

FCC RF Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : CDMA 1X/EVDO Phone
BRAND NAME : ZTE
MODEL NAME : ZTE N859
FCC ID : Q78-N859
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on May 04, 2012 and completely tested on Jun. 11, 2012. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by:



Jones Tsai / Manager



SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.



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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	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	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 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 14.73 dB at 0.450 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 4.85 dB at 2384.860 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.2 Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	CDMA 1X/EVDO Phone
Brand Name	ZTE
Model Name	ZTE N859
FCC ID	Q78-N859
Tx/Rx Frequency Range	2412 MHz ~ 2462 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Channel Spacing	5 MHz
Maximum Output Power to Antenna	802.11b : 19.02 dBm (0.080 W) 802.11g : 20.43 dBm (0.110 W) 802.11n (BW 20MHz) : 19.15 dBm (0.082 W)
Duty Cycle	802.11b : 92.82% 802.11g : 67.96% 802.11n (BW 20MHz) : 65.81%
Antenna Type	PIFA Antenna with gain 5.00 dBi
HW Version	c6nA
SW Version	USCC_US_N859V1.0.0B02
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH01-KS	CO01-KS	03CH01-KS	149928/4086E-1

1.5 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 v01
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3

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.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GWINSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A
4.	Router	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
5.	Notebook	Dell	P08S	QDS-BRCM1030	N/A	AC I/P: Unshielded, 0.9 m DC O/P: Shielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Pre-Scanned RF Power

Preliminary tests were performed in different data rate as below table and the highest power data rates (11b, 11g, 11n (BW 20MHz) modes) were chosen for full test in the following sections to demonstrate compliance to the FCC limit line.

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	19.02	19.01	18.98	18.99

2.4GHz 802.11g mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	20.43	19.41	19.76	19.16	20.23	20.39	19.16	19.27

2.4GHz 802.11n (BW 20MHz) mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	19.15	18.61	18.25	18.21	17.86	17.21	18.13	17.15

2.2 Test Mode

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).

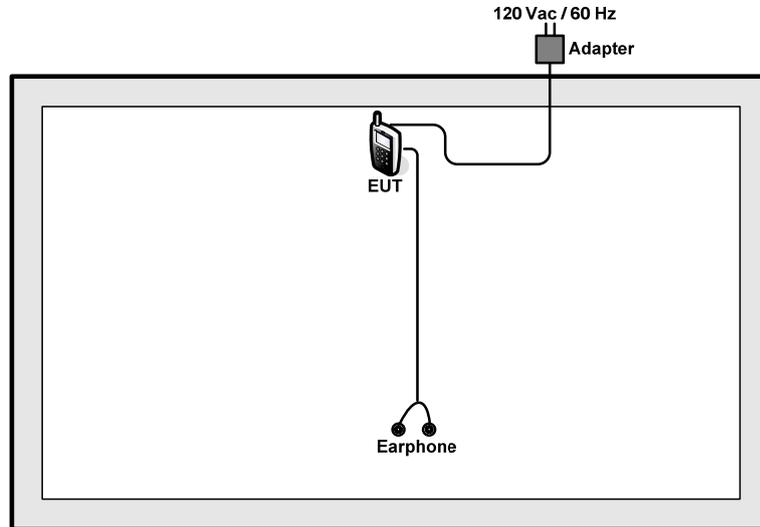
Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations.

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

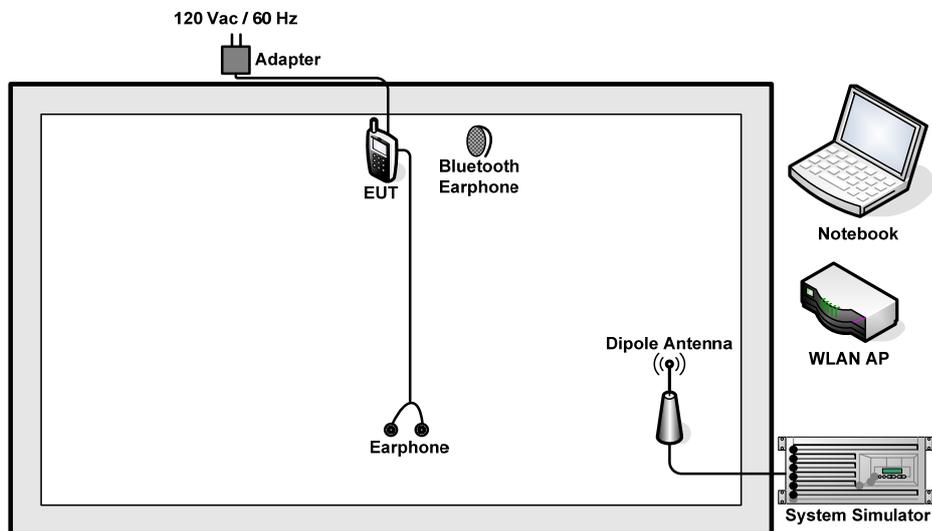
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
Radiated 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 Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
AC Conducted Emission	Mode 1 : CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone + Camera	

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 RF Utility

The programmed RF utility “*983*0#” is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

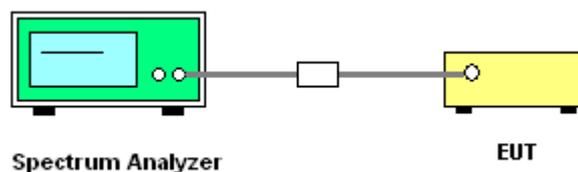
3.1.2 Measuring Instruments

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 Meas. Guidance and TCB Workshop 2012, April.
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. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 1-5% of the emission bandwidth (EBW). Set the Video bandwidth (VBW) $\geq 3 * RBW$. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 KHz.
4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

3.1.4 Test Setup



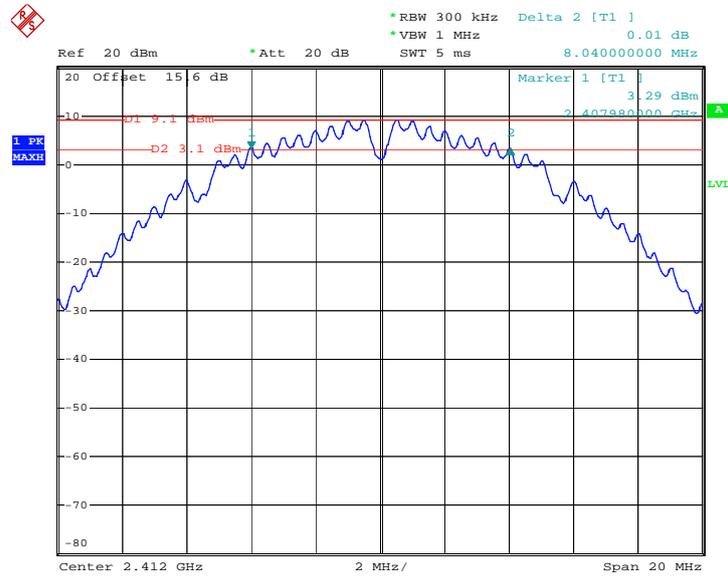


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	8.04	0.5	Pass
06	2437	8.04	0.5	Pass
11	2462	7.60	0.5	Pass

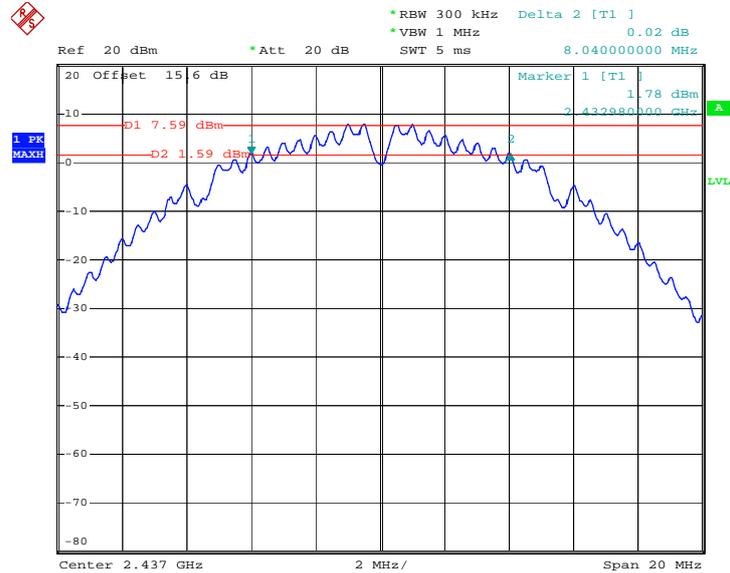
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



Date: 14.JUN.2012 16:51:03

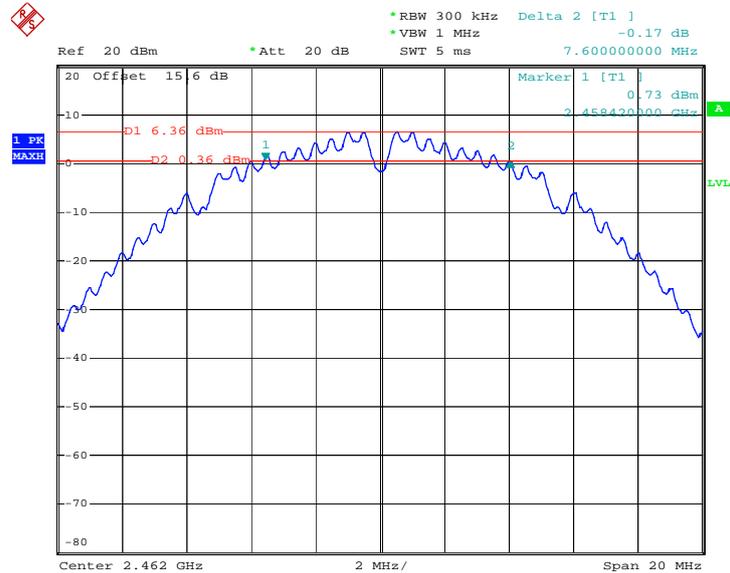


Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 14.JUN.2012 16:47:15

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



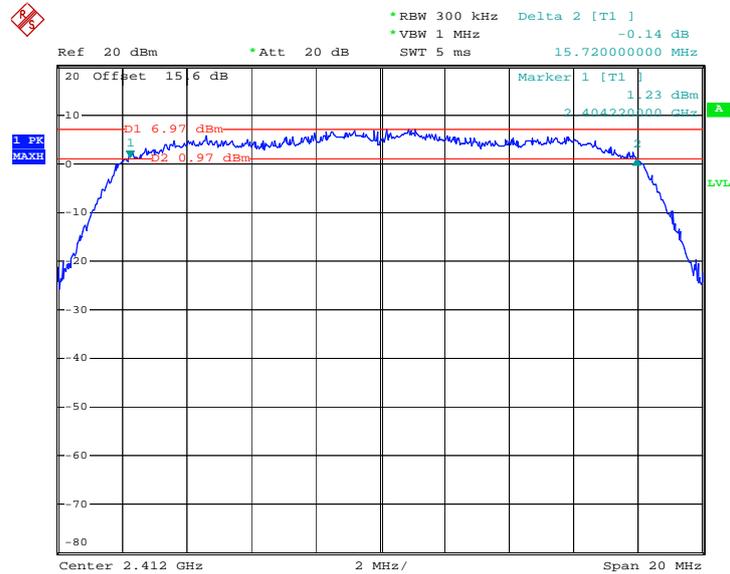
Date: 14.JUN.2012 16:43:14



Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.72	0.5	Pass
06	2437	15.84	0.5	Pass
11	2462	15.72	0.5	Pass

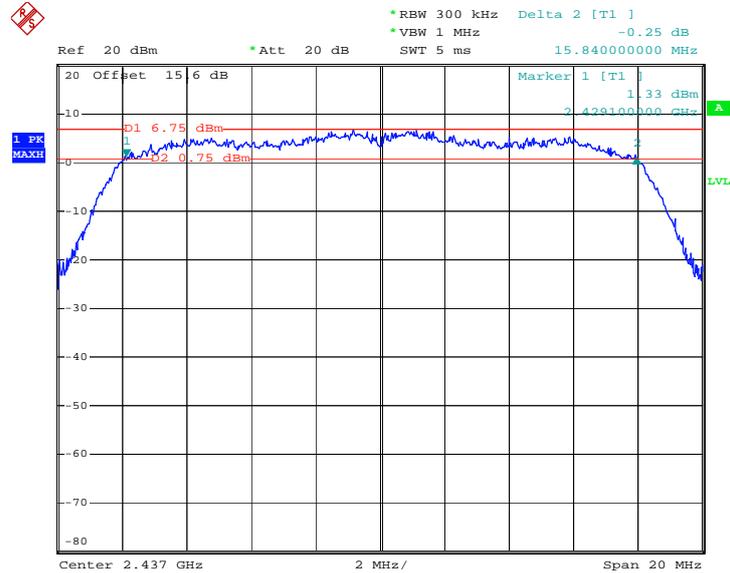
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Date: 31.MAY.2012 04:33:25

