

FCC RF Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : CDMA/LTE Digital Mobile Handset
BRAND NAME : ZTE
MODEL NAME : ZTE FLASH 4G LTE
FCC ID : Q78-ZTEN9500
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Jul. 02, 2012 and completely tested on Aug. 21, 2012. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures 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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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR270201B	Rev. 01	Initial issue of report	Sep. 11, 2012

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 Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	-
			Radiated Spurious Emission		Pass	Under limit 4.76 dB at 30.000 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 12.28 dB at 0.440 MHz
3.7	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	
Equipment	CDMA/LTE Digital Mobile Handset
Brand Name	ZTE
Model Name	ZTE FLASH 4G LTE
FCC ID	Q78-ZTEN9500
EUT supports Radios application	CDMA/EV-DO/LTE/WLAN 11bgn/ Bluetooth/Bluetooth4.0 – LE/NFC
HW Version	N9500.H01
SW Version	N9500V1.0.0B05
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.

Product Specification subjective to this standard	
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
Maximum Output Power to Antenna	802.11b : 17.97 dBm (0.063 W) 802.11g : 20.96 dBm (0.125 W) 802.11n HT20 : 20.93 dBm (0.124 W)
Antenna Type	PIFA Antenna with gain -1.00 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

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
- FCC TCB Workshop 2012, April
- ANSI C63.4-2003 and ANSI C63.10-2009
- 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	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
3.	DC Power Supply	GWINSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	VOSTRO 1450	PPD-AR5B195	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals 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) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437	-	-

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and antenna configurations as following table and the highest power data rates were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

Channel	Frequency	2.4GHz 802.11b mode			
		DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	16.41	16.43	16.51	16.56
CH 06	2437 MHz	15.08	15.01	15.10	15.12
CH 11	2462 MHz	17.97	17.75	17.82	17.90

Channel	Frequency	2.4GHz 802.11g mode							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	19.77	19.69	19.39	19.67	19.51	19.43	19.40	19.60
CH 06	2437 MHz	17.69	17.61	17.53	17.58	17.51	17.63	17.46	17.55
CH 11	2462 MHz	20.96	20.89	20.95	20.83	20.81	20.73	20.85	20.51

Channel	Frequency	2.4GHz 802.11n HT20 mode							
		OFDM Data Rate							
		MCS=0	MCS=1	MCS=2	MCS=3	MCS=4	MCS=5	MCS=6	MCS=7
CH 01	2412 MHz	19.89	19.82	19.76	19.57	19.76	19.63	19.52	19.56
CH 06	2437 MHz	18.38	18.12	18.09	17.75	17.84	17.76	17.62	17.51
CH 11	2462 MHz	20.93	20.85	20.72	20.65	20.67	20.6	20.57	20.49

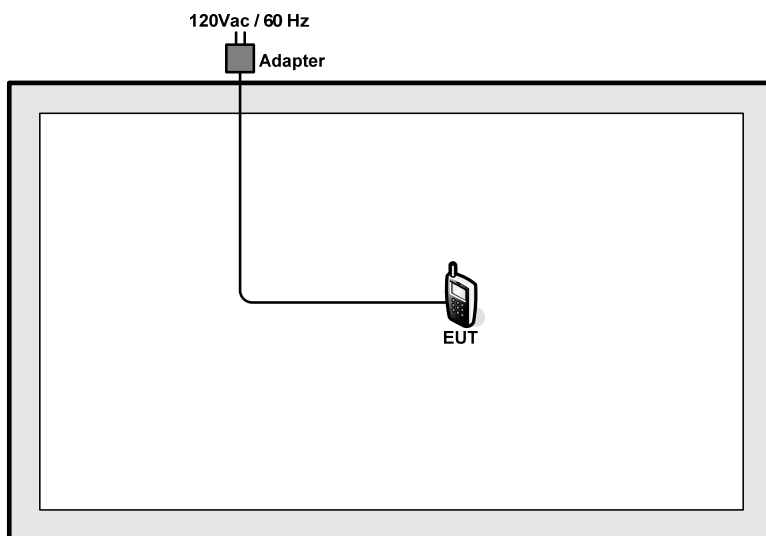
2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

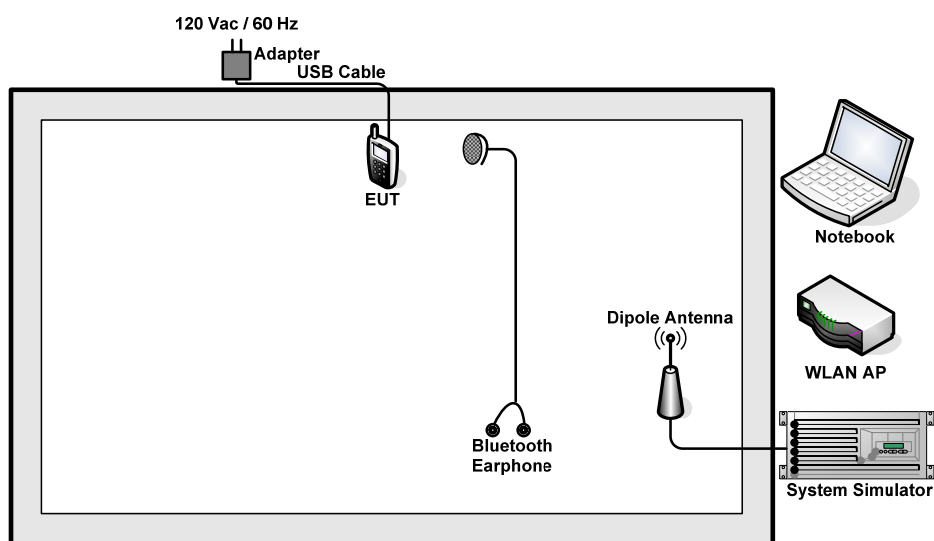
Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB BW Power Spectral Density	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	6.5 Mbps	1/6/11
	Output Power	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	6.5 Mbps	1/6/11
	Conducted Band EDGE	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	6.5 Mbps	1/11
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	6.5 Mbps	1/6/11
Radiated TCs	Radiated Band EDGE	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	6.5 Mbps	1/11
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	6.5 Mbps	1/6/11
AC Conducted Emission	Mode 1 : CDMA 2000 BC0 Idle + WLAN Link + Bluetooth Link + USB Cable (Charging from Adapter) + NFC Tx			

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

For WLAN function, turn on “FCC Test” on the EUT directly. Then, the EUT will get into the engineering modes to contact with WLAN AP for continuous transmitting and receiving signals.

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.

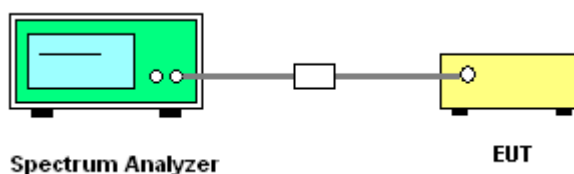
3.1.2 Measuring Instruments

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. Set to the maximum power setting and enable the EUT transmit continuously.
4. 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.

3.1.4 Test Setup

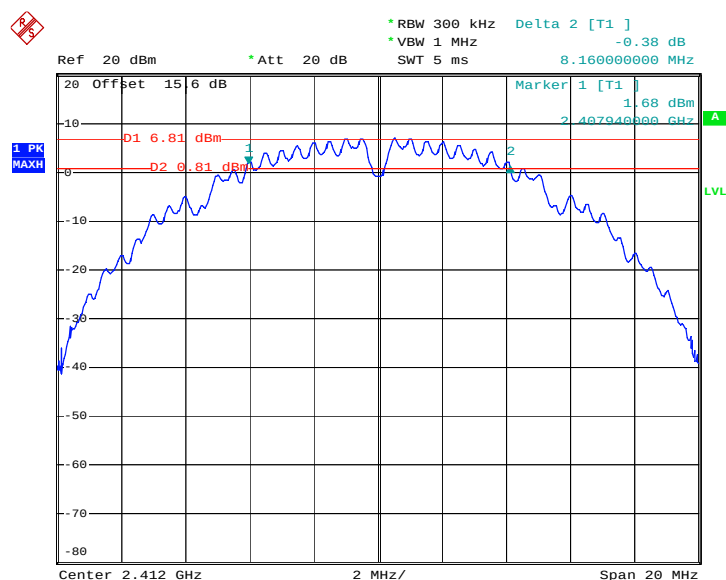


3.1.5 Test Result of 6dB Bandwidth

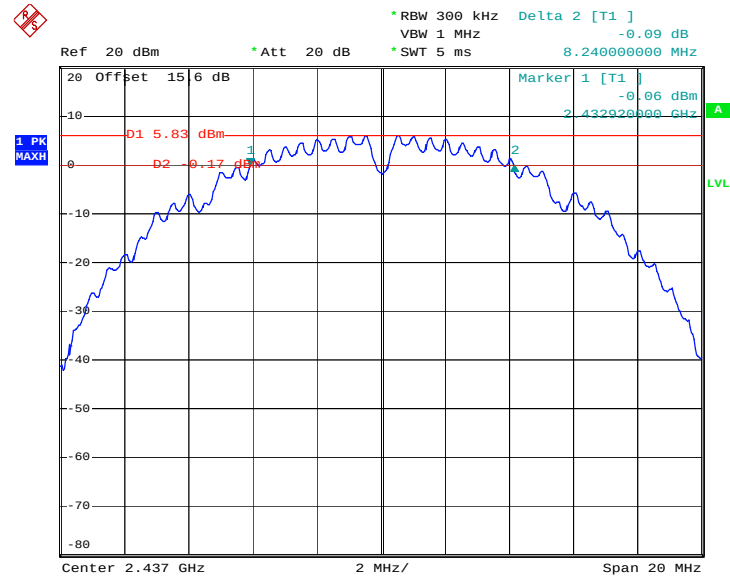
Test Mode :	802.11b	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	8.16	0.5	Pass
06	2437	8.24	0.5	Pass
11	2462	8.16	0.5	Pass

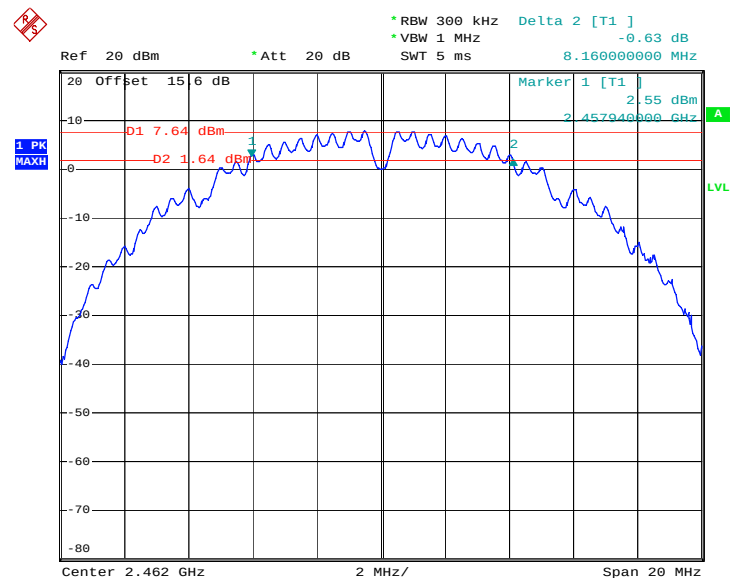
6 dB Bandwidth Plot on 802.11b Channel 01



Date: 24.JUL.2012 14:26:49

6 dB Bandwidth Plot on 802.11b Channel 06


Date: 21.AUG.2012 17:17:20

6 dB Bandwidth Plot on 802.11b Channel 11


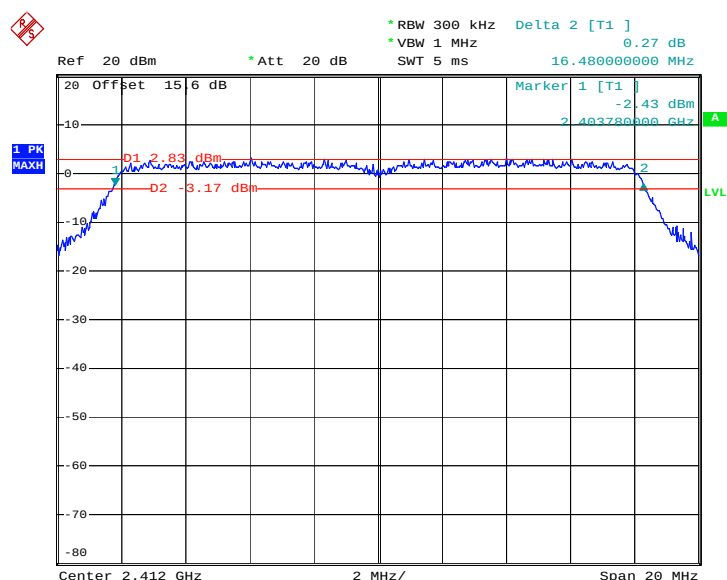
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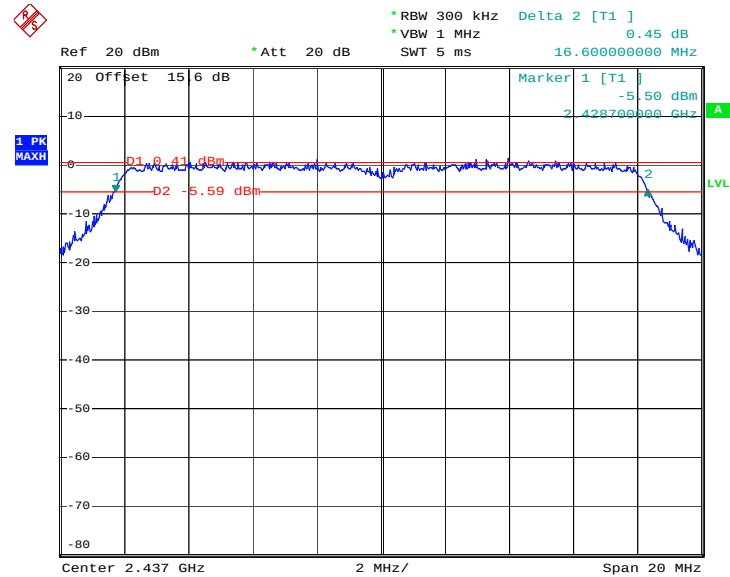
Test Mode :	802.11g	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.48	0.5	Pass
06	2437	16.60	0.5	Pass
11	2462	16.52	0.5	Pass

