FCC Test Report

Report No.: AGCX1Y121102F2C

FCC ID	:	Q34-D100
PRODUCT DESIGNATION	:	Mobile Phone
BRAND NAME	:	Argom
MODEL NAME	:	D100
CLIENT	:	Star Computer Group
DATE OF ISSUE	:	Dec.03,2012
STANDARD(S)	:	FCC Part 15 Rules
REPORT VERSION	:	V1.0

Attestation of ***G***lobal ***C***ompliance (Shenzhen) Co., Ltd.

VERIFICATION OF COMPLIANCE

Applicant	Star Computer Group
	2175 Northwest 115th Ave. Doral, FL 33172, USA
Manufacturer	GPLUS TELECOM CO., LTD.
	2nd F., B Building, Jiada R&D Building 5 Langshan Rd., Hi-tech Industrial Park, Nanshan District, Shenzhen, P.R.China
Product Designation	Mobile Phone
Brand Name	Argom
Model Name	D100
FCC ID	Q34-D100
Report Number	AGCX1Y121102F2C
Date of Test	Nov.26,2012 to Nov.30,2012

WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) 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 requirement of FCC Part 15 Rules requirement.

Tested By: Bart Xie Dec.03,2012

Reviewed By: Forrest Lei Dec.03,2012

Approved By: Solger Zhang Dec.03,2012

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

The EUT is 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
Max. Output Power	11b:12.51dBm,11g:11.43dBm,11n(20):10.42dBm
Modulation	CCK/OFDM: BPSK,GPSK,16-QAM,64-QAM
Data Rate	DSSS(1/2/5.5/11),OFDM(6/9/12/18/24/36/48/54) See section 1.3 for 802.11n
Number of channels	11
Antenna Designation	Integrated Antenna
Antenna Gain	Antenna (max): 0.8dBi
Power Supply	DC 3.7V by lithium battery

1.2 TABLE OF CARRIER FREQUENCYS

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	2442 MHZ
	8	2447 MHZ
	9	2452 MHZ
	10	2457 MHZ
	11	2462MHZ

Note: For 20MHZ bandwidth system use Channel 1 to Channel 11

1.3 IEEE 802.11N MODULATION SCHEME

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Data rate(Mbps)	
									800nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	guard interval

1.4 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: Q34-D100**, filing to comply with the FCC Part 15 requirements.

1.5 TEST METHODOLOGY

Because the EUT received power from DC3.7V lithium battery, so only radiated testing was performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.6 TEST FACILITY

The test site used to collect the radiated data is located on the address of Attestation of Global Compliance (Shenzhen) Co., Ltd. 2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 and IC requirements in documents RS212.
FCC register No.: 259865

1.7 SPECIAL ACCESSORIES

Refer to section 2.2.

1.8 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2. SYSTEM TEST CONFIGURATION

2.1 CONFIGURATION OF EUT SYSTEM

Configure 1: Configure 1 *Normal mode (WiFi)*

Configure 2 (Control continuous TX)

Note: All the accessories have been used during the test.

2.2 EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Mfr/Brand	Model/Type No.	Remark
1	Mobile Phone	Argom	D100	EUT
2	PC	Dell	Inpiron N4110	A.E

Note: the following "EUT" in setup diagram means EUT system.

3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Peak Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	Conducted Spurious Emission	Compliant
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Line Conduction Emission	Compliant

******Note:***
The EUT received power from DC3.7V lithium battery.

4. DESCRIPTION OF TEST MODES

TEST MODES
Low Channel(TX)
Middle Channel(TX)
High Channel(TX)
Normal (Wi-Fi)

Note: 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)
Transmit by 802.11n (20MHz) with Date rate(6.5/13/19.5/26/39/52/58.5/65)

Note: 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.
3. For Radiated Emission, 3 axis were chosen for testing for each applicable modes.

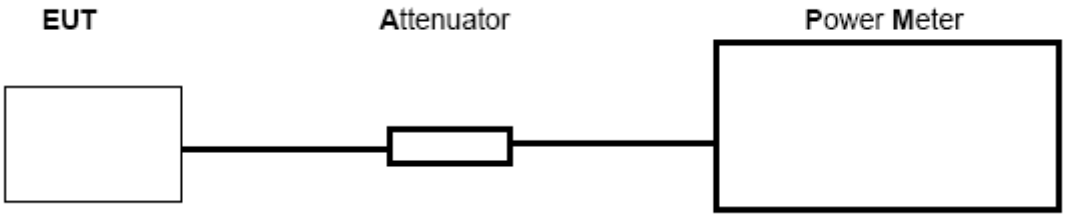
5. PEAK OUTPUT POWER

5.1 MEASUREMENT PROCEDURE

1. The EUT was placed on a 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.
6. The maximum peak power shall be less 1 Watt (30dBm).

Note：The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

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	R&S	NRP-Z23	N/A	07/18/2012	07/17/2013
RF attenuator	N/A	RFA20db	N/A	N/A	N/A
AGILENT	Agilent	E4440A	N/A	07/18/2012	07/17/2013

5.4 LIMITS AND MEASUREMENT RESULT

TEST ITEM	PEAK POWER
TEST MODE	802.11b with data rate 1

	LIMITS AND MEASUREMENT RESULT			
Frequency (GHz)	Average Power (dBm)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	11.43	12.38	30	Pass
2.437	11.39	12.41	30	Pass
2.462	11.47	12.51	30	Pass

TEST ITEM	PEAK POWER
TEST MODE	802.11g with data rate 6

	LIMITS AND MEASUREMENT RESULT			
Frequency (GHz)	Average Power (dBm)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	10.24	11.23	30	Pass
2.437	10.33	11.38	30	Pass
2.462	10.35	11.43	30	Pass

TEST ITEM	PEAK POWER
TEST MODE	802.11n 20 with data rate 6.5

	LIMITS AND MEASUREMENT RESULT			
Frequency (GHz)	Average Power (dBm)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	9.74	10.27	30	Pass
2.437	9.56	10.42	30	Pass
2.462	9.83	10.31	30	Pass

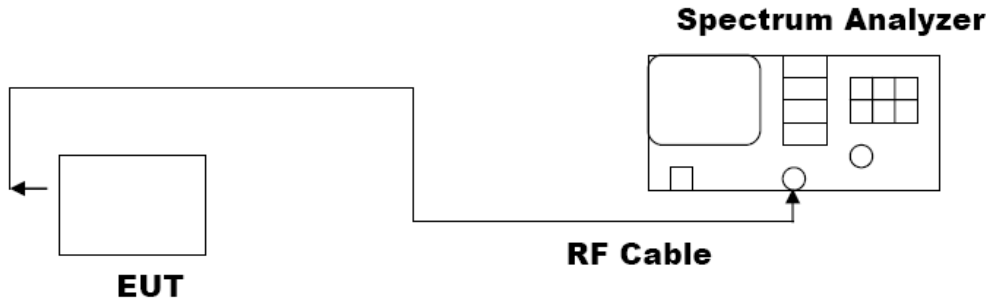
6. 6 DB BANDWIDTH

6.1 MEASUREMENT PROCEDURE

1. The EUT was placed on a 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≥RBW.
4. Set SPA Trace 1 Max hold, then View.

Note：The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



6.3 MEASUREMENT EQUIPMENT USED

Description	Manufacturer	Model	SERIAL NUMBER	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	N/A	07/18/2012	06/17/2013
RF attenuator	N/A	RFA20db	N/A	N/A	N/A

6.4 LIMITS AND MEASUREMENT RESULTS

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11b with data rate 11

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
>500KHZ	Low Channel	9.136	PASS
	Middle Channel	9.133	PASS
	High Channel	9.134	PASS

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11g with data rate 54

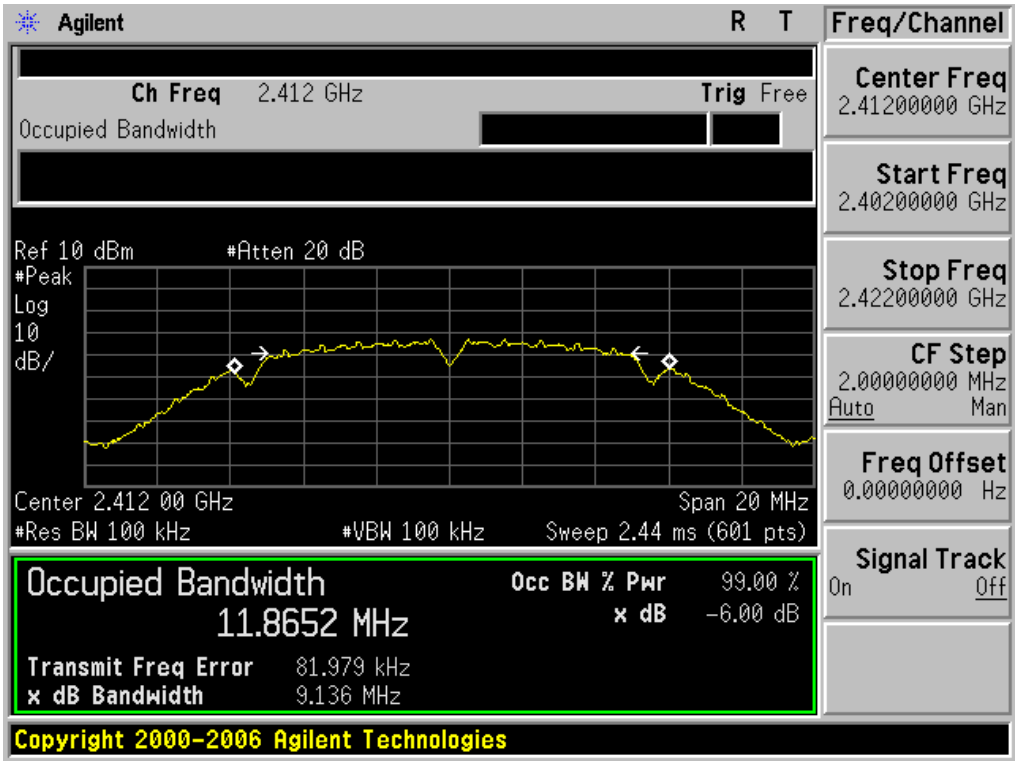
LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
>500KHZ	Low Channel	16.590	PASS
	Middle Channel	16.587	PASS
	High Channel	16.605	PASS

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11n 20 with data rate 65

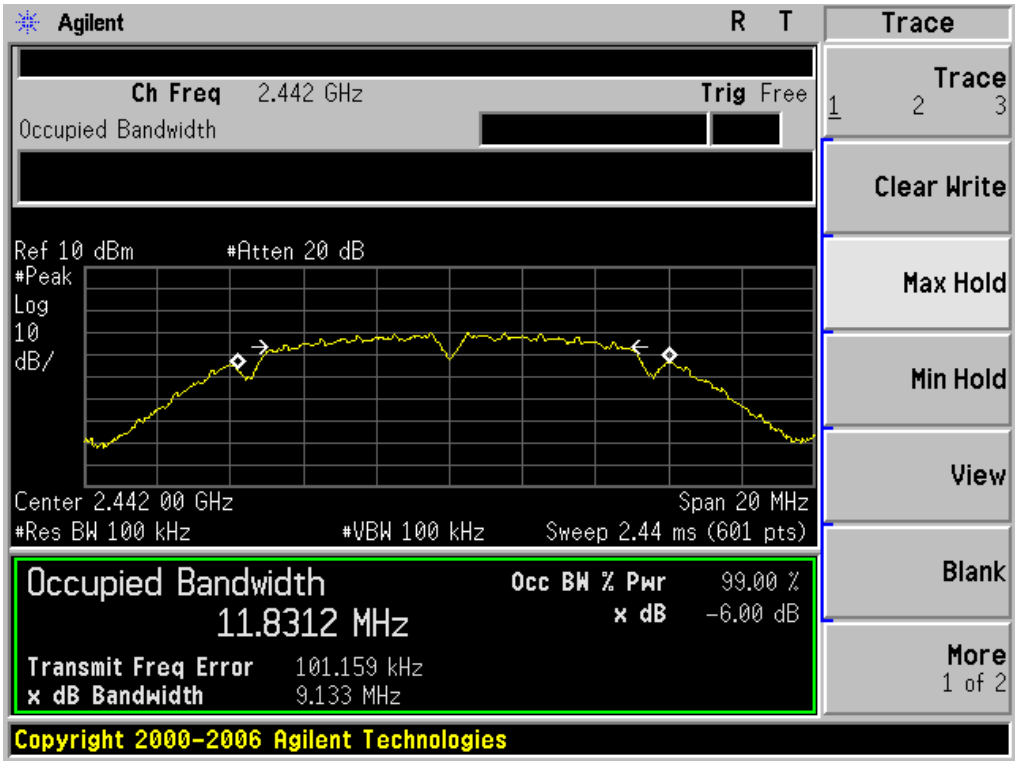
LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
>500KHZ	Low Channel	17.563	PASS
	Middle Channel	17.642	PASS
	High Channel	17.719	PASS

802.11b TEST RESULT

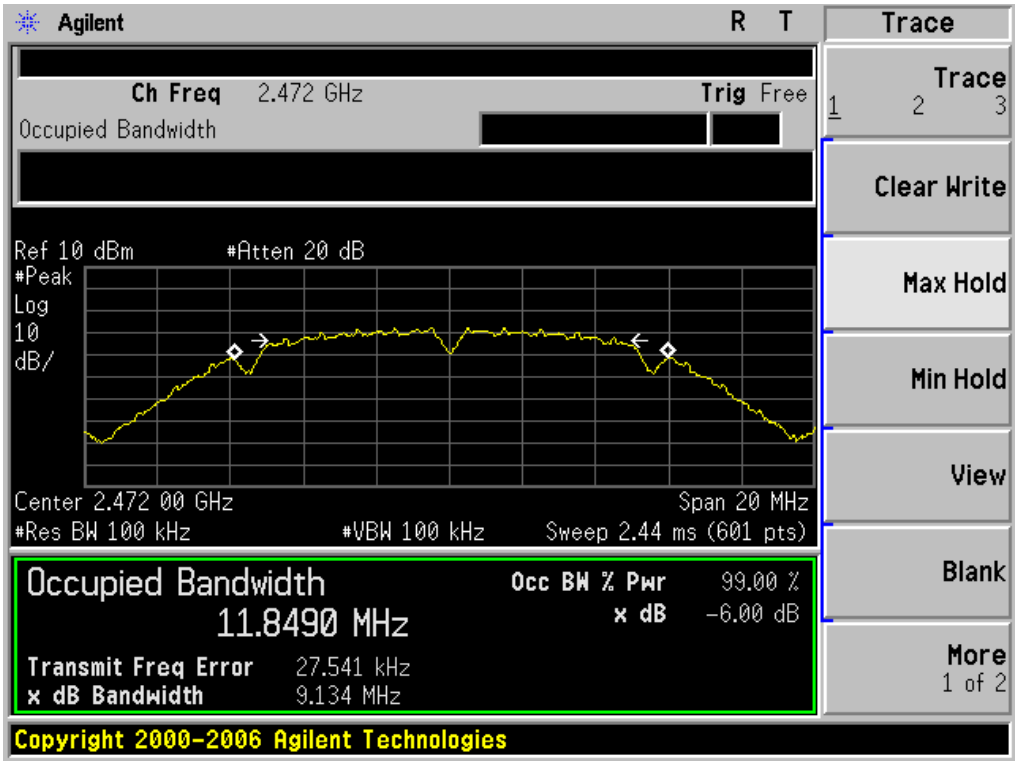
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