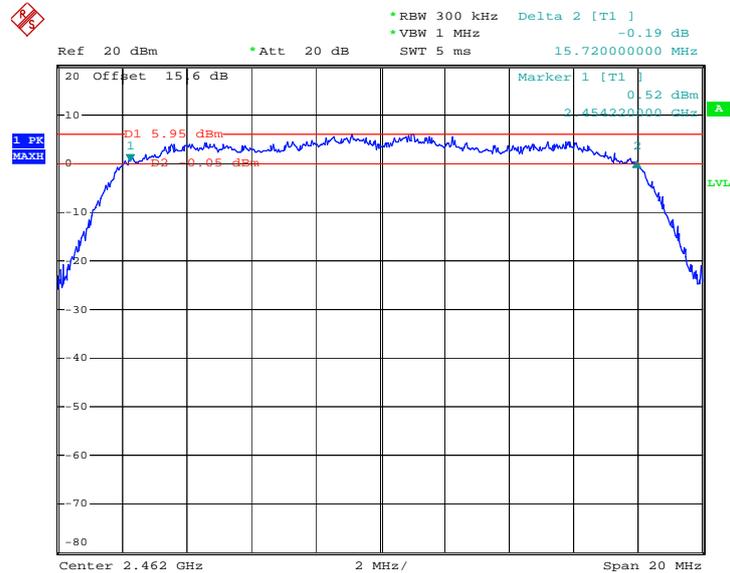


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 31.MAY.2012 04:38:09

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



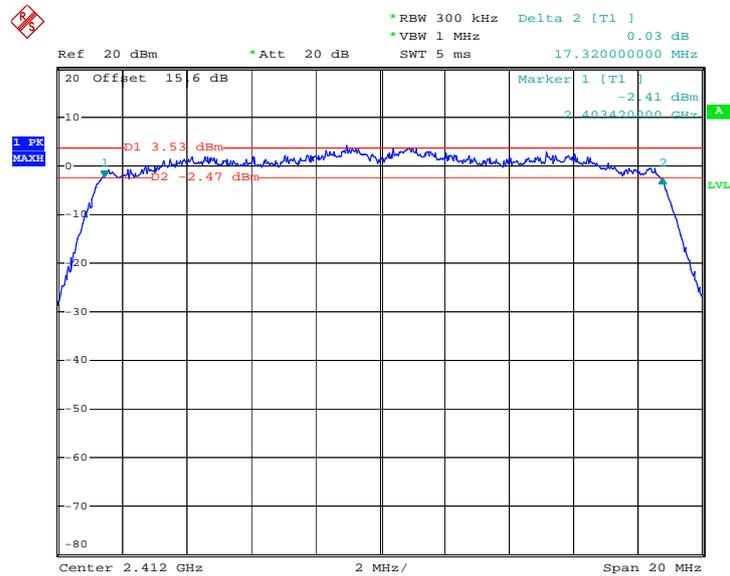
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Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.32	0.5	Pass
06	2437	17.30	0.5	Pass
11	2462	17.36	0.5	Pass

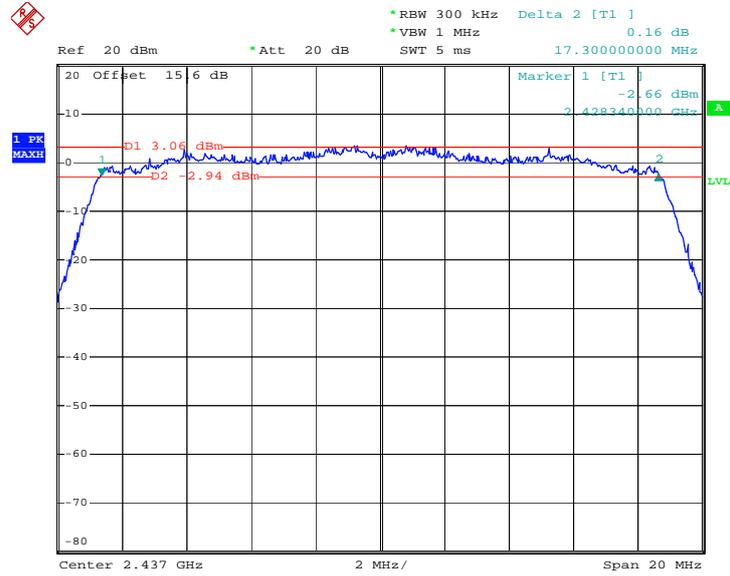
Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



Date: 31.MAY.2012 04:55:29

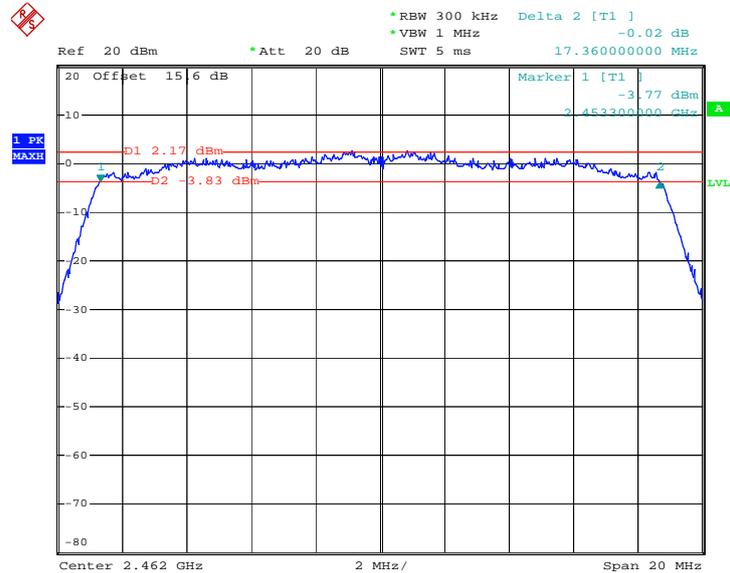


Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



Date: 31.MAY.2012 05:00:00

Mode 9 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 11



Date: 31.MAY.2012 04:48:10

3.2 Output Power Measurement

3.2.1 Limit of 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.

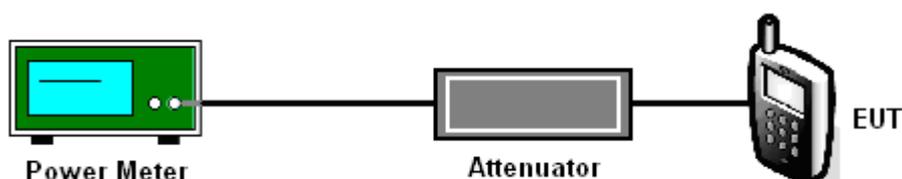
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure 7.2.1.3 Option 3(peak power meter method) of FCC KDB No. 558074 DTS Meas. Guidance DR01.
2. The RF output of EUT was connected to the power meter by a low loss cable
3. Measure the power by power meter.

3.2.4 Test Setup





3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.02	30	Pass
06	2437	17.76	30	Pass
11	2462	16.72	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.43	30	Pass
06	2437	19.26	30	Pass
11	2462	19.16	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.15	30	Pass
06	2437	17.81	30	Pass
11	2462	17.31	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 spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB.

3.3.2 Measuring Instruments

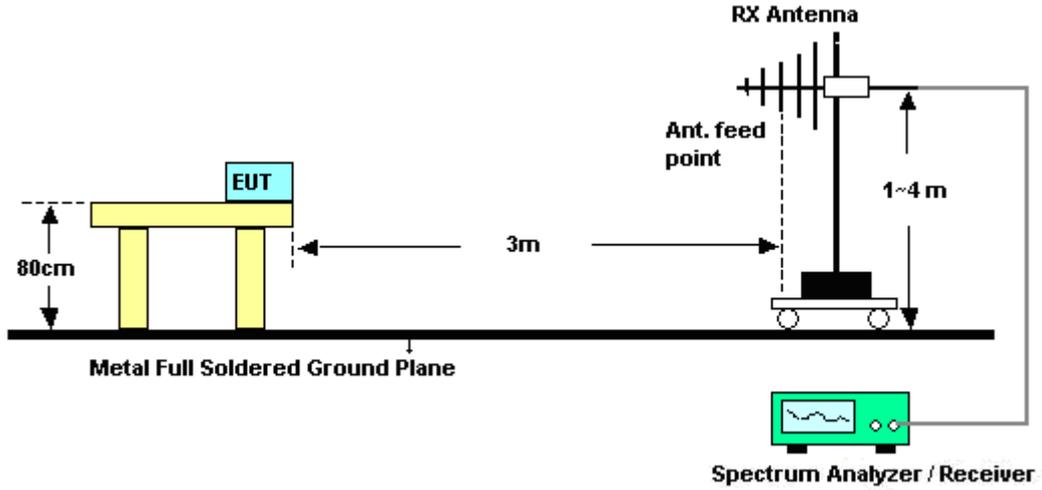
See list of measuring instruments of this test report.

3.3.3 Test Procedures

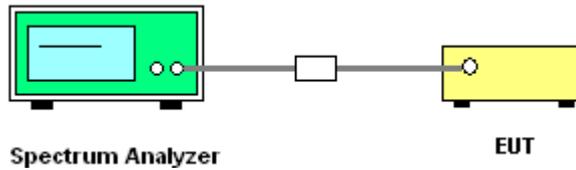
1. The testing follows the guidelines in ANSI C63.4-2003 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01.
2. Conducted emission test: Set RBW = 100 KHz, Video bandwidth (VBW) \geq RBW. Out of the authorized frequency band emissions must be at least 20 dB lower 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. Radiated emission test: Apply to band edge emissions that falling on 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 measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, then modify the unit for continuous operation. Use the settings in this paragraph to correct the reading level by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation per 15.35(b) and (c).

3.3.4 Test Setup

<Radiated Band Edges>



<Conducted Band Edges>





3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	21~22°C
Test Band :	802.11b	Relative Humidity :	46~47%
Test Channel :	01	Test Engineer :	Chenmy Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2384.86	56.84	-17.16	74	54.6	32.83	3.42	34.01	165	100	Peak
2384.86	49.15	-4.85	54	46.91	32.83	3.42	34.01	165	100	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.24	54.65	-19.35	74	52.41	32.83	3.42	34.01	120	160	Peak
2385.24	45.39	-8.61	54	43.15	32.83	3.42	34.01	120	160	Average

Test Mode :	Mode 3	Temperature :	21~22°C
Test Band :	802.11b	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Chenmy Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2489.93	55.71	-18.29	74	53.17	33.05	3.72	34.23	120	232	Peak
2489.93	40.1	-13.9	54	37.56	33.05	3.72	34.23	120	232	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2489.36	53.05	-20.95	74	50.51	33.05	3.72	34.23	150	355	Peak
2489.36	38.52	-15.48	54	35.98	33.05	3.72	34.23	150	355	Average



Test Mode :	Mode 4	Temperature :	21~22°C
Test Band :	802.11g	Relative Humidity :	46~47%
Test Channel :	01	Test Engineer :	Chenmy Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	67.36	-6.64	74	65.08	32.86	3.47	34.05	100	273	Peak
2390	47.76	-6.24	54	45.48	32.86	3.47	34.05	100	273	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	59.66	-14.34	74	57.38	32.86	3.47	34.05	100	119	Peak
2390	43.54	-10.46	54	41.26	32.86	3.47	34.05	100	119	Average

Test Mode :	Mode 6	Temperature :	21~22°C
Test Band :	802.11g	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Chenmy Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2485.94	61.06	-12.94	74	58.57	33.01	3.68	34.2	100	70	Peak
2485.94	45.4	-8.6	54	42.91	33.01	3.68	34.2	100	70	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	59.47	-14.53	74	56.98	33.01	3.68	34.2	100	81	Peak
2483.5	42.68	-11.32	54	40.19	33.01	3.68	34.2	100	81	Average



Test Mode :	Mode 7	Temperature :	21~22°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	46~47%
Test Channel :	01	Test Engineer :	Chenmy Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	59.01	-14.99	74	56.73	32.86	3.47	34.05	100	272	Peak
2390	43.91	-10.09	54	41.63	32.86	3.47	34.05	100	272	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	56.06	-17.94	74	53.78	32.86	3.47	34.05	100	181	Peak
2390	40.93	-13.07	54	38.65	32.86	3.47	34.05	100	181	Average

Test Mode :	Mode 9	Temperature :	21~22°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Chenmy Cheng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.66	55.82	-18.18	74	53.33	33.01	3.68	34.2	100	0	Peak
2483.66	37.68	-16.32	54	35.19	33.01	3.68	34.2	100	0	Average

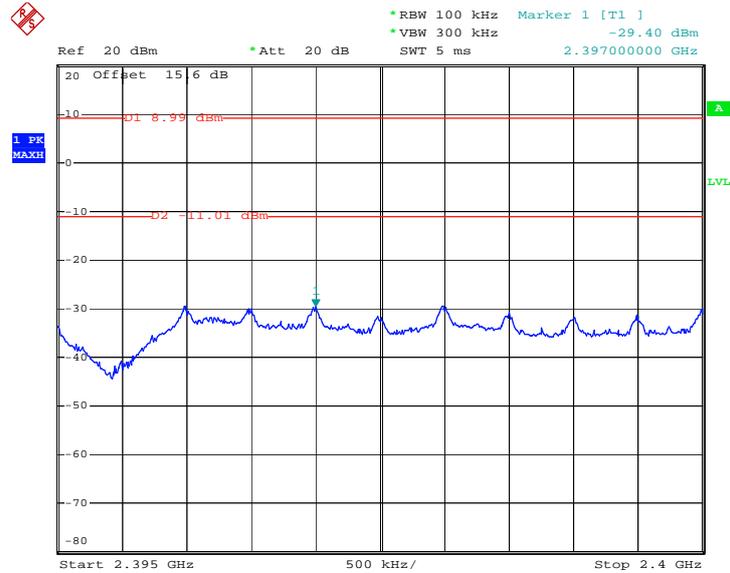
ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2490.31	53.77	-20.23	74	51.23	33.05	3.72	34.23	100	201	Peak
2490.31	40.67	-13.33	54	38.13	33.05	3.72	34.23	100	201	Average



3.3.6 Test Plots of Conducted Band Edges

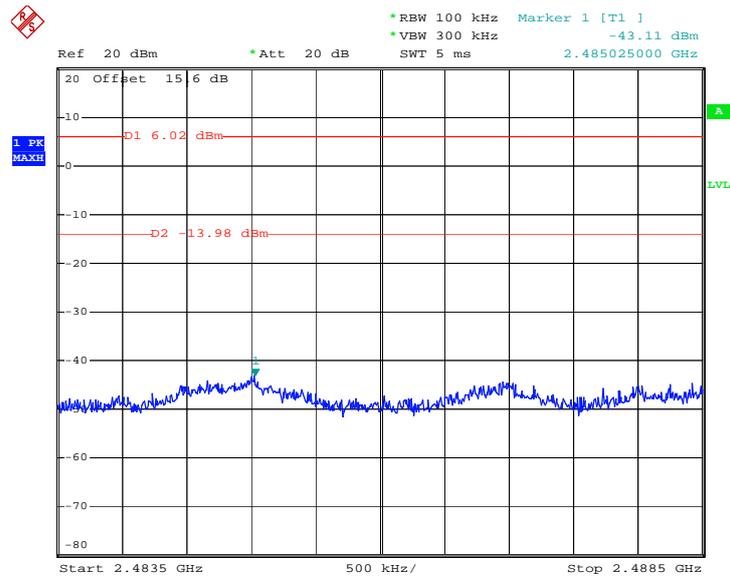
Test Mode :	Mode 1 and 3	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11b Channel 01