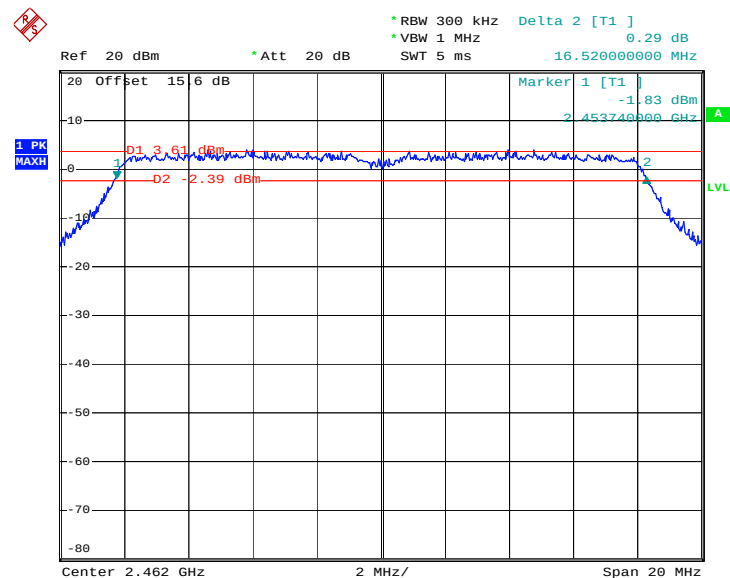
6 dB Bandwidth Plot on 802.11g Channel 01



Date: 24.JUL.2012 14:36:58

6 dB Bandwidth Plot on 802.11g Channel 06


Date: 24.JUL.2012 14:54:15

6 dB Bandwidth Plot on 802.11g Channel 11


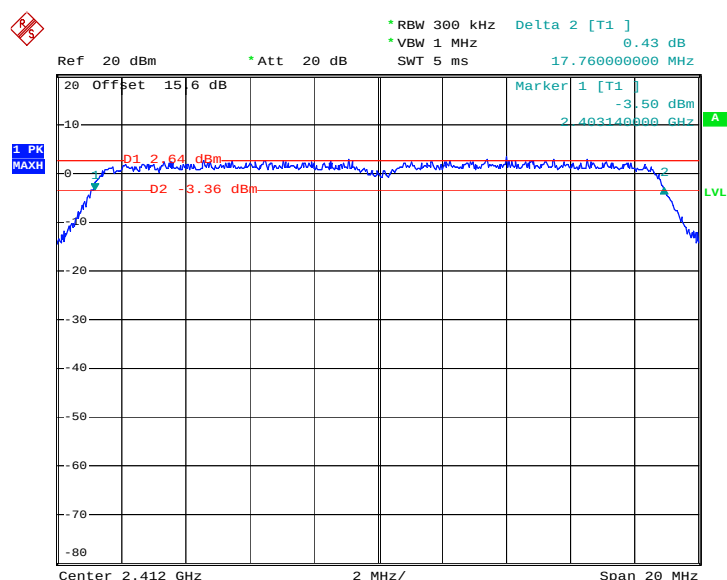
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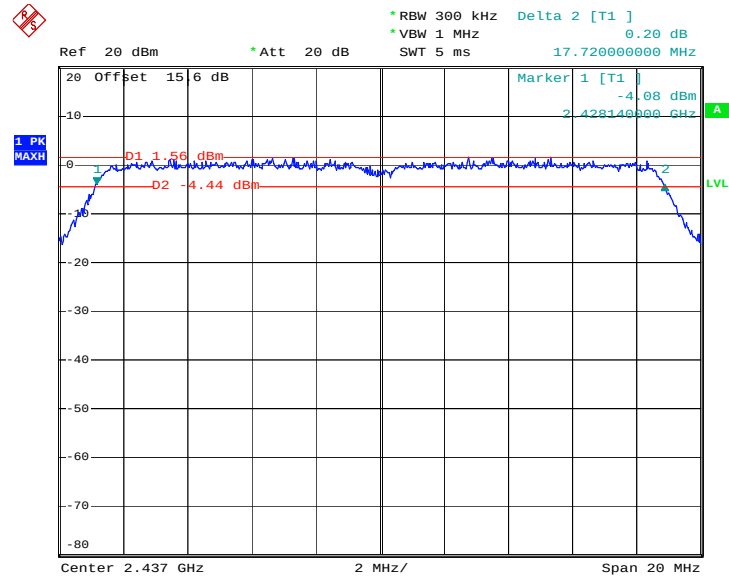
Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.76	0.5	Pass
06	2437	17.72	0.5	Pass
11	2462	17.76	0.5	Pass

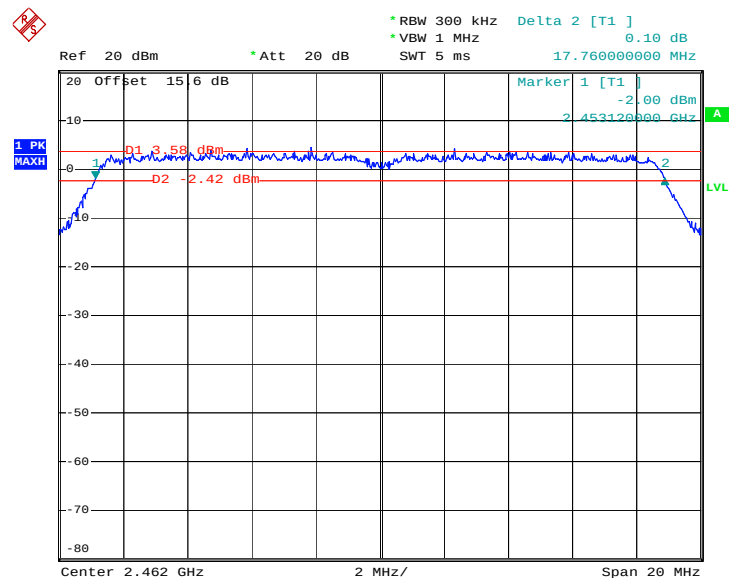
6 dB Bandwidth Plot on 802.11n HT20 Channel 01



Date: 24.JUL.2012 15:04:50

6 dB Bandwidth Plot on 802.11n HT20 Channel 06


Date: 24.JUL.2012 15:08:48

6 dB Bandwidth Plot on 802.11n HT20 Channel 11


Date: 24.JUL.2012 15:13:00

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.

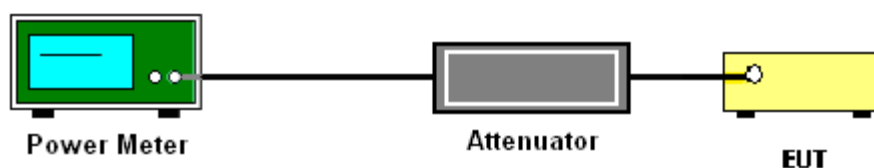
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance and TCB Workshop 2012, April.
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 :	802.11b	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	16.41	30	Pass
06	2437	15.08	30	Pass
11	2462	17.97	30	Pass

Test Mode :	802.11g	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.77	30	Pass
06	2437	17.69	30	Pass
11	2462	20.96	30	Pass

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.89	30	Pass
06	2437	18.38	30	Pass
11	2462	20.93	30	Pass

3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%
Duty Cycle:	97.67%	Duty Factor:	0.10dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	13.16
06	2437	11.44
11	2462	14.78

Test Mode :	802.11g	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%
Duty Cycle:	86.88%	Duty Factor:	0.61dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	9.96
06	2437	7.58
11	2462	11.34

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%
Duty Cycle:	86.09%	Duty Factor:	0.65dB

Channel	Frequency (MHz)	802.11n HT20 Average Output Power (dBm)
01	2412	10.31
06	2437	7.93
11	2462	11.56

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.

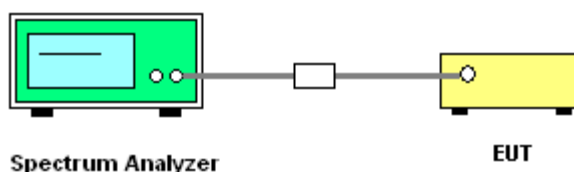
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test 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. Set to the maximum power setting and enable the EUT transmit continuously.
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. Record the measurement data derived from spectrum analyzer.
7. 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 $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

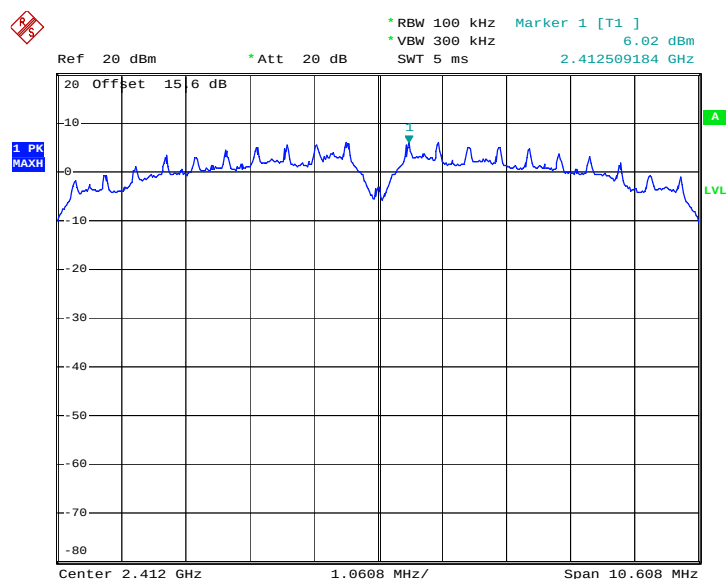
Test Mode :	802.11b	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	6.02	-9.18	8	Pass
06	2437	4.53	-10.67	8	Pass
11	2462	7.12	-8.08	8	Pass

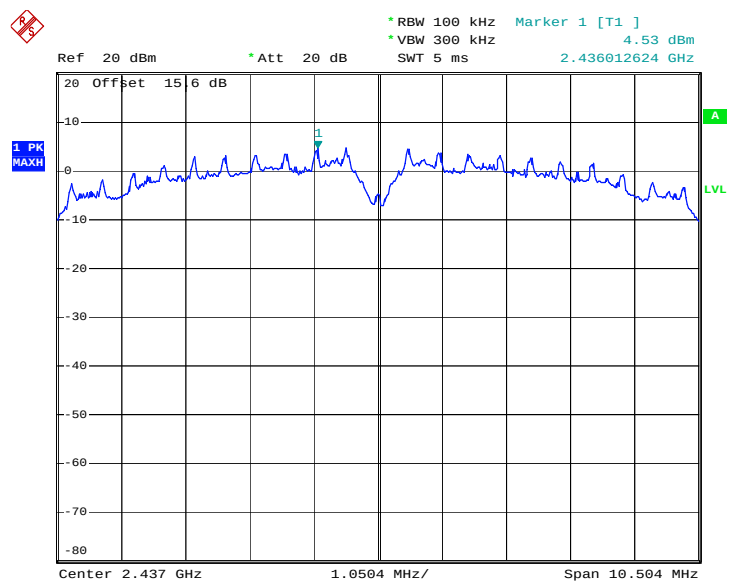
Note:

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

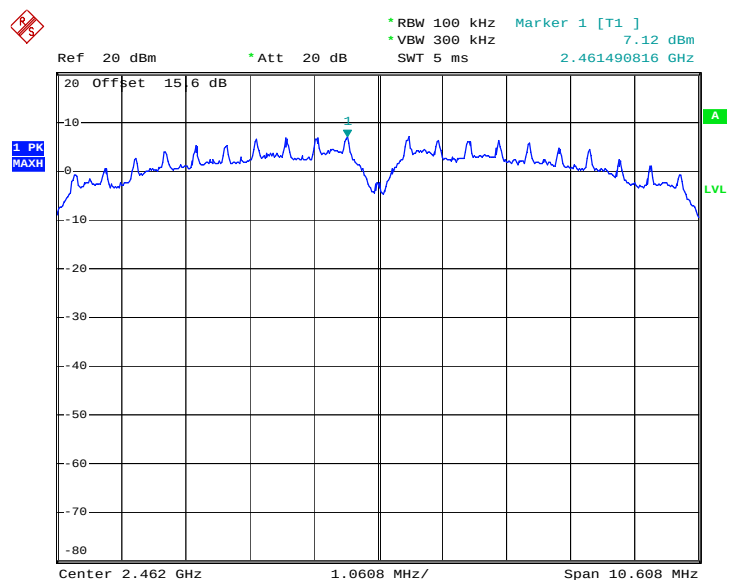
PSD Plot on 802.11b Channel 01



Date: 24.JUL.2012 14:21:13

PSD Plot on 802.11b Channel 06


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PSD Plot on 802.11b Channel 11


