



# SPORTON International Inc.

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## FCC RADIO TEST REPORT

Applicant's company	<b>Realtek Semiconductor Corp.</b>
Applicant Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan
FCC ID	<b>TX2RTL8192DEB8</b>
Manufacturer's company	<b>Realtek Semiconductor Corp.</b>
Manufacturer Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

Product Name	802.11a/b/g/n RTL8192DE Combo miniCard
Brand Name	Realtek
Model Name	RTL8192DEB8
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Nov. 15, 2011
Final Test Date	Dec. 15, 2011
Submission Type	Original Equipment
Operating Mode	Client (without radar detection function)

### Statement

**Test result included is for the IEEE 802.11n and IEEE 802.11a (5150 ~ 5350MHz / 5470 ~ 5725MHz) of the product.**

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2009** and **47 CFR FCC Part 15 Subpart E**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.



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## History of This Test Report



Certificate No.: CB10012174

## 1. CERTIFICATE OF COMPLIANCE

Product Name : 802.11a/b/g/n RTL8192DE Combo miniCard  
Brand Name : Realtek  
Model Name : RTL8192DEB8  
Applicant : Realtek Semiconductor Corp.  
Test Rule Part(s) : 47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Nov. 15, 2011 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

A handwritten signature in blue ink that appears to read "Jordan Hsiao".

Jordan Hsiao

SPORTON INTERNATIONAL INC.

## 2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	Rule Section	Description of Test	Result	Under Limit
4.1	15.207	AC Power Line Conducted Emissions	Complies	12.62 dB
4.2	15.407(a)	26dB Spectrum Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.05 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.25 dB
4.5	15.407(a)	Peak Excursion	Complies	7.30 dB
4.6	15.407(b)	Radiated Emissions	Complies	2.61 dB
4.7	15.407(b)	Band Edge Emissions	Complies	0.55 dB
4.8	15.407(g)	Frequency Stability	Complies	-
4.9	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Conducted Output Power	±0.5dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
Peak Excursion	±0.5dB	Confidence levels of 95%
26dB Spectrum Bandwidth / Frequency Stability	$\pm 8.5 \times 10^{-8}$	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7°C	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

### 3. GENERAL INFORMATION

#### 3.1. Product Details

##### IEEE 802.11n

Items	Description
Product Type	WLAN (1TX / 2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	see the below table for IEEE 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n
Frequency Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	19 for 20MHz bandwidth ; 9 for 40MHz bandwidth
Channel Band Width (99%)	1TX : MCS0 (20MHz): 33.44 MHz ; MCS0 (40MHz): 40.32 MHz 2TX : MCS8 (20MHz): 23.68 MHz ; MCS8 (40MHz): 36.48 MHz
Conducted Output Power	1TX: Band 1: MCS0 (20MHz): 16.60 dBm ; MCS0 (40MHz): 16.70 dBm 1TX: Band 2: MCS0 (20MHz): 18.92 dBm ; MCS0 (40MHz): 17.15 dBm 1TX: Band 3: MCS0 (20MHz): 20.78 dBm ; MCS0 (40MHz): 18.15 dBm 2TX: Band 1: MCS8 (20MHz): 16.95 dBm ; MCS8 (40MHz): 16.88 dBm 2TX: Band 2: MCS8 (20MHz): 20.94 dBm ; MCS8 (40MHz): 18.17 dBm 2TX: Band 3: MCS8 (20MHz): 22.22 dBm ; MCS8 (40MHz): 21.11 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

##### IEEE 802.11a

Items	Description
Product Type	WLAN (1TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	19
Channel Band Width (99%)	11a: 30.72 MHz
Conducted Output Power	Band 1: 16.86 dBm ; Band 2: 19.29 dBm ; Band 3: 21.01 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

**Antenna & Band width**

Antenna	Single (TX)		Two (TX)	
Band width Mode	20 MHz	40 MHz	20 MHz	40 MHz
IEEE 802.11a	V	X	X	X
IEEE 802.11n	V	V	V	V

**IEEE 802.11n spec**

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Data rate(Mbps)			
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.200	15
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.400	30
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.700	45
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.900	60
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.300	90
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.800	120
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.000	135
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.200	150
8	2	BPSK	1/2	1	104	216	52	108	13.0	27.0	14.444	30
9	2	QPSK	1/2	2	208	432	104	216	26.0	54.0	28.889	60
10	2	QPSK	3/4	2	208	432	156	324	39.0	81.0	43.333	90
11	2	16-QAM	1/2	4	416	864	208	432	52.0	108.0	57.778	120
12	2	16-QAM	3/4	4	416	864	312	648	78.0	162.0	86.667	180
13	2	64-QAM	2/3	6	624	1296	416	864	104.0	216.0	115.556	240
14	2	64-QAM	3/4	6	624	1296	468	972	117.0	243.0	130.000	270
15	2	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0	144.444	300

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	guard interval

### 3.2. Accessories

N/A

### 3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)		Chain
					2.4GHz	5GHz	
1	JOYMAX	TWF-614XMPXX-500	Dipole Antenna	Reversed-SMA	3	5	Chain1/Chain2
2	LYNwave	ALA110-222050	PIFA Antenna	I-PEX	3.5	5	Chain1/Chain2

Note: The EUT has two different type antennas.

The detail information of antennas, please refer to Appendix D.

**<5GHz WLAN function with/without Bluetooth function:>**

**For IEEE 802.11a/n Mode: (1TX, 2RX)**

Both Chain 1 and Chain 2 can be used as receiving antennas, and they can receive signal simultaneously.

The EUT supports the antenna with TX diversity function.

Both Chain 1 and Chain 2 can be used as transmitting antenna, but only one of them is used as transmitting antenna at the same time.

Due to Chain 1 generated higher output power, so all tests were base on this setting and recorded in this report.

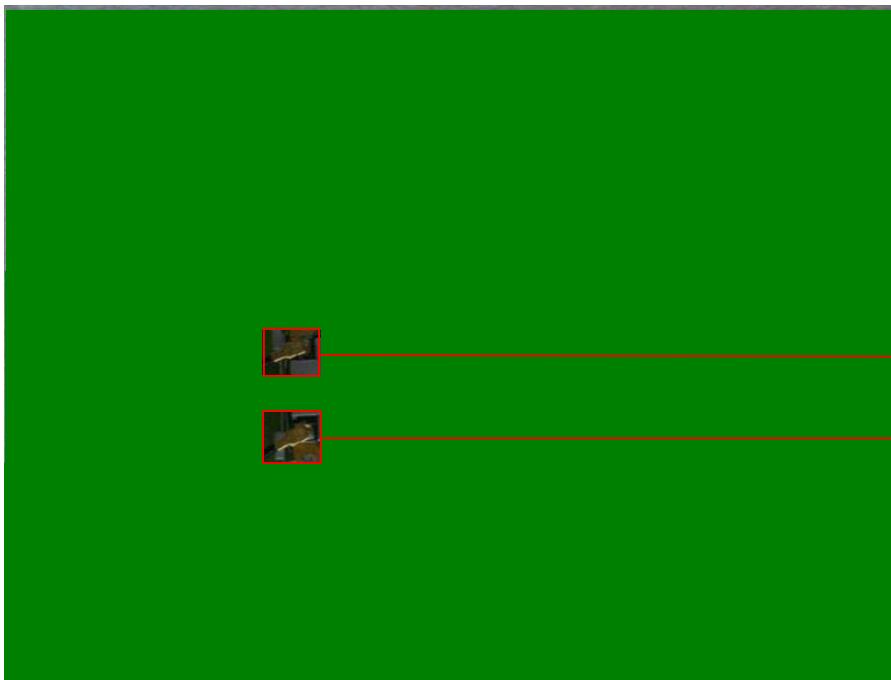
**For IEEE 802.11n Mode: (2TX, 2RX)**

Both Chain 1 and Chain 2 can be used as transmitting/receiving antennas, and they can transmit/receive signal simultaneously.

Note: For 802.11n mode, only 2TX function was selected to test and record in the report and the single power of peak output power for 1TX function will follow this same test result.

**For Bluetooth Mode:**

Only Chain 2 can be used as transmitting/receiving antenna.



### 3.4. Table for Carrier Frequencies

For IEEE 802.11a, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140.

There are two bandwidth systems for IEEE 802.11n.

For both 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140.

For both 40MHz bandwidth systems, use Channel 38, 46, 54, 62, 102, 110, 118, 126, 134.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
5470~5725 MHz Band 3	100	5500 MHz	120	5600 MHz
	102	5510MHz	124	5620 MHz
	104	5520 MHz	126	5630 MHz
	108	5540 MHz	128	5640 MHz
	110	5550 MHz	132	5660 MHz
	112	5560 MHz	134	5670 MHz
	116	5580 MHz	136	5680 MHz
	118	5590 MHz	140	5700 MHz

### 3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode			Data Rate	Channel	Chain	
AC Power Conducted Emission	Normal Link			Auto	-	-	
Max. Conducted Output Power Power Spectral Density	1TX	MCS0/20MHz	Band 1~2	6.5Mbps	36/40/48/52/60/64	1	
			Band 3	6.5Mbps	100/116/140		
	2TX	MCS8/20MHz	Band 1~2	13Mbps	36/40/48/52/60/64	1/2/1+2	
			Band 3	13Mbps	100/116/140		
	1TX	MCS0/40MHz	Band 1~2	13.5Mbps	38/46/54/62	1	
			Band 3	13.5Mbps	102/110/134		
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement Peak Excursion	2TX	MCS8/40MHz	Band 1~2	27Mbps	38/46/54/62	1/2/1+2	
			Band 3	27Mbps	102/110/134		
	11a/BPSK		Band 1~2	6Mbps	36/40/48/52/60/64	1	
			Band 3	6Mbps	100/116/140		
	1TX	MCS0/20MHz	Band 1~2	6.5Mbps	36/40/48/52/60/64	1	
			Band 3	6.5Mbps	100/116/140		
	2TX	MCS8/20MHz	Band 1~2	13Mbps	36/40/48/52/60/64	1+2	
			Band 3	13Mbps	100/116/140		
	1TX	MCS0/40MHz	Band 1~2	13.5Mbps	38/46/54/62	1	
			Band 3	13.5Mbps	102/110/134		
	2TX	MCS8/40MHz	Band 1~2	27Mbps	38/46/54/62	1+2	
			Band 3	27Mbps	102/110/134		

	11a/BPSK		Band 1~2	6Mbps	36/40/48/52/60/64	1	
			Band 3	6Mbps	100/116/140		
Radiated Emission Below 1GHz	Normal Link			Auto	-	-	
Radiated Emission Above 1GHz	1TX	MCS0/20MHz	Band 1~2	6.5Mbps	36/40/48/52/60/64	1	
			Band 3	6.5Mbps	100/116/140		
	2TX	MCS8/20MHz	Band 1~2	13Mbps	36/40/48/52/60/64	1+2	
			Band 3	13Mbps	100/116/140		
	1TX	MCS0/40MHz	Band 1~2	13.5Mbps	38/46/54/62	1	
			Band 3	13.5Mbps	102/110/134		
	2TX	MCS8/40MHz	Band 1~2	27Mbps	38/46/54/62	1+2	
			Band 3	27Mbps	102/110/134		
	11a/BPSK		Band 1~2	6Mbps	36/40/48/52/60/64	1	
			Band 3	6Mbps	100/116/140		
Band Edge Emission	1TX	MCS0/20MHz	Band 1~2	6.5Mbps	36/40/48/52/60/64	1	
			Band 3	6.5Mbps	100/116/140		
	2TX	MCS8/20MHz	Band 1~2	13Mbps	36/40/48/52/60/64	1+2	
			Band 3	13Mbps	100/116/140		
	1TX	MCS0/40MHz	Band 1~2	13.5Mbps	38/46/54/62	1	
			Band 3	13.5Mbps	102/110/134		
	2TX	MCS8/40MHz	Band 1~2	27Mbps	38/46/54/62	1+2	
			Band 3	27Mbps	102/110/134		
	11a/BPSK		Band 1~2	6Mbps	36/40/48/52/60/64	1	
			Band 3	6Mbps	100/116/140		
Frequency Stability	Un-modulation			-	40/60	N/A	

The following test modes were performed for all tests:

**For Conducted Emission test:**

Mode 1. WLAN + Bluetooth With Dipole antenna.

Mode 2. WLAN + Bluetooth With PIFA antenna.

**For Radiated Emission test:**

Mode 1. WLAN + Bluetooth With Dipole antenna.

Mode 2. WLAN + Bluetooth With PIFA antenna.

**<For MPE and Co-location Test>:**

The EUT could be applied with 2.4GHz WLAN + Bluetooth function and 5GHz WLAN+ Bluetooth function; therefore Maximum Permissible Exposure (Please refer to Appendix B) and Co-location (please refer to Appendix C) tests are added for simultaneously transmit between 2.4GHz WLAN + Bluetooth function and 5GHz WLAN + Bluetooth function..

### 3.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D	-
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

Please refer section 6 for Test Site Address.

### 3.7. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	1340	E2K4965AGNM
Wireless AP	BELKIN	WG7016G22-LF-AK	N/A
Mouse	Logitech	M-U0026	DoC
Modem	ACEEX	DM1414	IFAXDM1414
Bluetooth V2.1	SEEHOT	SBD10	N/A

### 3.8. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

#### Power Parameters of IEEE 802.11n MCS0 20MHz / 1TX

Test Software Version	Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011								
	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 20MHz	55	58	57	63	63	54	46	63	42

#### Power Parameters of IEEE 802.11n MCS0 40MHz / 1TX

Test Software Version	Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011							
	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	
MCS0 40MHz	46	57	56	46	39	53	44	

#### Power Parameters of IEEE 802.11n MCS8 20MHz / 2TX

Test Software Version	Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011								
	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS8 20MHz	53/52	54/54	53/53	63/62	63/61	53/52	45/44	63/60	41/45

#### Power Parameters of IEEE 802.11n MCS8 40MHz / 2TX

Test Software Version	Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011							
	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	
MCS8 40MHz	44/44	52/51	54/53	44/42	39/37	53/53	43/47	

#### Power Parameters of IEEE 802.11a

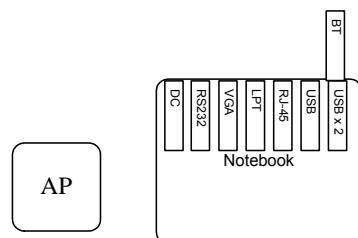
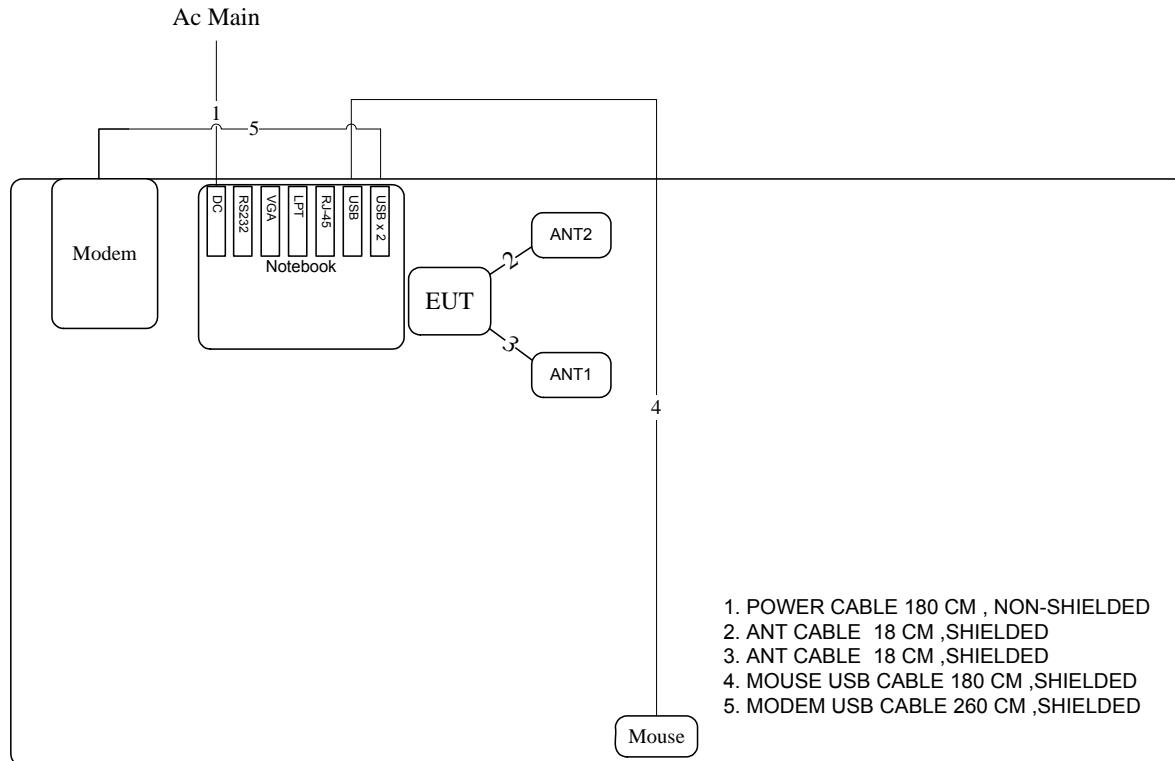
Test Software Version	Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011								
	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	56.00	59.00	58.00	63.00	63.00	55.00	49.00	63.00	44.00

During the test, "Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011" under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

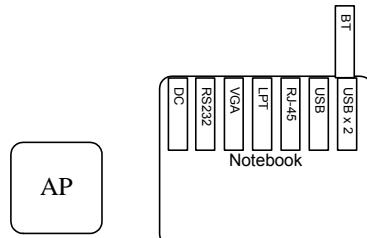
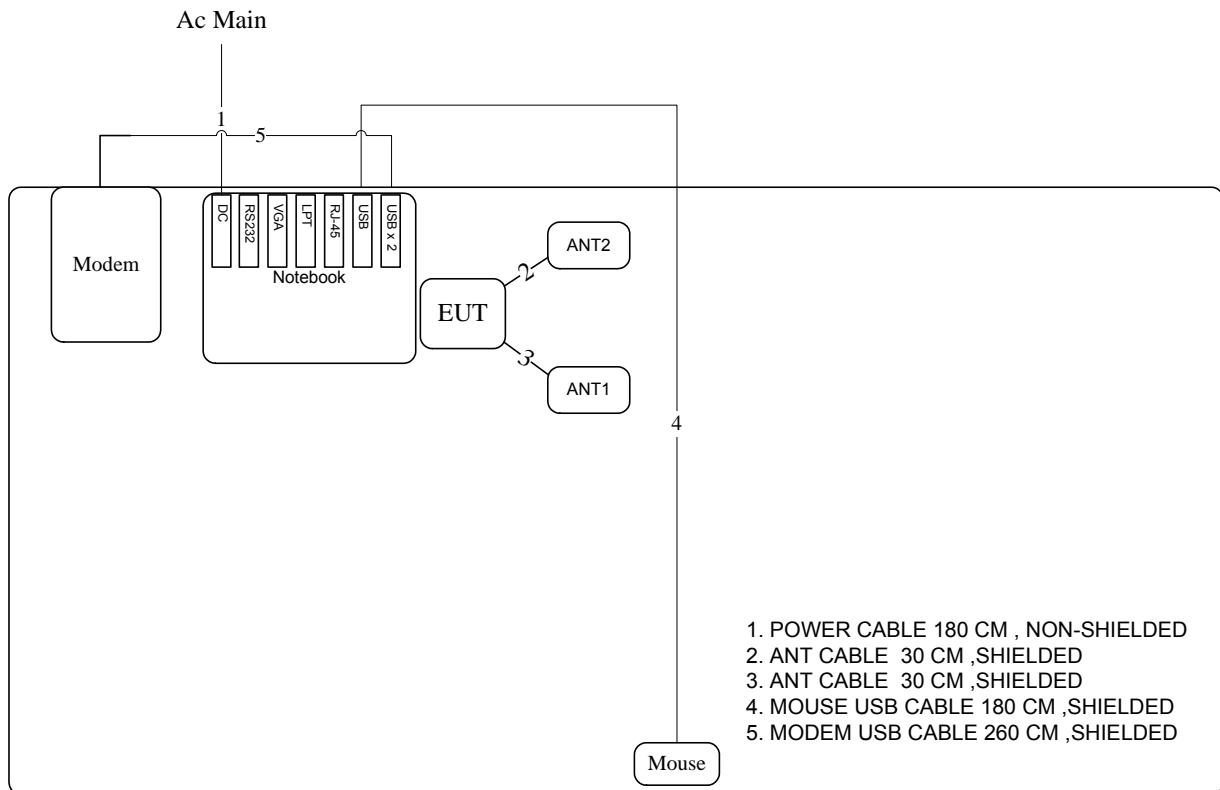
### 3.9. Test Configurations

#### 3.9.1. Radiation Emissions Test Configuration

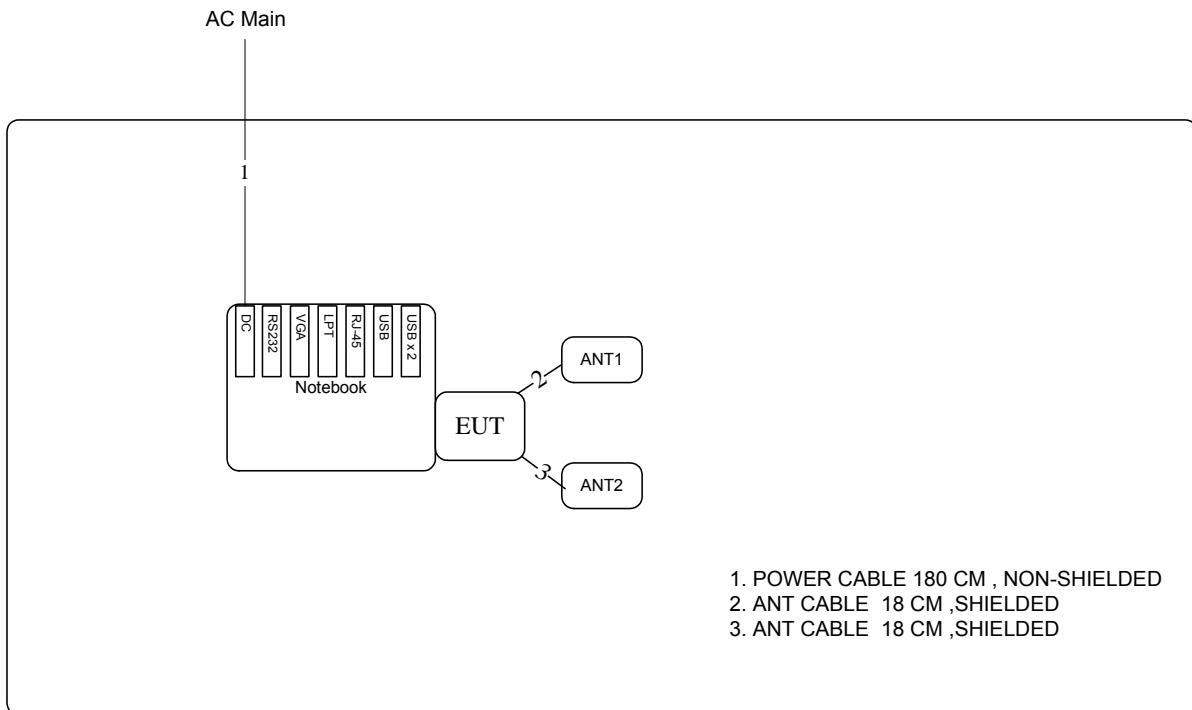
Test Configuration: 30MHz ~1GHz / Mode 1



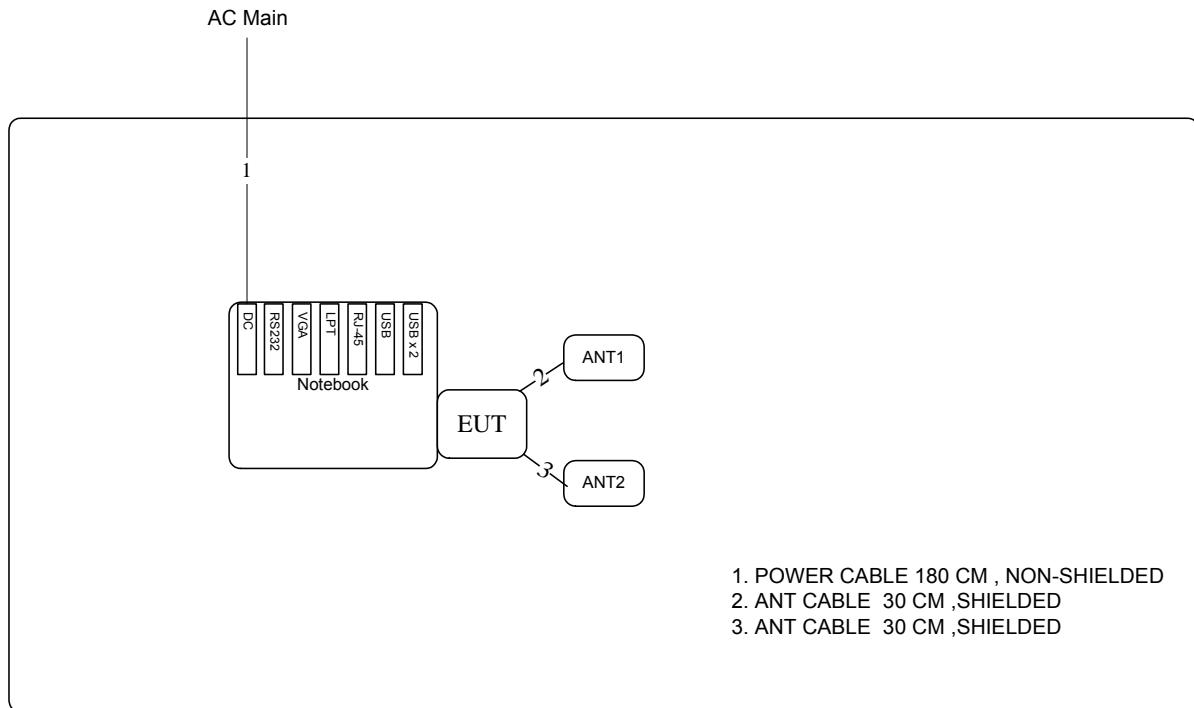
## Test Configuration: 30MHz~1GHz / Mode 2



Test Configuration: above 1GHz / Mode 1

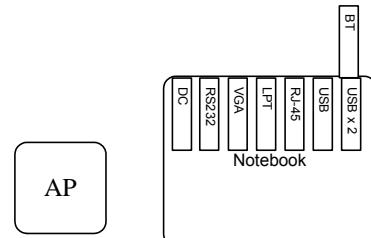
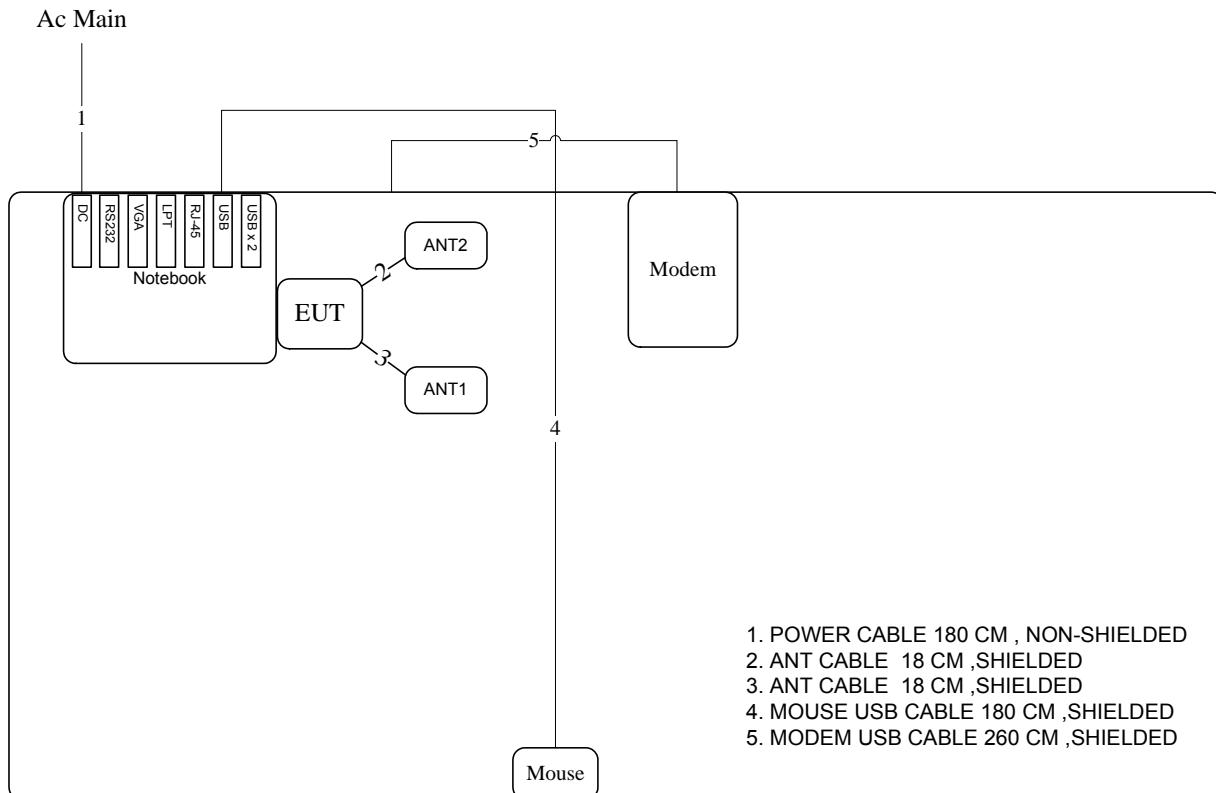


Test Configuration: above 1GHz / Mode 2



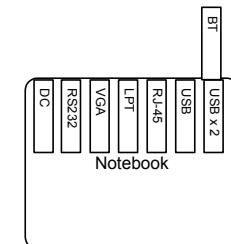
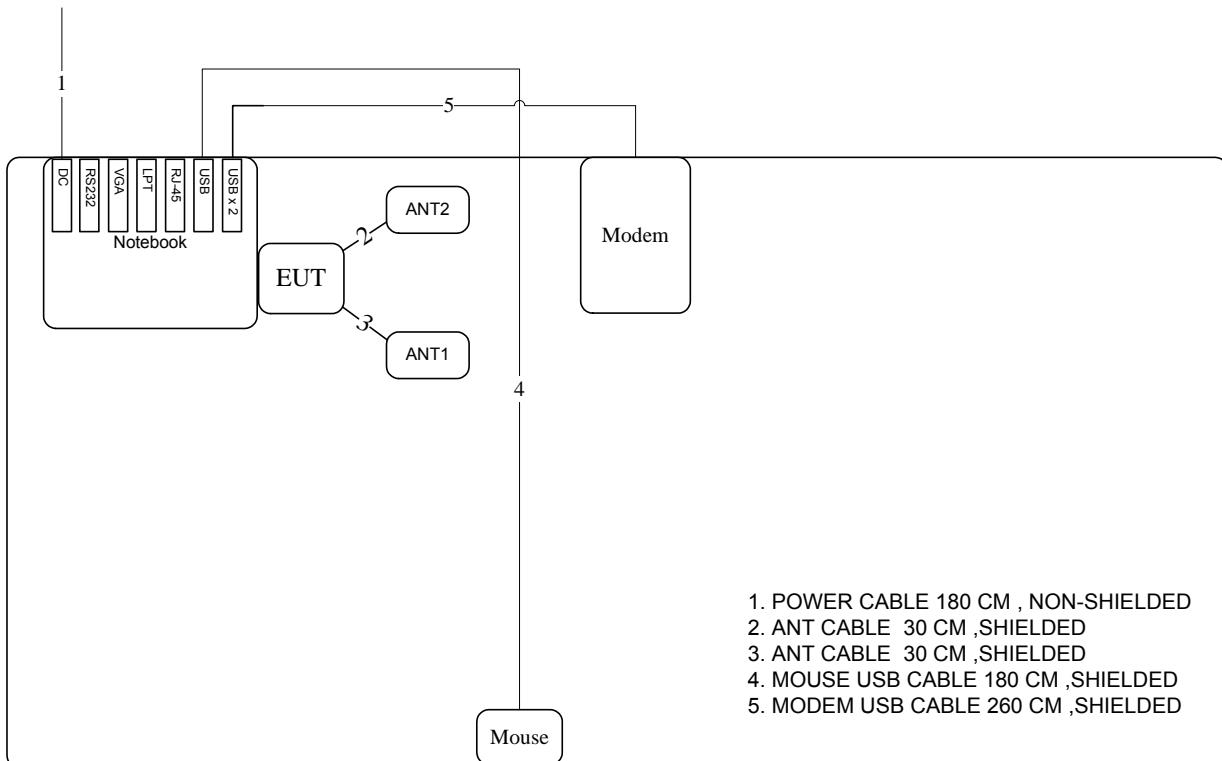
### 3.9.2. AC Power Line Conduction Emissions Test Configuration

Test Mode : Mode 1



## Test Mode : Mode 2

Ac Main



## 4. TEST RESULT

### 4.1. AC Power Line Conducted Emissions Measurement

#### 4.1.1. Limit

For this product that is designed to connect to the 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 below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

#### 4.1.2. Measuring Instruments and Setting

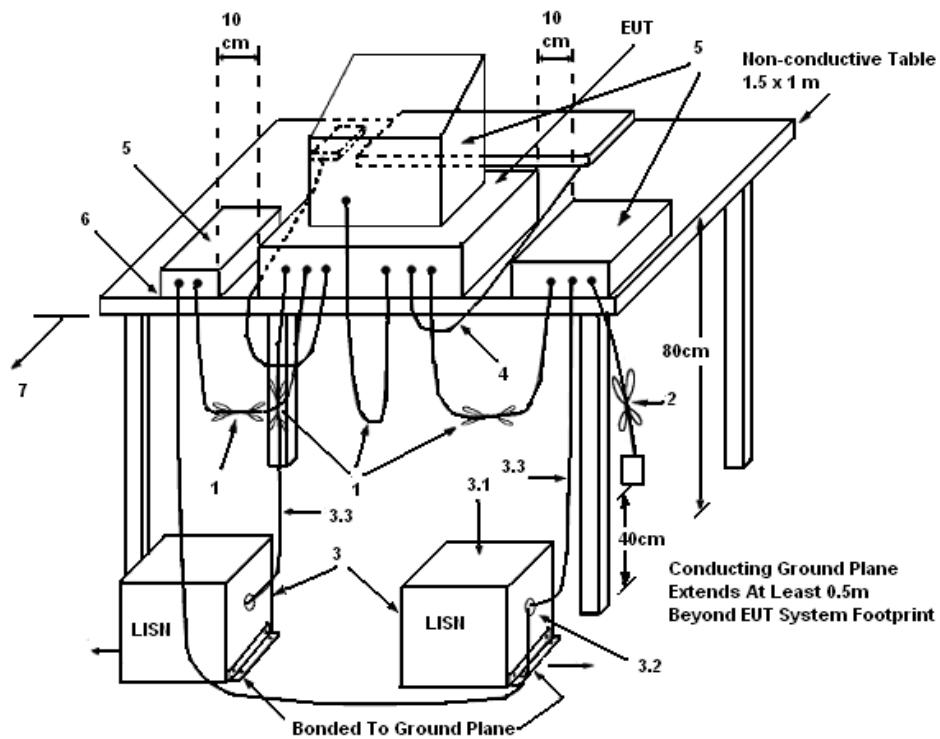
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

#### 4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

#### 4.1.4. Test Setup Layout



##### LEGEND:

- (1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- (2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- (3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in  $50 \Omega$ . LISN can be placed on top of, or immediately beneath, reference ground plane.
  - (3.1) All other equipment powered from additional LISN(s).
  - (3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
  - (3.3) LISN at least 80 cm from nearest part of EUT chassis.
- (4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
- (5) Non-EUT components of EUT system being tested.
- (6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
- (7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

#### 4.1.5. Test Deviation

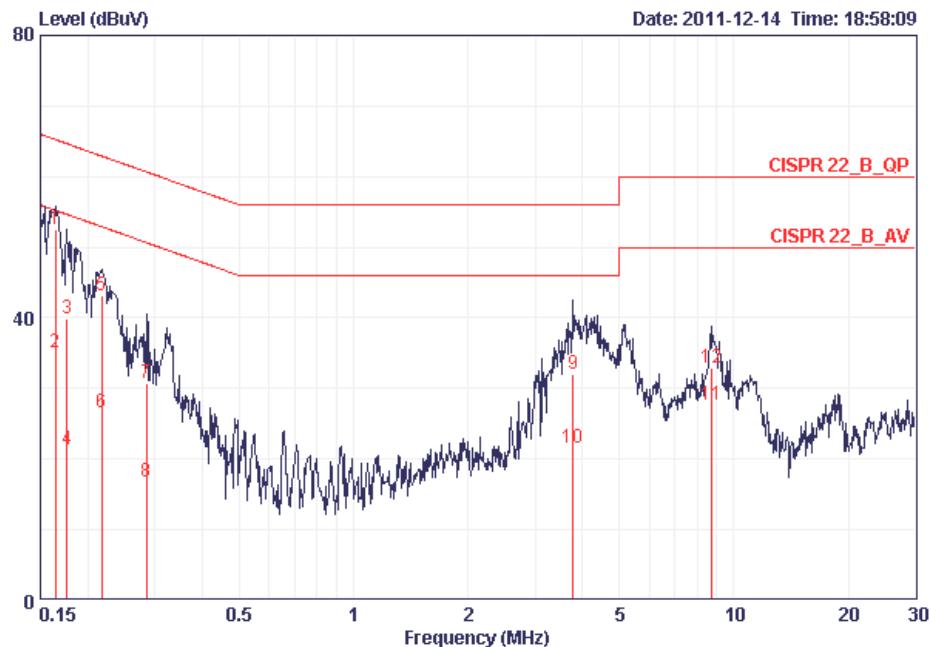
There is no deviation with the original standard.

