



FCC RF Test Report

APPLICANT : HTC Corporation
EQUIPMENT : Smartphone
MODEL NAME : PL80130
FCC ID : NM8PL80130
STANDARD : FCC Part 15 Subpart E
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Oct. 18, 2012 and completely tested on Nov. 26, 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.



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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	A9.2	26dB Bandwidth	-	Pass	-
3.2	15.407(a)	A9.2	Maximum Conducted Output Power	≤ 17, 24, 30 dBm (depend on band)	Pass	-
3.3	15.407(a)	A9.2	Power Spectral Density	≤ 4, 11, 17 dBm (depend on band)	Pass	-
3.4	15.407(a)(6)	A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.5	15.407(b)	A9.3	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 4.65 dB at 5469.680 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 4.00 dB at 13.558 MHz
3.7	15.407(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

HTC Corporation

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

1.2 Manufacturer

HTC Corporation

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

1.3 Feature of Equipment Under Test

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

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

Product Specification subjective to this standard	
Tx/Rx 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 : 12.16 dBm / 0.0164 W 802.11n HT20 : 12.16 dBm / 0.0164 W 802.11n HT40 : 12.49 dBm / 0.0177 W <5260 MHz ~ 5320 MHz> 802.11a : 12.00 dBm / 0.0158 W 802.11n HT20 : 12.05 dBm / 0.0160 W 802.11n HT40 : 12.34 dBm / 0.0171 W <5500 MHz ~ 5700 MHz> 802.11a : 11.91 dBm / 0.0155 W 802.11n HT20 : 11.90 dBm / 0.0155 W 802.11n HT40 : 12.16 dBm / 0.0164 W
Antenna Type	PIFA Antenna <5180 MHz ~ 5240 MHz> with gain -0.70 dBi <5260 MHz ~ 5320 MHz> with gain -0.70 dBi <5500 MHz ~ 5700 MHz> with gain -0.50 dBi
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH06-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:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
4.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 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 (X plane for Sample 1 / Z plane for Sample 2) 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	48Mbps	54M bps
Peak Power (dBm)	12.16	12.14	12.13	12.12	12.13	12.11	12.15	12.10

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	12.16	12.12	12.10	12.12	12.12	12.14	12.15	12.08

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	12.49	12.43	12.47	12.43	12.47	12.47	12.42	12.40

2.3 Test Mode

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

Test Cases						
	Test Items	Mode	Data rate	Test Channel	Remark	
Conducted TCs	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/M/H	-	
	Output Power	802.11a	6 Mbps	L/M/H	L/M/H	-
		802.11n HT20	6.5 Mbps	L/M/H	L/M/H	-
		802.11n HT40	13.5 Mbps	L/M/H	L/M/H	-
	Peak Excursion	802.11a	6 Mbps	L/M/H	L/M/H	-
		802.11n HT20	6.5 Mbps	L/M/H	L/M/H	-
		802.11n HT40	13.5 Mbps	L/M/H	L/M/H	-
	Frequency Stability	802.11a	6 Mbps	L/M/H	L/M/H	-
		802.11n HT20	6.5 Mbps	L/M/H	L/M/H	-
		802.11n HT40	13.5 Mbps	L/M/H	L/M/H	-
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	L/H	Sample 1	
		802.11n HT20	6.5 Mbps	L/H	Sample 1	
		802.11n HT40	13.5 Mbps	L/H	Sample 1 and Sample 2	
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H	Sample 1	
		802.11n HT20	6.5 Mbps	L/M/H	Sample 1	
		802.11n HT40	13.5 Mbps	L/M/H	Sample 1 and Sample 2	
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN (5G) Link + NFC + Earphone + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 1 Mode 2 : GSM850 Idle + Bluetooth Link + WLAN (5G) Link + NFC + Earphone + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 2					
Remark: 1. The worst case of conducted emission is mode 1; only the test data of it was reported. 2. For radiated TCs, the test was performance with Earphone, Battery 1, USB Cable 2, and Adapter 2.						



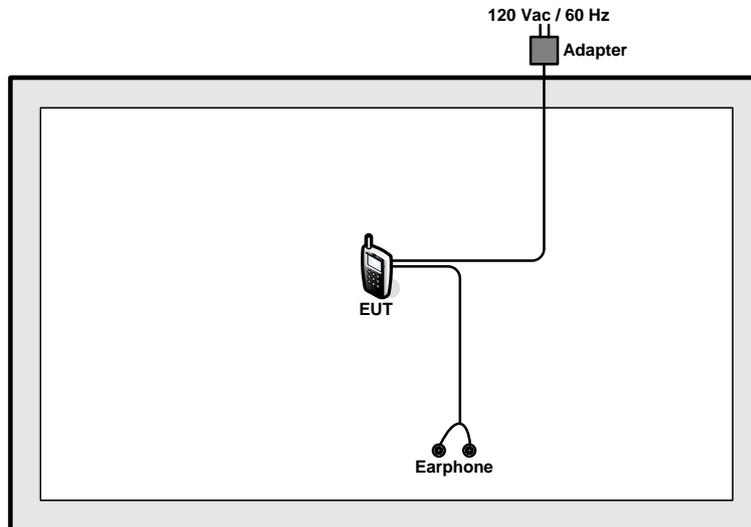
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725 MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725 MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

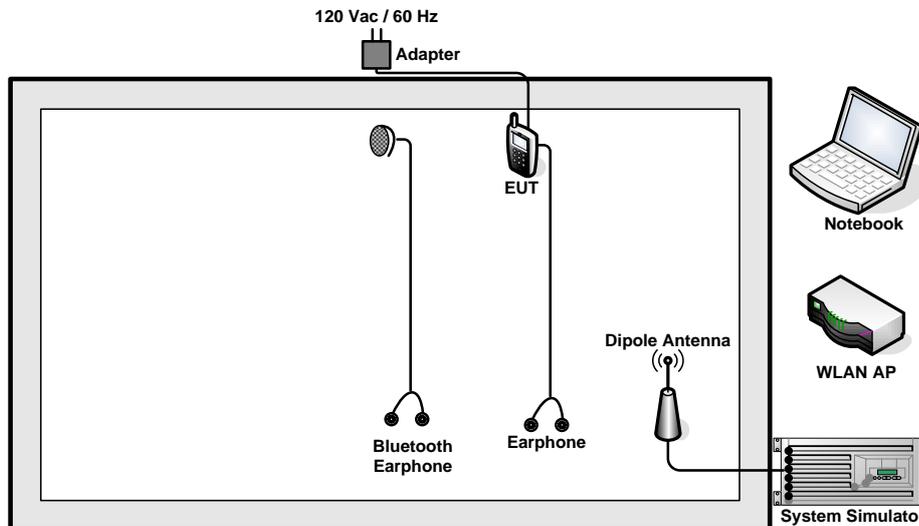
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725 MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

For 802.11a and 802.11n HT20 function, execute "Remote 432X controller (P2.01)" to make the EUT contact with WLAN AP for continuous transmitting and receiving signals.

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

3 Test Result

3.1 26dB 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.

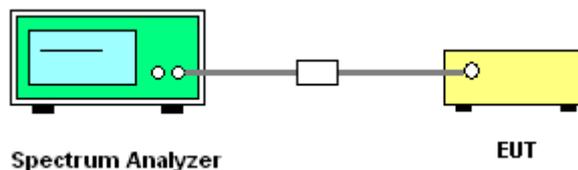
3.1.2 Measuring Instruments

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. Measure and record the results in the test report.

3.1.4 Test Setup



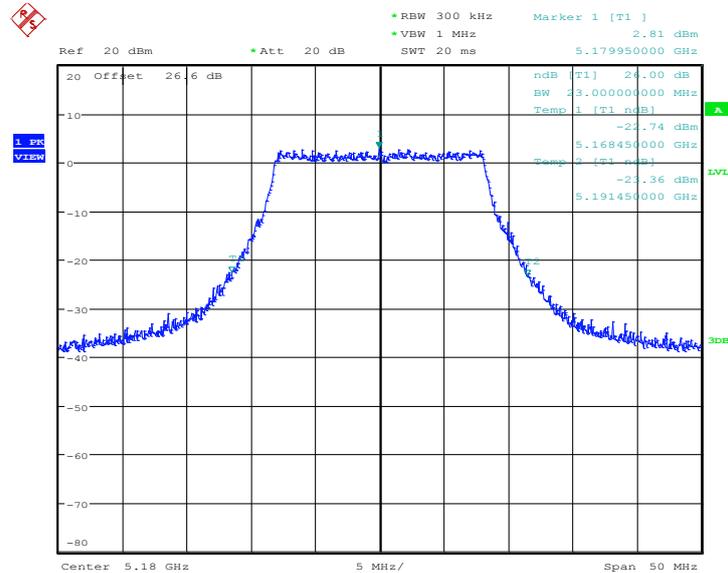


3.1.5 Test Result of 26dB Bandwidth Plots

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	23.000	N/A
44	5220	23.350	N/A
48	5240	23.200	N/A
52	5260	23.400	N/A
60	5300	23.200	N/A
64	5320	23.150	N/A
100	5500	23.100	N/A
116	5580	23.100	N/A
140	5700	22.950	N/A

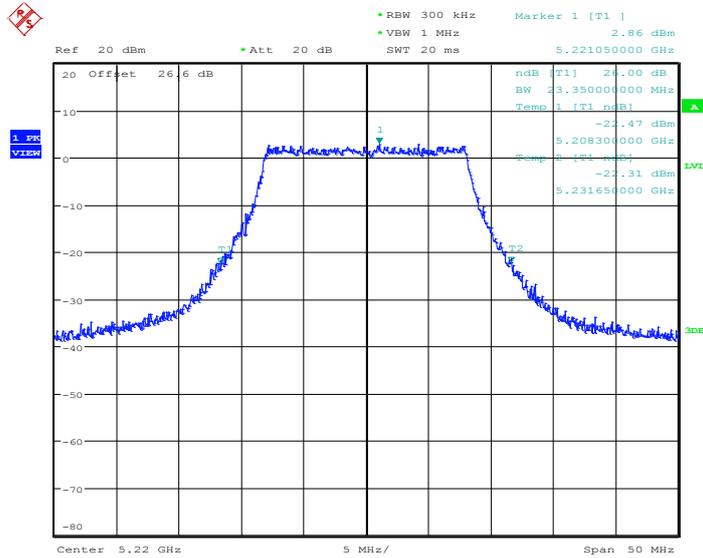
26 dB Bandwidth Plot on 802.11a Channel 36



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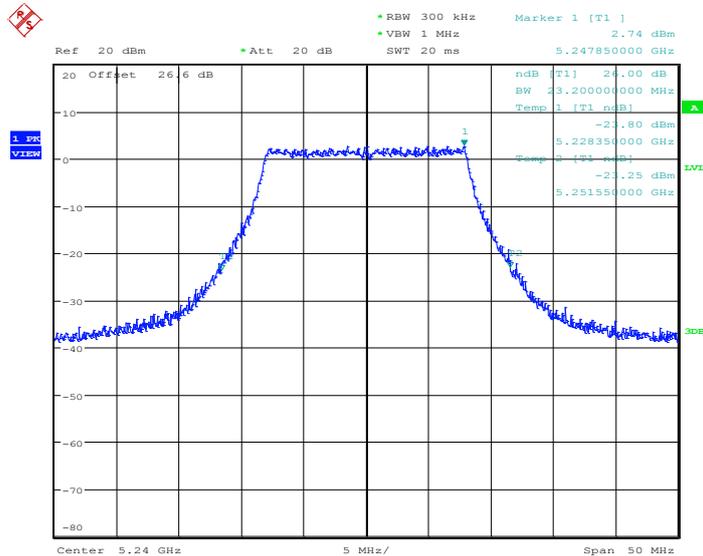


26 dB Bandwidth Plot on 802.11a Channel 44



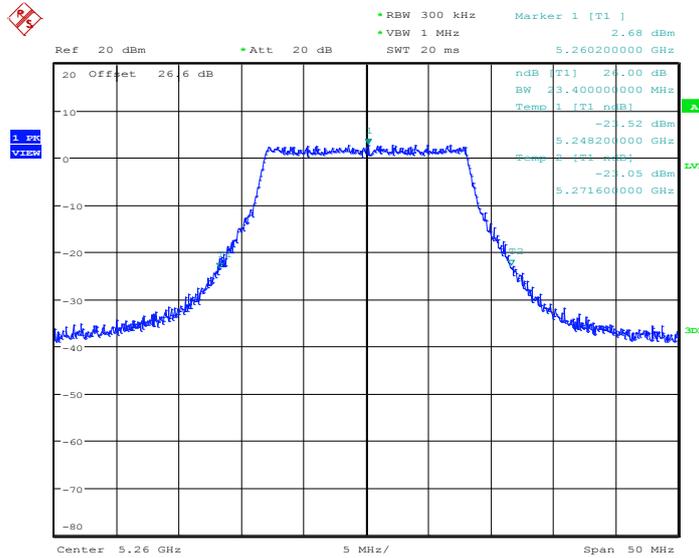
Date: 8.NOV.2012 11:01:15

26 dB Bandwidth Plot on 802.11a Channel 48



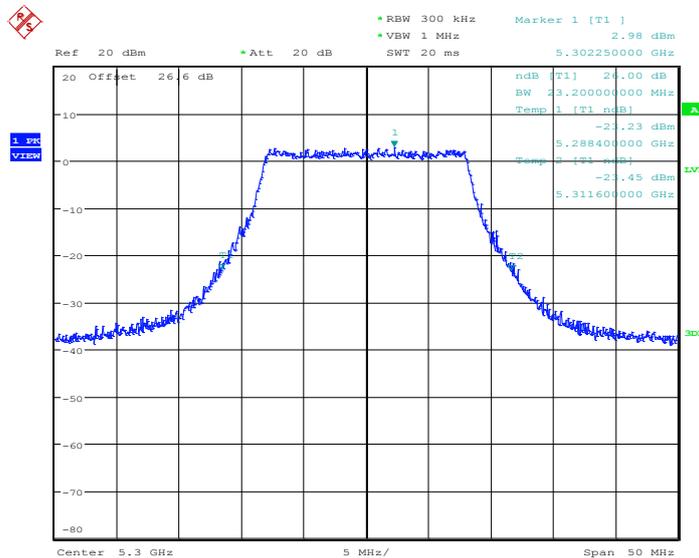


26 dB Bandwidth Plot on 802.11a Channel 52



Date: 8.NOV.2012 11:03:56

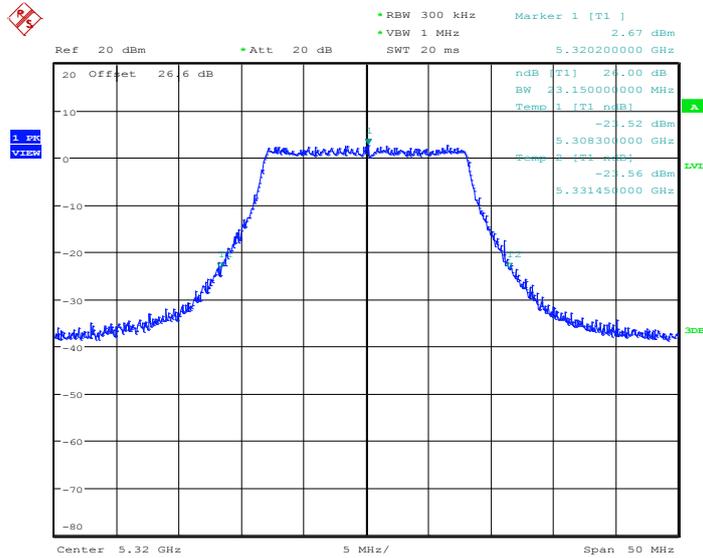
26 dB Bandwidth Plot on 802.11a Channel 60



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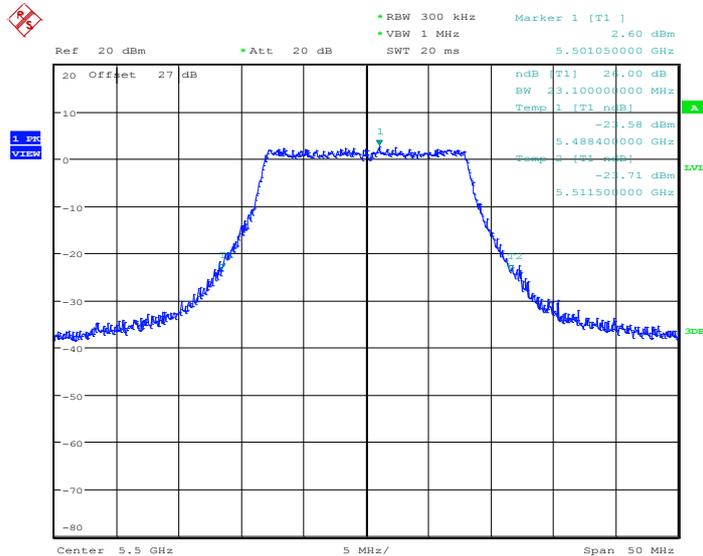


26 dB Bandwidth Plot on 802.11a Channel 64



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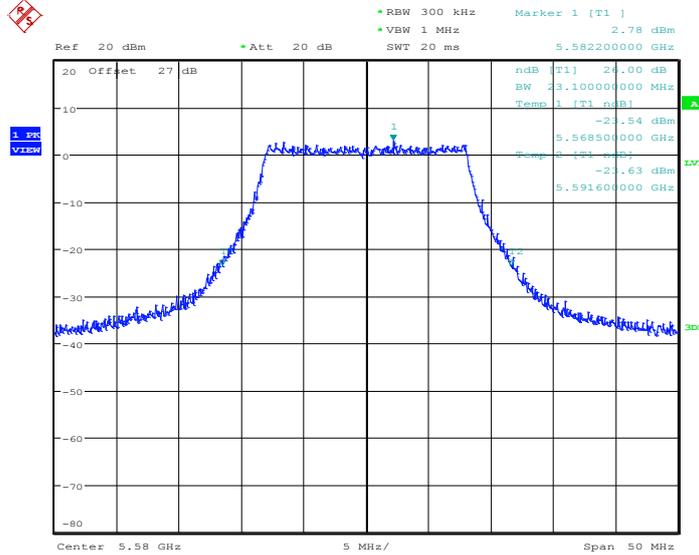
26 dB Bandwidth Plot on 802.11a Channel 100



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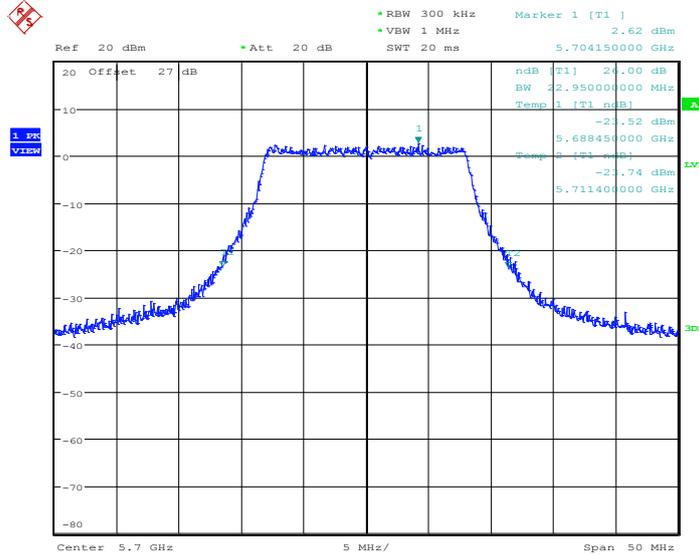