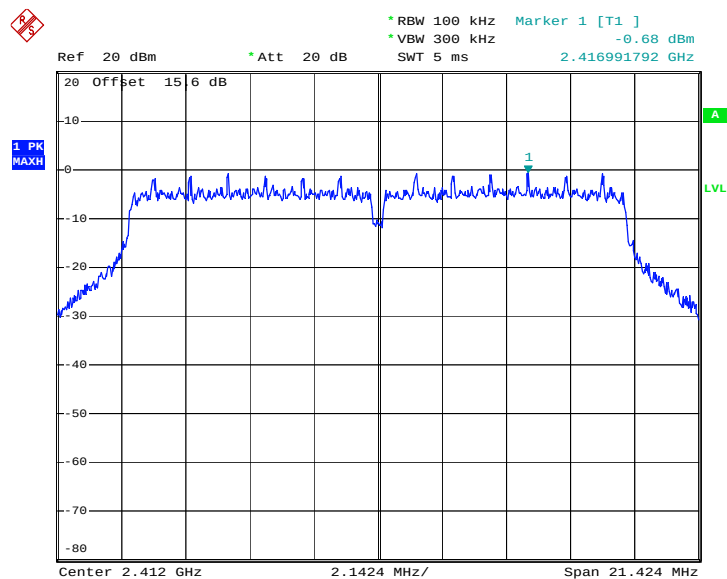
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Test Mode :	802.11g	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-0.68	-15.88	8	Pass
06	2437	-2.84	-18.04	8	Pass
11	2462	0.68	-14.52	8	Pass

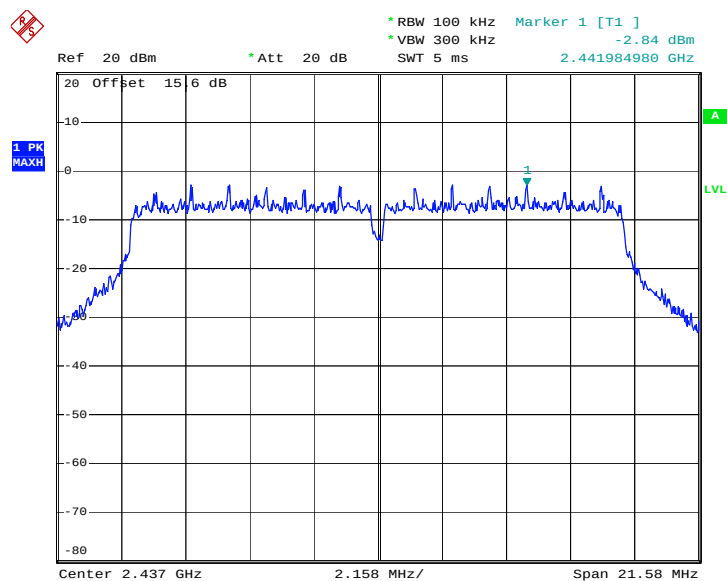
Note:

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

PSD Plot on 802.11g Channel 01


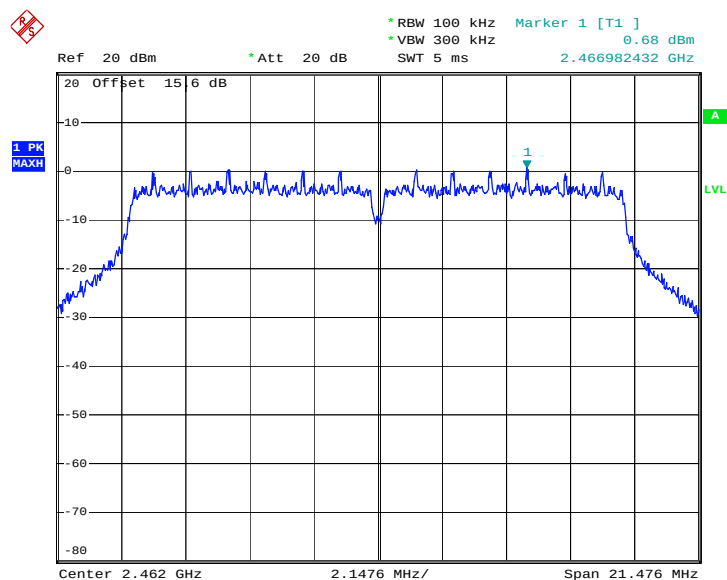
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PSD Plot on 802.11g Channel 06



Date: 24.JUL.2012 14:54:38

PSD Plot on 802.11g Channel 11



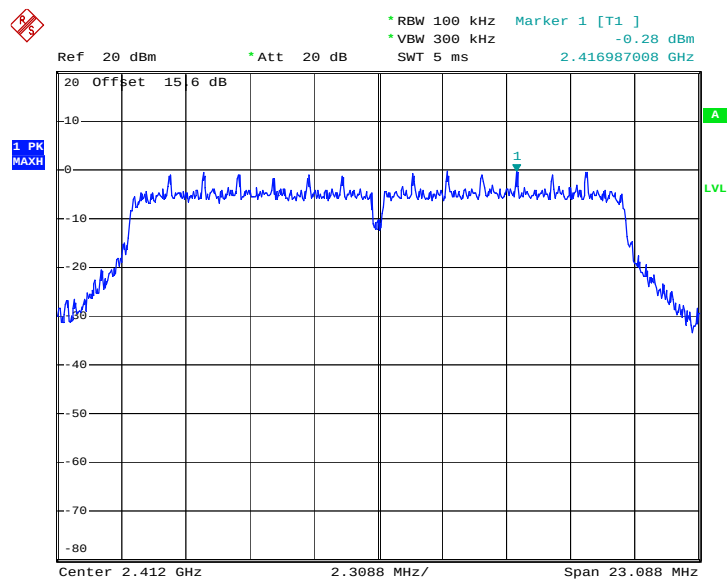
Date: 24.JUL.2012 14:57:56

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

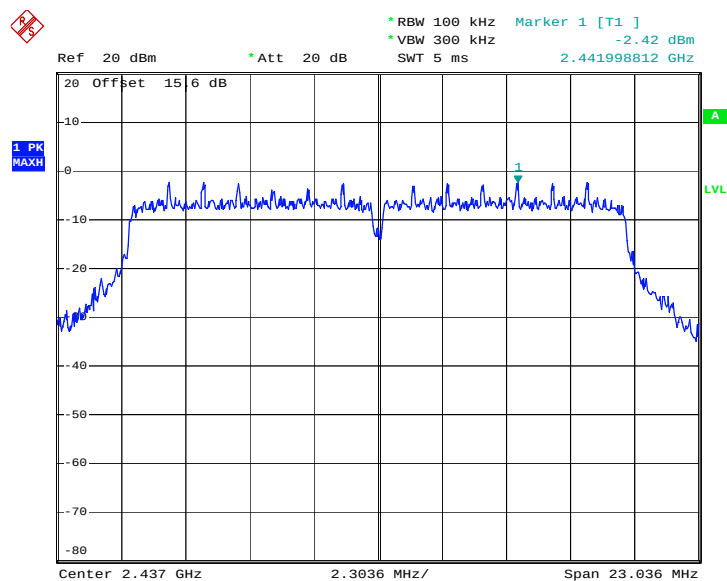
Channel	Frequency (MHz)	802.11n HT20 Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-0.28	-15.48	8	Pass
06	2437	-2.42	-17.62	8	Pass
11	2462	0.49	-14.71	8	Pass

Note:

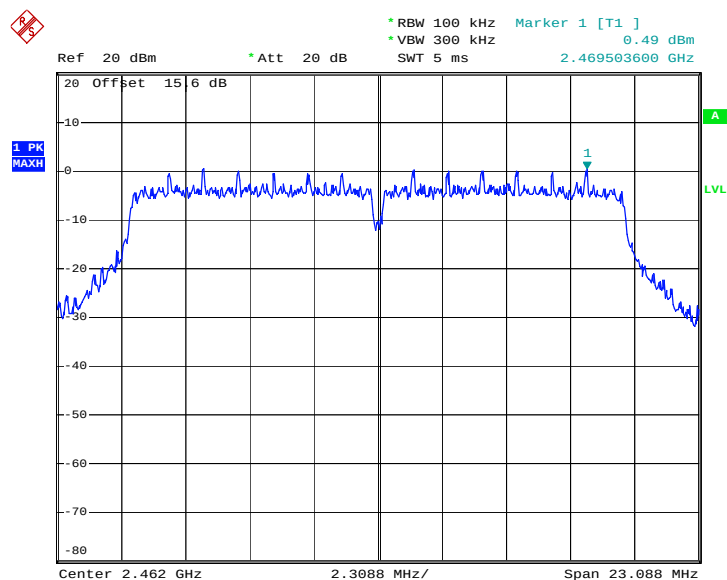
1. Measured power density (dBm) has offset with cable loss.
2. $BWCF (dB) = 10 \log (3k/100k) = -15.2 \text{ dB}$
3. $\text{Power Density/ 3KHz (dBm)} = \text{Measured power density/ 100KHz (dBm)} + BWCF (dB)$

PSD Plot on 802.11n HT20 Channel 01


Date: 24.JUL.2012 15:05:15

PSD Plot on 802.11n HT20 Channel 06


Date: 24.JUL.2012 15:09:11

PSD Plot on 802.11n HT20 Channel 11


Date: 24.JUL.2012 15:13:21

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

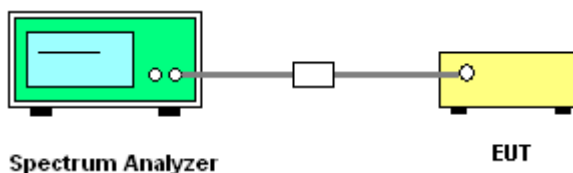
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows the guidelines in the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW = 100 KHz, VBW=300 KHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz, when maximum peak conducted output power procedure is used. The attenuation is set to 30dB, when maximum conducted output power procedure is used.
4. Measure and record the results in the test report.

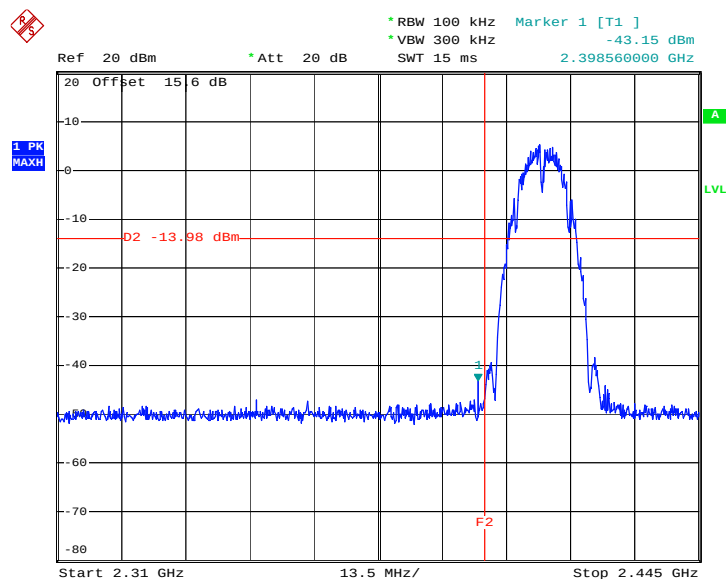
3.4.4 Test Setup



3.4.5 Test Plots of Conducted Band Edges

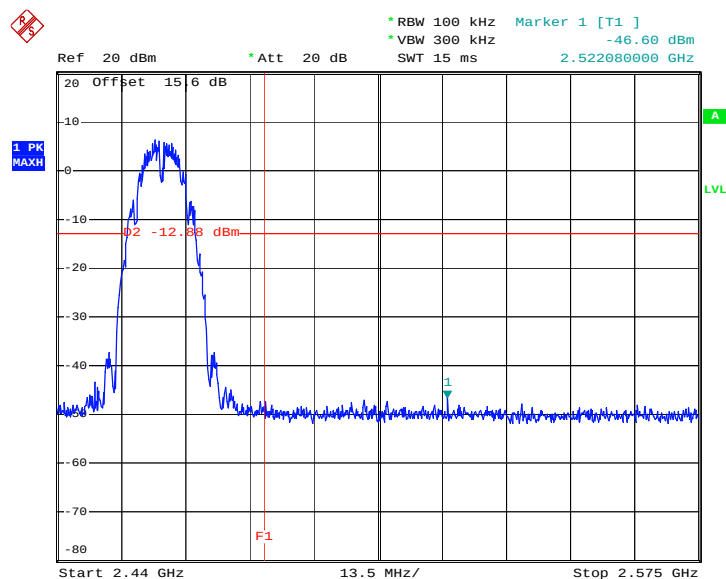
Test Mode :	802.11b	Temperature :	23~24°C
Test Band :	Low and High	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11b Channel 01



