FCC Test Report

FCC Part 15 Subpart C §15.247

Product Name	:	GSM/WCDMA MOBILE PHONE
Model No.	:	M4 SS990
FCC ID	:	CLNSS99

Prepared By:	:	Inventec Appliances(Pudong) Corporation
Address:	:	No.789 Pu Xing Road,Shanghai,PRC
Date of Receipt	:	2013.01.18
Date of Test	:	2013.01.18-2012.01.25
Report No.	:	20130118FCC-E

Test Report Certification

Date of Issue : Jan.27.2013

Report No. : 20130118FCC-E

Product Name	: GSM/WCDMA MOBILE PHONE
Model No.	: M4 SS990
Trade Name	: M4
Applicant	: MFOURTEL 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	: Digital Transmission Systems (DTS)
TX/RX Frequency Range	: Bluetooth (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 IAC regulatory Laboratory

Documented By : _____, Jan.27.2012
Judy Ge/Engineer

Tested By : _____, Jan.27.2012
Alice Lee/Engineer

Approved By : _____, Jan.27.2012
Jeff Huang/Director of Operations

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.1	-	99% Bandwidth	-	Pass	-
3.2	15.247(b)(1)	Peak Output Power	≤ 30dBm	Pass	-
3.5	15.247(e)	Power Spectral Density	≤ 8dBm	Pass	-
3.4	15.247(d)	Conducted Band Edges and Spurious Emission	≤ 20dBc	Pass	-
3.5	15.247(d)	Radiated Band Edges and Spurious Emission	15.209(a) & 15.247(d)	Pass	-
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	-
3.7	15.203 & 15.247(b)	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	M4
Model Name	M4 SS990
FCC ID	CLNSS990
Tx/Rx Frequency Range	2402 MHz ~ 2480 MHz
Number of Channels	40
Carrier Frequency of Each Channel	2402+n*2 MHz; n=0~39
Channel Spacing	BT : 2MHz
Maximum Output Power to Antenna	Bluetooth 4.0 - LE : 5.13 dBm (0.0033 W)
99% Occupied Bandwidth	Bluetooth 4.0 - LE : 1.026MHz
Antenna Type	Fixed Internal Antenna
HW Version	SLS-V1.0
SW Version	M4TEL_SS990_S01_Ver200
Type of Modulation	Bluetooth 4.0 - LE : GFSK

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. 558074 D01 DTS Meas. Guidance v02
- 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 Output Power

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

Channel	Frequency	Bluetooth RF Output Power (dBm)
		Data Rate / Modulation
		GFSK
		1Mbps
Ch00	2402MHz	5.13
Ch39	2440MHz	4.72
Ch78	2480MHz	4.34

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 FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02

ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations.

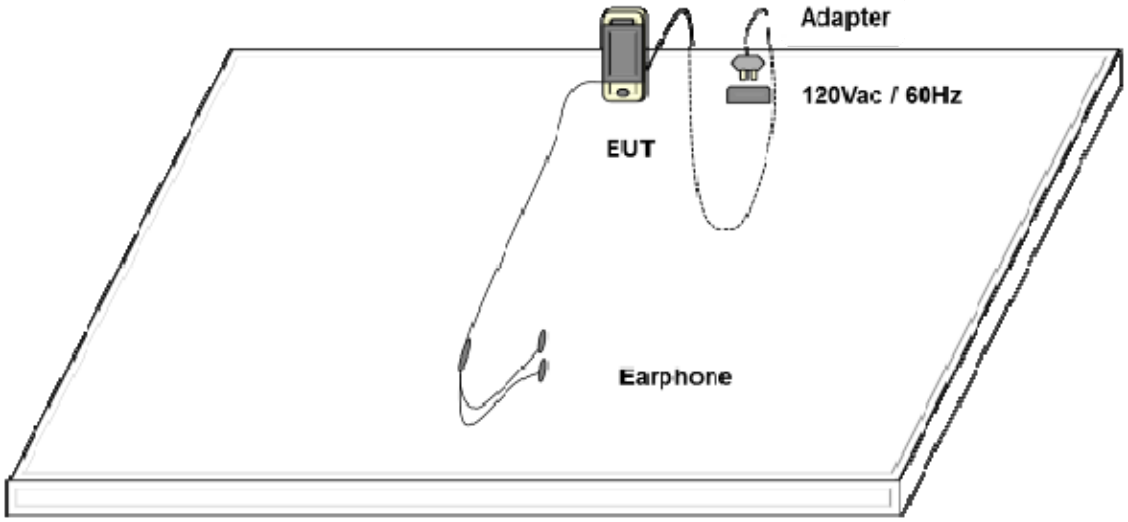
The following tables are showing the test modes as the worst cases (Y plane) and recorded in this report.

The following tables are showing the test modes as the worst cases and recorded in this report.

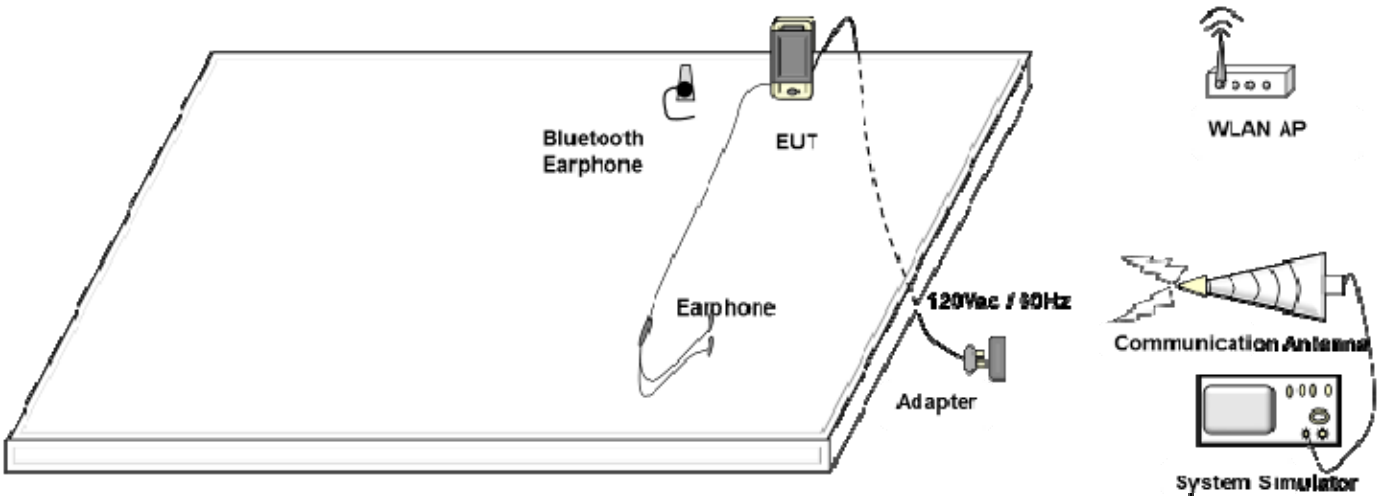
Test Cases	
Test Item	**Data Rate / Modulation**
	Bluetooth 4.0 – LE / GFSK
Conducted TCs	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps
Radiated TCs	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps
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 1: WCDMA Band II Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS Rx Mode 1: WCDMA Band V Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS Rx

2.3 Connection Diagram of Test System

<Bluetooth 4.0 – LE Tx Mode>



<AC Conducted Emission Mode>



RF Utility

For Bluetooth function, the RF utility, “Enter Engineer” was installed in EUT which was programmed in order to make the EUT into the engineering modes to contact with Bluetooth base station for continuous transmitting and receiving signals.

3. Test Result

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.

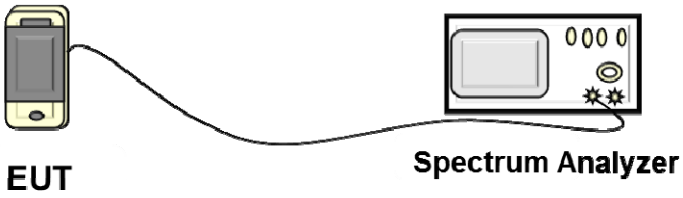
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 10 kHz. Set the Video bandwidth (VBW) = 30 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 KHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 30kHz and set the Video bandwidth (VBW) = 100kHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup

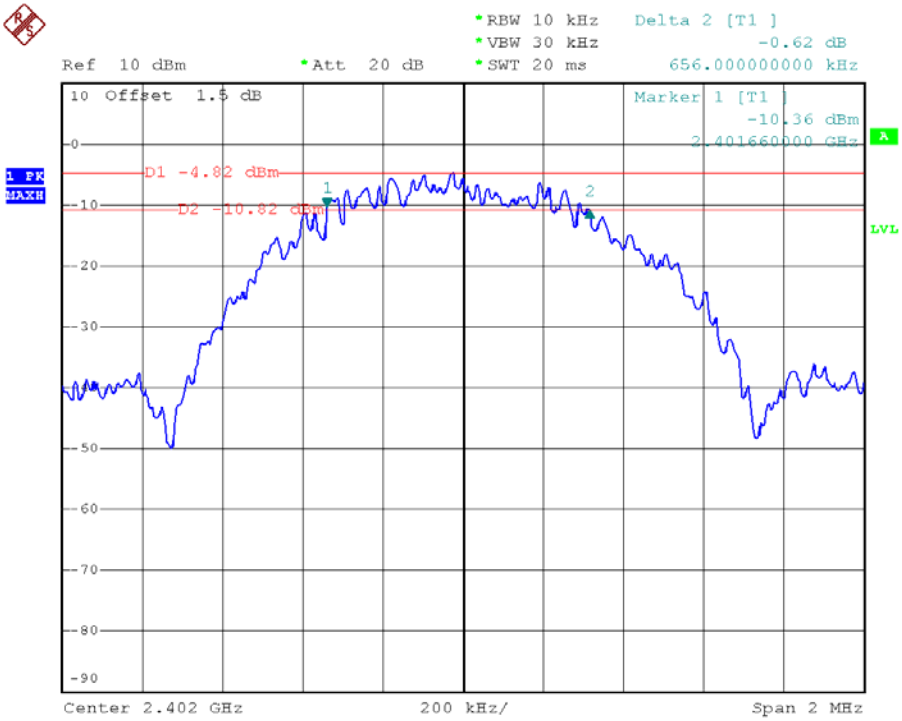


3.1.5 Test Result of 6dB Bandwidth

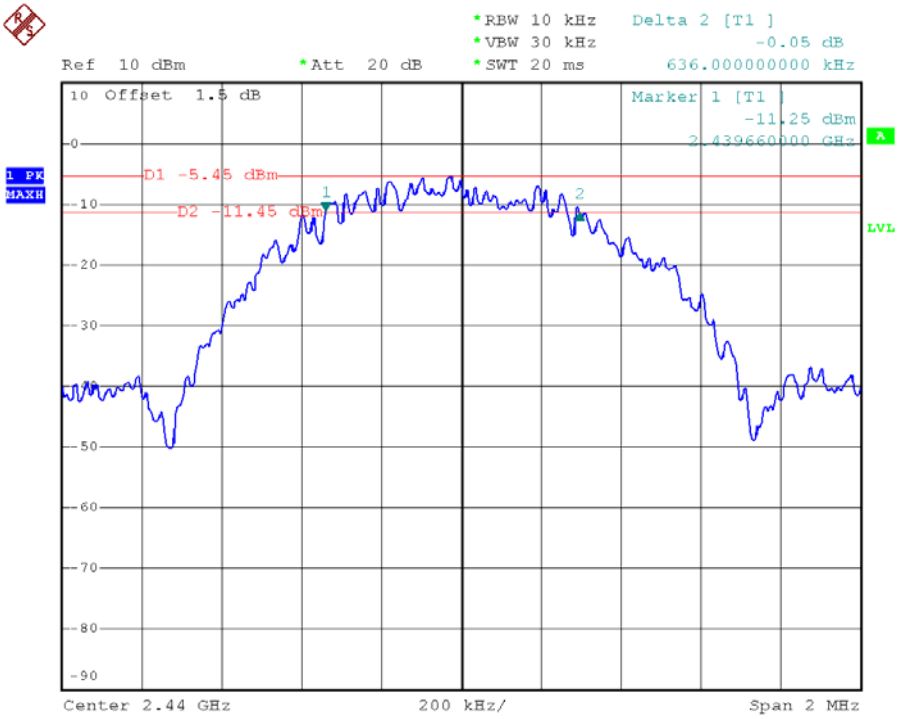
Test Mode :	Bluetooth 4.0 - LE	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	6dB Bandwidth (MHz)
00	2402	0.656
19	2440	0.636
39	2480	0.636

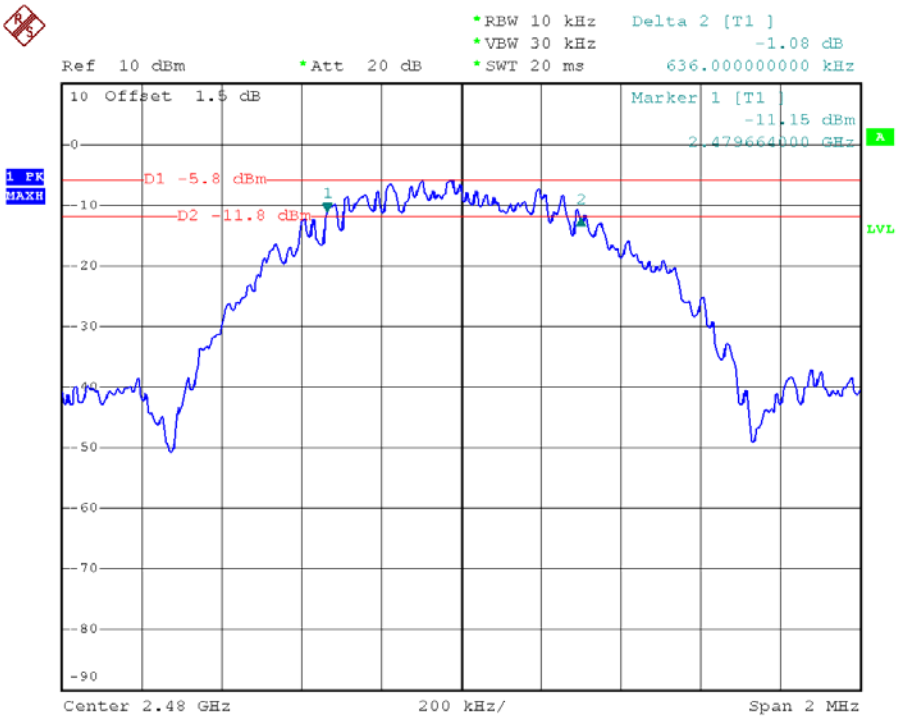
6 dB Bandwidth Plot on Channel 00



6 dB Bandwidth Plot on Channel 19



6 dB Bandwidth Plot on Channel 39

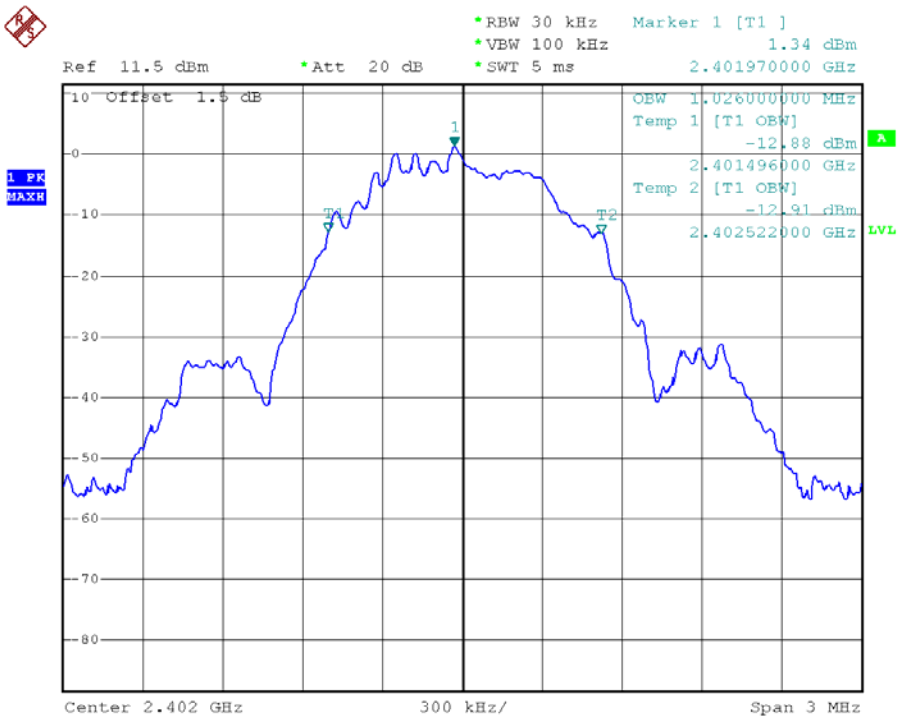


3.1.6 Test Result of 99% Occupied Bandwidth

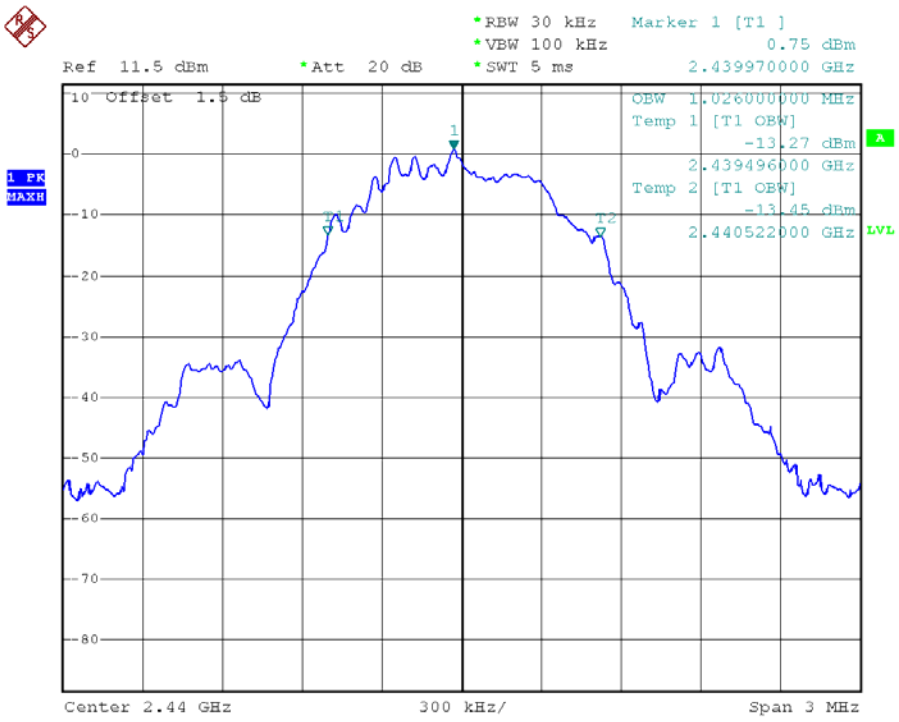
Test Mode :	Bluetooth 4.0 - LE	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	1.026
19	2440	1.026
39	2480	1.026

