FCC/IC RF Test Report

APPLICANT	:	**Mosby LLC**
EQUIPMENT	:	**Tablet PC**
MODEL NAME	:	**GU045RW**
FCC ID	:	**S5R-2670**
IC	:	**10911A-2670**
STANDARD	:	**FCC Part 15 Subpart C §15.247** **IC RSS-210 issue 8**
CLASSIFICATION	:	**(DTS) Digital Transmission System**

The product testing was completed on Sep. 05, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown to be compliant with the applicable technical standards.

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

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR332727-04B	Rev. 01	Initial issue of report	Sep. 06, 2013
FR332727-04B	Rev. 02	1. Add description N_{TX} =2 for MIMO output. 2. Add description about the WIFI AC power line conducted emission configuration.	Sep. 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	≥ 0.5MHz	Pass	-
3.1	-	RSS-Gen 4.6.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	RSS-210 A8.4	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges	≤ 20dBc	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.48 dB at 2389.470 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 7.40 dB at 0.198 MHz
3.7	15.203 & 15.247(b)	RSS-210 A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Mosby LLC
2825 E. Cottonwood Parkway
Suite 500
Salt Lake City, Utah 84121

1.2 Feature of Equipment Under Test

Product Feature	
Equipment	Tablet PC
Model Name	GU045RW
FCC ID	S5R-2670
IC	10911A-2670
EUT supports Radios application	WLAN 11b/g/n (HT20), WLAN 11a/n (HT20/HT40) Bluetooth v3.0

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

1.3 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Product Specification subjective to this standard</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>802.11b/g/n : 2412 MHz ~ 2462 MHz
802.11a/n: 5745~5825MHz.</td></tr>
<tr><td>Maximum Output Power to Antenna</td><td><2412 MHz ~ 2462 MHz >
802.11b : 22.6 dBm (0.1820 W)
802.11g : 24.3 dBm (0.2692 W)
802.11n HT20 : 24.4 dBm (0.2754 W)
<5745 MHz ~ 5825 MHz >
802.11a : 21.6 dBm (0.1445 W)
802.11n HT20 : 22.1 dBm (0.1622 W)
802.11n HT40 : 20.9 dBm (0.1230 W)</td></tr>
<tr><td>99% Occupied Bandwidth</td><td><2412 MHz ~ 2462 MHz>
802.11b : 12.30MHz
802.11g : 17.55MHz
802.11n HT20 : 18.55MHz
<5745 MHz ~ 5825 MHz>
802.11a : 17.40MHz
802.11n HT20 : 18.45MHz
802.11n HT40 : 36.20MHz</td></tr>
<tr><td>Antenna Type</td><td>< Ant. 1>
802.11b/g/n : Fixed Internal Antenna with gain 2.80 dBi
802.11a/n : Fixed Internal Antenna with gain 2.80 dBi
< Ant. 2>
802.11b/g/n : Fixed Internal Antenna with gain 2.10 dBi
802.11a/n : Fixed Internal Antenna with gain 3.30 dBi</td></tr>
<tr><td>Type of Modulation</td><td>802.11b : DSSS (DBPSK / DQPSK / CCK)
802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)</td></tr>
<tr><td>Antenna Function for Transmitter</td><td>
<table>
<tr><td></td><td>Ant. 1</td><td>Ant. 2</td></tr>
<tr><td>802.11 b MIMO</td><td>V</td><td>V</td></tr>
<tr><td>802.11 g MIMO</td><td>V</td><td>V</td></tr>
<tr><td>802.11 a MIMO</td><td>V</td><td>V</td></tr>
<tr><td>802.11 n MIMO</td><td>V</td><td>V</td></tr>
</table>
</td></tr>
</table>

1.4 Modification of EUT

No modifications are made to the EUT during all test items.

1.5 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH07-HY	722060/4086B-1

Note: 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 v03r01
- FCC KDB 662911 D01 Multiple Transmitter Output v02.
- ANSI C63.4-2003
- IC RSS-210 Issue 8
- IC RSS-Gen Issue 3
- NOTICE 2012-DRS0126

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.
3. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

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 for 2.4GHz and Z plane for 5GHz) 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 and 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 (DTS)	149	5745	159	5795
	151	5755	161	5805
	153	5765	165	5825
	157	5785	-	-

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test shown in the following tables.

MIMO <Ant. 1+2>

802.11b				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	22.6	22.3	22.1	22.0

802.11g								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	24.3	23.9	23.7	23.8	24.3	23.9	23.8	23.9

2.4GHz 802.11n HT20								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	24.4	24.2	24.1	23.9	23.9	23.8	24.2	23.3
Data Rate (MHz)	MSC 8	MSC 9	MSC 10	MSC 11	MSC 12	MSC 13	MSC 14	MSC 15
Peak Power (dBm)	24.2	24.1	24.0	24.3	24.1	24.1	24.0	23.6

802.11a								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	21.6	21.5	21.4	21.4	21.4	21.2	21.0	21.1

5GHz 802.11n HT20								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	22.1	21.5	21.7	22.0	22.0	22.0	22.0	21.5
Data Rate (MHz)	MSC 8	MSC 9	MSC 10	MSC 11	MSC 12	MSC 13	MSC 14	MSC 15
Peak Power (dBm)	21.5	21.5	21.6	21.8	21.8	21.8	21.4	21.1

5GHz 802.11n HT40								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	20.9	20.8	20.8	20.8	20.6	20.6	20.4	20.4
Data Rate (MHz)	MSC 8	MSC 9	MSC 10	MSC 11	MSC 12	MSC 13	MSC 14	MSC 15
Peak Power (dBm)	20.7	20.7	20.6	20.7	20.4	20.5	20.2	20.3

2.3 Test Mode

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

<2.4GHz>

Test Cases					
	Test Items	**Mode**	**Data Rate**	**N_{TX}**	**Test Channel**
Conducted TCs	**6dB and 99% BW Power Spectral Density**	**802.11b**	**1 Mbps**	**2**	**1/6/11**
		802.11g	**6 Mbps**	**2**	**1/2/6/10/11**
		802.11n HT20	**MSC0**	**2**	**1/2/6/10/11**
	Output Power	**802.11b**	**1 Mbps**	**2**	**1/6/11**
		802.11g	**6 Mbps**	**2**	**1/2/6/10/11**
		802.11n HT20	**MSC0**	**2**	**1/2/6/10/11**
	Conducted Band Edge	**802.11b**	**1 Mbps**	**2**	**1/11**
		802.11g	**6 Mbps**	**2**	**1/11**
		802.11n HT20	**MSC0**	**2**	**1/11**
	Conducted Spurious Emission	**802.11b**	**1 Mbps**	**2**	**1/6/11**
		802.11g	**6 Mbps**	**2**	**1/2/6/10/11**
		802.11n HT20	**MSC0**	**2**	**1/2/6/10/11**
Radiated TCs	**Radiated Band Edge**	**802.11b**	**1 Mbps**	**2**	**1/11**
		802.11g	**6 Mbps**	**2**	**1/2/10/11**
		802.11n HT20	**MSC0**	**2**	**1/2/10/11**
	Radiated Spurious Emission	**802.11b**	**1 Mbps**	**2**	**1/6/11**
		802.11g	**6 Mbps**	**2**	**1/2/6/10/11**
		802.11n HT20	**MSC0**	**2**	**1/2/6/10/11**
Note: The **N_{TX}** =2 means 2 antenna ports simultaneously transmit during test.					

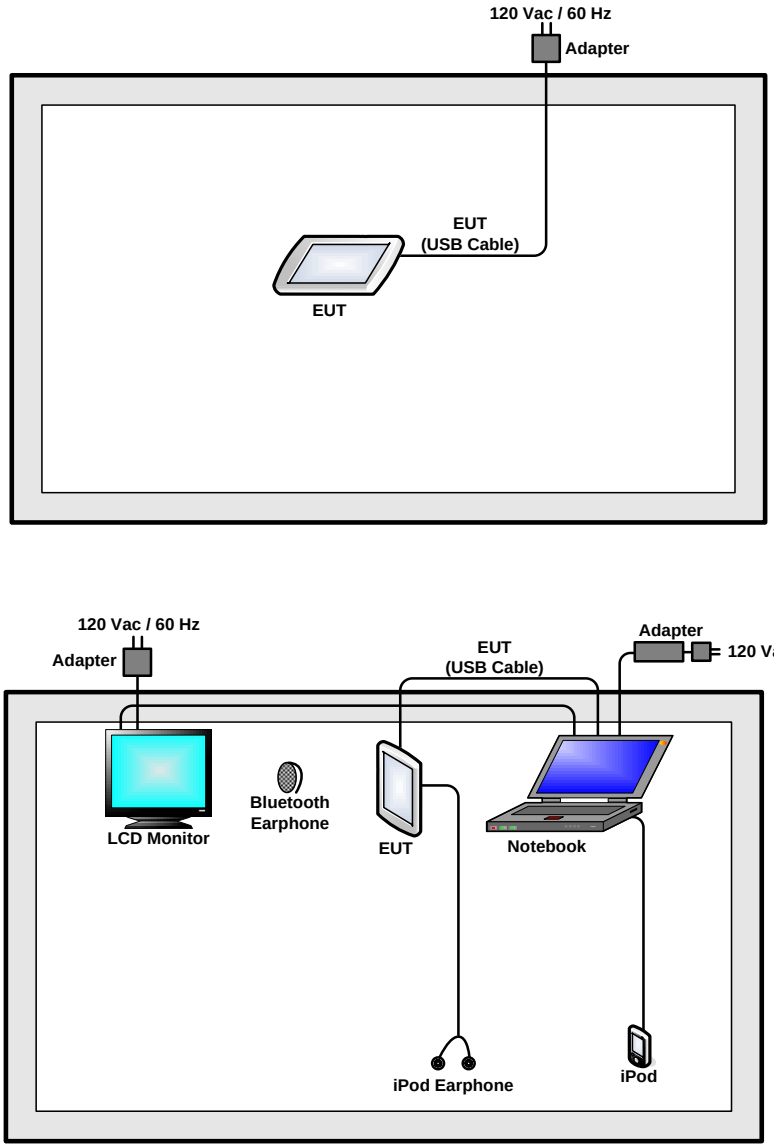
<5GHz>

Test Cases					
	Test Items	**Mode**	**Data Rate**	**N_{TX}**	**Test Channel**
Conducted TCs	**6dB and 99% BW Power Spectral Density**	**802.11a**	**6 Mbps**	**2**	**149/157/165**
		802.11n HT20	**MSC0**	**2**	**149/157/165**
		802.11n HT40	**MSC0**	**2**	**151/159**
	Output Power	**802.11a**	**6 Mbps**	**2**	**149/157/165**
		802.11n HT20	**MSC0**	**2**	**149/157/165**
		802.11n HT40	**MSC0**	**2**	**151/159**
	Conducted Band EDGE	**802.11a**	**6 Mbps**	**2**	**149/165**
		802.11n HT20	**MSC0**	**2**	**149/165**
		802.11n HT40	**MSC0**	**2**	**151/159**
	Conducted Spurious Emission	**802.11a**	**6 Mbps**	**2**	**149/157/165**
		802.11n HT20	**MSC0**	**2**	**149/157/165**
		802.11n HT40	**MSC0**	**2**	**151/159**
Radiated TCs	**Radiated Band EDGE**	**802.11a**	**6 Mbps**	**2**	**149/165**
		802.11n HT20	**MSC0**	**2**	**149/165**
		802.11n HT40	**MSC0**	**2**	**151/159**
	Radiated Spurious Emission	**802.11a**	**6 Mbps**	**2**	**149/157/165**
		802.11n HT20	**MSC0**	**2**	**149/157/165**
		802.11n HT40	**MSC0**	**2**	**151/159**
Note: The **N_{TX}** =2 means 2 antenna ports simultaneously transmit during test.					

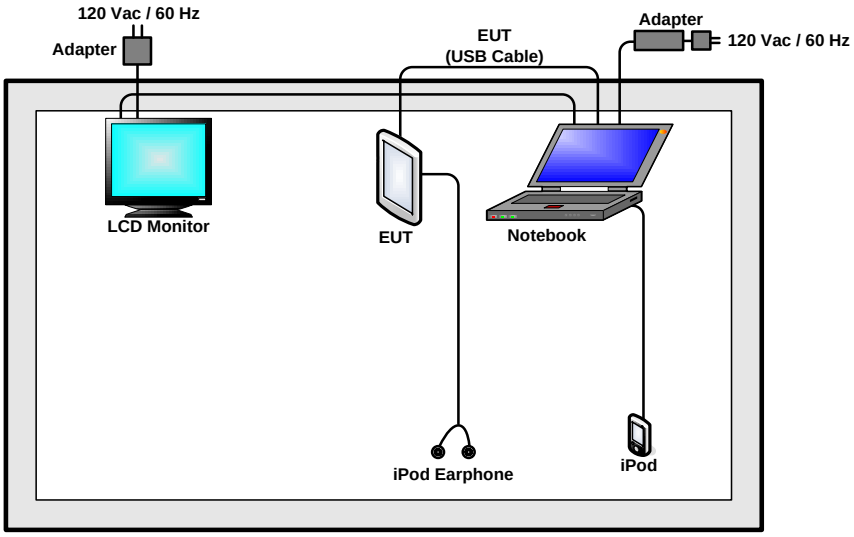
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (2.4GHz, 11b, Ch06, 1Mbps) Link + Bluetooth Link + Earphone + USB Cable (Data Link with Notebook) + Camera <Fig. 1> Mode 2 : WLAN (5GHz, 11a, Ch157, 6Mbps) Link + Bluetooth Link + Earphone + USB Cable (Data Link with Notebook) + Camera <Fig. 1> Mode 3 :WLAN (2.4GHz, 11b, Ch06, 1Mbps) MIMO Tx + Earphone + USB Cable (Data Link with Notebook) + Camera <Fig. 2> Mode 4 :WLAN (5GHz, 11a, Ch157, 6Mbps) MIMO Tx + Earphone + USB Cable (Data Link With Notebook) + Camera <Fig. 2>

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<Fig. 1>



<Fig. 2>

2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	iPod Earphone	Apple	N/A	N/A	Unshielded, 1.0 m	N/A
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	LCD Monitor	DELL	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
6.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
7.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
8.	Adapter	Foxlink	PE98ED	Verification	N/A	N/A

2.6 EUT Operation Test Setup

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

2.7 Measurement Results Explanation Example

For all conducted test items:

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

Example:
The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Offset = RF cable loss + attenuator factor.
Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).
= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

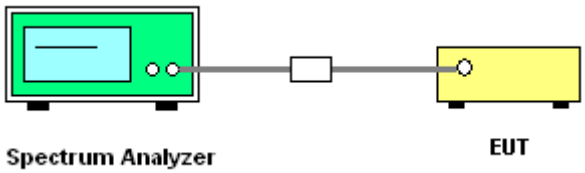
3.1.2 Measuring Instruments

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 v03r01.
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. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup



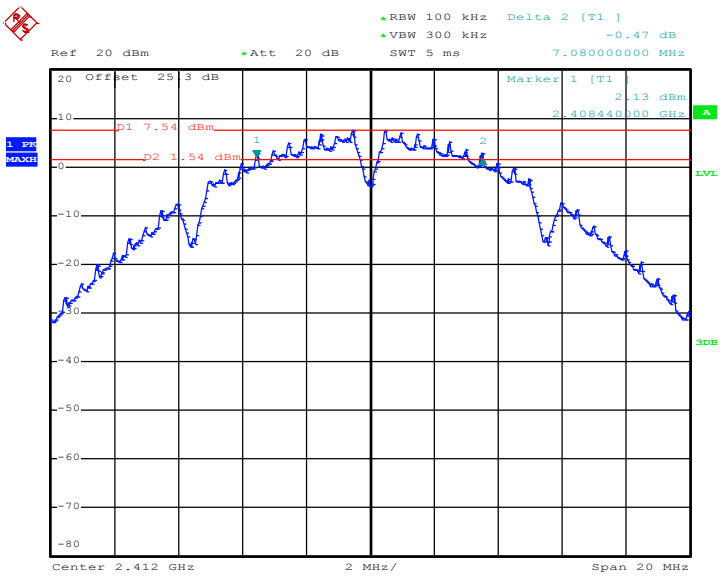
3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Test Band :	2.4GHz + 5GHz band 4	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	55~58%

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)		6dB Bandwidth (MHz)		6dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant. 1	Ant. 2	Ant. 1	Ant. 2		
11b	1Mbps	2	1	2412	12.25	12.30	7.08	7.08	0.5	Pass
11b	1Mbps	2	6	2437	12.20	12.15	7.08	7.08	0.5	Pass
11b	1Mbps	2	11	2462	12.30	12.10	7.08	7.08	0.5	Pass
11g	6Mbps	2	1	2412	17.40	17.50	16.32	16.28	0.5	Pass
11g	6Mbps	2	2	2417	17.45	17.50	16.32	16.28	0.5	Pass
11g	6Mbps	2	6	2437	17.55	17.55	16.32	16.28	0.5	Pass
11g	6Mbps	2	10	2457	17.45	17.55	16.28	16.32	0.5	Pass
11g	6Mbps	2	11	2462	17.40	17.40	16.28	16.28	0.5	Pass
HT20	MCS0	2	1	2412	18.45	18.45	17.52	16.80	0.5	Pass
HT20	MCS0	2	2	2417	18.40	18.55	17.52	16.80	0.5	Pass
HT20	MCS0	2	6	2437	18.50	18.50	16.84	16.80	0.5	Pass
HT20	MCS0	2	10	2457	18.45	18.45	17.52	17.14	0.5	Pass
HT20	MCS0	2	11	2462	18.40	18.45	17.08	16.80	0.5	Pass

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)		6dB Bandwidth (MHz)		6dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant. 1	Ant. 2	Ant. 1	Ant. 2		
11a	6Mbps	2	149	5745	17.20	17.40	16.04	15.32	0.5	Pass
11a	6Mbps	2	157	5785	17.25	17.40	15.76	15.44	0.5	Pass
11a	6Mbps	2	165	5825	17.25	17.40	15.76	15.32	0.5	Pass
HT20	MCS0	2	149	5745	18.20	18.40	16.76	15.96	0.5	Pass
HT20	MCS0	2	157	5785	18.25	18.40	16.78	16.52	0.5	Pass
HT20	MCS0	2	165	5825	18.25	18.45	16.90	16.52	0.5	Pass
HT40	MCS0	2	151	5755	35.90	36.20	33.84	32.56	0.5	Pass
HT40	MCS0	2	159	5795	36.00	36.20	32.56	32.56	0.5	Pass

Minimum 6dB Bandwidth



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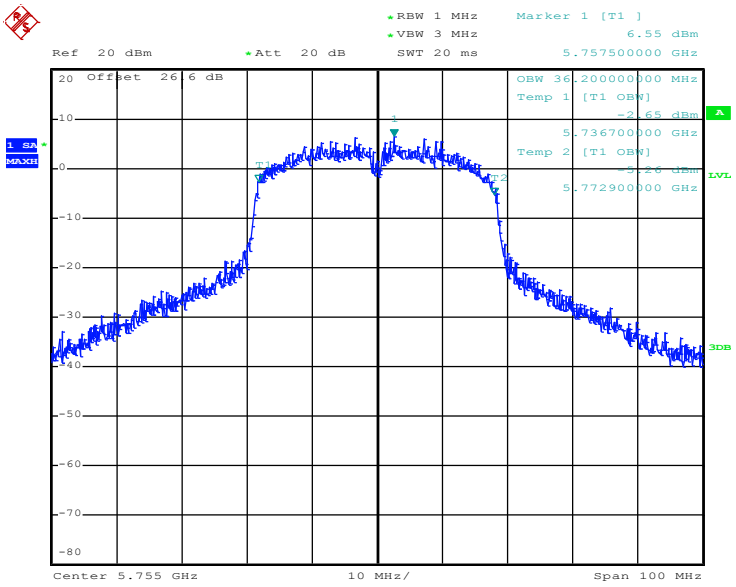
Maximum 99% Occupied Bandwidth



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3.2 Peak Output Power Measurement

3.2.1 Limit of Peak 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 with directional gain greater than 6dBi is 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.

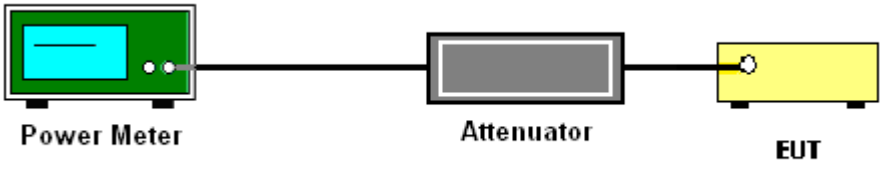
3.2.2 Measuring Instruments

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 v03r01.
2. The RF output of EUT was connected to the power meter 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.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Test Band :	2.4GHz + 5GHz band 4	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	55~58%

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)			Power Limit (dBm)	DG (dBi)	Pass/Fail
					Ant. 1	Ant. 2	Sum Power			
11b	1Mbps	2	1	2412	19.7	19.0	22.4	30	2.46	Pass
11b	1Mbps	2	6	2437	19.8	19.4	22.6	30	2.46	Pass
11b	1Mbps	2	11	2462	19.4	19.4	22.4	30	2.46	Pass
11g	6Mbps	2	1	2412	16.4	17.5	20.0	30	2.46	Pass
11g	6Mbps	2	2	2417	17.7	11.8	18.7	30	2.46	Pass
11g	6Mbps	2	6	2437	21.4	21.2	24.3	30	2.46	Pass
11g	6Mbps	2	10	2457	18.7	18.8	21.7	30	2.46	Pass
11g	6Mbps	2	11	2462	16.3	16.9	19.6	30	2.46	Pass
HT20	MCS0	2	1	2412	13.1	13.4	16.2	30	2.46	Pass
HT20	MCS0	2	2	2417	18.1	18.3	21.2	30	2.46	Pass
HT20	MCS0	2	6	2437	21.4	21.3	24.4	30	2.46	Pass
HT20	MCS0	2	10	2457	19.0	19.2	22.1	30	2.46	Pass
HT20	MCS0	2	11	2462	13.6	13.8	16.7	30	2.46	Pass

Note: Measured power (dBm) has offset with cable loss.

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)			Power Limit (dBm)	DG (dBi)	Pass/Fail
					Ant. 1	Ant. 2	Sum Power			
11a	6Mbps	2	149	5745	18.5	18.8	21.6	30	3.06	Pass
11a	6Mbps	2	157	5785	18.5	18.4	21.5	30	3.06	Pass
11a	6Mbps	2	165	5825	18.5	18.3	21.4	30	3.06	Pass
HT20	MCS0	2	149	5745	18.8	19.4	22.1	30	3.06	Pass
HT20	MCS0	2	157	5785	18.7	19.1	21.9	30	3.06	Pass
HT20	MCS0	2	165	5825	18.7	18.4	21.5	30	3.06	Pass
HT40	MCS0	2	151	5755	17.7	18.1	20.9	30	3.06	Pass
HT40	MCS0	2	159	5795	17.7	18.0	20.9	30	3.06	Pass

Note: Measured power (dBm) has offset with cable loss.

3.2.6 Test Result of Average output Power (Reporting Only)

Test Band :	2.4GHz + 5GHz band 4	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	55~58%

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)			Power Limit (dBm)	DG (dBi)	Pass/Fail
					Ant. 1	Ant. 2	Sum Power			
11b	1Mbps	2	1	2412	15.9	15.8	18.8	30	2.46	Pass
11b	1Mbps	2	6	2437	16.0	15.9	18.9	30	2.46	Pass
11b	1Mbps	2	11	2462	15.8	15.6	18.7	30	2.46	Pass
11g	6Mbps	2	1	2412	10.2	10.6	13.4	30	2.46	Pass
11g	6Mbps	2	2	2417	12.0	11.3	14.7	30	2.46	Pass
11g	6Mbps	2	6	2437	15.0	14.8	17.9	30	2.46	Pass
11g	6Mbps	2	10	2457	12.7	12.0	15.4	30	2.46	Pass
11g	6Mbps	2	11	2462	9.8	9.9	12.9	30	2.46	Pass
HT20	MCS0	2	1	2412	5.9	5.6	8.8	30	2.46	Pass
HT20	MCS0	2	2	2417	12.1	11.4	14.8	30	2.46	Pass
HT20	MCS0	2	6	2437	15.0	14.5	17.8	30	2.46	Pass
HT20	MCS0	2	10	2457	12.6	11.8	15.2	30	2.46	Pass
HT20	MCS0	2	11	2462	6.5	6.2	9.3	30	2.46	Pass

Note: Measured power (dBm) has offset with cable loss.

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)			Power Limit (dBm)	DG (dBi)	Pass/Fail
					Ant. 1	Ant. 2	Sum Power			
11a	6Mbps	2	149	5745	13.0	13.0	16.0	30	3.06	Pass
11a	6Mbps	2	157	5785	13.0	12.9	16.0	30	3.06	Pass
11a	6Mbps	2	165	5825	13.0	12.8	15.9	30	3.06	Pass
HT20	MCS0	2	149	5745	12.9	13.0	15.9	30	3.06	Pass
HT20	MCS0	2	157	5785	12.9	13.0	15.9	30	3.06	Pass
HT20	MCS0	2	165	5825	12.8	12.6	15.7	30	3.06	Pass
HT40	MCS0	2	151	5755	12.9	13.0	16.0	30	3.06	Pass
HT40	MCS0	2	159	5795	12.9	13.0	15.9	30	3.06	Pass

Note: Measured power (dBm) has offset with cable loss.

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 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
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. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02.

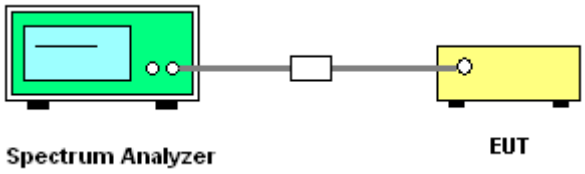
   If measurements performed using method (2) plus 10 log (N) exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

   Method (1): Measure and sum the spectra across the outputs.

   The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

   Method (2): Measure and add 10 log (N) dB, where N is the number of outputs. (N=2)

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Test Band :	2.4GHz + 5GHz band 4	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	55~58%

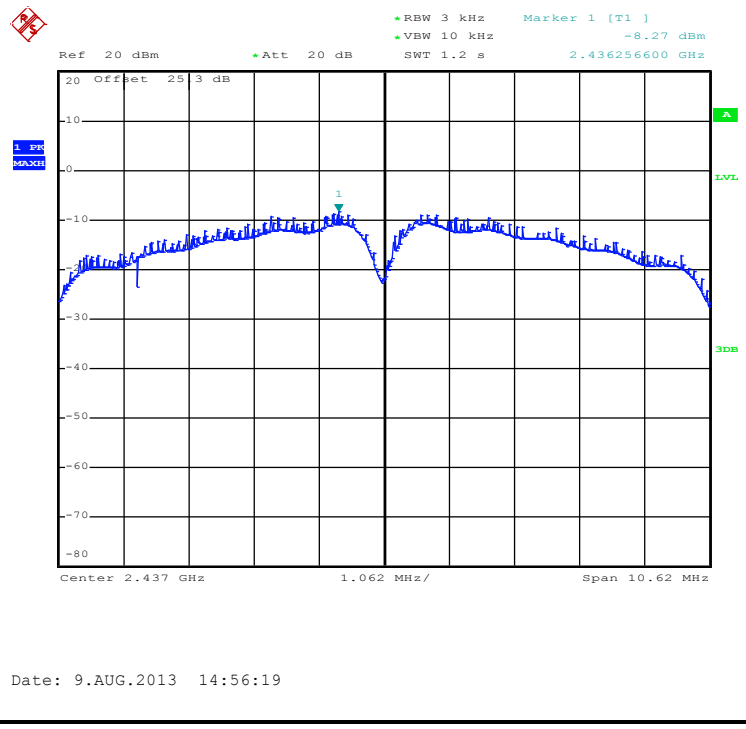
Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	Peak Power Density (dBm/3kHz)			Max. Limits (dBm/3kHz)	DG (dBi)	Pass/Fail
					Ant1	Ant2	Worst +10log(2)			
11b	1Mbps	2	1	2412	-8.71	-9.56	-5.70	8.00	5.47	Pass
11b	1Mbps	2	6	2437	-8.27	-8.60	-5.26	8.00	5.47	Pass
11b	1Mbps	2	11	2462	-9.38	-8.48	-5.47	8.00	5.47	Pass
11g	6Mbps	2	1	2412	-17.14	-16.95	-13.94	8.00	5.47	Pass
11g	6Mbps	2	2	2417	-17.69	-15.77	-12.76	8.00	5.47	Pass
11g	6Mbps	2	6	2437	-12.15	-11.73	-8.72	8.00	5.47	Pass
11g	6Mbps	2	10	2457	-15.20	-14.45	-11.44	8.00	5.47	Pass
11g	6Mbps	2	11	2462	-18.42	-16.74	-13.73	8.00	5.47	Pass
HT20	MCS0	2	1	2412	-20.11	-22.36	-17.10	8.00	5.47	Pass
HT20	MCS0	2	2	2417	-17.47	-16.67	-13.66	8.00	5.47	Pass
HT20	MCS0	2	6	2437	-11.36	-12.48	-8.35	8.00	5.47	Pass
HT20	MCS0	2	10	2457	-14.18	-14.00	-10.99	8.00	5.47	Pass
HT20	MCS0	2	11	2462	-19.74	-20.06	-16.73	8.00	5.47	Pass

Note: Measured power density (dBm) has offset with cable loss.

