

FCC RF Test Report

APPLICANT : DELL Inc.
EQUIPMENT : Tablet PC
BRAND NAME : Dell
MODEL NAME : T01C; T01C003
TYPE NAME : T01C003
FCC ID : E2K-T01C003
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Feb. 24, 2014 and testing was completed on May 21, 2014. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and the testing has shown the tested sample to be in compliance with the applicable technical standards.

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



Reviewed by: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager



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TABLE OF CONTENTS

REVISION HISTORY.....	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant.....	5
1.2 Manufacturer.....	5
1.3 Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test.....	6
1.5 Modification of EUT	6
1.6 Testing Location	7
1.7 Applicable Standards.....	7
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	8
2.1 Carrier Frequency Channel	8
2.2 Pre-Scanned RF Power.....	9
2.3 Test Mode.....	12
2.4 Connection Diagram of Test System.....	14
2.5 Support Unit used in test configuration and system	15
2.6 EUT Operation Test Setup	15
2.7 Measurement Results Explanation Example.....	15
3 TEST RESULT	16
3.1 6dB and 99% Bandwidth Measurement	16
3.2 Output Power Measurement.....	19
3.3 Power Spectral Density Measurement	24
3.4 Conducted Band Edges and Spurious Emission Measurement	27
3.5 Radiated Band Edges and Spurious Emission Measurement	55
3.6 AC Conducted Emission Measurement.....	91
3.7 Antenna Requirements.....	95
4 LIST OF MEASURING EQUIPMENT	96
5 UNCERTAINTY OF EVALUATION	97
APPENDIX A. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR422417C	Rev. 01	Initial issue of report	May 27, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	RSS-Gen 4.6.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	RSS-210 A8.4	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 2.5 dB at 2483.830 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 6.20 dB at 0.380 MHz
3.7	15.203 & 15.247(b)	RSS-210 A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

DELL Inc.

One Dell Way, Round Rock, Texas 78682, United States

1.2 Manufacturer

DELL Inc.

One Dell Way, Round Rock, Texas 78682, United States

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Tablet PC
Brand Name	Dell
Model Name	T01C; T01C003
Type Name	T01C003
FCC ID	E2K-T01C003
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20/HT40/ WLAN 5GHz 802.11a/n HT20/HT40/ WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	P708-B1-BOT
SW Version	YTP802A110830
EUT Stage	Identical Prototype

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

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	802.11b/g/n/ac : 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5745~5825MHz.
Maximum (Peak) Output Power to Antenna	<2412 MHz ~ 2462 MHz> 802.11b : 17.10 dBm (0.0513 W) 802.11g : 21.32 dBm (0.1355 W) 802.11n HT20 : 20.35 dBm (0.1084 W) 802.11n HT40 : 20.93 dBm (0.1239 W) <5745 MHz ~ 5825 MHz> 802.11a : 20.82 dBm (0.1208 W) 802.11n HT20 : 21.59 dBm (0.1442 W) 802.11n HT40 : 20.63 dBm (0.1156 W) 802.11ac VHT20 : 20.34 dBm (0.1081 W) 802.11ac VHT40 : 20.66 dBm (0.1164 W) 802.11ac VHT80 : 23.44 dBm (0.2208 W)
99% Occupied Bandwidth	<2412 MHz ~ 2462 MHz> 802.11b : 11.60MHz 802.11g : 18.65MHz 802.11n HT20 : 19.40MHz 802.11n HT40 : 36.70MHz <5745 MHz ~ 5825 MHz> 802.11a : 18.20MHz 802.11n HT20 : 19.05MHz 802.11n HT40 : 36.80MHz 802.11ac VHT20 : 18.90MHz 802.11ac VHT40 : 36.80MHz 802.11ac VHT80 : 75.80MHz
Antenna Type	802.11b/g/n : IFA Antenna with gain 0.00 dBi 802.11a/n/ac : IFA Antenna with gain 2.00 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

1.5 Modification of EUT

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

1.6 Testing Location

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

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

1.7 Applicable 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
- 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 (Y plane for WLAN 2.4GHz and X plane for WLAN 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 Channel

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

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4	149	5745	157	5785
	151	5755	159	5795
	153	5765	161	5805
	155	5775	165	5825

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.

2.4GHz 802.11b RF Power (dBm)						
Power vs. Channel			Power vs. Data Rate			
Channel	Frequency (MHz)	Data Rate	Channel	2Mbps	5.5Mbps	11Mbps
		1Mbps				
CH 1	2412	16.58	CH 11	17.04	17.08	16.94
CH 6	2437	16.95				
CH 11	2462	17.10				

2.4GHz 802.11g RF Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	Data Rate	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
		6Mbps								
CH 1	2412	20.81	CH 11	21.17	21.31	21.22	20.49	20.67	20.88	20.98
CH 6	2437	20.94								
CH 11	2462	21.32								

2.4GHz 802.11n HT20 RF Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
		MCS0								
CH 1	2412	19.87	CH 11	20.17	19.84	19.99	20.18	20.09	20.34	20.21
CH 6	2437	20.20								
CH 11	2462	20.35								

2.4GHz 802.11n HT40 RF Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
		MCS0								
CH 03	2422 MHz	20.56	CH 09	20.82	20.40	20.64	20.89	20.58	20.68	20.61
CH 06	2437 MHz	20.08								
CH 09	2452 MHz	20.93								

5GHz 802.11a RF Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	Data Rate	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
		6Mbps								
CH 149	5745 MHz	20.82	CH 149	20.62	20.67	20.55	20.16	20.28	20.55	20.45
CH 157	5785 MHz	20.77								
CH 165	5825 MHz	20.66								

5GHz 802.11n HT20 RF Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
		MCS0								
CH 149	5745 MHz	21.09	CH 157	21.48	21.57	21.48	21.36	21.36	21.51	21.51
CH 157	5785 MHz	21.59								
CH 165	5825 MHz	21.45								

5GHz 802.11n HT40 RF Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
		MCS0								
CH 151	5755 MHz	20.34	CH 159	20.55	20.55	20.62	20.34	20.49	20.55	20.60
CH 159	5795 MHz	20.63								

5GHz 802.11ac VHT20 RF Power (dBm)											
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
		MCS0									
CH 149	5745 MHz	20.34	CH 149	20.19	19.86	20.06	19.77	20.11	19.84	19.32	18.83
CH 157	5785 MHz	20.20									
CH 165	5825 MHz	20.19									

5GHz 802.11ac VHT40 RF Power (dBm)												
Power vs. Channel			Power vs. MCS Index									
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
		MCS0										
CH 151	5755 MHz	20.32	CH 159	20.49	20.51	20.61	20.58	20.58	20.52	20.49	20.16	20.26
CH 159	5795 MHz	20.66										

5GHz 802.11ac VHT80 RF Power (dBm)												
Power vs. Channel			Power vs. MCS Index									
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
		MCS0										
CH 155	5775 MHz	23.44	CH 155	23.17	23.08	23.41	23.28	23.09	23.19	23.24	22.78	23.16

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	Test Channel
	6dB and 99% BW Power Spectral Density Output Power	802.11b 802.11g 802.11n HT20 802.11n HT40	1 Mbps 6 Mbps MCS0 MCS0	1/6/11 1/6/11 1/6/11 3/6/9
Conducted TCs	Conducted Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	MCS0	1/6/11
		802.11n HT40	MCS0	3/6/9
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
		802.11n HT40	MCS0	3/6/9
	Radiated Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	MCS0	1/6/11
		802.11n HT40	MCS0	3/6/9
Radiated TCs	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
		802.11n HT40	MCS0	3/6/9

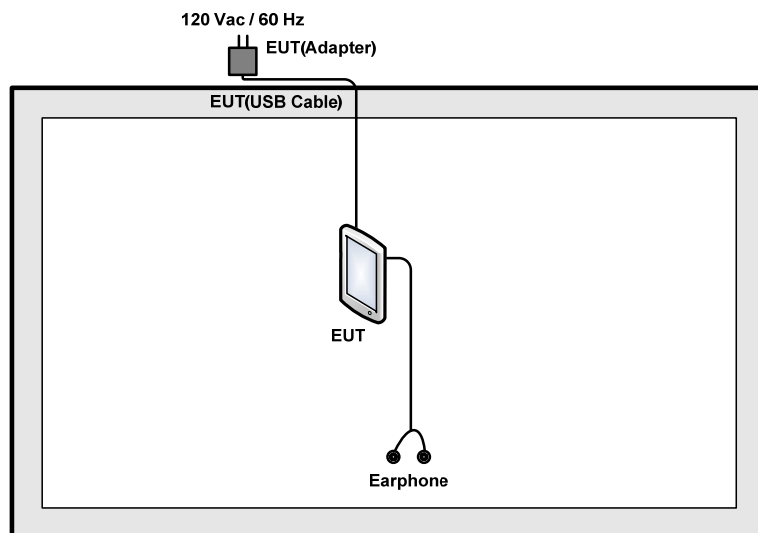
<5GHz>

Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB and 99% BW Power Spectral Density Output Power	802.11a	6 Mbps	149/157/165
		802.11n HT20	MCS0	149/157/165
		802.11n HT40	MCS0	151/159
		802.11ac VHT20	MCS0	149/157/165
		802.11ac VHT40	MCS0	151/159
		802.11ac VHT80	MCS0	155
	Conducted Band Edge	802.11a	6 Mbps	149/165
		802.11n HT20	MCS0	149/157/165
		802.11n HT40	MCS0	151/159
		802.11ac VHT20	MCS0	149/157/165
		802.11ac VHT40	MCS0	151/159
		802.11ac VHT80	MCS0	155
	Conducted Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	MCS0	149/157/165
		802.11n HT40	MCS0	151/159
		802.11ac VHT20	MCS0	149/157/165
		802.11ac VHT40	MCS0	151/159
		802.11ac VHT80	MCS0	155
Radiated TCs	Radiated Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	MCS0	149/157/165
		802.11n HT40	MCS0	151/159
		802.11ac VHT20	MCS0	149/157/165
		802.11ac VHT40	MCS0	151/159
		802.11ac VHT80	MCS0	155

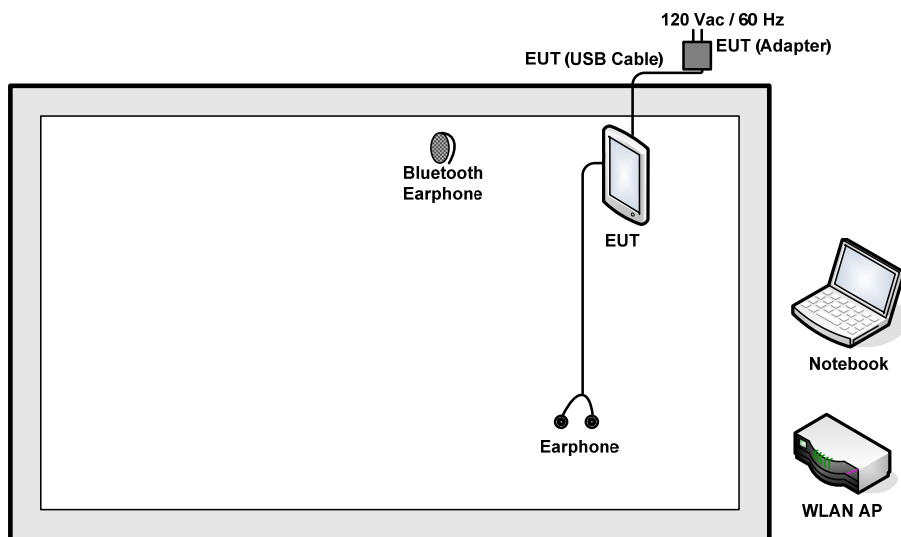
Test Cases	
AC Conducted	Mode 1 : Bluetooth Link + WLAN 2.4GHz Link + USB Cable (Charging from Adapter) + Earphone
Emission	Mode 2 : Bluetooth Link + WLAN 5GHz Link + USB Cable (Charging from Adapter) + Earphone
Remark: 1. The worst case of conducted emission is mode 1; only the test data of it was reported. 2. For Radiated TCs, The tests were performance with Adapter, Earphone, and USB Cable.	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
2.	Notebook	Acer	MS2204	QDS-BRCM1018	N/A	AC I/P: Unshielded, 0.9 m DC O/P: Shielded, 1.8 m
3.	Earphone	Lenovo	SH100	FCC DoC	N/A	N/A
4.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A

2.6 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

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 6.3 dB and 10dB attenuator.

Offset (dB) = RF cable loss (dB) + attenuator factor (dB).
= 6.3 + 10 = 16.3 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

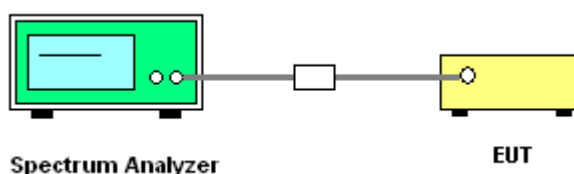
3.1.2 Measuring Instruments

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

3.1.4 Test Setup



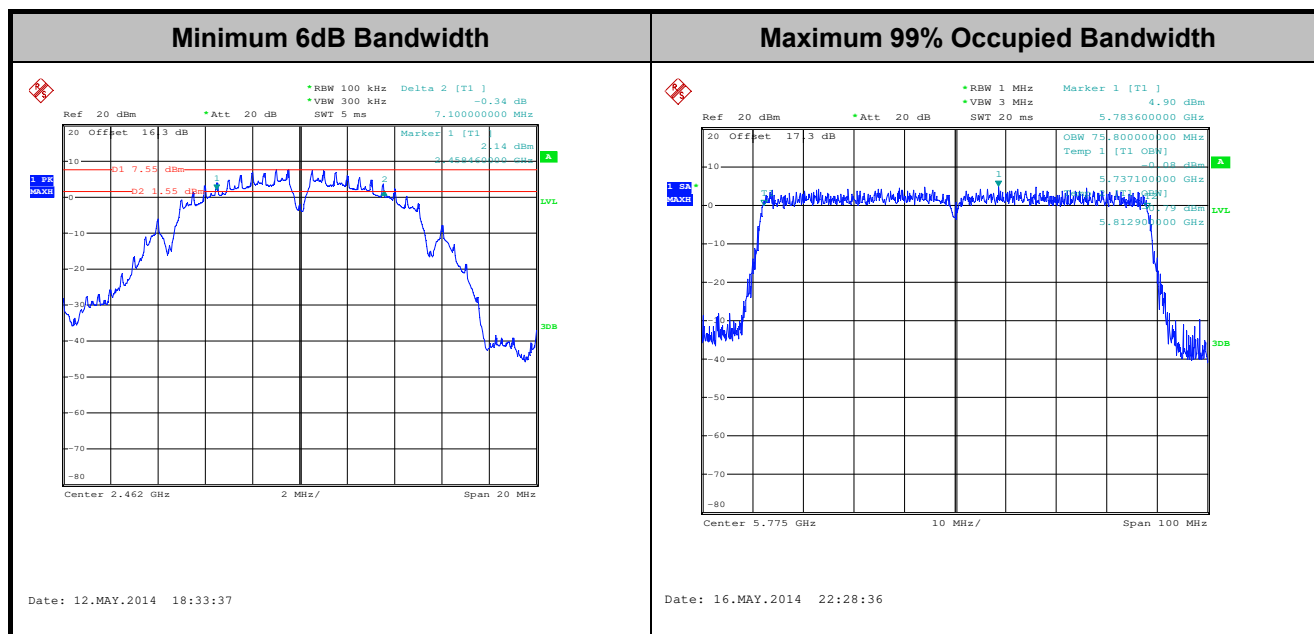
3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Test Band :	2.4GHz + 5GHz band 4	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)	6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	11.50	7.56	0.5	Pass
11b	1Mbps	1	6	2437	11.50	7.56	0.5	Pass
11b	1Mbps	1	11	2462	11.60	7.10	0.5	Pass
11g	6Mbps	1	1	2412	18.20	15.72	0.5	Pass
11g	6Mbps	1	6	2437	18.55	16.00	0.5	Pass
11g	6Mbps	1	11	2462	18.65	16.34	0.5	Pass
HT20	MCS0	1	1	2412	19.00	16.34	0.5	Pass
HT20	MCS0	1	6	2437	19.20	17.30	0.5	Pass
HT20	MCS0	1	11	2462	19.40	17.60	0.5	Pass
HT40	MCS0	1	3	2422	36.60	35.68	0.5	Pass
HT40	MCS0	1	6	2437	36.70	35.68	0.5	Pass
HT40	MCS0	1	9	2452	36.60	35.64	0.5	Pass



Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)	6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
11a	6Mbps	1	149	5745	18.15	16.32	0.5	Pass
11a	6Mbps	1	157	5785	18.05	16.32	0.5	Pass
11a	6Mbps	1	165	5825	18.20	16.32	0.5	Pass
HT20	MCS0	1	149	5745	18.85	17.56	0.5	Pass
HT20	MCS0	1	157	5785	18.90	17.56	0.5	Pass
HT20	MCS0	1	165	5825	19.05	17.56	0.5	Pass
HT40	MCS0	1	151	5755	36.80	36.32	0.5	Pass
HT40	MCS0	1	159	5795	36.70	36.32	0.5	Pass
VHT20	MCS0	1	149	5745	18.90	17.56	0.5	Pass
VHT20	MCS0	1	157	5785	18.90	17.56	0.5	Pass
VHT20	MCS0	1	165	5825	18.85	17.56	0.5	Pass
VHT40	MCS0	1	151	5755	36.80	36.32	0.5	Pass
VHT40	MCS0	1	159	5795	36.70	36.32	0.5	Pass
VHT80	MCS0	1	155	5775	75.80	75.68	0.5	Pass



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

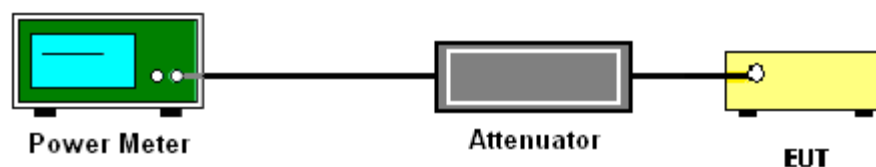
3.2.2 Measuring Instruments

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.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Test Mode :	2.4GHz + 5GHz band 4	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	16.58	30	0.00	Pass
11b	1Mbps	1	6	2437	16.95	30	0.00	Pass
11b	1Mbps	1	11	2462	17.10	30	0.00	Pass
11g	6Mbps	1	1	2412	20.81	30	0.00	Pass
11g	6Mbps	1	6	2437	20.94	30	0.00	Pass
11g	6Mbps	1	11	2462	21.32	30	0.00	Pass
HT20	MCS0	1	1	2412	19.87	30	0.00	Pass
HT20	MCS0	1	6	2437	20.20	30	0.00	Pass
HT20	MCS0	1	11	2462	20.35	30	0.00	Pass
HT40	MCS0	1	3	2422	20.56	30	0.00	Pass
HT40	MCS0	1	6	2437	20.08	30	0.00	Pass
HT40	MCS0	1	9	2452	20.93	30	0.00	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	149	5745	20.82	30	2.00	Pass
11a	6Mbps	1	157	5785	20.77	30	2.00	Pass
11a	6Mbps	1	165	5825	20.66	30	2.00	Pass
HT20	MCS0	1	149	5745	21.09	30	2.00	Pass
HT20	MCS0	1	157	5785	21.59	30	2.00	Pass
HT20	MCS0	1	165	5825	21.45	30	2.00	Pass
HT40	MCS0	1	151	5755	20.34	30	2.00	Pass
HT40	MCS0	1	159	5795	20.63	30	2.00	Pass
VHT20	MCS0	1	149	5745	20.34	30	2.00	Pass
VHT20	MCS0	1	157	5785	20.20	30	2.00	Pass
VHT20	MCS0	1	165	5825	20.19	30	2.00	Pass
VHT40	MCS0	1	151	5755	20.32	30	2.00	Pass
VHT40	MCS0	1	159	5795	20.66	30	2.00	Pass
VHT80	MCS0	1	155	5775	23.44	30	2.00	Pass

