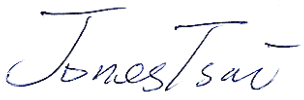
FCC RF Test Report

APPLICANT	**:**	**Mosby LLC**
EQUIPMENT	**:**	**Tablet PC**
MODEL NAME	**:**	**GL056ZE**
FCC ID	**:**	**S5R-4940**
STANDARD	**:**	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	**:**	**(DTS) Digital Transmission System**

The testing was completed on Sep. 13, 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

SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR332727-07B	Rev. 01	Initial issue of report	Oct. 08, 2013
FR332727-07B	Rev. 02	Update report for revising data of radiated spurious emission.	Oct. 16, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	Conducted Band Edges	≤ 20dBc	Pass	-
		Conducted Spurious Emission		Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.89 dB at 4923.000 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 10.20 dB at 1.622 MHz
3.7	15.203 & 15.247(b)	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	GL056ZE
FCC ID	S5R-4940
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE 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 : 21.8 dBm (0.1514 W)
802.11g : 23.2 dBm (0.2089 W)
802.11n HT20 : 23.2 dBm (0.2089 W)
<5745 MHz ~ 5825 MHz >
802.11a : 21.4 dBm (0.1380 W)
802.11n HT20 : 21.6 dBm (0.1445 W)
802.11n HT40 : 20.5 dBm (0.1122 W)</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><th></th><th>Ant. 1</th><th>Ant. 2</th></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

Remark:

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

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for 2.4GHz / 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)	**21.8**	21.6	21.6	21.6

802.11g								
Data Rate (MHz)	**6M bps**	**9M bps**	**12M bps**	**18M bps**	**24M bps**	**36M bps**	**48M bps**	**54M bps**
Peak Power (dBm)	**23.2**	23.1	23.0	23.1	23.1	23.1	23.0	23.1

2.4GHz 802.11n HT20								
Data Rate (MHz)	**MCS0**	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
Peak Power (dBm)	**23.2**	23.1	23.0	22.9	22.8	22.9	23.1	22.7
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Peak Power (dBm)	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.0

802.11a								
Data Rate (MHz)	**6M bps**	**9M bps**	**12M bps**	**18M bps**	**24M bps**	**36M bps**	**48M bps**	**54M bps**
Peak Power (dBm)	**21.4**	21.2	21.3	21.3	21.3	21.1	21.1	20.9

5GHz 802.11n HT20								
Data Rate (MHz)	**MCS0**	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
Peak Power (dBm)	**21.6**	21.5	21.4	21.5	21.4	21.5	21.4	20.7
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Peak Power (dBm)	21.4	21.3	21.3	21.5	21.4	21.4	21.5	21.4

5GHz 802.11n HT40								
Data Rate (MHz)	**MCS0**	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
Peak Power (dBm)	**20.5**	20.4	20.3	20.4	20.1	20.4	20.3	19.8
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Peak Power (dBm)	20.4	20.4	20.3	20.2	20.4	20.0	20.2	20.3

Note: MIMO Ant 1+2 is a calculated result from sum of the power MIMO Ant 1 and MIMO Ant 2.

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	**MCS0**	**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	**MCS0**	**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	**MCS0**	**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	**MCS0**	**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	**MCS0**	**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	**MCS0**	**2**	**1/2/6/10/11**
Note: The **N_{TX}** =2 means 2 antenna ports simultaneously transmit during test.					

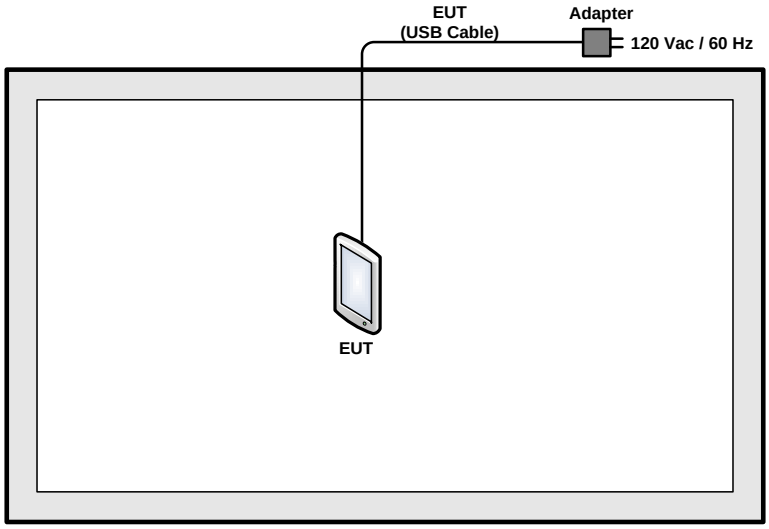
<5GHz>

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	**MCS0**	**2**	**149/157/165**
		802.11n HT40	**MCS0**	**2**	**151/159**
	Output Power	**802.11a**	**6 Mbps**	**2**	**149/157/165**
		802.11n HT20	**MCS0**	**2**	**149/157/165**
		802.11n HT40	**MCS0**	**2**	**151/159**
	Conducted Band Edge	**802.11a**	**6 Mbps**	**2**	**149/165**
		802.11n HT20	**MCS0**	**2**	**149/165**
		802.11n HT40	**MCS0**	**2**	**151/159**
	Conducted Spurious Emission	**802.11a**	**6 Mbps**	**2**	**149/157/165**
		802.11n HT20	**MCS0**	**2**	**149/157/165**
		802.11n HT40	**MCS0**	**2**	**151/159**
Radiated TCs	**Radiated Spurious Emission**	**802.11a**	**6 Mbps**	**2**	**149/157/165**
		802.11n HT20	**MCS0**	**2**	**149/157/165**
		802.11n HT40	**MCS0**	**2**	**151/159**
Note: The **N_{TX}** =2 means 2 antenna ports simultaneously transmit during test.					

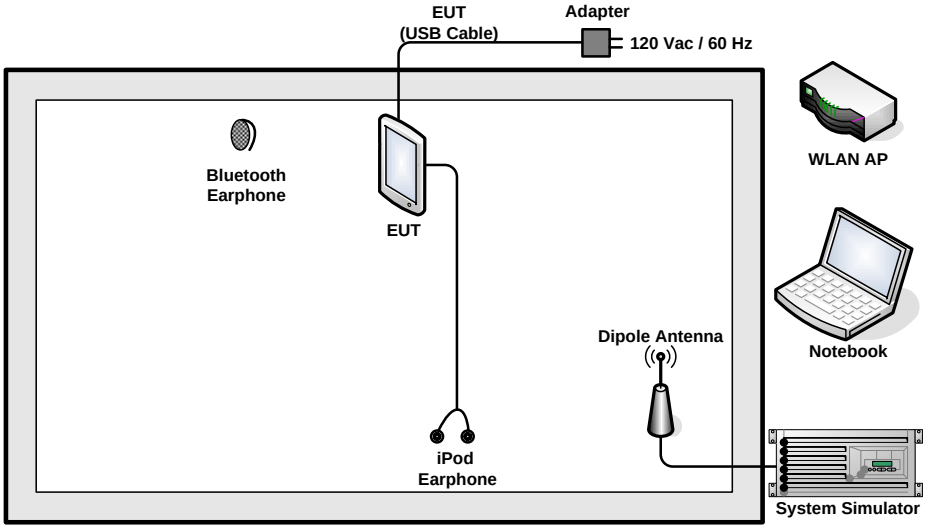
Test Cases	
AC Conducted Emission	Mode 1 : WCDMA Band II Idle + Bluetooth Link + WLAN (2.4GHz, 11n HT20, Ch06, MCS0) Link + H Pattern + Earphone + USB Cable (Charging from Adapter) Mode 2 : WCDMA Band II Idle + Bluetooth Link + WLAN (5GHz, 11n HT20, Ch157, MCS0) Link + H Pattern + Earphone + USB Cable (Charging from Adapter) Mode 3 : WCDMA Band II Idle + WLAN (2.4GHz, 11n HT20, Ch06, MCS0) MIMO Tx + H Pattern + Earphone + USB Cable (Charging from Adapter) Mode 4 : WCDMA Band II Idle + WLAN (5GHz, 11n HT20, Ch157, MCS0) MIMO Tx + H Pattern + Earphone + USB Cable (Charging from Adapter)
Remark: The worst case of conducted emission is mode 3.	

2.4 Connection Diagram of Test System

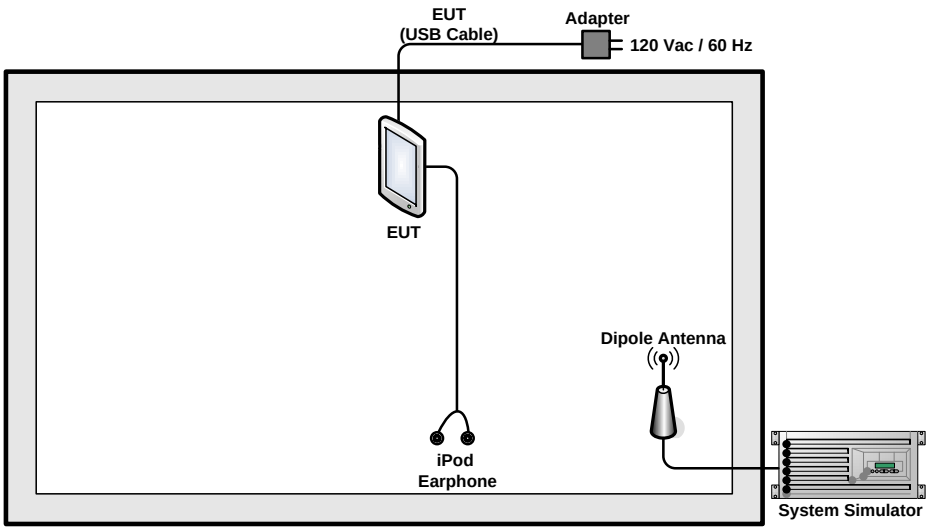
<WLAN Tx Mode>



<AC Conducted Emission Mode>



<AC Conducted Emission Mode for MIMO Tx>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	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.	iPod Earphone	Apple	N/A	N/A	Unshielded, 1.0 m	N/A
6.	Adapter	Foxlink	A02710	Verification	N/A	N/A

2.6 EUT Operation Test Setup

For WLAN function, programmed RF utility, “ADB” installed in the notebook make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

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 Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

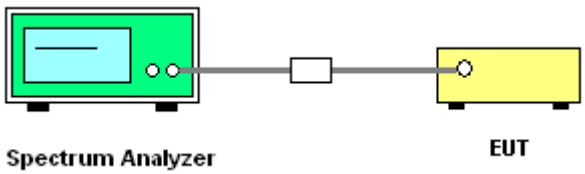
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 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. Measure and record the results in the test report.

3.1.4 Test Setup



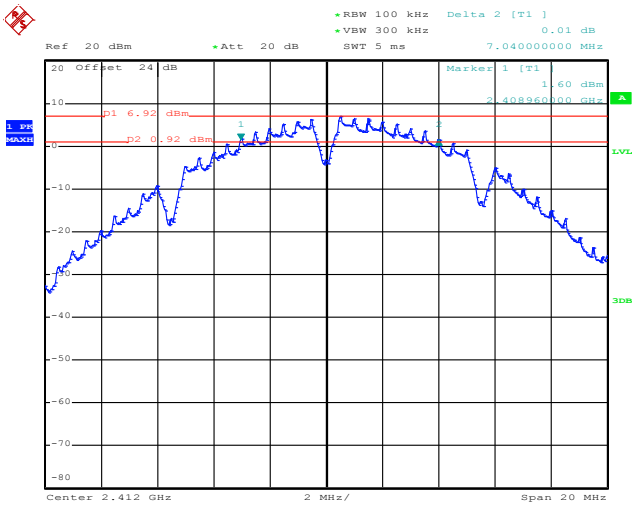
3.1.5 Test Result of 6dB Bandwidth

Test Band :	2.4GHz + 5GHz band 4	Temperature :	21~25℃
Test Engineer :	Reece Li	Relative Humidity :	51~54%

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	6dB Bandwidth (MHz)		6dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant1	Ant2		
11b	1Mbps	2	1	2412	7.52	7.04	0.50	Pass
11b	1Mbps	2	6	2437	7.12	7.56	0.50	Pass
11b	1Mbps	2	11	2462	7.08	7.08	0.50	Pass
11g	6Mbps	2	1	2412	15.68	15.68	0.50	Pass
11g	6Mbps	2	2	2417	15.68	15.68	0.50	Pass
11g	6Mbps	2	6	2437	16.08	16.32	0.50	Pass
11g	6Mbps	2	10	2457	16.06	15.72	0.50	Pass
11g	6Mbps	2	11	2462	16.26	15.72	0.50	Pass
HT20	MCS0	2	1	2412	16.36	16.28	0.50	Pass
HT20	MCS0	2	2	2417	16.00	15.92	0.50	Pass
HT20	MCS0	2	6	2437	17.20	17.16	0.50	Pass
HT20	MCS0	2	10	2457	17.18	15.96	0.50	Pass
HT20	MCS0	2	11	2462	17.18	16.34	0.50	Pass

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	6dB Bandwidth (MHz)		6dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant. 1	Ant. 2		
11a	6Mbps	2	149	5745	16.02	16.28	0.50	Pass
11a	6Mbps	2	157	5785	16.00	15.68	0.50	Pass
11a	6Mbps	2	165	5825	16.04	15.76	0.50	Pass
HT20	MCS0	2	149	5745	16.80	16.50	0.50	Pass
HT20	MCS0	2	157	5785	16.90	16.50	0.50	Pass
HT20	MCS0	2	165	5825	16.80	16.52	0.50	Pass
HT40	MCS0	2	151	5755	36.32	35.28	0.50	Pass
HT40	MCS0	2	159	5795	36.00	35.36	0.50	Pass

Minimum 6dB 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.

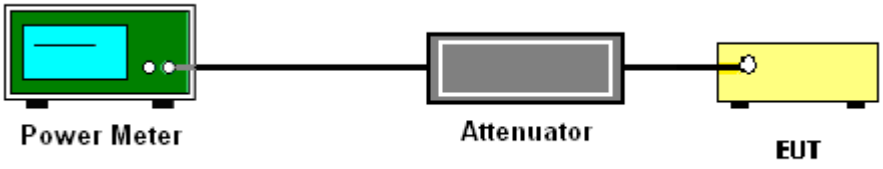
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 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 :	21~25℃
Test Engineer :	Reece Li	Relative Humidity :	51~54%

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	18.8	18.6	21.7	30.00	2.46	Pass
11b	1Mbps	2	6	2437	18.8	18.7	21.8	30.00	2.46	Pass
11b	1Mbps	2	11	2462	18.8	18.3	21.6	30.00	2.46	Pass
11g	6Mbps	2	1	2412	16.5	16.9	19.7	30.00	2.46	Pass
11g	6Mbps	2	2	2417	17.1	18.0	20.6	30.00	2.46	Pass
11g	6Mbps	2	6	2437	20.4	20.0	23.2	30.00	2.46	Pass
11g	6Mbps	2	10	2457	18.1	19.0	21.5	30.00	2.46	Pass
11g	6Mbps	2	11	2462	16.3	16.3	19.3	30.00	2.46	Pass
HT20	MCS0	2	1	2412	11.8	13.0	15.4	30.00	2.46	Pass
HT20	MCS0	2	2	2417	17.7	18.7	21.3	30.00	2.46	Pass
HT20	MCS0	2	6	2437	20.4	20.0	23.2	30.00	2.46	Pass
HT20	MCS0	2	10	2457	18.4	18.9	21.6	30.00	2.46	Pass
HT20	MCS0	2	11	2462	13.0	12.3	15.6	30.00	2.46	Pass

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	18.6	18.2	21.4	30.00	3.06	Pass
11a	6Mbps	2	157	5785	18.6	18.0	21.3	30.00	3.06	Pass
11a	6Mbps	2	165	5825	18.5	17.8	21.2	30.00	3.06	Pass
HT20	MCS0	2	149	5745	18.7	18.3	21.5	30.00	3.06	Pass
HT20	MCS0	2	157	5785	19.0	18.2	21.6	30.00	3.06	Pass
HT20	MCS0	2	165	5825	18.9	17.8	21.4	30.00	3.06	Pass
HT40	MCS0	2	151	5755	17.5	17.5	20.5	30.00	3.06	Pass
HT40	MCS0	2	159	5795	17.8	16.9	20.4	30.00	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 :	21~25℃
Test Engineer :	Reece Li	Relative Humidity :	51~54%

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)		
					Ant. 1	Ant. 2	Sum Power
11b	1Mbps	2	1	2412	16.0	16.0	19.0
11b	1Mbps	2	6	2437	16.0	16.0	19.0
11b	1Mbps	2	11	2462	16.0	15.5	18.7
11g	6Mbps	2	1	2412	10.3	10.6	13.5
11g	6Mbps	2	2	2417	11.2	12.1	14.7
11g	6Mbps	2	6	2437	15.0	15.0	18.0
11g	6Mbps	2	10	2457	12.2	12.9	15.5
11g	6Mbps	2	11	2462	10.0	10.3	13.1
HT20	MCS0	2	1	2412	5.4	6.7	9.1
HT20	MCS0	2	2	2417	11.4	12.6	15.0
HT20	MCS0	2	6	2437	15.0	15.0	18.0
HT20	MCS0	2	10	2457	12.2	12.6	15.4
HT20	MCS0	2	11	2462	6.5	6.2	9.4

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)		
					Ant. 1	Ant. 2	Sum Power
11a	6Mbps	2	149	5745	13.0	13.0	16.0
11a	6Mbps	2	157	5785	13.0	12.9	16.0
11a	6Mbps	2	165	5825	13.0	12.7	15.9
HT20	MCS0	2	149	5745	13.0	12.9	15.9
HT20	MCS0	2	157	5785	13.0	12.8	15.9
HT20	MCS0	2	165	5825	12.9	12.6	15.7
HT40	MCS0	2	151	5755	13.0	13.0	16.0
HT40	MCS0	2	159	5795	13.0	12.7	15.9

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

The measuring equipment is listed in the section 4 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.

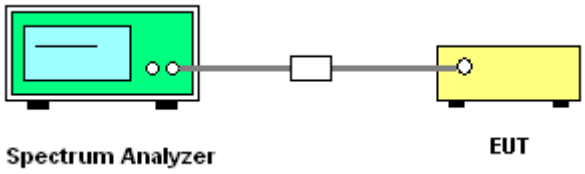
   If measurements performed using method (2) plus 10 log (N) exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

   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 :	21~25℃
Test Engineer :	Reece Li	Relative Humidity :	51~54%

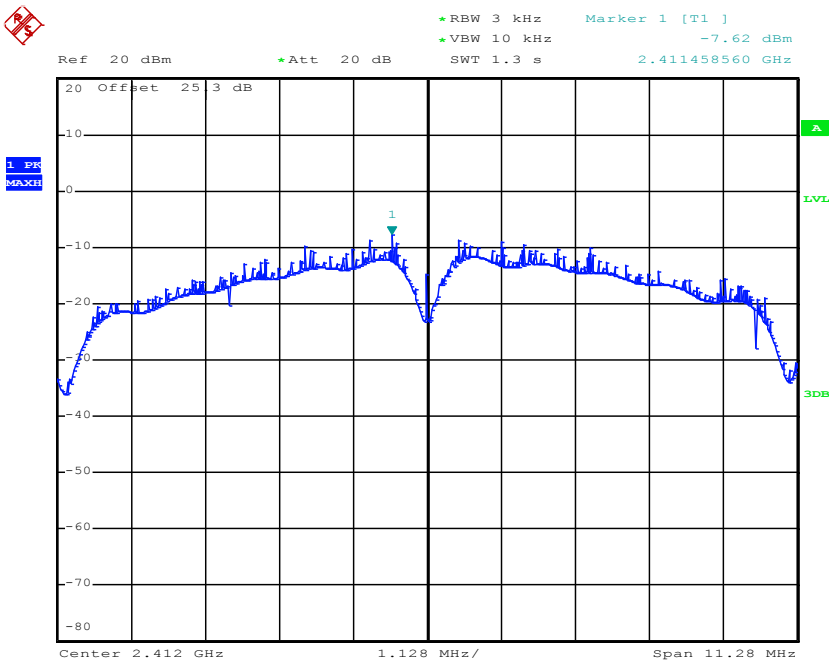
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Peak Power Density (dBm/3kHz)			Max. Limit (dBm/3kHz)	DG (dBi)	Pass/Fail
					Ant. 1	Ant. 2	Worst +10log(2)			
11b	1Mbps	2	1	2412	-7.62	-7.72	-4.61	8.00	5.47	Pass
11b	1Mbps	2	6	2437	-9.67	-8.17	-5.16	8.00	5.47	Pass
11b	1Mbps	2	11	2462	-8.66	-8.92	-5.65	8.00	5.47	Pass
11g	6Mbps	2	1	2412	-16.18	-15.58	-12.57	8.00	5.47	Pass
11g	6Mbps	2	2	2417	-16.25	-15.18	-12.17	8.00	5.47	Pass
11g	6Mbps	2	6	2437	-9.00	-11.64	-5.99	8.00	5.47	Pass
11g	6Mbps	2	10	2457	-15.14	-14.14	-11.13	8.00	5.47	Pass
11g	6Mbps	2	11	2462	-16.35	-15.84	-12.83	8.00	5.47	Pass
HT20	MCS0	2	1	2412	-21.56	-19.40	-16.39	8.00	5.47	Pass
HT20	MCS0	2	2	2417	-15.42	-14.19	-11.18	8.00	5.47	Pass
HT20	MCS0	2	6	2437	-11.29	-8.44	-5.43	8.00	5.47	Pass
HT20	MCS0	2	10	2457	-15.14	-14.74	-11.73	8.00	5.47	Pass
HT20	MCS0	2	11	2462	-20.93	-19.37	-16.36	8.00	5.47	Pass

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

Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Peak Power Density (dBm/3kHz)			Max. Limit (dBm/3kHz)	DG (dBi)	Pass/Fail
					Ant. 1	Ant. 2	Worst +10log(2)			
11a	6Mbps	2	149	5745	-14.17	-14.71	-11.16	7.93	6.07	Pass
11a	6Mbps	2	157	5785	-14.74	-14.64	-11.63	7.93	6.07	Pass
11a	6Mbps	2	165	5825	-14.94	-15.78	-11.93	7.93	6.07	Pass
HT20	MCS0	2	149	5745	-15.17	-12.96	-9.95	7.93	6.07	Pass
HT20	MCS0	2	157	5785	-13.87	-14.12	-10.86	7.93	6.07	Pass
HT20	MCS0	2	165	5825	-13.39	-11.55	-8.54	7.93	6.07	Pass
HT40	MCS0	2	151	5755	-14.51	-15.75	-11.50	7.93	6.07	Pass
HT40	MCS0	2	159	5795	-15.30	-15.48	-12.29	7.93	6.07	Pass

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

Worst Case Power Density (dBm/3kHz)



Date: 5.SEP.2013 16:41:21

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

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

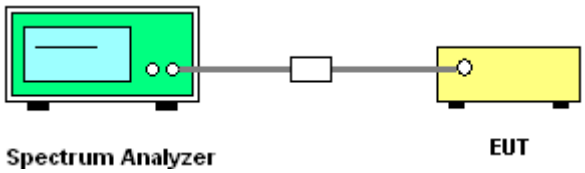
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 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



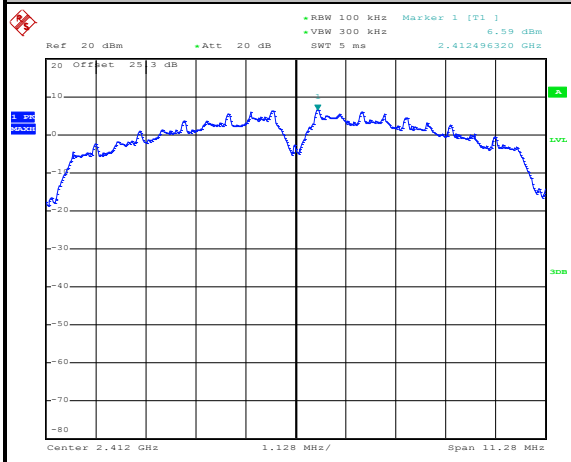
3.4.5 Test Result of Conducted Band Edges and Spurious Emission