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	Peak Power Density (dBm/3kHz)			Max. Limits (dBm/3kHz)	DG (dBi)	Pass/Fail
					Ant1	Ant2	Worst +10log(2)			
11a	6Mbps	2	149	5745	-14.80	-13.28	-10.27	7.93	6.07	Pass
11a	6Mbps	2	157	5785	-15.62	-14.35	-11.34	7.93	6.07	Pass
11a	6Mbps	2	165	5825	-14.81	-15.74	-11.80	7.93	6.07	Pass
HT20	MCS0	2	149	5745	-14.94	-13.21	-10.20	7.93	6.07	Pass
HT20	MCS0	2	157	5785	-15.24	-14.35	-11.34	7.93	6.07	Pass
HT20	MCS0	2	165	5825	-15.73	-15.66	-12.65	7.93	6.07	Pass
HT40	MCS0	2	151	5755	-18.00	-17.43	-14.42	7.93	6.07	Pass
HT40	MCS0	2	159	5795	-17.77	-18.20	-14.76	7.93	6.07	Pass

Note: Measured power density (dBm) has offset with cable loss.

Worst Case Power Density (dBm/3kHz)



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).

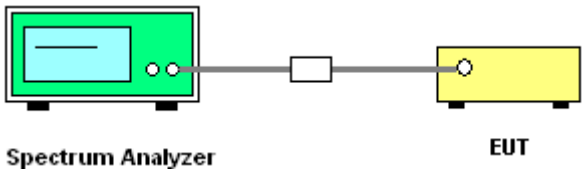
3.4.2 Measuring Instruments

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 v03r01.
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



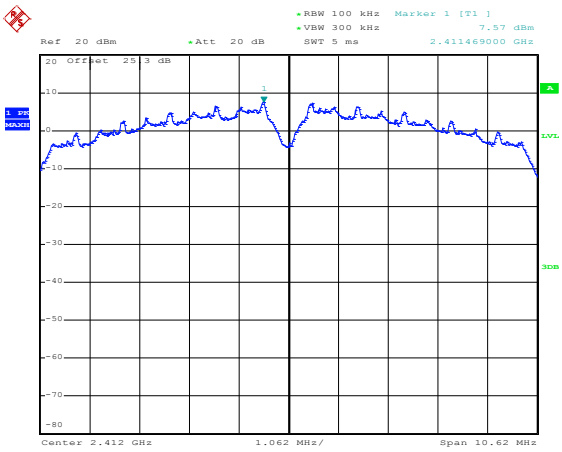
3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Number of TX = 2, Ant. 1(Measured)

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	55~58%
Test Channel :	01	**Test Engineer :**	Reece Lee

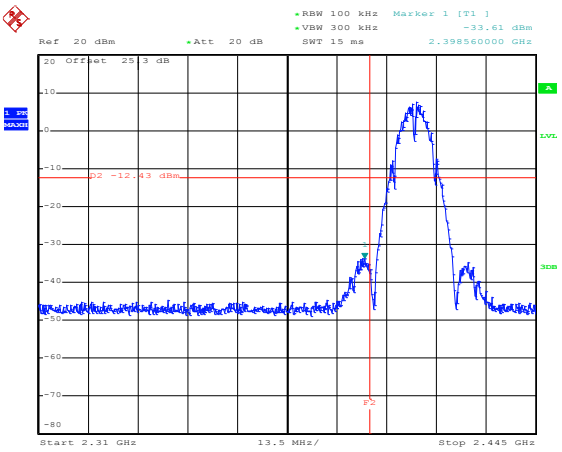
WLAN 802.11b Channel 01

100kHz PSD reference Level



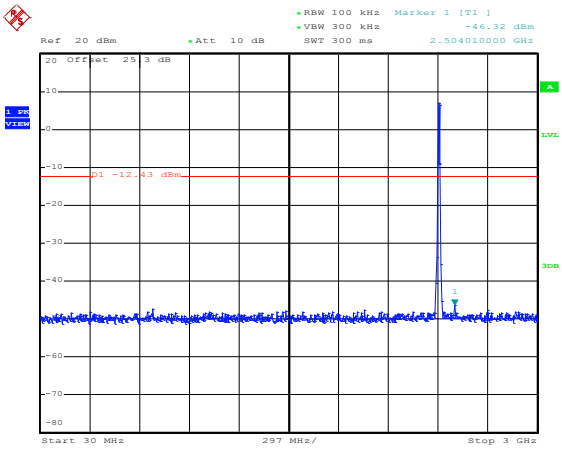
Date: 9.AUG.2013 14:51:48

Low Channel Plot



Date: 9.AUG.2013 14:52:05

Spurious Emission 30MHz~3GHz



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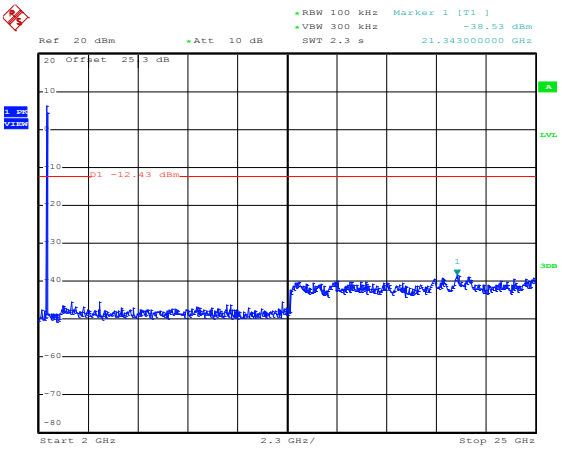
Spurious Emission 2GHz~25GHz

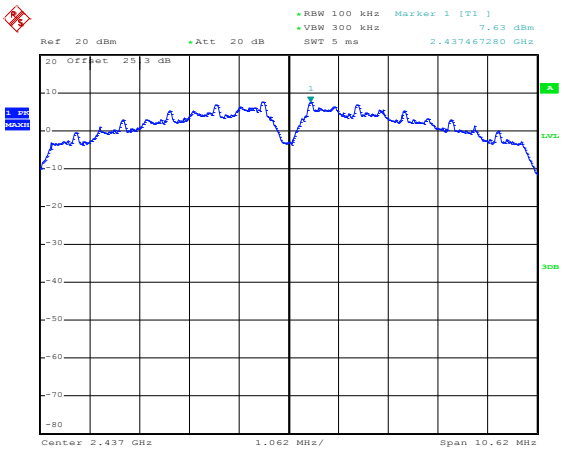


Date: 9.AUG.2013 14:52:59

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	06	**Test Engineer :**	Reece Lee

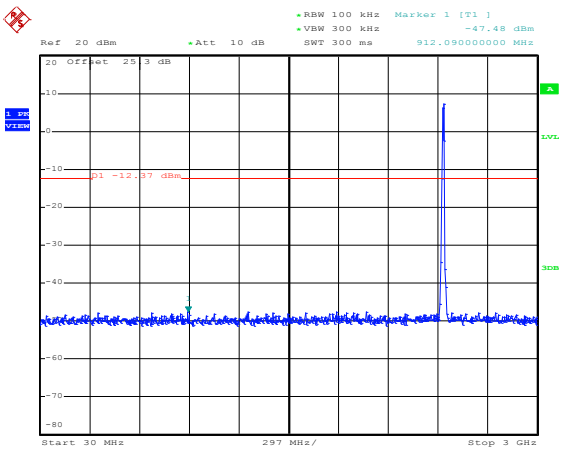
WLAN 802.11b Channel 06

100kHz PSD reference Level



Date: 9.AUG.2013 14:56:40

Spurious Emission 30MHz~3GHz



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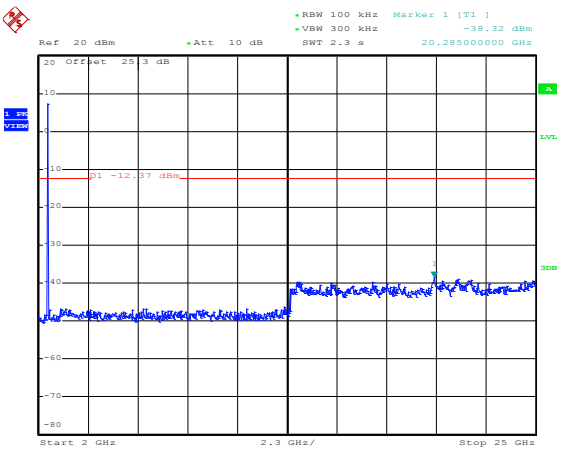
Spurious Emission 2GHz~25GHz



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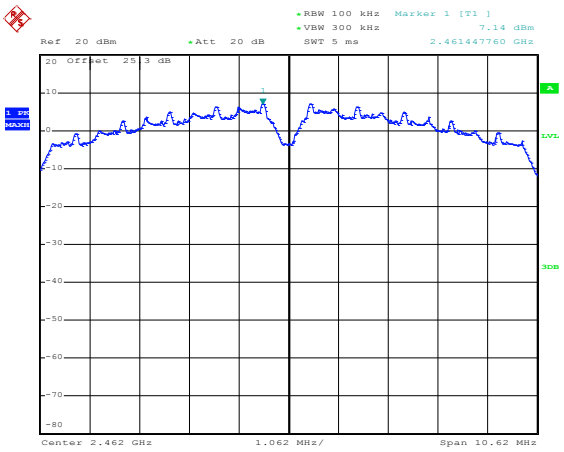
Number of TX :	2	**Antenna :**	1
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	55~58%
Test Channel :	11	**Test Engineer :**	Reece Lee

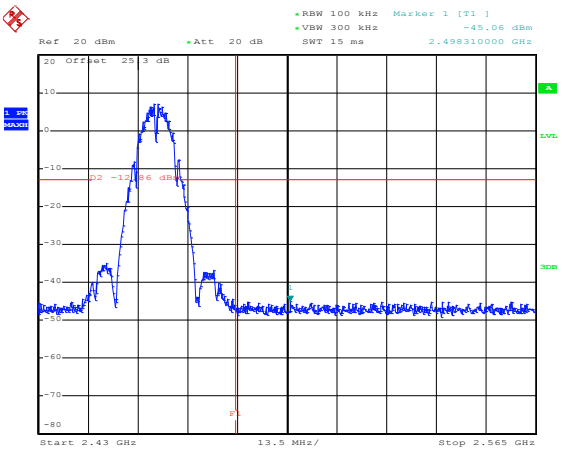
WLAN 802.11b Channel 11

100kHz PSD reference Level



Date: 9.AUG.2013 14:59:27

High Channel Plot



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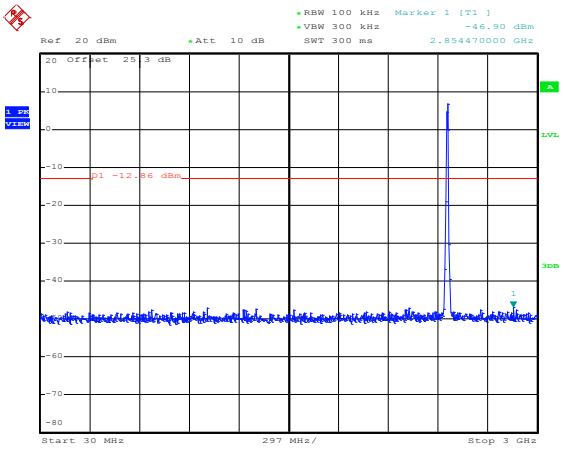
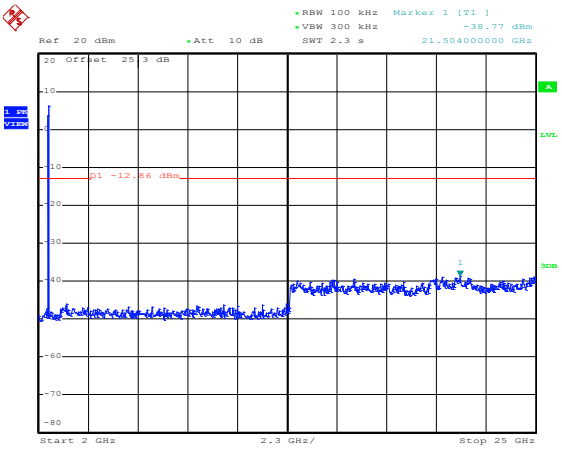
Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 15:00:20

Spurious Emission 2GHz~25GHz

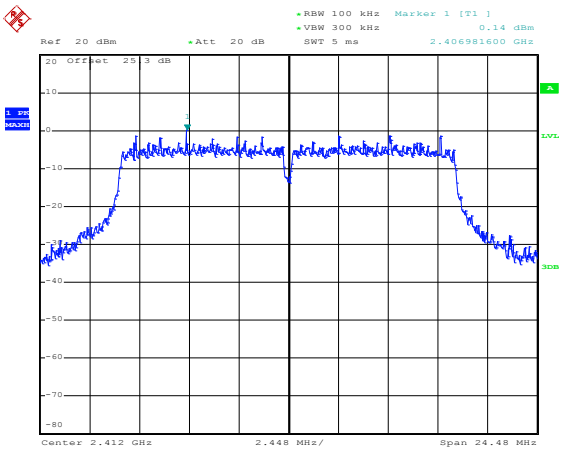


Date: 9.AUG.2013 15:00:38

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	55~58%
Test Channel :	01	**Test Engineer :**	Reece Lee

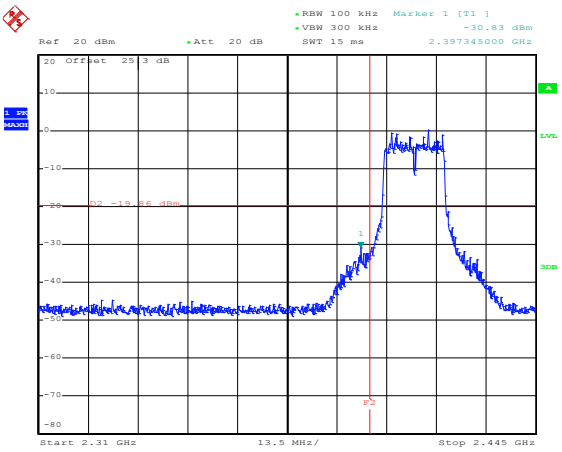
WLAN 802.11g Channel 01

100kHz PSD reference Level



Date: 9.AUG.2013 15:05:45

Low Channel Plot



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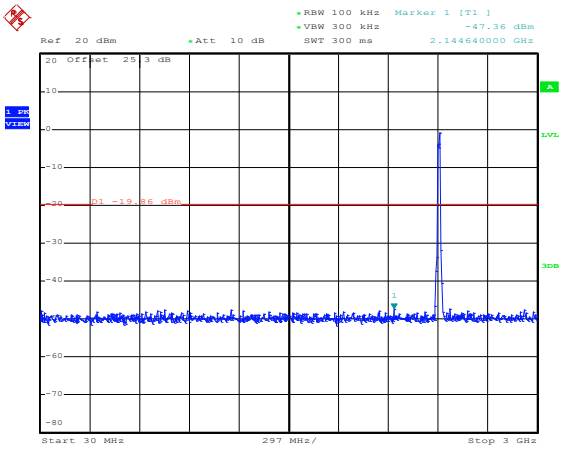
Spurious Emission 30MHz~3GHz



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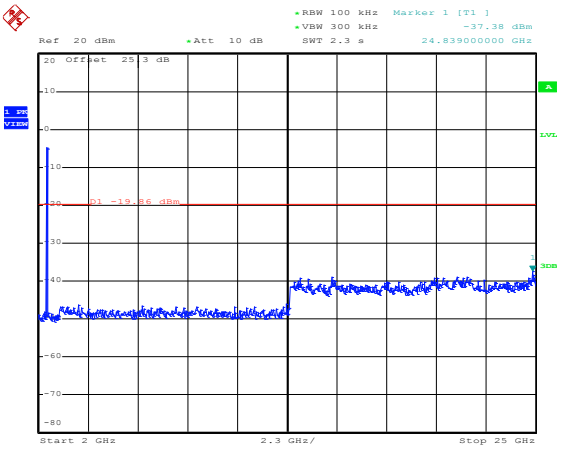
Spurious Emission 2GHz~25GHz

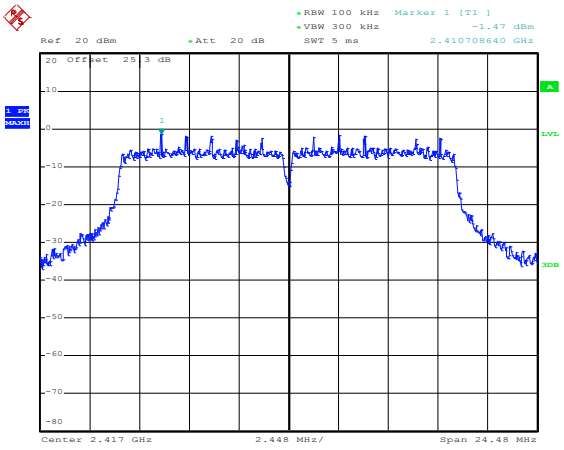


Date: 9.AUG.2013 15:06:38

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz	**Relative Humidity :**	55~58%
Test Channel :	02	**Test Engineer :**	Reece Lee

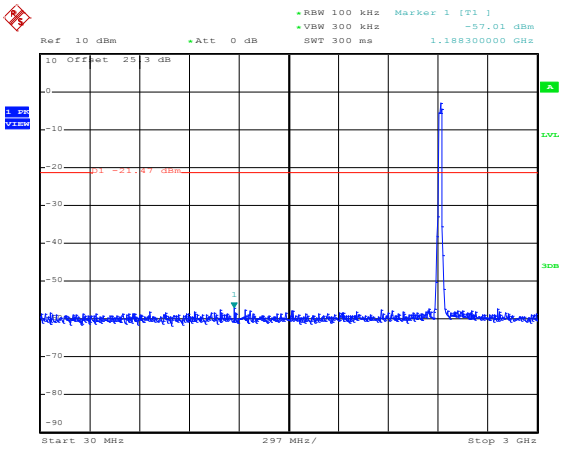
WLAN 802.11g Channel 02

100kHz PSD reference Level



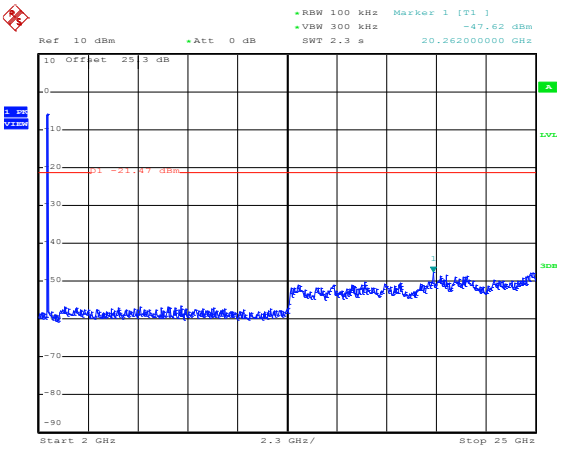
Date: 5.SEP.2013 11:51:43

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 11:52:05

Spurious Emission 2GHz~25GHz



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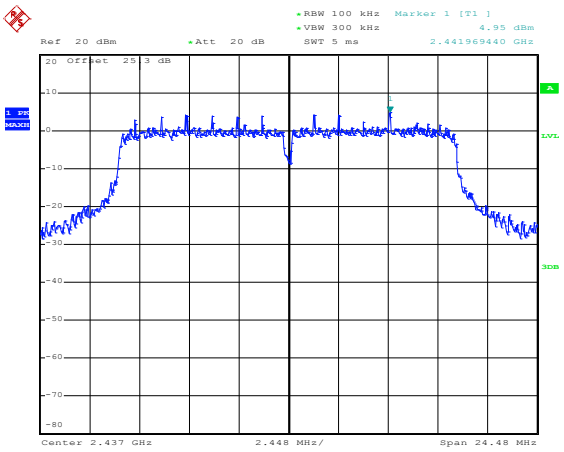
Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	06	**Test Engineer :**	Reece Lee

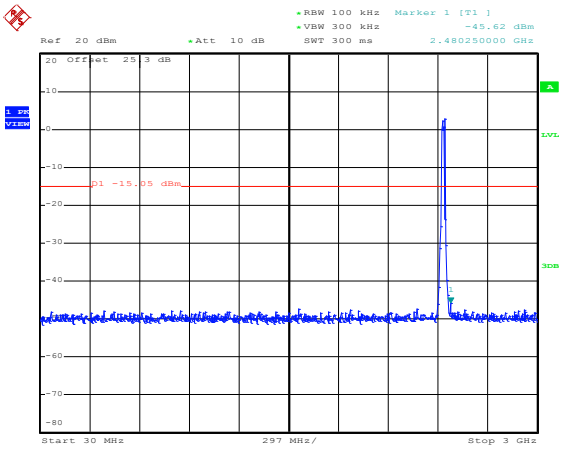
WLAN 802.11g Channel 06

100kHz PSD reference Level



Date: 9.AUG.2013 15:09:15

Spurious Emission 30MHz~3GHz



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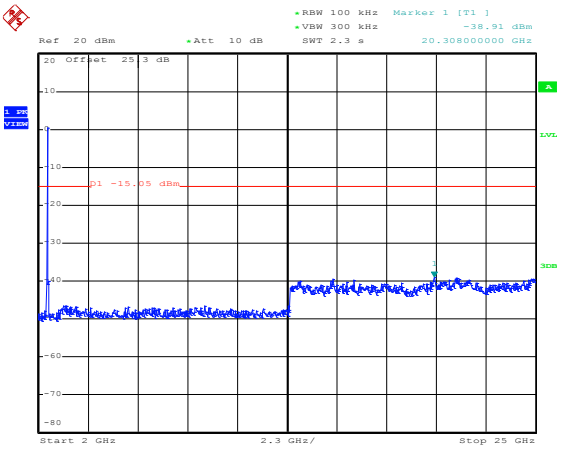
Spurious Emission 2GHz~25GHz

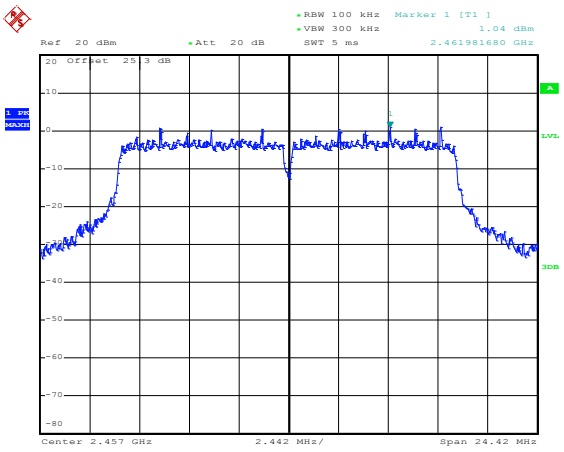


Date: 9.AUG.2013 15:10:47

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz	**Relative Humidity :**	55~58%
Test Channel :	10	**Test Engineer :**	Reece Lee

WLAN 802.11g Channel 10

100kHz PSD reference Level



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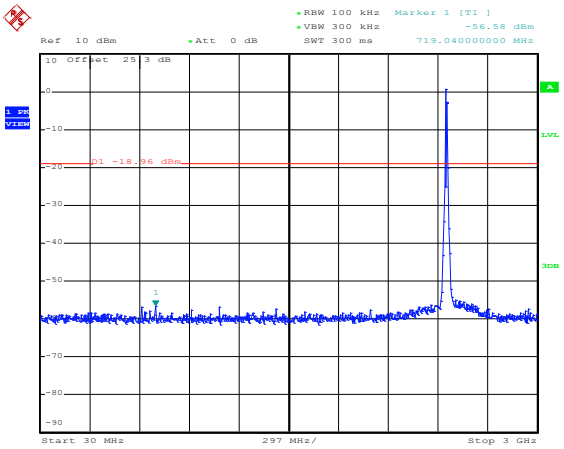
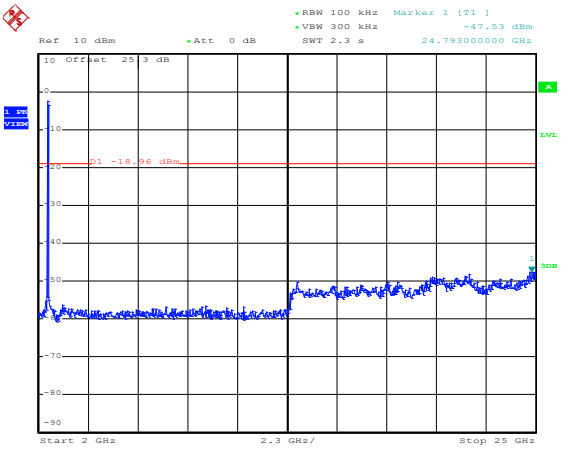
Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 12:02:08

Spurious Emission 2GHz~25GHz

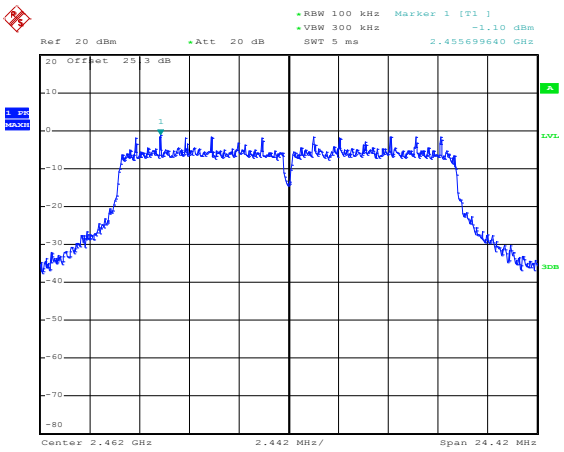


Date: 5.SEP.2013 12:02:27

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	55~58%
Test Channel :	11	**Test Engineer :**	Reece Lee

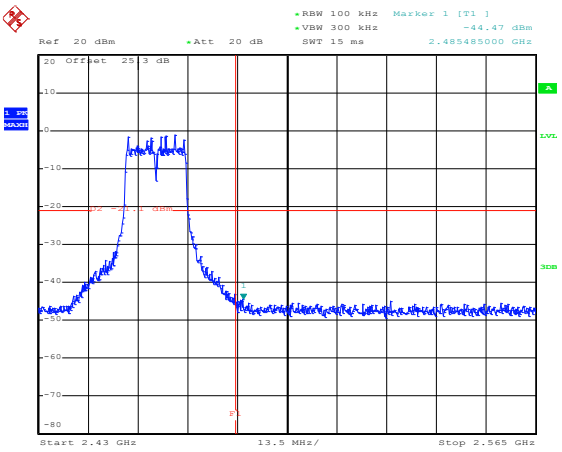
WLAN 802.11g Channel 11

100kHz PSD reference Level



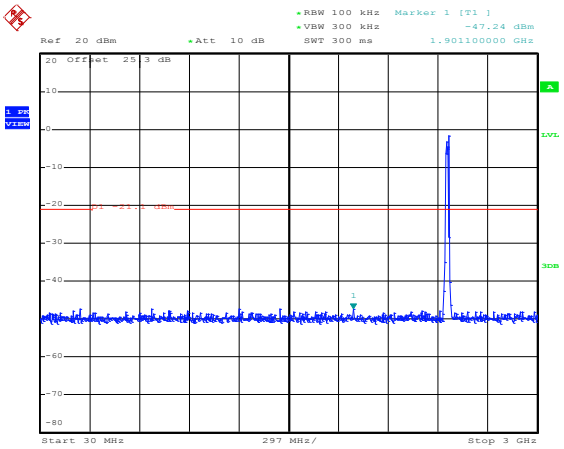
Date: 9.AUG.2013 15:13:20

High Channel Plot



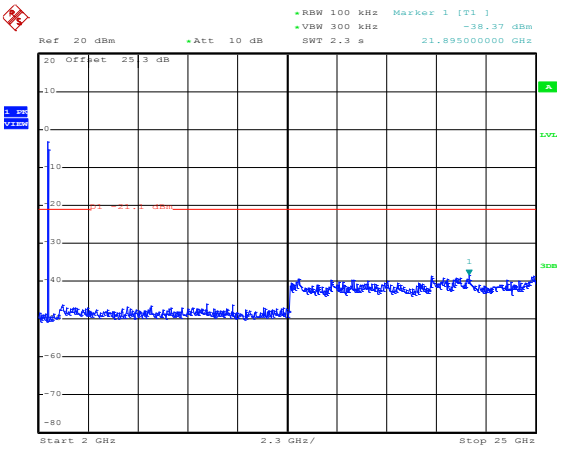
Date: 9.AUG.2013 15:13:46

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 15:14:45

Spurious Emission 2GHz~25GHz

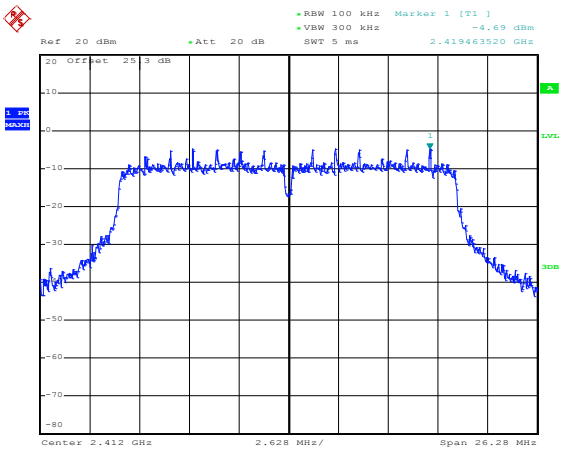


Date: 9.AUG.2013 15:15:04

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	55~58%
Test Channel :	01	**Test Engineer :**	Reece Lee

