

FCC Test Report

FCC Part 15 Subpart C §15.247

Product Name : GSM/WCDMA MOBILE PHONE
Model No. : M4TEL SS880
FCC ID : CLNSS880

Prepared By: : Inventec Appliances(Pudong) Corporation
Address: : No.789 Pu Xing Road,Shanghai,PRC
Date of Receipt : 2012.08.13
Date of Test : 2012.08.14-2012.08.22
Report No. : 20120813FCC-C



Test Report Certification

Date of Issue : Aug.22.2012

Report No. : 20120813FCC-C

Product Name : GSM/WCDMA MOBILE PHONE

Model No. : M4TEL SS880

Trade Name : M4TEL

Applicant : FOURTEL MEXICO S.A. DE C.V.

Address : Montecito 38, Piso 23, Oficina 15. Colonia Nápoles. C.P. 03810 Mexico

Standard : FCC Part 15 Subpart C §15.247

Classification : WiFi: Digital Transmission Systems (DTS)

TX/RX Frequency Range WLAN 802.11b/g (2400 MHz ~ 2483.5 MHz)

Test Result : Complied

The Test Results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of Inventec Appliances(Pudong) Corporation

Documented By :  , Aug.22.2012
Judy Ge/Engineer

Tested By :  , Aug.22.2012
Alice Lee/Engineer

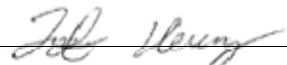
Approved By :  , Aug.22.2012
Jeff Huang/Director of Operations

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	Gen 4.4.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	A8.4	Output Power Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	Section 15.207(a)	Pass	-
3.7	15.247(d)	A8.5	Radiated Emission	FCC 47 CFR Part 15 Subpart C/ Section 15.209(a) & 15.247(d)	Pass	-
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1. GENERAL INFORMATION**1.1 Applicant**

Company Name: MFOURTEL MEXICO S.A. DE C.V.

Address: Montecito 38, Piso 23, Oficina 15. Colonia Nápoles. C.P. 03810 Mexico

1.2 Manufacturer

Company Name: CK Telecom Limited

Address: Technology Road.High-Tech Development Zone. Heyuan, Guangdong,P.R.China.

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	GSM/WCDMA MOBILE PHONE
Brand Name	M4TEL
Model Name	M4TEL SS880
FCC ID	CLNSS880
Tx/Rx Frequency Range	WLAN 802.11b/g (2400 MHz ~ 2483.5 MHz)
Number of Channels	802.11b/g: CH01 CH06 CH11
Carrier Frequency of Each Channel	802.11b/g: 2412MHz 2437MHz 2462MHz
Channel Spacing	802.11b/g: 5MHz
Maximum Output Power to Antenna	802.11b: 17.91 (dBm) 802.11g: 16.12 (dBm)
Antenna Type	Fixed Internal Antenna
HW Version	TUNA- V1.0
SW Version	M4Tel_SS880_Ver200
Type of Modulation	802.11 b type of modulation:DSSS 802.11g type of modulation:OFDM

Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Digital Transmission System (DTS)
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description

1.4 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 58074 D01 DTS Measurement Guidance v01
- ANSI C63.4-2003

Remark:

- 1 All test items were verified and recorded according to the standards and without any deviation during the test.
- 2 This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2. Test Configuration of Equipment Under Test

2.1 RF Power

Preliminary tests were performed in different data rate and recorded the RF Output Power in the following table:

Channel	Frequency	2.4GHz 802.11b RF Power (dBm)			
		At DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	17.91	17.77	17.86	17.79
CH 06	2437 MHz	17.75	17.55	17.74	17.44
CH 11	2462 MHz	17.56	17.34	17.53	17.22

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		At OFDM Data Rate							
		6	9	12	18	24	36	48	54
		Mbps	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps
CH01	2412MHz	16.12	16.01	15.87	15.66	15.39	15.01	14.43	14.33
CH06	2437MHz	15.86	15.71	15.59	15.33	15.09	14.71	14.35	14.23
CH11	2462MHz	15.64	15.48	15.36	15.11	14.87	14.28	13.92	13.81

Remark:

The EUT is programmed to transmit signal continuously for all testing.

2.2 Test Modes

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

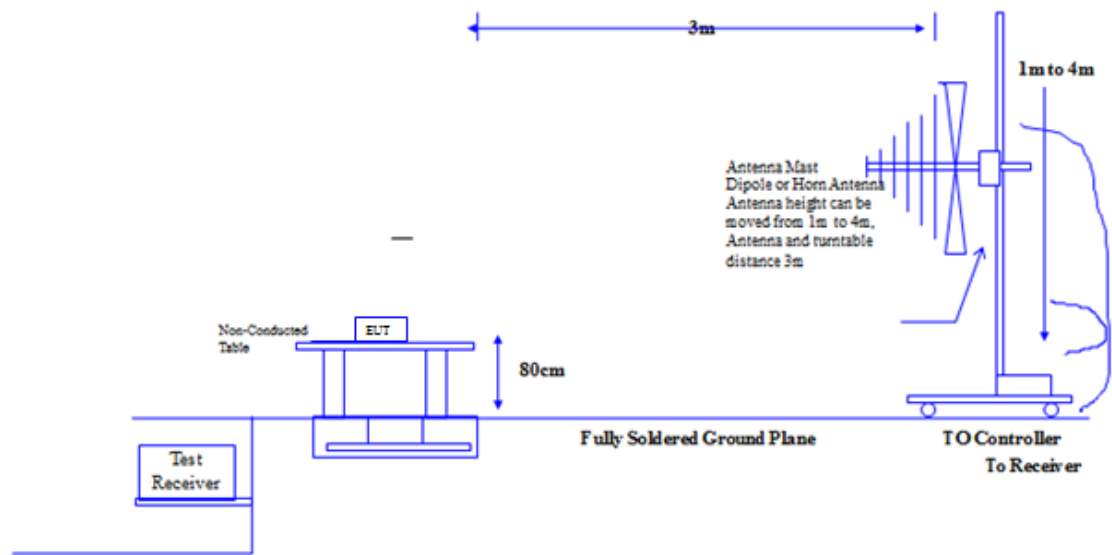
Pre-scanned tests were conducted to determine the final configuration from all possible combinations. The following tables are showing the test modes as the worst cases and recorded in this report.

Test Item	802.11b (Modulation : DSSS)	802.11g (Modulation : OFDM)
Conducted TCs	Mode 1: 802.11b_CH01_2412 MHz Mode 2: 802.11b_CH06_2437 MHz Mode 3: 802.11b_CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz

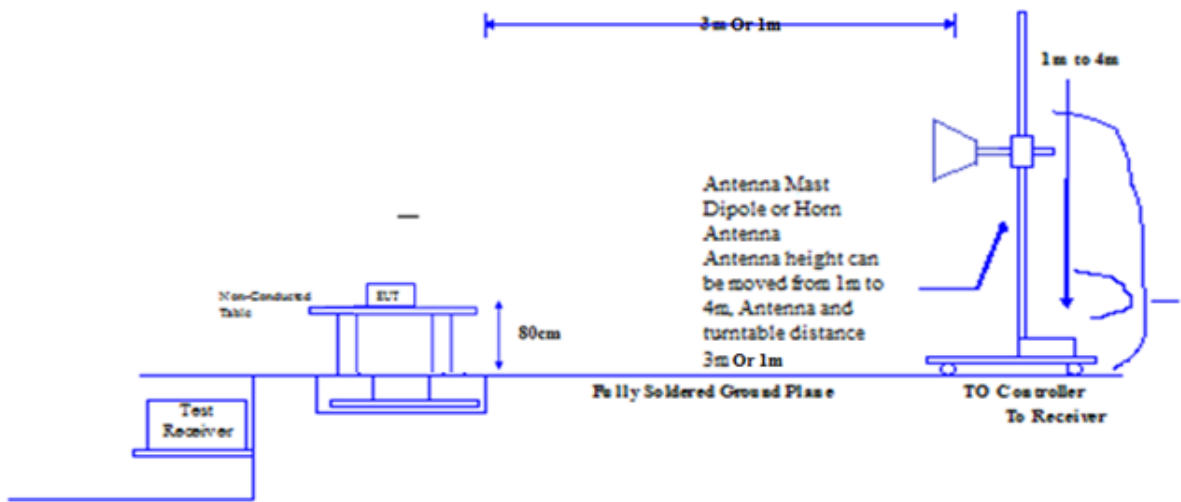
Test Cases		
Radiated TCs	Mode 1: 802.11b_CH01_2412 MHz + Battery Mode 2: 802.11b_CH06_2437 MHz + Battery Mode 3: 802.11b_CH11_2462 MHz + Battery	Mode 4 : 802.11g_CH01_2412 MHz + Battery Mode 5 : 802.11g_CH06_2437 MHz + Battery Mode 6 : 802.11g_CH11_2462 MHz + Battery
AC Conducted Emission	Mode 1 : GSM 850 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS RX Mode 2: GSM 1900 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone+ Adapter+ Battery + GPS RX Mode 3: WCDMA Band II Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone +Earphone+ Adapter+ Battery + GPS RX Mode 4: WCDMA Band V Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone +Earphone+ Adapter+ Battery + GPS RX	

2.3 Connection Diagram of Test System

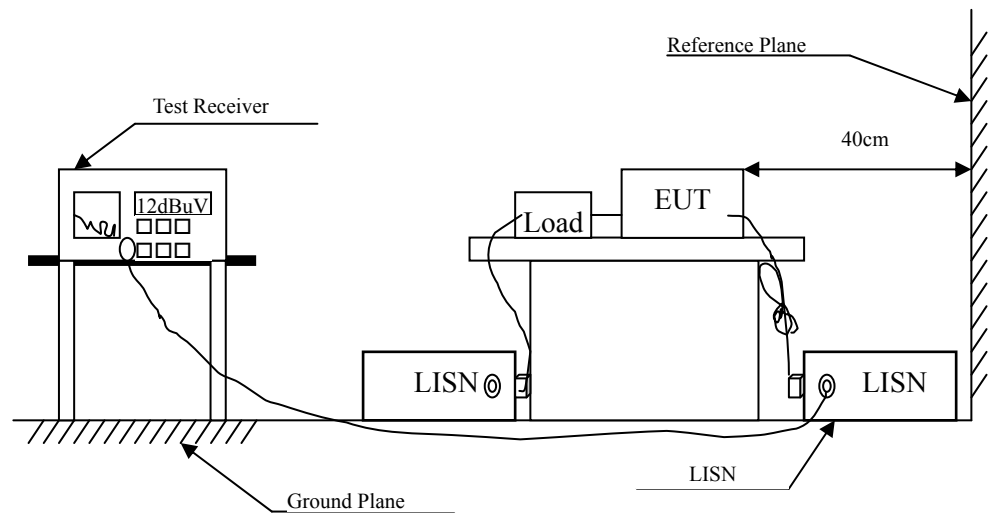
30MHz~1GHz



Above 1GHz



<Conduction Test>



3. Test Result for WLAN Function

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

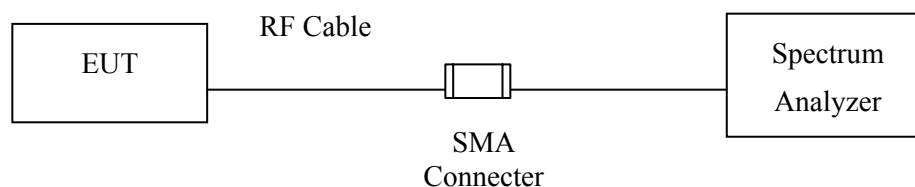
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Measurement Guidance v01.
2. Set resolution bandwidth (RBW) = 1-5 % of the emission bandwidth (EBW).
3. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. Compare the resultant bandwidth with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is 1-5 %.

3.1.4 Test Setup

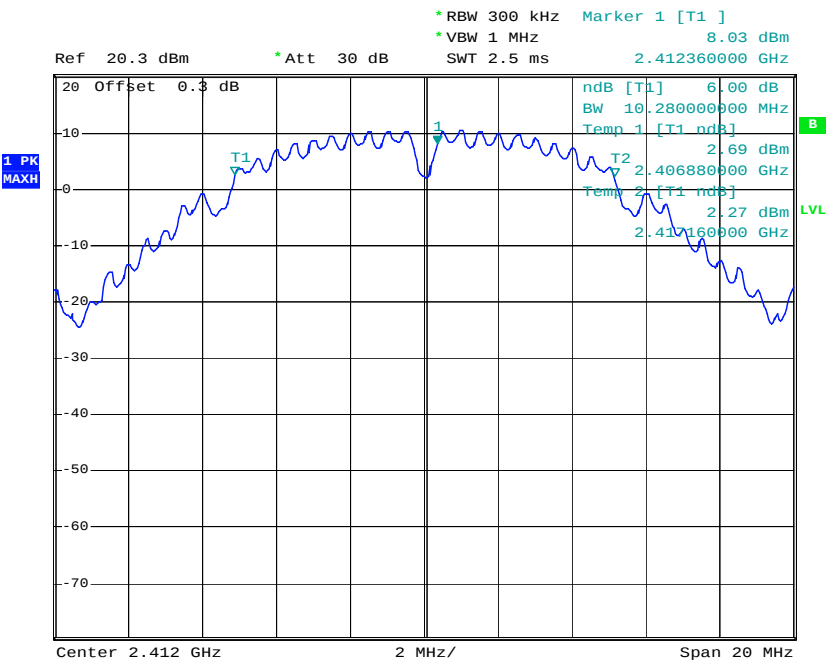


3.1.5 Test Result of 6dB Bandwidth

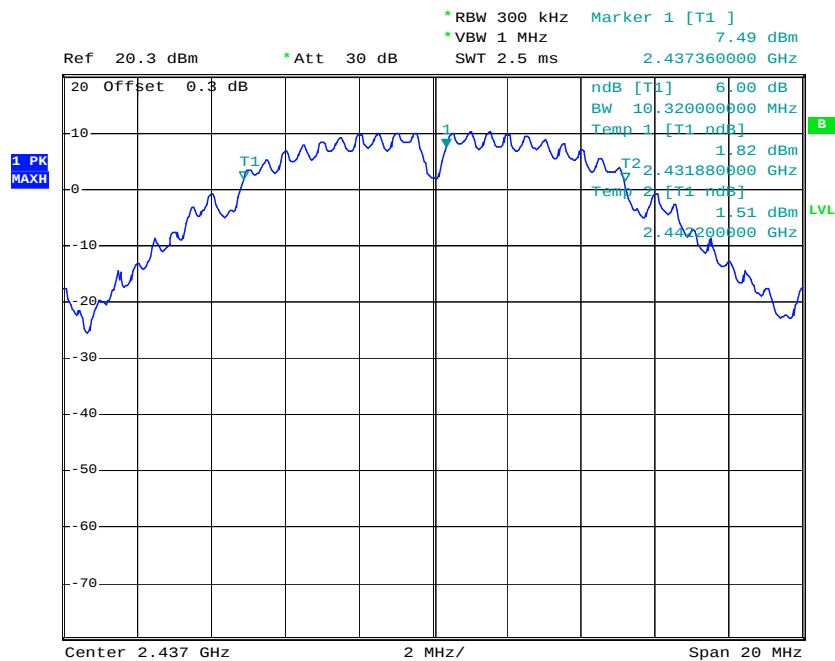
Test Mode :	Mode 1, 2, 3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	10.28	0.5	Pass
06	2437	10.32	0.5	Pass
11	2462	10.44	0.5	Pass

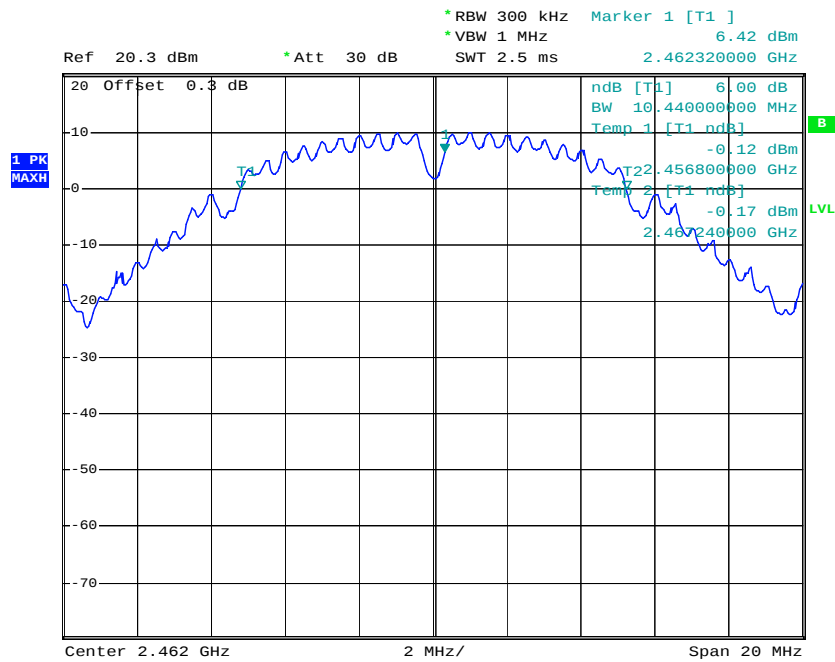
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



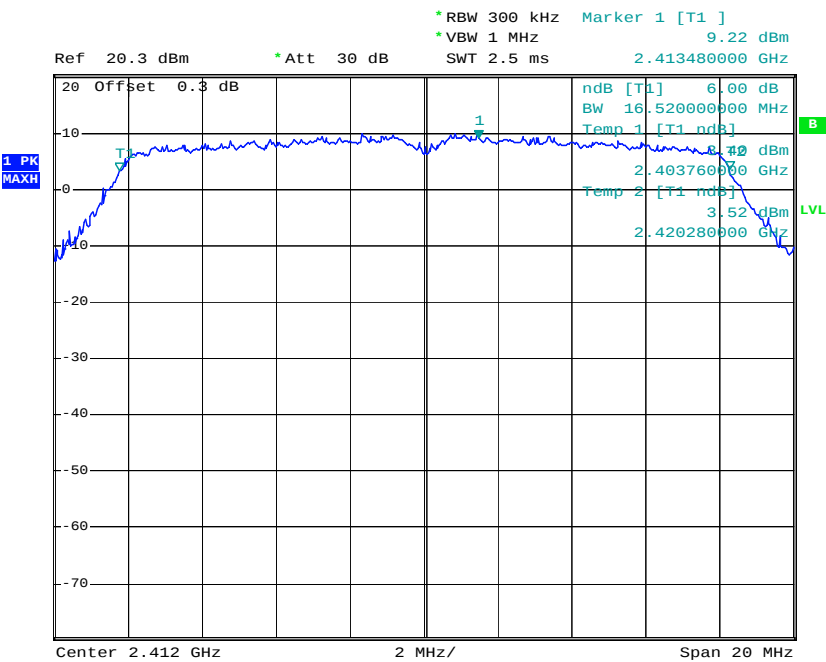
Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



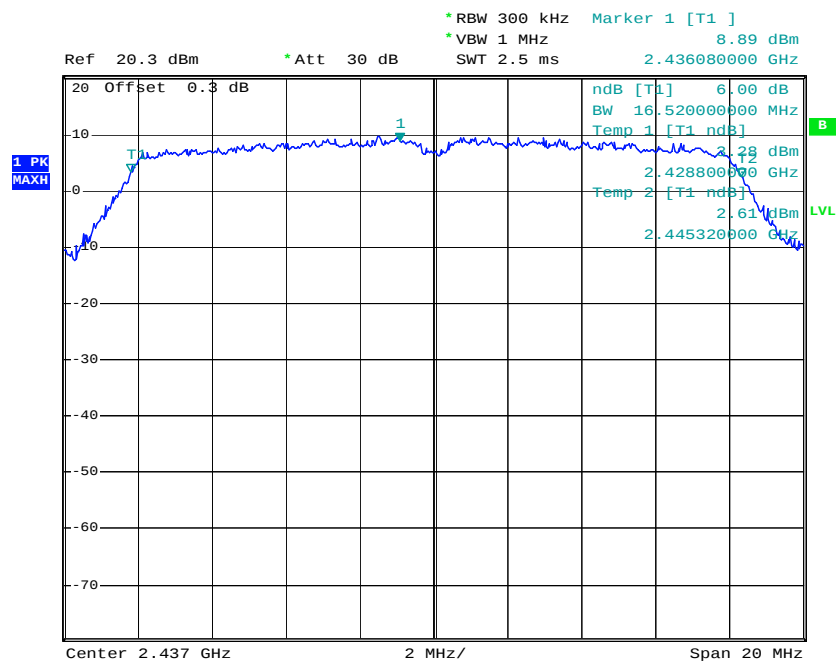
Test Mode :	Mode 4, 5, 6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.52	0.5	Pass
06	2437	16.52	0.5	Pass
11	2462	16.60	0.5	Pass

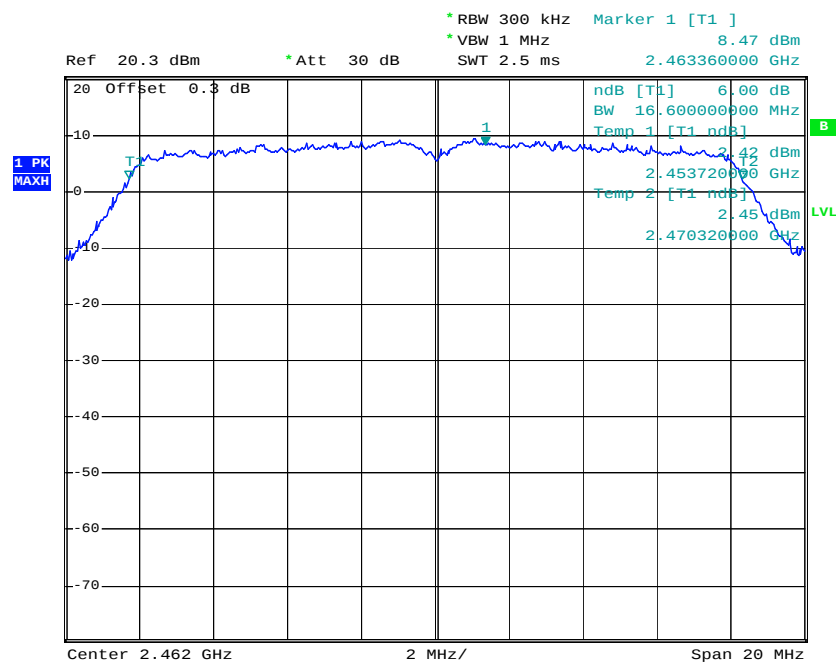
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Mode 6 : 6 dB Bandwidth Plot on 802.11g Channel 11

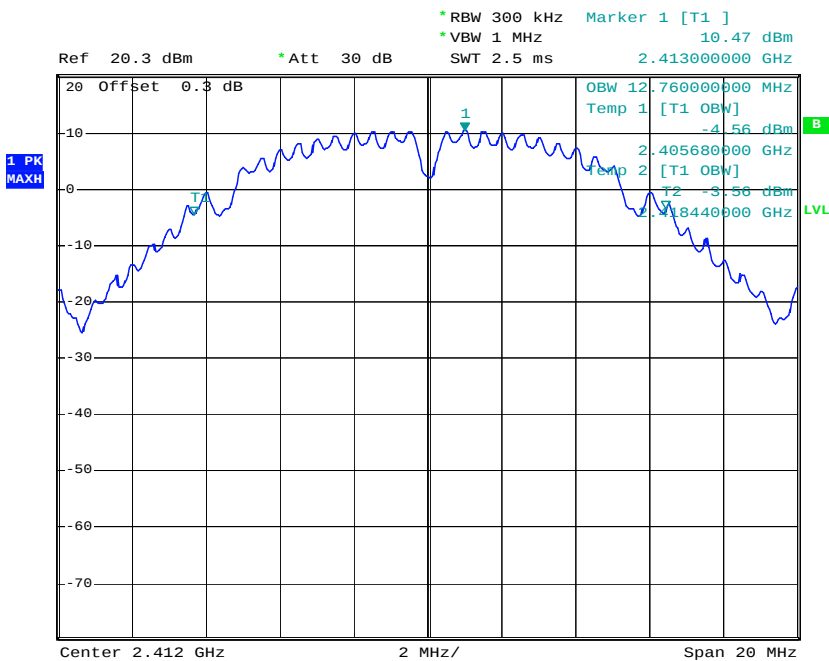


3.1.6 Test Result of 99% Occupied Bandwidth

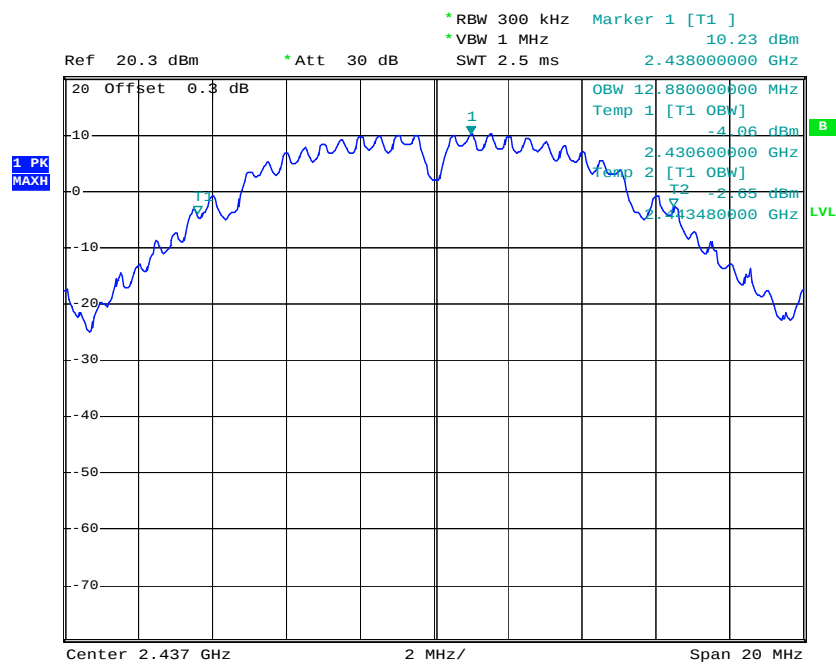
Test Mode :	Mode 1, 2, 3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	802.11b 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	12.76	Pass
06	2437	12.88	Pass
11	2462	12.84	Pass