Date: 14.JUN.2012 16:52:20

High Band Edge Plot on 802.11b Channel 11

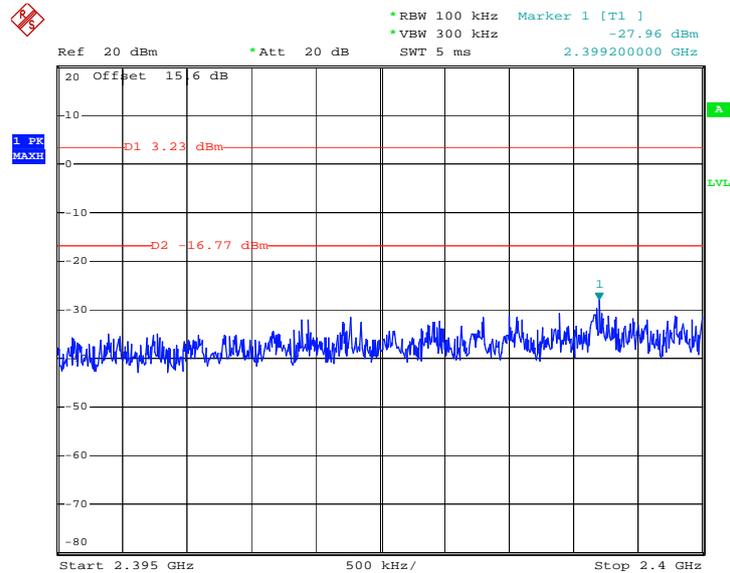


Date: 14.JUN.2012 16:44:24



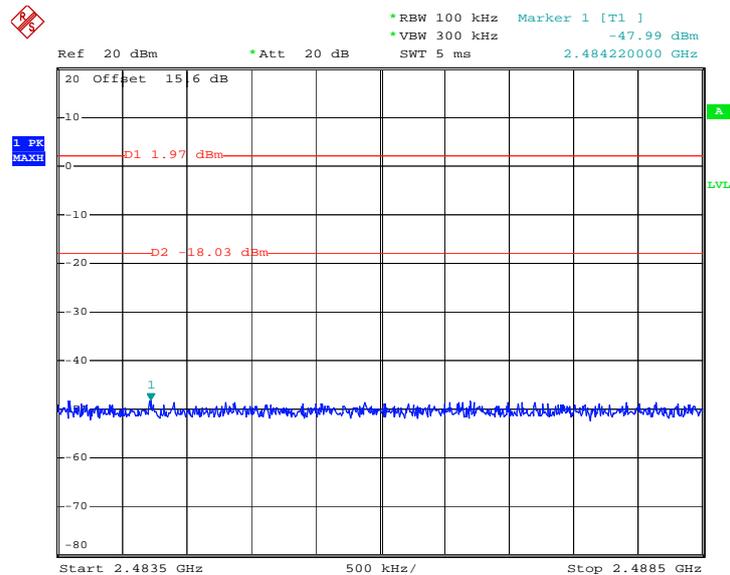
Test Mode :	Mode 4 and 6	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11g Channel 01



Date: 31.MAY.2012 04:34:49

High Band Edge Plot on 802.11g Channel 11

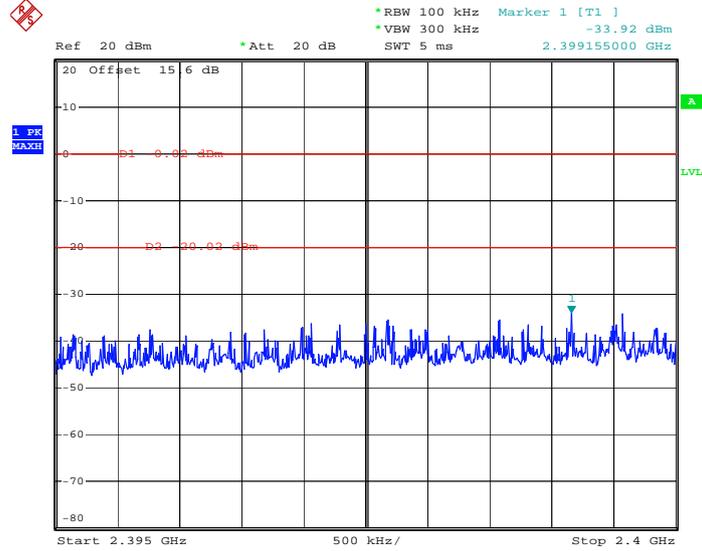


Date: 31.MAY.2012 04:43:21



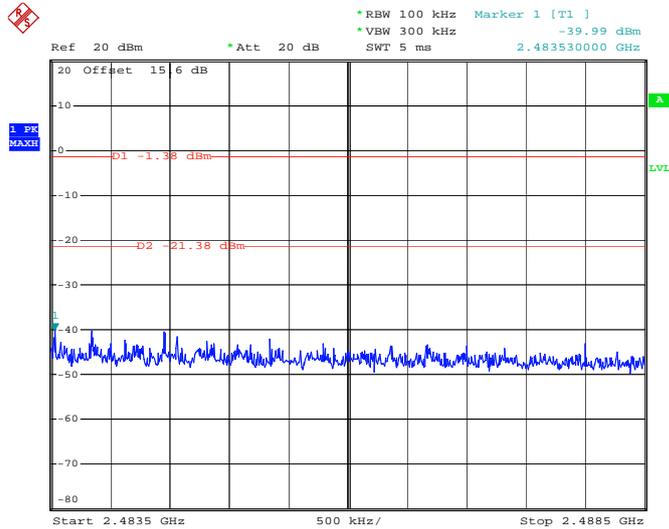
Test Mode :	Mode 7 and 9	Temperature :	23~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11n (BW 20MHz) Channel 01



Date: 31.MAY.2012 05:09:49

High Band Edge Plot on 802.11n (BW 20MHz) Channel 11



Date: 31.MAY.2012 04:53:23

3.4 Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

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

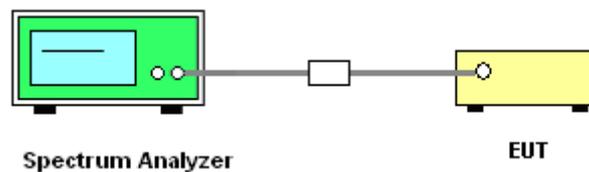
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable. The path loss was compensated to the results for each measurement.
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.

3.4.4 Test Setup

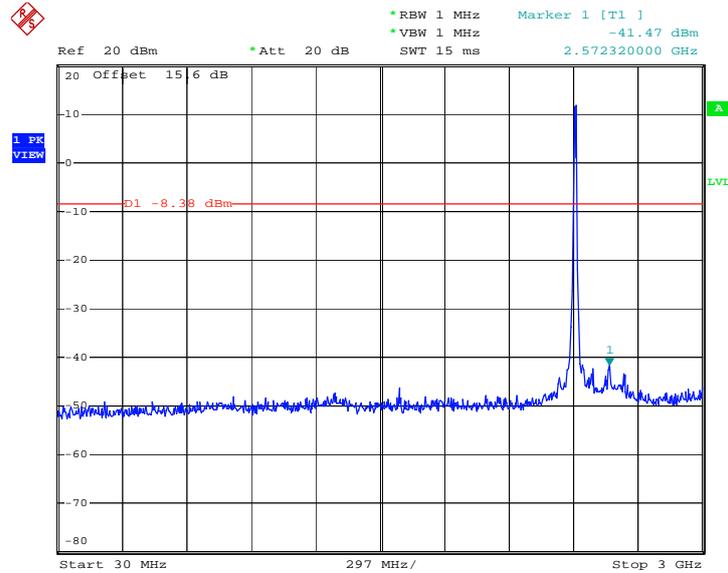




3.4.5 Test Plots of Spurious Emission

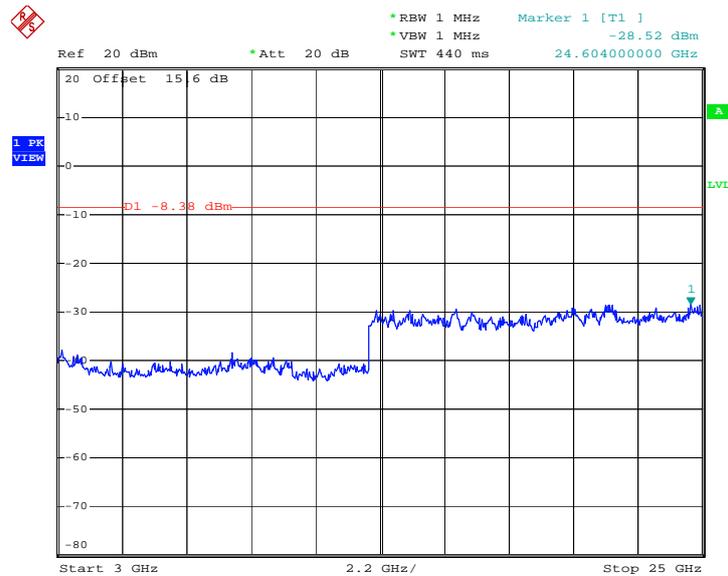
Test Mode :	Mode 1	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.JUN.2012 16:52:45

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

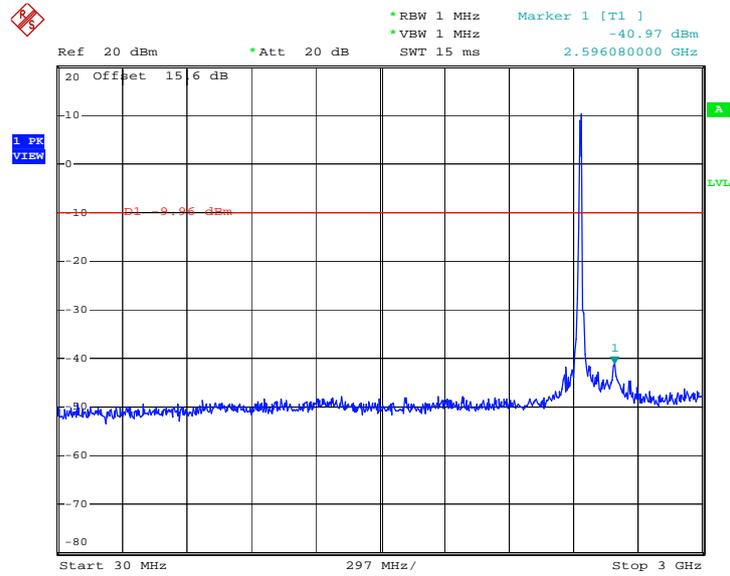


Date: 14.JUN.2012 16:53:04



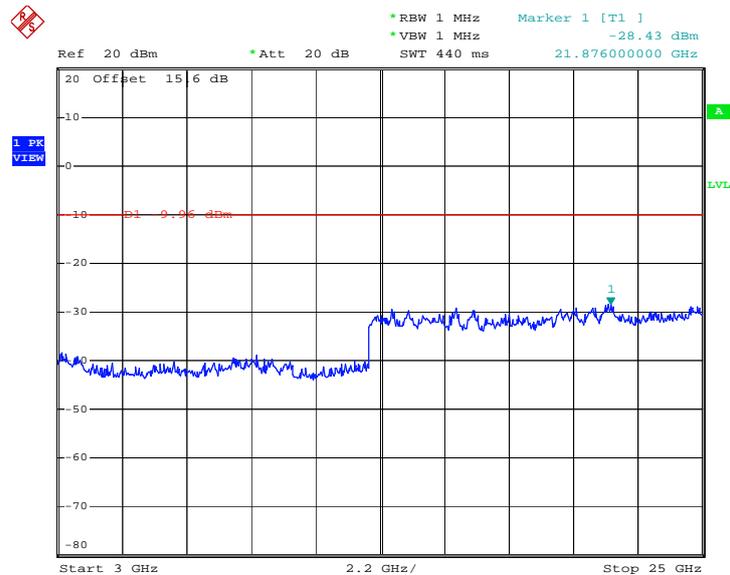
Test Mode :	Mode 2	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.JUN.2012 16:48:05

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

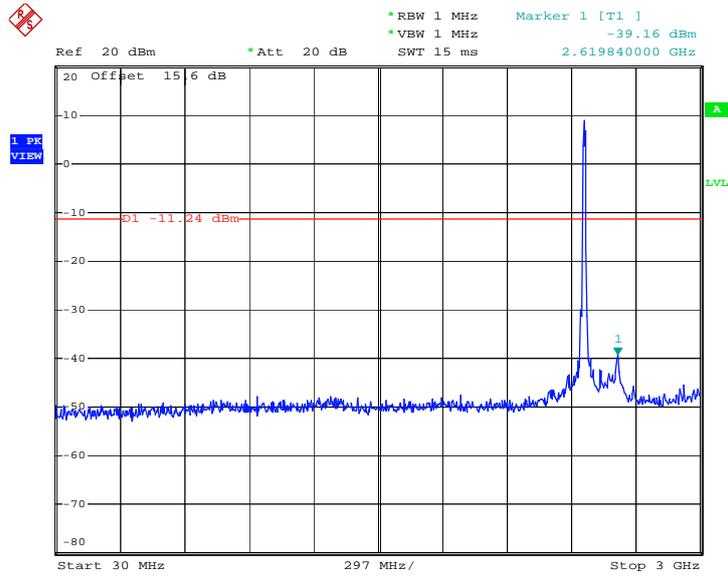


Date: 14.JUN.2012 16:48:23



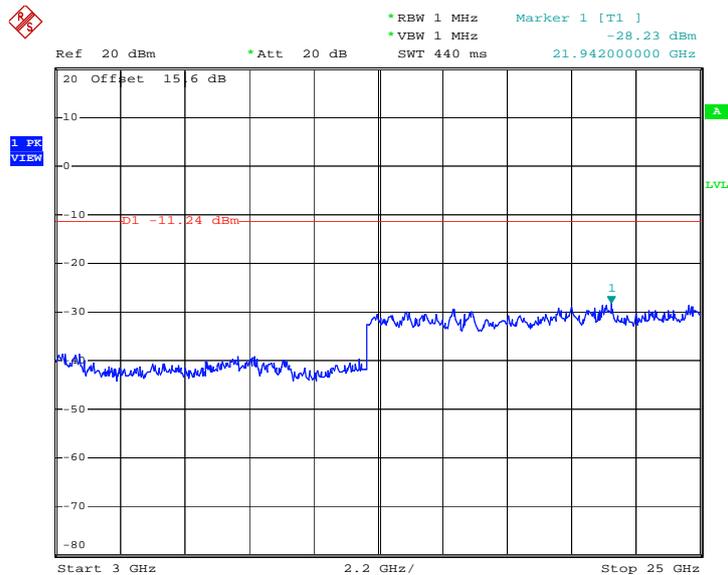
Test Mode :	Mode 3	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.JUN.2012 16:44:51