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

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Reece Li

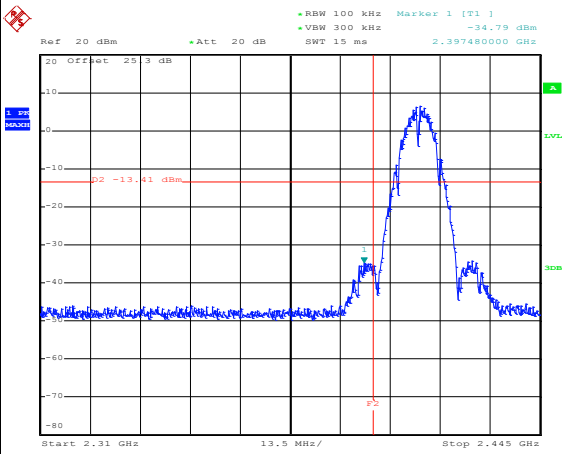
WLAN 802.11b Channel 01

100kHz PSD reference Level



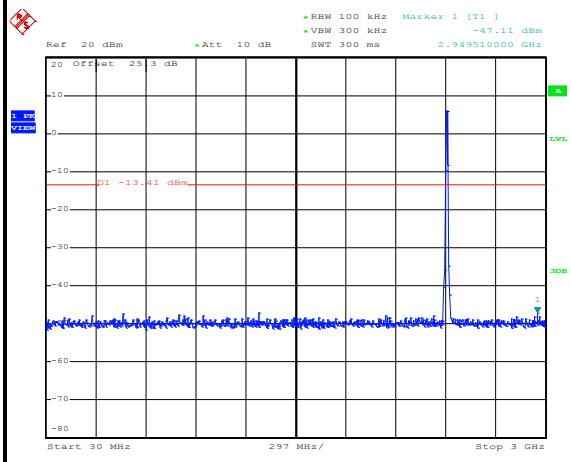
Date: 5.SEP.2013 16:41:31

Low Channel Plot



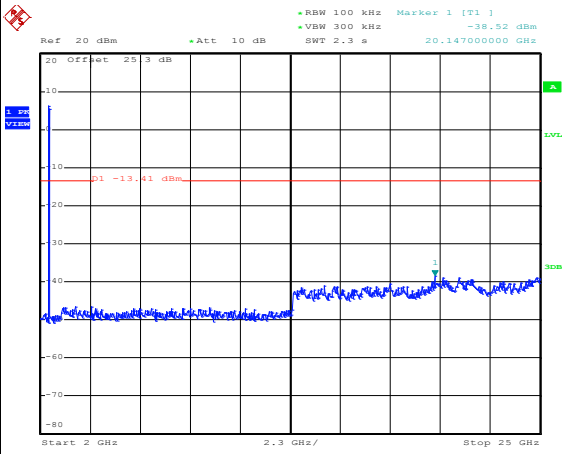
Date: 5.SEP.2013 16:41:47

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:02:01

Spurious Emission 2GHz~25GHz

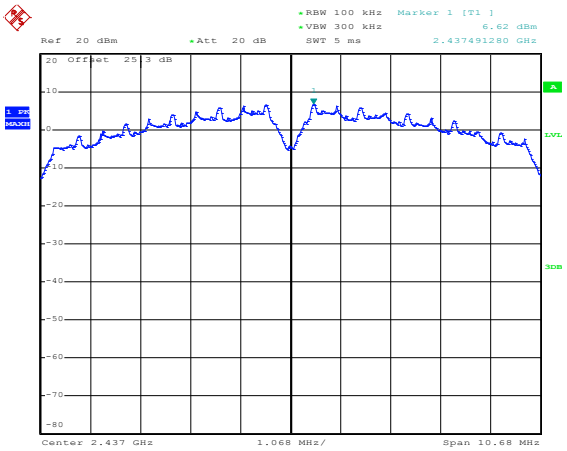


Date: 5.SEP.2013 19:02:19

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Reece Li

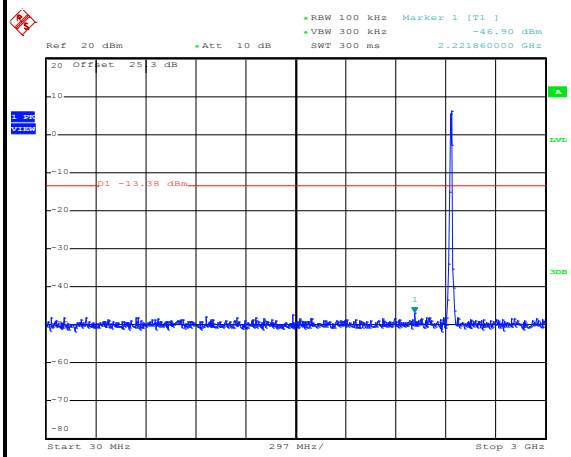
WLAN 802.11b Channel 06

100kHz PSD reference Level



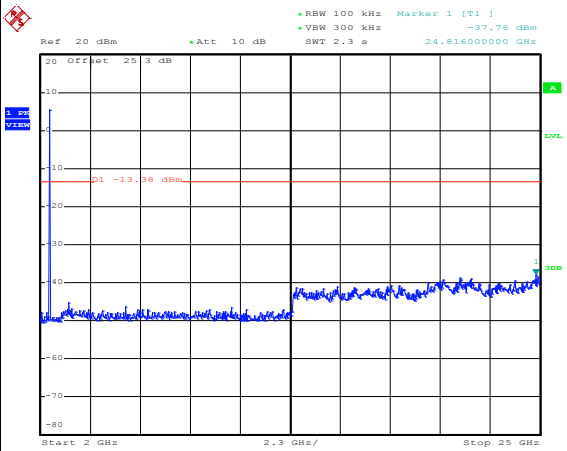
Date: 5.SEP.2013 16:52:22

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:07:03

Spurious Emission 2GHz~25GHz

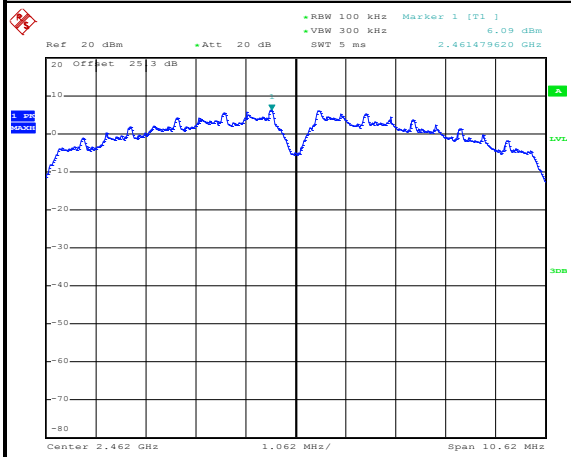


Date: 5.SEP.2013 19:07:22

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Reece Li

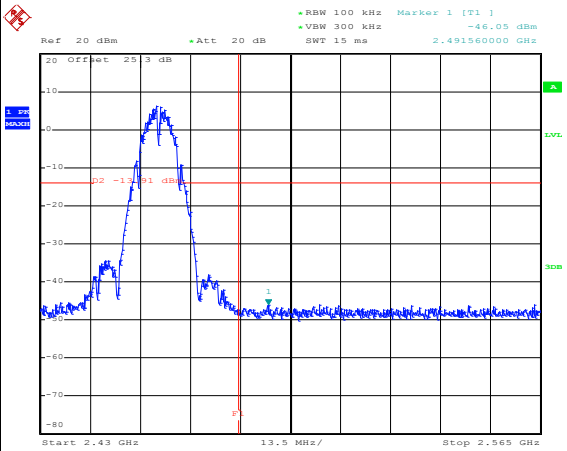
WLAN 802.11b Channel 11

100kHz PSD reference Level



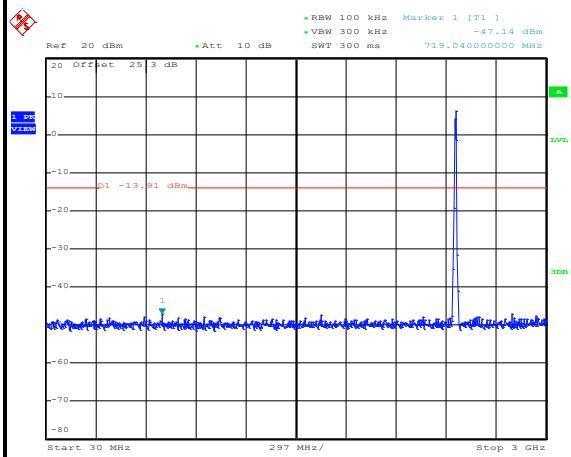
Date: 5.SEP.2013 17:02:27

High Channel Plot



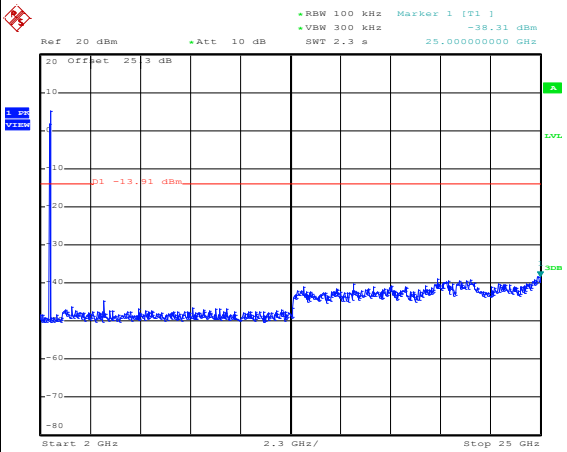
Date: 5.SEP.2013 17:02:47

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:11:49

Spurious Emission 2GHz~25GHz

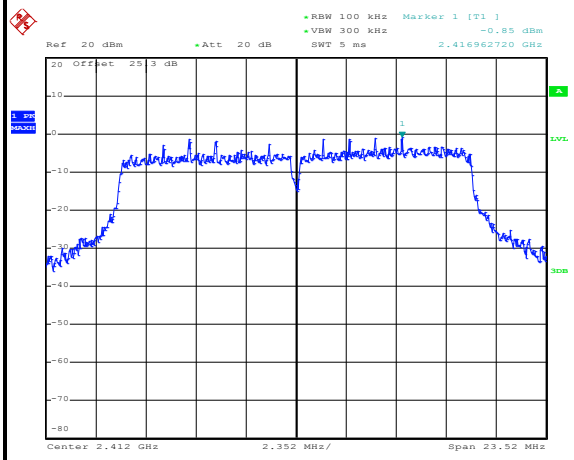


Date: 5.SEP.2013 19:12:08

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Reece Li

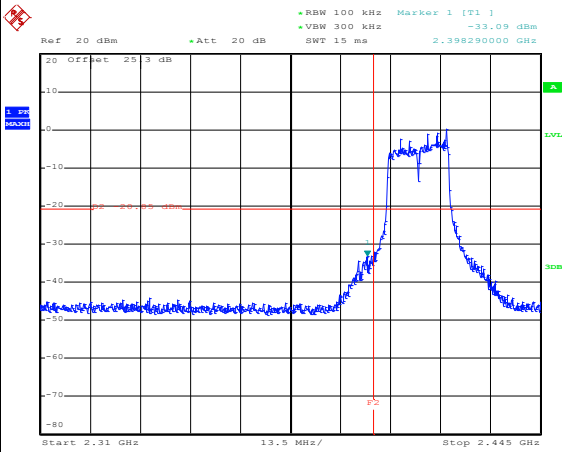
WLAN 802.11g Channel 01

100kHz PSD reference Level



Date: 5.SEP.2013 19:33:52

Low Channel Plot



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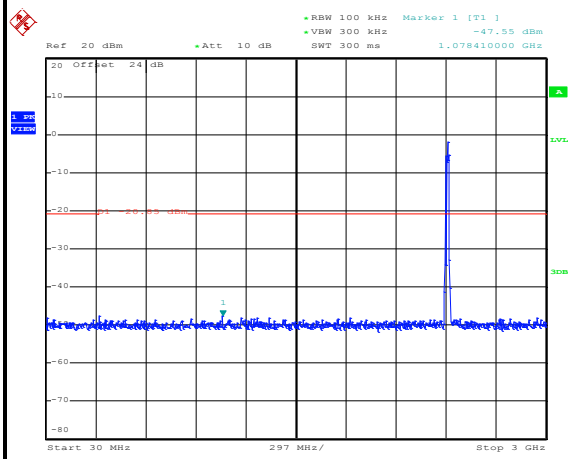
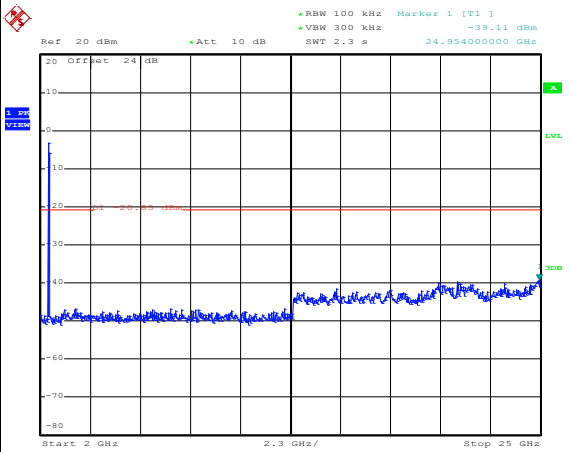
Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:35:03

Spurious Emission 2GHz~25GHz

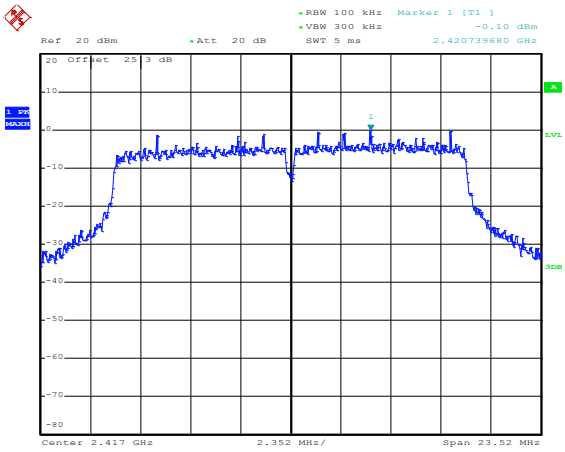


Date: 5.SEP.2013 19:35:22

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz	**Relative Humidity :**	51~54%
Test Channel :	02	**Test Engineer :**	Reece Li

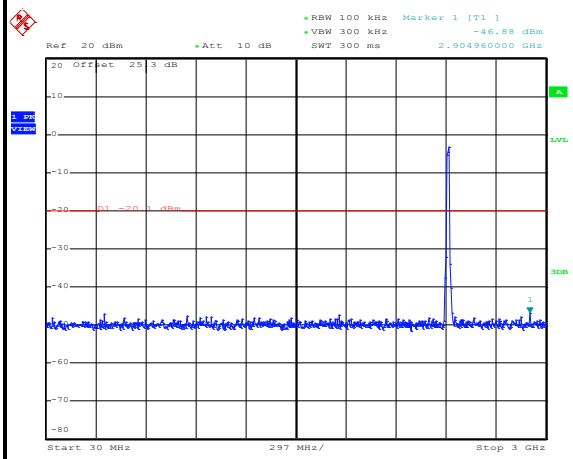
WLAN 802.11g Channel 02

100kHz PSD reference Level



Date: 5.SEP.2013 19:21:11

Spurious Emission 30MHz~3GHz



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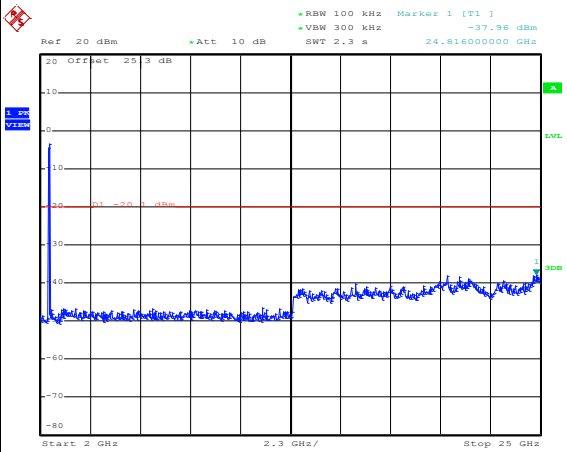
Spurious Emission 2GHz~25GHz

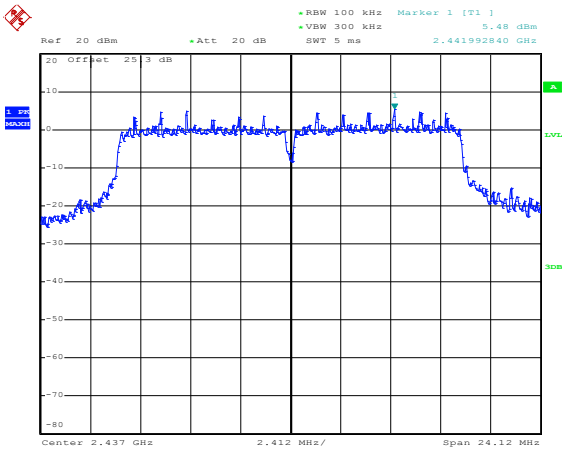


Date: 5.SEP.2013 19:21:53

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Reece Li

WLAN 802.11g Channel 06

100kHz PSD reference Level



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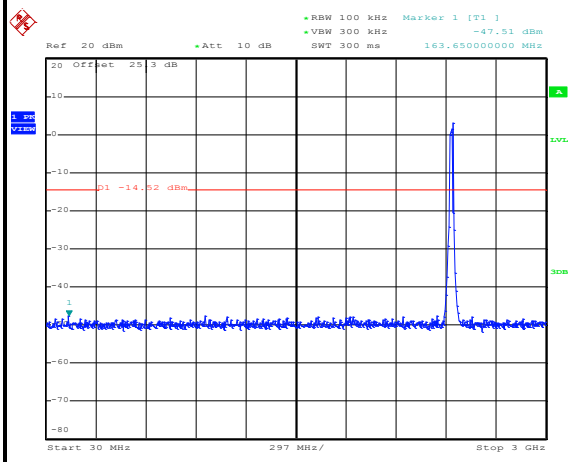
Spurious Emission 30MHz~3GHz



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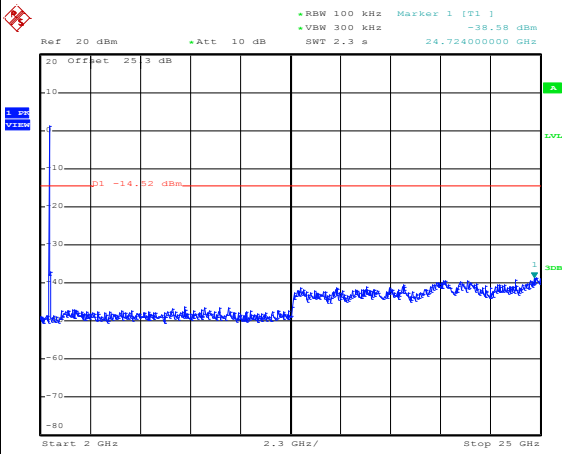
Spurious Emission 2GHz~25GHz

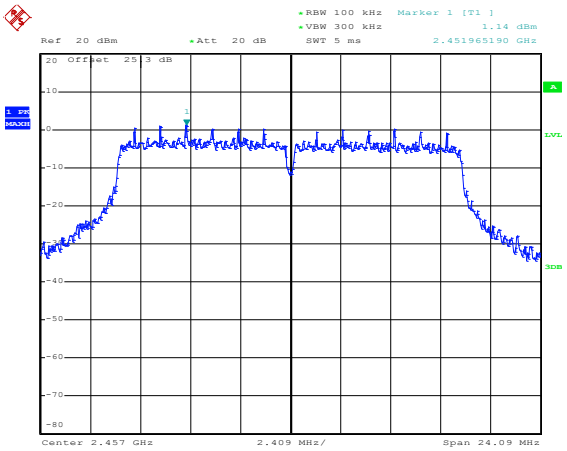


Date: 5.SEP.2013 18:51:04

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz	**Relative Humidity :**	51~54%
Test Channel :	10	**Test Engineer :**	Reece Li

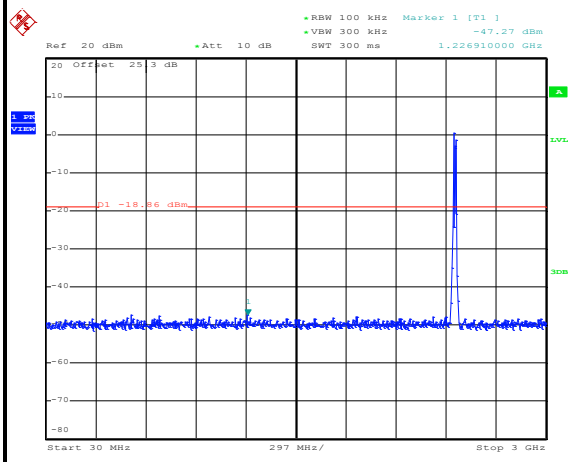
WLAN 802.11g Channel 10

100kHz PSD reference Level



Date: 5.SEP.2013 17:26:14

Spurious Emission 30MHz~3GHz



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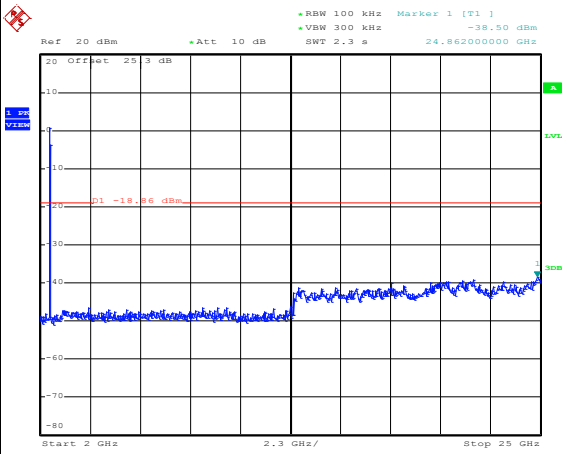
Spurious Emission 2GHz~25GHz

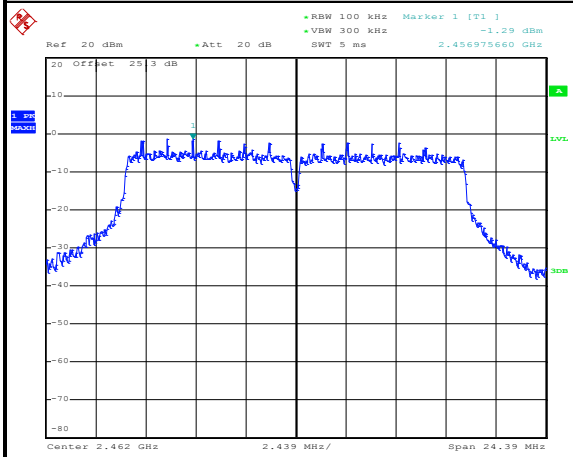


Date: 5.SEP.2013 18:55:26

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Reece Li

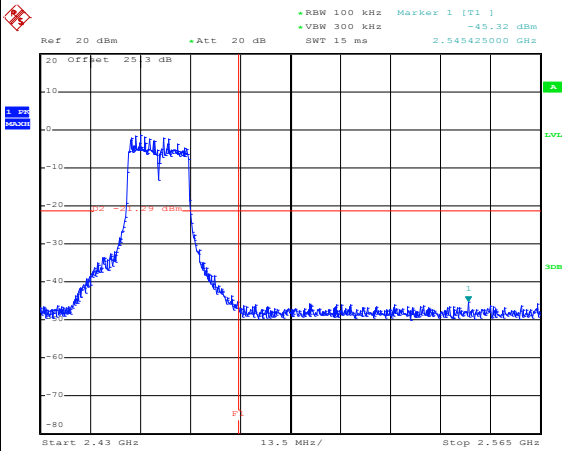
WLAN 802.11g Channel 11

100kHz PSD reference Level



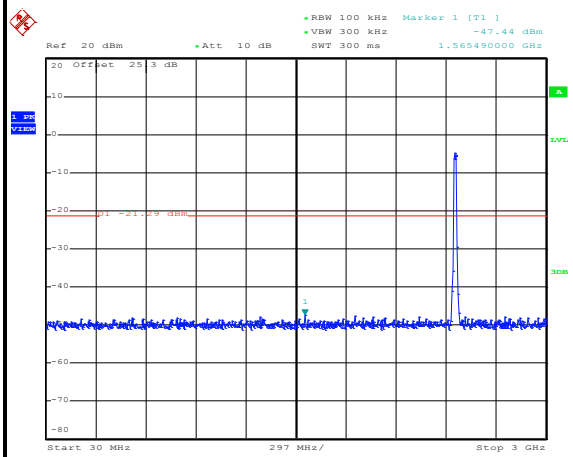
Date: 5.SEP.2013 17:11:14

High Channel Plot



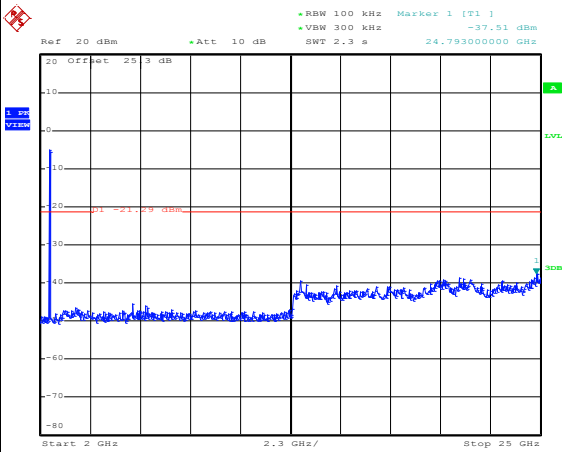
Date: 5.SEP.2013 17:11:31

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 18:56:16

Spurious Emission 2GHz~25GHz

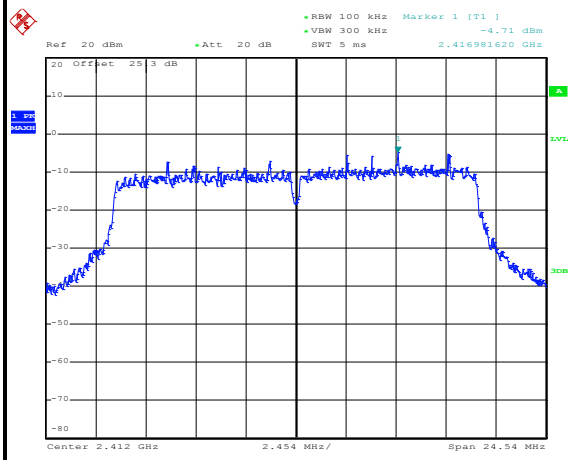


Date: 5.SEP.2013 18:56:35

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Reece Li

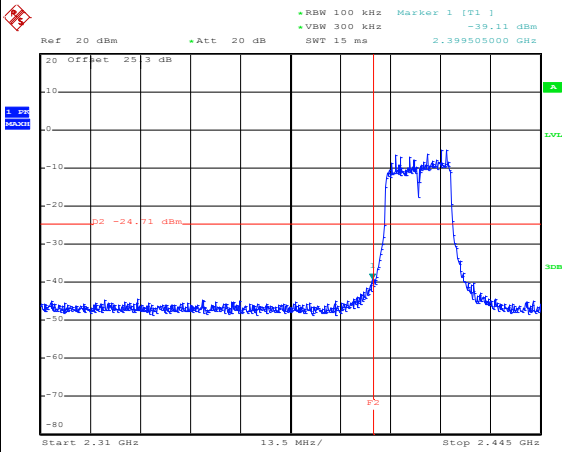
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



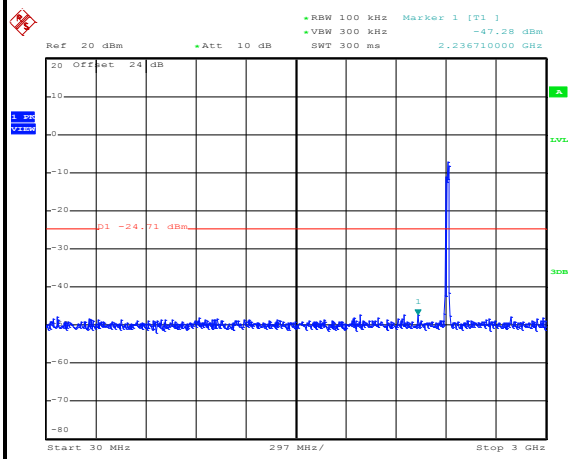
Date: 5.SEP.2013 19:39:34

Low Channel Plot



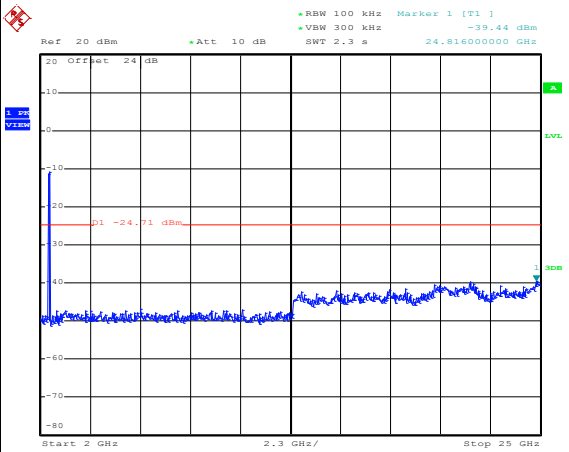
Date: 5.SEP.2013 19:39:52

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:40:14

Spurious Emission 2GHz~25GHz

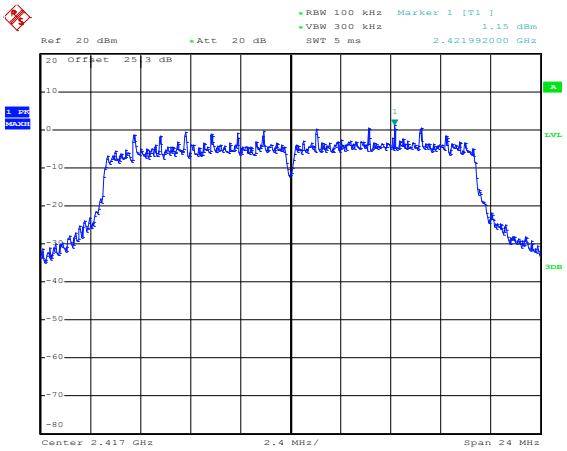


Date: 5.SEP.2013 19:40:32

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz	**Relative Humidity :**	51~54%
Test Channel :	02	**Test Engineer :**	Reece Li

