FCC RF Test Report

APPLICANT	**:**	**Elk LLC**
EQUIPMENT	**:**	**Tablet PC**
MODEL NAME	**:**	**3HT7G**
FCC ID	**:**	**ZHT-1013**
STANDARD	**:**	**FCC Part 15 Subpart E**
CLASSIFICATION	**:**	**(NII) Unlicensed National Information Infrastructure**

The product was completely tested on Sep. 17, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

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

Reviewed by:

Jones Tsai

Jones Tsai / Manager

SPORTON INTERNATIONAL INC.

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR240709C	Rev. 01	Initial issue of report	Sep. 03, 2012
FR240709C	Rev. 02	Updated the antenna type description	Sep. 12, 2012
FR240709C	Rev. 03	Updated the Legacy Ant 1 and SISO Ant1 conducted power.	Sep. 17, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	A9.2	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	A9.2	Maximum Conducted Output Power	≤ 17, 24, 30 dBm (depend on band)	Pass	-
3.3	15.407(a)	A9.2	Power Spectral Density	≤ 4, 11, 17 dBm (depend on band)	Pass	-
3.4	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 8.90 dB at 1.558 MHz
3.5	15.407(b)	A9.3	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 0.54 dB at 5725.000 MHz
3.6	15.407(b)	A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.7	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.9	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Elk LLC
Suite 100, 2730 Gateway Oaks Drive Sacramento, CA 95833

1.2 Feature of Equipment Under Test

Product Specification	
Equipment	Tablet PC
Model Name	3HT7G
FCC ID	ZHT-1013
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE WLAN 11abgn / Bluetooth 3.0

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

Product Feature	
Tx/Rx Channel Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** <Legacy Ant 1> 802.11a : 12.65 dBm / 0.0184 W <SISO Ant 1> 802.11n HT20 : 12.31 dBm / 0.017 W 802.11n HT40 : 12.03 dBm / 0.016 W <MIMO Ant 1+2> 802.11n HT20 : 14.88 dBm / 0.0308 W 802.11n HT40 : 14.74 dBm / 0.0298 W **<5260 MHz ~ 5320 MHz>** <Legacy Ant 1> 802.11a : 12.65 dBm / 0.0184 W <SISO Ant 1> 802.11n HT20 : 12.6 dBm / 0.0182 W 802.11n HT40 : 12.15 dBm / 0.0164 W <MIMO Ant 1+2> 802.11n HT20 : 16.37 dBm / 0.0434 W 802.11n HT40 : 16.08 dBm / 0.0406 W **<5500 MHz ~ 5700 MHz >** <Legacy Ant 1> 802.11a : 11.44 dBm / 0.0139 W <SISO Ant 1> 802.11n HT20 : 10.9 dBm / 0.0123 W 802.11n HT40 : 10.76 dBm / 0.0119 W <MIMO Ant 1+2> 802.11n HT20 : 15.25 dBm / 0.0335 W 802.11n HT40 : 15.11 dBm / 0.0324 W

<table>
<tr><td>Duty Cycle</td><td><Legacy Ant 1>
802.11a : 99.17%
<SISO Ant 1>
802.11n HT20 : 99.13%
802.11n HT40 : 98.60%
<MIMO Ant 1+2>
802.11n HT20 : 98.31% for Ant 1
802.11n HT20 : 98.21% for Ant 2
802.11n HT40 : 97.39% for Ant 1
802.11n HT40 : 96.70% for Ant 2</td></tr>
<tr><td>Antenna Type</td><td>Ant 1 :
PIFA Antenna type with gain 2.50 dBi
Ant 2 :
PIFA Antenna type with gain 2.00 dBi</td></tr>
<tr><td>Type of Modulation</td><td>OFDM (BPSK / QPSK / 16QAM / 64QAM)</td></tr>
<tr><td>Antenna Function Description</td><td><table><tr><td></td><td>Ant 1.</td><td>Ant 2.</td></tr><tr><td>802.11 a</td><td>V</td><td>-</td></tr><tr><td>802.11n SISO</td><td>V</td><td>-</td></tr><tr><td>802.11n MIMO</td><td>V</td><td>V</td></tr></table></td></tr>
</table>

1.3 Testing Site

<table>
<tr><td>Test Site</td><td colspan="4">SPORTON INTERNATIONAL INC.</td></tr>
<tr><td>Test Site Location</td><td colspan="4">No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
TEL: +886-3-3273456 / FAX: +886-3-3284978</td></tr>
<tr><td rowspan="2">Test Site No.</td><td colspan="3">Sporton Site No.</td><td>FCC/IC Registration No.</td></tr>
<tr><td>TH02-HY</td><td>CO05-HY</td><td>03CH07-HY</td><td>722060/4086B-1</td></tr>
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1.4 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 v01r01
- FCC KDB 662911 D01 Multiple Transmitter Output v01r01
- ANSI C63.4-2003 and ANSI C63.10-2009
- IC RSS-210 Issued 8
- IC RSS-Gen Issue 3

Remark:

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

2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.5 Ancillary Equipment List

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.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	LCD Monitor	Dell	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
6.	iPod Earphone	Apple	N/A	FCC DoC	Unshielded, 1.0 m	N/A
7.	Adapter	N/A	N/A	N/A	N/A	N/A

2 Test Configuration of Equipment Under Test

2.1 Test Mode

The EUT supports 802.11 a/n with two diversity antennas, Antenna 1 and 2, and completely uncorrelated MIMO modes. The Antenna 2 is receiver only for WLAN legacy/SISO mode, and dedicates for Bluetooth. The test configurations are reported in following sections.

For conducted test cases, the high, middle, low channels of legacy modes 802.11a and 802.11n mode (SISO, MIMO) were tested respectively by choosing the highest RF output power chain, and data rate from preliminary conducted power testing as shown in section 2.3.

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and ANSI C63.10-2009 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), radiated emission (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

For radiated measurements, pre-scanned tests were conducted to determine the final configuration from all possible combinations. Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations modes, and the worst mode (Z plane for Legacy, SISO, and MIMO) is recorded in this report only, and the worst modes from the legacy modes and n modes were used for the full radiated test measurement.

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 : GSM850 Idle + WLAN (5G) Link + Bluetooth Link + HDMI Cable + Earphone + MPEG4 + USB Cable (Charging from Adapter)			

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

2.2 Carrier Frequency Channel

There are two bandwidth systems for the device.

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

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

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

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

2.3 Pre-Scanned RF Power

Preliminary tests were performed in different data rate as below table and the highest power data rates (11a, 11n HT20, 11n HT40 modes) were chosen for full test in the following sections to demonstrate compliance to the FCC limit line. Final Output Power equals to Measured Output Power adds the duty factor.

<Legacy Ant 1>

5GHz 802.11a mode								
Data Rate (MHz)	**6M bps**	**9M bps**	**12M bps**	**18M bps**	**24M bps**	**36M bps**	**48M bps**	**54M bps**
Power (dBm) <5180-5240 MHz>	**12.65**	12.61	12.57	12.60	12.48	12.45	12.26	12.37
Power (dBm) <5260-5320 MHz>	**12.65**	12.61	12.52	12.56	12.54	12.51	12.54	12.43
Power (dBm) <5500-5700 MHz>	**11.44**	11.16	11.10	11.15	11.12	11.18	11.20	11.19

<SISO Ant 1>

5GHz 802.11n HT20 mode								
Data Rate (MHz)	**MCS0**	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
Power (dBm) <5180-5240 MHz>	**12.31**	12.30	12.32	12.28	12.20	12.18	12.12	12.15
Power (dBm) <5260-5320 MHz>	**12.60**	12.57	12.57	12.58	12.59	12.59	12.58	12.58
Power (dBm) <5500-5700 MHz>	**10.90**	10.85	10.85	10.83	10.84	10.89	10.84	10.83

5GHz 802.11n HT40 mode								
Data Rate (MHz)	**MCS0**	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
Power (dBm) <5180-5240 MHz>	**12.03**	11.93	11.94	11.96	12.00	11.99	11.98	11.95
Power (dBm) <5260-5320 MHz>	**12.15**	12.14	12.07	12.03	12.03	12.14	12.07	12.08
Power (dBm) <5500-5700 MHz>	**10.76**	10.74	10.66	10.65	10.59	10.75	10.69	10.73

<MIMO Ant 1 + 2>

5GHz 802.11n HT20 mode <5180-5240 MHz>								
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Power (dBm) MIMO – Ant 1	**11.34**	11.21	11.33	11.07	11.14	11.14	11.13	11.16
Power (dBm) MIMO – Ant 2	**12.34**	12.33	12.24	12.26	12.20	12.15	12.18	12.20
MIMO Ant 1+2 (Measure and Sum)	**14.88**	14.82	14.82	14.72	14.71	14.69	14.70	14.72

5GHz 802.11n HT20 mode <5260-5320 MHz>								
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Power (dBm) MIMO – Ant 1	**12.73**	12.64	12.63	12.66	12.54	12.56	12.64	12.53
Power (dBm) MIMO – Ant 2	**13.91**	13.84	13.82	13.78	13.71	13.68	13.86	13.72
MIMO Ant 1+2 (Measure and Sum)	**16.37**	16.29	16.28	16.27	16.18	16.17	16.30	16.17

5GHz 802.11n HT20 mode <5500-5700 MHz>								
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Power (dBm) MIMO – Ant 1	**11.83**	11.79	11.40	11.35	11.29	11.28	11.39	11.36
Power (dBm) MIMO – Ant 2	**12.62**	12.29	12.25	12.26	12.25	12.29	12.24	12.25
MIMO Ant 1+2 (Measure and Sum)	**15.25**	15.06	14.86	14.84	14.81	14.83	14.85	14.84

5GHz 802.11n HT40 mode <5180-5240 MHz>								
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Power (dBm) MIMO – Ant 1	**11.42**	11.40	11.38	11.46	11.49	11.44	11.39	11.32
Power (dBm) MIMO – Ant 2	**12.03**	12.02	11.94	11.96	11.95	11.88	11.91	11.98
MIMO Ant 1+2 (Measure and Sum)	**14.74**	14.73	14.68	14.73	14.73	14.68	14.67	14.67

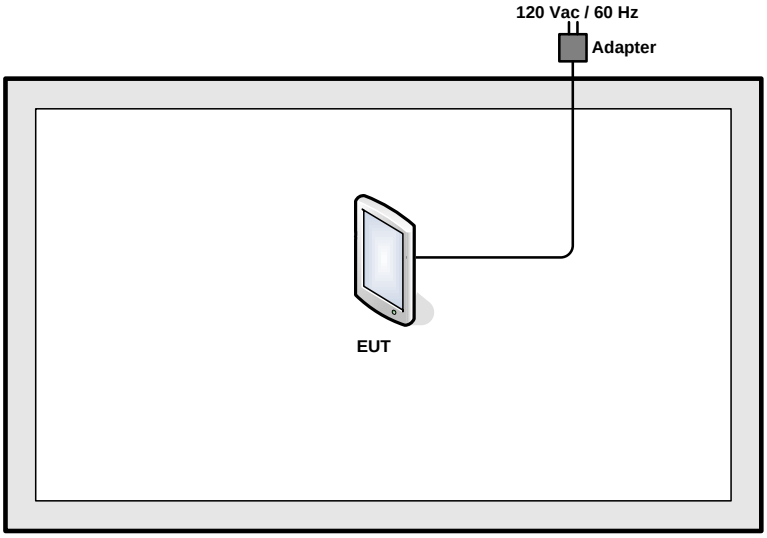
5GHz 802.11n HT40 mode <5260-5320 MHz>								
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Power (dBm) MIMO – Ant 1	**12.53**	12.62	12.55	12.45	12.54	12.55	12.57	12.49
Power (dBm) MIMO – Ant 2	**13.55**	13.33	13.16	13.26	13.49	13.50	13.50	13.49
MIMO Ant 1+2 (Measure and Sum)	**16.08**	16.00	15.88	15.88	16.05	16.06	16.07	16.03

5GHz 802.11n HT40 mode <5500-5700 MHz>								
Data Rate (MHz)	**MCS8**	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
Power (dBm) MIMO – Ant 1	**11.89**	11.79	11.49	11.85	11.81	11.79	11.78	11.66
Power (dBm) MIMO – Ant 2	**12.31**	12.07	12.01	12.05	11.99	11.89	11.92	11.96
MIMO Ant 1+2 (Measure and Sum)	**15.11**	14.94	14.77	14.96	14.91	14.85	14.86	14.82

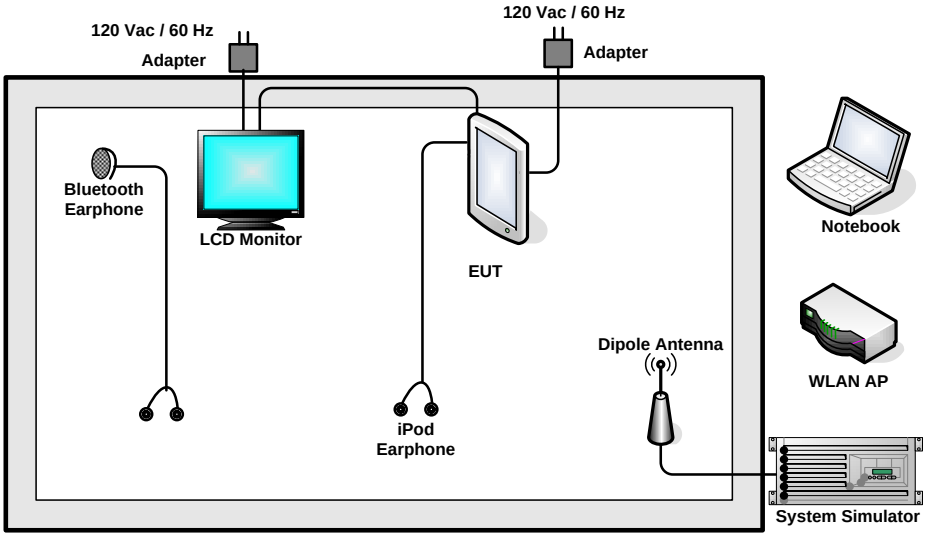
Note: MIMO Ant 1+2 is a calculated result from sum of the power MIMO Ant 1 and MIMO Ant 2

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

For WLAN function, “Compliance Tool” was installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing.

3 Test Result

3.1 26dB Bandwidth Measurement

3.1.1 Limit of 26dB% Bandwidth

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

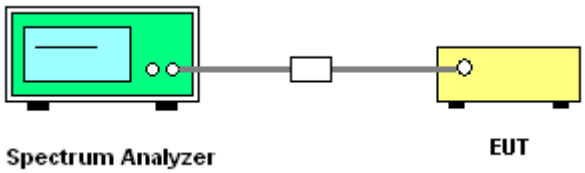
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r01.
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%.

3.1.4 Test Setup

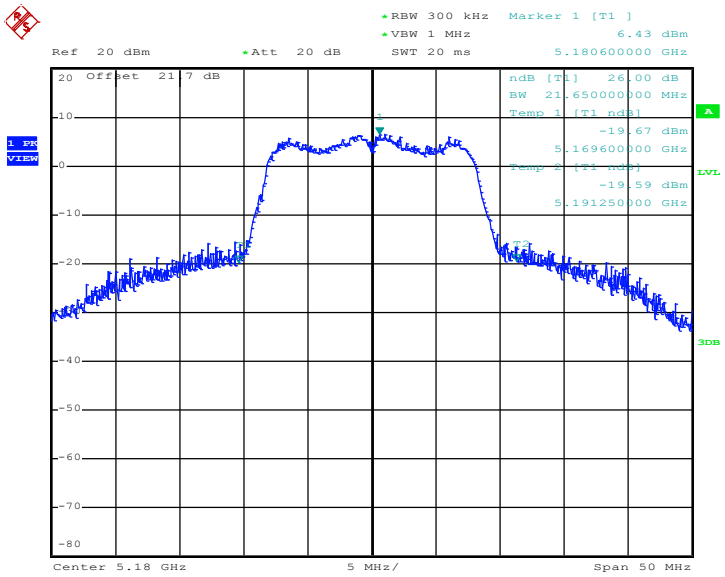


3.1.5 Test Result of 26dB Bandwidth

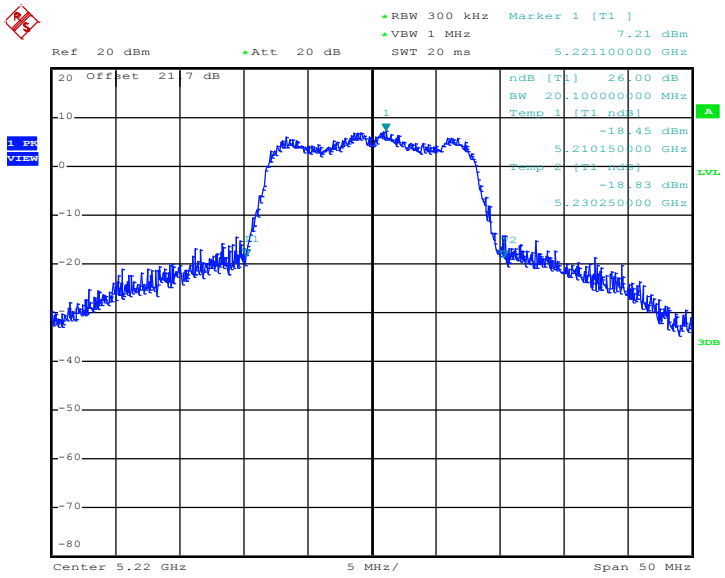
Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
		Legacy Ant 1	
36	5180	21.65	N/A
44	5220	20.10	N/A
48	5240	20.80	N/A
52	5260	20.40	N/A
60	5300	20.30	N/A
64	5320	20.00	N/A
100	5500	19.50	N/A
116	5580	19.45	N/A
140	5700	19.35	N/A

26 dB Bandwidth Plot on 802.11a Channel 36 - Legacy Ant 1



26 dB Bandwidth Plot on 802.11a Channel 44 - Legacy Ant 1



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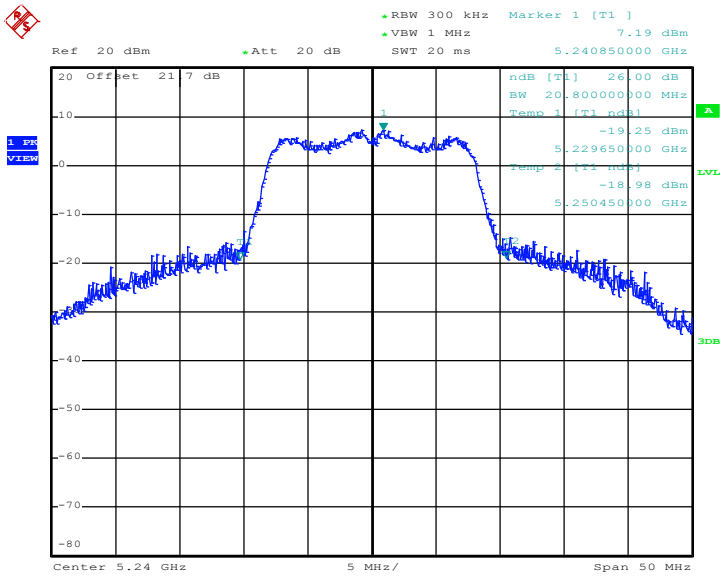
26 dB Bandwidth Plot on 802.11a Channel 48 - Legacy Ant 1



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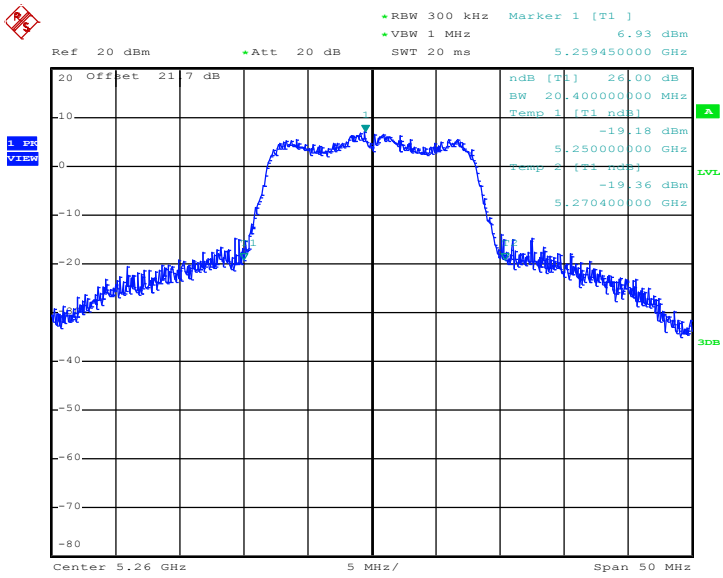
26 dB Bandwidth Plot on 802.11a Channel 52 - Legacy Ant 1



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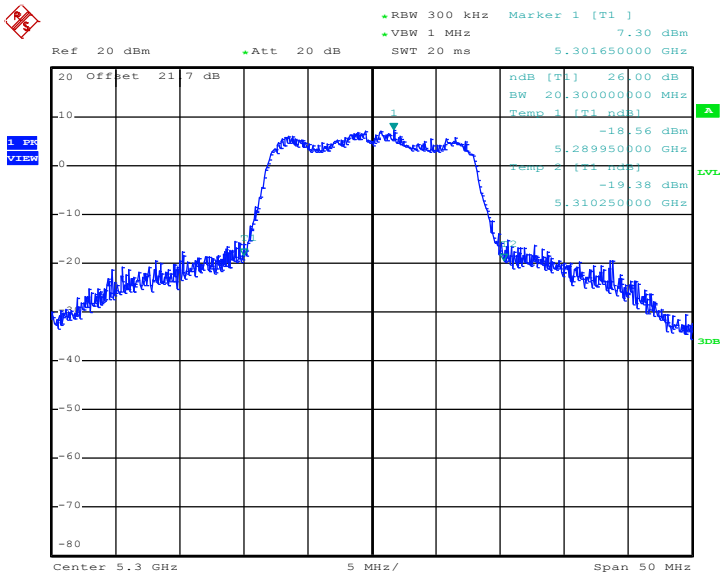
26 dB Bandwidth Plot on 802.11a Channel 60 - Legacy Ant 1



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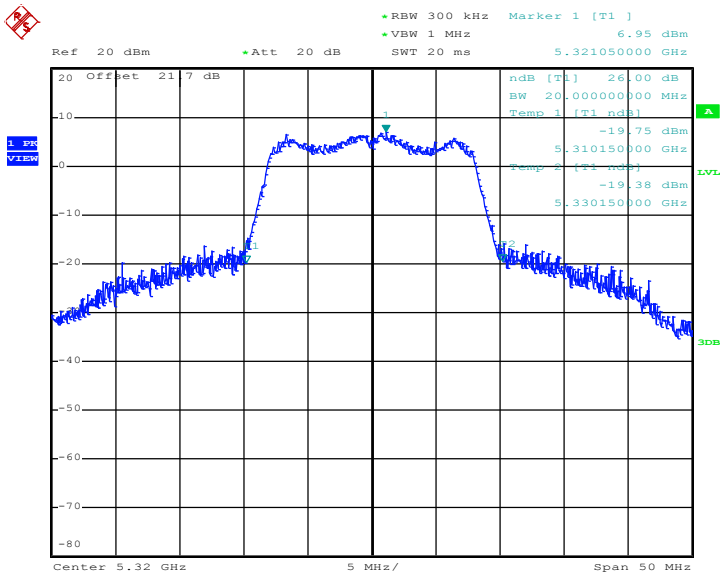
26 dB Bandwidth Plot on 802.11a Channel 64 - Legacy Ant 1



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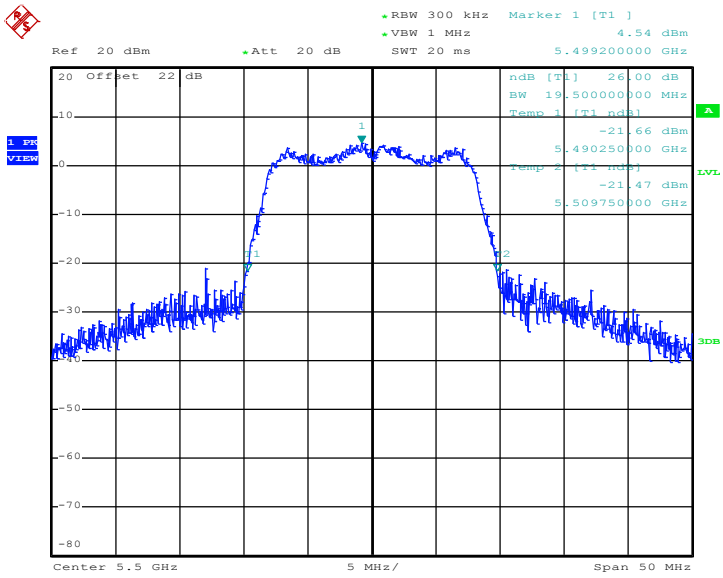
26 dB Bandwidth Plot on 802.11a Channel 100 - Legacy Ant 1



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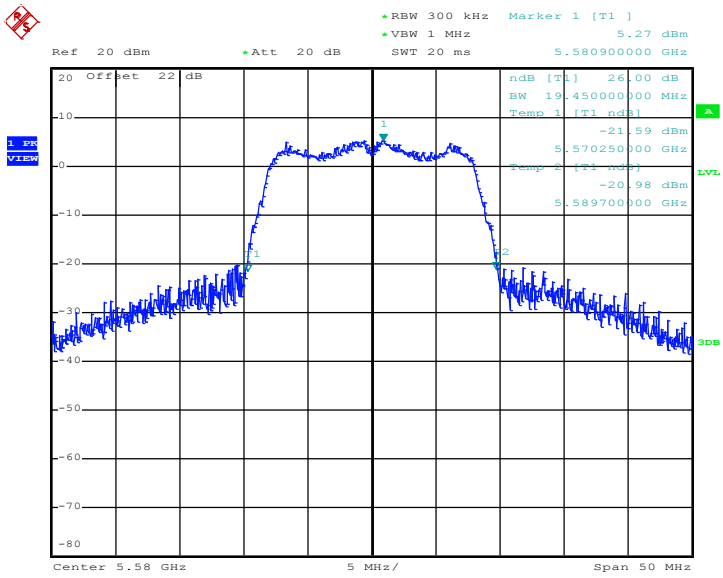
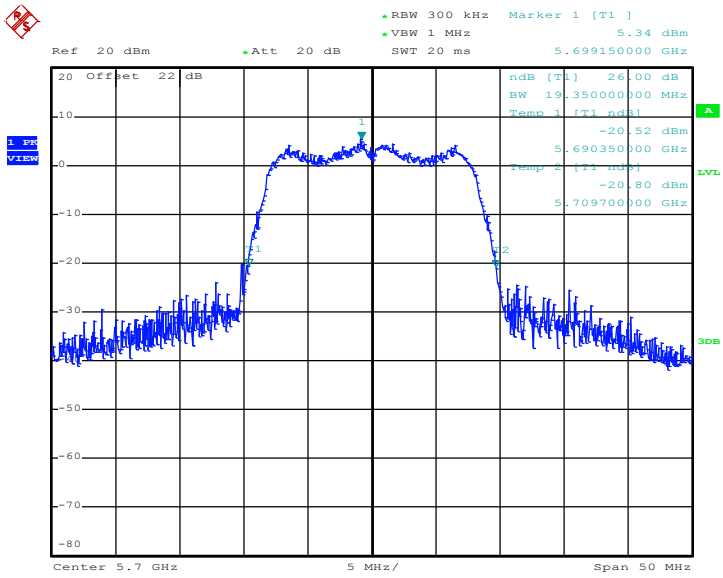
26 dB Bandwidth Plot on 802.11a Channel 116 - Legacy Ant 1



Date: 26.JUL.2012 23:17:32

26 dB Bandwidth Plot on 802.11a Channel 140 - Legacy Ant 1



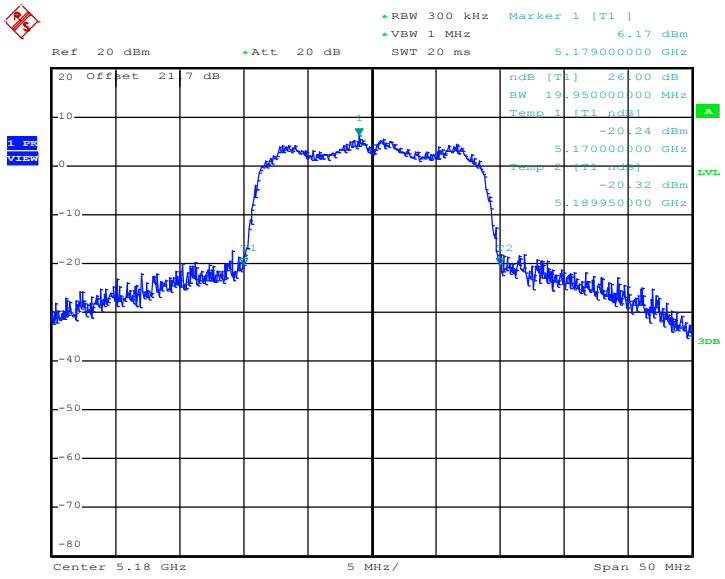
Date: 26.JUL.2012 23:21:43

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT20 (SISO, MIMO) 26dB Bandwidth (MHz)			Pass/Fail
		SISO Ant 1	MIMO Ant 1	MIMO Ant 2	
36	5180	19.95	19.70	19.75	N/A
44	5220	19.95	19.75	19.75	N/A
48	5240	20.10	19.90	19.60	N/A
52	5260	19.95	19.80	19.90	N/A
60	5300	19.95	19.85	19.85	N/A
64	5320	20.15	19.85	19.80	N/A
100	5500	19.75	19.80	19.75	N/A
116	5580	19.90	19.85	19.70	N/A
140	5700	19.90	19.70	19.65	N/A

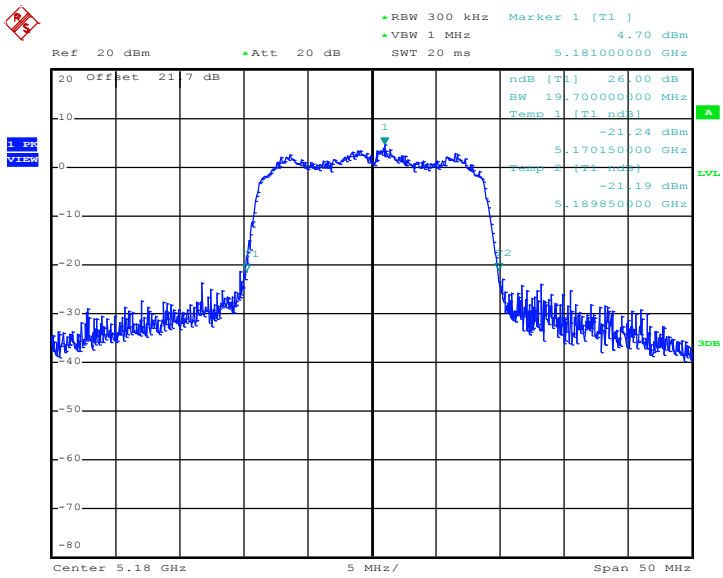
26 dB Bandwidth Plot on 802.11n HT20 Channel 36

