

FCC RF Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : CDMA/LTE Multi-Mode Digital Mobile Phone
BRAND NAME : ZTE
MODEL NAME : ZTE N9810
FCC ID : Q78-ZTEN9810
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Dec. 18, 2012 and completely tested on Feb. 18, 2013. 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.

TABLE OF CONTENTS

REVISION HISTORY.....	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant.....	5
1.2 Manufacturer.....	5
1.3 Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test.....	5
1.5 Testing Site.....	6
1.6 Applied Standards	6
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	7
2.1 Carrier Frequency Channel	7
2.2 Pre-Scanned RF Power.....	8
2.3 Test Mode.....	10
2.4 Connection Diagram of Test System.....	12
2.5 Support Unit used in test configuration and system	13
2.6 Description of RF Function Operation Test Setup.....	13
2.7 Measurement Results Explanation Example.....	13
3 TEST RESULT.....	14
3.1 6dB Bandwidth Measurement	14
3.2 Output Power Measurement.....	25
3.3 Power Spectral Density Measurement	30
3.4 Conducted Band Edges and Spurious Emission Measurement	49
3.5 Radiated Band Edges and Spurious Emission Measurement	70
3.6 AC Conducted Emission Measurement.....	109
3.7 Antenna Requirements.....	113
4 LIST OF MEASURING EQUIPMENT	114
5 UNCERTAINTY OF EVALUATION.....	115
APPENDIX A. PHOTOGRAPHS OF EUT	
APPENDIX B. SETUP PHOTOGRAPHS	

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR2D1804C	Rev. 01	Initial issue of report	Feb. 20, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	RSS-210 A8.4	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	$\leq 8\text{dBm/3kHz}$	Pass	-
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	Under limit 1.06 dB at 5723.900 MHz
			Radiated Spurious Emission			
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 11.69 dB at 6.090 MHz
3.7	15.203 & 15.247(b)	RSS-210 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 Multi-Mode Digital Mobile Phone
Brand Name	ZTE
Model Name	ZTE N9810
FCC ID	Q78-ZTEN9810
EUT supports Radios application	CDMA/EV-DO/LTE/WLAN 11abgn/ Bluetooth/Bluetooth4.0 – LE/NFC
HW Version	c9zB
SW Version	N9810V1.0.0B01
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 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	802.11b/g/n : 2412 MHz ~ 2462 MHz 802.11a/n: 5745~5805MHz.
Maximum Output Power to Antenna	<2412 MHz ~ 2462 MHz> 802.11b : 17.26 dBm (0.0532 W) 802.11g : 22.92 dBm (0.1959 W) 802.11n HT20 : 22.63 dBm (0.1832 W) <5745 MHz ~ 5805 MHz> 802.11a : 18.25 dBm (0.0668 W) 802.11n HT20 : 18.46 dBm (0.0701 W)
Antenna Type	802.11b/g/n : PIFA Antenna type with gain 3.00 dBi 802.11a/n : PIFA Antenna type with gain 3.00 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 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

The test site complies with ANSI C63.4 2003 requirement.

1.6 Applied Standards

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

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
- ♦ ANSIC63.10-2009

Remark:

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

2 Test Configuration of Equipment Under Test

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 (Y 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		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4	149	5745	159	5795
	151	5755	161	5805
	157	5785		

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	802.11b RF Power (dBm)			
		DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	17.15	16.82	16.32	16.26
CH 06	2437 MHz	17.21	17.16	16.58	16.64
CH 11	2462 MHz	17.26	16.57	16.48	16.38

Channel	Frequency	802.11g RF Power (dBm)							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	22.28	22.24	22.18	22.25	21.92	22.46	22.17	21.58
CH 06	2437 MHz	22.92	22.87	22.75	22.68	22.62	22.58	22.47	22.21
CH 11	2462 MHz	22.57	22.45	22.38	22.28	22.25	22.18	21.96	22.89

Channel	Frequency	2.4GHz 802.11n HT20 RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	22.05	21.81	21.78	21.68	21.36	21.29	21.18	21.06
CH 06	2437 MHz	22.63	22.35	22.11	22.05	21.96	21.87	21.65	21.63
CH 11	2462 MHz	22.24	21.95	21.85	21.73	21.68	21.58	21.37	21.24

Channel	Frequency	802.11a RF Power (dBm)							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 149	5745 MHz	18.25	18.21	18.19	18.15	18.12	18.08	18.02	17.96
CH 157	5785 MHz	17.96	17.83	17.68	17.92	17.88	17.84	17.89	17.72
CH 161	5805 MHz	17.82	17.74	17.72	17.69	17.65	17.59	17.56	17.77

Channel	Frequency	5GHz 802.11n HT20 RF Power (dBm)							
		OFDM Data Rate							
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 149	5745 MHz	18.40	18.27	18.25	18.28	18.38	18.42	18.46	18.30
CH 157	5785 MHz	17.92	17.77	17.74	17.81	17.85	17.86	17.82	17.83
CH 161	5805 MHz	17.93	17.73	17.85	17.88	17.86	17.88	17.84	17.83

2.3 Test Mode

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

<2.4GHz>

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

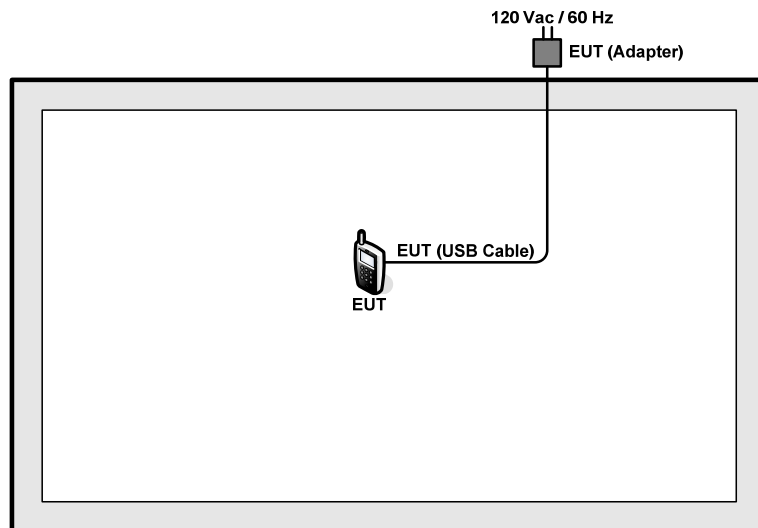
<5GHz>

Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB BW	802.11a	6 Mbps	149/157/161
	Power Spectral Density	802.11n HT20	58.5 Mbps	149/157/161
	Output Power	802.11a	6 Mbps	149/157/161
		802.11n HT20	58.5 Mbps	149/157/161
	Conducted Band Edge	802.11a	6 Mbps	149/161
		802.11n HT20	58.5 Mbps	149/161
	Conducted Spurious Emission	802.11a	6 Mbps	149/157/161
		802.11n HT20	58.5 Mbps	149/157/161
	Radiated TCs	Radiated Band Edge	802.11a	149/161
			802.11n HT20	149/161
		Radiated Spurious Emission	802.11a	149/157/161
			802.11n HT20	149/157/161

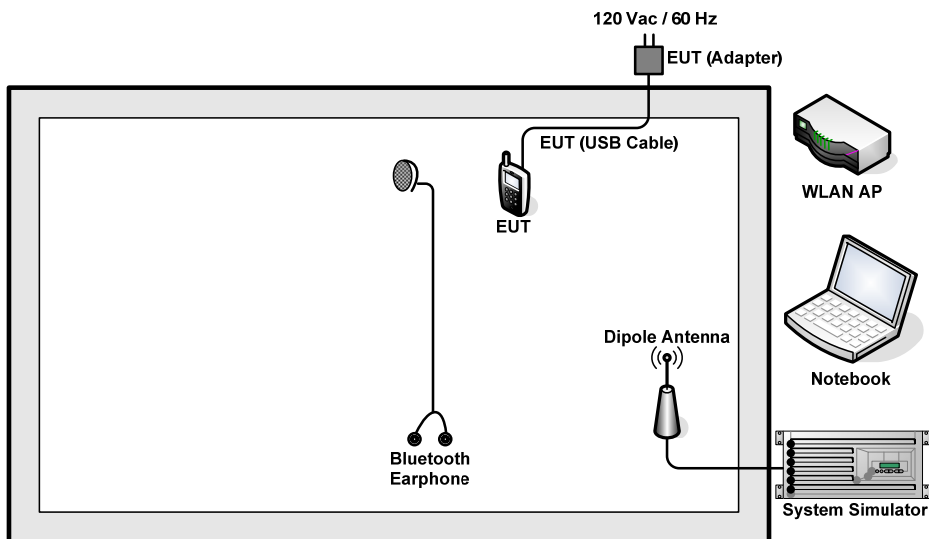
Test Cases	
AC Conducted Emission	Mode 1 :CDMA2000 BC0 Idle + Bluetooth Link + WLAN (2.4G) Link + USB Cable (Charging from Adapter) + NFC Tx
	Mode 2 :CDMA2000 BC0 Idle + Bluetooth Link + WLAN (5G) Link + USB Cable (Charging from Adapter) + NFC Tx
Remark: The worst case of conducted emission is mode 1; only the test data of it was reported.	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

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.	DC Power Supply	GWINSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	P08S	QDS-BRCM1030	N/A	AC I/P: Unshielded, 0.9 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A

2.6 Description of RF Function Operation Test Setup

For WLAN function, programmed RF utility, executed "FCC Test" software to make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

2.7 Measurement Results Explanation Example

For conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and 10dB attenuator between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and 10dB attenuator factor.

Offset = RF cable loss + attenuator factor.

Following table shows an offset computation example with cable loss 5.6 dB.

Example:

$$\begin{aligned}
 \text{Offset (dB)} &= \text{RF cable loss (dB)} + \text{attenuator factor (dB)} \\
 &= 5.6 + 10 = 15.6 \text{ (dB)}
 \end{aligned}$$

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.

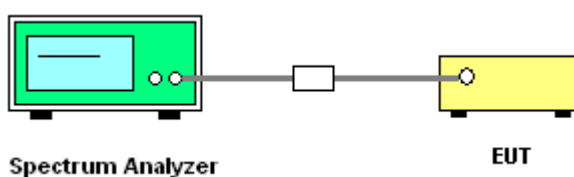
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 KHz.
5. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

Test Mode :	802.11b	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	9.06	0.5	Pass
06	2437	8.04	0.5	Pass
11	2462	8.56	0.5	Pass

Test Mode :	802.11g	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.36	0.5	Pass
06	2437	16.36	0.5	Pass
11	2462	16.36	0.5	Pass

Test Mode :	2.4GHz 802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.56	0.5	Pass
06	2437	17.56	0.5	Pass
11	2462	17.60	0.5	Pass

Test Mode :	802.11a	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

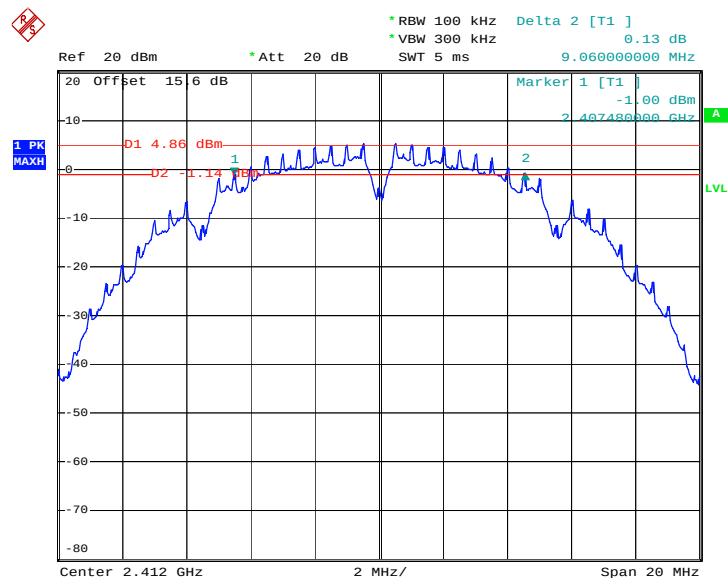
Channel	Frequency (MHz)	802.11a 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	16.32	0.5	Pass
157	5785	16.36	0.5	Pass
161	5805	16.36	0.5	Pass

Test Mode :	5GHz 802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	5GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	17.56	0.5	Pass
157	5785	17.56	0.5	Pass
161	5805	17.56	0.5	Pass

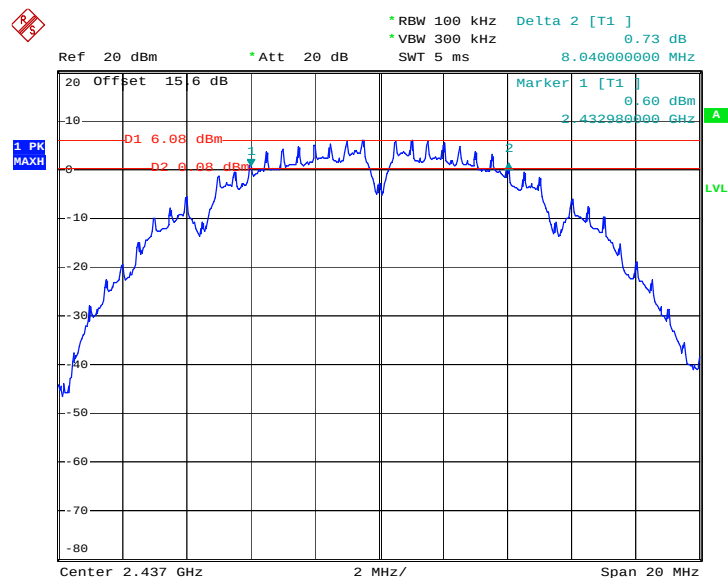
3.1.7 Test Result of 6dB Bandwidth Plots

6 dB Bandwidth Plot on 802.11b Channel 01

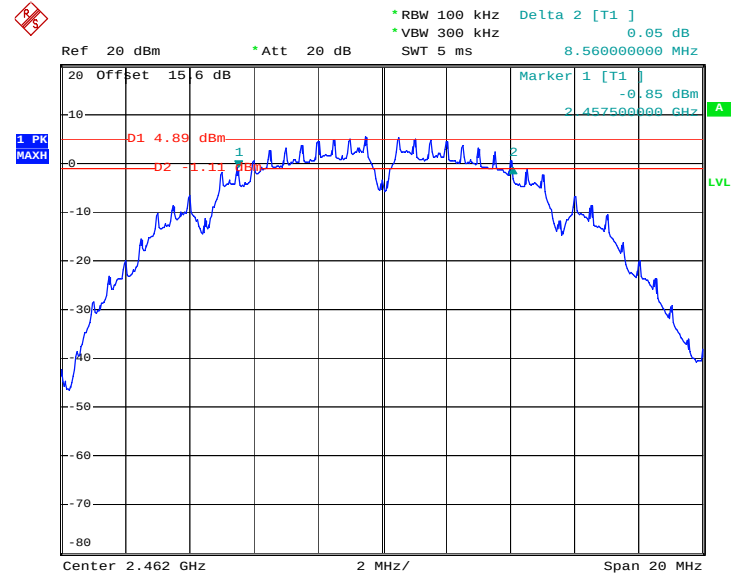


Date: 14.JAN.2013 23:50:45

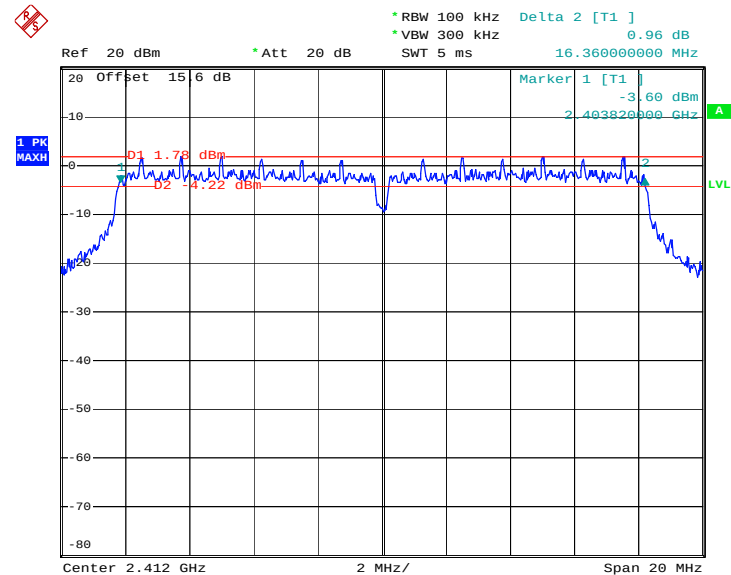
6 dB Bandwidth Plot on 802.11b Channel 06



Date: 14.JAN.2013 23:53:26

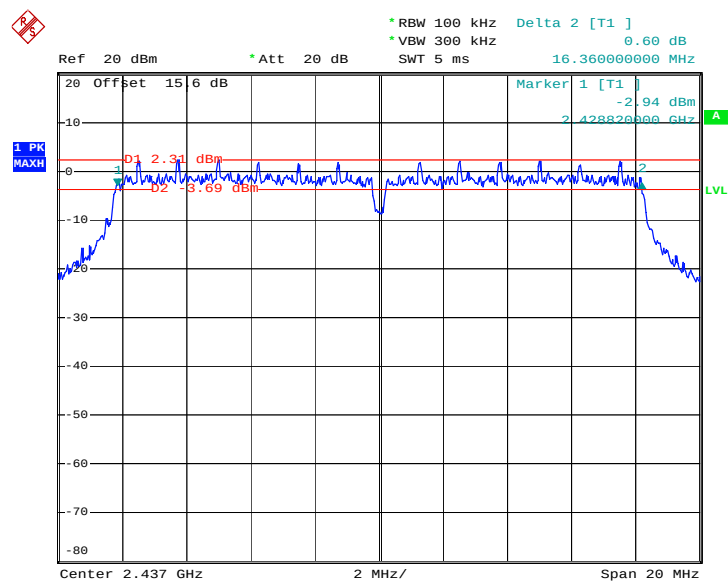
6 dB Bandwidth Plot on 802.11b Channel 11


Date: 14.JAN.2013 23:56:27

6 dB Bandwidth Plot on 802.11g Channel 01


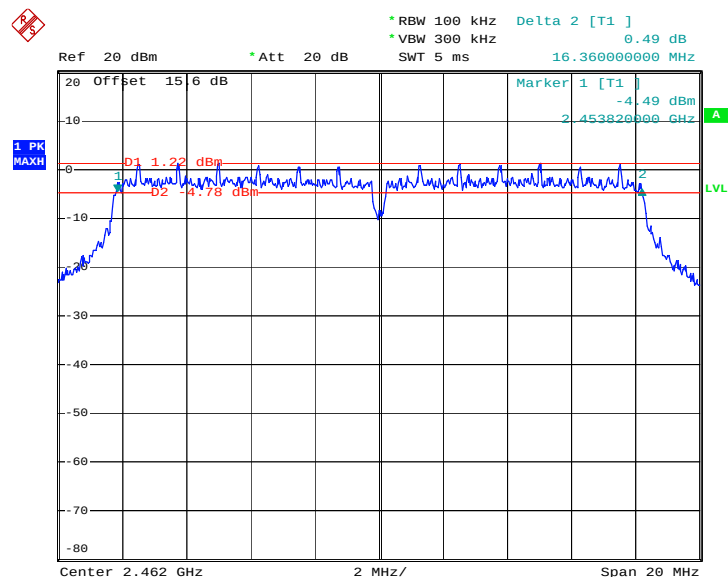
Date: 15.JAN.2013 00:01:08

6 dB Bandwidth Plot on 802.11g Channel 06

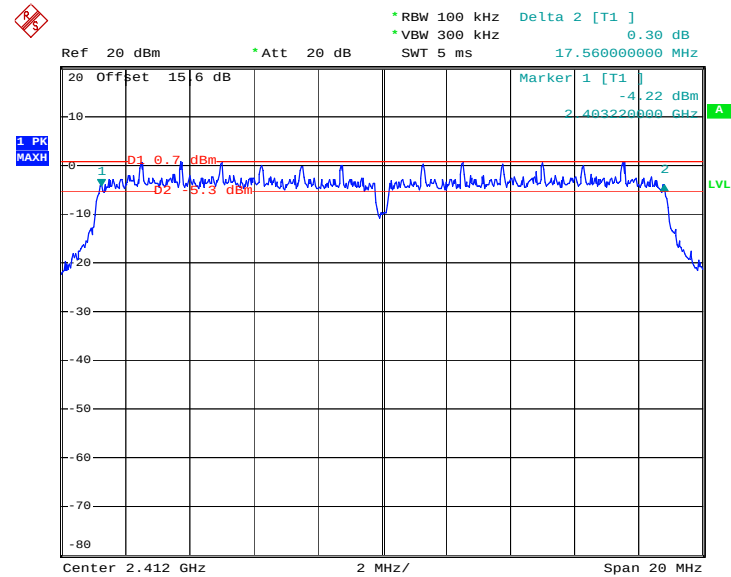


Date: 15.JAN.2013 00:04:18

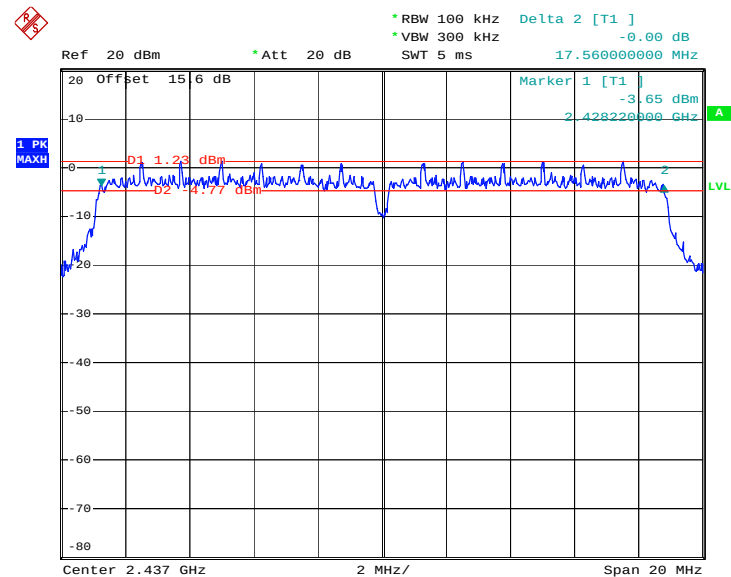
6 dB Bandwidth Plot on 802.11g Channel 11