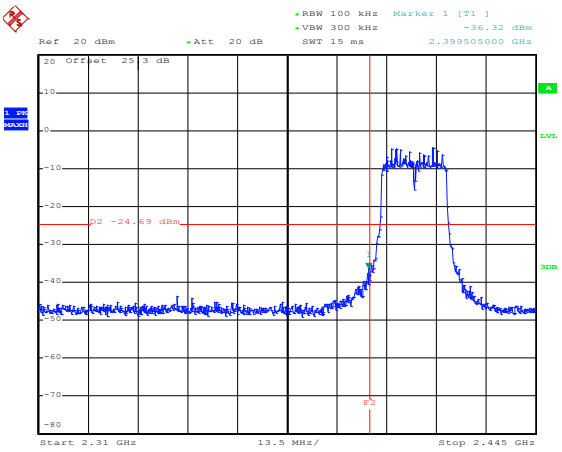
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



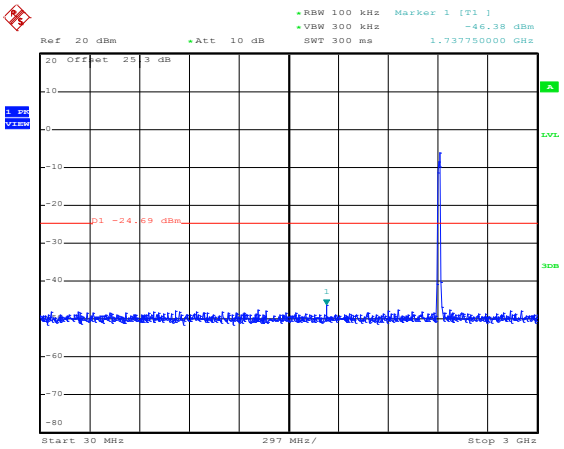
Date: 9.AUG.2013 15:31:38

Low Channel Plot



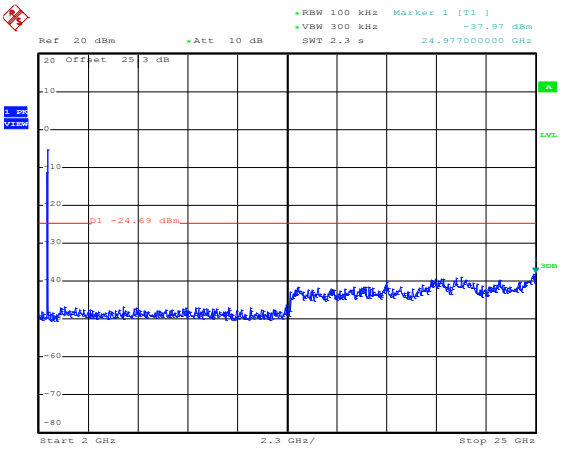
Date: 9.AUG.2013 15:31:52

Spurious Emission 30MHz~3GHz



Date: 4.SEP.2013 00:07:17

Spurious Emission 2GHz~25GHz

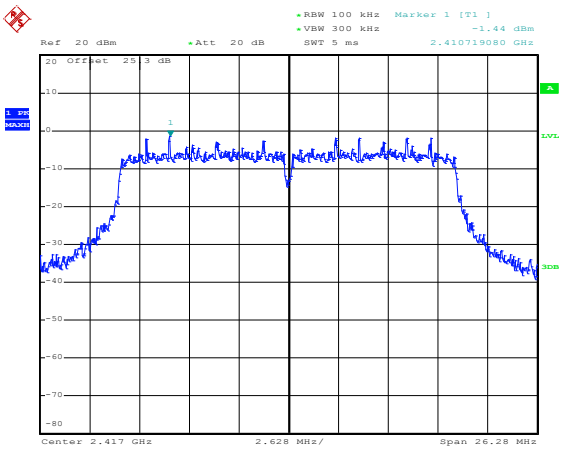


Date: 4.SEP.2013 00:07:36

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz	**Relative Humidity :**	55~58%
Test Channel :	02	**Test Engineer :**	Reece Lee

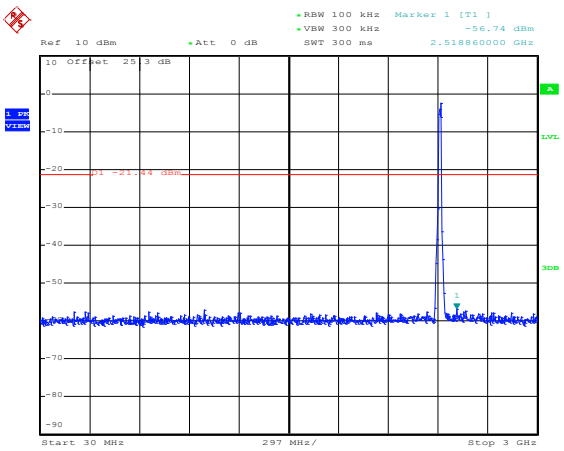
WLAN 802.11n HT20 Channel 02

100kHz PSD reference Level



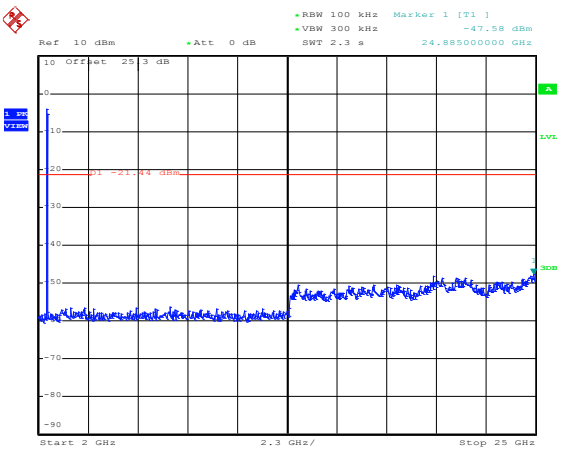
Date: 5.SEP.2013 12:40:25

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 12:40:53

Spurious Emission 2GHz~25GHz

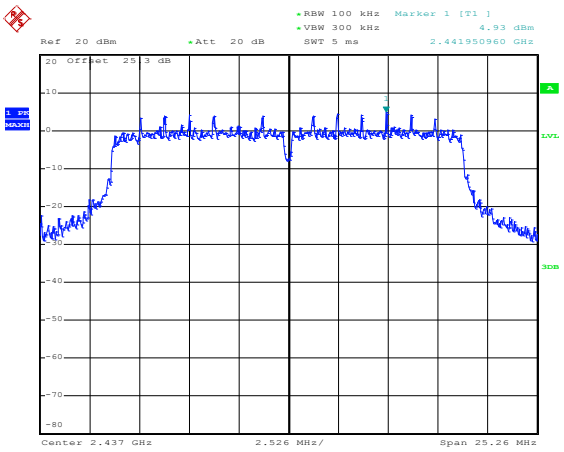


Date: 5.SEP.2013 12:41:12

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	06	**Test Engineer :**	Reece Lee

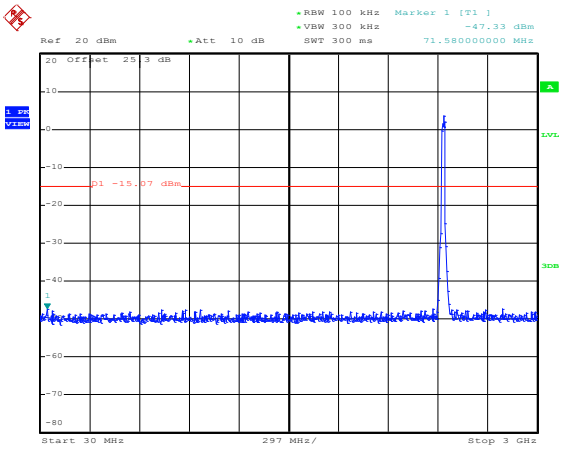
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



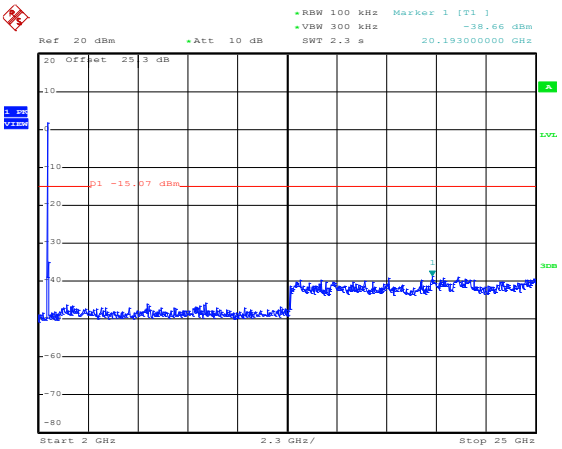
Date: 9.AUG.2013 15:35:40

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 15:36:13

Spurious Emission 2GHz~25GHz

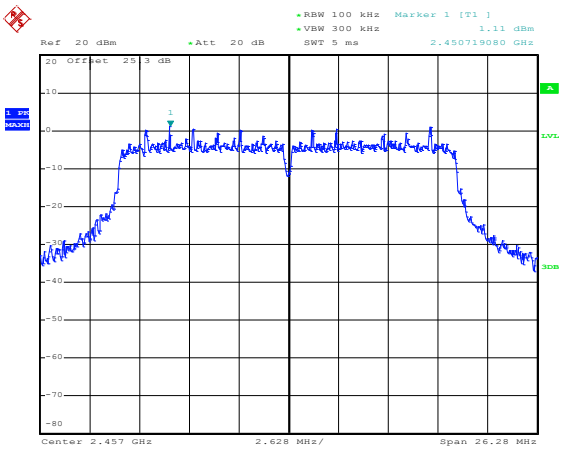


Date: 9.AUG.2013 15:36:32

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz	**Relative Humidity :**	55~58%
Test Channel :	10	**Test Engineer :**	Reece Lee

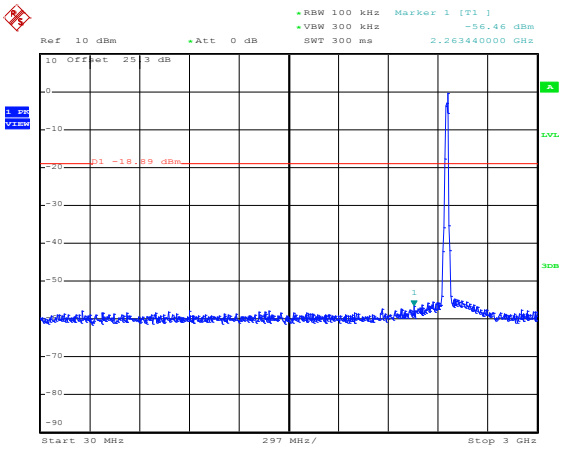
WLAN 802.11n HT20 Channel 10

100kHz PSD reference Level



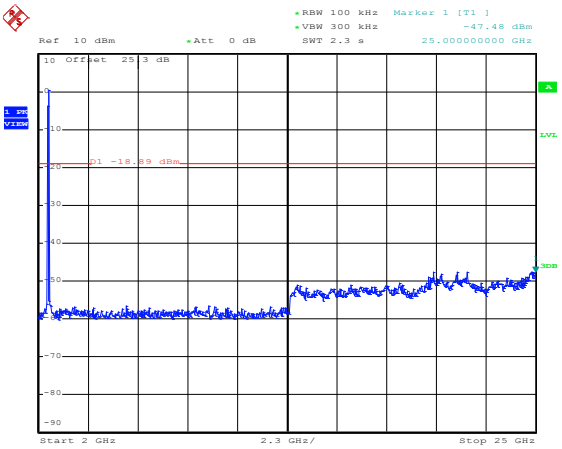
Date: 5.SEP.2013 12:26:52

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 12:27:30

Spurious Emission 2GHz~25GHz

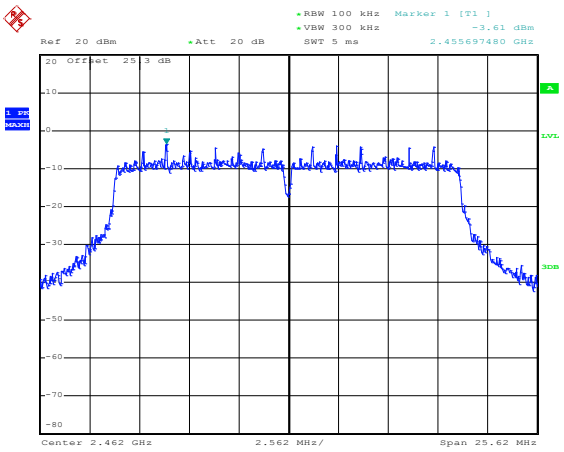


Date: 5.SEP.2013 12:27:49

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	55~58%
Test Channel :	11	**Test Engineer :**	Reece Lee

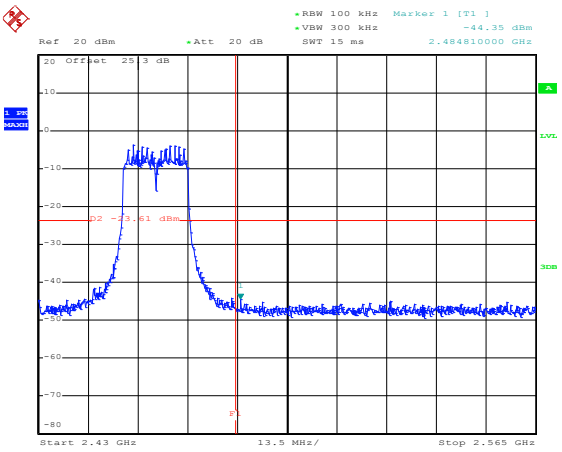
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



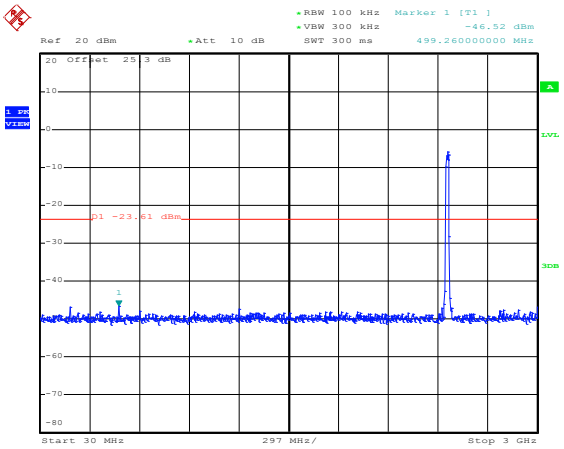
Date: 9.AUG.2013 15:39:36

High Channel Plot



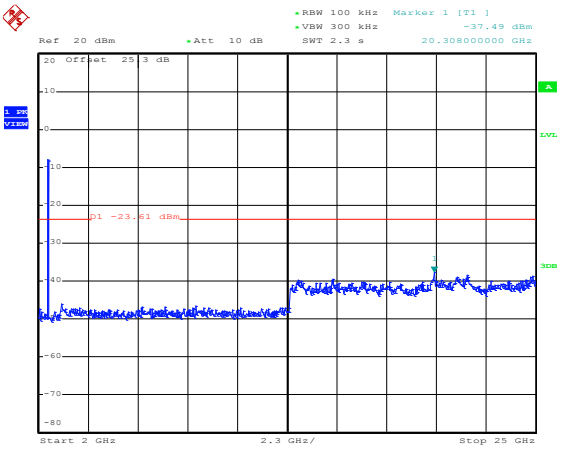
Date: 9.AUG.2013 15:39:52

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 15:40:24

Spurious Emission 2GHz~25GHz

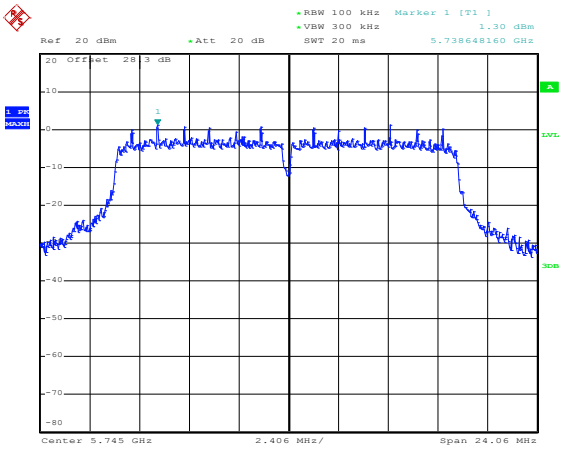


Date: 9.AUG.2013 15:40:43

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11a	**Temperature :**	24~26℃
Test Band :	5GHz Low	**Relative Humidity :**	55~58%
Test Channel :	149	**Test Engineer :**	Reece Lee

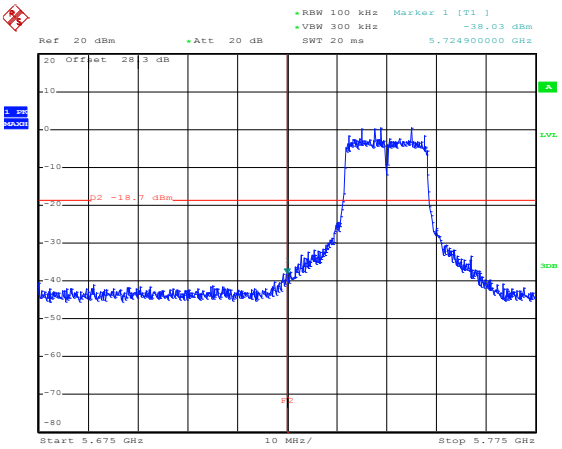
WLAN 802.11a Channel 149

100kHz PSD reference Level



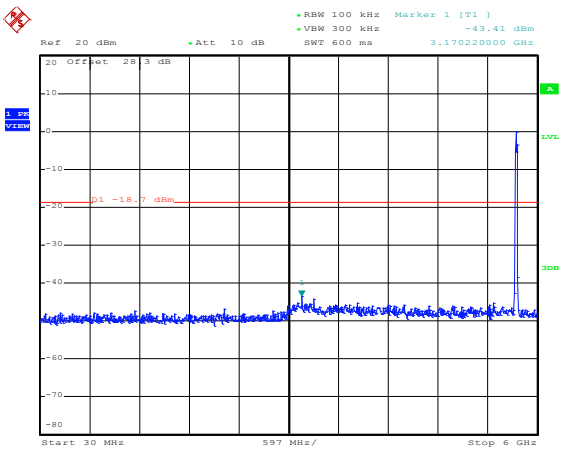
Date: 26.AUG.2013 18:38:33

Low Channel Plot



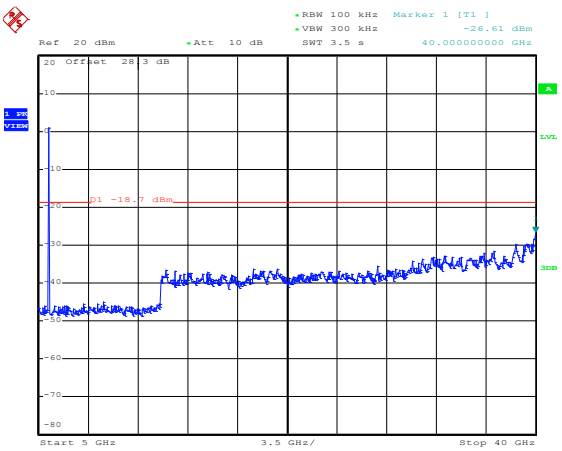
Date: 26.AUG.2013 18:38:49

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:04:23

Spurious Emission 5GHz~40GHz

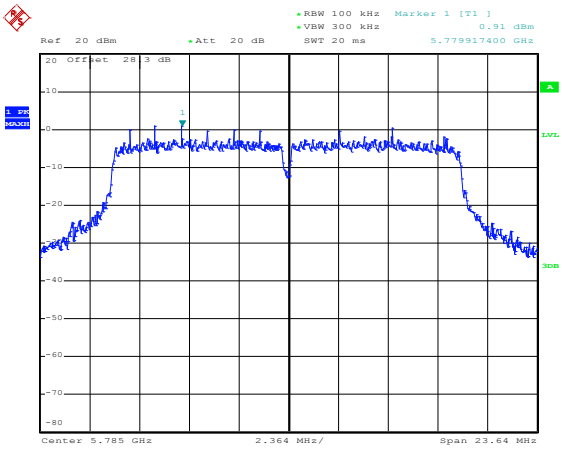


Date: 27.AUG.2013 09:04:42

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11a	**Temperature :**	24~26℃
Test Band :	5GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	157	**Test Engineer :**	Reece Lee

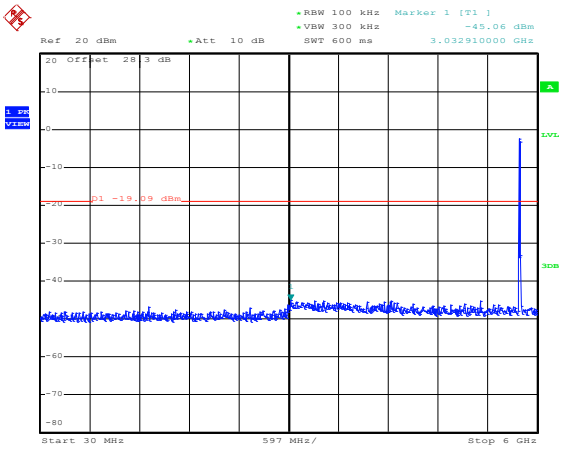
WLAN 802.11a Channel 157

100kHz PSD reference Level



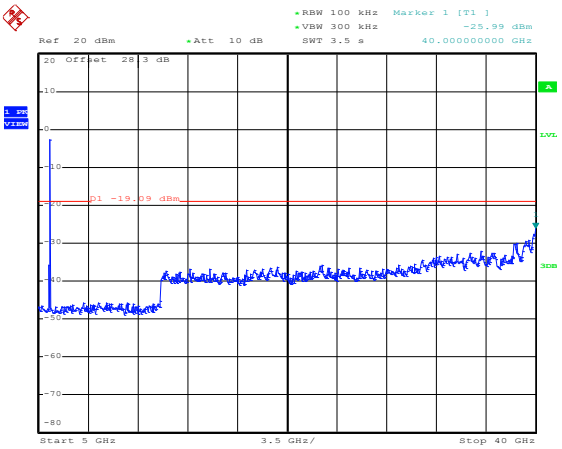
Date: 26.AUG.2013 18:47:15

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:05:34

Spurious Emission 5GHz~40GHz

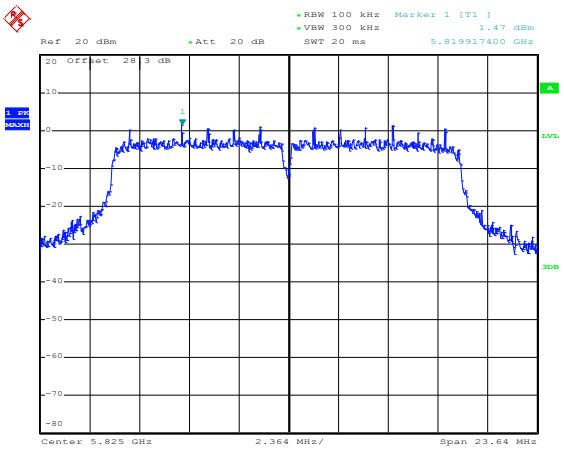


Date: 27.AUG.2013 09:05:52

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11a	**Temperature :**	24~26℃
Test Band :	5GHz High	**Relative Humidity :**	55~58%
Test Channel :	165	**Test Engineer :**	Reece Lee

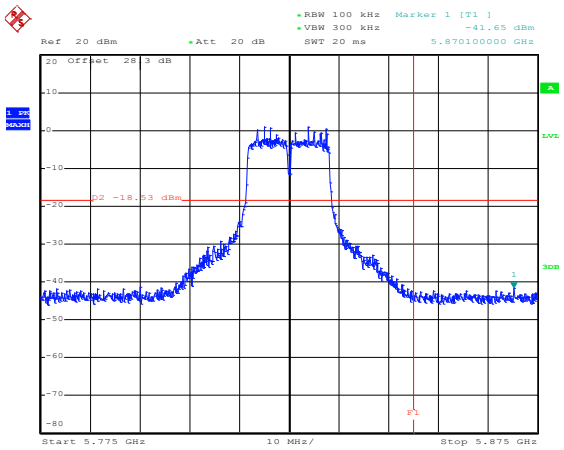
WLAN 802.11a Channel 165

100kHz PSD reference Level



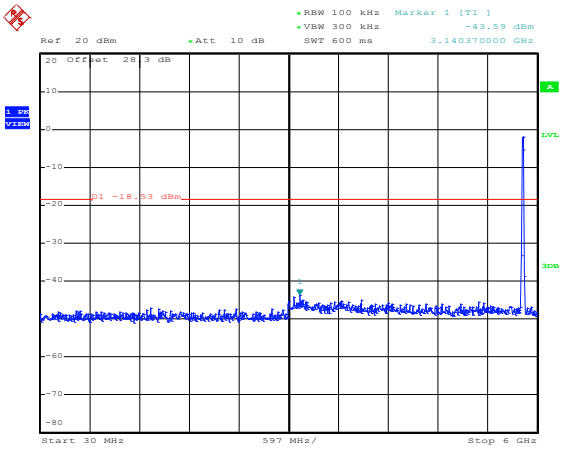
Date: 26.AUG.2013 18:49:33

High Channel Plot



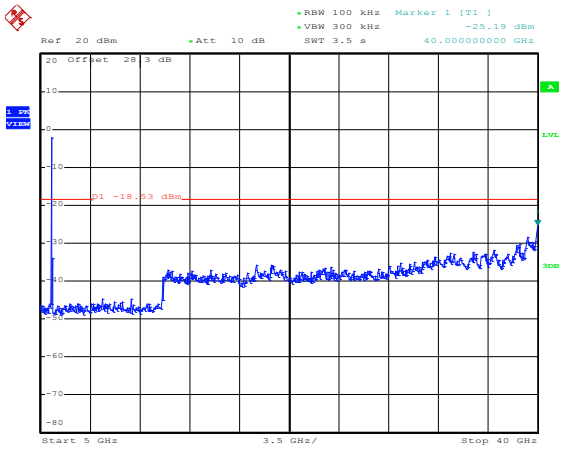
Date: 26.AUG.2013 18:49:50

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:06:36

Spurious Emission 5GHz~40GHz

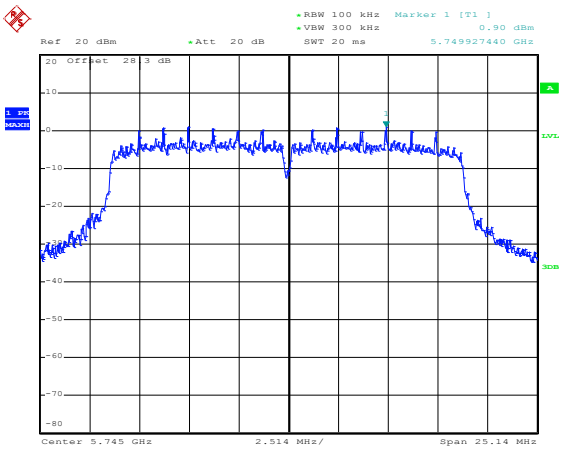


Date: 27.AUG.2013 09:06:54

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	5GHz Low	**Relative Humidity :**	55~58%
Test Channel :	149	**Test Engineer :**	Reece Lee