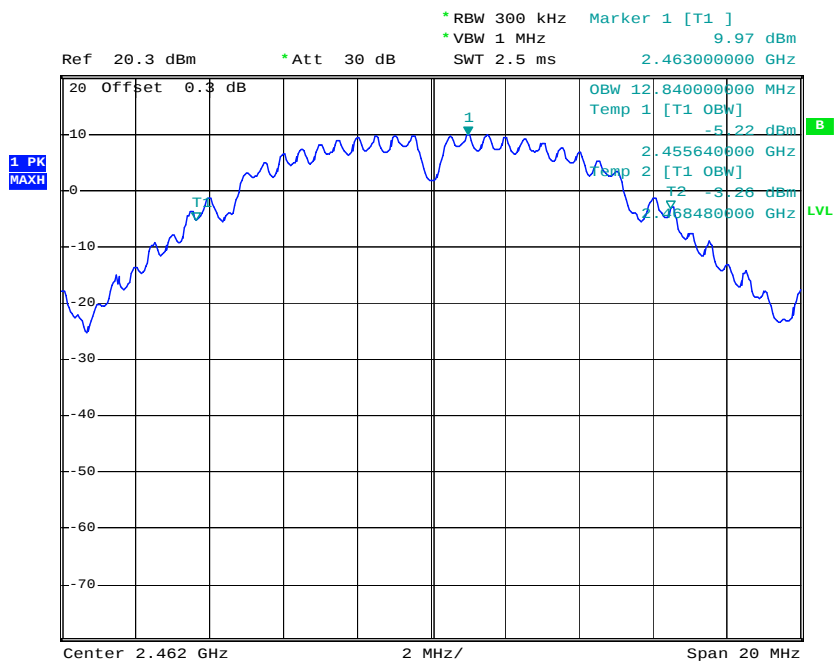
Mode 1 : 99% Occupied Bandwidth Plot on 802.11b Channel 01



Mode 2 : 99% Occupied Bandwidth Plot on 802.11b Channel 06



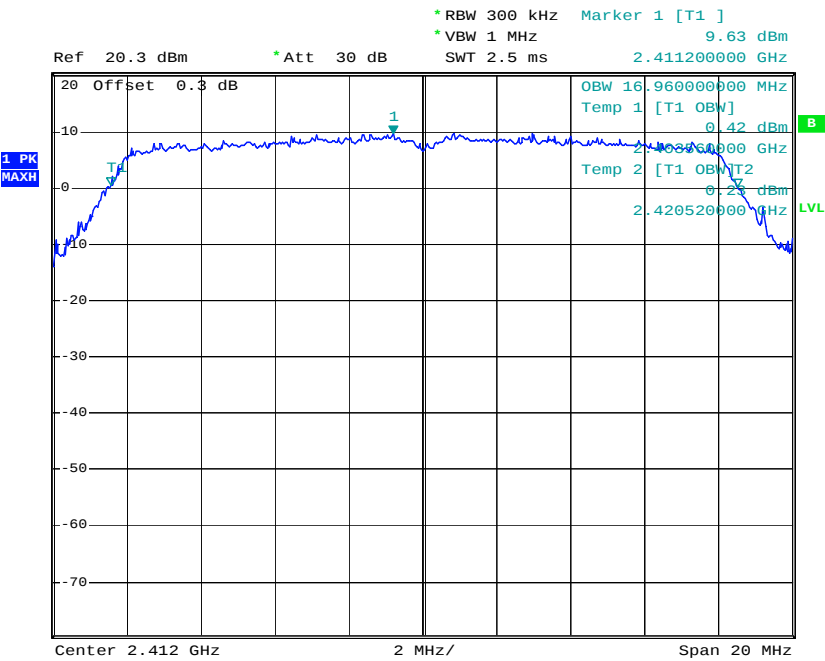
Mode 3 : 99% Occupied Bandwidth Plot on 802.11b Channel 11



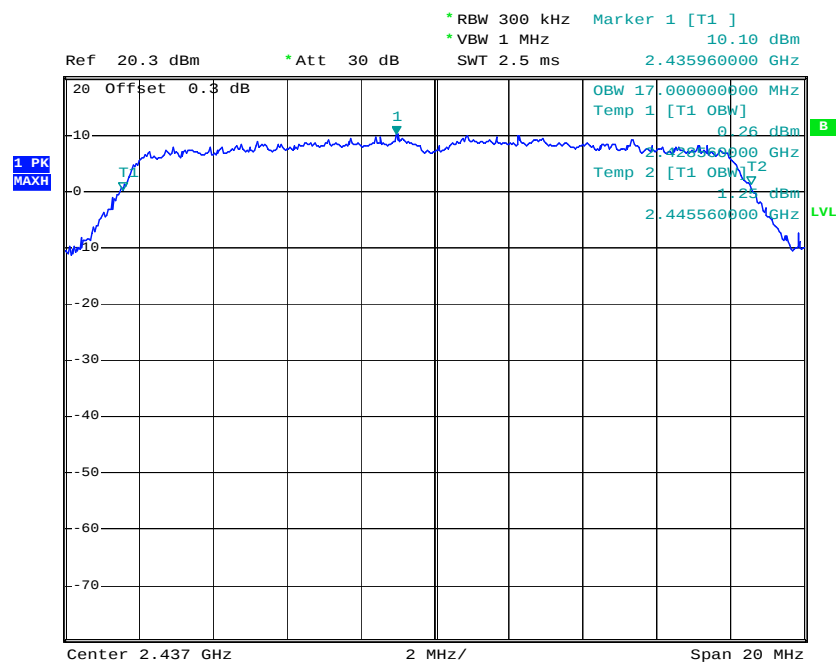
Test Mode :	Mode 4, 5, 6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	802.11g 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	16.96	Pass
06	2437	17.00	Pass
11	2462	17.00	Pass

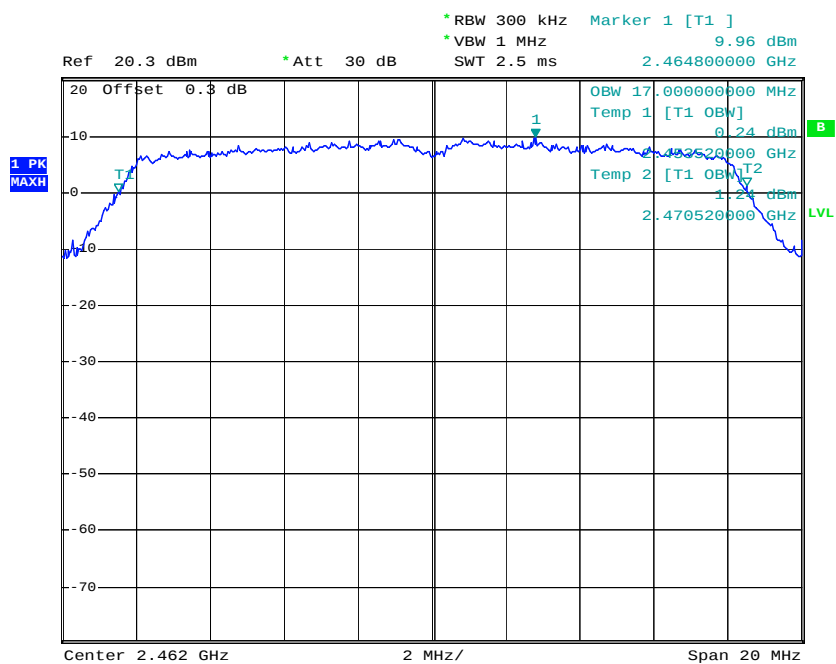
Mode 4 : 99% Occupied Bandwidth Plot on 802.11g Channel 01



Mode 5 : 99% Occupied Bandwidth Plot on 802.11g Channel 06



Mode 6 : 99% Occupied Bandwidth Plot on 802.11g Channel 11



3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz and 5725-5850MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

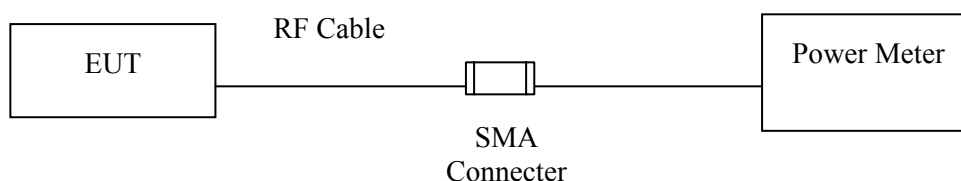
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Measurement Guidance v01.
2. The RF output of EUT was connected to the power meter by a low loss cable.
3. Measure the power by power meter with peak power sensor.

3.2.4 Test Setup



3.2.5 Test Result of Output Power

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.91	30	Pass
06	2437	17.75	30	Pass
11	2462	17.56	30	Pass

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	16.12	30	Pass
06	2437	15.86	30	Pass
11	2462	15.64	30	Pass

3.3 Band Edges Measurement

3.3.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. If the output power of this device was measured by power meter, the attenuation under this paragraph shall be 30 dB instead of 20 dB.

3.3.2 Measuring Instruments

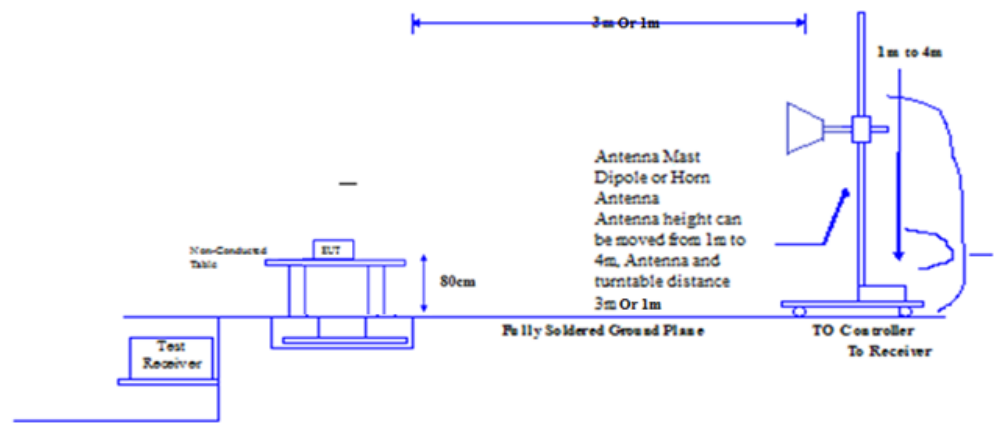
See list of measuring instruments of this test report.

3.3.3 Test Procedures

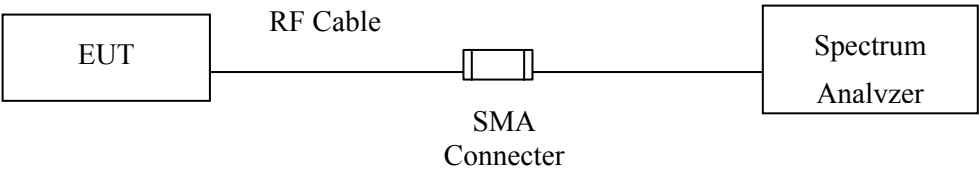
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 D01 DTS Measurement Guidance v01.
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) $\geq$ 300 kHz. Band edge emissions must be at least 20 dB below the highest emission level within the authorized band as measured with a 100 kHz RBW. Note: If the output power of this device was measured by power meter, the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. §15.247(d) specifies that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3) requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20dB relative to the maximum measured in-band peak PSD level.
4. Radiated emission test: Apply to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements peak radiated emission above 1 GHz, set RBW = 1MHz, VBW = 1MHz, Sweep=Auto. For measurements average radiated emission above 1 GHz, set RBW = 1MHz, VBW = 10Hz, Sweep=Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation as in FCC Section 15.35(b) and (c)

3.3.4 Test Setup

Radiated Band Edge



Conducted Band Edge



3.3.5 Test Result of Radiated Band Edges

Test Band :	802.11b
Test Channel	01

Frequency GHz	Level dBuv/m	Over Limit dB	Limit Line dBuv/m	Read Level dBuv	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Remark	Polarity
2.39(802.11b)	65.31	-8.69	74	54.82	27.5	6.99	24	Peak	Vertical
2.39(802.11b)	42.86	-11.14	54	32.37	27.5	6.99	24	Average	Vertical
2.39(802.11b)	61.77	-12.23	74	51.28	27.5	6.99	24	Peak	Horizontal
2.39(802.11b)	42.67	-11.33	54	32.18	27.5	6.99	24	Average	Horizontal

Test Band :	802.11b
Test Channel	11

Frequency GHz	Level dBuv/m	Over Limit dB	Limit Line dBuv/m	Read Level dBuv	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Remark	Polarity
2.4835(802.11b)	62.97	-11.03	74	51.69	27.6	7.68	24	Peak	Vertical
2.4835(802.11b)	43.64	-10.36	54	32.36	27.6	7.68	24	Average	Vertical
2.4835(802.11b)	60.37	-13.63	74	49.09	27.6	7.68	24	Peak	Horizontal
2.4835(802.11b)	42.05	-11.95	54	30.77	27.6	7.68	24	Average	Horizontal

Test Band :	802.11g
Test Channel	01

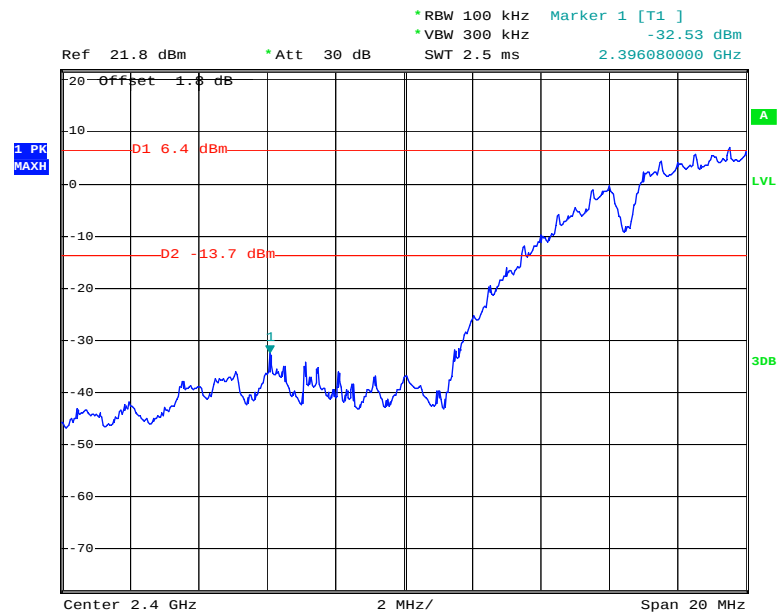
Frequency GHz	Level dBuv/m	Over Limit dB	Limit Line dBuv/m	Read Level dBuv	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Remark	Polarity
2.39(802.11g)	63.78	-10.22	74	53.29	27.5	6.99	24	Peak	Vertical
2.39(802.11g)	46.26	-7.74	54	35.77	27.5	6.99	24	Average	Vertical
2.39(802.12g)	64.72	-9.28	74	54.23	27.5	6.99	24	Peak	Horizontal
2.39(802.11g)	46.73	-7.27	54	36.24	27.5	6.99	24	Average	Horizontal

Test Band :	802.11g
Test Channel	11

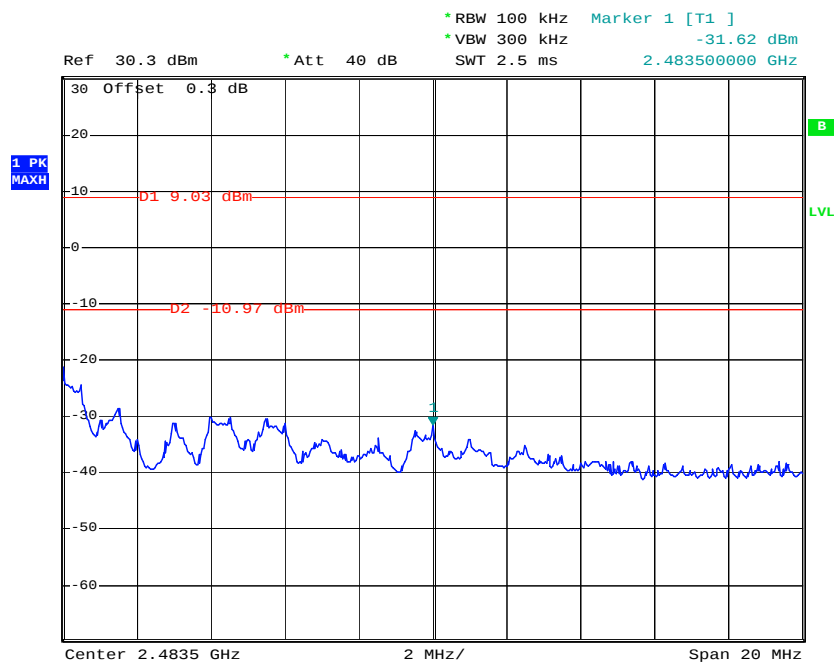
Frequency GHz	Level dBuv/m	Over Limit dB	Limit Line dBuv/m	Read Level dBuv	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Remark	Polarity
2.4835(802.11g)	65.96	-8.04	74	54.68	27.6	7.68	24	Peak	Vertical
2.4835(802.11g)	47.67	-6.33	54	36.39	27.6	7.68	24	Average	Vertical
2.4835(802.11g)	64.89	-9.11	74	53.61	27.6	7.68	24	Peak	Horizontal
2.4835(802.11g)	48.05	-5.95	54	36.77	27.6	7.68	24	Average	Horizontal

Test Mode :	Mode 1 and 3	Temperature :	23℃~26℃
Test Band :	802.11b	Relative Humidity :	35%~60%
Test Channel :	01 and 11	Test Engineer :	Hogan He

Low Band Edge Plot on 802.11b Channel 01

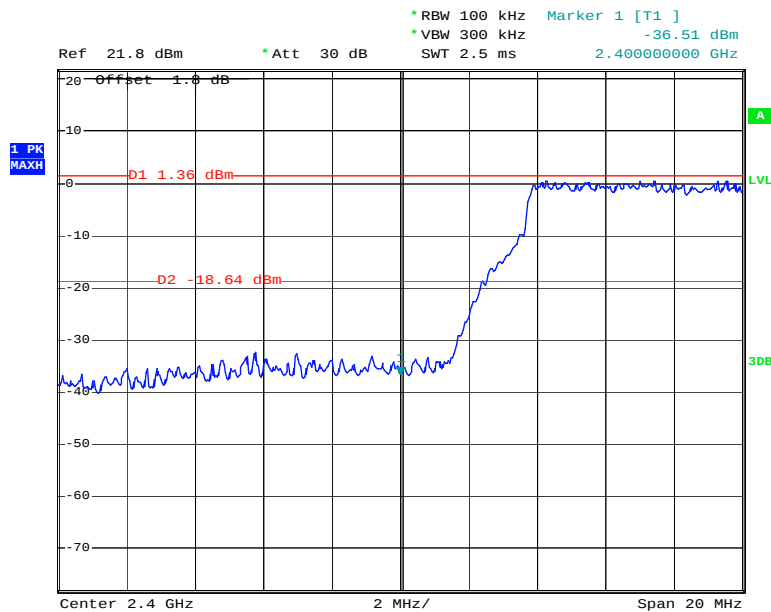


High Band Edge Plot on 802.11b Channel 11

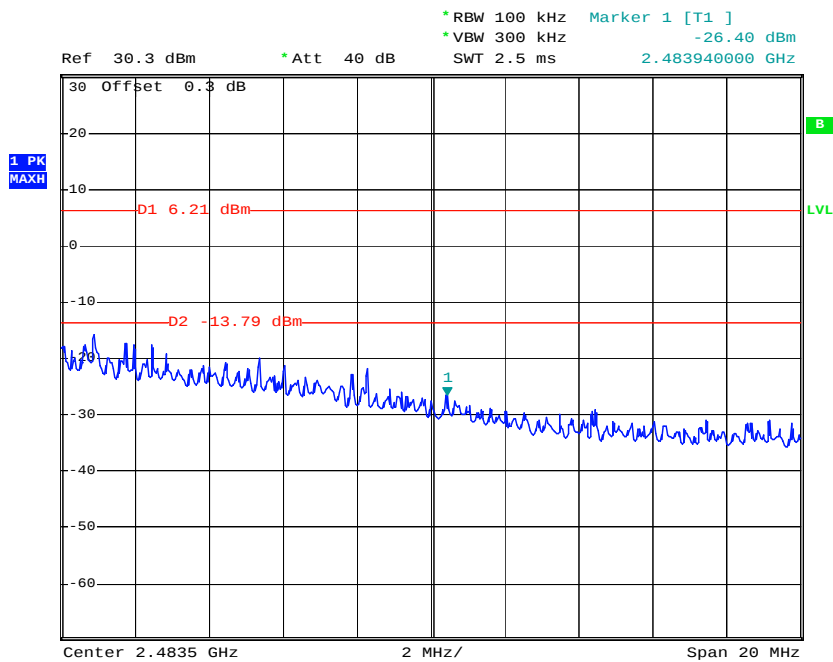


Test Mode :	Mode 4 and 6	Temperature :	23℃~26℃
Test Band :	802.11g	Relative Humidity :	35%~60%
Test Channel :	01 and 11	Test Engineer :	Hogan He

Low Band Edge Plot on 802.11g Channel 01



High Band Edge Plot on 802.11g Channel 11



3.3.7 Spurious Emission Measurement**3.3.8 Limit of Spurious Emission Measurement**

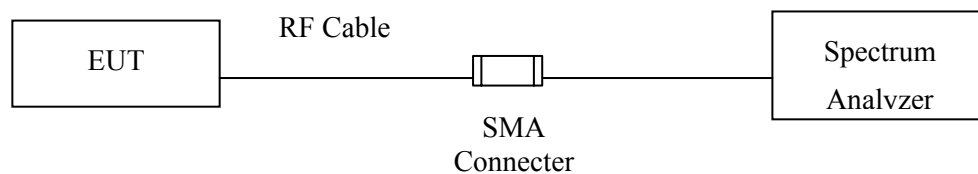
All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band.

3.3.9 Measuring Instruments

See list of measuring instruments of this test report.

