

FCC RF Test Report

APPLICANT : ASUSTeK COMPUTER INC.
EQUIPMENT : ASUS MeMO Pad
BRAND NAME : ASUS
MODEL NAME : K001
FCC ID : MSQK001
STANDARD : FCC Part 15 Subpart E
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Sep. 18, 2012 and completely tested on Nov. 29, 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.

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

SPORTON INTERNATIONAL INC.

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FCC ID : MSQK001

Page Number : 1 of 132

Report Issued Date : Dec. 03, 2012

Report Version : Rev. 01



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR291814C	Rev. 01	Initial issue of report	Dec. 03, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	A9.2	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	A9.2	Maximum Conducted Output Power	$\leq 17, 24, 30$ dBm (depend on band)	Pass	-
3.3	15.407(a)	A9.2	Power Spectral Density	$\leq 4, 11, 17$ dBm (depend on band)	Pass	-
3.4	15.407(a)(6)	A9.3	Peak Excursion Ratio	≤ 13 dB	Pass	-
3.5	15.407(b)	A9.3	Unwanted Emissions	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 1.03 dB at 7334.000 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 14.29 dB at 0.187 MHz
3.7	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.8	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.9	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

ASUSTeK COMPUTER INC.

4F., No. 150, LI-TE RD., PEITOU, TAIPEI 112, TAIWAN

1.2 Manufacturer

Wistron Infocomm Manufacturing (Kunshan) Co., Ltd.

First Avenue, Kunshan Integrated Free Trade Zone, Kunshan, Jiangsu, 215300, P.R China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	ASUS MeMO Pad
Brand Name	ASUS
Model Name	K001
FCC ID	MSQK001
Sample 1	SKU#1
Sample 2	SKU#2
Sample 3	SKU#3
Sample 4	SKU#4
EUT supports Radios application	WLAN 11abgn / Bluetooth
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 Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> 802.11a : 10.44 dBm / 0.0111 W 802.11n HT20 : 10.14 dBm / 0.0103 W 802.11n HT40 : 10.43 dBm / 0.0110 W <5260 MHz ~ 5320 MHz> 802.11a : 9.74 dBm / 0.0094 W 802.11n HT20 : 9.87 dBm / 0.0097 W 802.11n HT40 : 10.24 dBm / 0.0106 W <5500 MHz ~ 5700 MHz> 802.11a : 9.50 dBm / 0.0089 W 802.11n HT20 : 9.59 dBm / 0.0091 W 802.11n HT40 : 10.23 dBm / 0.0105 W
99% Occupied Bandwidth	802.11a : 18.70 MHz 802.11n HT20 : 19.35 MHz 802.11n HT40 : 36.54 MHz
Antenna Type	PCB Antenna <5180 MHz ~ 5240 MHz> with gain 4.38 dBi <5260 MHz ~ 5320 MHz> with gain 4.45 dBi <5500 MHz ~ 5700 MHz> with gain 3.69 dBi
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)

Second Source	SKU#1	SKU#2	SKU#3	SKU#4
Memory	HynixH5TC2G83CFR-H9R	ELPIDA/J2108EDBG-D JL-F	ELPIDA/J2108EDBG-D JL-F	ELPIDA/J2108EDBG-D JL-F
EMMC	Hynix/H26M64002DQR	Hynix/H26M52002EQR	KINGSTON/KE4CN4K6A	Hynix/H26M52002EQR
LCD Panel	HSD HSD101PWW1-G00	CMI/N101ICG-L21	HSD HSD101PWW1-G10	CMI/N101ICG-L21 (VER.C3)
Pad Battery	SIMPLO/ C11-ME301T	SIMPLO/ C11-ME301T	SIMPLO/ C11-ME301T	LG/C11-ME301T
Camera (front)	LITEON/10P2SF130L	LITEON/10P2SF130K	LITEON/10P2SF130K	LITEON/10P2SF130K
Camera (rear)	LITEON/12P2SA501	LITEON/12P2SA501	LITEON/12P2SA501	LITEON/12P2SA501
ADAPTER	AD83531	PSA10A-050Q	PSA10A-050Q	AD83531

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	CO01-NH	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 E
- FCC KDB 789033 D01 General UNII Test Procedures v01r02
- ANSI C63.4-2003 and ANSI C63.10-2009
- IC RSS-210 Issued 8
- IC RSS-Gen Issue 3

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-300	KA2DIR300B1	N/A	Unshielded, 1.5 m
2.	Bluetooth Speaker	i Tech	C51-A05153-XX	N/A	N/A	N/A
3.	Memory Card	Transcend	Micro SD 2GB	N/A	N/A	N/A
4.	LCD Monitor	Dell	E198WFPF	FCC DoC	Shielded, 1.8 m	Unshielded, 1.8 m

2 Test Configuration of Equipment Under Test

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

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

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

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1	36	5180	44	5220
	38	5190	46	5230
	40	5200	48	5240

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2	52	5260	60	5300
	54	5270	62	5310
	56	5280	64	5320

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3	100	5500	116	5580
	102	5510	132	5660
	104	5520	134	5670
	108	5540	136	5680
	110	5550	140	5700
	112	5560		

Note: The above Frequency and Channel in boldface were 802.11n HT40.

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.

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)	10.44	10.19	10.08	10.01	10.06	10.10	10.12	10.21

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	10.14	10.06	10.04	9.96	10.09	9.97	10.12	10.12

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	10.43	10.34	10.34	10.42	10.39	10.42	10.41	10.41

2.3 Test Mode

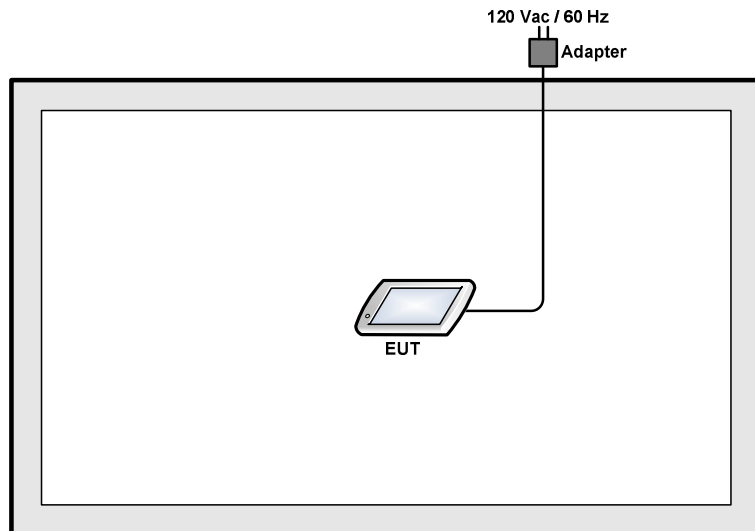
Final results of test modes, data rates and test channels are shown as following table.

Test Cases				
Conducted TCs	Test Items	Mode	Data rate	Test Channel
	26dB and 99% BW Power Spectral Density	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/H
	Output Power	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/H
	Peak Excursion	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/H
	Frequency Stability	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/H
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	L/H
		802.11n HT20	6.5 Mbps	L/H
		802.11n HT40	13.5 Mbps	L/H
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/H
AC Conducted Emission	Mode 1 : WLAN (5G) Link + Bluetooth Link + MP3 + H-Pattern + USB Cable (Charging from Adapter) + Earphone + SD Card + HDMI Cable			
Remark: All the tests were performance with SKU 1.				

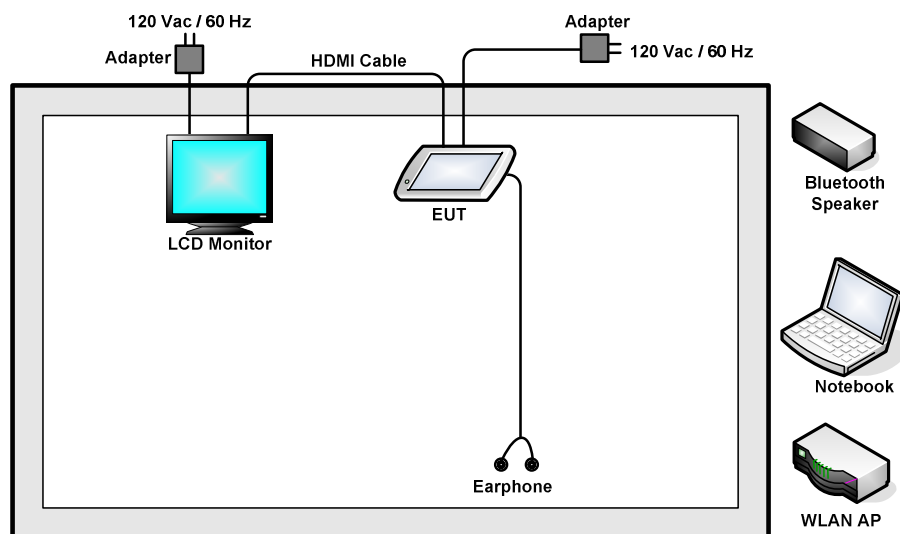
Ch. #		Band I : 5150-5250 MHz		Band II : 5250-5350 MHz		Band III : 5470-5725 MHz	
		802.11a, 802.11n HT20	802.11n HT40	802.11a, 802.11n HT20	802.11n HT40	802.11a, 802.11n HT20	802.11n HT40
L	Low	36	38	52	54	100	102
M	Middle	44	-	60	-	116	110
H	High	48	46	64	62	140	134

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

For WLAN function, execute "WLAN RF Test Tool" to make the EUT contact with WLAN AP for continuous transmitting and receiving signals.

3 Test Result

3.1 26dB & 99% Bandwidth Measurement

3.1.1 Description of Bandwidth Measurement

There is no restriction limits for bandwidth. The maximum conducted output power can be limited by measured emission bandwidth (B). For the band 5.15~5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B.

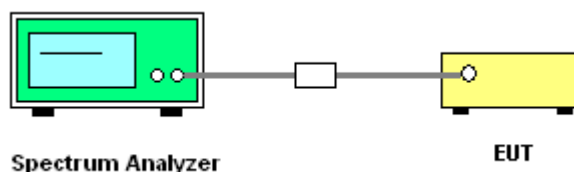
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r02.
Section D) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.
Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) $\geq 3 * RBW$.
8. Measure and record the results in the test report.

3.1.4 Test Setup

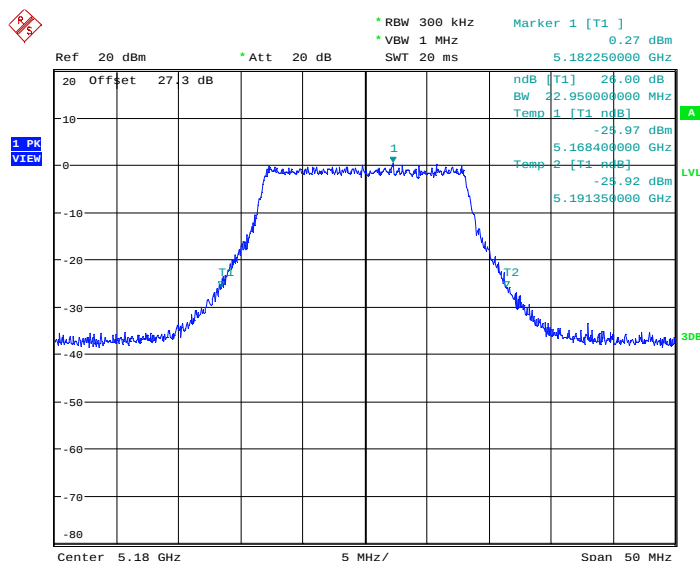


3.1.5 Test Result of 26dB Bandwidth Plots

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	22.950	N/A
44	5220	23.450	N/A
48	5240	22.650	N/A
52	5260	23.350	N/A
60	5300	23.050	N/A
64	5320	23.000	N/A
100	5500	23.000	N/A
116	5580	23.200	N/A
140	5700	23.350	N/A

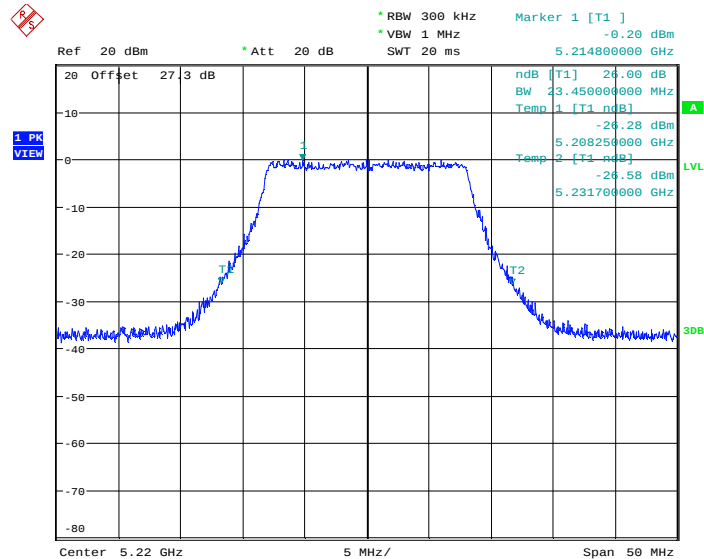
26 dB Bandwidth Plot on 802.11a Channel 36



Date: 22.NOV.2012 18:29:32

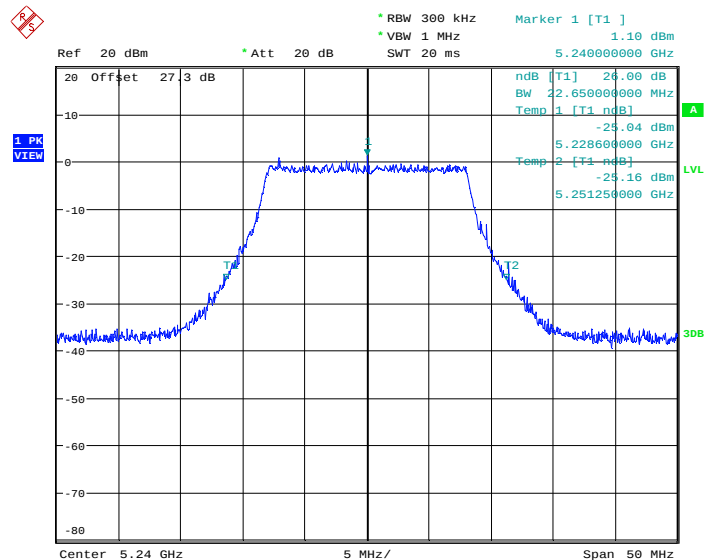


26 dB Bandwidth Plot on 802.11a Channel 44



Date: 22.NOV.2012 19:11:50

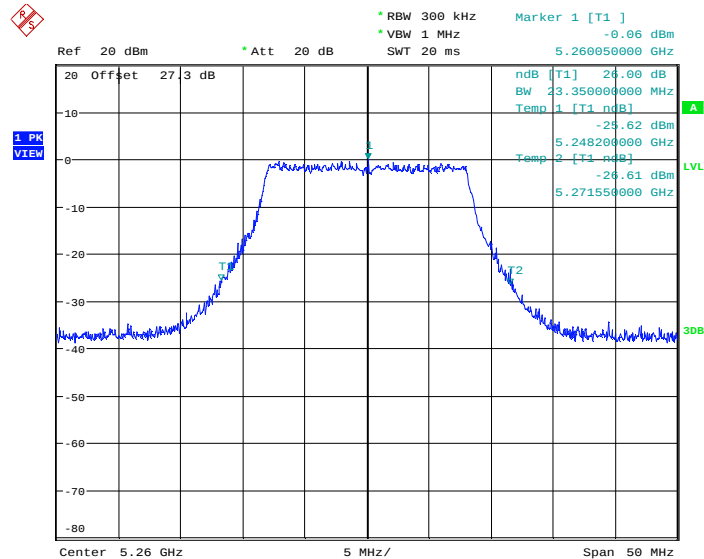
26 dB Bandwidth Plot on 802.11a Channel 48



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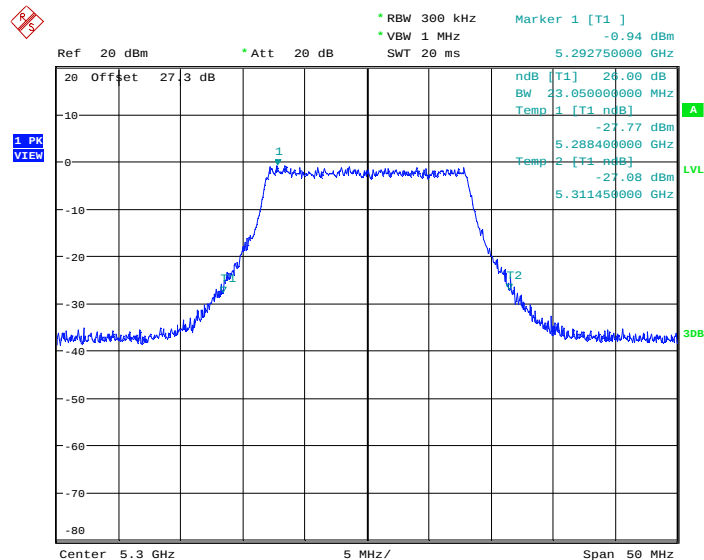


26 dB Bandwidth Plot on 802.11a Channel 52



Date: 22. NOV. 2012 19:23:35

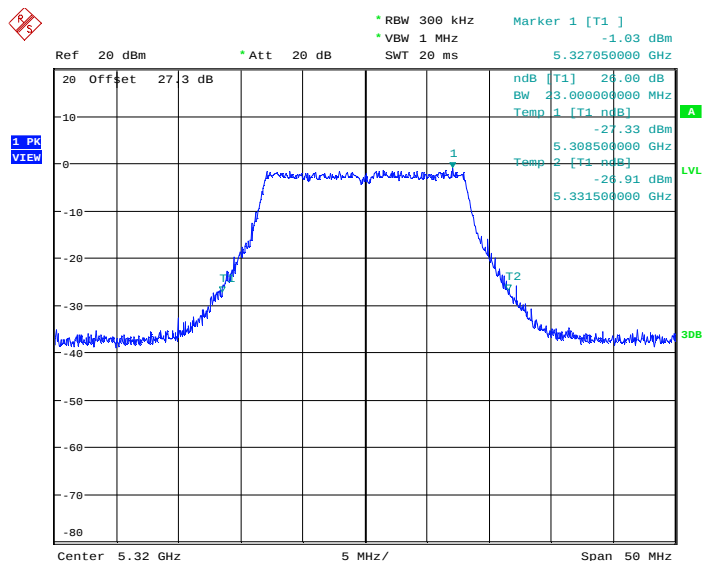
26 dB Bandwidth Plot on 802.11a Channel 60



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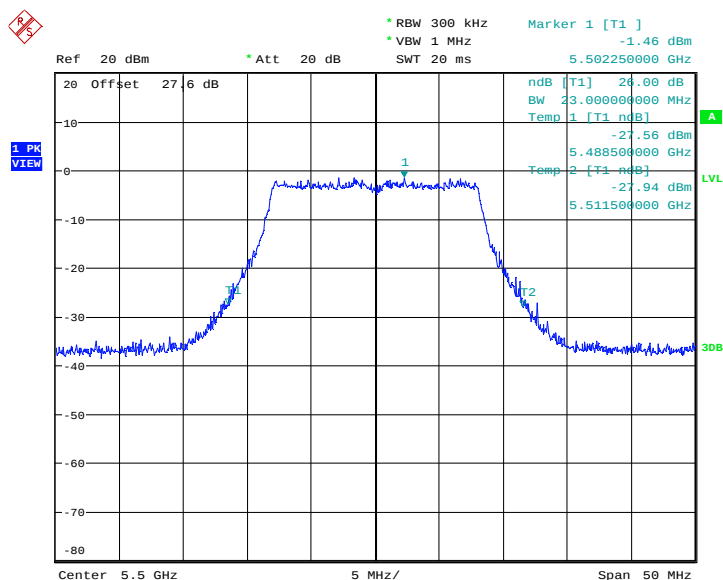


26 dB Bandwidth Plot on 802.11a Channel 64



Date: 22.NOV.2012 19:31:42

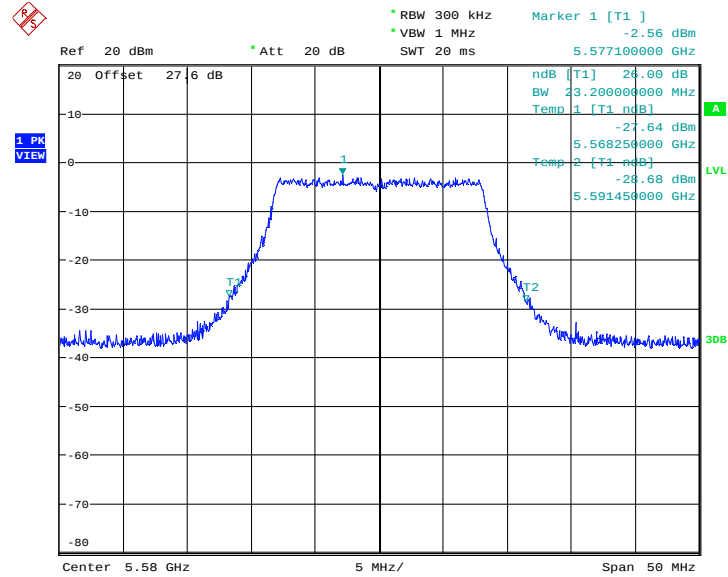
26 dB Bandwidth Plot on 802.11a Channel 100



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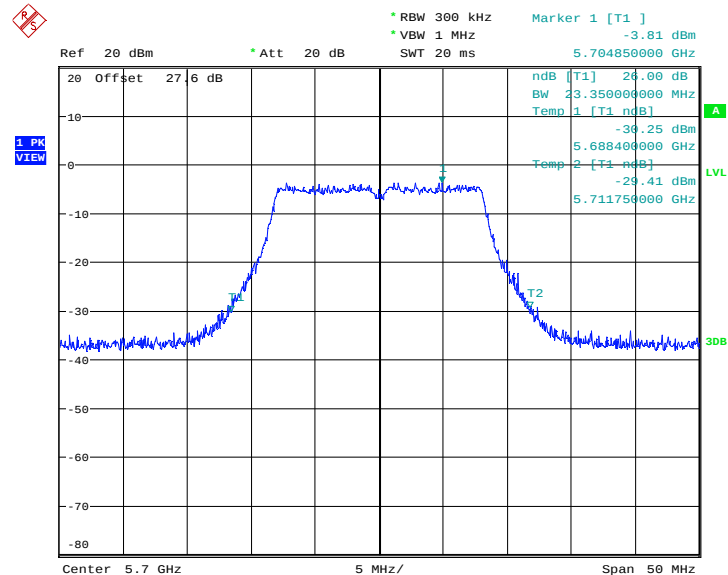


26 dB Bandwidth Plot on 802.11a Channel 116



Date: 22.NOV.2012 19:38:08

26 dB Bandwidth Plot on 802.11a Channel 140

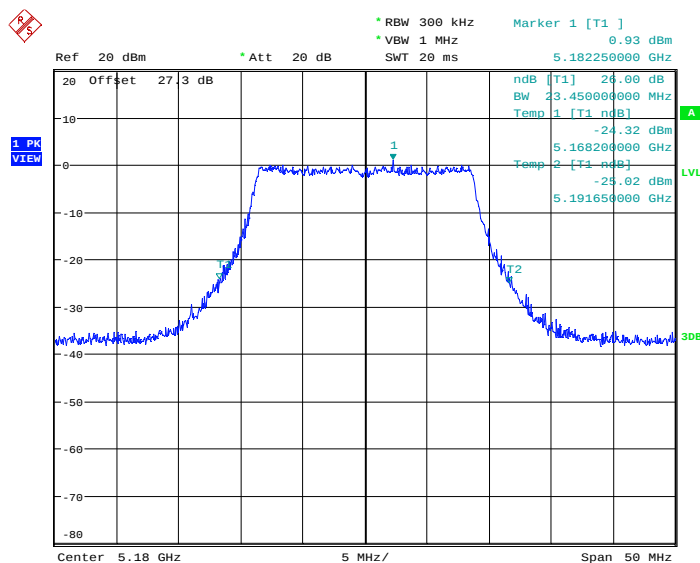


Date: 22.NOV.2012 19:42:14



Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%

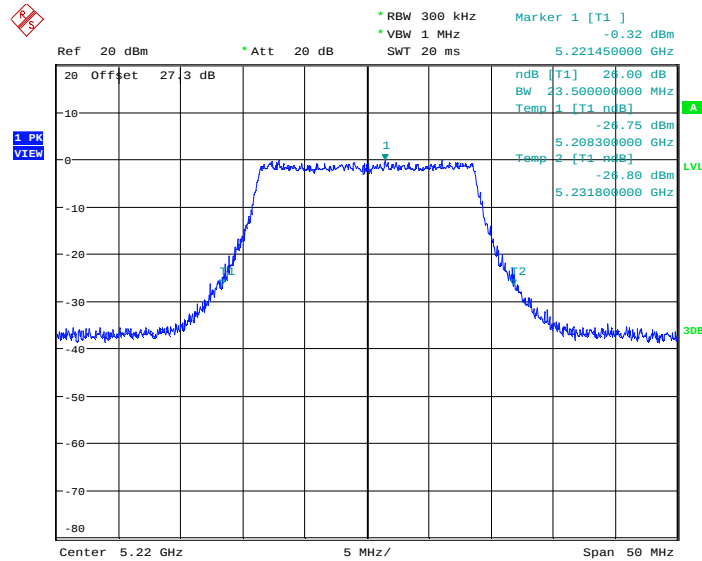
Channel	Frequency (MHz)	802.11n HT20 26dB Bandwidth (MHz)	Pass/Fail
36	5180	23.450	N/A
44	5220	23.500	N/A
48	5240	23.150	N/A
52	5260	23.700	N/A
60	5300	23.550	N/A
64	5320	23.700	N/A
100	5500	23.400	N/A
116	5580	23.350	N/A
140	5700	23.600	N/A

