Report No: CCIS13120058403

FCC REPORT （WIFI）

Applicant:	SHENZHEN SANG FEI CONSUMER COMMUNICATIONS CO., LTD
Address of Applicant:	11 Science and Technology Road, Shenzhen Hi-tech Industrial Park Nanshan District, Shenzhen 518057, PRC

Equipment Under Test (EUT)

Product Name:	Smart Phone
Model No.:	W6620
FCC ID:	VQRCTW6620
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	18 Dec., 2013
Date of Test:	19 Dec., 2013 to 31 Dec., 2013
Date of report issued:	02 Jan., 2014
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*02 Jan., 2014*	*Original*

Prepared By: Shirley Li ***Date:*** *02 Jan., 2014*

Report Clerk

Check By: Aaron Yang ***Date:*** *02 Jan., 2014*

Project Engineer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
Emission Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	SHENZHEN SANG FEI CONSUMER COMMUNICATIONS CO., LTD
Address of Applicant:	11 Science and Technology Road, Shenzhen Hi-tech Industrial Park Nanshan District, Shenzhen 518057,PRC
Manufacturer:	SHENZHEN SANG FEI CONSUMER COMMUNICATIONS CO., LTD.
Address of Manufacturer:	11 Science and Technology Road, Shenzhen Hi-tech Industrial Park Nanshan District, Shenzhen 518057,PRC

5.2 General Description of E.U.T.

Product Name:	Smart Phone
Model No.:	W6620
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(H20))
Channel numbers:	11 for 802.11b/802.11g/802.11n(H20)
Channel separation:	5MHz
Modulation technology: (IEEE 802.11b)	CCK/BPSK/QPSK
Modulation technology: (IEEE 802.11g/802.11n)	64QAM/16QAM/BPSK/QPSK
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps
Data speed (IEEE 802.11n):	Up to 150Mbps
Antenna Type:	Internal Antenna
Antenna gain:	2.1dBi
AC adapter:	Input:100-240V AC, 50/60Hz 150mA Output:5.0V DC 700mA
Power supply:	Rechargeable Li-ion Battery DC3.7V/1900mAh

Operation Frequency each of channel For 802.11b/g/n(H20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

802.11b/802.11g/802.11n (H20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

5.3 Test environment and mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Operation mode	Keep the EUT in continuous transmitting with modulation
The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20). Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.

5.4 Description of Support Units

N/A

5.5 Laboratory Facility

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

- **FCC - Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

- **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282
Fax: +86-755-23116366

5.7 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	June 09 2013	June 08 2014
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	CCIS0002	N/A	N/A
3	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	June 04 2013	June 03 2014
4	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	May 30 2013	May 29 2014
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
6	Coaxial Cable	CCIS	N/A	CCIS0016	Apr. 01 2013	Mar. 31 2014
7	Coaxial Cable	CCIS	N/A	CCIS0017	Apr. 01 2013	Mar. 31 2014
8	Coaxial cable	CCIS	N/A	CCIS0018	Apr. 01 2013	Mar. 31 2014
9	Coaxial Cable	CCIS	N/A	CCIS0019	Apr. 01 2013	Mar. 31 2014
10	Coaxial Cable	CCIS	N/A	CCIS0087	Apr. 01 2013	Mar. 31 2014
11	Amplifier(10kHz-1.3GHz)	HP	8447D	CCIS0003	Apr. 01 2013	Mar. 31 2014
12	Amplifier(1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	June 09 2013	June 08 2014
13	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Apr. 01 2013	Mar. 31 2014
14	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2013	Mar. 29 2014
15	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
16	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
17	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP	CCIS0023	May. 29 2013	May. 28 2014
18	Loop antenna	Laplace instrument	RF300	EMC0701	Aug. 12 2013	Aug. 11 2014
19	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	May 25 2013	May 24 2014
20	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	May 29 2013	May 28 2014

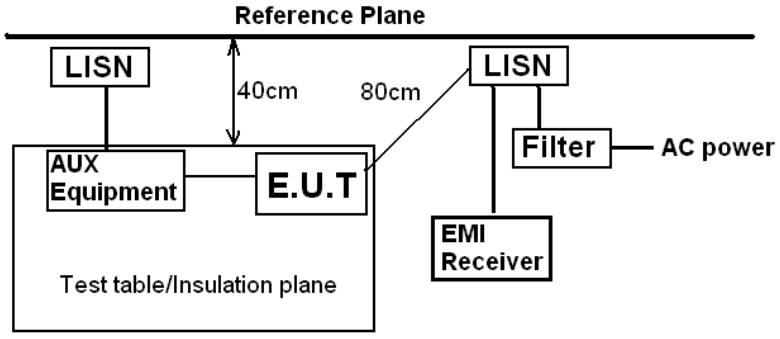
Conducted Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2013	June 08 2014
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	May 25 2013	May. 24 2014
3	LISN	CHASE	MN2050D	CCIS0074	Apr. 01 2013	Mar. 31 2014
4	Coaxial Cable	CCIS	N/A	CCIS0086	Apr. 01 2013	Mar. 31 2014

6 Test results and Measurement Data

6.1 Antenna requirement:

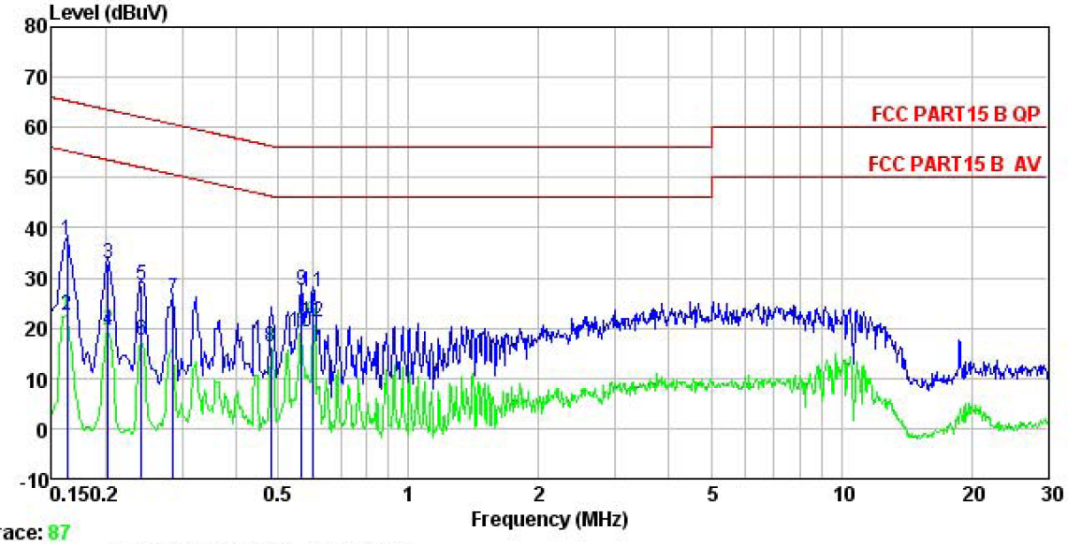
Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: *An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an* *antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.* *15.247(c) (1)(i) requirement:* *(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.*	
E.U.T Antenna:	
*The antenna is an internal antenna which cannot replace by end-user, the best case gain of the WiFi antenna is 2.1*dBi.	
	

6.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.4: 2003
Test Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9kHz, VBW=30kHz
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

Neutral:

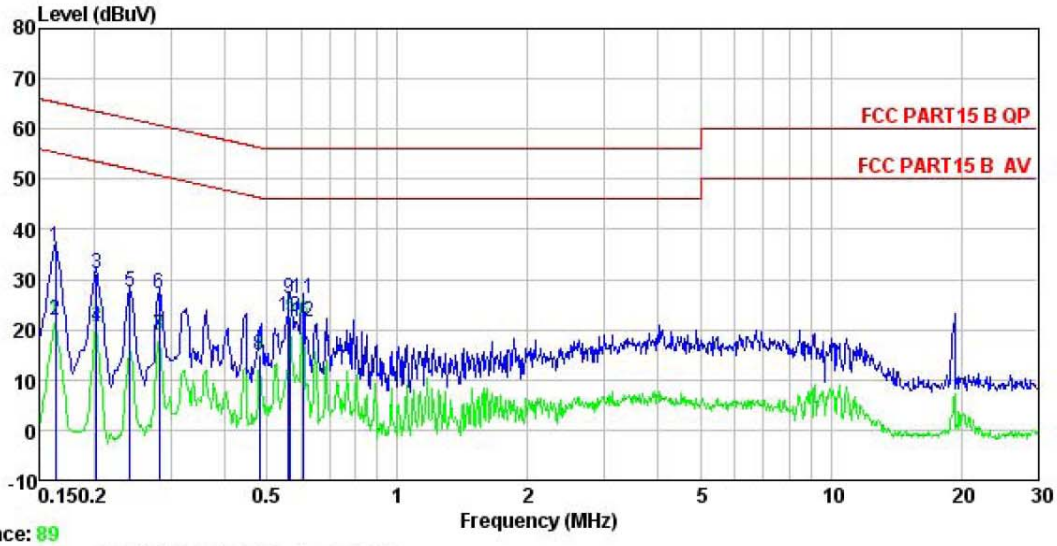


Trace: 87

Site : CCIS Conducted test Site
Condition : FCC PART15 B QP LISN NEUTRAL
Job No. : 584RF
EUT : Smart phone
Model : W6620
Test Mode : Wifi mode
Power Rating : AC 120V/ 60 Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: A-bomb

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.162	37.19	0.25	0.00	37.44	65.34	-27.90	QP
2	0.162	22.35	0.25	0.00	22.60	55.34	-32.74	Average
3	0.202	32.65	0.25	0.00	32.90	63.54	-30.64	QP
4	0.202	19.17	0.25	0.00	19.42	53.54	-34.12	Average
5	0.242	28.17	0.25	0.00	28.42	62.04	-33.62	QP
6	0.242	17.43	0.25	0.00	17.68	52.04	-34.36	Average
7	0.286	25.51	0.26	0.00	25.77	60.63	-34.86	QP
8	0.481	15.99	0.28	0.00	16.27	46.32	-30.05	Average
9	0.567	27.18	0.25	0.00	27.43	56.00	-28.57	QP
10	0.567	19.07	0.25	0.00	19.32	46.00	-26.68	Average
11	0.601	27.00	0.23	0.00	27.23	56.00	-28.77	QP
12	0.601	20.95	0.23	0.00	21.18	46.00	-24.82	Average

Line:



Trace: 89

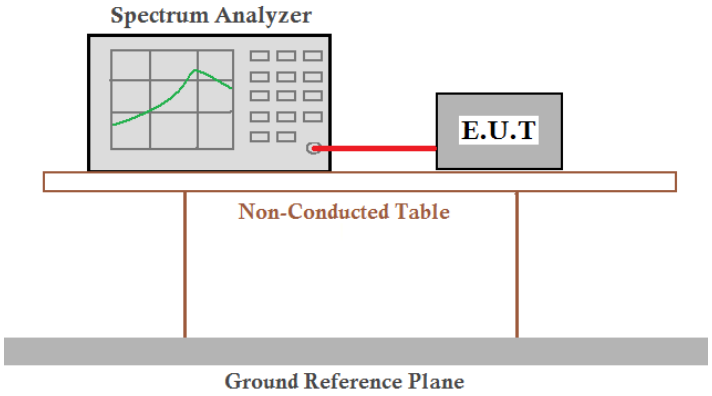
Site : CCIS Conducted test Site
Condition : FCC PART15 B QP LISN LINE
Job No. : 584RF
EUT : Smart phone
Model : W6620
Test Mode : Wifi mode
Power Rating : AC 120V/ 60 Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: A-bomb

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.162	36.16	0.27	0.00	36.43	65.34	-28.91	QP
2	0.162	21.56	0.27	0.00	21.83	55.34	-33.51	Average
3	0.202	30.77	0.28	0.00	31.05	63.54	-32.49	QP
4	0.202	20.38	0.28	0.00	20.66	53.54	-32.88	Average
5	0.242	27.15	0.27	0.00	27.42	62.04	-34.62	QP
6	0.282	26.89	0.26	0.00	27.15	60.76	-33.61	QP
7	0.282	18.59	0.26	0.00	18.85	50.76	-31.91	Average
8	0.481	14.66	0.29	0.00	14.95	46.32	-31.37	Average
9	0.561	25.84	0.27	0.00	26.11	56.00	-29.89	QP
10	0.567	22.13	0.26	0.00	22.39	46.00	-23.61	Average
11	0.608	25.84	0.25	0.00	26.09	56.00	-29.91	QP
12	0.608	21.24	0.25	0.00	21.49	46.00	-24.51	Average

Notes:

1. An initial pre-scan was performed on the live and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

6.3 Conducted Output Power

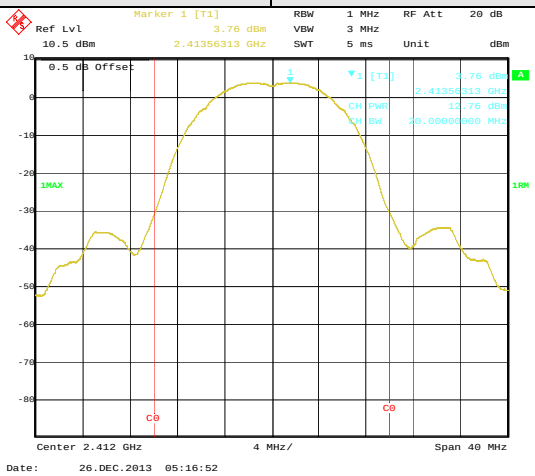
Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	Test method refers to KDB558074 (DTS Measure Guidance). AVGSA-1 method was used.