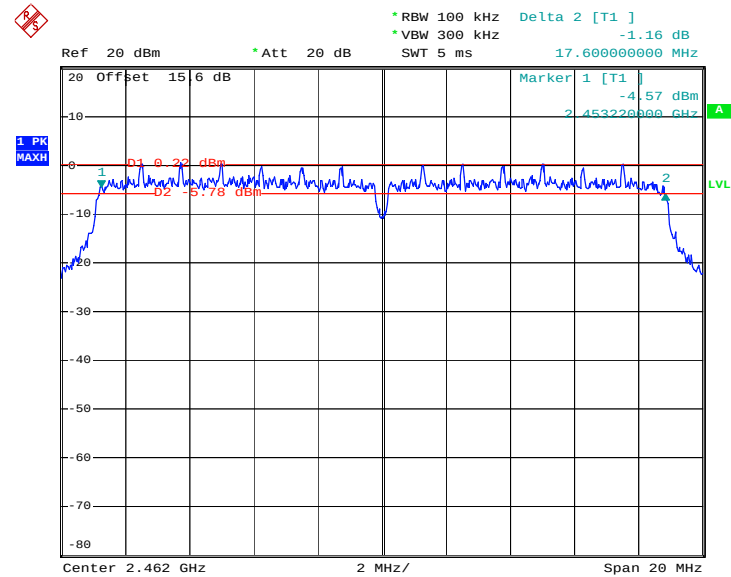
Date: 15.JAN.2013 00:07:41

6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 01


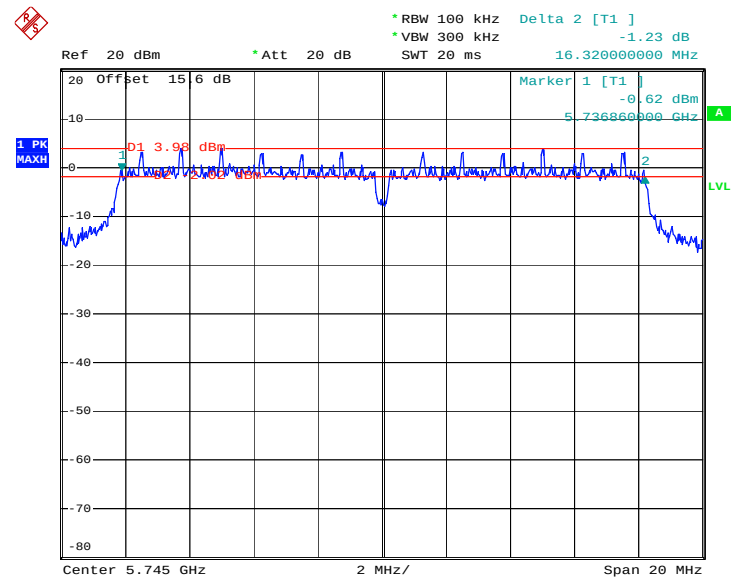
Date: 15.JAN.2013 00:12:36

6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 06


Date: 15.JAN.2013 00:15:15

6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 11


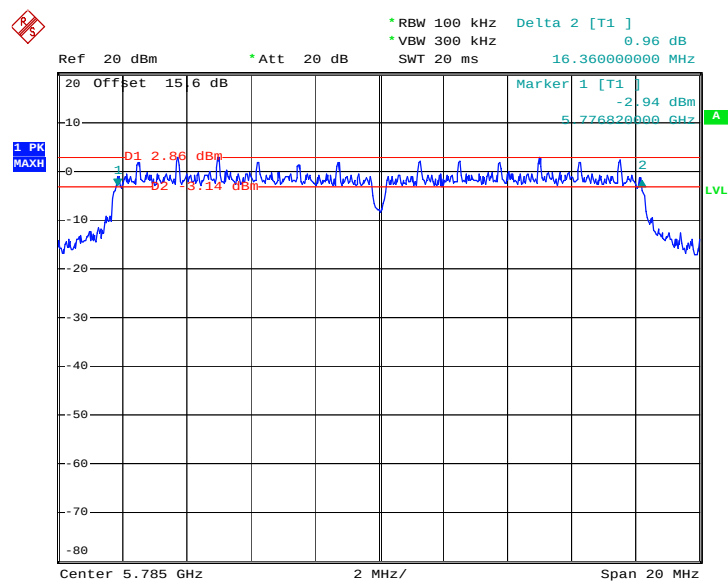
Date: 15.JAN.2013 00:17:38

6 dB Bandwidth Plot on 802.11a Channel 149


Date: 23.JAN.2013 16:15:36

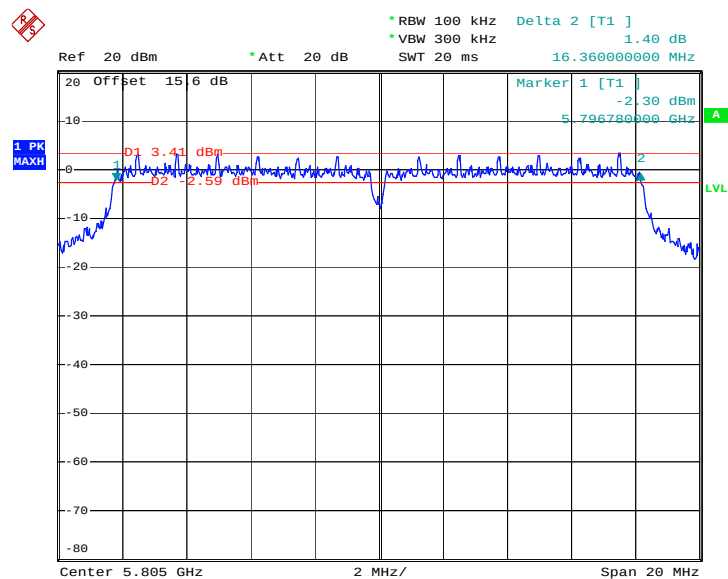


6 dB Bandwidth Plot on 802.11a Channel 157

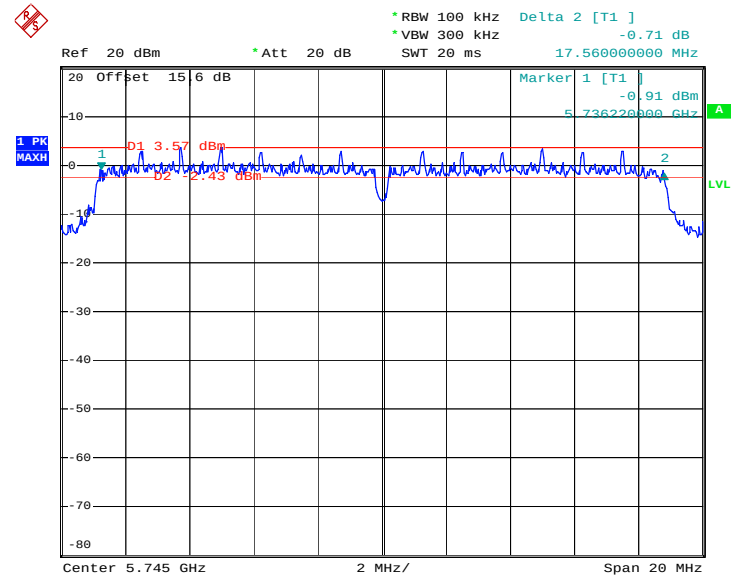


Date: 23.JAN.2013 16:20:18

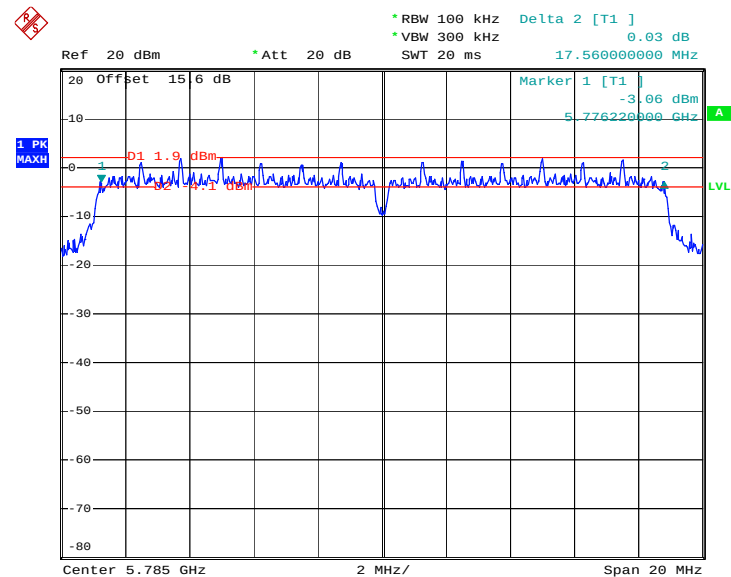
6 dB Bandwidth Plot on 802.11a Channel 161



Date: 6.FEB.2013 17:18:37

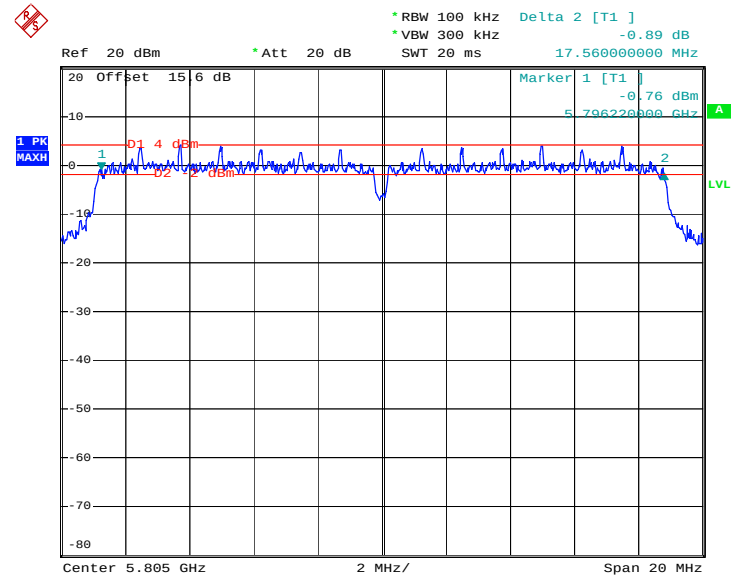
6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 149


Date: 23.JAN.2013 16:46:44

6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 157


Date: 23.JAN.2013 16:57:11

6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 161



Date: 6.FEB.2013 17:21:38

3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

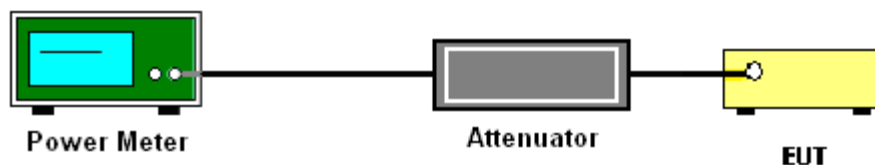
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. 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 :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.15	30	Pass
06	2437	17.21	30	Pass
11	2462	17.26	30	Pass

Test Mode :	802.11g	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	22.28	30	Pass
06	2437	22.92	30	Pass
11	2462	22.57	30	Pass

Test Mode :	2.4GHz 802.11n HT20	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	22.05	30	Pass
06	2437	22.63	30	Pass
11	2462	22.24	30	Pass

Test Mode :	802.11 a	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11a Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	18.25	30	Pass
157	5785	17.96	30	Pass
161	5805	17.82	30	Pass

Test Mode :	5GHz 802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	5GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	18.46	30	Pass
157	5785	17.82	30	Pass
161	5805	17.84	30	Pass

3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	97.67%	Duty Factor:	0.10dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	13.97
06	2437	14.16
11	2462	14.18

Test Mode :	802.11g	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	86.34%	Duty Factor:	0.64dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	13.82
06	2437	13.85
11	2462	13.07

Test Mode :	2.4GHz 802.11n HT20	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	85.94%	Duty Factor:	0.66dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Average Output Power (dBm)
01	2412	12.97
06	2437	13.07
11	2462	12.61



Test Mode :	802.11a	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	86.88%	Duty Factor:	0.61dB

Channel	Frequency (MHz)	802.11a Average Output Power (dBm)
149	5745	14.90
157	5785	14.37
161	5805	14.32

Test Mode :	5GHz 802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%
Duty Cycle:	47.37%	Duty Factor:	3.24dB

Channel	Frequency (MHz)	5GHz 802.11n HT20 Average Output Power (dBm)
149	5745	15.06
157	5785	14.66
161	5805	14.53

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.

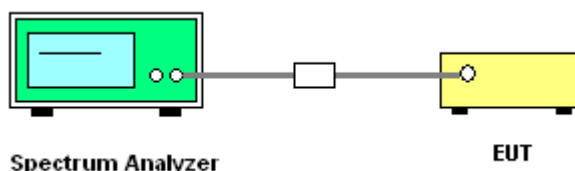
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 9.1 Option 1 of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. The Measured power density (dBm) / 100KHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11b	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
01	2412	4.93	-9.25	8	Pass
06	2437	5.79	-7.59	8	Pass
11	2462	5.28	-8.79	8	Pass

Test Mode :	802.11g	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
01	2412	1.25	-11.45	8	Pass
06	2437	2.07	-12.27	8	Pass
11	2462	0.92	-12.88	8	Pass

Test Mode :	2.4GHz 802.11n HT20	Temperature :	20~21°C
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
01	2412	0.66	-11.91	8	Pass
06	2437	1.17	-13.56	8	Pass
11	2462	-0.31	-13.64	8	Pass

Test Mode :	802.11a	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11a Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
149	5745	3.22	-12.34	8	Pass
157	5785	2.29	-12.63	8	Pass
161	5805	3.43	-10.77	8	Pass

Test Mode :	5GHz 802.11n HT20	Temperature :	20~21℃
Test Engineer :	Zhi Lu	Relative Humidity :	40~41%

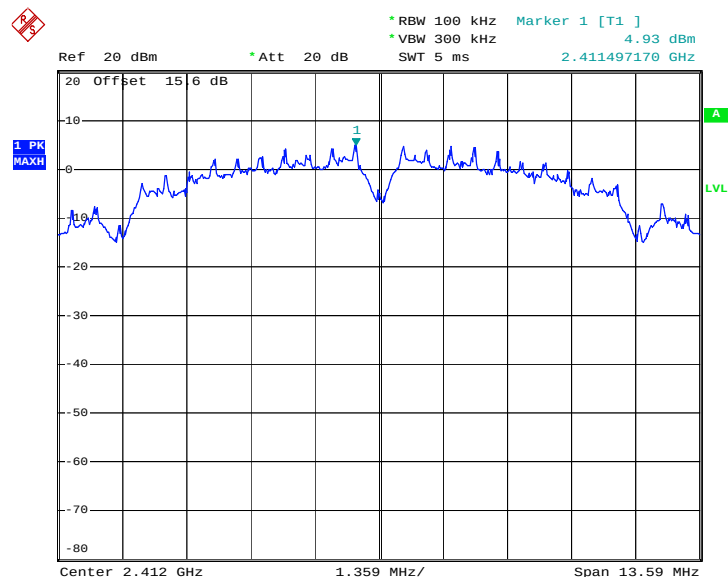
Channel	Frequency (MHz)	5GHz 802.11n HT20 Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
149	5745	3.56	-11.85	8	Pass
157	5785	2.04	-13.55	8	Pass
161	5805	4.05	-10.79	8	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. The Measured power density (dBm)/ 100KHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.

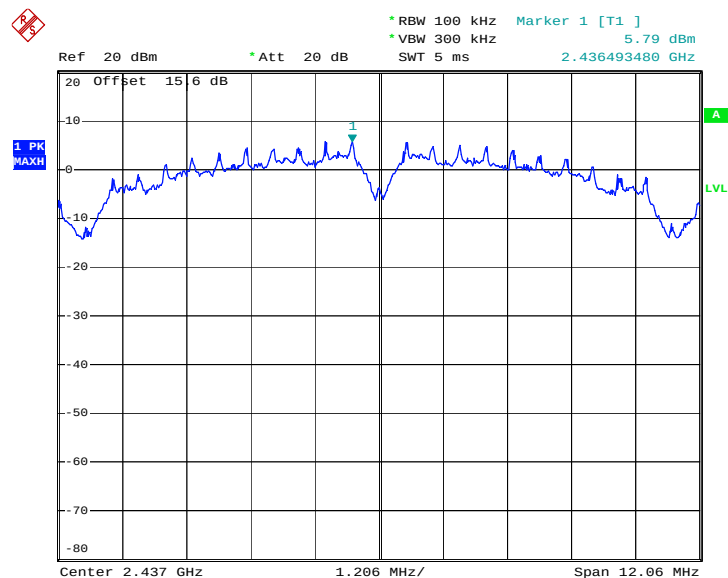
3.3.6 Test Result of Power Spectral Density Plots (100kHz)