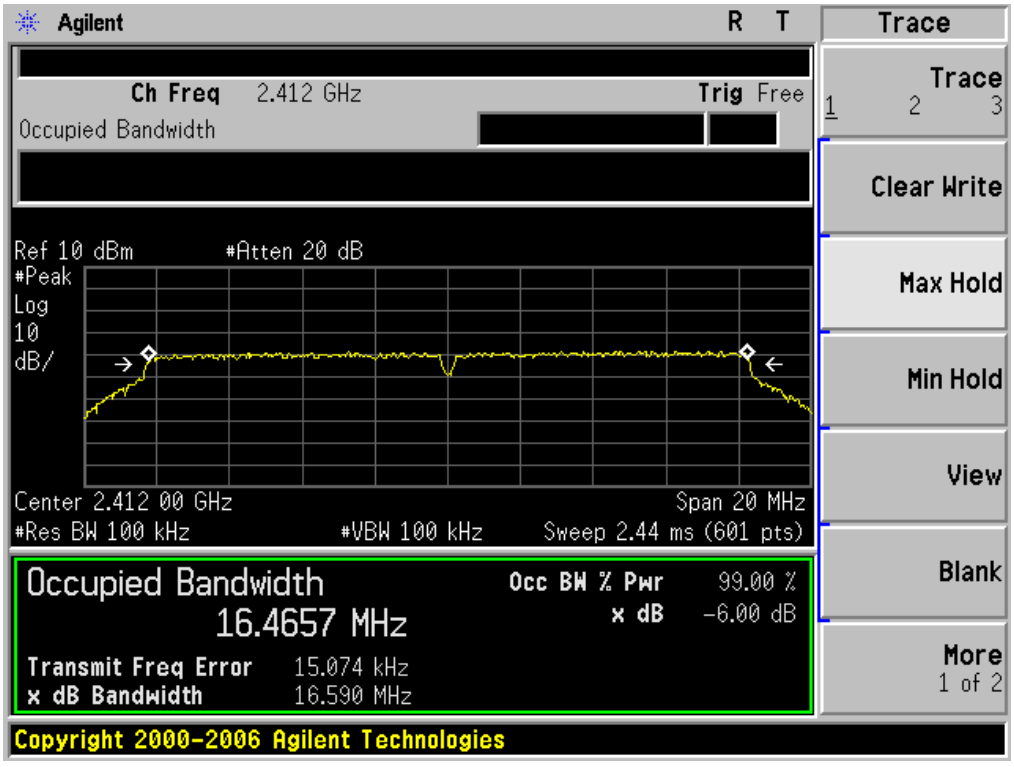


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

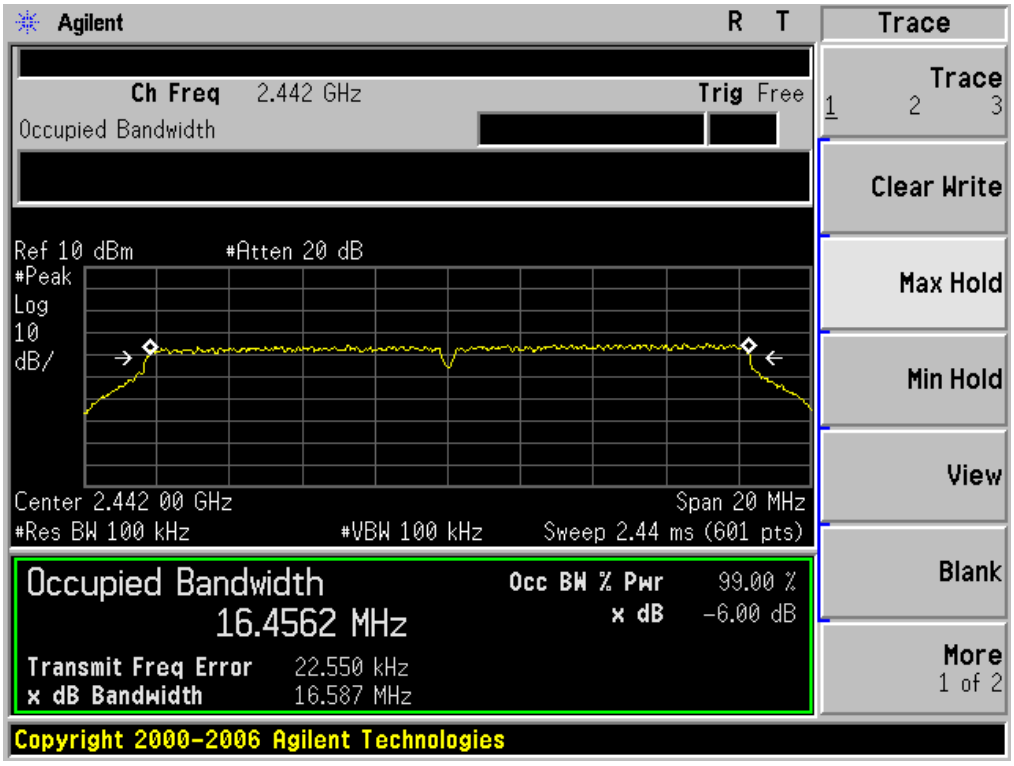


802.11g TEST RESULT

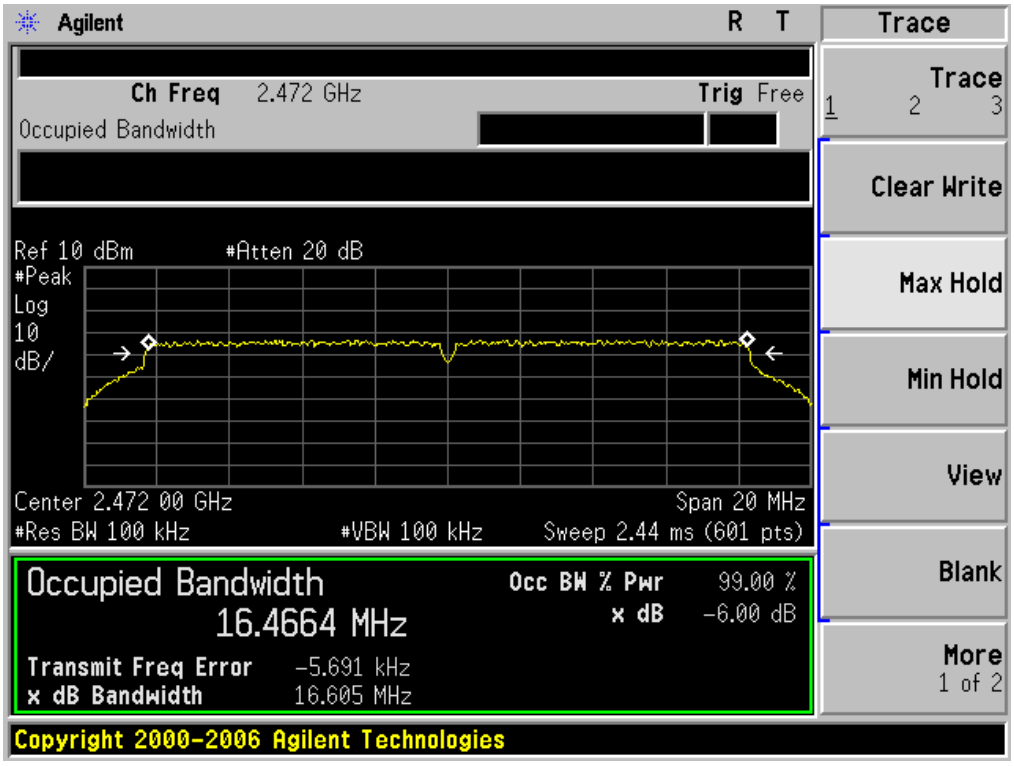
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

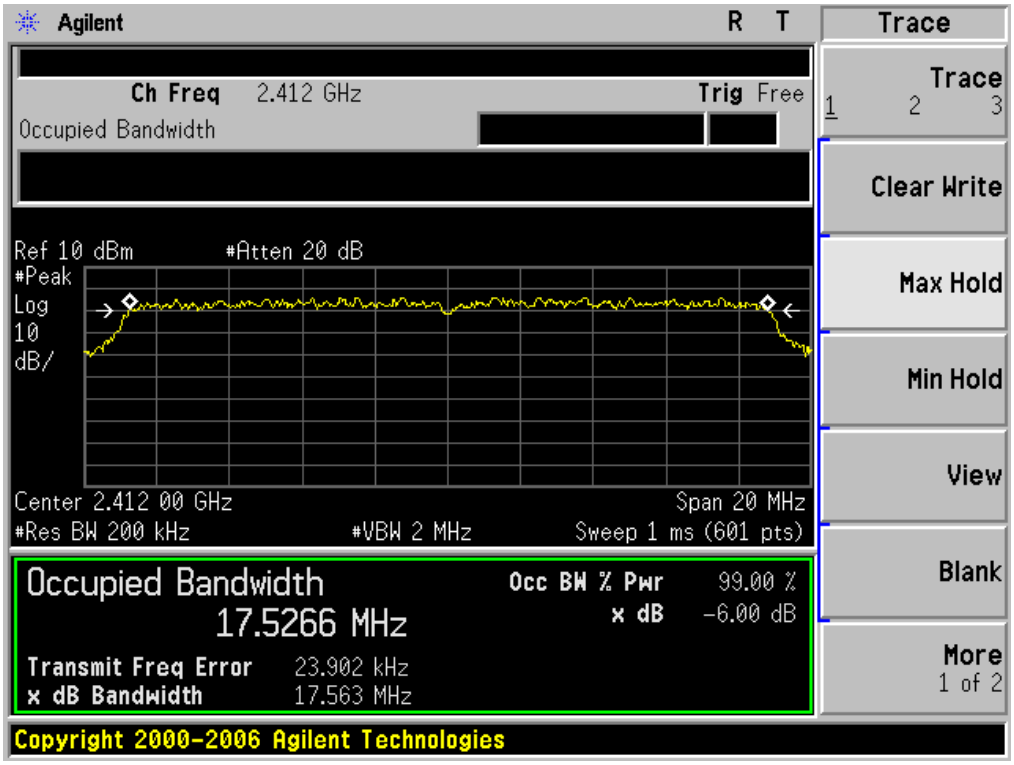


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

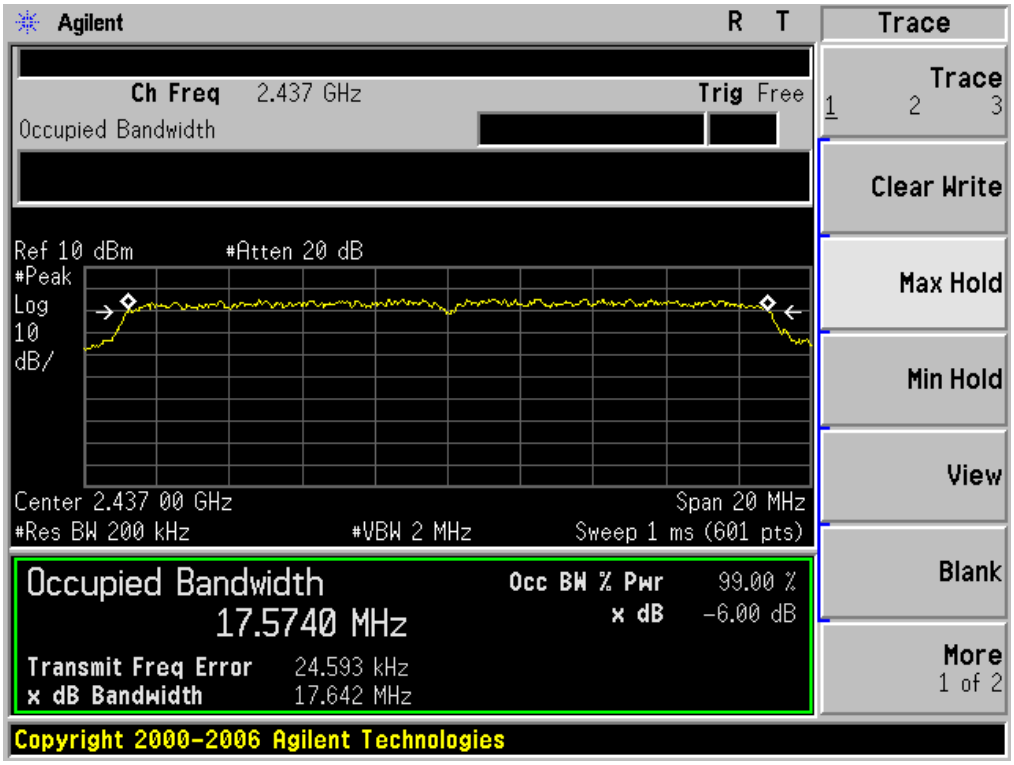


802.11n(20) TEST RESULT

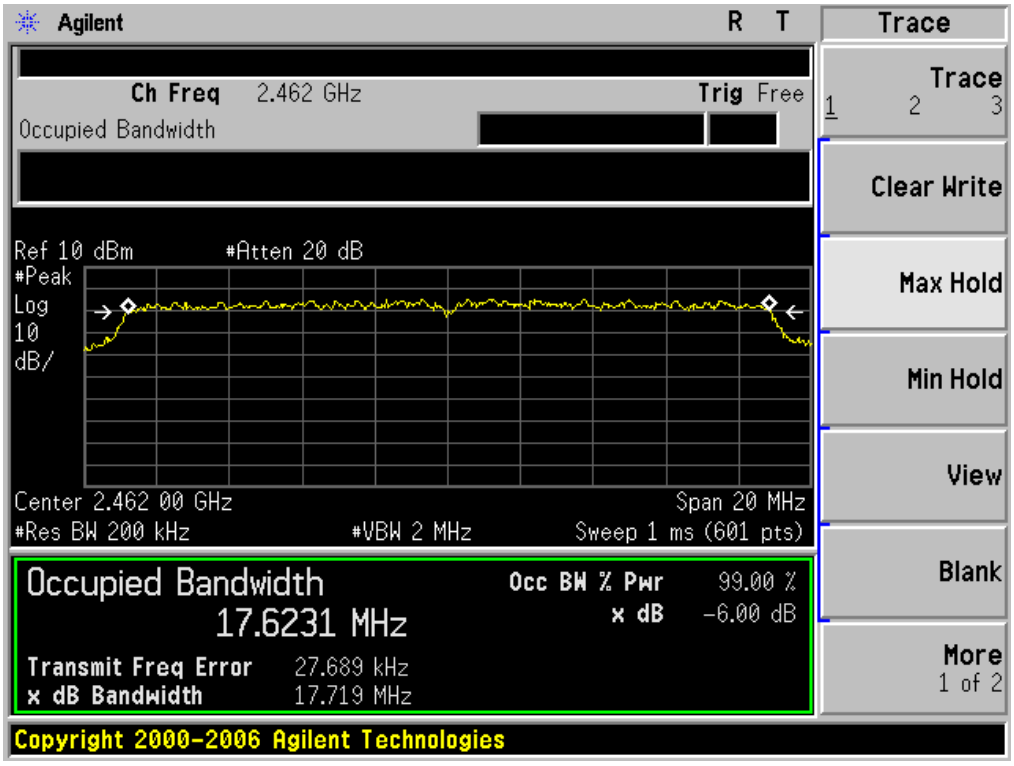
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



7. CONDUCTED SPURIOUS EMISSION

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 Trace 1 Max hold, then View.

