

FCC RF Test Report

APPLICANT : Hewlett-Packard Company
EQUIPMENT : 802.11 a/b/g/n Wi-Fi + BT combo adapter
BRAND NAME : HP
MODEL NAME : HSTNN-AR01
MARKETING NAME : Broadcom BCM4334 802.11abgn 2x2 Wi-Fi + BT 4.0
Combo Adapter
FCC ID : B94HNAR01
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Jan. 31, 2013 and completely tested on Feb. 15, 2013. 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: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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FCC ID : B94HNAR01

Page Number : 1 of 140

Report Issued Date : Mar. 19, 2013

Report Version : Rev. 01



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APPENDIX A. PHOTOGRAPHS OF EUT

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	RSS-210 A9.2	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	RSS-210 A9.2	Maximum Conducted Output Power	≤ 17, 24, 30 dBm (depend on band)	Pass	-
3.3	15.407(a)	RSS-210 A9.2	Power Spectral Density	≤ 4, 11, 17 dBm (depend on band)	Pass	-
3.4	15.407(a)(6)	RSS-210 A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.5	15.407(b)	RSS-210 A9.3	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 1.05 dB at 5149.550 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 8.70 dB at 0.158 MHz
3.7	15.407(g)	RSS-210 A9.5	Frequency Stability	Within Operation Band	Pass	-
3.8	15.407(c)	RSS-210 A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.9	15.203 & 15.407(a)	RSS-210 A9.2	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Hewlett-Packard Company

3000 Hanover Street, Palo Alto, California 94304, USA

1.2 Manufacturer

AzureWave Technologies (Shanghai) Inc.

No. 8, Lane 66, Chenbao Road, Malu Town, Jiading District, Shanghai, 201801, China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	802.11 a/b/g/n Wi-Fi + BT combo adapter
Brand Name	HP
Model Name	HSTNN-AR01
Marketing Name	Broadcom BCM4334 802.11abgn 2x2 Wi-Fi + BT 4.0 Combo Adapter
FCC ID	B94HNAR01
EUT supports Radios application	WLAN 11abgn/ Bluetooth 2.1/ 4.0
EUT Stage	Identical Prototype

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

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5580 MHz 5660 MHz ~ 5700 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> 802.11a : 13.90 dBm / 0.0245 W 802.11n HT20 : 12.92 dBm / 0.0196 W 802.11n HT40 : 10.99 dBm / 0.0126 W <5260 MHz ~ 5320 MHz> 802.11a : 13.91 dBm / 0.0246 W 802.11n HT20 : 12.95 dBm / 0.0197 W 802.11n HT40 : 10.53 dBm / 0.0113 W <5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz> 802.11a : 13.98 dBm / 0.0250 W 802.11n HT20 : 12.98 dBm / 0.0199 W 802.11n HT40 : 10.74 dBm / 0.0119 W
99% Occupied Bandwidth	802.11a : 18.55 MHz 802.11n HT20 : 19.35 MHz 802.11n HT40 : 38.16 MHz
Antenna Type	PIFA Antenna with gain 4.00 dBi
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)



1.5 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	03CH07-HY	722060/4086B-1

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

1.6 Applied Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D01 General UNII Test Procedures v01r02
- ♦ ANSI C63.10-2009
- ♦ IC RSS-210 Issued 8
- ♦ IC RSS-Gen Issue 3
- ♦ NOTICE 2012-DRS0126

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.
3. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

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).

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)
5470-5600 MHz and 5650-5725 MHz Band 3	100	5500	116	5580
	102	5510	132	5660
	104	5520	134	5670
	108	5540	136	5680
	110	5550	140	5700
	112	5560		

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

2.2 Pre-Scanned RF Power

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

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Average Power (dBm)	13.98	13.94	13.88	13.95	13.96	13.94	13.95	13.97

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power (dBm)	12.98	12.94	12.95	12.96	12.95	12.94	12.91	12.94

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power (dBm)	10.99	10.92	10.90	10.94	10.98	10.95	10.96	10.98

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
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
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/M/H
	Peak Excursion	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/M/H
	Frequency Stability	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/M/H
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	L/H
		802.11n HT20	6.5 Mbps	L/H
		802.11n HT40	13.5 Mbps	L/H
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
		802.11n HT40	13.5 Mbps	L/M/H
AC Conducted Emission	Mode 1 : Bluetooth Tx + WLAN (2.4G) Link + USB Cable (Charging from Notebook)			
	Mode 2 : Bluetooth Tx + WLAN (5G) Link + USB Cable (Charging from Notebook)			
Remark: The worst case of conducted emission is mode 1; only the test data of it was reported.				



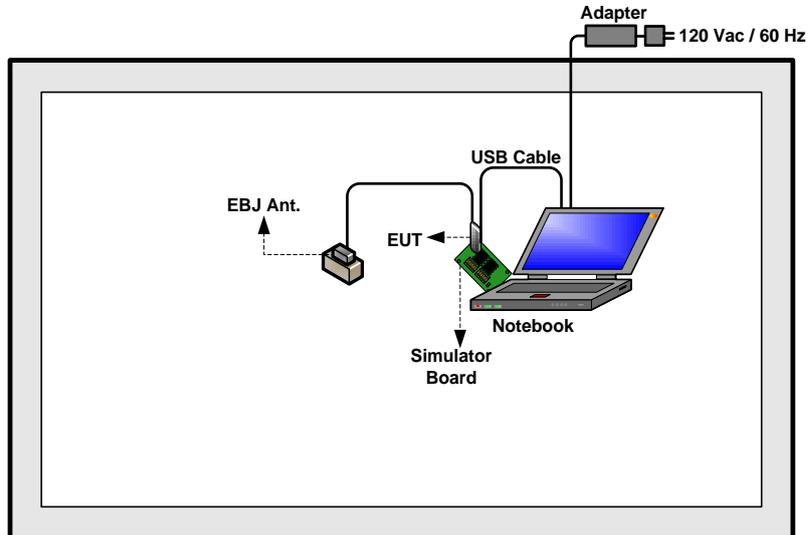
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5600 MHz and 5650-5725 MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5600 MHz and 5650-5725 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

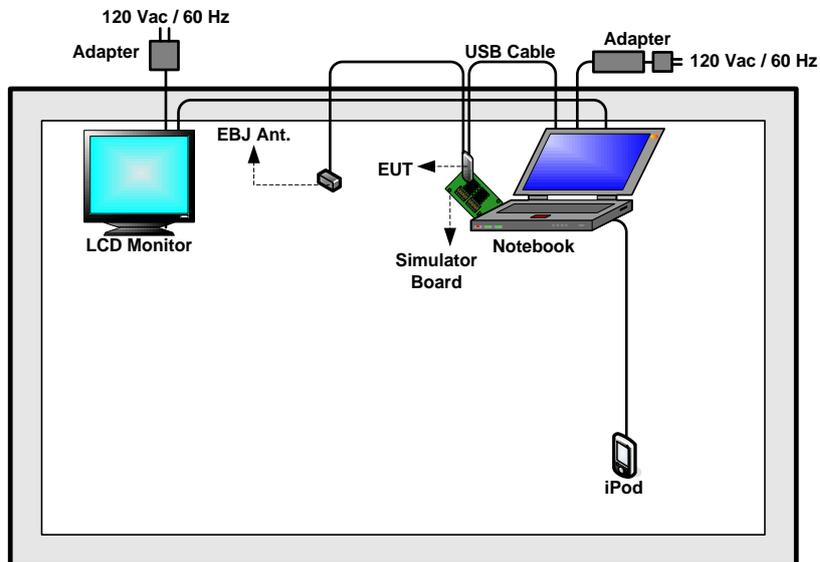
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5600 MHz and 5650-5725 MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
2.	Notebook	IBM	1860	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	LCD Monitor	Dell	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
4.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
5.	SD Card	SanDisk	Micro SD	FCC DoC	N/A	N/A

2.6 Description of RF Function Operation Test Setup

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



2.7 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\ &= 4.2 + 10 = 14.2 \text{ (dB)} \end{aligned}$$

3 Test Result

3.1 26dB & 99% Bandwidth Measurement

3.1.1 Description of Bandwidth Measurement

There is no restriction limits for bandwidth. The maximum conducted output power can be limited by measured emission bandwidth (B). For the band 5150-5250 MHz, 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 bands 5250-5350 MHz and 5470-5600 MHz and 5650-5725MHz, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B.

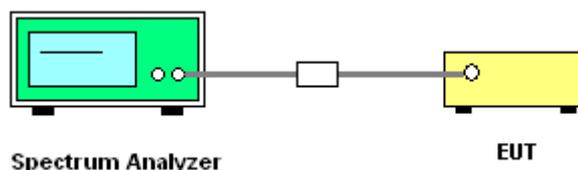
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup



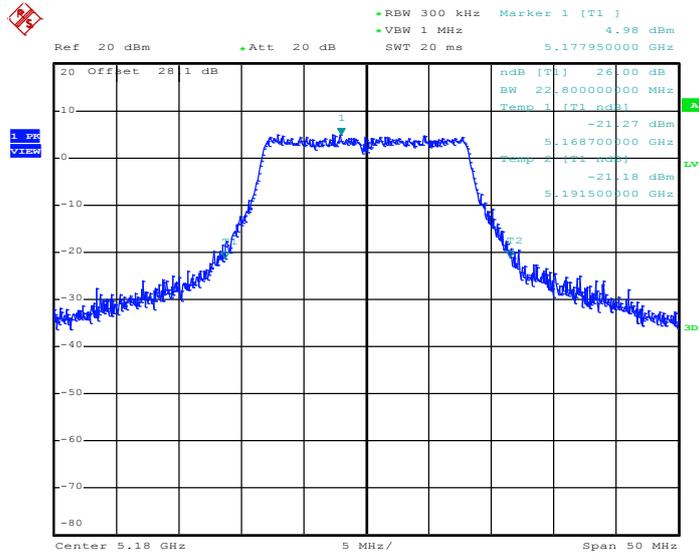


3.1.5 Test Result of 26dB Bandwidth Plots

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

Band	Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	22.80	N/A
	44	5220	23.20	N/A
	48	5240	22.65	N/A
NII Band 2	52	5260	22.95	N/A
	60	5300	23.00	N/A
	64	5320	23.00	N/A
NII Band 3	100	5500	23.05	N/A
	116	5580	23.15	N/A
	140	5700	22.70	N/A

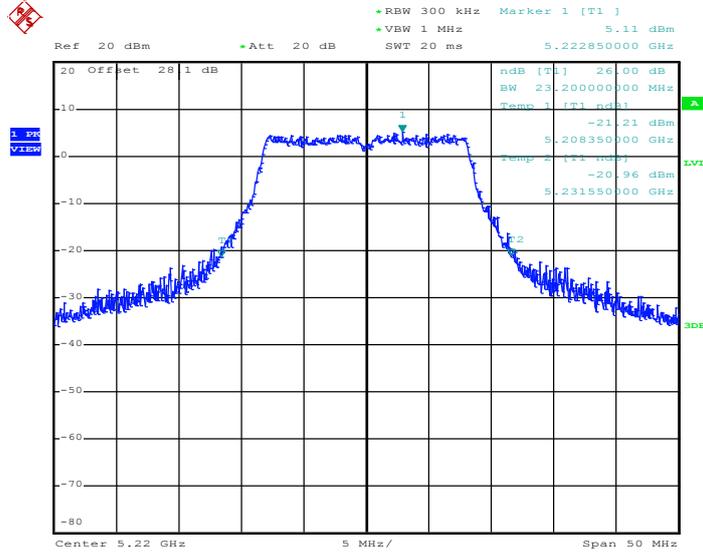
26 dB Bandwidth Plot on 802.11a Channel 36



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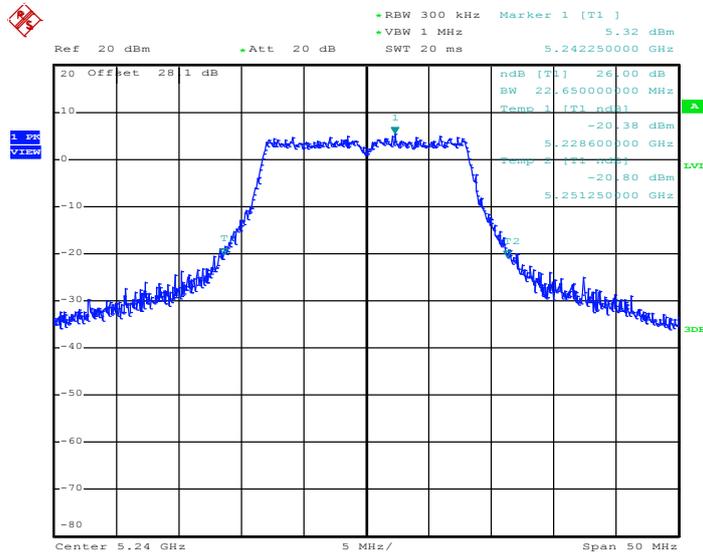


26 dB Bandwidth Plot on 802.11a Channel 44



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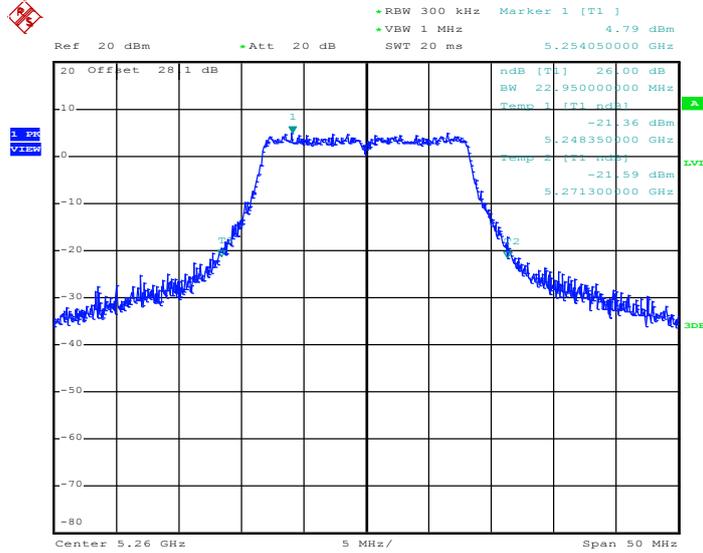
26 dB Bandwidth Plot on 802.11a Channel 48



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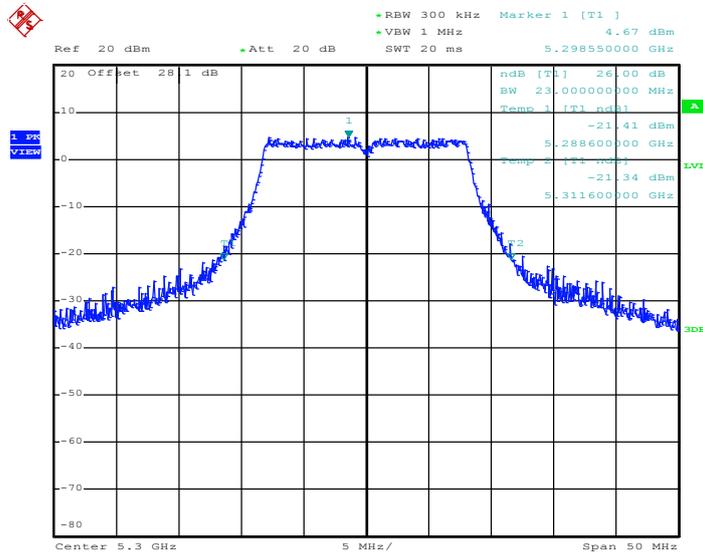


26 dB Bandwidth Plot on 802.11a Channel 52



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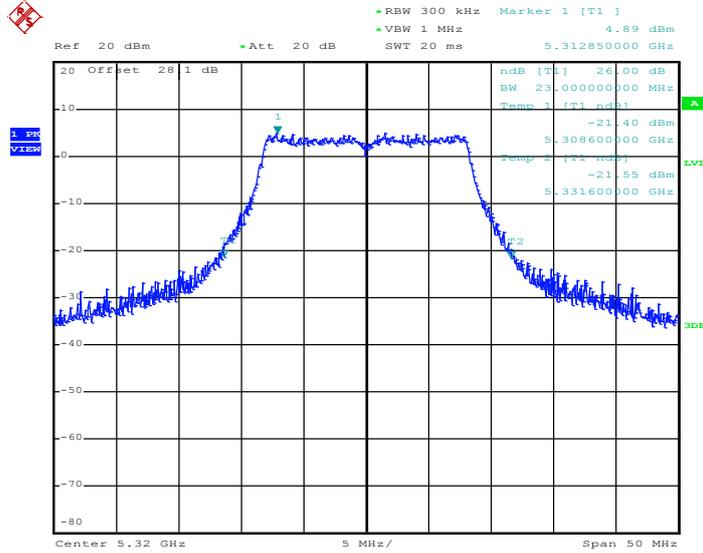
26 dB Bandwidth Plot on 802.11a Channel 60



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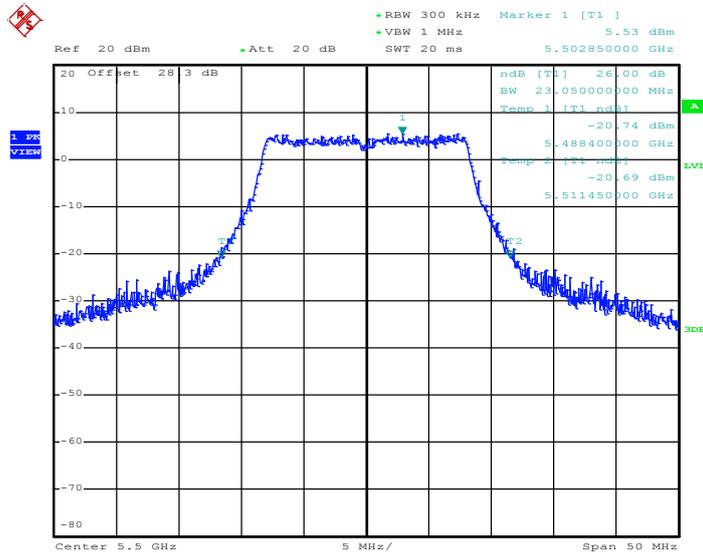


26 dB Bandwidth Plot on 802.11a Channel 64



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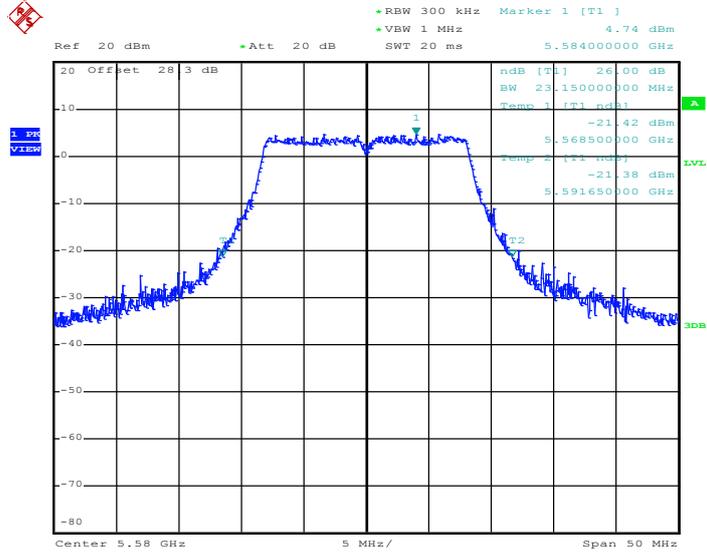
26 dB Bandwidth Plot on 802.11a Channel 100



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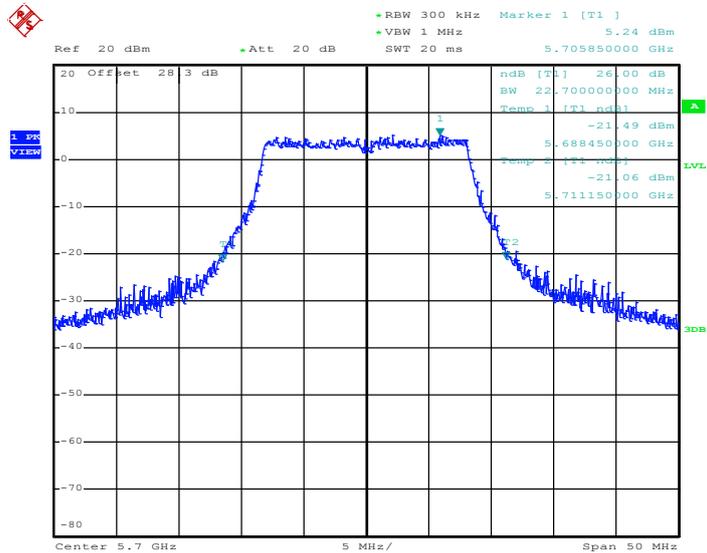


26 dB Bandwidth Plot on 802.11a Channel 116



Date: 15.FEB.2013 13:36:40

26 dB Bandwidth Plot on 802.11a Channel 140



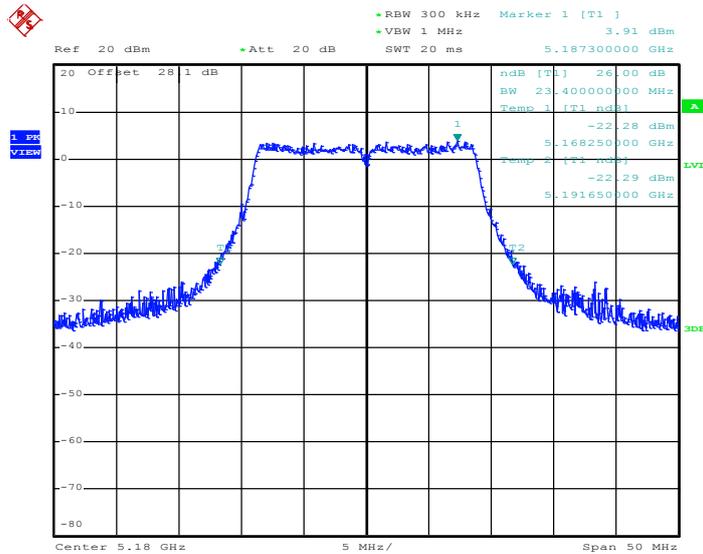
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Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11n HT20 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	23.40	N/A
	44	5220	23.75	N/A
	48	5240	23.40	N/A
NII Band 2	52	5260	23.60	N/A
	60	5300	23.55	N/A
	64	5320	23.80	N/A
NII Band 3	100	5500	23.45	N/A
	116	5580	23.40	N/A
	140	5700	23.25	N/A

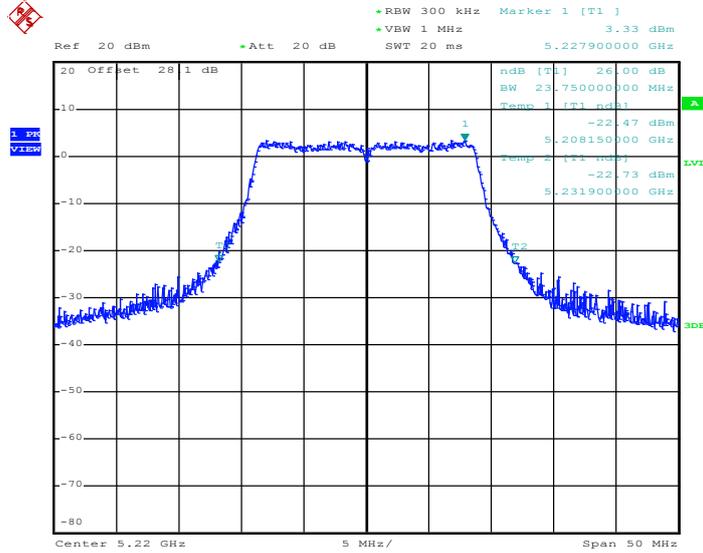
26 dB Bandwidth Plot on 802.11n HT20 Channel 36



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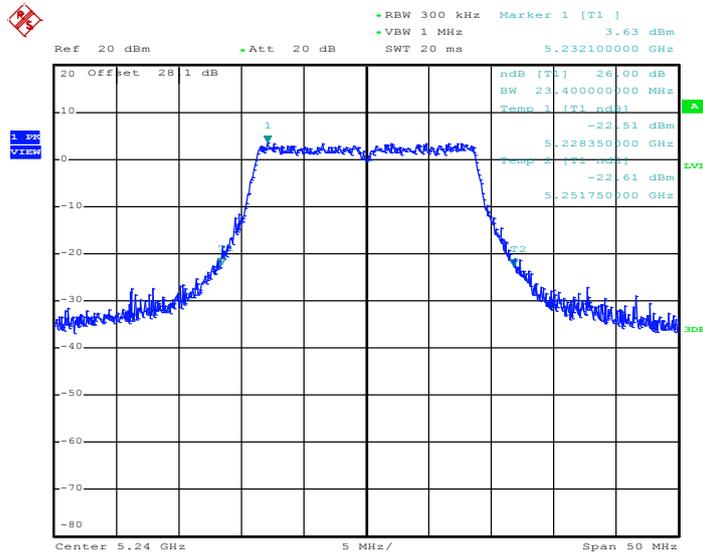


26 dB Bandwidth Plot on 802.11n HT20 Channel 44



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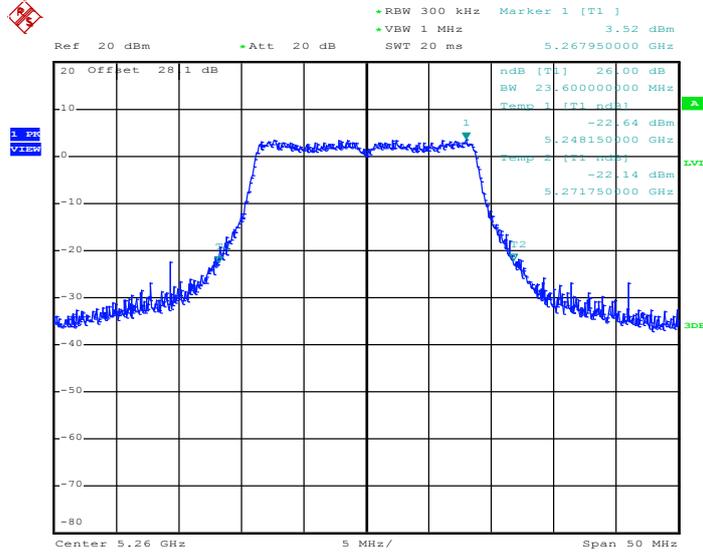
26 dB Bandwidth Plot on 802.11n HT20 Channel 48