26 dB Bandwidth Plot on 802.11n HT20 Channel 36

Date: 22. NOV. 2012 19:50:10

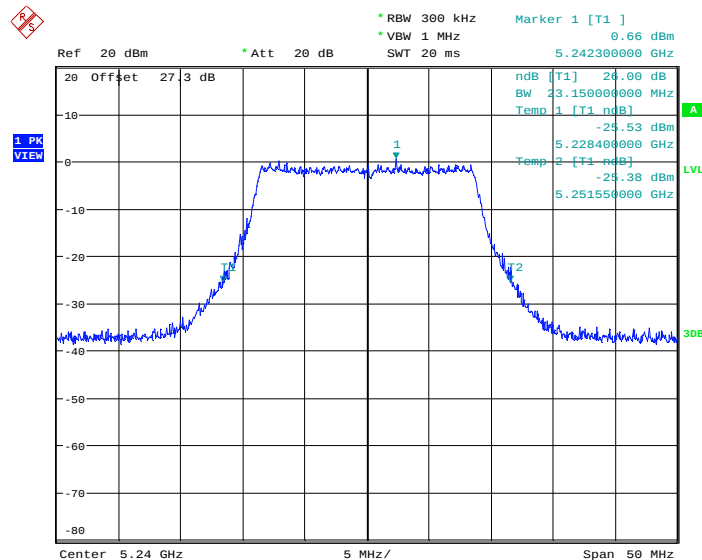


26 dB Bandwidth Plot on 802.11n HT20 Channel 44



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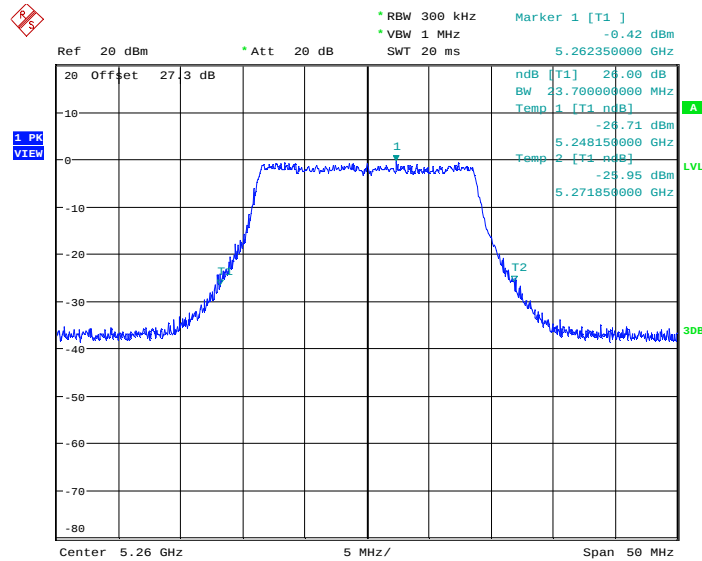
26 dB Bandwidth Plot on 802.11n HT20 Channel 48



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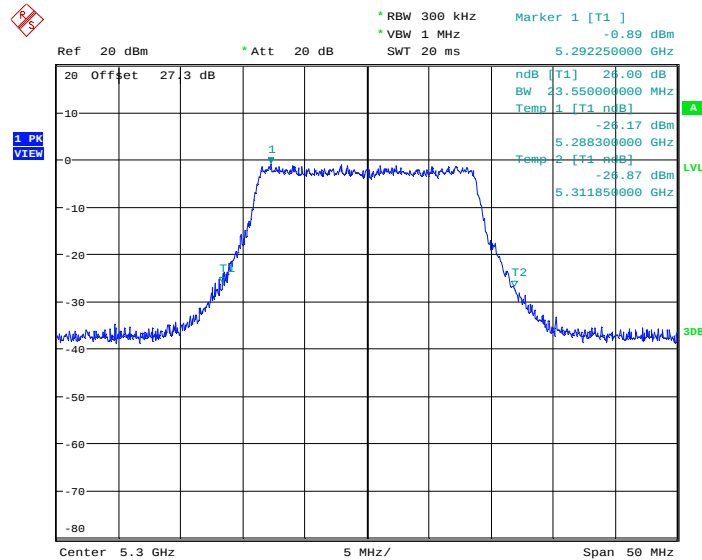


26 dB Bandwidth Plot on 802.11n HT20 Channel 52



Date: 22.NOV.2012 20:01:19

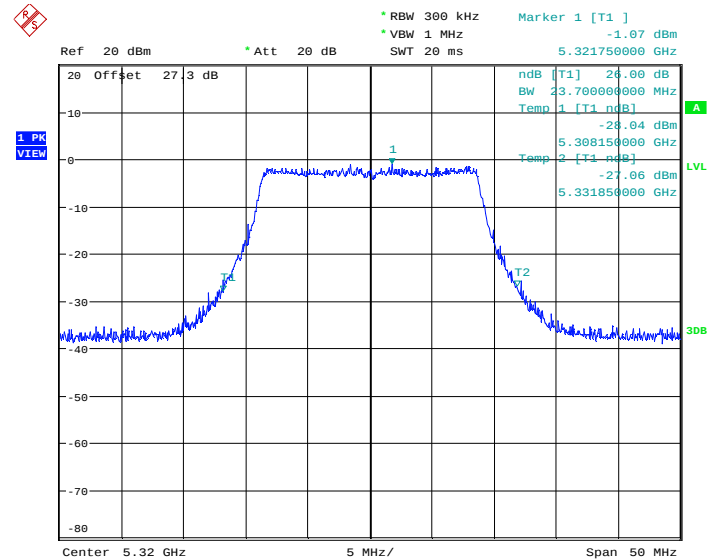
26 dB Bandwidth Plot on 802.11n HT20 Channel 60



Date: 22.NOV.2012 20:03:47

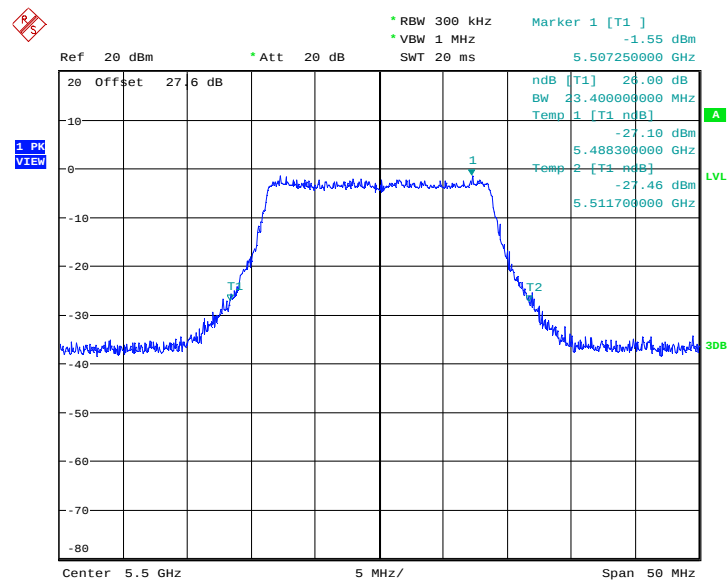


26 dB Bandwidth Plot on 802.11n HT20 Channel 64



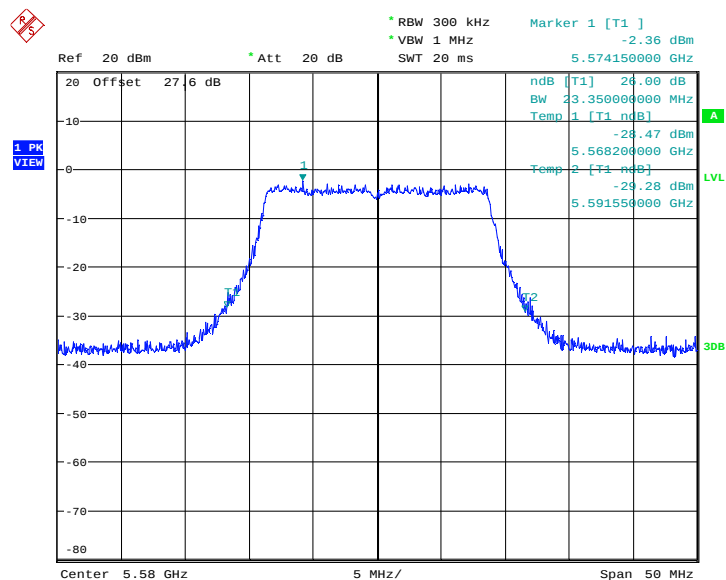
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26 dB Bandwidth Plot on 802.11n HT20 Channel 100



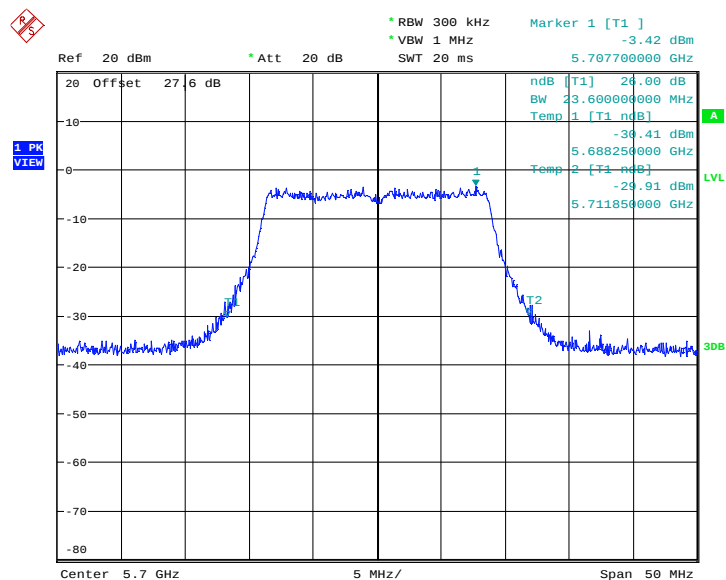
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26 dB Bandwidth Plot on 802.11n HT20 Channel 116



Date: 22.NOV.2012 20:11:52

26 dB Bandwidth Plot on 802.11n HT20 Channel 140

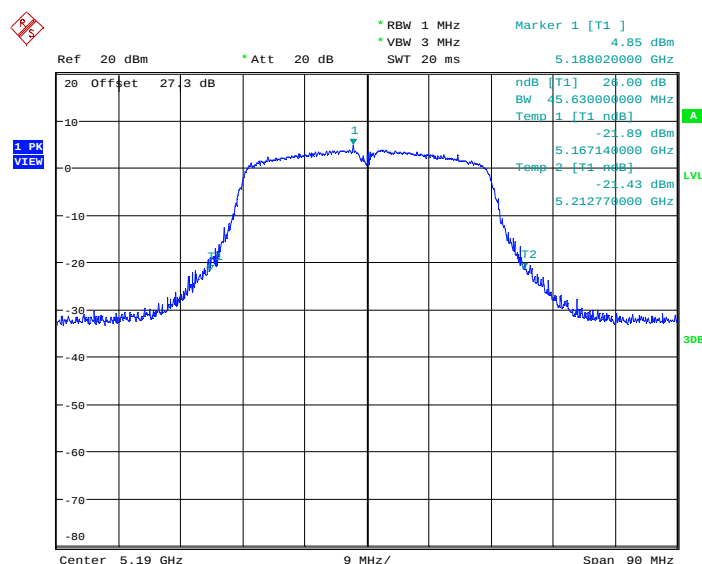


Date: 22.NOV.2012 20:14:41

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT40 26dB Bandwidth (MHz)	Pass/Fail
38	5190	45.630	N/A
46	5230	46.080	N/A
54	5270	46.980	N/A
62	5310	46.350	N/A
102	5510	46.350	N/A
110	5550	46.440	N/A
134	5670	47.070	N/A

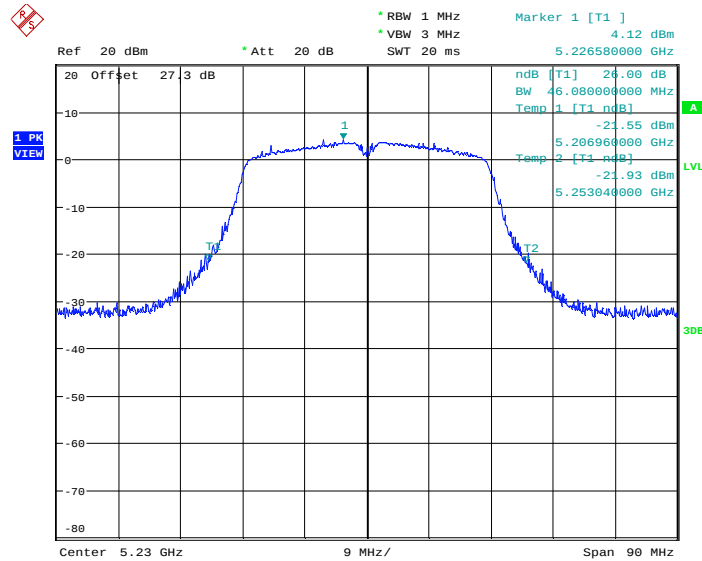
26 dB Bandwidth Plot on 802.11n HT40 Channel 38



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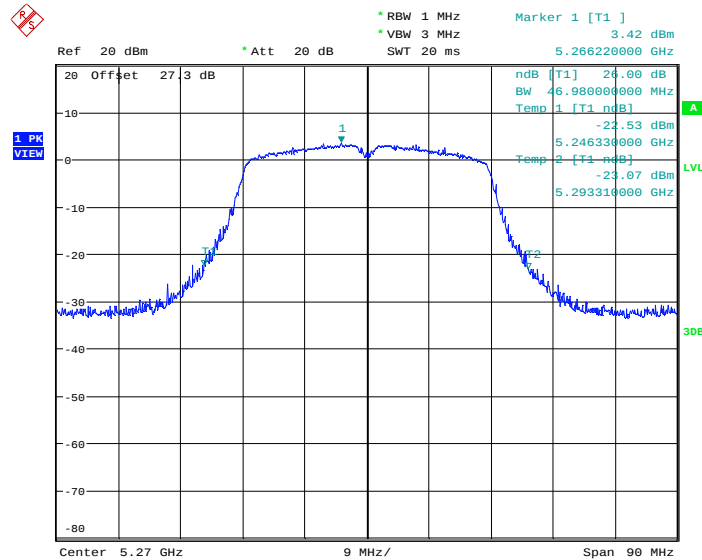


26 dB Bandwidth Plot on 802.11n HT40 Channel 46



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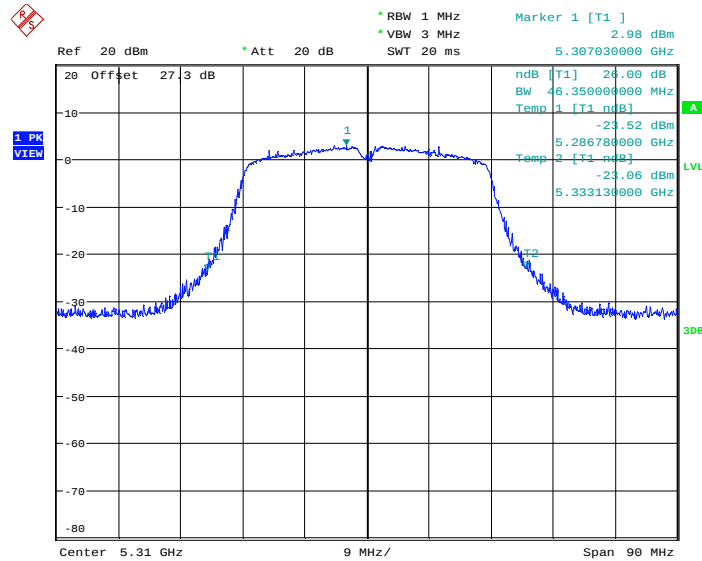
26 dB Bandwidth Plot on 802.11n HT40 Channel 54



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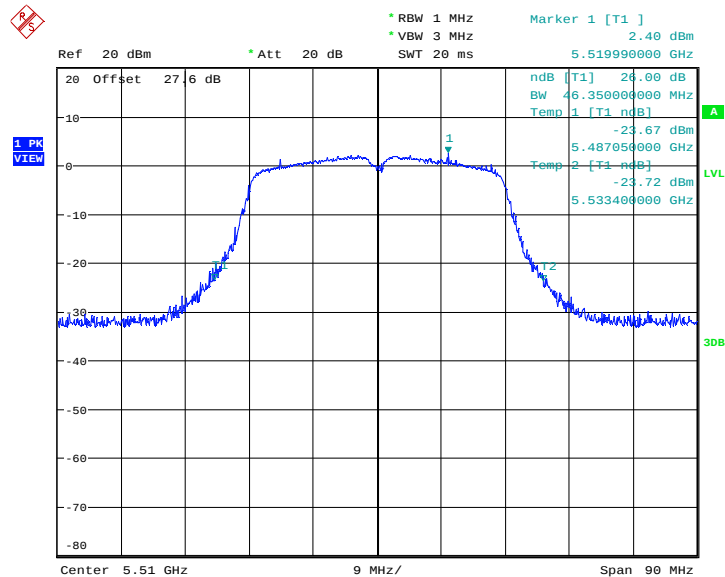


26 dB Bandwidth Plot on 802.11n HT40 Channel 62



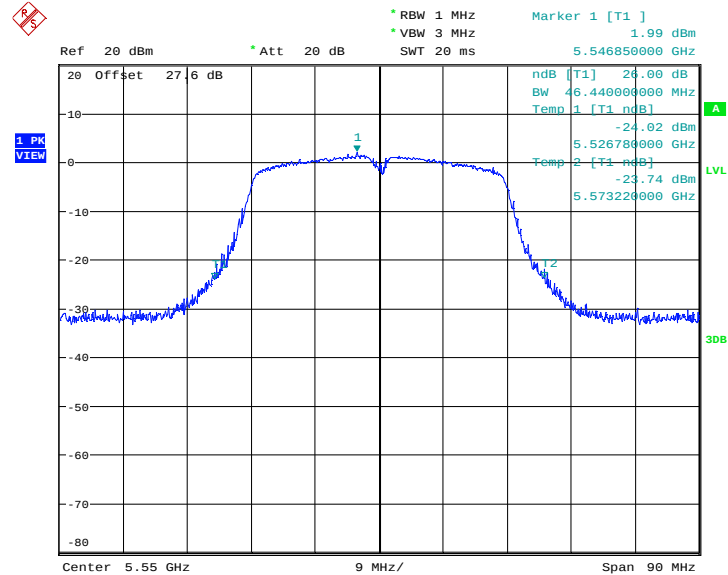
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26 dB Bandwidth Plot on 802.11n HT40 Channel 102



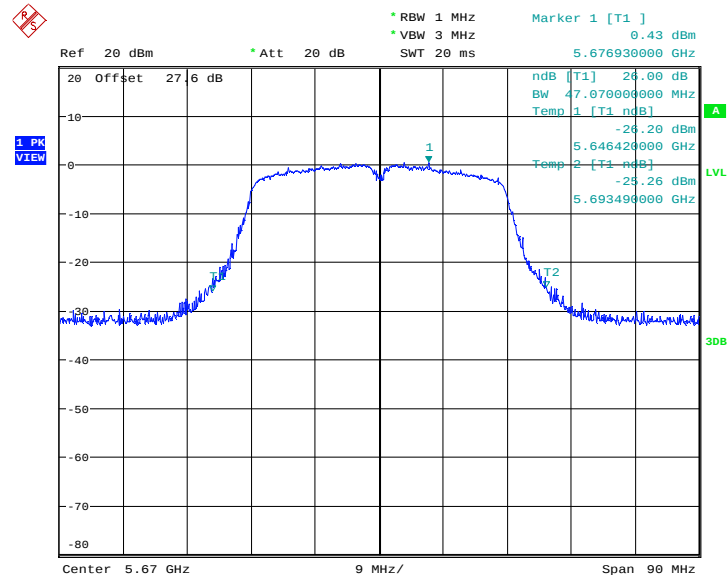
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26 dB Bandwidth Plot on 802.11n HT40 Channel 110



Date: 22.NOV.2012 20:22:01

26 dB Bandwidth Plot on 802.11n HT40 Channel 134

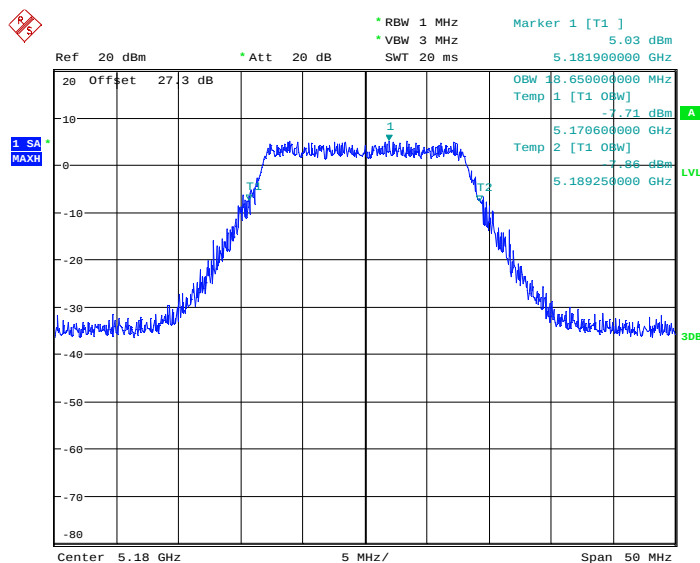


Date: 22.NOV.2012 20:27:10

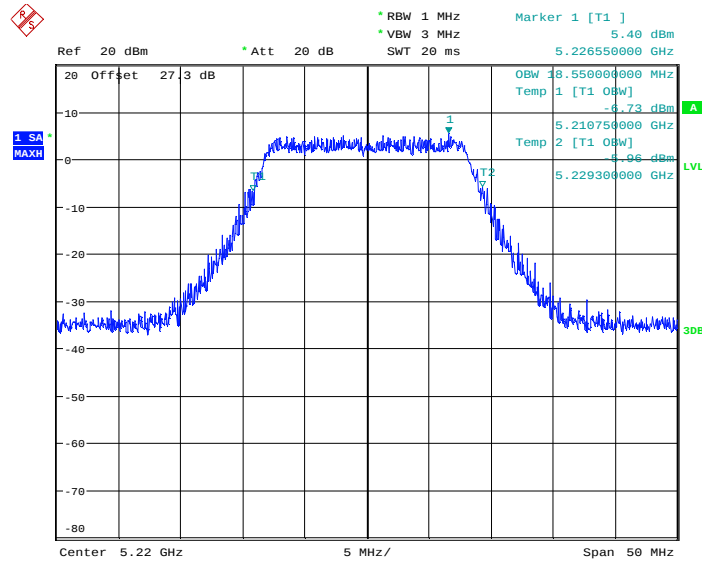
3.1.6 Test Result of 99% Occupied Bandwidth Plots

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%

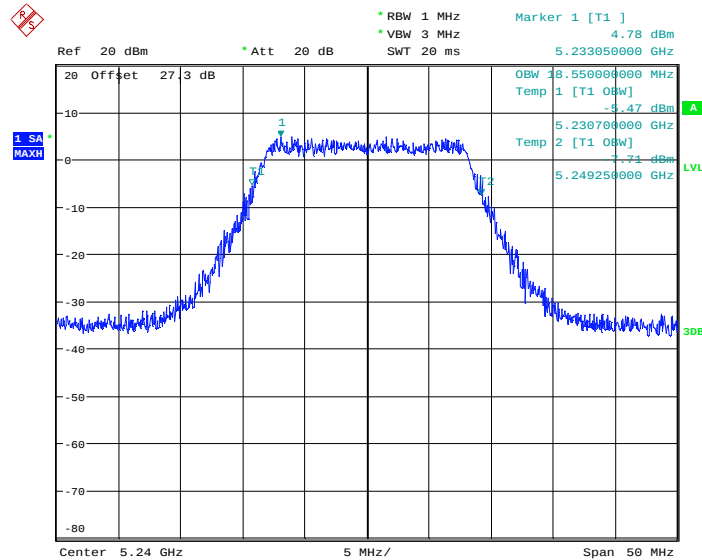
Channel	Frequency (MHz)	802.11a 99% Occupied Bandwidth (MHz)	Pass/Fail
36	5180	18.650	N/A
44	5220	18.550	N/A
48	5240	18.550	N/A
52	5260	18.500	N/A
60	5300	18.550	N/A
64	5320	18.650	N/A
100	5500	18.500	N/A
116	5580	18.550	N/A
140	5700	18.700	N/A

