SPORTON International Inc.
No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.
Ph: 886-3-656-9065 / FAX: 886-3-656-9085 / www.sporton.com.tw

FCC RADIO TEST REPORT

Applicant's company	**Realtek Semiconductor Corp.**
Applicant Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan
FCC ID	**TX2RTL8192DEB8**
Manufacturer's company	**Realtek Semiconductor Corp.**
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 C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Received Date	Nov. 15, 2011
Final Test Date	Dec. 24, 2011
Submission Type	Original Equipment

Statement

Test result included is only for the IEEE 802.11n, IEEE 802.11b/g part and IEEE 802.11a (5725 ~ 5850MHz) 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 C**.

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

TAF
Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR1N1521AA	Rev. 01	Initial issue of report	Jan. 02, 2012

Certificate No.: CB10012172

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 C § 15.247

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.

Jordan Hsiao

Jordan Hsiao
SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	12.62 dB
4.2	15.247(b)(3)	Peak Output Power	Complies	1.6 dB
4.3	-	Average Output Power	-	-
4.4	15.247(e)	Power Spectral Density	Complies	12.41 dB
4.5	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.6	15.247(d)	Radiated Emissions	Complies	0.53 dB
4.7	15.247(d)	Band Edge Emissions	Complies	0.61 dB
4.8	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Peak Output Power	±0.8dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
6dB Spectrum Bandwidth	$\pm 8.5\times10^{-8}$	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℃	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	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Channel Number	For 2.4GHz Band: 11 for 20MHz bandwidth ; 7 for 40MHz bandwidth For 5GHz Band: 5 for 20MHz bandwidth ; 2 for 40MHz bandwidth
Channel Band Width (99%)	For 2.4GHz Band: 1TX: MCS0 (20MHz): 17.72 MHz ; MCS0 (40MHz): 36.08 MHz 2TX: MCS8 (20MHz): 17.68 MHz ; MCS8 (40MHz): 36.16 MHz For 5GHz Band: 1TX: MCS0 (20MHz): 17.84 MHz ; MCS0 (40MHz): 36.24 MHz 2TX: MCS8 (20MHz): 17.64 MHz ; MCS8 (40MHz): 36.24 MHz
Peak Output Power	For 2.4GHz Band: 1TX: MCS0 (20MHz): 26.39 dBm ; MCS0 (40MHz): 24.73 dBm 2TX: MCS8 (20MHz): 28.40 dBm ; MCS8 (40MHz): 28.40 dBm For 5GHz Band: 1TX: MCS0 (20MHz): 23.46 dBm ; MCS0 (40MHz): 23.78 dBm 2TX: MCS8 (20MHz): 24.92 dBm ; MCS8 (40MHz): 25.76 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

802.11a/b/g

Items	Description
Product Type	802.11b (1TX, 1RX) 802.11g (1TX, 2RX) 802.11a (1TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11a/g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54)
Frequency Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Channel Number	11b/g: 11 ; 11a: 5
Channel Band Width (99%)	11b: 15.32 MHz ; 11g: 16.52 MHz ; 11a: 16.76 MHz
Peak Output Power	11b: 21.63 dBm ; 11g: 26.36 dBm ; 11a: 22.60 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 802.11b	V	X	X	X
IEEE 802.11g	V	X	X	X
IEEE 802.11n	V	V	V	V

IEEE 802.11n spec

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Datarate(Mbps)			
									800nsGI		400nsGI	
					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.

<2.4GHz WALN function without Bluetooth function:>

For IEEE 802.11b mode (1TX,1RX)

The EUT supports the antenna with TX/RX diversity function.

Both Chain 1 and Chain 2 can be used as transmitting/receiving antennas, but only one of them is used as transmitting/receiving 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 802.11g 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 802.11a 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 (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.

<2.4GHz WALN function with Bluetooth function:>

For IEEE 802.11b/g/n Mode: (1TX, 1RX)

Only Chain 1 can be used as transmitting/receiving antenna.

For Bluetooth Mode:

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

<5GHz WALN 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.

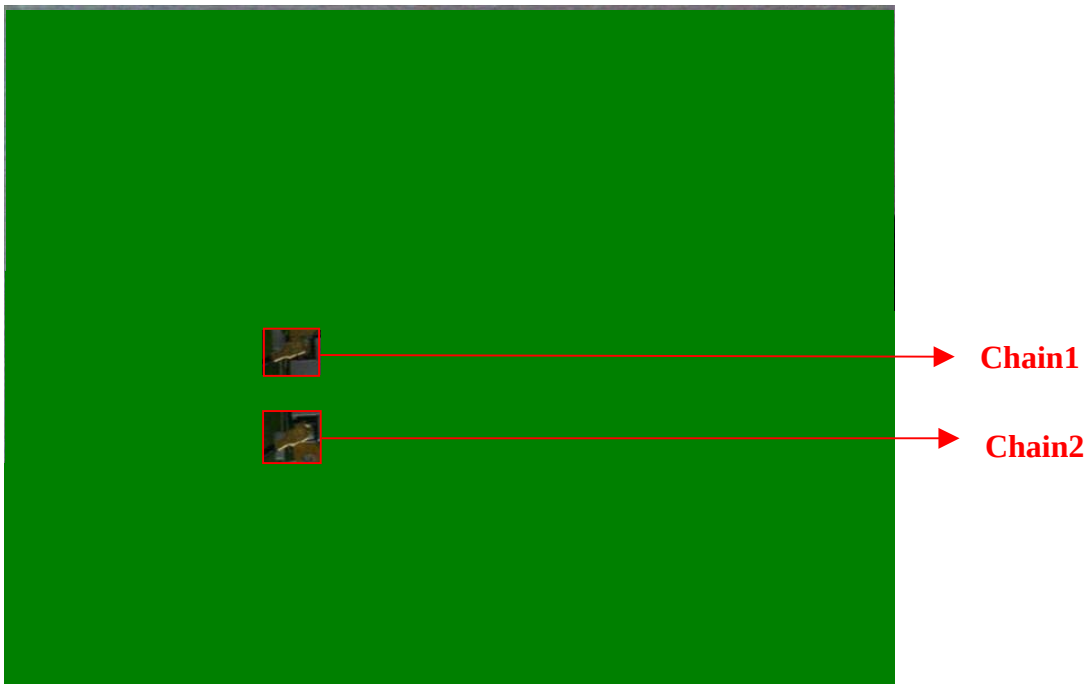
For IEEE 802.11n Mode: (2TX, 2RX)

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.


Chain1
Chain2

3.4. Table for Carrier Frequencies

For 2.4GHz Band:

For IEEE 802.11b/g, use Channel 1~Channel 11.

There are two bandwidth systems for IEEE 802.11n.

For both 20MHz bandwidth systems, use Channel 1~Channel 11.

For both 40MHz bandwidth systems, use Channel 3~Channel 9.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz	-	-

For 5GHz Band:

For IEEE 802.11a, use Channel 149, 153, 157, 161, 165.

There are two bandwidth systems for IEEE 802.11n.

For 20MHz bandwidth systems, use Channel 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 151, 159.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5725~5850 MHz Band 4	149	5745 MHz	159	5795 MHz
	151	5755 MHz	161	5805 MHz
	153	5765 MHz	165	5825 MHz
	157	5785 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.

For 2.4GHz Band

Test Items	Mode		Data Rate	Channel	Chain
AC Power Line Conducted Emissions	Normal Link		Auto	-	-
Peak Output Power Average Output Power Power Spectral Density	1TX	MCS0/20MHz	6.5 Mbps	1/6/11	1
	2TX	MCS8/20MHz	13 Mbps		1/2/1+2
	1TX	MCS0/40MHz	13.5 Mbps	3/6/9	1
	2TX	MCS8/40MHz	27 Mbps		1/2/1+2
	11b/CCK		1 Mbps	1/6/11	1
	11g/BPSK		6 Mbps	1/6/11	1
6dB Spectrum Bandwidth	1TX	MCS0/20MHz	6.5 Mbps	1/6/11	1
	2TX	MCS8/20MHz	13 Mbps		1+2
	1TX	MCS0/40MHz	13.5 Mbps	3/6/9	1
	2TX	MCS8/40MHz	27 Mbps		1+2
	11b/CCK		1 Mbps	1/6/11	1
	11g/BPSK		6 Mbps	1/6/11	1
Radiated Emissions Below 1GHz	Normal Link		Auto	-	-
Radiated Emissions Above 1GHz	1TX	MCS0/20MHz	6.5 Mbps	1/6/11	1
	2TX	MCS8/20MHz	13 Mbps		1+2
	1TX	MCS0/40MHz	13.5 Mbps	3/6/9	1
	2TX	MCS8/40MHz	27 Mbps		1+2
	11b/CCK		1 Mbps	1/6/11	1
	11g/BPSK		6 Mbps	1/6/11	1
Band Edge Emissions	1TX	MCS0/20MHz	6.5 Mbps	1/11	1
	2TX	MCS8/20MHz	13 Mbps		1+2
	1TX	MCS0/40MHz	13.5 Mbps	3/9	1
	2TX	MCS8/40MHz	27 Mbps		1+2
	11b/CCK		1 Mbps	1/11	1
	11g/BPSK		6 Mbps	1/11	1

For 5GHz Band

Test Items	Mode		Data Rate	Channel	Chain
AC Power Line Conducted Emissions	Normal Link		Auto	-	-
Peak Output Power Average Output Power Power Spectral Density	1TX	MCS0/20MHz	6.5 Mbps	149/157/165	1
	2TX	MCS8/20MHz	13 Mbps		1/2/1+2
	1TX	MCS0/40MHz	13.5 Mbps	151/159	1
	2TX	MCS8/40MHz	27 Mbps		1/2/1+2
	11a/BPSK		6 Mbps	149/157/165	1
6dB Spectrum Bandwidth	1TX	MCS0/20MHz	6.5 Mbps	149/157/165	1
	2TX	MCS8/20MHz	13 Mbps		1+2
	1TX	MCS0/40MHz	13.5 Mbps	151/159	1
	2TX	MCS8/40MHz	27 Mbps		1+2
	11a/BPSK		6 Mbps	149/157/165	1
Radiated Emissions Below 1GHz	Normal Link		Auto	-	-
Radiated Emissions Above 1GHz	1TX	MCS0/20MHz	6.5 Mbps	149/157/165	1
	2TX	MCS8/20MHz	13 Mbps		1+2
	1TX	MCS0/40MHz	13.5 Mbps	151/159	1
	2TX	MCS8/40MHz	27 Mbps		1+2
	11a/BPSK		6 Mbps	149/157/165	1
Band Edge Emissions	1TX	MCS0/20MHz	6.5 Mbps	149/157/165	1
	2TX	MCS8/20MHz	13 Mbps		1+2
	1TX	MCS0/40MHz	13.5 Mbps	151/159	1
	2TX	MCS8/40MHz	27 Mbps		1+2
	11a/BPSK		6 Mbps	149/157/165	1

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.

For 2.4GHz Band

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		
Frequency	2412 MHz	2437 MHz	2462 MHz
MCS0 20MHz	52	61	51

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		
Frequency	2422 MHz	2437 MHz	2452 MHz
MCS0 40MHz	48	52	50

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		
Frequency	2412 MHz	2437 MHz	2462 MHz
MCS8 20MHz	52/54	59/61	50/52

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		
Frequency	2422 MHz	2437 MHz	2452 MHz
MCS8 40MHz	49/51	60/62	51/53

Power Parameters of IEEE 802.11b/g

Test Software Version	Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b	48	48	48
IEEE 802.11g	54	60	52

For 5GHz Band

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		
Frequency	5745 MHz	5785 MHz	5825 MHz
MCS0 20MHz	63	63	63

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	
Frequency	5755 MHz	5795 MHz
MCS0 40MHz	54	63

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		
Frequency	5745 MHz	5785 MHz	5825 MHz
MCS8 20MHz	61/63	61/63	61/63

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	
Frequency	5755 MHz	5795 MHz
MCS8 40MHz	61/63	61/63

Power Parameters of IEEE 802.11a

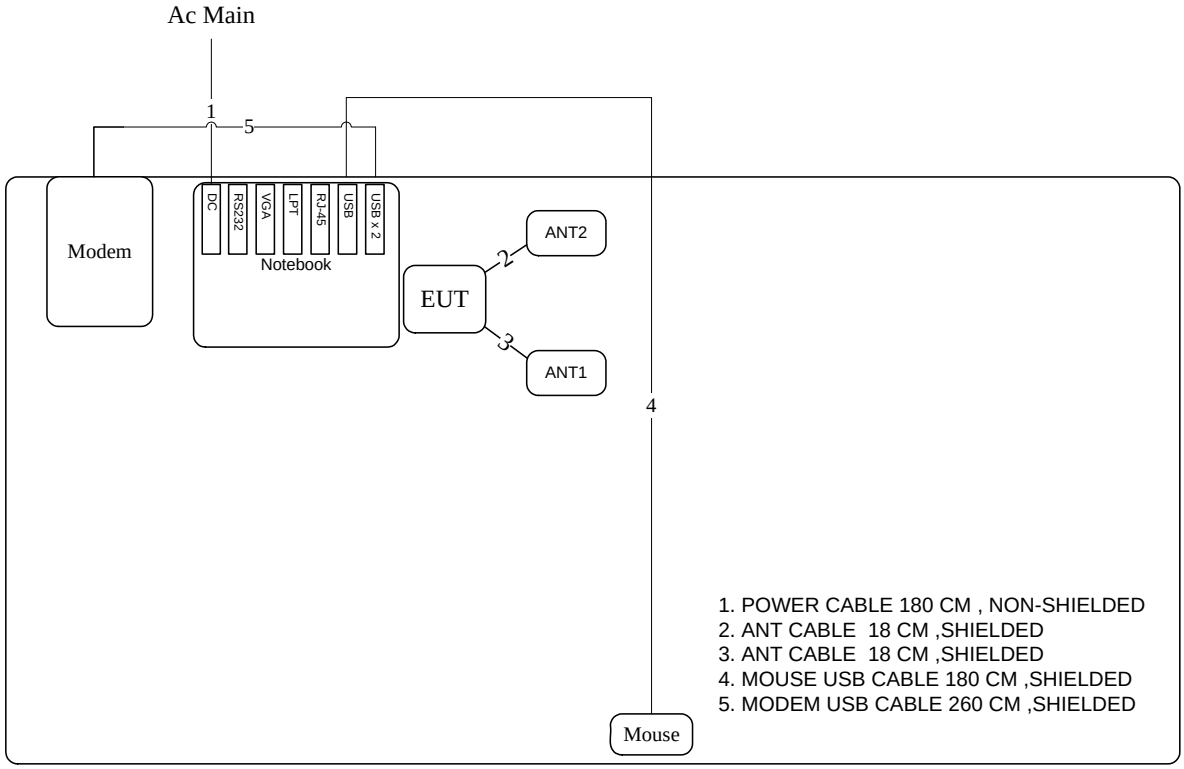
Test Software Version	Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011		
Frequency	5745 MHz	5785 MHz	5825 MHz
IEEE 802.11a	63	63	63

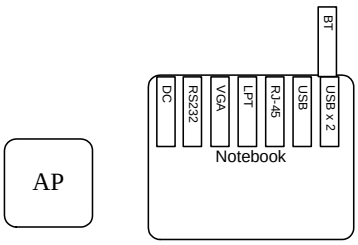
During the test, “Realtek Realtek 11n Dual MAC 92D PCIE WLAN MP Diagnostic Program 0.0013.1108.2011” under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

3.9. Test Configurations

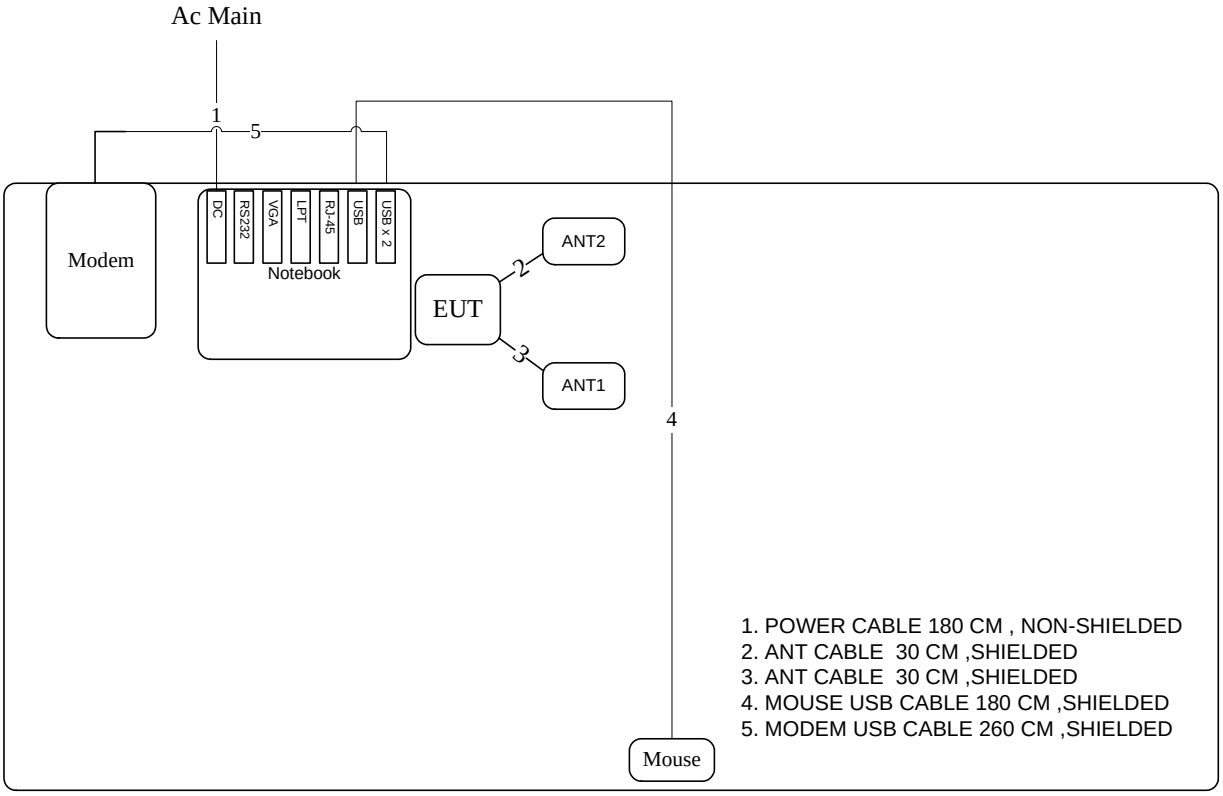
3.9.1. Radiation Emissions Test Configuration

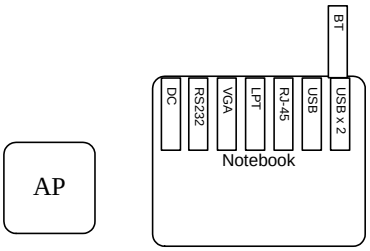
Test Configuration: 30MHz~1GHz / Mode 1



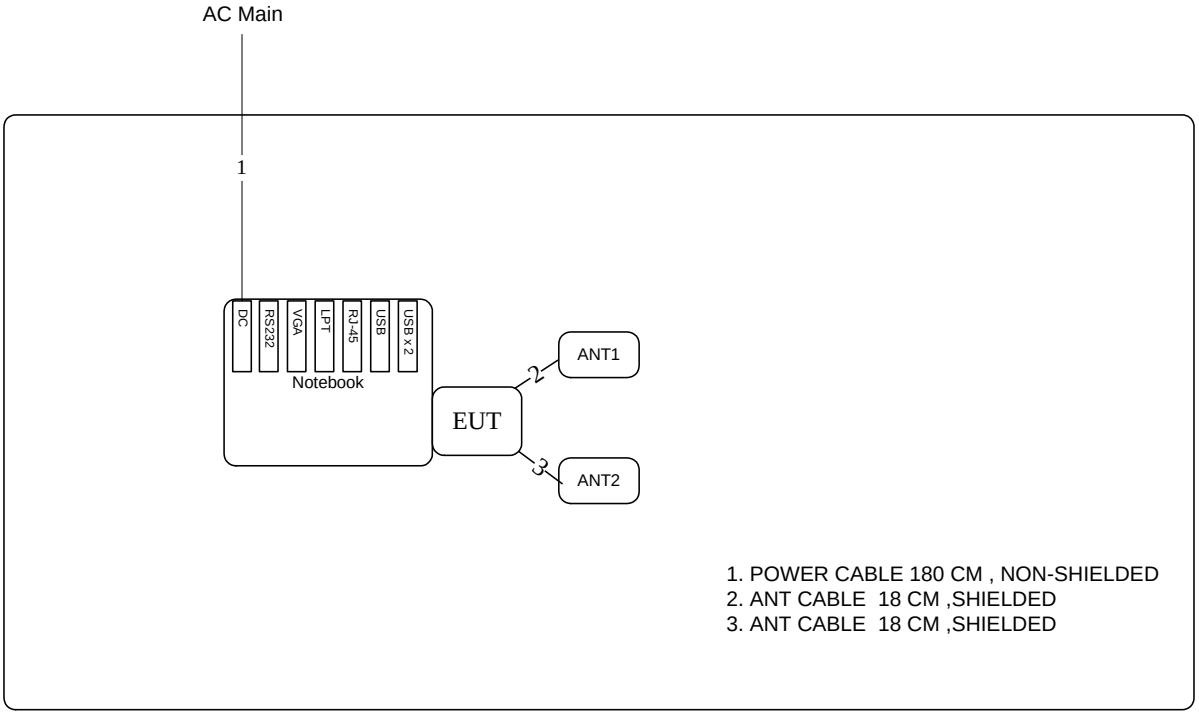


Test Configuration: 30MHz~1GHz / Mode 2

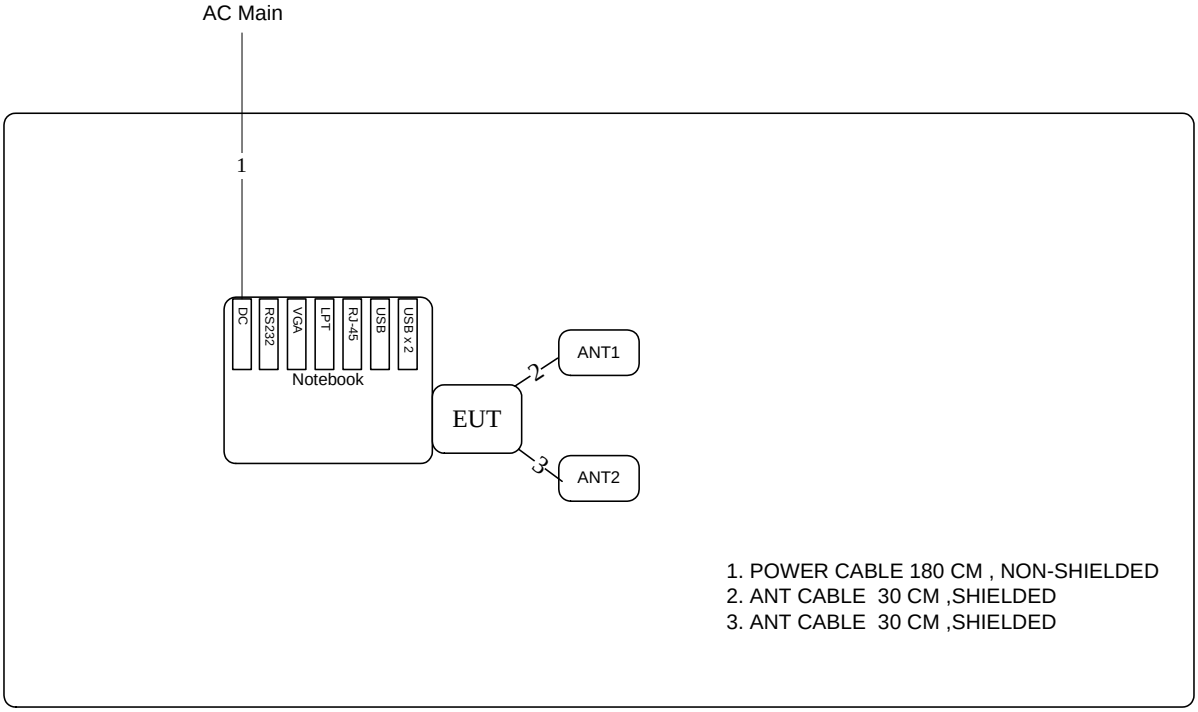




Test Configuration: above 1GHz / Mode 1

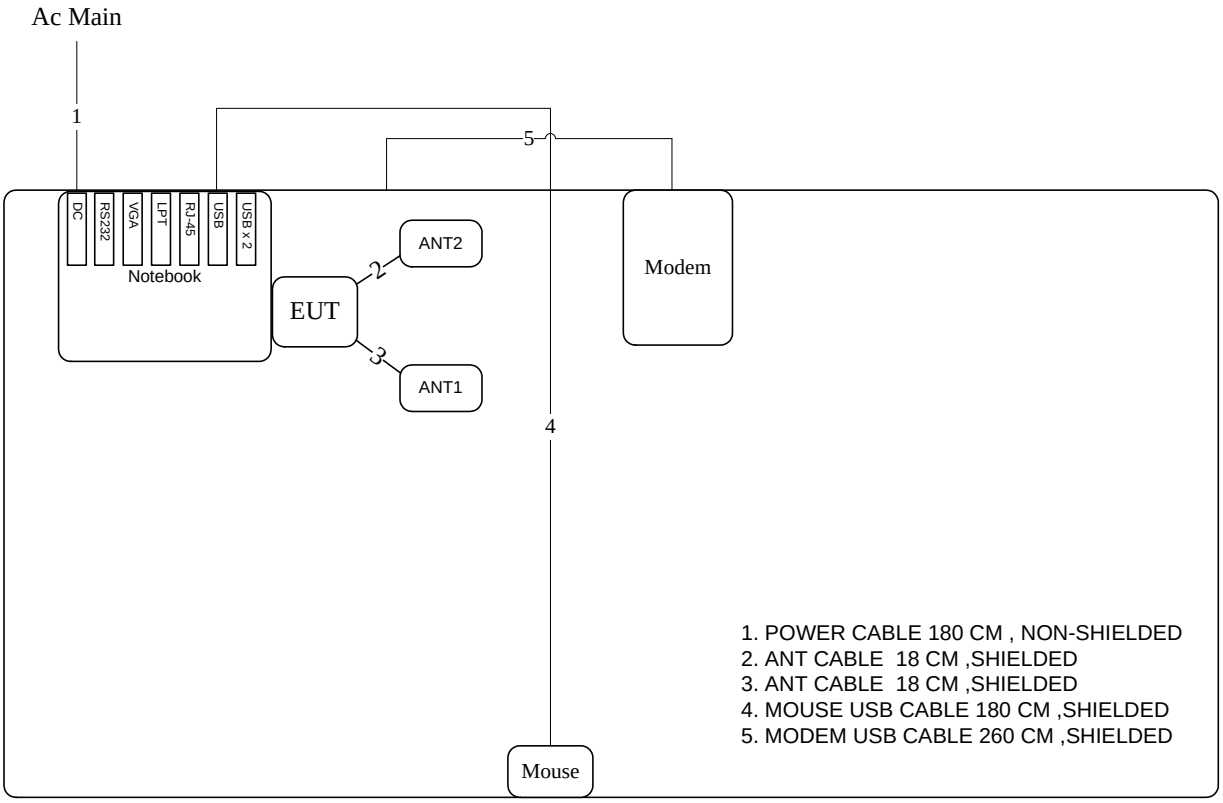


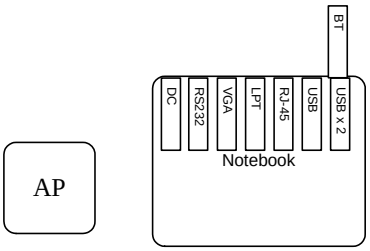
Test Configuration: above 1GHz / Mode 2



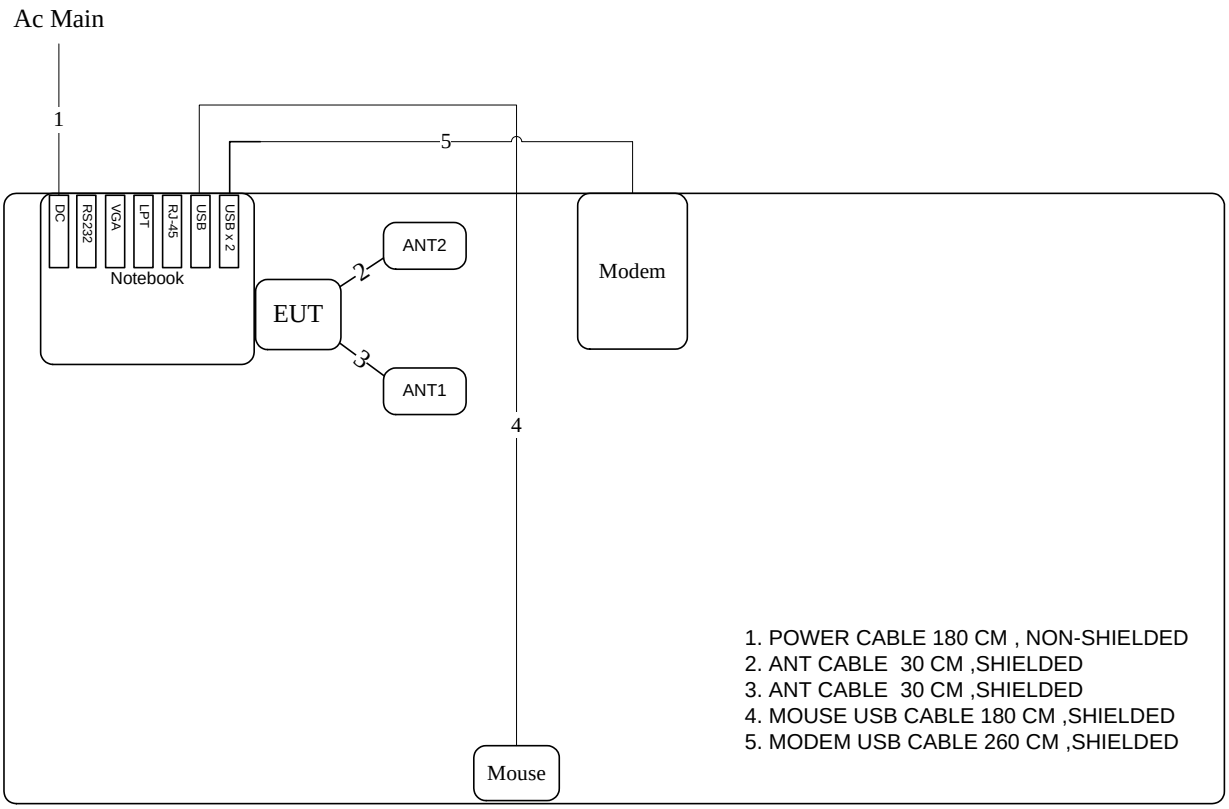
3.9.2. AC Power Line Conduction Emissions Test Configuration

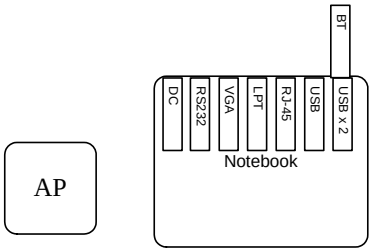
Test Mode : Mode 1





Test Mode : Mode 2





4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product which is designed to be connected 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