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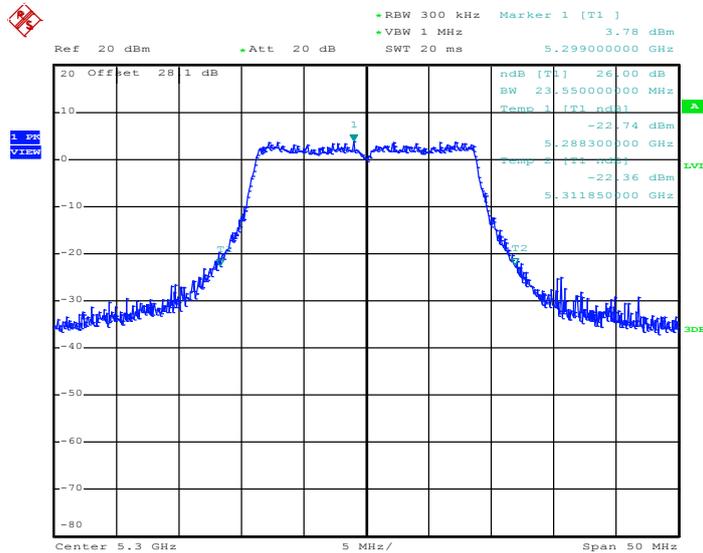


26 dB Bandwidth Plot on 802.11n HT20 Channel 52



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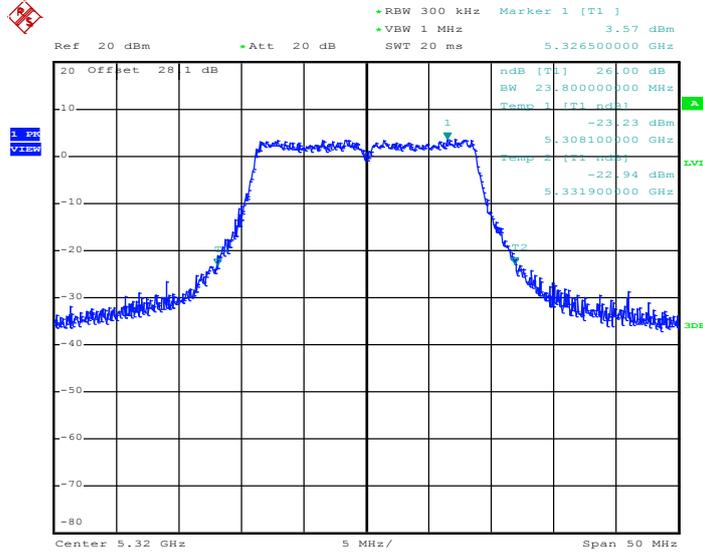
26 dB Bandwidth Plot on 802.11n HT20 Channel 60



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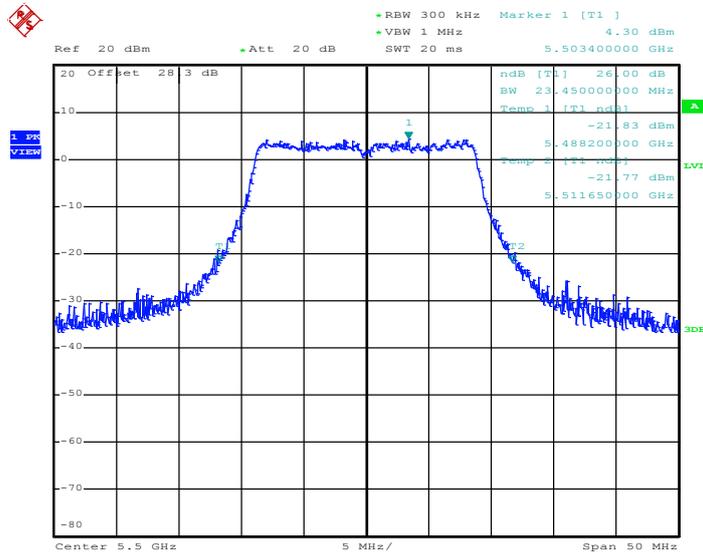


26 dB Bandwidth Plot on 802.11n HT20 Channel 64



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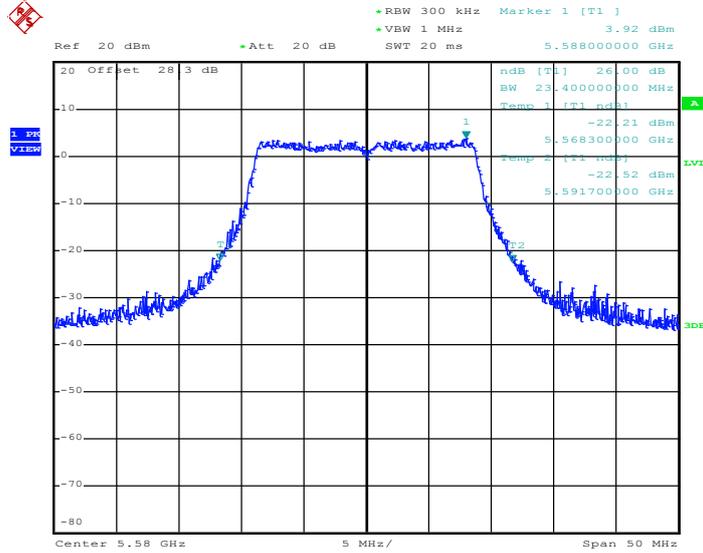
26 dB Bandwidth Plot on 802.11n HT20 Channel 100



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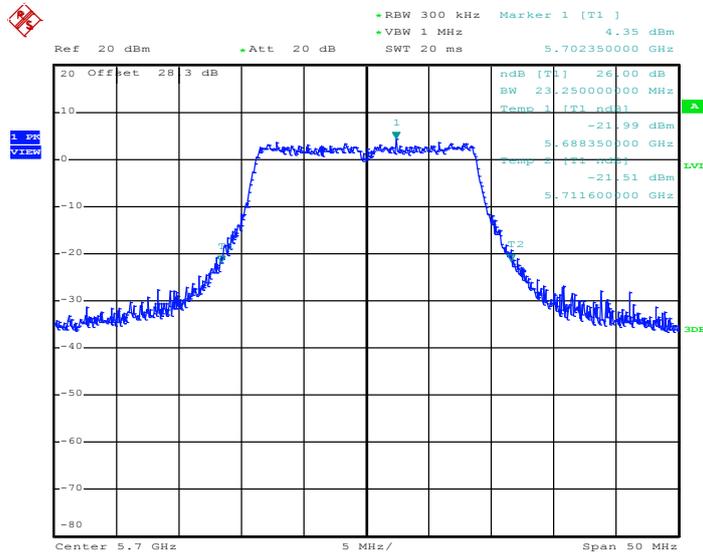


26 dB Bandwidth Plot on 802.11n HT20 Channel 116



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26 dB Bandwidth Plot on 802.11n HT20 Channel 140



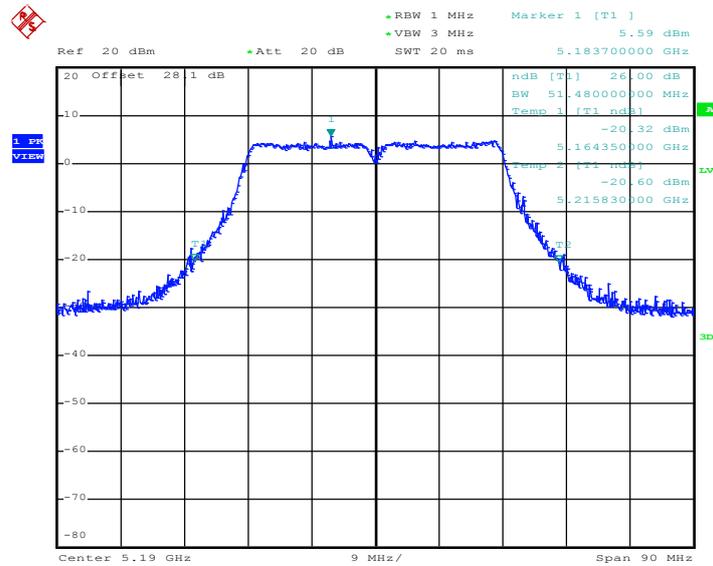
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Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11n HT40 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	38	5190	51.48	N/A
	46	5230	52.65	N/A
NII Band 2	54	5270	52.47	N/A
	62	5310	51.93	N/A
NII Band 3	102	5510	52.02	N/A
	110	5550	51.93	N/A
	134	5670	51.21	N/A

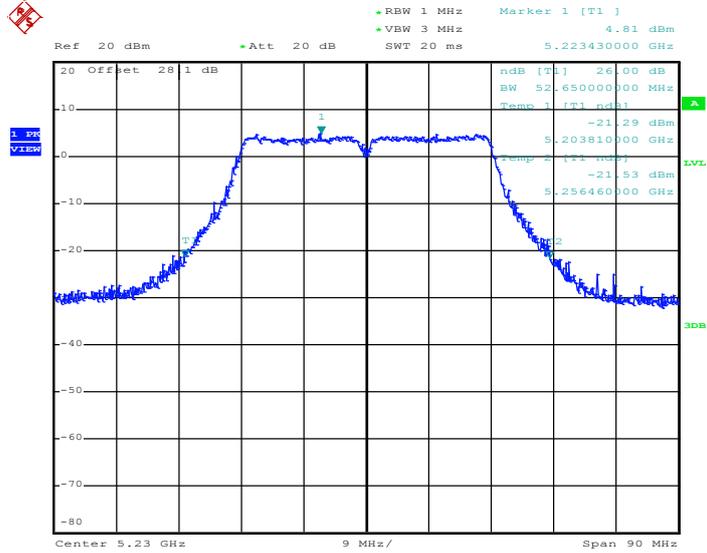
26 dB Bandwidth Plot on 802.11n HT40 Channel 38



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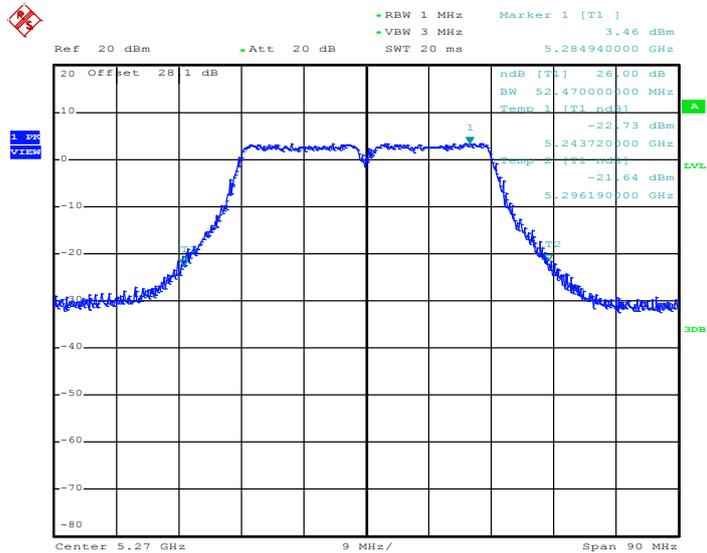


26 dB Bandwidth Plot on 802.11n HT40 Channel 46



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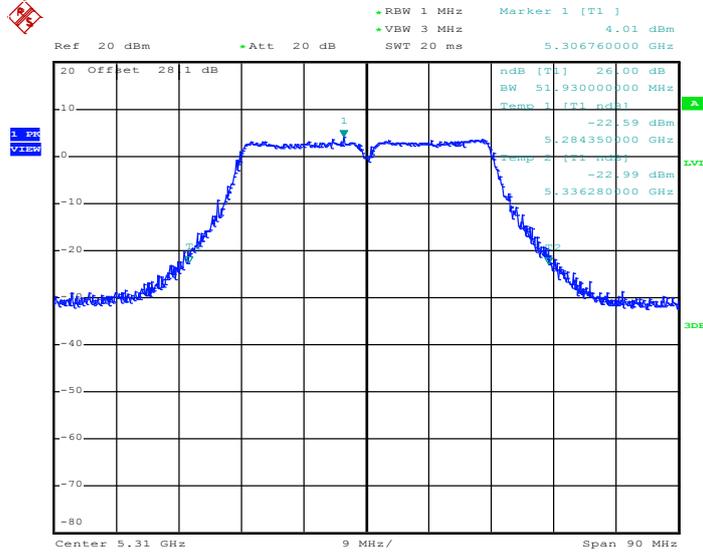
26 dB Bandwidth Plot on 802.11n HT40 Channel 54



Date: 15.FEB.2013 14:48:19

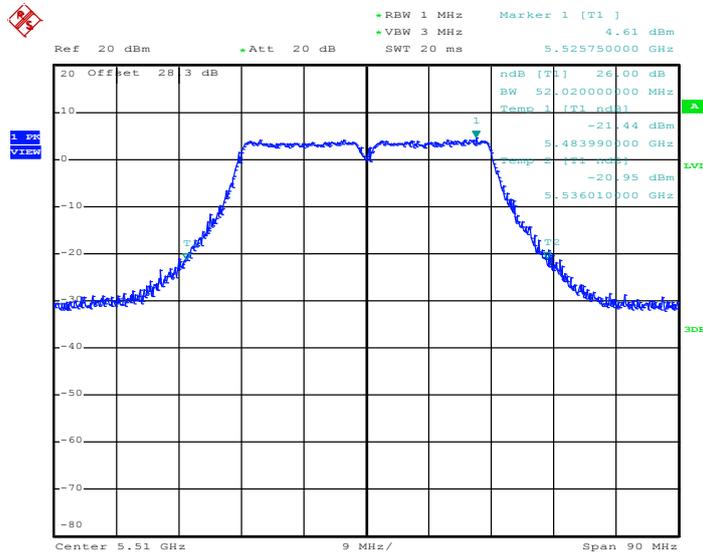


26 dB Bandwidth Plot on 802.11n HT40 Channel 62



Date: 15.FEB.2013 14:50:37

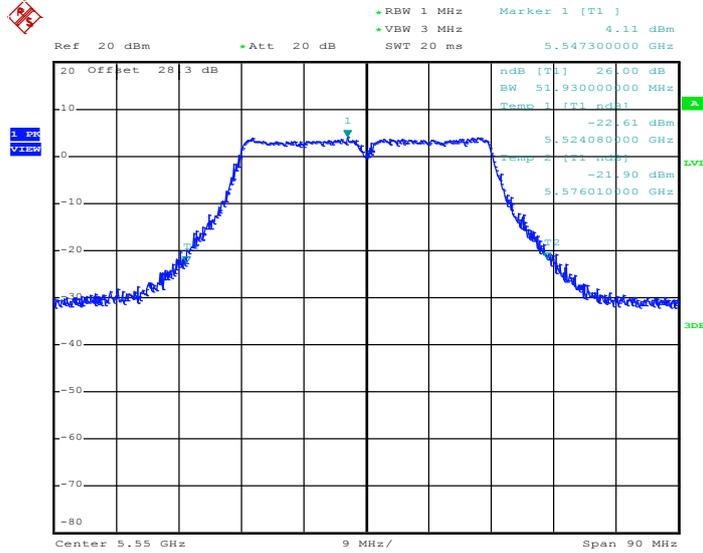
26 dB Bandwidth Plot on 802.11n HT40 Channel 102



Date: 15.FEB.2013 14:53:27

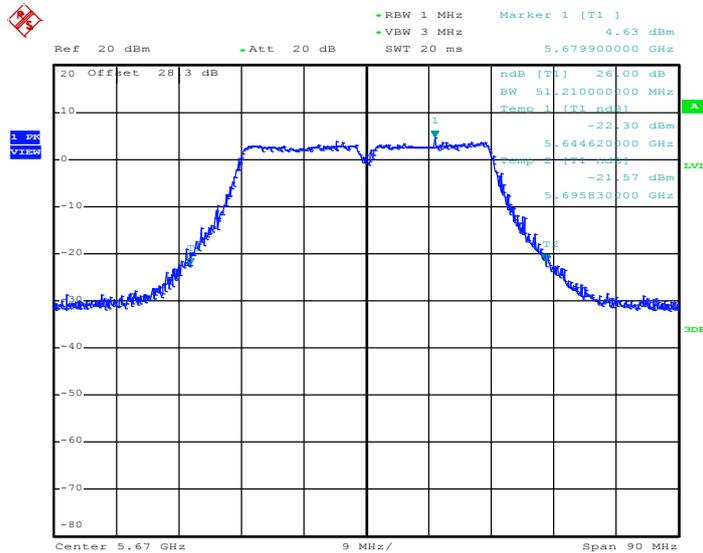


26 dB Bandwidth Plot on 802.11n HT40 Channel 110



Date: 15.FEB.2013 14:56:32

26 dB Bandwidth Plot on 802.11n HT40 Channel 134



Date: 15.FEB.2013 14:59:45

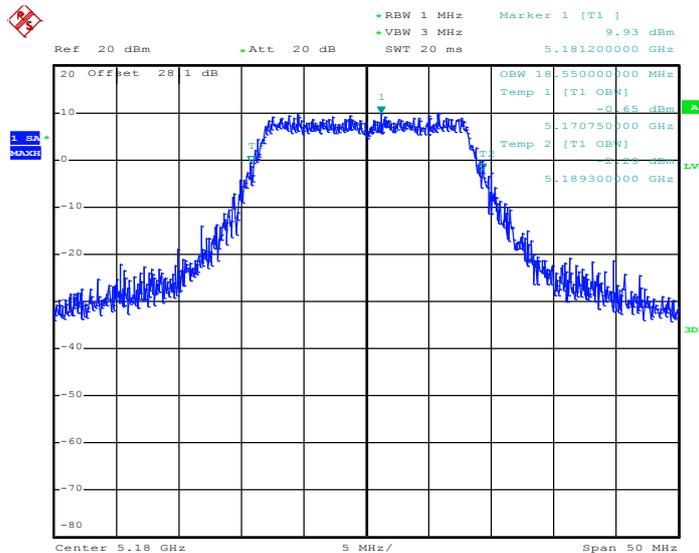


3.1.6 Test Result of 99% Occupied Bandwidth Plots

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

Band	Channel	Frequency (MHz)	802.11a 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	18.55	N/A
	44	5220	18.50	N/A
	48	5240	18.45	N/A
NII Band 2	52	5260	18.40	N/A
	60	5300	18.40	N/A
	64	5320	18.50	N/A
NII Band 3	100	5500	18.35	N/A
	116	5580	18.55	N/A
	140	5700	18.45	N/A

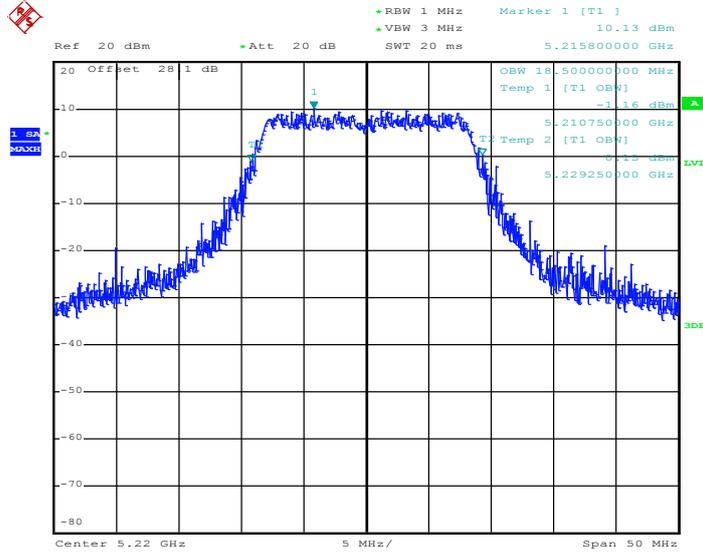
99% Occupied Bandwidth Plot on 802.11a Channel 36



Date: 15.FEB.2013 11:50:14

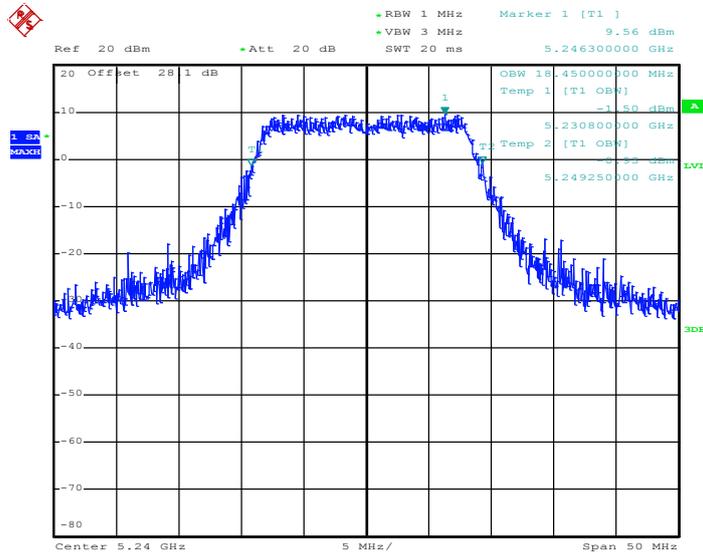


99% Occupied Bandwidth Plot on 802.11a Channel 44



Date: 15.FEB.2013 11:52:45

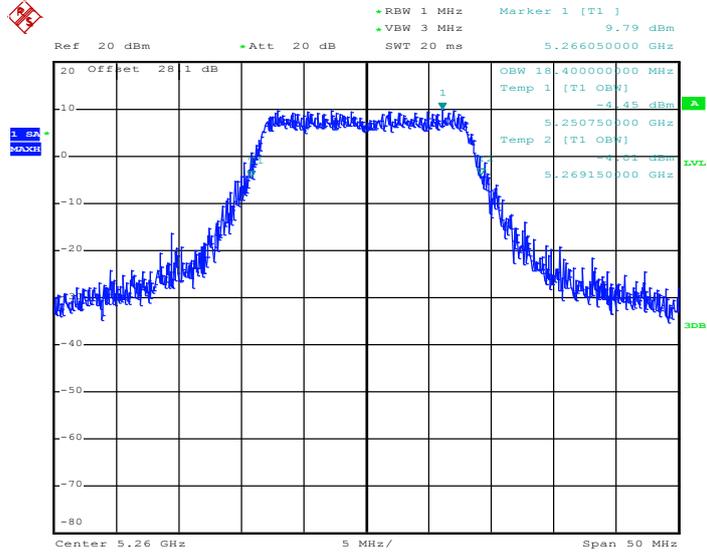
99% Occupied Bandwidth Plot on 802.11a Channel 48



Date: 15.FEB.2013 11:55:55

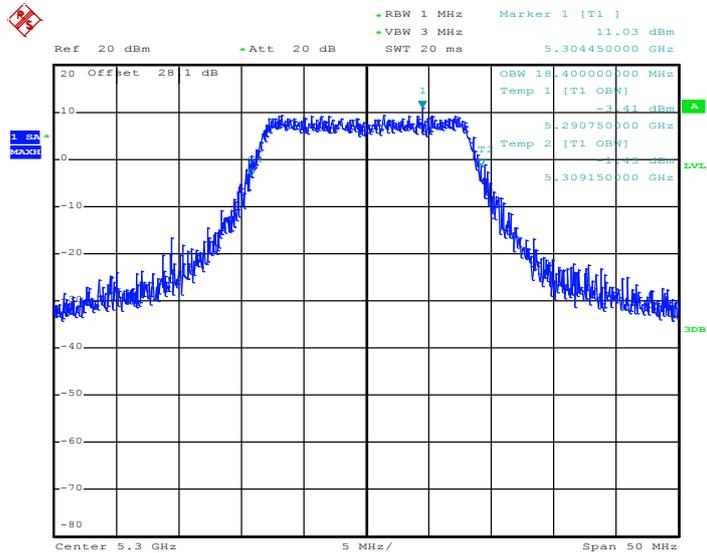


99% Occupied Bandwidth Plot on 802.11a Channel 52



Date: 15.FEB.2013 12:00:09

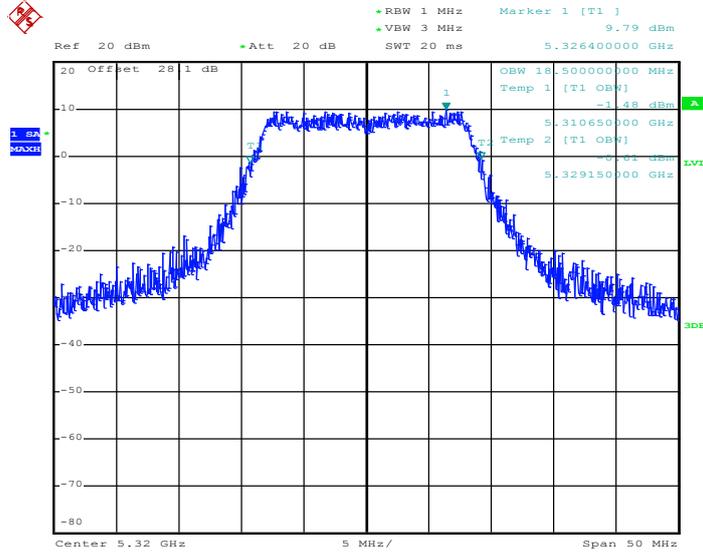
99% Occupied Bandwidth Plot on 802.11a Channel 60



Date: 15.FEB.2013 12:04:49

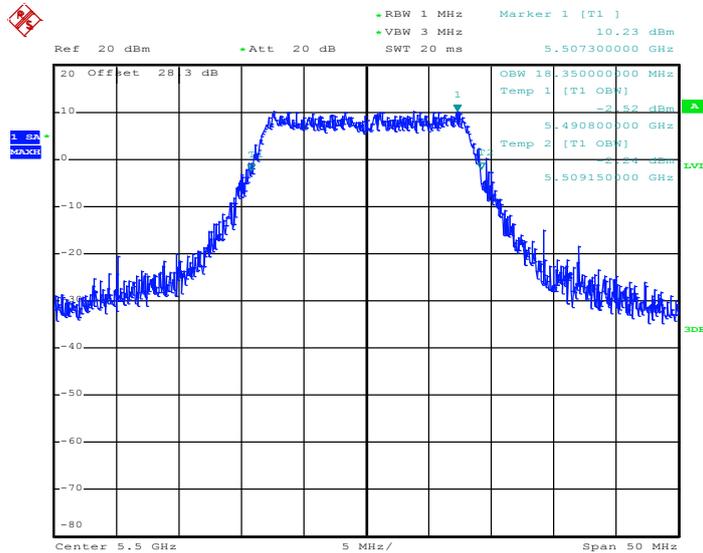


99% Occupied Bandwidth Plot on 802.11a Channel 64



Date: 15.FEB.2013 13:31:39

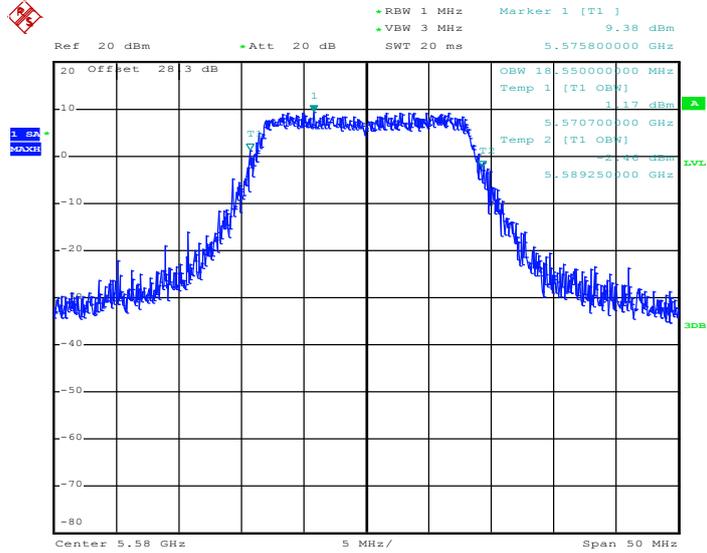
99% Occupied Bandwidth Plot on 802.11a Channel 100