99% Occupied Bandwidth Plot on 802.11a Channel 36


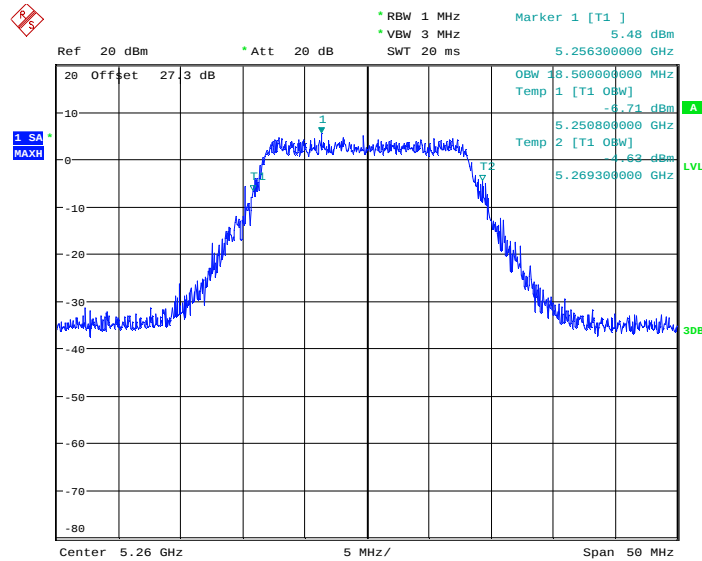
Date: 22.NOV.2012 19:10:37

99% Occupied Bandwidth Plot on 802.11a Channel 44


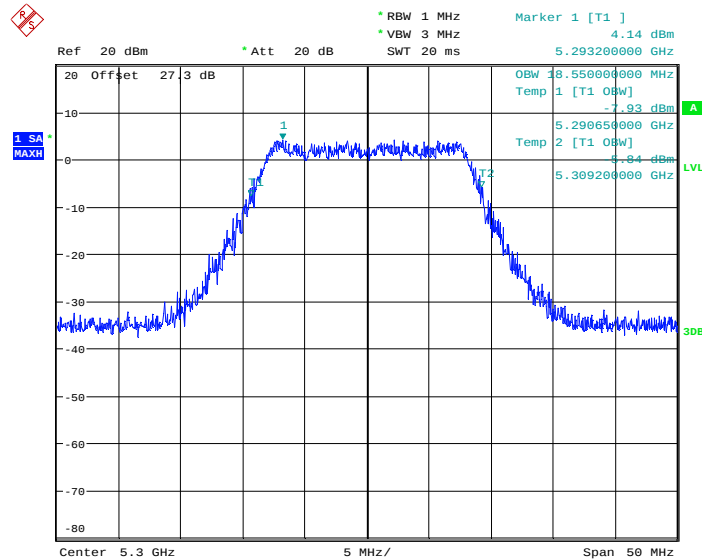
Date: 22.NOV.2012 19:15:01

99% Occupied Bandwidth Plot on 802.11a Channel 48


Date: 22.NOV.2012 19:19:54

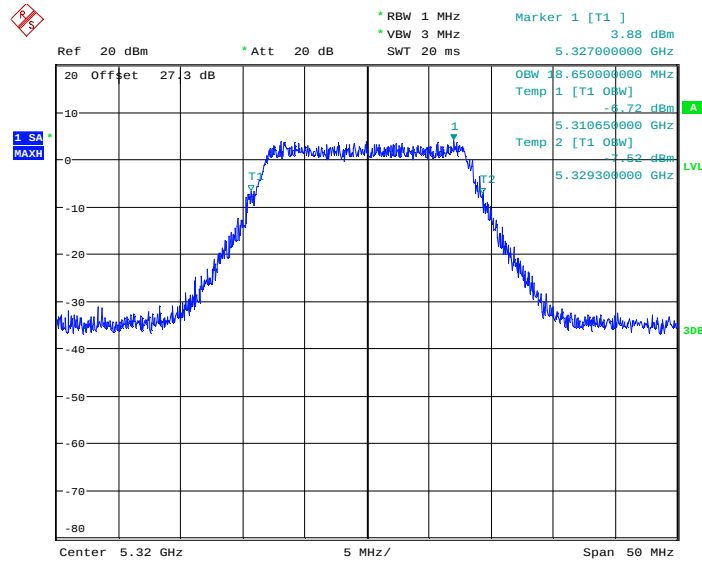
99% Occupied Bandwidth Plot on 802.11a Channel 52


Date: 22.NOV.2012 19:26:06

99% Occupied Bandwidth Plot on 802.11a Channel 60


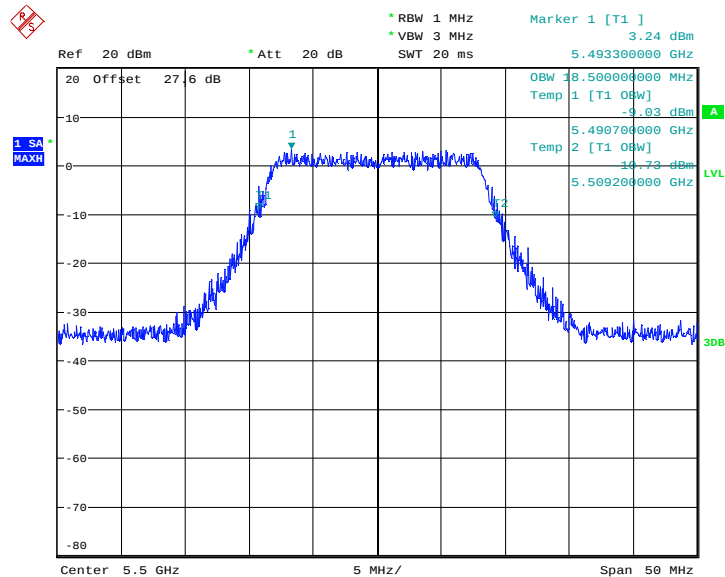
Date: 22.NOV.2012 19:30:55

99% Occupied Bandwidth Plot on 802.11a Channel 64



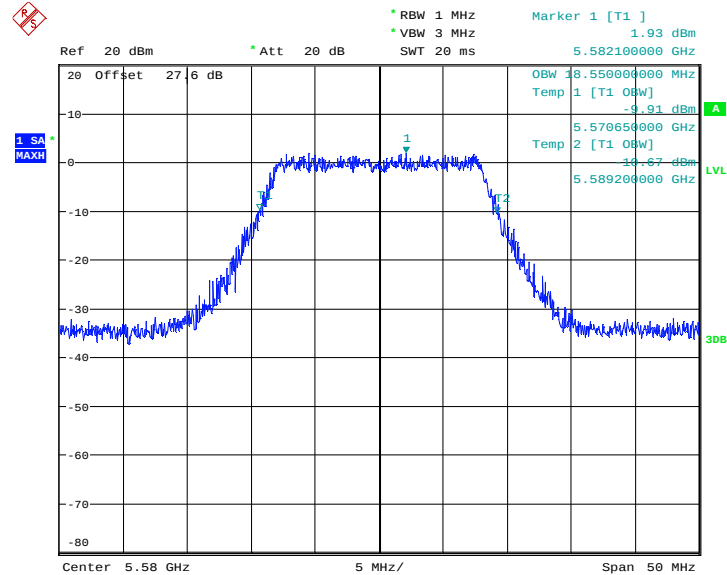
Date: 22.NOV.2012 19:34:08

99% Occupied Bandwidth Plot on 802.11a Channel 100



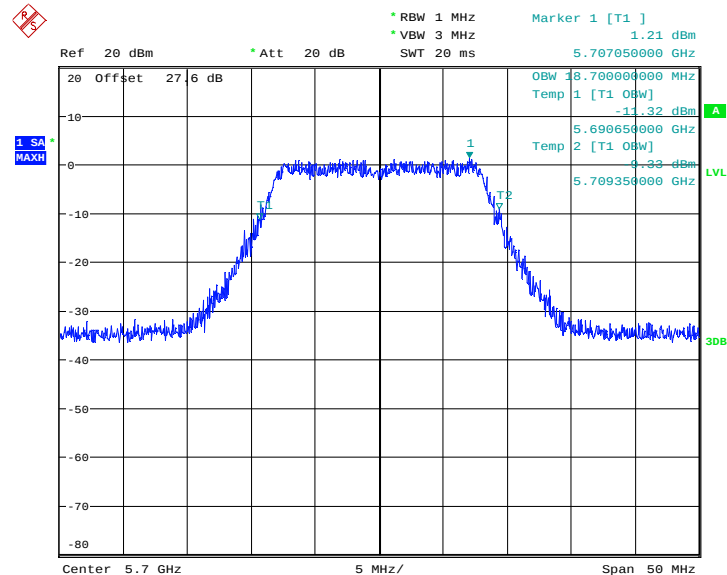
Date: 22.NOV.2012 19:37:25

99% Occupied Bandwidth Plot on 802.11a Channel 116



Date: 22.NOV.2012 19:41:32

99% Occupied Bandwidth Plot on 802.11a Channel 140



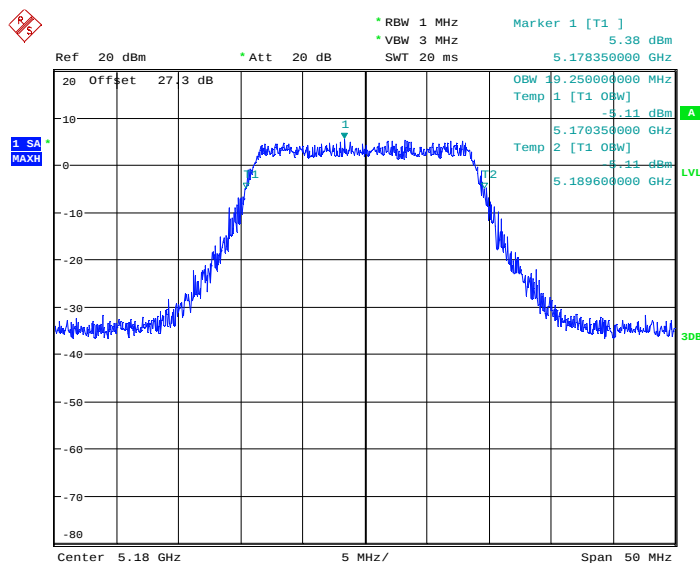
Date: 22.NOV.2012 19:46:00



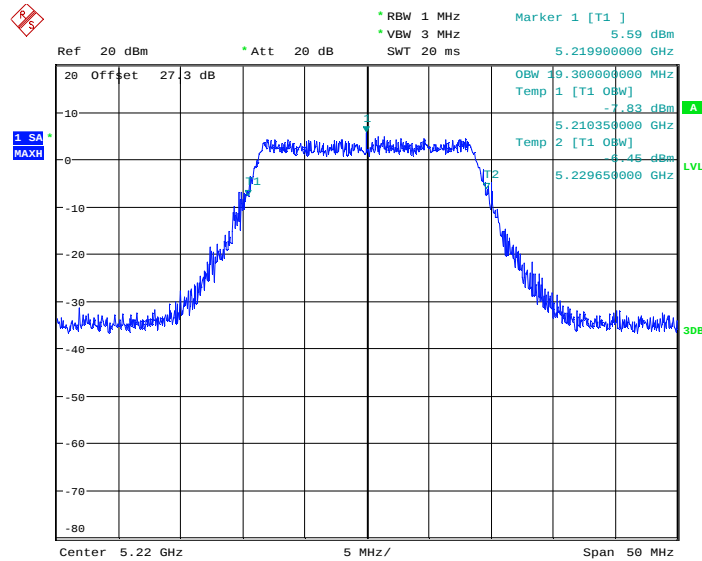
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT20 99% Occupied Bandwidth (MHz)	Pass/Fail
36	5180	19.250	N/A
44	5220	19.300	N/A
48	5240	19.350	N/A
52	5260	19.350	N/A
60	5300	19.250	N/A
64	5320	19.300	N/A
100	5500	19.300	N/A
116	5580	19.350	N/A
140	5700	19.350	N/A

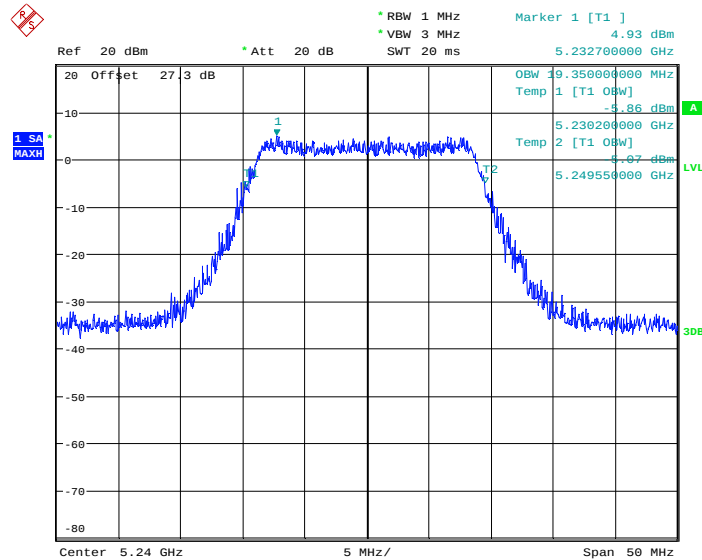
99% Occupied Bandwidth Plot on 802.11n HT20 Channel 36



Date: 22. NOV. 2012 19:52:08

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 44


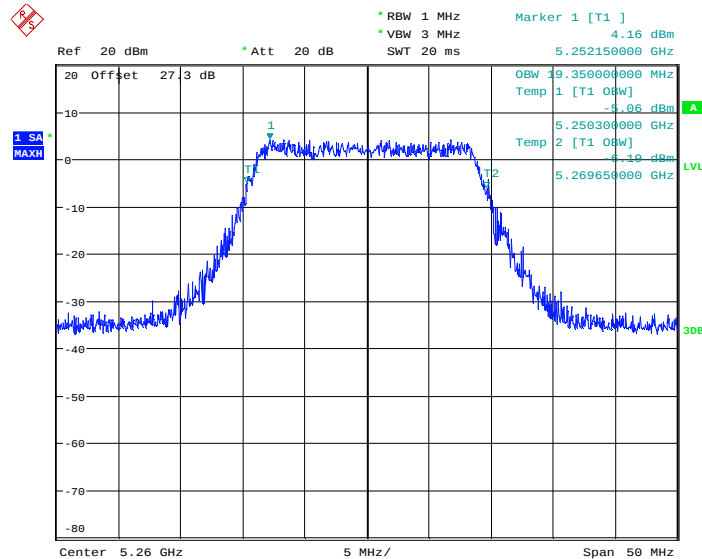
Date: 22.NOV.2012 19:54:13

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 48


Date: 22.NOV.2012 19:58:03

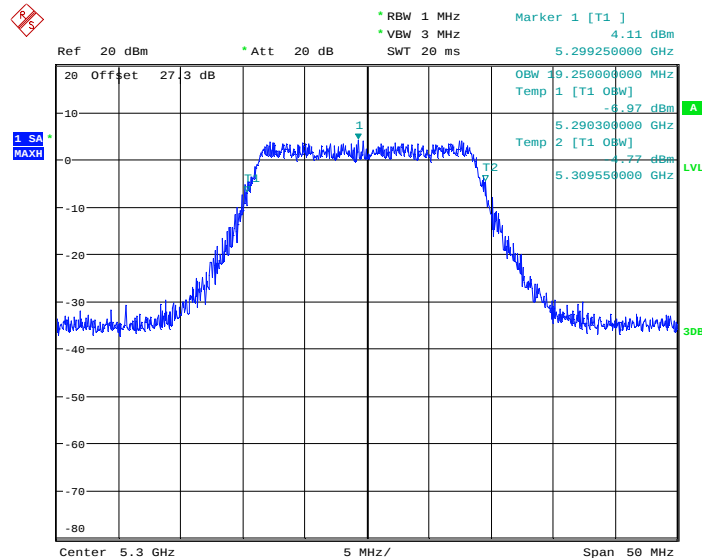


99% Occupied Bandwidth Plot on 802.11n HT20 Channel 52



Date: 22.NOV.2012 20:03:20

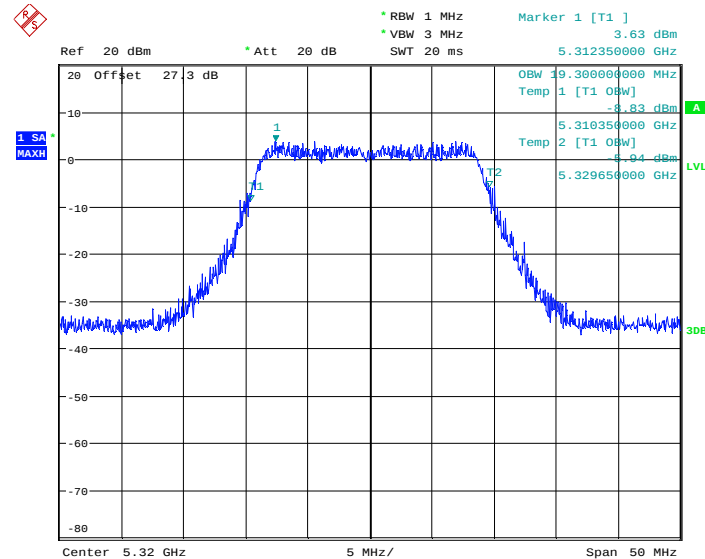
99% Occupied Bandwidth Plot on 802.11n HT20 Channel 60



Date: 22.NOV.2012 20:06:16

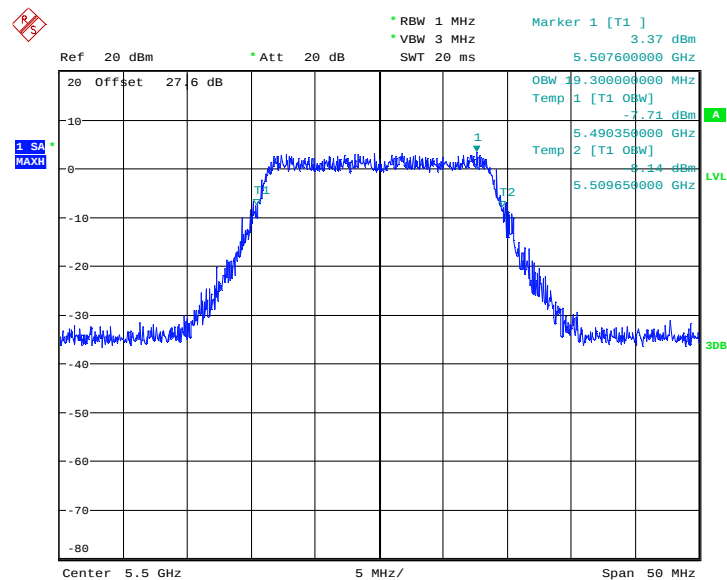


99% Occupied Bandwidth Plot on 802.11n HT20 Channel 64



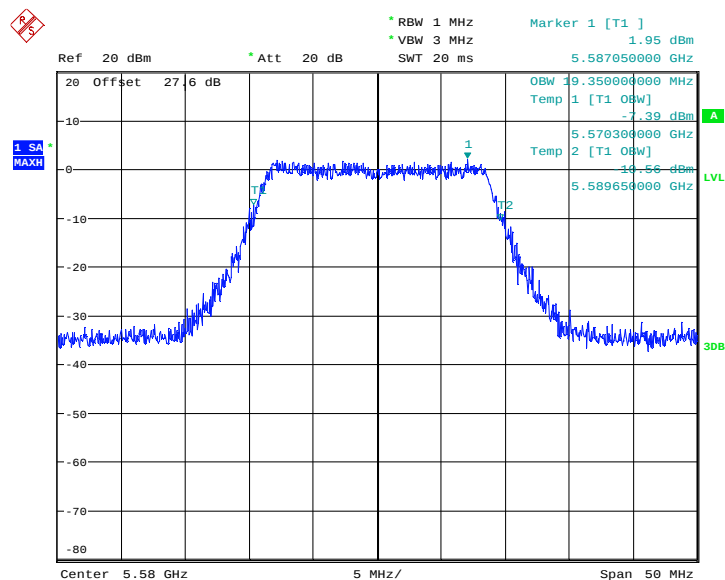
Date: 22.NOV.2012 20:09:01

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 100



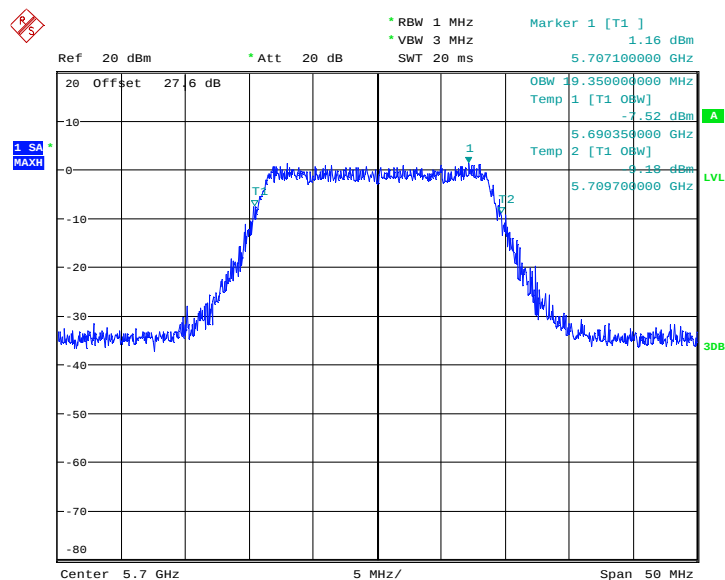
Date: 22.NOV.2012 20:11:23

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 116



Date: 22.NOV.2012 20:14:09

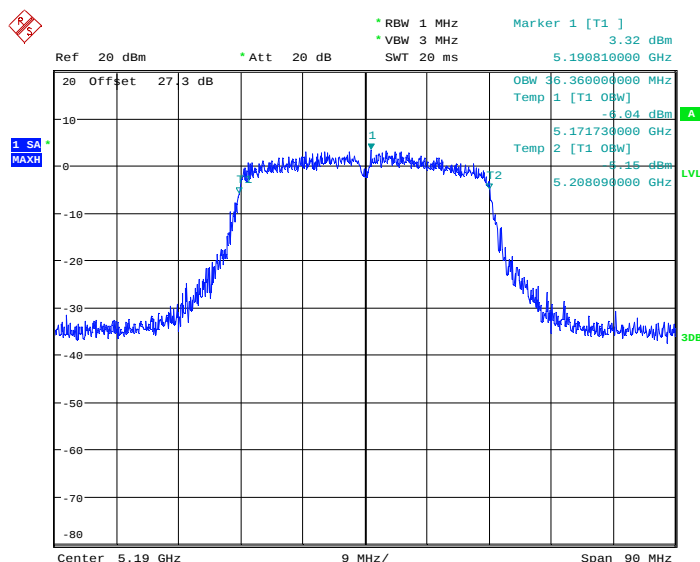
99% Occupied Bandwidth Plot on 802.11n HT20 Channel 140



Date: 22.NOV.2012 20:17:20

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

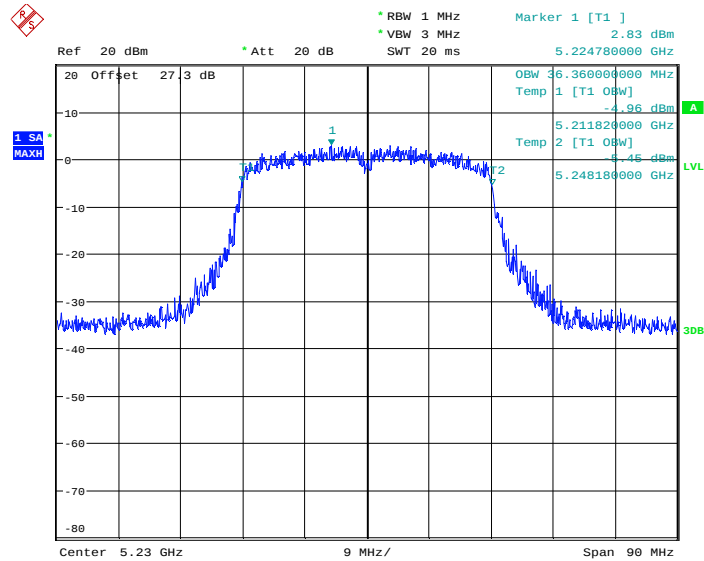
Channel	Frequency (MHz)	802.11n HT40 99% Occupied Bandwidth (MHz)	Pass/Fail
38	5190	36.360	N/A
46	5230	36.360	N/A
54	5270	36.540	N/A
62	5310	36.540	N/A
102	5510	36.450	N/A
110	5550	36.450	N/A
134	5670	36.540	N/A

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 38


Date: 22.NOV.2012 20:41:12

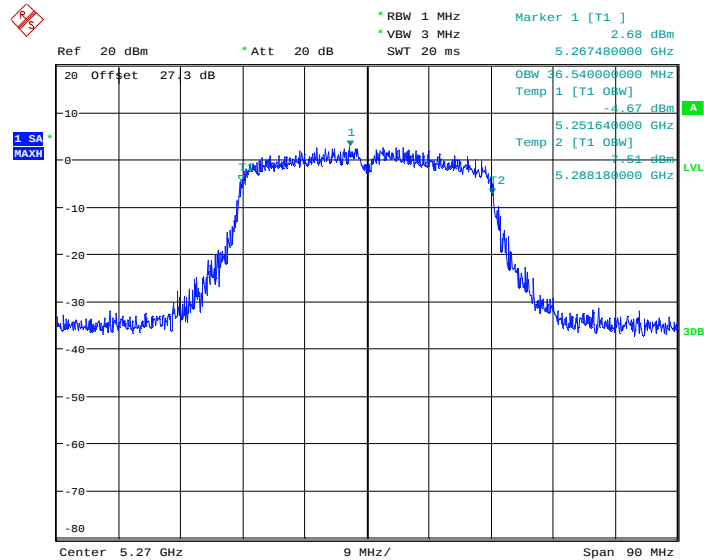


99% Occupied Bandwidth Plot on 802.11n HT40 Channel 46



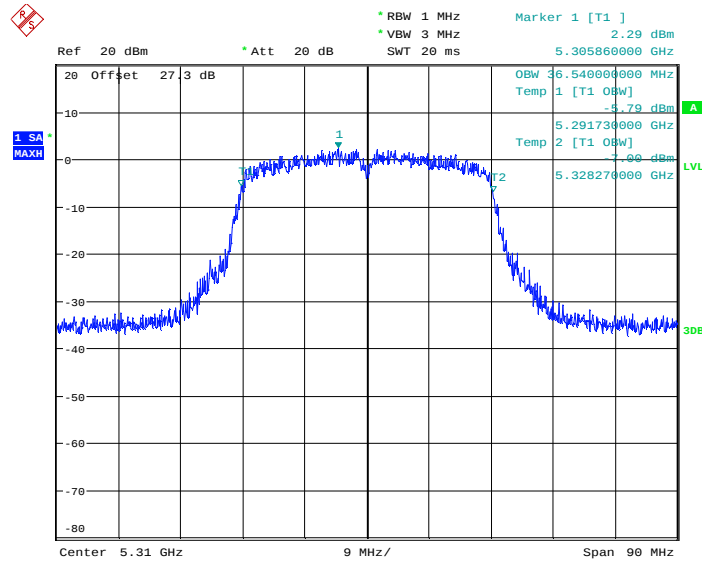
Date: 22.NOV.2012 20:49:51

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 54



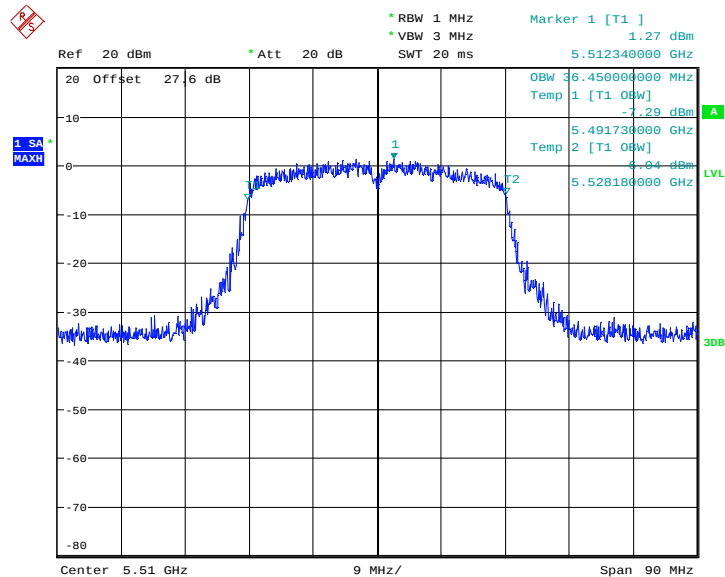
Date: 22.NOV.2012 20:52:59

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 62



Date: 22.NOV.2012 20:55:43

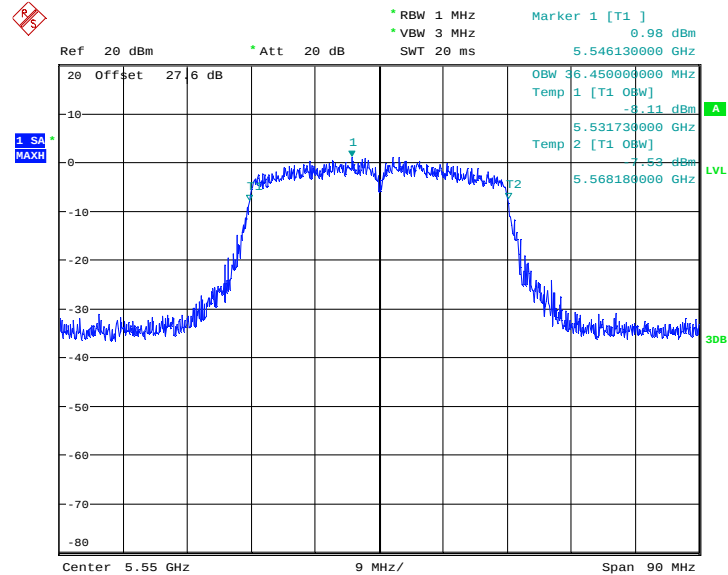
99% Occupied Bandwidth Plot on 802.11n HT40 Channel 102