Measurement Data

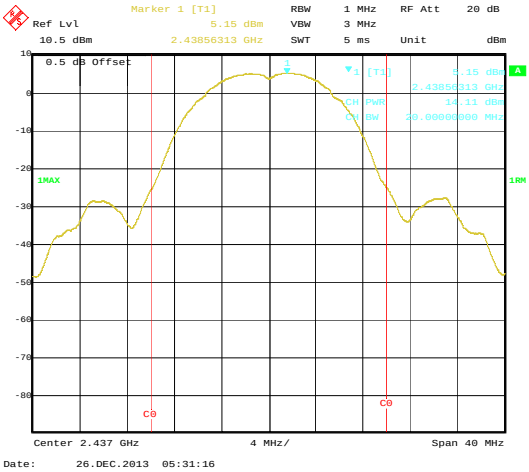
Test CH	Maximum Conducted Output Power (dBm)			Limit(dBm)	Result
	802.11b	802.11g	802.11n(H20)		
Lowest	12.76	9.53	8.68	30.00	Pass
Middle	14.11	13.44	13.44		
Highest	12.77	11.88	11.68		

Test plot as follows:

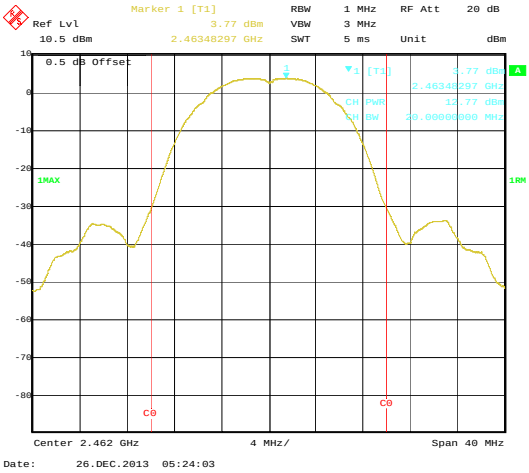
Test mode:	802.11b



Lowest channel

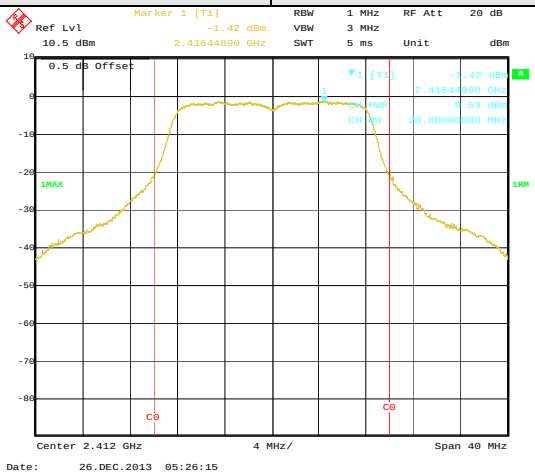


Middle channel

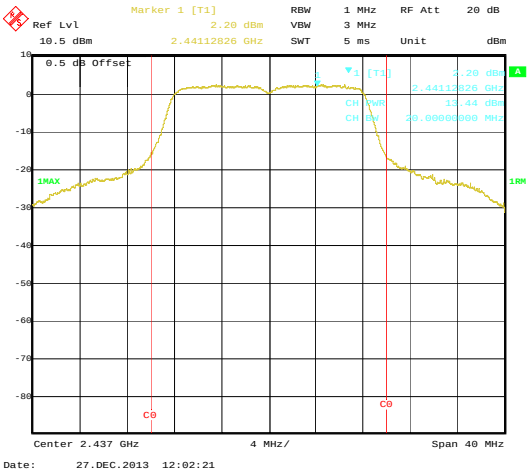


Highest channel

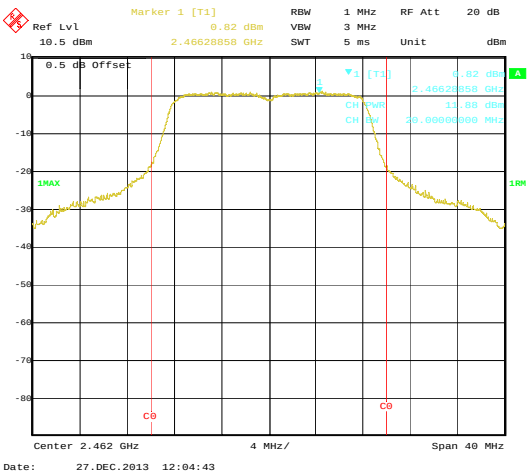
Test mode:	802.11g



Lowest channel

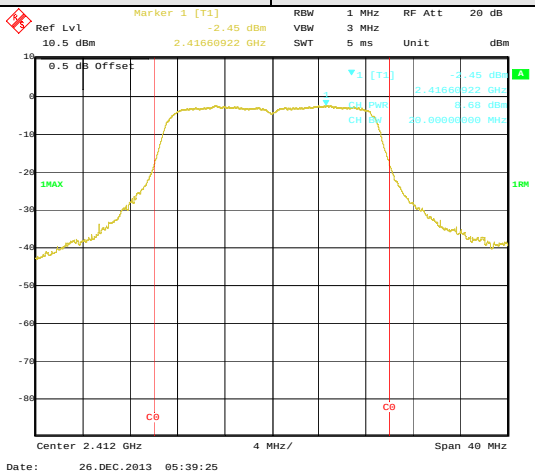


Middle channel

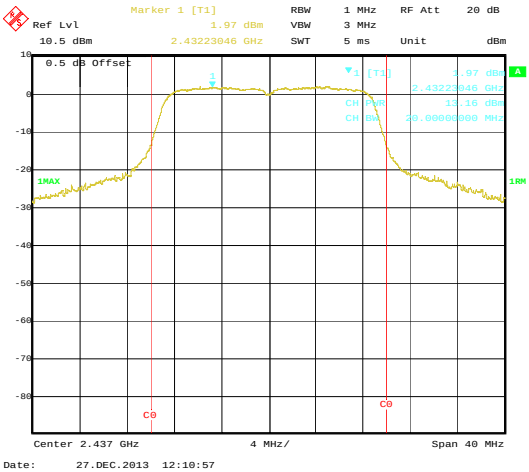


Highest channel

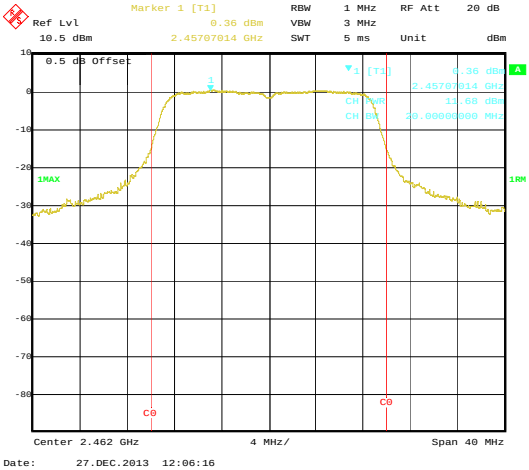
Test mode:	802.11n(H20)



Lowest channel

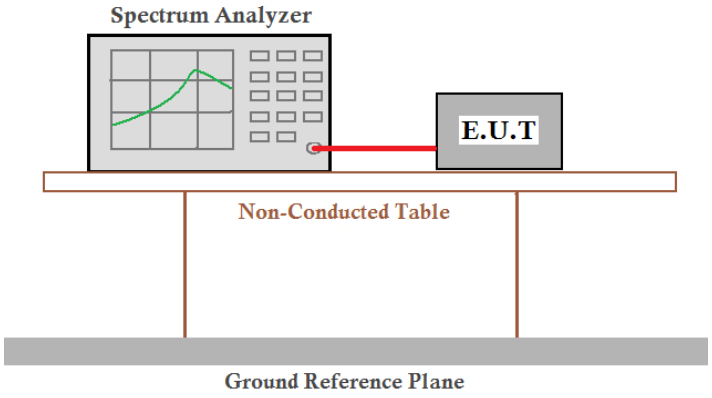


Middle channel



Highest channel

6.4 Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	>500kHz
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

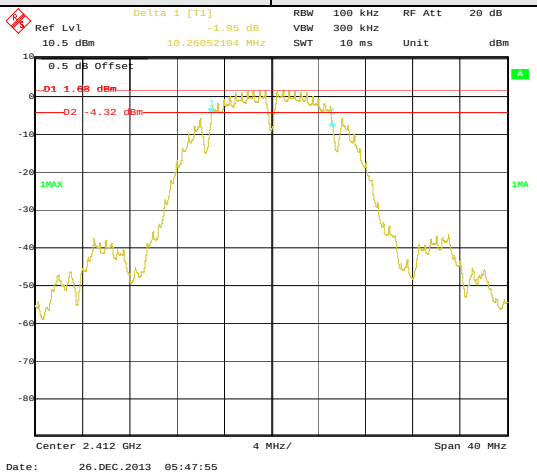
Measurement Data

Test CH	6dB Emission Bandwidth (MHz)			Limit(kHz)	Result
	802.11b	802.11g	802.11 n(H20)		
Lowest	10.26	16.51	17.64	>500	Pass
Middle	10.26	16.51	17.72		
Highest	10.26	16.51	17.71		

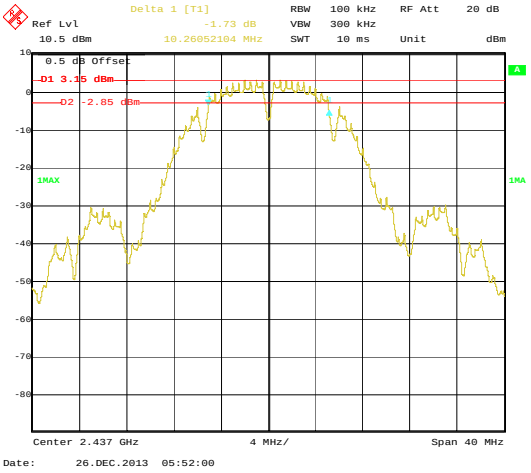
Test CH	99%dB Occupy Bandwidth (MHz)			Limit(kHz)	Result
	802.11b	802.11g	802.11 n(H20)		
Lowest	14.03	16.43	17.72	N/A	N/A
Middle	14.19	17.07	17.88		
Highest	14.03	16.59	17.88		

Test plot as follows:

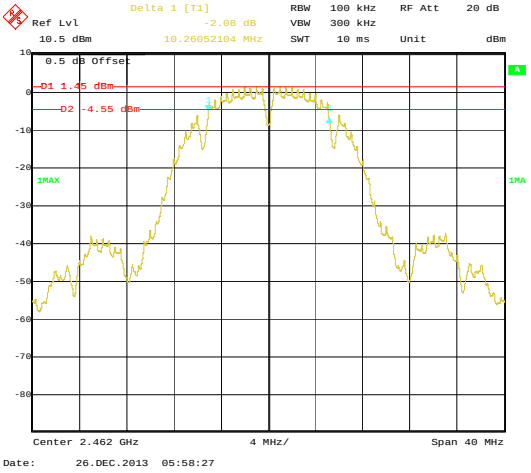
Test mode:6dB EBW	802.11b



Lowest channel

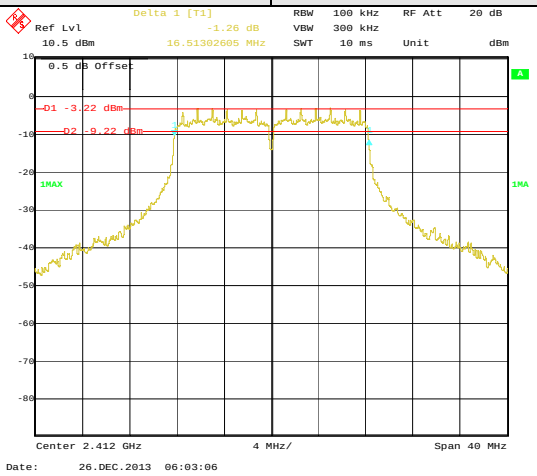


Middle channel

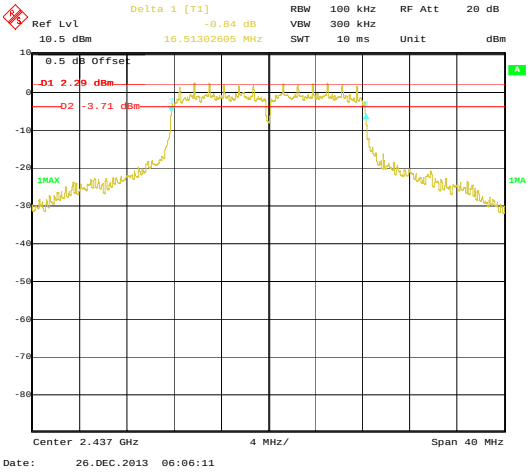


Highest channel

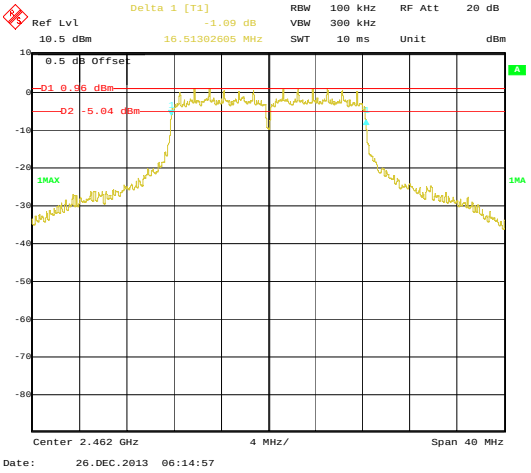
Test mode:6dB EBW	802.11g



Lowest channel

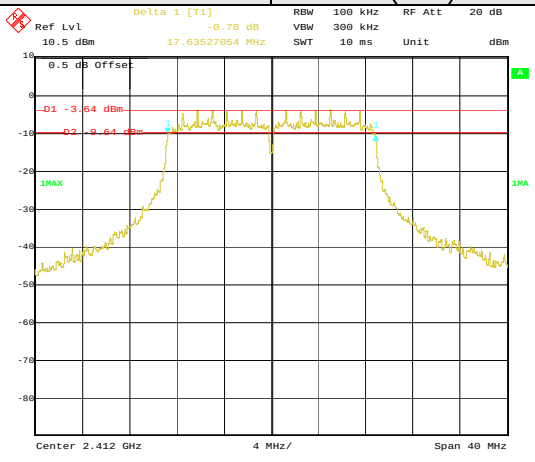


Middle channel

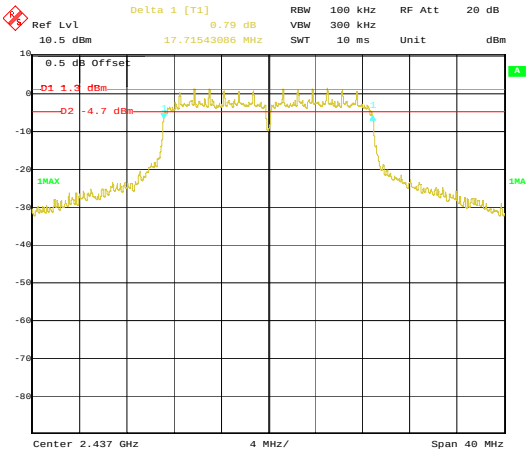


Highest channel

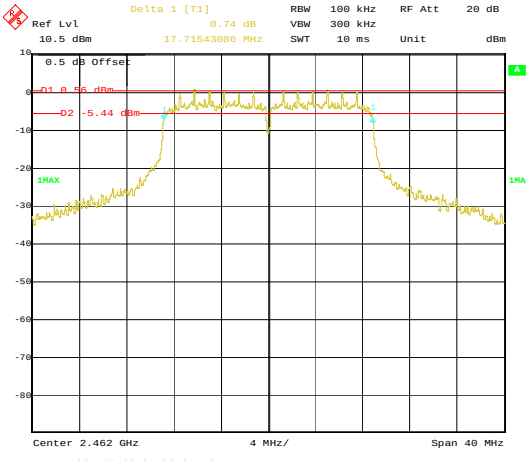
Test mode:6dB EBW	802.11 n(H20)



