



FCC RF Test Report

APPLICANT : HTC Corporation
EQUIPMENT : Smartphone
MODEL NAME : PL80130
FCC ID : NM8PL80130
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Oct. 18, 2012 and completely tested on Nov. 22, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

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

Reviewed by:

Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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FCC ID : NM8PL80130

Page Number : 1 of 129

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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 Testing Site 6

 1.5 Applied Standards 6

 1.6 Ancillary Equipment List 6

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST 7

 2.1 Carrier Frequency Channel 7

 2.2 Pre-Scanned RF Power 8

 2.3 Test Mode 9

 2.4 Connection Diagram of Test System 11

 2.5 RF Utility 12

3 TEST RESULT 13

 3.1 6dB Bandwidth Measurement 13

 3.2 Output Power Measurement 26

 3.3 Power Spectral Density Measurement 31

 3.4 Conducted Band Edges and Spurious Emission Measurement 54

 3.5 Radiated Band Edges and Spurious Emission Measurement 82

 3.6 AC Conducted Emission Measurement 123

 3.7 Antenna Requirements 127

4 LIST OF MEASURING EQUIPMENT 128

5 UNCERTAINTY OF EVALUATION 129

APPENDIX A. SETUP PHOTOGRAPHS

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	-
			Radiated Spurious Emission		Pass	Under limit 0.29 dB at 2389.470 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 4.00 dB at 13.558 MHz
3.7	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan

1.2 Manufacturer

HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Model Name	PL80130
FCC ID	NM8PL80130
Sample 1	EUT with LCD Panel 1, Camera Front 1, and 2nd Camera 1
Sample 2	EUT with LCD Panel 2, Camera Front 2, and 2nd Camera 2
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/ WLAN 11abgn/Bluetooth/NFC
EUT Stage	Identical Prototype

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

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	802.11b/g/n : 2412 MHz ~ 2462 MHz 802.11a/n: 5745~5825MHz.
Maximum Output Power to Antenna	<2412 MHz ~ 2462 MHz> 802.11b : 22.32 dBm (0.1706 W) 802.11g : 24.57 dBm (0.2864 W) 802.11n HT20 : 24.21 dBm (0.2636 W) 802.11n HT40 : 24.43 dBm (0.2773 W) <5745 MHz ~ 5825 MHz> 802.11a : 23.55 dBm (0.2265 W) 802.11n HT20 : 22.83 dBm (0.1919 W) 802.11n HT40 : 23.11 dBm (0.2046 W)
Antenna Type	802.11b/g/n : PIFA Antenna type with gain -0.20 dBi 802.11a/n : PIFA Antenna type with gain -0.40 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH05-HY	722060/4086B-1

1.5 Applied Standards

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

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
- ♦ ANSI C63.4-2003 and ANSI C63.10-2009
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3

Remark:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 KHz to 30 MHz) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for 2.4G and Z plane for 5G) were recorded in this report.

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

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

2.1 Carrier Frequency Channel

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

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

2.2 Pre-Scanned RF Power

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

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	22.32	22.29	22.28	22.30

2.4GHz 802.11g mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	24.57	24.45	23.89	23.81	23.73	23.67	23.61	23.56

2.4GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	24.21	24.00	23.98	23.81	23.68	23.66	23.48	23.42

2.4GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	24.43	24.38	24.24	24.12	24.11	24.03	23.98	22.95

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	23.55	22.91	22.27	22.06	22.29	22.16	22.17	22.23

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	22.83	22.43	22.26	22.31	22.15	22.81	22.36	22.32

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	23.11	23.03	22.92	22.85	22.79	22.71	22.63	22.57



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	Remark
Conducted TCs	6dB Power Spectral Density	802.11b	1 Mbps	1/6/11	-
		802.11g	6 Mbps	1/6/11	-
		802.11n HT20	6.5 Mbps	1/6/11	-
		802.11n HT40	13.5 Mbps	3/6/9	-
	Output Power	802.11b	1 Mbps	1/6/11	-
		802.11g	6 Mbps	1/6/11	-
		802.11n HT20	6.5 Mbps	1/6/11	-
		802.11n HT40	13.5 Mbps	3/6/9	-
	Conducted Band Edge	802.11b	1 Mbps	1/11	-
		802.11g	6 Mbps	1/11	-
		802.11n HT20	6.5 Mbps	1/11	-
		802.11n HT40	13.5 Mbps	3/9	-
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11	-
		802.11g	6 Mbps	1/6/11	-
		802.11n HT20	6.5 Mbps	1/6/11	-
		802.11n HT40	13.5 Mbps	3/6/9	-
Radiated TCs	Radiated Band Edge	802.11b	1 Mbps	1/11	Sample 1
		802.11g	6 Mbps	1/11	Sample 1
		802.11n HT20	6.5 Mbps	1/11	Sample 1
		802.11n HT40	13.5 Mbps	3/9	Sample 1 and Sample 2
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11	Sample 1
		802.11g	6 Mbps	1/6/11	Sample 1
		802.11n HT20	6.5 Mbps	1/6/11	Sample 1
		802.11n HT40	13.5 Mbps	3/6/9	Sample 1 and Sample 2

Remark: For radiated TCs, the test was performance with Earphone, Battery 1, USB Cable 1, and Adapter 1.



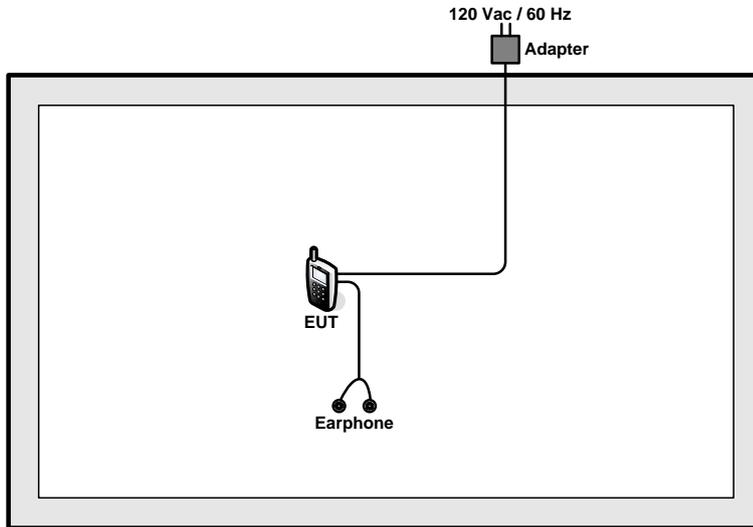
<5GHz>

Test Cases					
	Test Items	Mode	Data Rate	Test Channel	Remark
Conducted TCs	6dB Power Spectral Density	802.11a	6 Mbps	149/157/165	-
		802.11n HT20	6.5 Mbps	149/157/165	-
		802.11n HT40	13.5 Mbps	151/159	-
	Output Power	802.11a	6 Mbps	149/157/165	-
		802.11n HT20	6.5 Mbps	149/157/165	-
		802.11n HT40	13.5 Mbps	151/159	-
	Conducted Band Edge	802.11a	6 Mbps	149/165	-
		802.11n HT20	6.5 Mbps	149/165	-
		802.11n HT40	13.5 Mbps	151/159	-
	Conducted Spurious Emission	802.11a	6 Mbps	149/157/165	-
		802.11n HT20	6.5 Mbps	149/157/165	-
		802.11n HT40	13.5 Mbps	151/159	-
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	149/165	Sample 1
		802.11n HT20	6.5 Mbps	149/165	Sample 1
		802.11n HT40	13.5 Mbps	151/159	Sample 1 and Sample 2
	Radiated Spurious Emission	802.11a	6 Mbps	149/157/165	Sample 1
		802.11n HT20	6.5 Mbps	149/157/165	Sample 1
		802.11n HT40	13.5 Mbps	151/159	Sample 1 and Sample 2
Remark: For radiated TCs, the test was performance with Earphone, Battery 1, USB Cable 2, and Adapter 2.					

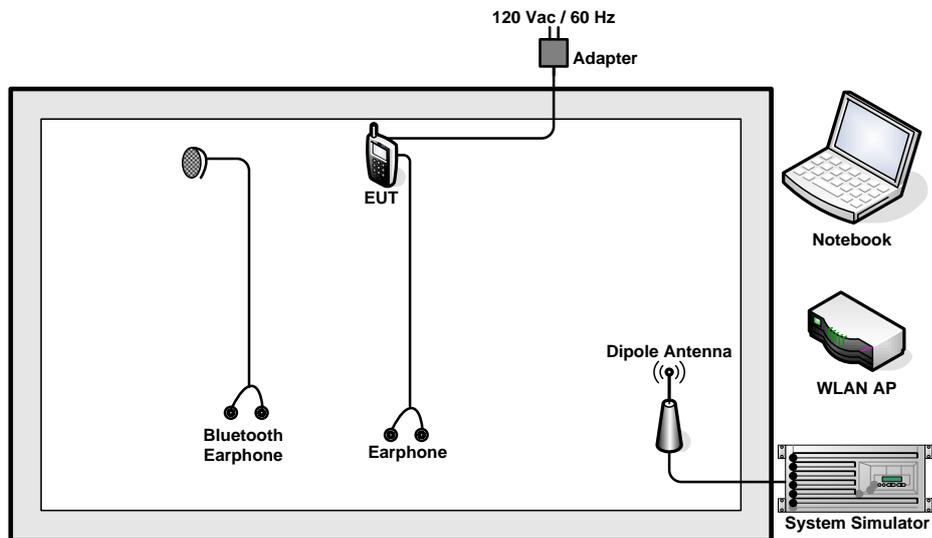
Test Cases	
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN (2.4G) Link + NFC + Earphone + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 1
	Mode 2 GSM850 Idle + Bluetooth Link + WLAN (5G) Link + NFC + Earphone + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 1
	Mode 3 GSM850 Idle + Bluetooth Link + WLAN (5G) Link + NFC + Earphone + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 2
Remark: The worst case of conducted emission is mode 2; only the test data of it was reported.	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





2.5 RF Utility

For 802.11a, 802.11b, 802.11g, 802.11n HT20, the programmed RF utility "Remote 432X controller (P2.01)", is installed in the notebook make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

For 802.11n HT40, the programmed RF utility "command", is installed in the notebook make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

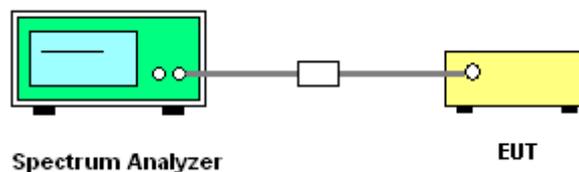
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	8.04	0.5	Pass
06	2437	8.00	0.5	Pass
11	2462	7.56	0.5	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.36	0.5	Pass
06	2437	16.40	0.5	Pass
11	2462	16.44	0.5	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.68	0.5	Pass
06	2437	17.60	0.5	Pass
11	2462	17.60	0.5	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
03	2422	36.32	0.5	Pass
06	2437	36.40	0.5	Pass
09	2452	36.40	0.5	Pass



Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	16.36	0.5	Pass
157	5785	16.40	0.5	Pass
165	5825	16.32	0.5	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

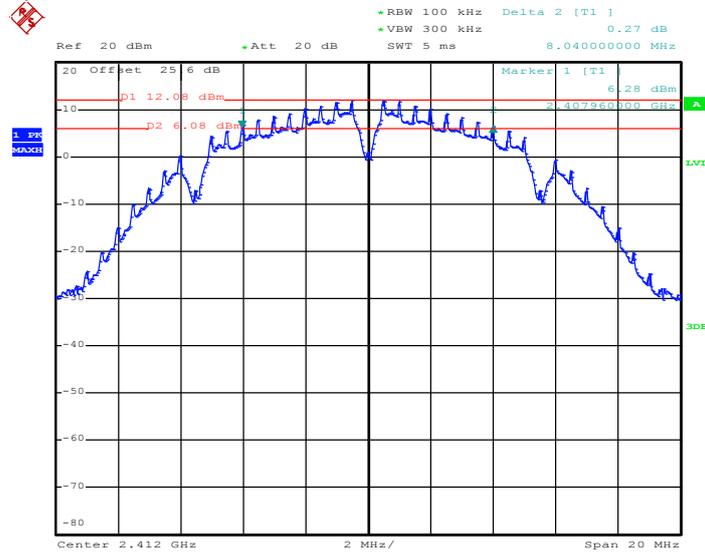
Channel	Frequency (MHz)	5GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	17.60	0.5	Pass
157	5785	17.60	0.5	Pass
165	5825	17.60	0.5	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT40 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
151	5755	36.32	0.5	Pass
159	5795	36.24	0.5	Pass

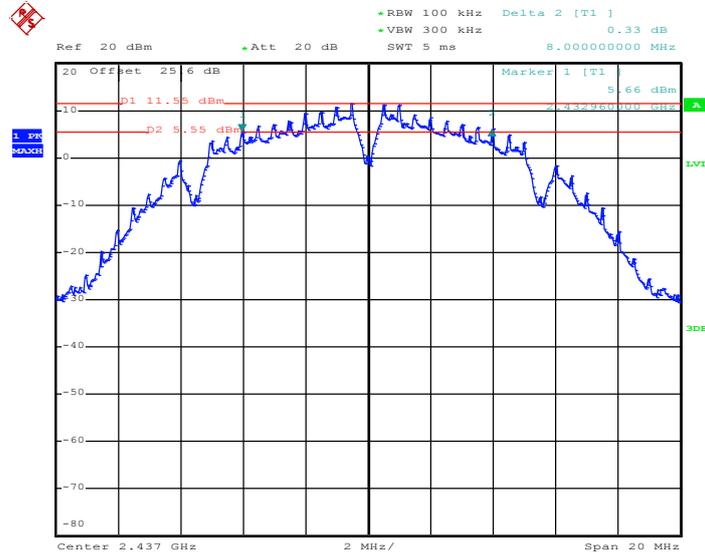
3.1.6 Test Result of 6dB Bandwidth Plots

6 dB Bandwidth Plot on 802.11b Channel 01



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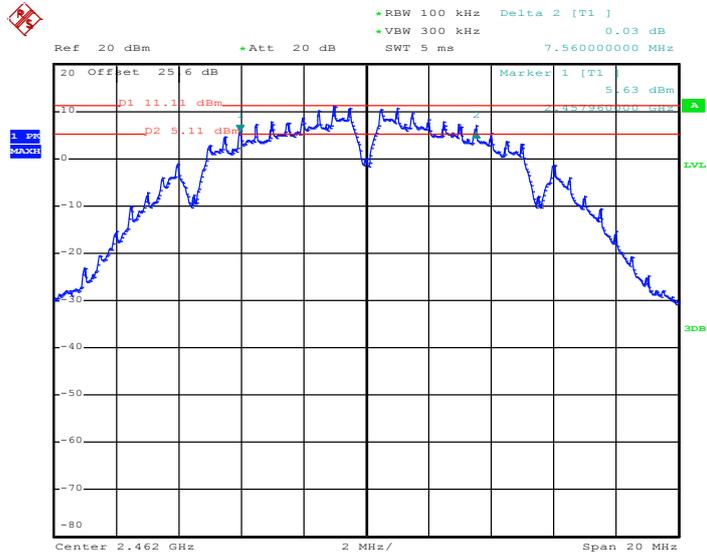
6 dB Bandwidth Plot on 802.11b Channel 06



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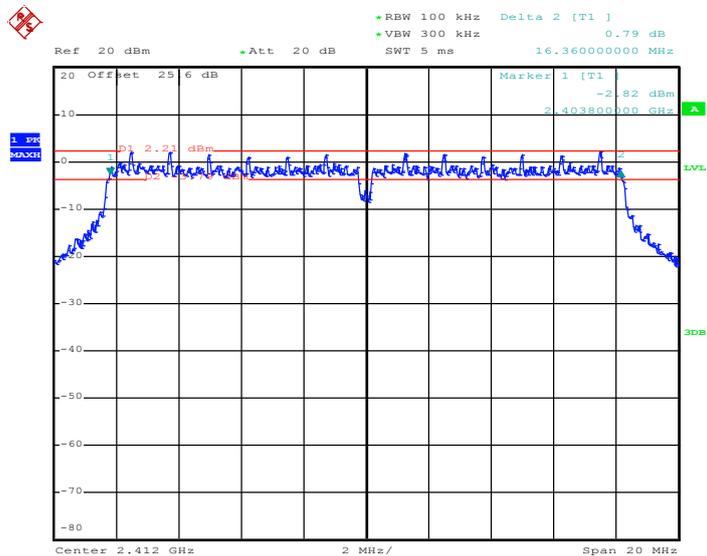


6 dB Bandwidth Plot on 802.11b Channel 11



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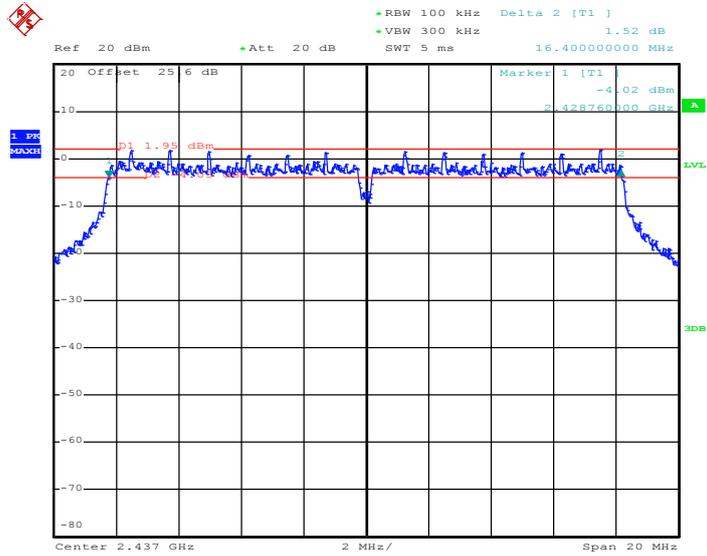
6 dB Bandwidth Plot on 802.11g Channel 01



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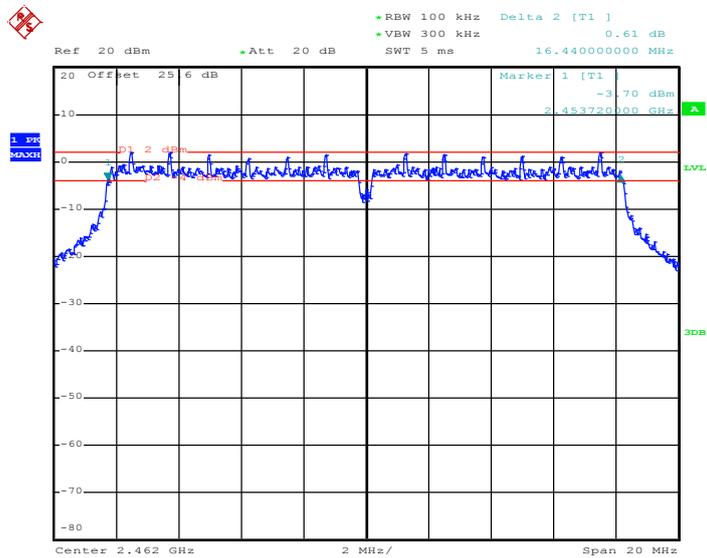


6 dB Bandwidth Plot on 802.11g Channel 06



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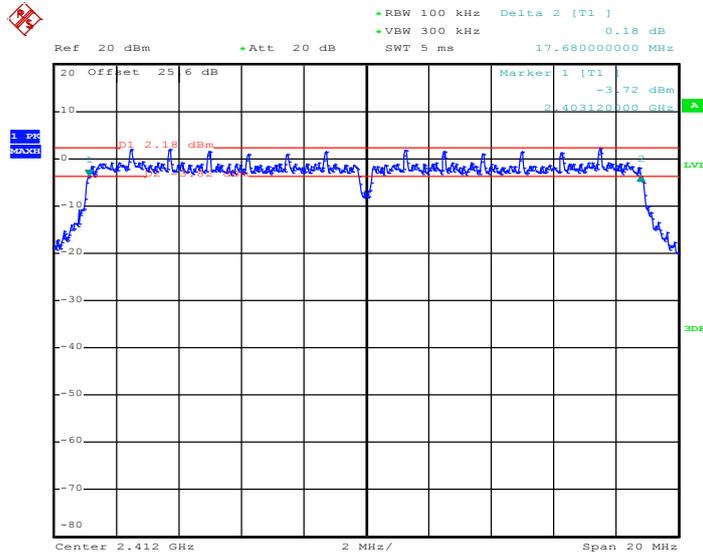
6 dB Bandwidth Plot on 802.11g Channel 11



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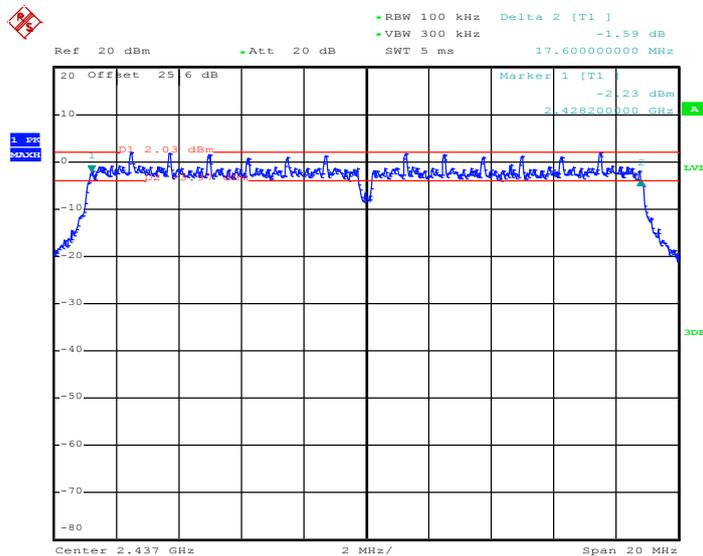


6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 01



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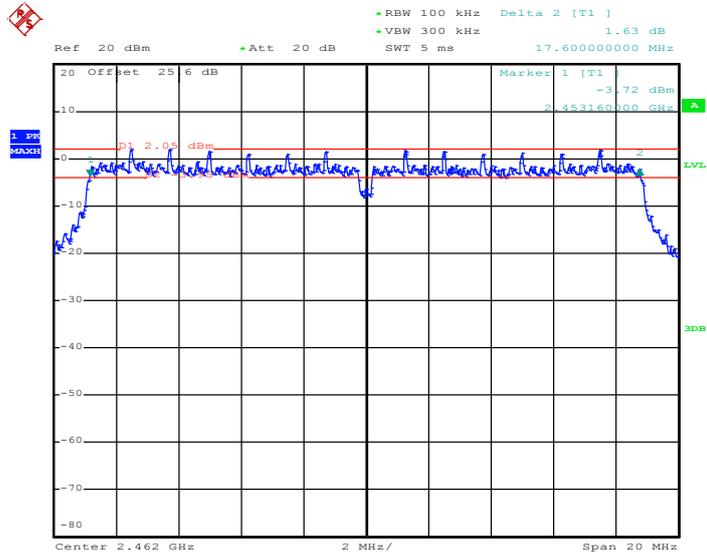
6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 06



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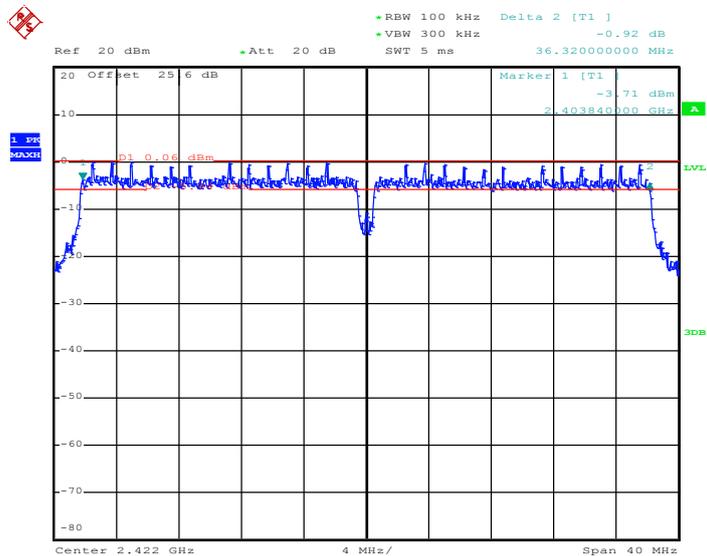


6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 11



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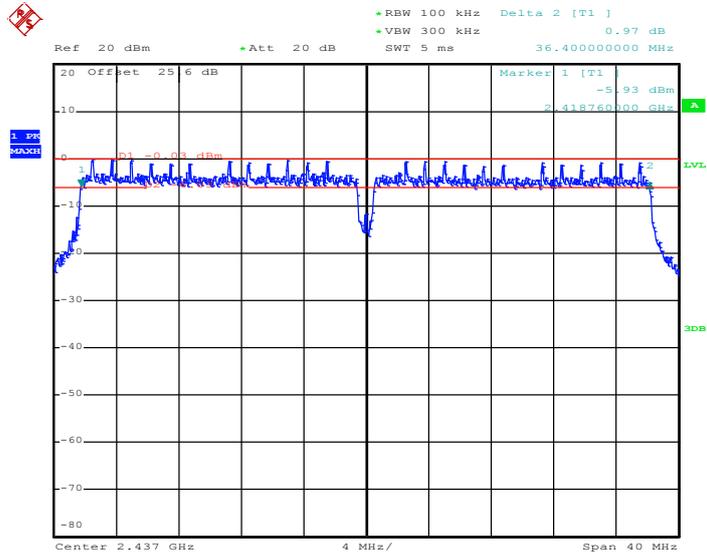
6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 03



