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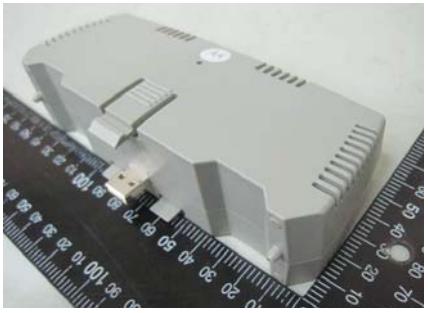
FCC RADIO TEST REPORT

Applicant's company	**Motorola Solutions, Inc.**
Applicant Address	One Motorola Plaza Holtsville, NY 11742 USA
FCC ID	**UZ7KHUSB600**
Manufacturer's company	**Wistron NeWeb Corporation**
Manufacturer Address	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308,Taiwan,R.O.C.

Product Name	802.11 a/b/g/n USB Dongle
Brand Name	MOTOROLA
Model Name	KHUSB600
Test Rule Part(s)	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Received Date	May 07, 2012
Final Test Date	Jul. 10, 2012
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** and KDB 558074 – 20120118 & KDB662911 D01-20110404.

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

Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR250705AA	Rev. 01	Initial issue of report	Oct. 30, 2012

Certificate No.: CB10107133

1. CERTIFICATE OF COMPLIANCE

Product Name	:	**802.11 a/b/g/n USB Dongle**
Brand Name	:	**MOTOROLA**
Model Name	:	**KHUSB600**
Applicant	:	**Motorola Solutions, Inc.**
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 May 07, 2012 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	13.95 dB
4.2	15.247(b)(3)	Conducted Output Power	Complies	4.74 dB
4.3	15.247(e)	Power Spectral Density	Complies	18.69 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	0.22 dB
4.6	15.247(d)	Band Edge Emissions	Complies	1.00 dB
4.7	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Conducted Output Power	±0.8dB	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~1GHz)	±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 (1/2TX, 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) : 28.32 MHz ; MCS0(40MHz) : 38.28 MHz 2TX : MCS0(20MHz) : 24.64 MHz ; MCS0(40MHz) : 37.80 MHz MCS8(20MHz) : 21.68 MHz ; MCS8(40MHz) : 37.80 MHz **For 5GHz Band:** 1TX : MCS0(20MHz) : 27.68 MHz ; MCS0(40MHz) : 44.76 MHz 2TX : MCS0(20MHz) : 27.76 MHz ; MCS0(40MHz) : 45.96 MHz MCS8(20MHz) : 27.52 MHz ; MCS8(40MHz) : 45.48 MHz
Conducted Output Power	**For 2.4GHz Band:** 1TX : MCS0(20MHz) : 20.57 dBm ; MCS0(40MHz) : 13.27 dBm 2TX : MCS0(20MHz) : 22.52 dBm ; MCS0(40MHz) : 14.53 dBm MCS8(20MHz) : 22.42 dBm ; MCS8(40MHz) : 14.87 dBm **For 5GHz Band:** 1TX : MCS0(20MHz) : 16.94 dBm ; MCS0(40MHz) : 16.88 dBm 2TX : MCS0(20MHz) : 20.36 dBm ; MCS0(40MHz) : 20.39 dBm MCS8(20MHz) : 20.26 dBm ; MCS8(40MHz) : 20.24 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

802.11a/b/g

Items	Description
Product Type	WLAN (1/2TX, 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%)	1TX : 11b: 14.64 MHz 2TX : 11b: 15.20 MHz
Conducted Output Power	1TX : 11b: 18.35 dBm ; 11g: 20.62 dBm ; 11a: 16.95 dBm 2TX : 11b: 20.68 dBm ; 11g: 23.31 dBm ; 11a: 20.50 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	V	X
IEEE 802.11b	V	X	V	X
IEEE 802.11g	V	X	V	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)	Remark
1	WNC	N/A	PIFA Antenna	N/A	2.4G: 5.80dBi, 5G: 5.49 dBi	TX / RX Ant.
2	WNC	N/A	PIFA Antenna	N/A	2.4G: 4.64dBi, 5G: 5.87dBi	TX / RX Ant.

Note: The EUT has two antennas.

For IEEE 802.11abgn mode (1TX/2RX):

Both Ant. 1 and Ant. 2 can be used as receiving antennas.

Only Ant. 1 can be use as transmitting antenna.

For IEEE 802.11abgn mode (2TX/2RX):

Both Ant. 1 and Ant. 2 can be used as transmitting/receiving antennas.

Ant. 1 and Ant. 2 could both transmit/receive simultaneously.

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	Antenna
AC Power Line Conducted Emissions	Normal Link	Auto	-	-
Conducted Output Power Power Spectral Density	1TX:MCS0/20MHz	6.5 Mbps	1/6/11	1
	1TX:MCS0/40MHz	13.5 Mbps	3/6/9	1
	2TX:MCS0/20MHz	6.5 Mbps	1/6/11	1+2
	2TX:MCS0/40MHz	13.5 Mbps	3/6/9	1+2
	2TX:MCS8/20MHz	15 Mbps	1/6/11	1+2
	2TX:MCS8/40MHz	30 Mbps	3/6/9	1+2
	1TX:11b/CCK	11 Mbps	1/6/11	1
	1TX:11g/BPSK	6 Mbps	1/6/11	1
	2TX:11b/CCK	11 Mbps	1/6/11	1+2
	2TX:11g/BPSK	6 Mbps	1/6/11	1+2
6dB Spectrum Bandwidth	1TX:MCS0/20MHz	6.5 Mbps	1/6/11	1
	1TX:MCS0/40MHz	13.5 Mbps	3/6/9	1
	2TX:MCS0/20MHz	6.5 Mbps	1/6/11	1+2
	2TX:MCS0/40MHz	13.5 Mbps	3/6/9	1+2
	2TX:MCS8/20MHz	15 Mbps	1/6/11	1+2
	2TX:MCS8/40MHz	30 Mbps	3/6/9	1+2
	1TX:11b/CCK	11 Mbps	1/6/11	1
	2TX:11b/CCK	11 Mbps	1/6/11	1+2
Radiated Emissions Below 1GHz	Normal Link	Auto	-	-
Radiated Emissions Above 1GHz	1TX:MCS0/20MHz	6.5 Mbps	1/6/11	1
	1TX:MCS0/40MHz	13.5 Mbps	3/6/9	1
	2TX:MCS0/20MHz	6.5 Mbps	1/6/11	1+2
	2TX:MCS0/40MHz	13.5 Mbps	3/6/9	1+2
	2TX:MCS8/20MHz	15 Mbps	1/6/11	1+2
	2TX:MCS8/40MHz	30 Mbps	3/6/9	1+2
	1TX:11b/CCK	11 Mbps	1/6/11	1
	2TX:11b/CCK	11 Mbps	1/6/11	1+2
Band Edge Emissions	1TX:MCS0/20MHz	6.5 Mbps	1/6/11	1

	1TX:MCS0/40MHz	13.5 Mbps	3/6/9	1
	2TX:MCS0/20MHz	6.5 Mbps	1/6/11	1+2
	2TX:MCS0/40MHz	13.5 Mbps	3/6/9	1+2
	2TX:MCS8/20MHz	15 Mbps	1/6/11	1+2
	2TX:MCS8/40MHz	30 Mbps	3/6/9	1+2
	1TX:11b/CCK	11 Mbps	1/6/11	1
	2TX:11b/CCK	11 Mbps	1/6/11	1+2

For 5GHz Band

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	Normal Link	Auto	-	-
Conducted Output Power Power Spectral Density	1TX:MCS0/20MHz	6.5 Mbps	149/157/165	1
	1TX:MCS0/40MHz	13.5 Mbps	151/159	1
	2TX:MCS0/20MHz	6.5 Mbps	149/157/165	1+2
	2TX:MCS0/40MHz	13.5 Mbps	151/159	1+2
	2TX:MCS8/20MHz	15 Mbps	149/157/165	1+2
	2TX:MCS8/40MHz	30 Mbps	151/159	1+2
	1TX:11a/BPSK	6 Mbps	149/157/165	1
	2TX:11a/BPSK	6 Mbps	149/157/165	1+2
6dB Spectrum Bandwidth	1TX:MCS0/20MHz	6.5 Mbps	149/157/165	1
	1TX:MCS0/40MHz	13.5 Mbps	151/159	1
	2TX:MCS0/20MHz	6.5 Mbps	149/157/165	1+2
	2TX:MCS0/40MHz	13.5 Mbps	151/159	1+2
	2TX:MCS8/20MHz	15 Mbps	149/157/165	1+2
	2TX:MCS8/40MHz	30 Mbps	151/159	1+2
Radiated Emissions Below 1GHz	Normal Link	Auto	-	-
Radiated Emissions Above 1GHz	1TX:MCS0/20MHz	6.5 Mbps	149/157/165	1
	1TX:MCS0/40MHz	13.5 Mbps	151/159	1
	2TX:MCS0/20MHz	6.5 Mbps	149/157/165	1+2
	2TX:MCS0/40MHz	13.5 Mbps	151/159	1+2
	2TX:MCS8/20MHz	15 Mbps	149/157/165	1+2
	2TX:MCS8/40MHz	30 Mbps	151/159	1+2
Band Edge Emissions	1TX:MCS0/20MHz	6.5 Mbps	149/157/165	1
	1TX:MCS0/40MHz	13.5 Mbps	151/159	1
	2TX:MCS0/20MHz	6.5 Mbps	149/157/165	1+2
	2TX:MCS0/40MHz	13.5 Mbps	151/159	1+2
	2TX:MCS8/20MHz	15 Mbps	149/157/165	1+2
	2TX:MCS8/40MHz	30 Mbps	151/159	1+2

<For MPE and Co-location Test>:

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

3.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File 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	E6220	N/A
Mouse	Logitech	M-U0026	DoC
Earphone	SHYARO CHI	MIC-04	N/A
Notebook	DELL	M1330	E2KWM3945ABG
module	Motorola	N/A	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/Ant. 1 (1TX)

Test Software Version:	ART2-GUI		
Frequency	2412 MHz	2437 MHz	2462 MHz
20MHz MCS0	13.00	24.00	12.50
Frequency	2422 MHz	2437MHz	2452 MHz
40MHz MCS0	10.00	13.50	10.00

Power Parameters of IEEE 802.11n/Ant. 1+2 (2TX)

Test Software Version:	ART2-GUI		
Frequency	2412 MHz	2437 MHz	2462 MHz
20MHz MCS0	11.00	21.50	11.50
20MHz MCS8	11.50	21.50	11.50
Frequency	2422 MHz	2437MHz	2452 MHz
40MHz MCS0	9.00	11.00	9.50
40MHz MCS8	10.00	11.50	10.00

Power Parameters of IEEE 802.11b/g/Ant. 1 (1TX)

Test Software Version	ART2-GUI		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b	19.00	19.00	18.00
IEEE 802.11g	14.00	24.00	13.50

Power Parameters of IEEE 802.11b/g/Ant. 1+2 (2TX)

Test Software Version	ART2-GUI		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b	18.00	18.00	16.50
IEEE 802.11g	13.00	22.50	12.00

For 5GHz Band

Power Parameters of IEEE 802.11n/Ant. 1 (1TX)

Test Software Version:	ART2-GUI 2.3		
Frequency	5745 MHz	5785 MHz	5825 MHz
20MHz MCS0	19.00	20.00	20.00
Frequency	5755 MHz		5795 MHz
40MHz MCS0	16.00		20.00

Power Parameters of IEEE 802.11n/Ant. 1+2 (2TX)

Test Software Version:	ART2-GUI 2.3		
Frequency	5745 MHz	5785 MHz	5825 MHz
20MHz MCS0	16.50	20.00	20.00
20MHz MCS8	18.50	20.00	20.00
Frequency	5755 MHz		5795 MHz
40MHz MCS0	14.00		20.00
40MHz MCS8	11.00		20.00

Power Parameters of IEEE 802.11a/Ant. 1 (1TX)

Test Software Version	ART2-GUI		
Frequency	5745 MHz	5785 MHz	5825 MHz
IEEE 802.11a	19.00	20.00	20.00

Power Parameters of IEEE 802.11a/Ant. 1+2 (2TX)