#### 4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

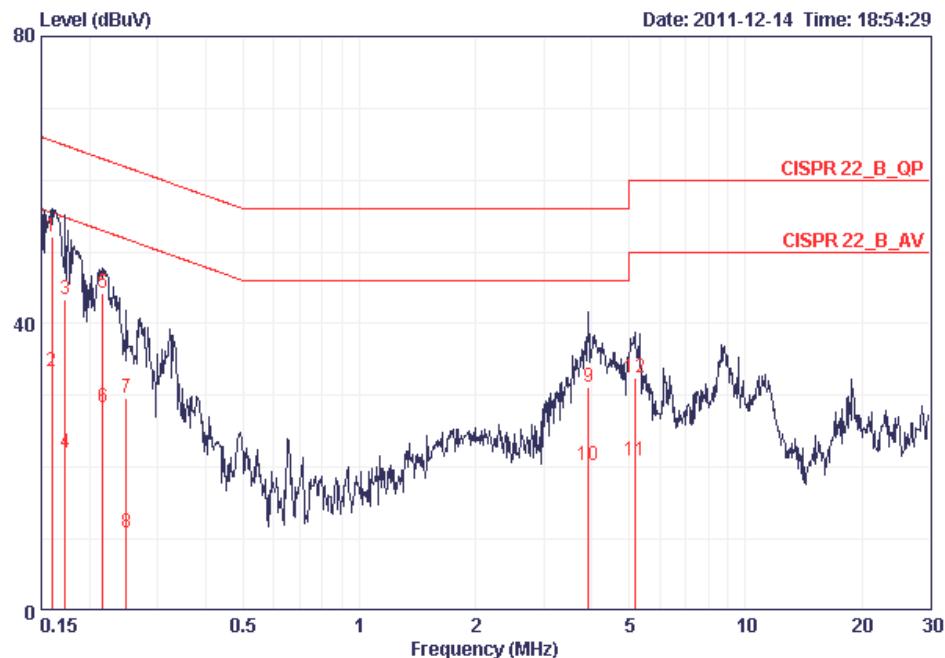
#### 4.1.7. Results of AC Power Line Conducted Emissions Measurement

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Kane Liu	<b>Phase</b>	Line
<b>Configuration</b>	Normal Link / Mode 1		



Freq	Level	Over	Limit	Read	LISN	Cable
		Limit	Line	Level	Factor	Loss Remark
MHz	dBuV	dB	dBuV	dBuV	dB	dB
1 @	0.16414	52.63	-12.62	65.25	52.36	0.07 0.20 QP
2	0.16414	35.00	-20.25	55.25	34.73	0.07 0.20 AVERAGE
3	0.17584	39.99	-24.69	64.68	39.73	0.06 0.20 QP
4	0.17584	21.42	-33.26	54.68	21.16	0.06 0.20 AVERAGE
5	0.21735	43.25	-19.67	62.92	43.00	0.05 0.20 QP
6	0.21735	26.56	-26.36	52.92	26.31	0.05 0.20 AVERAGE
7	0.28478	30.71	-29.97	60.68	30.47	0.04 0.20 QP
8	0.28478	16.72	-33.96	50.68	16.48	0.04 0.20 AVERAGE
9	3.779	32.12	-23.88	56.00	31.72	0.10 0.30 QP
10	3.779	21.68	-24.32	46.00	21.28	0.10 0.30 AVERAGE
11	8.776	27.63	-22.37	50.00	27.02	0.31 0.30 AVERAGE
12	8.776	33.01	-26.99	60.00	32.40	0.31 0.30 QP

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Kane Liu	<b>Phase</b>	Neutral
<b>Configuration</b>	Normal Link / Mode 1		

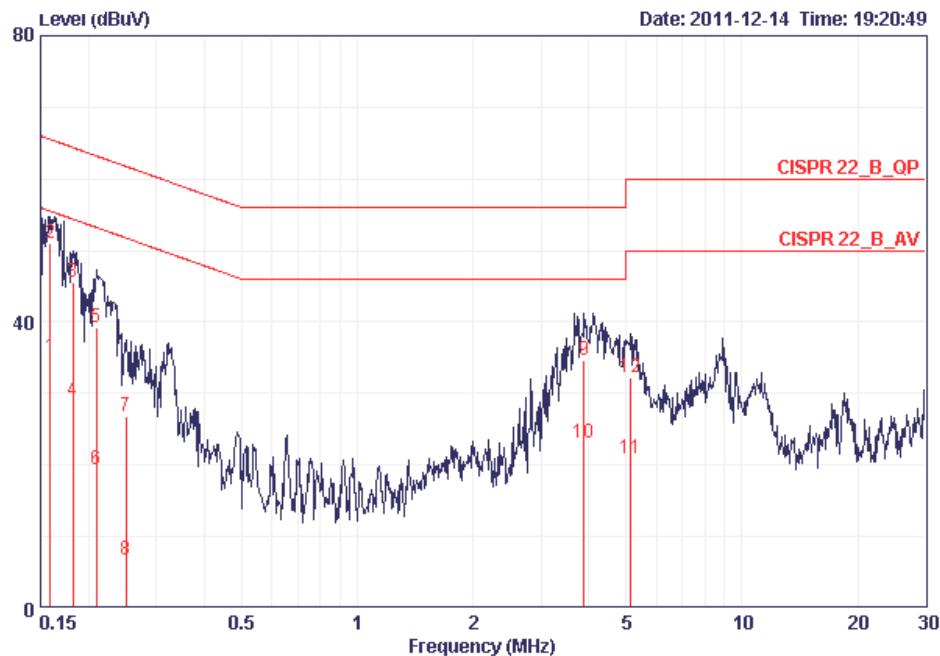


	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
			Limit	Line	Level	Factor	Loss	
1 @	0.15985	52.04	-13.43	65.47	51.74	0.10	0.20	QP
2	0.15985	33.26	-22.21	55.47	32.96	0.10	0.20	AVERAGE
3	0.17307	43.31	-21.50	64.81	43.02	0.09	0.20	QP
4	0.17307	21.98	-32.83	54.81	21.69	0.09	0.20	AVERAGE
5	0.21620	44.35	-18.61	62.96	44.07	0.08	0.20	QP
6	0.21620	28.40	-24.56	52.96	28.12	0.08	0.20	AVERAGE
7	0.24945	29.73	-32.05	61.78	29.45	0.08	0.20	QP
8	0.24945	10.87	-40.91	51.78	10.59	0.08	0.20	AVERAGE
9	3.922	31.21	-24.79	56.00	30.77	0.14	0.30	QP
10	3.922	20.23	-25.77	46.00	19.79	0.14	0.30	AVERAGE
11	5.166	20.91	-29.09	50.00	20.40	0.21	0.30	AVERAGE
12	5.166	32.39	-27.61	60.00	31.88	0.21	0.30	QP

Note:

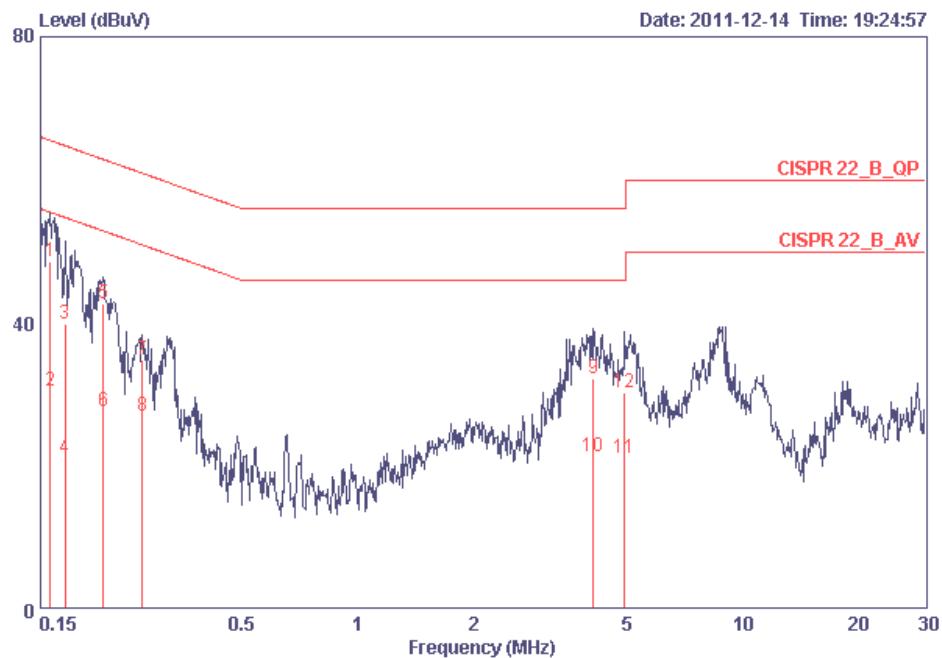
Level = Read Level + LISN Factor + Cable Loss

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Kane Liu	<b>Phase</b>	Line
<b>Configuration</b>	Normal Link / Mode 2		



	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
			Limit	Line	Level	Factor	Loss	
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15900	35.00	-20.52	55.52	34.73	0.07	0.20	AVERAGE
2	0.15900	50.93	-14.59	65.52	50.66	0.07	0.20	QP
3	0.18249	45.55	-18.82	64.37	45.29	0.06	0.20	QP
4	0.18249	28.98	-25.39	54.37	28.72	0.06	0.20	AVERAGE
5	0.20944	39.13	-24.10	63.23	38.88	0.05	0.20	QP
6	0.20944	19.48	-33.75	53.23	19.23	0.05	0.20	AVERAGE
7	0.25078	26.79	-34.94	61.73	26.55	0.04	0.20	QP
8	0.25078	6.70	-45.03	51.73	6.46	0.04	0.20	AVERAGE
9	3.881	34.70	-21.30	56.00	34.30	0.10	0.30	QP
10	3.881	23.19	-22.81	46.00	22.79	0.10	0.30	AVERAGE
11	5.139	21.01	-28.99	50.00	20.54	0.17	0.30	AVERAGE
12	5.139	32.35	-27.65	60.00	31.88	0.17	0.30	QP

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Kane Liu	<b>Phase</b>	Neutral
<b>Configuration</b>	Normal Link / Mode 2		



Freq	Level	Over Limit	Limit Line	Read Level		LISN Factor	Cable Loss	Remark
				MHz	dBuV	dB	dBuV	dB
1 @	0.15900	48.62	-16.90	65.52	48.32	0.10	0.20	QP
2	0.15900	30.53	-24.99	55.52	30.23	0.10	0.20	AVERAGE
3	0.17399	39.79	-24.98	64.77	39.50	0.09	0.20	QP
4	0.17399	21.16	-33.61	54.77	20.87	0.09	0.20	AVERAGE
5	0.21851	42.77	-20.11	62.88	42.49	0.08	0.20	QP
6	0.21851	27.79	-25.09	52.88	27.51	0.08	0.20	AVERAGE
7	0.27587	34.84	-26.10	60.94	34.56	0.08	0.20	QP
8	0.27587	26.94	-24.00	50.94	26.66	0.08	0.20	AVERAGE
9	4.114	32.29	-23.71	56.00	31.84	0.15	0.30	QP
10	4.114	21.26	-24.74	46.00	20.81	0.15	0.30	AVERAGE
11	4.952	21.18	-24.82	46.00	20.68	0.20	0.30	AVERAGE
12	4.952	30.40	-25.60	56.00	29.90	0.20	0.30	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

## 4.2. 99% Occupied Bandwidth Measurement

### 4.2.1. Limit

No restriction limits. But resolution bandwidth within band edge measurement is 1% of the 99% occupied bandwidth.

### 4.2.2. Measuring Instruments and Setting

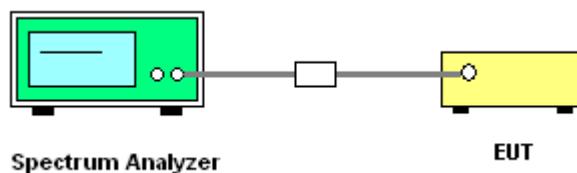
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RB	300 kHz
VB	1000 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

### 4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. The resolution bandwidth of 300 kHz and the video bandwidth of 1000 kHz were used.
3. Measured the spectrum width with power higher than 26dB below carrier.

### 4.2.4. Test Setup Layout



### 4.2.5. Test Deviation

There is no deviation with the original standard.

### 4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 4.2.7. Test Result of 99% Occupied Bandwidth

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11n

##### Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 1TX

<b>Channel</b>	<b>Frequency</b>	<b>26dB Bandwidth (MHz)</b>	<b>99% Occupied Bandwidth (MHz)</b>
36	5180 MHz	36.96	18.72
40	5200 MHz	40.48	19.84
48	5240 MHz	41.92	19.36
52	5260 MHz	45.76	29.28
60	5300 MHz	44.32	28.00
64	5320 MHz	35.36	18.56
100	5500 MHz	24.16	18.24
116	5580 MHz	47.84	33.44
140	5700 MHz	23.68	18.08

##### Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 1TX

<b>Channel</b>	<b>Frequency</b>	<b>26dB Bandwidth (MHz)</b>	<b>99% Occupied Bandwidth (MHz)</b>
38	5190 MHz	40.32	36.16
46	5230 MHz	69.76	36.48
54	5270 MHz	72.32	36.48
62	5310 MHz	36.48	40.32
102	5510MHz	40.64	36.16
110	5550 MHz	79.68	38.40
134	5670 MHz	40.96	36.16

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11n

**Configuration IEEE 802.11n MCS8 20MHz / Chain 1 + Chain 2 / 2TX**

<b>Channel</b>	<b>Frequency</b>	<b>26dB Bandwidth (MHz)</b>	<b>99% Occupied Bandwidth (MHz)</b>
36	5180 MHz	23.04	17.92
40	5200 MHz	23.68	18.08
48	5240 MHz	24.64	17.92
52	5260 MHz	42.24	23.68
60	5300 MHz	40.80	22.24
64	5320 MHz	28.80	18.08
100	5500 MHz	22.24	17.92
116	5580 MHz	22.40	17.92
140	5700 MHz	22.40	17.92

**Configuration IEEE 802.11n MCS8 40MHz / Chain 1 + Chain 2 / 2TX**

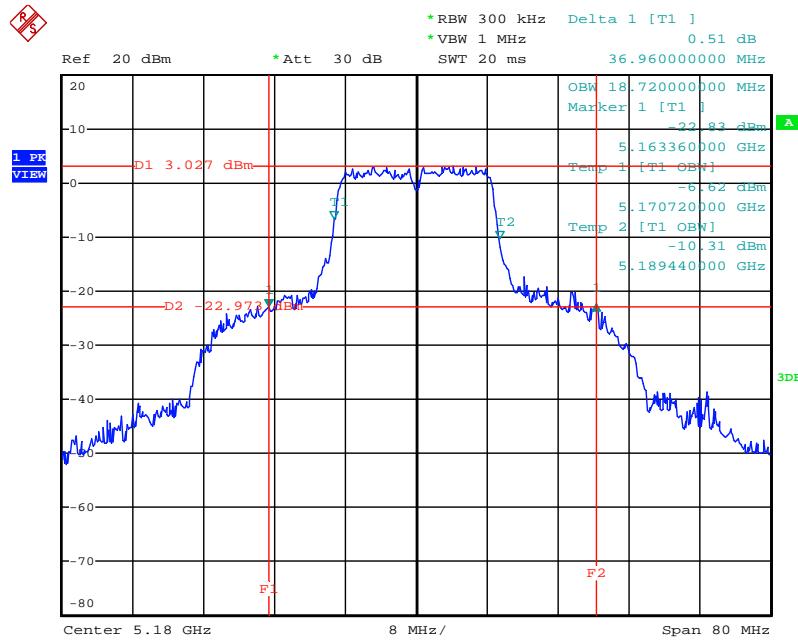
<b>Channel</b>	<b>Frequency</b>	<b>26dB Bandwidth (MHz)</b>	<b>99% Occupied Bandwidth (MHz)</b>
38	5190 MHz	39.68	36.48
46	5230 MHz	40.00	36.48
54	5270 MHz	40.00	36.48
62	5310 MHz	40.00	36.48
102	5510MHz	39.68	36.48
110	5550 MHz	65.92	36.48
134	5670 MHz	39.68	36.16

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a

**Configuration IEEE 802.11a / Chain 1**

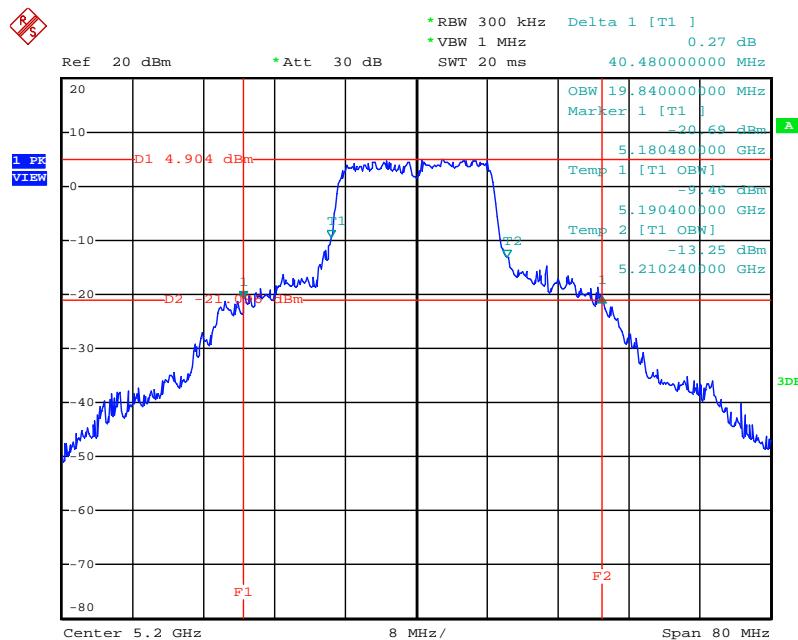
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	35.20	19.36
40	5200 MHz	37.92	20.00
48	5240 MHz	36.48	18.40
52	5260 MHz	40.16	26.24
60	5300 MHz	40.00	26.88
64	5320 MHz	34.56	17.60
100	5500 MHz	33.12	17.12
116	5580 MHz	42.08	30.72
140	5700 MHz	23.04	16.96

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5180 MHz / 1TX



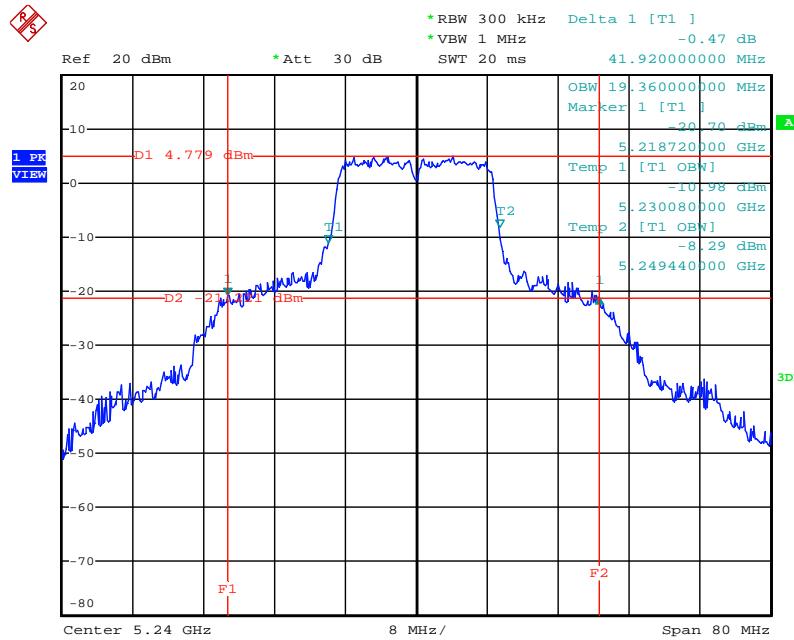
Date: 13.DEC.2011 10:07:42

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5200 MHz / 1TX



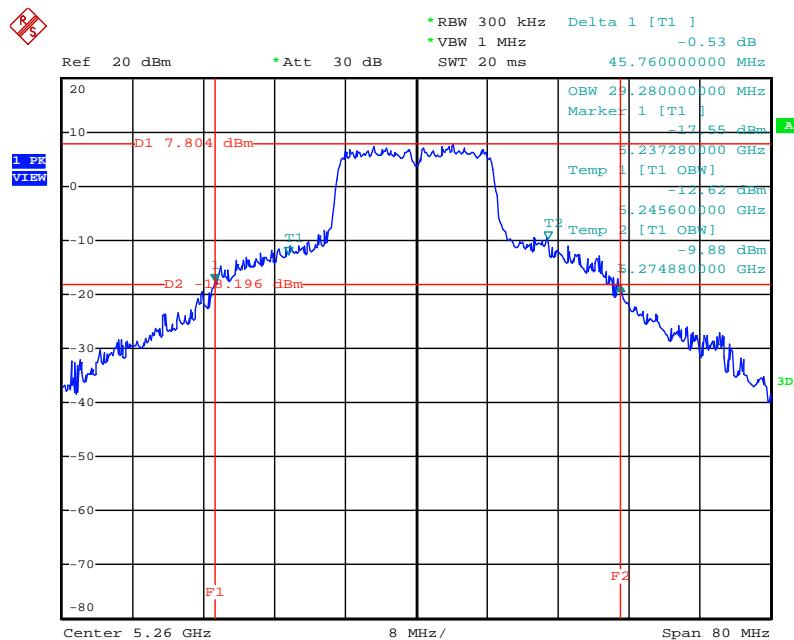
Date: 13.DEC.2011 10:08:49

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5240 MHz / 1TX



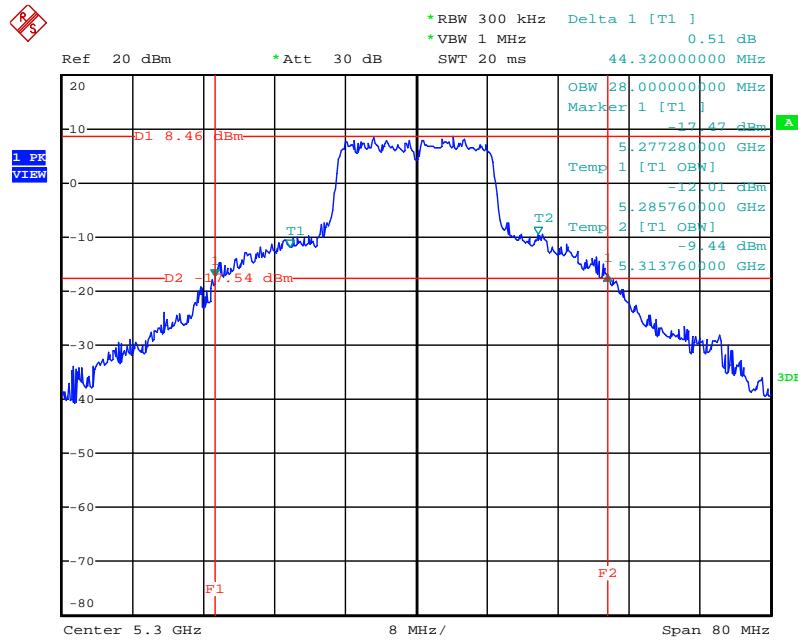
Date: 13.DEC.2011 10:09:17

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5260 MHz / 1TX



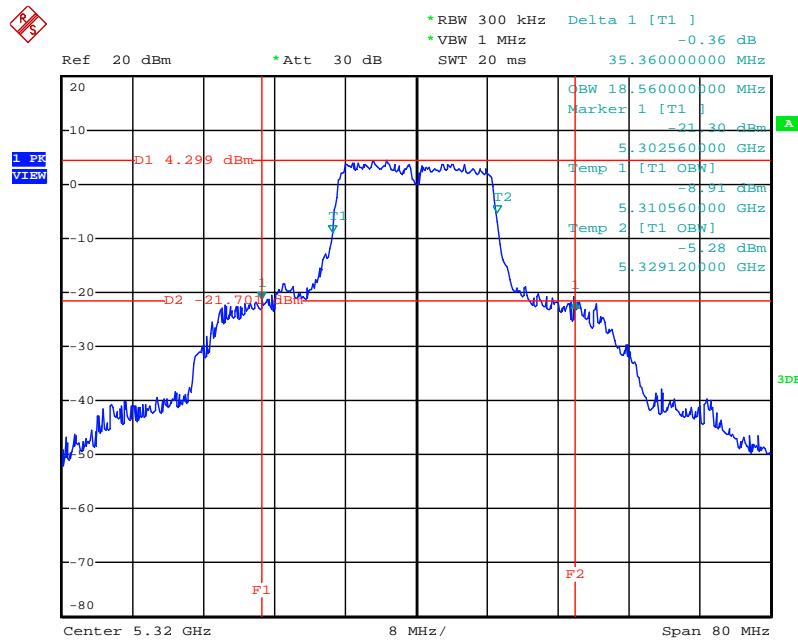
Date: 13.DEC.2011 10:09:47

## 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5300 MHz / 1Tx



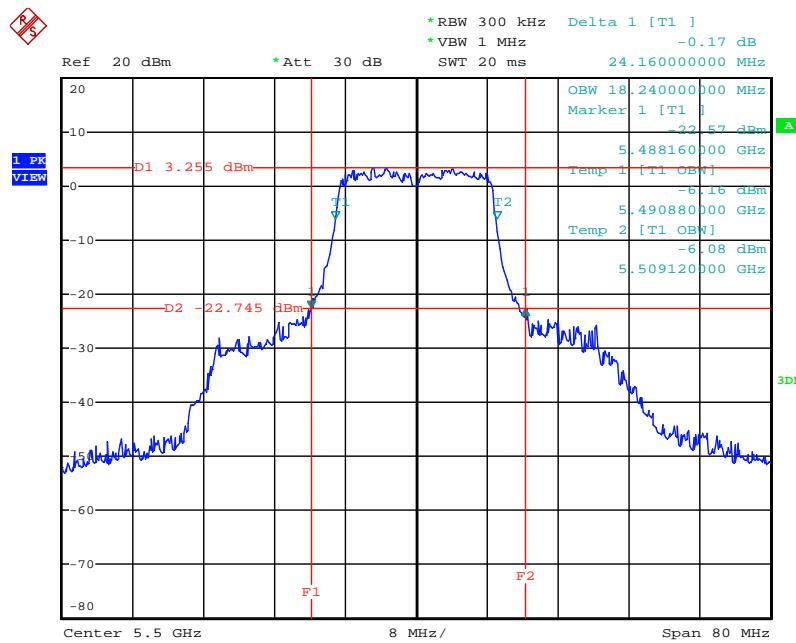
Date: 13.DEC.2011 10:10:36

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5320 MHz / 1TX



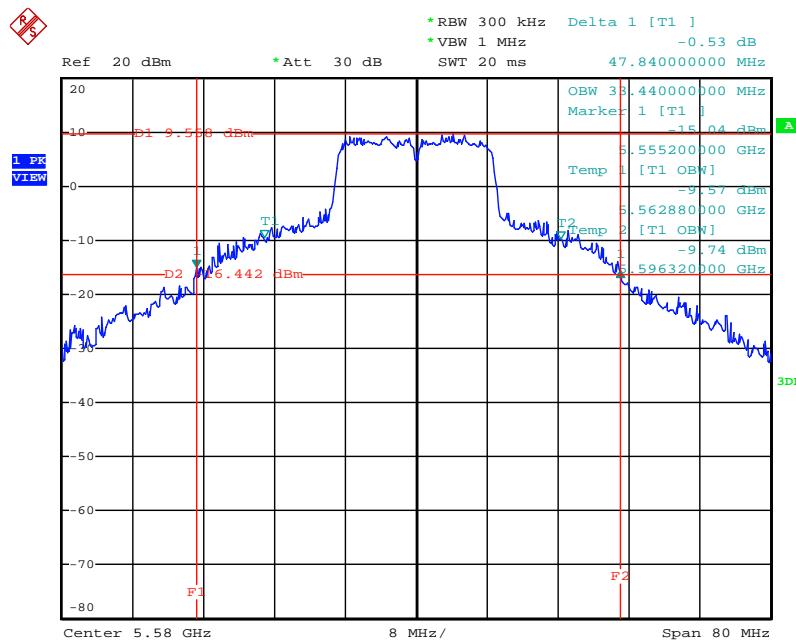
Date: 13.DEC.2011 10:11:00

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5500 MHz / 1TX



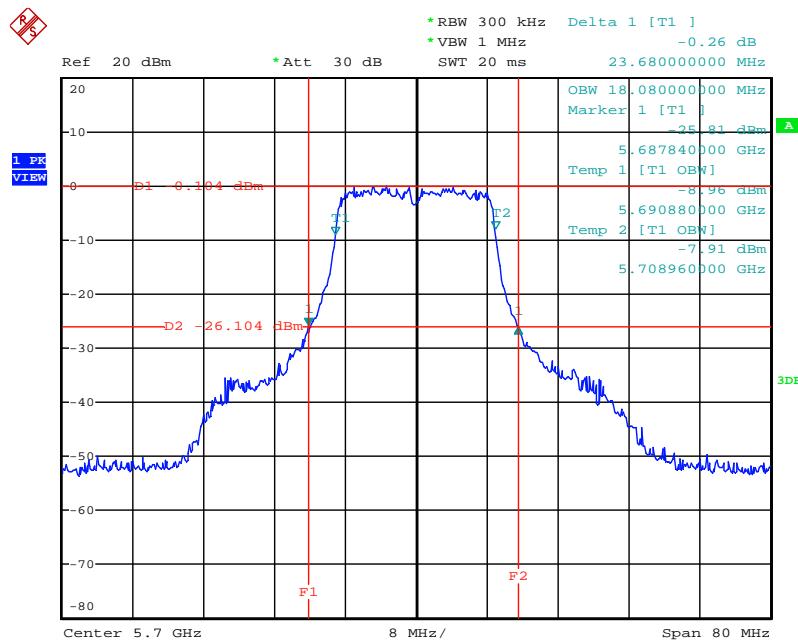
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### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5580 MHz / 1TX



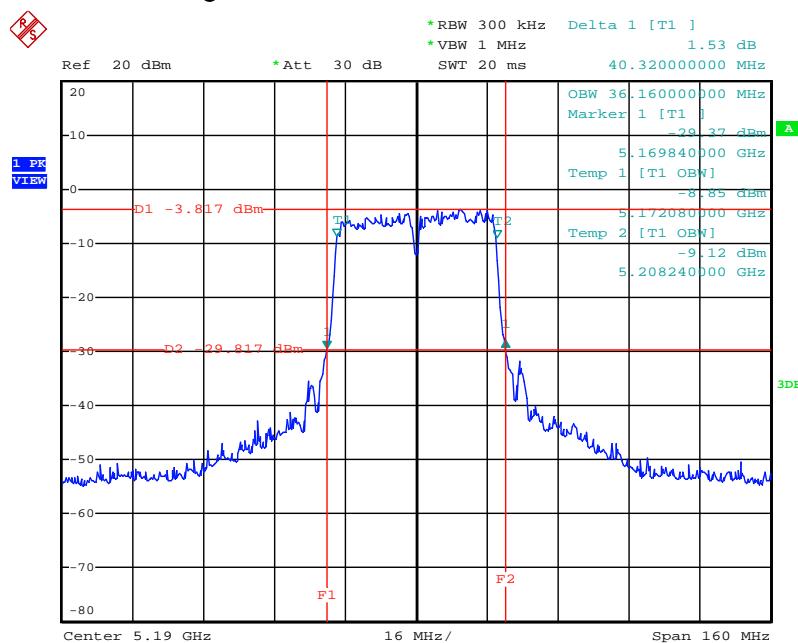
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### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5700 MHz / 1TX



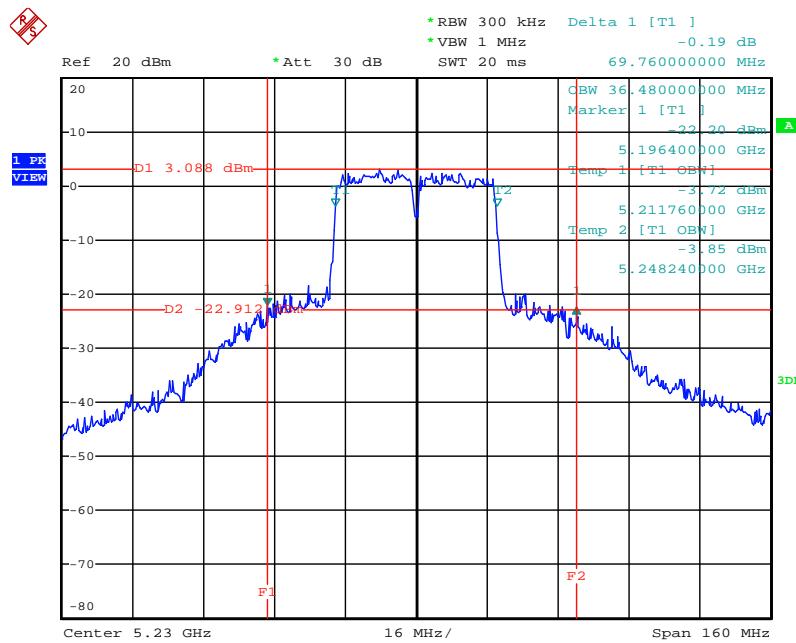
Date: 13.DEC.2011 10:12:37

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5190 MHz / 1TX



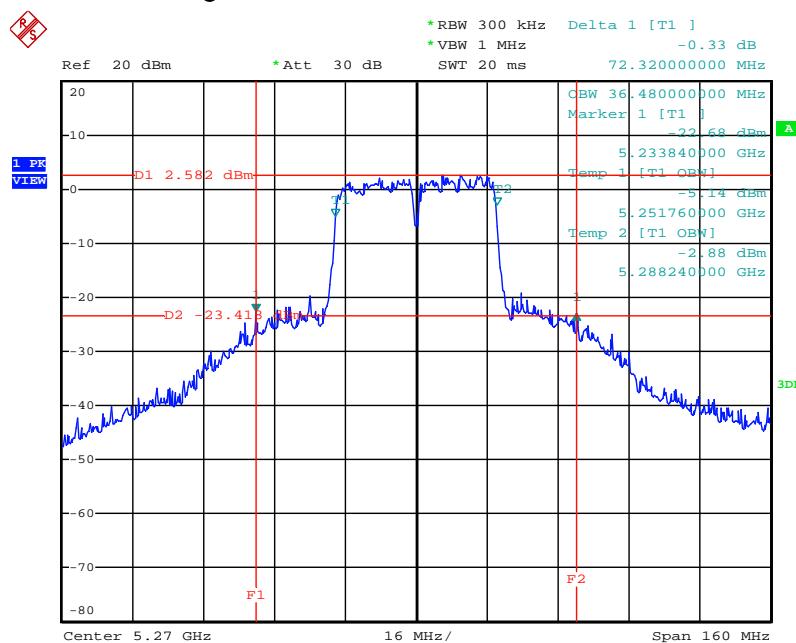
Date: 13.DEC.2011 10:17:45

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5230 MHz / 1TX



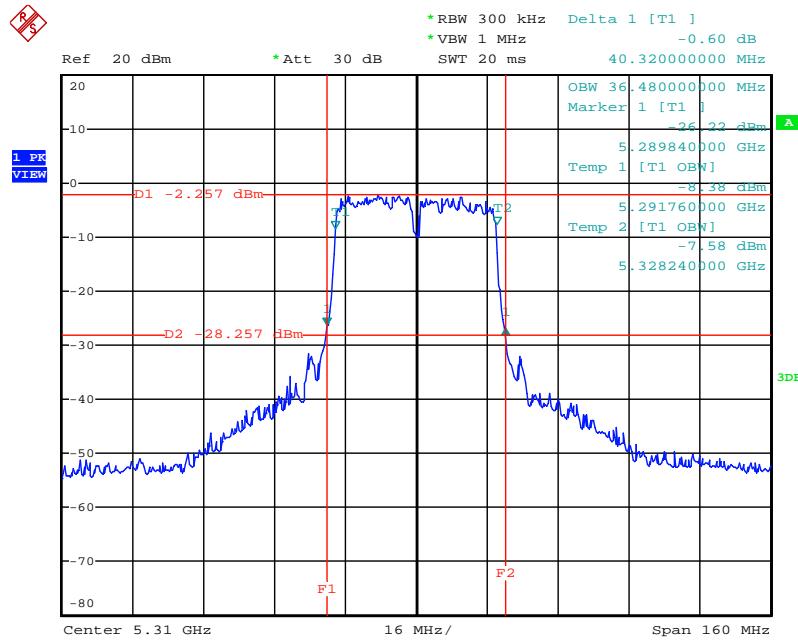
Date: 13.DEC.2011 10:17:10

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5270 MHz / 1TX



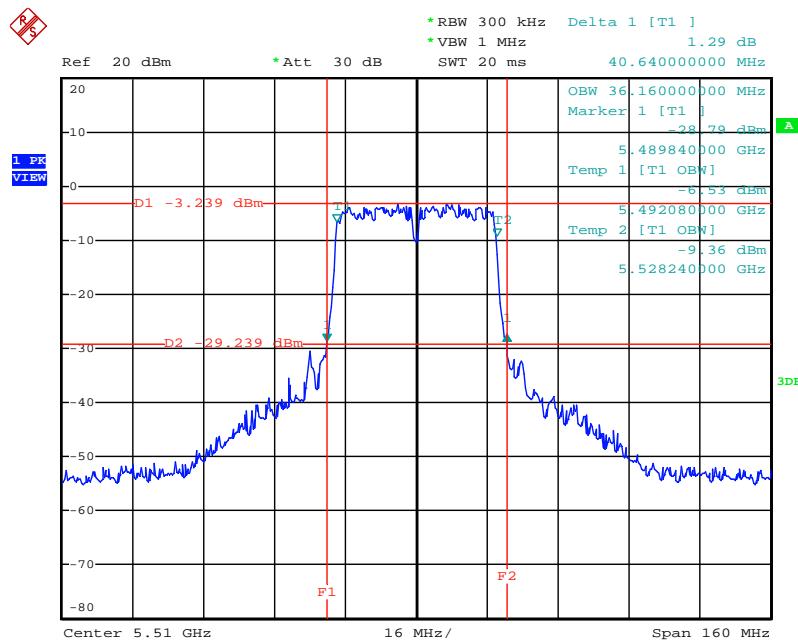
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### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5310 MHz / 1TX