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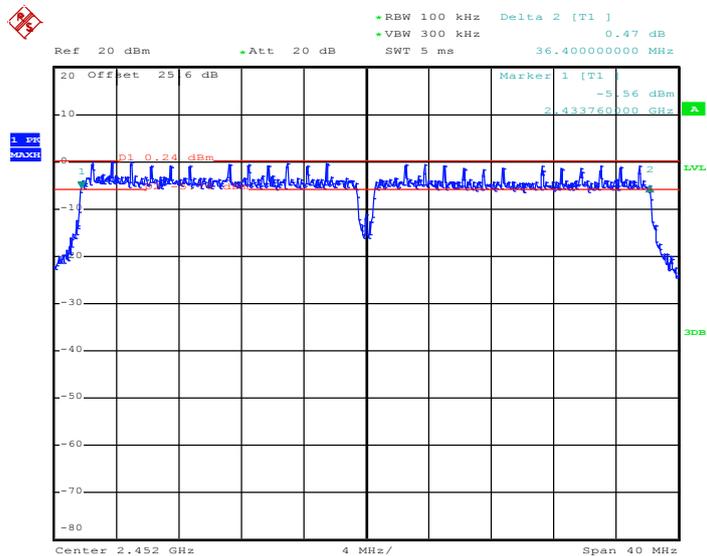


6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 06



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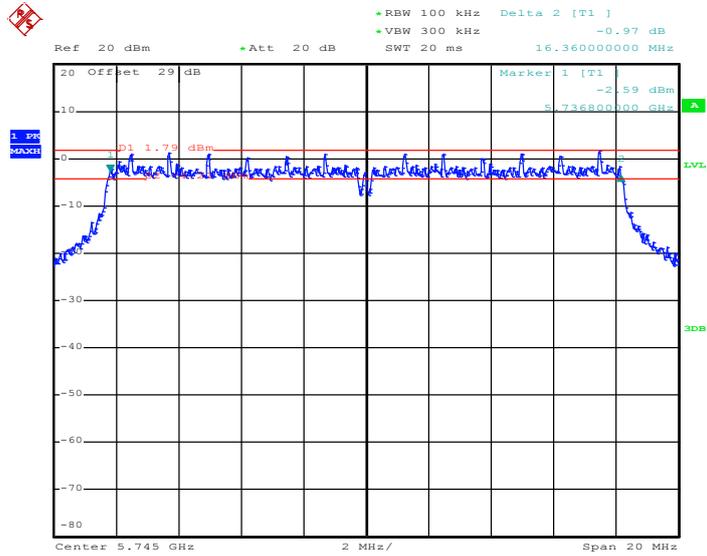
6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 09



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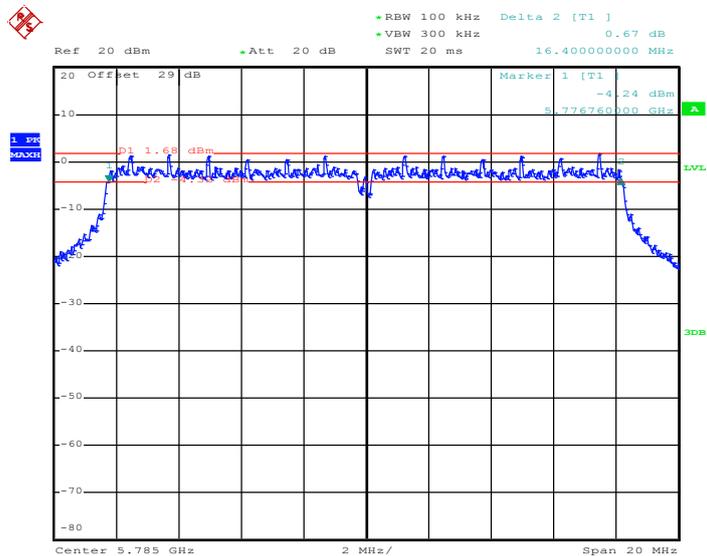


6 dB Bandwidth Plot on 802.11a Channel 149



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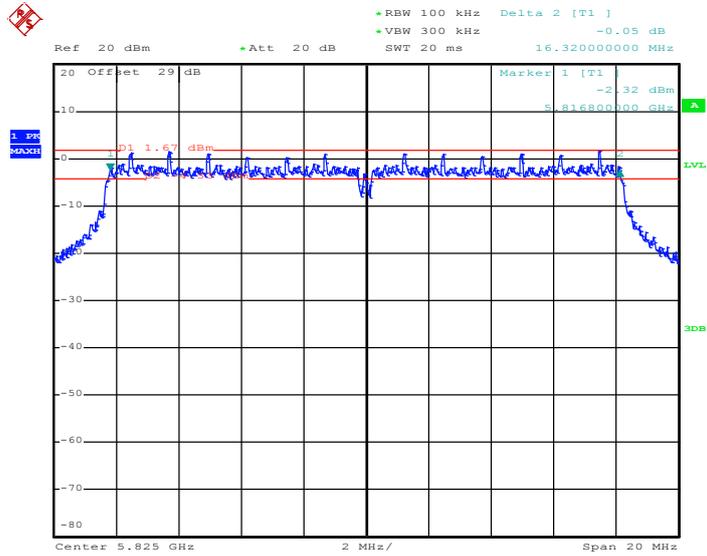
6 dB Bandwidth Plot on 802.11a Channel 157



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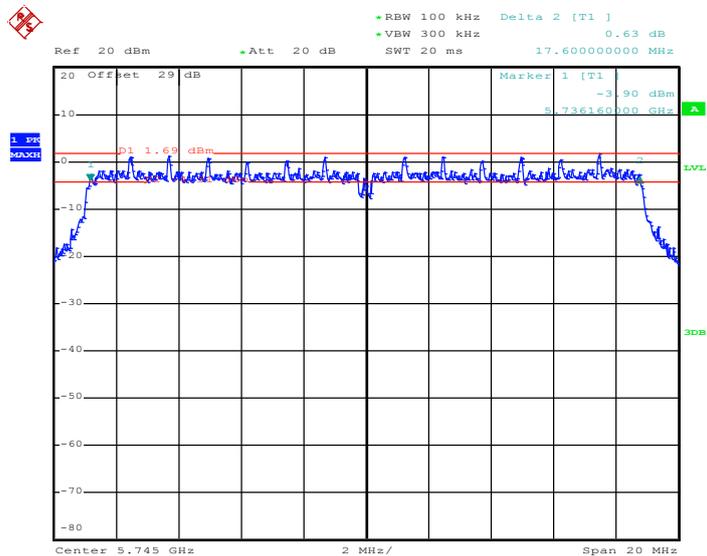


6 dB Bandwidth Plot on 802.11a Channel 165



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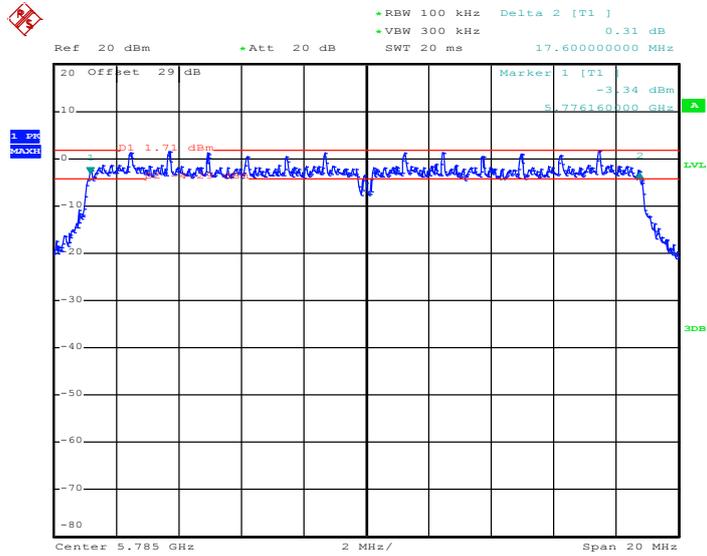
6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 149



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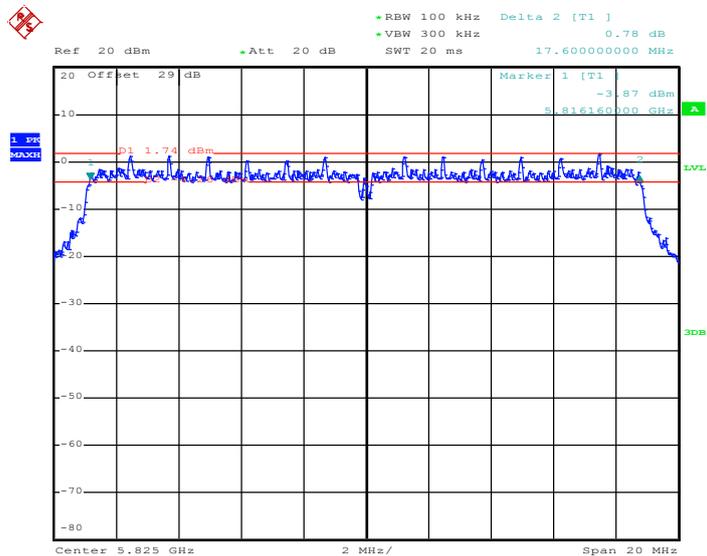


6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 157



Date: 6.NOV.2012 00:24:13

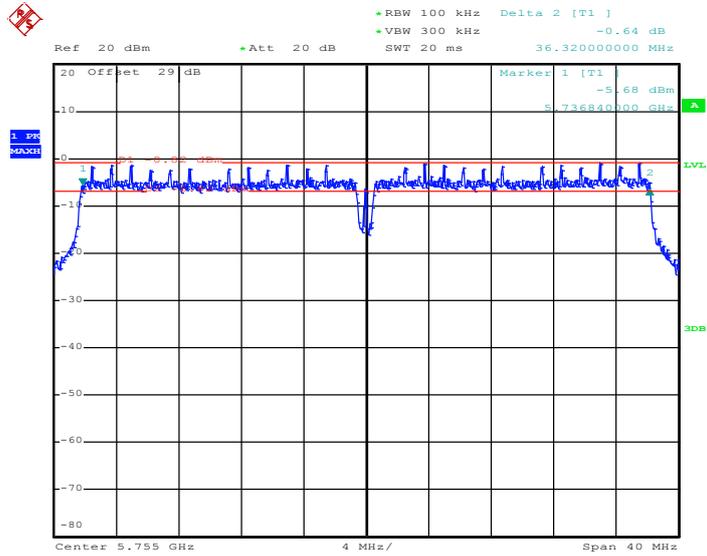
6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 165



Date: 6.NOV.2012 00:21:28

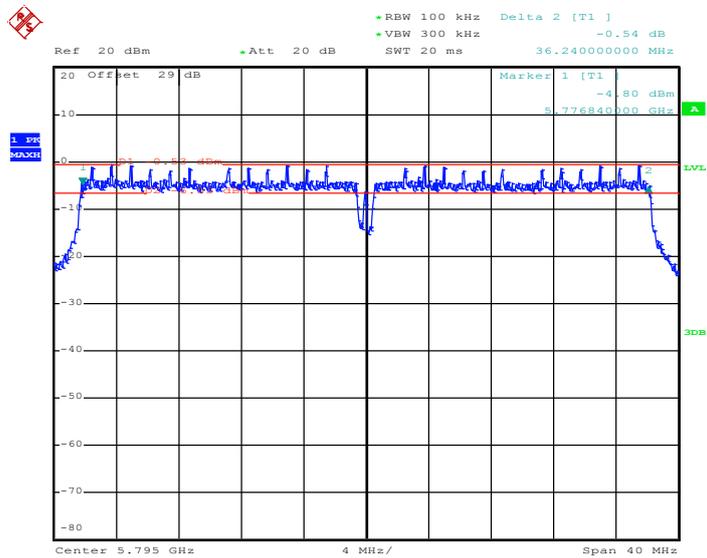


6 dB Bandwidth Plot on 5GHz 802.11n HT40 Channel 151



Date: 5.NOV.2012 23:13:36

6 dB Bandwidth Plot on 5GHz 802.11n HT40 Channel 159



Date: 5.NOV.2012 23:18:14

3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

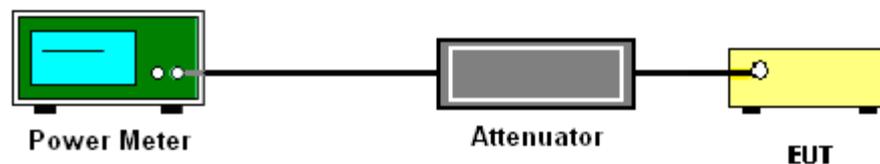
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup





3.2.5 Test Result of Peak Output Power

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.63	30	Pass
06	2437	22.32	30	Pass
11	2462	22.09	30	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	24.57	30	Pass
06	2437	24.39	30	Pass
11	2462	24.06	30	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	24.21	30	Pass
06	2437	24.09	30	Pass
11	2462	23.64	30	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	24.43	30	Pass
06	2437	24.28	30	Pass
09	2452	24.12	30	Pass



Test Mode :	802.11 a	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	22.95	30	Pass
157	5785	23.07	30	Pass
165	5825	23.55	30	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	22.68	30	Pass
157	5785	22.83	30	Pass
165	5825	22.49	30	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT40 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
151	5755	22.96	30	Pass
159	5795	23.11	30	Pass



3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%
Duty Cycle:	100.00%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	18.44
06	2437	19.38
11	2462	19.12

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%
Duty Cycle:	95.20%	Duty Factor:	0.21dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	13.51
06	2437	13.43
11	2462	13.29

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%
Duty Cycle:	95.08%	Duty Factor:	0.22dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Average Output Power (dBm)
01	2412	13.61
06	2437	13.49
11	2462	13.20

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%
Duty Cycle:	87.04%	Duty Factor:	0.60dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Average Output Power (dBm)
03	2422	14.65
06	2437	14.34
09	2452	13.92



Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%
Duty Cycle:	95.78%	Duty Factor:	0.19dB

Channel	Frequency (MHz)	802.11a Average Output Power (dBm)
149	5745	11.70
157	5785	11.78
165	5825	12.07

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%
Duty Cycle:	95.25%	Duty Factor:	0.21dB

Channel	Frequency (MHz)	5GHz 802.11n HT20 Average Output Power (dBm)
149	5745	11.87
157	5785	12.05
165	5825	11.95

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%
Duty Cycle:	87.26%	Duty Factor:	0.59dB

Channel	Frequency (MHz)	5GHz 802.11n HT40 Average Output Power (dBm)
151	5755	12.41
159	5795	12.66

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3KHz band at any time interval of continuous transmission.

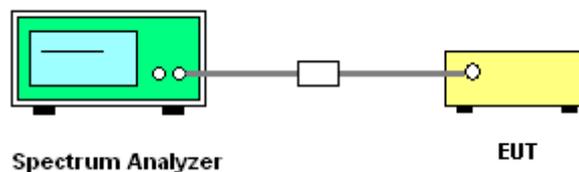
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	11.29	-1.65	8	Pass
06	2437	9.78	-2.06	8	Pass
11	2462	9.63	-3.44	8	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	1.97	-12.62	8	Pass
06	2437	1.73	-12.17	8	Pass
11	2462	1.28	-11.58	8	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	2.17	-12.06	8	Pass
06	2437	1.96	-11.80	8	Pass
11	2462	1.57	-10.78	8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
03	2422	0.11	-13.99	8	Pass
06	2437	-0.42	-14.62	8	Pass
09	2452	0.27	-13.22	8	Pass



Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
149	5745	1.12	-8.98	8	Pass
157	5785	1.24	-8.45	8	Pass
165	5825	1.66	-9.25	8	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT20 Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
149	5745	1.52	-8.89	8	Pass
157	5785	1.44	-9.08	8	Pass
165	5825	0.94	-9.31	8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Bill Kuo	Relative Humidity :	50~53%

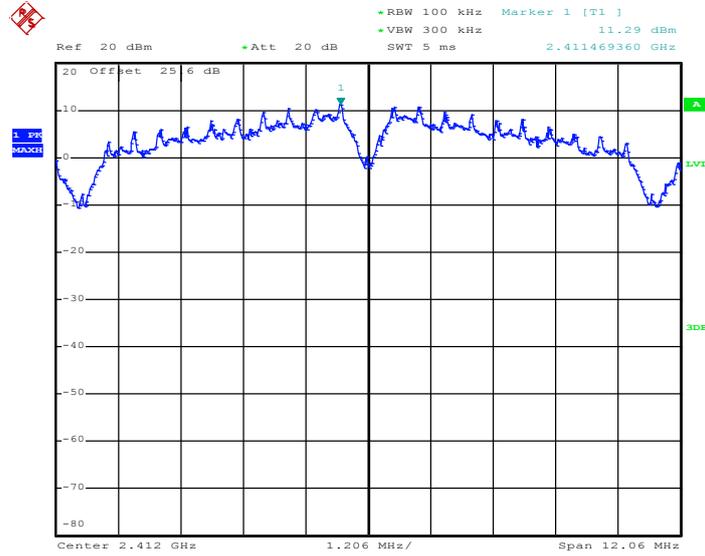
Channel	Frequency (MHz)	5GHz 802.11n HT40 Power Density		Max. Limits (dBm/3KHz)	Pass/Fail
		PSD/100KHz (dBm)	PSD/3KHz (dBm)		
151	5755	-1.08	-9.43	8	Pass
159	5795	-0.82	-10.15	8	Pass

Note:

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

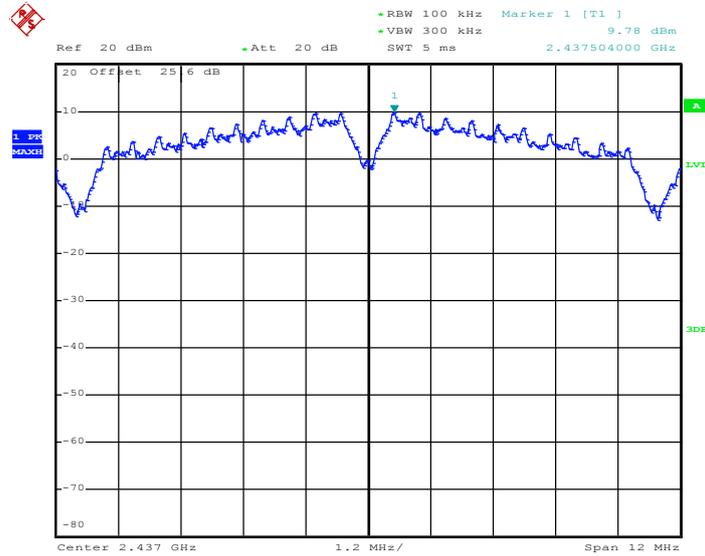
3.3.6 Test Result of Power Spectral Density Plots (100kHz)

PSD 100kHz Plot on 802.11b Channel 01



Date: 5.NOV.2012 22:18:04

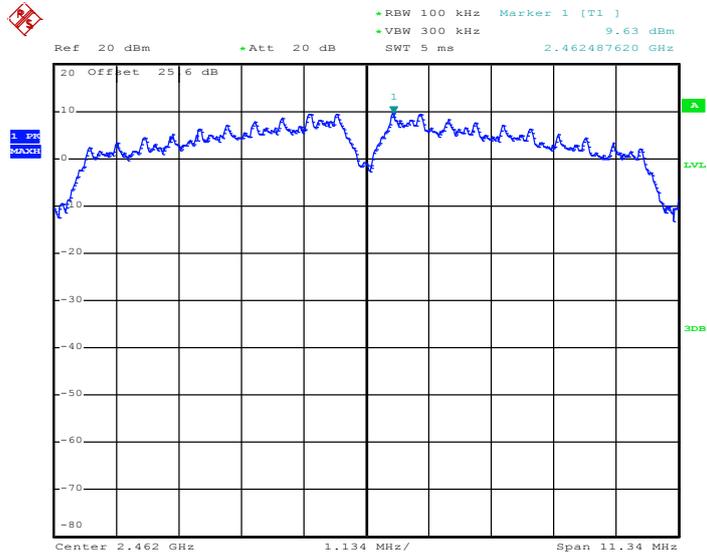
PSD 100kHz Plot on 802.11b Channel 06



Date: 5.NOV.2012 22:21:50

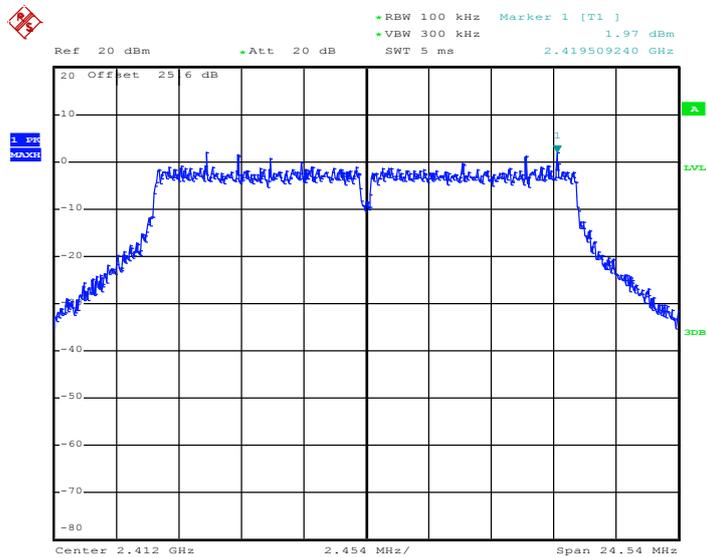


PSD 100kHz Plot on 802.11b Channel 11



Date: 5.NOV.2012 22:26:20

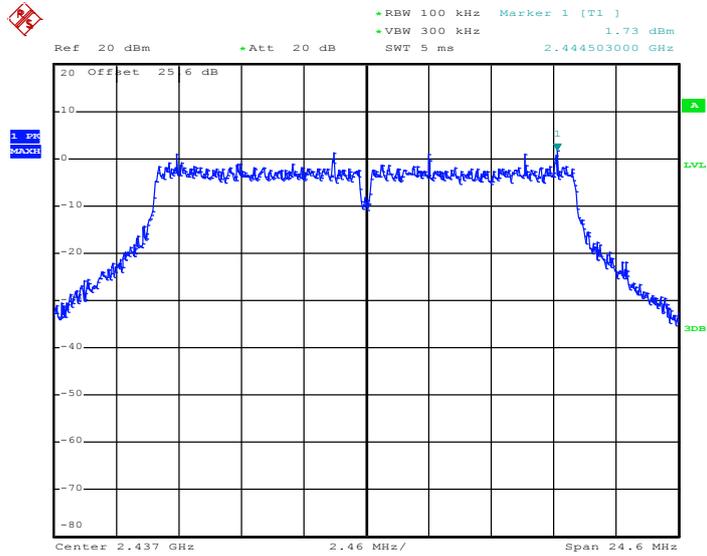
PSD 100kHz Plot on 802.11g Channel 01



Date: 5.NOV.2012 22:35:48

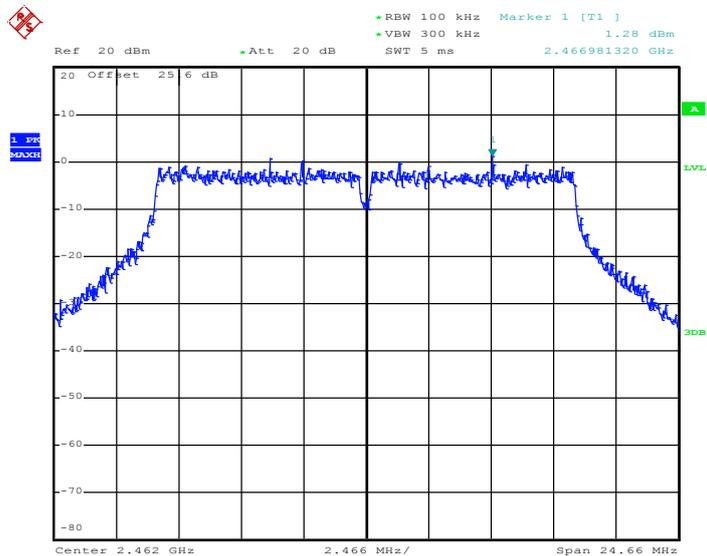


PSD 100kHz Plot 802.11g Channel 06



Date: 5.NOV.2012 22:32:45

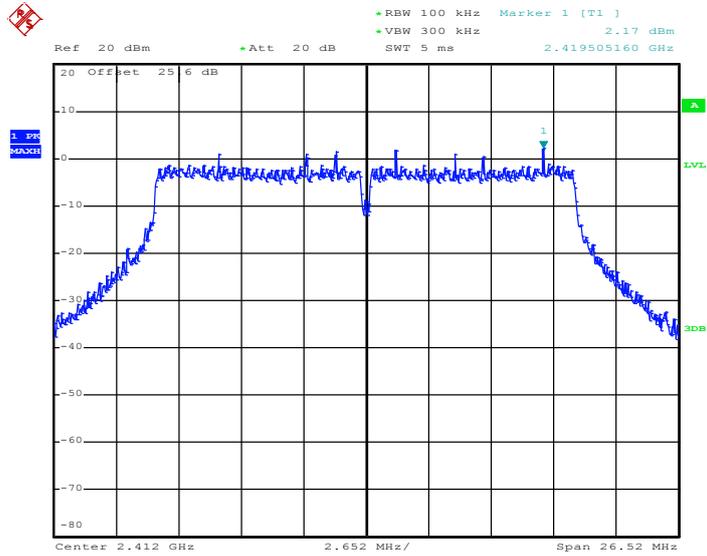
PSD 100kHz Plot 802.11g Channel 11



Date: 5.NOV.2012 22:30:05

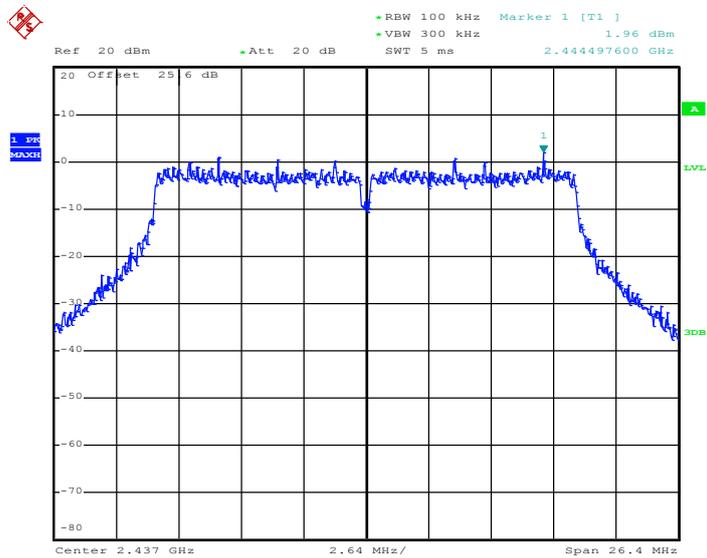


PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 01



Date: 5.NOV.2012 22:41:13

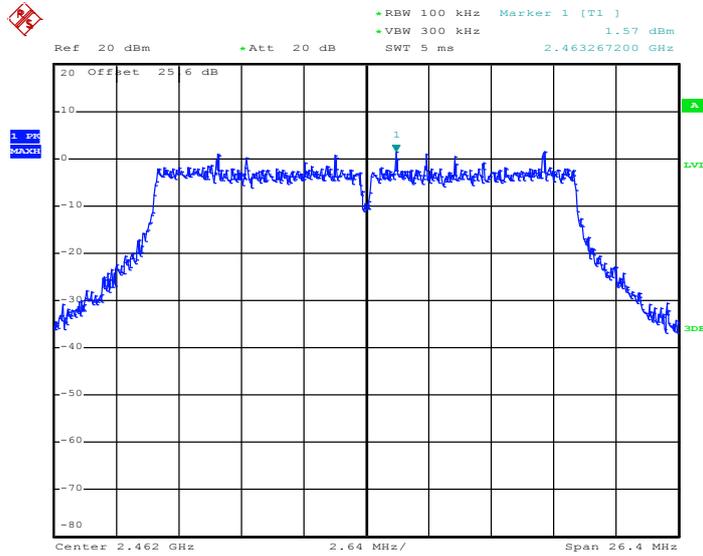
PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 06