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

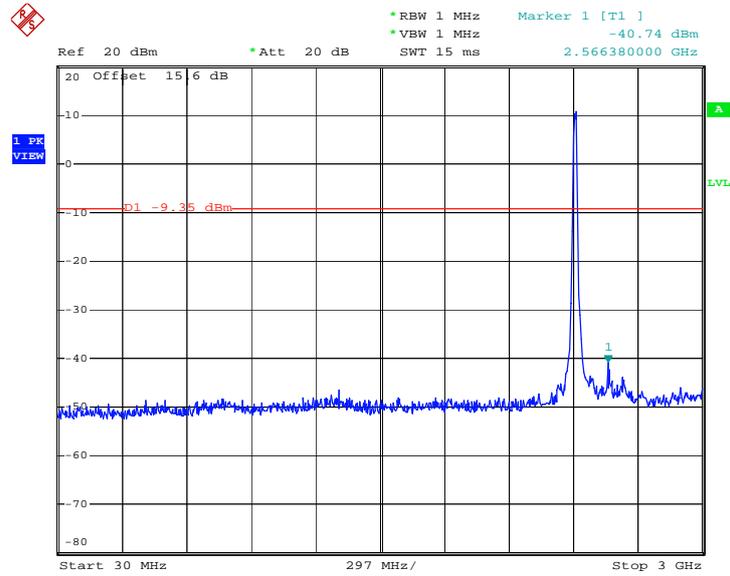


Date: 14.JUN.2012 16:45:09



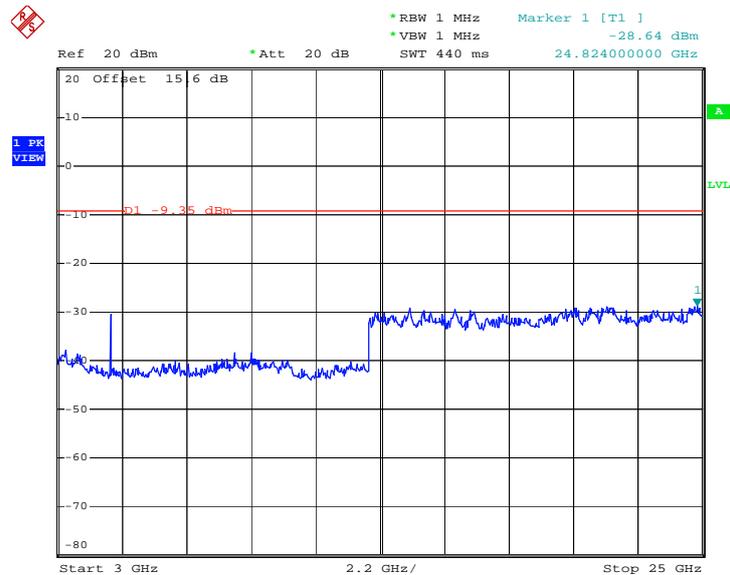
Test Mode :	Mode 4	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAY.2012 04:35:34

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

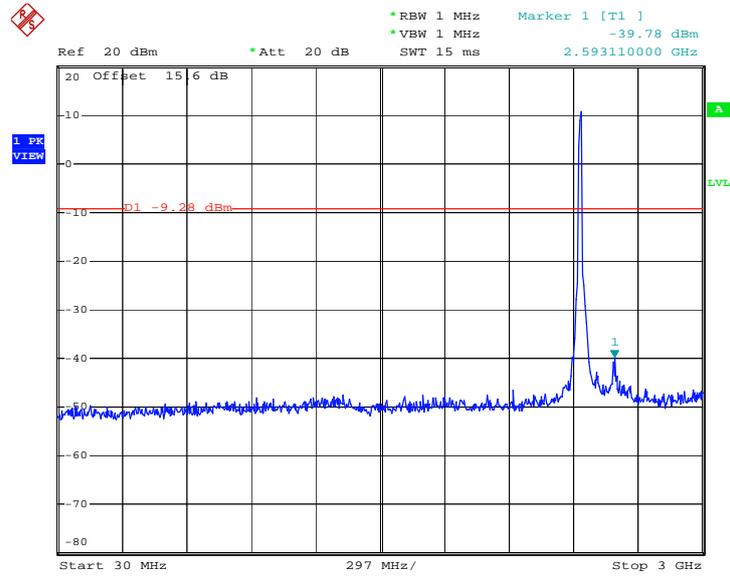


Date: 31.MAY.2012 04:35:52



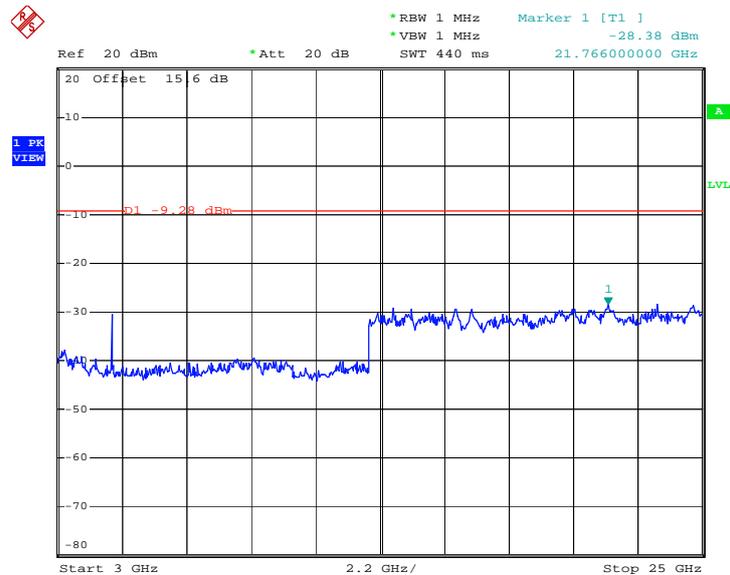
Test Mode :	Mode 5	Temperature :	23~24
Test Band :	802.11g	Relative Humidity :	47~48
Test Channel :	06	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAY.2012 04:39:20

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

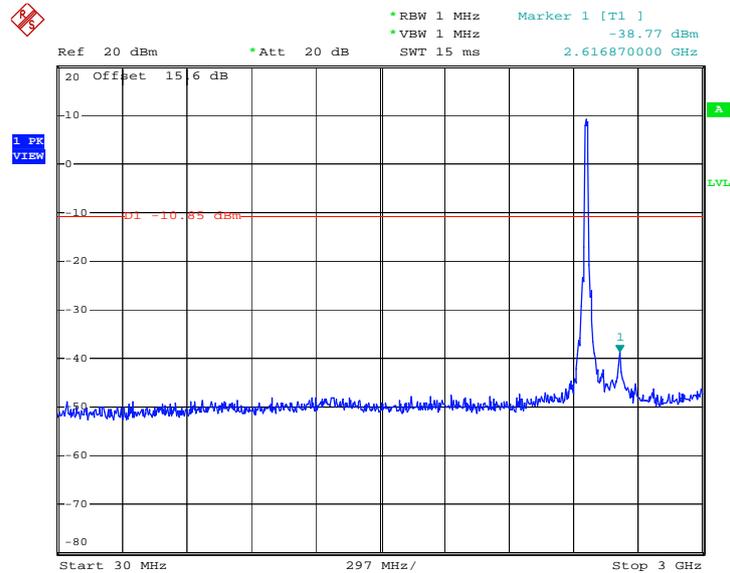


Date: 31.MAY.2012 04:39:38



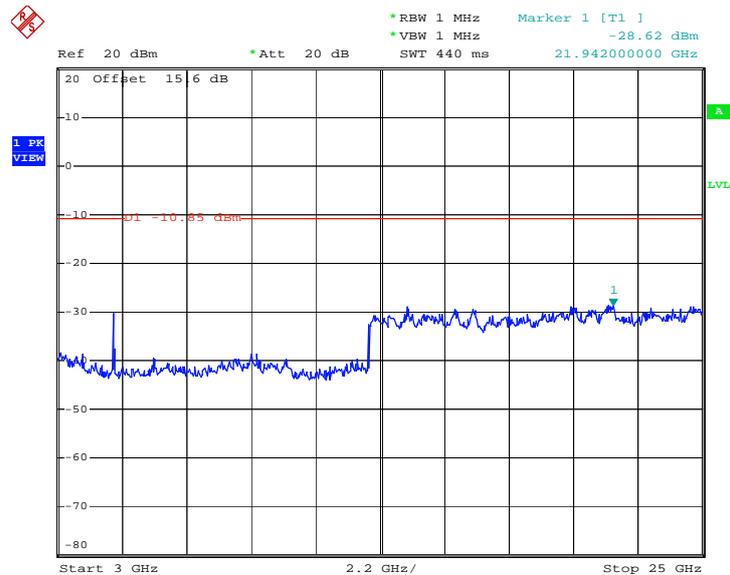
Test Mode :	Mode 6	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAY.2012 04:44:42

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

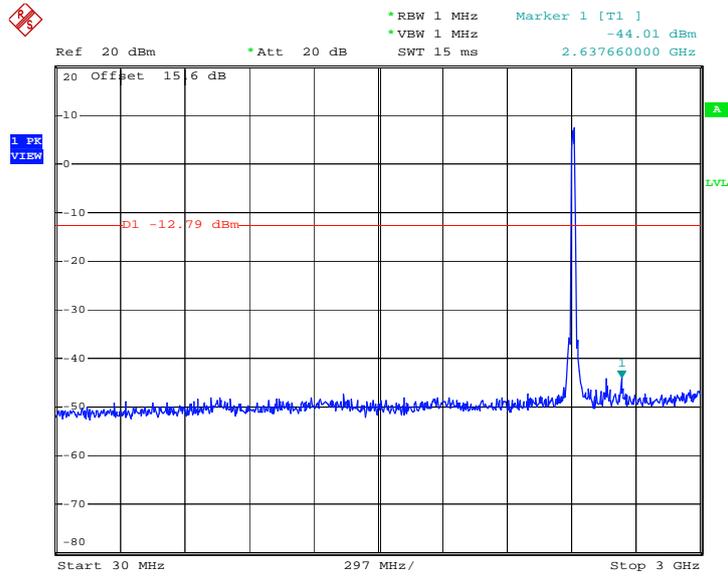


Date: 31.MAY.2012 04:45:00



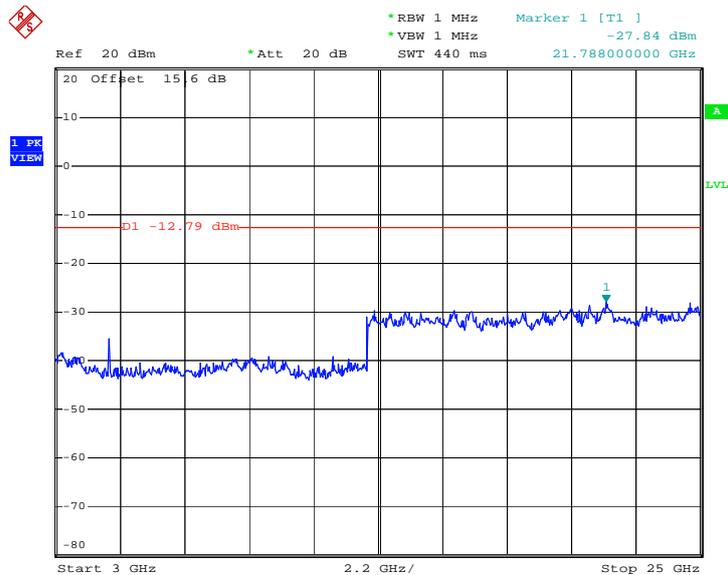
Test Mode :	Mode 7	Temperature :	23~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAY.2012 04:58:14

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

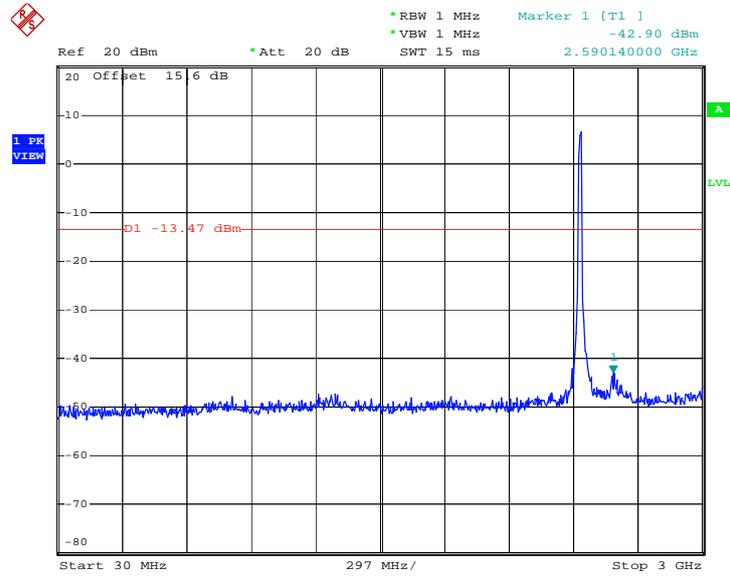


Date: 31.MAY.2012 04:58:32



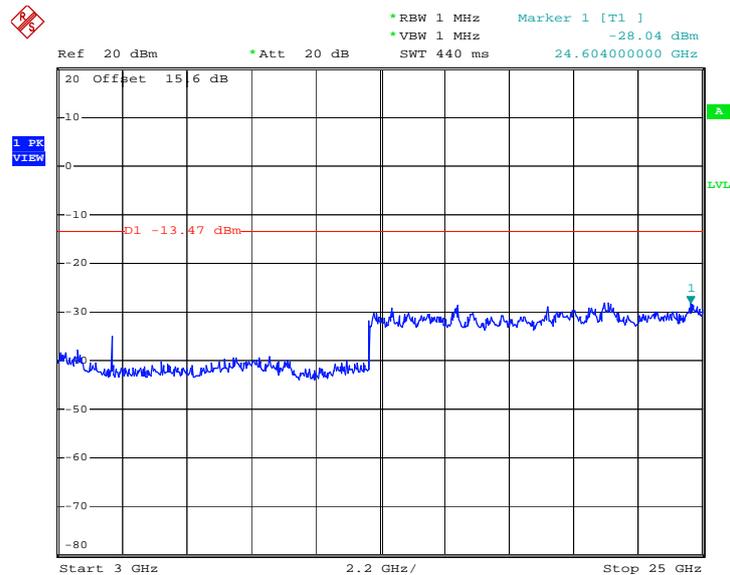
Test Mode :	Mode 8	Temperature :	23~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAY.2012 05:00:48