Note：The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements. Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

7.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 6.2

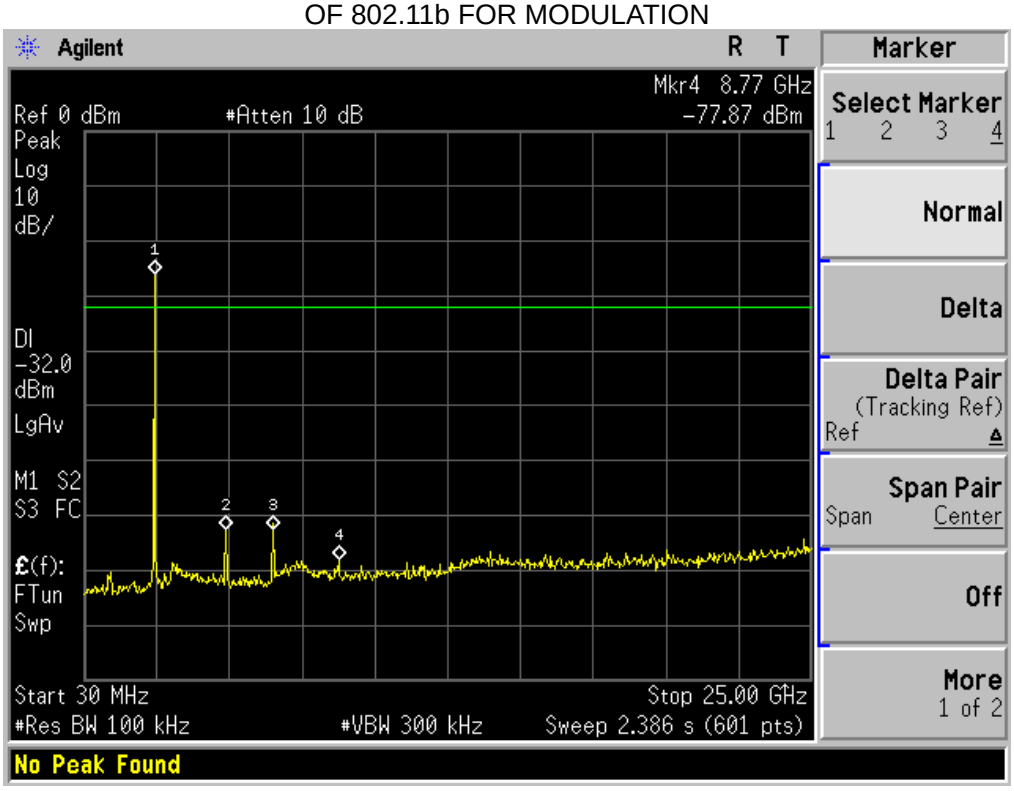
7.3 MEASUREMENT EQUIPMENT USED

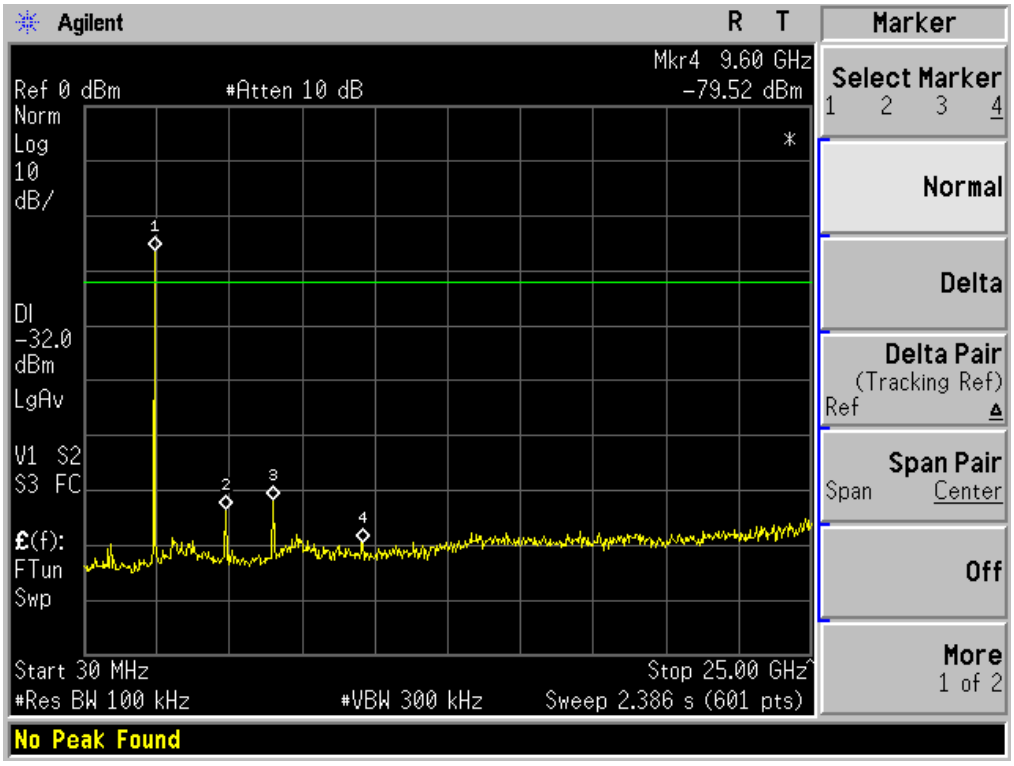
The same as described in section 6.3

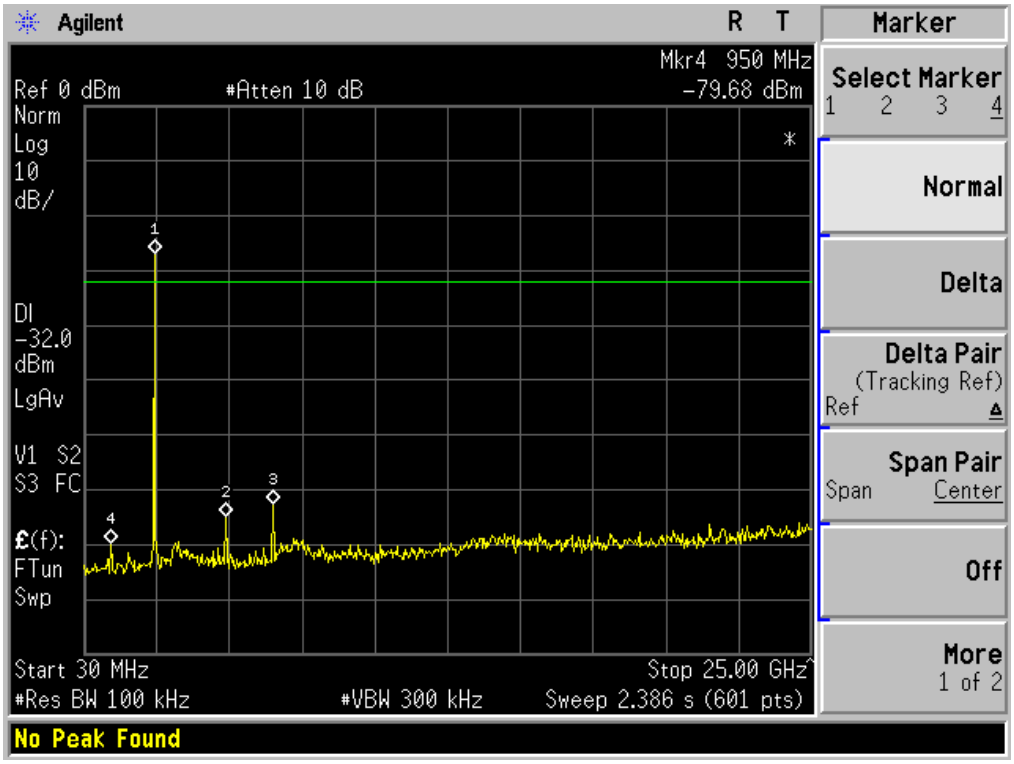
7.4 LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test Data	Criteria
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce 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.	At least -20dBc than the limit Specified on the BOTTOM Channel	PASS
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))	At least -20dBc than the limit Specified on the TOP Channel	PASS

TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE
OF 802.11b FOR MODULATION






Agilent
R T
Marker
Mkr4 950 MHz
Ref 0 dBm
#Atten 10 dB
-79.68 dBm
Norm
Log
10
dB/
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Dl
-32.0
dBm
LgAv
V1 S2
S3 FC
£(f):
FTun
Swp
Start 30 MHz
Stop 25.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.386 s (601 pts)
No Peak Found

8. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

8.1 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 Trace 1 Max hold, then View.

Note：The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements. Set RBW= 100 kHz, VBW≥300KHz, SPAN to 5-30 % greater than the EBW, Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100kHz = -15.2 dB).

8.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 6.2

8.3 MEASUREMENT EQUIPMENT USED

Refer To Section 6.3

8.4 LIMITS AND MEASUREMENT RESULT

TEST ITEM	POWER PECTRAL DENSITY
TEST MODE	802.11b with data rate 1

Channel No.	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
Low Channel	2.73	-15.2	-12.47	8	Pass
Middle Channel	2.77	-15.2	-12.43	8	Pass
High Channel	2.45	-15.2	-12.75	8	Pass

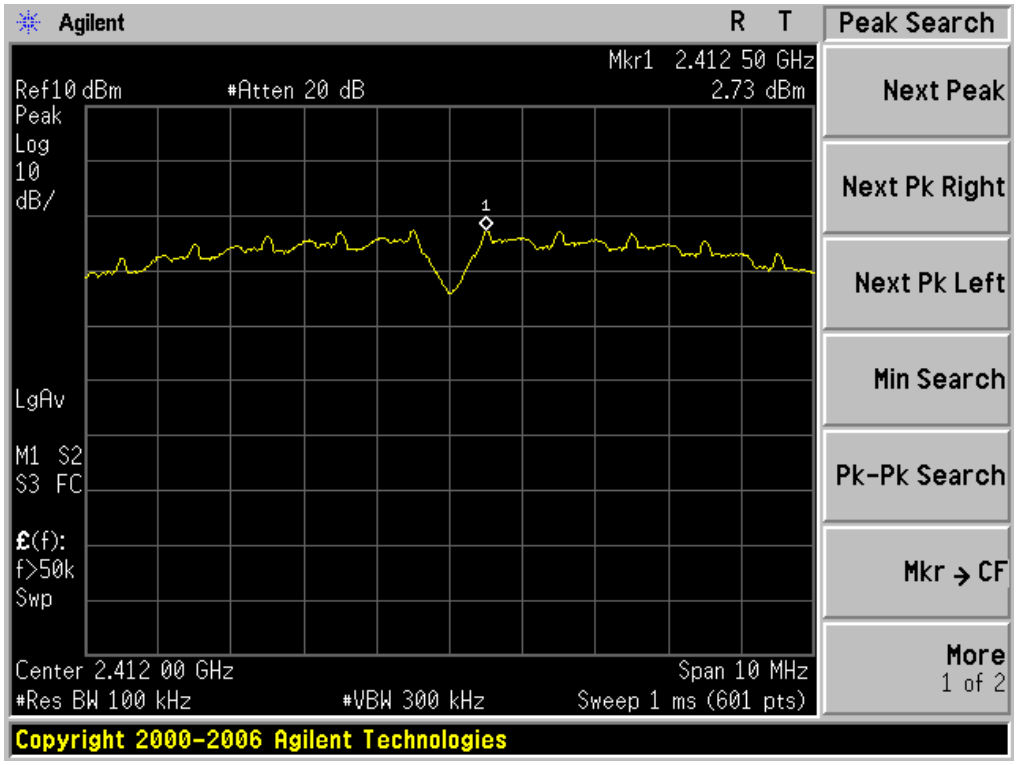
TEST ITEM	POWER PECTRAL DENSITY
TEST MODE	802.11g with data rate 6

Channel No.	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
Low Channel	-2.00	-15.2	-17.00	8	Pass
Middle Channel	-2.08	-15.2	-17.28	8	Pass
High Channel	-2.27	-15.2	-17.47	8	Pass

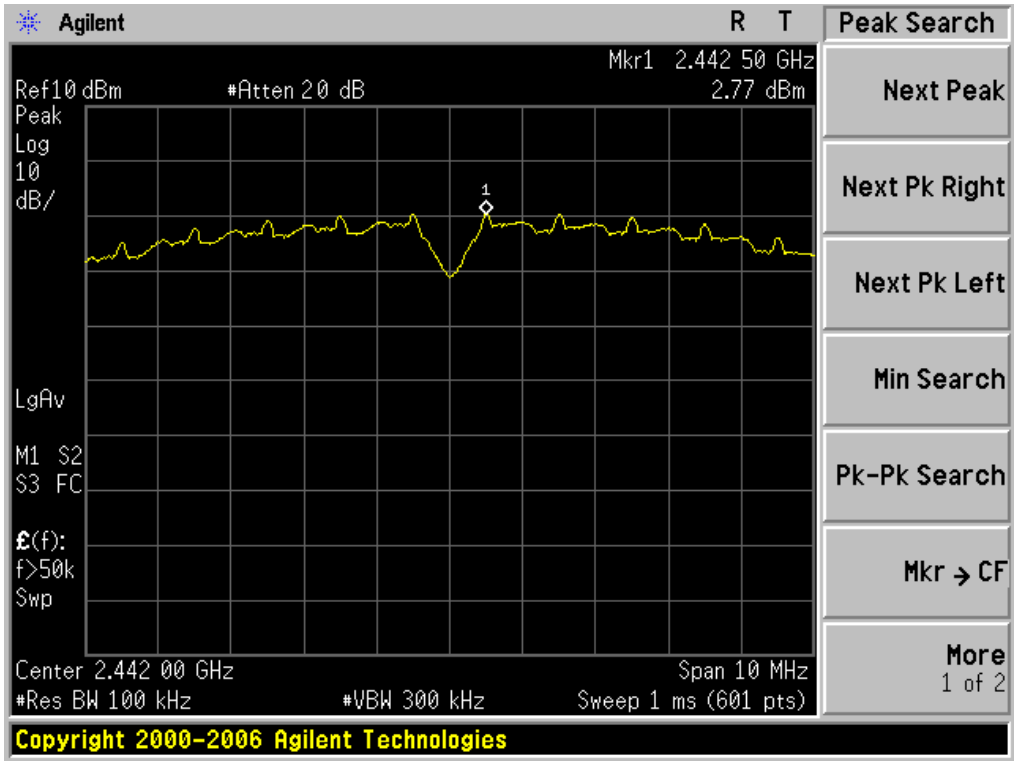
TEST ITEM	POWER PECTRAL DENSITY
TEST MODE	802.11n 20 with data rate 6.5