Date: 15.FEB.2013 13:34:26

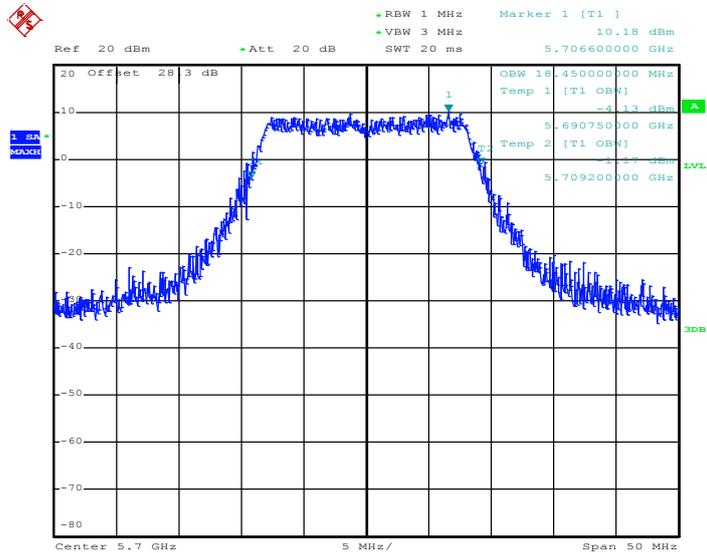


99% Occupied Bandwidth Plot on 802.11a Channel 116



Date: 15.FEB.2013 13:38:37

99% Occupied Bandwidth Plot on 802.11a Channel 140



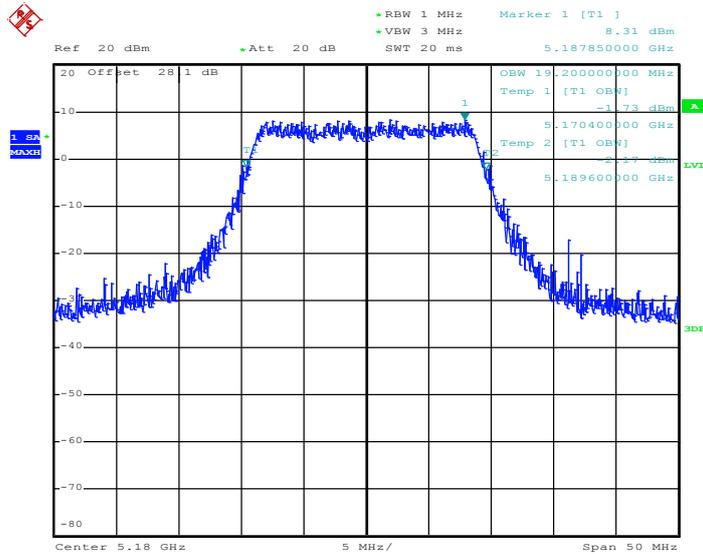
Date: 15.FEB.2013 13:41:35



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

Band	Channel	Frequency (MHz)	802.11n HT20 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	19.20	N/A
	44	5220	19.35	N/A
	48	5240	19.30	N/A
NII Band 2	52	5260	19.25	N/A
	60	5300	19.25	N/A
	64	5320	19.35	N/A
NII Band 3	100	5500	19.25	N/A
	116	5580	19.25	N/A
	140	5700	19.25	N/A

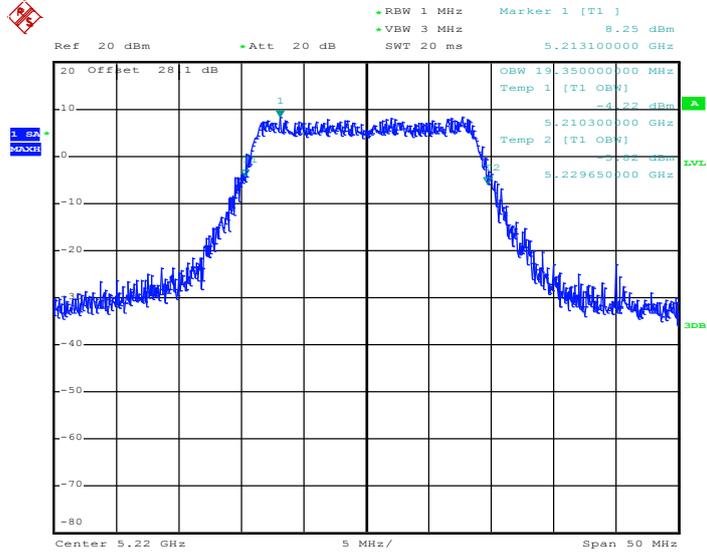
99% Occupied Bandwidth Plot on 802.11n HT20 Channel 36



Date: 15.FEB.2013 13:44:24

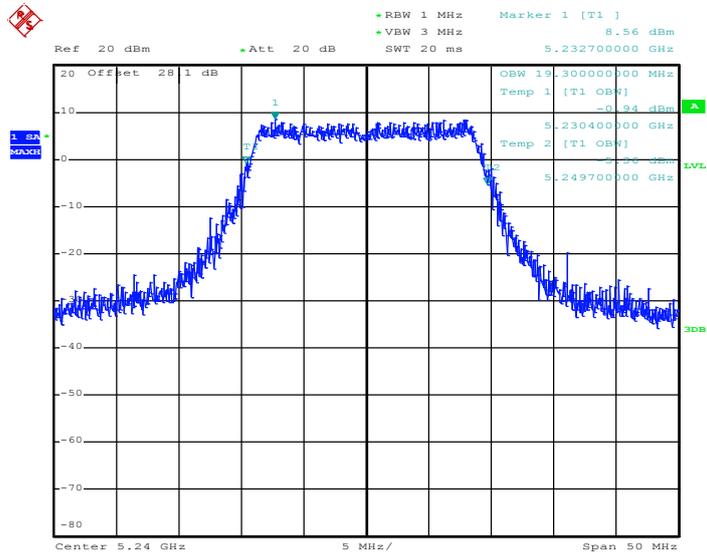


99% Occupied Bandwidth Plot on 802.11n HT20 Channel 44



Date: 15.FEB.2013 13:47:48

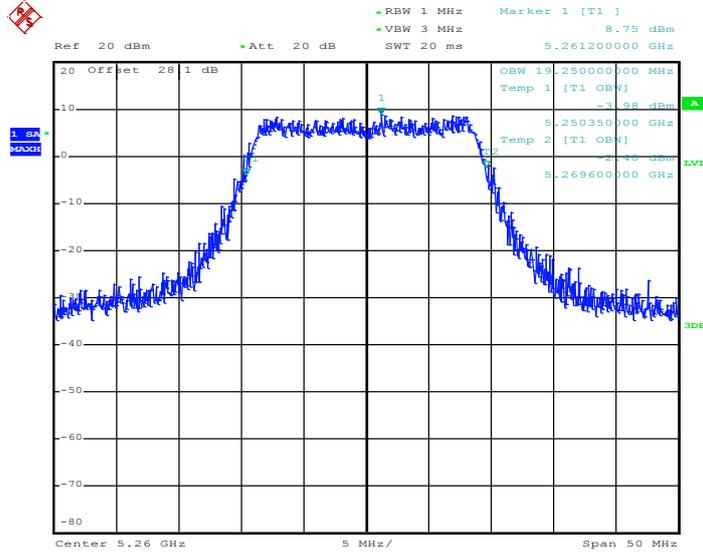
99% Occupied Bandwidth Plot on 802.11n HT20 Channel 48



Date: 15.FEB.2013 13:50:19

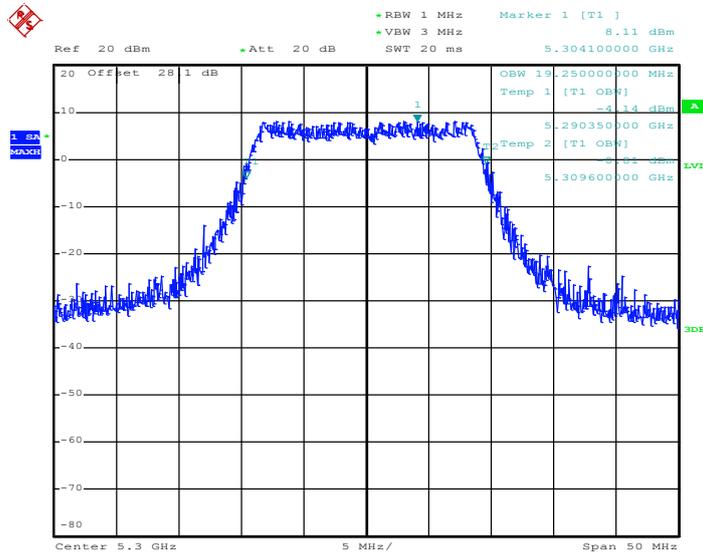


99% Occupied Bandwidth Plot on 802.11n HT20 Channel 52



Date: 15.FEB.2013 14:03:57

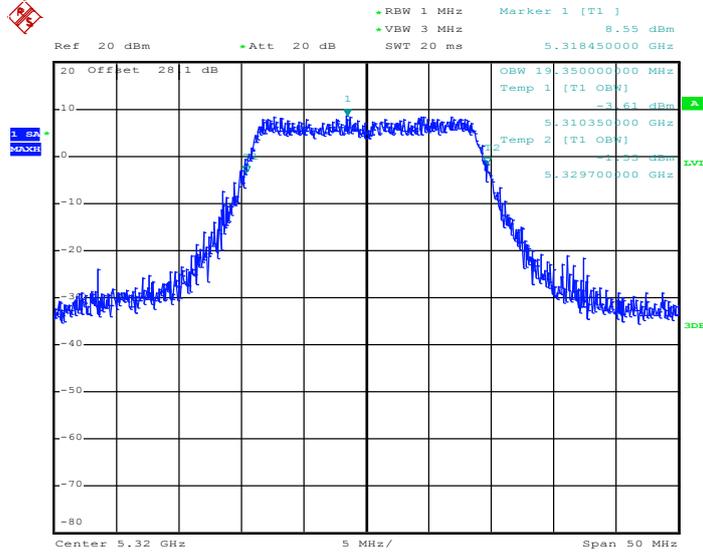
99% Occupied Bandwidth Plot on 802.11n HT20 Channel 60



Date: 15.FEB.2013 14:12:37

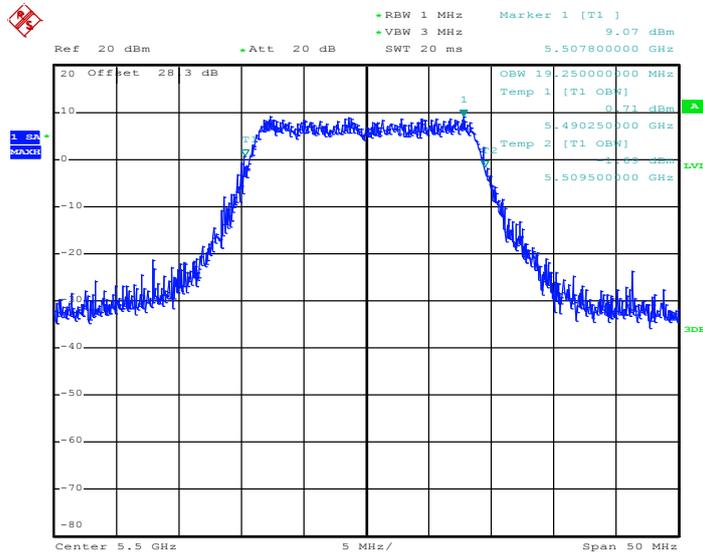


99% Occupied Bandwidth Plot on 802.11n HT20 Channel 64



Date: 15.FEB.2013 14:21:05

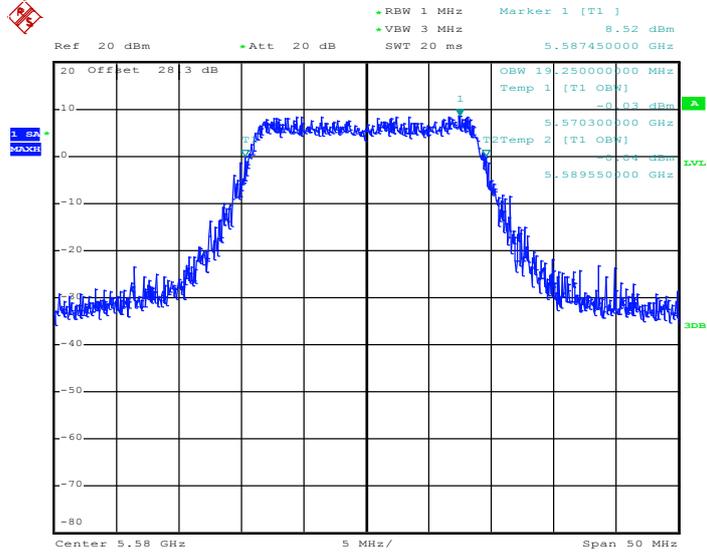
99% Occupied Bandwidth Plot on 802.11n HT20 Channel 100



Date: 15.FEB.2013 14:32:39

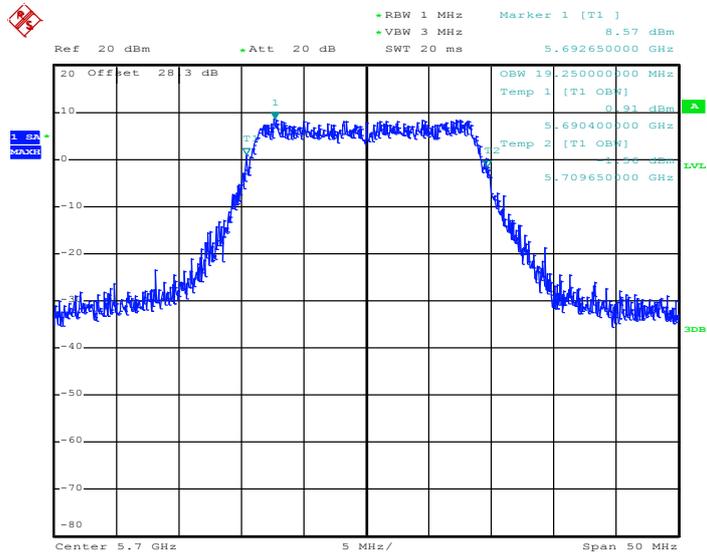


99% Occupied Bandwidth Plot on 802.11n HT20 Channel 116



Date: 15.FEB.2013 14:35:49

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 140



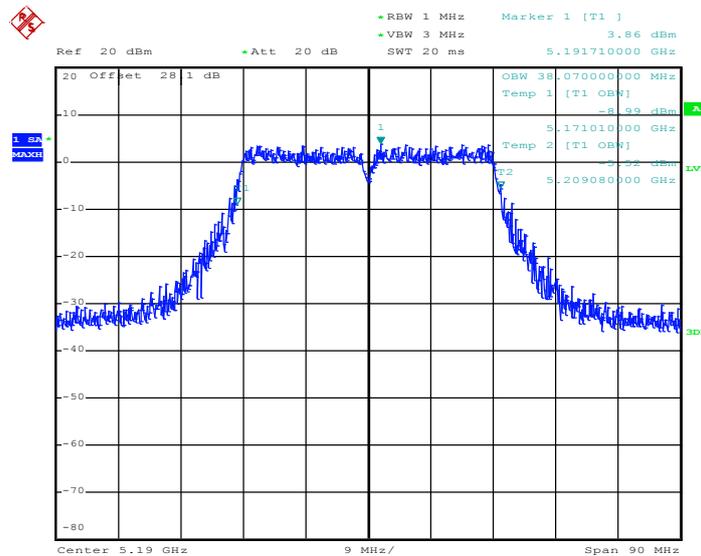
Date: 15.FEB.2013 14:40:25



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

Band	Channel	Frequency (MHz)	802.11n HT40 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	38	5190	38.07	N/A
	46	5230	38.16	N/A
NII Band 2	54	5270	37.71	N/A
	62	5310	37.98	N/A
NII Band 3	102	5510	37.80	N/A
	110	5550	37.89	N/A
	134	5670	38.07	N/A

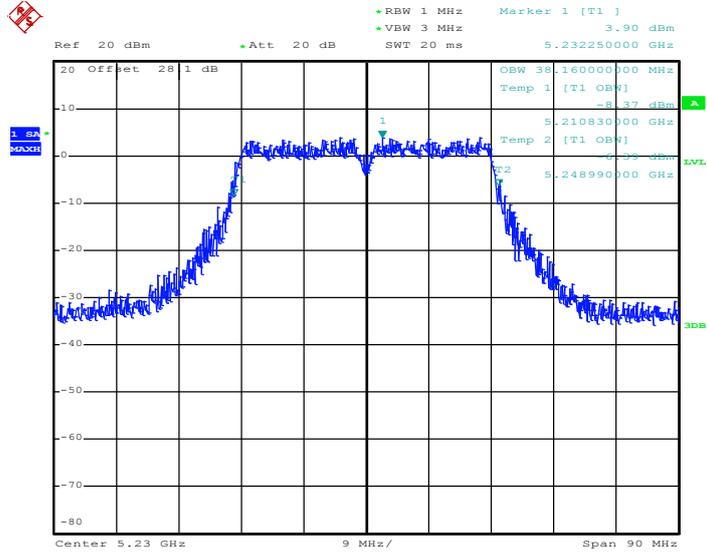
99% Occupied Bandwidth Plot on 802.11n HT40 Channel 38



Date: 15.FEB.2013 14:45:03

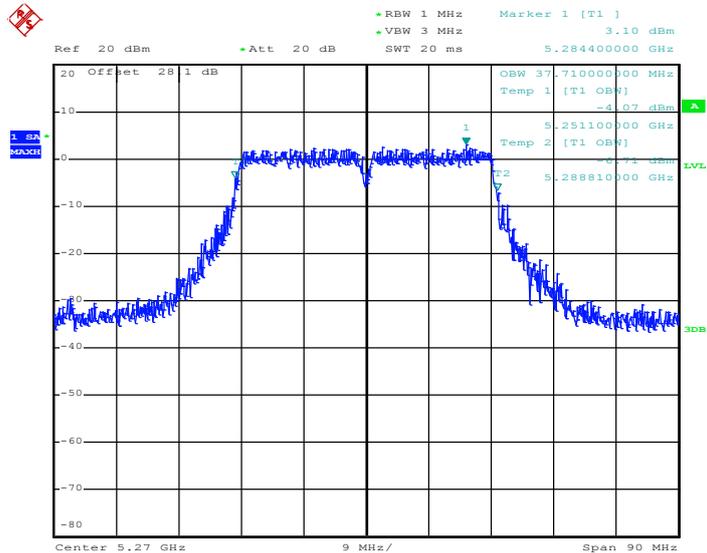


99% Occupied Bandwidth Plot on 802.11n HT40 Channel 46



Date: 15.FEB.2013 14:47:50

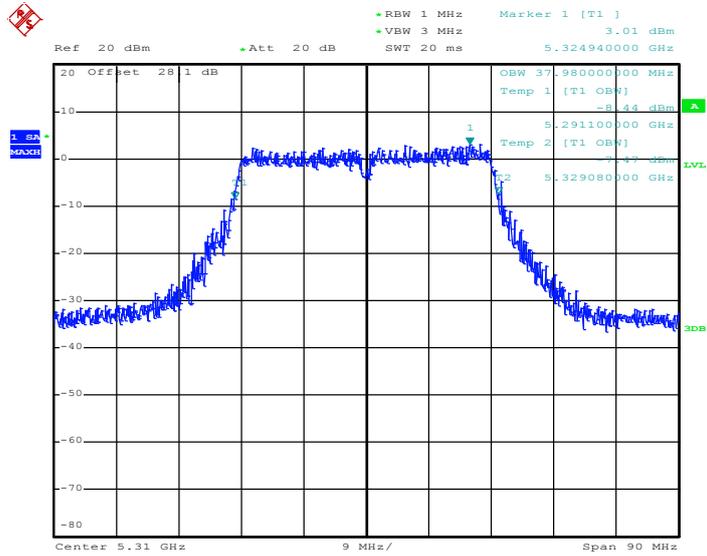
99% Occupied Bandwidth Plot on 802.11n HT40 Channel 54



Date: 15.FEB.2013 14:50:17

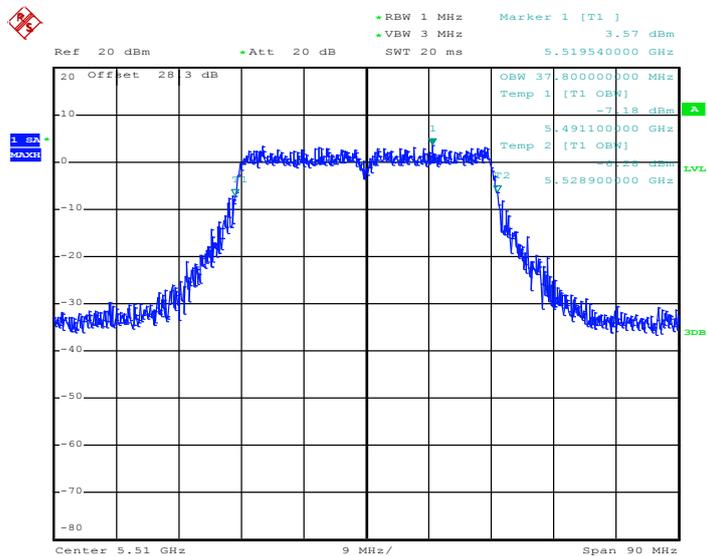


99% Occupied Bandwidth Plot on 802.11n HT40 Channel 62



Date: 15.FEB.2013 14:52:50

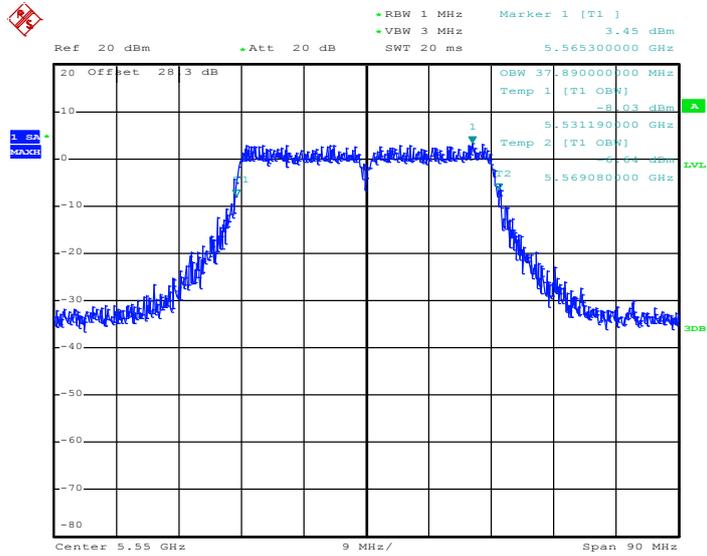
99% Occupied Bandwidth Plot on 802.11n HT40 Channel 102



Date: 15.FEB.2013 14:55:51

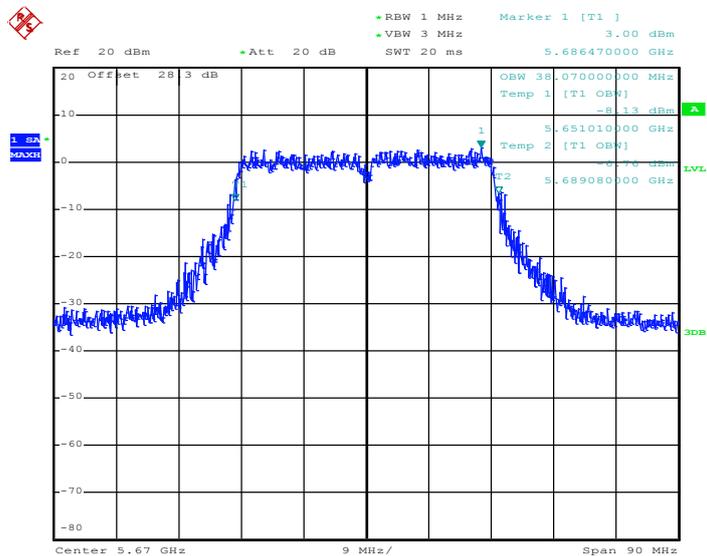


99% Occupied Bandwidth Plot on 802.11n HT40 Channel 110



Date: 15.FEB.2013 14:59:03

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 134



Date: 15.FEB.2013 15:04:13

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5150-5250 MHz, 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 bands 5250-5350 MHz and 5470-5600 MHz and 5650-5725 MHz, 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.

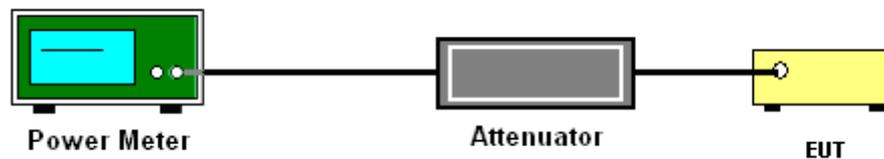
3.2.3 Test Procedures

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 :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle	98.32%	Duty Factor	0.07dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	13.63	13.70	17	Pass
	44	5220	13.57	13.64	17	Pass
	48	5240	13.83	13.90	17	Pass
NII Band 2	52	5260	13.74	13.81	24	Pass
	60	5300	13.77	13.84	24	Pass
	64	5320	13.84	13.91	24	Pass
NII Band 3	100	5500	13.91	13.98	24	Pass
	116	5580	13.85	13.92	24	Pass
	140	5700	13.41	13.48	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
3. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz 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 :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle	98.36%	Duty Factor	0.07dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	12.60	12.67	17	Pass
	44	5220	12.61	12.68	17	Pass
	48	5240	12.85	12.92	17	Pass
NII Band 2	52	5260	12.86	12.93	24	Pass
	60	5300	12.83	12.90	24	Pass
	64	5320	12.88	12.95	24	Pass
NII Band 3	100	5500	12.91	12.98	24	Pass
	116	5580	12.85	12.92	24	Pass
	140	5700	12.35	12.42	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
3. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz 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 :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle	97.05%	Duty Factor	0.13dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	38	5190	10.85	10.98	17	Pass
	46	5230	10.86	10.99	17	Pass
NII Band 2	54	5270	10.38	10.51	24	Pass
	62	5310	10.40	10.53	24	Pass
NII Band 3	102	5510	10.61	10.74	24	Pass
	110	5550	10.38	10.51	24	Pass
	134	5670	10.02	10.15	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
3. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz 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 5150-5250 MHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. For the bands 5250-5350 MHz and 5470-5600 and 5650-5725 MHz, 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).