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

3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	2.4GHz + 5GHz band 4	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	0.04	13.53	30	0.00	Pass
11b	1Mbps	1	6	2437	0.04	13.76	30	0.00	Pass
11b	1Mbps	1	11	2462	0.04	14.11	30	0.00	Pass
11g	6Mbps	1	1	2412	0.27	12.11	30	0.00	Pass
11g	6Mbps	1	6	2437	0.27	12.19	30	0.00	Pass
11g	6Mbps	1	11	2462	0.27	12.45	30	0.00	Pass
HT20	MCS0	1	1	2412	0.36	10.46	30	0.00	Pass
HT20	MCS0	1	6	2437	0.36	10.60	30	0.00	Pass
HT20	MCS0	1	11	2462	0.36	10.78	30	0.00	Pass
HT40	MCS0	1	3	2422	0.61	10.97	30	0.00	Pass
HT40	MCS0	1	6	2437	0.61	11.06	30	0.00	Pass
VHT40	MCS0	1	9	2452	0.61	11.23	30	0.00	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	149	5745	0.27	12.38	30	2.00	Pass
11a	6Mbps	1	157	5785	0.27	12.31	30	2.00	Pass
11a	6Mbps	1	165	5825	0.27	12.37	30	2.00	Pass
HT20	MCS0	1	149	5745	0.31	12.12	30	2.00	Pass
HT20	MCS0	1	157	5785	0.31	12.38	30	2.00	Pass
HT20	MCS0	1	165	5825	0.31	12.37	30	2.00	Pass
HT40	MCS0	1	151	5755	0.63	11.77	30	2.00	Pass
HT40	MCS0	1	159	5795	0.63	12.29	30	2.00	Pass
VHT20	MCS0	1	149	5745	0.31	11.42	30	2.00	Pass
VHT20	MCS0	1	157	5785	0.31	11.38	30	2.00	Pass
VHT20	MCS0	1	165	5825	0.31	11.40	30	2.00	Pass
VHT40	MCS0	1	151	5755	0.62	11.64	30	2.00	Pass
VHT40	MCS0	1	159	5795	0.62	11.77	30	2.00	Pass
VHT80	MCS0	1	155	5775	1.14	11.83	30	2.00	Pass

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

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.

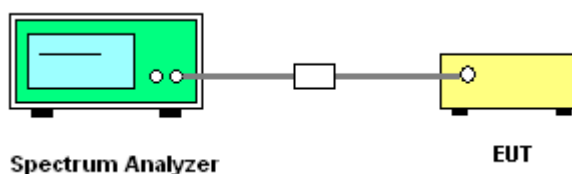
3.3.2 Measuring Instruments

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.

3.3.4 Test Setup



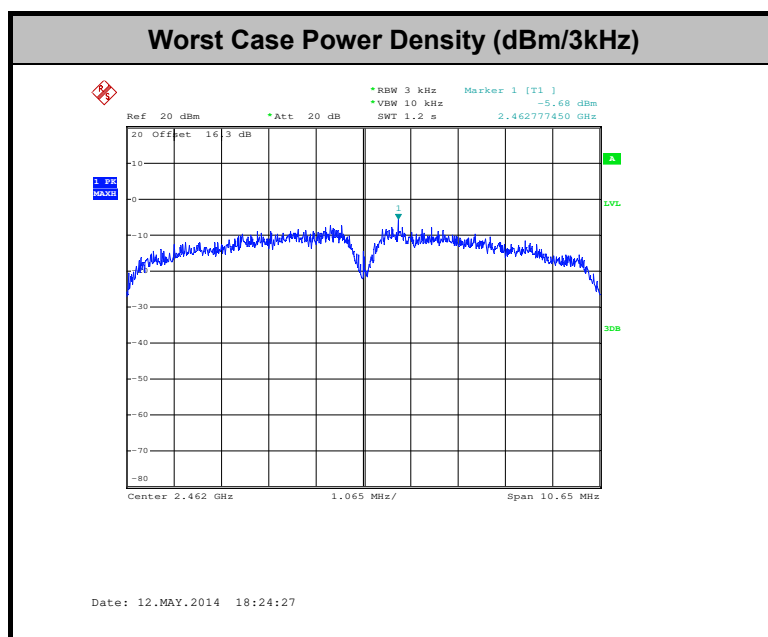
3.3.5 Test Result of Power Spectral Density

Test Mode :	2.4GHz + 5GHz band 4	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Peak Power Density (dBm/3kHz)	Max. Limits (dBm/3kHz)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	-7.09	8	0.00	Pass
11b	1Mbps	1	6	2437	-7.29	8	0.00	Pass
11b	1Mbps	1	11	2462	-5.68	8	0.00	Pass
11g	6Mbps	1	1	2412	-13.20	8	0.00	Pass
11g	6Mbps	1	6	2437	-13.34	8	0.00	Pass
11g	6Mbps	1	11	2462	-11.34	8	0.00	Pass
HT20	MCS0	1	1	2412	-15.23	8	0.00	Pass
HT20	MCS0	1	6	2437	-15.06	8	0.00	Pass
HT20	MCS0	1	11	2462	-15.24	8	0.00	Pass
HT40	MCS0	1	3	2422	-17.54	8	0.00	Pass
HT40	MCS0	1	6	2437	-16.08	8	0.00	Pass
HT40	MCS0	1	9	2452	-15.02	8	0.00	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Peak Power Density (dBm/3kHz)	Max. Limits (dBm/3kHz)	DG (dBi)	Pass/Fail
11a	6Mbps	1	149	5745	-11.13	8	2.00	Pass
11a	6Mbps	1	157	5785	-11.58	8	2.00	Pass
11a	6Mbps	1	165	5825	-11.86	8	2.00	Pass
HT20	MCS0	1	149	5745	-13.23	8	2.00	Pass
HT20	MCS0	1	157	5785	-12.40	8	2.00	Pass
HT20	MCS0	1	165	5825	-10.32	8	2.00	Pass
HT40	MCS0	1	151	5755	-14.90	8	2.00	Pass
HT40	MCS0	1	159	5795	-14.35	8	2.00	Pass
VHT20	MCS0	1	149	5745	-11.96	8	2.00	Pass
VHT20	MCS0	1	157	5785	-11.41	8	2.00	Pass
VHT20	MCS0	1	165	5825	-12.17	8	2.00	Pass
VHT40	MCS0	1	151	5755	-14.13	8	2.00	Pass
VHT40	MCS0	1	159	5795	-14.40	8	2.00	Pass
VHT80	MCS0	1	155	5775	-16.85	8	2.00	Pass

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



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).

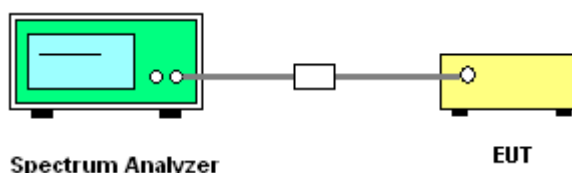
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

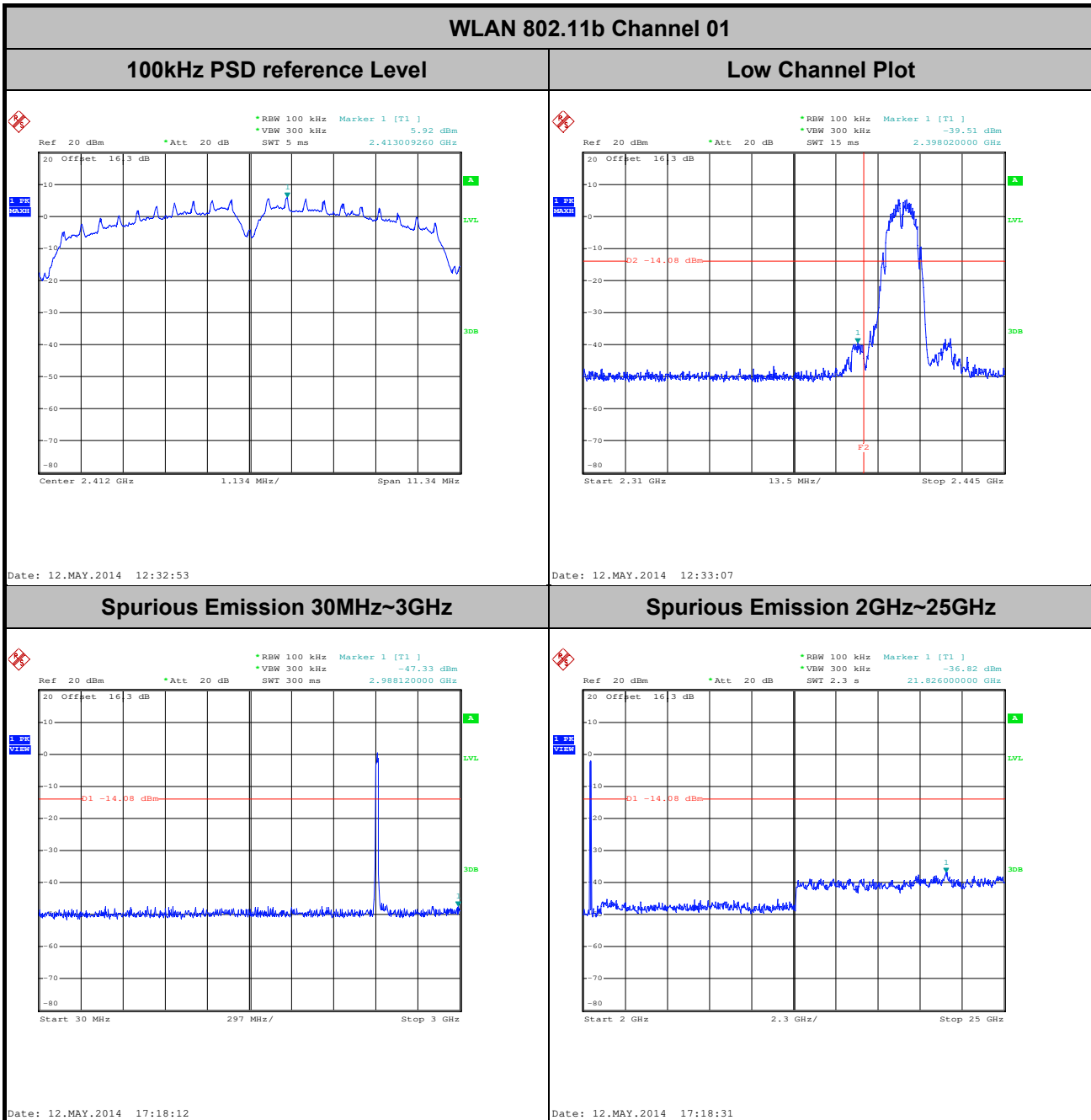
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit 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

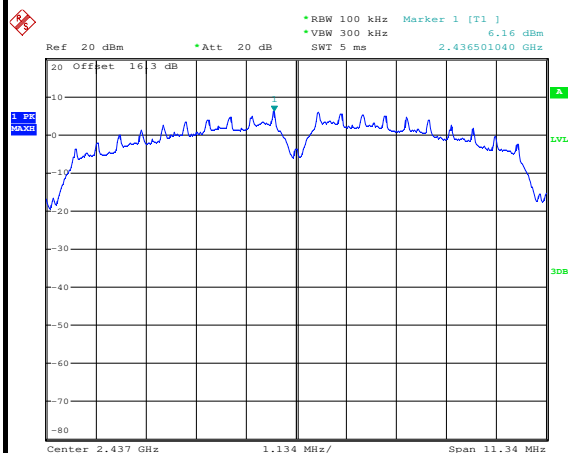
Test Mode :	802.11b	Temperature :	23~24℃
Test Band :	2.4GHz Low	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Adonis Li



Test Mode :	802.11b	Temperature :	23~24℃
Test Band :	2.4GHz Mid	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Adonis Li

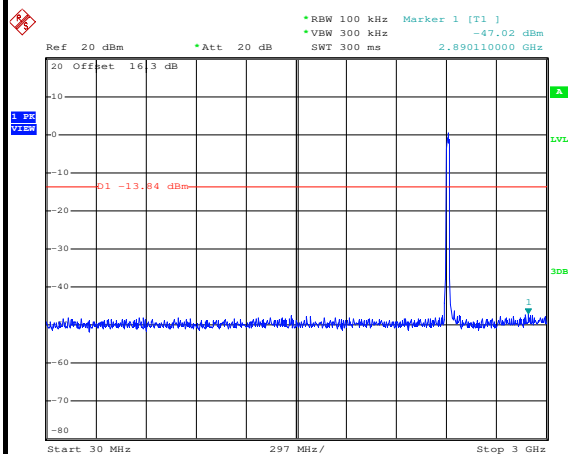
WLAN 802.11b Channel 06

100kHz PSD reference Level



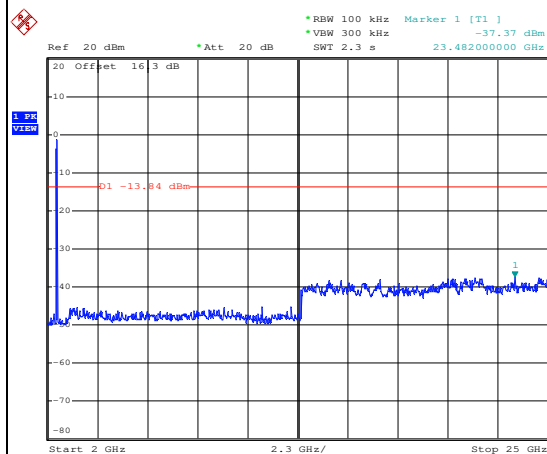
Date: 12.MAY.2014 12:41:35

Spurious Emission 30MHz~3GHz



Date: 12.MAY.2014 17:19:31

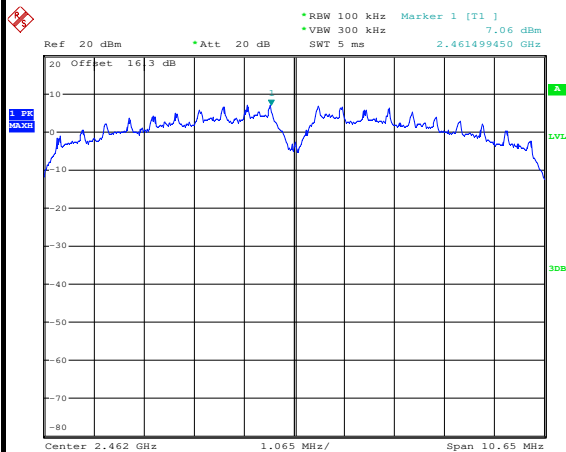
Spurious Emission 2GHz~25GHz



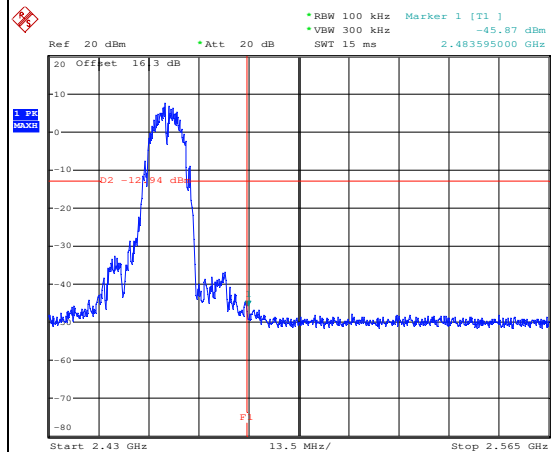
Date: 12.MAY.2014 17:19:50



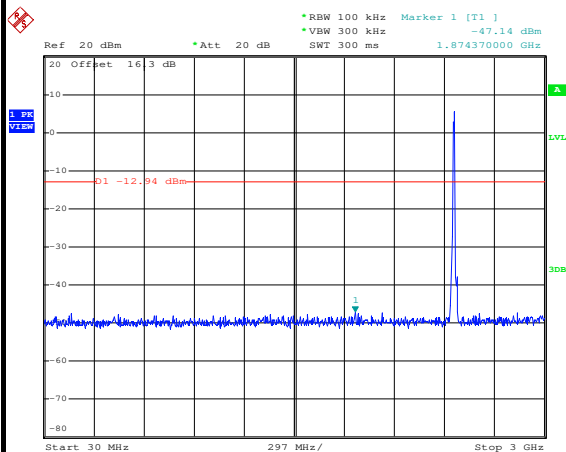
Test Mode :	802.11b	Temperature :	23~24℃
Test Band :	2.4GHz High	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Adonis Li

WLAN 802.11b Channel 11**100kHz PSD reference Level**

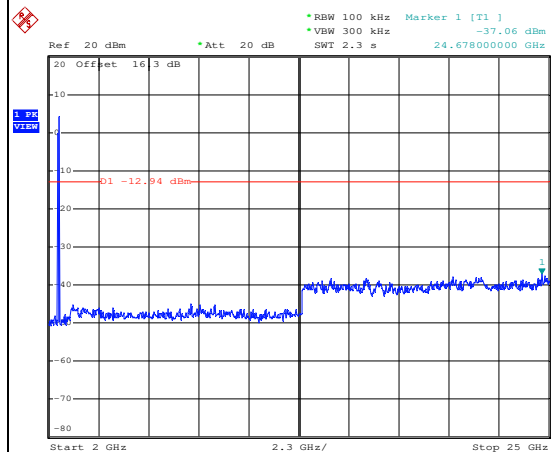
Date: 12.MAY.2014 18:24:36

High Channel Plot

Date: 12.MAY.2014 18:24:50

Spurious Emission 30MHz~3GHz

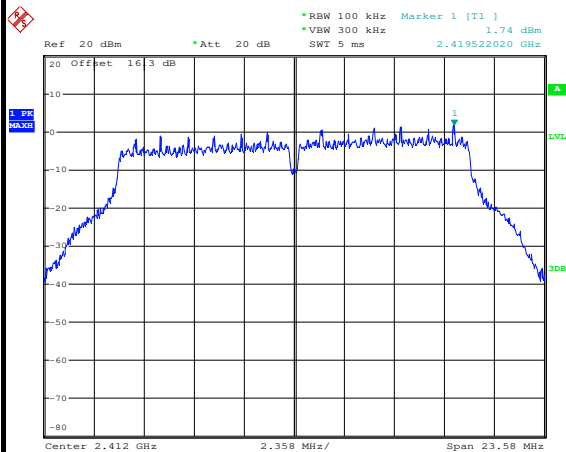
Date: 12.MAY.2014 18:25:09

Spurious Emission 2GHz~25GHz

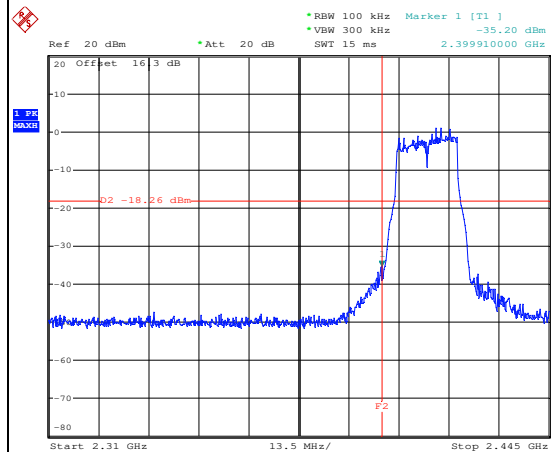
Date: 12.MAY.2014 18:25:28



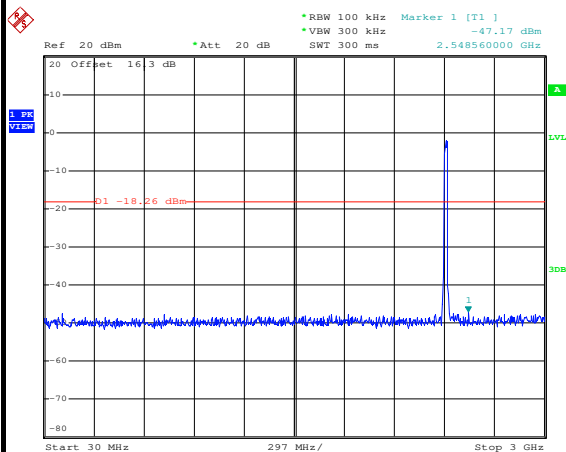
Test Mode :	802.11g	Temperature :	23~24℃
Test Band :	2.4GHz Low	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Adonis Li