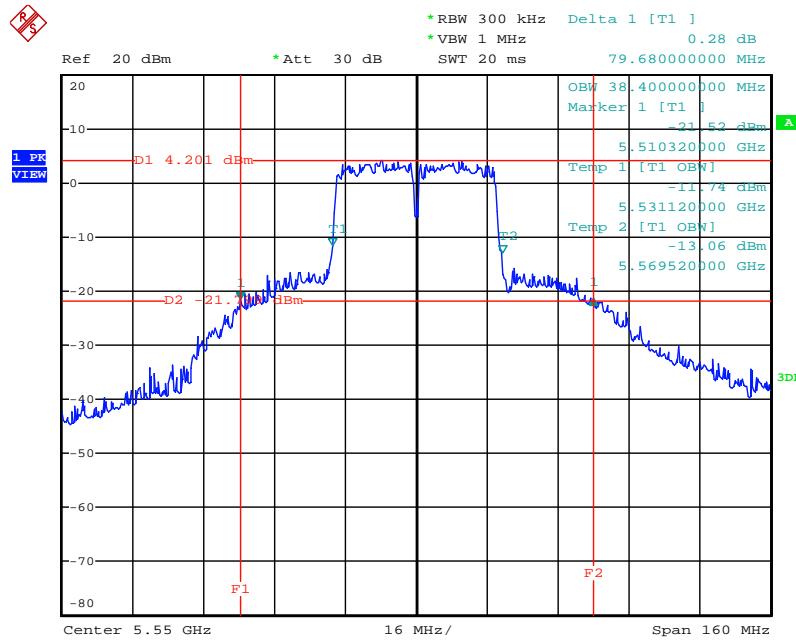
Date: 13.DEC.2011 10:15:43

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5510MHz / 1TX



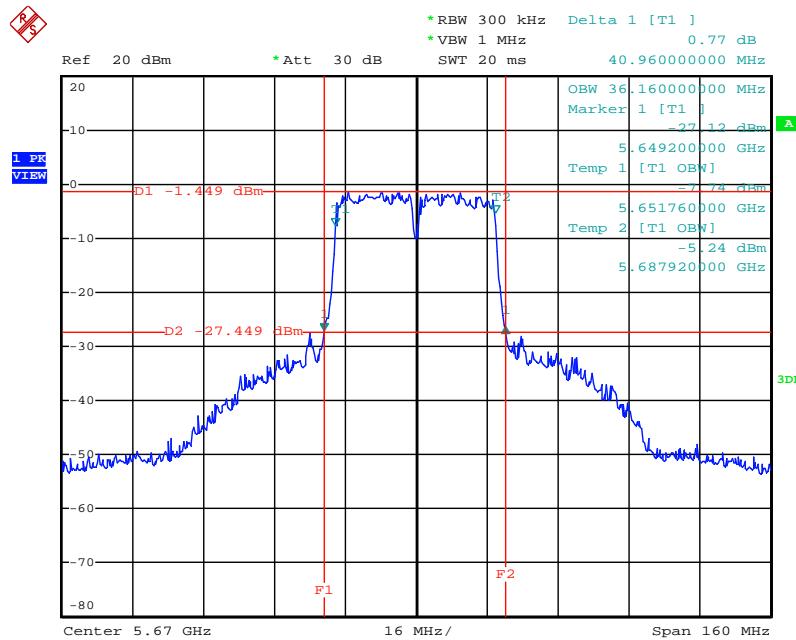
Date: 13.DEC.2011 10:15:16

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5550 MHz / 1TX



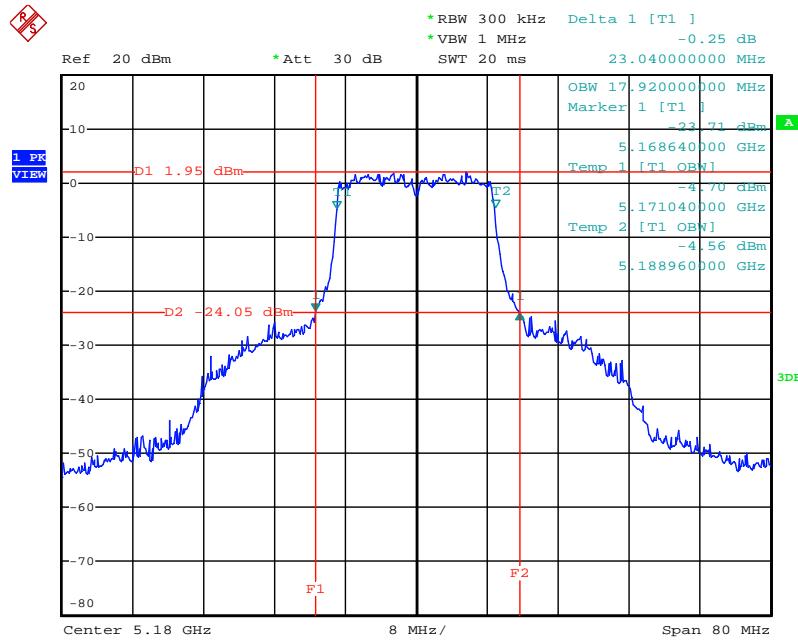
Date: 13.DEC.2011 10:14:38

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5670 MHz / 1TX



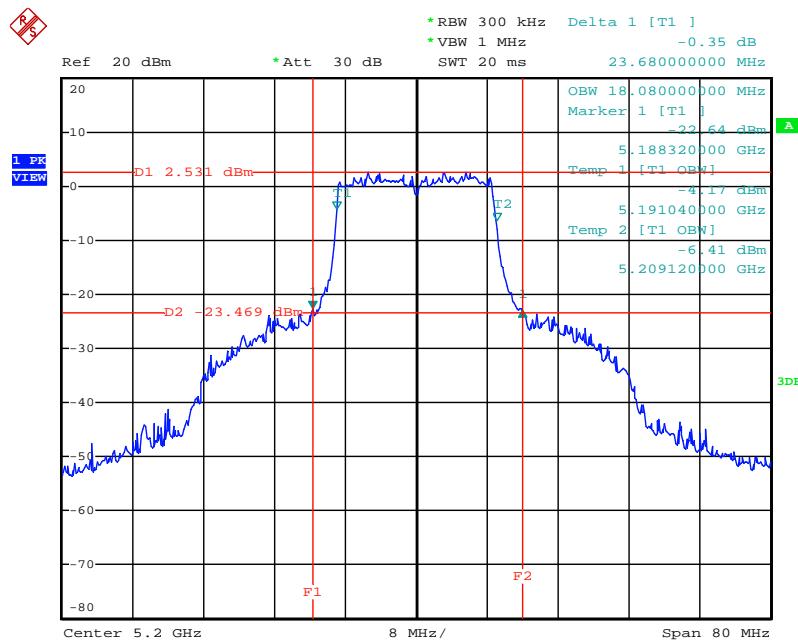
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### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5180 MHz / 2TX



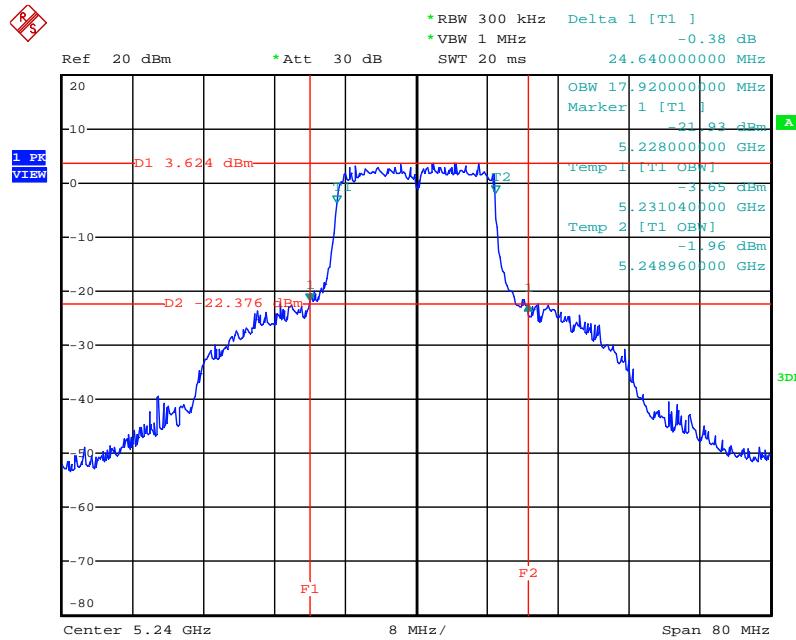
Date: 10.DEC.2011 18:03:01

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5200 MHz / 2TX



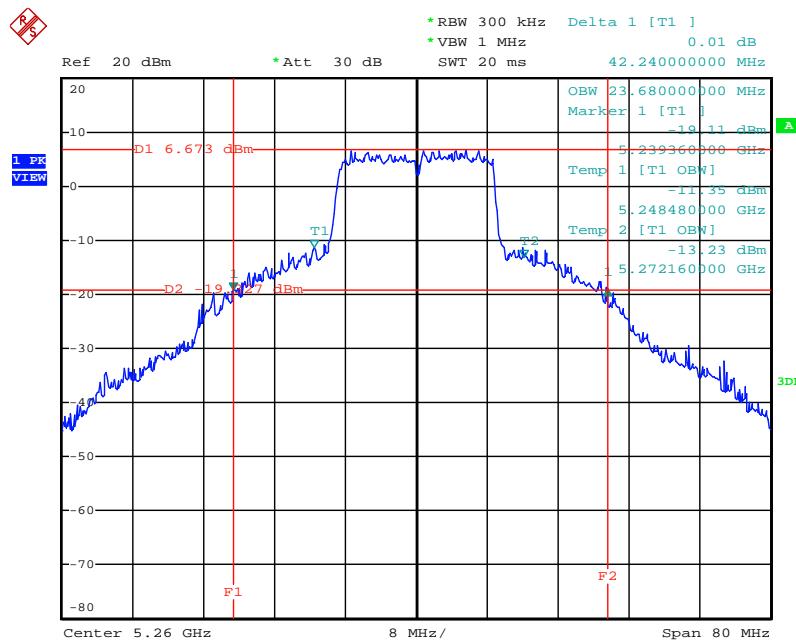
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### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5240 MHz / 2TX



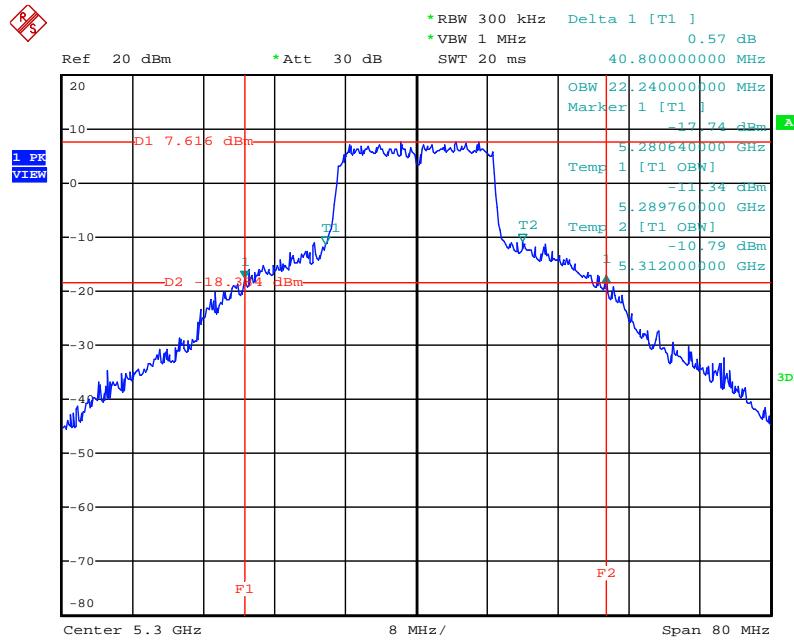
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### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5260 MHz / 2TX



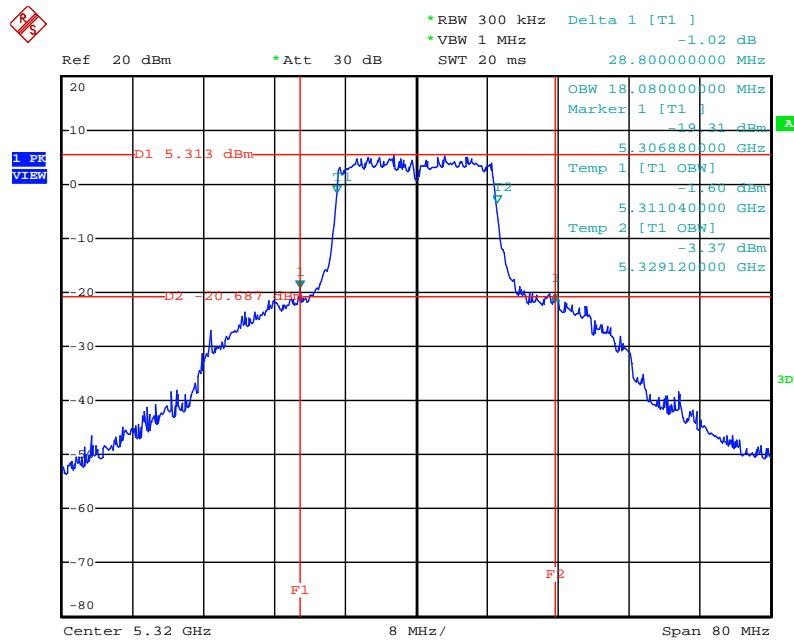
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### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5300 MHz / 2TX



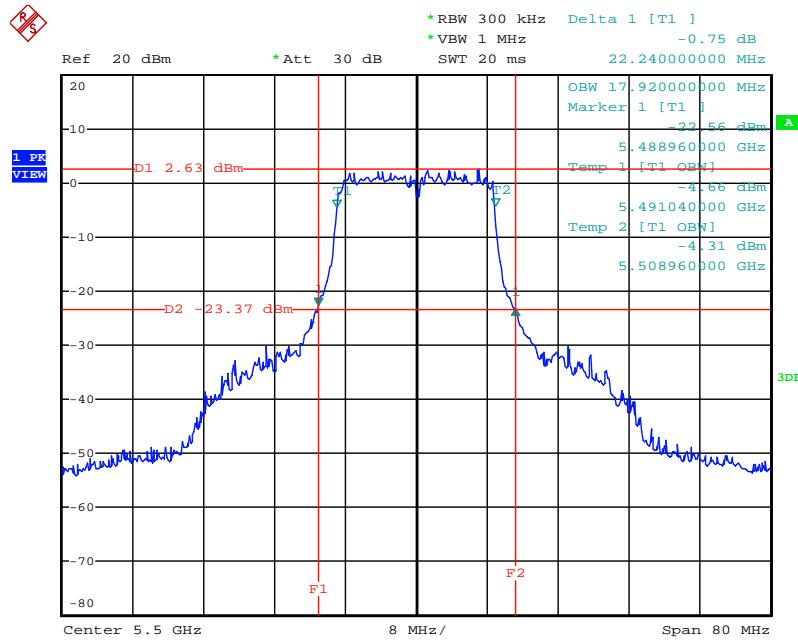
Date: 10.DEC.2011 18:06:18

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5320 MHz / 2TX



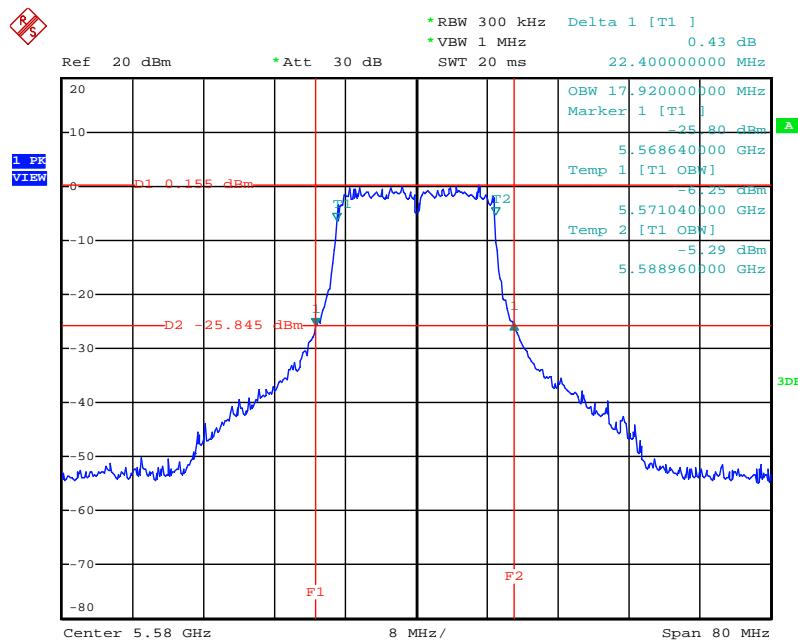
Date: 10.DEC.2011 18:07:01

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5500 MHz / 2TX



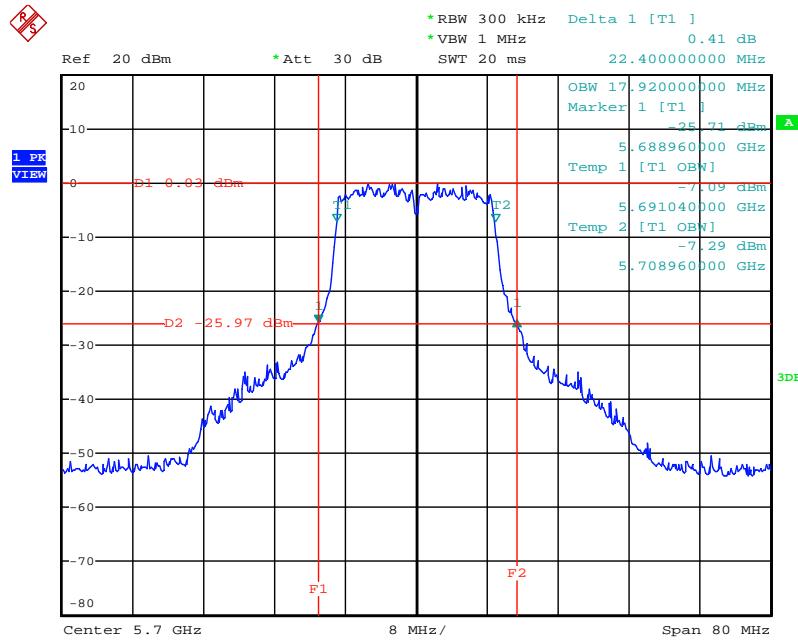
Date: 10.DEC.2011 18:07:52

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5580 MHz / 2TX



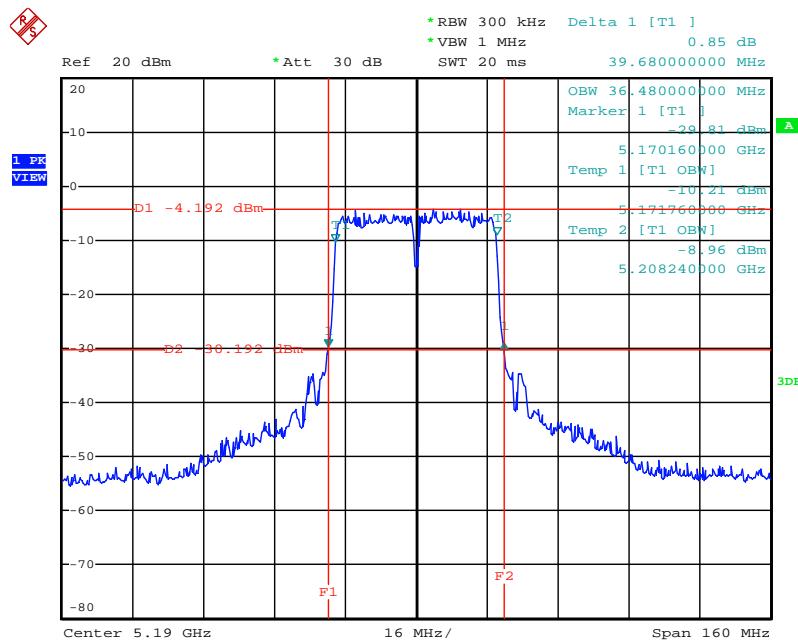
Date: 10.DEC.2011 18:08:36

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 / 5700 MHz / 2TX



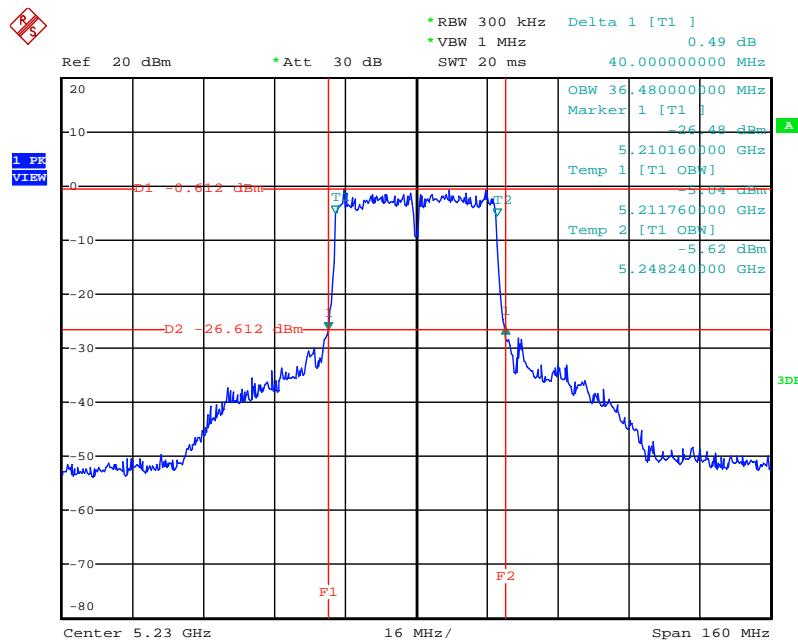
Date: 10.DEC.2011 18:09:14

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 / 5190 MHz / 2TX



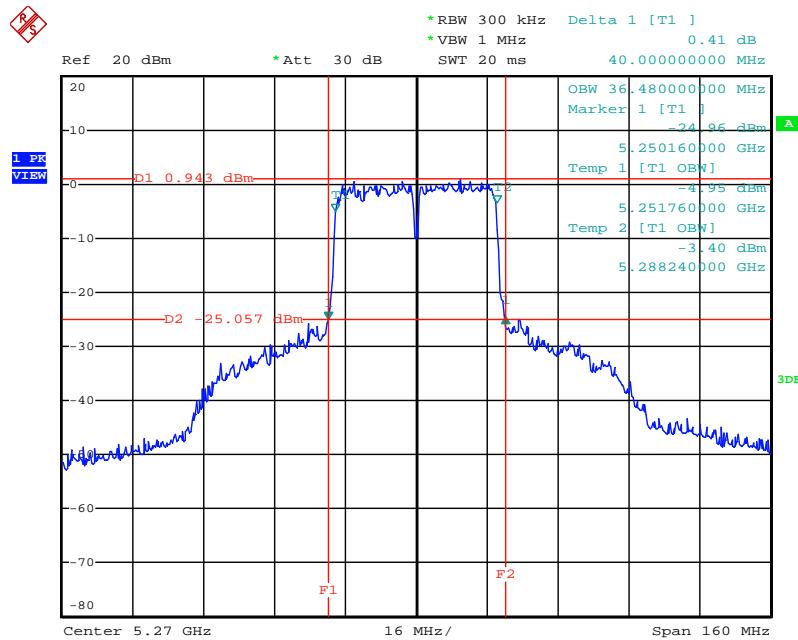
Date: 10.DEC.2011 18:10:02

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 / 5230 MHz / 2TX



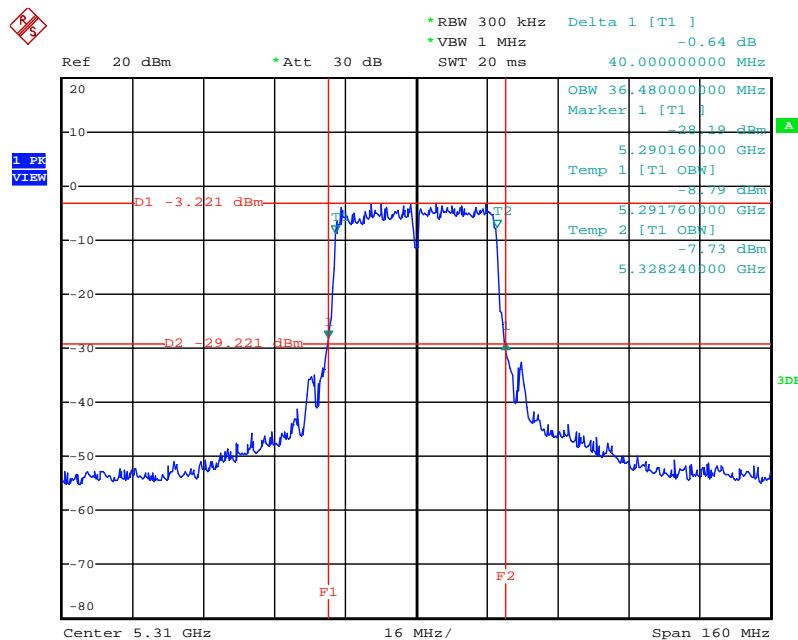
Date: 10.DEC.2011 18:11:39

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 / 5270 MHz / 2TX



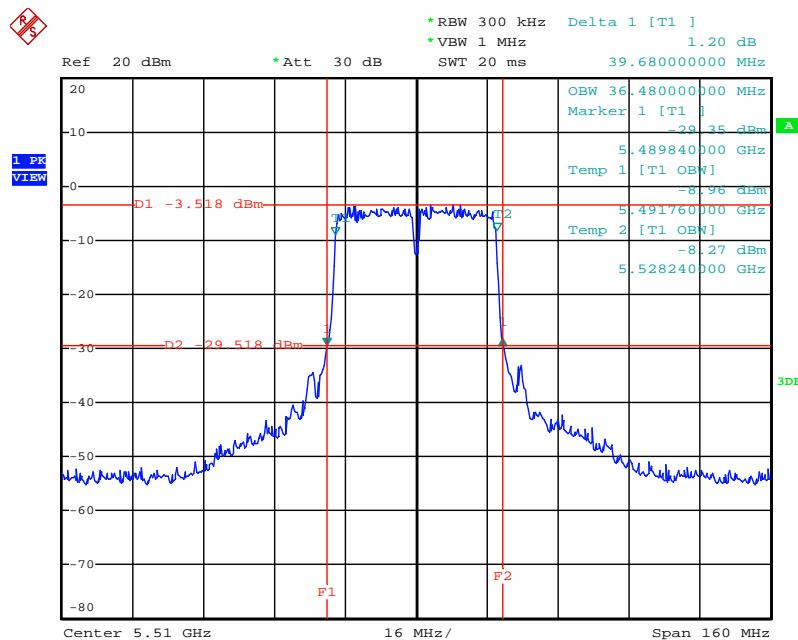
Date: 10.DEC.2011 18:12:45

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 / 5310 MHz / 2TX



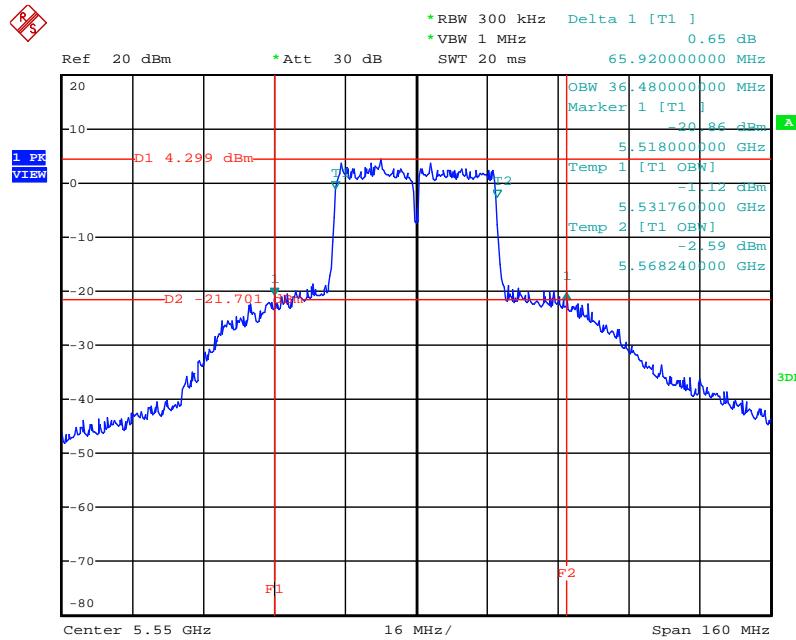
Date: 10.DEC.2011 18:13:37

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 / 5510MHz / 2TX



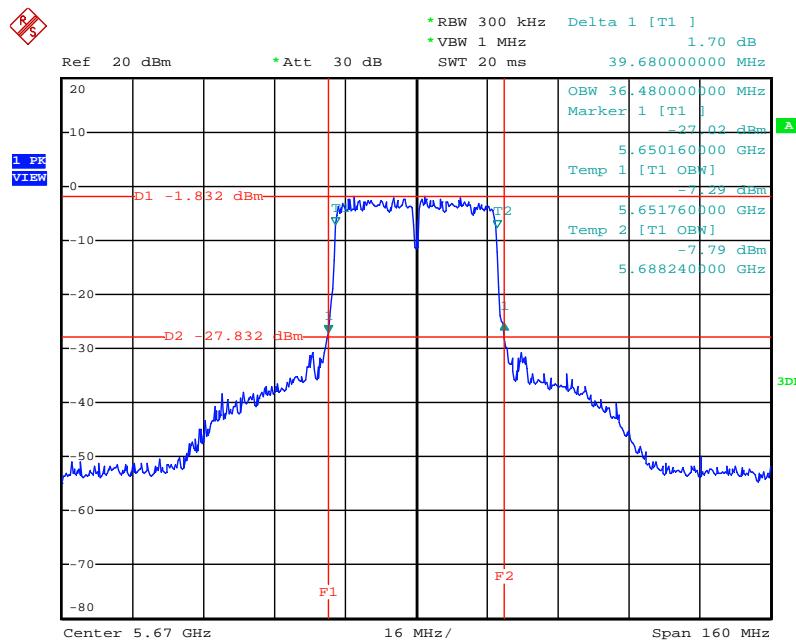
Date: 10.DEC.2011 18:14:30

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 / 5550 MHz / 2TX



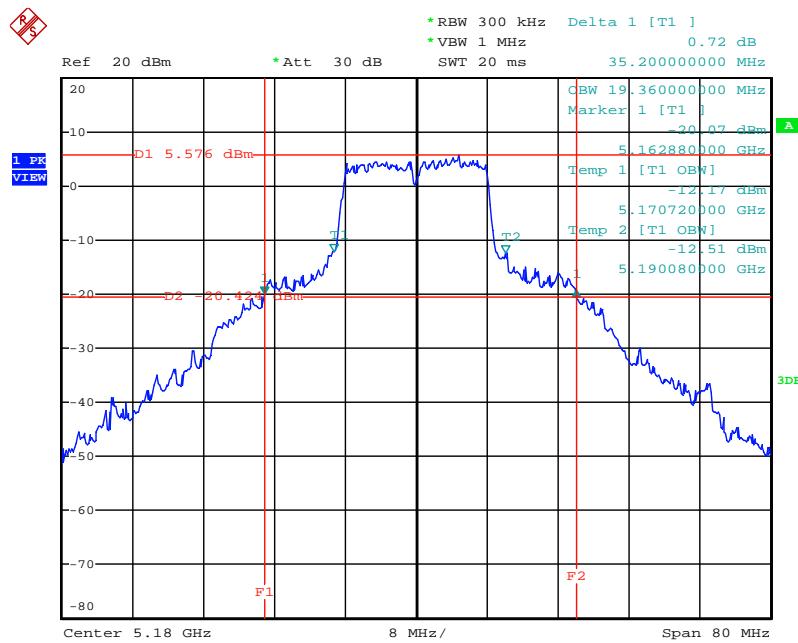
Date: 10.DEC.2011 18:15:46

### 26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 / 5670 MHz / 2TX



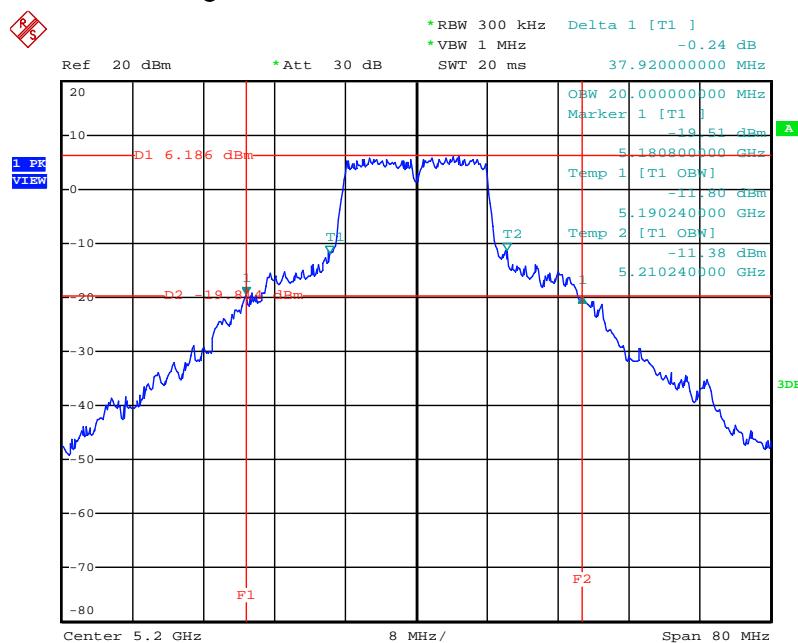
Date: 10.DEC.2011 18:16:27

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5180 MHz



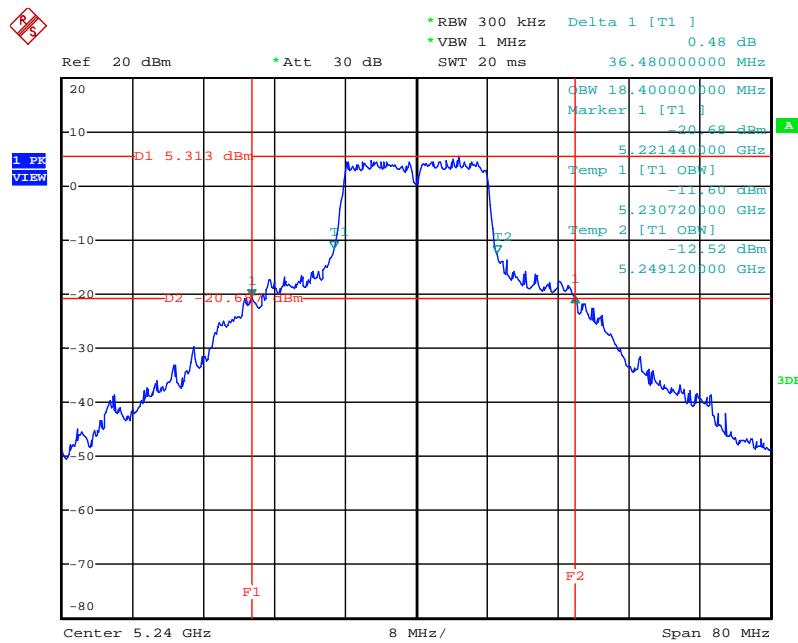
Date: 10.DEC.2011 17:54:23

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5200 MHz



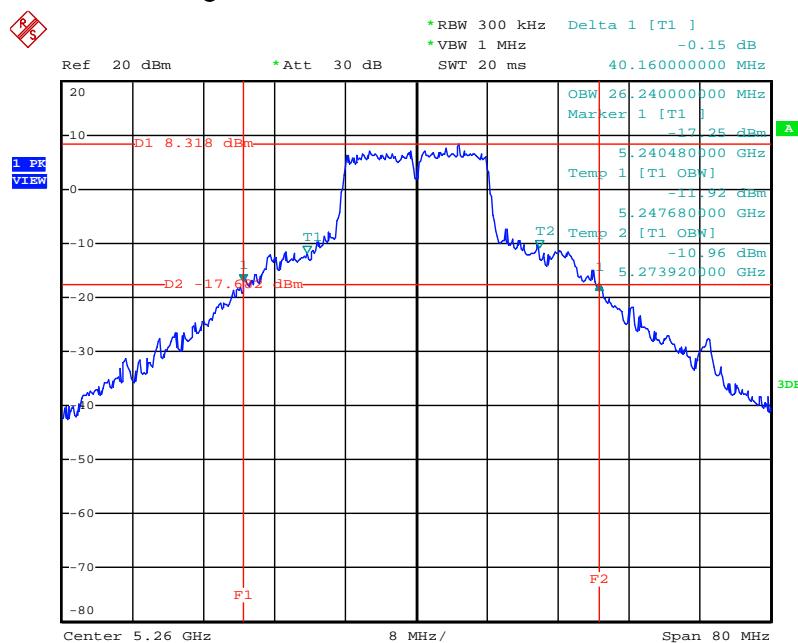
Date: 10.DEC.2011 17:55:02

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5240 MHz



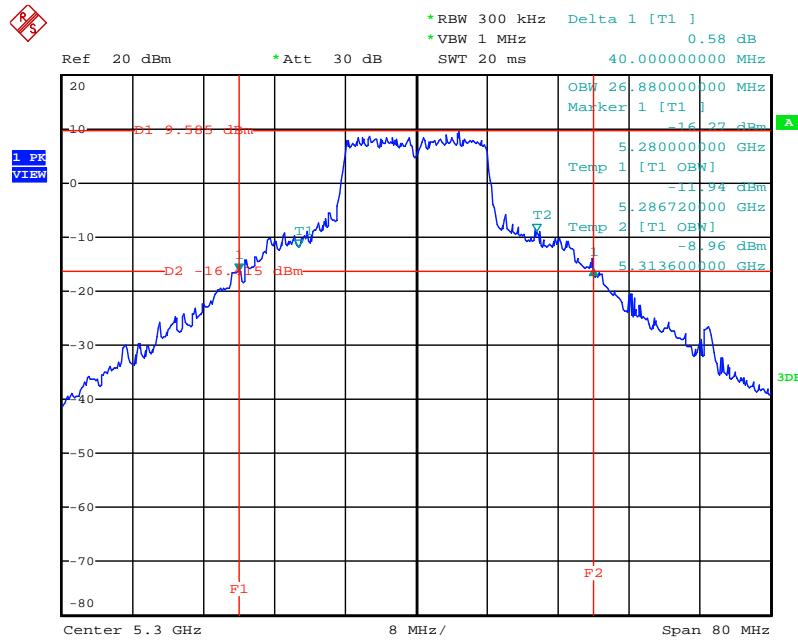
Date: 10.DEC.2011 17:56:29

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5260 MHz



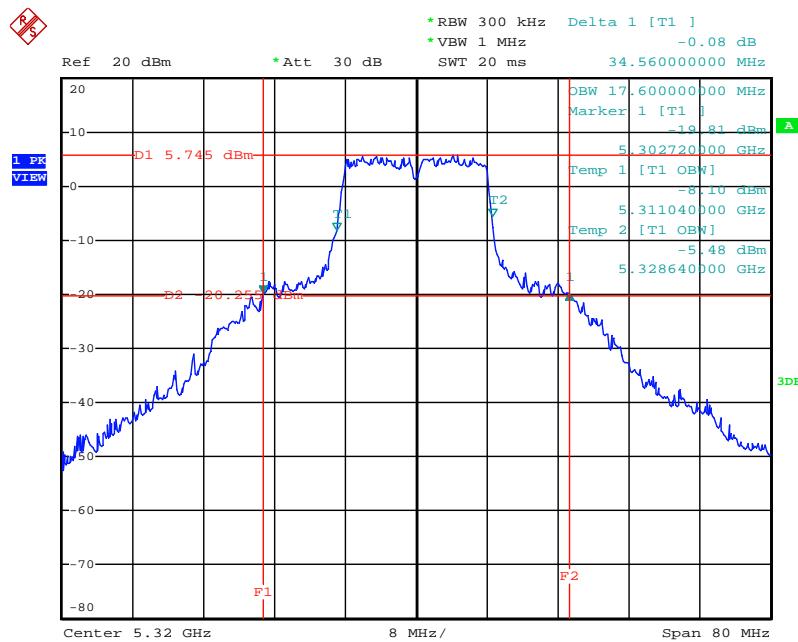
Date: 10.DEC.2011 17:57:12

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5300 MHz



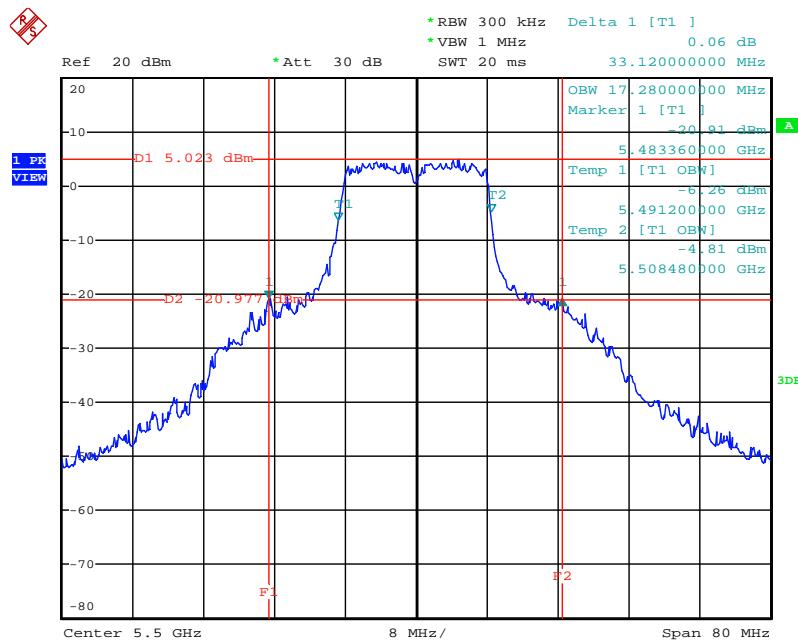
Date: 10.DEC.2011 17:57:47

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5320 MHz



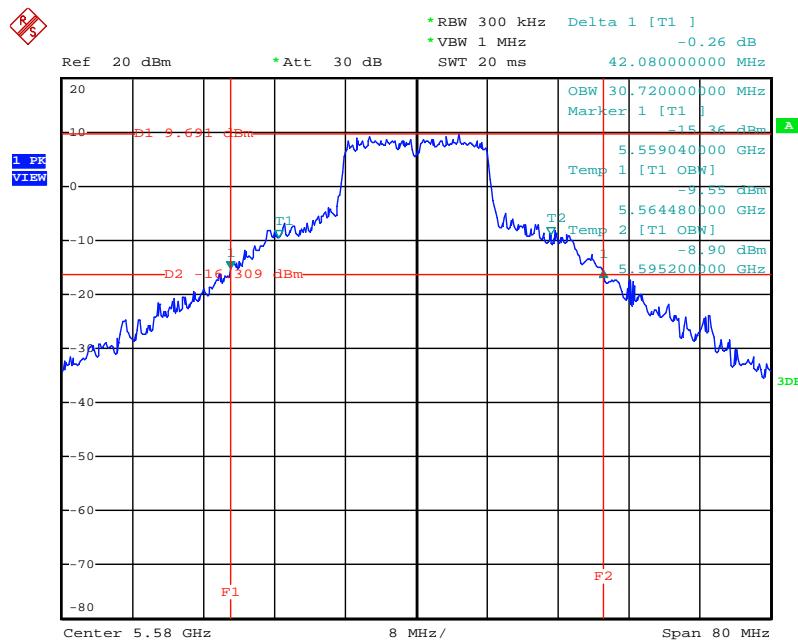
Date: 10.DEC.2011 17:58:29

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5500 MHz



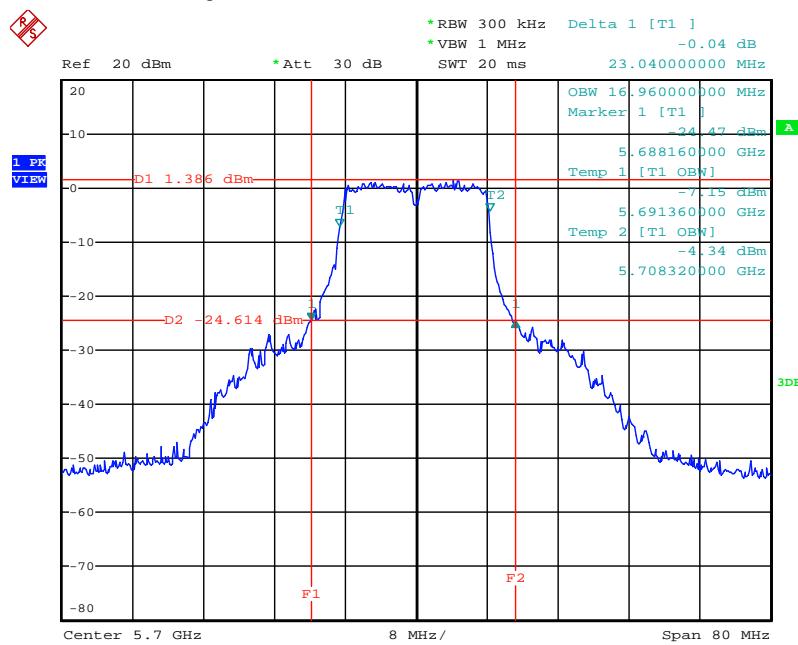
Date: 10.DEC.2011 17:59:30

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5580 MHz



Date: 10.DEC.2011 17:59:59

### 26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1/ 5700 MHz



Date: 10.DEC.2011 18:00:37

## 4.3. Maximum Conducted Output Power Measurement

### 4.3.1. Limit

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  $4 \text{ dBm} + 10\log B$ , where B is the 26 dB emissions bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, 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.