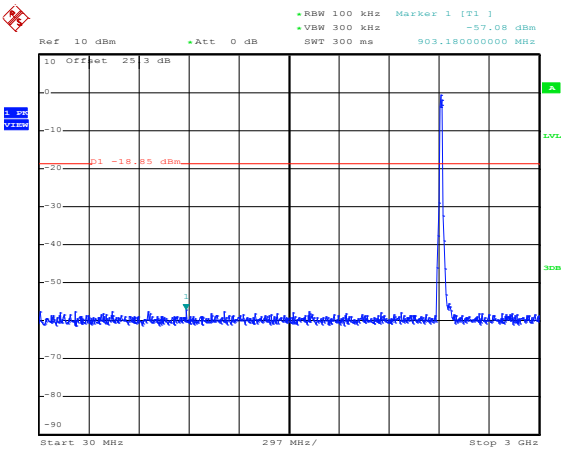
WLAN 802.11n HT20 Channel 02

100kHz PSD reference Level



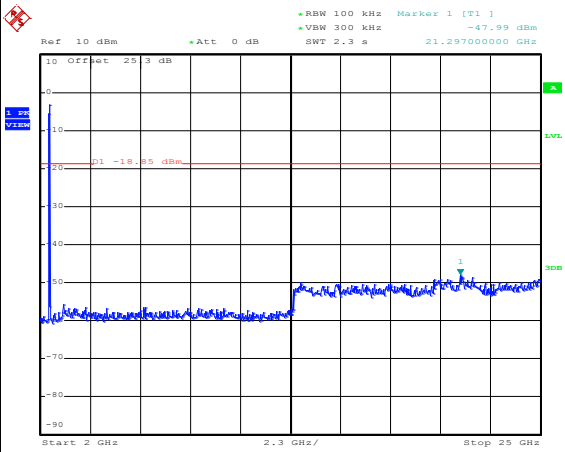
Date: 13.SEP.2013 13:38:37

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 13:39:01

Spurious Emission 2GHz~25GHz

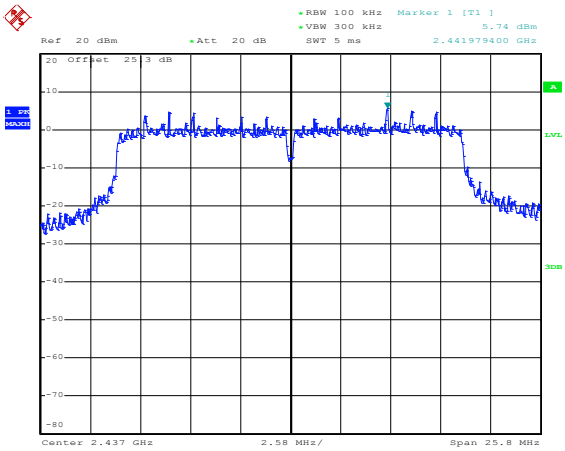


Date: 13.SEP.2013 13:39:19

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Reece Li

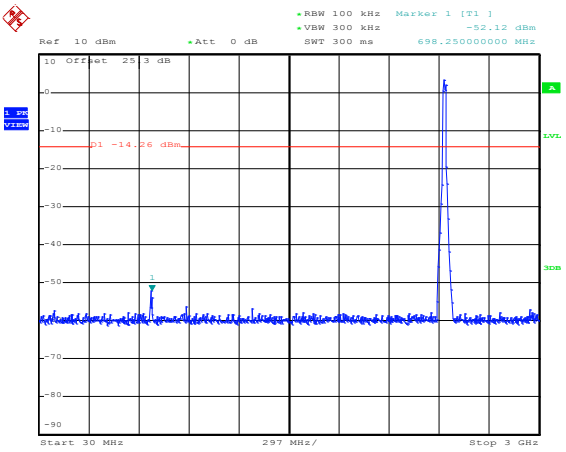
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



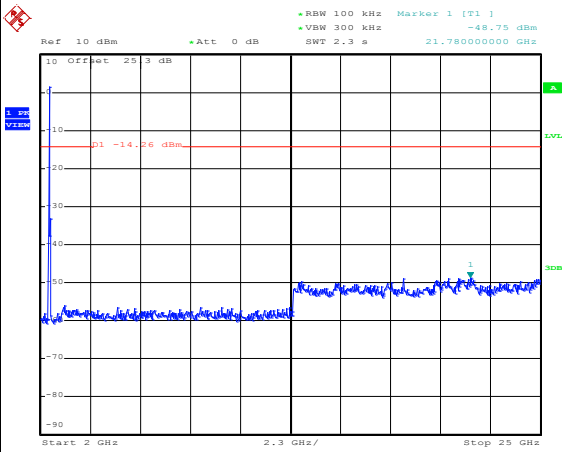
Date: 13.SEP.2013 13:45:47

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 13:46:10

Spurious Emission 2GHz~25GHz

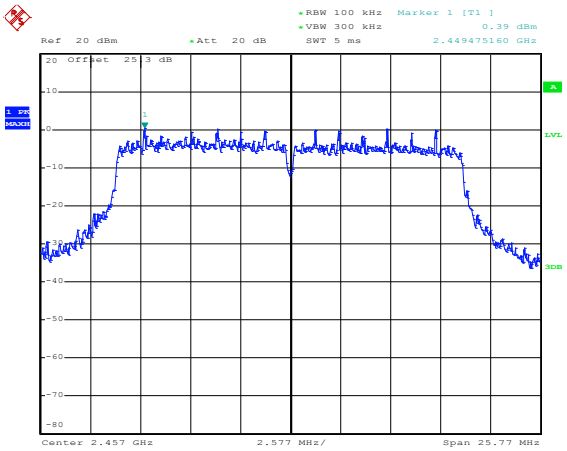


Date: 13.SEP.2013 13:46:29

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz	**Relative Humidity :**	51~54%
Test Channel :	10	**Test Engineer :**	Reece Li

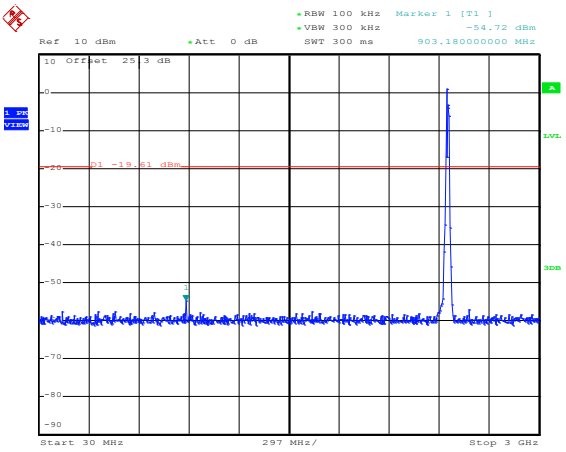
WLAN 802.11n HT20 Channel 10

100kHz PSD reference Level



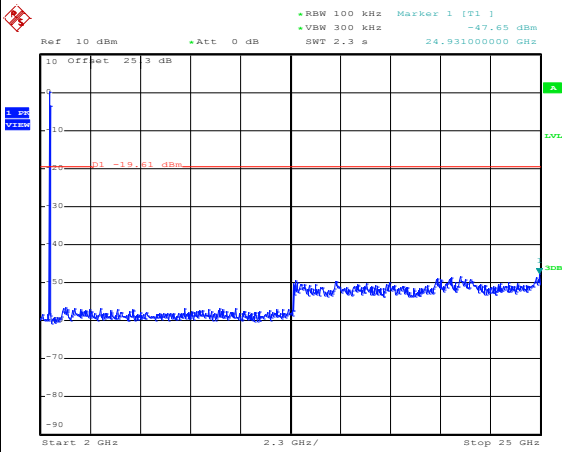
Date: 13.SEP.2013 13:59:52

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 14:01:02

Spurious Emission 2GHz~25GHz

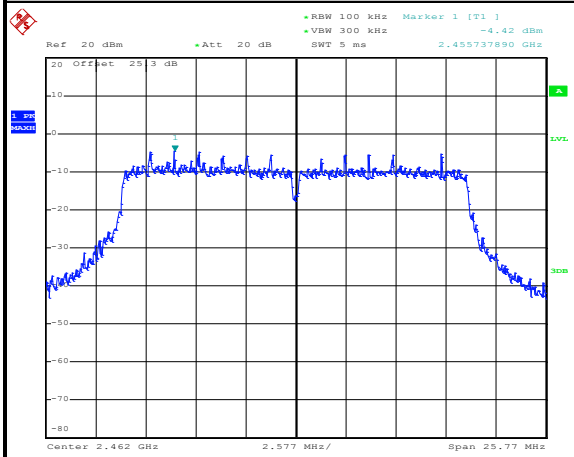


Date: 13.SEP.2013 14:01:21

Number of TX :	2	Antenna :	1
Test Mode :	802.11n HT20	Temperature :	21~25℃
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Reece Li

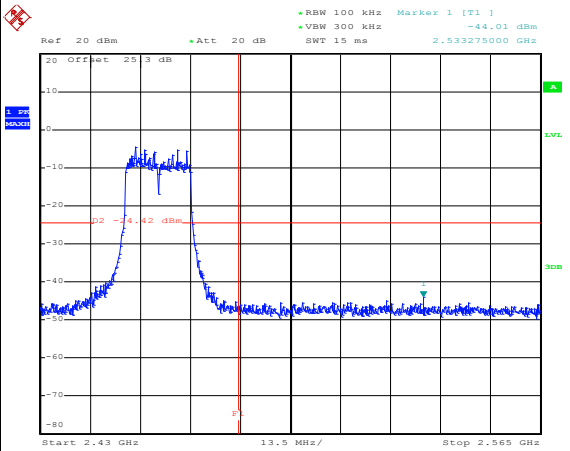
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



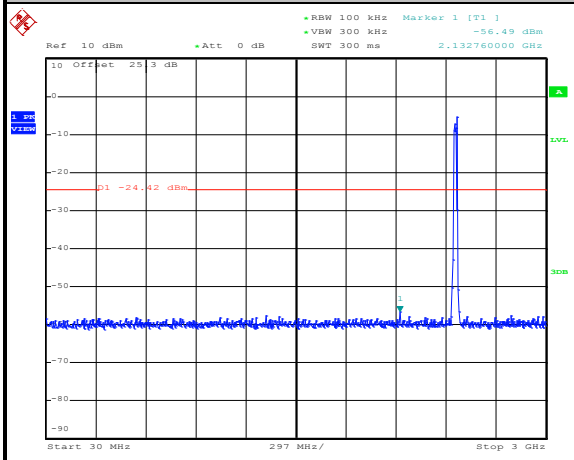
Date: 13.SEP.2013 14:08:32

High Channel Plot



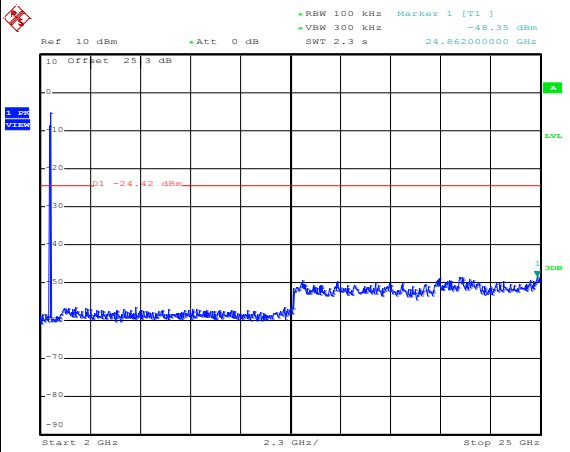
Date: 13.SEP.2013 14:08:59

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 14:15:06

Spurious Emission 2GHz~25GHz

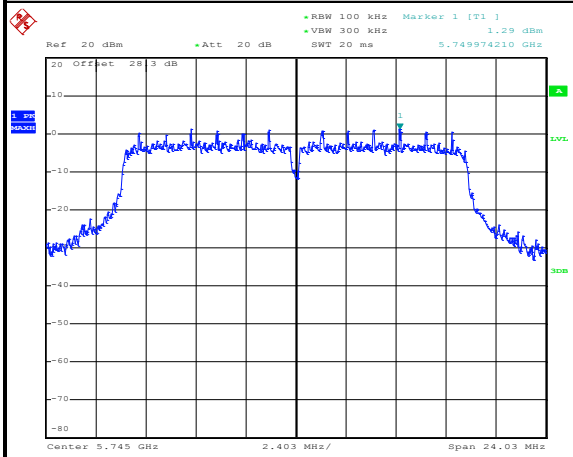


Date: 13.SEP.2013 14:15:25

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11a	**Temperature :**	21~25℃
Test Band :	5GHz Low	**Relative Humidity :**	51~54%
Test Channel :	149	**Test Engineer :**	Reece Li

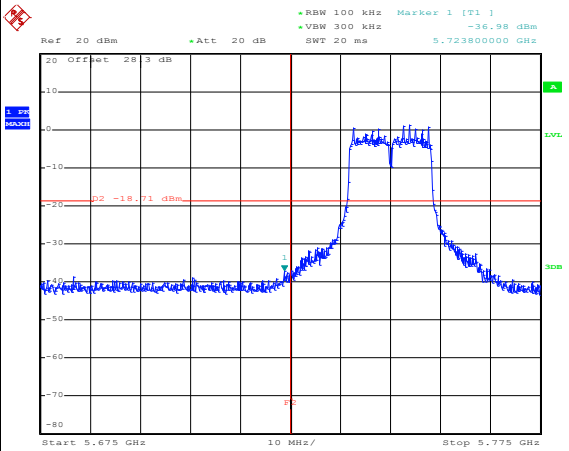
WLAN 802.11a Channel 149

100kHz PSD reference Level



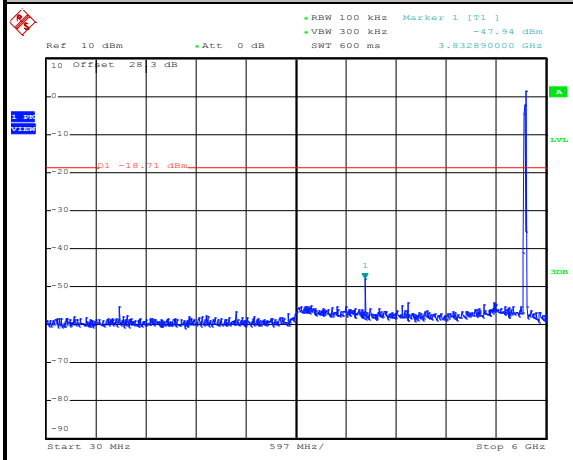
Date: 13.SEP.2013 14:32:32

Low Channel Plot



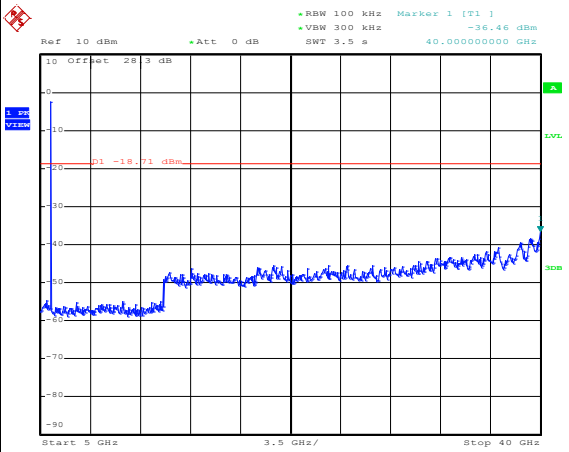
Date: 13.SEP.2013 14:32:50

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 14:33:11

Spurious Emission 5GHz~40GHz

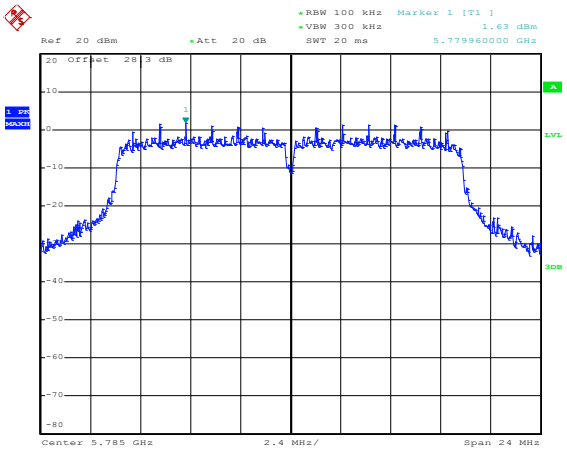


Date: 13.SEP.2013 14:33:29

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11a	**Temperature :**	21~25℃
Test Band :	5GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	157	**Test Engineer :**	Reece Li

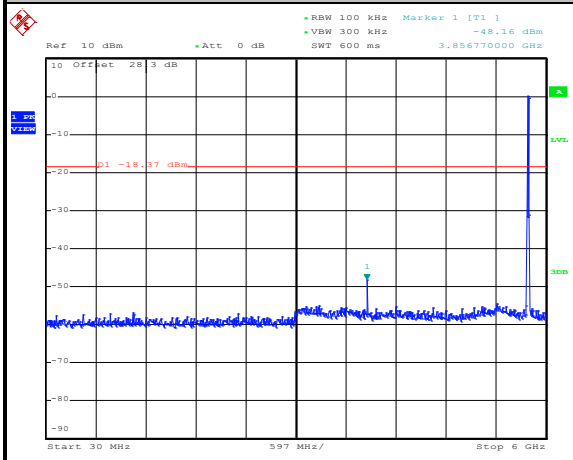
WLAN 802.11a Channel 157

100kHz PSD reference Level



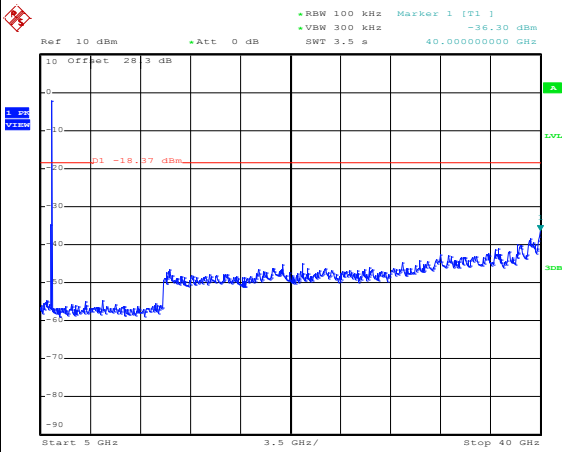
Date: 13.SEP.2013 14:48:55

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 14:49:18

Spurious Emission 5GHz~40GHz

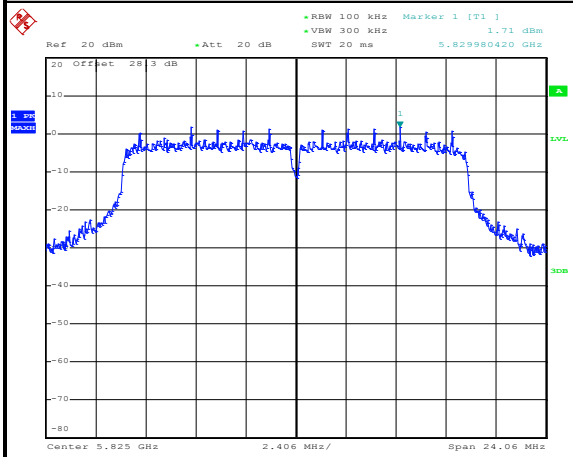


Date: 13.SEP.2013 14:49:37

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11a	**Temperature :**	21~25℃
Test Band :	5GHz High	**Relative Humidity :**	51~54%
Test Channel :	165	**Test Engineer :**	Reece Li

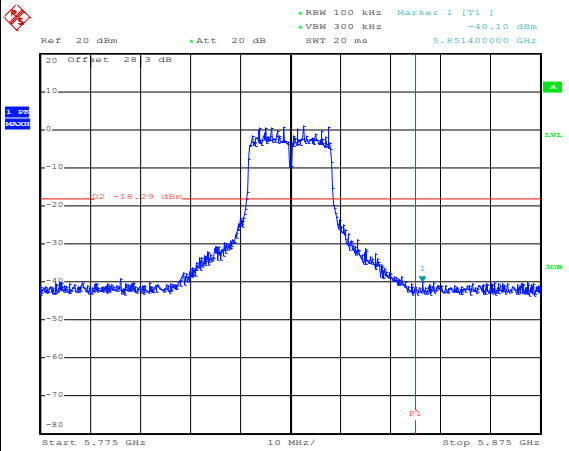
WLAN 802.11a Channel 165

100kHz PSD reference Level



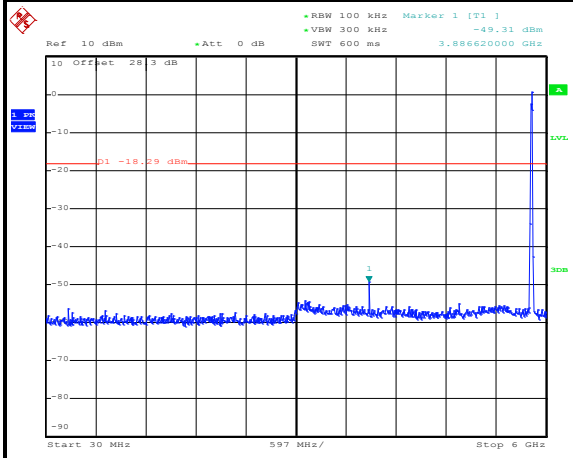
Date: 13.SEP.2013 14:53:04

High Channel Plot



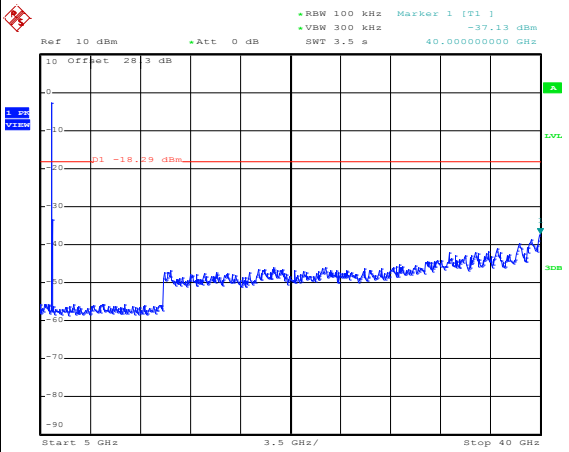
Date: 13.SEP.2013 14:53:31

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 14:53:53

Spurious Emission 5GHz~40GHz

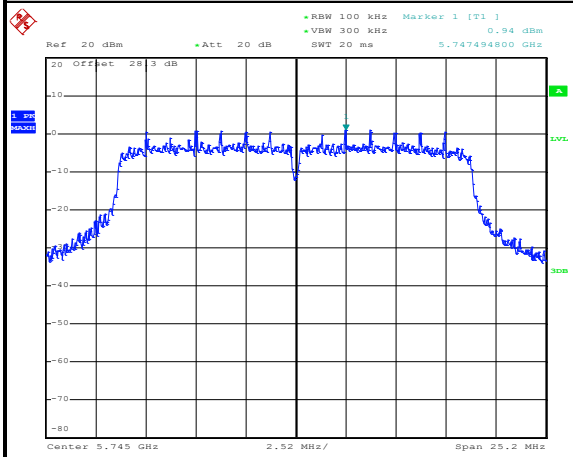


Date: 13.SEP.2013 14:54:11

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	5GHz Low	**Relative Humidity :**	51~54%
Test Channel :	149	**Test Engineer :**	Reece Li

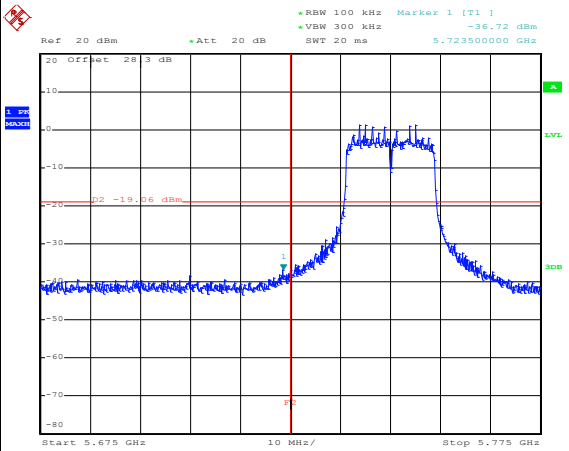
WLAN 802.11n HT20 Channel 149

100kHz PSD reference Level



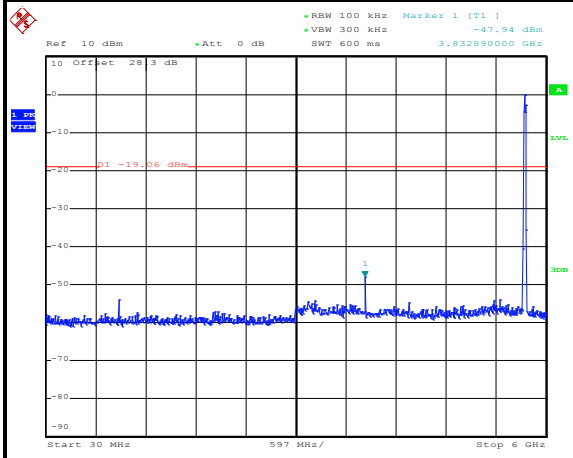
Date: 13.SEP.2013 15:25:14

Low Channel Plot



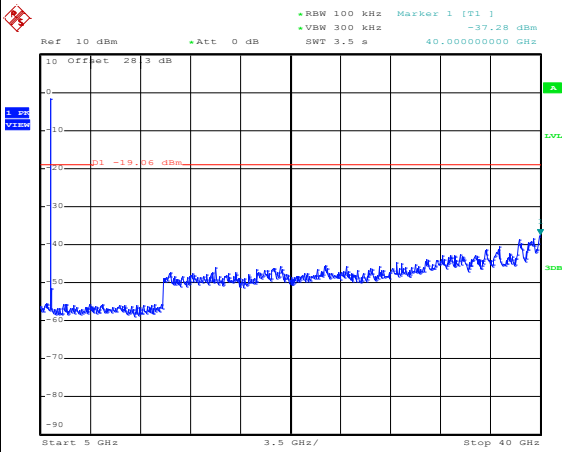
Date: 13.SEP.2013 15:25:43

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:26:07

Spurious Emission 5GHz~40GHz

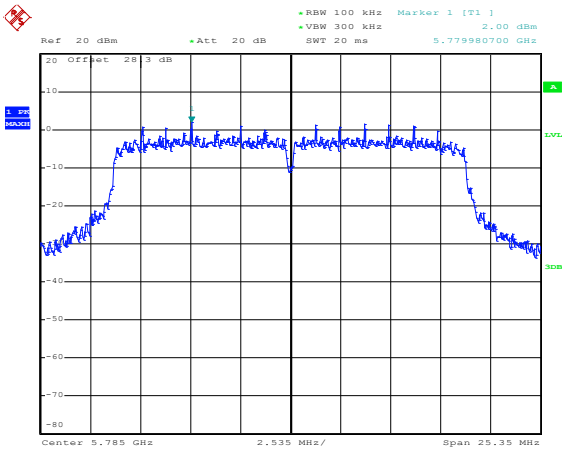


Date: 13.SEP.2013 15:26:26

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	5GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	157	**Test Engineer :**	Reece Li

