00	-31.47	peak			
2		2392.517	42.34	0.31	42.65	74.00	-31.35	peak			
3		2400.583	42.79	0.32	43.11	74.00	-30.89	peak			
4	*	2412.317	66.83	0.33	67.16	74.00	-6.84	peak			

## 802.11g TEST PLOT OF BAND EDGE FOR LOW CHANNEL-HORIZONTAL Radiated Emission Measurement

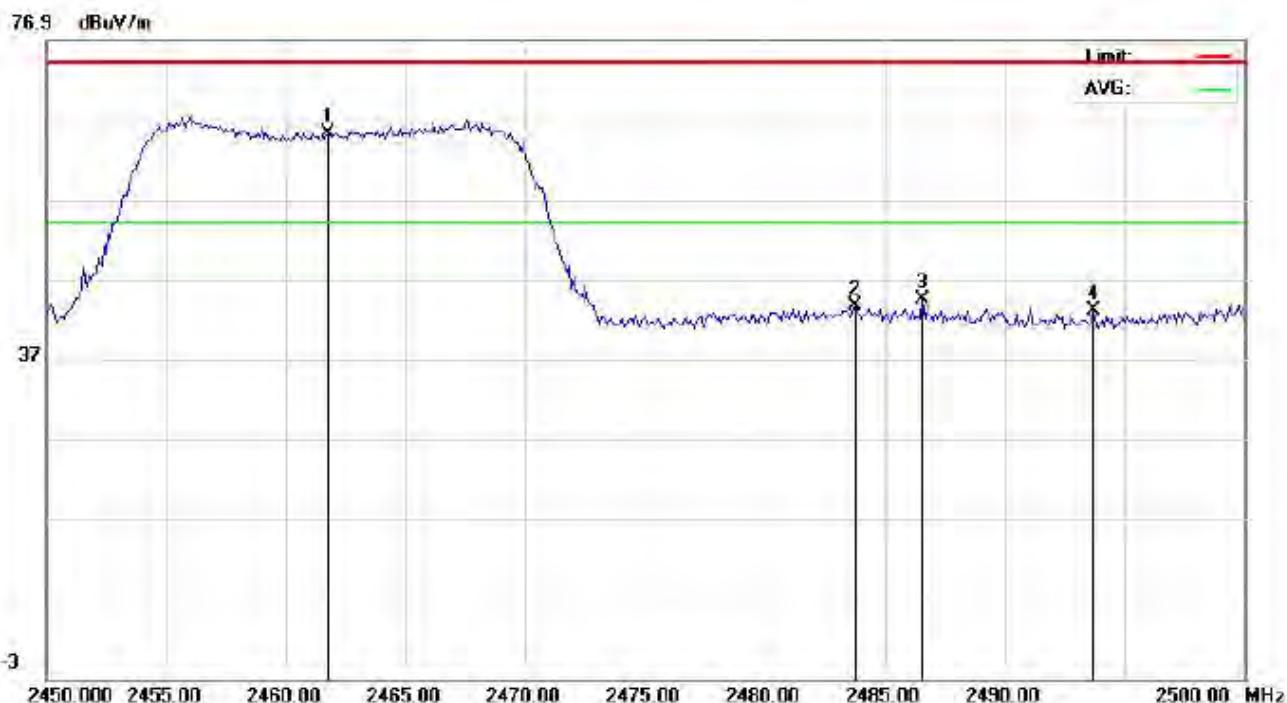


Site: site #1 Polarization: **Horizontal** Temperature: 26  
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %  
EUT: Distance: 3m  
M/N:  
Mode:802.11G Channel 1  
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2354.200	43.60	0.27	43.87	74.00	-30.13	peak			
2		2400.033	42.62	0.32	42.94	74.00	-31.06	peak			
3	*	2412.133	67.05	0.33	67.38	74.00	-6.62	peak			

802.11g TEST PLOT OF BAND EDGE FOR HIGH CHANNEL-VERTICAL

Radiated Emission Measurement



Site: site #1 Polarization: *Vertical* Temperature: 26

Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT: Distance: 3m

M/N:

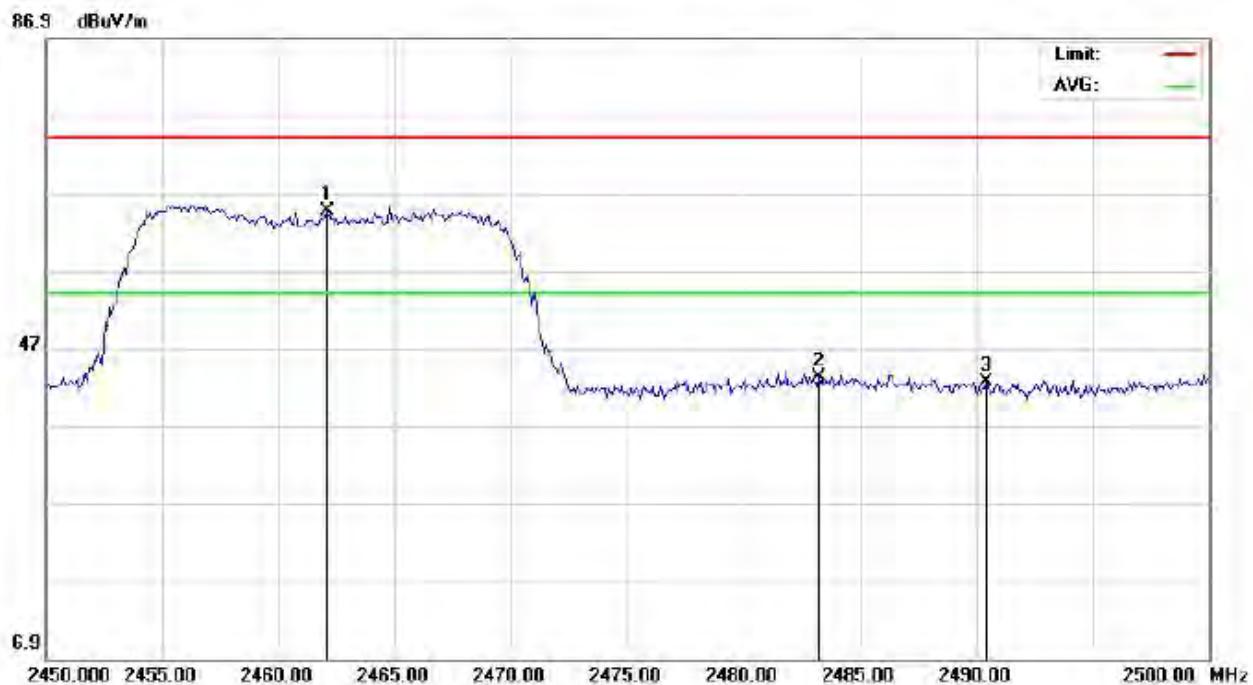
Mode: 802.11G Channel 11

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2461.750	64.89	0.39	65.28	74.00	-8.72	peak			
2		2483.750	43.23	0.41	43.64	74.00	-30.36	peak			
3		2486.583	44.07	0.42	44.49	74.00	-29.51	peak			
4		2493.667	42.62	0.42	43.04	74.00	-30.96	peak			

802.11g TEST PLOT OF BAND EDGE FOR HIGH CHANNEL-HORIZONTAL

Radiated Emission Measurement



Site: site #1 Polarization: *Horizontal* Temperature: 26  
 Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N:  
 Mode:802.11G Channel 11  
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2462.083	64.22	0.39	64.61	74.00	-9.39	peak			
2		2483.250	42.71	0.41	43.12	74.00	-30.88	peak			
3		2490.417	42.16	0.42	42.58	74.00	-31.42	peak			

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
- 3.802.11B is 1Mbps, 802.11g is 6Mbps for worst condition.