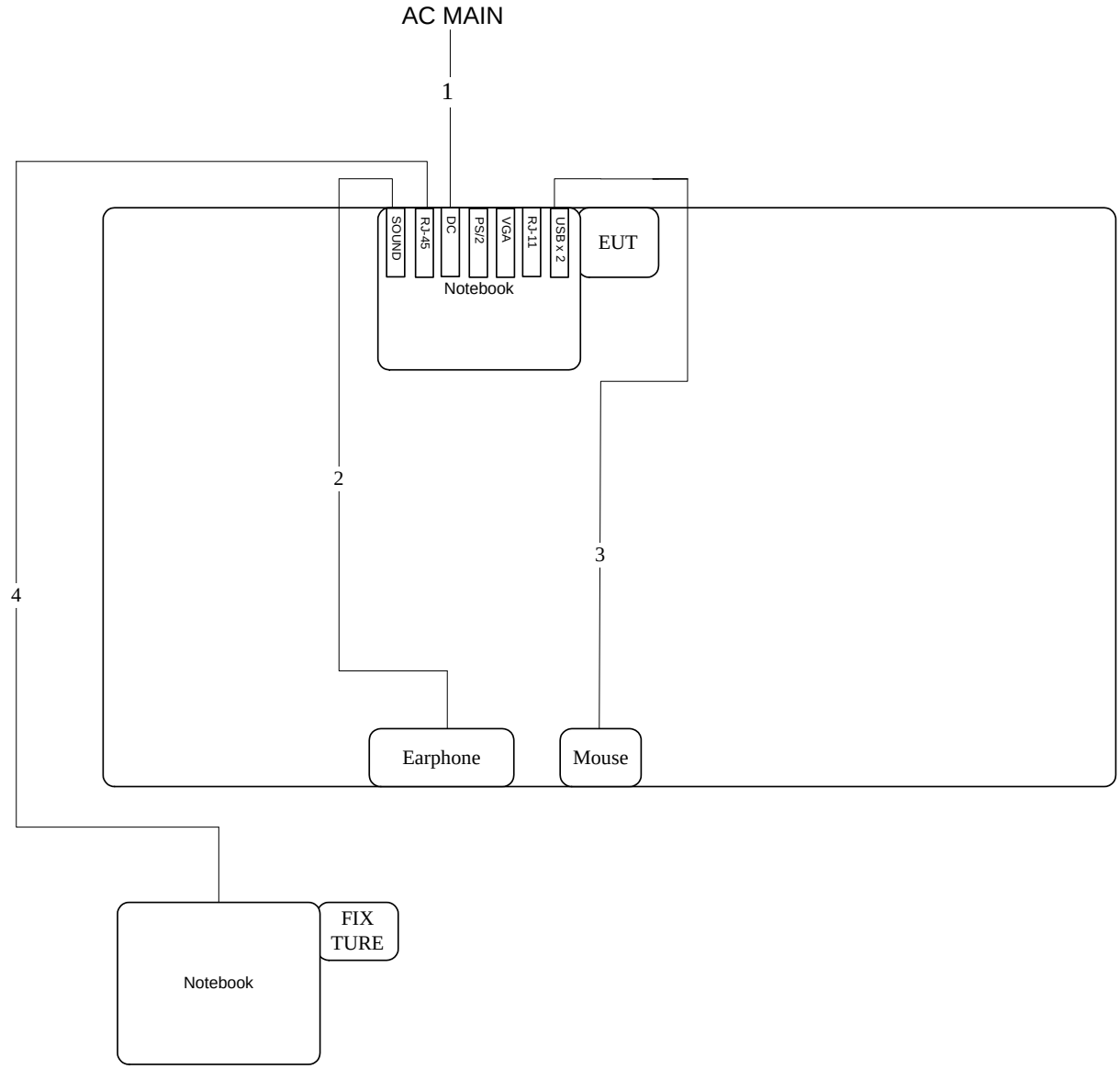
Test Software Version	ART2-GUI		
Frequency	5745 MHz	5785 MHz	5825 MHz
IEEE 802.11a	16.50	20.00	20.00

During the test, "ART2-GUI" under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

3.9. Test Configurations

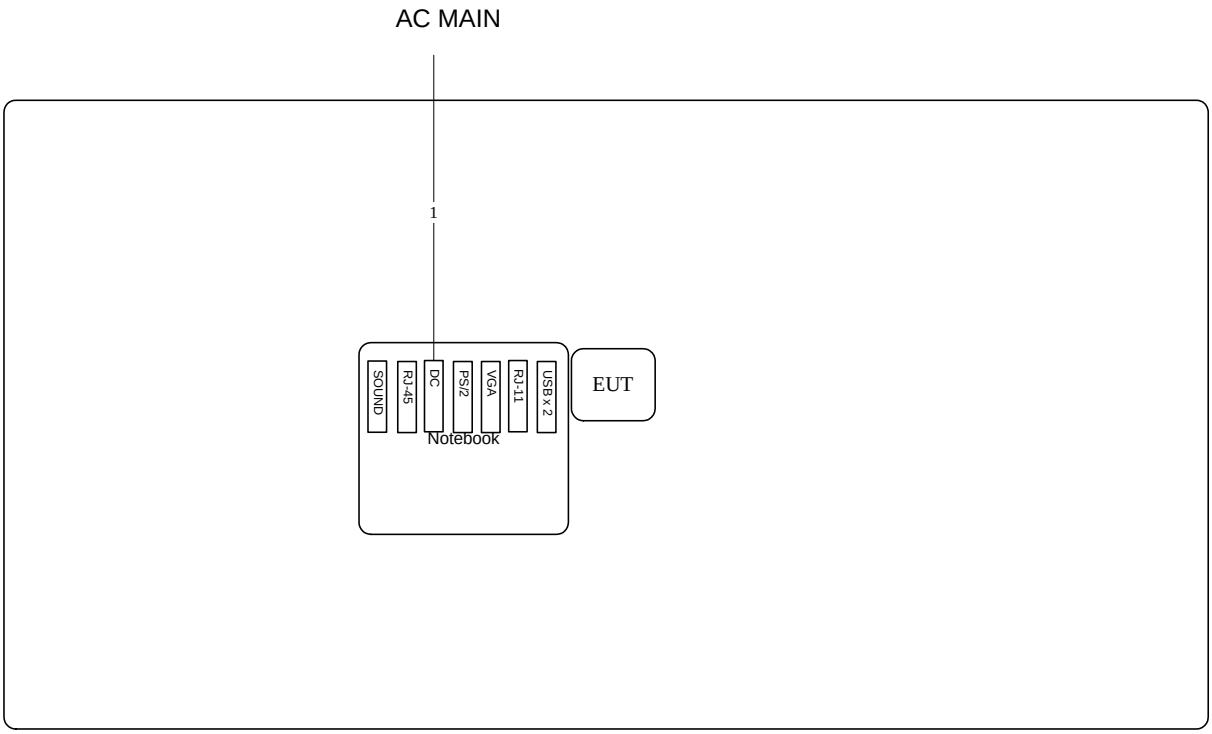
3.9.1. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz



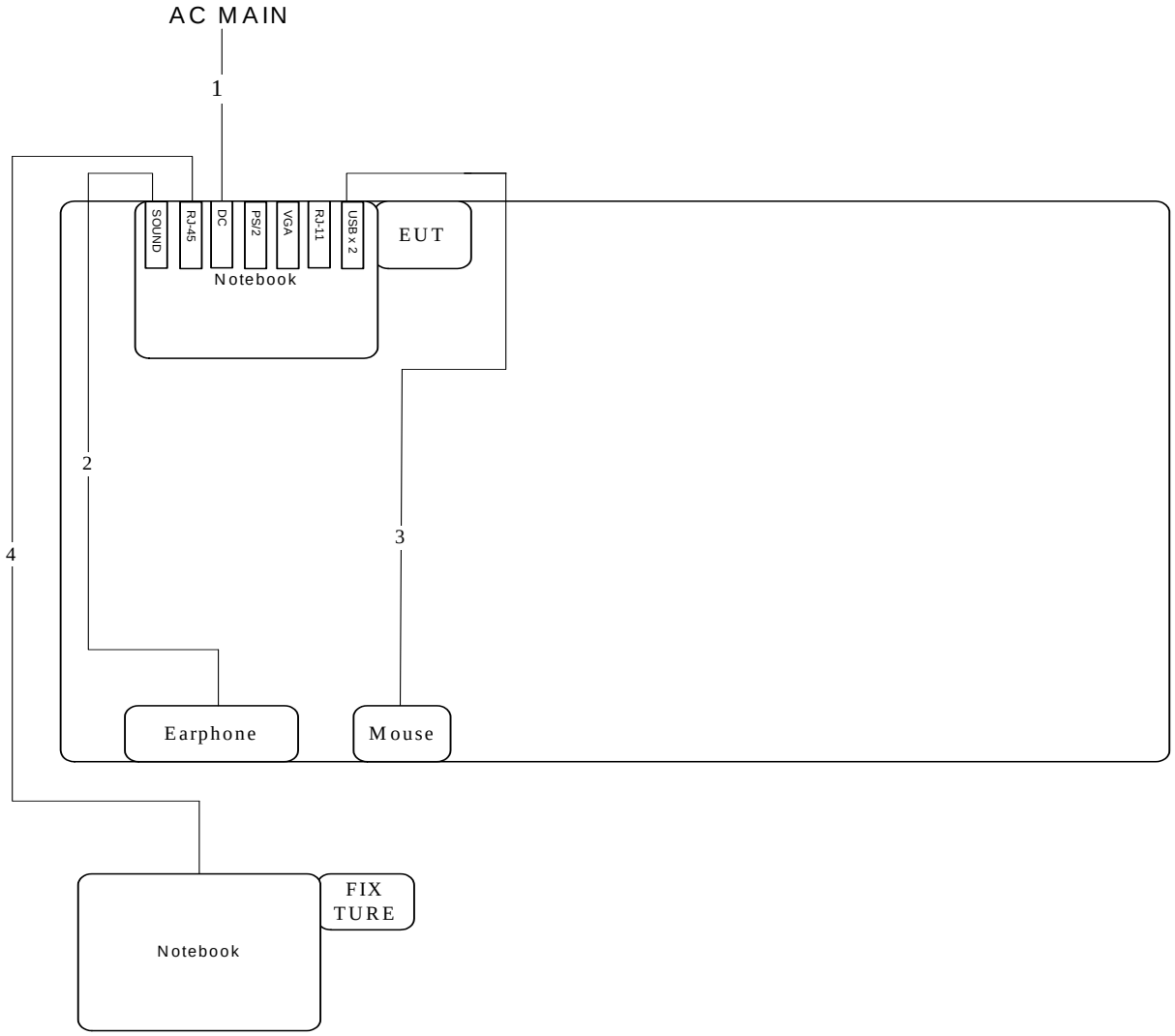
Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6M	-
2	Earphone cable	No	1.1M	-
3	USB cable	No	1.8M	-
4	RJ-45 cable	No	10M	-

Test Configuration: above 1GHz



Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6M	-

3.9.2. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6M	-
2	Earphone cable	No	1.1M	-
3	USB cable	No	1.8M	-
4	RJ-45 cable	No	10M	-

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

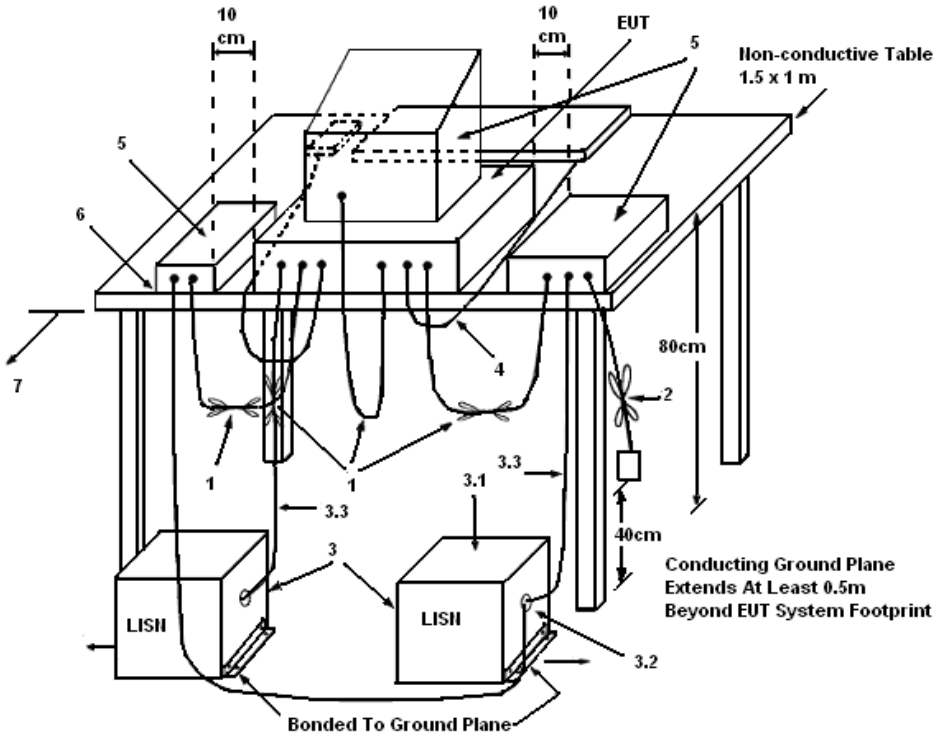
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