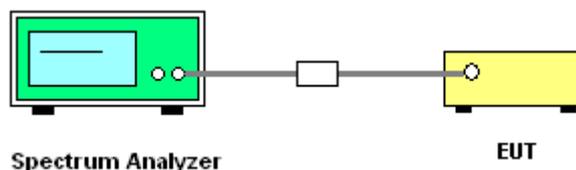
Note: Though the rule refers to “peak power spectral density”, the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

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





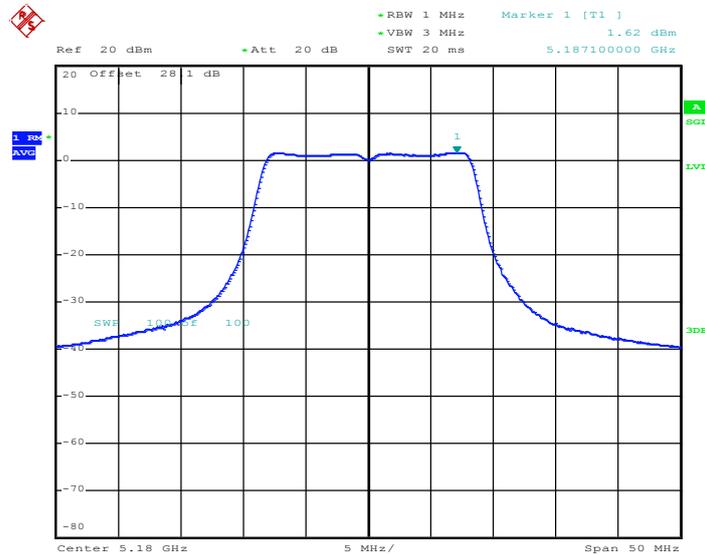
3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle:	98.32%	Duty Factor:	0.07dB

Band	Channel	Frequency (MHz)	802.11a PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	1.62	1.69	4	Pass
	44	5220	1.63	1.70	4	Pass
	48	5240	1.59	1.66	4	Pass
NII Band 2	52	5260	1.57	1.64	11	Pass
	60	5300	1.68	1.75	11	Pass
	64	5320	1.70	1.77	11	Pass
NII Band 3	100	5500	2.23	2.30	11	Pass
	116	5580	1.57	1.64	11	Pass
	140	5700	1.62	1.69	11	Pass

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

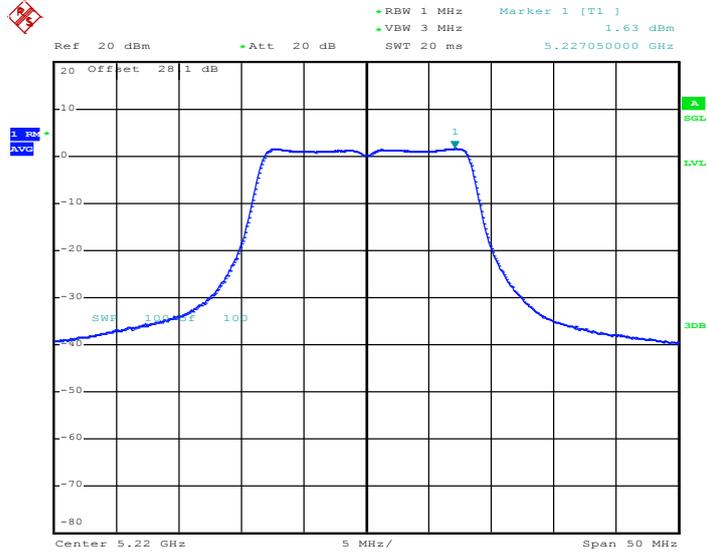
PSD Plot on 802.11a Channel 36



Date: 15.FEB.2013 11:48:16

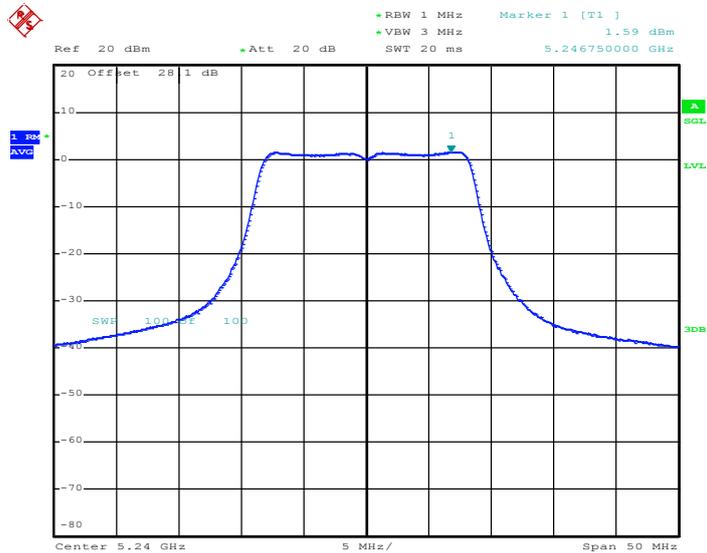


PSD Plot on 802.11a Channel 44



Date: 15.FEB.2013 11:51:11

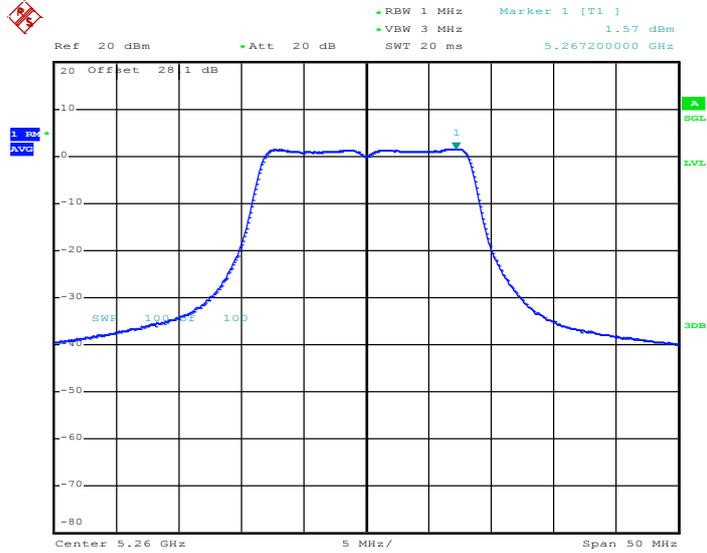
PSD Plot on 802.11a Channel 48



Date: 15.FEB.2013 11:53:59

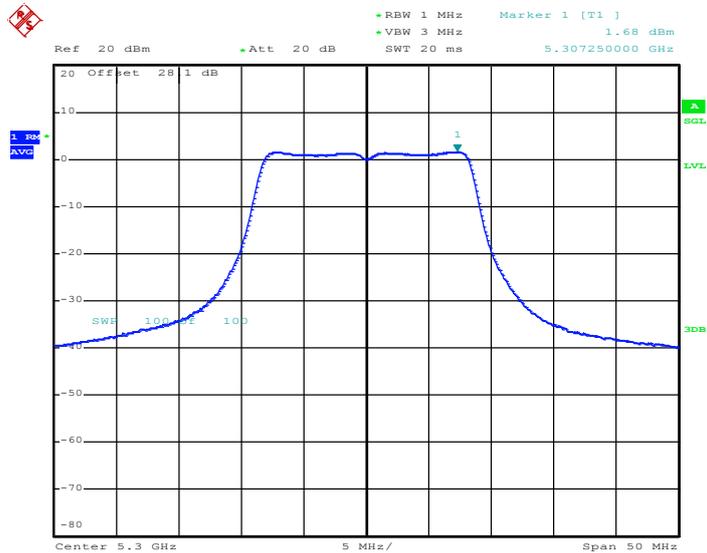


PSD Plot on 802.11a Channel 52



Date: 15.FEB.2013 11:56:57

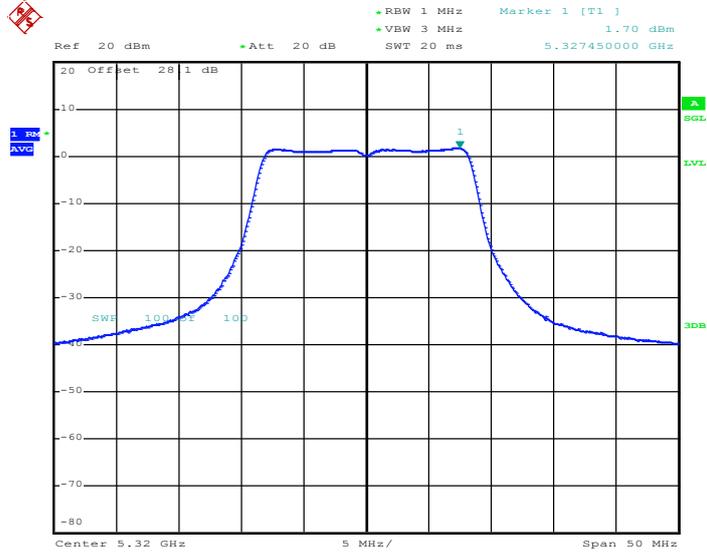
PSD Plot on 802.11a Channel 60



Date: 15.FEB.2013 12:02:29

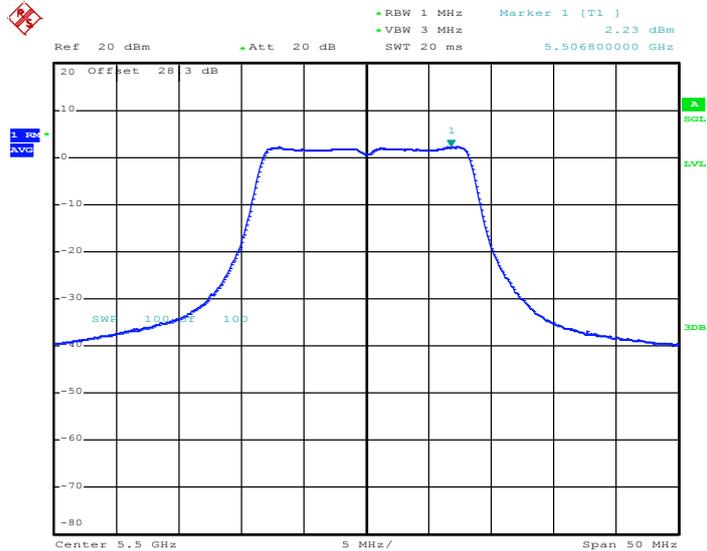


PSD Plot on 802.11a Channel 64



Date: 15.FEB.2013 13:30:01

PSD Plot on 802.11a Channel 100



Date: 15.FEB.2013 13:32:44

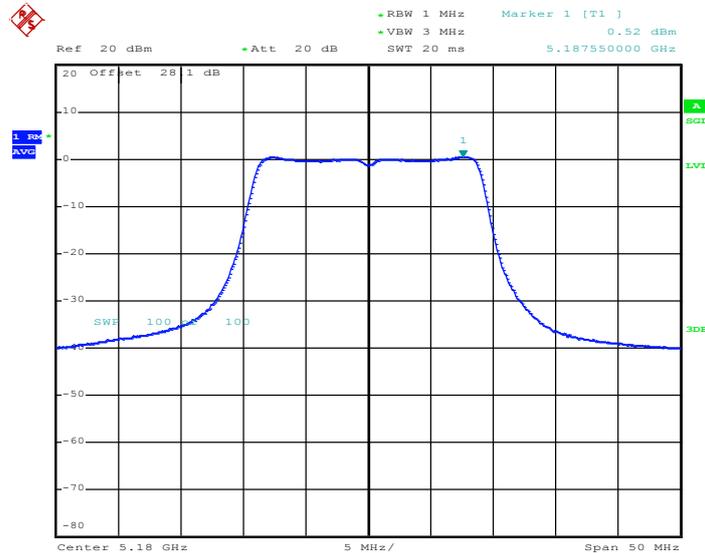


Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle:	98.36%	Duty Factor:	0.07dB

Band	Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	0.52	0.59	4	Pass
	44	5220	0.51	0.58	4	Pass
	48	5240	0.40	0.47	4	Pass
NII Band 2	52	5260	0.48	0.55	11	Pass
	60	5300	0.50	0.57	11	Pass
	64	5320	0.67	0.74	11	Pass
NII Band 3	100	5500	1.17	1.24	11	Pass
	116	5580	0.51	0.58	11	Pass
	140	5700	0.58	0.65	11	Pass

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

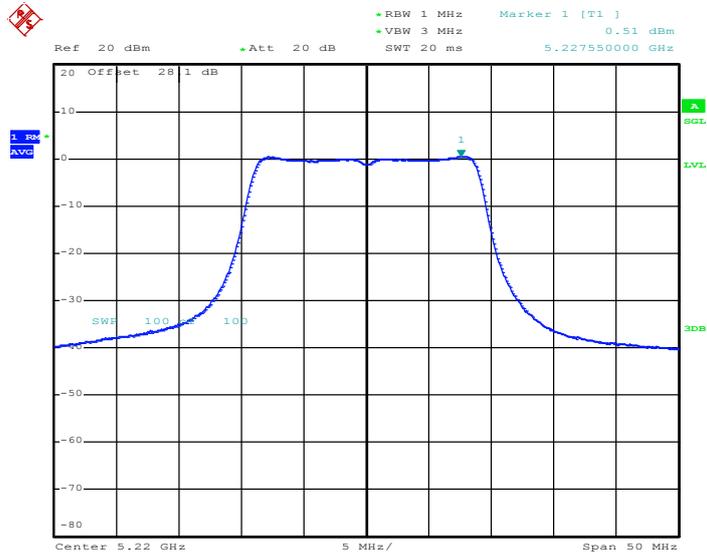
PSD Plot on 802.11n HT20 channel 36



Date: 15.FEB.2013 13:42:45

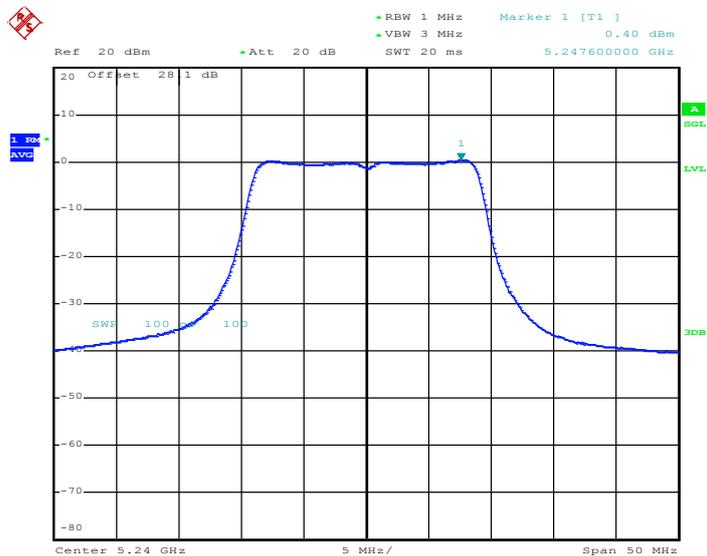


PSD Plot on 802.11n HT20 Channel 44



Date: 15.FEB.2013 13:45:59

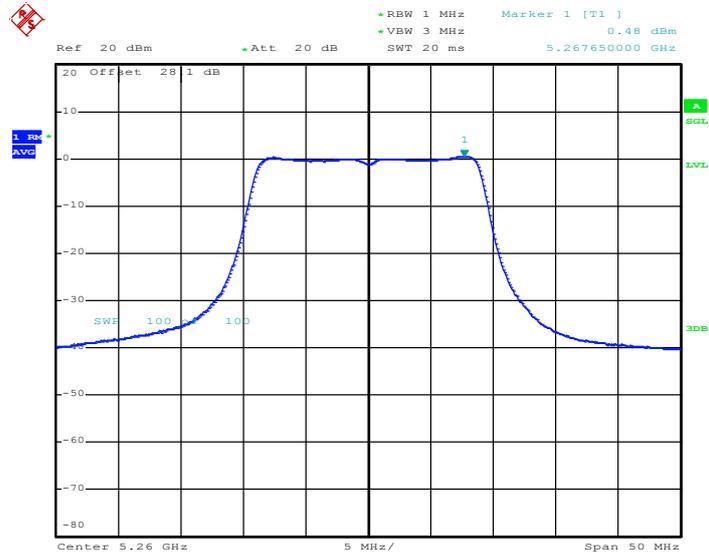
PSD Plot on 802.11n HT20 Channel 48



Date: 15.FEB.2013 13:48:47

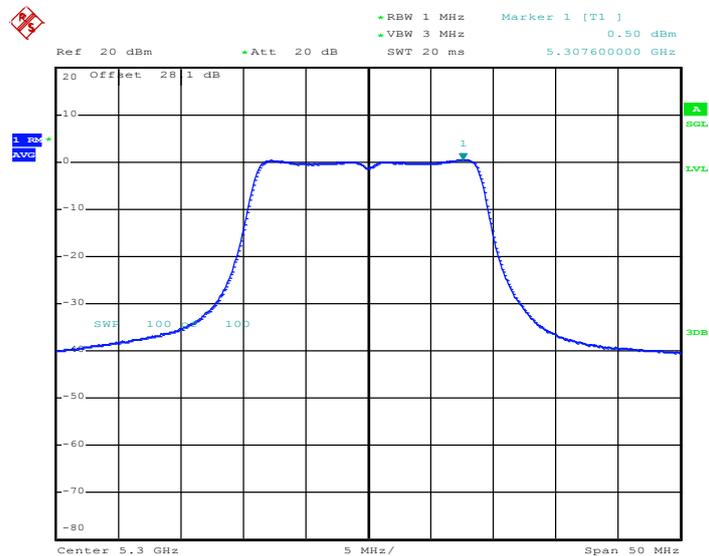


PSD Plot on 802.11n HT20 Channel 52



Date: 15.FEB.2013 13:56:43

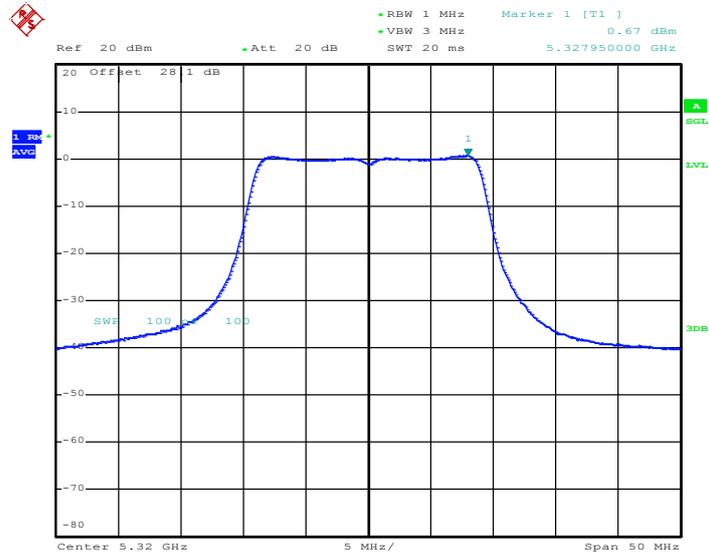
PSD Plot on 802.11n HT20 Channel 60



Date: 15.FEB.2013 14:06:34

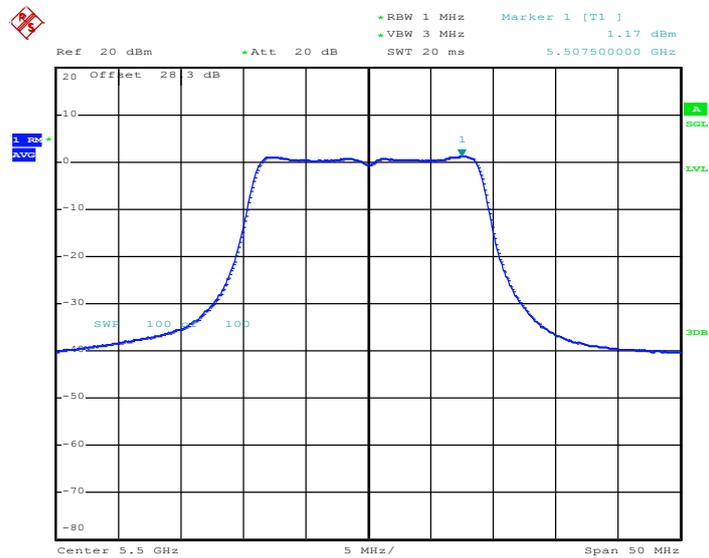


PSD Plot on 802.11n HT20 Channel 64



Date: 15.FEB.2013 14:18:35

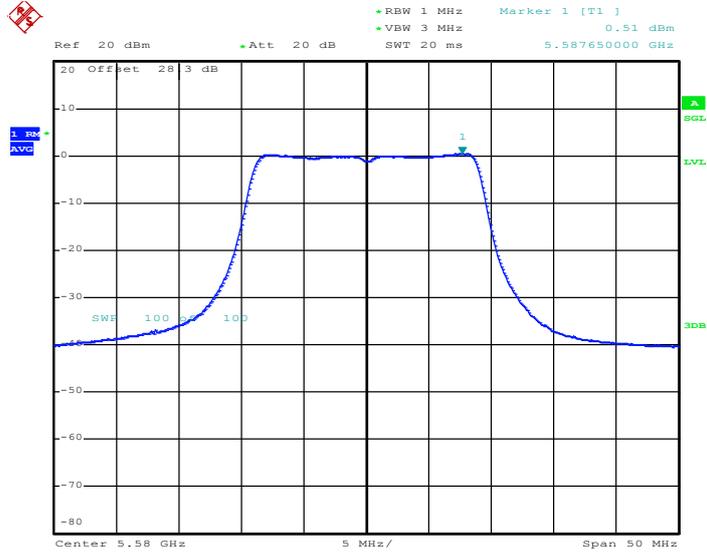
PSD Plot on 802.11n HT20 Channel 100



Date: 15.FEB.2013 14:31:01

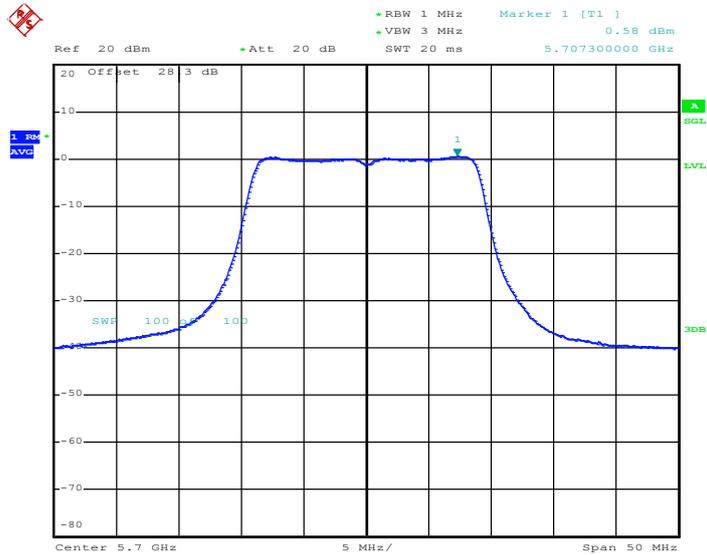


PSD Plot on 802.11n HT20 Channel 116



Date: 15.FEB.2013 14:33:30

PSD Plot on 802.11n HT20 Channel 140



Date: 15.FEB.2013 14:38:51

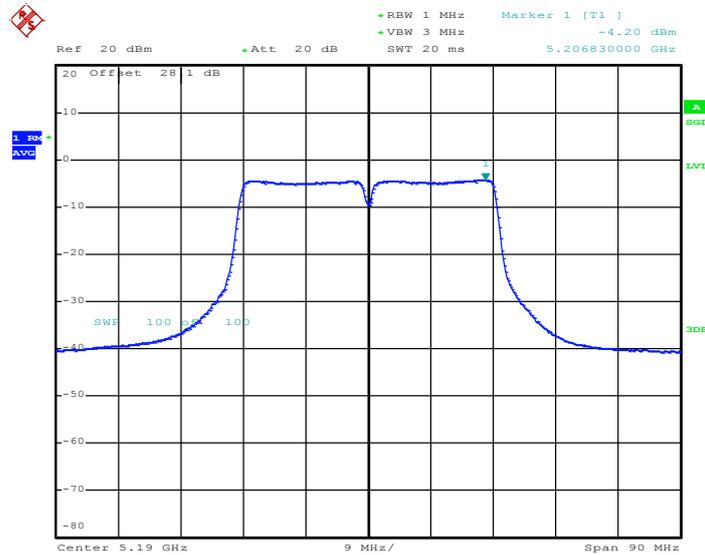


Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle:	97.05%	Duty Factor:	0.13dB

Band	Channel	Frequency (MHz)	802.11n HT40 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	38	5190	-4.20	-4.07	4	Pass
	46	5230	-4.19	-4.06	4	Pass
NII Band 2	54	5270	-5.31	-5.18	11	Pass
	62	5310	-5.19	-5.06	11	Pass
NII Band 3	102	5510	-4.60	-4.47	11	Pass
	110	5550	-5.00	-4.87	11	Pass
	134	5670	-5.17	-5.04	11	Pass

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

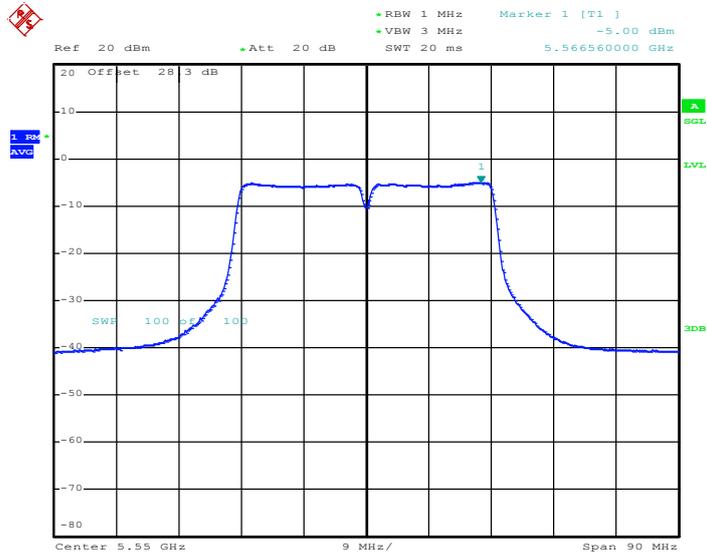
PSD Plot on 802.11n HT40 Channel 38



Date: 15.FEB.2013 14:43:03

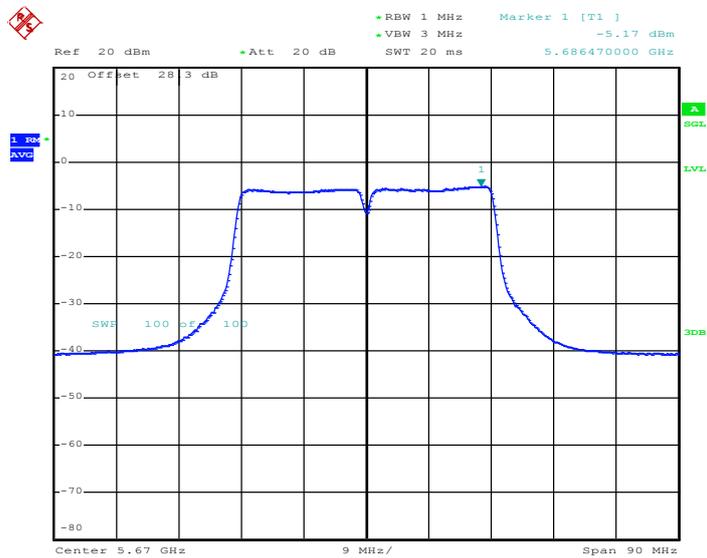


PSD Plot on 802.11n HT40 Channel 110



Date: 15.FEB.2013 14:56:55

PSD Plot on 802.11n HT40 Channel 134



Date: 15.FEB.2013 15:00:19

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.