Date: 22.NOV.2012 20:21:32

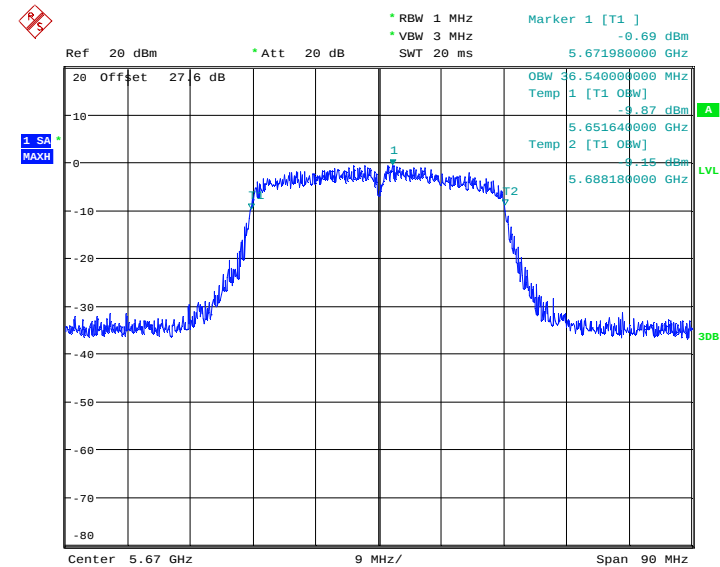


99% Occupied Bandwidth Plot on 802.11n HT40 Channel 110



Date: 22.NOV.2012 20:25:37

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 134



Date: 22.NOV.2012 20:38:27

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or $4 \text{ dBm} + 10\log B$, where B is the 26 dB emissions bandwidth in 1-MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or $11 \text{ dBm} + 10\log B$, where B is the 26 dB emissions bandwidth in 1-MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

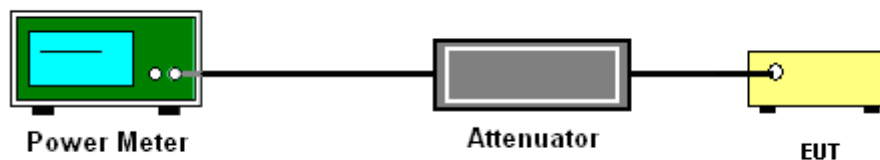
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D01 General UNII Test Procedures v01r02.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle :	99.31%	Duty Factor :	0.03dB

Channel	Frequency (MHz)	802.11a Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	10.41	10.44	17	Pass
44	5220	9.81	9.84	17	Pass
48	5240	9.63	9.66	17	Pass
52	5260	9.71	9.74	24	Pass
60	5300	9.27	9.30	24	Pass
64	5320	9.20	9.23	24	Pass
100	5500	9.47	9.50	24	Pass
116	5580	9.02	9.05	24	Pass
140	5700	8.13	8.16	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
3. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle :	99.11%	Duty Factor :	0.04dB

Channel	Frequency (MHz)	802.11n HT20 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	10.10	10.14	17	Pass
44	5220	9.73	9.77	17	Pass
48	5240	9.59	9.63	17	Pass
52	5260	9.83	9.87	24	Pass
60	5300	9.33	9.37	24	Pass
64	5320	9.32	9.36	24	Pass
100	5500	9.55	9.59	24	Pass
116	5580	8.93	8.97	24	Pass
140	5700	8.26	8.30	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
3. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW)

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle	98.57%	Duty Factor	0.06dB

Channel	Frequency (MHz)	802.11n HT40 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
38	5190	10.37	10.43	17	Pass
46	5230	10.22	10.28	17	Pass
54	5270	10.18	10.24	24	Pass
62	5310	9.73	9.79	24	Pass
102	5510	10.17	10.23	24	Pass
110	5550	9.96	10.02	24	Pass
134	5670	9.05	9.11	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
3. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW)

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.15–5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r02.

Section E) Peak power spectral density (PPSD).

Note: Though the rule refers to “peak power spectral density”, the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

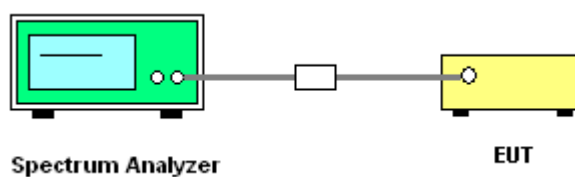
Method SA-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. The testing follows Method SA-2 of FCC KDB 789033 D01 General UNII Test Procedures v01r02.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW $\geq$ 3 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Sweep time = auto.
 - Detector = sample
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.

2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



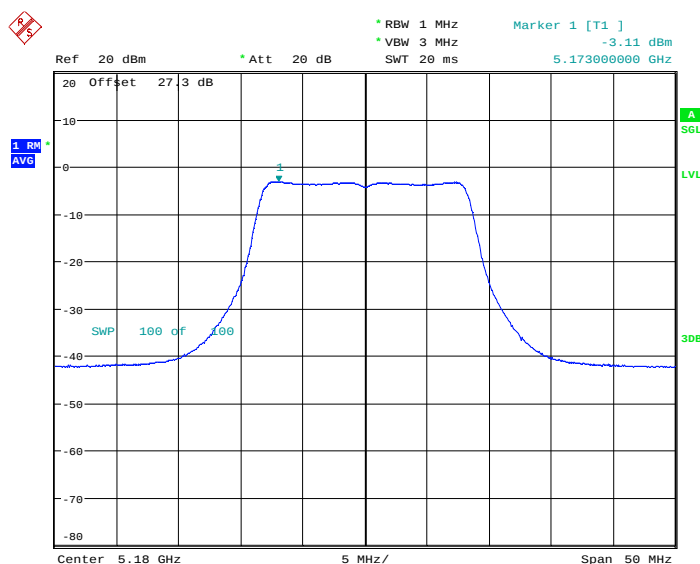
3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle:	99.31%	Duty Factor:	0.03dB

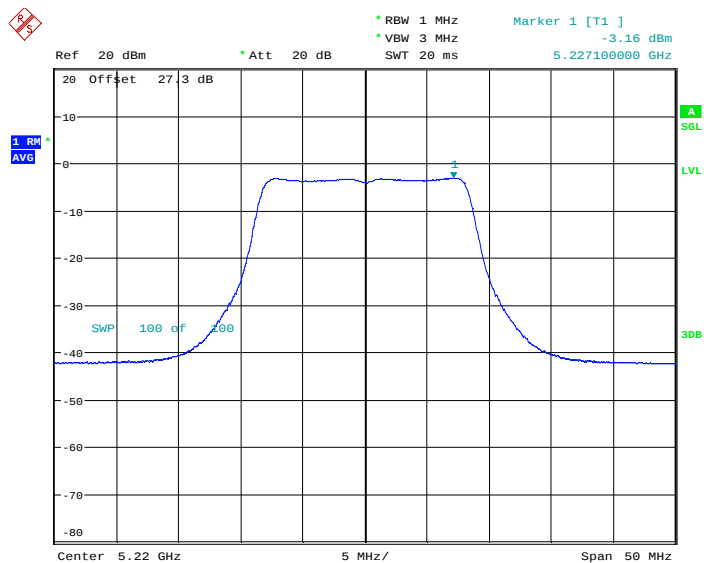
Channel	Frequency (MHz)	802.11a PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	-3.110	-3.080	4	Pass
44	5220	-3.160	-3.130	4	Pass
48	5240	-3.330	-3.300	4	Pass
52	5260	-3.530	-3.500	11	Pass
60	5300	-4.140	-4.110	11	Pass
64	5320	-4.410	-4.380	11	Pass
100	5500	-4.990	-4.960	11	Pass
116	5580	-6.580	-6.550	11	Pass
140	5700	-6.810	-6.780	11	Pass

Note: Result of Final PSD equals to Measured PSD adds the duty factor.

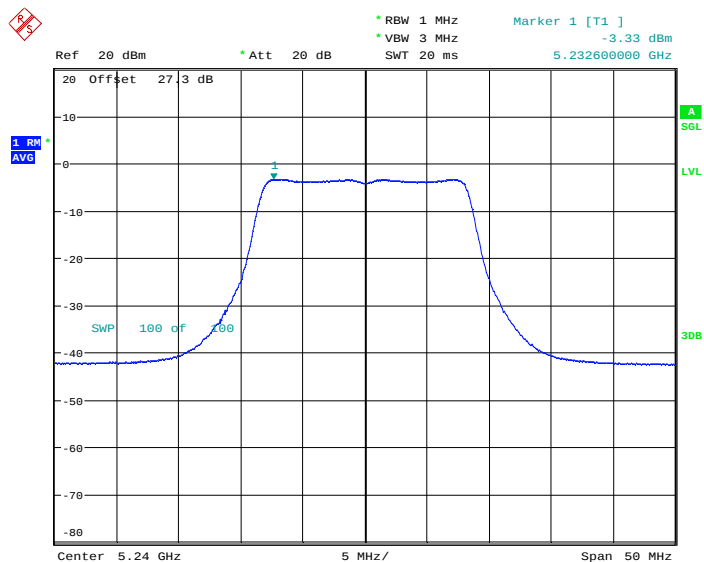
PSD Plot on 802.11a Channel 36



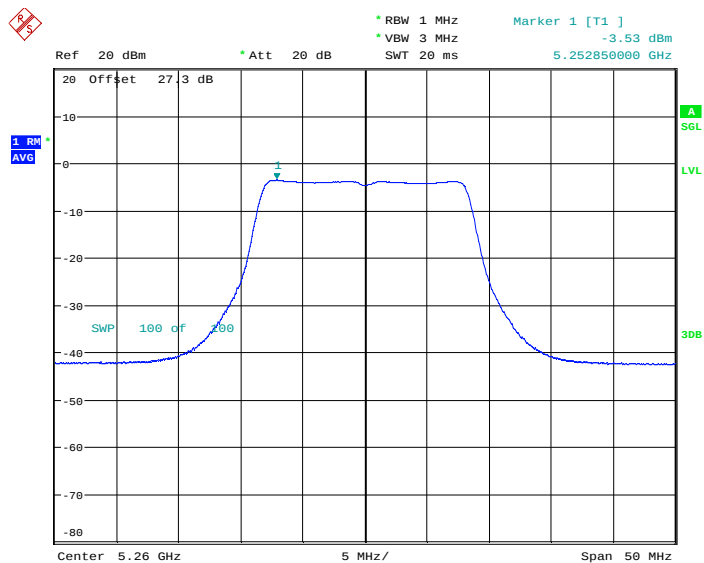
Date: 22.NOV.2012 18:57:25

PSD Plot on 802.11a Channel 44


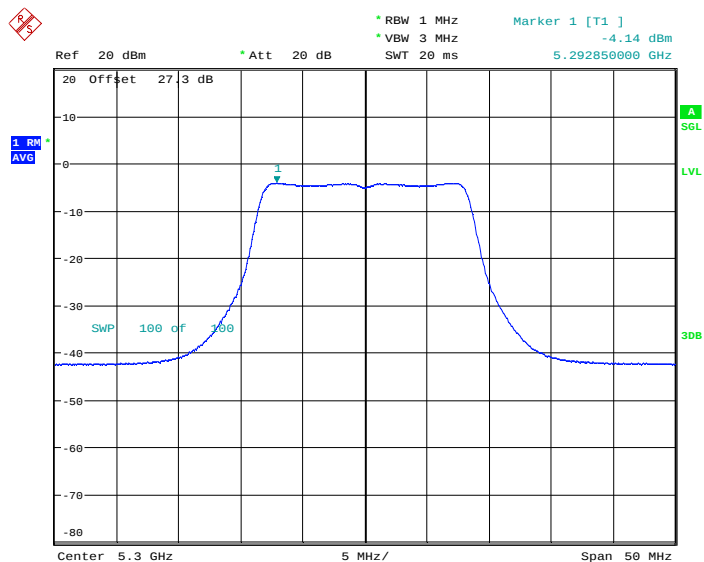
Date: 22.NOV.2012 19:12:06

PSD Plot on 802.11a Channel 48


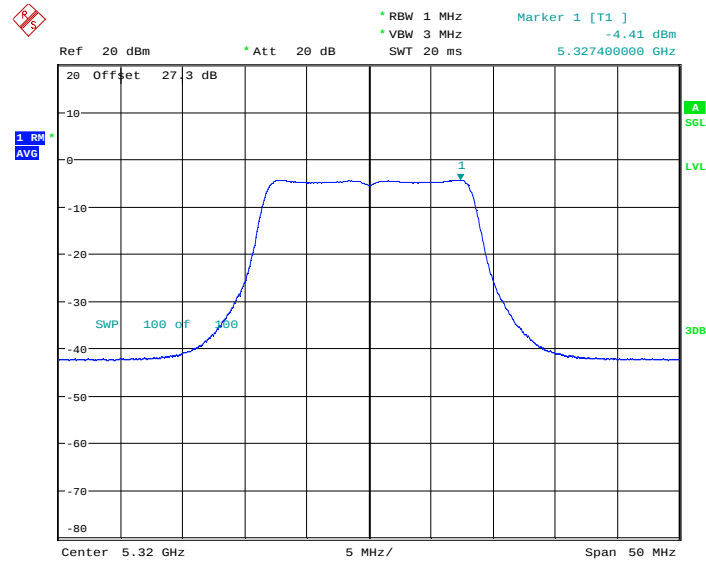
Date: 22.NOV.2012 19:18:07

PSD Plot on 802.11a Channel 52


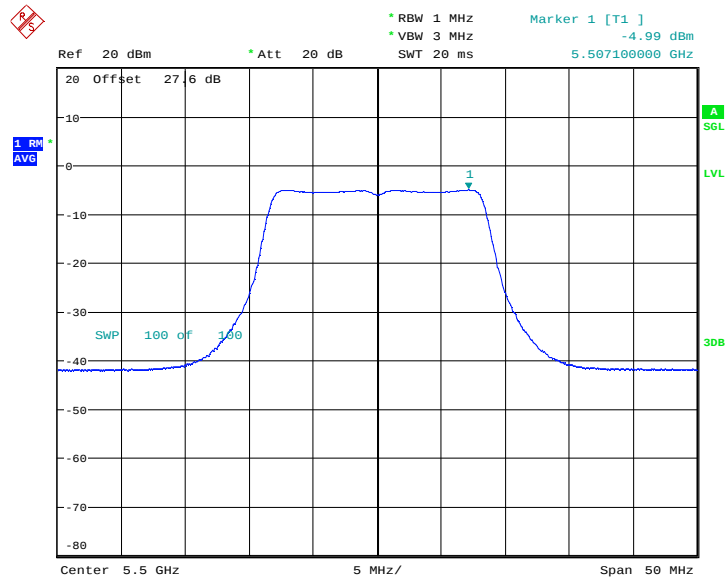
Date: 22.NOV.2012 19:23:53

PSD Plot on 802.11a Channel 60


Date: 22.NOV.2012 19:27:46

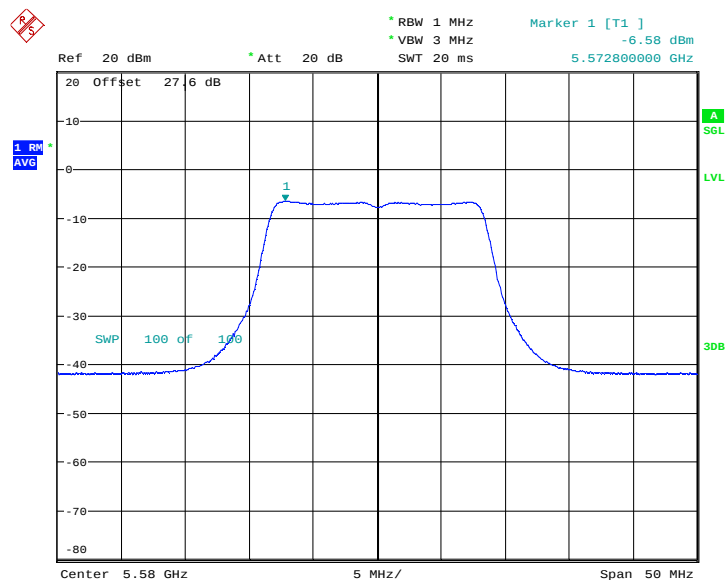
PSD Plot on 802.11a Channel 64


Date: 22.NOV.2012 19:32:20

PSD Plot on 802.11a Channel 100


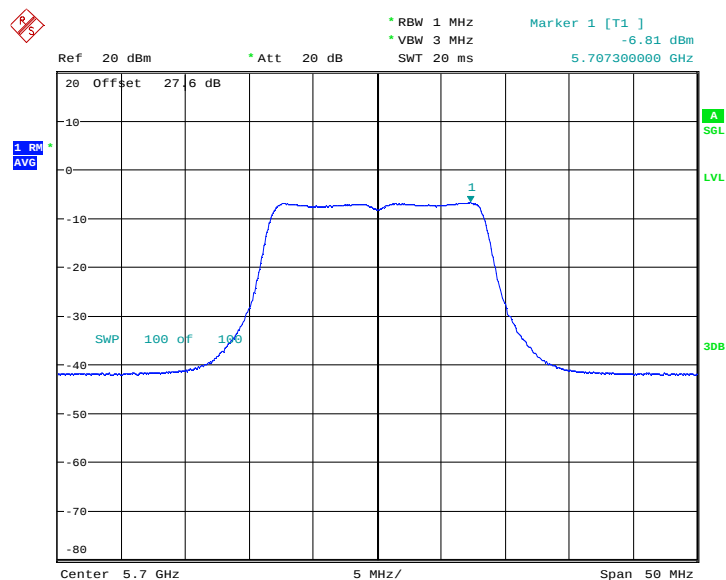
Date: 22.NOV.2012 19:35:31

PSD Plot on 802.11a Channel 116



Date: 22.NOV.2012 19:38:47

PSD Plot on 802.11a Channel 140



Date: 22.NOV.2012 19:43:09

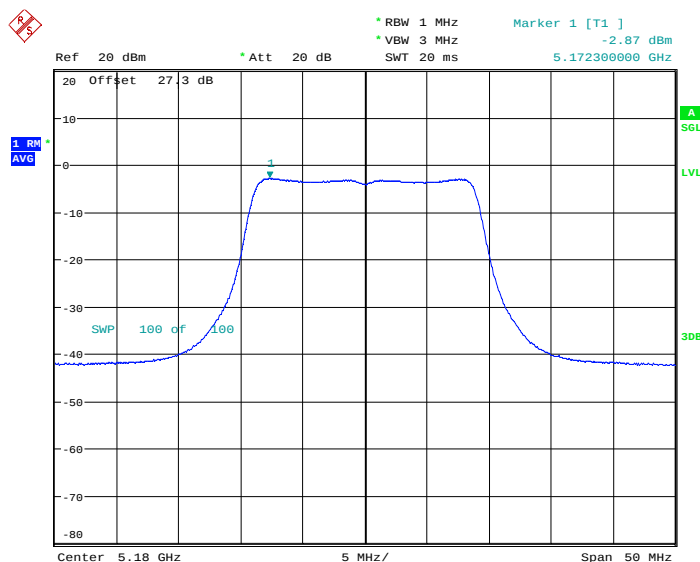


Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle:	99.11%	Duty Factor:	0.04dB

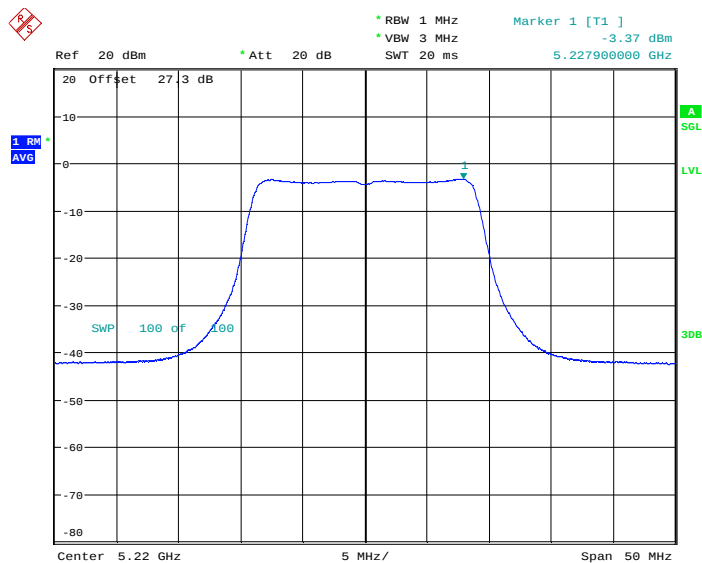
Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	-2.870	-2.831	4	Pass
44	5220	-3.370	-3.331	4	Pass
48	5240	-3.440	-3.401	4	Pass
52	5260	-3.660	-3.621	11	Pass
60	5300	-4.290	-4.251	11	Pass
64	5320	-4.470	-4.431	11	Pass
100	5500	-5.050	-5.011	11	Pass
116	5580	-6.080	-6.041	11	Pass
140	5700	-6.900	-6.861	11	Pass

Note: Result of Final PSD equals to Measured PSD adds the duty factor.