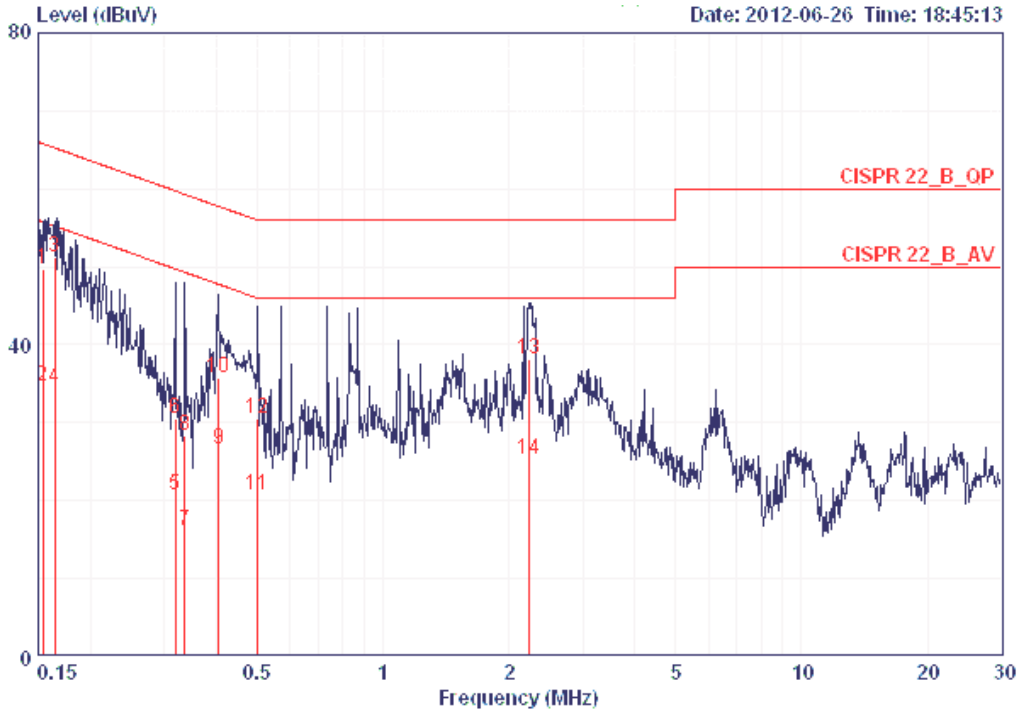
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

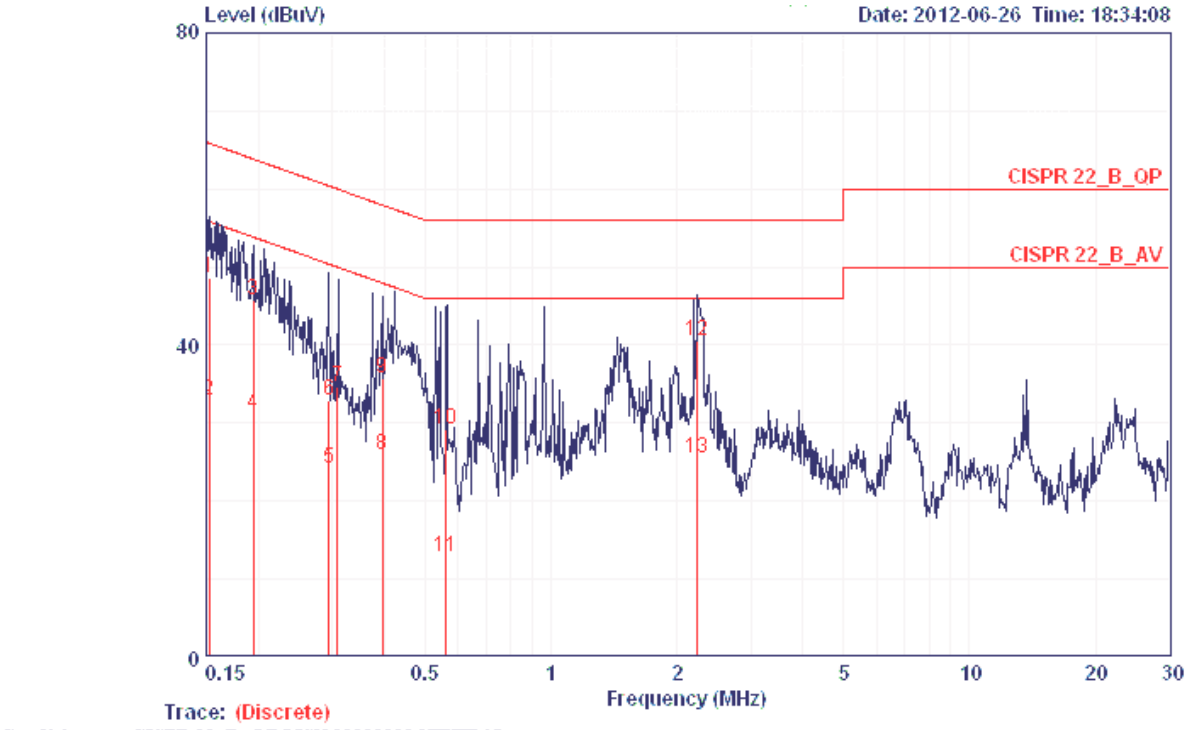
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24℃	Humidity	60%
Test Engineer	Simon Yang	Phase	Line
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15403	49.62	-16.16	65.78	49.36	0.06	0.20	LINE	QP
2	0.15403	34.63	-21.15	55.78	34.37	0.06	0.20	LINE	AVERAGE
3	0.16414	51.31	-13.95	65.25	51.05	0.06	0.20	LINE	QP
4	0.16414	34.53	-20.73	55.25	34.27	0.06	0.20	LINE	AVERAGE
5	0.31830	20.70	-29.05	49.75	20.48	0.02	0.20	LINE	AVERAGE
6	0.31830	30.46	-29.29	59.75	30.24	0.02	0.20	LINE	QP
7	0.33562	16.06	-33.25	49.31	15.84	0.02	0.20	LINE	AVERAGE
8	0.33562	28.24	-31.07	59.31	28.02	0.02	0.20	LINE	QP
9	0.40400	26.64	-21.13	47.77	26.43	0.01	0.20	LINE	AVERAGE
10	0.40400	35.73	-22.04	57.77	35.52	0.01	0.20	LINE	QP
11	0.50203	20.61	-25.39	46.00	20.39	0.02	0.19	LINE	AVERAGE
12	0.50203	30.58	-25.42	56.00	30.36	0.02	0.19	LINE	QP
13	2.237	38.07	-17.93	56.00	37.79	0.08	0.20	LINE	QP
14	2.237	25.32	-20.68	46.00	25.04	0.08	0.20	LINE	AVERAGE

Temperature	24℃	Humidity	60%
Test Engineer	Simon Yang	Phase	Neutral
Configuration	Normal Link		



	Freq	Level	Limit	Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15240	48.56	-17.31	65.87	48.30	0.06	0.20	NEUTRAL	QP
2	0.15240	32.93	-22.94	55.87	32.67	0.06	0.20	NEUTRAL	AVERAGE
3	0.19447	45.69	-18.15	63.84	45.44	0.05	0.20	NEUTRAL	QP
4	0.19447	31.12	-22.72	53.84	30.87	0.05	0.20	NEUTRAL	AVERAGE
5	0.29398	24.26	-26.15	50.41	24.01	0.05	0.20	NEUTRAL	AVERAGE
6	0.29398	33.01	-27.40	60.41	32.76	0.05	0.20	NEUTRAL	QP
7	0.30834	34.57	-25.45	60.02	34.37	0.00	0.20	NEUTRAL	Peak
8	0.39553	25.92	-22.03	47.95	25.67	0.05	0.20	NEUTRAL	AVERAGE
9	0.39553	35.78	-22.17	57.95	35.53	0.05	0.20	NEUTRAL	QP
10	0.56111	29.13	-26.87	56.00	28.87	0.06	0.20	NEUTRAL	QP
11	0.56111	12.81	-33.19	46.00	12.55	0.06	0.20	NEUTRAL	AVERAGE
12	2.237	40.50	-15.50	56.00	40.20	0.10	0.20	NEUTRAL	QP
13	2.237	25.54	-20.46	46.00	25.24	0.10	0.20	NEUTRAL	AVERAGE

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. Conducted 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.

4.2.2. Measuring Instruments and Setting

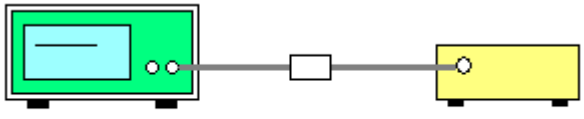
Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1MHz
VB	3MHz
Detector	RMS
Trace	Average 100
Sweep Time	Auto

4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with KDB 558074 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS)Operating Under §15.247 section 5.2.2.2. Multiple antenna systems was performed in accordance with KDB 662911 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
3. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

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 Conducted Output Power

Temperature	25℃	Humidity	60%
Test Engineer	Denis Su	Configurations	IEEE 802.11n

For 2.4GHz Band

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
1	2412 MHz	12.86	30.00	**Complies**
6	2437 MHz	20.57	30.00	**Complies**
11	2462 MHz	12.56	30.00	**Complies**

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
1	2412 MHz	11.08	11.19	14.15	27.75	**Complies**
6	2437 MHz	19.45	19.57	22.52	27.75	**Complies**
11	2462 MHz	11.87	10.48	14.24	27.75	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]\ \text{dBi}$ =8.25dBi > 6dBi , so the conducted power limit =30-(8.25-6)=27.75dBm.

Configuration IEEE 802.11n MCS8 20MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
1	2412 MHz	11.76	11.77	14.78	30.00	**Complies**
6	2437 MHz	19.47	19.35	22.42	30.00	**Complies**
11	2462 MHz	11.82	10.43	14.19	30.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
3	2422 MHz	10.13	30.00	**Complies**
6	2437 MHz	13.27	30.00	**Complies**
9	2452 MHz	9.99	30.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
3	2422 MHz	9.57	9.53	12.56	27.75	**Complies**
6	2437 MHz	11.49	11.54	14.53	27.75	**Complies**
9	2452 MHz	9.9	9.63	12.78	27.75	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]\ \text{dBi}$ =8.25dBi > 6dBi , so the conducted power limit =30-(8.25-6)=27.75dBm.

Configuration IEEE 802.11n MCS8 40MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
3	2422 MHz	10.31	11.07	13.72	30.00	**Complies**
6	2437 MHz	11.74	11.98	14.87	30.00	**Complies**
9	2452 MHz	10.17	9.99	13.09	30.00	**Complies**

For 5GHz Band

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
149	5745 MHz	16.67	30.00	**Complies**
157	5785 MHz	16.94	30.00	**Complies**
165	5825 MHz	16.35	30.00	**Complies**

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
149	5745 MHz	14.93	15.86	18.43	27.31	**Complies**
157	5785 MHz	16.95	17.72	20.36	27.31	**Complies**
165	5825 MHz	16.34	16.73	19.55	27.31	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]\ \text{dBi}$ =8.69dBi > 6dBi , so the conducted power limit =30-(8.69-6)=27.31dBm.

Configuration IEEE 802.11n MCS8 20MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
149	5745 MHz	15.95	17.18	19.62	30.00	**Complies**
157	5785 MHz	16.8	17.65	20.26	30.00	**Complies**
165	5825 MHz	16.55	17.04	19.81	30.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
151	5755 MHz	14.30	30.00	**Complies**
159	5795 MHz	16.88	30.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
151	5755 MHz	12.86	13.71	16.32	27.31	**Complies**
159	5795 MHz	16.94	17.78	20.39	27.31	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]\ \text{dBi}$ =8.69dBi > 6dBi , so the conducted power limit =30-(8.69-6)=27.31dBm.