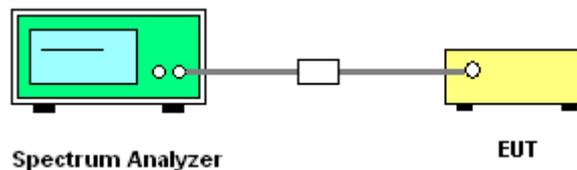
3.4.3 Test Procedures

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

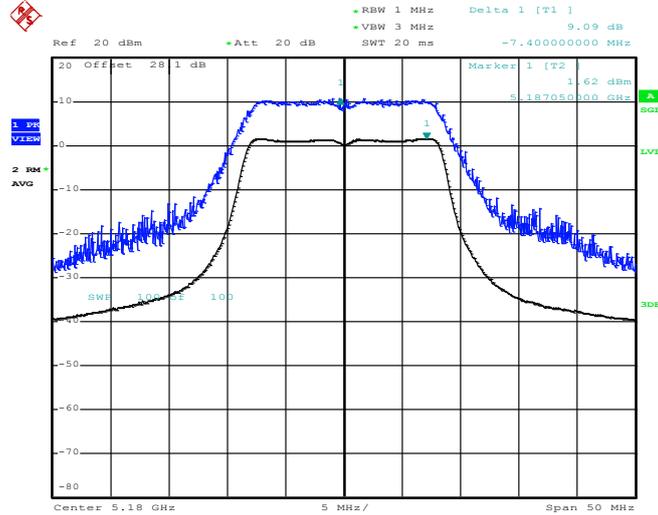




3.4.5 Test Result of Peak Excursion Ratio

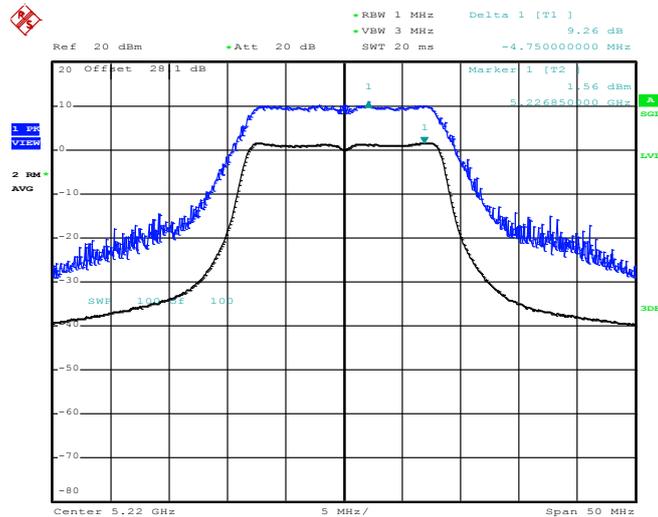
Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11a Channel 36



Date: 15.FEB.2013 11:48:36

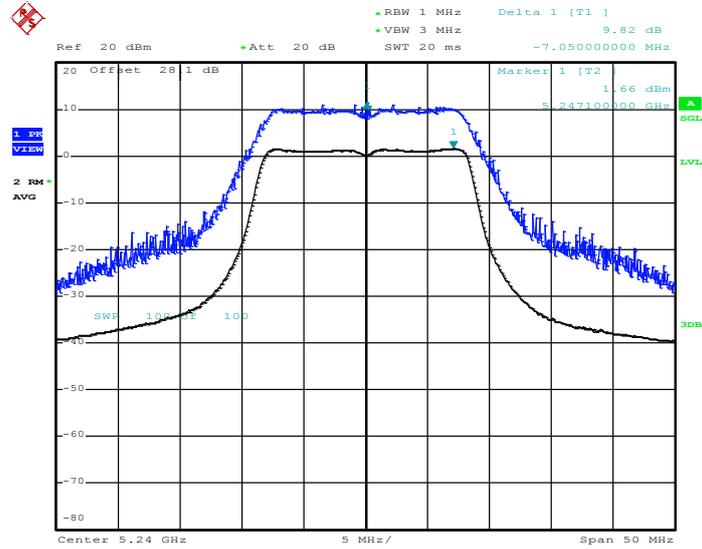
Peak Excursion Ratio Plot on 802.11a Channel 44



Date: 15.FEB.2013 11:51:31

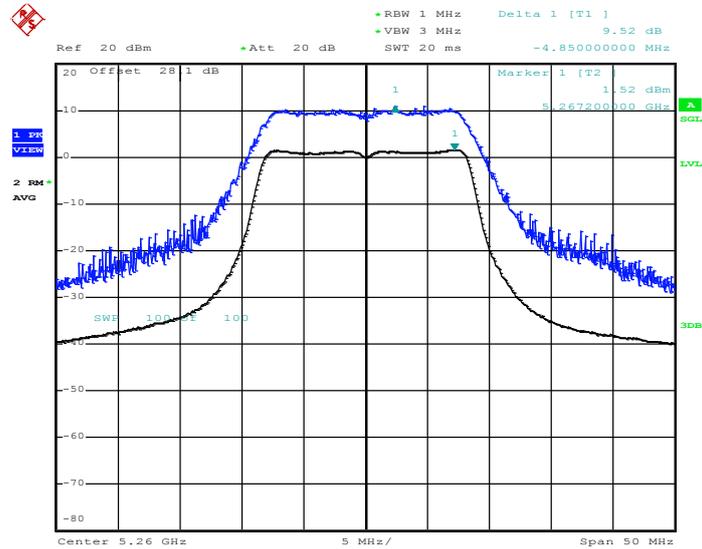


Peak Excursion Ratio Plot on 802.11a Channel 48



Date: 15.FEB.2013 11:54:20

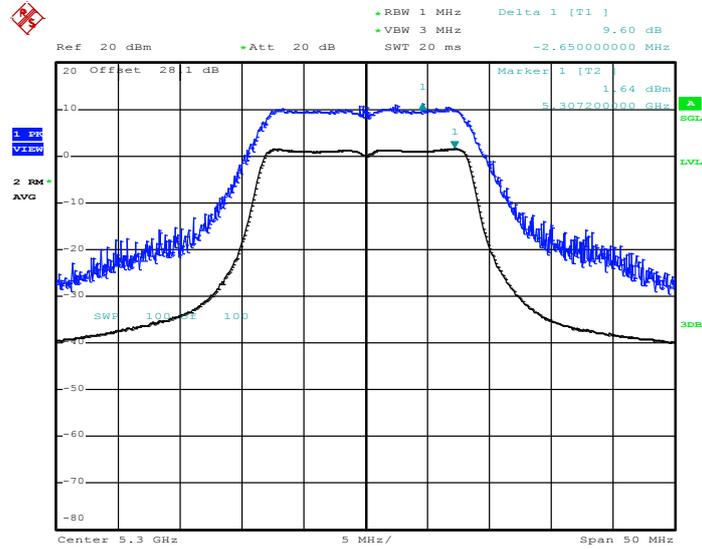
Peak Excursion Ratio Plot on 802.11a Channel 52



Date: 15.FEB.2013 11:57:46

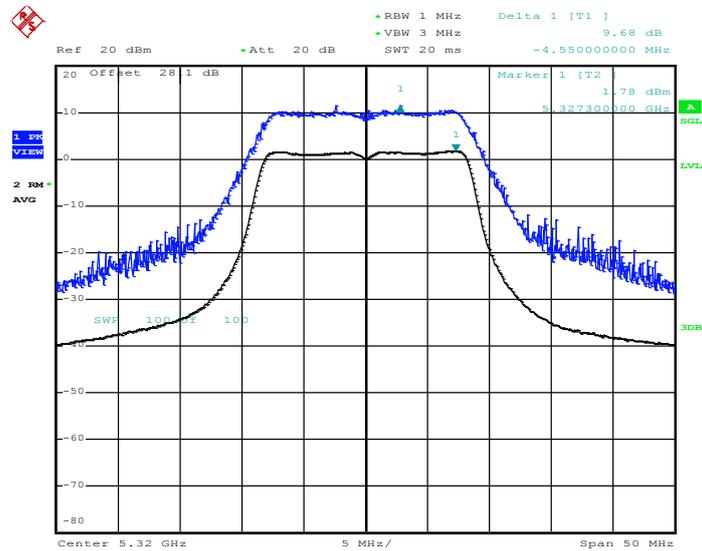


Peak Excursion Ratio Plot on 802.11a Channel 60



Date: 15.FEB.2013 12:02:57

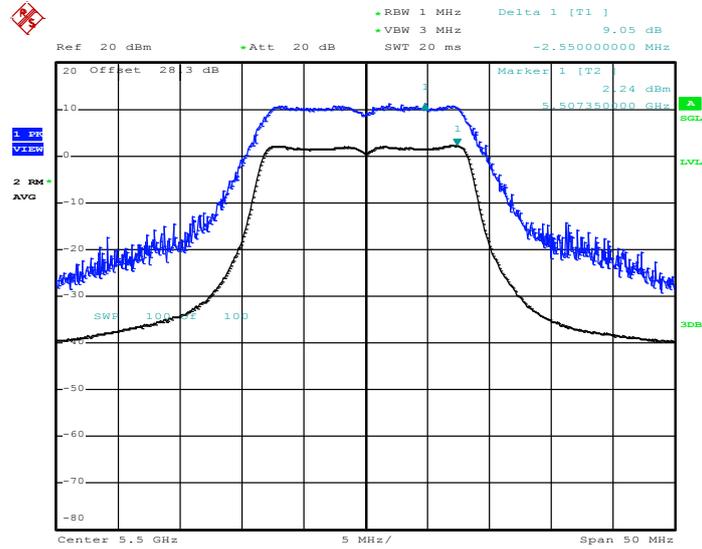
Peak Excursion Ratio Plot on 802.11a Channel 64



Date: 15.FEB.2013 13:30:21

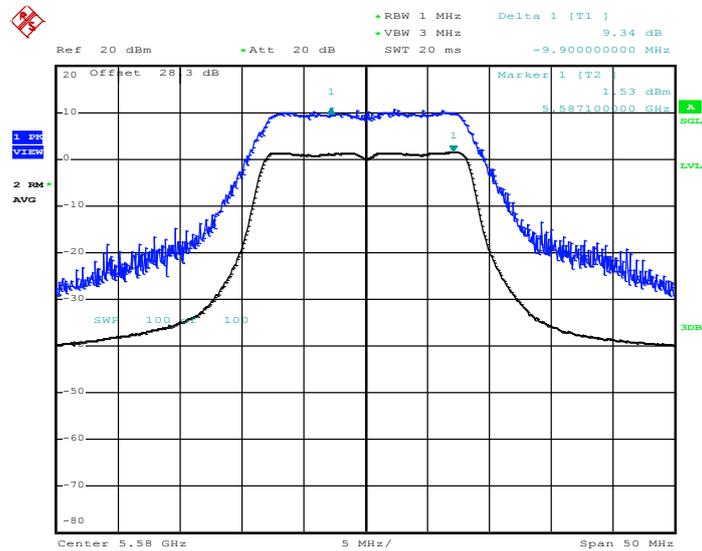


Peak Excursion Ratio Plot on 802.11a Channel 100



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

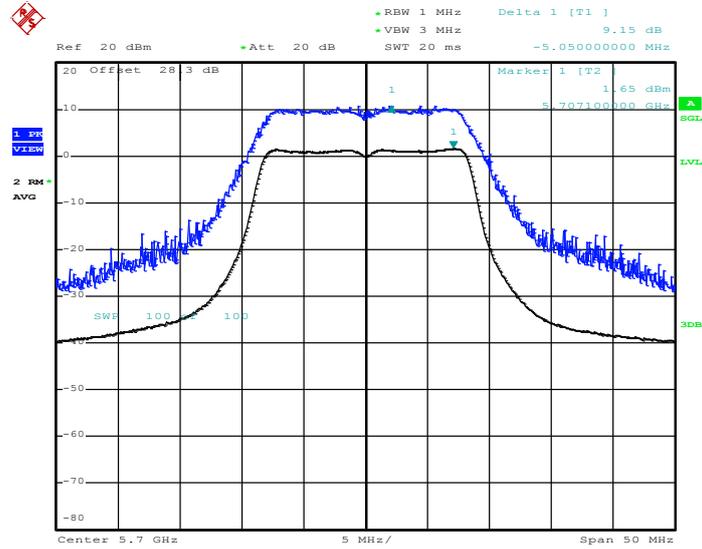
Peak Excursion Ratio Plot on 802.11a Channel 116



Date: 15.FEB.2013 13:37:23



Peak Excursion Ratio Plot on 802.11a Channel 140

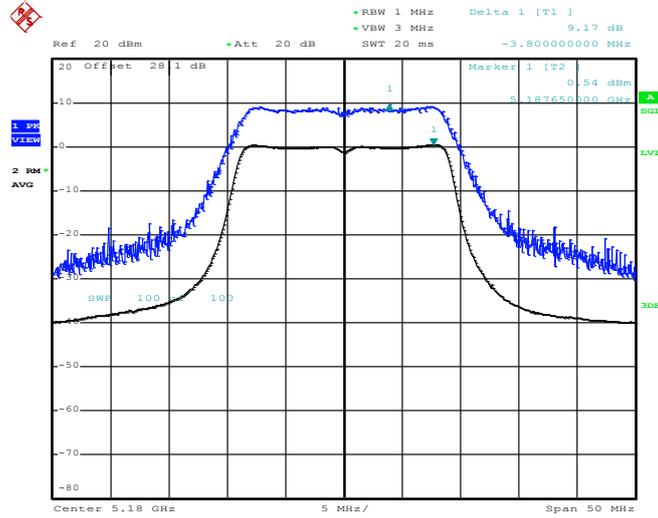


Date: 15.FEB.2013 13:40:10



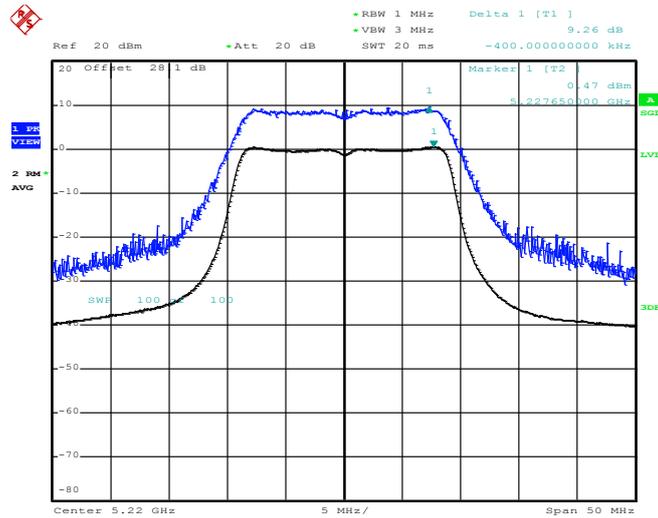
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11n HT20 Channel 36



Date: 15.FEB.2013 13:43:05

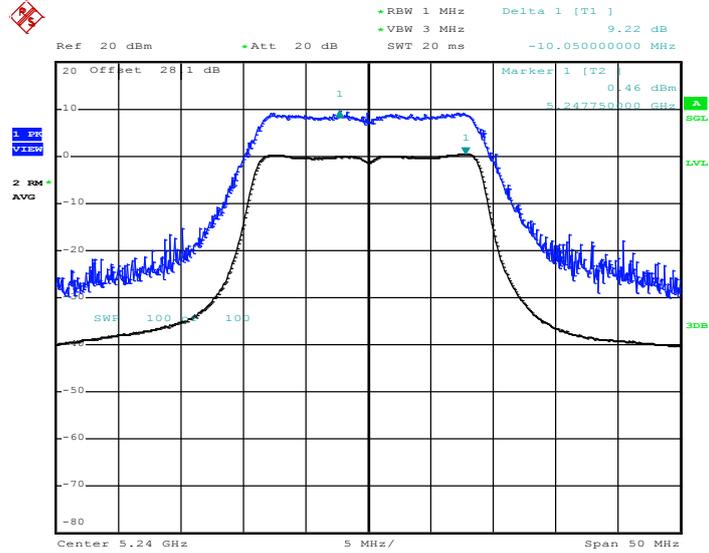
Peak Excursion Ratio Plot on 802.11n HT20 Channel 44



Date: 15.FEB.2013 13:46:20

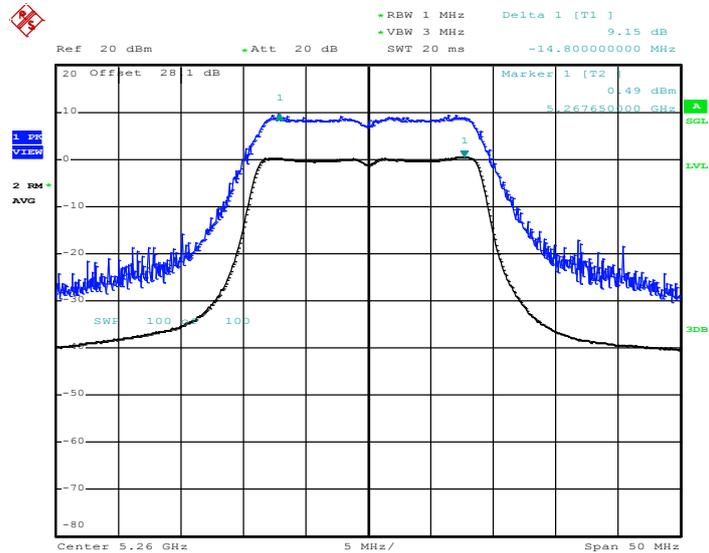


Peak Excursion Ratio Plot on 802.11n HT20 Channel 48



Date: 15.FEB.2013 13:49:07

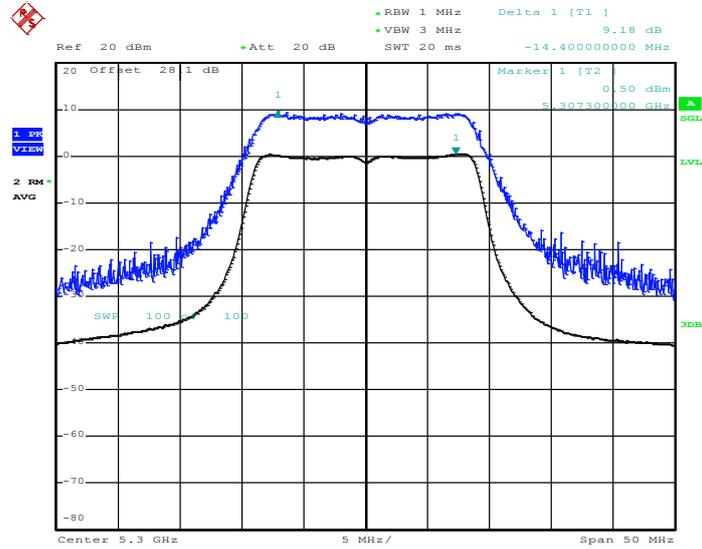
Peak Excursion Ratio Plot on 802.11n HT20 Channel 52



Date: 15.FEB.2013 13:57:04

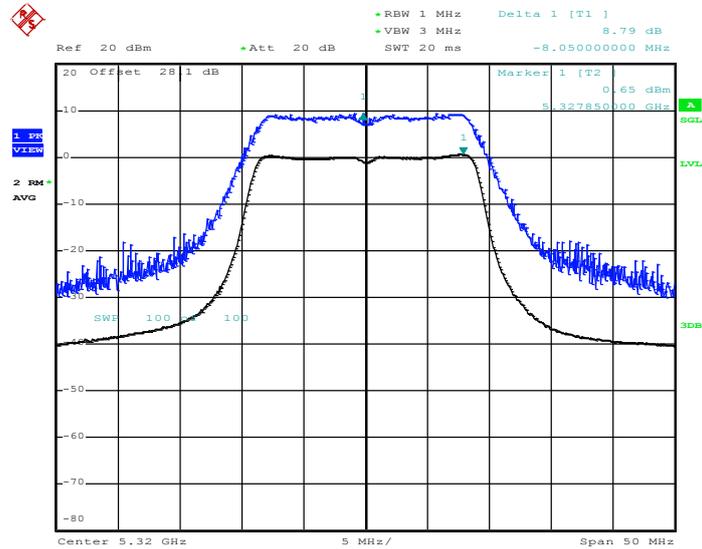


Peak Excursion Ratio Plot on 802.11n HT20 Channel 60



Date: 15.FEB.2013 14:07:10

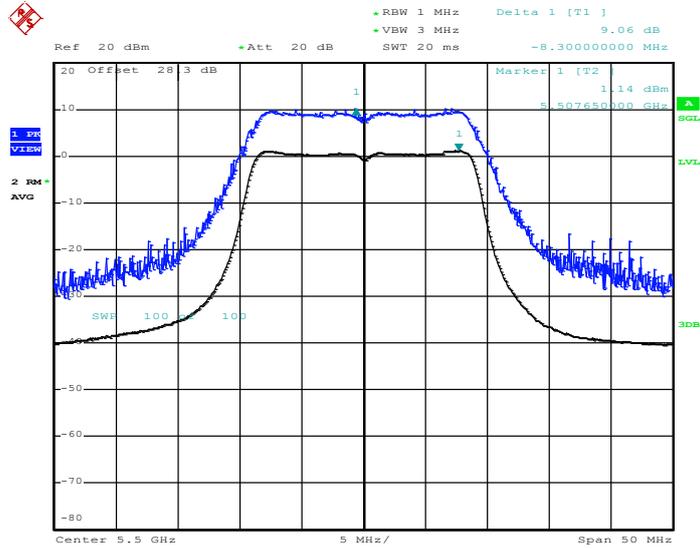
Peak Excursion Ratio Plot on 802.11n HT20 Channel 64



Date: 15.FEB.2013 14:18:55

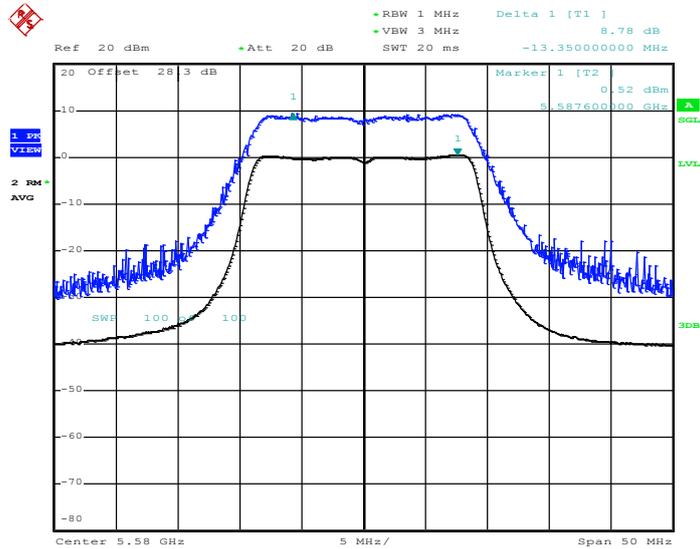


Peak Excursion Ratio Plot on 802.11n HT20 Channel 100



Date: 15.FEB.2013 14:31:21

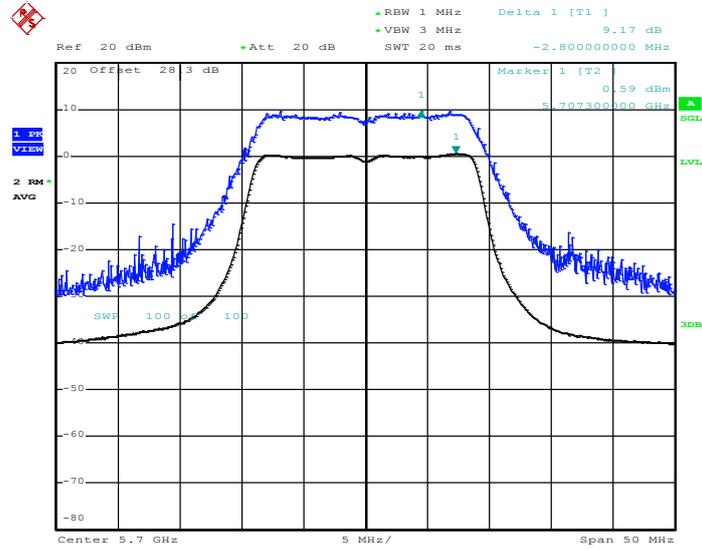
Peak Excursion Ratio Plot on 802.11n HT20 Channel 116



Date: 15.FEB.2013 14:34:36



Peak Excursion Ratio Plot on 802.11n HT20 Channel 140

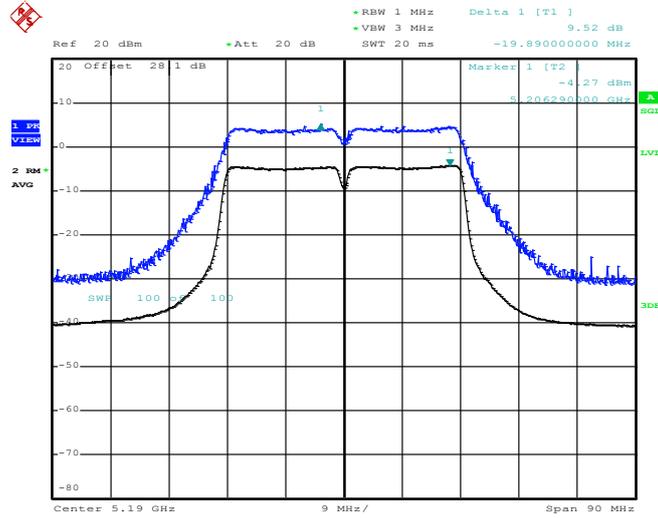


Date: 15.FEB.2013 14:39:10



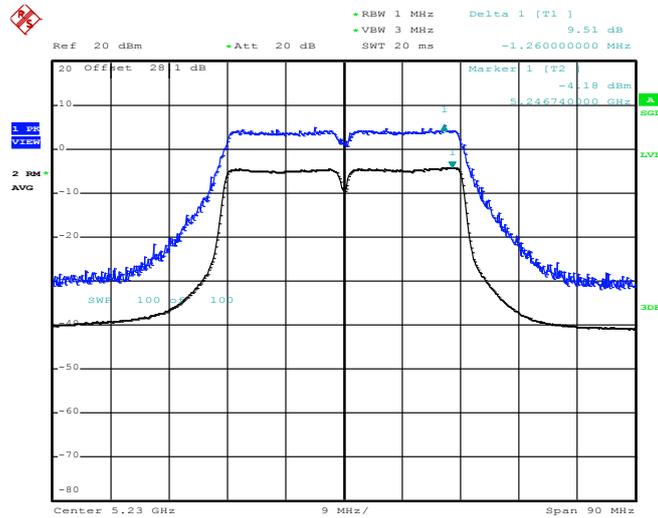
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11n HT40 Channel 38