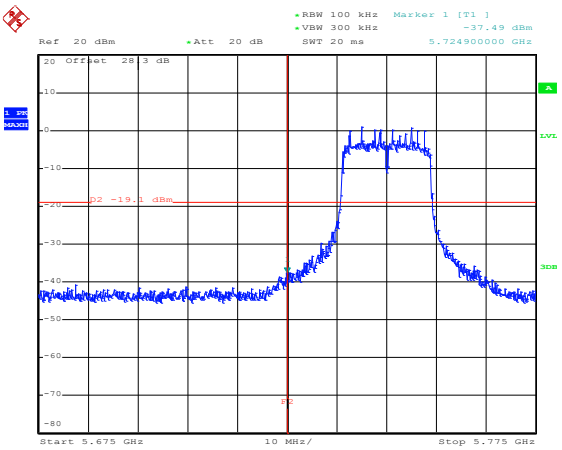
WLAN 802.11n HT20 Channel 149

100kHz PSD reference Level



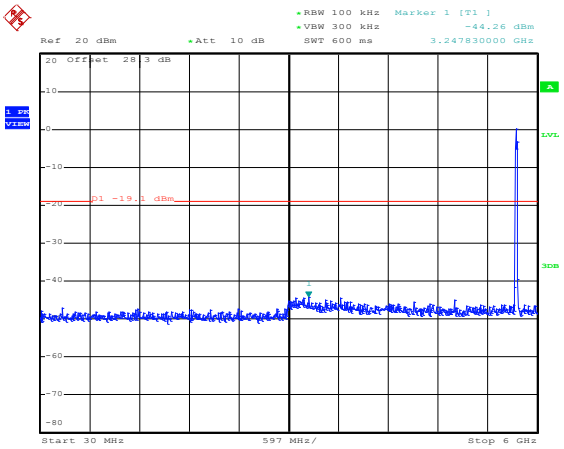
Date: 26.AUG.2013 18:59:37

Low Channel Plot



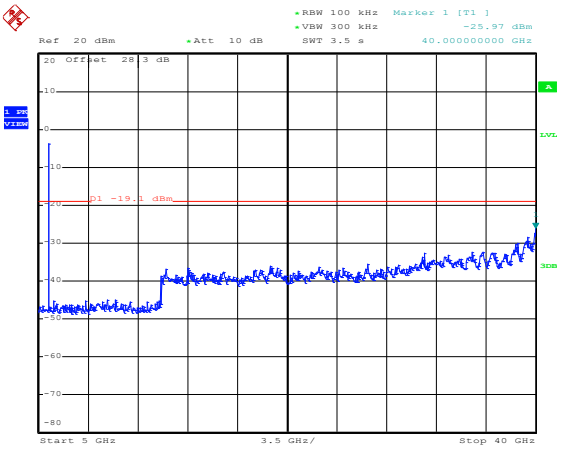
Date: 26.AUG.2013 18:59:52

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:11:31

Spurious Emission 5GHz~40GHz

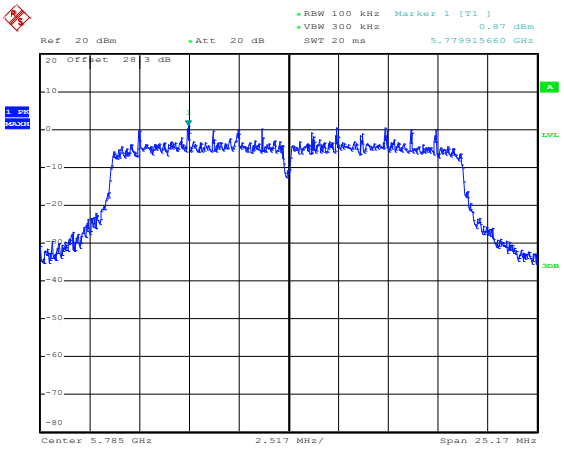


Date: 27.AUG.2013 09:11:49

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	5GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	157	**Test Engineer :**	Reece Lee

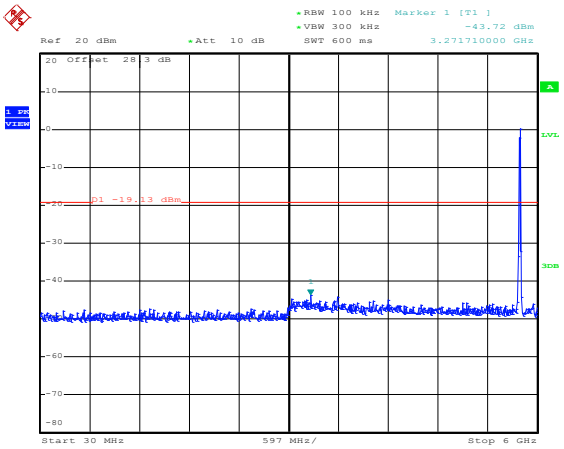
WLAN 802.11n HT20 Channel 157

100kHz PSD reference Level



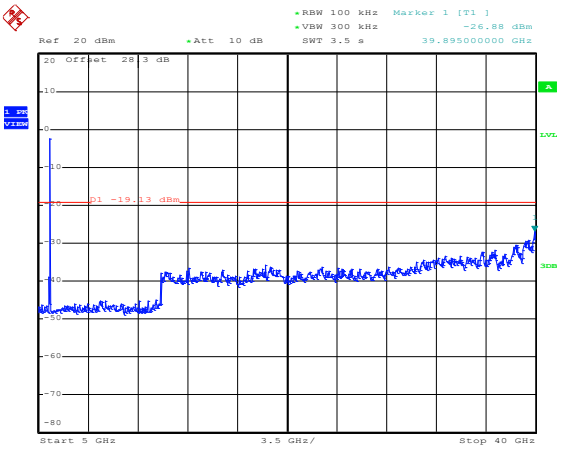
Date: 26.AUG.2013 19:04:01

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:12:45

Spurious Emission 5GHz~40GHz

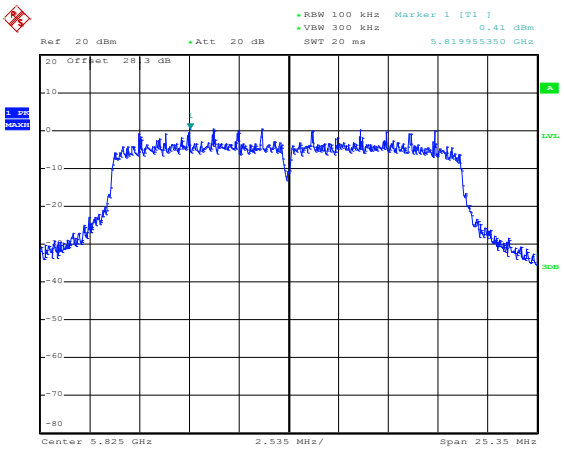


Date: 27.AUG.2013 09:13:04

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	5GHz High	**Relative Humidity :**	55~58%
Test Channel :	165	**Test Engineer :**	Reece Lee

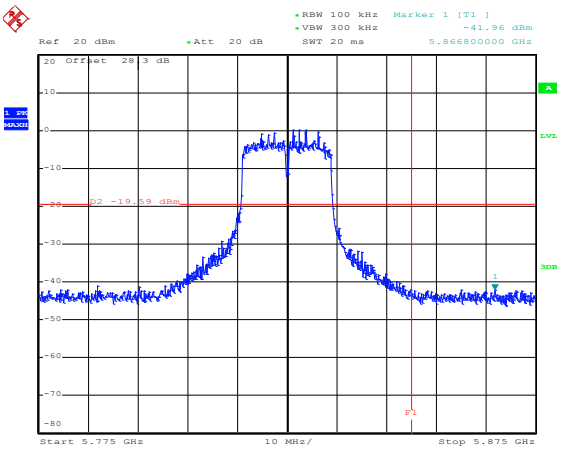
WLAN 802.11n HT20 Channel 165

100kHz PSD reference Level



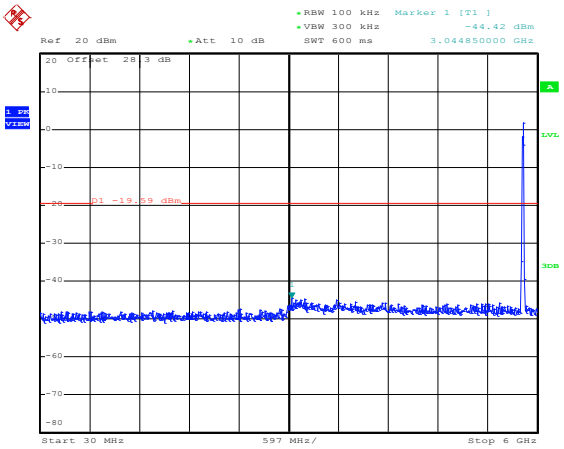
Date: 26.AUG.2013 19:25:04

High Channel Plot



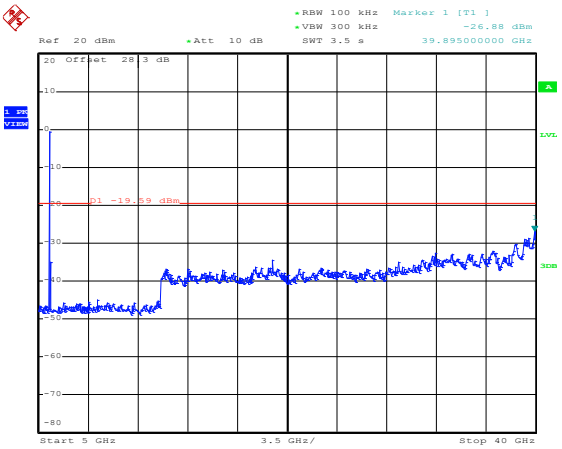
Date: 26.AUG.2013 19:25:35

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:13:49

Spurious Emission 5GHz~40GHz

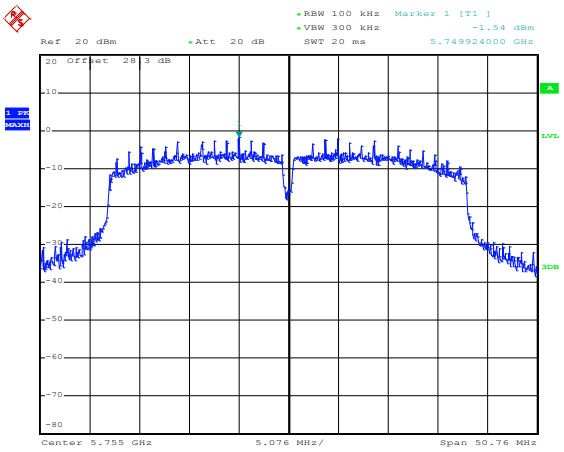


Date: 27.AUG.2013 09:14:08

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	5GHz Low	**Relative Humidity :**	55~58%
Test Channel :	151	**Test Engineer :**	Reece Lee

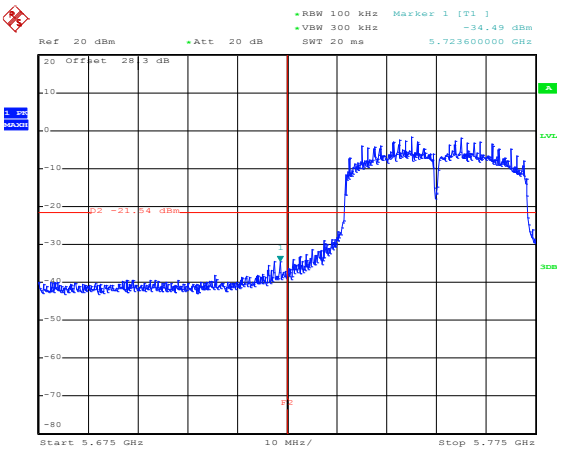
WLAN 802.11n HT40 Channel 151

100kHz PSD reference Level



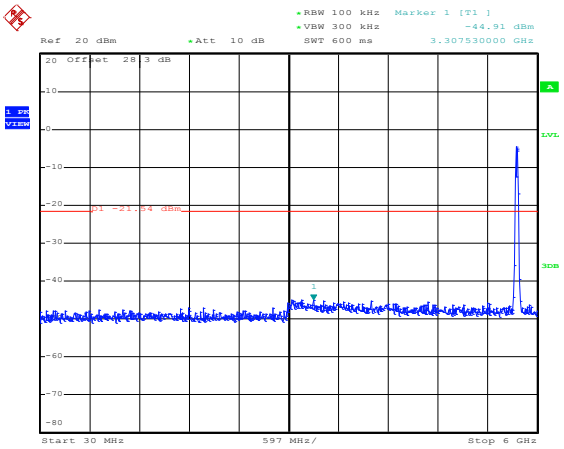
Date: 27.AUG.2013 09:41:24

Low Channel Plot



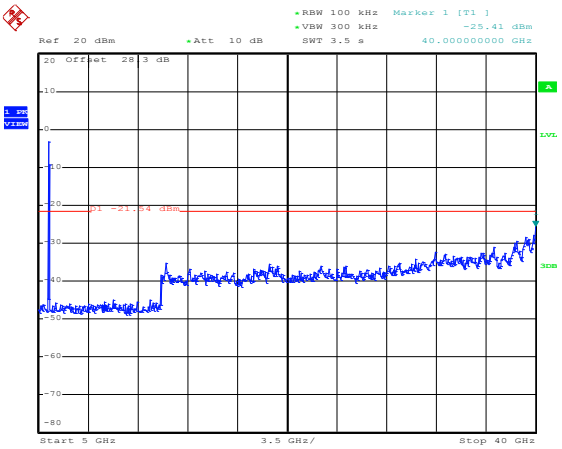
Date: 27.AUG.2013 09:41:45

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:42:06

Spurious Emission 5GHz~40GHz

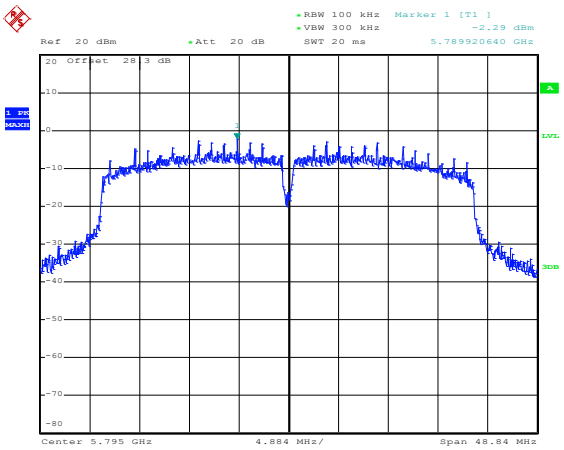


Date: 27.AUG.2013 09:42:25

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	5GHz High	**Relative Humidity :**	55~58%
Test Channel :	159	**Test Engineer :**	Reece Lee

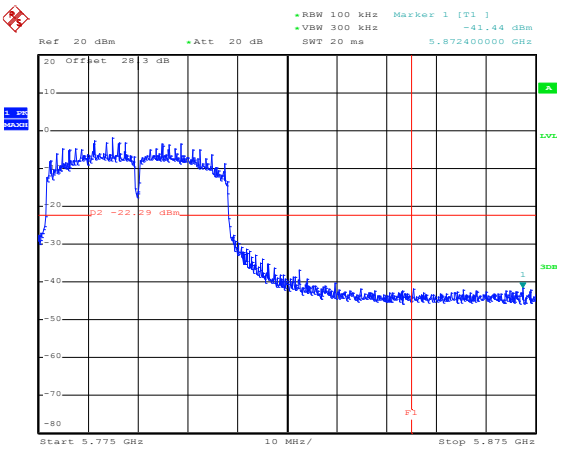
WLAN 802.11n HT40 Channel 159

100kHz PSD reference Level



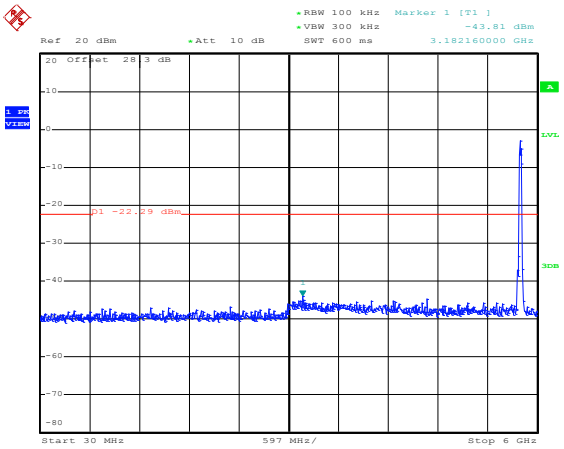
Date: 26.AUG.2013 19:30:28

High Channel Plot



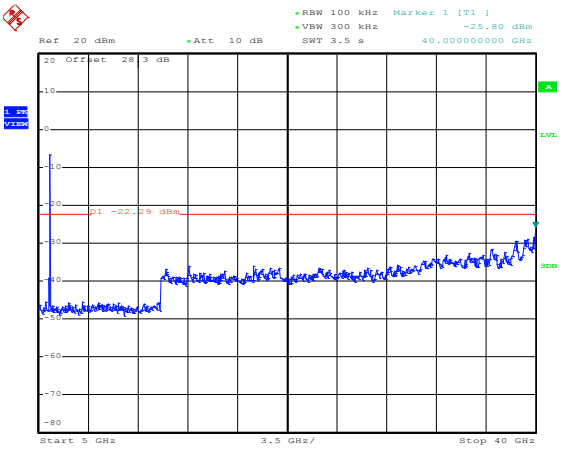
Date: 26.AUG.2013 19:30:46

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:39:04

Spurious Emission 5GHz~40GHz



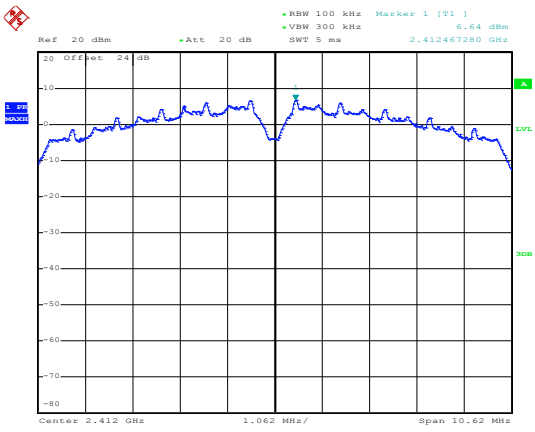
Date: 27.AUG.2013 09:39:22

Number of TX = 2, Ant. 2 (Measured)

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	55~58%
Test Channel :	01	**Test Engineer :**	Reece Lee

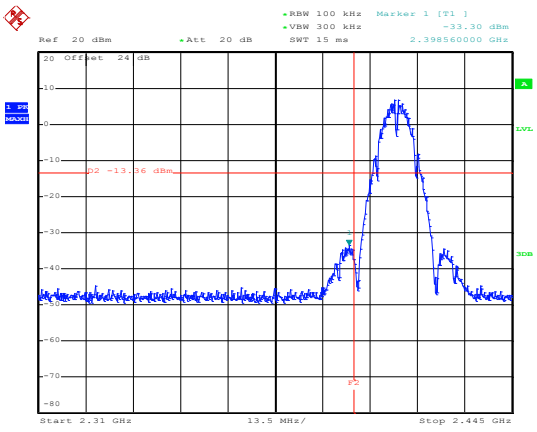
WLAN 802.11b Channel 01

100kHz PSD reference Level



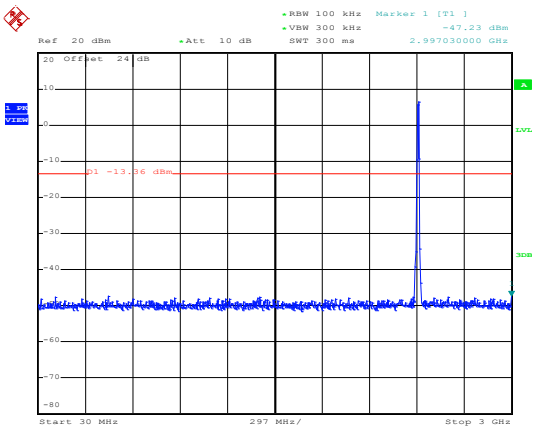
Date: 9.AUG.2013 16:57:57

Low Channel Plot



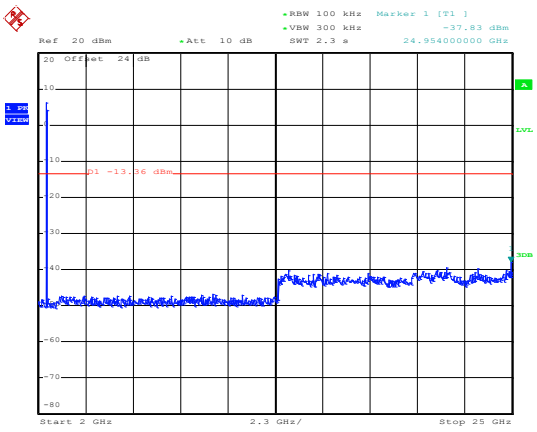
Date: 9.AUG.2013 16:58:13

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 16:58:34

Spurious Emission 2GHz~25GHz

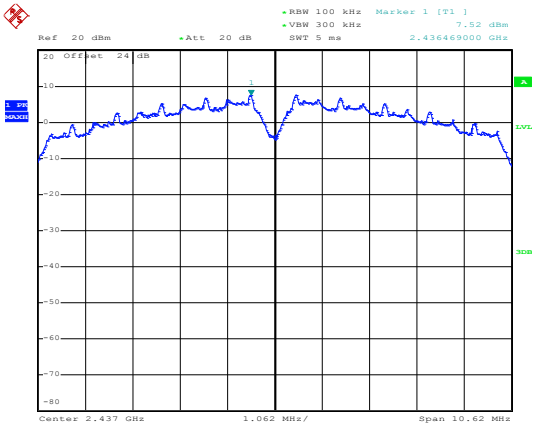


Date: 9.AUG.2013 16:58:53

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	06	**Test Engineer :**	Reece Lee

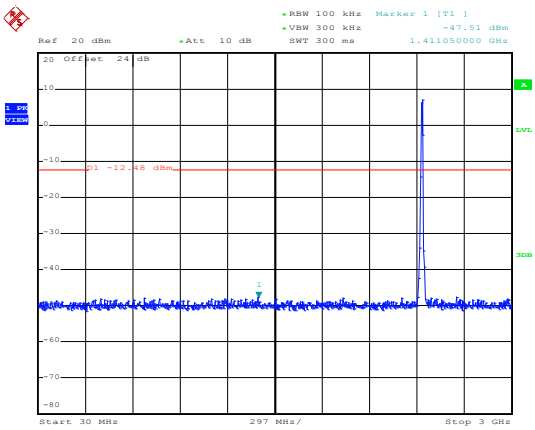
WLAN 802.11b Channel 06

100kHz PSD reference Level



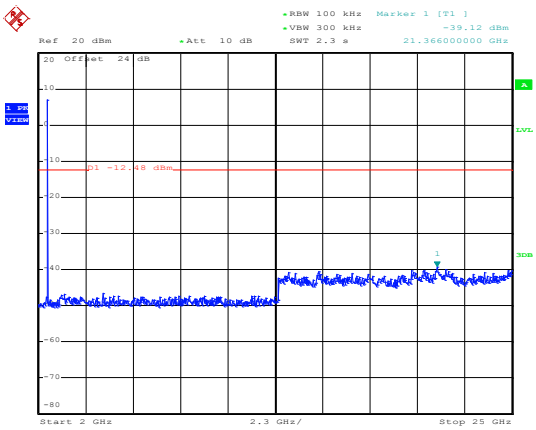
Date: 9.AUG.2013 17:01:05

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 17:01:46

Spurious Emission 2GHz~25GHz

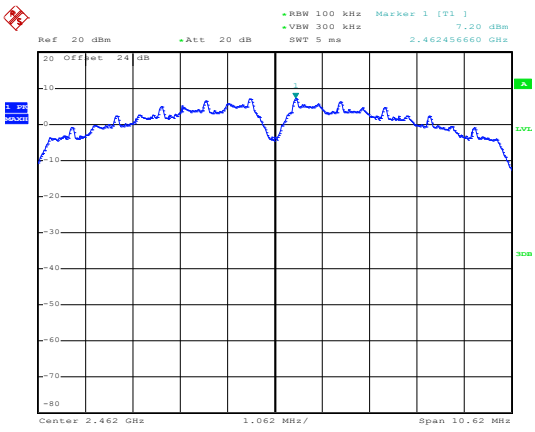


Date: 9.AUG.2013 17:02:04

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	55~58%
Test Channel :	11	**Test Engineer :**	Reece Lee

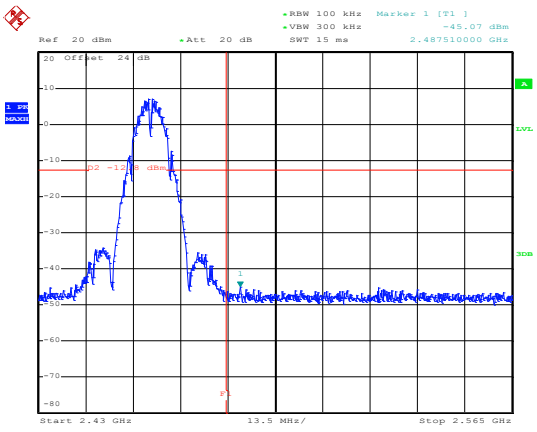
WLAN 802.11b Channel 11

100kHz PSD reference Level



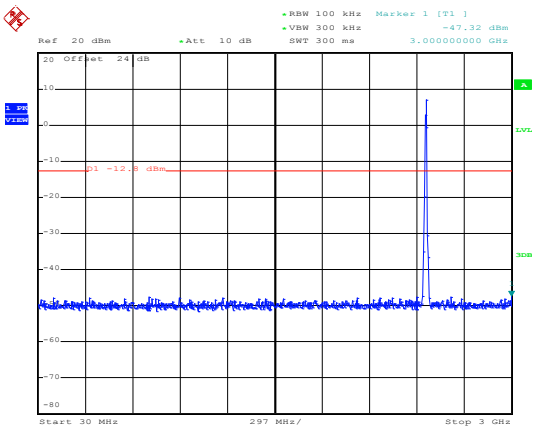
Date: 9.AUG.2013 17:04:38

High Channel Plot



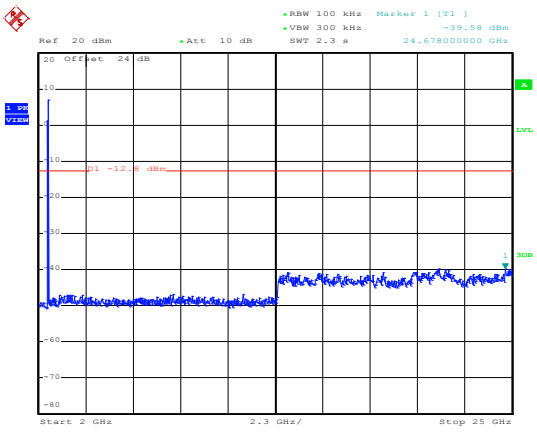
Date: 9.AUG.2013 17:04:55

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 17:05:15

Spurious Emission 2GHz~25GHz

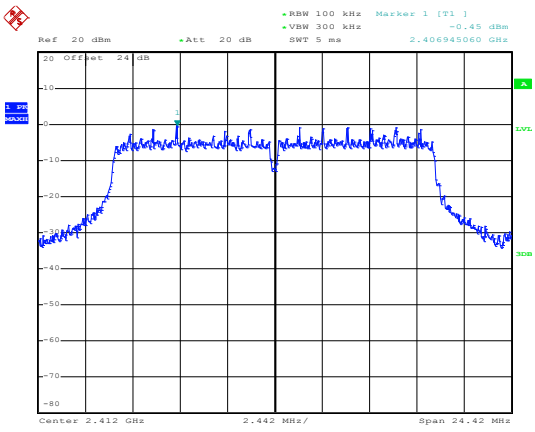


Date: 9.AUG.2013 17:05:34

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	55~58%
Test Channel :	01	**Test Engineer :**	Reece Lee

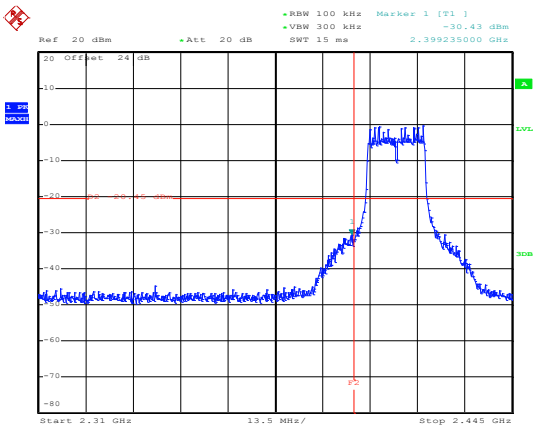
WLAN 802.11g Channel 01

100kHz PSD reference Level



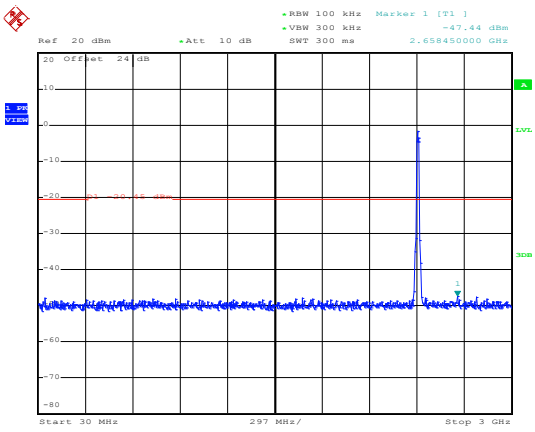
Date: 9.AUG.2013 17:18:53

Low Channel Plot



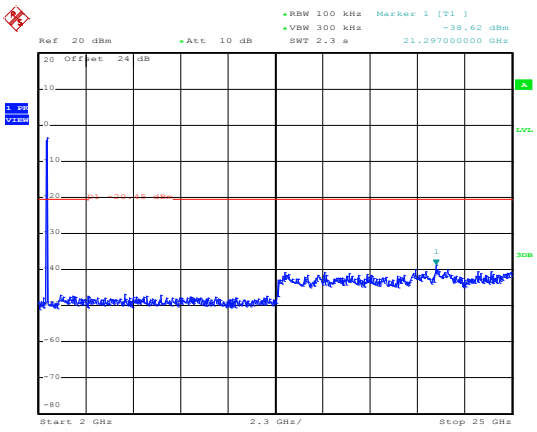
Date: 9.AUG.2013 17:19:13

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 17:21:07

Spurious Emission 2GHz~25GHz

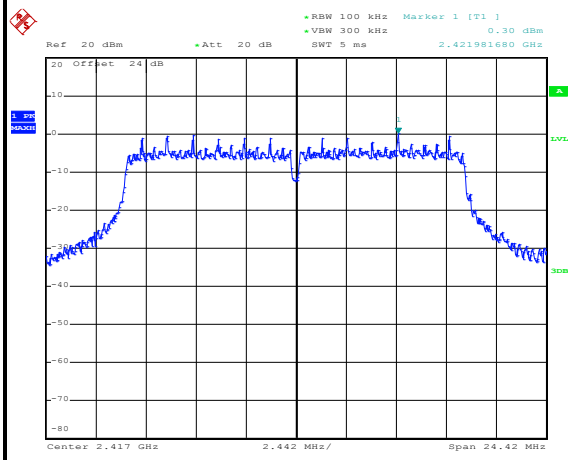


Date: 9.AUG.2013 17:21:26

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz	**Relative Humidity :**	55~58%
Test Channel :	02	**Test Engineer :**	Reece Lee