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

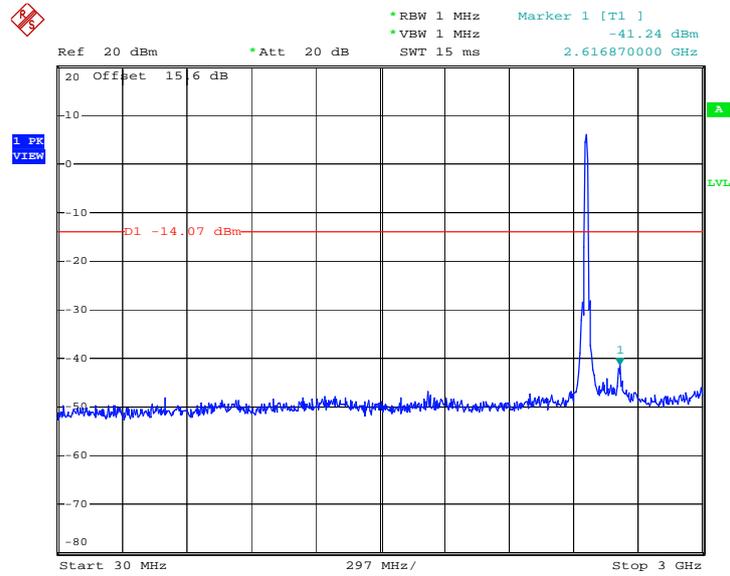


Date: 31.MAY.2012 05:01:07



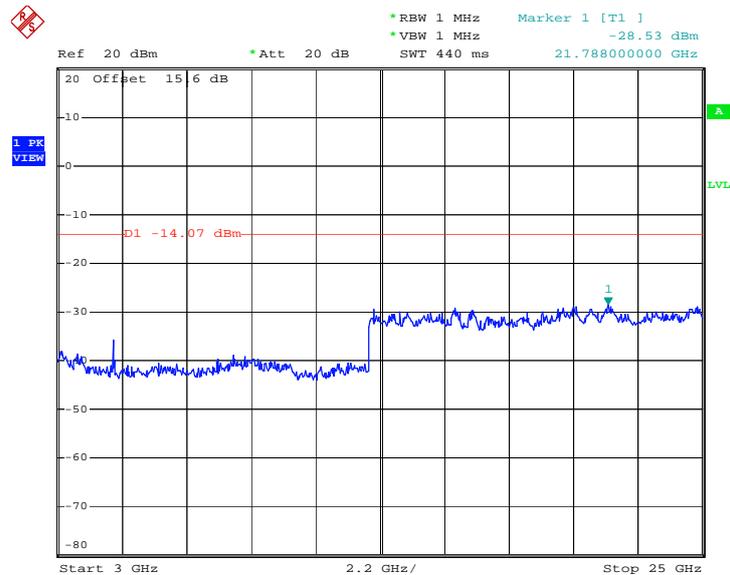
Test Mode :	Mode 9	Temperature :	23~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Lizy Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAY.2012 05:03:59

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 31.MAY.2012 05:04:17

3.5 Power Spectral Density Measurement

3.5.1 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.

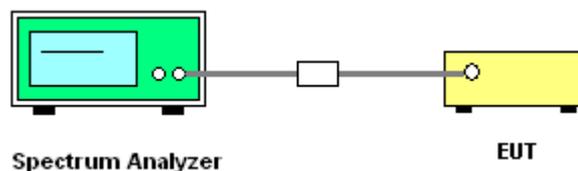
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The testing follows Measurement Procedure 5.3.1 (Peak PSD) of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.
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. Record the measurement data derived from spectrum analyzer.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 KHz. Video bandwidth (VBW) \geq 300 KHz In order to make an accurate measurement, set the span to 5-30% greater than Emission Bandwidth (EBW)
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 in any 100 kHz band segment within the fundamental EBW.
6. 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 $BWCF = 10\log(3\text{ kHz}/100\text{ kHz} = -15.2\text{ dB})$.

3.5.4 Test Setup



3.5.5 Test Result of Power Spectral Density

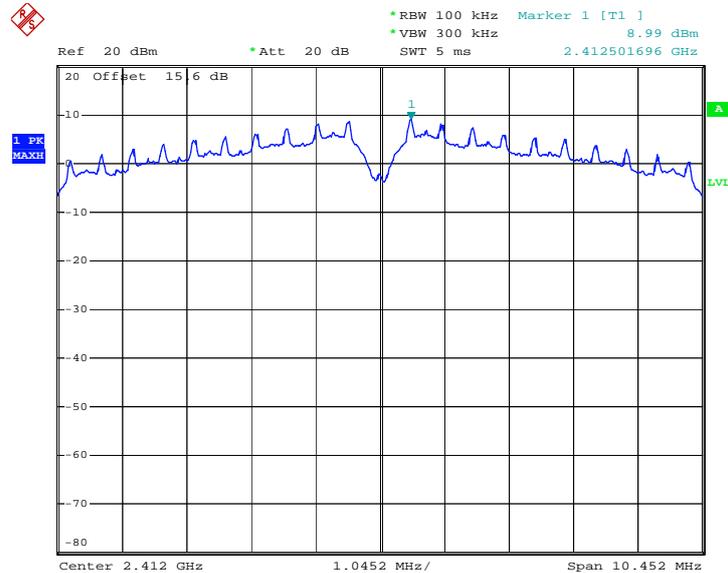
Test Mode :	Mode 1, 2, 3	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	8.99	-6.21	8	Pass
06	2437	7.34	-7.86	8	Pass
11	2462	6.02	-9.18	8	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. BWCF (dB) = $10 \log (3k/100k) = -15.2 \text{ dB}$
3. Power Density/ 3kHz (dBm) = Measured power density/ 100KHz (dBm) + BWCF (dB)

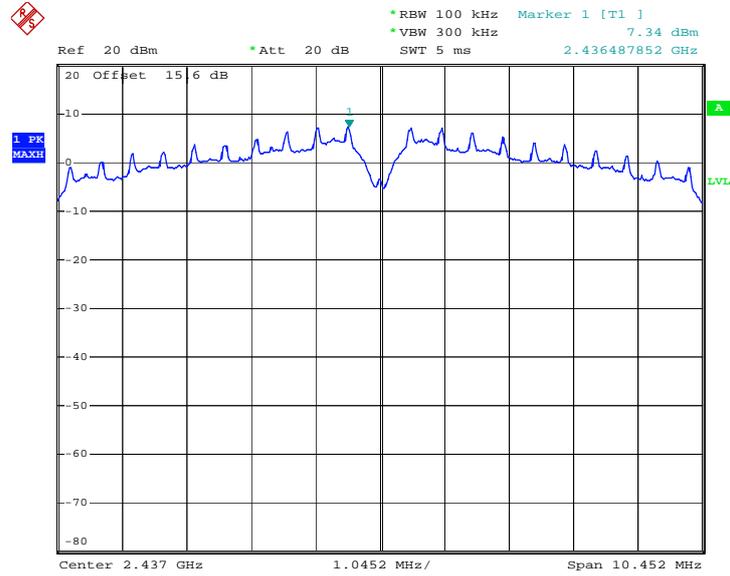
Mode 1 : PSD Plot on 802.11b Channel 01



Date: 14.JUN.2012 16:51:25

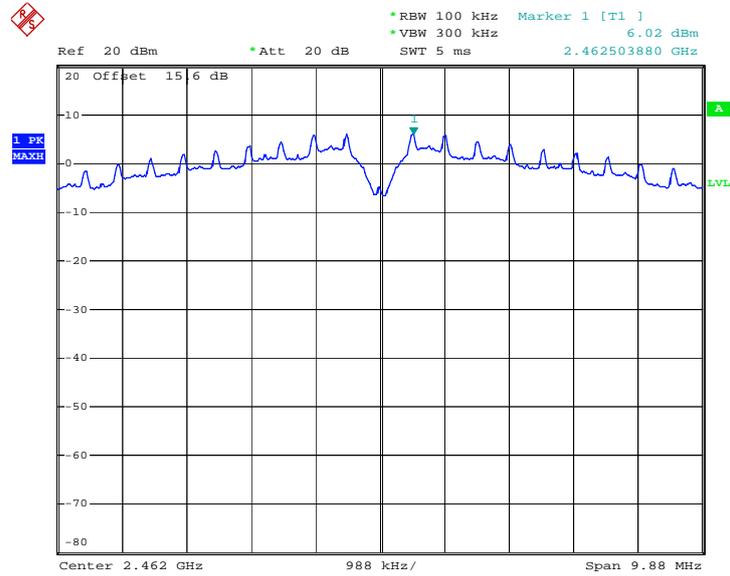


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 14.JUN.2012 16:47:39

Mode 3 : PSD Plot on 802.11b Channel 11



Date: 14.JUN.2012 16:43:36



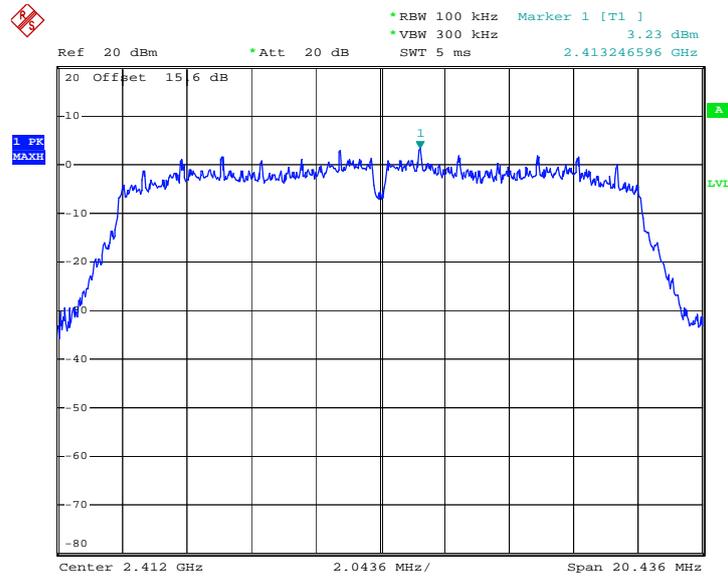
Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	3.23	-11.97	8	Pass
06	2437	2.89	-12.31	8	Pass
11	2462	1.97	-13.23	8	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. BWCF (dB) = $10 \log (3k/100k) = -15.2 \text{ dB}$
3. Power Density/ 3KHz (dBm)= Measured power density/ 100KHz (dBm) + BWCF (dB)

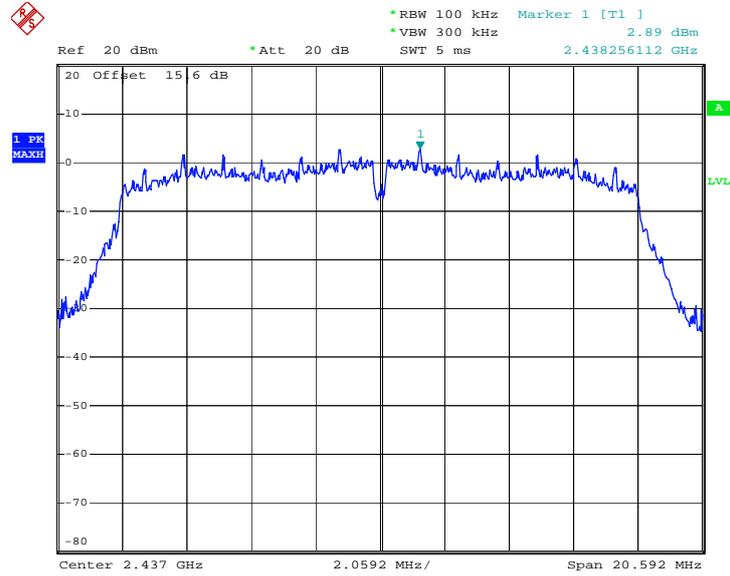
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 31.MAY.2012 04:33:51