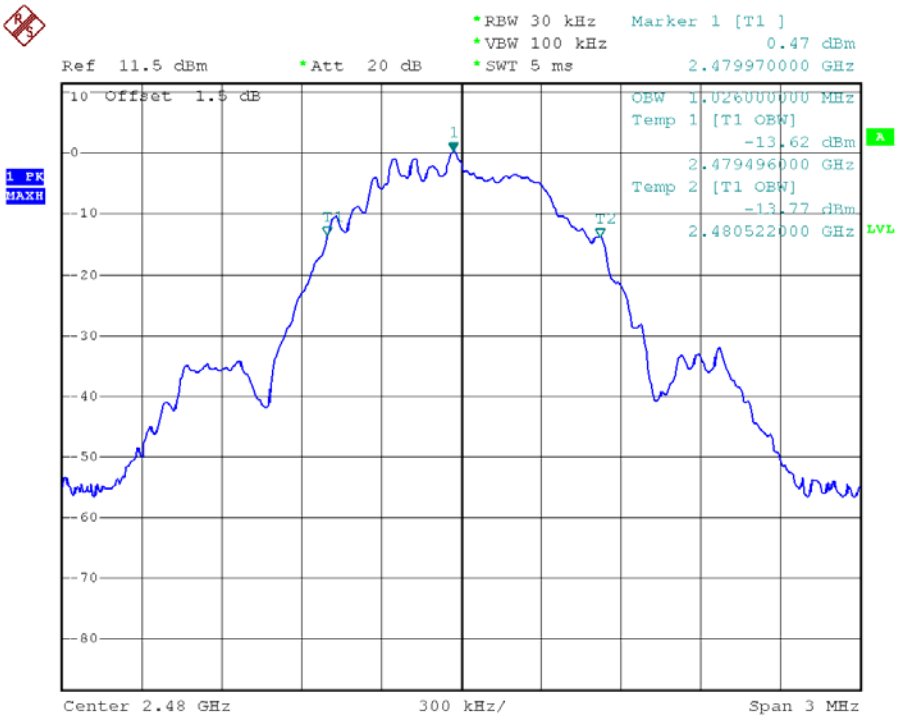
20 dB Bandwidth Plot on Channel 00



20 dB Bandwidth Plot on Channel 39



20 dB Bandwidth Plot on Channel 78



3.2 Peak Output Power Measurement

3.2.1 Limit of Peak Output Power

For systems using digital modulation in the 2400-2483.5MHz, 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.

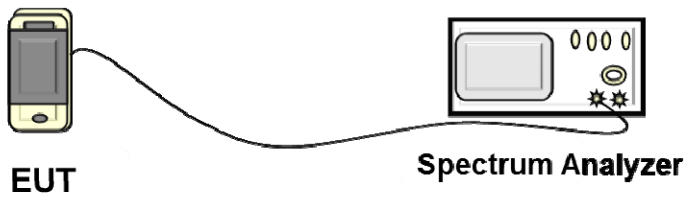
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the power meter by a low loss cable
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup

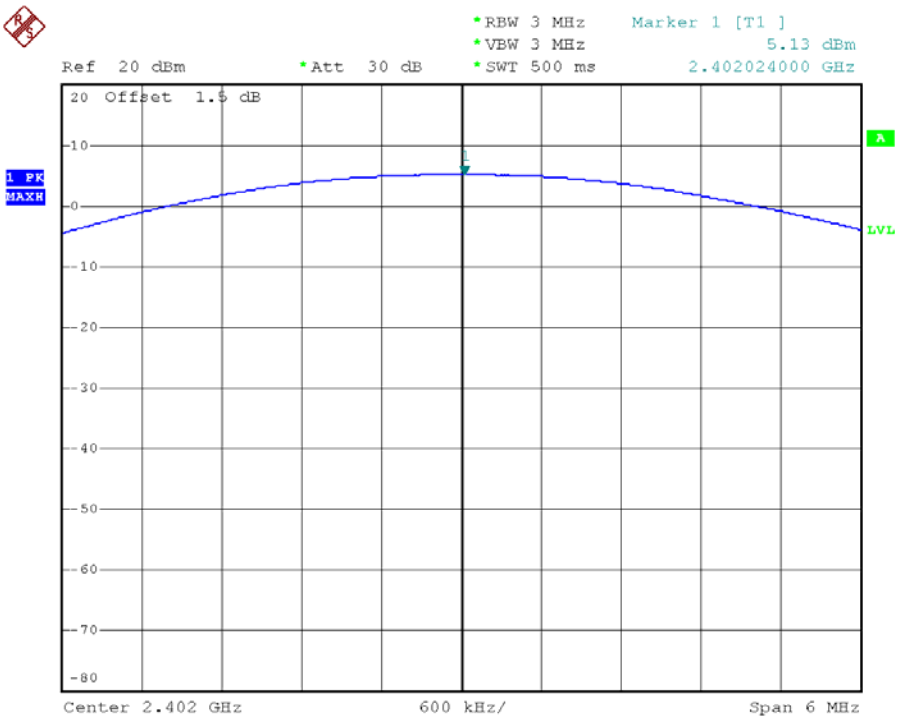


3.2.5 Test Result of Peak Output Power

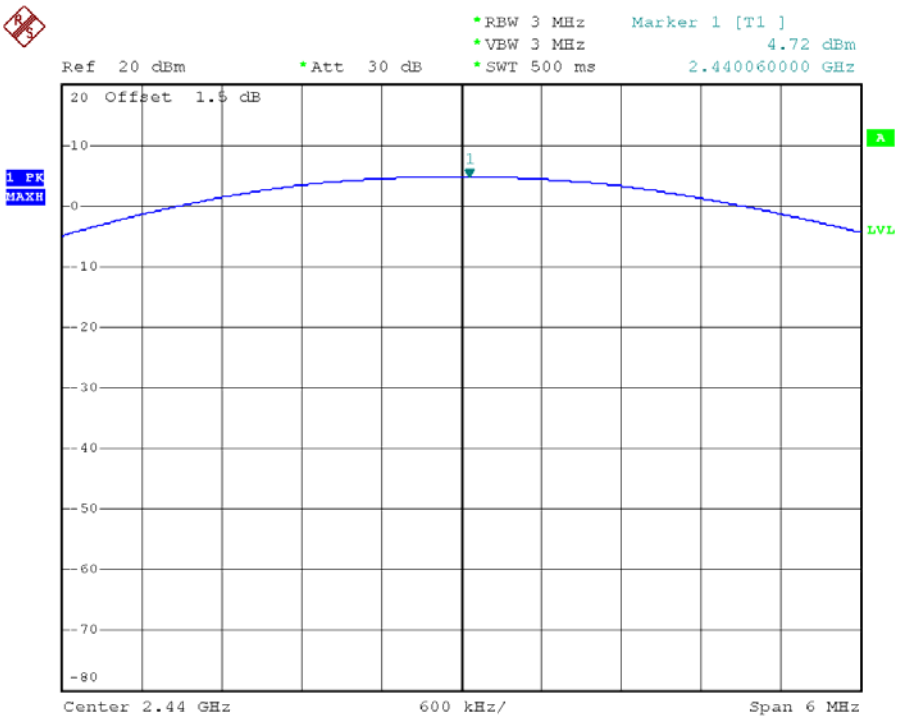
Test Mode :	Bluetooth 4.0 - LE	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	RF Power (dBm)		
		GFSK	Max. Limits (dBm)	Pass/Fail
		1 Mbps		
00	2402	5.13	30.00	Pass
19	2440	4.72	30.00	Pass
39	2480	4.34	30.00	Pass

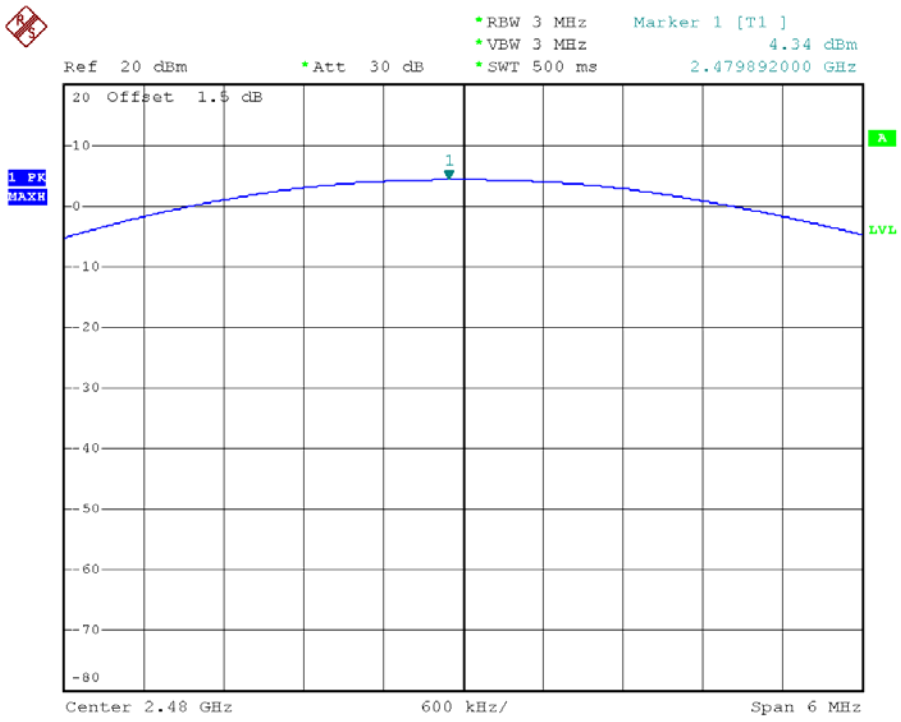
Peak Output Power Plot on Channel 00



Peak Output Power Plot on Channel 19



Peak Output Power Plot on Channel 39



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

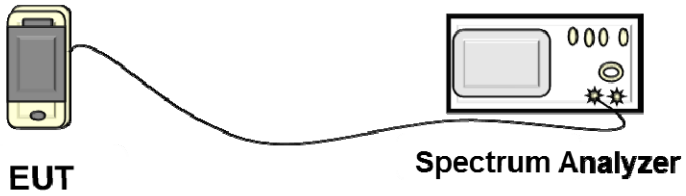
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedure

1. The testing follows Measurement Procedure 9.1 Option 1 of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Record the measurement data derived from spectrum analyzer.

3.3.4 Test Setup

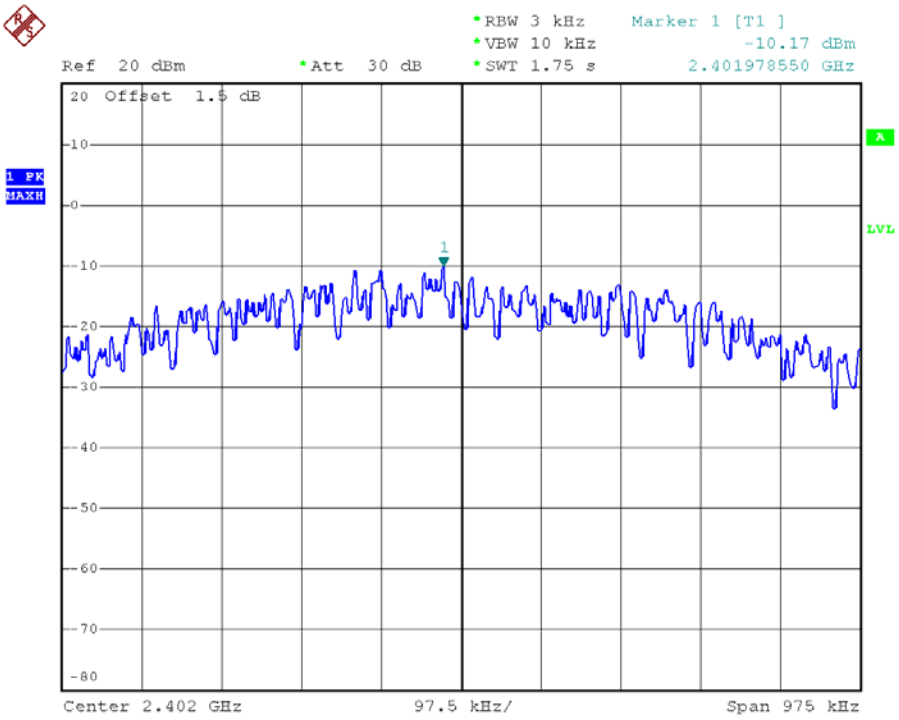


3.3.5 Test Result of Power Spectral Density

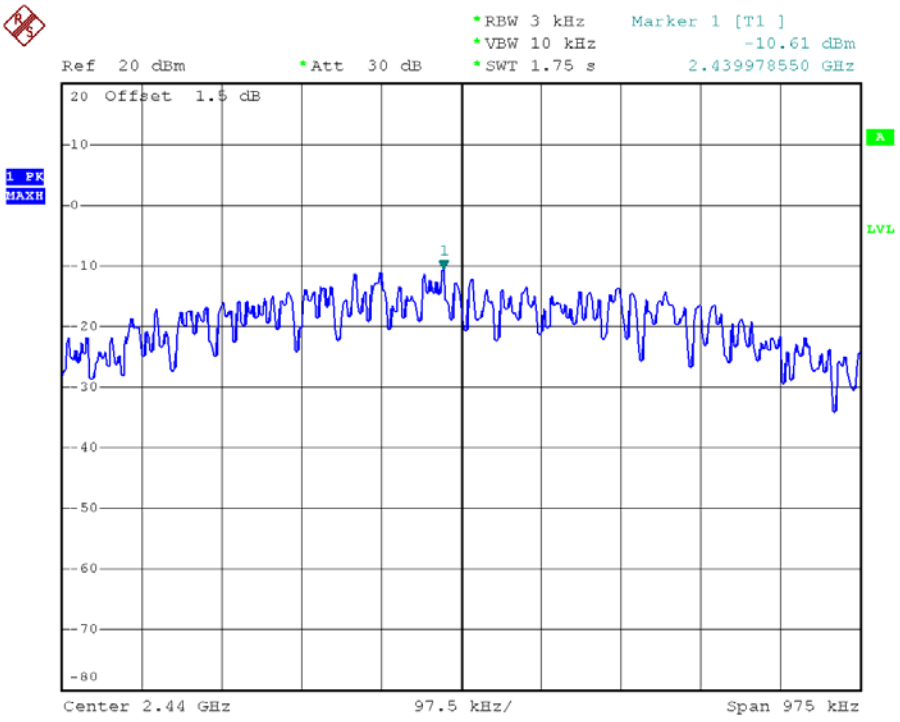
Test Mode :	Bluetooth 4.0 - LE	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	802.11b Power Density PSD/3KHz (dBm)	Max. Limits (dBm)	Pass/Fail
00	2402	-10.17	8	Pass
19	2440	-10.61	8	Pass
39	2480	-10.95	8	Pass