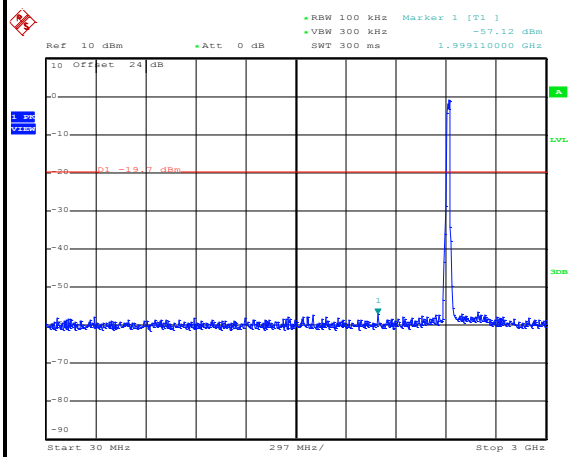
WLAN 802.11g Channel 02

100kHz PSD reference Level



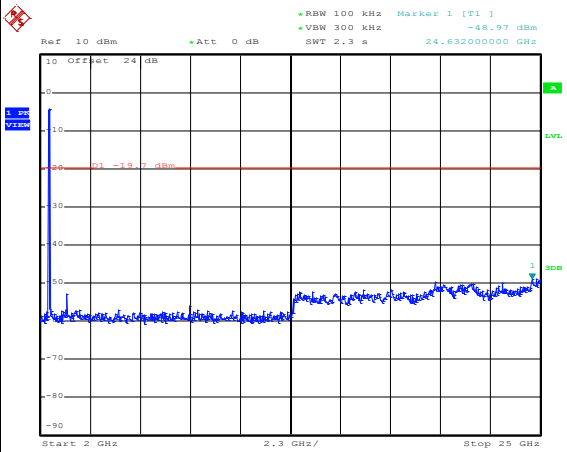
Date: 5.SEP.2013 11:54:59

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 11:55:22

Spurious Emission 2GHz~25GHz

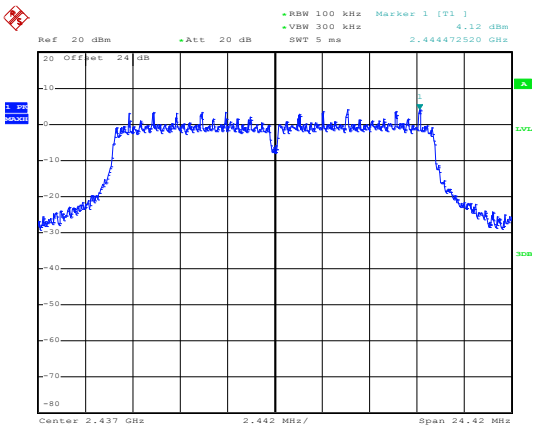


Date: 5.SEP.2013 11:55:40

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	06	**Test Engineer :**	Reece Lee

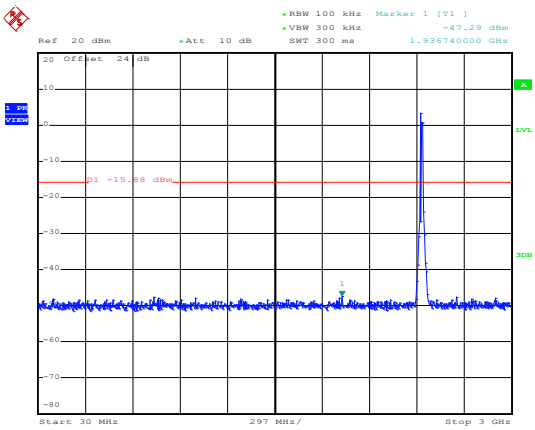
WLAN 802.11g Channel 06

100kHz PSD reference Level



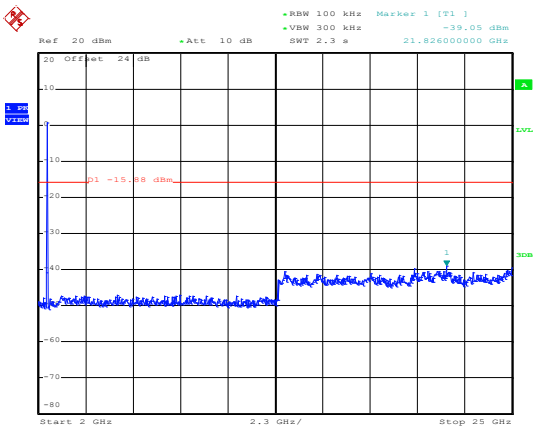
Date: 9.AUG.2013 17:14:50

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 17:15:42

Spurious Emission 2GHz~25GHz

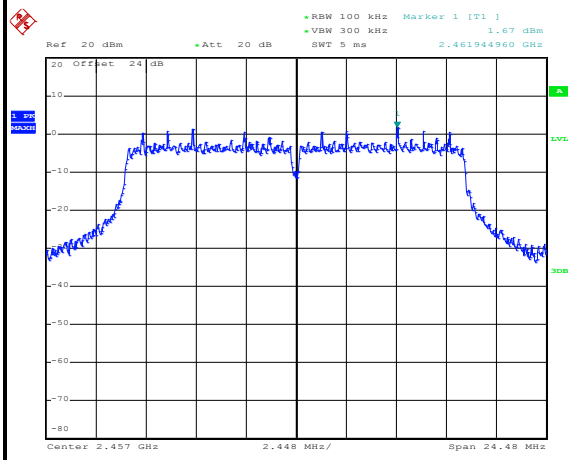


Date: 9.AUG.2013 17:16:01

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz	**Relative Humidity :**	55~58%
Test Channel :	10	**Test Engineer :**	Reece Lee

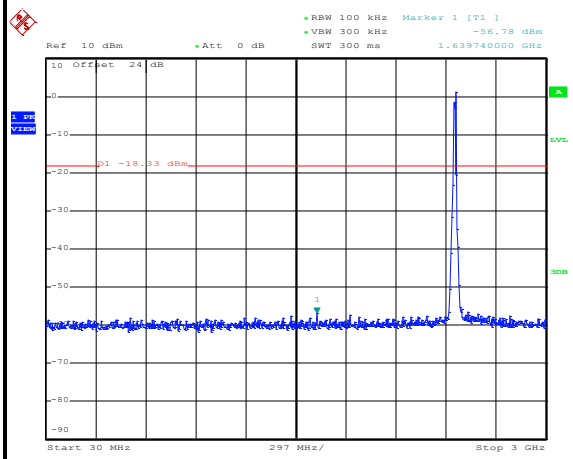
WLAN 802.11g Channel 10

100kHz PSD reference Level



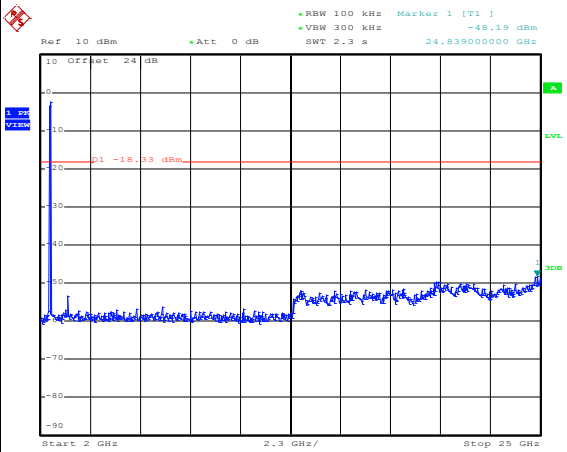
Date: 5.SEP.2013 11:59:11

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 11:59:31

Spurious Emission 2GHz~25GHz

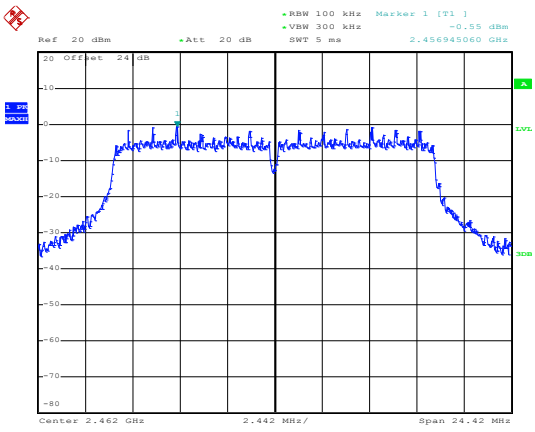


Date: 5.SEP.2013 11:59:50

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	55~58%
Test Channel :	11	**Test Engineer :**	Reece Lee

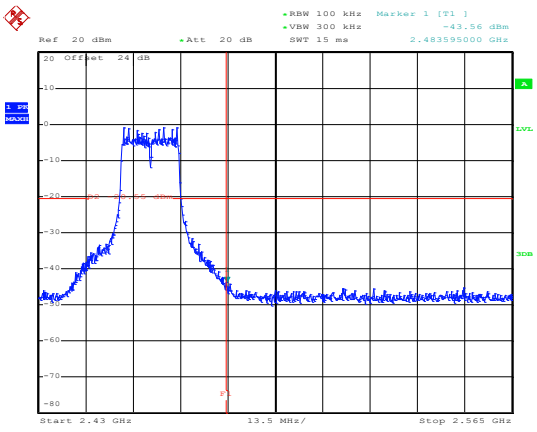
WLAN 802.11g Channel 11

100kHz PSD reference Level



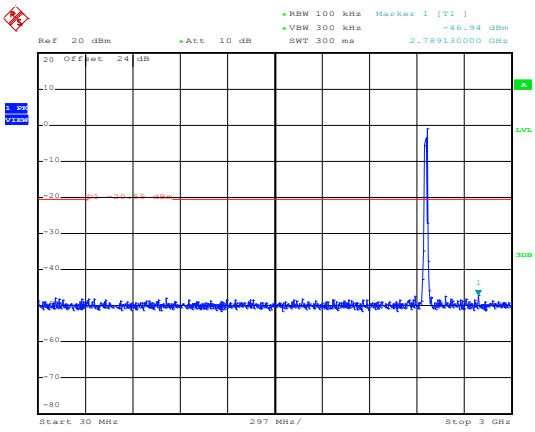
Date: 9.AUG.2013 17:10:58

High Channel Plot



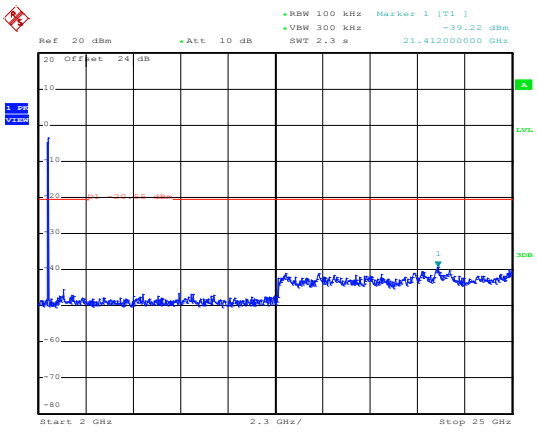
Date: 9.AUG.2013 17:11:32

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 17:11:52

Spurious Emission 2GHz~25GHz

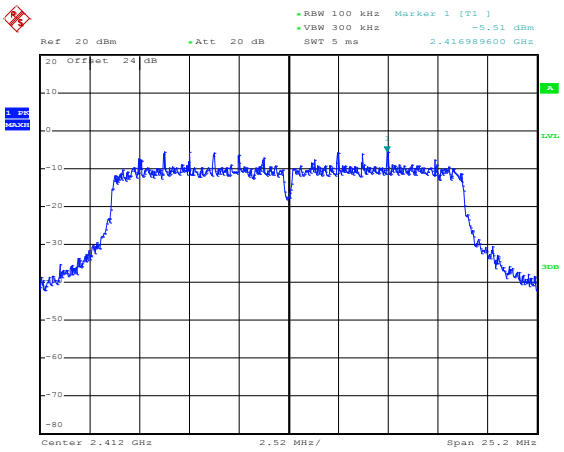


Date: 9.AUG.2013 17:12:11

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	55~58%
Test Channel :	01	**Test Engineer :**	Reece Lee

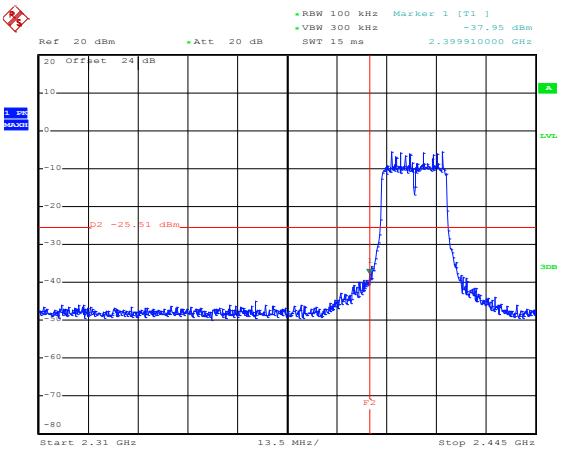
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



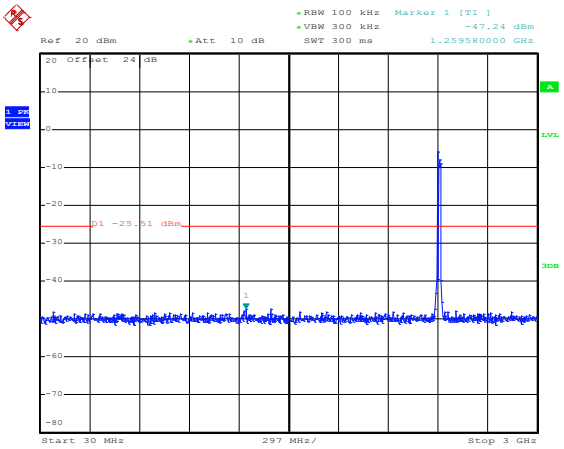
Date: 9.AUG.2013 17:25:49

Low Channel Plot



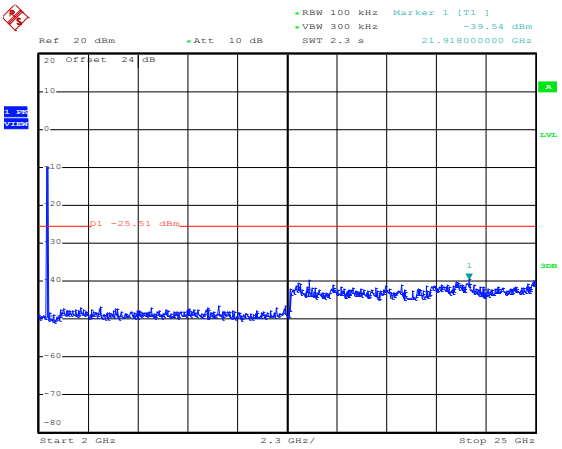
Date: 9.AUG.2013 17:26:13

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 17:26:55

Spurious Emission 2GHz~25GHz

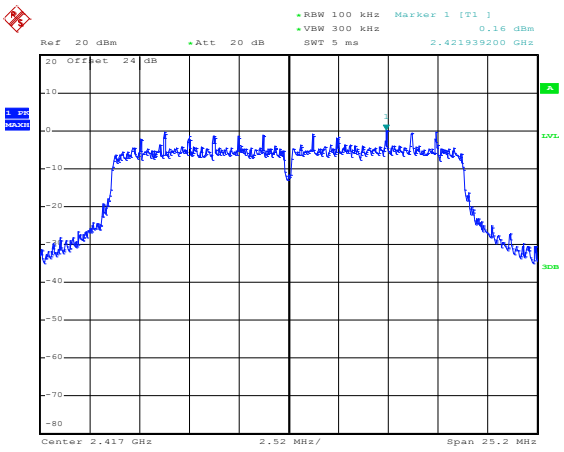


Date: 9.AUG.2013 17:27:14

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz	**Relative Humidity :**	55~58%
Test Channel :	02	**Test Engineer :**	Reece Lee

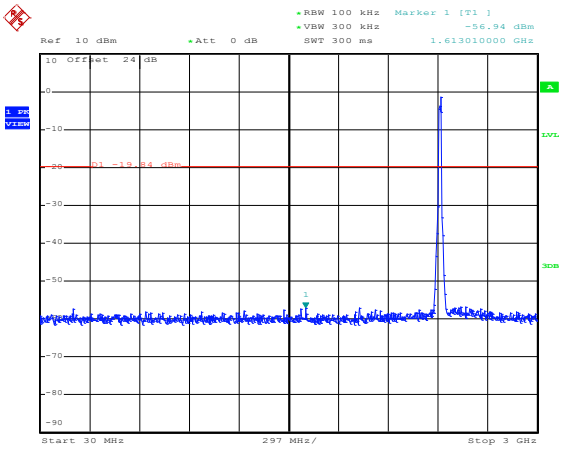
WLAN 802.11n HT20 Channel 02

100kHz PSD reference Level



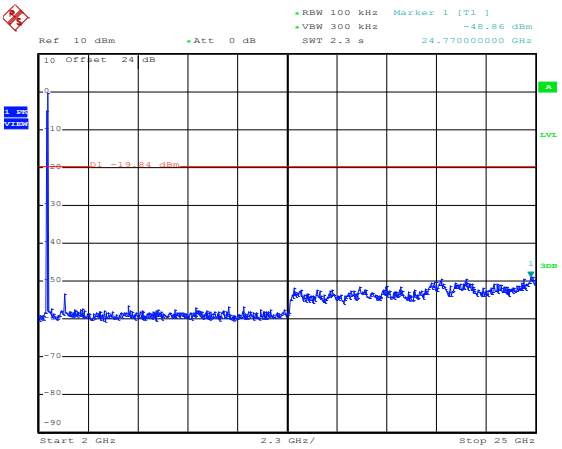
Date: 5.SEP.2013 12:36:24

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 12:36:52

Spurious Emission 2GHz~25GHz

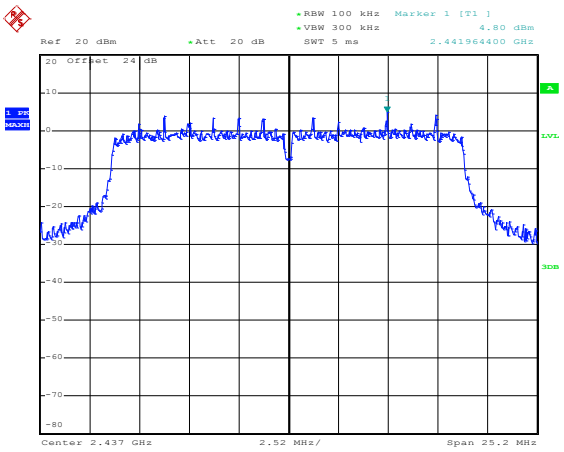


Date: 5.SEP.2013 12:37:11

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	06	**Test Engineer :**	Reece Lee

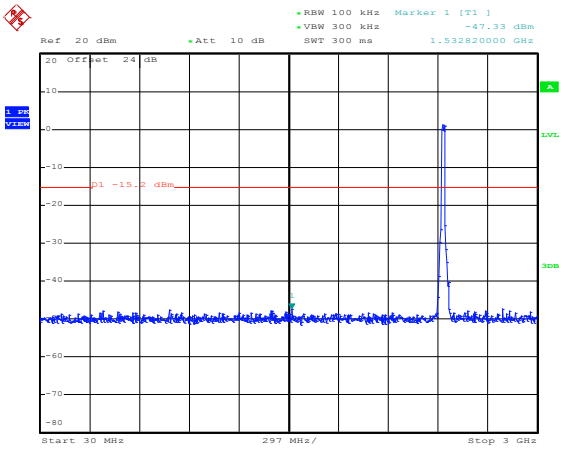
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



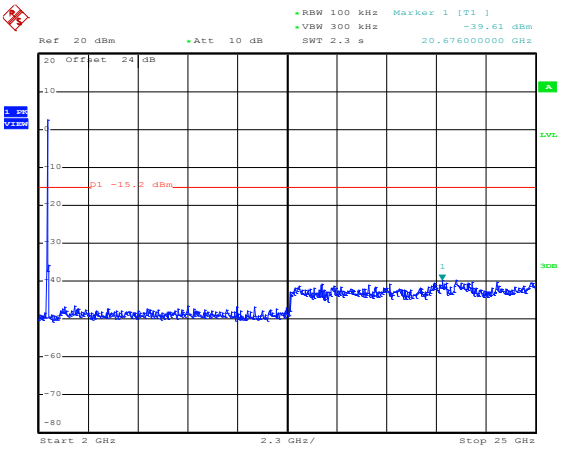
Date: 9.AUG.2013 17:30:12

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 17:30:50

Spurious Emission 2GHz~25GHz

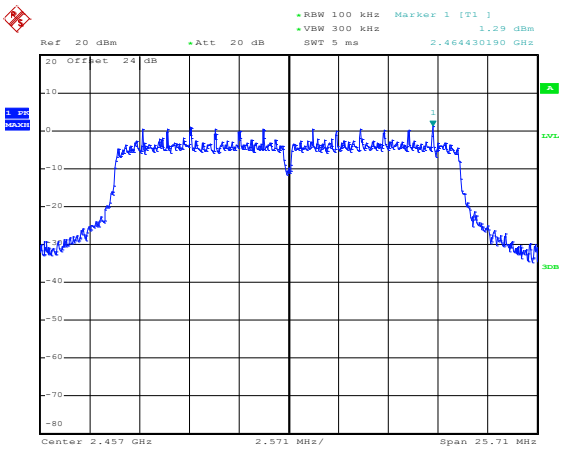


Date: 9.AUG.2013 17:31:09

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz	**Relative Humidity :**	55~58%
Test Channel :	10	**Test Engineer :**	Reece Lee

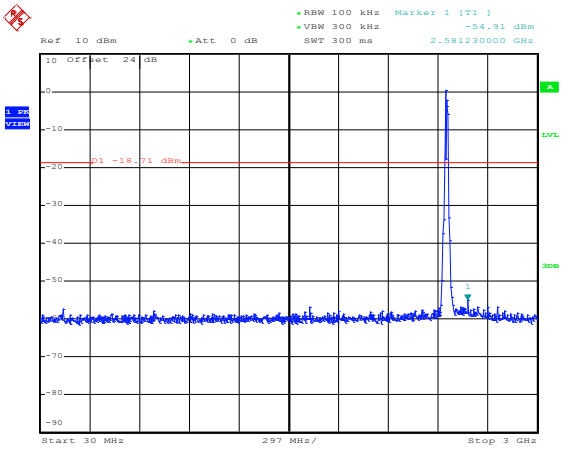
WLAN 802.11n HT20 Channel 10

100kHz PSD reference Level



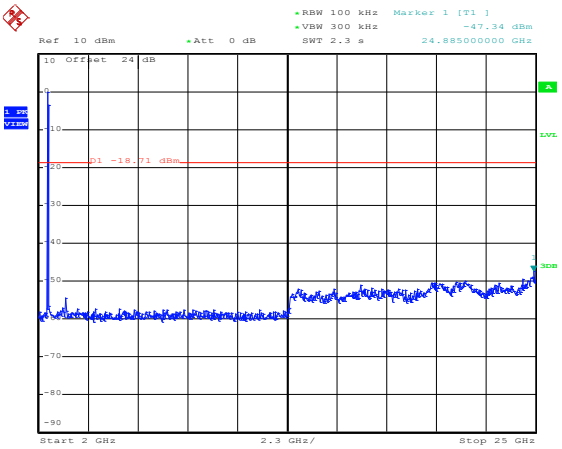
Date: 5.SEP.2013 12:31:15

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 12:32:16

Spurious Emission 2GHz~25GHz

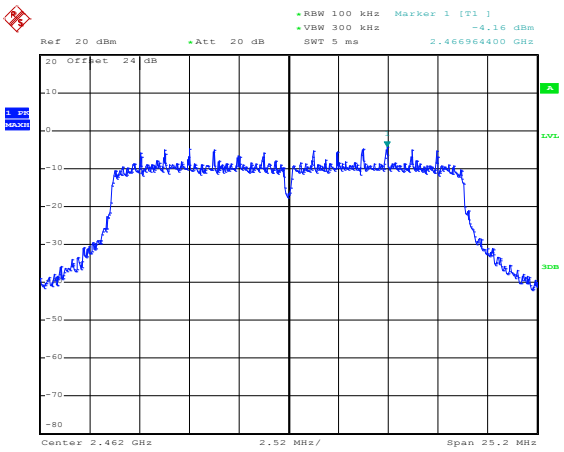


Date: 5.SEP.2013 12:32:35

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	55~58%
Test Channel :	11	**Test Engineer :**	Reece Lee

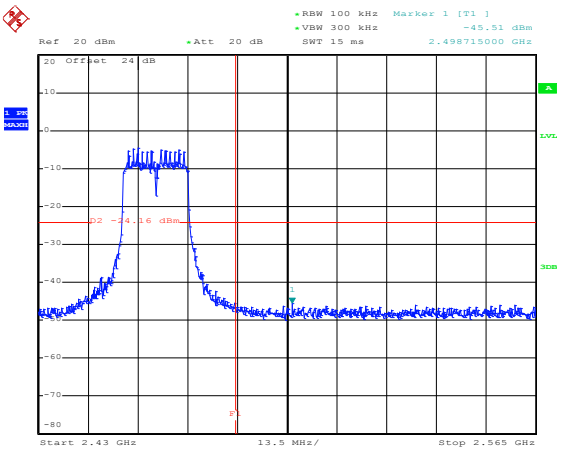
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



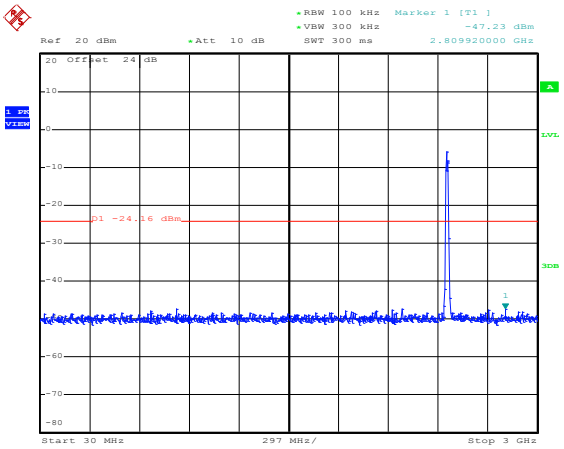
Date: 9.AUG.2013 17:37:17

High Channel Plot



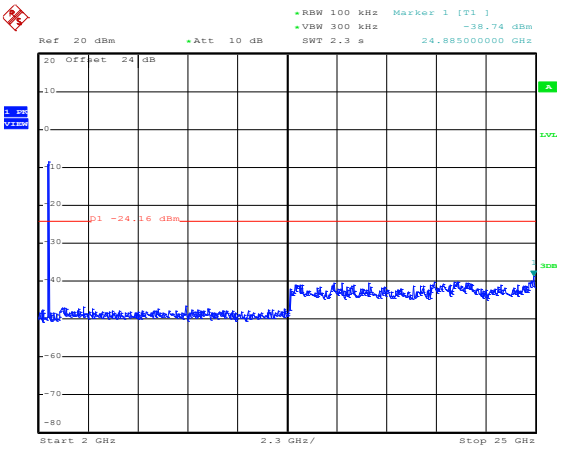
Date: 9.AUG.2013 17:37:34

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2013 17:38:50

Spurious Emission 2GHz~25GHz

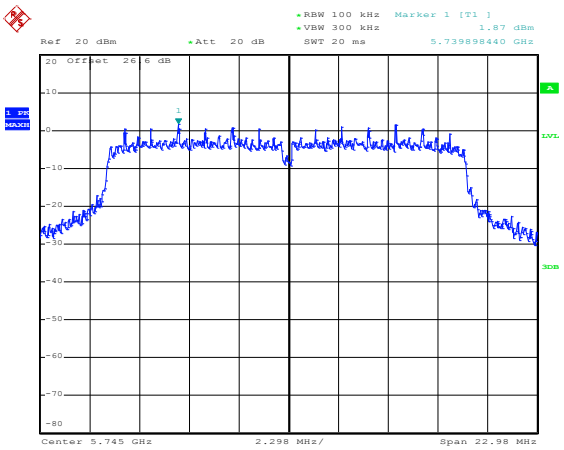


Date: 9.AUG.2013 17:39:08

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11a	**Temperature :**	24~26℃
Test Band :	5GHz Low	**Relative Humidity :**	55~58%
Test Channel :	149	**Test Engineer :**	Reece Lee