26 dB Bandwidth Plot on 802.11a Channel 116



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26 dB Bandwidth Plot on 802.11a Channel 140



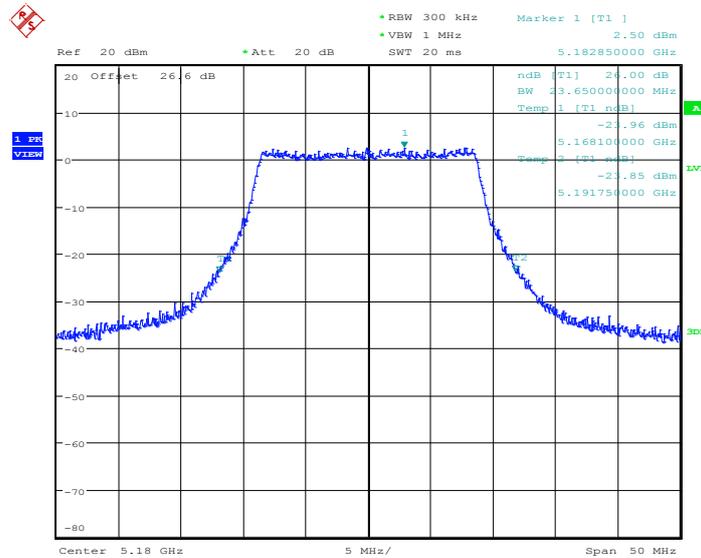
Date: 8,NOV,2012 11:23:45



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

Channel	Frequency (MHz)	802.11n HT20 26dB Bandwidth (MHz)	Pass/Fail
36	5180	23.650	N/A
44	5220	23.400	N/A
48	5240	23.200	N/A
52	5260	23.550	N/A
60	5300	23.550	N/A
64	5320	23.400	N/A
100	5500	23.450	N/A
116	5580	23.550	N/A
140	5700	23.800	N/A

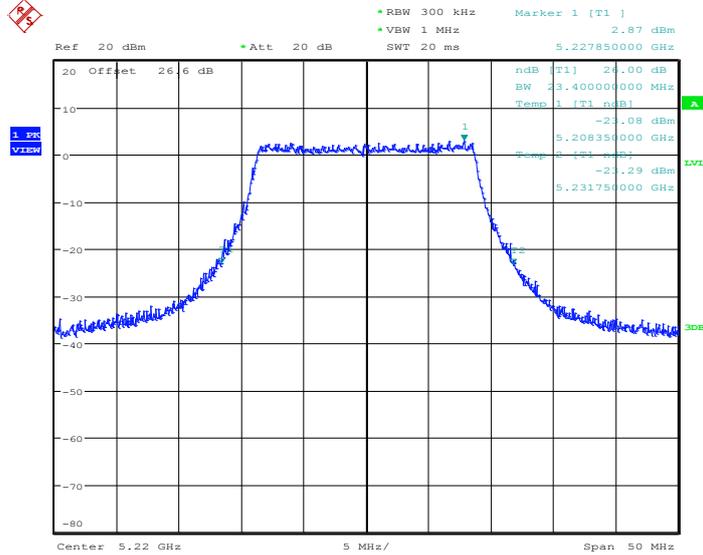
26 dB Bandwidth Plot on 802.11n HT20 Channel 36



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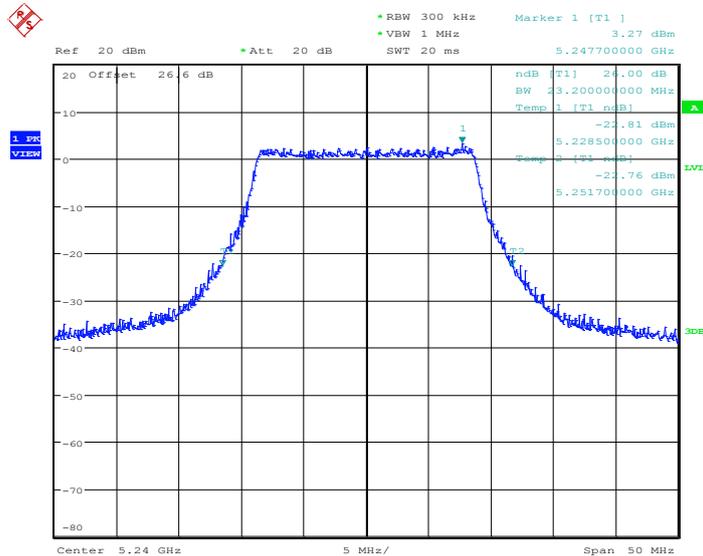


26 dB Bandwidth Plot on 802.11n HT20 Channel 44



Date: 8.NOV.2012 13:58:51

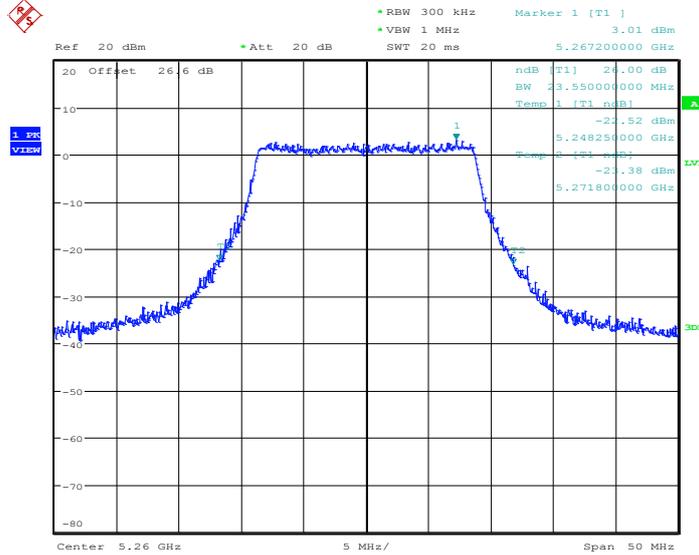
26 dB Bandwidth Plot on 802.11n HT20 Channel 48



Date: 8.NOV.2012 13:56:02

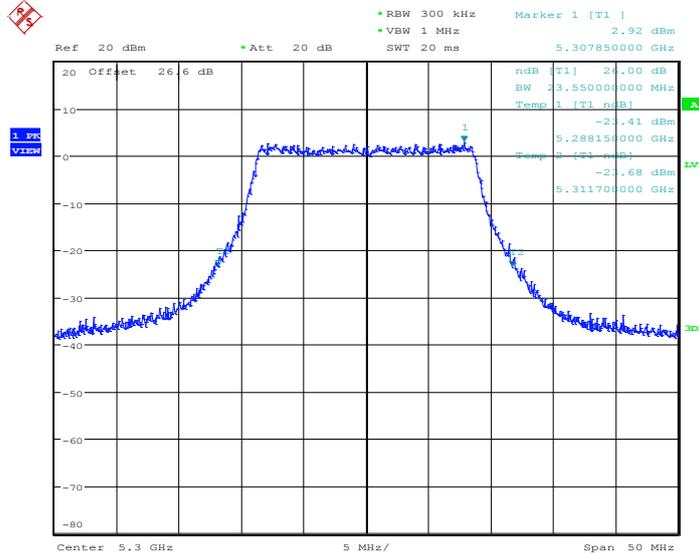


26 dB Bandwidth Plot on 802.11n HT20 Channel 52



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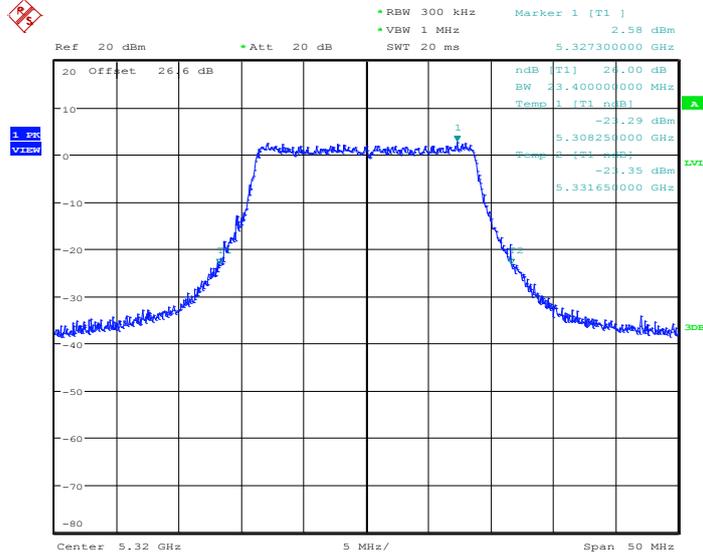
26 dB Bandwidth Plot on 802.11n HT20 Channel 60



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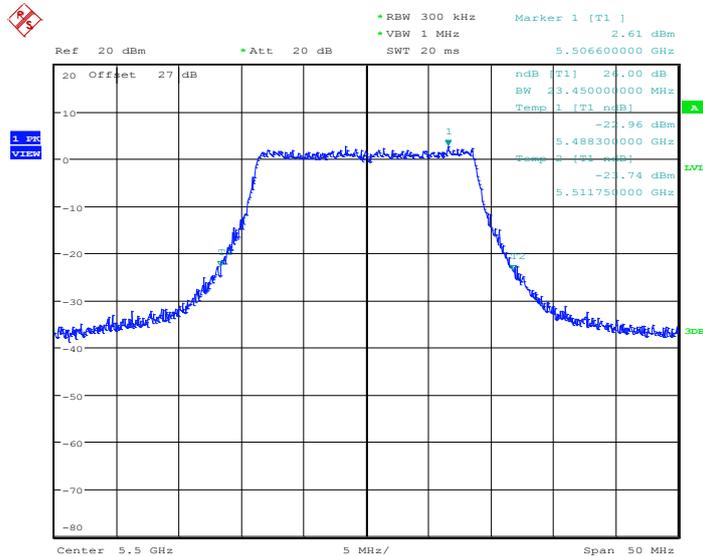


26 dB Bandwidth Plot on 802.11n HT20 Channel 64



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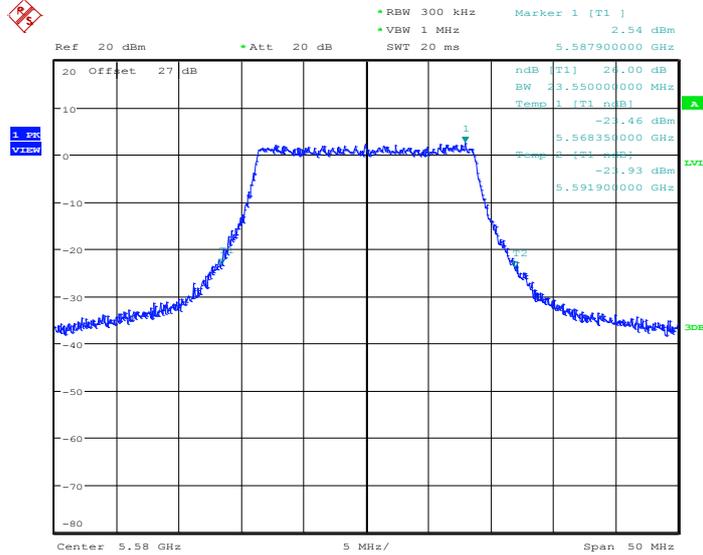
26 dB Bandwidth Plot on 802.11n HT20 Channel 100



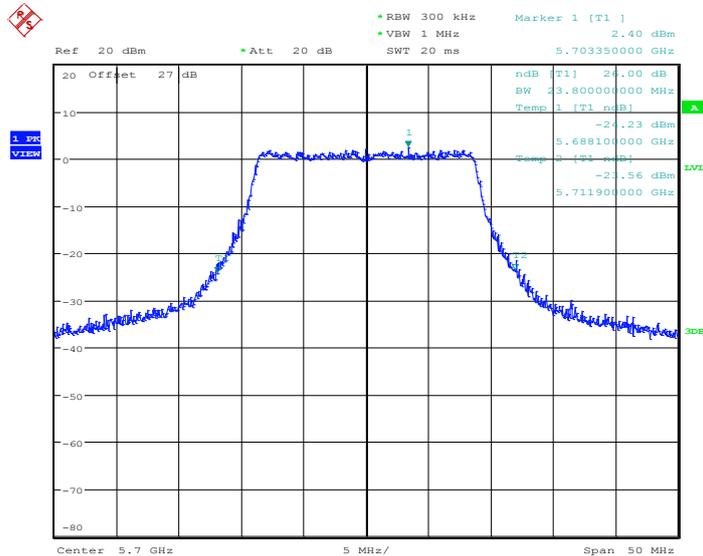
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26 dB Bandwidth Plot on 802.11n HT20 Channel 116



26 dB Bandwidth Plot on 802.11n HT20 Channel 140

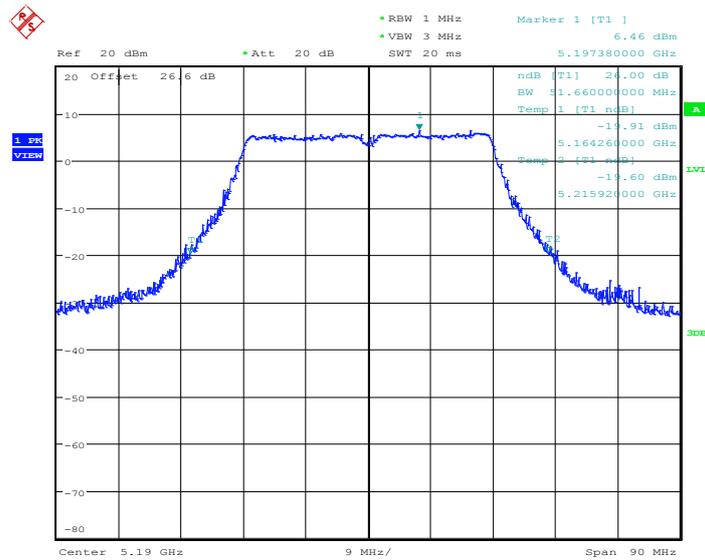




Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT40 26dB Bandwidth (MHz)	Pass/Fail
38	5190	51.660	N/A
46	5230	51.750	N/A
54	5270	51.120	N/A
62	5310	51.300	N/A
102	5510	51.570	N/A
110	5550	51.300	N/A
134	5670	51.750	N/A

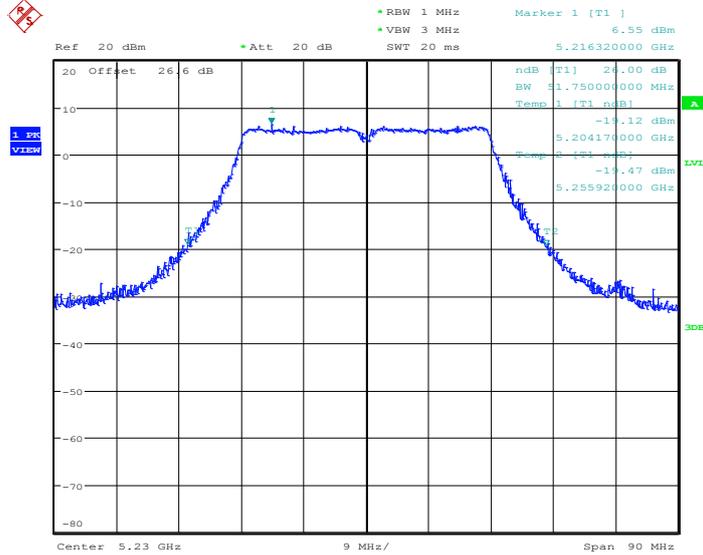
26 dB Bandwidth Plot on 802.11n HT40 Channel 38



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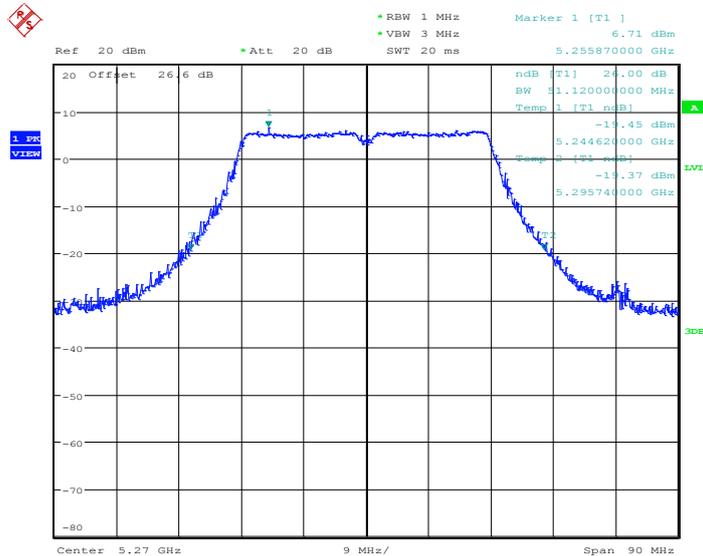


26 dB Bandwidth Plot on 802.11n HT40 Channel 46



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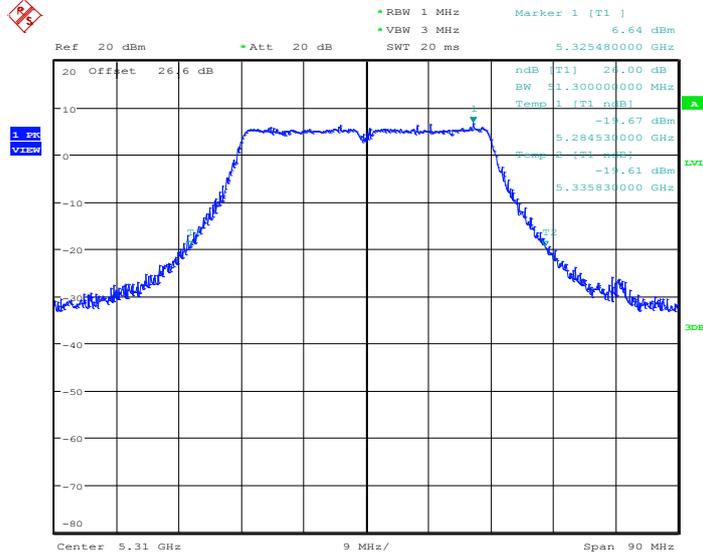
26 dB Bandwidth Plot on 802.11n HT40 Channel 54