Channel No.	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
Low Channel	-3.59	-15.2	-18.79	8	Pass
Middle Channel	-3.32	-15.2	-18.52	8	Pass
High Channel	-3.10	-15.2	-18.30	8	Pass

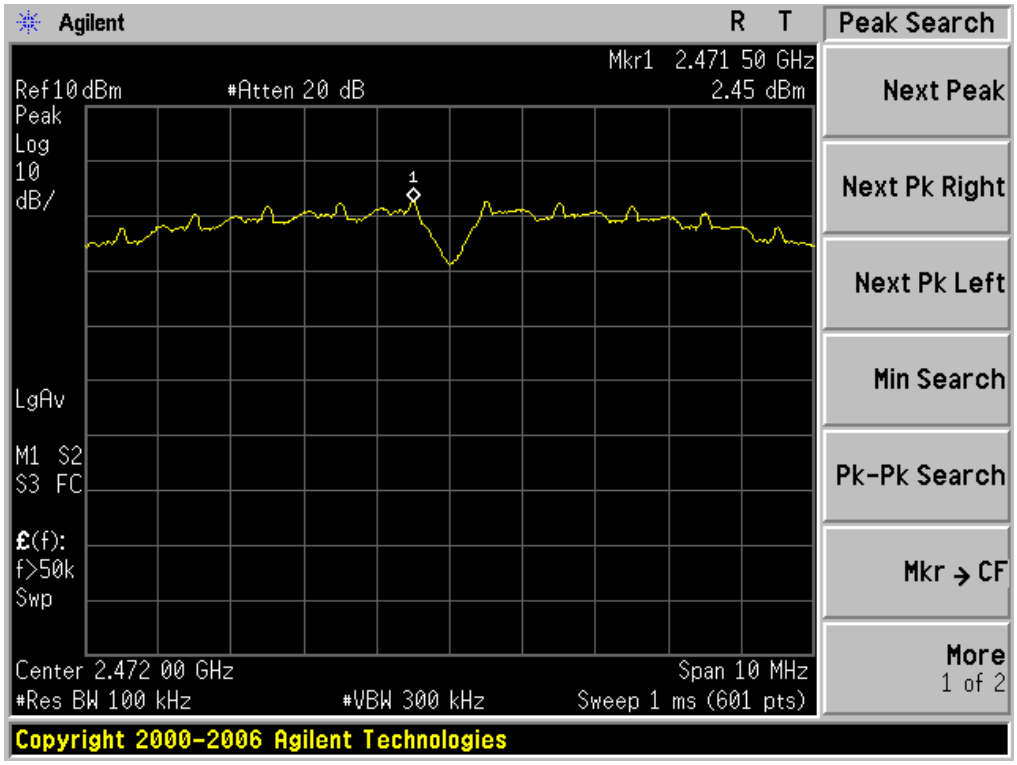
802.11b TEST RESULT
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

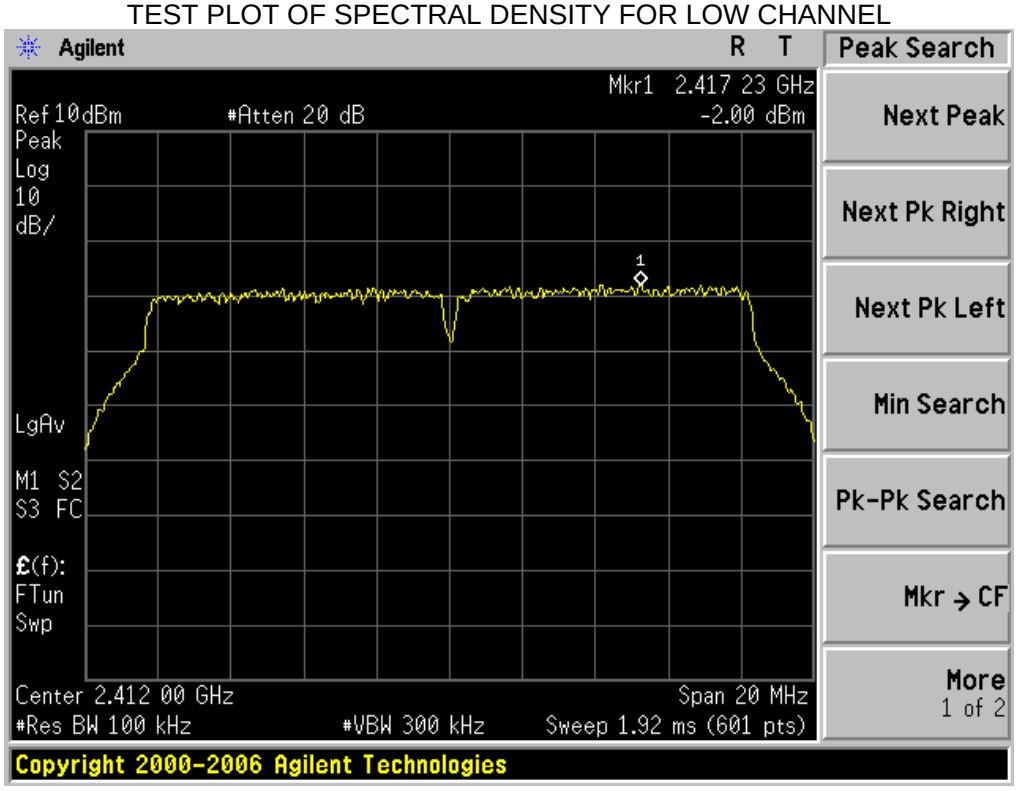


TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

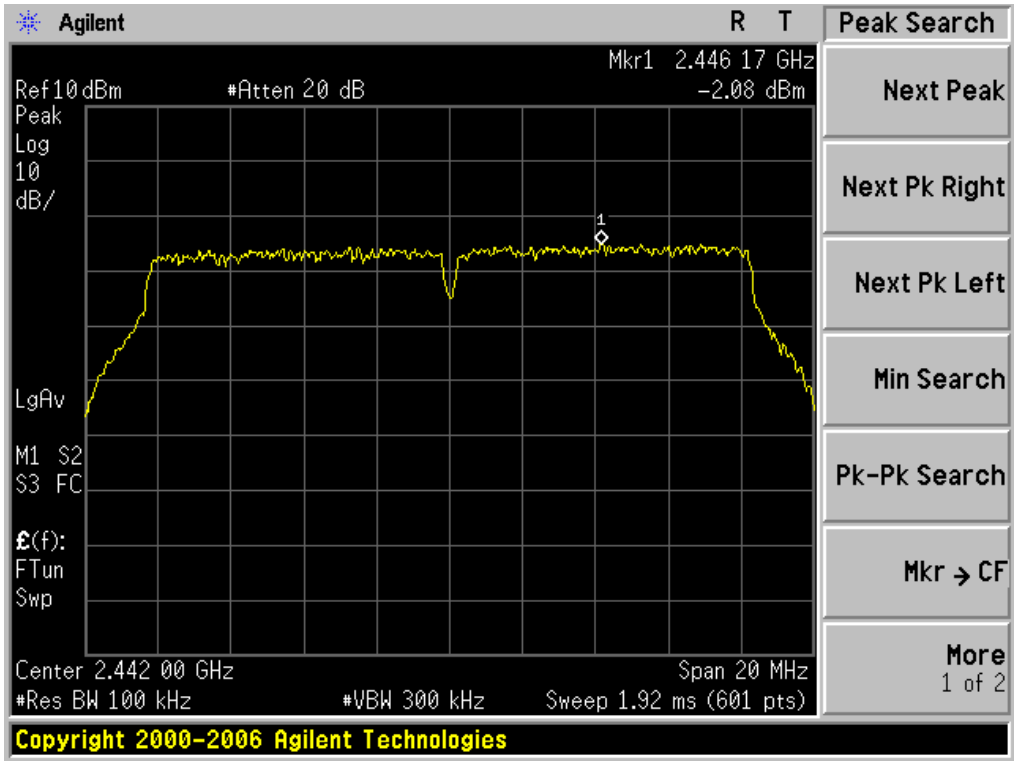


802.11g TEST RESULT

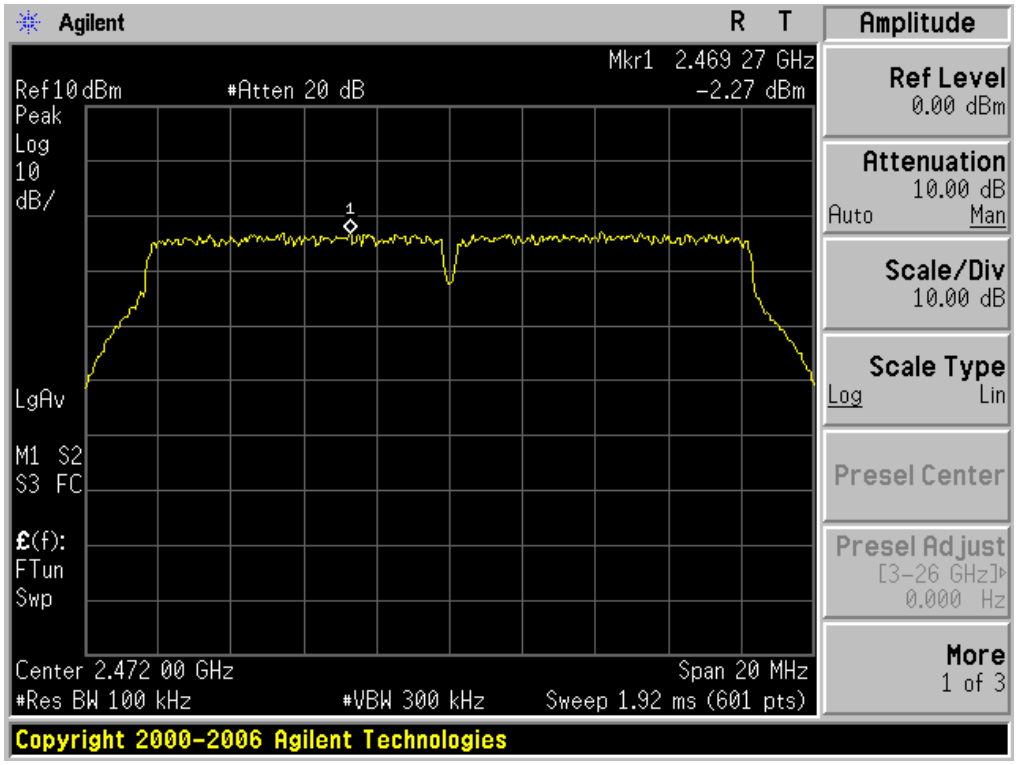
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