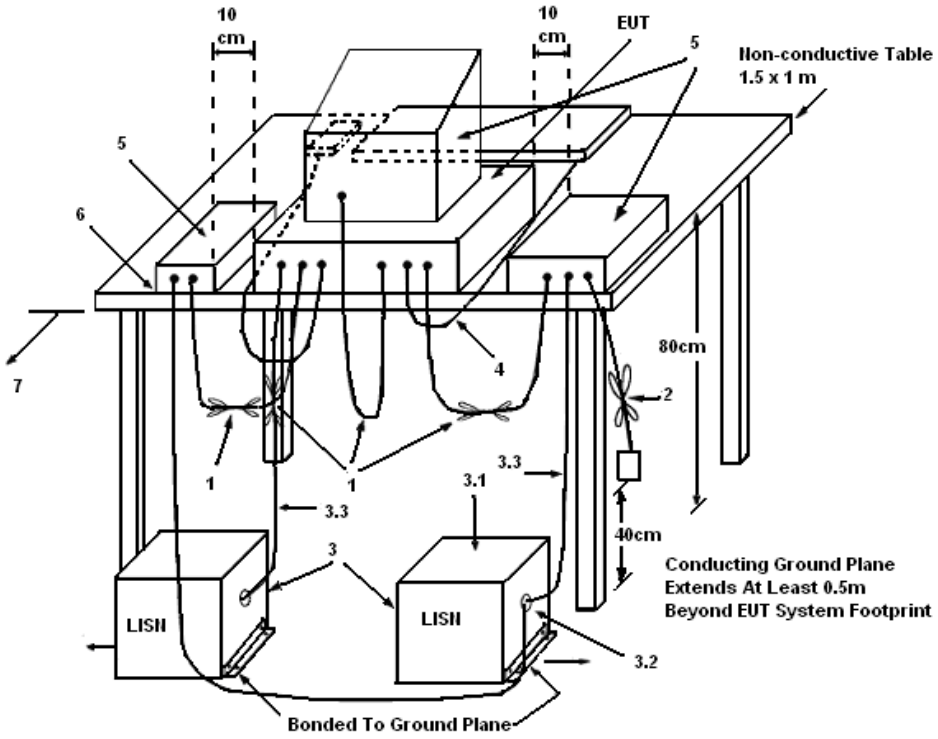
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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 Ω. 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

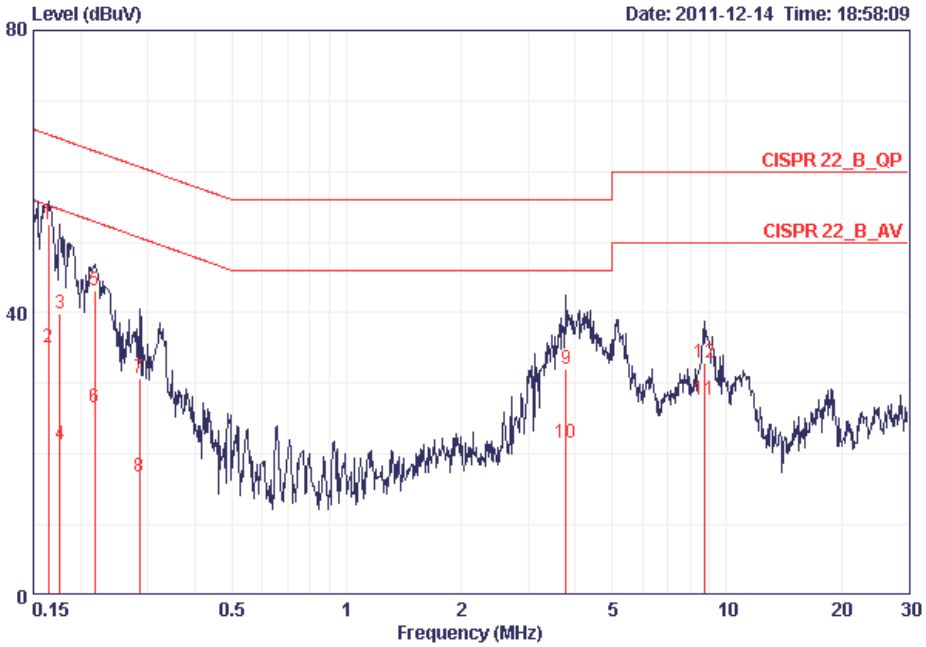
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

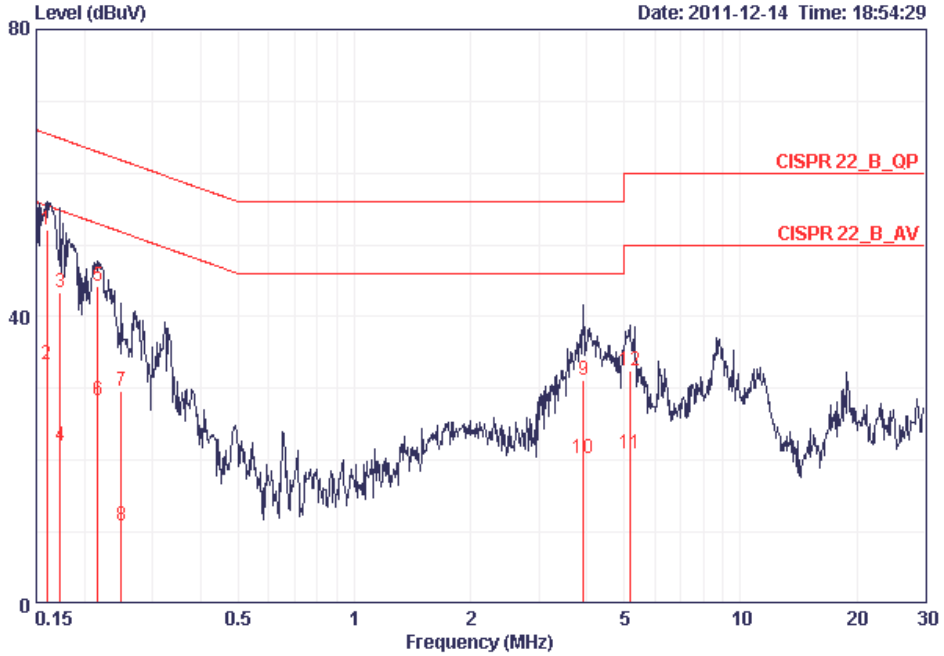
4.1.7. Results of AC Power Line Conducted Emissions Measurement

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



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable 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

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

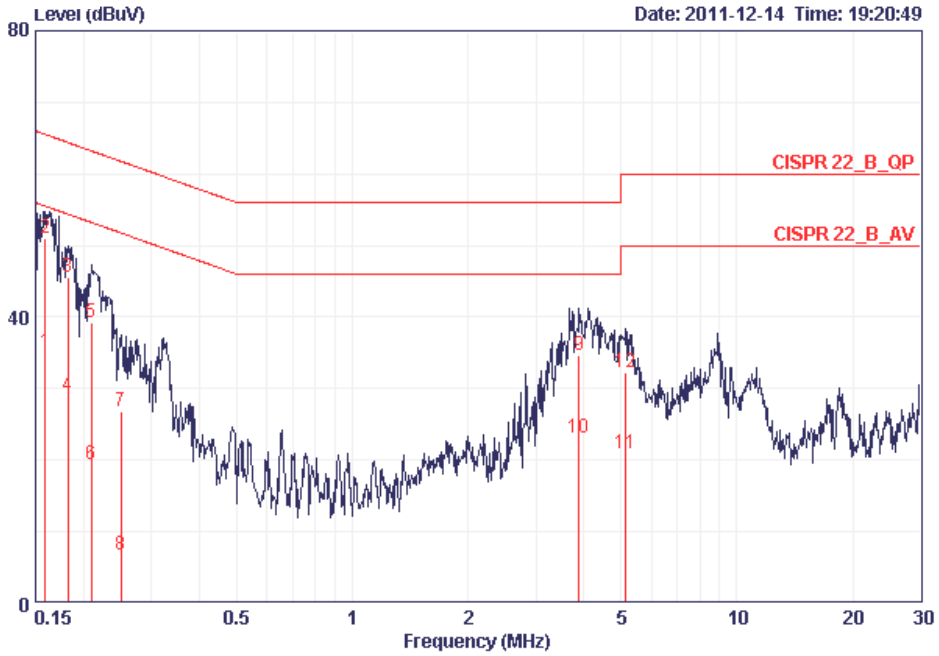


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 @	0.15985	52.04	-13.43	65.47	51.74	0.10	0.20	QP
2	0.15985	33.26	-22.21	55.47	32.96	0.10	0.20	AVERAGE
3	0.17307	43.31	-21.50	64.81	43.02	0.09	0.20	QP
4	0.17307	21.98	-32.83	54.81	21.69	0.09	0.20	AVERAGE
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:

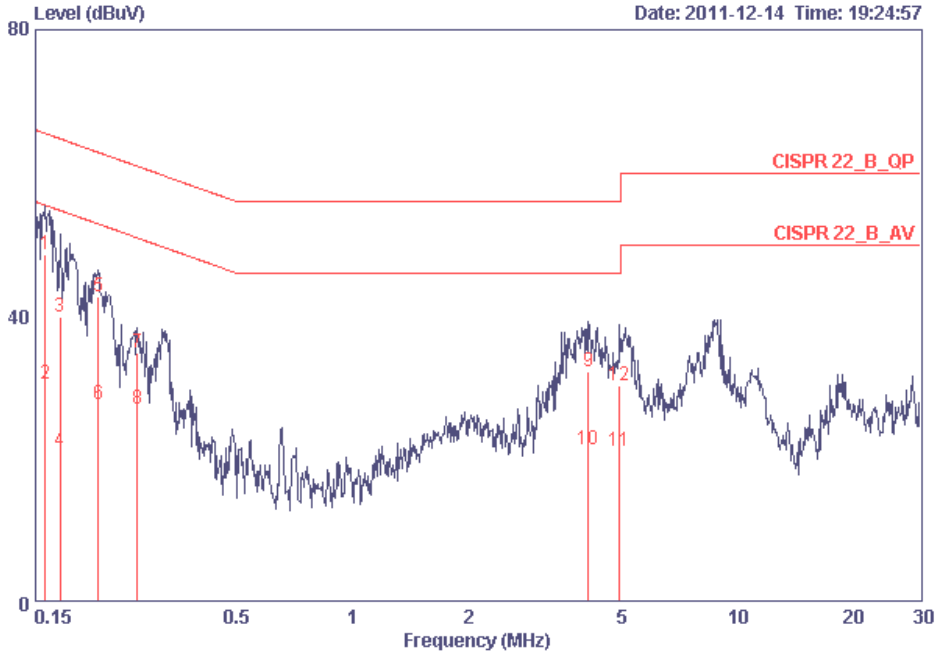
Level = Read Level + LISN Factor + Cable Loss

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



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	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

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



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	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. Peak Output Power Measurement

4.2.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi. Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

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 peak power meter.

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

4.2.3. Test Procedures

Spectrum Parameter	Setting
RF Output Power Method	☒ ANSI C63.10 clause 6.10.2.1 (a) power meter method
RF Output Power Method	☐ ANSI C63.10 clause 6.10.2.1 (b) channel integration method
RF Output Power Method	☐ ANSI C63.10 clause 6.10.3.1 Method 1 - spectral trace averaging
RF Output Power Method	☐ ANSI C63.10 clause 6.10.3.2 Method 2 - zero-span mode with trace averaging

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 Peak Output Power

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n
Test Date	Dec. 10, 2011		

For 2.4GHz Band

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

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	24.66	30.00	Complies
6	2437 MHz	26.39	30.00	Complies
11	2462 MHz	25.31	30.00	Complies

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

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	22.11	30.00	Complies
6	2437 MHz	24.73	30.00	Complies
9	2452 MHz	23.90	30.00	Complies

For 5GHz Band

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

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	23.46	30.00	Complies
157	5785 MHz	23.08	30.00	Complies
165	5825 MHz	22.64	30.00	Complies

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

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	23.50	30.00	Complies
159	5795 MHz	23.78	30.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n
Test Date	Dec. 10, 2011		

For 2.4GHz Band

Configuration IEEE 802.11n MCS8 20MHz / 2TX

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2			
1	2412 MHz	24.32	24.27	27.31	30.00	Complies
6	2437 MHz	25.59	25.18	28.40	30.00	Complies
11	2462 MHz	24.29	24.18	27.25	30.00	Complies

Configuration IEEE 802.11n MCS8 40MHz / 2TX

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2			
3	2422 MHz	22.56	22.02	25.31	30.00	Complies
6	2437 MHz	25.58	25.19	28.40	30.00	Complies
9	2452 MHz	24.06	23.59	26.84	30.00	Complies

For 5GHz Band

Configuration IEEE 802.11n MCS8 20MHz / 2TX

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2			
149	5745 MHz	22.18	21.63	24.92	30.00	Complies
157	5785 MHz	21.45	21.72	24.60	30.00	Complies
165	5825 MHz	21.24	21.12	24.19	30.00	Complies

Configuration IEEE 802.11n MCS8 40MHz / 2TX

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2			
151	5755 MHz	22.84	22.66	25.76	30.00	Complies
159	5795 MHz	22.62	22.23	25.44	30.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a/b/g
Test Date	Dec. 10, 2011		

Configuration IEEE 802.11b / Chain 1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	21.17	30.00	Complies
6	2437 MHz	21.09	30.00	Complies
11	2462 MHz	21.63	30.00	Complies

Configuration IEEE 802.11g / Chain 1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	25.77	30.00	Complies
6	2437 MHz	26.36	30.00	Complies
11	2462 MHz	25.76	30.00	Complies

Configuration IEEE 802.11a / Chain 1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	22.60	30.00	Complies
157	5785 MHz	22.52	30.00	Complies
165	5825 MHz	21.90	30.00	Complies

4.3. Average Output Power Measurement

4.3.1. Measuring Instruments and Setting

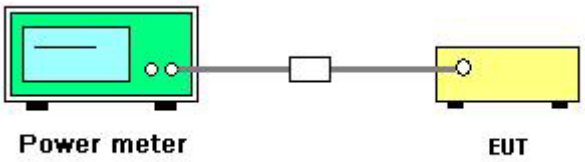
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

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

4.3.2. Test Procedures

Spectrum Parameter	Setting
RF Output Power Method	☒ ANSI C63.10 clause 6.10.2.1 (a) power meter method
RF Output Power Method	☐ ANSI C63.10 clause 6.10.2.1 (b) channel integration method
RF Output Power Method	☐ ANSI C63.10 clause 6.10.3.1 Method 1 - spectral trace averaging
RF Output Power Method	☐ ANSI C63.10 clause 6.10.3.2 Method 2 - zero-span mode with trace averaging

4.3.3. Test Setup Layout



4.3.4. Test Deviation

There is no deviation with the original standard.

4.3.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.6. Test Result of Average Output Power

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n
Test Date	Dec. 10, 2011		

For 2.4GHz Band

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

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	16.36
6	2437 MHz	21.16
11	2462 MHz	16.47

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

Channel	Frequency	Average Conducted Power (dBm)
3	2422 MHz	13.92
6	2437 MHz	16.55
9	2422 MHz	15.21

For 5GHz Band

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

Channel	Frequency	Average Conducted Power (dBm)
149	5745 MHz	20.24
157	5785 MHz	19.62
165	5825 MHz	19.01

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

Channel	Frequency	Average Conducted Power (dBm)
151	5755 MHz	17.70
159	5795 MHz	20.20

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n
Test Date	Dec. 10, 2011		

For 2.4GHz Band

Configuration IEEE 802.11n MCS8 20MHz / 2TX

Channel	Frequency	Average Conducted Power (dBm)		
		Chain 1	Chain 2	Total
1	2412 MHz	15.99	16.15	19.08
6	2437 MHz	20.16	19.83	23.01
11	2462 MHz	16.06	15.99	19.04

Configuration IEEE 802.11n MCS8 40MHz / 2TX

Channel	Frequency	Average Conducted Power (dBm)		
		Chain 1	Chain 2	Total
3	2422 MHz	14.57	14.33	17.46
6	2437 MHz	20.52	20.11	23.33
9	2452 MHz	16.32	16.02	19.18

For 5GHz Band

Configuration IEEE 802.11n MCS8 20MHz / 2TX

Channel	Frequency	Average Conducted Power (dBm)		
		Chain 1	Chain 2	Total
149	5745 MHz	18.25	17.45	20.88
157	5785 MHz	17.12	17.53	20.34
165	5825 MHz	16.53	16.32	19.44

Configuration IEEE 802.11n MCS8 40MHz / 2TX

Channel	Frequency	Average Conducted Power (dBm)		
		Chain 1	Chain 2	Total
151	5755 MHz	18.96	18.18	21.60
159	5795 MHz	17.95	16.52	20.30

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a/b/g
Test Date	Dec. 10, 2011		

Configuration IEEE 802.11b / Chain 1

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	18.95
6	2437 MHz	19.28
11	2462 MHz	19.39

Configuration IEEE 802.11g / Chain 1

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	17.04
6	2437 MHz	20.59
11	2462 MHz	17.09

Configuration IEEE 802.11a / Chain 1

Channel	Frequency	Average Conducted Power (dBm)
149	5745 MHz	18.90
157	5785 MHz	19.02
165	5825 MHz	18.68

4.4. Power Spectral Density Measurement

4.4.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

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	30 kHz
RB	3 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	10s

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set RBW of spectrum analyzer to 3kHz and VBW to 30kHz. Set Detector to Peak, Trace to Max Hold.
3. Mark the frequency with maximum peak power as the center of the display of the spectrum.
4. Set the span to 30kHz and the sweep time to 10s and record the maximum peak value.
5. When measuring power spectral density with multiple antenna systems, add every result of the values by mathematic formula.

4.4.4. Test Setup Layout

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

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n
Test Date	Dec. 10, 2011		

For 2.4GHz Band

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

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	-12.03	8.00	Complies
6	2437 MHz	-7.46	8.00	Complies
11	2462 MHz	-11.69	8.00	Complies

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

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
3	2422 MHz	-14.44	8.00	Complies
6	2437 MHz	-12.47	8.00	Complies
9	2452 MHz	-12.77	8.00	Complies

For 5GHz Band

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

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
149	5745 MHz	-8.32	8.00	Complies
157	5785 MHz	-8.56	8.00	Complies
165	5825 MHz	-9.18	8.00	Complies

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

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
151	5755 MHz	-10.64	8.00	Complies
159	5795 MHz	-8.67	8.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n
Test Date	Dec. 10, 2011		

For 2.4GHz Band

Configuration IEEE 802.11n MCS8 20MHz / 2TX

Channel	Frequency	Power Density (dBm/3kHz)		Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Chain 1	Chain 2			
1	2412 MHz	-11.33	-11.60	-8.45	8.00	Complies
6	2437 MHz	-7.17	-7.68	-4.41	8.00	Complies
11	2462 MHz	-11.27	-11.51	-8.38	8.00	Complies

Configuration IEEE 802.11n MCS8 40MHz / 2TX

Channel	Frequency	Power Density (dBm/3kHz)		Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Chain 1	Chain 2			
3	2422 MHz	-13.76	-16.42	-11.88	8.00	Complies
6	2437 MHz	-8.23	-10.64	-6.26	8.00	Complies
9	2452 MHz	-12.44	-14.87	-10.48	8.00	Complies

For 5GHz Band

Configuration IEEE 802.11n MCS8 20MHz / 2TX

Channel	Frequency	Power Density (dBm/3kHz)		Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Chain 1	Chain 2			
149	5745 MHz	-10.38	-11.58	-7.93	8.00	Complies
157	5785 MHz	-11.86	-12.79	-9.29	8.00	Complies
165	5825 MHz	-12.08	-12.63	-9.34	8.00	Complies

Configuration IEEE 802.11n MCS8 40MHz / 2TX

Channel	Frequency	Power Density (dBm/3kHz)		Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Chain 1	Chain 2			
151	5755 MHz	-11.54	-15.09	-9.95	8.00	Complies
159	5795 MHz	-13.08	-16.59	-11.48	8.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a/b/g
Test Date	Dec. 10, 2011		

Configuration IEEE 802.11b / Chain 1

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	-10.15	8.00	Complies
6	2437 MHz	-10.80	8.00	Complies
11	2462 MHz	-10.55	8.00	Complies

Configuration IEEE 802.11g / Chain 1

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	-11.86	8.00	Complies
6	2437 MHz	-7.70	8.00	Complies
11	2462 MHz	-11.41	8.00	Complies

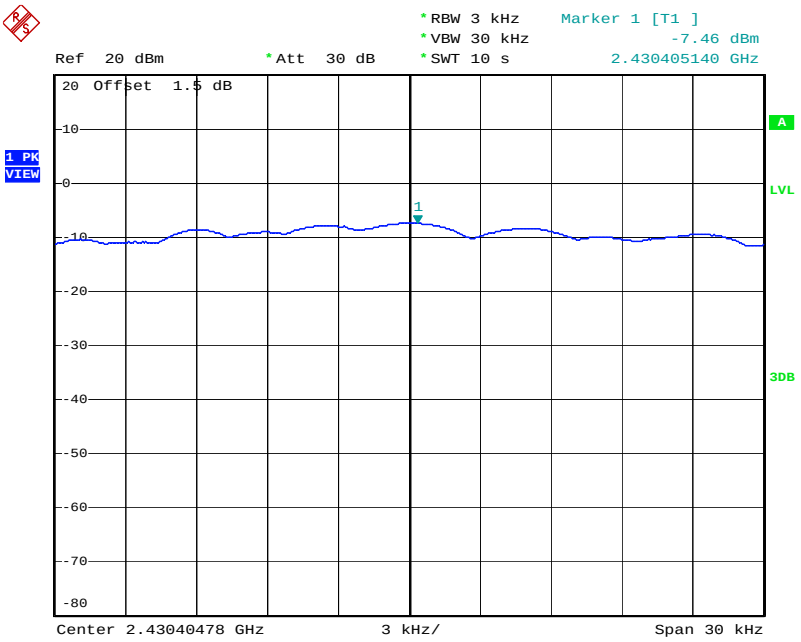
Configuration IEEE 802.11a / Chain 1

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
149	5745 MHz	-10.30	8.00	Complies
157	5785 MHz	-11.23	8.00	Complies
165	5825 MHz	-10.28	8.00	Complies

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

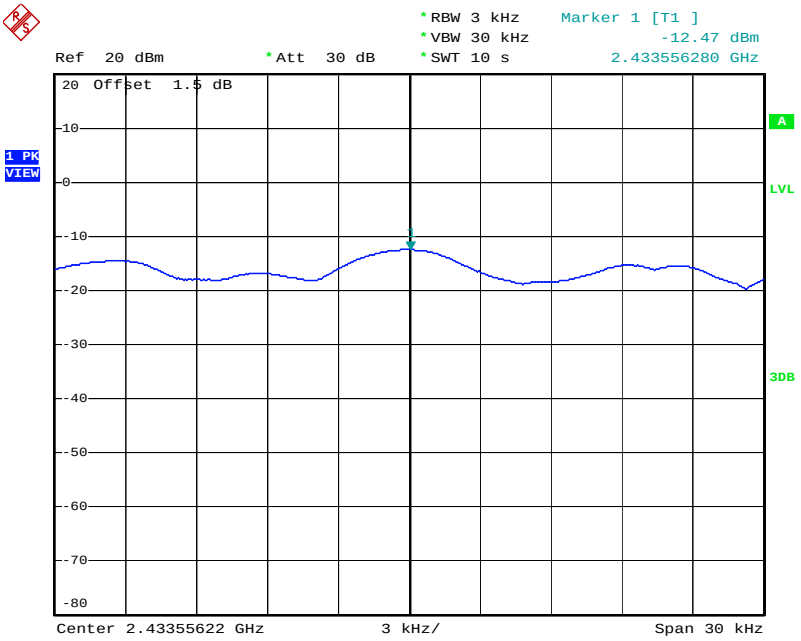
For plots, only the channel with maximum results was shown.

Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 1TX / 2437 MHz



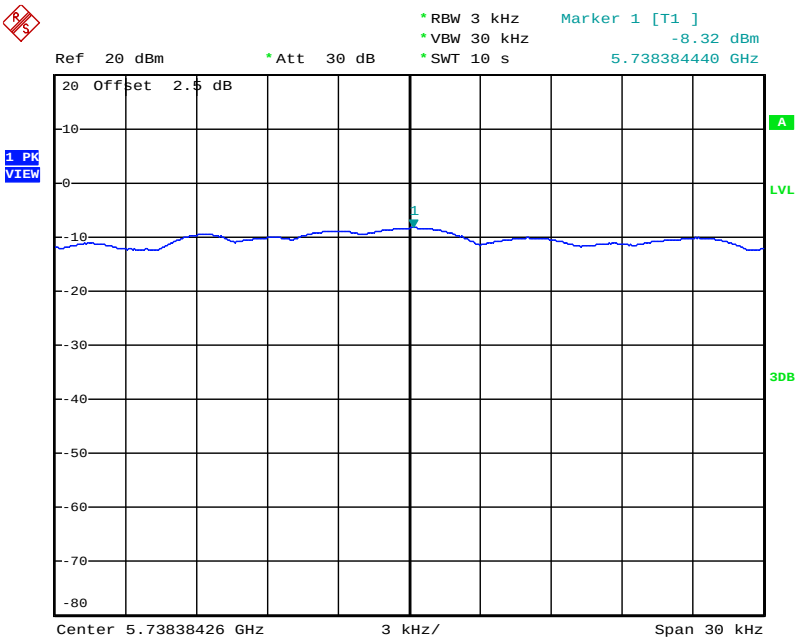
Date: 24.DEC.2011 13:54:36

Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 1TX / 2437 MHz



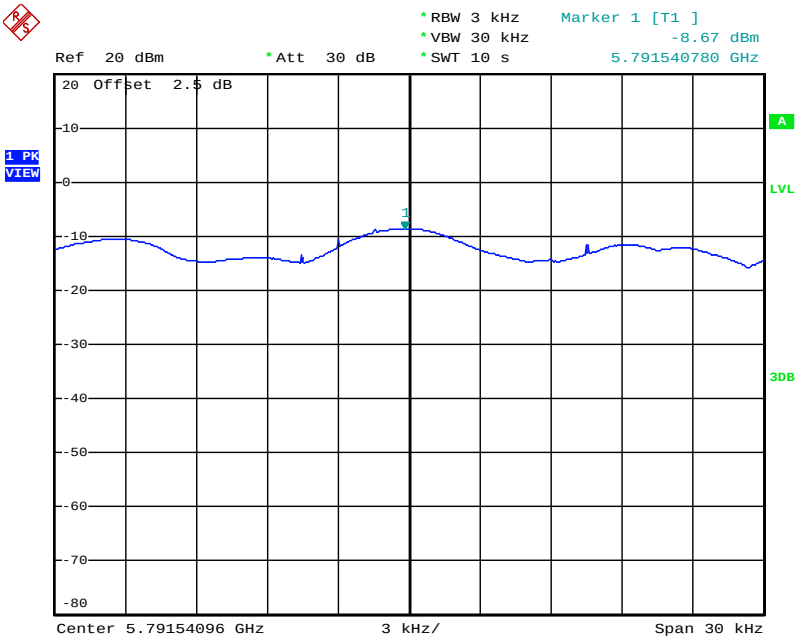
Date: 24.DEC.2011 14:18:12

Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 1TX / 5745 MHz



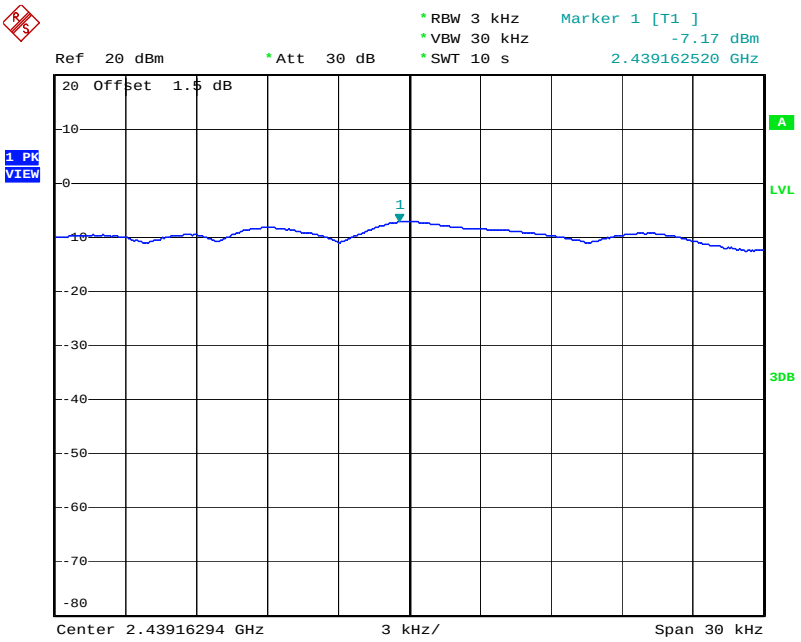
Date: 12.DEC.2011 22:13:53

Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 1TX / 5795 MHz



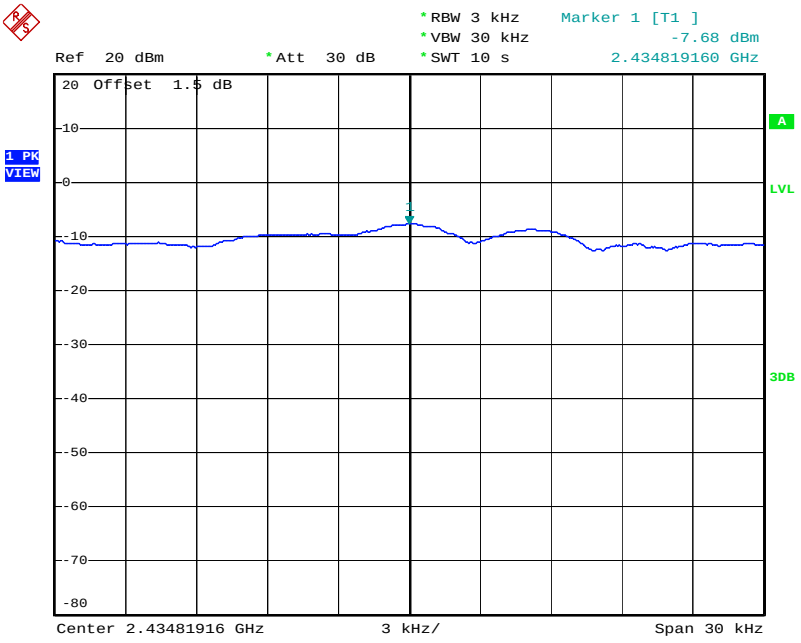
Date: 12.DEC.2011 22:24:56

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 / 2TX / 2437 MHz



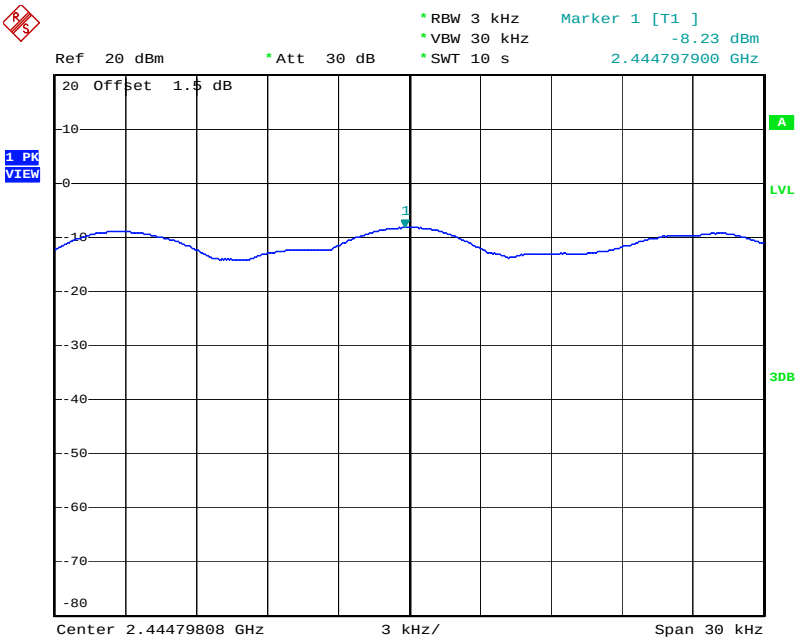
Date: 24.DEC.2011 12:56:25

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 2 / 2TX / 2437 MHz



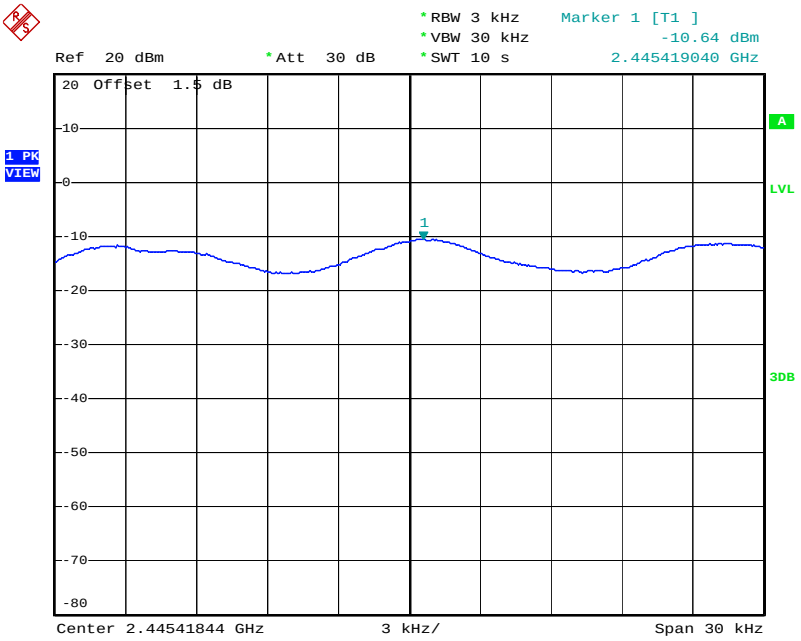
Date: 24.DEC.2011 12:53:51

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 / 2TX / 2437 MHz



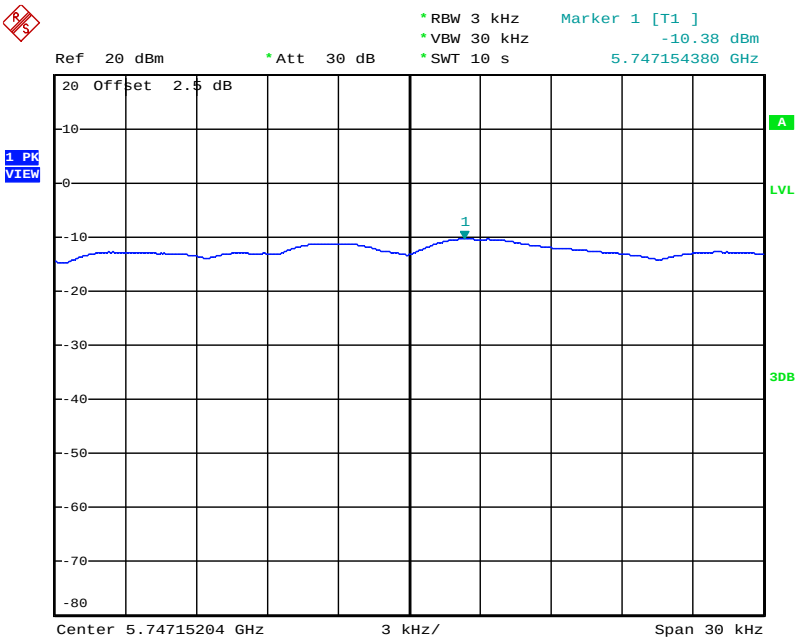
Date: 24.DEC.2011 13:13:48

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz /Chain 2 / 2TX / 2437 MHz



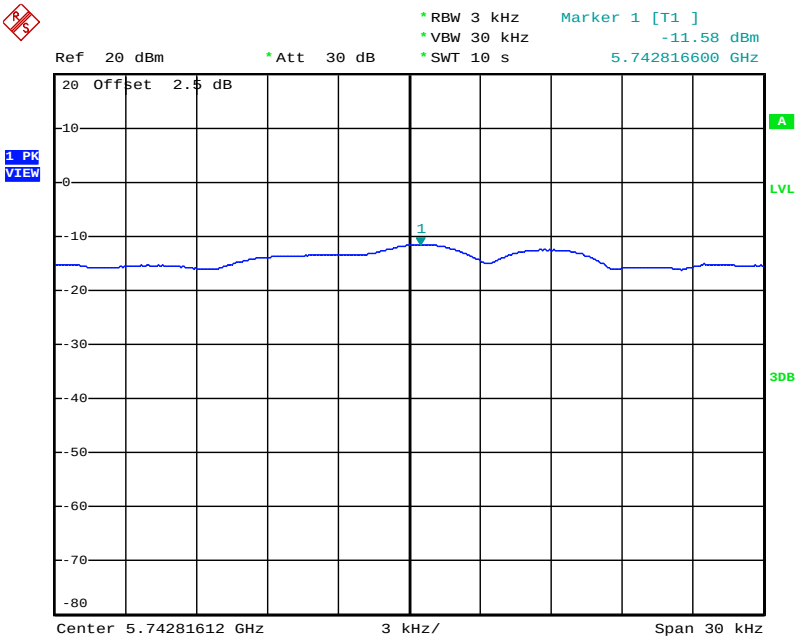
Date: 24.DEC.2011 13:11:59

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 / 2TX / 5745 MHz



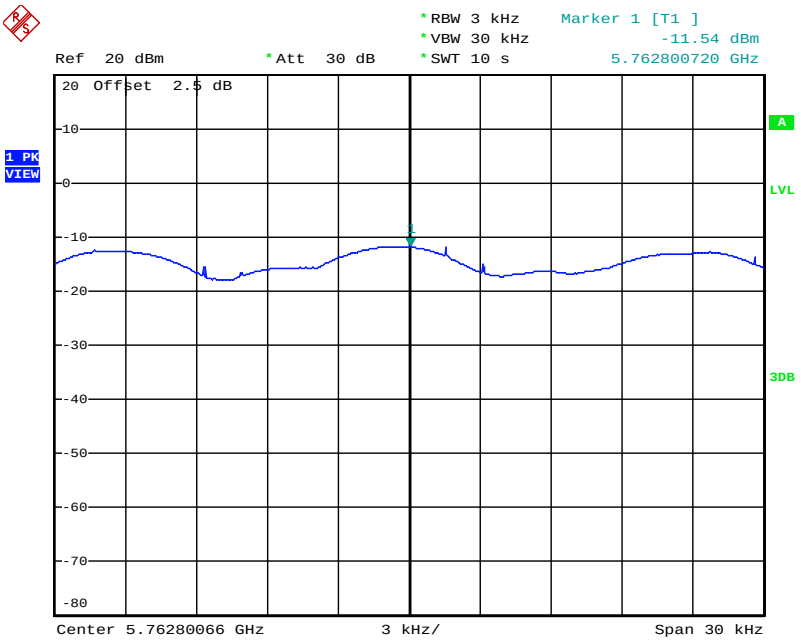
Date: 7.DEC.2011 16:56:59

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 2 / 2TX / 5745 MHz



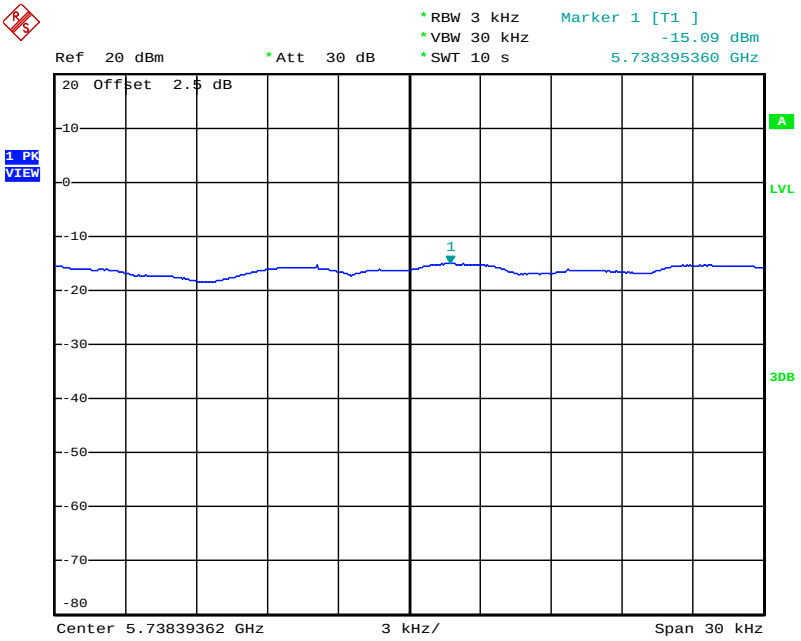
Date: 7.DEC.2011 16:58:56

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 / 2TX / 5755 MHz



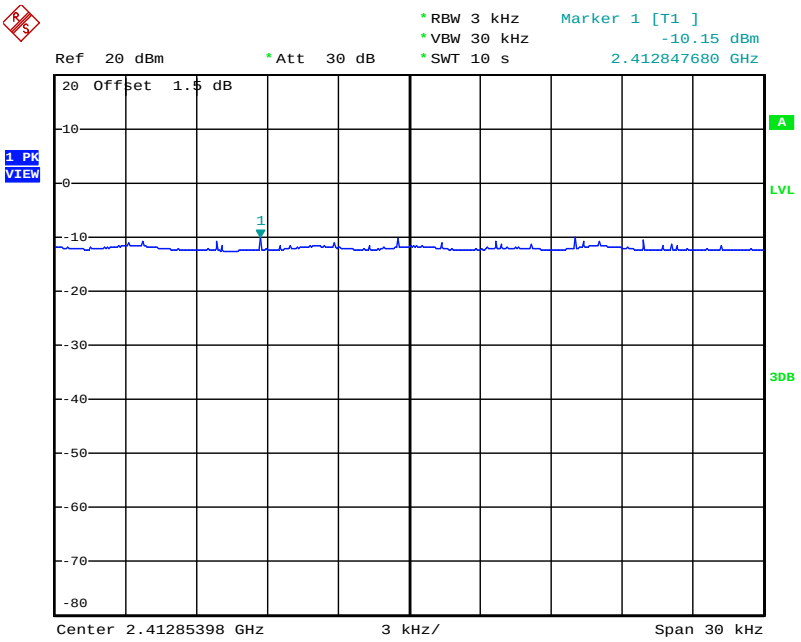
Date: 7.DEC.2011 17:10:58

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 2 / 2TX / 5755 MHz



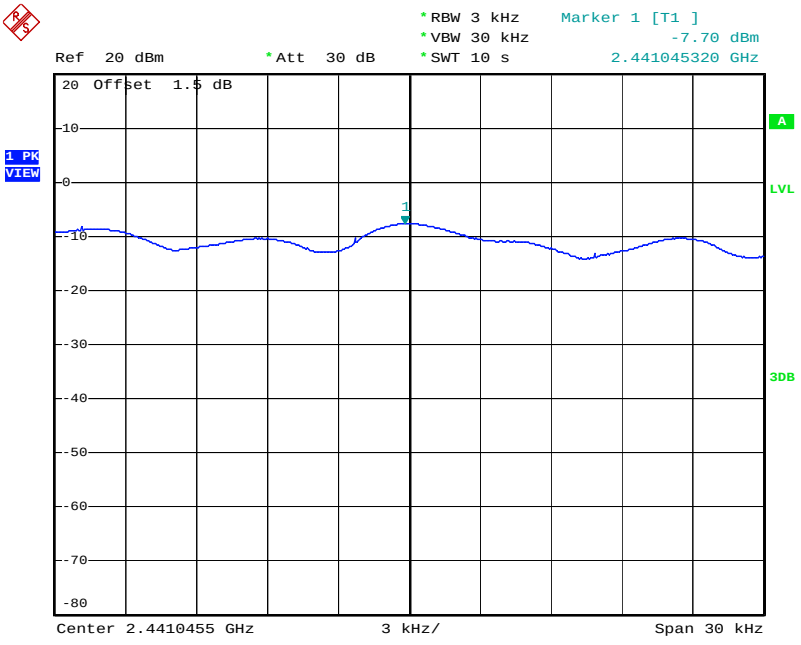
Date: 7.DEC.2011 17:09:04

Power Density Plot on Configuration IEEE 802.11b / Chain 1 / 2412 MHz



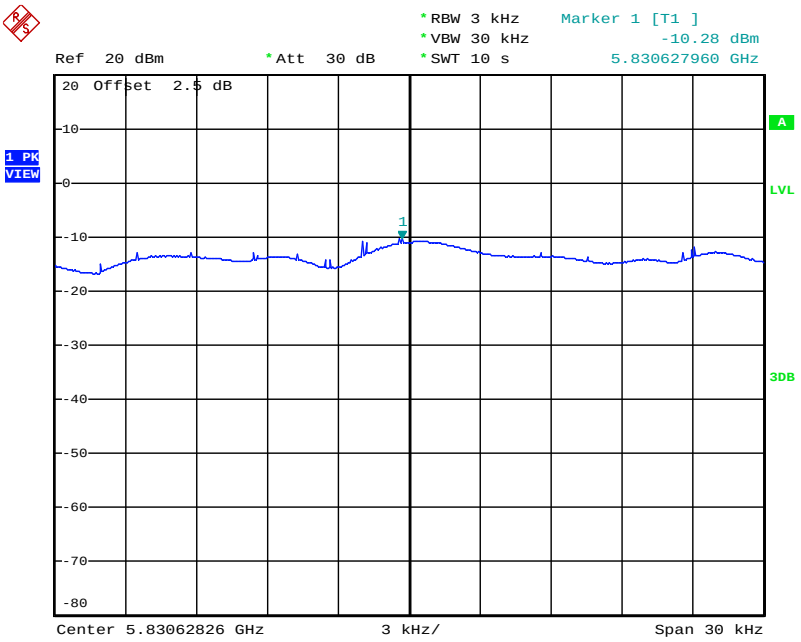
Date: 7.DEC.2011 15:52:26

Power Density Plot on Configuration IEEE 802.11g / Chain 1 / 2437 MHz



Date: 24.DEC.2011 11:35:16

Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5825 MHz



Date: 7.DEC.2011 16:26:14

4.5. 6dB Spectrum Bandwidth Measurement

4.5.1. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

4.5.2. Measuring Instruments and Setting

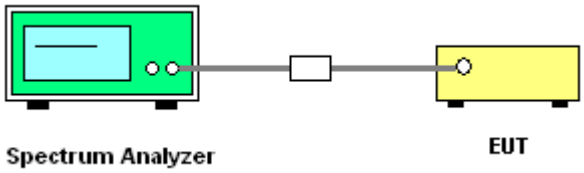
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.5.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were used.
3. Measured the spectrum width with power higher than 6dB below carrier.

4.5.4. Test Setup Layout



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 6dB Spectrum Bandwidth

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n
Test Date	Dec. 10, 2011		

For 2.4GHz Band

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

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	17.64	17.64	500	Complies
6	2437 MHz	17.76	17.72	500	Complies
11	2462 MHz	17.72	17.68	500	Complies

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

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.40	36.08	500	Complies
6	2437 MHz	36.48	36.08	500	Complies
9	2452 MHz	36.48	36.08	500	Complies

For 5GHz Band

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

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	17.84	17.84	500	Complies
157	5785 MHz	17.80	17.84	500	Complies
165	5825 MHz	17.84	17.80	500	Complies

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

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	36.40	36.08	500	Complies
159	5795 MHz	36.40	36.24	500	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n
Test Date	Dec. 10, 2011		

For 2.4GHz Band

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

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	17.64	17.60	500	Complies
6	2437 MHz	17.64	17.64	500	Complies
11	2462 MHz	17.72	17.68	500	Complies

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

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.40	35.92	500	Complies
6	2437 MHz	36.40	36.08	500	Complies
9	2452 MHz	36.40	36.16	500	Complies

For 5GHz Band

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

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	17.64	17.64	500	Complies
157	5785 MHz	17.64	17.64	500	Complies
165	5825 MHz	17.64	17.64	500	Complies

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

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	36.40	36.24	500	Complies
159	5795 MHz	36.40	36.24	500	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a/b/g
Test Date	Dec. 10, 2011		

Configuration IEEE 802.11b / Chain 1

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	10.08	14.88	500	Complies
6	2437 MHz	10.08	15.32	500	Complies
11	2462 MHz	10.08	14.96	500	Complies

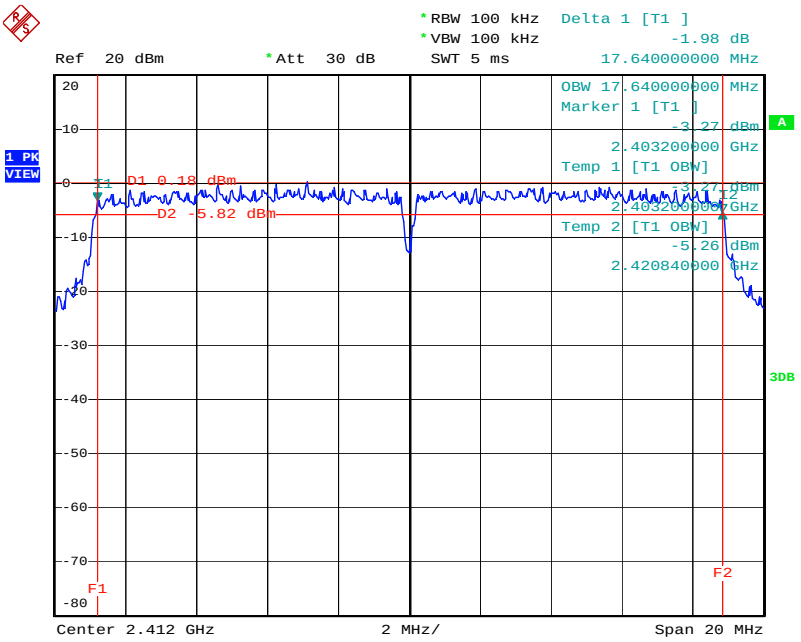
Configuration IEEE 802.11g / Chain 1

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.56	16.44	500	Complies
6	2437 MHz	16.56	16.52	500	Complies
11	2462 MHz	16.56	16.44	500	Complies

Configuration IEEE 802.11a / Chain 1

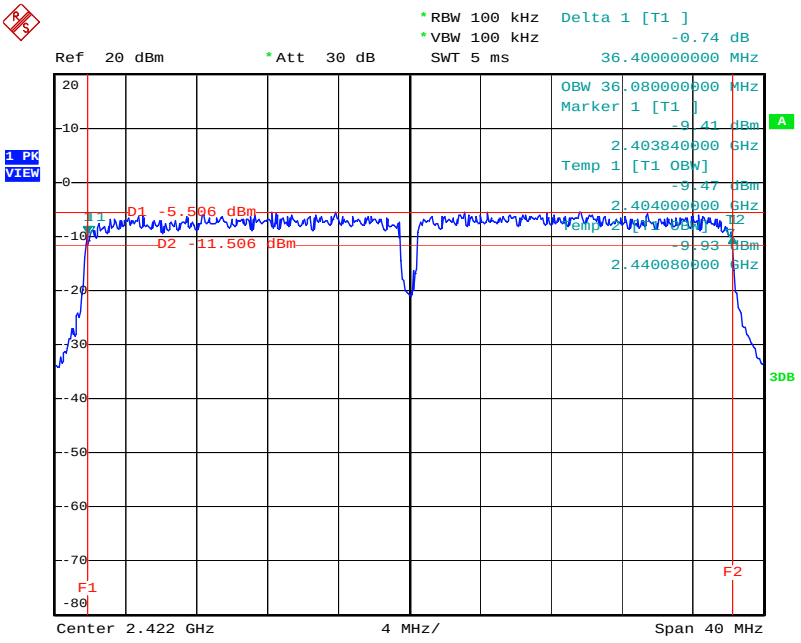
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	16.52	16.76	500	Complies
157	5785 MHz	16.52	16.76	500	Complies
165	5825 MHz	16.48	16.68	500	Complies

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 1TX / 2412 MHz



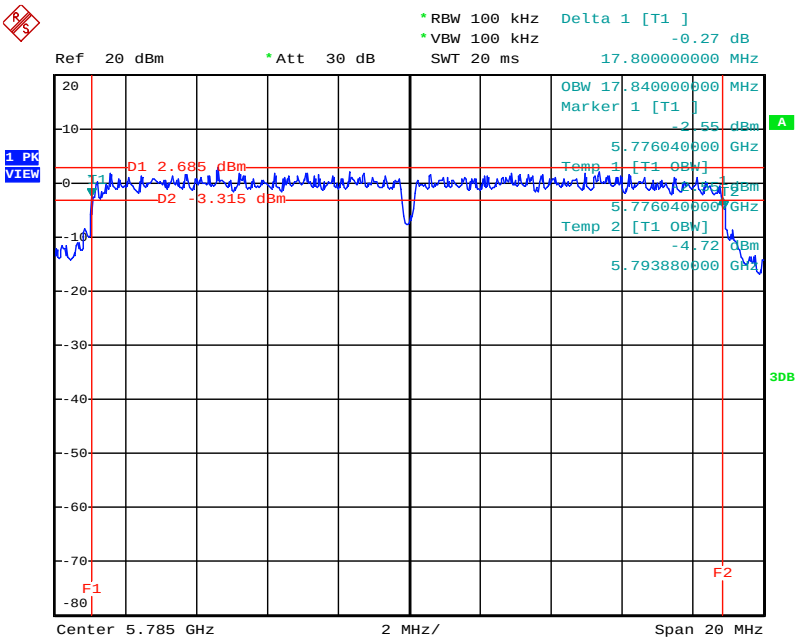
Date: 24.DEC.2011 13:49:29

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1/ 1TX / 2422 MHz



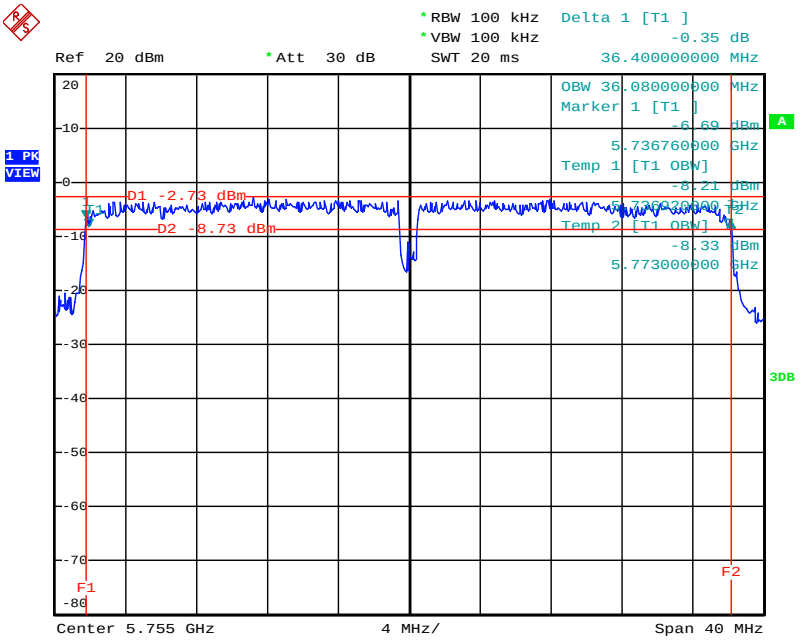
Date: 24.DEC.2011 14:12:36

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 1TX / 5785 MHz



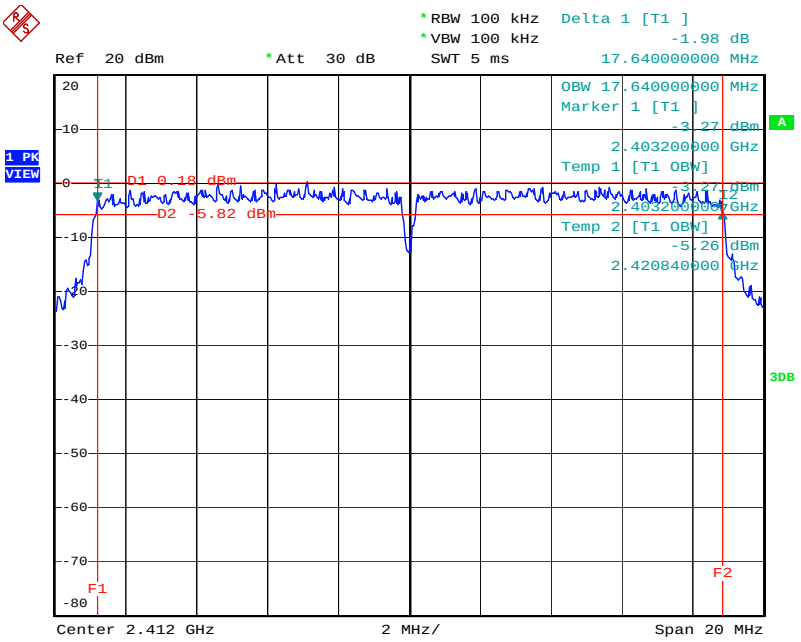
Date: 12.DEC.2011 22:15:32

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz /Chain 1 / 1TX / 5755 MHz



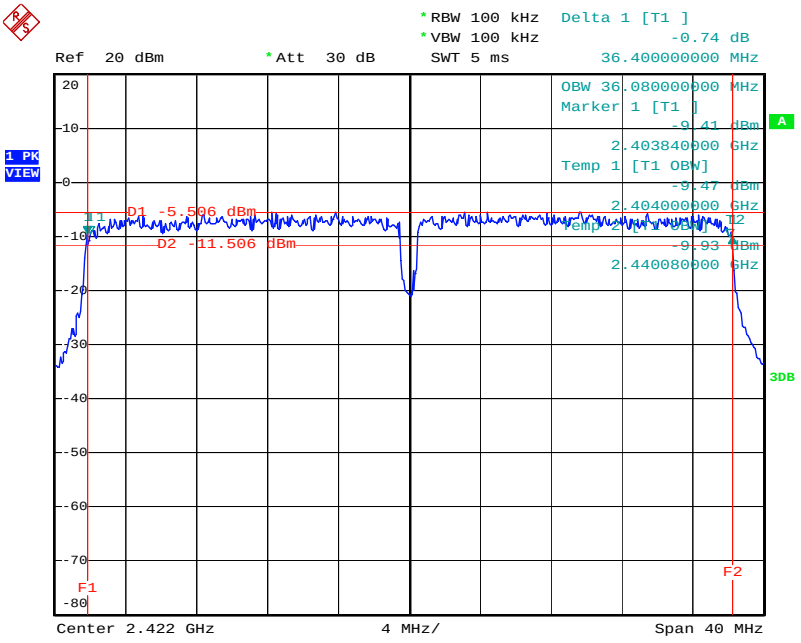
Date: 12.DEC.2011 22:20:31

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 + Chain 2 / 2TX / 2412 MHz



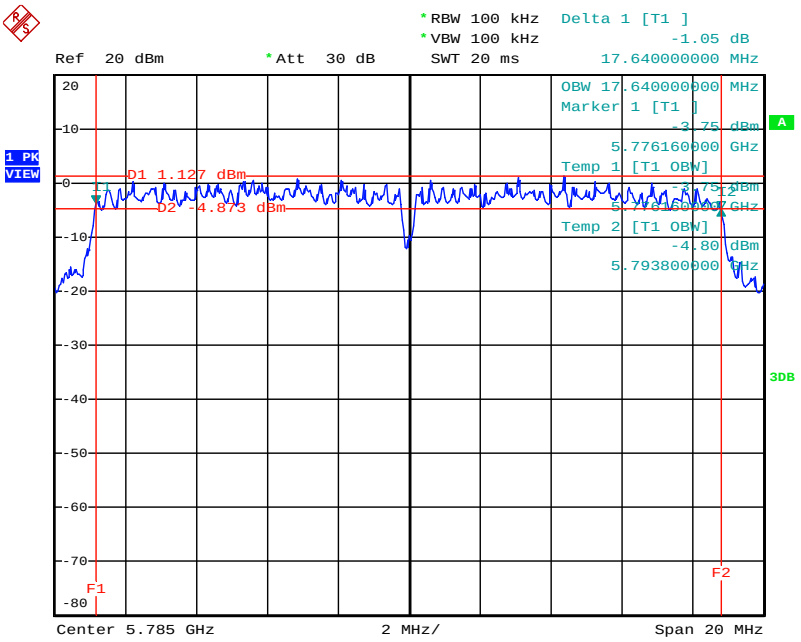
Date: 24.DEC.2011 13:49:29

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 + Chain 2 / 2TX / 2422 MHz



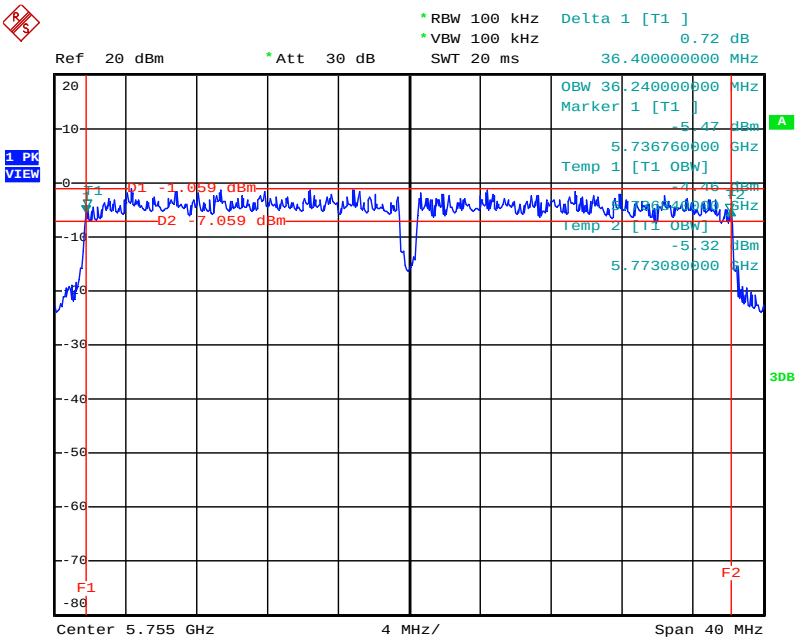
Date: 24.DEC.2011 14:12:36

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1 + Chain 2 / 2TX / 5785 MHz



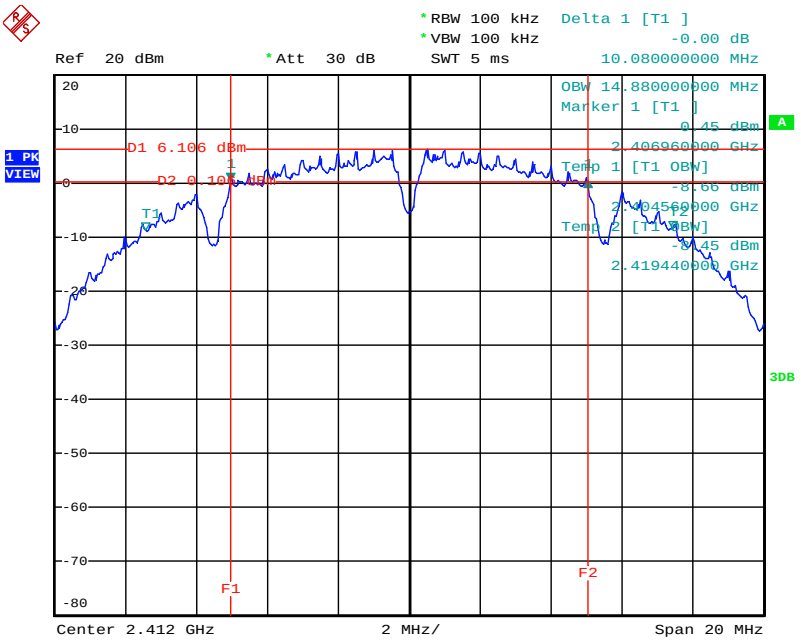
Date: 7.DEC.2011 16:16:58

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1 + Chain 2 / 2TX / 5755 MHz