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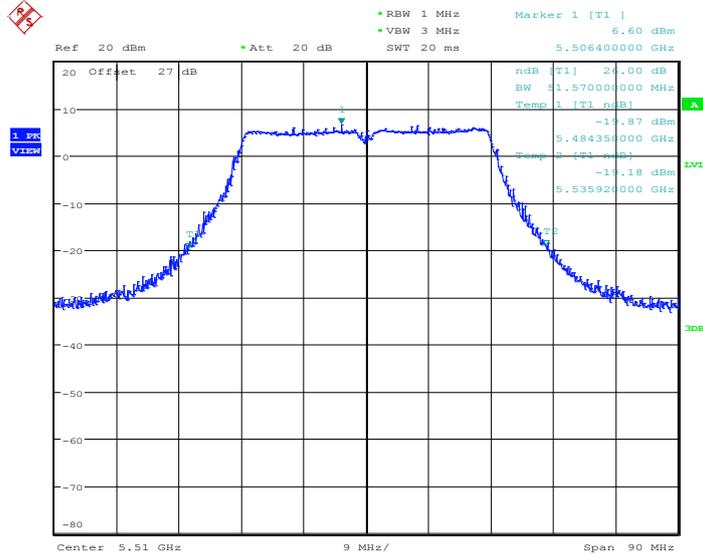


26 dB Bandwidth Plot on 802.11n HT40 Channel 62



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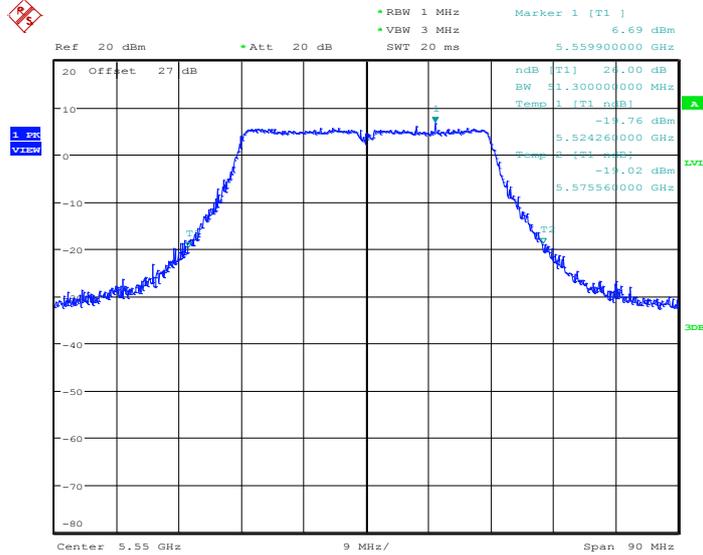
26 dB Bandwidth Plot on 802.11n HT40 Channel 102



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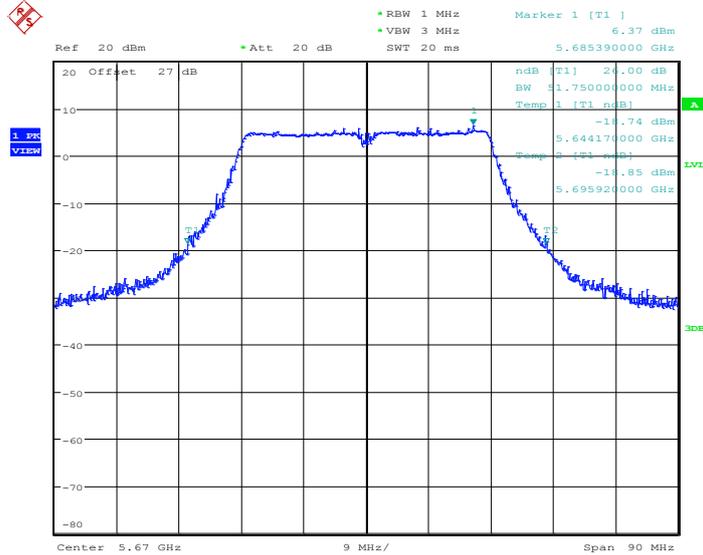


26 dB Bandwidth Plot on 802.11n HT40 Channel 110



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26 dB Bandwidth Plot on 802.11n HT40 Channel 13A



Date: 8.NOV.2012 14:35:36

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.

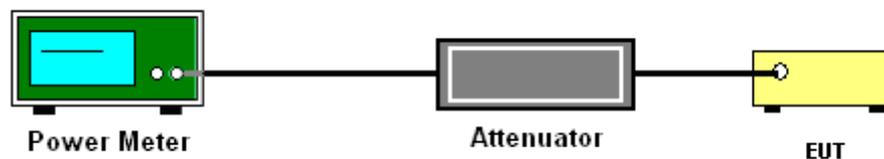
3.2.3 Test Procedures

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°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle :	95.78%	Duty Factor :	0.19dB

Channel	Frequency (MHz)	802.11a Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	11.97	12.16	17	Pass
44	5220	11.77	11.96	17	Pass
48	5240	11.70	11.89	17	Pass
52	5260	11.81	12.00	24	Pass
60	5300	11.72	11.91	24	Pass
64	5320	11.58	11.77	24	Pass
100	5500	11.72	11.91	24	Pass
116	5580	11.42	11.61	24	Pass
140	5700	11.32	11.51	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°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle :	95.25%	Duty Factor :	0.21dB

Channel	Frequency (MHz)	802.11n HT20 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	11.95	12.16	17	Pass
44	5220	11.78	11.99	17	Pass
48	5240	11.80	12.01	17	Pass
52	5260	11.84	12.05	24	Pass
60	5300	11.70	11.91	24	Pass
64	5320	11.68	11.89	24	Pass
100	5500	11.69	11.90	24	Pass
116	5580	11.57	11.78	24	Pass
140	5700	11.34	11.55	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°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle :	87.26%	Duty Factor :	0.59dB

Channel	Frequency (MHz)	802.11n HT40 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
38	5190	11.90	12.49	17	Pass
46	5230	11.64	12.23	17	Pass
54	5270	11.75	12.34	24	Pass
62	5310	11.60	12.19	24	Pass
102	5510	11.57	12.16	24	Pass
110	5550	11.46	12.05	24	Pass
134	5670	11.31	11.90	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.

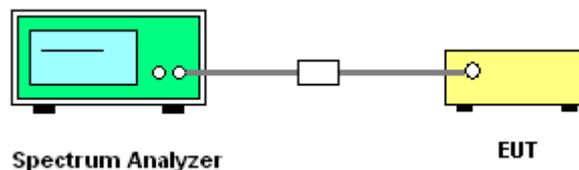
Section E) Peak power spectral density (PPSD).

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



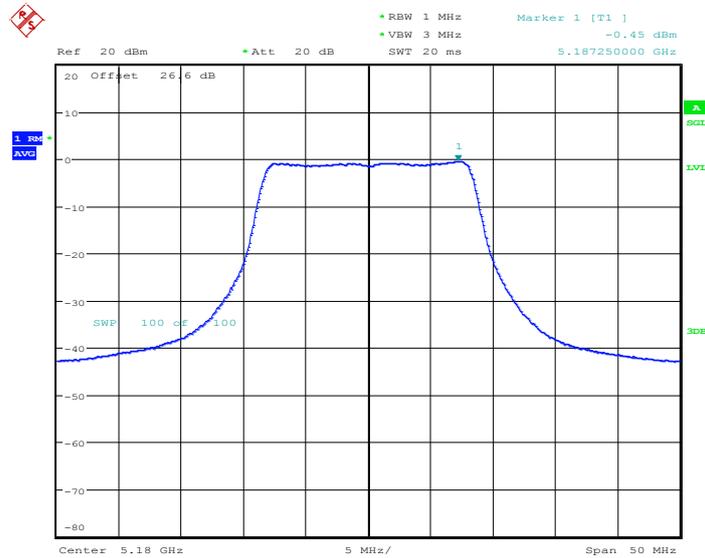
3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle:	95.78%	Duty Factor:	0.19dB

Channel	Frequency (MHz)	802.11a PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	-0.450	-0.26	4	Pass
44	5220	-0.370	-0.18	4	Pass
48	5240	-0.360	-0.17	4	Pass
52	5260	-0.360	-0.17	11	Pass
60	5300	-0.380	-0.19	11	Pass
64	5320	-0.570	-0.38	11	Pass
100	5500	-0.540	-0.35	11	Pass
116	5580	-0.760	-0.57	11	Pass
140	5700	-0.900	-0.71	11	Pass

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

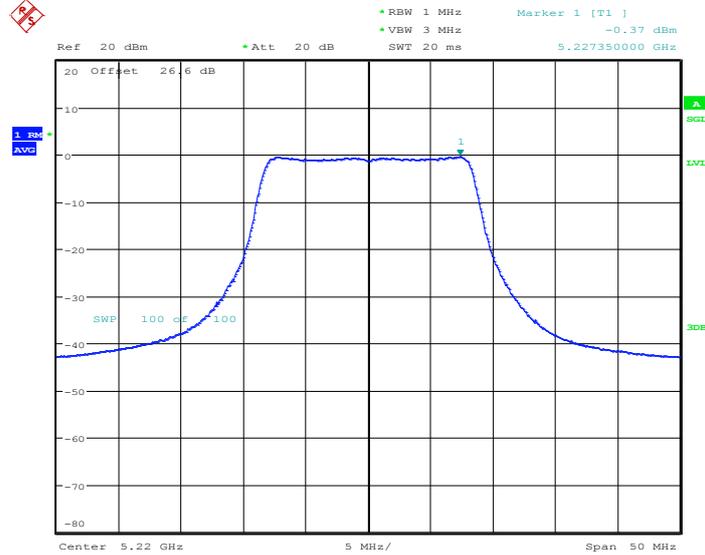
PSD Plot on 802.11a Channel 36



Date: 8.NOV.2012 10:50:58

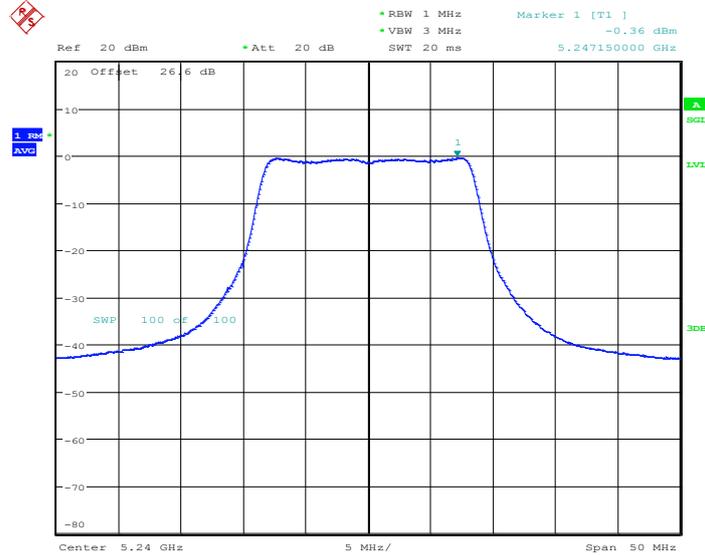


PSD Plot on 802.11a Channel 44



Date: 8,NOV,2012 11:01:30

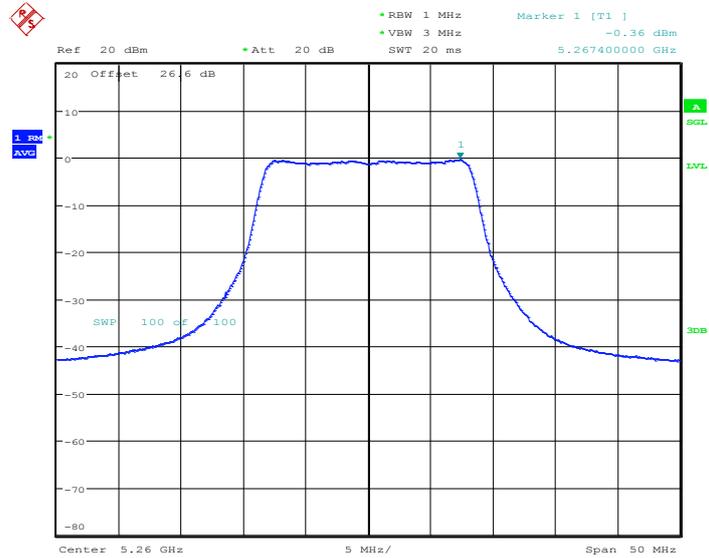
PSD Plot on 802.11a Channel 48



Date: 8,NOV,2012 10:56:52

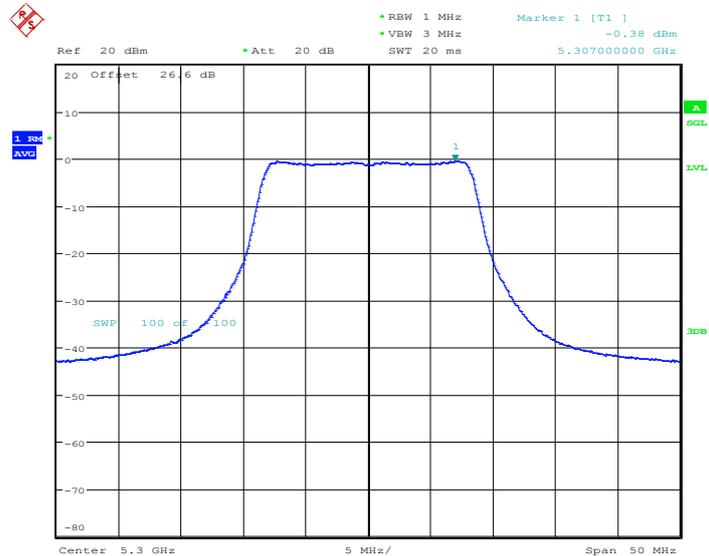


PSD Plot on 802.11a Channel 52



Date: 8.NOV.2012 11:04:13

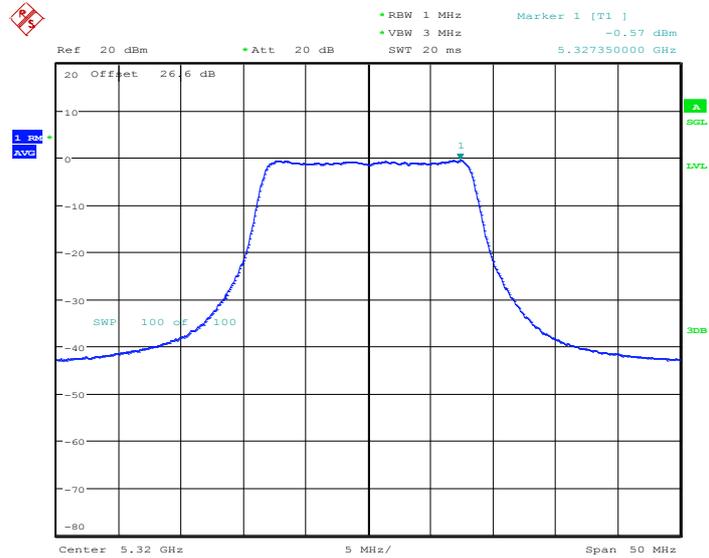
PSD Plot on 802.11a Channel 60



Date: 8.NOV.2012 11:06:37

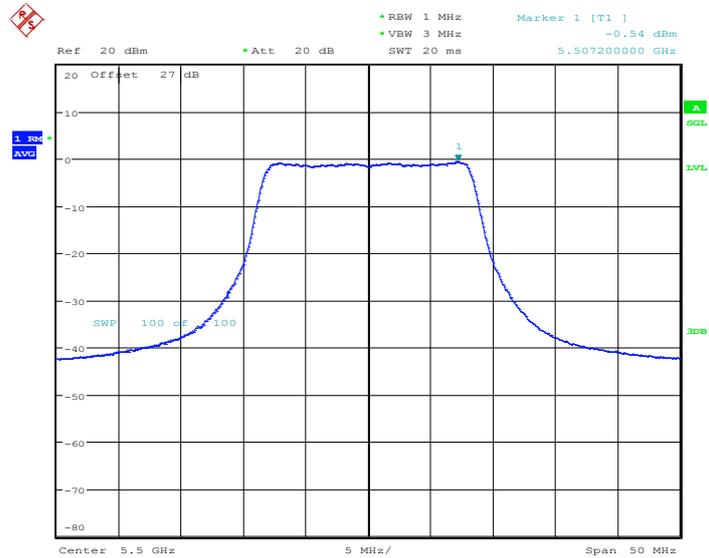


PSD Plot on 802.11a Channel 64



Date: 8,NOV,2012 11:09:08

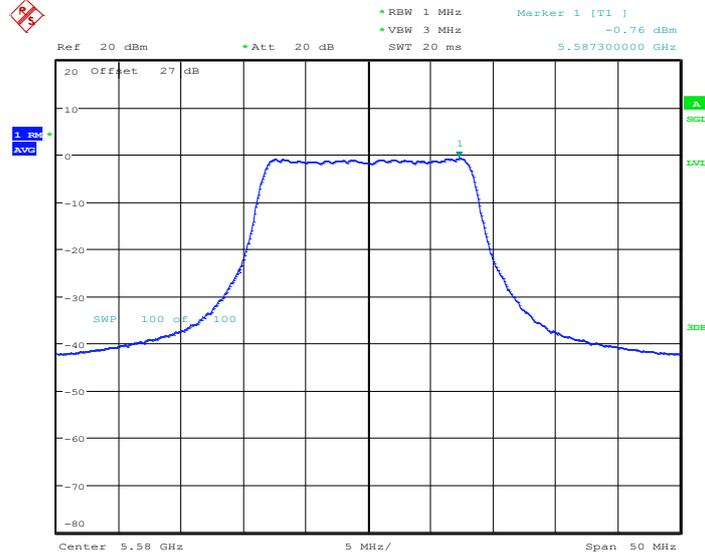
PSD Plot on 802.11a Channel 100



Date: 8,NOV,2012 11:16:58

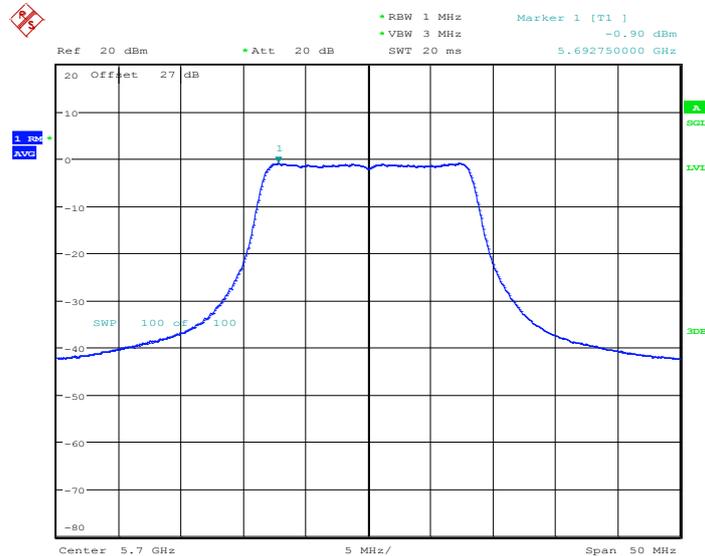


PSD Plot on 802.11a Channel 116



Date: 8.NOV.2012 11:19:51

PSD Plot on 802.11a Channel 140



Date: 8.NOV.2012 11:24:06

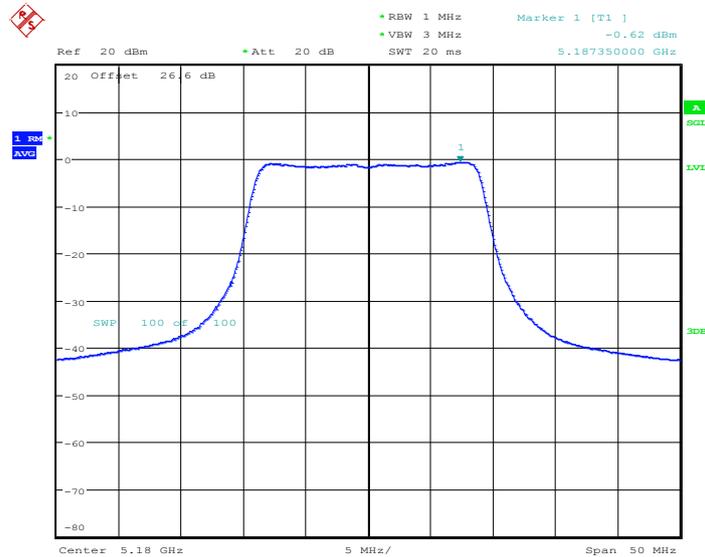


Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle:	95.25%	Duty Factor:	0.21dB

Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	-0.62	-0.41	4	Pass
44	5220	-0.36	-0.15	4	Pass
48	5240	-0.32	-0.11	4	Pass
52	5260	-0.42	-0.21	11	Pass
60	5300	-0.53	-0.32	11	Pass
64	5320	-0.66	-0.45	11	Pass
100	5500	-0.83	-0.62	11	Pass
116	5580	-0.82	-0.61	11	Pass
140	5700	-1.01	-0.80	11	Pass

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

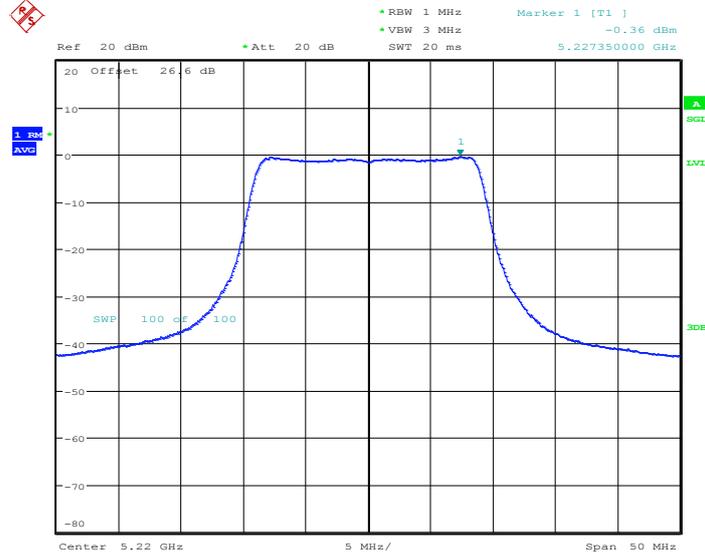
PSD Plot on 802.11n HT20 channel 36



Date: 8.NOV.2012 14:01:10

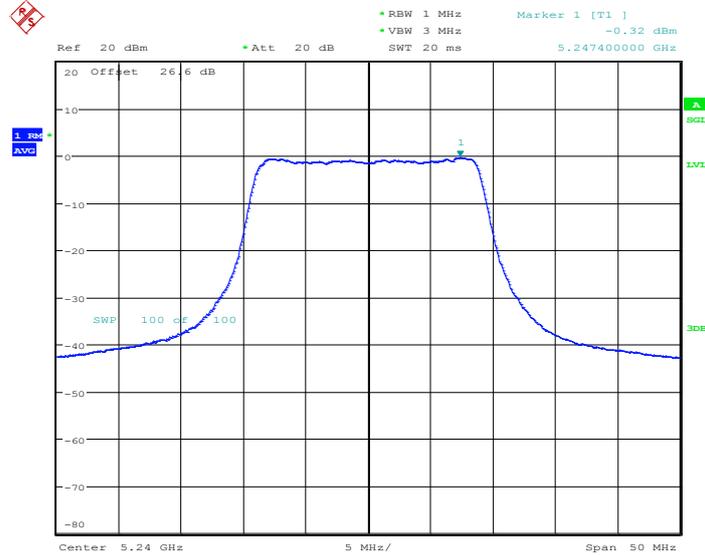


PSD Plot on 802.11n HT20 Channel 44



Date: 8.NOV.2012 13:59:06

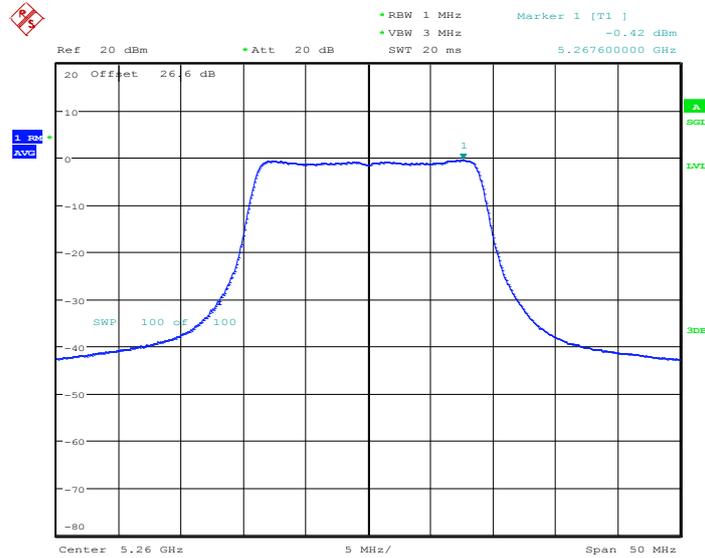
PSD Plot on 802.11n HT20 Channel 48



Date: 8.NOV.2012 13:56:17

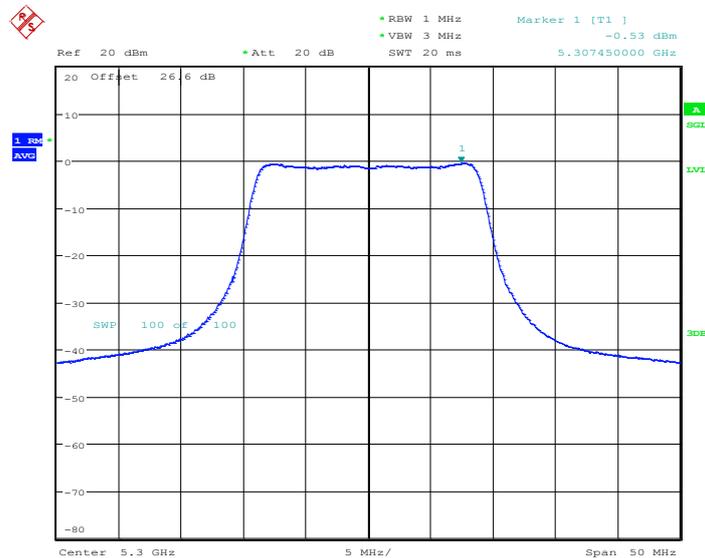


PSD Plot on 802.11n HT20 Channel 52



Date: 8,NOV,2012 13:37:55

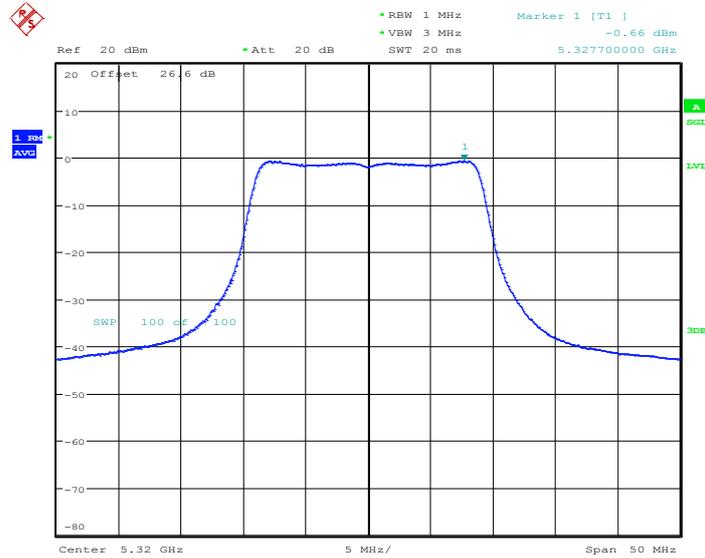
PSD Plot on 802.11n HT20 Channel 60



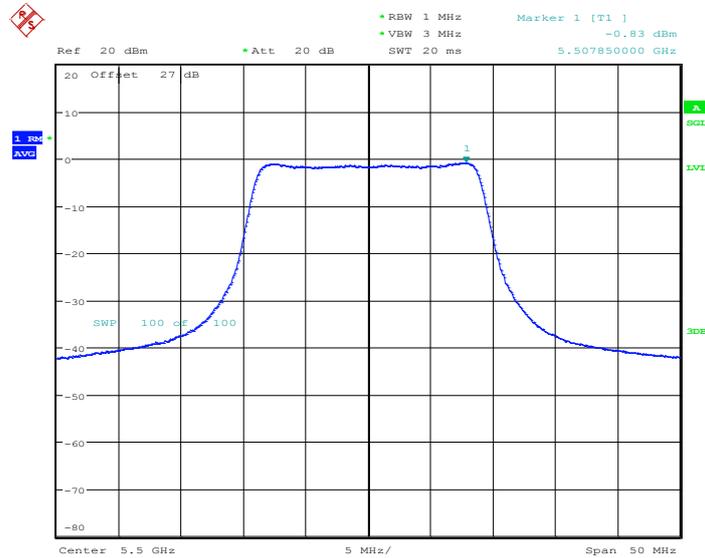
Date: 8,NOV,2012 13:33:05



PSD Plot on 802.11n HT20 Channel 64

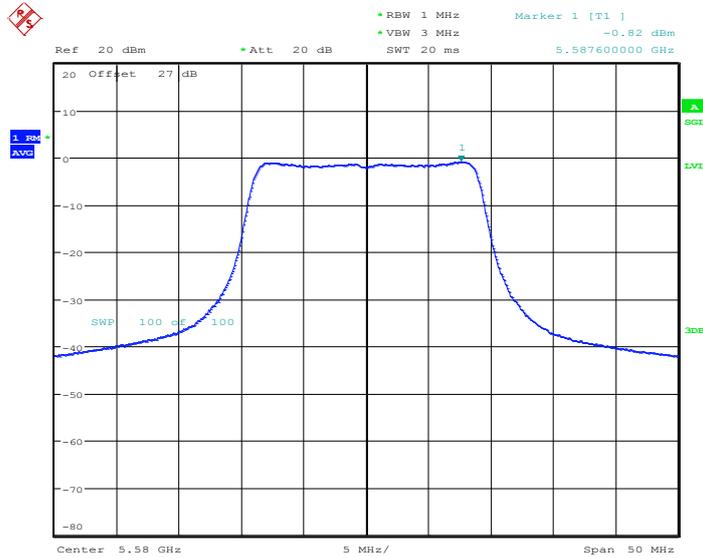


PSD Plot on 802.11n HT20 Channel 100



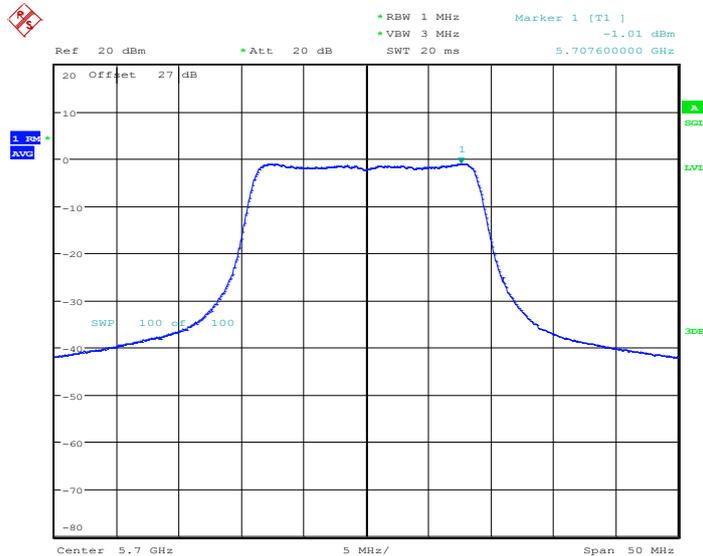


PSD Plot on 802.11n HT20 Channel 116



Date: 8,NOV,2012 11:58:55

PSD Plot on 802.11n HT20 Channel 140



Date: 8,NOV,2012 11:29:33

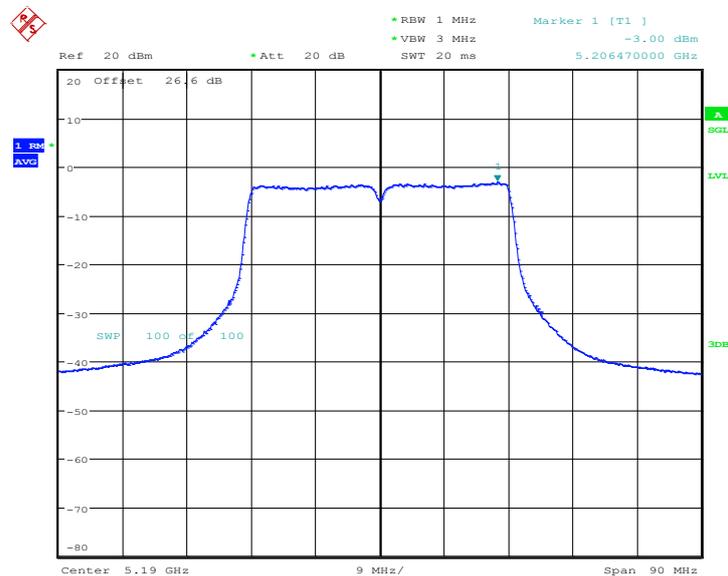


Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%
Duty Cycle:	87.26%	Duty Factor:	0.59dB

Channel	Frequency (MHz)	802.11n HT40 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
38	5190	-3.00	-2.41	4	Pass
46	5230	-3.12	-2.53	4	Pass
54	5270	-3.13	-2.54	11	Pass
62	5310	-3.40	-2.81	11	Pass
102	5510	-3.19	-2.60	11	Pass
110	5550	-3.63	-3.04	11	Pass
134	5670	-3.78	-3.19	11	Pass

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

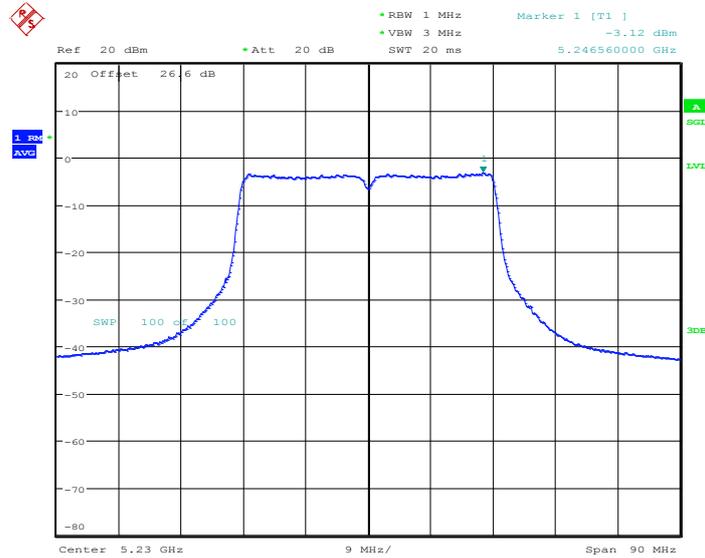
PSD Plot on 802.11n HT40 Channel 38



Date: 8.NOV.2012 14:05:35

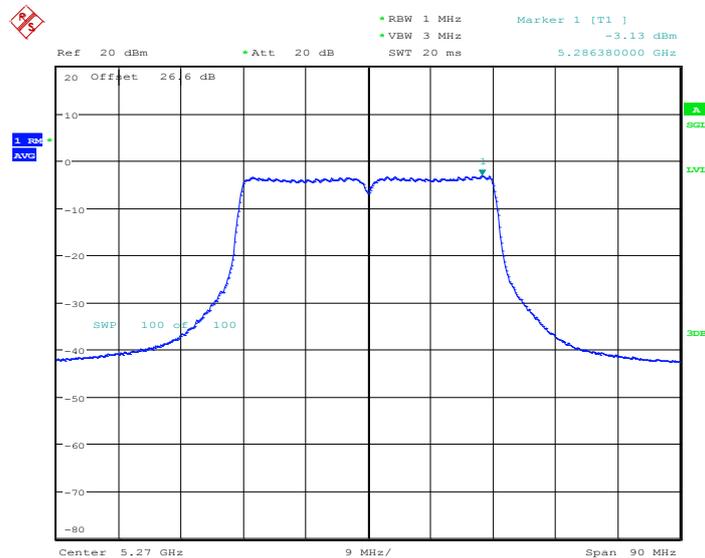


PSD Plot on 802.11n HT40 Channel 46



Date: 8.NOV.2012 14:08:00

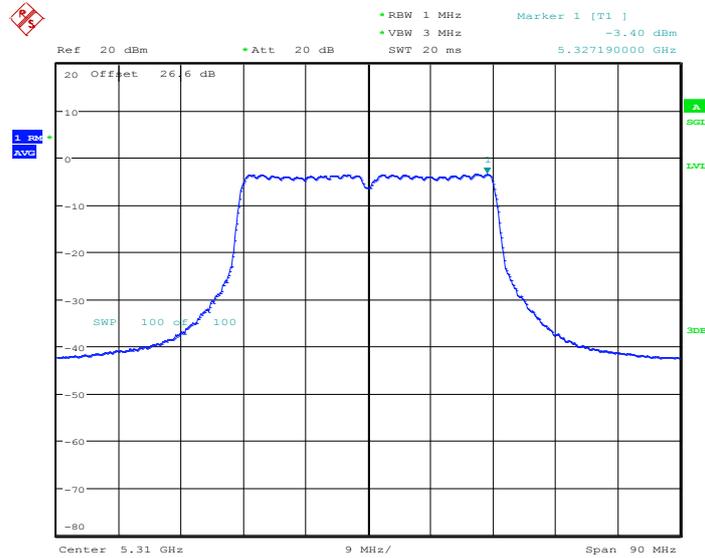
PSD Plot on 802.11n HT40 Channel 54



Date: 8.NOV.2012 14:10:41

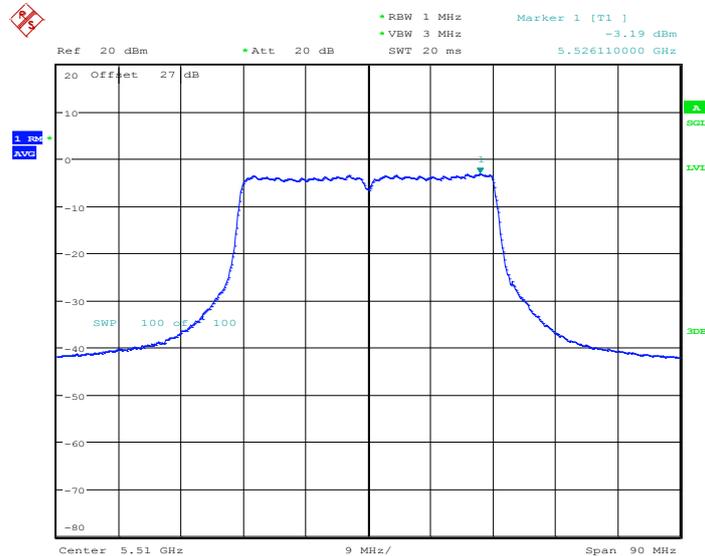


PSD Plot on 802.11n HT40 Channel 62



Date: 8,NOV,2012 14:13:23

PSD Plot on 802.11n HT40 Channel 102



Date: 8,NOV,2012 14:26:24

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.