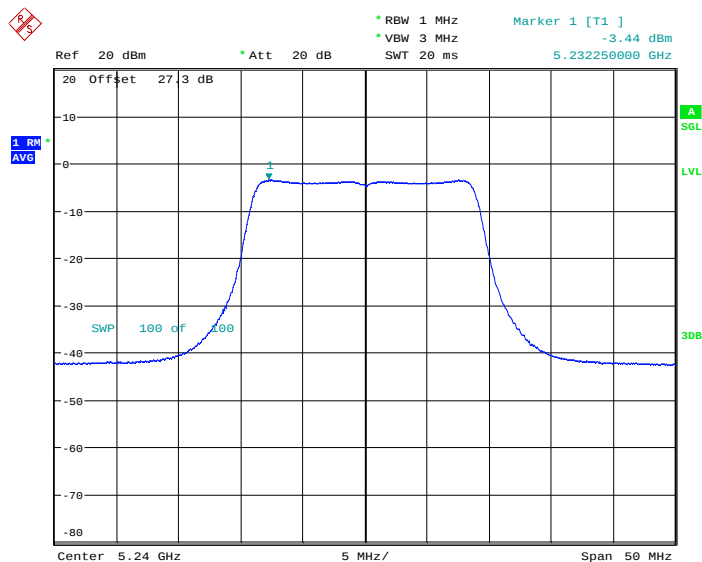
PSD Plot on 802.11n HT20 channel 36



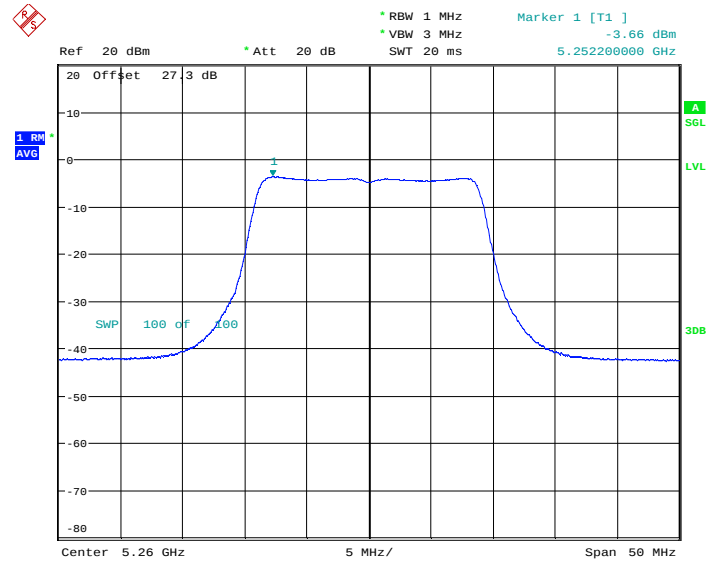
Date: 22.NOV.2012 19:50:25

PSD Plot on 802.11n HT20 Channel 44


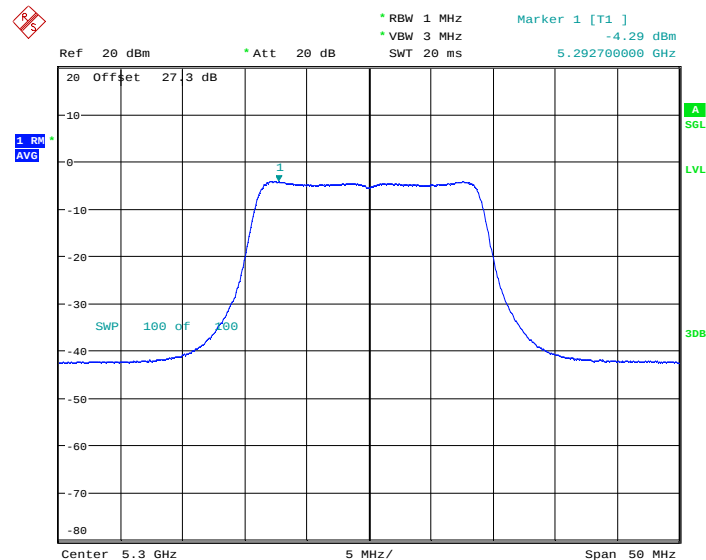
Date: 22.NOV.2012 19:53:40

PSD Plot on 802.11n HT20 Channel 48


Date: 22.NOV.2012 19:56:02

PSD Plot on 802.11n HT20 Channel 52


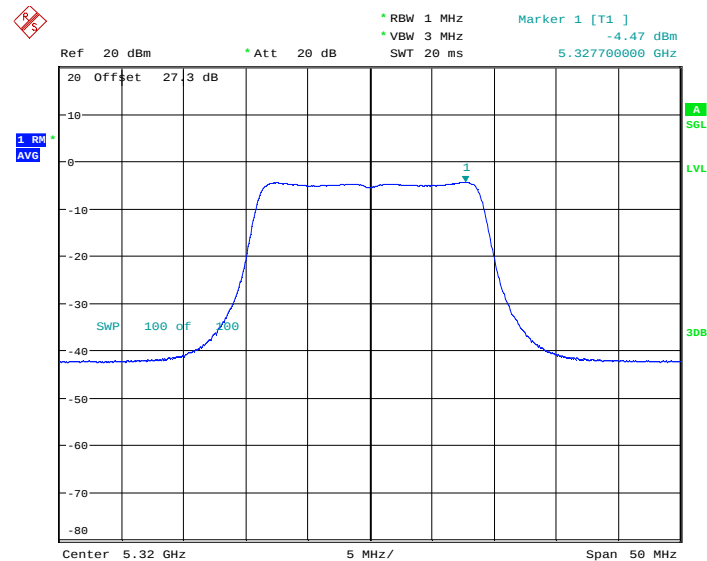
Date: 22.NOV.2012 20:01:34

PSD Plot on 802.11n HT20 Channel 60


Date: 22.NOV.2012 20:04:36

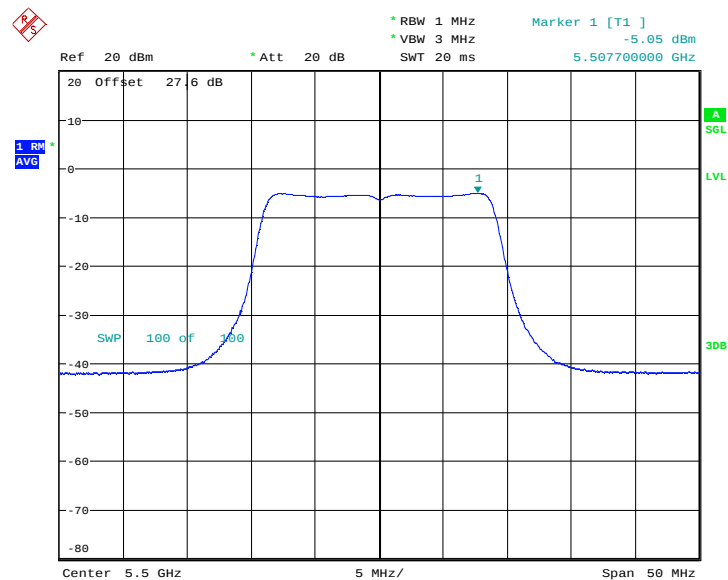


PSD Plot on 802.11n HT20 Channel 64

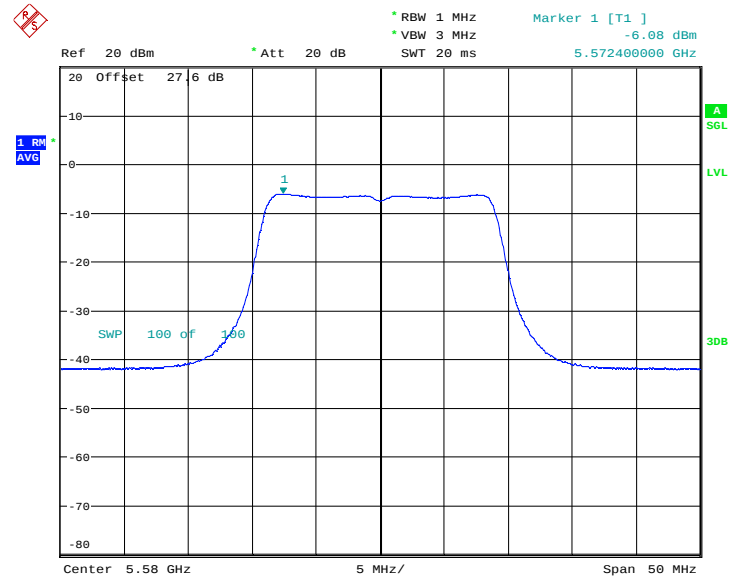


Date: 22.NOV.2012 20:06:58

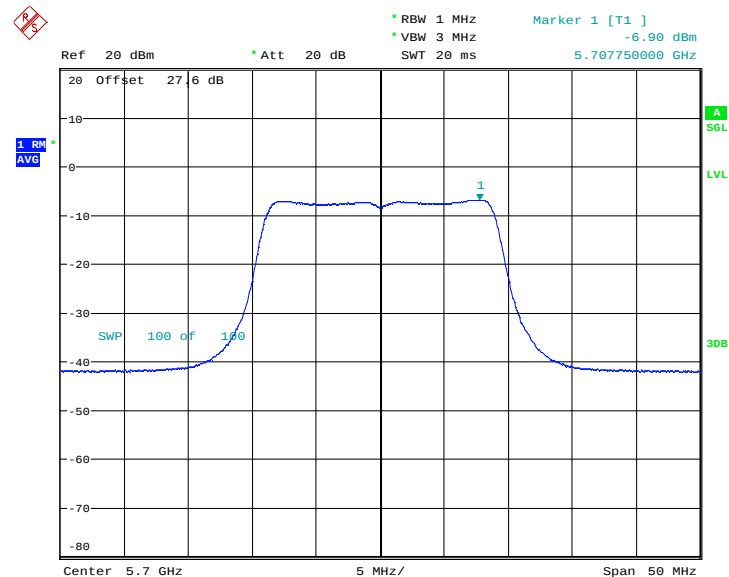
PSD Plot on 802.11n HT20 Channel 100



Date: 22.NOV.2012 20:09:56

PSD Plot on 802.11n HT20 Channel 116


Date: 22.NOV.2012 20:12:08

PSD Plot on 802.11n HT20 Channel 140


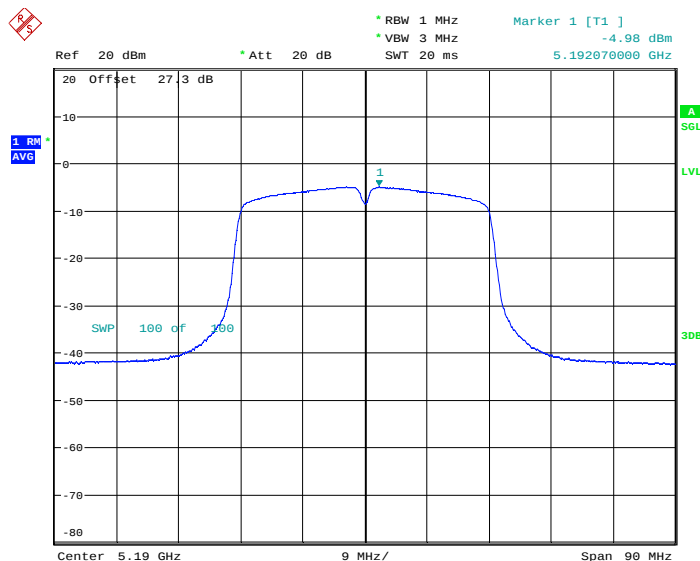
Date: 22.NOV.2012 20:14:57

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle:	98.57%	Duty Factor:	0.06dB

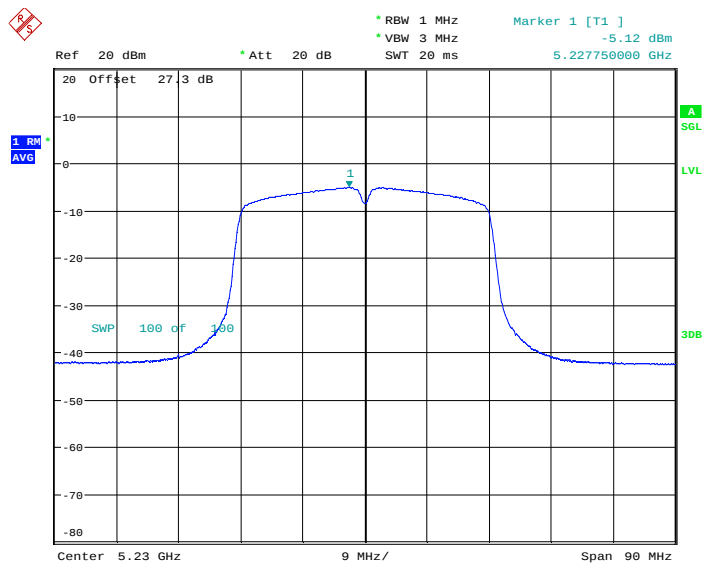
Channel	Frequency (MHz)	802.11n HT40 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
38	5190	-4.980	-4.917	4	Pass
46	5230	-5.120	-5.057	4	Pass
54	5270	-5.710	-5.647	11	Pass
62	5310	-6.140	-6.077	11	Pass
102	5510	-6.850	-6.787	11	Pass
110	5550	-7.400	-7.337	11	Pass
134	5670	-8.750	-8.687	11	Pass

Note: Result of Final PSD equals to Measured PSD adds the duty factor.

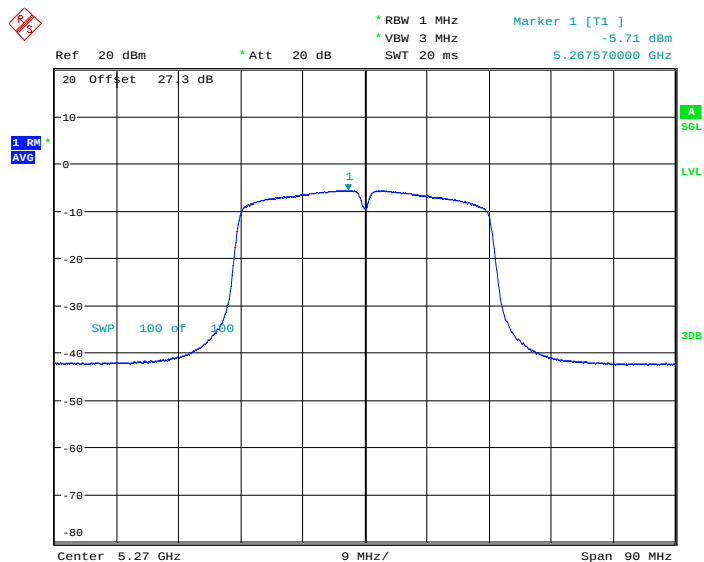
PSD Plot on 802.11n HT40 Channel 38



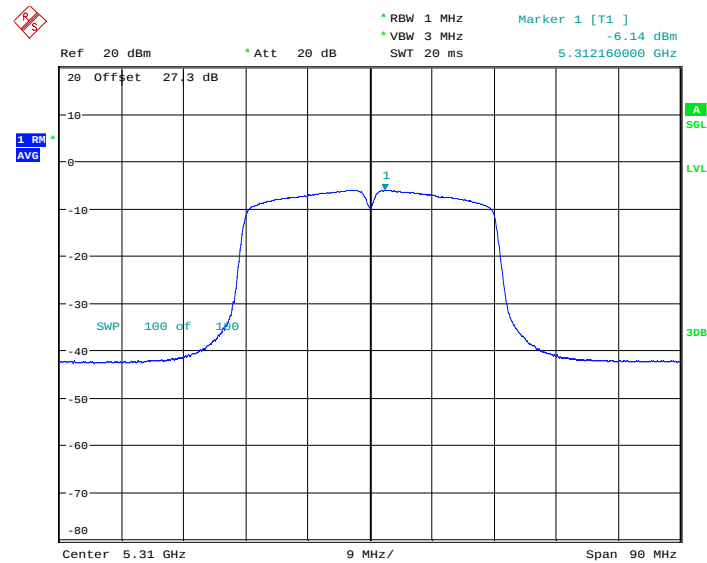
Date: 22.NOV.2012 20:40:00

PSD Plot on 802.11n HT40 Channel 46


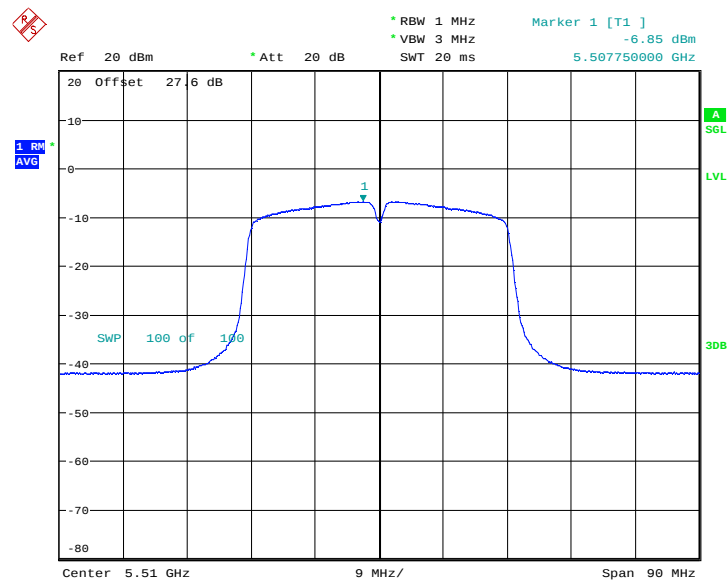
Date: 22.NOV.2012 20:42:41

PSD Plot on 802.11n HT40 Channel 54


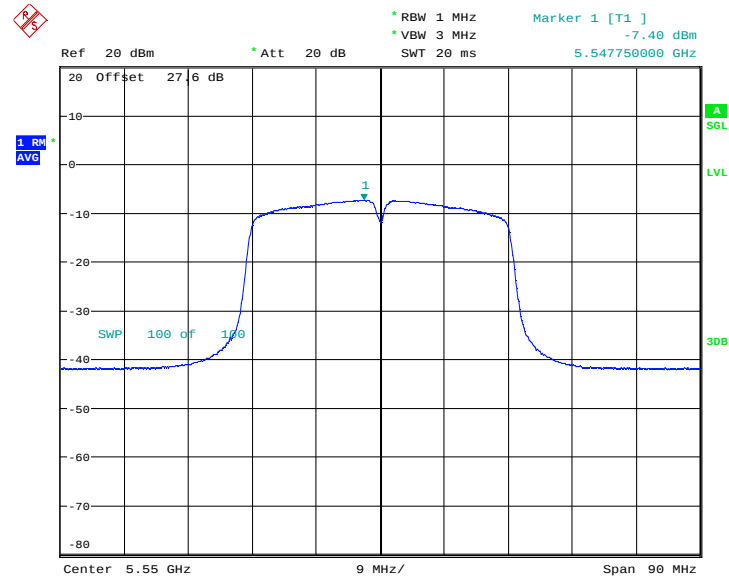
Date: 22.NOV.2012 20:51:01

PSD Plot on 802.11n HT40 Channel 62


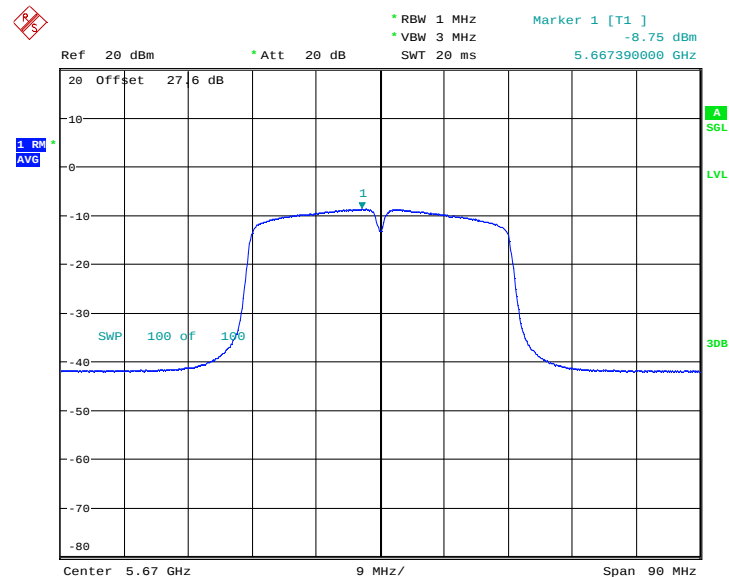
Date: 22.NOV.2012 20:53:39

PSD Plot on 802.11n HT40 Channel 102


Date: 22.NOV.2012 20:19:55

PSD Plot on 802.11n HT40 Channel 110


Date: 22.NOV.2012 20:23:32

PSD Plot on 802.11n HT40 Channel 134


Date: 22.NOV.2012 20:27:27

3.4 Peak Excursion Ratio Measurement

3.4.1 Limit of Peak Excursion Ratio

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

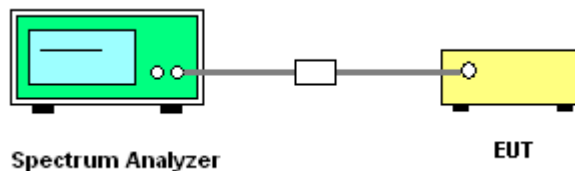
3.4.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r02.

Section F) Peak excursion measurement

1. The transmitter output is connected to the spectrum analyzer.
2. Set the spectrum analyzer span to view the entire emission bandwidth.
3. Find the maximum of the peak-max-hold spectrum.
 - *Set RBW = 1MHz.
 - *Set VBW $\geq$ 3MHz.
 - *Detector = peak.
 - *Trace mode = max-hold.
 - *Allow the sweeps to continue until the trace stabilizes.
 - *Use the peak search function to find the peak of the spectrum.
4. Use the procedure found under section 3.3 to measure the PPSD.
5. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

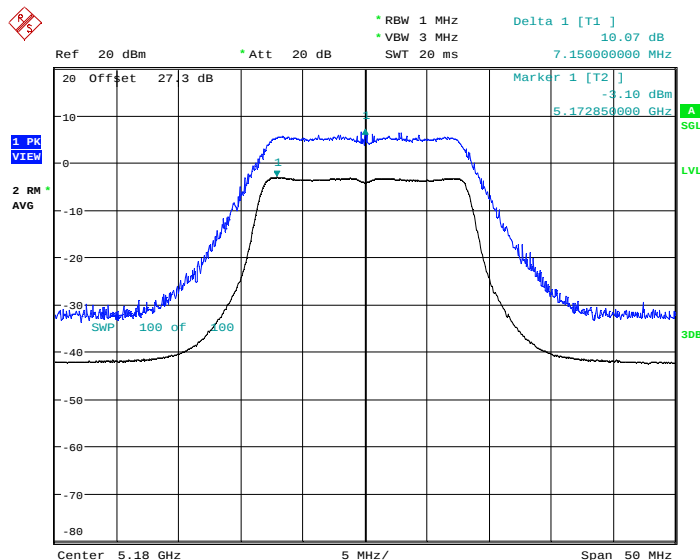
3.4.4 Test Setup



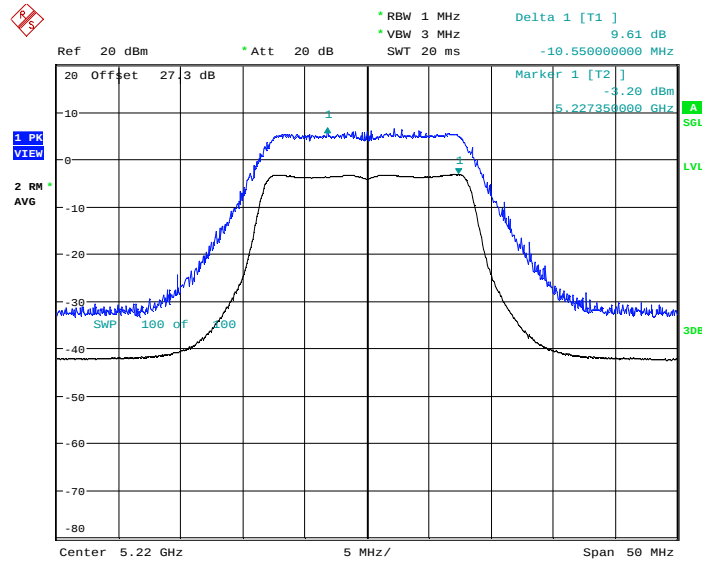
3.4.5 Test Result of Peak Excursion Ratio

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

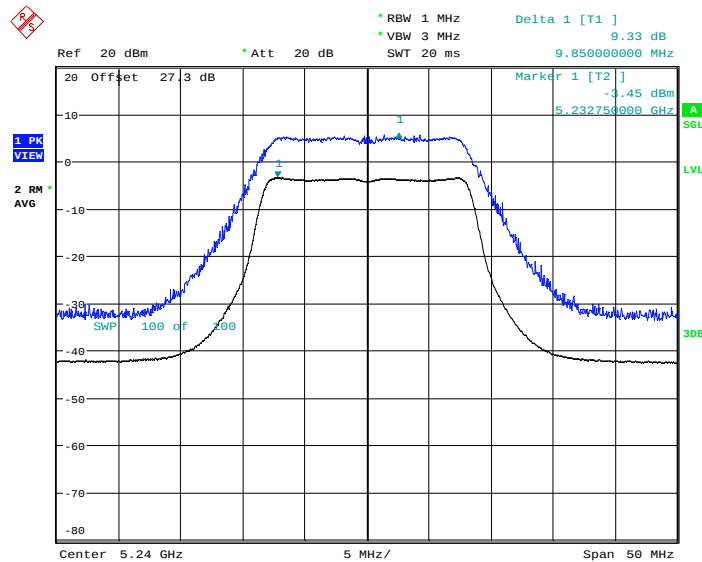
Peak Excursion Ratio Plot on 802.11a Channel 36



Date: 22.NOV.2012 18:58:31

Peak Excursion Ratio Plot on 802.11a Channel 44


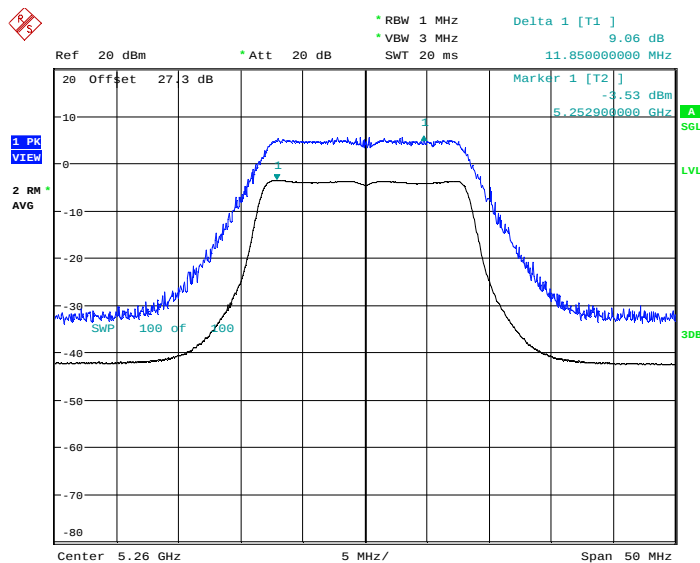
Date: 22.NOV.2012 19:15:19

Peak Excursion Ratio Plot on 802.11a Channel 48


Date: 22.NOV.2012 19:18:25

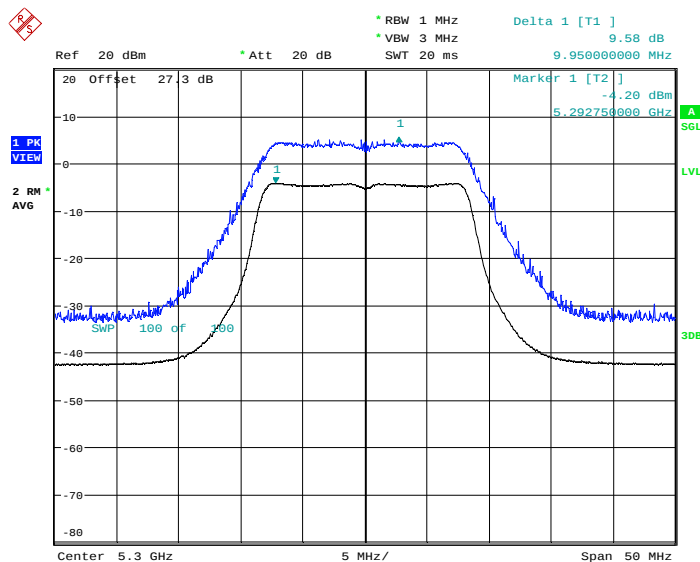


Peak Excursion Ratio Plot on 802.11a Channel 52



Date: 22.NOV.2012 19:24:30

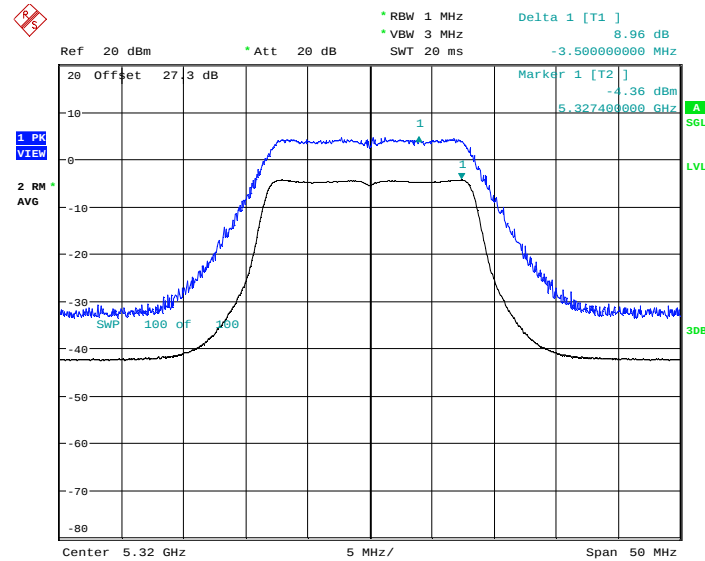
Peak Excursion Ratio Plot on 802.11a Channel 60