PSD 100kHz Plot on 802.11b Channel 01



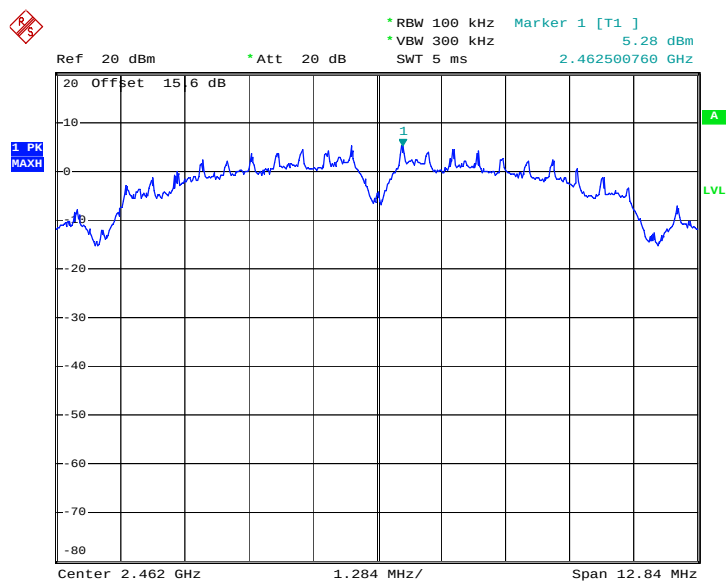
Date: 14.JAN.2013 23:51:14

PSD 100kHz Plot on 802.11b Channel 06



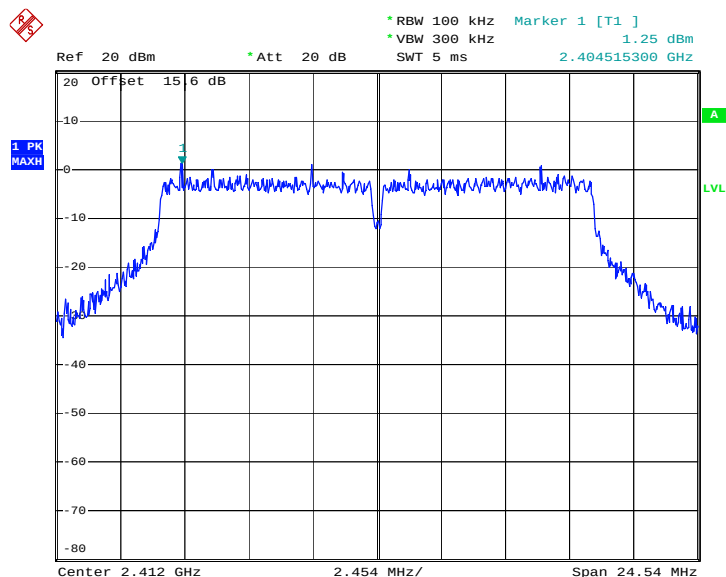
Date: 14.JAN.2013 23:53:56

PSD 100kHz Plot on 802.11b Channel 11

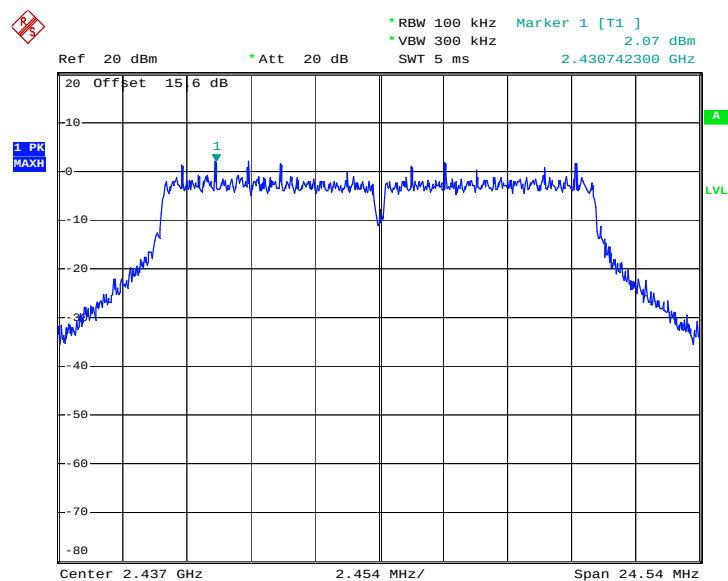


Date: 14.JAN.2013 23:56:57

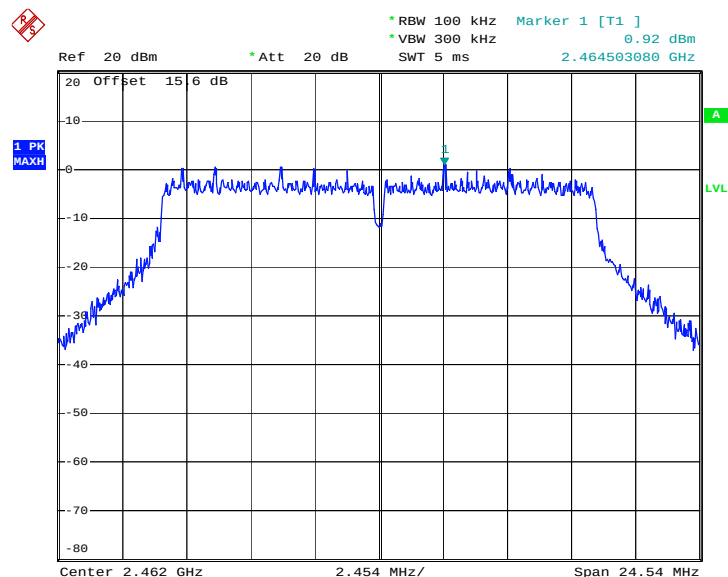
PSD 100kHz Plot on 802.11g Channel 01



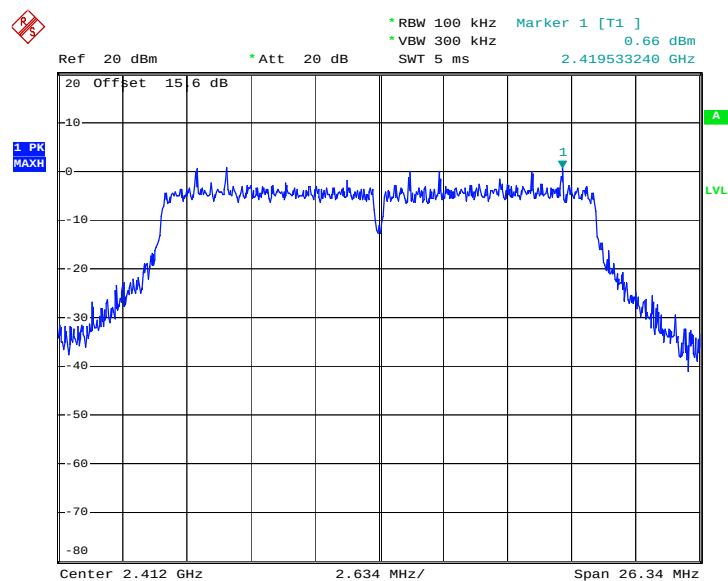
Date: 15.JAN.2013 00:01:39

PSD 100kHz Plot 802.11g Channel 06


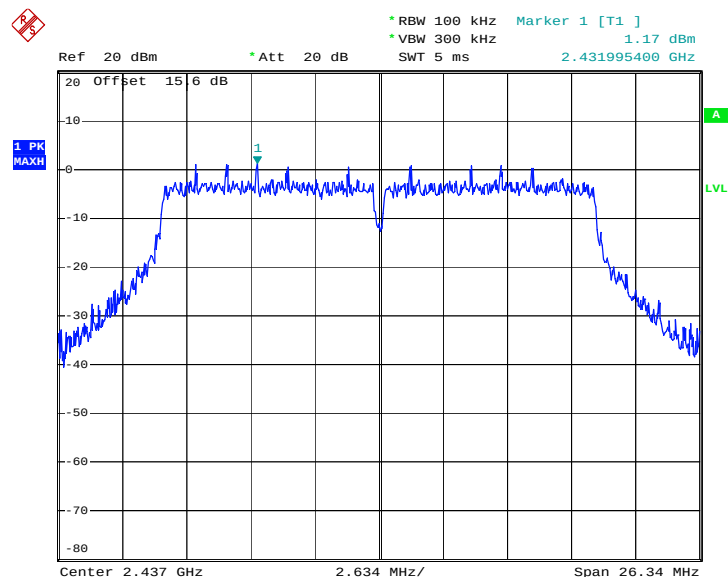
Date: 15.JAN.2013 00:04:49

PSD 100kHz Plot 802.11g Channel 11


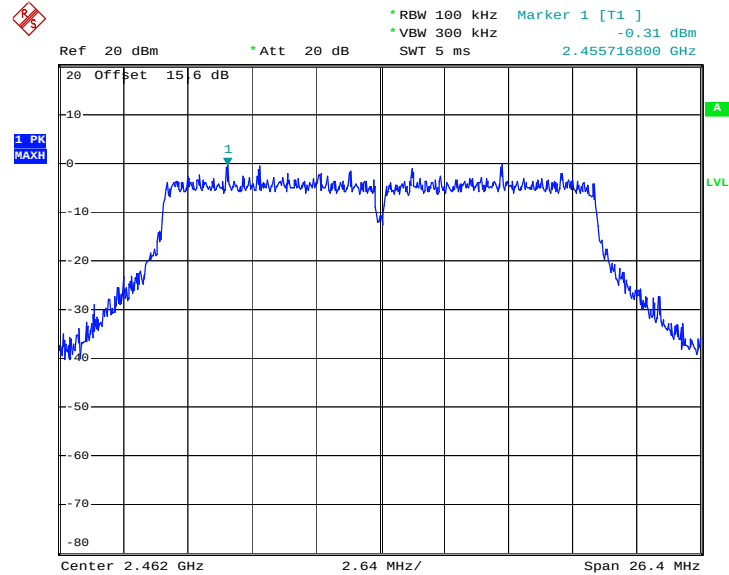
Date: 15.JAN.2013 00:09:56

PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 01


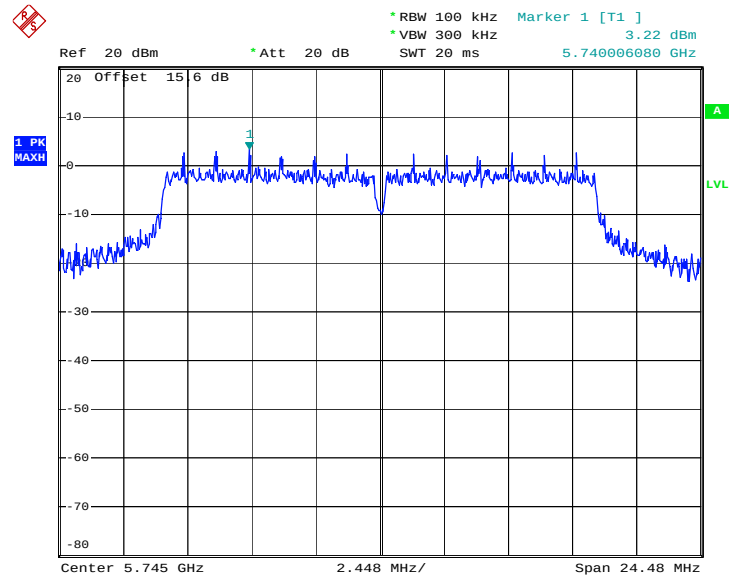
Date: 15.JAN.2013 00:13:07

PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 06


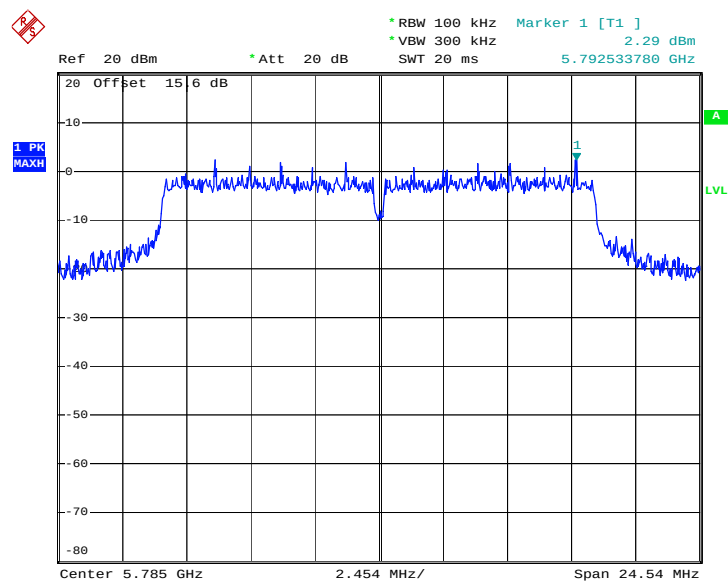
Date: 15.JAN.2013 00:15:46

PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 11


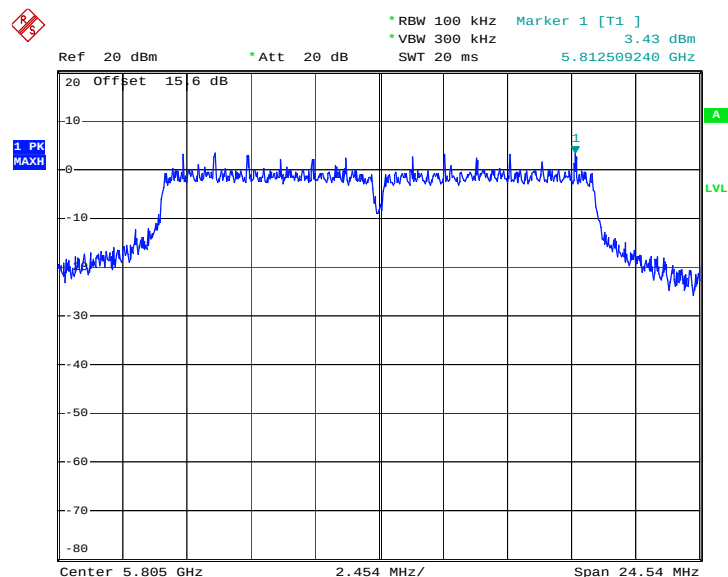
Date: 15.JAN.2013 00:18:09

PSD 100kHz Plot on 802.11a Channel 149


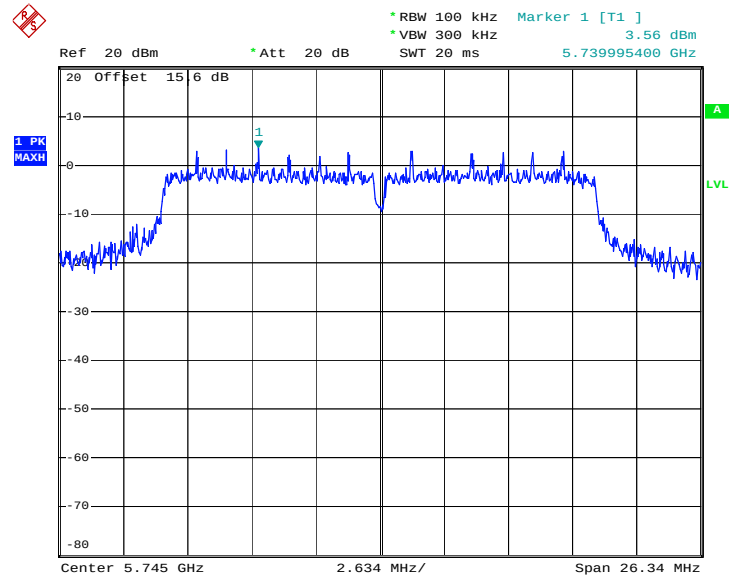
Date: 23.JAN.2013 16:16:27

PSD 100kHz Plot on 802.11a Channel 157


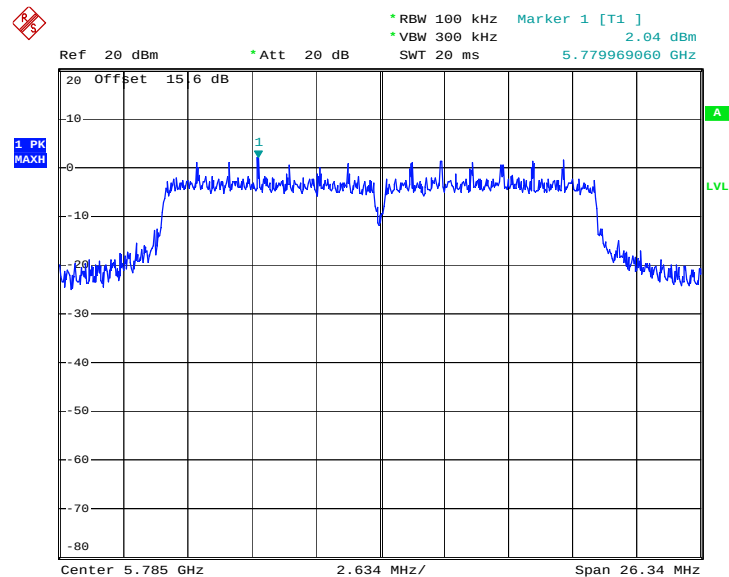
Date: 23.JAN.2013 16:20:48

PSD 100kHz Plot on 802.11a Channel 161


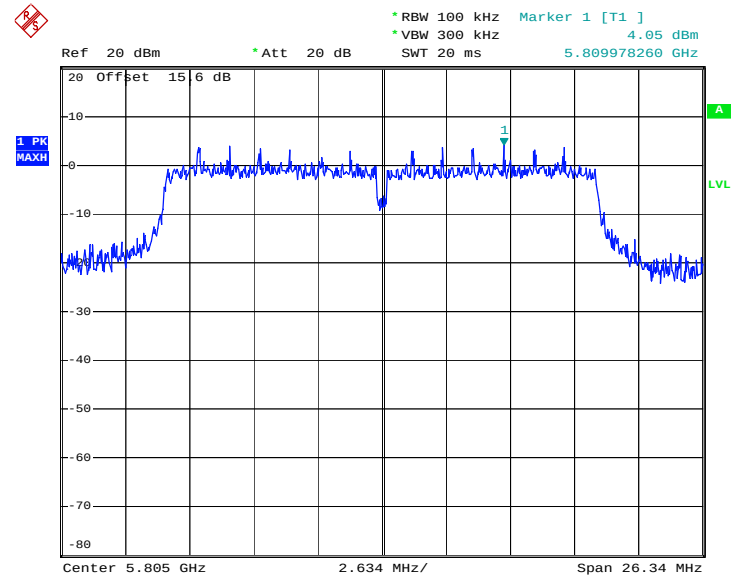
Date: 6.FEB.2013 17:19:07

PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 149


Date: 23.JAN.2013 16:47:15

PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 157


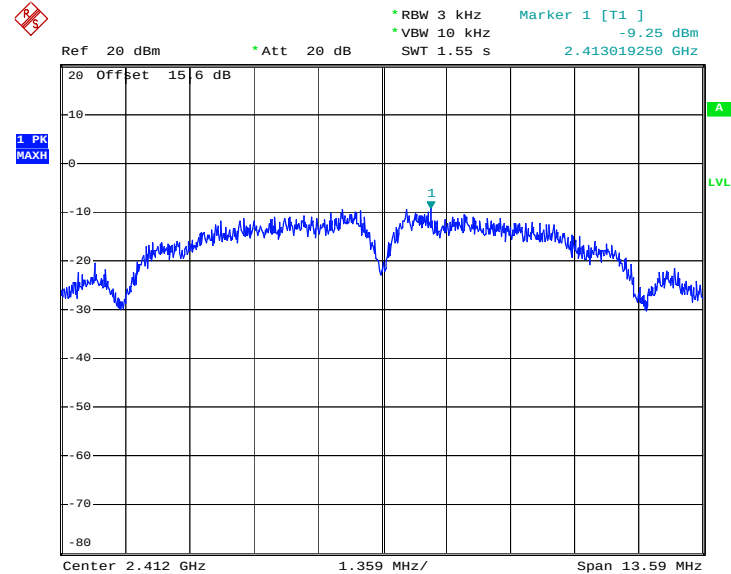
Date: 23.JAN.2013 16:57:42

PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 161


Date: 6.FEB.2013 17:22:09

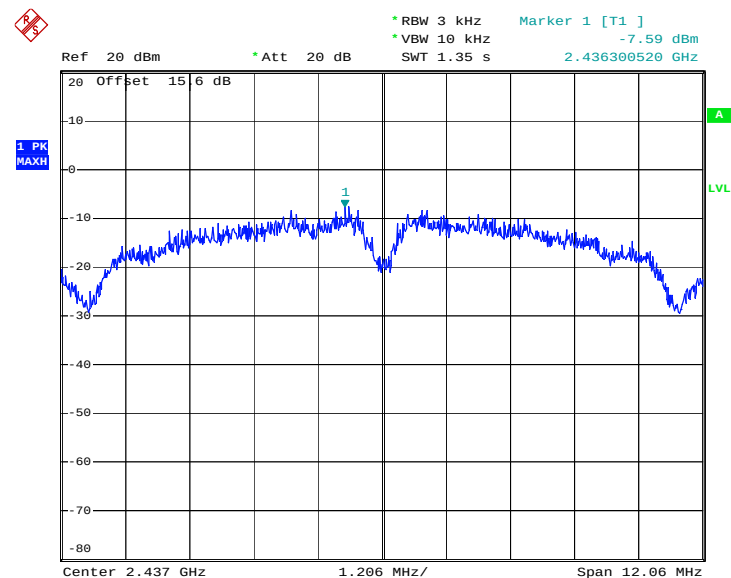
3.3.7 Test Result of Power Spectral Density Plots (3kHz)