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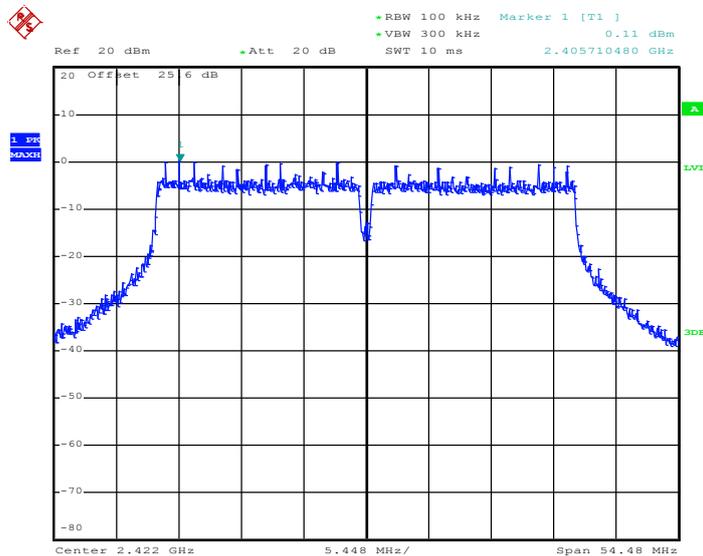


PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 11



Date: 5.NOV.2012 22:49:03

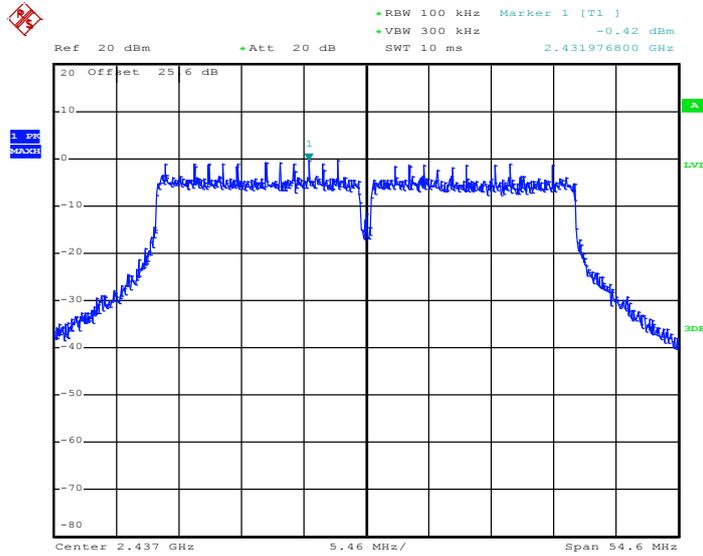
PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 03



Date: 6.NOV.2012 00:46:13

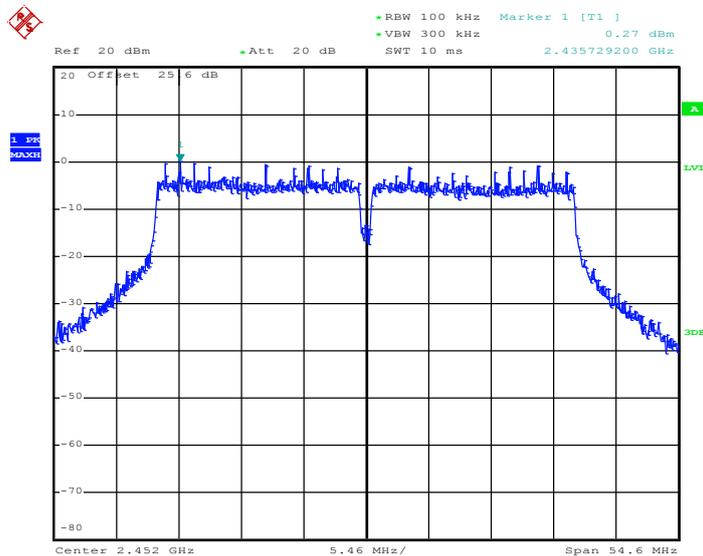


PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 06



Date: 5.NOV.2012 23:02:20

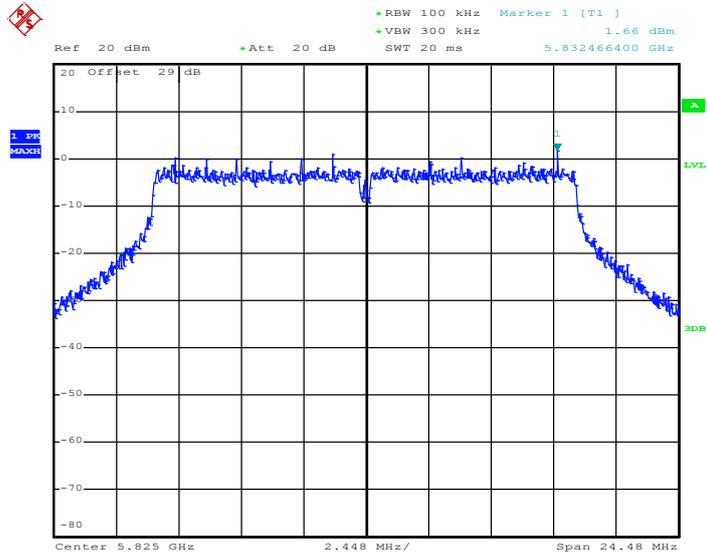
PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 09



Date: 5.NOV.2012 23:07:38

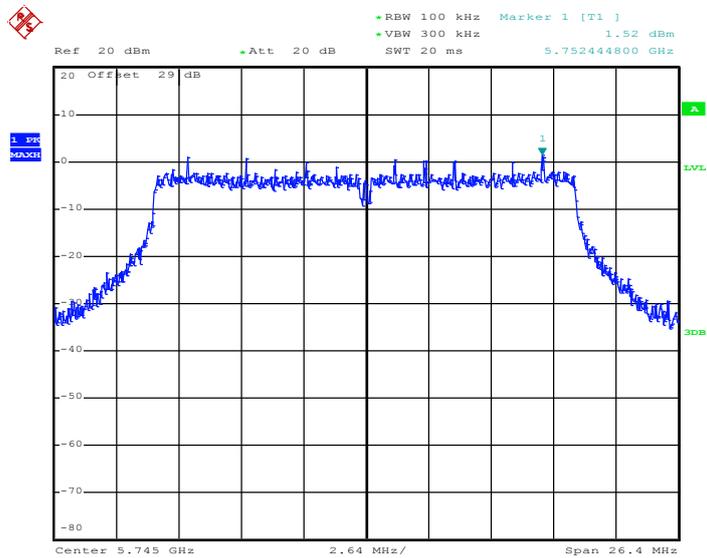


PSD 100kHz Plot on 802.11a Channel 165



Date: 6.NOV.2012 00:19:28

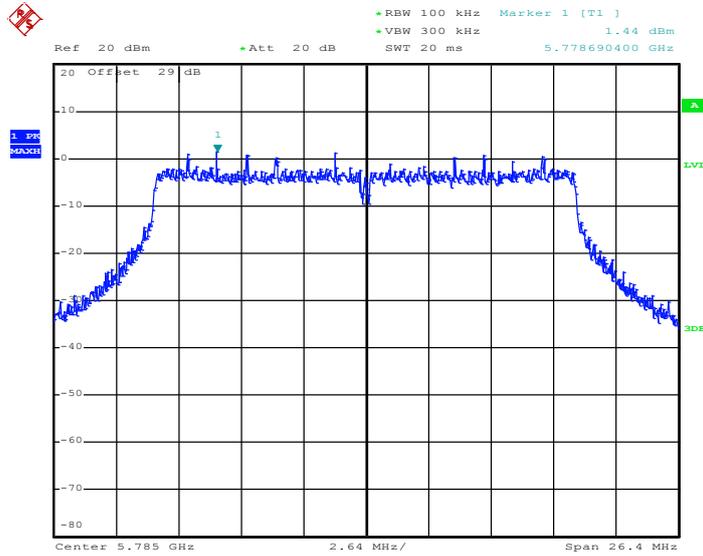
PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 149



Date: 6.NOV.2012 00:26:43

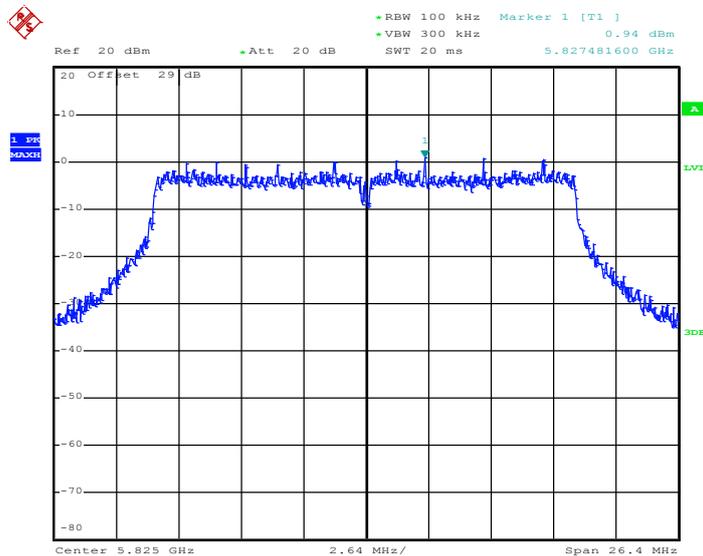


PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 157



Date: 6.NOV.2012 00:24:40

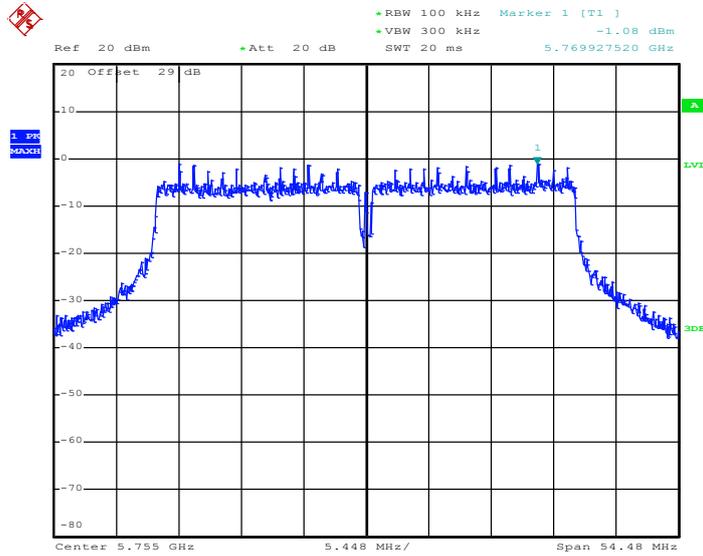
PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 165



Date: 6.NOV.2012 00:22:10

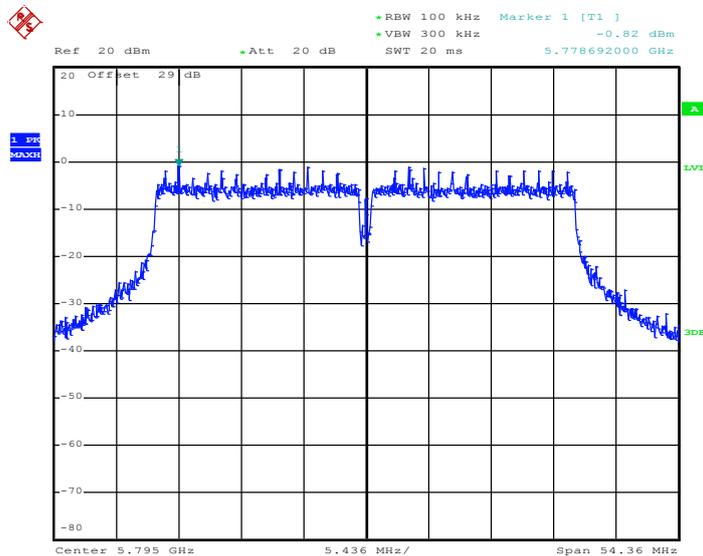


PSD 100kHz Plot on 5GHz 802.11n HT40 Channel 151



Date: 5.NOV.2012 23:14:13

PSD 100kHz Plot on 5GHz 802.11n HT40 Channel 159

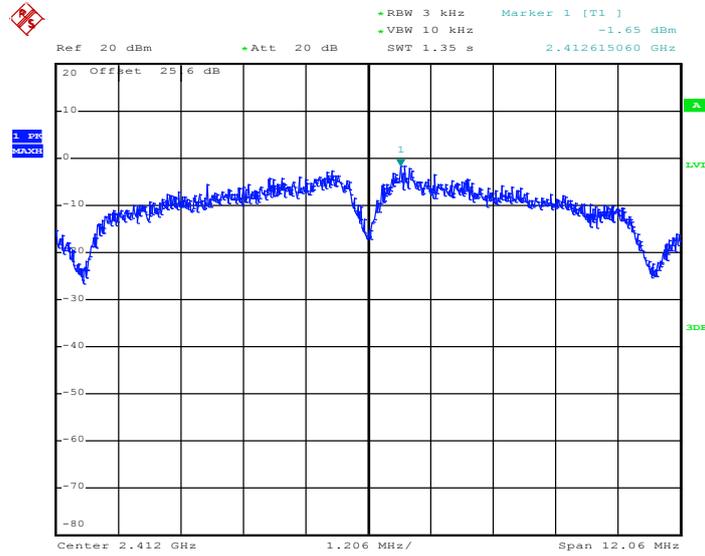


Date: 5.NOV.2012 23:18:44



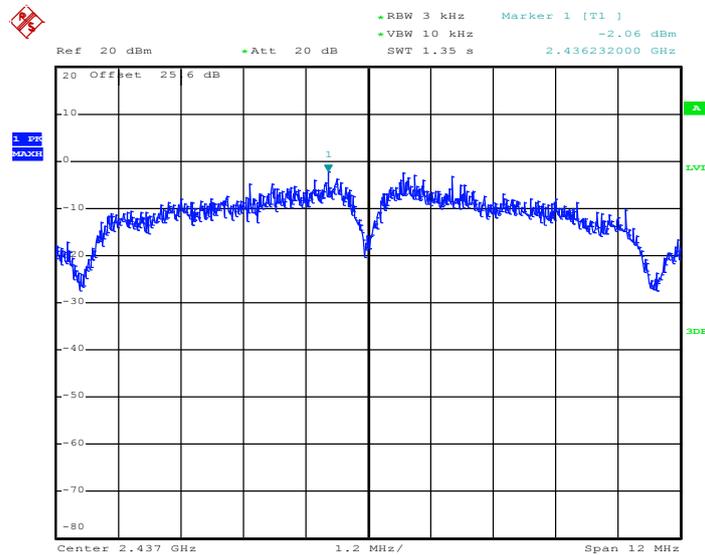
3.3.7 Test Result of Power Spectral Density Plots (3kHz)

PSD 3kHz Plot on 802.11b Channel 01



Date: 5.NOV.2012 22:20:12

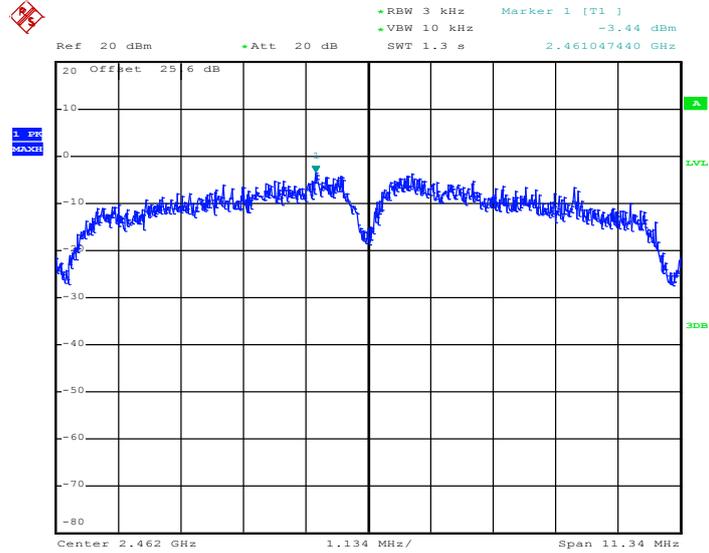
PSD 3kHz Plot on 802.11b Channel 06



Date: 5.NOV.2012 22:24:05

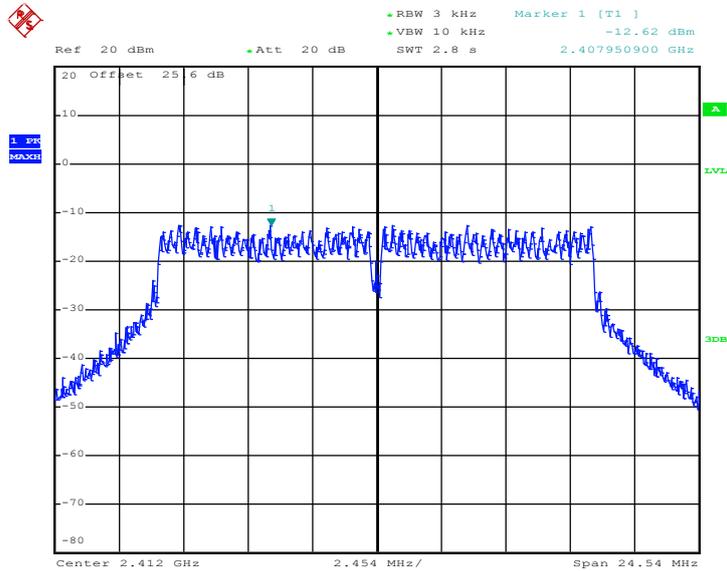


PSD 3kHz Plot on 802.11b Channel 11



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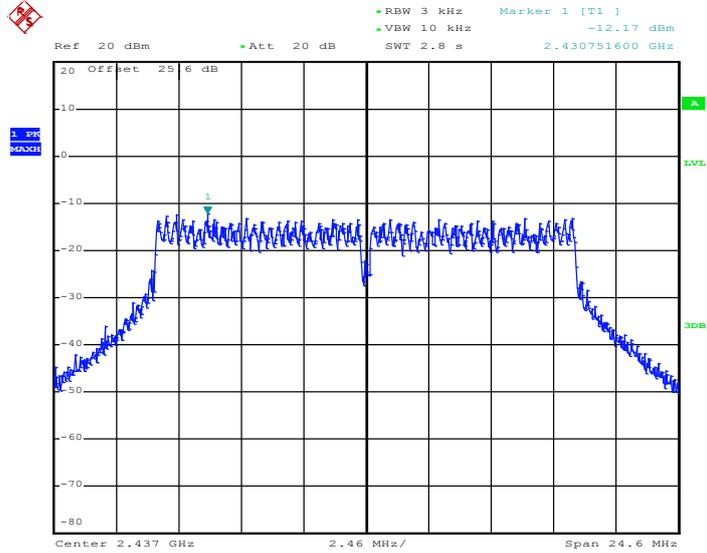
PSD 3kHz Plot on 802.11g Channel 01