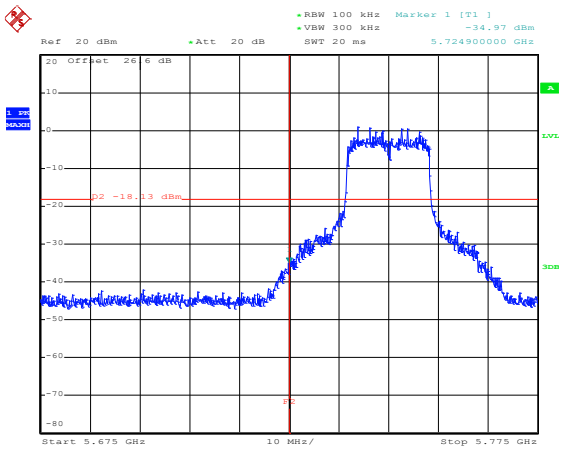
WLAN 802.11a Channel 149

100kHz PSD reference Level



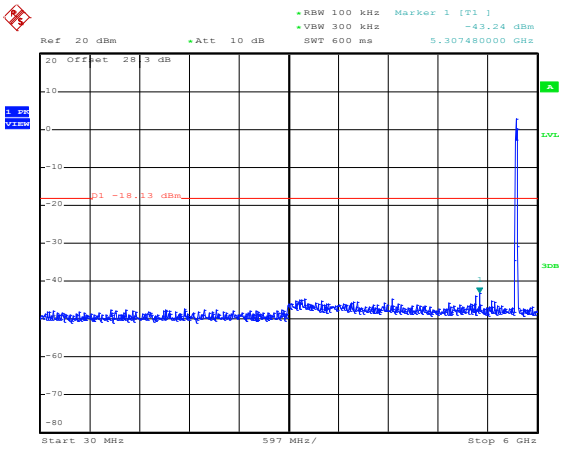
Date: 26.AUG.2013 18:41:27

Low Channel Plot



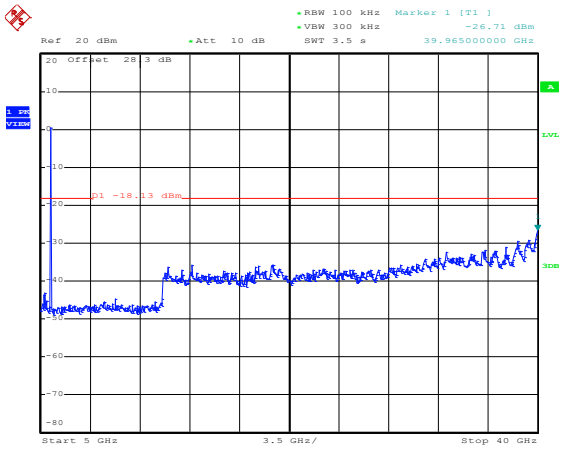
Date: 26.AUG.2013 18:42:02

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:29:56

Spurious Emission 5GHz~40GHz

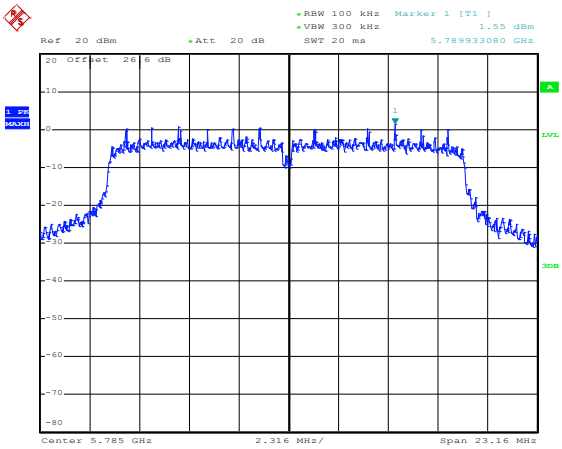


Date: 27.AUG.2013 09:30:14

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11a	**Temperature :**	24~26℃
Test Band :	5GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	157	**Test Engineer :**	Reece Lee

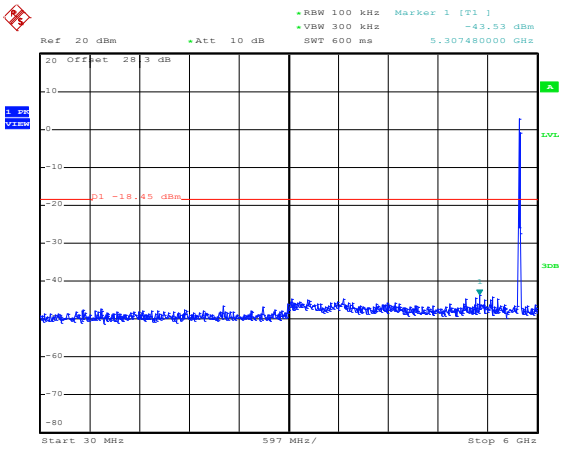
WLAN 802.11a Channel 157

100kHz PSD reference Level



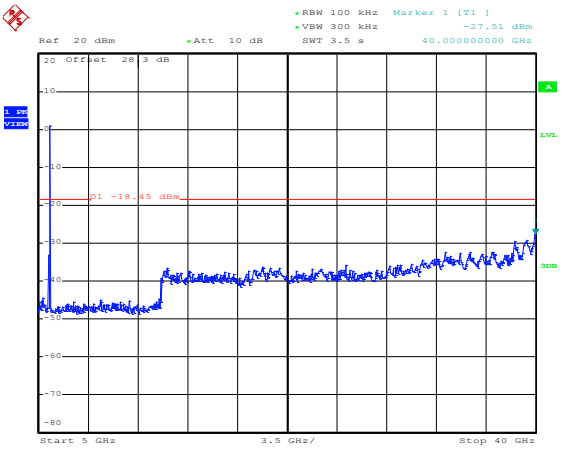
Date: 26.AUG.2013 18:44:50

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:31:49

Spurious Emission 5GHz~40GHz

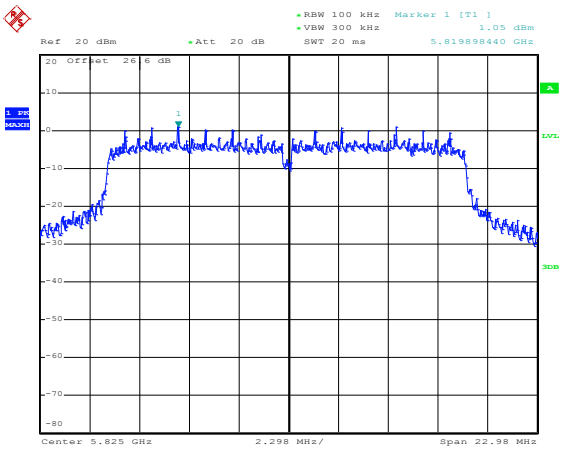


Date: 27.AUG.2013 09:32:07

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11a	**Temperature :**	24~26℃
Test Band :	5GHz High	**Relative Humidity :**	55~58%
Test Channel :	165	**Test Engineer :**	Reece Lee

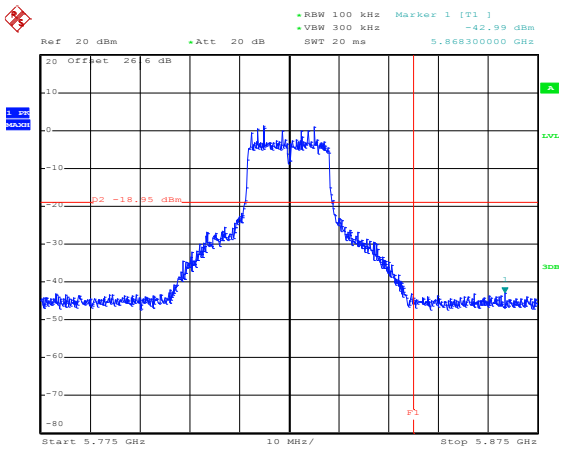
WLAN 802.11a Channel 165

100kHz PSD reference Level



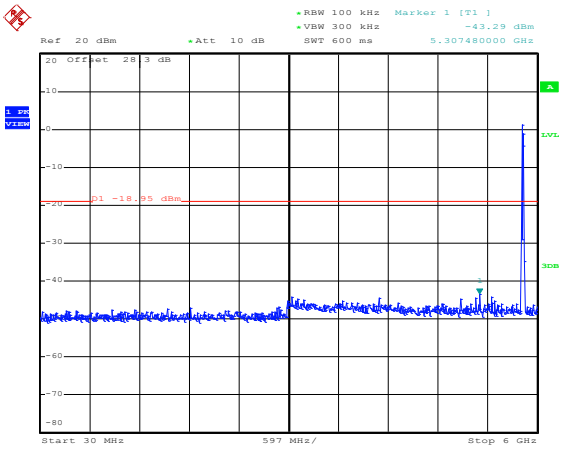
Date: 26.AUG.2013 18:52:02

High Channel Plot



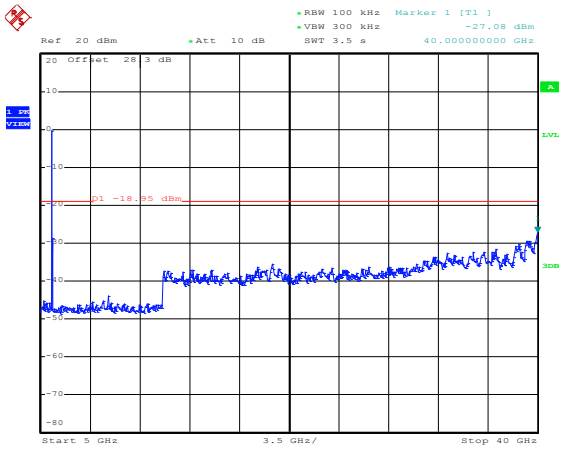
Date: 26.AUG.2013 18:52:29

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:32:53

Spurious Emission 5GHz~40GHz

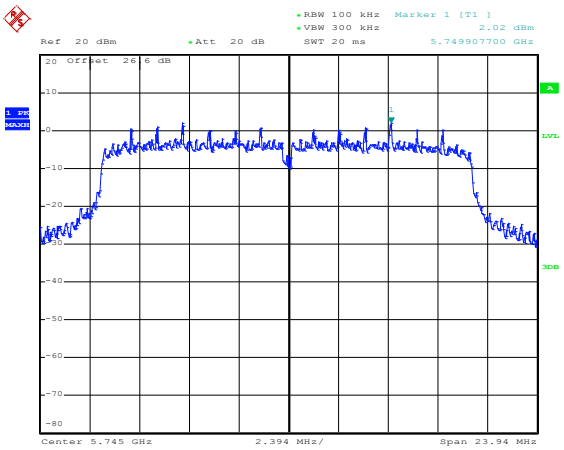


Date: 27.AUG.2013 09:33:11

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	5GHz Low	**Relative Humidity :**	55~58%
Test Channel :	149	**Test Engineer :**	Reece Lee

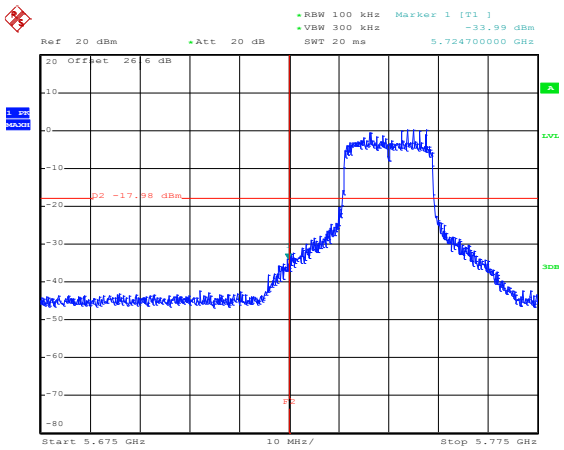
WLAN 802.11n HT20 Channel 149

100kHz PSD reference Level



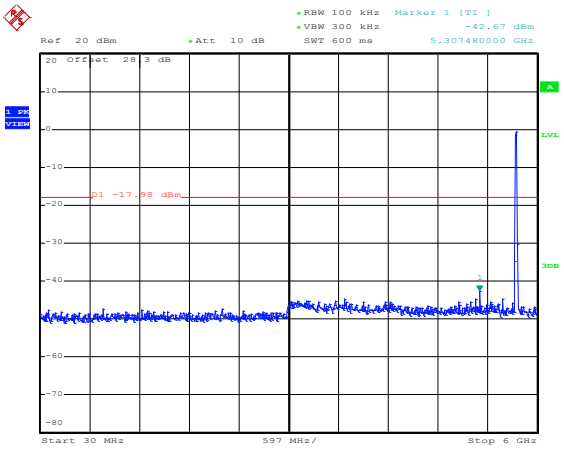
Date: 26.AUG.2013 18:57:04

Low Channel Plot



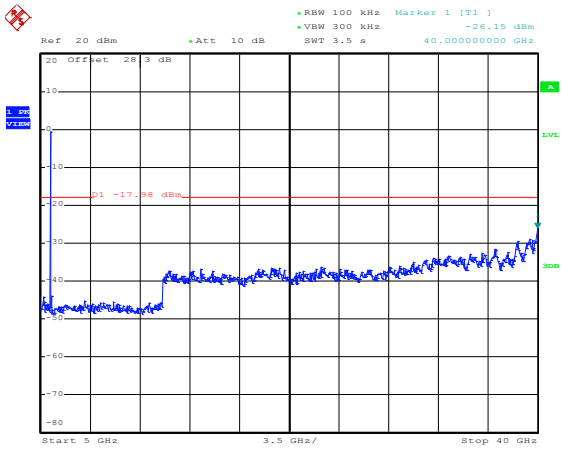
Date: 26.AUG.2013 18:57:20

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:15:35

Spurious Emission 5GHz~40GHz

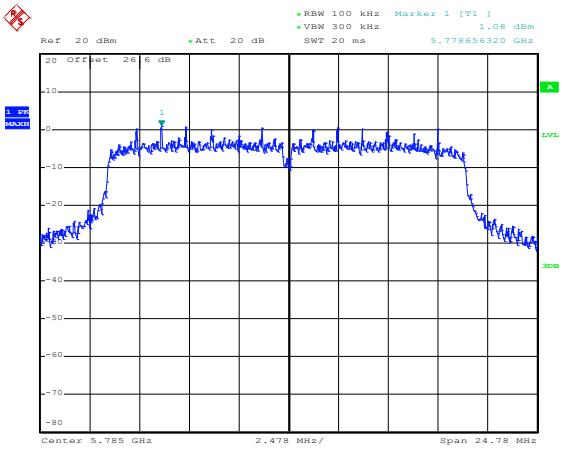


Date: 27.AUG.2013 09:15:54

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	5GHz Mid	**Relative Humidity :**	55~58%
Test Channel :	157	**Test Engineer :**	Reece Lee

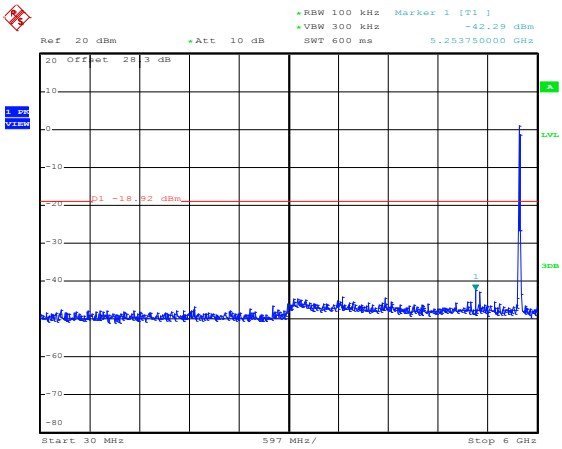
WLAN 802.11n HT20 Channel 157

100kHz PSD reference Level



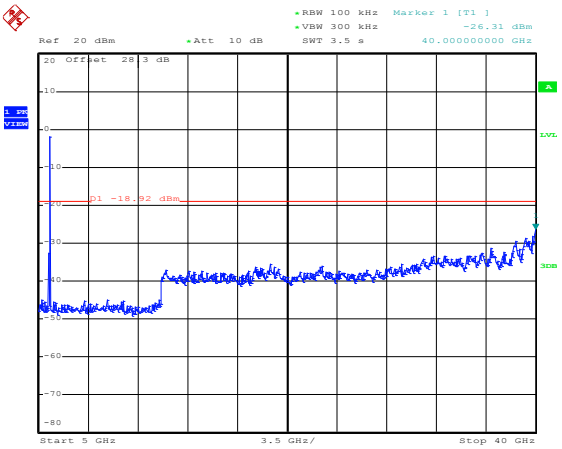
Date: 26.AUG.2013 19:10:40

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:17:29

Spurious Emission 5GHz~40GHz

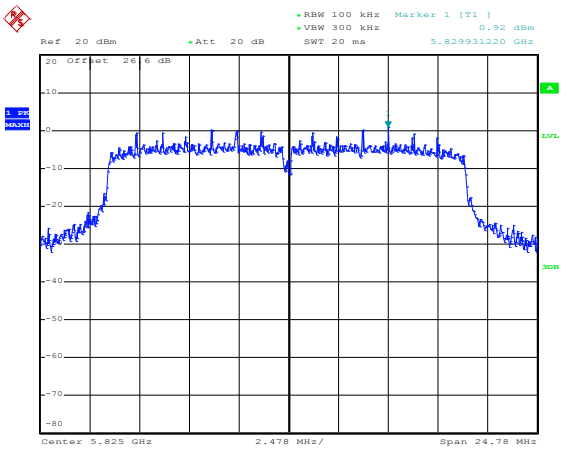


Date: 27.AUG.2013 09:17:47

Number of TX :	2	Antenna :	2
Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Band :	5GHz High	Relative Humidity :	55~58%
Test Channel :	165	Test Engineer :	Reece Lee

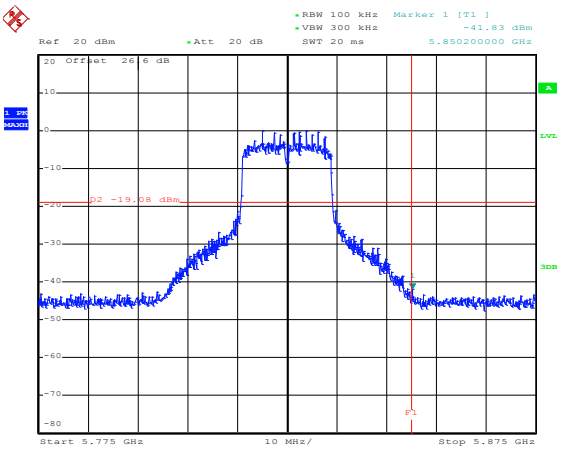
WLAN 802.11n HT20 Channel 165

100kHz PSD reference Level



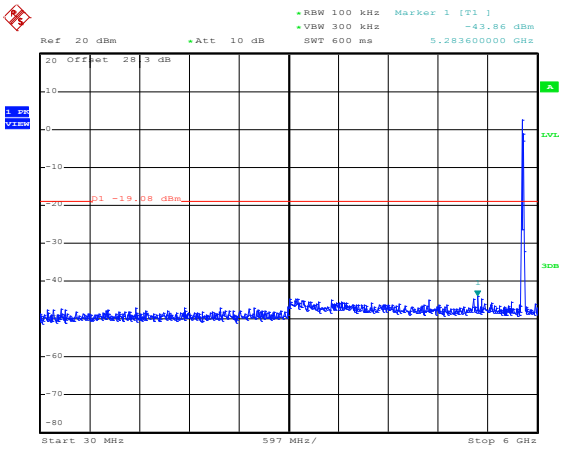
Date: 26.AUG.2013 19:17:29

High Channel Plot



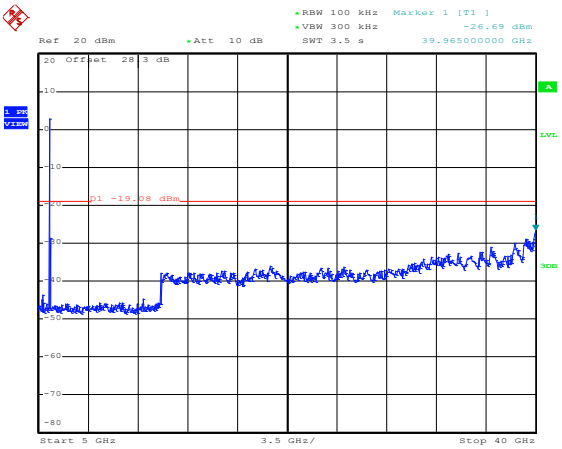
Date: 26.AUG.2013 19:17:47

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:26:45

Spurious Emission 5GHz~40GHz

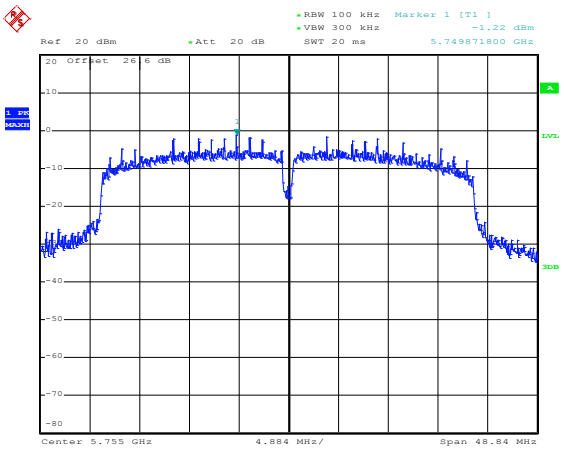


Date: 27.AUG.2013 09:27:04

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	5GHz Low	**Relative Humidity :**	55~58%
Test Channel :	151	**Test Engineer :**	Reece Lee

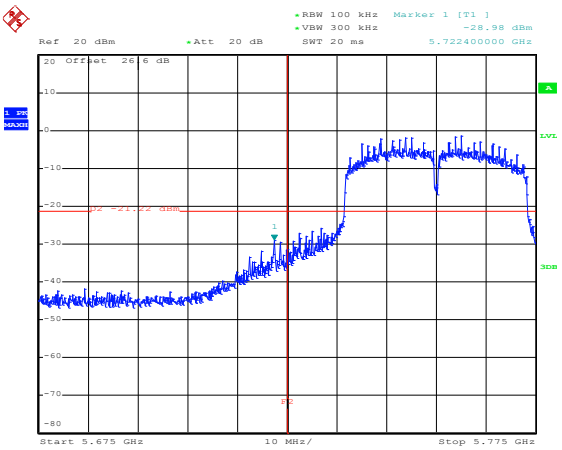
WLAN 802.11n HT40 Channel 151

100kHz PSD reference Level



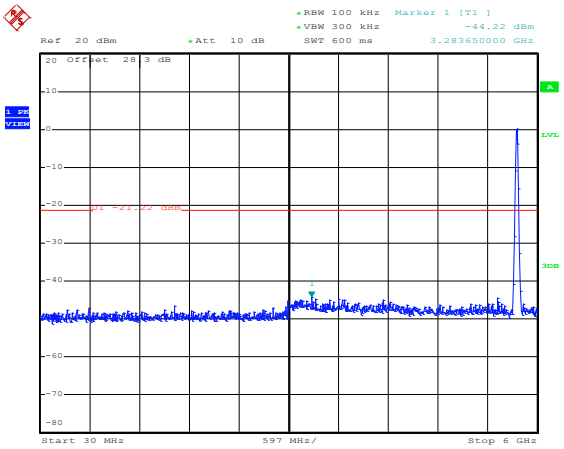
Date: 26.AUG.2013 19:41:04

Low Channel Plot



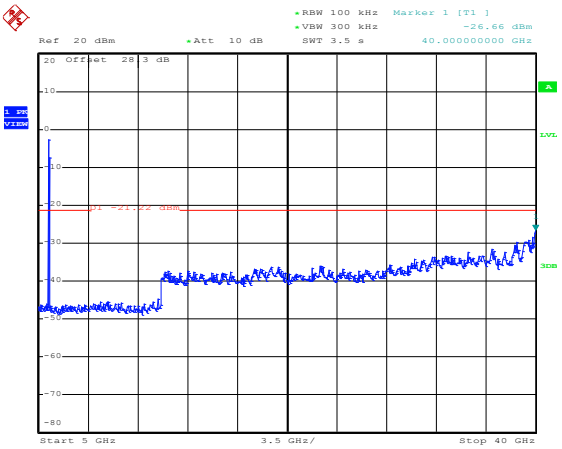
Date: 26.AUG.2013 19:41:27

Spurious Emission 30MHz~6GHz



Date: 27.AUG.2013 09:35:00

Spurious Emission 5GHz~40GHz

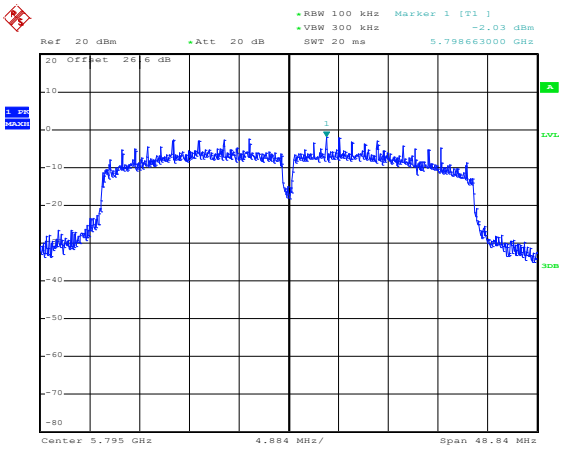


Date: 27.AUG.2013 09:35:19

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	5GHz High	**Relative Humidity :**	55~58%
Test Channel :	159	**Test Engineer :**	Reece Lee

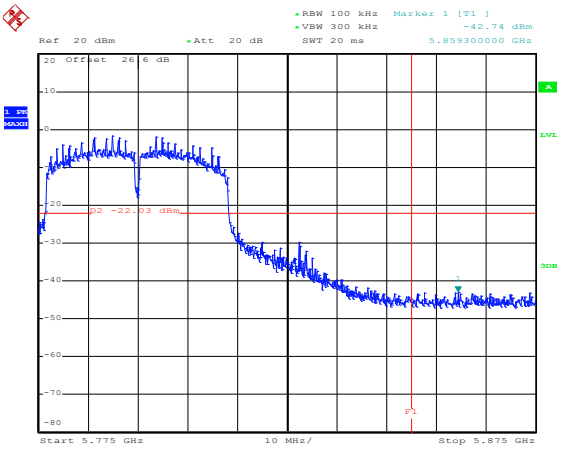
WLAN 802.11n HT40 Channel 159

100kHz PSD reference Level



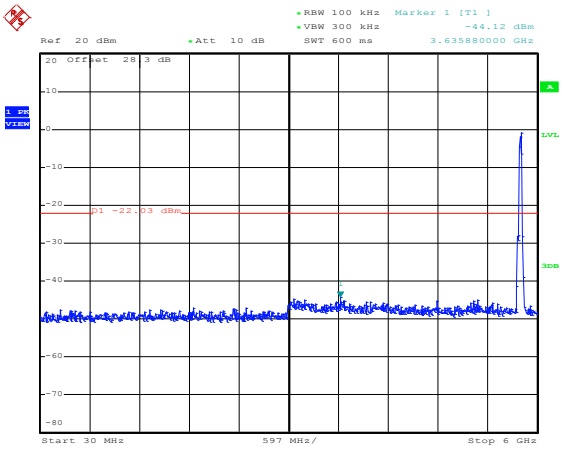
Date: 26.AUG.2013 19:35:11

High Channel Plot



Date: 26.AUG.2013 19:35:33

Spurious Emission 30MHz~6GHz



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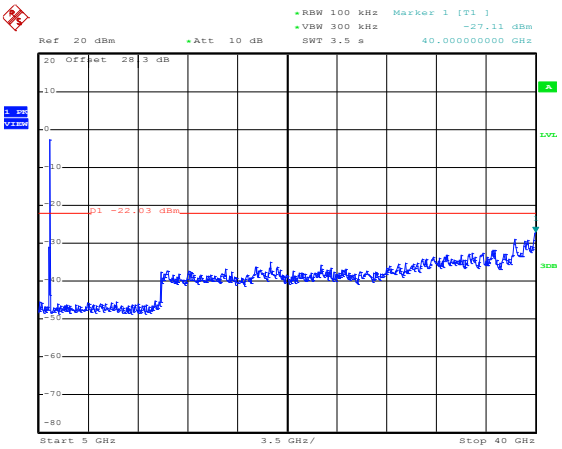
Spurious Emission 5GHz~40GHz



Date: 27.AUG.2013 09:37:00

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

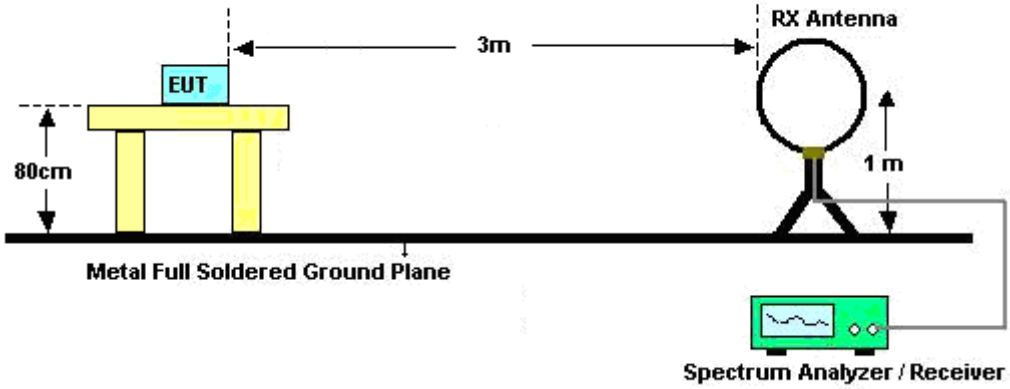
See list of measuring instruments of this test report.