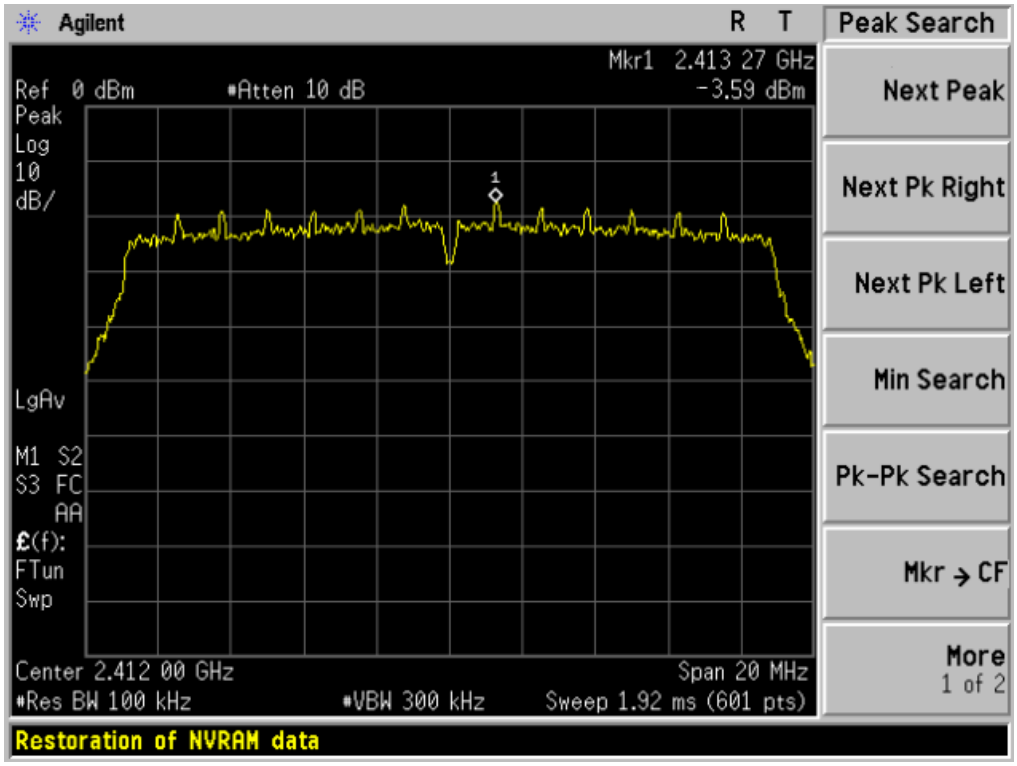


TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

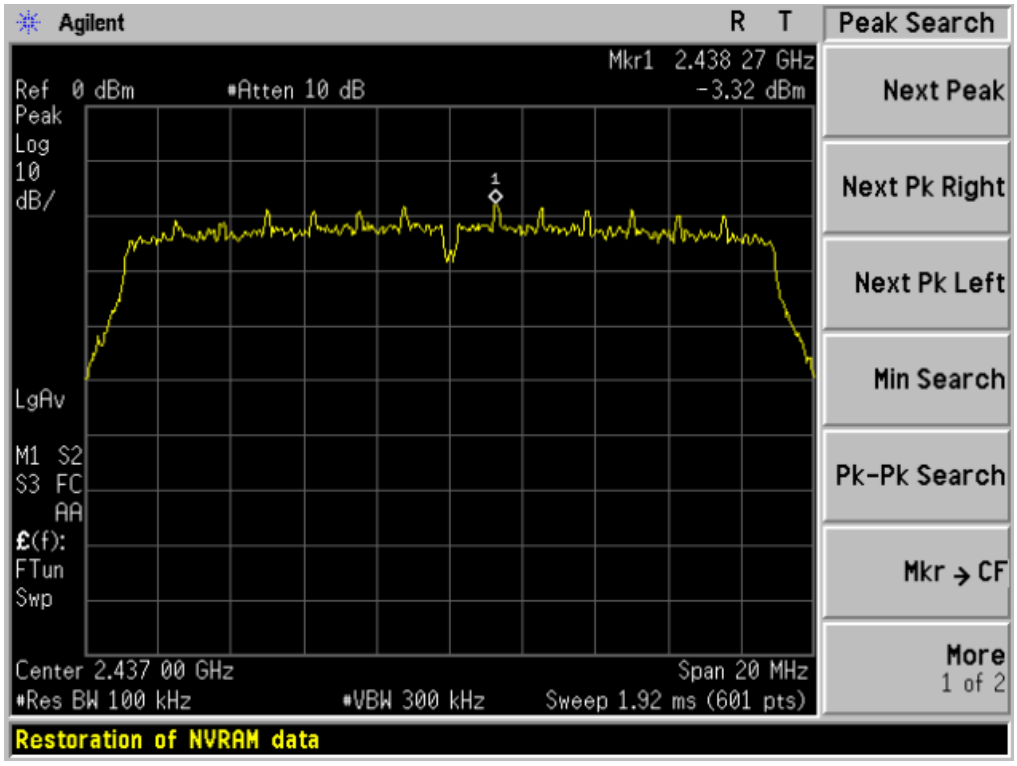


802.11n 20 TEST RESULT

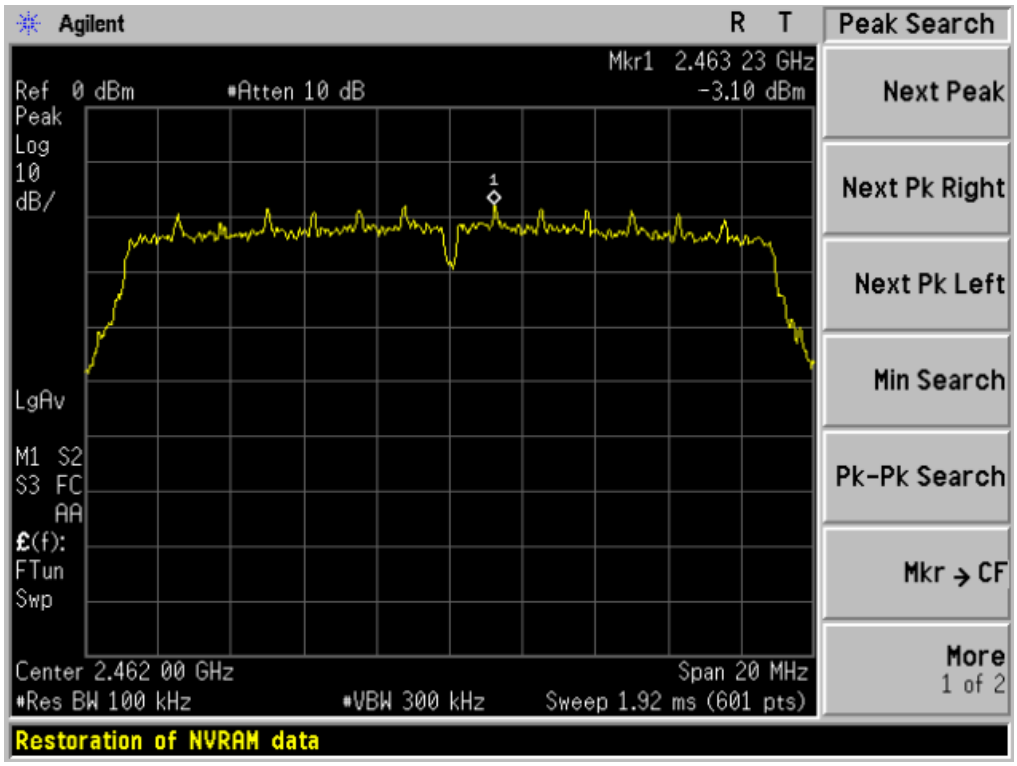
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



9. RADIATED EMISSION MEASUREMENT

9.1 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 360degrees) 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.

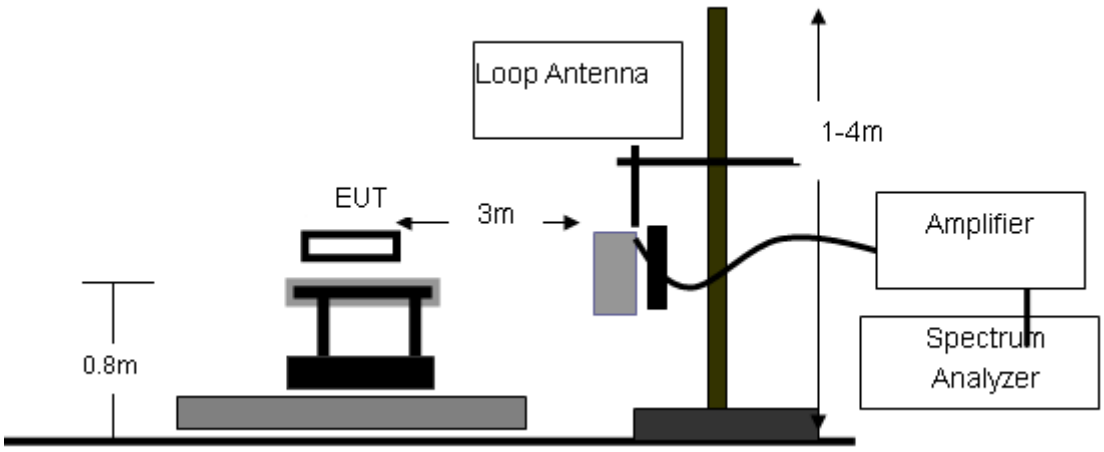
8 If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3dB margin will be repeated one by one using the quasi-peak method for below 1GHz.

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.

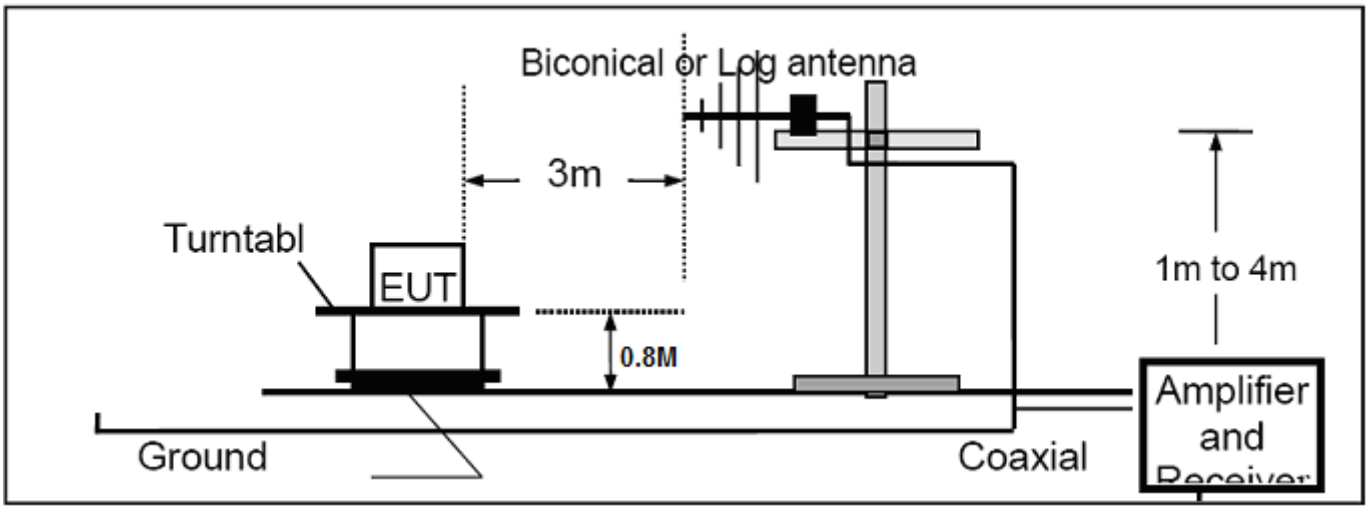
10 in case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded Data should be QP measured by receiver. High-Low scan is not required in this case.

9.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

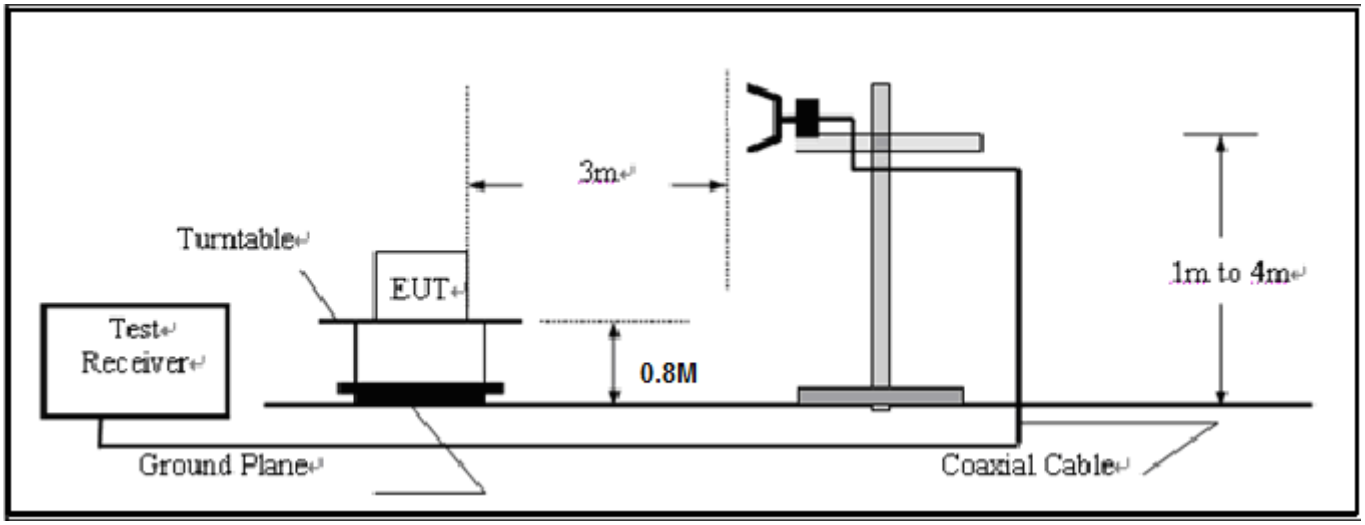
RADIATED EMISSION TEST SETUP BELOW 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



9.3 MEASUREMENT EQUIPMENT USED

Description	Manufacturer	Model	SERIAL NUMBER	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	N/A	07/18/2012	07/17/2013
Amplifier	EM	EM30180	0607030	07/18/2012	07/17/2013
Horn Antenna	EM	EM-AH-10180	N/A	07/18/2012	07/17/2013
Horn Antenna	A.H. Systems Inc.	SAS-574	--	07/18/2012	07/17/2013
EMI Test Receiver	Rohde & Schwarz	ESCI	N/A	07/18/2012	07/17/2013
Amplifier	EM	EM30180	N/A	07/18/2012	07/17/2013
Bilogical Antenna	A.H. Systems Inc.	SAS-521-4	N/A	07/18/2012	07/17/2013
Loop Antenna	A.H.	SAS-526B	264	07/18/2012	07/17/2013
Isolation Transformer	LETEAC	LTBK	--	07/18/2012	07/17/2013

9.4 LIMITS AND MEASUREMENT RESULT

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

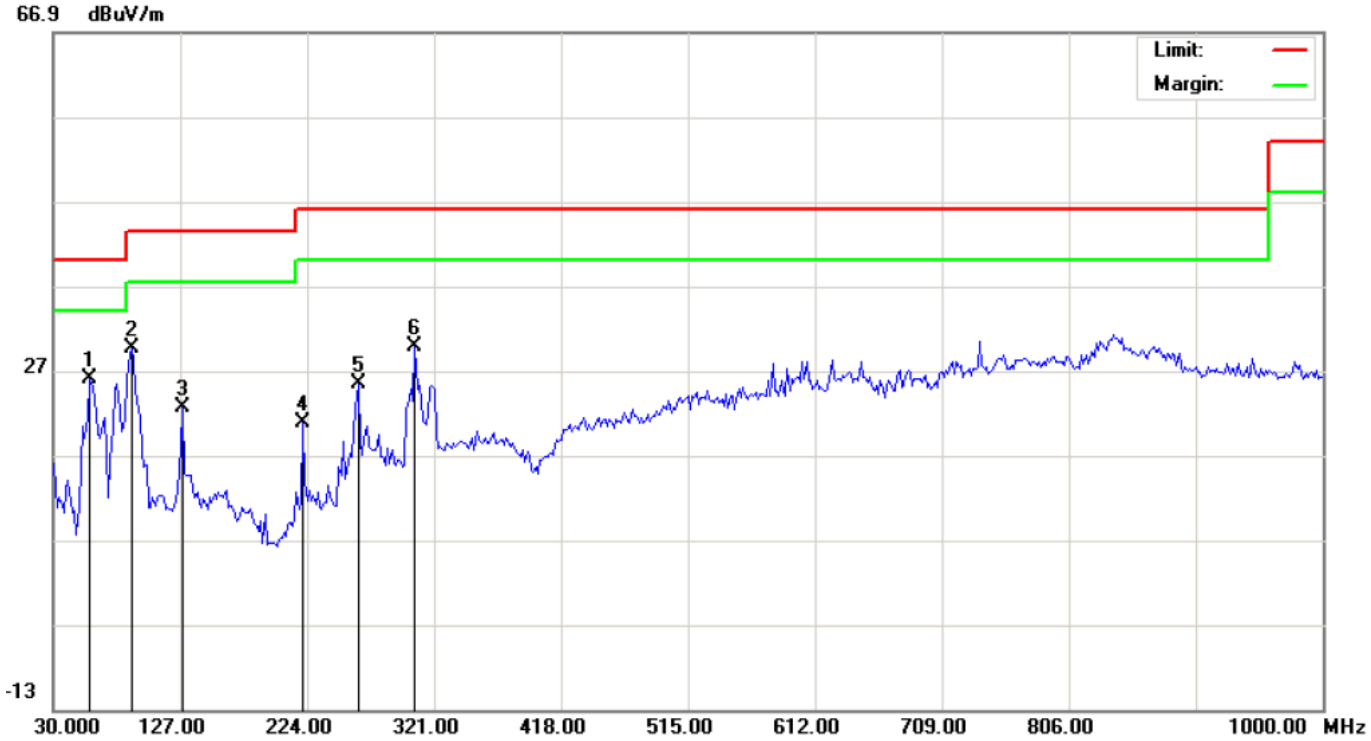
Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