WLAN 802.11g Channel 01**100kHz PSD reference Level**

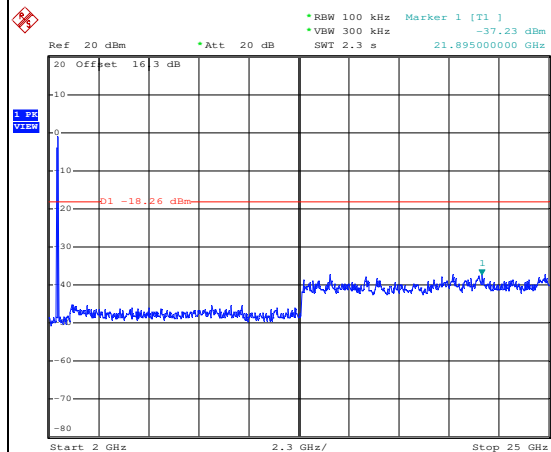
Date: 12.MAY.2014 15:57:06

Low Channel Plot

Date: 12.MAY.2014 15:57:20

Spurious Emission 30MHz~3GHz

Date: 12.MAY.2014 17:59:56

Spurious Emission 2GHz~25GHz

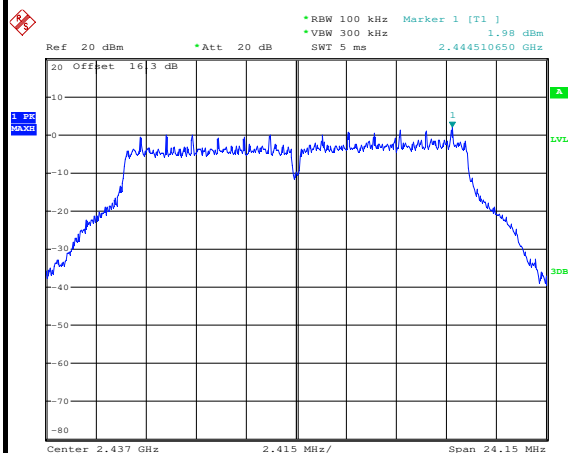
Date: 12.MAY.2014 18:00:14



Test Mode :	802.11g	Temperature :	23~24°C
Test Band :	2.4GHz Mid	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Adonis Li

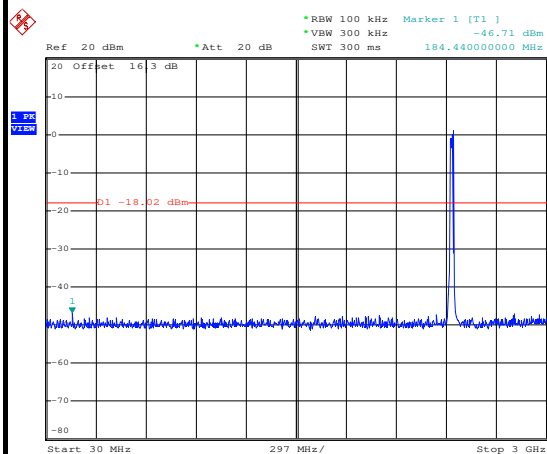
WLAN 802.11g Channel 06

100kHz PSD reference Level



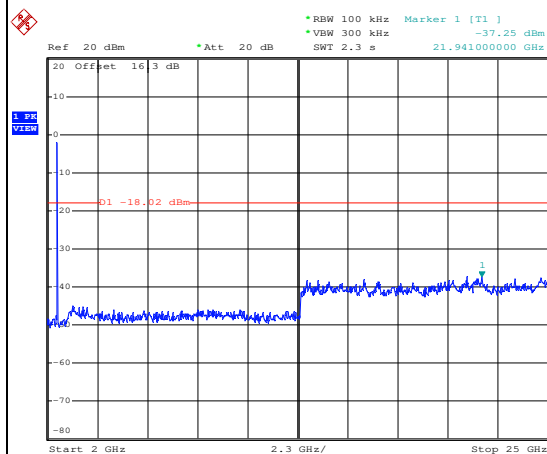
Date: 12.MAY.2014 14:18:52

Spurious Emission 30MHz~3GHz



Date: 12.MAY.2014 18:01:10

Spurious Emission 2GHz~25GHz



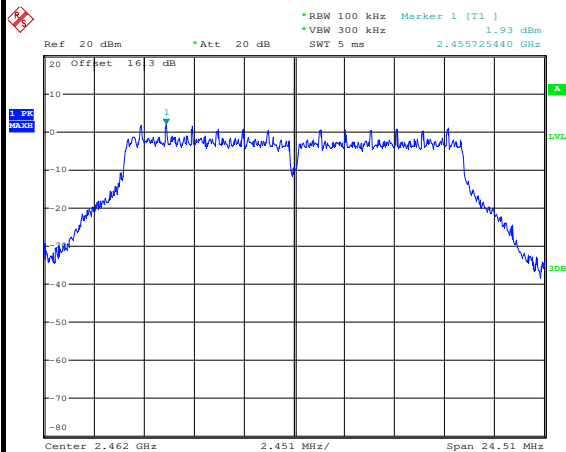
Date: 12.MAY.2014 18:01:29



Test Mode :	802.11g	Temperature :	23~24°C
Test Band :	2.4GHz High	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Adonis Li

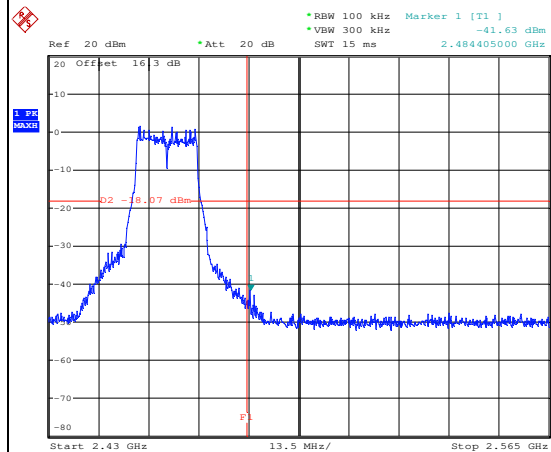
WLAN 802.11g Channel 11

100kHz PSD reference Level



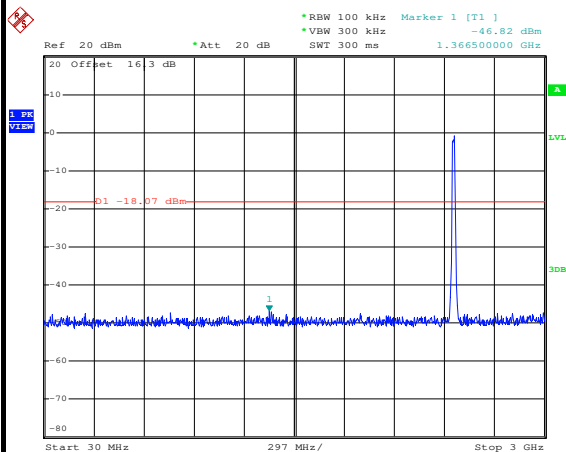
Date: 12.MAY.2014 14:28:36

High Channel Plot



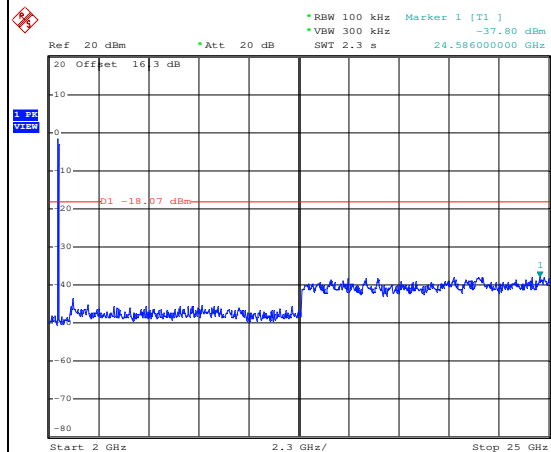
Date: 12.MAY.2014 14:28:50

Spurious Emission 30MHz~3GHz



Date: 12.MAY.2014 18:02:20

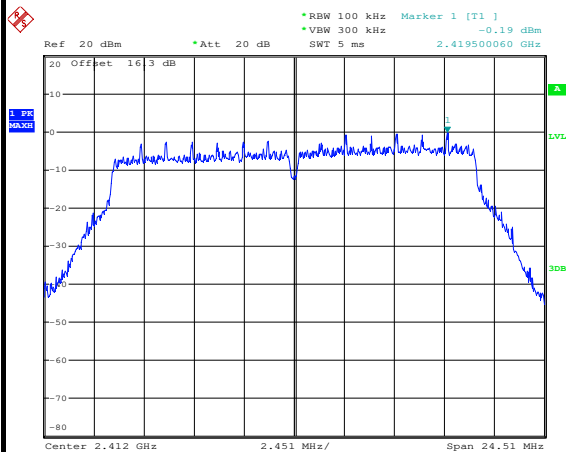
Spurious Emission 2GHz~25GHz



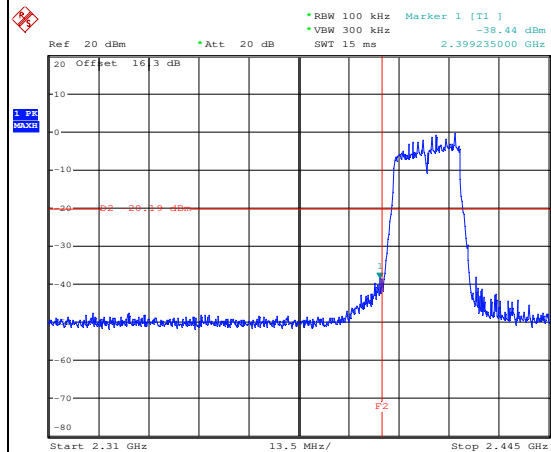
Date: 12.MAY.2014 18:02:39



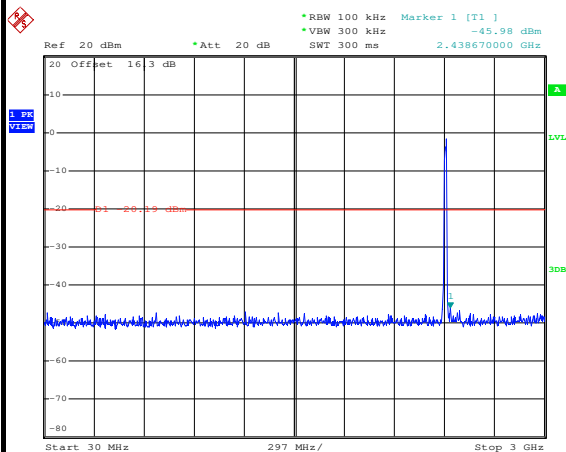
Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Band :	2.4GHz Low	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Adonis Li

WLAN 802.11n HT20 Channel 01**100kHz PSD reference Level**

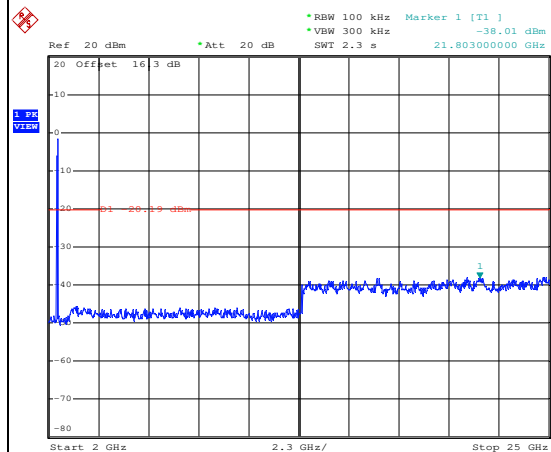
Date: 12.MAY.2014 14:35:49

Low Channel Plot

Date: 12.MAY.2014 14:36:03

Spurious Emission 30MHz~3GHz

Date: 12.MAY.2014 18:04:20

Spurious Emission 2GHz~25GHz

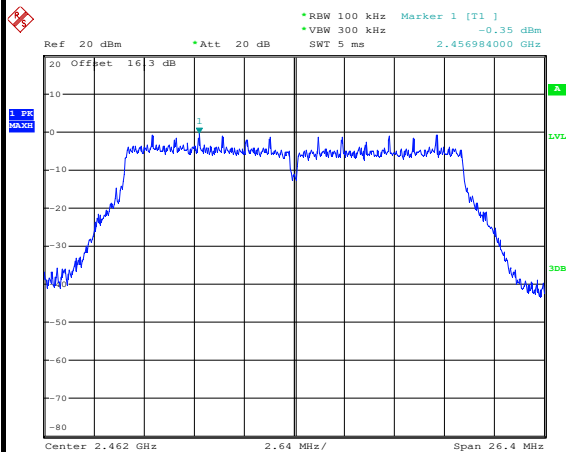
Date: 12.MAY.2014 18:04:38



Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Band :	2.4GHz High	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Adonis Li

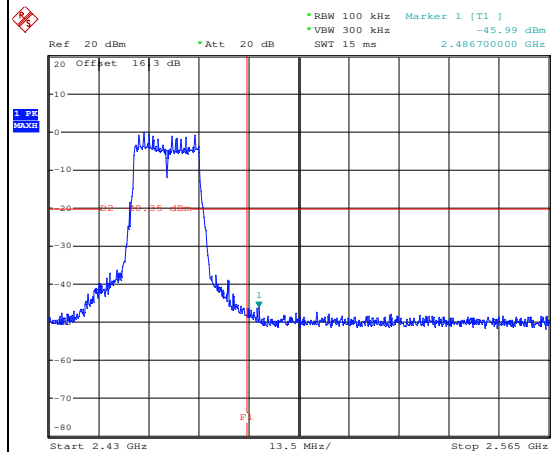
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



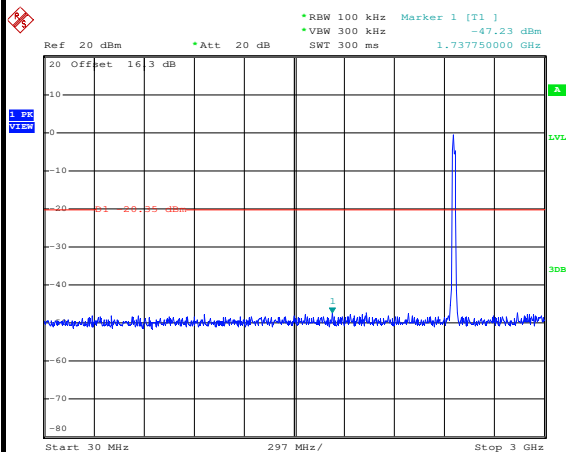
Date: 12.MAY.2014 14:49:08

High Channel Plot



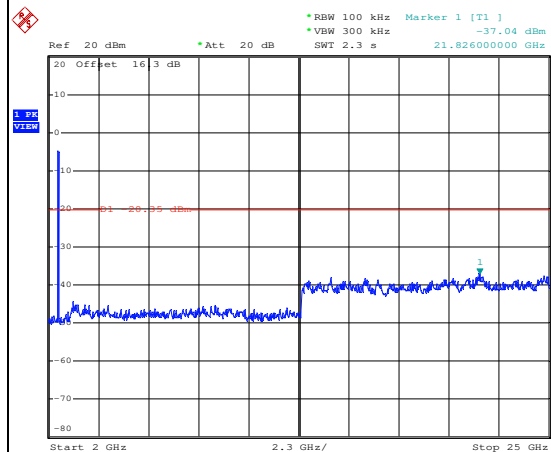
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Spurious Emission 30MHz~3GHz



Date: 12.MAY.2014 18:07:07

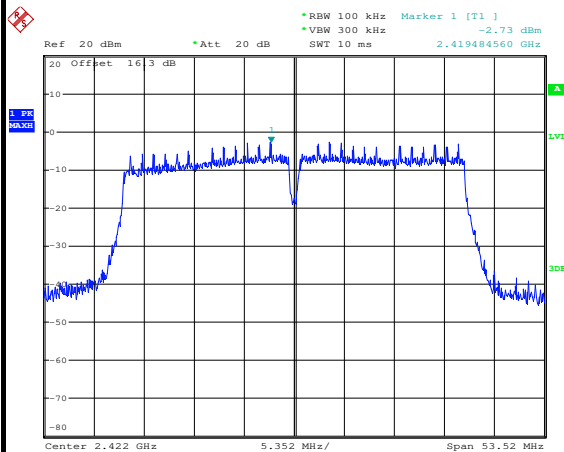
Spurious Emission 2GHz~25GHz



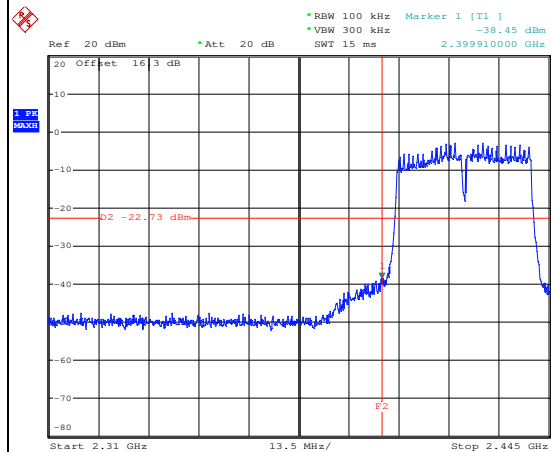
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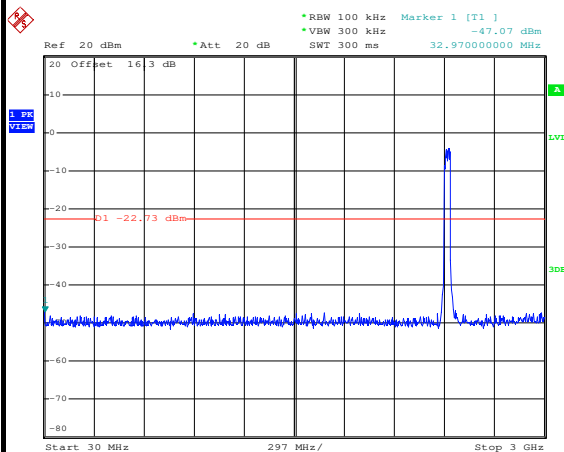
Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Band :	2.4GHz Low	Relative Humidity :	47~48%
Test Channel :	03	Test Engineer :	Adonis Li