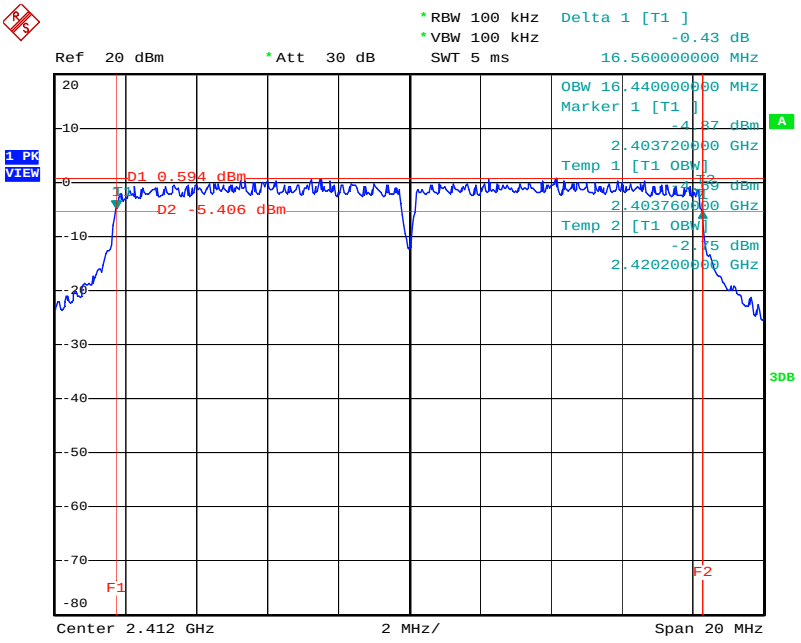
Date: 7.DEC.2011 16:18:02

6 dB Bandwidth Plot on Configuration IEEE 802.11b / Chain 1 / 2412 MHz



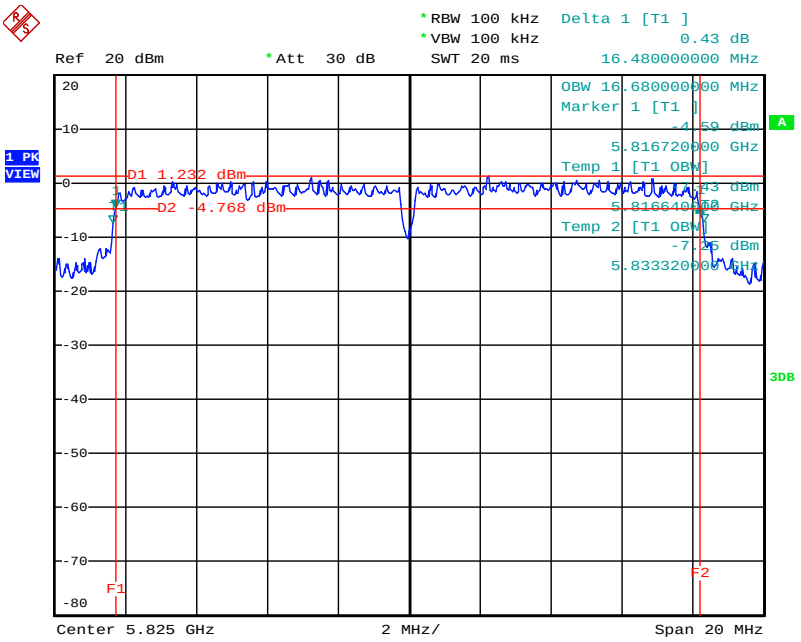
Date: 7.DEC.2011 15:50:59

6 dB Bandwidth Plot on Configuration IEEE 802.11g / Chain 1 / 2412 MHz



Date: 24.DEC.2011 11:30:22

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5825 MHz



Date: 7.DEC.2011 16:24:46

4.6. Radiated Emissions Measurement

4.6.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 3MHz for peak

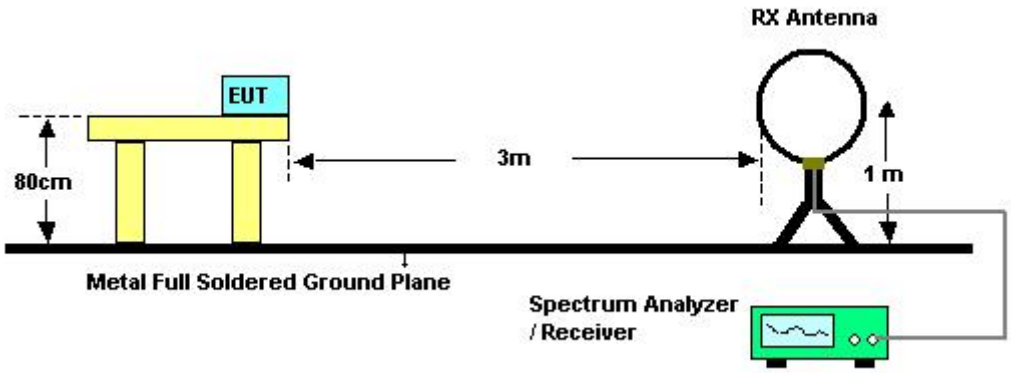
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.6.3. Test Procedures

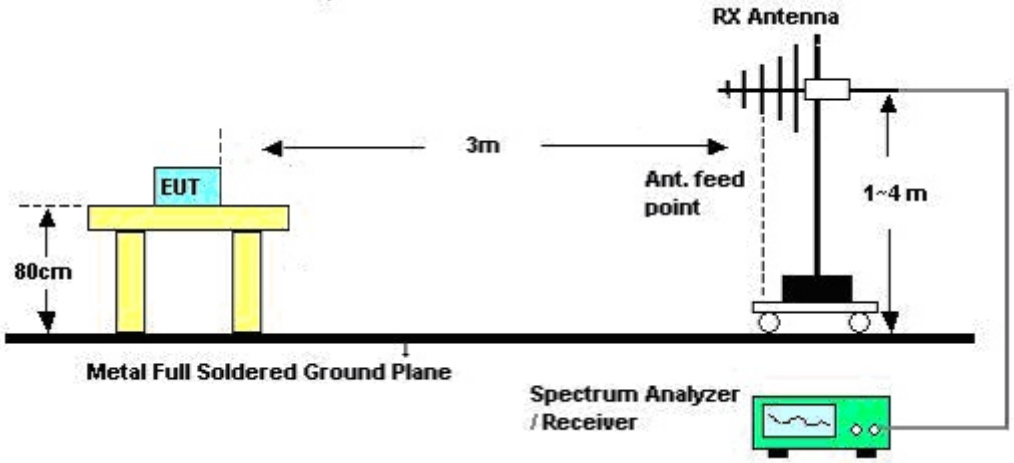
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

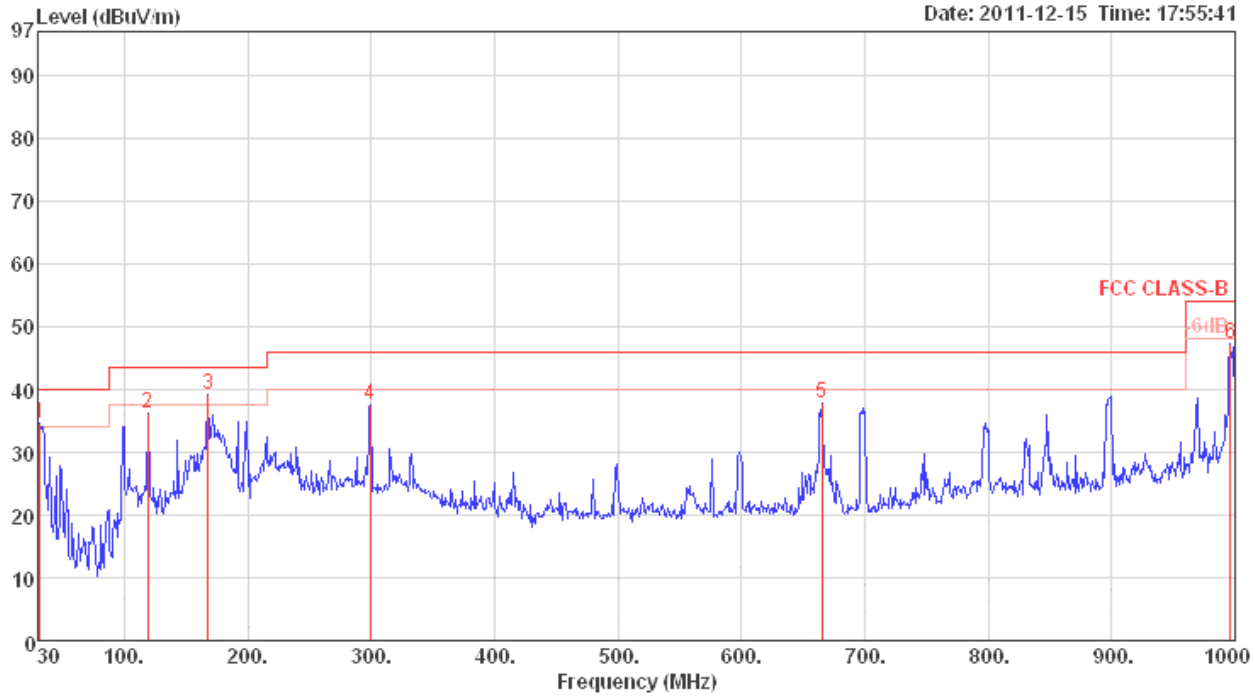
Limit line = specific limits (dBuV) + distance extrapolation factor.

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

Test Mode : Mode 1

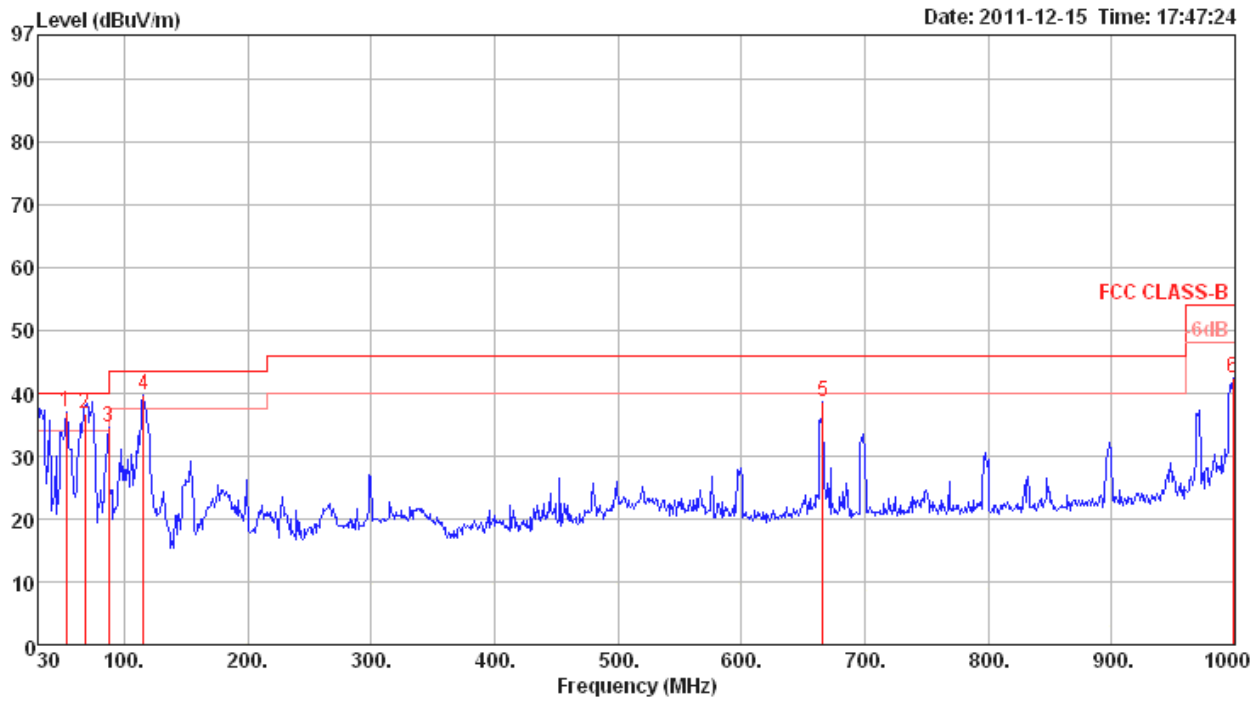
Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	Normal Link

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	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 Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	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.

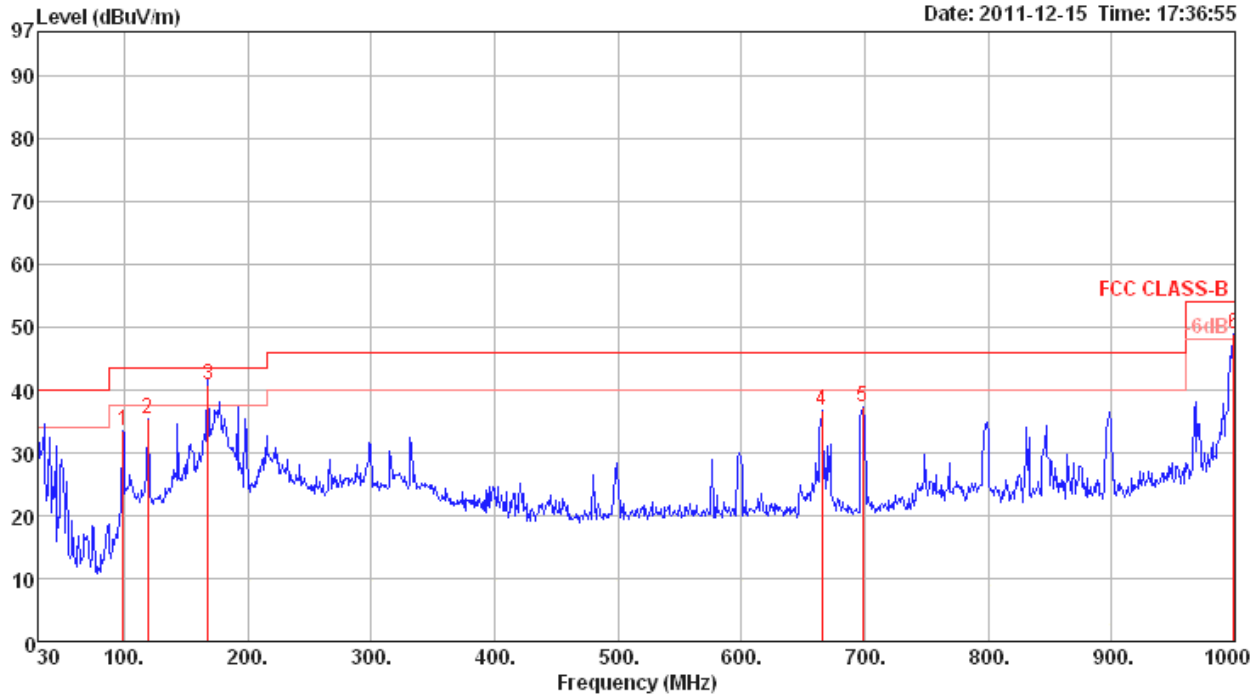
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

Test Mode : Mode 2

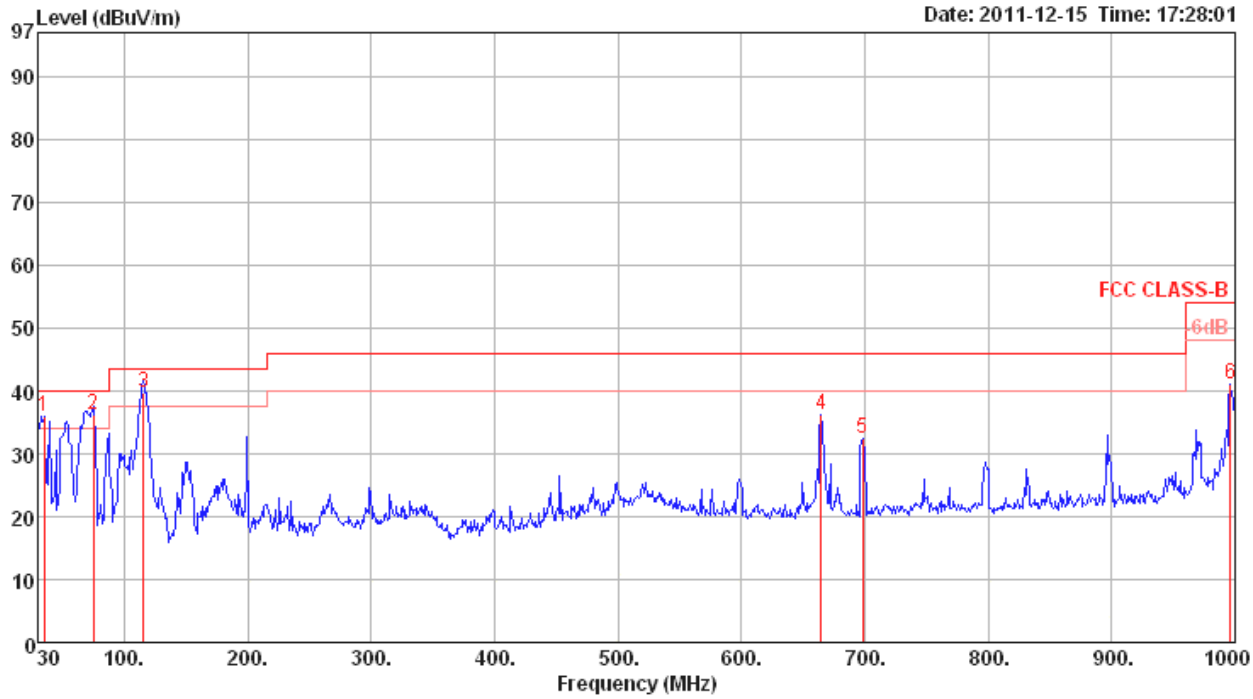
Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	Normal Link

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	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 Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	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~10th Harmonic)

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 1 / 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	4823.72	28.56	54.00	-25.44	27.28	4.08	35.26	32.46	92	100	Average	HORIZONTAL
2 p	4824.35	42.91	74.00	-31.09	41.63	4.08	35.26	32.46	92	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	4824.26	28.59	54.00	-25.41	27.31	4.08	35.26	32.46	183	100	Average	VERTICAL
2 p	4824.29	42.68	74.00	-31.32	41.40	4.08	35.26	32.46	183	100	Peak	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 6 / 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	4873.53	28.43	54.00	-25.57	26.91	4.11	35.15	32.56	182	100	Average	HORIZONTAL
2	4873.56	42.89	74.00	-31.11	41.37	4.11	35.15	32.56	182	100	Peak	HORIZONTAL
3 p	7309.44	64.66	74.00	-9.34	57.63	5.30	34.94	36.67	21	182	Peak	HORIZONTAL
4 a	7311.55	46.86	54.00	-7.14	39.82	5.30	34.93	36.67	21	182	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	4873.53	43.06	74.00	-30.94	41.54	4.11	35.15	32.56	56	100	Peak	VERTICAL
2	4873.66	28.61	54.00	-25.39	27.09	4.11	35.15	32.56	56	100	Average	VERTICAL
3 p	7309.61	70.75	74.00	-3.25	63.72	5.30	34.94	36.67	78	150	Peak	VERTICAL
4 a	7311.68	52.78	54.00	-1.22	45.74	5.30	34.93	36.67	78	150	Average	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch11 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4947.40	29.72	54.00	-24.28	28.06	3.37	33.30	35.01	Average	143	258	HORIZONTAL
2	4948.84	41.72	74.00	-32.28	40.06	3.37	33.30	35.01	Peak	143	258	HORIZONTAL
3	7390.25	35.05	54.00	-18.95	30.30	4.06	36.09	35.40	Average	156	318	HORIZONTAL
4	7399.30	49.93	74.00	-24.07	45.14	4.06	36.13	35.40	Peak	156	318	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4916.31	41.83	74.00	-32.17	40.27	3.35	33.23	35.02	Peak	132	278	VERTICAL
2	4946.84	29.84	54.00	-24.16	28.18	3.37	33.30	35.01	Average	132	278	VERTICAL
3	7381.83	39.05	54.00	-14.95	34.30	4.06	36.09	35.40	Average	189	283	VERTICAL
4	7384.32	56.59	74.00	-17.41	51.84	4.06	36.09	35.40	Peak	189	283	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 3 / 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	4843.71	42.39	74.00	-31.61	41.01	4.09	35.20	32.49	163	100	Peak	HORIZONTAL
2 a	4844.82	28.40	54.00	-25.60	27.02	4.09	35.20	32.49	163	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	4844.77	42.01	74.00	-31.99	40.63	4.09	35.20	32.49	20	100	Peak	VERTICAL
2 a	4844.79	28.46	54.00	-25.54	27.08	4.09	35.20	32.49	20	100	Average	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 6 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4874.42	29.47	54.00	-24.53	28.01	3.33	33.16	35.03	Average	100	290	HORIZONTAL
2	4874.85	42.49	74.00	-31.51	41.03	3.33	33.16	35.03	Peak	100	290	HORIZONTAL
3	7310.74	48.19	74.00	-25.81	43.57	4.06	35.96	35.40	Peak	101	308	HORIZONTAL
4	7311.93	33.38	54.00	-20.62	28.76	4.06	35.96	35.40	Average	101	308	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4874.09	28.31	54.00	-25.69	26.85	3.33	33.16	35.03	Average	100	346	VERTICAL
2	4874.14	42.88	74.00	-31.12	41.42	3.33	33.16	35.03	Peak	100	346	VERTICAL
3	7310.93	51.67	74.00	-22.33	47.05	4.06	35.96	35.40	Peak	101	182	VERTICAL
4	7311.89	37.18	54.00	-16.82	32.56	4.06	35.96	35.40	Average	101	182	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 9 / 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	4903.53	28.66	54.00	-25.34	27.00	4.12	35.09	32.63	119	100	Average	HORIZONTAL
2	4904.47	43.35	74.00	-30.65	41.69	4.12	35.09	32.63	119	100	Peak	HORIZONTAL
3 a	7355.56	40.21	54.00	-13.79	33.07	5.33	34.92	36.73	21	179	Average	HORIZONTAL
4 p	7356.36	54.33	74.00	-19.67	47.19	5.33	34.92	36.73	21	179	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	4903.62	42.88	74.00	-31.12	41.22	4.12	35.09	32.63	157	100	Peak	VERTICAL
2	4903.89	28.90	54.00	-25.10	27.24	4.12	35.09	32.63	157	100	Average	VERTICAL
3 a	7355.52	44.74	54.00	-9.26	37.60	5.33	34.92	36.73	78	147	Average	VERTICAL
4 p	7356.47	58.79	74.00	-15.21	51.65	5.33	34.92	36.73	78	147	Peak	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / 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 p	4823.44	42.34	74.00	-31.66	41.06	4.08	35.26	32.46	193	100	Peak	HORIZONTAL
2 a	4824.25	28.61	54.00	-25.39	27.33	4.08	35.26	32.46	193	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 a	4824.18	28.63	54.00	-25.37	27.35	4.08	35.26	32.46	298	100	Average	VERTICAL
2 p	4824.64	42.66	74.00	-31.34	41.38	4.08	35.26	32.46	298	100	Peak	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / 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	4873.66	28.43	54.00	-25.57	26.91	4.11	35.15	32.56	144	100	Average	HORIZONTAL
2	4873.95	43.24	74.00	-30.76	41.72	4.11	35.15	32.56	144	100	Peak	HORIZONTAL
3 p	7310.99	61.86	74.00	-12.14	54.83	5.30	34.94	36.67	21	178	Peak	HORIZONTAL
4 a	7312.72	46.67	54.00	-7.33	39.63	5.30	34.93	36.67	21	178	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	4873.53	31.57	54.00	-22.43	30.05	4.11	35.15	32.56	37	100	Average	VERTICAL
2	4874.30	46.32	74.00	-27.68	44.80	4.11	35.15	32.56	37	100	Peak	VERTICAL
3 p	7311.04	68.25	74.00	-5.75	61.22	5.30	34.94	36.67	79	150	Peak	VERTICAL
4 a	7312.67	52.58	54.00	-1.42	45.54	5.30	34.93	36.67	79	150	Average	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch11 / 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	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4947.96	41.97	74.00	-32.03	40.31	3.37	33.30	35.01	Peak	130	91	HORIZONTAL
2	4948.44	29.70	54.00	-24.30	28.04	3.37	33.30	35.01	Average	130	91	HORIZONTAL
3	7389.77	32.76	54.00	-21.24	28.01	4.06	36.09	35.40	Average	100	180	HORIZONTAL
4	7399.30	46.64	74.00	-27.36	41.85	4.06	36.13	35.40	Peak	100	180	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4921.36	43.09	74.00	-30.91	41.52	3.35	33.23	35.01	Peak	139	67	VERTICAL
2	4942.83	29.61	54.00	-24.39	27.95	3.37	33.30	35.01	Average	139	67	VERTICAL
3	7387.44	39.19	54.00	-14.81	34.44	4.06	36.09	35.40	Average	167	283	VERTICAL
4	7389.45	55.63	74.00	-18.37	50.88	4.06	36.09	35.40	Peak	167	283	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / 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 p	4843.34	42.32	74.00	-31.68	40.94	4.09	35.20	32.49	243	100	Peak	HORIZONTAL
2 a	4844.76	28.47	54.00	-25.53	27.09	4.09	35.20	32.49	243	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	4843.84	42.99	74.00	-31.01	41.61	4.09	35.20	32.49	268	100	Peak	VERTICAL
2 a	4844.76	28.72	54.00	-25.28	27.34	4.09	35.20	32.49	268	100	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / 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	4872.63	42.84	74.00	-31.16	41.32	4.11	35.15	32.56	112	100	Peak	HORIZONTAL
2	4874.99	28.52	54.00	-25.48	27.00	4.11	35.15	32.56	112	100	Average	HORIZONTAL
3 a	7311.02	40.46	54.00	-13.54	33.43	5.30	34.94	36.67	21	178	Average	HORIZONTAL
4 p	7311.05	54.41	74.00	-19.59	47.38	5.30	34.94	36.67	21	178	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	4874.90	28.90	54.00	-25.10	27.38	4.11	35.15	32.56	77	100	Average	VERTICAL
2	4875.73	42.58	74.00	-31.42	41.06	4.11	35.15	32.56	77	100	Peak	VERTICAL
3 p	7310.70	59.38	74.00	-14.62	52.35	5.30	34.94	36.67	78	150	Peak	VERTICAL
4 a	7311.86	45.93	54.00	-8.07	38.89	5.30	34.93	36.67	78	150	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / 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	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.70	42.01	74.00	-31.99	40.41	3.35	33.26	35.01	Peak	111	155	HORIZONTAL
2	4937.64	29.44	54.00	-24.56	27.84	3.35	33.26	35.01	Average	111	155	HORIZONTAL
3	7357.97	33.41	54.00	-20.59	28.73	4.06	36.02	35.40	Average	132	114	HORIZONTAL
4	7398.60	45.89	74.00	-28.11	41.10	4.06	36.13	35.40	Peak	132	114	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4912.08	29.62	54.00	-24.38	28.07	3.34	33.23	35.02	Average	144	91	VERTICAL
2	4927.30	41.91	74.00	-32.09	40.31	3.35	33.26	35.01	Peak	144	91	VERTICAL
3	7355.89	37.04	54.00	-16.96	32.36	4.06	36.02	35.40	Average	155	94	VERTICAL
4	7359.97	50.22	74.00	-23.78	45.50	4.06	36.06	35.40	Peak	155	94	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz CH 149 / 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 11486.83	54.82	74.00	-19.18	44.25	6.82	34.75	38.50	64	152	Peak	HORIZONTAL
2	a 11488.81	41.25	54.00	-12.75	30.68	6.82	34.75	38.50	64	152	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	a 11488.88	44.12	54.00	-9.88	33.55	6.82	34.75	38.50	157	145	Average	VERTICAL
2	p 11489.33	57.69	74.00	-16.31	47.12	6.82	34.75	38.50	157	145	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz CH 157 / 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 11569.49	55.71	74.00	-18.29	45.07	6.93	34.80	38.51	123	135	Peak	HORIZONTAL
2	a 11570.13	41.72	54.00	-12.28	31.10	6.93	34.82	38.51	123	135	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	a 11567.34	45.07	54.00	-8.93	34.43	6.93	34.80	38.51	164	144	Average	VERTICAL
2	p 11569.07	59.37	74.00	-14.63	48.73	6.93	34.80	38.51	164	144	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz CH 165 / 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 11648.78	40.08	54.00	-13.92	29.44	7.01	34.90	38.53	78	143	Average	HORIZONTAL
2	p 11650.45	54.06	74.00	-19.94	43.42	7.01	34.90	38.53	78	143	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 11648.30	58.43	74.00	-15.57	47.79	7.01	34.90	38.53	169	139	Peak	VERTICAL
2	a 11650.03	44.31	54.00	-9.69	33.67	7.01	34.90	38.53	169	139	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz CH 151 / 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 11504.04	38.32	54.00	-15.68	27.72	6.85	34.75	38.50	142	100	Average	HORIZONTAL
2	p 11504.65	52.13	74.00	-21.87	41.53	6.85	34.75	38.50	142	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 11509.71	41.74	54.00	-12.26	31.14	6.85	34.75	38.50	161	148	Average	VERTICAL
2	p 11510.26	54.31	74.00	-19.69	43.71	6.85	34.75	38.50	161	148	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz CH 159 / 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 11594.17	51.59	74.00	-22.41	40.94	6.95	34.82	38.52	149	100	Peak	HORIZONTAL
2	a 11595.22	38.38	54.00	-15.62	27.73	6.95	34.82	38.52	149	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	a 11590.06	42.76	54.00	-11.24	32.11	6.95	34.82	38.52	160	143	Average	VERTICAL
2	p 11590.22	56.00	74.00	-18.00	45.35	6.95	34.82	38.52	160	143	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz CH 149 / 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 p	11488.49	54.58	74.00	-19.42	44.01	6.82	34.75	38.50	128	136	Peak	HORIZONTAL
2 a	11489.07	40.88	54.00	-13.12	30.31	6.82	34.75	38.50	128	136	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	11490.54	58.39	74.00	-15.61	47.82	6.82	34.75	38.50	169	162	Peak	VERTICAL
2 a	11491.09	44.74	54.00	-9.26	34.17	6.82	34.75	38.50	169	162	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz CH 157 / 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 11568.91	41.07	54.00	-12.93	30.43	6.93	34.80	38.51	66	145	Average	HORIZONTAL
2	p 11569.46	54.57	74.00	-19.43	43.93	6.93	34.80	38.51	66	145	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 11568.94	45.13	54.00	-8.87	34.49	6.93	34.80	38.51	172	145	Average	VERTICAL
2	p 11570.54	59.65	74.00	-14.35	49.03	6.93	34.82	38.51	172	145	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz CH 165 / 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 p	11643.88	53.81	74.00	-20.19	43.14	7.01	34.87	38.53	142	135	Peak	HORIZONTAL
2 a	11650.54	39.86	54.00	-14.14	29.20	7.03	34.90	38.53	142	135	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	11650.61	58.88	74.00	-15.12	48.22	7.03	34.90	38.53	168	145	Peak	VERTICAL
2 a	11650.71	44.91	54.00	-9.09	34.25	7.03	34.90	38.53	168	145	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz CH 151 / 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 11505.74	38.35	54.00	-15.65	27.75	6.85	34.75	38.50	177	100	Average	HORIZONTAL
2	p 11507.82	52.02	74.00	-21.98	41.42	6.85	34.75	38.50	177	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 11506.60	41.98	54.00	-12.02	31.38	6.85	34.75	38.50	172	140	Average	VERTICAL
2	p 11507.82	56.57	74.00	-17.43	45.97	6.85	34.75	38.50	172	140	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz CH 159 / 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	11587.95	39.60	54.00	-14.40	28.95	6.95	34.82	38.52	119	136	Average	HORIZONTAL
2 p	11590.99	53.25	74.00	-20.75	42.60	6.95	34.82	38.52	119	136	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	11593.08	42.57	54.00	-11.43	31.92	6.95	34.82	38.52	171	145	Average	VERTICAL
2 p	11594.36	56.28	74.00	-17.72	45.63	6.95	34.82	38.52	171	145	Peak	VERTICAL