Lowest channel

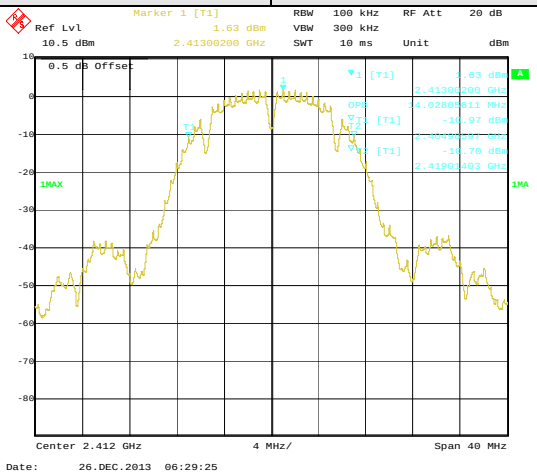


Middle channel

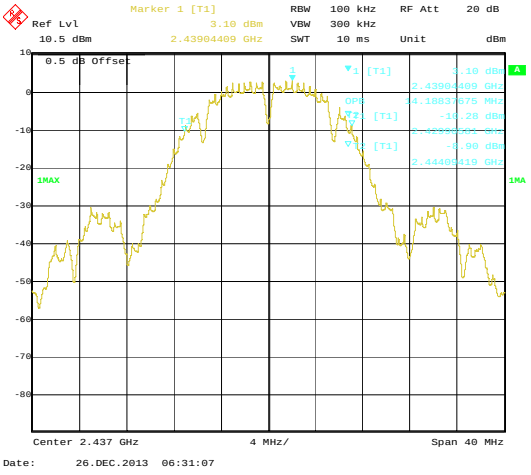


Highest channel

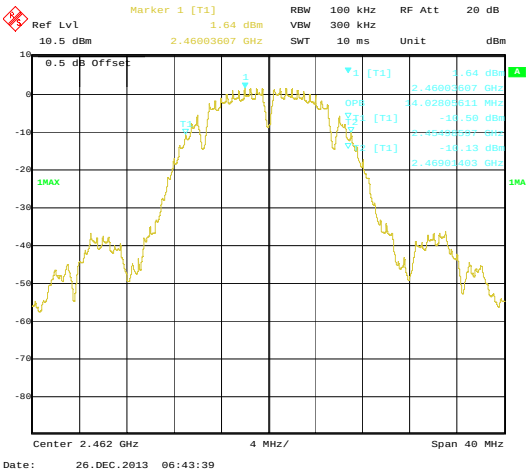
Test mode: 99%dB Occupy Bandwidth	802.11b



Lowest channel

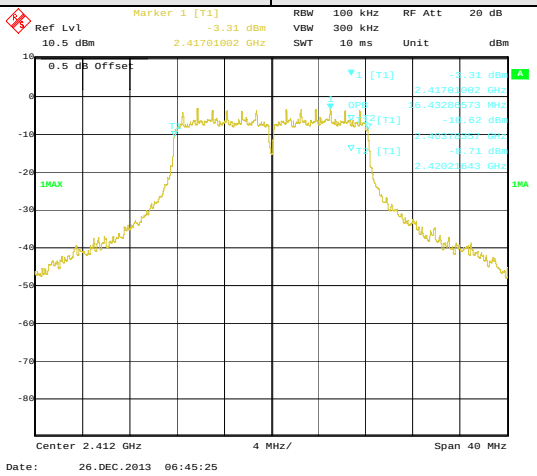


Middle channel

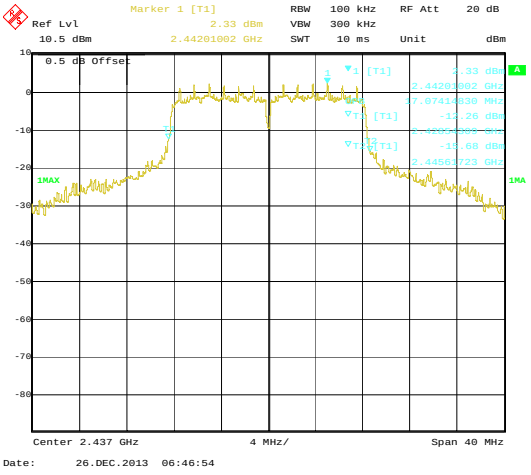


Highest channel

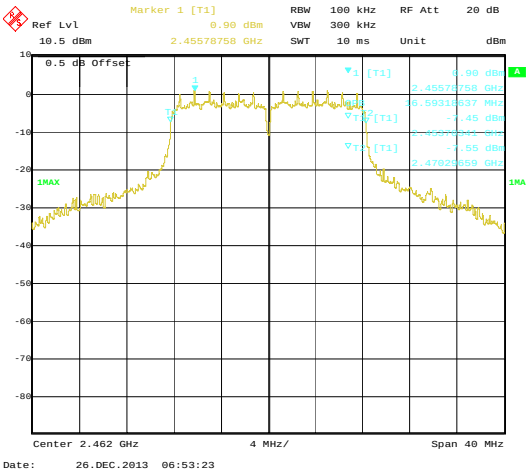
Test mode: 99%dB Occupy Bandwidth	802.11g



Lowest channel

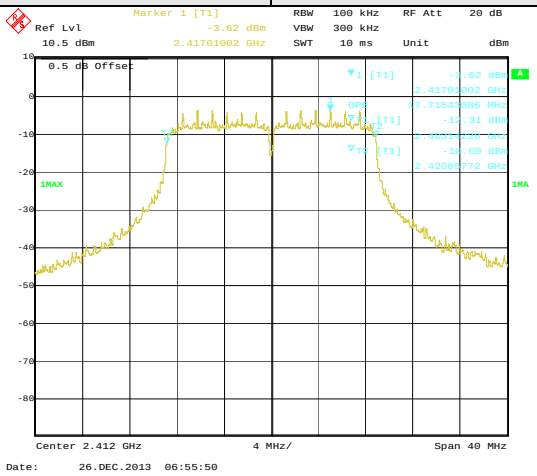


Middle channel

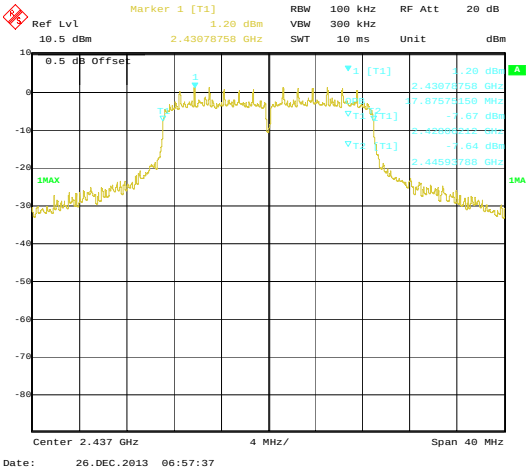


Highest channel

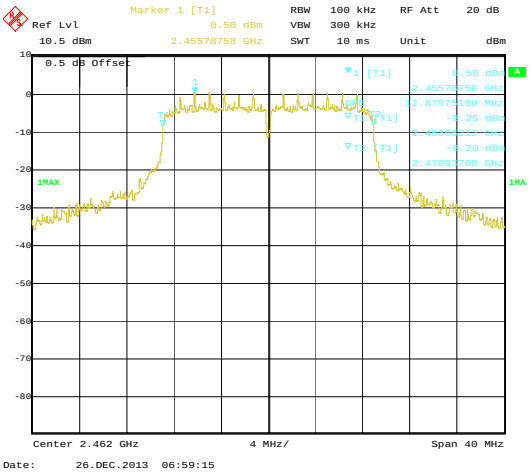
Test mode: 99%dB Occupy Bandwidth	802.11n(H20)



Lowest channel

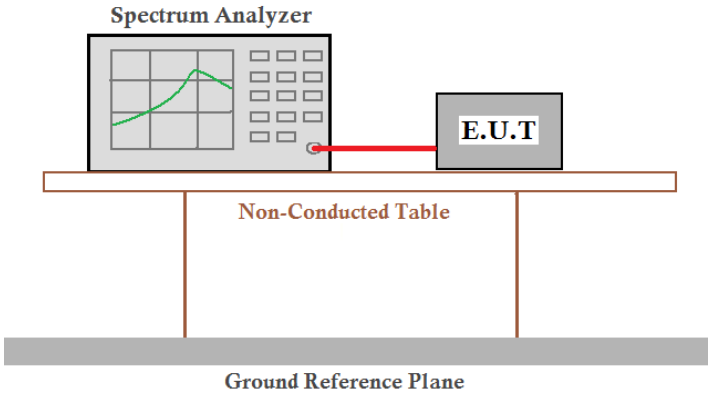


Middle channel



Highest channel

6.5 Power Spectral Density

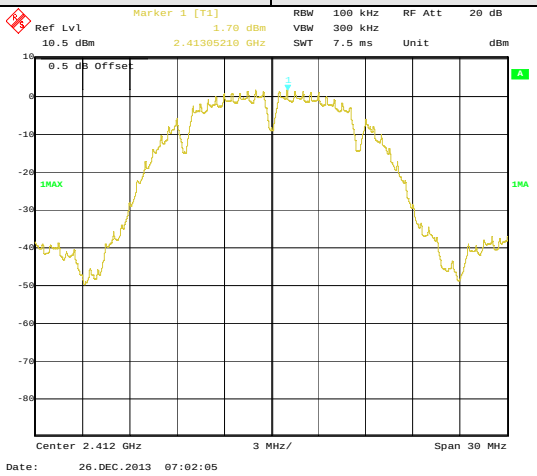
Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	8dBm
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

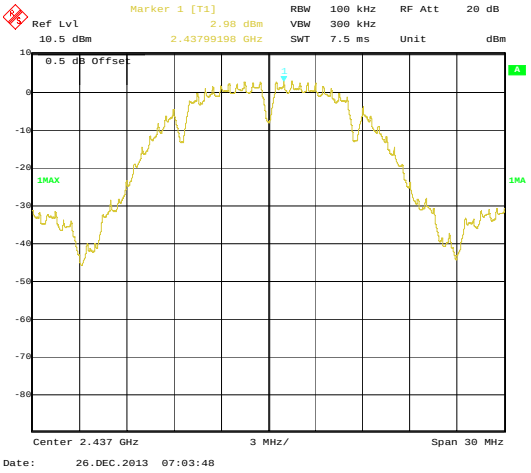
Test CH	Power Spectral Density (dBm)			Limit(dBm)	Result
	802.11a	802.11g	802.11n(H20)		
Lowest	1.70	-3.31	-3.68	8.00	Pass
Middle	2.98	2.45	1.22		
Highest	1.76	0.88	0.45		

Test plot as follows:

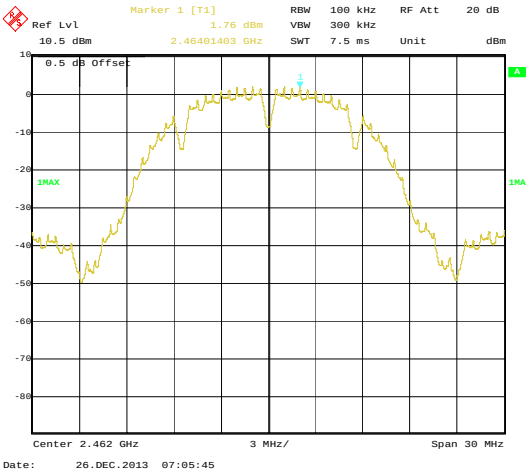
Test mode:	802.11b



Lowest channel

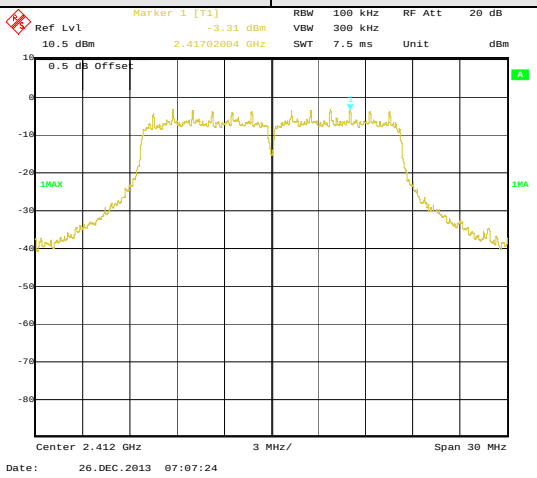


Middle channel

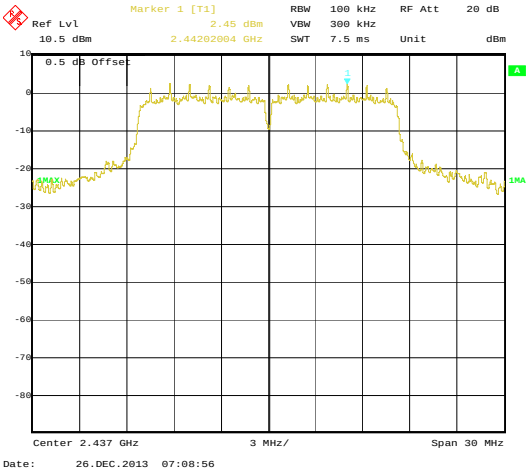


Highest channel

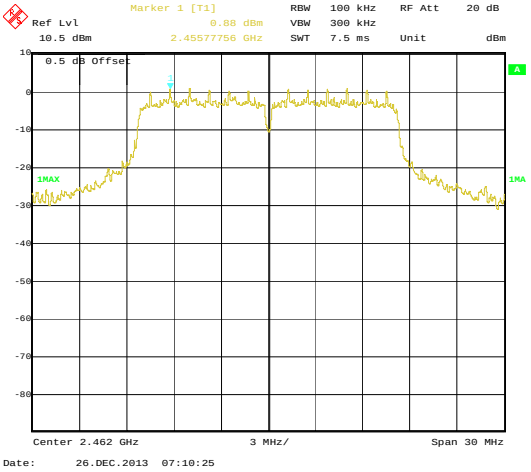
Test mode:	802.11g



Lowest channel

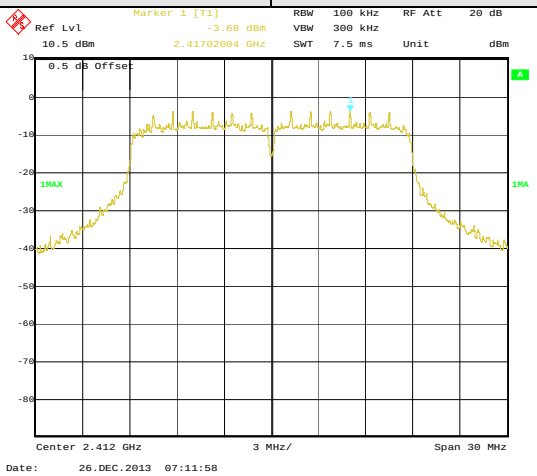


Middle channel

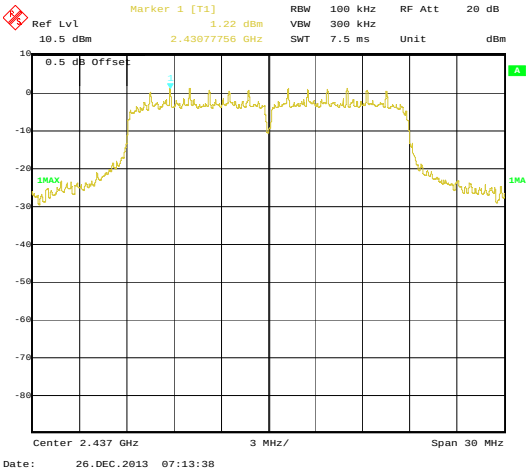


Highest channel

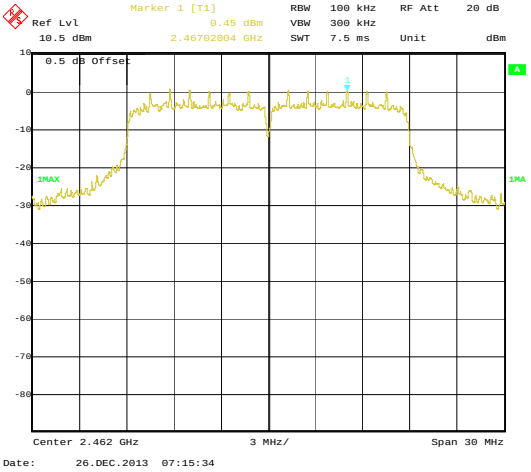
Test mode:	802.11n(H20)



Lowest channel



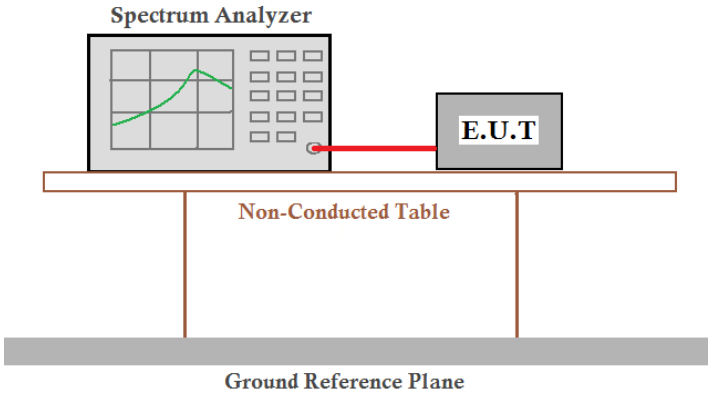
Middle channel



Highest channel

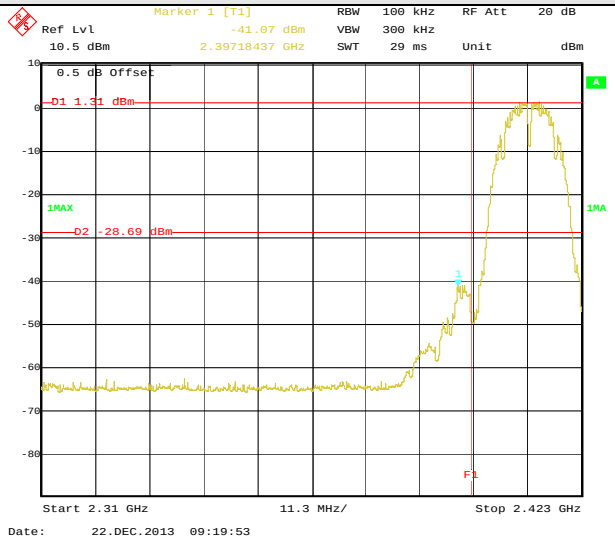
6.6 Band Edge

6.6.1 Conducted Emission Method

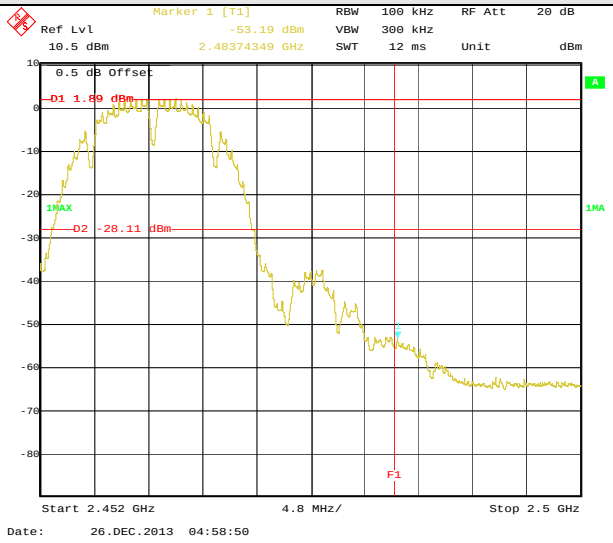
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 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.
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Test plot as follows:

Test mode:	802.11b

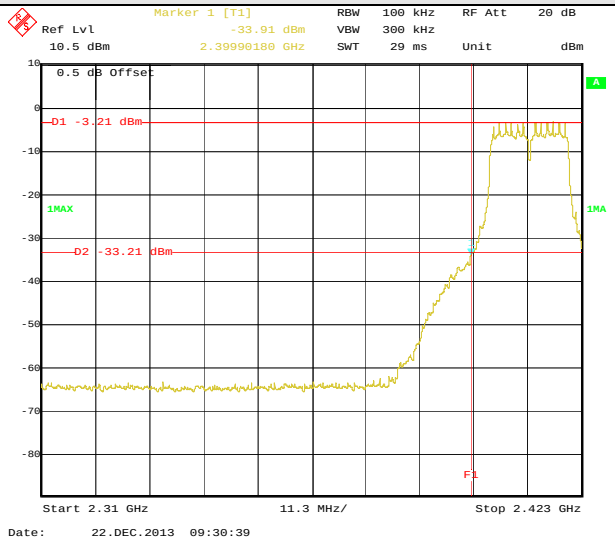


Lowest channel

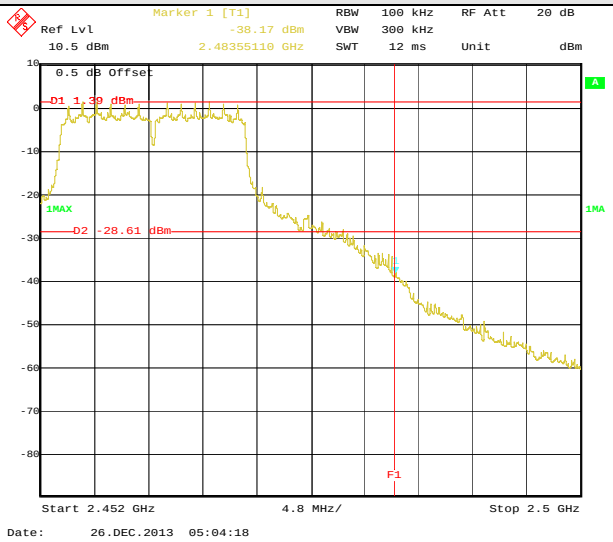


Highest channel

Test mode:	802.11g

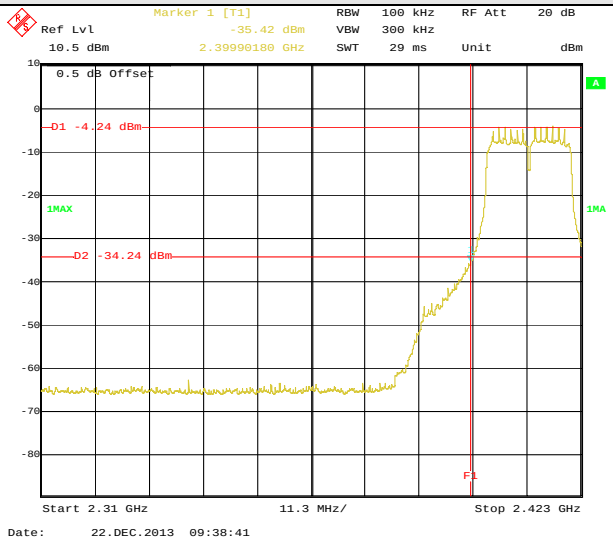


Lowest channel

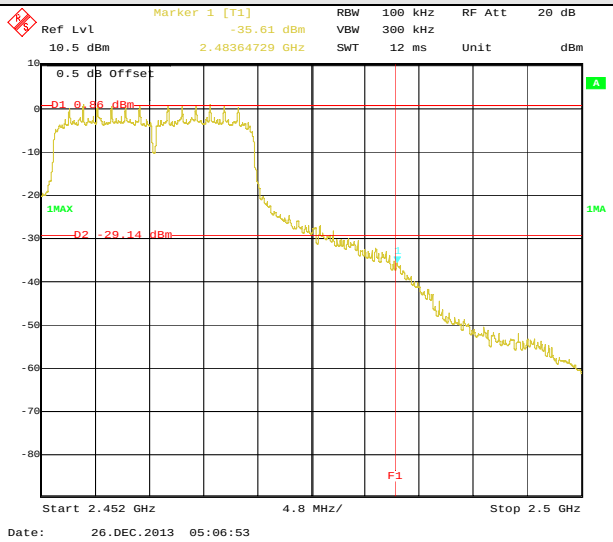


Highest channel

Test mode:	802.11n(H20)

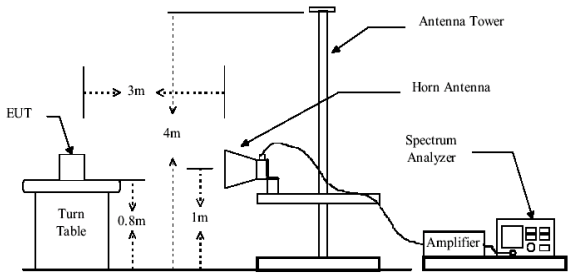


Lowest channel



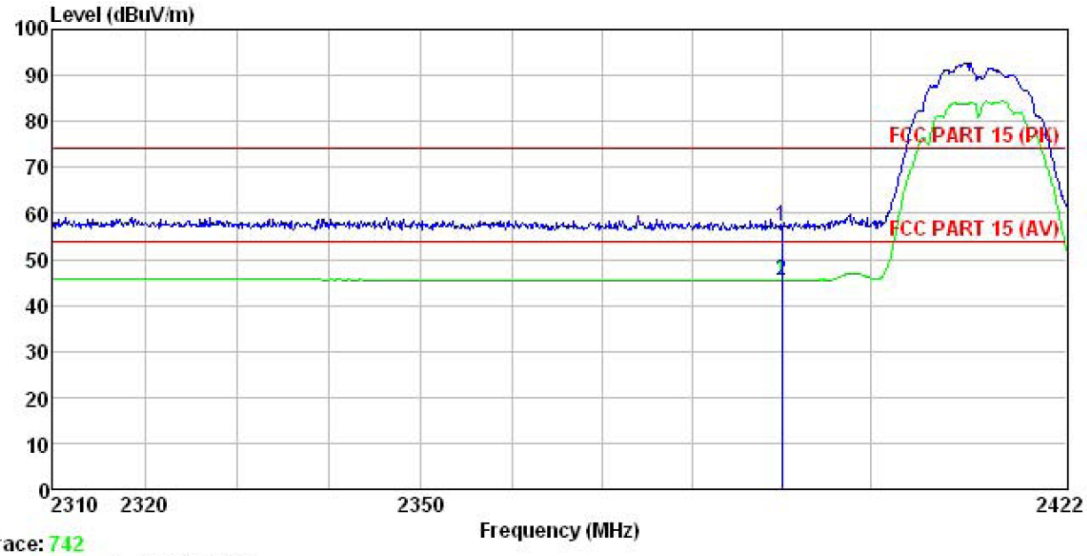
Highest channel

6.6.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4: 2003</td></tr>
<tr><td>Test Frequency Range:</td><td>2.3GHz to 2.5GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.7 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td>Passed</td></tr>
</table>