Date: 5.NOV.2012 22:35:39

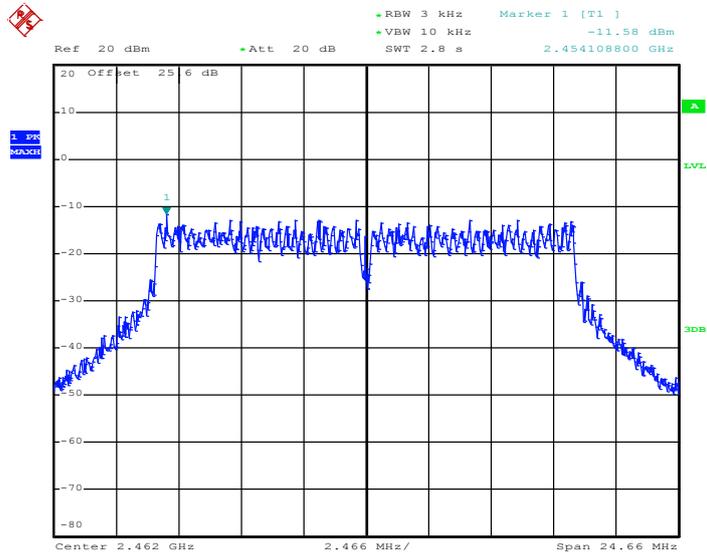


PSD 3kHz Plot on 802.11g Channel 06



Date: 5.NOV.2012 22:32:35

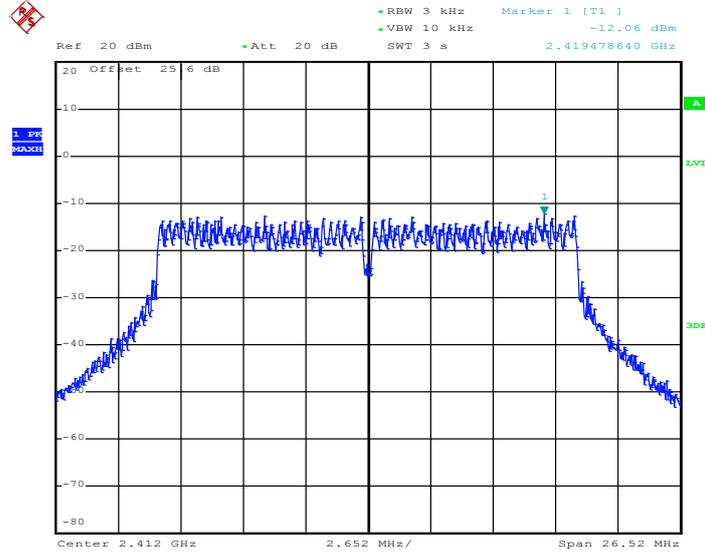
PSD 3kHz Plot on 802.11g Channel 11



Date: 5.NOV.2012 22:30:00

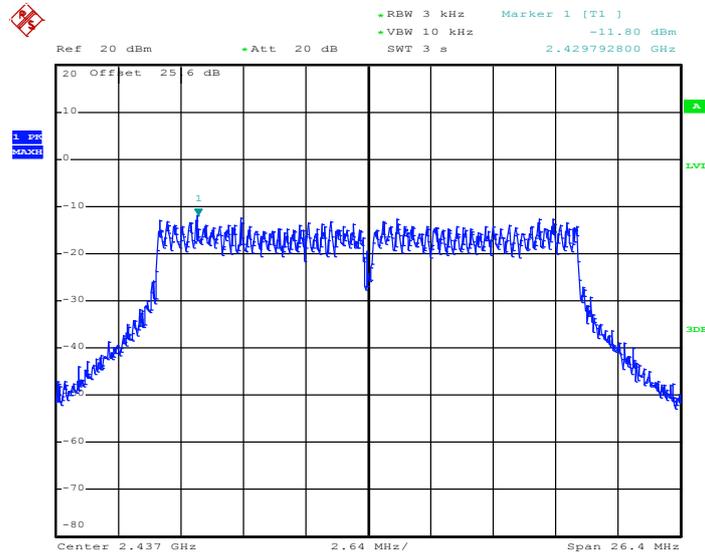


PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 01



Date: 5.NOV.2012 22:41:07

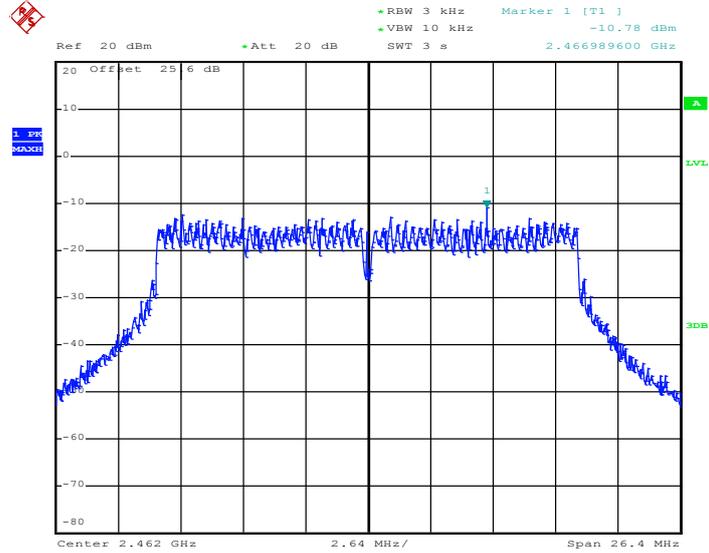
PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 06



Date: 5.NOV.2012 22:44:47

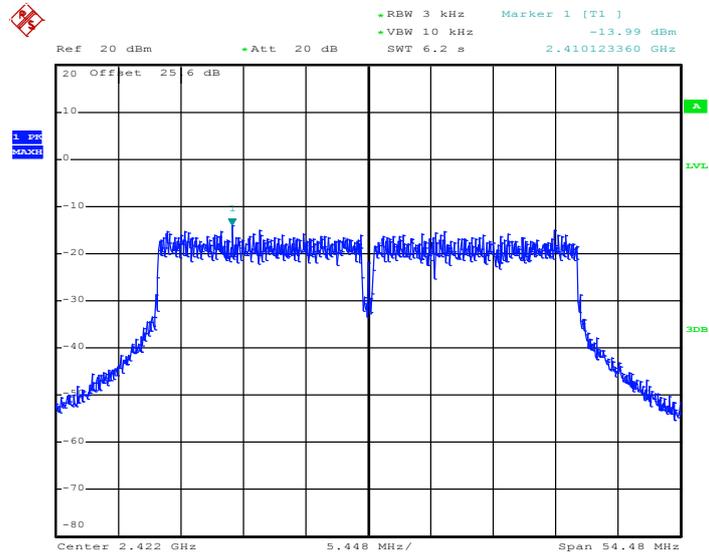


PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 11



Date: 5.NOV.2012 22:48:57

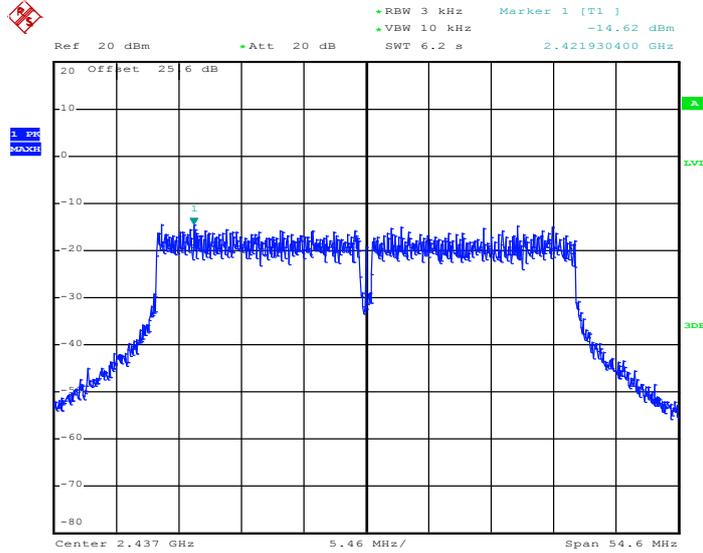
PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 03



Date: 6.NOV.2012 00:46:08

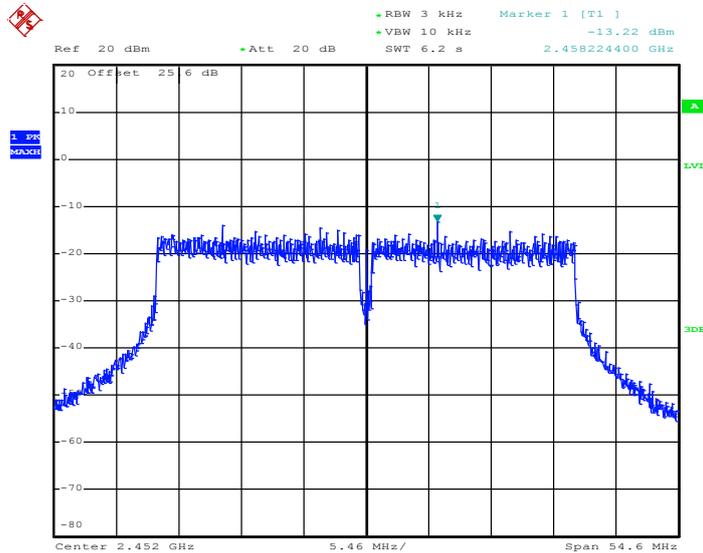


PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 06



Date: 5.NOV.2012 23:02:08

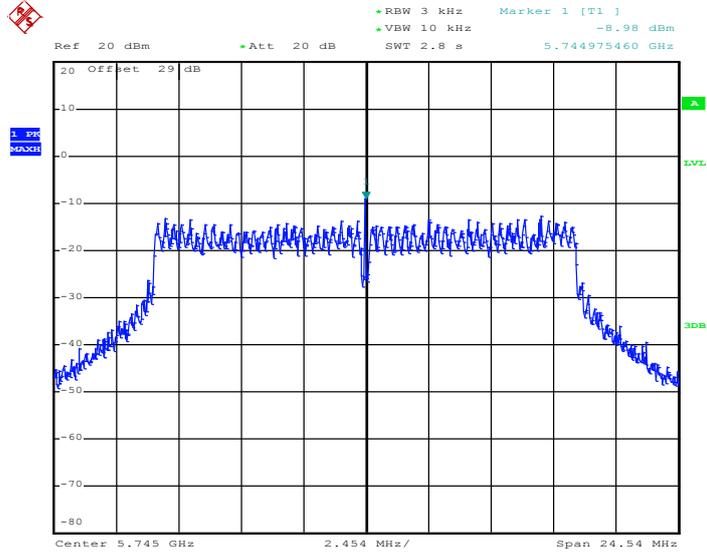
PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 09



Date: 5.NOV.2012 23:07:33

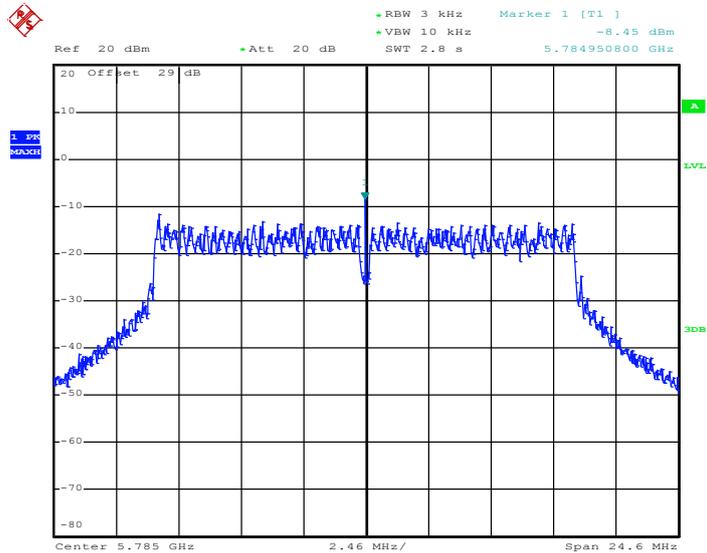


PSD 3kHz Plot on 802.11a Channel 149



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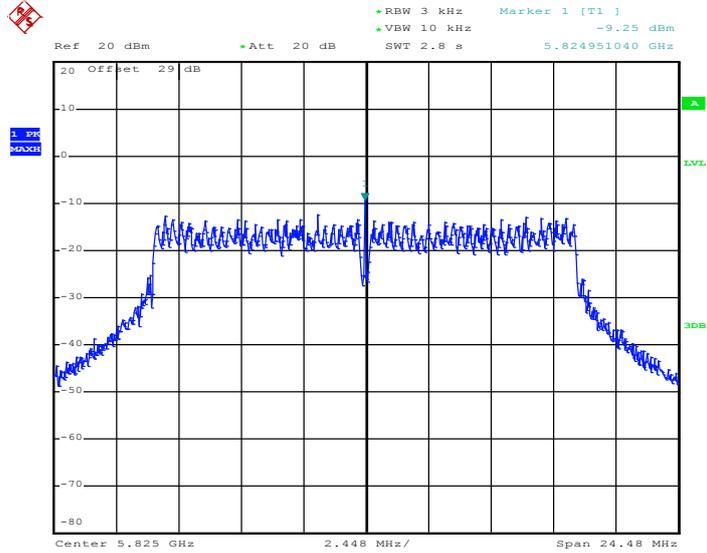
PSD 3kHz Plot on 802.11a Channel 157



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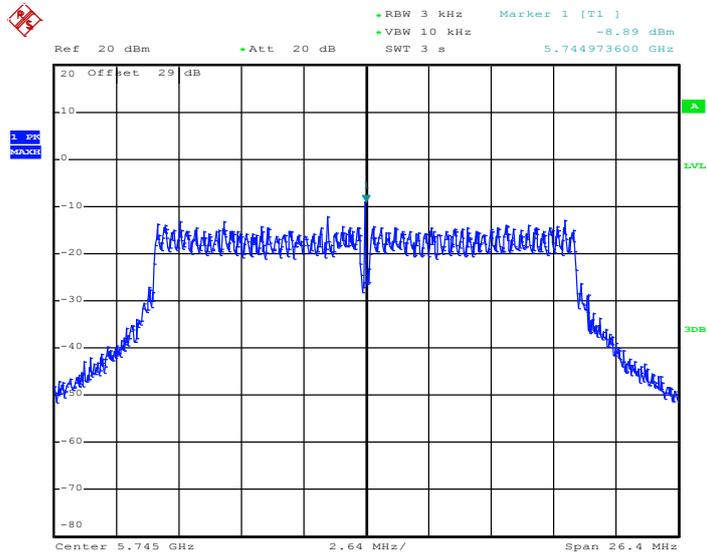


PSD 3kHz Plot on 802.11a Channel 165



Date: 6.NOV.2012 00:19:23

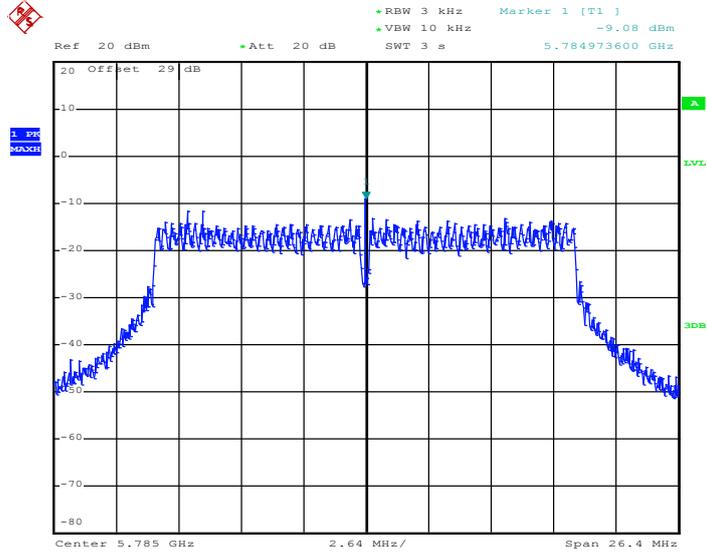
PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 149



Date: 6.NOV.2012 00:26:38

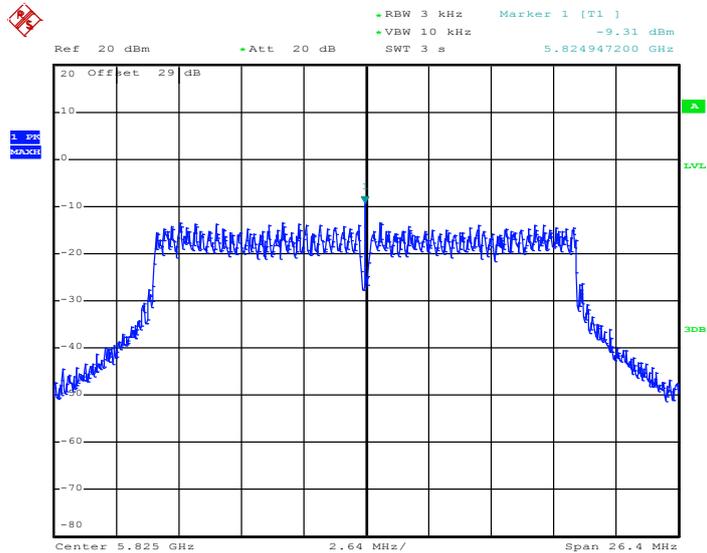


PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 157



Date: 6.NOV.2012 00:24:35

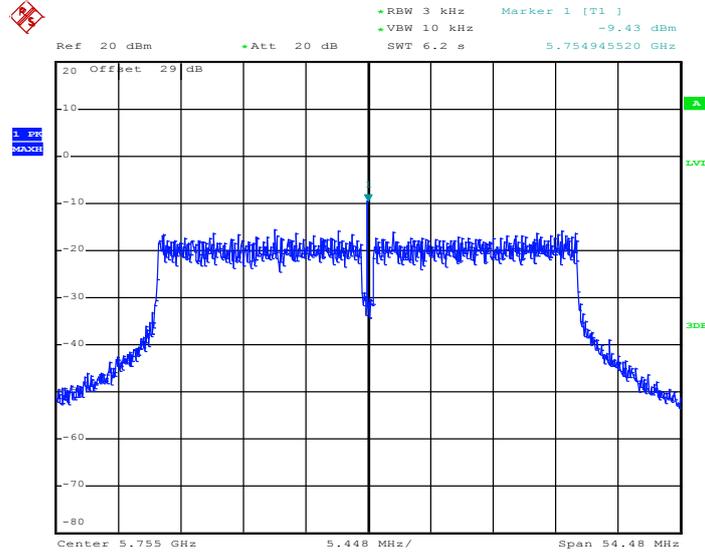
PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 165



Date: 6.NOV.2012 00:21:49

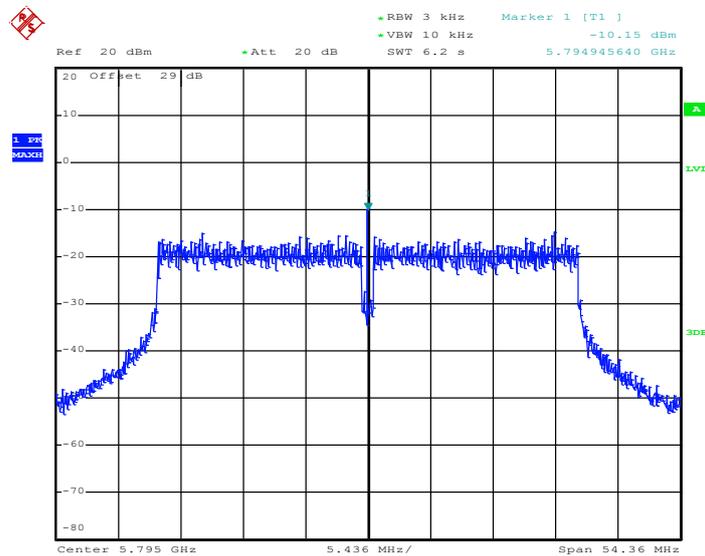


PSD 3kHz Plot on 5GHz 802.11n HT40 Channel 151



Date: 5.NOV.2012 23:14:01

PSD 3kHz Plot on 5GHz 802.11n HT40 Channel 159



Date: 5.NOV.2012 23:18:39

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

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

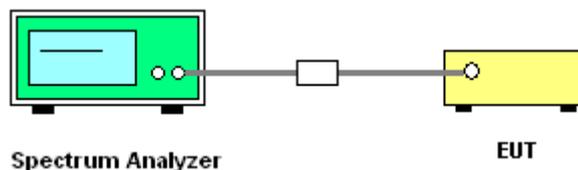
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 KHz, VBW=300 KHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz, when maximum peak conducted output power procedure is used. The attenuation is set to 30dB, when maximum conducted output power procedure is used.
5. Measure and record the results in the test report.

3.4.4 Test Setup

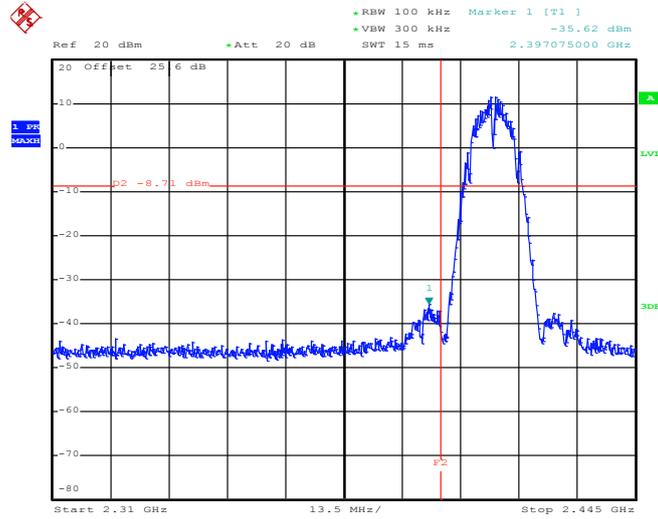




3.4.6 Test Result of Conducted Spurious at Band Edges

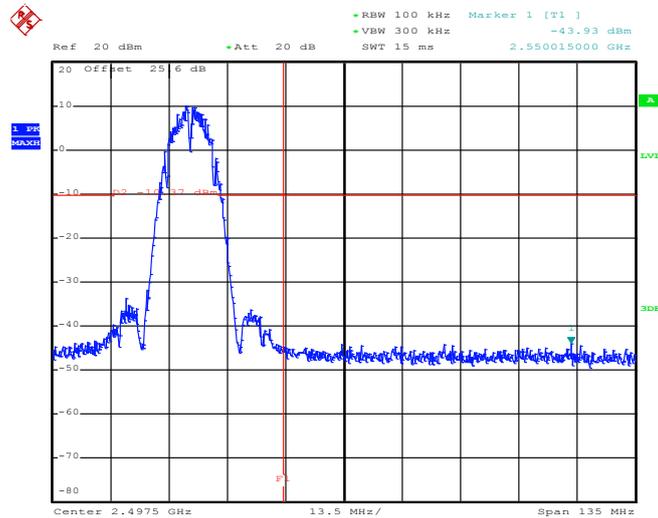
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Bill Kuo

Low Band Edge Plot on 802.11b Channel 01



Date: 5.NOV.2012 22:18:20

High Band Edge Plot on 802.11b Channel 11

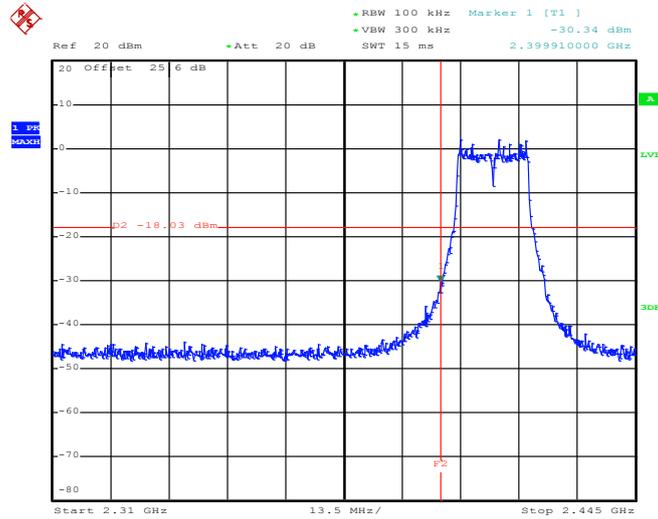


Date: 5.NOV.2012 22:26:58



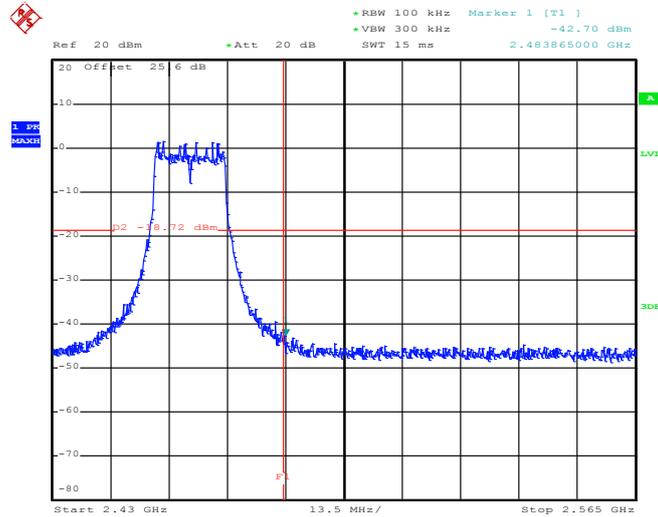
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Bill Kuo

Low Band Edge Plot on 802.11g Channel 01



Date: 5.NOV.2012 22:37:01

High Band Edge Plot on 802.11g Channel 11

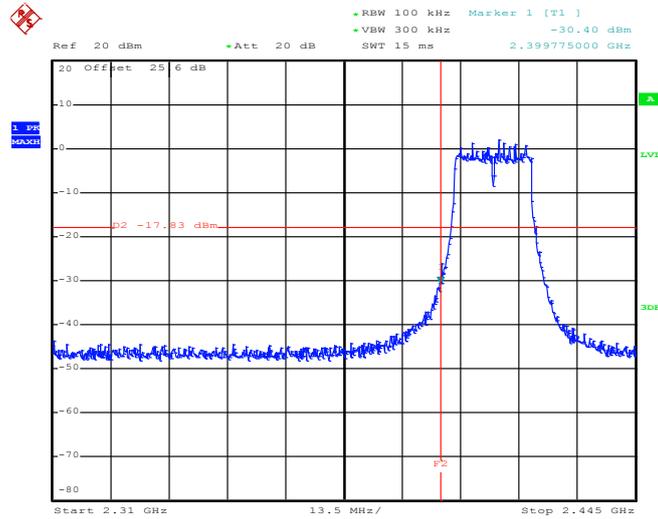


Date: 5.NOV.2012 22:30:23



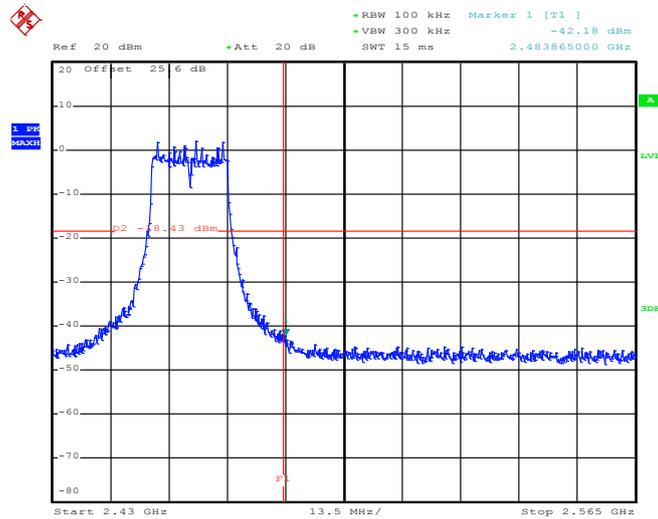
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Bill Kuo