- SISO Ant 1



26 dB Bandwidth Plot on 802.11n HT20 Channel 36

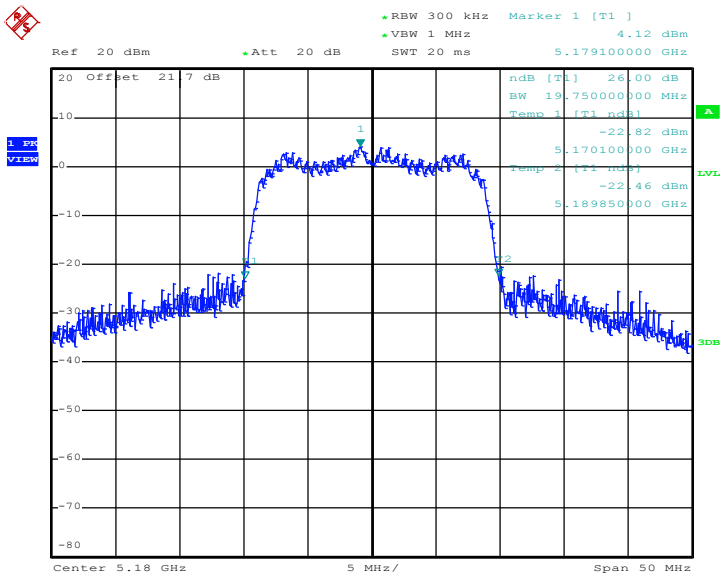
- MIMO Ant 1



Date: 28.JUL.2012 00:02:09

26 dB Bandwidth Plot on 802.11n HT20 Channel 36

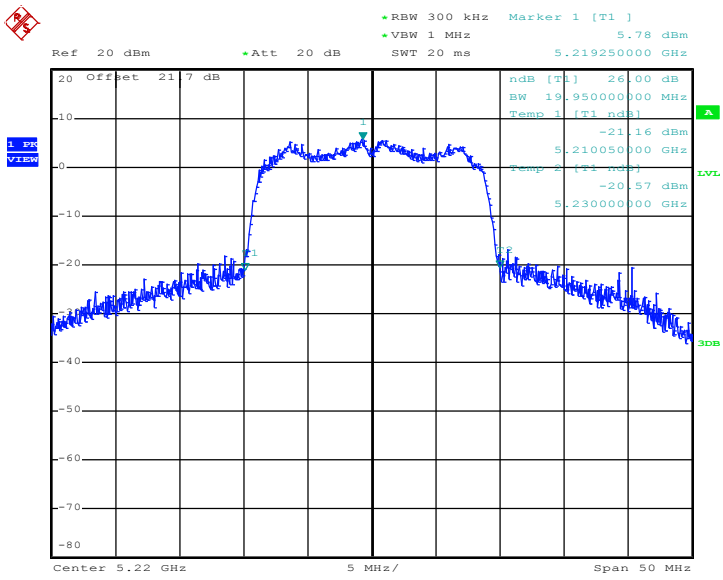
- MIMO Ant 2



Date: 27.JUL.2012 22:41:56

26 dB Bandwidth Plot on 802.11n HT20 Channel 44

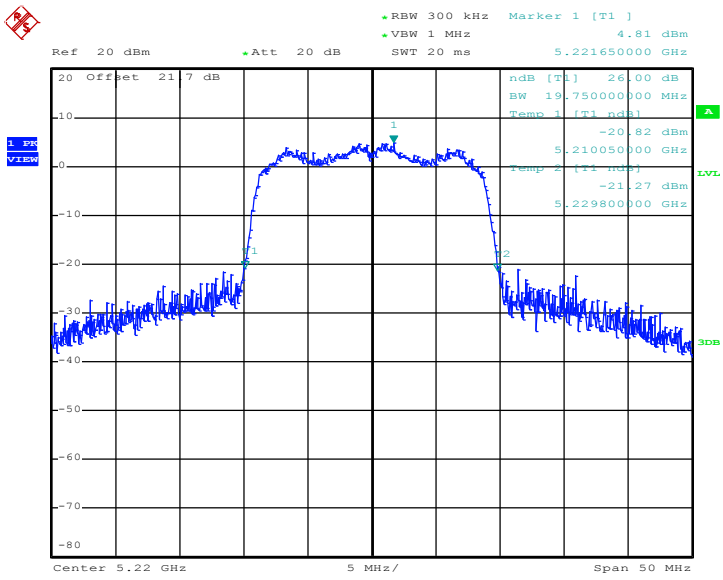
- SISO Ant 1



Date: 26.JUL.2012 23:44:27

26 dB Bandwidth Plot on 802.11n HT20 Channel 44

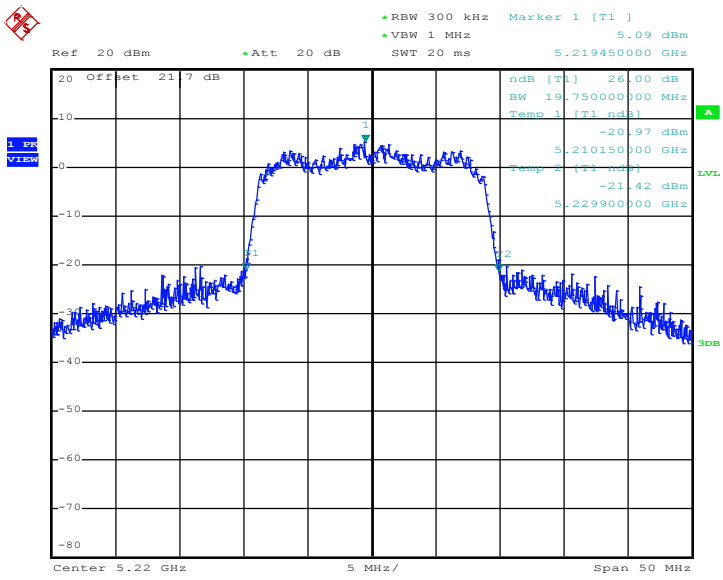
- MIMO Ant 1



Date: 27.JUL.2012 23:59:06

26 dB Bandwidth Plot on 802.11n HT20 Channel 44

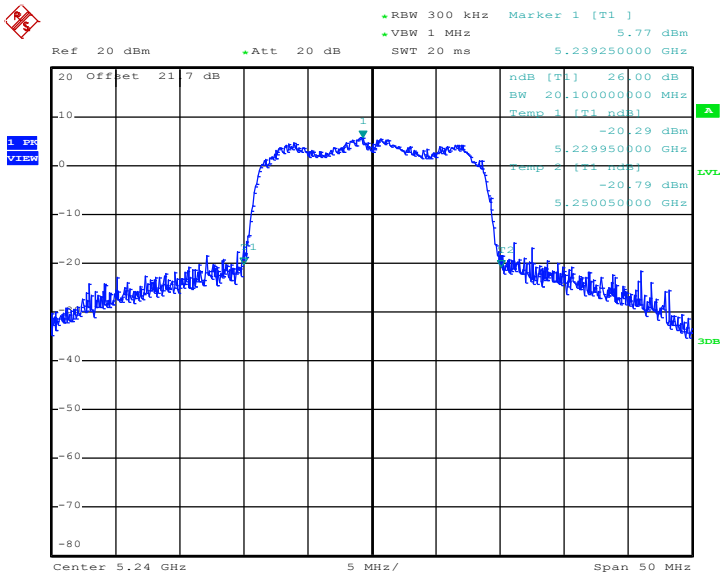
- MIMO Ant 2



Date: 27.JUL.2012 22:46:01

26 dB Bandwidth Plot on 802.11n HT20 Channel 48

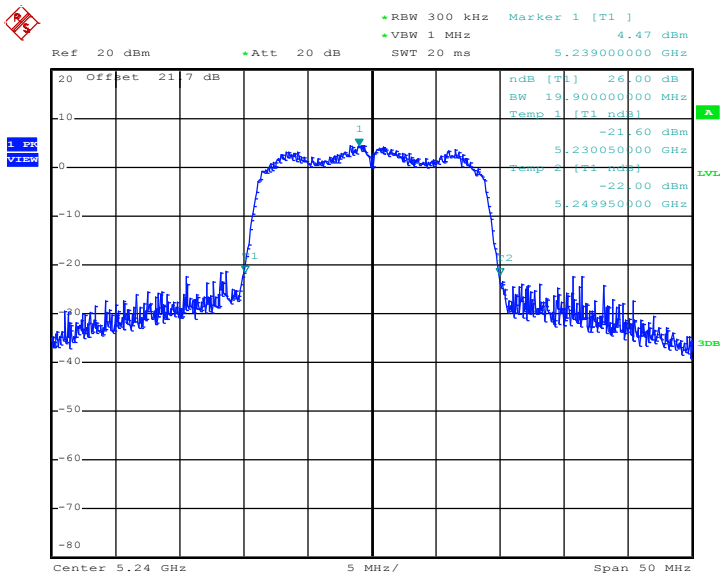
- SISO Ant 1



Date: 26.JUL.2012 23:47:55

26 dB Bandwidth Plot on 802.11n HT20 Channel 48

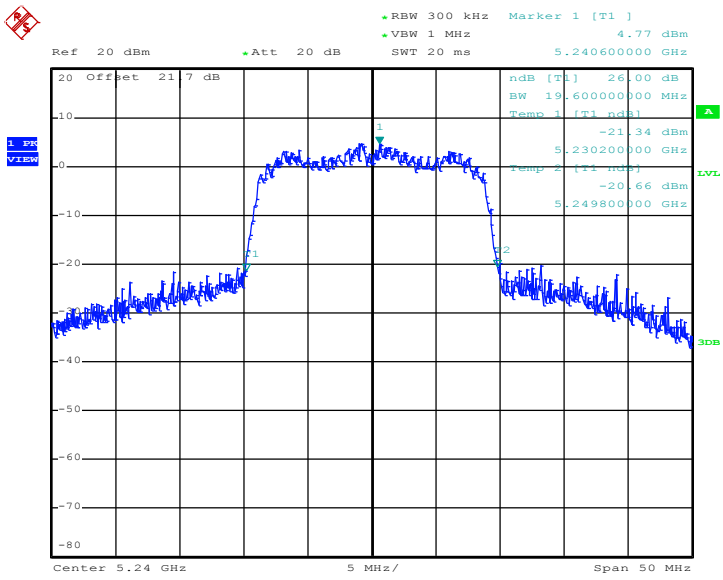
- MIMO Ant 1



Date: 27.JUL.2012 23:54:40

26 dB Bandwidth Plot on 802.11n HT20 Channel 48

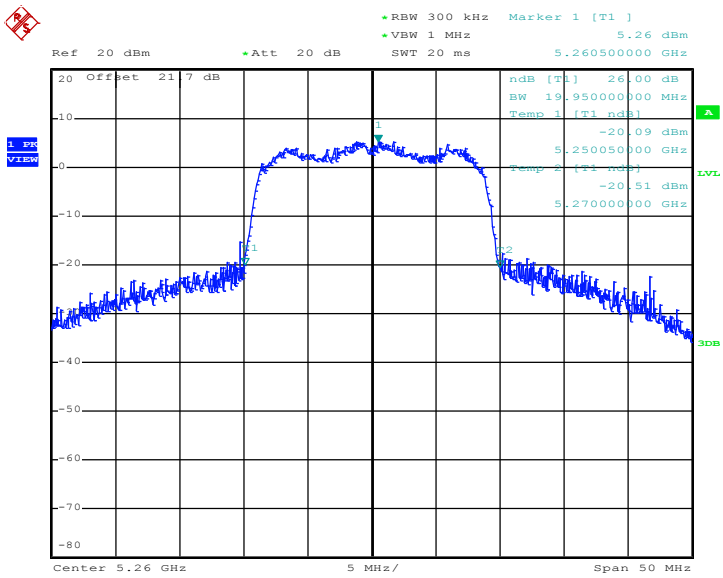
- MIMO Ant 2



Date: 27.JUL.2012 22:50:54

26 dB Bandwidth Plot on 802.11n HT20 Channel 52

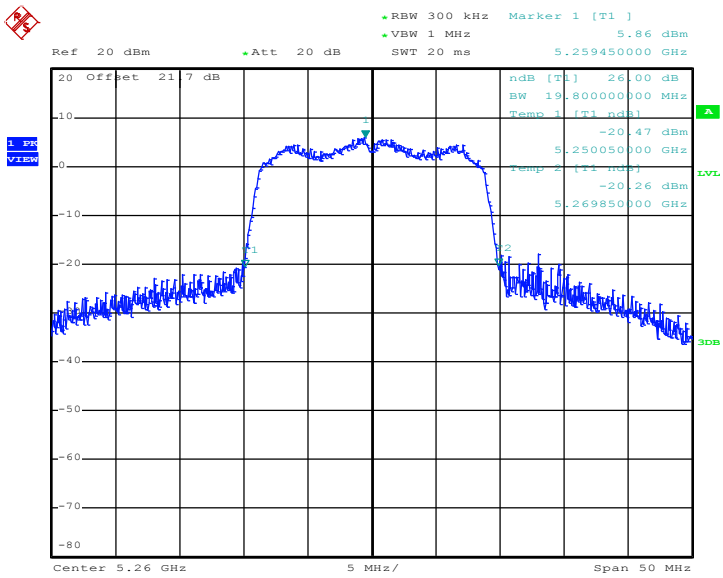
- SISO Ant 1



Date: 26.JUL.2012 23:51:06

26 dB Bandwidth Plot on 802.11n HT20 Channel 52

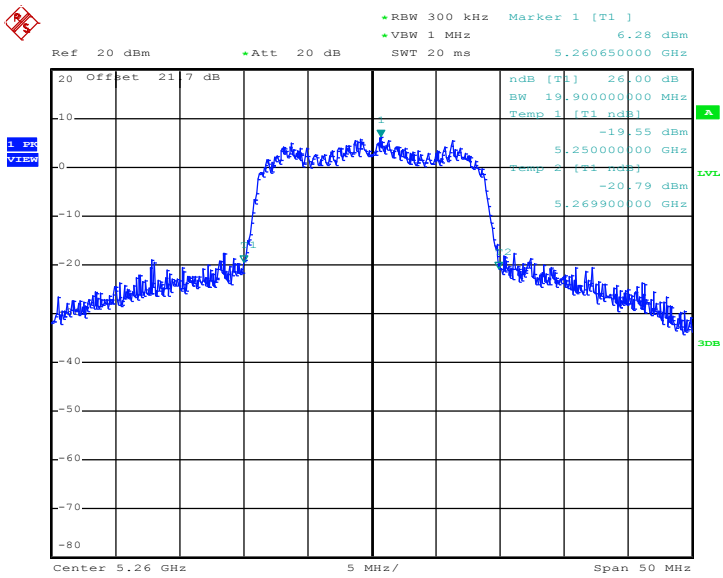
- MIMO Ant 1



Date: 27.JUL.2012 23:51:34

26 dB Bandwidth Plot on 802.11n HT20 Channel 52

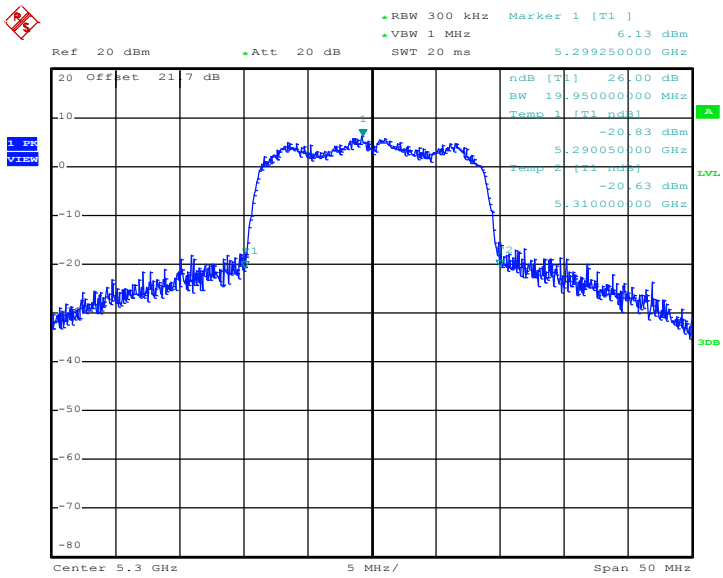
- MIMO Ant 2



Date: 27.JUL.2012 22:55:10

26 dB Bandwidth Plot on 802.11n HT20 Channel 60

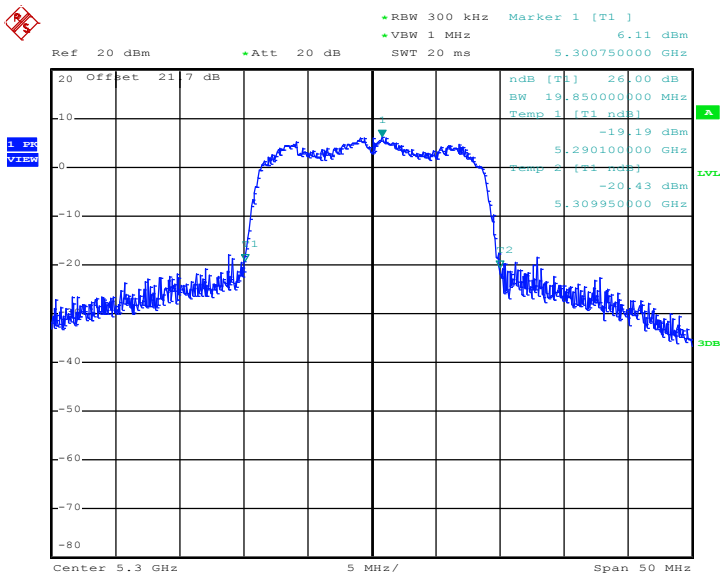
- SISO Ant 1



Date: 26.JUL.2012 23:56:03

26 dB Bandwidth Plot on 802.11n HT20 Channel 60

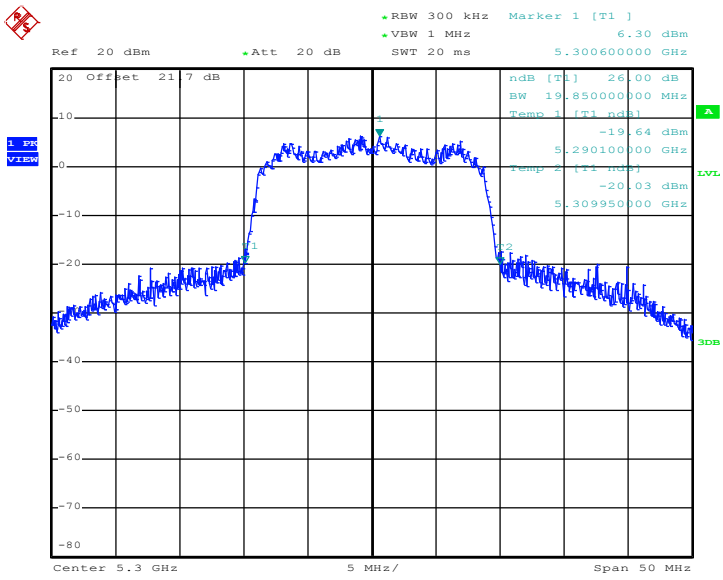
- MIMO Ant 1



Date: 27.JUL.2012 23:47:29

26 dB Bandwidth Plot on 802.11n HT20 Channel 60

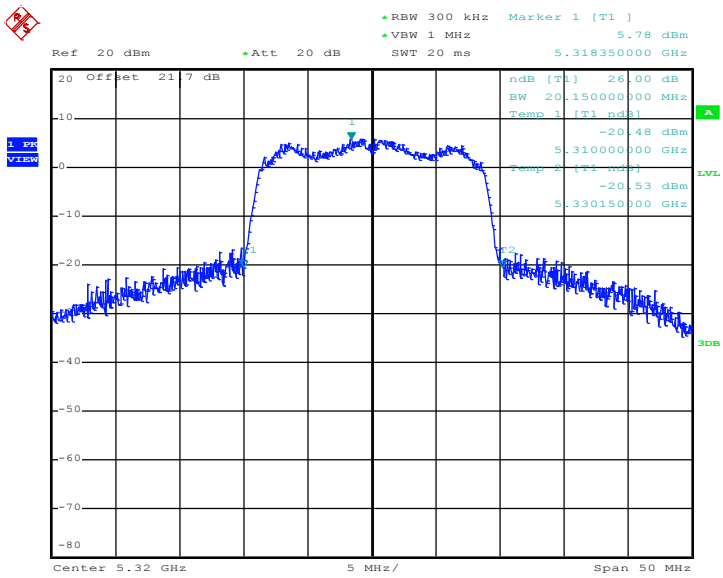
- MIMO Ant 2



Date: 27.JUL.2012 23:09:28

26 dB Bandwidth Plot on 802.11n HT20 Channel 64

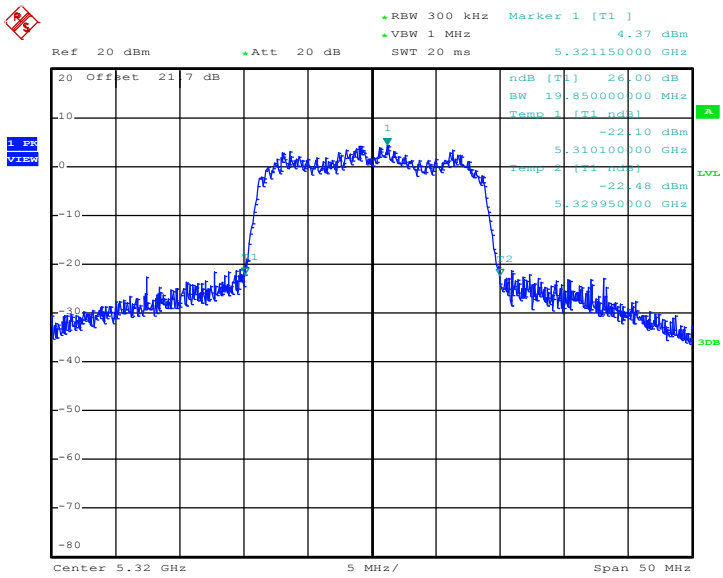
- SISO Ant 1



Date: 27.JUL.2012 00:00:41

26 dB Bandwidth Plot on 802.11n HT20 Channel 64

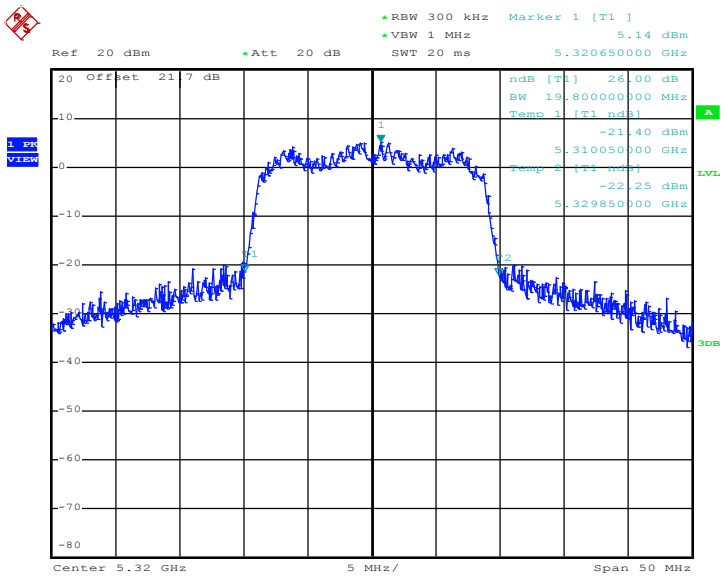
- MIMO Ant 1



Date: 28.JUL.2012 01:51:51

26 dB Bandwidth Plot on 802.11n HT20 Channel 64

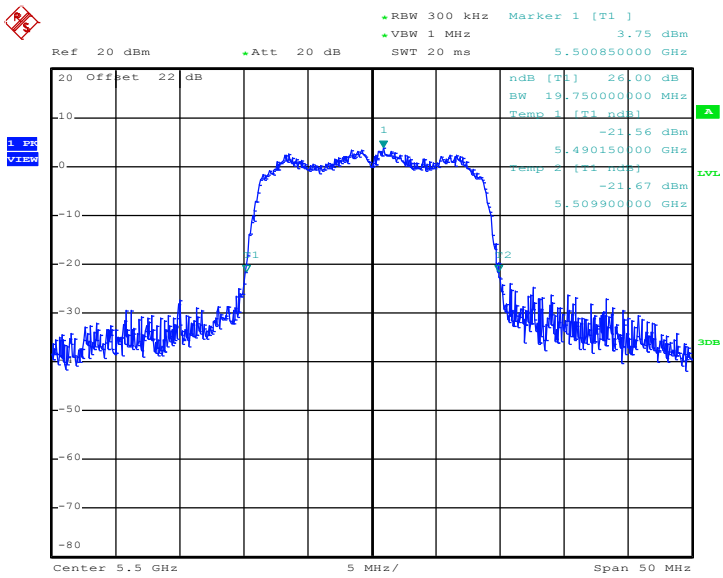
- MIMO Ant 2



Date: 27.JUL.2012 23:13:18

26 dB Bandwidth Plot on 802.11n HT20 Channel 100

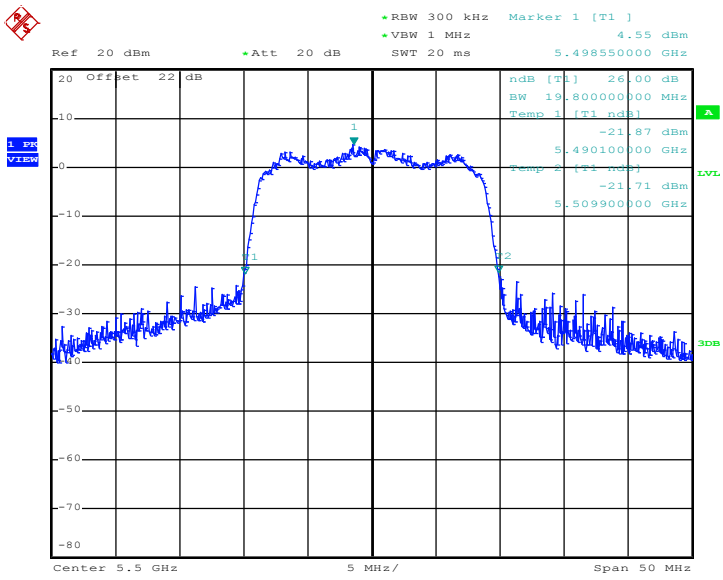
- SISO Ant 1



Date: 27.JUL.2012 00:04:15

26 dB Bandwidth Plot on 802.11n HT20 Channel 100

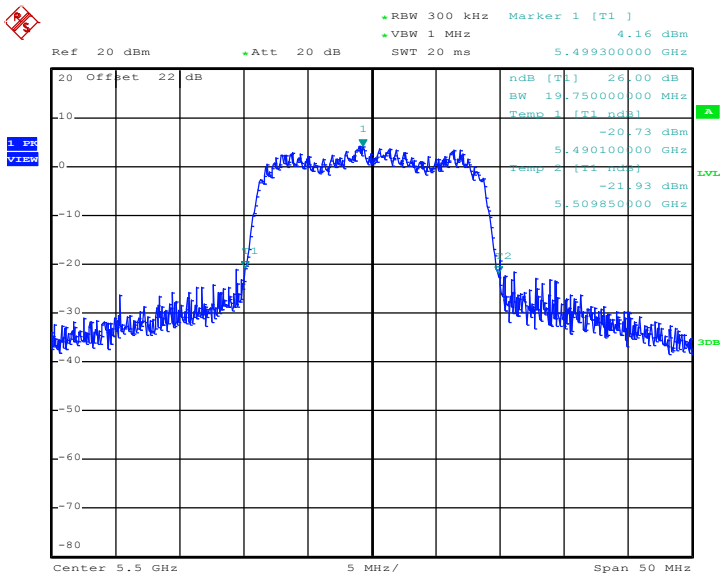
- MIMO Ant 1



Date: 27.JUL.2012 23:40:39

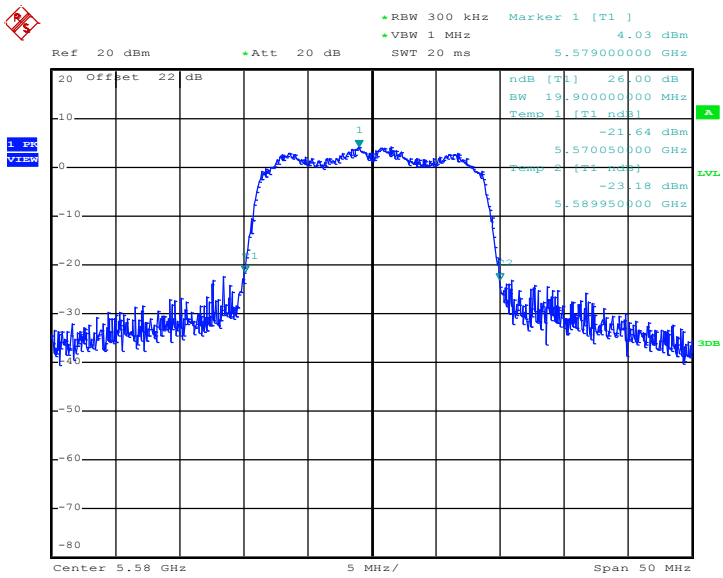
26 dB Bandwidth Plot on 802.11n HT20 Channel 100

- MIMO Ant 2



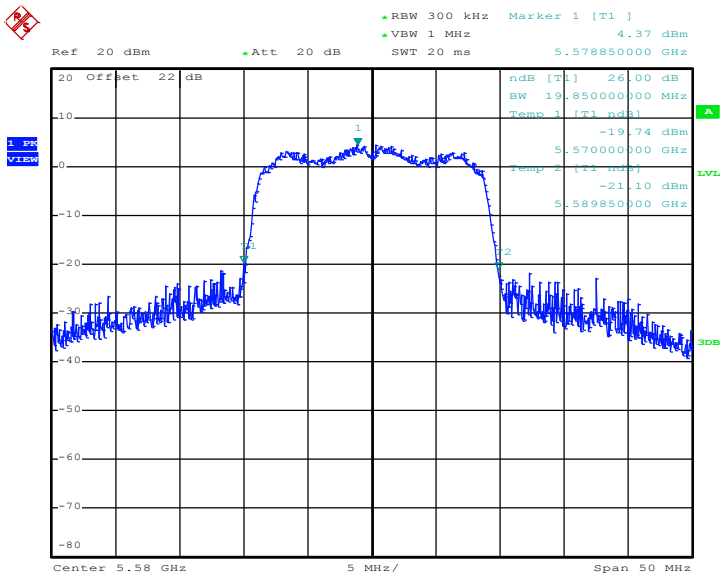
Date: 27.JUL.2012 23:16:48

26 dB Bandwidth Plot on 802.11n HT20 Channel 116 - SISO Ant 1



Date: 27.JUL.2012 00:07:29

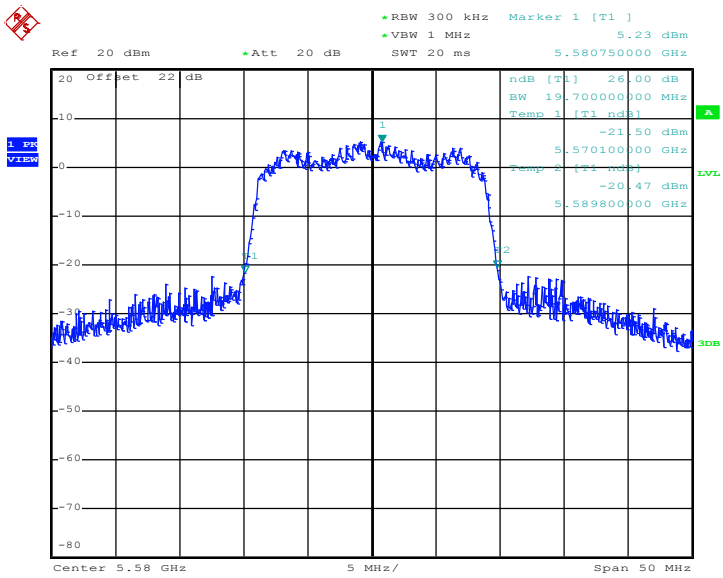
26 dB Bandwidth Plot on 802.11n HT20 Channel 116 - MIMO Ant 1



Date: 27.JUL.2012 23:36:46

26 dB Bandwidth Plot on 802.11n HT20 Channel 116

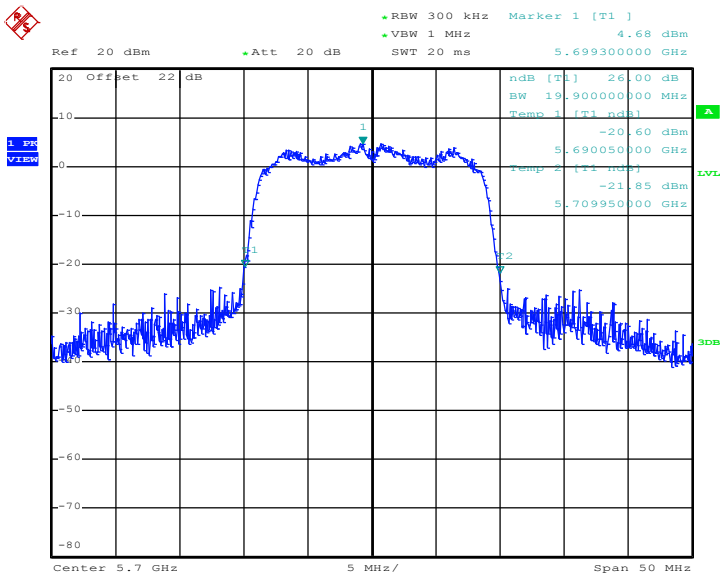
- MIMO Ant 2



Date: 27.JUL.2012 23:23:11

26 dB Bandwidth Plot on 802.11n HT20 Channel 140

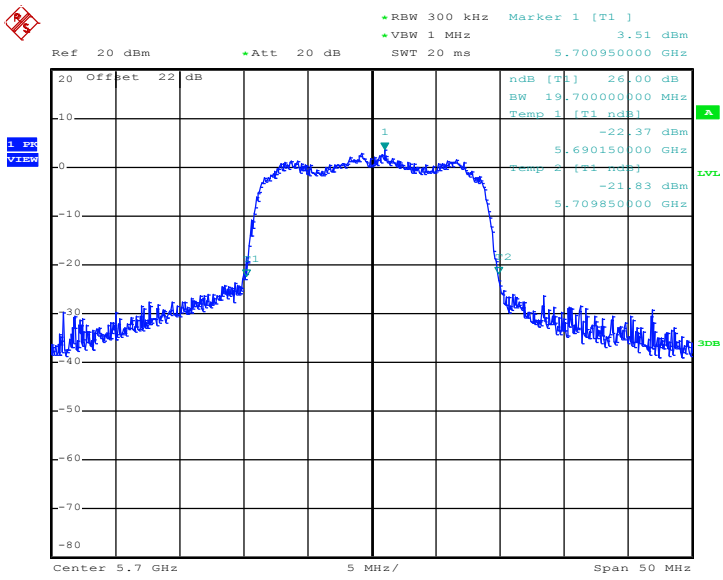
- SISO Ant 1



Date: 27.JUL.2012 00:10:32

26 dB Bandwidth Plot on 802.11n HT20 Channel 140

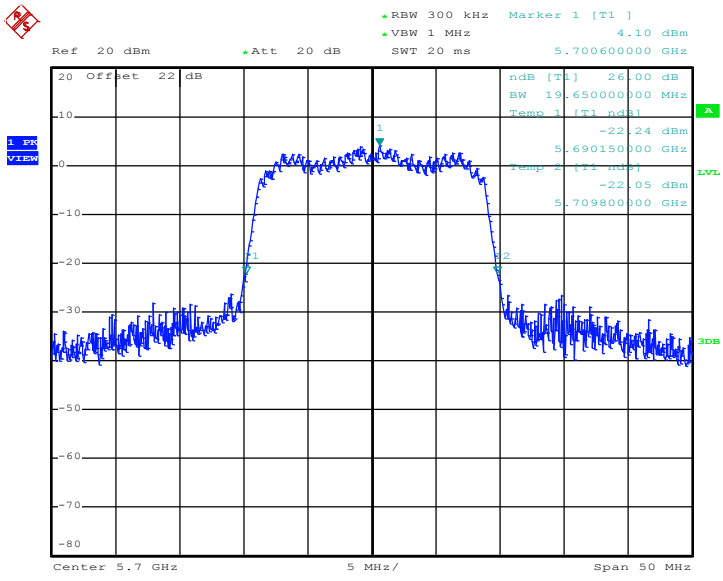
- MIMO Ant 1



Date: 27.JUL.2012 23:33:54

26 dB Bandwidth Plot on 802.11n HT20 Channel 140

- MIMO Ant 2



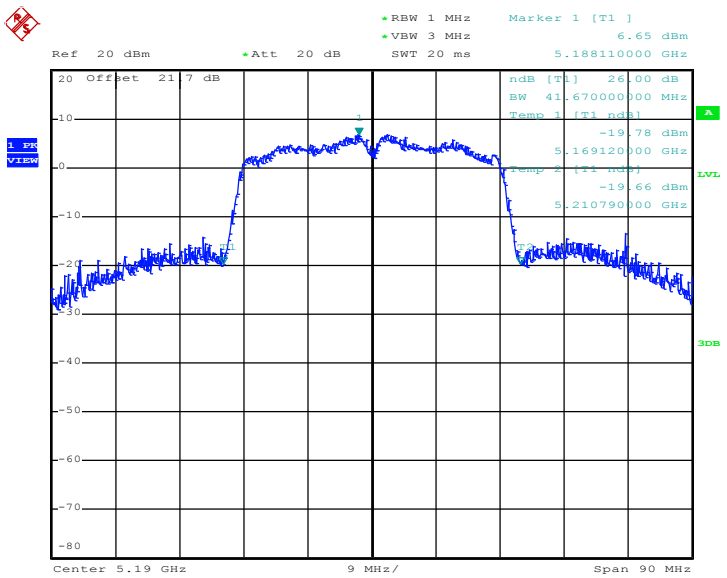
Date: 27.JUL.2012 23:29:37

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT40 (SISO, MIMO) 26dB Bandwidth (MHz)			Pass/Fail
		SISO Ant 1	MIMO Ant 1	MIMO Ant 2	
38	5190	41.67	41.49	41.31	N/A
46	5230	45.27	41.67	41.76	N/A
54	5270	46.89	43.65	42.12	N/A
62	5310	41.40	41.04	41.31	N/A
102	5510	41.13	40.95	41.67	N/A
110	5550	41.04	41.49	41.76	N/A
134	5670	41.31	41.22	41.49	N/A