802.11b
The lowest channel：

Vertical

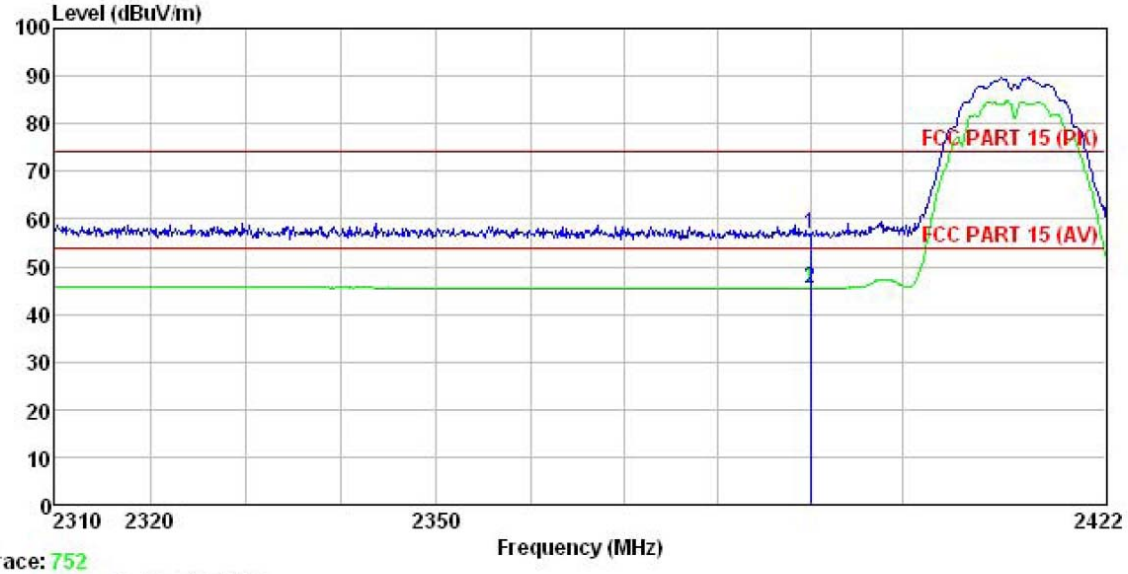


Trace: 742

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : WIFI mode BE-B-L
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: A-bomb

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	24.09	27.58	5.67	0.00	57.34	74.00	-16.66	Peak
2	2390.000	12.09	27.58	5.67	0.00	45.34	54.00	-8.66	Average

Horizontal



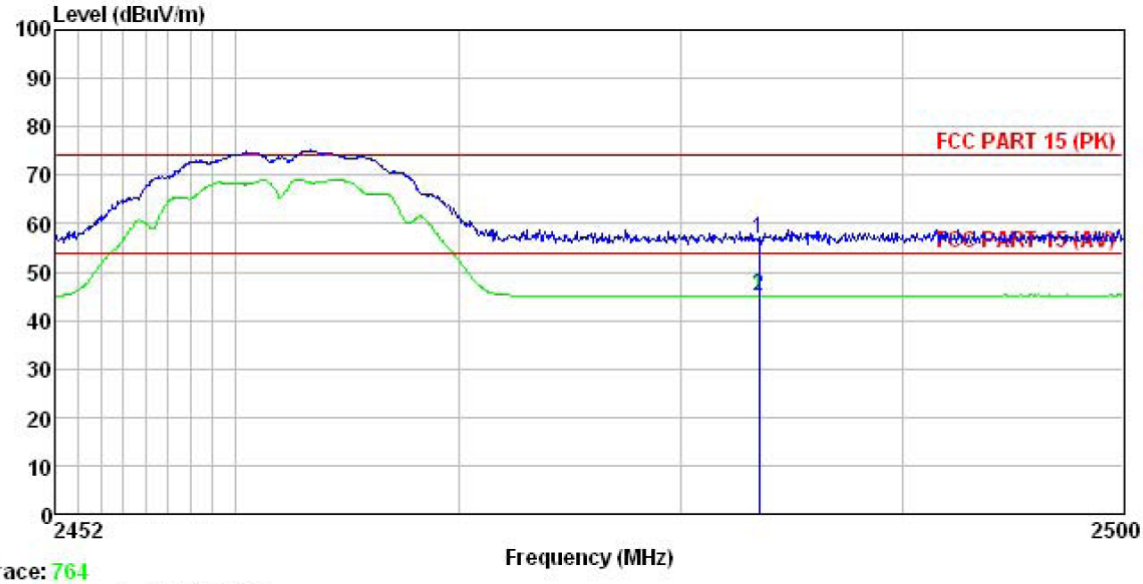
Trace: 752

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : WIFI mode BE-B-L
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: A-bomb

	Freq	ReadAntenna Level	Cable Factor	Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	23.67	27.58	5.67	0.00	56.92	74.00	-17.08	Peak
2	2390.000	12.13	27.58	5.67	0.00	45.38	54.00	-8.62	Average

The highest channel

Vertical

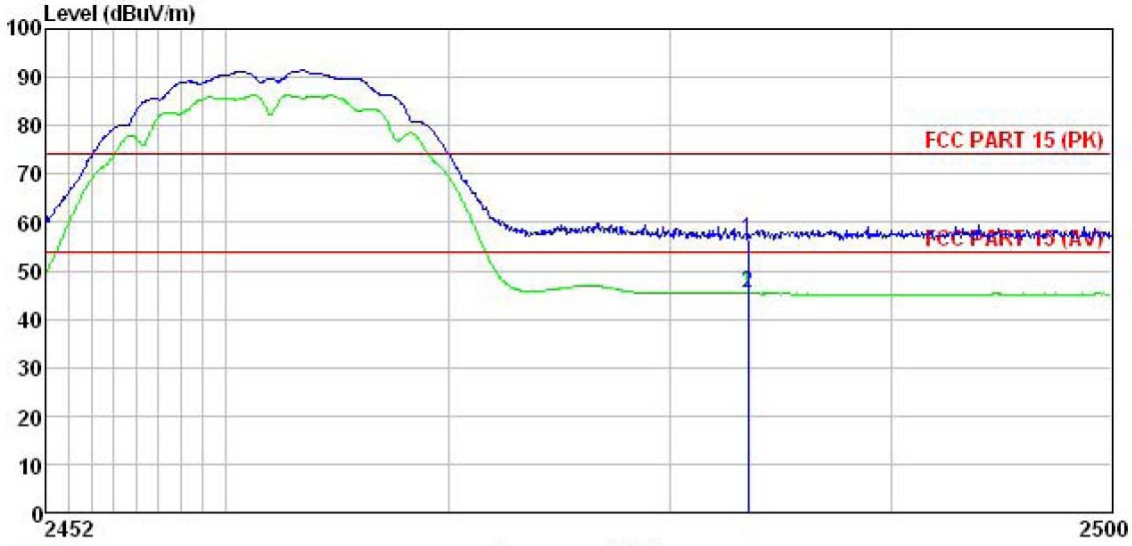


Trace: 764

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : WIFI mode BE-B-H
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: A-bomb

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	23.55	27.52	5.70	0.00	56.77	74.00	-17.23	Peak
2	2483.500	11.92	27.52	5.70	0.00	45.14	54.00	-8.86	Average

Horizontal



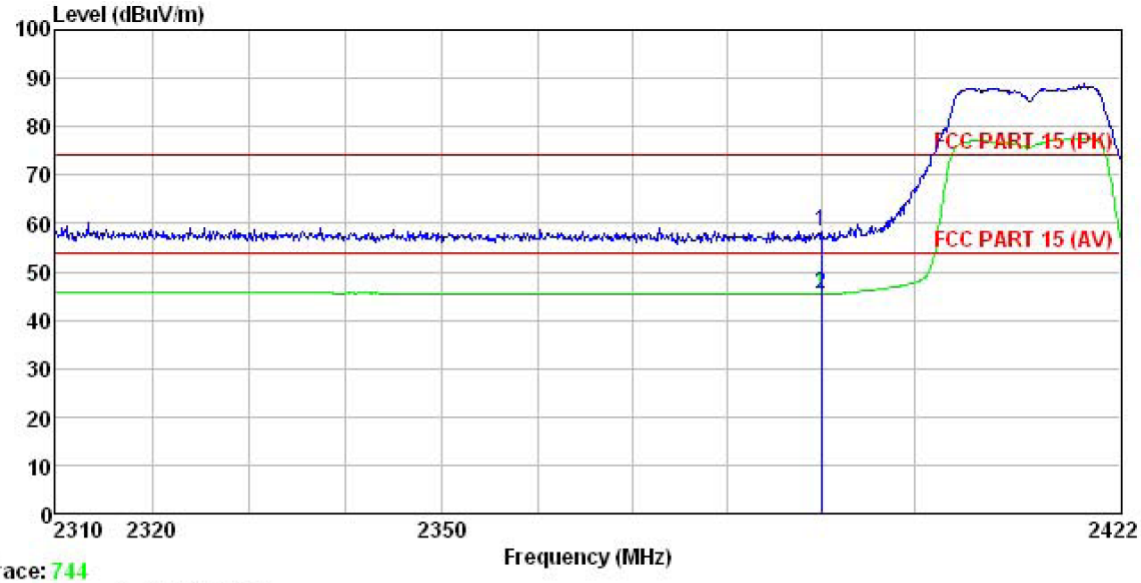
Trace: 754

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Job NO.       : 584RF
EUT           : Smart phone
Model         : W6620
Test mode     : WIFI mode BE-B-H
Power Rating  : AC120V/60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: A-bomb
```

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	23.38	27.52	5.70	0.00	56.60	74.00	-17.40	Peak
2	2483.500	12.00	27.52	5.70	0.00	45.22	54.00	-8.78	Average

802.11g
The lowest channel：

Vertical

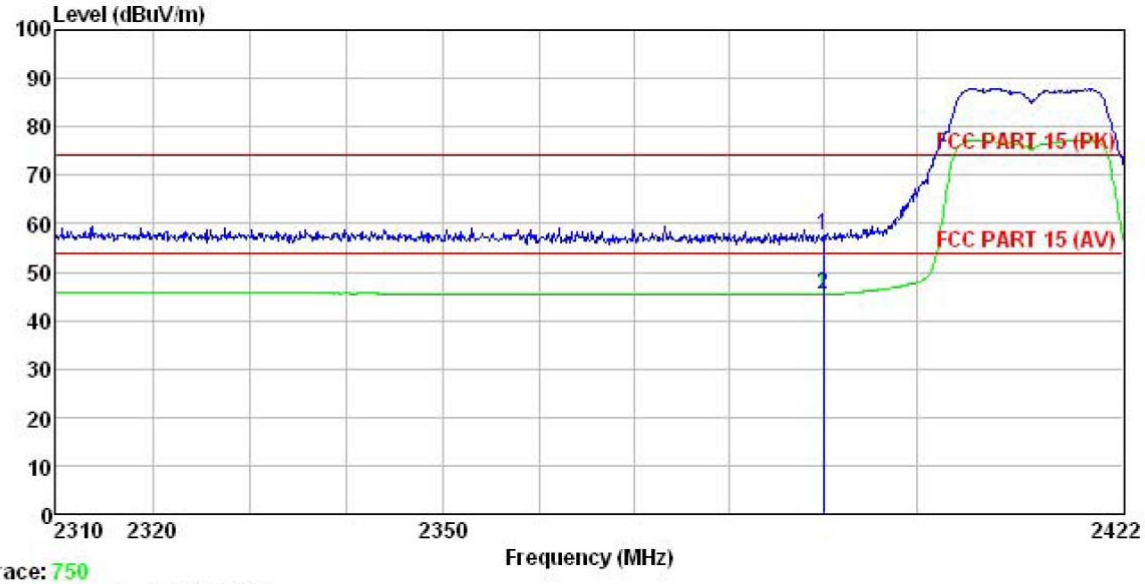


Trace: 744

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : WIFI mode BE-G-L
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: A-bomb

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	24.88	27.58	5.67	0.00	58.13	74.00	-15.87	Peak
2	2390.000	12.14	27.58	5.67	0.00	45.39	54.00	-8.61	Average

Horizontal



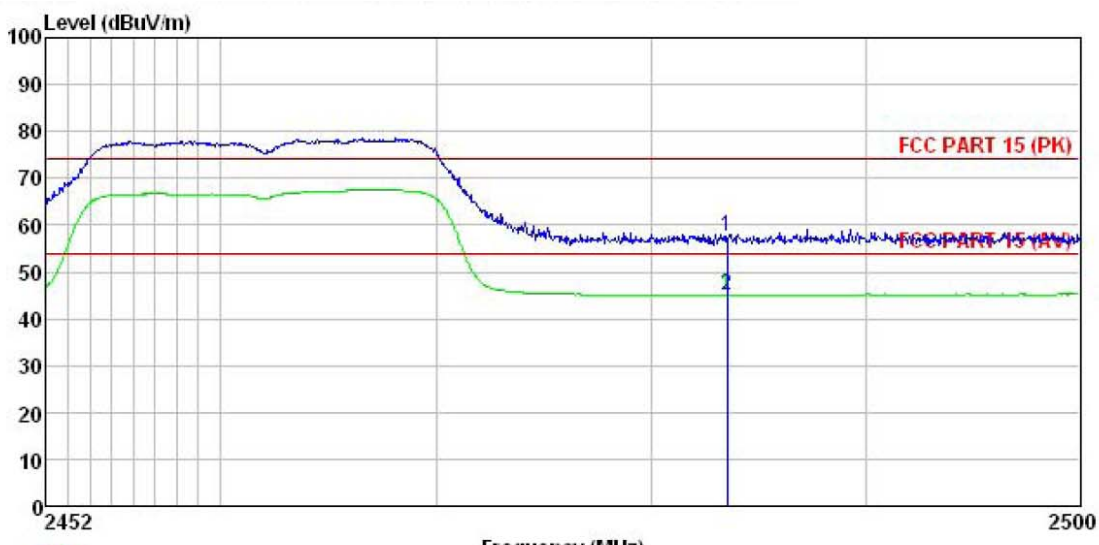
Trace: 750

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Job NO.       : 584RF
EUT           : Smart phone
Model         : W6620
Test mode     : WIFI mode BE-G-L
Power Rating  : AC120V/60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: A-bomb
```