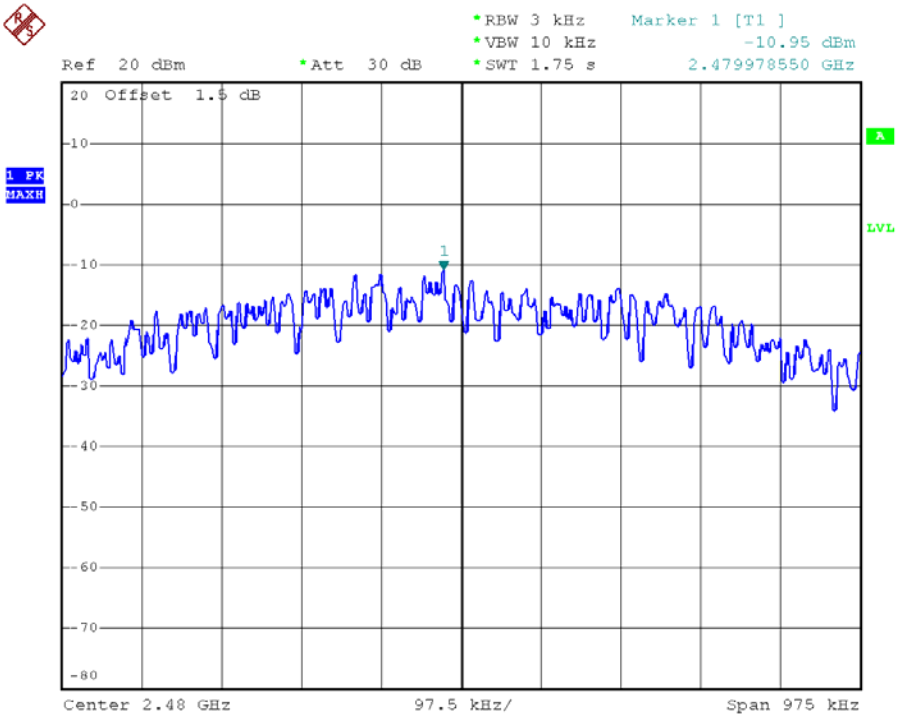
PSD 3KHz Plot on Channel 00



PSD 3KHz Plot on Channel 19



PSD 3KHz Plot on Channel 39



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission

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

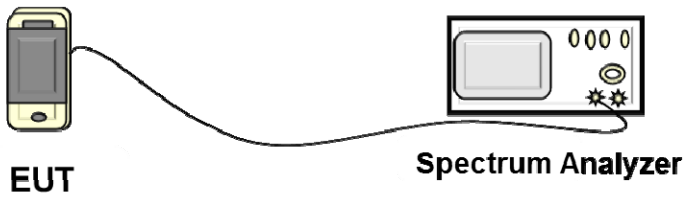
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows the guidelines in FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
2. ANSI C63.4-2003 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02.
3. The transmitter output was connected to the spectrum analyzer via a low lose cable.
4. Set to the maximum power setting and enable the EUT transmit continuously.
5. Set RBW = 100 KHz, Video bandwidth (VBW) ε RBW. Out of the authorized frequency band emissions must be at least 20 dB lower than the highest emission level within the authorized band as measured with a 100 KHz RBW. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).

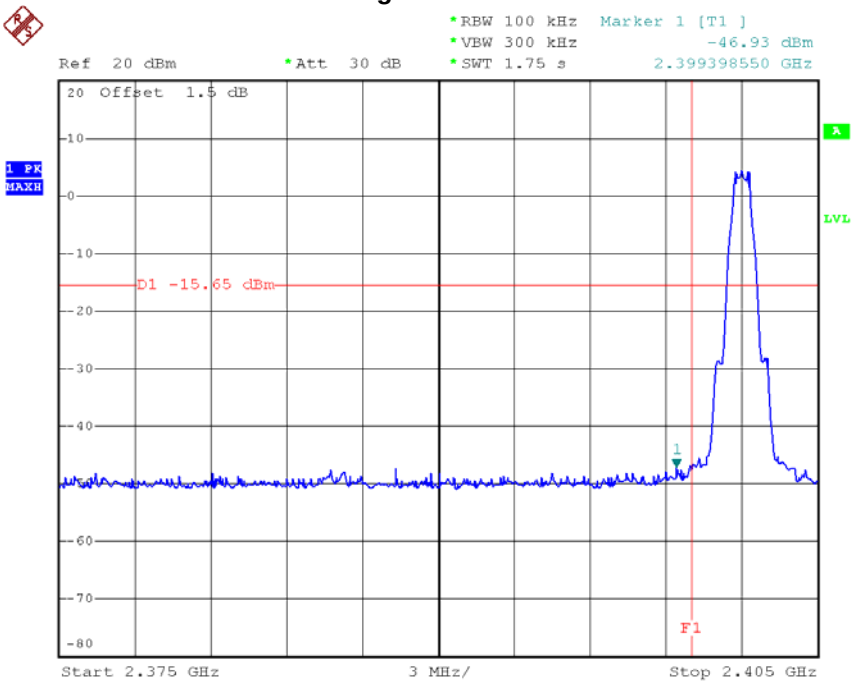
3.4.4 Test Setup



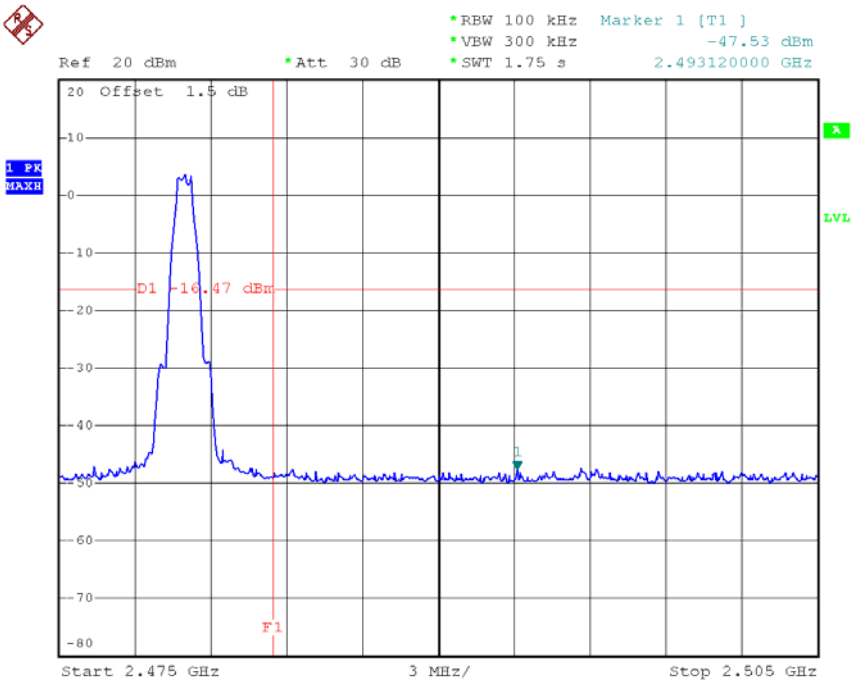
3.4.5 Test Result of Conducted Band Edges

Test Mode :	Mode 1 and 3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%
Test Channel:	00 and 39		

Low Band Edge Plot on Channel 00



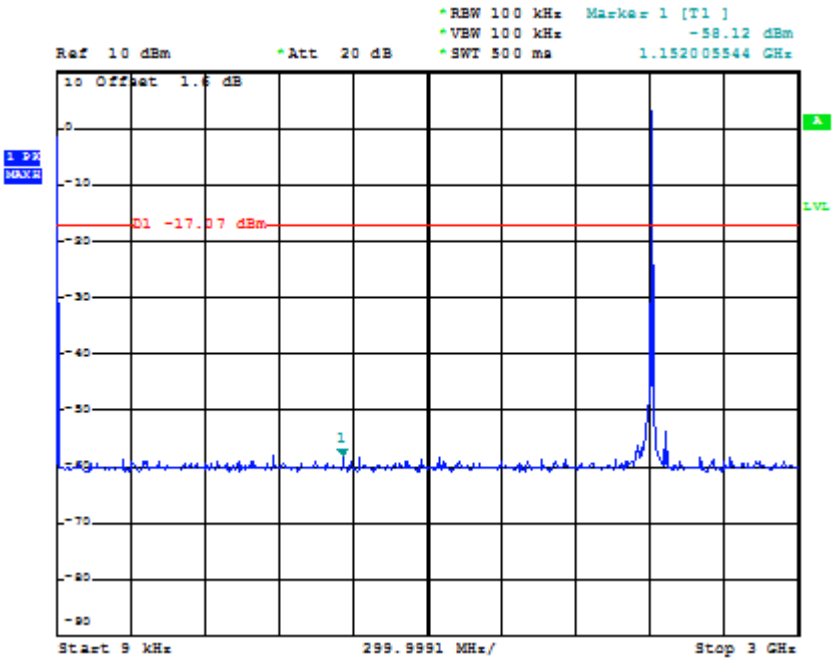
High Band Edge Plot on Channel 39



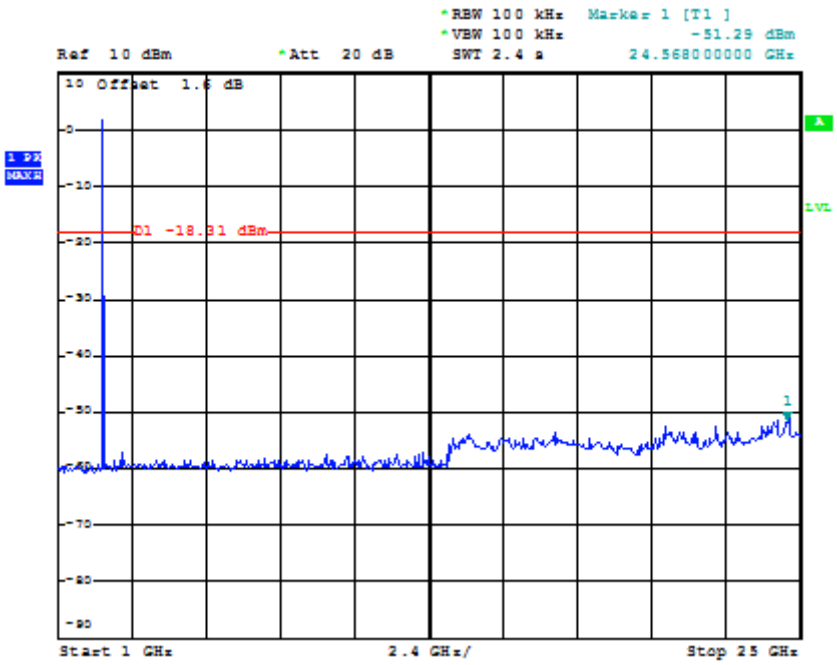
3.4.6 Test Result of Conducted Spurious Emission

Test Mode :	Bluetooth 4.0 - LE	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%
Test Channel:	00		

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

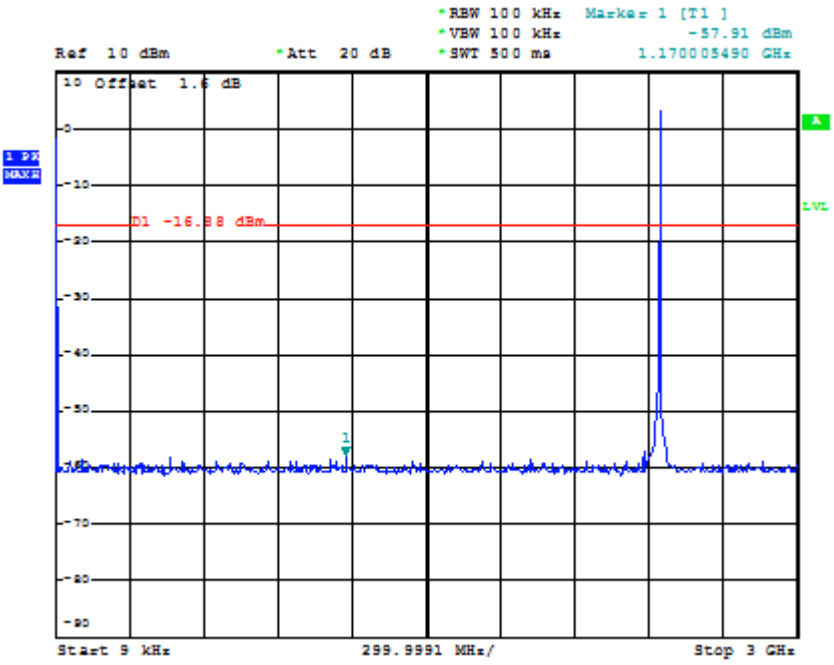


Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

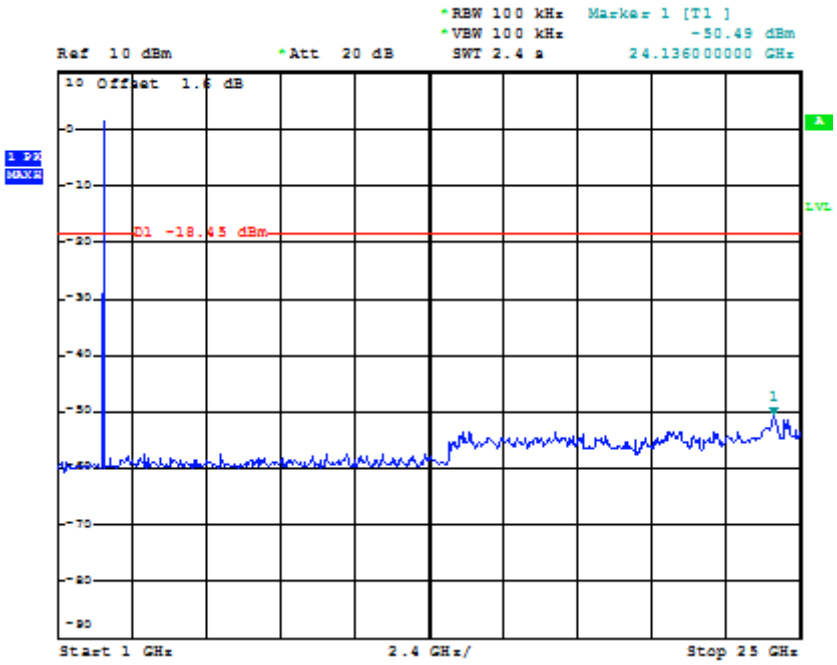


Test Mode :	Bluetooth 4.0 - LE	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%
Test Channel:	19		

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

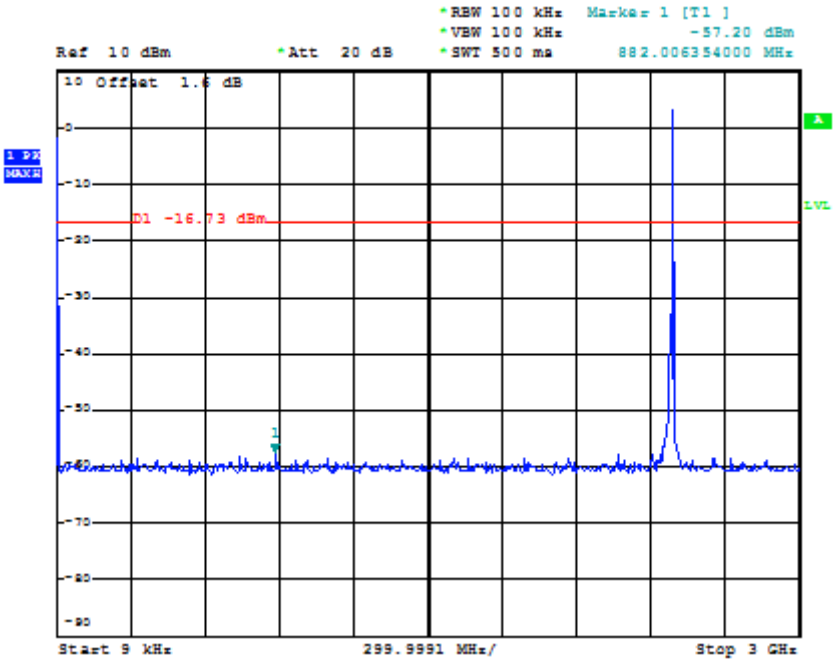


Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

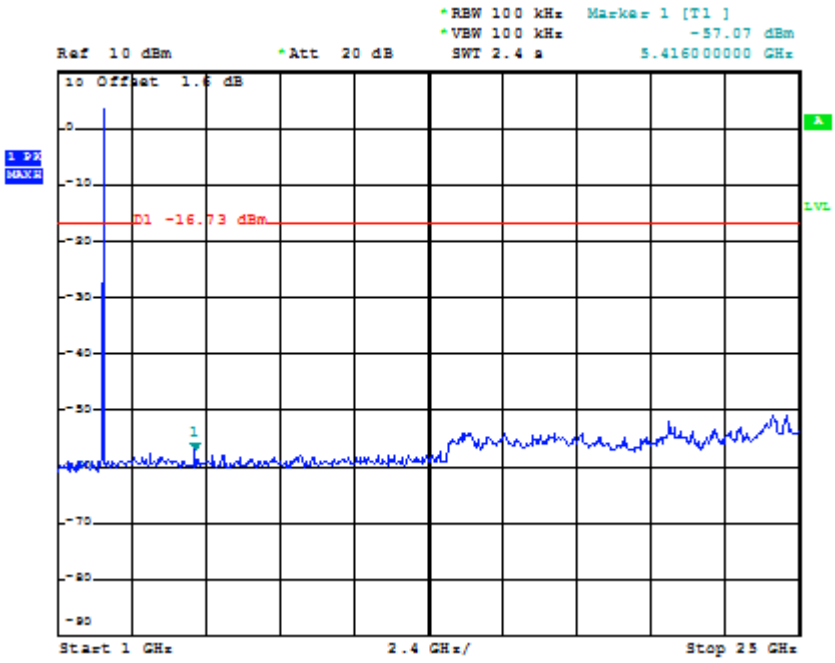


Test Mode :	Bluetooth 4.0 - LE	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%
Test Channel:	39		

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated Band Edges and Spurious 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. 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

3.5.2 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. 10-2009
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;

(2) Set RBW=100 KHz for f < 1 GHz; VBW ε RBW; Sweep = auto; Detector function = peak; Trace = max hold;

(3) Set RBW = 1 MHz, VBW= 3MHz for f δ 1 GHz for peak measurement.