3.5.3 Test Procedure

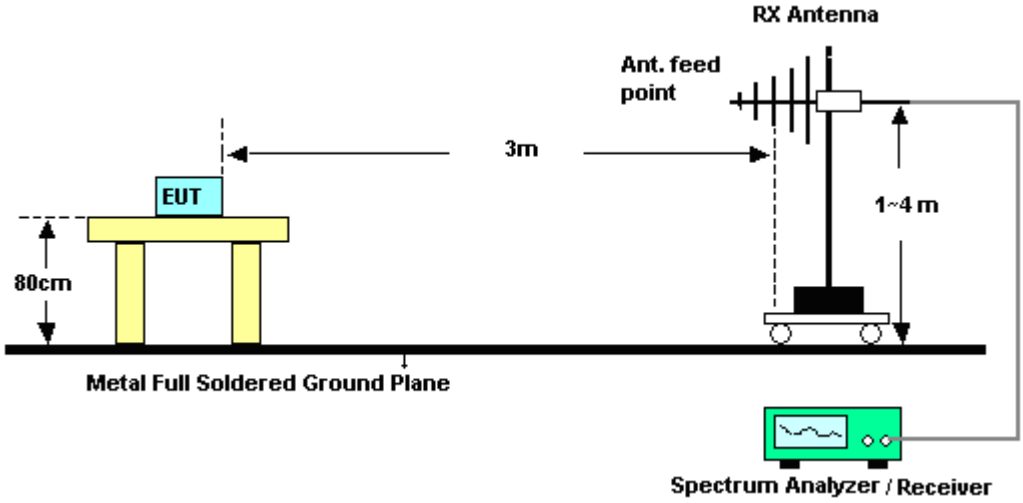
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the 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 ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
   - For 11b mode, the VBW is set to 10Hz ; For 11g, and HT20 modes, the VBW are set to 1KHz; For 11a, and HT20 are set to 10Hz, and HT40 is set to 3KHz.

3.5.4 Test Setup

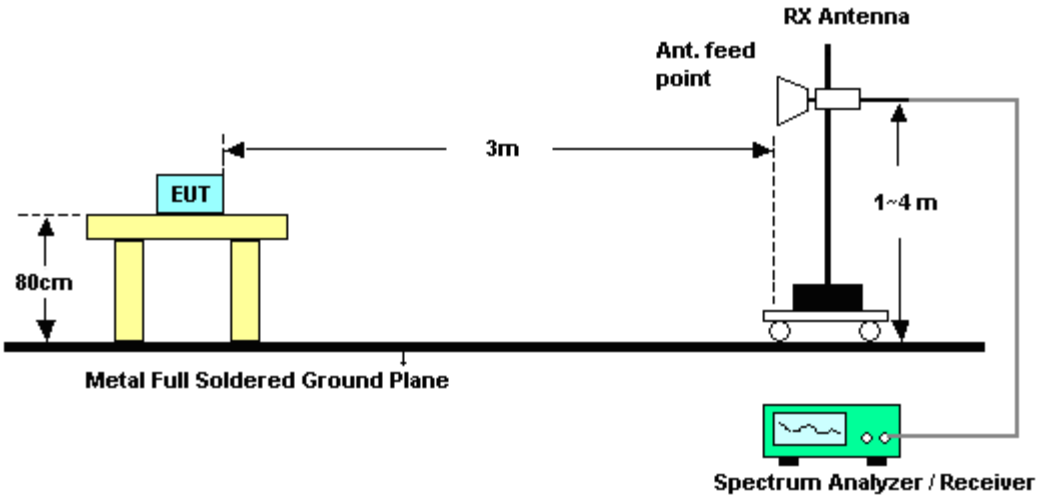
For radiated emissions below 30MHz



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 Spurious at Band Edges

MIMO Ant. <1+2>

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Band :	Low	**Relative Humidity :**	51~53%
Test Channel :	01	**Test Engineer :**	Kyle Jhuang

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**
2376.24	60.92	-13.08	74	56.03	32.28	6.88	34.27	114	1	Peak
2390	48.74	-5.26	54	43.83	32.3	6.91	34.3	114	1	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**
2382.09	59.53	-14.47	74	54.61	32.28	6.91	34.27	184	342	Peak
2387.4	49.11	-4.89	54	44.17	32.3	6.91	34.27	184	342	Average

MIMO Ant. <1+2>

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Band :	High	**Relative Humidity :**	51~53%
Test Channel :	11	**Test Engineer :**	Kyle Jhuang

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**
2486.59	61.91	-12.09	74	56.9	32.38	7.06	34.43	112	358	Peak
2487.1	50.61	-3.39	54	45.6	32.38	7.06	34.43	112	358	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**
2486.05	58.8	-15.2	74	53.79	32.38	7.06	34.43	149	340	Peak
2483.5	45.27	-8.73	54	40.26	32.38	7.06	34.43	149	340	Average

MIMO Ant. <1+2>

Test Mode :	802.11g	Temperature :	21~24°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	01	Test Engineer :	Kyle Jhuang

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
2389.92	69.79	-4.21	74	64.88	32.3	6.91	34.3	150	36	Peak
2389.47	53.52	-0.48	54	48.58	32.3	6.91	34.27	150	36	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	67.3	-6.7	74	62.39	32.3	6.91	34.3	186	317	Peak
2390	52.11	-1.89	54	47.2	32.3	6.91	34.3	186	317	Average

MIMO Ant. <1+2>

Test Mode :	802.11g	Temperature :	21~24°C
Test Band :	--	Relative Humidity :	51~53%
Test Channel :	02	Test Engineer :	Kyle Jhuang

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	68.46	-5.54	74	63.52	32.3	6.91	34.27	148	0	Peak
2390	53.06	-0.94	54	48.15	32.3	6.91	34.3	148	0	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.65	62.5	-11.5	74	57.56	32.3	6.91	34.27	121	321	Peak
2389.65	47.93	-6.07	54	42.99	32.3	6.91	34.27	121	321	Average

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Band :	--	**Relative Humidity :**	51~53%
Test Channel :	10	**Test Engineer :**	Kyle Jhuang

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**
2484.25	68.88	-5.12	74	63.87	32.38	7.06	34.43	176	0	Peak
2484.7	53.21	-0.79	54	48.2	32.38	7.06	34.43	176	0	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	**Level (dBµV/m)**	**Over Limit (dB)**	**Limit Line (dBµV/m)**	**Read Level (dBµV)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Ant Pos (cm)**	**Table Pos (deg)**	**Remark**
2484.46	62.94	-11.06	74	57.93	32.38	7.06	34.43	185	344	Peak
2483.65	47.77	-6.23	54	42.76	32.38	7.06	34.43	185	344	Average

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Band :	High	**Relative Humidity :**	51~53%
Test Channel :	11	**Test Engineer :**	Kyle Jhuang

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**
2483.5	69.22	-4.78	74	64.21	32.38	7.06	34.43	112	11	Peak
2483.53	53.51	-0.49	54	48.5	32.38	7.06	34.43	112	11	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**
2484.67	60.94	-13.06	74	55.93	32.38	7.06	34.43	178	9	Peak
2483.65	47.14	-6.86	54	42.13	32.38	7.06	34.43	178	9	Average

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	Temperature :	21~24°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	01	Test Engineer :	Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	68.14	-5.86	74	63.23	32.3	6.91	34.3	113	27	Peak
2390	53.49	-0.51	54	48.58	32.3	6.91	34.3	113	27	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
2387.85	62.72	-11.28	74	57.78	32.3	6.91	34.27	187	344	Peak
2390	50.31	-3.69	54	45.4	32.3	6.91	34.3	187	344	Average

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	Temperature :	21~24°C
Test Band :	--	Relative Humidity :	51~53%
Test Channel :	02	Test Engineer :	Kyle Jhuang

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
2389.83	67.85	-6.15	74	62.94	32.3	6.91	34.3	150	360	Peak
2389.83	53.43	-0.57	54	48.52	32.3	6.91	34.3	150	360	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	62.76	-11.24	74	57.85	32.3	6.91	34.3	192	347	Peak
2390	48.83	-5.17	54	43.92	32.3	6.91	34.3	192	347	Average

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	Temperature :	21~24°C
Test Band :	--	Relative Humidity :	51~53%
Test Channel :	10	Test Engineer :	Kyle Jhuang

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
2483.68	67.52	-6.48	74	62.51	32.38	7.06	34.43	118	354	Peak
2483.53	53.11	-0.89	54	48.1	32.38	7.06	34.43	118	354	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
2484.13	61.67	-12.33	74	56.66	32.38	7.06	34.43	100	349	Peak
2483.5	47.89	-6.11	54	42.88	32.38	7.06	34.43	100	349	Average

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	Temperature :	21~24°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	11	Test Engineer :	Kyle Jhuang

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
2483.83	67.26	-6.74	74	62.25	32.38	7.06	34.43	113	360	Peak
2483.53	52.55	-1.45	54	47.54	32.38	7.06	34.43	113	360	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
2483.68	58.8	-15.2	74	53.79	32.38	7.06	34.43	176	99	Peak
2483.59	46.05	-7.95	54	41.04	32.38	7.06	34.43	176	99	Average

MIMO Ant. <1+2>

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Band :	Low	**Relative Humidity :**	51~53%
Test Channel :	149	**Test Engineer :**	Kyle Jhuang

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	83.88	-5.66	89.54	72.66	35.33	10.04	34.15	100	88	Peak
5741	95.99	-	-	84.76	35.34	10.06	34.17	100	88	Average
5741	109.54	-	-	98.31	35.34	10.06	34.17	100	88	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**
5725	84.23	-3.27	87.5	73.01	35.33	10.04	34.15	167	344	Peak
5741	94.8	-	-	83.57	35.34	10.06	34.17	167	344	Average
5741	107.5	-	-	96.27	35.34	10.06	34.17	167	344	Peak

Remark: 5725 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 109.54dBμV/m - 20dB = 89.54dBμV/m.

MIMO Ant. <1+2>

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Band :	High	**Relative Humidity :**	51~53%
Test Channel :	165	**Test Engineer :**	Kyle Jhuang

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**
5850	67.77	-21.15	88.92	56.54	35.41	10.13	34.31	101	5	Peak
5825	95.25	-	-	84.01	35.4	10.11	34.27	101	5	Average
5825	108.92	-	-	97.68	35.4	10.11	34.27	101	5	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**
5850	65.85	-20.9	86.75	54.62	35.41	10.13	34.31	176	339	Peak
5824	93.09	-	-	81.85	35.4	10.11	34.27	176	339	Average
5824	106.75	-	-	95.51	35.4	10.11	34.27	176	339	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	Temperature :	21~24°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	149	Test Engineer :	Kyle Jhuang

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	84.12	-5.98	90.1	72.9	35.33	10.04	34.15	100	243	Peak
5740	96.28	-	-	85.05	35.34	10.06	34.17	100	243	Average
5740	110.1	-	-	98.87	35.34	10.06	34.17	100	243	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
5725	80.64	-9.4	90.04	69.42	35.33	10.04	34.15	135	310	Peak
5743	96.03	-	-	84.8	35.34	10.06	34.17	135	310	Average
5743	110.04	-	-	98.81	35.34	10.06	34.17	135	310	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	Temperature :	21~24°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	165	Test Engineer :	Kyle Jhuang

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
5850	66.94	-20.53	87.47	55.71	35.41	10.13	34.31	100	188	Peak
5823	92.87	-	-	81.63	35.4	10.11	34.27	100	188	Average
5823	107.47	-	-	96.23	35.4	10.11	34.27	100	188	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
5850	66.63	-21.26	87.89	55.4	35.41	10.13	34.31	101	314	Peak
5822	94.16	-	-	82.92	35.4	10.11	34.27	101	314	Average
5822	107.89	-	-	96.65	35.4	10.11	34.27	101	314	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT40	Temperature :	21~24°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	151	Test Engineer :	Kyle Jhuang

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	83.39	-4.7	88.09	72.17	35.33	10.04	34.15	100	245	Peak
5757	97.56	-	-	86.34	35.36	10.06	34.2	100	245	Average
5757	108.09	-	-	96.87	35.36	10.06	34.2	100	245	Peak
5850	61.82	-26.27	88.09	50.59	35.41	10.13	34.31	100	245	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
5725	81.77	-5.71	87.48	70.55	35.33	10.04	34.15	135	304	Peak
5753	97.07	-	-	85.82	35.36	10.06	34.17	135	304	Average
5753	107.48	-	-	96.23	35.36	10.06	34.17	135	304	Peak
5850	63.08	-24.4	87.48	51.85	35.41	10.13	34.31	135	304	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT40	Temperature :	21~24°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	159	Test Engineer :	Kyle Jhuang

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	56.96	-30.16	87.12	45.74	35.33	10.04	34.15	100	247	Peak
5795	96.25	-	-	85.01	35.38	10.09	34.23	100	247	Average
5795	107.12	-	-	95.88	35.38	10.09	34.23	100	247	Peak
5850	56.26	-30.86	87.12	45.03	35.41	10.13	34.31	100	247	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
5725	53.89	-31.65	85.54	42.67	35.33	10.04	34.15	172	349	Peak
5795	95.14	-	-	83.9	35.38	10.09	34.23	172	349	Average
5795	105.54	-	-	94.3	35.38	10.09	34.23	172	349	Peak
5850	55.64	-29.9	85.54	44.41	35.41	10.13	34.31	172	349	Peak

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

Note: Pre-scanned all test modes and only choose the worst case mode recorded in the test report for radiated spurious emission below 1GHz.

MIMO Ant. <1+2>

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2414 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 114.01 dBμV/m - 20dB = 94.01dBμV/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
2414	109.08	-	-	104.12	32.31	6.95	34.3	114	1	Average
2414	114.01	-	-	109.05	32.31	6.95	34.3	114	1	Peak
4824	49.98	-24.02	74	66.17	33.97	8.77	58.93	100	0	Peak
7236	47.32	-46.69	94.01	58.6	35.55	10.83	57.66	100	0	Peak

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2410 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
2410	106.19	-	-	101.23	32.31	6.95	34.3	184	342	Average
2410	110.89	-	-	105.93	32.31	6.95	34.3	184	342	Peak
4824	48.51	-25.49	74	64.7	33.97	8.77	58.93	100	0	Peak
7235	47.76	-43.13	90.89	59.04	35.55	10.83	57.66	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	06	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2436 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
2436	113.44	-	-	108.47	32.33	6.99	34.35	115	1	Average
2436	118.16	-	-	113.19	32.33	6.99	34.35	115	1	Peak
4875	47.59	-26.41	74	63.65	33.95	8.82	58.83	100	0	Peak
7311	44.35	-29.65	74	55.63	35.54	10.91	57.73	100	0	Peak

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	06	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2438 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
2438	104.3	-	-	99.31	32.35	6.99	34.35	101	14	Average
2438	109.04	-	-	104.05	32.35	6.99	34.35	101	14	Peak
4875	47.66	-26.34	74	63.72	33.95	8.82	58.83	100	0	Peak
7311	46.65	-27.35	74	57.93	35.54	10.91	57.73	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	11	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2464 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
2464	111.39	-	-	106.39	32.37	7.02	34.39	112	358	Average
2464	116.28	-	-	111.28	32.37	7.02	34.39	112	358	Peak
4923	48.39	-25.61	74	64.32	33.93	8.87	58.73	100	0	Peak
7386	43.58	-30.42	74	54.87	35.52	10.99	57.8	100	0	Peak

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	11	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**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	105.86	-	-	100.86	32.37	7.02	34.39	149	340	Average
2462	110.4	-	-	105.4	32.37	7.02	34.39	149	340	Peak
4923	48.87	-25.13	74	64.8	33.93	8.87	58.73	100	0	Peak
7386	45.06	-28.94	74	56.35	35.52	10.99	57.8	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2410 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 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
46.2	28.34	-11.66	40	49.17	9.7	0.67	31.2	100	52	Peak
129.9	20.15	-23.35	43.5	38.5	11.6	1.15	31.1	-	-	Peak
269.49	23.92	-22.08	46	40.41	12.87	1.64	31	-	-	Peak
327.3	20.41	-25.59	46	35.54	14.03	1.84	31	-	-	Peak
497.4	21.24	-24.76	46	31.38	18.04	2.44	30.62	-	-	Peak
825.7	24.54	-21.46	46	29.33	22.35	3.21	30.35	-	-	Peak
2410	99.6	-	-	94.64	32.31	6.95	34.3	150	36	Average
2410	109.01	-	-	104.05	32.31	6.95	34.3	150	36	Peak
4824	41.01	-32.99	74	57.2	33.97	8.77	58.93	100	0	Peak
7236	43.11	-45.9	89.01	54.39	35.55	10.83	57.66	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 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
33.24	25.25	-14.75	40	38.23	17.84	0.56	31.38	100	123	Peak
129.9	24.81	-18.69	43.5	43.16	11.6	1.15	31.1	-	-	Peak
284.34	26.1	-19.9	46	42.34	13.08	1.66	30.98	-	-	Peak
327.3	23.4	-22.6	46	38.53	14.03	1.84	31	-	-	Peak
450.5	21.14	-24.86	46	32.52	17.07	2.3	30.75	-	-	Peak
925.8	24.66	-21.34	46	28.12	23.49	3.4	30.35	-	-	Peak
2412	95.96	-	-	91	32.31	6.95	34.3	186	317	Average
2412	105.37	-	-	100.41	32.31	6.95	34.3	186	317	Peak
4825	44.57	-29.43	74	60.76	33.97	8.77	58.93	100	0	Peak
7236	42.55	-42.82	85.37	53.83	35.55	10.83	57.66	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	02	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2419 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
2419	105.65	-	-	100.74	32.31	6.95	34.35	148	0	Average
2419	115.03	-	-	110.12	32.31	6.95	34.35	148	0	Peak
4834	43.26	-30.74	74	59.39	33.96	8.8	58.89	100	0	Peak
7251	42.68	-31.32	74	53.98	35.55	10.83	57.68	100	0	Peak

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	02	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2415 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
2415	97.12	-	-	92.16	32.31	6.95	34.3	121	321	Average
2415	107.17	-	-	102.21	32.31	6.95	34.3	121	321	Peak
4833	41.5	-32.5	74	57.66	33.97	8.8	58.93	100	0	Peak
7251	43.16	-30.84	74	54.46	35.55	10.83	57.68	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	06	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**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	107.2	-	-	102.21	32.35	6.99	34.35	111	358	Average
2437	116.35	-	-	111.36	32.35	6.99	34.35	111	358	Peak
4874	46.15	-27.85	74	62.21	33.95	8.82	58.83	100	0	Peak
7311	42.18	-31.82	74	53.46	35.54	10.91	57.73	100	0	Peak

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	06	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2439 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
2439	97.54	-	-	92.55	32.35	6.99	34.35	188	2	Average
2439	107.43	-	-	102.44	32.35	6.99	34.35	188	2	Peak
4874	45.95	-28.05	74	62.01	33.95	8.82	58.83	100	0	Peak
7311	44.17	-29.83	74	55.45	35.54	10.91	57.73	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	10	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2457 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
2457	106.02	-	-	101.02	32.37	7.02	34.39	176	0	Average
2457	115.53	-	-	110.53	32.37	7.02	34.39	176	0	Peak
4914	41.55	-32.45	74	57.51	33.93	8.87	58.76	100	0	Peak
7371	42.69	-31.31	74	54	35.52	10.96	57.79	100	0	Peak

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	10	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2457 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
2457	96.55	-	-	91.55	32.37	7.02	34.39	185	344	Average
2457	106.68	-	-	101.68	32.37	7.02	34.39	185	344	Peak
4914	43.42	-30.58	74	59.38	33.93	8.87	58.76	100	0	Peak
7371	42.41	-31.59	74	53.72	35.52	10.96	57.79	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	11	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**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	100.5	-	-	95.5	32.37	7.02	34.39	112	11	Average
2462	109.54	-	-	104.54	32.37	7.02	34.39	112	11	Peak
4923	39.78	-34.22	74	55.71	33.93	8.87	58.73	100	0	Peak
7386	43.81	-30.19	74	55.1	35.52	10.99	57.8	100	0	Peak

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	11	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**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	94.54	-	-	89.54	32.37	7.02	34.39	178	9	Average
2462	103.9	-	-	98.94	32.37	7.02	34.43	178	9	Peak
4923	40.8	-33.2	74	56.73	33.93	8.87	58.73	100	0	Peak
7386	42.03	-31.97	74	53.32	35.52	10.99	57.8	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2410 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 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
2410	99.96	-	-	95	32.31	6.95	34.3	113	27	Average
2410	109.82	-	-	104.86	32.31	6.95	34.3	113	27	Peak
4824	40.31	-33.69	74	56.5	33.97	8.77	58.93	100	0	Peak
7236	42.67	-47.15	89.82	53.95	35.55	10.83	57.66	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2410 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 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
2410	94.5	-	-	89.54	32.31	6.95	34.3	187	344	Average
2410	104.08	-	-	99.12	32.31	6.95	34.3	187	344	Peak
4824	39.77	-34.23	74	55.96	33.97	8.77	58.93	100	0	Peak
7236	42.14	-41.94	84.08	53.42	35.55	10.83	57.66	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	02	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2417 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
2417	104.7	-	-	99.79	32.31	6.95	34.35	150	360	Average
2417	114.83	-	-	109.92	32.31	6.95	34.35	150	360	Peak
4834	43.7	-30.3	74	59.83	33.96	8.8	58.89	100	0	Peak
7251	44.08	-29.92	74	55.38	35.55	10.83	57.68	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	02	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2417 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
2417	97.01	-	-	92.1	32.31	6.95	34.35	192	347	Average
2417	107.74	-	-	102.83	32.31	6.95	34.35	192	347	Peak
4833	42.94	-31.06	74	59.1	33.97	8.8	58.93	100	0	Peak
7251	43.24	-30.76	74	54.54	35.55	10.83	57.68	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	06	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2435 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
2435	109.5	-	-	104.53	32.33	6.99	34.35	115	25	Average
2435	118.92	-	-	113.95	32.33	6.99	34.35	115	25	Peak
4874	45.76	-28.24	74	61.82	33.95	8.82	58.83	100	0	Peak
7311	42.27	-31.73	74	53.55	35.54	10.91	57.73	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	06	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2439 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
2439	99.6	-	-	94.61	32.35	6.99	34.35	148	28	Average
2439	109.03	-	-	104.04	32.35	6.99	34.35	148	28	Peak
4874	46.22	-27.78	74	62.28	33.95	8.82	58.83	100	0	Peak
7311	42.93	-31.07	74	54.21	35.54	10.91	57.73	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	10	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2457 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
2457	105.79	-	-	100.79	32.37	7.02	34.39	118	354	Average
2457	115.75	-	-	110.75	32.37	7.02	34.39	118	354	Peak
4914	40.96	-33.04	74	56.92	33.93	8.87	58.76	100	0	Peak
7371	42.32	-31.68	74	53.63	35.52	10.96	57.79	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	10	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2456 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
2456	96.94	-	-	91.94	32.37	7.02	34.39	100	349	Average
2456	106.79	-	-	101.79	32.37	7.02	34.39	100	349	Peak
4914	44.15	-29.85	74	60.11	33.93	8.87	58.76	100	0	Peak
7371	43.44	-30.56	74	54.75	35.52	10.96	57.79	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	11	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 2464 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
2464	104.93	-	-	99.93	32.37	7.02	34.39	113	360	Average
2464	110.44	-	-	105.44	32.37	7.02	34.39	113	360	Peak
4923	40.66	-33.34	74	56.59	33.93	8.87	58.73	100	0	Peak
7386	41.95	-32.05	74	53.24	35.52	10.99	57.8	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	11	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 2464 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
2464	92.8	-	-	87.8	32.37	7.02	34.39	176	99	Average
2464	101.93	-	-	96.93	32.37	7.02	34.39	176	99	Peak
4923	41.15	-32.85	74	57.08	33.93	8.87	58.73	100	0	Peak
7386	42.74	-31.26	74	54.03	35.52	10.99	57.8	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	149	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5741 MHz is fundamental signal which can be ignored. 2. 17235 MHz is not within a restricted band, and its limit line is 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
47.01	30.05	-9.95	40	51.28	9.3	0.67	31.2	100	58	Peak
129.36	20.16	-23.34	43.5	38.5	11.62	1.14	31.1	-	-	Peak
277.86	23.9	-22.1	46	40.19	13	1.64	30.93	-	-	Peak
331.5	20.15	-25.85	46	35.12	14.17	1.86	31	-	-	Peak
474.3	20.34	-25.66	46	31.23	17.55	2.36	30.8	-	-	Peak
743.1	22.63	-23.37	46	28.75	21.24	3.04	30.4	-	-	Peak
5741	95.99	-	-	84.76	35.34	10.06	34.17	100	88	Average
5741	109.54	-	-	98.31	35.34	10.06	34.17	100	88	Peak
11490	46.76	-27.24	74	51.02	38.38	14.33	56.97	100	0	Peak
17235	48.2	-41.34	89.54	45.93	41.86	16.6	56.19	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	149	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5741 MHz is fundamental signal which can be ignored. 2. 17235 MHz is not within a restricted band, and its limit line is 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
36.48	25.19	-14.81	40	40.61	15.24	0.6	31.26	100	71	Peak
128.82	25.17	-18.33	43.5	43.51	11.62	1.14	31.1	-	-	Peak
228.18	22.6	-23.4	46	41.08	11.05	1.47	31	-	-	Peak
327.3	23.63	-22.37	46	38.76	14.03	1.84	31	-	-	Peak
474.3	20.9	-25.1	46	31.79	17.55	2.36	30.8	-	-	Peak
646.5	22.5	-23.5	46	30.01	20.17	2.83	30.51	-	-	Peak
5741	94.8	-	-	83.57	35.34	10.06	34.17	167	344	Average
5741	107.5	-	-	96.27	35.34	10.06	34.17	167	344	Peak
11490	46.21	-27.79	74	50.47	38.38	14.33	56.97	100	0	Peak
17235	48.35	-39.15	87.5	46.08	41.86	16.6	56.19	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	157	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5783 MHz is fundamental signal which can be ignored. 2. 17355 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

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
5783	95.19	-	-	83.98	35.37	10.07	34.23	110	88	Average
5783	108.07	-	-	96.83	35.37	10.07	34.2	110	88	Peak
11571	40.95	-13.05	54	44.86	38.46	14.41	56.78	100	163	Average
11571	50.58	-23.42	74	54.49	38.46	14.41	56.78	100	163	Peak
17355	49.61	-38.46	88.07	47.29	41.79	16.75	56.22	100	0	Peak

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	157	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5782 MHz is fundamental signal which can be ignored. 2. 17355 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

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
5782	93.17	-	-	81.96	35.37	10.07	34.23	113	358	Average
5782	106.15	-	-	94.94	35.37	10.07	34.23	113	358	Peak
11571	41.56	-12.44	54	45.47	38.46	14.41	56.78	117	174	Average
11571	51.05	-22.95	74	54.96	38.46	14.41	56.78	117	174	Peak
17355	49.63	-36.52	86.15	47.31	41.79	16.75	56.22	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	165	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. 17475 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

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
5825	95.25	-	-	84.01	35.4	10.11	34.27	101	5	Average
5825	108.92	-	-	97.68	35.4	10.11	34.27	101	5	Peak
11649	40.77	-13.23	54	44.35	38.51	14.52	56.61	100	169	Average
11649	52	-22	74	55.58	38.51	14.52	56.61	100	169	Peak
17475	49.4	-39.52	88.92	47.04	41.72	16.89	56.25	100	0	Peak

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	165	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5824 MHz is fundamental signal which can be ignored. 2. 17475 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

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
5824	93.09	-	-	81.85	35.4	10.11	34.27	176	339	Average
5824	106.75	-	-	95.51	35.4	10.11	34.27	176	339	Peak
11650	42.31	-11.69	54	45.89	38.51	14.52	56.61	100	199	Average
11650	55.53	-18.47	74	59.11	38.51	14.52	56.61	100	199	Peak
17475	49.53	-37.22	86.75	47.17	41.72	16.89	56.25	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	149	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5740 MHz is fundamental signal which can be ignored. 2. 17235 MHz is not within a restricted band, and its limit line is 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
5740	96.28	-	-	85.05	35.34	10.06	34.17	100	243	Average
5740	110.1	-	-	98.87	35.34	10.06	34.17	100	243	Peak
11490	48.6	-25.4	74	52.86	38.38	14.33	56.97	100	0	Peak
17235	49.85	-40.25	90.1	47.58	41.86	16.6	56.19	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	149	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5743 MHz is fundamental signal which can be ignored. 2. 17235 MHz is not within a restricted band, and its limit line is 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
5743	96.03	-	-	84.8	35.34	10.06	34.17	135	310	Average
5743	110.04	-	-	98.81	35.34	10.06	34.17	135	310	Peak
11490	48.9	-25.1	74	53.16	38.38	14.33	56.97	100	0	Peak
17235	50.35	-39.69	90.04	48.08	41.86	16.6	56.19	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	157	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5783 MHz is fundamental signal which can be ignored. 2. 17355 MHz is not within a restricted band, and its limit line is 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
5783	94.12	-	-	82.91	35.37	10.07	34.23	100	248	Average
5783	108.11	-	-	96.9	35.37	10.07	34.23	100	248	Peak
11568	50.17	-23.83	74	54.08	38.46	14.41	56.78	100	0	Peak
17355	50.15	-37.96	88.11	47.83	41.79	16.75	56.22	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	157	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5783 MHz is fundamental signal which can be ignored. 2. 17355 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

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
5783	94.7	-	-	83.49	35.37	10.07	34.23	113	295	Average
5783	108.96	-	-	97.75	35.37	10.07	34.23	113	295	Peak
11565	41.69	-12.31	54	45.66	38.44	14.41	56.82	140	195	Average
11565	54.33	-19.67	74	58.3	38.44	14.41	56.82	140	195	Peak
17355	50.14	-38.82	88.96	47.82	41.79	16.75	56.22	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	165	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5823 MHz is fundamental signal which can be ignored. 2. 17475 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

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
5823	92.87	-	-	81.63	35.4	10.11	34.27	100	188	Average
5823	107.47	-	-	96.23	35.4	10.11	34.27	100	188	Peak
11649	39.6	-14.4	54	43.18	38.51	14.52	56.61	153	152	Average
11649	52	-22	74	55.58	38.51	14.52	56.61	153	152	Peak
17475	51.57	-35.9	87.47	49.21	41.72	16.89	56.25	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	165	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5822 MHz is fundamental signal which can be ignored. 2. 17475 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

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
5822	94.16	-	-	82.92	35.4	10.11	34.27	101	314	Average
5822	107.89	-	-	96.65	35.4	10.11	34.27	101	314	Peak
11655	42.18	-11.82	54	45.71	38.52	14.52	56.57	139	197	Average
11655	54.62	-19.38	74	58.15	38.52	14.52	56.57	139	197	Peak
17475	51.29	-36.6	87.89	48.93	41.72	16.89	56.25	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT40	**Temperature :**	21~24°C
Test Channel :	151	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5757 MHz is fundamental signal which can be ignored. 2. 17265 MHz is not within a restricted band, and its limit line is 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
5757	97.56	-	-	86.34	35.36	10.06	34.2	100	245	Average
5757	108.09	-	-	96.87	35.36	10.06	34.2	100	245	Peak
11511	47.85	-26.15	74	52.05	38.4	14.35	56.95	100	0	Peak
17265	50.61	-37.48	88.09	48.31	41.84	16.66	56.2	100	0	Peak

Test Mode :	802.11n HT40	**Temperature :**	21~24°C
Test Channel :	151	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5753 MHz is fundamental signal which can be ignored. 2. 17265 MHz is not within a restricted band, and its limit line is 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
5753	97.07	-	-	85.82	35.36	10.06	34.17	135	304	Average
5753	107.48	-	-	96.23	35.36	10.06	34.17	135	304	Peak
11511	49.15	-24.85	74	53.35	38.4	14.35	56.95	100	0	Peak
17265	50.41	-37.07	87.48	48.11	41.84	16.66	56.2	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11n HT40	**Temperature :**	21~24°C
Test Channel :	159	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. 17385 MHz is not within a restricted band, and its limit line is 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
5795	96.25	-	-	85.01	35.38	10.09	34.23	100	247	Average
5795	107.12	-	-	95.88	35.38	10.09	34.23	100	247	Peak
11589	48.85	-25.15	74	52.68	38.47	14.44	56.74	100	0	Peak
17385	51.81	-35.31	87.12	49.47	41.77	16.8	56.23	100	0	Peak

Test Mode :	802.11n HT40	**Temperature :**	21~24°C
Test Channel :	159	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. 17385 MHz is not within a restricted band, and its limit line is 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
5795	95.14	-	-	83.9	35.38	10.09	34.23	172	349	Average
5795	105.54	-	-	94.3	35.38	10.09	34.23	172	349	Peak
11589	50.48	-23.52	74	54.31	38.47	14.44	56.74	100	0	Peak
17385	50.86	-34.68	85.54	48.52	41.77	16.8	56.23	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 (dBμV)	
	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.