WLAN 802.11n HT40 Channel 03**100kHz PSD reference Level**

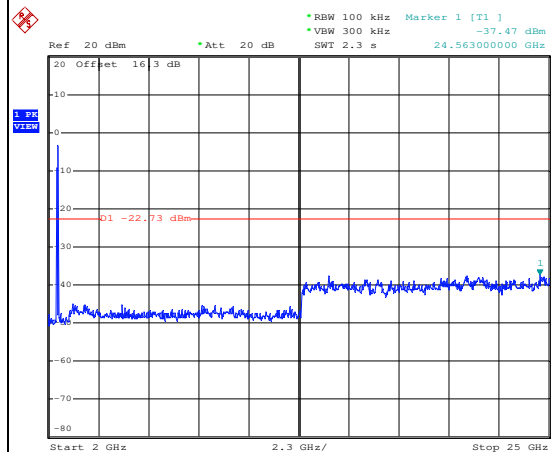
Date: 12.MAY.2014 14:54:51

Low Channel Plot

Date: 12.MAY.2014 14:55:05

Spurious Emission 30MHz~3GHz

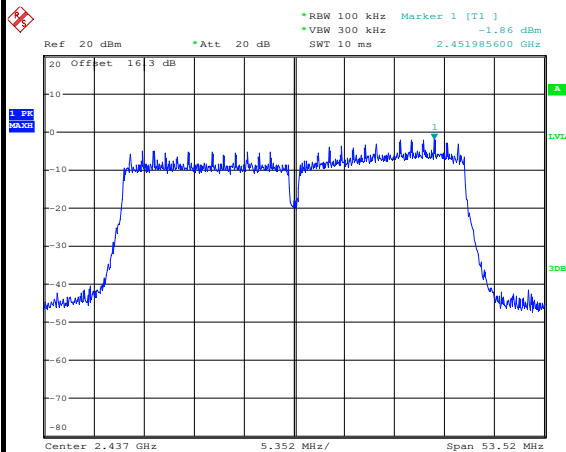
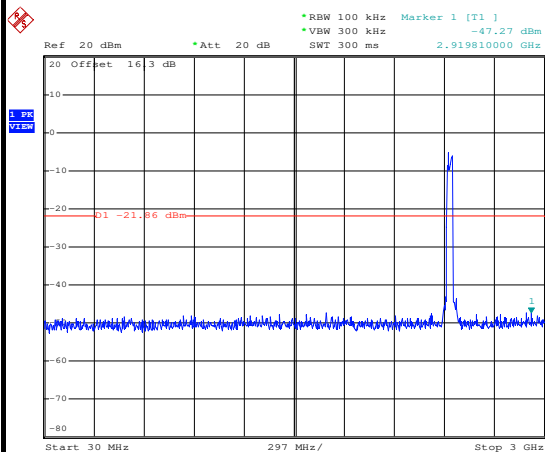
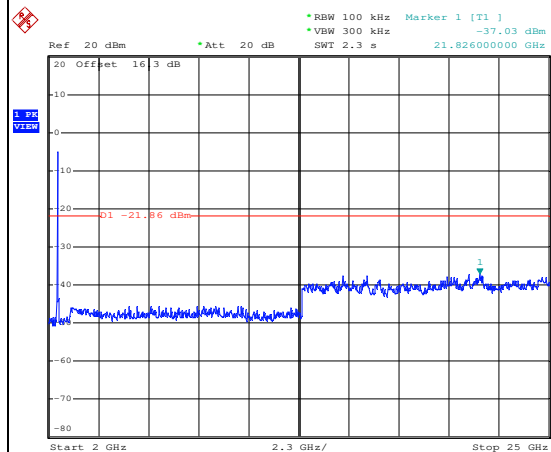
Date: 12.MAY.2014 18:08:38

Spurious Emission 2GHz~25GHz

Date: 12.MAY.2014 18:08:57

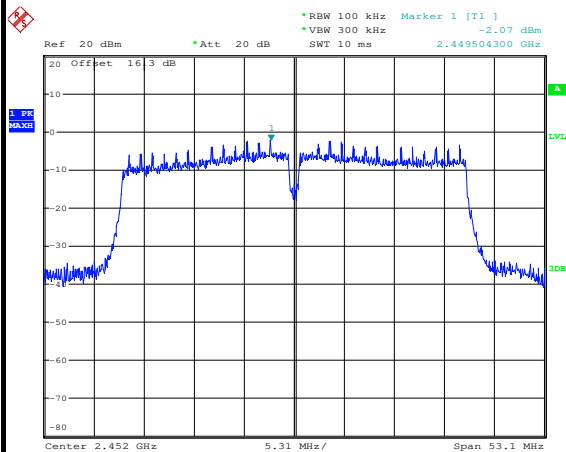


Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Band :	2.4GHz Mid	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Adonis Li

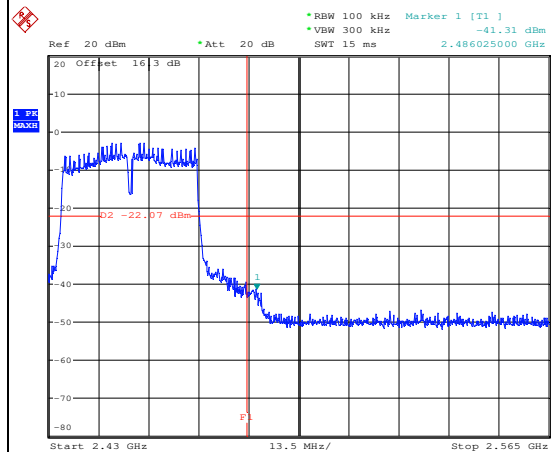
WLAN 802.11n HT40 Channel 06**100kHz PSD reference Level****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**



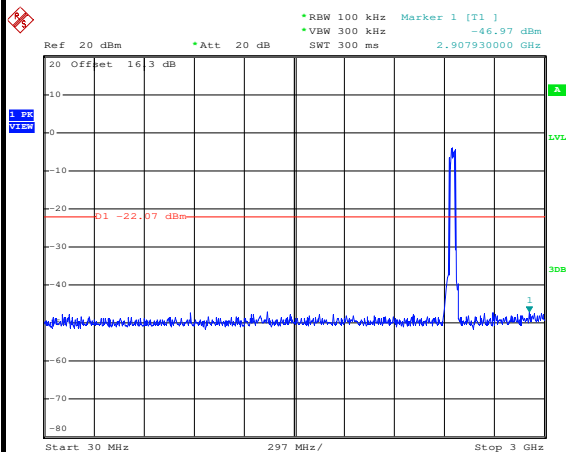
Test Mode :	802.11n HT40	Temperature :	23~24°C
Test Band :	2.4GHz High	Relative Humidity :	47~48%
Test Channel :	09	Test Engineer :	Adonis Li

WLAN 802.11n HT40 Channel 09**100kHz PSD reference Level**

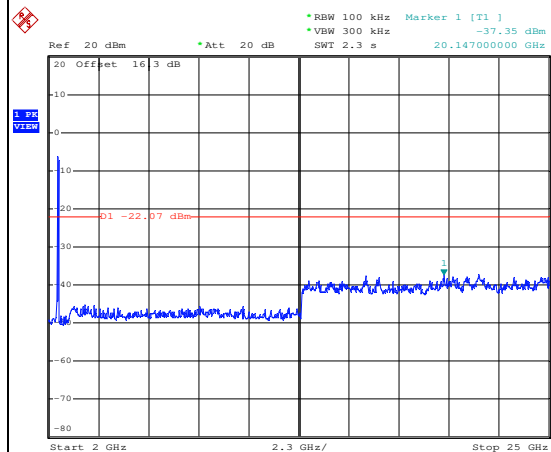
Date: 12.MAY.2014 15:05:36

High Channel Plot

Date: 12.MAY.2014 18:27:34

Spurious Emission 30MHz~3GHz

Date: 12.MAY.2014 18:19:33

Spurious Emission 2GHz~25GHz

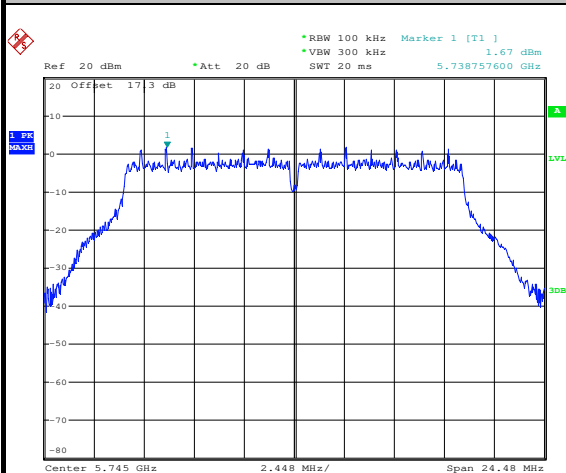
Date: 12.MAY.2014 18:19:52



Test Mode :	802.11a	Temperature :	23~24°C
Test Band :	5GHz Low	Relative Humidity :	47~48%
Test Channel :	149	Test Engineer :	Adonis Li

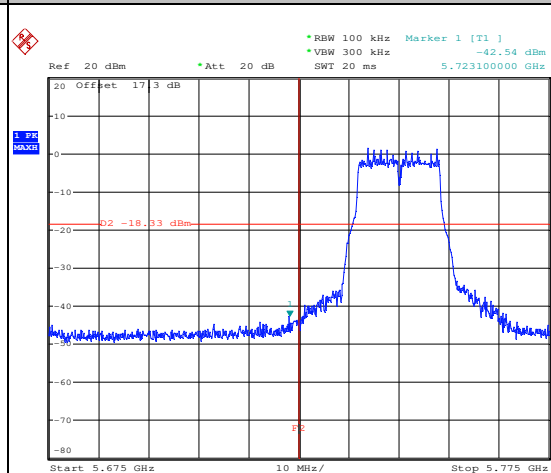
WLAN 802.11a Channel 149

100kHz PSD reference Level



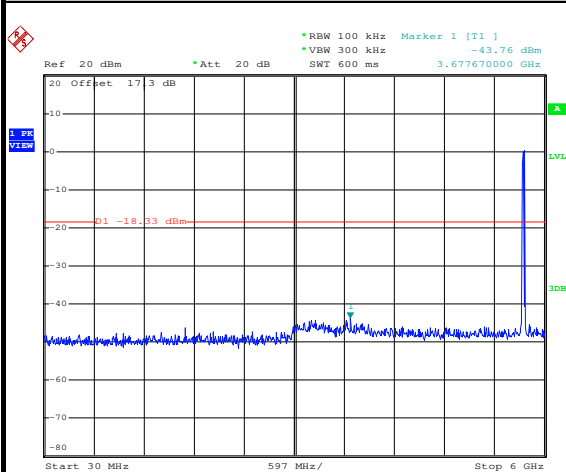
Date: 16.MAY.2014 21:36:38

Low Channel Plot



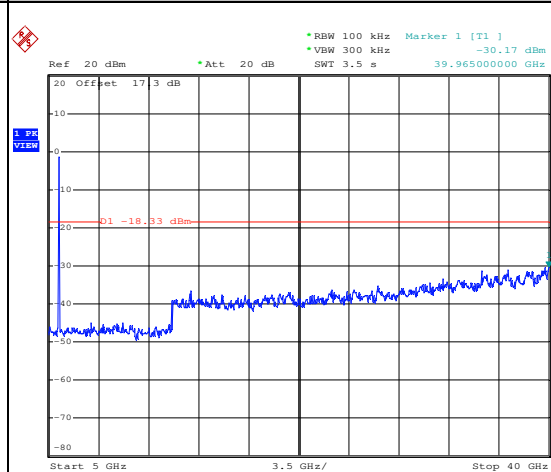
Date: 16.MAY.2014 21:36:52

Spurious Emission 30MHz~6GHz



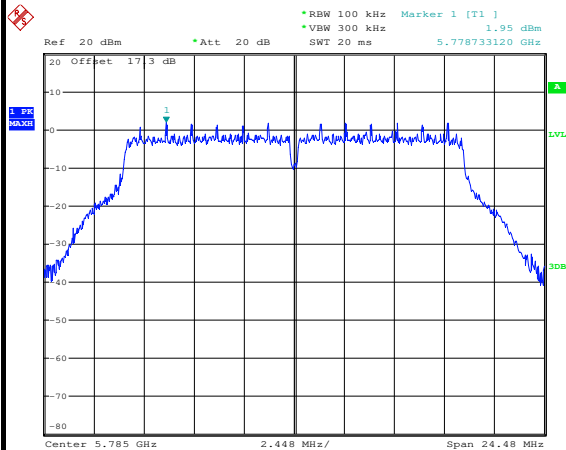
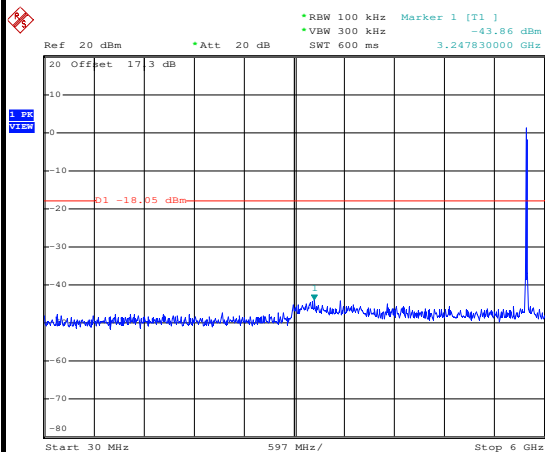
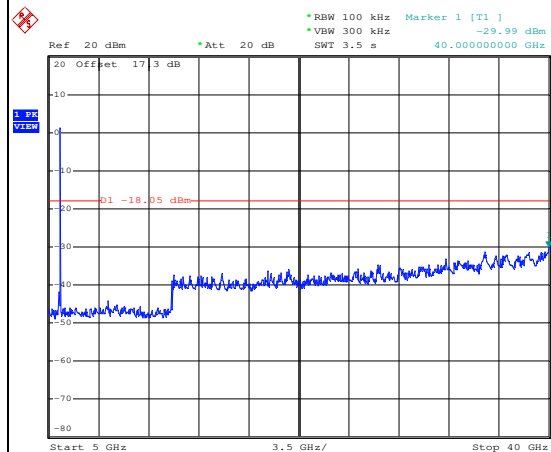
Date: 16.MAY.2014 21:37:11

Spurious Emission 5GHz~40GHz



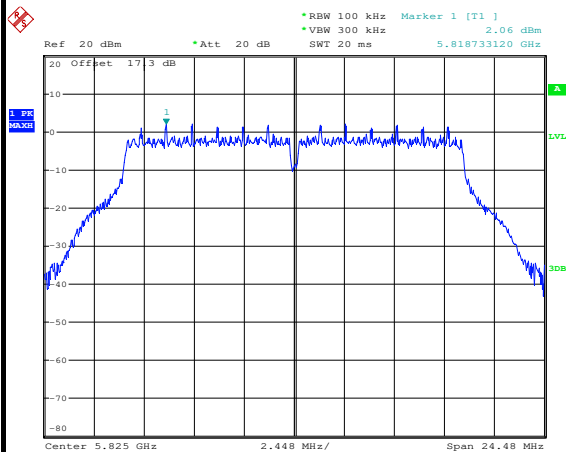
Date: 16.MAY.2014 21:37:30

Test Mode :	802.11a	Temperature :	23~24℃
Test Band :	5GHz Mid	Relative Humidity :	47~48%
Test Channel :	157	Test Engineer :	Adonis Li

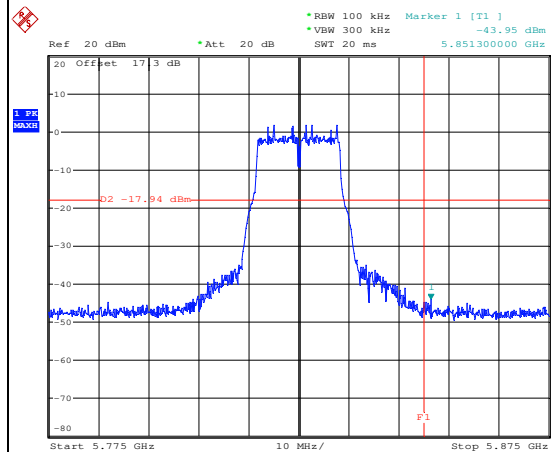
WLAN 802.11a Channel 157
100kHz PSD reference Level

Spurious Emission 30MHz~6GHz

Spurious Emission 5GHz~40GHz




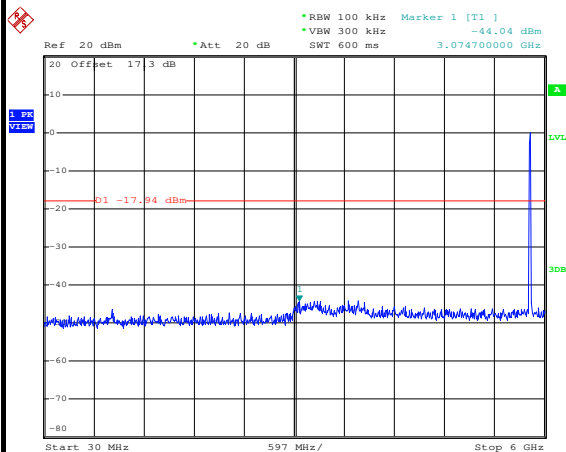
Test Mode :	802.11a	Temperature :	23~24℃
Test Band :	5GHz High	Relative Humidity :	47~48%
Test Channel :	165	Test Engineer :	Adonis Li