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



Date: 5.NOV.2012 22:42:10

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

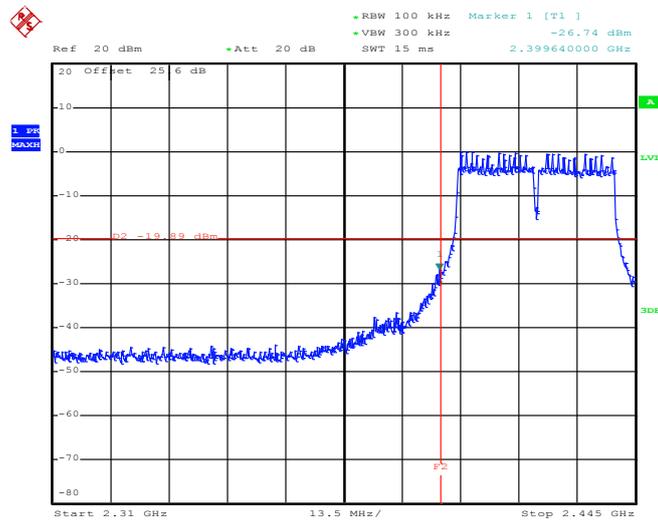


Date: 5.NOV.2012 22:49:24



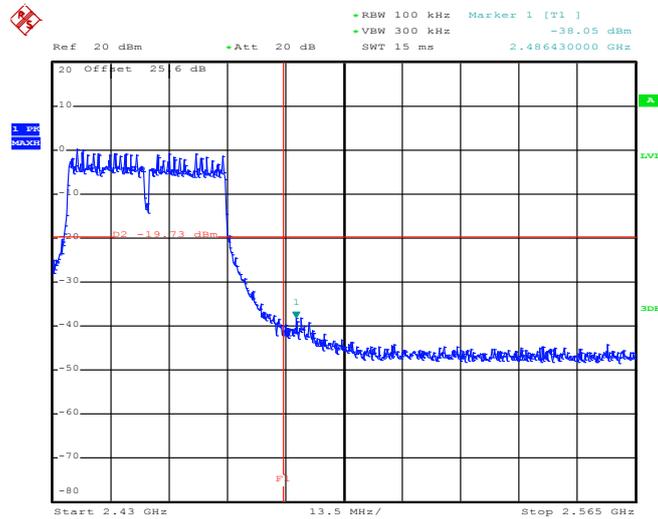
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	03 and 09	Test Engineer :	Bill Kuo

Low Band Edge Plot on 2.4GHz 802.11n HT40 Channel 03



Date: 6.NOV.2012 00:46:47

High Band Edge Plot on 2.4GHz 802.11n HT40 Channel 09

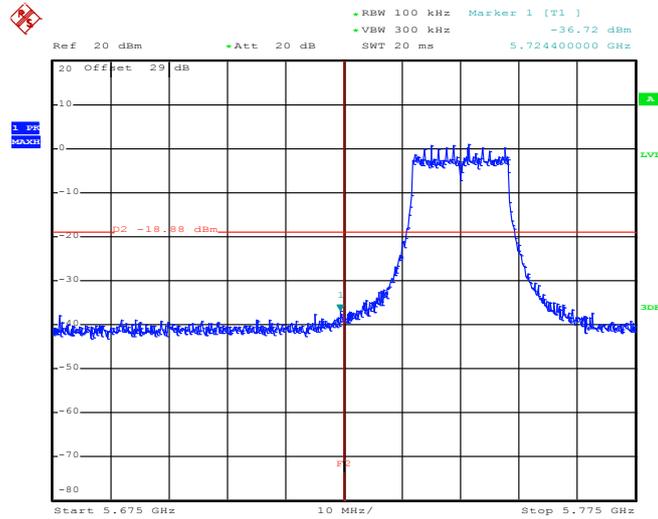


Date: 5.NOV.2012 23:08:02



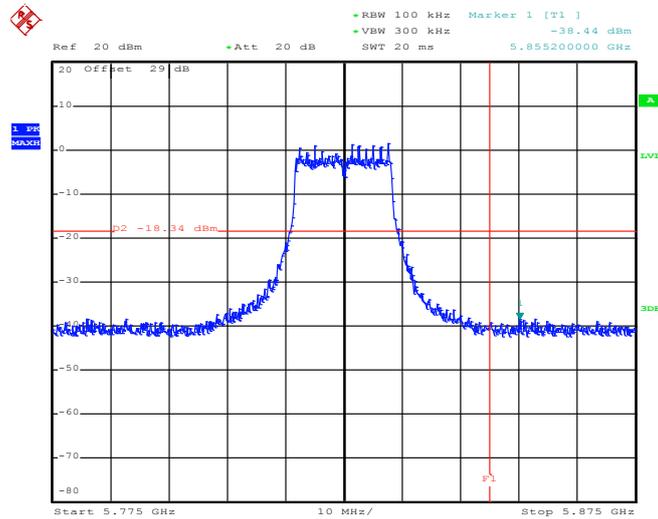
Test Mode :	802.11a	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	149 and 165	Test Engineer :	Bill Kuo

Low Band Edge Plot on 802.11a Channel 149



Date: 6.NOV.2012 00:14:20

High Band Edge Plot on 802.11a Channel 165

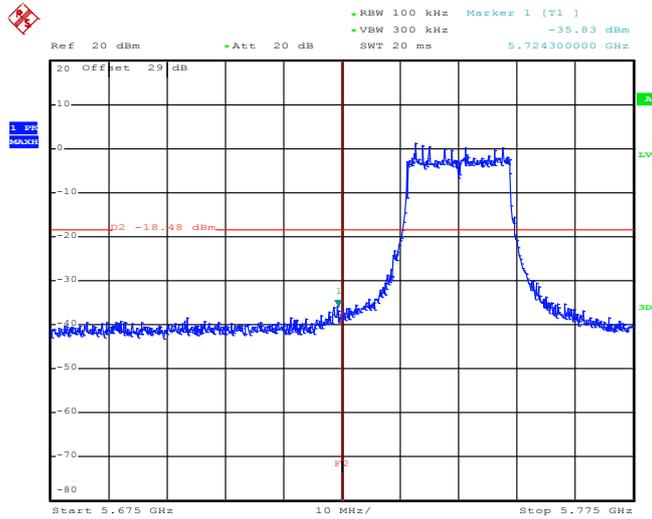


Date: 6.NOV.2012 00:19:43



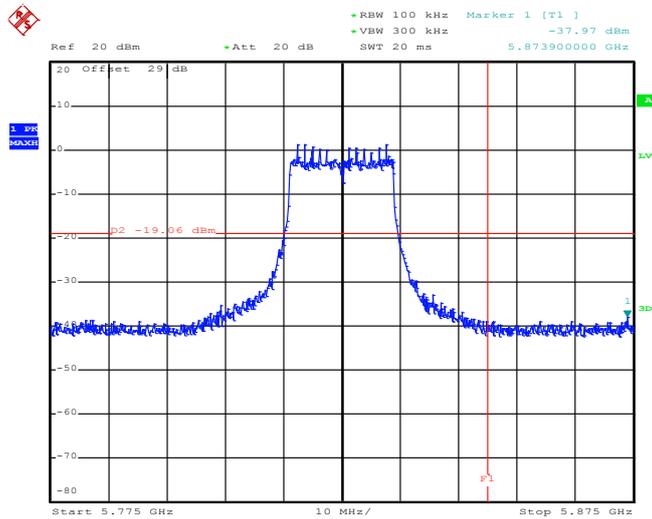
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	149 and 165	Test Engineer :	Bill Kuo

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



Date: 6.NOV.2012 00:26:58

High Band Edge Plot on 5GHz 802.11n HT20 Channel 165

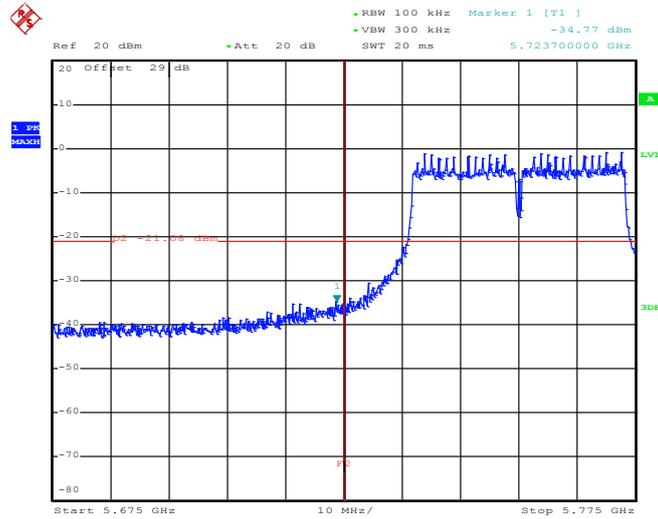


Date: 6.NOV.2012 00:22:27



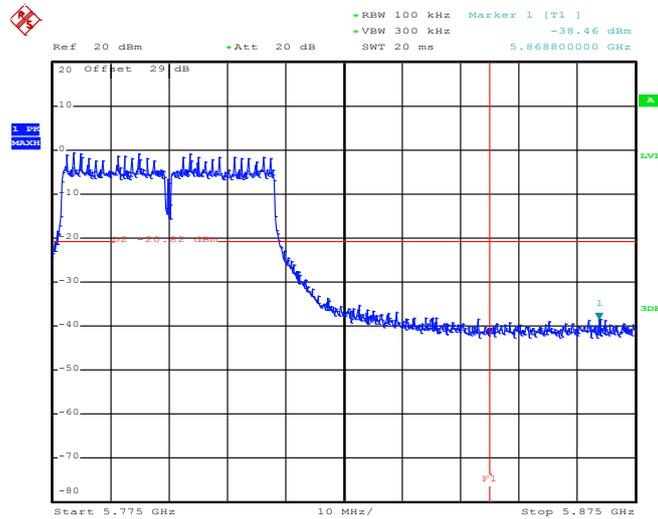
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	151 and 159	Test Engineer :	Bill Kuo

Low Band Edge Plot on 5GHz 802.11n HT40 Channel 151



Date: 5.NOV.2012 23:14:45

High Band Edge Plot on 5GHz 802.11n HT40 Channel 159



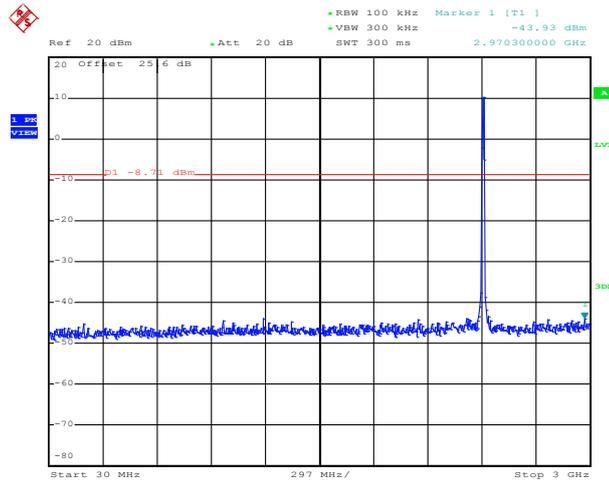
Date: 5.NOV.2012 23:19:02

3.4.7 Test Result of Conducted Spurious Emission

Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Bill Kuo

802.11b 30 MHz~3 GHz

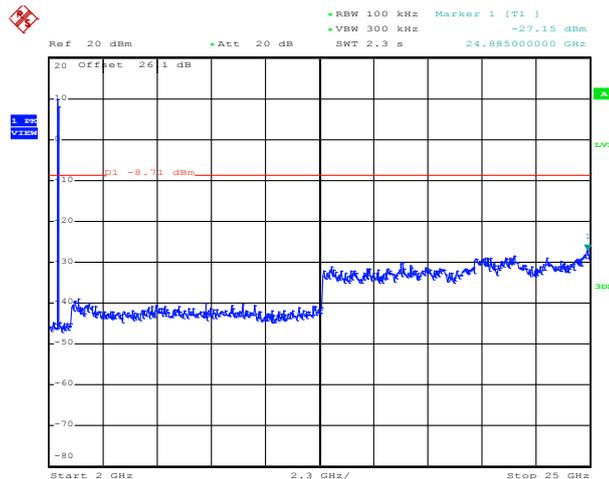
Conducted Spurious Emission Plot on Channel 01



Date: 5.NOV.2012 22:18:40

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

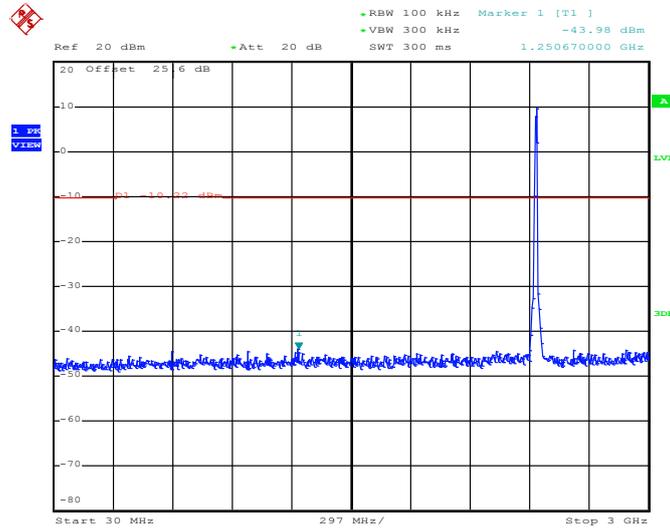


Date: 5.NOV.2012 22:18:58



802.11b 30 MHz~3 GHz

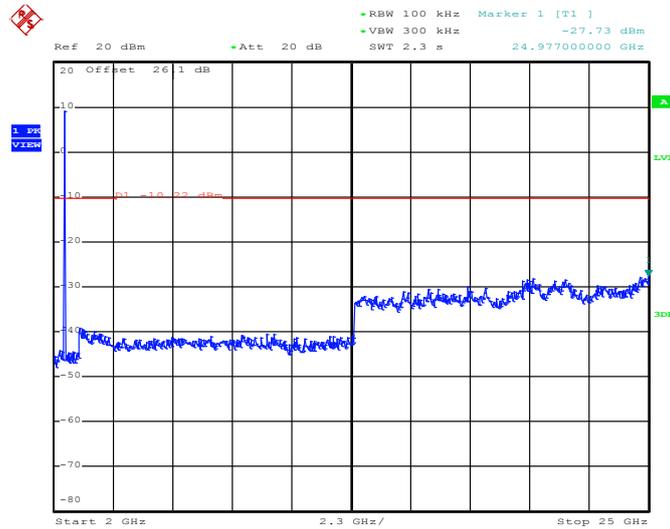
Conducted Spurious Emission Plot on Channel 06



Date: 5.NOV.2012 22:22:11

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

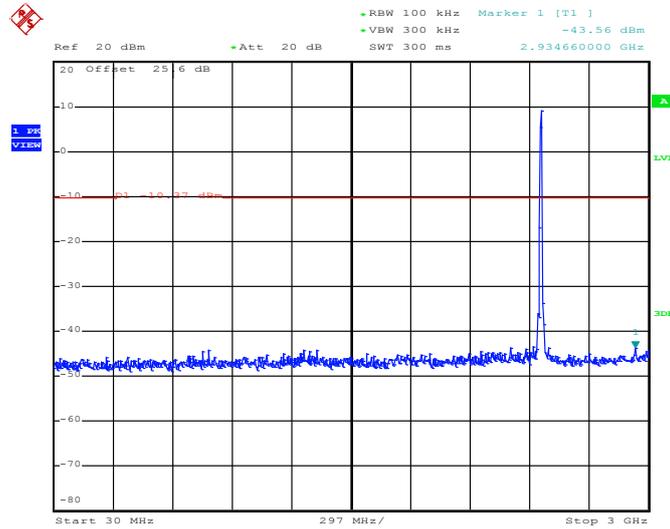


Date: 5.NOV.2012 22:22:29



802.11b 30 MHz~3 GHz

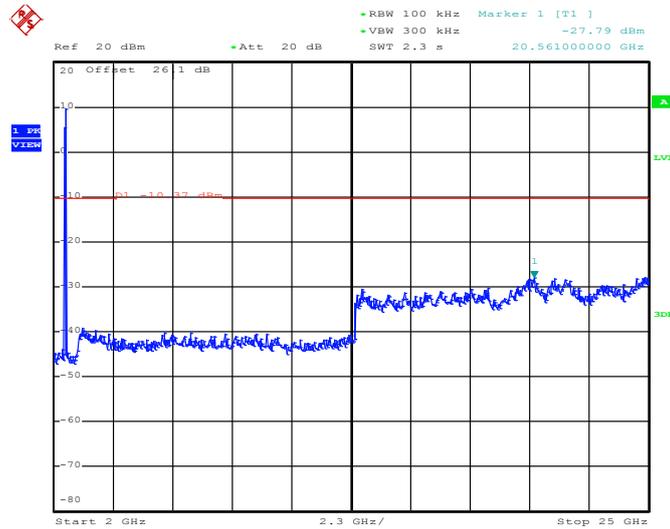
Conducted Spurious Emission Plot on Channel 11



Date: 5.NOV.2012 22:27:29

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



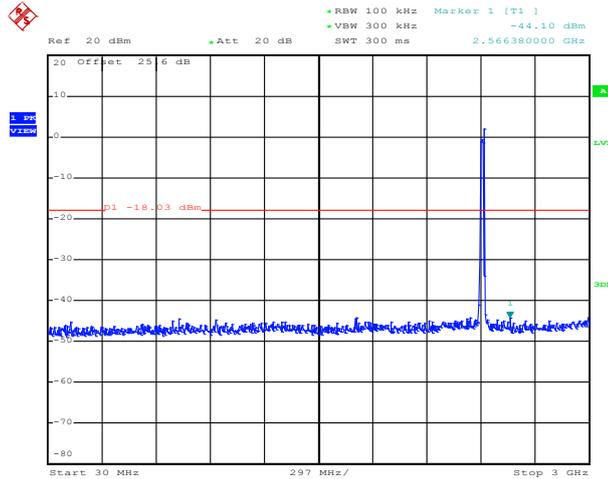
Date: 5.NOV.2012 22:27:47



Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Bill Kuo

802.11g 30 MHz~3 GHz

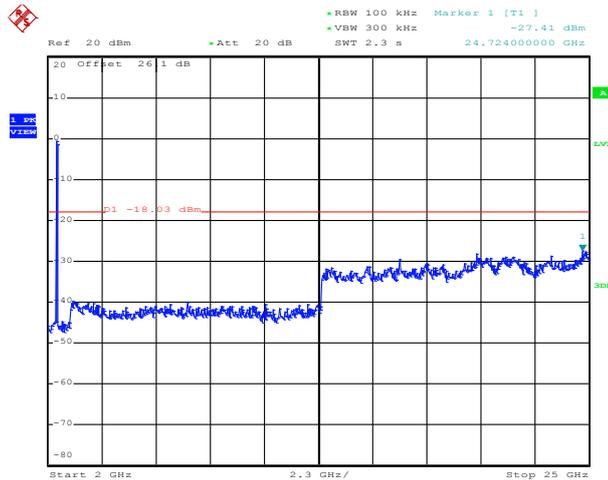
Conducted Spurious Emission Plot on Channel 01



Date: 5.NOV.2012 22:37:21

802.11g 2 GHz~25 GHz

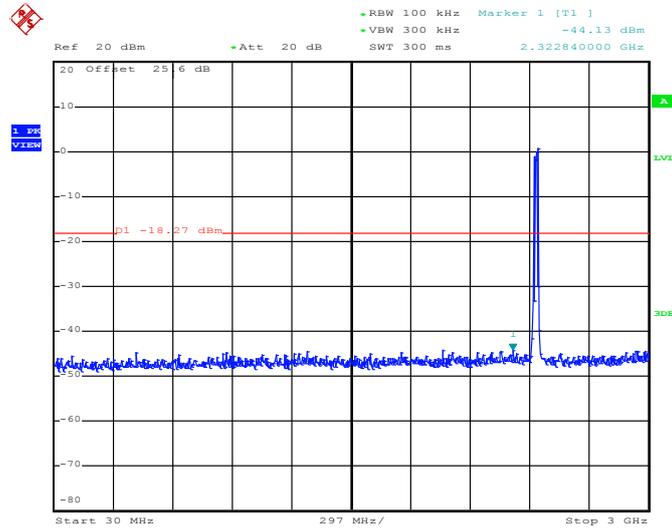
Conducted Spurious Emission Plot on Channel 01



Date: 5.NOV.2012 22:37:39

802.11g 30 MHz~3 GHz

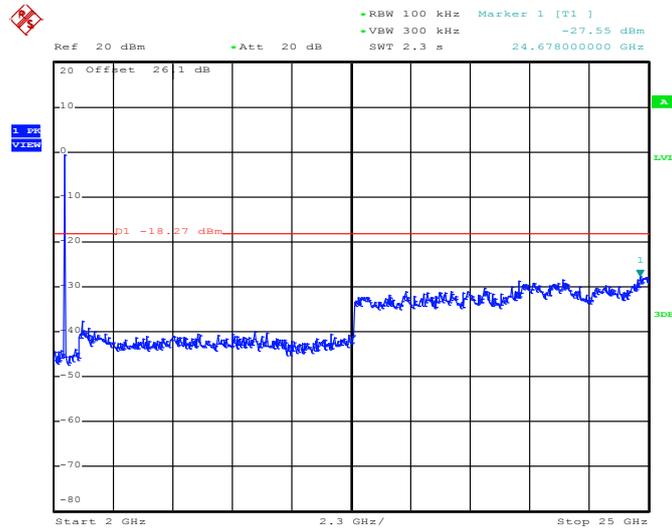
Conducted Spurious Emission Plot on Channel 06



Date: 5.NOV.2012 22:33:06

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

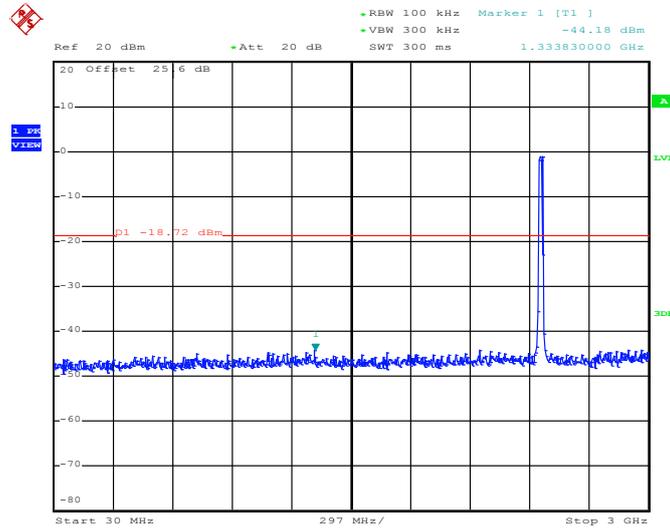


Date: 5.NOV.2012 22:33:24



802.11g 30 MHz~3 GHz

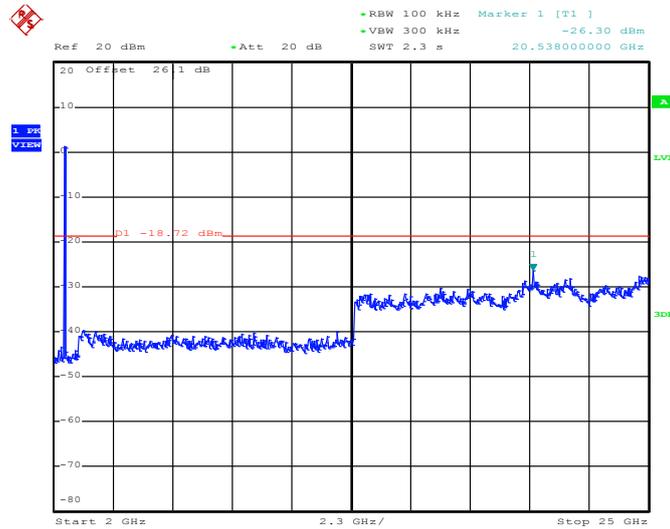
Conducted Spurious Emission Plot on Channel 11