Configuration IEEE 802.11n MCS8 40MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
151	5755 MHz	12.7	13.26	16.00	30.00	**Complies**
159	5795 MHz	16.9	17.53	20.24	30.00	**Complies**

Temperature	25℃	Humidity	60%
Test Engineer	Denis Su	Configurations	IEEE 802.11a/b/g

Configuration IEEE 802.11b

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
1	2412 MHz	18.35	30.00	**Complies**
6	2437 MHz	18.23	30.00	**Complies**
11	2462 MHz	17.81	30.00	**Complies**

Configuration IEEE 802.11b

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
1	2412 MHz	17.63	17.4	20.53	27.75	**Complies**
6	2437 MHz	17.75	17.58	20.68	27.75	**Complies**
11	2462 MHz	16.75	15.41	19.14	27.75	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]\ \text{dBi}$ =8.25dBi > 6dBi , so the conducted power limit =30-(8.25-6)=27.75dBm.

Configuration IEEE 802.11g

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
1	2412 MHz	14.23	30.00	**Complies**
6	2437 MHz	20.62	30.00	**Complies**
11	2462 MHz	13.97	30.00	**Complies**

Configuration IEEE 802.11g

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
1	2412 MHz	13.5	13.56	16.54	27.75	**Complies**
6	2437 MHz	20.04	20.54	23.31	27.75	**Complies**
11	2462 MHz	12.86	11.6	15.29	27.75	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]\ \text{dBi}$ =8.25dBi > 6dBi , so the conducted power limit =30-(8.25-6)=27.75dBm.

Configuration IEEE 802.11a

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
149	5745 MHz	16.10	30.00	**Complies**
157	5785 MHz	16.95	30.00	**Complies**
165	5825 MHz	16.47	30.00	**Complies**

Configuration IEEE 802.11a

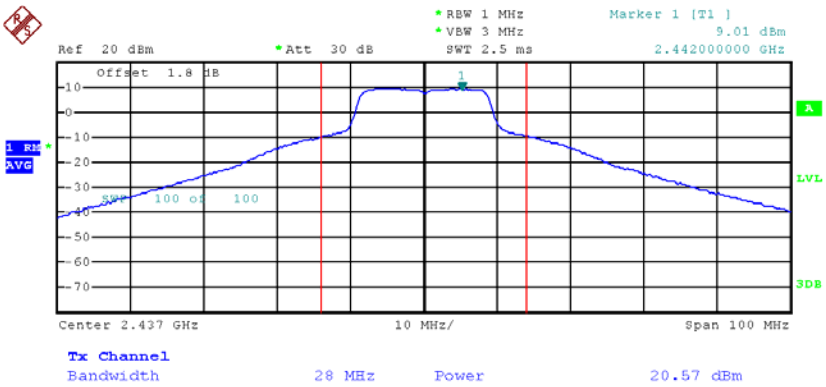
Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
149	5745 MHz	14.8	15.45	18.15	27.75	**Complies**
157	5785 MHz	17.04	17.89	20.50	27.75	**Complies**
165	5825 MHz	16.35	16.91	19.65	27.75	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]\ \text{dBi}$ =8.25dBi > 6dBi , so the conducted power limit =30-(8.25-6)=27.75dBm.

All the test values were listed in the report.

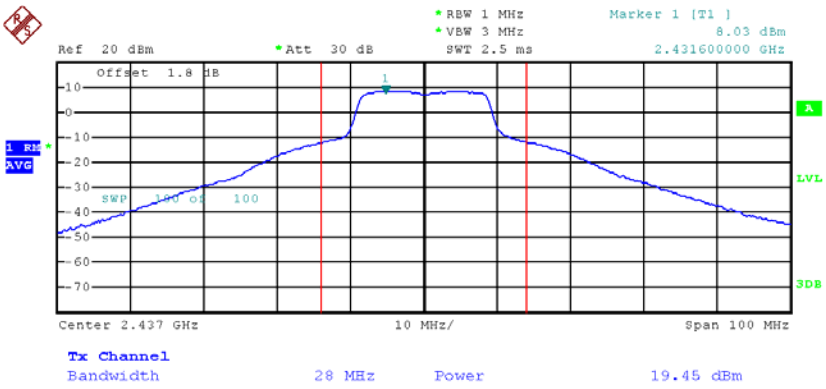
For plots, only the channel with maximum results was shown.

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz / 2437 MHz/ ANT. 1 (1TX)



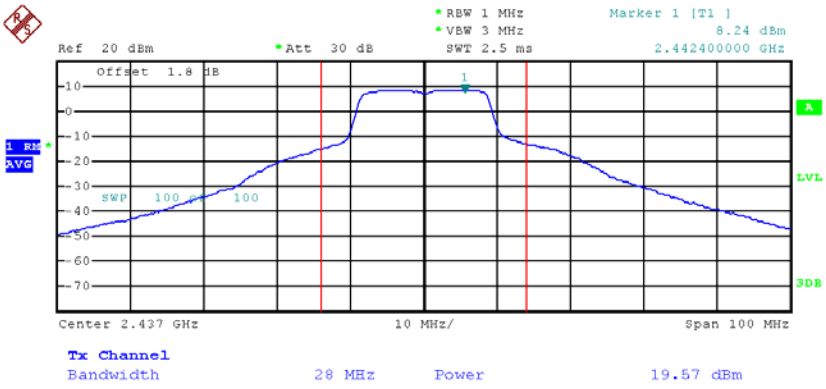
Date: 9.JUL.2012 15:05:08

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz / 2437 MHz/ ANT. 1 (2TX)



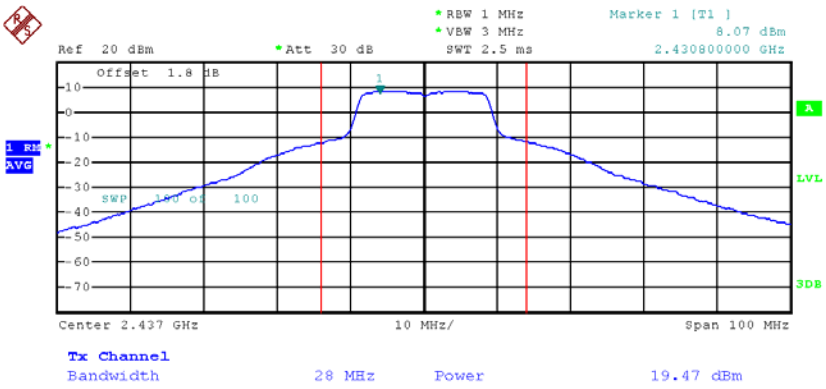
Date: 9.JUL.2012 15:19:08

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz / 2437 MHz/ ANT. 2 (2TX)



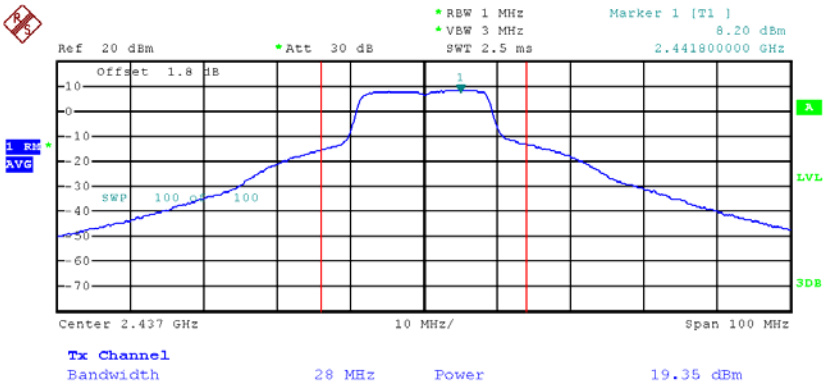
Date: 9.JUL.2012 15:19:37

Conducted Output Power Plot on Configuration IEEE 802.11n MCS8 20MHz / 2437 MHz/ ANT. 1 (2TX)



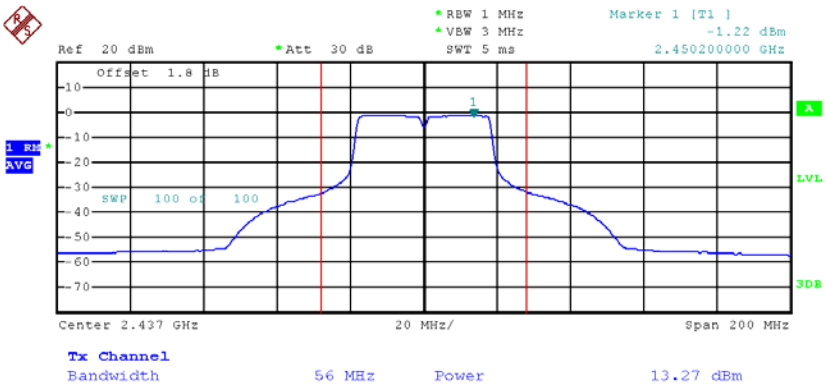
Date: 9.JUL.2012 15:16:51

Conducted Output Power Plot on Configuration IEEE 802.11n MCS8 20MHz / 2437 MHz/ ANT. 2 (2TX)



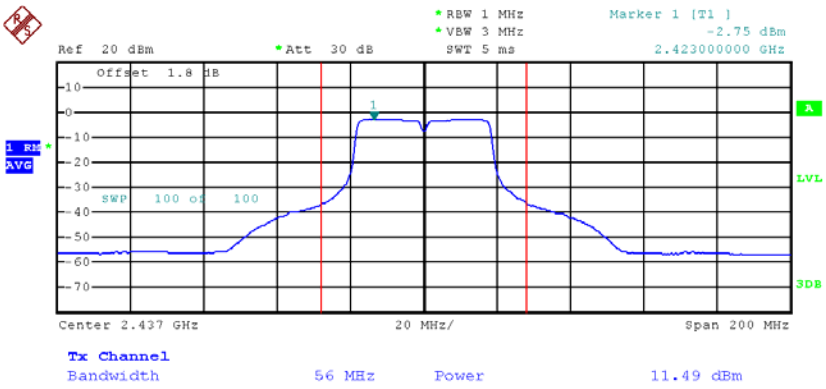
Date: 9.JUL.2012 15:16:27

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz / 2437 MHz/ ANT. 1 (1TX)



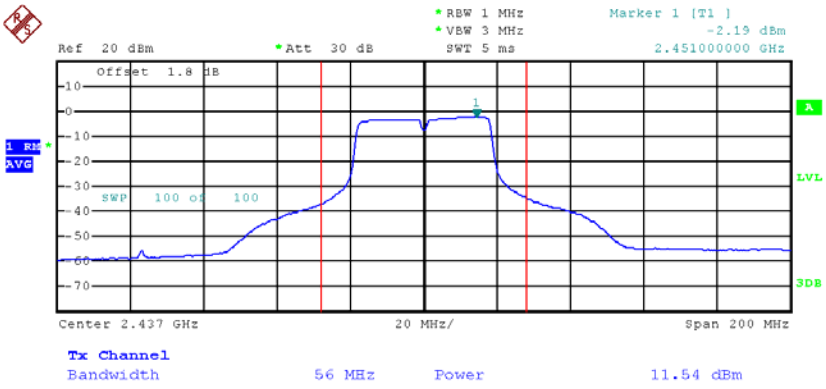
Date: 9.JUL.2012 15:06:43

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz / 2437 MHz/ ANT. 1 (2TX)



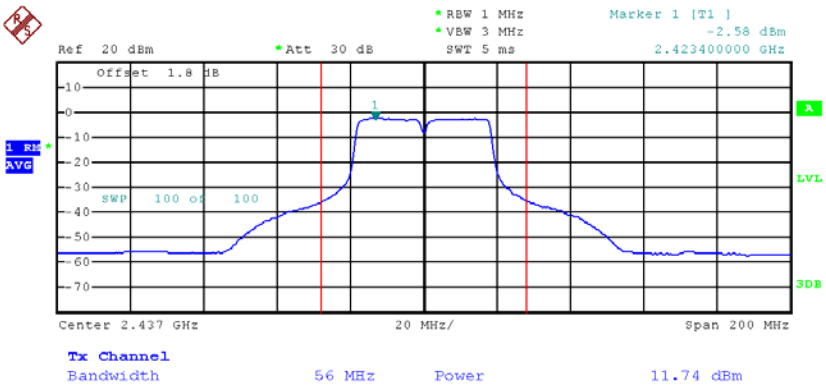
Date: 9.JUL.2012 15:09:38

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz / 2437 MHz/ ANT. 2 (2TX)