## 10 FCC LINE CONDUCTED EMISSION TEST

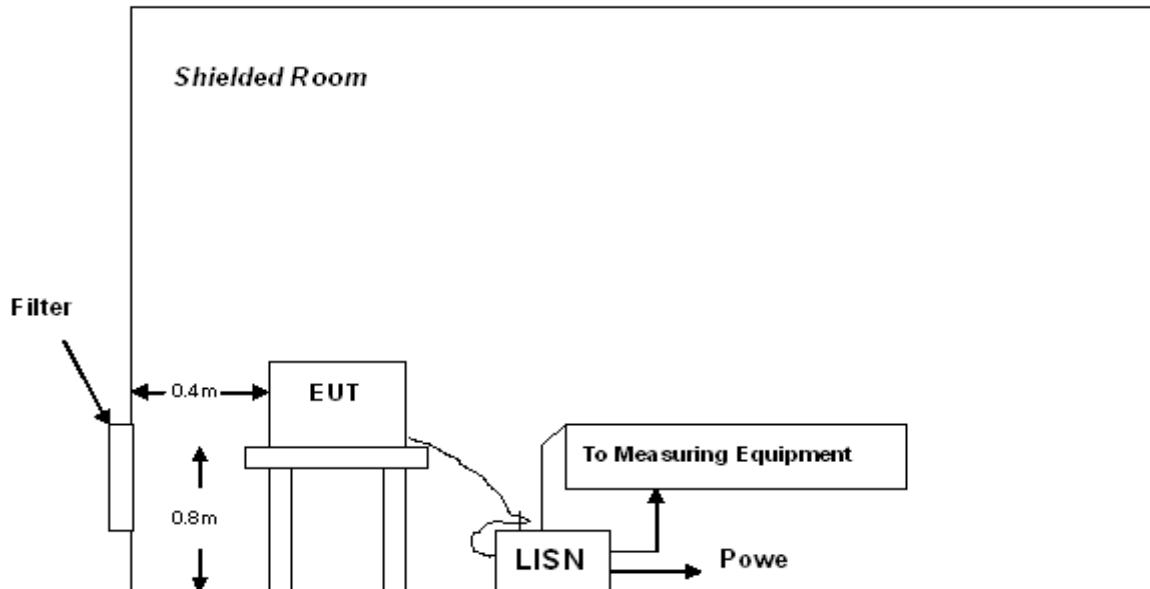
### 10.1 LIMITS OF LINE CONDUCTED EMISSION TEST

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

\*\*Note: 1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

### 10.2 BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



A: Powered through filter

### 10.3 PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) The EUT charged by adapter which received 120V power from a LISN.
- 5) All support equipments received AC120V power from a second LISN, if any
- 6) The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8) During the above scans, the emissions were maximized by cable manipulation.
- 9) The following test mode(s) were scanned during the preliminary test:

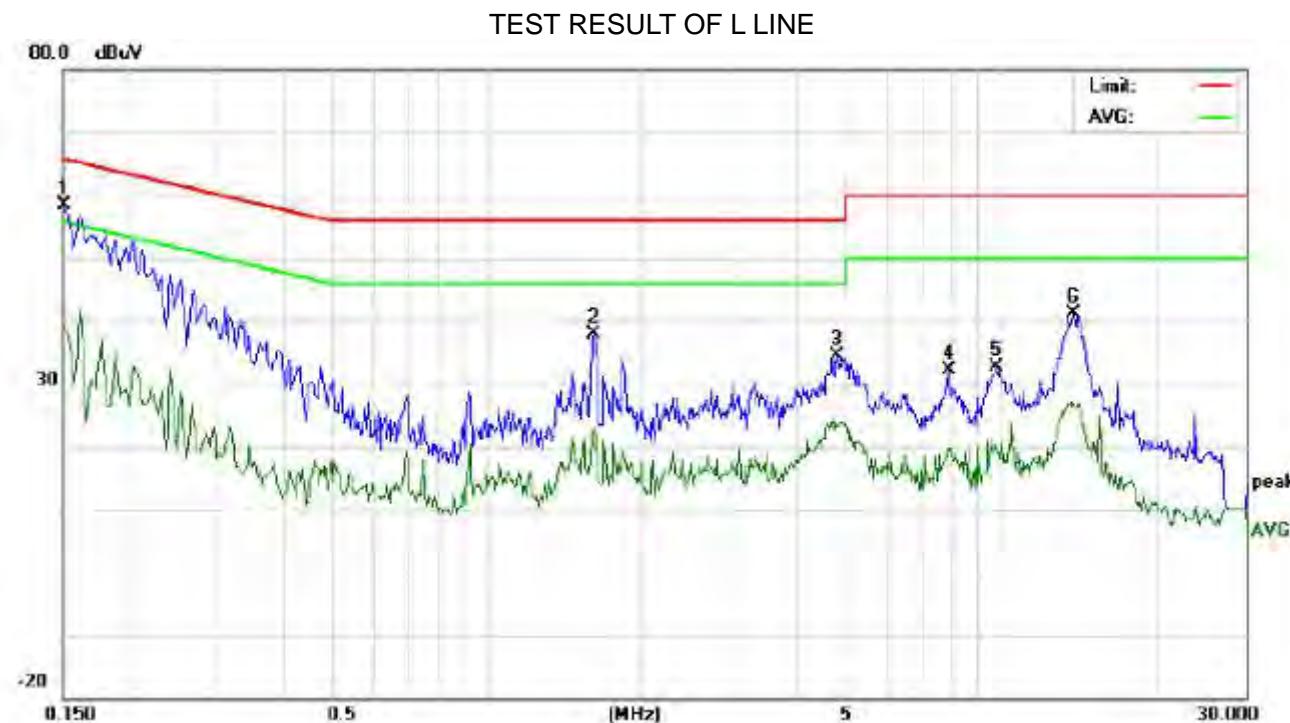
Preliminary Line Conducted Emission Test				
Frequency Range Investigated		150 KHz TO 30 MHz		
Mode of operation	Date	Report No.	Data#	Worst Mode
802.11b	07/22/2011	AGC14G120401-2	QM-G2GFQ2BK -0	<input checked="" type="checkbox"/>
802.11g	07/22/2011	AGC14G120401-2	QM-G2GFQ2BK -1	<input type="checkbox"/>

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

### 10.4 FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1) EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3) The test data of the worst case condition(s) was reported on the Summary Data page.

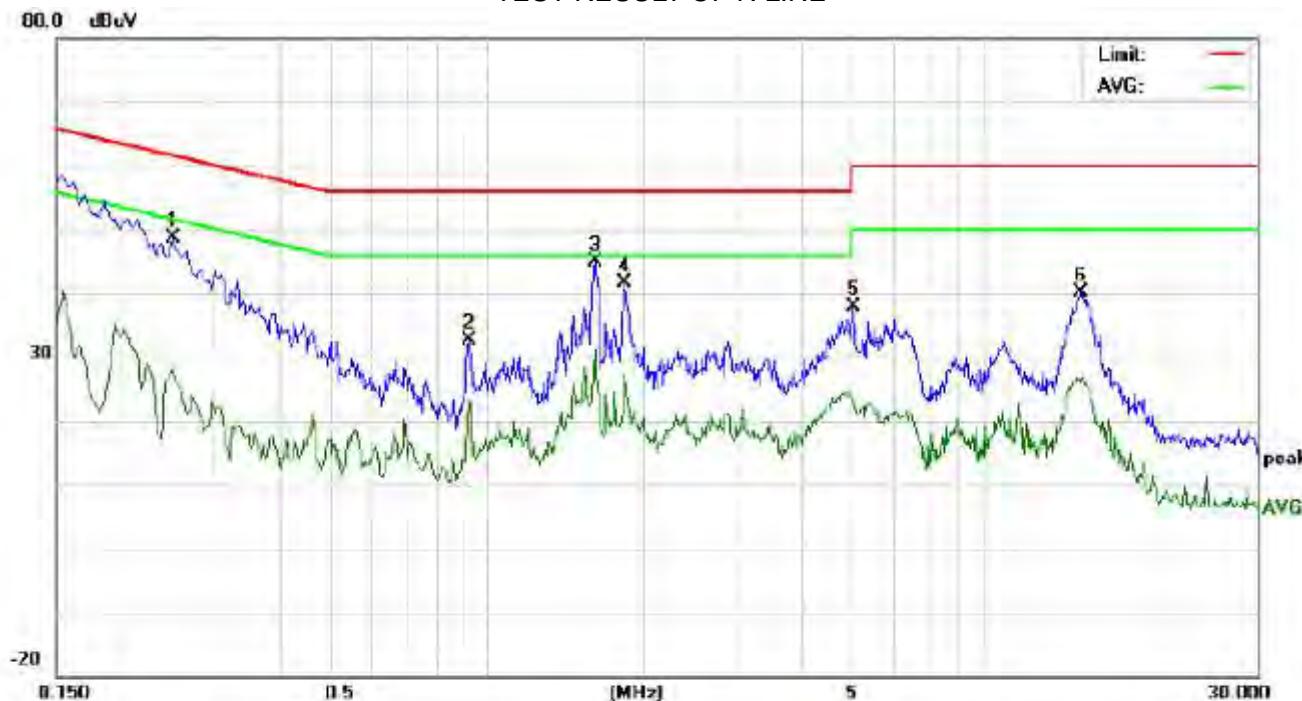
## 10.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST



Site: Conduction Phase: L1 Temperature: 26  
 Limit: FCC Class B Conduction(QP) Power: Humidity: 60 %  
 EUT:  
 M/N:  
 Mode: 802.11b  
 Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1516	48.14		29.25	10.16	58.30		39.41	65.91	55.91	-7.61	-16.50	P	
2	1.6220	27.53		11.94	10.34	37.87		22.28	56.00	46.00	-18.13	-23.72	P	
3	4.8020	24.02		13.22	10.23	34.25		23.45	56.00	46.00	-21.75	-22.55	P	
4	7.9340	21.73		9.47	10.35	32.08		19.82	60.00	50.00	-27.92	-30.18	P	
5	9.8100	22.44		9.57	10.20	32.64		19.77	60.00	50.00	-27.36	-30.23	P	
6	13.8860	30.97		16.72	10.12	41.09		26.84	60.00	50.00	-18.91	-23.16	P	

TEST RESULT OF N LINE



Site: Conduction Phase: **N** Temperature: 26  
 Limit: FCC Class B Conduction(QP) Power: Humidity: 60 %  
 EUT:  
 M/N:  
 Mode: 802.11b  
 Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2500	38.34		17.80	10.27	48.61		28.07	61.75	51.75	-13.14	-23.68	P	
2	0.9260	22.35		12.79	10.40	32.75		23.19	56.00	46.00	-23.25	-22.81	P	
3	1.6180	34.44		20.77	10.34	44.78		31.11	56.00	46.00	-11.22	-14.89	P	
4	1.8420	31.31		17.06	10.27	41.58		27.33	56.00	46.00	-14.42	-18.67	P	
5	5.0540	27.65		13.10	10.24	37.89		23.34	60.00	50.00	-22.11	-26.66	P	
6	13.8060	30.12		15.97	10.12	40.24		26.09	60.00	50.00	-19.76	-23.91	P	