For the 5.25-5.35 GHz and 5.470-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or  $11 \text{ dBm} + 10\log B$ , where B is the 26-dB emission bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, 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.

For the band 5.725~5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W or  $17 \text{ dBm} + 10 \log B$ , where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 17 dBm in any 1MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain up to 23 dBi without any corresponding reduction in the transmitter peak output power or peak power spectral density. For fixed, point-to-point U-NII transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in peak transmitter power and peak power spectral density for each 1 dB of antenna gain in excess of 23 dBi would be required.

### 4.3.2. Measuring Instruments and Setting

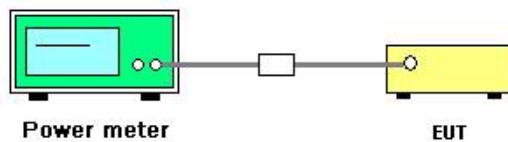
The following table is the setting of the peak power meter.

Power Meter Parameter	Setting
Bandwidth	50MHz bandwidth is greater than the EUT emission bandwidth
Detector	AVERAGE

#### 4.3.3. Test Procedures

Spectrum Parameter	Setting
RF Output Power Method	<input checked="" type="checkbox"/> ANSI C63.10 clause 6.10.2.1 (a) power meter method
RF Output Power Method	<input type="checkbox"/> ANSI C63.10 clause 6.10.2.1 (b) channel integration method
RF Output Power Method	<input type="checkbox"/> ANSI C63.10 clause 6.10.3.1 Method 1 - spectral trace averaging
RF Output Power Method	<input type="checkbox"/> ANSI C63.10 clause 6.10.3.2 Method 2 - zero-span mode with trace averaging

#### 4.3.4. Test Setup Layout



#### 4.3.5. Test Deviation

There is no deviation with the original standard.

#### 4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 4.3.7. Test Result of Maximum Conducted Output Power

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11n
<b>Test Date</b>	Dec. 13, 2011		

##### Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 1TX

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	14.47	17.00	Complies
40	5200 MHz	16.60	17.00	Complies
48	5240 MHz	16.59	17.00	Complies
52	5260 MHz	18.77	24.00	Complies
60	5300 MHz	18.92	24.00	Complies
64	5320 MHz	16.41	24.00	Complies
100	5500 MHz	13.76	24.00	Complies
116	5580 MHz	20.78	24.00	Complies
140	5700 MHz	12.53	24.00	Complies

##### Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 1TX

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
38	5190 MHz	11.43	17.00	Complies
46	5230 MHz	16.70	17.00	Complies
54	5270 MHz	17.15	24.00	Complies
62	5310 MHz	12.54	24.00	Complies
102	5510MHz	10.91	24.00	Complies
110	5550 MHz	18.15	24.00	Complies
134	5670 MHz	14.14	24.00	Complies

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11n
<b>Test Date</b>	Dec. 13, 2011		

**Configuration IEEE 802.11n MCS8 20MHz / Chain 1 + Chain 2 / 2TX**

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	16.74	17.00	Complies
40	5200 MHz	16.95	17.00	Complies
48	5240 MHz	16.74	17.00	Complies
52	5260 MHz	20.85	24.00	Complies
60	5300 MHz	20.94	24.00	Complies
64	5320 MHz	17.61	24.00	Complies
100	5500 MHz	17.41	24.00	Complies
116	5580 MHz	22.22	24.00	Complies
140	5700 MHz	15.71	24.00	Complies

**Configuration IEEE 802.11n MCS8 40MHz / Chain 1 + Chain 2 / 2TX**

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
38	5190 MHz	14.17	17.00	Complies
46	5230 MHz	16.88	17.00	Complies
54	5270 MHz	18.17	24.00	Complies
62	5310 MHz	14.77	24.00	Complies
102	5510MHz	14.67	24.00	Complies
110	5550 MHz	21.11	24.00	Complies
134	5670 MHz	16.73	24.00	Complies



Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a
Test Date	Dec. 13, 2011		

**Configuration IEEE 802.11a / Chain 1**

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	15.47	17.00	Complies
40	5200 MHz	16.67	17.00	Complies
48	5240 MHz	16.86	17.00	Complies
52	5260 MHz	18.82	24.00	Complies
60	5300 MHz	19.29	24.00	Complies
64	5320 MHz	16.61	24.00	Complies
100	5500 MHz	16.87	24.00	Complies
116	5580 MHz	21.01	24.00	Complies
140	5700 MHz	14.52	24.00	Complies

## 4.4. Power Spectral Density Measurement

### 4.4.1. Limit

The power spectral density is defined as the highest level of power in dBm per MHz generated by the transmitter within the power envelope. The following table is power spectral density limits and decrease power density limit rule refer to section 4.3.1.

Frequency Range	Power Spectral Density limit (dBm/MHz)
5.15~5.25 GHz	4
5.25-5.35 GHz	11
5470-5725	11

### 4.4.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz
VB	3000 kHz
Detector	SAMPLE
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times

### 4.4.3. Test Procedures

1. The test procedure is the same as section 4.6.3.
2. Trace A, Set RBW = 1MHz, VBW = 3MHz, Span > 26dB bandwidth, Max. hold.
3. Delta Mark trace A Maximum frequency and trace B same frequency.
4. Repeat the above procedure until measurements for all frequencies were complete.

### 4.4.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.6.4.

### 4.4.5. Test Deviation

There is no deviation with the original standard.

### 4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 4.4.7. Test Result of Power Spectral Density

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11n

##### Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 1TX

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	-0.17	4.00	Complies
40	5200 MHz	2.59	4.00	Complies
48	5240 MHz	2.16	4.00	Complies
52	5260 MHz	3.30	11.00	Complies
60	5300 MHz	5.44	11.00	Complies
64	5320 MHz	0.64	11.00	Complies
100	5500 MHz	-0.02	11.00	Complies
116	5580 MHz	6.31	11.00	Complies
140	5700 MHz	-3.17	11.00	Complies

##### Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 1TX

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
38	5190 MHz	-6.23	4.00	Complies
46	5230 MHz	-0.03	4.00	Complies
54	5270 MHz	-0.19	11.00	Complies
62	5310 MHz	-4.62	11.00	Complies
102	5510MHz	-5.65	11.00	Complies
110	5550 MHz	1.22	11.00	Complies
134	5670 MHz	-3.90	11.00	Complies

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11n

**Configuration IEEE 802.11n MCS8 20MHz / Chain1 + Chain 2 / 2TX**

Channel	Frequency	Power Density (dBm/3kHz)		Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Chain 1	Chain 2			
36	5180 MHz	1.45	-0.11	3.75	4.00	Complies
40	5200 MHz	0.08	1.13	3.65	4.00	Complies
48	5240 MHz	0.58	0.90	3.75	4.00	Complies
52	5260 MHz	3.38	3.73	6.57	11.00	Complies
60	5300 MHz	4.10	5.26	7.73	11.00	Complies
64	5320 MHz	2.02	3.19	5.65	11.00	Complies
100	5500 MHz	0.41	1.21	3.84	11.00	Complies
116	5580 MHz	-2.43	-2.54	0.53	11.00	Complies
140	5700 MHz	-3.30	-3.05	-0.16	11.00	Complies

**Configuration IEEE 802.11n MCS8 40MHz Chain1 + Chain 2 / 2TX**

Channel	Frequency	Power Density (dBm/3kHz)		Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Chain 1	Chain 2			
38	5190 MHz	-6.09	-5.46	-2.75	4.00	Complies
46	5230 MHz	-2.66	-4.02	-0.28	4.00	Complies
54	5270 MHz	-1.86	-0.30	2.00	11.00	Complies
62	5310 MHz	-4.35	-5.95	-2.07	11.00	Complies
102	5510MHz	-4.89	-4.48	-1.67	11.00	Complies
110	5550 MHz	1.64	1.13	4.40	11.00	Complies
134	5670 MHz	-4.01	-2.94	-0.43	11.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a

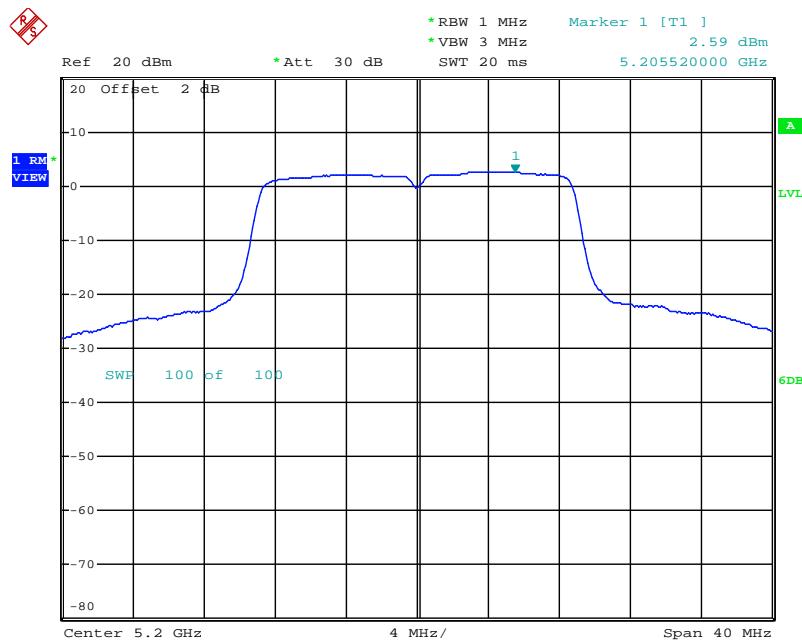
**Configuration IEEE 802.11a / Chain 1**

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	3.04	4.00	Complies
40	5200 MHz	2.13	4.00	Complies
48	5240 MHz	2.93	4.00	Complies
52	5260 MHz	5.23	11.00	Complies
60	5300 MHz	5.60	11.00	Complies
64	5320 MHz	4.87	11.00	Complies
100	5500 MHz	3.55	11.00	Complies
116	5580 MHz	7.03	11.00	Complies
140	5700 MHz	-2.05	11.00	Complies

Note: All the test values were listed in the report.

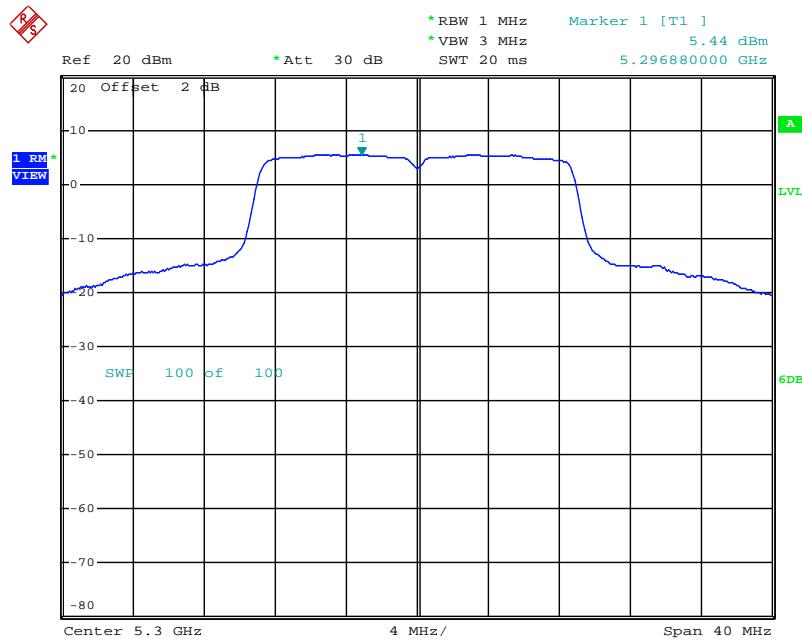
For plots, only the channel with maximum results was shown.

### Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5200 MHz / 1TX



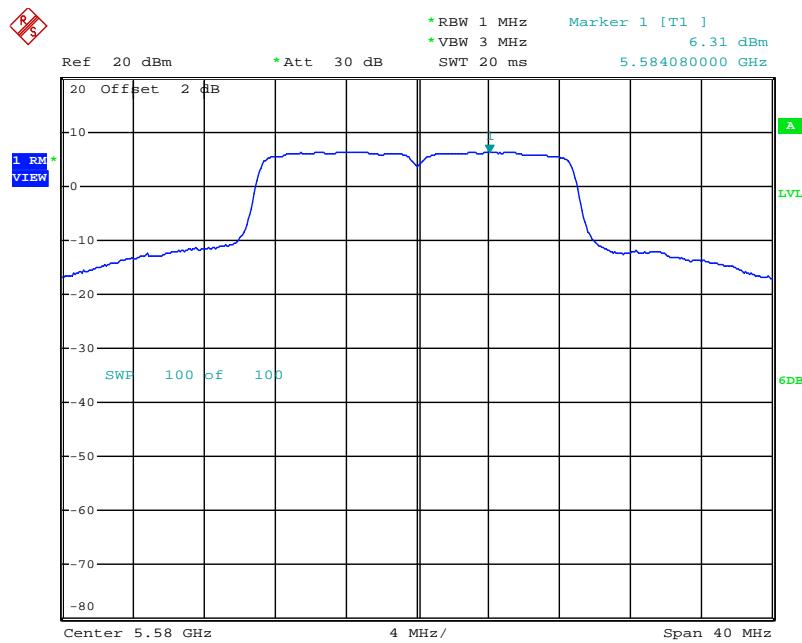
Date: 13.DEC.2011 10:38:36

### Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5300 MHz / 1TX



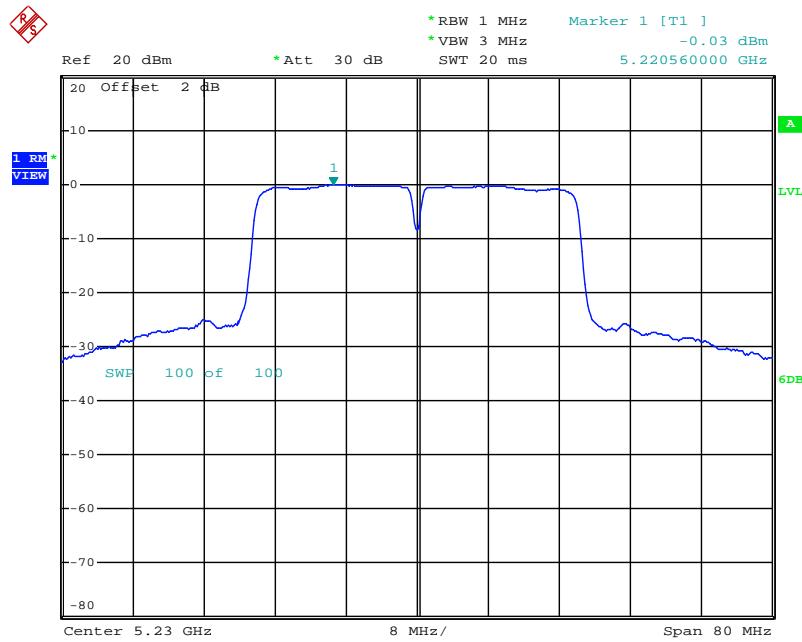
Date: 13.DEC.2011 10:33:06

### Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5580 MHz / 1TX



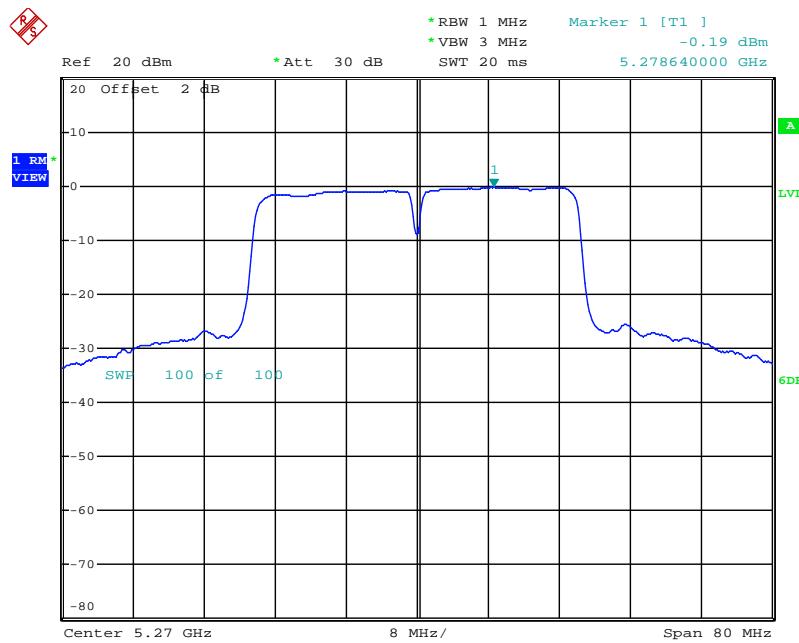
Date: 13.DEC.2011 10:28:29

### Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5230 MHz / 1TX



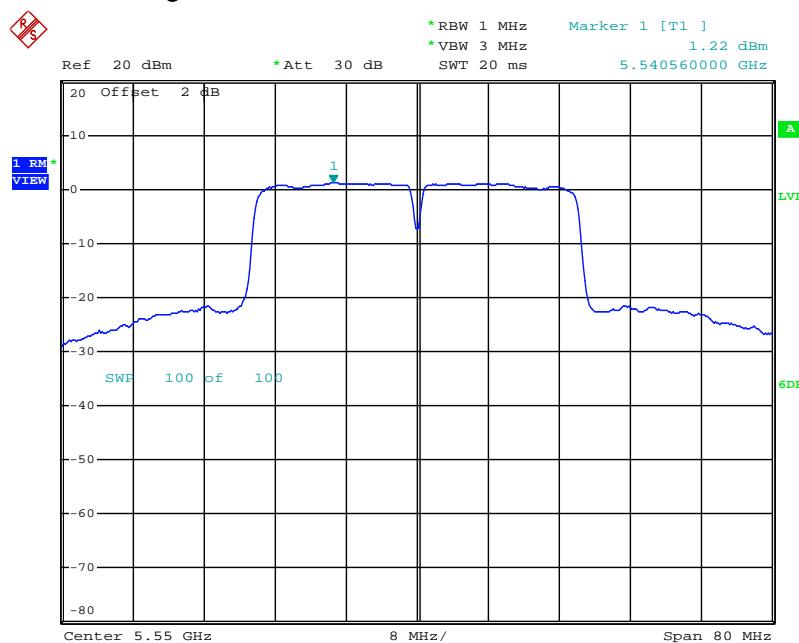
Date: 13.DEC.2011 10:21:33

### Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5270 MHz / 1TX



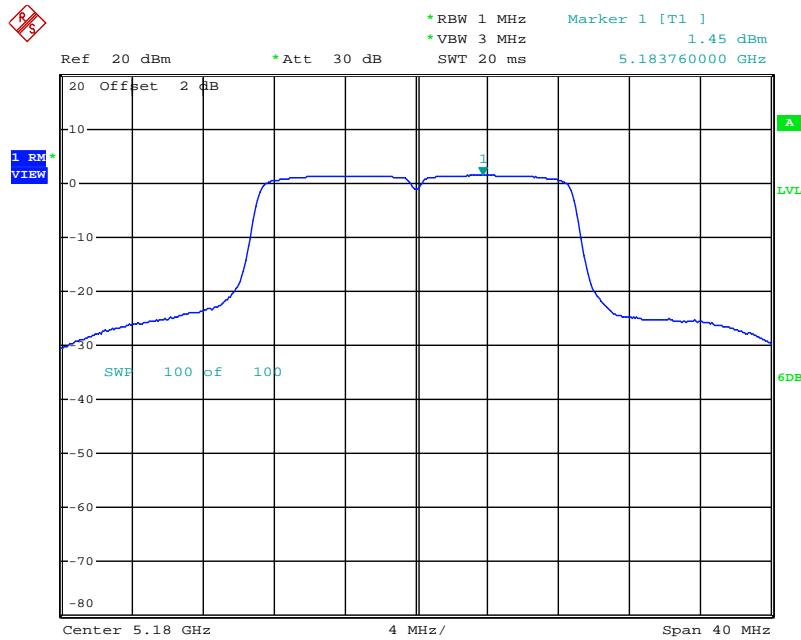
Date: 13.DEC.2011 10:22:11

### Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5550 MHz / 1TX



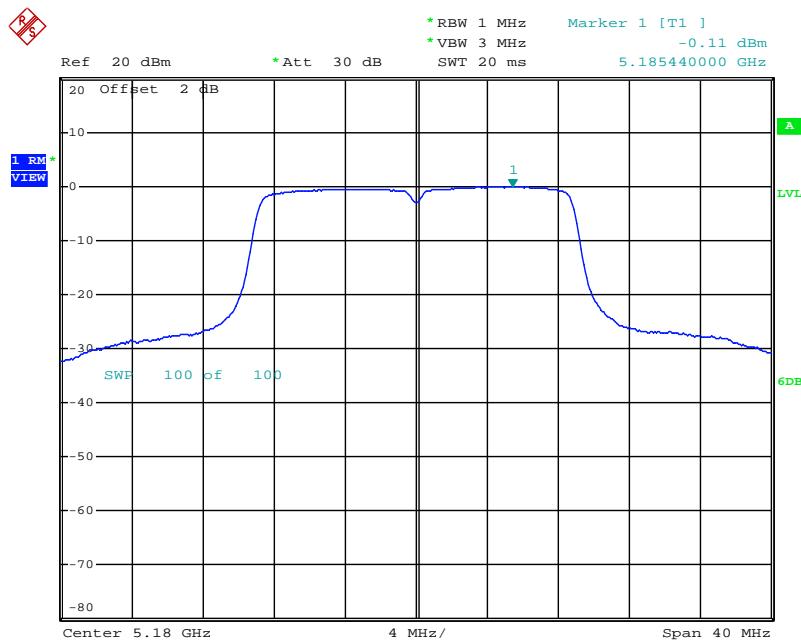
Date: 13.DEC.2011 10:26:22

### Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 / 5180 MHz / 2TX



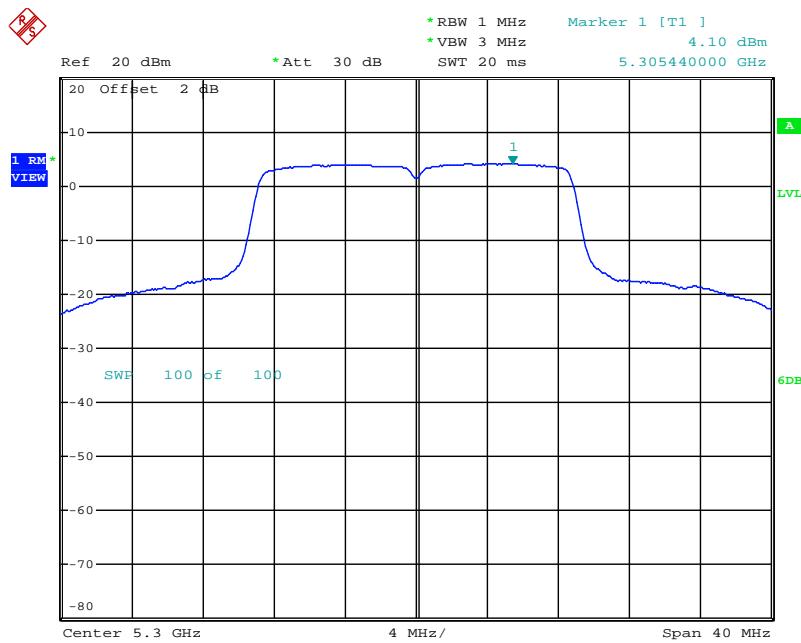
Date: 10.DEC.2011 18:41:43

### Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 2 / 5180 MHz / 2TX



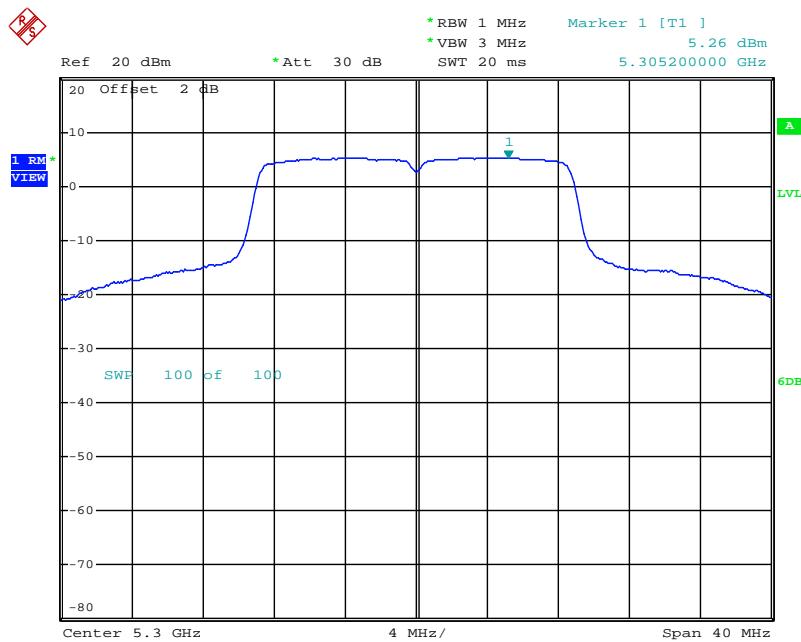
Date: 10.DEC.2011 18:41:05

### Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 / 5300 MHz / 2TX



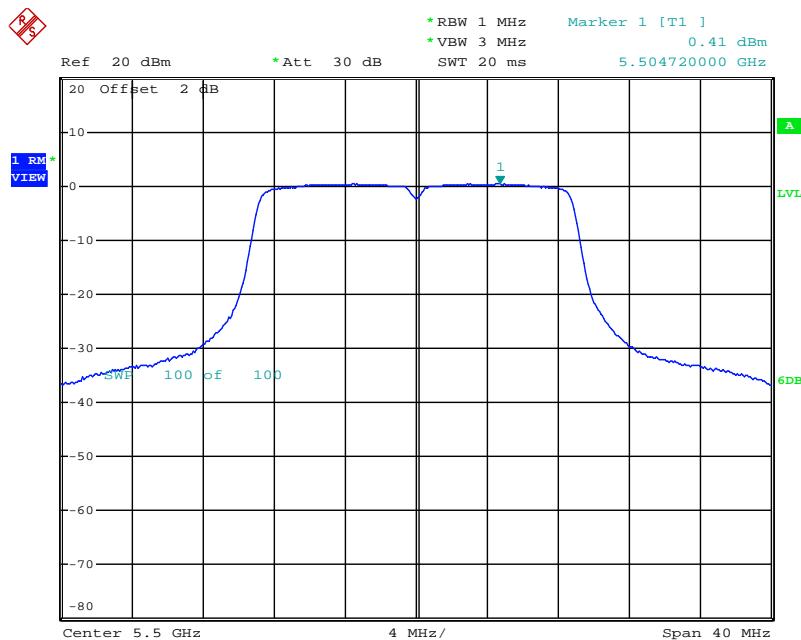
Date: 10.DEC.2011 18:58:23

### Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 2 / 5300 MHz / 2TX



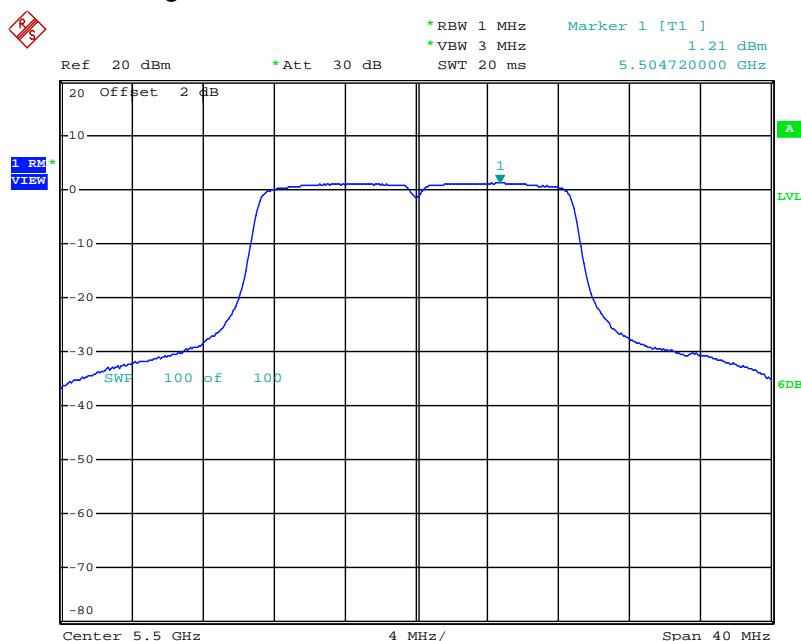
Date: 10.DEC.2011 18:57:53

### Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 / 5500 MHz / 2TX



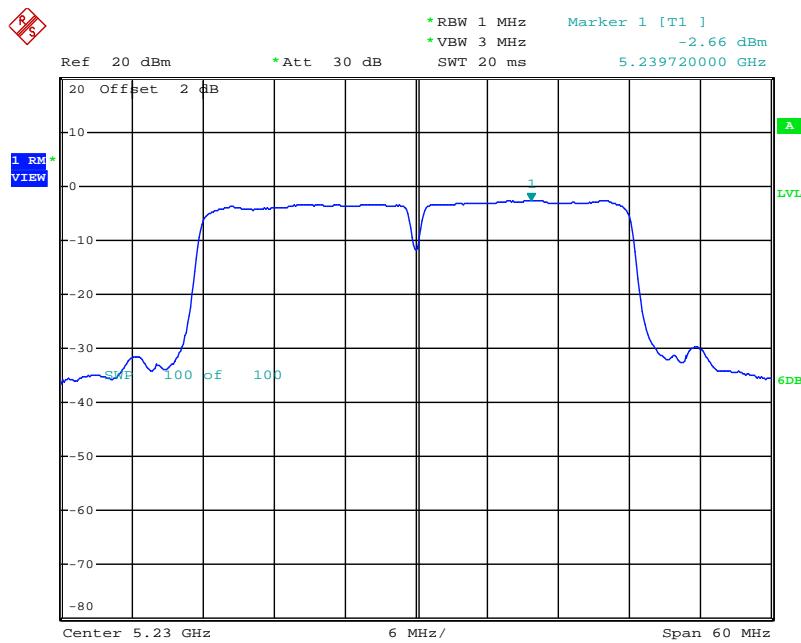
Date: 10.DEC.2011 19:00:59

### Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 2 / 5500 MHz / 2TX



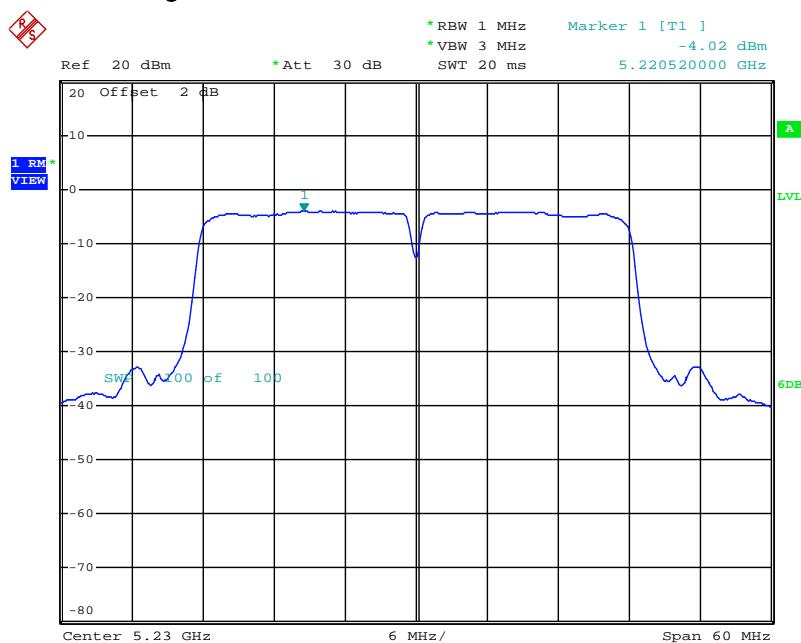
Date: 10.DEC.2011 19:01:39

### Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 / 5230 MHz / 2TX



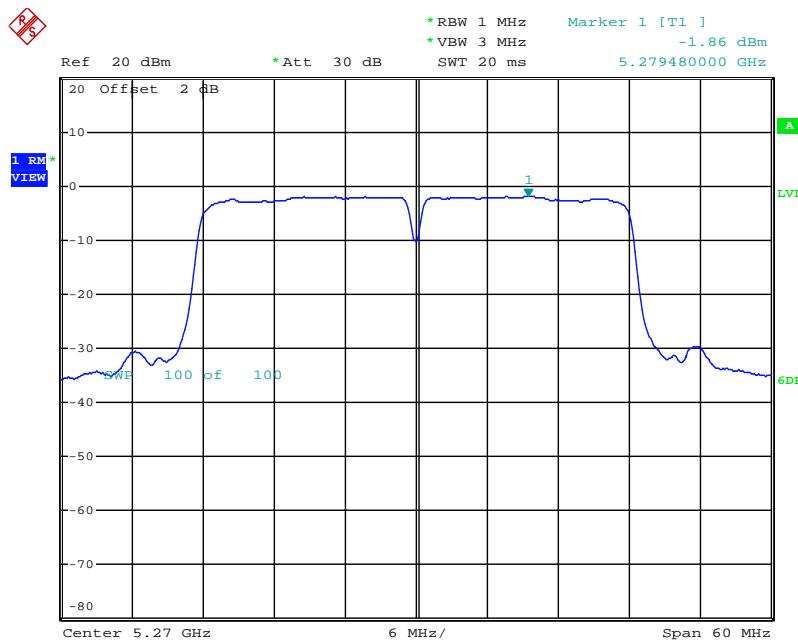
Date: 10.DEC.2011 18:36:49

### Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 2 / 5230 MHz / 2TX



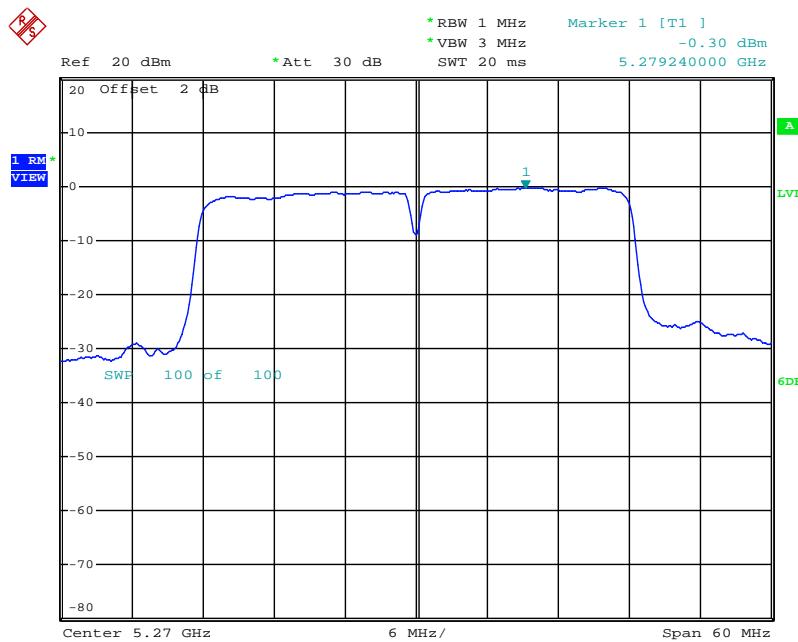
Date: 10.DEC.2011 18:36:04

### Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 / 5270 MHz / 2TX



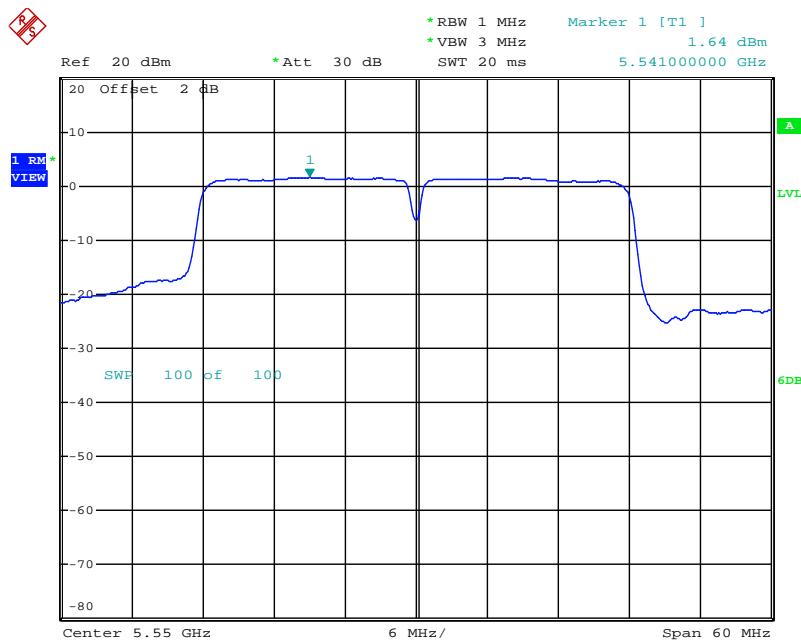
Date: 10.DEC.2011 18:33:59

### Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 2 / 5270 MHz / 2TX



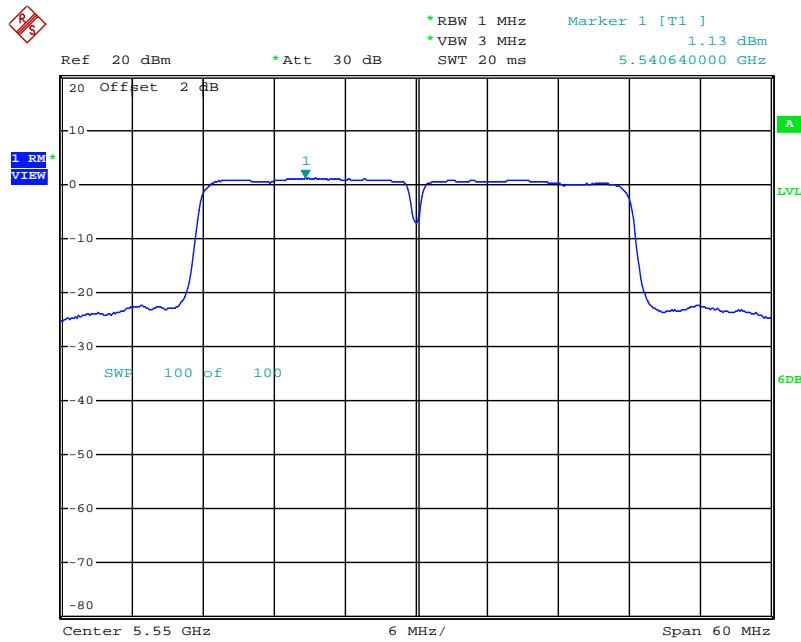
Date: 10.DEC.2011 18:34:46

### Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 / 5550 MHz / 2TX



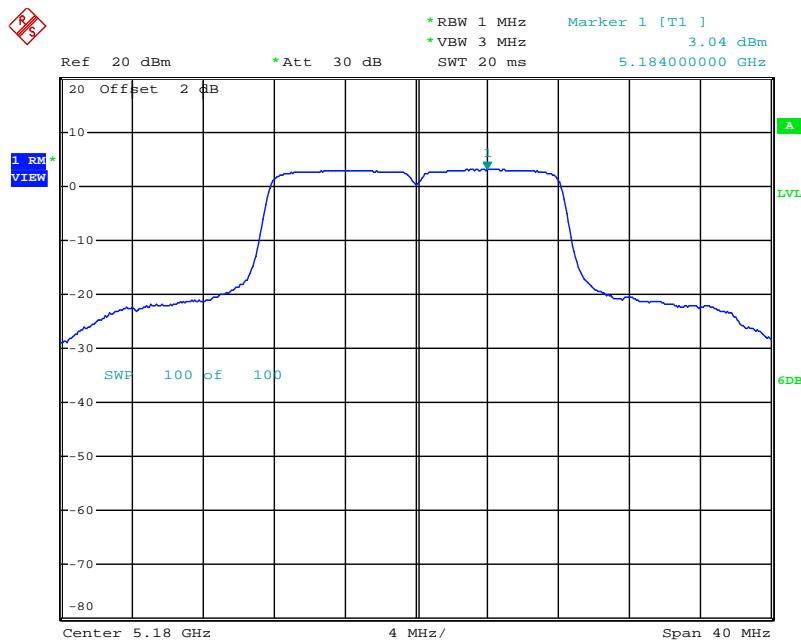
Date: 10.DEC.2011 18:28:14

### Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 2 / 5550 MHz / 2TX



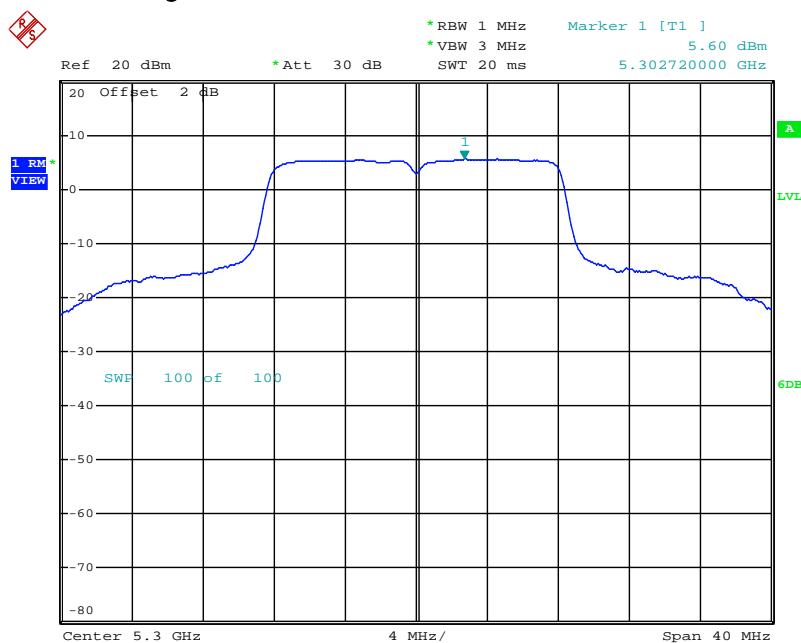
Date: 10.DEC.2011 18:27:20

### Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5180 MHz



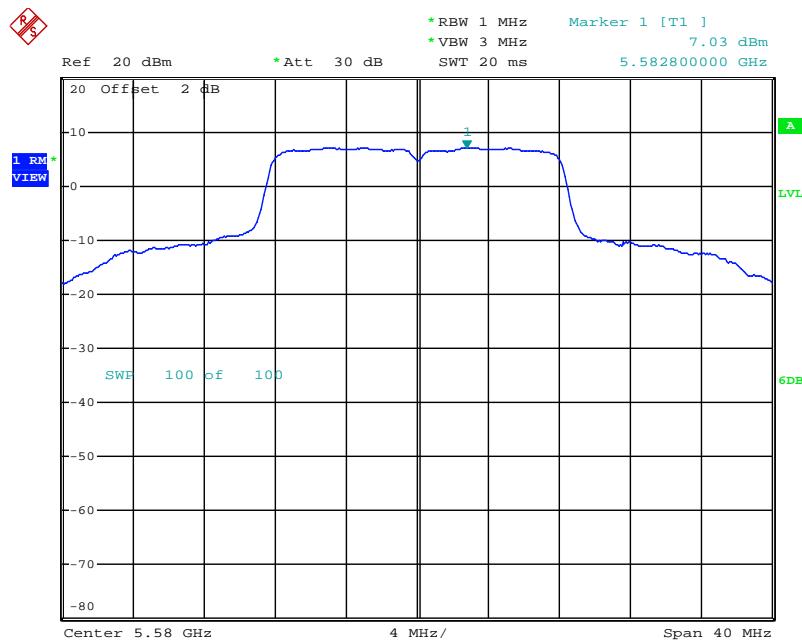
Date: 10.DEC.2011 19:12:13

### Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5300 MHz



Date: 10.DEC.2011 19:09:31

### Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5580 MHz



Date: 10.DEC.2011 19:07:19

## 4.5. Peak Excursion Measurement

### 4.5.1. Limit

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 emissions bandwidth whichever is less.

### 4.5.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz (Peak Trace) / 1000 kHz (Average Trace)
VB	3000 kHz (Peak Trace) / 300 kHz (Average Trace)
Detector	Peak (Peak Trace) / Sample (Average Trace)
Trace	Max Hold
Sweep Time	60s

### 4.5.3. Test Procedures

1. The test procedure is the same as section 4.6.3.
2. Trace A, Set RBW = 1MHz, VBW = 3MHz, Span > 26dB bandwidth, Max. hold.
3. Delta Mark trace A Maximum frequency and trace B same frequency.
4. Repeat the above procedure until measurements for all frequencies were complete.

### 4.5.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.6.4.

### 4.5.5. Test Deviation

There is no deviation with the original standard.

### 4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 4.5.7. Test Result of Peak Excursion

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11n

##### Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 1TX

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
36	5180 MHz	4.44	13	Complies
40	5200 MHz	5.20	13	Complies
48	5240 MHz	4.92	13	Complies
52	5260 MHz	3.95	13	Complies
60	5300 MHz	5.23	13	Complies
64	5320 MHz	5.14	13	Complies
100	5500 MHz	5.33	13	Complies
116	5580 MHz	4.64	13	Complies
140	5700 MHz	4.78	13	Complies

##### Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 1TX

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
38	5190 MHz	5.27	13	Complies
46	5230 MHz	5.41	13	Complies
54	5270 MHz	5.17	13	Complies
62	5310 MHz	4.76	13	Complies
102	5510MHz	5.00	13	Complies
110	5550 MHz	4.59	13	Complies
134	5670 MHz	5.03	13	Complies

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11n

**Configuration IEEE 802.11n MCS8 20MHz / Chain 1 + Chain 2 / 2TX**

<b>Channel</b>	<b>Frequency</b>	<b>Peak Excursion (dB)</b>	<b>Max. Limit (dB)</b>	<b>Result</b>
36	5180 MHz	5.44	13	Complies
40	5200 MHz	5.20	13	Complies
48	5240 MHz	5.23	13	Complies
52	5260 MHz	4.50	13	Complies
60	5300 MHz	4.55	13	Complies
64	5320 MHz	5.18	13	Complies
100	5500 MHz	4.65	13	Complies
116	5580 MHz	5.61	13	Complies
140	5700 MHz	4.76	13	Complies

**Configuration IEEE 802.11n MCS8 40MHz / Chain 1 + Chain 2 / 2TX**

<b>Channel</b>	<b>Frequency</b>	<b>Peak Excursion (dB)</b>	<b>Max. Limit (dB)</b>	<b>Result</b>
38	5190 MHz	5.47	13	Complies
46	5230 MHz	4.16	13	Complies
54	5270 MHz	5.40	13	Complies
62	5310 MHz	5.56	13	Complies
102	5510MHz	4.15	13	Complies
110	5550 MHz	5.63	13	Complies
134	5670 MHz	4.14	13	Complies

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sean Ku	<b>Configurations</b>	IEEE 802.11a

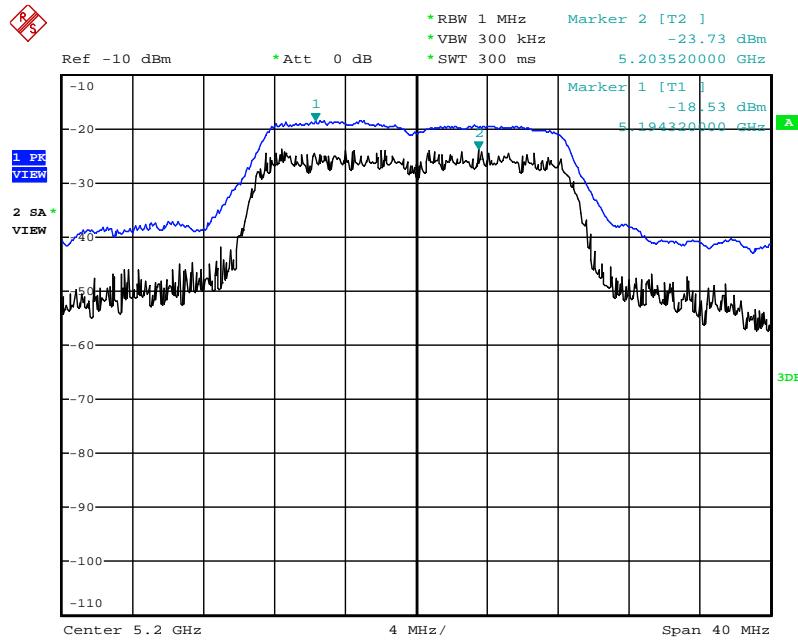
**Configuration IEEE 802.11a / Chain 1**

<b>Channel</b>	<b>Frequency</b>	<b>Peak Excursion (dB)</b>	<b>Max. Limit (dB)</b>	<b>Result</b>
36	5180 MHz	5.12	13	Complies
40	5200 MHz	4.08	13	Complies
48	5240 MHz	4.67	13	Complies
52	5260 MHz	5.70	13	Complies
60	5300 MHz	5.47	13	Complies
64	5320 MHz	4.88	13	Complies
100	5500 MHz	4.84	13	Complies
116	5580 MHz	4.91	13	Complies
140	5700 MHz	4.84	13	Complies

Note: All the test values were listed in the report.

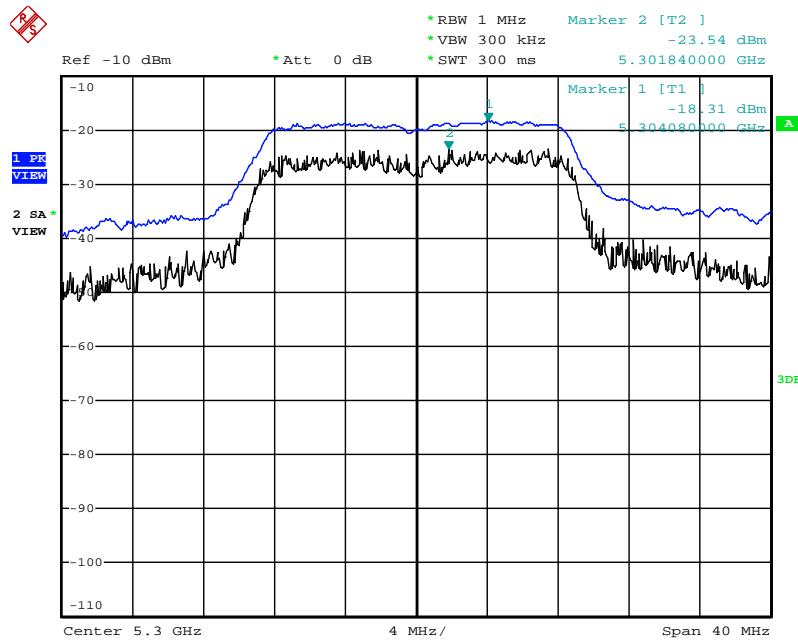
For plots, only the channel with maximum results was shown.

### Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5200 MHz / 1TX



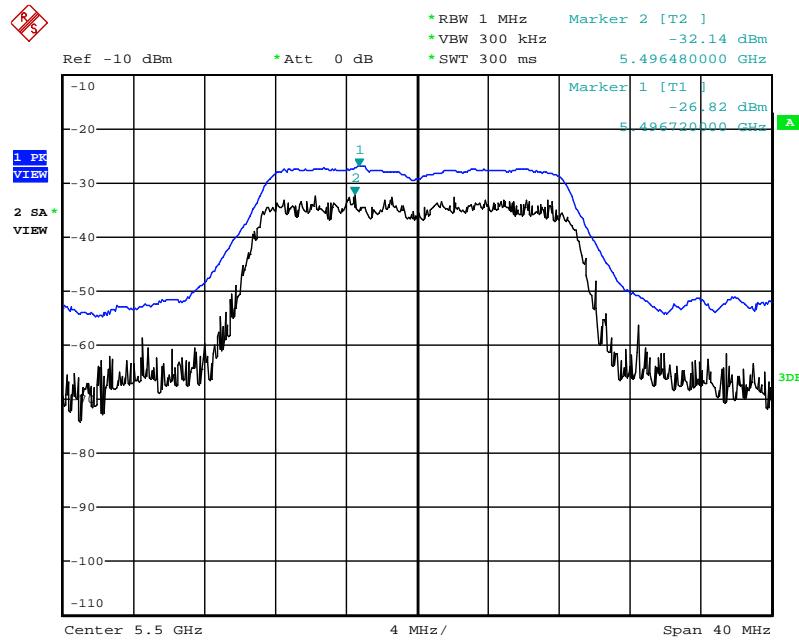
Date: 13.DEC.2011 10:47:37

### Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5300 MHz / 1TX



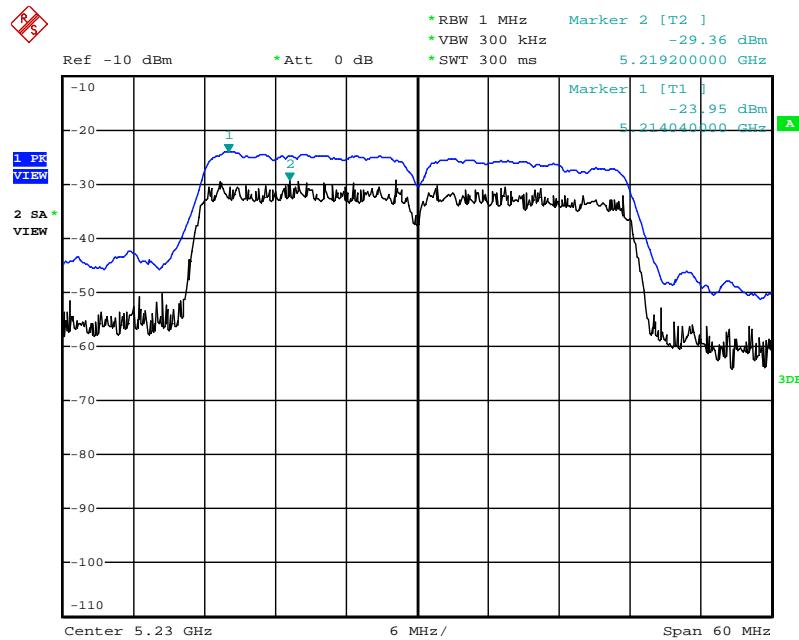
Date: 13.DEC.2011 10:49:29

### Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5500 MHz / 1TX



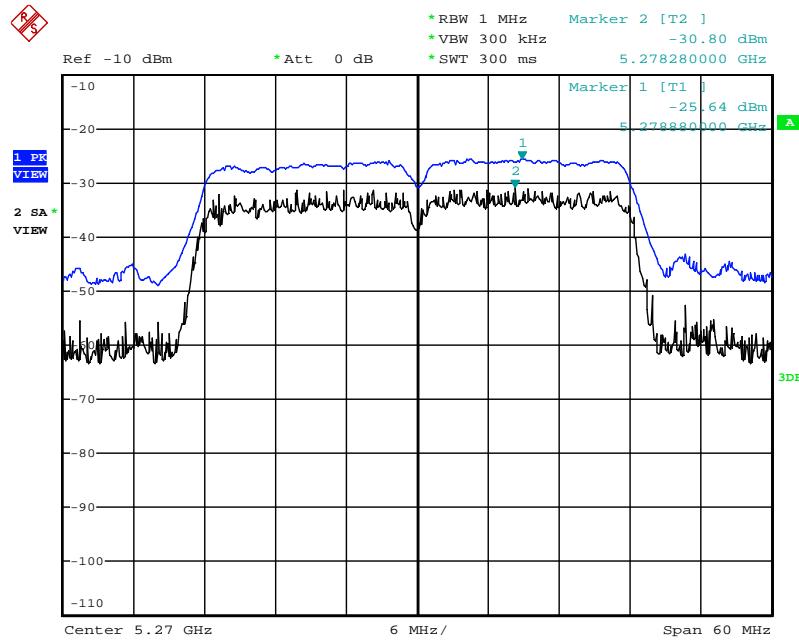
Date: 13.DEC.2011 10:50:50

### Peak Excusion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5230 MHz / 1TX



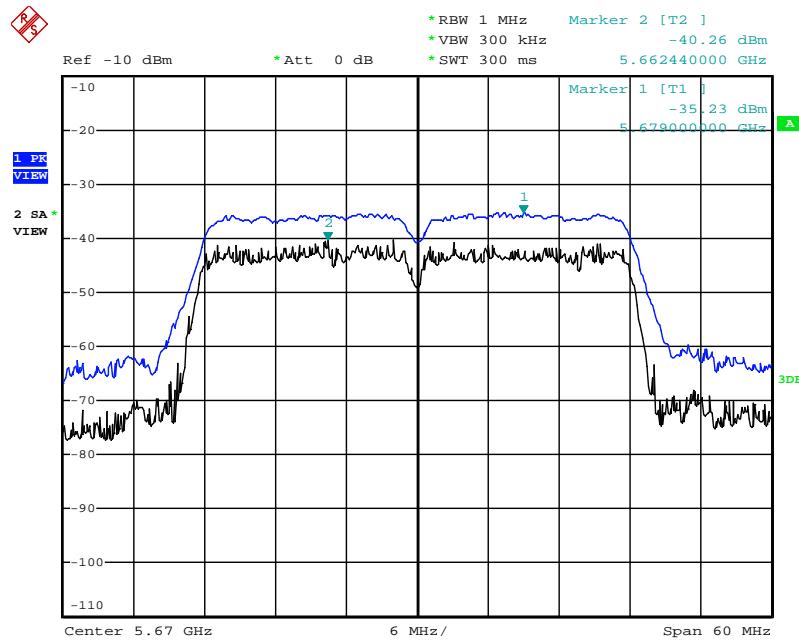
Date: 13.DEC.2011 10:53:52

### Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5270 MHz / 1TX



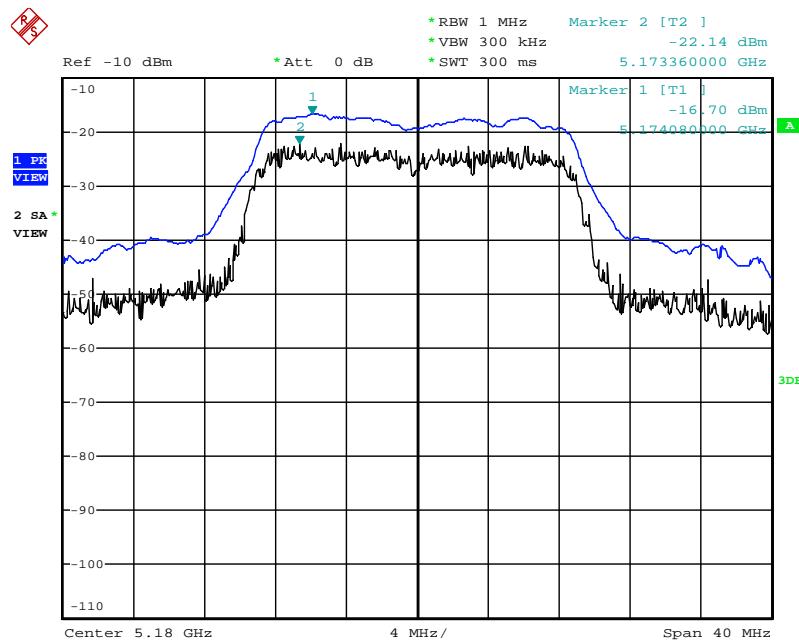
Date: 13.DEC.2011 10:54:34

### Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5670 MHz / 1TX



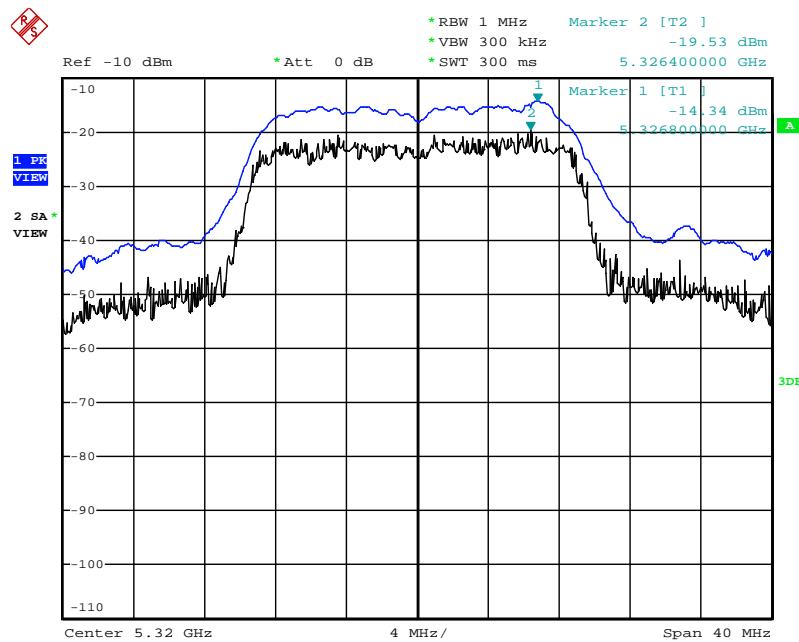
Date: 13.DEC.2011 10:57:31

### Peak Excursion Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 + Chain 2 / 5180 MHz / 2TX



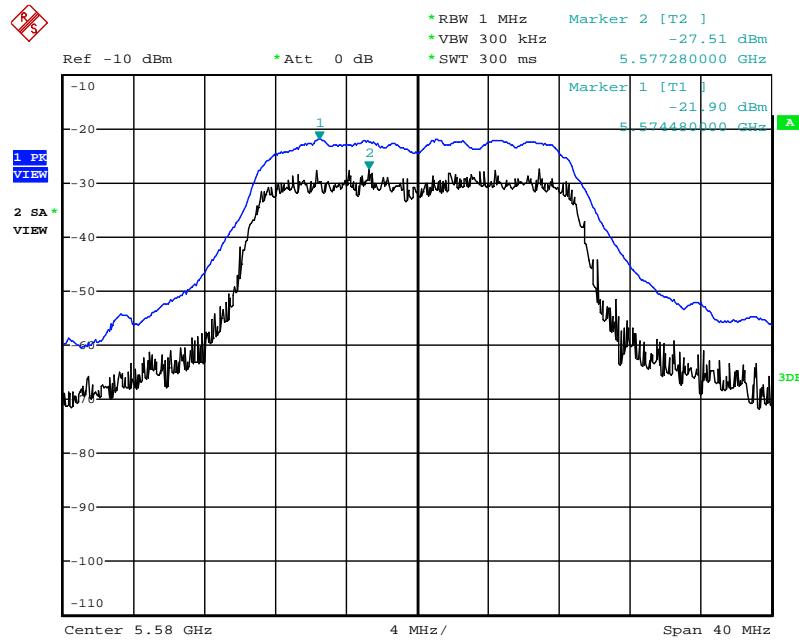
Date: 10.DEC.2011 19:33:53

### Peak Excusion Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 + Chain 2 / 5320 MHz / 2TX



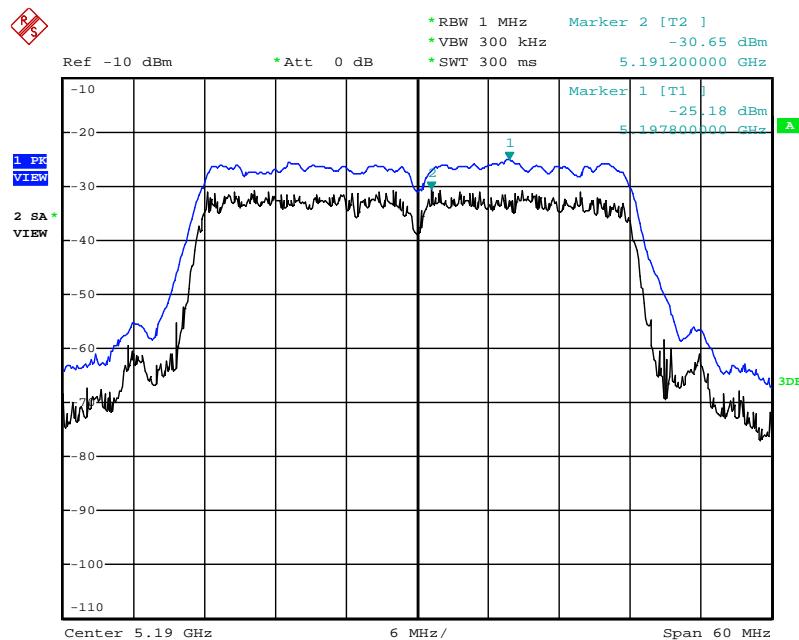
Date: 10.DEC.2011 19:29:07

### Peak Excursion Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 + Chain 2 / 5580 MHz / 2TX



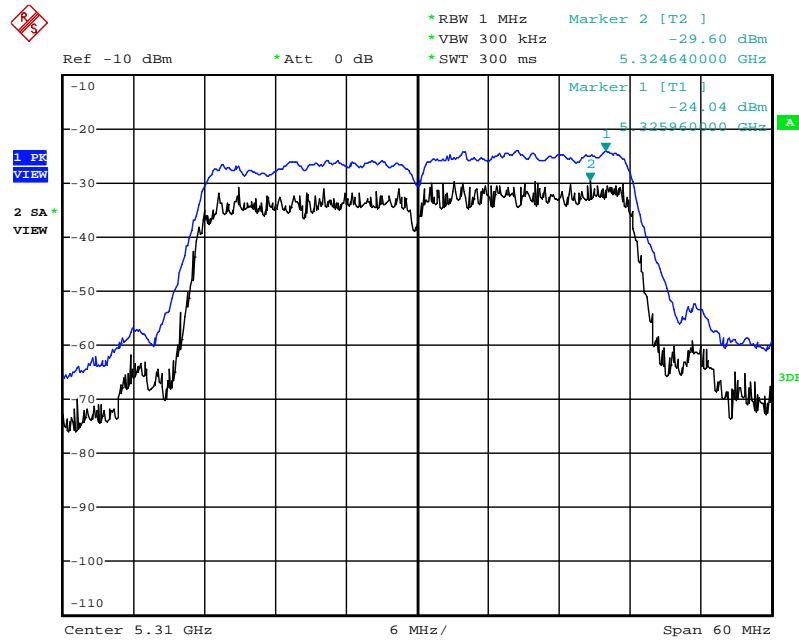
Date: 10.DEC.2011 19:27:10

### Peak Excursion Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 + Chain 2 / 5190 MHz / 2TX



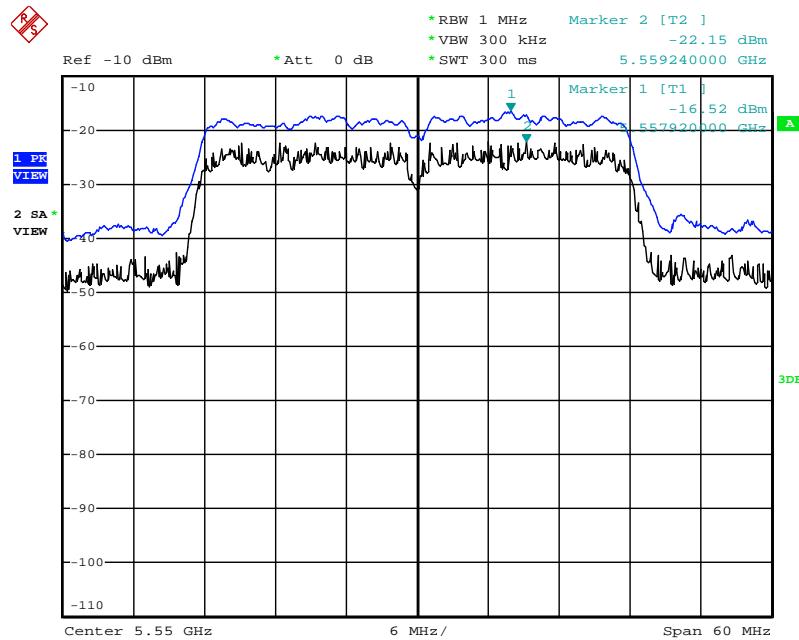
Date: 10.DEC.2011 19:35:18

### Peak Excursion Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 + Chain 2 / 5310 MHz / 2TX



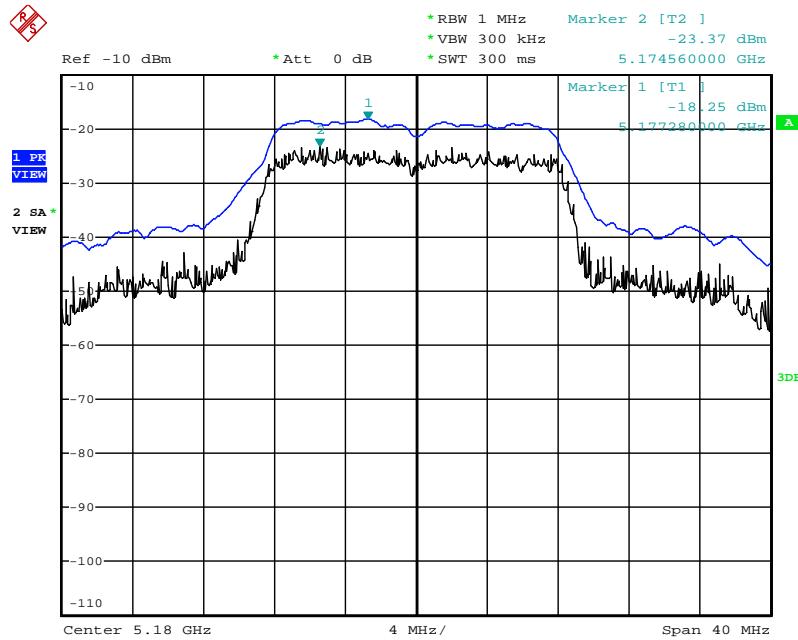
Date: 10.DEC.2011 19:38:24

### Peak Excursion Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 + Chain 2 / 5550 MHz / 2TX



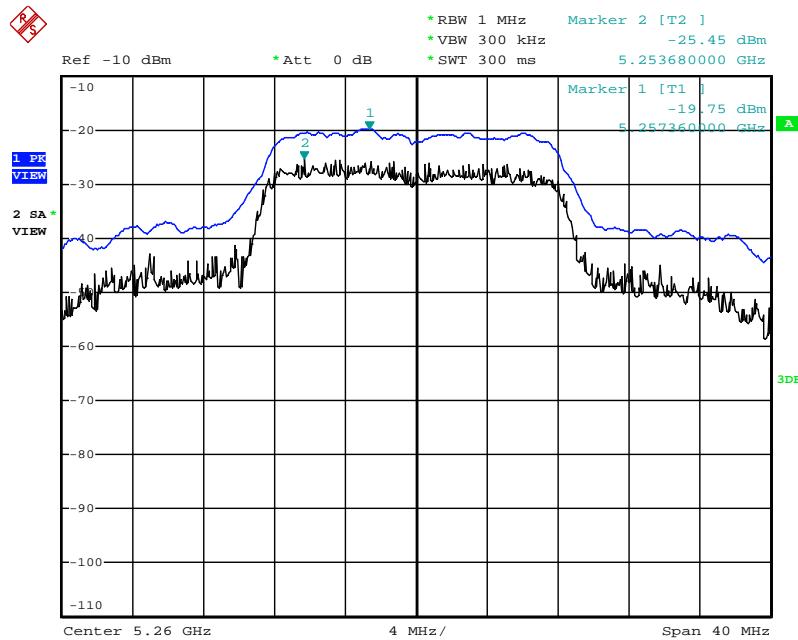
Date: 10.DEC.2011 19:39:59

### Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 / 5180 MHz



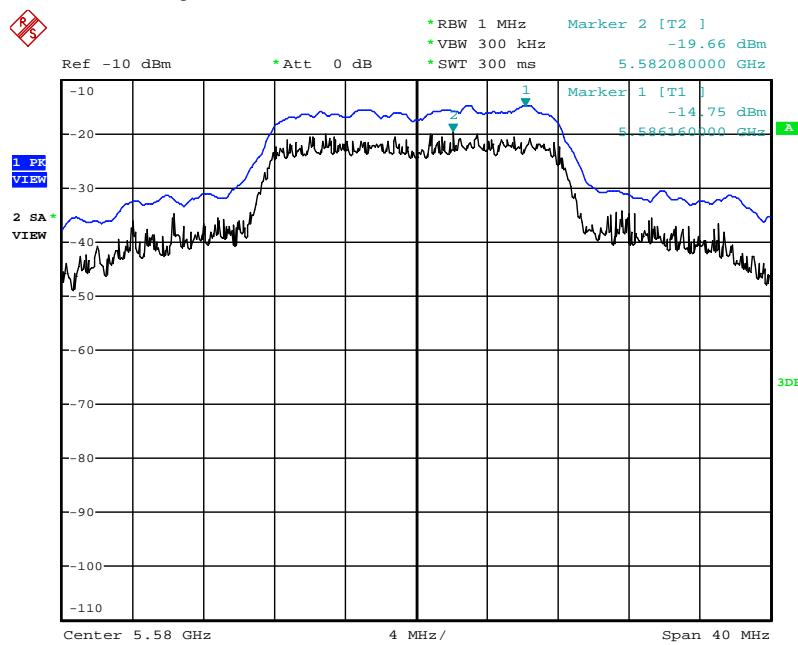
Date: 10.DEC.2011 19:17:41

### Peak Excusion Plot on Configuration IEEE 802.11a / Chain 1 / 5260 MHz



Date: 10.DEC.2011 19:20:23

### Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 / 5580 MHz



Date: 10.DEC.2011 19:24:05

## 4.6. Radiated Emissions Measurement

### 4.6.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz. band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m at 3m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/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

### 4.6.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RB / VB (Emission in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1000KHz / 1000KHz for peak

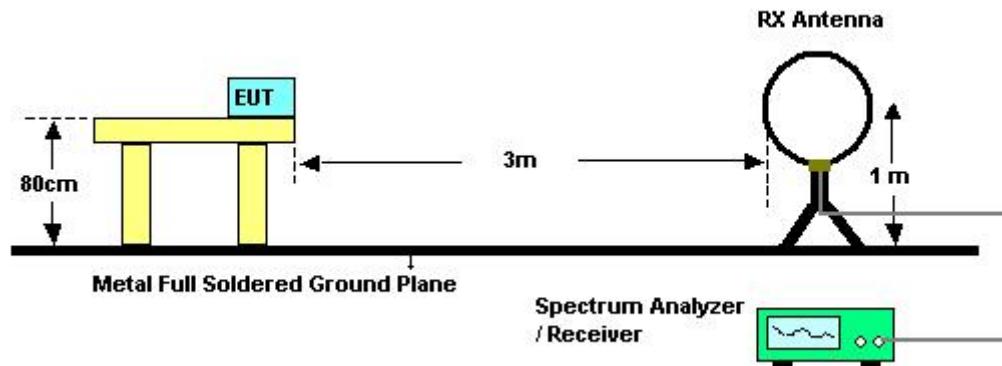
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

#### 4.6.3. Test Procedures

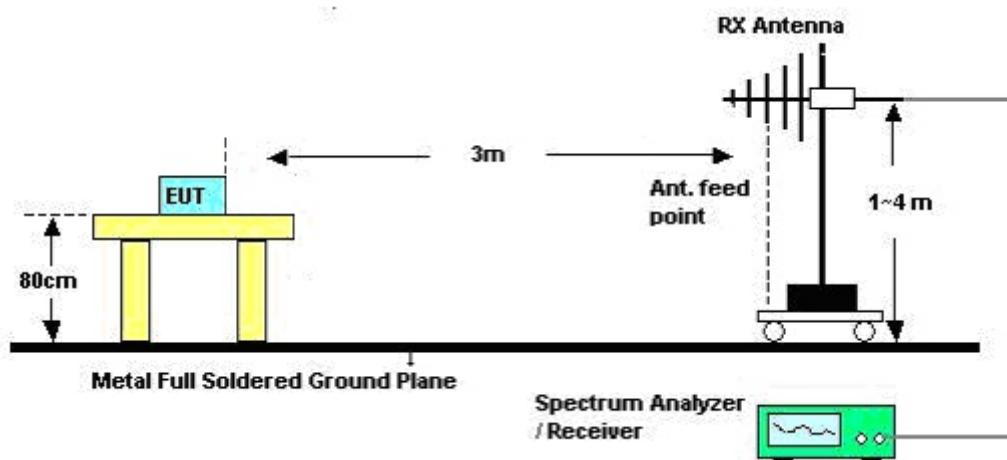
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

#### 4.6.4. Test Setup Layout

For radiated emissions below 1GHz



For radiated emissions above 1GHz



#### 4.6.5. Test Deviation

There is no deviation with the original standard.