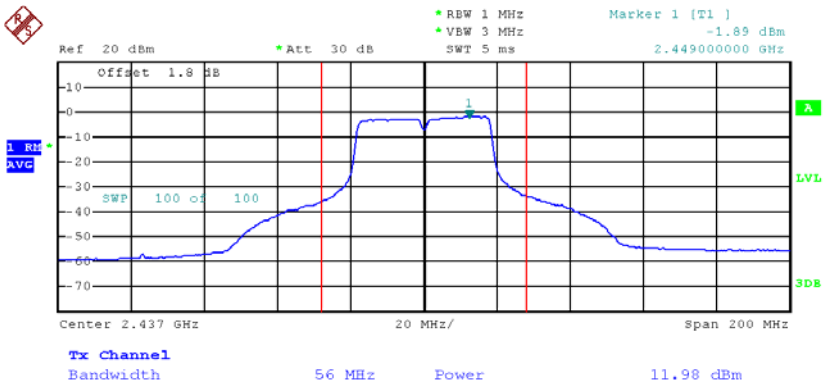
Date: 9.JUL.2012 15:09:22

Conducted Output Power Plot on Configuration IEEE 802.11n MCS8 40MHz / 2437 MHz/ ANT. 1 (2TX)



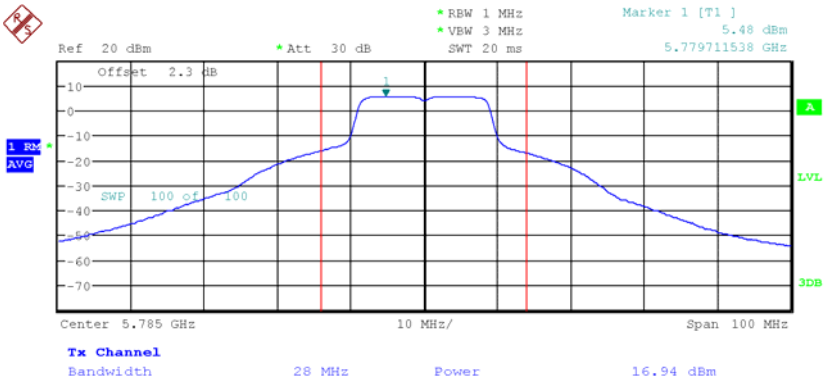
Date: 9.JUL.2012 15:13:22

Conducted Output Power Plot on Configuration IEEE 802.11n MCS8 40MHz / 2437 MHz/ ANT. 2 (2TX)



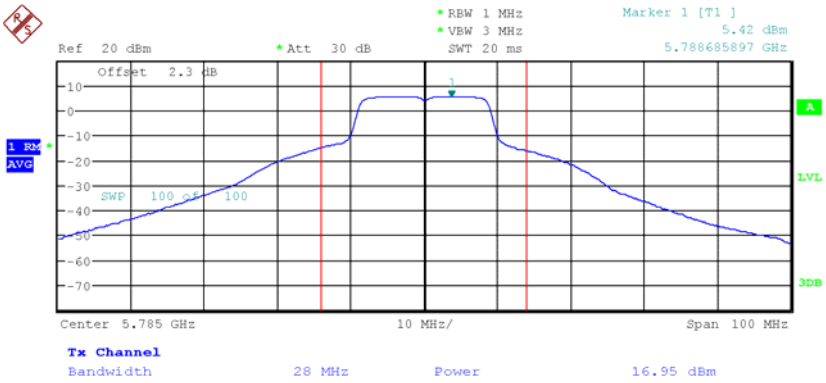
Date: 9.JUL.2012 15:13:37

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz / 5785 MHz/ ANT. 1 (1TX)



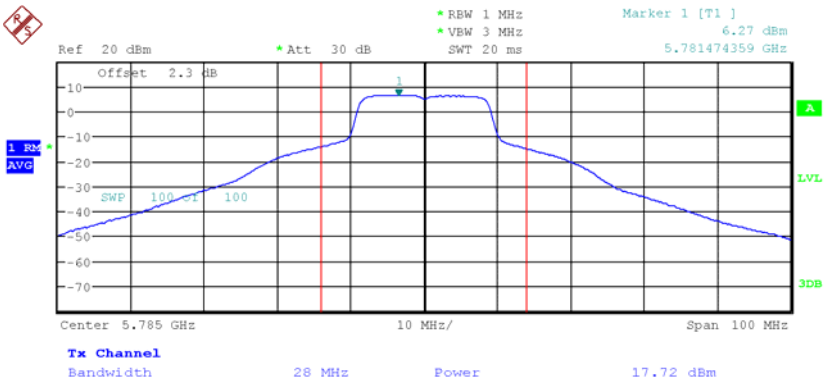
Date: 18.JUL.2012 16:41:40

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz / 5785 MHz/ ANT. 1 (2TX)



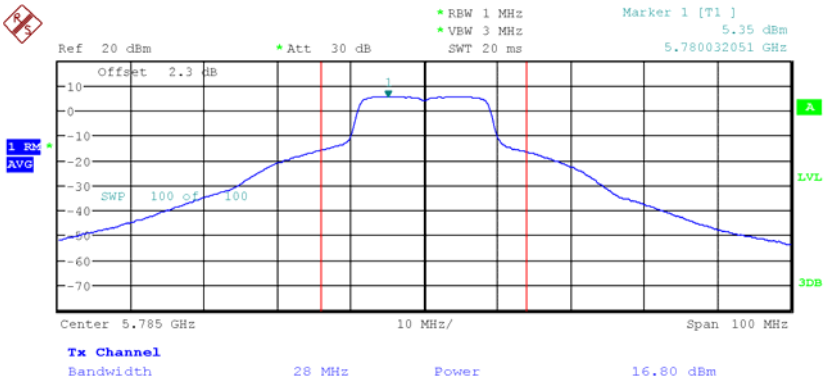
Date: 18.JUL.2012 17:13:08

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz / 5785 MHz/ ANT. 2 (2TX)



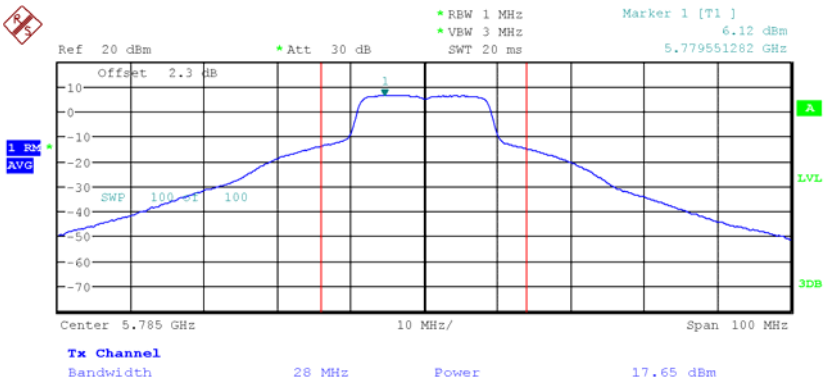
Date: 18.JUL.2012 17:11:06

Conducted Output Power Plot on Configuration IEEE 802.11n MCS8 20MHz / 5785 MHz/ ANT. 1 (2TX)



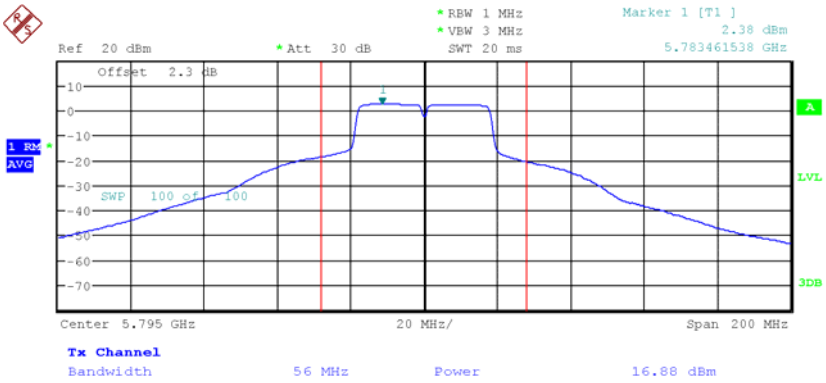
Date: 18.JUL.2012 17:16:00

Conducted Output Power Plot on Configuration IEEE 802.11n MCS8 20MHz / 5785 MHz/ ANT. 2 (2TX)



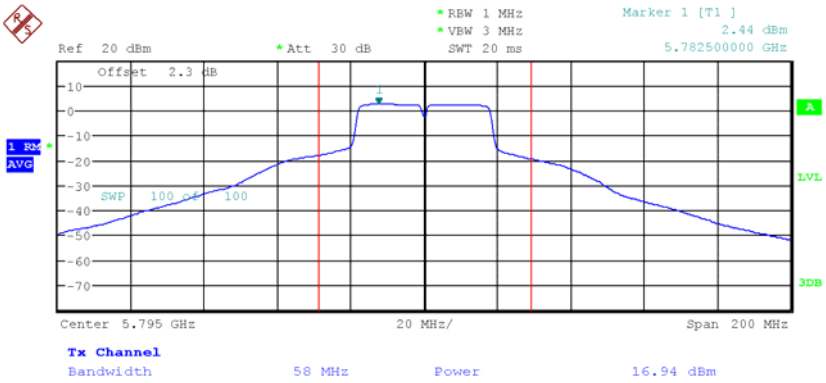
Date: 18.JUL.2012 17:17:23

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz/ ANT. 1 (1TX)



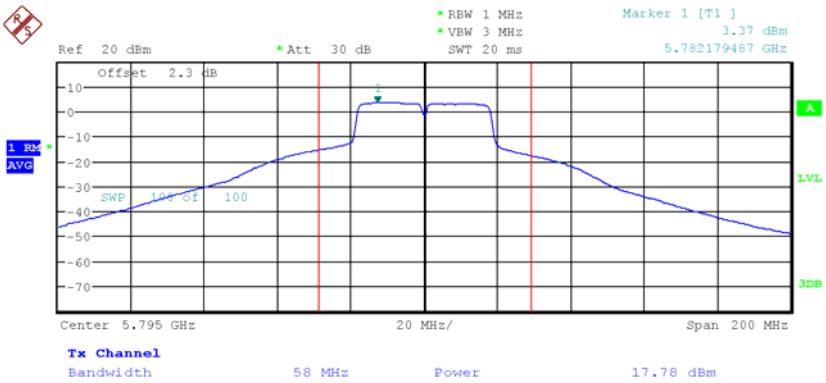
Date: 18.JUL.2012 16:43:54

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz/ ANT. 1 (2TX)



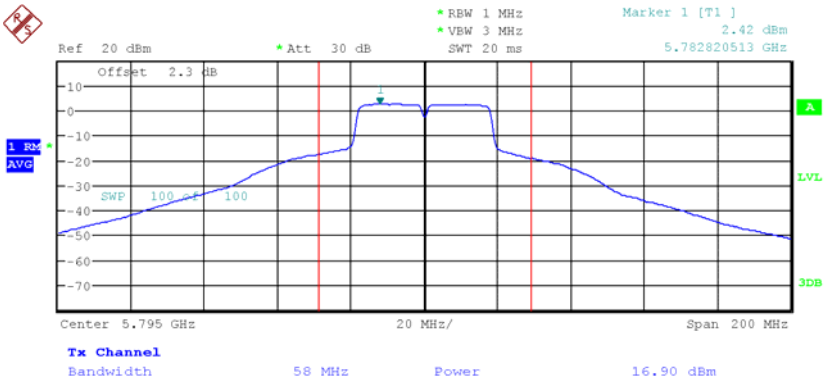
Date: 18.JUL.2012 17:27:24

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz/ ANT. 2 (2TX)