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	24.13	27.58	5.67	0.00	57.38	74.00	-16.62	Peak
2	2390.000	12.18	27.58	5.67	0.00	45.43	54.00	-8.57	Average

The highest channel

Vertical

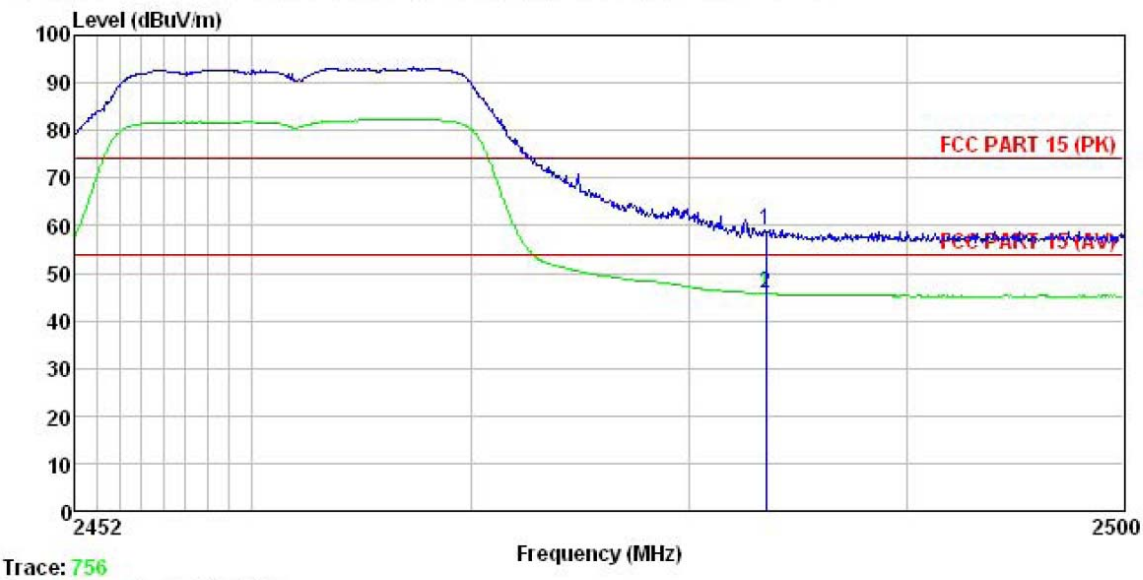


Trace: 762

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Job NO.       : 584RF
EUT           : Smart phone
Model         : W6620
Test mode     : WIFI mode BE-G-H
Power Rating  : AC120V/60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: A-bomb
```

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	24.17	27.52	5.70	0.00	57.39	74.00	-16.61	Peak
2	2483.500	11.91	27.52	5.70	0.00	45.13	54.00	-8.87	Average

Horizontal



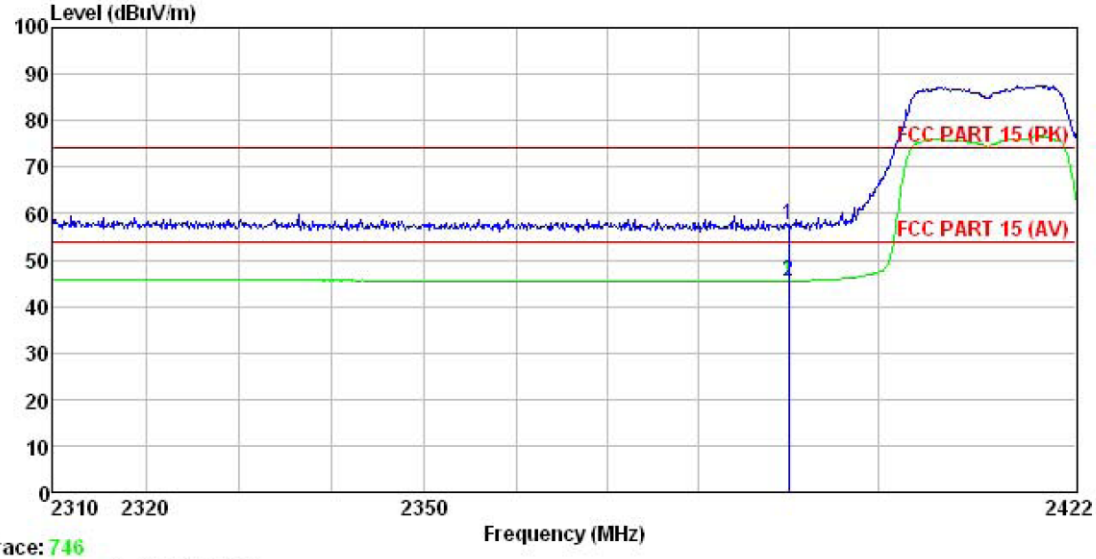
Trace: 756

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : WIFI mode BE-G-H
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: A-bomb

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	25.87	27.52	5.70	0.00	59.09	74.00	-14.91	Peak
2	2483.500	12.49	27.52	5.70	0.00	45.71	54.00	-8.29	Average

802.11n (H20)
The lowest channel：

Vertical

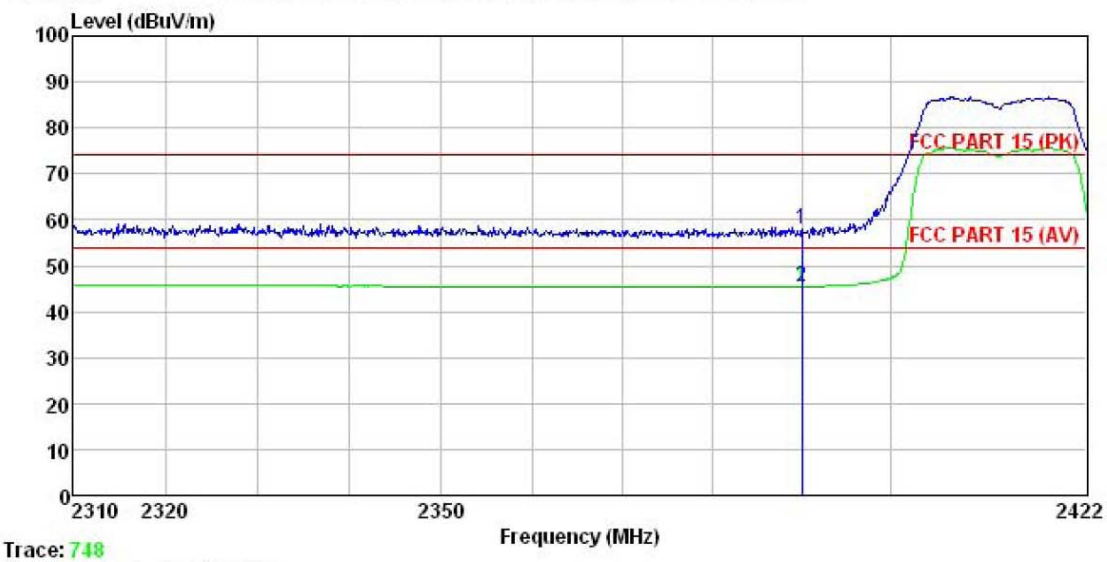


Trace: 746

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : WIFI mode BE-N20-L
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: A-bomb

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	24.41	27.58	5.67	0.00	57.66	74.00	-16.34	Peak
2	2390.000	12.20	27.58	5.67	0.00	45.45	54.00	-8.55	Average

Horizontal



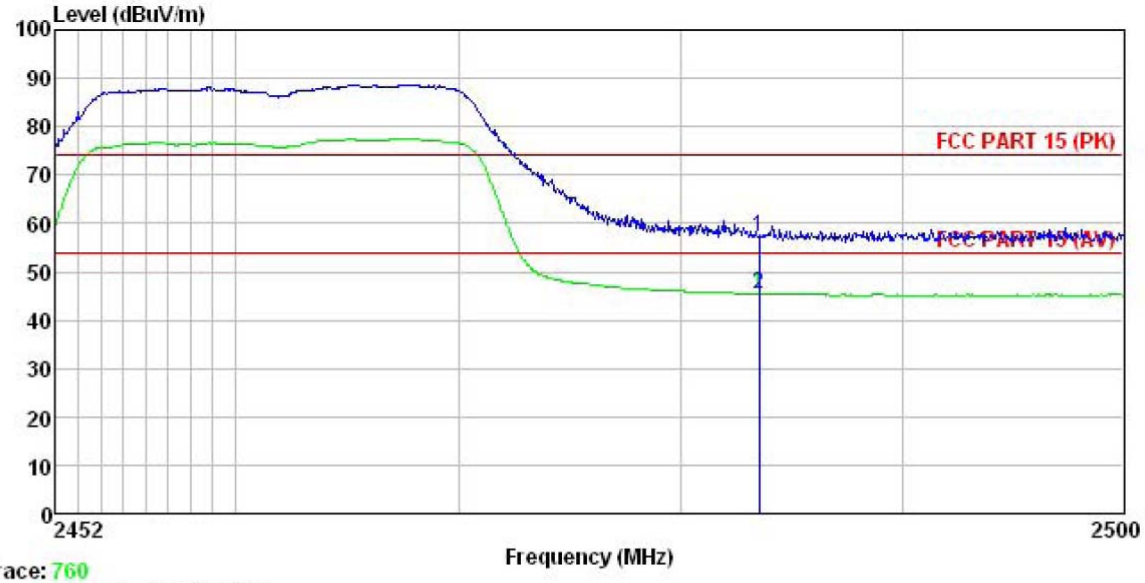
Trace: 748

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Job NO.       : 584RF
EUT           : Smart phone
Model         : W6620
Test mode     : WIFI mode BE-N20-L
Power Rating  : AC120V/60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: A-bomb
```

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	24.53	27.58	5.67	0.00	57.78	74.00	-16.22	Peak
2	2390.000	12.18	27.58	5.67	0.00	45.43	54.00	-8.57	Average

The highest channel

Vertical

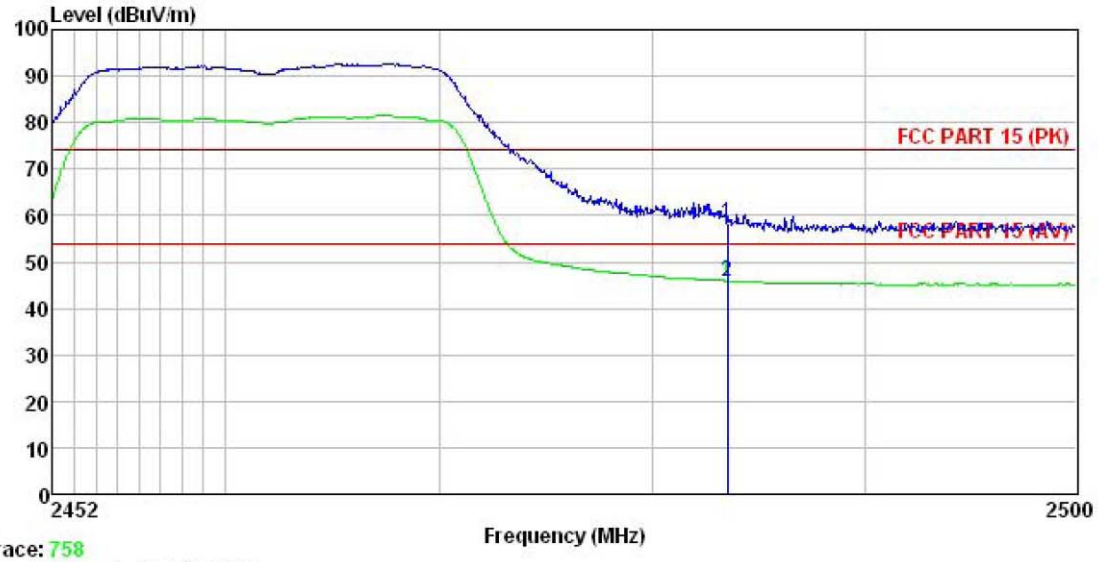


Trace: 760

Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : WIFI mode BE-N20-H
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: A-bomb

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	24.16	27.52	5.70	0.00	57.38	74.00	-16.62	Peak
2	2483.500	12.26	27.52	5.70	0.00	45.48	54.00	-8.52	Average