RADIATED EMISSION BELOW 30MHZ

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

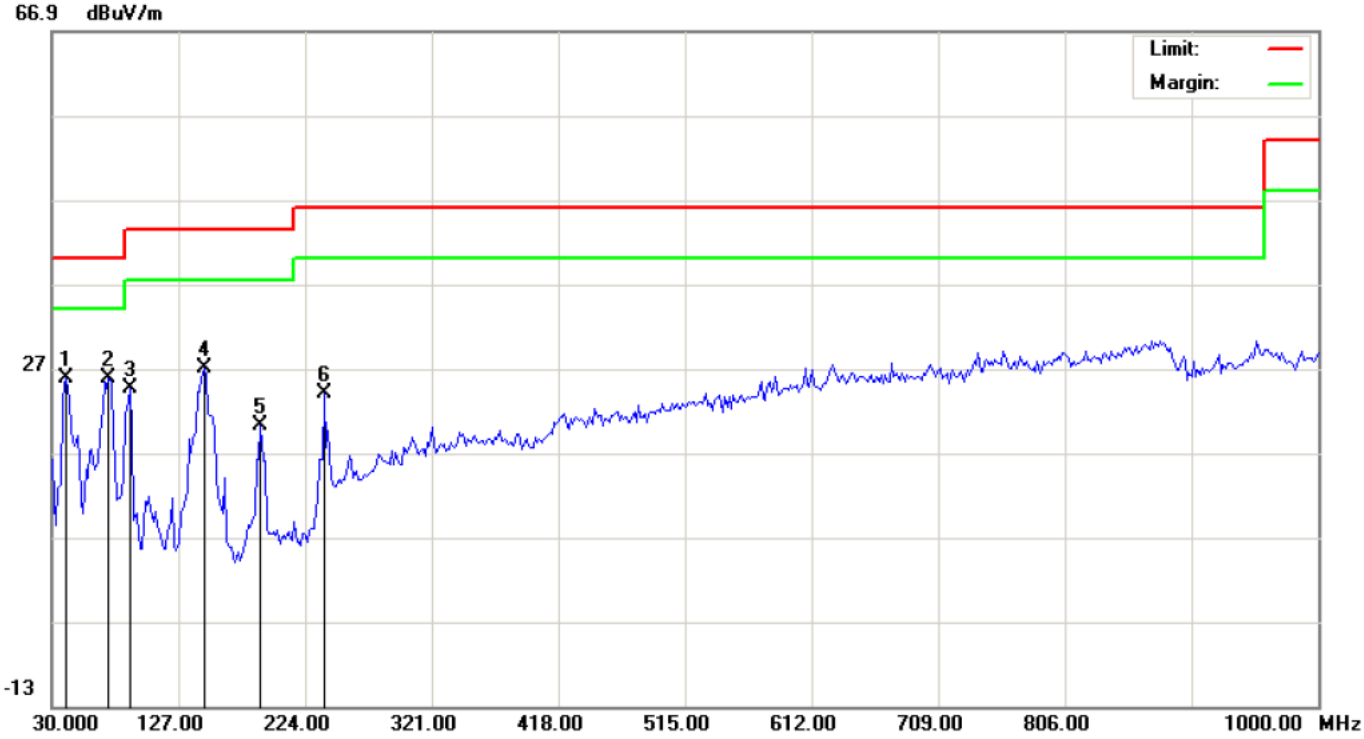
RADIATED EMISSION BELOW 1GHZ

EUT	Mobile Phone	Model Name	D100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b With date rate 1 2412MHZ	Antenna	Vertical



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		57.4832	23.56	2.39	25.95	40.00	-14.05	peak			
2	*	89.8165	12.49	17.11	29.60	43.50	-13.90	peak			
3		128.6167	8.75	13.89	22.64	43.50	-20.86	peak			
4		220.7666	8.26	12.47	20.73	46.00	-25.27	peak			
5		262.8000	11.51	13.98	25.49	46.00	-20.51	peak			
6		306.4499	12.47	17.42	29.89	46.00	-16.11	peak			

EUT	Mobile Phone	Model Name	D100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b With date rate 1 2412MHZ	Antenna	Horizontal

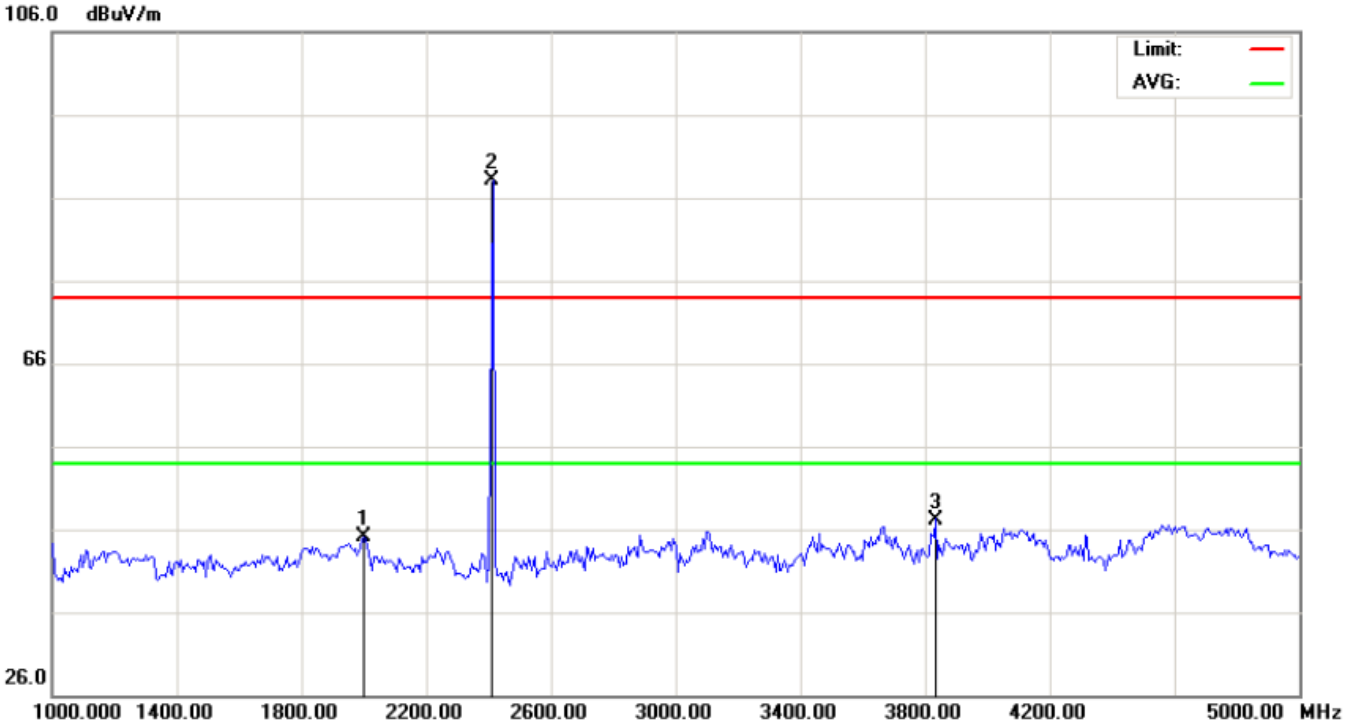


No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	41.3166	19.07	6.79	25.86	40.00	-14.14	peak			
2		73.6500	20.40	5.35	25.75	40.00	-14.25	peak			
3		89.8165	16.25	8.37	24.62	43.50	-18.88	peak			
4		146.4000	13.72	13.29	27.01	43.50	-16.49	peak			
5		190.0500	10.41	9.89	20.30	43.50	-23.20	peak			
6		238.5500	10.55	13.42	23.97	46.00	-22.03	peak			

Note: Measurement= Reading + Factor, Over=Measure-Limit.

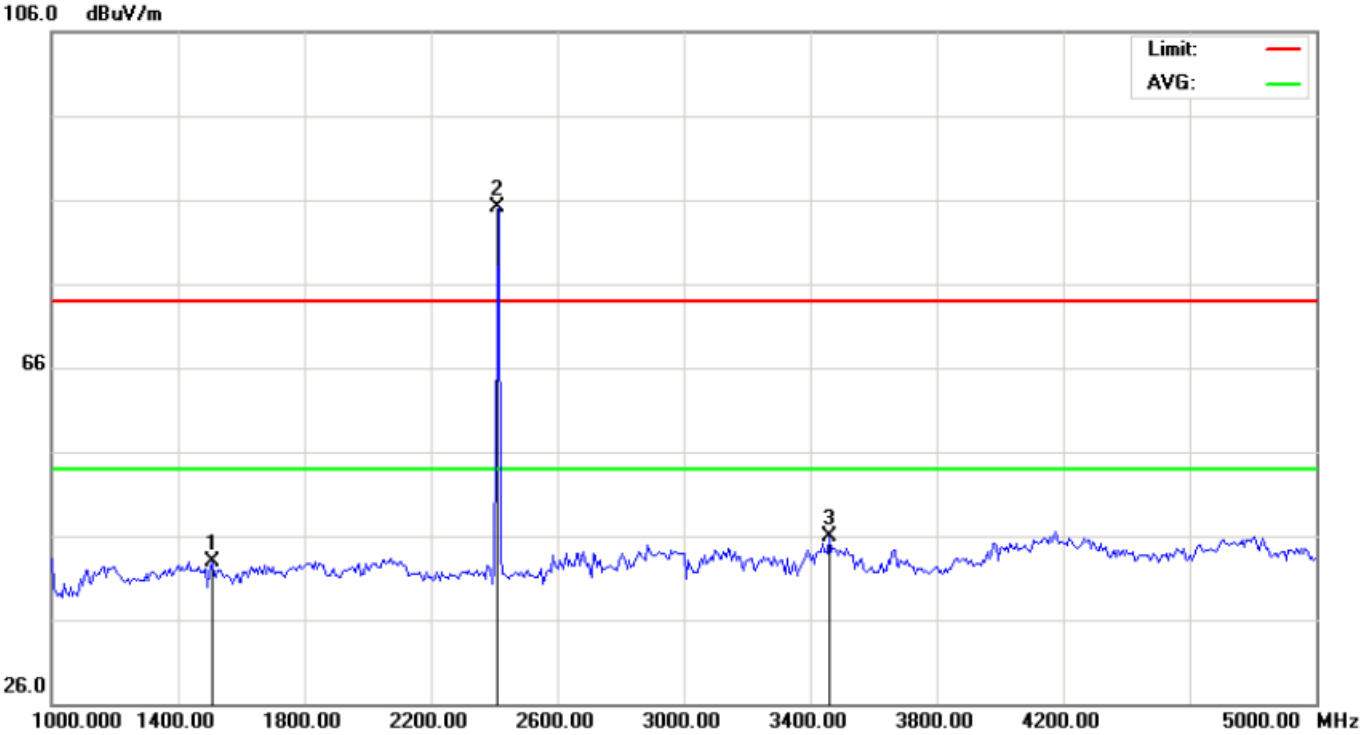
RADIATED EMISSION ABOVE 1GHZ

EUT	Mobile Phone	Model Name	D100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b With date rate 1 2412MHZ	Antenna	Vertical



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		2000.000	35.31	9.88	45.19	74.00	-28.81	peak			
2	*	2412.000	77.83	10.33	88.16	74.00	14.16	peak			
3		3833.333	33.04	14.16	47.20	74.00	-26.80	peak			

EUT	Mobile Phone	Model Name	D100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b With date rate 1 2412MHZ	Antenna	Horizontal



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		1506.667	38.21	4.69	42.90	74.00	-31.10	peak			
2	*	2412.000	74.83	10.33	85.16	74.00	11.16	peak			
3		3460.000	33.89	12.07	45.96	74.00	-28.04	peak			

Note: *The other modes radiation emissions have more than 20dB margin.*
Measurement= Reading + Factor, Over=Measure-Limit.
All modes radiation emission from 5GHz to 25GHz at least have 20dB margin. No recording in the test report.

10. BAND EDGE EMISSION

10.1 MEASUREMENT PROCEDURE

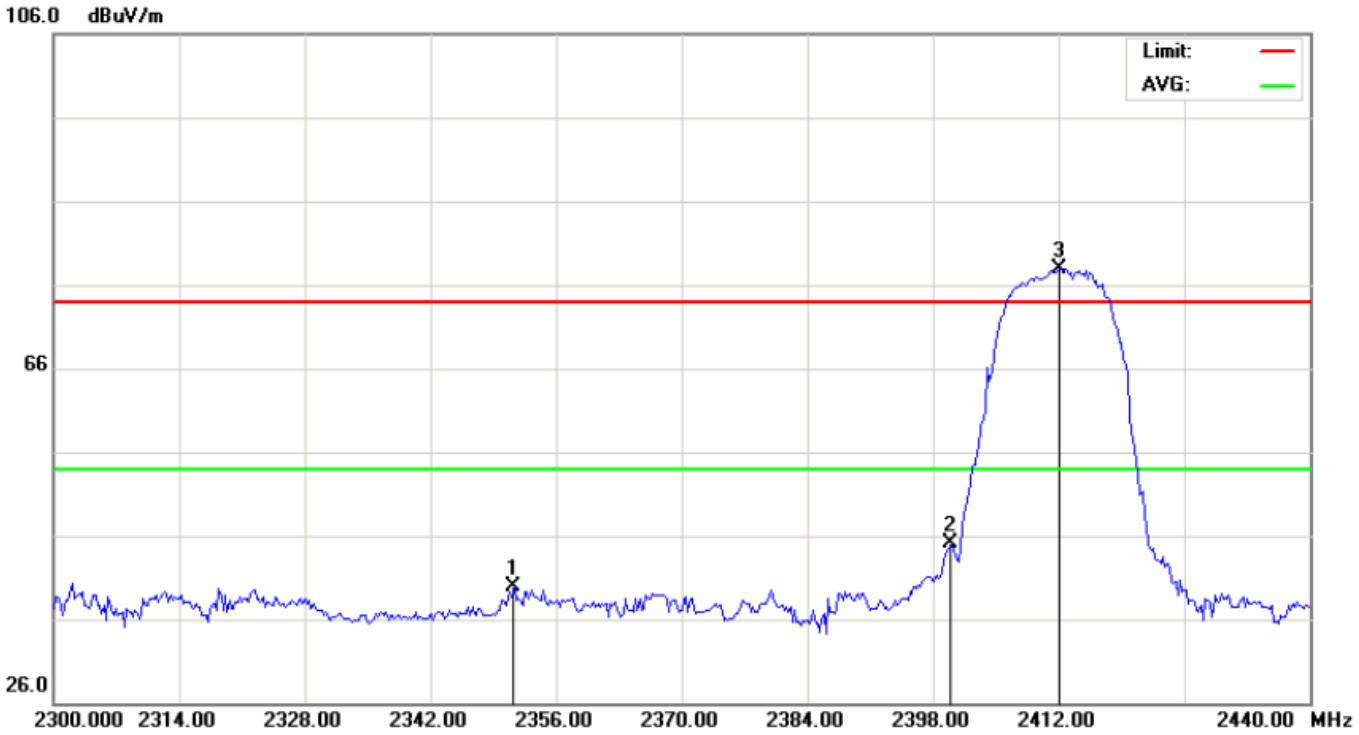
1, Set the EUT Work on the top, the bottom operation frequency individually.
2. Set SPA Start or Stop Frequency = Operation Frequency, RBW= 1MHz, VBW= 1MHz.
3. The band edges was measured and recorded.