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

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.28	46.64	74.00	-27.36	45.30	3.31	33.06	35.03	Peak	100	312	HORIZONTAL
2	4823.83	32.25	54.00	-21.75	30.91	3.31	33.06	35.03	Average	100	312	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4822.70	48.57	74.00	-25.43	47.23	3.31	33.06	35.03	Peak	100	160	VERTICAL
2	4823.96	33.60	54.00	-20.40	32.26	3.31	33.06	35.03	Average	100	160	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 6 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4871.98	47.94	74.00	-26.06	46.48	3.33	33.16	35.03	Peak	100	43	HORIZONTAL
2	4874.00	34.08	54.00	-19.92	32.62	3.33	33.16	35.03	Average	100	43	HORIZONTAL
3	7311.64	47.01	54.00	-6.99	42.39	4.06	35.96	35.40	Average	182	337	HORIZONTAL
4	7317.64	62.41	74.00	-11.59	57.79	4.06	35.96	35.40	Peak	182	337	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4871.85	47.89	74.00	-26.11	46.43	3.33	33.16	35.03	Peak	101	353	VERTICAL
2	4874.99	34.06	54.00	-19.94	32.60	3.33	33.16	35.03	Average	101	353	VERTICAL
3	7306.99	53.09	54.00	-0.91	48.51	4.06	35.92	35.40	Average	140	73	VERTICAL
4	7317.64	68.46	74.00	-5.54	63.84	4.06	35.96	35.40	Peak	140	73	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch11 / Chain 1 / 1TX
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	4923.80	30.47	54.00	-23.53	28.71	4.13	35.03	32.66	157	100	Average	HORIZONTAL
2	4924.06	43.22	74.00	-30.78	41.46	4.13	35.03	32.66	157	100	Peak	HORIZONTAL
3 a	7381.90	47.10	54.00	-6.90	39.90	5.34	34.90	36.76	69	108	Average	HORIZONTAL
4 p	7387.19	61.55	74.00	-12.45	54.32	5.35	34.90	36.78	69	108	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	4923.97	31.17	54.00	-22.83	29.41	4.13	35.03	32.66	194	100	Average	VERTICAL
2	4924.48	43.27	74.00	-30.73	41.51	4.13	35.03	32.66	194	100	Peak	VERTICAL
3 a	7381.74	52.21	54.00	-1.79	45.01	5.34	34.90	36.76	178	183	Average	VERTICAL
4 p	7387.09	67.91	74.00	-6.09	60.68	5.35	34.90	36.78	178	183	Peak	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 3 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4826.95	41.78	74.00	-32.22	40.44	3.31	33.06	35.03	Peak	100	257	HORIZONTAL
2	4827.24	29.21	54.00	-24.79	27.87	3.31	33.06	35.03	Average	100	257	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4825.83	42.31	74.00	-31.69	40.97	3.31	33.06	35.03	Peak	100	113	VERTICAL
2	4827.11	29.03	54.00	-24.97	27.69	3.31	33.06	35.03	Average	100	113	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 6 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4874.98	28.75	54.00	-25.25	27.29	3.33	33.16	35.03	Average	100	60	HORIZONTAL
2	4878.87	42.08	74.00	-31.92	40.62	3.33	33.16	35.03	Peak	100	60	HORIZONTAL
3	7311.80	50.17	74.00	-23.83	45.55	4.06	35.96	35.40	Peak	179	346	HORIZONTAL
4	7314.77	36.07	54.00	-17.93	31.45	4.06	35.96	35.40	Average	179	346	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4871.45	42.29	74.00	-31.71	40.83	3.33	33.16	35.03	Peak	100	242	VERTICAL
2	4876.48	29.38	54.00	-24.62	27.92	3.33	33.16	35.03	Average	100	242	VERTICAL
3	7302.03	40.97	54.00	-13.03	36.39	4.06	35.92	35.40	Average	139	77	VERTICAL
4	7312.04	55.14	74.00	-18.86	50.52	4.06	35.96	35.40	Peak	139	77	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 9 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4906.95	42.32	74.00	-31.68	40.77	3.34	33.23	35.02	Peak	100	93	HORIZONTAL
2	4913.26	29.12	54.00	-24.88	27.57	3.34	33.23	35.02	Average	100	93	HORIZONTAL
3	7352.47	45.66	74.00	-28.34	40.98	4.06	36.02	35.40	Peak	100	294	HORIZONTAL
4	7360.65	34.14	54.00	-19.86	29.42	4.06	36.06	35.40	Average	100	294	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4902.49	28.94	54.00	-25.06	27.43	3.34	33.19	35.02	Average	100	316	VERTICAL
2	4904.47	41.95	74.00	-32.05	40.44	3.34	33.19	35.02	Peak	100	316	VERTICAL
3	7345.18	50.17	74.00	-23.83	45.49	4.06	36.02	35.40	Peak	100	254	VERTICAL
4	7358.24	37.17	54.00	-16.83	32.49	4.06	36.02	35.40	Average	100	254	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / 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	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4849.51	29.82	54.00	-24.18	28.44	3.32	33.09	35.03	Average	100	194	HORIZONTAL
2	4853.14	43.07	74.00	-30.93	41.69	3.32	33.09	35.03	Peak	100	194	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4850.86	29.91	54.00	-24.09	28.53	3.32	33.09	35.03	Average	100	298	VERTICAL
2	4854.71	41.32	74.00	-32.68	39.91	3.32	33.12	35.03	Peak	100	298	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / 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	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4873.36	32.52	54.00	-21.48	31.06	3.33	33.16	35.03	Average	100	47	HORIZONTAL
2	4874.64	44.42	74.00	-29.58	42.96	3.33	33.16	35.03	Peak	100	47	HORIZONTAL
3	7312.60	45.15	54.00	-8.85	40.53	4.06	35.96	35.40	Average	157	325	HORIZONTAL
4	7319.01	59.00	74.00	-15.00	54.38	4.06	35.96	35.40	Peak	157	325	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4874.48	32.94	54.00	-21.06	31.48	3.33	33.16	35.03	Average	100	124	VERTICAL
2	4877.97	46.22	74.00	-27.78	44.76	3.33	33.16	35.03	Peak	100	124	VERTICAL
3	7307.88	51.16	54.00	-2.84	46.54	4.06	35.96	35.40	Average	139	77	VERTICAL
4	7310.76	64.59	74.00	-9.41	59.97	4.06	35.96	35.40	Peak	139	77	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz Ch11 / 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	4923.75	30.30	54.00	-23.70	28.54	4.13	35.03	32.66	136	100	Average	HORIZONTAL
2	4924.34	43.09	74.00	-30.91	41.33	4.13	35.03	32.66	136	100	Peak	HORIZONTAL
3 a	7383.21	41.68	54.00	-12.32	34.48	5.34	34.90	36.76	70	100	Average	HORIZONTAL
4 p	7388.53	54.91	74.00	-19.09	47.67	5.35	34.89	36.78	70	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	4923.52	45.71	74.00	-28.29	43.95	4.13	35.03	32.66	92	100	Peak	VERTICAL
2	4923.87	32.08	54.00	-21.92	30.32	4.13	35.03	32.66	92	100	Average	VERTICAL
3 a	7383.02	47.95	54.00	-6.05	40.75	5.34	34.90	36.76	18	200	Average	VERTICAL
4 p	7388.79	61.19	74.00	-12.81	53.95	5.35	34.89	36.78	18	200	Peak	VERTICAL

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / 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	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4846.97	42.14	74.00	-31.86	40.76	3.32	33.09	35.03	Peak	100	277	HORIZONTAL
2	4847.53	28.79	54.00	-25.21	27.41	3.32	33.09	35.03	Average	100	277	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4841.92	42.38	74.00	-31.62	41.00	3.32	33.09	35.03	Peak	100	182	VERTICAL
2	4848.90	28.95	54.00	-25.05	27.57	3.32	33.09	35.03	Average	100	182	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / 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	4874.71	29.87	54.00	-24.13	28.35	4.11	35.15	32.56	136	100	Average	HORIZONTAL
2	4874.74	41.57	74.00	-32.43	40.05	4.11	35.15	32.56	136	100	Peak	HORIZONTAL
3 p	7310.78	53.77	74.00	-20.23	46.74	5.30	34.94	36.67	69	100	Peak	HORIZONTAL
4 a	7311.55	40.52	54.00	-13.48	33.48	5.30	34.93	36.67	69	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	4872.97	43.04	74.00	-30.96	41.52	4.11	35.15	32.56	243	100	Peak	VERTICAL
2	4874.87	31.41	54.00	-22.59	29.89	4.11	35.15	32.56	243	100	Average	VERTICAL
3 p	7301.00	59.92	74.00	-14.08	52.89	5.30	34.94	36.67	23	100	Peak	VERTICAL
4 a	7314.43	47.14	54.00	-6.86	40.10	5.30	34.93	36.67	23	100	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / 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	4903.50	42.54	74.00	-31.46	40.88	4.12	35.09	32.63	183	100	Peak	HORIZONTAL
2	4903.61	29.61	54.00	-24.39	27.95	4.12	35.09	32.63	183	100	Average	HORIZONTAL
3 p	7355.71	50.68	74.00	-23.32	43.54	5.33	34.92	36.73	147	100	Peak	HORIZONTAL
4 a	7355.80	37.94	54.00	-16.06	30.80	5.33	34.92	36.73	147	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	4903.70	30.02	54.00	-23.98	28.36	4.12	35.09	32.63	244	100	Average	VERTICAL
2	4903.83	42.21	74.00	-31.79	40.55	4.12	35.09	32.63	244	100	Peak	VERTICAL
3 p	7355.80	57.36	74.00	-16.64	50.22	5.33	34.92	36.73	173	185	Peak	VERTICAL
4 a	7355.90	45.46	54.00	-8.54	38.32	5.33	34.92	36.73	173	185	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz CH 149 / Chain 1 / 1TX
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 11489.93	41.10	54.00	-12.90	30.53	6.82	34.75	38.50	169	153	Average	HORIZONTAL
2	p 11490.75	55.17	74.00	-18.83	44.60	6.82	34.75	38.50	169	153	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 11489.09	56.83	74.00	-17.17	46.26	6.82	34.75	38.50	358	100	Peak	VERTICAL
2	a 11489.87	42.50	54.00	-11.50	31.93	6.82	34.75	38.50	358	100	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz CH 157 / Chain 1 / 1TX
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 11569.14	55.02	74.00	-18.98	44.38	6.93	34.80	38.51	176	144	Peak	HORIZONTAL
2	a 11569.88	40.87	54.00	-13.13	30.25	6.93	34.82	38.51	176	144	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	a 11570.01	44.25	54.00	-9.75	33.63	6.93	34.82	38.51	144	146	Average	VERTICAL
2	p 11570.53	58.96	74.00	-15.04	48.34	6.93	34.82	38.51	144	146	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz CH 165 / Chain 1 / 1TX
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	11649.68	54.84	74.00	-19.16	44.20	7.01	34.90	38.53	37	159	Peak	HORIZONTAL
2 a	11649.90	40.58	54.00	-13.42	29.94	7.01	34.90	38.53	37	159	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	11649.01	57.83	74.00	-16.17	47.19	7.01	34.90	38.53	171	187	Peak	VERTICAL
2 a	11650.03	43.25	54.00	-10.75	32.61	7.01	34.90	38.53	171	187	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz CH 151 / Chain 1 / 1TX
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	11509.46	54.11	74.00	-19.89	43.51	6.85	34.75	38.50	42	135	Peak	HORIZONTAL
2 a	11510.32	40.68	54.00	-13.32	30.08	6.85	34.75	38.50	42	135	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	11509.65	55.84	74.00	-18.16	45.24	6.85	34.75	38.50	166	144	Peak	VERTICAL
2 a	11510.25	42.01	54.00	-11.99	31.41	6.85	34.75	38.50	166	144	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz CH 159 / Chain 1 / 1TX
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	11590.13	52.68	74.00	-21.32	42.03	6.95	34.82	38.52	260	100	Peak	HORIZONTAL
2 a	11590.32	38.43	54.00	-15.57	27.78	6.95	34.82	38.52	260	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	11589.56	56.67	74.00	-17.33	46.02	6.95	34.82	38.52	167	144	Peak	VERTICAL
2 a	11589.85	42.81	54.00	-11.19	32.16	6.95	34.82	38.52	167	144	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz CH 149 / 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 11489.01	41.01	54.00	-12.99	30.44	6.82	34.75	38.50	168	154	Average	HORIZONTAL
2	p 11489.12	55.18	74.00	-18.82	44.61	6.82	34.75	38.50	168	154	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 11490.61	60.11	74.00	-13.89	49.54	6.82	34.75	38.50	172	175	Peak	VERTICAL
2	a 11490.63	46.21	54.00	-7.79	35.64	6.82	34.75	38.50	172	175	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz CH 157 / 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	p 11570.03	53.75	74.00	-20.25	43.13	6.93	34.82	38.51	167	151	Peak	HORIZONTAL
2	a 11570.13	39.82	54.00	-14.18	29.20	6.93	34.82	38.51	167	151	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 11570.58	60.03	74.00	-13.97	49.41	6.93	34.82	38.51	172	160	Peak	VERTICAL
2	a 11570.66	44.84	54.00	-9.16	34.22	6.93	34.82	38.51	172	160	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 20MHz CH 165 / 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 p	11649.16	54.70	74.00	-19.30	44.06	7.01	34.90	38.53	332	142	Peak	HORIZONTAL
2 a	11650.42	40.34	54.00	-13.66	29.70	7.01	34.90	38.53	332	142	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	11650.60	58.55	74.00	-15.45	47.89	7.03	34.90	38.53	171	148	Peak	VERTICAL
2 a	11651.00	43.52	54.00	-10.48	32.86	7.03	34.90	38.53	171	148	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz CH 151 / 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	11509.01	39.50	54.00	-14.50	28.90	6.85	34.75	38.50	319	154	Average	HORIZONTAL
2 p	11510.14	52.91	74.00	-21.09	42.31	6.85	34.75	38.50	319	154	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	11509.00	42.99	54.00	-11.01	32.39	6.85	34.75	38.50	172	155	Average	VERTICAL
2 p	11509.02	56.44	74.00	-17.56	45.84	6.85	34.75	38.50	172	155	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz CH 159 / 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	11590.37	38.42	54.00	-15.58	27.77	6.95	34.82	38.52	55	100	Average	HORIZONTAL
2 p	11590.56	53.45	74.00	-20.55	42.80	6.95	34.82	38.52	55	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	11589.00	42.27	54.00	-11.73	31.62	6.95	34.82	38.52	173	153	Average	VERTICAL
2 p	11589.04	55.77	74.00	-18.23	45.12	6.95	34.82	38.52	173	153	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11b CH 1 / Chain 1
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	4823.97	47.59	74.00	-26.41	46.31	4.08	35.26	32.46	71	116	Peak	HORIZONTAL
2 a	4823.97	41.53	54.00	-12.47	40.25	4.08	35.26	32.46	71	116	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 a	4823.97	52.07	54.00	-1.93	50.79	4.08	35.26	32.46	264	140	Average	VERTICAL
2 p	4823.97	54.48	74.00	-19.52	53.20	4.08	35.26	32.46	264	140	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11b CH 6 / Chain 1
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	4873.81	28.32	54.00	-25.68	26.80	4.11	35.15	32.56	336	100	Average	HORIZONTAL
2	4874.37	42.36	74.00	-31.64	40.84	4.11	35.15	32.56	336	100	Peak	HORIZONTAL
3 p	7310.23	54.50	74.00	-19.50	47.47	5.30	34.94	36.67	22	183	Peak	HORIZONTAL
4 a	7311.69	47.42	54.00	-6.58	40.38	5.30	34.93	36.67	22	183	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	4873.97	33.74	54.00	-20.26	32.22	4.11	35.15	32.56	146	102	Average	VERTICAL
2	4874.01	44.85	74.00	-29.15	43.33	4.11	35.15	32.56	146	102	Peak	VERTICAL
3 p	7310.02	57.91	74.00	-16.09	50.88	5.30	34.94	36.67	82	171	Peak	VERTICAL
4 a	7310.21	52.59	54.00	-1.41	45.56	5.30	34.94	36.67	82	171	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11b CH 11 / Chain 1
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	4923.69	43.28	74.00	-30.72	41.52	4.13	35.03	32.66	299	100	Peak	HORIZONTAL
2	4924.00	30.13	54.00	-23.87	28.37	4.13	35.03	32.66	299	100	Average	HORIZONTAL
3 p	7385.00	58.14	74.00	-15.86	50.91	5.35	34.90	36.78	298	167	Peak	HORIZONTAL
4 a	7385.22	52.66	54.00	-1.34	45.43	5.35	34.90	36.78	298	167	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	4923.90	46.08	74.00	-27.92	44.32	4.13	35.03	32.66	20	100	Peak	VERTICAL
2	4923.99	38.68	54.00	-15.32	36.92	4.13	35.03	32.66	20	100	Average	VERTICAL
3 p	7385.03	57.14	74.00	-16.86	49.91	5.35	34.90	36.78	20	101	Peak	VERTICAL
4 a	7385.21	51.60	54.00	-2.40	44.37	5.35	34.90	36.78	20	101	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802. 11g CH 1 / Chain 1
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	4824.02	28.59	54.00	-25.41	27.31	4.08	35.26	32.46	357	100	Average	HORIZONTAL
2 p	4824.42	42.39	74.00	-31.61	41.11	4.08	35.26	32.46	357	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	4823.79	44.21	74.00	-29.79	42.93	4.08	35.26	32.46	42	100	Peak	VERTICAL
2 a	4824.20	30.30	54.00	-23.70	29.02	4.08	35.26	32.46	42	100	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802. 11g CH 6 / Chain 1
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	4873.30	43.62	74.00	-30.38	42.10	4.11	35.15	32.56	116	100	Peak	HORIZONTAL
2	4874.96	28.43	54.00	-25.57	26.91	4.11	35.15	32.56	116	100	Average	HORIZONTAL
3 a	7308.50	41.75	54.00	-12.25	34.72	5.30	34.94	36.67	21	100	Average	HORIZONTAL
4 p	7312.68	58.51	74.00	-15.49	51.47	5.30	34.93	36.67	21	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	4873.67	42.64	74.00	-31.36	41.12	4.11	35.15	32.56	114	100	Peak	VERTICAL
2	4874.99	28.63	54.00	-25.37	27.11	4.11	35.15	32.56	114	100	Average	VERTICAL
3 a	7308.50	53.47	54.00	-0.53	46.44	5.30	34.94	36.67	80	148	Average	VERTICAL
4 p	7312.47	69.75	74.00	-4.25	62.71	5.30	34.93	36.67	80	148	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802. 11g CH 11 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4905.01	42.41	74.00	-31.59	40.86	3.34	33.23	35.02	Peak	114	111	HORIZONTAL
2	4944.43	28.65	54.00	-25.35	26.99	3.37	33.30	35.01	Average	114	111	HORIZONTAL
3	7388.64	55.37	74.00	-18.63	50.62	4.06	36.09	35.40	Peak	163	100	HORIZONTAL
4	7390.17	40.74	54.00	-13.26	35.99	4.06	36.09	35.40	Average	163	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4924.08	36.30	54.00	-17.70	34.70	3.35	33.26	35.01	Average	143	306	VERTICAL
2	4934.18	50.51	74.00	-23.49	48.91	3.35	33.26	35.01	Peak	143	306	VERTICAL
3	7383.28	48.19	54.00	-5.81	43.44	4.06	36.09	35.40	Average	102	37	VERTICAL
4	7387.60	62.85	74.00	-11.15	58.10	4.06	36.09	35.40	Peak	102	37	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a CH 149 / Chain 1
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	11486.86	56.67	74.00	-17.33	46.10	6.82	34.75	38.50	26	156	Peak	HORIZONTAL
2 a	11490.06	42.64	54.00	-11.36	32.07	6.82	34.75	38.50	26	156	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 a	11489.90	44.86	54.00	-9.14	34.29	6.82	34.75	38.50	157	146	Average	VERTICAL
2 p	11490.71	58.08	74.00	-15.92	47.51	6.82	34.75	38.50	157	146	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a CH 157 / Chain 1
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	11564.13	56.07	74.00	-17.93	45.45	6.91	34.80	38.51	62	145	Peak	HORIZONTAL
2 a	11569.94	42.91	54.00	-11.09	32.29	6.93	34.82	38.51	62	145	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 a	11570.13	45.91	54.00	-8.09	35.29	6.93	34.82	38.51	91	122	Average	VERTICAL
2 p	11570.67	59.46	74.00	-14.54	48.84	6.93	34.82	38.51	91	122	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a CH 165 / Chain 1
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	11650.00	42.18	54.00	-11.82	31.54	7.01	34.90	38.53	124	143	Average	HORIZONTAL
2 p	11650.16	55.52	74.00	-18.48	44.88	7.01	34.90	38.53	124	143	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	11650.10	45.31	54.00	-8.69	34.67	7.01	34.90	38.53	168	140	Average	VERTICAL
2 p	11650.45	59.58	74.00	-14.42	48.94	7.01	34.90	38.53	168	140	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℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11b CH 1 / 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	4823.85	48.64	74.00	-25.36	47.36	4.08	35.26	32.46	304	102	Peak	HORIZONTAL
2 a	4823.93	44.30	54.00	-9.70	43.02	4.08	35.26	32.46	304	102	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	4823.89	50.51	74.00	-23.49	49.23	4.08	35.26	32.46	133	100	Peak	VERTICAL
2 a	4823.94	47.38	54.00	-6.62	46.10	4.08	35.26	32.46	133	100	Average	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11b CH 6 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4873.97	42.04	54.00	-11.96	40.58	3.33	33.16	35.03	Average	118	312	HORIZONTAL
2	4874.06	47.47	74.00	-26.53	46.01	3.33	33.16	35.03	Peak	118	312	HORIZONTAL
3	7310.01	55.44	74.00	-18.56	50.82	4.06	35.96	35.40	Peak	158	341	HORIZONTAL
4	7311.69	49.16	54.00	-4.84	44.54	4.06	35.96	35.40	Average	158	341	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4873.96	43.98	54.00	-10.02	42.52	3.33	33.16	35.03	Average	112	84	VERTICAL
2	4873.98	48.71	74.00	-25.29	47.25	3.33	33.16	35.03	Peak	112	84	VERTICAL
3	7311.69	53.02	54.00	-0.98	48.40	4.06	35.96	35.40	Average	100	251	VERTICAL
4	7311.87	57.86	74.00	-16.14	53.24	4.06	35.96	35.40	Peak	100	251	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11b CH 11 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.90	47.90	74.00	-26.10	46.30	3.35	33.26	35.01	Peak	115	316	HORIZONTAL
2	4923.96	41.94	54.00	-12.06	40.34	3.35	33.26	35.01	Average	115	316	HORIZONTAL
3	7386.69	49.26	54.00	-4.74	44.51	4.06	36.09	35.40	Average	136	332	HORIZONTAL
4	7386.93	55.56	74.00	-18.44	50.81	4.06	36.09	35.40	Peak	136	332	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4923.95	48.33	74.00	-25.67	46.73	3.35	33.26	35.01	Peak	140	122	VERTICAL
2	4923.97	43.54	54.00	-10.46	41.94	3.35	33.26	35.01	Average	140	122	VERTICAL
3	7386.69	52.81	54.00	-1.19	48.06	4.06	36.09	35.40	Average	101	252	VERTICAL
4	7386.91	57.82	74.00	-16.18	53.07	4.06	36.09	35.40	Peak	101	252	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802. 11g CH 1 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4820.19	45.55	74.00	-28.45	44.21	3.31	33.06	35.03	Peak	114	311	HORIZONTAL
2	4822.24	32.07	54.00	-21.93	30.73	3.31	33.06	35.03	Average	114	311	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4820.38	47.15	74.00	-26.85	45.81	3.31	33.06	35.03	Peak	100	161	VERTICAL
2	4826.00	33.85	54.00	-20.15	32.51	3.31	33.06	35.03	Average	100	161	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802. 11g CH 6 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4874.06	33.07	54.00	-20.93	31.61	3.33	33.16	35.03	Average	100	38	HORIZONTAL
2	4874.67	47.17	74.00	-26.83	45.71	3.33	33.16	35.03	Peak	100	38	HORIZONTAL
3	7310.12	47.58	54.00	-6.42	42.96	4.06	35.96	35.40	Average	158	340	HORIZONTAL
4	7310.60	61.39	74.00	-12.61	56.77	4.06	35.96	35.40	Peak	158	340	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4874.19	34.17	54.00	-19.83	32.71	3.33	33.16	35.03	Average	100	353	VERTICAL
2	4874.61	47.94	74.00	-26.06	46.48	3.33	33.16	35.03	Peak	100	353	VERTICAL
3	7308.24	53.34	54.00	-0.66	48.72	4.06	35.96	35.40	Average	139	73	VERTICAL
4	7310.62	67.13	74.00	-6.87	62.51	4.06	35.96	35.40	Peak	139	73	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802. 11g CH 11 / 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	4924.15	42.53	74.00	-31.47	40.77	4.13	35.03	32.66	108	100	Peak	HORIZONTAL
2	4924.23	30.25	54.00	-23.75	28.49	4.13	35.03	32.66	108	100	Average	HORIZONTAL
3 p	7382.28	59.37	74.00	-14.63	52.17	5.34	34.90	36.76	69	109	Peak	HORIZONTAL
4 a	7383.15	45.24	54.00	-8.76	38.04	5.34	34.90	36.76	69	109	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	4923.79	31.18	54.00	-22.82	29.42	4.13	35.03	32.66	226	100	Average	VERTICAL
2	4924.50	43.54	74.00	-30.46	41.78	4.13	35.03	32.66	226	100	Peak	VERTICAL
3 a	7383.40	52.98	54.00	-1.02	45.78	5.34	34.90	36.76	19	191	Average	VERTICAL
4 p	7387.64	67.46	74.00	-6.54	60.23	5.35	34.90	36.78	19	191	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a CH 149 / 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 a	11489.88	40.55	54.00	-13.45	29.98	6.82	34.75	38.50	169	100	Average	HORIZONTAL
2 p	11490.40	55.14	74.00	-18.86	44.57	6.82	34.75	38.50	169	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	11490.02	43.01	54.00	-10.99	32.44	6.82	34.75	38.50	358	100	Average	VERTICAL
2 p	11490.92	57.26	74.00	-16.74	46.69	6.82	34.75	38.50	358	100	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a CH 157 / 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 a	11570.24	39.85	54.00	-14.15	29.23	6.93	34.82	38.51	168	100	Average	HORIZONTAL
2 p	11570.51	53.86	74.00	-20.14	43.24	6.93	34.82	38.51	168	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	11570.13	42.06	54.00	-11.94	31.44	6.93	34.82	38.51	144	100	Average	VERTICAL
2 p	11570.53	56.29	74.00	-17.71	45.67	6.93	34.82	38.51	144	100	Peak	VERTICAL

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11a CH 165 / 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	11649.40	52.65	74.00	-21.35	42.01	7.01	34.90	38.53	278	100	Peak	HORIZONTAL
2 a	11650.00	38.55	54.00	-15.45	27.91	7.01	34.90	38.53	278	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 a	11649.99	44.15	54.00	-9.85	33.51	7.01	34.90	38.53	172	182	Average	VERTICAL
2 p	11650.34	58.34	74.00	-15.66	47.70	7.01	34.90	38.53	172	182	Peak	VERTICAL

4.7. Band Edge Emissions Measurement

4.7.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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 / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	100 KHz /100 KHz for Peak

4.7.3. Test Procedures

1. The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around bandedges.
2. 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 4.5.4.

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

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 20MHz Ch 1, 6, 11 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Channel 1

		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	!	2390.00	72.71	74.00	-1.29	42.00	2.84	0.00	27.87	146	100	Peak	VERTICAL
2	!	2390.00	52.04	54.00	-1.96	21.33	2.84	0.00	27.87	146	100	Average	VERTICAL
3	p	2409.92	112.37				2.85	0.00	27.84	146	100	Peak	VERTICAL
4	a	2415.05	103.02				2.85	0.00	27.84	146	100	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

		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		2389.84	57.47	74.00	-16.53	26.76	2.84	0.00	27.87	145	100	Peak	VERTICAL
2		2390.00	42.62	54.00	-11.38	11.91	2.84	0.00	27.87	145	100	Average	VERTICAL
3	a	2434.44	102.53				2.86	0.00	27.81	145	100	Average	VERTICAL
4	p	2438.92	111.76				2.87	0.00	27.78	145	100	Peak	VERTICAL
5		2483.50	60.00	74.00	-14.00	29.37	2.90	0.00	27.73	145	100	Peak	VERTICAL
6		2483.50	41.24	54.00	-12.76	10.61	2.90	0.00	27.73	145	100	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2437MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2467.45	98.74				2.26	28.33	0.00	Average	133	285	VERTICAL
2	2467.45	108.23				2.26	28.33	0.00	Peak	133	285	VERTICAL
3	2483.50	53.30	54.00	-0.70	22.67	2.26	28.37	0.00	Average	133	285	VERTICAL
4	2483.50	71.97	74.00	-2.03	41.34	2.26	28.37	0.00	Peak	133	285	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 3, 6, 9 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Channel 3

	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 !	2389.04	69.87	74.00	-4.13	39.16	2.84	0.00	27.87	146	100	Peak	VERTICAL
2 !	2390.00	52.35	54.00	-1.65	21.64	2.84	0.00	27.87	146	100	Average	VERTICAL
3 a	2412.71	98.94				2.85	0.00	27.84	146	100	Average	VERTICAL
4 p	2414.31	108.59				2.85	0.00	27.84	146	100	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2390.00	43.05	54.00	-10.95	12.66	2.22	28.17	0.00	Average	100	252	VERTICAL
2	2390.00	56.81	74.00	-17.19	26.42	2.22	28.17	0.00	Peak	100	252	VERTICAL
3	2446.30	95.61				2.24	28.29	0.00	Average	100	252	VERTICAL
4	2447.26	106.39				2.24	28.29	0.00	Peak	100	252	VERTICAL
5	2483.50	53.18	54.00	-0.82	22.55	2.26	28.37	0.00	Average	100	252	VERTICAL
6	2483.50	69.49	74.00	-4.51	38.86	2.26	28.37	0.00	Peak	100	252	VERTICAL

Item 3, 4 are the fundamental frequency at 2437MHz.

Channel 9

	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	2436.30	96.96				2.86	0.00	27.81	146	100	Average	VERTICAL
2 p	2437.26	106.12				2.87	0.00	27.78	146	100	Peak	VERTICAL
3 !	2483.50	52.90	54.00	-1.10	22.27	2.90	0.00	27.73	146	100	Average	VERTICAL
4 !	2487.99	69.32	74.00	-4.68	38.71	2.91	0.00	27.70	146	100	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 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 20MHz Ch 1, 6, 11 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Channel 1

		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		2389.52	67.35	74.00	-6.65	36.64	2.84	0.00	27.87	148	100	Peak	VERTICAL
2	!	2390.00	52.52	54.00	-1.48	21.81	2.84	0.00	27.87	148	100	Average	VERTICAL
3	p	2405.43	114.52				2.85	0.00	27.84	148	100	Peak	VERTICAL
4	a	2409.44	104.41				2.85	0.00	27.84	148	100	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

		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		2390.00	55.81	74.00	-18.19	25.10	2.84	0.00	27.87	149	100	Peak	VERTICAL
2		2390.00	43.93	54.00	-10.07	13.22	2.84	0.00	27.87	149	100	Average	VERTICAL
3	p	2439.56	115.85				2.87	0.00	27.78	149	100	Peak	VERTICAL
4	a	2440.69	104.59				2.87	0.00	27.78	149	100	Average	VERTICAL
5		2483.50	43.53	54.00	-10.47	12.90	2.90	0.00	27.73	149	100	Average	VERTICAL
6		2484.14	59.03	74.00	-14.97	28.40	2.90	0.00	27.73	149	100	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2467.61	98.57				2.26	28.33	0.00	Average	134	281	VERTICAL
2	2469.37	107.64				2.26	28.37	0.00	Peak	134	281	VERTICAL
3	2483.50	53.35	54.00	-0.65	22.72	2.26	28.37	0.00	Average	134	281	VERTICAL
4	2483.82	71.13	74.00	-2.87	40.50	2.26	28.37	0.00	Peak	134	281	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 3, 6, 9 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Channel 3

	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	2389.36	65.70	74.00	-8.30	34.99	2.84	0.00	27.87	147	100	Peak	VERTICAL
2 !	2390.00	52.36	54.00	-1.64	21.65	2.84	0.00	27.87	147	100	Average	VERTICAL
3 p	2411.10	110.61				2.85	0.00	27.84	147	100	Peak	VERTICAL
4 a	2425.21	100.15				2.86	0.00	27.81	147	100	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	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	2390.00	63.19	74.00	-10.81	32.48	2.84	0.00	27.87	148	100	Peak	VERTICAL
2 !	2390.00	49.77	54.00	-4.23	19.06	2.84	0.00	27.87	148	100	Average	VERTICAL
3 a	2427.06	100.26				2.86	0.00	27.81	148	100	Average	VERTICAL
4 p	2441.49	110.52				2.87	0.00	27.78	148	100	Peak	VERTICAL
5 !	2483.50	53.06	54.00	-0.94	22.43	2.90	0.00	27.73	148	100	Average	VERTICAL
6	2485.10	67.60	74.00	-6.40	36.97	2.90	0.00	27.73	148	100	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2461.30	94.03				2.24	28.33	0.00	Average	100	261	VERTICAL
2	2462.58	105.19				2.24	28.33	0.00	Peak	100	261	VERTICAL
3	2486.06	52.81	54.00	-1.19	22.14	2.26	28.41	0.00	Average	100	261	VERTICAL
4	2487.03	70.15	74.00	-3.85	39.48	2.26	28.41	0.00	Peak	100	261	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 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 20MHz Ch 1, 6, 11 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.68	72.83	74.00	-1.17	42.45	2.21	28.17	0.00	Peak	152	67	HORIZONTAL
2	2390.00	53.14	54.00	-0.86	22.75	2.22	28.17	0.00	Average	152	67	HORIZONTAL
3	2407.19	110.86				2.22	28.21	0.00	Peak	152	67	HORIZONTAL
4	2408.80	101.00				2.22	28.21	0.00	Average	152	67	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.52	69.87	74.00	-4.13	39.49	2.21	28.17	0.00	Peak	152	112	HORIZONTAL
2	2390.00	49.25	54.00	-4.75	18.86	2.22	28.17	0.00	Average	152	112	HORIZONTAL
3	2431.39	104.70				2.23	28.25	0.00	Average	152	112	HORIZONTAL
4	2432.19	114.76				2.23	28.25	0.00	Peak	152	112	HORIZONTAL
5	2483.50	51.05	54.00	-2.95	20.41	2.26	28.38	0.00	Average	152	112	HORIZONTAL
6	2484.46	71.59	74.00	-2.41	40.95	2.26	28.38	0.00	Peak	152	112	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437MHz.