PSD 3kHz Plot on 802.11b Channel 01



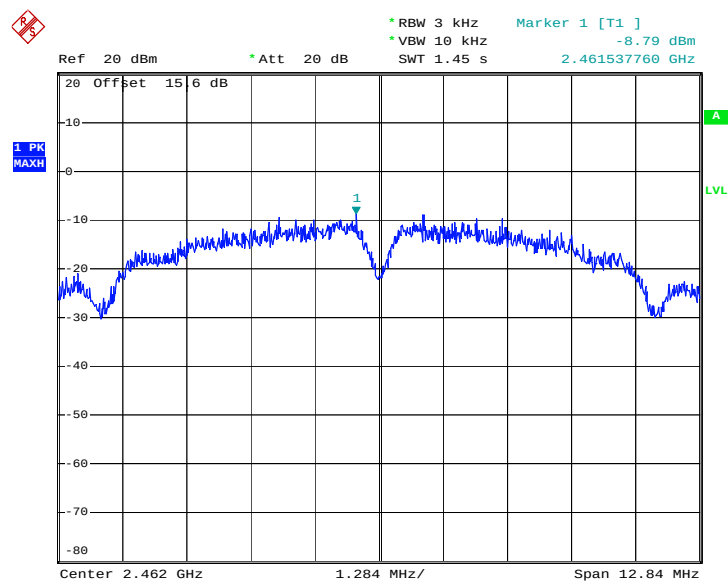
Date: 14.JAN.2013 23:51:04

PSD 3kHz Plot on 802.11b Channel 06



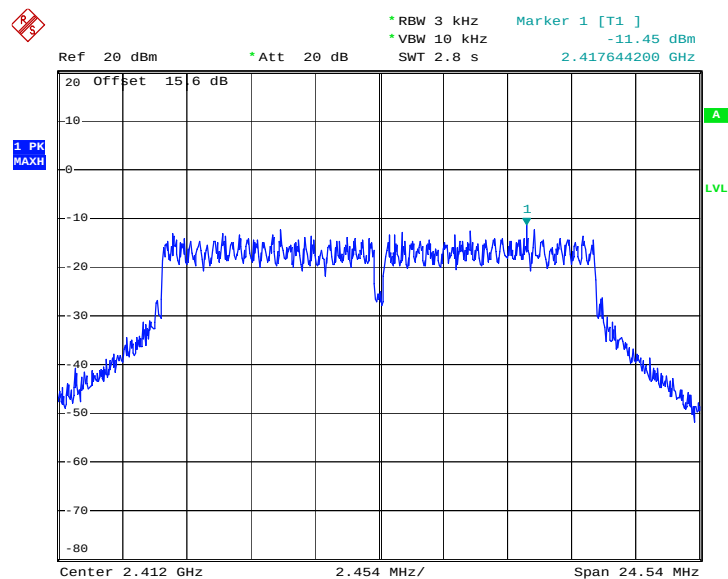
Date: 14.JAN.2013 23:53:46

PSD 3kHz Plot on 802.11b Channel 11

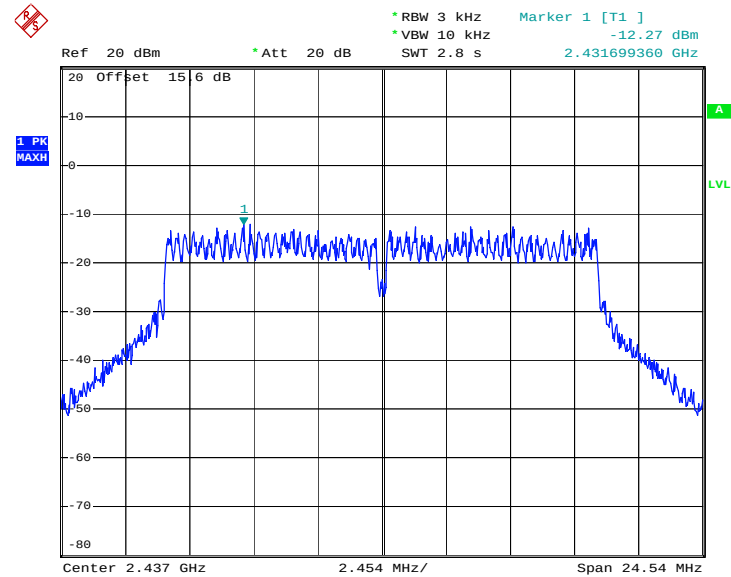


Date: 14.JAN.2013 23:56:47

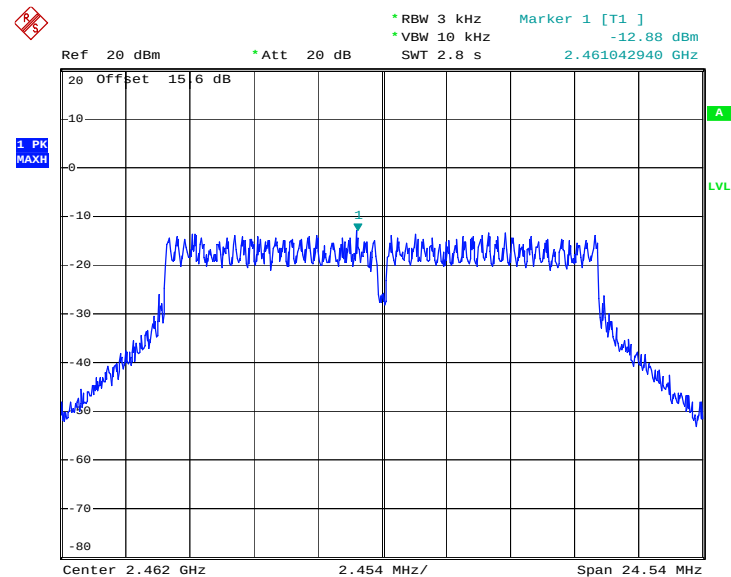
PSD 3kHz Plot on 802.11g Channel 01



Date: 15.JAN.2013 00:01:29

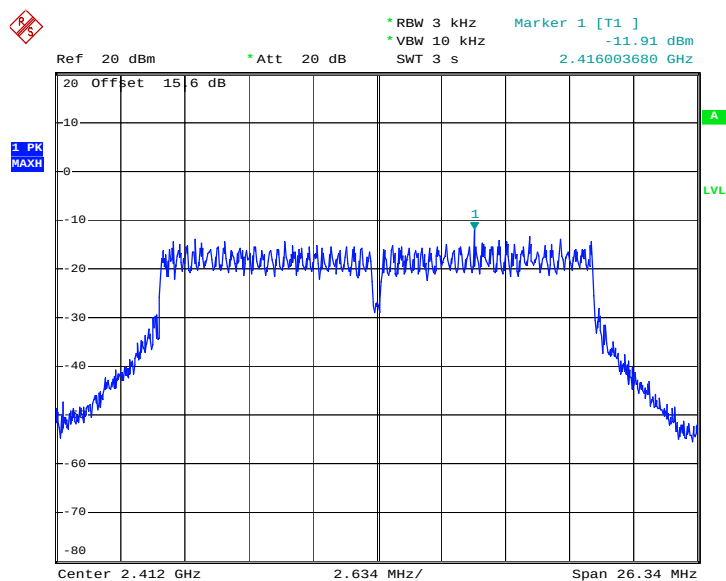
PSD 3kHz Plot on 802.11g Channel 06


Date: 15.JAN.2013 00:04:39

PSD 3kHz Plot on 802.11g Channel 11


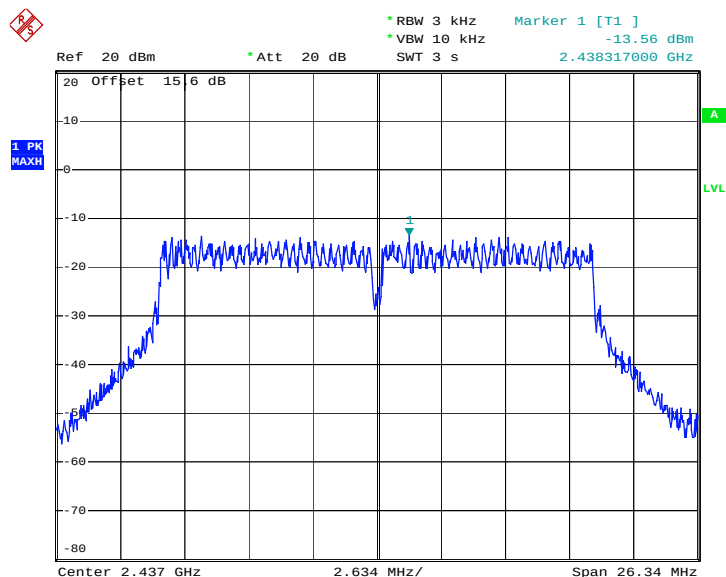
Date: 15.JAN.2013 00:09:46

PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 01

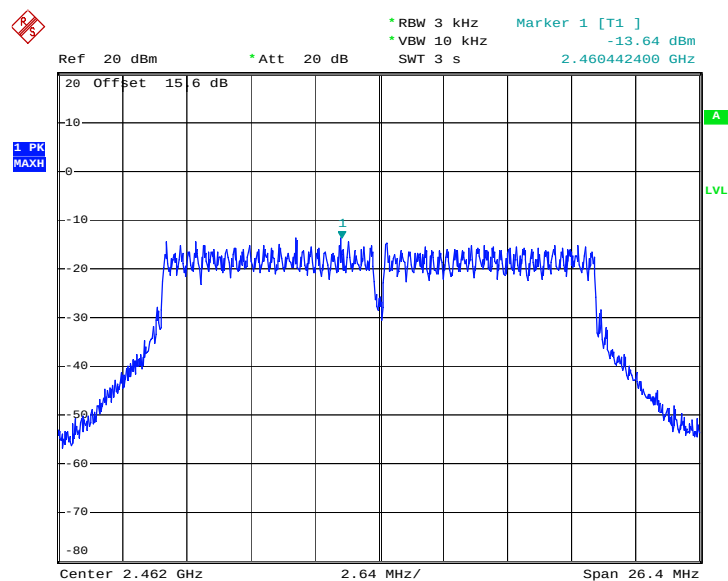


Date: 15.JAN.2013 00:12:57

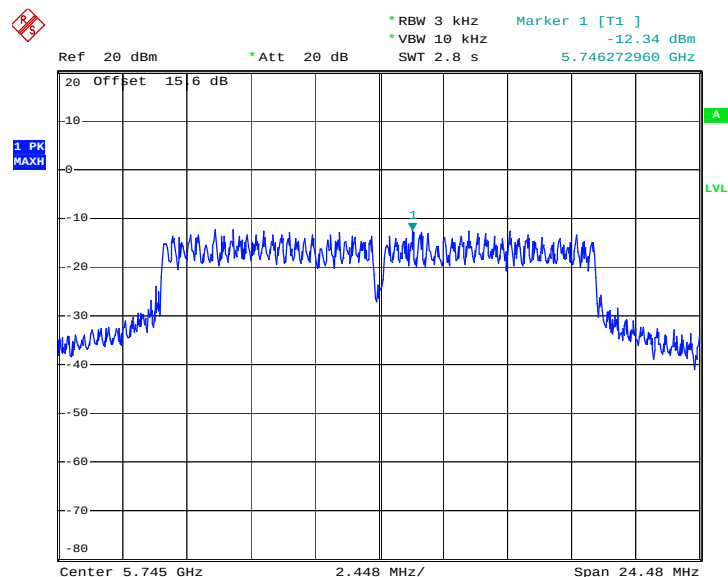
PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 06



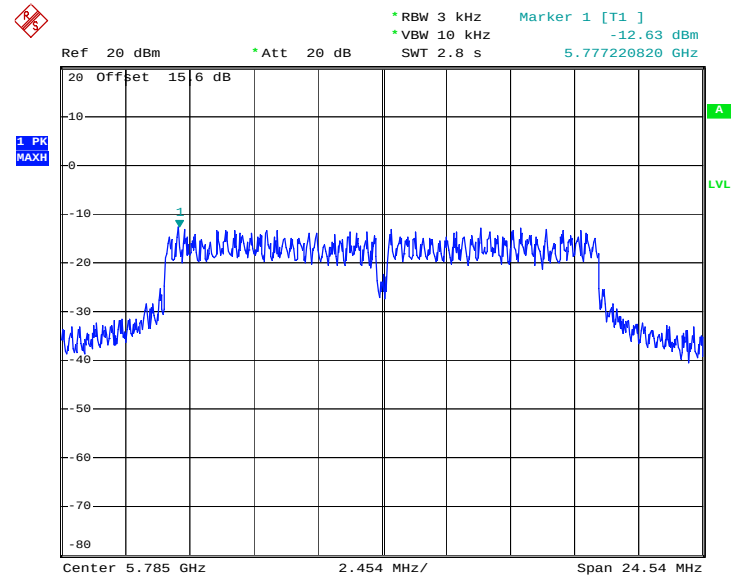
Date: 15.JAN.2013 00:15:36

PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 11


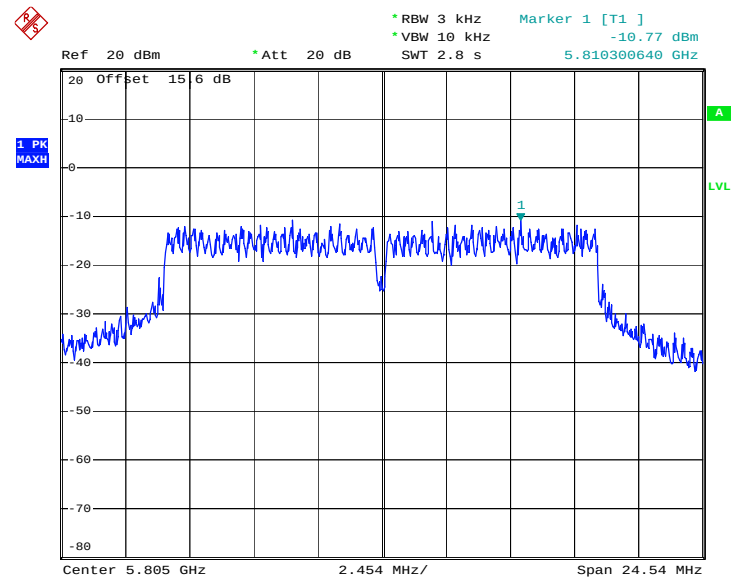
Date: 15.JAN.2013 00:17:59

PSD 3kHz Plot on 802.11a Channel 149


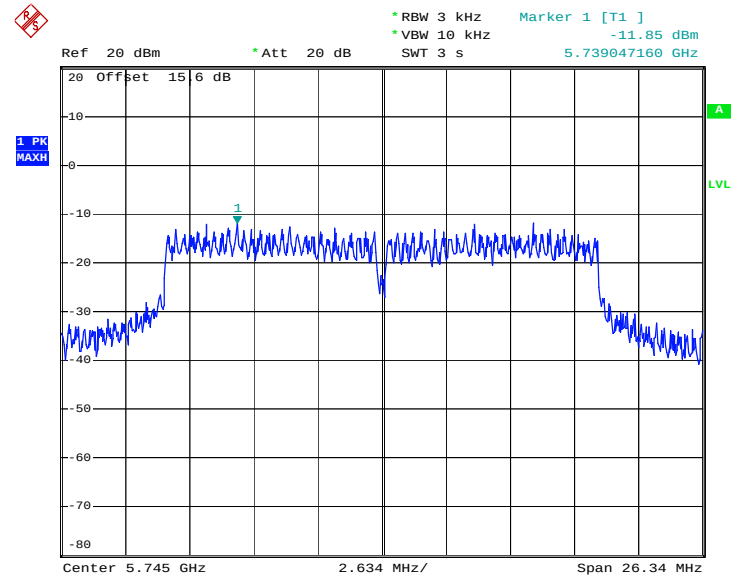
Date: 23.JAN.2013 16:15:58

PSD 3kHz Plot on 802.11a Channel 157


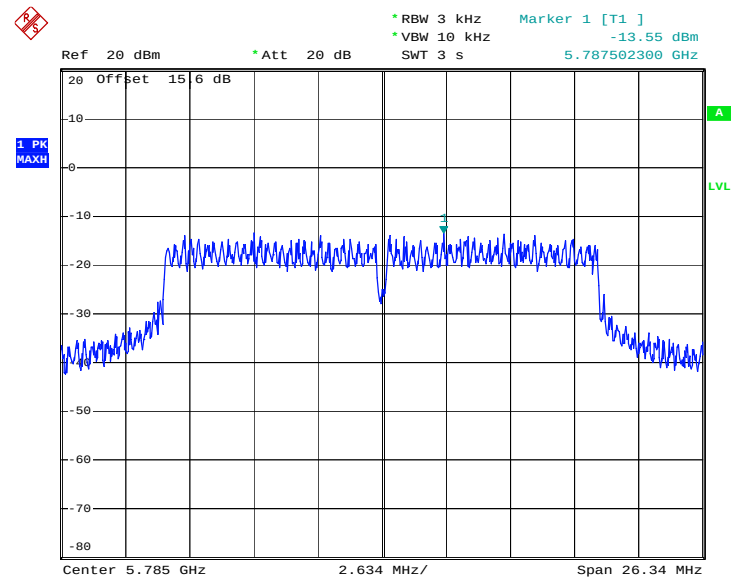
Date: 23.JAN.2013 16:20:38

PSD 3kHz Plot on 802.11a Channel 161


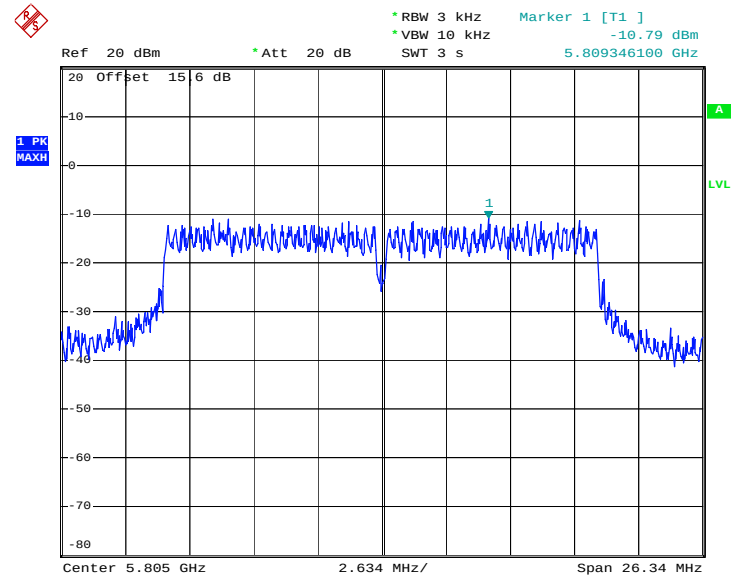
Date: 6.FEB.2013 17:18:58

PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 149


Date: 23.JAN.2013 16:47:05

PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 157


Date: 23.JAN.2013 16:57:32

PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 161


Date: 6.FEB.2013 17:21:59

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).

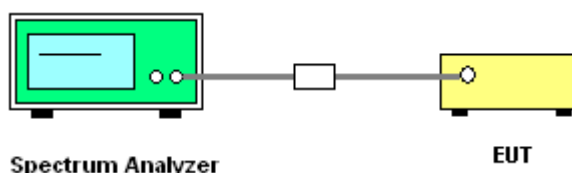
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. 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. 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).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

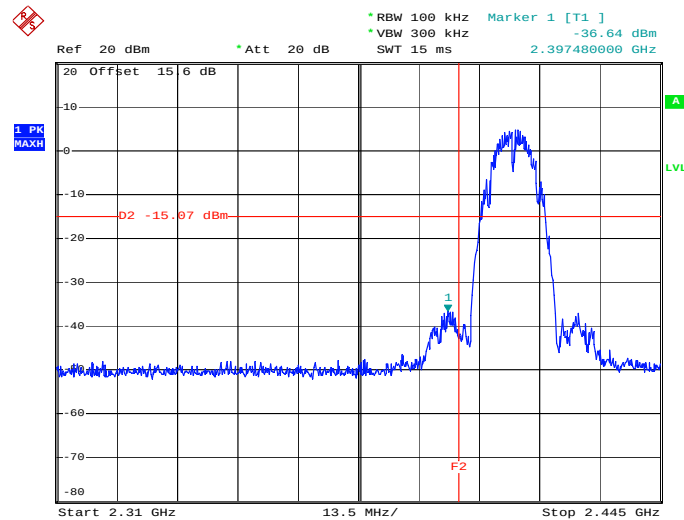
3.4.4 Test Setup



3.4.5 Test Result of Conducted Spurious at Band Edges

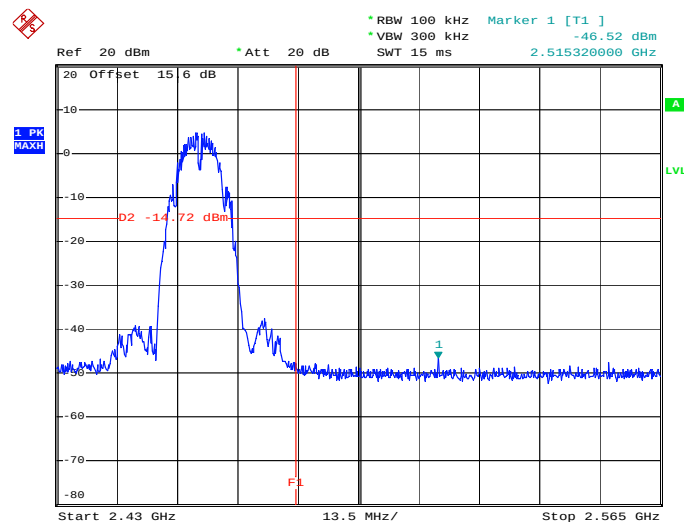
Test Mode :	802.11b	Temperature :	20~21℃
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11b Channel 01



Date: 14.JAN.2013 23:51:30

High Band Edge Plot on 802.11b Channel 11

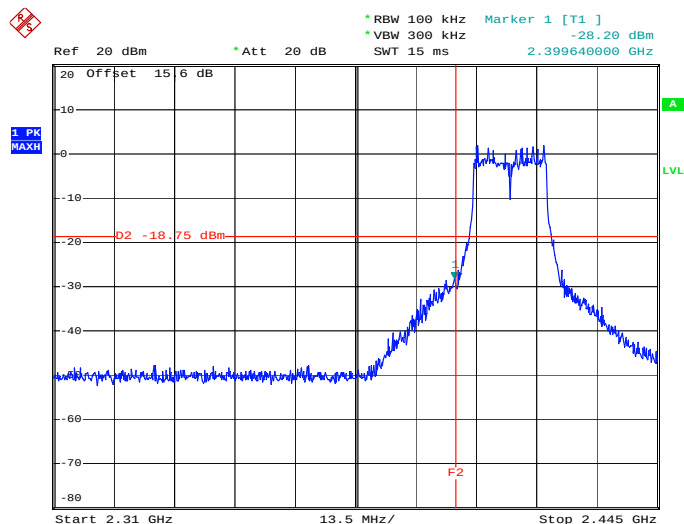


Date: 14.JAN.2013 23:57:13



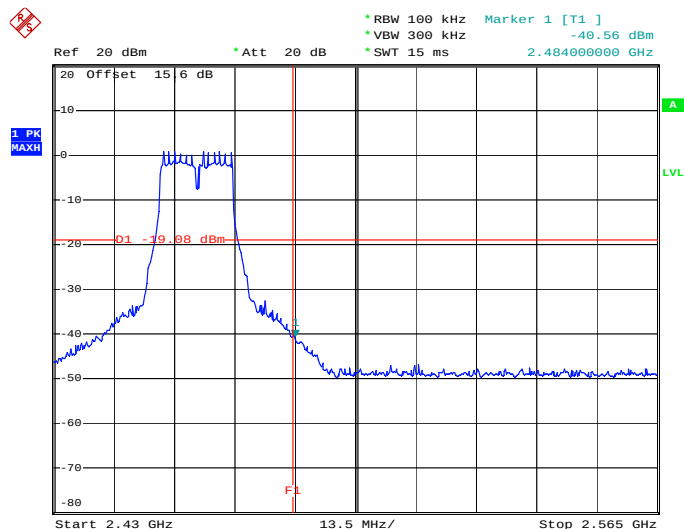
Test Mode :	802.11g	Temperature :	20~21℃
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11g Channel 01