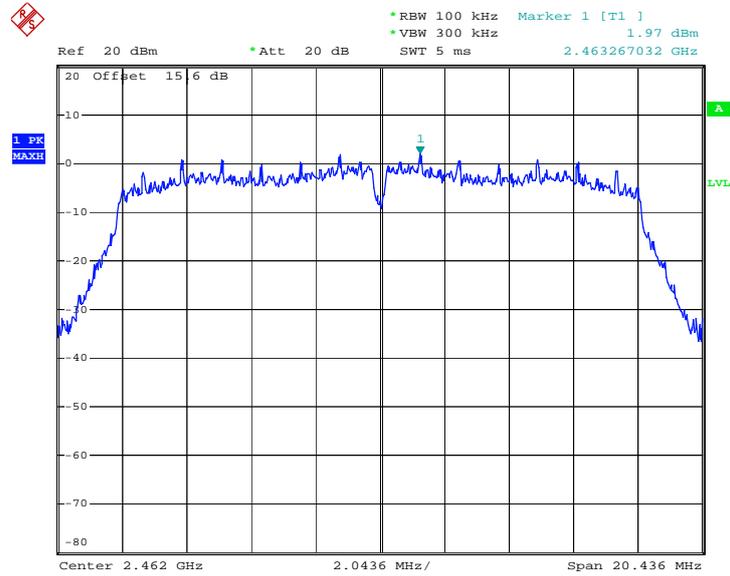


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 31.MAY.2012 04:38:33

Mode 6 : PSD Plot on 802.11g Channel 11



Date: 31.MAY.2012 04:41:47



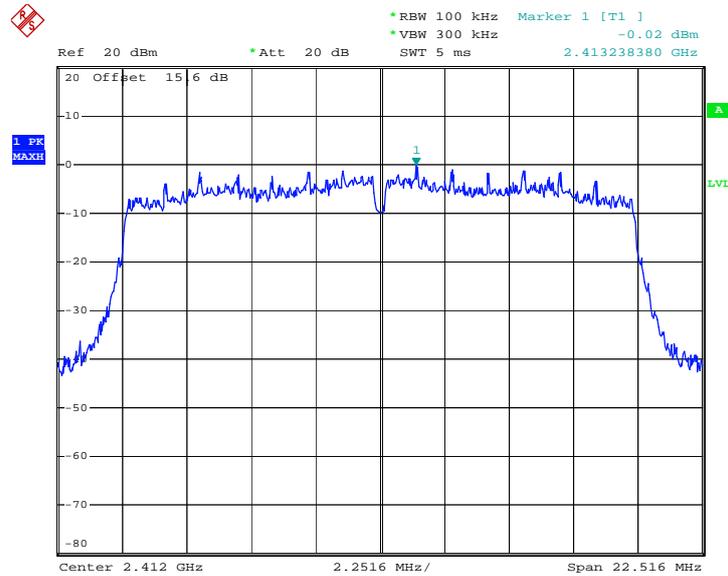
Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-0.02	-15.22	8	Pass
06	2437	-0.18	-15.38	8	Pass
11	2462	-1.38	-16.58	8	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. BWCF (dB) = $10 \log (3k/100k) = -15.2 \text{ dB}$
3. Power Density/ 3KHz (dBm)= Measured power density/ 100KHz (dBm) + BWCF (dB)

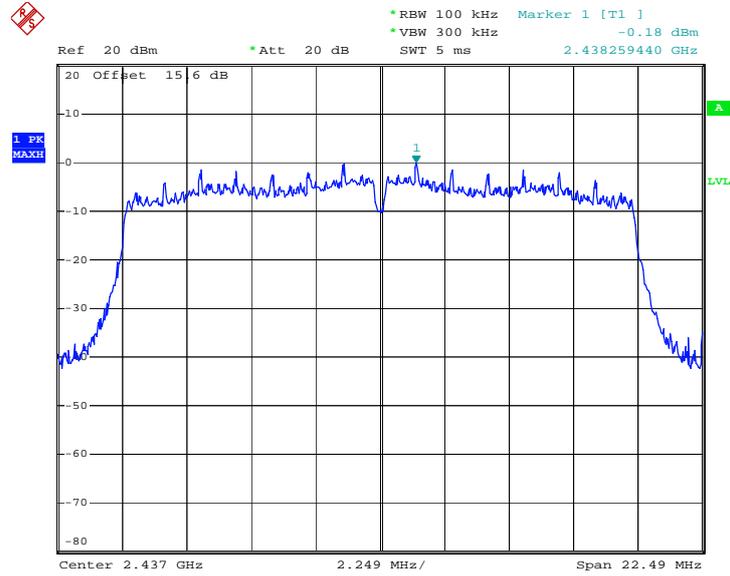
Mode 7 : PSD Plot on 802.11n (BW 20MHz) Channel 01



Date: 31.MAY.2012 05:09:08

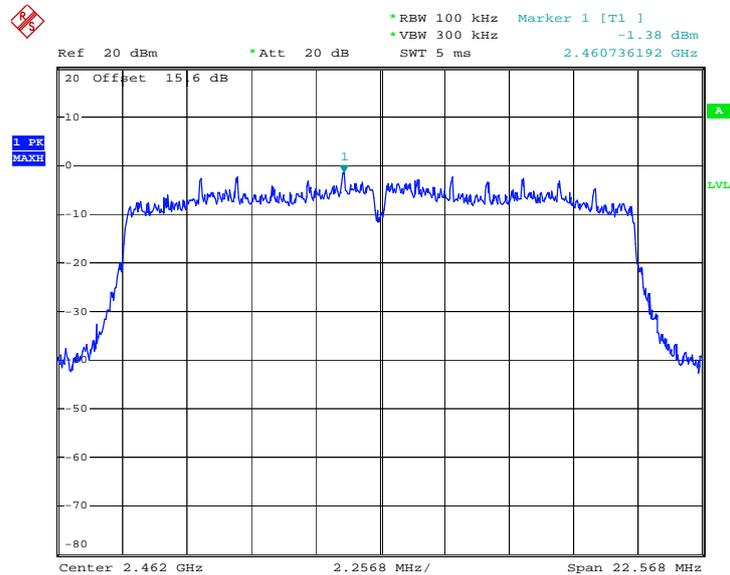


Mode 8 : PSD Plot on 802.11n (BW 20MHz) Channel 06



Date: 31.MAY.2012 05:00:24

Mode 9 : PSD Plot on 802.11n (BW 20MHz) Channel 11



Date: 31.MAY.2012 04:48:38

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.

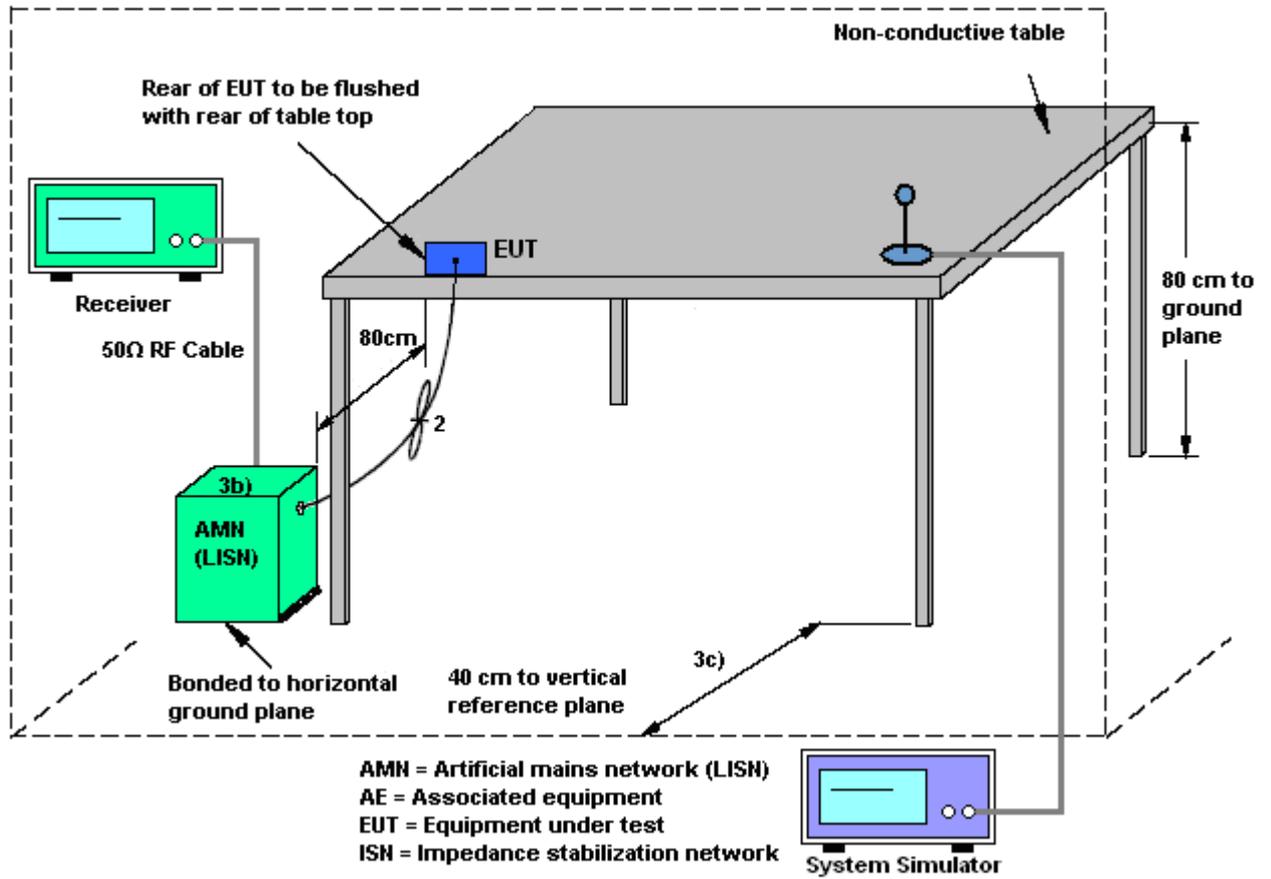
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. 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 with Maximum Hold Mode.

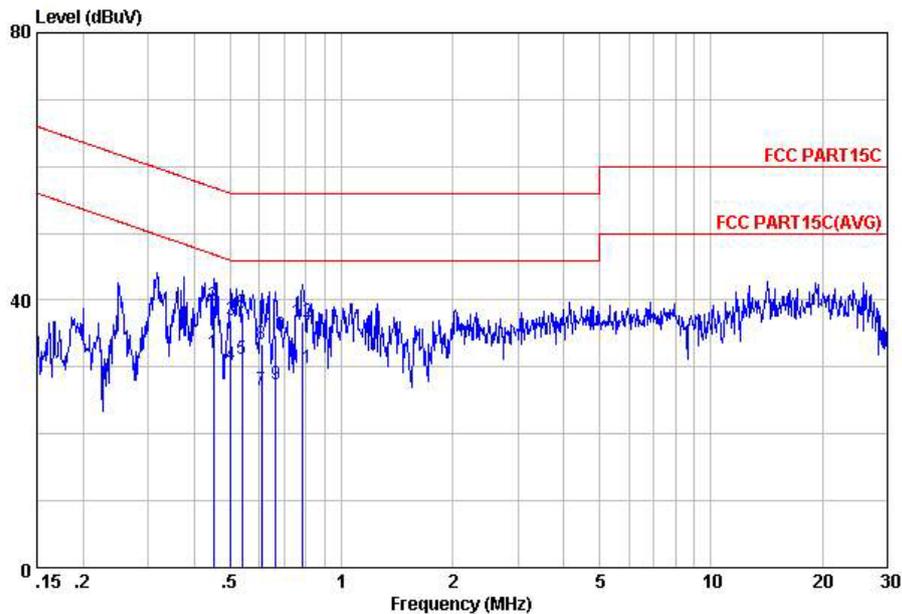
3.6.4 Test Setup





3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	19~20°C
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone + Camera		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

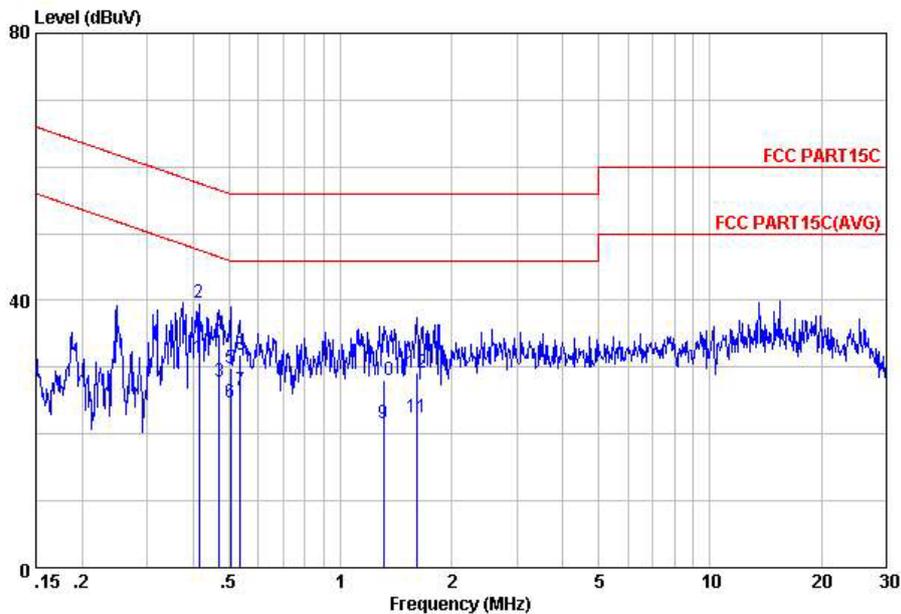


Site : C001-KS
 Condition: FCC PART15C LISN-100807 LINE
 mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.45	32.12	-14.73	46.85	22.00	-0.08	10.20	Average
2	0.45	39.22	-17.63	56.85	29.10	-0.08	10.20	QP
3	0.50	37.03	-18.97	56.00	26.90	-0.08	10.21	QP
4	0.50	30.33	-15.67	46.00	20.20	-0.08	10.21	Average
5	0.54	31.23	-14.77	46.00	21.10	-0.08	10.21	Average
6	0.54	38.03	-17.97	56.00	27.90	-0.08	10.21	QP
7	0.61	26.54	-19.46	46.00	16.41	-0.09	10.22	Average
8	0.61	33.44	-22.56	56.00	23.31	-0.09	10.22	QP
9	0.66	27.44	-18.56	46.00	17.30	-0.09	10.23	Average
10	0.66	34.84	-21.16	56.00	24.70	-0.09	10.23	QP
11	0.79	29.75	-16.25	46.00	19.60	-0.09	10.24	Average
12	0.79	36.75	-19.25	56.00	26.60	-0.09	10.24	QP



Test Mode :	Mode 1	Temperature :	19~20°C
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone + Camera		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
 Condition: FCC PART15C LISN-100807 NEUTRAL
 mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.41	31.51	-16.04	47.55	21.40	-0.08	10.19	Average
2	0.41	39.61	-17.94	57.55	29.50	-0.08	10.19	QP
3	0.47	27.92	-18.57	46.49	17.80	-0.08	10.20	Average
4	0.47	35.02	-21.47	56.49	24.90	-0.08	10.20	QP
5	0.50	29.93	-26.07	56.00	19.80	-0.08	10.21	QP
6	0.50	24.83	-21.17	46.00	14.70	-0.08	10.21	Average
7	0.53	26.53	-19.47	46.00	16.40	-0.08	10.21	Average
8	0.53	31.93	-24.07	56.00	21.80	-0.08	10.21	QP
9	1.31	21.69	-24.31	46.00	11.50	-0.10	10.29	Average
10	1.31	27.99	-28.01	56.00	17.80	-0.10	10.29	QP
11	1.61	22.60	-23.40	46.00	12.39	-0.10	10.31	Average
12	1.61	29.20	-26.80	56.00	18.99	-0.10	10.31	QP



3.7 Radiated Emission Measurement

3.7.1 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

3.7.2 Measuring Instruments

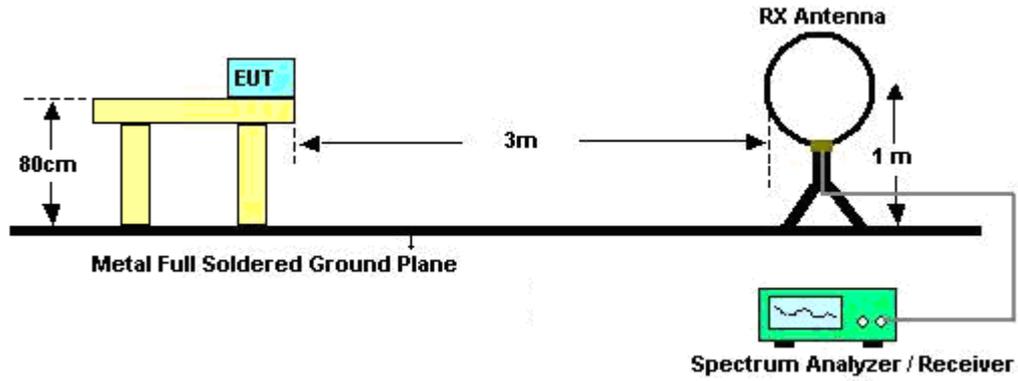
See list of measuring instruments of this test report.