Channel 11

	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	2458.96	110.25				2.89	0.00	27.76	132	181	Peak	HORIZONTAL
2 a	2465.05	100.12				2.89	0.00	27.76	132	181	Average	HORIZONTAL
3 !	2483.50	71.64	74.00	-2.36	41.01	2.90	0.00	27.73	132	181	Peak	HORIZONTAL
4 !	2483.50	52.77	54.00	-1.23	22.14	2.90	0.00	27.73	132	181	Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS0 40MHz Ch 3, 6, 9 / Chain 1 / 1TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2388.72	69.19	74.00	-4.81	38.81	2.21	28.17	0.00	Peak	123	102	HORIZONTAL
2	2390.00	53.08	54.00	-0.92	22.69	2.22	28.17	0.00	Average	123	102	HORIZONTAL
3	2412.39	96.61				2.22	28.21	0.00	Average	123	102	HORIZONTAL
4	2419.76	106.26				2.23	28.25	0.00	Peak	123	102	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.68	61.89	74.00	-12.11	31.51	2.21	28.17	0.00	Peak	182	99	HORIZONTAL
2	2390.00	47.69	54.00	-6.31	17.30	2.22	28.17	0.00	Average	182	99	HORIZONTAL
3	2427.39	98.18				2.23	28.25	0.00	Average	182	99	HORIZONTAL
4	2429.31	108.11				2.23	28.25	0.00	Peak	182	99	HORIZONTAL
5	2483.50	53.13	54.00	-0.87	22.49	2.26	28.38	0.00	Average	182	99	HORIZONTAL
6	2485.42	70.11	74.00	-3.89	39.43	2.26	28.42	0.00	Peak	182	99	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2444.31	106.35				2.24	28.29	0.00	Peak	151	94	HORIZONTAL
2	2447.51	96.89				2.24	28.29	0.00	Average	151	94	HORIZONTAL
3	2483.50	52.45	54.00	-1.55	21.81	2.26	28.38	0.00	Average	151	94	HORIZONTAL
4	2485.10	69.81	74.00	-4.19	39.13	2.26	28.42	0.00	Peak	151	94	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 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 20MHz Ch 1, 6, 11 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2390.00	53.19	54.00	-0.81	22.80	2.22	28.17	0.00	Average	156	114	HORIZONTAL
2	2390.00	69.37	74.00	-4.63	38.98	2.22	28.17	0.00	Peak	156	114	HORIZONTAL
3	2407.83	110.83				2.22	28.21	0.00	Peak	156	114	HORIZONTAL
4	2408.80	101.58				2.22	28.21	0.00	Average	156	114	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.68	62.08	74.00	-11.92	31.70	2.21	28.17	0.00	Peak	150	98	HORIZONTAL
2	2390.00	45.10	54.00	-8.90	14.71	2.22	28.17	0.00	Average	150	98	HORIZONTAL
3	2432.35	113.21				2.23	28.25	0.00	Peak	150	98	HORIZONTAL
4	2432.51	113.64				2.23	28.25	0.00	Peak	150	98	HORIZONTAL
5	2442.61	103.66				2.24	28.29	0.00	Average	150	98	HORIZONTAL
6	2483.50	47.54	54.00	-6.46	16.90	2.26	28.38	0.00	Average	150	98	HORIZONTAL
7	2483.82	63.07	74.00	-10.93	32.43	2.26	28.38	0.00	Peak	150	98	HORIZONTAL

Item 3, 4, 5 are the fundamental frequency at 2437MHz.

Channel 11

	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	2456.39	112.93				2.89	0.00	27.76	88	178	Peak	HORIZONTAL
2 a	2457.35	102.09				2.89	0.00	27.76	88	178	Average	HORIZONTAL
3 !	2483.50	69.49	74.00	-4.51	38.86	2.90	0.00	27.73	88	178	Peak	HORIZONTAL
4 !	2483.50	52.82	54.00	-1.18	22.19	2.90	0.00	27.73	88	178	Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11n MCS8 40MHz Ch 3, 6, 9 / Chain 1 + Chain 2/ 2TX
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Channel 3

		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		2387.12	66.19	74.00	-7.81	35.48	2.84	0.00	27.87	82	123	Peak	HORIZONTAL
2	!	2390.00	53.20	54.00	-0.80	22.49	2.84	0.00	27.87	82	123	Average	HORIZONTAL
3	a	2413.67	98.58				2.85	0.00	27.84	82	123	Average	HORIZONTAL
4	p	2426.81	108.44				2.86	0.00	27.81	82	123	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

		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		2390.00	59.88	74.00	-14.12	29.17	2.84	0.00	27.87	189	128	Peak	HORIZONTAL
2	!	2390.00	49.21	54.00	-4.79	18.50	2.84	0.00	27.87	189	128	Average	HORIZONTAL
3	p	2433.47	106.43				2.86	0.00	27.81	189	128	Peak	HORIZONTAL
4	a	2434.12	95.33				2.86	0.00	27.81	189	128	Average	HORIZONTAL
5		2483.50	67.14	74.00	-6.86	36.51	2.90	0.00	27.73	189	128	Peak	HORIZONTAL
6	!	2483.50	53.39	54.00	-0.61	22.76	2.90	0.00	27.73	189	128	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437MHz.

Channel 9

		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	2436.62	98.90				2.87	0.00	27.78	103	179	Average	HORIZONTAL
2	p	2456.81	109.69				2.89	0.00	27.76	103	179	Peak	HORIZONTAL
3		2483.50	67.20	74.00	-6.80	36.57	2.90	0.00	27.73	103	179	Peak	HORIZONTAL
4	!	2483.50	53.34	54.00	-0.66	22.71	2.90	0.00	27.73	103	179	Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 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℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Channel 1

		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		2386.15	59.15	74.00	-14.85	28.44	2.84	0.00	27.87	146	100	Peak	VERTICAL
2	!	2388.08	52.24	54.00	-1.76	21.53	2.84	0.00	27.87	146	100	Average	VERTICAL
3	a	2411.20	113.23				2.85	0.00	27.84	146	100	Average	VERTICAL
4	p	2412.96	116.74				2.85	0.00	27.84	146	100	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

		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		2388.24	40.66	54.00	-13.34	9.95	2.84	0.00	27.87	145	100	Average	VERTICAL
2		2389.20	52.48	74.00	-21.52	21.77	2.84	0.00	27.87	145	100	Peak	VERTICAL
3	p	2436.04	110.24				2.86	0.00	27.81	145	100	Peak	VERTICAL
4	a	2436.20	106.79				2.86	0.00	27.81	145	100	Average	VERTICAL
5		2484.30	51.86	74.00	-22.14	21.23	2.90	0.00	27.73	145	100	Peak	VERTICAL
6		2484.78	40.33	54.00	-13.67	9.70	2.90	0.00	27.73	145	100	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

		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	2461.20	106.18				2.89	0.00	27.76	146	100	Average	VERTICAL
2	p	2462.96	109.78				2.89	0.00	27.76	146	100	Peak	VERTICAL
3		2496.00	55.67	74.00	-18.33	25.06	2.91	0.00	27.70	146	100	Peak	VERTICAL
4		2496.80	46.92	54.00	-7.08	16.31	2.91	0.00	27.70	146	100	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11g CH 1, 6, 11 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 1

Channel 1

		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	!	2390.00	71.00	74.00	-3.00	40.29	2.84	0.00	27.87	146	100	Peak	VERTICAL
2	!	2390.00	52.04	54.00	-1.96	21.33	2.84	0.00	27.87	146	100	Average	VERTICAL
3	a	2414.08	103.98				2.85	0.00	27.84	146	100	Average	VERTICAL
4	p	2414.72	113.33				2.85	0.00	27.84	146	100	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

		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		2388.72	56.46	74.00	-17.54	25.75	2.84	0.00	27.87	146	100	Peak	VERTICAL
2		2390.00	42.95	54.00	-11.05	12.24	2.84	0.00	27.87	146	100	Average	VERTICAL
3	p	2438.92	112.34				2.87	0.00	27.78	146	100	Peak	VERTICAL
4	a	2439.08	103.12				2.87	0.00	27.78	146	100	Average	VERTICAL
5		2483.98	60.44	74.00	-13.56	29.81	2.90	0.00	27.73	146	100	Peak	VERTICAL
6		2484.78	41.61	54.00	-12.39	10.98	2.90	0.00	27.73	146	100	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2464.72	108.26				2.24	28.33	0.00	Peak	100	260	VERTICAL
2	2466.01	98.73				2.24	28.33	0.00	Average	100	260	VERTICAL
3	2483.50	52.57	54.00	-1.43	21.94	2.26	28.37	0.00	Average	100	260	VERTICAL
4	2483.50	67.52	74.00	-6.48	36.89	2.26	28.37	0.00	Peak	100	260	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Channel 1

		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	!	2385.19	52.18	54.00	-1.82	21.46	2.83	0.00	27.89	238	153	Average	HORIZONTAL
2		2390.00	59.93	74.00	-14.07	29.22	2.84	0.00	27.87	238	153	Peak	HORIZONTAL
3	p	2411.04	113.73				2.85	0.00	27.84	238	153	Peak	HORIZONTAL
4	a	2411.20	110.39				2.85	0.00	27.84	238	153	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2356.03	45.00	54.00	-9.00	14.71	2.19	28.10	0.00	Average	123	97	HORIZONTAL
2	2358.91	55.34	74.00	-18.66	25.05	2.19	28.10	0.00	Peak	123	97	HORIZONTAL
3	2436.04	113.43				2.23	28.29	0.00	Peak	123	97	HORIZONTAL
4	2436.36	109.69				2.23	28.29	0.00	Average	123	97	HORIZONTAL
5	2485.42	41.86	54.00	-12.14	11.18	2.26	28.42	0.00	Average	123	97	HORIZONTAL
6	2486.71	52.87	74.00	-21.13	22.19	2.26	28.42	0.00	Peak	123	97	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2461.20	108.58				2.24	28.33	0.00	Average	180	89	HORIZONTAL
2	2462.96	112.30				2.24	28.33	0.00	Peak	180	89	HORIZONTAL
3	2484.62	55.51	74.00	-18.49	24.87	2.26	28.38	0.00	Peak	180	89	HORIZONTAL
4	2484.78	45.90	54.00	-8.10	15.26	2.26	28.38	0.00	Average	180	89	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23°C	Humidity	65%
Test Engineer	Rion Li	Configurations	IEEE 802.11g CH 1, 6, 11 / Chain 1
Test Date	Dec. 08, 2011	Test Mode	Mode 2

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2390.00	53.35	54.00	-0.65	22.96	2.22	28.17	0.00	Average	156	109	HORIZONTAL
2	2390.00	70.39	74.00	-3.61	40.00	2.22	28.17	0.00	Peak	156	109	HORIZONTAL
3	2407.67	111.89				2.22	28.21	0.00	Peak	156	109	HORIZONTAL
4	2409.44	102.84				2.22	28.21	0.00	Average	156	109	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.04	65.77	74.00	-8.23	35.39	2.21	28.17	0.00	Peak	122	95	HORIZONTAL
2	2390.00	48.16	54.00	-5.84	17.77	2.22	28.17	0.00	Average	122	95	HORIZONTAL
3	2434.44	105.37				2.23	28.29	0.00	Average	122	95	HORIZONTAL
4	2435.24	114.72				2.23	28.29	0.00	Peak	122	95	HORIZONTAL
5	2483.50	49.09	54.00	-4.91	18.45	2.26	28.38	0.00	Average	122	95	HORIZONTAL
6	2484.94	65.99	74.00	-8.01	35.35	2.26	28.38	0.00	Peak	122	95	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

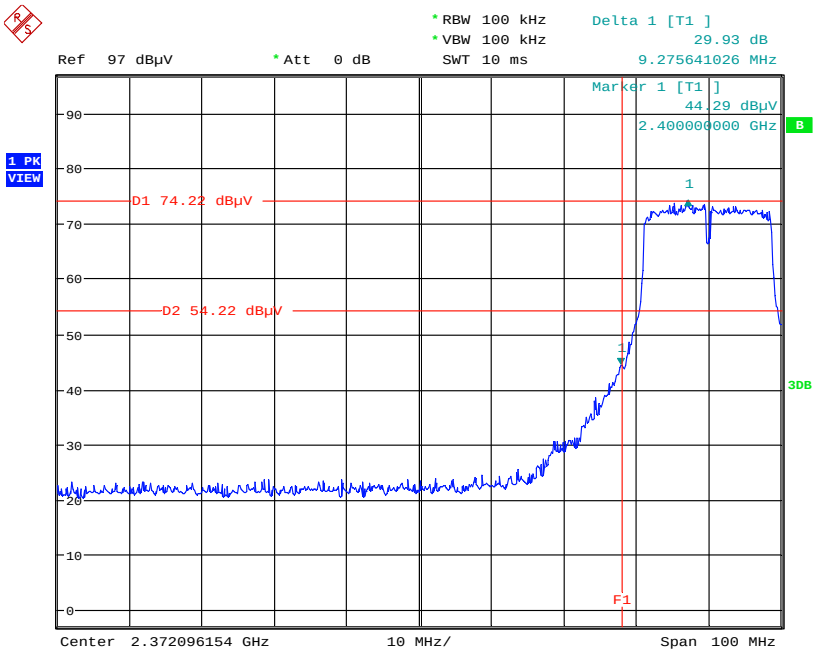
Channel 11

	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	2458.15	109.38				2.89	0.00	27.76	130	125	Peak	HORIZONTAL
2 a	2459.44	100.01				2.89	0.00	27.76	130	125	Average	HORIZONTAL
3 !	2483.50	69.81	74.00	-4.19	39.18	2.90	0.00	27.73	130	125	Peak	HORIZONTAL
4 !	2483.50	51.24	54.00	-2.76	20.61	2.90	0.00	27.73	130	125	Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

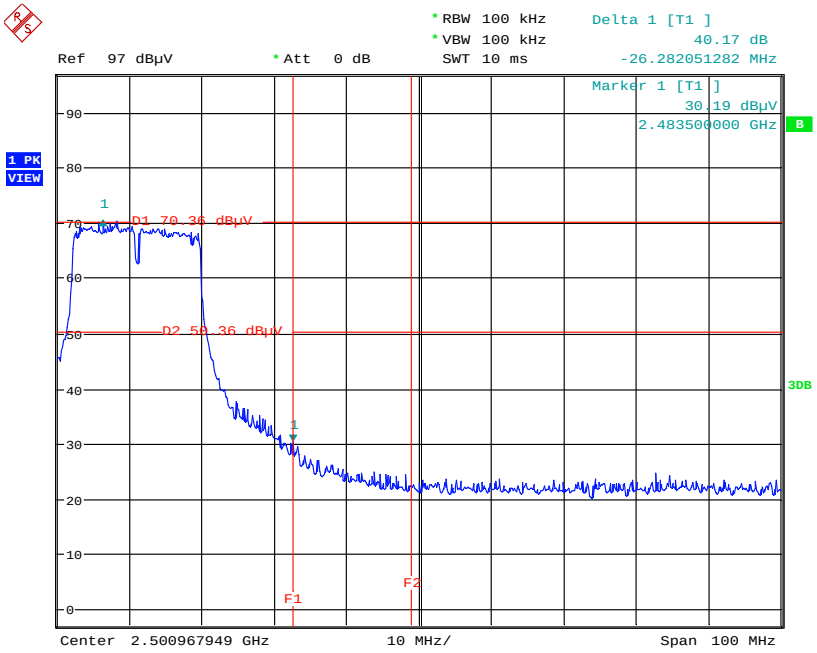
For Emission not in Restricted Band

Low Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 /1TX / 2412 MHz / Mode 1



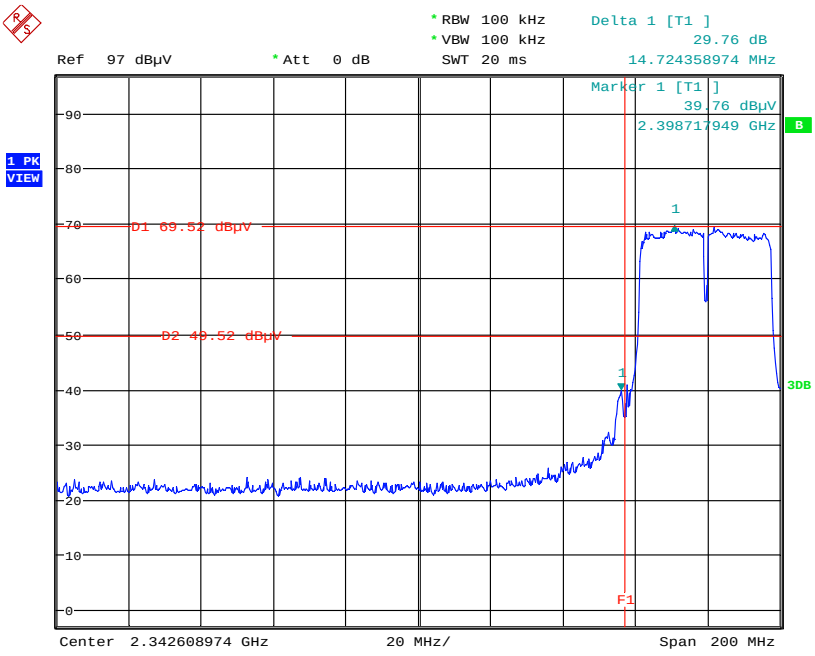
Date: 7.DEC.2011 22:47:54

High Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 /1TX / 2462 MHz / Mode 1



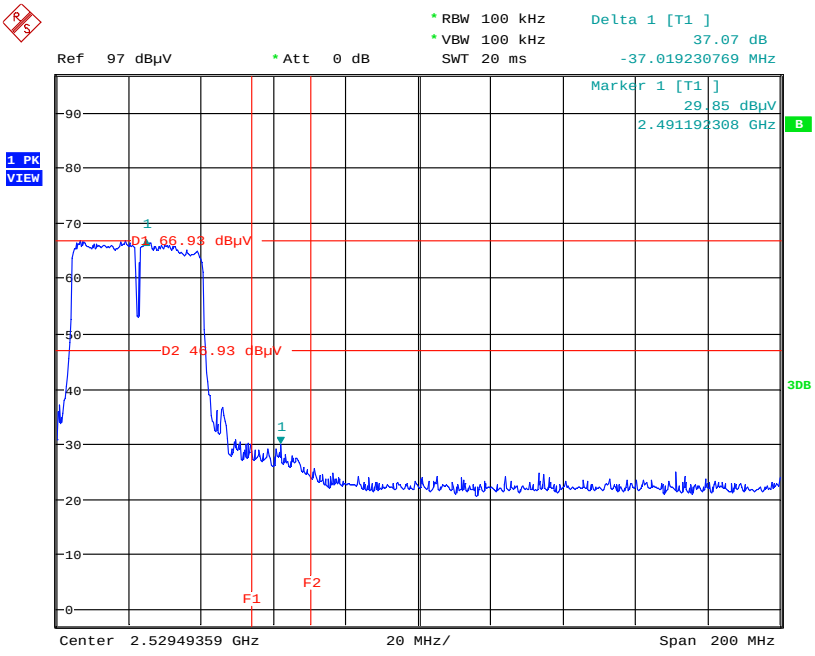
Date: 8.DEC.2011 01:46:04

Low Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 /1TX / 2422 MHz / Mode 1



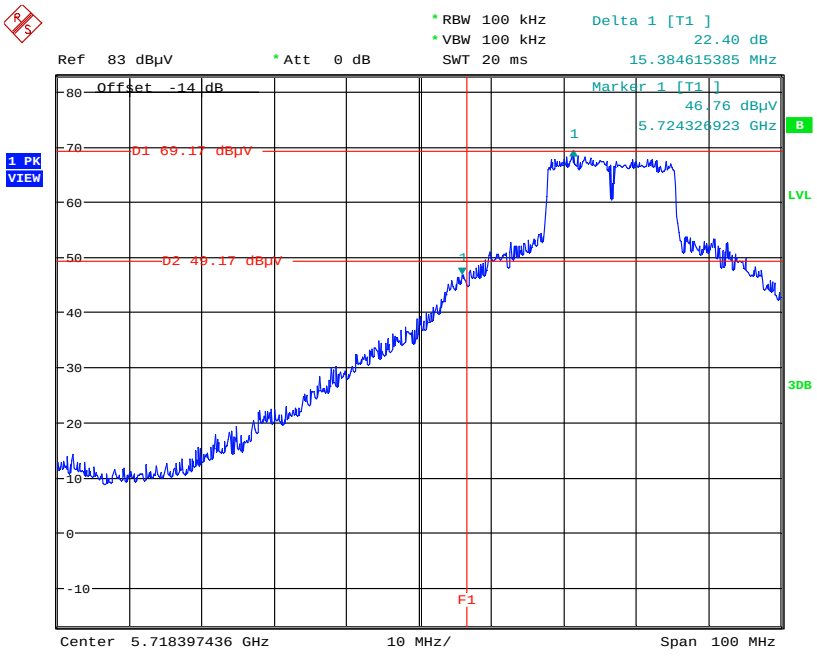
Date: 7.DEC.2011 23:13:17

High Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 /1TX / 2452 MHz / Mode 1



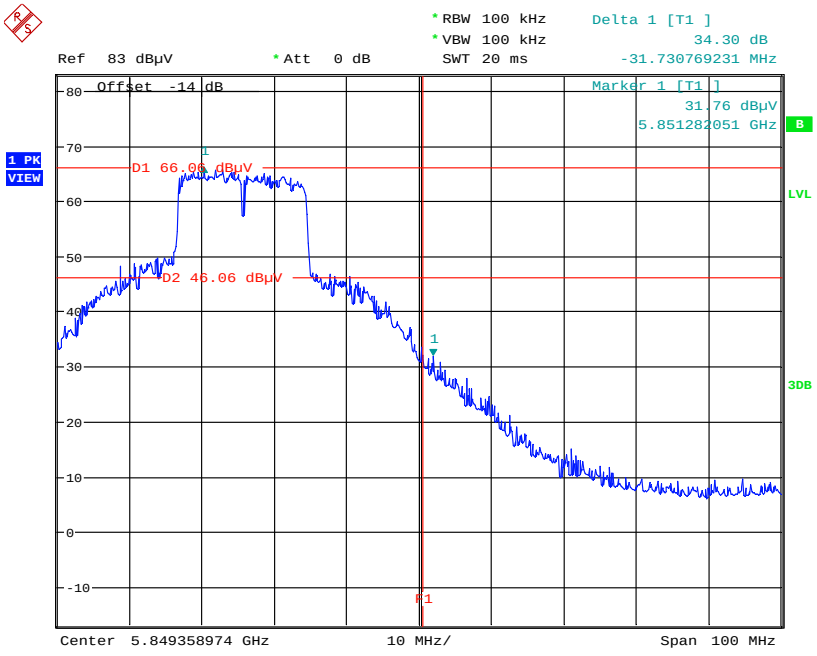
Date: 8.DEC.2011 01:57:21

Low Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 /1TX / 5745 MHz / Mode 1



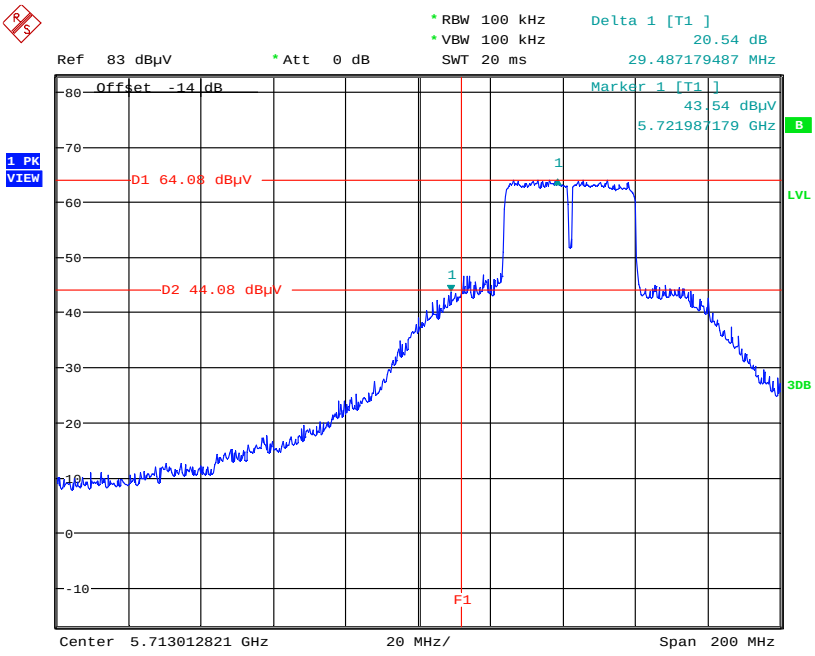
Date: 9.DEC.2011 20:53:13

High Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 /1TX / 5825 MHz / Mode 1



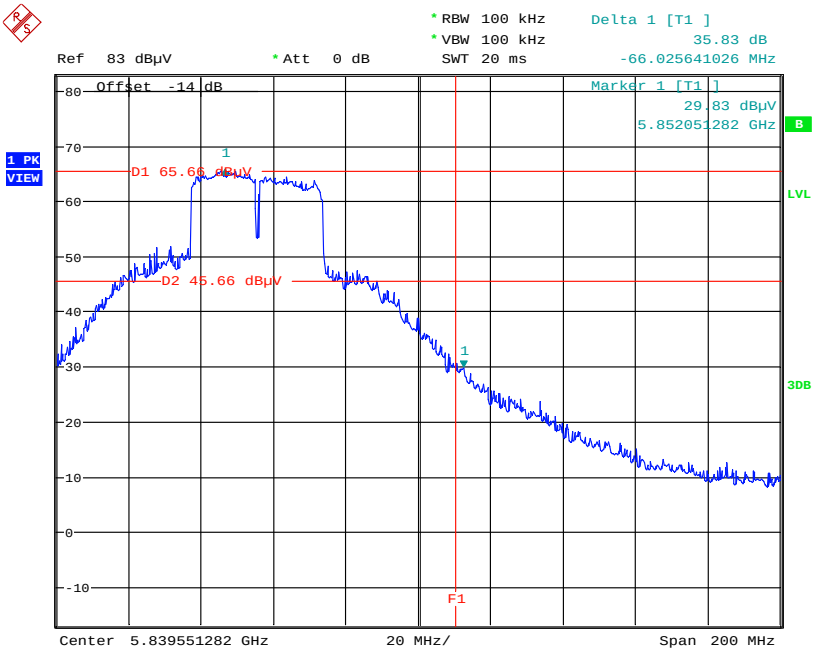
Date: 9.DEC.2011 20:50:40

Low Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 /1TX / 5755 MHz / Mode 1



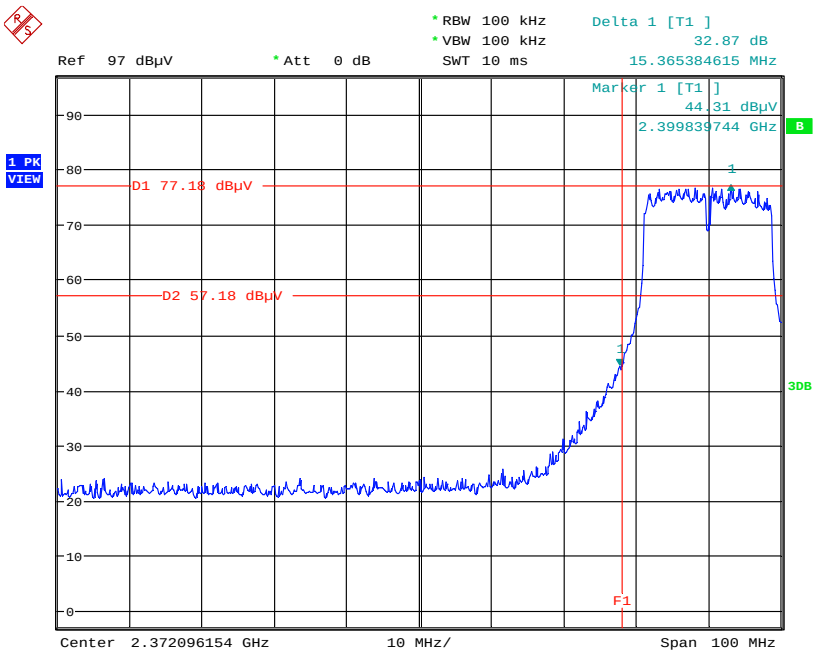
Date: 9.DEC.2011 21:06:25

High Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 /1TX / 5795 MHz / Mode 1