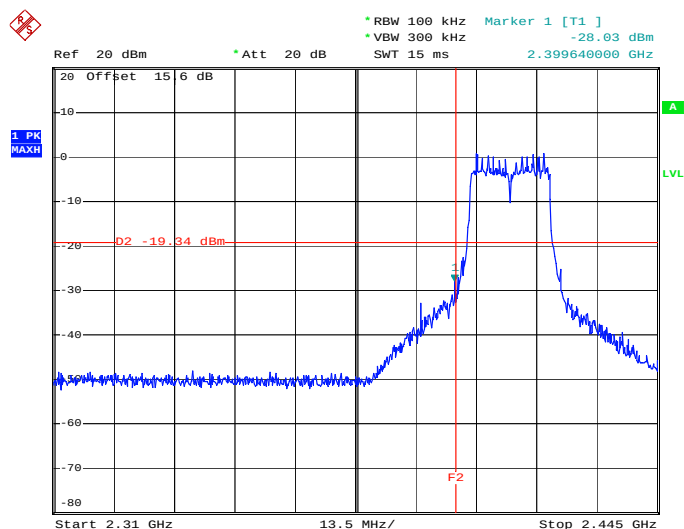
Date: 15.JAN.2013 00:01:55

High Band Edge Plot on 802.11g Channel 11

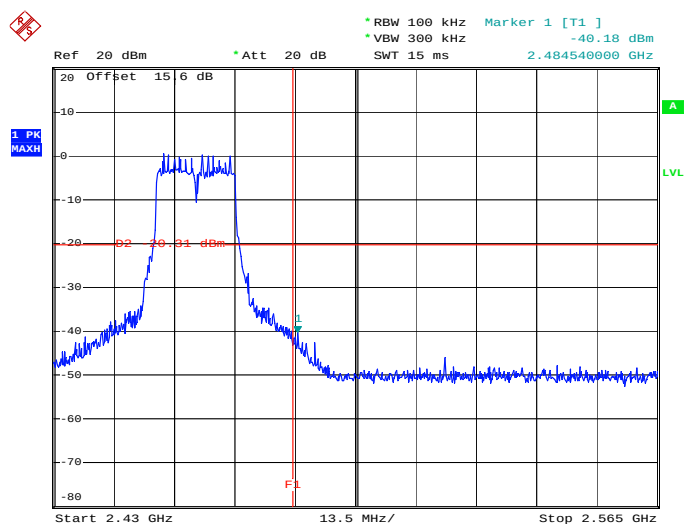


Date: 15.JAN.2013 00:24:54

Test Mode :	2.4GHz 802.11n HT20	Temperature :	20~21°C
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

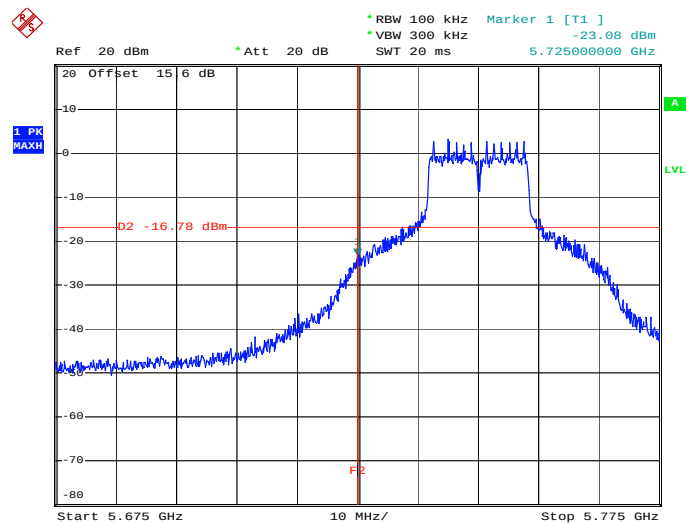
Low Band Edge Plot on 2.4GHz 802.11n HT20 Channel 01


Date: 15.JAN.2013 00:13:23

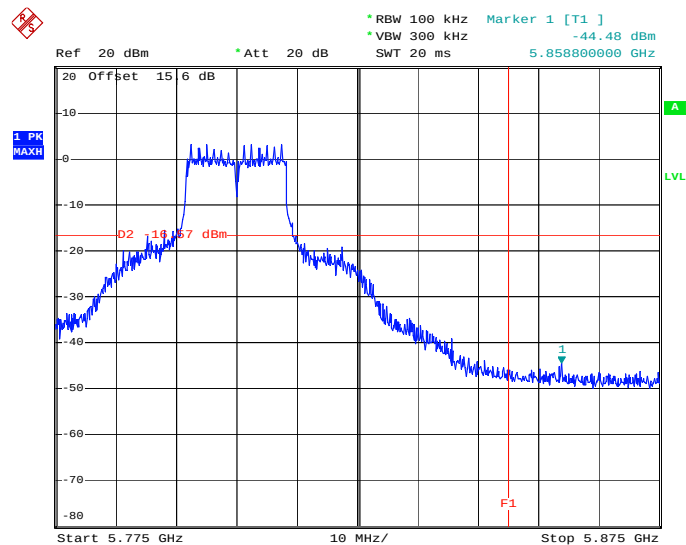
High Band Edge Plot on 2.4GHz 802.11n HT20 Channel 11


Date: 15.JAN.2013 00:18:25

Test Mode :	802.11a	Temperature :	20~21°C
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	149 and 161	Test Engineer :	Zhi Lu

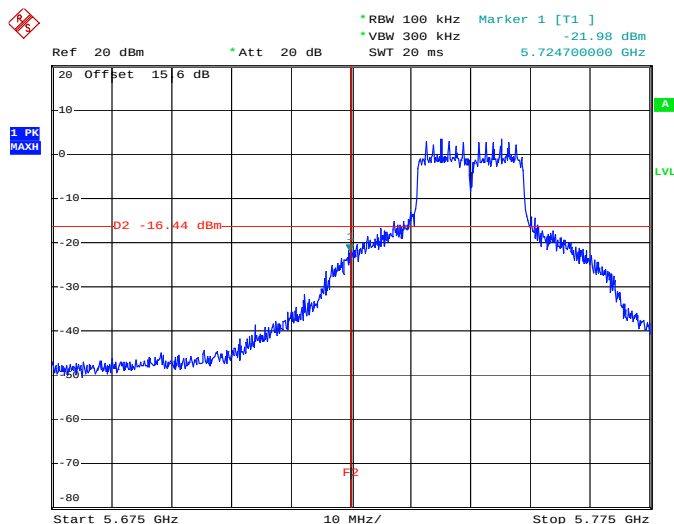
Low Band Edge Plot on 802.11a Channel 149


Date: 23.JAN.2013 16:16:44

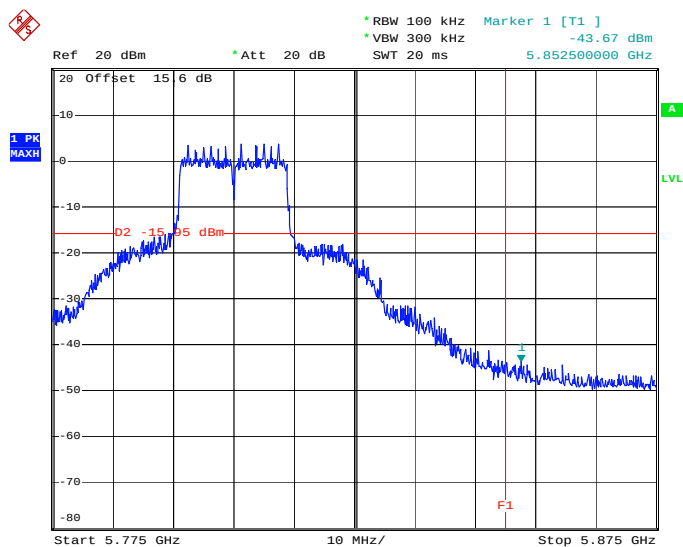
High Band Edge Plot on 802.11a Channel 161


Date: 6.FEB.2013 17:19:24

Test Mode :	5GHz 802.11n HT20	Temperature :	20~21°C
Test Band :	Low and High	Relative Humidity :	40~41%
Test Channel :	149 and 161	Test Engineer :	Zhi Lu

Low Band Edge Plot on 5GHz 802.11n HT20 Channel 149


Date: 23.JAN.2013 16:47:31

High Band Edge Plot on 5GHz 802.11n HT20 Channel 161


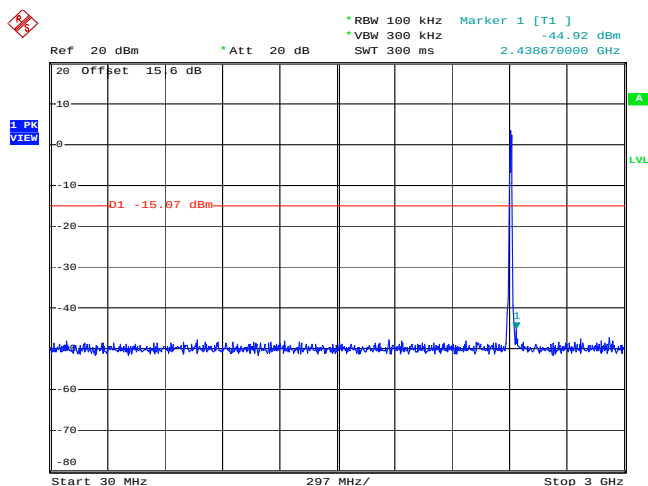
Date: 6.FEB.2013 17:30:06

3.4.6 Test Result of Conducted Spurious Emission

Test Mode :	802.11b	Temperature :	20~21°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	40~41%
Test Channel :	01, 06, 11	Test Engineer :	Zhi Lu

802.11b 30 MHz~3 GHz

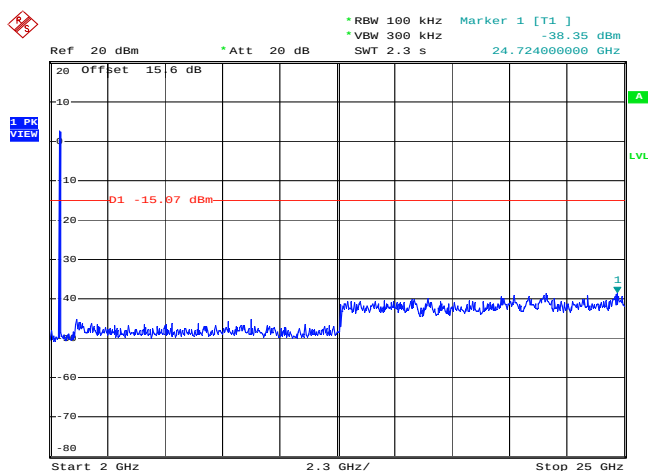
Conducted Spurious Emission Plot on Channel 01



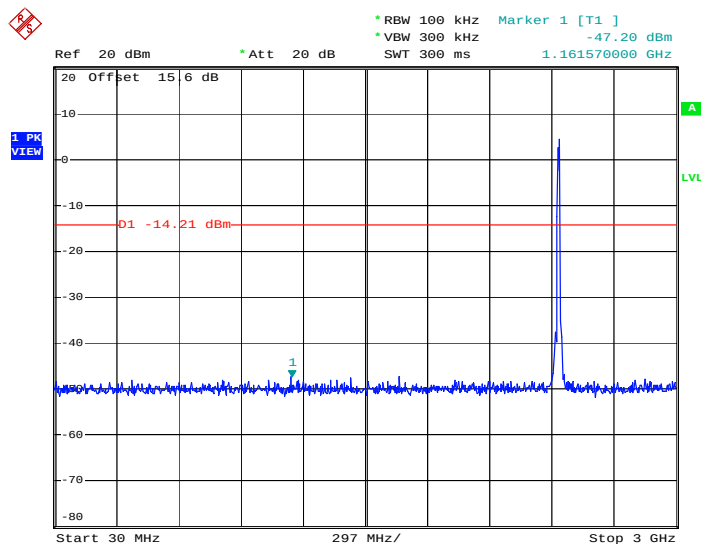
Date: 14.JAN.2013 23:51:49

802.11b 2 GHz~25 GHz

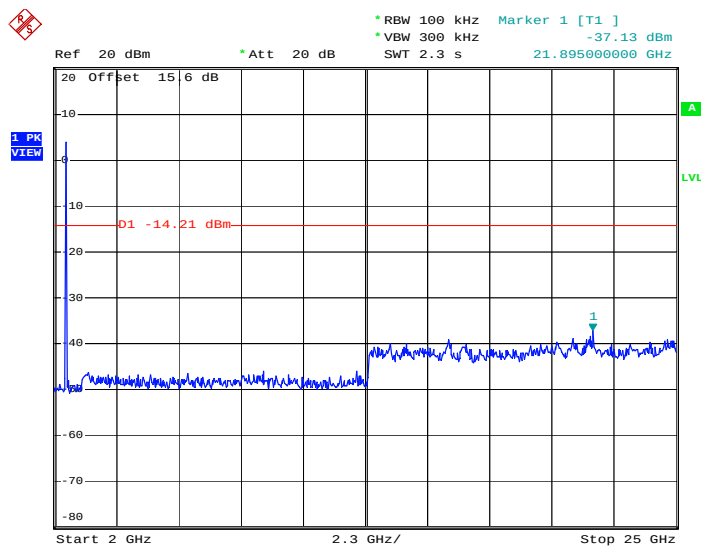
Conducted Spurious Emission Plot on Channel 01



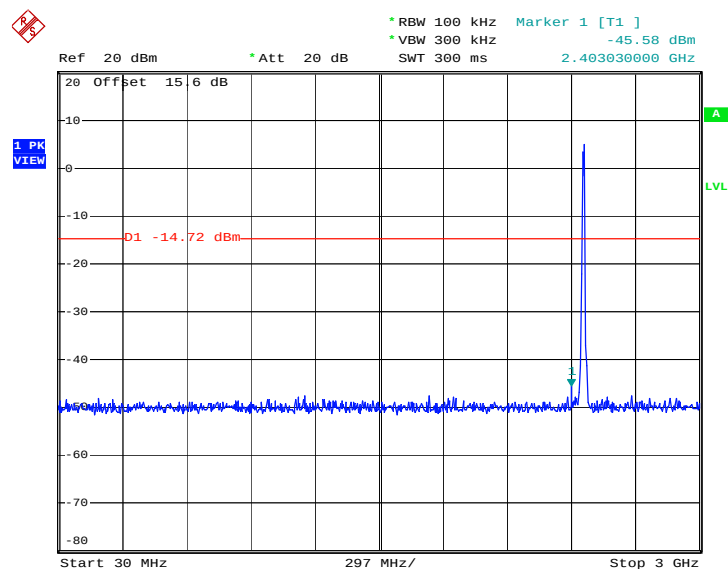
Date: 14.JAN.2013 23:52:07

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


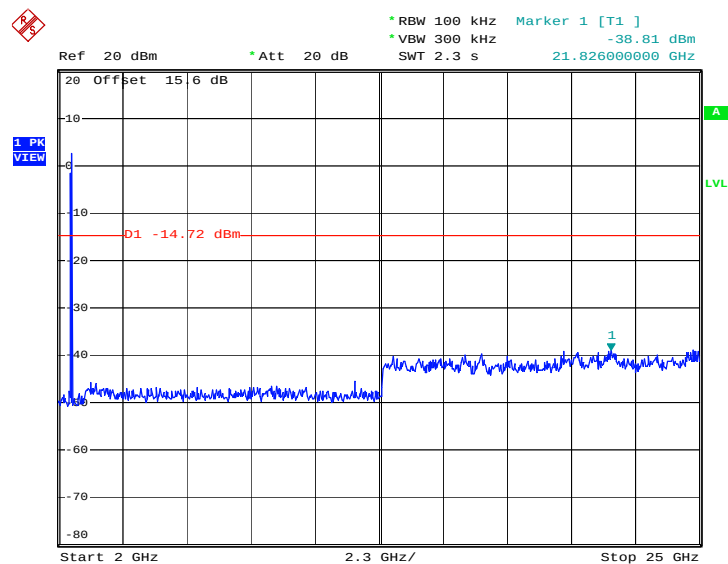
Date: 14.JAN.2013 23:54:17

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


Date: 14.JAN.2013 23:54:35

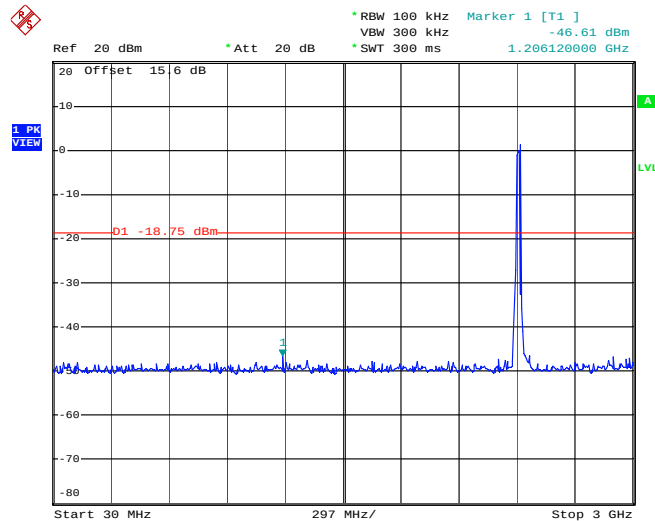
802.11b 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 14.JAN.2013 23:57:31

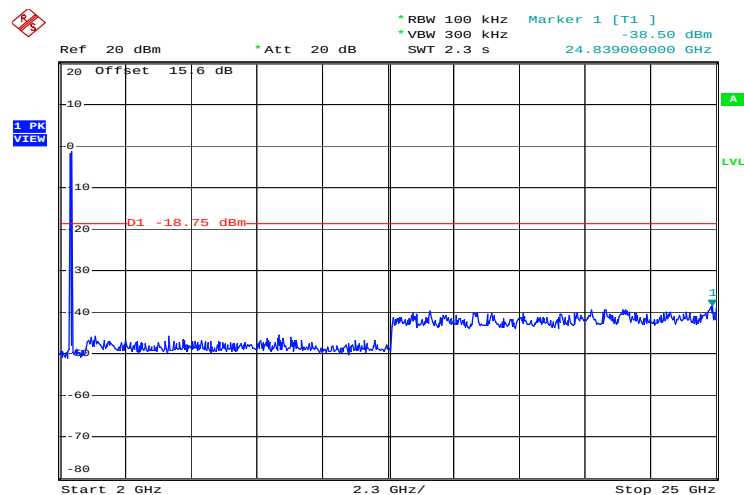
802.11b 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 14.JAN.2013 23:57:49

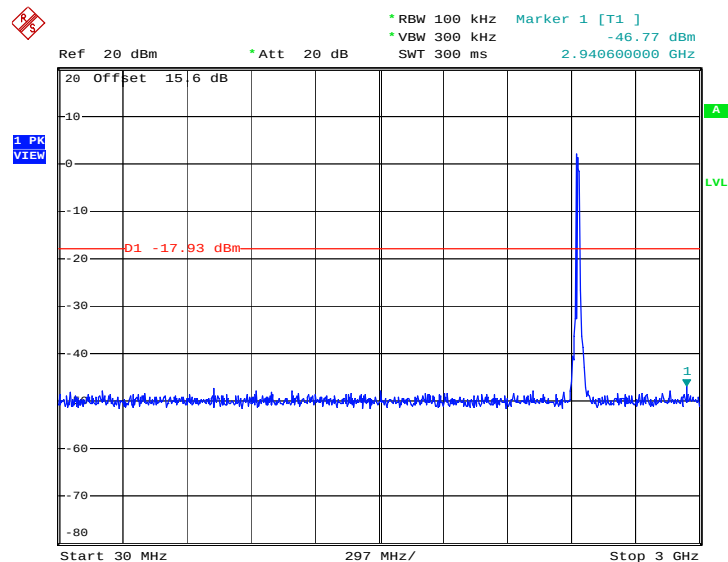
Test Mode :	802.11g	Temperature :	20~21°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	40~41%
Test Channel :	01, 06, 11	Test Engineer :	Zhi Lu