Date: 22.NOV.2012 19:28:33

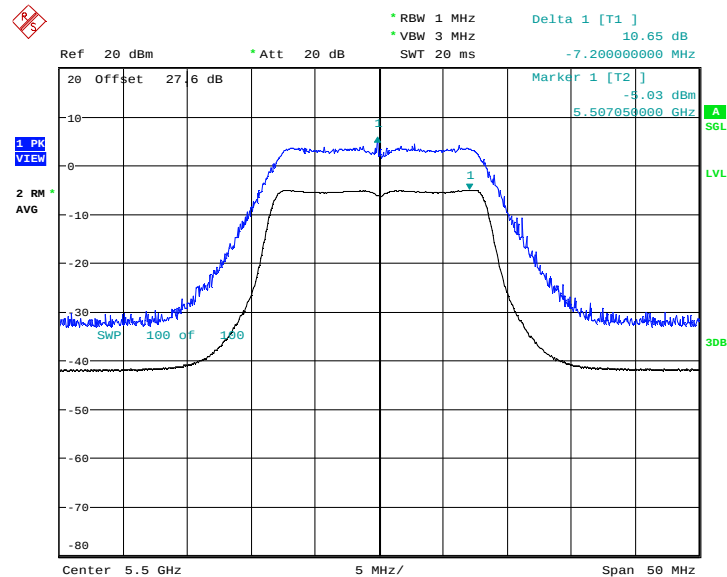


Peak Excursion Ratio Plot on 802.11a Channel 64

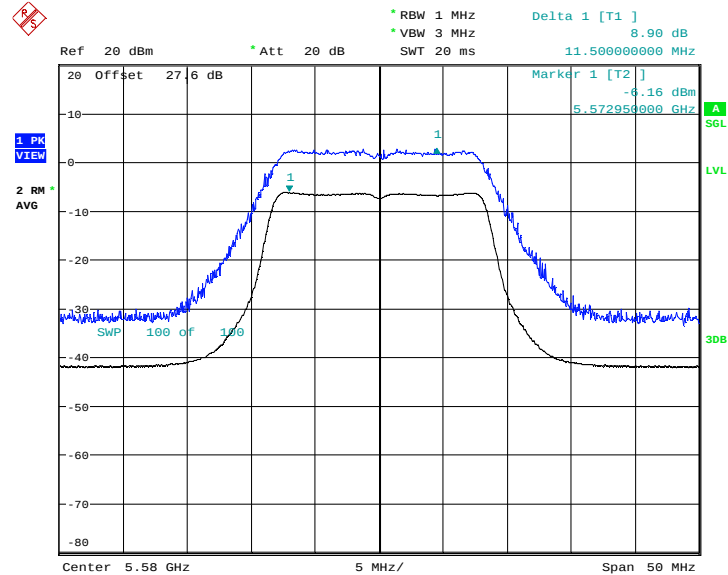


Date: 22.NOV.2012 19:32:37

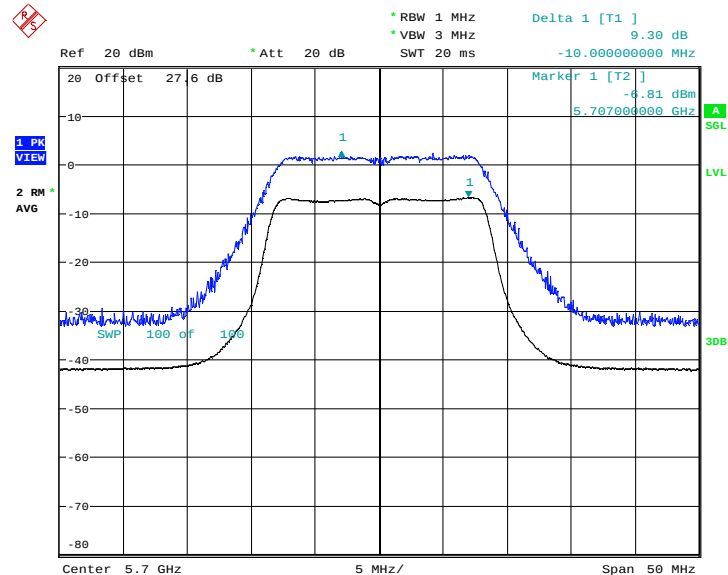
Peak Excursion Ratio Plot on 802.11a Channel 100



Date: 22.NOV.2012 19:36:16

Peak Excursion Ratio Plot on 802.11a Channel 116


Date: 22.NOV.2012 19:40:20

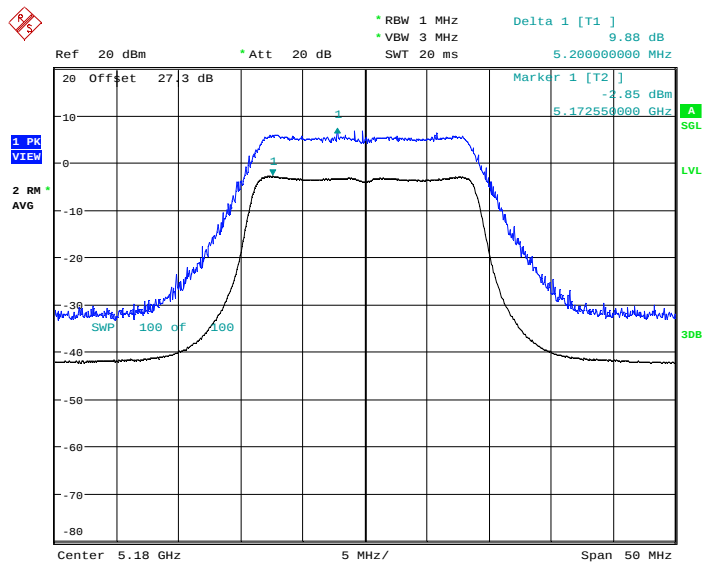
Peak Excursion Ratio Plot on 802.11a Channel 140


Date: 22.NOV.2012 19:43:53

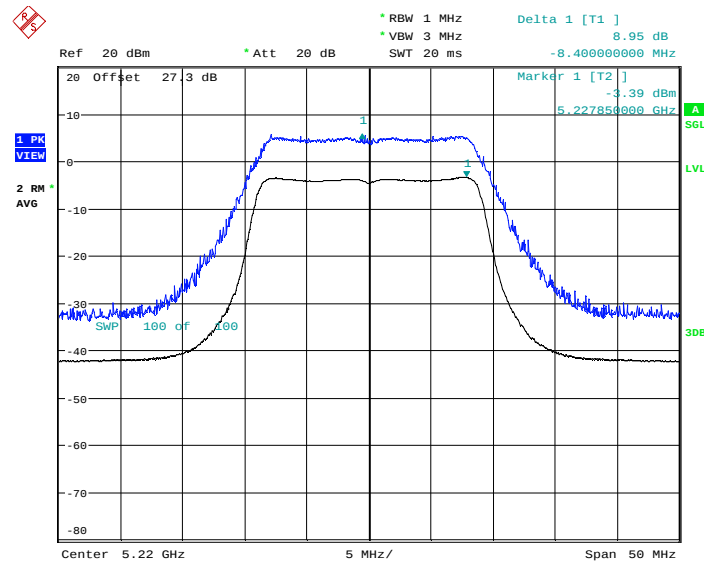


Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%

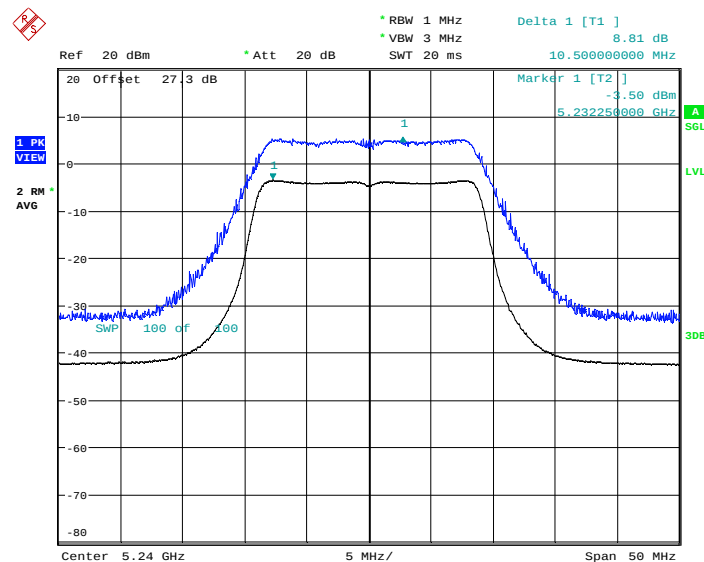
Peak Excursion Ratio Plot on 802.11n HT20 Channel 36



Date: 22.NOV.2012 19:50:43

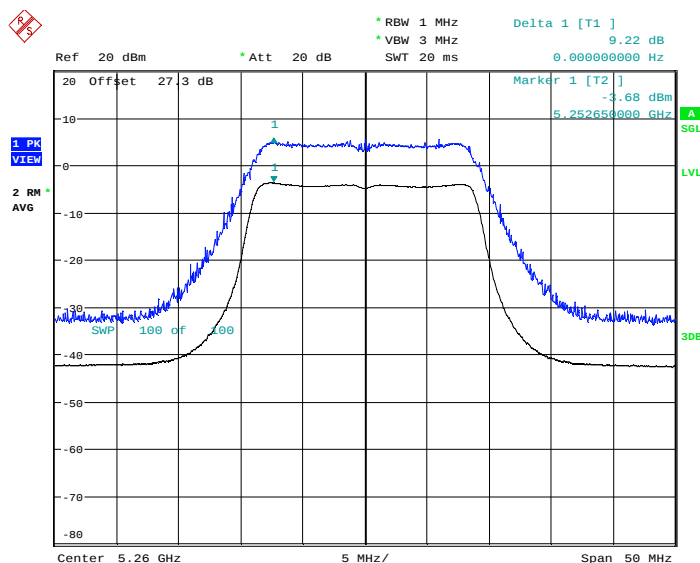
Peak Excursion Ratio Plot on 802.11n HT20 Channel 44


Date: 22.NOV.2012 19:54:03

Peak Excursion Ratio Plot on 802.11n HT20 Channel 48


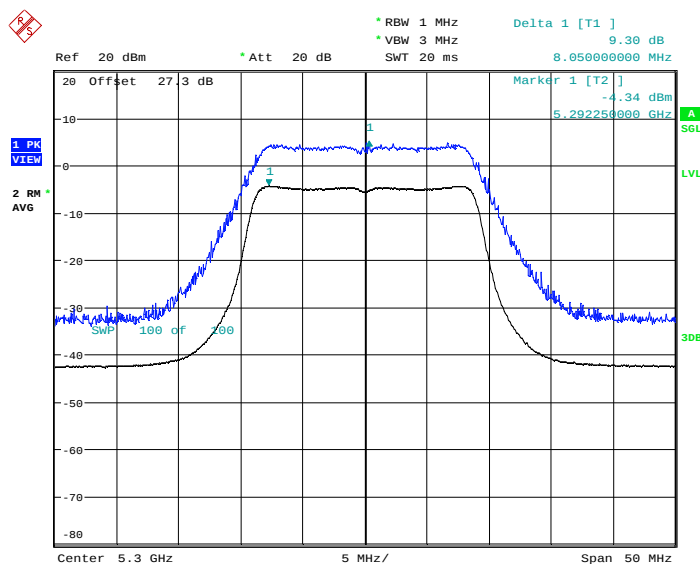
Date: 22.NOV.2012 19:56:19

Peak Excursion Ratio Plot on 802.11n HT20 Channel 52



Date: 22.NOV.2012 20:01:52

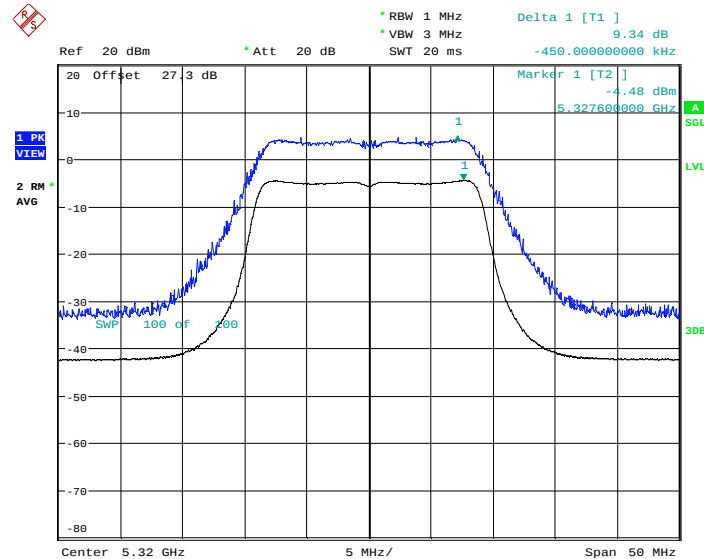
Peak Excursion Ratio Plot on 802.11n HT20 Channel 60



Date: 22.NOV.2012 20:05:21

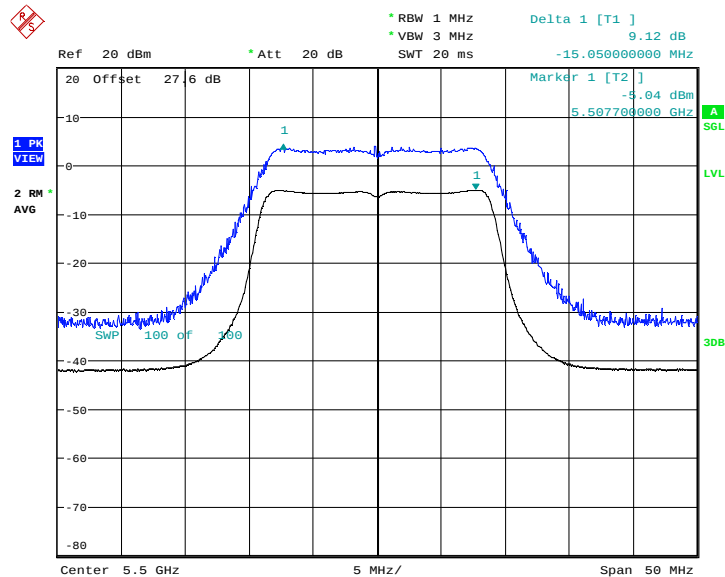


Peak Excursion Ratio Plot on 802.11n HT20 Channel 64

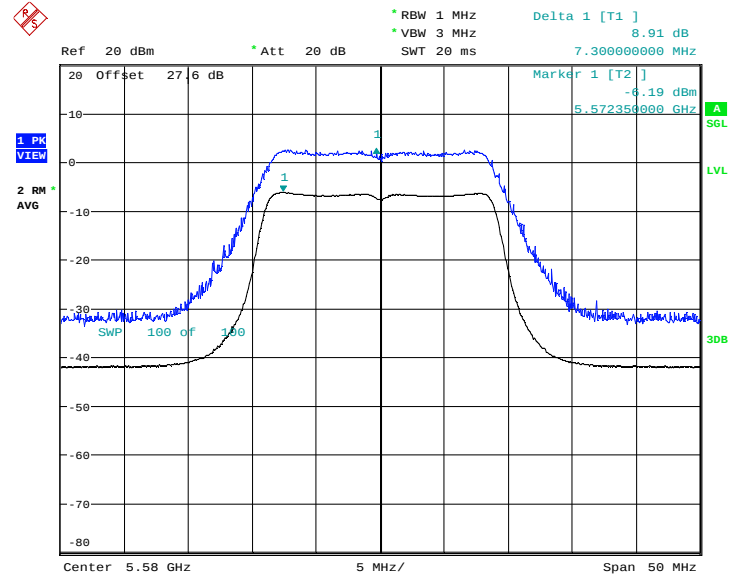


Date: 22.NOV.2012 20:07:19

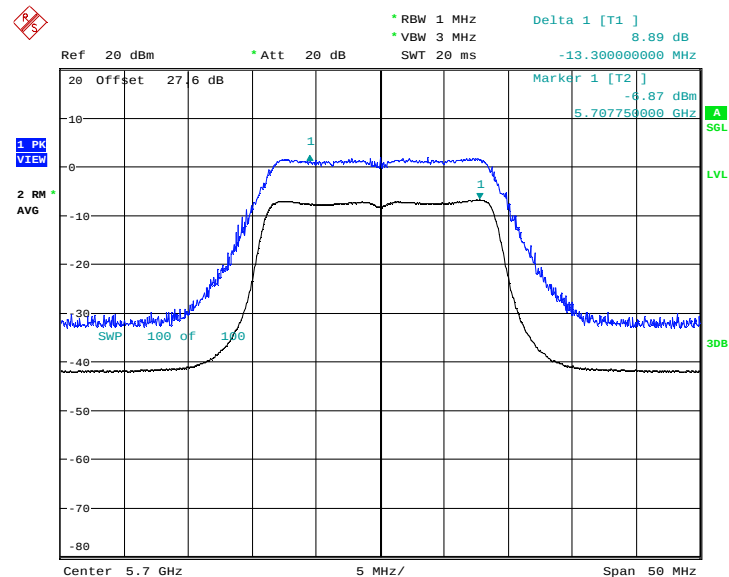
Peak Excursion Ratio Plot on 802.11n HT20 Channel 100



Date: 22.NOV.2012 20:10:15

Peak Excursion Ratio Plot on 802.11n HT20 Channel 116


Date: 22.NOV.2012 20:12:46

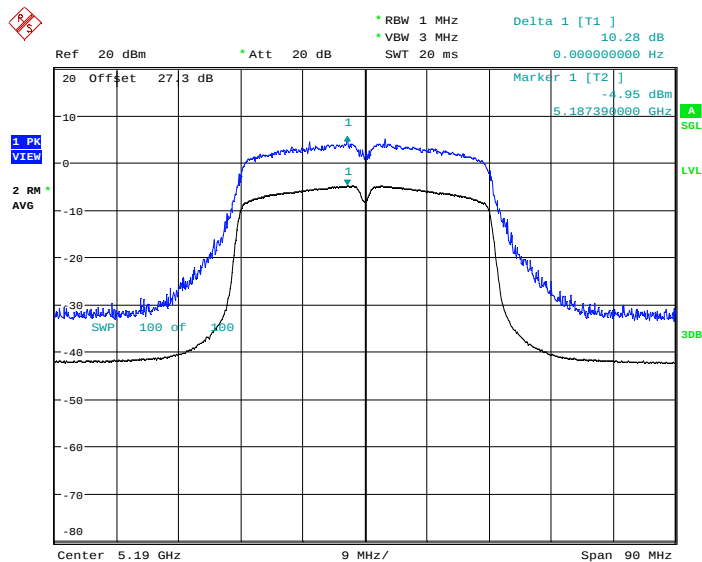
Peak Excursion Ratio Plot on 802.11n HT20 Channel 140


Date: 22.NOV.2012 20:16:23

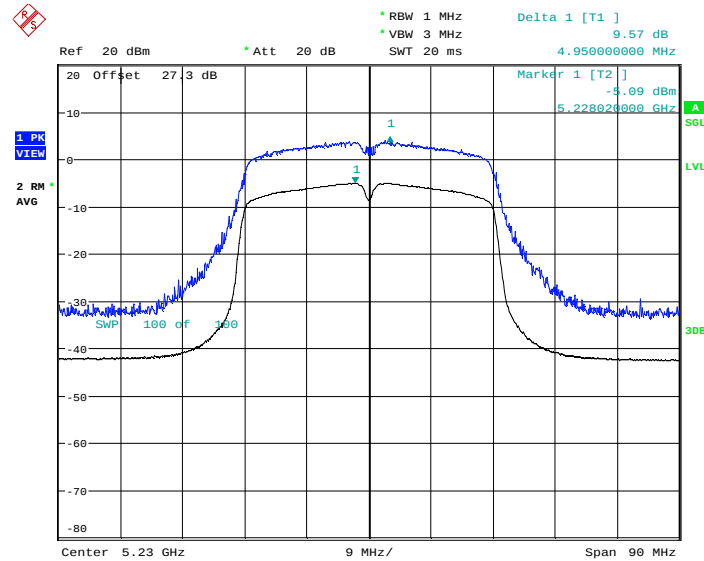


Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

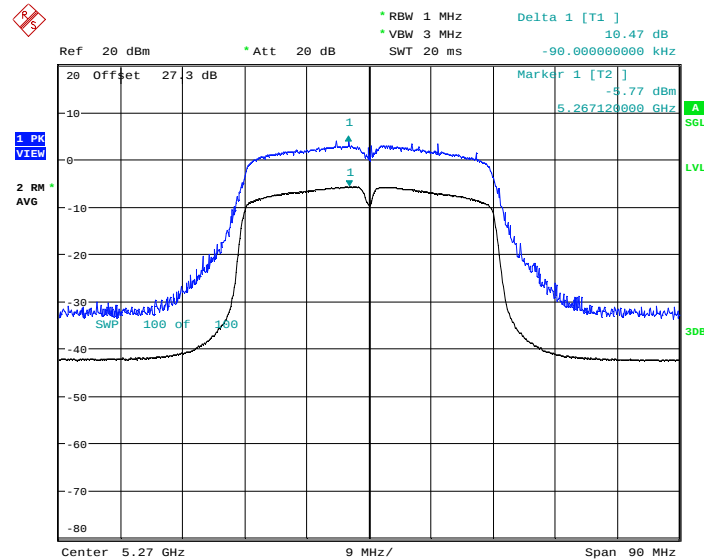
Peak Excursion Ratio Plot on 802.11n HT40 Channel 38



Date: 22.NOV.2012 20:40:19

Peak Excursion Ratio Plot on 802.11n HT40 Channel 46


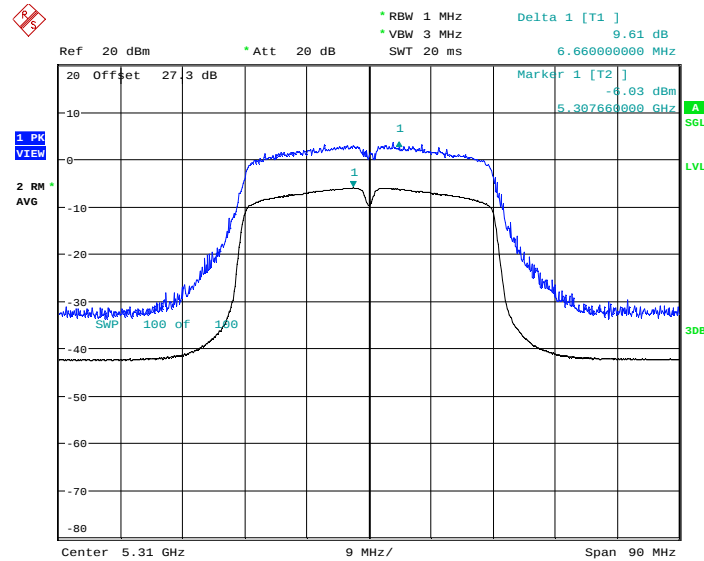
Date: 22.NOV.2012 20:43:03

Peak Excursion Ratio Plot on 802.11n HT40 Channel 54


Date: 22.NOV.2012 20:51:18

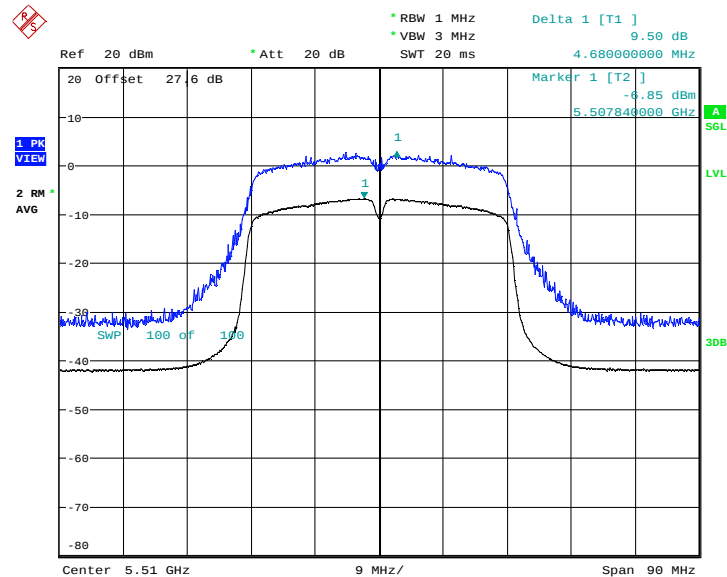


Peak Excursion Ratio Plot on 802.11n HT40 Channel 62

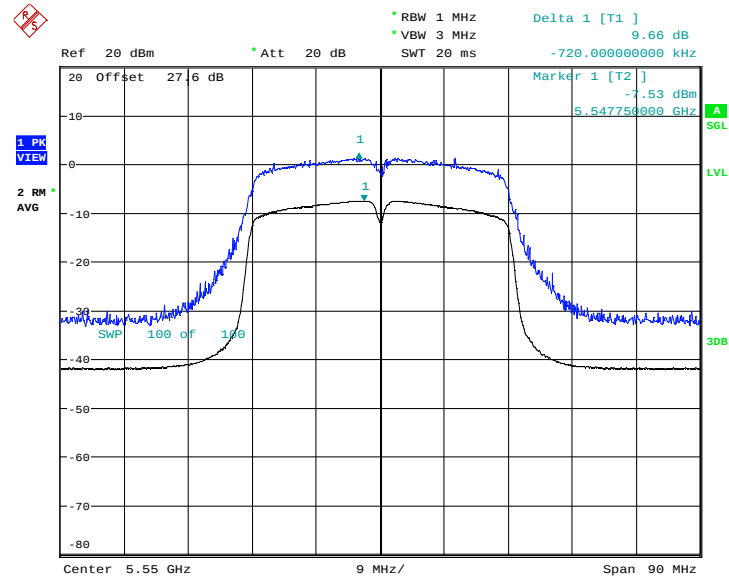


Date: 22.NOV.2012 20:53:56

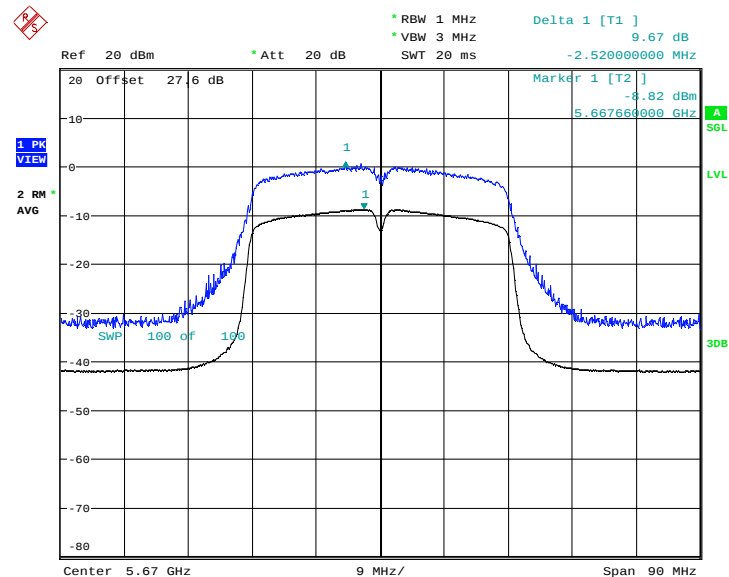
Peak Excursion Ratio Plot on 802.11n HT40 Channel 102



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

Peak Excursion Ratio Plot on 802.11n HT40 Channel 110


Date: 22.NOV.2012 20:23:49

Peak Excursion Ratio Plot on 802.11n HT40 Channel 134


Date: 22.NOV.2012 20:27:45

3.5 Unwanted Radiated Emission Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

3.5.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.