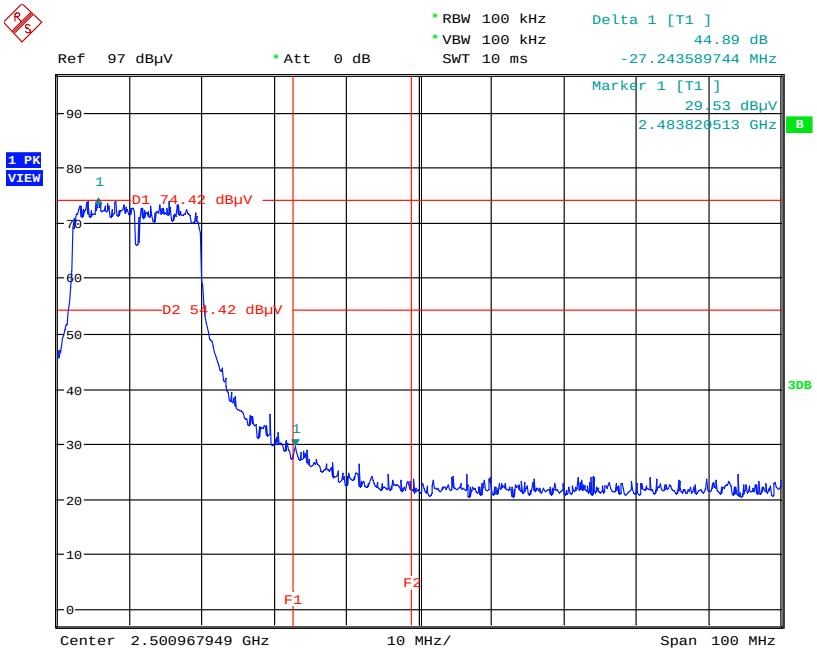
Date: 9.DEC.2011 21:10:56

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 /2TX / 2412 MHz / Mode 1



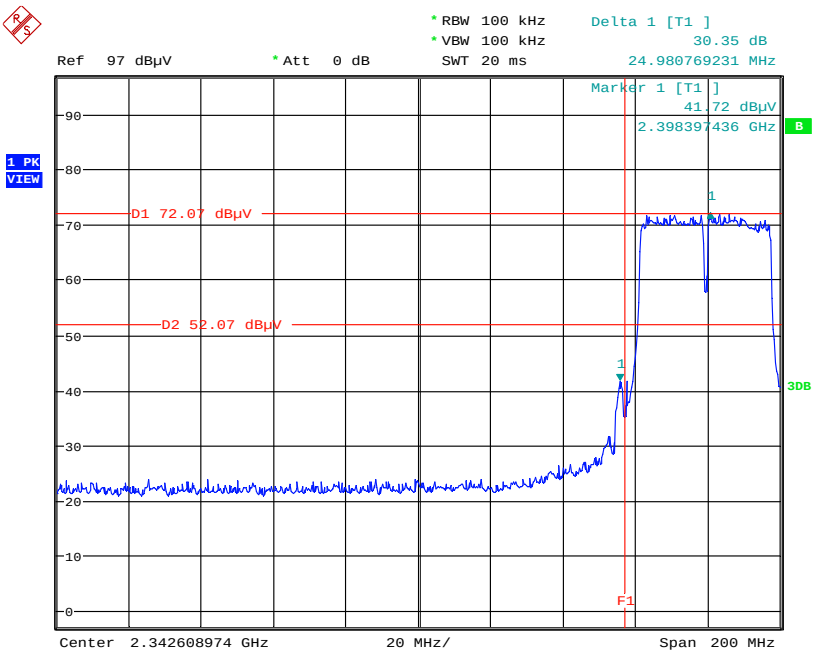
Date: 7.DEC.2011 22:58:12

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 /2TX / 2462 MHz / Mode 1



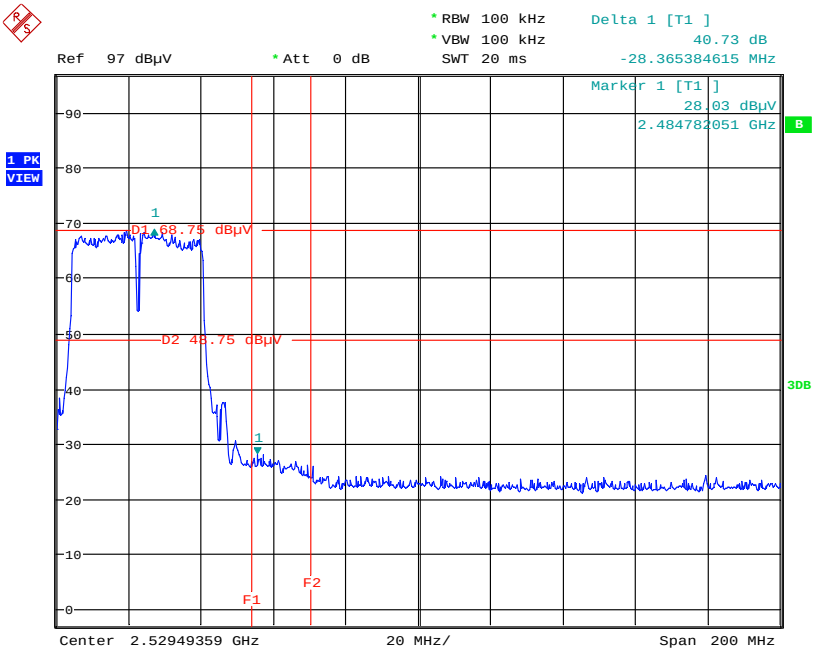
Date: 8.DEC.2011 01:43:30

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 /2TX / 2422 MHz / Mode 1



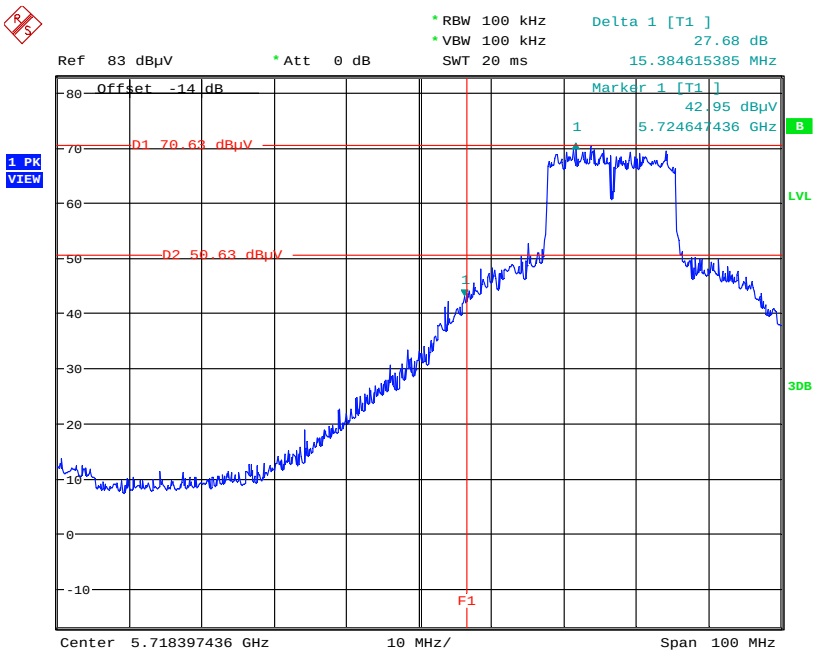
Date: 7.DEC.2011 23:21:16

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 /2TX / 2452 MHz / Mode 1



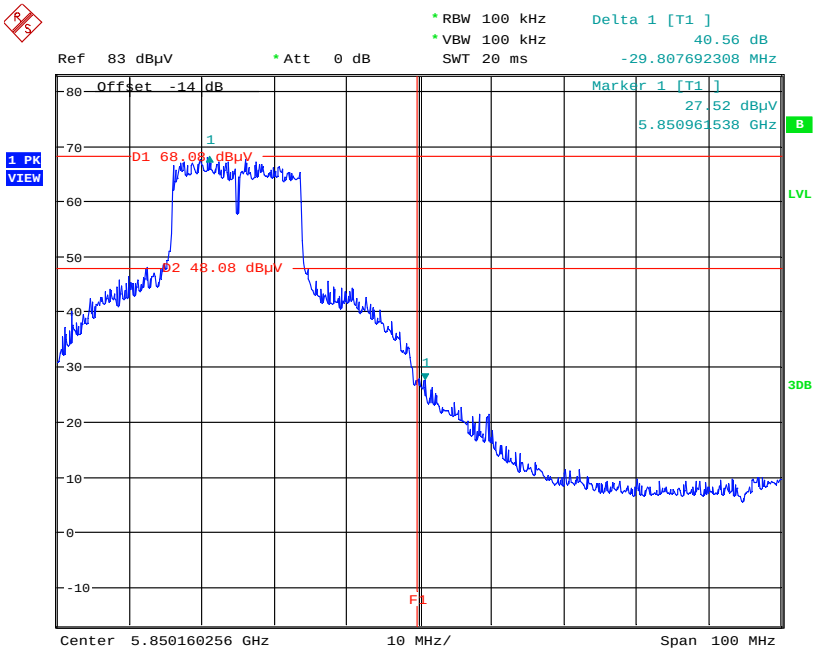
Date: 8.DEC.2011 02:37:50

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 /2TX / 5745 MHz / Mode 1



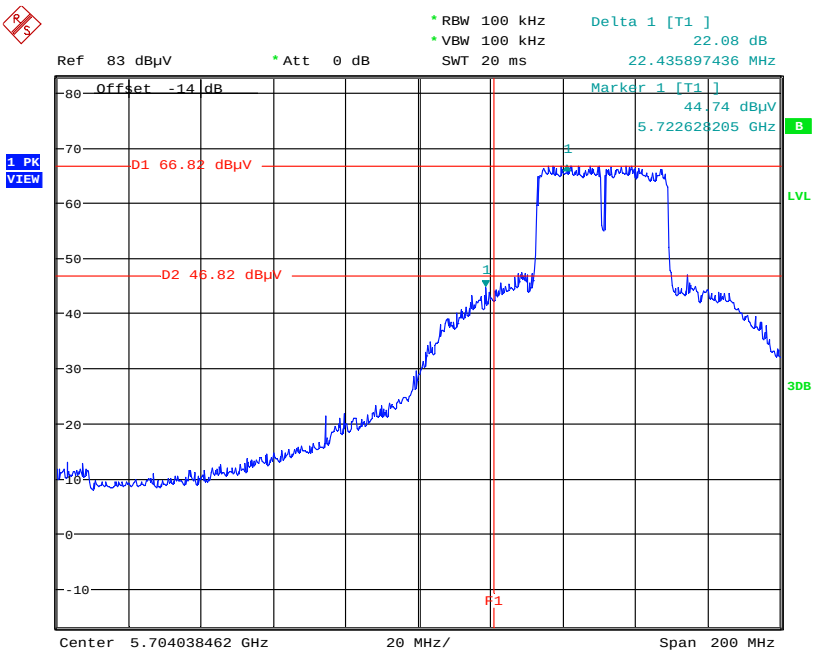
Date: 9.DEC.2011 20:58:33

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 /2TX / 5825 MHz / Mode 1



Date: 9.DEC.2011 21:01:57

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 /2TX / 5755 MHz / Mode 1



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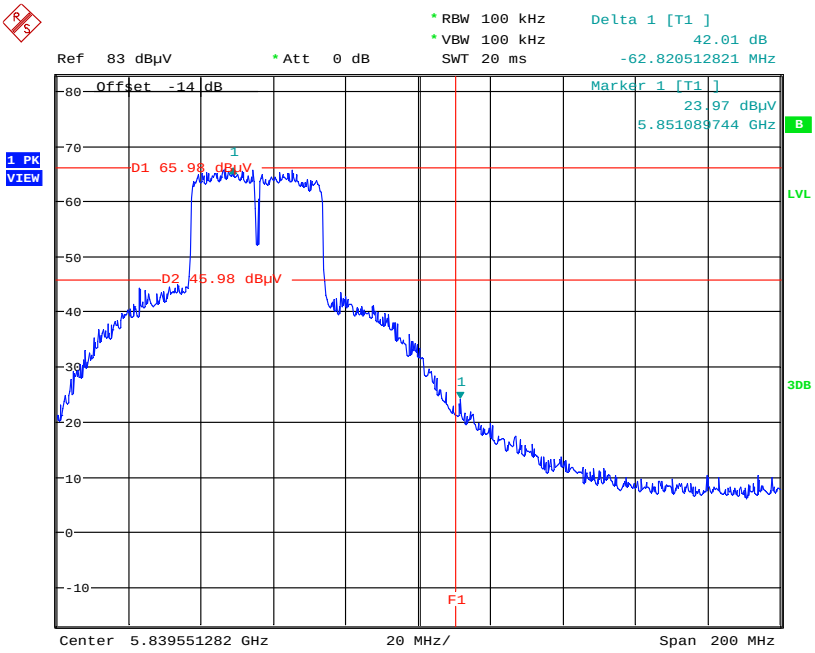
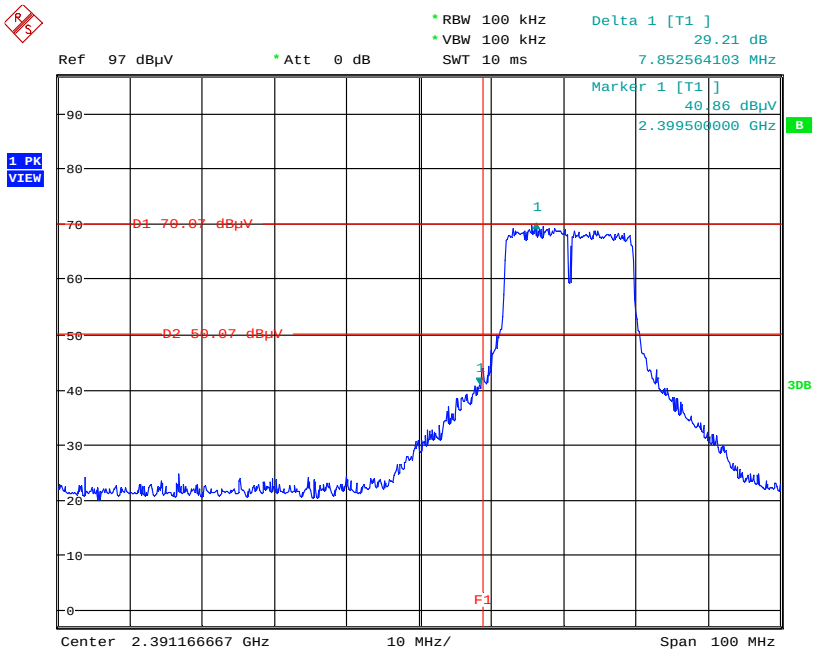
High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 /2TX / 5795 MHz / Mode 1



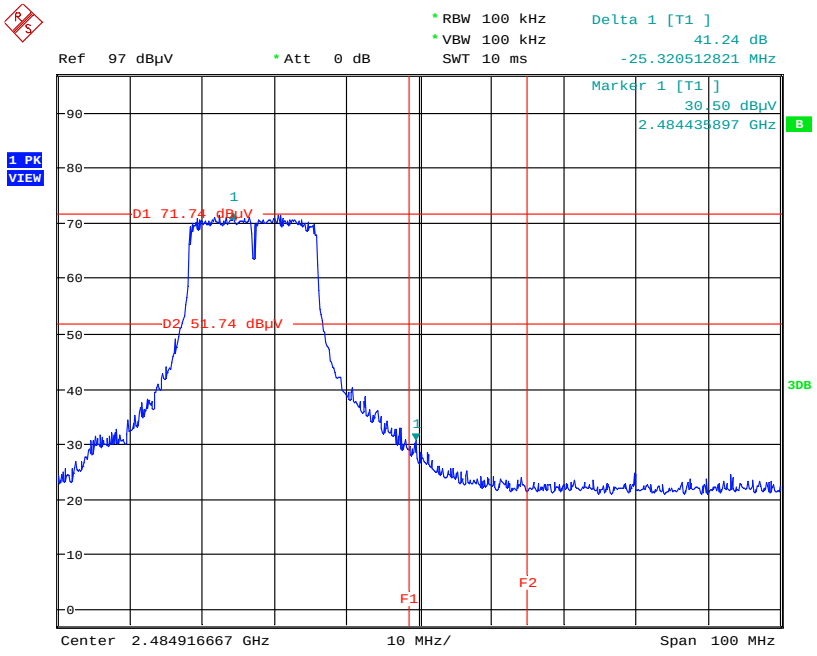
Date: 9.DEC.2011 21:15:46

Low Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 /1TX / 2412 MHz / Mode 2



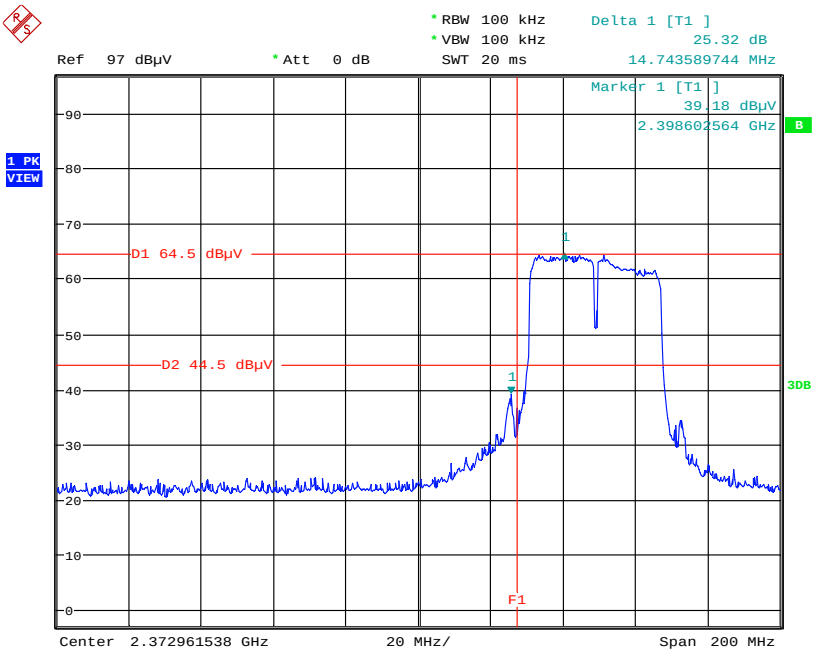
Date: 3.DEC.2011 16:19:04

High Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 /1TX / 2462 MHz / Mode 2



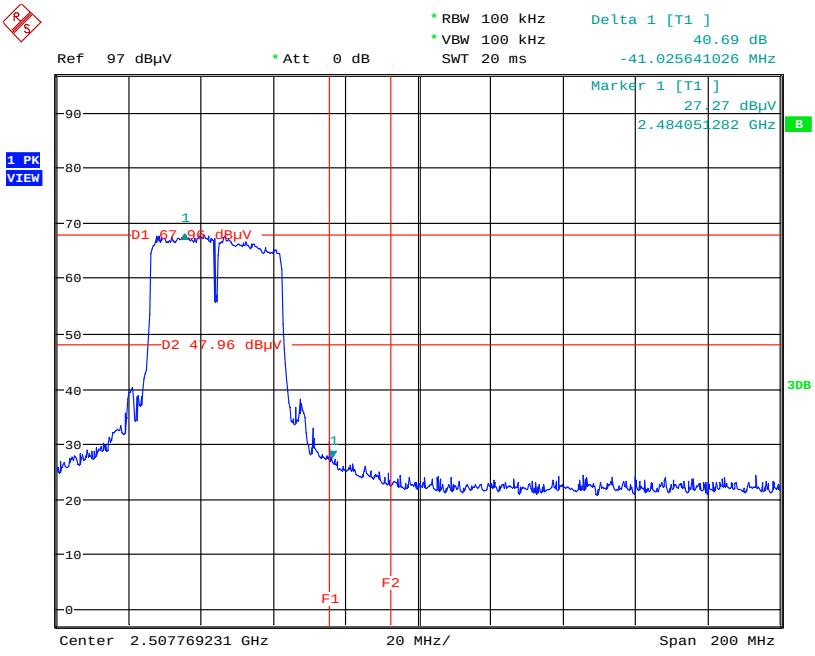
Date: 3.DEC.2011 17:04:40

Low Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 /1TX / 2422 MHz / Mode 2



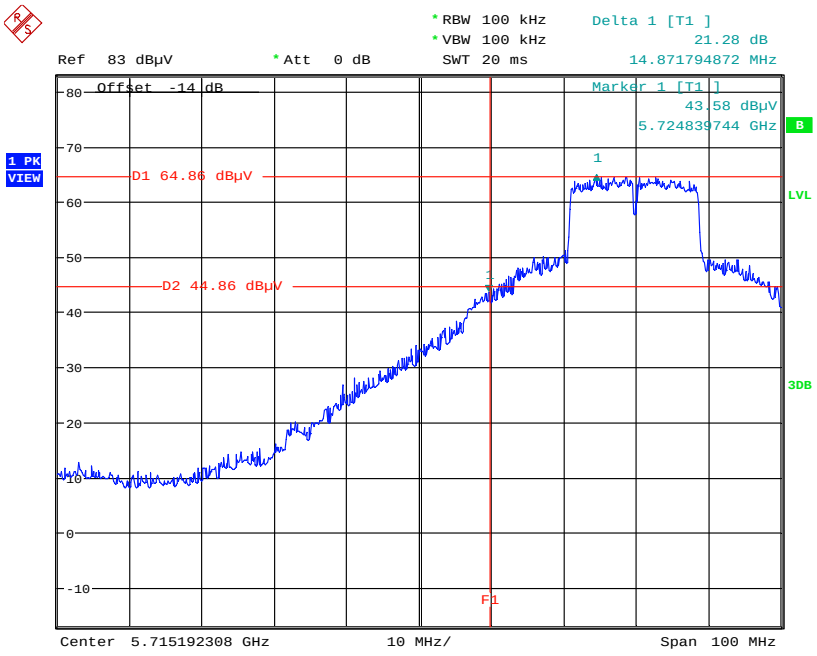
Date: 3.DEC.2011 19:44:53

High Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 /1TX / 2452 MHz / Mode 2



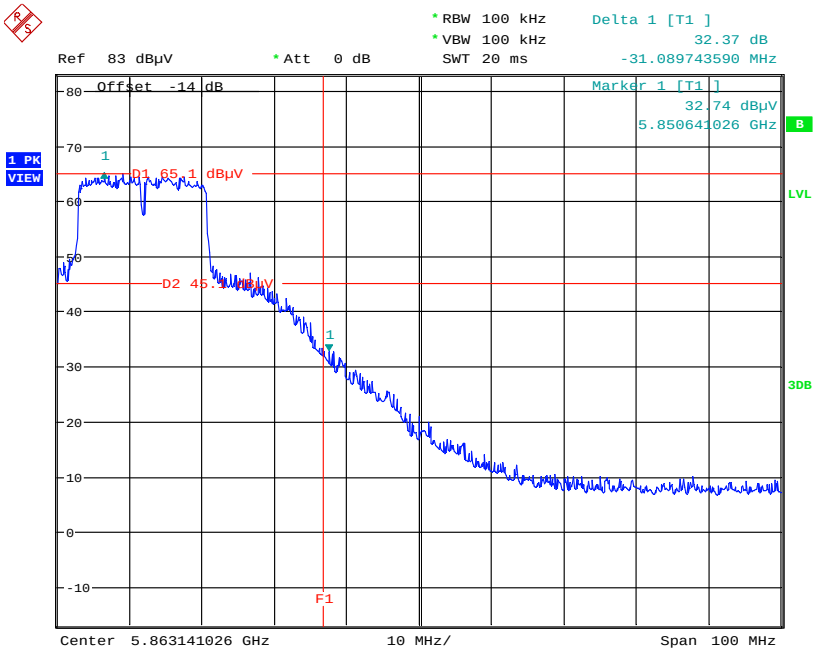
Date: 3.DEC.2011 19:12:29

Low Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 /1TX / 5745 MHz / Mode 2



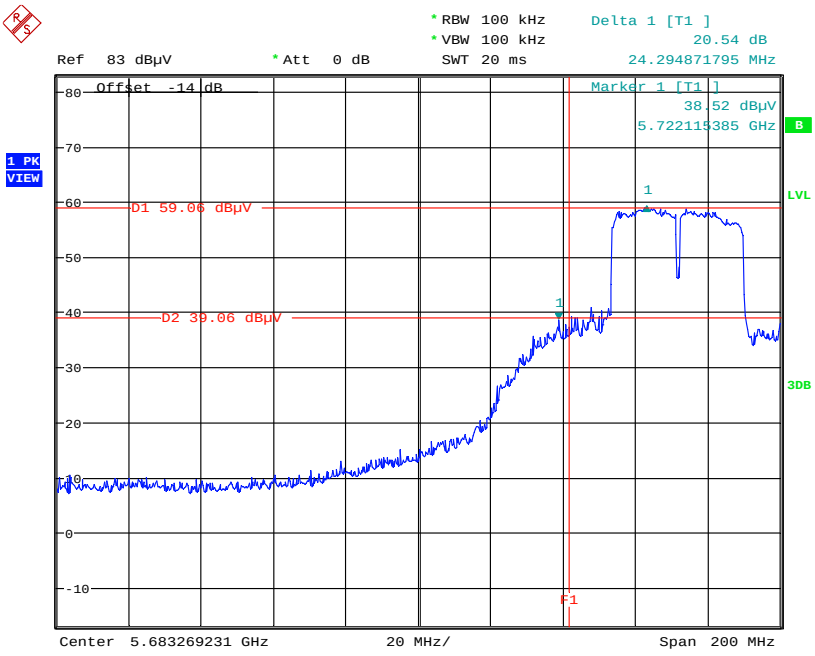
Date: 6.DEC.2011 23:11:52

High Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 /1TX / 5825 MHz / Mode 2



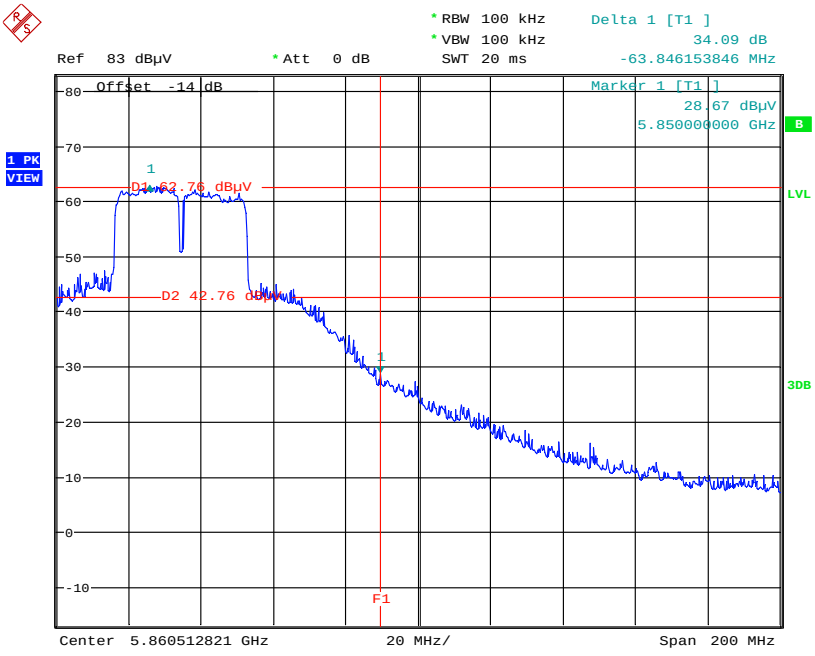
Date: 6.DEC.2011 22:56:39

Low Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 /1TX / 5755 MHz / Mode 2



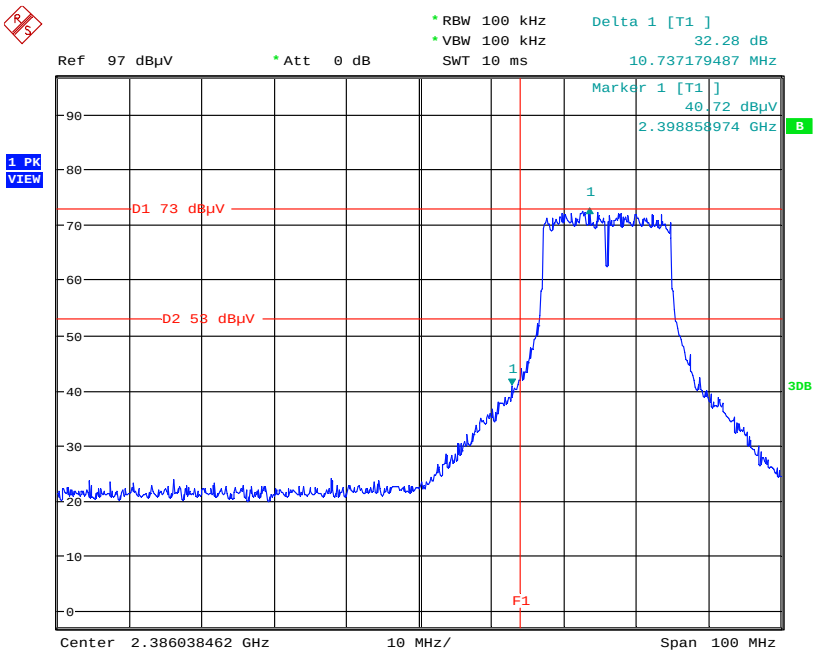
Date: 6.DEC.2011 23:43:56

High Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 /1TX / 5795 MHz / Mode 2