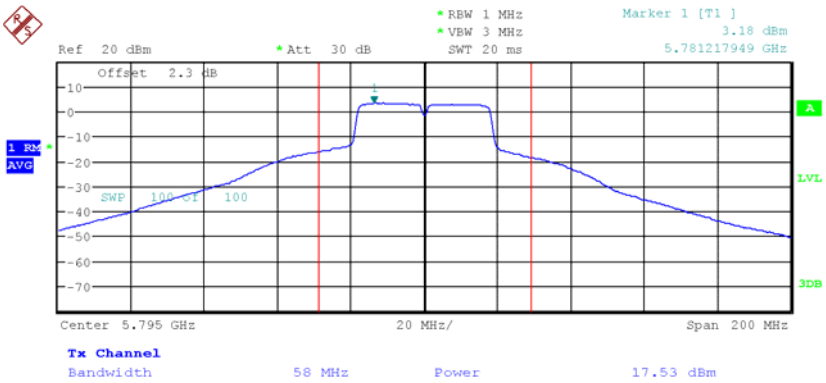
Date: 18.JUL.2012 17:29:11

Conducted Output Power Plot on Configuration IEEE 802.11n MCS8 40MHz / 5795 MHz/ ANT. 1 (2TX)



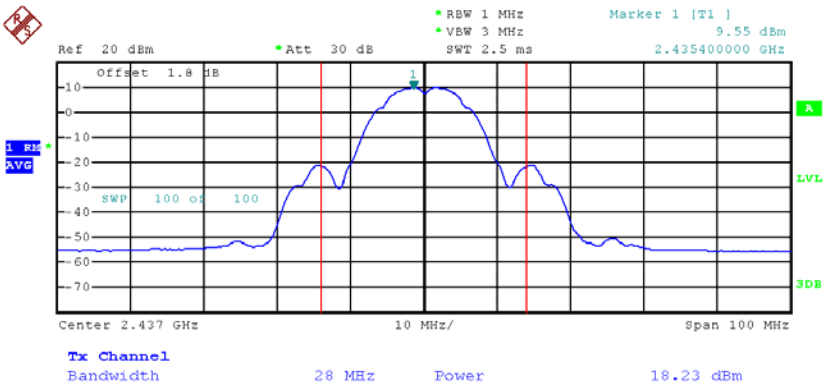
Date: 18.JUL.2012 17:33:35

Conducted Output Power Plot on Configuration IEEE 802.11n MCS8 40MHz / 5795 MHz/ ANT. 2 (2TX)



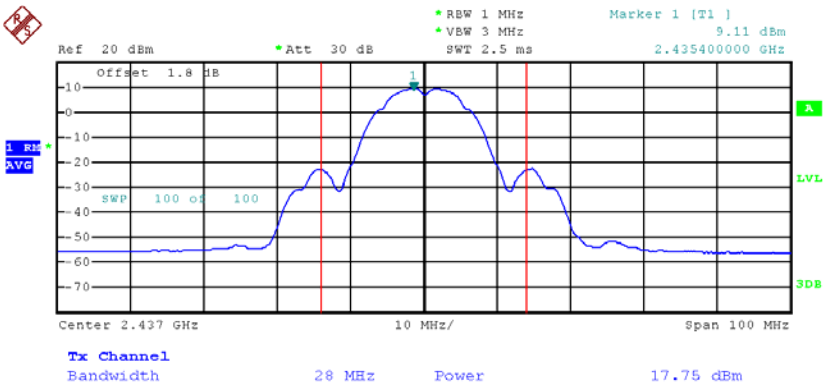
Date: 18.JUL.2012 17:31:25

Conducted Output Power Plot on Configuration IEEE 802.11b / 2437 MHz/ ANT. 1 (1TX)



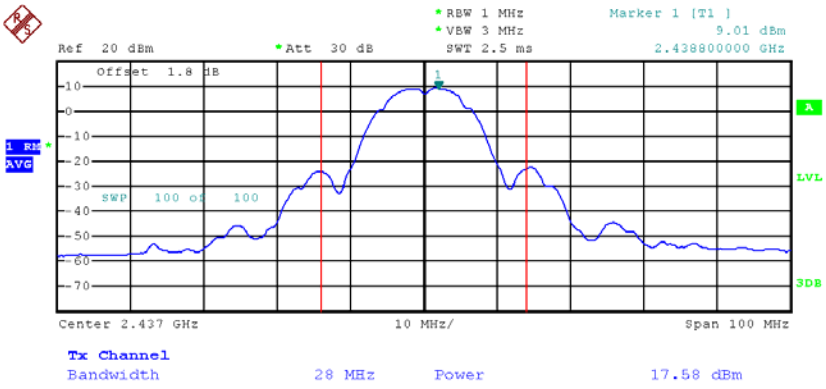
Date: 9.JUL.2012 15:02:15

Conducted Output Power Plot on Configuration IEEE 802.11b / 2437 MHz/ ANT. 1 (2TX)



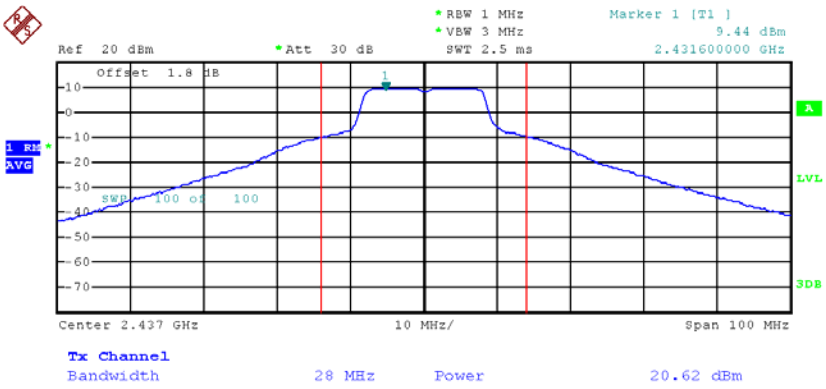
Date: 9.JUL.2012 15:22:02

Conducted Output Power Plot on Configuration IEEE 802.11b / 2437 MHz/ ANT. 2 (2TX)



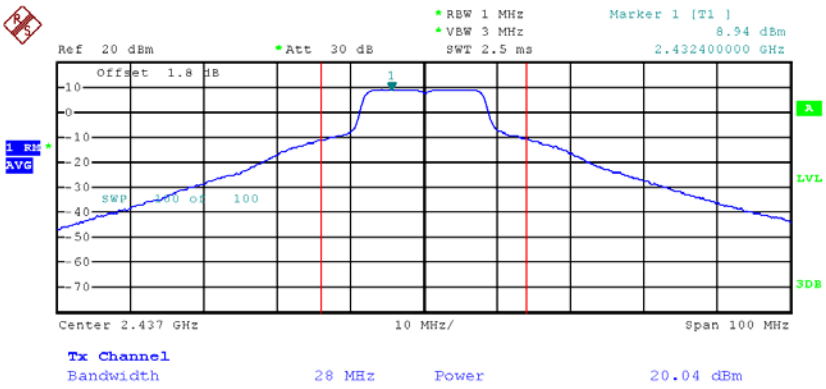
Date: 9.JUL.2012 15:21:40

Conducted Output Power Plot on Configuration IEEE 802.11g / 2437 MHz/ ANT. 1 (1TX)



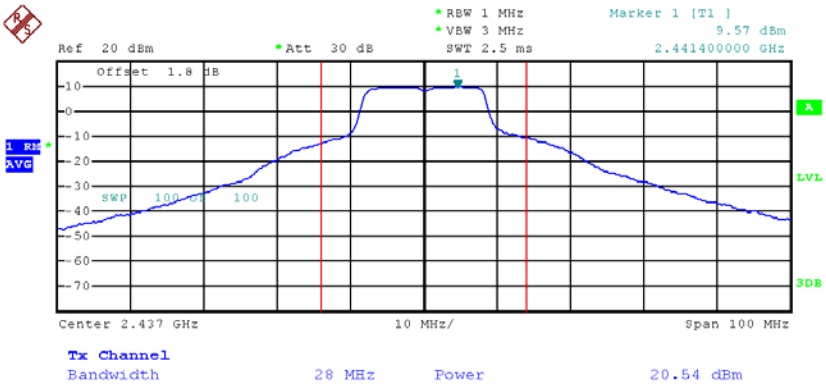
Date: 9.JUL.2012 15:03:36

Conducted Output Power Plot on Configuration IEEE 802.11g / 2437 MHz/ ANT. 1 (2TX)



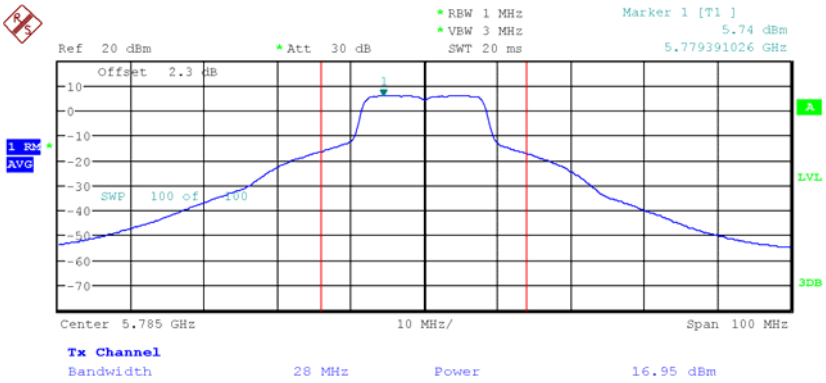
Date: 9.JUL.2012 15:26:04

Conducted Output Power Plot on Configuration IEEE 802.11g / 2437 MHz/ ANT. 2 (2TX)



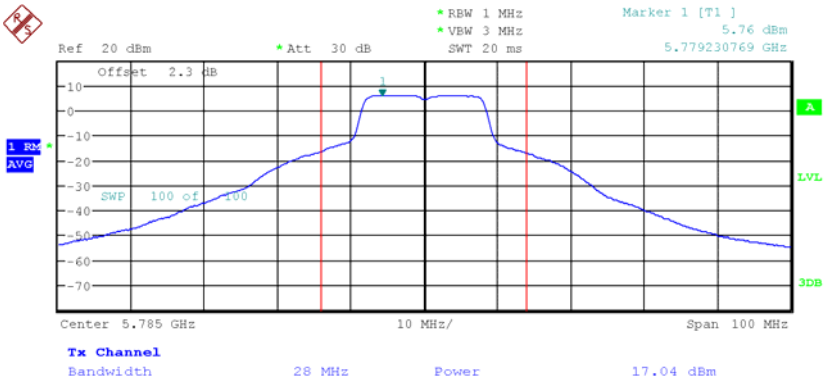
Date: 9.JUL.2012 15:26:31

Conducted Output Power Plot on Configuration IEEE 802.11a / 5785 MHz/ ANT. 1 (1TX)



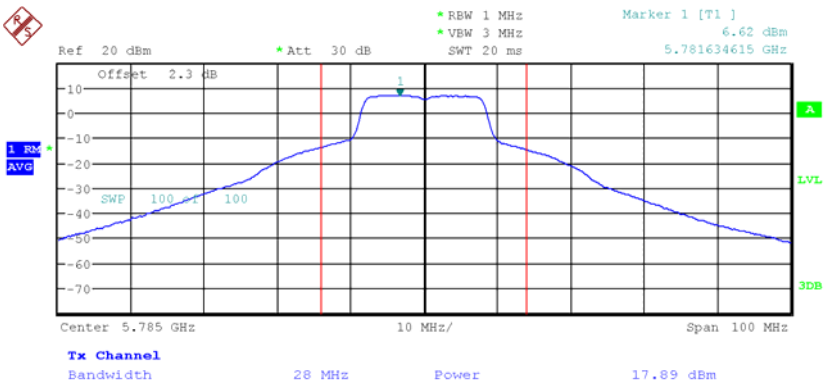
Date: 18.JUL.2012 16:37:41

Conducted Output Power Plot on Configuration IEEE 802.11a / 5785 MHz/ ANT. 1 (2TX)



Date: 18.JUL.2012 16:49:42

Conducted Output Power Plot on Configuration IEEE 802.11a / 5785 MHz/ ANT. 2 (2TX)



Date: 18.JUL.2012 16:52:53

4.3. Power Spectral Density Measurement

4.3.1. 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.

4.3.2. Measuring Instruments and Setting

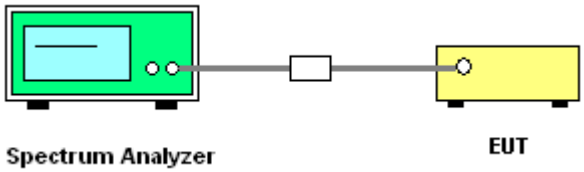
Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the analyzer span to 5-30% greater than the EBW.
RB	100KHz
VB	300KHz
Detector	RMS
Trace	Single Sweep
Sweep Time	≥ 10 x (number of measurement points in sweep) x (transmission symbol period).