3.7.3 Test Procedures

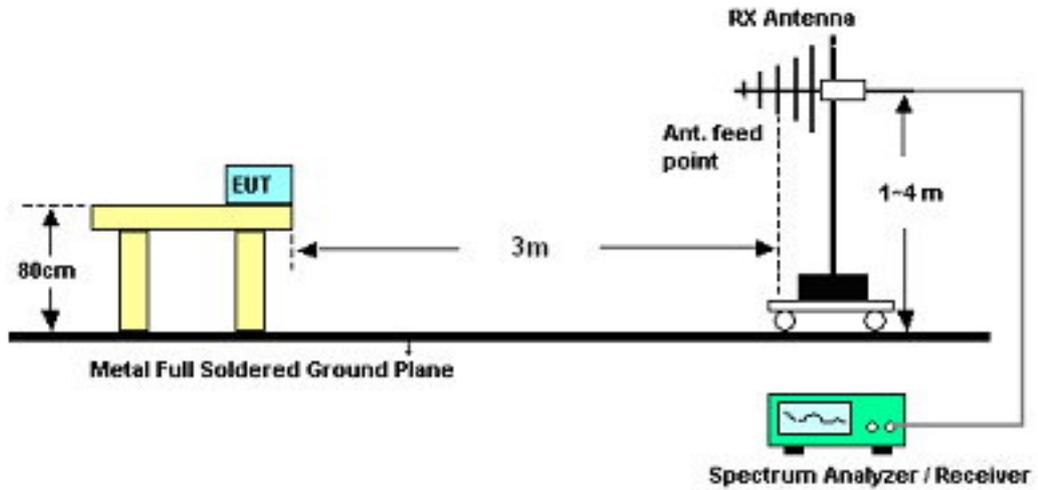
1. The testing follows TCB Workshop 2012, April and fulfills ANSI C63.4-2003 test site requirement. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
 2. The EUT was placed on a turntable with 0.8 meter above ground.
 3. The EUT was set 3 meters from the interference receiving Antenna, which was mounted on the top of a variable height Antenna tower.
 4. The table was rotated 360 degrees to determine the position of the highest radiation.
 5. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set 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;
 - (3) Measurement above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB per decade from 3m to 1m.
Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB)
 6. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
1. If the emission level of the EUT measured by the peak detector is more than 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

3.7.4 Test Setup

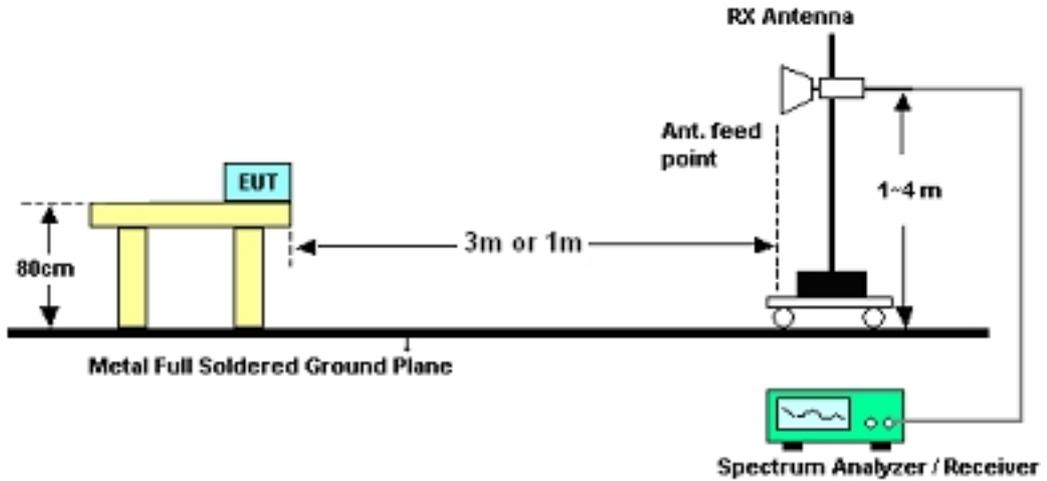
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.7.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.



3.7.6 Test Result of Radiated Emission (30 MHz ~ 10th Harmonic)

Test Mode :	Mode 1	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	22.02	-17.98	40	33.84	18	0.26	30.08	-	-	Peak
126.03	21.36	-22.14	43.5	39.14	11.74	0.46	29.98	-	-	Peak
151.25	23.21	-20.29	43.5	42.71	9.96	0.51	29.97	-	-	Peak
288.02	21.76	-24.24	46	38.18	12.82	0.71	29.95	-	-	Peak
951.5	31.94	-14.06	46	39.41	20.74	1.33	29.54	100	28	Peak
960.23	28.42	-25.58	54	35.83	20.79	1.34	29.54	-	-	Peak
2384.86	56.84	-17.16	74	54.6	32.83	3.42	34.01	165	100	Peak
2384.86	49.15	-4.85	54	46.91	32.83	3.42	34.01	165	100	Average
2412	104.64	-	-	102.31	32.89	3.52	34.08	100	270	Peak
2412	98.15	-	-	95.82	32.89	3.52	34.08	100	270	Average
2489.93	52.89	-21.11	74	50.35	33.05	3.72	34.23	100	0	Peak
2489.93	37.29	-16.71	54	34.75	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 1	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.43	-9.57	40	42.25	18	0.26	30.08	100	109	Peak
47.46	28.15	-11.85	40	49.51	8.5	0.27	30.13	-	-	Peak
60.07	24.58	-15.42	40	49.11	5.3	0.31	30.14	-	-	Peak
83.35	24.24	-15.76	40	46.57	7.34	0.36	30.03	-	-	Peak
600.36	26	-20	46	35.95	18.6	1.07	29.62	-	-	Peak
946.65	28.89	-17.11	46	36.38	20.72	1.33	29.54	-	-	Peak
2385.24	54.65	-19.35	74	52.41	32.83	3.42	34.01	120	160	Peak
2385.24	45.39	-8.61	54	43.15	32.83	3.42	34.01	120	160	Average
2412	101.77	-	-	99.44	32.89	3.52	34.08	100	120	Peak
2412	94.85	-	-	92.52	32.89	3.52	34.08	100	120	Average
2488.03	52.98	-21.02	74	50.44	33.05	3.72	34.23	100	220	Peak
2488.03	41.47	-12.53	54	38.93	33.05	3.72	34.23	100	220	Average
4826	53.54	-20.46	74	45.67	35.17	4.97	32.27	100	288	Peak
4826	48.8	-5.2	54	40.93	35.17	4.97	32.27	100	288	Average



Test Mode :	Mode 2	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	23.3	-16.7	40	35.12	18	0.26	30.08	-	-	Peak
89.17	20.85	-22.65	43.5	41.84	8.61	0.39	29.99	-	-	Peak
127.97	21.11	-22.39	43.5	38.9	11.72	0.47	29.98	-	-	Peak
149.31	22.15	-21.35	43.5	41.54	10.07	0.51	29.97	-	-	Peak
288.02	22.36	-23.64	46	38.78	12.82	0.71	29.95	-	-	Peak
951.5	30.77	-15.23	46	38.24	20.74	1.33	29.54	100	261	Peak
2363.58	53.07	-20.93	74	50.86	32.81	3.38	33.98	100	0	Peak
2363.58	37.9	-16.1	54	35.69	32.81	3.38	33.98	100	0	Average
2437	104.93	-	-	102.53	32.95	3.6	34.15	130	250	Peak
2437	92.98	-	-	90.58	32.95	3.6	34.15	130	250	Average
2484.61	37.96	-16.04	54	35.47	33.01	3.68	34.2	150	235	Average
2484.61	51.33	-22.67	74	48.84	33.01	3.68	34.2	150	235	Peak



Test Mode :	Mode 2	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	29.98	-10.02	40	41.8	18	0.26	30.08	100	22	Peak
47.46	27.65	-12.35	40	49.01	8.5	0.27	30.13	-	-	Peak
83.35	26.35	-13.65	40	48.68	7.34	0.36	30.03	-	-	Peak
600.36	25.86	-20.14	46	35.81	18.6	1.07	29.62	-	-	Peak
946.65	29.02	-16.98	46	36.51	20.72	1.33	29.54	-	-	Peak
960.23	29.26	-24.74	54	36.67	20.79	1.34	29.54	-	-	Peak
2388.66	38.14	-15.86	54	35.86	32.86	3.47	34.05	100	0	Average
2388.66	49.7	-24.3	74	47.42	32.86	3.47	34.05	100	0	Peak
2437	99.74	-	-	97.34	32.95	3.6	34.15	100	120	Peak
2437	92.77	-	-	90.37	32.95	3.6	34.15	100	120	Average
2492.21	50.56	-23.44	74	48.02	33.05	3.72	34.23	150	0	Peak
2492.21	37.41	-16.59	54	34.87	33.05	3.72	34.23	150	0	Average
4874	51.63	-22.37	74	43.74	35.18	4.98	32.27	100	290	Peak
4874	48.05	-5.95	54	40.16	35.18	4.98	32.27	100	290	Average



Test Mode :	Mode 3	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	23.32	-16.68	40	35.14	18	0.26	30.08	100	223	Peak
86.26	20.33	-19.67	40	42.08	7.89	0.37	30.01	-	-	Peak
167.74	22.9	-20.6	43.5	43.01	9.27	0.54	29.92	-	-	Peak
288.02	21.36	-24.64	46	37.78	12.82	0.71	29.95	-	-	Peak
946.65	28.58	-17.42	46	36.07	20.72	1.33	29.54	-	-	Peak
960.23	27.83	-26.17	54	35.24	20.79	1.34	29.54	-	-	Peak
2386.19	52.42	-21.58	74	50.14	32.86	3.47	34.05	100	155	Peak
2386.19	38.12	-15.88	54	35.84	32.86	3.47	34.05	100	155	Average
2462	106.1	-	-	103.65	32.98	3.64	34.17	100	275	Peak
2462	98.92	-	-	96.47	32.98	3.64	34.17	100	275	Average
2489.93	55.71	-18.29	74	53.17	33.05	3.72	34.23	120	232	Peak
2489.93	40.1	-13.9	54	37.56	33.05	3.72	34.23	120	232	Average



Test Mode :	Mode 3	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	28.26	-11.74	40	40.08	18	0.26	30.08	100	312	Peak
47.46	27.11	-12.89	40	48.47	8.5	0.27	30.13	-	-	Peak
84.32	22.93	-17.07	40	45.05	7.53	0.37	30.02	-	-	Peak
175.5	20.63	-22.87	43.5	41.17	8.8	0.55	29.89	-	-	Peak
935.98	26.93	-19.07	46	34.47	20.67	1.32	29.53	-	-	Peak
951.5	31.5	-14.5	46	38.97	20.74	1.33	29.54	-	-	Peak
2386.19	50.25	-23.75	74	47.97	32.86	3.47	34.05	100	259	Peak
2386.19	37.15	-16.85	54	34.87	32.86	3.47	34.05	100	259	Average
2462	100.56	-	-	98.11	32.98	3.64	34.17	100	123	Peak
2462	93.26	-	-	90.81	32.98	3.64	34.17	100	123	Average
2489.36	53.05	-20.95	74	50.51	33.05	3.72	34.23	150	355	Peak
2489.36	38.52	-15.48	54	35.98	33.05	3.72	34.23	150	355	Average



Test Mode :	Mode 4	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.85	23.4	-16.6	40	38.16	15.1	0.23	30.09	-	-	Peak
150.28	24.3	-19.2	43.5	43.76	10	0.51	29.97	-	-	Peak
263.77	23.05	-22.95	46	40.01	12.23	0.68	29.87	-	-	Peak
297.72	23.42	-22.58	46	39.68	12.97	0.72	29.95	-	-	Peak
939.86	28.43	-17.57	46	35.94	20.69	1.33	29.53	-	-	Peak
951.5	30.39	-15.61	46	37.86	20.74	1.33	29.54	100	301	Peak
2390	67.36	-6.64	74	65.08	32.86	3.47	34.05	100	273	Peak
2390	47.76	-6.24	54	45.48	32.86	3.47	34.05	100	273	Average
2412	104.94	-	-	102.61	32.89	3.52	34.08	100	273	Peak
2412	78.55	-	-	76.22	32.89	3.52	34.08	100	273	Average
2495.06	52.13	-21.87	74	49.59	33.05	3.72	34.23	100	206	Peak
2495.06	38.82	-15.18	54	36.28	33.05	3.72	34.23	100	206	Average