26 dB Bandwidth Plot on 802.11n HT40 Channel 38

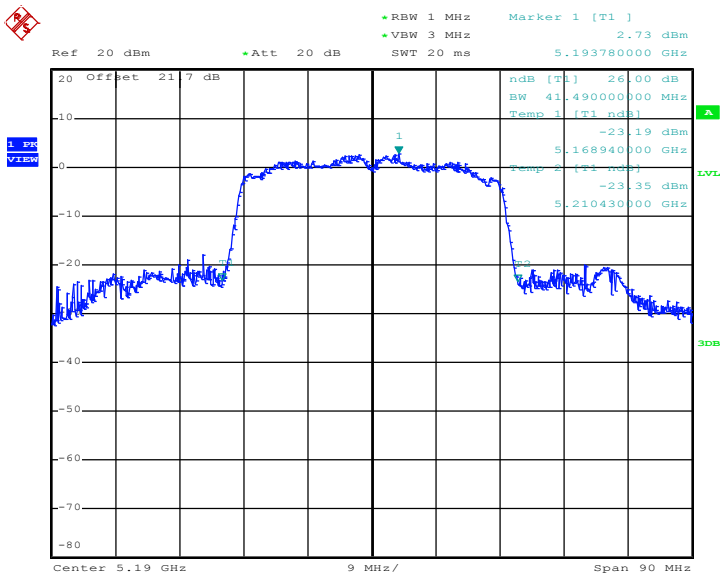
- SISO Ant 1



Date: 27.JUL.2012 00:26:54

26 dB Bandwidth Plot on 802.11n HT40 Channel 38

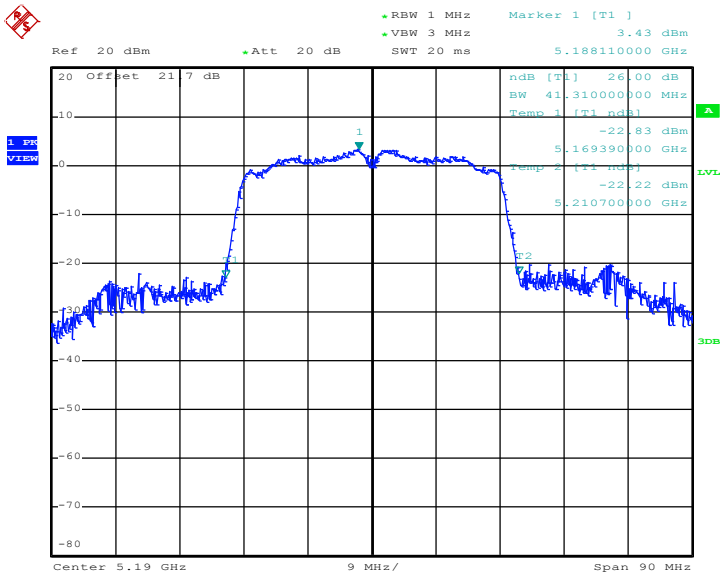
- MIMO Ant 1



Date: 28.JUL.2012 01:05:44

26 dB Bandwidth Plot on 802.11n HT40 Channel 38

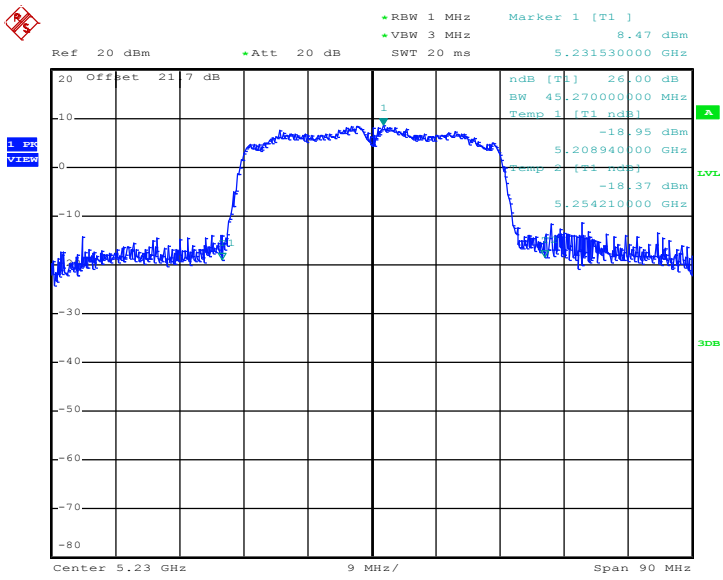
- MIMO Ant 2



Date: 28.JUL.2012 01:08:40

26 dB Bandwidth Plot on 802.11n HT40 Channel 46

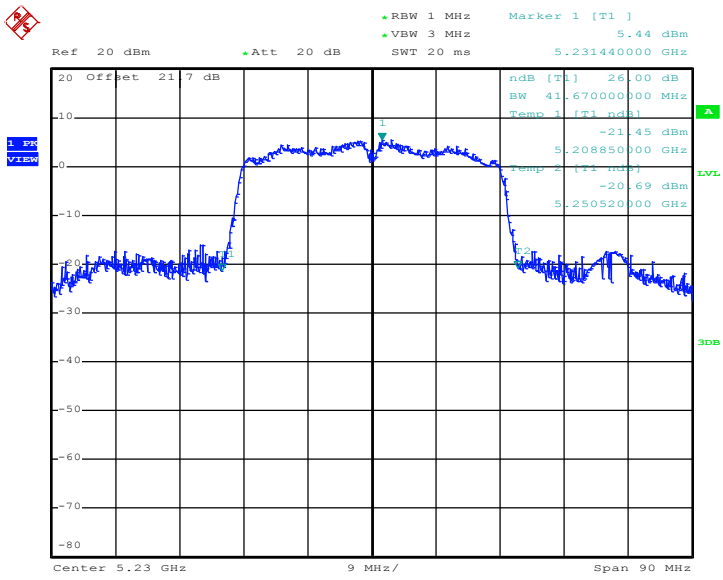
- SISO Ant 1



Date: 27.JUL.2012 00:36:53

26 dB Bandwidth Plot on 802.11n HT40 Channel 46

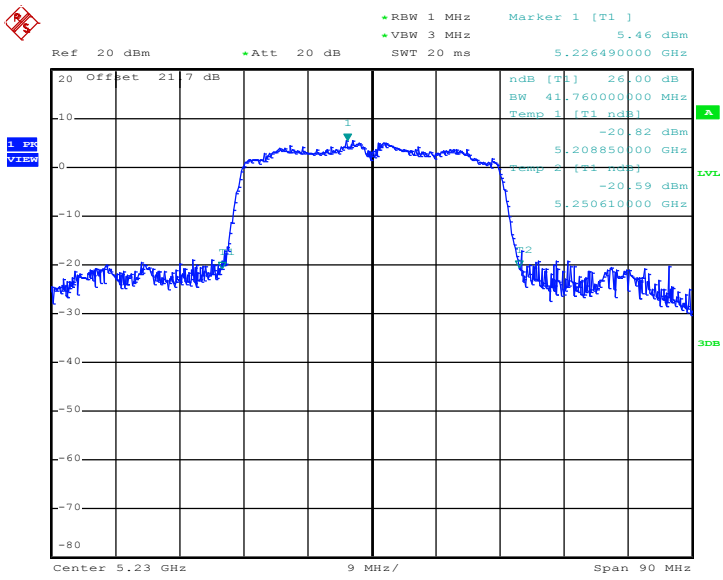
- MIMO Ant 1



Date: 28.JUL.2012 01:12:01

26 dB Bandwidth Plot on 802.11n HT40 Channel 46

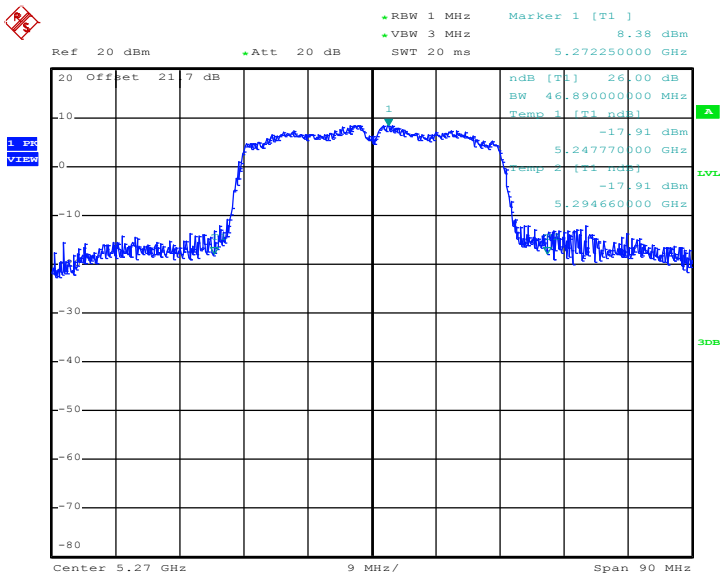
- MIMO Ant 2



Date: 28.JUL.2012 01:15:38

26 dB Bandwidth Plot on 802.11n HT40 Channel 54

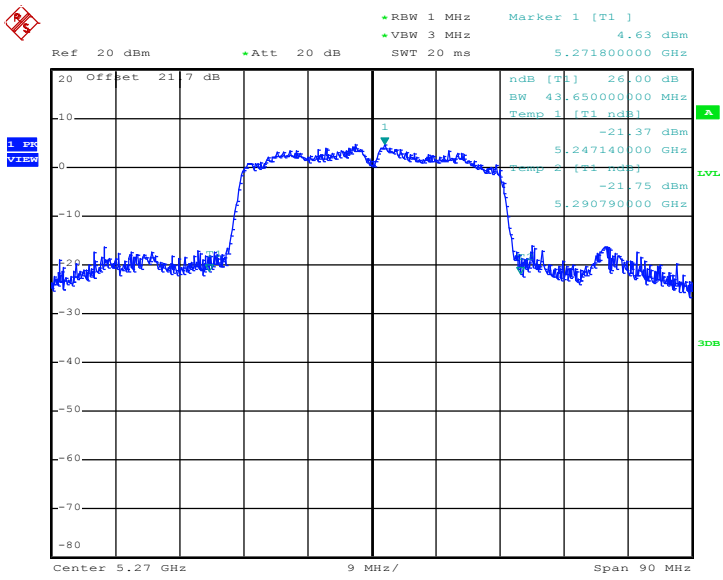
- SISO Ant 1



Date: 27.JUL.2012 00:44:40

26 dB Bandwidth Plot on 802.11n HT40 Channel 54

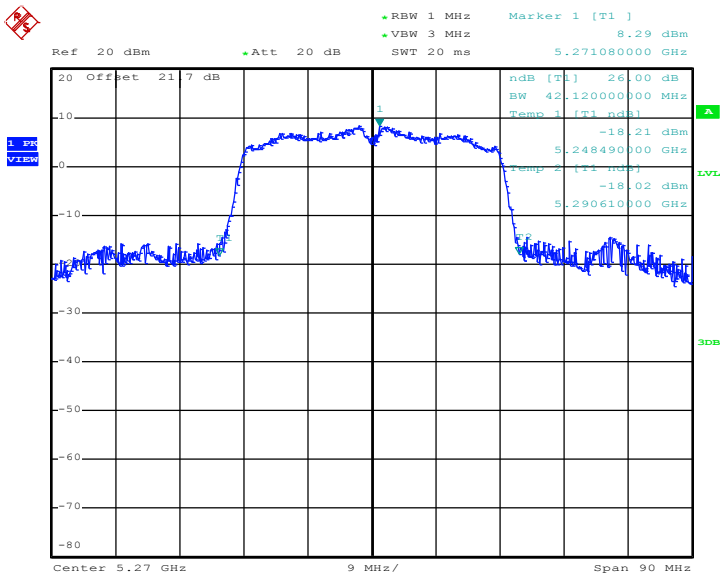
- MIMO Ant 1



Date: 28.JUL.2012 01:17:25

26 dB Bandwidth Plot on 802.11n HT40 Channel 54

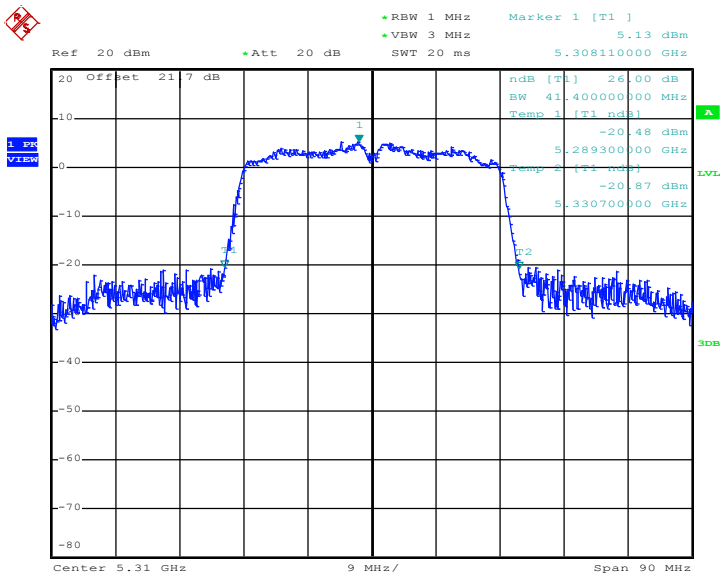
- MIMO Ant 2



Date: 28.JUL.2012 01:19:35

26 dB Bandwidth Plot on 802.11n HT40 Channel 62

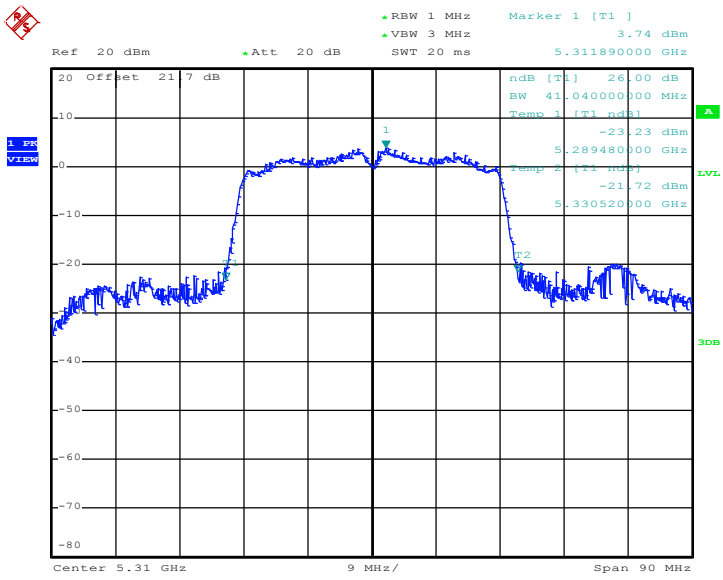
- SISO Ant 1



Date: 27.JUL.2012 00:50:37

26 dB Bandwidth Plot on 802.11n HT40 Channel 62

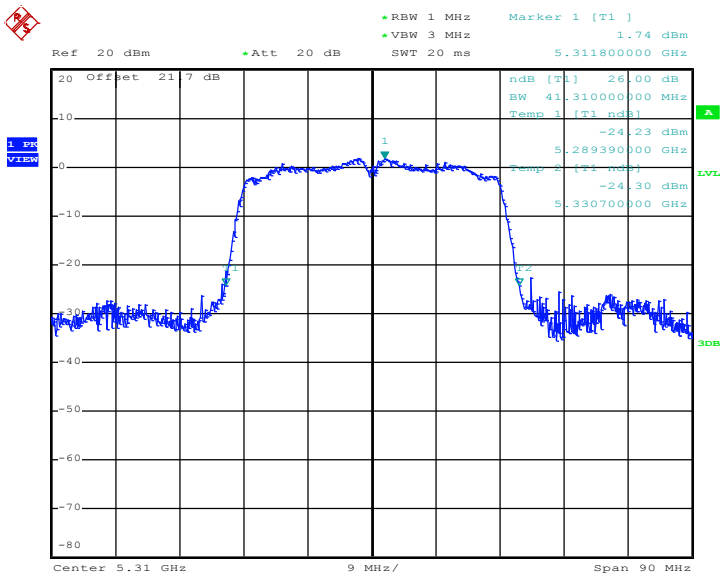
- MIMO Ant 1



Date: 28.JUL.2012 01:27:27

26 dB Bandwidth Plot on 802.11n HT40 Channel 62

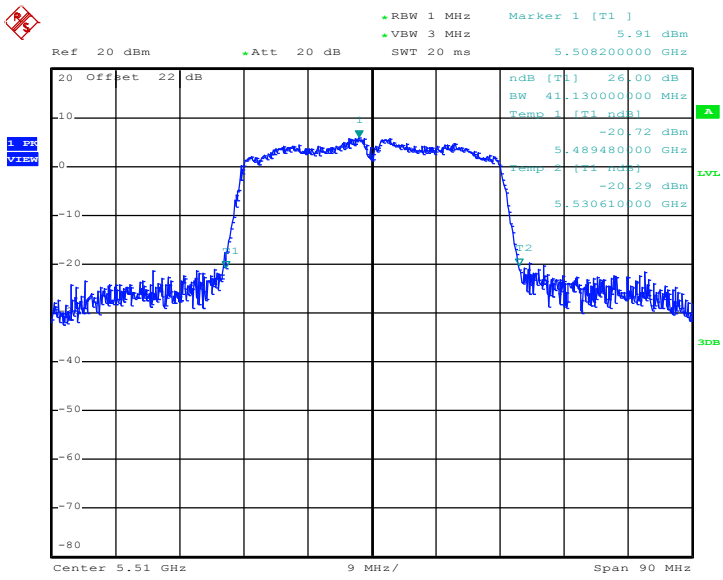
- MIMO Ant 2



Date: 28.JUL.2012 01:30:21

26 dB Bandwidth Plot on 802.11n HT40 Channel 102

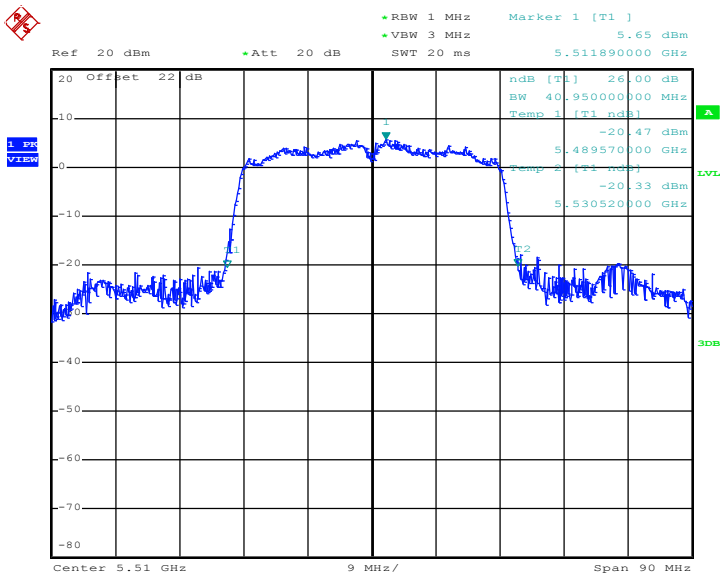
- SISO Ant 1



Date: 27.JUL.2012 00:55:57

26 dB Bandwidth Plot on 802.11n HT40 Channel 102

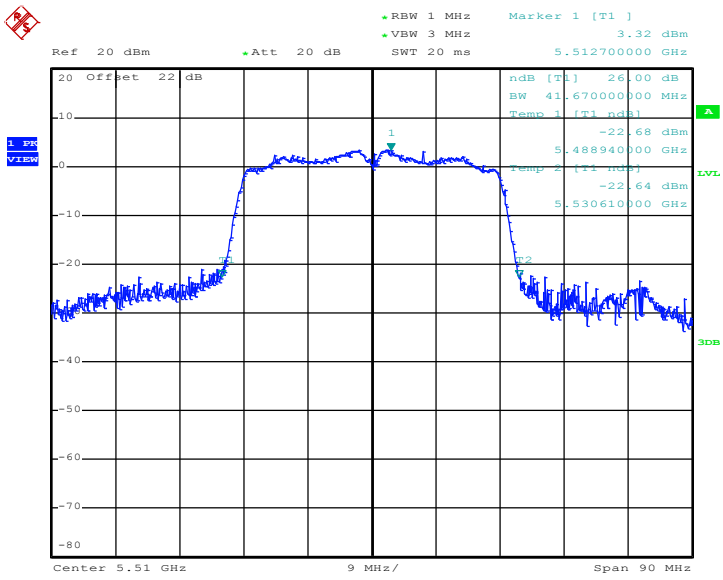
- MIMO Ant 1



Date: 28.JUL.2012 00:45:15

26 dB Bandwidth Plot on 802.11n HT40 Channel 102

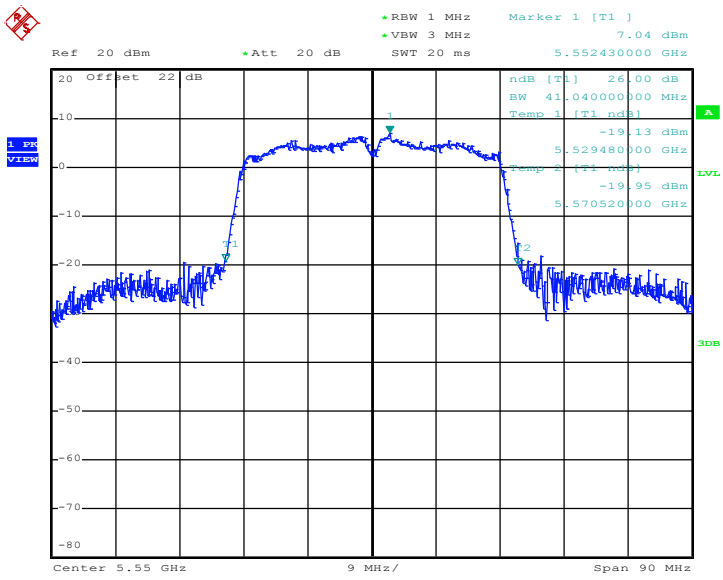
- MIMO Ant 2



Date: 28.JUL.2012 00:48:41

26 dB Bandwidth Plot on 802.11n HT40 Channel 110

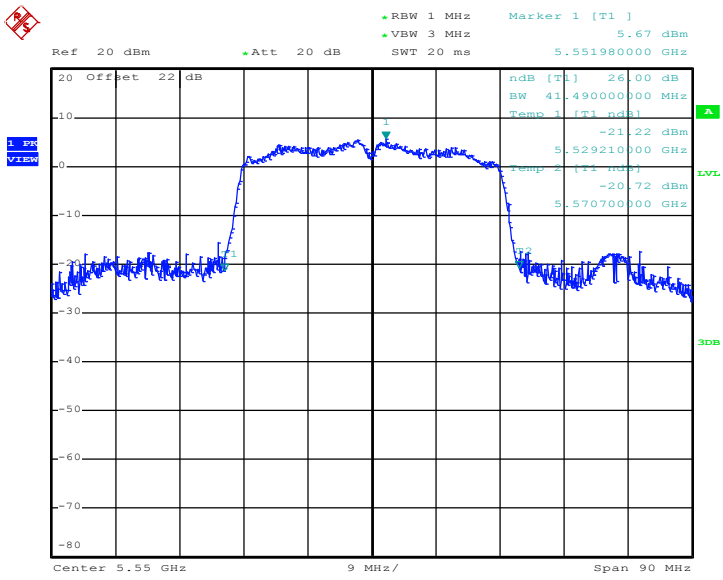
- SISO Ant 1



Date: 27.JUL.2012 01:01:32

26 dB Bandwidth Plot on 802.11n HT40 Channel 110

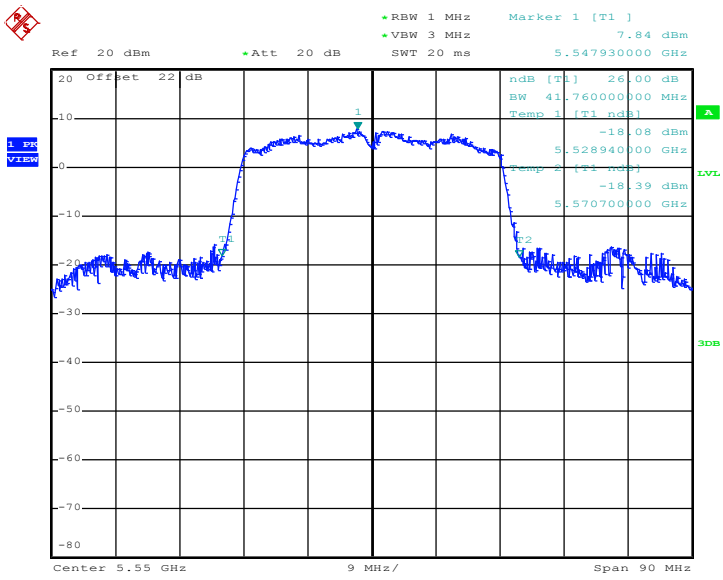
- MIMO Ant 1



Date: 28.JUL.2012 00:52:26

26 dB Bandwidth Plot on 802.11n HT40 Channel 110

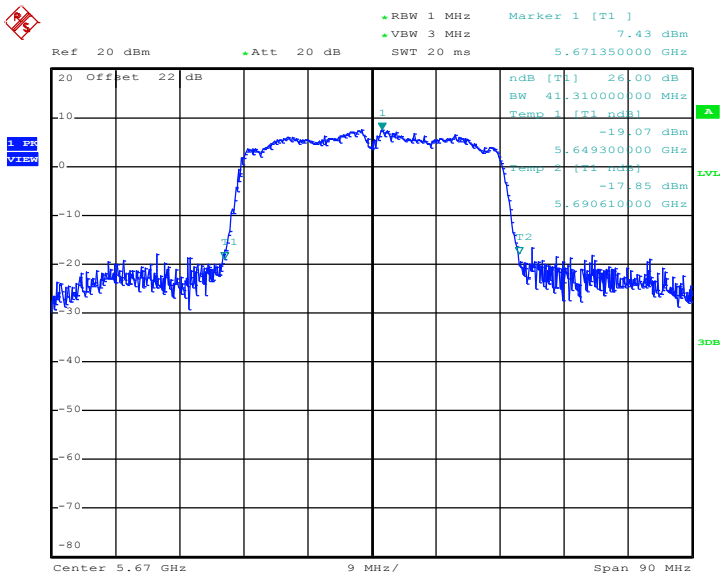
- MIMO Ant 2



Date: 28.JUL.2012 00:55:59

26 dB Bandwidth Plot on 802.11n HT40 Channel 134

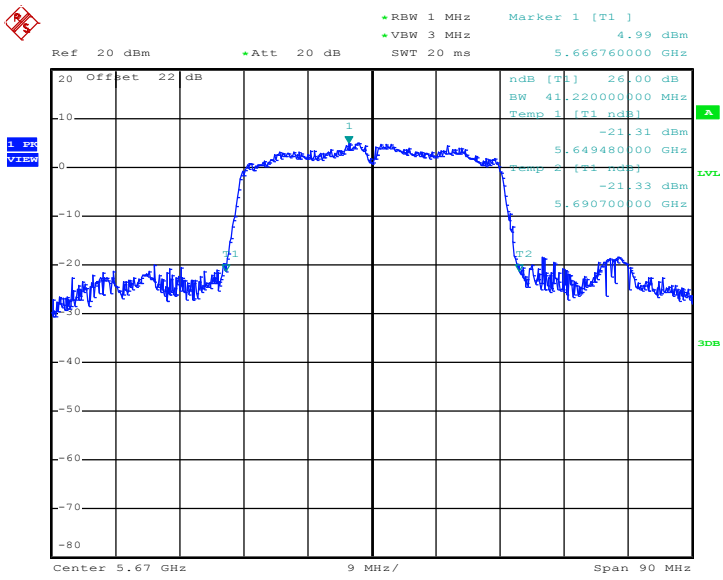
- SISO Ant 1



Date: 27.JUL.2012 01:04:20

26 dB Bandwidth Plot on 802.11n HT40 Channel 134

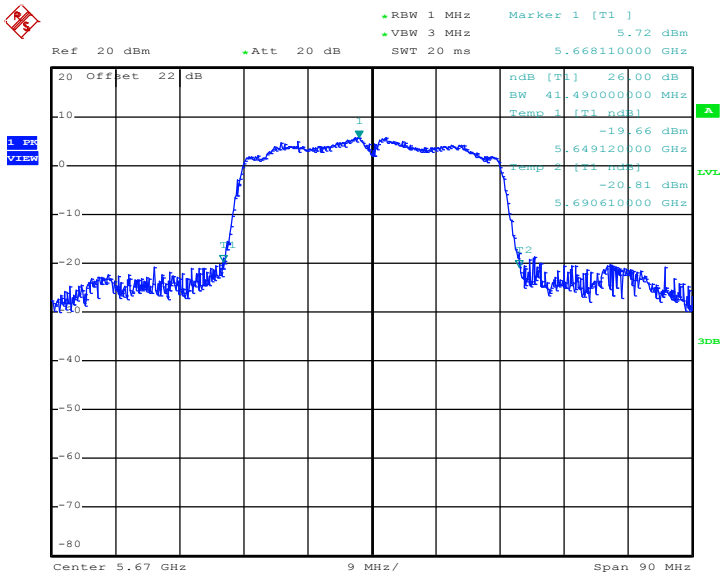
- MIMO Ant 1



Date: 28.JUL.2012 01:00:51

26 dB Bandwidth Plot on 802.11n HT40 Channel 134

- MIMO Ant 2



Date: 28.JUL.2012 00:57:52

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

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

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log 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.

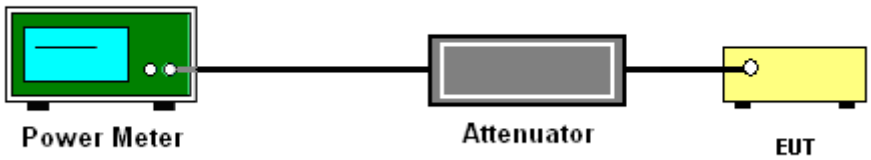
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows Method PM of FCC KDB 789033 D01 General UNII Test Procedures v01r01. Method PM (Measurement using an RF average power meter):
2. Measurement is performed using a wideband RF power meter.
3. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
4. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	99.17% for Ant 1	Duty Factor	0.04dB for Ant 1

Channel	Frequency (MHz)	802.11a Output Power (dBm)		Max. Limits (dBm)	Pass /Fail
		Measured	Final		
		Legacy Ant 1	Legacy Ant 1		
36	5180	11.78	11.82	17.00	Pass
44	5220	12.61	12.65	17.00	Pass
48	5240	11.84	11.88	17.00	Pass
52	5260	12.11	12.15	24.00	Pass
60	5300	12.61	12.65	24.00	Pass
64	5320	12.15	12.19	24.00	Pass
100	5500	10.66	10.70	23.90	Pass
116	5580	11.40	11.44	23.89	Pass
140	5700	10.70	10.74	23.87	Pass

Note:

1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B (26dB BW).
3. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	99.13% for SISO Ant 1	Duty Factor	0.04dB for SISO Ant 1

Channel	Frequency (MHz)	802.11n HT20 Output Power (dBm)		Max. Limits (dBm)	Pass /Fail
		Measured	Final		
		SISO Ant 1	SISO Ant 1		
36	5180	11.11	11.15	17.00	Pass
44	5220	12.27	12.31	17.00	Pass
48	5240	11.57	11.61	17.00	Pass
52	5260	12.01	12.05	24.00	Pass
60	5300	12.56	12.60	24.00	Pass
64	5320	12.14	12.18	24.00	Pass
100	5500	10.65	10.69	23.96	Pass
116	5580	10.86	10.90	23.99	Pass
140	5700	10.56	10.60	23.99	Pass

Note:

1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B (26dB BW).
3. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	98.31% for MIMO Ant 1 98.21% for MIMO Ant 2	Duty Factor	0.07dB for MIMO Ant 1 0.08dB for MIMO Ant 2

Channel	Frequency (MHz)	802.11n HT20 (2Tx) Output Power (dBm)					Max. Limits (dBm)	Pass /Fail
		Measured		Final				
		MIMO Ant 1	MIMO Ant 2	MIMO Ant 1	MIMO Ant 2	MIMO Ant 1+2		
36	5180	10.81	11.67	10.88	11.75	14.35	16.96	Pass
44	5220	11.27	12.26	11.34	12.34	14.88	16.96	Pass
48	5240	11.20	12.10	11.27	12.18	14.76	16.99	Pass
52	5260	12.55	13.62	12.62	13.70	16.20	23.99	Pass
60	5300	12.66	13.83	12.73	13.91	16.37	23.98	Pass
64	5320	11.47	12.32	11.54	12.40	15.00	23.98	Pass
100	5500	10.18	11.76	10.25	11.84	14.13	23.97	Pass
116	5580	11.76	12.54	11.83	12.62	15.25	23.98	Pass
140	5700	9.70	10.80	9.77	10.88	13.37	23.94	Pass

Note:

1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B (26dB BW).
3. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	98.60% for SISO Ant 1	Duty Factor	0.06dB for SISO Ant 1

Channel	Frequency (MHz)	802.11n HT40 Output Power (dBm)		Max. Limits (dBm)	Pass /Fail
		Measured	Final		
		SISO Ant 1	SISO Ant 1		
38	5190	9.19	9.25	17	Pass
46	5230	11.97	12.03	17	Pass
54	5270	12.09	12.15	24	Pass
62	5310	9.65	9.71	24	Pass
102	5510	9.83	9.89	24	Pass
110	5550	10.68	10.74	24	Pass
134	5670	10.70	10.76	24	Pass

Note:

1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B (26dB BW).
3. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	97.39% for MIMO Ant 1 96.70% for MIMO Ant 2	Duty Factor	0.12dB for MIMO Ant 1 0.15dB for MIMO Ant 2

Channel	Frequency (MHz)	802.11n HT40 (2Tx) Output Power (dBm)					Max. Limits (dBm)	Pass /Fail
		Measured		Final				
		MIMO Ant 1	MIMO Ant 2	MIMO Ant 1	MIMO Ant 2	MIMO Ant 1+2		
38	5190	10.73	11.06	10.85	11.21	14.04	17	Pass
46	5230	11.30	11.88	11.42	12.03	14.74	17	Pass
54	5270	12.41	13.40	12.53	13.55	16.08	24	Pass
62	5310	8.91	10.06	9.03	10.21	12.67	24	Pass
102	5510	9.72	10.47	9.84	10.62	13.25	24	Pass
110	5550	11.77	12.16	11.89	12.31	15.11	24	Pass
134	5670	10.10	11.74	10.22	11.89	14.14	24	Pass

Note:

1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B (26dB BW).
3. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r01.

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 v01r01.
   - Measure the duty cycle.
   - Set span to encompass the entire emission bandwidth (EBW) of the signal.
   - Set RBW = 1 MHz.
   - Set VBW ≥ 3 MHz.
   - Number of points in sweep ≥ 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.

4. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v01r01.

   Method (1): Measure and sum the spectra across the outputs.

   The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

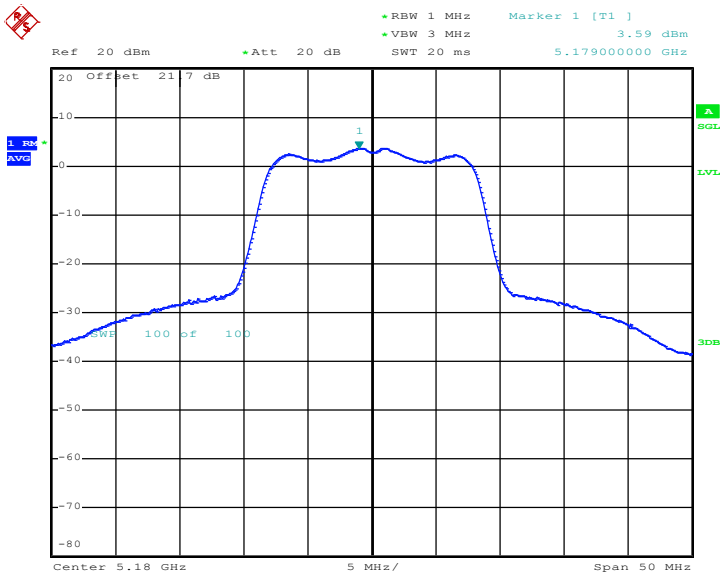
3.3.4 Test Setup

3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	99.17% for Ant 1	Duty Factor	0.04dB for Ant 1

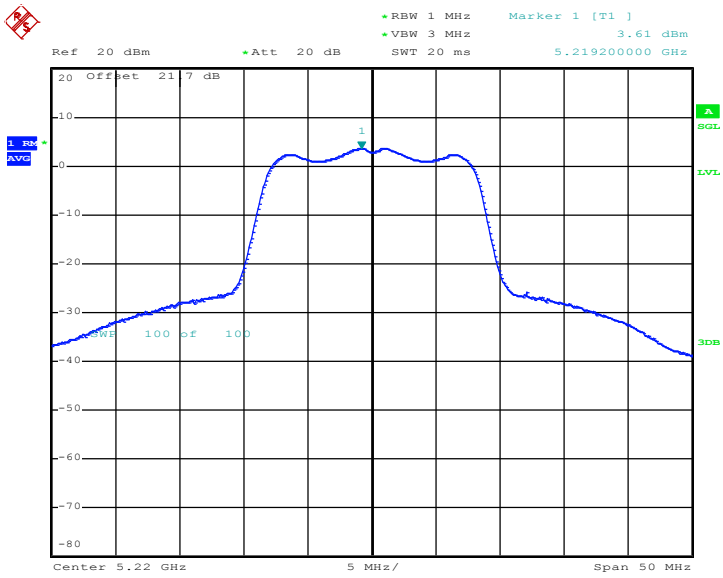
Channel	Frequency (MHz)	802.11a Measured PSD (dBm)		Max. Limits (dBm)	Pass /Fail
		Measured	Final		
		Legacy Ant 1	Legacy Ant 1		
36	5180	3.59	3.63	4	Pass
44	5220	3.61	3.65	4	Pass
48	5240	3.59	3.63	4	Pass
52	5260	3.85	3.89	11	Pass
60	5300	4.26	4.30	11	Pass
64	5320	3.96	4.00	11	Pass
100	5500	1.66	1.70	11	Pass
116	5580	2.35	2.39	11	Pass
140	5700	1.67	1.71	11	Pass

PSD Plot on 802.11a Channel 36 - Legacy Ant 1



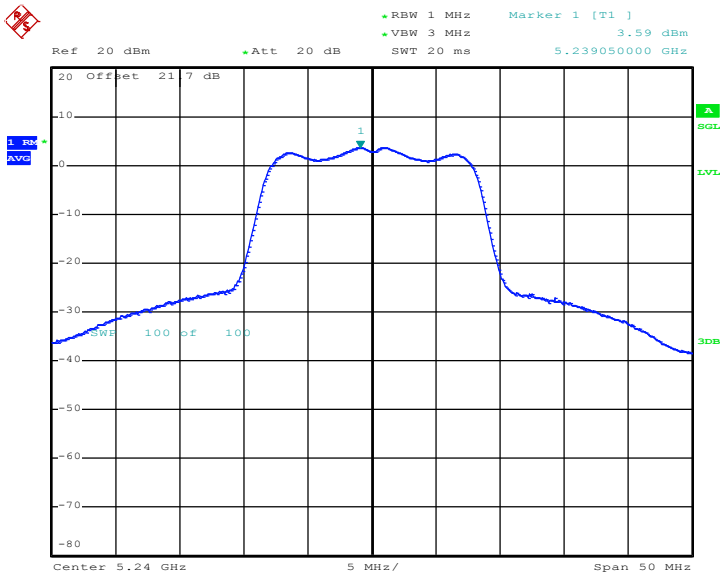
Date: 24.JUL.2012 02:15:13

PSD Plot on 802.11a Channel 44 - Legacy Ant 1



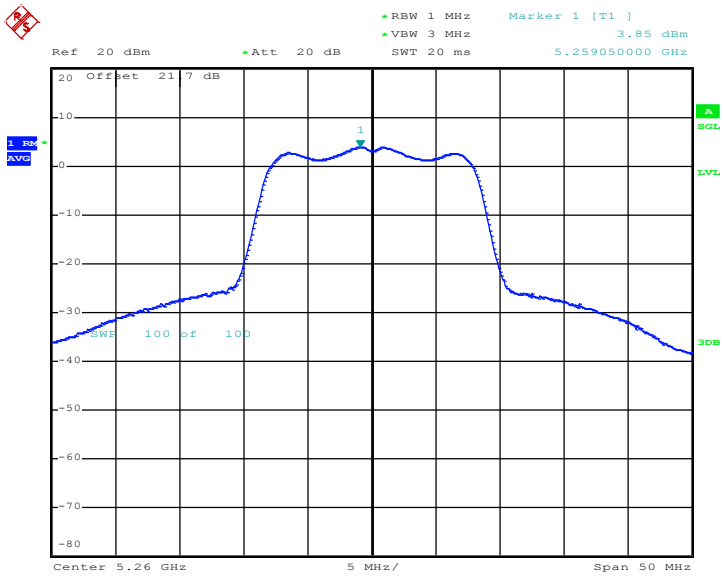
Date: 24.JUL.2012 02:16:07

PSD Plot on 802.11a Channel 48 - Legacy Ant 1



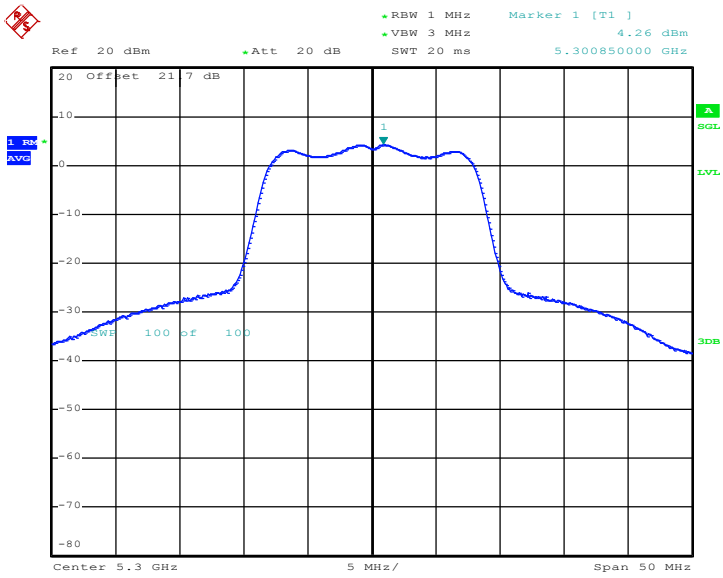
Date: 24.JUL.2012 02:16:50

PSD Plot on 802.11a Channel 52 - Legacy Ant 1



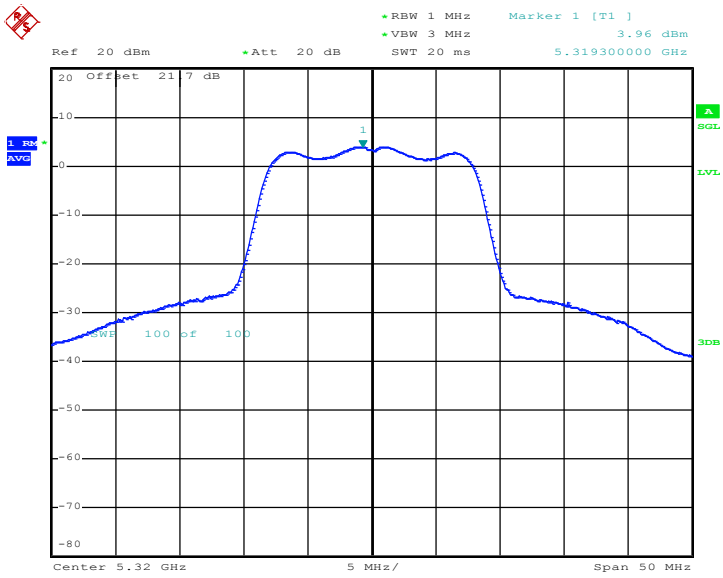
Date: 26.JUL.2012 22:59:45

PSD Plot on 802.11a Channel 60 - Legacy Ant 1



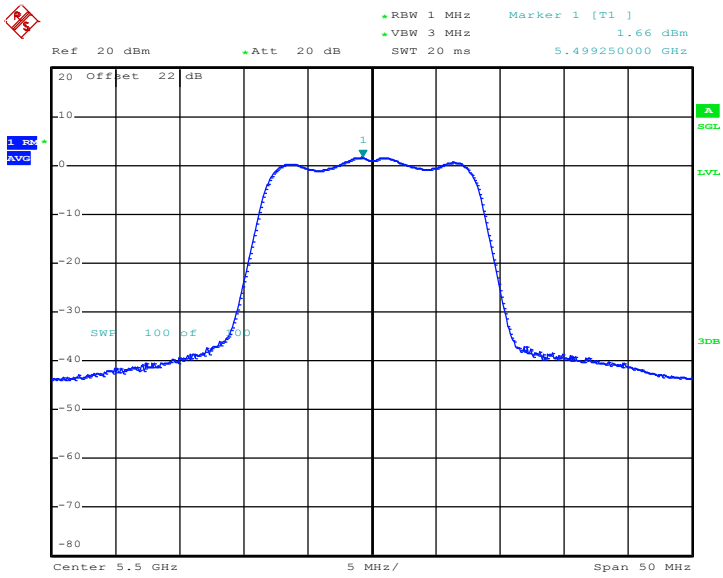
Date: 26.JUL.2012 23:03:42

PSD Plot on 802.11a Channel 64 - Legacy Ant 1



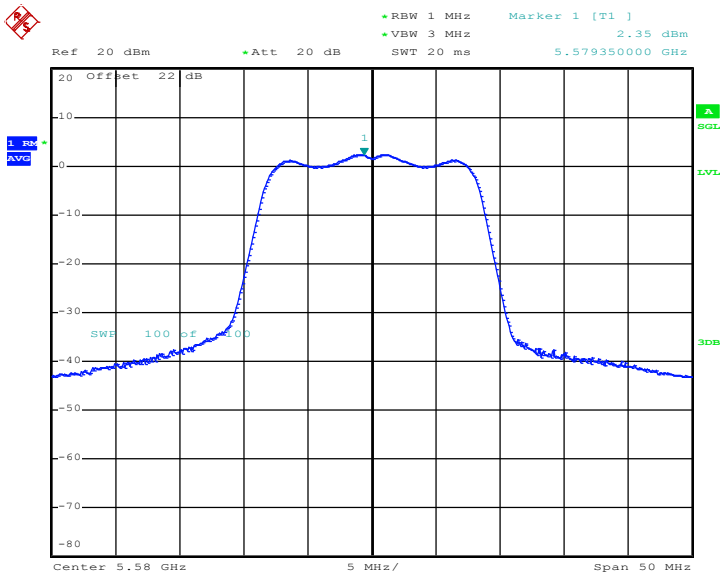
Date: 26.JUL.2012 23:07:23

PSD Plot on 802.11a Channel 100 - Legacy Ant 1



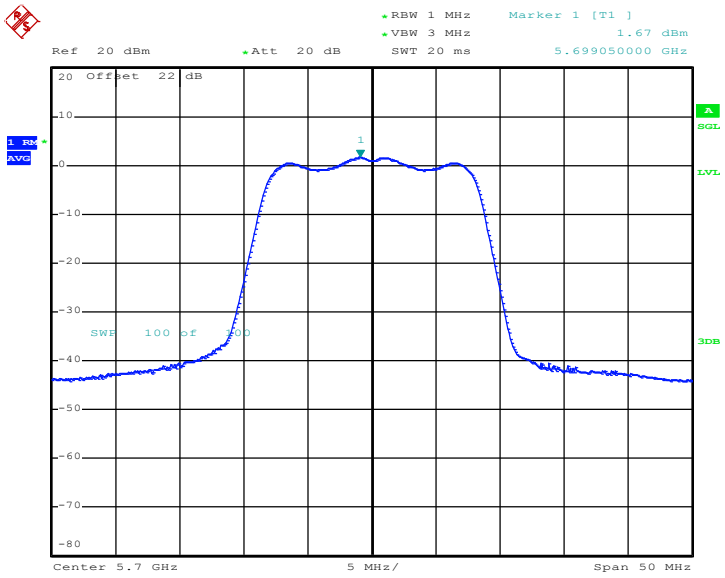
Date: 26.JUL.2012 23:10:51

PSD Plot on 802.11a Channel 116 - Legacy Ant 1



Date: 26.JUL.2012 23:17:50

PSD Plot on 802.11a Channel 140 - Legacy Ant 1



Date: 26.JUL.2012 23:22:33

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	99.13% for SISO Ant 1	Duty Factor	0.04dB for SISO Ant 1

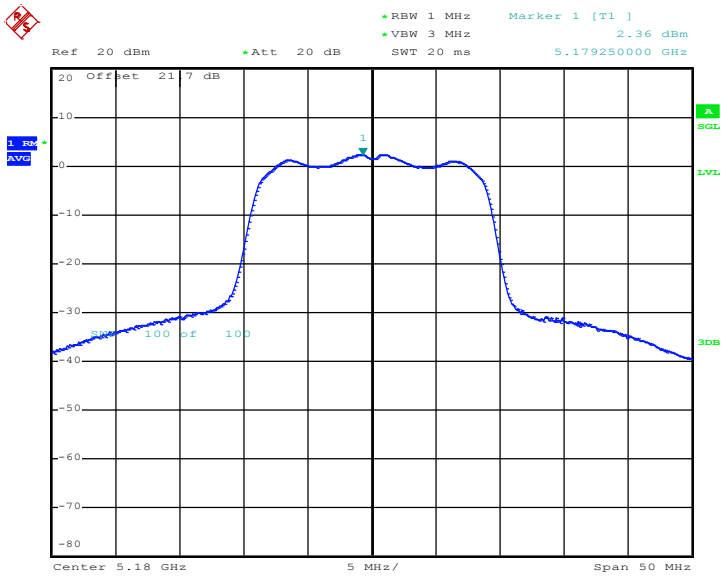
Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass /Fail
		Measured	Final		
		SISO Ant 1	SISO Ant 1		
36	5180	2.36	2.40	4	Pass
44	5220	2.40	2.44	4	Pass
48	5240	2.44	2.48	4	Pass
52	5260	2.59	2.63	11	Pass
60	5300	3.23	3.27	11	Pass
64	5320	2.98	3.02	11	Pass
100	5500	0.66	0.70	11	Pass
116	5580	1.28	1.32	11	Pass
140	5700	1.75	1.79	11	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	98.31% for MIMO Ant 1 98.21% for MIMO Ant 2	Duty Factor	0.07dB for MIMO Ant 1 0.08dB for MIMO Ant 2

Channel	Frequency (MHz)	802.11n HT20 (2Tx) PSD (dBm)	Max. Limits (dBm)	Pass /Fail
		MIMO (2Tx)		
		MIMO Ant 1+2		
36	5180	3.60	4	Pass
44	5220	3.75	4	Pass
48	5240	3.64	4	Pass
52	5260	1.58	11	Pass
60	5300	2.81	11	Pass
64	5320	2.76	11	Pass
100	5500	3.54	11	Pass
116	5580	2.00	11	Pass
140	5700	1.30	11	Pass

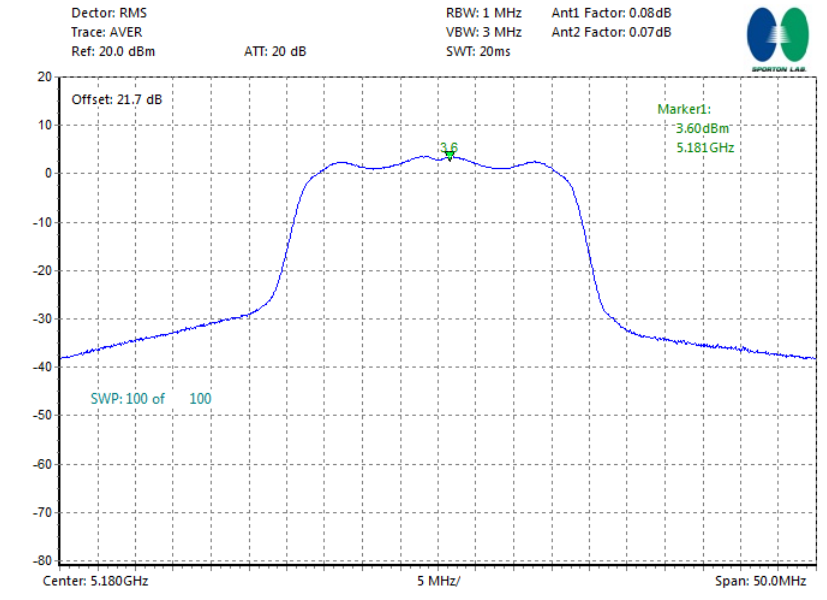
Note: According to the method (1) of In-Band Power Spectral Density (PSD) Measurements in FCC KDB789033 D01 General UNII Test Procedures v01r01, measure and sum the bin-by-bin from two outputs by computer.