WLAN 802.11a Channel 165**100kHz PSD reference Level**

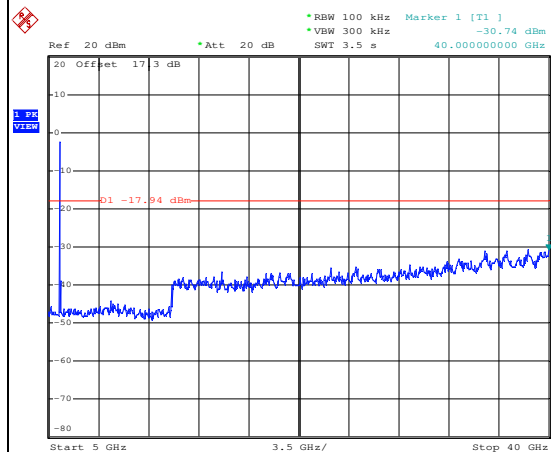
Date: 16.MAY.2014 21:42:39

High Channel Plot

Date: 16.MAY.2014 21:42:53

Spurious Emission 30MHz~6GHz

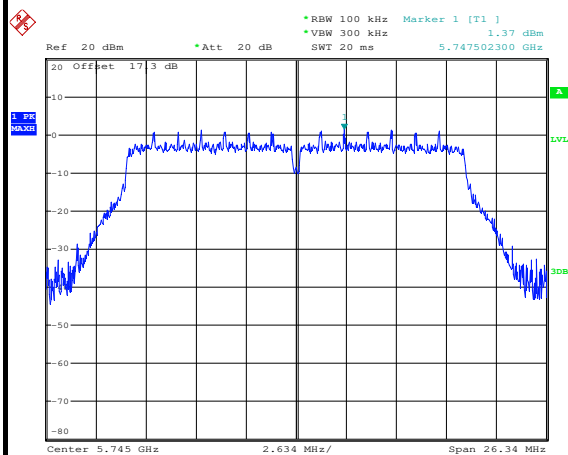
Date: 16.MAY.2014 21:43:12

Spurious Emission 5GHz~40GHz

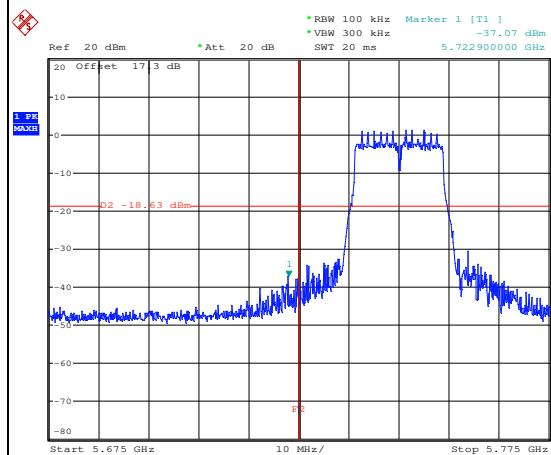
Date: 16.MAY.2014 21:43:31



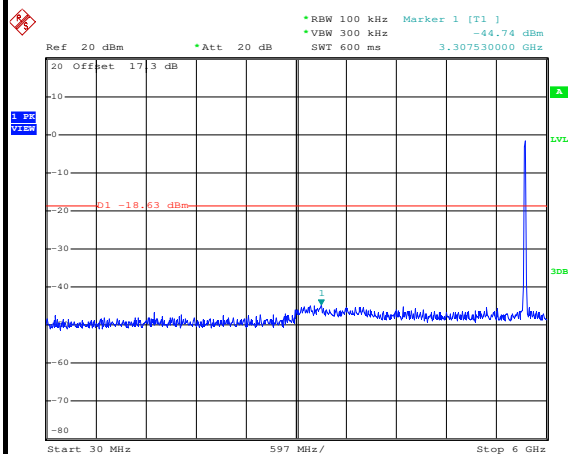
Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Band :	5GHz Low	Relative Humidity :	47~48%
Test Channel :	149	Test Engineer :	Adonis Li

WLAN 802.11n HT20 Channel 149**100kHz PSD reference Level**

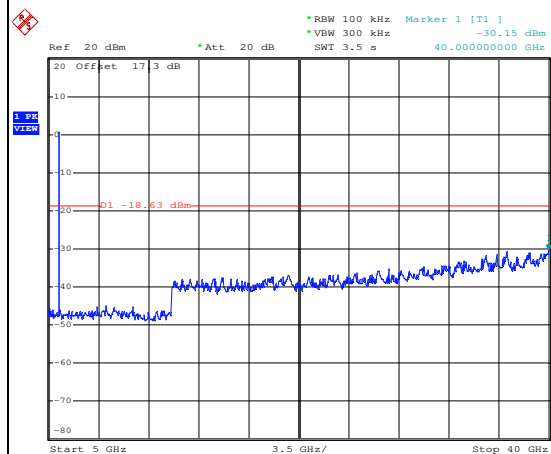
Date: 16.MAY.2014 21:46:22

Low Channel Plot

Date: 16.MAY.2014 21:46:36

Spurious Emission 30MHz~6GHz

Date: 16.MAY.2014 21:46:55

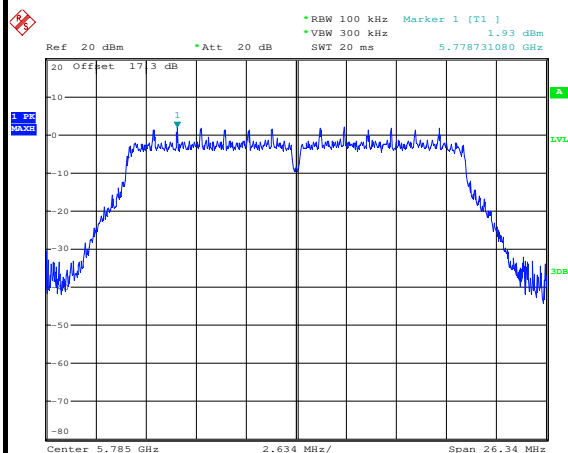
Spurious Emission 5GHz~40GHz

Date: 16.MAY.2014 21:47:14

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Band :	5GHz Mid	Relative Humidity :	47~48%
Test Channel :	157	Test Engineer :	Adonis Li

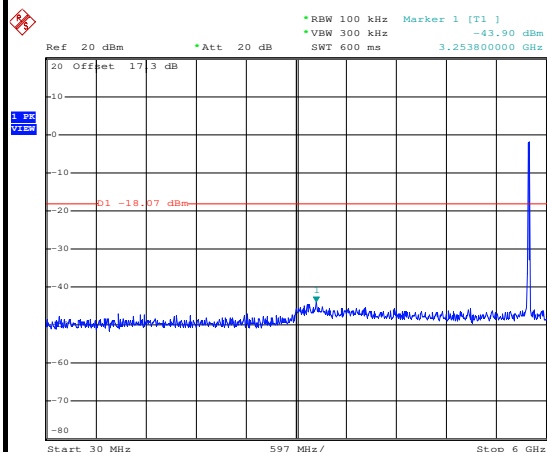
WLAN 802.11n HT20 Channel 157

100kHz PSD reference Level



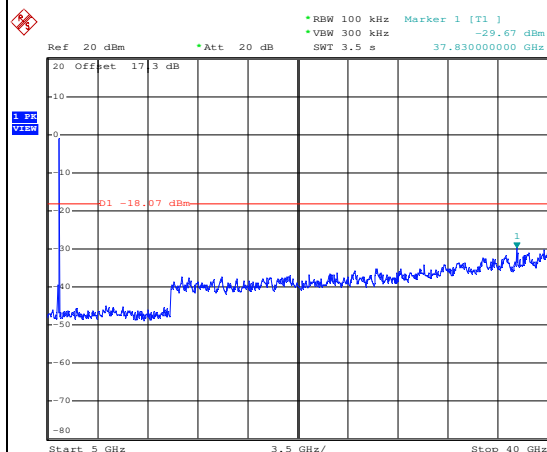
Date: 16.MAY.2014 21:49:58

Spurious Emission 30MHz~6GHz



Date: 16.MAY.2014 21:50:18

Spurious Emission 5GHz~40GHz



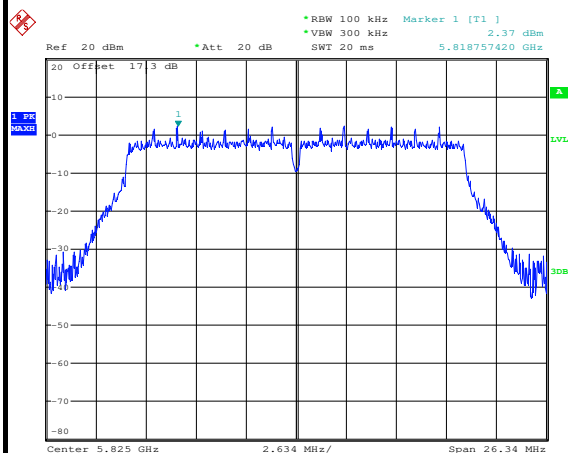
Date: 16.MAY.2014 21:50:37



Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Band :	5GHz High	Relative Humidity :	47~48%
Test Channel :	165	Test Engineer :	Adonis Li

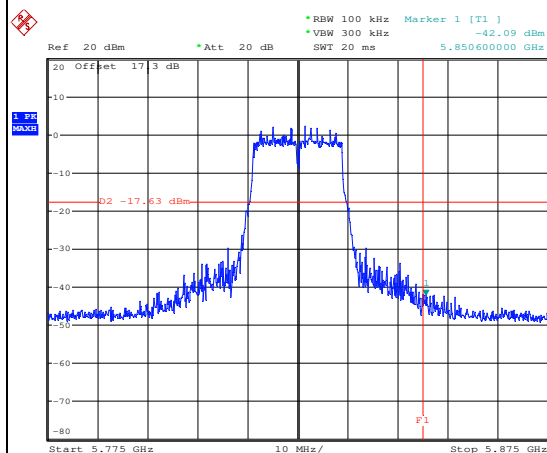
WLAN 802.11n HT20 Channel 165

100kHz PSD reference Level



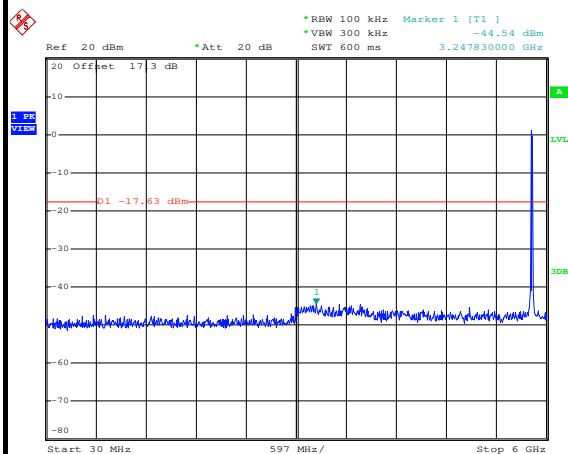
Date: 16.MAY.2014 21:52:41

High Channel Plot



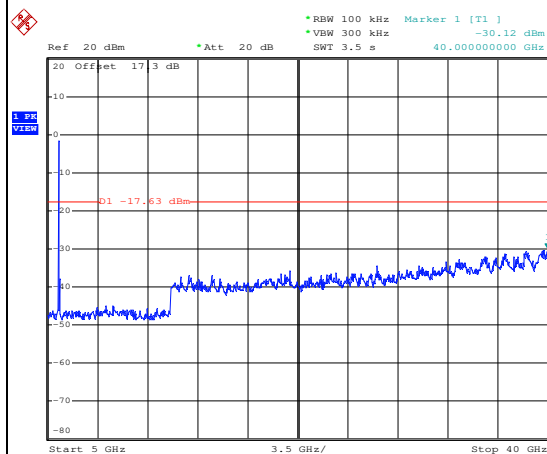
Date: 16.MAY.2014 21:52:55

Spurious Emission 30MHz~6GHz



Date: 16.MAY.2014 21:53:14

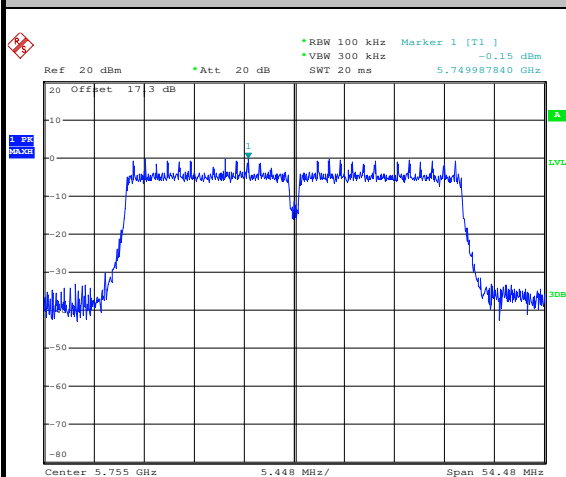
Spurious Emission 5GHz~40GHz



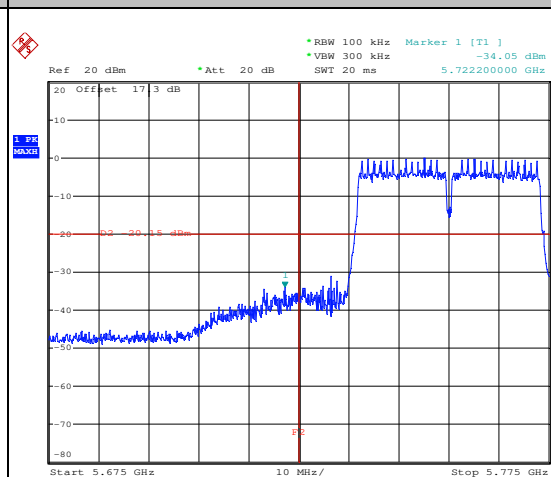
Date: 16.MAY.2014 21:53:32



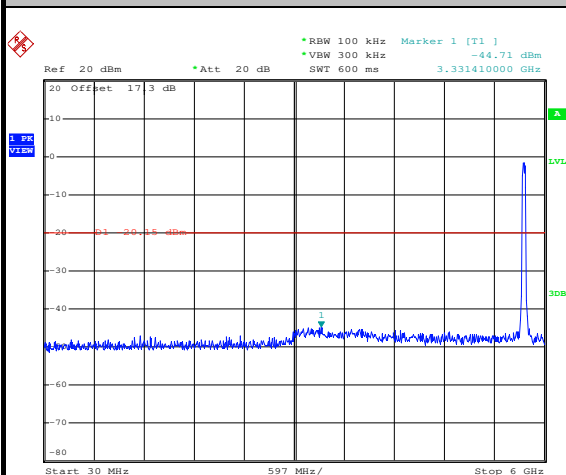
Test Mode :	802.11n HT40	Temperature :	23~24°C
Test Band :	5GHz Low	Relative Humidity :	47~48%
Test Channel :	151	Test Engineer :	Adonis Li

WLAN 802.11n HT40 Channel 151**100kHz PSD reference Level**

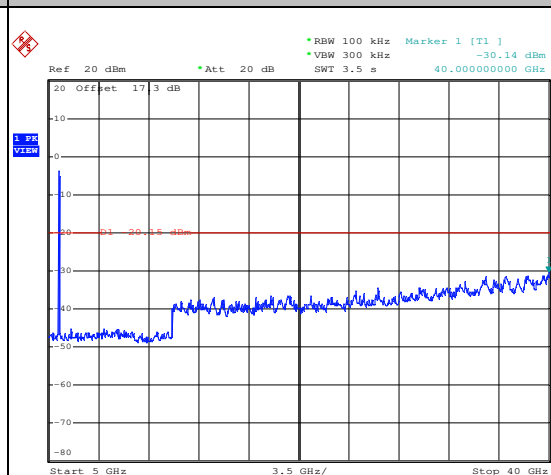
Date: 16.MAY.2014 21:56:09

Low Channel Plot

Date: 16.MAY.2014 21:56:23

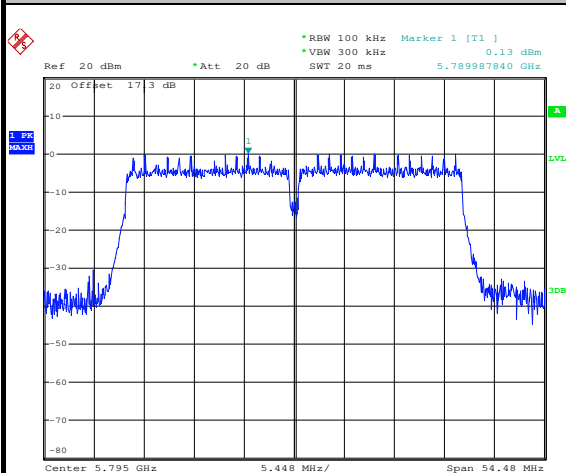
Spurious Emission 30MHz~6GHz

Date: 16.MAY.2014 21:56:42

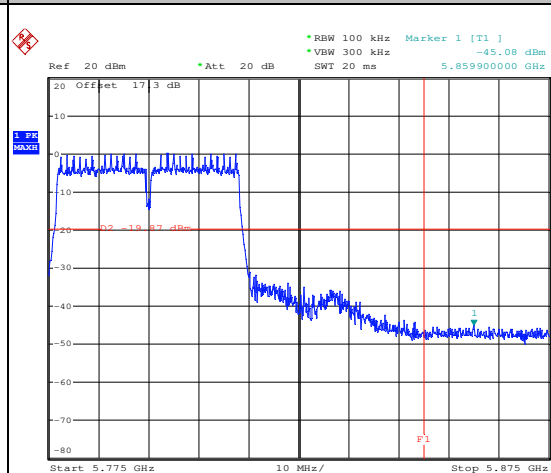
Spurious Emission 5GHz~40GHz

Date: 16.MAY.2014 21:57:01

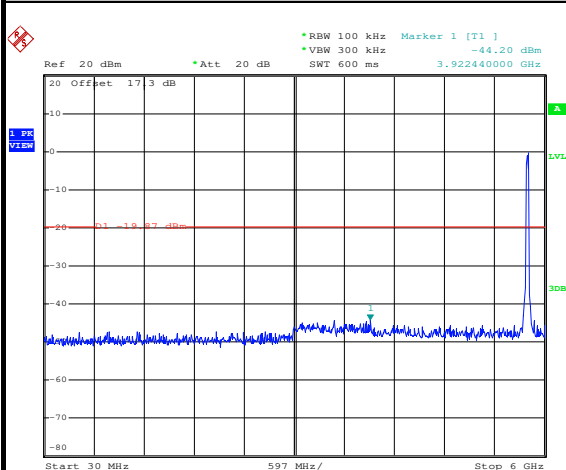
Test Mode :	802.11n HT40	Temperature :	23~24°C
Test Band :	5GHz High	Relative Humidity :	47~48%
Test Channel :	159	Test Engineer :	Adonis Li