Date: 5.NOV.2012 22:30:47

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



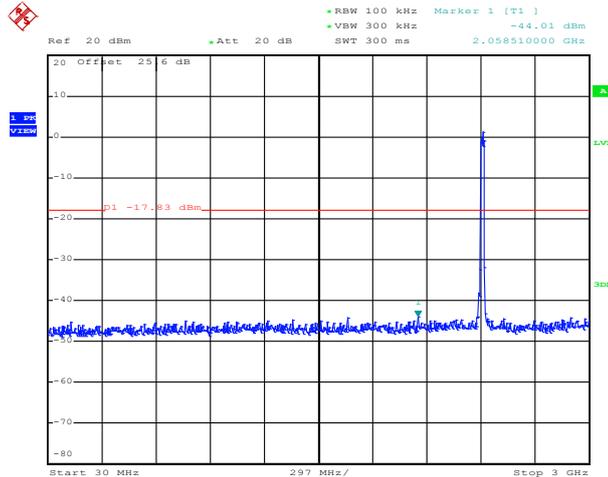
Date: 5.NOV.2012 22:31:05



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Bill Kuo

2.4GHz 802.11n HT20 30 MHz~3 GHz

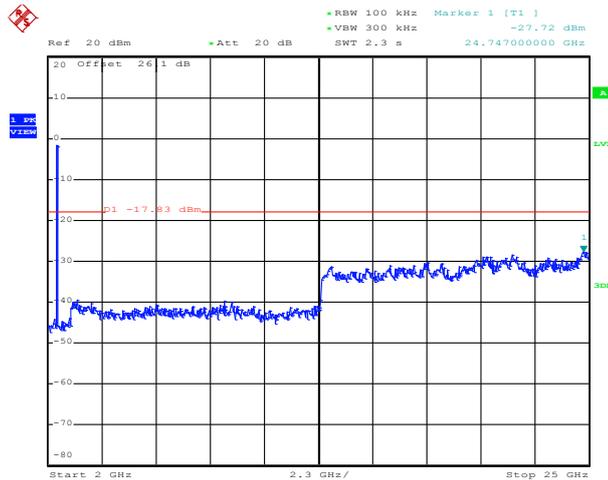
Conducted Spurious Emission Plot on Channel 01



Date: 5.NOV.2012 22:42:29

2.4GHz 802.11n HT20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

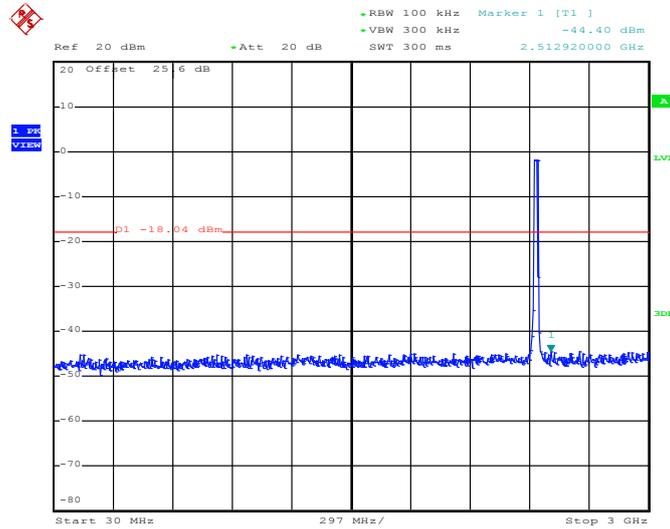


Date: 5.NOV.2012 22:42:46



2.4GHz 802.11n HT20 30 MHz~3 GHz

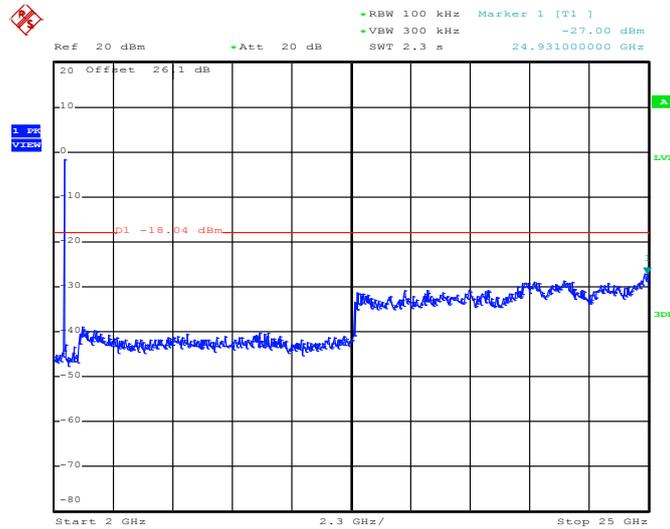
Conducted Spurious Emission Plot on Channel 06



Date: 5.NOV.2012 22:45:59

2.4GHz 802.11n HT20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

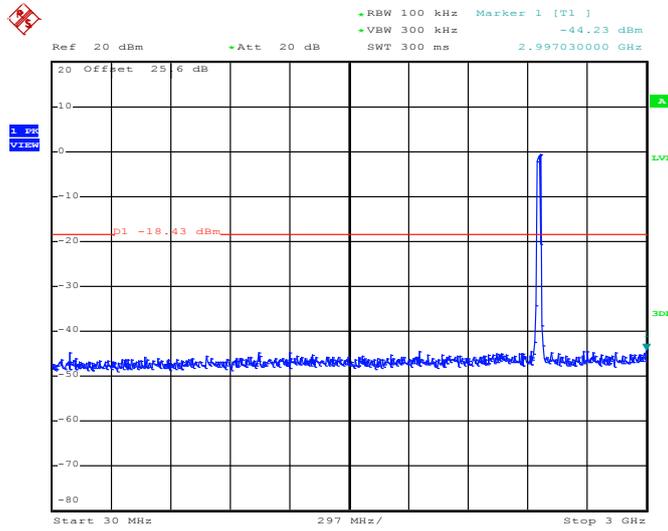


Date: 5.NOV.2012 22:46:17



2.4GHz 802.11n HT20 30 MHz~3 GHz

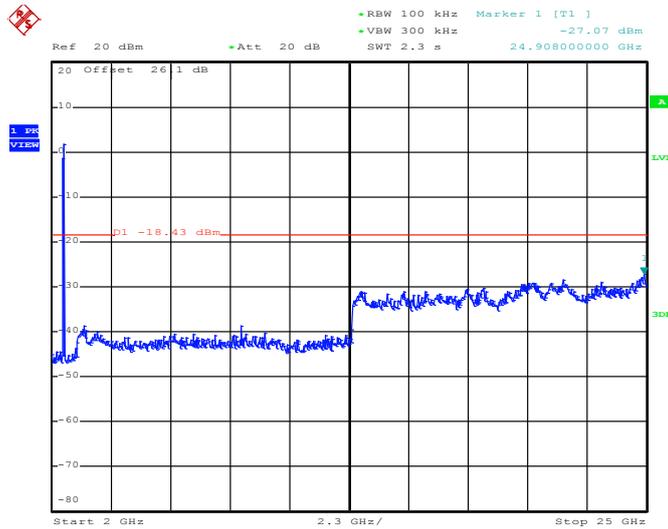
Conducted Spurious Emission Plot on Channel 11



Date: 5.NOV.2012 22:49:44

2.4GHz 802.11n HT20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



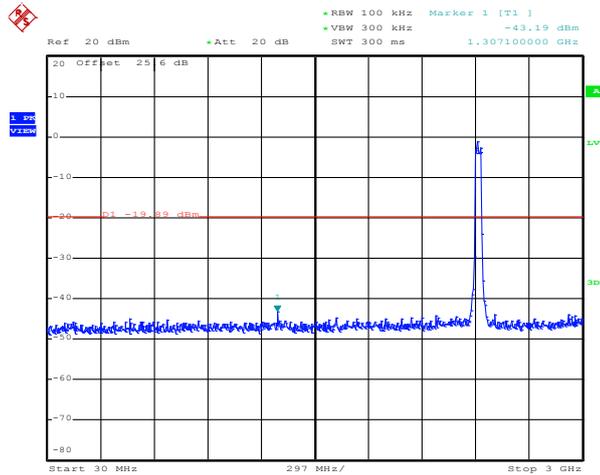
Date: 5.NOV.2012 22:50:02



Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	03, 06, 09	Test Engineer :	Bill Kuo

2.4GHz 802.11n HT40 30 MHz~3 GHz

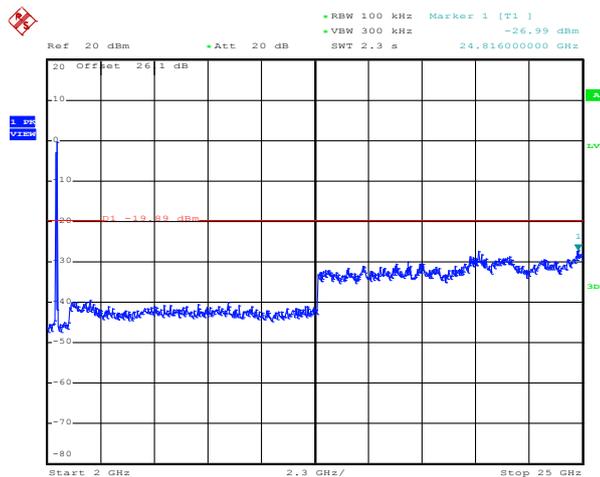
Conducted Spurious Emission Plot on Channel 03



Date: 6.NOV.2012 00:49:37

2.4GHz 802.11n HT40 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 03

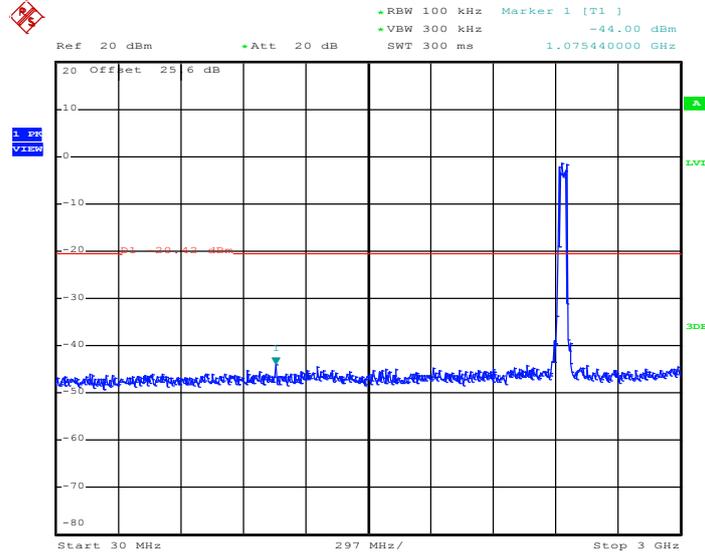


Date: 6.NOV.2012 00:49:55



2.4GHz 802.11n HT40 30 MHz~3 GHz

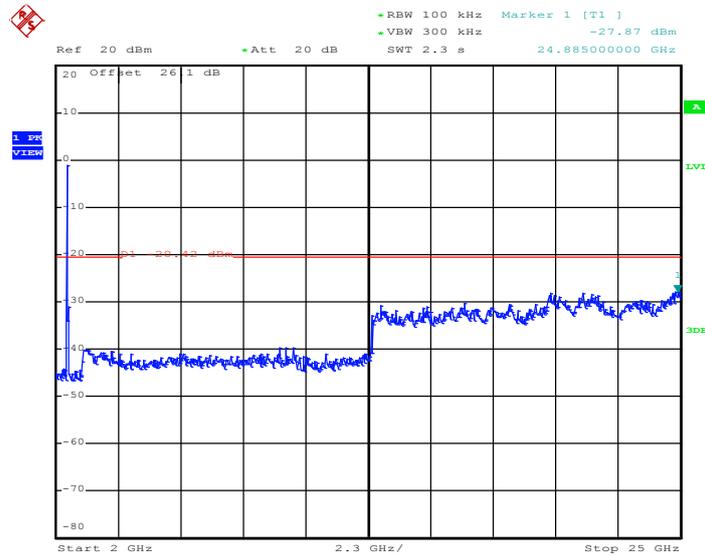
Conducted Spurious Emission Plot on Channel 06



Date: 5.NOV.2012 23:04:26

2.4GHz 802.11n HT40 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

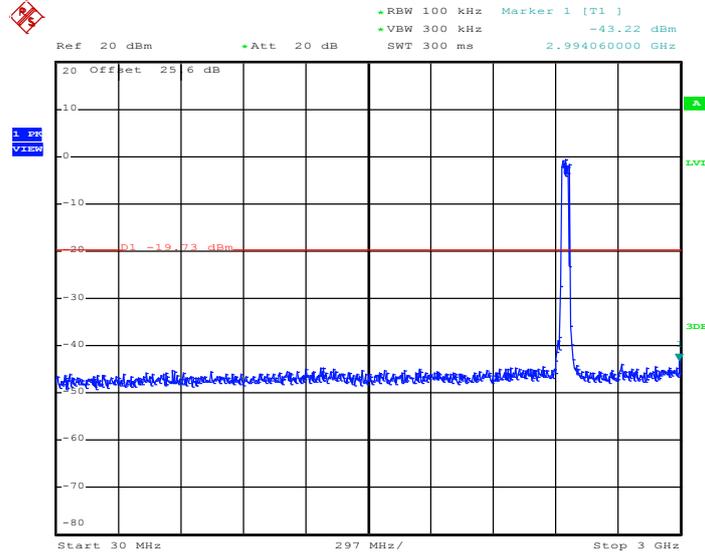


Date: 5.NOV.2012 23:04:44



2.4GHz 802.11n HT40 30 MHz~3 GHz

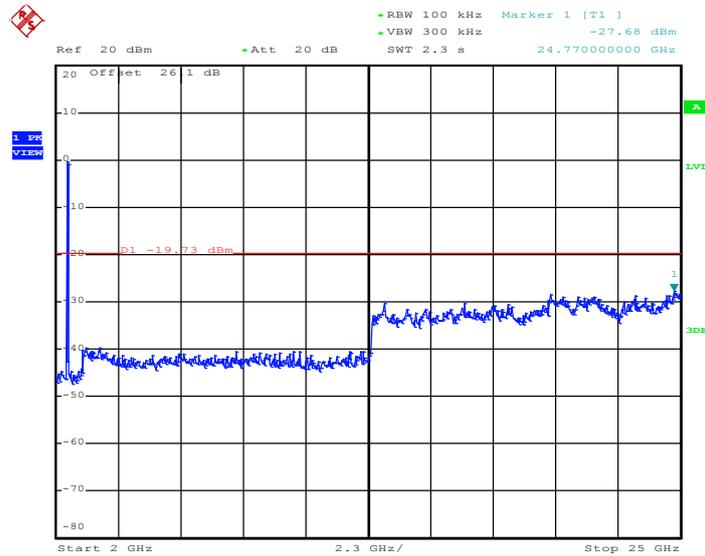
Conducted Spurious Emission Plot on Channel 09



Date: 5.NOV.2012 23:10:22

2.4GHz 802.11n HT40 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 09



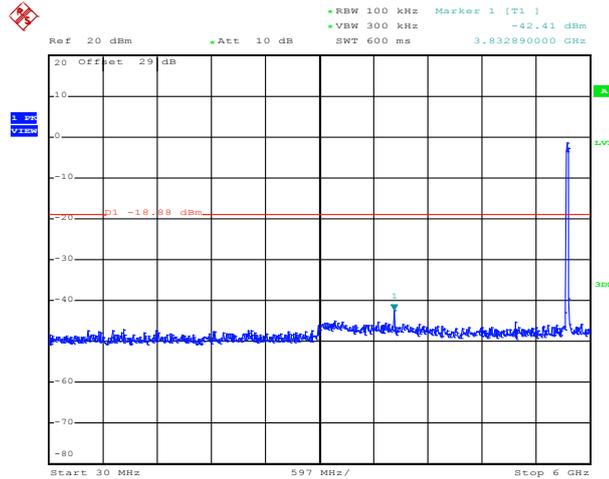
Date: 5.NOV.2012 23:10:39



Test Mode :	802.11a	Temperature :	24~26°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	149, 157, 165	Test Engineer :	Bill Kuo

802.11a 30 MHz~6 GHz

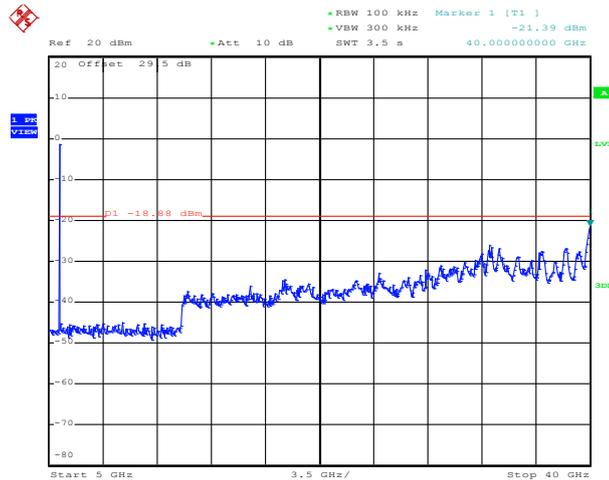
Conducted Spurious Emission Plot on Channel 149



Date: 6.NOV.2012 00:14:40

802.11a 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 149

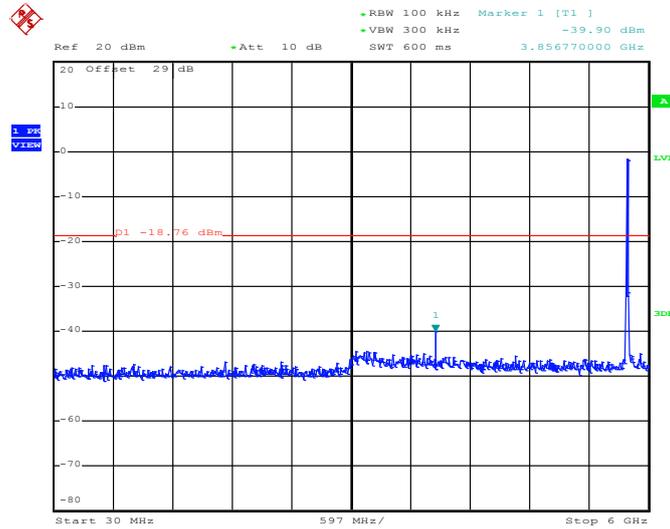


Date: 6.NOV.2012 00:14:57



802.11a 30 MHz~6 GHz

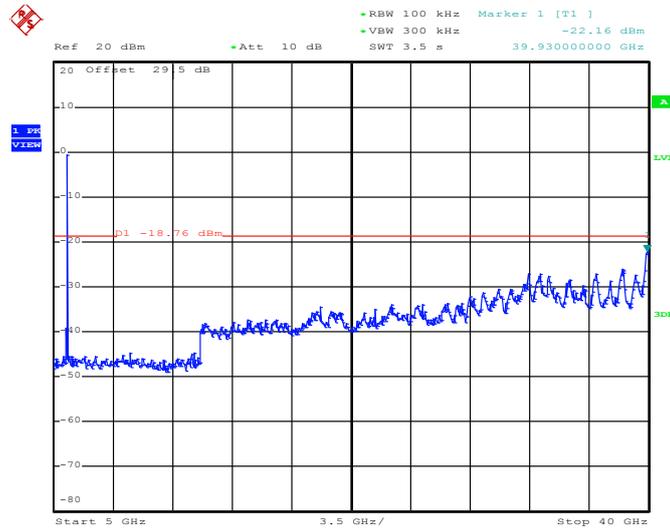
Conducted Spurious Emission Plot on Channel 157



Date: 6.NOV.2012 00:17:24

802.11a 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 157

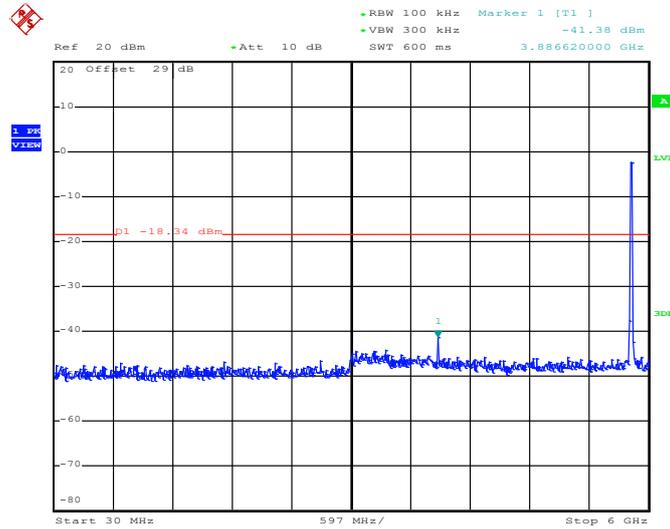


Date: 6.NOV.2012 00:17:41



802.11a 30 MHz~6 GHz

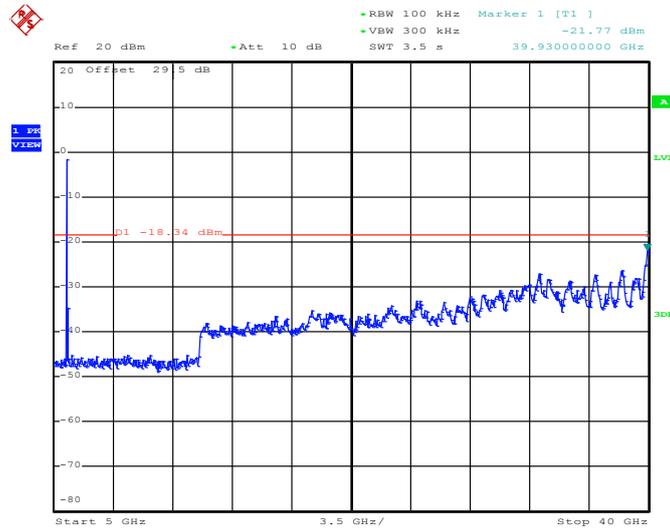
Conducted Spurious Emission Plot on Channel 165



Date: 6.NOV.2012 00:20:02

802.11a 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 165



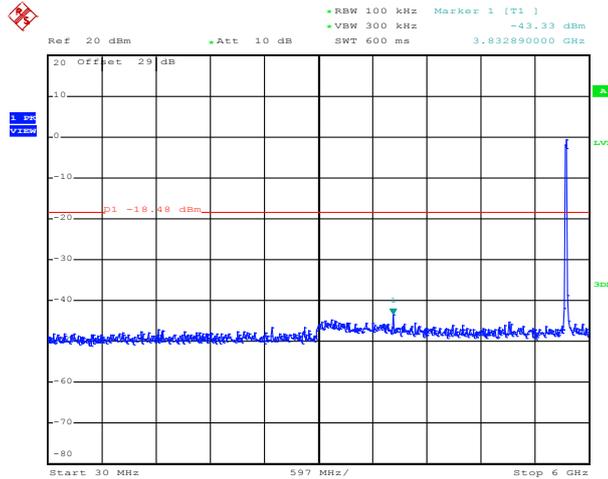
Date: 6.NOV.2012 00:20:20



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	149, 157, 165	Test Engineer :	Bill Kuo

5GHz 802.11n HT20 30 MHz~6 GHz

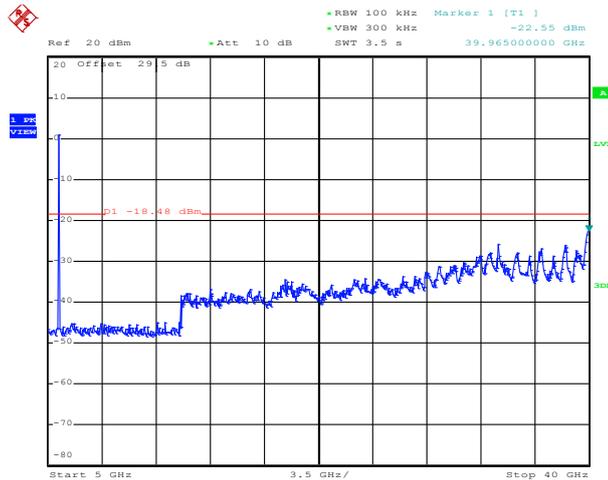
Conducted Spurious Emission Plot on Channel 149



Date: 6.NOV.2012 00:27:16

5GHz 802.11n HT20 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 149

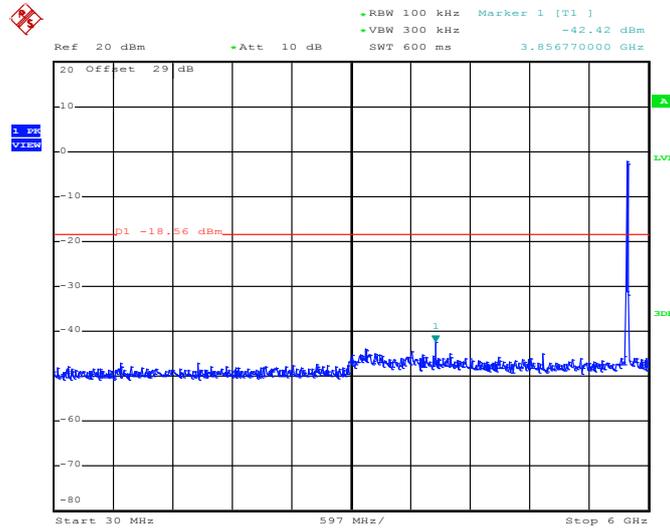


Date: 6.NOV.2012 00:27:33



5GHz 802.11n HT20 30 MHz~6 GHz

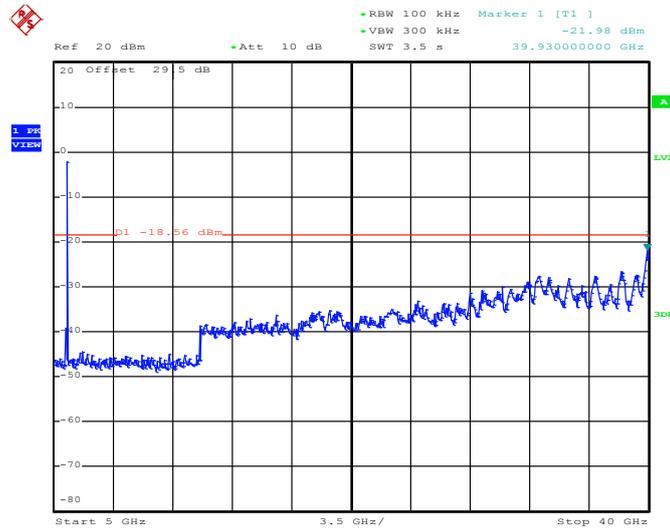
Conducted Spurious Emission Plot on Channel 157