- (2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

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

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

EIRP (dBm)	Field Strength at 3m (dBuV/m)
-17	78.3
- 27	68.3

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 fulfills ANSI C63.4-2003 and the guidelines in ANSI C63.10-2009 test site requirement and FCC KDB 789033 D01 General UNII Test Procedures v01r02.

Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 1000MHz

- RBW = 120 KHz
- VBW = 300 KHz
- Detector = Peak
- Trace mode = max hold

(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

- The setting follows the G) 5) of FCC KDB 789033.
- RBW = 1 MHz
- VBW $\geq$ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

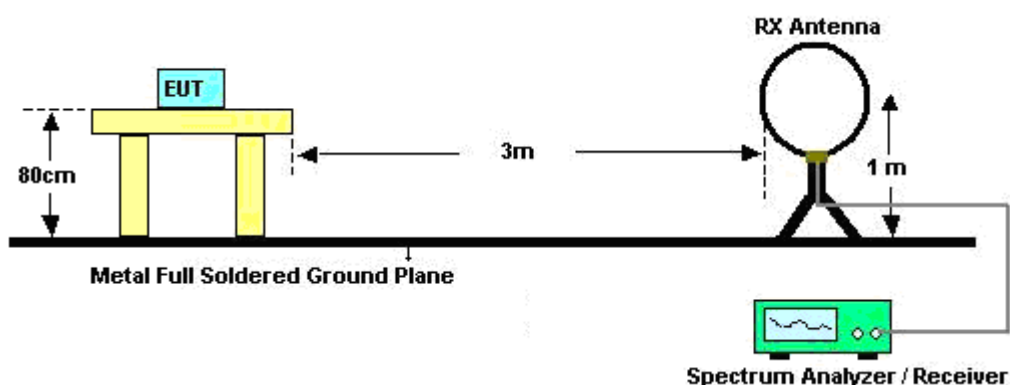
- The setting follows G) 6) of FCC KDB 789033.
- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle (%)	T(us)	1/T(KHz)	VBW Setting
802.11a	99.31	-	-	10Hz
802.11n HT20	99.11	-	-	10Hz
802.11n HT40	98.57	-	-	10Hz

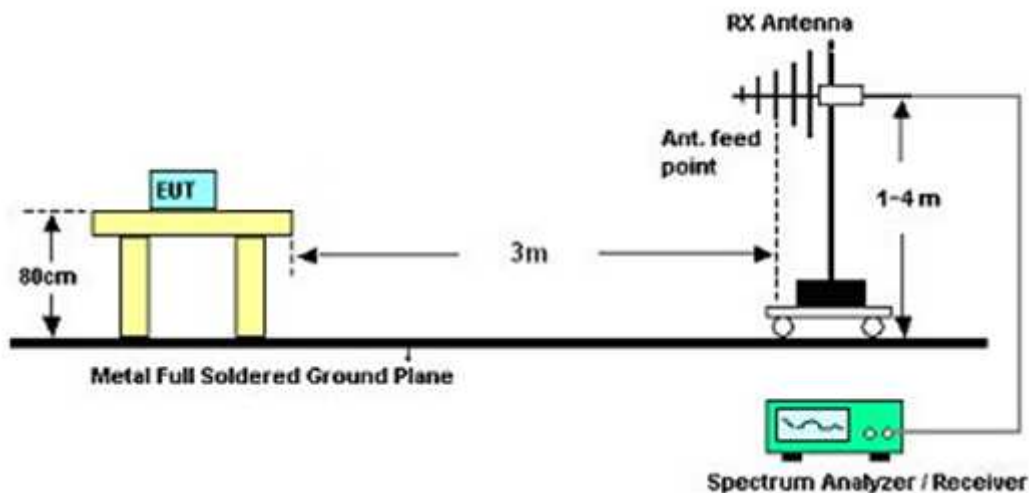
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.5.4 Test Setup

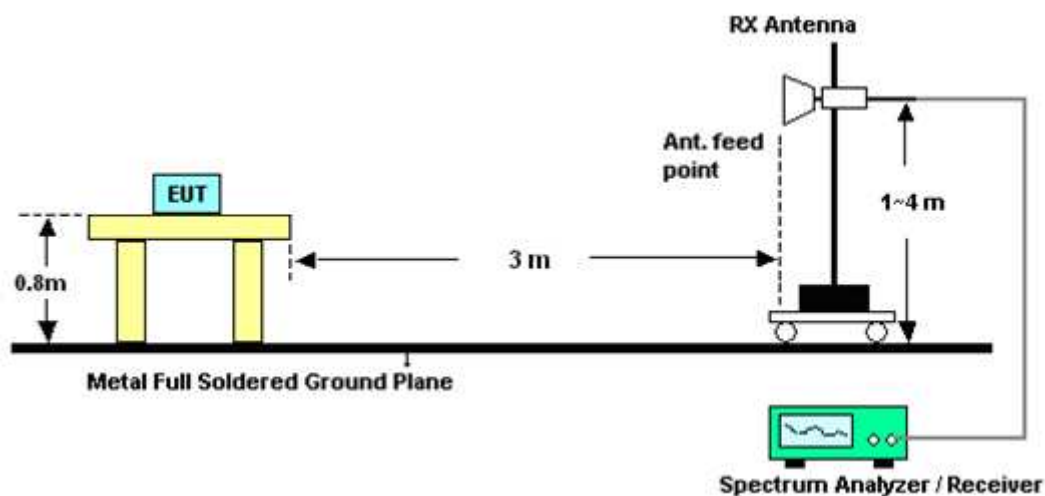
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

3.5.6.1 Test Result of Radiated Band Edges

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	36	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5141	52.77	-21.23	74	46.8	34.45	6.69	35.17	100	241	Peak
5147.15	40.98	-13.02	54	34.98	34.45	6.69	35.14	100	241	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
5147.6	58	-16	74	52	34.45	6.69	35.14	108	17	Peak
5147.15	43.42	-10.58	54	37.42	34.45	6.69	35.14	108	17	Average



Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	48	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5130.05	51.49	-22.51	74	45.55	34.43	6.68	35.17	100	244	Peak
5142.95	39.78	-14.22	54	33.81	34.45	6.69	35.17	100	244	Average
5378.49	51.59	-22.41	74	44.97	34.68	6.85	34.91	100	244	Peak
5360.78	40.13	-13.87	54	33.54	34.67	6.85	34.93	100	244	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
5138	52.91	-21.09	74	46.97	34.43	6.68	35.17	106	17	Peak
5143.55	40.78	-13.22	54	34.81	34.45	6.69	35.17	106	17	Average
5352.64	53.55	-20.45	74	47	34.65	6.83	34.93	106	17	Peak
5350.11	41.67	-12.33	54	35.12	34.65	6.83	34.93	106	17	Average



Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	52	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5141.9	51.34	-22.66	74	45.37	34.45	6.69	35.17	100	245	Peak
5150	39.54	-14.46	54	33.54	34.45	6.69	35.14	100	245	Average
5350.88	52.64	-21.36	74	46.09	34.65	6.83	34.93	100	245	Peak
5350	40.27	-13.73	54	33.72	34.65	6.83	34.93	100	245	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
5144.3	52.68	-21.32	74	46.68	34.45	6.69	35.14	118	355	Peak
5150	40.47	-13.53	54	34.47	34.45	6.69	35.14	118	355	Average
5351.1	52.33	-21.67	74	45.78	34.65	6.83	34.93	118	355	Peak
5350	40.28	-13.72	54	33.73	34.65	6.83	34.93	118	355	Average

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	64	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5364.3	54.33	-19.67	74	47.74	34.67	6.85	34.93	100	203	Peak
5357.7	41.52	-12.48	54	34.95	34.65	6.85	34.93	100	203	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
5359.35	58.59	-15.41	74	52.02	34.65	6.85	34.93	113	189	Peak
5352.64	44.89	-9.11	54	38.34	34.65	6.83	34.93	113	189	Average

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	100	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5466	53.68	-20.32	74	46.82	34.77	6.92	34.83	125	141	Peak
5462.64	41.26	-12.74	54	34.4	34.77	6.92	34.83	125	141	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
5460.88	57.35	-16.65	74	50.51	34.75	6.92	34.83	109	191	Peak
5461.68	43.65	-10.35	54	36.81	34.75	6.92	34.83	109	191	Average

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	140	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5725.08	56.89	-17.11	74	49.5	35.07	7.17	34.85	156	138	Peak
5732.68	42.74	-11.26	54	35.35	35.07	7.17	34.85	156	138	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
5725.32	60.23	-13.77	74	52.84	35.07	7.17	34.85	107	10	Peak
5732.68	44.69	-9.31	54	37.3	35.07	7.17	34.85	107	10	Average



Test Mode :	802.11n HT20	Temperature :	24~25°C
Test Channel :	36	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5147.75	53.73	-20.27	74	47.73	34.45	6.69	35.14	101	241	Peak
5147.75	41.41	-12.59	54	35.41	34.45	6.69	35.14	101	241	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
5136.05	56.75	-17.25	74	50.81	34.43	6.68	35.17	108	17	Peak
5148.2	43.47	-10.53	54	37.47	34.45	6.69	35.14	108	17	Average



Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	48	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5138.15	51.61	-22.39	74	45.67	34.43	6.68	35.17	101	244	Peak
5147.6	39.89	-14.11	54	33.89	34.45	6.69	35.14	101	244	Average
5366.5	52.35	-21.65	74	45.76	34.67	6.85	34.93	101	244	Peak
5350.22	40.11	-13.89	54	33.56	34.65	6.83	34.93	101	244	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
5138.15	52.93	-21.07	74	46.99	34.43	6.68	35.17	107	17	Peak
5142.95	40.78	-13.22	54	34.81	34.45	6.69	35.17	107	17	Average
5353.08	54.34	-19.66	74	47.79	34.65	6.83	34.93	107	17	Peak
5350	41.51	-12.49	54	34.96	34.65	6.83	34.93	107	17	Average



Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	52	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5149.7	51.16	-22.84	74	45.16	34.45	6.69	35.14	102	246	Peak
5148.95	39.75	-14.25	54	33.75	34.45	6.69	35.14	102	246	Average
5360.23	51.5	-22.5	74	44.93	34.65	6.85	34.93	102	246	Peak
5364.85	39.98	-14.02	54	33.39	34.67	6.85	34.93	102	246	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
5143.4	52.19	-21.81	74	46.22	34.45	6.69	35.17	106	17	Peak
5140.25	40.42	-13.58	54	34.45	34.45	6.69	35.17	106	17	Average
5353.96	55.04	-18.96	74	48.49	34.65	6.83	34.93	106	17	Peak
5350	42.92	-11.08	54	36.37	34.65	6.83	34.93	106	17	Average

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	64	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5357.26	54.35	-19.65	74	47.78	34.65	6.85	34.93	100	246	Peak
5351.65	41.18	-12.82	54	34.63	34.65	6.83	34.93	100	246	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
5352.64	57.63	-16.37	74	51.08	34.65	6.83	34.93	106	17	Peak
5351.87	44.33	-9.67	54	37.78	34.65	6.83	34.93	106	17	Average



Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	100	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5452.08	54.17	-19.83	74	47.33	34.75	6.92	34.83	125	141	Peak
5463.28	41.14	-12.86	54	34.28	34.77	6.92	34.83	125	141	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
5462.16	56.49	-17.51	74	49.65	34.75	6.92	34.83	120	190	Peak
5467.92	43.07	-10.93	54	36.21	34.77	6.92	34.83	120	190	Average

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	140	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5727.16	58.79	-15.21	74	51.4	35.07	7.17	34.85	144	138	Peak
5725	43.32	-10.68	54	35.93	35.07	7.17	34.85	144	138	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
5725.48	62.82	-11.18	74	55.43	35.07	7.17	34.85	106	9	Peak
5725	45.47	-8.53	54	38.08	35.07	7.17	34.85	106	9	Average



Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	38	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5149.1	57.96	-16.04	74	51.96	34.45	6.69	35.14	101	243	Peak
5150	43.18	-10.82	54	37.18	34.45	6.69	35.14	101	243	Average
5449.99	51.83	-22.17	74	45.01	34.75	6.9	34.83	101	243	Peak
5351.1	39.84	-14.16	54	33.29	34.65	6.83	34.93	101	243	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
5148.65	63.33	-10.67	74	57.33	34.45	6.69	35.14	108	17	Peak
5150	45.52	-8.48	54	39.52	34.45	6.69	35.14	108	17	Average
5350.77	51.77	-22.23	74	45.22	34.65	6.83	34.93	108	17	Peak
5350	40.27	-13.73	54	33.72	34.65	6.83	34.93	108	17	Average



Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	46	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5149.85	52.89	-21.11	74	46.89	34.45	6.69	35.14	101	244	Peak
5148.2	40.72	-13.28	54	34.72	34.45	6.69	35.14	101	244	Average
5350.88	52.43	-21.57	74	45.88	34.65	6.83	34.93	101	244	Peak
5350	40.09	-13.91	54	33.54	34.65	6.83	34.93	101	244	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
5148.35	53.66	-20.34	74	47.66	34.45	6.69	35.14	118	18	Peak
5150	41.78	-12.22	54	35.78	34.45	6.69	35.14	118	18	Average
5362.1	53.19	-20.81	74	46.6	34.67	6.85	34.93	118	18	Peak
5351.21	41.2	-12.8	54	34.65	34.65	6.83	34.93	118	18	Average



Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	54	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5124.95	52	-22	74	46.06	34.43	6.68	35.17	101	246	Peak
5148.95	40	-14	54	34	34.45	6.69	35.14	101	246	Average
5352.53	53.87	-20.13	74	47.32	34.65	6.83	34.93	101	246	Peak
5361.99	41.09	-12.91	54	34.5	34.67	6.85	34.93	101	246	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
5150	53.12	-20.88	74	47.12	34.45	6.69	35.14	117	20	Peak
5150	40.61	-13.39	54	34.61	34.45	6.69	35.14	117	20	Average
5351.87	57.4	-16.6	74	50.85	34.65	6.83	34.93	117	20	Peak
5361.77	43.84	-10.16	54	37.25	34.67	6.85	34.93	117	20	Average



Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	62	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5145.95	50.83	-23.17	74	44.83	34.45	6.69	35.14	101	249	Peak
5145.8	39.54	-14.46	54	33.54	34.45	6.69	35.14	101	249	Average
5350.99	54.84	-19.16	74	48.29	34.65	6.83	34.93	101	249	Peak
5350	41.7	-12.3	54	35.15	34.65	6.83	34.93	101	249	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
5144.75	50.67	-23.33	74	44.67	34.45	6.69	35.14	116	19	Peak
5150	39.65	-14.35	54	33.65	34.45	6.69	35.14	116	19	Average
5353.08	61.06	-12.94	74	54.51	34.65	6.83	34.93	116	19	Peak
5350	45.51	-8.49	54	38.96	34.65	6.83	34.93	116	19	Average



Test Mode :	802.11n HT40	Temperature :	24~25°C
Test Channel :	102	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5412.4	53.41	-20.59	74	46.69	34.72	6.88	34.88	107	205	Peak
5469.68	41	-13	54	34.14	34.77	6.92	34.83	107	205	Average
5738.2	52.09	-21.91	74	44.68	35.09	7.17	34.85	107	205	Peak
5739.64	40.31	-13.69	54	32.9	35.09	7.17	34.85	107	205	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
5469.84	56.23	-17.77	74	49.37	34.77	6.92	34.83	110	191	Peak
5470	43.44	-10.56	54	36.58	34.77	6.92	34.83	110	191	Average
5757.24	52.16	-21.84	74	44.71	35.11	7.19	34.85	110	191	Peak
5760.36	40.33	-13.67	54	32.88	35.11	7.19	34.85	110	191	Average



Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	134	Relative Humidity :	52~54%
Test Engineer :	David Ke		

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
5412.08	52.85	-21.15	74	46.13	34.72	6.88	34.88	141	141	Peak
5459.92	40.98	-13.02	54	34.14	34.75	6.92	34.83	141	141	Average
5752.28	56.16	-17.84	74	48.71	35.11	7.19	34.85	141	141	Peak
5752.12	42.86	-11.14	54	35.41	35.11	7.19	34.85	141	141	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
5402.64	52.06	-21.94	74	45.38	34.7	6.86	34.88	107	9	Peak
5464.72	39.82	-14.18	54	32.96	34.77	6.92	34.83	107	9	Average
5747.64	57.97	-16.03	74	50.54	35.09	7.19	34.85	107	9	Peak
5733.08	44.27	-9.73	54	36.88	35.07	7.17	34.85	107	9	Average

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

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	36	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5180 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
5180	91.61	-	-	85.54	34.48	6.71	35.12	100	241	Average
5180	102.83	-	-	96.76	34.48	6.71	35.12	100	241	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	36	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5180 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
5180	98	-	-	91.93	34.48	6.71	35.12	108	17	Average
5180	109.55	-	-	103.48	34.48	6.71	35.12	108	17	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	44	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5220 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
5220	92.61	-	-	86.44	34.52	6.74	35.09	100	241	Average
5220	103.84	-	-	97.67	34.52	6.74	35.09	100	241	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	44	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5220	96.92	-	-	90.75	34.52	6.74	35.09	108	17	Average
5220	108.13	-	-	101.96	34.52	6.74	35.09	108	17	Peak
10440	49.31	-24.69	74	57.45	37.76	9.75	55.65	100	0	Peak
15657	48.79	-25.21	74	54.53	40.13	11.87	57.74	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	48	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5240 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
5240	91.83	-	-	85.6	34.53	6.76	35.06	100	244	Average
5240	102.86	-	-	96.59	34.55	6.76	35.04	100	244	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	48	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10473 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	97.87	-	-	91.64	34.53	6.76	35.06	106	17	Average
5240	109.04	-	-	102.83	34.53	6.74	35.06	106	17	Peak
10473	49.83	-24.17	74	57.91	37.78	9.78	55.64	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	52	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 7012 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5260	91.62	-	-	85.31	34.57	6.78	35.04	100	245	Average
5260	102.69	-	-	96.38	34.57	6.78	35.04	100	245	Peak
7012	52.47	-15.83	68.3	66	36.1	7.87	57.5	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	52	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 7012 MHz and 10527 MHz are not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5260	97.19	-	-	90.88	34.57	6.78	35.04	118	355	Average
5260	109.56	-	-	103.25	34.57	6.78	35.04	118	355	Peak
7012	56.06	-12.24	68.3	69.59	36.1	7.87	57.5	100	0	Peak
10527	49.52	-18.78	68.3	57.53	37.81	9.81	55.63	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	60	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 7066 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5300	92.06	-	-	85.64	34.6	6.8	34.98	133	204	Average
5300	103.36	-	-	96.94	34.6	6.8	34.98	133	204	Peak
7066	53.75	-14.55	68.3	67.24	36.09	8	57.58	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	60	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 7066 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission limit. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	97.76	-	-	91.34	34.6	6.8	34.98	114	190	Average
5300	109.83	-	-	103.41	34.6	6.8	34.98	114	190	Peak
7066	56.5	-11.8	68.3	69.99	36.09	8	57.58	100	0	Peak
10600	50.91	-23.09	74	58.82	37.84	9.85	55.6	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	64	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. 7092 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5320	91.88	-	-	85.43	34.62	6.81	34.98	100	203	Average
5320	103.31	-	-	96.86	34.62	6.81	34.98	100	203	Peak
7092	52.69	-15.61	68.3	66.18	36.08	8.04	57.61	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	64	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. 7092 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5320	97.97	-	-	91.52	34.62	6.81	34.98	113	189	Average
5320	109.75	-	-	103.3	34.62	6.81	34.98	113	189	Peak
7092	56.52	-11.78	68.3	70.01	36.08	8.04	57.61	100	0	Peak
10638	38.31	-15.69	54	46.16	37.86	9.88	55.59	100	305	Average
10638	52.05	-21.95	74	59.9	37.86	9.88	55.59	100	305	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	100	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	5500 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
32.97	20.36	-19.64	40	34.19	17.08	0.72	31.63	-	-	Peak
106.95	22.67	-20.83	43.5	42.55	10.52	1.12	31.52	-	-	Peak
288.93	27.34	-18.66	46	43.65	13.07	1.75	31.13	-	-	Peak
510	29.75	-16.25	46	40.07	18.1	2.25	30.67	100	38	Peak
714.4	28.95	-17.05	46	35.32	21.15	2.68	30.2	-	-	Peak
816.6	26.68	-19.32	46	31.28	22.31	2.86	29.77	-	-	Peak
5500	89.79	-	-	82.84	34.8	6.95	34.8	125	141	Average
5500	100.85	-	-	93.94	34.78	6.93	34.8	125	141	Peak
7334	48.15	-5.85	54	61.7	36.03	8.46	58.04	100	246	Average
7334	51.02	-22.98	74	64.57	36.03	8.46	58.04	100	246	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	100	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5500 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
34.86	31.23	-8.77	40	46.12	16	0.74	31.63	110	134	Peak
84	20.92	-19.08	40	43.44	7.82	1.03	31.37	-	-	Peak
223.86	23.26	-22.74	46	43.06	9.58	1.56	30.94	-	-	Peak
510	32.26	-13.74	46	42.58	18.1	2.25	30.67	-	-	Peak
713.7	27.37	-18.63	46	33.79	21.1	2.68	30.2	-	-	Peak
816.6	27.27	-18.73	46	31.87	22.31	2.86	29.77	-	-	Peak
5500	94.84	-	-	87.89	34.8	6.95	34.8	109	191	Average
5500	106.28	-	-	99.34	34.8	6.95	34.81	109	191	Peak
7334	52.97	-1.03	54	66.52	36.03	8.46	58.04	143	177	Average
7334	55.17	-18.83	74	68.72	36.03	8.46	58.04	143	177	Peak
11007	49.33	-24.67	74	56.68	38.02	10.11	55.48	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	116	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5580 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
5580	89.94	-	-	82.86	34.88	7.02	34.82	128	138	Average
5580	100.25	-	-	93.17	34.88	7.02	34.82	128	138	Peak
7440	50.52	-23.48	74	64.09	36.01	8.63	58.21	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	116	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5580 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
5580	94.33	-	-	87.25	34.88	7.02	34.82	100	8	Average
5580	106.67	-	-	99.59	34.88	7.02	34.82	100	8	Peak
7440	52.08	-1.92	54	65.65	36.01	8.63	58.21	131	179	Average
7440	53.42	-20.58	74	66.99	36.01	8.63	58.21	131	179	Peak
11166	48.66	-25.34	74	55.72	38.17	10.16	55.39	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	140	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5700 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
5700	94.08	-	-	86.74	35.03	7.15	34.84	156	138	Average
5700	105.31	-	-	97.97	35.03	7.15	34.84	156	138	Peak
7600	47.72	-26.28	74	61.17	36.02	8.78	58.25	100	0	Peak
11403	50.86	-23.14	74	57.49	38.4	10.23	55.26	100	0	Peak