WLAN 802.11n HT40 Channel 159
100kHz PSD reference Level


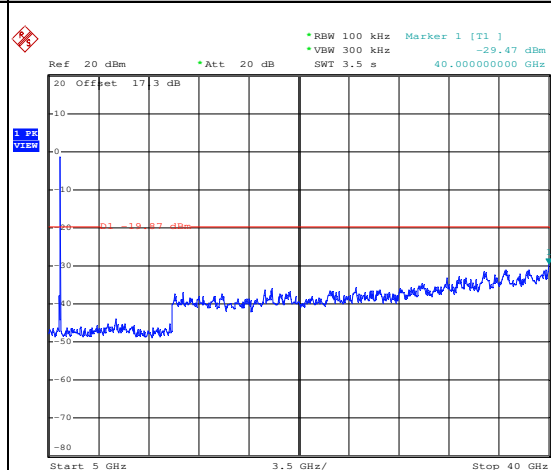
Date: 16.MAY.2014 22:00:19

High Channel Plot


Date: 16.MAY.2014 22:00:32

Spurious Emission 30MHz~6GHz


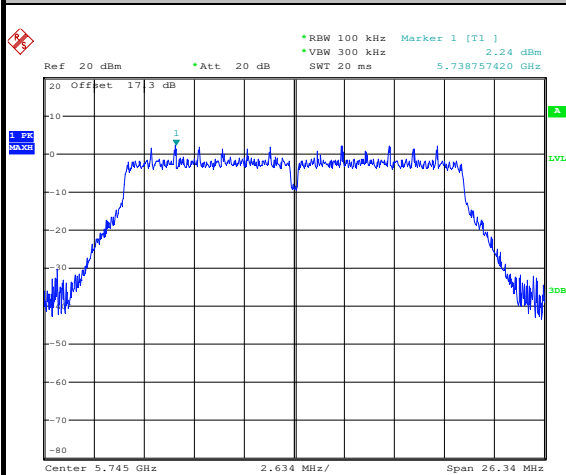
Date: 16.MAY.2014 22:00:52

Spurious Emission 5GHz~40GHz


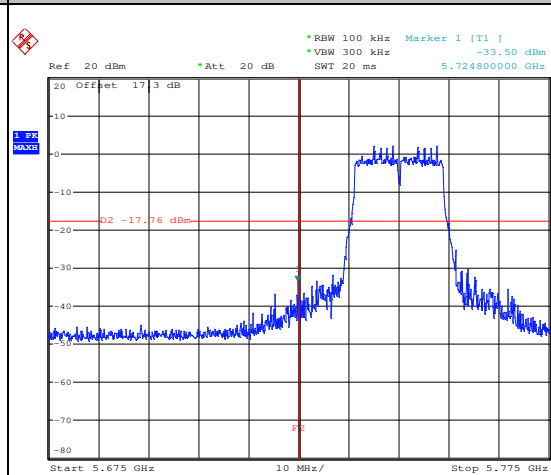
Date: 16.MAY.2014 22:01:10



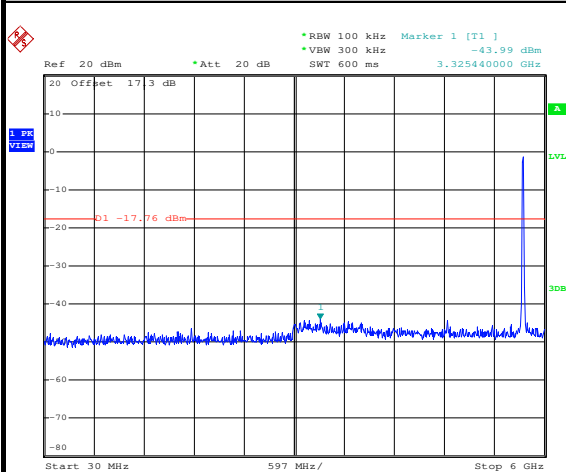
Test Mode :	802.11ac VHT20	Temperature :	23~24°C
Test Band :	5GHz Low	Relative Humidity :	47~48%
Test Channel :	149	Test Engineer :	Adonis Li

WLAN 802.11ac VHT20 Channel 149**100kHz PSD reference Level**

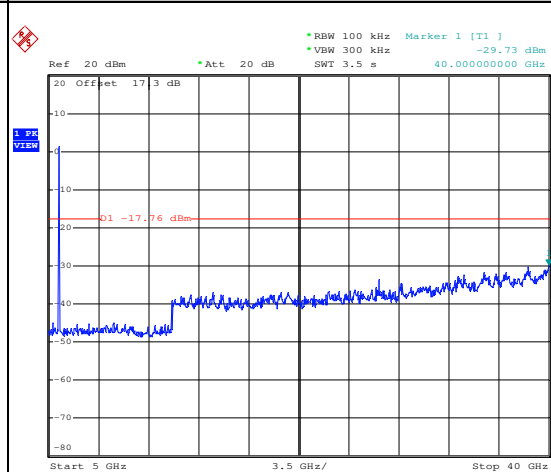
Date: 16.MAY.2014 22:06:37

Low Channel Plot

Date: 16.MAY.2014 22:06:51

Spurious Emission 30MHz~6GHz

Date: 16.MAY.2014 22:07:10

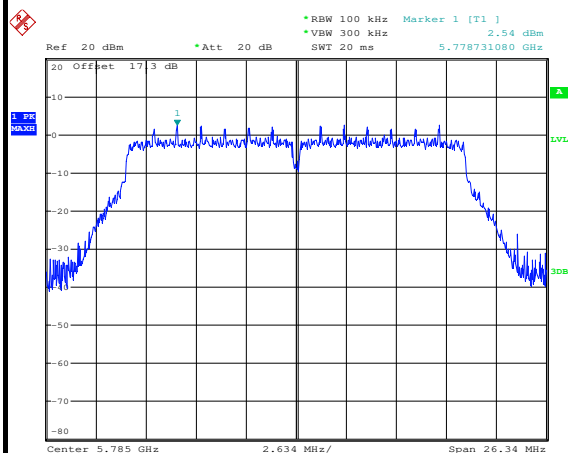
Spurious Emission 5GHz~40GHz

Date: 16.MAY.2014 22:07:28

Test Mode :	802.11ac VHT20	Temperature :	23~24℃
Test Band :	5GHz Mid	Relative Humidity :	47~48%
Test Channel :	157	Test Engineer :	Adonis Li

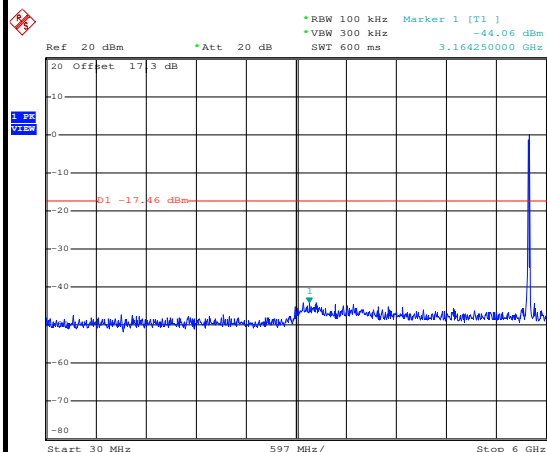
WLAN 802.11ac VHT20 Channel 157

100kHz PSD reference Level



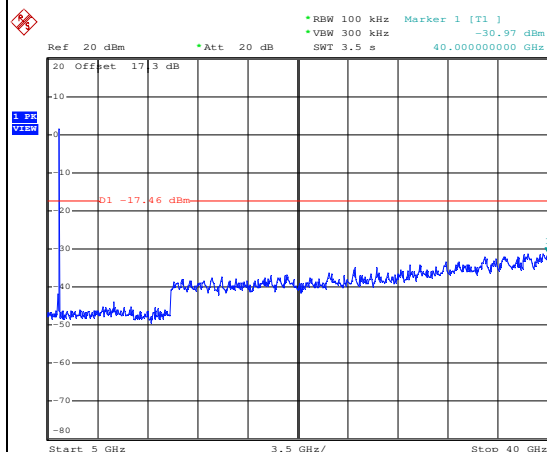
Date: 16.MAY.2014 22:09:42

Spurious Emission 30MHz~6GHz



Date: 16.MAY.2014 22:10:01

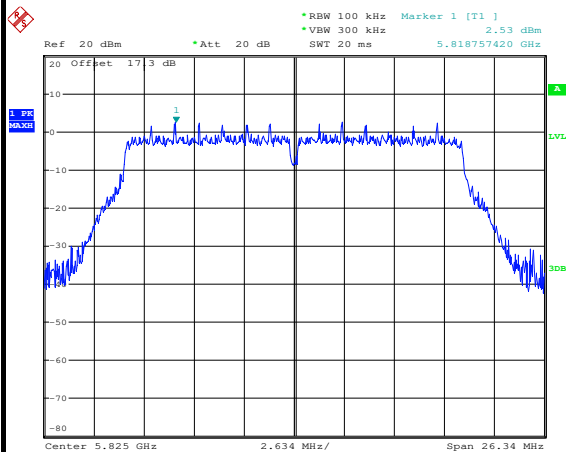
Spurious Emission 5GHz~40GHz



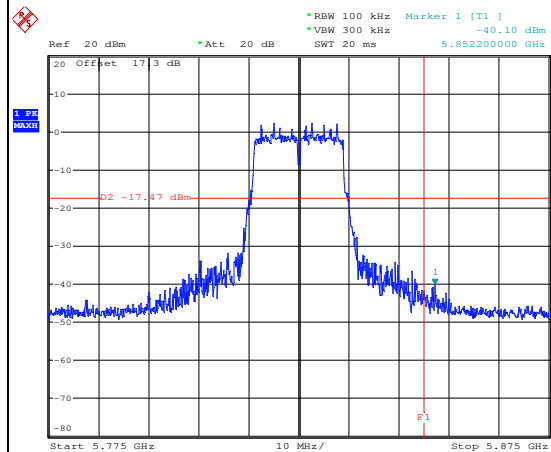
Date: 16.MAY.2014 22:10:20



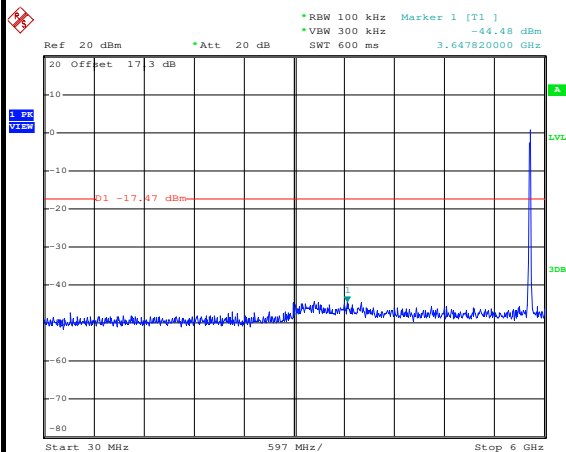
Test Mode :	802.11ac VHT20	Temperature :	23~24℃
Test Band :	5GHz High	Relative Humidity :	47~48%
Test Channel :	165	Test Engineer :	Adonis Li

WLAN 802.11ac VHT20 Channel 165**100kHz PSD reference Level**

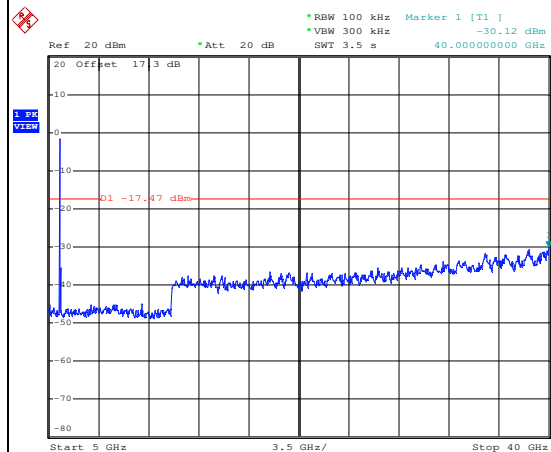
Date: 16.MAY.2014 22:13:53

High Channel Plot

Date: 16.MAY.2014 22:14:07

Spurious Emission 30MHz~6GHz

Date: 16.MAY.2014 22:14:26

Spurious Emission 5GHz~40GHz

Date: 16.MAY.2014 22:14:44



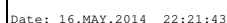
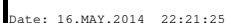
Report No. : FR422417C

WLAN 802.11ac VHT40 Channel 151

Low Channel Plot

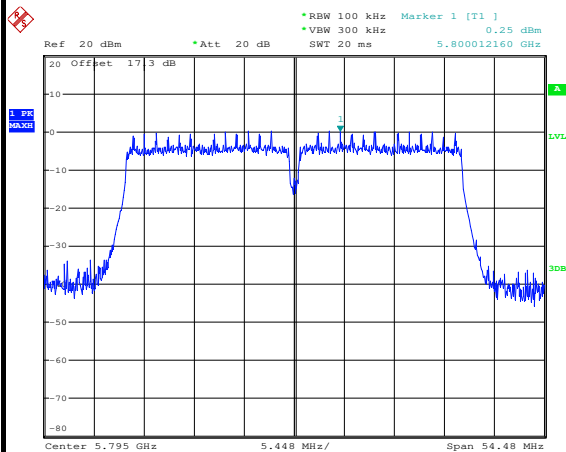


Spurious Emission 5GHz~40GHz

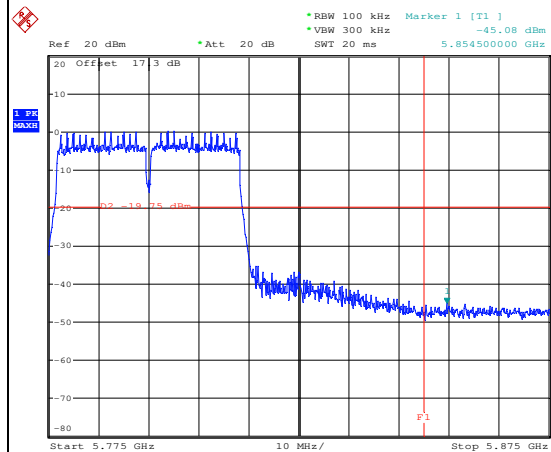




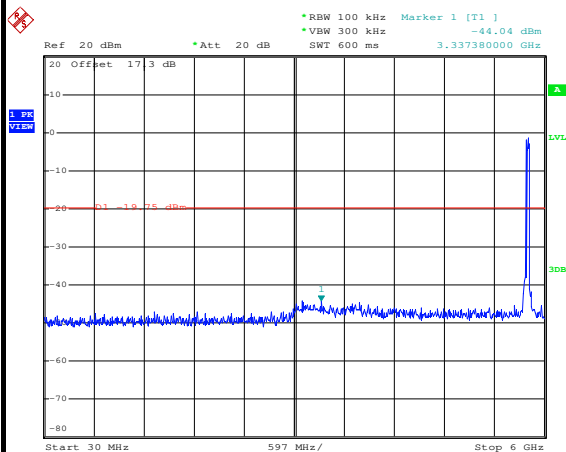
Test Mode :	802.11ac VHT40	Temperature :	23~24°C
Test Band :	5GHz High	Relative Humidity :	47~48%
Test Channel :	159	Test Engineer :	Adonis Li

WLAN 802.11ac VHT40 Channel 159**100kHz PSD reference Level**

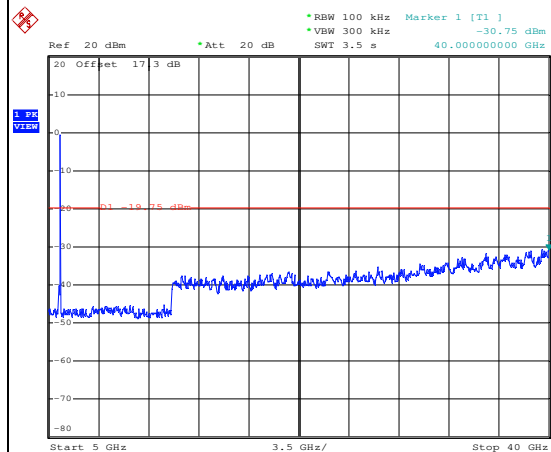
Date: 16.MAY.2014 22:23:34

High Channel Plot

Date: 16.MAY.2014 22:23:48

Spurious Emission 30MHz~6GHz

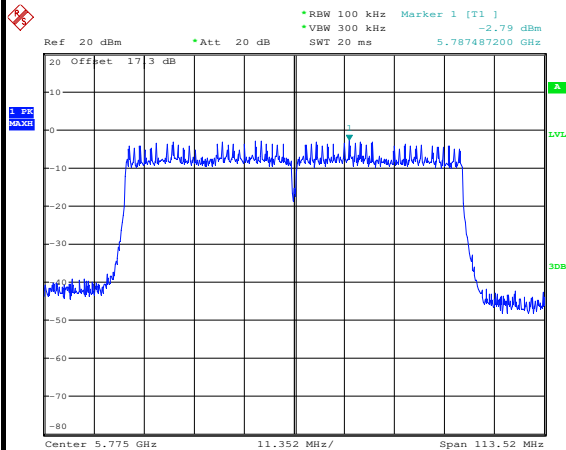
Date: 16.MAY.2014 22:24:07

Spurious Emission 5GHz~40GHz

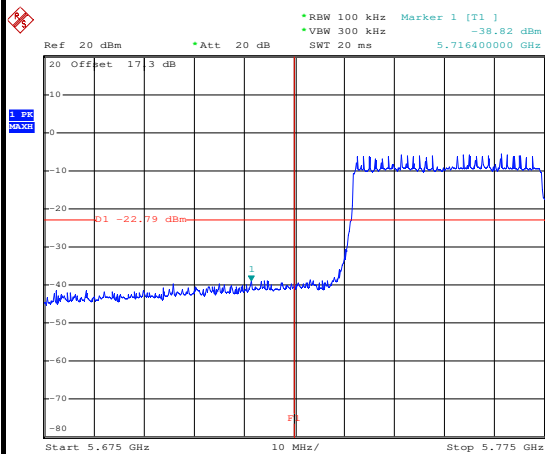
Date: 16.MAY.2014 22:24:26



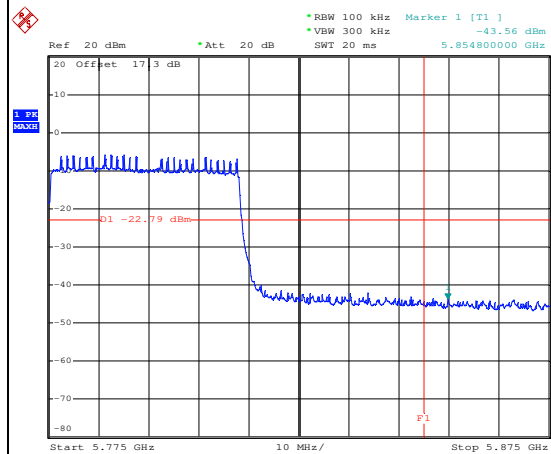
Test Mode :	802.11ac VHT80	Temperature :	23~24℃
Test Band :	5GHz	Relative Humidity :	47~48%
Test Channel :	155	Test Engineer :	Adonis Li