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


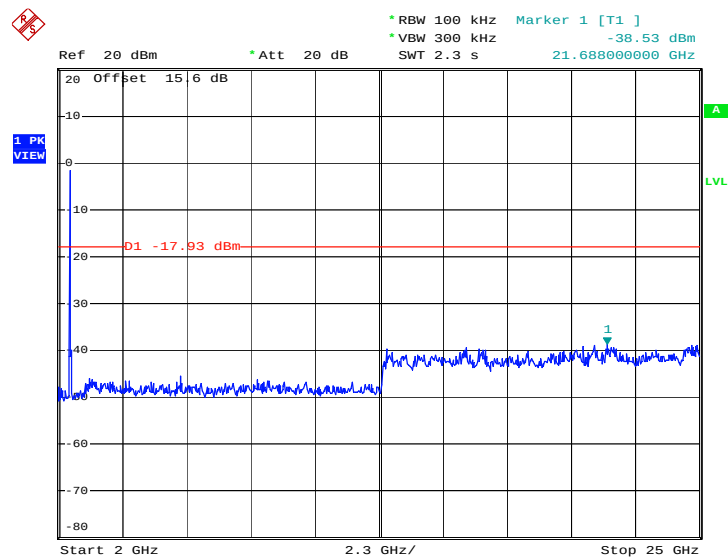
Date: 18.FEB.2013 15:55:12

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


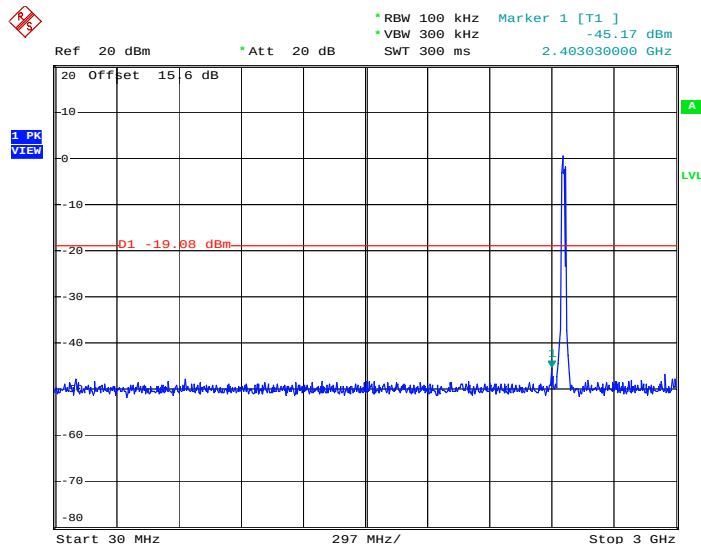
Date: 15.JAN.2013 00:02:32

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


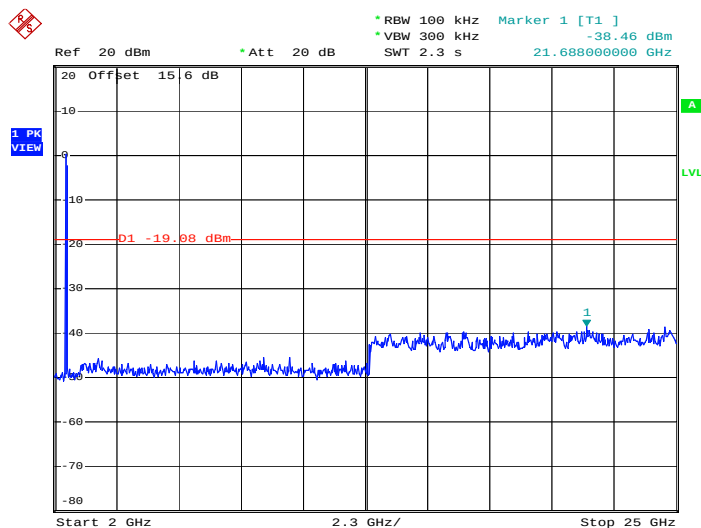
Date: 15.JAN.2013 00:06:08

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


Date: 15.JAN.2013 00:06:26

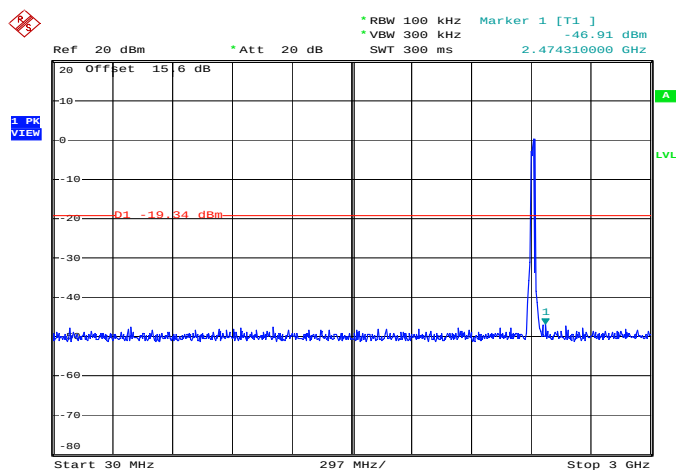
802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 15.JAN.2013 00:10:31

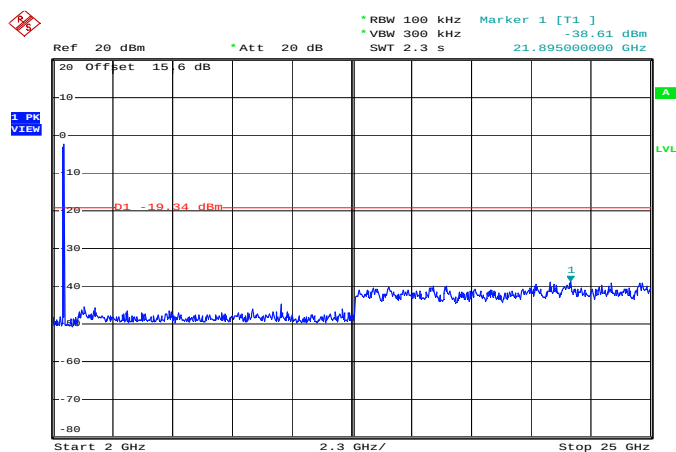
802.11g 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 15.JAN.2013 00:10:49

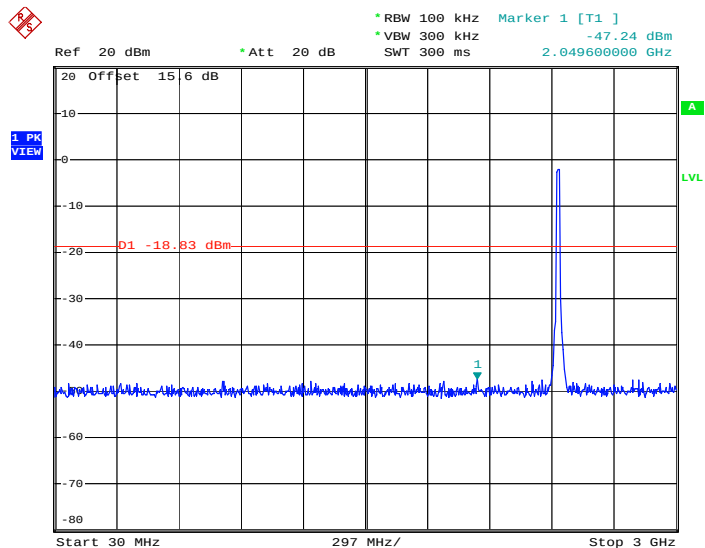
Test Mode :	2.4GHz 802.11n HT20	Temperature :	20~21°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	40~41%
Test Channel :	01, 06, 11	Test Engineer :	Zhi Lu

2.4GHz 802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 01


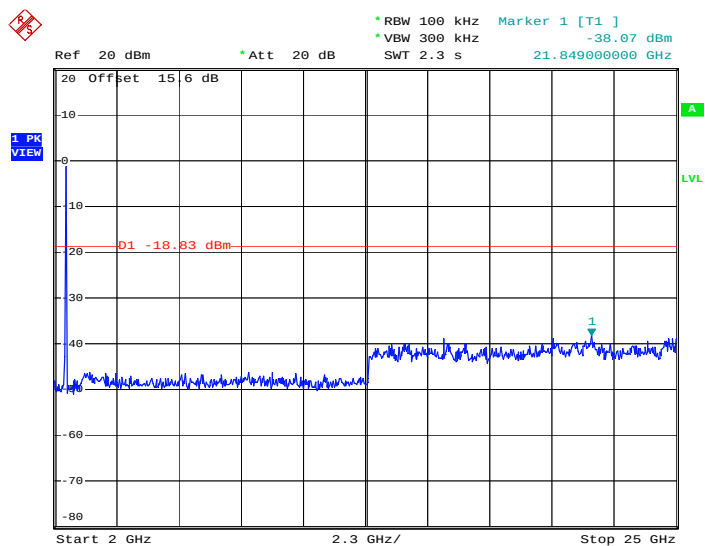
Date: 15.JAN.2013 00:13:41

2.4GHz 802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 01


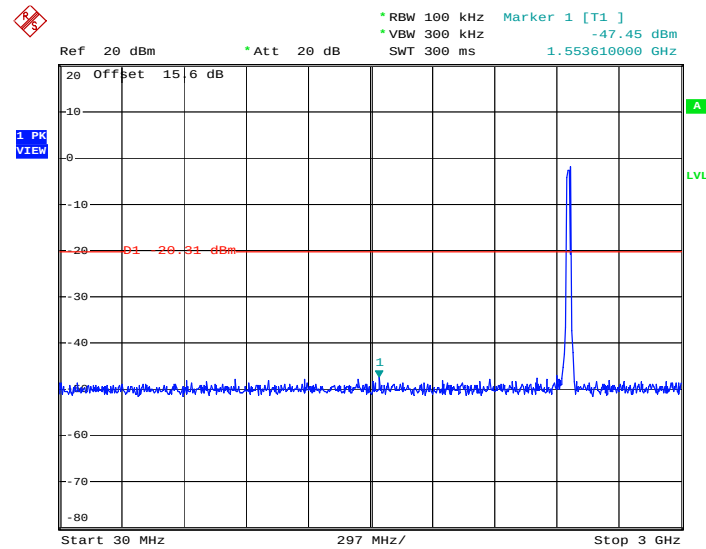
Date: 15.JAN.2013 00:14:00

2.4GHz 802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


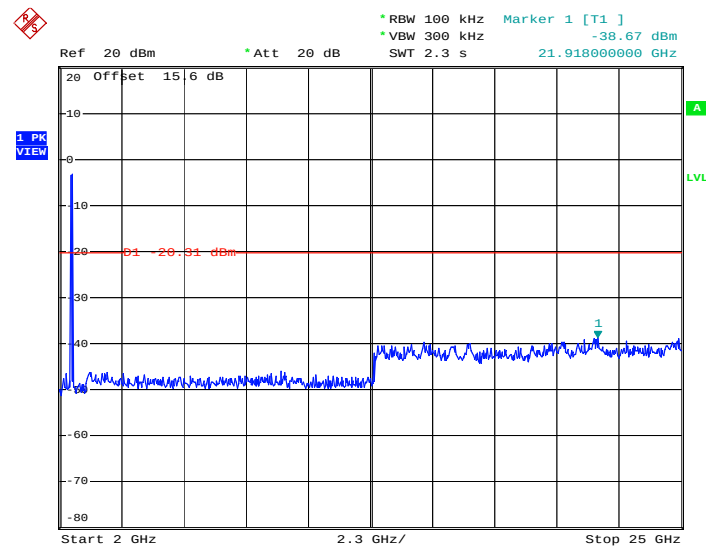
Date: 15.JAN.2013 00:16:07

2.4GHz 802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 15.JAN.2013 00:16:26

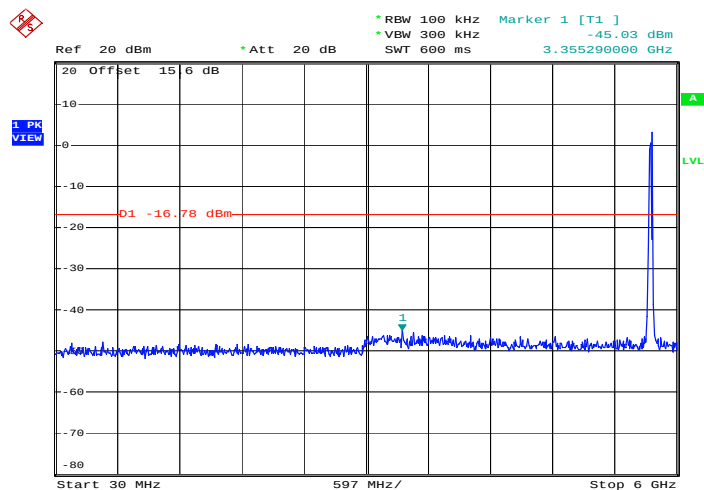
2.4GHz 802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 15.JAN.2013 00:18:43

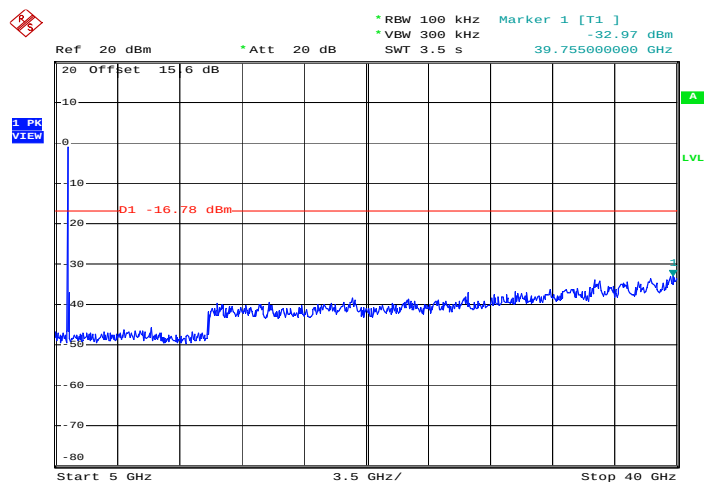
2.4GHz 802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


Date: 15.JAN.2013 00:19:02

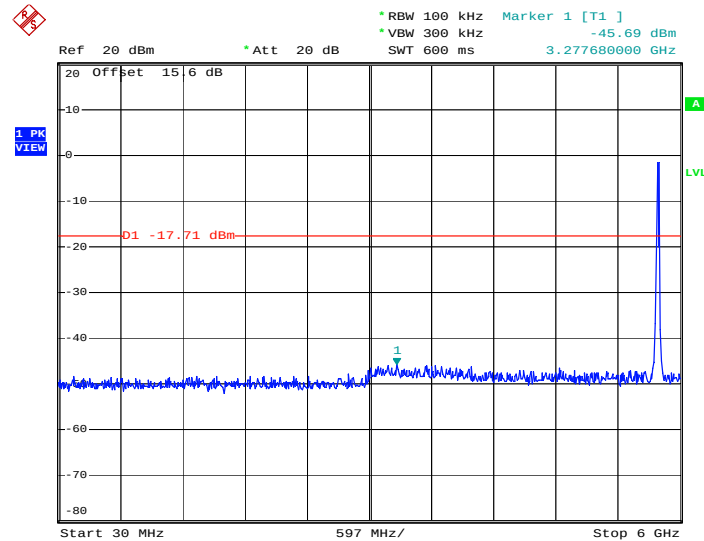
Test Mode :	802.11a	Temperature :	20~21°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	40~41%
Test Channel :	149, 157, 161	Test Engineer :	Zhi Lu

802.11a 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 149


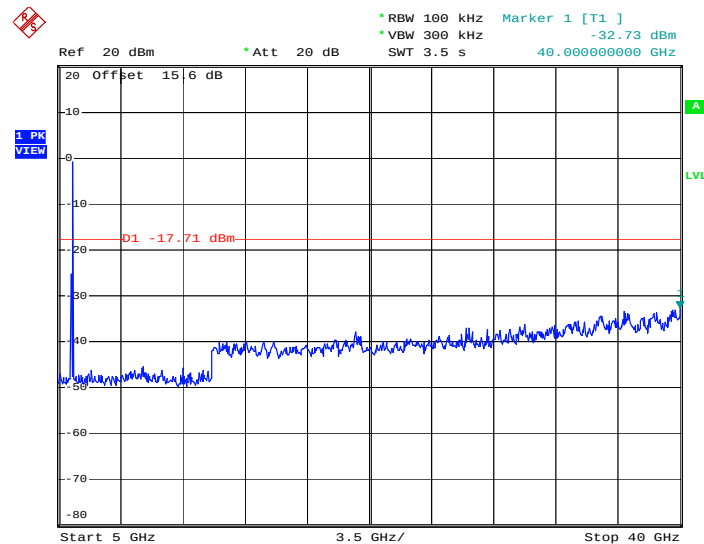
Date: 23.JAN.2013 17:18:56

802.11a 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 149


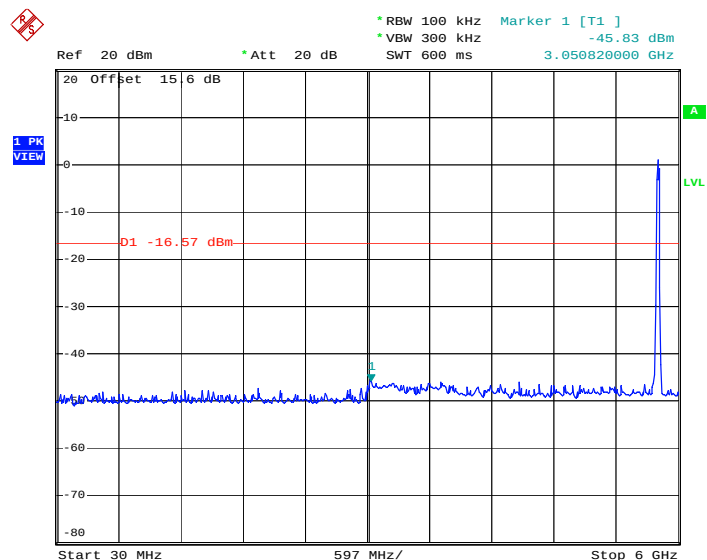
Date: 23.JAN.2013 17:19:14

802.11a 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 157


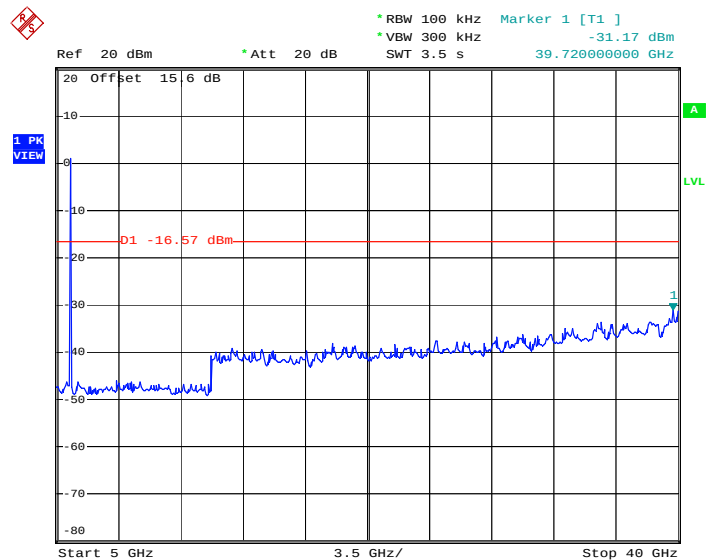
Date: 23.JAN.2013 17:21:27

802.11a 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 157


Date: 23.JAN.2013 17:21:46

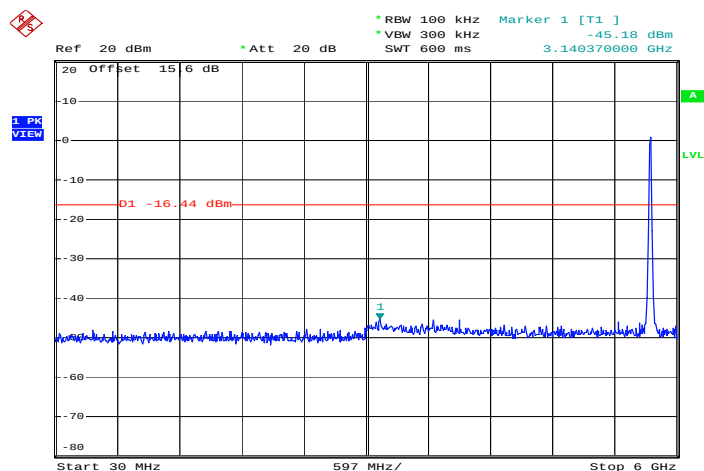
802.11a 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 161