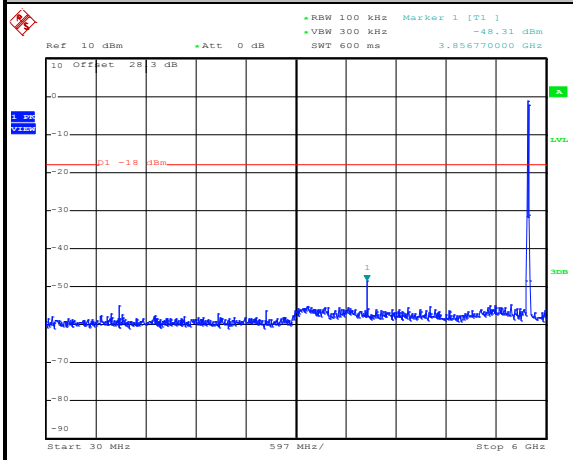
WLAN 802.11n HT20 Channel 157

100kHz PSD reference Level



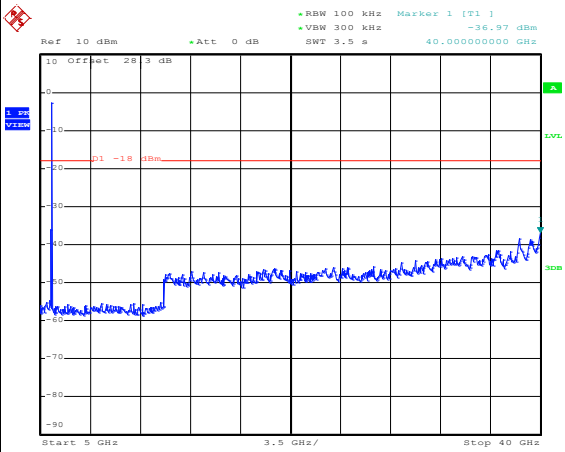
Date: 13.SEP.2013 15:13:57

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:14:19

Spurious Emission 5GHz~40GHz

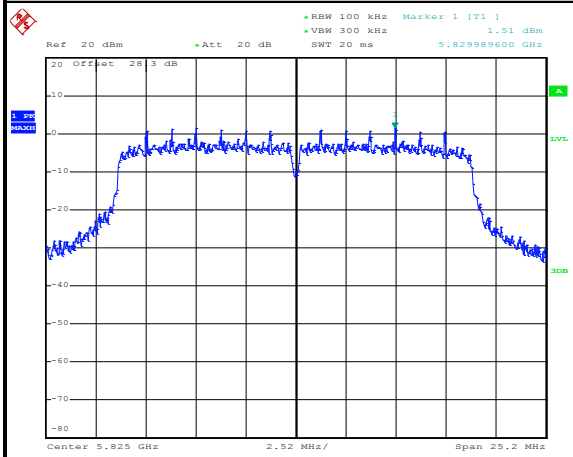


Date: 13.SEP.2013 15:14:38

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	5GHz High	**Relative Humidity :**	51~54%
Test Channel :	165	**Test Engineer :**	Reece Li

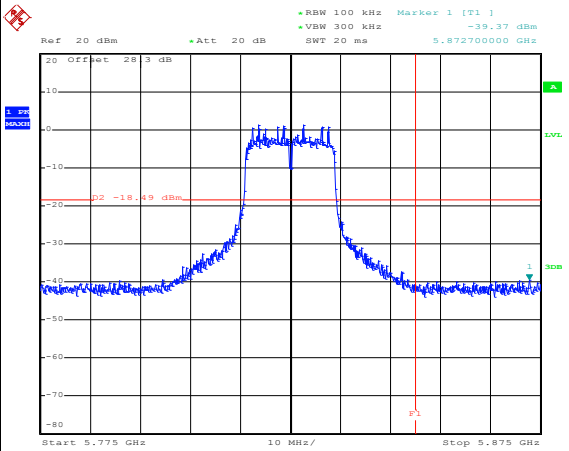
WLAN 802.11n HT20 Channel 165

100kHz PSD reference Level



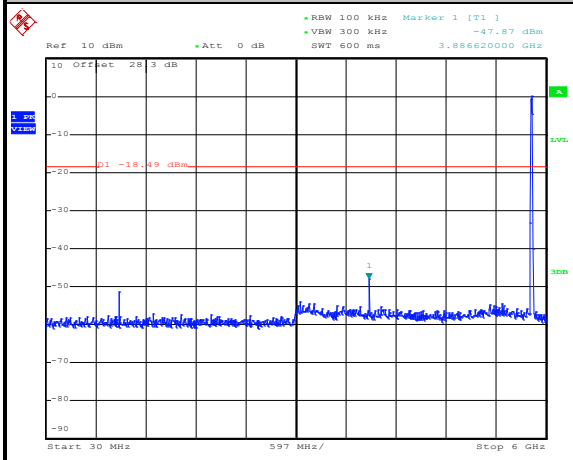
Date: 13.SEP.2013 15:09:21

High Channel Plot



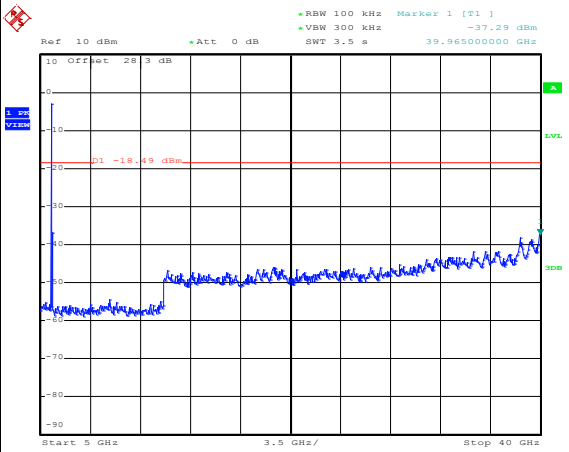
Date: 13.SEP.2013 15:09:58

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:10:20

Spurious Emission 5GHz~40GHz

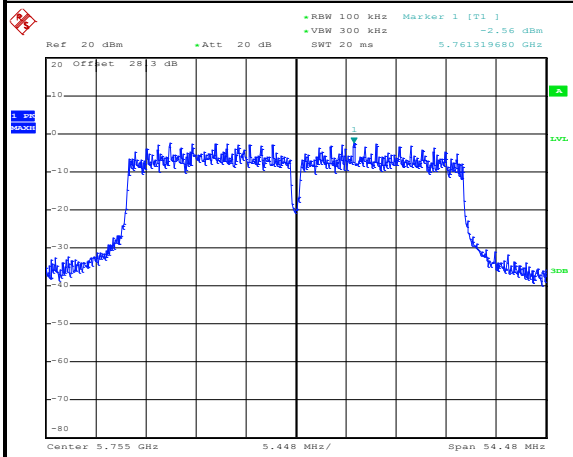


Date: 13.SEP.2013 15:10:39

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	5GHz Low	**Relative Humidity :**	51~54%
Test Channel :	151	**Test Engineer :**	Reece Li

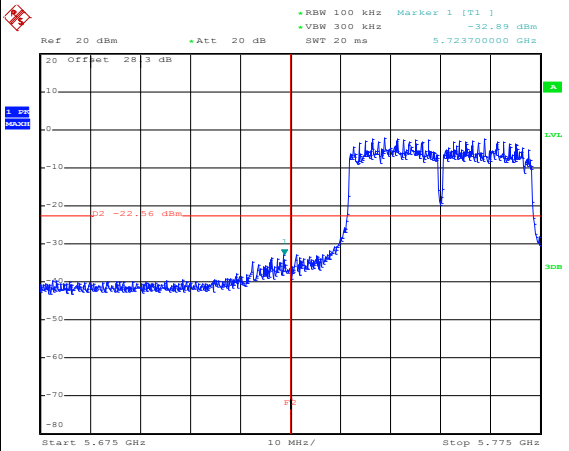
WLAN 802.11n HT40 Channel 151

100kHz PSD reference Level



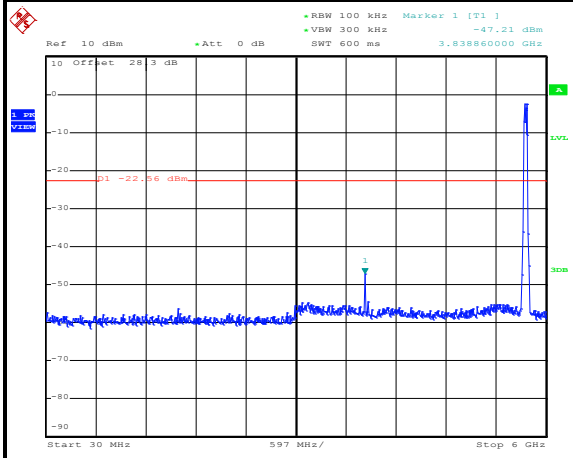
Date: 13.SEP.2013 15:33:33

Low Channel Plot



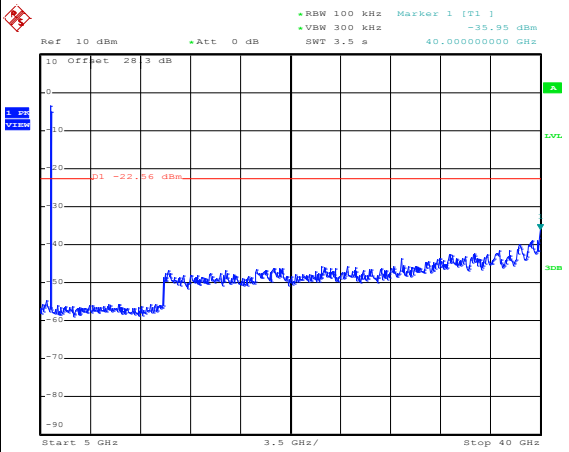
Date: 13.SEP.2013 15:33:53

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:34:13

Spurious Emission 5GHz~40GHz

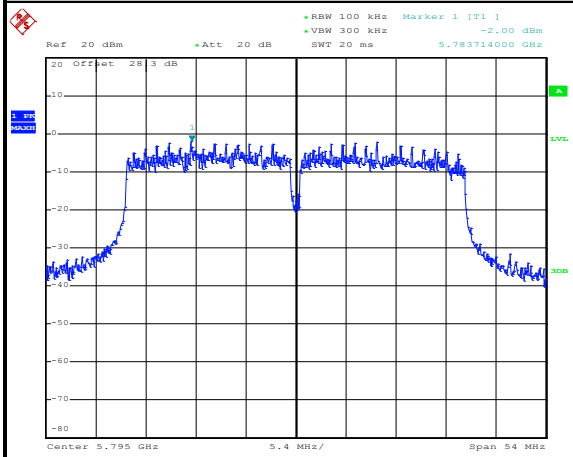


Date: 13.SEP.2013 15:34:31

Number of TX :	2	**Antenna :**	1
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	5GHz High	**Relative Humidity :**	51~54%
Test Channel :	159	**Test Engineer :**	Reece Li

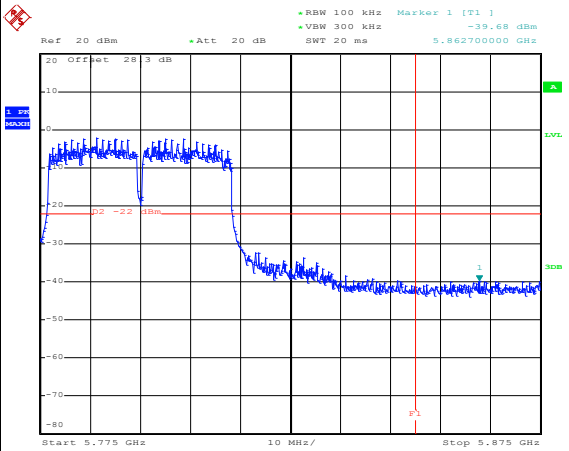
WLAN 802.11n HT40 Channel 159

100kHz PSD reference Level



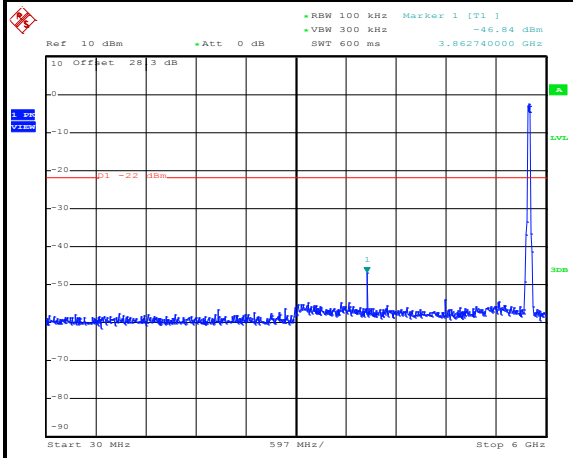
Date: 13.SEP.2013 15:48:37

High Channel Plot



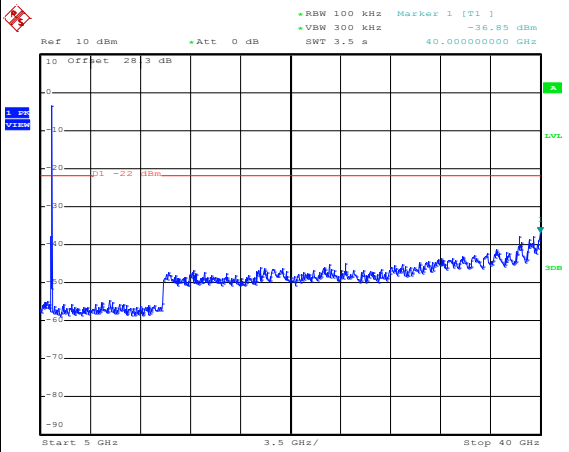
Date: 13.SEP.2013 15:49:00

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:49:22

Spurious Emission 5GHz~40GHz



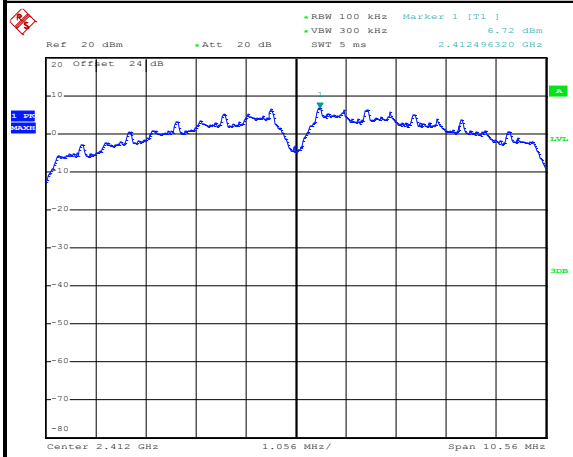
Date: 13.SEP.2013 15:49:41

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

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Reece Li

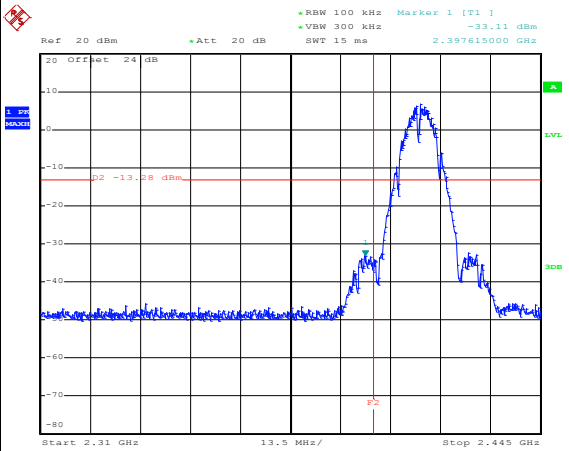
WLAN 802.11b Channel 01

100kHz PSD reference Level



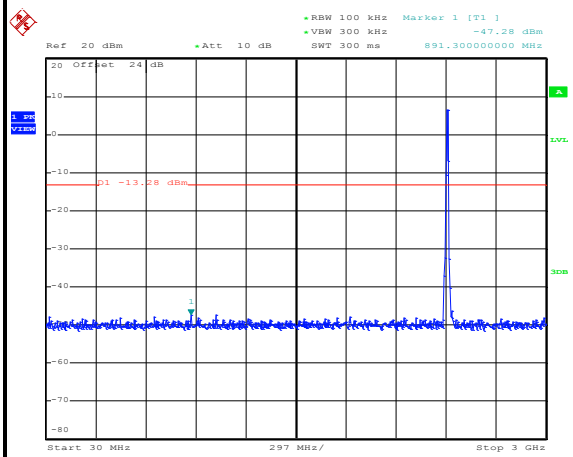
Date: 5.SEP.2013 16:47:33

Low Channel Plot



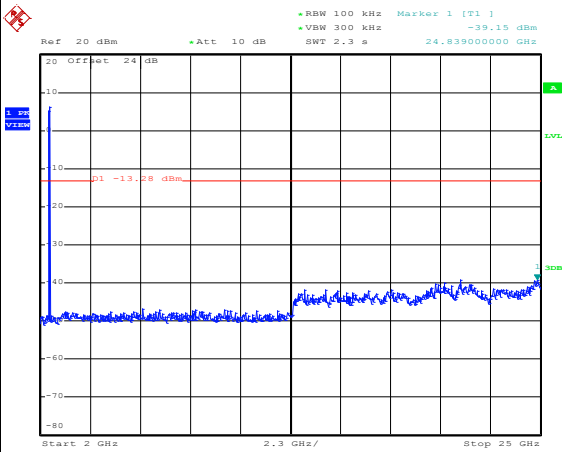
Date: 5.SEP.2013 16:47:48

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:04:27

Spurious Emission 2GHz~25GHz

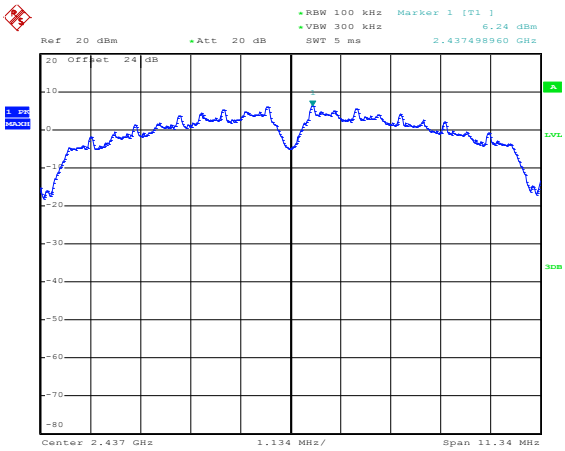


Date: 5.SEP.2013 19:04:46

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Reece Li

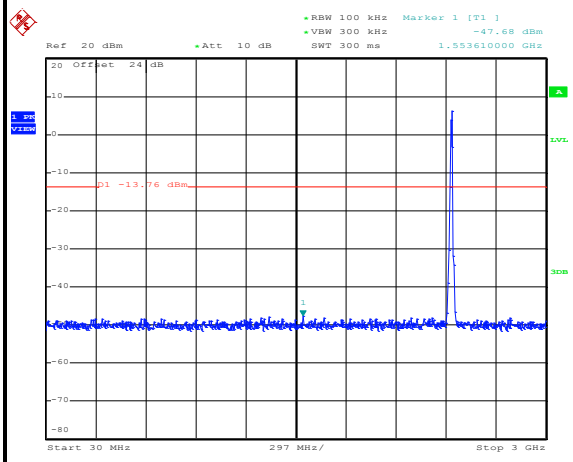
WLAN 802.11b Channel 06

100kHz PSD reference Level



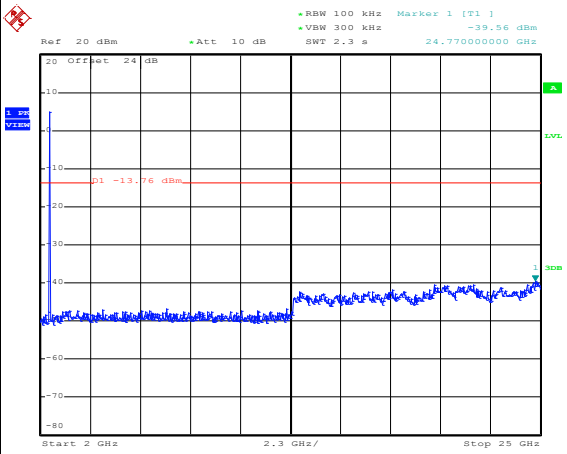
Date: 5.SEP.2013 16:55:45

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:05:40

Spurious Emission 2GHz~25GHz

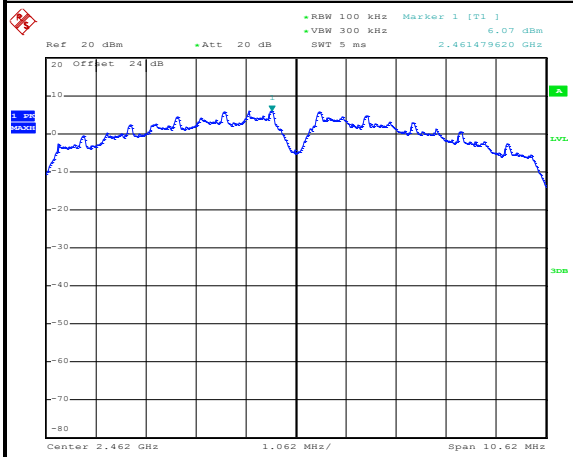


Date: 5.SEP.2013 19:05:58

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Reece Li

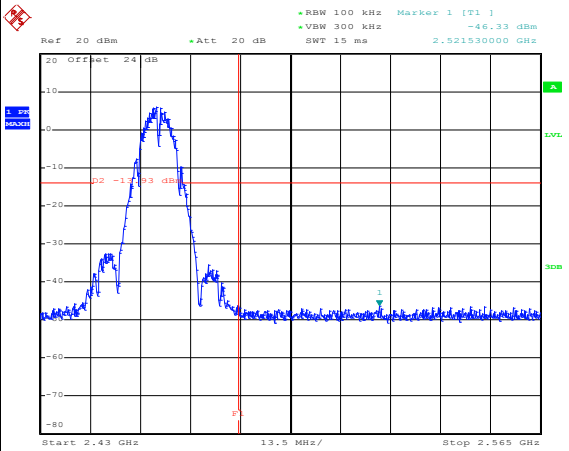
WLAN 802.11b Channel 11

100kHz PSD reference Level



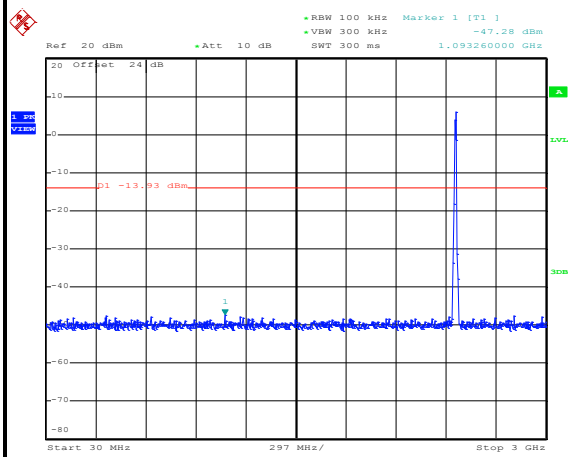
Date: 5.SEP.2013 16:59:30

High Channel Plot



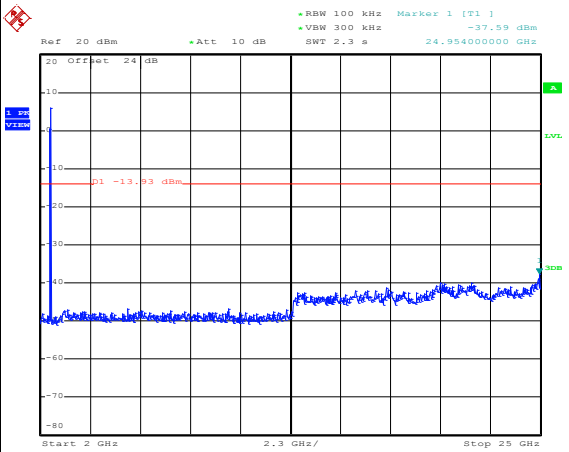
Date: 5.SEP.2013 16:59:51

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:10:31

Spurious Emission 2GHz~25GHz

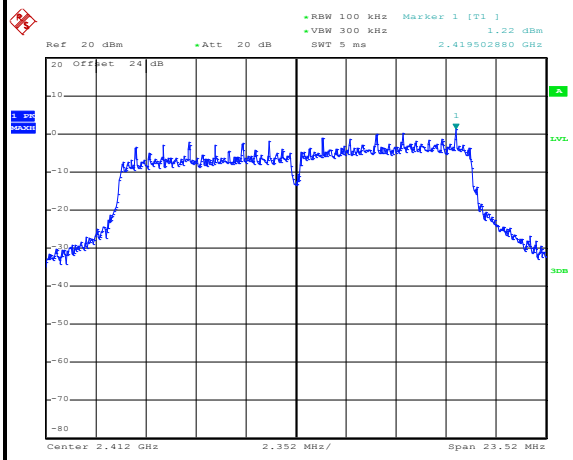


Date: 5.SEP.2013 19:10:49

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Reece Li

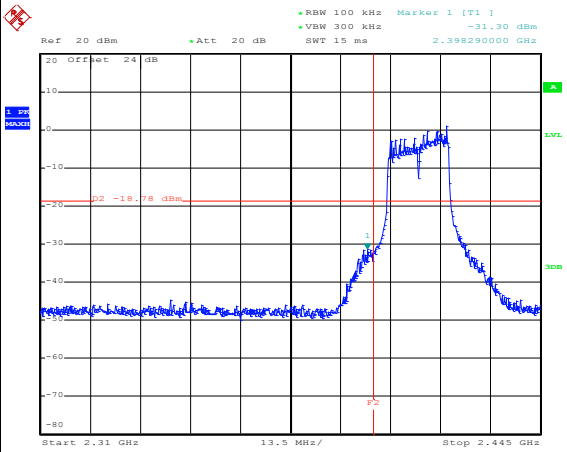
WLAN 802.11g Channel 01

100kHz PSD reference Level



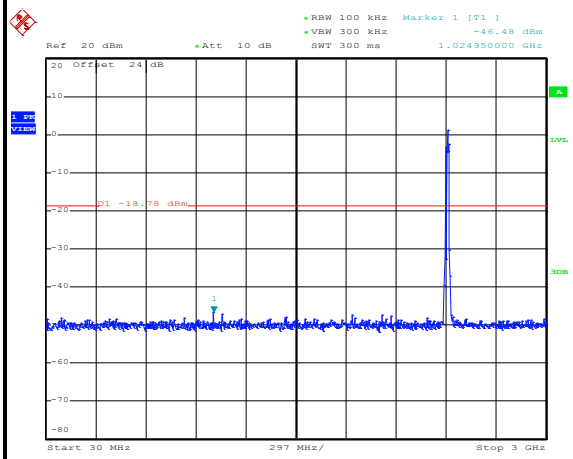
Date: 5.SEP.2013 19:29:11

Low Channel Plot



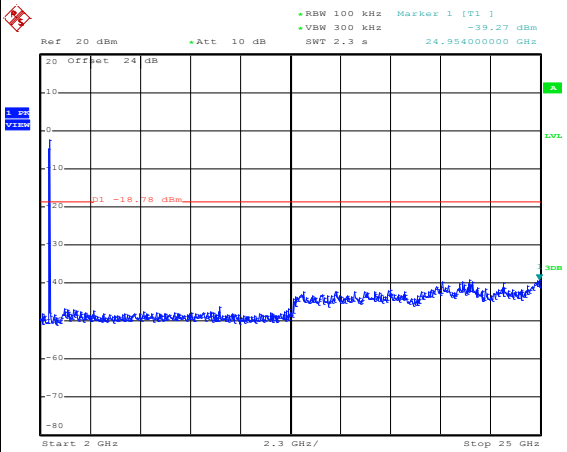
Date: 5.SEP.2013 19:29:27

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:29:56

Spurious Emission 2GHz~25GHz

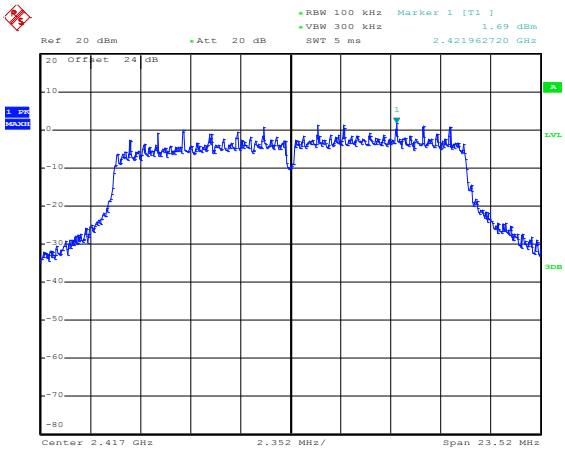


Date: 5.SEP.2013 19:30:14

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz	**Relative Humidity :**	51~54%
Test Channel :	02	**Test Engineer :**	Reece Li