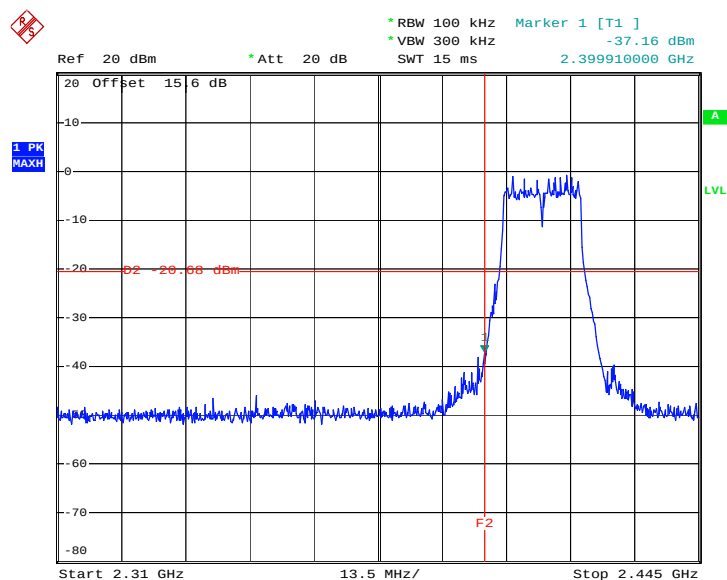
Date: 24.JUL.2012 14:22:38

High Band Edge Plot on 802.11b Channel 11

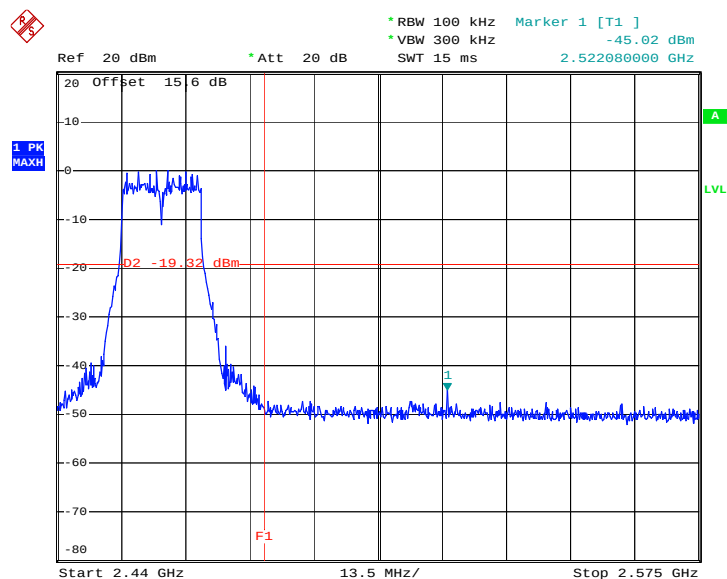


Date: 24.JUL.2012 14:33:03

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

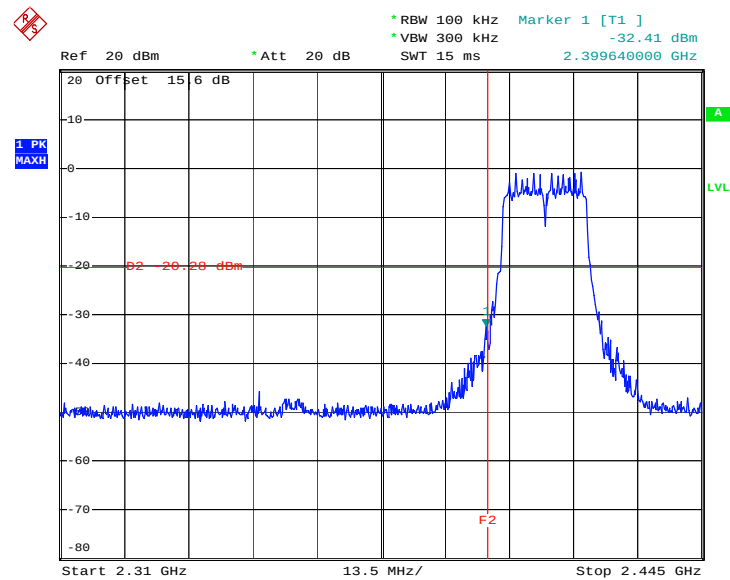
Low Band Edge Plot on 802.11g Channel 01


Date: 24.JUL.2012 14:40:03

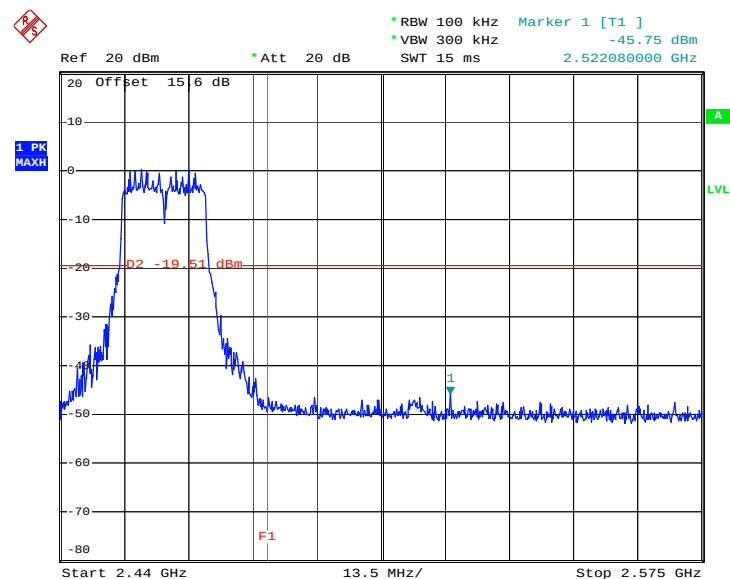
High Band Edge Plot on 802.11g Channel 11


Date: 24.JUL.2012 14:59:47

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Band :	Low and High	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11n HT20 Channel 01


Date: 24.JUL.2012 15:05:34

High Band Edge Plot on 802.11n HT20 Channel 11


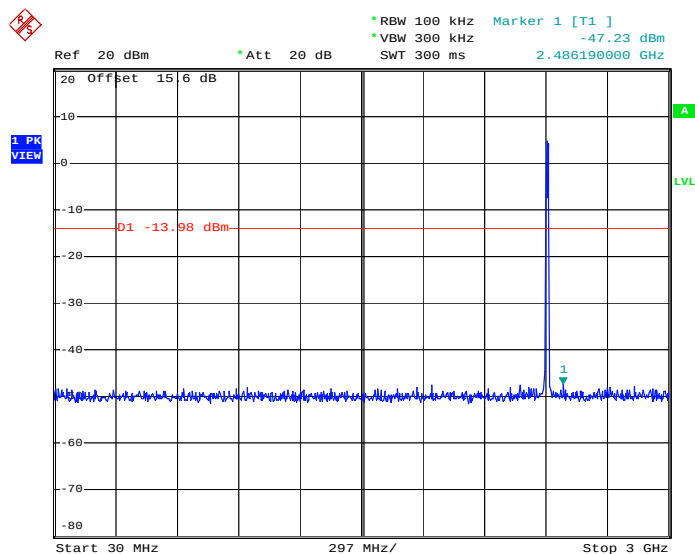
Date: 24.JUL.2012 15:13:43

3.4.6 Test Plots of Spurious Emission

Test Mode :	802.11b	Temperature :	23~24°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	47~48%
Test Channel :	01, 06, 11	Test Engineer :	Lizy Li

802.11b 30 MHz~3 GHz

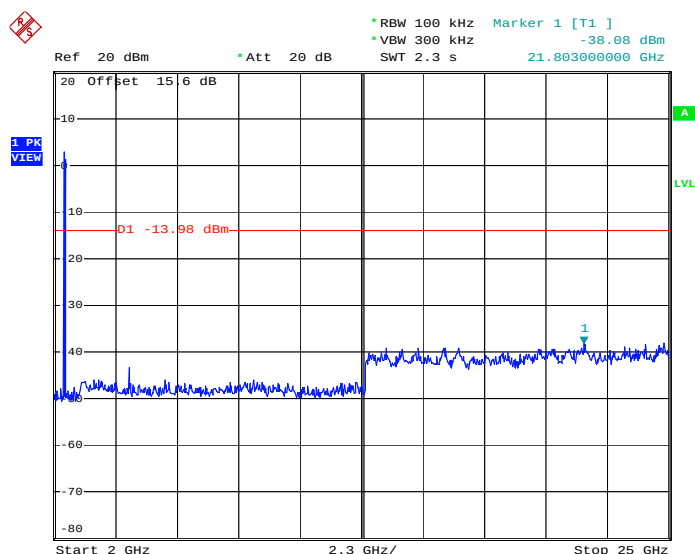
Conducted Spurious Emission Plot on Channel 01



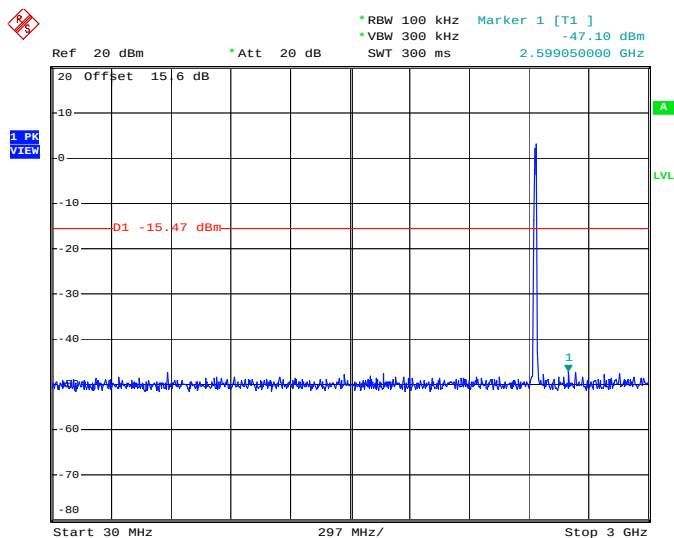
Date: 24.JUL.2012 14:22:57

802.11b 2 GHz~25 GHz

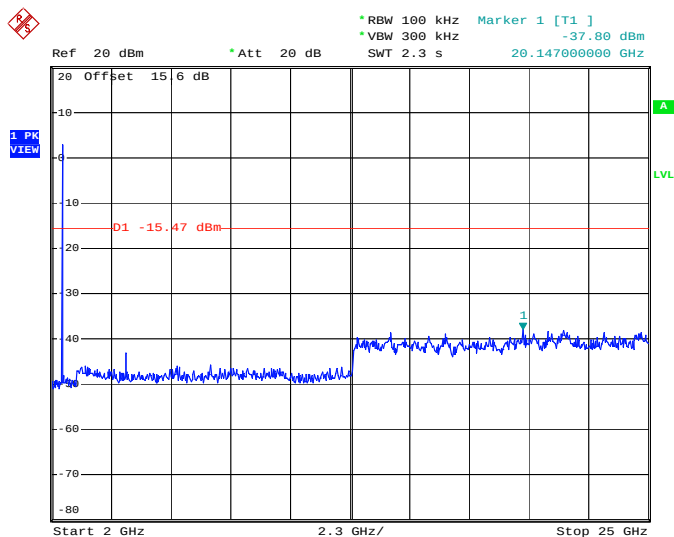
Conducted Spurious Emission Plot on Channel 01



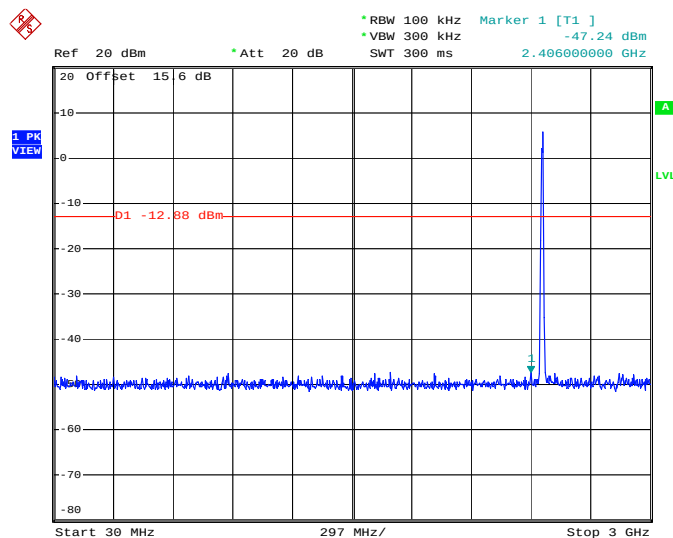
Date: 24.JUL.2012 14:23:15

802.11b 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


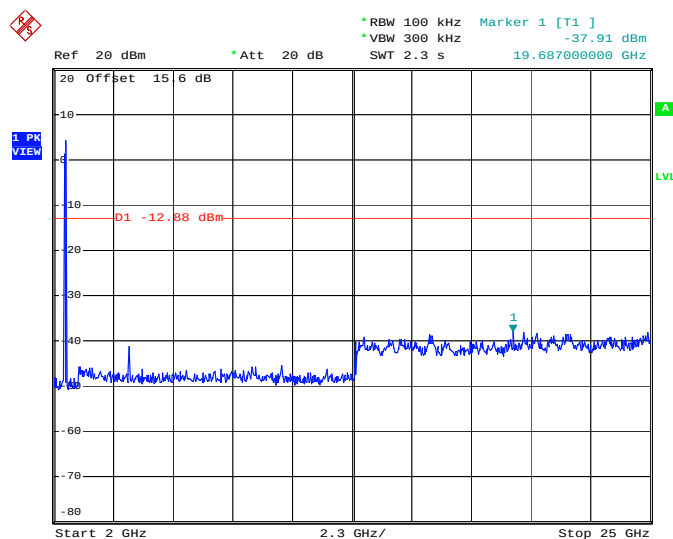
Date: 24.JUL.2012 14:29:42

802.11b 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 24.JUL.2012 14:30:00

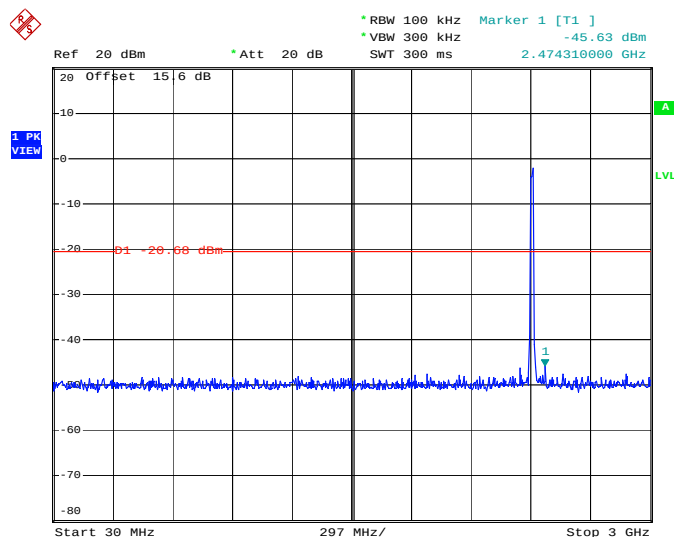
802.11b 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 24.JUL.2012 14:33:26