PSD Plot on 802.11n HT20 Channel 36 – SISO Ant 1

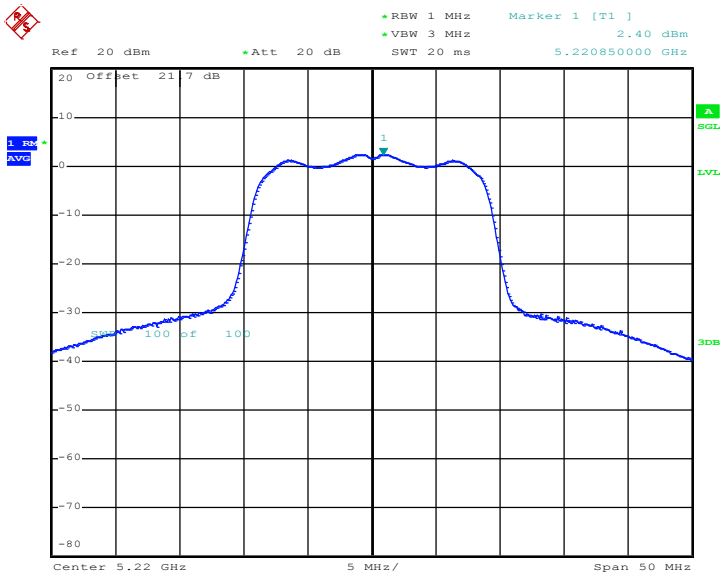


Date: 24.JUL.2012 02:19:16

PSD Plot on 802.11n HT20 Channel 36 – MIMO Ant 1+2



PSD Plot on 802.11n HT20 Channel 44 – SISO Ant 1



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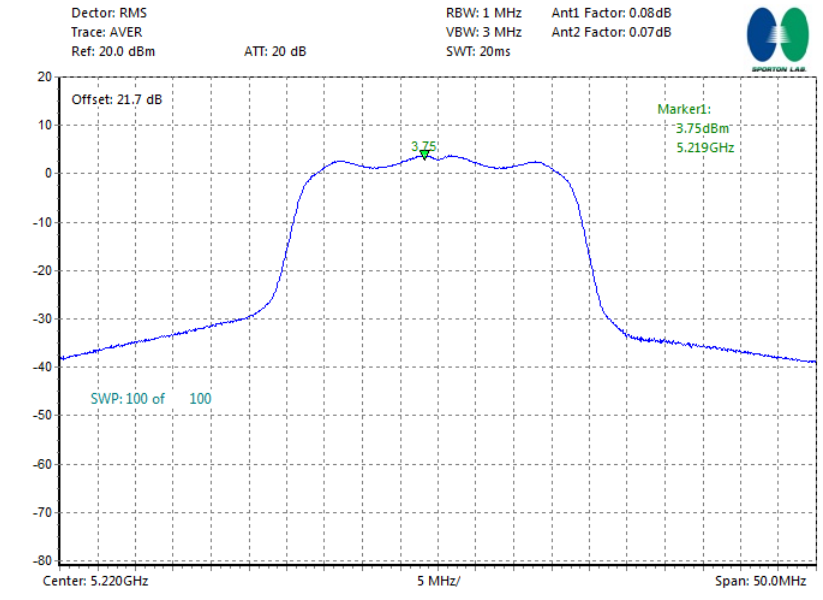
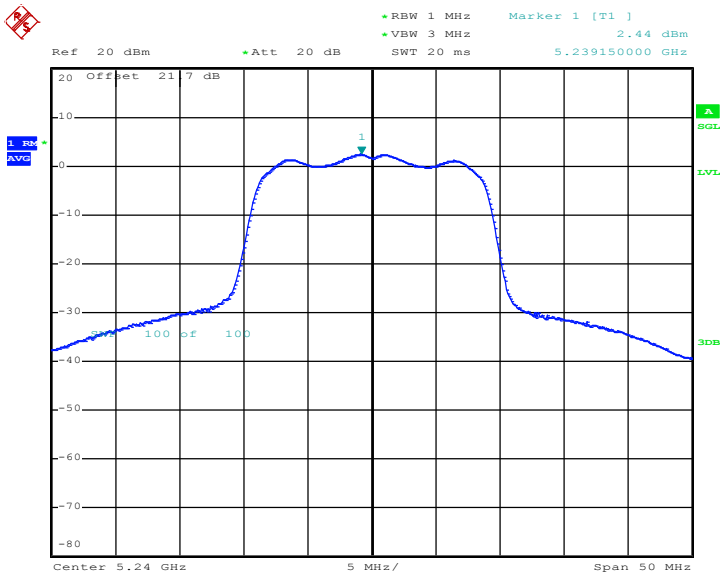
PSD Plot on 802.11n HT20 Channel 44 - MIMO Ant 1+2

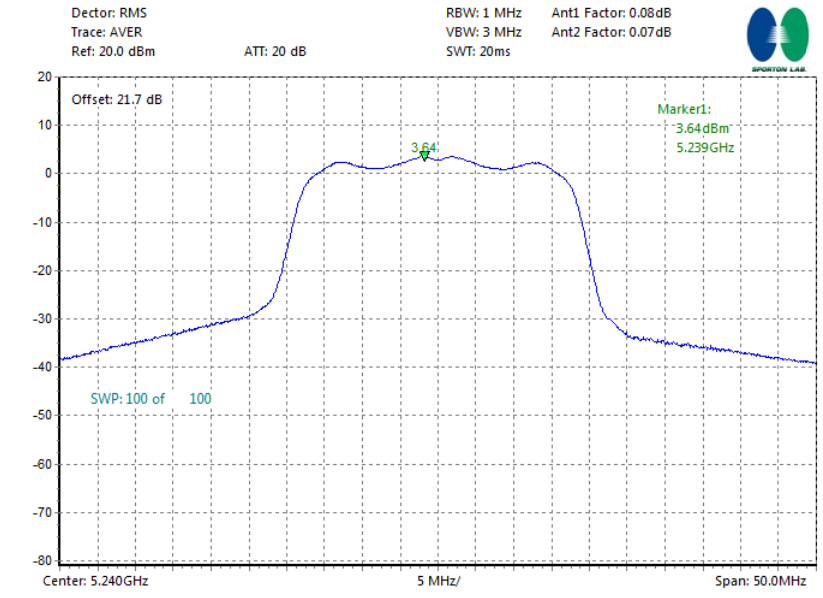


PSD Plot on 802.11n HT20 Channel 48 - SISO Ant 1

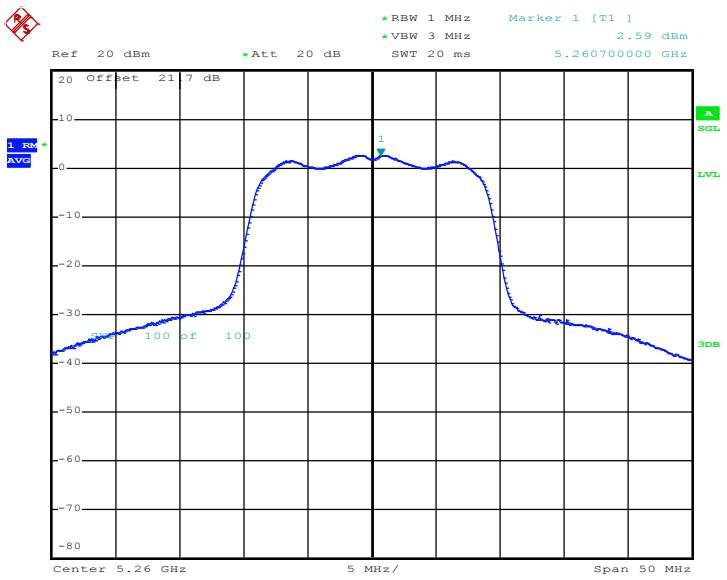


Date: 24.JUL.2012 02:17:51

PSD Plot on 802.11n HT20 Channel 48 - MIMO Ant 1+2

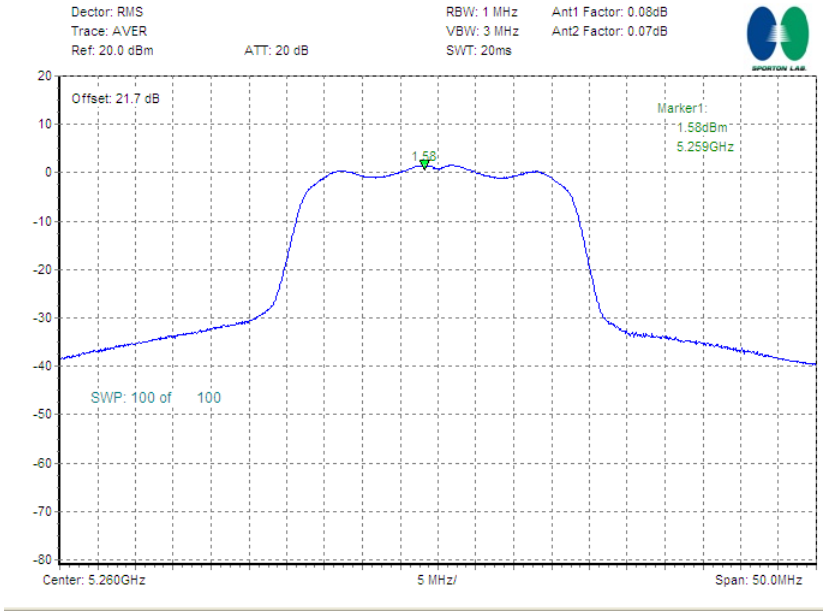


PSD Plot on 802.11n HT20 Channel 52 - SISO Ant 1

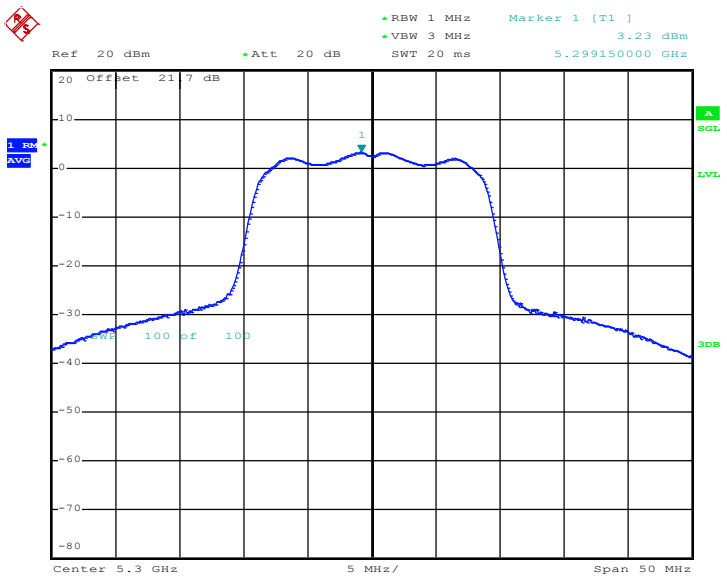


Date: 26.JUL.2012 23:51:33

PSD Plot on 802.11n HT20 Channel 52 - MIMO Ant 1+2

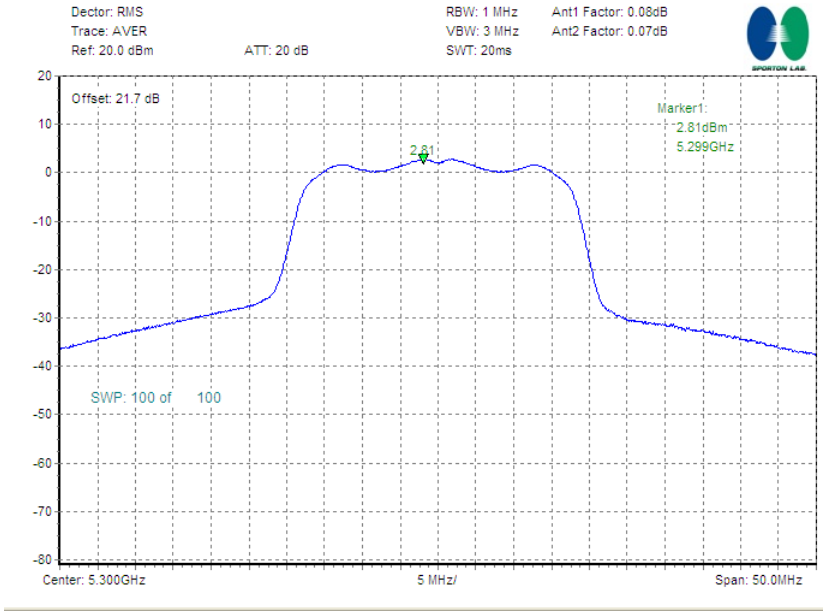


PSD Plot on 802.11n HT20 Channel 60 - SISO Ant 1

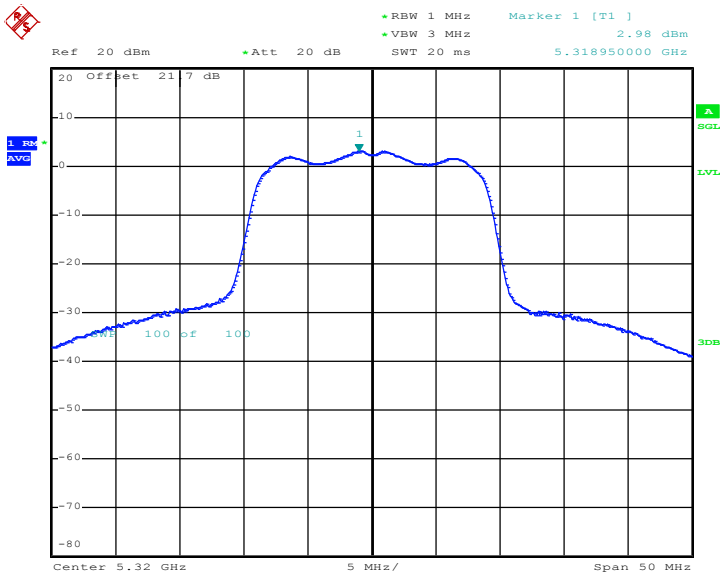


Date: 26.JUL.2012 23:56:45

PSD Plot on 802.11n HT20 Channel 60 - MIMO Ant 1+2

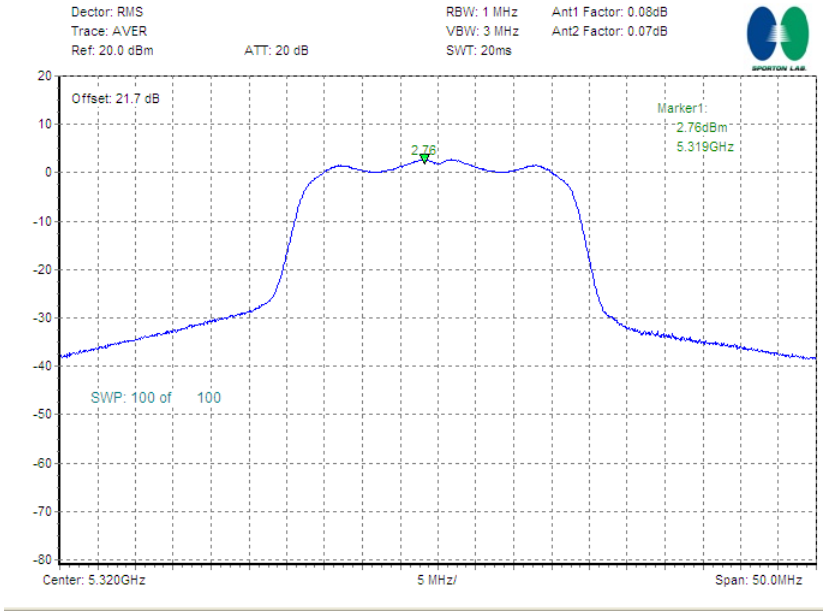


PSD Plot on 802.11n HT20 Channel 64 - SISO Ant 1

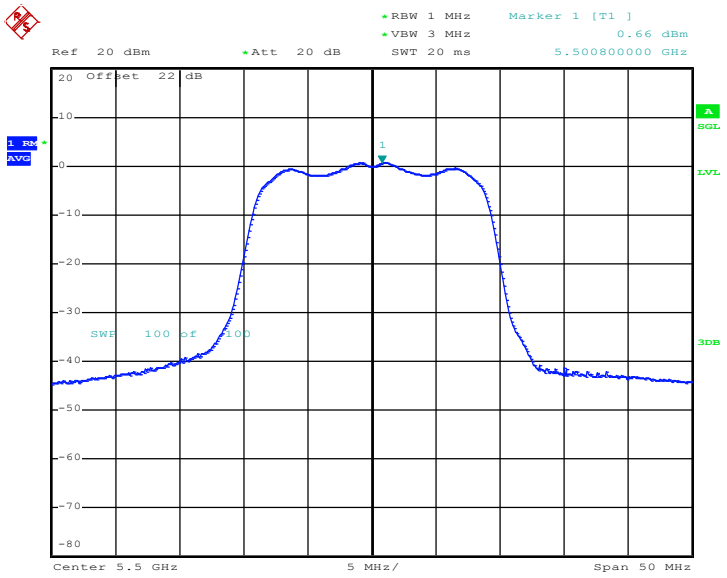


Date: 27.JUL.2012 00:01:02

PSD Plot on 802.11n HT20 Channel 64 - MIMO Ant 1+2

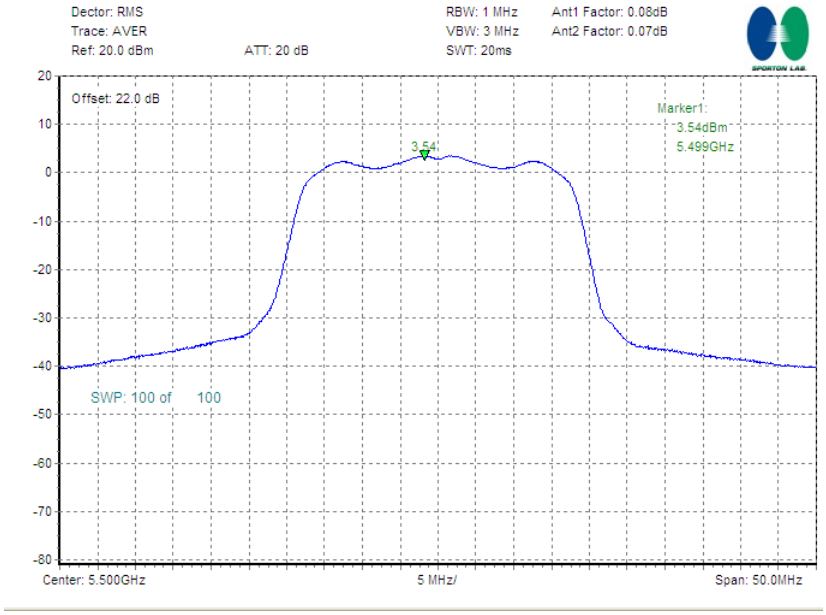


PSD Plot on 802.11n HT20 Channel 100 - SISO Ant 1

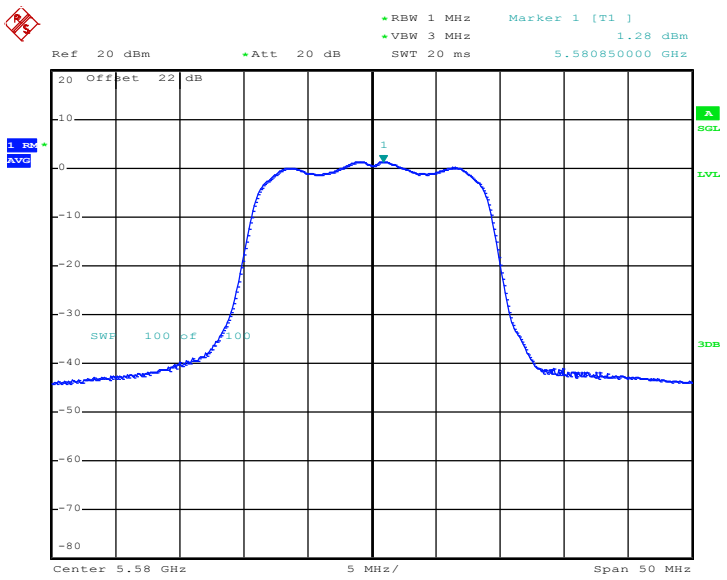


Date: 27.JUL.2012 00:04:33

PSD Plot on 802.11n HT20 Channel 100 - MIMO Ant 1+2

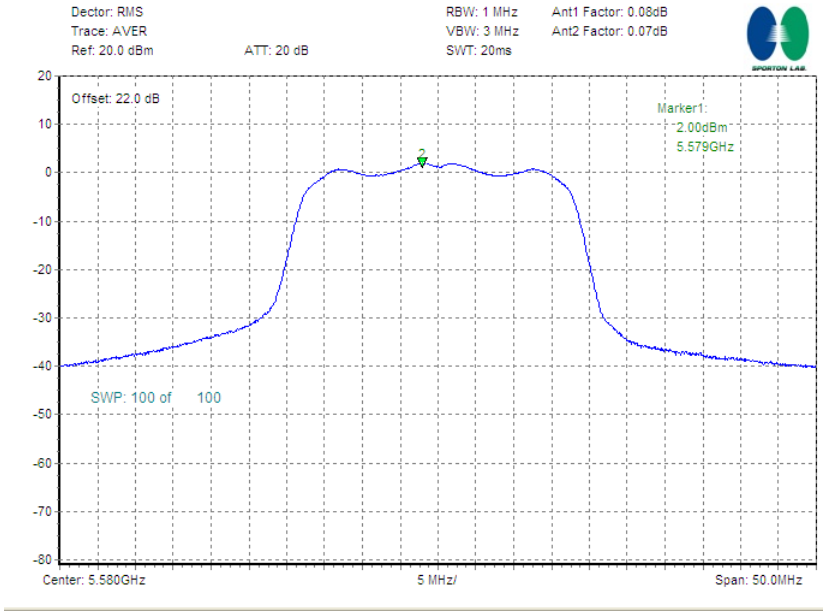


PSD Plot on 802.11n HT20 Channel 116 - SISO Ant 1

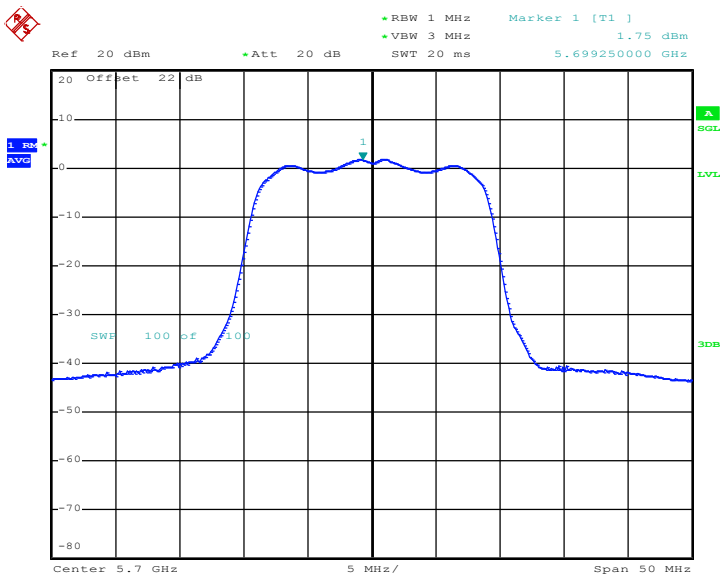


Date: 27.JUL.2012 00:07:50

PSD Plot on 802.11n HT20 Channel 116 - MIMO Ant 1+2

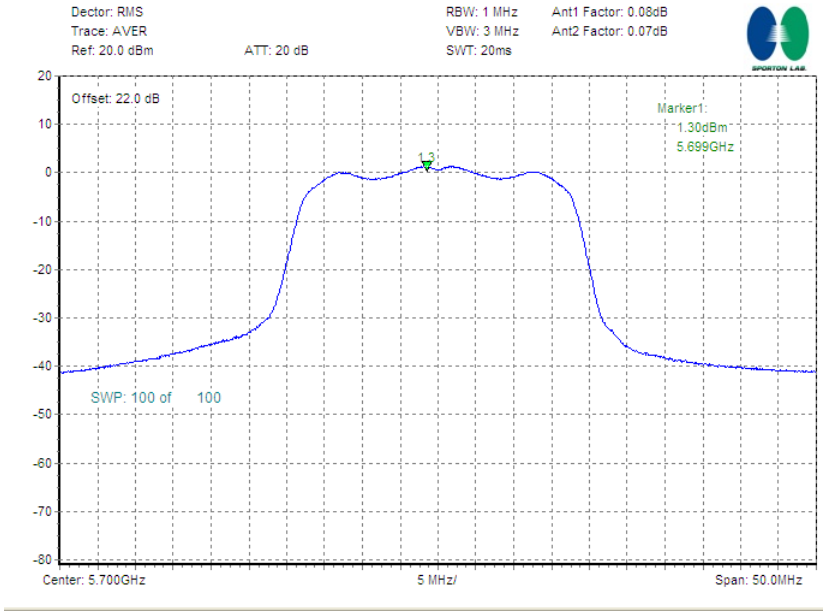


PSD Plot on 802.11n HT20 Channel 140 - SISO Ant 1



Date: 27.JUL.2012 00:10:56

PSD Plot on 802.11n HT20 Channel 140 - MIMO Ant 1+2



Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	98.60% for SISO Ant 1	Duty Factor	0.06dB for SISO Ant 1

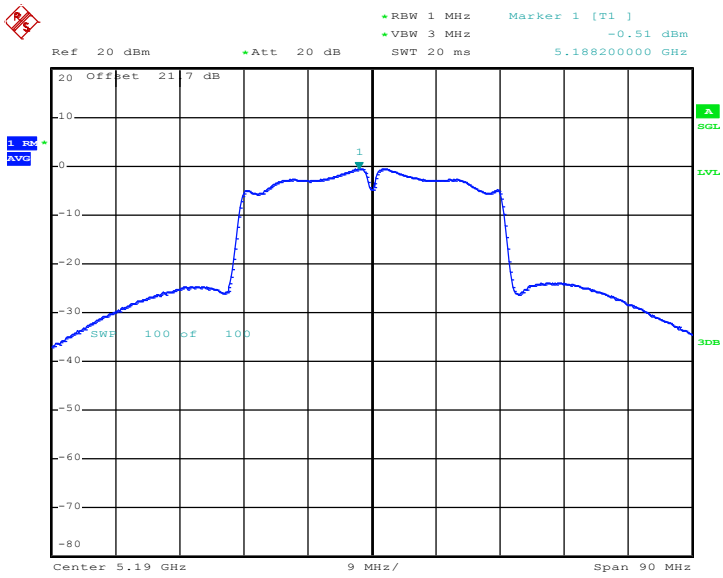
Channel	Frequency (MHz)	802.11n HT40 PSD (dBm)		Max. Limits (dBm)	Pass /Fail
		Measured	Final		
		SISO Ant 1	SISO Ant 1		
38	5190	-0.51	-0.45	4	Pass
46	5230	-0.64	-0.58	4	Pass
54	5270	-0.32	-0.26	11	Pass
62	5310	-3.71	-3.65	11	Pass
102	5510	-3.11	-3.05	11	Pass
110	5550	-2.46	-2.40	11	Pass
134	5670	-1.41	-1.35	11	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%
Duty Cycle	97.39% for MIMO Ant 1 96.70% for MIMO Ant 2	Duty Factor	0.12dB for MIMO Ant 1 0.15dB for MIMO Ant 2

Channel	Frequency (MHz)	802.11n HT40 (2Tx) PSD (dBm)	Max. Limits (dBm)	Pass /Fail
		MIMO (2Tx)		
		MIMO Ant 1+2		
38	5190	2.47	4	Pass
46	5230	2.81	4	Pass
54	5270	1.12	11	Pass
62	5310	-2.90	11	Pass
102	5510	-2.58	11	Pass
110	5550	-0.08	11	Pass
134	5670	-0.78	11	Pass

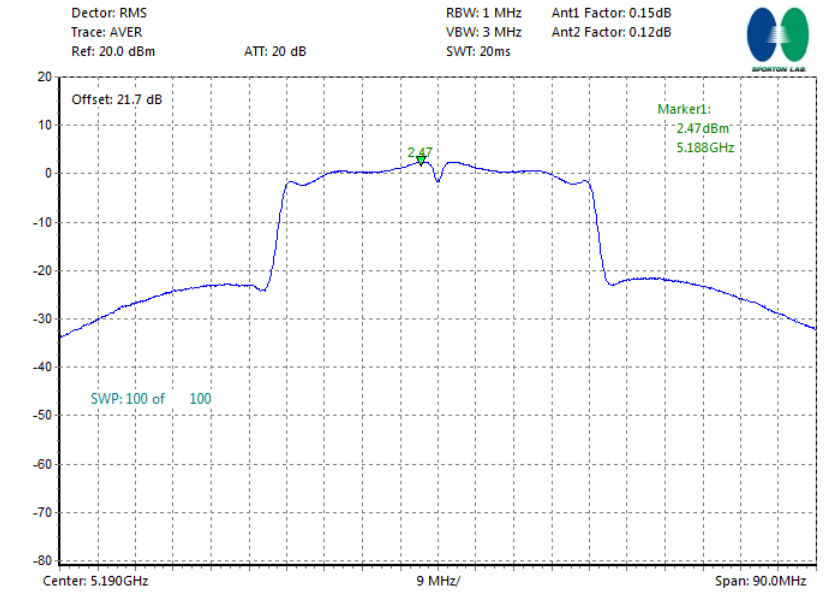
Note: According to the method (1) of In-Band Power Spectral Density (PSD) Measurements in FCC KDB789033 D01 General UNII Test Procedures v01r01, measure and sum the bin-by-bin from two outputs by computer.