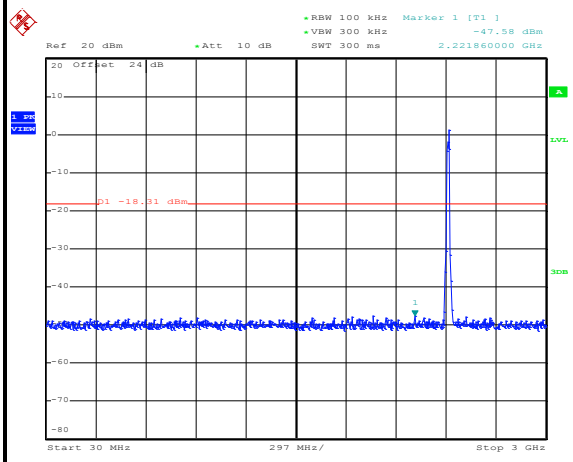
WLAN 802.11g Channel 02

100kHz PSD reference Level



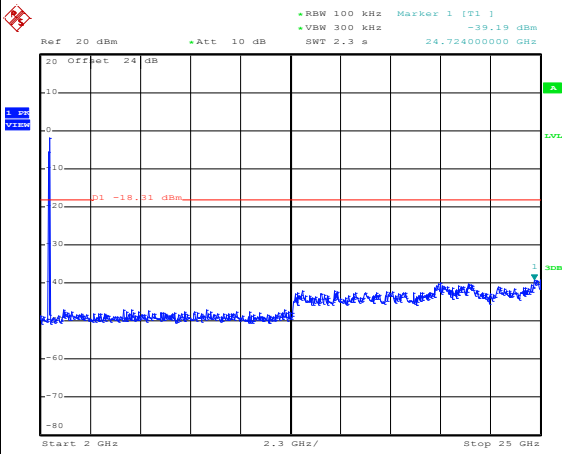
Date: 5.SEP.2013 19:25:05

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 19:25:30

Spurious Emission 2GHz~25GHz

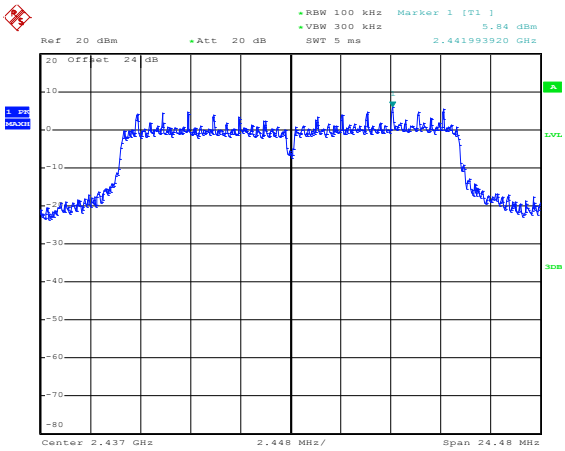


Date: 5.SEP.2013 19:25:49

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Reece Li

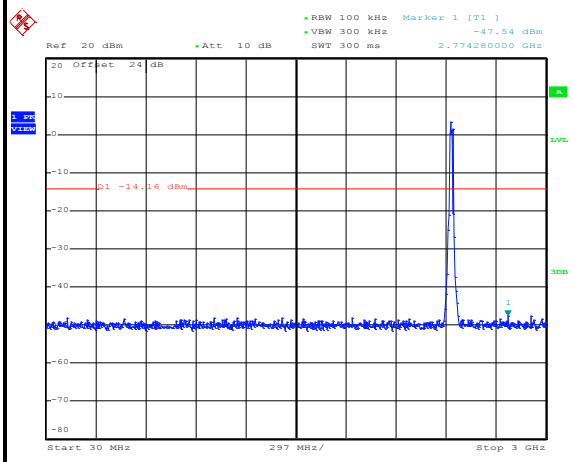
WLAN 802.11g Channel 06

100kHz PSD reference Level



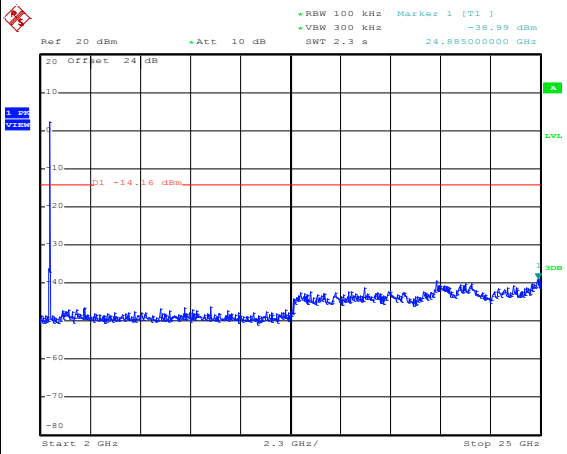
Date: 5.SEP.2013 17:36:33

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 18:52:31

Spurious Emission 2GHz~25GHz

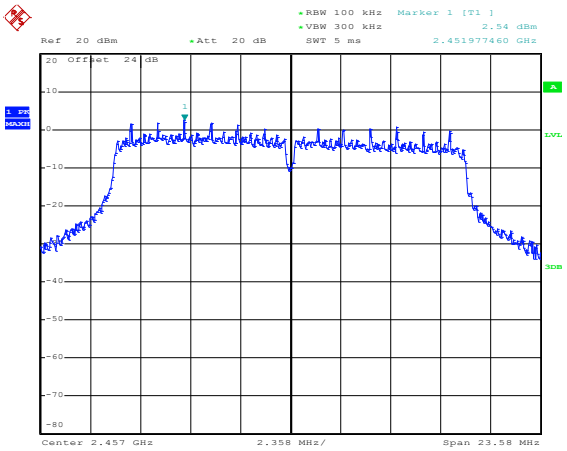


Date: 5.SEP.2013 18:52:49

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz	**Relative Humidity :**	51~54%
Test Channel :	10	**Test Engineer :**	Reece Li

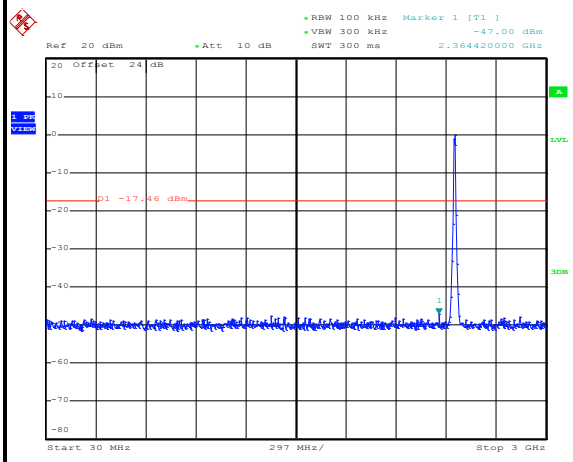
WLAN 802.11g Channel 10

100kHz PSD reference Level



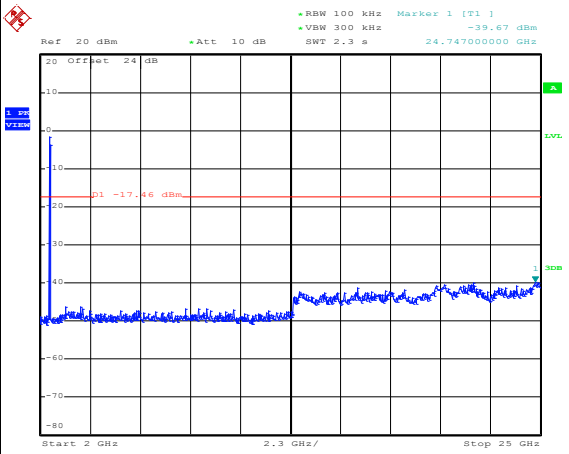
Date: 5.SEP.2013 17:20:15

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 18:53:56

Spurious Emission 2GHz~25GHz

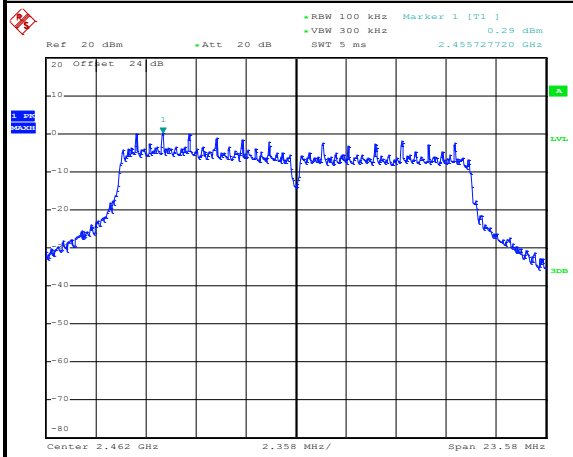


Date: 5.SEP.2013 18:54:15

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Reece Li

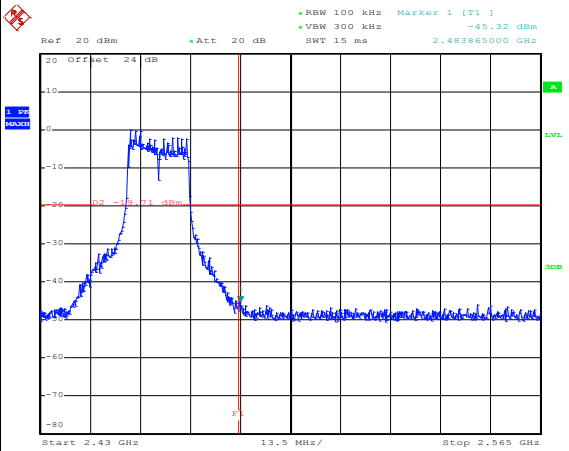
WLAN 802.11g Channel 11

100kHz PSD reference Level



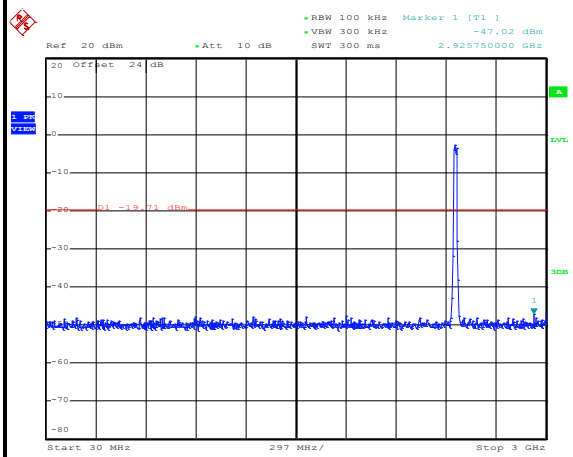
Date: 5.SEP.2013 17:15:15

High Channel Plot



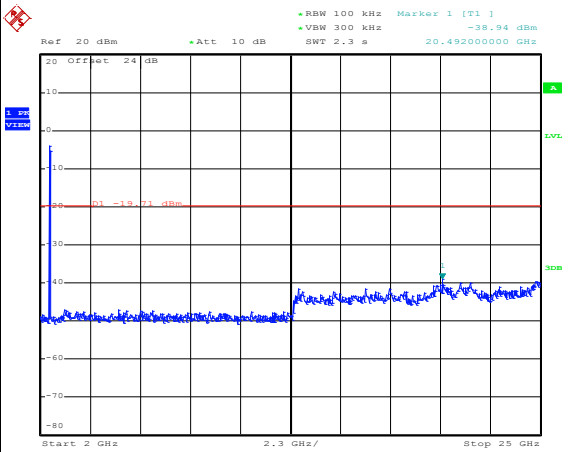
Date: 5.SEP.2013 17:15:32

Spurious Emission 30MHz~3GHz



Date: 5.SEP.2013 18:58:12

Spurious Emission 2GHz~25GHz

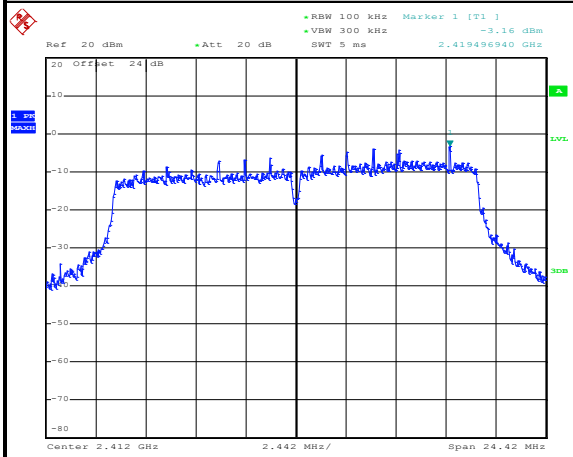


Date: 5.SEP.2013 18:58:31

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Reece Li

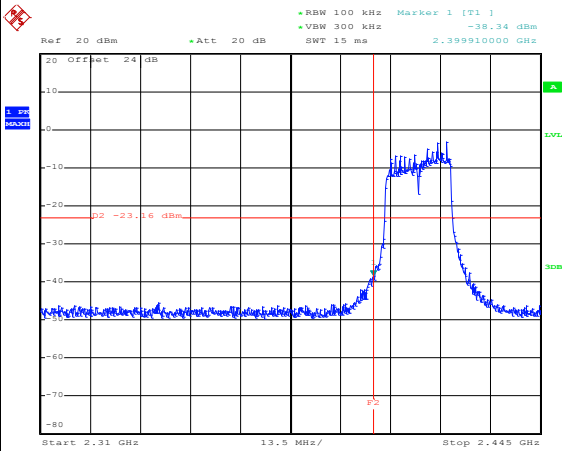
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



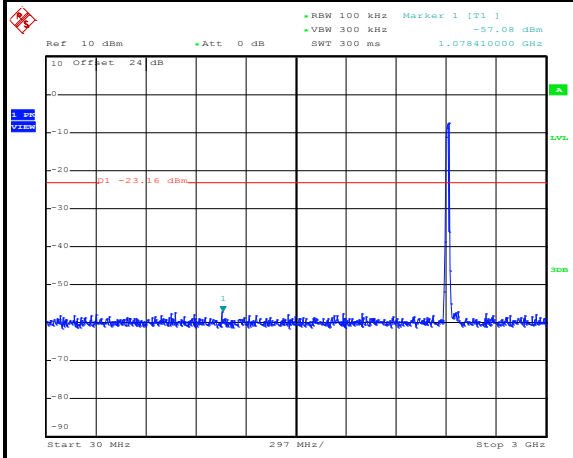
Date: 13.SEP.2013 13:27:03

Low Channel Plot



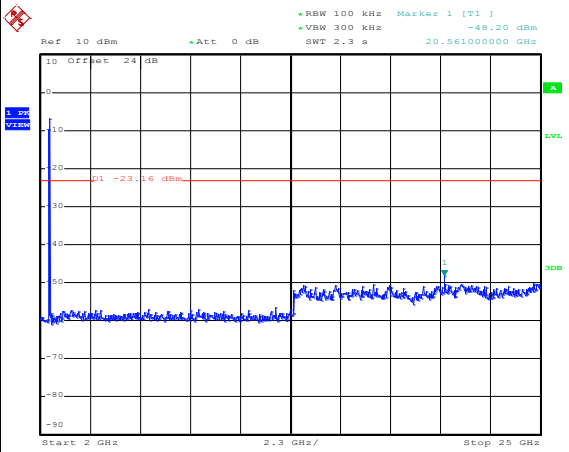
Date: 13.SEP.2013 13:27:24

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 13:27:46

Spurious Emission 2GHz~25GHz

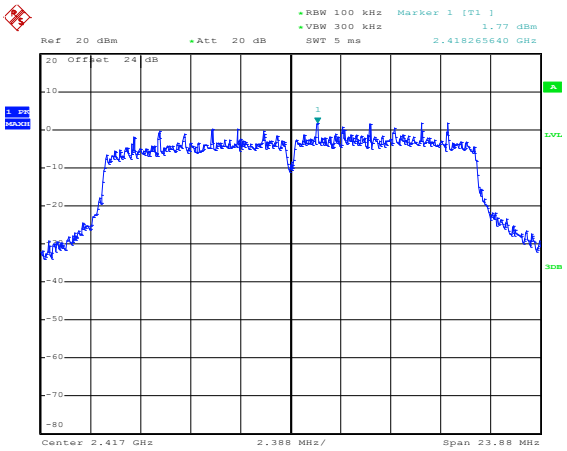


Date: 13.SEP.2013 13:28:04

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz	**Relative Humidity :**	51~54%
Test Channel :	02	**Test Engineer :**	Reece Li

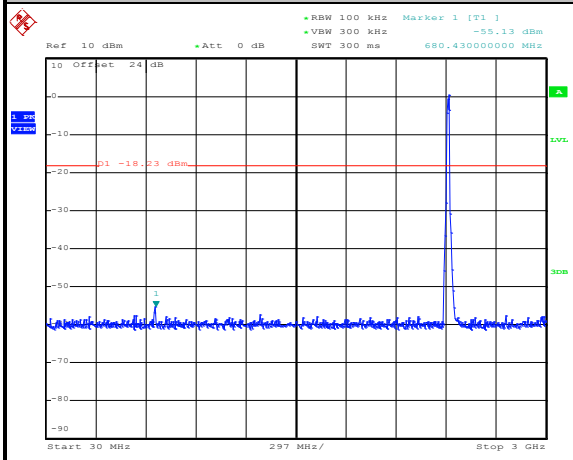
WLAN 802.11n HT20 Channel 02

100kHz PSD reference Level



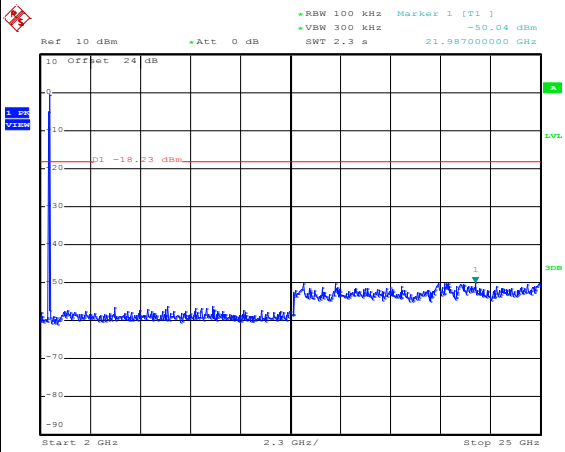
Date: 13.SEP.2013 13:32:37

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 13:33:06

Spurious Emission 2GHz~25GHz

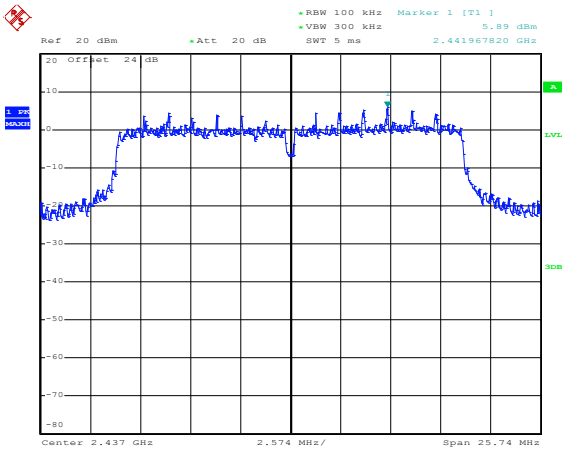


Date: 13.SEP.2013 13:33:25

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Reece Li

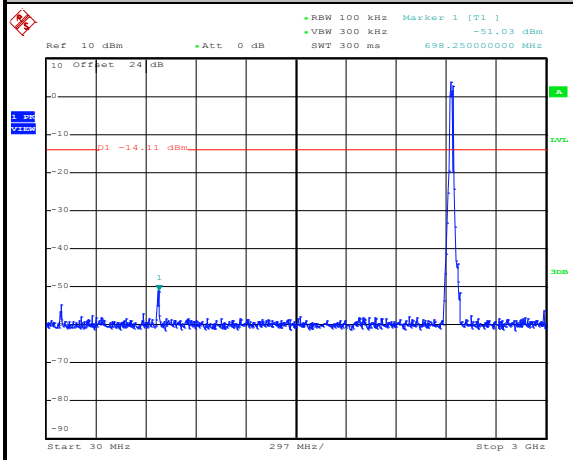
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



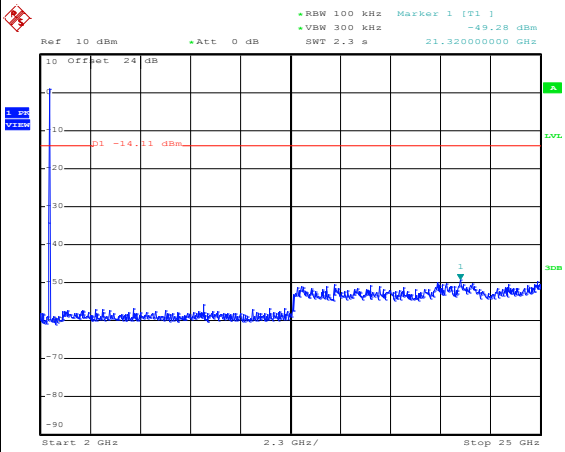
Date: 13.SEP.2013 13:49:19

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 13:49:54

Spurious Emission 2GHz~25GHz

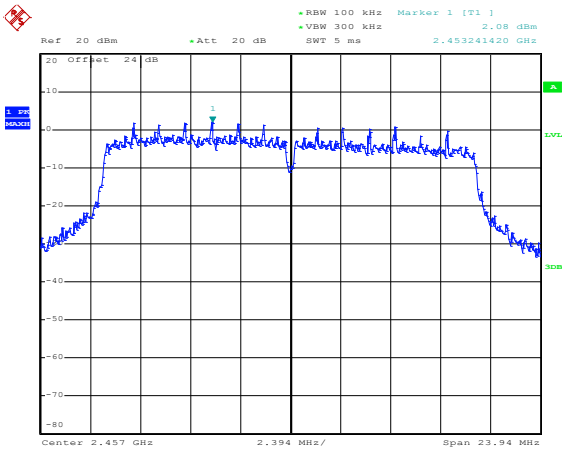


Date: 13.SEP.2013 13:50:12

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz	**Relative Humidity :**	51~54%
Test Channel :	10	**Test Engineer :**	Reece Li

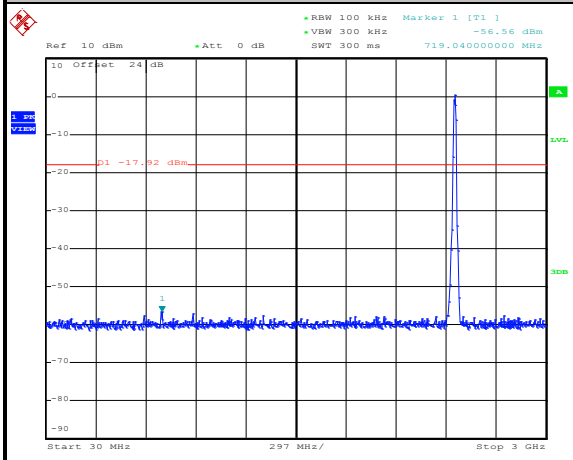
WLAN 802.11n HT20 Channel 10

100kHz PSD reference Level



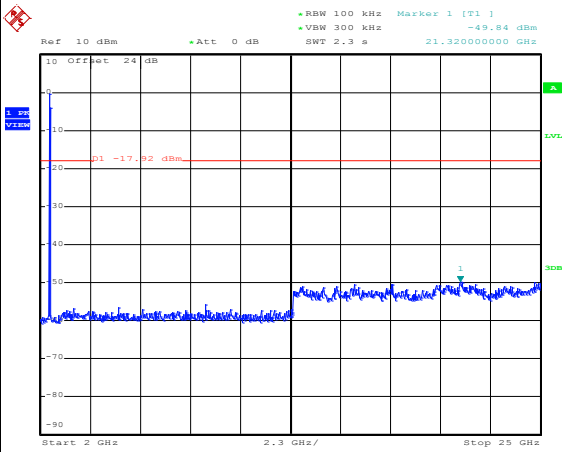
Date: 13.SEP.2013 13:55:49

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 13:56:10

Spurious Emission 2GHz~25GHz

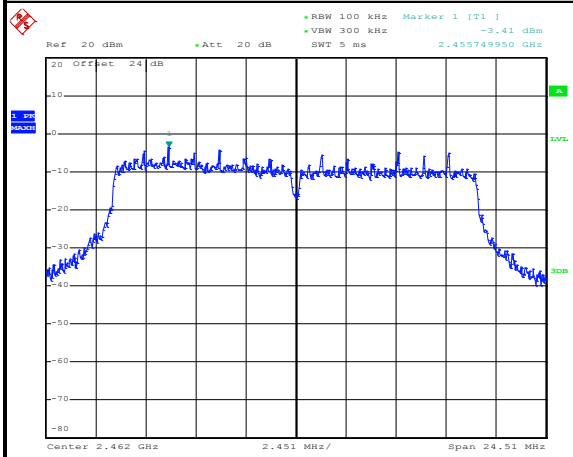


Date: 13.SEP.2013 13:56:29

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Reece Li

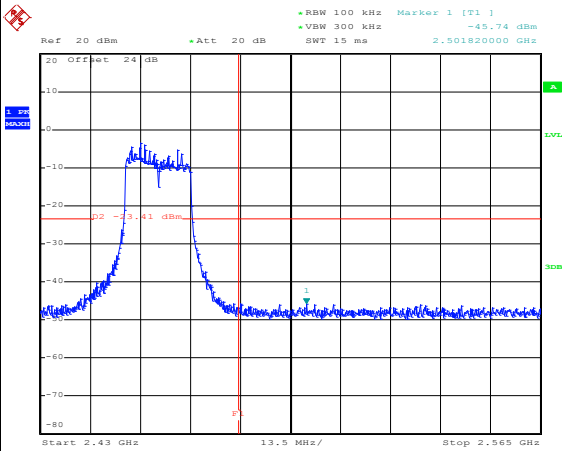
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