3.3.10 Test Procedure

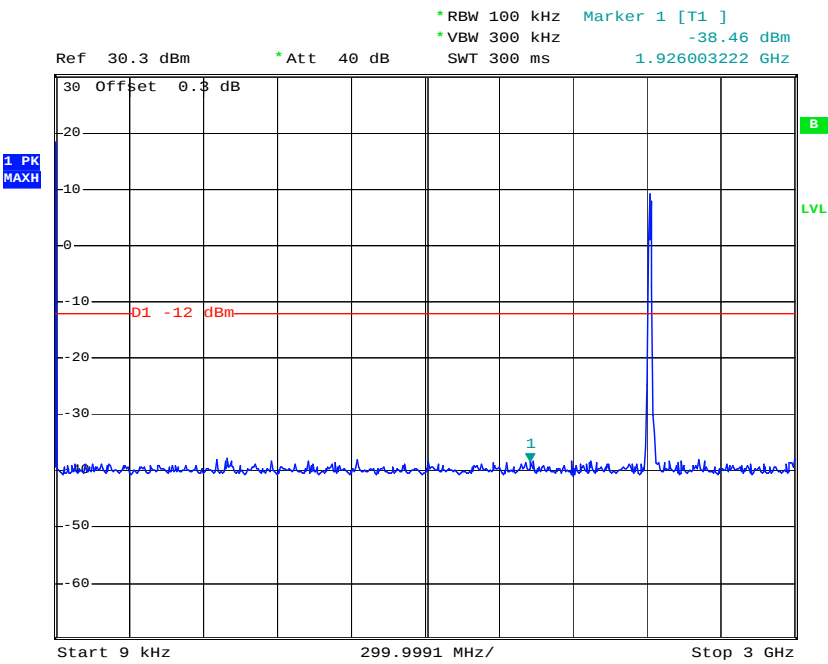
1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = 100 kHz, Video bandwidth (VBW) $\geq$ RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

3.3.11 Test Setup

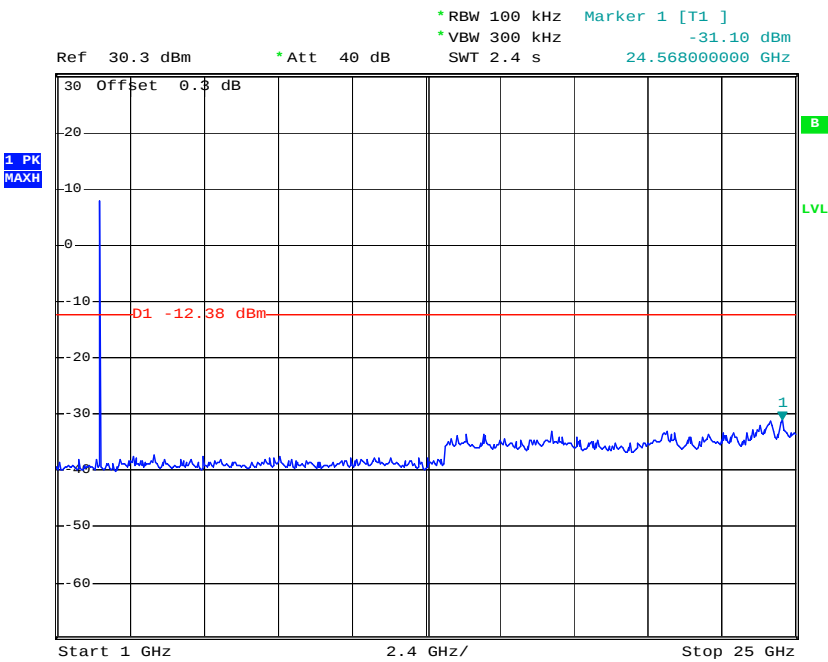
3.3.12 Test Result

Test Mode :	Mode 1	Temperature :	23℃~26℃
Test Band :	802.11b	Relative Humidity :	35%~60%
Test Channel :	01	Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

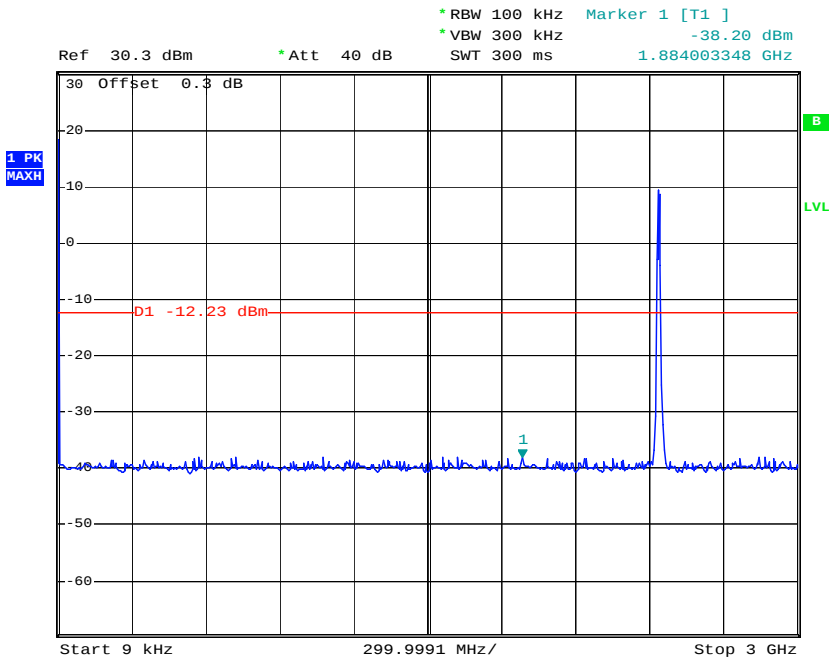


Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

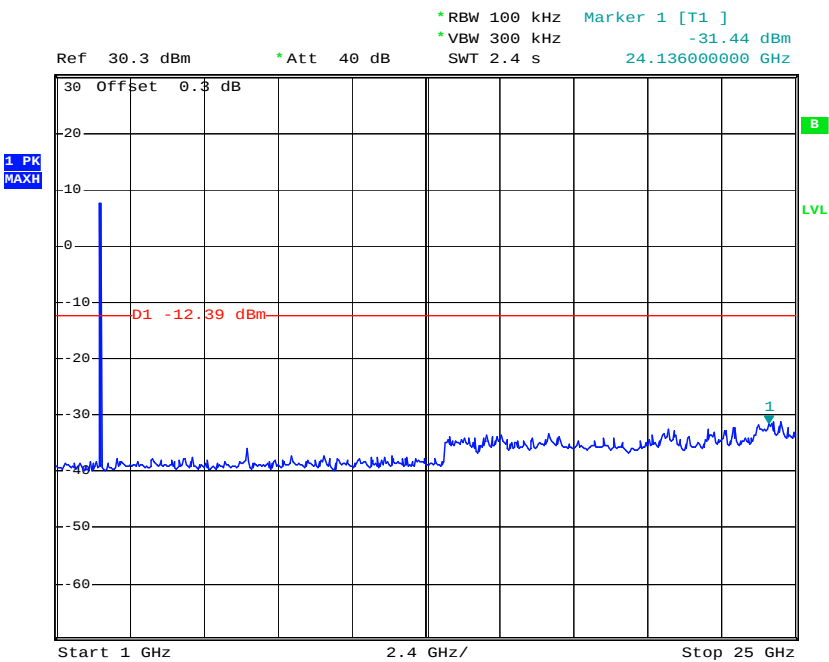


Test Mode :	Mode 2	Temperature :	23℃~26℃
Test Band :	802.11b	Relative Humidity :	35%~60%
Test Channel :	06	Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

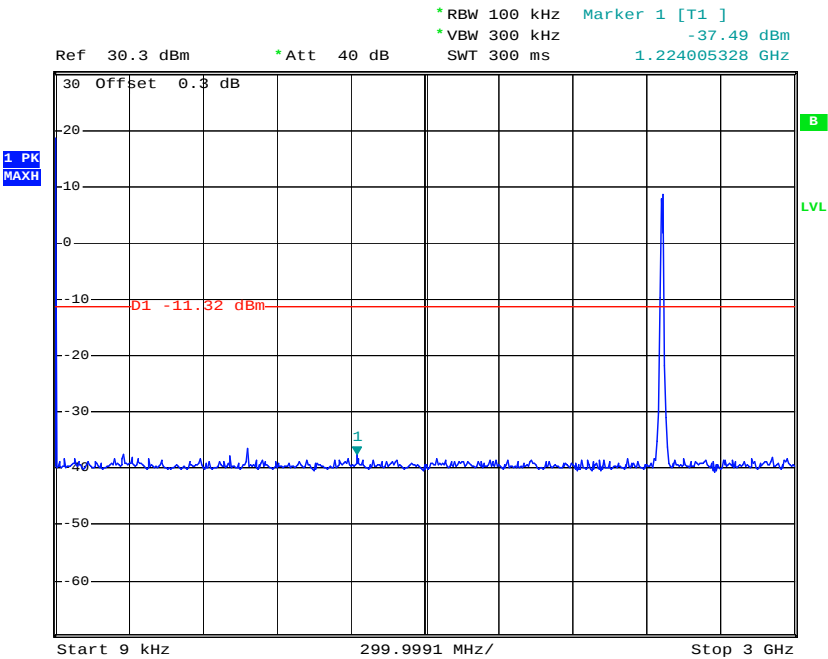


Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

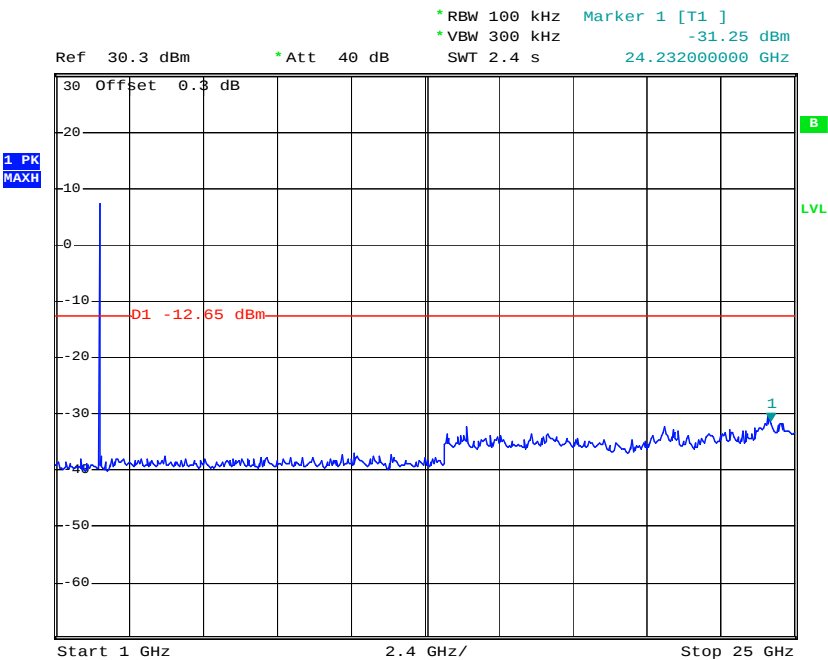


Test Mode :	Mode 3	Temperature :	23℃~26℃
Test Band :	802.11b	Relative Humidity :	35%~60%
Test Channel :	11	Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

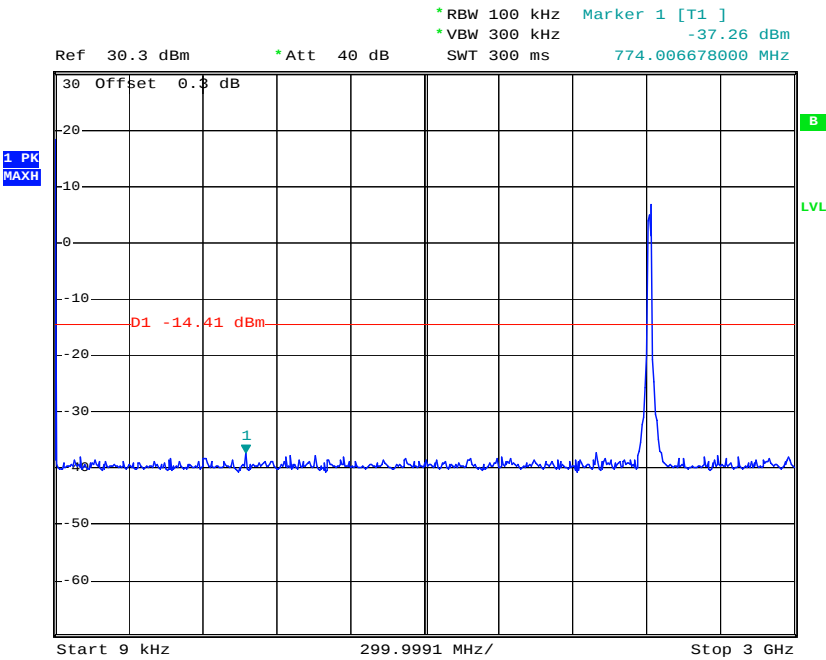


Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

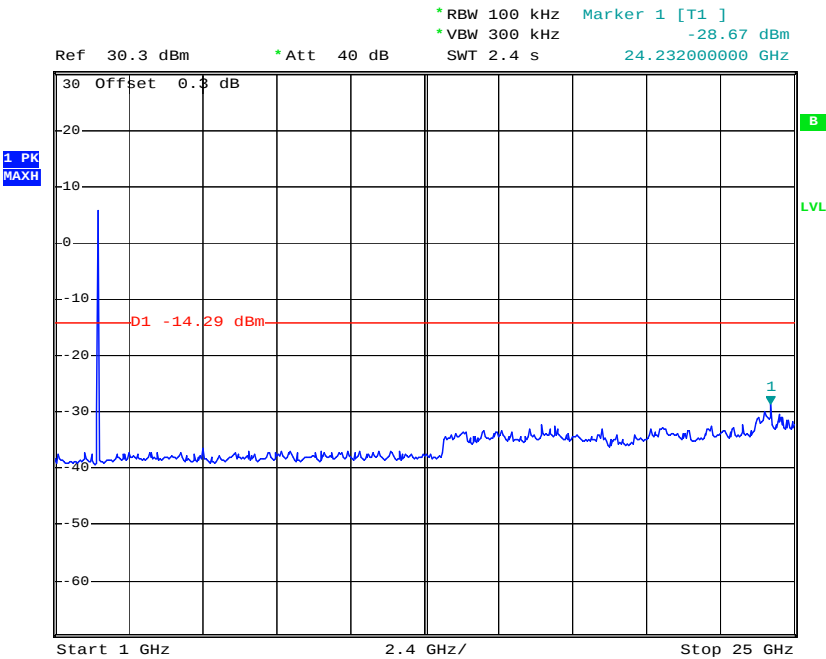


Test Mode :	Mode 4	Temperature :	23℃~26℃
Test Band :	802.11g	Relative Humidity :	35%~60%
Test Channel :	01	Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

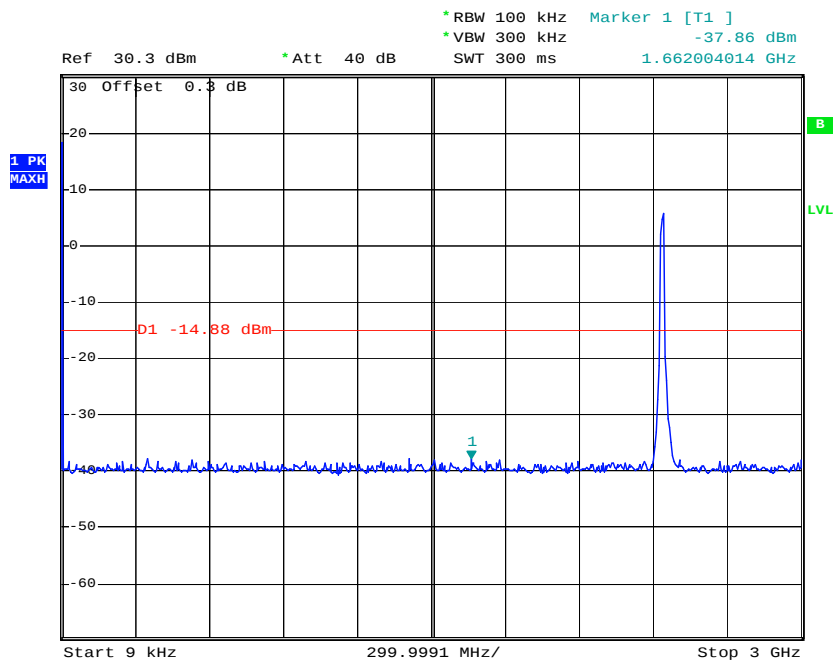


Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

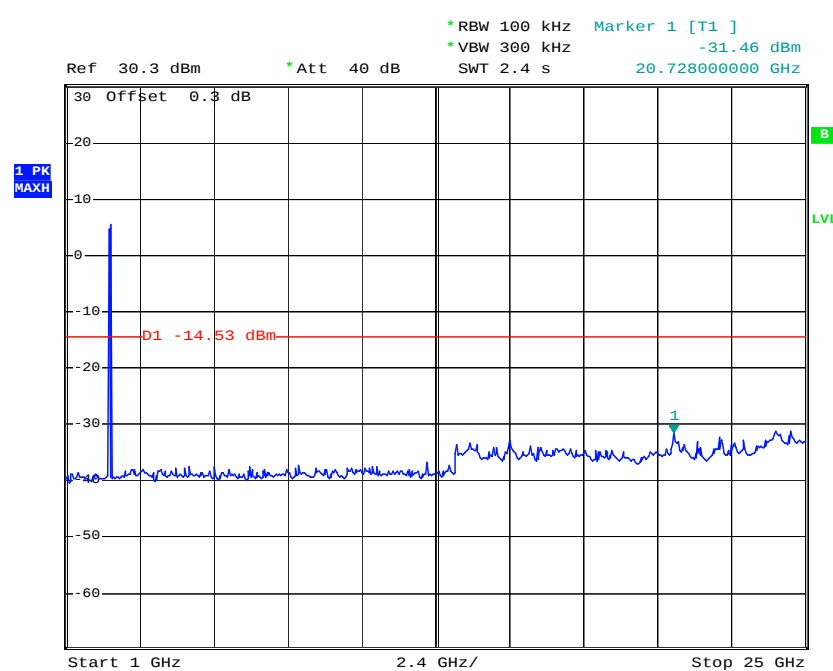


Test Mode :	Mode 5	Temperature :	23℃~26℃
Test Band :	802.11g	Relative Humidity :	35%~60%
Test Channel :	06	Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

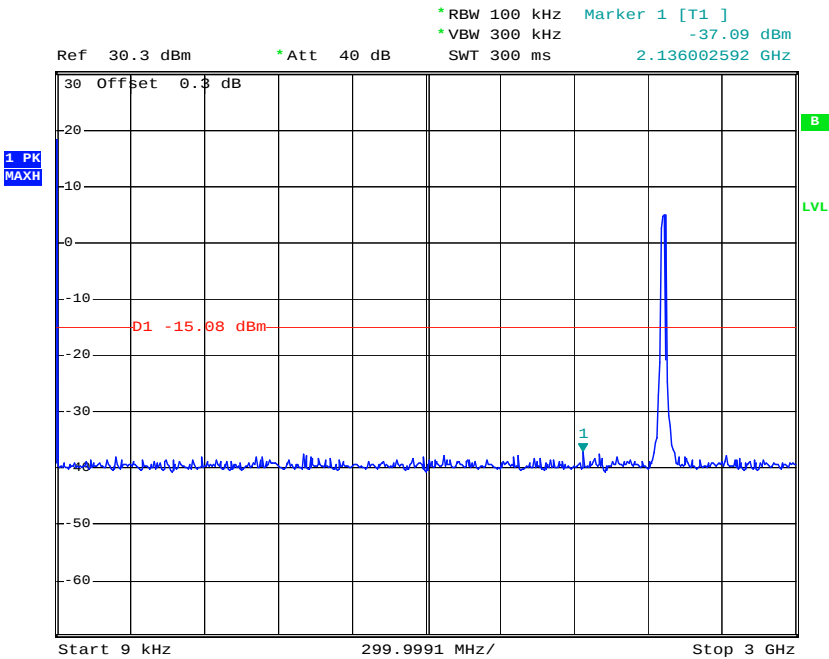


Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

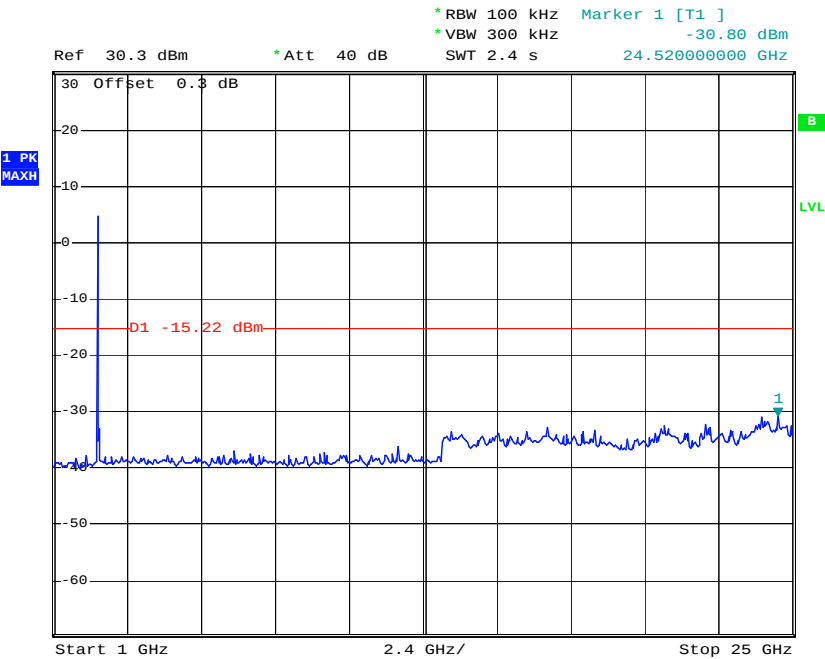


Test Mode :	Mode 6	Temperature :	23℃~26℃
Test Band :	802.11g	Relative Humidity :	35%~60%
Test Channel :	11	Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



3.4 Power Spectral Density Measurement

3.4.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3 kHz band at any time interval of continuous transmission.

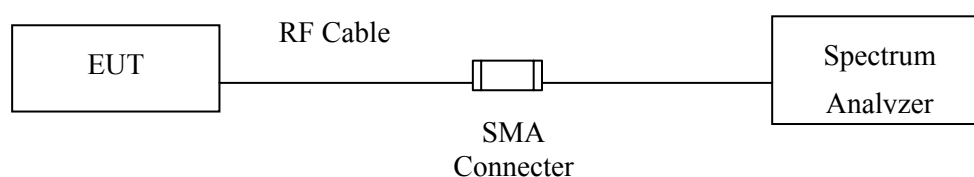
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The test follows FCC KDB Publication No. 558074 D01 DTA Measurement Guidance v01.
2. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
3. Set the RBW = 100 kHz.
4. Set the VBW $\geq$ 300 kHz.
5. Set the span to 5-30 % greater than the EBW.
6. Detector = peak.
7. Sweep time = auto couple
8. Trace mode = max hold.
9. Allow trace to fully stabilize.
10. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
11. 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 $BWCF = 10\log(3\text{ kHz}/100\text{ kHz} = -15.2\text{ dB})$
12. The resulting peak PSD level must be $\leq 8\text{ dBm}$.