10.2 TEST SET-UP

The Same as described in section 8.2

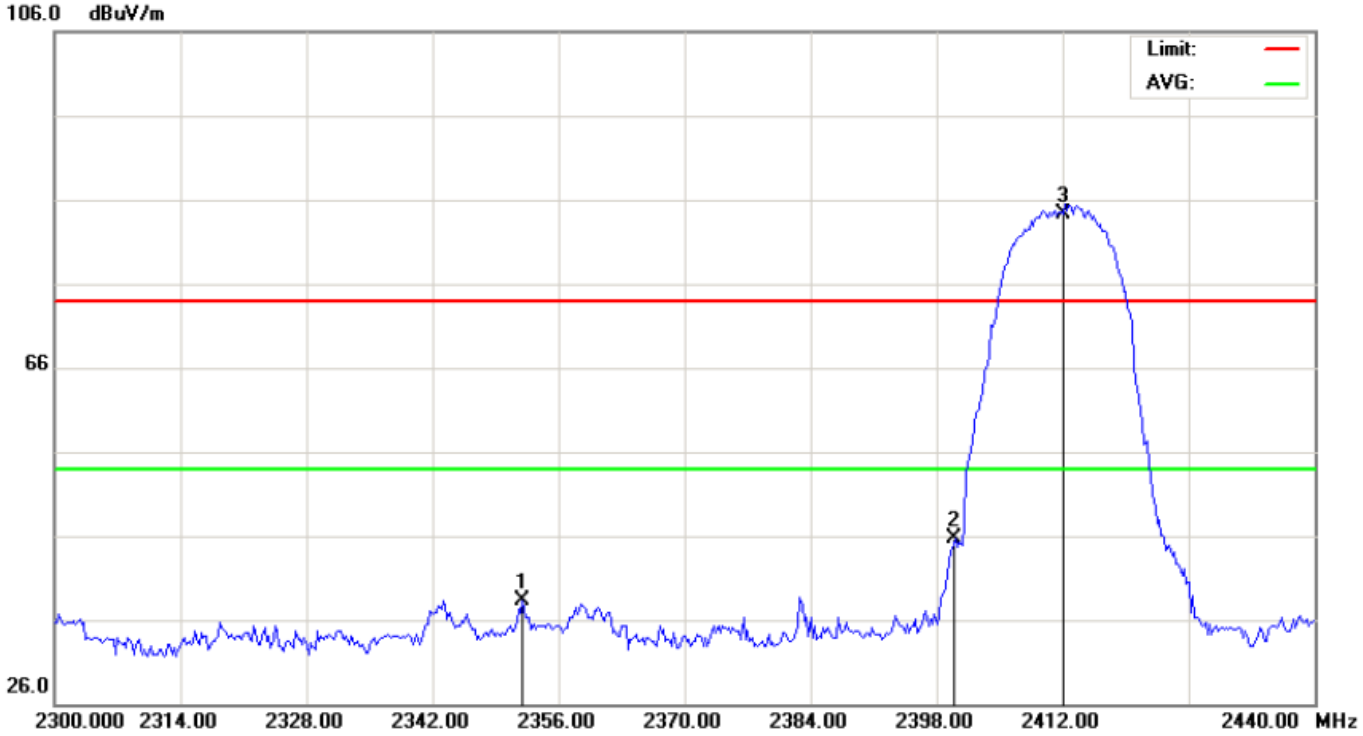
10.3 TEST RESULT（WORST）

EUT	Mobile Phone	Model Name	D100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b With data rate 1 2412MHZ	Antenna	Vertical



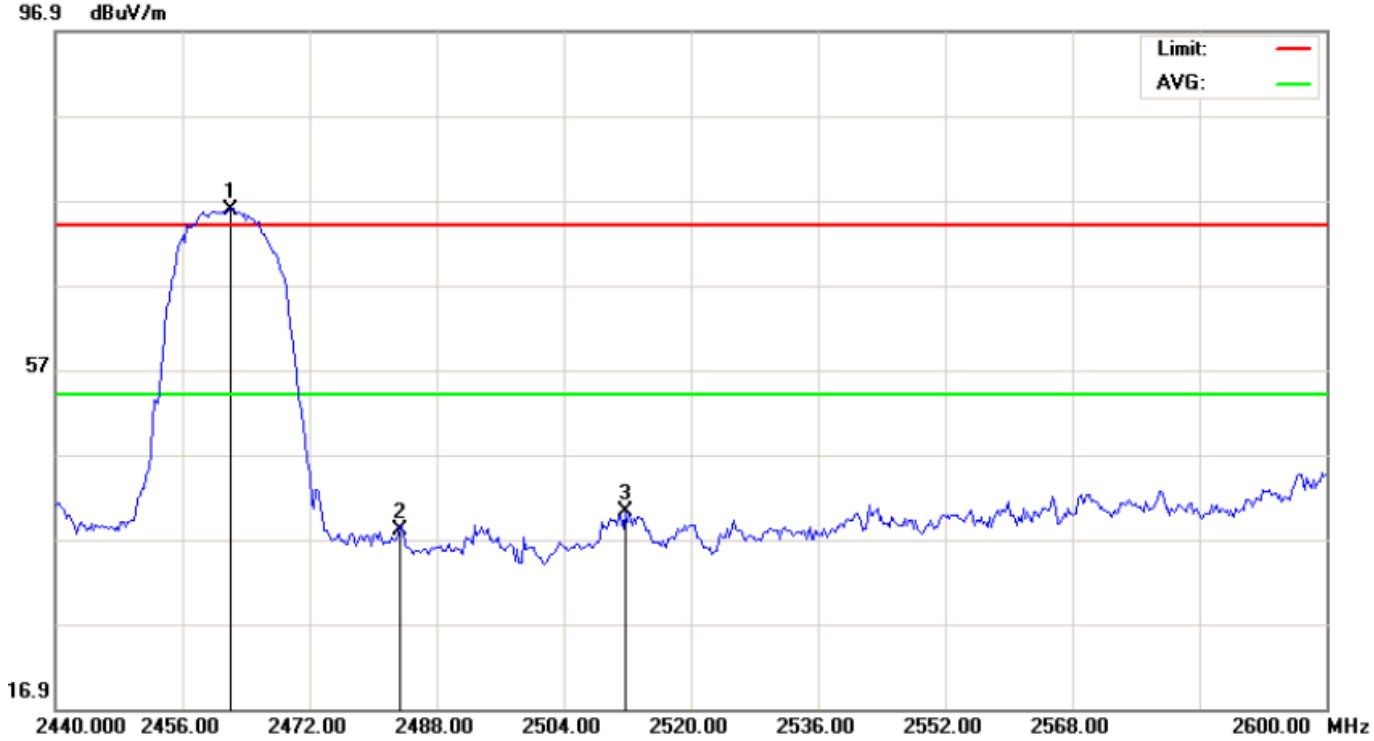
No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2351.333	29.66	10.27	39.93	74.00	-34.07	peak			
2		2400.000	34.87	10.32	45.19	74.00	-28.81	peak			
3	*	2412.000	67.51	10.33	77.84	74.00	3.84	peak			

EUT	Mobile Phone	Model Name	D100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b With data rate 1 2412MHZ	Antenna	Horizontal



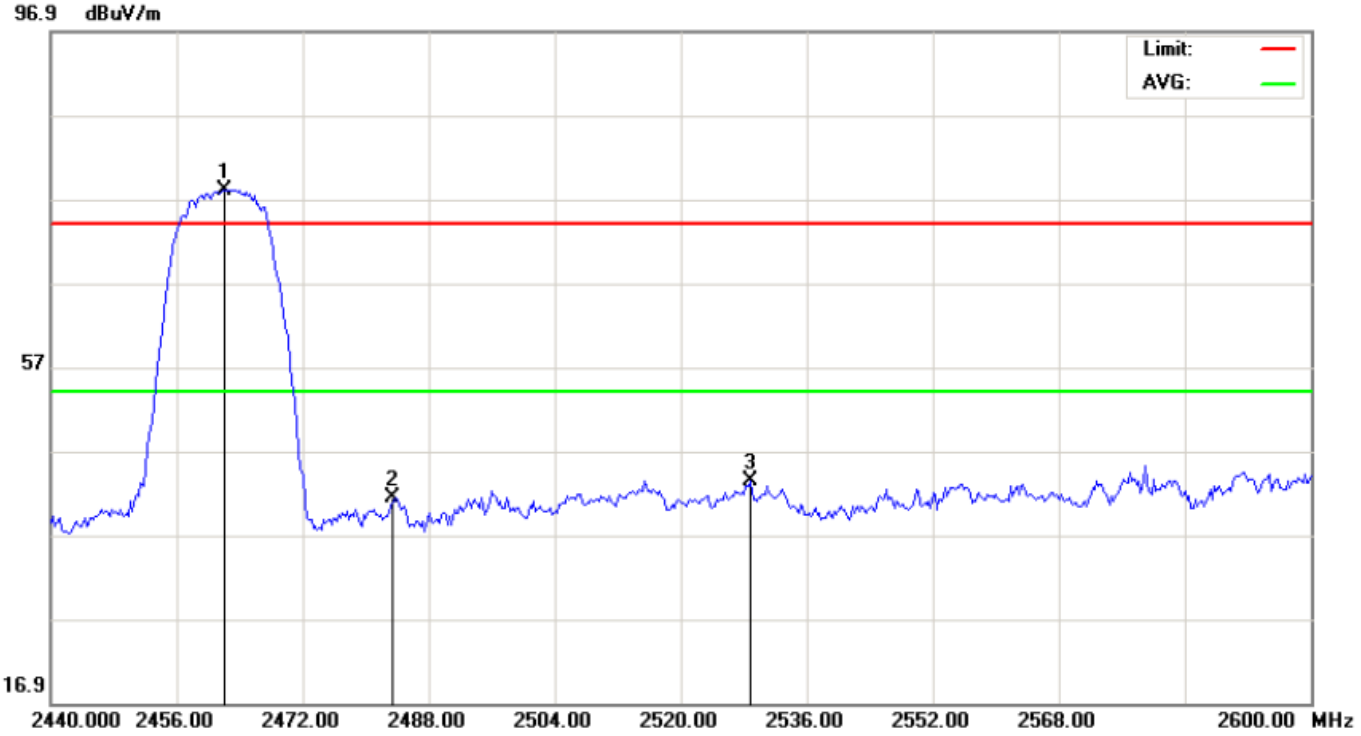
No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2352.033	28.10	10.27	38.37	74.00	-35.63	peak			
2		2400.000	35.37	10.32	45.69	74.00	-28.31	peak			
3	*	2412.000	74.01	10.33	84.34	74.00	10.34	peak			

EUT	Mobile Phone	Model Name	D100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b With data rate 1 2462MHZ	Antenna	Vertical



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	65.44	10.39	75.83	74.00	1.83	peak			
2		2483.500	27.50	10.41	37.91	74.00	-36.09	peak			
3		2511.733	29.68	10.46	40.14	74.00	-33.86	peak			

EUT	Mobile Phone	Model Name	D100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b With data rate 1 2462MHZ	Antenna	Horizontal



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	67.53	10.39	77.92	74.00	3.92	peak			
2		2483.500	31.06	10.41	41.47	74.00	-32.53	peak			
3		2528.800	32.86	10.50	43.36	74.00	-30.64	peak			

***Note**: the other modes radiation emission have enough 20dB margin.*
Measurement= Reading + Factor, Over=Measure-Limit.

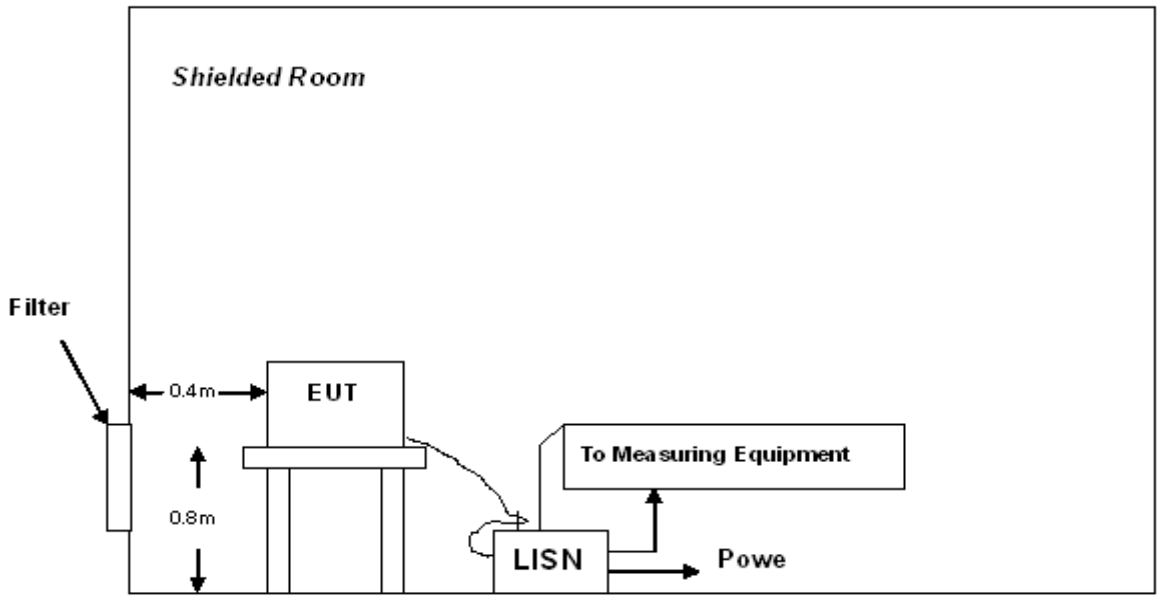
11. FCC LINE CONDUCTED EMISSION TEST

11.1 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

11.2 BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



A: Powered through filter

11.3 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) All support equipments received AC120V power from a LISN, if any.
5) The EUT received DC 5V power by adapter which received 120V/60Hz power from a LISN.
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:

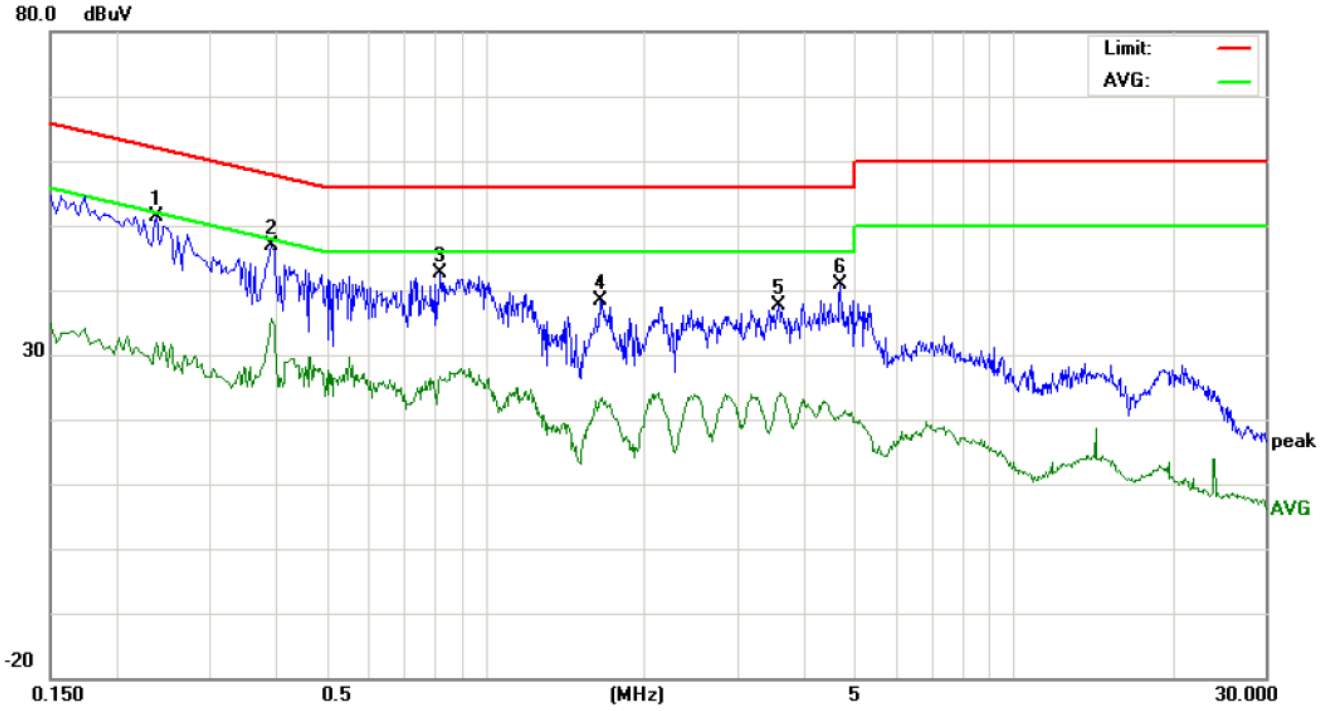
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing. All the test mode were in the worst case(the lowest rate).