#### 4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



#### 4.6.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	Normal Link
Test Date	Dec. 15, 2011		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB);

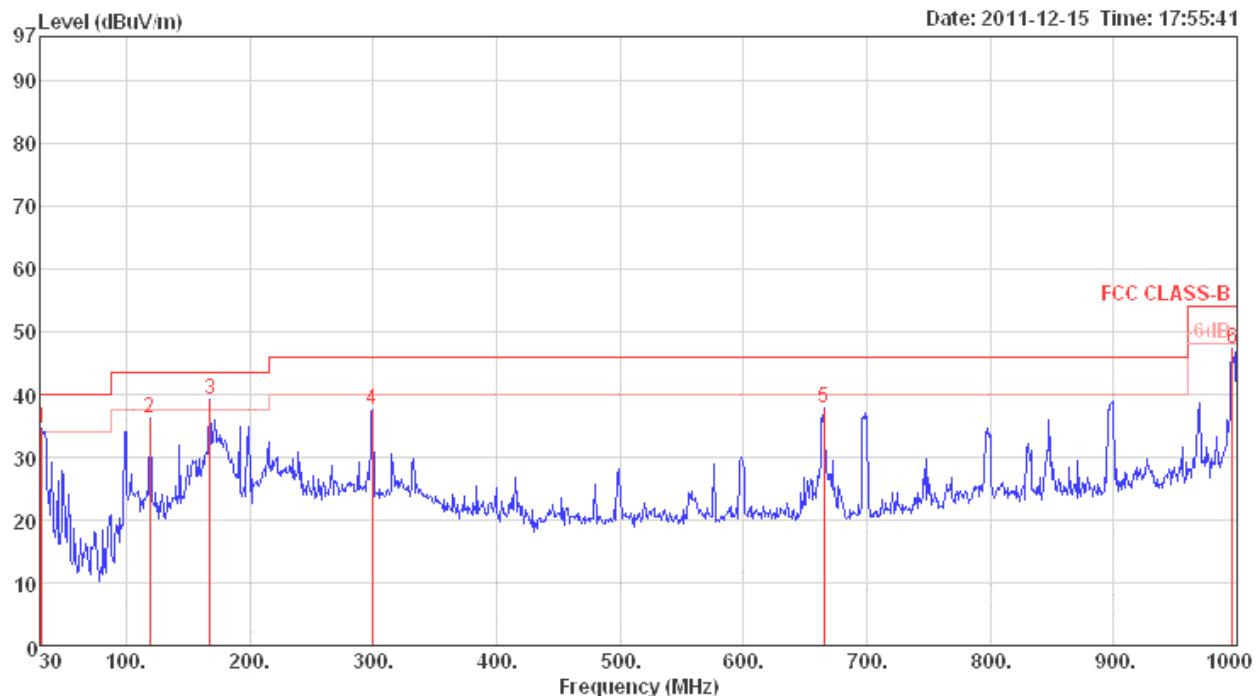
Limit line = specific limits (dBuV) + distance extrapolation factor.

#### 4.6.8. Results of Radiated Emissions (30MHz~1GHz)

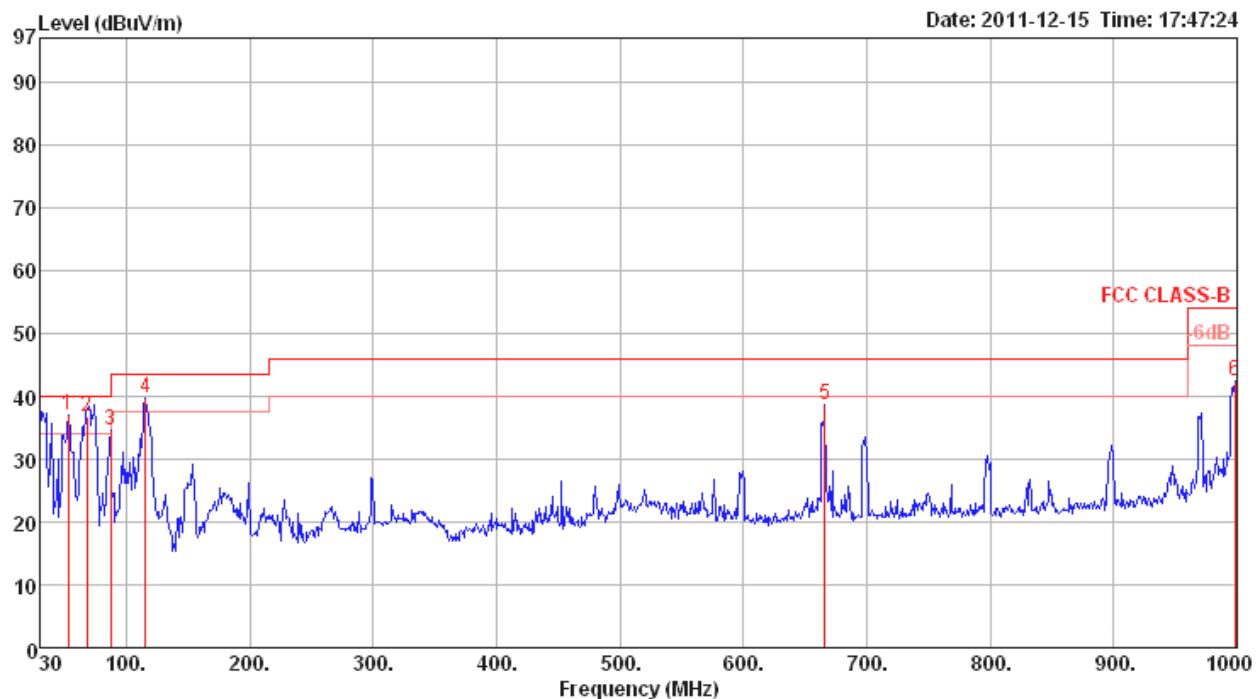
**Test Mode : Mode 1**

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	Normal Link

*Horizontal*



Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
1	31.94	34.46	40.00	-5.54	44.07	0.50	17.69	27.80	400	0 Peak	HORIZONTAL
2	119.24	36.09	43.50	-7.41	49.93	1.20	12.46	27.50	400	0 Peak	HORIZONTAL
3	167.74	39.11	43.50	-4.39	52.22	1.54	12.61	27.26	400	0 Peak	HORIZONTAL
4	299.66	37.48	46.00	-8.52	48.92	2.10	13.36	26.90	400	0 Peak	HORIZONTAL
5	665.35	37.79	46.00	-8.21	43.40	3.44	18.98	28.03	400	0 Peak	HORIZONTAL
6	996.12	47.25	54.00	-6.75	49.32	3.69	21.26	27.02	400	0 Peak	HORIZONTAL

**Vertical**


Freq	Level	Limit	Over	Read	CableAntenna			Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level					
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB/m	dB	cm	deg		
1	53.28	36.90	40.00	-3.10	55.93	0.76	8.00	27.79	400	0	Peak	VERTICAL
2	68.00	36.88	40.00	-3.12	57.10	0.84	6.67	27.73	100	251	QP	VERTICAL
3	87.23	34.70	40.00	-5.30	52.81	1.10	8.44	27.65	400	0	Peak	VERTICAL
4	115.36	39.59	43.50	-3.91	53.75	1.20	12.16	27.52	400	0	Peak	VERTICAL
5	666.32	38.53	46.00	-7.47	44.15	3.43	18.98	28.03	400	0	Peak	VERTICAL
6	998.06	42.35	54.00	-11.65	44.38	3.70	21.28	27.01	400	0	Peak	VERTICAL

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

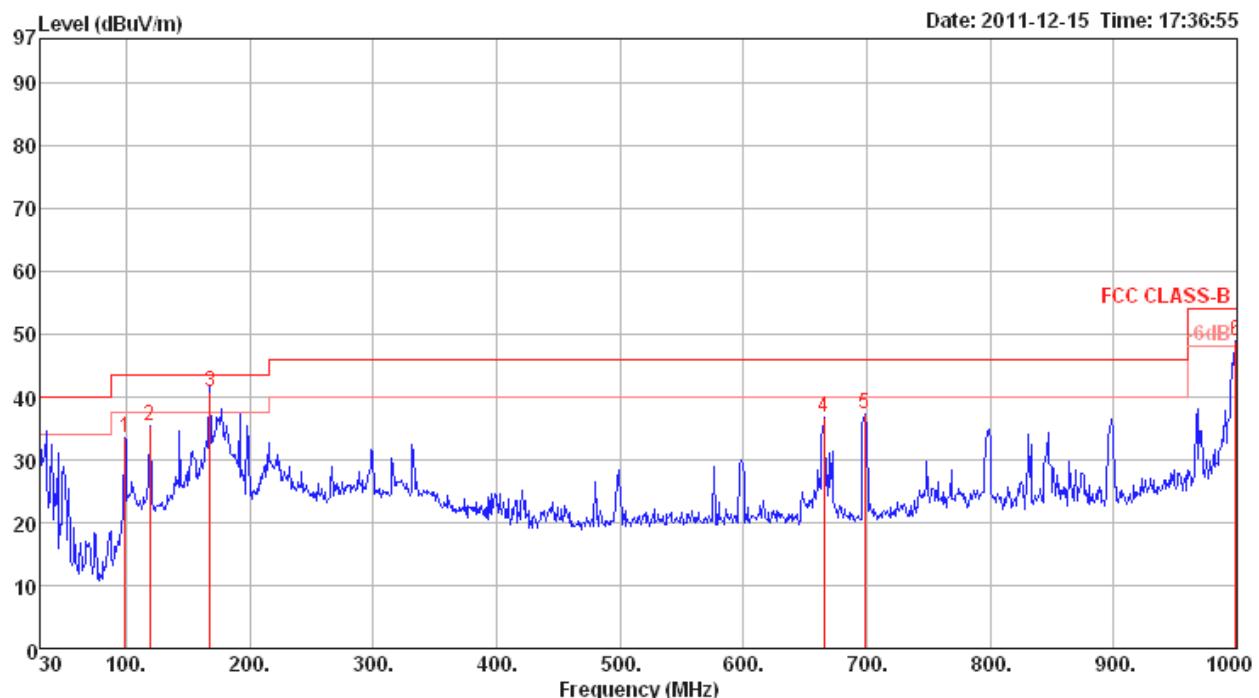
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.



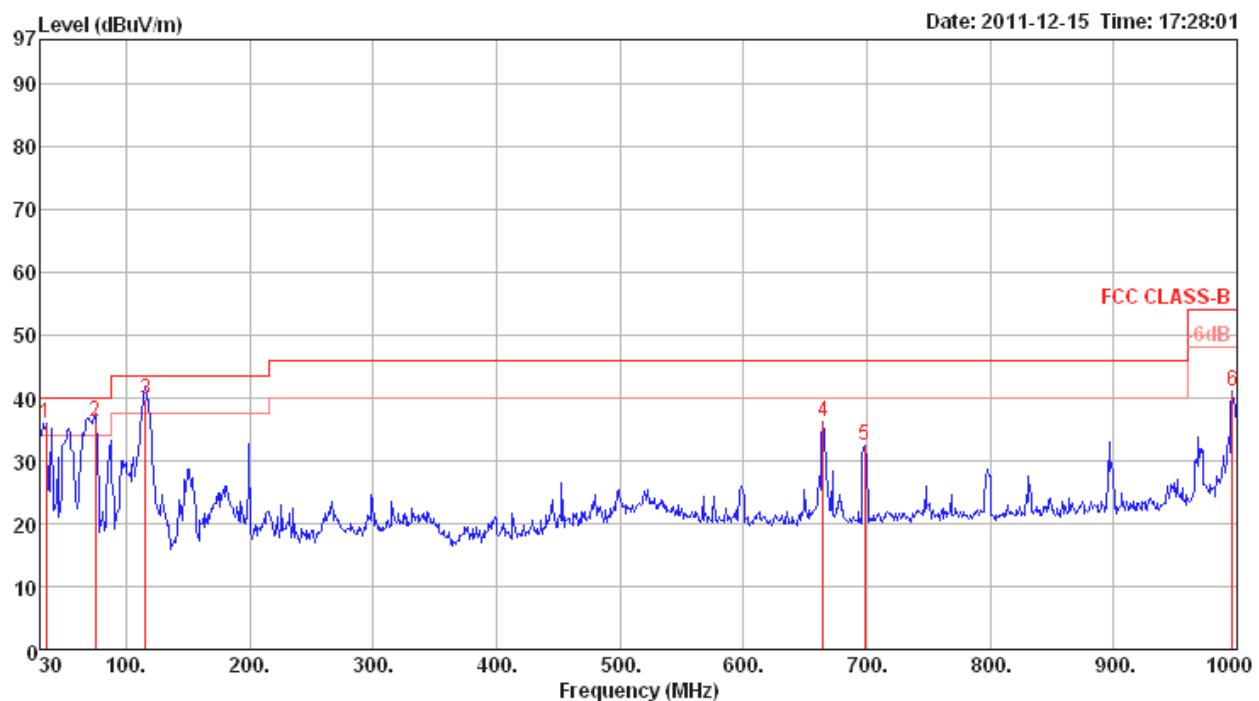
## **Test Mode : Mode 2**

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	Normal Link

## **Horizontal**



Freq	Level	Limit		Over Limit	Read Level	Cable			Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Loss	dB	dB/m						
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB	cm	deg					
1	98.87	33.38	43.50	-10.12	49.02	1.18	10.79	27.61	400	0	Peak	HORIZONTAL		
2	119.24	35.33	43.50	-8.17	49.17	1.20	12.46	27.50	400	0	Peak	HORIZONTAL		
3	168.00	40.89	43.50	-2.61	54.00	1.54	12.61	27.26	132	145	QP	HORIZONTAL		
4	665.35	36.81	46.00	-9.19	42.42	3.44	18.98	28.03	400	0	Peak	HORIZONTAL		
5	698.33	37.31	46.00	-8.69	42.92	3.31	19.08	28.00	400	0	Peak	HORIZONTAL		
6	999.03	48.88	54.00	-5.12	50.91	3.70	21.28	27.01	400	0	Peak	HORIZONTAL		

**Vertical**


Freq	Level	Limit	Over	Read	Cable			Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level					
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB/m	dB	cm	deg		
1	34.85	35.98	40.00	-4.02	47.20	0.50	16.08	27.80	400	0	Peak	VERTICAL
2	75.00	36.08	40.00	-3.92	56.00	0.90	6.88	27.70	100	58	QP	VERTICAL
3	115.36	39.84	43.50	-3.66	54.00	1.20	12.16	27.52	106	187	QP	VERTICAL
4	664.38	36.30	46.00	-9.70	41.92	3.44	18.98	28.04	400	0	Peak	VERTICAL
5	698.33	32.29	46.00	-13.71	37.90	3.31	19.08	28.00	400	0	Peak	VERTICAL
6	996.12	41.20	54.00	-12.80	43.27	3.69	21.26	27.02	400	0	Peak	VERTICAL

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

#### 4.6.9. Results for Radiated Emissions (1GHz~40GHz)

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS0 20MHz Ch 36 / Chain 1 / 1TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 1

##### Horizontal

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15539.08	40.56	54.00	-13.44	28.80	8.22	34.69	38.23	222	100	Average	HORIZONTAL
2 p 15540.72	54.44	74.00	-19.56	42.68	8.22	34.69	38.23	222	100	Peak	HORIZONTAL

##### Vertical

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15540.65	54.83	74.00	-19.17	43.07	8.22	34.69	38.23	123	100	Peak	VERTICAL
2 a 15540.76	40.57	54.00	-13.43	28.81	8.22	34.69	38.23	123	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 40 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1 a	15599.24	40.38	54.00	-13.62	28.61	8.24	34.77	38.30	283	100	Average	HORIZONTAL
2 p	15599.81	54.59	74.00	-19.41	42.82	8.24	34.77	38.30	283	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1 p	15599.49	54.77	74.00	-19.23	43.00	8.24	34.77	38.30	331	100	Peak	VERTICAL
2 a	15600.80	40.42	54.00	-13.58	28.65	8.24	34.77	38.30	331	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 48 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15719.54	40.68	54.00	-13.32	28.83	8.29	34.86	38.42	84	100	Average	HORIZONTAL
2 p 15719.87	54.44	74.00	-19.56	42.59	8.29	34.86	38.42	84	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15719.54	40.66	54.00	-13.34	28.81	8.29	34.86	38.42	200	100	Average	VERTICAL
2 p 15720.64	54.47	74.00	-19.53	42.62	8.29	34.86	38.42	200	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 52 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit								
1 p	15779.52	55.00	74.00	-19.00	43.15	8.31	34.94	38.48	31	100 Peak	HORIZONTAL
2 a	15780.42	40.83	54.00	-13.17	28.98	8.31	34.94	38.48	31	100 Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit								
1 a	15779.00	40.84	54.00	-13.16	28.99	8.31	34.94	38.48	129	100 Average	VERTICAL
2 p	15780.55	54.87	74.00	-19.13	43.02	8.31	34.94	38.48	129	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 60 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
1 a	10600.00	47.07	54.00	-6.93	37.30	6.31	35.10	38.56	75	134 Average	HORIZONTAL
2 p	10600.58	61.69	74.00	-12.31	51.92	6.31	35.10	38.56	75	134 Peak	HORIZONTAL
3	15899.68	40.69	54.00	-13.31	28.77	8.35	35.03	38.60	198	100 Average	HORIZONTAL
4	15900.63	54.98	74.00	-19.02	43.04	8.36	35.03	38.61	198	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
1 a	10600.02	44.04	54.00	-9.96	34.27	6.31	35.10	38.56	59	134 Average	VERTICAL
2 p	10600.15	58.69	74.00	-15.31	48.92	6.31	35.10	38.56	59	134 Peak	VERTICAL
3	15900.25	40.73	54.00	-13.27	28.81	8.35	35.03	38.60	107	100 Average	VERTICAL
4	15900.72	54.20	74.00	-19.80	42.26	8.36	35.03	38.61	107	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 64 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			Loss	Factor	Factor	deg	cm		
1 p	10639.17	58.31	74.00	-15.69	48.52	6.30	35.05	38.54	76	135	Peak	HORIZONTAL
2 a	10639.79	43.12	54.00	-10.88	33.33	6.30	35.05	38.54	76	135	Average	HORIZONTAL
3	15959.99	41.22	54.00	-12.78	29.28	8.38	35.11	38.67	105	100	Average	HORIZONTAL
4	15960.61	55.14	74.00	-18.86	43.20	8.38	35.11	38.67	105	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			Loss	Factor	Factor	deg	cm		
1	10639.96	40.89	54.00	-13.11	31.10	6.30	35.05	38.54	70	128	Average	VERTICAL
2 p	10640.52	55.21	74.00	-18.79	45.42	6.30	35.05	38.54	70	128	Peak	VERTICAL
3 a	15960.08	41.24	54.00	-12.76	29.30	8.38	35.11	38.67	177	100	Average	VERTICAL
4	15960.88	54.65	74.00	-19.35	42.71	8.38	35.11	38.67	177	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 100 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 10999.78	38.69	54.00	-15.31	28.74	6.24	34.69	38.40	76	135	Average	HORIZONTAL
2 p 11000.04	52.39	74.00	-21.61	42.44	6.24	34.69	38.40	76	135	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 10999.86	38.29	54.00	-15.71	28.34	6.24	34.69	38.40	58	134	Average	VERTICAL
2 p 11000.93	52.80	74.00	-21.20	42.85	6.24	34.69	38.40	58	134	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 116 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1 p	11159.33	52.98	74.00	-21.02	42.82	6.44	34.71	38.43	349	149	Peak	HORIZONTAL
2 a	11160.01	39.00	54.00	-15.00	28.84	6.44	34.71	38.43	349	149	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1 p	11159.16	58.05	74.00	-15.95	47.89	6.44	34.71	38.43	40	140	Peak	VERTICAL
2 a	11159.95	43.05	54.00	-10.95	32.89	6.44	34.71	38.43	40	140	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 140 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1 a	11399.31	38.52	54.00	-15.48	28.06	6.72	34.74	38.48	34	100	Average	HORIZONTAL
2 p	11400.10	52.04	74.00	-21.96	41.58	6.72	34.74	38.48	34	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1 p	11399.83	52.56	74.00	-21.44	42.10	6.72	34.74	38.48	182	100	Peak	VERTICAL
2 a	11400.16	38.57	54.00	-15.43	28.11	6.72	34.74	38.48	182	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 36 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/u	deg	cm		
1 a 15540.46	40.70	54.00	-13.30	28.94	8.22	34.69	38.23	296	100	Average	HORIZONTAL
2 p 15540.47	54.55	74.00	-19.45	42.79	8.22	34.69	38.23	296	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/u	deg	cm		
1 a 15539.76	40.70	54.00	-13.30	28.94	8.22	34.69	38.23	267	100	Average	VERTICAL
2 p 15540.14	54.72	74.00	-19.28	42.96	8.22	34.69	38.23	267	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 40 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15599.65	40.49	54.00	-13.51	28.72	8.24	34.77	38.30	278	100	Average	HORIZONTAL
2 p 15600.50	54.52	74.00	-19.48	42.75	8.24	34.77	38.30	278	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15599.79	40.52	54.00	-13.48	28.75	8.24	34.77	38.30	322	100	Average	VERTICAL
2 p 15599.88	54.54	74.00	-19.46	42.77	8.24	34.77	38.30	322	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 48 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15719.63	54.59	74.00	-19.41	42.74	8.29	34.86	38.42	253	100	Peak	HORIZONTAL
2 a 15719.99	40.70	54.00	-13.30	28.85	8.29	34.86	38.42	253	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15719.48	40.68	54.00	-13.32	28.83	8.29	34.86	38.42	296	100	Average	VERTICAL
2 p 15720.11	55.05	74.00	-18.95	43.20	8.29	34.86	38.42	296	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 52 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15779.00	40.73	54.00	-13.27	28.88	8.31	34.94	38.48	220	100	Average	HORIZONTAL
2 p 15779.69	54.73	74.00	-19.27	42.88	8.31	34.94	38.48	220	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15779.17	40.78	54.00	-13.22	28.93	8.31	34.94	38.48	263	100	Average	VERTICAL
2 p 15780.60	54.67	74.00	-19.33	42.82	8.31	34.94	38.48	263	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 60 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Line	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm	
1	10600.98	49.84	74.00	-24.16	40.05	6.31	35.08	38.56	195	100	Peak	HORIZONTAL
2	10600.98	37.90	54.00	-16.10	28.11	6.31	35.08	38.56	195	100	Average	HORIZONTAL
3 a	15899.72	40.68	54.00	-13.32	28.76	8.35	35.03	38.60	220	100	Average	HORIZONTAL
4 p	15900.65	54.65	74.00	-19.35	42.71	8.36	35.03	38.61	220	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Line	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm	
1	10600.32	49.74	74.00	-24.26	39.97	6.31	35.10	38.56	254	100	Peak	VERTICAL
2	10600.32	37.69	54.00	-16.31	27.92	6.31	35.10	38.56	254	100	Average	VERTICAL
3 p	15899.80	55.33	74.00	-18.67	43.41	8.35	35.03	38.60	273	100	Peak	VERTICAL
4 a	15900.96	40.72	54.00	-13.28	28.78	8.36	35.03	38.61	273	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 64 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Line	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm	
1	10639.76	37.60	54.00	-16.40	27.81	6.30	35.05	38.54	260	100	Average	HORIZONTAL
2	10640.43	51.00	74.00	-23.00	41.21	6.30	35.05	38.54	260	100	Peak	HORIZONTAL
3 a	15959.14	41.41	54.00	-12.59	29.47	8.38	35.11	38.67	284	100	Average	HORIZONTAL
4 p	15959.21	55.45	74.00	-18.55	43.51	8.38	35.11	38.67	284	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Line	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm	
1	10639.28	37.61	54.00	-16.39	27.82	6.30	35.05	38.54	290	100	Average	VERTICAL
2	10639.31	50.94	74.00	-23.06	41.15	6.30	35.05	38.54	290	100	Peak	VERTICAL
3 p	15959.28	55.31	74.00	-18.69	43.37	8.38	35.11	38.67	318	100	Peak	VERTICAL
4 a	15959.39	41.42	54.00	-12.58	29.48	8.38	35.11	38.67	318	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 100 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/u	deg	cm		
1 a 10999.15	37.77	54.00	-16.23	27.82	6.24	34.69	38.40	291	100	Average	HORIZONTAL
2 p 10999.72	51.30	74.00	-22.70	41.35	6.24	34.69	38.40	291	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/u	deg	cm		
1 a 10999.00	37.78	54.00	-16.22	27.83	6.24	34.69	38.40	263	100	Average	VERTICAL
2 p 10999.14	51.48	74.00	-22.52	41.53	6.24	34.69	38.40	263	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 116 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 11160.18	37.75	54.00	-16.25	27.59	6.44	34.71	38.43	246	100	Average	HORIZONTAL
2 p 11160.63	52.08	74.00	-21.92	41.92	6.44	34.71	38.43	246	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 11159.00	38.02	54.00	-15.98	27.86	6.44	34.71	38.43	278	100	Average	VERTICAL
2 p 11160.20	51.50	74.00	-22.50	41.34	6.44	34.71	38.43	278	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 140 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	11399.75	38.46	54.00	-15.54	28.00	6.72	34.74	38.48	299	100 Average	HORIZONTAL
2 p	11400.78	52.23	74.00	-21.77	41.77	6.72	34.74	38.48	299	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	11399.10	52.31	74.00	-21.69	41.85	6.72	34.74	38.48	252	100 Peak	VERTICAL
2 a	11399.58	38.48	54.00	-15.52	28.02	6.72	34.74	38.48	252	100 Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 36 / Chain 1 + Chain 2 / 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	15539.47	54.19	74.00	-19.81	42.43	8.22	34.69	38.23	278	100 Peak	HORIZONTAL
2 a	15540.80	40.51	54.00	-13.49	28.75	8.22	34.69	38.23	278	100 Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	15539.19	54.33	74.00	-19.67	42.57	8.22	34.69	38.23	328	100 Peak	VERTICAL
2 a	15540.76	40.54	54.00	-13.46	28.78	8.22	34.69	38.23	328	100 Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 40 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit								
MHz		dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm	
1 p	15600.05	54.29	74.00	-19.71	42.52	8.24	34.77	38.30	211	100 Peak	HORIZONTAL
2 a	15600.38	40.52	54.00	-13.48	28.75	8.24	34.77	38.30	211	100 Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit								
MHz		dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm	
1 a	15600.45	40.47	54.00	-13.53	28.70	8.24	34.77	38.30	291	100 Average	VERTICAL
2 p	15600.69	54.85	74.00	-19.15	43.08	8.24	34.77	38.30	291	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 48 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15719.69	40.60	54.00	-13.40	28.75	8.29	34.86	38.42	145	100	Average	HORIZONTAL
2 p 15719.98	54.62	74.00	-19.38	42.77	8.29	34.86	38.42	145	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15720.02	54.70	74.00	-19.30	42.85	8.29	34.86	38.42	221	100	Peak	VERTICAL
2 a 15720.58	40.57	54.00	-13.43	28.72	8.29	34.86	38.42	221	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 52 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1 p	15780.15	54.78	74.00	-19.22	42.93	8.31	34.94	38.48		66	100 Peak	HORIZONTAL
2 a	15780.31	40.81	54.00	-13.19	28.96	8.31	34.94	38.48		66	100 Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1 a	15779.15	40.71	54.00	-13.29	28.86	8.31	34.94	38.48		98	100 Average	VERTICAL
2 p	15780.40	54.52	74.00	-19.48	42.67	8.31	34.94	38.48		98	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 60 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1 p	10600.06	58.49	74.00	-15.51	48.72	6.31	35.10	38.56	72	134	Peak	HORIZONTAL
2 a	10600.56	45.07	54.00	-8.93	35.30	6.31	35.10	38.56	72	134	Average	HORIZONTAL
3	15899.67	53.87	74.00	-20.13	41.95	8.35	35.03	38.60	142	100	Peak	HORIZONTAL
4	15899.73	40.60	54.00	-13.40	28.68	8.35	35.03	38.60	142	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1 a	10600.64	42.48	54.00	-11.52	32.71	6.31	35.10	38.56	62	127	Average	VERTICAL
2 p	10600.72	56.48	74.00	-17.52	46.71	6.31	35.10	38.56	62	127	Peak	VERTICAL
3	15900.07	40.61	54.00	-13.39	28.69	8.35	35.03	38.60	190	100	Average	VERTICAL
4	15900.75	54.84	74.00	-19.16	42.90	8.36	35.03	38.61	190	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 64 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 10640.45	42.46	54.00	-11.54	32.67	6.30	35.05	38.54	72	135	Average	HORIZONTAL
2 p 10640.79	56.01	74.00	-17.99	46.22	6.30	35.05	38.54	72	135	Peak	HORIZONTAL
3 15960.14	41.22	54.00	-12.78	29.28	8.38	35.11	38.67	161	100	Average	HORIZONTAL
4 15960.96	55.21	74.00	-18.79	43.27	8.38	35.11	38.67	161	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 10640.65	40.89	54.00	-13.11	31.10	6.30	35.05	38.54	63	128	Average	VERTICAL
2 p 10640.83	55.95	74.00	-18.05	46.16	6.30	35.05	38.54	63	128	Peak	VERTICAL
3 15959.63	54.91	74.00	-19.09	42.97	8.38	35.11	38.67	112	100	Peak	VERTICAL
4 a 15960.17	41.19	54.00	-12.81	29.25	8.38	35.11	38.67	112	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 100 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 10999.01	37.87	54.00	-16.13	27.92	6.24	34.69	38.40	44	100	Average	HORIZONTAL
2 p 10999.06	51.98	74.00	-22.02	42.03	6.24	34.69	38.40	44	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 10999.02	39.38	54.00	-14.62	29.43	6.24	34.69	38.40	85	126	Average	VERTICAL
2 p 11000.69	54.05	74.00	-19.95	44.10	6.24	34.69	38.40	85	126	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 116 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	Line	Limit	dBuV	dB	dB	dB/m	deg	cm	
1 p	11160.55	56.11	74.00	-17.89	45.95	6.44	34.71	38.43	128	143	Peak
2 a	11160.62	41.26	54.00	-12.74	31.10	6.44	34.71	38.43	128	143	Average

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	Line	Limit	dBuV	dB	dB	dB/m	deg	cm	
1 p	11160.57	57.90	74.00	-16.10	47.74	6.44	34.71	38.43	160	154	Peak
2 a	11160.72	43.01	54.00	-10.99	32.85	6.44	34.71	38.43	160	154	Average



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 140 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	Line	Limit	dB	dBuV	dB	dB	dB/m	deg	cm
1 a	11399.79	38.50	54.00	-15.50	28.04	6.72	34.74	38.48	302	100 Average	HORIZONTAL
2 p	11400.95	53.29	74.00	-20.71	42.83	6.72	34.74	38.48	302	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	Line	Limit	dB	dBuV	dB	dB	dB/m	deg	cm
1 a	11399.17	39.14	54.00	-14.86	28.68	6.72	34.74	38.48	163	100 Average	VERTICAL
2 p	11399.38	53.43	74.00	-20.57	42.97	6.72	34.74	38.48	163	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 36 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15539.67	54.12	74.00	-19.88	42.36	8.22	34.69	38.23	266	100	Peak	HORIZONTAL
2 a 15540.01	40.54	54.00	-13.46	28.78	8.22	34.69	38.23	266	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15540.22	40.54	54.00	-13.46	28.78	8.22	34.69	38.23	295	100	Average	VERTICAL
2 p 15540.86	54.24	74.00	-19.76	42.48	8.22	34.69	38.23	295	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 40 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15599.76	40.37	54.00	-13.63	28.60	8.24	34.77	38.30	224	100	Average	HORIZONTAL
2 p 15600.90	53.89	74.00	-20.11	42.12	8.24	34.77	38.30	224	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15600.05	54.55	74.00	-19.45	42.78	8.24	34.77	38.30	203	100	Peak	VERTICAL
2 a 15600.82	40.44	54.00	-13.56	28.67	8.24	34.77	38.30	203	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 48 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15720.03	40.69	54.00	-13.31	28.84	8.29	34.86	38.42	190	100	Average	HORIZONTAL
2 p 15720.35	55.06	74.00	-18.94	43.21	8.29	34.86	38.42	190	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15719.52	40.62	54.00	-13.38	28.77	8.29	34.86	38.42	228	100	Average	VERTICAL
2 p 15720.44	54.49	74.00	-19.51	42.64	8.29	34.86	38.42	228	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 52 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15779.07	40.65	54.00	-13.35	28.80	8.31	34.94	38.48	260	100	Average	HORIZONTAL
2 p 15779.99	54.30	74.00	-19.70	42.45	8.31	34.94	38.48	260	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15779.07	40.70	54.00	-13.30	28.85	8.31	34.94	38.48	249	100	Average	VERTICAL
2 p 15779.88	55.11	74.00	-18.89	43.26	8.31	34.94	38.48	249	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 60 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/n	deg	cm		
1	10600.68	49.16	74.00	-24.84	39.39	6.31	35.10	38.56	248	100	Peak	HORIZONTAL
2	10600.68	37.49	54.00	-16.51	27.72	6.31	35.10	38.56	248	100	Average	HORIZONTAL
3 p	15899.36	54.81	74.00	-19.19	42.89	8.35	35.03	38.60	274	100	Peak	HORIZONTAL
4 a	15899.66	40.60	54.00	-13.40	28.68	8.35	35.03	38.60	274	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/n	deg	cm		
1	10600.75	49.18	74.00	-24.82	39.41	6.31	35.10	38.56	289	100	Peak	VERTICAL
2	10600.75	37.58	54.00	-16.42	27.81	6.31	35.10	38.56	289	100	Average	VERTICAL
3 p	15900.42	55.08	74.00	-18.92	43.16	8.35	35.03	38.60	316	100	Peak	VERTICAL
4 a	15900.85	40.64	54.00	-13.36	28.70	8.36	35.03	38.61	316	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 64 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dB	dB	dB/m	deg	cm	
1	10639.98	51.64	74.00	-22.36	41.85	6.30	35.05	38.54	280	100	Peak	HORIZONTAL
2	10640.91	37.56	54.00	-16.44	27.77	6.30	35.05	38.54	280	100	Average	HORIZONTAL
3 p	15959.02	54.80	74.00	-19.20	42.86	8.38	35.11	38.67	319	100	Peak	HORIZONTAL
4 a	15959.07	41.34	54.00	-12.66	29.40	8.38	35.11	38.67	319	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dB	dB	dB/m	deg	cm	
1	10639.86	51.55	74.00	-22.45	41.76	6.30	35.05	38.54	243	100	Peak	VERTICAL
2	10640.79	37.65	54.00	-16.35	27.86	6.30	35.05	38.54	243	100	Average	VERTICAL
3 a	15959.68	41.32	54.00	-12.68	29.38	8.38	35.11	38.67	277	100	Average	VERTICAL
4 p	15960.27	55.31	74.00	-18.69	43.37	8.38	35.11	38.67	277	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 100 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg		
1 p	11000.14	51.41	74.00	-22.59	41.46	6.24	34.69	38.40	262	100	Peak	HORIZONTAL
2 a	11000.80	37.68	54.00	-16.32	27.73	6.24	34.69	38.40	262	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg		
1 a	10999.29	37.80	54.00	-16.20	27.85	6.24	34.69	38.40	302	100	Average	VERTICAL
2 p	11000.80	51.34	74.00	-22.66	41.39	6.24	34.69	38.40	302	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 116 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/u	deg	cm		
1 p	11159.54	52.14	74.00	-21.86	41.98	6.44	34.71	38.43	319	100 Peak	HORIZONTAL
2 a	11160.63	37.77	54.00	-16.23	27.61	6.44	34.71	38.43	319	100 Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/u	deg	cm		
1 a	11160.80	38.49	54.00	-15.51	28.33	6.44	34.71	38.43	277	100 Average	VERTICAL
2 p	11160.81	52.65	74.00	-21.35	42.49	6.44	34.71	38.43	277	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 140 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	11399.90	38.42	54.00	-15.58	27.96	6.72	34.74	38.48	297	100 Average	HORIZONTAL
2 p	11400.39	52.43	74.00	-21.57	41.97	6.72	34.74	38.48	297	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	11399.62	52.12	74.00	-21.88	41.66	6.72	34.74	38.48	270	100 Peak	VERTICAL
2 a	11399.79	38.43	54.00	-15.57	27.97	6.72	34.74	38.48	270	100 Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 38 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg		
1 a	15570.68	40.46	54.00	-13.54	28.68	8.23	34.72	38.27	183	100	Average	HORIZONTAL
2 p	15570.79	55.05	74.00	-18.95	43.27	8.23	34.72	38.27	183	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg		
1 a	15569.13	40.49	54.00	-13.51	28.71	8.23	34.72	38.27	56	100	Average	VERTICAL
2 p	15569.13	54.41	74.00	-19.59	42.63	8.23	34.72	38.27	56	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 46 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m	deg	cm	
1 p 15690.71	54.57	74.00	-19.43	42.74	8.28	34.84	38.39	275	100	Peak	HORIZONTAL
2 a 15690.99	40.67	54.00	-13.33	28.84	8.28	34.84	38.39	275	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m	deg	cm	
1 p 15689.58	54.86	74.00	-19.14	43.03	8.28	34.84	38.39	223	100	Peak	VERTICAL
2 a 15689.96	40.70	54.00	-13.30	28.87	8.28	34.84	38.39	223	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 54 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15730.08	54.35	74.00	-19.65	42.53	8.29	34.89	38.42	355	100	Peak	HORIZONTAL
2 a 15730.90	40.62	54.00	-13.38	28.78	8.29	34.89	38.44	355	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15730.71	54.79	74.00	-19.21	42.95	8.29	34.89	38.44	288	100	Peak	VERTICAL
2 a 15730.93	40.61	54.00	-13.39	28.77	8.29	34.89	38.44	288	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 62 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1	10619.85	37.48	54.00	-16.52	27.71	6.30	35.08	38.55	98	100	Average	HORIZONTAL
2	10620.17	51.32	74.00	-22.68	41.55	6.30	35.08	38.55	98	100	Peak	HORIZONTAL
3 a	15929.95	41.14	54.00	-12.86	29.21	8.36	35.06	38.63	172	100	Average	HORIZONTAL
4 p	15930.99	54.58	74.00	-19.42	42.67	8.36	35.08	38.63	172	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1	10619.00	37.47	54.00	-16.53	27.70	6.30	35.08	38.55	119	100	Average	VERTICAL
2	10620.26	51.23	74.00	-22.77	41.46	6.30	35.08	38.55	119	100	Peak	VERTICAL
3 a	15929.93	41.11	54.00	-12.89	29.18	8.36	35.06	38.63	254	100	Average	VERTICAL
4 p	15930.76	55.28	74.00	-18.72	43.37	8.36	35.08	38.63	254	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 102 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit								
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	11019.66	37.47	54.00	-16.53	27.50	6.26	34.69	38.40	346	100 Average	HORIZONTAL
2 p	11020.76	51.29	74.00	-22.71	41.32	6.26	34.69	38.40	346	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit								
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	11019.51	37.45	54.00	-16.55	27.48	6.26	34.69	38.40	264	100 Average	VERTICAL
2 p	11020.76	51.31	74.00	-22.69	41.34	6.26	34.69	38.40	264	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 110 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	Line	Limit	dB	dBuV	dB	dB	dB/m	deg	cm
1 a	11099.35	37.94	54.00	-16.06	27.86	6.36	34.70	38.42	50	100 Average	HORIZONTAL
2 p	11099.58	51.88	74.00	-22.12	41.80	6.36	34.70	38.42	50	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	Line	Limit	dB	dBuV	dB	dB	dB/m	deg	cm
1 p	11099.24	51.30	74.00	-22.70	41.22	6.36	34.70	38.42	151	100 Peak	VERTICAL
2 a	11100.51	37.75	54.00	-16.25	27.67	6.36	34.70	38.42	151	100 Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 134 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m	deg	cm	
1 a	11339.49	37.58	54.00	-16.42	27.20	6.64	34.73	38.47	219	100 Average	HORIZONTAL
2 p	11339.94	52.63	74.00	-21.37	42.25	6.64	34.73	38.47	219	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m	deg	cm	
1 p	11339.38	51.44	74.00	-22.56	41.06	6.64	34.73	38.47	330	100 Peak	VERTICAL
2 a	11340.55	37.65	54.00	-16.35	27.27	6.64	34.73	38.47	330	100 Average	VERTICAL