3.4.4 Test Setup

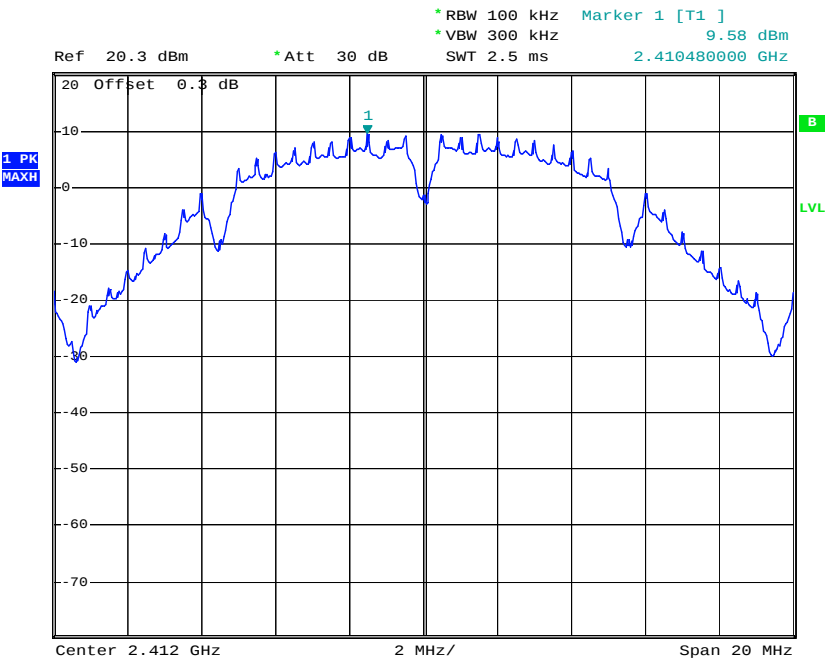


3.4.5 Test Result of Power Spectral Density

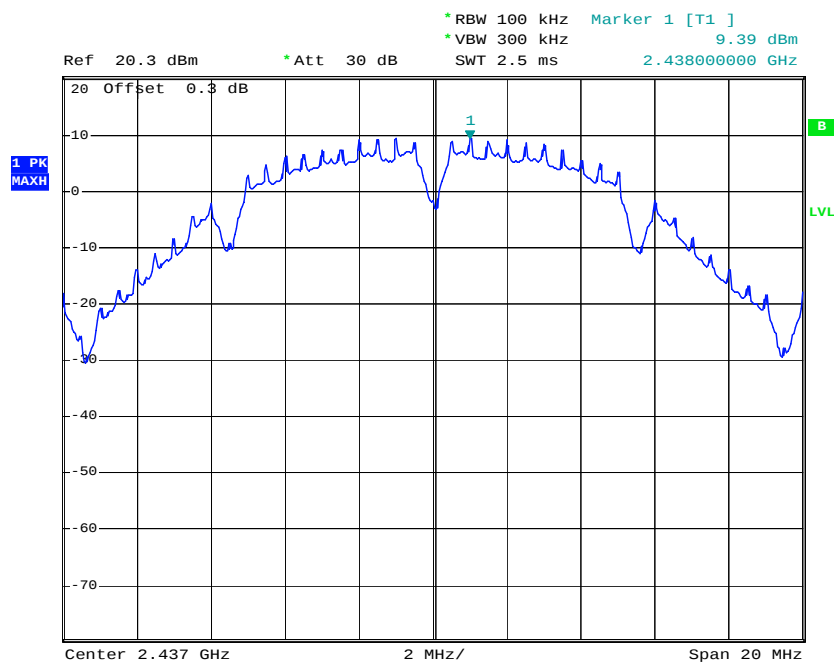
Test Mode :	Mode 1, 2, 3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-5.62	8	Pass
06	2437	-5.81	8	Pass
11	2462	-5.97	8	Pass

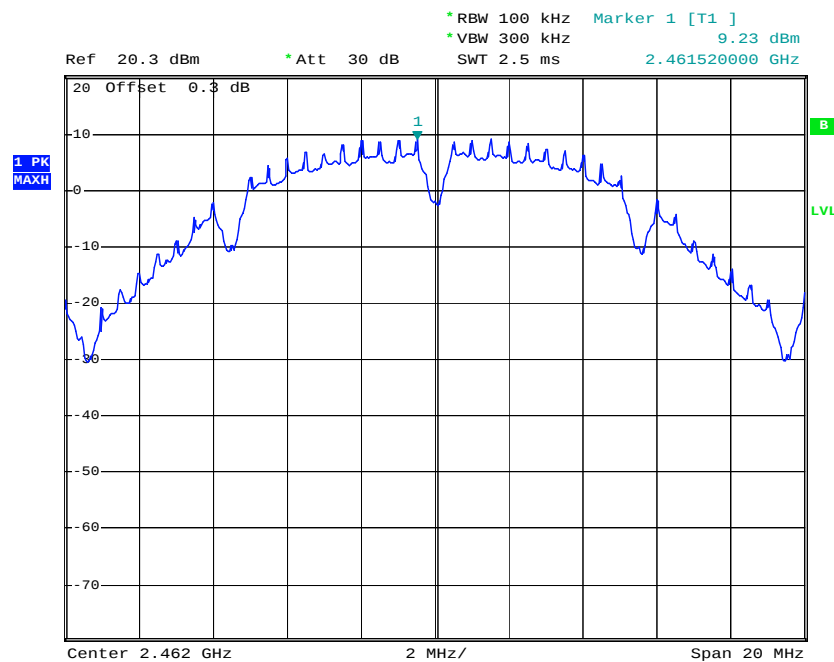
Mode 1 : PSD Plot on 802.11b Channel 01



Mode 2 : PSD Plot on 802.11b Channel 06



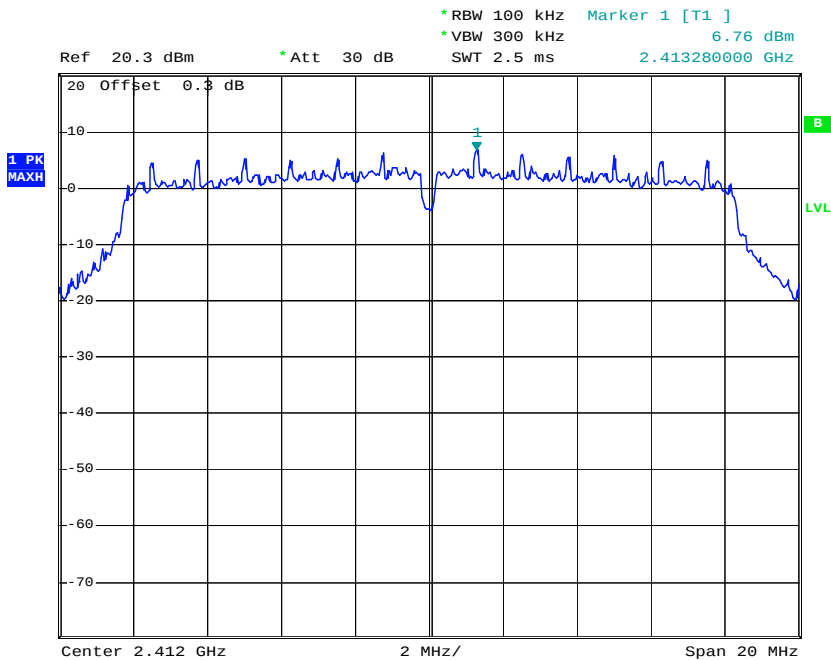
Mode 3 : PSD Plot on 802.11b Channel 11



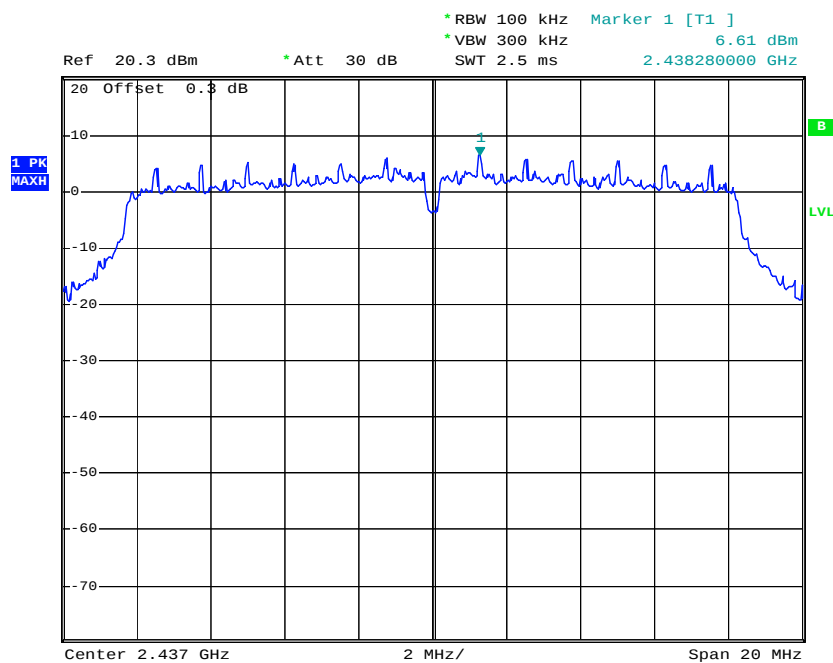
Test Mode :	Mode 4, 5, 6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-8.44	8	Pass
06	2437	-8.59	8	Pass
11	2462	-9.02	8	Pass

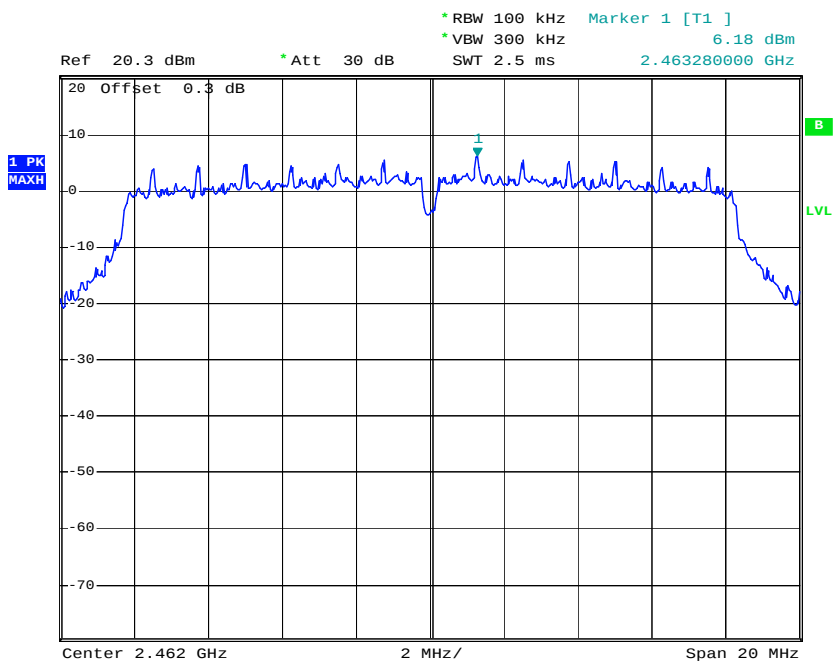
Mode 4 : PSD Plot on 802.11g Channel 01



Mode 5 : PSD Plot on 802.11g Channel 06



Mode 6 : PSD Plot on 802.11g Channel 11



3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted 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.

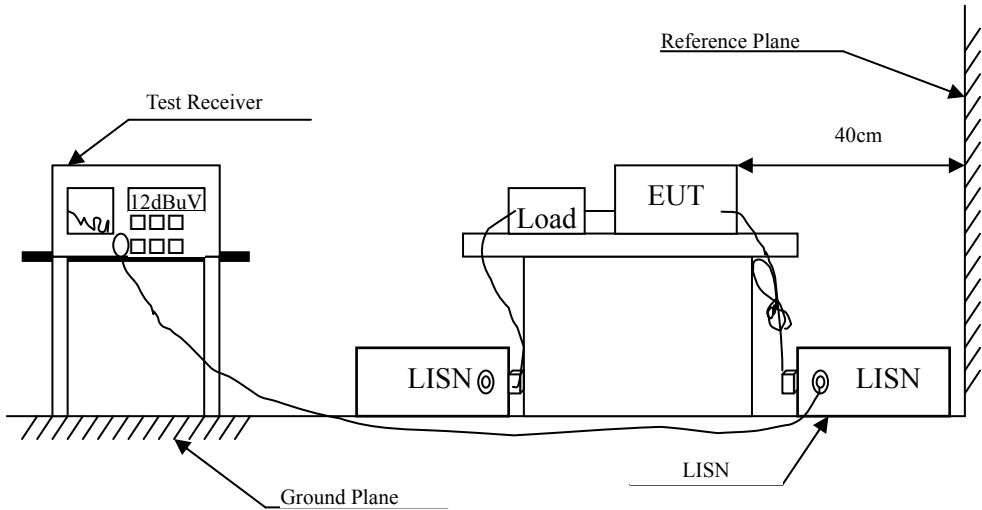
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth (RBW=9kHz and VBW=30kHz) with Maximum Hold Mode for QP limit measurement.
10. Set the test-receiver system to Average Detect Function and specified bandwidth (RBW=9kHz and VBW=30kHz) with Maximum Hold Mode for QP limit measurement.

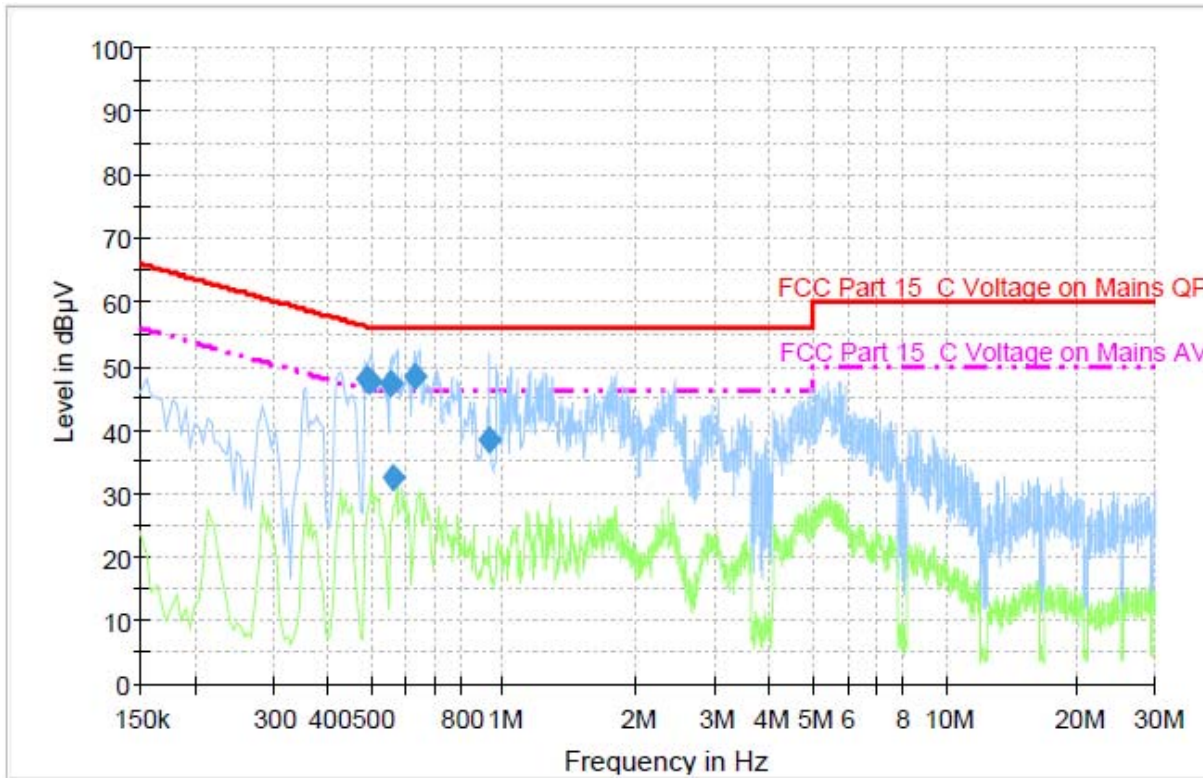
3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Test Voltage:120V/60Hz

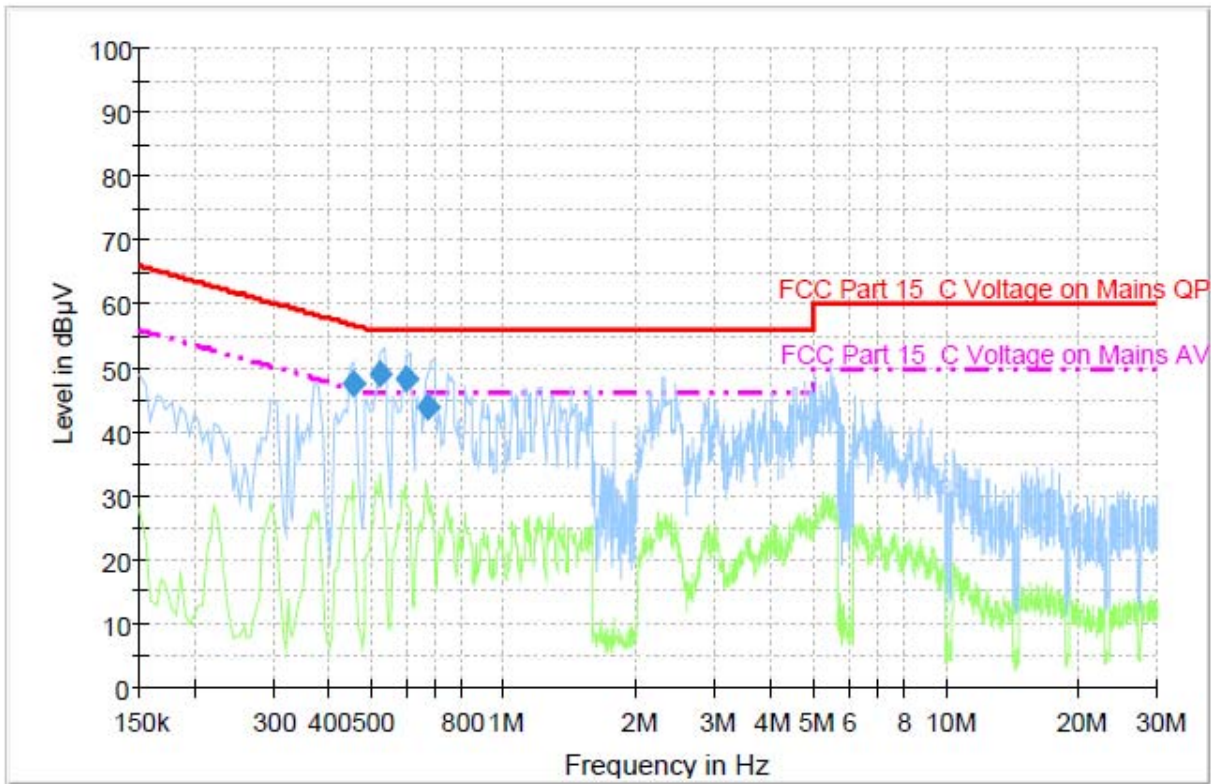
Test mode 1: GSM 850 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS RX +Neutral



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.492000	47.8	10.0	9.000	On	N	9.8	8.3	56.1
0.496500	47.7	10.0	9.000	On	N	9.8	8.4	56.1
0.555000	47.1	10.0	9.000	On	N	9.8	8.9	56.0
0.564000	32.7	10.0	9.000	On	N	9.8	23.3	56.0
0.627000	48.4	10.0	9.000	On	N	9.8	7.6	56.0
0.928500	38.3	10.0	9.000	On	N	9.7	17.7	56.0

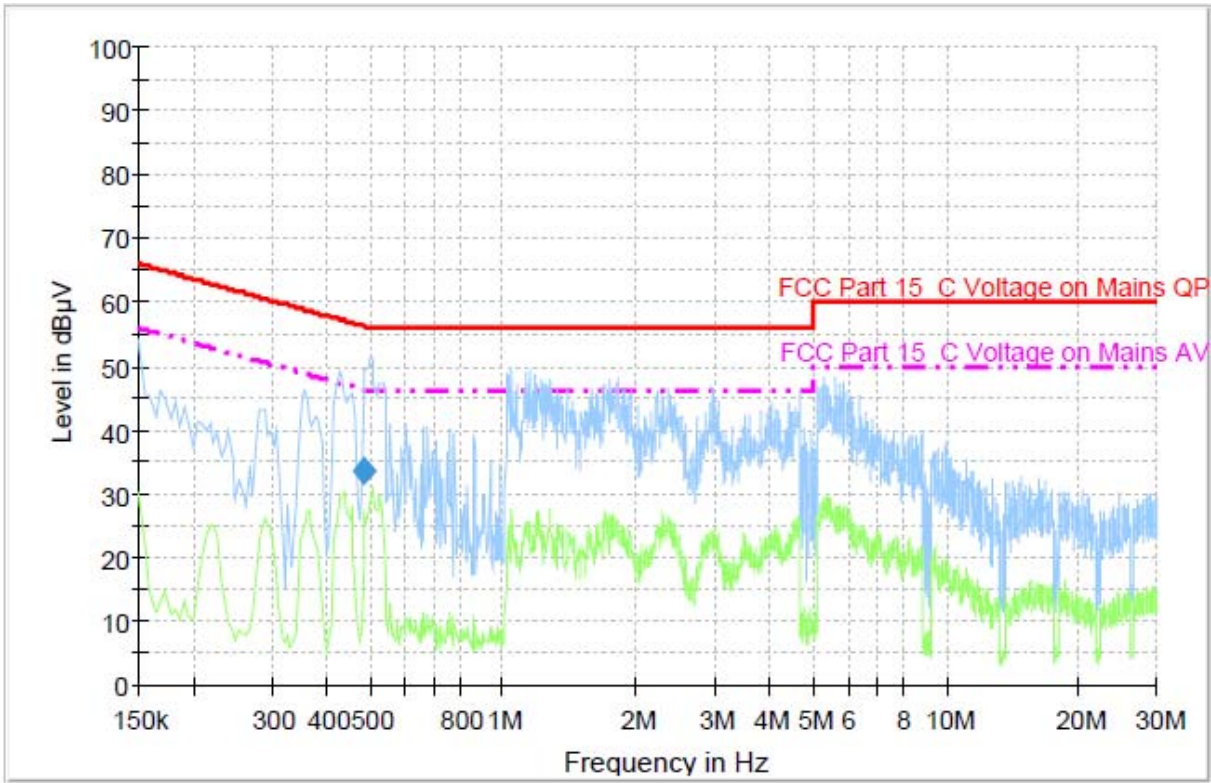
Test mode 1: GSM 850 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS RX +Line



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.456000	47.7	10.0	9.000	On	L1	9.7	9.1	56.8
0.528000	49.2	10.0	9.000	On	L1	9.7	6.8	56.0
0.600000	48.4	10.0	9.000	On	L1	9.7	7.6	56.0
0.672000	43.9	10.0	9.000	On	L1	9.7	12.1	56.0

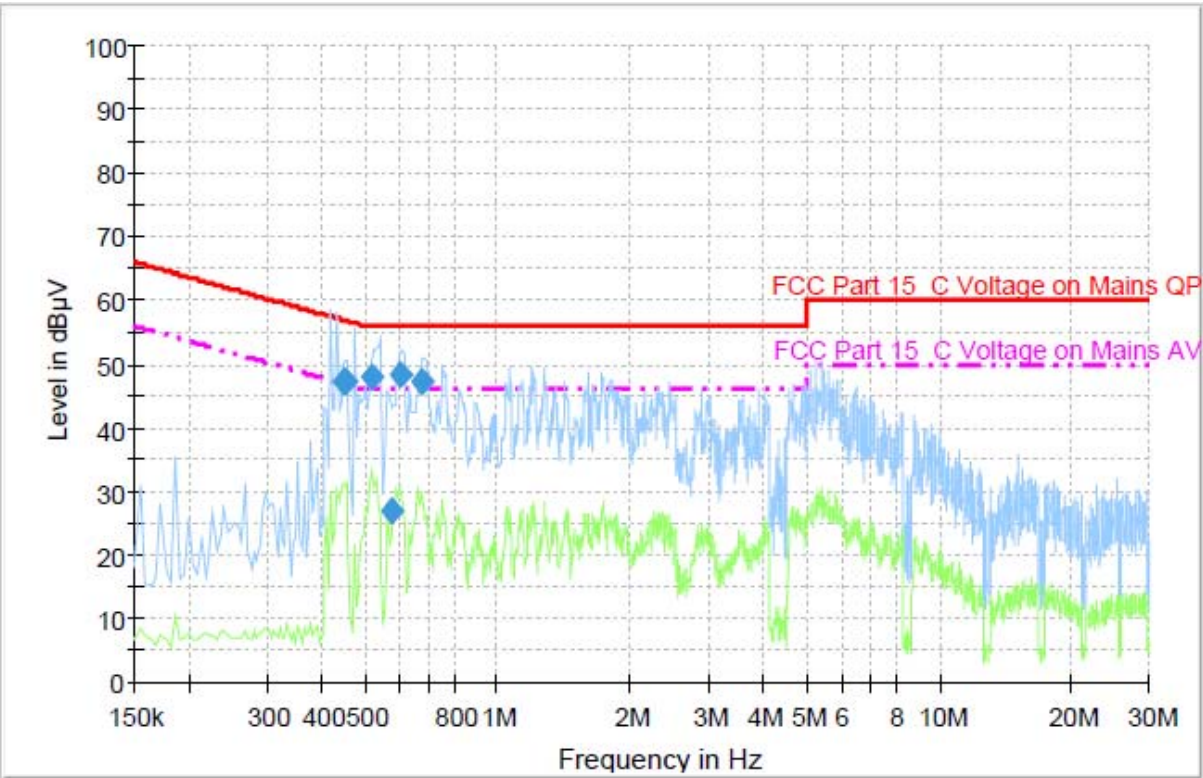
Test mode 2: GSM 1900 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS RX + Neutral



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.487500	33.5	10.0	9.000	On	N	9.8	22.7	56.2

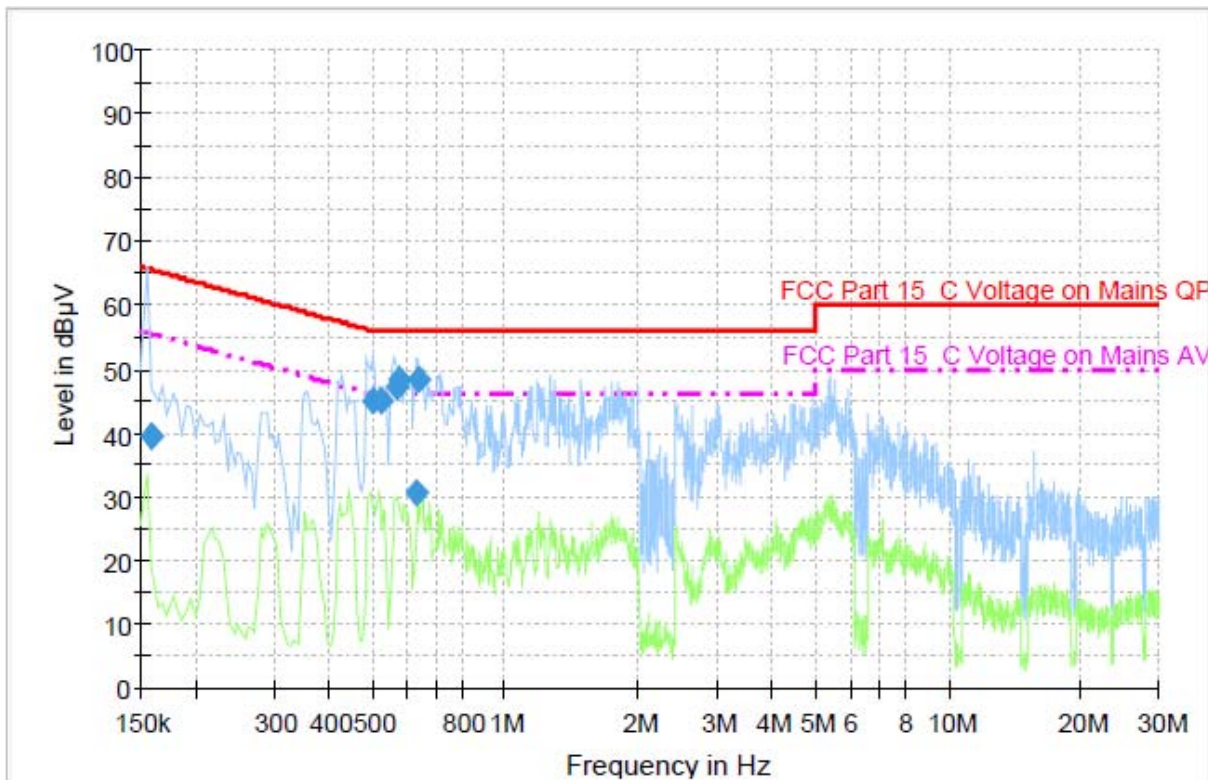
Test mode 2: GSM 1900 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS RX + Line