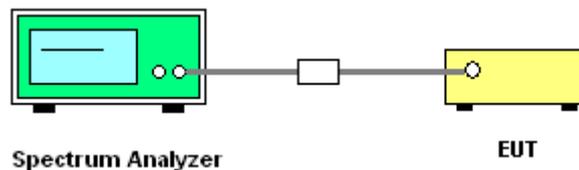
3.4.3 Test Procedures

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

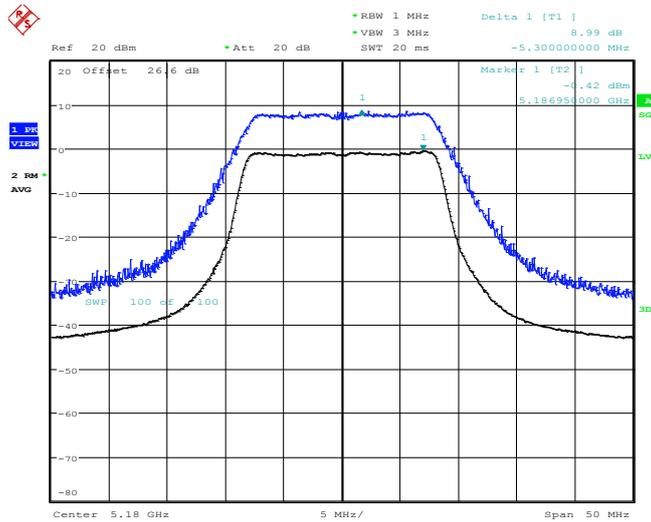




3.4.5 Test Result of Peak Excursion Ratio

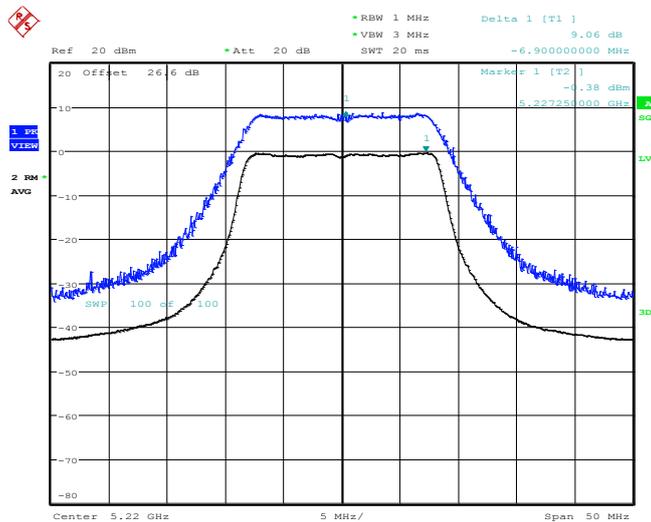
Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11a Channel 36



Date: 8.NOV.2012 10:51:15

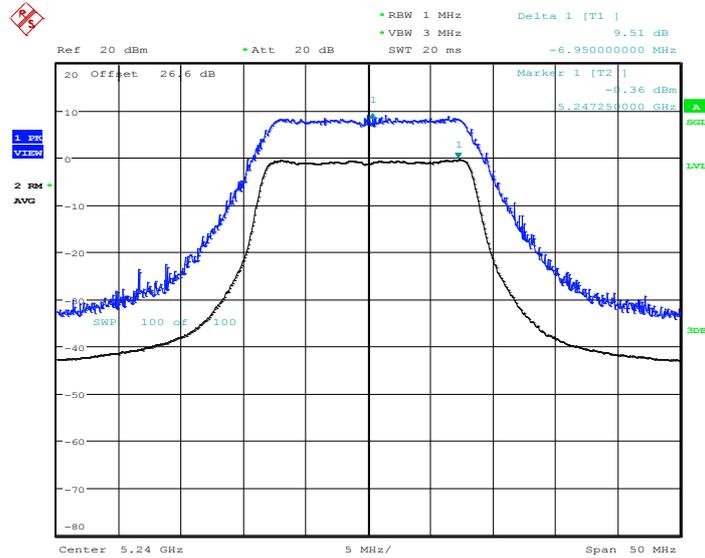
Peak Excursion Ratio Plot on 802.11a Channel 44



Date: 8.NOV.2012 11:01:47

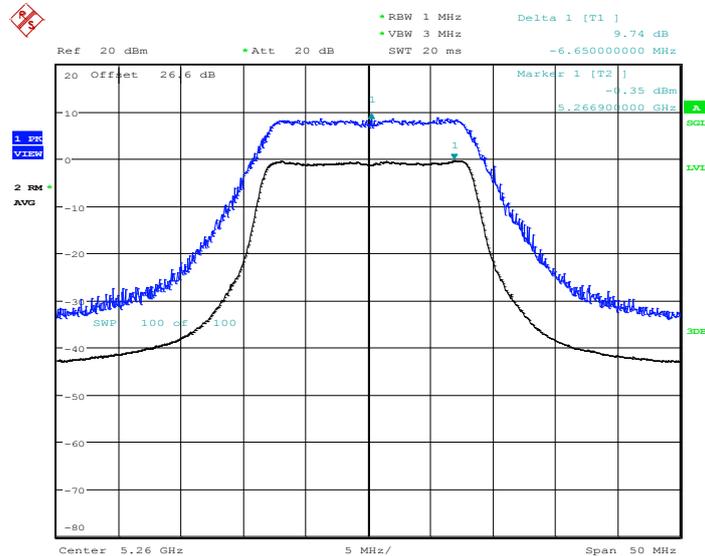


Peak Excursion Ratio Plot on 802.11a Channel 48



Date: 8.NOV.2012 10:57:12

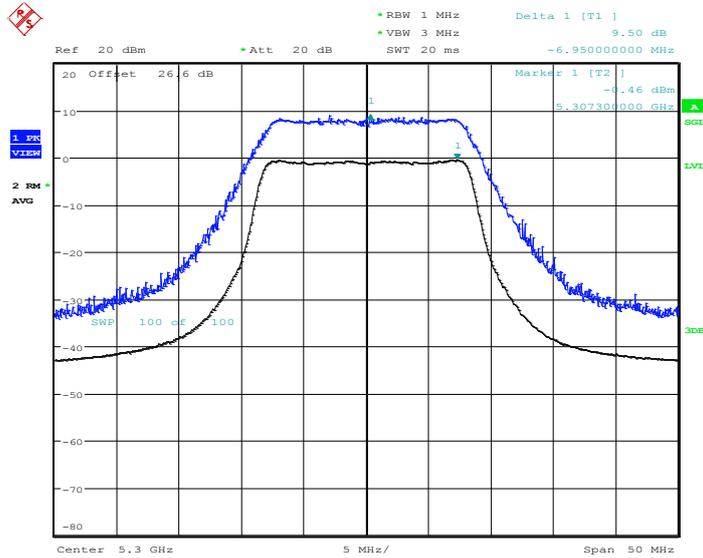
Peak Excursion Ratio Plot on 802.11a Channel 52



Date: 8.NOV.2012 11:04:30

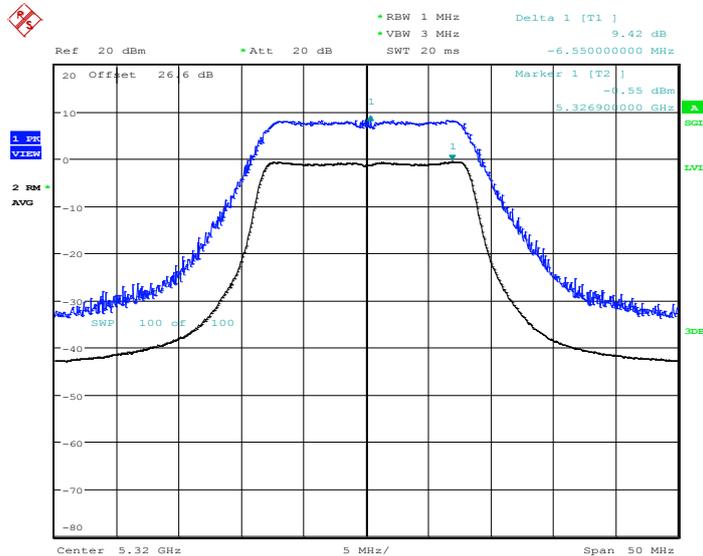


Peak Excursion Ratio Plot on 802.11a Channel 60



Date: 8.NOV.2012 11:06:54

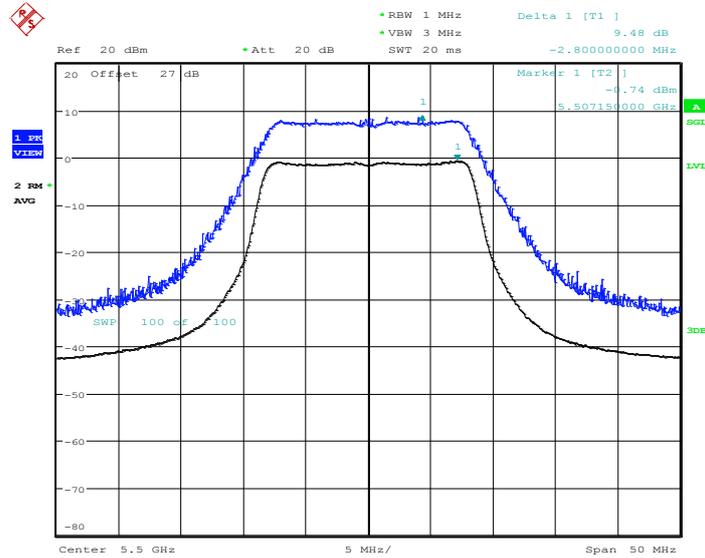
Peak Excursion Ratio Plot on 802.11a Channel 64



Date: 8.NOV.2012 11:09:25

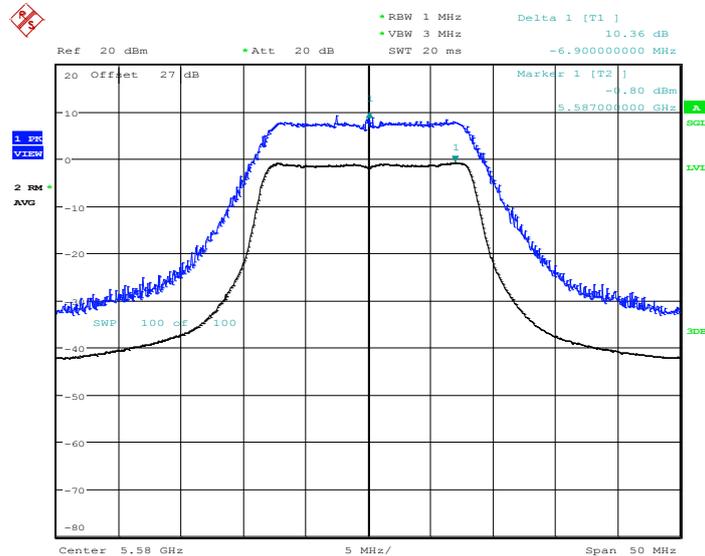


Peak Excursion Ratio Plot on 802.11a Channel 100



Date: 8.NOV.2012 11:17:15

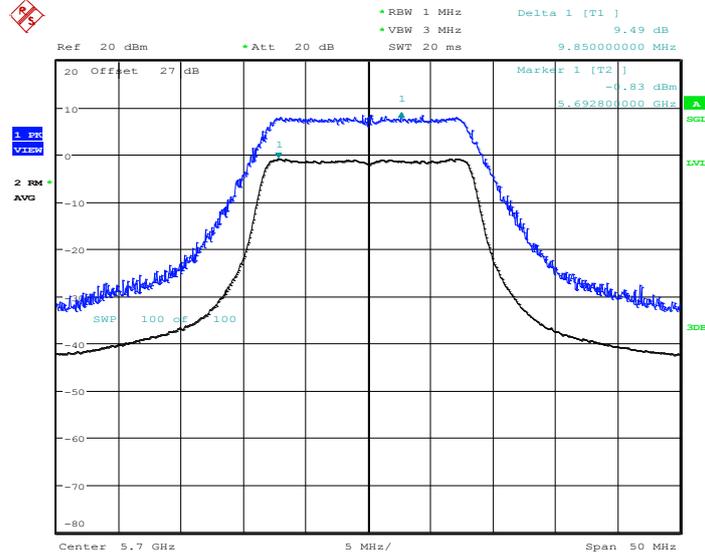
Peak Excursion Ratio Plot on 802.11a Channel 116



Date: 8.NOV.2012 11:20:08



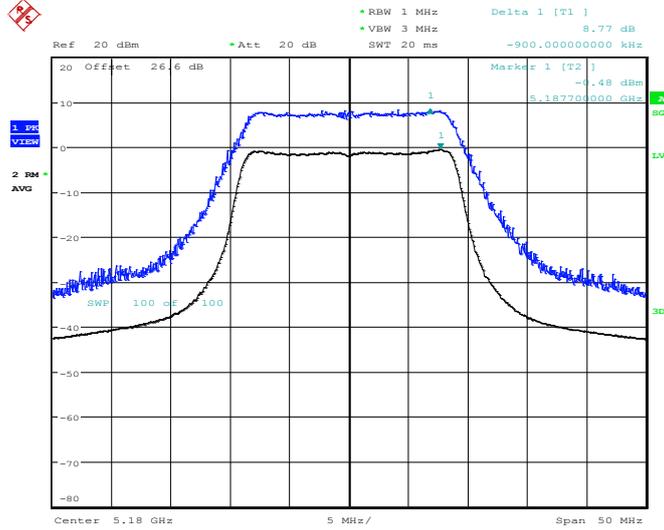
Peak Excursion Ratio Plot on 802.11a Channel 140





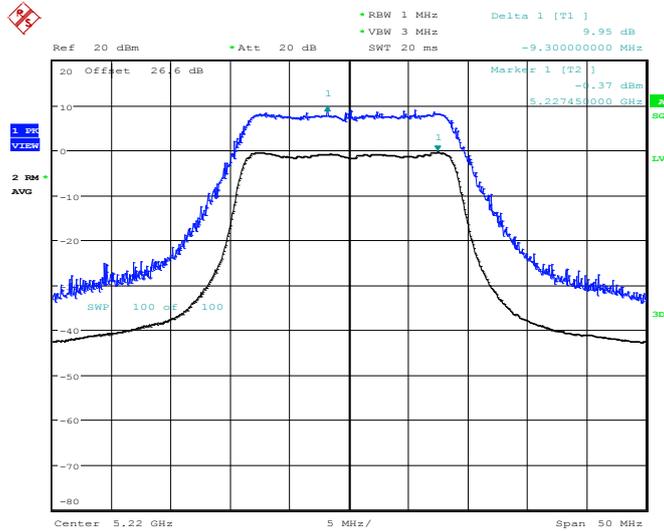
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11n HT20 Channel 36



Date: 8.NOV.2012 14:01:26

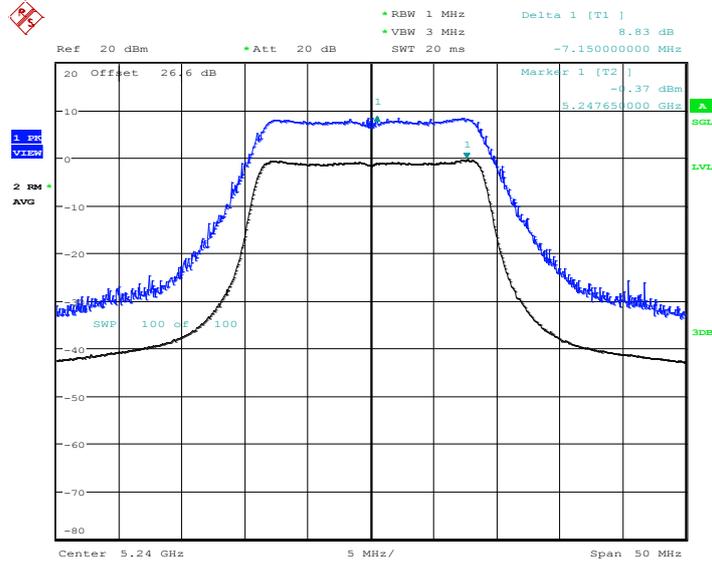
Peak Excursion Ratio Plot on 802.11n HT20 Channel 44



Date: 8.NOV.2012 13:59:21

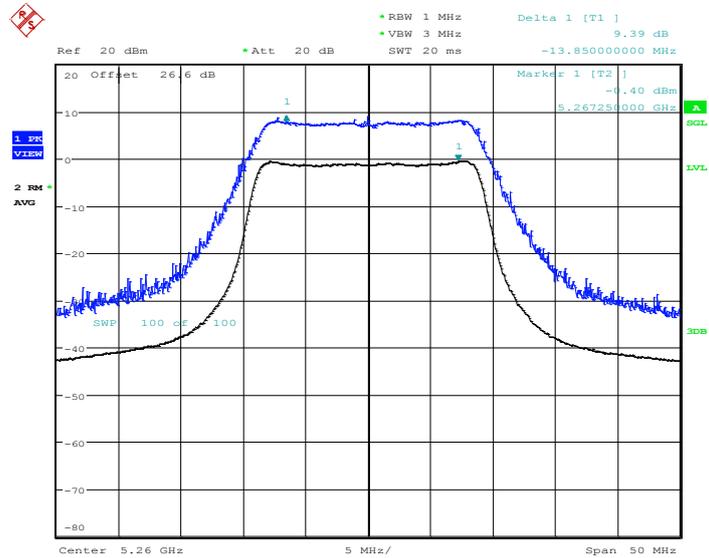


Peak Excursion Ratio Plot on 802.11n HT20 Channel 48



Date: 8.NOV.2012 13:56:33

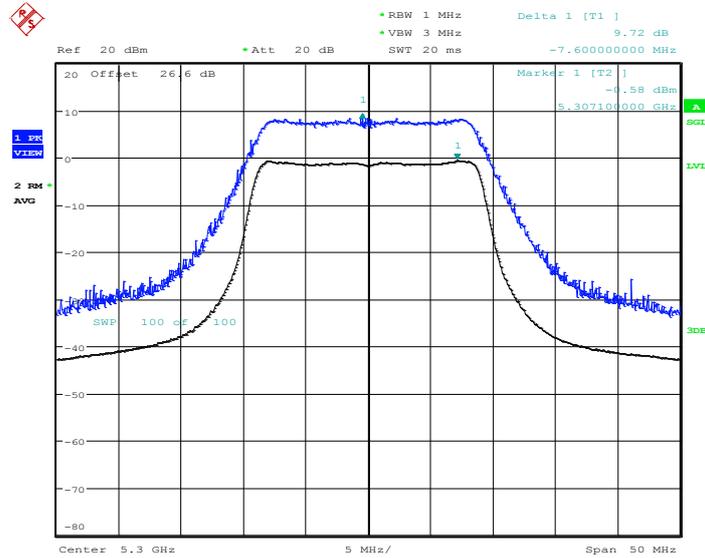
Peak Excursion Ratio Plot on 802.11n HT20 Channel 52