For average measurement:

VBW = 10 Hz, when duty cycle is no less than 98 percent.

VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(ms)	1/T(KHz)	VBW Setting
Bluetooth 4.0 - LE	64.79	0.408	2.45098039	3KHZ

Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

Marker-Delta method :

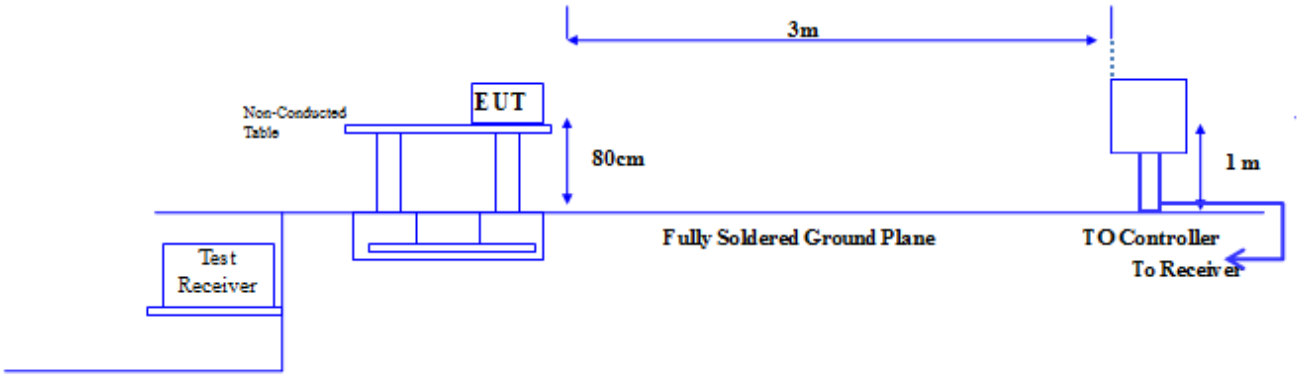
(1) Set RBW = 1 MHz, VBW = 3 MHz, peak detector.
Repeat the measurement with an average detector, use RBW = 1MHz
VBW = 10 Hz, when duty cycle is no less than 98 percent.
VBW ≥ 1/T, when duty cycle is less than 98 percent

(2) Set span = 10MHz, that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set RBW = 100KHz, 1% of the total span. Set VBW =100KHz >= RBW.

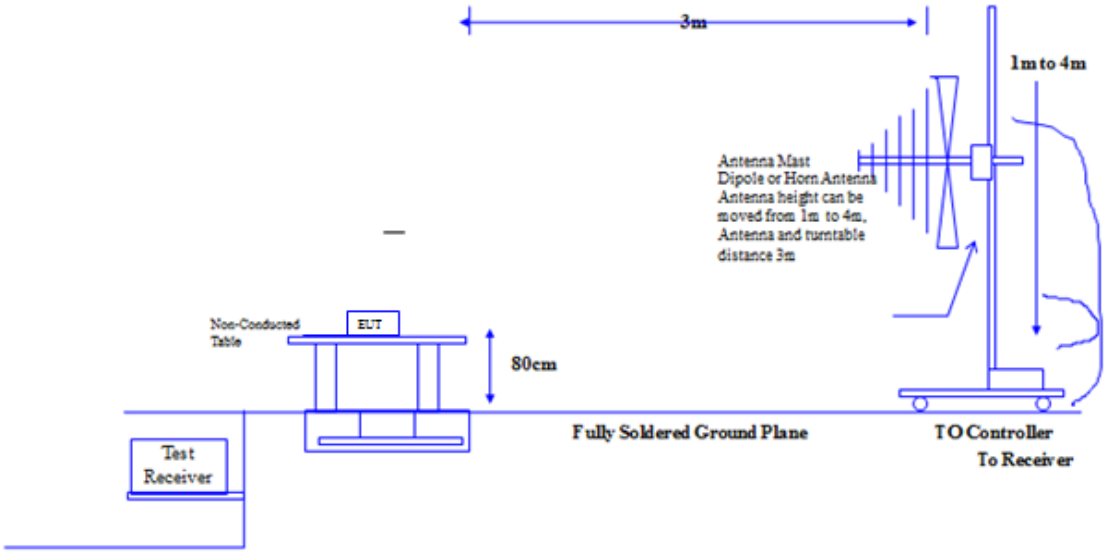
(3) Subtract the delta measured in step (2) from the field strengths measured in step (1). The resultant field strengths (peak/average) are then used to determine band-edge compliance as required by Section 15.205.

3.5.4 Test Setup

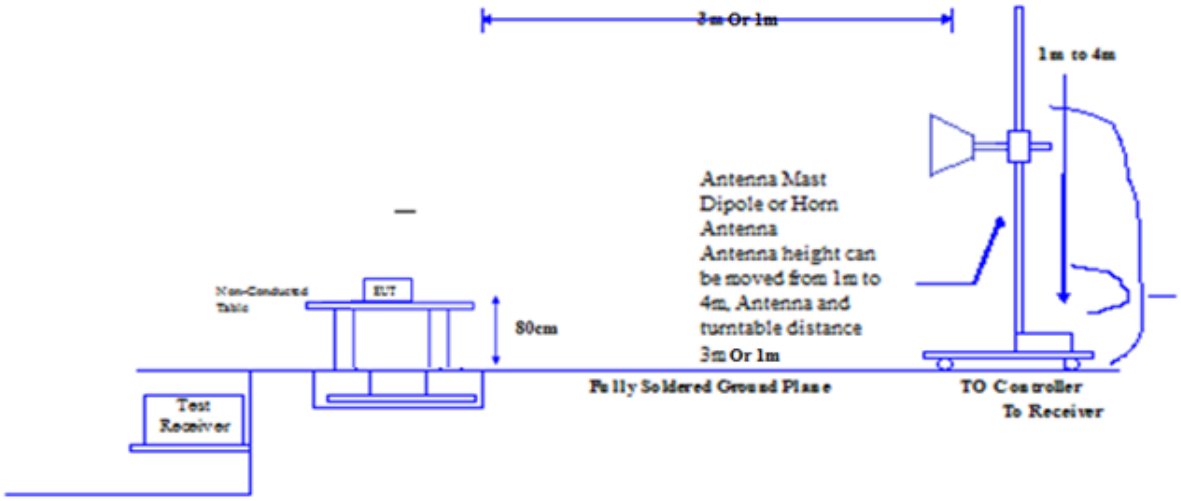
9kHz~30MHz



30MHz~1GHz



Above 1GHz



3.5.5 Test Results of Radiated Band Edges Measurement

Test Band :	Mode 1
Test Channel	00

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	55.02	-18.98	74	44.53	27.5	6.99	24	Peak	Vertical
2.39	42.92	-11.08	54	32.43	27.5	6.99	24	Average	Vertical
2.39	54.31	-19.69	74	43.82	27.5	6.99	24	Peak	Horizontal
2.39	43.77	-10.23	54	33.28	27.5	6.99	24	Average	Horizontal

Test Band :	Mode 3
Test Channel	78

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	56.59	-17.41	74	45.31	27.6	7.68	24	Peak	Vertical
2.4835	42.57	-11.43	54	31.29	27.6	7.68	24	Average	Vertical
2.4835	55.84	-18.16	74	44.56	27.6	7.68	24	Peak	Horizontal
2.4835	43.22	-10.78	54	31.94	27.6	7.68	24	Average	Horizontal

3.5.6 Test Result of Radiated Emission Measurement

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

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

Frequency (MHz)	Reading (dBu V/m)	Factor(dB) Corr.	Result (dBu V/m)	Limit (dBu V/m)	Margin (dB)	Polarization
1.075	25.93	14.89	40.82	62.97	-22.15	Horizontal
1.075	26.74	14.89	41.63	62.97	-21.34	Vertical

Notes:

1，No emission found between lowest internal or generated frequency to 30MHz.

2，Laboratory's Information：

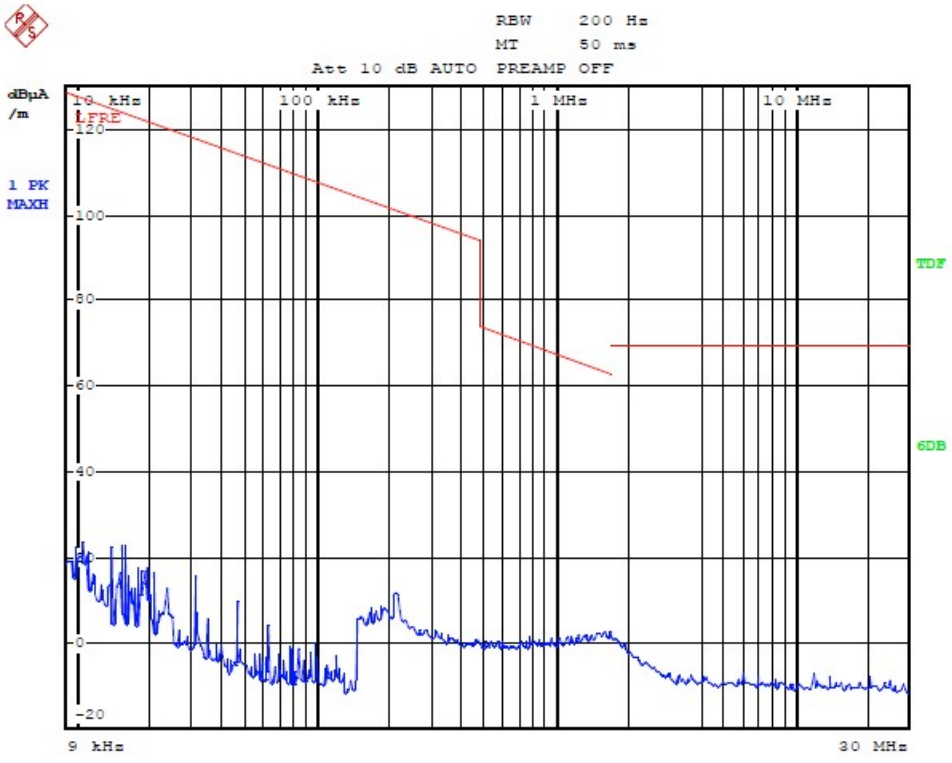
Prepared By：Accurate Technology Co., Ltd

Address: F1, Bldg. A, Changyuan New Meterial Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China