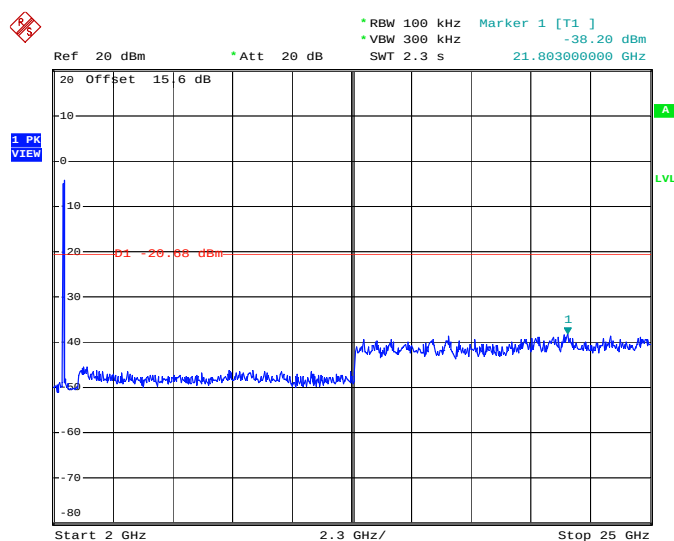
802.11b 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 24.JUL.2012 14:33:45

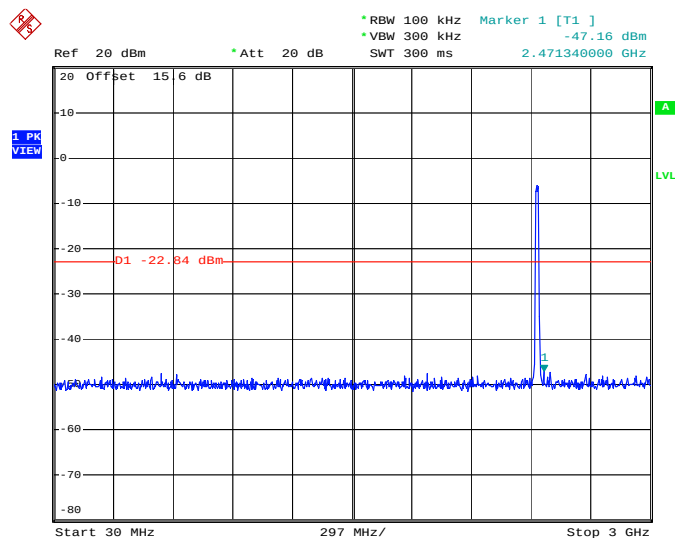
Test Mode :	802.11g	Temperature :	23~24℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	47~48%
Test Channel :	01, 06, 11	Test Engineer :	Lizy Li

802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 01


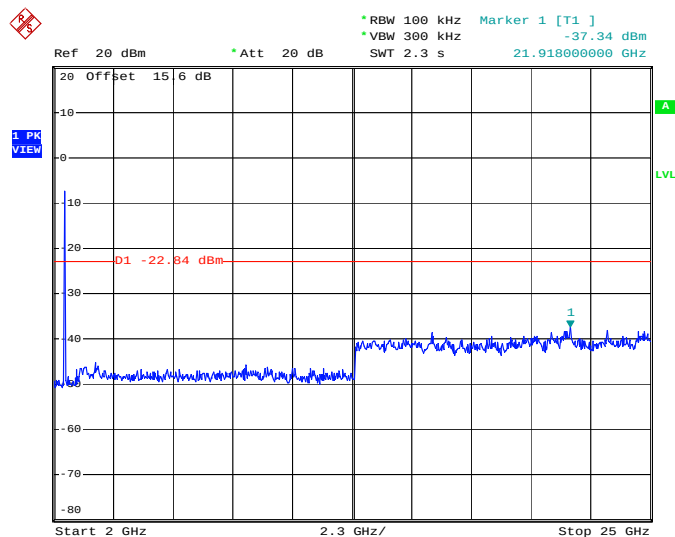
Date: 24.JUL.2012 14:40:26

802.11g 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 01


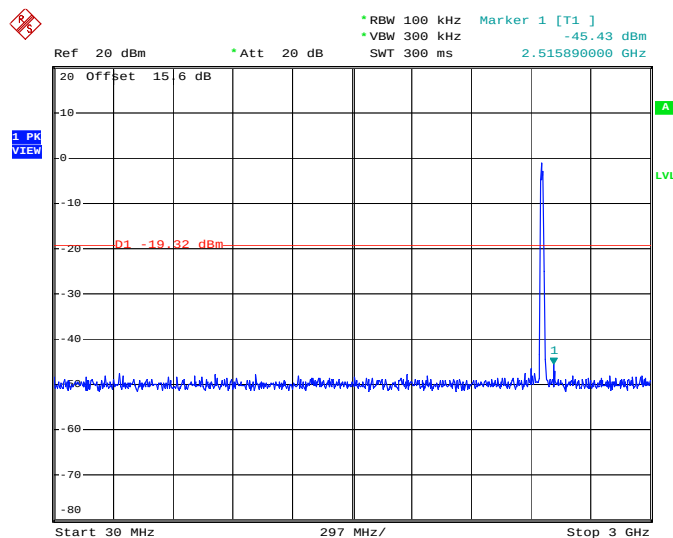
Date: 24.JUL.2012 14:40:45

802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


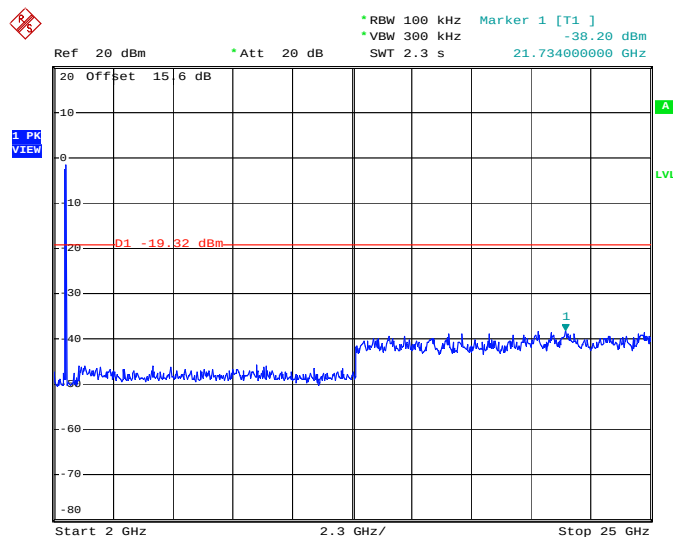
Date: 24.JUL.2012 14:55:16

802.11g 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 24.JUL.2012 14:55:35

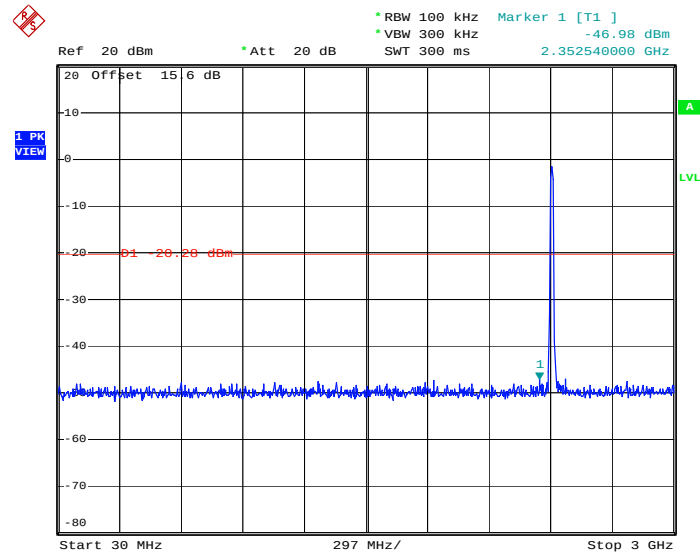
802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 24.JUL.2012 15:00:51

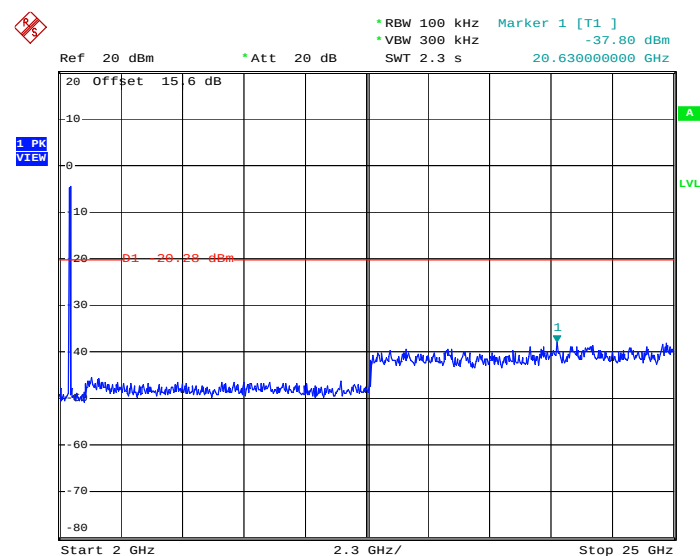
802.11g 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 24.JUL.2012 15:01:10

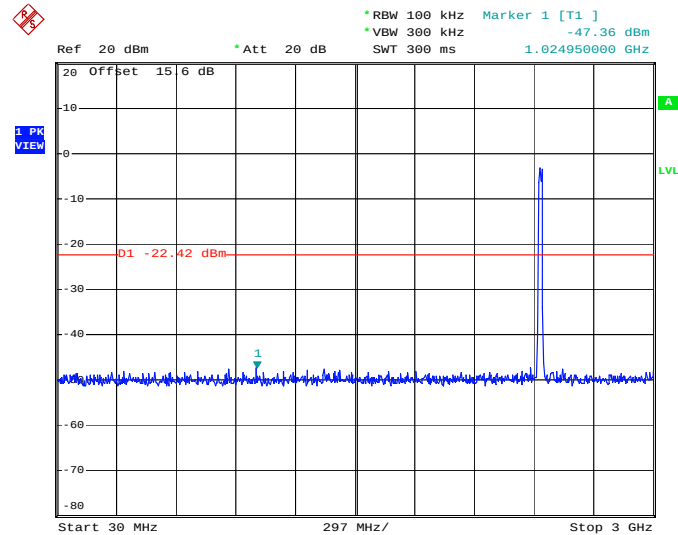
Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	47~48%
Test Channel :	01, 06, 11	Test Engineer :	Lizy Li

802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 01


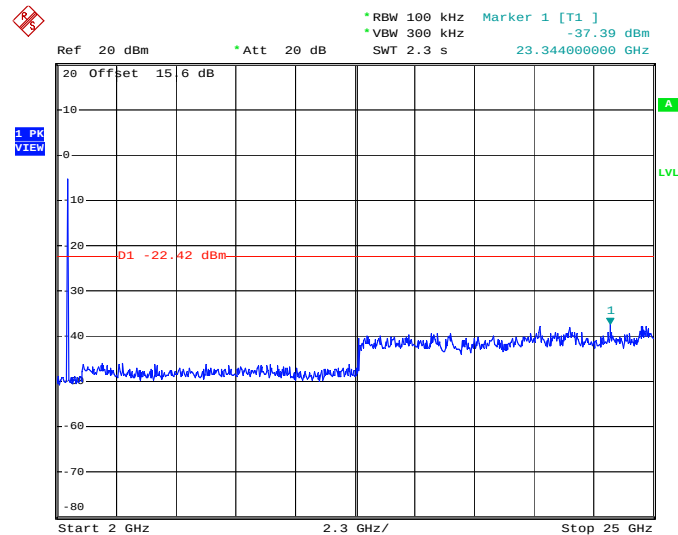
Date: 24.JUL.2012 15:05:58

802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 01


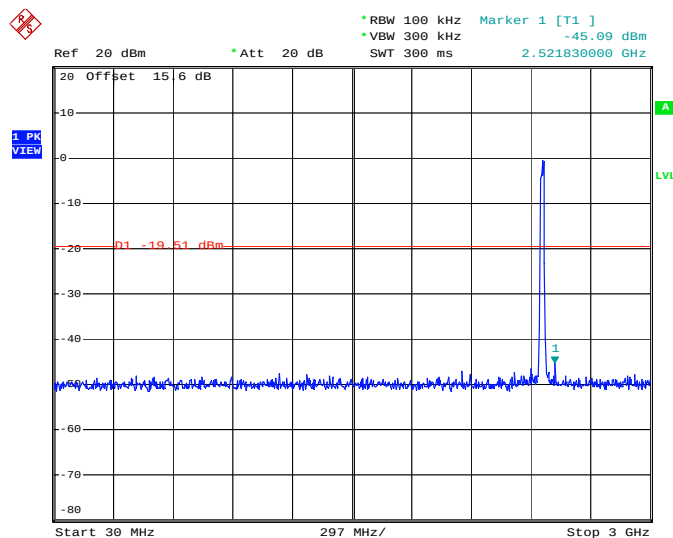
Date: 24.JUL.2012 15:06:16

802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


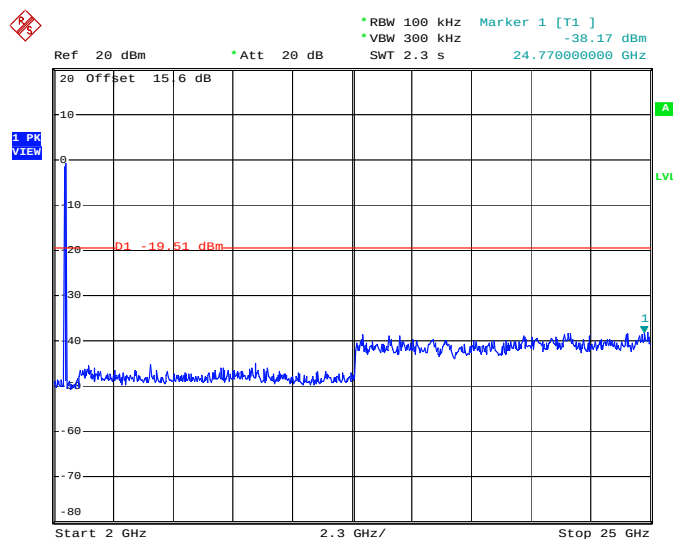
Date: 24.JUL.2012 15:09:40

802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 24.JUL.2012 15:09:58

802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 24.JUL.2012 15:14:44

802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 24.JUL.2012 15:15:02

3.5 Radiated Emission Measurement

3.5.1 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

3.5.2 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 - Preamplifier 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 $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