Date: 15.FEB.2013 14:43:23

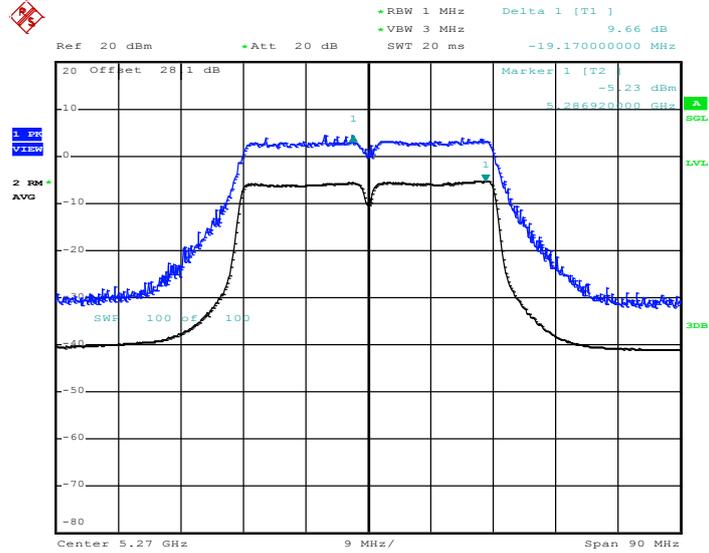
Peak Excursion Ratio Plot on 802.11n HT40 Channel 46



Date: 15.FEB.2013 14:46:30

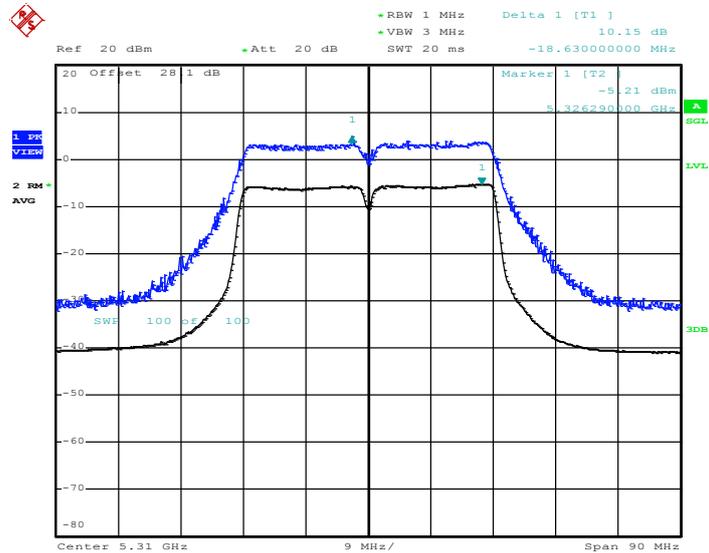


Peak Excursion Ratio Plot on 802.11n HT40 Channel 54



Date: 15.FEB.2013 14:48:59

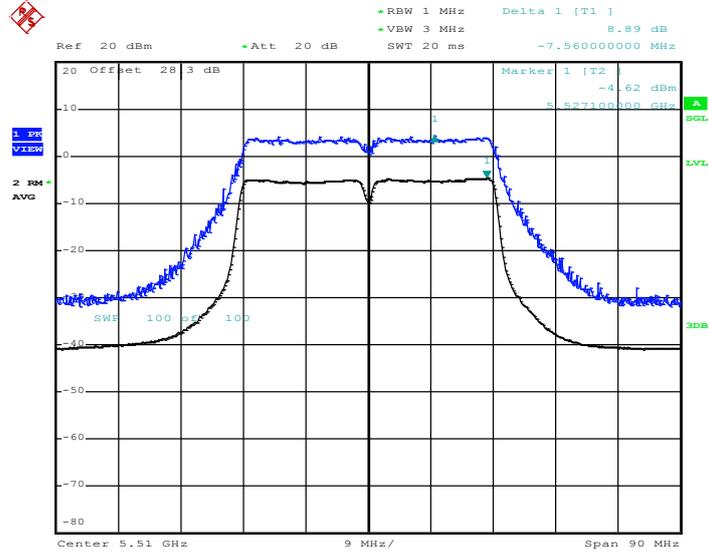
Peak Excursion Ratio Plot on 802.11n HT40 Channel 62



Date: 15.FEB.2013 14:51:17

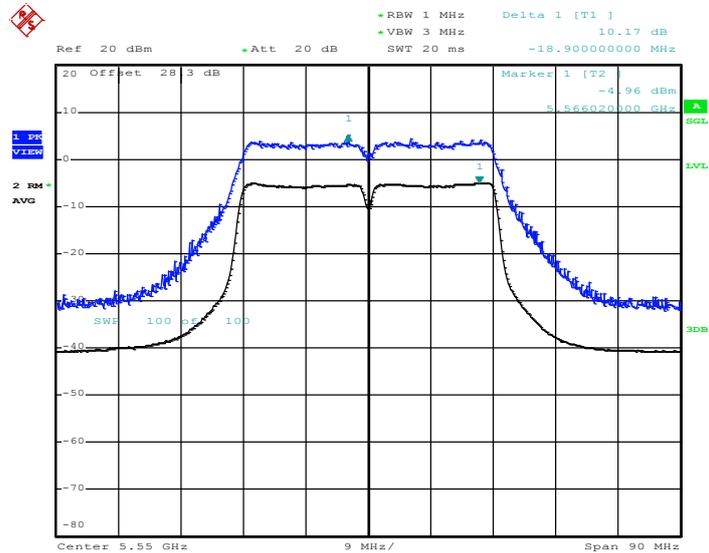


Peak Excursion Ratio Plot on 802.11n HT40 Channel 102



Date: 15.FEB.2013 14:54:26

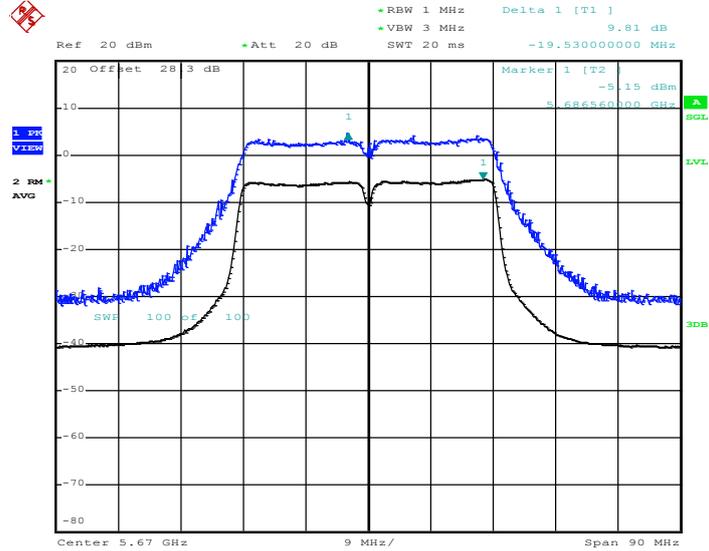
Peak Excursion Ratio Plot on 802.11n HT40 Channel 110



Date: 15.FEB.2013 14:57:22



Peak Excursion Ratio Plot on 802.11n HT40 Channel 134



Date: 15.FEB.2013 15:01:39

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 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz 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 (dBµV/m)
-17	78.3
- 27	68.3



- (3) KDB789033 v01r02 G)2)c(i) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.



3.5.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.10-2009 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 ≥ 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.

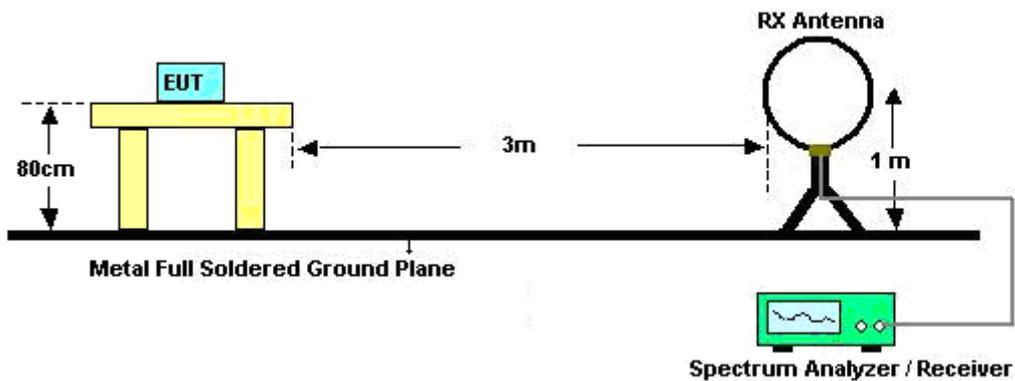
Band	Duty Cycle(%)	T(μs)	1/T(kHz)	VBW Setting
802.11a	98.32	-	-	10Hz
802.11n HT20	98.36	-	-	10Hz
802.11n HT40	97.05	948.076	1.055	3kHz

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.

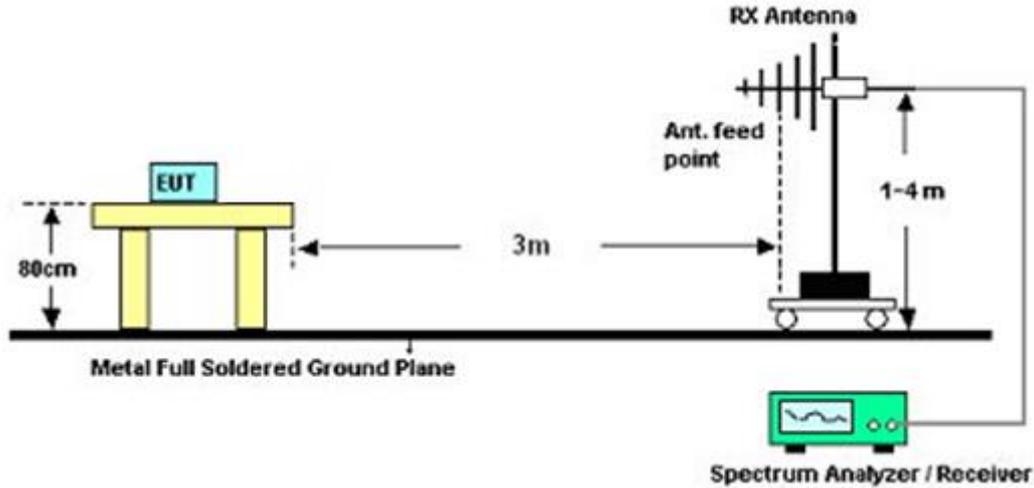
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, 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

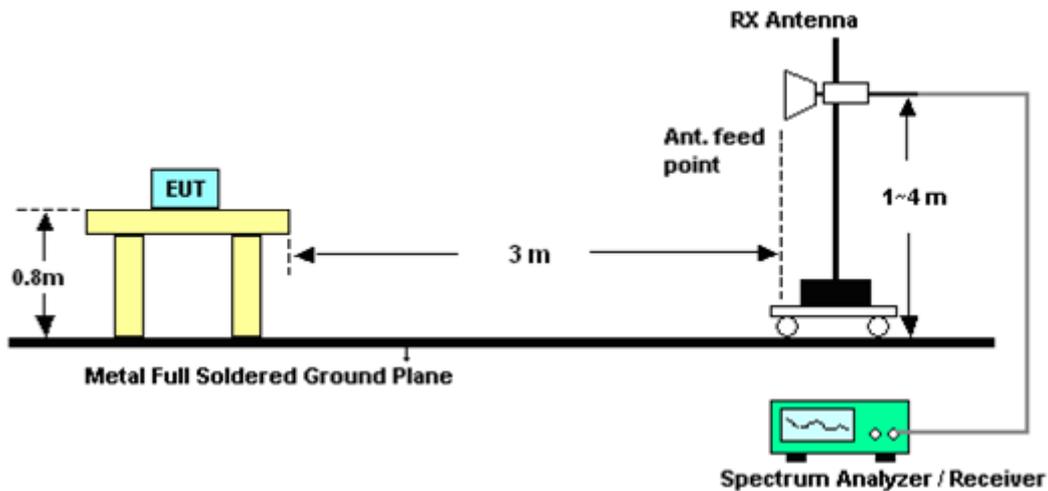
For radiated emissions below 30MHz



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

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	51~52%
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
5149.55	67.89	-6.11	74	56.87	34.29	9.22	32.49	100	332	Peak
5150	48.69	-5.31	54	37.67	34.29	9.22	32.49	100	332	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
5149.55	64.76	-9.24	74	53.74	34.29	9.22	32.49	102	356	Peak
5150	45.59	-8.41	54	34.57	34.29	9.22	32.49	102	356	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	51~52%
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
5138.75	56.43	-17.57	74	45.45	34.25	9.18	32.45	110	323	Peak
5149.25	43.05	-10.95	54	32.03	34.29	9.22	32.49	110	323	Average
5358.14	56.54	-17.46	74	45.3	34.81	9.61	33.18	110	323	Peak
5356.6	43.73	-10.27	54	32.49	34.81	9.61	33.18	110	323	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
5034.2	53.74	-20.26	74	43.06	33.99	9.01	32.32	101	354	Peak
5150	41.16	-12.84	54	30.14	34.29	9.22	32.49	101	354	Average
5352.53	55.08	-18.92	74	43.89	34.81	9.56	33.18	101	354	Peak
5354.73	42.14	-11.86	54	30.95	34.81	9.56	33.18	101	354	Average



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	51~52%
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
5145.05	55.11	-18.89	74	44.09	34.29	9.22	32.49	110	324	Peak
5150	42.45	-11.55	54	31.43	34.29	9.22	32.49	110	324	Average
5369.03	57.42	-16.58	74	46.14	34.85	9.61	33.18	110	324	Peak
5355.83	44.24	-9.76	54	33.05	34.81	9.56	33.18	110	324	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
5061.35	54.9	-19.1	74	44.13	34.07	9.05	32.35	101	354	Peak
5149.4	40.99	-13.01	54	29.97	34.29	9.22	32.49	101	354	Average
5366.06	55.18	-18.82	74	43.9	34.85	9.61	33.18	101	354	Peak
5350.55	42.34	-11.66	54	31.15	34.81	9.56	33.18	101	354	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	51~52%
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
5350.33	67.27	-6.73	74	56.08	34.81	9.56	33.18	122	323	Peak
5350	47.93	-6.07	54	36.74	34.81	9.56	33.18	122	323	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
5351.54	64.95	-9.05	74	53.76	34.81	9.56	33.18	111	357	Peak
5352.75	45.48	-8.52	54	34.29	34.81	9.56	33.18	111	357	Average



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	51~52%
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
5468.08	69.84	-4.16	74	58.52	35.11	9.78	33.57	103	336	Peak
5467.92	48.25	-5.75	54	36.93	35.11	9.78	33.57	103	336	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
5469.68	66.45	-7.55	74	55.13	35.11	9.78	33.57	189	0	Peak
5469.84	44.68	-9.32	54	33.36	35.11	9.78	33.57	189	0	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	51~52%
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	70.22	-3.78	74	59	35.33	10.04	34.15	162	316	Peak
5725	49.14	-4.86	54	37.92	35.33	10.04	34.15	162	316	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725.88	65.43	-8.57	74	54.21	35.33	10.04	34.15	182	357	Peak
5725	46.55	-7.45	54	35.33	35.33	10.04	34.15	182	357	Average



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	51~52%
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
5148.95	65.42	-8.58	74	54.4	34.29	9.22	32.49	110	337	Peak
5148.95	47.2	-6.8	54	36.18	34.29	9.22	32.49	110	337	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
5149.7	62.02	-11.98	74	51	34.29	9.22	32.49	102	342	Peak
5150	44.6	-9.4	54	33.58	34.29	9.22	32.49	102	342	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	51~52%
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
5136.35	54.85	-19.15	74	43.87	34.25	9.18	32.45	109	337	Peak
5136.2	42	-12	54	31.02	34.25	9.18	32.45	109	337	Average
5357.15	57.05	-16.95	74	45.81	34.81	9.61	33.18	109	337	Peak
5458.46	44.62	-9.38	54	33.34	35.07	9.78	33.57	109	337	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
5146.55	54.38	-19.62	74	43.36	34.29	9.22	32.49	100	339	Peak
5149.85	41.14	-12.86	54	30.12	34.29	9.22	32.49	100	339	Average
5350.11	55.76	-18.24	74	44.57	34.81	9.56	33.18	100	339	Peak
5458.46	42.96	-11.04	54	31.68	35.07	9.78	33.57	100	339	Average



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	51~52%
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
5123.75	54.7	-19.3	74	43.72	34.25	9.18	32.45	109	336	Peak
5139.95	41.99	-12.01	54	30.97	34.29	9.18	32.45	109	336	Average
5361.11	56.94	-17.06	74	45.66	34.85	9.61	33.18	109	336	Peak
5354.29	43.19	-10.81	54	32	34.81	9.56	33.18	109	336	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
5026.4	53.89	-20.11	74	43.21	33.99	9.01	32.32	100	334	Peak
5149.7	40.89	-13.11	54	29.87	34.29	9.22	32.49	100	334	Average
5452.74	55.91	-18.09	74	44.63	35.07	9.78	33.57	100	334	Peak
5350	42.46	-11.54	54	31.27	34.81	9.56	33.18	100	334	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	51~52%
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
5352.86	64.74	-9.26	74	53.55	34.81	9.56	33.18	178	330	Peak
5352.09	46.88	-7.12	54	35.69	34.81	9.56	33.18	178	330	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
5351.76	62.2	-11.8	74	51.01	34.81	9.56	33.18	100	336	Peak
5351.54	44.72	-9.28	54	33.53	34.81	9.56	33.18	100	336	Average



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	51~52%
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
5469.04	66.46	-7.54	74	55.14	35.11	9.78	33.57	115	333	Peak
5467.92	47.56	-6.44	54	36.24	35.11	9.78	33.57	115	333	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
5470	62.25	-11.75	74	50.93	35.11	9.78	33.57	189	0	Peak
5468.56	44.15	-9.85	54	32.83	35.11	9.78	33.57	189	0	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	51~52%
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
5725.16	69.57	-4.43	74	58.35	35.33	10.04	34.15	161	314	Peak
5725	48.12	-5.88	54	36.9	35.33	10.04	34.15	161	314	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	64.43	-9.57	74	53.21	35.33	10.04	34.15	183	0	Peak
5725	45.42	-8.58	54	34.2	35.33	10.04	34.15	183	0	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	38	Relative Humidity :	51~52%
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
5148.2	68.38	-5.62	74	57.36	34.29	9.22	32.49	110	336	Peak
5149.55	52.95	-1.05	54	41.93	34.29	9.22	32.49	110	336	Average
5445.7	54.81	-19.19	74	43.49	35.07	9.73	33.48	110	336	Peak
5354.18	43.3	-10.7	54	32.11	34.81	9.56	33.18	110	336	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
5149.7	65.26	-8.74	74	54.24	34.29	9.22	32.49	101	336	Peak
5150	49.36	-4.64	54	38.34	34.29	9.22	32.49	101	336	Average
5377.94	54.48	-19.52	74	43.25	34.9	9.61	33.28	101	336	Peak
5355.83	43.13	-10.87	54	31.94	34.81	9.56	33.18	101	336	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	46	Relative Humidity :	51~52%
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
5141	54.52	-19.48	74	43.46	34.29	9.22	32.45	108	343	Peak
5137.25	42.78	-11.22	54	31.8	34.25	9.18	32.45	108	343	Average
5352.2	56.14	-17.86	74	44.95	34.81	9.56	33.18	108	343	Peak
5353.85	44.14	-9.86	54	32.95	34.81	9.56	33.18	108	343	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
5093.3	54.18	-19.82	74	43.3	34.16	9.14	32.42	100	337	Peak
5150	42.19	-11.81	54	31.17	34.29	9.22	32.49	100	337	Average
5351.87	55.08	-18.92	74	43.89	34.81	9.56	33.18	100	337	Peak
5355.17	43.27	-10.73	54	32.08	34.81	9.56	33.18	100	337	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	54	Relative Humidity :	51~52%
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
5067.05	54.36	-19.64	74	43.59	34.07	9.05	32.35	120	47	Peak
5115.5	42.26	-11.74	54	31.34	34.2	9.14	32.42	120	47	Average
5352.86	58.62	-15.38	74	47.43	34.81	9.56	33.18	120	47	Peak
5354.18	43.79	-10.21	54	32.6	34.81	9.56	33.18	120	47	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
5000.3	53.83	-20.17	74	43.25	33.9	8.97	32.29	100	334	Peak
5019.8	42.08	-11.92	54	31.49	33.94	8.97	32.32	100	334	Average
5350.99	56.91	-17.09	74	45.72	34.81	9.56	33.18	100	334	Peak
5352.42	43.52	-10.48	54	32.33	34.81	9.56	33.18	100	334	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	62	Relative Humidity :	51~52%
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
5138.75	53.84	-20.16	74	42.86	34.25	9.18	32.45	108	45	Peak
5031.5	42.06	-11.94	54	31.38	33.99	9.01	32.32	108	45	Average
5350.99	59.87	-14.13	74	48.68	34.81	9.56	33.18	108	45	Peak
5353.3	46.26	-7.74	54	35.07	34.81	9.56	33.18	108	45	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
5064.05	53.8	-20.2	74	43.03	34.07	9.05	32.35	100	331	Peak
5008.1	41.85	-12.15	54	31.23	33.94	8.97	32.29	100	331	Average
5371.56	58.21	-15.79	74	46.93	34.85	9.61	33.18	100	331	Peak
5350.55	45.54	-8.46	54	34.35	34.81	9.56	33.18	100	331	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	51~52%
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	67.03	-6.97	74	55.71	35.11	9.78	33.57	102	341	Peak
5470	50.33	-3.67	54	39.01	35.11	9.78	33.57	102	341	Average
5743.96	54.47	-19.53	74	43.24	35.34	10.06	34.17	102	341	Peak
5725.48	42.65	-11.35	54	31.43	35.33	10.04	34.15	102	341	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
5466.48	58.62	-15.38	74	47.3	35.11	9.78	33.57	153	300	Peak
5469.68	45.06	-8.94	54	33.74	35.11	9.78	33.57	153	300	Average
5732.04	54.09	-19.91	74	42.89	35.33	10.04	34.17	153	300	Peak
5759.48	41.9	-12.1	54	30.68	35.36	10.06	34.2	153	300	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	134	Relative Humidity :	51~52%
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
5385.04	54.15	-19.85	74	42.88	34.9	9.65	33.28	100	340	Peak
5460.08	44.14	-9.86	54	32.86	35.07	9.78	33.57	100	340	Average
5744.84	63.08	-10.92	74	51.85	35.34	10.06	34.17	100	340	Peak
5725.88	45.59	-8.41	54	34.37	35.33	10.04	34.15	100	340	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
5442.64	54.67	-19.33	74	43.39	35.03	9.73	33.48	150	185	Peak
5431.28	41.82	-12.18	54	30.54	35.03	9.73	33.48	150	185	Average
5725.16	56.82	-17.18	74	45.6	35.33	10.04	34.15	150	185	Peak
5733.8	42.79	-11.21	54	31.59	35.33	10.04	34.17	150	185	Average