Company Registration Number：752051

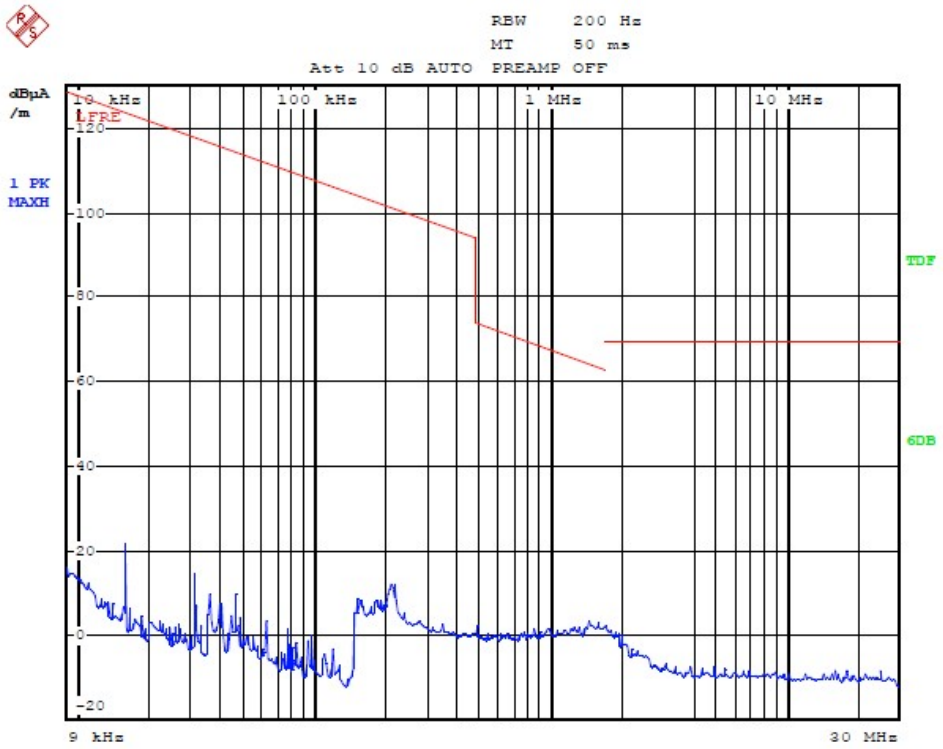
Date of Receipt：2013.01.22

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



Date: 22.JAN.2013 19:59:23 X

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

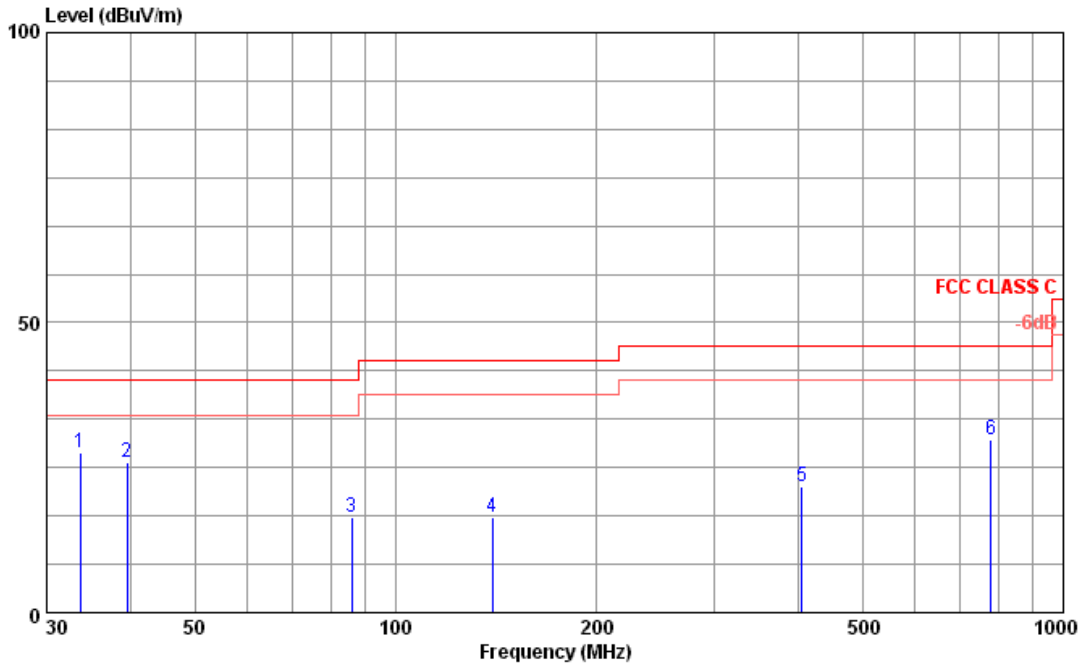


Date: 22.JAN.2013 19:55:16 Y

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

Test Channel :	00
Remark:	2402MHz is Fundamental signal which can be ignored

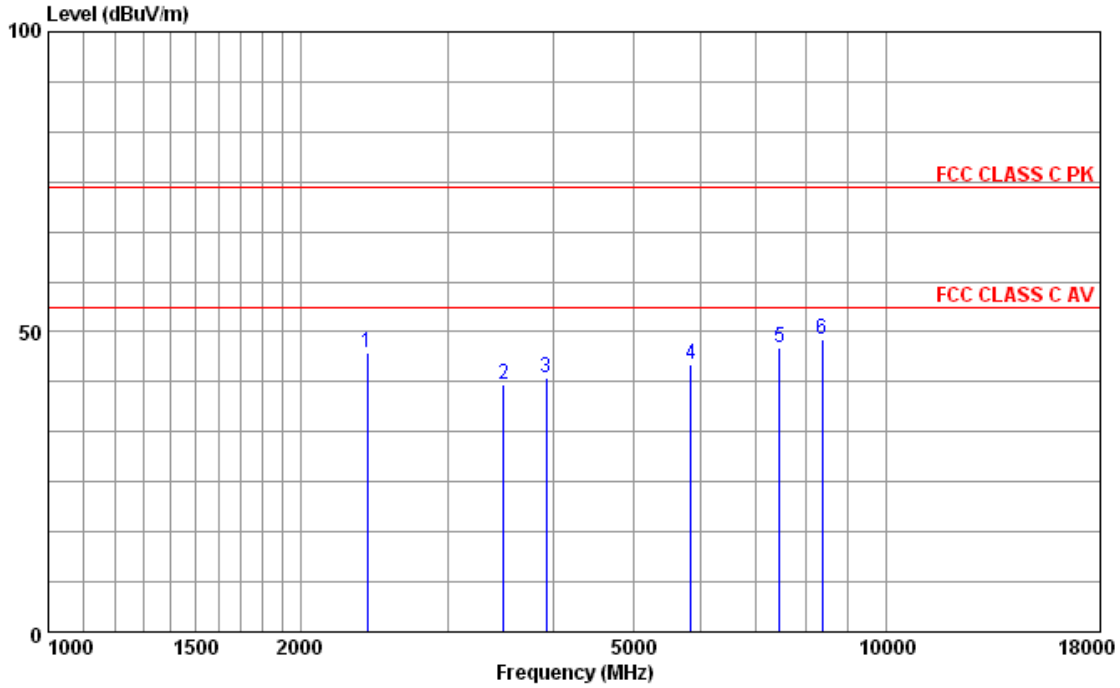
Radiated Emission 30MHz-1GHz Vertical



Site : 966 CHAMBER
Condition : FCC CLASS C 3m 2011 HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CHOO
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	33.68	VERTICAL	27.55	17.23	40.00	-12.45	200	0	Peak
2	39.58	VERTICAL	25.94	14.12	40.00	-14.06	200	0	Peak
3	85.90	VERTICAL	16.47	8.54	40.00	-23.53	200	0	Peak
4	139.36	VERTICAL	16.42	8.06	43.50	-27.08	200	0	Peak
5	406.09	VERTICAL	21.75	13.61	46.00	-24.25	200	0	Peak
6	779.61	VERTICAL	29.70	19.32	46.00	-16.30	200	0	Peak

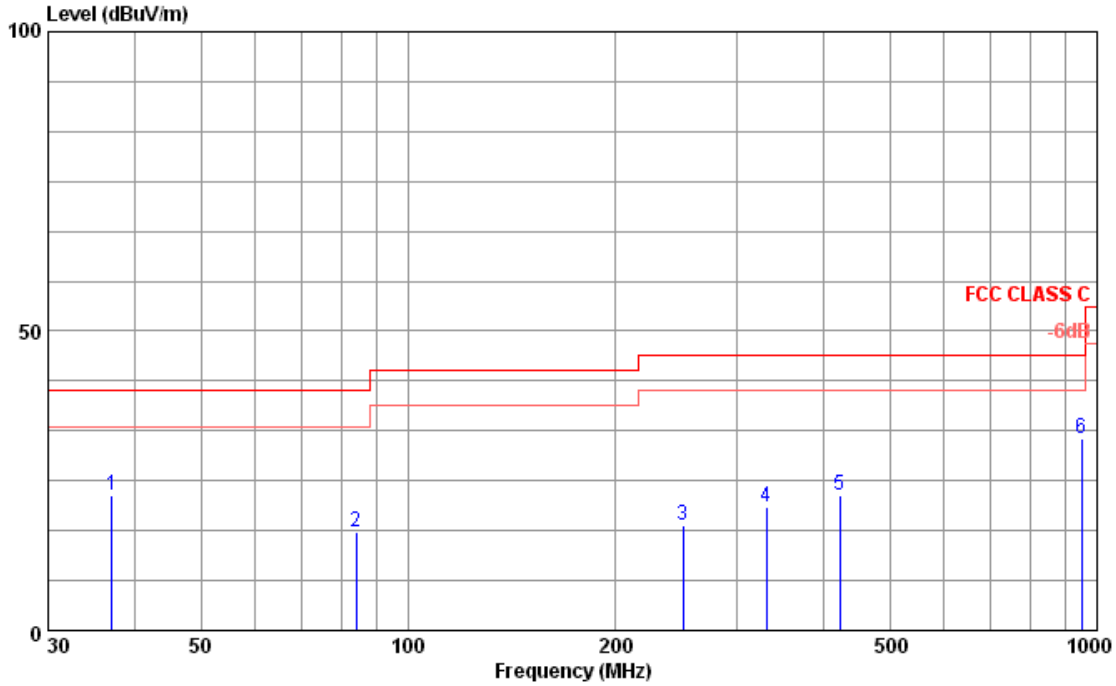
Radiated Emission 1GHz-18GHz Vertical



Site : 966 CHAMBER
Condition : FCC CLASS C PK 3m HF906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH00
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	2400.75	VERTICAL	46.44	27.58	74.00	-27.56	200	0	Peak
2	3495.69	VERTICAL	41.32	30.70	74.00	-32.68	200	0	Peak
3	3924.14	VERTICAL	42.34	31.48	74.00	-31.66	200	0	Peak
4	5847.52	VERTICAL	44.48	33.84	74.00	-29.52	200	0	Peak
5	7454.43	VERTICAL	47.48	35.57	74.00	-26.52	200	0	Peak
6	8392.29	VERTICAL	48.86	35.82	74.00	-25.14	200	0	Peak

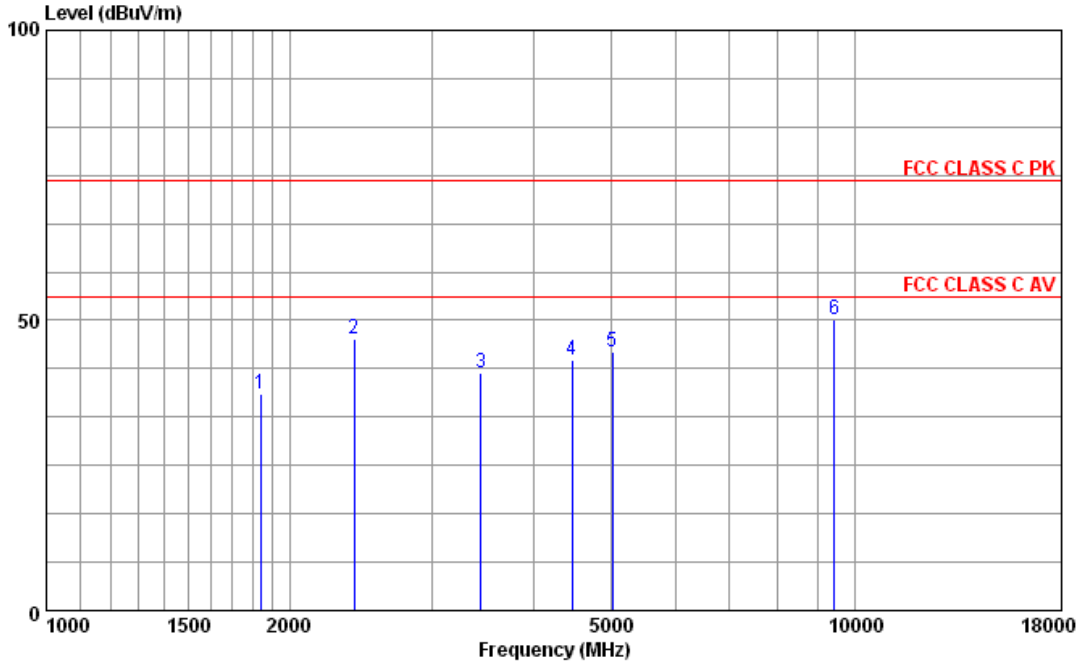
Radiated Emission 30MHz-1GHz Horizontal



Site : 966 CHAMBER
Condition : FCC CLASS C 3m 2011 HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CHOO
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	37.15	HORIZONTAL	22.67	15.49	40.00	-17.33	200	0	Peak
2	84.11	HORIZONTAL	16.46	8.47	40.00	-23.54	200	0	Peak
3	250.30	HORIZONTAL	17.41	9.44	46.00	-28.59	200	0	Peak
4	331.35	HORIZONTAL	20.52	11.90	46.00	-25.48	200	0	Peak
5	423.54	HORIZONTAL	22.64	13.98	46.00	-23.36	200	0	Peak
6	948.76	HORIZONTAL	32.13	21.01	46.00	-13.87	200	0	Peak

Radiated Emission 1GHz-18GHz Horizontal

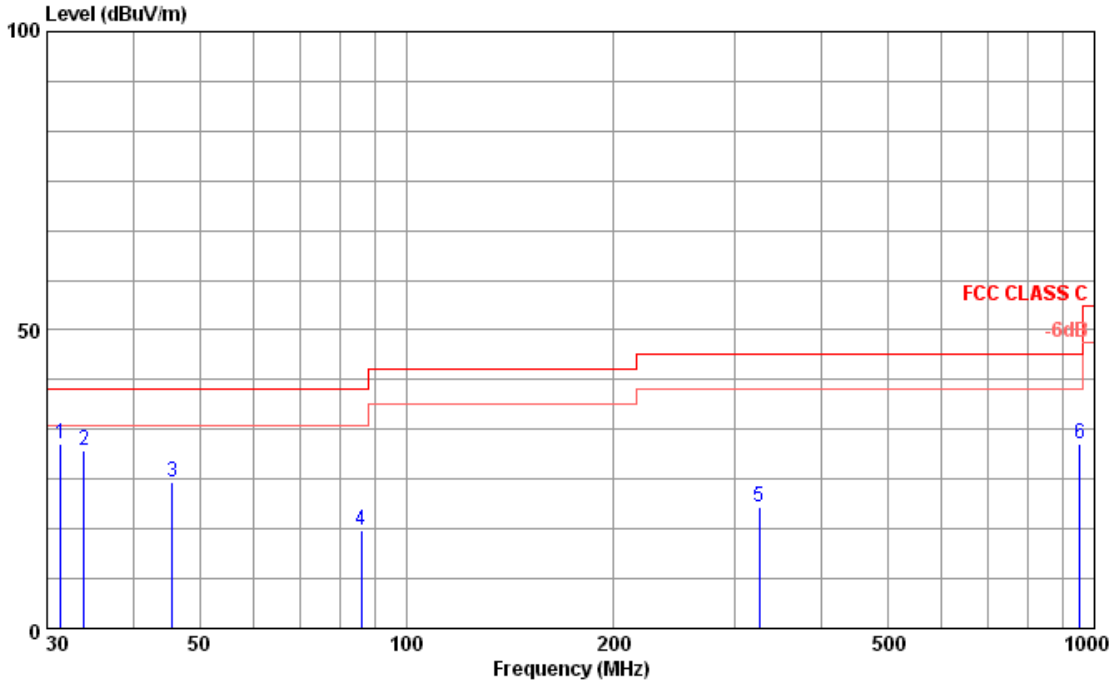


Site : 966 CHAMBER
Condition : FCC CLASS C PK 3m HF906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH00
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	1840.19	HORIZONTAL	37.45	26.38	74.00	-36.55	200	0	Peak
2	2400.75	HORIZONTAL	46.82	27.58	74.00	-27.18	200	0	Peak
3	3445.54	HORIZONTAL	40.86	30.55	74.00	-33.14	200	0	Peak
4	4469.21	HORIZONTAL	43.05	31.51	74.00	-30.95	200	0	Peak
5	5016.98	HORIZONTAL	44.68	32.72	74.00	-29.32	200	0	Peak
6	9420.88	HORIZONTAL	50.11	36.91	74.00	-23.89	200	0	Peak

Test Channel :	19
Remark:	2440MHz is Fundamental signal which can be ignored

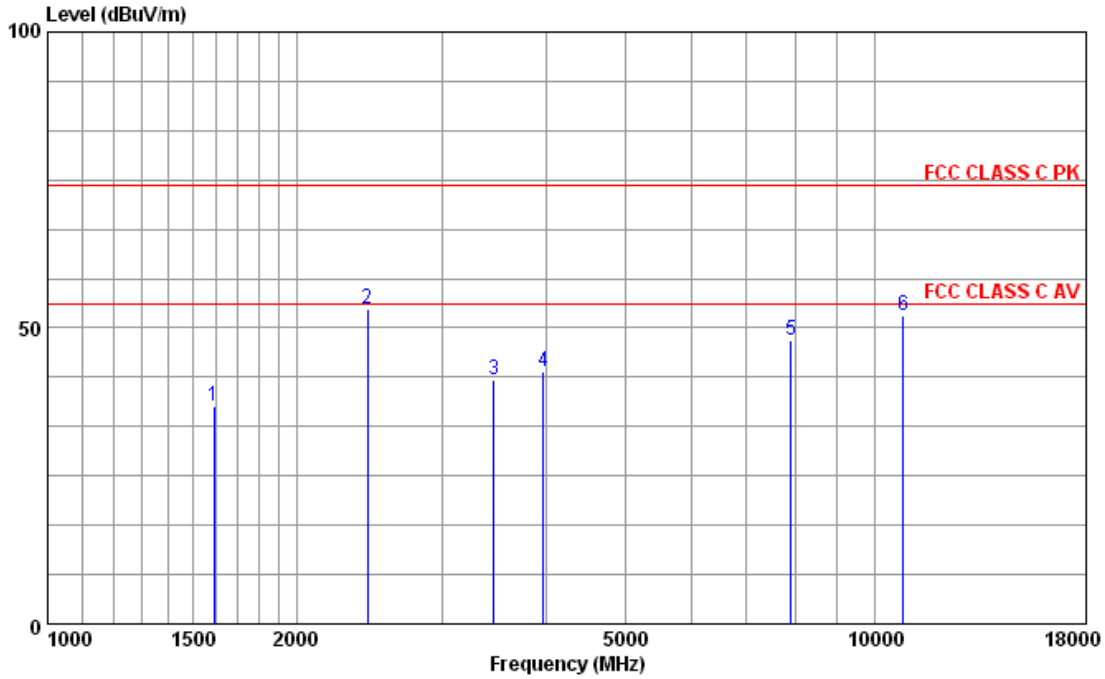
Radiated Emission 30MHz-1GHz Vertical



Site : 966 CHAMBER
Condition : FCC CLASS C 3m 2011 HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH19
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	31.40	VERTICAL	30.97	18.41	40.00	-9.03	200	0	Peak
2	33.92	VERTICAL	29.87	17.08	40.00	-10.13	200	0	Peak
3	45.69	VERTICAL	24.54	10.62	40.00	-15.46	200	0	Peak
4	85.90	VERTICAL	16.53	8.54	40.00	-23.47	200	0	Peak
5	325.60	VERTICAL	20.42	11.74	46.00	-25.58	200	0	Peak
6	952.09	VERTICAL	30.87	21.05	46.00	-15.13	200	0	Peak

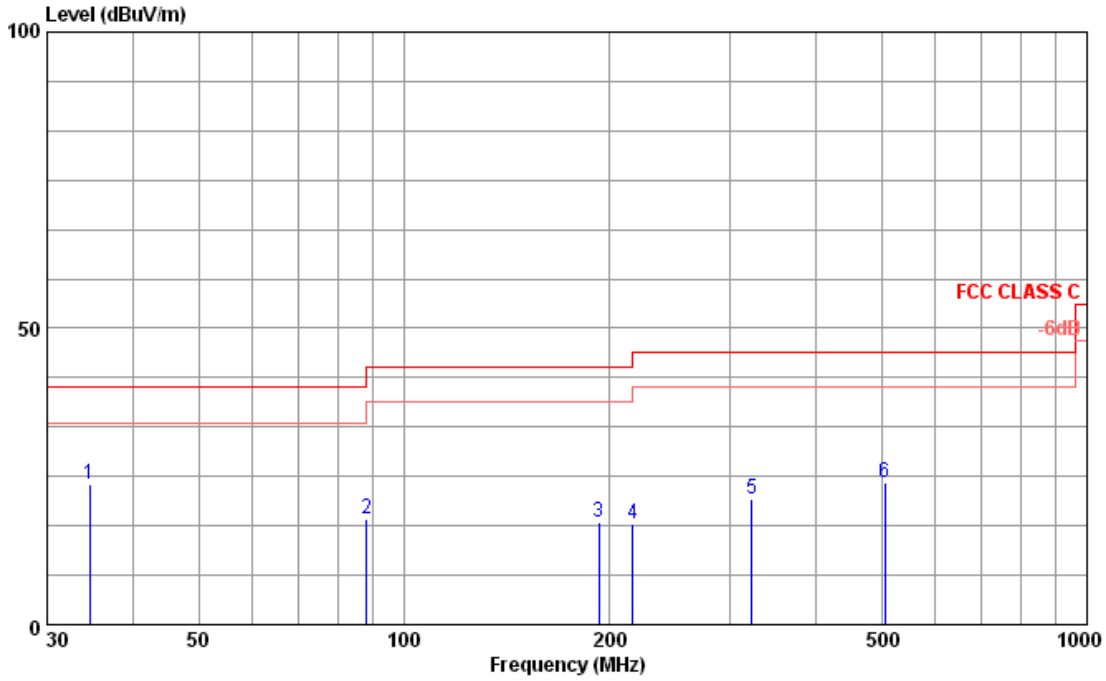
Radiated Emission 1GHz-18GHz Vertical



Site : 966 CHAMBER
Condition : FCC CLASS C PK 3m HF906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH19
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	1587.98	VERTICAL	36.85	25.32	74.00	-37.15	200	0	Peak
2	2435.70	VERTICAL	53.17	27.62	74.00	-20.83	200	0	Peak
3	3465.51	VERTICAL	41.12	30.60	74.00	-32.88	200	0	Peak
4	3969.77	VERTICAL	42.56	31.57	74.00	-31.44	200	0	Peak
5	7920.91	VERTICAL	47.88	35.52	74.00	-26.12	200	0	Peak
6	10822.92	VERTICAL	51.99	37.49	74.00	-22.01	200	0	Peak