Test Mode :	Mode 4	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	27.6	-12.4	40	39.42	18	0.26	30.08	100	0	Peak
47.46	25.51	-14.49	40	46.87	8.5	0.27	30.13	-	-	Peak
63.95	25.13	-14.87	40	49.71	5.22	0.32	30.12	-	-	Peak
88.2	23.56	-19.94	43.5	44.88	8.3	0.38	30	-	-	Peak
943.74	27.57	-18.43	46	35.06	20.71	1.33	29.53	-	-	Peak
951.5	30.95	-15.05	46	38.42	20.74	1.33	29.54	-	-	Peak
2390	59.66	-14.34	74	57.38	32.86	3.47	34.05	100	119	Peak
2390	43.54	-10.46	54	41.26	32.86	3.47	34.05	100	119	Average
2412	98.32	-	-	95.99	32.89	3.52	34.08	100	120	Peak
2412	73.67	-	-	71.34	32.89	3.52	34.08	100	120	Average
2489.17	50.37	-23.63	74	47.83	33.05	3.72	34.23	100	0	Peak
2489.17	38.36	-15.64	54	35.82	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 5	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	22.07	-17.93	40	33.89	18	0.26	30.08	-	-	Peak
128.94	23.57	-19.93	43.5	41.37	11.71	0.47	29.98	-	-	Peak
166.77	23.15	-20.35	43.5	43.22	9.31	0.54	29.92	-	-	Peak
288.02	23.16	-22.84	46	39.58	12.82	0.71	29.95	-	-	Peak
946.65	29.99	-16.01	46	37.48	20.72	1.33	29.54	100	226	Peak
960.23	29.77	-24.23	54	37.18	20.79	1.34	29.54	-	-	Peak
2389.04	57.05	-16.95	74	54.77	32.86	3.47	34.05	100	61	Peak
2389.04	40.45	-13.55	54	38.17	32.86	3.47	34.05	100	61	Average
2437	103.36	-	-	100.96	32.95	3.6	34.15	100	273	Peak
2437	77.21	-	-	74.81	32.95	3.6	34.15	100	273	Average
2484.61	53.4	-20.6	74	50.91	33.01	3.68	34.2	100	15	Peak
2484.61	39.34	-14.66	54	36.85	33.01	3.68	34.2	100	15	Average



Test Mode :	Mode 5	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	27.28	-12.72	40	39.1	18	0.26	30.08	100	19	Peak
47.46	26.09	-13.91	40	47.45	8.5	0.27	30.13	-	-	Peak
63.95	24.5	-15.5	40	49.08	5.22	0.32	30.12	-	-	Peak
273.47	23	-23	46	39.76	12.47	0.69	29.92	-	-	Peak
943.74	31.57	-14.43	46	39.06	20.71	1.33	29.53	-	-	Peak
960.23	30.53	-23.47	54	37.94	20.79	1.34	29.54	-	-	Peak
2367.95	50.23	-23.77	74	48.02	32.81	3.38	33.98	100	105	Peak
2367.95	37.85	-16.15	54	35.64	32.81	3.38	33.98	100	105	Average
2437	99.06	-	-	96.66	32.95	3.6	34.15	100	261	Peak
2437	73.72	-	-	71.32	32.95	3.6	34.15	100	261	Average
2494.3	50.45	-23.55	74	47.91	33.05	3.72	34.23	100	0	Peak
2494.3	37.7	-16.3	54	35.16	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 6	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	21.68	-18.32	40	33.5	18	0.26	30.08	-	-	Peak
150.28	21.65	-21.85	43.5	41.11	10	0.51	29.97	-	-	Peak
167.74	21.45	-22.05	43.5	41.56	9.27	0.54	29.92	-	-	Peak
368.53	22.11	-23.89	46	36.2	14.98	0.83	29.9	-	-	Peak
943.74	30.03	-15.97	46	37.52	20.71	1.33	29.53	100	255	Peak
960.23	30.32	-23.68	54	37.73	20.79	1.34	29.54	-	-	Peak
2386	51.53	-22.47	74	49.25	32.86	3.47	34.05	100	112	Peak
2386	39.57	-14.43	54	37.29	32.86	3.47	34.05	100	112	Average
2462	100.36	-	-	97.91	32.98	3.64	34.17	100	166	Peak
2462	73.98	-	-	71.53	32.98	3.64	34.17	100	166	Average
2485.94	61.06	-12.94	74	58.57	33.01	3.68	34.2	100	70	Peak
2485.94	45.4	-8.6	54	42.91	33.01	3.68	34.2	100	70	Average



Test Mode :	Mode 6	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	28.64	-11.36	40	40.46	18	0.26	30.08	100	265	Peak
47.46	26.78	-13.22	40	48.14	8.5	0.27	30.13	-	-	Peak
76.56	26.21	-13.79	40	49.85	6.06	0.35	30.05	-	-	Peak
225.94	28.79	-17.21	46	47.51	10.59	0.63	29.94	-	-	Peak
943.74	29.83	-16.17	46	37.32	20.71	1.33	29.53	-	-	Peak
960.23	30.41	-23.59	54	37.82	20.79	1.34	29.54	-	-	Peak
2336.98	49.93	-24.07	74	47.76	32.78	3.33	33.94	100	0	Peak
2336.98	37.55	-16.45	54	35.38	32.78	3.33	33.94	100	0	Average
2462	97.43	-	-	94.98	32.98	3.64	34.17	100	62	Peak
2462	71.99	-	-	69.54	32.98	3.64	34.17	100	62	Average
2483.5	59.47	-14.53	74	56.98	33.01	3.68	34.2	100	81	Peak
2483.5	42.68	-11.32	54	40.19	33.01	3.68	34.2	100	81	Average



Test Mode :	Mode 7	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	22.09	-17.91	40	33.91	18	0.26	30.08	-	-	Peak
159.98	22	-21.5	43.5	41.81	9.6	0.53	29.94	-	-	Peak
222.06	23.59	-22.41	46	42.69	10.25	0.62	29.97	-	-	Peak
294.81	22.37	-23.63	46	38.67	12.93	0.72	29.95	-	-	Peak
943.74	29.97	-16.03	46	37.46	20.71	1.33	29.53	100	65	Peak
960.23	29.91	-24.09	54	37.32	20.79	1.34	29.54	-	-	Peak
2390	59.01	-14.99	74	56.73	32.86	3.47	34.05	100	272	Peak
2390	43.91	-10.09	54	41.63	32.86	3.47	34.05	100	272	Average
2412	100.47	-	-	98.14	32.89	3.52	34.08	100	281	Peak
2412	74.88	-	-	72.55	32.89	3.52	34.08	100	281	Average
2487.65	50.54	-23.46	74	48	33.05	3.72	34.23	100	0	Peak
2487.65	38.35	-15.65	54	35.81	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 7	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.01	-9.99	40	41.83	18	0.26	30.08	100	223	Peak
47.46	27.08	-12.92	40	48.44	8.5	0.27	30.13	-	-	Peak
83.35	23.29	-16.71	40	45.62	7.34	0.36	30.03	-	-	Peak
875.84	25.04	-20.96	46	32.83	20.48	1.29	29.56	-	-	Peak
943.74	30.4	-15.6	46	37.89	20.71	1.33	29.53	-	-	Peak
960.23	29.36	-24.64	54	36.77	20.79	1.34	29.54	-	-	Peak
2390	56.06	-17.94	74	53.78	32.86	3.47	34.05	100	181	Peak
2390	40.93	-13.07	54	38.65	32.86	3.47	34.05	100	181	Average
2412	95.58	-	-	93.25	32.89	3.52	34.08	100	26	Peak
2412	71.27	-	-	68.94	32.89	3.52	34.08	100	26	Average
2486.7	50.4	-23.6	74	47.91	33.01	3.68	34.2	100	30	Peak
2486.7	37.14	-16.86	54	34.65	33.01	3.68	34.2	100	30	Average



Test Mode :	Mode 8	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	24.4	-15.6	40	36.22	18	0.26	30.08	100	198	Peak
125.06	21.75	-21.75	43.5	39.52	11.75	0.46	29.98	-	-	Peak
167.74	22.58	-20.92	43.5	42.69	9.27	0.54	29.92	-	-	Peak
876.81	24.67	-21.33	46	32.46	20.48	1.29	29.56	-	-	Peak
943.74	29.36	-16.64	46	36.85	20.71	1.33	29.53	-	-	Peak
960.23	29.95	-24.05	54	37.36	20.79	1.34	29.54	-	-	Peak
2388.28	51.5	-22.5	74	49.22	32.86	3.47	34.05	100	0	Peak
2388.28	38.41	-15.59	54	36.13	32.86	3.47	34.05	100	0	Average
2437	99.04	-	-	96.64	32.95	3.6	34.15	100	275	Peak
2437	73.21	-	-	70.81	32.95	3.6	34.15	100	275	Average
2492.02	49.97	-24.03	74	47.43	33.05	3.72	34.23	100	116	Peak
2492.02	38.22	-15.78	54	35.68	33.05	3.72	34.23	100	116	Average



Test Mode :	Mode 8	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	28.68	-11.32	40	40.5	18	0.26	30.08	-	-	Peak
43.58	29.97	-10.03	40	49.78	10.03	0.27	30.11	100	153	Peak
84.32	23.21	-16.79	40	45.33	7.53	0.37	30.02	-	-	Peak
254.07	30.3	-15.7	46	47.42	12.06	0.67	29.85	-	-	Peak
294.81	28.76	-17.24	46	45.06	12.93	0.72	29.95	-	-	Peak
951.5	32.85	-13.15	46	40.32	20.74	1.33	29.54	-	-	Peak
2340.02	50.44	-23.56	74	48.27	32.78	3.33	33.94	100	19	Peak
2340.02	37.27	-16.73	54	35.1	32.78	3.33	33.94	100	19	Average
2437	95.73	-	-	93.33	32.95	3.6	34.15	100	62	Peak
2437	69.91	-	-	67.51	32.95	3.6	34.15	100	62	Average
2488.98	49.84	-24.16	74	47.3	33.05	3.72	34.23	100	23	Peak
2488.98	39.17	-14.83	54	36.63	33.05	3.72	34.23	100	23	Average



Test Mode :	Mode 9	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.88	23.75	-16.25	40	38.05	15.56	0.23	30.09	-	-	Peak
282.2	23.19	-22.81	46	39.73	12.7	0.71	29.95	-	-	Peak
368.53	22.29	-23.71	46	36.38	14.98	0.83	29.9	-	-	Peak
876.81	25.78	-20.22	46	33.57	20.48	1.29	29.56	-	-	Peak
943.74	30.39	-15.61	46	37.88	20.71	1.33	29.53	100	206	Peak
960.23	27.97	-26.03	54	35.38	20.79	1.34	29.54	-	-	Peak
2368.71	50.06	-23.94	74	47.82	32.83	3.42	34.01	100	19	Peak
2368.71	36.92	-17.08	54	34.68	32.83	3.42	34.01	100	19	Average
2462	97.49	-	-	95.04	32.98	3.64	34.17	100	182	Peak
2462	71.97	-	-	69.52	32.98	3.64	34.17	100	182	Average
2483.66	55.82	-18.18	74	53.33	33.01	3.68	34.2	100	0	Peak
2483.66	37.68	-16.32	54	35.19	33.01	3.68	34.2	100	0	Average



Test Mode :	Mode 9	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Chenmy Cheng	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	28.55	-11.45	40	40.37	18	0.26	30.08	100	199	Peak
47.46	26.69	-13.31	40	48.05	8.5	0.27	30.13	-	-	Peak
83.35	23.48	-16.52	40	45.81	7.34	0.36	30.03	-	-	Peak
270.56	27.15	-18.85	46	43.98	12.39	0.69	29.91	-	-	Peak
943.74	29.77	-16.23	46	37.26	20.71	1.33	29.53	-	-	Peak
960.23	30.24	-23.76	54	37.65	20.79	1.34	29.54	-	-	Peak
2342.68	49.79	-24.21	74	47.62	32.78	3.33	33.94	100	18	Peak
2342.68	37.78	-16.22	54	35.61	32.78	3.33	33.94	100	18	Average
2462	95.86	-	-	93.41	32.98	3.64	34.17	100	66	Peak
2462	69.74	-	-	67.29	32.98	3.64	34.17	100	66	Average
2490.31	53.77	-20.23	74	51.23	33.05	3.72	34.23	100	201	Peak
2490.31	40.67	-13.33	54	38.13	33.05	3.72	34.23	100	201	Average



3.8 Antenna Requirements

3.8.1 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. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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.

3.8.2 Antenna Connected Construction

Non-standard connector used.

3.8.3 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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	May 31, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY451015 55	N/A	Aug. 23, 2011	May 31, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY444211 98	N/A	Aug. 23, 2011	May 31, 2012	Aug. 22, 2012	Conducted (TH01-KS)
DC Power supply	GWINSTEK	GPS-3030D	E1884515	N/A	Aug. 23, 2011	May 31, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-9605 02	N/A	Dec. 30, 2011	May 31, 2012	Dec. 29, 2012	Conducted (TH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 02, 2011	May 21, 2012	Jun. 01, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 30, 2011	May 21, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Dec. 30, 2011	May 21, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000 0811	N/A	Nov. 16, 2011	May 21, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/06 6	2G Full-Band	Dec. 30, 2011	May 21, 2012	Dec. 29, 2012	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	Jun. 11, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Jun. 11, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	Jun. 11, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/00	9 kHz~30 MHz	Jul. 28, 2011	Jun. 11, 2012	Jul. 27, 2012	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	Jun. 11, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 30, 2011	Jun. 11, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A023 70	1GHz~26.5GHz	Dec. 30, 2011	Jun. 11, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2011	Jun. 11, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA1702 49	15GHz~40GHz	Oct. 11, 2011	Jun. 11, 2012	Oct.10, 2012	Radiation (03CH01-KS)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 KHz ~ 30 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
Combined Standard Uncertainty $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26		

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				