Test Mode :	802.11a	Temperature :	24~25℃
Test Channel :	140	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5700 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
5700	97.46	-	-	90.12	35.03	7.15	34.84	107	10	Average
5700	109.47	-	-	102.13	35.03	7.15	34.84	107	10	Peak
7600	50.8	-3.2	54	64.25	36.02	8.78	58.25	115	45	Average
7600	51.7	-22.3	74	65.15	36.02	8.78	58.25	115	45	Peak
11406	49.17	-24.83	74	55.79	38.4	10.24	55.26	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	36	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5180 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
5180	90.97	-	-	84.9	34.48	6.71	35.12	101	241	Average
5180	102.37	-	-	96.3	34.48	6.71	35.12	101	241	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	36	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10368 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	97.04	-	-	90.97	34.48	6.71	35.12	108	17	Average
5180	108.47	-	-	102.4	34.48	6.71	35.12	108	17	Peak
10368	46.98	-27.02	74	55.21	37.72	9.71	55.66	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	44	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5220 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
5220	91.37	-	-	85.2	34.52	6.74	35.09	101	242	Average
5220	102.78	-	-	96.58	34.52	6.74	35.06	101	242	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	44	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10437 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5220	96.65	-	-	90.48	34.52	6.74	35.09	107	19	Average
5220	108.03	-	-	101.86	34.52	6.74	35.09	107	19	Peak
10437	47.83	-26.17	74	55.97	37.76	9.75	55.65	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	48	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5240 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
5240	91.89	-	-	85.66	34.53	6.76	35.06	101	244	Average
5240	102.05	-	-	95.84	34.53	6.74	35.06	101	244	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	48	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	97.05	-	-	90.82	34.53	6.76	35.06	107	17	Average
5240	108.17	-	-	101.96	34.53	6.74	35.06	107	17	Peak
10479	47.91	-26.09	74	55.97	37.79	9.78	55.63	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	52	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 7012 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5260	91.71	-	-	85.4	34.57	6.78	35.04	102	246	Average
5260	102.85	-	-	96.54	34.57	6.78	35.04	102	246	Peak
7012	53.59	-14.71	68.3	67.12	36.1	7.87	57.5	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	52	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 7012 MHz and 10521 MHz are not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5260	97.74	-	-	91.43	34.57	6.78	35.04	106	17	Average
5260	108.13	-	-	101.82	34.57	6.78	35.04	106	17	Peak
7012	55.66	-12.64	68.3	69.19	36.1	7.87	57.5	100	0	Peak
10521	48.46	-19.84	68.3	56.47	37.81	9.81	55.63	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25°C
Test Channel :	60	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 7066 MHz is not within a restricted band and satisfies 68.3 dB μ V /m peak emission limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	91.54	-	-	85.12	34.6	6.8	34.98	102	247	Average
5300	103.05	-	-	96.63	34.6	6.8	34.98	102	247	Peak
7066	53.1	-15.2	68.3	66.59	36.09	8	57.58	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25°C
Test Channel :	60	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 7066 MHz is not within a restricted band and satisfies 68.3 dB μ V /m peak emission limit. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	97.03	-	-	90.61	34.6	6.8	34.98	117	18	Average
5300	108.93	-	-	102.51	34.6	6.8	34.98	117	18	Peak
7066	56.76	-11.54	68.3	70.25	36.09	8	57.58	100	0	Peak
10600	50.47	-23.53	74	58.38	37.84	9.85	55.6	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	64	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. 7092 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5320	91.36	-	-	84.91	34.62	6.81	34.98	100	246	Average
5320	102.62	-	-	96.17	34.62	6.81	34.98	100	246	Peak
7092	53.04	-15.26	68.3	66.53	36.08	8.04	57.61	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	64	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. 7092 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5320	97.08	-	-	90.63	34.62	6.81	34.98	106	17	Average
5320	108.58	-	-	102.13	34.62	6.81	34.98	106	17	Peak
7092	56.35	-11.95	68.3	69.84	36.08	8.04	57.61	100	0	Peak
10638	38.68	-15.32	54	46.53	37.86	9.88	55.59	100	312	Average
10638	52.02	-21.98	74	59.87	37.86	9.88	55.59	100	312	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	100	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5500 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
34.36	20.11	-19.89	40	35.5	16	0.74	31.63			Peak
155.35	22.01	-21.49	43.5	41.43	11	1.31	31.23			Peak
297.1	27.73	-18.27	46	43.27	13.26	1.78	30.98			Peak
510.8	28.62	-17.38	46	39.14	18.1	2.25	30.67			Peak
713.14	30.39	-15.61	46	37.26	21.15	2.68	30.2	112	45	Peak
814.6	27.99	-18.01	46	32.29	22.31	2.86	29.77			Peak
5500	89.66	-	-	82.71	34.8	6.95	34.8	125	141	Average
5500	100.61	-	-	93.7	34.78	6.93	34.8	125	141	Peak
7334	48.98	-5.02	54	62.53	36.03	8.46	58.04	167	132	Average
7334	51.1	-22.9	74	64.65	36.03	8.46	58.04	167	132	Peak
11004	47.73	-26.27	74	55.11	38	10.11	55.49	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	100	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5500 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
34.68	30.89	-9.11	40	45.69	16	0.74	31.63	140	55	Peak
84.4	20.15	-19.85	40	42.71	7.82	1.03	31.37			Peak
289.97	22.61	-23.39	46	38.42	13.07	1.75	31.13			Peak
513	33.21	-12.79	46	43.42	18.1	2.25	30.67			Peak
716.7	29.65	-16.35	46	35.77	21.1	2.68	30.2			Peak
816.9	28.44	-17.56	46	33.14	22.31	2.86	29.77			Peak
5500	94.14	-	-	87.19	34.8	6.95	34.8	120	190	Average
5500	106.84	-	-	99.9	34.8	6.95	34.81	120	190	Peak
7334	52.72	-1.28	54	66.27	36.03	8.46	58.04	129	34	Average
7334	53.62	-20.38	74	67.17	36.03	8.46	58.04	129	34	Peak
11001	48.34	-25.66	74	55.72	38	10.11	55.49	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	116	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5580 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
5580	88.58	-	-	81.5	34.88	7.02	34.82	146	140	Average
5580	99.93	-	-	92.85	34.88	7.02	34.82	146	140	Peak
7440	48.28	-25.72	74	61.85	36.01	8.63	58.21	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	116	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5580 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
5580	94.71	-	-	87.63	34.88	7.02	34.82	107	188	Average
5580	106.64	-	-	99.54	34.9	7.02	34.82	107	188	Peak
7440	51.28	-2.72	54	64.85	36.01	8.63	58.21	131	178	Average
7440	52.34	-21.66	74	65.91	36.01	8.63	58.21	131	178	Peak
11160	47.75	-26.25	74	54.81	38.17	10.16	55.39	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	140	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5700 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
5700	93.38	-	-	86.04	35.03	7.15	34.84	144	138	Average
5700	104.65	-	-	97.31	35.03	7.15	34.84	144	138	Peak
7600	47.57	-26.43	74	61.02	36.02	8.78	58.25	100	0	Peak
11406	50.68	-23.32	74	57.3	38.4	10.24	55.26	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	24~25℃
Test Channel :	140	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5700 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
5700	98.13	-	-	90.79	35.03	7.15	34.84	106	9	Average
5700	109.11	-	-	101.76	35.05	7.15	34.85	106	9	Peak
7600	50.66	-3.34	54	64.11	36.02	8.78	58.25	116	45	Average
7600	52.56	-21.44	74	66.01	36.02	8.78	58.25	116	45	Peak
11409	48.5	-25.5	74	55.12	38.4	10.24	55.26	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	38	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5190 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
5190	89.48	-	-	83.39	34.48	6.73	35.12	101	243	Average
5190	100.88	-	-	94.81	34.48	6.71	35.12	101	243	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	38	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. 10383 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5190	95.12	-	-	89.03	34.48	6.73	35.12	108	17	Average
5190	106.56	-	-	100.49	34.48	6.71	35.12	108	17	Peak
10383	46.78	-27.22	74	54.98	37.73	9.73	55.66	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	46	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5230 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
5230	88.58	-	-	82.37	34.53	6.74	35.06	101	244	Average
5230	100.03	-	-	93.82	34.53	6.74	35.06	101	244	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	46	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. 10464 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5230	95.88	-	-	89.67	34.53	6.74	35.06	118	18	Average
5230	106.44	-	-	100.24	34.52	6.74	35.06	118	18	Peak
10464	46.95	-27.05	74	55.05	37.78	9.76	55.64	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	54	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5270 MHz is fundamental signal which can be ignored. 2. 7026 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5270	89.15	-	-	82.84	34.57	6.78	35.04	101	246	Average
5270	100.39	-	-	94.08	34.57	6.78	35.04	101	246	Peak
7026	54.15	-14.15	68.3	67.64	36.1	7.91	57.5	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	54	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5270 MHz is fundamental signal which can be ignored. 2. 7026 MHz and 10551 MHz are not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5270	94.73	-	-	88.42	34.57	6.78	35.04	117	20	Average
5270	106.47	-	-	100.16	34.57	6.78	35.04	117	20	Peak
7026	57.81	-10.49	68.3	71.3	36.1	7.91	57.5	100	0	Peak
10551	48.36	-19.94	68.3	56.34	37.82	9.82	55.62	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	62	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5310 MHz is fundamental signal which can be ignored. 2. 7080 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission 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
5310	88.58	-	-	82.13	34.62	6.81	34.98	101	249	Average
5310	100.27	-	-	93.82	34.62	6.81	34.98	101	249	Peak
7080	53.58	-14.72	68.3	67.11	36.08	8	57.61	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	62	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5310 MHz is fundamental signal which can be ignored. 2. 7080 MHz is not within a restricted band and satisfies 68.3 dBμV /m peak emission limit. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5310	89.15	-	-	82.7	34.62	6.81	34.98	116	19	Average
5310	106.84	-	-	100.39	34.62	6.81	34.98	116	19	Peak
7080	57.59	-10.71	68.3	71.12	36.08	8	57.61	-	-	Peak
10623	49.59	-24.41	74	57.47	37.85	9.87	55.6	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	102	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5510 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
5510	88.24	-	-	81.3	34.8	6.95	34.81	107	205	Average
5510	99.77	-	-	92.83	34.8	6.95	34.81	107	205	Peak
7348	48.6	-5.4	54	62.15	36.03	8.46	58.04	165	130	Average
7348	51.04	-22.96	74	64.59	36.03	8.46	58.04	165	130	Peak
11016	47.45	-26.55	74	54.8	38.02	10.11	55.48	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	102	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5510 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
5510	92.51	-	-	85.57	34.8	6.95	34.81	110	191	Average
5510	104.22	-	-	97.28	34.8	6.95	34.81	110	191	Peak
7346	52.59	-1.41	54	66.14	36.03	8.46	58.04	130	36	Average
7346	53.17	-20.83	74	66.72	36.03	8.46	58.04	130	36	Peak
11022	47.62	-26.38	74	54.94	38.03	10.12	55.47	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	110	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5550 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
5550	88.76	-	-	81.71	34.86	7	34.81	108	140	Average
5550	99.01	-	-	92.01	34.84	6.97	34.81	108	140	Peak
7400	49.91	-24.09	74	63.43	36.02	8.59	58.13	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	110	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	5550 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
5550	92.01	-	-	84.96	34.86	7	34.81	108	190	Average
5550	103.49	-	-	96.49	34.84	6.97	34.81	108	190	Peak
7400	51.93	-2.07	54	65.45	36.02	8.59	58.13	136	36	Average
7400	52.61	-21.39	74	66.13	36.02	8.59	58.13	136	36	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	134	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	1. 5670 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
5670	91.65	-	-	84.35	35.01	7.12	34.83	141	141	Average
5670	102.66	-	-	95.36	35.01	7.12	34.83	141	141	Peak
7560	49.06	-24.94	74	62.55	36.01	8.77	58.27	100	0	Peak
11340	50.14	-23.86	74	56.89	38.33	10.22	55.3	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	24~25℃
Test Channel :	134	Relative Humidity :	52~54%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	1. 5670 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
5670	96.75	-	-	89.45	35.01	7.12	34.83	107	9	Average
5670	108.16	-	-	100.88	35.01	7.1	34.83	107	9	Peak
7560	50.92	-3.08	54	64.41	36.01	8.77	58.27	116	44	Average
7560	53.18	-20.82	74	66.67	36.01	8.77	58.27	116	44	Peak
11346	48.64	-25.36	74	55.36	38.35	10.22	55.29	100	0	Peak

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

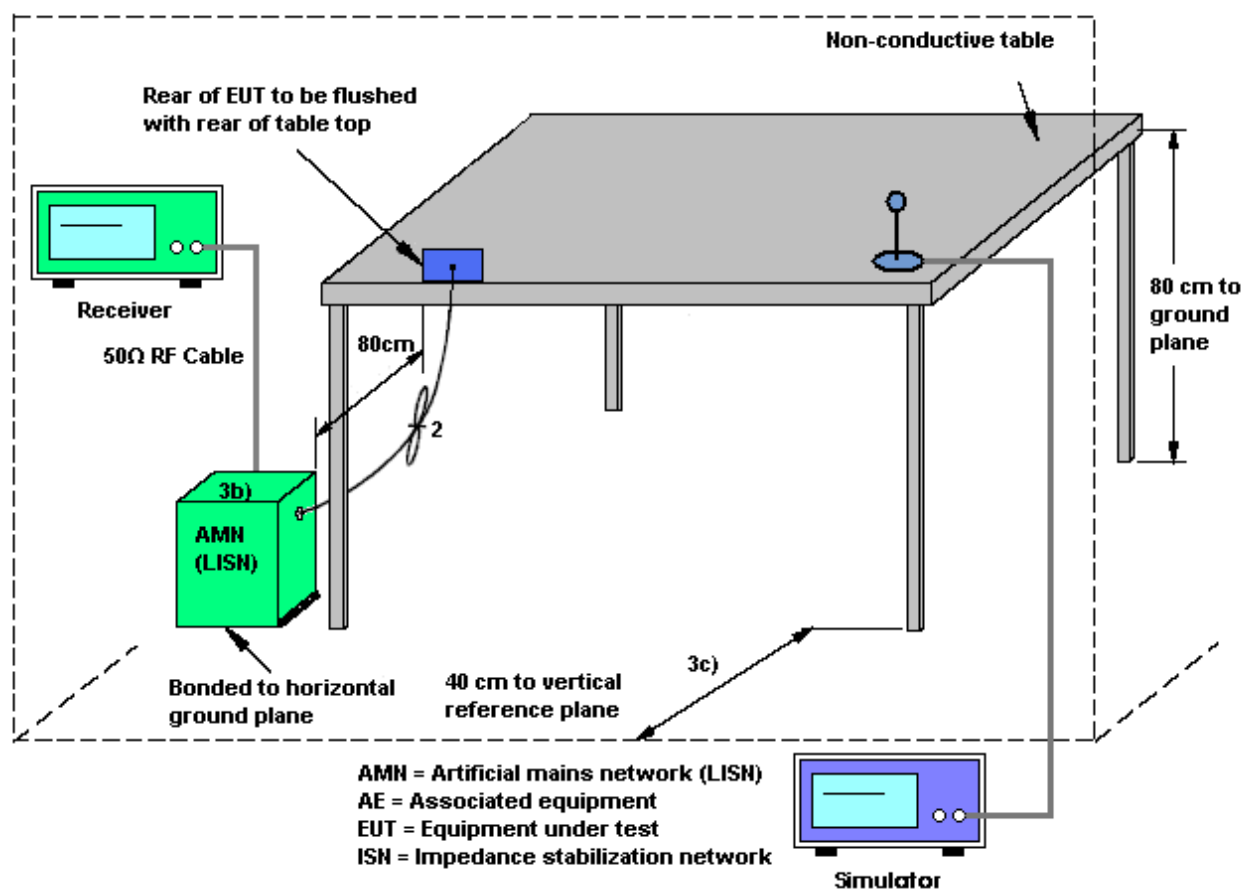
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

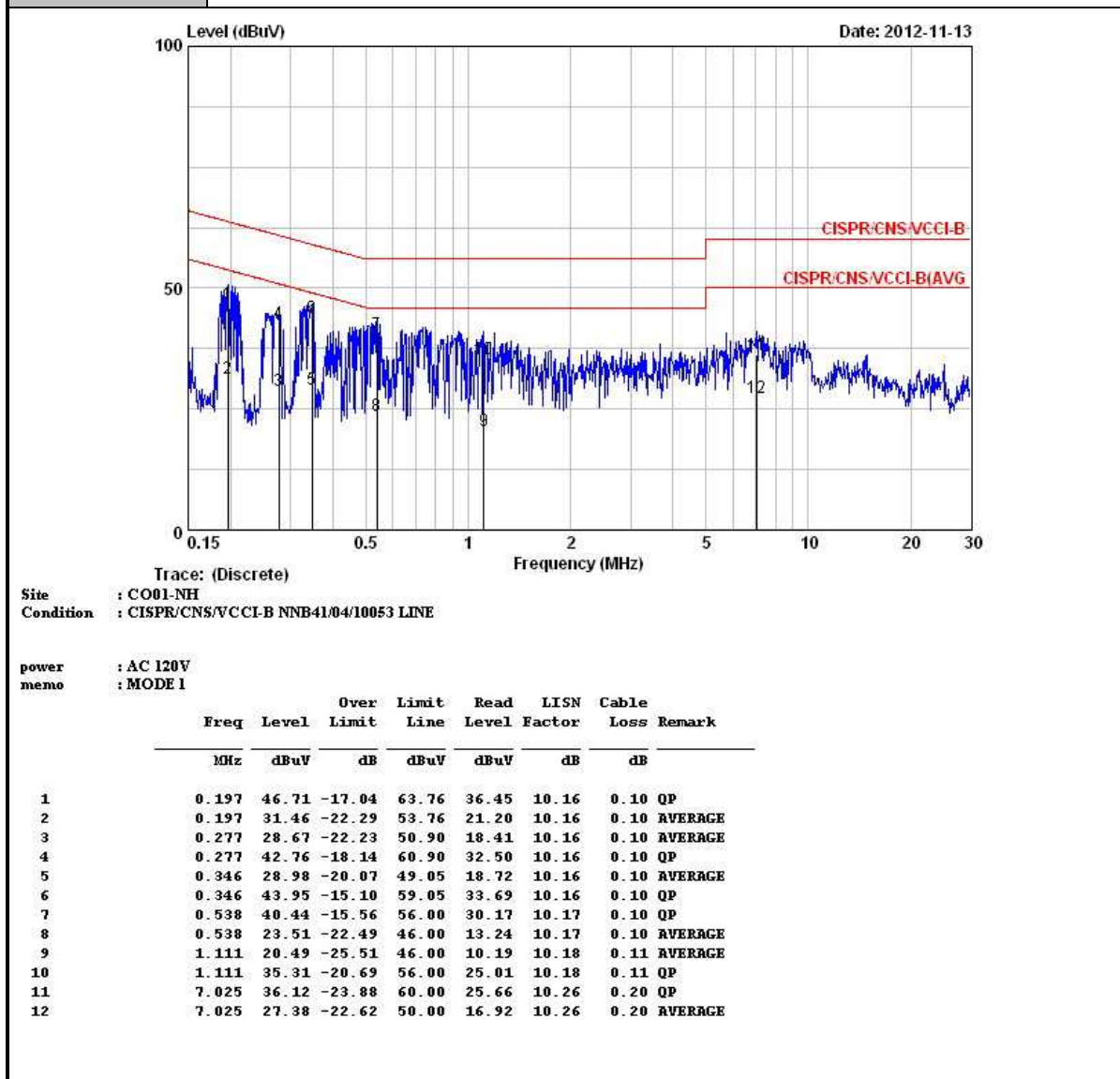
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009 test site requirement.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a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

3.6.4 Test Setup

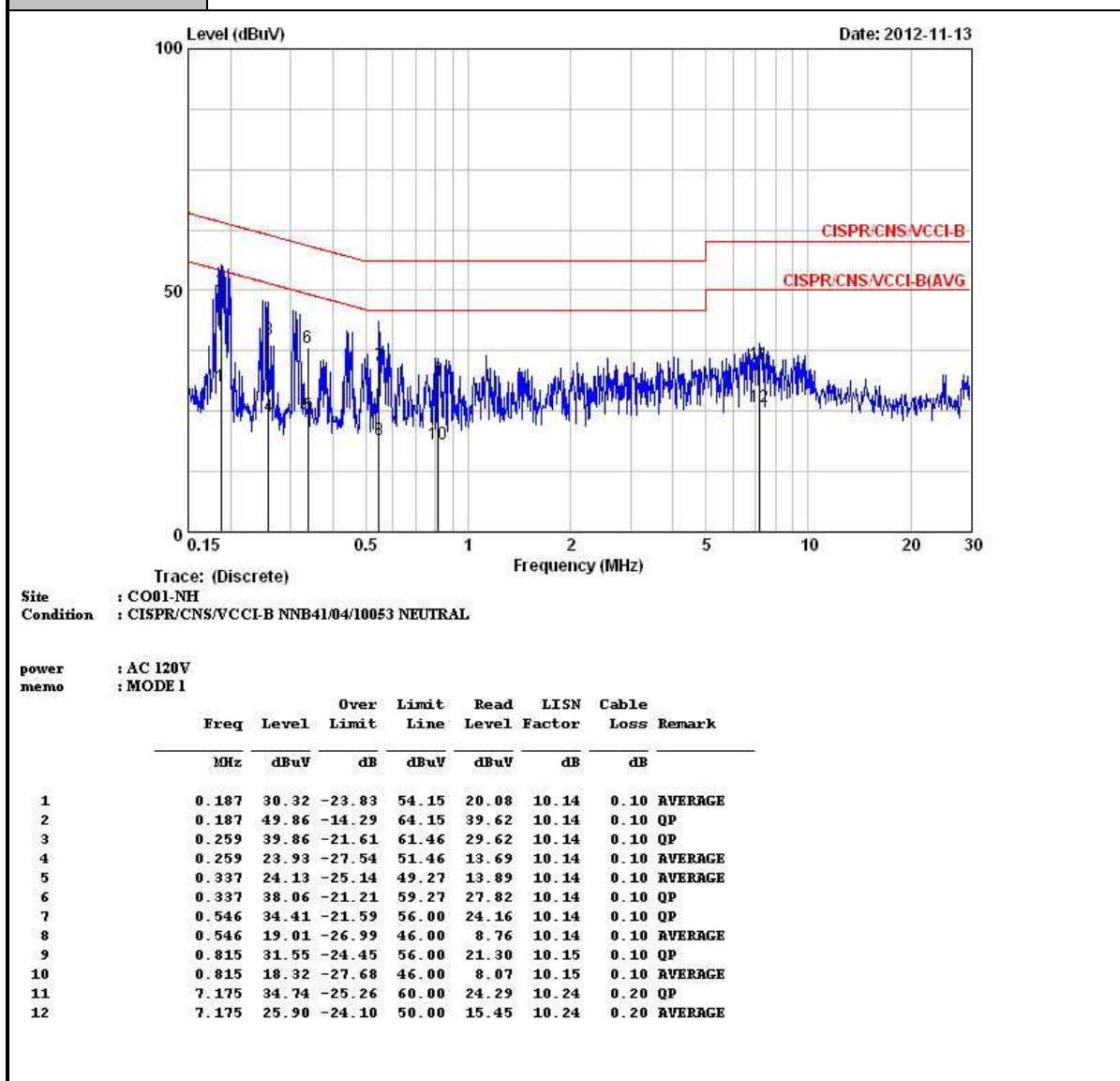


3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	23~24℃
Test Engineer :	Eddie Lee	Relative Humidity :	54~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (5G) Link + Bluetooth Link + MP3 + H-Pattern + USB Cable (Charging from Adapter) + Earphone + SD Card + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Test Mode :	Mode 1	Temperature :	23~24℃
Test Engineer :	Eddie Lee	Relative Humidity :	54~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (5G) Link + Bluetooth Link + MP3 + H-Pattern + USB Cable (Charging from Adapter) + Earphone + SD Card + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



3.7 Frequency Stability Measurement

3.7.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

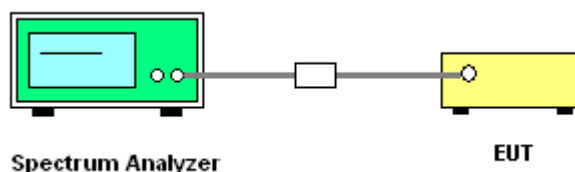
3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

3.7.4 Test Setup



3.7.5 Test Result of Frequency Stability

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.71	5188.25	-3.09
44	5220	5211.75	5228.25	0.00
48	5240	5231.71	5248.30	1.53
52	5260	5251.72	5268.30	2.19
60	5300	5291.75	5308.30	4.54
64	5320	5311.63	5328.30	-6.02

Test Mode :	802.11n HT-20	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.03	5188.94	-3.09
44	5220	5211.15	5228.94	9.21
48	5240	5231.07	5248.94	1.53
52	5260	5251.07	5268.92	-0.18
60	5300	5291.07	5308.94	1.51
64	5320	5311.07	5328.94	1.51

Test Mode :	802.11n HT-40	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
38	5190	5171.90	5208.11	0.78
46	5230	5211.90	5248.11	0.77
54	5270	5251.90	5288.11	0.77
62	5310	5291.90	5328.11	0.76

3.8 Automatically Discontinue Transmission

3.8.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Result of Automatically Discontinue Transmission

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.9 Antenna Requirements

3.9.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.9.2 Antenna Connected Construction

Non-standard connector used.

3.9.3 Antenna Gain

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

4 List of Measuring Equipments

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. 12, 2012 ~ Nov. 29, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Nov. 12, 2012 ~ Nov. 29, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Nov. 12, 2012 ~ Nov. 29, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Receiver	R&S	ESCS 30	100357	9 kHz - 2.75 GHz	Nov. 18, 2011	Nov. 13, 2012	Nov. 17, 2012	Conduction (CO01-NH)
LISN	SCHAFFNER	NNB41	04/10053	9kHz - 30MHz	Nov. 17, 2011	Nov. 13, 2012	Nov. 16, 2012	Conduction (CO01-NH)
Power Filter	CORCOM	MR12030	N/A	30A*2	N/A	Nov. 13, 2012	N/A	Conduction (CO01-NH)
RF Cable-CON	Suhner Switzerland	RG223/U	CB004	9kHz - 30MHz	Dec. 13, 2011	Nov. 13, 2012	Dec. 12, 2012	Conduction (CO01-NH)
Spectrum Analyzer	R&S	ESU26	100390	20Hz ~ 26.5GHz	Dec. 22, 2011	Nov. 14, 2012 ~ Nov. 29, 2012	Dec. 21, 2012	Radiation (03CH05-HY)
Bilog Antenna	Schaffner	CBL6111C	2725	30MHz~2GHz	Oct. 06, 2012	Nov. 14, 2012 ~ Nov. 29, 2012	Oct. 05, 2013	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 ~ 360 degree	N/A	Nov. 14, 2012 ~ Nov. 29, 2012	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m ~ 4 m	N/A	Nov. 14, 2012 ~ Nov. 29, 2012	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	66584	1GHz~18GHz	Aug. 10, 2012	Nov. 14, 2012 ~ Nov. 29, 2012	Aug. 09, 2013	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A02665	1GHz~26.5GHz	Aug. 28, 2012	Nov. 14, 2012 ~ Nov. 29, 2012	Aug. 27, 2013	Radiation (03CH05-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Nov. 14, 2012 ~ Nov. 29, 2012	Sep. 27, 2013	Radiation (03CH05-HY)
Pre Amplifier	COM-POWER	PA-103	161075	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Nov. 14, 2012 ~ Nov. 29, 2012	Feb. 26, 2013	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Nov. 14, 2012 ~ Nov. 29, 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% ($U = 2U_c(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP291814 as below.