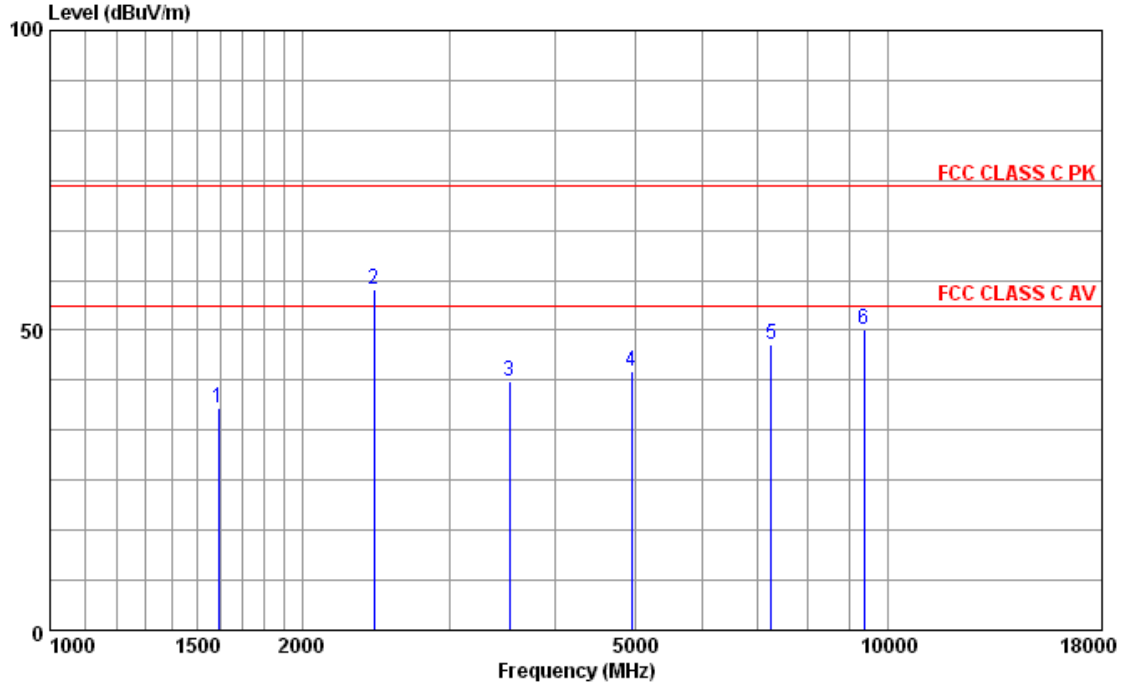
Radiated Emission 30MHz-1GHz Horizontal



Site : 966 CHAMBER
Condition : FCC CLASS C 3m 2011 HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH19
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	34.64	HORIZONTAL	23.58	16.80	40.00	-16.42	200	0	Peak
2	88.03	HORIZONTAL	17.86	8.59	43.50	-25.64	200	0	Peak
3	193.09	HORIZONTAL	17.20	7.24	43.50	-26.30	200	0	Peak
4	216.02	HORIZONTAL	17.12	8.08	46.00	-28.88	200	0	Peak
5	323.32	HORIZONTAL	21.06	11.66	46.00	-24.94	200	0	Peak
6	506.48	HORIZONTAL	23.95	15.59	46.00	-22.05	200	0	Peak

Radiated Emission 1GHz-18GHz Horizontal

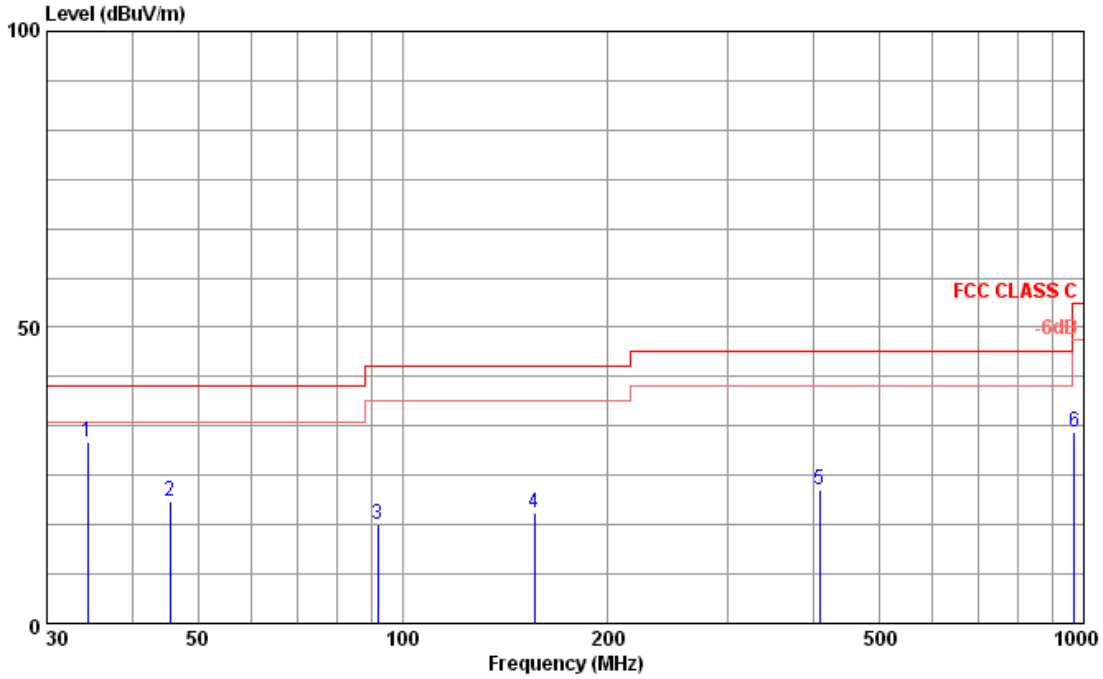


Site : 966 CHAMBER
Condition : FCC CLASS C PK 3m HF906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH19
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	1587.98	HORIZONTAL	37.00	25.32	74.00	-37.00	200	0	Peak
2	2435.70	HORIZONTAL	56.86	27.62	74.00	-17.14	200	0	Peak
3	3536.34	HORIZONTAL	41.42	30.76	74.00	-32.58	200	0	Peak
4	4944.99	HORIZONTAL	43.16	32.59	74.00	-30.84	200	0	Peak
5	7263.02	HORIZONTAL	47.57	35.35	74.00	-26.43	200	0	Peak
6	9366.58	HORIZONTAL	50.27	36.86	74.00	-23.73	200	0	Peak

Test Channel :	39
Remark:	2480MHz is Fundamental signal which can be ignored

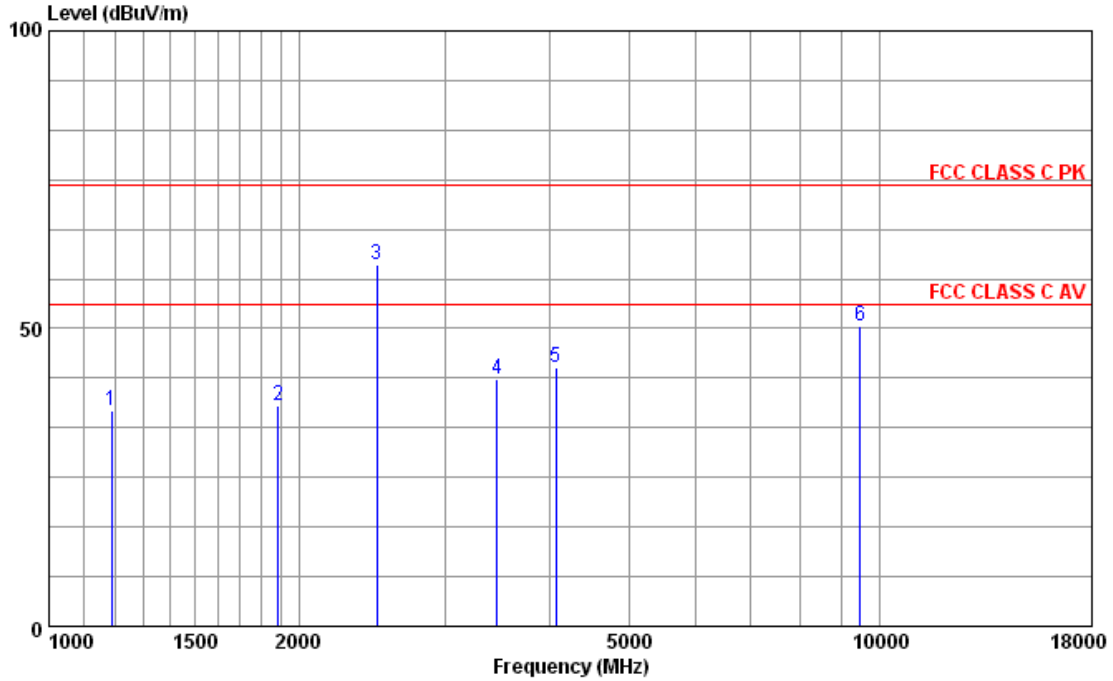
Radiated Emission 30MHz-1GHz Vertical



Site : 966 CHAMBER
Condition : FCC CLASS C 3m 2011 HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH39
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	34.40	VERTICAL	30.63	16.87	40.00	-9.37	200	0	Peak
2	45.53	VERTICAL	20.75	10.62	40.00	-19.25	200	0	Peak
3	91.82	VERTICAL	16.76	8.66	43.50	-26.74	200	0	Peak
4	155.91	VERTICAL	18.55	7.42	43.50	-24.95	200	0	Peak
5	408.95	VERTICAL	22.53	13.65	46.00	-23.47	200	0	Peak
6	968.93	VERTICAL	32.23	21.21	53.90	-21.67	200	0	Peak

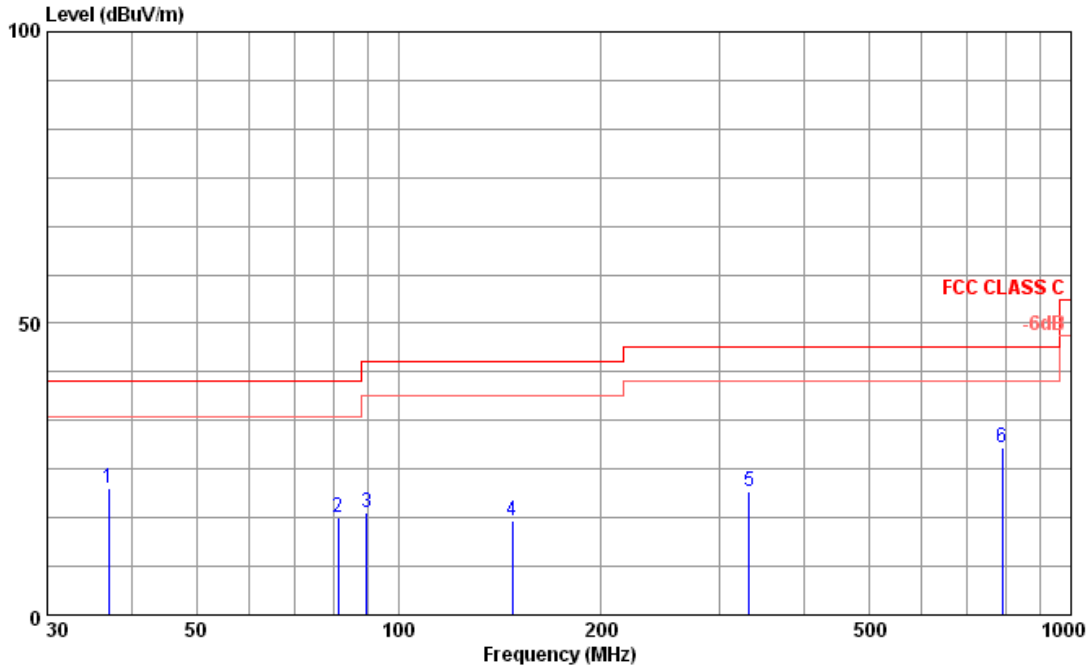
Radiated Emission 1GHz-18GHz Vertical



Site : 966 CHAMBER
Condition : FCC CLASS C PK 3m HF906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH39
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	1189.37	VERTICAL	36.21	23.98	74.00	-37.79	200	0	Peak
2	1888.69	VERTICAL	37.14	26.61	74.00	-36.86	200	0	Peak
3	2478.31	VERTICAL	60.80	27.68	74.00	-13.20	200	0	Peak
4	3465.51	VERTICAL	41.60	30.60	74.00	-32.40	200	0	Peak
5	4074.39	VERTICAL	43.35	31.58	74.00	-30.65	200	0	Peak
6	9475.50	VERTICAL	50.35	36.98	74.00	-23.65	200	0	Peak

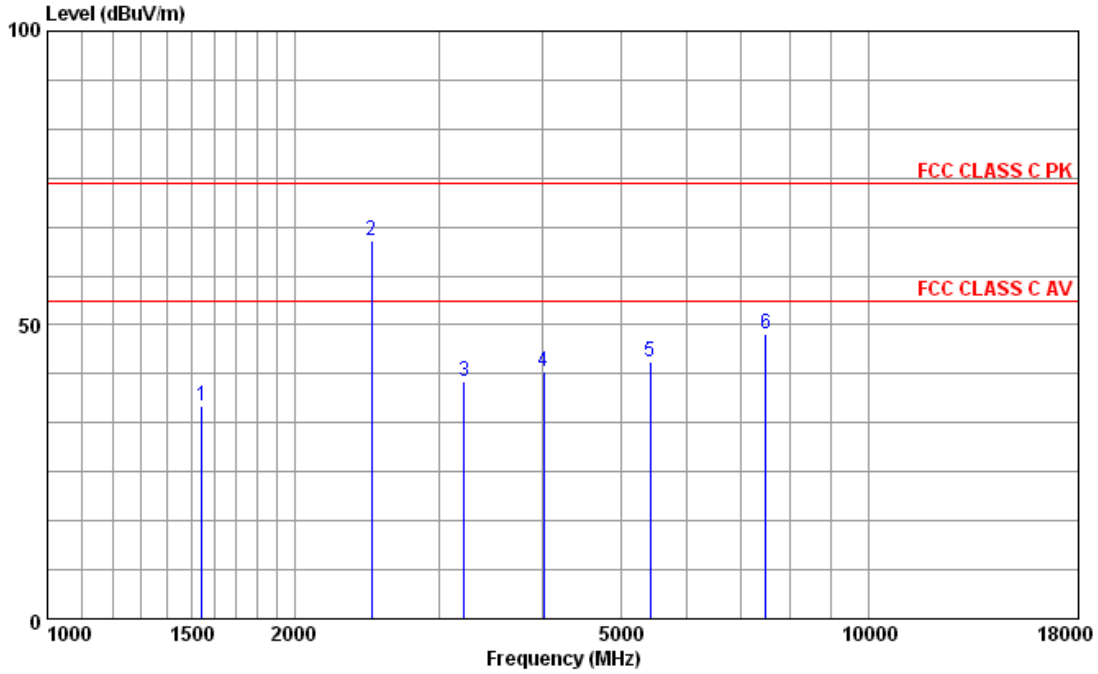
Radiated Emission 30MHz-1GHz Horizontal



Site : 966 CHAMBER
Condition : FCC CLASS C 3m 2011 HLS62 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH39
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	37.02	HORIZONTAL	21.79	15.49	40.00	-18.21	200	0	Peak
2	81.21	HORIZONTAL	16.72	8.25	40.00	-23.28	200	0	Peak
3	89.59	HORIZONTAL	17.42	8.61	43.50	-26.08	200	0	Peak
4	147.40	HORIZONTAL	16.03	7.59	43.50	-27.47	200	0	Peak
5	332.52	HORIZONTAL	21.12	11.90	46.00	-24.88	200	0	Peak
6	790.62	HORIZONTAL	28.80	19.43	46.00	-17.20	200	0	Peak

Radiated Emission 1GHz-18GHz Horizontal



Site : 966 CHAMBER
Condition : FCC CLASS C PK 3m HF906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE
mode : BT4 CH39
memo :

	Freq	Pol/Phase	Level	Antenna Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV/m	dB/m	dBuV/m	dB	cm	deg	
1	1542.73	HORIZONTAL	36.21	25.11	74.00	-37.79	200	0	Peak
2	2478.31	HORIZONTAL	64.33	27.68	74.00	-9.67	200	0	Peak
3	3214.62	HORIZONTAL	40.45	29.78	74.00	-33.55	200	0	Peak
4	4015.93	HORIZONTAL	41.94	31.60	74.00	-32.06	200	0	Peak
5	5424.18	HORIZONTAL	43.74	33.37	74.00	-30.26	200	0	Peak
6	7497.65	HORIZONTAL	48.49	35.60	74.00	-25.51	200	0	Peak

3.5.6.3 Radiated Emission Measurement Results (18GHz-25GHz)

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.