PSD Plot on 802.11n HT40 Channel 38 - SISO Ant 1

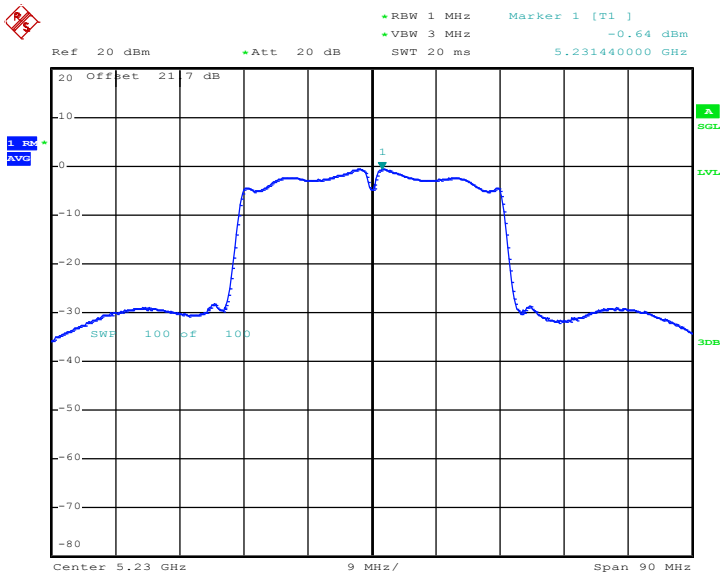


Date: 24.JUL.2012 02:20:44

PSD Plot on 802.11n HT40 Channel 38 – MIMO Ant 1+2

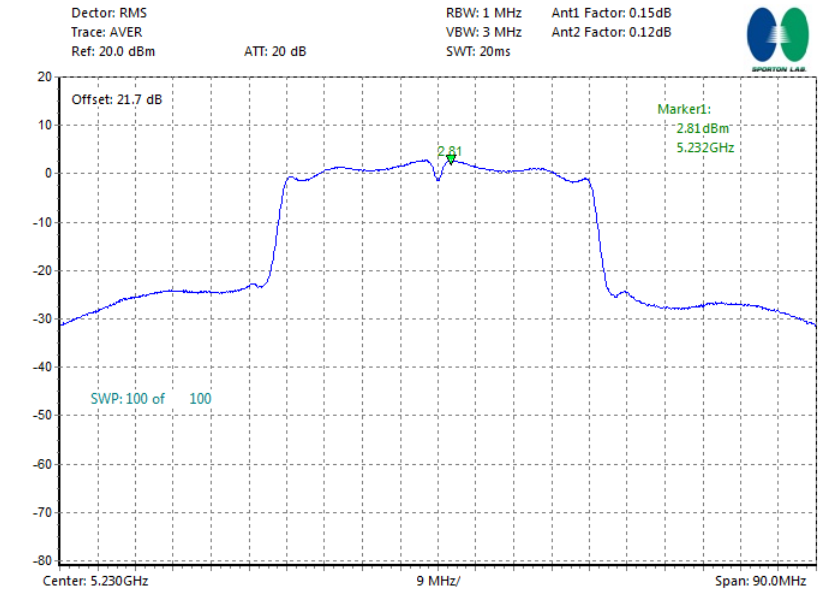


PSD Plot on 802.11n HT40 Channel 46 - SISO Ant 1

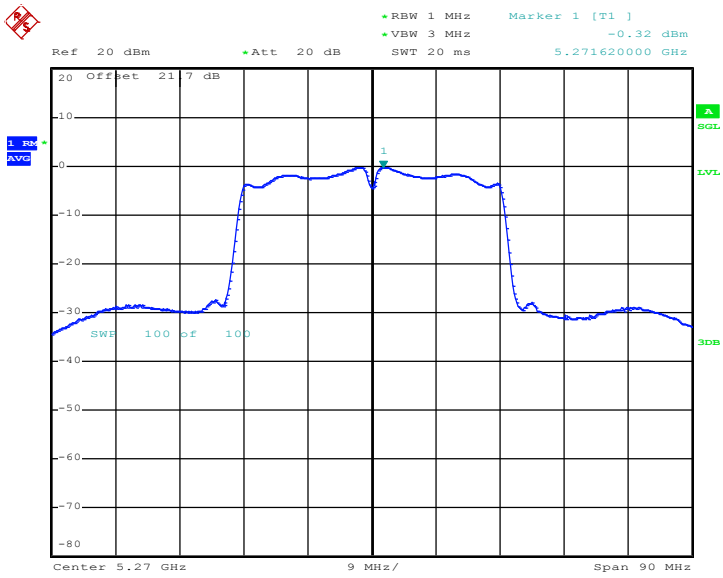


Date: 24.JUL.2012 02:21:28

PSD Plot on 802.11n HT40 Channel 46 - MIMO Ant 1+2

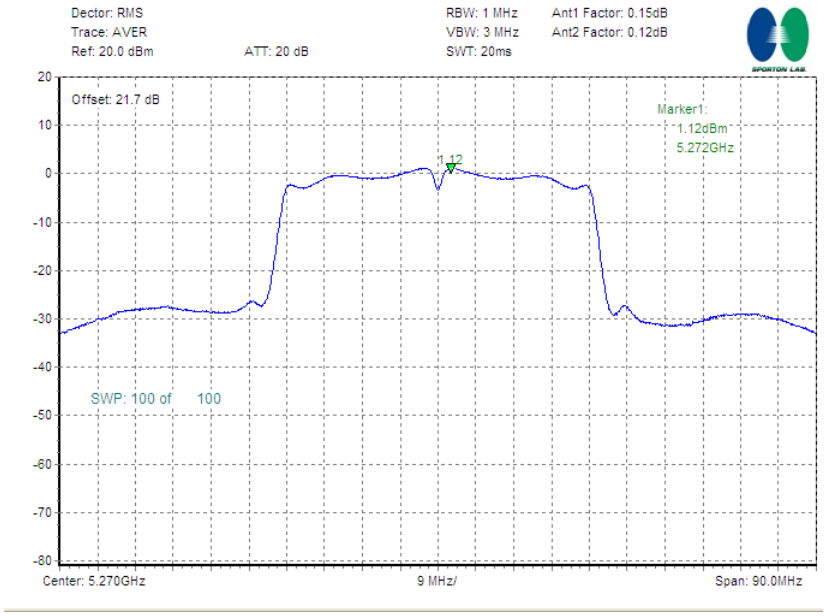


PSD Plot on 802.11n HT40 Channel 54 - SISO Ant 1

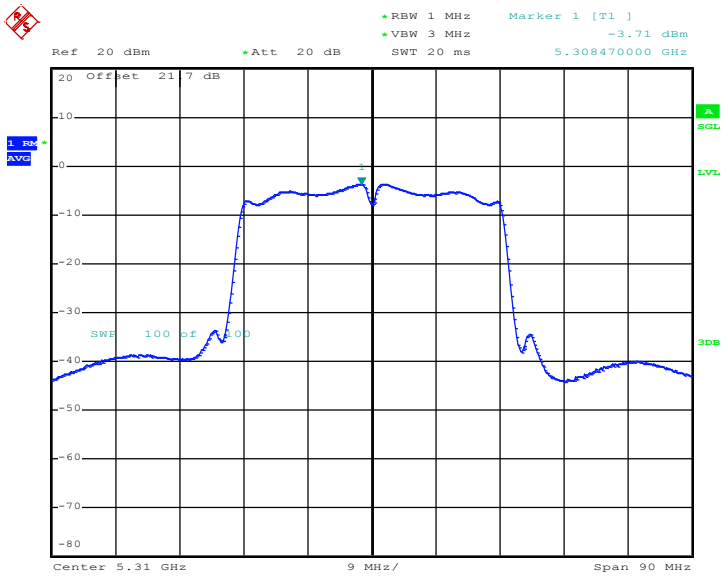


Date: 27.JUL.2012 01:22:13

PSD Plot on 802.11n HT40 Channel 54 - MIMO Ant 1+2

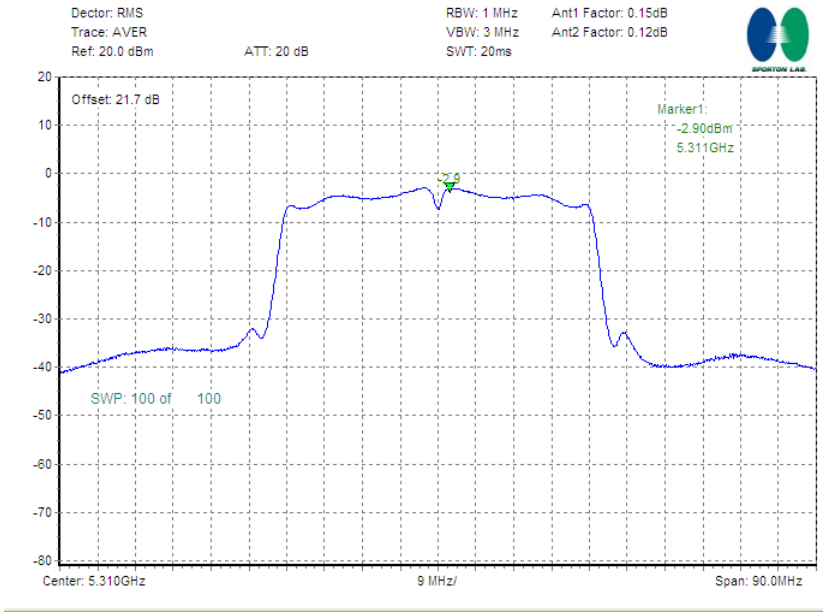


PSD Plot on 802.11n HT40 Channel 62 - SISO Ant 1

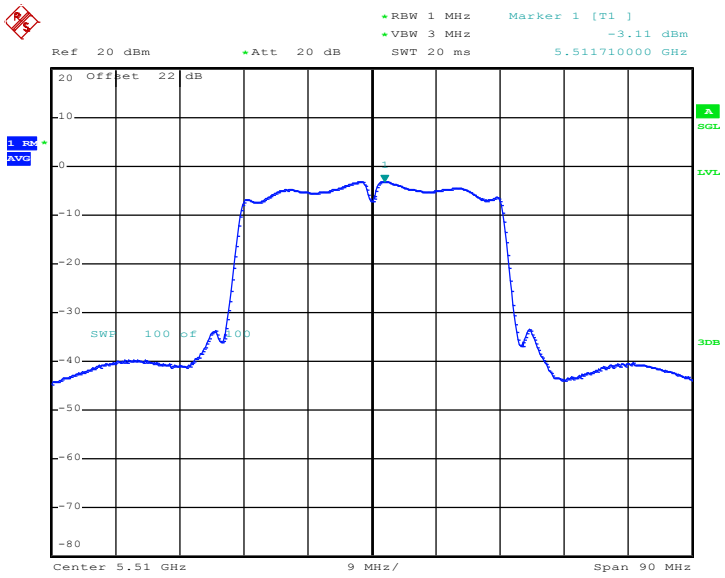


Date: 27.JUL.2012 00:51:35

PSD Plot on 802.11n HT40 Channel 62 - MIMO Ant 1+2

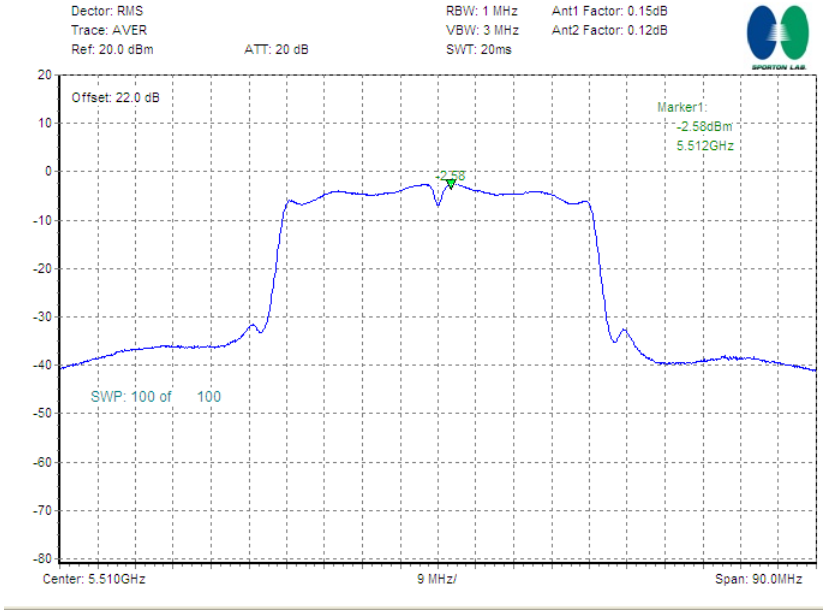


PSD Plot on 802.11n HT40 Channel 102 - SISO Ant 1

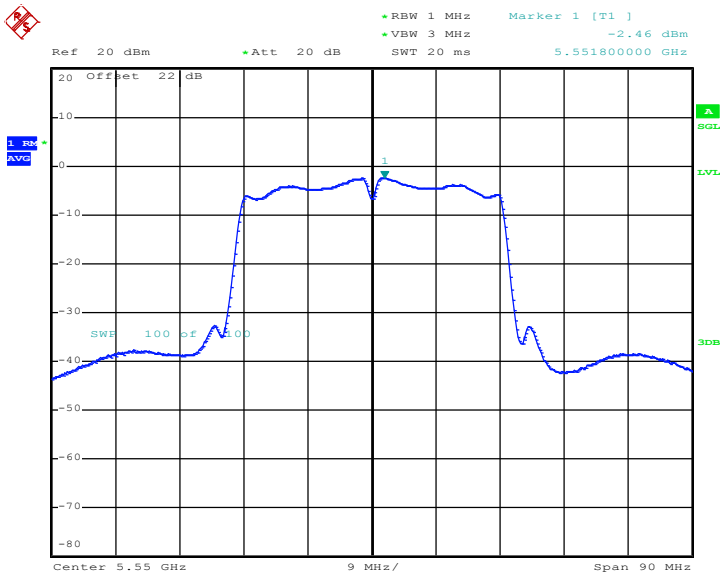


Date: 27.JUL.2012 00:56:30

PSD Plot on 802.11n HT40 Channel 102 - MIMO Ant 1+2

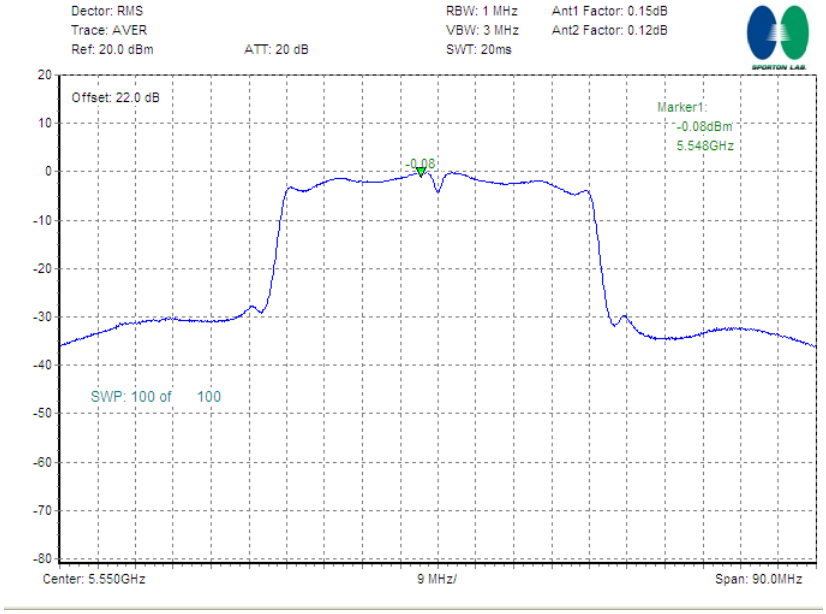


PSD Plot on 802.11n HT40 Channel 110 - SISO Ant 1

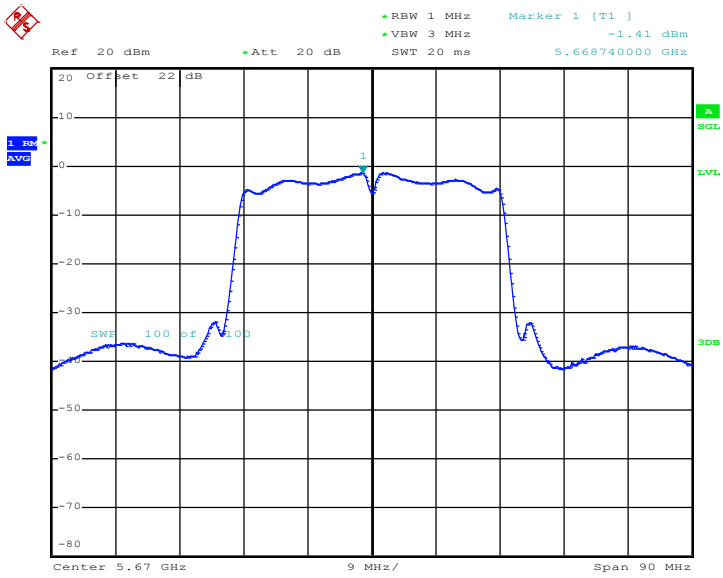


Date: 27.JUL.2012 01:01:52

PSD Plot on 802.11n HT40 Channel 110 - MIMO Ant 1+2

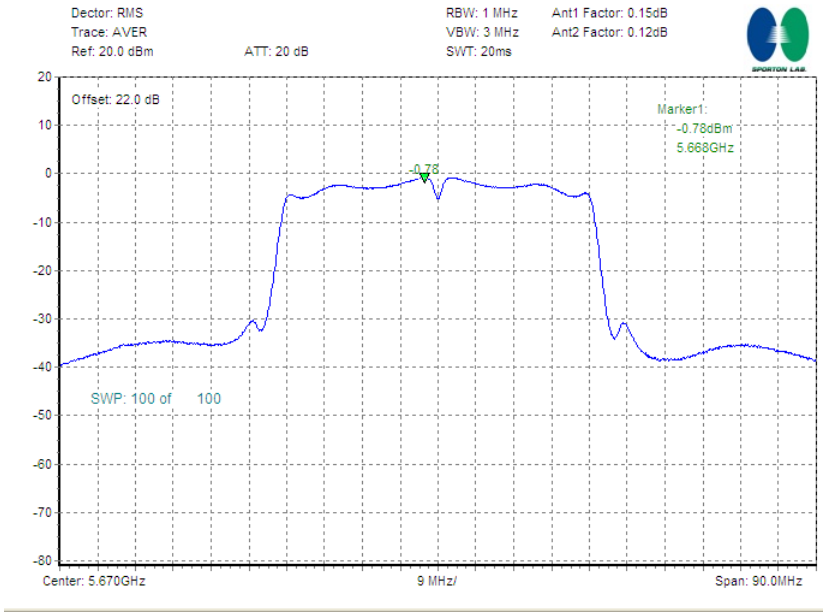


PSD Plot on 802.11n HT40 Channel 134 - SISO Ant 1



Date: 27.JUL.2012 01:04:39

PSD Plot on 802.11n HT40 Channel 134 - MIMO Ant 1+2



3.4 AC Conducted Emission Measurement

3.4.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

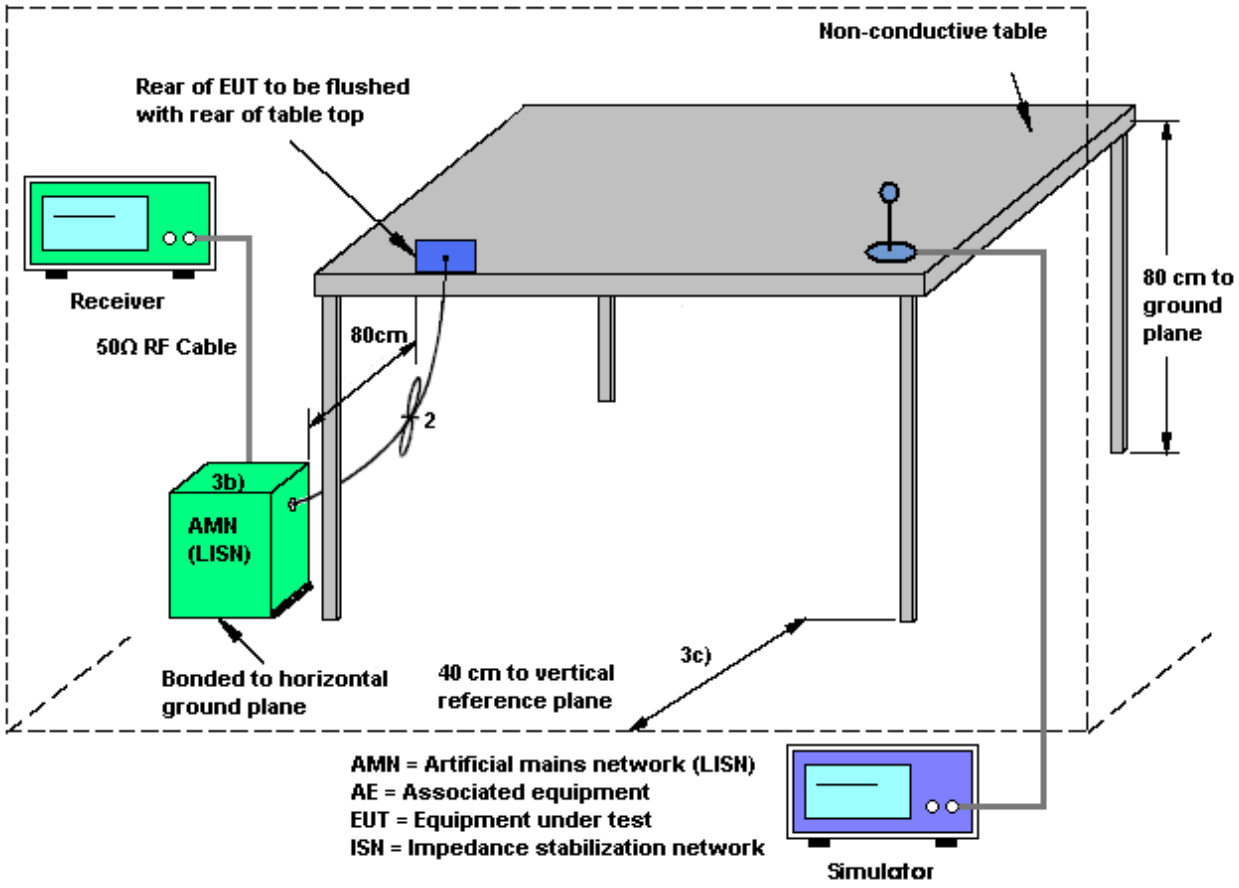
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

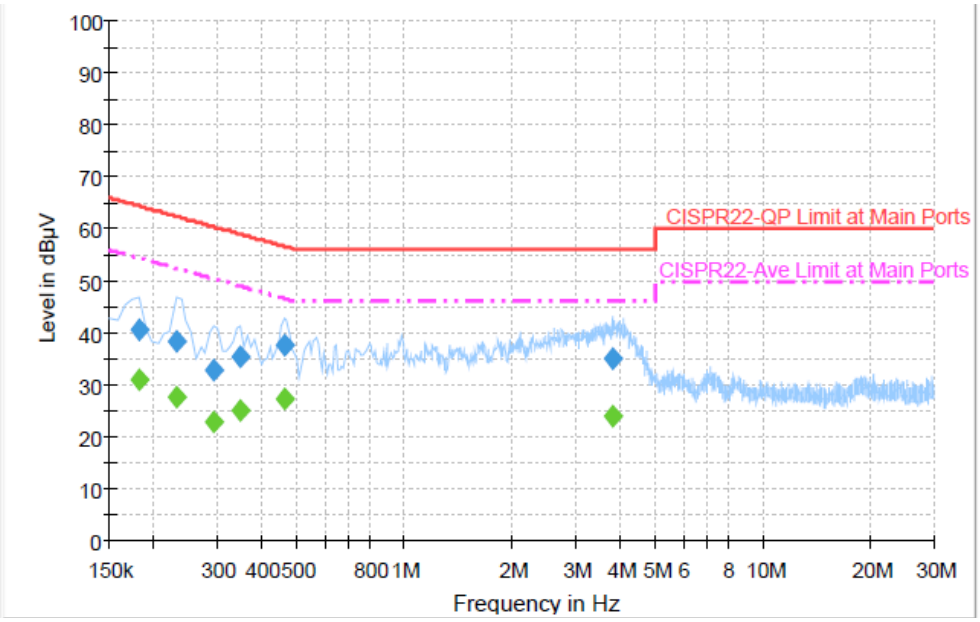
1. Test follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009 test site requirement.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance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

3.4.4 Test Setup



3.4.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	**Temperature :**	21~22℃
Test Engineer :	Kai-Chun Chu	**Relative Humidity :**	52~53%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + WLAN (5G) Link + Bluetooth Link + HDMI Cable + Earphone + MPEG4 + USB Cable (Charging from Adapter)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



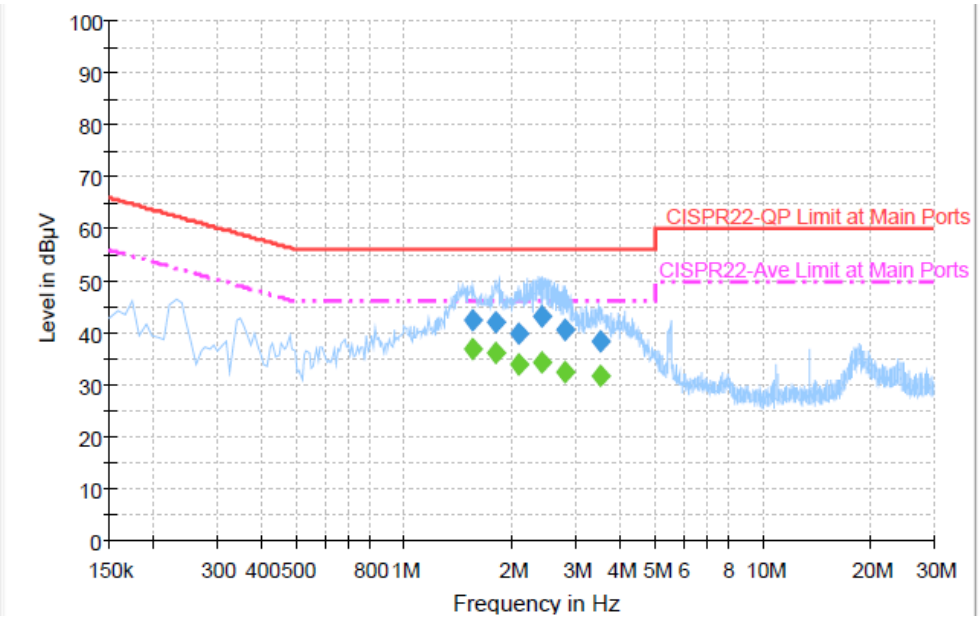
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	40.5	Off	L1	19.4	23.9	64.4
0.230000	38.5	Off	L1	19.4	23.9	62.4
0.294000	33.0	Off	L1	19.4	27.4	60.4
0.350000	35.3	Off	L1	19.4	23.7	59.0
0.462000	37.7	Off	L1	19.3	19.0	56.7
3.798000	35.1	Off	L1	19.6	20.9	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	31.0	Off	L1	19.4	23.4	54.4
0.230000	27.8	Off	L1	19.4	24.6	52.4
0.294000	22.7	Off	L1	19.4	27.7	50.4
0.350000	25.2	Off	L1	19.4	23.8	49.0
0.462000	27.3	Off	L1	19.3	19.4	46.7
3.798000	24.1	Off	L1	19.6	21.9	46.0

Test Mode :	Mode 1	**Temperature :**	21~22℃
Test Engineer :	Kai-Chun Chu	**Relative Humidity :**	52~53%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM850 Idle + WLAN (5G) Link + Bluetooth Link + HDMI Cable + Earphone + MPEG4 + USB Cable (Charging from Adapter)		
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)
1.558000	42.6	Off	N	19.4	13.4	56.0
1.790000	42.2	Off	N	19.5	13.8	56.0
2.078000	39.7	Off	N	19.6	16.3	56.0
2.414000	43.1	Off	N	19.7	12.9	56.0
2.806000	40.6	Off	N	19.7	15.4	56.0
3.526000	38.3	Off	N	19.6	17.7	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.558000	37.1	Off	N	19.4	8.9	46.0
1.790000	36.3	Off	N	19.5	9.7	46.0
2.078000	34.0	Off	N	19.6	12.0	46.0
2.414000	34.4	Off	N	19.7	11.6	46.0
2.806000	32.5	Off	N	19.7	13.5	46.0
3.526000	31.6	Off	N	19.6	14.4	46.0

3.5 Unwanted Emissions Measurement

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

3.5.1 Limit of Unwanted Emissions

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

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

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

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

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

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

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

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

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The testing follows the guidelines in fulfills ANSI C63.4-2003 and the guidelines in ANSI C63.10-2009 test site requirement and FCC KDB 789033 D01 General UNII Test Procedures v01r01.

   (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

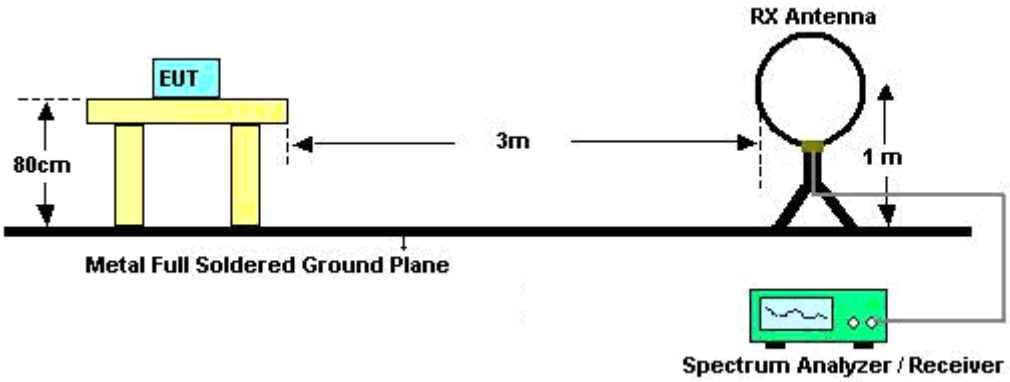
   - The setting follows G) 6) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power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

Antenna	Band	Duty Cycle(%)	T(us)	1/T(KHz)	VBW Setting
1	802.11a	99.17	-	-	10Hz
1	802.11n HT20	99.13	-	-	10Hz
1	802.11n HT40	98.60	-	-	10Hz
1+2	802.11n HT20 for Ant1	98.31	-	-	10Hz
1+2	802.11n HT20 for Ant2	98.21	-	-	
1+2	802.11n HT40 for Ant1	97.39	649.5	1.539	3KHz
1+2	802.11n HT40 for Ant2	96.70	640.0	1.563	

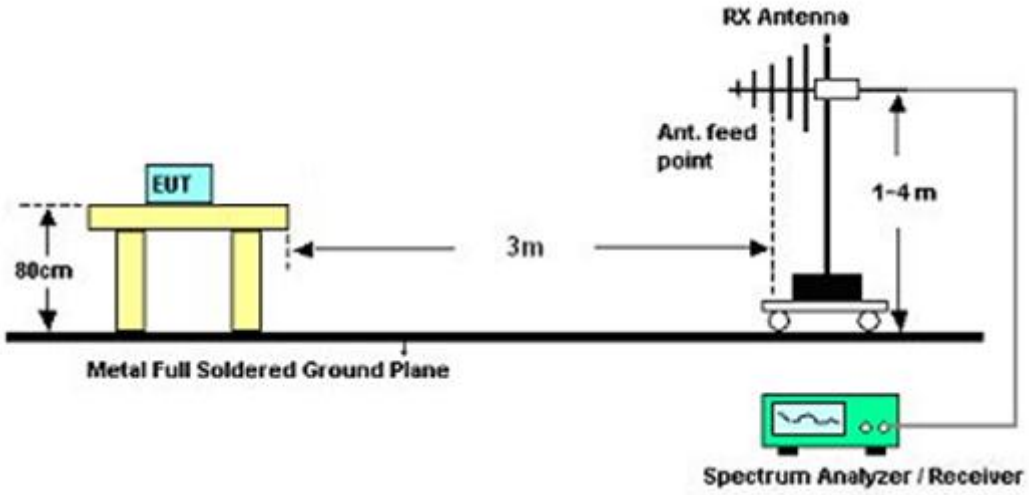
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna height is adjusted between one meter and four meters above ground to find the maximum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

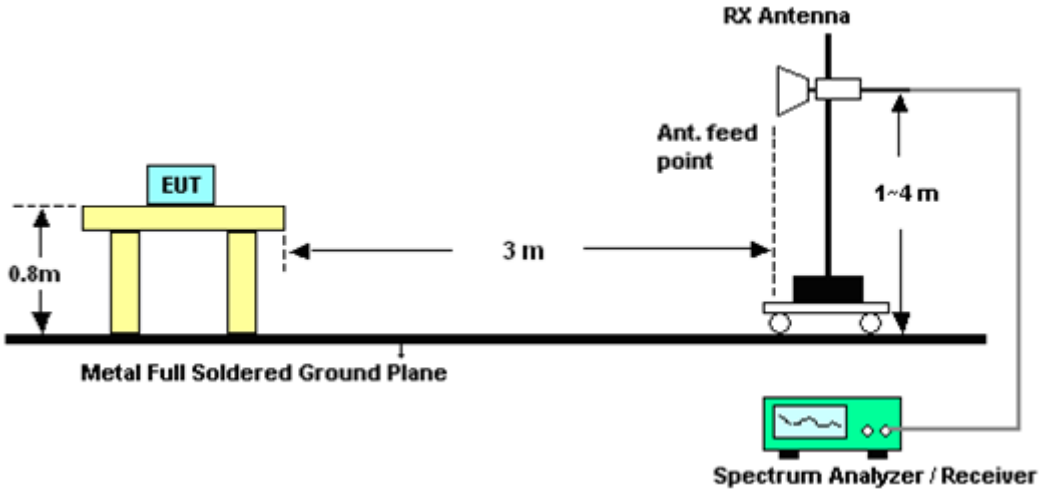
For radiated emissions below 30MHz



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 of Radiated Band Edges

<Legacy Ant 1>:

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	36	**Relative Humidity :**	49~51%
		Test Engineer :	Eric Shih

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**
5149.9	72.79	-1.21	74	62.13	34.22	9.41	32.97	100	302	Peak
5150	52.24	-1.76	54	41.58	34.22	9.41	32.97	100	302	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**
5149.45	72.75	-1.25	74	62.09	34.22	9.41	32.97	100	278	Peak
5150	53.16	-0.84	54	42.5	34.22	9.41	32.97	100	278	Average

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Band :	802.11a	**Relative Humidity :**	49~51%
Test Channel :	48	**Test Engineer :**	Eric Shih

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**
5406.43	57.32	-16.68	74	45.96	34.42	9.86	32.92	107	303	Peak
5399.83	44.58	-9.42	54	33.26	34.42	9.82	32.92	107	303	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**
5400.38	59.92	-14.08	74	48.6	34.42	9.82	32.92	100	157	Peak
5400.38	47.88	-6.12	54	36.56	34.42	9.82	32.92	100	157	Average

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	52	Test Engineer :	Eric Shih

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
5420.62	57.35	-16.65	74	45.98	34.43	9.86	32.92	107	242	Peak
5419.85	44.82	-9.18	54	33.45	34.43	9.86	32.92	107	242	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
5420.4	58.5	-15.5	74	47.13	34.43	9.86	32.92	102	160	Peak
5419.85	46.57	-7.43	54	35.2	34.43	9.86	32.92	102	160	Average

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	64	Test Engineer :	Eric Shih

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	67.25	-6.75	74	56.06	34.38	9.74	32.93	198	137	Peak
5350	49.14	-4.86	54	37.95	34.38	9.74	32.93	198	137	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
5350.11	71.34	-2.66	74	60.15	34.38	9.74	32.93	100	156	Peak
5350	52.88	-1.12	54	40.69	34.38	9.74	32.93	100	156	Average

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	100	Test Engineer :	Eric Shih

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
5459.36	59.47	-14.53	74	47.98	34.46	9.94	32.91	111	190	Peak
5470	66.25	-2.05	68.3	54.75	34.47	9.94	32.91	111	190	Peak
5460	44.68	-9.32	54	33.19	34.46	9.94	32.91	111	190	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
5459.44	62.28	-11.72	74	50.79	34.46	9.94	32.91	168	66	Peak
5470	67.06	-1.24	68.3	55.56	34.47	9.94	32.91	168	66	Peak
5460	44.3	-9.7	54	32.81	34.46	9.94	32.91	168	66	Average

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	140	Test Engineer :	Eric Shih

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	61.44	-6.86	68.3	49.97	34.81	9.92	33.26	117	295	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	64.93	-3.37	68.3	53.46	34.81	9.92	33.26	129	271	Peak

<SISO Ant 1>:

Test Mode :	802.11n HT20 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5149.45	72.83	-1.17	74	62.17	34.22	9.41	32.97	100	244	Peak
5150	52.02	-1.98	54	41.36	34.22	9.41	32.97	100	244	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.3	73.09	-0.91	74	62.43	34.22	9.41	32.97	112	279	Peak
5150	50.99	-3.01	54	40.33	34.22	9.41	32.97	112	279	Average

Test Mode :	802.11n HT20 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5399.5	56.86	-17.14	74	45.54	34.42	9.82	32.92	190	131	Peak
5399.94	45.67	-8.33	54	34.35	34.42	9.82	32.92	190	131	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
5400.82	57.5	-16.5	74	46.18	34.42	9.82	32.92	174	271	Peak
5400.27	45.92	-8.08	54	34.6	34.42	9.82	32.92	174	271	Average

Test Mode :	802.11n HT20 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5427.33	55.94	-18.06	74	44.57	34.43	9.86	32.92	106	303	Peak
5420.29	44.22	-9.78	54	32.85	34.43	9.86	32.92	106	303	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
5421.28	56.66	-17.34	74	45.29	34.43	9.86	32.92	176	154	Peak
5419.85	44.42	-9.58	54	33.05	34.43	9.86	32.92	176	154	Average

Test Mode :	802.11n HT20 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5352.97	66.55	-7.45	74	55.36	34.38	9.74	32.93	186	37	Peak
5350	48.46	-5.54	54	37.27	34.38	9.74	32.93	186	37	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
5351.32	68.44	-5.56	74	57.25	34.38	9.74	32.93	109	149	Peak
5350	50.62	-3.38	54	39.43	34.38	9.74	32.93	109	149	Average

Test Mode :	802.11n HT20 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5458.72	58.05	-15.95	74	46.56	34.46	9.94	32.91	112	189	Peak
5470	62.36	-5.94	68.3	50.86	34.47	9.94	32.91	112	189	Peak
5459.52	45.21	-8.79	54	33.72	34.46	9.94	32.91	112	189	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
5458.32	61.63	-12.37	74	50.14	34.46	9.94	32.91	151	68	Peak
5470	66.27	-2.03	68.3	54.77	34.47	9.94	32.91	151	68	Peak
5459.6	45.14	-8.86	54	33.65	34.46	9.94	32.91	151	68	Average

Test Mode :	802.11n HT20 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	66.71	-1.59	68.3	55.24	34.81	9.92	33.26	168	38	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	66.17	-2.13	68.3	54.7	34.81	9.92	33.26	139	271	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	38	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5145.95	69.24	-4.76	74	58.58	34.22	9.41	32.97	108	241	Peak
5149.95	48.58	-5.42	54	37.92	34.22	9.41	32.97	108	241	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	73.12	-0.88	74	62.46	34.22	9.41	32.97	102	153	Peak
5150	51	-3	54	40.34	34.22	9.41	32.97	102	153	Average

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	46	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5388.55	55.97	-18.03	74	44.66	34.41	9.82	32.92	100	242	Peak
5388.35	43.21	-10.79	54	31.9	34.41	9.82	32.92	100	242	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
5372.45	56.3	-17.7	74	45.06	34.39	9.78	32.93	101	155	Peak
5391.6	43.15	-10.85	54	31.84	34.41	9.82	32.92	101	155	Average

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	54	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5134.25	53.32	-20.68	74	42.72	34.21	9.37	32.98	176	136	Peak
5127.2	39.83	-14.17	54	29.23	34.21	9.37	32.98	176	136	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
5113.55	53.75	-20.25	74	43.21	34.19	9.33	32.98	100	155	Peak
5108.35	40.39	-13.61	54	29.85	34.19	9.33	32.98	100	155	Average

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	62	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5350.7	65.08	-8.92	74	53.89	34.38	9.74	32.93	102	219	Peak
5350	49.01	-4.99	54	37.82	34.38	9.74	32.93	102	219	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
5350.6	67.35	-6.65	74	56.16	34.38	9.74	32.93	100	6	Peak
5350.55	50.96	-3.04	54	39.77	34.38	9.74	32.93	100	6	Average

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	102	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5459.2	57.74	-16.26	74	45.64	35.07	9.94	32.91	100	231	Peak
5470	62.48	-5.82	68.3	50.34	35.11	9.94	32.91	100	231	Peak
5460	43.68	-10.32	54	31.58	35.07	9.94	32.91	100	231	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
5459.2	63.9	-10.1	74	51.8	35.07	9.94	32.91	100	269	Peak
5470	67.56	-0.74	68.3	55.42	35.11	9.94	32.91	100	269	Peak
5459.92	45.56	-8.44	54	33.46	35.07	9.94	32.91	100	269	Average

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	134	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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	60.04	-8.26	68.3	48.57	34.81	9.92	33.26	162	39	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	62.69	-5.61	68.3	51.22	34.81	9.92	33.26	157	267	Peak

<MIMO>:

Test Mode :	802.11n HT20 <MIMO>	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5149.4	73.12	-0.88	74	62.46	34.22	9.41	32.97	140	252	Peak
5149.6	52.81	-1.19	54	42.15	34.22	9.41	32.97	140	252	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.9	67.4	-6.6	74	56.74	34.22	9.41	32.97	164	61	Peak
5149.75	49.95	-4.05	54	39.29	34.22	9.41	32.97	164	61	Average

Test Mode :	802.11n HT20 <MIMO>	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5128.7	55.3	-18.7	74	44.7	34.21	9.37	32.98	102	246	Peak
5149.8	42.8	-11.2	54	32.14	34.22	9.41	32.97	102	246	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5134.75	55.11	-18.89	74	44.51	34.21	9.37	32.98	195	62	Peak
5149.4	42.24	-11.76	54	31.58	34.22	9.41	32.97	195	62	Average

Test Mode :	802.11n HT20 <MIMO>	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5420.62	60.63	-13.37	74	49.26	34.43	9.86	32.92	101	250	Peak
5420.51	49.3	-4.7	54	37.93	34.43	9.86	32.92	101	250	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
5420.84	59.56	-14.44	74	48.19	34.43	9.86	32.92	197	64	Peak
5418.64	47.78	-6.22	54	36.41	34.43	9.86	32.92	197	64	Average

Test Mode :	802.11n HT20 <MIMO>	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5351.21	70.53	-3.47	74	59.34	34.38	9.74	32.93	100	246	Peak
5350	53.3	-0.7	54	42.11	34.38	9.74	32.93	100	246	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5351.54	66.39	-7.61	74	55.2	34.38	9.74	32.93	175	63	Peak
5350	51.26	-2.74	54	40.07	34.38	9.74	32.93	175	63	Average

Test Mode :	802.11n HT20 <MIMO>	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5456	63.14	-10.86	74	51.65	34.46	9.94	32.91	107	191	Peak
5470	67.41	-0.89	68.3	55.91	34.47	9.94	32.91	107	191	Peak
5459.6	45.69	-8.31	54	34.2	34.46	9.94	32.91	107	191	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
5457.44	56.39	-17.61	74	44.9	34.46	9.94	32.91	167	70	Peak
5470	58.4	-9.9	68.3	46.9	34.47	9.94	32.91	167	70	Peak
5459.76	45.1	-8.9	54	33.61	34.46	9.94	32.91	167	70	Average

Test Mode :	802.11n HT20 <MIMO>	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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	67.54	-0.76	68.3	56.07	34.81	9.92	33.26	149	240	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	67.2	-1.1	68.3	55.73	34.81	9.92	33.26	189	68	Peak

Test Mode :	802.11n HT40 <MIMO>	Temperature :	23~25°C
Test Channel :	38	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5150	71.86	-2.14	74	61.2	34.22	9.41	32.97	110	202	Peak
5150	50.31	-3.69	54	39.65	34.22	9.41	32.97	110	202	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
5149.85	69.12	-4.88	74	58.46	34.22	9.41	32.97	199	65	Peak
5150	47.8	-6.2	54	37.14	34.22	9.41	32.97	199	65	Average

Test Mode :	802.11n HT40 <MIMO>	Temperature :	23~25°C
Test Channel :	46	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5388.39	60.79	-13.21	74	49.48	34.41	9.82	32.92	102	244	Peak
5391.69	49.45	-4.55	54	38.14	34.41	9.82	32.92	102	244	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5378.93	57.17	-16.83	74	45.91	34.41	9.78	32.93	193	62	Peak
5387.18	46.2	-7.8	54	34.89	34.41	9.82	32.92	193	62	Average

Test Mode :	802.11n HT40 <MIMO>	Temperature :	23~25°C
Test Channel :	54	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5107.35	55.84	-18.16	74	45.3	34.19	9.33	32.98	101	247	Peak
5112.85	42.1	-11.9	54	31.56	34.19	9.33	32.98	101	247	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
5149.1	53.6	-20.4	74	42.94	34.22	9.41	32.97	198	314	Peak
5107.95	40.24	-13.76	54	29.7	34.19	9.33	32.98	198	314	Average

Test Mode :	802.11n HT40 <MIMO>	Temperature :	23~25°C
Test Channel :	62	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5352.2	66.79	-7.21	74	55.17	34.81	9.74	32.93	104	258	Peak
5350	49.99	-4.01	54	38.37	34.81	9.74	32.93	104	258	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
5350.7	71.87	-2.13	74	60.25	34.81	9.74	32.93	100	7	Peak
5350.2	53.39	-0.61	54	41.77	34.81	9.74	32.93	100	7	Average

Test Mode :	802.11n HT40 <MIMO>	Temperature :	23~25°C
Test Channel :	102	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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
5458.72	57.28	-16.72	74	45.79	34.46	9.94	32.91	111	231	Peak
5470	65.71	-2.59	68.3	54.21	34.47	9.94	32.91	111	231	Peak
5459.68	44.69	-9.31	54	33.2	34.46	9.94	32.91	111	231	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5460	59.24	-14.76	74	47.75	34.46	9.94	32.91	101	269	Peak
5470	67.55	-0.75	68.3	56.05	34.47	9.94	32.91	101	269	Peak
5459.84	46.43	-7.57	54	34.94	34.46	9.94	32.91	101	269	Average

Test Mode :	802.11n HT40 <MIMO>	Temperature :	23~25°C
Test Channel :	134	Relative Humidity :	49~51%
		Test Engineer :	Eric Shih

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	67.76	-0.54	68.3	56.29	34.81	9.92	33.26	127	188	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	63.13	-5.17	68.3	51.66	34.81	9.92	33.26	190	69	Peak

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

<Legacy Ant 1>:

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	36	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	100.22	-	-	89.49	34.25	9.45	32.97	100	302	Average
5180	110.44	-	-	99.71	34.25	9.45	32.97	100	302	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	36	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	101.5	-	-	90.77	34.25	9.45	32.97	100	278	Average
5180	112.98	-	-	102.25	34.25	9.45	32.97	100	278	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	44	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
142.86	23	-20.5	43.5	41.89	11.35	1.2	31.44	124	85	Peak
149.34	20.07	-23.43	43.5	39.04	11.22	1.21	31.4	-	-	Peak
236.28	22.73	-23.27	46	40.76	11.66	1.51	31.2	-	-	Peak
323.1	22.44	-23.56	46	37.85	13.93	1.82	31.16	-	-	Peak
475.7	21.05	-24.95	46	32.09	17.58	2.37	30.99	-	-	Peak
695.5	23.71	-22.29	46	30.7	20.56	2.93	30.48	-	-	Peak
5220	95.69	-	-	84.85	34.27	9.53	32.96	101	187	Average
5220	107.15	-	-	96.31	34.27	9.53	32.96	101	187	Peak
10440	44.78	-23.52	68.3	54.83	37.36	11.21	58.62	100	0	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	44	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
44.58	18.93	-21.07	40	39.5	10.5	0.65	31.72	-	-	Peak
141.51	19.84	-23.66	43.5	38.73	11.36	1.2	31.45	-	-	Peak
233.04	20.36	-25.64	46	38.68	11.39	1.5	31.21	-	-	Peak
327.3	24.12	-21.88	46	39.47	14.03	1.84	31.22	-	-	Peak
457.5	22.61	-23.39	46	34.24	17.21	2.32	31.16	-	-	Peak
775.3	25.84	-20.16	46	31.37	21.72	3.1	30.35	111	50	Peak
5220	98.48	-	-	87.64	34.27	9.53	32.96	124	270	Average
5220	109.54	-	-	98.7	34.27	9.53	32.96	124	270	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	48	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	99.48	-	-	88.57	34.29	9.57	32.95	107	303	Average
5240	110.81	-	-	99.9	34.29	9.57	32.95	107	303	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	48	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	102.5	-	-	91.59	34.29	9.57	32.95	100	157	Average
5240	113.14	-	-	102.23	34.29	9.57	32.95	100	157	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	52	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	98.22	-	-	87.24	34.31	9.62	32.95	107	242	Average
5260	109.8	-	-	98.82	34.31	9.62	32.95	107	242	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	52	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	102.82	-	-	91.84	34.31	9.62	32.95	102	160	Average
5260	113.29	-	-	102.31	34.31	9.62	32.95	102	160	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
65.91	19.05	-20.95	40	43.79	6.22	0.81	31.77	101	1	Peak
136.11	22.45	-21.05	43.5	41.29	11.48	1.18	31.5	-	-	Peak
266.52	22.57	-23.43	46	39.41	12.83	1.62	31.29	-	-	Peak
324.5	22.73	-23.27	46	38.1	13.98	1.83	31.18	-	-	Peak
638.1	22.26	-23.74	46	29.76	20.1	2.8	30.4	-	-	Peak
760.6	24.8	-21.2	46	30.67	21.5	3.08	30.45	-	-	Peak
5300	97.22	-	-	86.16	34.34	9.66	32.94	100	179	Average
5300	107.96	-	-	96.9	34.34	9.66	32.94	100	179	Peak
10600	43.49	-30.51	74	53.12	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
44.04	17.59	-22.41	40	37.58	11.1	0.64	31.73	-	-	Peak
141.78	20.26	-23.24	43.5	39.15	11.36	1.2	31.45	-	-	Peak
231.69	20.22	-25.78	46	38.62	11.32	1.49	31.21	-	-	Peak
323.8	26.33	-19.67	46	41.72	13.96	1.83	31.18	121	54	Peak
456.8	22.18	-23.82	46	33.84	17.19	2.31	31.16	-	-	Peak
790.7	24.63	-21.37	46	29.79	21.95	3.12	30.23	-	-	Peak
5300	98.62	-	-	87.56	34.34	9.66	32.94	155	287	Average
5300	109.86	-	-	98.8	34.34	9.66	32.94	155	287	Peak
10600	43.06	-30.94	74	52.69	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	64	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	97.76	-	-	86.65	34.35	9.7	32.94	198	137	Average
5320	108.98	-	-	97.87	34.35	9.7	32.94	198	137	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	64	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	101.05	-	-	89.94	34.35	9.7	32.94	100	156	Average
5320	112.59	-	-	101.48	34.35	9.7	32.94	100	156	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	100	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	97.17	-	-	85.55	34.5	10.02	32.9	160	48	Average
5500	107.97	-	-	96.35	34.5	10.02	32.9	160	48	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	100	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	98.44	-	-	86.82	34.5	10.02	32.9	115	156	Average
5500	109.65	-	-	98.03	34.5	10.02	32.9	115	156	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	5580 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
140.7	23.51	-19.99	43.5	42.38	11.38	1.2	31.45	103	57	Peak
170.67	17.54	-25.96	43.5	38.11	9.47	1.23	31.27	-	-	Peak
265.17	22.8	-23.2	46	39.65	12.81	1.62	31.28	-	-	Peak
323.1	22.93	-23.07	46	38.34	13.93	1.82	31.16	-	-	Peak
487.6	20.39	-25.61	46	31.07	17.84	2.41	30.93	-	-	Peak
811.7	25.19	-20.81	46	30.05	22.22	3.17	30.25	-	-	Peak
5580	94.88	-	-	83.31	34.6	9.99	33.02	115	66	Average
5580	106.13	-	-	94.56	34.6	9.99	33.02	115	66	Peak
11160	43.36	-30.64	74	50.7	38	13.2	58.54	100	0	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	5580 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
68.34	25.08	-14.92	40	49.75	6.28	0.83	31.78	112	82	Peak
140.97	20.46	-23.04	43.5	39.33	11.38	1.2	31.45	-	-	Peak
230.34	20.06	-25.94	46	38.53	11.25	1.49	31.21	-	-	Peak
328	24.15	-21.85	46	39.49	14.06	1.84	31.24	-	-	Peak
533.1	20.5	-25.5	46	30.45	18.66	2.52	31.13	-	-	Peak
934.9	26.51	-19.49	46	30.31	23.62	3.42	30.84	-	-	Peak
5580	97.2	-	-	85.63	34.6	9.99	33.02	145	299	Average
5580	109.51	-	-	97.94	34.6	9.99	33.02	145	299	Peak
11160	42.89	-31.11	74	50.23	38	13.2	58.54	100	0	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	140	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	92.72	-	-	81.24	34.77	9.93	33.22	117	295	Average
5700	103.51	-	-	92.03	34.77	9.93	33.22	117	295	Peak

Test Mode :	802.11a <Ant 1>	**Temperature :**	23~25°C
Test Channel :	140	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	96.72	-	-	85.24	34.77	9.93	33.22	127	271	Average
5700	106.97	-	-	95.49	34.77	9.93	33.22	127	271	Peak

<SISO Ant 1>:

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	36	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	99.35	-	-	88.62	34.25	9.45	32.97	100	244	Average
5180	110.52	-	-	99.79	34.25	9.45	32.97	100	244	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	36	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	100.23	-	-	89.5	34.25	9.45	32.97	112	279	Average
5180	111.36	-	-	100.63	34.25	9.45	32.97	112	279	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	44	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
62.4	22.65	-17.35	40	47.51	6.14	0.78	31.78	111	41	Peak
150.96	24.45	-19.05	43.5	43.5	11.13	1.21	31.39	-	-	Peak
235.47	22.9	-23.1	46	41	11.59	1.51	31.2	-	-	Peak
321.7	22.48	-23.52	46	37.91	13.9	1.82	31.15	-	-	Peak
492.5	20.81	-25.19	46	31.36	17.94	2.42	30.91	-	-	Peak
815.2	23.91	-22.09	46	28.75	22.25	3.18	30.27	-	-	Peak
5220	95.91	-	-	85.07	34.27	9.53	32.96	124	151	Average
5220	107.38	-	-	96.54	34.27	9.53	32.96	124	151	Peak
10440	46.26	-22.04	68.3	56.31	37.36	11.21	58.62	100	0	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	44	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band..		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
44.31	21.05	-18.95	40	41.63	10.5	0.65	31.73	111	2	Peak
141.51	18.92	-24.58	43.5	37.81	11.36	1.2	31.45	-	-	Peak
233.31	20.71	-25.29	46	38.96	11.46	1.5	31.21	-	-	Peak
328.7	24.18	-21.82	46	39.5	14.09	1.84	31.25	-	-	Peak
457.5	22.62	-23.38	46	34.25	17.21	2.32	31.16	-	-	Peak
645.1	25.05	-20.95	46	32.43	20.16	2.83	30.37	-	-	Peak
5220	97.88	-	-	87.04	34.27	9.53	32.96	146	266	Average
5220	109.04	-	-	98.2	34.27	9.53	32.96	146	266	Peak
10440	42.35	-25.95	68.3	52.4	37.36	11.21	58.62	100	0	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	48	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	97.58	-	-	86.67	34.29	9.57	32.95	190	131	Average
5240	109.17	-	-	98.26	34.29	9.57	32.95	190	131	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	48	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	99.65	-	-	88.74	34.29	9.57	32.95	174	271	Average
5240	110.02	-	-	99.11	34.29	9.57	32.95	174	271	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	52	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5260	97.25	-	-	86.27	34.31	9.62	32.95	106	303	Average
5260	109.13	-	-	98.15	34.31	9.62	32.95	106	303	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	52	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	99.46	-	-	88.48	34.31	9.62	32.95	176	154	Average
5260	110.24	-	-	99.26	34.31	9.62	32.95	176	154	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	60	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
140.97	23.66	-19.84	43.5	42.53	11.38	1.2	31.45	111	42	Peak
236.28	22.49	-23.51	46	40.52	11.66	1.51	31.2	-	-	Peak
269.76	22.99	-23.01	46	39.78	12.87	1.64	31.3	-	-	Peak
325.2	23.37	-22.63	46	38.75	13.98	1.83	31.19	-	-	Peak
433.7	21.18	-24.82	46	33.38	16.71	2.26	31.17	-	-	Peak
809.6	24.39	-21.61	46	29.26	22.2	3.17	30.24	-	-	Peak
5300	97.01	-	-	85.95	34.34	9.66	32.94	100	123	Average
5300	108.04	-	-	96.98	34.34	9.66	32.94	100	123	Peak
10600	42.82	-31.18	74	52.45	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	60	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
42.42	24.5	-15.5	40	43.92	11.7	0.64	31.76	101	5	Peak
141.51	20.3	-23.2	43.5	39.19	11.36	1.2	31.45	-	-	Peak
231.42	19.69	-26.31	46	38.09	11.32	1.49	31.21	-	-	Peak
328	24.56	-21.44	46	39.9	14.06	1.84	31.24	-	-	Peak
608	23.96	-22.04	46	31.9	19.86	2.71	30.51	-	-	Peak
820.8	25.31	-20.69	46	30.14	22.3	3.19	30.32	-	-	Peak
5300	98.52	-	-	87.46	34.34	9.66	32.94	155	269	Average
5300	109.31	-	-	98.25	34.34	9.66	32.94	155	269	Peak
10600	41.35	-32.65	74	50.98	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	64	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	97.56	-	-	86.45	34.35	9.7	32.94	186	37	Average
5320	108.7	-	-	97.59	34.35	9.7	32.94	186	37	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	64	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	99.95	-	-	88.84	34.35	9.7	32.94	109	149	Average
5320	111.11	-	-	100	34.35	9.7	32.94	109	149	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	100	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	93.41	-	-	81.79	34.5	10.02	32.9	107	154	Average
5500	105.23	-	-	93.61	34.5	10.02	32.9	107	154	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	100	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (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	97.22	-	-	85.6	34.5	10.02	32.9	106	232	Average
5500	110.16	-	-	98.54	34.5	10.02	32.9	106	232	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	116	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	5580 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
143.13	23.75	-19.75	43.5	42.66	11.33	1.2	31.44	116	23	Peak
234.66	22.65	-23.35	46	40.83	11.52	1.5	31.2	-	-	Peak
267.06	22.9	-23.1	46	39.74	12.83	1.62	31.29	-	-	Peak
324.5	23.08	-22.92	46	38.45	13.98	1.83	31.18	-	-	Peak
455.4	20.53	-25.47	46	32.21	17.17	2.31	31.16	-	-	Peak
832	25.66	-20.34	46	30.42	22.42	3.22	30.4	-	-	Peak
5580	93.91	-	-	82.34	34.6	9.99	33.02	182	63	Average
5580	105.62	-	-	94.05	34.6	9.99	33.02	182	63	Peak
11160	43.69	-30.31	74	51.03	38	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	116	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	5580 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
67.8	24.21	-15.79	40	48.91	6.26	0.82	31.78	154	78	Peak
94.53	21.14	-22.36	43.5	42.63	9.2	0.98	31.67	-	-	Peak
235.2	20.45	-25.55	46	38.55	11.59	1.51	31.2	-	-	Peak
324.5	24.3	-21.7	46	39.67	13.98	1.83	31.18	-	-	Peak
456.8	21.21	-24.79	46	32.87	17.19	2.31	31.16	-	-	Peak
849.5	25.09	-20.91	46	29.75	22.6	3.27	30.53	-	-	Peak
5580	96.15	-	-	84.58	34.6	9.99	33.02	135	315	Average
5580	107.41	-	-	95.84	34.6	9.99	33.02	135	315	Peak
11160	43.06	-30.94	74	50.4	38	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	140	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	94.57	-	-	83.09	34.77	9.93	33.22	168	38	Average
5700	104.66	-	-	93.18	34.77	9.93	33.22	168	38	Peak

Test Mode :	802.11n HT20 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	140	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	96.67	-	-	85.19	34.77	9.93	33.22	139	271	Average
5700	107.55	-	-	96.07	34.77	9.93	33.22	139	271	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	38	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	5190 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
41.88	21.93	-18.07	40	40.76	12.3	0.63	31.76	121	52	Peak
141.24	23.58	-19.92	43.5	42.47	11.36	1.2	31.45	-	-	Peak
271.38	22.92	-23.08	46	39.69	12.9	1.64	31.31	-	-	Peak
324.5	22.77	-23.23	46	38.14	13.98	1.83	31.18	-	-	Peak
491.1	20.25	-25.75	46	30.85	17.9	2.42	30.92	-	-	Peak
810.3	25.04	-20.96	46	29.91	22.2	3.17	30.24	-	-	Peak
5190	93.4	-	-	82.62	34.25	9.49	32.96	108	241	Average
5190	103	-	-	92.22	34.25	9.49	32.96	108	241	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	38	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	5190 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
35.13	18.96	-21.04	40	33.86	16.4	0.58	31.88	-	-	Peak
142.59	19.23	-24.27	43.5	38.12	11.35	1.2	31.44	-	-	Peak
283.8	26.41	-19.59	46	43.08	13.08	1.66	31.41	100	37	Peak
328	24.18	-21.82	46	39.52	14.06	1.84	31.24	-	-	Peak
456.8	21.56	-24.44	46	33.22	17.19	2.31	31.16	-	-	Peak
710.9	21.37	-24.63	46	28.14	20.76	2.97	30.5	-	-	Peak
5190	96.57	-	-	85.79	34.25	9.49	32.96	102	153	Average
5190	106.66	-	-	95.88	34.25	9.49	32.96	102	153	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	46	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5230	95.7	-	-	84.84	34.29	9.53	32.96	100	242	Average
5230	105.13	-	-	94.27	34.29	9.53	32.96	100	242	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	46	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5230	99.77	-	-	88.91	34.29	9.53	32.96	101	155	Average
5230	109.37	-	-	98.51	34.29	9.53	32.96	101	155	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	54	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	5270 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
94.53	19.11	-24.39	43.5	40.6	9.2	0.98	31.67	-	-	Peak
142.05	23.79	-19.71	43.5	42.69	11.35	1.2	31.45	141	20	Peak
268.95	22.43	-23.57	46	39.24	12.86	1.63	31.3	-	-	Peak
325.9	22.87	-23.13	46	38.24	14.01	1.83	31.21	-	-	Peak
435.1	20.09	-25.91	46	32.24	16.75	2.26	31.16	-	-	Peak
742.4	23.28	-22.72	46	29.53	21.23	3.04	30.52	-	-	Peak
5270	94.24	-	-	83.26	34.31	9.62	32.95	176	136	Average
5270	103.43	-	-	92.45	34.31	9.62	32.95	176	136	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	54	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	5270 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
96.69	16.63	-26.87	43.5	37.88	9.44	0.98	31.67	-	-	Peak
141.24	19.48	-24.02	43.5	38.37	11.36	1.2	31.45	-	-	Peak
232.77	20.75	-25.25	46	39.07	11.39	1.5	31.21	-	-	Peak
326.6	24.32	-21.68	46	39.67	14.03	1.84	31.22	101	30	Peak
577.2	23.59	-22.41	46	32.43	19.4	2.63	30.87	-	-	Peak
751.5	23.49	-22.51	46	29.58	21.37	3.06	30.52	-	-	Peak
5270	97.59	-	-	86.61	34.31	9.62	32.95	100	155	Average
5270	107.43	-	-	96.45	34.31	9.62	32.95	100	155	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	62	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5310 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5310	90.49	-	-	79.01	34.72	9.7	32.94	102	219	Average
5310	100.4	-	-	88.92	34.72	9.7	32.94	102	219	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	62	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5310 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5310	92	-	-	80.89	34.35	9.7	32.94	100	6	Average
5310	102.04	-	-	90.93	34.35	9.7	32.94	100	6	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	102	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5510 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5510	90.95	-	-	78.63	35.2	10.02	32.9	100	231	Average
5510	100.76	-	-	88.44	35.2	10.02	32.9	100	231	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	102	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5510 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5510	93.7	-	-	81.38	35.2	10.02	32.9	100	269	Average
5510	103.58	-	-	91.26	35.2	10.02	32.9	100	269	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	110	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark:	All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
143.67	22.81	-20.69	43.5	41.71	11.33	1.2	31.43	102	3	Peak
236.28	22.21	-23.79	46	40.24	11.66	1.51	31.2	-	-	Peak
271.65	22.85	-23.15	46	39.63	12.9	1.64	31.32	-	-	Peak
322.4	22.67	-23.33	46	38.1	13.9	1.82	31.15	-	-	Peak
435.1	20.85	-25.15	46	33	16.75	2.26	31.16	-	-	Peak
675.9	23.18	-22.82	46	30.3	20.41	2.89	30.42	-	-	Peak
11000	40.87	-33.13	74	48.29	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	110	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark:	All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	18.47	-21.53	40	33.37	16.4	0.58	31.88	-	-	Peak
96.69	17.48	-26.02	43.5	38.73	9.44	0.98	31.67	-	-	Peak
140.97	19.75	-23.75	43.5	38.62	11.38	1.2	31.45	-	-	Peak
323.8	26.09	-19.91	46	41.48	13.96	1.83	31.18	102	63	Peak
493.9	19.87	-26.13	46	30.39	17.96	2.43	30.91	-	-	Peak
640.2	24.09	-21.91	46	31.55	20.12	2.81	30.39	-	-	Peak
11000	40.33	-33.67	74	47.75	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	134	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5670 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5670	88.7	-	-	77.2	34.74	9.94	33.18	162	39	Average
5670	101.11	-	-	89.61	34.74	9.94	33.18	162	39	Peak

Test Mode :	802.11n HT40 <SISO Ant 1>	**Temperature :**	23~25°C
Test Channel :	134	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5670 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5670	107.41	-	-	95.91	34.74	9.94	33.18	157	267	Peak
5670	94.01	-	-	82.51	34.74	9.94	33.18	157	267	Peak

<MIMO Ant 1+2>:

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	36	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10360 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	99.44	-	-	88.71	34.25	9.45	32.97	140	252	Average
5180	112.43	-	-	101.7	34.25	9.45	32.97	140	252	Peak
10360	44.32	-23.98	68.3	54.25	37.32	11.31	58.56	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	36	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10360 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	97.67	-	-	86.94	34.25	9.45	32.97	164	61	Average
5180	111.26	-	-	100.53	34.25	9.45	32.97	164	61	Peak
10360	43.14	-25.16	68.3	53.07	37.32	11.31	58.56	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	44	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
141.24	23.53	-19.97	43.5	42.42	11.36	1.2	31.45	108	20	Peak
233.85	22.28	-23.72	46	40.53	11.46	1.5	31.21	-	-	Peak
269.22	22.79	-23.21	46	39.58	12.87	1.64	31.3	-	-	Peak
324.5	23.09	-22.91	46	38.46	13.98	1.83	31.18	-	-	Peak
435.1	21.11	-24.89	46	33.26	16.75	2.26	31.16	-	-	Peak
634.6	21.5	-24.5	46	29.05	20.07	2.79	30.41	-	-	Peak
5220	98.24	-	-	87.4	34.27	9.53	32.96	154	252	Average
5220	111.46	-	-	100.62	34.27	9.53	32.96	154	252	Peak
10440	44.75	-23.55	68.3	54.8	37.36	11.21	58.62	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	44	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
66.99	26.83	-13.17	40	51.55	6.24	0.82	31.78	129	52	Peak
141.24	19.9	-23.6	43.5	38.79	11.36	1.2	31.45	-	-	Peak
234.39	20.5	-25.5	46	38.69	11.52	1.5	31.21	-	-	Peak
324.5	24.2	-21.8	46	39.57	13.98	1.83	31.18	-	-	Peak
456.8	23.11	-22.89	46	34.77	17.19	2.31	31.16	-	-	Peak
625.5	24.48	-21.52	46	32.15	20	2.77	30.44	-	-	Peak
5220	97.47	-	-	86.63	34.27	9.53	32.96	180	65	Average
5220	110.88	-	-	100.04	34.27	9.53	32.96	180	65	Peak
10440	41.78	-26.52	68.3	51.83	37.36	11.21	58.62	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	48	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10480 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	98.95	-	-	88.04	34.29	9.57	32.95	102	246	Average
5240	112.12	-	-	101.21	34.29	9.57	32.95	102	246	Peak
10480	42.33	-25.97	68.3	52.46	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	48	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10480 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	97.78	-	-	86.87	34.29	9.57	32.95	195	62	Average
5240	110.53	-	-	99.62	34.29	9.57	32.95	195	62	Peak
10480	41.1	-27.2	68.3	51.23	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	52	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 10520 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5260	100.06	-	-	89.08	34.31	9.62	32.95	101	250	Average
5260	111.56	-	-	100.58	34.31	9.62	32.95	101	250	Peak
10520	42.72	-25.58	68.3	52.76	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	52	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 10520 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5260	67.66	-	-	56.68	34.31	9.62	32.95	197	64	Average
5260	109.51	-	-	98.53	34.31	9.62	32.95	197	64	Peak
10520	42.04	-26.26	68.3	52.08	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	60	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
141.51	23.34	-20.16	43.5	42.23	11.36	1.2	31.45	118	34	Peak
170.4	17.49	-26.01	43.5	38.07	9.47	1.23	31.28	-	-	Peak
269.22	22.47	-23.53	46	39.26	12.87	1.64	31.3	-	-	Peak
323.8	22.67	-23.33	46	38.06	13.96	1.83	31.18	-	-	Peak
478.5	20.38	-25.62	46	31.34	17.64	2.37	30.97	-	-	Peak
748	23.54	-22.46	46	29.7	21.31	3.06	30.53	-	-	Peak
5300	99.26	-	-	88.2	34.34	9.66	32.94	102	195	Average
5300	110.95	-	-	99.89	34.34	9.66	32.94	102	195	Peak
10600	42.89	-31.11	74	52.52	37.5	11.51	58.64	100	0	Peak
15900	49.32	-24.68	74	51.54	40.91	14.3	57.43	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	60	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
40.53	16	-24	40	34.25	12.9	0.63	31.78	-	-	Peak
141.51	20.65	-22.85	43.5	39.54	11.36	1.2	31.45	-	-	Peak
233.58	19.89	-26.11	46	38.14	11.46	1.5	31.21	-	-	Peak
328	24.23	-21.77	46	39.57	14.06	1.84	31.24	-	-	Peak
626.9	24.91	-21.09	46	32.57	20.01	2.77	30.44	-	-	Peak
885.2	25.31	-20.69	46	29.78	22.95	3.32	30.74	100	0	Peak
5300	97.48	-	-	86.42	34.34	9.66	32.94	175	66	Average
5300	110.73	-	-	99.67	34.34	9.66	32.94	175	66	Peak
10600	41.93	-32.07	74	51.56	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	64	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	5320 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	99.03	-	-	87.92	34.35	9.7	32.94	100	246	Average
5320	111.17	-	-	100.06	34.35	9.7	32.94	100	246	Peak
10640	42.69	-31.31	74	52.07	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	64	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	5320 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	97.43	-	-	86.32	34.35	9.7	32.94	175	63	Average
5320	109.5	-	-	98.39	34.35	9.7	32.94	175	63	Peak
10640	41.61	-32.39	74	50.99	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	100	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	5500 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5500	98.5	-	-	86.88	34.5	10.02	32.9	110	186	Average
5500	111.42	-	-	99.8	34.5	10.02	32.9	110	186	Peak
11000	41.14	-32.86	74	48.56	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	100	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	5500 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5500	93	-	-	81.38	34.5	10.02	32.9	112	174	Average
5500	103.76	-	-	92.14	34.5	10.02	32.9	112	174	Peak
11000	41.28	-32.72	74	48.7	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	116	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	5580 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
141.51	23.98	-19.52	43.5	42.87	11.36	1.2	31.45	107	31	Peak
233.85	22.16	-23.84	46	40.41	11.46	1.5	31.21	-	-	Peak
266.25	22.36	-23.64	46	39.19	12.83	1.62	31.28	-	-	Peak
323.8	23.18	-22.82	46	38.57	13.96	1.83	31.18	-	-	Peak
435.1	20.39	-25.61	46	32.54	16.75	2.26	31.16	-	-	Peak
768.3	24.4	-21.6	46	30.09	21.62	3.09	30.4	-	-	Peak
5580	100.27	-	-	88.7	34.6	9.99	33.02	117	244	Average
5580	113.22	-	-	101.65	34.6	9.99	33.02	117	244	Peak
11160	45.94	-28.06	74	53.28	38	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	**Temperature :**	23~25°C
Test Channel :	116	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	5580 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
67.26	29.29	-10.71	40	54.01	6.24	0.82	31.78	115	63	Peak
141.51	20.11	-23.39	43.5	39	11.36	1.2	31.45	-	-	Peak
231.15	20.65	-25.35	46	39.12	11.25	1.49	31.21	-	-	Peak
324.5	24.35	-21.65	46	39.72	13.98	1.83	31.18	-	-	Peak
577.2	23.02	-22.98	46	31.86	19.4	2.63	30.87	-	-	Peak
914.6	25.43	-20.57	46	29.56	23.32	3.38	30.83	-	-	Peak
5580	97.92	-	-	86.35	34.6	9.99	33.02	194	70	Average
5580	110.56	-	-	98.99	34.6	9.99	33.02	194	70	Peak
11160	43.29	-30.71	74	50.63	38	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	5700 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	102.22	-	-	90.74	34.77	9.93	33.22	149	240	Average
5700	111.21	-	-	99.73	34.77	9.93	33.22	149	240	Peak
11400	46.15	-27.85	74	53.39	38.14	13.16	58.54	100	0	Peak

Test Mode :	802.11n HT20 <MIMO>0	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	5700 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	96.41	-	-	84.93	34.77	9.93	33.22	189	68	Average
5700	109.11	-	-	97.63	34.77	9.93	33.22	189	68	Peak
11400	44.14	-29.86	74	51.38	38.14	13.16	58.54	100	0	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	38	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	19.85	-20.15	40	31.9	19.28	0.54	31.87	109	154	Peak
143.4	22.8	-20.7	43.5	41.71	11.33	1.2	31.44	-	-	Peak
169.32	17.34	-26.16	43.5	37.83	9.57	1.23	31.29	-	-	Peak
323.1	23.1	-22.9	46	38.51	13.93	1.82	31.16	-	-	Peak
680.8	22.94	-23.06	46	30.04	20.44	2.9	30.44	-	-	Peak
846.7	26	-20	46	30.69	22.57	3.26	30.52	-	-	Peak
5190	92.21	-	-	81.43	34.25	9.49	32.96	110	202	Average
5190	105.03	-	-	94.25	34.25	9.49	32.96	110	202	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	38	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
61.59	28.43	-11.57	40	53.29	6.14	0.78	31.78	105	222	Peak
142.05	18.76	-24.74	43.5	37.66	11.35	1.2	31.45	-	-	Peak
170.13	17.23	-26.27	43.5	37.71	9.57	1.23	31.28	-	-	Peak
327.3	24.52	-21.48	46	39.87	14.03	1.84	31.22	-	-	Peak
456.8	21.15	-24.85	46	32.81	17.19	2.31	31.16	-	-	Peak
622.7	24.1	-21.9	46	31.81	19.98	2.76	30.45	-	-	Peak
5190	90.14	-	-	79.36	34.25	9.49	32.96	199	65	Average
5190	103.19	-	-	92.41	34.25	9.49	32.96	199	65	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	46	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. 10460 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5230	97.51	-	-	86.65	34.29	9.53	32.96	102	244	Average
5230	108.08	-	-	97.22	34.29	9.53	32.96	102	244	Peak
10460	42.57	-25.73	68.3	52.65	37.38	11.18	58.64	100	0	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	46	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. 10460 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5230	97.66	-	-	86.8	34.29	9.53	32.96	193	62	Average
5230	106.99	-	-	96.13	34.29	9.53	32.96	193	62	Peak
10460	42.35	-25.95	68.3	52.43	37.38	11.18	58.64	100	0	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	54	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5270 MHz is fundamental signal which can be ignored. 2. 10540 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
143.13	22.72	-20.78	43.5	41.63	11.33	1.2	31.44	100	5	Peak
231.96	22.32	-23.68	46	40.72	11.32	1.49	31.21	-	-	Peak
269.22	22.79	-23.21	46	39.58	12.87	1.64	31.3	-	-	Peak
325.2	23.26	-22.74	46	38.64	13.98	1.83	31.19	-	-	Peak
435.1	21.47	-24.53	46	33.62	16.75	2.26	31.16	-	-	Peak
770.4	24.95	-21.05	46	30.59	21.65	3.09	30.38	-	-	Peak
5270	98.58	-	-	87.6	34.31	9.62	32.95	101	247	Average
5270	109.83	-	-	98.85	34.31	9.62	32.95	101	247	Peak
10540	44.3	-24	68.3	54.32	37.43	11.21	58.66	100	0	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	54	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5270 MHz is fundamental signal which can be ignored. 2. 10540 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
96.69	16.25	-27.25	43.5	37.5	9.44	0.98	31.67	-	-	Peak
142.05	18.8	-24.7	43.5	37.7	11.35	1.2	31.45	-	-	Peak
226.29	21.07	-24.93	46	39.9	10.92	1.46	31.21	-	-	Peak
326.6	25.09	-20.91	46	40.44	14.03	1.84	31.22	136	62	Peak
476.4	20.5	-25.5	46	31.52	17.6	2.37	30.99	-	-	Peak
711.6	23.61	-22.39	46	30.37	20.77	2.97	30.5	-	-	Peak
5270	93.42	-	-	82.44	34.31	9.62	32.95	198	314	Average
5270	103.56	-	-	92.58	34.31	9.62	32.95	198	314	Peak
10540	42.55	-25.75	68.3	52.57	37.43	11.21	58.66	100	0	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	62	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	1. 5310 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5310	91.77	-	-	80.29	34.72	9.7	32.94	104	258	Average
5310	102.35	-	-	90.87	34.72	9.7	32.94	104	258	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	62	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	1. 5310 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5310	94.18	-	-	82.7	34.72	9.7	32.94	100	7	Average
5310	104.82	-	-	93.34	34.72	9.7	32.94	100	7	Peak

Test Mode :	802.11n HT40 <MIMO>	Temperature :	23~25°C
Test Channel :	102	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	1. 5510 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5510	90.94	-	-	78.62	35.2	10.02	32.9	111	231	Average
5510	100.58	-	-	88.26	35.2	10.02	32.9	111	231	Peak

Test Mode :	802.11n HT40 <MIMO>	Temperature :	23~25°C
Test Channel :	102	Relative Humidity :	49~51%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	1. 5510 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5510	92.78	-	-	80.46	35.2	10.02	32.9	114	269	Average
5510	103.76	-	-	91.44	35.2	10.02	32.9	114	269	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	110	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	5500 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
142.32	25.44	-18.06	43.5	44.34	11.35	1.2	31.45	100	3	Peak
170.13	18.24	-25.26	43.5	38.72	9.57	1.23	31.28	-	-	Peak
268.14	22.41	-23.59	46	39.21	12.86	1.63	31.29	-	-	Peak
325.9	23.1	-22.9	46	38.47	14.01	1.83	31.21	-	-	Peak
435.1	21.21	-24.79	46	33.36	16.75	2.26	31.16	-	-	Peak
799.8	24.53	-21.47	46	29.45	22.1	3.14	30.16	-	-	Peak
5550	96.83	-	-	85.24	34.57	10	32.98	107	244	Average
5550	110.37	-	-	98.78	34.57	10	32.98	107	244	Peak
11100	43.65	-30.35	74	51.03	37.96	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	110	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	5550 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
67.53	24.22	-15.78	40	48.92	6.26	0.82	31.78	121	52	Peak
142.59	20.87	-22.63	43.5	39.76	11.35	1.2	31.44	-	-	Peak
237.36	19.63	-26.37	46	37.58	11.73	1.52	31.2	-	-	Peak
327.3	24.56	-21.44	46	39.91	14.03	1.84	31.22	-	-	Peak
559.7	20.58	-25.42	46	30.01	19.11	2.58	31.12	-	-	Peak
790.7	24.33	-21.67	46	29.49	21.95	3.12	30.23	-	-	Peak
5550	93.98	-	-	82.39	34.57	10	32.98	181	66	Average
5550	107.65	-	-	96.06	34.57	10	32.98	181	66	Peak
11100	41.95	-32.05	74	49.33	37.96	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	134	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	5670 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5670	98.55	-	-	87.05	34.74	9.94	33.18	127	188	Average
5670	109.42	-	-	97.92	34.74	9.94	33.18	127	188	Peak
11340	44.9	-29.1	74	52.17	38.1	13.17	58.54	100	0	Peak

Test Mode :	802.11n HT40 <MIMO>	**Temperature :**	23~25°C
Test Channel :	134	**Relative Humidity :**	49~51%
Test Engineer :	Eric Shih	**Polarization :**	Vertical
Remark :	5670 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5670	96.39	-	-	84.89	34.74	9.94	33.18	190	69	Average
5670	106.13	-	-	94.63	34.74	9.94	33.18	190	69	Peak
11340	43.72	-30.28	74	50.99	38.1	13.17	58.54	100	0	Peak

3.6 Peak Excursion Ratio Measurement

3.6.1 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.

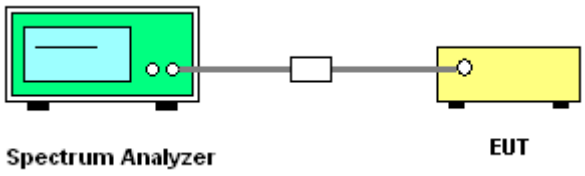
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

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 = 1 MHz.
   * Set VBW ≥ 3 MHz.
   * 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.

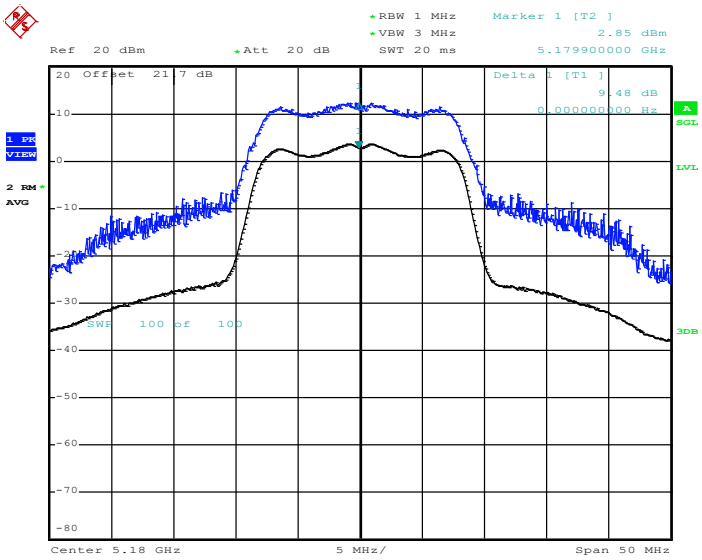
3.6.4 Test Setup



3.6.5 Test Result of Peak Excursion Ratio

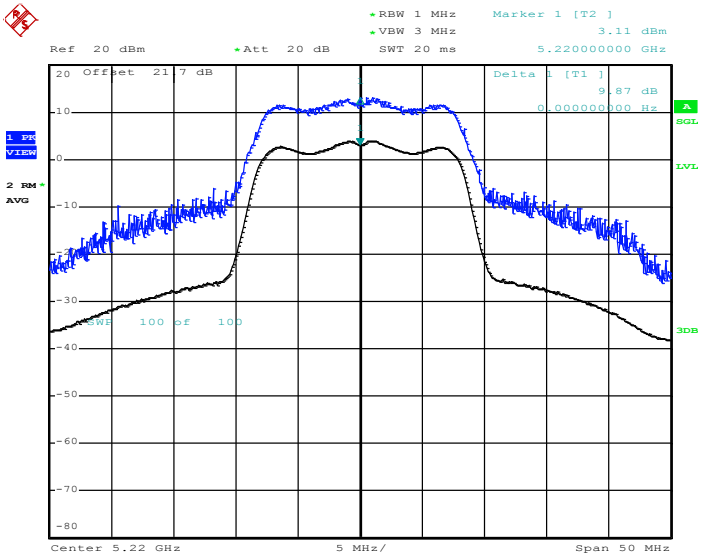
Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11a Channel 36 - SISO Ant 1