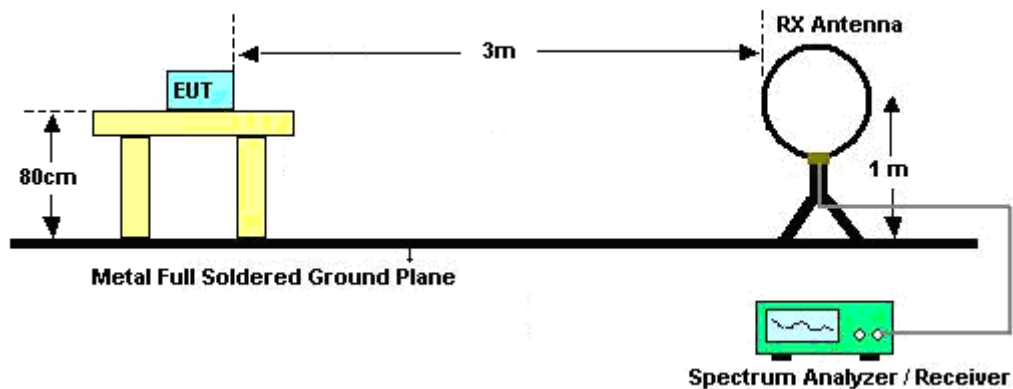
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(us)	1/T(KHz)	VBW Setting
802.11b	97.67	8400.00	0.119	300Hz
802.11g	86.88	1390.00	0.719	1KHz
2.4G 802.11n HT20	86.09	780.00	1.282	3KHz

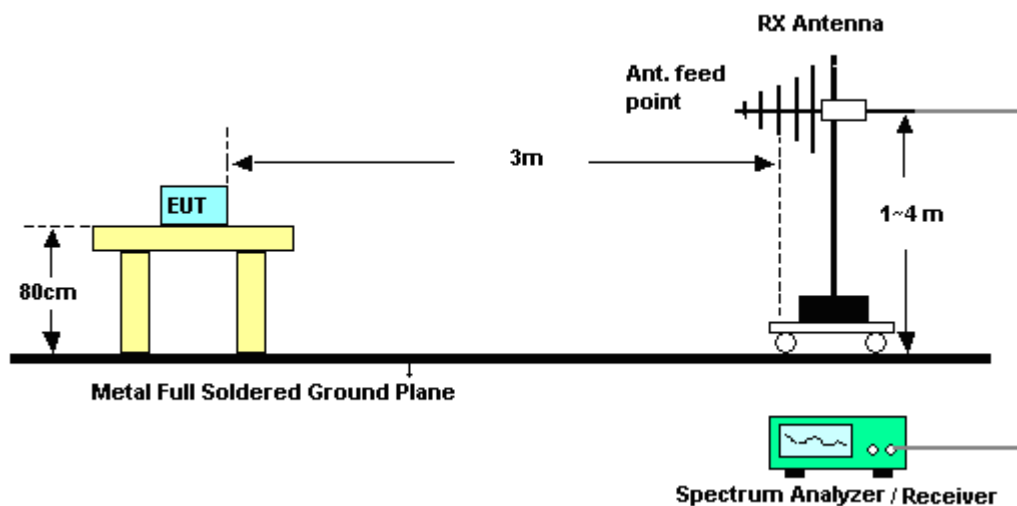
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

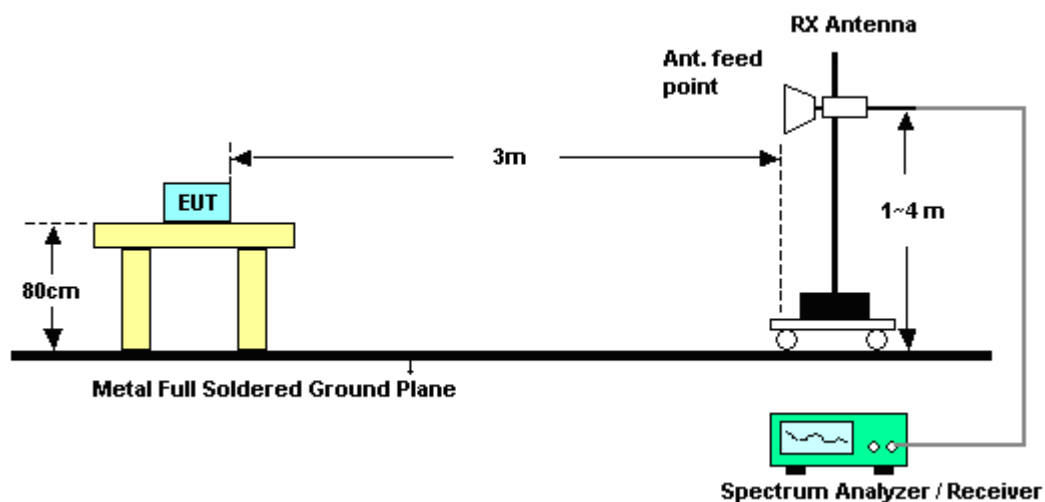
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 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.

3.5.6 Test Result of Radiated Band Edges

Test Mode :	802.11b	Temperature :	21~22℃
Test Band :	Low	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
2378.59	53.99	-20.01	74	46.03	32.83	4.22	29.09	140	254	Peak
2378.59	40.8	-13.2	54	32.84	32.83	4.22	29.09	140	254	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
2386	54.73	-19.27	74	46.73	32.86	4.22	29.08	100	0	Peak
2386	40.69	-13.31	54	32.69	32.86	4.22	29.08	100	0	Average

Test Mode :	802.11b	Temperature :	21~22℃
Test Band :	High	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
2492.4	53.11	-20.89	74	44.75	33.05	4.3	28.99	100	254	Peak
2492.4	42.86	-11.14	54	34.5	33.05	4.3	28.99	100	254	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
2491.45	52.84	-21.16	74	44.48	33.05	4.3	28.99	132	120	Peak
2491.45	42.6	-11.4	54	34.24	33.05	4.3	28.99	132	120	Average



Test Mode :	802.11g	Temperature :	21~22℃
Test Band :	Low	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
2380.87	54.68	-19.32	74	46.72	32.83	4.22	29.09	100	250	Peak
2380.87	42.49	-11.51	54	34.53	32.83	4.22	29.09	100	250	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
2386.19	55.99	-18.01	74	47.99	32.86	4.22	29.08	120	122	Peak
2386.19	41.3	-12.7	54	33.3	32.86	4.22	29.08	120	122	Average

Test Mode :	802.11g	Temperature :	21~22℃
Test Band :	High	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
2488.98	56.35	-17.65	74	48.01	33.05	4.29	29	120	110	Peak
2488.98	41.93	-12.07	54	33.59	33.05	4.29	29	120	110	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
2497.34	52.97	-21.03	74	44.61	33.05	4.3	28.99	100	250	Peak
2497.34	41.2	-12.8	54	32.84	33.05	4.3	28.99	100	250	Average

Test Mode :	802.11n HT20	Temperature :	21~22°C
Test Band :	Low	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
2380.49	55.13	-18.87	74	47.17	32.83	4.22	29.09	160	18	Peak
2380.49	39.59	-14.41	54	31.63	32.83	4.22	29.09	160	18	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
2386.38	55.95	-18.05	74	47.95	32.86	4.22	29.08	100	85	Peak
2386.38	39.59	-14.41	54	31.59	32.86	4.22	29.08	100	85	Average

Test Mode :	802.11n HT20	Temperature :	21~22°C
Test Band :	High	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
2490.31	54.09	-19.91	74	45.74	33.05	4.3	29	100	251	Peak
2490.31	40.21	-13.79	54	31.86	33.05	4.3	29	100	251	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	55.58	-18.42	74	47.23	33.05	4.3	29	100	37	Peak
2490.31	39.72	-14.28	54	31.37	33.05	4.3	29	100	37	Average

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

Test Mode :	802.11b	Temperature :	21~22℃
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
30.424	20.97	-19.03	40	32.79	18	0.26	30.08	-	-	Peak
96.436	25.75	-17.75	43.5	45.41	9.91	0.4	29.97	-	-	Peak
121.123	19.73	-23.77	43.5	37.46	11.79	0.45	29.97	-	-	Peak
372.005	23.97	-22.03	46	37.91	15.12	0.83	29.89	-	-	Peak
531.964	21.76	-24.24	46	32.39	18.08	0.99	29.7	-	-	Peak
833.317	37.94	-8.06	46	45.99	20.32	1.27	29.64	200	301	Peak
2378.59	53.99	-20.01	74	46.03	32.83	4.22	29.09	140	254	Peak
2378.59	40.8	-13.2	54	32.84	32.83	4.22	29.09	140	254	Average
2412	99.62	-	-	91.54	32.89	4.24	29.05	187	14	Peak
2412	94.63	-	-	86.55	32.89	4.24	29.05	187	14	Average
2498.67	53.68	-20.32	74	45.32	33.05	4.3	28.99	100	0	Peak
2498.67	43.52	-10.48	54	35.16	33.05	4.3	28.99	100	0	Average

Test Mode :	802.11b	Temperature :	21~22℃
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
30.638	20.84	-19.16	40	33.38	17.29	0.25	30.08	-	-	Peak
39.994	15.6	-24.4	40	33.07	12.3	0.25	30.02	-	-	Peak
91.175	17.59	-25.91	43.5	38.07	9.12	0.39	29.99	-	-	Peak
381.249	19.11	-26.89	46	32.66	15.49	0.83	29.87	-	-	Peak
833.317	23.43	-22.57	46	31.48	20.32	1.27	29.64	-	-	Peak
942.131	23.21	-22.79	46	30.71	20.7	1.33	29.53	-	-	Peak
2386	54.73	-19.27	74	46.73	32.86	4.22	29.08	100	0	Peak
2386	40.69	-13.31	54	32.69	32.86	4.22	29.08	100	0	Average
2412	98.24	-	-	90.16	32.89	4.24	29.05	152	0	Peak
2412	93.16	-	-	85.08	32.89	4.24	29.05	152	0	Average
2486.89	53.38	-20.62	74	45.08	33.01	4.29	29	120	0	Peak
2486.89	42.89	-11.11	54	34.59	33.01	4.29	29	120	0	Average

Test Mode :	802.11b	Temperature :	21~22℃
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
31.843	15.96	-24.04	40	29.26	16.55	0.24	30.09	-	-	Peak
95.762	25.06	-18.44	43.5	44.72	9.91	0.4	29.97	-	-	Peak
120.277	17.92	-25.58	43.5	35.64	11.8	0.45	29.97	-	-	Peak
345.595	23.18	-22.82	46	37.91	14.4	0.81	29.94	-	-	Peak
365.539	27.1	-18.9	46	41.3	14.88	0.83	29.91	-	-	Peak
833.317	32.05	-13.95	46	40.1	20.32	1.27	29.64	200	50	Peak
2376.69	53.8	-20.2	74	45.85	32.83	4.22	29.1	100	23	Peak
2376.69	41.46	-12.54	54	33.51	32.83	4.22	29.1	100	23	Average
2437	101.24	-	-	93.07	32.95	4.25	29.03	130	156	Peak
2437	92.13	-	-	83.96	32.95	4.25	29.03	130	156	Average
2493.35	53.21	-20.79	74	44.85	33.05	4.3	28.99	120	251	Peak
2493.35	41.98	-12.02	54	33.62	33.05	4.3	28.99	120	251	Average

Test Mode :	802.11b	Temperature :	21~22℃
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
30.64	28.78	-11.22	40	41.32	17.29	0.25	30.08	-	-	Peak
42.45	22.48	-17.52	40	41.83	10.48	0.26	30.09	-	-	Peak
90.54	24.37	-19.13	43.5	45.07	8.9	0.39	29.99	-	-	Peak
374.62	19.89	-26.11	46	33.74	15.21	0.83	29.89	-	-	Peak
566.62	19.07	-26.93	46	29.18	18.53	1.02	29.66	-	-	Peak
833.32	38.06	-7.94	46	46.11	20.32	1.27	29.64	100	181	Peak
2378.97	54.15	-19.85	74	46.19	32.83	4.22	29.09	100	0	Peak
2378.97	42.21	-11.79	54	34.25	32.83	4.22	29.09	100	0	Average
2437	98.4	-	-	90.23	32.95	4.25	29.03	126	310	Peak
2437	93.53	-	-	85.36	32.95	4.25	29.03	126	310	Average
2493.35	52.94	-21.06	74	44.58	33.05	4.3	28.99	150	355	Peak
2493.35	42.31	-11.69	54	33.95	33.05	4.3	28.99	150	355	Average