**APPENDIX I**  
**PHOTOGRAPHS OF THE EUT**  
**TOP VIEW OF SAMPLE**



**BOTTOM VIEW OF SAMPLE**



LEFT VIEW OF SAMPLE



RIGHT VIEW OF SAMPLE



FRONT VIEW OF SAMPLE



BACK VIEW OF SAMPLE



ALL VIEW OF SAMPLE



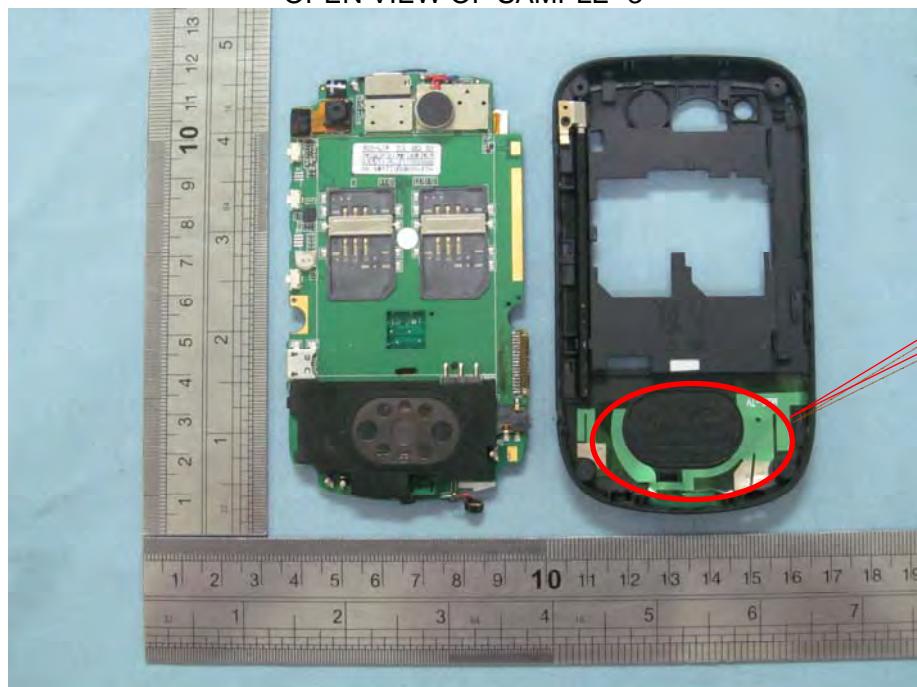
OPEN VIEW OF SAMPLE-1