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.447000	47.3	10.0	9.000	On	L1	9.7	9.6	56.9
0.451500	47.2	10.0	9.000	On	L1	9.7	9.6	56.8
0.519000	48.0	10.0	9.000	On	L1	9.7	8.0	56.0
0.577500	27.0	10.0	9.000	On	L1	9.7	29.0	56.0
0.600000	48.3	10.0	9.000	On	L1	9.7	7.7	56.0

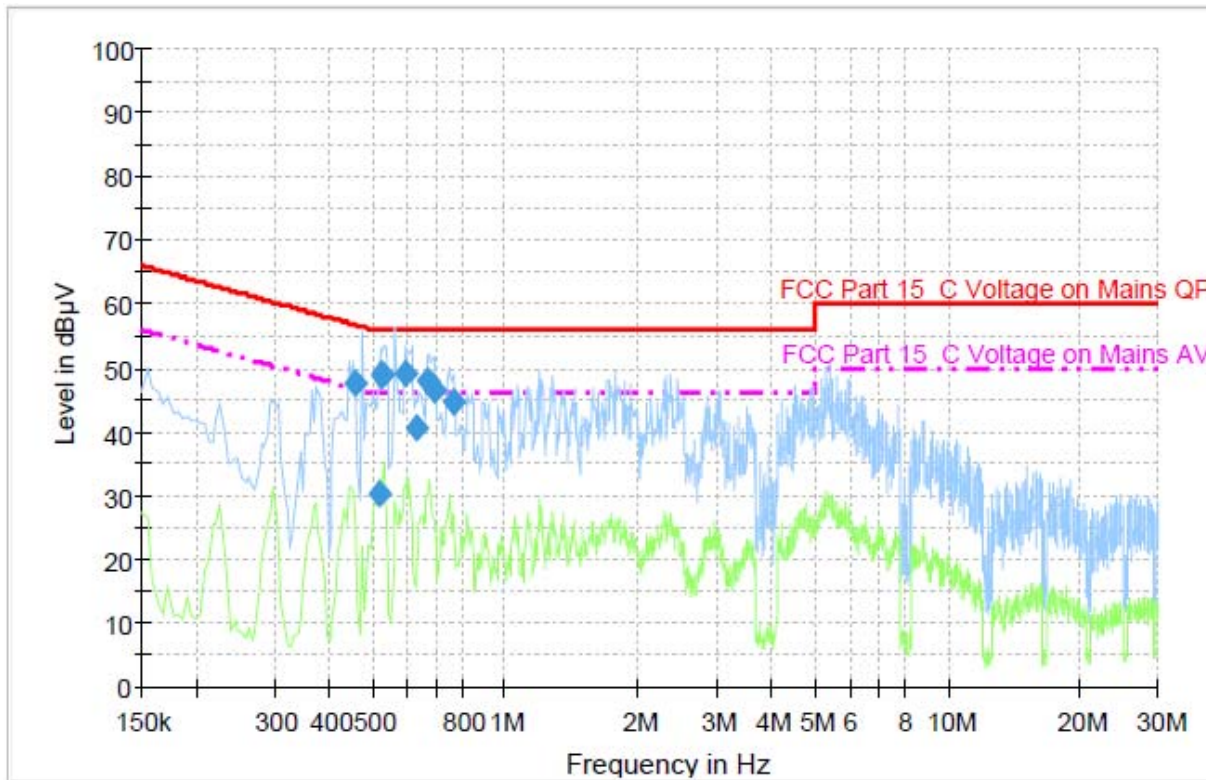
Test mode 3: WCDMA Band II Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone
+Earphone+ Adapter+ Battery + GPS RX +Neutral



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.159000	39.5	10.0	9.000	On	N	9.4	26.0	65.5
0.501000	45.1	10.0	9.000	On	N	9.8	10.9	56.0
0.528000	45.0	10.0	9.000	On	N	9.8	11.0	56.0
0.568500	47.3	10.0	9.000	On	N	9.8	8.7	56.0
0.573000	48.4	10.0	9.000	On	N	9.8	7.6	56.0
0.627000	30.7	10.0	9.000	On	N	9.8	25.3	56.0
0.640500	48.4	10.0	9.000	On	N	9.8	7.6	56.0

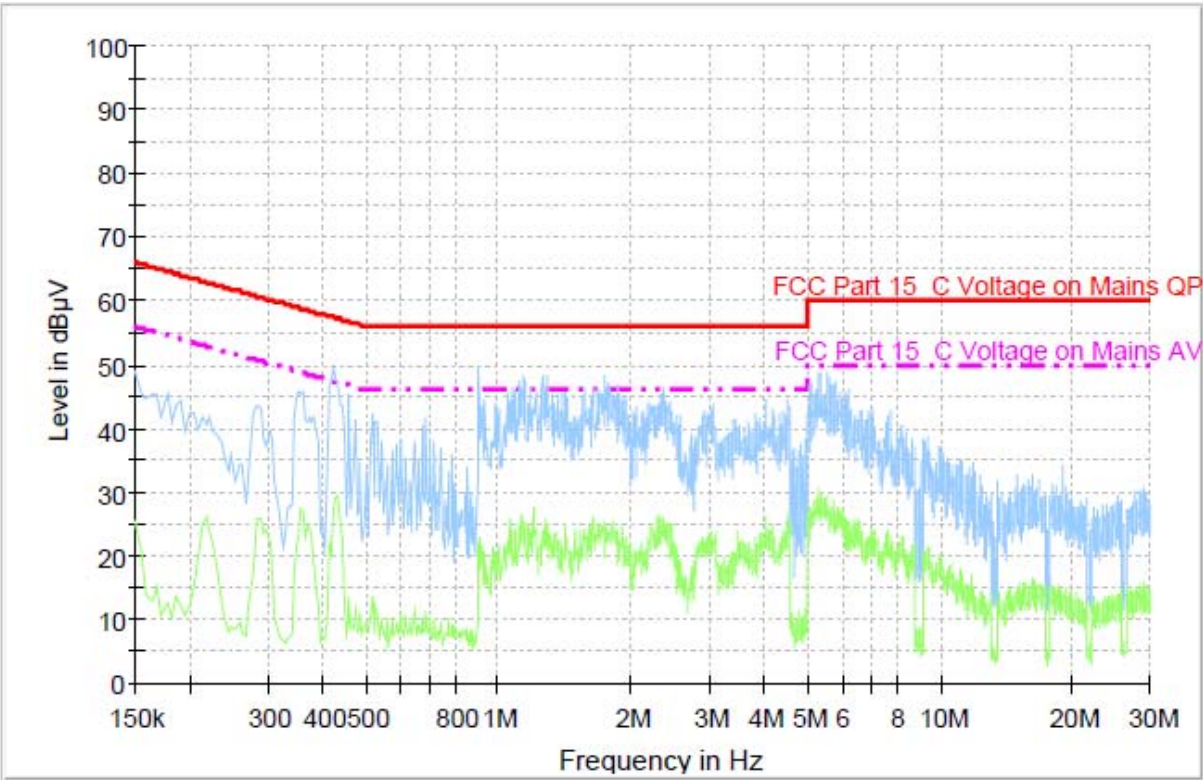
Test mode 3: WCDMA Band II Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone
+Earphone+ Adapter+ Battery + GPS RX +Line



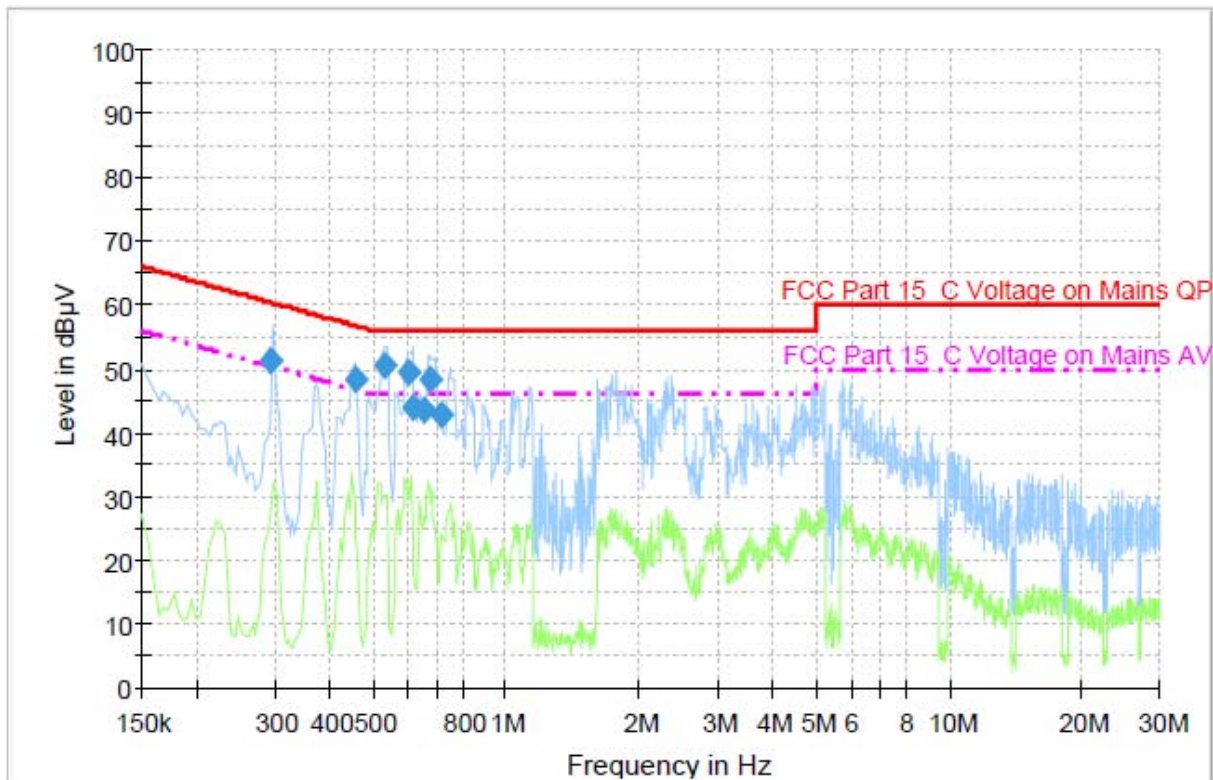
Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.456000	47.8	10.0	9.000	On	L1	9.7	9.0	56.8
0.519000	30.4	10.0	9.000	On	L1	9.7	25.6	56.0
0.523500	49.2	10.0	9.000	On	L1	9.7	6.8	56.0
0.528000	48.7	10.0	9.000	On	L1	9.7	7.3	56.0
0.595500	49.2	10.0	9.000	On	L1	9.7	6.8	56.0
0.631500	40.5	10.0	9.000	On	L1	9.7	15.5	56.0
0.667500	47.9	10.0	9.000	On	L1	9.7	8.1	56.0
0.690000	46.7	10.0	9.000	On	L1	9.7	9.3	56.0
0.762000	44.7	10.0	9.000	On	L1	9.7	11.3	56.0

Test mode 4: WCDMA Band V Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone
+Earphone+ Adapter+ Battery + GPS RX +Neutral



Test mode 4: WCDMA Band V Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone
+Earphone+ Adapter+ Battery + GPS RX +Line



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.294000	51.1	10.0	9.000	On	L1	9.7	9.3	60.4
0.456000	48.5	10.0	9.000	On	L1	9.7	8.3	56.8
0.532500	50.4	10.0	9.000	On	L1	9.7	5.6	56.0
0.600000	49.6	10.0	9.000	On	L1	9.7	6.4	56.0
0.613500	43.9	10.0	9.000	On	L1	9.7	12.1	56.0
0.649500	43.7	10.0	9.000	On	L1	9.7	12.3	56.0
0.676500	48.2	10.0	9.000	On	L1	9.7	7.8	56.0
0.717000	42.9	10.0	9.000	On	L1	9.7	13.1	56.0

3.6 Radiated Emission Measurement

3.6.1 Limit of Radiated Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/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

3.6.2 Measuring Instruments

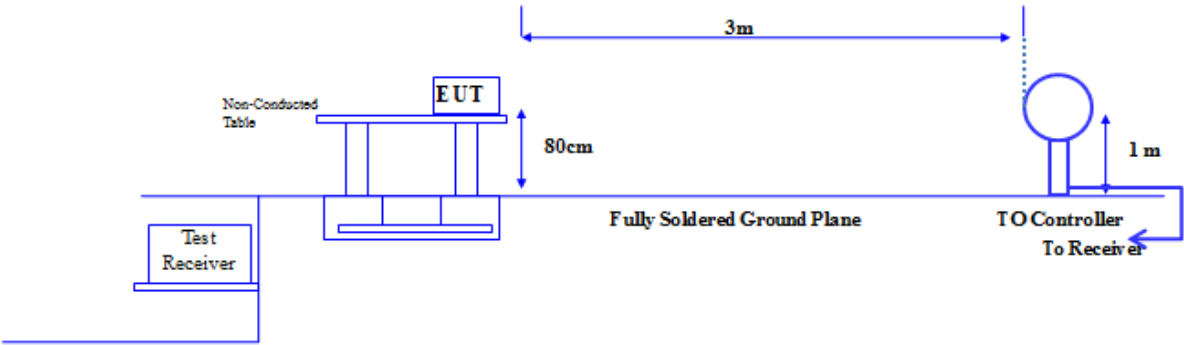
See list of measuring instruments of this test report.

3.6.3 Test Procedures

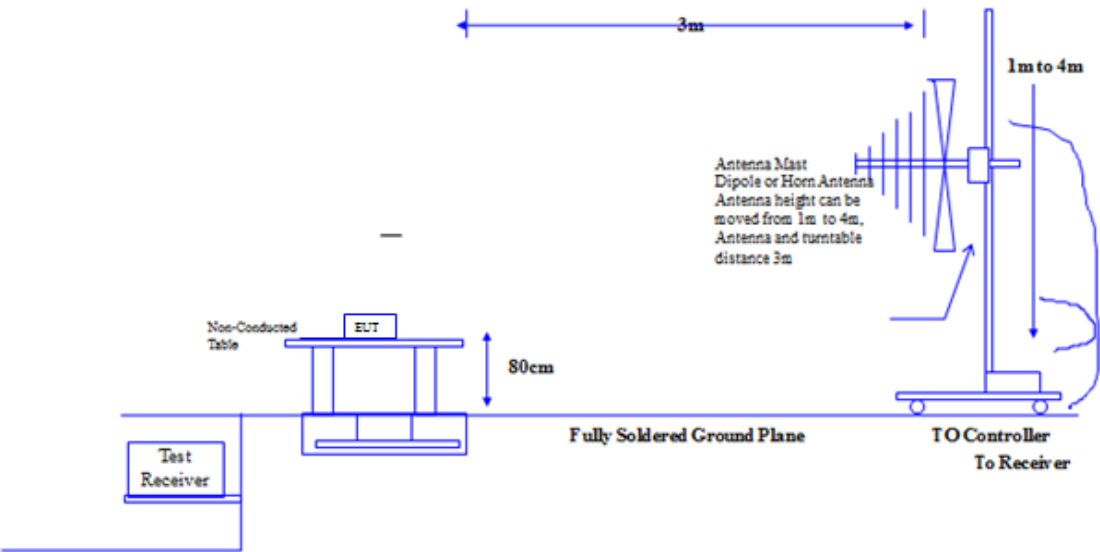
1. The testing follows the guidelines in FCC KDB Publication No.558074 D01 DTS Measurement Guidance v01.
2. Use the following spectrum analyzer settings:
 - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
 - (2) Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB)
3. Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.

3.6.4 Test Setup

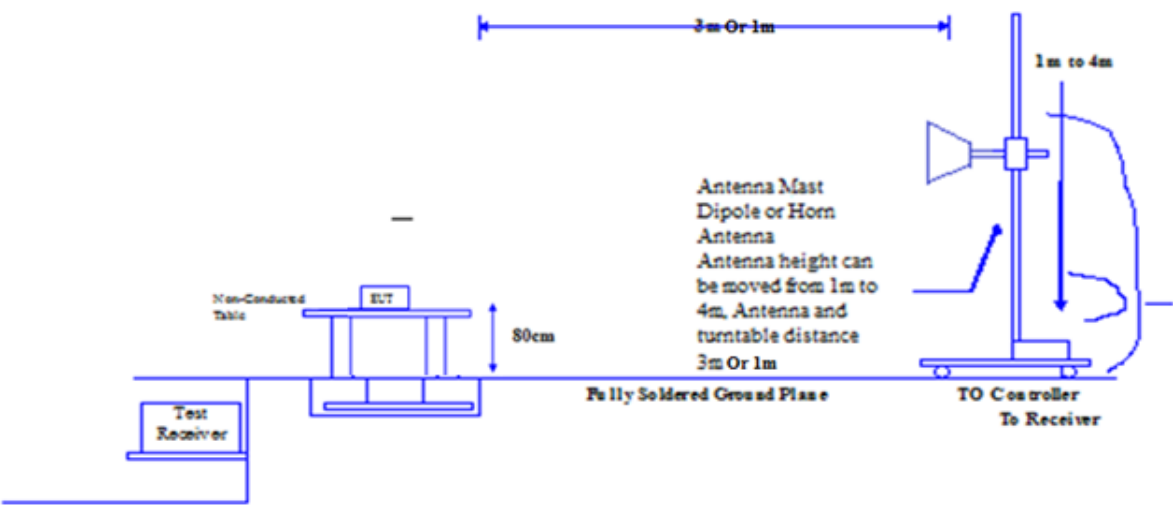
9kHz~30MHz



30MHz~1GHz



Above 1GHz



3.6.5 Radiated Emission Measurement Results (9kHz ~ 30MHz)

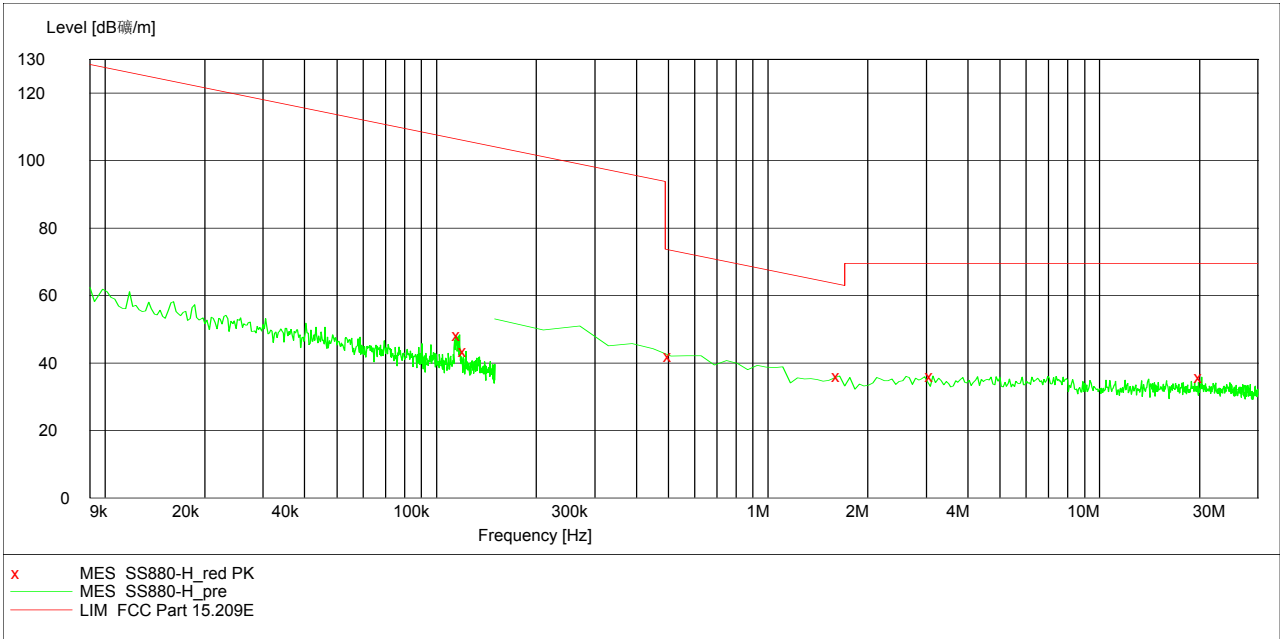
Test Engineer :	Fan Yang	Temperature :	23℃~26℃
		Relative Humidity :	35%~60%

Frequency (MHz)	Result (dBu V/m)	Polarization	Limit (dBu V/m)	Margin (dB)
0.117222	48.42	HOR	106.2	57.8
0.122874	43.47	HOR	105.8	62.3
0.508918	42.02	HOR	73.5	31.5
1.645491	36.22	HOR	63.3	27.1
3.140982	36.13	HOR	69.5	33.4
20.309218	35.90	HOR	69.5	33.6
0.009848	70.87	VER	127.7	56.9
0.066926	48.90	VER	111.1	62.2
0.508918	42.97	VER	73.5	30.5
1.525852	36.93	VER	63.9	27.0
2.183868	37.07	VER	69.5	32.5
9.840782	37.63	VER	69.5	31.9

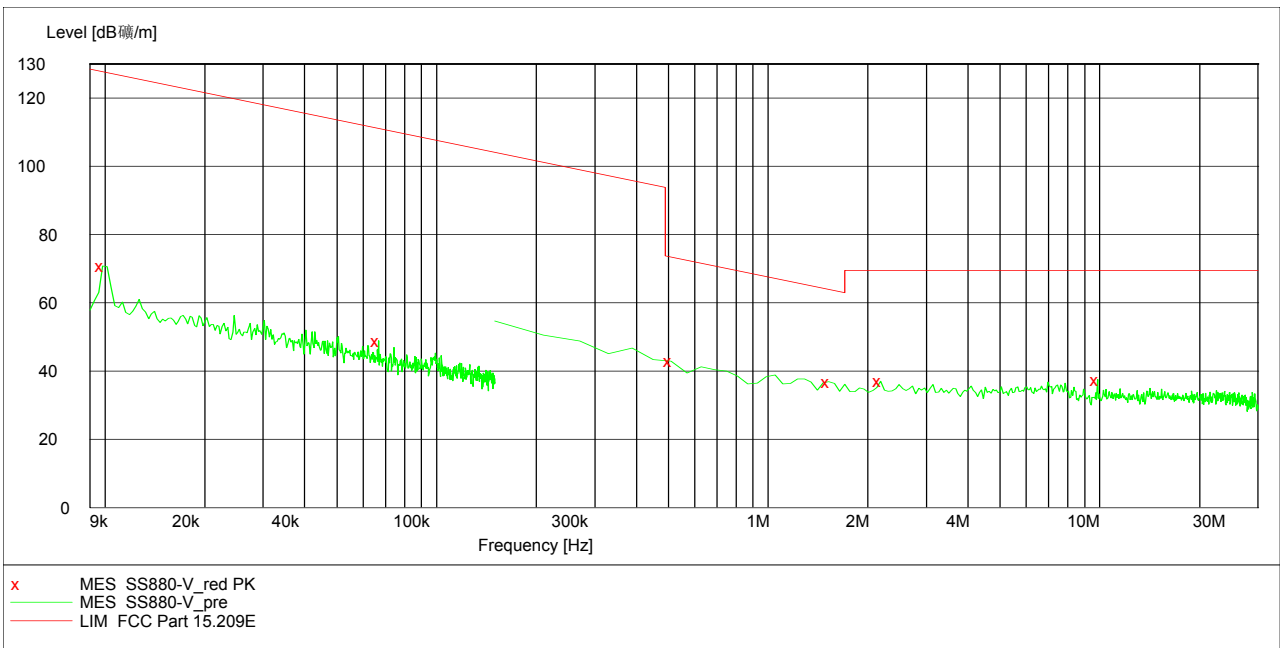
Notes:

- 1 , No emission found between lowest internal or generated frequency to 30MHz.
- 2 , Laboratory's Information :
Prepared By : ZTE Corporation Reliability Testing Center
Address: 1/F, B2 Wing, ZTE Plaza, Keji Road South, Hi-Tech industrial park, Shenzhen, Guangdong, 518057, China
Company Registration Number : 373926
Date of Receipt : 2012.08.22

Radiated Emission Plot between 9 kHz ~ 30MHz (Horizontal)



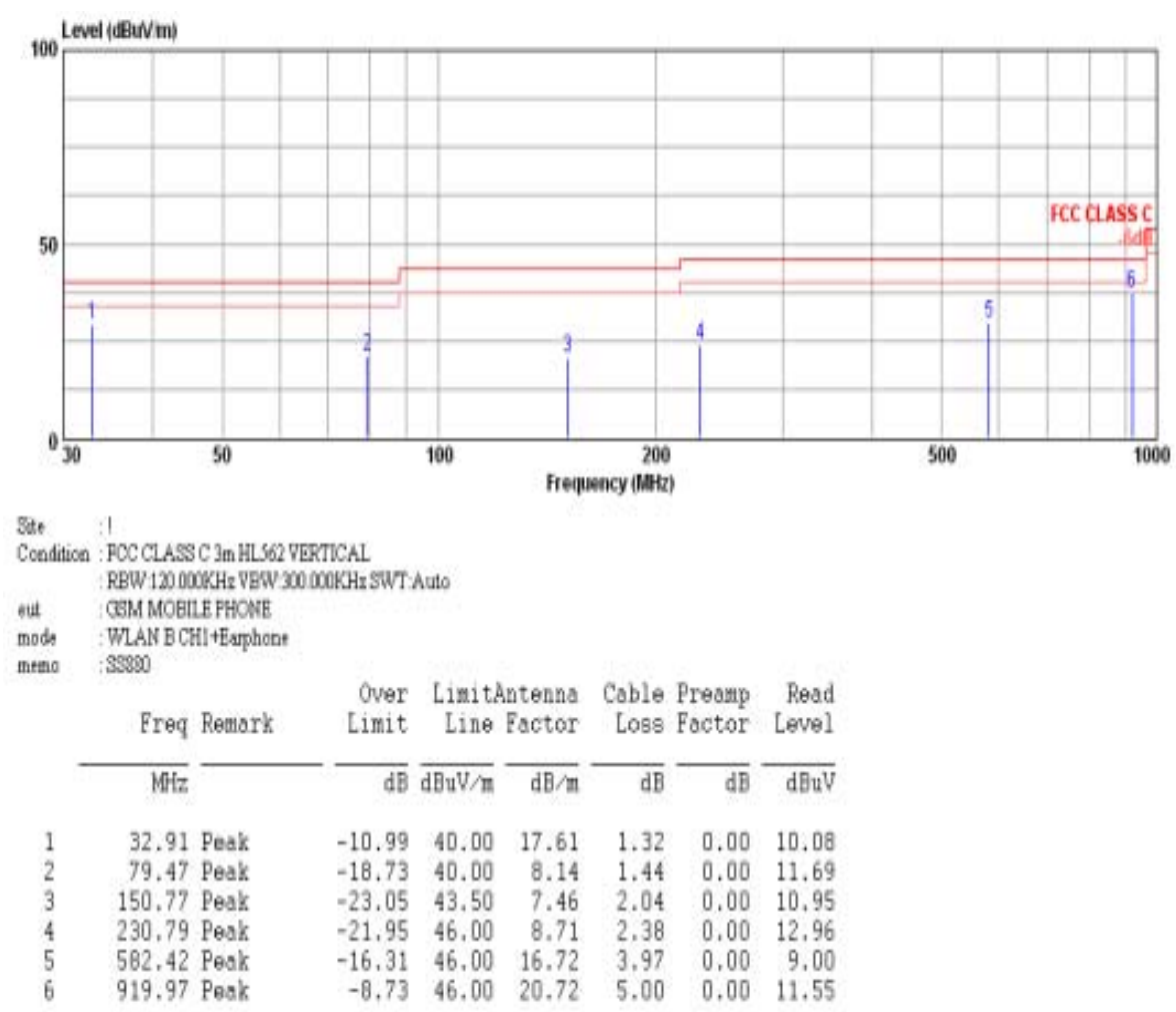
Radiated Emission Plot between 9 kHz ~ 30MHz (Vertical)



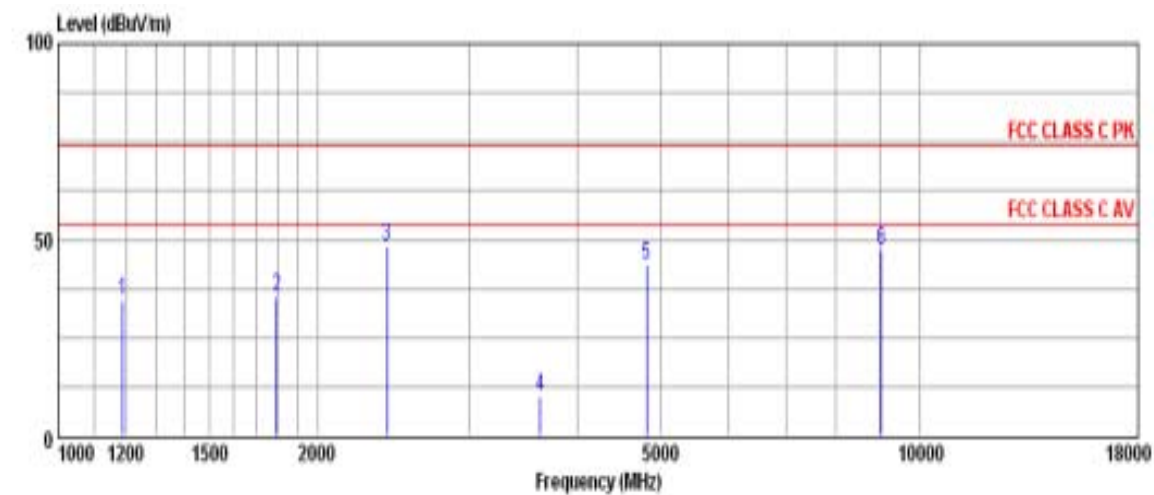
3.6.6 Radiated Emission Measurement Results (30MHz-18GHz)

Test Channel :	01	Test Mode	Mode 1
Test Band :	802.11b	Test Engineer :	Guo-Zheng Li
Remark:	2412MHz is Fundamental signal which can be ignored		

Radiated Emission 30MHz-1GHz Vertical



Radiated Emission 1GHz-18GHz Vertical

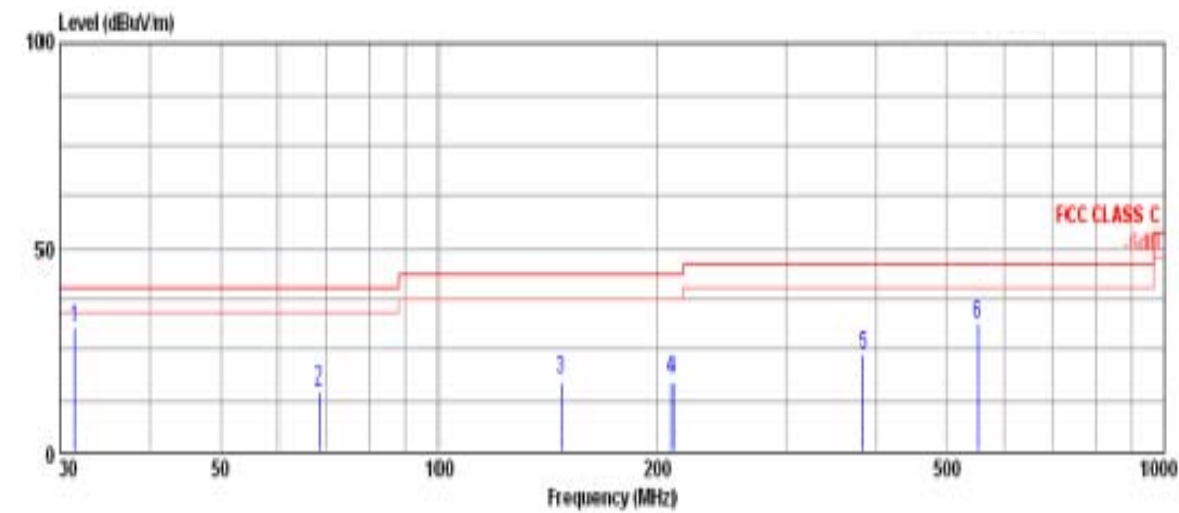


Site : /
Condition : FCC CLASS C PK 3m HP906 VERTICAL
RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eui : GSM MOBILE PHONE
mode : WLAN B CH1+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss Factor	Preamplifier Gain Factor	Read Level
	Mhz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	1188.70	Peak	-39.51	74.00	23.98	3.12	27.38	34.77
2	1792.54	Peak	-38.66	74.00	26.23	3.82	26.50	31.79
3	2408.96	Peak	-25.84	74.00	27.60	4.42	25.29	41.43
4	3629.22	Peak	-63.85	74.00	30.93	5.68	26.66	0.20
5	4824.32	Peak	-30.25	74.00	32.31	6.73	27.07	31.78
6	9026.04	Peak	-26.74	74.00	36.52	9.58	26.73	27.89

Remark: Marker #3 is Fundamental signal which can be ignored

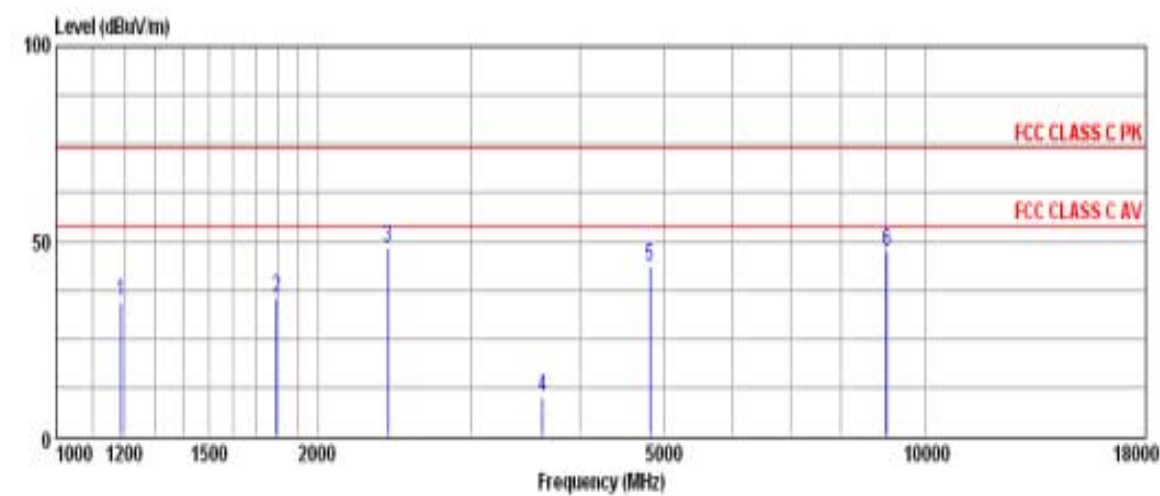
Radiated Emission 30MHz-1GHz Horizontal



Site : I
Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW 120.000KHz VBW 300.000KHz SWT Auto
cut : GSM MOBILE PHONE
mode : WLAN B CH1+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp	Read Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	31.49	Peak	-9.87	40.00	18.33	1.20	0.00	10.60
2	68.31	Peak	-25.03	40.00	6.01	1.30	0.00	7.66
3	147.37	Peak	-26.15	43.50	7.59	1.98	0.00	7.78
4	209.45	Peak	-26.16	43.50	7.74	2.27	0.00	7.33
5	384.05	Peak	-22.75	46.00	13.12	3.21	0.00	6.92
6	553.80	Peak	-14.73	46.00	16.24	3.91	0.00	11.12

Radiated Emission 1GHz-18GHz Horizontal



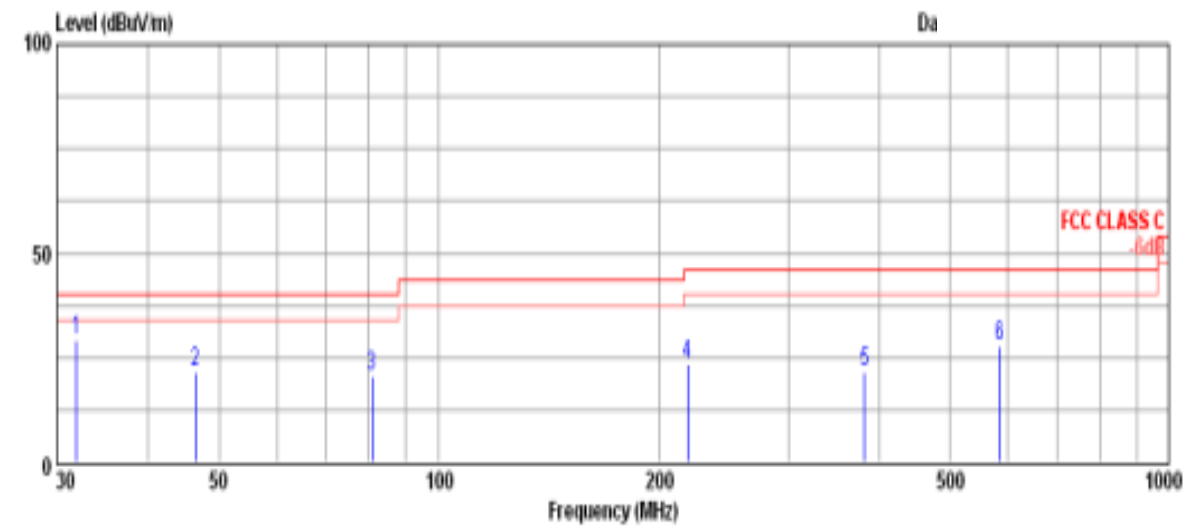
Site : I
Condition : FCC CLASS C PK 3m HP906 VERTICAL
 : RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
cut : GSM MOBILE PHONE
mode : WLAN B CH1+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamplifier Factor	Read Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	1188.70	Peak	-39.51	74.00	23.98	3.12	27.38	34.77
2	1792.54	Peak	-38.66	74.00	26.23	3.82	26.50	31.79
3	2408.96	Peak	-25.84	74.00	27.60	4.42	25.29	41.43
4	3629.22	Peak	-63.85	74.00	30.93	5.68	26.66	0.20
5	4824.32	Peak	-30.25	74.00	32.31	6.73	27.07	31.78
6	9026.04	Peak	-26.74	74.00	36.52	9.58	26.73	27.89

Remark: Marker #3 is Fundamental signal which can be ignored

Test Channel :	06	Test Mode	Mode 2
Test Band :	802.11b	Test Engineer :	Guo-Zheng Li
Remark:	2437MHz is Fundamental signal which can be ignored		

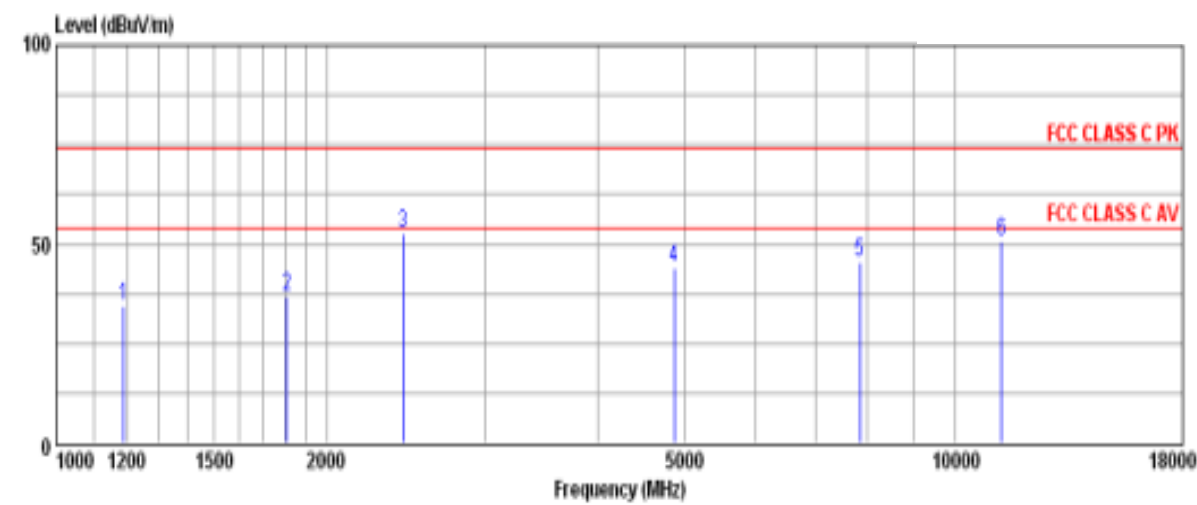
Radiated Emission 30MHz-1GHz Vertical



Site : !
Condition : FCC CLASS C 3m HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN B CH6+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level
	Mhz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	31.94	Peak	-10.63	40.00	18.09	1.36	0.00	9.92
2	46.49	Peak	-18.57	40.00	10.09	1.09	0.00	10.25
3	80.93	Peak	-19.25	40.00	8.23	1.44	0.00	11.08
4	218.66	Peak	-22.71	46.00	8.17	2.36	0.00	12.76
5	381.62	Peak	-24.37	46.00	13.03	3.18	0.00	5.42
6	584.36	Peak	-18.24	46.00	16.76	3.97	0.00	7.03

Radiated Emission 1GHz-18GHz Vertical

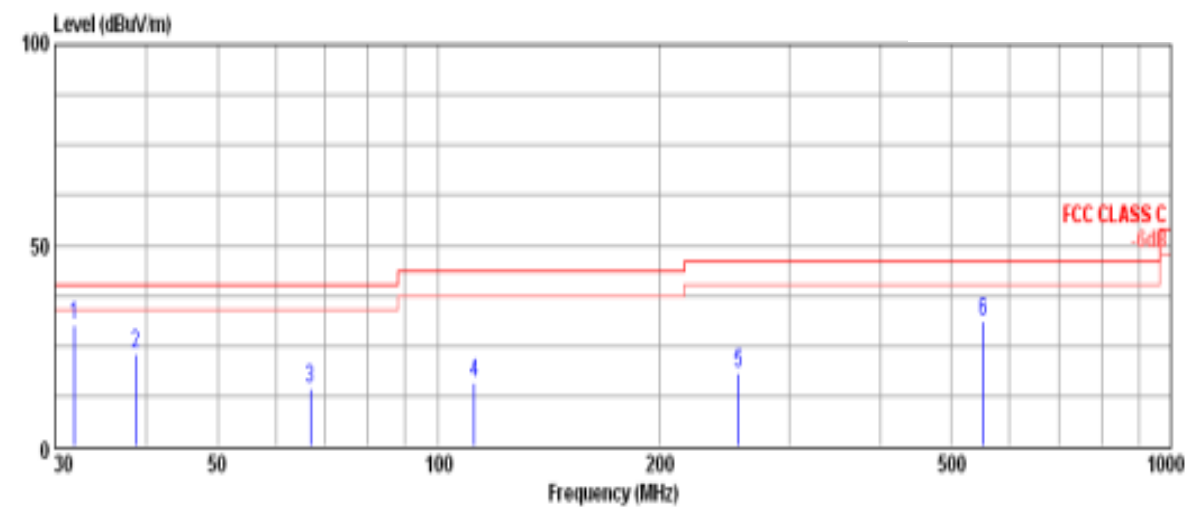


Site :!
Condition : FCC CLASS C PK 3m HP906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN B CH6+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamplifier Factor	Read Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	1188.70	Peak	-39.58	74.00	23.98	3.12	27.38	34.70
2	1805.12	Peak	-37.04	74.00	26.23	3.82	26.48	33.39
3	2434.12	Peak	-21.43	74.00	27.62	4.46	25.32	45.81
4	4874.64	Peak	-30.05	74.00	32.43	6.50	26.98	32.00
5	7843.52	Peak	-28.65	74.00	35.53	8.22	26.55	28.15
6	11282.70	Peak	-23.47	74.00	37.81	10.27	26.17	28.62

Remark: Marker #3 is Fundamental signal which can be ignored

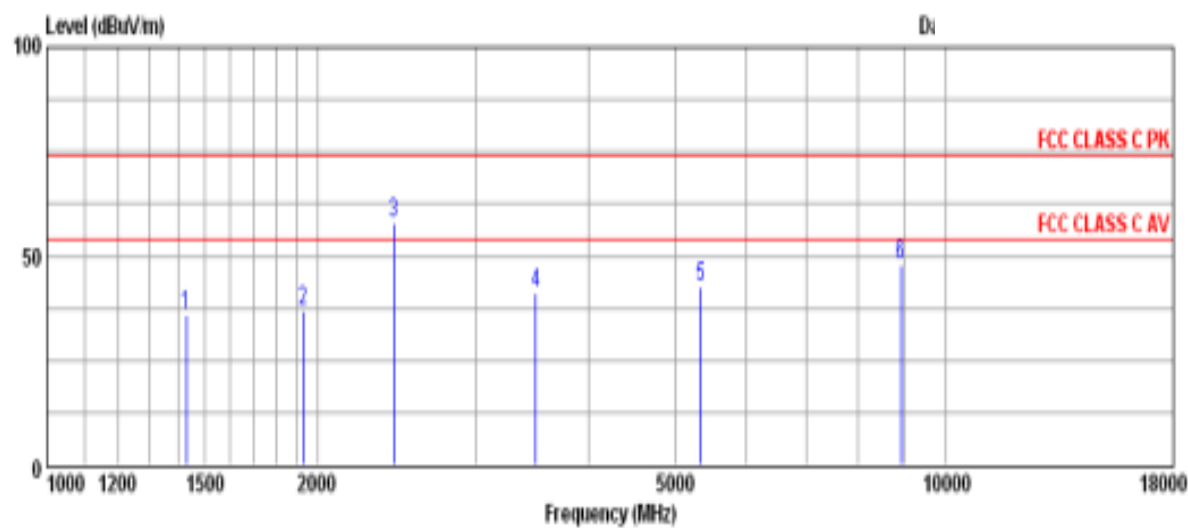
Radiated Emission 30MHz-1GHz Horizontal



Site :!
Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
cut : GSM MOBILE PHONE
mode : WLAN B CH6+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamplifier Factor	Read Level
	Mhz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	31.94	Peak	-9.62	40.00	18.09	1.36	0.00	10.93
2	38.73	Peak	-16.96	40.00	14.60	1.10	0.00	7.34
3	66.86	Peak	-25.71	40.00	5.45	1.26	0.00	7.58
4	111.97	Peak	-27.65	43.50	9.21	1.63	0.00	5.01
5	256.01	Peak	-27.60	46.00	9.62	2.69	0.00	6.09
6	552.35	Peak	-14.88	46.00	16.24	3.90	0.00	10.98

Radiated Emission 1GHz-18GHz Horizontal



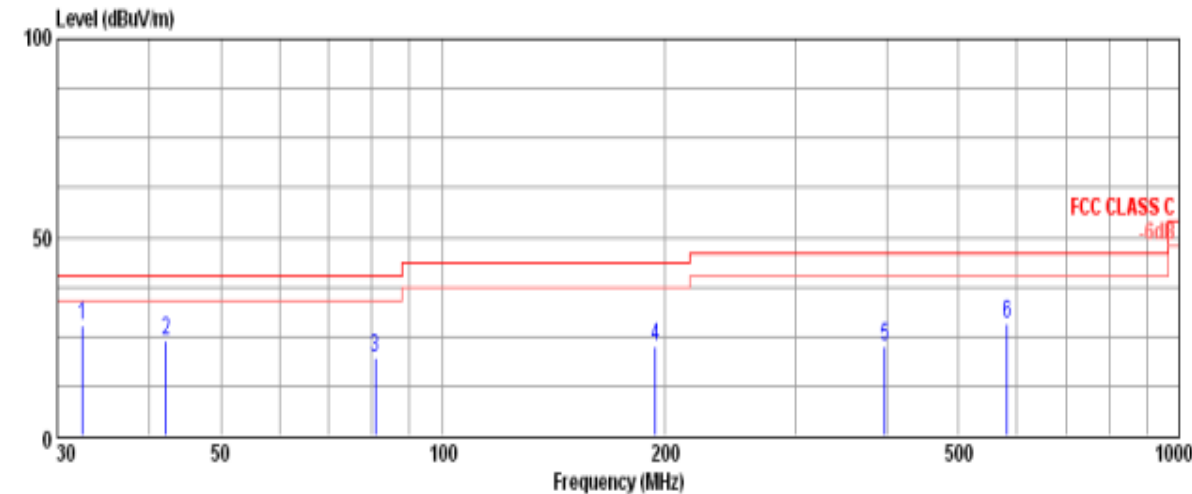
Site :!
Condition : FCC CLASS C PK 3m HP906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN B CH6+Earphone
memo : SS880