Date: 8.NOV.2012 13:38:12

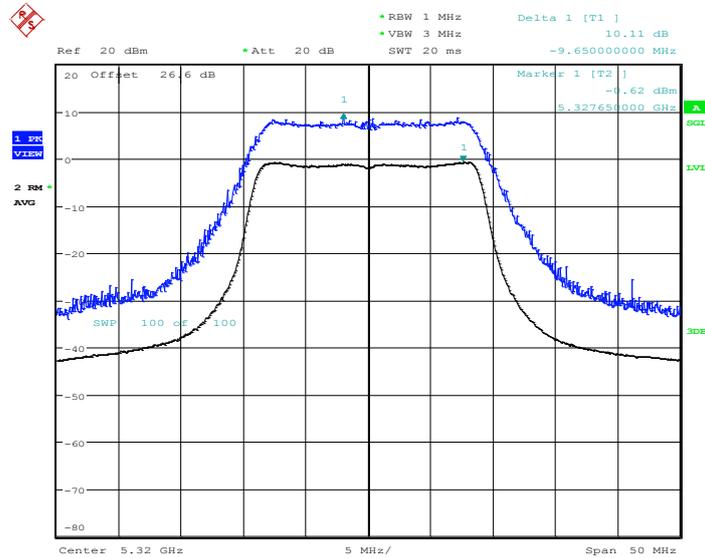


Peak Excursion Ratio Plot on 802.11n HT20 Channel 60



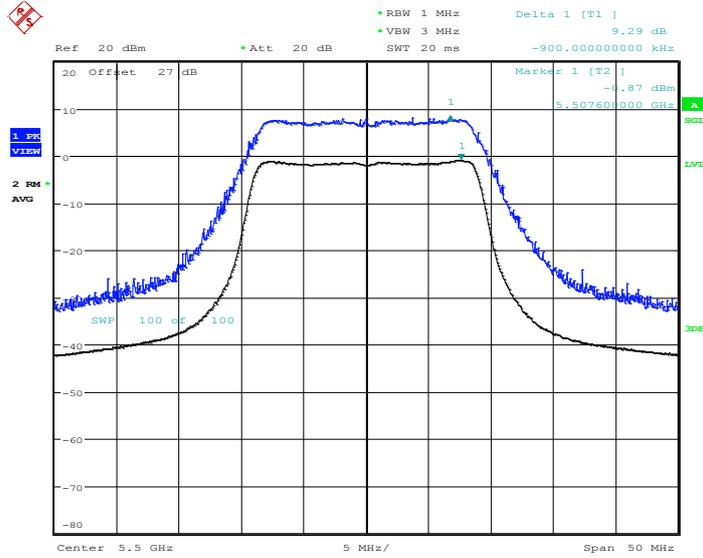
Date: 8,NOV,2012 13:33:22

Peak Excursion Ratio Plot on 802.11n HT20 Channel 64



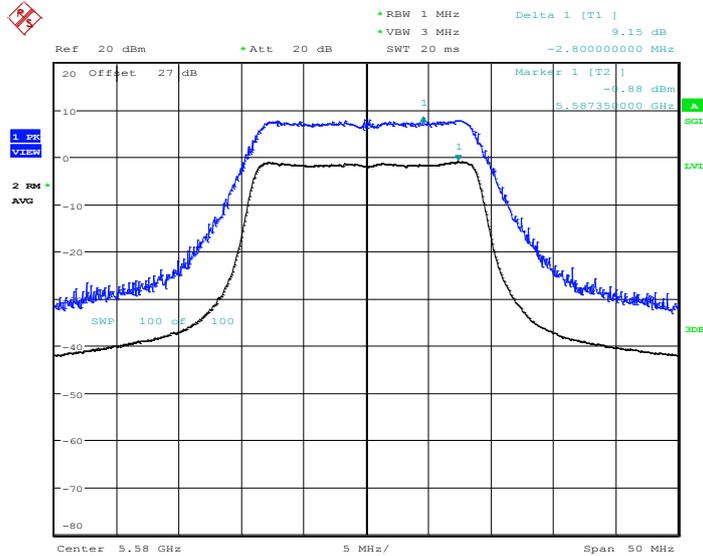
Date: 8,NOV,2012 12:04:34

Peak Excursion Ratio Plot on 802.11n HT20 Channel 100



Date: 8.NOV.2012 12:01:26

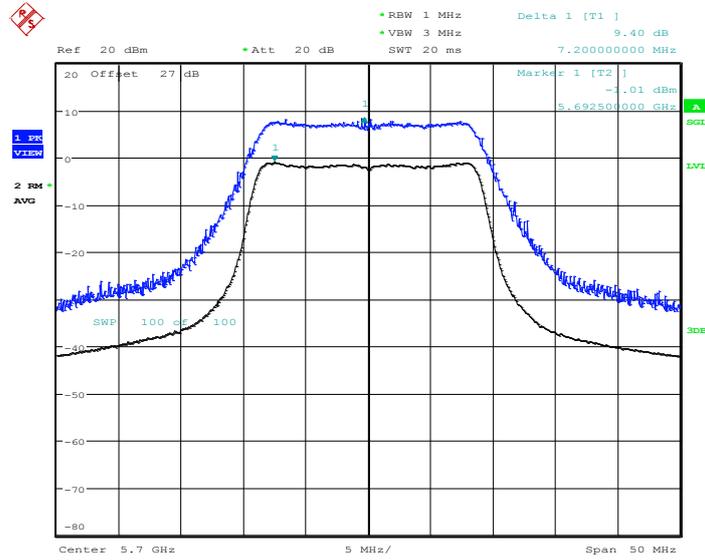
Peak Excursion Ratio Plot on 802.11n HT20 Channel 116



Date: 8.NOV.2012 11:59:11



Peak Excursion Ratio Plot on 802.11n HT20 Channel 140

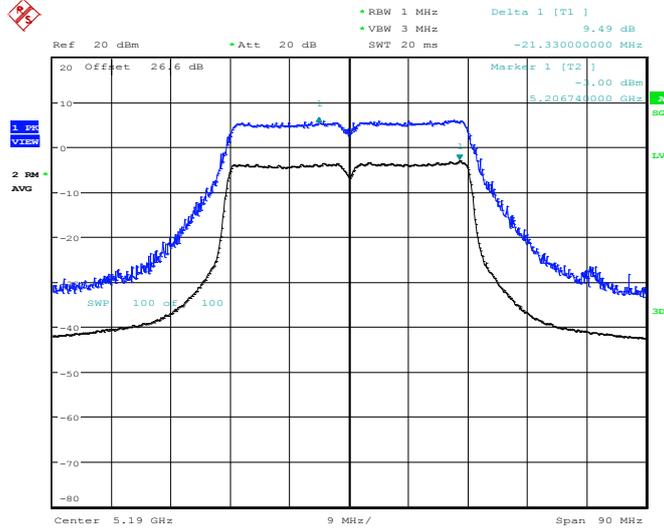


Date: 8.NOV.2012 11:29:50



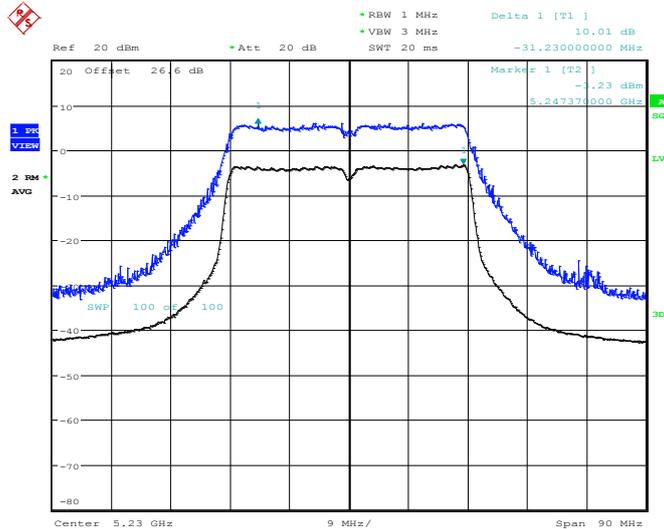
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11n HT40 Channel 38



Date: 8.NOV.2012 14:05:51

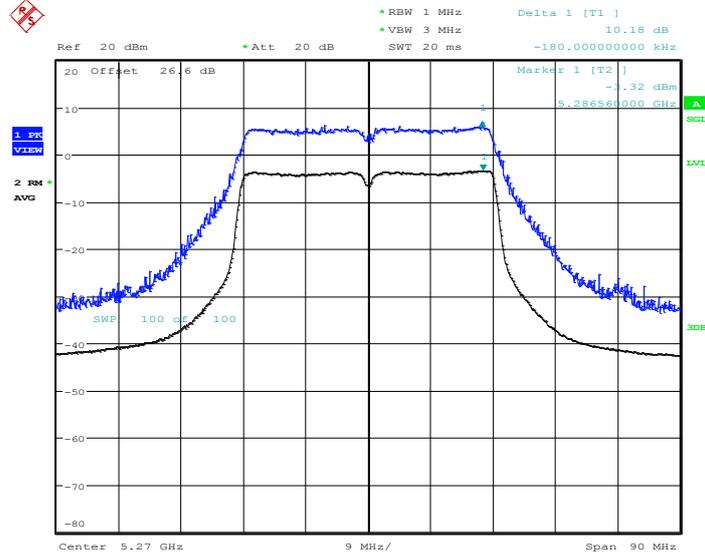
Peak Excursion Ratio Plot on 802.11n HT40 Channel 46



Date: 8.NOV.2012 14:08:16

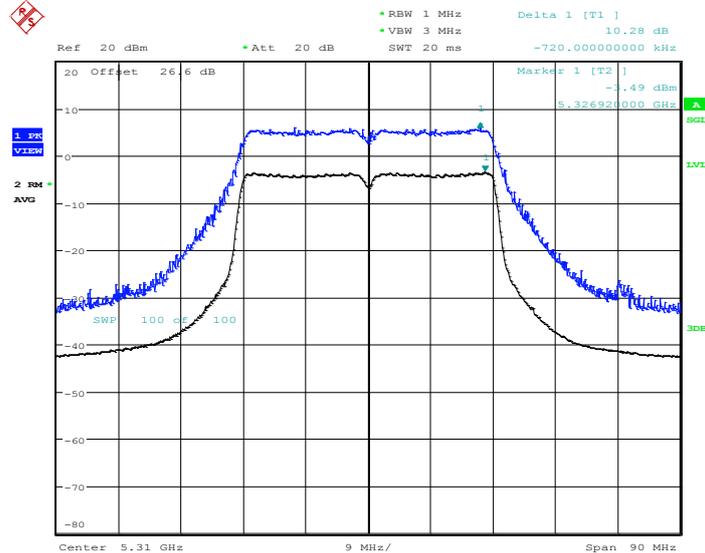


Peak Excursion Ratio Plot on 802.11n HT40 Channel 54



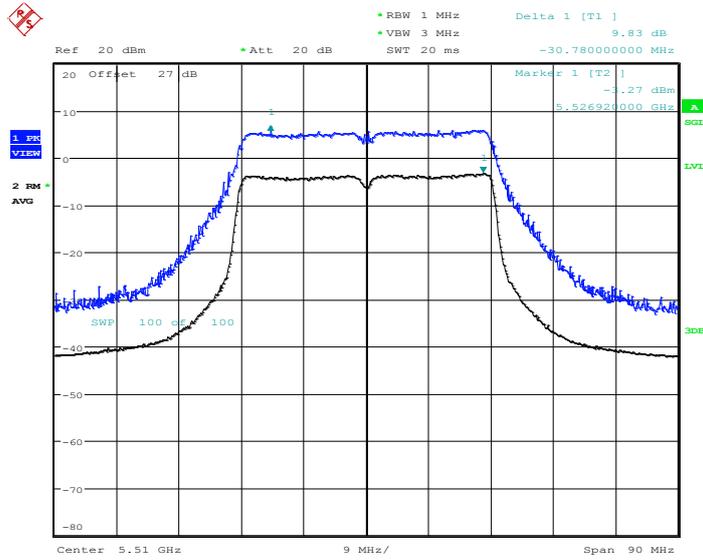
Date: 8.NOV.2012 14:10:57

Peak Excursion Ratio Plot on 802.11n HT40 Channel 62



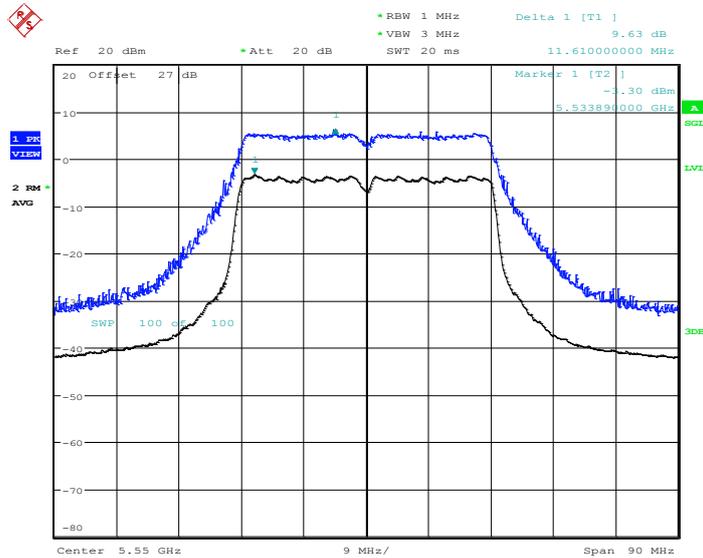
Date: 8.NOV.2012 14:13:39

Peak Excursion Ratio Plot on 802.11n HT40 Channel 102



Date: 8.NOV.2012 14:26:40

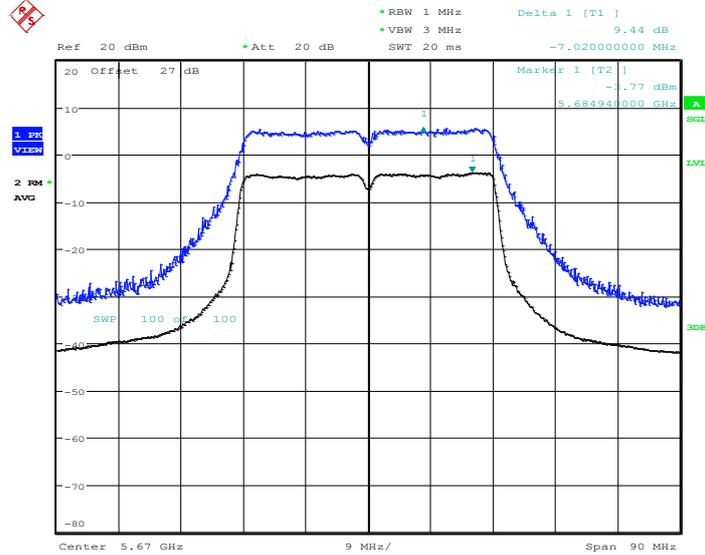
Peak Excursion Ratio Plot on 802.11n HT40 Channel 110



Date: 8.NOV.2012 14:29:06



Peak Excursion Ratio Plot on 802.11n HT40 Channel 134



Date: 8.NOV.2012 14:36:07

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

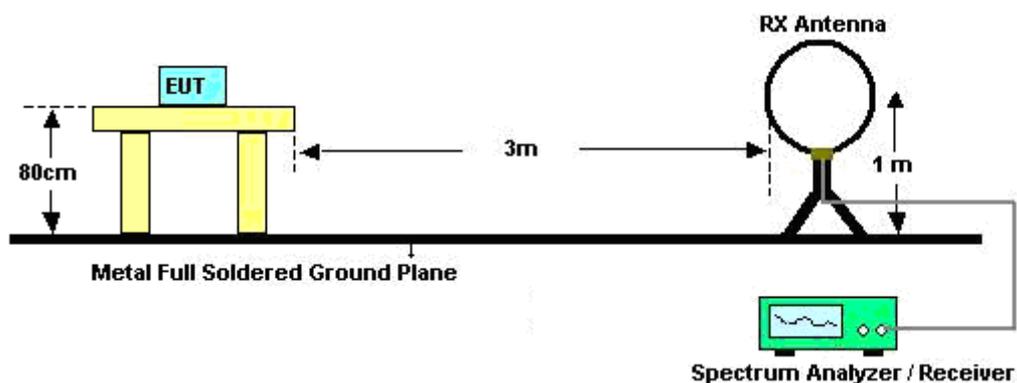
- The setting follows G) 6) of FCC KDB 789033.
- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control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

Band	Duty Cycle (%)	T(us)	1/T(KHz)	VBW Setting
802.11a	95.78	2072.12	0.482	1KHz
802.11n HT20	95.25	1927.88	0.518	1KHz
802.11n HT40	87.26	667.31	1.498	3KHz

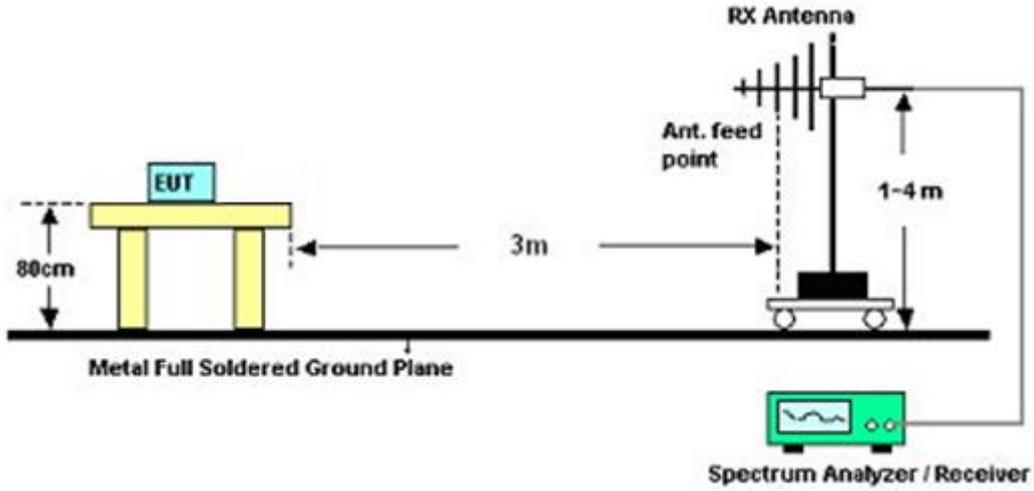
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters 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