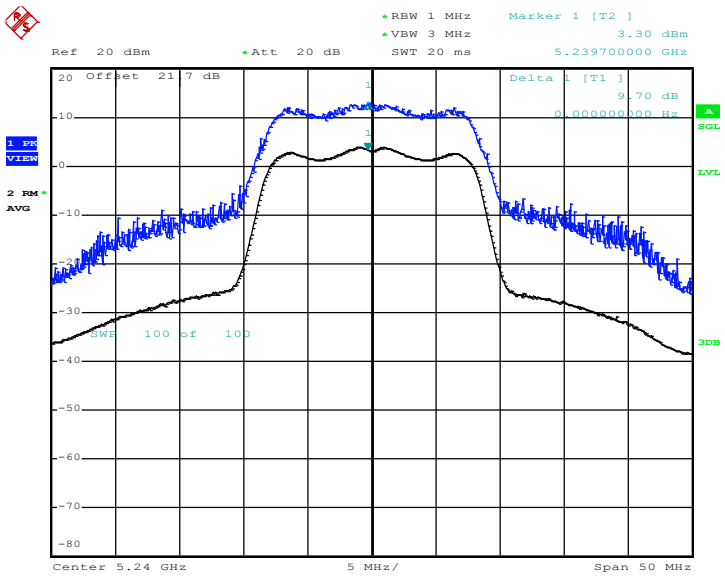
Date: 26.JUL.2012 21:55:14

Peak Excursion Ratio Plot on 802.11a Channel 44 - SISO Ant 1



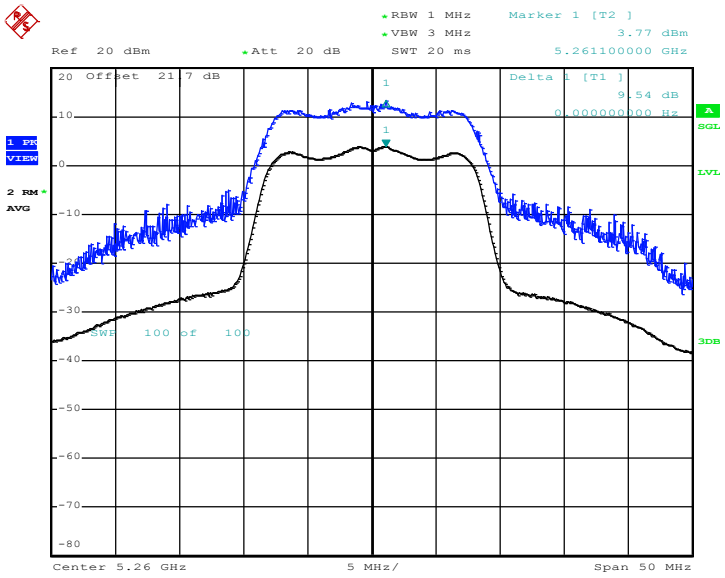
Date: 26.JUL.2012 22:54:03

Peak Excursion Ratio Plot on 802.11a Channel 48 - SISO Ant 1



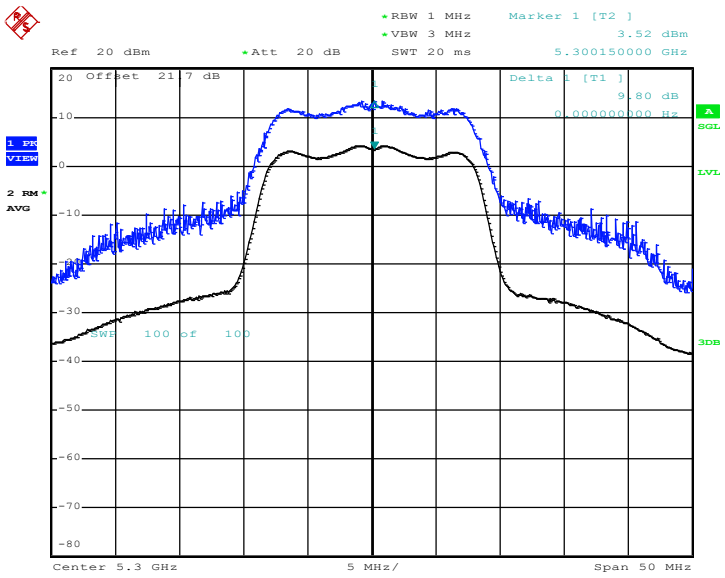
Date: 26.JUL.2012 22:56:52

Peak Excursion Ratio Plot on 802.11a Channel 52 - SISO Ant 1



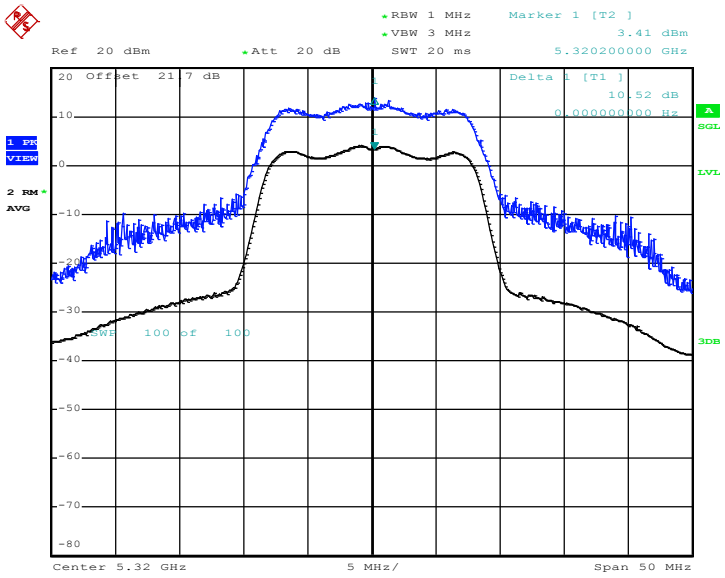
Date: 26.JUL.2012 23:00:05

Peak Excursion Ratio Plot on 802.11a Channel 60 - SISO Ant 1



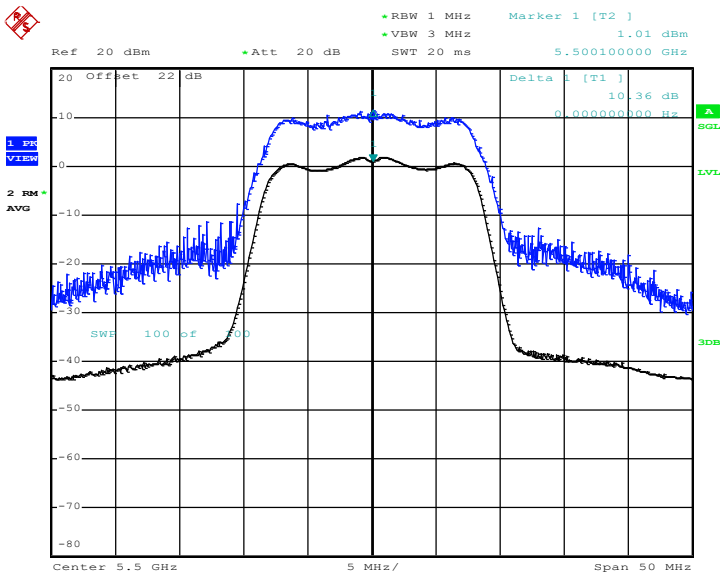
Date: 26.JUL.2012 23:04:04

Peak Excursion Ratio Plot on 802.11a Channel 64 - SISO Ant 1



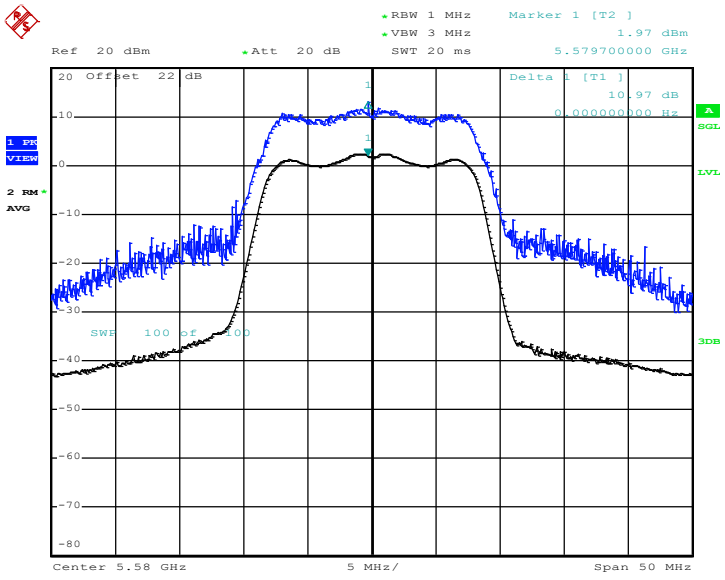
Date: 26.JUL.2012 23:07:42

Peak Excursion Ratio Plot on 802.11a Channel 100 - SISO Ant 1



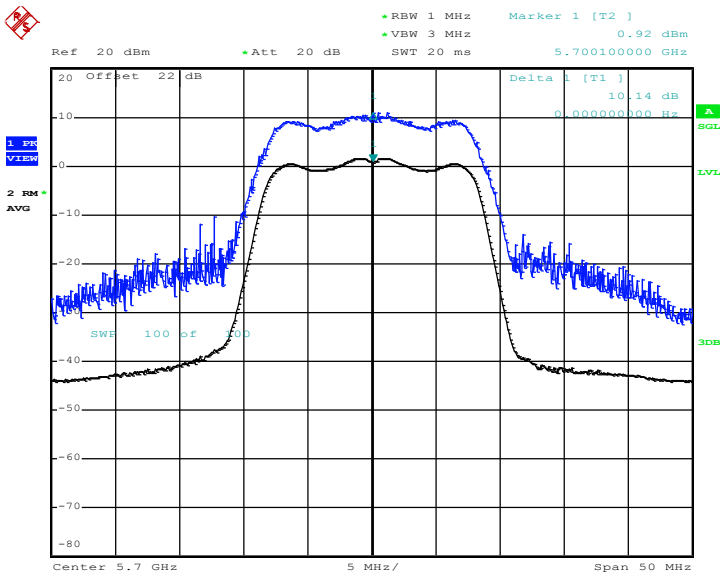
Date: 26.JUL.2012 23:11:09

Peak Excursion Ratio Plot on 802.11a Channel 116- SISO Ant 1



Date: 26.JUL.2012 23:18:29

Peak Excursion Ratio Plot on 802.11a Channel 140 - SISO Ant 1

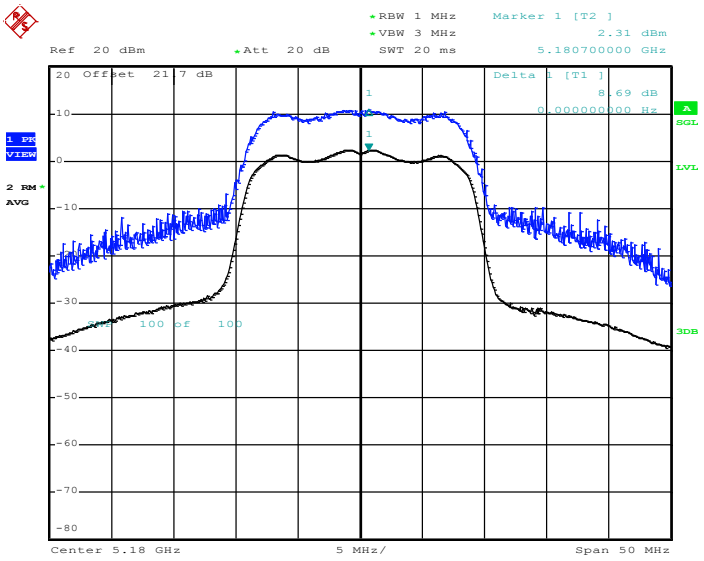


Date: 26.JUL.2012 23:22:54

Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	**Relative Humidity :**	45~49%

Peak Excursion Ratio Plot on 802.11n HT20 Channel 36 - SISO

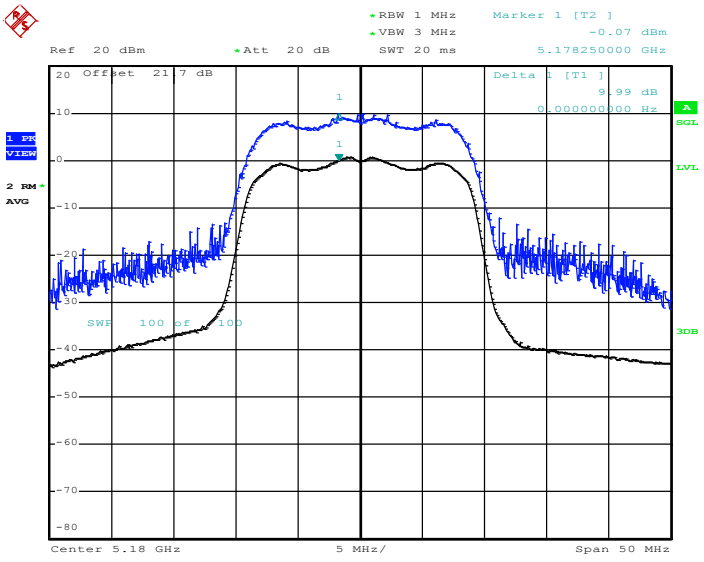
Ant 1



Date: 26.JUL.2012 23:41:47

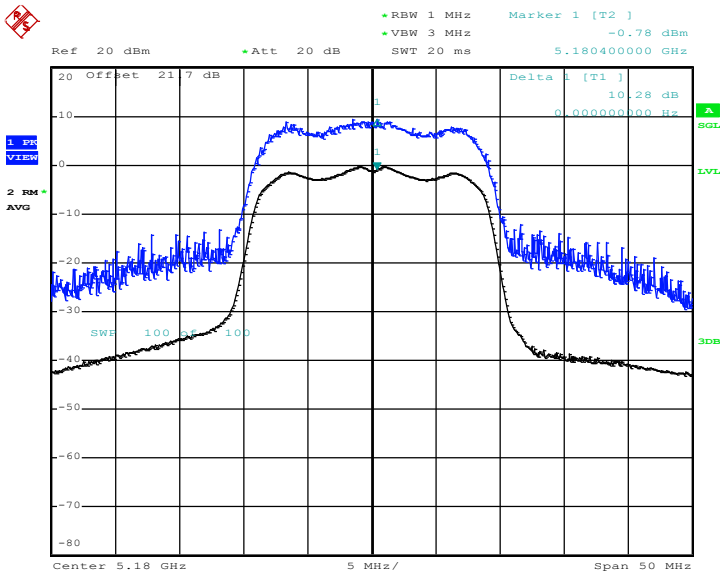
Peak Excursion Ratio Plot on 802.11n HT20 Channel 36 - MIMO