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

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5182 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
99.66	56.25	*	43.5	77.12	9.8	0.99	31.66	-	-	Peak
117.75	23.6	-19.9	43.5	42.73	11.43	1.09	31.65	-	-	Peak
133.14	39.97	*	43.5	58.81	11.54	1.16	31.54	-	-	Peak
149.88	34.37	-9.13	43.5	53.35	11.2	1.21	31.39	-	-	Peak
166.62	63.49	*	43.5	83.72	9.85	1.23	31.31	-	-	Peak
199.83	55.15	*	43.5	76.04	9.1	1.32	31.31	-	-	Peak
209.82	27.8	-15.7	43.5	48.09	9.77	1.36	31.42	-	-	Peak
216.03	37.99	-8.01	46	57.65	10.24	1.4	31.3	156	254	Peak
233.31	62.11	*	46	80.36	11.46	1.5	31.21	-	-	Peak
266.52	42.44	*	46	59.28	12.83	1.62	31.29	-	-	Peak
298.92	57.82	*	46	74.06	13.29	1.76	31.29	-	-	Peak
366.5	54.23	*	46	68.43	15.11	2.07	31.38	-	-	Peak
388.2	32.82	-13.18	46	46.4	15.69	2.12	31.39	-	-	Peak
433	49.5	*	46	61.73	16.69	2.25	31.17	-	-	Peak
499.5	42.3	*	46	52.66	18.08	2.45	30.89	-	-	Peak
630.4	43.21	*	46	50.82	20.04	2.78	30.43	-	-	Peak
733.3	32.7	-13.3	46	39.1	21.1	3.02	30.52	-	-	Peak
766.2	42.64	*	46	48.37	21.59	3.09	30.41	-	-	Peak
799.8	41.91	*	46	46.83	22.1	3.14	30.16	-	-	Peak
5182	99.64	-	-	88.51	34.38	9.27	32.52	100	332	Average
5182	110.68	-	-	99.55	34.38	9.27	32.52	100	332	Peak
10359	44.31	-29.69	74	51.87	37.29	13.71	58.56	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5182 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
99.66	52.91	*	43.5	73.78	9.8	0.99	31.66	-	-	Peak
109.65	24.32	-19.18	43.5	44.32	10.7	1.05	31.75	-	-	Peak
129.9	34.74	-8.76	43.5	53.56	11.6	1.15	31.57	-	-	Peak
133.14	38.24	*	43.5	57.08	11.54	1.16	31.54	-	-	Peak
150.15	27.81	-15.69	43.5	46.79	11.2	1.21	31.39	-	-	Peak
166.62	62.12	*	43.5	82.35	9.85	1.23	31.31	-	-	Peak
174.99	37.31	-6.19	43.5	58.2	9.1	1.24	31.23	108	25	Peak
199.29	46.14	*	43.5	67.03	9.1	1.32	31.31	-	-	Peak
233.31	56.43	*	46	74.68	11.46	1.5	31.21	-	-	Peak
250.05	31.78	-14.22	46	48.81	12.6	1.53	31.16	-	-	Peak
298.92	49.68	*	46	65.92	13.29	1.76	31.29	-	-	Peak
366.5	47.88	*	46	62.08	15.11	2.07	31.38	-	-	Peak
389.6	33.17	-12.83	46	46.72	15.74	2.12	31.41	-	-	Peak
433	42.55	*	46	54.78	16.69	2.25	31.17	-	-	Peak
465.9	29.21	-16.79	46	40.6	17.37	2.34	31.1	-	-	Peak
499.5	38.37	*	46	48.73	18.08	2.45	30.89	-	-	Peak
519.8	32.04	-13.96	46	42.16	18.43	2.49	31.04	-	-	Peak
566	39.79	*	46	49	19.22	2.6	31.03	-	-	Peak
633.2	42.26	*	46	49.82	20.06	2.79	30.41	-	-	Peak
763.4	38.86	-7.14	46	44.66	21.55	3.08	30.43	-	-	Peak
5182	95.39	-	-	84.26	34.38	9.27	32.52	102	356	Average
5182	106.54	-	-	95.41	34.38	9.27	32.52	102	356	Peak
10359	44.93	-29.07	74	52.49	37.29	13.71	58.56	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5222	98.6	-	-	87.44	34.46	9.35	32.65	100	332	Average
5222	110.02	-	-	98.86	34.46	9.35	32.65	100	332	Peak
10440	44.95	-29.05	74	52.51	37.35	13.71	58.62	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5222	94.88	-	-	83.72	34.46	9.35	32.65	114	356	Average
5222	106.42	-	-	95.26	34.46	9.35	32.65	114	356	Peak
10440	45.48	-28.52	74	53.04	37.35	13.71	58.62	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5242 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5242	100.32	-	-	89.03	34.55	9.39	32.65	110	323	Average
5242	111.44	-	-	100.15	34.55	9.39	32.65	110	323	Peak
10479	43.96	-30.04	74	51.51	37.39	13.72	58.66	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5238 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5238	95.33	-	-	84.08	34.51	9.39	32.65	101	354	Average
5238	105.92	-	-	94.67	34.51	9.39	32.65	101	354	Peak
10479	45.47	-28.53	74	53.02	37.39	13.72	58.66	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5262 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5262	100.05	-	-	88.78	34.59	9.44	32.76	110	324	Average
5262	111.64	-	-	100.37	34.59	9.44	32.76	110	324	Peak
10521	45.16	-28.84	74	52.69	37.42	13.72	58.67	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	51~52%
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 and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5260	95	-	-	83.73	34.59	9.44	32.76	101	354	Average
5260	106.15	-	-	94.88	34.59	9.44	32.76	101	354	Peak
10521	44.53	-29.47	74	52.06	37.42	13.72	58.67	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5302 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5302	91.28	-	-	80.09	34.68	9.48	32.97	150	317	Average
5302	110.45	-	-	99.26	34.68	9.48	32.97	150	317	Peak
10599	43.58	-30.42	74	50.99	37.5	13.73	58.64	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5298 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5298	94.95	-	-	83.76	34.68	9.48	32.97	112	356	Average
5298	106	-	-	94.81	34.68	9.48	32.97	112	356	Peak
10599	44.21	-29.79	74	51.62	37.5	13.73	58.64	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5319 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “*” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
99.66	56.36	*	43.5	77.23	9.8	0.99	31.66	-	-	Peak
113.43	35.38	-8.12	43.5	54.95	11.07	1.07	31.71	-	-	Peak
132.87	40.18	*	43.5	59.02	11.54	1.16	31.54	-	-	Peak
149.88	34.69	-8.81	43.5	53.67	11.2	1.21	31.39	-	-	Peak
166.62	63.55	*	43.5	83.78	9.85	1.23	31.31	-	-	Peak
172.83	42.02	-1.48	43.5	62.74	9.29	1.24	31.25	152	189	Peak
183.9	36.79	-6.71	43.5	57.83	8.94	1.26	31.24	-	-	Peak
199.29	54.86	*	43.5	75.75	9.1	1.32	31.31	-	-	Peak
233.31	62.04	*	46	80.29	11.46	1.5	31.21	-	-	Peak
265.71	42.53	*	46	59.37	12.82	1.62	31.28	-	-	Peak
298.92	58.14	*	46	74.38	13.29	1.76	31.29	-	-	Peak
366.5	54.64	*	46	68.84	15.11	2.07	31.38	-	-	Peak
398	39.69	*	46	53.1	15.95	2.14	31.5	-	-	Peak
433	49.27	*	46	61.5	16.69	2.25	31.17	-	-	Peak
497.4	42.13	-3.87	46	52.55	18.04	2.44	30.9	-	-	Peak
566	35.09	-10.91	46	44.3	19.22	2.6	31.03	-	-	Peak
633.2	43.18	*	46	50.74	20.06	2.79	30.41	-	-	Peak
766.2	42.22	*	46	47.95	21.59	3.09	30.41	-	-	Peak
799.8	41.85	*	46	46.77	22.1	3.14	30.16	-	-	Peak
5319	99.95	-	-	88.68	34.72	9.52	32.97	122	323	Average
5319	111.09	-	-	99.82	34.72	9.52	32.97	122	323	Peak
10641	43.46	-30.54	74	50.82	37.54	13.73	58.63	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5318 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “*” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.24	32.13	*	40	45.61	17.84	0.56	31.88	-	-	Peak
66.45	24.17	*	40	48.88	6.24	0.82	31.77	-	-	Peak
99.66	52.66	*	43.5	73.53	9.8	0.99	31.66	-	-	Peak
133.14	38.14	*	43.5	56.98	11.54	1.16	31.54	-	-	Peak
162.3	31.74	-11.76	43.5	51.58	10.31	1.22	31.37	-	-	Peak
166.62	62.3	*	43.5	82.53	9.85	1.23	31.31	-	-	Peak
174.99	37.31	-6.19	43.5	58.2	9.1	1.24	31.23	113	54	Peak
199.83	45.83	*	43.5	66.72	9.1	1.32	31.31	-	-	Peak
233.31	56.45	*	46	74.7	11.46	1.5	31.21	-	-	Peak
266.52	34.01	*	46	50.85	12.83	1.62	31.29	-	-	Peak
298.92	49.65	*	46	65.89	13.29	1.76	31.29	-	-	Peak
366.5	48.17	*	46	62.37	15.11	2.07	31.38	-	-	Peak
389.6	33.52	-12.48	46	47.07	15.74	2.12	31.41	-	-	Peak
433	42.24	*	46	54.47	16.69	2.25	31.17	-	-	Peak
454.7	30.18	-15.82	46	41.88	17.15	2.31	31.16	-	-	Peak
499.5	38.66	*	46	49.02	18.08	2.45	30.89	-	-	Peak
566	39.86	*	46	49.07	19.22	2.6	31.03	-	-	Peak
633.2	42.46	*	46	50.02	20.06	2.79	30.41	-	-	Peak
766.2	39.11	-6.89	46	44.84	21.59	3.09	30.41	-	-	Peak
5318	95.39	-	-	84.12	34.72	9.52	32.97	111	357	Average
5318	106.43	-	-	95.16	34.72	9.52	32.97	111	357	Peak
10641	42.51	-31.49	74	49.87	37.54	13.73	58.63	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	51~52%
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	99.92	-	-	88.52	35.2	9.86	33.66	103	336	Average
5500	111.26	-	-	99.86	35.2	9.86	33.66	103	336	Peak
11001	42.79	-31.21	74	49.67	37.9	13.76	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5502 MHz and 5504 MHz are fundamental signals 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
5502	95.21	-	-	83.89	35.2	9.86	33.74	189	0	Average
5504	106.82	-	-	95.5	35.2	9.86	33.74	189	0	Peak
11001	43.82	-30.18	74	50.7	37.9	13.76	58.54	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5578 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
5578	98.82	-	-	87.67	35.24	9.92	34.01	139	319	Average
5578	110.49	-	-	99.34	35.24	9.92	34.01	139	319	Peak
11160	44.54	-29.46	74	51.08	38.07	13.93	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5578 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
5578	94.87	-	-	83.72	35.24	9.92	34.01	200	355	Average
5578	107.06	-	-	95.91	35.24	9.92	34.01	200	355	Peak
11160	43.95	-30.05	74	50.49	38.07	13.93	58.54	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5702 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
99.66	56.52	*	43.5	77.39	9.8	0.99	31.66	-	-	Peak
112.89	33.95	-9.55	43.5	53.62	10.98	1.06	31.71	-	-	Peak
133.14	40.34	*	43.5	59.18	11.54	1.16	31.54	-	-	Peak
149.88	34.72	-8.78	43.5	53.7	11.2	1.21	31.39	-	-	Peak
166.08	63.61	*	43.5	83.76	9.94	1.23	31.32	-	-	Peak
172.83	41.96	-1.54	43.5	62.68	9.29	1.24	31.25	111	62	Peak
194.16	36.86	-6.64	43.5	57.84	9.04	1.3	31.32	-	-	Peak
199.83	55.05	*	43.5	75.94	9.1	1.32	31.31	-	-	Peak
233.31	62.23	*	46	80.48	11.46	1.5	31.21	-	-	Peak
266.52	42.54	*	46	59.38	12.83	1.62	31.29	-	-	Peak
298.92	58.3	*	46	74.54	13.29	1.76	31.29	-	-	Peak
366.5	54.91	*	46	69.11	15.11	2.07	31.38	-	-	Peak
393.1	35.92	-10.08	46	49.41	15.82	2.13	31.44	-	-	Peak
433	49.34	*	46	61.57	16.69	2.25	31.17	-	-	Peak
466.6	34.4	-11.6	46	45.76	17.39	2.34	31.09	-	-	Peak
499.5	42.28	*	46	52.64	18.08	2.45	30.89	-	-	Peak
633.2	43.54	*	46	51.1	20.06	2.79	30.41	-	-	Peak
766.2	42.53	*	46	48.26	21.59	3.09	30.41	-	-	Peak
799.8	41.87	*	46	46.79	22.1	3.14	30.16	-	-	Peak
5702	97.79	-	-	86.57	35.32	10.02	34.12	162	316	Average
5702	109.32	-	-	98.11	35.31	10.02	34.12	162	316	Peak
11400	43.53	-30.47	74	49.56	38.3	14.21	58.54	100	0	Peak



Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5702 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
49.44	29.14	-10.86	40	51.58	8.5	0.69	31.63	-	-	Peak
99.66	52.89	*	43.5	73.76	9.8	0.99	31.66	-	-	Peak
133.14	38.5	*	43.5	57.34	11.54	1.16	31.54	-	-	Peak
150.15	29.72	-13.78	43.5	48.7	11.2	1.21	31.39	-	-	Peak
166.62	62.43	*	43.5	82.66	9.85	1.23	31.31	-	-	Peak
174.99	37.28	-6.22	43.5	58.17	9.1	1.24	31.23	168	85	Peak
184.44	31.83	-11.67	43.5	52.87	8.94	1.26	31.24	-	-	Peak
199.29	46.12	*	43.5	67.01	9.1	1.32	31.31	-	-	Peak
233.31	56.65	*	46	74.9	11.46	1.5	31.21	-	-	Peak
265.71	34.3	*	46	51.14	12.82	1.62	31.28	-	-	Peak
298.92	49.96	*	46	66.2	13.29	1.76	31.29	-	-	Peak
366.5	48.26	*	46	62.46	15.11	2.07	31.38	-	-	Peak
388.2	33.68	-12.32	46	47.26	15.69	2.12	31.39	-	-	Peak
433	42.61	*	46	54.84	16.69	2.25	31.17	-	-	Peak
497.4	38.66	*	46	49.08	18.04	2.44	30.9	-	-	Peak
519.8	31.6	-14.4	46	41.72	18.43	2.49	31.04	-	-	Peak
566	40.26	*	46	49.47	19.22	2.6	31.03	-	-	Peak
633.2	42.35	*	46	49.91	20.06	2.79	30.41	-	-	Peak
763.4	38.86	*	46	44.66	21.55	3.08	30.43	-	-	Peak
5702	95.63	-	-	84.41	35.32	10.02	34.12	182	357	Average
5702	106.98	-	-	95.76	35.32	10.02	34.12	182	357	Peak
11400	44.5	-29.5	74	50.53	38.3	14.21	58.54	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5178 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
99.66	56.53	*	43.5	77.4	9.8	0.99	31.66	-	-	Peak
113.43	34.94	-8.56	43.5	54.51	11.07	1.07	31.71	-	-	Peak
133.14	40.47	*	43.5	59.31	11.54	1.16	31.54	-	-	Peak
149.88	35.15	-8.35	43.5	54.13	11.2	1.21	31.39	-	-	Peak
166.62	63.7	*	43.5	83.93	9.85	1.23	31.31	-	-	Peak
173.64	41.96	-1.54	43.5	62.77	9.19	1.24	31.24	107	210	Peak
183.9	37.31	-6.19	43.5	58.35	8.94	1.26	31.24	-	-	Peak
199.29	55.14	*	43.5	76.03	9.1	1.32	31.31	-	-	Peak
232.5	62.35	*	46	80.67	11.39	1.5	31.21	-	-	Peak
266.52	42.9	*	46	59.74	12.83	1.62	31.29	-	-	Peak
298.92	58.45	*	46	74.69	13.29	1.76	31.29	-	-	Peak
311.9	32.73	-13.27	46	48.48	13.64	1.79	31.18	-	-	Peak
366.5	54.92	*	46	69.12	15.11	2.07	31.38	-	-	Peak
433	49.21	*	46	61.44	16.69	2.25	31.17	-	-	Peak
465.9	34.24	-11.76	46	45.63	17.37	2.34	31.1	-	-	Peak
497.4	42.38	*	46	52.8	18.04	2.44	30.9	-	-	Peak
633.2	43.08	*	46	50.64	20.06	2.79	30.41	-	-	Peak
763.4	41.74	*	46	47.54	21.55	3.08	30.43	-	-	Peak
799.8	41.35	*	46	46.27	22.1	3.14	30.16	-	-	Peak
5178	98.01	-	-	86.88	34.38	9.27	32.52	110	337	Average
5178	110.18	-	-	99.05	34.38	9.27	32.52	110	337	Peak
10359	44.92	-29.08	74	52.48	37.29	13.71	58.56	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5178 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
88.59	22.67	-20.83	43.5	44.98	8.42	0.93	31.66	-	-	Peak
99.66	53.03	*	43.5	73.9	9.8	0.99	31.66	-	-	Peak
129.9	34.77	-8.73	43.5	53.59	11.6	1.15	31.57	-	-	Peak
133.14	38.59	*	43.5	57.43	11.54	1.16	31.54	-	-	Peak
149.88	29.74	-13.76	43.5	48.72	11.2	1.21	31.39	-	-	Peak
166.08	62.43	*	43.5	82.58	9.94	1.23	31.32	-	-	Peak
174.99	37.31	-6.19	43.5	58.2	9.1	1.24	31.23	179	158	Peak
180.12	33.12	-10.38	43.5	54.15	8.9	1.25	31.18	-	-	Peak
199.29	46.13	*	43.5	67.02	9.1	1.32	31.31	-	-	Peak
233.31	56.69	*	46	74.94	11.46	1.5	31.21	-	-	Peak
298.92	50.03	*	46	66.27	13.29	1.76	31.29	-	-	Peak
349.7	22.22	-23.78	46	37	14.66	1.97	31.41	-	-	Peak
366.5	48.18	*	46	62.38	15.11	2.07	31.38	-	-	Peak
433	42.42	*	46	54.65	16.69	2.25	31.17	-	-	Peak
465.9	29.01	-16.99	46	40.4	17.37	2.34	31.1	-	-	Peak
499.5	39.13	*	46	49.49	18.08	2.45	30.89	-	-	Peak
519.8	31.68	-14.32	46	41.8	18.43	2.49	31.04	-	-	Peak
566	39.72	*	46	48.93	19.22	2.6	31.03	-	-	Peak
633.2	42.16	*	46	49.72	20.06	2.79	30.41	-	-	Peak
766.2	39.12	*	46	44.85	21.59	3.09	30.41	-	-	Peak
5178	94.32	-	-	83.19	34.38	9.27	32.52	102	342	Average
5178	105.87	-	-	94.74	34.38	9.27	32.52	102	342	Peak
10359	44.46	-29.54	74	52.02	37.29	13.71	58.56	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5222	97.77	-	-	86.61	34.46	9.35	32.65	110	336	Average
5222	109.41	-	-	98.25	34.46	9.35	32.65	110	336	Peak
10440	46.03	-27.97	74	53.59	37.35	13.71	58.62	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5222	94.3	-	-	83.14	34.46	9.35	32.65	102	341	Average
5222	106	-	-	94.84	34.46	9.35	32.65	102	341	Peak
10440	45.95	-28.05	74	53.51	37.35	13.71	58.62	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5242 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5242	97.73	-	-	86.44	34.55	9.39	32.65	109	337	Average
5242	109.15	-	-	97.86	34.55	9.39	32.65	109	337	Peak
10479	44.65	-29.35	74	52.2	37.39	13.72	58.66	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5238 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5238	94.04	-	-	82.79	34.51	9.39	32.65	100	339	Average
5238	105.54	-	-	94.29	34.51	9.39	32.65	100	339	Peak
10479	44.35	-29.65	74	51.9	37.39	13.72	58.66	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5262 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5262	97.45	-	-	86.18	34.59	9.44	32.76	109	336	Average
5262	109.29	-	-	98.02	34.59	9.44	32.76	109	336	Peak
10521	43.96	-30.04	74	51.49	37.42	13.72	58.67	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5262 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5262	94.09	-	-	82.82	34.59	9.44	32.76	100	334	Average
5262	106.08	-	-	94.81	34.59	9.44	32.76	100	334	Peak
10521	43.96	-30.04	74	51.49	37.42	13.72	58.67	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5298 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5298	97.92	-	-	86.73	34.68	9.48	32.97	108	333	Average
5298	109.27	-	-	98.08	34.68	9.48	32.97	108	333	Peak
10599	43.38	-30.62	74	50.79	37.5	13.73	58.64	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5298 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5298	94.06	-	-	82.87	34.68	9.48	32.97	100	332	Average
5298	105.83	-	-	94.64	34.68	9.48	32.97	100	332	Peak
10599	43.3	-30.7	74	50.71	37.5	13.73	58.64	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5318 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
99.66	56.44	*	43.5	77.31	9.8	0.99	31.66	-	-	Peak
113.16	34.81	-8.69	43.5	54.38	11.07	1.07	31.71	-	-	Peak
133.14	40.45	*	43.5	59.29	11.54	1.16	31.54	-	-	Peak
166.08	63.38	*	43.5	83.53	9.94	1.23	31.32	-	-	Peak
172.29	42.13	-1.37	43.5	62.86	9.29	1.24	31.26	134	199	Peak
184.98	36.83	-6.67	43.5	57.87	8.95	1.26	31.25	-	-	Peak
199.29	55.26	*	43.5	76.15	9.1	1.32	31.31	-	-	Peak
224.94	37.09	-8.91	46	56.01	10.85	1.45	31.22	-	-	Peak
233.31	62.21	*	46	80.46	11.46	1.5	31.21	-	-	Peak
265.71	42.48	*	46	59.32	12.82	1.62	31.28	-	-	Peak
298.92	58.22	*	46	74.46	13.29	1.76	31.29	-	-	Peak
312.6	19.61	-26.39	46	35.35	13.64	1.79	31.17	-	-	Peak
366.5	54.55	*	46	68.75	15.11	2.07	31.38	-	-	Peak
388.2	32.47	-13.53	46	46.05	15.69	2.12	31.39	-	-	Peak
433	49.6	*	46	61.83	16.69	2.25	31.17	-	-	Peak
499.5	42.56	*	46	52.92	18.08	2.45	30.89	-	-	Peak
633.2	43.27	*	46	50.83	20.06	2.79	30.41	-	-	Peak
766.2	42.39	*	46	48.12	21.59	3.09	30.41	-	-	Peak
799.8	41.83	*	46	46.75	22.1	3.14	30.16	-	-	Peak
5318	97.37	-	-	86.1	34.72	9.52	32.97	178	330	Average
5318	109.03	-	-	97.76	34.72	9.52	32.97	178	330	Peak
10641	42.64	-31.36	74	50	37.54	13.73	58.63	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5318 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
99.93	52.82	*	43.5	73.69	9.8	0.99	31.66	-	-	Peak
133.14	38.43	*	43.5	57.27	11.54	1.16	31.54	-	-	Peak
149.88	29.43	-14.07	43.5	48.41	11.2	1.21	31.39	-	-	Peak
166.62	62.24	*	43.5	82.47	9.85	1.23	31.31	-	-	Peak
174.99	36.92	-6.58	43.5	57.81	9.1	1.24	31.23	132	61	Peak
182.01	32.58	-10.92	43.5	53.61	8.92	1.26	31.21	-	-	Peak
199.29	46.13	*	43.5	67.02	9.1	1.32	31.31	-	-	Peak
227.37	30.61	-15.39	46	49.38	10.98	1.46	31.21	-	-	Peak
233.31	56.51	*	46	74.76	11.46	1.5	31.21	-	-	Peak
266.52	33.9	*	46	50.74	12.83	1.62	31.29	-	-	Peak
298.92	49.78	*	46	66.02	13.29	1.76	31.29	-	-	Peak
366.5	48.01	*	46	62.21	15.11	2.07	31.38	-	-	Peak
433	42.35	*	46	54.58	16.69	2.25	31.17	-	-	Peak
454.7	30	-16	46	41.7	17.15	2.31	31.16	-	-	Peak
499.5	39.16	*	46	49.52	18.08	2.45	30.89	-	-	Peak
566	39.84	*	46	49.05	19.22	2.6	31.03	-	-	Peak
589.8	28.52	-17.48	46	36.92	19.62	2.66	30.68	-	-	Peak
633.2	42.1	*	46	49.66	20.06	2.79	30.41	-	-	Peak
766.2	39.26	*	46	44.99	21.59	3.09	30.41	-	-	Peak
5318	94.15	-	-	82.88	34.72	9.52	32.97	100	336	Average
5318	106.23	-	-	94.96	34.72	9.52	32.97	100	336	Peak
10641	43.42	-30.58	74	50.78	37.54	13.73	58.63	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5498 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
5498	98.54	-	-	87.18	35.2	9.82	33.66	115	333	Average
5498	110.69	-	-	99.33	35.2	9.82	33.66	115	333	Peak
11001	43.23	-30.77	74	50.11	37.9	13.76	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5502 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
5502	93.85	-	-	82.53	35.2	9.86	33.74	189	0	Average
5502	105.6	-	-	94.28	35.2	9.86	33.74	189	0	Peak
11001	43.69	-30.31	74	50.57	37.9	13.76	58.54	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5582 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
5582	98.08	-	-	86.92	35.25	9.92	34.01	101	333	Average
5582	109.77	-	-	98.61	35.25	9.92	34.01	101	333	Peak
11160	44.31	-29.69	74	50.85	38.07	13.93	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5578 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
5578	93.93	-	-	82.78	35.24	9.92	34.01	200	355	Average
5578	105.58	-	-	94.43	35.24	9.92	34.01	200	355	Peak
11160	44.21	-29.79	74	50.75	38.07	13.93	58.54	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5702 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
49.71	28.72	-11.28	40	51.14	8.5	0.69	31.61	-	-	Peak
99.66	56.25	*	43.5	77.12	9.8	0.99	31.66	-	-	Peak
113.16	33.96	-9.54	43.5	53.53	11.07	1.07	31.71	-	-	Peak
133.14	40.03	*	43.5	58.87	11.54	1.16	31.54	-	-	Peak
166.08	63.47	*	43.5	83.62	9.94	1.23	31.32	-	-	Peak
174.18	41.95	-1.55	43.5	62.85	9.1	1.24	31.24	105	49	Peak
186.33	36.83	-6.67	43.5	57.86	8.96	1.27	31.26	-	-	Peak
199.83	54.97	*	43.5	75.86	9.1	1.32	31.31	-	-	Peak
233.31	61.96	*	46	80.21	11.46	1.5	31.21	-	-	Peak
266.52	42.41	*	46	59.25	12.83	1.62	31.29	-	-	Peak
298.92	58.05	*	46	74.29	13.29	1.76	31.29	-	-	Peak
366.5	54.24	*	46	68.44	15.11	2.07	31.38	-	-	Peak
393.1	35.78	-10.22	46	49.27	15.82	2.13	31.44	-	-	Peak
433	49.34	*	46	61.57	16.69	2.25	31.17	-	-	Peak
497.4	41.96	*	46	52.38	18.04	2.44	30.9	-	-	Peak
531	23.06	-22.94	46	33.06	18.61	2.51	31.12	-	-	Peak
633.2	42.9	*	46	50.46	20.06	2.79	30.41	-	-	Peak
766.2	42.18	*	46	47.91	21.59	3.09	30.41	-	-	Peak
799.8	41.71	*	46	46.63	22.1	3.14	30.16	-	-	Peak
5702	96.42	-	-	85.2	35.32	10.02	34.12	161	314	Average
5702	108.27	-	-	97.05	35.32	10.02	34.12	161	314	Peak
11400	43.44	-30.56	74	49.47	38.3	14.21	58.54	100	0	Peak