4.3.3. Test Procedures

1. Test was performed in accordance with KDB 558074 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 5.3.2 Multiple antenna systems was performed in accordance with KDB 662911 in-Band Power Spectral Density (PSD) Measurements(2) Measure and add 10 log(N) dB (as described in the preceding section).
2. Use this procedure when the maximum conducted output power in the fundamental emission is used to demonstrate compliance. The EUT must be configured to transmit continuously at full power over the measurement duration.
3. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW (use of a greater number of measurement points than this minimum requirement is recommended).
4. Use the peak marker function to determine the maximum level in any 100 kHz band segment within the fundamental EBW.
5. Scale the observed power level to an equivalent level in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where: BWCF = 10log (3 kHz/100 kHz = -15.2 dB).
6. The resulting PSD level must be ≤ 8 dBm.
7. When measuring power spectral density with multiple antenna systems, add every result of the values by mathematic formula.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Power Spectral Density

Temperature	25℃	Humidity	60%
Test Engineer	Denis Su	Configurations	IEEE 802.11n

For 2.4GHz Band

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1				
1	2412 MHz	-8.10	-15.23	-23.33	8.00	**Complies**
6	2437 MHz	-0.53	-15.23	-15.76	8.00	**Complies**
11	2462 MHz	-8.23	-15.23	-23.46	8.00	**Complies**

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
1	2412 MHz	-9.73	-9.31	-6.50	-15.23	-21.73	5.75	**Complies**
6	2437 MHz	-1.51	-1.49	1.51	-15.23	-13.72	5.75	**Complies**
11	2462 MHz	-8.66	-10.71	-6.55	-15.23	-21.78	5.75	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]$ dBi =8.25dBi > 6dBi , so the power density limit =8-(8.25-6)=5.75dBm.

Configuration IEEE 802.11n MCS8 20MHz

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
1	2412 MHz	-9.28	-9.07	-6.16	-15.23	-21.39	8.00	**Complies**
6	2437 MHz	-1.44	-1.40	1.59	-15.23	-13.64	8.00	**Complies**
11	2462 MHz	-9.26	-10.33	-6.75	-15.23	-21.98	8.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1				
3	2422 MHz	-13.80	-15.23	-29.03	8.00	**Complies**
6	2437 MHz	-10.35	-15.23	-25.58	8.00	**Complies**
9	2452 MHz	-14.02	-15.23	-29.25	8.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
3	2422 MHz	-14.79	-13.22	-10.92	-15.23	-26.15	5.75	**Complies**
6	2437 MHz	-12.59	-12.02	-9.29	-15.23	-24.51	5.75	**Complies**
9	2452 MHz	-14.06	-14.20	-11.12	-15.23	-26.35	5.75	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]$ dBi =8.25dBi > 6dBi , so the power density limit =8-(8.25-6)=5.75dBm.

Configuration IEEE 802.11n MCS8 40MHz

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
3	2422 MHz	-13.50	-12.75	-10.10	-15.23	-25.33	8.00	**Complies**
6	2437 MHz	-11.87	-11.38	-8.61	-15.23	-23.84	8.00	**Complies**
9	2452 MHz	-13.44	-13.72	-10.57	-15.23	-25.80	8.00	**Complies**

For 5GHz Band

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1				
149	5745 MHz	-5.59	-15.23	-20.82	8.00	**Complies**
157	5785 MHz	-4.69	-15.23	-19.92	8.00	**Complies**
165	5825 MHz	-5.01	-15.23	-20.24	8.00	**Complies**

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
149	5745 MHz	-7.15	-6.53	-3.82	-15.23	-19.05	5.31	**Complies**
157	5785 MHz	-4.73	-4.15	-1.42	-15.23	-16.65	5.31	**Complies**
165	5825 MHz	-5.22	-4.76	-1.97	-15.23	-17.20	5.31	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]$ dBi =8.69dBi > 6dBi , so the power density limit =8-(8.69-6)=5.31dBm.

Configuration IEEE 802.11n MCS8 20MHz

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
149	5745 MHz	-5.75	-4.88	-2.28	-15.23	-17.51	8.00	**Complies**
157	5785 MHz	-4.71	-3.56	-1.09	-15.23	-16.32	8.00	**Complies**
165	5825 MHz	-5.25	-4.67	-1.94	-15.23	-17.17	8.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1				
151	5755 MHz	-10.11	-15.23	-25.34	8.00	**Complies**
159	5795 MHz	-7.76	-15.23	-22.99	8.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
151	5755 MHz	-12.73	-9.68	-7.93	-15.23	-23.16	5.31	**Complies**
159	5795 MHz	-7.77	-7.34	-4.54	-15.23	-19.77	5.31	**Complies**

Note: $\text{Directional gain} = 10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N]\ \text{dBi}$ =8.69dBi > 6dBi , so the power density limit =8-(8.69-6)=5.31dBm.

Configuration IEEE 802.11n MCS8 40MHz

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
151	5755 MHz	-13.57	-12.00	-9.70	-15.23	-24.93	8.00	**Complies**
159	5795 MHz	-8.25	-7.38	-4.78	-15.23	-20.01	8.00	**Complies**

Temperature	25℃	Humidity	60%
Test Engineer	Denis Su	Configurations	IEEE 802.11b

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1				
1	2412 MHz	0.09	-15.23	-15.14	8.00	**Complies**
6	2437 MHz	0.02	-15.23	-15.21	8.00	**Complies**
11	2462 MHz	-0.66	-15.23	-15.89	8.00	**Complies**

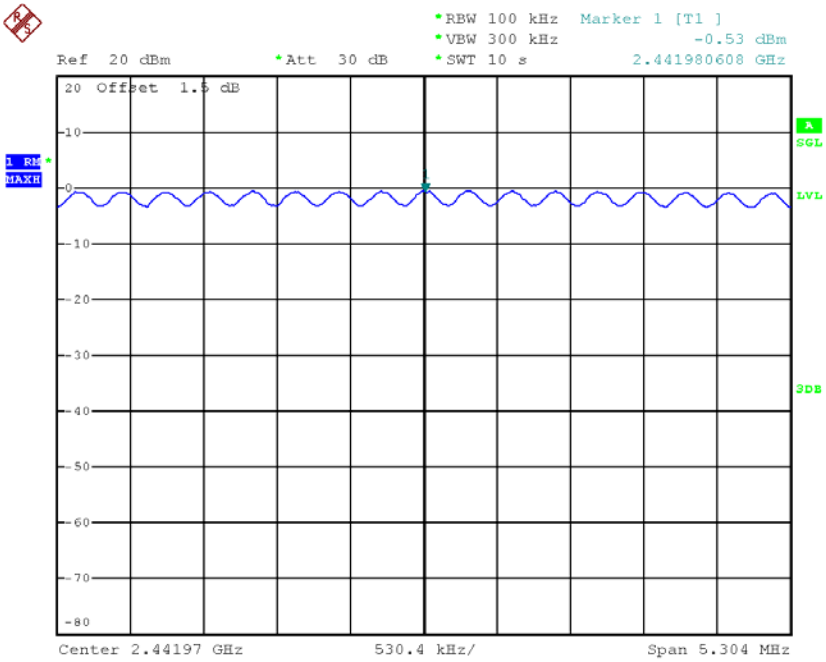
Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm/100kHz)		Total Power Density (dBm/100 kHz)	BWCF factor (100KHz to 3KHz	Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2					
1	2412 MHz	-0.98	-0.47	2.29	-15.23	-12.94	5.20	**Complies**
6	2437 MHz	-0.50	-1.25	2.15	-15.23	-13.08	5.20	**Complies**
11	2462 MHz	-1.84	-2.88	0.68	-15.23	-14.55	5.20	**Complies**

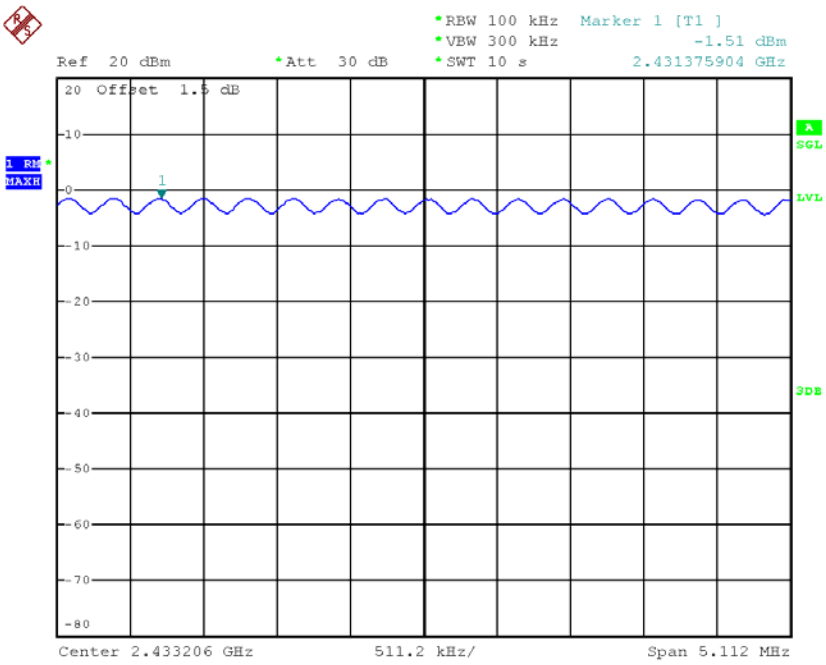
Note: All the test values were listed in the report.

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

Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / 2437 MHz / ANT. 1 (1TX)

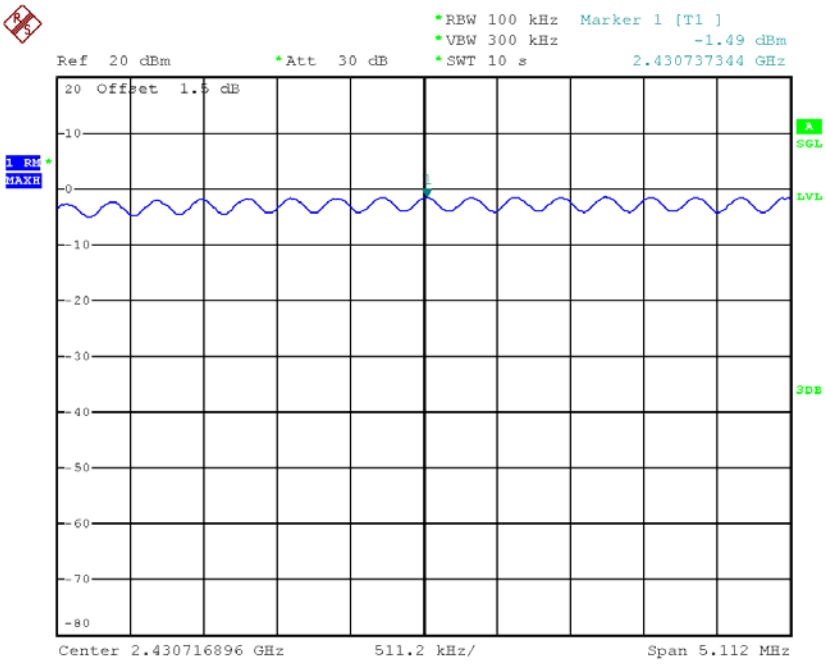


Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / 2437 MHz / Ant. 1 (TX)