WLAN 802.11ac VHT80 Channel 155**100kHz PSD reference Level**

Date: 16.MAY.2014 22:27:47

Low Channel Plot

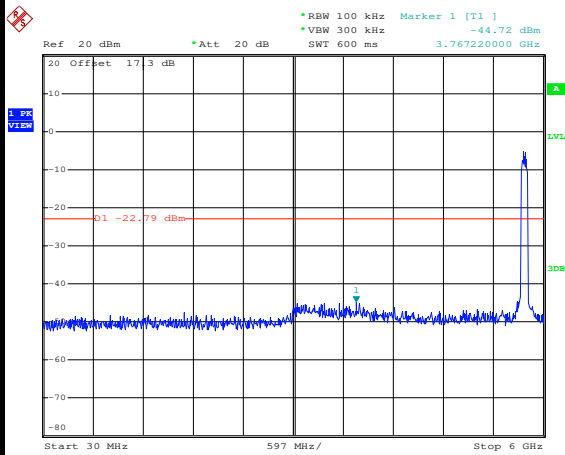
Date: 21.MAY.2014 16:26:07

High Channel Plot

Date: 21.MAY.2014 16:27:41

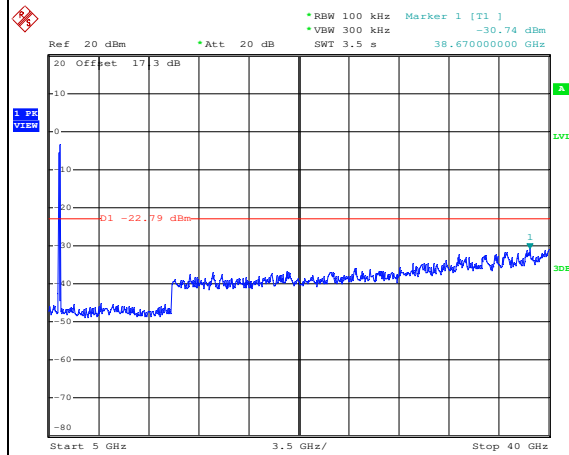


Spurious Emission 30MHz~6GHz



Date: 16.MAY.2014 22:32:10

Spurious Emission 5GHz~40GHz



Date: 16.MAY.2014 22:31:18

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 Procedures

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

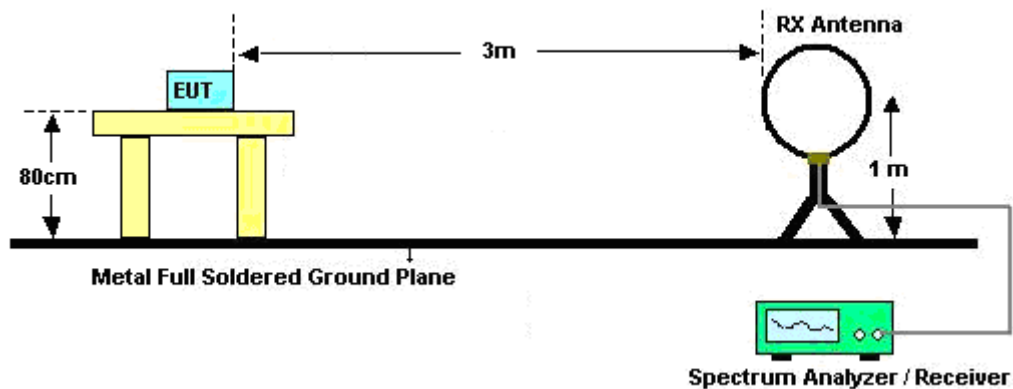
For average measurement:

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

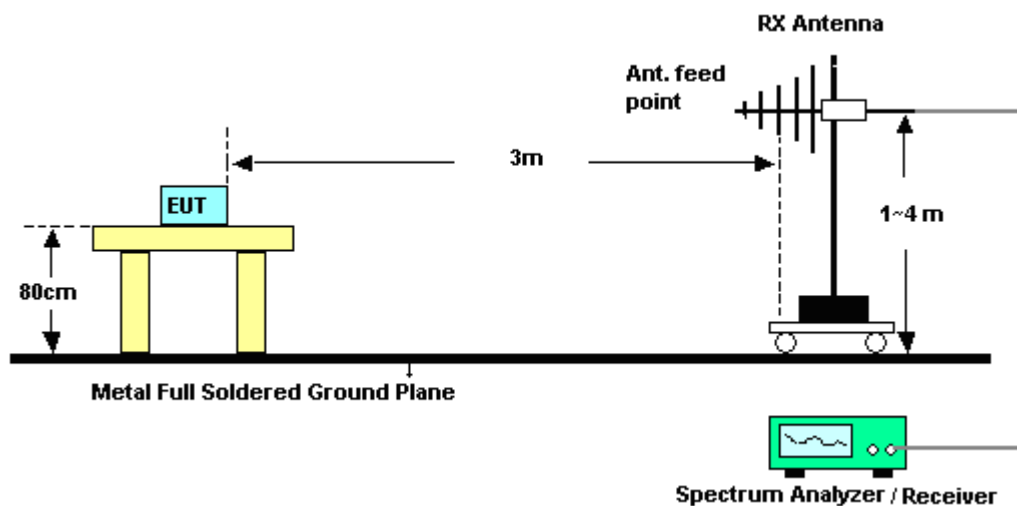
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11b	99.083	-	-	10Hz
802.11g	93.872	1.440	0.694	1kHz
2.4GHz 802.11n HT20	92.105	1.330	0.752	1kHz
2.4GHz 802.11n HT40	86.889	0.676	1.479	3kHz
802.11a	93.963	1.432	0.698	1kHz
5GHz 802.11n HT20	93.056	1.340	0.746	1kHz
5GHz 802.11n HT40	86.528	0.668	1.497	3kHz
5GHz 802.11ac VHT20	93.103	1.350	0.741	1kHz
5GHz 802.11ac VHT40	86.598	0.672	1.488	3kHz
5GHz 802.11ac VHT80	76.959	0.334	2.994	3kHz

3.5.4 Test Setup

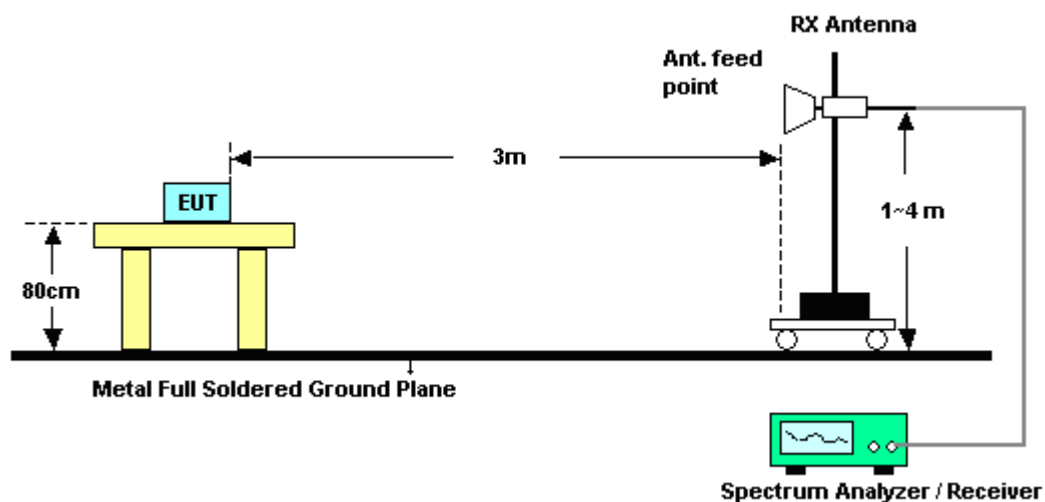
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious 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

Test Mode :	802.11b	Temperature :	22~23°C
Test Band :	Low	Relative Humidity :	40~41%
Test Channel :	01	Test Engineer :	Jun Liu

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	54.62	-19.38	74	51.43	32.86	3.59	33.26	100	326	Peak
2388.75	41.51	-12.49	54	38.32	32.86	3.59	33.26	100	326	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
2389.56	52.32	-21.68	74	49.13	32.86	3.59	33.26	100	56	Peak
2389.56	39.62	-14.38	54	36.43	32.86	3.59	33.26	100	56	Average

Test Mode :	802.11b	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	40~41%
Test Channel :	11	Test Engineer :	Jun Liu

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	56.33	-17.67	74	52.96	33.01	3.65	33.29	100	328	Peak
2483.5	48.94	-5.06	54	45.57	33.01	3.65	33.29	100	328	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	52.5	-21.5	74	49.13	33.01	3.65	33.29	112	52	Peak
2483.5	44.49	-9.51	54	41.12	33.01	3.65	33.29	112	52	Average



Test Mode :	802.11g	Temperature :	22~23°C
Test Band :	Low	Relative Humidity :	40~41%
Test Channel :	01	Test Engineer :	Jun Liu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.92	66.82	-7.18	74	63.63	32.86	3.59	33.26	100	327	Peak
2389.92	45.28	-8.72	54	42.09	32.86	3.59	33.26	100	327	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.65	62.9	-11.1	74	59.71	32.86	3.59	33.26	100	56	Peak
2389.92	42.53	-11.47	54	39.34	32.86	3.59	33.26	100	56	Average

Test Mode :	802.11g	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	40~41%
Test Channel :	11	Test Engineer :	Jun Liu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.83	71.5	-2.5	74	68.13	33.01	3.65	33.29	142	320	Peak
2483.56	47.93	-6.07	54	44.56	33.01	3.65	33.29	100	328	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
2483.56	66.78	-7.22	74	63.41	33.01	3.65	33.29	100	343	Peak
2483.59	42.94	-11.06	54	39.57	33.01	3.65	33.29	100	343	Average



Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Band :	Low	Relative Humidity :	40~41%
Test Channel :	01	Test Engineer :	Jun Liu

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	65.47	-8.53	74	62.28	32.86	3.59	33.26	152	331	Peak
2389.83	43.05	-10.95	54	39.86	32.86	3.59	33.26	152	331	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
2389.56	58.31	-15.69	74	55.12	32.86	3.59	33.26	100	63	Peak
2389.92	39.48	-14.52	54	36.29	32.86	3.59	33.26	100	63	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	40~41%
Test Channel :	11	Test Engineer :	Jun Liu

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
2484.94	70.35	-3.65	74	66.98	33.01	3.65	33.29	100	329	Peak
2483.56	44.71	-9.29	54	41.34	33.01	3.65	33.29	100	329	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
2483.86	67.28	-6.72	74	63.91	33.01	3.65	33.29	135	59	Peak
2483.62	41.23	-12.77	54	37.86	33.01	3.65	33.29	135	59	Average



Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Band :	Low	Relative Humidity :	40~41%
Test Channel :	03	Test Engineer :	Jun Liu

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	66.91	-7.09	74	63.72	32.86	3.59	33.26	100	333	Peak
2389.74	49.42	-4.58	54	46.23	32.86	3.59	33.26	100	333	Average
2483.59	60.03	-13.97	74	56.66	33.01	3.65	33.29	100	329	Peak
2483.89	40.6	-13.4	54	37.23	33.01	3.65	33.29	100	331	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
2389.56	64.43	-9.57	74	61.24	32.86	3.59	33.26	100	56	Peak
2389.83	47.67	-6.33	54	44.48	32.86	3.59	33.26	100	52	Average
2483.74	55.77	-18.23	74	52.4	33.01	3.65	33.29	100	48	Peak
2483.83	36.68	-17.32	54	33.31	33.01	3.65	33.29	100	48	Average



Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Band :	High	Relative Humidity :	40~41%
Test Channel :	09	Test Engineer :	Jun Liu

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	52.18	-21.82	74	48.99	32.86	3.59	33.26	100	326	Peak
2389.56	36.67	-17.33	54	33.48	32.86	3.59	33.26	100	326	Average
2483.83	71.16	-2.84	74	67.79	33.01	3.65	33.29	100	327	Peak
2485.42	47.62	-6.38	54	44.25	33.01	3.65	33.29	100	325	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.38	49.53	-24.47	74	46.34	32.86	3.59	33.26	100	62	Peak
2389.74	35.91	-18.09	54	32.72	32.86	3.59	33.26	100	62	Average
2483.5	67.79	-6.21	74	64.42	33.01	3.65	33.29	100	60	Peak
2483.62	45.02	-8.98	54	41.65	33.01	3.65	33.29	100	60	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.

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2412 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
2412	109.1	-	-	105.87	32.89	3.61	33.27	100	325	Peak
2412	103.61	-	-	100.38	32.89	3.61	33.27	100	325	Average
4824	45.89	-28.11	74	39.27	35.17	5.25	33.8	100	184	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2412 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
2412	105.8	-	-	102.57	32.89	3.61	33.27	100	57	Peak
2412	100.02	-	-	96.79	32.89	3.61	33.27	100	57	Average
4824	46.64	-27.36	74	40.02	35.17	5.25	33.8	119	52	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	108.95	-	-	105.65	32.95	3.63	33.28	100	326	Peak
2437	103.44	-	-	100.14	32.95	3.63	33.28	100	326	Average
4874	47.5	-26.5	74	40.84	35.18	5.28	33.8	100	262	Peak
7312	48.55	-25.45	74	39.87	36.2	6.61	34.13	110	152	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	105.92	-	-	102.62	32.95	3.63	33.28	196	57	Peak
2437	100.72	-	-	97.42	32.95	3.63	33.28	196	57	Average
4874	47.71	-26.29	74	41.05	35.18	5.28	33.8	100	100	Peak
7312	47.96	-26.04	74	39.28	36.2	6.61	34.13	100	155	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	109.51	-	-	106.18	32.98	3.64	33.29	100	329	Peak
2462	103.38	-	-	100.05	32.98	3.64	33.29	100	329	Average
4924	48.22	-25.78	74	41.52	35.19	5.31	33.8	155	230	Peak
7386	49.18	-24.82	74	40.4	36.24	6.7	34.16	100	295	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	106.57	-	-	103.24	32.98	3.64	33.29	169	61	Peak
2462	101.16	-	-	97.83	32.98	3.64	33.29	169	61	Average
4924	47.38	-26.62	74	40.68	35.19	5.31	33.8	144	200	Peak
7386	49.35	-24.65	74	40.57	36.24	6.7	34.16	155	203	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2412 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
2412	108.96	-	-	105.73	32.89	3.61	33.27	100	330	Peak
2412	98.07	-	-	94.84	32.89	3.61	33.27	100	330	Average
4824	47.15	-26.85	74	40.53	35.17	5.25	33.8	166	295	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2412 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
2412	107.14	-	-	103.91	32.89	3.61	33.27	100	54	Peak
2412	95.82	-	-	92.59	32.89	3.61	33.27	100	54	Average
4824	46.88	-27.12	74	40.26	35.17	5.25	33.8	165	220	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	109.41	-	-	106.11	32.95	3.63	33.28	100	319	Peak
2437	98.39	-	-	95.09	32.95	3.63	33.28	100	319	Average
4874	46.84	-27.16	74	40.18	35.18	5.28	33.8	100	78	Peak
7312	48.2	-25.8	74	39.52	36.2	6.61	34.13	145	245	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	106.66	-	-	103.36	32.95	3.63	33.28	100	55	Peak
2437	95.84	-	-	92.54	32.95	3.63	33.28	100	55	Average
4874	47.01	-26.99	74	40.35	35.18	5.28	33.8	100	132	Peak
7312	49.16	-24.84	74	40.48	36.2	6.61	34.13	145	120	Peak



Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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
30	21.91	-18.09	40	37	18	0.48	33.57	120	154	Peak
128.94	21.12	-22.38	43.5	41.96	11.71	1.04	33.59	-	-	Peak
202.66	22.26	-21.24	43.5	45.39	9.12	1.31	33.56	-	-	Peak
304.51	30.73	-15.27	46	49.39	13.1	1.61	33.37	-	-	Peak
406.36	26.49	-19.51	46	41.91	16.03	1.85	33.3	-	-	Peak
812.79	22.7	-23.3	46	32.78	19.98	2.59	32.65	-	-	Peak
2462	109.63	-	-	106.3	32.98	3.64	33.29	100	323	Peak
2462	99.08	-	-	95.75	32.98	3.64	33.29	100	323	Average
4924	45.97	-28.03	74	39.27	35.19	5.31	33.8	162	58	Peak
7386	48.55	-25.45	74	39.77	36.24	6.7	34.16	166	85	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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
43.58	34.28	-5.72	40	57.25	10.03	0.62	33.62	100	120	Peak
141.55	22.76	-20.74	43.5	44.52	10.73	1.09	33.58	-	-	Peak
202.66	22.6	-20.9	43.5	45.73	9.12	1.31	33.56	-	-	Peak
507.24	27.85	-18.15	46	41.61	17.34	2.02	33.12	-	-	Peak
609.09	30.98	-15.02	46	43.04	18.64	2.25	32.95	-	-	Peak
710.94	27.42	-18.58	46	38.48	19.4	2.4	32.86	-	-	Peak
2462	105.37	-	-	102.04	32.98	3.64	33.29	100	56	Peak
2462	95.18	-	-	91.85	32.98	3.64	33.29	100	56	Average
4924	47.13	-26.87	74	40.43	35.19	5.31	33.8	145	110	Peak
7386	49.04	-24.96	74	40.26	36.24	6.7	34.16	120	171	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2412 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
2412	106.76	-	-	103.53	32.89	3.61	33.27	100	327	Peak
2412	95.12	-	-	91.89	32.89	3.61	33.27	100	327	Average
4824	46.95	-27.05	74	40.33	35.17	5.25	33.8	100	256	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2412 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
2412	104.16	-	-	100.93	32.89	3.61	33.27	100	61	Peak
2412	92.84	-	-	89.61	32.89	3.61	33.27	100	61	Average
4824	46.93	-27.07	74	40.31	35.17	5.25	33.8	110	174	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	106.93	-	-	103.63	32.95	3.63	33.28	100	326	Peak
2437	95.64	-	-	92.34	32.95	3.63	33.28	100	326	Average
4874	45.92	-28.08	74	39.26	35.18	5.28	33.8	100	285	Peak
7311	49.72	-24.28	74	41.04	36.2	6.61	34.13	101	233	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	104.03	-	-	100.73	32.95	3.63	33.28	100	57	Peak
2437	92.31	-	-	89.01	32.95	3.63	33.28	100	57	Average
4874	47.66	-26.34	74	41	35.18	5.28	33.8	122	263	Peak
7311	47.49	-26.51	74	38.81	36.2	6.61	34.13	100	199	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	106.77	-	-	103.44	32.98	3.64	33.29	100	325	Peak
2462	96.23	-	-	92.9	32.98	3.64	33.29	100	325	Average
4924	47.43	-26.57	74	40.73	35.19	5.31	33.8	100	215	Peak
7386	49.7	-24.3	74	40.92	36.24	6.7	34.16	133	269	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	102.57	-	-	99.24	32.98	3.64	33.29	100	57	Peak
2462	91.67	-	-	88.34	32.98	3.64	33.29	100	57	Average
4924	46.9	-27.1	74	40.2	35.19	5.31	33.8	100	320	Peak
7386	47.85	-26.15	74	39.07	36.24	6.7	34.16	133	268	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	03	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2422 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
2422	105.02	-	-	101.76	32.92	3.62	33.28	100	323	Peak
2422	93.35	-	-	90.09	32.92	3.62	33.28	100	323	Average
4844	46.69	-27.31	74	40.05	35.18	5.26	33.8	100	152	Peak
7266	48.34	-25.66	74	39.7	36.19	6.56	34.11	174	32	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	03	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2422 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
2422	102.23	-	-	98.97	32.92	3.62	33.28	100	59	Peak
2422	91.04	-	-	87.78	32.92	3.62	33.28	100	59	Average
4844	46.6	-27.4	74	39.96	35.18	5.26	33.8	133	207	Peak
7266	47.38	-26.62	74	38.74	36.19	6.56	34.11	130	25	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	103.26	-	-	99.96	32.95	3.63	33.28	100	323	Peak
2437	93.25	-	-	89.95	32.95	3.63	33.28	100	323	Average
4874	45.51	-28.49	74	38.85	35.18	5.28	33.8	100	166	Peak
7312	47.37	-26.63	74	38.69	36.2	6.61	34.13	166	252	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	100.5	-	-	97.2	32.95	3.63	33.28	100	54	Peak
2437	89.43	-	-	86.13	32.95	3.63	33.28	100	54	Average
4874	46.38	-27.62	74	39.72	35.18	5.28	33.8	121	174	Peak
7312	49.16	-24.84	74	40.48	36.2	6.61	34.13	166	85	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 2452 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
2452	104.33	-	-	101.03	32.95	3.63	33.28	100	323	Peak
2452	93.53	-	-	90.23	32.95	3.63	33.28	100	323	Average
4904	46.66	-27.34	74	39.97	35.19	5.3	33.8	184	55	Peak
7356	48.14	-25.86	74	39.41	36.22	6.66	34.15	155	210	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 2452 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
2452	100.95	-	-	97.65	32.95	3.63	33.28	100	57	Peak
2452	89.59	-	-	86.29	32.95	3.63	33.28	100	57	Average
4904	46.48	-27.52	74	39.79	35.19	5.3	33.8	100	200	Peak
7356	47.12	-26.88	74	38.39	36.22	6.66	34.15	100	284	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	107.31	-	-	99.82	35.52	5.67	33.7	100	278	Peak
5745	95.78	-	-	88.29	35.52	5.67	33.7	100	278	Average
11490	38.88	-35.12	74	59.57	4.47	8.84	34	122	145	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	99.29	-	-	91.8	35.52	5.67	33.7	100	114	Peak
5745	88.52	-	-	81.03	35.52	5.67	33.7	100	114	Average
11490	38.14	-35.86	74	58.83	4.47	8.84	34	100	231	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	107.08	-	-	99.55	35.53	5.7	33.7	159	291	Peak
5785	96.6	-	-	89.07	35.53	5.7	33.7	159	291	Average
11571	39.38	-34.62	74	60.22	4.38	8.8	34.02	100	102	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	99.98	-	-	92.45	35.53	5.7	33.7	100	113	Peak
5785	89.25	-	-	81.72	35.53	5.7	33.7	100	113	Average
11571	38.35	-35.65	74	59.19	4.38	8.8	34.02	100	123	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	165	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5825 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
5825	105.58	-	-	97.97	35.55	5.76	33.7	100	258	Peak
5825	94.43	-	-	86.82	35.55	5.76	33.7	100	258	Average
11649	38	-36	74	59.12	4.2	8.73	34.05	120	331	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	165	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5825 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
5825	98.7	-	-	91.09	35.55	5.76	33.7	100	112	Peak
5825	87.86	-	-	80.25	35.55	5.76	33.7	100	112	Average
11649	37.83	-36.17	74	58.95	4.2	8.73	34.05	100	136	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	108.74	-	-	101.25	35.52	5.67	33.7	100	289	Peak
5745	96.01	-	-	88.52	35.52	5.67	33.7	100	289	Average
11490	37.88	-36.12	74	58.57	4.47	8.84	34	108	227	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	100.38	-	-	92.89	35.52	5.67	33.7	100	112	Peak
5745	88.28	-	-	80.79	35.52	5.67	33.7	100	112	Average
11490	37.73	-36.27	74	58.42	4.47	8.84	34	133	207	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	107.49	-	-	99.96	35.53	5.7	33.7	100	257	Peak
5785	95.28	-	-	87.75	35.53	5.7	33.7	100	257	Average
11571	38.47	-35.53	74	59.31	4.38	8.8	34.02	100	169	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	101.35	-	-	93.82	35.53	5.7	33.7	100	114	Peak
5785	89.49	-	-	81.96	35.53	5.7	33.7	100	114	Average
11571	36.99	-37.01	74	57.83	4.38	8.8	34.02	200	102	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	165	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5825 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
5825	107.22	-	-	99.61	35.55	5.76	33.7	173	293	Peak
5825	96.16	-	-	88.55	35.55	5.76	33.7	173	293	Average
11649	37.93	-36.07	74	59.05	4.2	8.73	34.05	112	152	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	22~23°C
Test Channel :	165	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5825 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
5825	98.8	-	-	91.19	35.55	5.76	33.7	100	112	Peak
5825	87.52	-	-	79.91	35.55	5.76	33.7	100	112	Average
11649	36.74	-37.26	74	57.86	4.2	8.73	34.05	133	285	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	151	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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
5755	106.06	-	-	98.55	35.53	5.68	33.7	121	292	Peak
5755	95.48	-	-	87.97	35.53	5.68	33.7	121	292	Average
11511	37.6	-36.4	74	58.21	4.53	8.86	34	133	268	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	151	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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
5755	97.73	-	-	90.22	35.53	5.68	33.7	100	112	Peak
5755	86.68	-	-	79.17	35.53	5.68	33.7	100	112	Average
11511	37.98	-36.02	74	58.59	4.53	8.86	34	133	200	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	159	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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	103.72	-	-	96.16	35.54	5.72	33.7	100	257	Peak
5795	92.48	-	-	84.92	35.54	5.72	33.7	100	257	Average
11590	37.48	-36.52	74	58.39	4.34	8.78	34.03	100	200	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	22~23°C
Test Channel :	159	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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	97.58	-	-	90.02	35.54	5.72	33.7	100	114	Peak
5795	86.88	-	-	79.32	35.54	5.72	33.7	100	114	Average
11589	38.65	-35.35	74	59.56	4.34	8.78	34.03	100	248	Peak