Ant 1



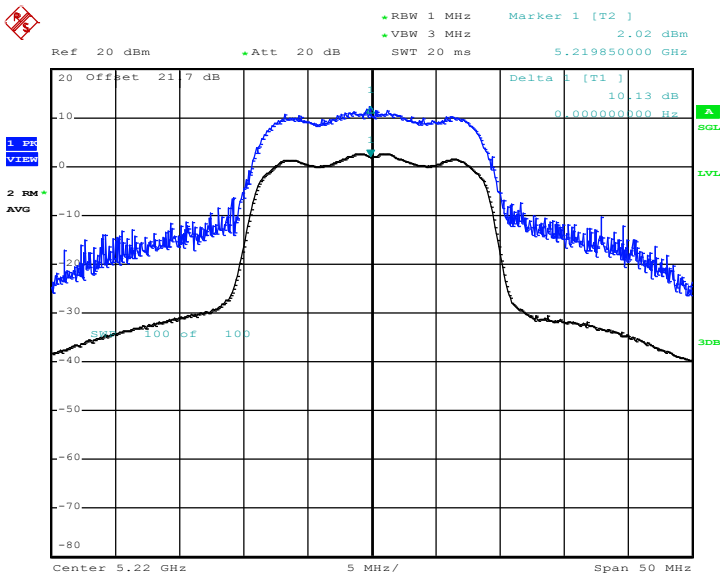
Date: 28.JUL.2012 00:03:55

Peak Excursion Ratio Plot on 802.11n HT20 Channel 36 - MIMO Ant 2



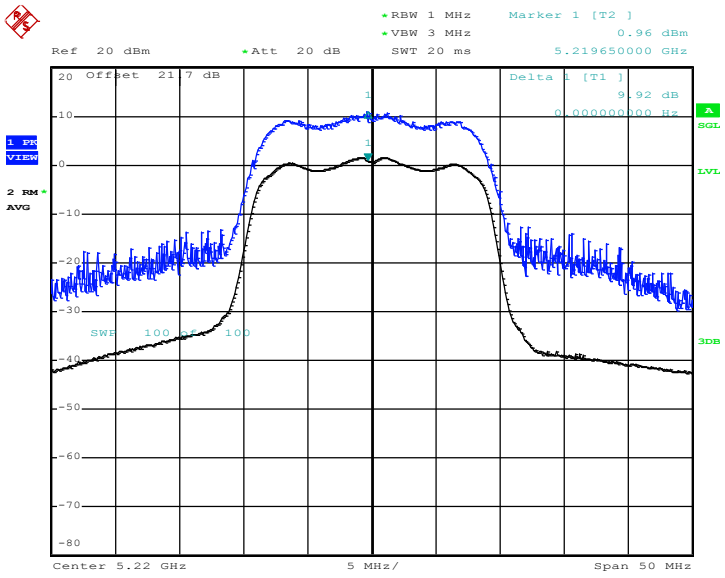
Date: 27.JUL.2012 22:42:45

Peak Excursion Ratio Plot on 802.11n HT20 Channel 44- SISO Ant 1



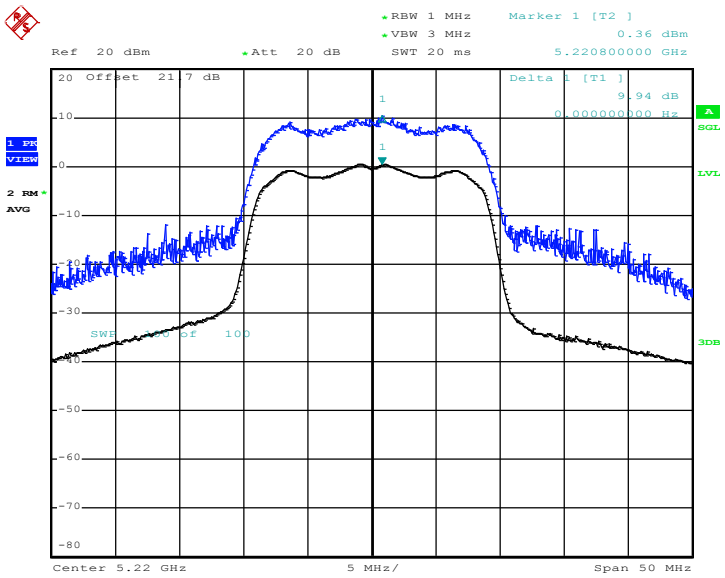
Date: 26.JUL.2012 23:45:15

Peak Excursion Ratio Plot on 802.11n HT20 Channel 44 - MIMO Ant 1



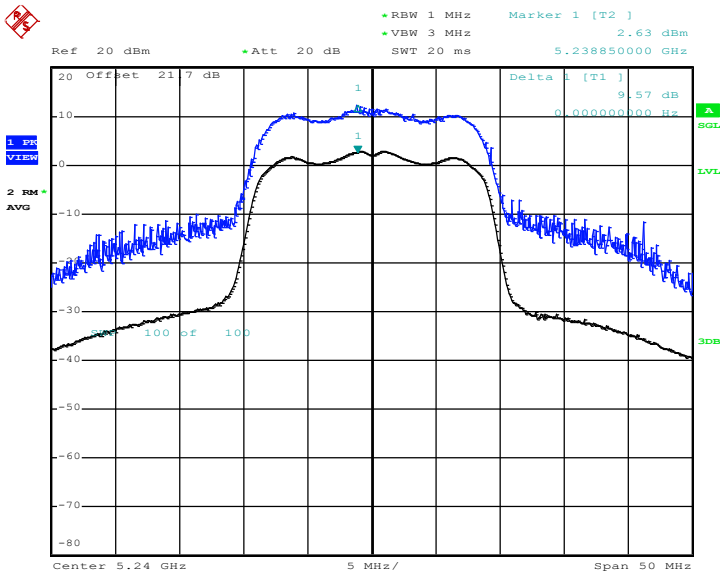
Date: 27.JUL.2012 23:59:50

Peak Excursion Ratio Plot on 802.11n HT20 Channel 44 - MIMO Ant 2



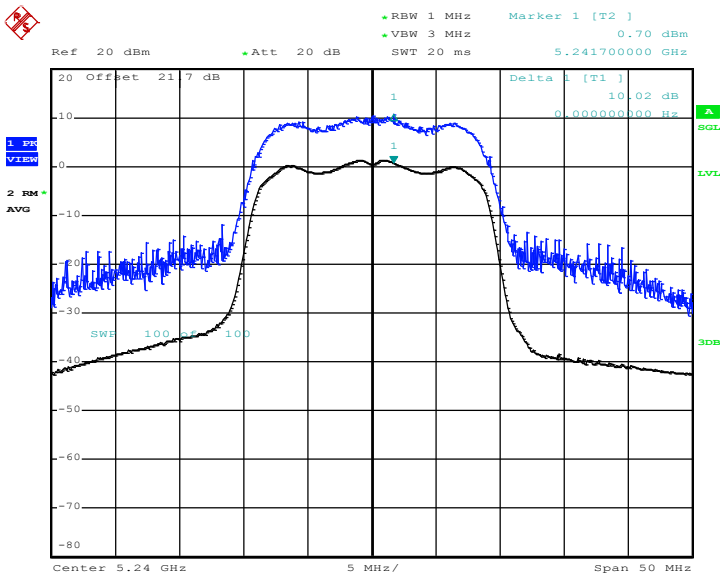
Date: 27.JUL.2012 22:46:55

Peak Excursion Ratio Plot on 802.11n HT20 Channel 48 - SISO Ant 1



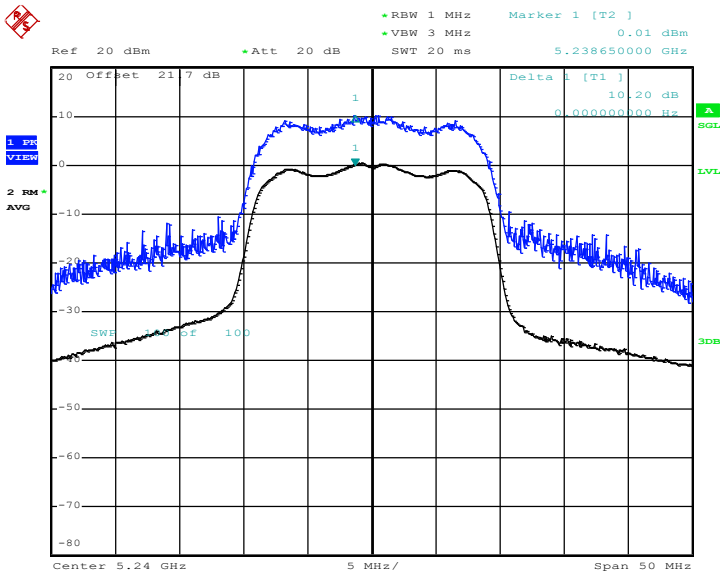
Date: 26.JUL.2012 23:48:36

Peak Excursion Ratio Plot on 802.11n HT20 Channel 48 - MIMO Ant 1



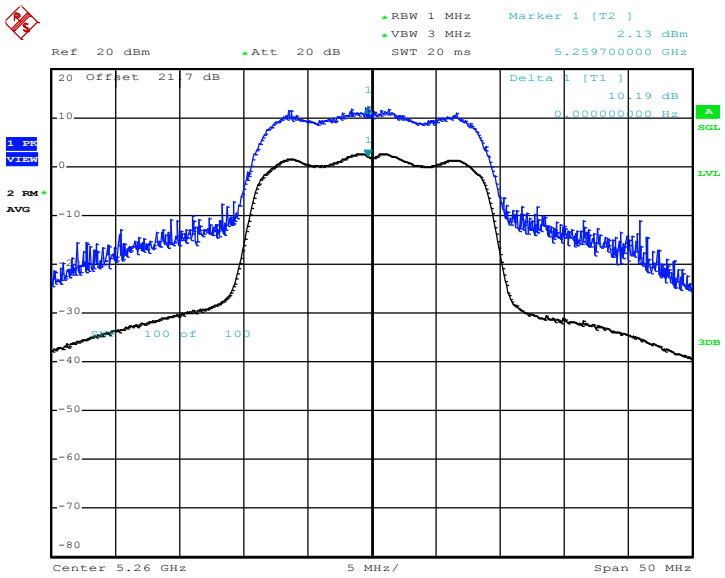
Date: 27.JUL.2012 23:56:39

Peak Excursion Ratio Plot on 802.11n HT20 Channel 48 - MIMO Ant 2



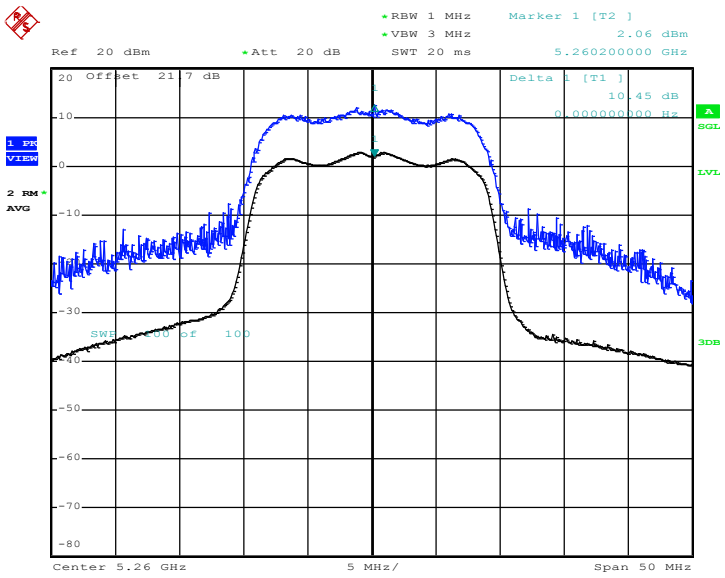
Date: 27.JUL.2012 22:51:33

Peak Excursion Ratio Plot on 802.11n HT20 Channel 52 - SISO Ant 1



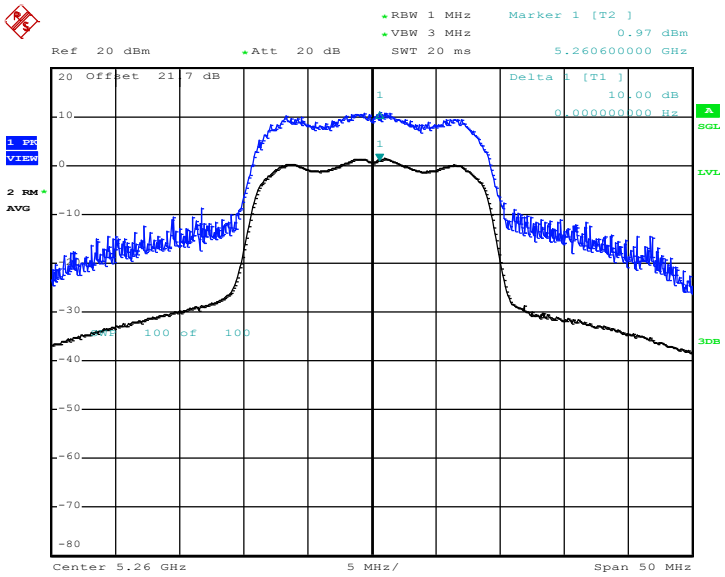
Date: 26.JUL.2012 23:51:53

Peak Excursion Ratio Plot on 802.11n HT20 Channel 52 - MIMO Ant 1



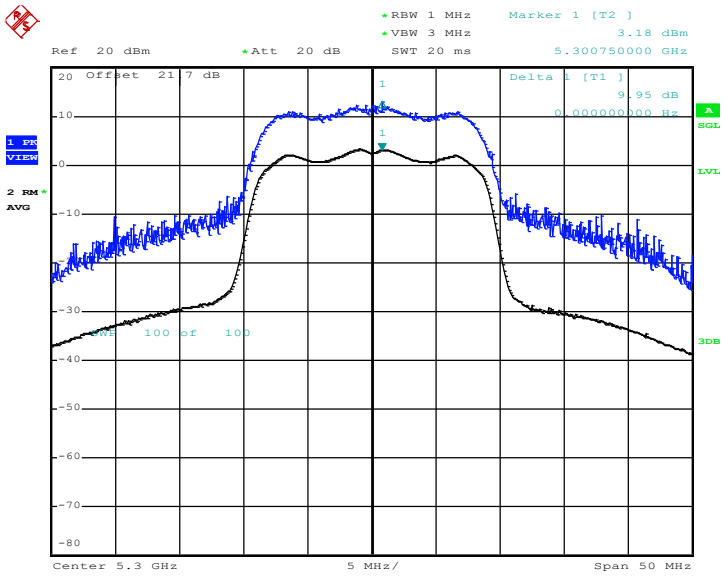
Date: 27.JUL.2012 23:52:11

Peak Excursion Ratio Plot on 802.11n HT20 Channel 52 - MIMO Ant 2



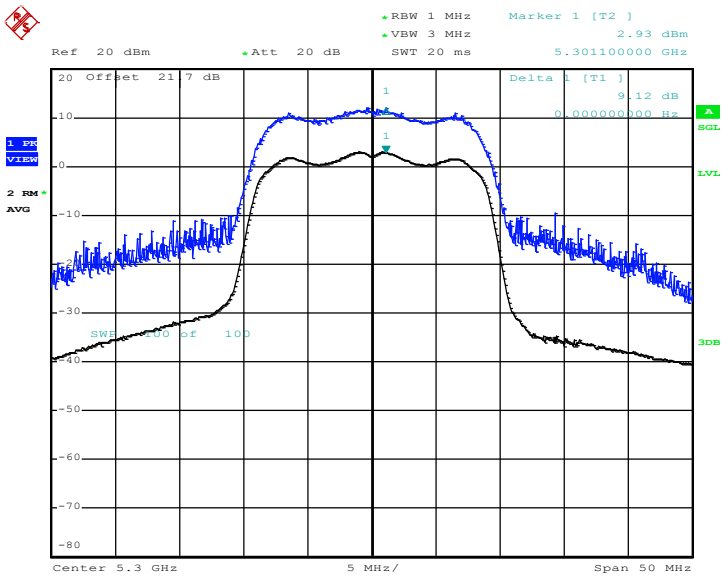
Date: 27.JUL.2012 22:57:01

Peak Excursion Ratio Plot on 802.11n HT20 Channel 60 - SISO Ant 1



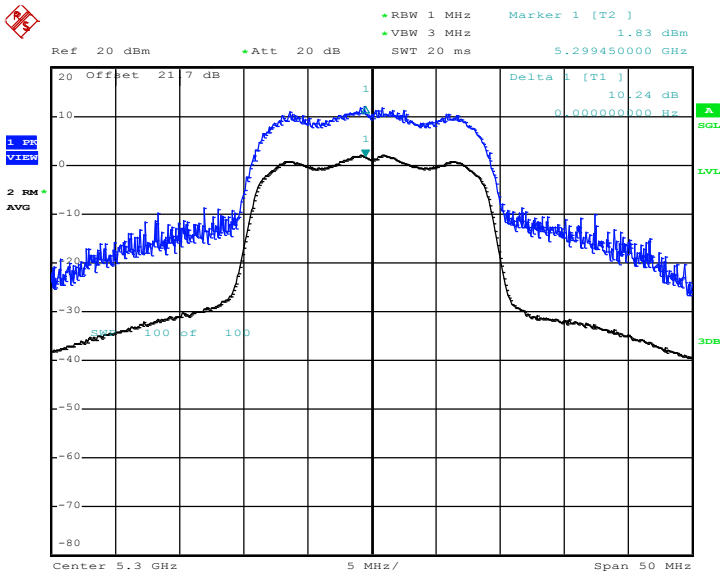
Date: 26.JUL.2012 23:57:07

Peak Excursion Ratio Plot on 802.11n HT20 Channel 60 - MIMO Ant 1



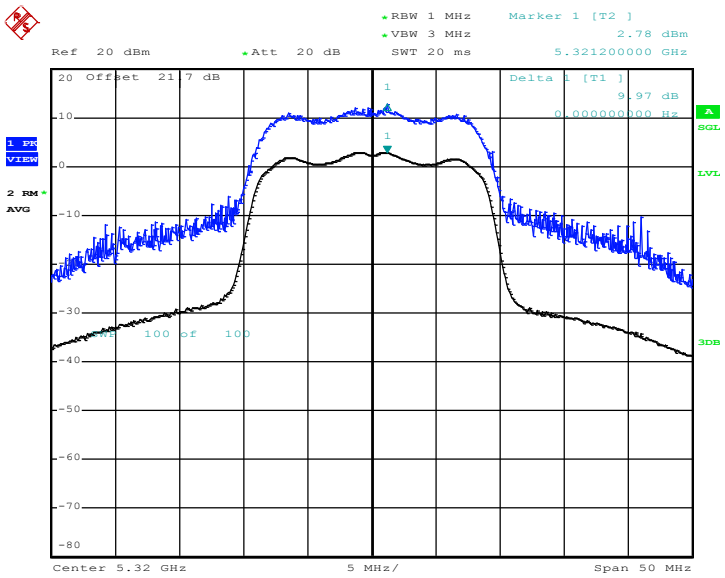
Date: 27.JUL.2012 23:48:12

Peak Excursion Ratio Plot on 802.11n HT20 Channel 60 - MIMO Ant 2



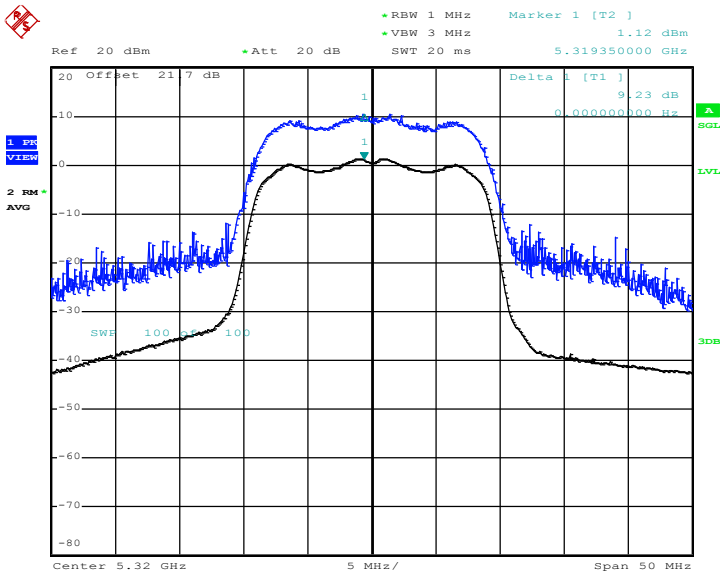
Date: 27.JUL.2012 23:10:19

Peak Excursion Ratio Plot on 802.11n HT20 Channel 64 - SISO Ant 1



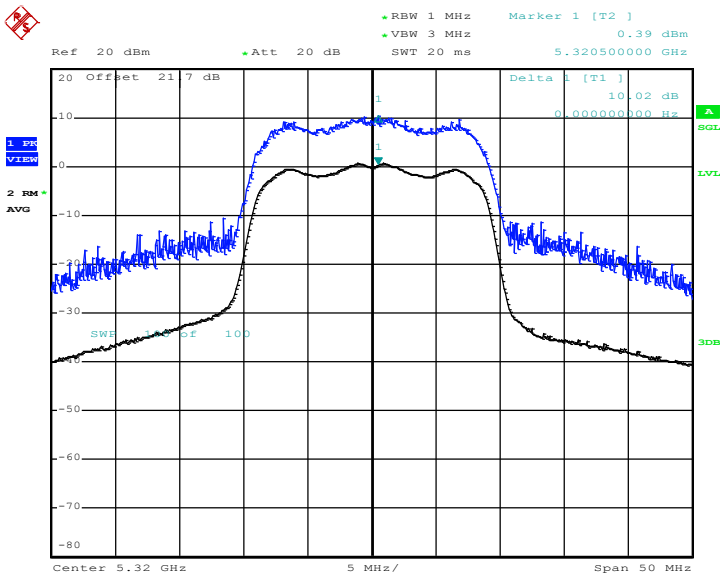
Date: 27.JUL.2012 00:01:22

Peak Excursion Ratio Plot on 802.11n HT20 Channel 64 - MIMO Ant 1



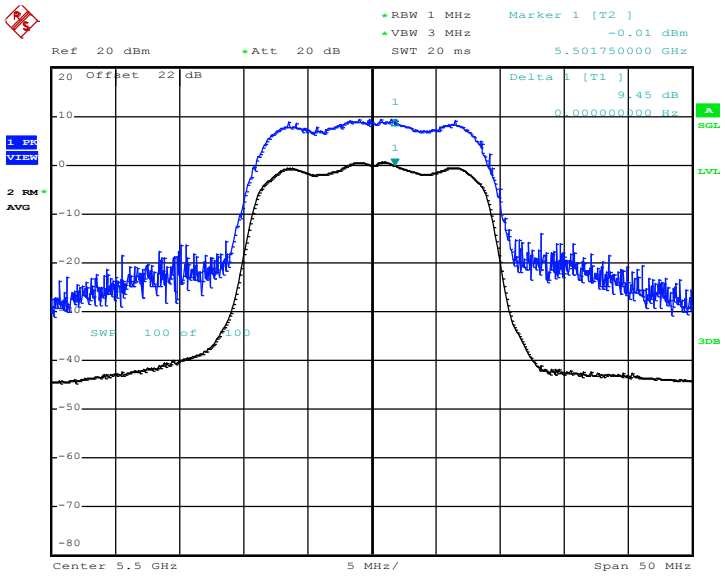
Date: 27.JUL.2012 23:45:00

Peak Excursion Ratio Plot on 802.11n HT20 Channel 64 - MIMO Ant 2



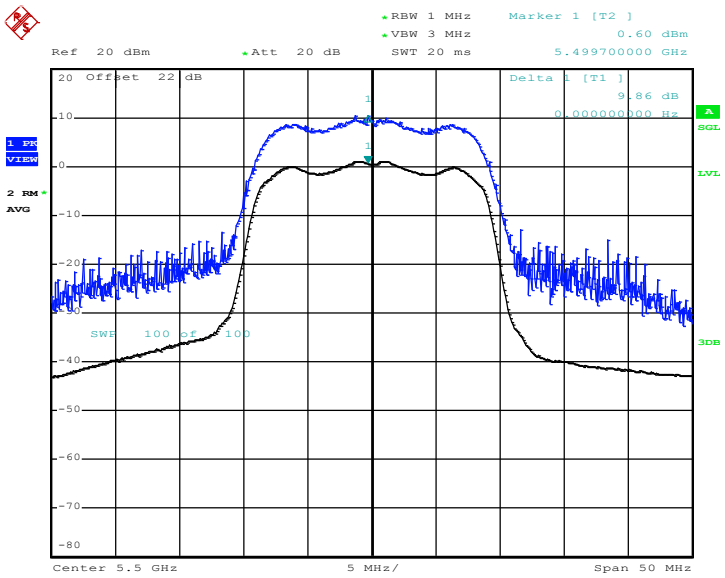
Date: 27.JUL.2012 23:14:27

Peak Excursion Ratio Plot on 802.11n HT20 Channel 100 - SISO Ant 1



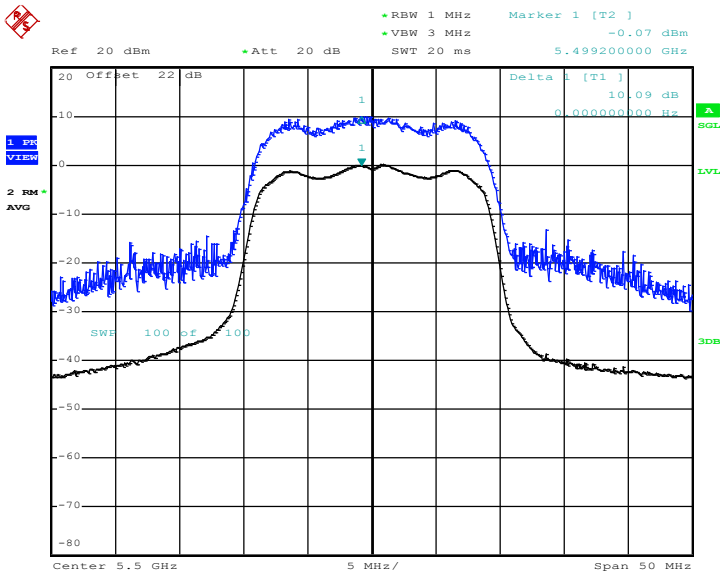
Date: 27.JUL.2012 00:04:56

Peak Excursion Ratio Plot on 802.11n HT20 Channel 100 - MIMO Ant 1



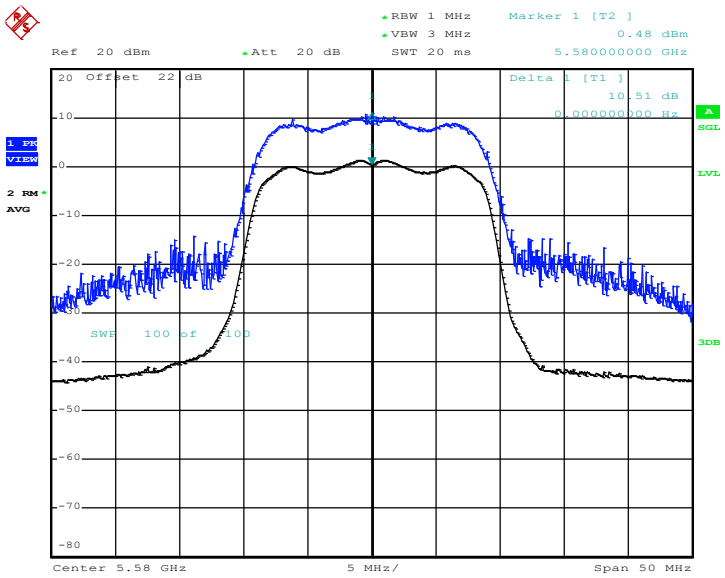
Date: 27.JUL.2012 23:41:42

Peak Excursion Ratio Plot on 802.11n HT20 Channel 100 - MIMO Ant 2



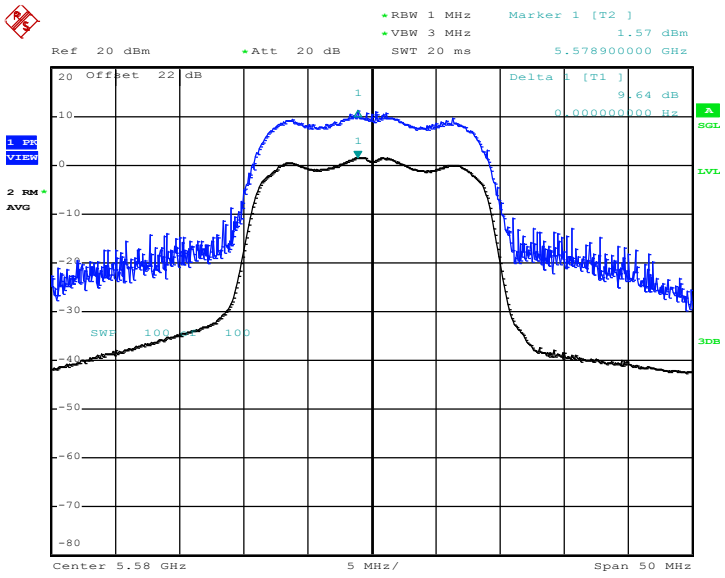
Date: 27.JUL.2012 23:18:21

Peak Excursion Ratio Plot on 802.11n HT20 Channel 116- SISO Ant 1



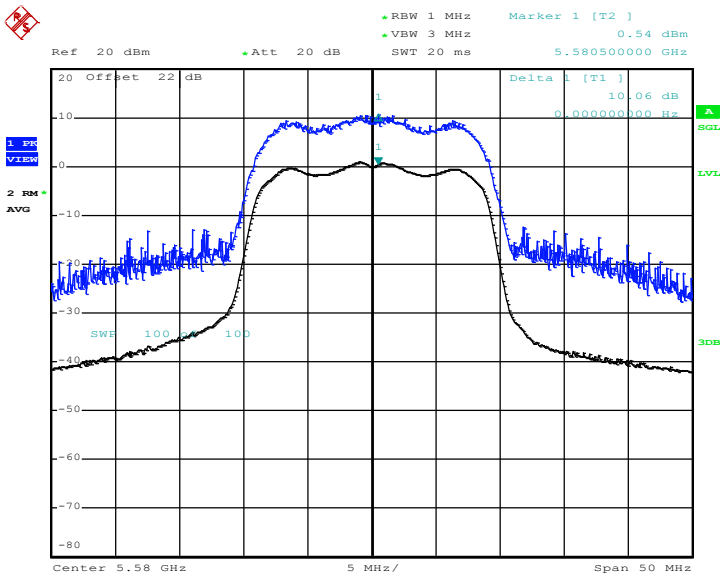
Date: 27.JUL.2012 00:08:10

Peak Excursion Ratio Plot on 802.11n HT20 Channel 116- MIMO Ant 1



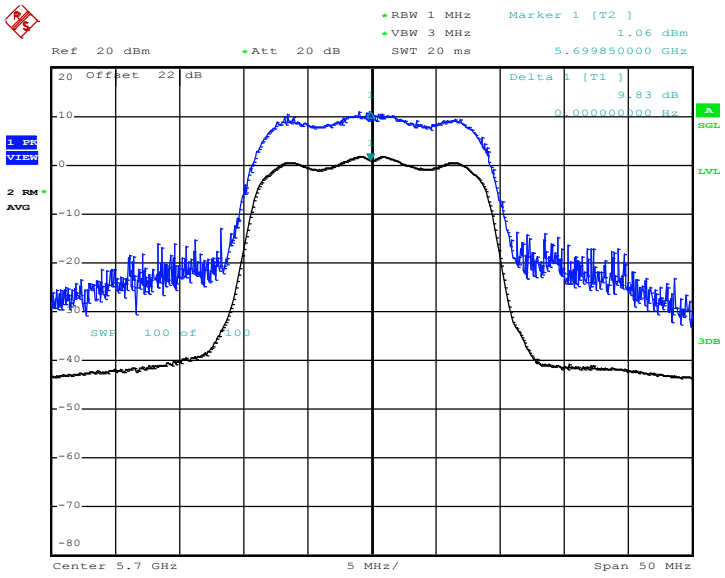
Date: 27.JUL.2012 23:37:28

Peak Excursion Ratio Plot on 802.11n HT20 Channel 116- MIMO Ant 2



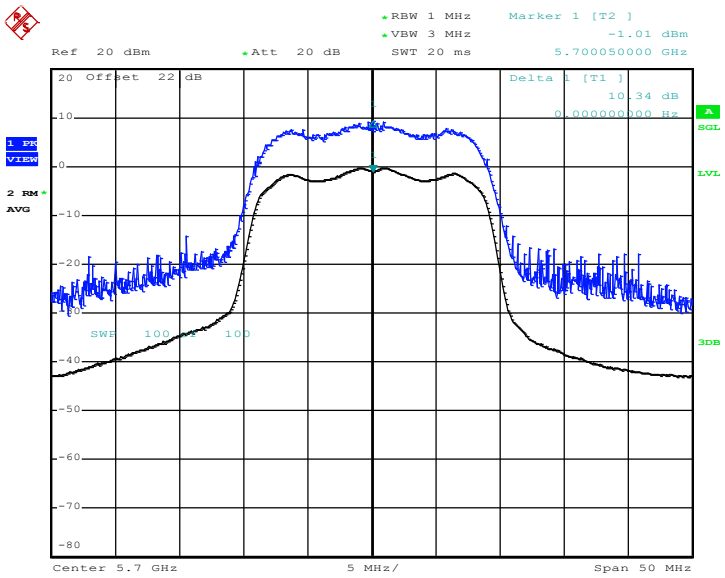
Date: 27.JUL.2012 23:26:21

Peak Excursion Ratio Plot on 802.11n HT20 Channel 140 - SISO Ant 1



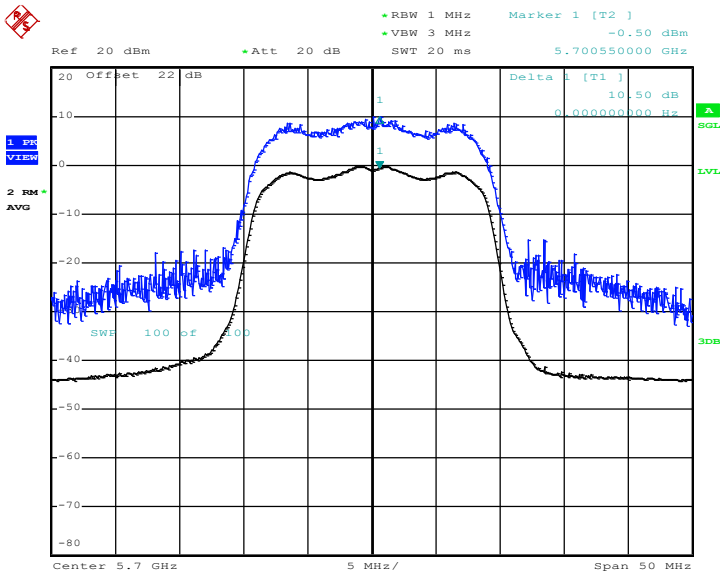
Date: 27.JUL.2012 00:11:35

Peak Excursion Ratio Plot on 802.11n HT20 Channel 140 - MIMO Ant 1



Date: 27.JUL.2012 23:34:35

Peak Excursion Ratio Plot on 802.11n HT20 Channel 140 - MIMO Ant 2

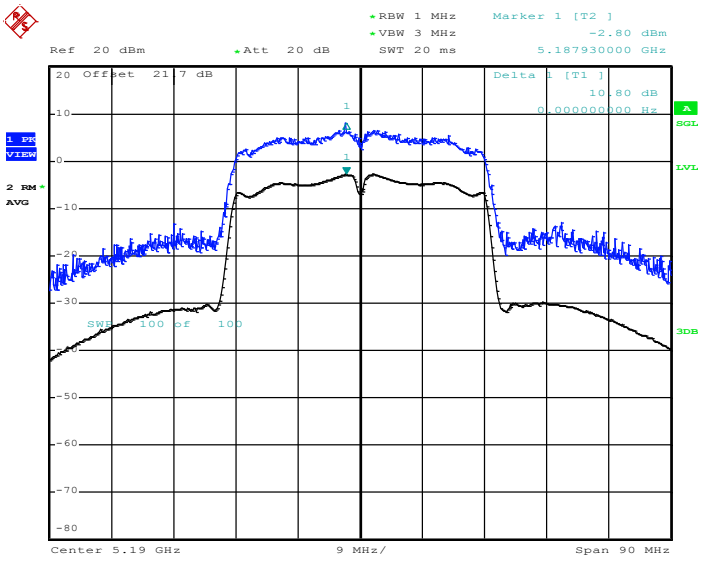


Date: 27.JUL.2012 23:30:19

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11n HT40 Channel 38 - SISO

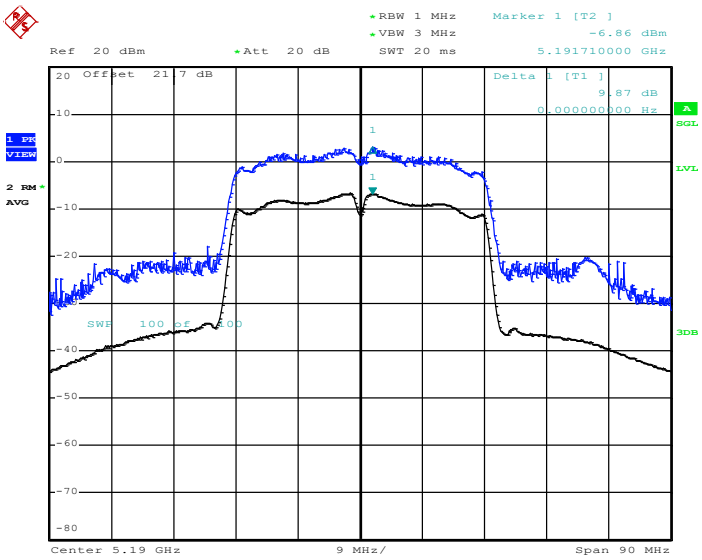
Ant 1



Date: 27.JUL.2012 00:27:48

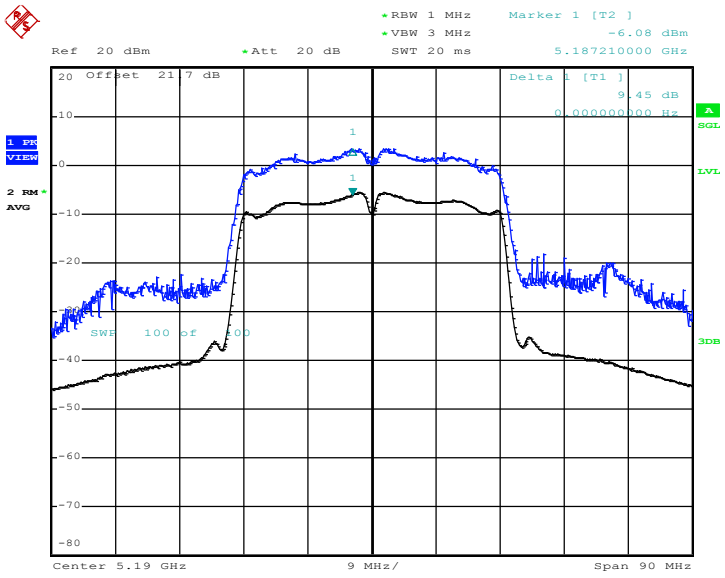
Peak Excursion Ratio Plot on 802.11n HT40 Channel 38 - MIMO

Ant 1



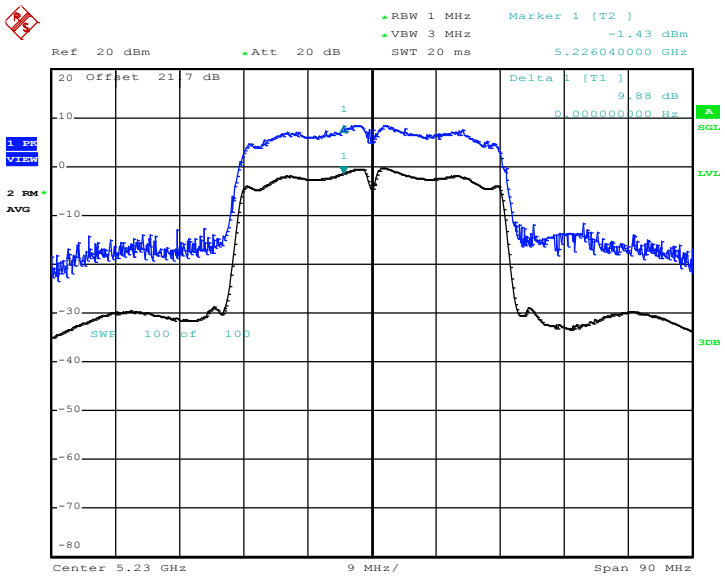
Date: 28.JUL.2012 01:06:04

Peak Excursion Ratio Plot on 802.11n HT40 Channel 38 - MIMO Ant 2



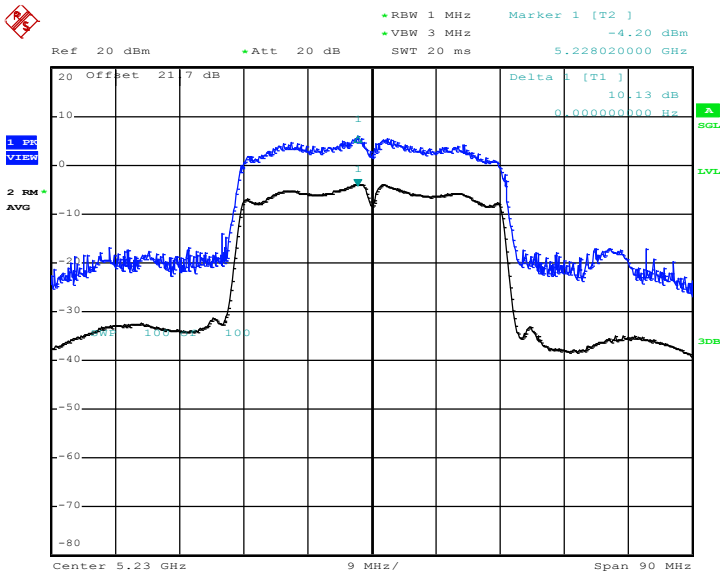
Date: 28.JUL.2012 01:08:59

Peak Excursion Ratio Plot on 802.11n HT40 Channel 46 - SISO Ant 1



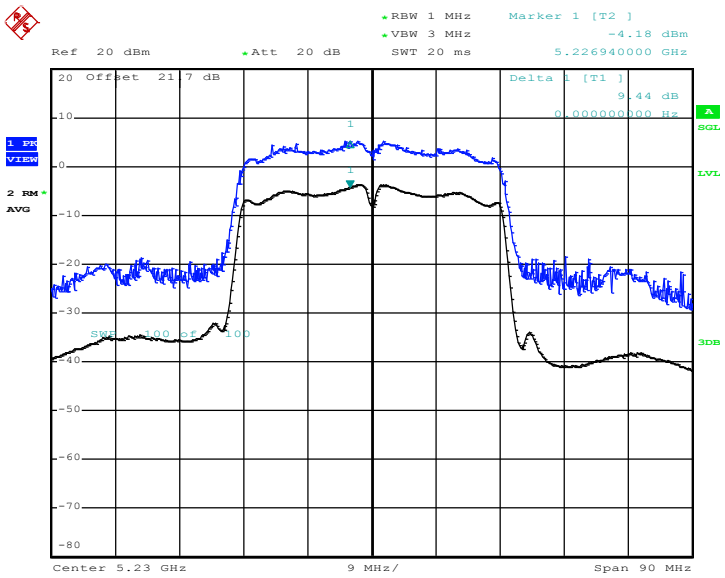
Date: 27.JUL.2012 00:38:50

Peak Excursion Ratio Plot on 802.11n HT40 Channel 46 - MIMO Ant 1



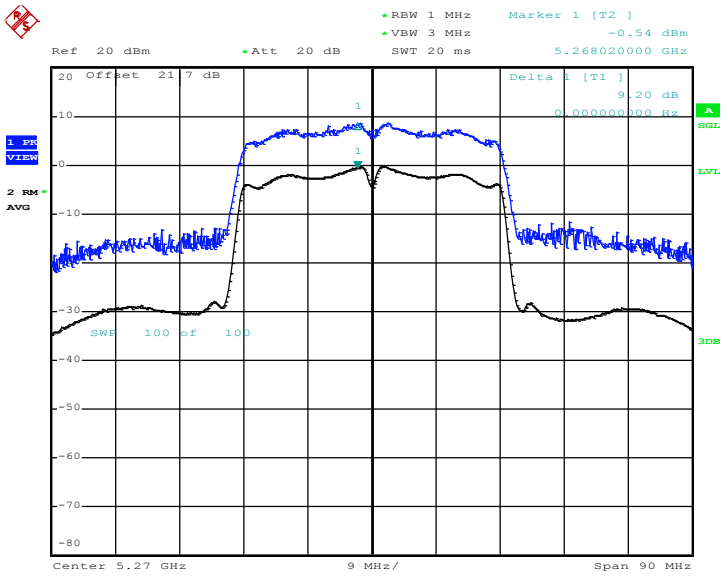
Date: 28.JUL.2012 01:12:20

Peak Excursion Ratio Plot on 802.11n HT40 Channel 46 - MIMO Ant 2



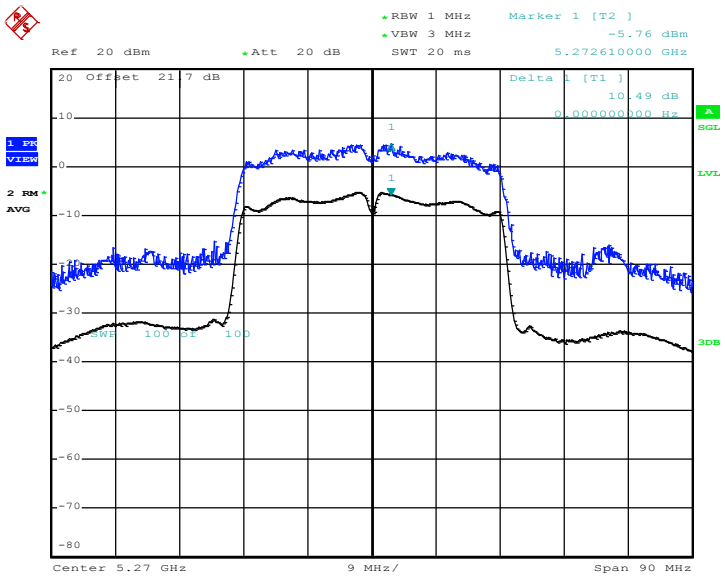
Date: 28.JUL.2012 01:14:28

Peak Excursion Ratio Plot on 802.11n HT40 Channel 54 - SISO Ant 1



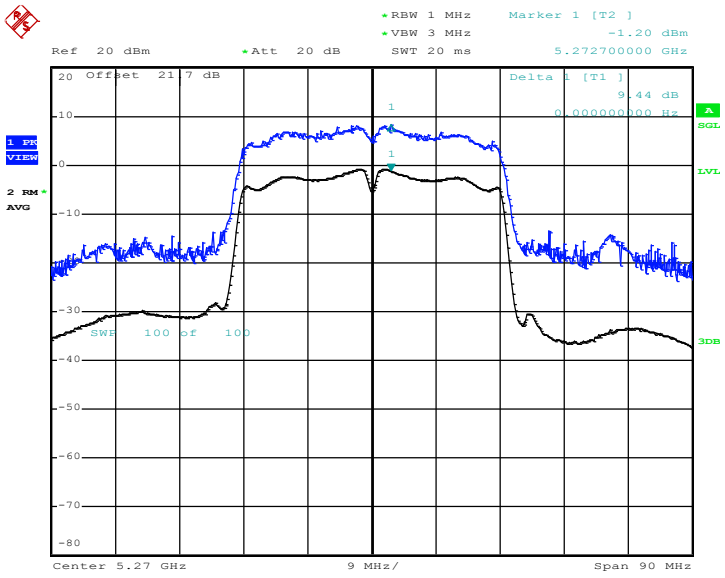
Date: 27.JUL.2012 00:46:23

Peak Excursion Ratio Plot on 802.11n HT40 Channel 54 - MIMO Ant 1



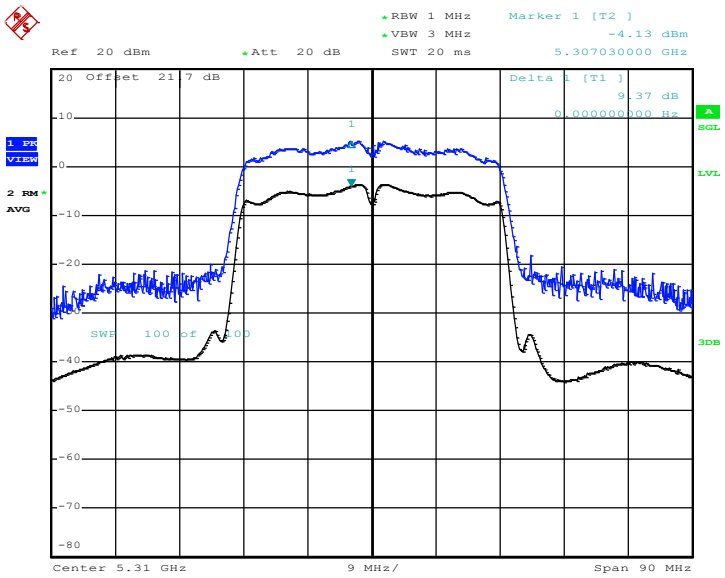
Date: 28.JUL.2012 01:17:46

Peak Excursion Ratio Plot on 802.11n HT40 Channel 54 - MIMO Ant 2



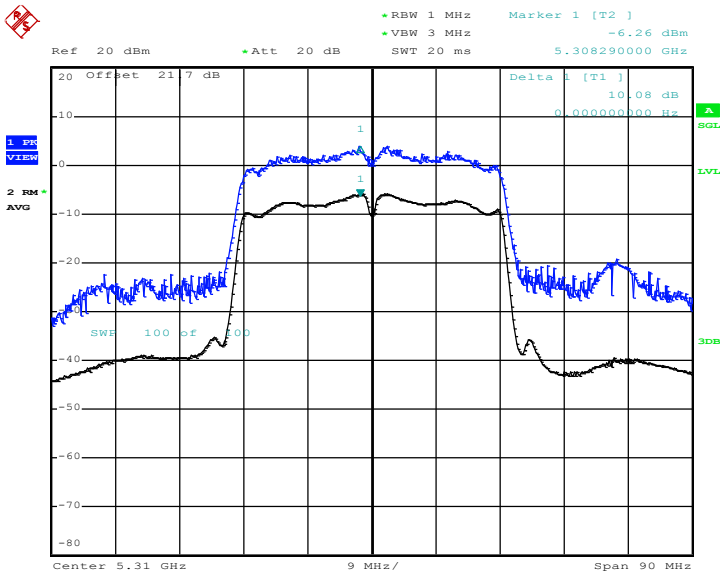
Date: 28.JUL.2012 01:19:54

Peak Excursion Ratio Plot on 802.11n HT40 Channel 62 - SISO Ant 1



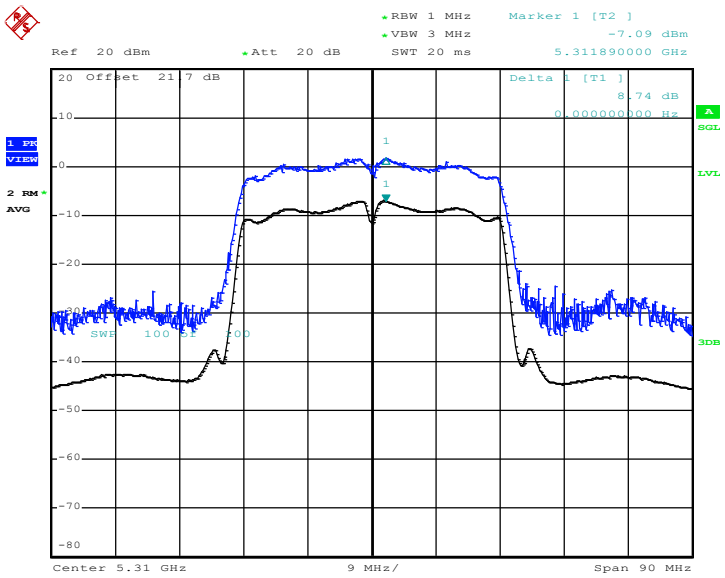
Date: 27.JUL.2012 00:53:18

Peak Excursion Ratio Plot on 802.11n HT40 Channel 62 - MIMO Ant 1



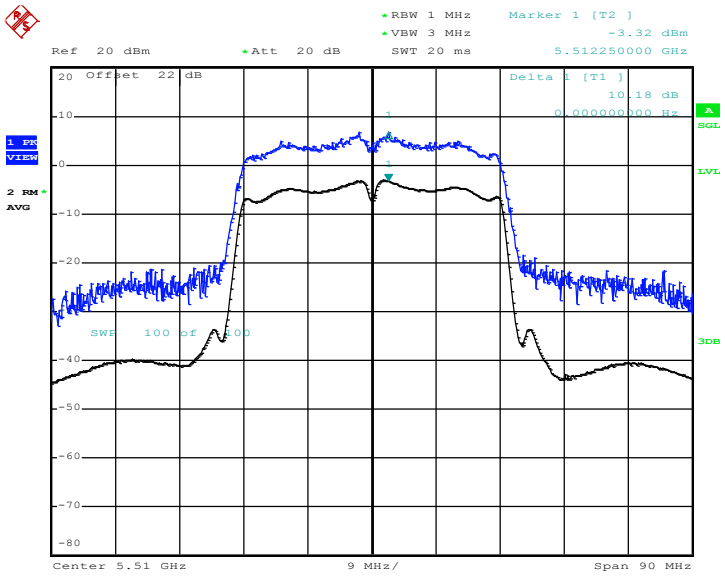
Date: 28.JUL.2012 01:28:11

Peak Excursion Ratio Plot on 802.11n HT40 Channel 62 - MIMO Ant 2



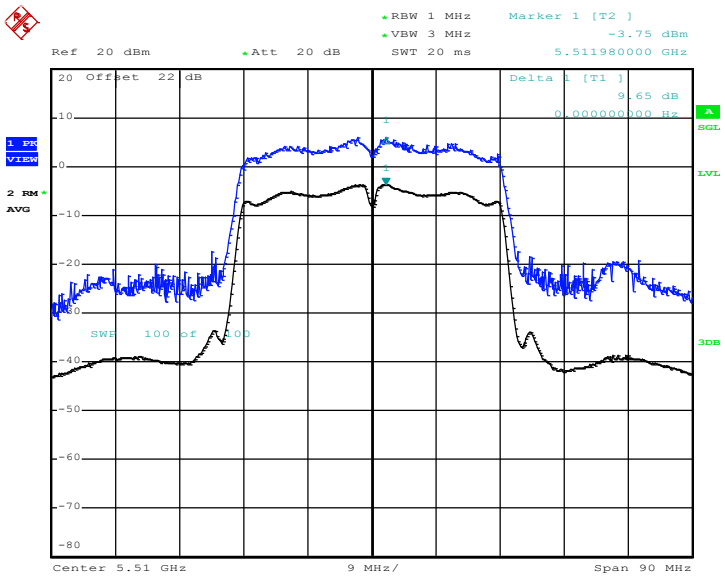
Date: 28.JUL.2012 01:30:41

Peak Excursion Ratio Plot on 802.11n HT40 Channel 102 - SISO Ant 1



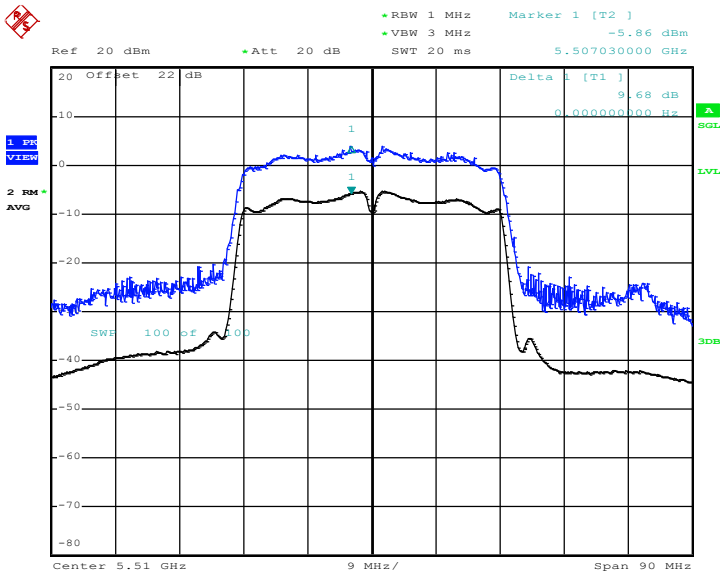
Date: 27.JUL.2012 00:57:08

Peak Excursion Ratio Plot on 802.11n HT40 Channel 102 - MIMO Ant 1



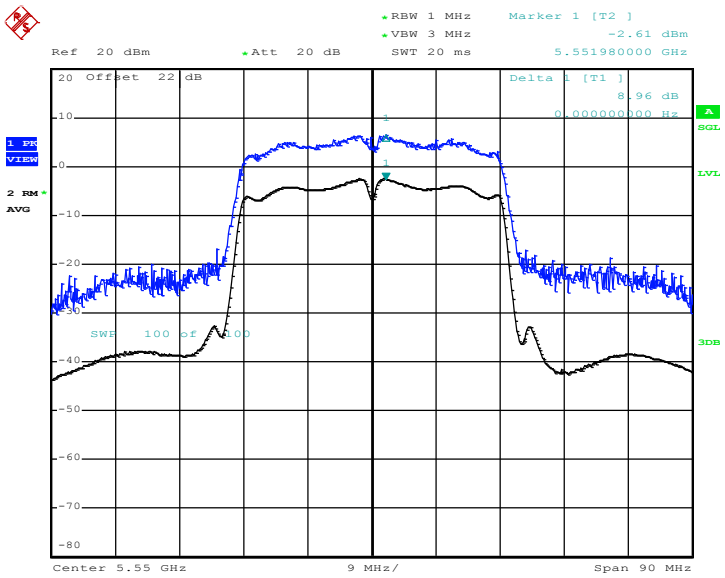
Date: 28.JUL.2012 00:45:35

Peak Excursion Ratio Plot on 802.11n HT40 Channel 102 - MIMO Ant 2



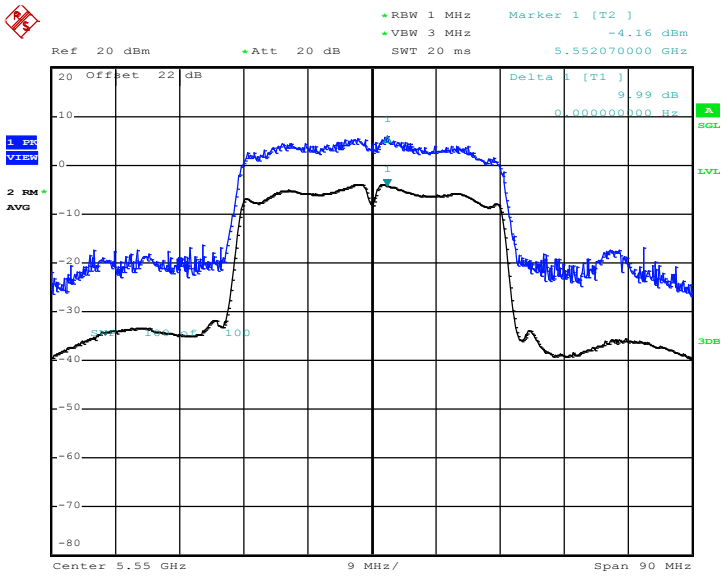
Date: 28.JUL.2012 00:49:01

Peak Excursion Ratio Plot on 802.11n HT40 Channel 110- SISO Ant 1



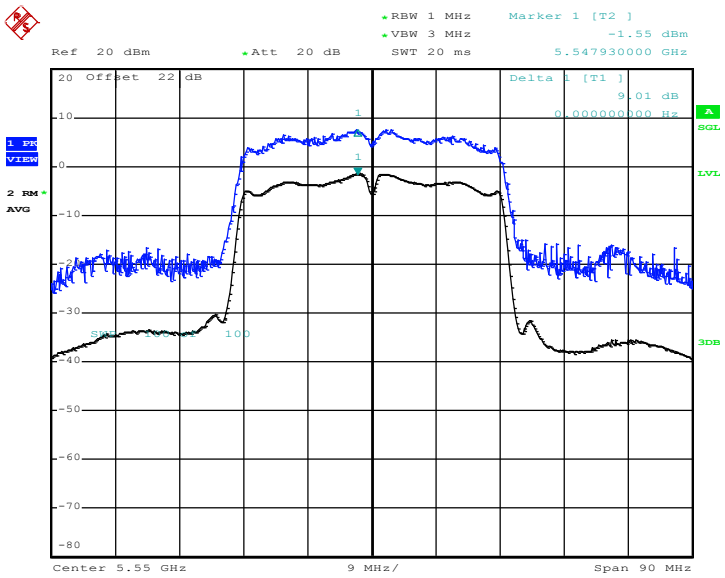
Date: 27.JUL.2012 01:02:14

Peak Excursion Ratio Plot on 802.11n HT40 Channel 110- MIMO Ant 1



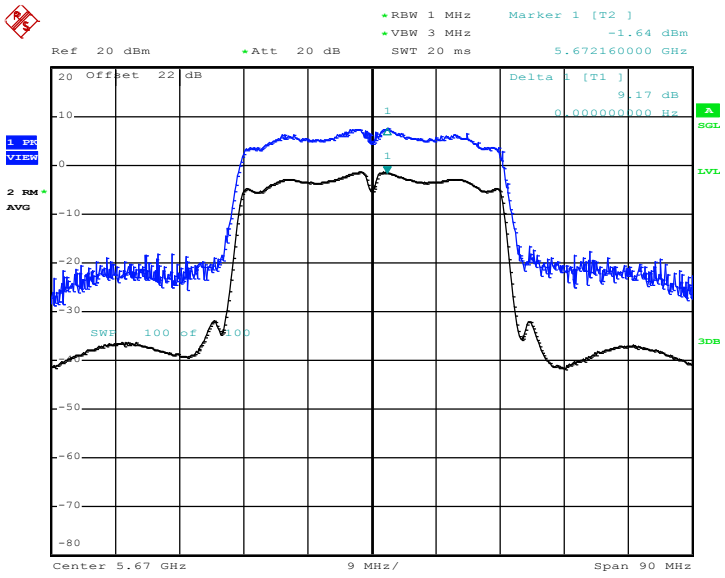
Date: 28.JUL.2012 00:52:45

Peak Excursion Ratio Plot on 802.11n HT40 Channel 110- MIMO Ant 2



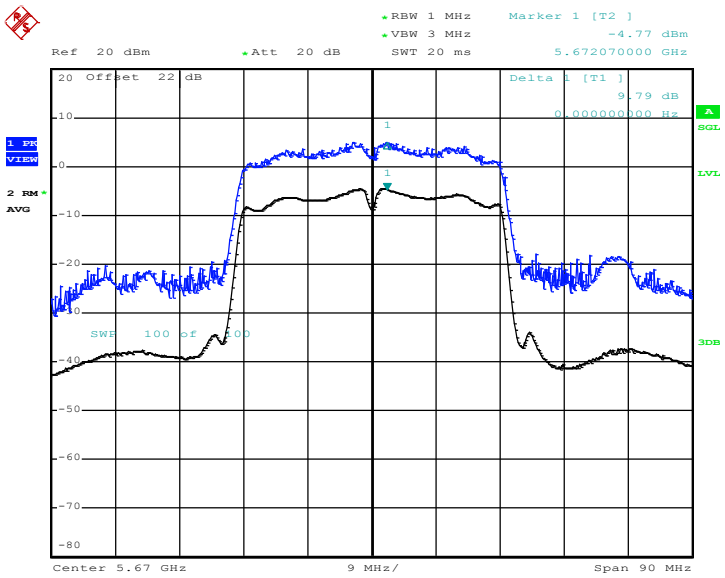
Date: 28.JUL.2012 00:56:19

Peak Excursion Ratio Plot on 802.11n HT40 Channel 134 - SISO Ant 1



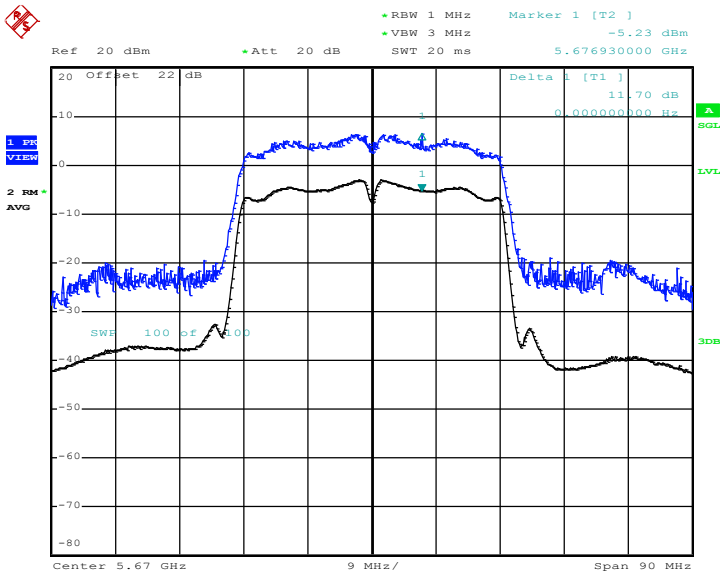
Date: 27.JUL.2012 01:05:03

Peak Excursion Ratio Plot on 802.11n HT40 Channel 134 - MIMO Ant 1



Date: 28.JUL.2012 01:01:09

Peak Excursion Ratio Plot on 802.11n HT40 Channel 134 - MIMO Ant 2



Date: 28.JUL.2012 00:58:22

3.7 Automatically Discontinue Transmission

3.7.1 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.

3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 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.

3.8 Frequency Stability Measurement

3.8.1 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.

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 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.

3.8.4 Test Setup

3.8.5 Test Result of Frequency Stability

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%

802.11a – Legacy Ant 1				
Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.85	5188.15	0.00
44	5220	5211.80	5228.15	-4.79
48	5240	5231.80	5248.15	-4.77
52	5260	5251.85	5268.15	0.00
60	5300	5291.80	5308.15	-4.72
64	5320	5311.80	5328.20	0.00
100	5500	5491.75	5508.25	0.00
116	5580	5571.80	5588.15	-4.48
140	5700	5691.85	5708.15	0.00

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%

802.11n HT20 – SISO Ant 1				
Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.15	5188.85	0.00
44	5220	5211.15	5228.75	-9.58
48	5240	5231.15	5248.85	0.00
52	5260	5251.15	5268.75	-9.51
60	5300	5291.15	5308.85	0.00
64	5320	5311.25	5328.75	0.00
100	5500	5491.20	5508.75	-4.55
116	5580	5571.25	5588.85	8.96
140	5700	5691.25	5708.75	0.00

802.11n HT20 (2Tx) – MIMO Ant 1				
Channel	**Frequency (MHz)**	**Low Frequency (Fl)**	**High Frequency (Fh)**	**Frequency Stability (ppm)**
36	5180	5171.25	5188.85	9.65
44	5220	5211.15	5228.75	-9.58
48	5240	5231.15	5248.75	-9.54
52	5260	5251.15	5268.75	-9.51
60	5300	5291.15	5308.75	-9.43
64	5320	5311.15	5328.75	-9.40
100	5500	5491.15	5508.75	-9.09
116	5580	5571.15	5588.75	-8.96
140	5700	5691.20	5708.80	0.00

802.11n HT20 (2Tx) MIMO Ant 2				
Channel	**Frequency (MHz)**	**Low Frequency (Fl)**	**High Frequency (Fh)**	**Frequency Stability (ppm)**
36	5180	5171.15	5188.90	4.83
44	5220	5211.15	5228.75	-9.58
48	5240	5231.15	5248.85	0.00
52	5260	5251.15	5268.85	0.00
60	5300	5291.15	5308.85	0.00
64	5320	5311.15	5328.85	0.00
100	5500	5491.15	5508.85	0.00
116	5580	5571.15	5588.85	0.00
140	5700	5691.15	5708.85	0.00

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Pinkston Tu and Book Lin	Relative Humidity :	45~49%

802.11n HT40 – SISO Ant 1				
Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
38	5190	5171.82	5208.36	17.34
46	5230	5211.82	5248.18	0.00
54	5270	5251.82	5288.18	0.00
62	5310	5291.82	5328.18	0.00
102	5510	5491.82	5528.36	16.33
110	5550	5531.82	5568.18	0.00
134	5670	5651.82	5688.18	0.00

802.11n HT40 (2Tx) – MIMO Ant 1				
Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
38	5190	5171.82	5208.18	0.00
46	5230	5211.82	5248.18	0.00
54	5270	5251.82	5288.18	0.00
62	5310	5291.82	5328.18	0.00
102	5510	5491.82	5528.18	0.00
110	5550	5531.82	5568.18	0.00
134	5670	5651.82	5688.18	0.00

802.11n HT40 (2Tx) – MIMO Ant 2				
Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
38	5190	5171.82	5208.18	0.00
46	5230	5211.82	5248.18	0.00
54	5270	5251.82	5288.18	0.00
62	5310	5291.82	5328.18	0.00
102	5510	5491.82	5528.18	0.00
110	5550	5531.82	5568.18	0.00
134	5670	5651.82	5688.18	0.00

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 peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit. The EUT supports completely uncorrelated MIMO mode. The composite antenna gain for 2.4GHz is 2.25 dBi. The composite antenna gain for 5GHz is 2.25 dBi as following table.

	2.4GHz	5GHz
ANT 1 GAIN (dBi)	2.50	2.50
ANT 2 GAIN (dBi)	2.00	2.00
COMPOSITE GAIN(dBi)	2.25	2.25

FCC KDB 662911 D01 Multiple Transmitter Output v01r01

Unequal antenna gains, with equal transmit powers.

For antenna gains given by G_1, G_2, …, G_N dBi.

If all transmit signals are *completely uncorrelated*, then

Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10})/N]$ dBi

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 06, 2012	Jul. 26, 2012 ~ Jul. 28, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	300MHz~40GHz	Sep. 21, 2011	Jul. 26, 2012 ~ Sep. 17, 2012	Sep. 20, 2012	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Sep. 21, 2011	Jul. 26, 2012 ~ Sep. 17, 2012	Sep. 20, 2012	Conducted (TH02-HY)
EMI Test Receiver	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Jul. 25, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Jul. 25, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Jul. 25, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Jul. 25, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Jul. 25, 2012	Jul. 27, 2013	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Jul. 23, 2012 ~ Aug. 24, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Jul. 23, 2012 ~ Aug. 24, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 10, 2011	Jul. 23, 2012 ~ Aug. 01, 2012	Aug. 09, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Aug. 01, 2012 ~ Aug. 24, 2012	Jul. 31, 2013	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Jul. 23, 2012 ~ Aug. 24, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Jul. 23, 2012 ~ Aug. 24, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz ~ 1000MHz	May 04, 2012	Jul. 23, 2012 ~ Aug. 24, 2012	May. 03, 2013	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Jul. 23, 2012 ~ Aug. 24, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Oct. 21, 2011	Jul. 23, 2012 ~ Aug. 24, 2012	Oct. 20, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	100315	9 kHz~30 MHz	May 14, 2012	Jul. 23, 2012 ~ Aug. 24, 2012	May 13, 2013	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

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

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

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