3.6 AC Conducted Emission Measurement

3.6.1 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.

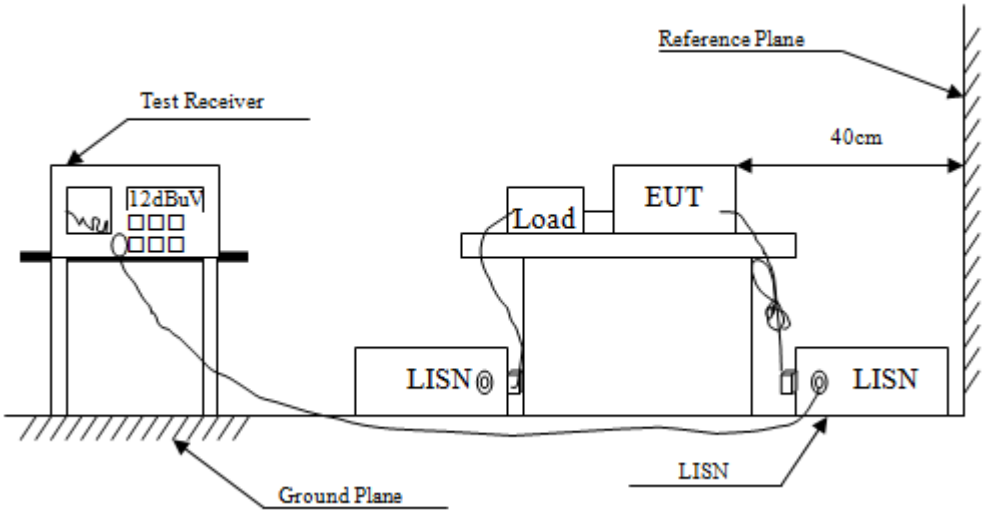
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room 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.

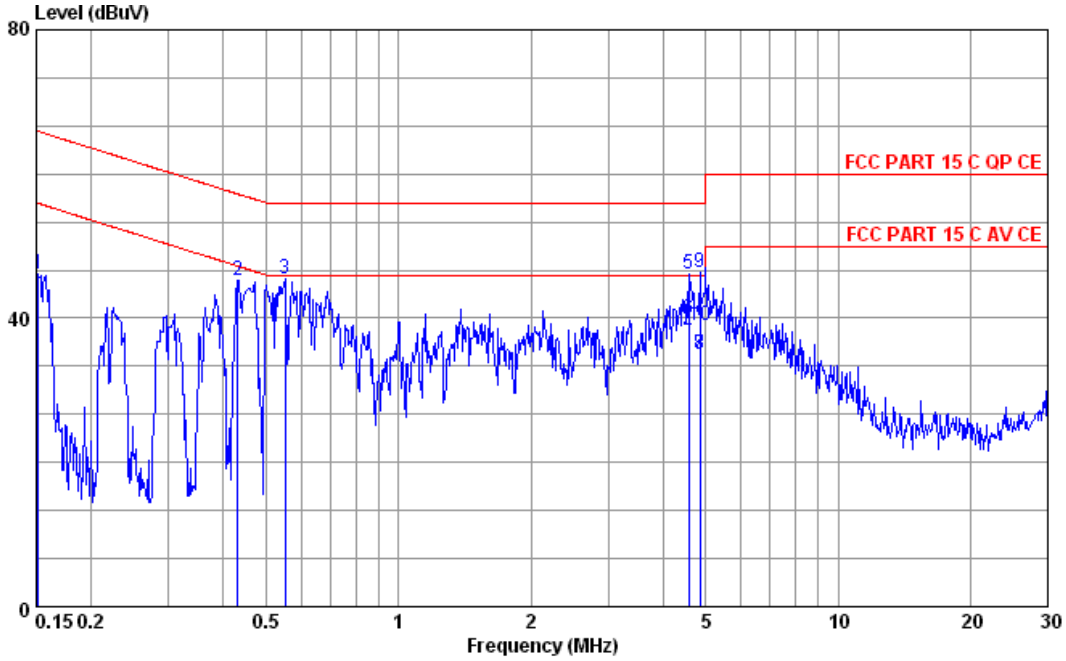
3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Voltage:120V/60Hz

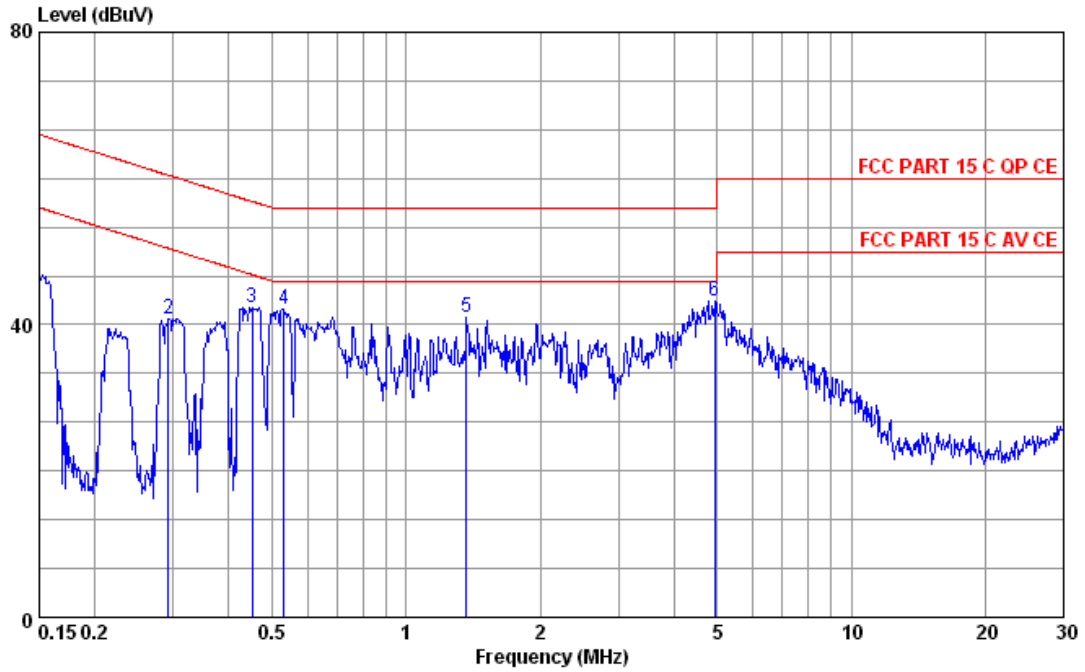
Test mode 1: GSM 850 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS Rx + Neutral



Site : 966 CHAMBER
Condition : FCC PART 15 C QP CE ENV216 NEW NEUTRAL
: RBW:9.000KHz VBW:30.000KHz SWT:Auto
eut : phone
mode : gsm850 idle+bt link+wifi link+bt
memo : earphone+adapter

	Freq	Pol/Phase	Level	LISN Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV	dB	dBuV	dB	cm	deg	
1	0.15	NEUTRAL	46.18	9.21	65.91	-19.73	104	0	Peak
2	0.43	NEUTRAL	45.33	9.82	57.24	-11.91	104	0	Peak
3	0.55	NEUTRAL	45.55	9.77	56.00	-10.45	104	0	Peak
4	4.57	NEUTRAL	37.81	9.66	46.00	-8.19	104	0	Average
5	4.57	NEUTRAL	46.18	9.66	56.00	-9.82	104	0	Peak
6	4.57	NEUTRAL	39.86	9.66	56.00	-16.14	104	0	QP
7	4.85	NEUTRAL	35.09	9.67	46.00	-10.91	104	0	Average
8	4.85	NEUTRAL	35.09	9.67	46.00	-10.91	104	0	Average
9	4.85	NEUTRAL	46.33	9.67	56.00	-9.67	104	0	Peak
10	4.85	NEUTRAL	39.05	9.67	56.00	-16.95	104	0	QP

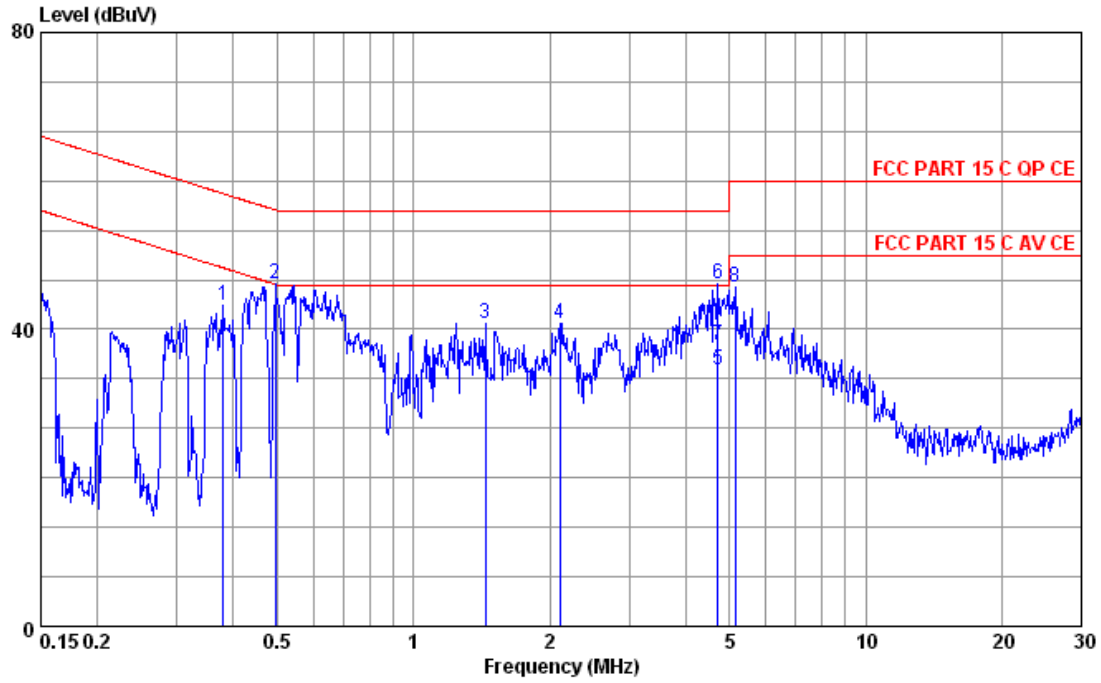
Test mode 1: GSM 850 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone + Adapter+ Battery + GPS Rx +Line



Site : 966 CHAMBER
Condition : FCC PART 15 C QP CE ENV216 NEW LINE
: RBW:9.000KHz VBW:30.000KHz SWT:Auto
eut : phone
mode : gsm850 idle+bt link+wifi link+bt
memo : earphone+adapter

	Freq	Pol/Phase	Level	LISN Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV	dB	dBuV	dB	cm	deg	
1	0.15	LINE	46.78	9.36	66.00	-19.22	104	0	Peak
2	0.29	LINE	40.83	9.65	60.46	-19.63	104	0	Peak
3	0.45	LINE	42.33	9.68	56.85	-14.52	104	0	Peak
4	0.53	LINE	42.16	9.68	56.00	-13.84	104	0	Peak
5	1.37	LINE	40.98	9.67	56.00	-15.02	104	0	Peak
6	4.93	LINE	43.31	9.69	56.00	-12.69	104	0	Peak

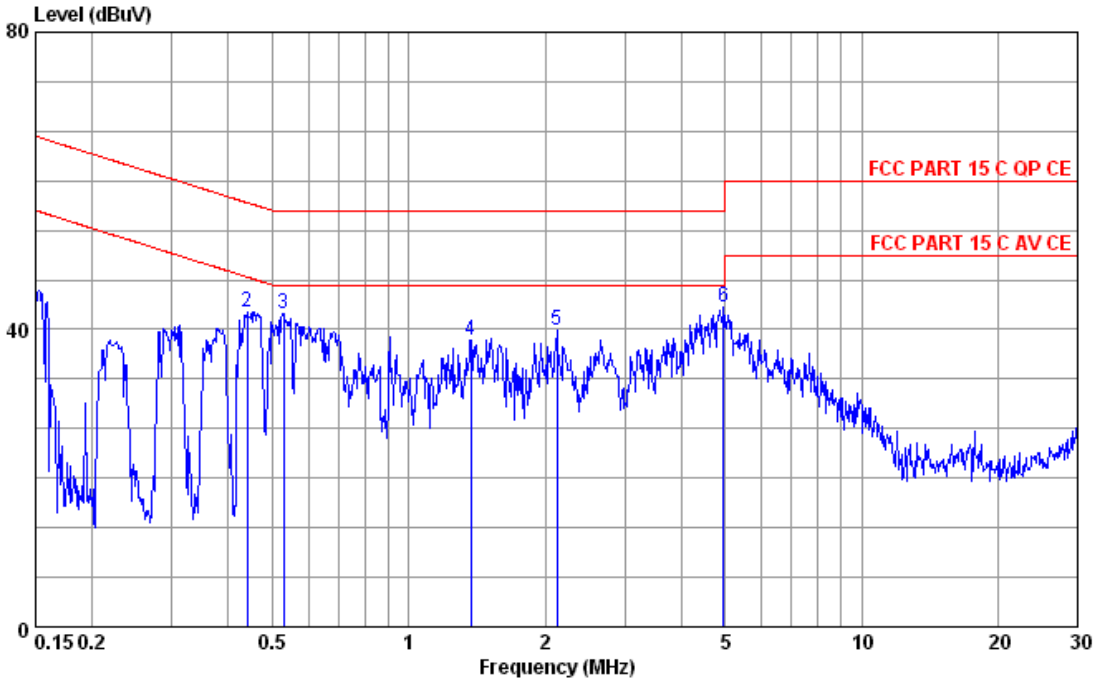
Test mode 2: GSM 1900 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone+ Adapter+ Battery+ GPS Rx + Neutral



Site : 966 CHAMBER
Condition : FCC PART 15 C QP CE ENV216 NEW NEUTRAL
: RBW:9.000KHz VBW:30.000KHz SWT:Auto
eut : phone
mode : gsm1900 idle+bt link+wifi link+bt
memo : earphone+adapter

	Freq	Pol/Phase	Level	LISN Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV	dB	dBuV	dB	cm	deg	
1	0.38	NEUTRAL	43.27	9.88	58.30	-15.03	104	0	Peak
2	0.49	NEUTRAL	46.03	9.76	56.10	-10.07	104	0	Peak
3	1.44	NEUTRAL	40.79	9.60	56.00	-15.21	104	0	Peak
4	2.11	NEUTRAL	40.81	9.53	56.00	-15.19	104	0	Peak
5	4.72	NEUTRAL	34.57	9.66	46.00	-11.43	104	0	Average
6	4.72	NEUTRAL	46.04	9.66	56.00	-9.96	104	0	Peak
7	4.72	NEUTRAL	37.85	9.66	56.00	-18.15	104	0	QP
8	5.14	NEUTRAL	45.67	9.67	60.00	-14.33	104	0	Peak