Freq	Remark	Over Limit	LimitAntenna Line Factor	Cable Loss	Preamp Factor	Read Level	
MHz		dB	dBuV/m	dB/m	dB	dBuV	
1427.72	Peak	-37.89	74.00	24.71	3.48	27.12	35.04
1930.92	Peak	-37.14	74.00	26.82	4.04	26.29	32.29
2434.12	Peak	-16.34	74.00	27.62	4.46	25.32	50.90
3503.42	Peak	-32.66	74.00	30.70	5.42	26.72	31.94
5340.00	Peak	-31.32	74.00	33.24	6.93	26.98	29.49
8925.40	Peak	-26.34	74.00	36.40	9.31	26.48	28.43

Remark: Marker #3 is Fundamental signal which can be ignored

Test Channel :	11	Test Mode	Mode 3
Test Band :	802.11b	Test Engineer :	Guo-Zheng Li
Remark:	2462MHz is Fundamental signal which can be ignored		

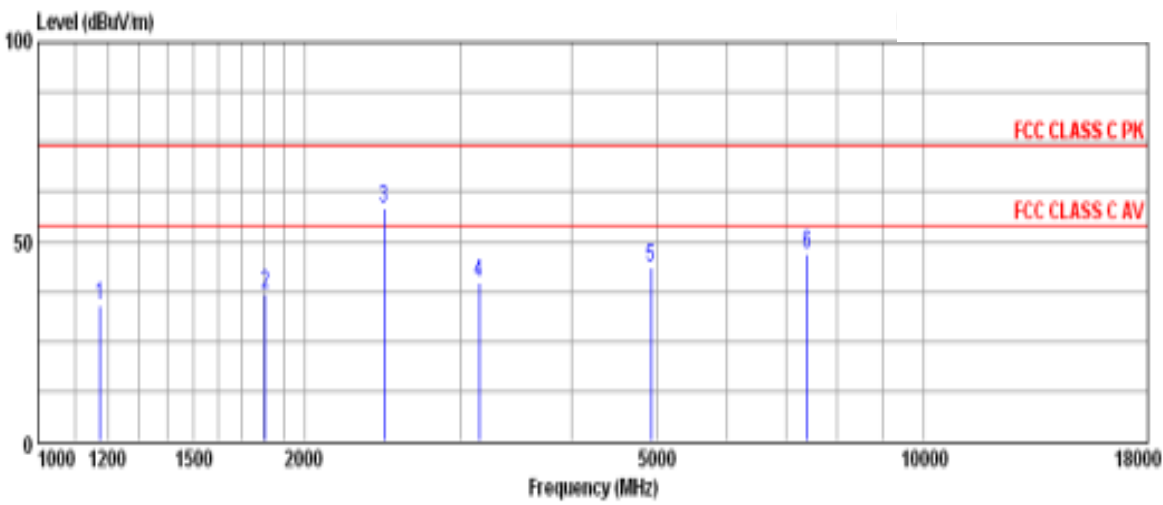
Radiated Emission 30MHz-1GHz Vertical



Site :!
Condition : FCC CLASS C 3m HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : WLAN B CH11+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamplifier	Read Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	32.45	Peak	-12.15	40.00	17.84	1.36	0.00	8.65
2	42.13	Peak	-16.02	40.00	12.59	1.11	0.00	10.28
3	80.93	Peak	-20.32	40.00	8.23	1.44	0.00	10.01
4	193.93	Peak	-21.14	43.50	7.24	2.31	0.00	12.81
5	397.20	Peak	-23.67	46.00	13.41	3.31	0.00	5.61
6	582.42	Peak	-17.89	46.00	16.72	3.97	0.00	7.42

Radiated Emission 1GHz-18GHz Vertical

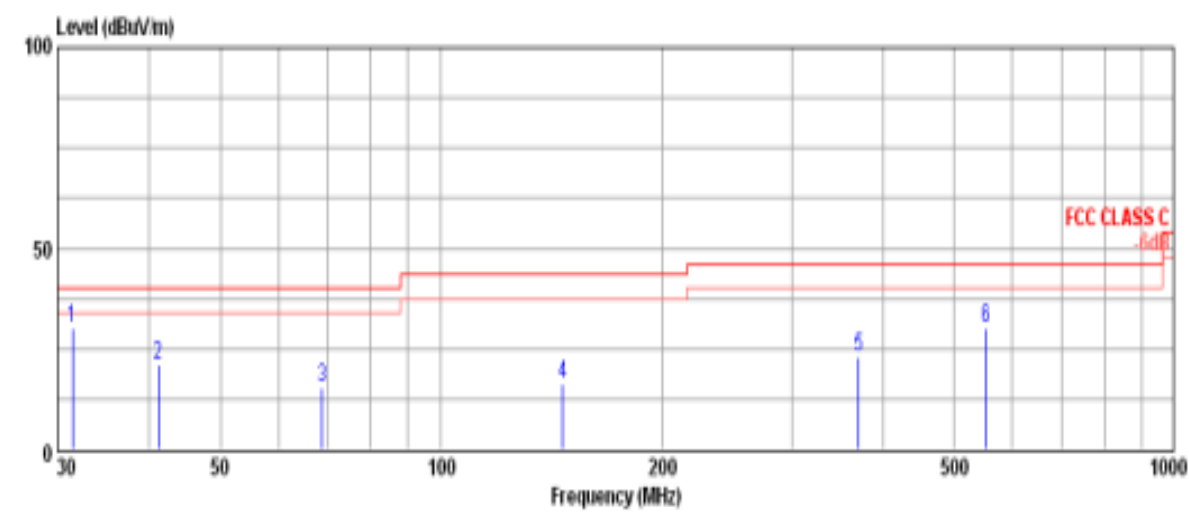


Site :!
Condition : FCC CLASS C PK 3m HP906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN B CH11+Earphone
memo : SS880

Freq Remark		Over Limit	Limit	Antenna	Cable	Preamp	Read
				Line Factor	Loss Factor		Level
Mhz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	1176.12 Peak	-40.09	74.00	23.93	3.11	27.36	34.23
2	1805.12 Peak	-37.20	74.00	26.23	3.82	26.48	33.23
3	2459.28 Peak	-15.52	74.00	27.66	4.49	25.39	51.72
4	3151.18 Peak	-34.08	74.00	29.60	4.95	26.42	31.79
5	4924.96 Peak	-30.27	74.00	32.55	6.43	27.12	31.87
6	7390.64 Peak	-27.28	74.00	35.50	7.91	27.00	30.31

Remark: Marker #3 is Fundamental signal which can be ignored

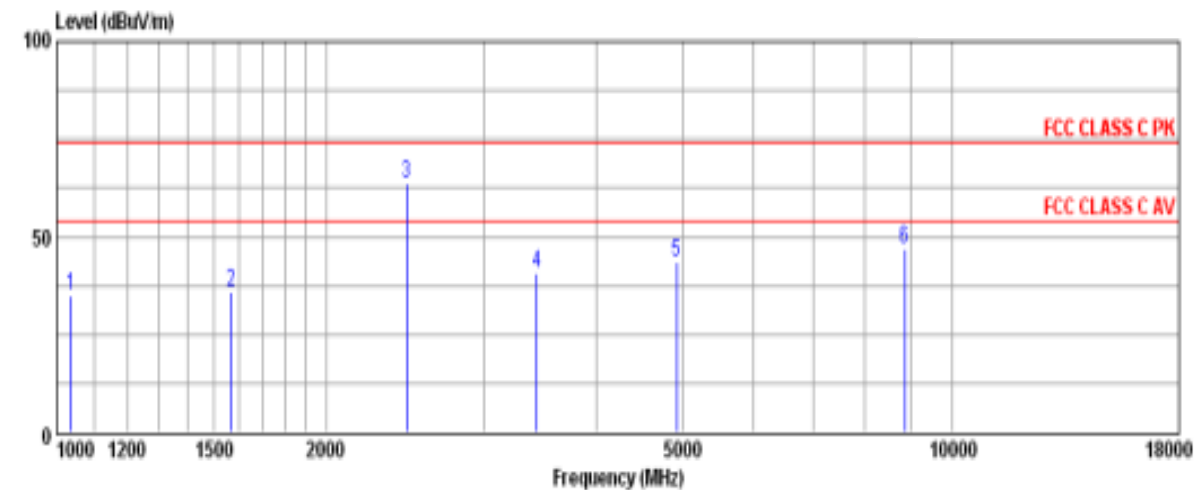
Radiated Emission 30MHz-1GHz Horizontal



Site :!
Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN B CH11+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level
	Mhz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	31.45	Peak	-9.79	40.00	18.41	1.20	0.00	10.60
2	41.16	Peak	-18.91	40.00	13.17	1.11	0.00	6.81
3	68.80	Peak	-24.80	40.00	6.13	1.32	0.00	7.75
4	146.40	Peak	-27.10	43.50	7.67	1.96	0.00	6.77
5	370.47	Peak	-22.97	46.00	12.76	3.06	0.00	7.21
6	552.83	Peak	-15.71	46.00	16.24	3.91	0.00	10.14

Radiated Emission 1GHz-18GHz Horizontal



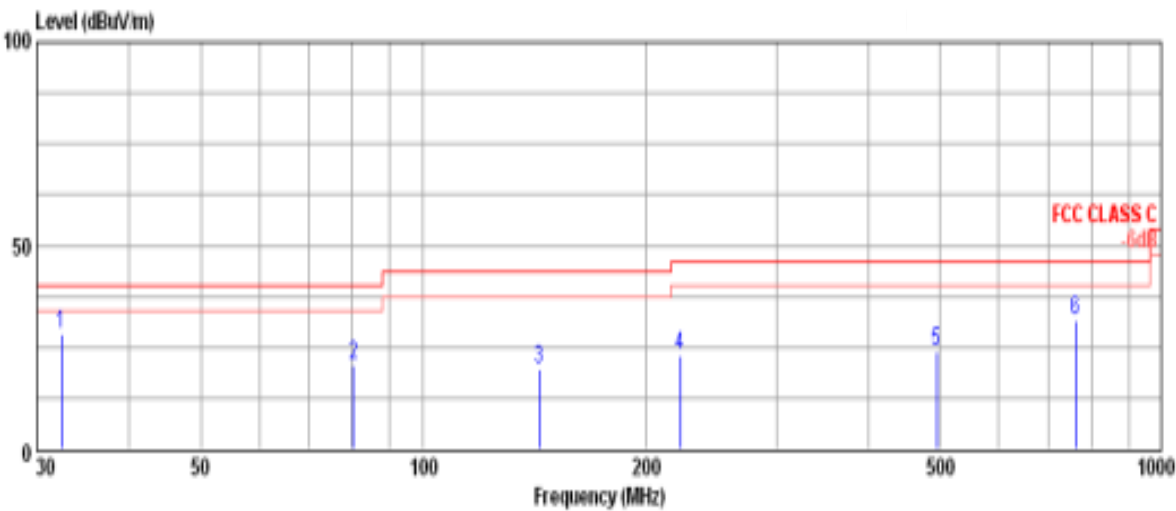
Site :!
Condition : FCC CLASS C PK 3m HP906 HORIZONTAL
 : RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN B CH11+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level
	Mhz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	1037.74	Peak	-39.03	74.00	23.50	2.80	27.12	35.79
2	1566.10	Peak	-38.07	74.00	25.18	3.51	27.16	34.40
3	2459.28	Peak	-10.13	74.00	27.66	4.49	25.39	57.11
4	3440.52	Peak	-33.27	74.00	30.55	5.62	27.17	31.73
5	4926.96	Peak	-30.27	74.00	32.55	6.43	27.12	31.87
6	8862.50	Peak	-26.92	74.00	36.33	9.23	26.34	27.86

Remark: Marker #3 is Fundamental signal which can be ignored

Test Channel :	01	Test Mode	Mode 4
Test Band :	802.11g	Test Engineer :	Guo-Zheng Li
Remark:	2412MHz is Fundamental signal which can be ignored		

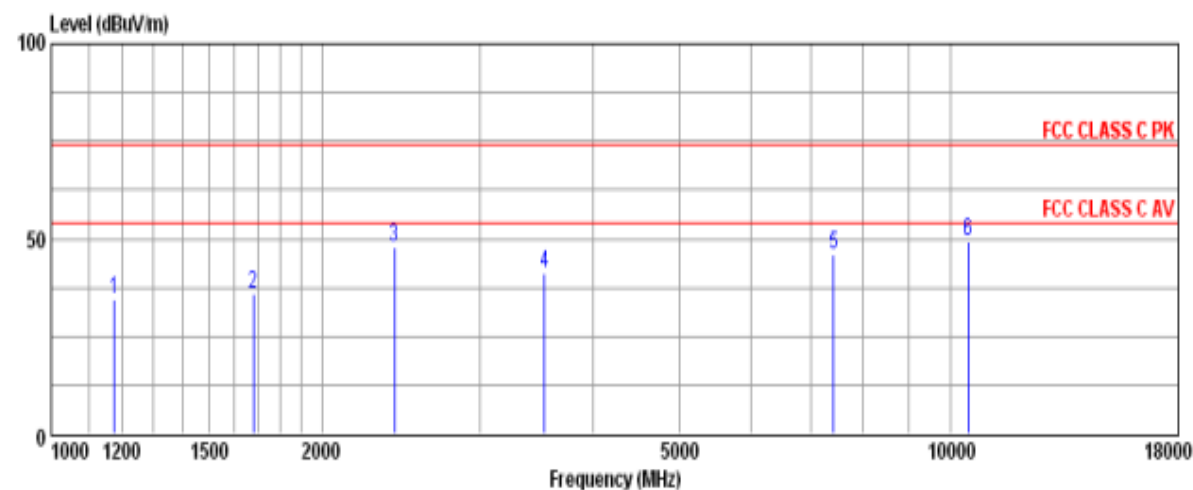
Radiated Emission 30MHz-1GHz Vertical



Site :!
Condition : FCC CLASS C 3m HL562 VERTICAL
: RBW:120.000KHz VBSW:300.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN O CHI+Earphone
memo : SS880

Freq Remark		Over Limit	Antenna Line	Cable Loss	Preamp Factor	Read Level	
MHz		dB	dBuV/m	dB/m	dB	dBuV	
1	32.43 Peak	-11.91	40.00	17.84	1.36	0.00	8.89
2	80.44 Peak	-19.35	40.00	8.20	1.44	0.00	11.01
3	143.49 Peak	-23.70	43.50	7.83	1.92	0.00	10.05
4	222.55 Peak	-23.19	46.00	8.35	2.37	0.00	12.09
5	494.15 Peak	-22.22	46.00	15.38	3.56	0.00	4.84
6	762.84 Peak	-14.39	46.00	19.15	4.58	0.00	7.88

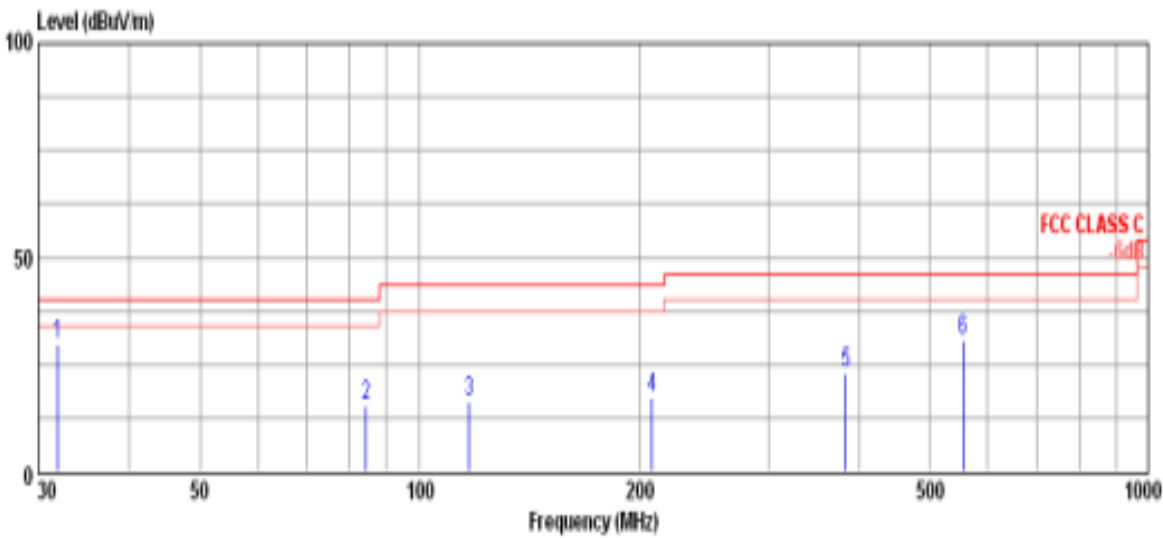
Radiated Emission 1GHz-18GHz Vertical



Site :!
Condition : FCC CLASS C PK 3m HF906 VERTICAL
 : RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eui : GSM MOBILE PHONE
mode : WLAN G CHI+Earphone
memo : S3380

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamplifier Gain	Read Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	1176.12	Peak	-39.42	74.00	23.93	3.11	27.36	34.90
2	1679.32	Peak	-38.27	74.00	25.69	3.76	27.00	33.28
3	2408.96	Peak	-26.14	74.00	27.60	4.42	25.29	41.13
4	3541.16	Peak	-33.08	74.00	30.76	5.50	26.50	31.16
5	7415.80	Peak	-28.18	74.00	35.51	7.88	27.02	29.45
6	10472.74	Peak	-24.86	74.00	37.10	9.45	26.49	29.08

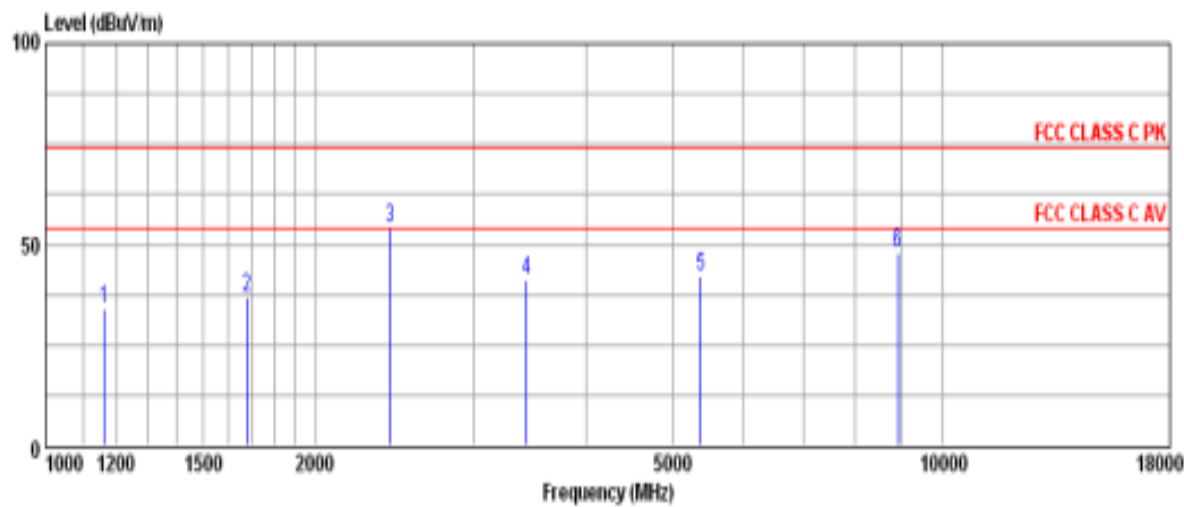
Radiated Emission 30MHz-1GHz Horizontal



Site :!
Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
cut : GSM MOBILE PHONE
mode : WLAN O CH1+Earphone
memo : SS880

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level
	Mhz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	31.94	Peak	-10.32	40.00	18.09	1.36	0.00	10.23
2	84.32	Peak	-24.53	40.00	8.47	1.67	0.00	5.33
3	116.81	Peak	-27.40	43.50	9.46	1.68	0.00	4.96
4	207.99	Peak	-26.10	43.50	7.64	2.27	0.00	7.49
5	384.05	Peak	-23.24	46.00	13.12	3.21	0.00	6.43
6	555.74	Peak	-15.26	46.00	16.28	3.91	0.00	10.55

Radiated Emission 1GHz-18GHz Horizontal

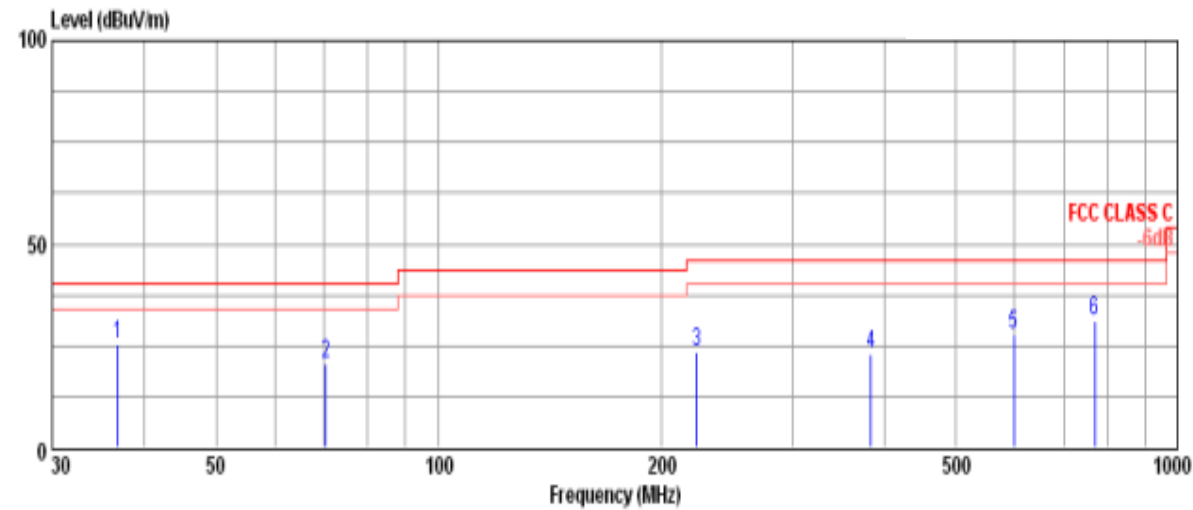


Site : |
Condition : FCC CLASS C PK 3m HP906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
cut : GSM MOBILE PHONE
mode : WLAN O CH1+Earphone
memo : SS880

Freq Remark		Over Limit	Antenna Line	Cable Loss	Preamp Factor	Read Level
MHz		dB	dBuV/m	dB/m	dB	dBuV
1	1163.54 Peak	-39.95	74.00	23.93	3.10	27.33
2	1679.32 Peak	-37.25	74.00	25.69	3.76	27.00
3	2421.54 Peak	-19.88	74.00	27.62	4.43	25.31
4	3440.52 Peak	-32.93	74.00	30.55	5.62	27.17
5	5377.84 Peak	-31.98	74.00	33.32	7.02	26.92
6	8912.82 Peak	-25.94	74.00	36.38	9.19	26.48

Test Channel :	06	Test Mode	Mode 5
Test Band :	802.11g	Test Engineer :	Guo-Zheng Li
Remark:	2437MHz is Fundamental signal which can be ignored		

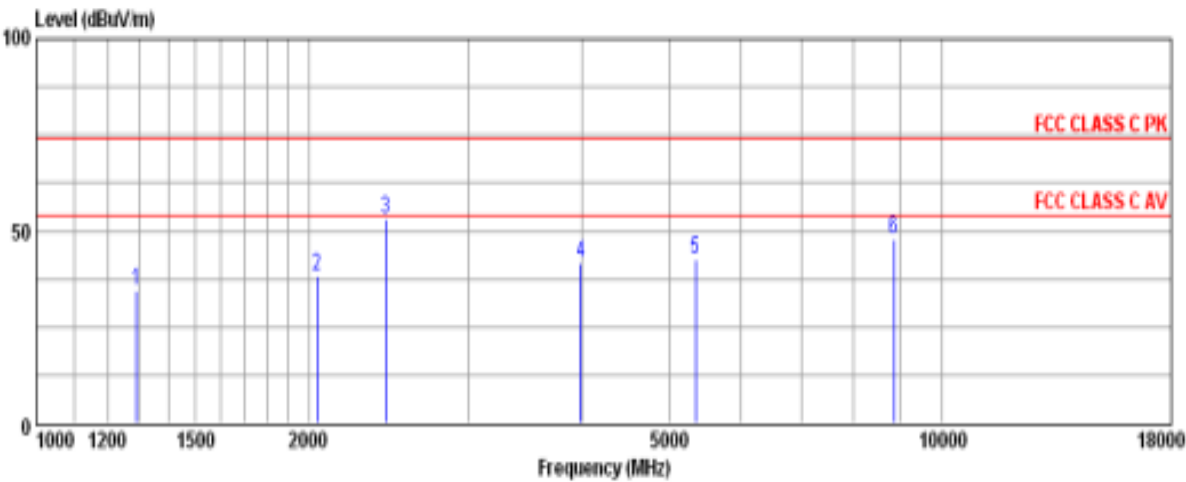
Radiated Emission 30MHz-1GHz Vertical



Site :!
Condition : FCC CLASS C 3m HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eui : GSM MOBILE PHONE
mode : WLAN G CH6+Earphone
memo : SS380