Test Mode :	802.11b	Temperature :	21~22℃
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
95.093	24.67	-18.83	43.5	44.44	9.8	0.4	29.97	-	-	Peak
118.601	17.29	-26.21	43.5	35.01	11.8	0.45	29.97	-	-	Peak
143.83	20.04	-23.46	43.5	38.98	10.55	0.5	29.99	-	-	Peak
365.539	29.24	-16.76	46	43.44	14.88	0.83	29.91	-	-	Peak
460.727	20.59	-25.41	46	33.01	16.45	0.91	29.78	-	-	Peak
833.317	32.62	-13.38	46	40.67	20.32	1.27	29.64	100	155	Peak
2339.64	54.19	-19.81	74	46.38	32.78	4.2	29.17	100	23	Peak
2339.64	44.07	-9.93	54	36.26	32.78	4.2	29.17	100	23	Average
2462	101.25	-	-	93.01	32.98	4.27	29.01	132	16	Peak
2462	95.5	-	-	87.26	32.98	4.27	29.01	132	16	Average
2492.4	53.11	-20.89	74	44.75	33.05	4.3	28.99	100	254	Peak
2492.4	42.86	-11.14	54	34.5	33.05	4.3	28.99	100	254	Average

Test Mode :	802.11b	Temperature :	21~22℃
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
32.979	26.52	-13.48	40	40.33	16.04	0.24	30.09	-	-	Peak
43.506	22.21	-17.79	40	42.02	10.03	0.27	30.11	-	-	Peak
91.175	24.33	-19.17	43.5	44.81	9.12	0.39	29.99	-	-	Peak
365.539	21.16	-24.84	46	35.36	14.88	0.83	29.91	-	-	Peak
460.727	19.65	-26.35	46	32.07	16.45	0.91	29.78	-	-	Peak
833.317	33.37	-12.63	46	41.42	20.32	1.27	29.64	100	89	Peak
2356.93	53.71	-20.29	74	45.82	32.81	4.21	29.13	120	215	Peak
2356.93	42.51	-11.49	54	34.62	32.81	4.21	29.13	120	215	Average
2462	97.69	-	-	89.45	32.98	4.27	29.01	114	315	Peak
2462	91.68	-	-	83.44	32.98	4.27	29.01	114	315	Average
2491.45	52.84	-21.16	74	44.48	33.05	4.3	28.99	132	120	Peak
2491.45	42.6	-11.4	54	34.24	33.05	4.3	28.99	132	120	Average

Test Mode :	802.11g	Temperature :	21~22℃
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
94.76	25.47	-18.03	43.5	45.24	9.8	0.4	29.97	100	192	Peak
119.018	17.79	-25.71	43.5	35.51	11.8	0.45	29.97	-	-	Peak
174.424	17.74	-25.76	43.5	38.21	8.87	0.55	29.89	-	-	Peak
343.18	23.13	-22.87	46	37.91	14.35	0.81	29.94	-	-	Peak
365.539	27.36	-18.64	46	41.56	14.88	0.83	29.91	-	-	Peak
942.131	23.97	-22.03	46	31.47	20.7	1.33	29.53	-	-	Peak
2380.87	54.68	-19.32	74	46.72	32.83	4.22	29.09	100	250	Peak
2380.87	42.49	-11.51	54	34.53	32.83	4.22	29.09	100	250	Average
2412	97.09	-	-	89.01	32.89	4.24	29.05	180	10	Peak
2412	81.54	-	-	73.46	32.89	4.24	29.05	180	10	Average
2495.82	52.45	-21.55	74	44.09	33.05	4.3	28.99	100	142	Peak
2495.82	41.87	-12.13	54	33.51	33.05	4.3	28.99	100	142	Average

Test Mode :	802.11g	Temperature :	21~22℃
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
30.424	32.24	-7.76	40	44.06	18	0.26	30.08	100	263	Peak
33.095	29.89	-10.11	40	43.7	16.04	0.24	30.09	-	-	Peak
41.713	26.83	-13.17	40	45.7	10.95	0.26	30.08	-	-	Peak
90.855	27.72	-15.78	43.5	48.2	9.12	0.39	29.99	-	-	Peak
365.539	21.51	-24.49	46	35.71	14.88	0.83	29.91	-	-	Peak
833.317	34.18	-11.82	46	42.23	20.32	1.27	29.64	-	-	Peak
2386.19	55.99	-18.01	74	47.99	32.86	4.22	29.08	120	122	Peak
2386.19	41.3	-12.7	54	33.3	32.86	4.22	29.08	120	122	Average
2412	95.23	-	-	87.15	32.89	4.24	29.05	121	340	Peak
2412	79.67	-	-	71.59	32.89	4.24	29.05	121	340	Average
2486.13	53.23	-20.77	74	44.93	33.01	4.29	29	110	250	Peak
2486.13	42.82	-11.18	54	34.52	33.01	4.29	29	110	250	Average

Test Mode :	802.11g	Temperature :	21~22℃
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
37.68	15.21	-24.79	40	31.33	13.7	0.24	30.06	-	-	Peak
93.113	29.86	-13.64	43.5	49.93	9.51	0.4	29.98	-	-	Peak
119.856	22.2	-21.3	43.5	39.92	11.8	0.45	29.97	-	-	Peak
345.595	28.79	-17.21	46	43.52	14.4	0.81	29.94	-	-	Peak
365.539	31.27	-14.73	46	45.47	14.88	0.83	29.91	-	-	Peak
833.317	32.68	-13.32	46	40.73	20.32	1.27	29.64	100	35	Peak
2340.78	55.53	-18.47	74	47.72	32.78	4.2	29.17	100	250	Peak
2340.78	42.67	-11.33	54	34.86	32.78	4.2	29.17	100	250	Average
2437	97.33	-	-	89.16	32.95	4.25	29.03	100	58	Peak
2437	82.53	-	-	74.36	32.95	4.25	29.03	100	58	Average
2490.88	53.25	-20.75	74	44.9	33.05	4.3	29	100	120	Peak
2490.88	41.97	-12.03	54	33.62	33.05	4.3	29	100	120	Average

Test Mode :	802.11g	Temperature :	21~22℃
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
30.105	33.74	-6.26	40	45.56	18	0.26	30.08	100	200	Peak
40.559	28.15	-11.85	40	46.31	11.64	0.25	30.05	-	-	Peak
50.586	23.5	-16.5	40	45.95	7.4	0.28	30.13	-	-	Peak
91.175	29.58	-13.92	43.5	50.06	9.12	0.39	29.99	-	-	Peak
365.539	23.23	-22.77	46	37.43	14.88	0.83	29.91	-	-	Peak
942.131	24.8	-21.2	46	32.3	20.7	1.33	29.53	-	-	Peak
2351.04	53.07	-20.93	74	45.22	32.78	4.21	29.14	100	100	Peak
2351.04	40.41	-13.59	54	32.56	32.78	4.21	29.14	100	100	Average
2437	79.22	-	-	71.05	32.95	4.25	29.03	104	123	Average
2437	94.69	-	-	86.52	32.95	4.25	29.03	104	123	Peak
2484.61	52.92	-21.08	74	44.62	33.01	4.29	29	100	154	Peak
2484.61	41.85	-12.15	54	33.55	33.01	4.29	29	100	154	Average

Test Mode :	802.11g	Temperature :	21~22℃
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
95.093	29.76	-13.74	43.5	49.53	9.8	0.4	29.97	-	-	Peak
122.834	21.74	-21.76	43.5	39.48	11.77	0.46	29.97	-	-	Peak
176.269	19.4	-24.1	43.5	40.02	8.71	0.56	29.89	-	-	Peak
345.595	27.37	-18.63	46	42.1	14.4	0.81	29.94	-	-	Peak
365.539	30.16	-15.84	46	44.36	14.88	0.83	29.91	-	-	Peak
833.317	34.8	-11.2	46	42.85	20.32	1.27	29.64	100	26	Peak
2340.4	54.93	-19.07	74	47.12	32.78	4.2	29.17	100	0	Peak
2340.4	40.76	-13.24	54	32.95	32.78	4.2	29.17	100	0	Average
2462	97.04	-	-	88.8	32.98	4.27	29.01	100	360	Peak
2462	81.13	-	-	72.89	32.98	4.27	29.01	100	360	Average
2488.98	56.35	-17.65	74	48.01	33.05	4.29	29	120	110	Peak
2488.98	41.93	-12.07	54	33.59	33.05	4.29	29	120	110	Average

Test Mode :	802.11g	Temperature :	21~22℃
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
31.731	32.3	-7.7	40	45.6	16.55	0.24	30.09	100	165	Peak
40.845	28.36	-11.64	40	46.52	11.64	0.25	30.05	-	-	Peak
50.232	23.84	-16.16	40	46.29	7.4	0.28	30.13	-	-	Peak
91.495	29.17	-14.33	43.5	49.65	9.12	0.39	29.99	-	-	Peak
460.727	21.79	-24.21	46	34.21	16.45	0.91	29.78	-	-	Peak
833.317	38.09	-7.91	46	46.14	20.32	1.27	29.64	-	-	Peak
2362.63	53.36	-20.64	74	45.46	32.81	4.21	29.12	110	15	Peak
2362.63	43.5	-10.5	54	35.6	32.81	4.21	29.12	110	15	Average
2462	93.41	-	-	85.17	32.98	4.27	29.01	115	321	Peak
2462	77.22	-	-	68.98	32.98	4.27	29.01	115	321	Average
2497.34	52.97	-21.03	74	44.61	33.05	4.3	28.99	100	250	Peak
2497.34	41.2	-12.8	54	32.84	33.05	4.3	28.99	100	250	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
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
95.762	30.2	-13.3	43.5	49.86	9.91	0.4	29.97	-	-	Peak
120.277	22.4	-21.1	43.5	40.12	11.8	0.45	29.97	-	-	Peak
175.652	19.51	-23.99	43.5	40.05	8.8	0.55	29.89	-	-	Peak
365.539	29.48	-16.52	46	43.68	14.88	0.83	29.91	-	-	Peak
383.932	26.43	-19.57	46	39.87	15.59	0.83	29.86	-	-	Peak
833.317	38.99	-7.01	46	47.04	20.32	1.27	29.64	100	206	Peak
2380.49	55.13	-18.87	74	47.17	32.83	4.22	29.09	160	18	Peak
2380.49	39.59	-14.41	54	31.63	32.83	4.22	29.09	160	18	Average
2412	96.91	-	-	88.83	32.89	4.24	29.05	160	18	Peak
2412	79.68	-	-	71.6	32.89	4.24	29.05	160	18	Average
2492.21	53.22	-20.78	74	44.86	33.05	4.3	28.99	100	86	Peak
2492.21	39.21	-14.79	54	30.85	33.05	4.3	28.99	100	86	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
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
32.52	31.88	-8.12	40	45.69	16.04	0.24	30.09	100	236	Peak
38.346	28.99	-11.01	40	45.8	12.98	0.25	30.04	-	-	Peak
50.764	23.95	-16.05	40	46.4	7.4	0.28	30.13	-	-	Peak
91.816	29.37	-14.13	43.5	49.61	9.35	0.39	29.98	-	-	Peak
365.539	22.49	-23.51	46	36.69	14.88	0.83	29.91	-	-	Peak
833.317	37.08	-8.92	46	45.13	20.32	1.27	29.64	-	-	Peak
2386.38	55.95	-18.05	74	47.95	32.86	4.22	29.08	100	85	Peak
2386.38	39.59	-14.41	54	31.59	32.86	4.22	29.08	100	85	Average
2412	95.57	-	-	87.49	32.89	4.24	29.05	100	39	Peak
2412	77.97	-	-	69.89	32.89	4.24	29.05	100	39	Average
2489.93	53.76	-20.24	74	45.41	33.05	4.3	29	100	39	Peak
2489.93	39.35	-14.65	54	31	33.05	4.3	29	100	39	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
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
93.768	30.4	-13.1	43.5	50.32	9.66	0.4	29.98	100	206	Peak
119.436	22.76	-20.74	43.5	40.48	11.8	0.45	29.97	-	-	Peak
339.589	24.24	-21.76	46	39.13	14.25	0.8	29.94	-	-	Peak
365.539	29.8	-16.2	46	44	14.88	0.83	29.91	-	-	Peak
378.584	28.5	-17.5	46	42.17	15.38	0.83	29.88	-	-	Peak
833.317	32.41	-13.59	46	40.46	20.32	1.27	29.64	-	-	Peak
2340.78	54	-20	74	46.19	32.78	4.2	29.17	126	43	Peak
2340.78	39.07	-14.93	54	31.26	32.78	4.2	29.17	126	43	Average
2437	96.16	-	-	87.99	32.95	4.25	29.03	126	43	Peak
2437	78.62	-	-	70.45	32.95	4.25	29.03	126	43	Average
2488.6	53.61	-20.39	74	45.27	33.05	4.29	29	126	43	Peak
2488.6	40.78	-13.22	54	32.44	33.05	4.29	29	126	43	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
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
30.105	32.73	-7.27	40	44.55	18	0.26	30.08	100	206	Peak
35.128	29.97	-10.03	40	44.73	15.1	0.23	30.09	-	-	Peak
41.86	28.04	-11.96	40	46.91	10.95	0.26	30.08	-	-	Peak
90.855	29.73	-13.77	43.5	50.21	9.12	0.39	29.99	-	-	Peak
365.539	21.74	-24.26	46	35.94	14.88	0.83	29.91	-	-	Peak
833.317	35.55	-10.45	46	43.6	20.32	1.27	29.64	-	-	Peak
2339.64	54.04	-19.96	74	46.23	32.78	4.2	29.17	100	40	Peak
2339.64	38.99	-15.01	54	31.18	32.78	4.2	29.17	100	48	Average
2437	94.73	-	-	86.56	32.95	4.25	29.03	100	40	Peak
2437	78.01	-	-	69.84	32.95	4.25	29.03	100	40	Average
2487.27	53.12	-20.88	74	44.82	33.01	4.29	29	100	40	Peak
2487.27	39.87	-14.13	54	31.57	33.01	4.29	29	100	40	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
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
32.067	20.72	-19.28	40	34.02	16.55	0.24	30.09	-	-	Peak
93.768	30.47	-13.03	43.5	50.39	9.66	0.4	29.98	-	-	Peak
118.186	23.45	-20.05	43.5	41.17	11.8	0.45	29.97	-	-	Peak
365.539	28.96	-17.04	46	43.16	14.88	0.83	29.91	-	-	Peak
383.932	27.33	-18.67	46	40.77	15.59	0.83	29.86	-	-	Peak
833.317	39.34	-6.66	46	47.39	20.32	1.27	29.64	100	19	Peak
2366.62	53.65	-20.35	74	45.73	32.81	4.22	29.11	100	179	Peak
2366.62	40.06	-13.94	54	32.14	32.81	4.22	29.11	100	179	Average
2462	97.32	-	-	89.08	32.98	4.27	29.01	100	36	Peak
2462	80.17	-	-	71.93	32.98	4.27	29.01	100	36	Average
2490.31	54.09	-19.91	74	45.74	33.05	4.3	29	100	251	Peak
2490.31	40.21	-13.79	54	31.86	33.05	4.3	29	100	251	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
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	35.24	-4.76	40	47.06	18	0.26	30.08	100	211	Peak
38.752	29.22	-10.78	40	46.03	12.98	0.25	30.04	-	-	Peak
50.942	24.15	-15.85	40	46.79	7.21	0.28	30.13	-	-	Peak
91.816	29.98	-13.52	43.5	50.22	9.35	0.39	29.98	-	-	Peak
833.317	40.38	-5.62	46	48.43	20.32	1.27	29.64	-	-	Peak
948.761	24.54	-21.46	46	32.02	20.73	1.33	29.54	-	-	Peak
2386.38	53.75	-20.25	74	45.75	32.86	4.22	29.08	100	37	Peak
2386.38	39.37	-14.63	54	31.37	32.86	4.22	29.08	100	37	Average
2462	97.68	-	-	89.44	32.98	4.27	29.01	100	37	Peak
2462	80.07	-	-	71.83	32.98	4.27	29.01	100	37	Average
2490.31	55.58	-18.42	74	47.23	33.05	4.3	29	100	37	Peak
2490.31	39.72	-14.28	54	31.37	33.05	4.3	29	100	37	Average