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 38 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB	dB/m	deg		
1 a	15569.11	40.38	54.00	-13.62	28.60	8.23	34.72	38.27	357	100	Average	HORIZONTAL
2 p	15570.71	53.80	74.00	-20.20	42.02	8.23	34.72	38.27	357	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB	dB/m	deg		
1 p	15570.03	53.95	74.00	-20.05	42.17	8.23	34.72	38.27	202	100	Peak	VERTICAL
2 a	15570.78	40.38	54.00	-13.62	28.60	8.23	34.72	38.27	202	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 46 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15690.10	40.62	54.00	-13.38	28.79	8.28	34.84	38.39	148	100	Average	HORIZONTAL
2 p 15690.64	54.91	74.00	-19.09	43.08	8.28	34.84	38.39	148	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15690.84	54.39	74.00	-19.61	42.56	8.28	34.84	38.39	248	100	Peak	VERTICAL
2 a 15690.92	40.67	54.00	-13.33	28.84	8.28	34.84	38.39	248	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 54 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB	dB/m	deg		
1 p	15809.28	54.77	74.00	-19.23	42.90	8.32	34.96	38.51	208	100	Peak	HORIZONTAL
2 a	15810.00	40.57	54.00	-13.43	28.70	8.32	34.96	38.51	208	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB	dB/m	deg		
1 a	15809.25	40.55	54.00	-13.45	28.68	8.32	34.96	38.51	252	100	Average	VERTICAL
2 p	15810.52	54.53	74.00	-19.47	42.66	8.32	34.96	38.51	252	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 62 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1	10619.43	51.07	74.00	-22.93	41.30	6.30	35.08	38.55	269	100	Peak	HORIZONTAL
2	10620.63	37.44	54.00	-16.56	27.67	6.30	35.08	38.55	269	100	Average	HORIZONTAL
3 a	15929.80	41.05	54.00	-12.95	29.12	8.36	35.06	38.63	355	100	Average	HORIZONTAL
4 p	15930.12	54.39	74.00	-19.61	42.46	8.36	35.06	38.63	355	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1	10619.28	37.48	54.00	-16.52	27.71	6.30	35.08	38.55	295	100	Average	VERTICAL
2	10619.92	50.75	74.00	-23.25	40.98	6.30	35.08	38.55	295	100	Peak	VERTICAL
3 p	15929.49	54.82	74.00	-19.18	42.89	8.36	35.06	38.63	331	100	Peak	VERTICAL
4 a	15930.05	41.07	54.00	-12.93	29.14	8.36	35.06	38.63	331	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 102 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 11019.11	51.30	74.00	-22.70	41.33	6.26	34.69	38.40	100	100	Peak	HORIZONTAL
2 a 11020.61	37.47	54.00	-16.53	27.50	6.26	34.69	38.40	100	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 11019.13	37.48	54.00	-16.52	27.51	6.26	34.69	38.40	152	100	Average	VERTICAL
2 p 11020.69	51.31	74.00	-22.69	41.34	6.26	34.69	38.40	152	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 110 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 11099.02	51.97	74.00	-22.03	41.89	6.36	34.70	38.42	297	100	Peak	HORIZONTAL
2 a 11099.45	37.59	54.00	-16.41	27.51	6.36	34.70	38.42	297	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 11099.28	37.62	54.00	-16.38	27.54	6.36	34.70	38.42	237	100	Average	VERTICAL
2 p 11100.06	51.63	74.00	-22.37	41.55	6.36	34.70	38.42	237	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 134 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 11340.71	51.37	74.00	-22.63	40.99	6.64	34.73	38.47	340	100	Peak	HORIZONTAL
2 a 11340.83	37.58	54.00	-16.42	27.20	6.64	34.73	38.47	340	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 11340.59	51.30	74.00	-22.70	40.92	6.64	34.73	38.47	253	100	Peak	VERTICAL
2 a 11340.59	37.55	54.00	-16.45	27.17	6.64	34.73	38.47	253	100	Average	VERTICAL

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 38 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15569.25	40.46	54.00	-13.54	28.68	8.23	34.72	38.27	17	100	Average	HORIZONTAL
2 p 15570.30	54.39	74.00	-19.61	42.61	8.23	34.72	38.27	17	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15570.49	54.30	74.00	-19.70	42.52	8.23	34.72	38.27	92	100	Peak	VERTICAL
2 a 15570.73	40.46	54.00	-13.54	28.68	8.23	34.72	38.27	92	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 46 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15690.38	40.69	54.00	-13.31	28.86	8.28	34.84	38.39	241	100	Average	HORIZONTAL
2 p 15690.84	54.10	74.00	-19.90	42.27	8.28	34.84	38.39	241	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15689.12	54.92	74.00	-19.08	43.09	8.28	34.84	38.39	170	100	Peak	VERTICAL
2 a 15689.93	40.71	54.00	-13.29	28.88	8.28	34.84	38.39	170	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 54 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15809.65	54.34	74.00	-19.66	42.47	8.32	34.96	38.51	310	100	Peak	HORIZONTAL
2 a 15810.02	40.63	54.00	-13.37	28.76	8.32	34.96	38.51	310	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15809.11	54.79	74.00	-19.21	42.92	8.32	34.96	38.51	231	100	Peak	VERTICAL
2 a 15810.34	40.64	54.00	-13.36	28.77	8.32	34.96	38.51	231	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 62 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1	10619.52	51.84	74.00	-22.16	42.07	6.30	35.08	38.55	175	100	Peak	HORIZONTAL
2	10620.87	37.49	54.00	-16.51	27.72	6.30	35.08	38.55	175	100	Average	HORIZONTAL
3 a	15930.21	41.11	54.00	-12.89	29.18	8.36	35.06	38.63	74	100	Average	HORIZONTAL
4 p	15930.51	54.59	74.00	-19.41	42.68	8.36	35.08	38.63	74	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1	10620.37	51.42	74.00	-22.58	41.65	6.30	35.08	38.55	265	100	Peak	VERTICAL
2	10620.55	37.49	54.00	-16.51	27.72	6.30	35.08	38.55	265	100	Average	VERTICAL
3 a	15929.85	41.14	54.00	-12.86	29.21	8.36	35.06	38.63	176	100	Average	VERTICAL
4 p	15929.91	54.88	74.00	-19.12	42.95	8.36	35.06	38.63	176	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 102 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 11019.23	37.47	54.00	-16.53	27.50	6.26	34.69	38.40	355	100	Average	HORIZONTAL
2 p 11019.70	51.34	74.00	-22.66	41.37	6.26	34.69	38.40	355	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 11019.23	51.18	74.00	-22.82	41.21	6.26	34.69	38.40	262	100	Peak	VERTICAL
2 a 11019.27	37.46	54.00	-16.54	27.49	6.26	34.69	38.40	262	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 110 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 11099.20	37.72	54.00	-16.28	27.64	6.36	34.70	38.42	302	100	Average	HORIZONTAL
2 p 11100.12	52.33	74.00	-21.67	42.25	6.36	34.70	38.42	302	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 11099.00	54.53	74.00	-19.47	44.45	6.36	34.70	38.42	78	125	Peak	VERTICAL
2 a 11099.03	39.99	54.00	-14.01	29.91	6.36	34.70	38.42	78	125	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 134 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	11339.19	51.68	74.00	-22.32	41.30	6.64	34.73	38.47	212	100 Peak	HORIZONTAL
2 a	11339.90	37.61	54.00	-16.39	27.23	6.64	34.73	38.47	212	100 Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	11339.07	39.41	54.00	-14.59	29.03	6.64	34.73	38.47	172	149 Average	VERTICAL
2 p	11339.33	53.19	74.00	-20.81	42.81	6.64	34.73	38.47	172	149 Peak	VERTICAL

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 38 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15569.24	40.38	54.00	-13.62	28.60	8.23	34.72	38.27	280	100	Average	HORIZONTAL
2 p 15569.24	53.91	74.00	-20.09	42.13	8.23	34.72	38.27	280	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 15569.02	54.60	74.00	-19.40	42.82	8.23	34.72	38.27	237	100	Peak	VERTICAL
2 a 15569.06	40.40	54.00	-13.60	28.62	8.23	34.72	38.27	237	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 46 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15689.90	40.67	54.00	-13.33	28.84	8.28	34.84	38.39	240	100	Average	HORIZONTAL
2 p 15690.52	54.78	74.00	-19.22	42.95	8.28	34.84	38.39	240	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15690.68	40.67	54.00	-13.33	28.84	8.28	34.84	38.39	314	100	Average	VERTICAL
2 p 15690.76	54.73	74.00	-19.27	42.90	8.28	34.84	38.39	314	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 54 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1 a	15809.21	40.62	54.00	-13.38	28.75	8.32	34.96	38.51	318	100	Average	HORIZONTAL
2 p	15809.36	54.74	74.00	-19.26	42.87	8.32	34.96	38.51	318	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1 p	15809.30	54.70	74.00	-19.30	42.83	8.32	34.96	38.51	239	100	Peak	VERTICAL
2 a	15809.86	40.66	54.00	-13.34	28.79	8.32	34.96	38.51	239	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 62 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1	10619.27	37.48	54.00	-16.52	27.71	6.30	35.08	38.55	355	100	Average	HORIZONTAL
2	10620.19	52.38	74.00	-21.62	42.61	6.30	35.08	38.55	355	100	Peak	HORIZONTAL
3 p	15929.00	54.98	74.00	-19.02	43.05	8.36	35.06	38.63	249	100	Peak	HORIZONTAL
4 a	15930.32	41.09	54.00	-12.91	29.18	8.36	35.08	38.63	249	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1	10619.62	37.50	54.00	-16.50	27.73	6.30	35.08	38.55	165	100	Average	VERTICAL
2	10620.49	51.07	74.00	-22.93	41.30	6.30	35.08	38.55	165	100	Peak	VERTICAL
3 a	15930.03	41.11	54.00	-12.89	29.18	8.36	35.06	38.63	194	100	Average	VERTICAL
4 p	15930.97	55.68	74.00	-18.32	43.77	8.36	35.08	38.63	194	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 102 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable Loss			Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm	deg	cm		
1 p	11019.12	50.79	74.00	-23.21	40.82	6.26	34.69	38.40	281	100	Peak	HORIZONTAL		
2 a	11020.76	37.41	54.00	-16.59	27.44	6.26	34.69	38.40	281	100	Average	HORIZONTAL		

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable Loss			Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm	deg	cm		
1 a	11020.70	37.43	54.00	-16.57	27.46	6.26	34.69	38.40	331	100	Average	VERTICAL		
2 p	11020.78	51.15	74.00	-22.85	41.18	6.26	34.69	38.40	331	100	Peak	VERTICAL		



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 110 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1 p	11099.80	51.53	74.00	-22.47	41.45	6.36	34.70	38.42	209	100	Peak	HORIZONTAL
2 a	11099.92	37.71	54.00	-16.29	27.63	6.36	34.70	38.42	209	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1 a	11099.22	38.01	54.00	-15.99	27.93	6.36	34.70	38.42	278	100	Average	VERTICAL
2 p	11100.69	52.10	74.00	-21.90	42.02	6.36	34.70	38.42	278	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 134 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 11339.49	37.62	54.00	-16.38	27.24	6.64	34.73	38.47	72	100	Average	HORIZONTAL
2 p 11339.78	51.34	74.00	-22.66	40.96	6.64	34.73	38.47	72	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 11339.93	37.66	54.00	-16.34	27.28	6.64	34.73	38.47	208	100	Average	VERTICAL
2 p 11340.61	51.50	74.00	-22.50	41.12	6.64	34.73	38.47	208	100	Peak	VERTICAL

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 36 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	15739.93	54.31	74.00	-19.69	42.47	8.29	34.89	38.44	148	100 Peak	HORIZONTAL
2 a	15740.07	40.82	54.00	-13.18	28.98	8.29	34.89	38.44	148	100 Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	15739.25	55.07	74.00	-18.93	43.23	8.29	34.89	38.44	50	100 Peak	VERTICAL
2 a	15739.73	40.87	54.00	-13.13	29.03	8.29	34.89	38.44	50	100 Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 40 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq MHz	Level dBuV/m	Limit		Over dB	Read dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Limit dBuV/m									
1 p 15599.63	54.04	74.00	-19.96	42.27	8.24	34.77	38.30	258	100	Peak	HORIZONTAL	
2 a 15600.99	40.86	54.00	-13.14	29.09	8.24	34.77	38.30	258	100	Average	HORIZONTAL	

**Vertical**

Freq MHz	Level dBuV/m	Limit		Over dB	Read dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Limit dBuV/m									
1 p 15600.36	54.22	74.00	-19.78	42.45	8.24	34.77	38.30	144	100	Peak	VERTICAL	
2 a 15600.56	40.46	54.00	-13.54	28.69	8.24	34.77	38.30	144	100	Average	VERTICAL	



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 48 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB									
1 a	15719.52	40.69	54.00	-13.31	28.84	8.29	34.86	38.42	234	100	Average	HORIZONTAL
2 p	15720.24	55.68	74.00	-18.32	43.83	8.29	34.86	38.42	234	100	Peak	HORIZONTAL

**Vertical**

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB									
1 p	15719.12	54.81	74.00	-19.19	42.96	8.29	34.86	38.42	325	100	Peak	VERTICAL
2 a	15720.04	40.71	54.00	-13.29	28.86	8.29	34.86	38.42	325	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 52 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq MHz	Level dBuV/m	Limit		Over Line Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB									
1 p 15779.54	54.71	74.00	-19.29	42.86	8.31	34.94	38.48	91	100	Peak	HORIZONTAL	
2 a 15780.22	40.78	54.00	-13.22	28.93	8.31	34.94	38.48	91	100	Average	HORIZONTAL	

**Vertical**

Freq MHz	Level dBuV/m	Limit		Over Line Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB									
1 p 15779.56	54.74	74.00	-19.26	42.89	8.31	34.94	38.48	173	100	Peak	VERTICAL	
2 a 15780.52	40.78	54.00	-13.22	28.93	8.31	34.94	38.48	173	100	Average	VERTICAL	



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 60 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line	Line									
1 a	10600.02	47.58	54.00	-6.42	37.81	6.31	35.10	38.56	75	132	Average	HORIZONTAL
2 p	10600.66	61.76	74.00	-12.24	51.99	6.31	35.10	38.56	75	132	Peak	HORIZONTAL
3	15899.83	40.69	54.00	-13.31	28.77	8.35	35.03	38.60	217	100	Average	HORIZONTAL
4	15900.87	55.35	74.00	-18.65	43.41	8.36	35.03	38.61	217	100	Peak	HORIZONTAL

**Vertical**

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line	Line									
1 a	10600.02	45.24	54.00	-8.76	35.47	6.31	35.10	38.56	61	126	Average	VERTICAL
2 p	10600.53	60.08	74.00	-13.92	50.31	6.31	35.10	38.56	61	126	Peak	VERTICAL
3	15899.79	40.67	54.00	-13.33	28.75	8.35	35.03	38.60	341	100	Average	VERTICAL
4	15900.60	54.79	74.00	-19.21	42.85	8.36	35.03	38.61	341	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 64 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq MHz	Level dBuV/m	Limit		Over Line Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Limit dB									
1 a 10640.03	44.53	54.00	-9.47	34.74	6.30	35.05	38.54	75	134	Average	HORIZONTAL	
2 p 10640.32	58.96	74.00	-15.04	49.17	6.30	35.05	38.54	75	134	Peak	HORIZONTAL	
3 15959.58	54.84	74.00	-19.16	42.90	8.38	35.11	38.67	34	100	Peak	HORIZONTAL	
4 15960.06	41.20	54.00	-12.80	29.26	8.38	35.11	38.67	34	100	Average	HORIZONTAL	

**Vertical**

Freq MHz	Level dBuV/m	Limit		Over Line Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Limit dB									
1 a 10640.07	42.58	54.00	-11.42	32.79	6.30	35.05	38.54	64	128	Average	VERTICAL	
2 p 10640.61	57.34	74.00	-16.66	47.55	6.30	35.05	38.54	64	128	Peak	VERTICAL	
3 15960.00	41.20	54.00	-12.80	29.26	8.38	35.11	38.67	100	128	Average	VERTICAL	
4 15960.71	55.17	74.00	-18.83	43.23	8.38	35.11	38.67	100	128	Peak	VERTICAL	



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 100 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq MHz	Level dBuV/m	Limit Line	Over Limit	Read Level dB	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		dB	dBuV		dB	dB	dB/m	deg	cm		
1 a 11000.04	39.95	54.00	-14.05	30.00	6.24	34.69	38.40	75	130	Average	HORIZONTAL
2 p 11000.73	54.63	74.00	-19.37	44.68	6.24	34.69	38.40	75	130	Peak	HORIZONTAL

**Vertical**

Freq MHz	Level dBuV/m	Limit Line	Over Limit	Read Level dB	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		dB	dBuV		dB	dB	dB/m	deg	cm		
1 a 10999.91	38.63	54.00	-15.37	28.68	6.24	34.69	38.40	65	126	Average	VERTICAL
2 p 10999.95	53.09	74.00	-20.91	43.14	6.24	34.69	38.40	65	126	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 116 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq MHz	Level dBuV/m	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
1 a 11160.00	41.09	54.00	-12.91	30.93	6.44	34.71	38.43	49	148	Average	HORIZONTAL
2 p 11160.96	55.30	74.00	-18.70	45.14	6.44	34.71	38.43	49	148	Peak	HORIZONTAL

**Vertical**

Freq MHz	Level dBuV/m	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
1 a 11159.96	43.55	54.00	-10.45	33.39	6.44	34.71	38.43	40	141	Average	VERTICAL
2 p 11160.57	58.29	74.00	-15.71	48.13	6.44	34.71	38.43	40	141	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 140 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	11399.48	38.47	54.00	-15.53	28.01	6.72	34.74	38.48	297	100 Average	HORIZONTAL
2 p	11399.95	52.26	74.00	-21.74	41.80	6.72	34.74	38.48	297	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	11399.87	54.11	74.00	-19.89	43.65	6.72	34.74	38.48	86	121 Peak	VERTICAL
2 a	11399.97	40.06	54.00	-13.94	29.60	6.72	34.74	38.48	86	121 Average	VERTICAL

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 36 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq MHz	Level dBuV/m	Limit		Over dB	Read dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Limit dB									
1 p 15540.42	54.42	74.00	-19.58	42.66	8.22	34.69	38.23	154	100	Peak	HORIZONTAL	
2 a 15540.68	40.86	54.00	-13.14	29.10	8.22	34.69	38.23	154	100	Average	HORIZONTAL	

**Vertical**

Freq MHz	Level dBuV/m	Limit		Over dB	Read dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Limit dB									
1 a 15539.79	40.87	54.00	-13.13	29.11	8.22	34.69	38.23	116	100	Average	VERTICAL	
2 p 15539.98	54.80	74.00	-19.20	43.04	8.22	34.69	38.23	116	100	Peak	VERTICAL	



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 40 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq MHz	Level dBuV/m	Limit Line	Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		dB	dB	dB	dB	dB	dB/m	deg	cm		
1 p 15600.37	54.98	74.00	-19.02	43.21	8.24	34.77	38.30	287	100	Peak	HORIZONTAL
2 a 15600.75	40.63	54.00	-13.37	28.86	8.24	34.77	38.30	287	100	Average	HORIZONTAL

**Vertical**

Freq MHz	Level dBuV/m	Limit Line	Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		dB	dB	dB	dB	dB	dB/m	deg	cm		
1 p 15600.31	54.71	74.00	-19.29	42.94	8.24	34.77	38.30	232	100	Peak	VERTICAL
2 a 15600.58	40.65	54.00	-13.35	28.88	8.24	34.77	38.30	232	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 48 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	15719.65	40.84	54.00	-13.16	28.99	8.29	34.86	38.42	325	100 Average	HORIZONTAL
2 p	15720.50	55.30	74.00	-18.70	43.45	8.29	34.86	38.42	325	100 Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	15719.73	40.89	54.00	-13.11	29.04	8.29	34.86	38.42	290	100 Average	VERTICAL
2 p	15720.36	55.15	74.00	-18.85	43.30	8.29	34.86	38.42	290	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 52 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15779.03	40.93	54.00	-13.07	29.08	8.31	34.94	38.48	283	100	Average	HORIZONTAL
2 p 15780.81	54.54	74.00	-19.46	42.69	8.31	34.94	38.48	283	100	Peak	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 15779.13	40.95	54.00	-13.05	29.10	8.31	34.94	38.48	237	100	Average	VERTICAL
2 p 15779.18	54.75	74.00	-19.25	42.90	8.31	34.94	38.48	237	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 60 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

	Freq	Limit MHz	Line dBuV/m	Over dB	Read dBuV	Cable Loss dB	Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
1	10600.65	37.90	54.00	-16.10	28.13	6.31	35.10	38.56	351	100	Average	HORIZONTAL
2	10600.78	49.36	74.00	-24.64	39.57	6.31	35.08	38.56	351	100	Peak	HORIZONTAL
3 a	15900.27	40.83	54.00	-13.17	28.91	8.35	35.03	38.60	104	100	Average	HORIZONTAL
4 p	15900.97	54.66	74.00	-19.34	42.72	8.36	35.03	38.61	104	100	Peak	HORIZONTAL

**Vertical**

	Freq	Limit MHz	Line dBuV/m	Over dB	Read dBuV	Cable Loss dB	Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
1	10600.10	37.68	74.00	-36.32	27.91	6.31	35.10	38.56	192	100	Peak	VERTICAL
2	10600.10	37.69	54.00	-16.31	27.92	6.31	35.10	38.56	192	100	Average	VERTICAL
3 p	15899.61	54.73	74.00	-19.27	42.81	8.35	35.03	38.60	154	100	Peak	VERTICAL
4 a	15900.37	40.85	54.00	-13.15	28.93	8.35	35.03	38.60	154	100	Average	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 64 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB dB									
1 10640.46	37.85	54.00	-16.15	28.06	6.30	35.05	38.54	279	100	Average	HORIZONTAL	
2 10640.83	51.93	74.00	-22.07	42.14	6.30	35.05	38.54	279	100	Peak	HORIZONTAL	
3 a 15959.37	41.55	54.00	-12.45	29.61	8.38	35.11	38.67	259	100	Average	HORIZONTAL	
4 p 15959.78	55.60	74.00	-18.40	43.66	8.38	35.11	38.67	259	100	Peak	HORIZONTAL	

**Vertical**

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB dB									
1 10639.80	51.24	74.00	-22.76	41.45	6.30	35.05	38.54	321	100	Peak	VERTICAL	
2 10639.86	37.73	54.00	-16.27	27.94	6.30	35.05	38.54	321	100	Average	VERTICAL	
3 a 15959.46	41.57	54.00	-12.43	29.63	8.38	35.11	38.67	252	100	Average	VERTICAL	
4 p 15959.79	55.18	74.00	-18.82	43.24	8.38	35.11	38.67	252	100	Peak	VERTICAL	



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 100 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq MHz	Level dBuV/m	Limit Line	Over Limit	Read Level dB	Cable Loss dB	Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		dB	dBuV	dB	dB	dB/m	deg	cm	cm		
1 a 10999.02	37.93	54.00	-16.07	27.98	6.24	34.69	38.40	242	100	Average	HORIZONTAL
2 p 11000.35	51.50	74.00	-22.50	41.55	6.24	34.69	38.40	242	100	Peak	HORIZONTAL

**Vertical**

Freq MHz	Level dBuV/m	Limit Line	Over Limit	Read Level dB	Cable Loss dB	Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		dB	dBuV	dB	dB	dB/m	deg	cm	cm		
1 a 10999.04	38.08	54.00	-15.92	28.13	6.24	34.69	38.40	270	100	Average	VERTICAL
2 p 11000.67	52.08	74.00	-21.92	42.13	6.24	34.69	38.40	270	100	Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 116 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	11159.59	51.89	74.00	-22.11	41.73	6.44	34.71	38.43	297	100 Peak	HORIZONTAL
2 a	11160.28	37.90	54.00	-16.10	27.74	6.44	34.71	38.43	297	100 Average	HORIZONTAL

**Vertical**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	11160.14	38.44	54.00	-15.56	28.28	6.44	34.71	38.43	283	100 Average	VERTICAL
2 p	11160.56	52.57	74.00	-21.43	42.41	6.44	34.71	38.43	283	100 Peak	VERTICAL



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 140 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Horizontal**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 11399.08	52.44	74.00	-21.56	41.98	6.72	34.74	38.48	220	100	Peak	HORIZONTAL
2 a 11399.76	38.58	54.00	-15.42	28.12	6.72	34.74	38.48	220	100	Average	HORIZONTAL

**Vertical**

Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p 11399.70	52.76	74.00	-21.24	42.30	6.72	34.74	38.48	250	100	Peak	VERTICAL
2 a 11400.92	38.68	54.00	-15.32	28.22	6.72	34.74	38.48	250	100	Average	VERTICAL

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

## 4.7. Band Edge Emissions Measurement

### 4.7.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m at 3m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/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

### 4.7.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (Emission in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1 MHz /3 MHz for Peak

### 4.7.3. Test Procedures

11. The test procedure is the same as section 4.6.3, only the frequency range investigated is limited to 100MHz around bandedges.
12. In case the emission is fail due to the used RB/VB is too wide, marker-delta method of FCC Public Notice DA00-705 will be followed.

#### **4.7.4. Test Setup Layout**

This test setup layout is the same as that shown in section 4.6.4.

#### **4.7.5. Test Deviation**

There is no deviation with the original standard.

#### **4.7.6. EUT Operation during Test**

The EUT was programmed to be in continuously transmitting mode.

#### 4.7.7. Test Result of Band Edge and Fundamental Emissions

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS0 20MHz Ch 36, 40, 48 /Chain 1 / 1TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 1

##### Channel 36

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1 !	5149.36	73.18	74.00	-0.82	35.81	4.30	0.00	33.07	165	111	Peak	VERTICAL
2 !	5150.00	51.25	54.00	-2.75	13.88	4.30	0.00	33.07	165	111	Average	VERTICAL
3 a	5174.71	103.18	—	—	—	4.32	0.00	33.13	165	111	Average	VERTICAL
4 p	5176.96	113.04	—	—	—	4.32	0.00	33.13	165	111	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

##### Channel 40

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1	5150.00	66.58	74.00	-7.42	29.21	4.30	0.00	33.07	164	109	Peak	VERTICAL
2	5150.00	46.73	54.00	-7.27	9.36	4.30	0.00	33.07	164	109	Average	VERTICAL
3 p	5192.31	115.72	—	—	—	4.34	0.00	33.16	164	109	Peak	VERTICAL
4 a	5194.55	106.33	—	—	—	4.34	0.00	33.16	164	109	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz

##### Channel 48

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1	4993.75	55.41	74.00	-18.59	18.45	4.16	0.00	32.80	162	108	Peak	VERTICAL
2	4996.15	44.45	54.00	-9.55	7.49	4.16	0.00	32.80	162	108	Average	VERTICAL
3 p	5236.80	115.72	—	—	—	4.37	0.00	33.22	162	108	Peak	VERTICAL
4 a	5236.80	106.28	—	—	—	4.37	0.00	33.22	162	108	Average	VERTICAL
5	5352.40	41.35	54.00	-12.65	3.45	4.47	0.00	33.43	162	108	Average	VERTICAL
6	5354.81	52.63	74.00	-21.37	14.73	4.47	0.00	33.43	162	108	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 52, 60, 64 /Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

### Channel 52

Freq MHz	Level dBuV/m	Limit		Over Line Limit	Read Level dBuV	Cable Loss dB	Preamp Factor 0.00	Antenna Factor 32.83	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Over Limit dB									
1	5015.61	43.20	54.00	-10.80	6.20	4.17	0.00	32.83	162	121	Average	VERTICAL
2	5016.19	54.31	74.00	-19.69	17.31	4.17	0.00	32.83	162	121	Peak	VERTICAL
3 p	5252.79	115.50				4.39	0.00	33.25	162	121	Peak	VERTICAL
4 a	5254.39	105.71				4.39	0.00	33.25	162	121	Average	VERTICAL
5	5354.01	53.84	74.00	-20.16	15.94	4.47	0.00	33.43	162	121	Peak	VERTICAL
6	5358.81	41.29	54.00	-12.71	3.39	4.47	0.00	33.43	162	121	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

### Channel 60

Freq MHz	Level dBuV/m	Limit		Over Line Limit	Read Level dBuV	Cable Loss dB	Preamp Factor 0.00	Antenna Factor 33.34	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Over Limit dB									
1 a	5294.55	105.26				4.43	0.00	33.34	162	119	Average	VERTICAL
2 p	5296.15	114.66				4.43	0.00	33.34	162	119	Peak	VERTICAL
3	5350.00	66.50	74.00	-7.50	28.60	4.47	0.00	33.43	162	119	Peak	VERTICAL
4	5350.00	46.79	54.00	-7.21	8.89	4.47	0.00	33.43	162	119	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

### Channel 64

Freq MHz	Level dBuV/m	Limit		Over Line Limit	Read Level dBuV	Cable Loss dB	Preamp Factor 0.00	Antenna Factor 33.37	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	Over Limit dB									
1 p	5316.96	111.49				4.45	0.00	33.37	143	110	Peak	VERTICAL
2 a	5325.29	101.84				4.45	0.00	33.37	143	110	Average	VERTICAL
3 !	5350.00	51.48	54.00	-2.52	13.58	4.47	0.00	33.43	143	110	Average	VERTICAL
4 !	5352.56	72.65	74.00	-1.35	34.75	4.47	0.00	33.43	143	110	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS0 20MHz Ch 100, 140 / Chain 1 / 1TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 1

### Channel 100

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m	deg	cm	
1	5454.87	56.63	74.00	-17.37	18.45	4.57	0.00	33.61	280	114 Peak	VERTICAL
2	5460.00	43.03	54.00	-10.97	4.85	4.57	0.00	33.61	280	114 Average	VERTICAL
3 !	5466.96	67.16	68.30	-1.14	28.94	4.58	0.00	33.64	280	114 Peak	VERTICAL
4 p	5496.96	111.22				4.61	0.00	33.70	280	114 Peak	VERTICAL
5 a	5505.29	101.77				4.61	0.00	33.70	280	114 Average	VERTICAL

Item 4, 5 are the fundamental frequency at 5500 MHz.

### Channel 140

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m	deg	cm	
1 p	5696.96	108.95				4.69	0.00	34.27	254	110 Peak	VERTICAL
2 a	5703.05	98.84				4.70	0.00	34.32	254	110 Average	VERTICAL
3 !	5725.00	66.38	68.30	-1.92	27.30	4.71	0.00	34.37	254	110 Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 36, 40, 48 /Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Channel 36**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg		
1 !	5150.00	70.52	74.00	-3.48	33.15	4.30	0.00	33.07	248	100 Peak	VERTICAL
2 !	5150.00	52.40	54.00	-1.60	15.03	4.30	0.00	33.07	248	100 Average	VERTICAL
3 p	5182.89	109.87				4.32	0.00	33.13	248	100 Peak	VERTICAL
4 a	5185.29	100.48				4.32	0.00	33.13	248	100 Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

**Channel 40**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg		
1	5150.00	59.10	74.00	-14.90	21.73	4.30	0.00	33.07	249	100 Peak	VERTICAL
2	5150.00	43.25	54.00	-10.75	5.88	4.30	0.00	33.07	249	100 Average	VERTICAL
3 p	5203.21	111.63				4.34	0.00	33.16	249	100 Peak	VERTICAL
4 a	5205.45	102.33				4.34	0.00	33.16	249	100 Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz

**Channel 48**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg		
1	5150.00	50.36	74.00	-23.64	12.99	4.30	0.00	33.07	102	103 Peak	VERTICAL
2	5150.00	40.38	54.00	-13.62	3.01	4.30	0.00	33.07	102	103 Average	VERTICAL
3 p	5235.19	114.27				4.37	0.00	33.22	102	103 Peak	VERTICAL
4 a	5243.21	105.00				4.39	0.00	33.25	102	103 Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS0 20MHz Ch 52, 60, 64 /Chain 1 / 1TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 2

### Channel 52

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1 a	5263.21	104.82				4.40	0.00	33.28	101	103	Average	VERTICAL
2 p	5264.49	114.37				4.40	0.00	33.28	101	103	Peak	VERTICAL
3	5350.00	51.78	74.00	-22.22	13.88	4.47	0.00	33.43	101	103	Peak	VERTICAL
4	5350.00	40.59	54.00	-13.41	2.69	4.47	0.00	33.43	101	103	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 5260 MHz.

### Channel 60

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1 p	5303.53	114.19				4.43	0.00	33.34	101	102	Peak	VERTICAL
2 a	5305.45	104.88				4.43	0.00	33.34	101	102	Average	VERTICAL
3	5350.00	64.42	74.00	-9.58	26.52	4.47	0.00	33.43	101	102	Peak	VERTICAL
4	5350.00	46.09	54.00	-7.91	8.19	4.47	0.00	33.43	101	102	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

### Channel 64

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm		
1 a	5316.80	101.46				4.45	0.00	33.37	104	113	Average	VERTICAL
2 p	5317.12	111.38				4.45	0.00	33.37	104	113	Peak	VERTICAL
3 !	5350.00	52.40	54.00	-1.60	14.50	4.47	0.00	33.43	104	113	Average	VERTICAL
4 !	5352.24	72.49	74.00	-1.51	34.59	4.47	0.00	33.43	104	113	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS0 20MHz Ch 100, 140 / Chain 1 / 1TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 2

**Channel 100**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
MHz	dBuV/m	dBuV/m										
1	5460.00	58.68	74.00	-15.32	20.50	4.57	0.00	33.61	273	100	Peak	VERTICAL
2	5460.00	43.02	54.00	-10.98	4.84	4.57	0.00	33.61	273	100	Average	VERTICAL
3 !	5467.44	67.56	68.30	-0.74	29.34	4.58	0.00	33.64	273	100	Peak	VERTICAL
4 p	5497.12	111.54				4.61	0.00	33.70	273	100	Peak	VERTICAL
5 a	5503.05	101.47				4.61	0.00	33.70	273	100	Average	VERTICAL

Item 4, 5 are the fundamental frequency at 5500 MHz.