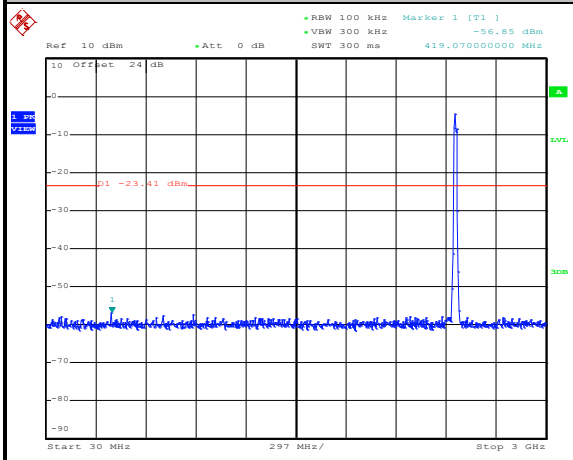
Date: 13.SEP.2013 14:20:10

High Channel Plot



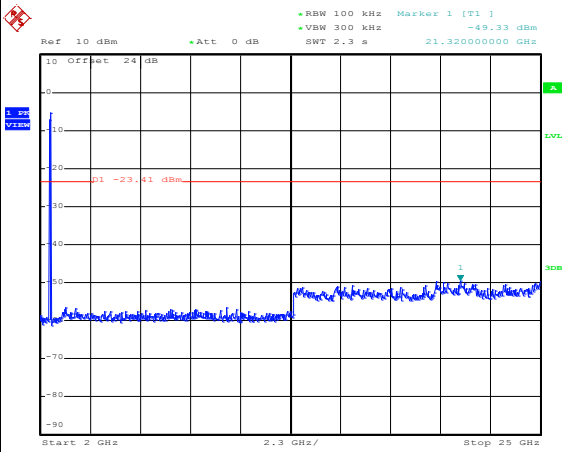
Date: 13.SEP.2013 14:20:27

Spurious Emission 30MHz~3GHz



Date: 13.SEP.2013 14:20:50

Spurious Emission 2GHz~25GHz

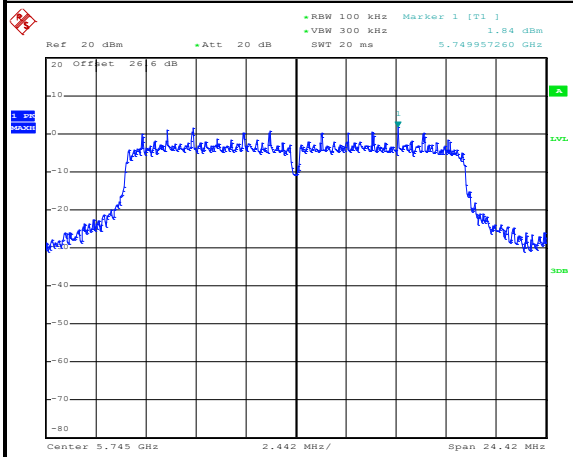


Date: 13.SEP.2013 14:21:09

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11a	**Temperature :**	21~25℃
Test Band :	5GHz Low	**Relative Humidity :**	51~54%
Test Channel :	149	**Test Engineer :**	Reece Li

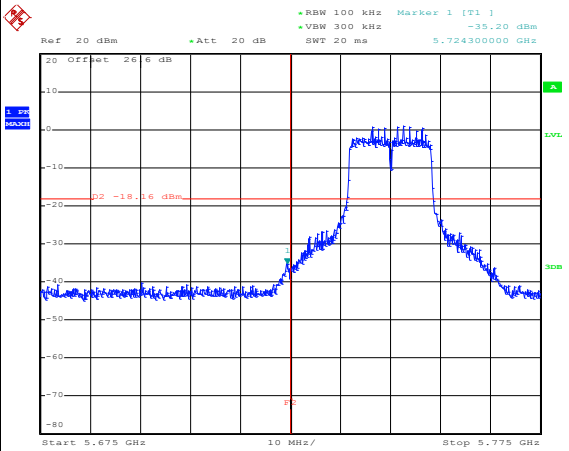
WLAN 802.11a Channel 149

100kHz PSD reference Level



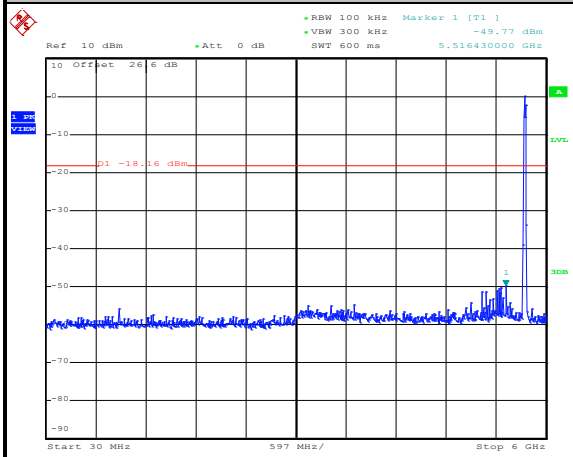
Date: 13.SEP.2013 14:37:16

Low Channel Plot



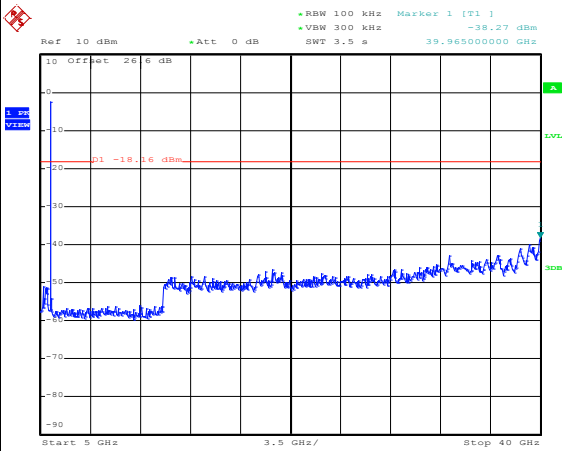
Date: 13.SEP.2013 14:37:35

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 14:37:59

Spurious Emission 5GHz~40GHz

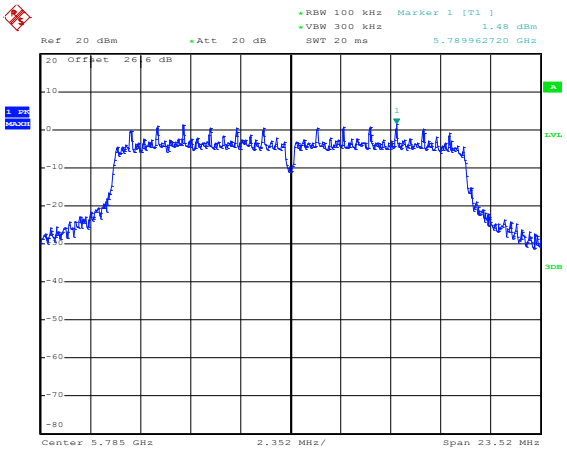


Date: 13.SEP.2013 14:38:18

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11a	**Temperature :**	21~25℃
Test Band :	5GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	157	**Test Engineer :**	Reece Li

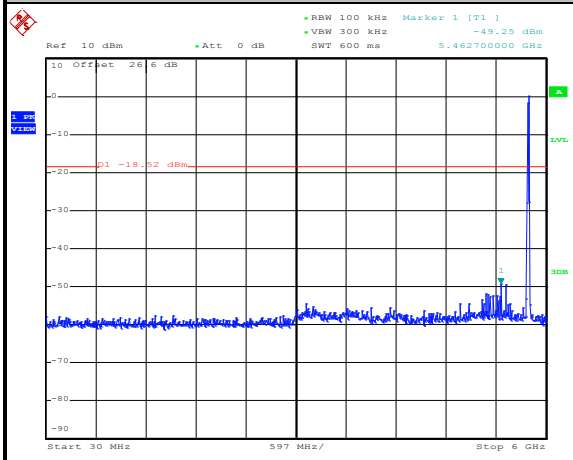
WLAN 802.11a Channel 157

100kHz PSD reference Level



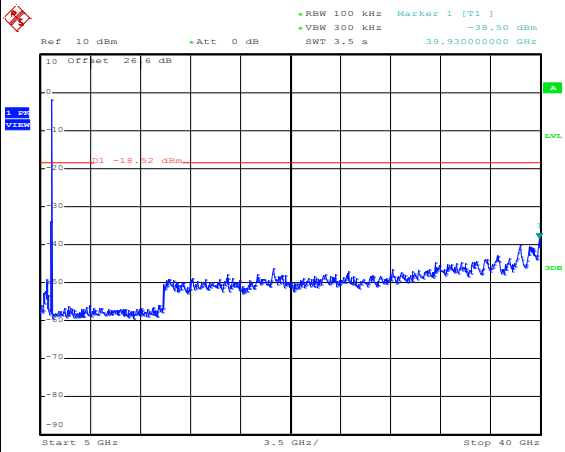
Date: 13.SEP.2013 14:42:42

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 14:43:13

Spurious Emission 5GHz~40GHz

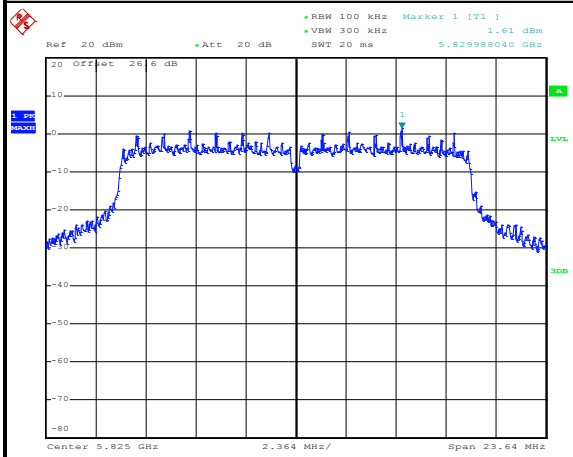


Date: 13.SEP.2013 14:43:31

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11a	**Temperature :**	21~25℃
Test Band :	5GHz High	**Relative Humidity :**	51~54%
Test Channel :	165	**Test Engineer :**	Reece Li

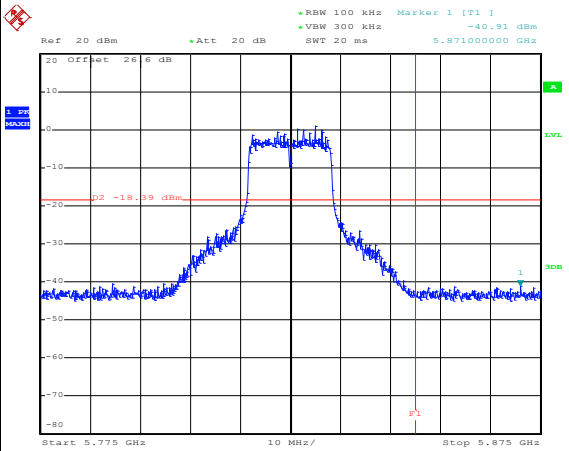
WLAN 802.11a Channel 165

100kHz PSD reference Level



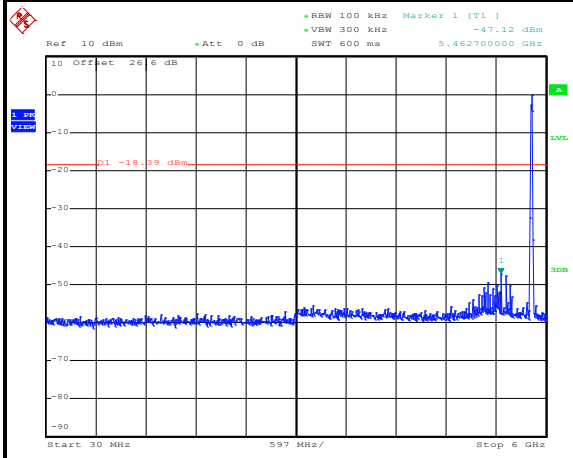
Date: 13.SEP.2013 14:57:29

High Channel Plot



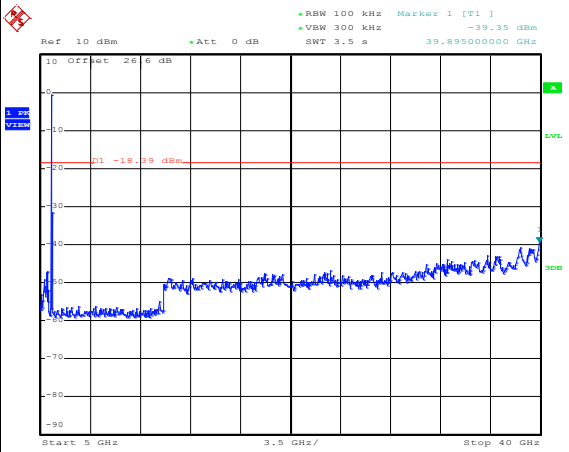
Date: 13.SEP.2013 14:57:46

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 14:58:06

Spurious Emission 5GHz~40GHz

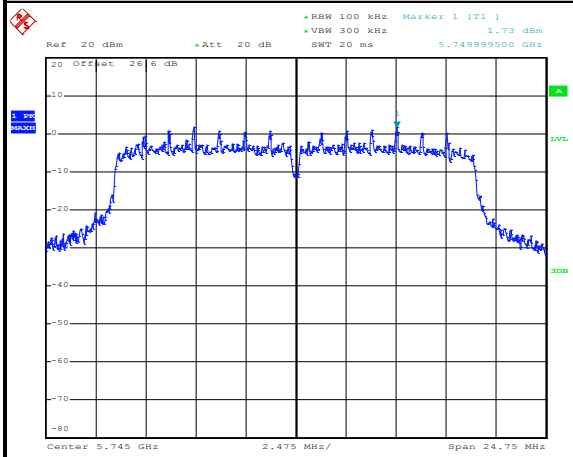


Date: 13.SEP.2013 14:58:25

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	5GHz Low	**Relative Humidity :**	51~54%
Test Channel :	149	**Test Engineer :**	Reece Li

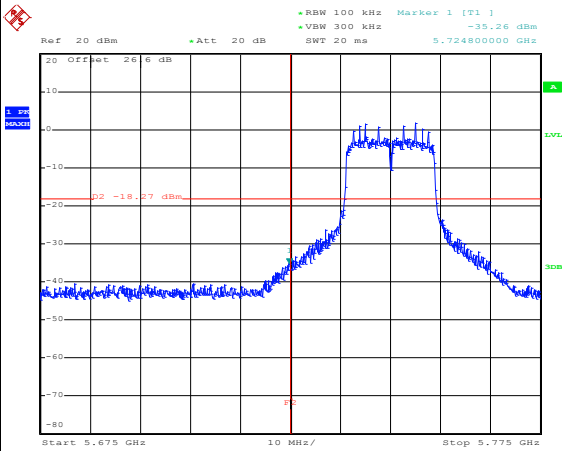
WLAN 802.11n HT20 Channel 149

100kHz PSD reference Level



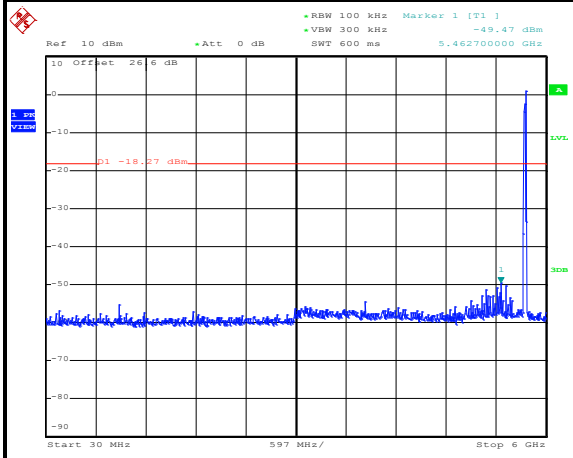
Date: 13.SEP.2013 15:21:16

Low Channel Plot



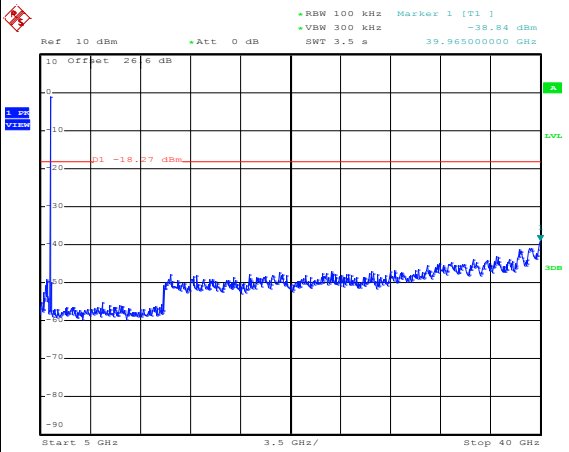
Date: 13.SEP.2013 15:22:06

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:22:28

Spurious Emission 5GHz~40GHz

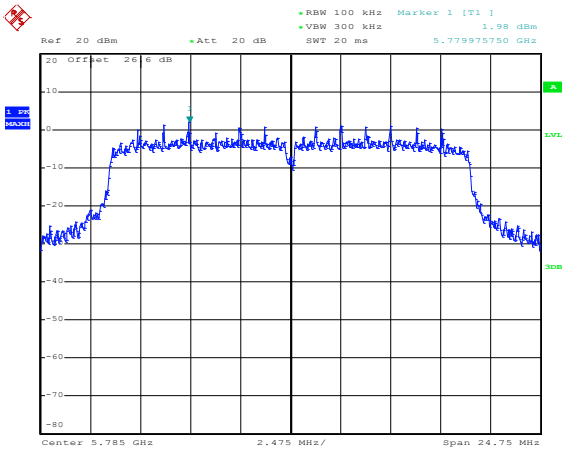


Date: 13.SEP.2013 15:22:47

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	5GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	157	**Test Engineer :**	Reece Li

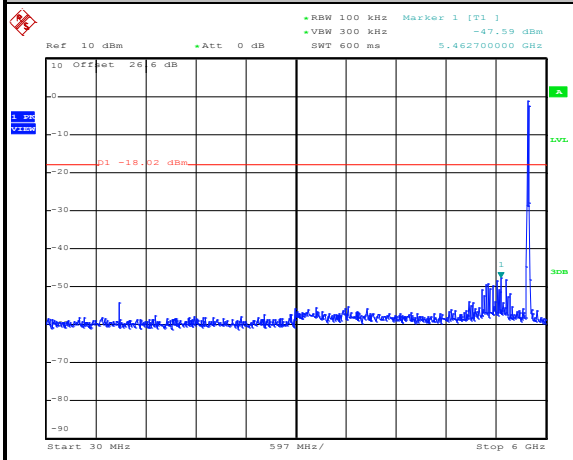
WLAN 802.11n HT20 Channel 157

100kHz PSD reference Level



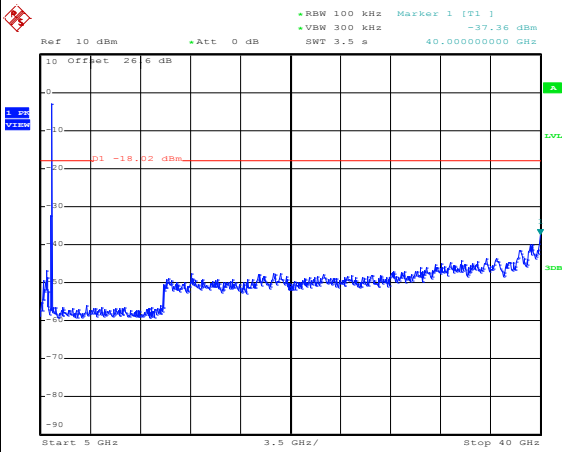
Date: 13.SEP.2013 15:17:46

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:18:10

Spurious Emission 5GHz~40GHz

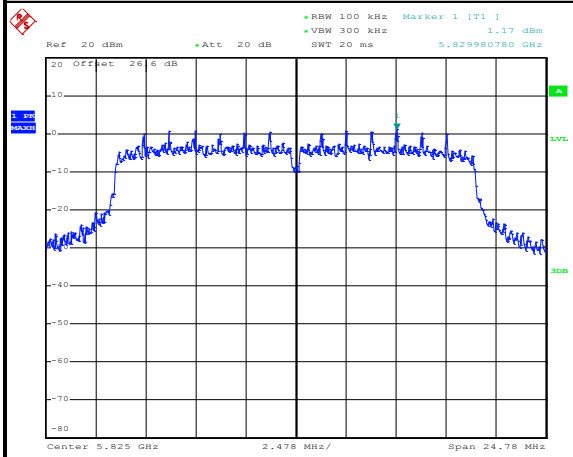


Date: 13.SEP.2013 15:18:29

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	5GHz High	**Relative Humidity :**	51~54%
Test Channel :	165	**Test Engineer :**	Reece Li

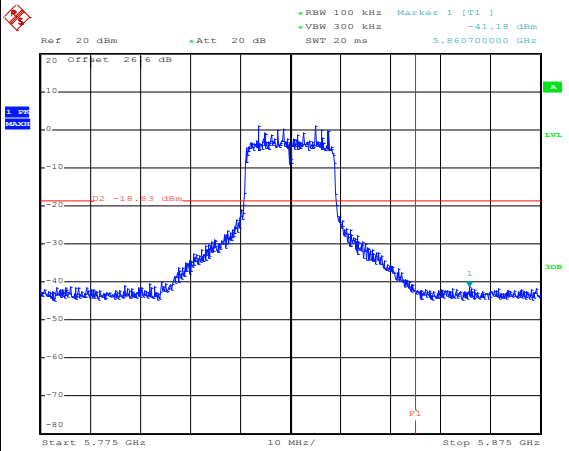
WLAN 802.11n HT20 Channel 165

100kHz PSD reference Level



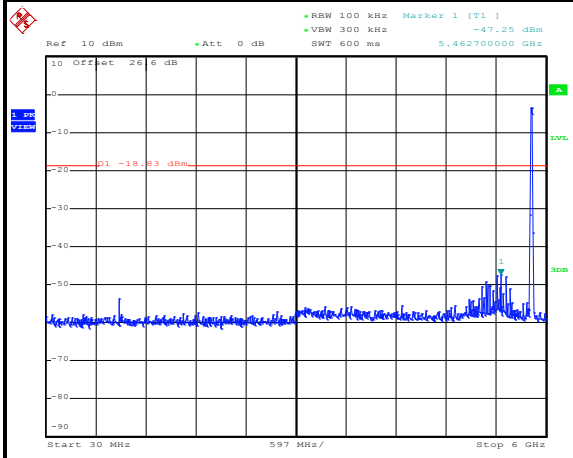
Date: 13.SEP.2013 15:04:06

High Channel Plot



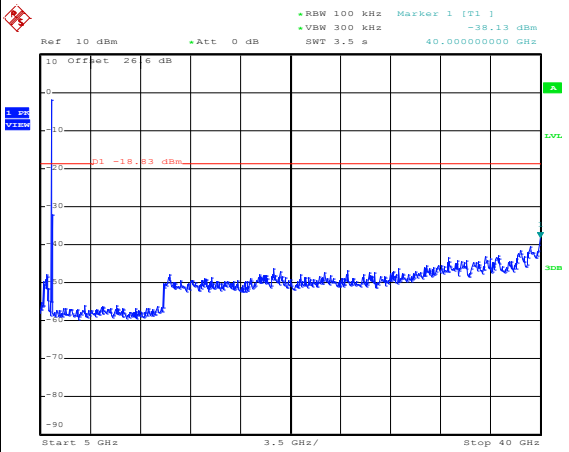
Date: 13.SEP.2013 15:05:01

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:05:33

Spurious Emission 5GHz~40GHz

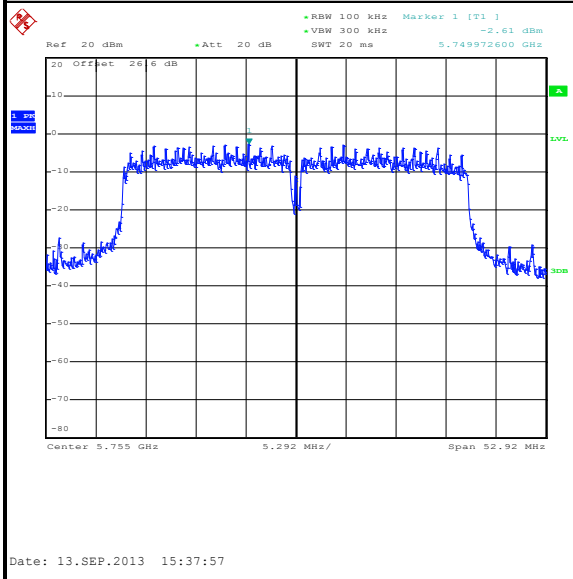


Date: 13.SEP.2013 15:05:52

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	5GHz Low	**Relative Humidity :**	51~54%
Test Channel :	151	**Test Engineer :**	Reece Li

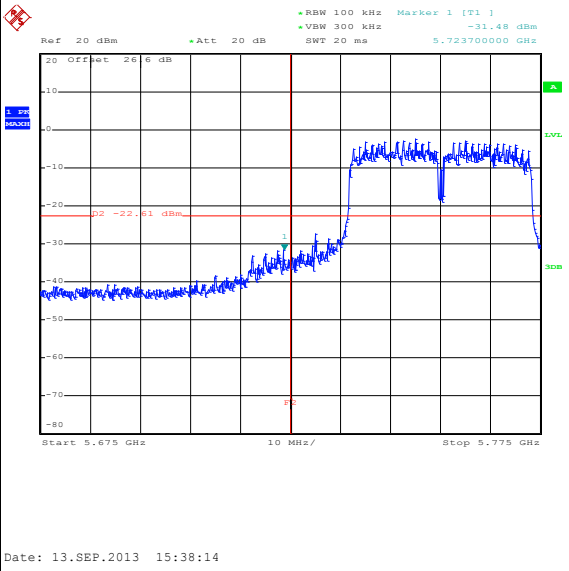
WLAN 802.11n HT40 Channel 151

100kHz PSD reference Level



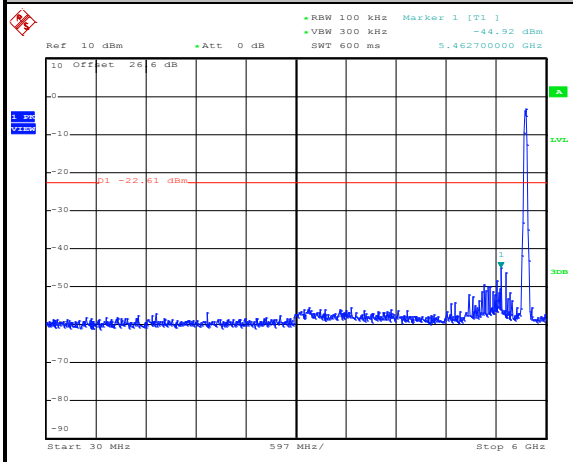
Date: 13.SEP.2013 15:37:57

Low Channel Plot



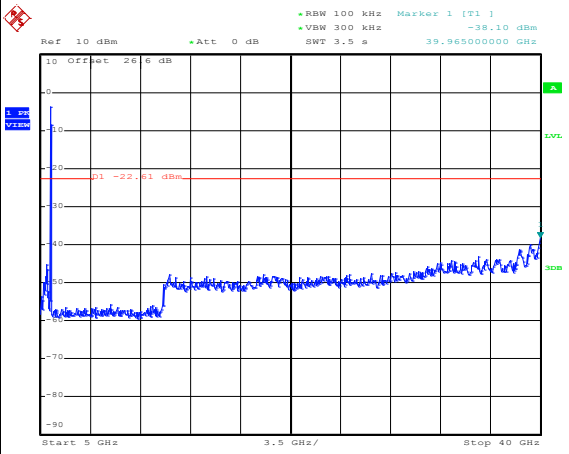
Date: 13.SEP.2013 15:38:14

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:38:35

Spurious Emission 5GHz~40GHz

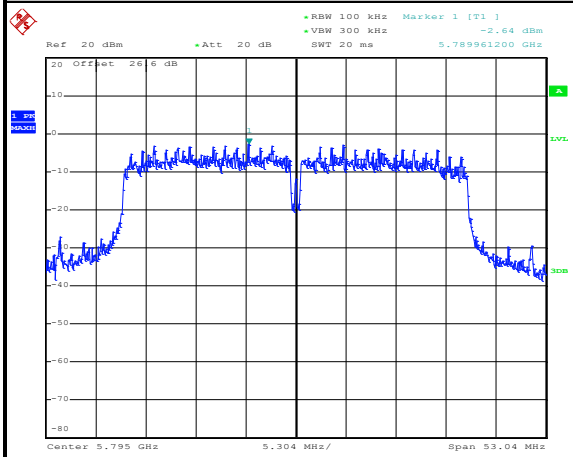


Date: 13.SEP.2013 15:38:54

Number of TX :	2	**Antenna :**	2
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	5GHz High	**Relative Humidity :**	51~54%
Test Channel :	159	**Test Engineer :**	Reece Li