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5698 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
50.25	28.57	-11.43	40	51.38	8.1	0.7	31.61	-	-	Peak
99.66	52.54	*	43.5	73.41	9.8	0.99	31.66	-	-	Peak
133.14	38.12	*	43.5	56.96	11.54	1.16	31.54	-	-	Peak
149.88	29.45	-14.05	43.5	48.43	11.2	1.21	31.39	-	-	Peak
166.62	62.13	*	43.5	82.36	9.85	1.23	31.31	-	-	Peak
174.99	37.19	-6.31	43.5	58.08	9.1	1.24	31.23	198	251	Peak
182.01	32.77	-10.73	43.5	53.8	8.92	1.26	31.21	-	-	Peak
199.29	45.92	*	43.5	66.81	9.1	1.32	31.31	-	-	Peak
233.31	56.34	*	46	74.59	11.46	1.5	31.21	-	-	Peak
265.71	34.33	*	46	51.17	12.82	1.62	31.28	-	-	Peak
298.92	49.58	*	46	65.82	13.29	1.76	31.29	-	-	Peak
366.5	48.06	*	46	62.26	15.11	2.07	31.38	-	-	Peak
379.8	19.51	-26.49	46	33.23	15.48	2.1	31.3	-	-	Peak
433	42.22	*	46	54.45	16.69	2.25	31.17	-	-	Peak
499.5	38.43	*	46	48.79	18.08	2.45	30.89	-	-	Peak
533.1	26.55	*	46	36.5	18.66	2.52	31.13	-	-	Peak
566	38.6	*	46	47.81	19.22	2.6	31.03	-	-	Peak
633.2	41.54	*	46	49.1	20.06	2.79	30.41	-	-	Peak
763.4	39.18	-6.82	46	44.98	21.55	3.08	30.43	-	-	Peak
5698	93.85	-	-	82.64	35.31	10.02	34.12	183	0	Average
5698	105.31	-	-	94.1	35.31	10.02	34.12	183	0	Peak
11400	43.85	-30.15	74	49.88	38.3	14.21	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	38	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5192 MHz is fundamental signal which can be ignored. 2. 10380 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
50.25	29.28	-10.72	40	52.09	8.1	0.7	31.61	-	-	Peak
99.66	56.37	*	43.5	77.24	9.8	0.99	31.66	-	-	Peak
112.89	34.8	-8.7	43.5	54.47	10.98	1.06	31.71	-	-	Peak
133.14	40.06	*	43.5	58.9	11.54	1.16	31.54	-	-	Peak
166.62	63.52	*	43.5	83.75	9.85	1.23	31.31	-	-	Peak
172.83	42.38	-1.12	43.5	63.1	9.29	1.24	31.25	135	78	Peak
184.44	37.22	-6.28	43.5	58.26	8.94	1.26	31.24	-	-	Peak
199.29	55.14	*	43.5	76.03	9.1	1.32	31.31	-	-	Peak
232.5	62.16	*	46	80.48	11.39	1.5	31.21	-	-	Peak
266.52	42.43	*	46	59.27	12.83	1.62	31.29	-	-	Peak
298.92	58.22	*	46	74.46	13.29	1.76	31.29	-	-	Peak
366.5	54.35	*	46	68.55	15.11	2.07	31.38	-	-	Peak
384	25.4	-20.6	46	39.05	15.58	2.11	31.34	-	-	Peak
433	49.35	*	46	61.58	16.69	2.25	31.17	-	-	Peak
499.5	42.16	*	46	52.52	18.08	2.45	30.89	-	-	Peak
589.8	24.11	-21.89	46	32.51	19.62	2.66	30.68	-	-	Peak
633.2	42.94	*	46	50.5	20.06	2.79	30.41	-	-	Peak
766.2	41.87	*	46	47.6	21.59	3.09	30.41	-	-	Peak
799.8	41.7	*	46	46.62	22.1	3.14	30.16	-	-	Peak
5192	95.93	-	-	84.72	34.42	9.31	32.52	110	336	Average
5192	106.18	-	-	94.97	34.42	9.31	32.52	110	336	Peak
10380	43.75	-30.25	74	51.3	37.31	13.71	58.57	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	38	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5192 MHz is fundamental signal which can be ignored. 2. 10380 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
51.06	24.23	-15.77	40	47.25	7.9	0.71	31.63	-	-	Peak
99.66	52.73	*	43.5	73.6	9.8	0.99	31.66	-	-	Peak
133.14	38	*	43.5	56.84	11.54	1.16	31.54	-	-	Peak
149.88	28.91	-14.59	43.5	47.89	11.2	1.21	31.39	-	-	Peak
166.62	62.23	*	43.5	82.46	9.85	1.23	31.31	-	-	Peak
174.99	37.48	-6.02	43.5	58.37	9.1	1.24	31.23	211	149	Peak
183.9	31.62	-11.88	43.5	52.66	8.94	1.26	31.24	-	-	Peak
199.83	45.95	*	43.5	66.84	9.1	1.32	31.31	-	-	Peak
232.5	56.3	*	46	74.62	11.39	1.5	31.21	-	-	Peak
265.71	33.63	*	46	50.47	12.82	1.62	31.28	-	-	Peak
298.92	49.5	*	46	65.74	13.29	1.76	31.29	-	-	Peak
366.5	47.47	*	46	61.67	15.11	2.07	31.38	-	-	Peak
433	42.04	*	46	54.27	16.69	2.25	31.17	-	-	Peak
485.5	25.62	-20.38	46	36.36	17.8	2.4	30.94	-	-	Peak
497.4	38.09	*	46	48.51	18.04	2.44	30.9	-	-	Peak
566	38.92	*	46	48.13	19.22	2.6	31.03	-	-	Peak
589.8	29.38	-16.62	46	37.78	19.62	2.66	30.68	-	-	Peak
630.4	41.64	*	46	49.25	20.04	2.78	30.43	-	-	Peak
766.2	38.84	*	46	44.57	21.59	3.09	30.41	-	-	Peak
5192	91.23	-	-	80.02	34.42	9.31	32.52	101	336	Average
5192	101.14	-	-	89.93	34.42	9.31	32.52	101	336	Peak
10380	45.47	-28.53	74	53.02	37.31	13.71	58.57	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	46	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5232 MHz is fundamental signal which can be ignored. 2. 10461 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5232	95.16	-	-	83.95	34.51	9.35	32.65	108	343	Average
5232	105.35	-	-	94.14	34.51	9.35	32.65	108	343	Peak
10461	44.03	-29.97	74	51.58	37.37	13.72	58.64	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	46	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5228 MHz is fundamental signal which can be ignored. 2. 10461 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5228	91.06	-	-	79.85	34.51	9.35	32.65	100	337	Average
5228	101.11	-	-	89.9	34.51	9.35	32.65	100	337	Peak
10461	45.06	-28.94	74	52.61	37.37	13.72	58.64	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	54	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5273 MHz is fundamental signal which can be ignored. 2. 10539 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5273	90.86	-	-	79.69	34.59	9.44	32.86	120	47	Average
5273	100.86	-	-	89.6	34.64	9.48	32.86	120	47	Peak
10539	43.8	-30.2	74	51.31	37.43	13.72	58.66	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	54	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5266 MHz is fundamental signal which can be ignored. 2. 10539 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5266	89.83	-	-	78.56	34.59	9.44	32.76	100	334	Average
5266	99.66	-	-	88.39	34.59	9.44	32.76	100	334	Peak
10539	42.76	-31.24	74	50.27	37.43	13.72	58.66	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	62	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5314 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
99.93	56.39	*	43.5	77.26	9.8	0.99	31.66	-	-	Peak
112.35	34.59	-8.91	43.5	54.27	10.98	1.06	31.72	-	-	Peak
133.14	40.04	*	43.5	58.88	11.54	1.16	31.54	-	-	Peak
159.33	30.18	-13.32	43.5	49.78	10.57	1.22	31.39	-	-	Peak
166.62	63.54	*	43.5	83.77	9.85	1.23	31.31	-	-	Peak
172.29	41.63	-1.87	43.5	62.36	9.29	1.24	31.26	153	61	Peak
189.3	35.77	-7.73	43.5	56.81	8.99	1.28	31.31	-	-	Peak
199.83	55.14	*	43.5	76.03	9.1	1.32	31.31	-	-	Peak
233.31	62.12	*	46	80.37	11.46	1.5	31.21	-	-	Peak
266.52	42.52	*	46	59.36	12.83	1.62	31.29	-	-	Peak
298.92	57.8	*	46	74.04	13.29	1.76	31.29	-	-	Peak
349.7	27.87	-18.13	46	42.65	14.66	1.97	31.41	-	-	Peak
366.5	54.47	*	46	68.67	15.11	2.07	31.38	-	-	Peak
433	49.3	*	46	61.53	16.69	2.25	31.17	-	-	Peak
499.5	42.02	*	46	52.38	18.08	2.45	30.89	-	-	Peak
531	23.95	-22.05	46	33.95	18.61	2.51	31.12	-	-	Peak
633.2	42.99	*	46	50.55	20.06	2.79	30.41	-	-	Peak
766.2	41.73	*	46	47.46	21.59	3.09	30.41	-	-	Peak
799.8	41.94	*	46	46.86	22.1	3.14	30.16	-	-	Peak
5314	91.97	-	-	80.7	34.72	9.52	32.97	108	45	Average
5314	101.1	-	-	89.83	34.72	9.52	32.97	108	45	Peak
10620	42.49	-31.51	74	49.88	37.52	13.73	58.64	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	62	Relative Humidity :	51~52%
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. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.24	31.07	-8.93	40	44.55	17.84	0.56	31.88	-	-	Peak
49.44	26.29	-13.71	40	48.73	8.5	0.69	31.63	-	-	Peak
99.66	52.91	*	43.5	73.78	9.8	0.99	31.66	-	-	Peak
132.87	38.08	*	43.5	56.92	11.54	1.16	31.54	-	-	Peak
149.88	29.54	-13.96	43.5	48.52	11.2	1.21	31.39	-	-	Peak
166.62	62.35	*	43.5	82.58	9.85	1.23	31.31	-	-	Peak
174.99	37.63	-5.87	43.5	58.52	9.1	1.24	31.23	191	263	Peak
199.83	46.17	*	43.5	67.06	9.1	1.32	31.31	-	-	Peak
233.31	56.61	*	46	74.86	11.46	1.5	31.21	-	-	Peak
265.71	34.23	*	46	51.07	12.82	1.62	31.28	-	-	Peak
298.92	49.77	*	46	66.01	13.29	1.76	31.29	-	-	Peak
366.5	47.94	*	46	62.14	15.11	2.07	31.38	-	-	Peak
407.8	20.8	-25.2	46	33.88	16.16	2.17	31.41	-	-	Peak
433	42.34	*	46	54.57	16.69	2.25	31.17	-	-	Peak
499.5	38.69	*	46	49.05	18.08	2.45	30.89	-	-	Peak
566	39.31	*	46	48.52	19.22	2.6	31.03	-	-	Peak
615.7	27.5	-18.5	46	35.32	19.92	2.74	30.48	-	-	Peak
633.2	41.82	*	46	49.38	20.06	2.79	30.41	-	-	Peak
766.2	39.38	*	46	45.11	21.59	3.09	30.41	-	-	Peak
5310	90.33	-	-	79.06	34.72	9.52	32.97	100	331	Average
5310	100.09	-	-	88.79	34.68	9.48	32.86	100	331	Peak
10620	43.92	-30.08	74	51.31	37.52	13.73	58.64	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5512 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
89.67	25.22	-18.28	43.5	47.33	8.6	0.94	31.65	-	-	Peak
99.66	56.31	*	43.5	77.18	9.8	0.99	31.66	-	-	Peak
133.14	40.03	*	43.5	58.87	11.54	1.16	31.54	-	-	Peak
149.88	34.79	-8.71	43.5	53.77	11.2	1.21	31.39	-	-	Peak
166.62	63.69	*	43.5	83.92	9.85	1.23	31.31	-	-	Peak
173.1	41.67	-1.83	43.5	62.49	9.19	1.24	31.25	149	216	Peak
184.44	36.81	-6.69	43.5	57.85	8.94	1.26	31.24	-	-	Peak
199.29	55.08	*	43.5	75.97	9.1	1.32	31.31	-	-	Peak
232.5	62.18	*	46	80.5	11.39	1.5	31.21	-	-	Peak
266.52	42.46	*	46	59.3	12.83	1.62	31.29	-	-	Peak
298.92	57.79	*	46	74.03	13.29	1.76	31.29	-	-	Peak
366.5	54.65	*	46	68.85	15.11	2.07	31.38	-	-	Peak
433	49.08	*	46	61.31	16.69	2.25	31.17	-	-	Peak
497.4	42.02	*	46	52.44	18.04	2.44	30.9	-	-	Peak
531	24.43	-21.57	46	34.43	18.61	2.51	31.12	-	-	Peak
633.2	42.88	*	46	50.44	20.06	2.79	30.41	-	-	Peak
680.1	23.41	-22.59	46	30.5	20.44	2.9	30.43	-	-	Peak
766.2	42.12	*	46	47.85	21.59	3.09	30.41	-	-	Peak
799.8	41.79	*	46	46.71	22.1	3.14	30.16	-	-	Peak
5512	95.02	-	-	83.7	35.2	9.86	33.74	102	341	Average
5512	104.84	-	-	93.51	35.21	9.86	33.74	102	341	Peak
11019	42.69	-31.31	74	49.55	37.92	13.76	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	102	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5513 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. “ * ” are from extender card which is provided by Applicant, declared to ignore those signal due to not from WLAN module.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
50.52	28.09	-11.91	40	50.92	8.1	0.7	31.63	-	-	Peak
99.66	52.89	*	43.5	73.76	9.8	0.99	31.66	-	-	Peak
133.14	37.98	*	43.5	56.82	11.54	1.16	31.54	-	-	Peak
149.88	29.06	-14.44	43.5	48.04	11.2	1.21	31.39	-	-	Peak
166.62	62.15	*	43.5	82.38	9.85	1.23	31.31	-	-	Peak
174.99	37.8	-5.7	43.5	58.69	9.1	1.24	31.23	125	45	Peak
180.12	33.21	-10.29	43.5	54.24	8.9	1.25	31.18	-	-	Peak
199.83	46.02	*	43.5	66.91	9.1	1.32	31.31	-	-	Peak
233.31	56.58	*	46	74.83	11.46	1.5	31.21	-	-	Peak
266.52	34.25	*	46	51.09	12.83	1.62	31.29	-	-	Peak
298.65	47.97	*	46	64.21	13.29	1.76	31.29	-	-	Peak
366.5	48.03	*	46	62.23	15.11	2.07	31.38	-	-	Peak
430.9	42.17	*	46	54.45	16.65	2.25	31.18	-	-	Peak
452.6	30.02	-15.98	46	41.76	17.11	2.31	31.16	-	-	Peak
497.4	38.76	*	46	49.18	18.04	2.44	30.9	-	-	Peak
566	39.23	*	46	48.44	19.22	2.6	31.03	-	-	Peak
599.6	26.3	*	46	34.37	19.78	2.69	30.54	-	-	Peak
633.2	41.83	*	46	49.39	20.06	2.79	30.41	-	-	Peak
676.6	22.55	-23.45	46	29.68	20.41	2.89	30.43	-	-	Peak
766.2	39.26	*	46	44.99	21.59	3.09	30.41	-	-	Peak
5513	88.78	-	-	77.46	35.2	9.86	33.74	153	300	Average
5513	98.53	-	-	87.18	35.21	9.88	33.74	153	300	Peak
11019	43.91	-30.09	74	50.77	37.92	13.76	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	110	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5553 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
5553	94.63	-	-	83.42	35.23	9.9	33.92	102	337	Average
5553	103.92	-	-	92.71	35.23	9.9	33.92	102	337	Peak
11100	43.51	-30.49	74	50.18	38	13.87	58.54	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	110	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5559 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
5559	87.66	-	-	76.45	35.23	9.9	33.92	127	280	Average
5559	98.89	-	-	87.68	35.23	9.9	33.92	127	280	Peak
11100	43.81	-30.19	74	50.48	38	13.87	58.54	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	134	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 5668 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
5668	94.39	-	-	83.2	35.3	9.98	34.09	100	340	Average
5668	104.12	-	-	92.93	35.3	9.98	34.09	100	340	Peak
11340	43.79	-30.21	74	49.94	38.23	14.16	58.54	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Channel :	134	Relative Humidity :	51~52%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 5672 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
5672	90.53	-	-	79.32	35.3	10	34.09	150	185	Average
5672	99.86	-	-	88.65	35.3	10	34.09	150	185	Peak
11340	43.89	-30.11	74	50.04	38.23	14.16	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 (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

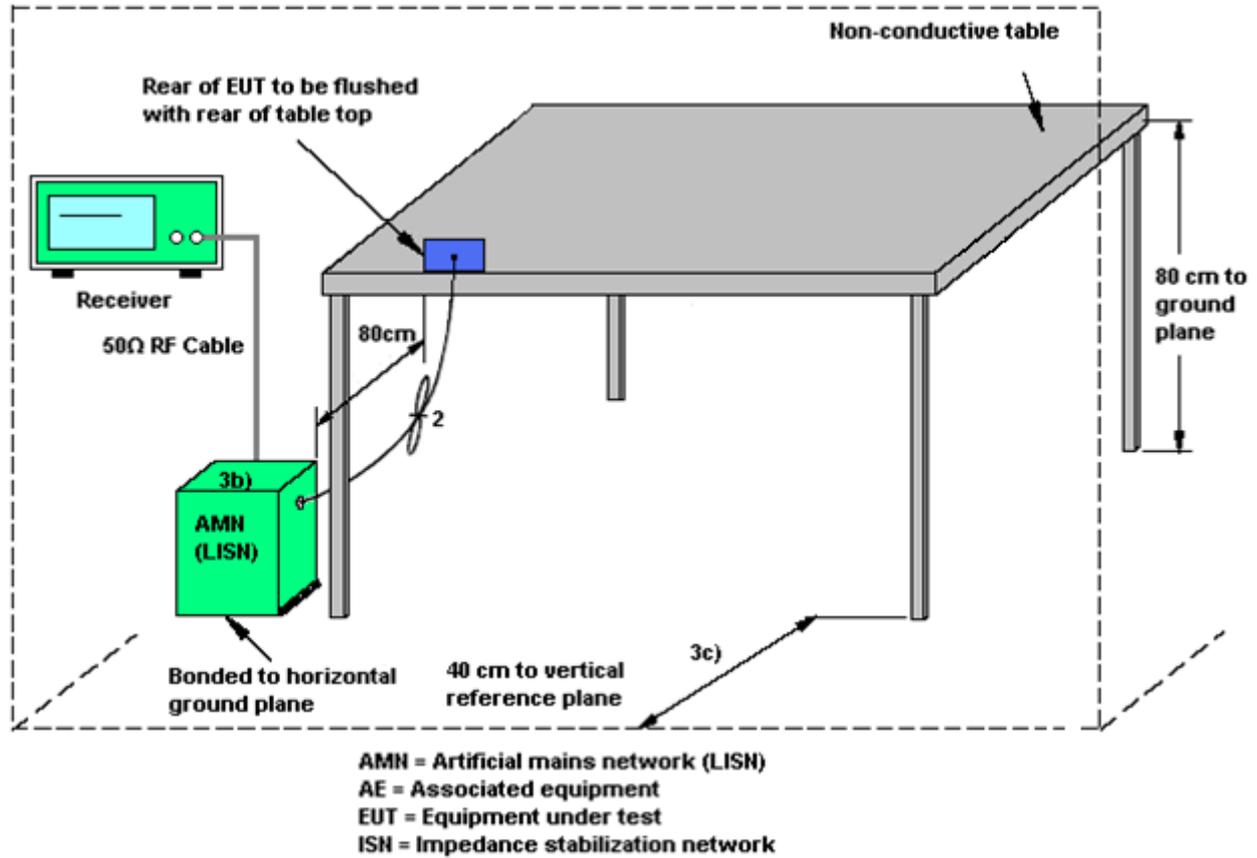
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

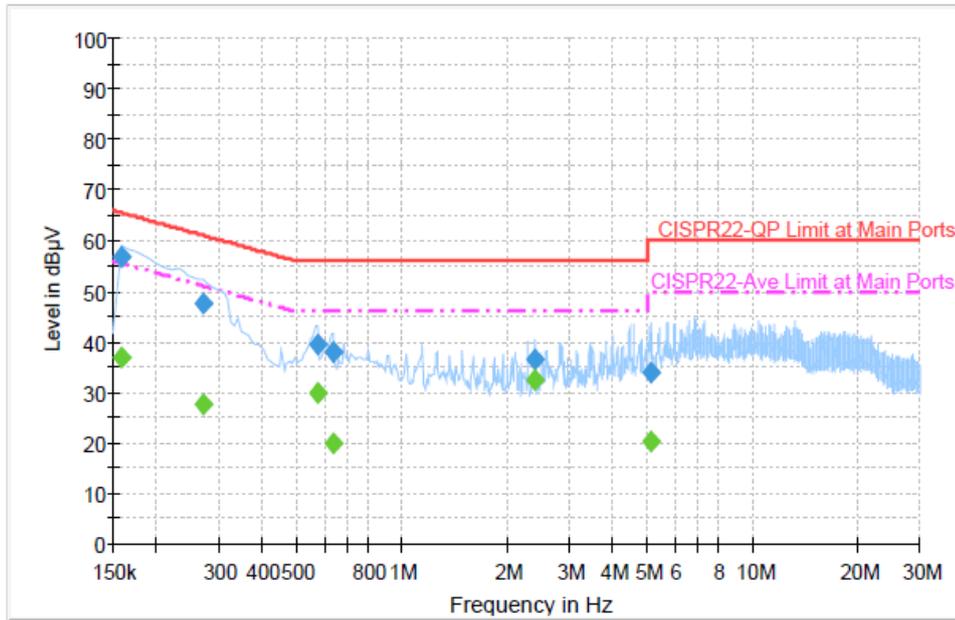
1. The testing follows the guidelines in ANSI C63.10-2009 test site requirement.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization 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 :	Bluetooth Tx + WLAN (2.4G) Link + USB Cable (Charging from Notebook)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

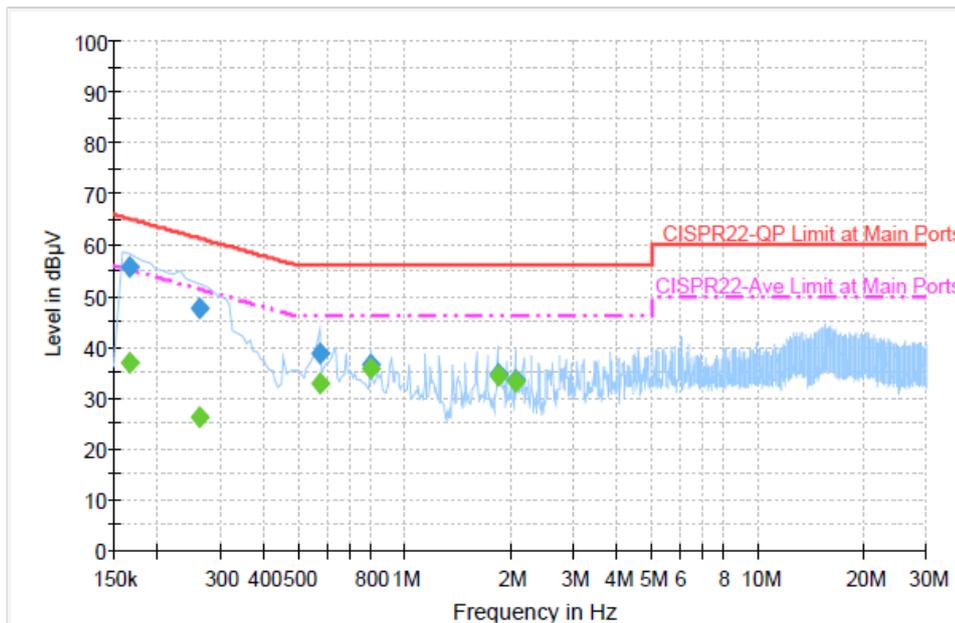
Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	56.9	Off	L1	19.4	8.7	65.6
0.270000	47.6	Off	L1	19.3	13.5	61.1
0.574000	39.5	Off	L1	19.4	16.5	56.0
0.638000	37.8	Off	L1	19.5	18.2	56.0
2.398000	36.6	Off	L1	19.6	19.4	56.0
5.158000	33.9	Off	L1	19.6	26.1	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	36.8	Off	L1	19.4	18.8	55.6
0.270000	27.7	Off	L1	19.3	23.4	51.1
0.574000	30.0	Off	L1	19.4	16.0	46.0
0.638000	20.0	Off	L1	19.5	26.0	46.0
2.398000	32.3	Off	L1	19.6	13.7	46.0
5.158000	20.3	Off	L1	19.6	29.7	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 :	Bluetooth Tx + WLAN (2.4G) Link + USB Cable (Charging from Notebook)		
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	55.6	Off	N	19.4	9.6	65.2
0.262000	47.6	Off	N	19.5	13.8	61.4
0.574000	38.9	Off	N	19.4	17.1	56.0
0.798000	36.6	Off	N	19.4	19.4	56.0
1.830000	34.6	Off	N	19.5	21.4	56.0
2.054000	33.6	Off	N	19.6	22.4	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	36.7	Off	N	19.4	18.5	55.2
0.262000	26.4	Off	N	19.5	25.0	51.4
0.574000	32.8	Off	N	19.4	13.2	46.0
0.798000	35.7	Off	N	19.4	10.3	46.0
1.830000	34.3	Off	N	19.5	11.7	46.0
2.054000	33.3	Off	N	19.6	12.7	46.0

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.

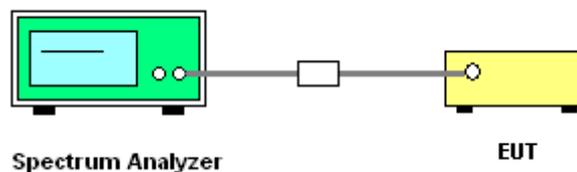
3.7.2 Measuring Instruments

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 :	Coyote Lin	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
NII Band 1	36	5180	5171.75	5188.25	0.00
	44	5220	5211.70	5228.30	0.00
	48	5240	5231.70	5248.30	0.00
NII Band 2	52	5260	5251.70	5268.30	0.00
	60	5300	5291.70	5308.30	0.00
	64	5320	5311.70	5328.30	0.00
NII Band 3	100	5500	5491.70	5508.30	0.00
	116	5580	5571.75	5588.30	4.48
	140	5700	5691.70	5708.30	0.00

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

Band	Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
NII Band 1	36	5180	5171.10	5188.90	0.00
	44	5220	5211.10	5228.90	0.00
	48	5240	5231.10	5248.90	0.00
NII Band 2	52	5260	5251.10	5268.90	0.00
	60	5300	5291.10	5308.90	0.00
	64	5320	5311.10	5328.90	0.00
NII Band 3	100	5500	5491.10	5508.95	4.55
	116	5580	5571.10	5588.90	0.00
	140	5700	5691.10	5708.90	0.00



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

Band	Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
NII Band 1	38	5190	5171.73	5208.27	0.00
	46	5230	5211.73	5248.27	0.00
NII Band 2	54	5270	5251.73	5288.27	0.00
	62	5310	5291.73	5328.36	8.47
NII Band 3	102	5510	5491.73	5528.27	0.00
	110	5550	5531.73	5568.27	0.00
	134	5670	5651.73	5688.27	0.00



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	Jan. 31, 2013 ~ Feb. 15, 2013	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Jan. 31, 2013 ~ Feb. 15, 2013	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Jan. 31, 2013 ~ Feb. 15, 2013	Sep. 07, 2013	Conducted (TH02-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9KHz ~ 2.75GHz	Nov. 13, 2012	Feb. 15, 2013	Nov. 12, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100081	9KHz ~ 30MHz	Dec. 12, 2012	Feb. 15, 2013	Dec. 11, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9KHz ~ 30MHz	Dec. 06, 2012	Feb. 15, 2013	Dec. 05, 2013	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Feb. 15, 2013	N/A	Conduction (CO05-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 06, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Oct. 05, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Nov. 30, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Nov. 29, 2013	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 22, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Aug. 21, 2013	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 01, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Nov. 30, 2013	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Mar. 09, 2013	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz. 32dB.GAIN	Feb. 27, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Feb. 26, 2013	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Sep. 02, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Sep. 27, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Feb. 06, 2013 ~ Feb. 08, 2013	Jul. 02, 2013	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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Appendix A. Photographs of EUT

Please refer to Sporton report number EP320849 as below.