Date: 6.NOV.2012 00:24:58

5GHz 802.11n HT20 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 157

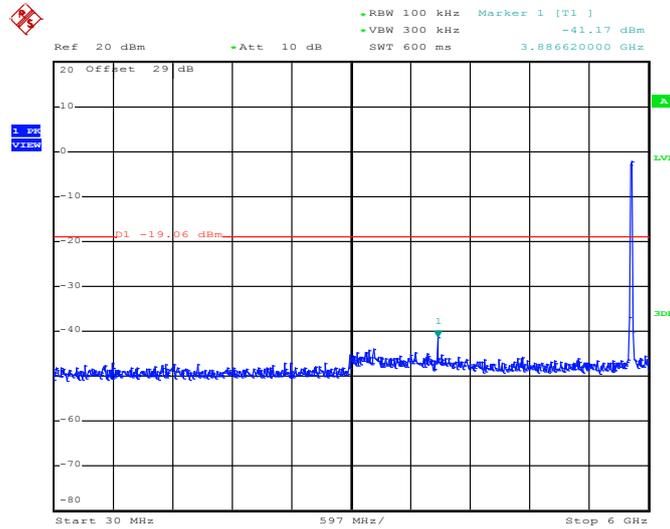


Date: 6.NOV.2012 00:25:16



5GHz 802.11n HT20 30 MHz~6 GHz

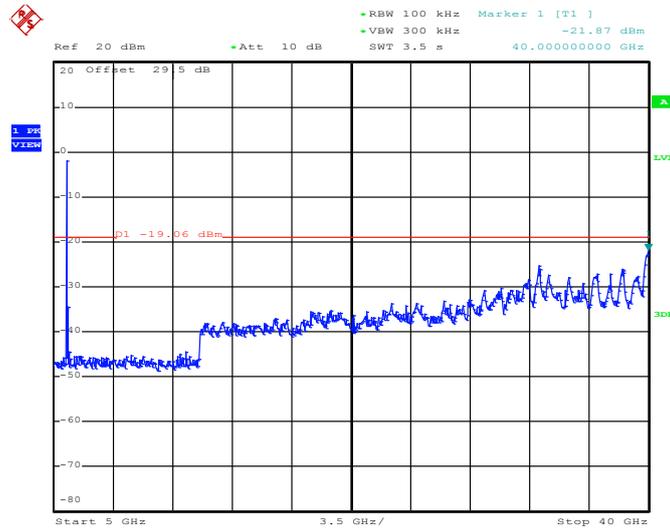
Conducted Spurious Emission Plot on Channel 165



Date: 6.NOV.2012 00:22:46

5GHz 802.11n HT20 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 165



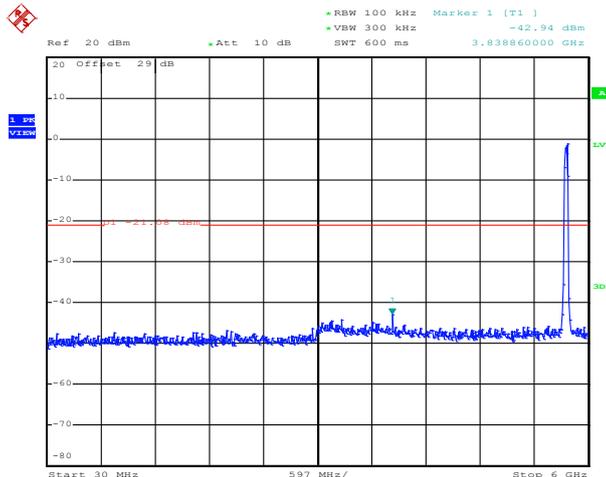
Date: 6.NOV.2012 00:23:03



Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	151 and 159	Test Engineer :	Bill Kuo

5GHz 802.11n HT40 30 MHz~6 GHz

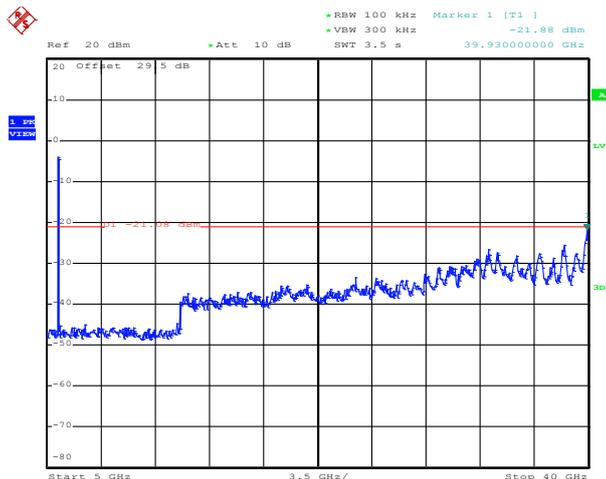
Conducted Spurious Emission Plot on Channel 151



Date: 5.NOV.2012 23:16:25

5GHz 802.11n HT40 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 151

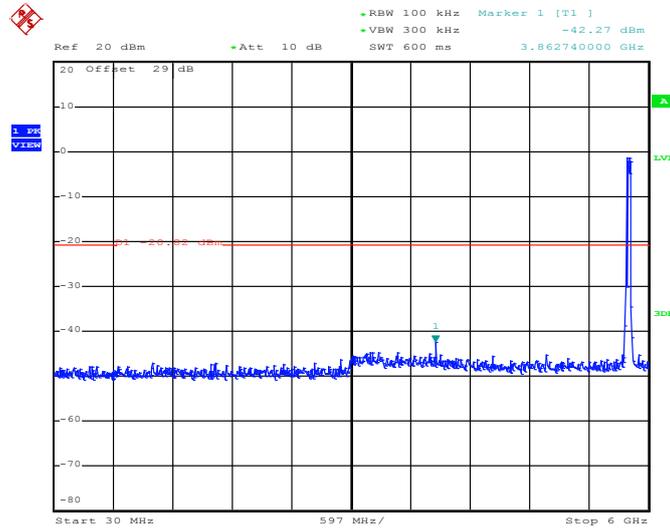


Date: 5.NOV.2012 23:16:43



5GHz 802.11n HT40 30 MHz~6 GHz

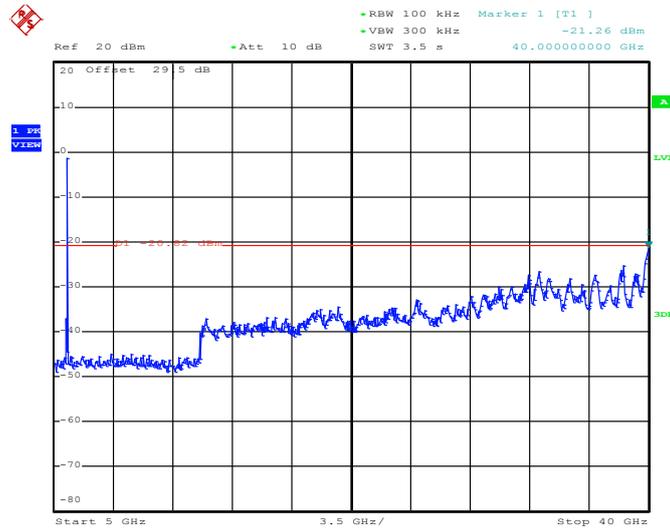
Conducted Spurious Emission Plot on Channel 159



Date: 5.NOV.2012 23:19:29

5GHz 802.11n HT40 5GHz~40 GHz

Conducted Spurious Emission Plot on Channel 159



Date: 5.NOV.2012 23:19:47



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 KHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.



3.5.3 Test Procedures

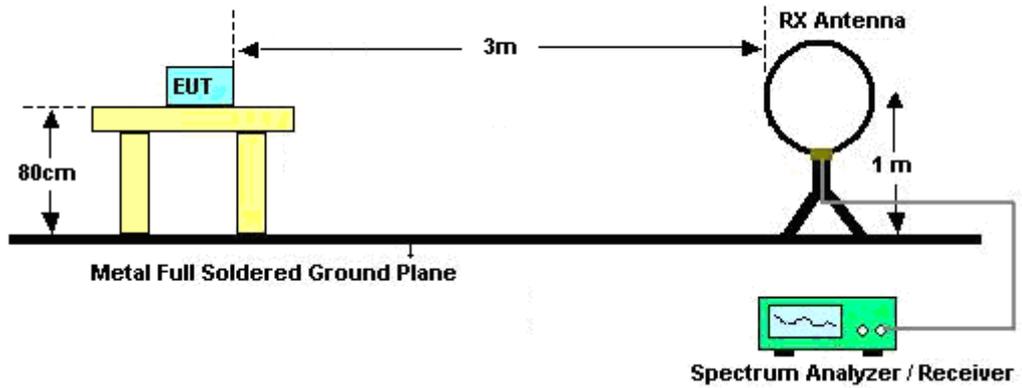
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 KHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
 For average measurement:
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(us)	1/T(KHz)	VBW Setting
802.11b	100.00	-	-	10Hz
802.11g	95.20	2065.71	0.484	1 kHz
2.4GHz 802.11n HT20	95.08	1919.87	0.521	1 kHz
2.4GHz 802.11n HT40	87.04	667.31	1.499	3 kHz
802.11a	95.78	2072.12	0.483	1 kHz
5GHz 802.11n HT20	95.25	1927.89	0.519	1 kHz
5GHz 802.11n HT40	87.26	667.31	1.499	3 kHz

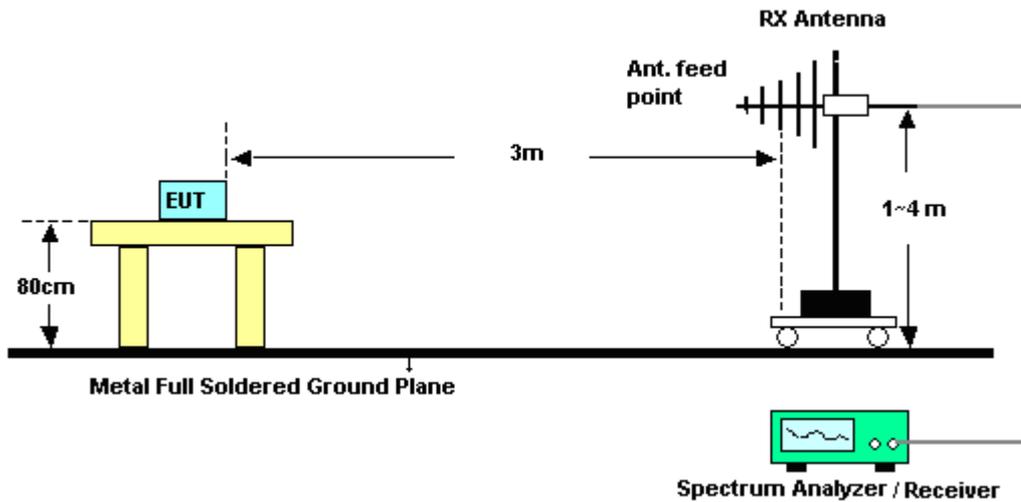
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

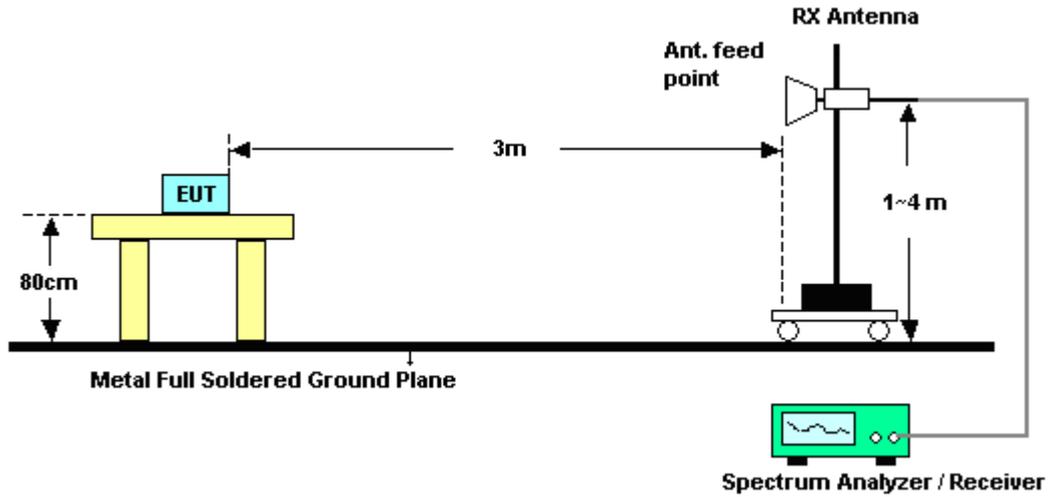
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.



3.5.6 Test Result of Radiated Band Edges

<Sample 1>

Test Mode :	802.11b	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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	72.23	-1.77	74	67.98	32.36	6.45	34.56	100	95	Peak
2388.84	41.54	-12.46	54	37.29	32.36	6.45	34.56	100	95	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
2388.03	72.2	-1.8	74	67.95	32.36	6.45	34.56	102	359	Peak
2386.77	40.86	-13.14	54	36.61	32.36	6.45	34.56	102	359	Average

Test Mode :	802.11b	Temperature :	26~27°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
2485.88	60.43	-13.57	74	55.91	32.48	6.59	34.55	196	92	Peak
2485.54	47.44	-6.56	54	42.92	32.48	6.59	34.55	196	92	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
2488.04	54.33	-19.67	74	49.79	32.5	6.59	34.55	122	240	Peak
2487.4	40.72	-13.28	54	36.2	32.48	6.59	34.55	122	240	Average



Test Mode :	802.11g	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.84	67.75	-6.25	74	63.5	32.36	6.45	34.56	200	75	Peak
2390	49.61	-4.39	54	45.36	32.36	6.45	34.56	200	75	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
2389.83	58.36	-15.64	74	54.11	32.36	6.45	34.56	100	150	Peak
2390	43.44	-10.56	54	39.19	32.36	6.45	34.56	100	150	Average

Test Mode :	802.11g	Temperature :	26~27°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
2484.2	67.92	-6.08	74	63.4	32.48	6.59	34.55	197	91	Peak
2483.64	49.13	-4.87	54	44.61	32.48	6.59	34.55	197	91	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
2483.72	63.08	-10.92	74	58.56	32.48	6.59	34.55	118	221	Peak
2483.86	43.96	-10.04	54	39.44	32.48	6.59	34.55	118	221	Average



Test Mode :	802.11n HT20	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
2389.2	69.93	-4.07	74	65.68	32.36	6.45	34.56	200	94	Peak
2390	50.87	-3.13	54	46.62	32.36	6.45	34.56	200	94	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
2389.74	60.85	-13.15	74	56.6	32.36	6.45	34.56	100	142	Peak
2389.92	44.59	-9.41	54	40.34	32.36	6.45	34.56	100	142	Average

Test Mode :	802.11n HT20	Temperature :	26~27°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
2484.62	69.29	-4.71	74	64.77	32.48	6.59	34.55	197	91	Peak
2483.56	51.4	-2.6	54	46.88	32.48	6.59	34.55	197	91	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	61.34	-12.66	74	56.82	32.48	6.59	34.55	100	7	Peak
2483.5	44.49	-9.51	54	39.97	32.48	6.59	34.55	100	7	Average



Test Mode :	802.11n HT40	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	03	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
2389.65	70.64	-3.36	74	66.39	32.36	6.45	34.56	200	91	Peak
2389.47	53.71	-0.29	54	49.46	32.36	6.45	34.56	200	91	Average
2484.34	53.1	-20.9	74	48.58	32.48	6.59	34.55	200	91	Peak
2488.42	40.38	-13.62	54	35.84	32.5	6.59	34.55	200	91	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
2389.47	62.83	-11.17	74	58.58	32.36	6.45	34.56	100	125	Peak
2389.65	46.35	-7.65	54	42.1	32.36	6.45	34.56	100	125	Average
2496.74	54.06	-19.94	74	49.52	32.5	6.59	34.55	100	125	Peak
2491.62	40.56	-13.44	54	36.02	32.5	6.59	34.55	100	125	Average



Test Mode :	802.11n HT40	Temperature :	26~27°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	09	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
2383.8	53.74	-20.26	74	49.52	32.33	6.45	34.56	200	92	Peak
2384.16	42.09	-11.91	54	37.87	32.33	6.45	34.56	200	92	Average
2488.1	71.42	-2.58	74	66.88	32.5	6.59	34.55	200	92	Peak
2483.64	53.09	-0.91	54	48.57	32.48	6.59	34.55	200	92	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
2389.74	51.15	-22.85	74	46.9	32.36	6.45	34.56	200	130	Peak
2388.21	39.35	-14.65	54	35.1	32.36	6.45	34.56	200	130	Average
2488.32	63.42	-10.58	74	58.88	32.5	6.59	34.55	200	130	Peak
2483.54	45.75	-8.25	54	41.23	32.48	6.59	34.55	200	130	Average



Test Mode :	802.11a	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	149	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	64.12	-20.76	84.88	51.21	35.41	11.34	33.84	102	301	Peak
5745	94.42	-	-	81.48	35.44	11.34	33.84	102	301	Average
5745	104.88	-	-	91.94	35.44	11.34	33.84	102	301	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	65.32	-18.53	83.85	52.41	35.41	11.34	33.84	108	3	Peak
5745	92.87	-	-	79.88	35.44	11.39	33.84	108	3	Average
5745	103.85	-	-	90.86	35.44	11.39	33.84	108	3	Peak

Test Mode :	802.11a	Temperature :	26~27°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	165	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
5825	94.58	-	-	81.35	35.56	11.51	33.84	101	301	Average
5825	105.12	-	-	91.89	35.56	11.51	33.84	101	301	Peak
5850	57.39	-27.73	85.12	44.09	35.58	11.56	33.84	101	301	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	92.12	-	-	78.89	35.56	11.51	33.84	106	9	Average
5825	102.54	-	-	89.31	35.56	11.51	33.84	106	9	Peak
5850	56.98	-25.56	82.54	43.68	35.58	11.56	33.84	106	9	Peak



Test Mode :	802.11n HT20	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	149	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	66.54	-17.99	84.53	53.63	35.41	11.34	33.84	101	301	Peak
5745	93.88	-	-	80.94	35.44	11.34	33.84	101	301	Average
5745	104.53	-	-	91.59	35.44	11.34	33.84	101	301	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	62.49	-20.07	82.56	49.58	35.41	11.34	33.84	108	6	Peak
5745	92.12	-	-	79.13	35.44	11.39	33.84	108	6	Average
5745	102.56	-	-	89.57	35.44	11.39	33.84	108	6	Peak

Test Mode :	802.11n HT20	Temperature :	26~27°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	165	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
5825	94.31	-	-	81.08	35.56	11.51	33.84	100	295	Average
5825	104.72	-	-	91.49	35.56	11.51	33.84	100	295	Peak
5850	59.22	-25.5	84.72	45.92	35.58	11.56	33.84	100	295	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	91.58	-	-	78.38	35.53	11.51	33.84	106	10	Average
5825	101.66	-	-	88.46	35.53	11.51	33.84	106	10	Peak
5850	58.24	-23.42	81.66	44.94	35.58	11.56	33.84	106	10	Peak



Test Mode :	802.11n HT40	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	151	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	69.25	-11.71	80.96	56.34	35.41	11.34	33.84	100	300	Peak
5755	90.83	-	-	77.82	35.46	11.39	33.84	100	300	Average
5755	100.96	-	-	87.95	35.46	11.39	33.84	100	300	Peak
5850	52.88	-28.08	80.96	39.58	35.58	11.56	33.84	100	300	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	66.25	-12	78.25	53.34	35.41	11.34	33.84	102	260	Peak
5755	87.9	-	-	74.89	35.46	11.39	33.84	102	260	Average
5755	98.25	-	-	85.24	35.46	11.39	33.84	102	260	Peak
5850	51.67	-26.58	78.25	38.37	35.58	11.56	33.84	102	260	Peak



Test Mode :	802.11n HT40	Temperature :	26~27°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	159	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	54.08	-27.99	82.07	41.17	35.41	11.34	33.84	100	298	Peak
5795	92.22	-	-	79.08	35.51	11.47	33.84	100	298	Average
5795	102.07	-	-	88.93	35.51	11.47	33.84	100	298	Peak
5850	54.51	-27.56	82.07	41.21	35.58	11.56	33.84	100	298	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	52.3	-16.02	68.32	39.39	35.41	11.34	33.84	101	266	Peak
5795	88.64	-	-	75.5	35.51	11.47	33.84	101	266	Average
5795	98.32	-	-	85.18	35.51	11.47	33.84	101	266	Peak
5850	52.83	-15.49	68.32	39.53	35.58	11.56	33.84	101	266	Peak



<Sample 2>

Test Mode :	802.11n HT40	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	03	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

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
2387.76	64.75	-9.25	74	60.5	32.36	6.45	34.56	200	84	Peak
2390	48.53	-5.47	54	44.28	32.36	6.45	34.56	200	84	Average
2486.42	51.77	-22.23	74	47.25	32.48	6.59	34.55	200	84	Peak
2484.58	40.05	-13.95	54	35.53	32.48	6.59	34.55	200	84	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
2389.47	59.95	-14.05	74	55.7	32.36	6.45	34.56	100	155	Peak
2390	44.59	-9.41	54	40.34	32.36	6.45	34.56	100	155	Average
2490.34	51.21	-22.79	74	46.67	32.5	6.59	34.55	100	155	Peak
2492.28	39.16	-14.84	54	34.62	32.5	6.59	34.55	100	155	Average



Test Mode :	802.11n HT40	Temperature :	26~27°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	151	Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	66.24	-11.28	77.52	53.33	35.41	11.34	33.84	100	291	Peak
5755	88.32	-	-	75.31	35.46	11.39	33.84	100	291	Average
5755	97.52	-	-	84.51	35.46	11.39	33.84	100	291	Peak
5850	53.34	-24.18	77.52	40.04	35.58	11.56	33.84	100	291	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	63.32	-11.71	75.03	50.41	35.41	11.34	33.84	103	261	Peak
5755	85.42	-	-	72.41	35.46	11.39	33.84	103	261	Average
5755	95.03	-	-	82.02	35.46	11.39	33.84	103	261	Peak
5850	52.25	-22.78	75.03	38.95	35.58	11.56	33.84	103	261	Peak

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

<Sample 1>

Test Mode :	802.11b	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	92.23	-	-	87.92	32.38	6.49	34.56	100	95	Average
2412	106.12	-	-	101.81	32.38	6.49	34.56	100	95	Peak
3618	49.9	-24.1	74	62.68	33.27	8.24	54.29	100	0	Peak

Test Mode :	802.11b	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	90.39	-	-	86.08	32.38	6.49	34.56	102	359	Average
2412	103.32	-	-	99.01	32.38	6.49	34.56	102	359	Peak



Test Mode :	802.11b	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	103.48	-	-	99.09	32.43	6.52	34.56	195	297	Average
2437	108.39	-	-	104	32.43	6.52	34.56	195	297	Peak
3654	49.96	-4.04	54	62.66	33.32	8.33	54.35	100	275	Average
3654	53.15	-20.85	74	65.85	33.32	8.33	54.35	100	275	Peak

Test Mode :	802.11b	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	99.96	-	-	95.57	32.43	6.52	34.56	100	125	Average
2437	104.74	-	-	100.35	32.43	6.52	34.56	100	125	Peak



Test Mode :	802.11b	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	106.63	-	-	102.18	32.45	6.56	34.56	196	92	Average
2462	111.75	-	-	107.3	32.45	6.56	34.56	196	92	Peak
3693	50.2	-3.8	54	62.86	33.37	8.37	54.4	100	278	Average
3693	53.57	-20.43	74	66.23	33.37	8.37	54.4	100	278	Peak

Test Mode :	802.11b	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	98.83	-	-	94.38	32.45	6.56	34.56	122	240	Average
2462	103.91	-	-	99.46	32.45	6.56	34.56	122	240	Peak



Test Mode :	802.11g	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	96.49	-	-	92.18	32.38	6.49	34.56	200	75	Average
2412	107.22	-	-	102.91	32.38	6.49	34.56	200	75	Peak
3618	47.83	-6.17	54	60.61	33.27	8.24	54.29	100	275	Average
3618	51.6	-22.4	74	64.38	33.27	8.24	54.29	100	275	Peak