11.4 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.

11.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST

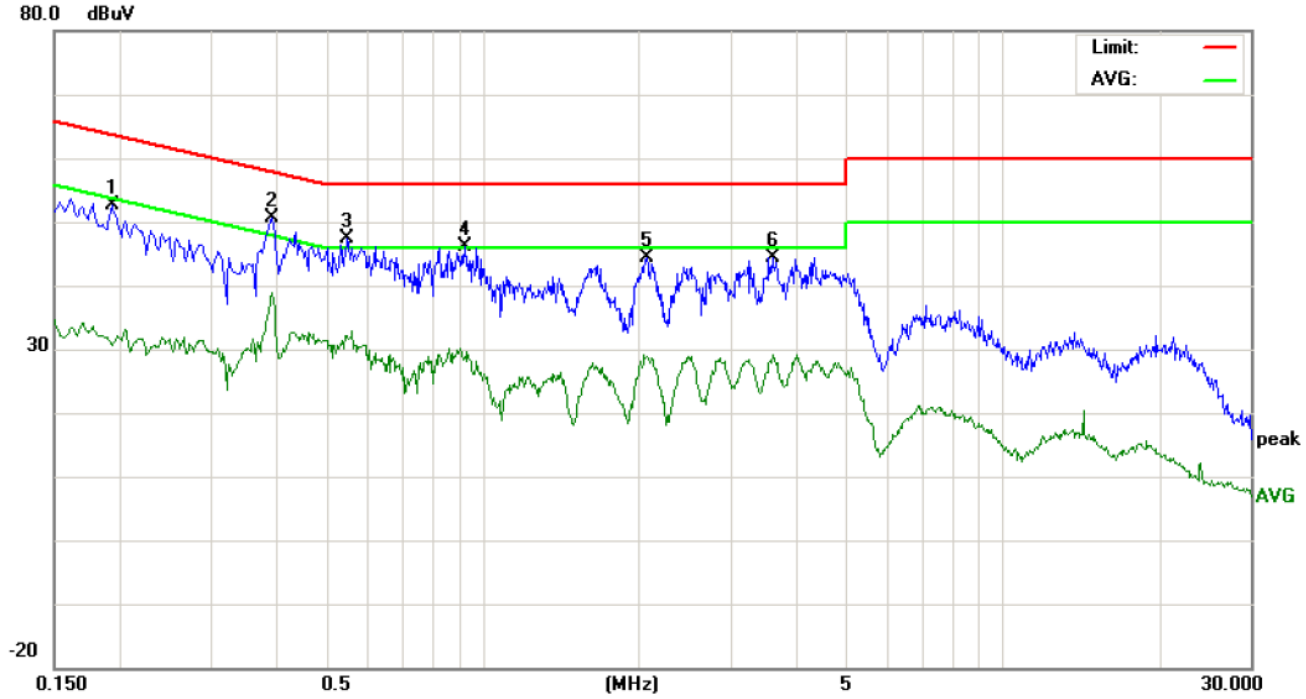
TEST RESULT OF L LINE



Site: Conduction
Phase: *L1*
Temperature: 26
Limit: FCC Class B Conduction(QP)
Power: AC 120V/60Hz
Humidity: 60 %
EUT: Mobile Phone
M/N: D100
Mode: 802.11b-CH1
Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2380	41.13		21.65	10.26	51.39		31.91	62.16	52.16	-10.77	-20.25	P	
2	0.3940	36.42		25.36	10.33	46.75		35.69	57.98	47.98	-11.23	-12.29	P	
3	0.8220	32.21		16.24	10.31	42.52		26.55	56.00	46.00	-13.48	-19.45	P	
4	1.6460	28.04		12.68	10.33	38.37		23.01	56.00	46.00	-17.63	-22.99	P	
5	3.6020	27.11		13.14	10.49	37.60		23.63	56.00	46.00	-18.40	-22.37	P	
6	4.7180	30.60		10.49	10.22	40.82		20.71	56.00	46.00	-15.18	-25.29	P	

TEST RESULT OF N LINE



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Mobile Phone
M/N: D100
Mode: 802.11b-CH1
Note:

Phase: *N*
Power: AC 120V/60Hz

Temperature: 26
Humidity: 60 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1940	42.40		20.41	10.21	52.61		30.62	63.86	53.86	-11.25	-23.24	P	
2	0.3940	40.19		28.55	10.33	50.52		38.88	57.98	47.98	-7.46	-9.10	P	
3	0.5500	37.00		21.77	10.35	47.35		32.12	56.00	46.00	-8.65	-13.88	P	
4	0.9260	35.80		18.48	10.40	46.20		28.88	56.00	46.00	-9.80	-17.12	P	
5	2.0740	34.17		18.57	10.25	44.42		28.82	56.00	46.00	-11.58	-17.18	P	
6	3.6060	33.82		18.31	10.49	44.31		28.80	56.00	46.00	-11.69	-17.20	P	

APPENDIX I
PHOTOGRAPHS OF THE EUT

TOTAL VIEW OF EUT

TOP VIEW OF EUT

BOTTOM VIEW OF EUT

FRONT VIEW OF EUT

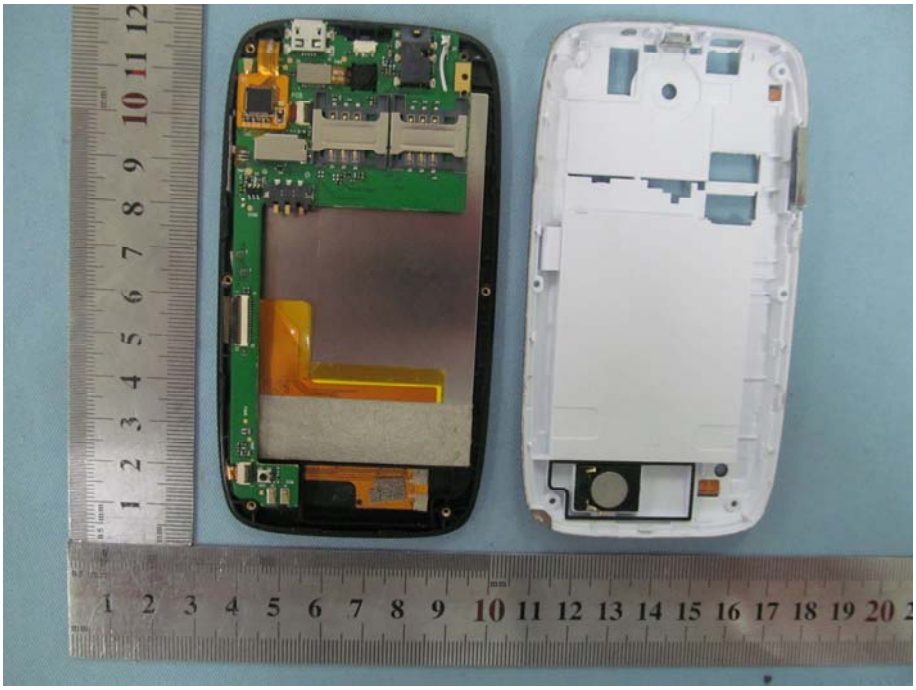
BACK VIEW OF EUT

LEFT VIEW OF EUT

RIGHT VIEW OF EUT

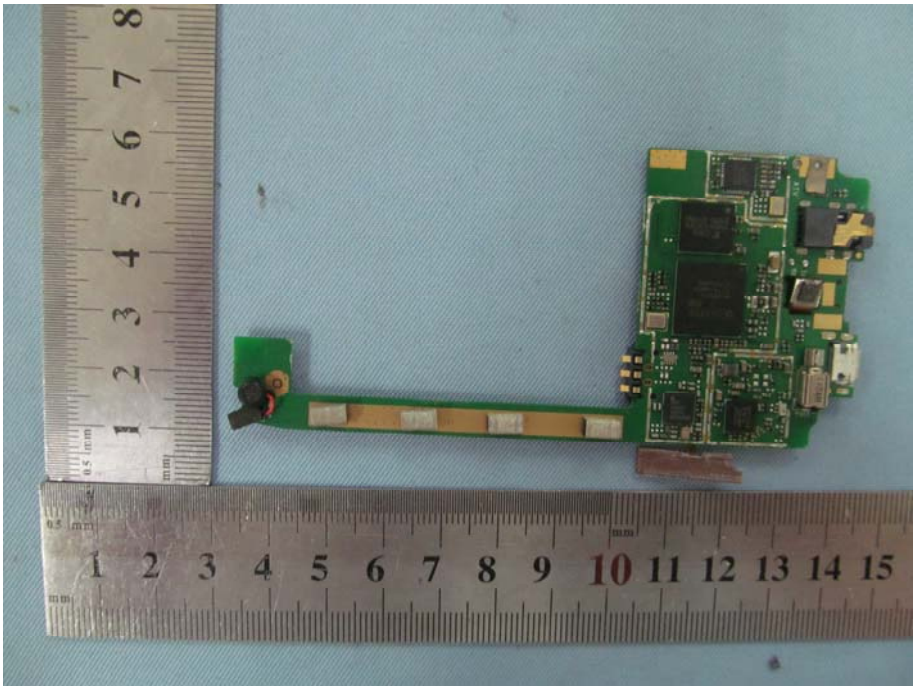
OPEN VIEW OF EUT-1

OPEN VIEW OF EUT-2

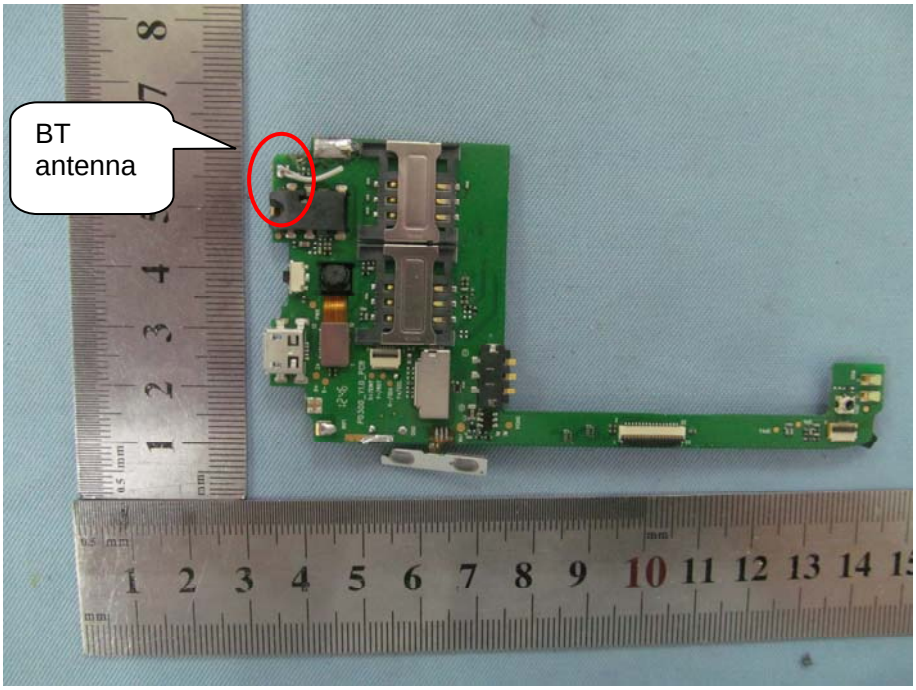


OPEN VIEW OF EUT-3

INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2

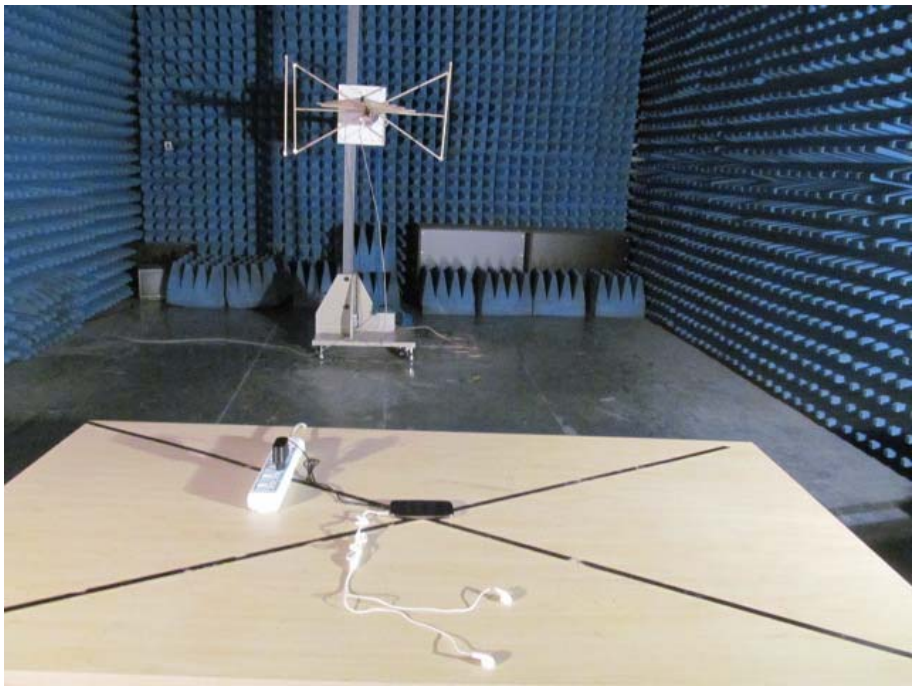


APPENDIX II

PHOTOGRAPHS OF THE TEST SETUP

CONDUCTED EMISSION

RADIATED SPURIOUS EMISSION



----END OF REPORT----