Date: 15.FEB.2013 23:04:25

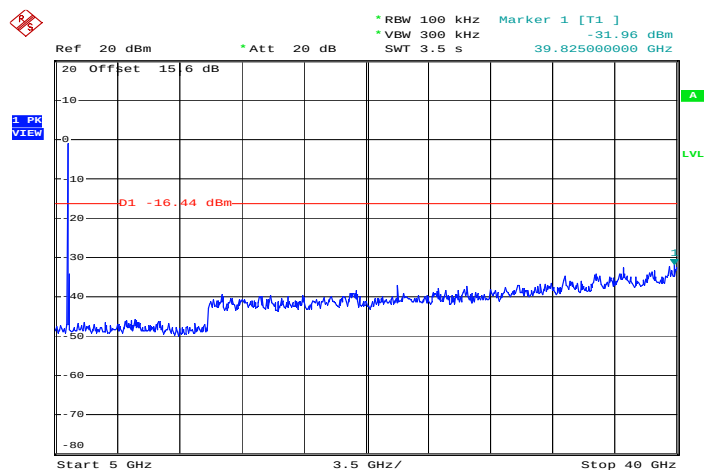
802.11a 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 161


Date: 15.FEB.2013 23:06:32

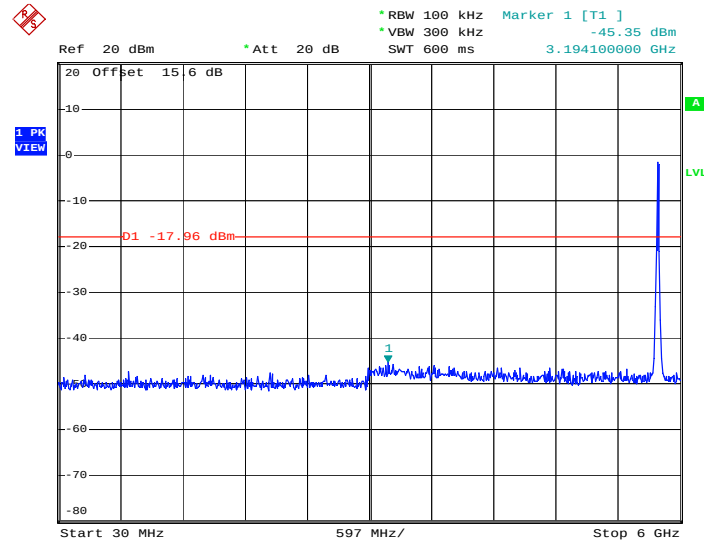
Test Mode :	5GHz 802.11n HT20	Temperature :	20~21°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	40~41%
Test Channel :	149, 157, 161	Test Engineer :	Zhi Lu

5GHz 802.11n HT20 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 149


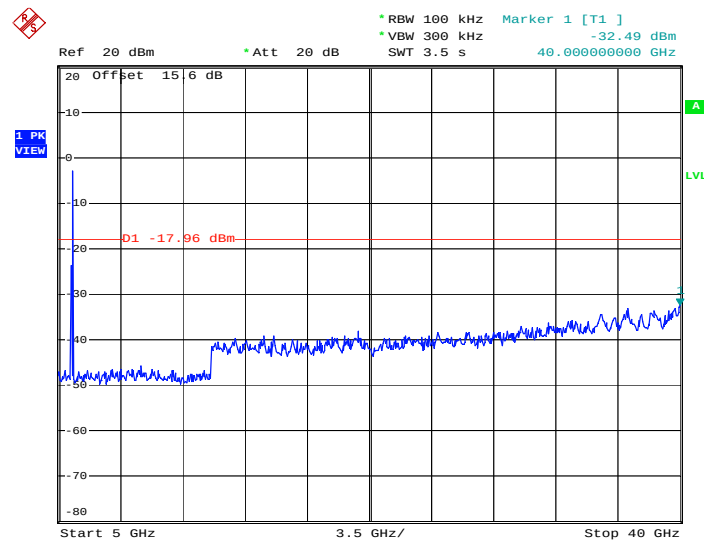
Date: 23.JAN.2013 17:12:56

5GHz 802.11n HT20 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 149


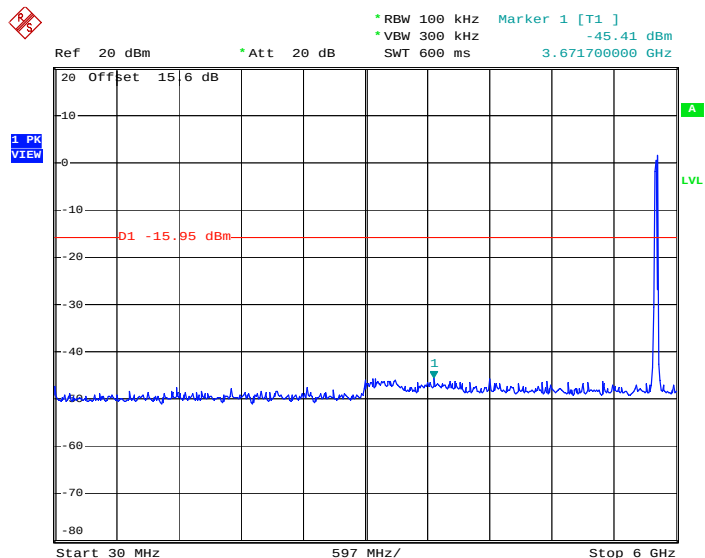
Date: 23.JAN.2013 17:13:14

5GHz 802.11n HT20 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 157


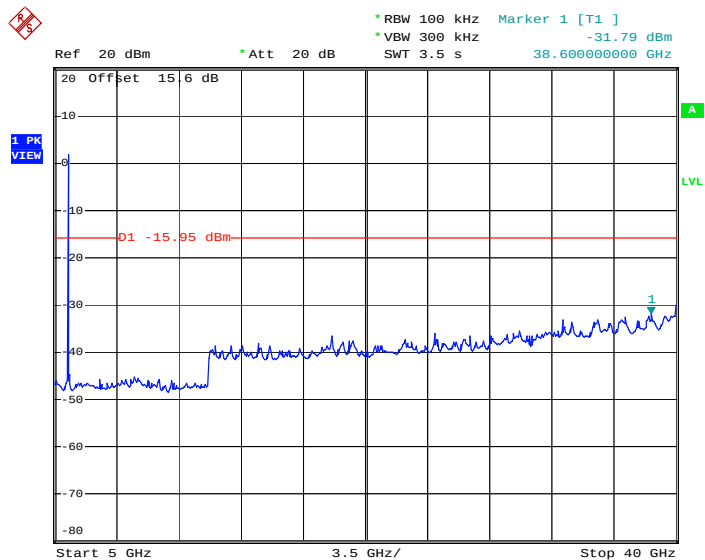
Date: 23.JAN.2013 16:58:04

5GHz 802.11n HT20 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 157


Date: 23.JAN.2013 16:58:22

5GHz 802.11n HT20 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 161


Date: 15.FEB.2013 23:10:22

5GHz 802.11n HT20 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 161


Date: 15.FEB.2013 23:11:50

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

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 ANSIC63.10-2009.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 KHz for $f < 1$ GHz; VBW $\geq$ 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:

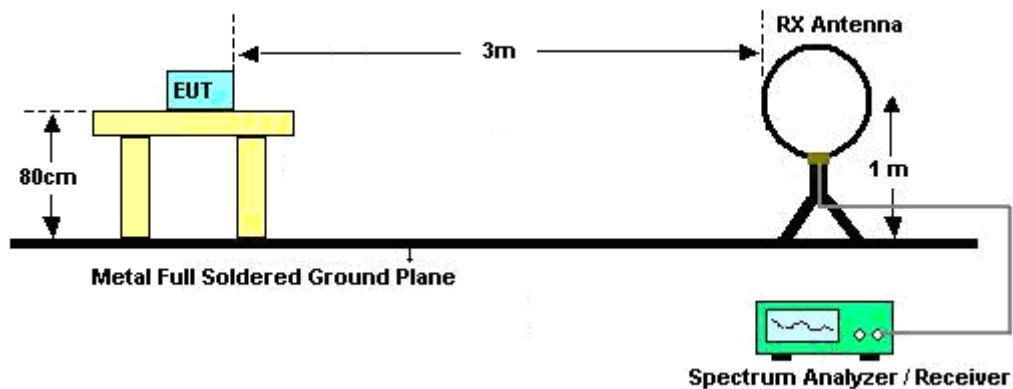
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle (%)	T (ms)	1/T (kHz)	VBW Setting
802.11b	97.67	8.400	0.12	300Hz
802.11g	86.34	1.390	0.72	1kHz
2.4GHz 802.11n HT20	85.94	1.296	0.77	1kHz
802.11a	86.88	1.390	0.72	1kHz
5GHz 802.11n HT20	47.37	0.180	5.56	10kHz

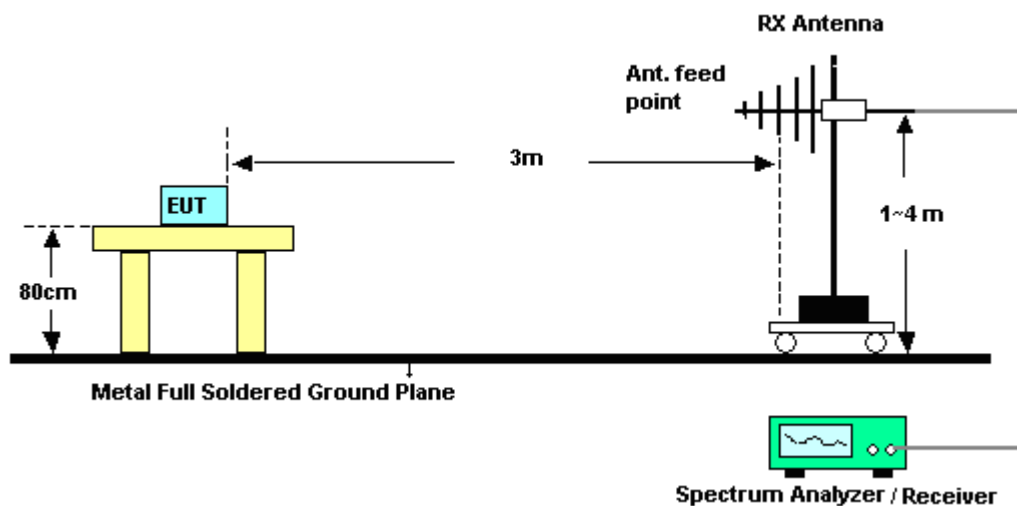
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

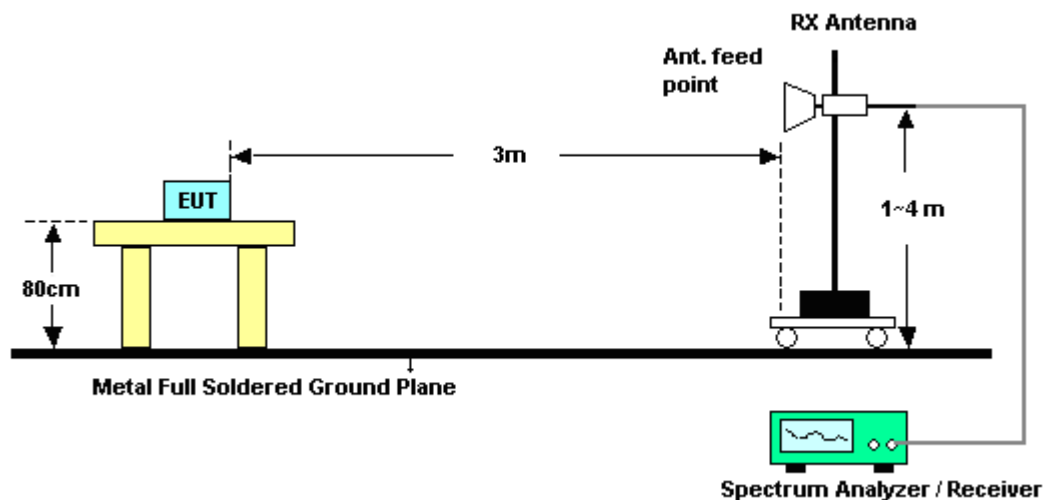
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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 :	22~23°C
Test Band :	Low	Relative Humidity :	41~43%
Test Channel :	01	Test Engineer :	Steven Hao

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
2388.93	55.26	-18.74	74	54.15	32.86	2.11	33.86	102	190	Peak
2390	42.1	-11.9	54	41.02	32.86	2.11	33.89	103	190	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
2389.38	50.56	-23.44	74	49.45	32.86	2.11	33.86	135	48	Peak
2389.38	38.2	-15.8	54	37.09	32.86	2.11	33.86	125	46	Average

Test Mode :	802.11b	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	41~43%
Test Channel :	11	Test Engineer :	Steven Hao

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
2484.19	55.25	-18.75	74	54.07	33.01	2.16	33.99	100	192	Peak
2483.5	41.86	-12.14	54	40.68	33.01	2.16	33.99	100	187	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
2483.59	51.54	-22.46	74	50.36	33.01	2.16	33.99	100	67	Peak
2483.5	37.37	-16.63	54	36.19	33.01	2.16	33.99	100	65	Average



Test Mode :	802.11g	Temperature :	22~23°C
Test Band :	Low	Relative Humidity :	41~43%
Test Channel :	01	Test Engineer :	Steven Hao

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
2389.74	67.19	-6.81	74	66.08	32.86	2.11	33.86	100	203	Peak
2390	46.89	-7.11	54	45.81	32.86	2.11	33.89	100	320	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
2389.92	61.76	-12.24	74	60.68	32.86	2.11	33.89	108	52	Peak
2390	42.27	-11.73	54	41.19	32.86	2.11	33.89	109	50	Average

Test Mode :	802.11g	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	41~43%
Test Channel :	11	Test Engineer :	Steven Hao

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
2483.71	69.43	-4.57	74	68.25	33.01	2.16	33.99	100	203	Peak
2483.5	47.16	-6.84	54	45.98	33.01	2.16	33.99	100	301	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
2483.59	60.42	-13.58	74	59.24	33.01	2.16	33.99	105	63	Peak
2483.5	40.96	-13.04	54	39.78	33.01	2.16	33.99	106	62	Average



Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Band :	Low	Relative Humidity :	41~43%
Test Channel :	01	Test Engineer :	Steven Hao

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
2389.29	69.88	-4.12	74	68.77	32.86	2.11	33.86	100	280	Peak
2390	48.07	-5.93	54	46.99	32.86	2.11	33.89	100	200	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
2389.65	62.06	-11.94	74	60.95	32.86	2.11	33.86	106	0	Peak
2390	40.39	-13.61	54	39.31	32.86	2.11	33.89	106	0	Average

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	41~43%
Test Channel :	11	Test Engineer :	Steven Hao

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
2483.95	70.82	-3.18	74	69.64	33.01	2.16	33.99	100	203	Peak
2483.5	49.37	-4.63	54	48.19	33.01	2.16	33.99	100	208	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
2483.77	64.97	-9.03	74	63.79	33.01	2.16	33.99	100	89	Peak
2483.5	42.89	-11.11	54	41.71	33.01	2.16	33.99	105	72	Average



Test Mode :	802.11a	Temperature :	22~23°C
Test Band :	Low	Relative Humidity :	41~43%
Test Channel :	149	Test Engineer :	Steven Hao

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
5725	76.67	-1.18	77.85	68.78	35.52	3.22	30.85	100	321	Peak
5745	97.85	-	-	89.96	35.52	3.21	30.84	100	320	Peak
5745	86.58	-	-	78.69	35.52	3.21	30.84	100	320	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
5723.9	83.22	-1.06	84.28	75.33	35.52	3.22	30.85	102	360	Peak
5745	104.28	-	-	96.39	35.52	3.21	30.84	102	0	Peak
5745	93.58	-	-	85.69	35.52	3.21	30.84	102	0	Average

Remark: 5725 MHz and 5723.9 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 97.85 dBμV/m - 20dB = 77.85 dBμV/m.



Test Mode :	802.11a	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	41~43%
Test Channel :	161	Test Engineer :	Steven Hao

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
5805	98.28	-	-	90.35	35.55	3.17	30.79	100	299	Peak
5805	88.09	-	-	80.16	35.55	3.17	30.79	100	299	Average
5850	53.47	-24.81	78.28	45.52	35.56	3.16	30.77	100	0	Peak

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
5805	103.4	-	-	95.47	35.55	3.17	30.79	100	36	Peak
5805	92.55	-	-	84.62	35.55	3.17	30.79	100	36	Average
5850	56.01	-27.39	83.4	48.06	35.56	3.16	30.77	100	36	Peak

Remark: 5850 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.



Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Band :	Low	Relative Humidity :	41~43%
Test Channel :	149	Test Engineer :	Steven Hao

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
5722.2	78.33	-1.32	79.65	70.44	35.52	3.22	30.85	100	165	Peak
5745	99.65	-	-	91.76	35.52	3.21	30.84	100	312	Peak
5745	88.68	-	-	80.79	35.52	3.21	30.84	100	312	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
5724.45	83.82	-2.11	85.93	75.93	35.52	3.22	30.85	100	0	Peak
5745	105.93	-	-	98.04	35.52	3.21	30.84	100	2	Peak
5745	95.49	-	-	87.6	35.52	3.21	30.84	100	2	Average

Remark: 5722.2 MHz and 5724.45 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level.

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	41~43%
Test Channel :	161	Test Engineer :	Steven Hao

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
5805	99.31	-	-	91.38	35.55	3.17	30.79	100	316	Peak
5805	88.52	-	-	80.59	35.55	3.17	30.79	100	316	Average
5850	54.44	-24.87	79.31	46.49	35.56	3.16	30.77	120	316	Peak

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
5805	102.4	-	-	94.47	35.55	3.17	30.79	100	21	Peak
5805	92.44	-	-	84.51	35.55	3.17	30.79	100	21	Average
5850	56.75	-25.65	82.4	48.8	35.56	3.16	30.77	100	162	Peak

Remark: 5850 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.

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

Note: Below 1GHz for radiated emission measurement, pre-scanned all test modes and only choose the worst case mode was recorded in the report.