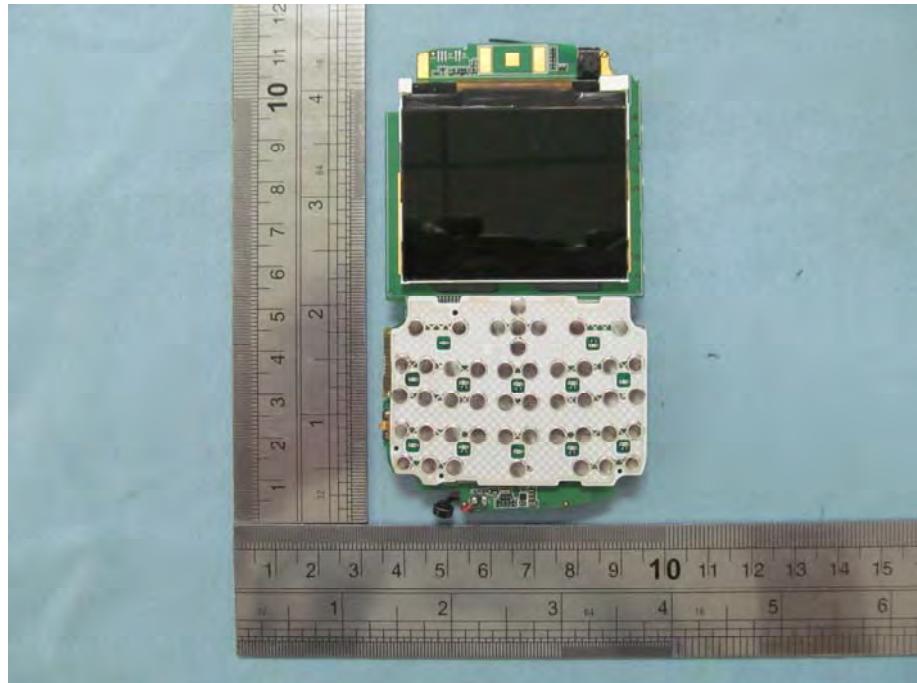
OPEN VIEW OF SAMPLE-2



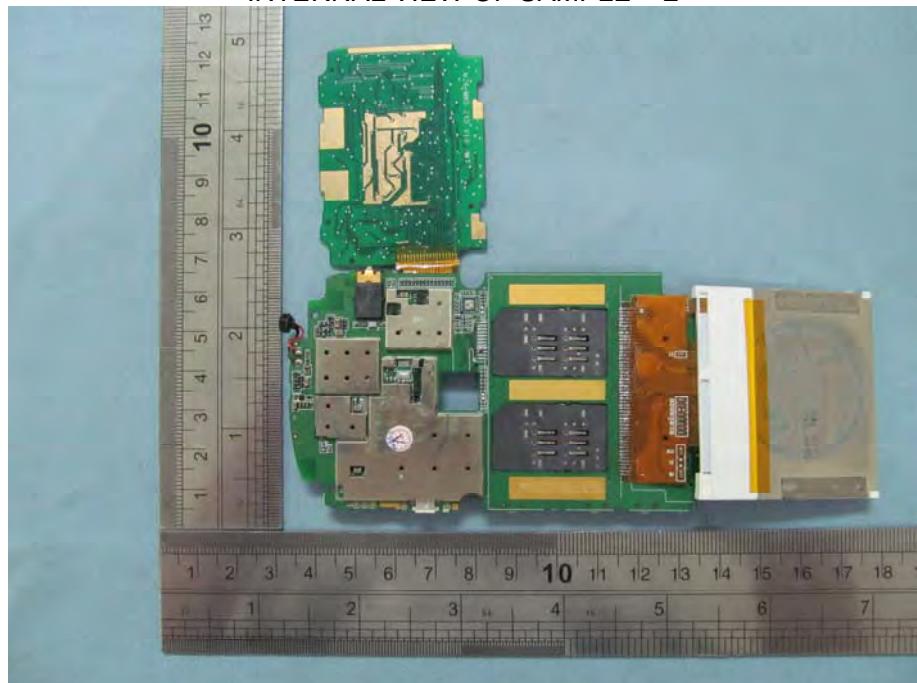
OPEN VIEW OF SAMPLE -3



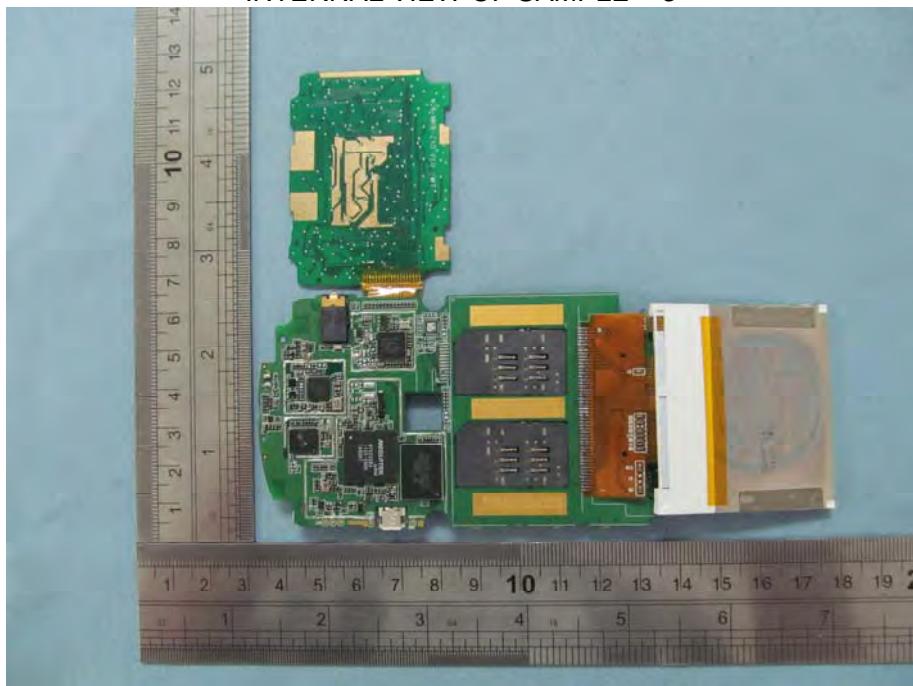
INTERNAL VIEW OF SAMPLE – 1



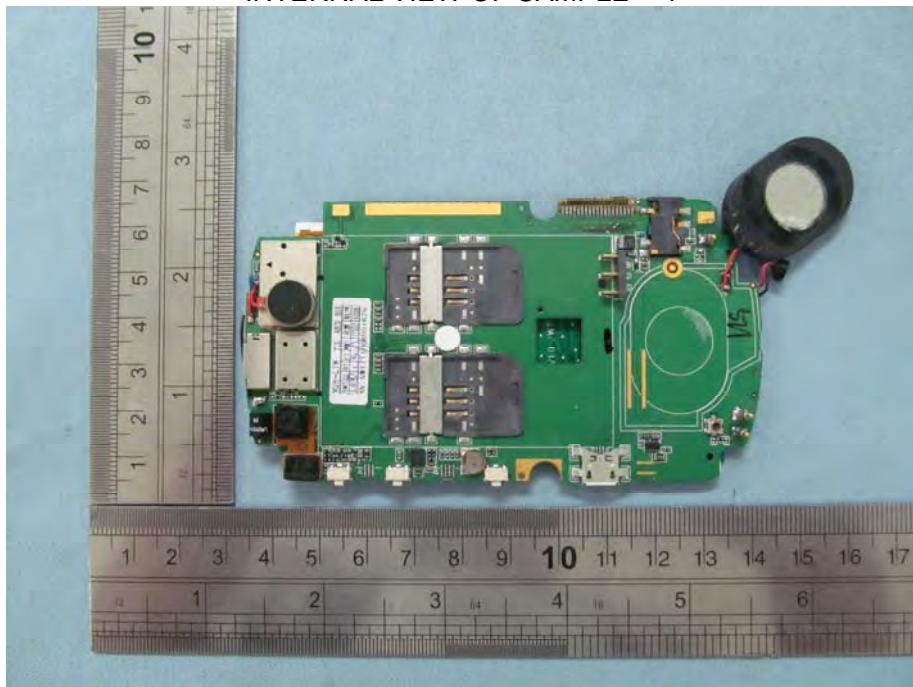
INTERNAL VIEW OF SAMPLE – 2