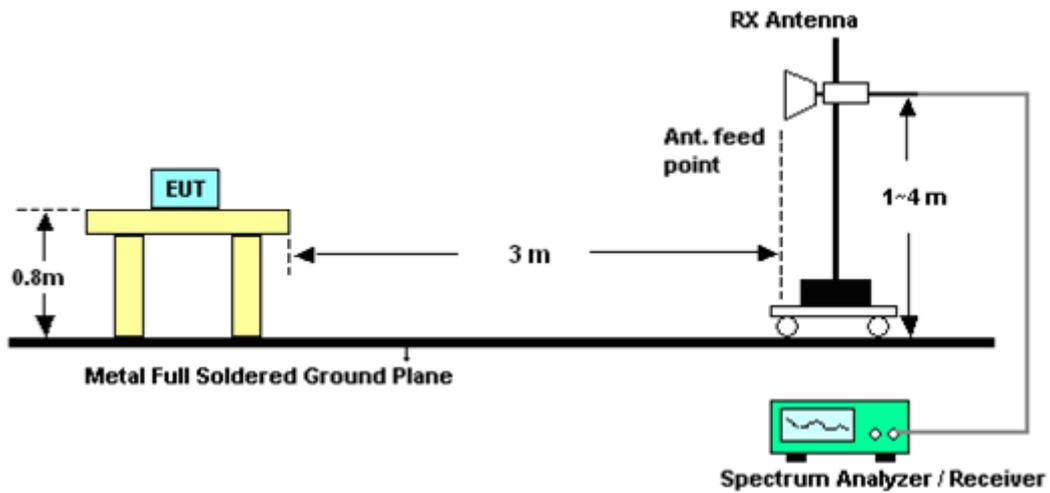
For radiated emissions below 30MHz



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

<Sample 1>

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5136.05	53.73	-20.27	74	43.09	34.25	9.37	32.98	120	127	Peak
5146.25	41.85	-12.15	54	31.12	34.29	9.41	32.97	120	127	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
5138.9	53.05	-20.95	74	42.41	34.25	9.37	32.98	100	100	Peak
5149.25	40.26	-13.74	54	29.53	34.29	9.41	32.97	100	100	Average



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5022.95	53.15	-20.85	74	42.95	33.99	9.21	33	132	125	Peak
5131.85	40.38	-13.62	54	29.74	34.25	9.37	32.98	132	125	Average
5384.76	54.41	-19.59	74	42.61	34.9	9.82	32.92	132	125	Peak
5458.68	41.91	-12.09	54	29.81	35.07	9.94	32.91	132	125	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
5132.45	52.88	-21.12	74	42.24	34.25	9.37	32.98	100	104	Peak
5146.7	39.98	-14.02	54	29.25	34.29	9.41	32.97	100	104	Average
5429.09	54.51	-19.49	74	42.49	35.03	9.9	32.91	100	104	Peak
5392.35	41.53	-12.47	54	29.73	34.9	9.82	32.92	100	104	Average



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5139.2	53.92	-20.08	74	43.28	34.25	9.37	32.98	131	125	Peak
5147.9	40.27	-13.73	54	29.54	34.29	9.41	32.97	131	125	Average
5352.2	54.28	-19.72	74	42.66	34.81	9.74	32.93	131	125	Peak
5353.19	41.89	-12.11	54	30.27	34.81	9.74	32.93	131	125	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
5064.5	52.97	-21.03	74	42.64	34.07	9.25	32.99	100	95	Peak
5145.65	40.02	-13.98	54	29.29	34.29	9.41	32.97	100	95	Average
5385.86	54.58	-19.42	74	42.78	34.9	9.82	32.92	100	95	Peak
5388.17	41.48	-12.52	54	29.68	34.9	9.82	32.92	100	95	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5352.2	56.48	-17.52	74	44.86	34.81	9.74	32.93	116	125	Peak
5353.52	43.59	-10.41	54	31.97	34.81	9.74	32.93	116	125	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
5392.13	54.62	-19.38	74	42.82	34.9	9.82	32.92	109	84	Peak
5357.04	42.29	-11.71	54	30.63	34.81	9.78	32.93	109	84	Average



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5467.44	55.71	-18.29	74	43.57	35.11	9.94	32.91	136	124	Peak
5467.28	43.33	-10.67	54	31.19	35.11	9.94	32.91	136	124	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
5444.4	53.95	-20.05	74	41.93	35.03	9.9	32.91	161	347	Peak
5393.36	41.56	-12.44	54	29.76	34.9	9.82	32.92	161	347	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5743.64	55.22	-18.78	74	43.27	35.34	9.91	33.3	108	122	Peak
5725	42.65	-11.35	54	30.66	35.33	9.92	33.26	108	122	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
5750.12	54.25	-19.75	74	42.3	35.34	9.91	33.3	100	58	Peak
5728.84	41.59	-12.41	54	29.6	35.33	9.92	33.26	100	58	Average



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5144.75	53.69	-20.31	74	42.96	34.29	9.41	32.97	106	125	Peak
5148.95	41.79	-12.21	54	31.06	34.29	9.41	32.97	106	125	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
5118.95	52.96	-21.04	74	42.37	34.2	9.37	32.98	100	86	Peak
5134.4	40.37	-13.63	54	29.73	34.25	9.37	32.98	100	86	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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	53.47	-20.53	74	42.74	34.29	9.41	32.97	158	127	Peak
5146.7	40.21	-13.79	54	29.48	34.29	9.41	32.97	158	127	Average
5389.16	54.4	-19.6	74	42.6	34.9	9.82	32.92	158	127	Peak
5458.35	42.01	-11.99	54	29.91	35.07	9.94	32.91	158	127	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
5141	53.45	-20.55	74	42.72	34.29	9.41	32.97	100	90	Peak
5040.2	39.98	-14.02	54	29.74	34.03	9.21	33	100	90	Average
5433.27	54.45	-19.55	74	42.43	35.03	9.9	32.91	100	90	Peak
5389.6	41.53	-12.47	54	29.73	34.9	9.82	32.92	100	90	Average



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5110.4	52.62	-21.38	74	42.07	34.2	9.33	32.98	105	127	Peak
5148.5	40.23	-13.77	54	29.5	34.29	9.41	32.97	105	127	Average
5403.79	54.35	-19.65	74	42.51	34.94	9.82	32.92	105	127	Peak
5350.55	42.11	-11.89	54	30.49	34.81	9.74	32.93	105	127	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
5134.4	52.67	-21.33	74	42.03	34.25	9.37	32.98	100	91	Peak
5144.9	40.03	-13.97	54	29.3	34.29	9.41	32.97	100	91	Average
5422.71	54.52	-19.48	74	42.6	34.98	9.86	32.92	100	91	Peak
5392.13	41.46	-12.54	54	29.66	34.9	9.82	32.92	100	91	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5351.76	56.62	-17.38	74	45	34.81	9.74	32.93	127	127	Peak
5351.21	44.06	-9.94	54	32.44	34.81	9.74	32.93	127	127	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
5404.23	54.44	-19.56	74	42.56	34.94	9.86	32.92	109	84	Peak
5350.33	41.96	-12.04	54	30.34	34.81	9.74	32.93	109	84	Average



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5468.24	55.07	-18.93	74	42.93	35.11	9.94	32.91	123	121	Peak
5468.88	42.98	-11.02	54	30.84	35.11	9.94	32.91	123	121	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
5403.92	54.01	-19.99	74	42.17	34.94	9.82	32.92	106	75	Peak
5460.24	41.78	-12.22	54	29.68	35.07	9.94	32.91	106	75	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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	55.89	-18.11	74	43.9	35.33	9.92	33.26	108	122	Peak
5725.16	42.97	-11.03	54	30.98	35.33	9.92	33.26	108	122	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
5742.6	55.09	-18.91	74	43.14	35.34	9.91	33.3	111	66	Peak
5738.68	41.67	-12.33	54	29.67	35.34	9.92	33.26	111	66	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	38	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5149.25	61.12	-12.88	74	50.39	34.29	9.41	32.97	119	125	Peak
5149.7	46.7	-7.3	54	35.97	34.29	9.41	32.97	119	125	Average
5360.34	54.23	-19.77	74	42.57	34.81	9.78	32.93	119	125	Peak
5353.52	42.23	-11.77	54	30.61	34.81	9.74	32.93	119	125	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	55.65	-18.35	74	44.92	34.29	9.41	32.97	100	94	Peak
5150	42.57	-11.43	54	31.84	34.29	9.41	32.97	100	94	Average
5393.67	53.77	-20.23	74	41.97	34.9	9.82	32.92	100	94	Peak
5366.39	41.99	-12.01	54	30.29	34.85	9.78	32.93	100	94	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	46	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5144.6	53.64	-20.36	74	42.91	34.29	9.41	32.97	118	127	Peak
5147.45	40.92	-13.08	54	30.19	34.29	9.41	32.97	118	127	Average
5438.66	55.21	-18.79	74	43.19	35.03	9.9	32.91	118	127	Peak
5351.43	42.45	-11.55	54	30.83	34.81	9.74	32.93	118	127	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
5051.75	52.91	-21.09	74	42.62	34.03	9.25	32.99	100	96	Peak
5141.15	40.79	-13.21	54	30.06	34.29	9.41	32.97	100	96	Average
5354.07	54.62	-19.38	74	43	34.81	9.74	32.93	100	96	Peak
5351.65	42.14	-11.86	54	30.52	34.81	9.74	32.93	100	96	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	54	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5117.6	52.59	-21.41	74	42	34.2	9.37	32.98	130	126	Peak
5133.35	40.89	-13.11	54	30.25	34.25	9.37	32.98	130	126	Average
5394.88	54.26	-19.74	74	42.42	34.94	9.82	32.92	130	126	Peak
5354.62	42.87	-11.13	54	31.25	34.81	9.74	32.93	130	126	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
5030.15	52.96	-21.04	74	42.76	33.99	9.21	33	100	91	Peak
5146.85	40.62	-13.38	54	29.89	34.29	9.41	32.97	100	91	Average
5418.86	54.16	-19.84	74	42.24	34.98	9.86	32.92	100	91	Peak
5360.78	42.35	-11.65	54	30.65	34.85	9.78	32.93	100	91	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	62	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5051	52.85	-21.15	74	42.56	34.03	9.25	32.99	128	127	Peak
5133.5	40.84	-13.16	54	30.2	34.25	9.37	32.98	128	127	Average
5350.11	61.47	-12.53	74	49.85	34.81	9.74	32.93	128	127	Peak
5351.32	48.08	-5.92	54	36.46	34.81	9.74	32.93	128	127	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
5021.15	52.76	-21.24	74	42.56	33.99	9.21	33	109	91	Peak
5106.5	40.69	-13.31	54	30.14	34.2	9.33	32.98	109	91	Average
5351.65	56.68	-17.32	74	45.06	34.81	9.74	32.93	109	91	Peak
5350.33	45.1	-8.9	54	33.48	34.81	9.74	32.93	109	91	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5469.68	62.82	-11.18	74	50.68	35.11	9.94	32.91	100	126	Peak
5469.68	49.35	-4.65	54	37.21	35.11	9.94	32.91	100	126	Average
5741.24	54.73	-19.27	74	42.78	35.34	9.91	33.3	100	126	Peak
5730.04	41.6	-12.4	54	29.61	35.33	9.92	33.26	100	126	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
5469.52	58.63	-15.37	74	46.49	35.11	9.94	32.91	104	82	Peak
5469.2	45.22	-8.78	54	33.08	35.11	9.94	32.91	104	82	Average
5730.28	54.25	-19.75	74	42.26	35.33	9.92	33.26	104	82	Peak
5742.36	41.41	-12.59	54	29.46	35.34	9.91	33.3	104	82	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	110	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5449.2	54.55	-19.45	74	42.49	35.07	9.9	32.91	122	123	Peak
5460.88	42.54	-11.46	54	30.44	35.07	9.94	32.91	122	123	Average
5758.68	54.3	-19.7	74	42.33	35.36	9.91	33.3	122	123	Peak
5742.92	41.58	-12.42	54	29.63	35.34	9.91	33.3	122	123	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
5414.64	53.92	-20.08	74	42	34.98	9.86	32.92	104	64	Peak
5446.96	42.07	-11.93	54	30.01	35.07	9.9	32.91	104	64	Average
5745.56	53.58	-20.42	74	41.63	35.34	9.91	33.3	104	64	Peak
5758.52	41.38	-12.62	54	29.41	35.36	9.91	33.3	104	64	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	134	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5353.84	53.79	-20.21	74	42.17	34.81	9.74	32.93	132	122	Peak
5460.08	42.21	-11.79	54	30.11	35.07	9.94	32.91	132	122	Average
5741.88	54.84	-19.16	74	42.89	35.34	9.91	33.3	132	122	Peak
5725.16	42.26	-11.74	54	30.27	35.33	9.92	33.26	132	122	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
5416.72	53.93	-20.07	74	42.01	34.98	9.86	32.92	101	63	Peak
5454.96	42.08	-11.92	54	29.98	35.07	9.94	32.91	101	63	Average
5748.12	54.13	-19.87	74	42.18	35.34	9.91	33.3	101	63	Peak
5728.36	41.6	-12.4	54	29.61	35.33	9.92	33.26	101	63	Average



<Sample 2>

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu		

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
5465.36	62.75	-11.25	74	50.61	35.11	9.94	32.91	122	297	Peak
5469.52	46.57	-7.43	54	34.43	35.11	9.94	32.91	122	297	Average
5749.96	54.26	-19.74	74	42.31	35.34	9.91	33.3	122	297	Peak
5725.4	41.43	-12.57	54	29.44	35.33	9.92	33.26	122	297	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
5466.8	60.55	-13.45	74	48.41	35.11	9.94	32.91	123	261	Peak
5470	45.22	-8.78	54	33.08	35.11	9.94	32.91	123	261	Average
5755	54.7	-19.3	74	42.73	35.36	9.91	33.3	123	261	Peak
5760.76	41.38	-12.62	54	29.41	35.36	9.91	33.3	123	261	Average