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2398.74 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. For example, 106.92 dBuV/m - 20dB = 86.92 dBuV/m. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2398.74	63.97	-22.95	86.92	62.89	32.86	2.11	33.89	102	190	Peak
2412	106.92	-	-	105.8	32.89	2.12	33.89	102	190	Peak
2412	102.56	-	-	101.44	32.89	2.12	33.89	102	190	Average
4824	44.12	-29.88	74	40	35.17	3.09	34.14	200	0	Peak
7236	44.5	-42.42	86.92	39.36	36.18	3.24	34.28	200	0	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2398.56 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2398.56	55.47	-26.72	82.19	54.39	32.86	2.11	33.89	154	44	Peak
2412	102.19	-	-	101.07	32.89	2.12	33.89	154	44	Peak
2412	97.78	-	-	96.66	32.89	2.12	33.89	154	44	Average
4824	47.14	-26.86	74	43.02	35.17	3.09	34.14	100	0	Peak
7236	44.39	-37.8	82.19	39.25	36.18	3.24	34.28	100	0	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2437	108.1	-	-	106.94	32.95	2.14	33.93	100	199	Peak
2437	103.73	-	-	102.57	32.95	2.14	33.93	100	199	Average
4874	42.62	-31.38	74	38.36	35.18	3.12	34.04	200	175	Peak
7312	44.13	-29.87	74	38.97	36.2	3.21	34.25	100	73	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2437	103.08	-	-	101.92	32.95	2.14	33.93	132	67	Peak
2437	98.38	-	-	97.22	32.95	2.14	33.93	132	67	Average
4876	49.25	-24.75	74	44.99	35.18	3.12	34.04	100	0	Peak
7312	44	-30	74	38.84	36.2	3.21	34.25	200	360	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2462	107.4	-	-	106.23	32.98	2.15	33.96	100	193	Peak
2462	102.89	-	-	101.72	32.98	2.15	33.96	100	193	Average
4924	45.24	-28.76	74	40.84	35.19	3.15	33.94	100	29	Peak
7386	44.51	-29.49	74	39.31	36.24	3.19	34.23	200	0	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2462	101.47	-	-	100.3	32.98	2.15	33.96	154	67	Peak
2462	96.88	-	-	95.71	32.98	2.15	33.96	154	67	Average
4926	47.5	-26.5	74	43.1	35.19	3.15	33.94	100	0	Peak
7386	44.07	-29.93	74	38.87	36.24	3.19	34.23	100	200	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2398.83 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2398.83	83.15	-4.84	87.99	82.07	32.86	2.11	33.89	100	202	Peak
2412	107.99	-	-	106.87	32.89	2.12	33.89	100	202	Peak
2412	96.4	-	-	95.28	32.89	2.12	33.89	100	202	Average
4824	43.64	-30.36	74	39.52	35.17	3.09	34.14	100	236	Peak
7236	43.57	-44.42	87.99	38.43	36.18	3.24	34.28	200	0	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2396.94 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2396.94	78.48	-4.05	82.53	77.4	32.86	2.11	33.89	108	50	Peak
2412	102.53	-	-	101.41	32.89	2.12	33.89	108	50	Peak
2412	91.44	-	-	90.32	32.89	2.12	33.89	108	50	Average
4824	44.82	-29.18	74	40.7	35.17	3.09	34.14	200	0	Peak
7236	42.97	-39.56	82.53	37.83	36.18	3.24	34.28	100	80	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2437	108.36	-	-	107.2	32.95	2.14	33.93	100	202	Peak
2437	97.23	-	-	96.07	32.95	2.14	33.93	100	202	Average
4874	43.01	-30.99	74	38.75	35.18	3.12	34.04	100	0	Peak
7312	44.29	-29.71	74	39.13	36.2	3.21	34.25	100	360	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2437	101.82	-	-	100.66	32.95	2.14	33.93	100	323	Peak
2437	90.49	-	-	89.33	32.95	2.14	33.93	100	323	Average
4874	44.45	-29.55	74	40.19	35.18	3.12	34.04	110	200	Peak
7312	45	-29	74	39.84	36.2	3.21	34.25	200	45	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2462	108.35	-	-	107.18	32.98	2.15	33.96	100	203	Peak
2462	96.55	-	-	95.38	32.98	2.15	33.96	100	203	Average
4924	42.46	-31.54	74	38.06	35.19	3.15	33.94	200	306	Peak
7386	44.12	-29.88	74	38.92	36.24	3.19	34.23	100	250	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2462	101.54	-	-	100.37	32.98	2.15	33.96	104	63	Peak
2462	89.31	-	-	88.14	32.98	2.15	33.96	104	63	Average
4924	42.55	-31.45	74	38.15	35.19	3.15	33.94	189	0	Peak
7386	43.91	-30.09	74	38.71	36.24	3.19	34.23	100	200	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2399 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2399	83.9	-4.01	87.91	82.82	32.86	2.11	33.89	100	202	Peak
2412	107.91	-	-	106.79	32.89	2.12	33.89	100	202	Peak
2412	96.21	-	-	95.09	32.89	2.12	33.89	100	202	Average
4824	42.57	-31.43	74	38.45	35.17	3.09	34.14	200	150	Peak
7236	44.17	-43.74	87.91	39.03	36.18	3.24	34.28	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2399 MHz and 7236 are not within restricted bands, and their limit lines are 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2399	71.84	-7.49	79.33	70.76	32.86	2.11	33.89	108	0	Peak
2412	99.33	-	-	98.21	32.89	2.12	33.89	108	0	Peak
2412	87.96	-	-	86.84	32.89	2.12	33.89	108	0	Average
4824	42.53	-31.47	74	38.41	35.17	3.09	34.14	100	230	Peak
7236	42.88	-36.45	79.33	37.74	36.18	3.24	34.28	200	10	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2437	108.35	-	-	107.19	32.95	2.14	33.93	100	307	Peak
2437	96.64	-	-	95.48	32.95	2.14	33.93	100	307	Average
4874	42.56	-31.44	74	38.3	35.18	3.12	34.04	100	340	Peak
7312	43.81	-30.19	74	38.65	36.2	3.21	34.25	100	34	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2437	99.39	-	-	98.23	32.95	2.14	33.93	103	210	Peak
2437	87.96	-	-	86.8	32.95	2.14	33.93	103	210	Average
4874	44.5	-29.5	74	40.24	35.18	3.12	34.04	100	56	Peak
7312	42.42	-31.58	74	37.26	36.2	3.21	34.25	200	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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	18.55	-21.45	40	35.23	16.55	0.35	33.58	-	-	Peak
53.882	12.98	-27.02	40	39.61	6.49	0.46	33.58	-	-	Peak
99.18	19.71	-23.79	43.5	42.42	10.33	0.58	33.62	-	-	Peak
111.738	18.96	-24.54	43.5	40.16	11.8	0.61	33.61	-	-	Peak
195.137	25.74	-17.76	43.5	49.74	8.75	0.81	33.56	-	-	Peak
948.761	31.32	-14.68	46	41.28	20.73	1.75	32.44	200	150	Peak
2462	107.47	-	-	106.3	32.98	2.15	33.96	100	203	Peak
2462	96.49	-	-	95.32	32.98	2.15	33.96	100	203	Average
4924	43.43	-30.57	74	39.03	35.19	3.15	33.94	100	300	Peak
7386	44.67	-29.33	74	39.47	36.24	3.19	34.23	200	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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	25.69	-14.31	40	40.92	18	0.34	33.57	-	-	Peak
52.025	27.62	-12.38	40	53.74	7.01	0.45	33.58	100	0	Peak
89.905	20.03	-23.47	43.5	44.2	8.9	0.55	33.62	-	-	Peak
129.015	18.65	-24.85	43.5	39.86	11.71	0.67	33.59	-	-	Peak
193.773	15.94	-27.56	43.5	39.99	8.7	0.81	33.56	-	-	Peak
948.761	30.76	-15.24	46	40.72	20.73	1.75	32.44	-	-	Peak
2462	101.14	-	-	99.97	32.98	2.15	33.96	105	72	Peak
2462	89.54	-	-	88.37	32.98	2.15	33.96	105	72	Average
4924	44.12	-29.88	74	39.72	35.19	3.15	33.94	100	0	Peak
7386	43.7	-30.3	74	38.5	36.24	3.19	34.23	106	100	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5745	97.85	-	-	89.96	35.52	3.21	30.84	100	320	Peak
5745	86.58	-	-	78.69	35.52	3.21	30.84	100	320	Average
11490	32.22	-41.78	74	43.96	13.61	4.47	29.82	100	231	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5745	104.28	-	-	96.39	35.52	3.21	30.84	102	0	Peak
5745	93.58	-	-	85.69	35.52	3.21	30.84	102	0	Average
11490	33.19	-40.81	74	44.93	13.61	4.47	29.82	100	0	Peak



Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5785	99.56	-	-	91.65	35.53	3.19	30.81	100	0	Peak
5785	88.06	-	-	80.15	35.53	3.19	30.81	100	0	Average
11570	32.02	-41.98	74	43.62	13.68	4.52	29.8	120	157	Peak



Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5785	104.81	-	-	96.9	35.53	3.19	30.81	100	0	Peak
5785	93.56	-	-	85.65	35.53	3.19	30.81	100	0	Average
11570	32.61	-41.39	74	44.21	13.68	4.52	29.8	103	263	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	161	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5805	98.28	-	-	90.35	35.55	3.17	30.79	100	299	Peak
5805	88.09	-	-	80.16	35.55	3.17	30.79	100	299	Average
11610	31.16	-42.84	74	42.74	13.66	4.55	29.79	100	109	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	161	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5805	103.4	-	-	95.47	35.55	3.17	30.79	100	36	Peak
5805	92.55	-	-	84.62	35.55	3.17	30.79	100	36	Average
11610	30.78	-43.22	74	42.36	13.66	4.55	29.79	100	186	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5745	99.65	-	-	91.76	35.52	3.21	30.84	100	312	Peak
5745	88.68	-	-	80.79	35.52	3.21	30.84	100	312	Average
11490	32.8	-41.2	74	44.54	13.61	4.47	29.82	120	188	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5745	105.93	-	-	98.04	35.52	3.21	30.84	100	2	Peak
5745	95.49	-	-	87.6	35.52	3.21	30.84	100	2	Average
11490	33.74	-40.26	74	45.48	13.61	4.47	29.82	132	65	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5785	100.67	-	-	92.76	35.53	3.19	30.81	100	156	Peak
5785	89.09	-	-	81.18	35.53	3.19	30.81	100	156	Average
11570	32.32	-41.68	74	43.92	13.68	4.52	29.8	100	231	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5785	105.72	-	-	97.81	35.53	3.19	30.81	100	0	Peak
5785	94.02	-	-	86.11	35.53	3.19	30.81	100	0	Average
11570	32.51	-41.49	74	44.11	13.68	4.52	29.8	139	360	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	161	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5805	99.31	-	-	91.38	35.55	3.17	30.79	100	316	Peak
5805	88.52	-	-	80.59	35.55	3.17	30.79	100	316	Average
11610	32.28	-41.72	74	43.86	13.66	4.55	29.79	100	26	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	161	Relative Humidity :	41~43%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
5805	102.4	-	-	94.47	35.55	3.17	30.79	100	21	Peak
5805	92.44	-	-	84.51	35.55	3.17	30.79	100	21	Average
11610	31.53	-42.47	74	43.11	13.66	4.55	29.79	100	0	Peak

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.

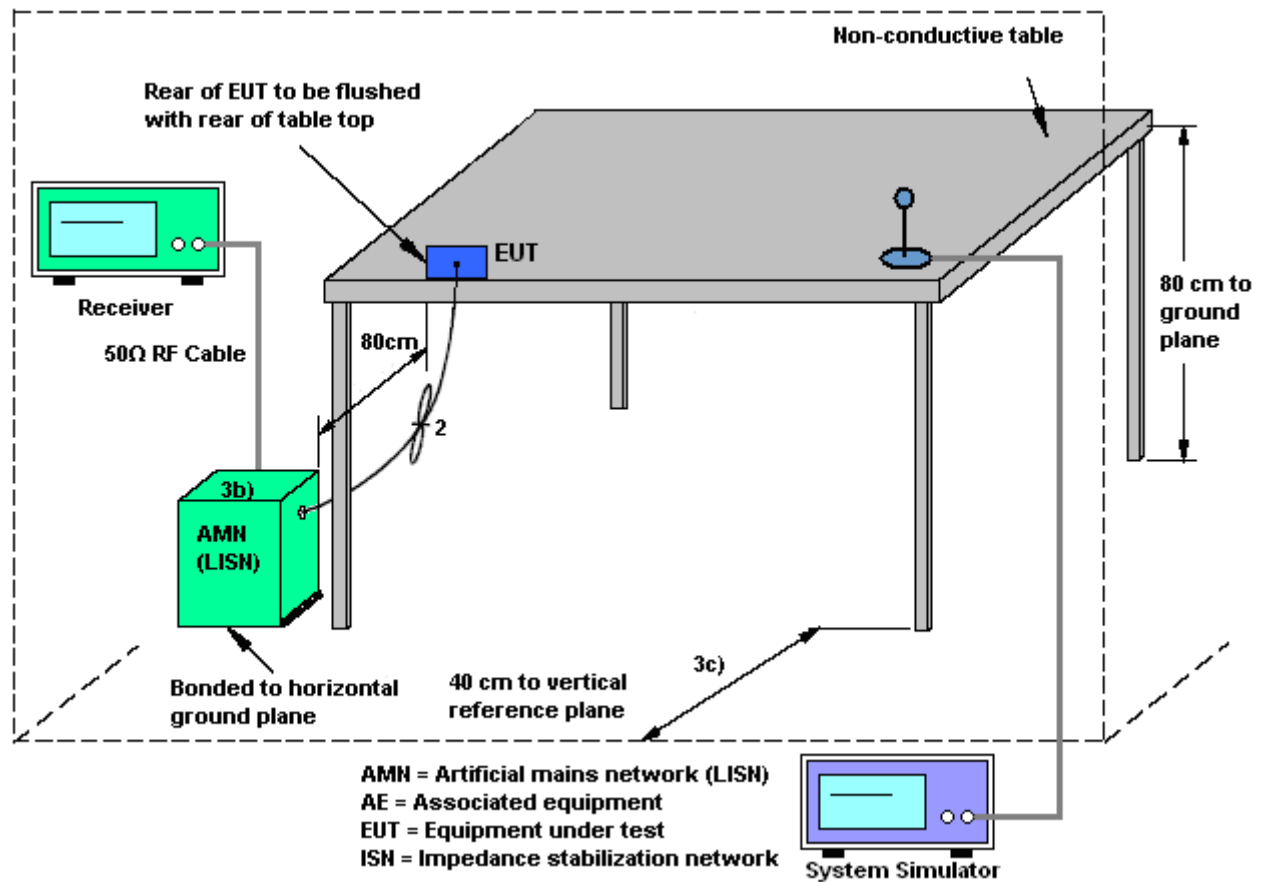
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

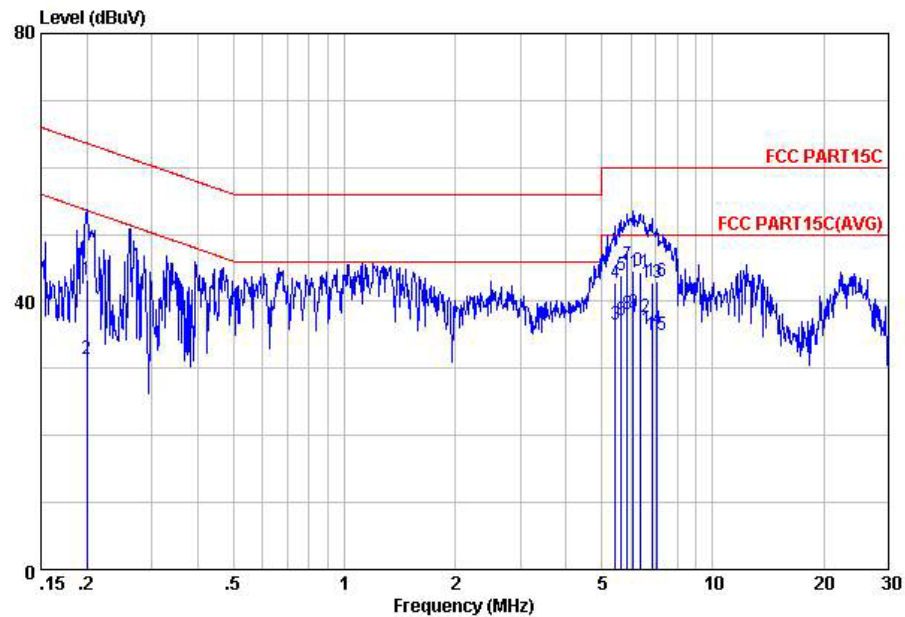
1. The testing follows the guidelines in ANSIC63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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

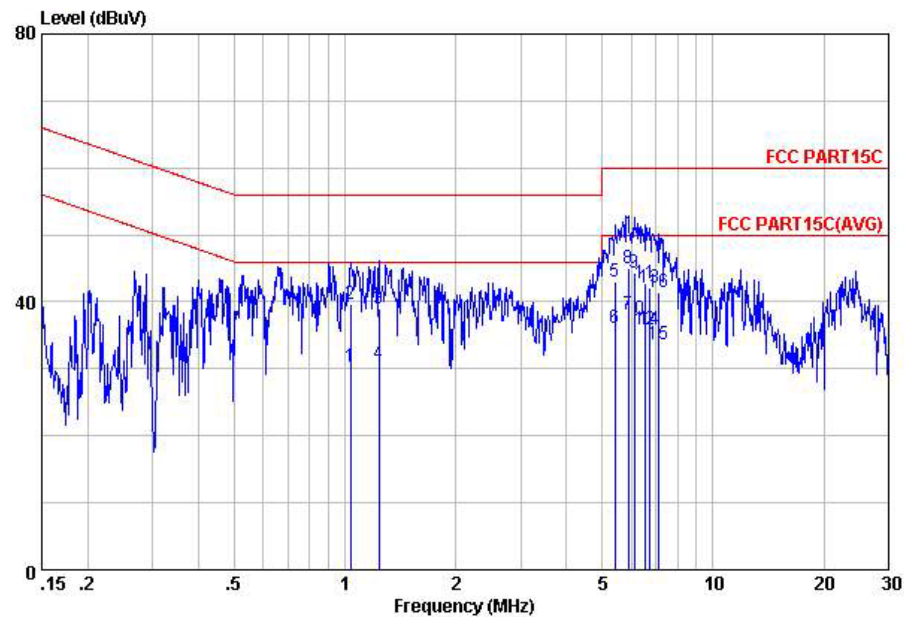
Test Mode :	Mode 1	Temperature :	19~20℃
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN (2.4G) Link + USB Cable (Charging from Adapter) + NFC Tx		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



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

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.20	43.15	-20.47	63.62	33.00	-0.07	10.22	QP
2	0.20	31.35	-22.27	53.62	21.20	-0.07	10.22	Average
3	5.45	36.51	-13.49	50.00	26.30	-0.13	10.34	Average
4	5.45	42.71	-17.29	60.00	32.50	-0.13	10.34	QP
5	5.65	44.01	-15.99	60.00	33.80	-0.13	10.34	QP
6	5.65	37.21	-12.79	50.00	27.00	-0.13	10.34	Average
7	5.87	45.41	-14.59	60.00	35.20	-0.13	10.34	QP
8	5.87	38.11	-11.89	50.00	27.90	-0.13	10.34	Average
9	6.09	38.31	-11.69	50.00	28.10	-0.13	10.34	Average
10	6.09	44.61	-15.39	60.00	34.40	-0.13	10.34	QP
11	6.35	44.42	-15.58	60.00	34.20	-0.13	10.35	QP
12	6.35	37.72	-12.28	50.00	27.50	-0.13	10.35	Average
13	6.84	42.82	-17.18	60.00	32.60	-0.13	10.35	QP
14	6.84	35.92	-14.08	50.00	25.70	-0.13	10.35	Average
15	7.06	34.92	-15.08	50.00	24.70	-0.13	10.35	Average
16	7.06	42.92	-17.08	60.00	32.70	-0.13	10.35	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 (2.4G) 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	1.04	30.39	-15.61	46.00	20.20	-0.09	10.28	Average
2	1.04	39.59	-16.41	56.00	29.40	-0.09	10.28	QP
3	1.24	38.89	-17.11	56.00	28.70	-0.09	10.28	QP
4	1.24	30.79	-15.21	46.00	20.60	-0.09	10.28	Average
5	5.42	42.91	-17.09	60.00	32.70	-0.13	10.34	QP
6	5.42	36.21	-13.79	50.00	26.00	-0.13	10.34	Average
7	5.90	38.01	-11.99	50.00	27.80	-0.13	10.34	Average
8	5.90	45.11	-14.89	60.00	34.90	-0.13	10.34	QP
9	6.12	44.31	-15.69	60.00	34.10	-0.13	10.34	QP
10	6.12	37.41	-12.59	50.00	27.20	-0.13	10.34	Average
11	6.52	42.82	-17.18	60.00	32.60	-0.13	10.35	QP
12	6.52	35.82	-14.18	50.00	25.60	-0.13	10.35	Average
13	6.73	42.12	-17.88	60.00	31.90	-0.13	10.35	QP
14	6.73	35.82	-14.18	50.00	25.60	-0.13	10.35	Average
15	7.10	33.62	-16.38	50.00	23.40	-0.13	10.35	Average
16	7.10	41.52	-18.48	60.00	31.30	-0.13	10.35	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	Dec. 24, 2012~ Dec. 28, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 29, 2012	Dec. 29, 2012~ Feb. 18, 2013	Dec. 28, 2013	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 22, 2012	Dec. 24, 2012~ Feb. 18, 2013	Aug. 21, 2013	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 22, 2012	Dec. 24, 2012~ Feb. 18, 2013	Aug. 21, 2013	Conducted (TH01-KS)
DC Power Supply	GWINSTEK	GPS-3030D	E1884515	N/A	Aug. 22, 2012	Dec. 24, 2012~ Feb. 18, 2013	Aug. 21, 2013	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 30, 2011	Dec. 24, 2012~ Dec. 28, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 29, 2012	Dec. 29, 2012~ Feb. 18, 2013	Dec. 28, 2013	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 08, 2012	Jan. 31, 2013~ Feb. 15, 2013	Nov. 07, 2013	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	100400	9kHz~30GHz	Jun. 01, 2012	Jan. 31, 2013~ Feb. 15, 2013	May 31, 2013	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 07, 2012	Jan. 31, 2013~ Feb. 15, 2013	Dec. 06, 2013	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/ 001	9 kHz~30 MHz	Jul. 03, 2012	Jan. 31, 2013~ Feb. 15, 2013	Jul. 02, 2014	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 05, 2013	Jan. 31, 2013~ Feb. 15, 2013	Jan. 04, 2014	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1GHz	Jun. 01, 2012	Jan. 31, 2013~ Feb. 15, 2013	May 31, 2013	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 29, 2012	Jan. 31, 2013~ Feb. 15, 2013	Dec. 28, 2013	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2012	Jan. 31, 2013~ Feb. 15, 2013	Nov. 06, 2013	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	9170249	15GHz~40GHz	Nov. 23, 2012	Jan. 31, 2013~ Feb. 15, 2013	Nov. 22, 2013	Radiation (03CH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 01, 2012	Jan. 31, 2013~ Feb. 15, 2013	May 31, 2013	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 29, 2012	Jan. 31, 2013~ Feb. 15, 2013	Dec. 28, 2013	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Dec. 29, 2012	Jan. 31, 2013~ Feb. 15, 2013	Dec. 28, 2013	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 15, 2012	Jan. 31, 2013~ Feb. 15, 2013	Nov. 14, 2013	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	2G Full-Band	Dec. 29, 2012	Jan. 31, 2013~ Feb. 15, 2013	Dec. 28, 2013	Conduction (CO01-KS)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26
--	------

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54
--	------

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72
--	------



Appendix A. Photographs of EUT

Please refer to Sporton report number EP2D1804 as below.