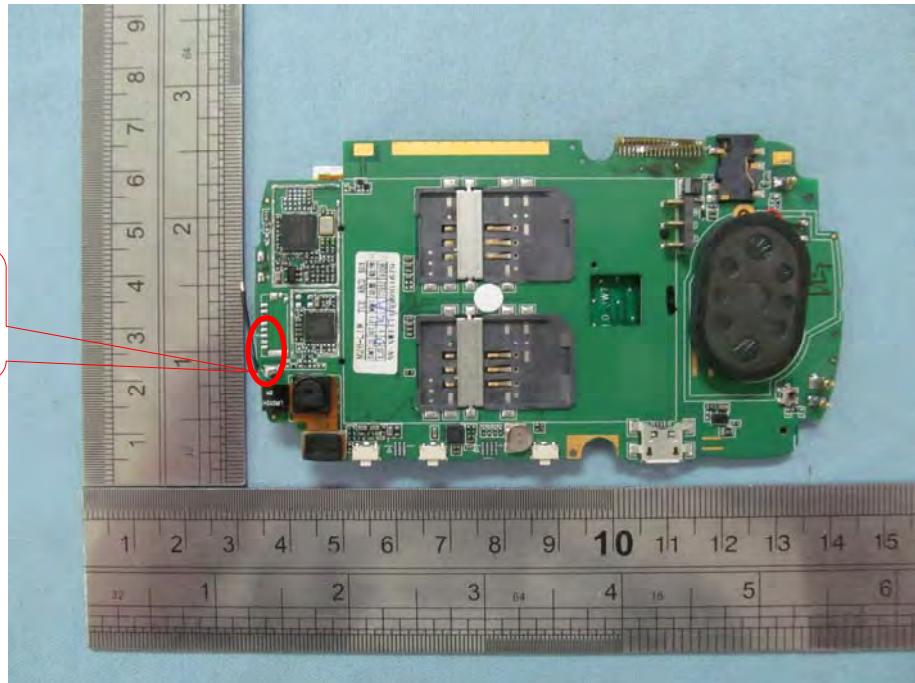
INTERNAL VIEW OF SAMPLE – 3



INTERNAL VIEW OF SAMPLE – 4



INTERNAL VIEW OF SAMPLE – 5



**APPENDIX II**  
**PHOTOGRAPHS OF THE TEST SETUP**

**CONDUCTED EMISSION**



**RADIATED SPURIOUS EMISSION**



**---END OF REPORT---**