Test Mode :	5GHz 802.11ac VHT20	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	107.7	-	-	100.21	35.52	5.67	33.7	100	295	Peak
5745	95.79	-	-	88.3	35.52	5.67	33.7	100	295	Average
11490	37.94	-36.06	74	58.63	4.47	8.84	34	105	221	Peak

Test Mode :	5GHz 802.11ac VHT20	Temperature :	22~23°C
Test Channel :	149	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	99.6	-	-	92.11	35.52	5.67	33.7	100	108	Peak
5745	88.29	-	-	80.8	35.52	5.67	33.7	100	108	Average
11490	38	-36	74	58.69	4.47	8.84	34	106	251	Peak

Test Mode :	5GHz 802.11ac VHT20	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	107.63	-	-	100.1	35.53	5.7	33.7	158	294	Peak
5785	97.4	-	-	89.87	35.53	5.7	33.7	158	294	Average
11570	38.62	-35.38	74	59.46	4.38	8.8	34.02	100	74	Peak

Test Mode :	5GHz 802.11ac VHT20	Temperature :	22~23°C
Test Channel :	157	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	99.8	-	-	92.27	35.53	5.7	33.7	100	113	Peak
5785	88.98	-	-	81.45	35.53	5.7	33.7	100	113	Average
11571	38.72	-35.28	74	59.56	4.38	8.8	34.02	100	12	Peak

Test Mode :	5GHz 802.11ac VHT20	Temperature :	22~23°C
Test Channel :	165	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5825 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
5825	106.01	-	-	98.4	35.55	5.76	33.7	100	290	Peak
5825	93.75	-	-	86.14	35.55	5.76	33.7	100	290	Average
11649	37.5	-36.5	74	58.62	4.2	8.73	34.05	121	147	Peak

Test Mode :	5GHz 802.11ac VHT20	Temperature :	22~23°C
Test Channel :	165	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5825 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
5825	99.11	-	-	91.5	35.55	5.76	33.7	100	113	Peak
5825	88.59	-	-	80.98	35.55	5.76	33.7	100	113	Average
11649	37.8	-36.2	74	58.92	4.2	8.73	34.05	100	321	Peak

Test Mode :	5GHz 802.11ac VHT40	Temperature :	22~23°C
Test Channel :	151	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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
5755	105.6	-	-	98.09	35.53	5.68	33.7	100	279	Peak
5755	93.46	-	-	85.95	35.53	5.68	33.7	100	279	Average
11511	37.5	-36.5	74	58.11	4.53	8.86	34	100	185	Peak

Test Mode :	5GHz 802.11ac VHT40	Temperature :	22~23°C
Test Channel :	151	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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
5755	98.36	-	-	90.85	35.53	5.68	33.7	100	114	Peak
5755	86.92	-	-	79.41	35.53	5.68	33.7	100	114	Average
11511	37.39	-36.61	74	58	4.53	8.86	34	116	252	Peak

Test Mode :	5GHz 802.11ac VHT40	Temperature :	22~23°C
Test Channel :	159	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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	103.58	-	-	96.02	35.54	5.72	33.7	100	289	Peak
5795	92.52	-	-	84.96	35.54	5.72	33.7	100	289	Average
11590	39.7	-34.3	74	60.61	4.34	8.78	34.03	178	120	Peak

Test Mode :	5GHz 802.11ac VHT40	Temperature :	22~23°C
Test Channel :	159	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	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	97.96	-	-	90.4	35.54	5.72	33.7	100	114	Peak
5795	87.24	-	-	79.68	35.54	5.72	33.7	100	114	Average
11589	37.62	-36.38	74	58.53	4.34	8.78	34.03	169	220	Peak

Test Mode :	5GHz 802.11ac VHT80	Temperature :	22~23°C
Test Channel :	155	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5775 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
5775	100.97	-	-	93.44	35.53	5.7	33.7	100	279	Peak
5775	90.33	-	-	82.8	35.53	5.7	33.7	100	279	Average
11550	39.72	-34.28	74	60.51	4.42	8.81	34.02	100	269	Peak

Test Mode :	5GHz 802.11ac VHT80	Temperature :	22~23°C
Test Channel :	155	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5775 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
5775	94.67	-	-	87.14	35.53	5.7	33.7	100	114	Peak
5775	83.59	-	-	76.06	35.53	5.7	33.7	100	114	Average
11550	37.32	-36.68	74	58.11	4.42	8.81	34.02	100	184	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 (dB μ V)	
	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.

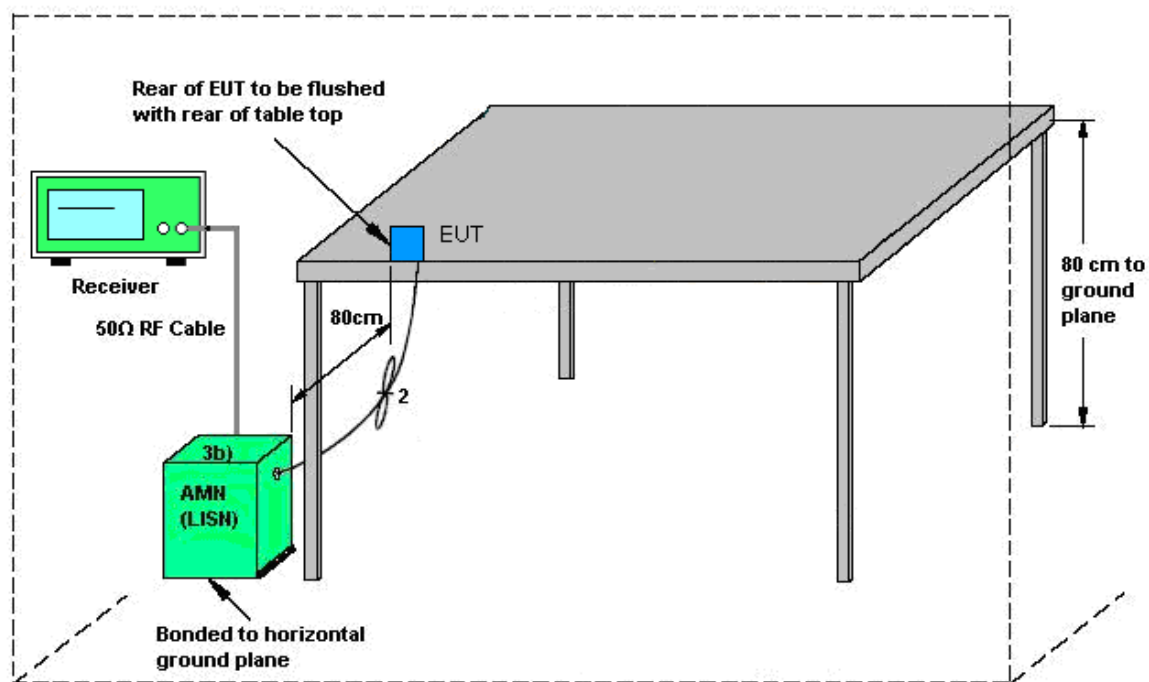
3.6.2 Measuring Instruments

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.

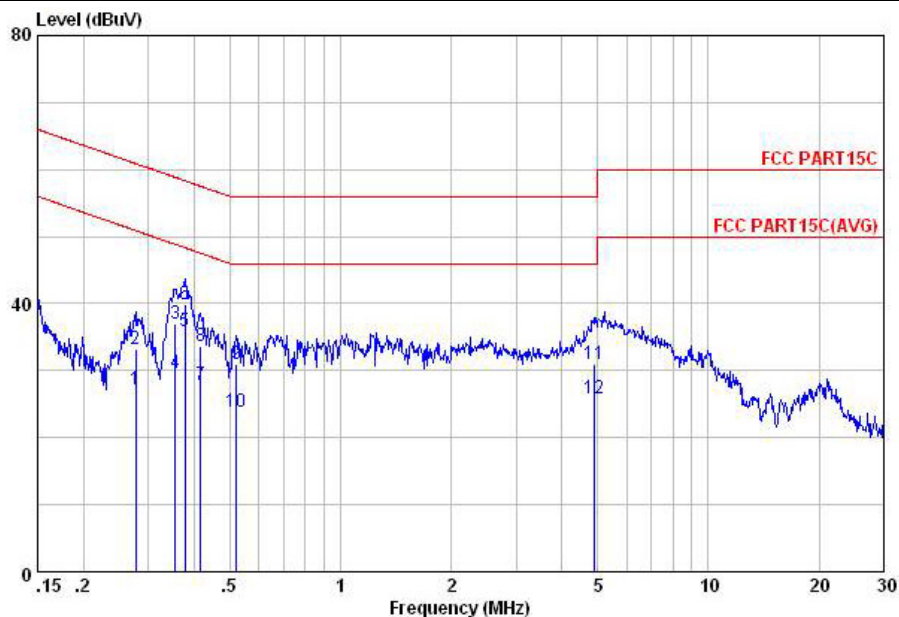
3.6.4 Test Setup



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

3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Eligah Wang	Relative Humidity :	35~37%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Bluetooth Link + WLAN 2.4GHz Link + USB Cable (Charging from Adapter) + Earphone		

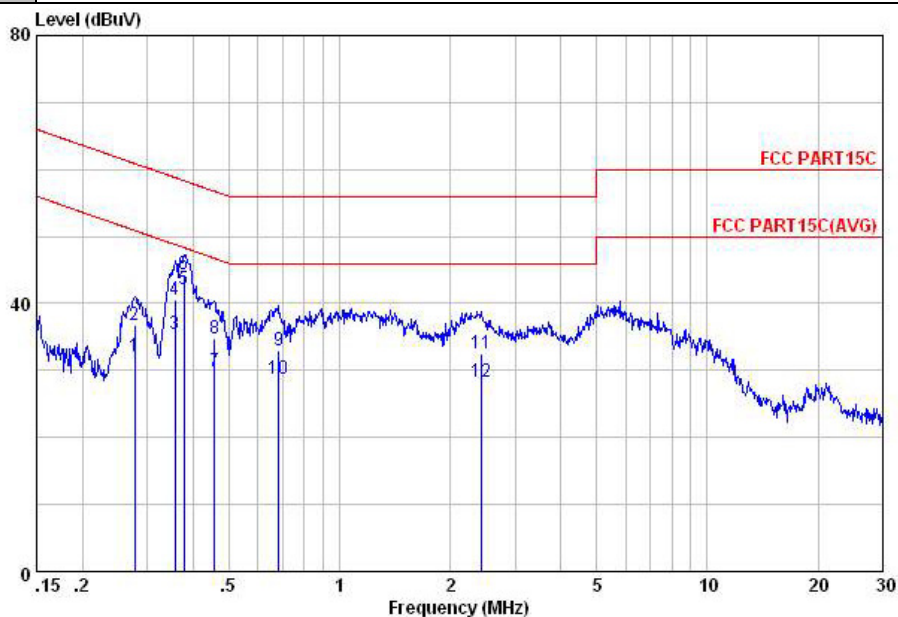


Site : C001-KS
Condition: FCC PART15C LISN-L20130306 LINE

mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.28	27.13	-23.77	50.90	15.90	0.79	10.44	Average
2	0.28	33.13	-27.77	60.90	21.90	0.79	10.44	QP
3	0.36	37.03	-21.80	58.83	26.29	0.42	10.32	QP
4	0.36	29.63	-19.20	48.83	18.89	0.42	10.32	Average
5	0.38	35.96	-12.38	48.34	25.30	0.36	10.30	Average
6	0.38	39.96	-18.38	58.34	29.30	0.36	10.30	QP
7	0.42	27.87	-19.64	47.51	17.30	0.29	10.28	Average
8	0.42	33.67	-23.84	57.51	23.10	0.29	10.28	QP
9	0.52	31.06	-24.94	56.00	20.60	0.20	10.26	QP
10	0.52	23.86	-22.14	46.00	13.40	0.20	10.26	Average
11	4.87	31.06	-24.94	56.00	20.60	0.20	10.26	QP
12	4.87	25.86	-20.14	46.00	15.40	0.20	10.26	Average

Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Eligah Wang	Relative Humidity :	35~37%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Bluetooth Link + WLAN 2.4GHz Link + USB Cable (Charging from Adapter) + Earphone		



Site : C001-KS
Condition: FCC PART15C LISN-N20130306 NEUTRAL

mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBμV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBμV	dBμV	dB	dB	
1	0.28	32.16	-18.74	50.90	20.90	0.82	10.44	Average
2	0.28	36.86	-24.04	60.90	25.60	0.82	10.44	QP
3	0.36	35.40	-13.38	48.78	24.60	0.49	10.31	Average
4	0.36	40.60	-18.18	58.78	29.80	0.49	10.31	QP
5	0.38	42.14	-6.20	48.34	31.40	0.44	10.30	Average
6	0.38	44.34	-14.00	58.34	33.60	0.44	10.30	QP
7	0.46	29.91	-16.85	46.76	19.30	0.34	10.27	Average
8	0.46	34.71	-22.05	56.76	24.10	0.34	10.27	QP
9	0.68	33.02	-22.98	56.00	22.60	0.21	10.21	QP
10	0.68	28.72	-17.28	46.00	18.30	0.21	10.21	Average
11	2.42	32.61	-23.39	56.00	22.30	0.11	10.20	QP
12	2.42	28.21	-17.79	46.00	17.90	0.11	10.20	Average

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 Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 28, 2013	May 12, 2014~ May 21, 2014	Dec. 27, 2014	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	30MHz~40GHz	Feb. 27, 2014	May 12, 2014~ May 21, 2014	Feb. 26, 2015	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Feb. 27, 2014	May 12, 2014~ May 21, 2014	Feb. 26, 2015	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 05, 2013	May 21, 2014	Nov. 04, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 23, 2013	May 21, 2014	May 22, 2014	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 09, 2013	May 21, 2014	Oct. 08, 2014	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 08, 2014	May 21, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 08, 2014	May 21, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA1702 49	15GHz~40GHz	Mar. 10, 2014	May 21, 2014	Mar. 09, 2015	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701030	1GHz~18GHz	Nov. 18, 2013	May 21, 2014	Nov. 17, 2014	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161073	1MHz~1GHz	May 04, 2014	May 21, 2014	May 03, 2015	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A023 71	1GHz~26.5GHz	Dec.10, 2013	May 21, 2014	Dec. 09, 2014	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	May 21, 2014	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	May 21, 2014	NCR	Radiation (03CH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	May 23, 2013	Apr. 22, 2014	May 22, 2014	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Dec. 10, 2013	Apr. 22, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Dec. 10, 2013	Apr. 22, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000 0811	AC 0V~300V, 45Hz~1000Hz	Dec. 10, 2013	Apr. 22, 2014	Dec. 09, 2014	Conduction (CO01-KS)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

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