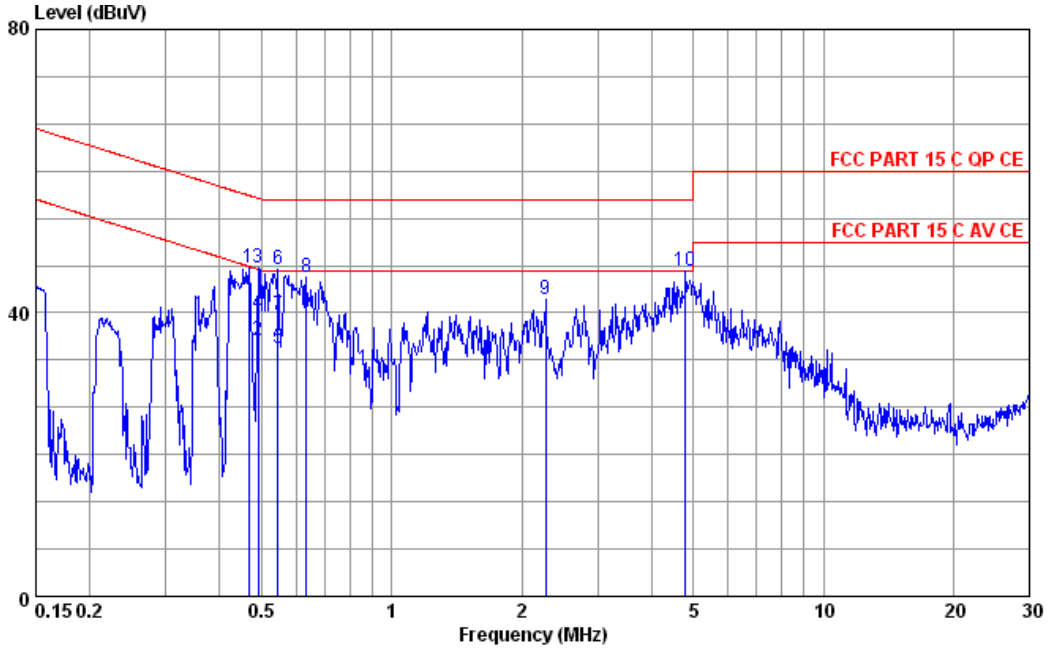
Test mode 2: GSM 1900 Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone + Earphone+ Adapter+ Battery + GPS Rx + Line



Site : 966 CHAMBER
Condition : FCC PART 15 C QP CE ENV216 NEW LINE
: RBW:9.000KHz VBW:30.000KHz SWT:Auto
eut : phone
mode : gsm1900 idle+bt link+wifi link+bt
memo : earphone+adapter

	Freq	Pol/Phase	Level	LISN Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV	dB	dBuV	dB	cm	deg	
1	0.15	LINE	45.83	9.36	66.00	-20.17	104	0	Peak
2	0.44	LINE	42.39	9.67	57.07	-14.68	104	0	Peak
3	0.53	LINE	42.15	9.68	56.00	-13.85	104	0	Peak
4	1.37	LINE	38.64	9.67	56.00	-17.36	104	0	Peak
5	2.12	LINE	39.88	9.64	56.00	-16.12	104	0	Peak
6	4.95	LINE	43.06	9.69	56.00	-12.94	104	0	Peak

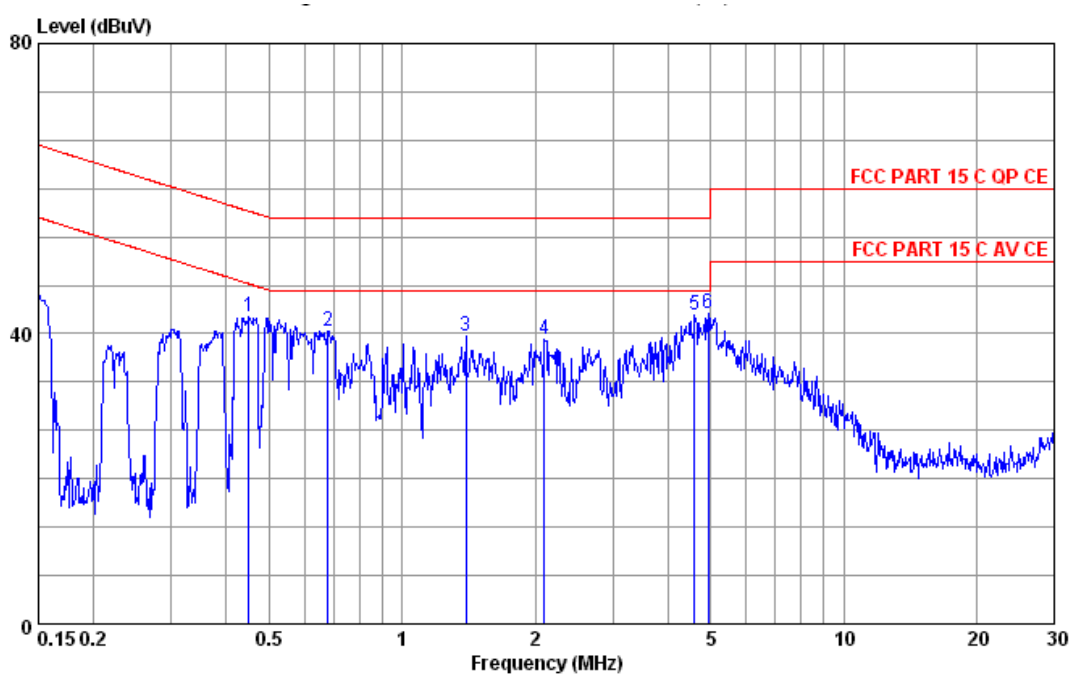
Test mode 3: WCDMA Band II Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone +Earphone+ Adapter+ Battery + GPS RX +Neutral



Site : 966 CHAMBER
Condition : FCC PART 15 C QP CE ENV216 NEW NEUTRAL
: RBW:9.000KHz VBW:30.000KHz SWT:Auto
eut : phone
mode : wcdma band II idle+bt link+wifi link+bt
memo : earphone+adapter

	Freq	Pol/Phase	Level	LISN Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV	dB	dBuV	dB	cm	deg	
1	0.47	NEUTRAL	46.40	9.79	56.58	-10.18	104	0	Peak
2	0.49	NEUTRAL	36.14	9.77	46.14	-10.00	104	0	Average
3	0.49	NEUTRAL	46.30	9.77	56.14	-9.84	104	0	Peak
4	0.49	NEUTRAL	39.95	9.77	56.14	-16.19	104	0	QP
5	0.55	NEUTRAL	34.91	9.77	46.00	-11.09	104	0	Average
6	0.55	NEUTRAL	46.17	9.77	56.00	-9.83	104	0	Peak
7	0.55	NEUTRAL	39.65	9.77	56.00	-16.35	104	0	QP
8	0.63	NEUTRAL	45.07	9.77	56.00	-10.93	104	0	Peak
9	2.27	NEUTRAL	41.85	9.54	56.00	-14.15	104	0	Peak
10	4.80	NEUTRAL	45.83	9.66	56.00	-10.17	104	0	Peak

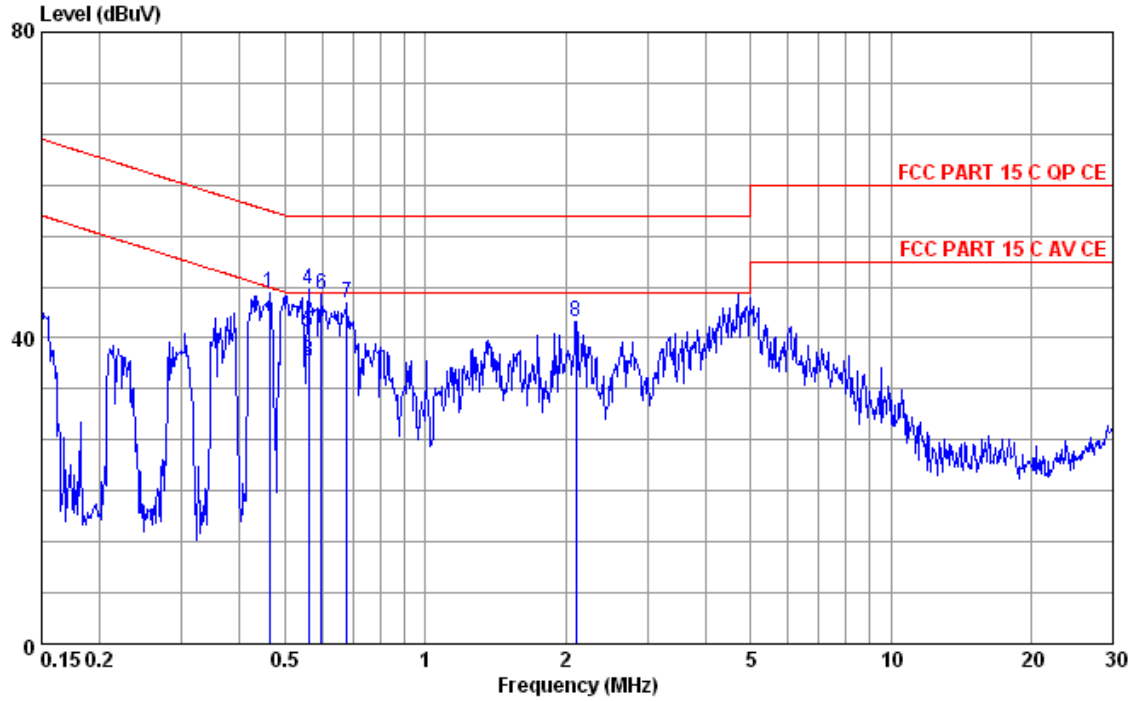
Test mode 3: WCDMA Band II Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone +Earphone+ Adapter+ Battery + GPS RX +Line



Site : 966 CHAMBER
Condition : FCC PART 15 C QP CE ENV216 NEW LINE
: RBW:9.000KHz VBW:30.000KHz SWT:Auto
eut : phone
mode : wcdma band II idle+bt link+wifi link+bt
memo : earphone+adapter

	Freq	Pol/Phase	Level	LISN Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV	dB	dBuV	dB	cm	deg	
1	0.45	LINE	42.26	9.68	56.89	-14.63	104	0	Peak
2	0.68	LINE	40.39	9.70	56.00	-15.61	104	0	Peak
3	1.40	LINE	39.77	9.67	56.00	-16.23	104	0	Peak
4	2.10	LINE	39.17	9.64	56.00	-16.83	104	0	Peak
5	4.60	LINE	42.61	9.69	56.00	-13.39	104	0	Peak
6	4.93	LINE	42.83	9.69	56.00	-13.17	104	0	Peak

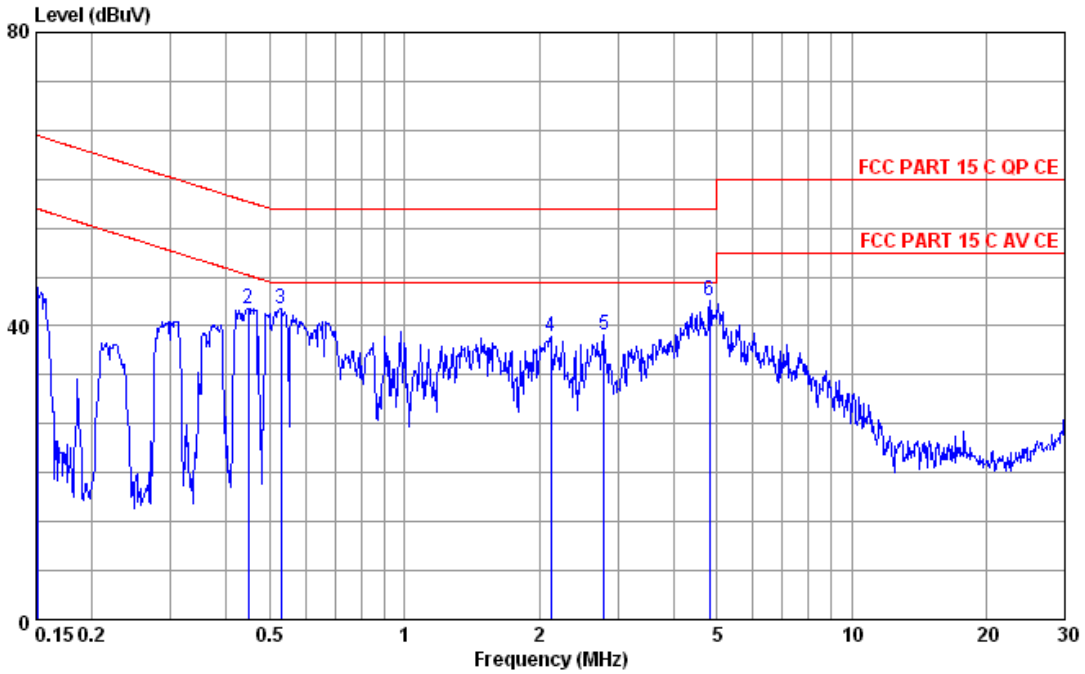
Test mode 4: WCDMA Band V Idle + WLAN Link (2.4G) + Bluetooth Link +Bluetooth earphone +Earphone+ Adapter+ Battery + GPS RX +Neutral



Site : 966 CHAMBER
Condition : FCC PART 15 C QP CE ENV216 NEW NEUTRAL
: RBW:9.000KHz VBW:30.000KHz SWT:Auto
eut : phone
mode : wcdma band V idle+bt link+wifi link+bt
memo : earphone+adapter

	Freq	Pol/Phase	Level	LISN Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV	dB	dBuV	dB	cm	deg	
1	0.46	NEUTRAL	45.93	9.79	56.63	-10.70	104	0	Peak
2	0.56	NEUTRAL	36.92	9.77	46.00	-9.08	104	0	Average
3	0.56	NEUTRAL	36.92	9.77	46.00	-9.08	104	0	Average
4	0.56	NEUTRAL	46.34	9.77	56.00	-9.66	104	0	Peak
5	0.56	NEUTRAL	40.87	9.77	56.00	-15.13	104	0	QP
6	0.60	NEUTRAL	45.63	9.77	56.00	-10.37	104	0	Peak
7	0.68	NEUTRAL	44.62	9.78	56.00	-11.38	104	0	Peak
8	2.11	NEUTRAL	42.21	9.53	56.00	-13.79	104	0	Peak

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



Site : 966 CHAMBER
Condition : FCC PART 15 C QP CE ENV216 NEW LINE
: RBW:9.000KHz VBW:30.000KHz SWT:Auto
eut : phone
mode : wcdma band V idle+bt link+wifi link+bt
memo : earphone+adapter

	Freq	Pol/Phase	Level	LISN Factor	Limit Line	Over Limit	A/Pos	T/Pos	Remark
	MHz		dBuV	dB	dBuV	dB	cm	deg	
1	0.15	LINE	45.13	9.36	65.96	-20.83	104	0	Peak
2	0.45	LINE	42.43	9.67	56.93	-14.50	104	0	Peak
3	0.53	LINE	42.29	9.68	56.00	-13.71	104	0	Peak
4	2.12	LINE	38.53	9.64	56.00	-17.47	104	0	Peak
5	2.79	LINE	38.68	9.66	56.00	-17.32	104	0	Peak
6	4.82	LINE	43.43	9.69	56.00	-12.57	104	0	Peak

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.7.2 Antenna Connected Construction

The antennas type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

No	Instrument/Ancillary	Provider	Type/Model	Cal. Date
01	Base Station	R&S	CMU200	2012.12.08
02	Spectrum Analyzer	R&S	FSP30(9kHz~30GHz)	2012.07.19
03	Antenna	R&S	HL562 (30M-1G)	2012.11.09
04	Loop Antenna	Schwarzbeck	FMZB1516(9KHz~30MHz)	2012.01.07
05	Antenna	R&S	HF906(1G-18G)	2012.08.02
06	Antenna	Schwarzbeck	BBHA 9170 (15G-26.5G)	2012.11.09
07	High Pass Filter	R&S	System Integrated	2012.11.14
08	Thermal chamber	Hitachi	EC- 85MHP	2012.12.25
09	Pre-Amplifier	Agilent	83006A(0.01GHz-26.5GHz)	2012.08.06
10	Pre-Amplifier	Agilent	83006A(0.01GHz-26.5GHz)	2012.08.06
11	Helical Antenna	ETS	3102 (1G-10G)	NCR
12	Power Meter	R&S	NRP(10MHz~8GHz)	2012.12.05
13	Relay Switch	R&S	TS-REMI	NCR
14	Signal Generator	R&S	SMR20(10MHz-20 GHz)	2012.12.08
15	LISN	ROHDE&SCHWARZ	ENV216 TWO-LINE V-NETWORK	2012.11.13
16	Power Meter	Agilent	E4418B (EPM Series)	2012.12.08
17	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	KA2DWLG700APB1	AC: I/P: Unshielded 1.8m DC:O/P: Unshielded 1.8m
Bluetooth headset	acer	S100FBT	N/A	HLZDMS100FBT	N/A

6 Uncertainty Evaluation

6.1 Ucertainty 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	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	0.28	0.28
Free-space antenna factor	U07	Normal	2.00	0.70	0.70
Antenna Factor Interpolation for Frequency	U08	Rectangular	1.73	0.17	0.17
Antenna factor with height in the correlation	U09	Rectangular	1.73	0.17	0.17
Measurementantennaand theabsorbingmaterialintheimageof themutualcoupling 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	1.02	1.22
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	0.10	0.11
Combined Standard Uncertainty Uc(y)	Uc	Normal	1.00	2.03	2.14
Measuring Uncertainty for a level of Confidence of 95%(U= 2Uc(y))	U=kUc	Normal	k	4.05	4.28

6.2 Ucertainty of Radiated Spurious Emissionevaluation (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
Measurementantennaand theabsorbingmaterialintheimageof themutualcoupling 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