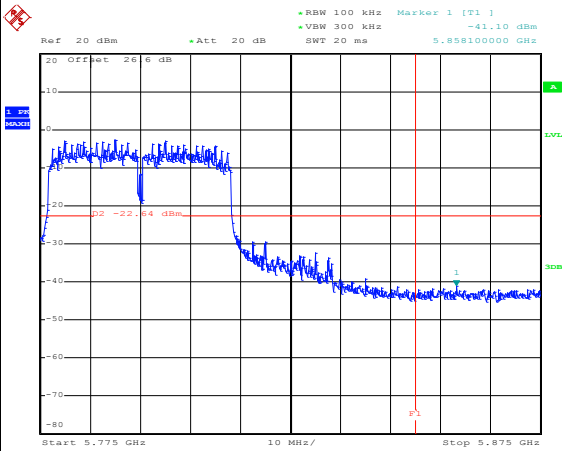
WLAN 802.11n HT40 Channel 159

100kHz PSD reference Level



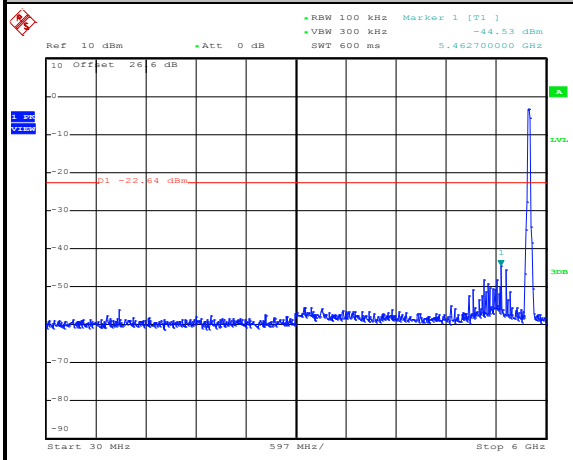
Date: 13.SEP.2013 15:43:04

High Channel Plot



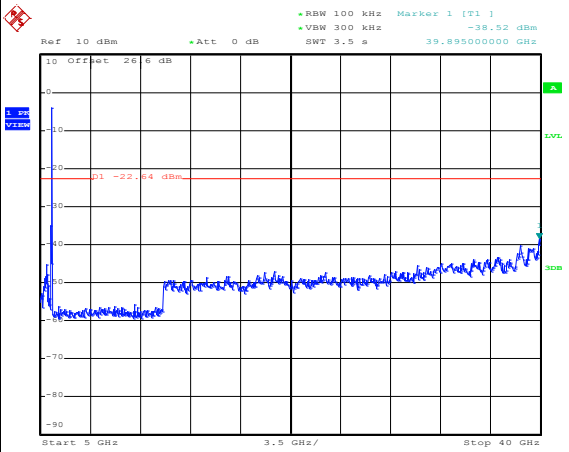
Date: 13.SEP.2013 15:43:24

Spurious Emission 30MHz~6GHz



Date: 13.SEP.2013 15:43:55

Spurious Emission 5GHz~40GHz



Date: 13.SEP.2013 15:44:14

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

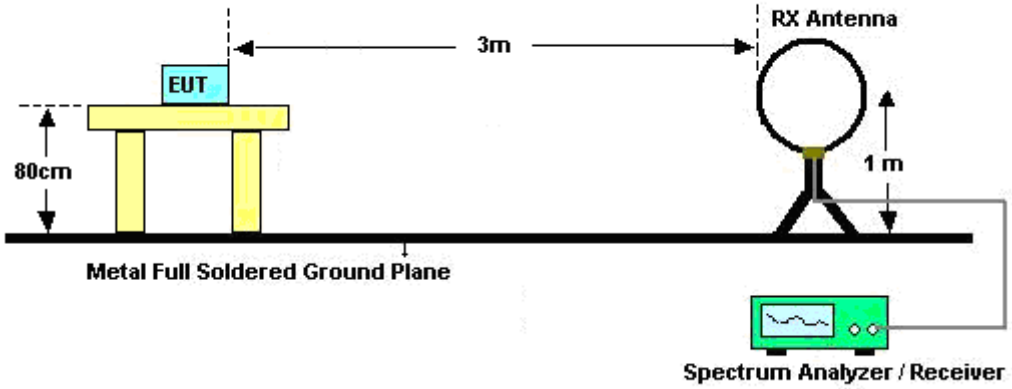
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedure

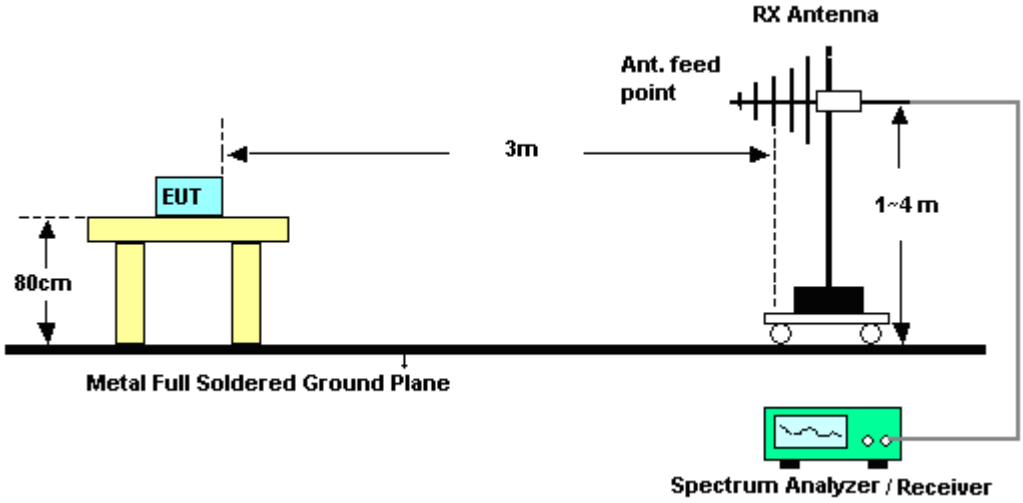
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the 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 mode are set to 1kHz; for 11a mode is set to 10Hz; for HT20 mode is set to 1kHz; for HT40 mode is set to 3kHz.

3.5.4 Test Setup

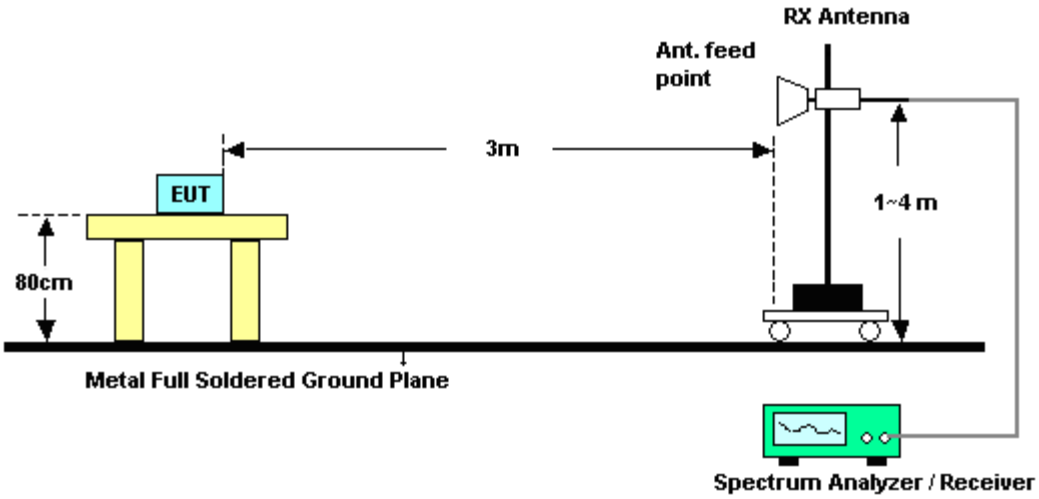
For radiated emissions below 30MHz



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 :**	Eric Shih

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**
2389.38	61.53	-12.47	74	56.59	32.3	6.91	34.27	182	353	Peak
2390	47.25	-6.75	54	42.34	32.3	6.91	34.3	182	353	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**
2339.25	56.51	-17.49	74	51.68	32.24	6.84	34.25	188	335	Peak
2390	44.66	-9.34	54	39.75	32.3	6.91	34.3	188	335	Average

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

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**
2483.53	58.98	-15.02	74	53.97	32.38	7.06	34.43	177	65	Peak
2483.5	46.59	-7.41	54	41.58	32.38	7.06	34.43	177	65	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**
2485.36	57.27	-16.73	74	52.26	32.38	7.06	34.43	152	326	Peak
2483.5	45	-9	54	39.99	32.38	7.06	34.43	152	326	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 :**	Eric Shih

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	66.5	-7.5	74	61.59	32.3	6.91	34.3	116	0	Peak
2390	51.26	-2.74	54	46.35	32.3	6.91	34.3	116	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**
2390	58.68	-15.32	74	53.77	32.3	6.91	34.3	126	341	Peak
2390	46.69	-7.31	54	41.78	32.3	6.91	34.3	126	341	Average

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

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	59.94	-14.06	74	55.03	32.3	6.91	34.3	117	2	Peak
2390	46.27	-7.73	54	41.36	32.3	6.91	34.3	117	2	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**
2389.11	57.16	-16.84	74	52.22	32.3	6.91	34.27	188	322	Peak
2390	44.63	-9.37	54	39.72	32.3	6.91	34.3	188	322	Average

MIMO Ant. <1+2>

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

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
2484.01	62.41	-11.59	74	57.4	32.38	7.06	34.43	115	0	Peak
2483.53	47.83	-6.17	54	42.82	32.38	7.06	34.43	115	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
2484.58	59.8	-14.2	74	54.79	32.38	7.06	34.43	153	338	Peak
2483.65	46.03	-7.97	54	41.02	32.38	7.06	34.43	153	338	Average

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

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
2484.52	63	-11	74	57.99	32.38	7.06	34.43	114	7	Peak
2483.5	49.31	-4.69	54	44.3	32.38	7.06	34.43	114	7	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.77	60.43	-13.57	74	55.42	32.38	7.06	34.43	153	324	Peak
2483.5	47.04	-6.96	54	42.03	32.38	7.06	34.43	153	324	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 :	Eric Shih

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	58.38	-15.62	74	53.47	32.3	6.91	34.3	119	360	Peak
2390	46.53	-7.47	54	41.62	32.3	6.91	34.3	119	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
2382.72	56.54	-17.46	74	51.62	32.28	6.91	34.27	123	334	Peak
2389.92	44.52	-9.48	54	39.61	32.3	6.91	34.3	123	334	Average

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

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
2389.47	59.33	-14.67	74	54.39	32.3	6.91	34.27	119	360	Peak
2389.83	46.96	-7.04	54	42.05	32.3	6.91	34.3	119	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
2389.65	56.13	-17.87	74	51.19	32.3	6.91	34.27	186	327	Peak
2390	44.89	-9.11	54	39.98	32.3	6.91	34.3	186	327	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 :	Eric Shih

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	61.81	-12.19	74	56.8	32.38	7.06	34.43	119	0	Peak
2483.5	47.5	-6.5	54	42.49	32.38	7.06	34.43	119	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
2484.01	58.43	-15.57	74	53.42	32.38	7.06	34.43	187	334	Peak
2483.65	45.84	-8.16	54	40.83	32.38	7.06	34.43	187	334	Average

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

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
2484.04	58.25	-15.75	74	53.24	32.38	7.06	34.43	115	1	Peak
2483.5	45.95	-8.05	54	40.94	32.38	7.06	34.43	115	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
2483.65	58.42	-15.58	74	53.41	32.38	7.06	34.43	151	340	Peak
2483.5	44.78	-9.22	54	39.77	32.38	7.06	34.43	151	340	Average

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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 2414 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
2414	112.85	-	-	107.89	32.31	6.95	34.3	182	353	Average
2414	117.46	-	-	112.5	32.31	6.95	34.3	182	353	Peak
4824	49.21	-4.79	54	65.4	33.97	8.77	58.93	100	0	Peak

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	2414 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2414	107.32	-	-	102.36	32.31	6.95	34.3	188	335	Average
2414	112.03	-	-	107.07	32.31	6.95	34.3	188	335	Peak
4824	50.94	-3.06	54	67.13	33.97	8.77	58.93	115	57	Average
4824	52.58	-21.42	74	68.77	33.97	8.77	58.93	115	57	Peak

MIMO Ant. <1+2>

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	06	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	2439 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2439	110.33	-	-	105.34	32.35	6.99	34.35	113	92	Average
2439	115.17	-	-	110.18	32.35	6.99	34.35	113	92	Peak
4875	50.82	-3.18	54	66.88	33.95	8.82	58.83	121	66	Average
4875	51.48	-22.52	74	67.54	33.95	8.82	58.83	121	66	Peak

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	06	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
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	105.39	-	-	100.42	32.33	6.99	34.35	192	208	Average
2436	109.96	-	-	104.99	32.33	6.99	34.35	192	208	Peak
4875	49.38	-4.62	54	65.44	33.95	8.82	58.83	100	0	Peak
7311	47.23	-6.77	54	58.51	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 :	Eric Shih	**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
42.96	26.97	-13.03	40	45.83	11.7	0.64	31.2	100	123	Peak
166.89	20.76	-22.74	43.5	40.81	9.85	1.23	31.13	-	-	Peak
271.92	23.92	-22.08	46	40.36	12.9	1.64	30.98	-	-	Peak
329.4	22	-24	46	37.04	14.11	1.85	31	-	-	Peak
682.9	22.9	-23.1	46	29.96	20.46	2.91	30.43	-	-	Peak
975.5	26.84	-27.16	54	29.41	24.24	3.49	30.3	-	-	Peak
2462	111.22	-	-	106.22	32.37	7.02	34.39	177	65	Average
2462	116.02	-	-	111.02	32.37	7.02	34.39	177	65	Peak
4923	53.11	-0.89	54	69.04	33.93	8.87	58.73	120	76	Average
4923	53.74	-20.26	74	69.67	33.93	8.87	58.73	120	76	Peak
7386	44.24	-9.76	54	55.53	35.52	10.99	57.8	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11b	**Temperature :**	21~24°C
Test Channel :	11	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**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
42.96	25.17	-14.83	40	44.03	11.7	0.64	31.2	100	158	Peak
122.61	22.7	-20.8	43.5	40.99	11.7	1.11	31.1	-	-	Peak
272.46	26.36	-19.64	46	42.77	12.92	1.64	30.97	-	-	Peak
335	22.16	-23.84	46	37.05	14.24	1.87	31	-	-	Peak
818	23.69	-22.31	46	28.57	22.27	3.19	30.34	-	-	Peak
913.2	27.98	-18.02	46	31.64	23.3	3.37	30.33	-	-	Peak
2462	107.12	-	-	102.12	32.37	7.02	34.39	152	326	Average
2462	111.08	-	-	106.08	32.37	7.02	34.39	152	326	Peak
4924	51.16	-2.84	54	67.06	33.93	8.9	58.73	105	23	Average
4924	51.96	-22.04	74	67.86	33.93	8.9	58.73	105	23	Peak
7386	44.17	-9.83	54	55.46	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 2414 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
2414	103.35	-	-	98.39	32.31	6.95	34.3	116	0	Average
2414	113.07	-	-	108.11	32.31	6.95	34.3	116	0	Peak
4824	44.34	-9.66	54	60.53	33.97	8.77	58.93	100	0	Peak

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 2414 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
2414	96.63	-	-	91.67	32.31	6.95	34.3	126	341	Average
2414	106.07	-	-	101.11	32.31	6.95	34.3	126	341	Peak
4824	42.67	-11.33	54	58.86	33.97	8.77	58.93	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11g	**Temperature :**	21~24°C
Test Channel :	02	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**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	103.99	-	-	99.08	32.31	6.95	34.35	117	2	Average
2419	114.08	-	-	109.17	32.31	6.95	34.35	117	2	Peak
4834	44.75	-9.25	54	60.88	33.96	8.8	58.89	100	0	Peak
7251	44.98	-9.02	54	56.28	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 :	Eric Shih	**Polarization :**	Vertical
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	99.04	-	-	94.13	32.31	6.95	34.35	188	322	Average
2419	108.19	-	-	103.28	32.31	6.95	34.35	188	322	Peak
4834	44.25	-9.75	54	60.38	33.96	8.8	58.89	100	0	Peak
7251	43.67	-10.33	54	54.97	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 :	Eric Shih	**Polarization :**	Horizontal
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	105.55	-	-	100.56	32.35	6.99	34.35	114	359	Average
2439	115.39	-	-	110.4	32.35	6.99	34.35	114	359	Peak
4874	44.36	-9.64	54	60.42	33.95	8.82	58.83	164	69	Average
4874	53.02	-20.98	74	69.08	33.95	8.82	58.83	164	69	Peak
7311	47.13	-6.87	54	58.41	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 :	Eric Shih	**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	101.63	-	-	96.64	32.35	6.99	34.35	186	324	Average
2439	110.36	-	-	105.37	32.35	6.99	34.35	186	324	Peak
4874	48	-6	54	64.06	33.95	8.82	58.83	100	0	Peak
7311	46.11	-7.89	54	57.39	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 :	Eric Shih	**Polarization :**	Horizontal
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	103.85	-	-	98.85	32.37	7.02	34.39	115	0	Average
2456	113.44	-	-	108.44	32.37	7.02	34.39	115	0	Peak
4914	48.85	-5.15	54	64.81	33.93	8.87	58.76	100	0	Peak
7371	42.33	-11.67	54	53.64	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 :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 2455 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
2455	99.43	-	-	94.43	32.37	7.02	34.39	153	338	Average
2455	109.26	-	-	104.26	32.37	7.02	34.39	153	338	Peak
4914	45.63	-8.37	54	61.59	33.93	8.87	58.76	100	0	Peak
7371	42.9	-11.1	54	54.21	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 2460 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
2460	103.09	-	-	98.09	32.37	7.02	34.39	114	7	Average
2460	111.37	-	-	106.37	32.37	7.02	34.39	114	7	Peak
4924	46.8	-7.2	54	62.7	33.93	8.9	58.73	100	0	Peak
7386	42.64	-11.36	54	53.93	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 :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 2460 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
2460	96.73	-	-	91.73	32.37	7.02	34.39	153	324	Average
2460	106.58	-	-	101.58	32.37	7.02	34.39	153	324	Peak
4924	43.94	-10.06	54	59.84	33.93	8.9	58.73	100	0	Peak
7386	43.47	-10.53	54	54.76	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 2414 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
2414	98.28	-	-	93.32	32.31	6.95	34.3	119	360	Average
2414	107.83	-	-	102.87	32.31	6.95	34.3	119	360	Peak
4824	39.76	-14.24	54	55.95	33.97	8.77	58.93	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	01	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 2414 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
2414	93.7	-	-	88.74	32.31	6.95	34.3	123	334	Average
2414	103.21	-	-	98.25	32.31	6.95	34.3	123	334	Peak
4824	42.73	-11.27	54	58.92	33.97	8.77	58.93	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 :	Eric Shih	**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	104.12	-	-	99.21	32.31	6.95	34.35	119	360	Average
2419	114.26	-	-	109.35	32.31	6.95	34.35	119	360	Peak
4836	42.75	-11.25	54	58.88	33.96	8.8	58.89	100	0	Peak
7251	44.98	-9.02	54	56.28	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 :	Eric Shih	**Polarization :**	Vertical
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	98.44	-	-	93.53	32.31	6.95	34.35	186	327	Average
2419	108.35	-	-	103.44	32.31	6.95	34.35	186	327	Peak
4836	43.25	-10.75	54	59.38	33.96	8.8	58.89	100	0	Peak
7251	43.67	-10.33	54	54.97	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 :	Eric Shih	**Polarization :**	Horizontal
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	106.07	-	-	101.08	32.35	6.99	34.35	115	0	Average
2439	115.84	-	-	110.85	32.35	6.99	34.35	115	0	Peak
4874	46.16	-7.84	54	62.22	33.95	8.82	58.83	100	67	Average
4874	59.51	-14.49	74	75.57	33.95	8.82	58.83	100	67	Peak
7311	48.9	-5.1	54	60.18	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 :	Eric Shih	**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	100.52	-	-	95.53	32.35	6.99	34.35	100	330	Average
2439	110.12	-	-	105.13	32.35	6.99	34.35	100	330	Peak
4874	49.9	-4.1	54	65.96	33.95	8.82	58.83	100	0	Peak
7311	48.81	-5.19	54	60.09	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 2455 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
2455	104.31	-	-	99.31	32.37	7.02	34.39	119	0	Average
2455	113.73	-	-	108.73	32.37	7.02	34.39	119	0	Peak
4912	45.35	-8.65	54	61.31	33.93	8.87	58.76	100	0	Peak
7371	42.33	-11.67	54	53.64	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 :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 2455 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
2455	97.78	-	-	92.78	32.37	7.02	34.39	187	334	Average
2455	107.74	-	-	102.74	32.37	7.02	34.39	187	334	Peak
4916	43.63	-10.37	54	59.59	33.93	8.87	58.76	100	0	Peak
7371	42.9	-11.1	54	54.21	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 2460 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
2460	98.91	-	-	93.91	32.37	7.02	34.39	115	1	Average
2460	109.34	-	-	104.34	32.37	7.02	34.39	115	1	Peak
4923	40.12	-13.88	54	56.05	33.93	8.87	58.73	100	0	Peak
7386	42.23	-11.77	54	53.52	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 :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 2460 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
2460	93.59	-	-	88.59	32.37	7.02	34.39	151	340	Average
2460	102.44	-	-	97.44	32.37	7.02	34.39	151	340	Peak
4923	40.59	-13.41	54	56.52	33.93	8.87	58.73	100	0	Peak
7386	43.36	-10.64	54	54.65	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5743 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
5743	96.99	-	-	85.76	35.34	10.06	34.17	100	297	Average
5743	109.16	-	-	97.93	35.34	10.06	34.17	100	297	Peak
11490	47.97	-6.03	54	52.23	38.38	14.33	56.97	100	0	Peak

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	149	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5743 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
5743	95.91	-	-	84.68	35.34	10.06	34.17	161	159	Average
5743	108.74	-	-	97.51	35.34	10.06	34.17	161	159	Peak
11490	48.2	-5.8	54	52.46	38.38	14.33	56.97	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	157	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5783 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
5783	96.84	-	-	85.63	35.37	10.07	34.23	100	304	Average
5783	109.4	-	-	98.19	35.37	10.07	34.23	100	304	Peak
11571	47.92	-6.08	54	51.83	38.46	14.41	56.78	100	0	Peak

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	157	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5783 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
5783	96.46	-	-	85.25	35.37	10.07	34.23	101	153	Average
5783	109.32	-	-	98.11	35.37	10.07	34.23	101	153	Peak
11571	48.67	-5.33	54	52.58	38.46	14.41	56.78	100	0	Peak

MIMO Ant. <1+2>

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	165	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5823 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
5823	95.36	-	-	84.12	35.4	10.11	34.27	100	307	Average
5823	108.71	-	-	97.47	35.4	10.11	34.27	100	307	Peak
11649	48.67	-5.33	54	52.25	38.51	14.52	56.61	100	0	Peak

Test Mode :	802.11a	**Temperature :**	21~24°C
Test Channel :	165	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5823 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
5823	94.14	-	-	82.9	35.4	10.11	34.27	165	266	Average
5823	107.22	-	-	95.98	35.4	10.11	34.27	165	266	Peak
11649	48.31	-5.69	54	51.89	38.51	14.52	56.61	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5743 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
5743	99.03	-	-	87.8	35.34	10.06	34.17	102	308	Average
5743	108.55	-	-	97.32	35.34	10.06	34.17	102	308	Peak
11490	47.36	-6.64	54	51.62	38.38	14.33	56.97	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	149	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5743 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
5743	97.63	-	-	86.4	35.34	10.06	34.17	104	158	Average
5743	107.69	-	-	96.46	35.34	10.06	34.17	104	158	Peak
11490	49.55	-4.45	54	53.81	38.38	14.33	56.97	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5783 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
5783	99.26	-	-	88.05	35.37	10.07	34.23	110	306	Average
5783	109.13	-	-	97.92	35.37	10.07	34.23	110	306	Peak
11571	47.91	-6.09	54	51.82	38.46	14.41	56.78	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	157	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5783 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
5783	98.76	-	-	87.55	35.37	10.07	34.23	132	159	Average
5783	108.67	-	-	97.46	35.37	10.07	34.23	132	159	Peak
11571	49.08	-4.92	54	52.99	38.46	14.41	56.78	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5823 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
5823	98.94	-	-	87.7	35.4	10.11	34.27	100	303	Average
5823	108.82	-	-	97.58	35.4	10.11	34.27	100	303	Peak
11649	47.28	-6.72	54	50.86	38.51	14.52	56.61	100	0	Peak

Test Mode :	802.11n HT20	**Temperature :**	21~24°C
Test Channel :	165	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5823 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
5823	98.56	-	-	87.32	35.4	10.11	34.27	139	159	Average
5823	108.57	-	-	97.33	35.4	10.11	34.27	139	159	Peak
11649	50.01	-3.99	54	53.59	38.51	14.52	56.61	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5755 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
42.96	26.44	-13.56	40	45.3	11.7	0.64	31.2	10	58	Peak
168.78	19.61	-23.89	43.5	39.84	9.66	1.23	31.12	-	-	Peak
270.03	23.49	-22.51	46	39.98	12.87	1.64	31	-	-	Peak
306.3	22.48	-23.52	46	38.22	13.48	1.78	31	-	-	Peak
630.4	22.57	-23.43	46	30.29	20.04	2.78	30.54	-	-	Peak
982.5	27.06	-26.94	54	29.5	24.34	3.49	30.27	-	-	Peak
5755	95.46	-	-	84.21	35.36	10.06	34.17	100	302	Average
5755	105.52	-	-	94.29	35.34	10.06	34.17	100	302	Peak
11511	47.66	-6.34	54	51.86	38.4	14.35	56.95	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 :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5755 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
42.96	22.38	-17.62	40	41.24	11.7	0.64	31.2	100	169	Peak
121.53	22.43	-21.07	43.5	40.72	11.7	1.11	31.1	-	-	Peak
281.91	26.6	-19.4	46	42.82	13.05	1.65	30.92	-	-	Peak
332.9	21.6	-24.4	46	36.55	14.19	1.86	31	-	-	Peak
521.2	21.27	-24.73	46	31.02	18.45	2.49	30.69	-	-	Peak
786.5	24.17	-21.83	46	29.48	21.9	3.12	30.33	-	-	Peak
5755	94.75	-	-	83.5	35.36	10.06	34.17	162	160	Average
5755	104.59	-	-	93.36	35.34	10.06	34.17	162	160	Peak
11511	47.22	-6.78	54	51.42	38.4	14.35	56.95	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 :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5795 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
5795	94.96	-	-	83.72	35.38	10.09	34.23	117	301	Average
5795	106.46	-	-	95.22	35.38	10.09	34.23	117	301	Peak
11589	46.91	-7.09	54	50.74	38.47	14.44	56.74	100	0	Peak

Test Mode :	802.11n HT40	**Temperature :**	21~24°C
Test Channel :	159	**Relative Humidity :**	51~53%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5795 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
5795	95.42	-	-	84.18	35.38	10.09	34.23	152	153	Average
5795	105.55	-	-	94.34	35.37	10.07	34.23	152	153	Peak
11589	47.16	-6.84	54	50.99	38.47	14.44	56.74	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.