**Channel 140**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
MHz	dBuV/m	dBuV/m										
1 p	5696.96	108.33				4.69	0.00	34.27	271	106	Peak	VERTICAL
2 a	5703.05	98.41				4.70	0.00	34.32	271	106	Average	VERTICAL
3 !	5725.00	67.50	68.30	-0.80	28.42	4.71	0.00	34.37	271	106	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 36, 40, 48 / Chain 1 + Chain 2 / 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Channel 36**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1 !	5150.00	70.78	74.00	-3.22	33.41	4.30	0.00	33.07	164	111	Peak	VERTICAL
2 !	5150.00	52.76	54.00	-1.24	15.39	4.30	0.00	33.07	164	111	Average	VERTICAL
3 p	5174.39	116.75				4.32	0.00	33.13	164	111	Peak	VERTICAL
4 a	5184.33	105.11				4.32	0.00	33.13	164	111	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

**Channel 40**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1	5149.36	61.13	74.00	-12.87	23.76	4.30	0.00	33.07	163	111	Peak	VERTICAL
2	5150.00	45.21	54.00	-8.79	7.84	4.30	0.00	33.07	163	111	Average	VERTICAL
3 a	5195.51	106.45				4.34	0.00	33.16	163	111	Average	VERTICAL
4 p	5195.83	117.35				4.34	0.00	33.16	163	111	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz

**Channel 48**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1	5139.90	55.17	74.00	-18.83	17.80	4.30	0.00	33.07	165	110	Peak	VERTICAL
2	5139.90	42.80	54.00	-11.20	5.43	4.30	0.00	33.07	165	110	Average	VERTICAL
3 p	5243.85	116.63				4.39	0.00	33.25	165	110	Peak	VERTICAL
4 a	5245.29	105.69				4.39	0.00	33.25	165	110	Average	VERTICAL
5	5350.00	41.12	54.00	-12.88	3.22	4.47	0.00	33.43	165	110	Average	VERTICAL
6	5352.40	53.46	74.00	-20.54	15.56	4.47	0.00	33.43	165	110	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS8 20MHz Ch 52, 60, 64 / Chain 1 + Chain 2 / 2TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 1

### Channel 52

Freq	Level	Limit		Read Level	Cable			Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit		Loss	dB	deg						
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m		deg	cm		
1	5147.60	42.73	54.00	-11.27	5.36	4.30	0.00	33.07	165	110	Average	VERTICAL	
2	5149.52	54.77	74.00	-19.23	17.40	4.30	0.00	33.07	165	110	Peak	VERTICAL	
3 p	5255.67	116.70				4.39	0.00	33.25	165	110	Peak	VERTICAL	
4 a	5265.77	105.56				4.40	0.00	33.28	165	110	Average	VERTICAL	
5	5359.62	55.09	74.00	-18.91	17.19	4.47	0.00	33.43	165	110	Peak	VERTICAL	
6	5360.10	42.00	54.00	-12.00	4.10	4.47	0.00	33.43	165	110	Average	VERTICAL	

Item 3, 4 are the fundamental frequency at 5260 MHz.

### Channel 60

Freq	Level	Limit		Read Level	Cable			Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit		Loss	dB	deg						
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m		deg	cm		
1 p	5294.55	117.13				4.43	0.00	33.34	163	106	Peak	VERTICAL	
2 a	5304.17	106.14				4.43	0.00	33.34	163	106	Average	VERTICAL	
3	5350.00	58.19	74.00	-15.81	20.29	4.47	0.00	33.43	163	106	Peak	VERTICAL	
4	5350.00	45.50	54.00	-8.50	7.60	4.47	0.00	33.43	163	106	Average	VERTICAL	

Item 1, 2 are the fundamental frequency at 5300 MHz.

### Channel 64

Freq	Level	Limit		Read Level	Cable			Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Over Limit		Loss	dB	deg						
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	dB/m		deg	cm		
1 p	5315.67	115.51				4.45	0.00	33.37	163	106	Peak	VERTICAL	
2 a	5325.45	104.59				4.45	0.00	33.37	163	106	Average	VERTICAL	
3 !	5350.00	53.30	54.00	-0.70	15.40	4.47	0.00	33.43	163	106	Average	VERTICAL	
4 !	5350.16	71.60	74.00	-2.40	33.70	4.47	0.00	33.43	163	106	Peak	VERTICAL	

Item 1, 2 are the fundamental frequency at 5320 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 100, 140 / Chain 1 + Chain 2 / 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Channel 100**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1	5459.20	57.68	74.00	-16.32	19.50	4.57	0.00	33.61	318	115	Peak	VERTICAL
2	5459.36	43.63	54.00	-10.37	5.45	4.57	0.00	33.61	318	115	Average	VERTICAL
3 !	5470.00	66.79	68.30	-1.51	28.57	4.58	0.00	33.64	318	115	Peak	VERTICAL
4 a	5495.51	102.37				4.60	0.00	33.67	318	115	Average	VERTICAL
5 p	5495.67	113.82				4.60	0.00	33.67	318	115	Peak	VERTICAL

Item 4, 5 are the fundamental frequency at 5500 MHz.

**Channel 140**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
1 p	5697.60	112.14				4.69	0.00	34.27	256	100	Peak	VERTICAL
2 a	5705.29	100.99				4.70	0.00	34.32	256	100	Average	VERTICAL
3 !	5725.00	66.85	68.30	-1.45	27.77	4.71	0.00	34.37	256	100	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 36, 40, 48 / Chain 1 + Chain 2 / 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Channel 36**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1   5149.84	71.70	74.00	-2.30	34.33	4.30	0.00	33.07	284	101	Peak	VERTICAL
2   5150.00	53.45	54.00	-0.55	16.08	4.30	0.00	33.07	284	101	Average	VERTICAL
3 p 5183.53	111.56				4.32	0.00	33.13	284	101	Peak	VERTICAL
4 a 5185.45	101.64				4.32	0.00	33.13	284	101	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

**Channel 40**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 5149.36	57.11	74.00	-16.89	19.74	4.30	0.00	33.07	100	115	Peak	VERTICAL
2 5150.00	42.82	54.00	-11.18	5.45	4.30	0.00	33.07	100	115	Average	VERTICAL
3 a 5203.21	105.06				4.34	0.00	33.16	100	115	Average	VERTICAL
4 p 5203.85	116.42				4.34	0.00	33.16	100	115	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz

**Channel 48**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a 5242.89	106.23				4.39	0.00	33.25	100	103	Average	VERTICAL
2 p 5243.85	117.47				4.39	0.00	33.25	100	103	Peak	VERTICAL
3 5350.00	41.18	54.00	-12.82	3.28	4.47	0.00	33.43	100	103	Average	VERTICAL
4 5350.96	53.43	74.00	-20.57	15.53	4.47	0.00	33.43	100	103	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5240 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS8 20MHz Ch 52, 60, 64 / Chain 1 + Chain 2 / 2TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 2

### Channel 52

Freq	Level	Limit		Over Limit	Read Level	Cable Loss			Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm				
1	5138.94	51.92	74.00	-22.08	14.60	4.28	0.00	33.04	99	102	Peak		VERTICAL	
2	5147.60	40.15	54.00	-13.85	2.78	4.30	0.00	33.07	99	102	Average		VERTICAL	
3 a	5264.33	106.36				4.40	0.00	33.28	99	102	Average		VERTICAL	
4 p	5267.21	117.21				4.40	0.00	33.28	99	102	Peak		VERTICAL	

Item 3, 4 are the fundamental frequency at 5260 MHz.

### Channel 60

Freq	Level	Limit		Over Limit	Read Level	Cable Loss			Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm				
1 p	5302.56	117.95				4.43	0.00	33.34	101	101	Peak		VERTICAL	
2 a	5304.17	106.53				4.43	0.00	33.34	101	101	Average		VERTICAL	
3 !	5373.72	48.04	54.00	-5.96	10.09	4.49	0.00	33.46	101	101	Average		VERTICAL	
4	5375.96	60.10	74.00	-13.90	22.15	4.49	0.00	33.46	101	101	Peak		VERTICAL	

Item 1, 2 are the fundamental frequency at 5300 MHz.

### Channel 64

Freq	Level	Limit		Over Limit	Read Level	Cable Loss			Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m	deg	cm				
1 a	5324.49	104.34				4.45	0.00	33.37	99	112	Average		VERTICAL	
2 p	5325.29	115.64				4.45	0.00	33.37	99	112	Peak		VERTICAL	
3 !	5350.00	52.21	54.00	-1.79	14.31	4.47	0.00	33.43	99	112	Average		VERTICAL	
4 !	5350.96	70.09	74.00	-3.91	32.19	4.47	0.00	33.43	99	112	Peak		VERTICAL	

Item 1, 2 are the fundamental frequency at 5320 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS8 20MHz Ch 100, 140 / Chain 1 + Chain 2 / 2TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 2

**Channel 100**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase	
		Line	dBuV/m			dB	dBuV	dB	dB	dB/n	deg		
MHz	dBuV/m	dBuV/m		dB	dBuV		dB	dB	dB/n		deg	cm	
1	5459.20	57.09	74.00	-16.91	18.91	4.57	0.00	33.61	269	100	Peak	VERTICAL	
2	5460.00	42.95	54.00	-11.05	4.77	4.57	0.00	33.61	269	100	Average	VERTICAL	
3	5469.04	66.83	68.30	-1.47	28.61	4.58	0.00	33.64	269	100	Peak	VERTICAL	
4	p 5494.55	112.89				4.60	0.00	33.67	269	100	Peak	VERTICAL	
5	a 5504.01	102.09				4.61	0.00	33.70	269	100	Average	VERTICAL	

Item 4, 5 are the fundamental frequency at 5500 MHz.

**Channel 140**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase	
		Line	dBuV/m			dB	dBuV	dB	dB	dB/n	deg		
MHz	dBuV/m	dBuV/m		dB	dBuV		dB	dB	dB/n		deg	cm	
1	a 5703.05	101.76				4.70	0.00	34.32	106	105	Average	VERTICAL	
2	p 5703.85	113.25				4.70	0.00	34.32	106	105	Peak	VERTICAL	
3	! 5725.00	67.10	68.30	-1.20	28.02	4.71	0.00	34.37	106	105	Peak	VERTICAL	

Item 1, 2 are the fundamental frequency at 5700 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS0 40MHz Ch 38, 46 / Chain 1 / 1TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 1

### Channel 38

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Cable Loss	Preamp Factor	Antenna Factor				
MHz	dBuV/m	dBuV/m				dB	dB	dB/m	deg	cm		
1 !	5149.36	69.06	74.00	-4.94	31.69	4.30	0.00	33.07	140	110	Peak	VERTICAL
2 !	5150.00	52.46	54.00	-1.54	15.09	4.30	0.00	33.07	140	110	Average	VERTICAL
3 a	5180.71	96.21				4.32	0.00	33.13	140	110	Average	VERTICAL
4 p	5200.26	106.04				4.34	0.00	33.16	140	110	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

### Channel 46

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Cable Loss	Preamp Factor	Antenna Factor				
MHz	dBuV/m	dBuV/m				dB	dB	dB/m	deg	cm		
1 !	5149.36	68.86	74.00	-5.14	31.49	4.30	0.00	33.07	141	109	Peak	VERTICAL
2 !	5150.00	52.47	54.00	-1.53	15.10	4.30	0.00	33.07	141	109	Average	VERTICAL
3 a	5220.39	100.96				4.36	0.00	33.19	141	109	Average	VERTICAL
4 p	5222.63	110.51				4.36	0.00	33.19	141	109	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 54, 62 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Channel 54**

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB dB									
1 a	5279.30	100.31				4.41	0.00	33.31	141	108	Average	VERTICAL
2 p	5280.58	109.36				4.41	0.00	33.31	141	108	Peak	VERTICAL
3 !	5350.00	52.38	54.00	-1.62	14.48	4.47	0.00	33.43	141	108	Average	VERTICAL
4 !	5353.85	68.50	74.00	-5.50	30.60	4.47	0.00	33.43	141	108	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

**Channel 62**

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level dBuV	Cable Loss dB	Preamp Factor dB	Antenna Factor dB/m	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB dB									
1 p	5317.05	104.53				4.45	0.00	33.37	143	112	Peak	VERTICAL
2 a	5319.30	95.41				4.45	0.00	33.37	143	112	Average	VERTICAL
3 !	5350.00	52.49	54.00	-1.51	14.59	4.47	0.00	33.43	143	112	Average	VERTICAL
4	5355.13	67.45	74.00	-6.55	29.55	4.47	0.00	33.43	143	112	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5310 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 102, 110, 134 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Channel 102**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable Loss Factor			Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
					dB	dB	dB/m					
1	5459.68	58.37	74.00	-15.63	20.19	4.57	0.00	33.61	279	123	Peak	VERTICAL
2	5460.00	42.95	54.00	-11.05	4.77	4.57	0.00	33.61	279	123	Average	VERTICAL
3	5470.00	66.80	68.30	-1.50	28.58	4.58	0.00	33.64	279	123	Peak	VERTICAL
4	a	5519.30	95.29			4.62	0.00	33.75	279	123	Average	VERTICAL
5	p	5520.26	105.77			4.62	0.00	33.75	279	123	Peak	VERTICAL

Item 4, 5 are the fundamental frequency at 5510MHz.

**Channel 110**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable Loss Factor			Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase	
					dB	dB	dB/m						
1	5459.36	49.61	54.00	-4.39	11.43	4.57	0.00	33.61	281	112	Average	VERTICAL	
2	5460.00	62.60	74.00	-11.40	24.42	4.57	0.00	33.61	281	112	Peak	VERTICAL	
3	!	5469.36	67.17	68.30	-1.13	28.95	4.58	0.00	33.64	281	112	Peak	VERTICAL
4	a	5559.30	103.43			4.63	0.00	33.86	281	112	Average	VERTICAL	
5	p	5560.26	114.14			4.63	0.00	33.86	281	112	Peak	VERTICAL	

Item 4, 5 are the fundamental frequency at 5550 MHz.

**Channel 134**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable Loss Factor			Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase	
					dB	dB	dB/m						
1	a	5679.30	98.27			4.69	0.00	34.22	280	112	Average	VERTICAL	
2	p	5680.26	108.85			4.69	0.00	34.22	280	112	Peak	VERTICAL	
3	!	5727.24	66.90	68.30	-1.40	27.82	4.71	0.00	34.37	280	112	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

**Note:**

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 38, 46 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Channel 38**

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/n			deg	cm
1	5150.00	66.60	74.00	-7.40	29.23	4.30	0.00	33.07	266	108	Peak	VERTICAL
2 !	5150.00	52.17	54.00	-1.83	14.80	4.30	0.00	33.07	266	108	Average	VERTICAL
3 a	5199.62	95.68				4.34	0.00	33.16	266	108	Average	VERTICAL
4 p	5200.58	105.79				4.34	0.00	33.16	266	108	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

**Channel 46**

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/n			deg	cm
1	5134.94	65.35	74.00	-8.65	28.03	4.28	0.00	33.04	100	102	Peak	VERTICAL
2 !	5150.00	51.27	54.00	-2.73	13.90	4.30	0.00	33.07	100	102	Average	VERTICAL
3 p	5231.60	113.89				4.37	0.00	33.22	100	102	Peak	VERTICAL
4 a	5239.30	103.20				4.37	0.00	33.22	100	102	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 54, 62 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Channel 54**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable			Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
					Loss	dB	dB/m						
1 a	5278.33	103.22			4.41	0.00	33.31	99	103	Average		VERTICAL	
2 p	5281.86	113.23			4.41	0.00	33.31	99	103	Peak		VERTICAL	
3 !	5350.00	53.42	54.00	-0.58	15.52	4.47	0.00	33.43	99	103	Average		VERTICAL
4 !	5351.60	68.05	74.00	-5.95	30.15	4.47	0.00	33.43	99	103	Peak		VERTICAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

**Channel 62**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable			Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
					Loss	dB	dB/m						
1 a	5305.51	97.73			4.43	0.00	33.34	101	101	Average		VERTICAL	
2 p	5308.72	108.51			4.43	0.00	33.34	101	101	Peak		VERTICAL	
3 !	5350.00	67.26	74.00	-6.74	29.36	4.47	0.00	33.43	101	101	Peak		VERTICAL
4 !	5350.00	52.97	54.00	-1.03	15.07	4.47	0.00	33.43	101	101	Average		VERTICAL

Item 1, 2 are the fundamental frequency at 5310 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 102, 110, 134 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Channel 102**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable Loss Factor			Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
					dB	dB	dB/m					
1	5459.68	59.91	74.00	-14.09	21.73	4.57	0.00	33.61	274	100	Peak	VERTICAL
2	5460.00	45.26	54.00	-8.74	7.08	4.57	0.00	33.61	274	100	Average	VERTICAL
3	5470.00	67.26	68.30	-1.04	29.04	4.58	0.00	33.64	274	100	Peak	VERTICAL
4	a	5500.06	96.43			4.61	0.00	33.70	274	100	Average	VERTICAL
5	p	5507.12	106.56			4.61	0.00	33.70	274	100	Peak	VERTICAL

Item 4, 5 are the fundamental frequency at 5510MHz.

**Channel 110**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable Loss Factor			Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase	
					dB	dB	dB/m						
1	5454.87	66.76	74.00	-7.24	28.58	4.57	0.00	33.61	105	107	Peak	VERTICAL	
2	!	5460.00	50.91	54.00	-3.09	12.73	4.57	0.00	33.61	105	107	Average	VERTICAL
3	!	5470.00	67.73	68.30	-0.57	29.51	4.58	0.00	33.64	105	107	Peak	VERTICAL
4	p	5554.81	115.20			4.63	0.00	33.86	105	107	Peak	VERTICAL	
5	a	5558.33	103.81			4.63	0.00	33.86	105	107	Average	VERTICAL	

Item 4, 5 are the fundamental frequency at 5550 MHz.

**Channel 134**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable Loss Factor			Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase	
					dB	dB	dB/m						
1	a	5661.67	100.53			4.68	0.00	34.17	103	105	Average	VERTICAL	
2	p	5662.31	111.46			4.68	0.00	34.17	103	105	Peak	VERTICAL	
3	!	5725.00	67.57	68.30	-0.73	28.49	4.71	0.00	34.37	103	105	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

**Note:**

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS8 40MHz Ch 38, 46 / Chain 1 + Chain 2 / 2TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 1

### Channel 38

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB dB									
1	5148.72	66.64	74.00	-7.36	29.27	4.30	0.00	33.07	344	111	Peak	VERTICAL
2 !	5150.00	52.63	54.00	-1.37	15.26	4.30	0.00	33.07	344	111	Average	VERTICAL
3 a	5180.71	97.29				4.32	0.00	33.13	344	111	Average	VERTICAL
4 p	5181.99	107.60				4.32	0.00	33.13	344	111	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

### Channel 46

Freq MHz	Level dBuV/m	Limit		Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos deg	A/Pos cm	Remark	Pol/Phase
		Line dBuV/m	dB dB									
1	5145.19	65.92	74.00	-8.08	28.55	4.30	0.00	33.07	12	110	Peak	VERTICAL
2 !	5150.00	52.05	54.00	-1.95	14.68	4.30	0.00	33.07	12	110	Average	VERTICAL
3 a	5220.71	102.69				4.36	0.00	33.19	12	110	Average	VERTICAL
4 p	5239.30	113.53				4.37	0.00	33.22	12	110	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 54, 62 / Chain 1 + Chain 2 / 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Channel 54**

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m			deg	cm
1 p	5262.63	113.75				4.40	0.00	33.28	76	127	Peak	VERTICAL
2 a	5279.30	102.83				4.41	0.00	33.31	76	127	Average	VERTICAL
3 !	5350.00	53.37	54.00	-0.63	15.47	4.47	0.00	33.43	76	127	Average	VERTICAL
4 !	5353.21	68.36	74.00	-5.64	30.46	4.47	0.00	33.43	76	127	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

**Channel 62**

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m			deg	cm
1 p	5317.37	108.02				4.45	0.00	33.37	163	117	Peak	VERTICAL
2 a	5319.30	97.08				4.45	0.00	33.37	163	117	Average	VERTICAL
3 !	5350.00	52.78	54.00	-1.22	14.88	4.47	0.00	33.43	163	117	Average	VERTICAL
4	5353.85	67.75	74.00	-6.25	29.85	4.47	0.00	33.43	163	117	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS8 40MHz Ch 102, 110, 134 / Chain 1 + Chain 2 / 2TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 1

**Channel 102**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m										
1	5459.68	60.30	74.00	-13.70	22.12	4.57	0.00	33.61	39	114	Peak	VERTICAL
2	5460.00	45.80	54.00	-8.20	7.62	4.57	0.00	33.61	39	114	Average	VERTICAL
3 !	5469.36	67.23	68.30	-1.07	29.01	4.58	0.00	33.64	39	114	Peak	VERTICAL
4 p	5499.10	108.97				4.61	0.00	33.70	39	114	Peak	VERTICAL
5 a	5500.71	97.64				4.61	0.00	33.70	39	114	Average	VERTICAL

Item 4, 5 are the fundamental frequency at 5510MHz.

**Channel 110**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m										
1	5452.31	64.29	74.00	-9.71	26.11	4.57	0.00	33.61	278	112	Peak	VERTICAL
2 !	5460.00	50.08	54.00	-3.92	11.90	4.57	0.00	33.61	278	112	Average	VERTICAL
3 !	5469.68	67.16	68.30	-1.14	28.94	4.58	0.00	33.64	278	112	Peak	VERTICAL
4 p	5557.05	115.90				4.63	0.00	33.86	278	112	Peak	VERTICAL
5 a	5559.30	104.96				4.63	0.00	33.86	278	112	Average	VERTICAL

Item 4, 5 are the fundamental frequency at 5550 MHz.

**Channel 134**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m										
1 a	5661.67	99.56				4.68	0.00	34.17	3	100	Average	VERTICAL
2 p	5662.31	111.19				4.68	0.00	34.17	3	100	Peak	VERTICAL
3 !	5725.00	66.73	68.30	-1.57	27.65	4.71	0.00	34.37	3	100	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

**Note:**

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 38, 46 / Chain 1 + Chain 2 / 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Channel 38**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable PreampAntenna			T/Pos deg	A/Pos cm	Remark	Pol/Phase
					Loss	Factor	Factor				
1	5150.00	66.60	74.00	-7.40	29.23	4.30	0.00	33.07	266	108 Peak	VERTICAL
2 !	5150.00	52.17	54.00	-1.83	14.80	4.30	0.00	33.07	266	108 Average	VERTICAL
3 a	5199.62	95.68				4.34	0.00	33.16	266	108 Average	VERTICAL
4 p	5200.58	105.79				4.34	0.00	33.16	266	108 Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

**Channel 46**

Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable PreampAntenna			T/Pos deg	A/Pos cm	Remark	Pol/Phase
					Loss	Factor	Factor				
1	5134.94	65.35	74.00	-8.65	28.03	4.28	0.00	33.04	100	102 Peak	VERTICAL
2 !	5150.00	51.27	54.00	-2.73	13.90	4.30	0.00	33.07	100	102 Average	VERTICAL
3 p	5231.60	113.89				4.37	0.00	33.22	100	102 Peak	VERTICAL
4 a	5239.30	103.20				4.37	0.00	33.22	100	102 Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 54, 62 / Chain 1 + Chain 2 / 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Channel 54**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1 a	5278.33	103.22				4.41	0.00	33.31	99	103	Average	VERTICAL
2 p	5281.86	113.23				4.41	0.00	33.31	99	103	Peak	VERTICAL
3 !	5350.00	53.42	54.00	-0.58	15.52	4.47	0.00	33.43	99	103	Average	VERTICAL
4 !	5351.60	68.05	74.00	-5.95	30.15	4.47	0.00	33.43	99	103	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

**Channel 62**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB	dB/m	deg	cm	
1 a	5305.51	97.73				4.43	0.00	33.34	101	101	Average	VERTICAL
2 p	5308.72	108.51				4.43	0.00	33.34	101	101	Peak	VERTICAL
3	5350.00	67.26	74.00	-6.74	29.36	4.47	0.00	33.43	101	101	Peak	VERTICAL
4 !	5350.00	52.97	54.00	-1.03	15.07	4.47	0.00	33.43	101	101	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11n MCS8 40MHz Ch 102, 110, 134 / Chain 1 + Chain 2 / 2TX
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 2

### Channel 102

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m										
1	5459.68	59.91	74.00	-14.09	21.73	4.57	0.00	33.61	274	100	Peak	VERTICAL
2	5460.00	45.26	54.00	-8.74	7.08	4.57	0.00	33.61	274	100	Average	VERTICAL
3 !	5470.00	67.26	68.30	-1.04	29.04	4.58	0.00	33.64	274	100	Peak	VERTICAL
4 a	5500.06	96.43				4.61	0.00	33.70	274	100	Average	VERTICAL
5 p	5507.12	106.56				4.61	0.00	33.70	274	100	Peak	VERTICAL

Item 4, 5 are the fundamental frequency at 5510MHz.

### Channel 110

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m										
1	5454.87	66.76	74.00	-7.24	28.58	4.57	0.00	33.61	105	107	Peak	VERTICAL
2 !	5460.00	50.91	54.00	-3.09	12.73	4.57	0.00	33.61	105	107	Average	VERTICAL
3 !	5470.00	67.73	68.30	-0.57	29.51	4.58	0.00	33.64	105	107	Peak	VERTICAL
4 p	5554.81	115.20				4.63	0.00	33.86	105	107	Peak	VERTICAL
5 a	5558.33	103.81				4.63	0.00	33.86	105	107	Average	VERTICAL

Item 4, 5 are the fundamental frequency at 5550 MHz.

### Channel 134

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m										
1 a	5661.67	100.53				4.68	0.00	34.17	103	105	Average	VERTICAL
2 p	5662.31	111.46				4.68	0.00	34.17	103	105	Peak	VERTICAL
3 !	5725.00	67.57	68.30	-0.73	28.49	4.71	0.00	34.37	103	105	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

### Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 36, 40 ,48/ Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Channel 36**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
1 !	5150.00	68.15	74.00	-5.85	30.78	4.30	0.00	33.07	162	112	Peak	VERTICAL
2 !	5150.00	52.31	54.00	-1.69	14.94	4.30	0.00	33.07	162	112	Average	VERTICAL
3 p	5182.72	113.24				4.32	0.00	33.13	162	112	Peak	VERTICAL
4 a	5184.33	103.66				4.32	0.00	33.13	162	112	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

**Channel 40**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
1	5150.00	63.26	74.00	-10.74	25.89	4.30	0.00	33.07	162	112	Peak	VERTICAL
2	5150.00	46.22	54.00	-7.78	8.85	4.30	0.00	33.07	162	112	Average	VERTICAL
3 a	5195.19	105.92				4.34	0.00	33.16	162	112	Average	VERTICAL
4 p	5196.15	115.26				4.34	0.00	33.16	162	112	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

**Channel 48**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	deg	cm		
1	5002.02	55.57	74.00	-18.43	18.61	4.16	0.00	32.80	159	110	Peak	VERTICAL
2	5004.17	44.30	54.00	-9.70	7.30	4.17	0.00	32.83	159	110	Average	VERTICAL
3 p	5243.21	115.70				4.39	0.00	33.25	159	110	Peak	VERTICAL
4 a	5243.21	106.08				4.39	0.00	33.25	159	110	Average	VERTICAL
5	5394.07	41.86	54.00	-12.14	3.86	4.51	0.00	33.49	159	110	Average	VERTICAL
6	5406.89	54.74	74.00	-19.26	16.70	4.52	0.00	33.52	159	110	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 52,60, 64 / Chanin 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

**Channel 52**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1	5014.81	44.62	54.00	-9.38	7.62	4.17	0.00	32.83	139	100	Average	VERTICAL
2	5015.39	55.60	74.00	-18.40	18.60	4.17	0.00	32.83	139	100	Peak	VERTICAL
3 p	5253.59	114.00				4.39	0.00	33.25	139	100	Peak	VERTICAL
4 a	5255.19	104.68				4.39	0.00	33.25	139	100	Average	VERTICAL
5	5413.30	41.69	54.00	-12.31	3.61	4.53	0.00	33.55	139	100	Average	VERTICAL
6	5420.51	53.29	74.00	-20.71	15.21	4.53	0.00	33.55	139	100	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

**Channel 60**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1 p	5303.53	114.76				4.43	0.00	33.34	159	109	Peak	VERTICAL
2 a	5305.13	105.07				4.43	0.00	33.34	159	109	Average	VERTICAL
3	5350.00	46.54	54.00	-7.46	8.64	4.47	0.00	33.43	159	109	Average	VERTICAL
4	5351.60	60.75	74.00	-13.25	22.85	4.47	0.00	33.43	159	109	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

**Channel 64**

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV	dB	dB	dB/m	deg	
1 p	5322.56	111.91				4.45	0.00	33.37	142	110	Peak	VERTICAL
2 a	5324.01	102.44				4.45	0.00	33.37	142	110	Average	VERTICAL
3 !	5350.00	52.98	54.00	-1.02	15.08	4.47	0.00	33.43	142	110	Average	VERTICAL
4 !	5352.40	70.56	74.00	-3.44	32.66	4.47	0.00	33.43	142	110	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11a Ch 100, 140 / Chain 1
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 1

### Channel 100

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
MHz	dBuV/m	dBuV/m	dB									
1	5460.00	58.27	74.00	-15.73	20.09	4.57	0.00	33.61	130	124	Peak	VERTICAL
2	5460.00	43.70	54.00	-10.30	5.52	4.57	0.00	33.61	130	124	Average	VERTICAL
3 !	5470.00	67.24	68.30	-1.06	29.02	4.58	0.00	33.64	130	124	Peak	VERTICAL
4 a	5502.08	103.02				4.61	0.00	33.70	130	124	Average	VERTICAL
5 p	5502.72	112.53				4.61	0.00	33.70	130	124	Peak	VERTICAL

Item 4, 5 are the fundamental frequency at 5500 MHz.

### Channel 140

Freq	Level	Limit		Over Limit	Read Level	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	deg	cm		
MHz	dBuV/m	dBuV/m	dB									
1 p	5693.59	109.98				4.69	0.00	34.27	254	111	Peak	VERTICAL
2 *	5695.35	100.64				4.69	0.00	34.27	254	111	Peak	VERTICAL
3 !	5725.00	66.50	68.30	-1.80	27.42	4.71	0.00	34.37	254	111	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

### Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level



Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a Ch 36, 40 ,48/ Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

**Channel 36**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 l	5150.00	70.37	74.00	-3.63	33.00	4.30	0.00	33.07	249	101 Peak	VERTICAL
2 l	5150.00	52.48	54.00	-1.52	15.11	4.30	0.00	33.07	249	101 Average	VERTICAL
3 p	5182.56	110.59				4.32	0.00	33.13	249	101 Peak	VERTICAL
4 a	5184.33	101.08				4.32	0.00	33.13	249	101 Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

**Channel 40**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	5150.00	59.37	74.00	-14.63	22.00	4.30	0.00	33.07	249	100 Peak	VERTICAL
2	5150.00	43.31	54.00	-10.69	5.94	4.30	0.00	33.07	249	100 Average	VERTICAL
3 a	5203.21	103.05				4.34	0.00	33.16	249	100 Average	VERTICAL
4 p	5204.81	112.62				4.34	0.00	33.16	249	100 Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

**Channel 48**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	5002.56	52.74	74.00	-21.26	15.78	4.16	0.00	32.80	223	111 Peak	HORIZONTAL
2	5002.56	42.36	54.00	-11.64	5.40	4.16	0.00	32.80	223	111 Average	HORIZONTAL
3 p	5235.19	112.19				4.37	0.00	33.22	223	111 Peak	HORIZONTAL
4 a	5235.19	102.99				4.37	0.00	33.22	223	111 Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5240 MHz

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11a Ch 52,60, 64 / Chanin 1
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 2

### Channel 52

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor				
MHz	dBuV/m	dBuV/m				dB	dB	dB/m	deg	cm		
1 p	5263.21	112.70				4.40	0.00	33.28	224	112	Peak	HORIZONTAL
2 a	5263.21	103.04				4.40	0.00	33.28	224	112	Average	HORIZONTAL
3	5350.32	50.96	74.00	-23.04	13.06	4.47	0.00	33.43	224	112	Peak	HORIZONTAL
4	5350.64	40.31	54.00	-13.69	2.41	4.47	0.00	33.43	224	112	Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5260 MHz.

### Channel 60

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor				
MHz	dBuV/m	dBuV/m				dB	dB	dB/m	deg	cm		
1 p	5303.85	114.81				4.43	0.00	33.34	101	102	Peak	VERTICAL
2 a	5305.13	105.26				4.43	0.00	33.34	101	102	Average	VERTICAL
3	5350.00	56.76	74.00	-17.24	18.86	4.47	0.00	33.43	101	102	Peak	VERTICAL
4	5350.00	45.04	54.00	-8.96	7.14	4.47	0.00	33.43	101	102	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

### Channel 64

Freq	Level	Limit		Over Limit	Read Level	Cable PreampAntenna			T/Pos	A/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor				
MHz	dBuV/m	dBuV/m				dB	dB	dB/m	deg	cm		
1 p	5315.99	111.82				4.45	0.00	33.37	100	113	Peak	VERTICAL
2 a	5317.28	102.28				4.45	0.00	33.37	100	113	Average	VERTICAL
3 !	5350.00	53.06	54.00	-0.94	15.16	4.47	0.00	33.43	100	113	Average	VERTICAL
4 !	5352.89	69.06	74.00	-4.94	31.16	4.47	0.00	33.43	100	113	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

<b>Temperature</b>	23°C	<b>Humidity</b>	65%
<b>Test Engineer</b>	Rion Li	<b>Configurations</b>	IEEE 802.11a Ch 100, 140 / Chain 1
<b>Test Date</b>	Dec. 08, 2011	<b>Test Mode</b>	Mode 2

**Channel 100**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	5460.00	57.88	74.00	-16.12	19.70	4.57	0.00	33.61	96	100 Peak	VERTICAL
2	5460.00	43.46	54.00	-10.54	5.28	4.57	0.00	33.61	96	100 Average	VERTICAL
3 !	5470.00	66.58	68.30	-1.72	28.36	4.58	0.00	33.64	96	100 Peak	VERTICAL
4 a	5494.87	101.82				4.60	0.00	33.67	96	100 Average	VERTICAL
5 p	5495.99	111.29				4.60	0.00	33.67	96	100 Peak	VERTICAL

Item 4, 5 are the fundamental frequency at 5500 MHz.

**Channel 140**

Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	T/Pos	A/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	deg	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	5695.35	98.94				4.69	0.00	34.27	249	100 Average	VERTICAL
2 p	5695.99	108.34				4.69	0.00	34.27	249	100 Peak	VERTICAL
3 !	5725.00	67.17	68.30	-1.13	28.09	4.71	0.00	34.37	249	100 Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

**Note:**

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

## 4.8. Frequency Stability Measurement

### 4.8.1. Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emissions is maintained within the band of operation under all conditions of normal operation as specified in the user's manual or ±20ppm (IEEE 802.11n specification).

### 4.8.2. Measuring Instruments and Setting

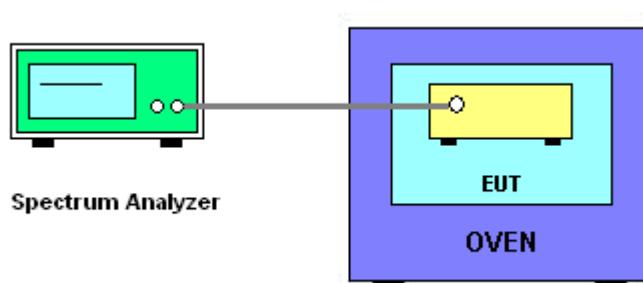
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RB	10 kHz
VB	10 kHz
Sweep Time	Auto

### 4.8.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is  $(fc-f)/fc \times 10^6$  ppm and the limit is less than ±20ppm (IEEE 802.11n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature rule is -30°C~50°C.

### 4.8.4. Test Setup Layout



#### 4.8.5. Test Deviation

There is no deviation with the original standard.

#### 4.8.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

#### 4.8.7. Test Result of Frequency Stability

##### Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)	
(V)	5200	5300
126.50	5199.9920	5299.9950
110.00	5199.9920	5299.9950
93.50	5199.9980	5299.9950
Max. Deviation (MHz)	0.008000	0.005000
Max. Deviation (ppm)	1.54	0.94

##### Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)	
(°C)	5200	5300
-30	5199.9300	5299.9310
-20	5199.9320	5299.9310
-10	5199.9320	5299.9350
0	5199.9400	5299.9450
10	5199.9650	5299.9720
20	5199.9820	5299.9850
30	5199.9980	5299.9950
40	5200.0050	5300.0030
50	5200.0070	5300.0080
Max. Deviation (MHz)	0.070000	0.069000
Max. Deviation (ppm)	13.46	13.0189

## 4.9. Antenna Requirements

### 4.9.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

### 4.9.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

## 5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100377	9kHz ~ 2.75GHz	Sep. 14, 2011	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Oct. 28, 2011	Conduction (CO01-CB)
V- LISN	Schwarzbeck	NSLK 8127	8127-478	9K ~ 30MHz	Nov. 16, 2011	Conduction (CO01-CB)
PULSE LIMITER	R&S	ESH3-Z2	100430	9K~30MHz	Jan. 04, 2011	Conduction (CO01-CB)
COND Cable	-	Cable	-	0.15MHz~30MHz	Dec. 4, 2011	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	Oct. 29, 2011	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 22, 2011	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Nov. 22, 2011	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 17, 2011	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Nov. 23, 2011	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26.5GHz ~ 40GHz	Jul. 29, 2011	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100056	9KHz~40GHz	Nov. 03, 2011	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9KHz ~ 2.75GHz	Mar. 22, 2011	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9 kHz - 30 MHz	Sep. 09, 2010*	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N/A	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N/A	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz - 1 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	N/A	1 GHz – 26.5 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz – 26.5 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV30	101026	9KHz~30GHz	Jul. 27, 2011	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	May 20, 2011	Conducted (TH01-CB)
Thermo-Hygro Meter	N/A	HC 520	#1	15~70 degree	Nov. 02, 2011	Conducted (TH01-CB)
RF Power Divider	HP	11636A	00306	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Power Splitter	Anaren	44100	1839	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)
RF Power Splitter	Anaren	42100	17930	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 17, 2011	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 17, 2011	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 17, 2011	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 17, 2011	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 17, 2011	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-12	-	1 GHz – 26.5 GHz	Nov. 17, 2011	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-13	-	1 GHz – 26.5 GHz	Nov. 17, 2011	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Nov. 01, 2011	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Nov. 01, 2011	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

\*\* Calibration Interval of instruments listed above is two years.

NCR means Non-Calibration required.



## 6. TEST LOCATION

SHIJR	ADD : 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
LINKOU	ADD : No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C TEL : 886-2-2601-1640 FAX : 886-2-2601-1695
DUNGHU	ADD : No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C. TEL : 886-2-2631-4739 FAX : 886-2-2631-9740
JUNGHE	ADD : 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C. TEL : 886-2-8227-2020 FAX : 886-2-8227-2626
NEIHU	ADD : 4Fl., No. 339, Hsin Hu 2 <sup>nd</sup> Rd., Taipei 114, Taiwan, R.O.C. TEL : 886-2-2794-8886 FAX : 886-2-2794-9777
JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

## 7. TAF CERTIFICATE OF ACCREDITATION



Certificate No. : L1190-110702

財團法人全國認證基金會  
Taiwan Accreditation Foundation

### Certificate of Accreditation

This is to certify that

**Sportun International Inc.  
EMC & Wireless Communications Laboratory**  
No.52, Hwa Ya 1st Road, Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,  
Taiwan, R.O.C.

**is accredited in respect of laboratory**

**Accreditation Criteria** : ISO/IEC 17025:2005  
**Accreditation Number** : 1190  
**Originally Accredited** : December 15, 2003  
**Effective Period** : January 10, 2010 to January 09, 2013  
**Accredited Scope** : Testing Field, see described in the Appendix  
**Specific Accreditation Program** : Accreditation Program for Designated Testing Laboratory for Commodities Inspection  
Accreditation Program for Telecommunication Equipment Testing Laboratory  
Accreditation Program for BSMI Mutual Recognition Arrangement with Foreign Authorities



Jay-San Chen  
President, Taiwan Accreditation Foundation  
Date : July 02, 2011

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The Appendix forms an integral part of this Certificate, which shall be invalid when used without the Appendix