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamplifier	Read Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	36.79	Peak	-14.82	40.00	15.68	1.09	0.00	8.41
2	70.26	Peak	-19.66	40.00	6.62	1.37	0.00	12.35
3	223.03	Peak	-22.32	46.00	8.39	2.37	0.00	12.92
4	384.05	Peak	-23.21	46.00	13.12	3.21	0.00	6.46
5	597.99	Peak	-18.08	46.00	16.97	4.01	0.00	6.94
6	769.14	Peak	-14.96	46.00	19.19	4.60	0.00	7.25

Radiated Emission 1GHz-18GHz Vertical

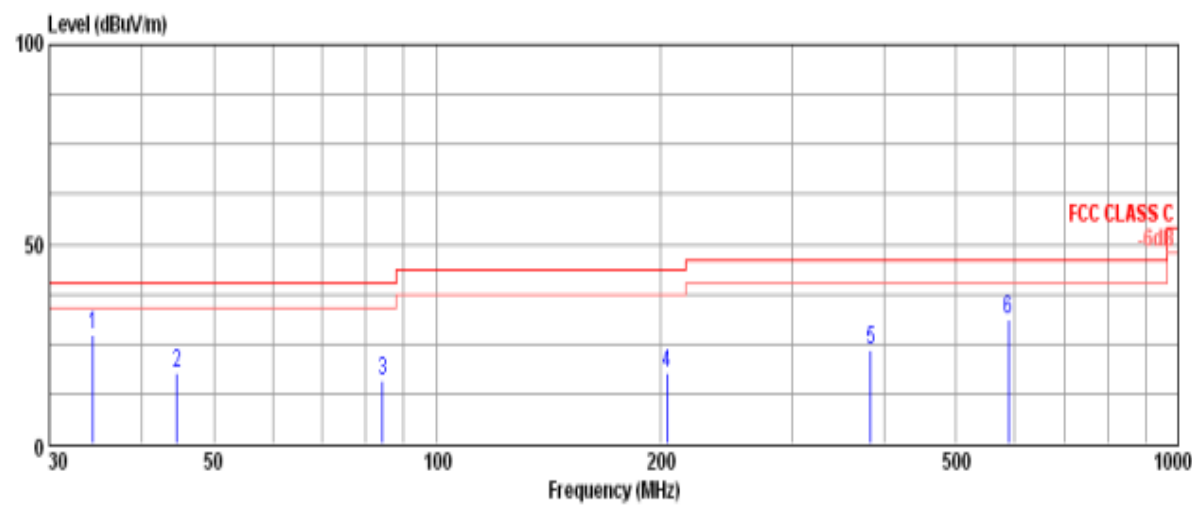


Site : I
Condition : FCC CLASS C PK 3m HP906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN O CH6+Earphone
memo : SS890

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	1289.34	Peak	-39.42	74.00	24.31	3.48	27.51	34.30
2	2044.14	Peak	-35.54	74.00	27.14	4.27	25.80	32.85
3	2434.12	Peak	-20.91	74.00	27.62	4.46	25.32	46.33
4	3994.04	Peak	-32.25	74.00	31.60	5.80	27.09	31.44
5	5352.68	Peak	-31.56	74.00	33.27	6.93	26.98	29.22
6	8862.50	Peak	-26.34	74.00	36.33	9.23	26.34	28.44

Remark: Marker #3 is Fundamental signal which can be ignored

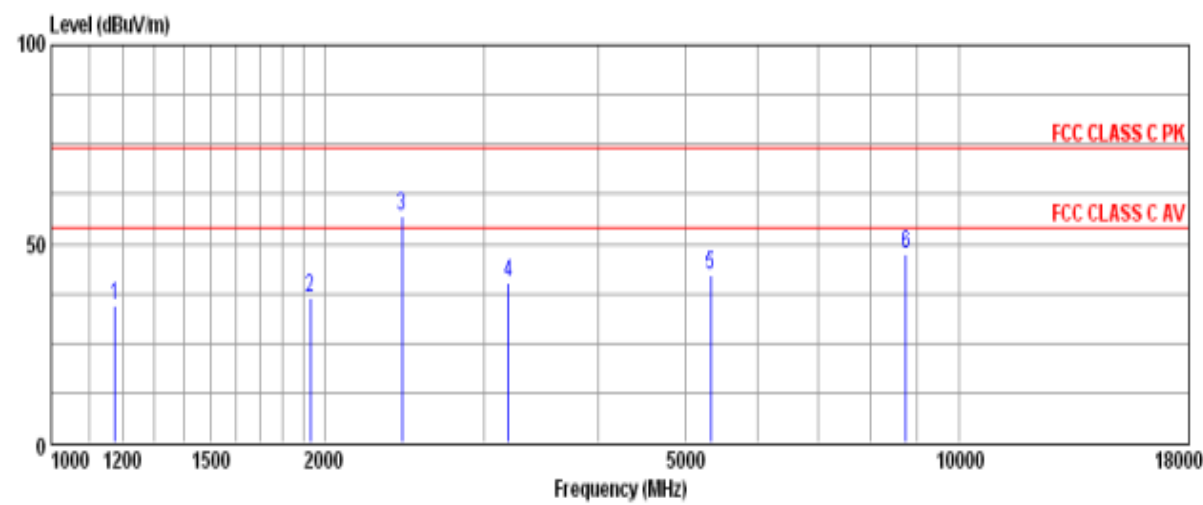
Radiated Emission 30MHz-1GHz Horizontal



Site :!
Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
cut : GSM MOBILE PHONE
mode : WLAN G CH6+Earphone
memo : SS880

			Over	Limit	Antenna	Cable	Preamp	Read
	Freq	Remark	Limit	Line	Factor	Loss	Factor	Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	34.36	Peak	-12.86	40.00	16.94	1.17	0.00	9.03
2	44.55	Peak	-22.51	40.00	11.22	1.11	0.00	5.16
3	84.32	Peak	-24.10	40.00	8.47	1.67	0.00	5.76
4	204.12	Peak	-25.80	43.50	7.43	2.28	0.00	7.99
5	384.05	Peak	-22.53	46.00	13.12	3.21	0.00	7.14
6	587.75	Peak	-14.79	46.00	16.80	3.98	0.00	10.43

Radiated Emission 1GHz-18GHz Horizontal



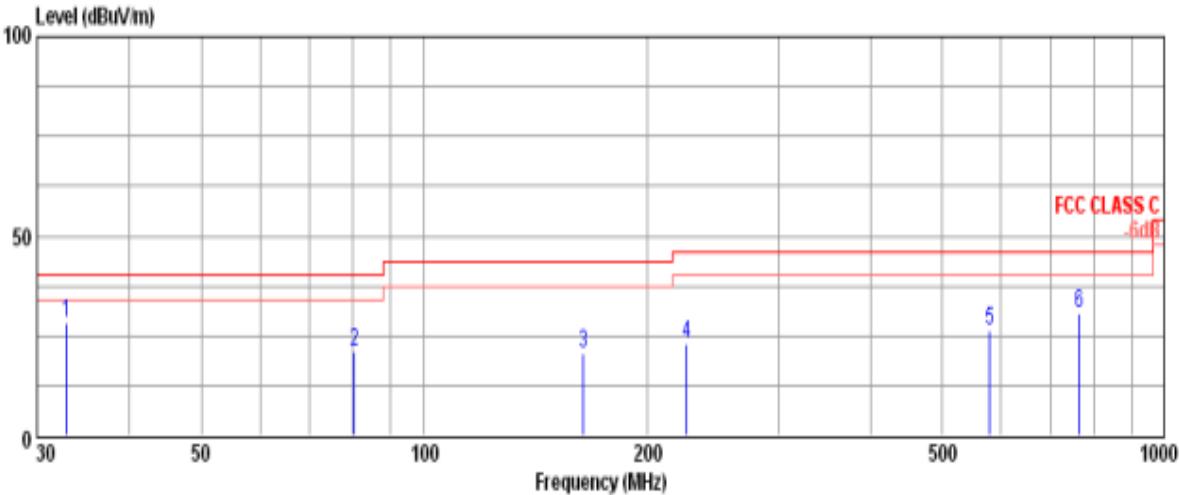
Site : !
Condition : FCC CLASS C PK 3m HF906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
cut : GSM MOBILE PHONE
mode : WLAN G CH6+Earphone
memo : SS880

Freq Remark		Over Limit	LimitAntenna	Cable	Preamp	Read
		Line	Factor	Loss	Factor	Level
MHz		dB	dBuV/m	dB/m	dB	dBuV
1	1176.12 Peak	-39.77	74.00	23.93	3.11 27.36	34.55
2	1930.92 Peak	-37.53	74.00	26.82	4.04 26.29	31.90
3	2434.12 Peak	-17.18	74.00	27.62	4.46 25.32	50.06
4	3188.92 Peak	-33.84	74.00	29.72	5.05 26.50	31.89
5	5327.52 Peak	-31.98	74.00	33.24	6.88 27.01	28.91
6	8749.28 Peak	-26.57	74.00	36.20	9.16 26.41	28.48

Remark: Marker #3 is Fundamental signal which can be ignored

Test Channel :	11	Test Mode	Mode 6
Test Band :	802.11g	Test Engineer :	Guo-Zheng Li
Remark:	2462MHz is Fundamental signal which can be ignored		

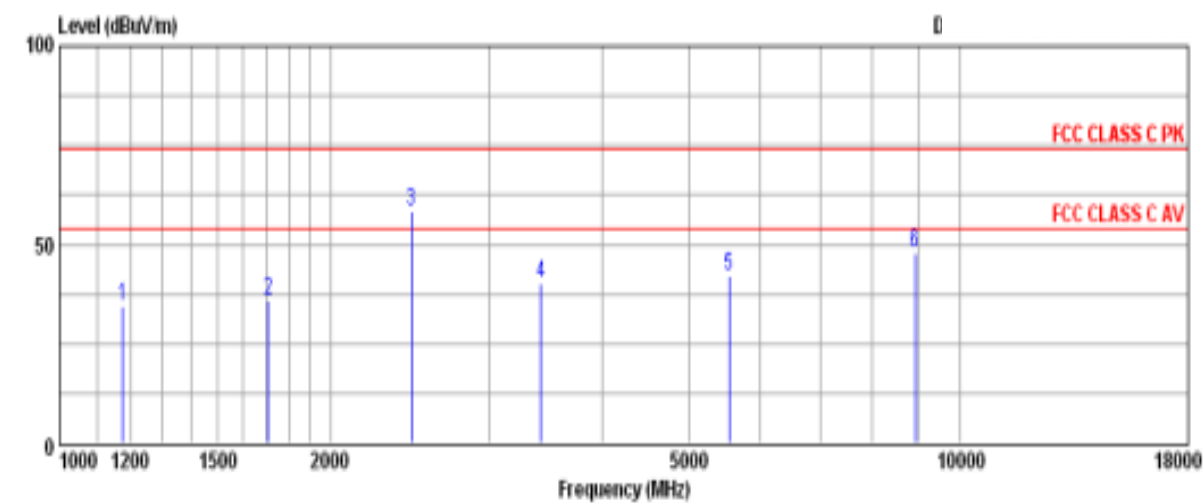
Radiated Emission 30MHz-1GHz Vertical



Site :!
Condition : FCC CLASS C 3m HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eui : GSM MOBILE PHONE
mode : WLAN O CH11+Earphone
memo : SS380

	Freq	Remark	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	32.91	Peak	-11.70	40.00	17.61	1.32	0.00	9.37
2	80.44	Peak	-18.93	40.00	8.20	1.44	0.00	11.43
3	163.86	Peak	-22.71	43.50	7.43	2.15	0.00	11.21
4	225.94	Peak	-22.96	46.00	8.48	2.37	0.00	12.19
5	579.02	Peak	-19.49	46.00	16.67	3.96	0.00	5.88
6	764.77	Peak	-15.28	46.00	19.15	4.58	0.00	6.99

Radiated Emission 1GHz-18GHz Vertical

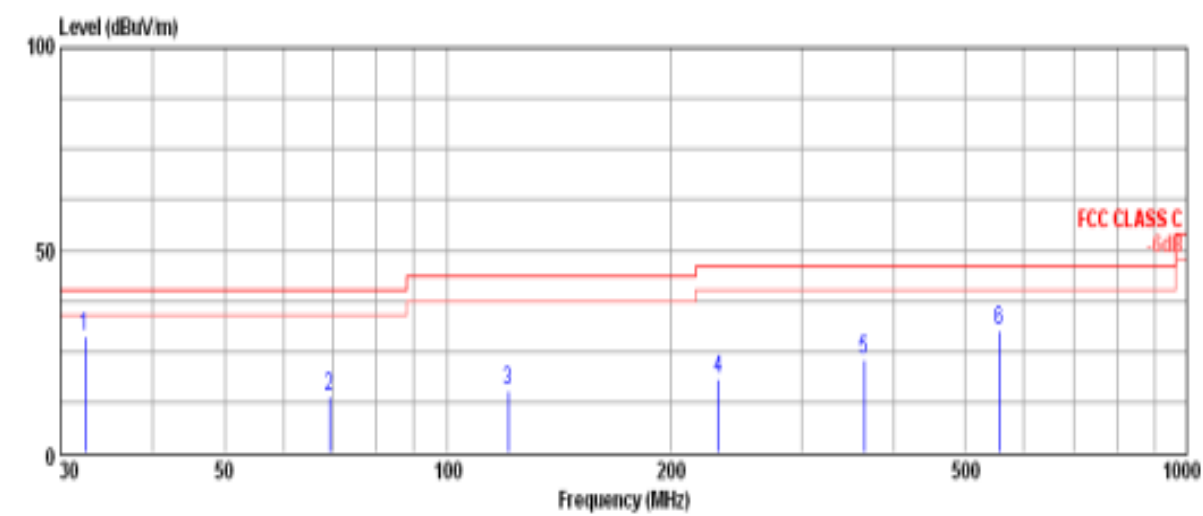


Site : I
Condition : FCC CLASS C PK 3m HP906 VERTICAL
REW:1000.000KHz VBW:1000.000KHz SWT:Auto
out : GSM MOBILE PHONE
mode : WLAN O CH11+Earphone
memo : SS880

			Over	Limit	Antenna	Cable	Preamp	Read
	Freq	Remark	Limit	Line	Factor	Loss	Factor	Level
	MHz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	1176.72	Peak	-39.34	74.00	23.93	3.11	27.36	34.98
2	1704.48	Peak	-38.03	74.00	25.77	3.76	26.78	33.22
3	2459.28	Peak	-15.53	74.00	27.66	4.49	25.39	51.71
4	3427.94	Peak	-33.76	74.00	30.50	5.87	27.23	31.10
5	5541.38	Peak	-31.94	74.00	33.53	6.93	26.98	28.58
6	8925.40	Peak	-26.00	74.00	36.40	9.31	26.48	28.77

Remark: Marker #3 is Fundamental signal which can be ignored

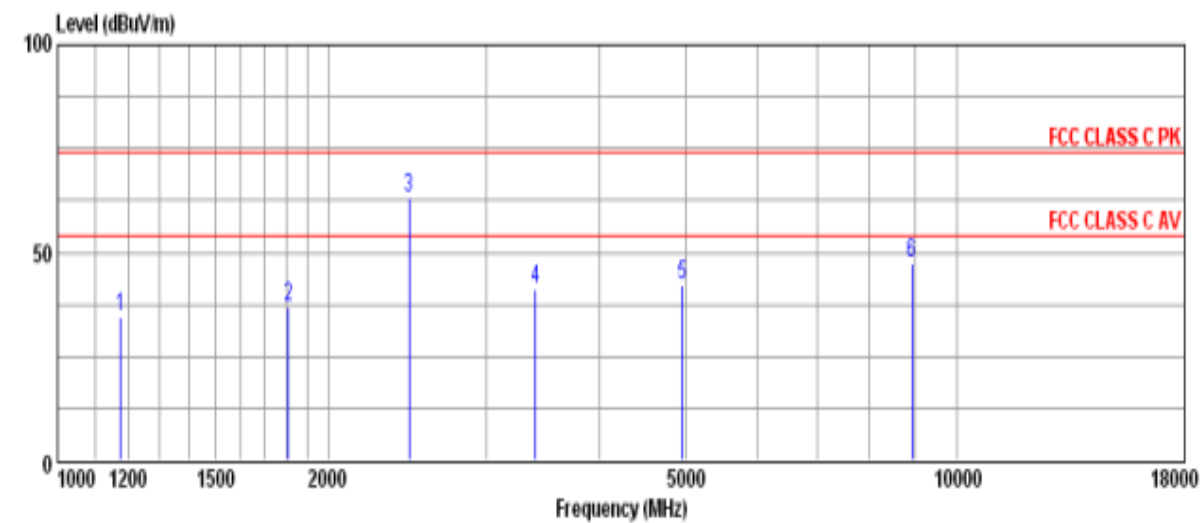
Radiated Emission 30MHz-1GHz Horizontal



Site : I
Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
cut : GSM MOBILE PHONE
mode : WLAN G CH11+Earphone
memo : SS890

	Freq	Remark	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamplifier Factor	Read Level
	Mhz		dB	dBuV/m	dB/m	dB	dB	dBuV
1	32.43	Peak	-11.44	40.00	17.84	1.36	0.00	9.36
2	69.29	Peak	-26.01	40.00	6.35	1.33	0.00	6.31
3	120.70	Peak	-28.06	43.50	9.58	1.72	0.00	4.14
4	231.76	Peak	-27.79	46.00	8.76	2.38	0.00	7.07
5	365.14	Peak	-22.95	46.00	12.66	2.99	0.00	7.40
6	556.23	Peak	-15.87	46.00	16.28	3.91	0.00	9.94

Radiated Emission 1GHz-18GHz Horizontal



Site :!
Condition : FCC CLASS C PK 3m HF906 HORIZONTAL
 : RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eute : GSM MOBILE PHONE
mode : WLAN O CH11+Earphone
memo : SS380

Freq Remark		Over Limit	Antenna Line	Cable Loss	Preamp Factor	Read Level
MHz		dB	dBuV/m	dB/m	dB	dB
1	1176.12 Peak	-39.75	74.00	23.93	3.11	27.36
2	1805.12 Peak	-37.23	74.00	26.23	3.82	26.48
3	2459.28 Peak	-11.01	74.00	27.66	4.49	25.39
4	3402.78 Peak	-33.05	74.00	30.39	5.91	27.31
5	4950.12 Peak	-32.12	74.00	32.59	6.48	27.24
6	8925.10 Peak	-26.54	74.00	36.40	9.31	26.48

Remark: Marker #3 is Fundamental signal which can be ignored

3.6.7 Radiated Emission Measurement Results (18GHz-26.5GHz)

Test Engineer :	Hogan. He	Temperature :	23℃~26℃
		Relative Humidity :	35%~60%

Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Notes:

The amplitude of radiated emissions that are attenuated by more than 20dB below the permissible value has no need to be reported. The measurement performed at 1meter distance from turn table to antenna.

4. List of Measuring Equipment

No	Instrument/Ancillary	Provider	Type/Model	Cal. Date
01	Base Station	Agilent	E5515C	2011.12.14
02	Spectrum Analyzer	R&S	FSP30(9kHz~30GHz)	2012.07.19
03	Antenna	Schwarzbeck	VULB9165(30M-1G)	2011.11.09
04	Antenna	Schaffner	HLA6120(9KHz~30MHz)	2011.11.09
05	Antenna	R&S	HF906(1G-18G)	2012.08.02
06	Antenna	Schwarzbeck	BBHA 9170 (15G-26.5G)	2011.11.09
07	Active Loop Antenna	ETS	6502	2012.07.16
08	High Pass Filter	R&S	System Integrated	2011.11.14
09	Thermal chamber	Hitachi	EC- 85MHP	2011.12.25
10	Pre-Amplifier	Agilent	83006A(0.01GHz-26.5GHz)	2012.8.06
11	Pre-Amplifier	Agilent	83006A(0.01GHz-26.5GHz)	2012.8.06
12	Helical Antenna	ETS	3102 (1G-10G)	NCR
13	Power Meter	R&S	NRP(10MHz~8GHz)	2011.12.05
14	Relay Switch	R&S	TS-REMI	NCR
15	Signal Generator	R&S	SMR20(10MHz-20 GHz)	2011.12.05
16	LISN	ROHDE&SCHWARZ	ENV216 TWO-LINE V-NETWORK	2011.11.13
17	Power Meter	Agilent	E4418B (EPM Series)	2011.12.14
18	Power Sensor	Agilent	E4412A (E-series CW)	

5 Ancillary Equipment List

Product	Manufacturer	Model No.	Serial No.	FCC approval	Power Cord
Wlan AP	D-Link	DWL-2000 AP+A	B2D3161002856	KA2DWLG700A PB1	AC: I/P: Unshielded 1.8m DC:O/P: Unshielded 1.8m
Bluetooth headset	Jabra	BT2080	N/A	FCC DOC	Unshielded 1.8m

6 Uncertainty Evaluation

6.1 Uncertainty of Radiated Spurious Emission evaluation (30MHz~1GHz)

Radiated Spurious Emission Measurement Uncertainty Evaluation					
Contribution		Probability Distribution	Partition Coefficient	u(xi)	
				Horizontal 30-1000MHz	Vertical 30-1000MHz
Cable Loss Calibration	U ₀₁	U-Shape	1.41	0.16	0.16
Sine wave voltage accuracy of Spectrum analyzer	U ₀₂	Triangle	2.45	0.82	0.82
Impulse response of spectrum analyzer	U ₀₃	Triangle	2.45	0.61	0.61
Pulse repetition rate of spectrum analyzer	U ₀₄	Triangle	2.45	0.61	0.61
Spectrum analyzer noise level	U ₀₅	Normal	2.00	0.25	0.25
Measurement of the signal path mismatch	U ₀₆	U-Shape	1.41	0.28	0.28
Free-space antenna factor	U ₀₇	Normal	2.00	0.70	0.70
Antenna Factor Interpolation for Frequency	U ₀₈	Rectangular	1.73	0.17	0.17
Antenna factor with height in the correlation	U ₀₉	Rectangular	1.73	0.17	0.17
Measurement antenna and the absorbing material lin the image of the mutual coupling effect	U ₁₀	Rectangular	1.73	0.58	0.58
Antenna phase center variation	U ₁₁	Rectangular	1.73	0.13	0.13
Antenna cross polarization response	U ₁₂	Rectangular	1.73	0.52	0.52
Antenna imbalance	U ₁₃	Rectangular	1.73	0.52	0.52
Test distance error	U ₁₄	Rectangular	2.45	1.02	1.22
Desktop terrain clearance variation	U ₁₅	Normal	1.73	0.17	0.17
Random uncertainty	U ₁₆	Standard deviation	2.00	0.05	0.05
Pre-Amplifier gain Calibration	U ₁₇	U-Shape	1.00	0.10	0.11
Combined Standard Uncertainty U _c (y)	U _c	Normal	1.00	2.03	2.14
Measuring Uncertainty for a level of Confidence of 95%(U=2U _c (y))	U=kU _c	Normal	k	4.05	4.28

6.2 Uncertainty of Radiated Spurious Emission evaluation (1GHz~26.5GHz)

Radiated Spurious Emission Measurement Uncertainty Evaluation					
Contribution		Probability Distribution	Partition Coefficient	u(xi)	
				Horizontal 1-26.5GHz	Vertical 1-26.5GHz
Cable Loss Calibration	U01	U-Shape	2.00	0.04	0.04
Sine wave voltage accuracy of Spectrum analyzer	U02	Triangle	2.45	0.82	0.82
Impulse response of spectrum analyzer	U03	Triangle	2.45	0.61	0.61
Pulse repetition rate of spectrum analyzer	U04	Triangle	2.45	0.61	0.61
Spectrum analyzer noise level	U05	Normal	2.00	0.25	0.25
Measurement of the signal path mismatch	U06	U-Shape	1.41	0.69	0.69
Free-space antenna factor	U07	Normal	2.00	0.50	0.50
Antenna Factor Interpolation for Frequency	U08	Rectangular	1.73	0.17	0.17
Antenna factor with height in the correlation	U09	Rectangular	1.73	NA	NA
Measurement antenna and the absorbing material in the image of the mutual coupling effect	U10	Rectangular	1.73	0.58	0.58
Antenna phase center variation	U11	Rectangular	1.73	0.13	0.13
Antenna cross polarization response	U12	Rectangular	1.73	0.52	0.52
Antenna imbalance	U13	Rectangular	1.73	0.52	0.52
Test distance error	U14	Rectangular	2.45	2.36	2.36
Desktop terrain clearance variation	U15	Normal	1.73	0.17	0.17
Random uncertainty	U16	Standard deviation	2.00	0.05	0.05
Pre-Amplifier gain Calibration	U17	U-Shape	1.00	0.09	0.10
Combined Standard Uncertainty Uc(y)	Uc	Normal	1.00	2.95	2.96
Measuring Uncertainty for a level of Confidence of 95%(U=2Uc(y))	U=kUc	Normal	k	5.91	5.92