Horizontal



Trace: 758

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Job NO.       : 584RF
EUT           : Smart phone
Model         : W6620
Test mode     : WIFI mode BE-N20-H
Power Rating  : AC120V/60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: A-bomb
```

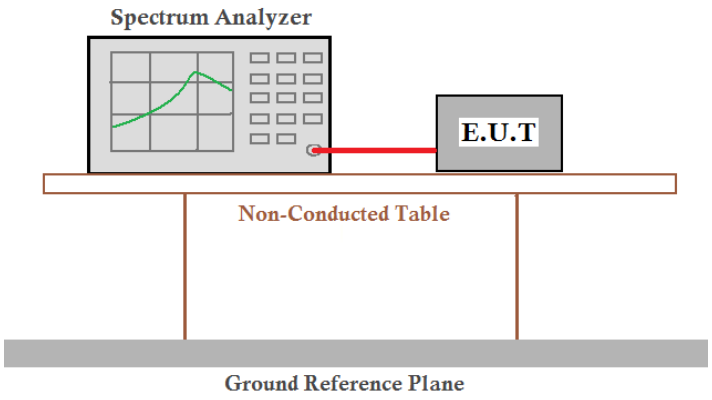
	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	25.03	27.52	5.70	0.00	58.25	74.00	-15.75	Peak
2	2483.500	12.71	27.52	5.70	0.00	45.93	54.00	-8.07	Average

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

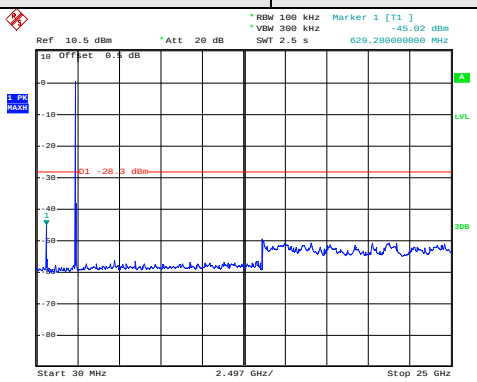
6.7 Spurious Emission

6.7.1 Conducted Emission Method

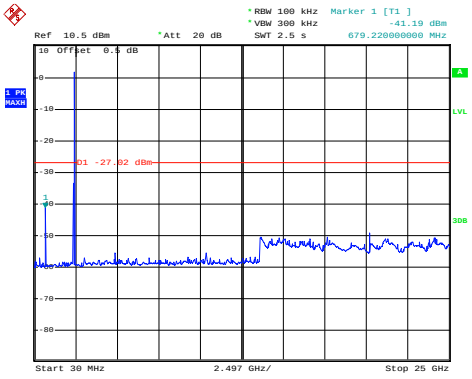
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 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.
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Test plot as follows:

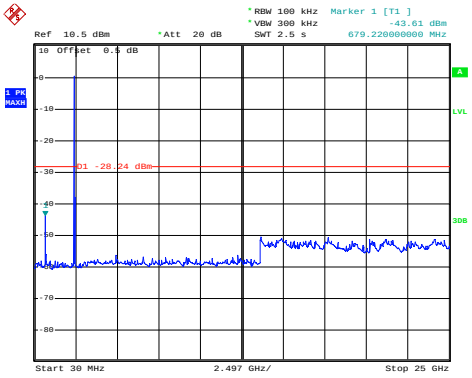
Test mode:	802.11b



Lowest channel (30MHz~25GHz)

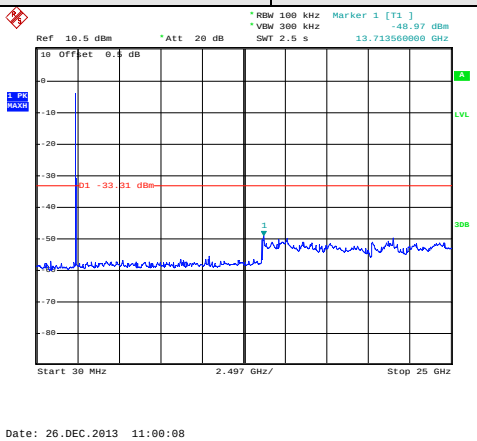


Middle channel (30MHz~25GHz)

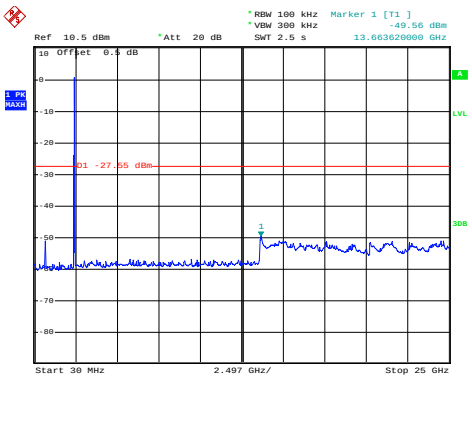


Highest channel (30MHz~25GHz)

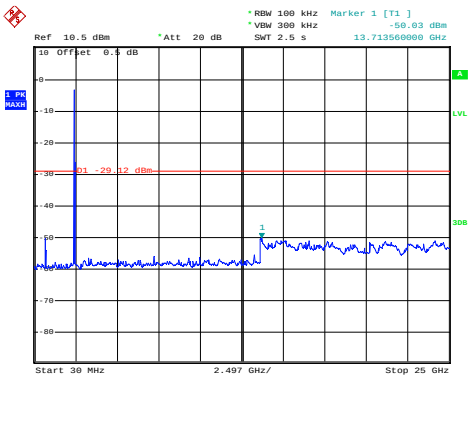
Test mode:	802.11g



Lowest channel (30MHz~25GHz)

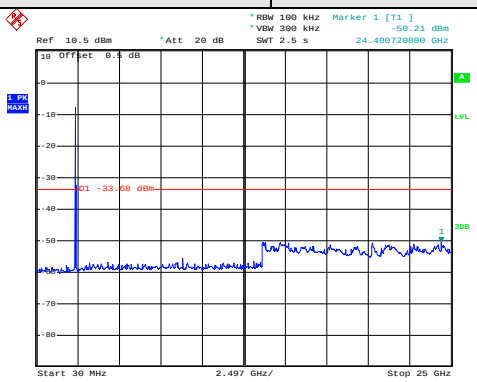


Middle channel (30MHz~25GHz)

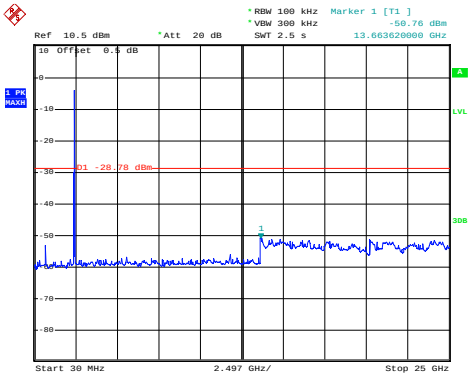


Highest channel (30MHz~25GHz)

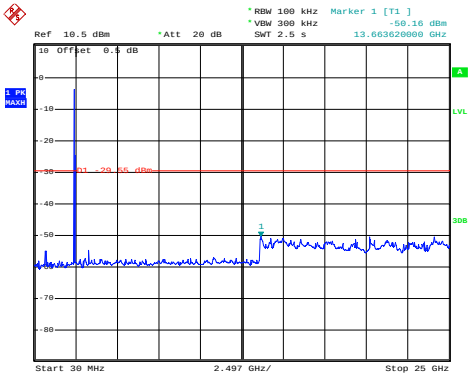
Test mode:	802.11n(H20)



Lowest channel (30MHz~25GHz)



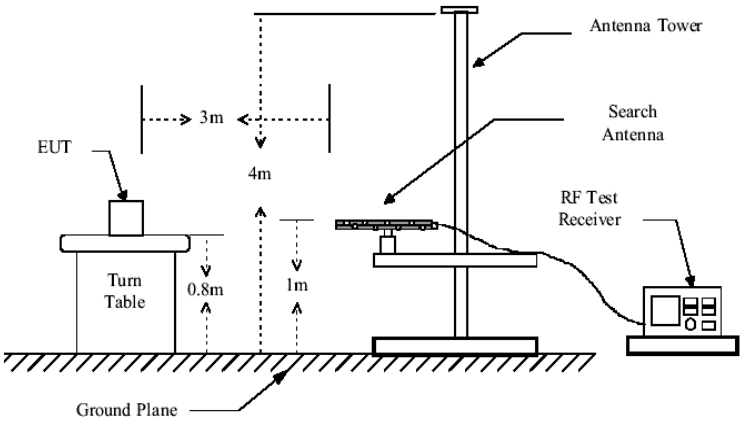
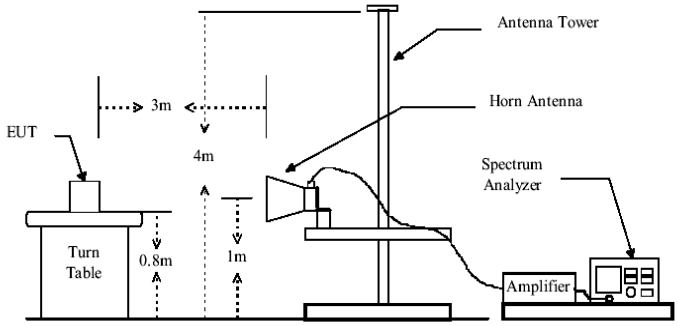
Middle channel(30MHz~25GHz)



Highest channel (30MHz~25GHz)

6.7.2 Radiated Emission Method

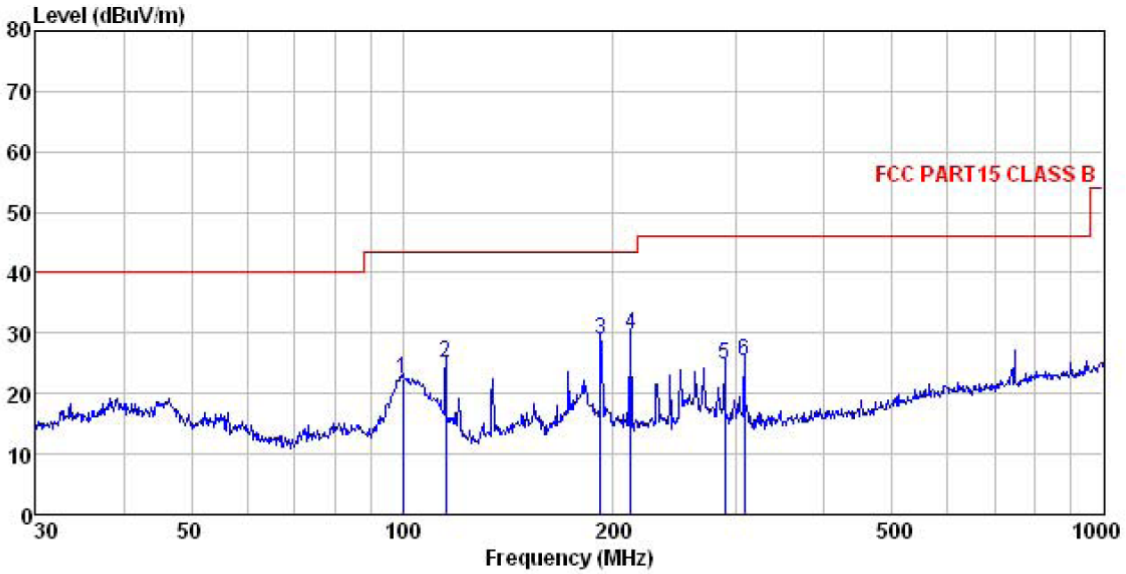
<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2003</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>
1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 2. 9 kHz to 30MHz is too low, so only shows the data of above 30MHz in this report.

Below 1GHz

Measurement Data

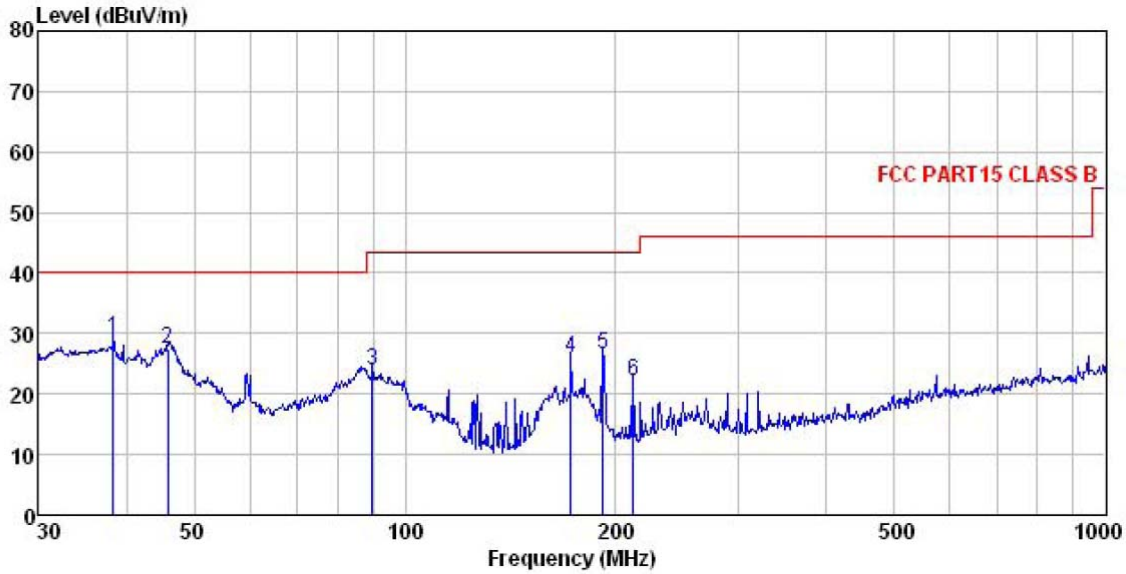
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : Wifi mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: A-bomb

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	100.229	37.40	13.11	1.94	30.08	22.37	43.50	-21.13	QP
2	115.321	41.54	11.31	2.11	29.78	25.18	43.50	-18.32	QP
3	191.745	45.52	10.56	2.81	29.83	29.06	43.50	-14.44	QP
4	211.527	45.78	10.93	2.86	29.76	29.81	43.50	-13.69	QP
5	287.990	38.52	12.84	2.91	29.47	24.80	46.00	-21.20	QP
6	307.831	38.78	13.17	2.97	29.47	25.45	46.00	-20.55	QP

Vertical:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
Job NO. : 584RF
EUT : Smart phone
Model : W6620
Test mode : Wifi mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: A-bomb

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	38.346	41.94	13.15	1.18	27.10	29.17	40.00	-10.83	QP
2	45.855	40.63	13.49	1.29	27.88	27.53	40.00	-12.47	QP
3	89.905	40.15	11.90	2.04	30.07	24.02	43.50	-19.48	QP
4	172.599	42.30	9.16	2.68	28.17	25.97	43.50	-17.53	QP
5	191.745	42.99	10.56	2.81	29.83	26.53	43.50	-16.97	QP
6	211.527	38.16	10.93	2.86	29.76	22.19	43.50	-21.31	QP

Above 1GHz

Test mode:	802.11b		Test channel:	Lowest		Remark:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	47.98	31.53	8.90	40.24	48.17	74.00	-25.83	Vertical
7236.00	31.59	36.19	6.88	26.44	48.22	74.00	-25.78	Vertical
9648.00	28.12	38.07	8.96	25.36	49.79	74.00	-24.21	Vertical
12060.00	26.56	39.05	10.35	25.15	50.81	74.00	-23.19	Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	48.05	31.53	8.90	40.24	48.24	74.00	-25.76	48.05
7236.00	28.98	36.19	6.88	26.44	45.61	74.00	-28.39	Horizontal
9648.00	28.66	38.07	8.96	25.36	50.33	74.00	-23.67	Horizontal
12060.00	28.96	39.05	10.35	25.15	53.21	74.00	-20.79	Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Test mode:	802.11b		Test channel:	Lowest		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	37.66	31.53	8.90	40.24	37.85	54.00	-16.15	Vertical
7236.00	18.53	36.19	6.88	26.44	35.16	54.00	-18.84	Vertical
9648.00	15.85	38.07	8.96	25.36	37.52	54.00	-16.48	Vertical
12060.00	14.25	39.05	10.35	25.15	38.50	54.00	-15.50	Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	38.82	31.53	8.90	40.24	39.01	54.00	-14.99	Horizontal
7236.00	18.48	36.19	6.88	26.44	35.11	54.00	-18.89	Horizontal
9648.00	16.85	38.07	8.96	25.36	38.52	54.00	-15.48	Horizontal
12060.00	14.85	39.05	10.35	25.15	39.10	54.00	-14.90	Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11b		Test channel:	Middle		Remark:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	47.45	31.58	8.98	40.15	47.86	74.00	-26.14	Vertical
7311.00	35.65	36.37	6.90	26.58	52.34	74.00	-21.66	Vertical
9748.00	31.25	38.13	8.98	25.34	53.02	74.00	-20.98	Vertical
12185.00	28.13	38.92	10.38	25.04	52.39	74.00	-21.61	Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	47.11	31.58	8.98	40.15	47.52	74.00	-26.48	Horizontal
7311.00	34.63	36.37	6.90	26.58	51.32	74.00	-22.68	Horizontal
9748.00	31.75	38.13	8.98	25.34	53.52	74.00	-20.48	Horizontal
12185.00	28.97	38.92	10.38	25.04	53.23	74.00	-20.77	Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Test mode:	802.11b		Test channel:	Middle		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	37.96	31.58	8.98	40.15	38.37	54.00	-15.63	Vertical
7311.00	17.45	36.37	6.90	26.58	34.14	54.00	-19.86	Vertical
9748.00	15.25	38.13	8.98	25.34	37.02	54.00	-16.98	Vertical
12185.00	14.86	38.92	10.38	25.04	39.12	54.00	-14.88	Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	37.29	31.58	8.98	40.15	37.70	54.00	-16.30	Horizontal
7311.00	22.54	36.37	6.90	26.58	39.23	54.00	-14.77	Horizontal
9748.00	18.24	38.13	8.98	25.34	40.01	54.00	-13.99	Horizontal
12185.00	16.58	38.92	10.38	25.04	40.84	54.00	-13.16	Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11b		Test channel:	Highest		Remark:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	48.85	31.69	9.08	40.03	49.59	74.00	-24.41	Vertical
7386.00	36.69	36.49	6.93	26.79	53.32	74.00	-20.68	Vertical
9848.00	29.58	38.24	9.05	25.30	51.57	74.00	-22.43	Vertical
12310.00	29.76	38.83	10.41	24.90	54.10	74.00	-19.90	Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	48.34	31.69	9.08	40.03	49.08	74.00	-24.92	Horizontal
7386.00	39.65	36.49	6.93	26.79	56.28	74.00	-17.72	Horizontal
9848.00	32.16	38.24	9.05	25.30	54.15	74.00	-19.85	Horizontal
12310.00	33.65	38.83	10.41	24.90	57.99	74.00	-16.01	Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Test mode:	802.11b		Test channel:	Highest		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	38.30	31.69	9.08	40.03	39.04	54.00	-14.96	Vertical
7386.00	21.54	36.49	6.93	26.79	38.17	54.00	-15.83	Vertical
9848.00	16.95	38.24	9.05	25.30	38.94	54.00	-15.06	Vertical
12310.00	16.26	38.83	10.41	24.90	40.60	54.00	-13.40	Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	38.81	31.69	9.08	40.03	39.55	54.00	-14.45	Horizontal
7386.00	23.65	36.49	6.93	26.79	40.28	54.00	-13.72	Horizontal
9848.00	17.85	38.24	9.05	25.30	39.84	54.00	-14.16	Horizontal
12310.00	17.46	38.83	10.41	24.90	41.80	54.00	-12.20	Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11g		Test channel:	Lowest		Remark:		Peak
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	45.19	31.53	8.90	40.24	45.38	74.00	-28.62	Vertical
7236.00	36.97	36.19	6.88	26.44	53.60	74.00	-20.40	Vertical
9648.00	32.45	38.07	8.96	25.36	54.12	74.00	-19.88	Vertical
12060.00	32.45	39.05	10.35	25.15	56.70	74.00	-17.30	Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	43.80	31.53	8.90	40.24	43.99	74.00	-30.01	Horizontal