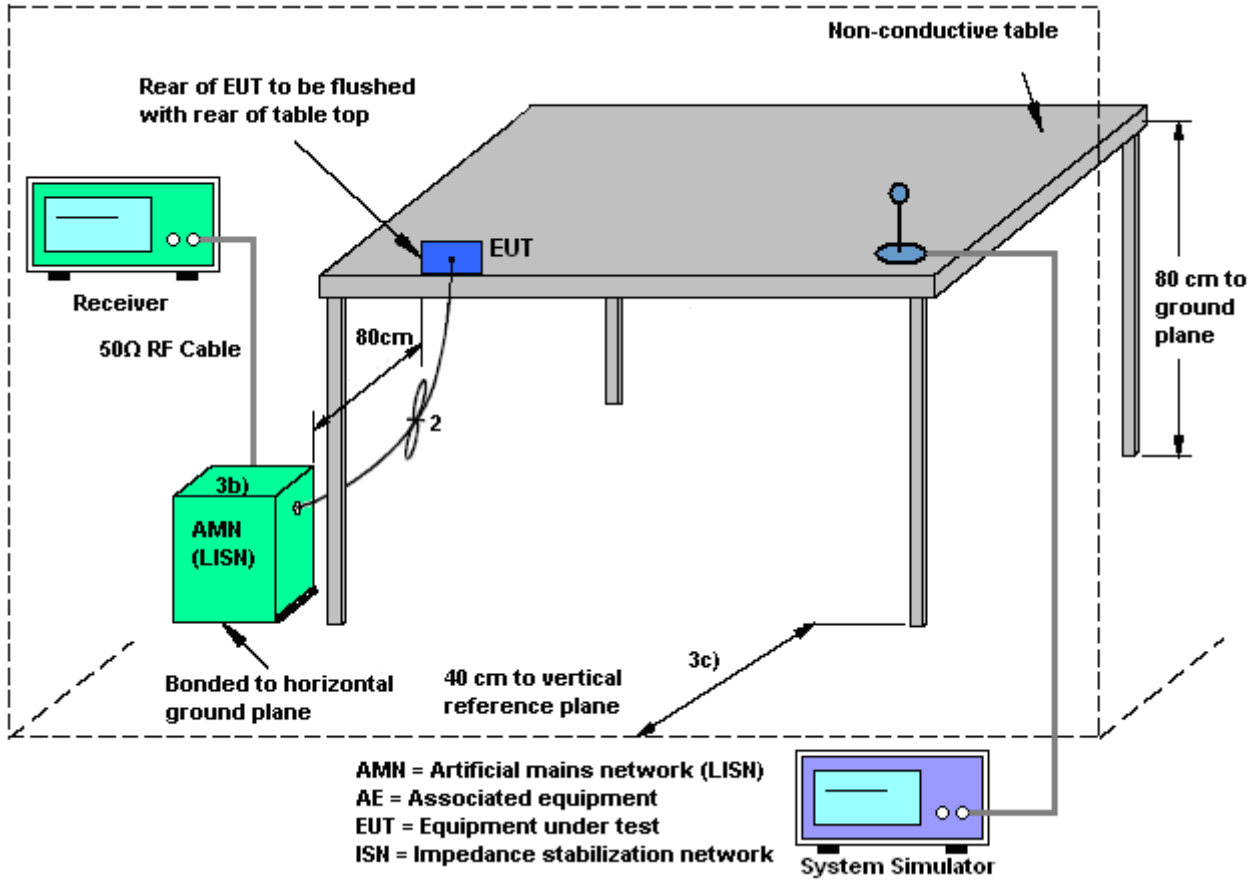
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

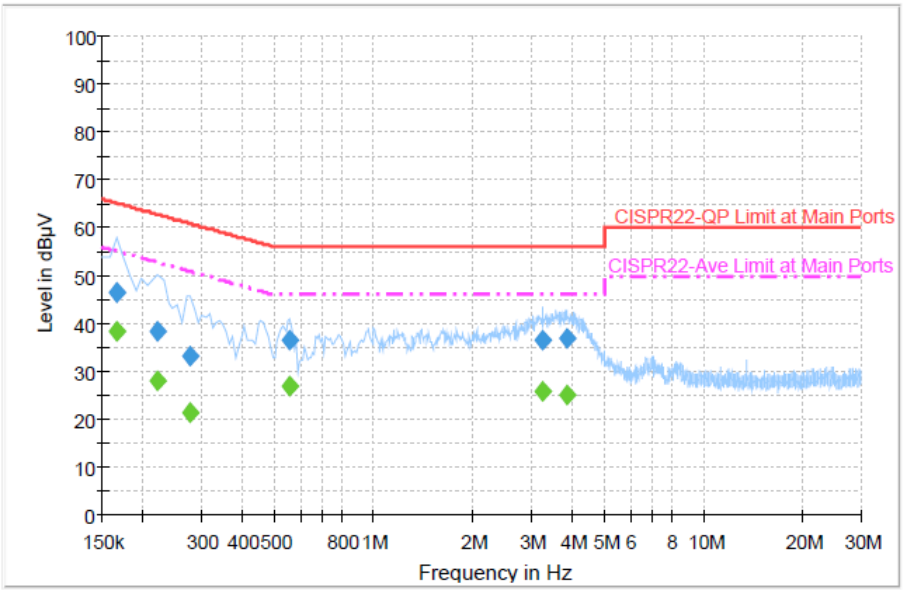
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other 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



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WCDMA Band II Idle + Bluetooth Link + WLAN (2.4GHz, 11n HT20, Ch06, MCS0) Link + H Pattern + Earphone + USB Cable (Charging from Adapter)		



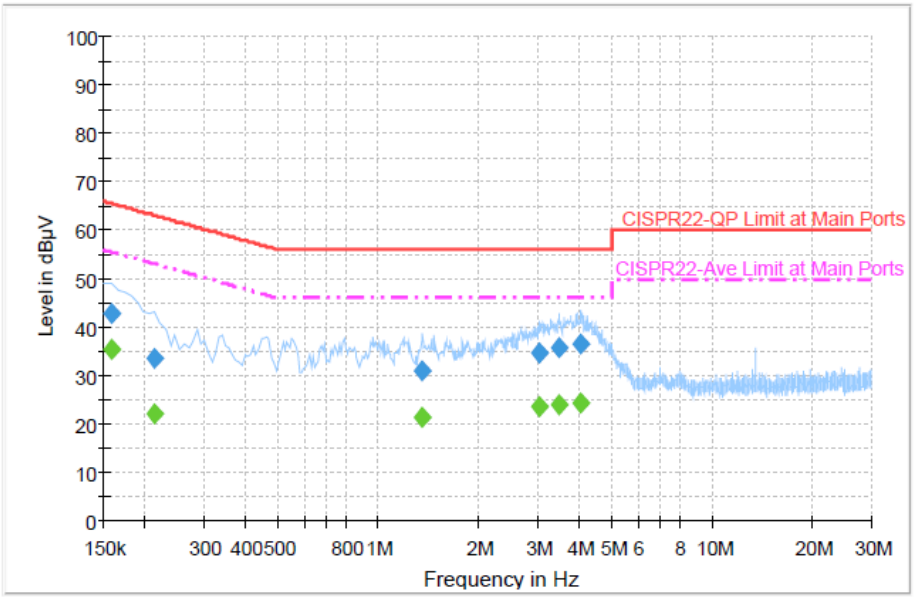
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	46.4	Off	L1	19.4	18.8	65.2
0.222000	38.5	Off	L1	19.4	24.2	62.7
0.278000	33.3	Off	L1	19.3	27.6	60.9
0.558000	36.7	Off	L1	19.4	19.3	56.0
3.254000	36.5	Off	L1	19.6	19.5	56.0
3.854000	36.8	Off	L1	19.6	19.2	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	38.2	Off	L1	19.4	17.0	55.2
0.222000	27.9	Off	L1	19.4	24.8	52.7
0.278000	21.4	Off	L1	19.3	29.5	50.9
0.558000	26.9	Off	L1	19.4	19.1	46.0
3.254000	25.9	Off	L1	19.6	20.1	46.0
3.854000	25.2	Off	L1	19.6	20.8	46.0

Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	WCDMA Band II Idle + Bluetooth Link + WLAN (2.4GHz, 11n HT20, Ch06, MCS0) Link + H Pattern + Earphone + USB Cable (Charging from Adapter)		



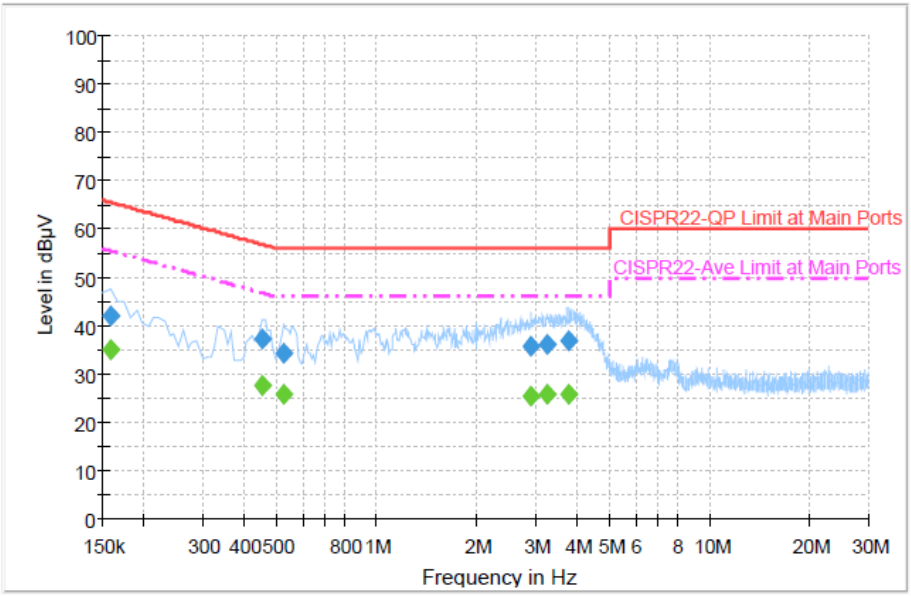
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	42.9	Off	N	19.3	22.7	65.6
0.214000	33.6	Off	N	19.4	29.4	63.0
1.358000	30.9	Off	N	19.5	25.1	56.0
3.054000	34.6	Off	N	19.6	21.4	56.0
3.494000	35.8	Off	N	19.6	20.2	56.0
4.054000	36.5	Off	N	19.6	19.5	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	35.6	Off	N	19.3	20.0	55.6
0.214000	22.0	Off	N	19.4	31.0	53.0
1.358000	21.5	Off	N	19.5	24.5	46.0
3.054000	23.8	Off	N	19.6	22.2	46.0
3.494000	24.0	Off	N	19.6	22.0	46.0
4.054000	24.5	Off	N	19.6	21.5	46.0

Test Mode :	Mode 2	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WCDMA Band II Idle + Bluetooth Link + WLAN (5GHz, 11n HT20, Ch157, MCS0) Link + H Pattern + Earphone + USB Cable (Charging from Adapter)		



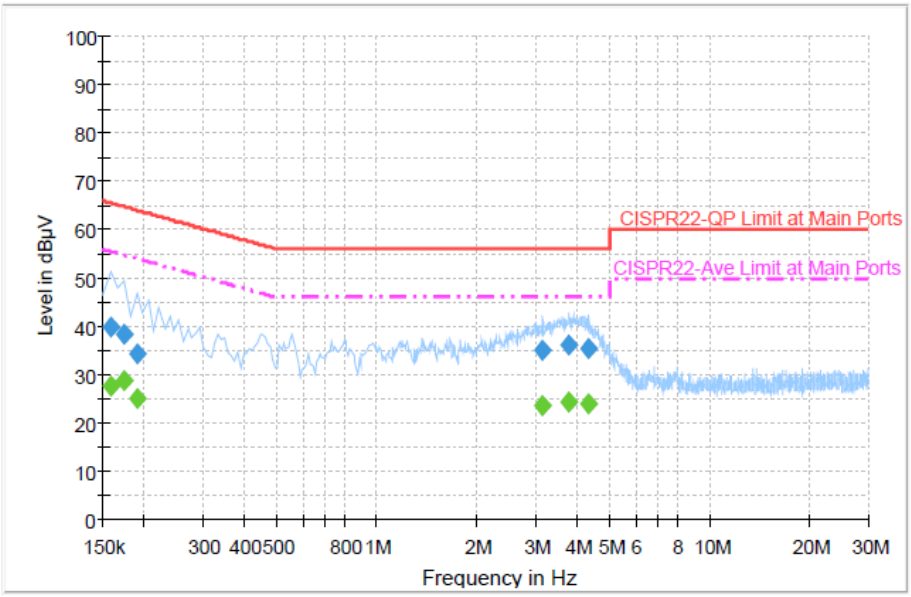
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	41.9	Off	L1	19.3	23.7	65.6
0.454000	37.1	Off	L1	19.3	19.7	56.8
0.526000	34.4	Off	L1	19.4	21.6	56.0
2.902000	35.8	Off	L1	19.6	20.2	56.0
3.262000	36.3	Off	L1	19.6	19.7	56.0
3.766000	36.9	Off	L1	19.6	19.1	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	35.1	Off	L1	19.3	20.5	55.6
0.454000	27.8	Off	L1	19.3	19.0	46.8
0.526000	25.9	Off	L1	19.4	20.1	46.0
2.902000	25.5	Off	L1	19.6	20.5	46.0
3.262000	25.8	Off	L1	19.6	20.2	46.0
3.766000	25.8	Off	L1	19.6	20.2	46.0

Test Mode :	Mode 2	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	WCDMA Band II Idle + Bluetooth Link + WLAN (5GHz, 11n HT20, Ch157, MCS0) Link + H Pattern + Earphone + USB Cable (Charging from Adapter)		



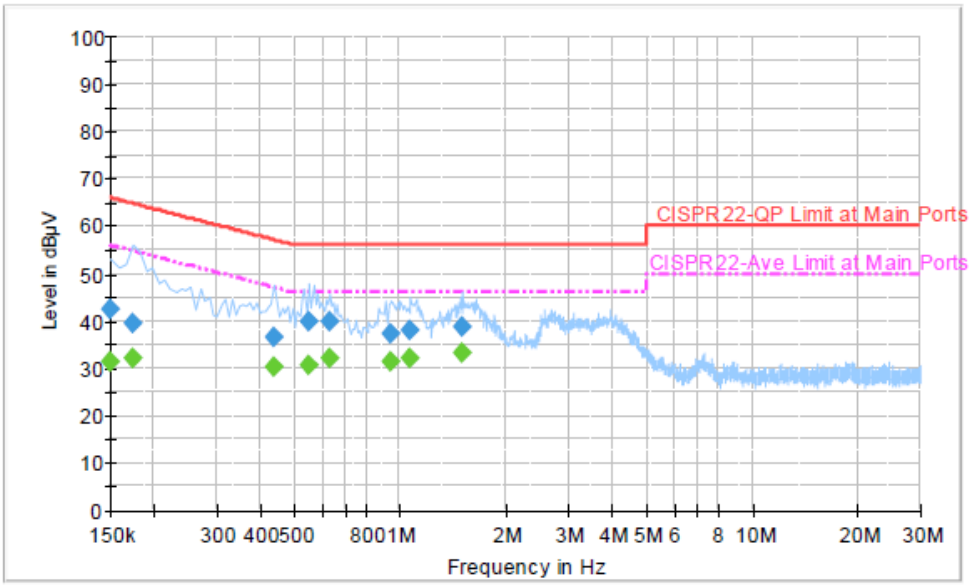
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	39.8	Off	N	19.3	25.8	65.6
0.174000	38.4	Off	N	19.4	26.4	64.8
0.190000	34.3	Off	N	19.4	29.7	64.0
3.142000	35.1	Off	N	19.7	20.9	56.0
3.766000	36.3	Off	N	19.6	19.7	56.0
4.318000	35.4	Off	N	19.6	20.6	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	27.8	Off	N	19.3	27.8	55.6
0.174000	28.6	Off	N	19.4	26.2	54.8
0.190000	25.0	Off	N	19.4	29.0	54.0
3.142000	23.7	Off	N	19.7	22.3	46.0
3.766000	24.4	Off	N	19.6	21.6	46.0
4.318000	24.0	Off	N	19.6	22.0	46.0

Test Mode :	Mode 3	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WCDMA Band II Idle + WLAN (2.4GHz, 11n HT20, Ch06, MCS0) MIMO Tx + H Pattern + Earphone + USB Cable (Charging from Adapter)		



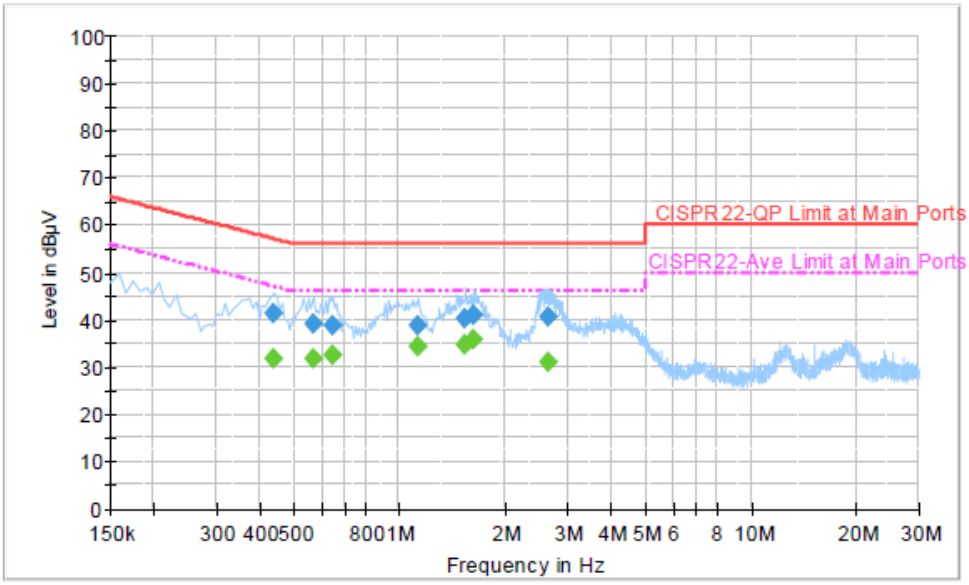
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	42.6	Off	L1	19.4	23.4	66.0
0.174000	39.6	Off	L1	19.4	25.2	64.8
0.438000	36.5	Off	L1	19.4	20.6	57.1
0.550000	39.7	Off	L1	19.4	16.3	56.0
0.630000	39.8	Off	L1	19.4	16.2	56.0
0.942000	37.2	Off	L1	19.4	18.8	56.0
1.070000	37.9	Off	L1	19.4	18.1	56.0
1.502000	38.6	Off	L1	19.4	17.4	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	31.2	Off	L1	19.4	24.8	56.0
0.174000	32.3	Off	L1	19.4	22.5	54.8
0.438000	30.3	Off	L1	19.4	16.8	47.1
0.550000	30.7	Off	L1	19.4	15.3	46.0
0.630000	32.0	Off	L1	19.4	14.0	46.0
0.942000	31.5	Off	L1	19.4	14.5	46.0
1.070000	32.0	Off	L1	19.4	14.0	46.0
1.502000	33.3	Off	L1	19.4	12.7	46.0

Test Mode :	Mode 3	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	WCDMA Band II Idle + WLAN (2.4GHz, 11n HT20, Ch06, MCS0) MIMO Tx + H Pattern + Earphone + USB Cable (Charging from Adapter)		



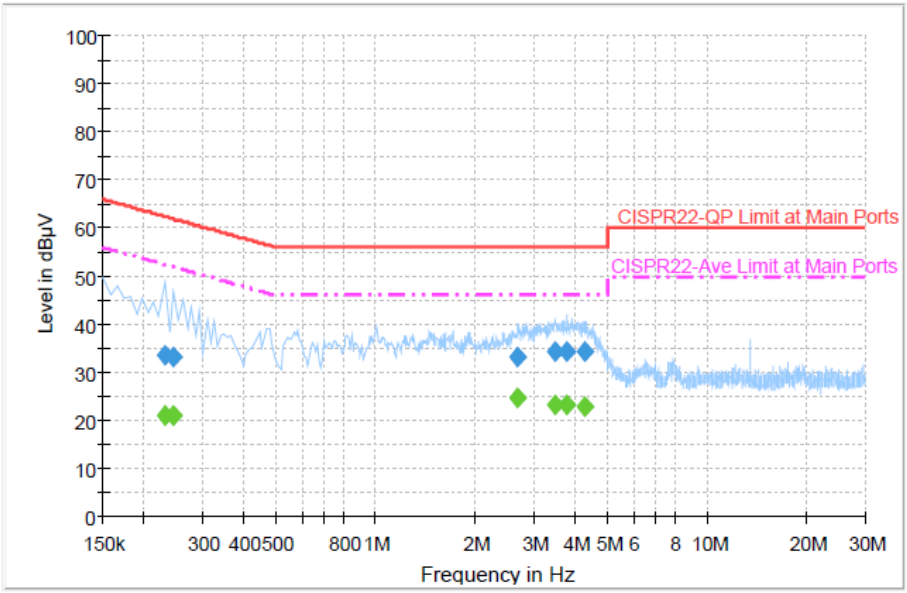
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.438000	41.2	Off	N	19.4	15.9	57.1
0.566000	39.3	Off	N	19.4	16.7	56.0
0.646000	38.9	Off	N	19.4	17.1	56.0
1.126000	38.7	Off	N	19.5	17.3	56.0
1.534000	40.1	Off	N	19.4	15.9	56.0
1.622000	40.8	Off	N	19.4	15.2	56.0
2.654000	40.8	Off	N	19.6	15.2	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.438000	31.7	Off	N	19.4	15.4	47.1
0.566000	31.8	Off	N	19.4	14.2	46.0
0.646000	32.7	Off	N	19.4	13.3	46.0
1.126000	34.3	Off	N	19.5	11.7	46.0
1.534000	34.7	Off	N	19.4	11.3	46.0
1.622000	35.8	Off	N	19.4	10.2	46.0
2.654000	30.9	Off	N	19.6	15.1	46.0

Test Mode :	Mode 4	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WCDMA Band II Idle + WLAN (5GHz, 11n HT20, Ch157, MCS0) MIMO Tx + H Pattern + Earphone + USB Cable (Charging from Adapter)		



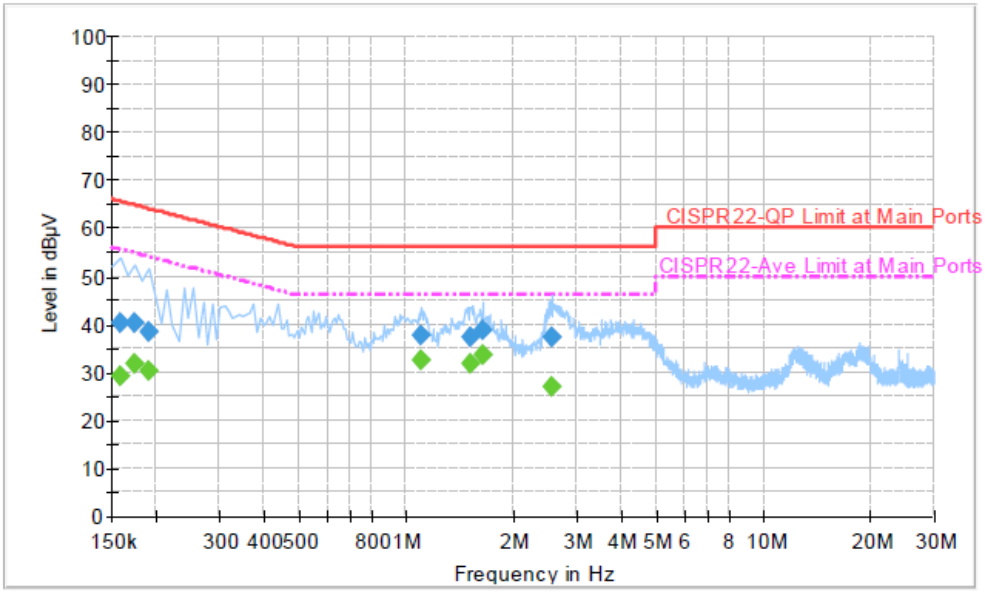
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.230000	33.5	Off	L1	19.4	28.9	62.4
0.246000	33.3	Off	L1	19.4	28.6	61.9
2.694000	33.0	Off	L1	19.6	23.0	56.0
3.486000	34.2	Off	L1	19.6	21.8	56.0
3.758000	34.3	Off	L1	19.6	21.7	56.0
4.270000	34.2	Off	L1	19.6	21.8	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.230000	21.2	Off	L1	19.4	31.2	52.4
0.246000	21.0	Off	L1	19.4	30.9	51.9
2.694000	24.6	Off	L1	19.6	21.4	46.0
3.486000	23.3	Off	L1	19.6	22.7	46.0
3.758000	23.3	Off	L1	19.6	22.7	46.0
4.270000	22.7	Off	L1	19.6	23.3	46.0

Test Mode :	Mode 4	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	WCDMA Band II Idle + WLAN (5GHz, 11n HT20, Ch157, MCS0) MIMO Tx + H Pattern + Earphone + USB Cable (Charging from Adapter)		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	40.4	Off	N	19.3	25.2	65.6
0.174000	40.1	Off	N	19.4	24.7	64.8
0.190000	38.2	Off	N	19.4	25.8	64.0
1.102000	37.5	Off	N	19.5	18.5	56.0
1.510000	37.2	Off	N	19.4	18.8	56.0
1.638000	38.9	Off	N	19.5	17.1	56.0
2.566000	37.4	Off	N	19.6	18.6	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	29.2	Off	N	19.3	26.4	55.6
0.174000	31.9	Off	N	19.4	22.9	54.8
0.190000	30.2	Off	N	19.4	23.8	54.0
1.102000	32.4	Off	N	19.5	13.6	46.0
1.510000	31.8	Off	N	19.4	14.2	46.0
1.638000	33.6	Off	N	19.5	12.4	46.0
2.566000	26.9	Off	N	19.6	19.1	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	Aug. 17, 2013 ~ Sep. 13, 2013	Jun. 06, 2014	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Aug. 17, 2013	Aug. 17, 2013 ~ Sep. 13, 2013	Aug. 16, 2014	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Aug. 17, 2013	Aug. 17, 2013 ~ Sep. 13, 2013	Aug. 16, 2014	Conducted (TH02-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Aug. 25, 2013 ~ Aug. 28, 2013	Sep. 02, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz~30GHz	Nov. 30, 2012	Aug. 25, 2013 ~ Aug. 28, 2013	Nov. 29, 2013	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	860004/0001	9 kHz~30 MhZ	Jul. 03, 2012	Aug. 25, 2013 ~ Aug. 28, 2013	Jul. 03, 2014	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz~1GHz	Oct. 06, 2012	Aug. 25, 2013 ~ Aug. 28, 2013	Oct. 05, 2013	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 22, 2013	Aug. 25, 2013 ~ Aug. 28, 2013	Aug. 21, 2014	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Sep. 28, 2012	Aug. 25, 2013 ~ Aug. 28, 2013	Sep. 27, 2013	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	30MHz~1GHz	Feb. 26, 2013	Aug. 25, 2013 ~ Aug. 28, 2013	Feb. 25, 2014	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Dec. 01, 2012	Aug. 25, 2013 ~ Aug. 28, 2013	Nov. 30, 2013	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Aug. 25, 2013 ~ Aug. 28, 2013	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	Aug. 25, 2013 ~ Aug. 28, 2013	N/A	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Nov. 13, 2012	Aug. 30, 2013 ~ Sep. 04, 2013	Nov. 12, 2013	Conduction (CO05-HY)
Two-LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 12, 2012	Aug. 30, 2013 ~ Sep. 04, 2013	Dec. 11, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 06, 2012	Aug. 30, 2013 ~ Sep. 04, 2013	Dec. 05, 2013	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Aug. 30, 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**