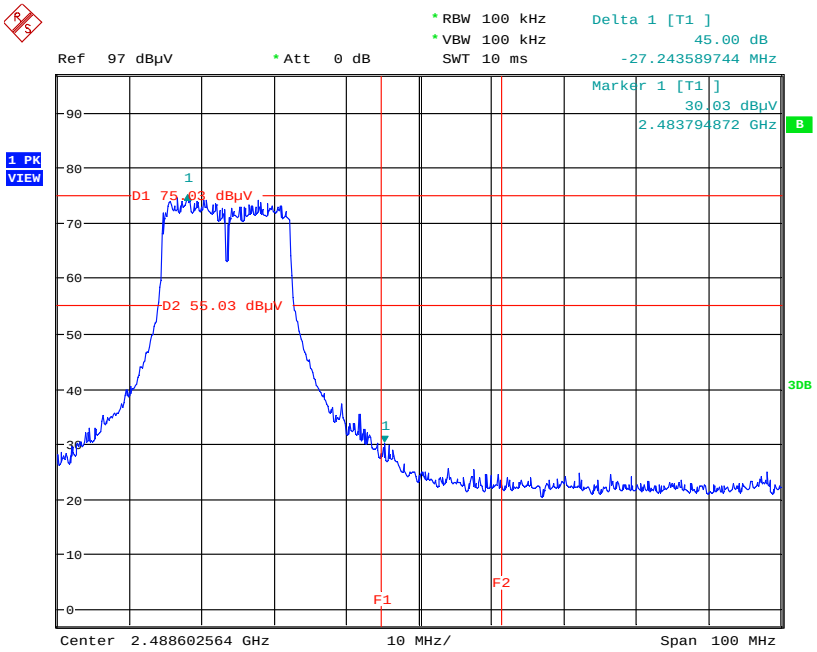
Date: 7.DEC.2011 00:10:06

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 /2TX / 2412 MHz / Mode 2



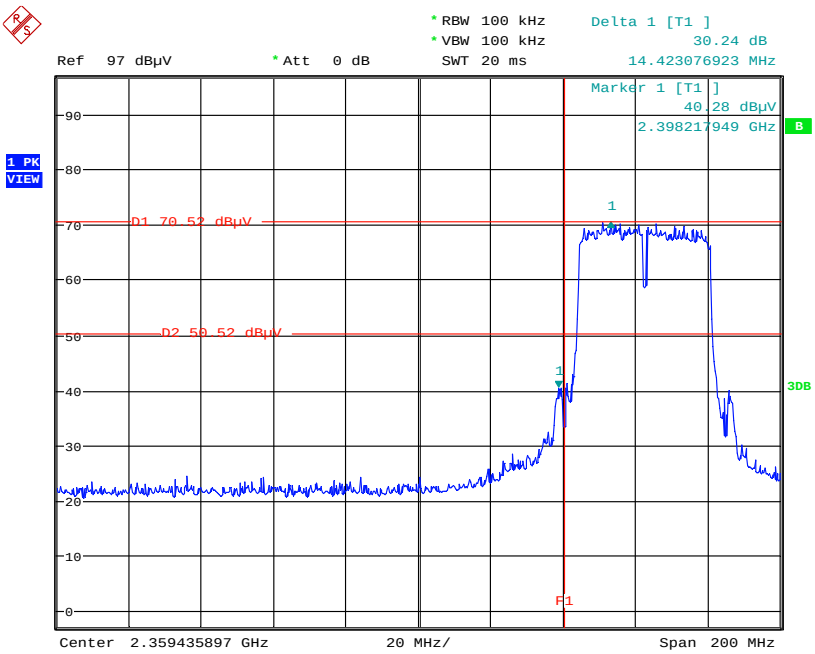
Date: 3.DEC.2011 17:29:43

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 /2TX / 2462 MHz / Mode 2



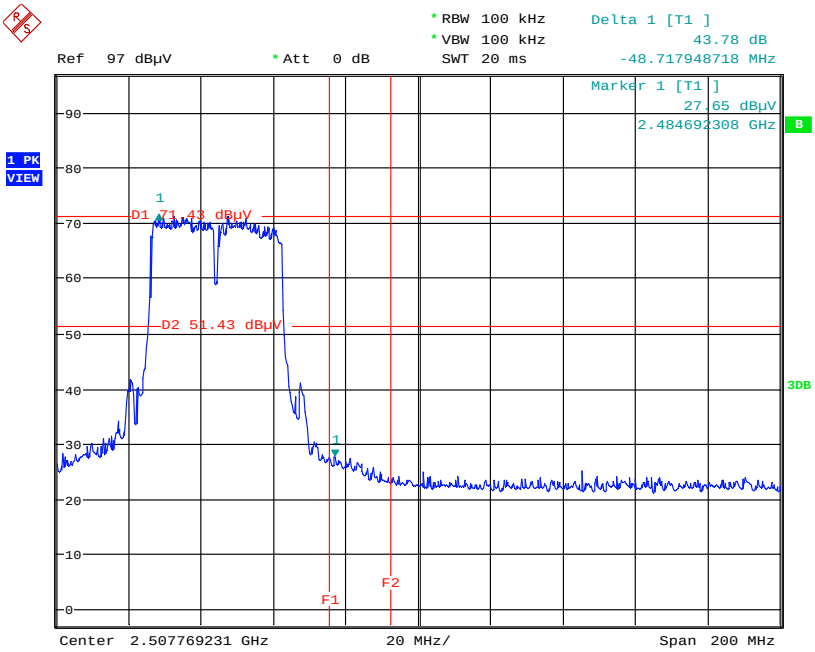
Date: 3.DEC.2011 18:01:47

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 /2TX / 2422 MHz / Mode 2



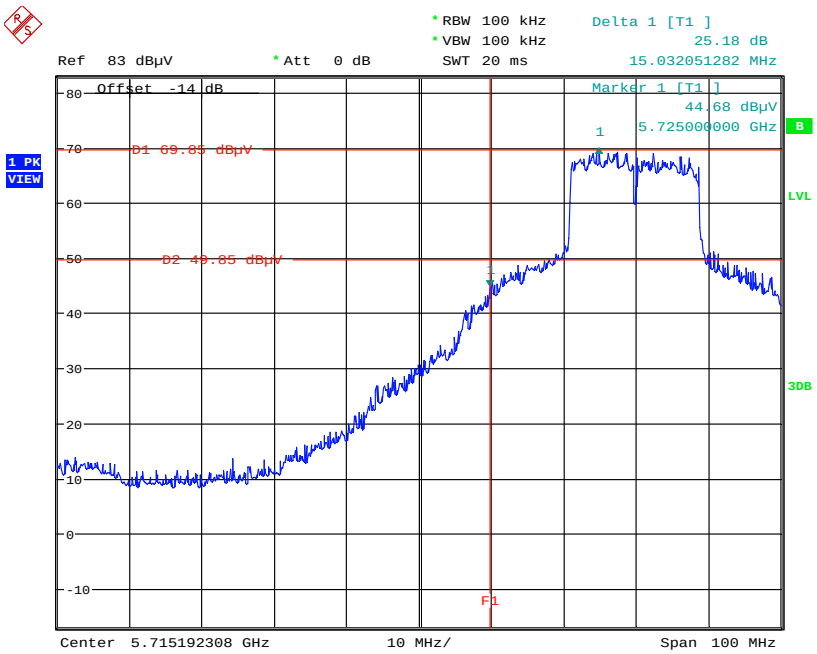
Date: 3.DEC.2011 18:23:38

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 /2TX / 2452 MHz / Mode 2



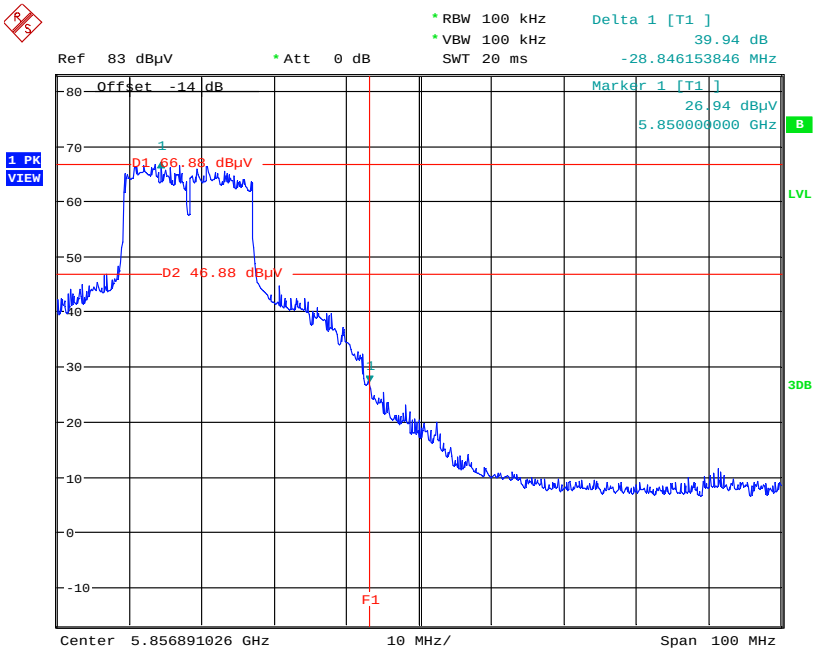
Date: 3.DEC.2011 18:56:06

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 /2TX / 5745 MHz / Mode 2



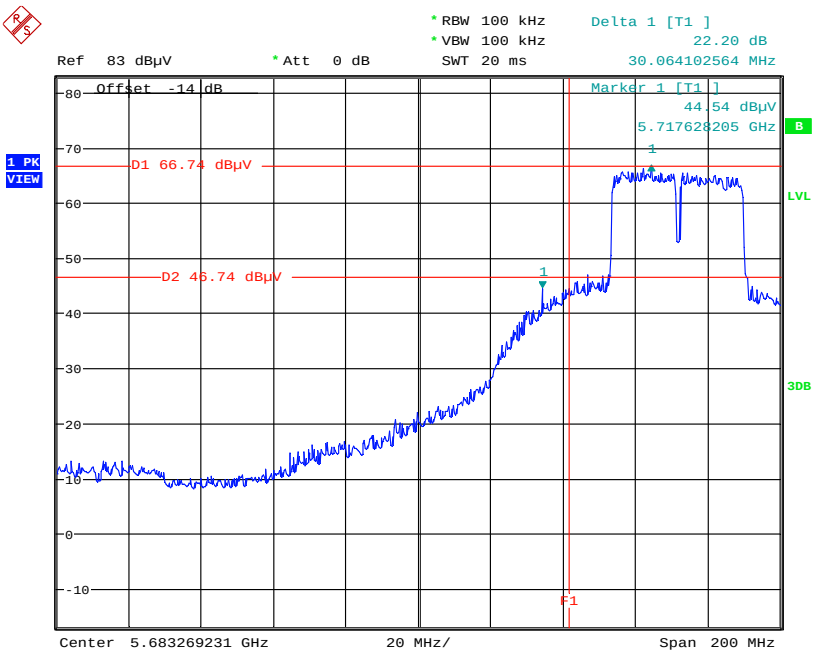
Date: 6.DEC.2011 23:19:00

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / Chain 1+Chain 2 /2TX / 5825 MHz / Mode 2



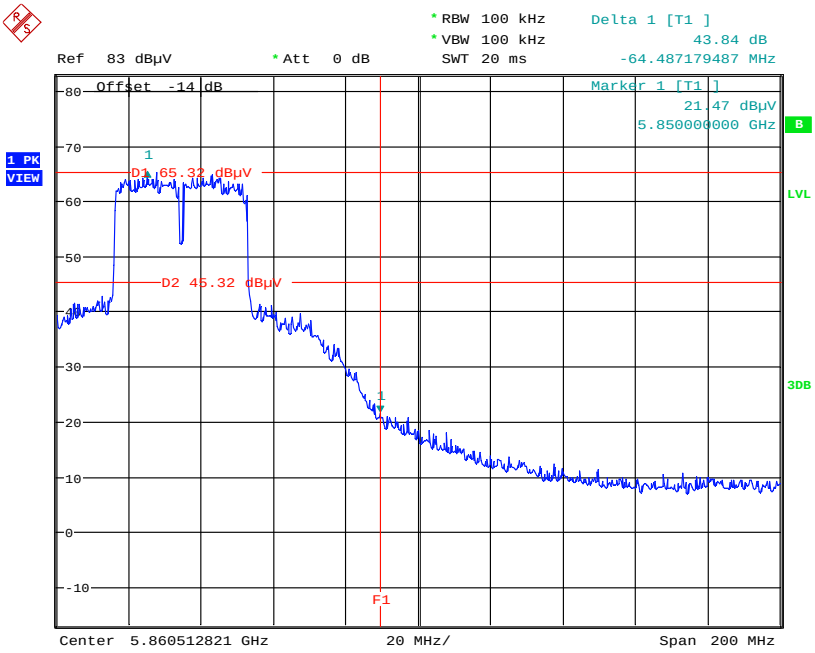
Date: 6.DEC.2011 23:25:03

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 /2TX / 5755 MHz / Mode 2



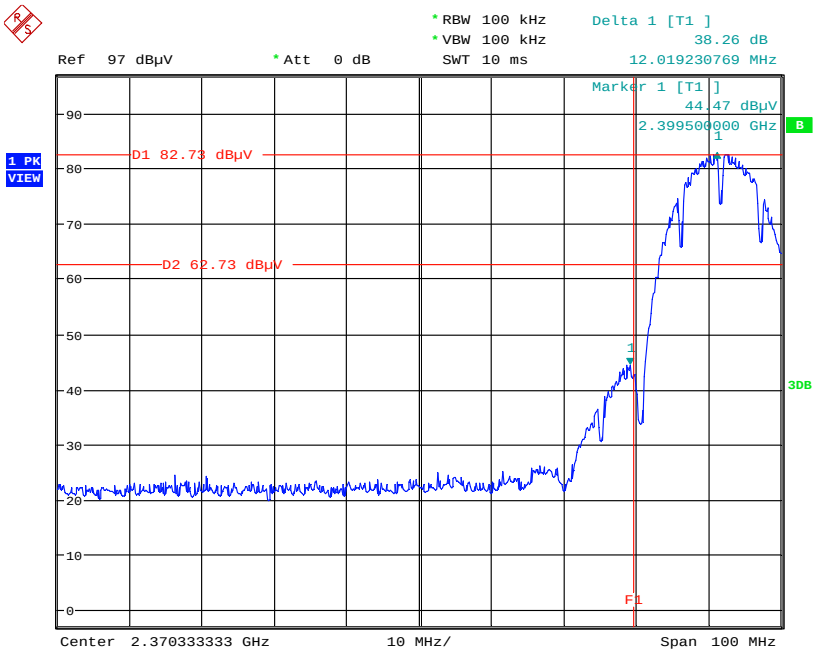
Date: 6.DEC.2011 23:56:07

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / Chain 1+Chain 2 /2TX / 5795 MHz / Mode 2



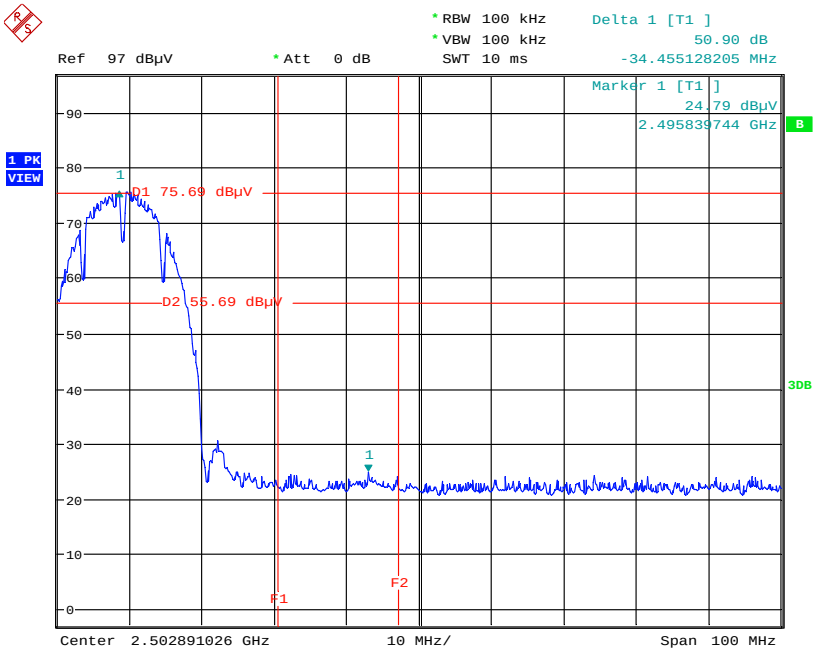
Date: 7.DEC.2011 00:02:10

Low Band Edge Plot on Configuration IEEE 802.11b / Chain 1 / 2412 MHz / Mode 1



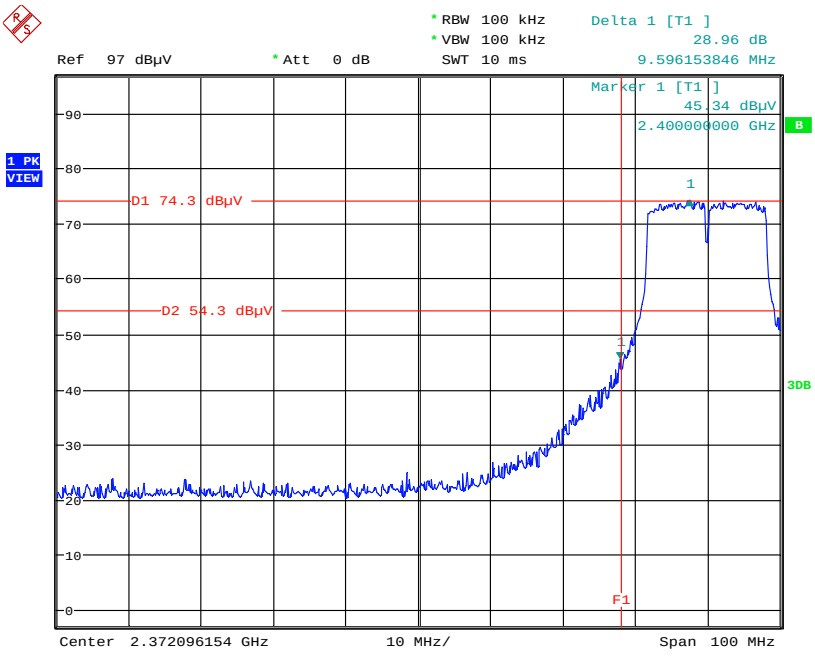
Date: 7.DEC.2011 21:33:58

High Band Edge Plot on Configuration IEEE 802.11b / Chain 1 / 2462 MHz / Mode 1



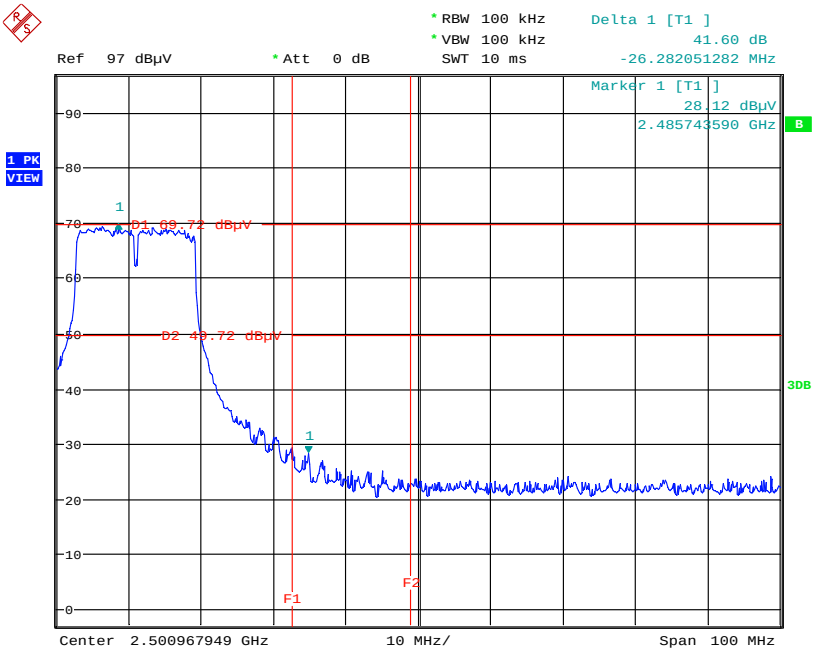
Date: 7.DEC.2011 21:56:58

Low Band Edge Plot on Configuration IEEE 802.11g /Chain 1 / 2412 MHz / Mode 1



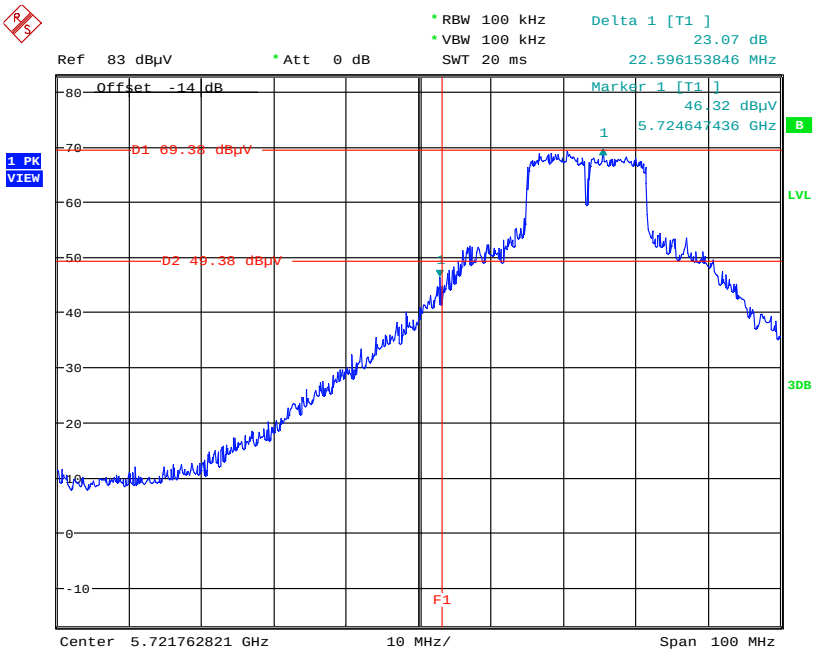
Date: 7.DEC.2011 22:37:13

High Band Edge Plot on Configuration IEEE 802.11g / Chain 1 / 2462 MHz / Mode 1



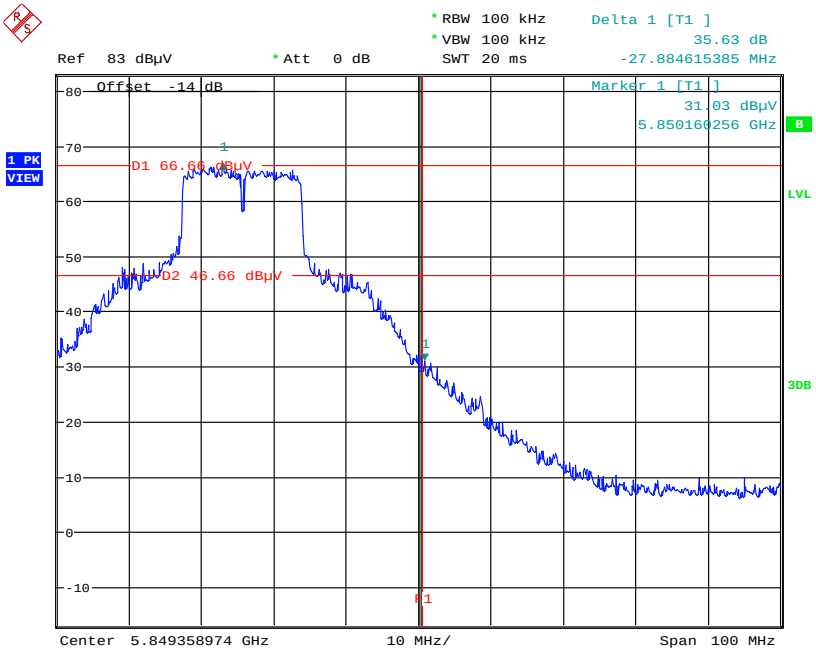
Date: 8.DEC.2011 01:30:24

Low Band Edge Plot on Configuration IEEE 802.11a / Chain 1 / 5745 MHz / Mode 1



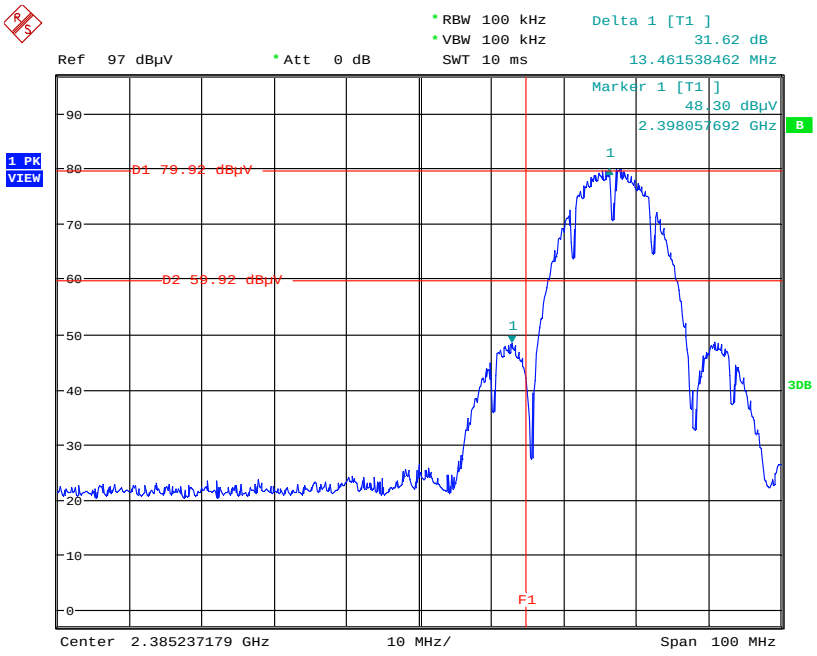
Date: 9.DEC.2011 20:42:32

High Band Edge Plot on Configuration IEEE 802.11a / Chain 1 / 5825 MHz / Mode 1



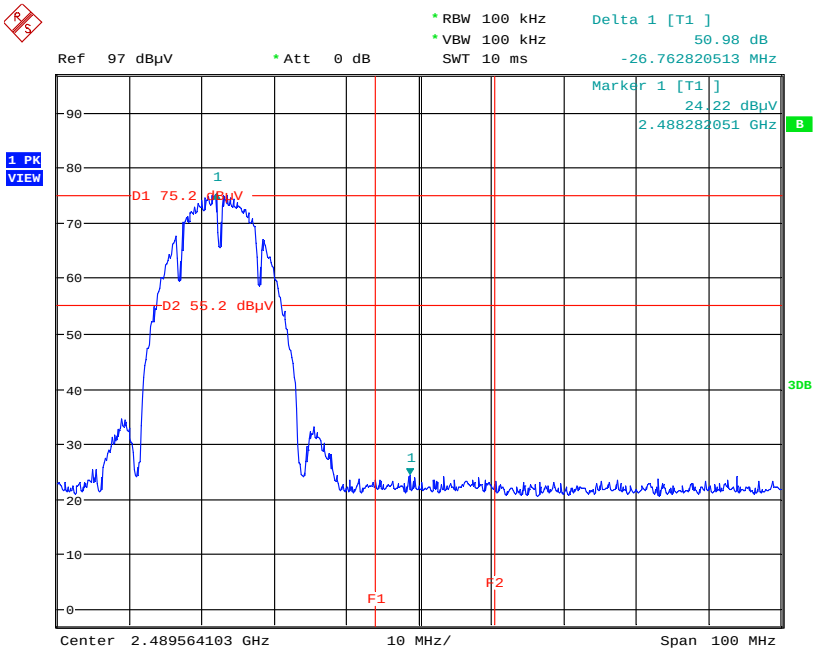
Date: 9.DEC.2011 20:46:59

Low Band Edge Plot on Configuration IEEE 802.11b / Chain 1 / 2412 MHz / Mode 2



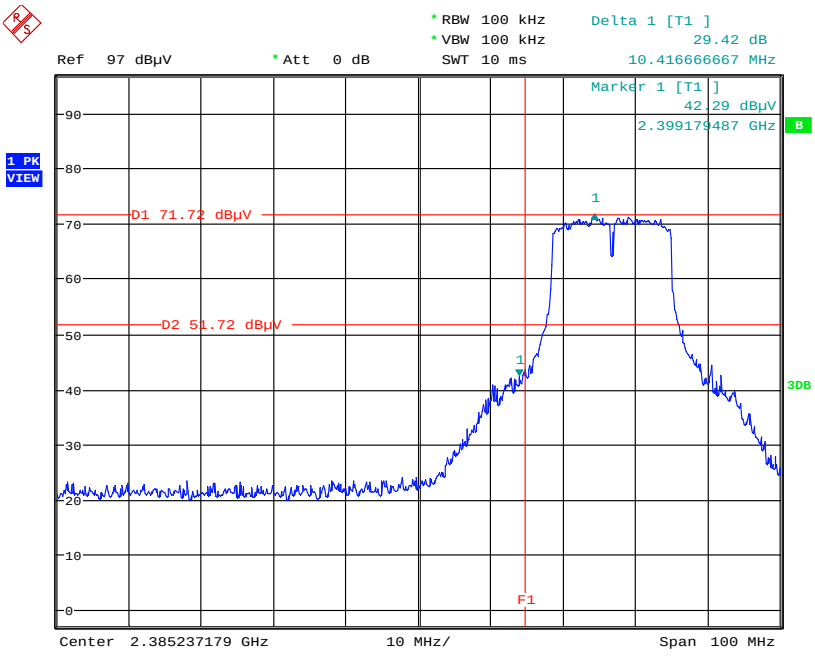
Date: 3.DEC.2011 14:25:55

High Band Edge Plot on Configuration IEEE 802.11b / Chain 1 / 2462 MHz / Mode 2



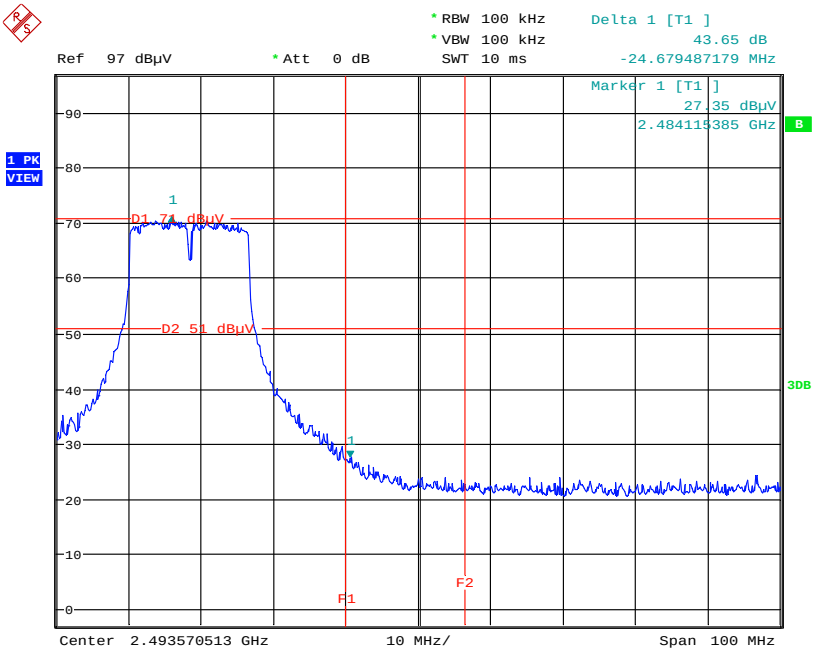
Date: 3.DEC.2011 14:08:07

Low Band Edge Plot on Configuration IEEE 802.11g /Chain 1 / 2412 MHz / Mode 2



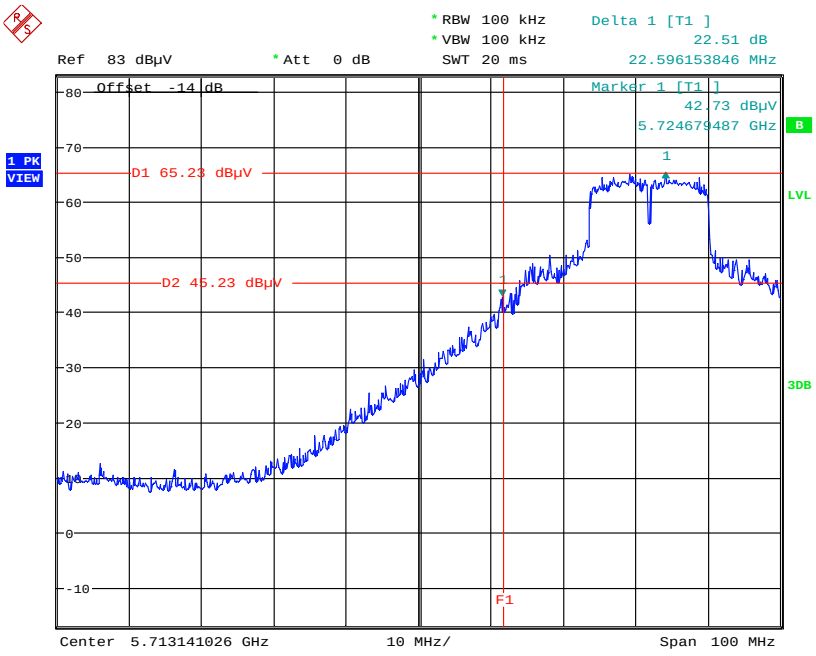
Date: 3.DEC.2011 15:09:51

High Band Edge Plot on Configuration IEEE 802.11g / Chain 1 / 2462 MHz / Mode 2



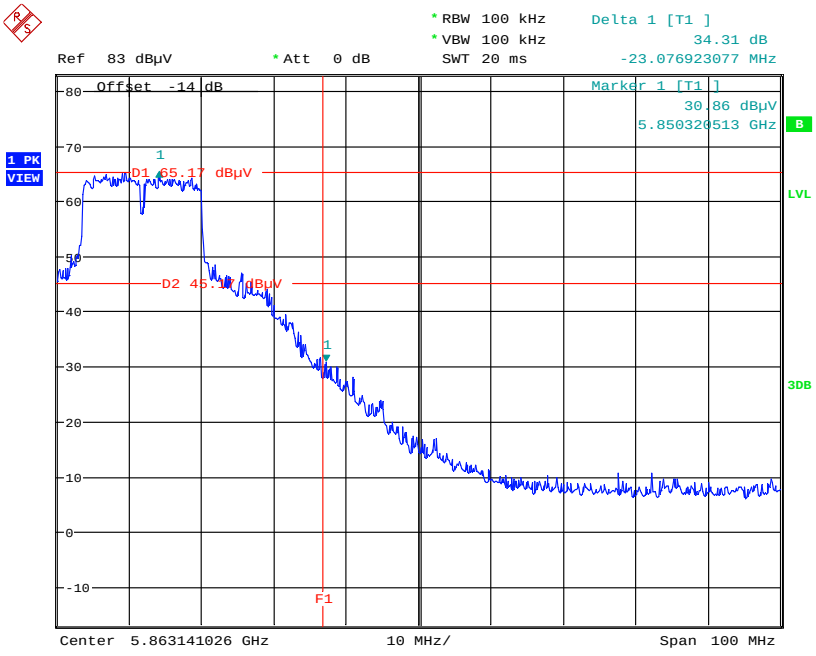
Date: 3.DEC.2011 16:04:05

Low Band Edge Plot on Configuration IEEE 802.11a / Chain 1 / 5745 MHz / Mode 2



Date: 6.DEC.2011 22:42:42

High Band Edge Plot on Configuration IEEE 802.11a / Chain 1 / 5825 MHz / Mode 2



Date: 6.DEC.2011 22:50:53

4.8. Antenna Requirements

4.8.1. 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.

4.8.2. 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.

Note: "*" Calibration Interval of instruments listed above is two years.

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 2nd 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

Sporton 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 Arrangment with Foreign Authorities

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

P1, total 22 pages

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