7236.00	35.00	36.19	6.88	26.44	51.63	74.00	-22.37	Horizontal
9648.00	33.26	38.07	8.96	25.36	54.93	74.00	-19.07	Horizontal
12060.00	30.49	39.05	10.35	25.15	54.74	74.00	-19.26	Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Test mode:	802.11g		Test channel:	Lowest		Remark:		Average
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	35.39	31.53	8.90	40.24	35.58	54.00	-18.42	Vertical
7236.00	23.18	36.19	6.88	26.44	39.81	54.00	-14.19	Vertical
9648.00	17.46	38.07	8.96	25.36	39.13	54.00	-14.87	Vertical
12060.00	15.14	39.05	10.35	25.15	39.39	54.00	-14.61	Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	33.80	31.53	8.90	40.24	33.99	54.00	-20.01	Horizontal
7236.00	24.12	36.19	6.88	26.44	40.75	54.00	-13.25	Horizontal
9648.00	19.89	38.07	8.96	25.36	41.56	54.00	-12.44	Horizontal
12060.00	18.17	39.05	10.35	25.15	42.42	54.00	-11.58	Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11g		Test channel:	Middle		Remark:		Peak
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	45.15	31.58	8.98	40.15	45.56	74.00	-28.44	Vertical
7311.00	32.56	36.37	6.90	26.58	49.25	74.00	-24.75	Vertical
9748.00	30.41	38.13	8.98	25.34	52.18	74.00	-21.82	Vertical
12185.00	30.86	38.92	10.38	25.04	55.12	74.00	-18.88	Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	43.11	31.58	8.98	40.15	43.52	74.00	-30.48	Horizontal
7311.00	33.15	36.37	6.90	26.58	49.84	74.00	-24.16	Horizontal
9748.00	27.58	38.13	8.98	25.34	49.35	74.00	-24.65	Horizontal
12185.00	25.94	38.92	10.38	25.04	50.20	74.00	-23.80	Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Test mode:	802.11g		Test channel:	Middle		Remark:		Average
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	35.96	31.58	8.98	40.15	36.37	54.00	-17.63	Vertical
7311.00	22.86	36.37	6.90	26.58	39.55	54.00	-14.45	Vertical
9748.00	16.79	38.13	8.98	25.34	38.56	54.00	-15.44	Vertical
12185.00	13.65	38.92	10.38	25.04	37.91	54.00	-16.09	Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	33.29	31.58	8.98	40.15	33.70	54.00	-20.30	Horizontal
7311.00	21.53	36.37	6.90	26.58	38.22	54.00	-15.78	Horizontal
9748.00	16.43	38.13	8.98	25.34	38.20	54.00	-15.80	Horizontal
12185.00	14.12	38.92	10.38	25.04	38.38	54.00	-15.62	Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11g		Test channel:	Highest		Remark:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	45.85	31.69	9.08	40.03	46.59	74.00	-27.41	Vertical
7386.00	35.19	36.49	6.93	26.79	51.82	74.00	-22.18	Vertical
9848.00	30.58	38.24	9.05	25.30	52.57	74.00	-21.43	Vertical
12310.00	29.95	38.83	10.41	24.90	54.29	74.00	-19.71	Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	48.92	31.69	9.08	40.03	49.66	74.00	-24.34	Horizontal
7386.00	35.37	36.49	6.93	26.79	52.00	74.00	-22.00	Horizontal
9848.00	30.56	38.24	9.05	25.30	52.55	74.00	-21.45	Horizontal
12310.00	26.72	38.83	10.41	24.90	51.06	74.00	-22.94	Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Test mode:	802.11g		Test channel:	Highest		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	35.60	31.69	9.08	40.03	36.34	54.00	-17.66	Vertical
7386.00	22.46	36.49	6.93	26.79	39.09	54.00	-14.91	Vertical
9848.00	17.85	38.24	9.05	25.30	39.84	54.00	-14.16	Vertical
12310.00	14.85	38.83	10.41	24.90	39.19	54.00	-14.81	Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	38.81	31.69	9.08	40.03	39.55	54.00	-14.45	Horizontal
7386.00	23.06	36.49	6.93	26.79	39.69	54.00	-14.31	Horizontal
9848.00	18.68	38.24	9.05	25.30	40.67	54.00	-13.33	Horizontal
12310.00	15.43	38.83	10.41	24.90	39.77	54.00	-14.23	Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11n(H20)		Test channel:	Lowest		Remark:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	45.19	31.53	8.90	40.24	45.38	74.00	-28.62	Vertical
7236.00	33.61	36.19	6.88	26.44	50.24	74.00	-23.76	Vertical
9648.00	28.62	38.07	8.96	25.36	50.29	74.00	-23.71	Vertical
12060.00	27.41	39.05	10.35	25.15	51.66	74.00	-22.34	Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	46.05	31.53	8.90	40.24	46.24	74.00	-27.76	Horizontal
7236.00	35.20	36.19	6.88	26.44	51.83	74.00	-22.17	Horizontal
9648.00	32.14	38.07	8.96	25.36	53.81	74.00	-20.19	Horizontal
12060.00	28.46	39.05	10.35	25.15	52.71	74.00	-21.29	Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Test mode:	802.11n(H20)		Test channel:	Lowest		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	35.19	31.53	8.90	40.24	35.38	54.00	-18.62	Vertical
7236.00	22.36	36.19	6.88	26.44	38.99	54.00	-15.01	Vertical
9648.00	16.85	38.07	8.96	25.36	38.52	54.00	-15.48	Vertical
12060.00	14.52	39.05	10.35	25.15	38.77	54.00	-15.23	Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	36.71	31.53	8.90	40.24	36.90	54.00	-17.10	Horizontal
7236.00	22.56	36.19	6.88	26.44	39.19	54.00	-14.81	Horizontal
9648.00	18.38	38.07	8.96	25.36	40.05	54.00	-13.95	Horizontal
12060.00	15.96	39.05	10.35	25.15	40.21	54.00	-13.79	Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11n(H20)		Test channel:	Middle		Remark:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	45.45	31.58	8.98	40.15	45.86	74.00	-28.14	Vertical
7311.00	30.28	36.37	6.90	26.58	46.97	74.00	-27.03	Vertical
9748.00	25.96	38.13	8.98	25.34	47.73	74.00	-26.27	Vertical
12185.00	24.75	38.92	10.38	25.04	49.01	74.00	-24.99	Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	45.40	31.58	8.98	40.15	45.81	74.00	-28.19	Horizontal
7311.00	35.98	36.37	6.90	26.58	52.67	74.00	-21.33	Horizontal
9748.00	28.97	38.13	8.98	25.34	50.74	74.00	-23.26	Horizontal
12185.00	26.34	38.92	10.38	25.04	50.60	74.00	-23.40	Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Test mode:	802.11n(H20)		Test channel:	Middle		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	35.96	31.58	8.98	40.15	36.37	54.00	-17.63	Vertical
7311.00	21.15	36.37	6.90	26.58	37.84	54.00	-16.16	Vertical
9748.00	17.76	38.13	8.98	25.34	39.53	54.00	-14.47	Vertical
12185.00	15.82	38.92	10.38	25.04	40.08	54.00	-13.92	Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	35.29	31.58	8.98	40.15	35.70	54.00	-18.30	Horizontal
7311.00	22.46	36.37	6.90	26.58	39.15	54.00	-14.85	Horizontal
9748.00	17.68	38.13	8.98	25.34	39.45	54.00	-14.55	Horizontal
12185.00	14.26	38.92	10.38	25.04	38.52	54.00	-15.49	Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11n(H20)		Test channel:	Highest		Remark:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	45.85	31.69	9.08	40.03	46.59	74.00	-27.41	Vertical
7386.00	34.74	36.49	6.93	26.79	51.37	74.00	-22.63	Vertical
9848.00	30.49	38.24	9.05	25.30	52.48	74.00	-21.52	Vertical
12310.00	28.49	38.83	10.41	24.90	52.83	74.00	-21.17	Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	46.34	31.69	9.08	40.03	47.08	74.00	-26.92	Horizontal
7386.00	35.23	36.49	6.93	26.79	51.86	74.00	-22.14	Horizontal
9848.00	30.00	38.24	9.05	25.30	51.99	74.00	-22.01	Horizontal
12310.00	30.41	38.83	10.41	24.90	54.75	74.00	-19.25	Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Test mode:	802.11n(H20)		Test channel:	Highest		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	35.30	31.69	9.08	40.03	36.04	54.00	-17.96	Vertical
7386.00	21.46	36.49	6.93	26.79	38.09	54.00	-15.91	Vertical
9848.00	15.96	38.24	9.05	25.30	37.95	54.00	-16.05	Vertical
12310.00	15.40	38.83	10.41	24.90	39.74	54.00	-14.26	Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	36.33	31.69	9.08	40.03	37.07	54.00	-16.93	Horizontal
7386.00	21.54	36.49	6.93	26.79	38.17	54.00	-15.83	Horizontal
9848.00	17.03	38.24	9.05	25.30	39.02	54.00	-14.98	Horizontal
12310.00	14.96	38.83	10.41	24.90	39.30	54.00	-14.70	Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*