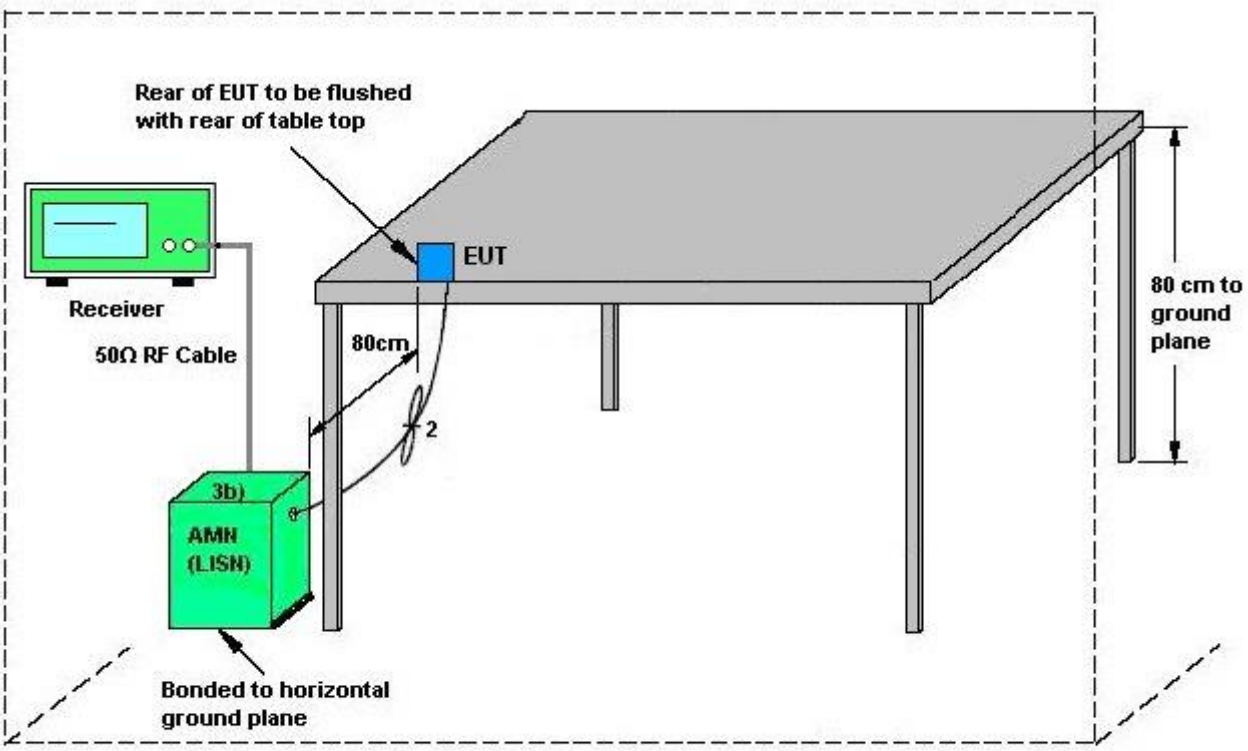
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The 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.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

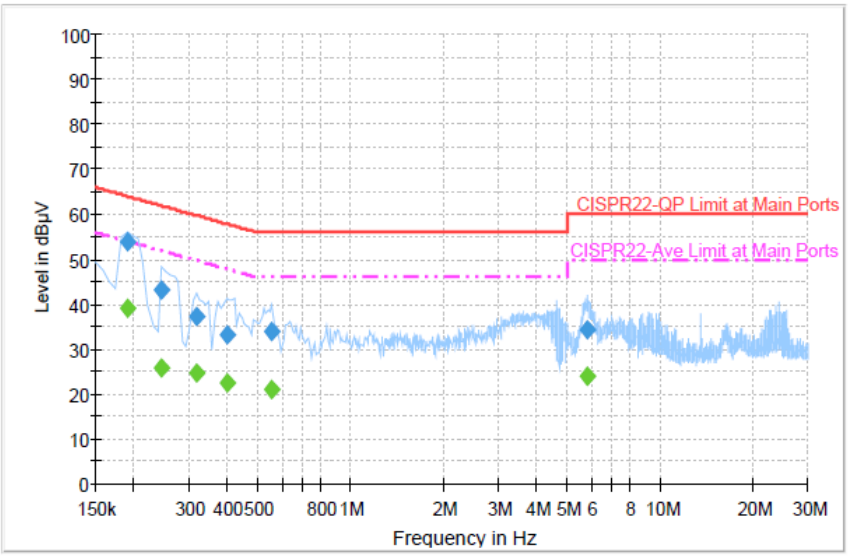
3.6.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (2.4GHz, 11b, Ch06, 1Mbps) Link + Bluetooth Link + Earphone + USB Cable (Data Link with Notebook) + Camera		



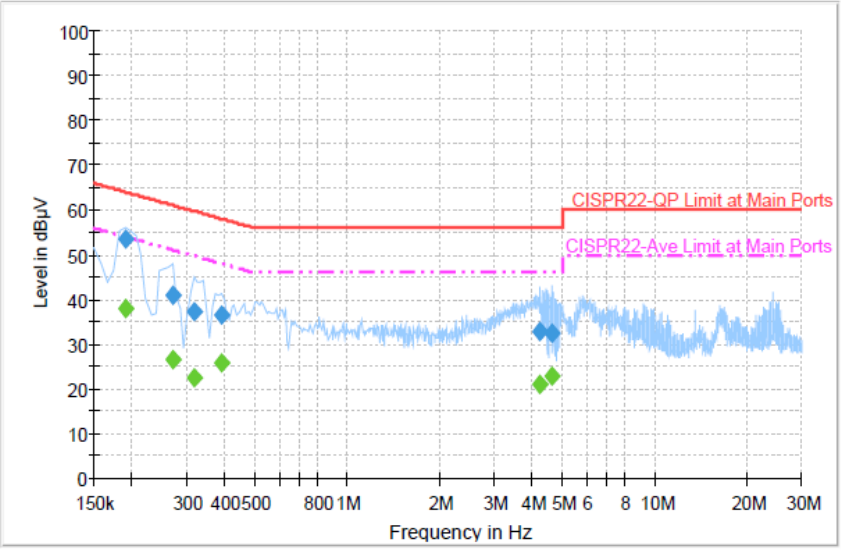
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	53.8	Off	L1	19.4	10.2	64.0
0.246000	43.1	Off	L1	19.4	18.8	61.9
0.318000	37.2	Off	L1	19.4	22.6	59.8
0.398000	33.2	Off	L1	19.5	24.7	57.9
0.558000	34.0	Off	L1	19.4	22.0	56.0
5.790000	34.5	Off	L1	19.6	25.5	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	39.0	Off	L1	19.4	15.0	54.0
0.246000	26.0	Off	L1	19.4	25.9	51.9
0.318000	24.8	Off	L1	19.4	25.0	49.8
0.398000	22.4	Off	L1	19.5	25.5	47.9
0.558000	21.2	Off	L1	19.4	24.8	46.0
5.790000	24.1	Off	L1	19.6	25.9	50.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (2.4GHz, 11b, Ch06, 1Mbps) Link + Bluetooth Link + Earphone + USB Cable (Data Link with Notebook) + Camera		



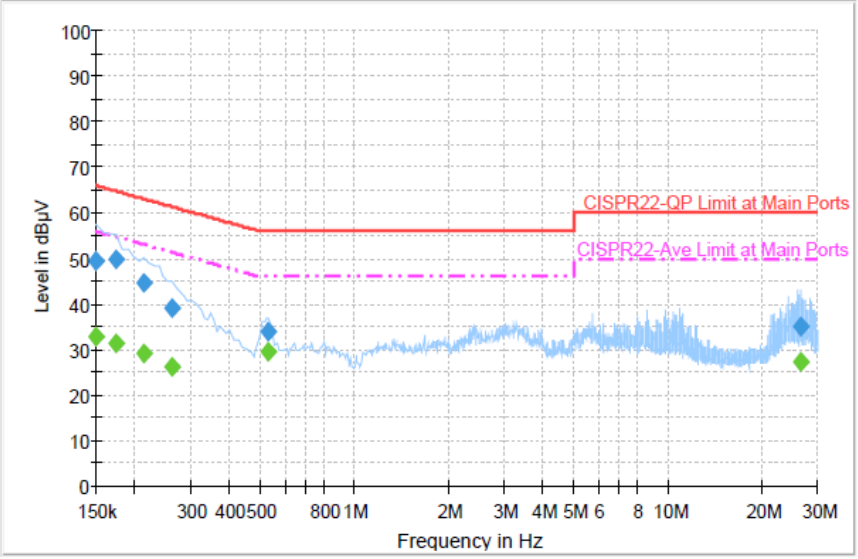
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	53.6	Off	N	19.4	10.4	64.0
0.270000	41.1	Off	N	19.4	20.0	61.1
0.318000	37.4	Off	N	19.4	22.4	59.8
0.390000	36.5	Off	N	19.4	21.6	58.1
4.246000	32.8	Off	N	19.6	23.2	56.0
4.622000	32.5	Off	N	19.7	23.5	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	38.1	Off	N	19.4	15.9	54.0
0.270000	26.6	Off	N	19.4	24.5	51.1
0.318000	22.7	Off	N	19.4	27.1	49.8
0.390000	25.9	Off	N	19.4	22.2	48.1
4.246000	20.9	Off	N	19.6	25.1	46.0
4.622000	23.1	Off	N	19.7	22.9	46.0

Test Mode :	Mode 2	**Temperature :**	20~22℃
Test Engineer :	Kai-Chun Chu	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WLAN (5GHz, 11a, Ch157, 6Mbps) Link + Bluetooth Link + Earphone + USB Cable (Data Link with Notebook) + Camera		



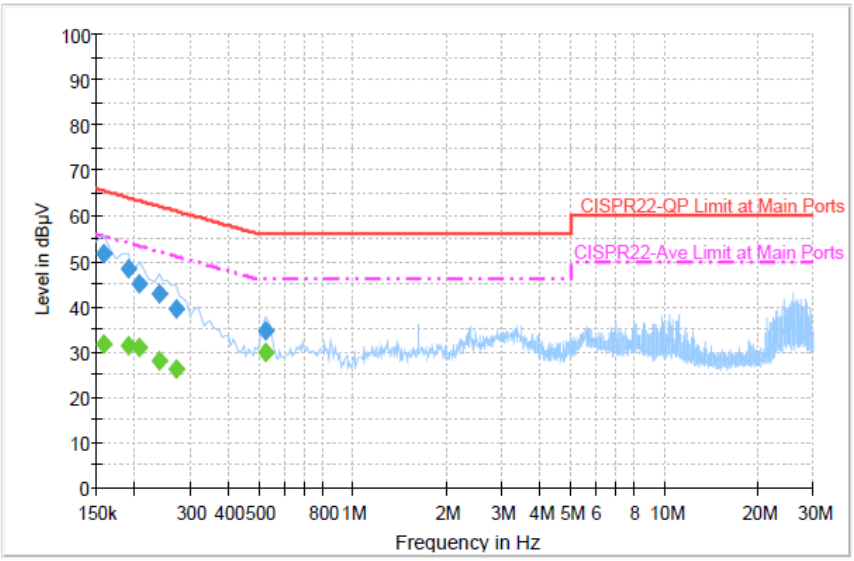
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	49.3	Off	L1	19.4	16.7	66.0
0.174000	49.7	Off	L1	19.4	15.1	64.8
0.214000	44.6	Off	L1	19.4	18.4	63.0
0.262000	39.1	Off	L1	19.4	22.3	61.4
0.534000	34.0	Off	L1	19.4	22.0	56.0
26.382000	35.2	Off	L1	20.0	24.8	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	32.9	Off	L1	19.4	23.1	56.0
0.174000	31.3	Off	L1	19.4	23.5	54.8
0.214000	29.1	Off	L1	19.4	23.9	53.0
0.262000	26.2	Off	L1	19.4	25.2	51.4
0.534000	29.7	Off	L1	19.4	16.3	46.0
26.382000	27.5	Off	L1	20.0	22.5	50.0

Test Mode :	Mode 2	Temperature :	20~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (5GHz, 11a, Ch157, 6Mbps) Link + Bluetooth Link + Earphone + USB Cable (Data Link with Notebook) + Camera		



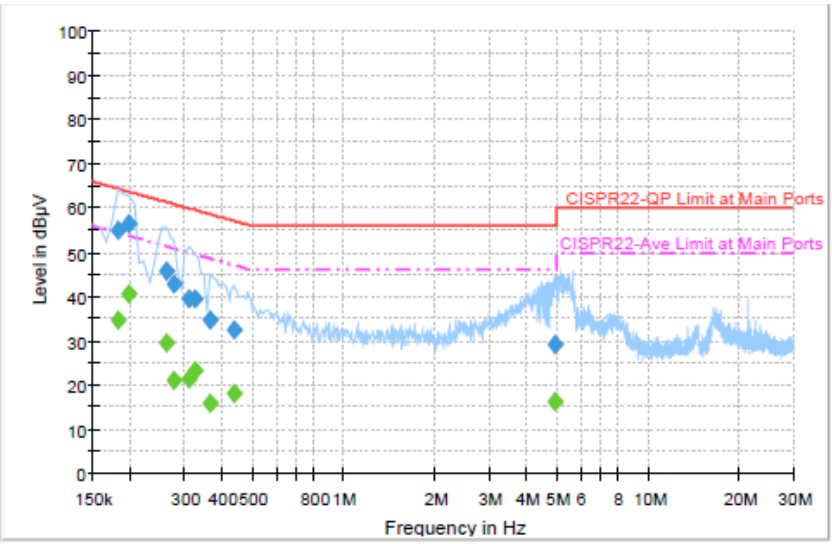
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	51.7	Off	N	19.3	13.9	65.6
0.190000	48.4	Off	N	19.4	15.6	64.0
0.206000	45.0	Off	N	19.4	18.4	63.4
0.238000	42.9	Off	N	19.5	19.3	62.2
0.270000	39.5	Off	N	19.4	21.6	61.1
0.526000	34.6	Off	N	19.4	21.4	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	31.8	Off	N	19.3	23.8	55.6
0.190000	31.5	Off	N	19.4	22.5	54.0
0.206000	31.1	Off	N	19.4	22.3	53.4
0.238000	28.2	Off	N	19.5	24.0	52.2
0.270000	26.1	Off	N	19.4	25.0	51.1
0.526000	30.0	Off	N	19.4	16.0	46.0

Test Mode :	Mode 3	**Temperature :**	20~22℃
Test Engineer :	Kai-Chun Chu	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WLAN (2.4GHz, 11b, Ch06, 1Mbps) MIMO Tx + Earphone + USB Cable (Data Link with Notebook) + Camera		



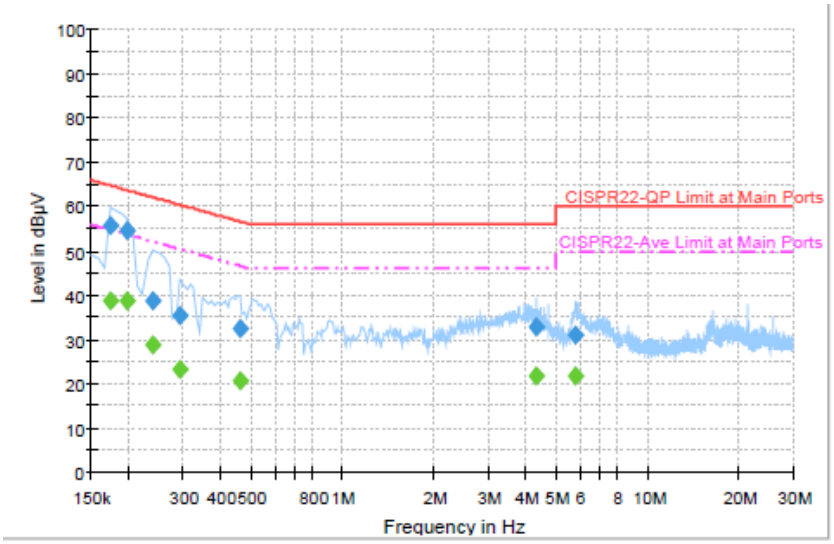
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	54.9	Off	L1	19.4	9.5	64.4
0.198000	56.3	Off	L1	19.3	7.4	63.7
0.262000	45.9	Off	L1	19.4	15.5	61.4
0.278000	42.7	Off	L1	19.3	18.2	60.9
0.310000	39.6	Off	L1	19.4	20.4	60.0
0.326000	39.6	Off	L1	19.4	20.0	59.6
0.366000	34.8	Off	L1	19.4	23.8	58.6
0.438000	32.3	Off	L1	19.4	24.8	57.1
4.934000	29.0	Off	L1	19.7	27.0	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	34.5	Off	L1	19.4	19.9	54.4
0.198000	40.6	Off	L1	19.3	13.1	53.7
0.262000	29.5	Off	L1	19.4	21.9	51.4
0.278000	21.0	Off	L1	19.3	29.9	50.9
0.310000	21.3	Off	L1	19.4	28.7	50.0
0.326000	23.2	Off	L1	19.4	26.4	49.6
0.366000	16.0	Off	L1	19.4	32.6	48.6
0.438000	18.0	Off	L1	19.4	29.1	47.1
4.934000	16.2	Off	L1	19.7	29.8	46.0

Test Mode :	Mode 3	**Temperature :**	20~22℃
Test Engineer :	Kai-Chun Chu	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	WLAN (2.4GHz, 11b, Ch06, 1Mbps) MIMO Tx + Earphone + USB Cable (Data Link with Notebook) + Camera		



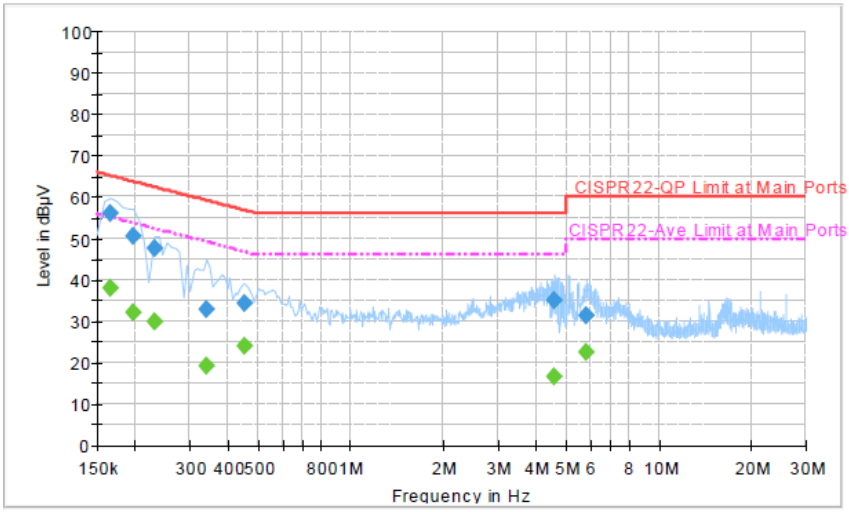
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	55.7	Off	N	19.4	9.1	64.8
0.198000	54.5	Off	N	19.3	9.2	63.7
0.238000	38.7	Off	N	19.5	23.5	62.2
0.294000	35.6	Off	N	19.4	24.8	60.4
0.462000	32.3	Off	N	19.3	24.4	56.7
4.326000	32.9	Off	N	19.6	23.1	56.0
5.806000	30.9	Off	N	19.7	29.1	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	38.9	Off	N	19.4	15.9	54.8
0.198000	38.7	Off	N	19.3	15.0	53.7
0.238000	28.8	Off	N	19.5	23.4	52.2
0.294000	23.4	Off	N	19.4	27.0	50.4
0.462000	20.6	Off	N	19.3	26.1	46.7
4.326000	21.6	Off	N	19.6	24.4	46.0
5.806000	21.7	Off	N	19.7	28.3	50.0

Test Mode :	Mode 4	**Temperature :**	20~22℃
Test Engineer :	Kai-Chun Chu	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WLAN (5GHz, 11a, Ch157, 6Mbps) MIMO Tx + Earphone + USB Cable (Data Link With Notebook) + Camera		



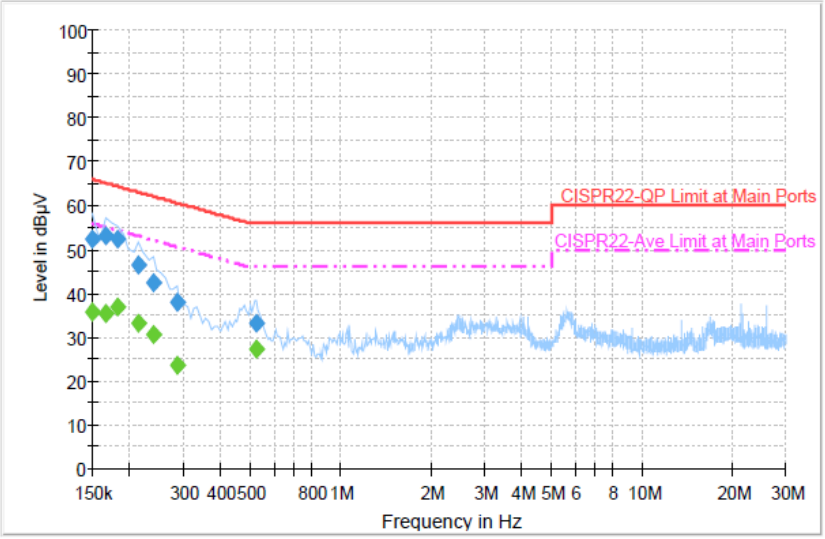
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	56.1	Off	L1	19.4	9.1	65.2
0.198000	50.4	Off	L1	19.3	13.3	63.7
0.230000	47.7	Off	L1	19.4	14.7	62.4
0.342000	32.9	Off	L1	19.4	26.3	59.2
0.454000	34.2	Off	L1	19.3	22.6	56.8
4.598000	34.9	Off	L1	19.7	21.1	56.0
5.822000	31.3	Off	L1	19.6	28.7	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	38.1	Off	L1	19.4	17.1	55.2
0.198000	32.1	Off	L1	19.3	21.6	53.7
0.230000	29.9	Off	L1	19.4	22.5	52.4
0.342000	19.2	Off	L1	19.4	30.0	49.2
0.454000	24.0	Off	L1	19.3	22.8	46.8
4.598000	16.7	Off	L1	19.7	29.3	46.0
5.822000	22.4	Off	L1	19.6	27.6	50.0

Test Mode :	Mode 4	Temperature :	20~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (5GHz, 11a, Ch157, 6Mbps) MIMO Tx + Earphone + USB Cable (Data Link With Notebook) + Camera		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	52.3	Off	N	19.4	13.7	66.0
0.166000	53.3	Off	N	19.4	11.9	65.2
0.182000	52.3	Off	N	19.4	12.1	64.4
0.214000	46.5	Off	N	19.4	16.5	63.0
0.238000	42.5	Off	N	19.5	19.7	62.2
0.286000	38.2	Off	N	19.4	22.4	60.6
0.526000	33.1	Off	N	19.4	22.9	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	35.9	Off	N	19.4	20.1	56.0
0.166000	35.6	Off	N	19.4	19.6	55.2
0.182000	36.8	Off	N	19.4	17.6	54.4
0.214000	33.3	Off	N	19.4	19.7	53.0
0.238000	30.6	Off	N	19.5	21.6	52.2
0.286000	23.7	Off	N	19.4	26.9	50.6
0.526000	27.2	Off	N	19.4	18.8	46.0

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-detachable antenna is used.

3.7.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

The EUT supports CDD mode.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is calculated as following table.

	Ant. 1 (dBi)	Ant. 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4 GHz	2.80	2.10	2.46	5.47	0.00	0.00
5 GHz	2.80	3.30	3.06	6.07	0.00	0.07

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Jul. 22, 2013~ Sep. 05, 2013	Jun. 06, 2014	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Jul. 22, 2013~ Sep. 05, 2013	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Jul. 22, 2013~ Sep. 05, 2013	Sep. 07, 2013	Conducted (TH02-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9KHz~7GHz	Sep. 03, 2012	Jul. 24, 2013~ Aug. 07, 2013	Sep. 02, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz~30GHz	Nov. 30, 2012	Jul. 24, 2013~ Aug. 07, 2013	Nov. 29, 2013	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	860004/0001	9 kHz~30 MhZ	Jul. 03, 2012	Jul. 24, 2013~ Aug. 07, 2013	Jul. 03, 2014	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz~1GHz	Oct. 06, 2012	Jul. 24, 2013~ Aug. 07, 2013	Oct. 05, 2013	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2012	Jul. 24, 2013~ Aug. 07, 2013	Aug. 21, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Sep. 28, 2012	Jul. 24, 2013~ Aug. 07, 2013	Sep. 27, 2013	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	30MHz~1GHz	Feb. 26, 2013	Jul. 24, 2013~ Aug. 07, 2013	Feb. 25, 2014	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Dec. 01, 2012	Jul. 24, 2013~ Aug. 07, 2013	Nov. 30, 2013	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	159088	DC~18G High Gain	Feb. 27, 2013	Jul. 24, 2013~ Aug. 07, 2013	Feb. 26, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Jul. 24, 2013~ Aug. 07, 2013	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	Jul. 24, 2013~ Aug. 07, 2013	N/A	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Nov. 13, 2012	Jul. 12, 2013~ Sep. 04, 2013	Nov. 12, 2013	Conduction (CO05-HY)
Two-LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 12, 2012	Jul. 12, 2013~ Sep. 04, 2013	Dec. 11, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 06, 2012	Jul. 12, 2013~ Sep. 04, 2013	Dec. 05, 2013	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Jul. 12, 2013~ Sep. 04, 2013	N/A	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**