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.

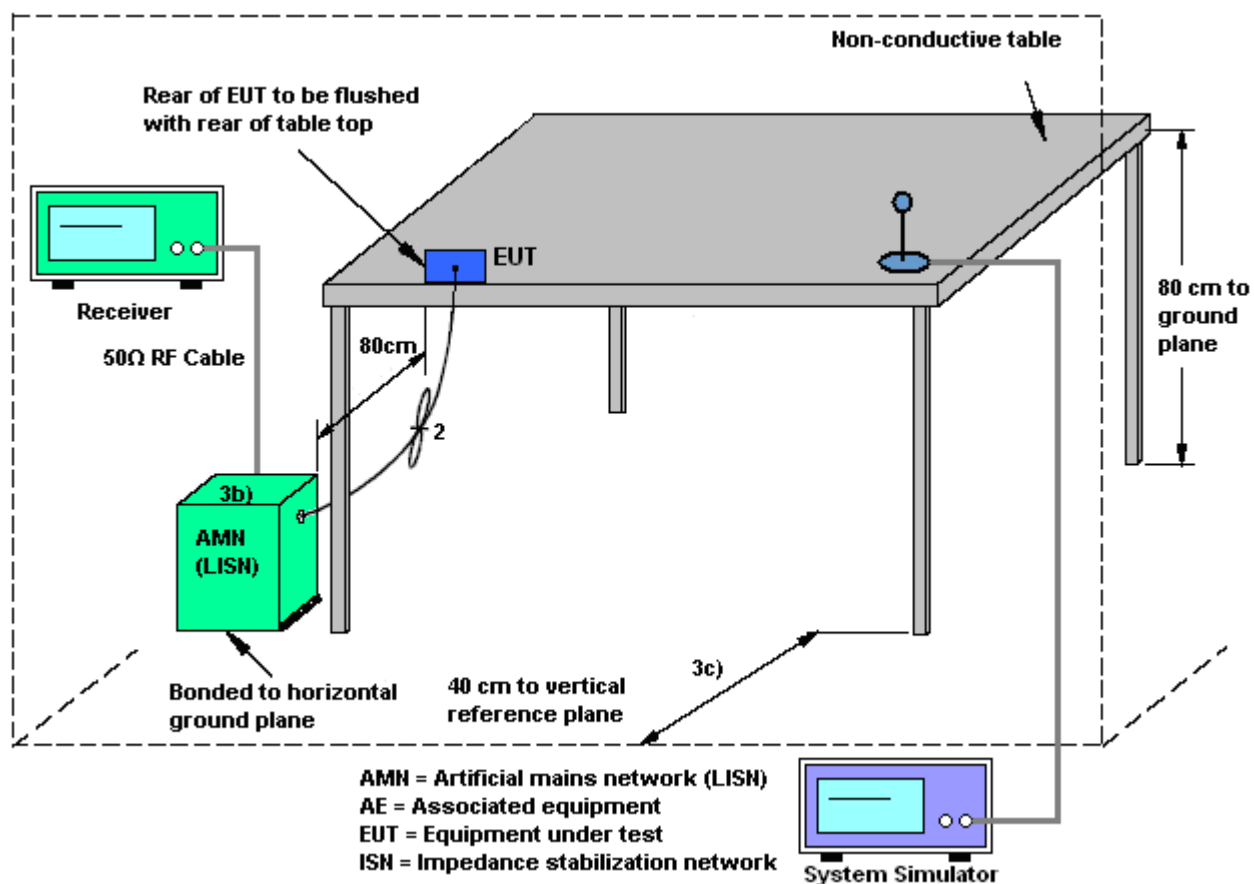
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

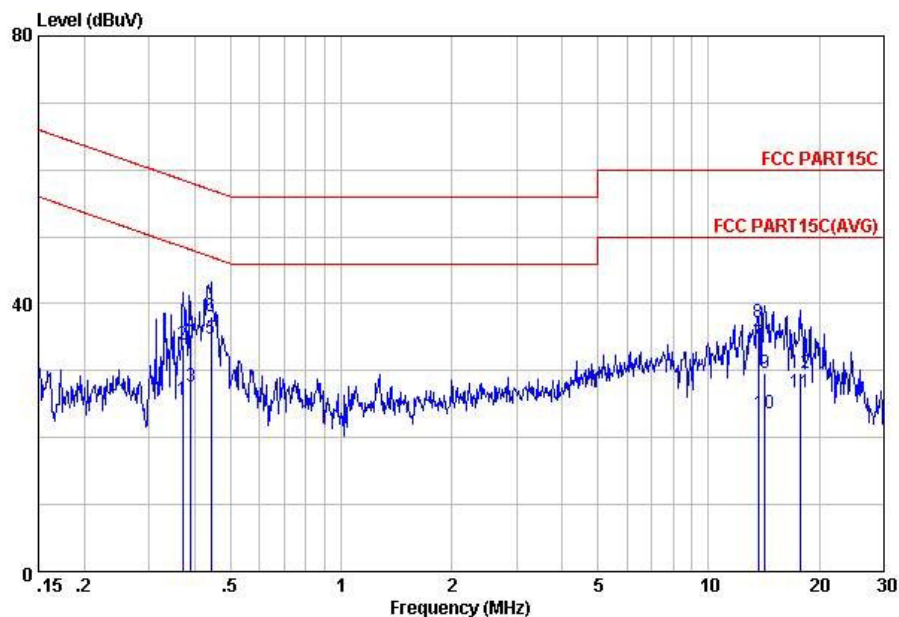
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance 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

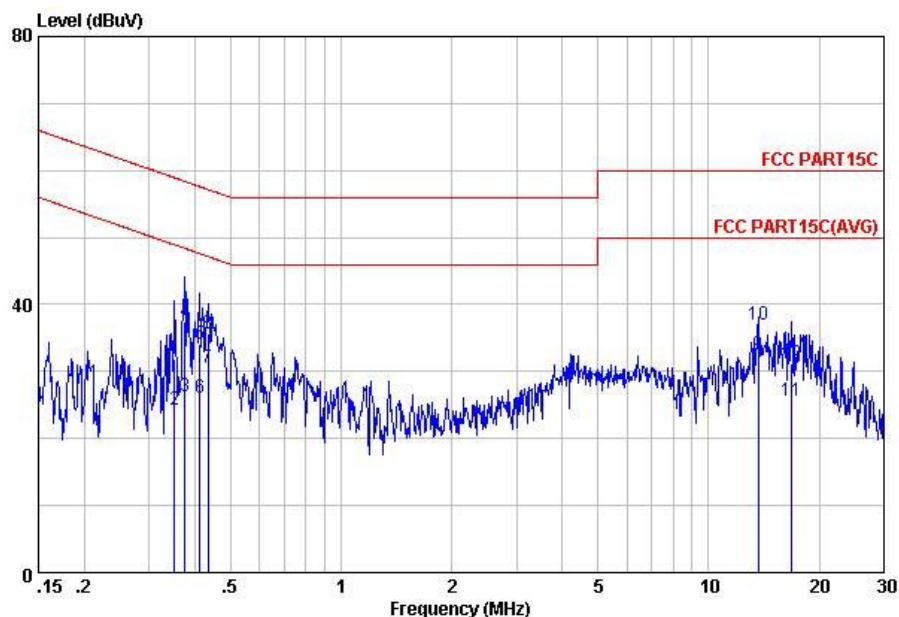
Test Mode :	Mode 1	Temperature :	19~20℃
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA 2000 BC0 Idle + WLAN Link + Bluetooth Link + USB Cable (Charging from Adapter) + NFC Tx		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
Condition: FCC PART15C LISN-111230 LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.37	25.73	-22.74	48.47	15.20	-0.08	10.61	Average
2	0.37	33.83	-24.64	58.47	23.30	-0.08	10.61	QP
3	0.39	27.54	-20.54	48.08	17.00	-0.08	10.62	Average
4	0.39	35.34	-22.74	58.08	24.80	-0.08	10.62	QP
5	0.44	34.74	-12.28	47.02	24.20	-0.08	10.62	Average
6	0.44	38.04	-18.98	57.02	27.50	-0.08	10.62	QP
7	13.62	34.03	-15.97	50.00	23.11	-0.06	10.98	Average
8	13.62	37.13	-22.87	60.00	26.21	-0.06	10.98	QP
9	14.21	29.74	-30.26	60.00	18.80	-0.05	10.99	QP
10	14.21	23.64	-26.36	50.00	12.70	-0.05	10.99	Average
11	17.75	26.70	-23.30	50.00	15.61	0.04	11.05	Average
12	17.75	29.60	-30.40	60.00	18.51	0.04	11.05	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 :	CDMA 2000 BC0 Idle + WLAN Link + Bluetooth Link + USB Cable (Charging from Adapter) + NFC Tx		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
Condition: FCC PART15C LISN-111230 NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.35	31.93	-26.98	58.91	21.40	-0.08	10.61	QP
2	0.35	24.33	-24.58	48.91	13.80	-0.08	10.61	Average
3	0.38	26.34	-22.05	48.39	15.81	-0.08	10.61	Average
4	0.38	37.34	-21.05	58.39	26.81	-0.08	10.61	QP
5	0.41	34.14	-23.45	57.59	23.60	-0.08	10.62	QP
6	0.41	26.14	-21.45	47.59	15.60	-0.08	10.62	Average
7	0.44	30.44	-16.71	47.15	19.90	-0.08	10.62	Average
8	0.44	35.74	-21.41	57.15	25.20	-0.08	10.62	QP
9	13.62	32.61	-17.39	50.00	21.70	-0.07	10.98	Average
10	13.62	37.01	-22.99	60.00	26.10	-0.07	10.98	QP
11	16.75	25.62	-24.38	60.00	14.61	-0.01	11.02	Average
12	16.75	31.22	-28.78	60.00	20.21	-0.01	11.02	QP

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. 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.

3.7.2 Antenna Connected Construction

Non-standard connector used.

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

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	Jul. 24, 2012~ Aug. 21, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 23, 2011	Jul. 24, 2012~ Aug. 21, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 23, 2011	Jul. 24, 2012~ Aug. 21, 2012	Aug. 22, 2012	Conducted (TH01-KS)
DC Power Supply	GWINSTEK	GPS-3030D	E1884515	N/A	Aug. 23, 2011	Jul. 24, 2012~ Aug. 21, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 30, 2011	Jul. 24, 2012~ Aug. 21, 2012	Dec. 29, 2012	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	Aug. 20, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Aug. 20, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	Aug. 20, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/00	9 kHz~30 MHz	Jul. 28, 2012	Aug. 20, 2012	Jul. 27, 2013	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	Aug. 20, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 30, 2011	Aug. 20, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	Aug. 20, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2011	Aug. 20, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Oct. 11, 2011	Aug. 20, 2012	Oct.10, 2012	Radiation (03CH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 01, 2012	Aug. 20, 2012	May 31, 2013	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 30, 2011	Aug. 20, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Dec. 30, 2011	Aug. 20, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 16, 2011	Aug. 20, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	2G Full-Band	Dec. 30, 2011	Aug. 20, 2012	Dec. 29, 2012	Conduction (CO01-KS)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72
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Uncertainty of Conducted Emission Measurement (150 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP270201 as below.