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

<Sample 1>

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.42	-	-	80.56	34.38	9.45	32.97	120	127	Average
5180	102.26	-	-	91.4	34.38	9.45	32.97	120	127	Peak
10359	41.03	-32.97	74	50.99	37.29	11.31	58.56	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	84.98	-	-	74.12	34.38	9.45	32.97	100	100	Average
5180	95.31	-	-	84.45	34.38	9.45	32.97	100	100	Peak
10359	41.49	-32.51	74	51.45	37.29	11.31	58.56	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.35	-	-	80.32	34.46	9.53	32.96	108	125	Average
5220	101.61	-	-	90.58	34.46	9.53	32.96	108	125	Peak
10440	40.38	-33.62	74	50.44	37.35	11.21	58.62	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	86.25	-	-	75.22	34.46	9.53	32.96	100	89	Average
5220	96.59	-	-	85.56	34.46	9.53	32.96	100	89	Peak
10440	40.66	-33.34	74	50.72	37.35	11.21	58.62	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.87	-	-	80.74	34.51	9.57	32.95	132	125	Average
5240	102.31	-	-	91.18	34.51	9.57	32.95	132	125	Peak
10479	39.43	-34.57	74	49.56	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	86.16	-	-	75.03	34.51	9.57	32.95	100	104	Average
5240	96.15	-	-	85.02	34.51	9.57	32.95	100	104	Peak
10479	40.02	-33.98	74	50.15	37.39	11.14	58.66	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.37	-	-	80.11	34.59	9.62	32.95	131	125	Average
5260	101.67	-	-	90.41	34.59	9.62	32.95	131	125	Peak
10521	40.96	-33.04	74	51	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	86.21	-	-	74.95	34.59	9.62	32.95	100	95	Average
5260	96.06	-	-	84.8	34.59	9.62	32.95	100	95	Peak
10521	40.58	-33.42	74	50.62	37.42	11.21	58.67	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.69	-	-	80.29	34.68	9.66	32.94	116	124	Average
5300	102.02	-	-	90.62	34.68	9.66	32.94	116	124	Peak
10599	40.37	-33.63	74	50	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	86.29	-	-	74.89	34.68	9.66	32.94	111	91	Average
5300	97.44	-	-	86.04	34.68	9.66	32.94	111	91	Peak
10599	39.9	-34.1	74	49.53	37.5	11.51	58.64	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5320 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
5320	92.6	-	-	81.12	34.72	9.7	32.94	116	125	Average
5320	103.27	-	-	91.79	34.72	9.7	32.94	116	125	Peak
10641	40.55	-33.45	74	49.93	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5320 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
5320	87.14	-	-	75.66	34.72	9.7	32.94	109	84	Average
5320	97.83	-	-	86.35	34.72	9.7	32.94	109	84	Peak
10641	40.94	-33.06	74	50.32	37.54	11.71	58.63	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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
5500	91.42	-	-	79.1	35.2	10.02	32.9	136	124	Average
5500	102.09	-	-	89.77	35.2	10.02	32.9	136	124	Peak
11001	41.15	-32.85	74	48.57	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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
5500	82.25	-	-	69.93	35.2	10.02	32.9	161	347	Average
5500	93.1	-	-	80.78	35.2	10.02	32.9	161	347	Peak
11001	40.6	-33.4	74	48.02	37.9	13.22	58.54	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	91.36	-	-	79.15	35.24	9.99	33.02	135	124	Average
5580	101.66	-	-	89.45	35.24	9.99	33.02	135	124	Peak
11160	39.59	-34.41	74	46.86	38.07	13.2	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	85.52	-	-	73.31	35.24	9.99	33.02	102	66	Average
5580	96.11	-	-	83.9	35.24	9.99	33.02	102	66	Peak
11160	41.26	-32.74	74	48.53	38.07	13.2	58.54	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	90.72	-	-	78.7	35.31	9.93	33.22	108	122	Average
5700	101.26	-	-	89.24	35.31	9.93	33.22	108	122	Peak
11400	42.03	-31.97	74	49.11	38.3	13.16	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	85.08	-	-	73.06	35.31	9.93	33.22	100	58	Average
5700	95.29	-	-	83.27	35.31	9.93	33.22	100	58	Peak
11400	42.16	-31.84	74	49.24	38.3	13.16	58.54	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.74	-	-	80.88	34.38	9.45	32.97	106	125	Average
5180	101.87	-	-	91.01	34.38	9.45	32.97	106	125	Peak
10359	40.88	-33.12	74	50.84	37.29	11.31	58.56	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	85.05	-	-	74.19	34.38	9.45	32.97	100	86	Average
5180	95.81	-	-	84.95	34.38	9.45	32.97	100	86	Peak
10359	41.9	-32.1	74	51.86	37.29	11.31	58.56	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.83	-	-	80.8	34.46	9.53	32.96	119	121	Average
5220	102.17	-	-	91.14	34.46	9.53	32.96	119	121	Peak
10440	40.85	-33.15	74	50.91	37.35	11.21	58.62	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	86.88	-	-	75.85	34.46	9.53	32.96	100	90	Average
5220	97.48	-	-	86.45	34.46	9.53	32.96	100	90	Peak
10440	40.5	-33.5	74	50.56	37.35	11.21	58.62	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.45	-	-	80.32	34.51	9.57	32.95	158	127	Average
5240	101.62	-	-	90.49	34.51	9.57	32.95	158	127	Peak
10479	40.53	-33.47	74	50.66	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	85.89	-	-	74.76	34.51	9.57	32.95	100	90	Average
5240	96.26	-	-	85.13	34.51	9.57	32.95	100	90	Peak
10479	40.05	-33.95	74	50.18	37.39	11.14	58.66	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	91.69	-	-	80.43	34.59	9.62	32.95	105	127	Average
5260	102.14	-	-	90.88	34.59	9.62	32.95	105	127	Peak
10521	41.2	-32.8	74	51.24	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	86.2	-	-	74.94	34.59	9.62	32.95	100	91	Average
5260	96.4	-	-	85.14	34.59	9.62	32.95	100	91	Peak
10521	40.76	-33.24	74	50.8	37.42	11.21	58.67	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	92.56	-	-	81.16	34.68	9.66	32.94	142	125	Average
5300	102.38	-	-	90.98	34.68	9.66	32.94	142	125	Peak
10599	40.69	-33.31	74	50.32	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5300 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
5300	86.83	-	-	75.43	34.68	9.66	32.94	110	92	Average
5300	96.78	-	-	85.38	34.68	9.66	32.94	110	92	Peak
10600	41.11	-32.89	74	50.74	37.5	11.51	58.64	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5320 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
5320	92.23	-	-	80.75	34.72	9.7	32.94	127	127	Average
5320	102.79	-	-	91.31	34.72	9.7	32.94	127	127	Peak
10641	41.4	-32.6	74	50.78	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5320 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
5320	86.5	-	-	75.02	34.72	9.7	32.94	109	84	Average
5320	96.91	-	-	85.43	34.72	9.7	32.94	109	84	Peak
10641	39.97	-34.03	74	49.35	37.54	11.71	58.63	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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
5500	91.37	-	-	79.05	35.2	10.02	32.9	123	121	Average
5500	101.96	-	-	89.64	35.2	10.02	32.9	123	121	Peak
11001	43.02	-30.98	74	50.44	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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
5500	85.22	-	-	72.9	35.2	10.02	32.9	106	75	Average
5500	95.49	-	-	83.17	35.2	10.02	32.9	106	75	Peak
11001	41.22	-32.78	74	48.64	37.9	13.22	58.54	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	91.45	-	-	79.24	35.24	9.99	33.02	133	121	Average
5580	101.95	-	-	89.74	35.24	9.99	33.02	133	121	Peak
11160	42.66	-31.34	74	49.93	38.07	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	85.19	-	-	72.98	35.24	9.99	33.02	102	66	Average
5580	95.72	-	-	83.51	35.24	9.99	33.02	102	66	Peak
11160	42.66	-31.34	74	49.93	38.07	13.2	58.54	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	90.69	-	-	78.67	35.31	9.93	33.22	108	122	Average
5700	101.33	-	-	89.31	35.31	9.93	33.22	108	122	Peak
11400	42.52	-31.48	74	49.6	38.3	13.16	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	83.77	-	-	71.75	35.31	9.93	33.22	111	66	Average
5700	95.3	-	-	83.28	35.31	9.93	33.22	111	66	Peak
11400	42.1	-31.9	74	49.18	38.3	13.16	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	38	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. 10380 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	89.52	-	-	78.61	34.38	9.49	32.96	119	125	Average
5190	99.42	-	-	88.51	34.38	9.49	32.96	119	125	Peak
10380	40.51	-33.49	74	50.5	37.31	11.27	58.57	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	38	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. 10380 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	83.45	-	-	72.54	34.38	9.49	32.96	100	94	Average
5190	93.61	-	-	82.7	34.38	9.49	32.96	100	94	Peak
10380	40.77	-33.23	74	50.76	37.31	11.27	58.57	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	46	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. 10461 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	89.67	-	-	78.59	34.51	9.53	32.96	118	127	Average
5230	99.4	-	-	88.32	34.51	9.53	32.96	118	127	Peak
10461	40.55	-33.45	74	50.64	37.37	11.18	58.64	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	46	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. 10461 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	83.92	-	-	72.84	34.51	9.53	32.96	100	96	Average
5230	94.71	-	-	83.63	34.51	9.53	32.96	100	96	Peak
10461	40.21	-33.79	74	50.3	37.37	11.18	58.64	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	54	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5270 MHz is fundamental signal which can be ignored. 2. 10539 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	89.2	-	-	77.94	34.59	9.62	32.95	130	126	Average
5270	99.1	-	-	87.84	34.59	9.62	32.95	130	126	Peak
10539	40.73	-33.27	74	50.75	37.43	11.21	58.66	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	54	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5270 MHz is fundamental signal which can be ignored. 2. 10539 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	83.8	-	-	72.54	34.59	9.62	32.95	100	91	Average
5270	93.37	-	-	82.11	34.59	9.62	32.95	100	91	Peak
10539	41.29	-32.71	74	51.31	37.43	11.21	58.66	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	62	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5310 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
5310	89.98	-	-	78.5	34.72	9.7	32.94	128	127	Average
5310	100.54	-	-	89.06	34.72	9.7	32.94	128	127	Peak
10620	39.97	-34.03	74	49.48	37.52	11.61	58.64	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	62	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5310 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
5310	84.54	-	-	73.06	34.72	9.7	32.94	109	91	Average
5310	94.63	-	-	83.15	34.72	9.7	32.94	109	91	Peak
10620	40.22	-33.78	74	49.73	37.52	11.61	58.64	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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
39.72	25.43	-14.57	40	43.1	13.5	0.62	31.79	100	175	Peak
46.2	25.29	-14.71	40	46.62	9.7	0.67	31.7	-	-	Peak
112.35	26.26	-17.24	43.5	45.94	10.98	1.06	31.72	-	-	Peak
715.8	23	-23	46	29.69	20.83	2.98	30.5	-	-	Peak
787.9	24.9	-21.1	46	30.12	21.91	3.12	30.25	-	-	Peak
892.9	24.52	-21.48	46	28.95	23.03	3.33	30.79	-	-	Peak
5510	90.15	-	-	77.83	35.2	10.02	32.9	100	126	Average
5510	99.96	-	-	87.64	35.2	10.02	32.9	100	126	Peak
11019	41.88	-32.12	74	49.28	37.92	13.22	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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
32.7	30.2	-9.8	40	43.68	17.84	0.56	31.88	105	226	Peak
41.88	28.95	-11.05	40	47.78	12.3	0.63	31.76	-	-	Peak
45.39	28.81	-11.19	40	49.77	10.1	0.66	31.72	-	-	Peak
713.7	22.53	-23.47	46	29.26	20.8	2.97	30.5	-	-	Peak
787.2	23.5	-22.5	46	28.73	21.91	3.12	30.26	-	-	Peak
825	24.63	-21.37	46	29.42	22.35	3.21	30.35	-	-	Peak
5510	83.81	-	-	71.49	35.2	10.02	32.9	104	82	Average
5510	93.78	-	-	81.46	35.2	10.02	32.9	104	82	Peak
11019	42.22	-31.78	74	49.62	37.92	13.22	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	110	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	90.35	-	-	78.1	35.23	10	32.98	122	123	Average
5550	100.44	-	-	88.19	35.23	10	32.98	122	123	Peak
11100	42.11	-31.89	74	49.45	38	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	110	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
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	83.48	-	-	71.23	35.23	10	32.98	104	64	Average
5550	93.47	-	-	81.22	35.23	10	32.98	104	64	Peak
11100	42.31	-31.69	74	49.65	38	13.2	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	134	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	89.8	-	-	77.74	35.3	9.94	33.18	132	122	Average
5670	100.29	-	-	88.23	35.3	9.94	33.18	132	122	Peak
11340	46.27	-27.73	74	49.74	38.23	13.17	54.87	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	134	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	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	83.64	-	-	71.58	35.3	9.94	33.18	101	63	Average
5670	93.28	-	-	81.22	35.3	9.94	33.18	101	63	Peak
11340	46.37	-27.63	74	49.84	38.23	13.17	54.87	100	0	Peak



<Sample 2>

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
42.96	31.09	-8.91	40	50.5	11.7	0.64	31.75	100	56	Peak
110.46	24.39	-19.11	43.5	44.29	10.8	1.05	31.75	-	-	Peak
221.43	24.44	-21.56	46	43.65	10.58	1.43	31.22	-	-	Peak
484.1	18.38	-27.62	46	29.17	17.76	2.39	30.94	-	-	Peak
675.9	22.46	-23.54	46	29.58	20.41	2.89	30.42	-	-	Peak
834.1	23.73	-22.27	46	28.48	22.44	3.23	30.42	-	-	Peak
5510	90.27	-	-	77.95	35.2	10.02	32.9	122	297	Average
5510	100.3	-	-	87.98	35.2	10.02	32.9	122	297	Peak
11019	41.47	-32.53	74	48.87	37.92	13.22	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	53~55%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	35.13	-4.87	40	46.47	20	0.53	31.87	100	97	Peak
79.95	27.07	-12.93	40	50.34	7.57	0.88	31.72	-	-	Peak
221.7	17.95	-28.05	46	37.09	10.65	1.43	31.22	-	-	Peak
515.6	19.48	-26.52	46	29.65	18.36	2.48	31.01	-	-	Peak
621.3	21.95	-24.05	46	29.69	19.97	2.75	30.46	-	-	Peak
916.7	25.09	-20.91	46	29.19	23.35	3.38	30.83	-	-	Peak
5510	87.81	-	-	75.49	35.2	10.02	32.9	123	261	Average
5510	97.56	-	-	85.24	35.2	10.02	32.9	123	261	Peak
11019	41.02	-32.98	74	48.42	37.92	13.22	58.54	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.

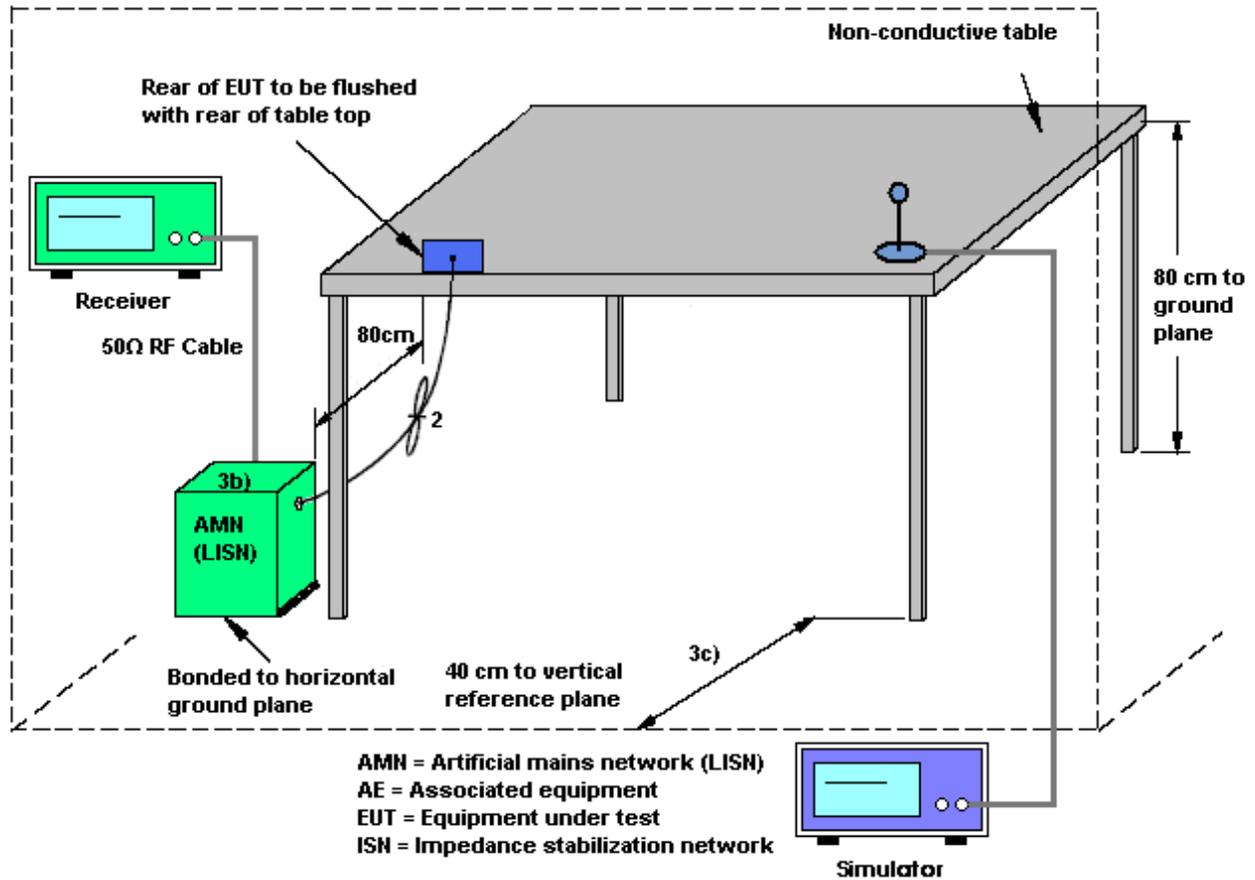
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

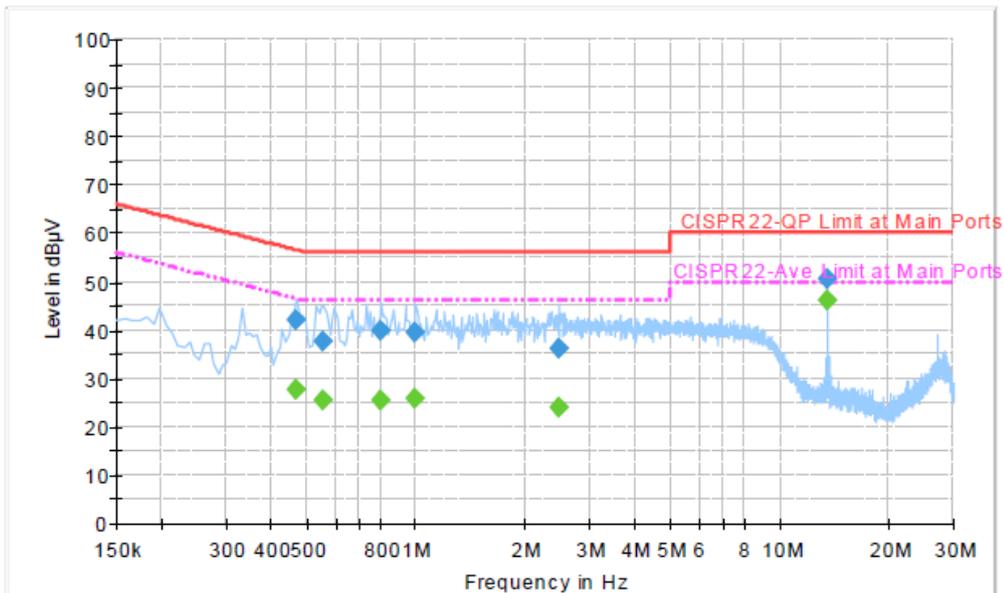
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009 test site requirement.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a 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 :	20~22°C
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + NFC + Earphone + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



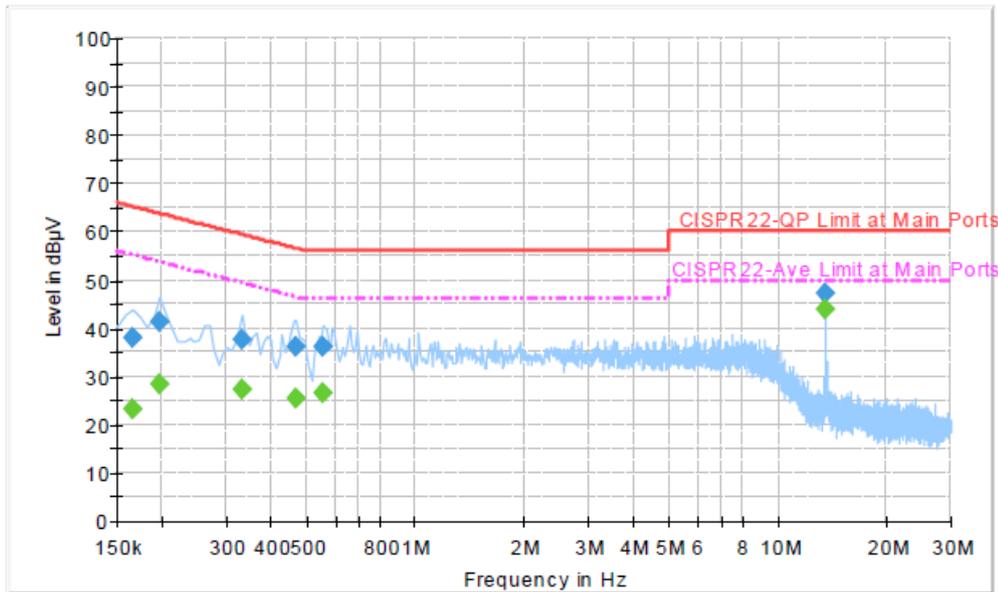
Final Result : QuasiPeak

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

Final Result : Average

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

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



Final Result : QuasiPeak

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

Final Result : Average

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

3.7 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.

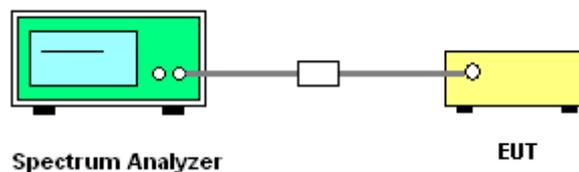
3.7.2 Measuring Instruments

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°C
Test Engineer :	Reece Li	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.74	5188.25	-0.37
48	5240	5231.66	5248.25	-8.01
52	5260	5251.63	5268.30	-6.09
64	5320	5311.66	5328.25	-7.89
100	5500	5491.66	5508.25	-7.63
140	5700	5691.63	5708.25	-10.01

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

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.07	5188.89	-3.28
48	5240	5231.07	5248.86	-6.12
52	5260	5251.07	5268.89	-3.23
64	5320	5311.07	5328.86	-6.02
100	5500	5491.02	5508.89	-7.63
140	5700	5691.10	5708.89	-0.34

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

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
38	5190	5171.69	5208.18	-12.34
46	5230	5211.69	5248.18	-12.24
54	5270	5251.64	5288.18	-17.30
62	5310	5291.69	5328.18	-11.97
102	5510	5491.64	5528.27	-8.38
134	5670	5651.69	5688.27	-3.36



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. 02, 2012 ~ Nov. 26, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Nov. 02, 2012 ~ Nov. 26, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Nov. 02, 2012 ~ Nov. 26, 2012	Sep. 07, 2013	Conducted (TH02-HY)
EMI Test Receiver	R&S	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Nov. 20, 2012	Sep. 02, 2013	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Nov. 20, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Nov. 20, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Nov. 20, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Nov. 20, 2012	Jul. 27, 2013	Conduction (CO05-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 06, 2012	Nov. 10, 2012 ~ Nov. 22, 2012	Oct. 05, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Nov. 10, 2012 ~ Nov. 22, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 22, 2012	Nov. 10, 2012 ~ Nov. 22, 2012	Aug. 21, 2013	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Nov. 10, 2012 ~ Nov. 22, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Nov. 10, 2012 ~ Nov. 22, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Nov. 10, 2012 ~ Nov. 22, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Nov. 10, 2012 ~ Nov. 22, 2012	Sep. 02, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	15GHz ~ 40GHz	Sep. 28, 2012	Nov. 10, 2012 ~ Nov. 22, 2012	Sep. 27, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Nov. 10, 2012 ~ Nov. 22, 2012	Jul. 02, 2014	Radiation (03CH07-HY)



5 Uncertainty of Evaluation

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

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

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

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