Test Mode :	802.11g	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	90.73	-	-	86.42	32.38	6.49	34.56	100	150	Average
2412	100.78	-	-	96.47	32.38	6.49	34.56	100	150	Peak



Test Mode :	802.11g	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	94.25	-	-	89.86	32.43	6.52	34.56	103	297	Average
2437	104.33	-	-	99.94	32.43	6.52	34.56	103	297	Peak
3654	49.92	-4.08	54	62.62	33.32	8.33	54.35	100	275	Average
3654	52.1	-21.9	74	64.8	33.32	8.33	54.35	100	275	Peak

Test Mode :	802.11g	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	89.24	-	-	84.85	32.43	6.52	34.56	100	241	Average
2437	99.54	-	-	95.15	32.43	6.52	34.56	100	241	Peak
3654	47.36	-26.64	74	59.72	33.63	8.72	54.71	100	0	Peak



Test Mode :	802.11g	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	98.23	-	-	93.78	32.45	6.56	34.56	197	91	Average
2462	108.52	-	-	104.07	32.45	6.56	34.56	197	91	Peak
3693	50.7	-23.3	74	63.36	33.37	8.37	54.4	100	0	Peak

Test Mode :	802.11g	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	90.82	-	-	86.37	32.45	6.56	34.56	118	221	Average
2462	101.35	-	-	96.9	32.45	6.56	34.56	118	221	Peak
3693	49.6	-24.4	74	62.26	33.37	8.37	54.4	100	0	Peak



Test Mode :	2.4GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	97.16	-	-	92.85	32.38	6.49	34.56	200	94	Average
2412	107.69	-	-	103.38	32.38	6.49	34.56	200	94	Peak
3618	48.54	-25.46	74	61.32	33.27	8.24	54.29	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	90.47	-	-	86.16	32.38	6.49	34.56	100	142	Average
2412	100.7	-	-	96.39	32.38	6.49	34.56	100	142	Peak
3618	46.36	-27.64	74	59.14	33.27	8.24	54.29	100	0	Peak



Test Mode :	2.4GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	97.17	-	-	92.78	32.43	6.52	34.56	200	92	Average
2437	107.85	-	-	103.46	32.43	6.52	34.56	200	92	Peak
3654	50.56	-23.44	74	63.26	33.32	8.33	54.35	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	87.2	-	-	82.81	32.43	6.52	34.56	100	6	Average
2437	97.86	-	-	93.47	32.43	6.52	34.56	100	6	Peak
3654	48.34	-25.66	74	61.04	33.32	8.33	54.35	100	0	Peak



Test Mode :	2.4GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	97.68	-	-	93.23	32.45	6.56	34.56	197	91	Average
2462	108.03	-	-	103.57	32.45	6.56	34.55	197	91	Peak
3693	49.25	-4.75	54	61.91	33.37	8.37	54.4	100	278	Average
3693	52.77	-21.23	74	65.43	33.37	8.37	54.4	100	278	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	88.89	-	-	84.44	32.45	6.56	34.56	100	7	Average
2462	99.55	-	-	95.09	32.45	6.56	34.55	100	7	Peak
3693	48.14	-25.86	74	60.8	33.37	8.37	54.4	100	0	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	03	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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
71.04	22.72	-17.28	40	47.23	6.44	0.75	31.7	100	172	Peak
138.54	23.87	-19.63	43.5	42.98	11.18	1.41	31.7	-	-	Peak
224.94	25.76	-20.24	46	45.62	9.65	2.13	31.64	-	-	Peak
571.6	21.76	-24.24	46	31.94	18.81	3	31.99	-	-	Peak
679.4	22.66	-23.34	46	32.06	19.1	3.49	31.99	-	-	Peak
861.4	24.42	-21.58	46	31.98	20.41	3.87	31.84	-	-	Peak
2422	95.6	-	-	91.27	32.4	6.49	34.56	200	91	Average
2422	105.48	-	-	101.15	32.4	6.49	34.56	200	91	Peak
3633	50.54	-23.46	74	63.28	33.29	8.29	54.32	100	0	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	03	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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
55.65	27.47	-12.53	40	51.57	6.9	0.67	31.67	100	69	Peak
106.14	26.07	-17.43	43.5	45.05	11.64	1.08	31.7	-	-	Peak
169.86	18.11	-25.39	43.5	38.25	9.7	1.83	31.67	-	-	Peak
567.4	22.17	-23.83	46	32.31	18.83	3	31.97	-	-	Peak
650	23.07	-22.93	46	32.43	19.2	3.41	31.97	-	-	Peak
870.5	25.24	-20.76	46	32.67	20.5	3.85	31.78	-	-	Peak
2422	88.45	-	-	84.12	32.4	6.49	34.56	100	125	Average
2422	98.53	-	-	94.22	32.38	6.49	34.56	100	125	Peak
3633	47.51	-26.49	74	60.25	33.29	8.29	54.32	100	0	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	95.99	-	-	91.6	32.43	6.52	34.56	199	88	Average
2437	106.22	-	-	101.86	32.4	6.52	34.56	199	88	Peak
3654	48.74	-5.26	54	61.44	33.32	8.33	54.35	101	273	Average
3654	53.12	-20.88	74	65.82	33.32	8.33	54.35	101	273	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	90.07	-	-	85.68	32.43	6.52	34.56	198	124	Average
2437	100.02	-	-	95.66	32.4	6.52	34.56	198	124	Peak
3654	48.57	-25.43	74	61.27	33.32	8.33	54.35	100	0	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	09	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	2452 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2452	95.64	-	-	91.25	32.43	6.52	34.56	200	92	Average
2452	105.85	-	-	101.46	32.43	6.52	34.56	200	92	Peak
3678	50.03	-3.97	54	62.69	33.37	8.37	54.4	100	279	Average
3678	51.98	-22.02	74	64.64	33.37	8.37	54.4	100	279	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	09	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	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	87.9	-	-	83.51	32.43	6.52	34.56	200	130	Average
2452	98.02	-	-	93.66	32.4	6.52	34.56	200	130	Peak
3678	49.23	-24.77	74	61.89	33.37	8.37	54.4	100	0	Peak



Test Mode :	802.11a	Temperature :	26~27°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	94.42	-	-	81.48	35.44	11.34	33.84	102	301	Average
5745	104.88	-	-	91.94	35.44	11.34	33.84	102	301	Peak

Test Mode :	802.11a	Temperature :	26~27°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	92.87	-	-	79.88	35.44	11.39	33.84	108	3	Average
5745	103.85	-	-	90.86	35.44	11.39	33.84	108	3	Peak



Test Mode :	802.11a	Temperature :	26~27°C
Test Channel :	157	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	94.08	-	-	81	35.49	11.43	33.84	100	295	Average
5785	104.57	-	-	91.49	35.49	11.43	33.84	100	295	Peak

Test Mode :	802.11a	Temperature :	26~27°C
Test Channel :	157	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.74	-	-	78.66	35.49	11.43	33.84	108	2	Average
5785	102.36	-	-	89.28	35.49	11.43	33.84	108	2	Peak



Test Mode :	802.11a	Temperature :	26~27°C
Test Channel :	165	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	94.58	-	-	81.35	35.56	11.51	33.84	101	301	Average
5825	105.12	-	-	91.89	35.56	11.51	33.84	101	301	Peak

Test Mode :	802.11a	Temperature :	26~27°C
Test Channel :	165	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	92.12	-	-	78.89	35.56	11.51	33.84	106	9	Average
5825	102.54	-	-	89.31	35.56	11.51	33.84	106	9	Peak



Test Mode :	5GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	93.88	-	-	80.94	35.44	11.34	33.84	101	301	Average
5745	104.53	-	-	91.59	35.44	11.34	33.84	101	301	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	92.12	-	-	79.13	35.44	11.39	33.84	108	6	Average
5745	102.56	-	-	89.57	35.44	11.39	33.84	108	6	Peak



Test Mode :	5GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	157	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	93.43	-	-	80.29	35.51	11.47	33.84	100	301	Average
5785	103.02	-	-	89.88	35.51	11.47	33.84	100	301	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	157	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	92.11	-	-	78.97	35.51	11.47	33.84	106	9	Average
5785	102.14	-	-	89	35.51	11.47	33.84	106	9	Peak



Test Mode :	5GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	165	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	94.31	-	-	81.08	35.56	11.51	33.84	100	295	Average
5825	104.72	-	-	91.49	35.56	11.51	33.84	100	295	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	26~27°C
Test Channel :	165	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.58	-	-	78.38	35.53	11.51	33.84	106	10	Average
5825	101.66	-	-	88.46	35.53	11.51	33.84	106	10	Peak



Test Mode :	5GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	151	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per 15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
49.98	24.46	-15.54	40	47.2	8.2	0.77	31.71	103	296	Peak
177.15	24.71	-18.79	43.5	45.4	9.45	1.54	31.68			Peak
219.54	27.61	-18.39	46	48.58	9.1	1.61	31.68			Peak
508.6	22.15	-23.85	46	33.78	17.7	2.47	31.8			Peak
657	23.97	-22.03	46	33.93	19.2	2.82	31.98			Peak
882.4	25.34	-20.66	46	33.23	20.5	3.32	31.71			Peak
5755	90.83	-	-	77.82	35.46	11.39	33.84	100	300	Average
5755	100.96	-	-	87.95	35.46	11.39	33.84	100	300	Peak



Test Mode :	5GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	151	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per 15.31..		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
37.56	30.39	-9.61	40	47.32	14.12	0.65	31.7	100	241	Peak
67.8	28.42	-11.58	40	52.7	6.48	0.93	31.69			Peak
114.24	27.15	-16.35	43.5	45.26	12.42	1.18	31.71			Peak
384	17.33	-28.67	46	31.83	15.12	2.14	31.76			Peak
613.6	21.58	-24.42	46	31.93	18.98	2.76	32.09			Peak
942.6	24.4	-21.6	46	31.4	20.83	3.36	31.19			Peak
5755	87.9	-	-	74.89	35.46	11.39	33.84	102	260	Average
5755	98.25	-	-	85.24	35.46	11.39	33.84	102	260	Peak



Test Mode :	5GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	159	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	92.22	-	-	79.08	35.51	11.47	33.84	100	298	Average
5795	102.07	-	-	88.93	35.51	11.47	33.84	100	298	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	159	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	88.64	-	-	75.5	35.51	11.47	33.84	101	266	Average
5795	98.32	-	-	85.18	35.51	11.47	33.84	101	266	Peak



<Sample 2>

Test Mode :	2.4GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	03	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 2422 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
41.34	24.1	-15.9	40	43.57	11.54	0.69	31.7	100	139	Peak
165	26.33	-17.17	43.5	46.47	10	1.52	31.66			Peak
230.61	29.23	-16.77	46	48.86	10.31	1.66	31.6			Peak
419	22.09	-23.91	46	35.21	16.48	2.23	31.83			Peak
619.9	24.55	-21.45	46	34.75	19.1	2.77	32.07			Peak
880.3	26.05	-19.95	46	33.85	20.61	3.31	31.72			Peak
2422	91.07	-	-	86.74	32.4	6.49	34.56	200	84	Average
2422	101.08	-	-	96.75	32.4	6.49	34.56	200	84	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	03	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 2422 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
49.98	31.48	-8.52	40	54.22	8.2	0.77	31.71	100	133	Peak
118.29	31.13	-12.37	43.5	49.19	12.44	1.21	31.71			Peak
189.3	26.26	-17.24	43.5	47.35	9.02	1.55	31.66			Peak
374.2	18.08	-27.92	46	32.78	14.88	2.11	31.69			Peak
601	22.5	-23.5	46	33.07	18.81	2.75	32.13			Peak
793.5	23.8	-22.2	46	32.75	19.93	3.11	31.99			Peak
2422	87.03	-	-	82.7	32.4	6.49	34.56	100	155	Average
2422	96.74	-	-	92.41	32.4	6.49	34.56	100	155	Peak



Test Mode :	5GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	151	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Horizontal
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
56.46	22.88	-17.12	40	46.95	6.78	0.82	31.67	102	359	Peak
99.39	24.59	-18.91	43.5	43.97	11.2	1.1	31.68			Peak
219.54	27.61	-18.39	46	48.6	9.08	1.61	31.68			Peak
459.6	20.77	-25.23	46	33.18	17.1	2.34	31.85			Peak
710.2	23.97	-22.03	46	33.98	19.1	2.92	32.03			Peak
920.2	25.49	-20.51	46	32.85	20.7	3.35	31.41			Peak
5755	88.32	-	-	75.31	35.46	11.39	33.84	100	291	Average
5755	97.52	-	-	84.51	35.46	11.39	33.84	100	291	Peak



Test Mode :	5GHz 802.11n HT40	Temperature :	26~27°C
Test Channel :	151	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin and Hayden Wu	Polarization :	Vertical
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
65.64	28.14	-11.86	40	52.67	6.24	0.91	31.68	100	139	Peak
114.51	27.93	-15.57	43.5	46.66	11.8	1.18	31.71			Peak
186.6	20.27	-23.23	43.5	41.49	8.9	1.55	31.67			Peak
422.5	20.01	-25.99	46	33.1	16.5	2.24	31.83			Peak
662.6	23.42	-22.58	46	33.4	19.17	2.83	31.98			Peak
880.3	26.13	-19.87	46	33.93	20.61	3.31	31.72			Peak
5755	85.42	-	-	72.41	35.46	11.39	33.84	103	261	Average
5755	95.03	-	-	82.02	35.46	11.39	33.84	103	261	Peak

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

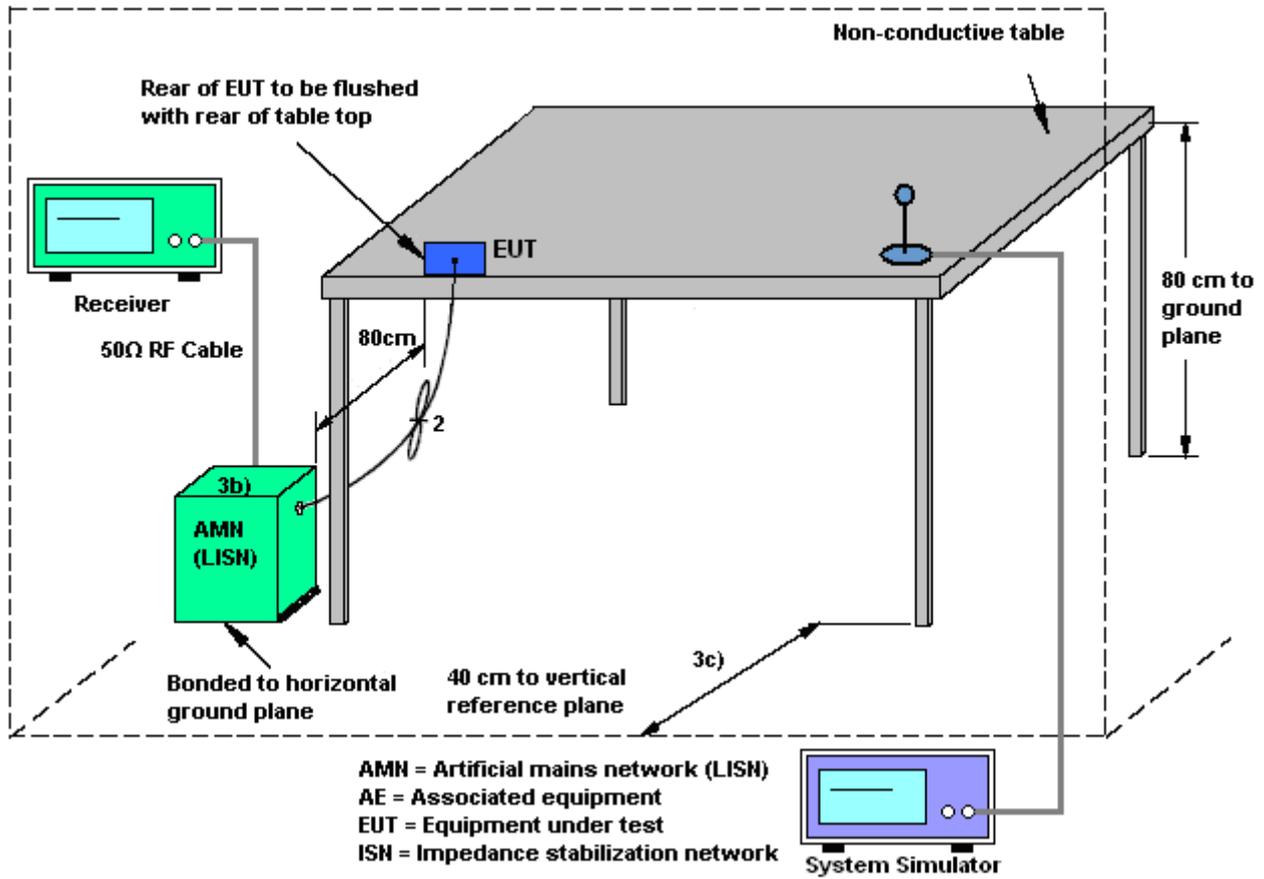
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

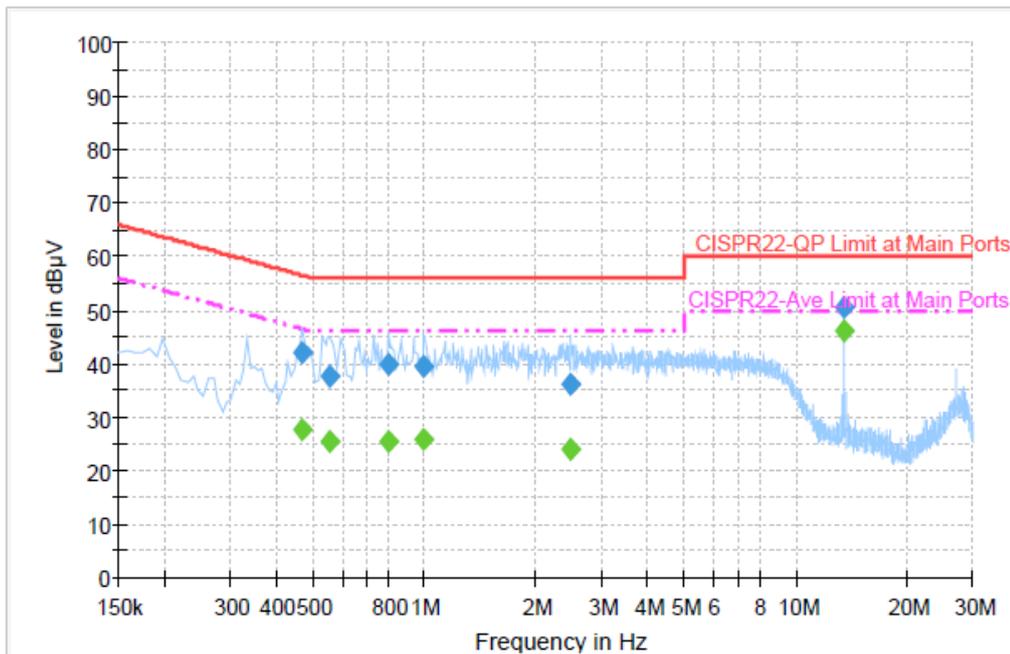
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 KHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + NFC + Earphone + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



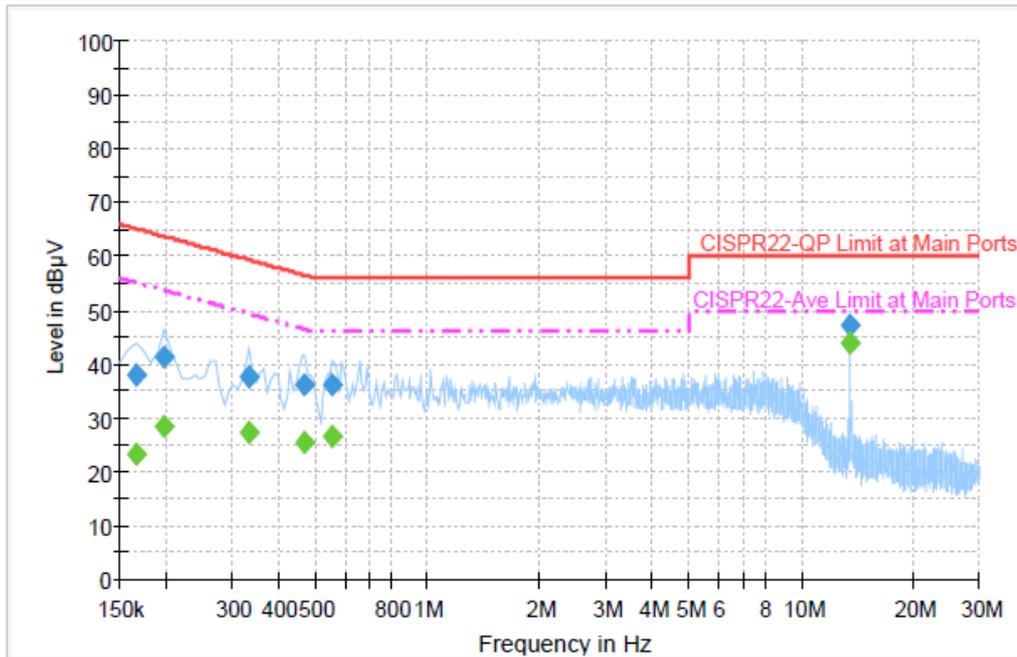
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.470000	41.9	Off	L1	19.4	14.6	56.5
0.558000	37.6	Off	L1	19.4	18.4	56.0
0.798000	39.9	Off	L1	19.4	16.1	56.0
0.998000	39.6	Off	L1	19.4	16.4	56.0
2.470000	36.3	Off	L1	19.4	19.7	56.0
13.558000	50.7	Off	L1	19.6	9.3	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.470000	27.8	Off	L1	19.4	18.7	46.5
0.558000	25.4	Off	L1	19.4	20.6	46.0
0.798000	25.4	Off	L1	19.4	20.6	46.0
0.998000	25.7	Off	L1	19.4	20.3	46.0
2.470000	24.0	Off	L1	19.4	22.0	46.0
13.558000	46.0	Off	L1	19.6	4.0	50.0

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + NFC + Earphone + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	38.1	Off	N	19.4	27.1	65.2
0.198000	41.3	Off	N	19.4	22.4	63.7
0.334000	37.8	Off	N	19.4	21.6	59.4
0.470000	36.0	Off	N	19.4	20.5	56.5
0.558000	36.2	Off	N	19.4	19.8	56.0
13.558000	47.2	Off	N	19.7	12.8	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	23.4	Off	N	19.4	31.8	55.2
0.198000	28.2	Off	N	19.4	25.5	53.7
0.334000	27.2	Off	N	19.4	22.2	49.4
0.470000	25.6	Off	N	19.4	20.9	46.5
0.558000	26.5	Off	N	19.4	19.5	46.0
13.558000	43.9	Off	N	19.7	6.1	50.0



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.7.2 Antenna Connected Construction

Non-standard connector used.

3.7.3 Antenna Gain

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 06, 2012	Nov. 02, 2012 ~ Nov. 06, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Nov. 02, 2012 ~ Nov. 06, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Nov. 02, 2012 ~ Nov. 06, 2012	Sep. 07, 2013	Conducted (TH02-HY)
EMI Test Receiver	R&S	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Nov. 07, 2012 ~ Nov. 14, 2012	Sep. 02, 2013	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Nov. 07, 2012 ~ Nov. 14, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Nov. 07, 2012 ~ Nov. 14, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Nov. 07, 2012 ~ Nov. 14, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Nov. 07, 2012 ~ Nov. 14, 2012	Jul. 27, 2013	Conduction (CO05-HY)
Spectrum Analyzer	R&S	ESU26	100390	20Hz ~ 26.5GHz	Dec. 22, 2011	Nov. 06, 2012 ~ Nov. 22, 2012	Dec. 21, 2012	Radiation (03CH05-HY)
Bilog Antenna	Schaffner	CBL6111C	2725	30MHz~2GHz	Oct. 06, 2012	Nov. 06, 2012 ~ Nov. 22, 2012	Oct. 05, 2013	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 ~ 360 degree	N/A	Nov. 06, 2012 ~ Nov. 22, 2012	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m ~ 4 m	N/A	Nov. 06, 2012 ~ Nov. 22, 2012	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	66584	1GHz~18GHz	Aug. 10, 2012	Nov. 06, 2012 ~ Nov. 22, 2012	Aug. 09, 2013	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A02665	1GHz~26.5GHz	Aug. 28, 2012	Nov. 06, 2012 ~ Nov. 22, 2012	Aug. 27, 2013	Radiation (03CH05-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Nov. 06, 2012 ~ Nov. 22, 2012	Sep. 27, 2013	Radiation (03CH05-HY)
Pre Amplifier	COM-POWER	PA-103	161075	10-1000MHz.32dB.GAIN	Feb. 27, 2012	Nov. 06, 2012 ~ Nov. 22, 2012	Feb. 26, 2013	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Nov. 06, 2012 ~ Nov. 22, 2012	Jul. 02, 2014	Radiation (03CH05-HY)



5 Uncertainty of Evaluation

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

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

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

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