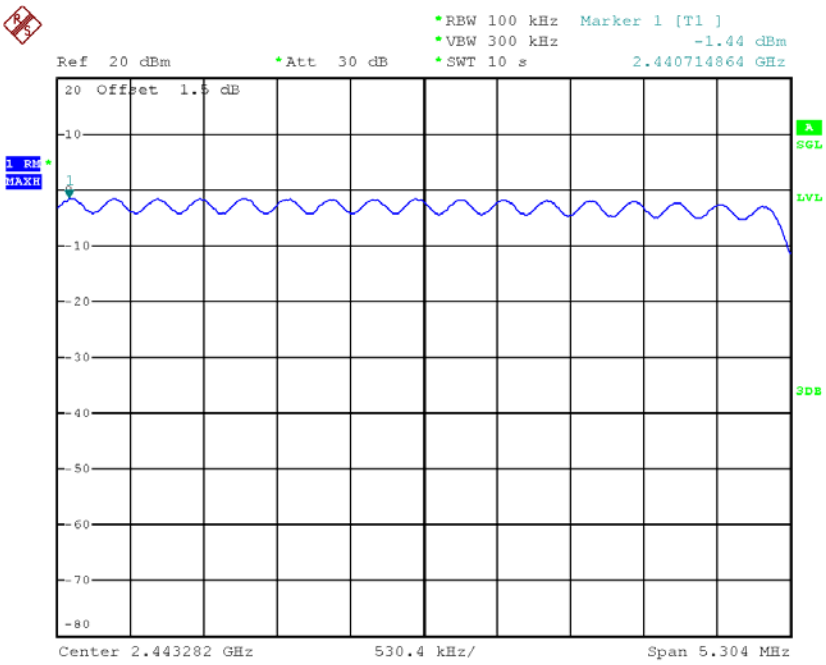
Date: 10.JUL.2012 08:21:21

Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / 2437 MHz / Ant. 2 (2TX)



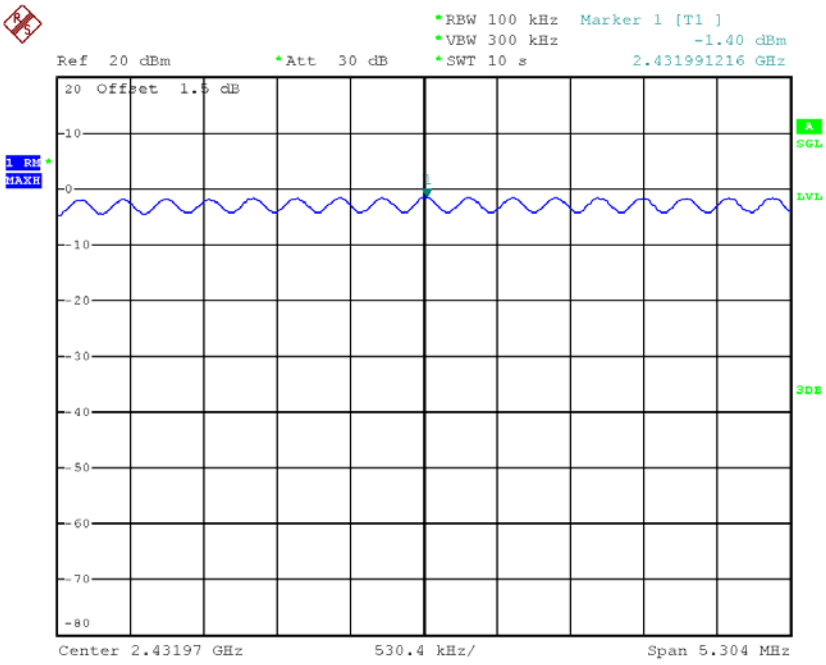
Date: 10.JUL.2012 08:20:45

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / 2437 MHz / Ant. 1 (2TX)



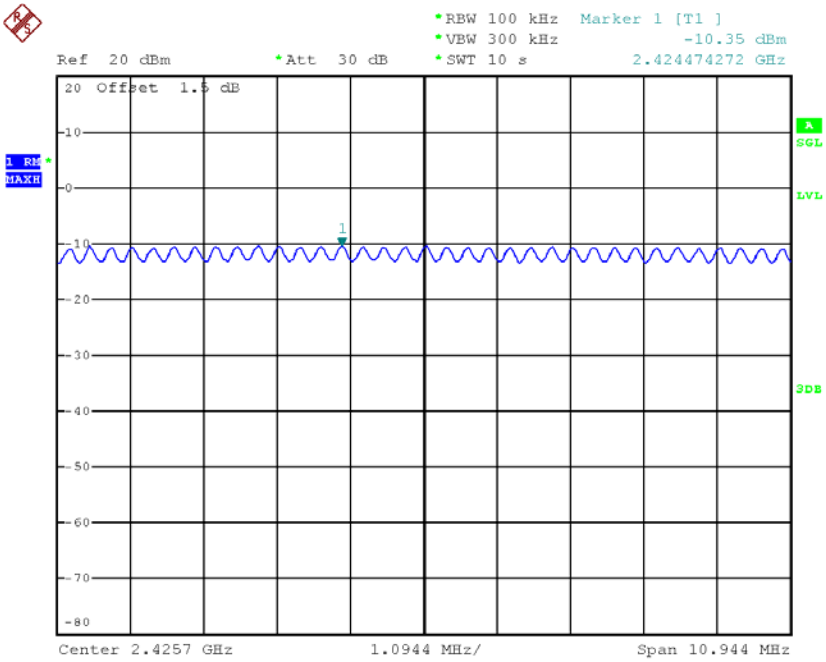
Date: 10.JUL.2012 08:30:34

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / 2437 MHz / Ant. 2 (2TX)



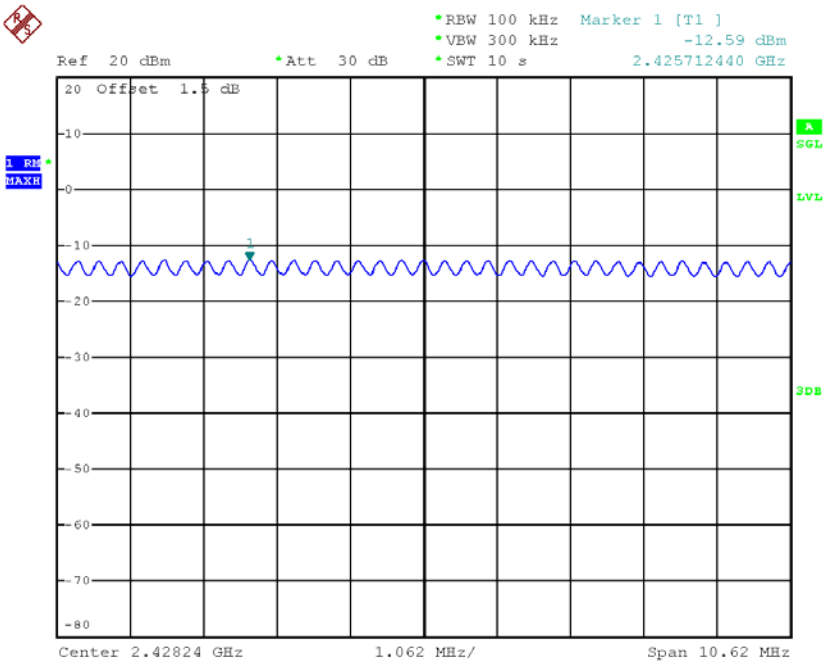
Date: 10.JUL.2012 08:31:22

Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / 2437 MHz / ANT. 1 (1TX)



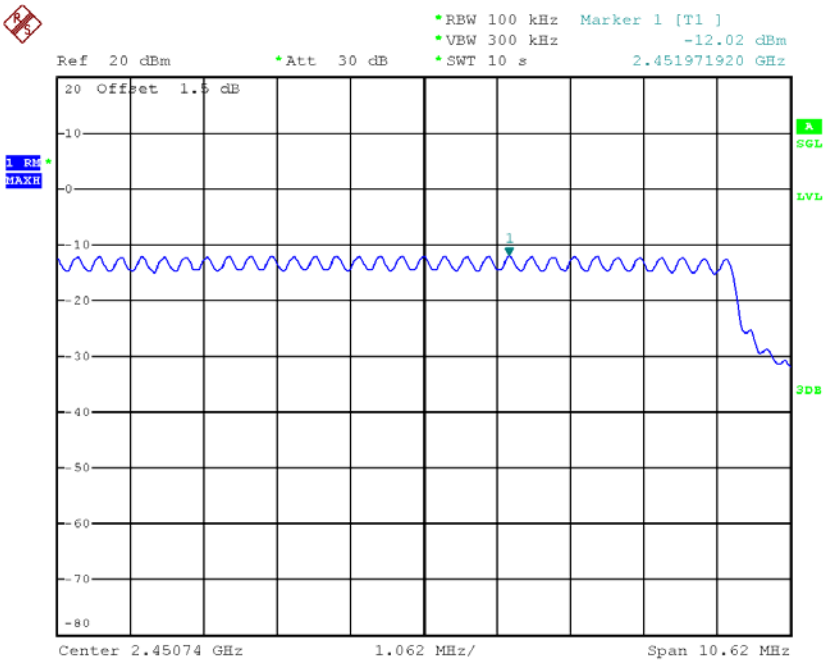
Date: 10.JUL.2012 07:58:33

Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / 2437 MHz / Ant. 1 (2TX)



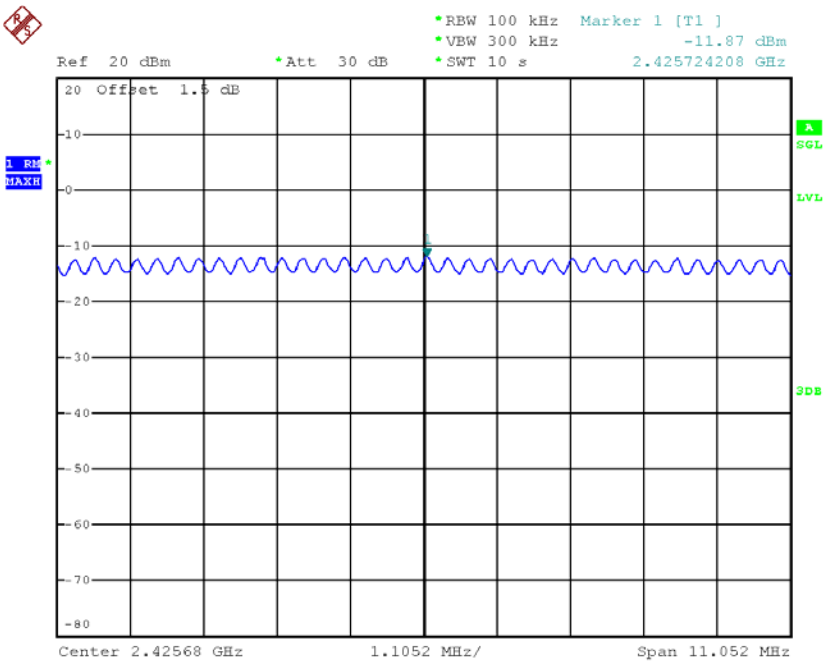
Date: 10.JUL.2012 08:09:03

Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / 2437 MHz / Ant. 2 (2TX)



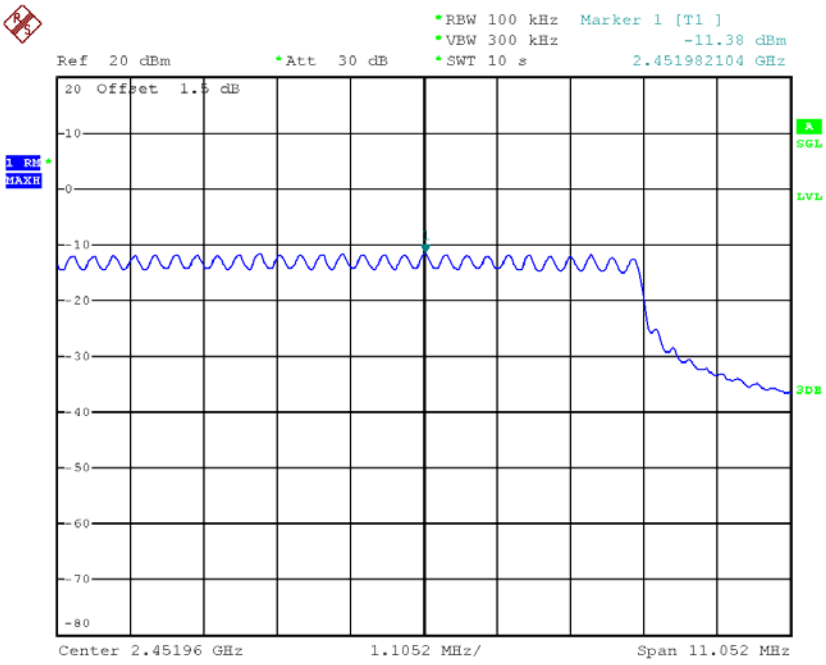
Date: 10.JUL.2012 08:07:11

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / 2437 MHz / Ant. 1 (2TX)



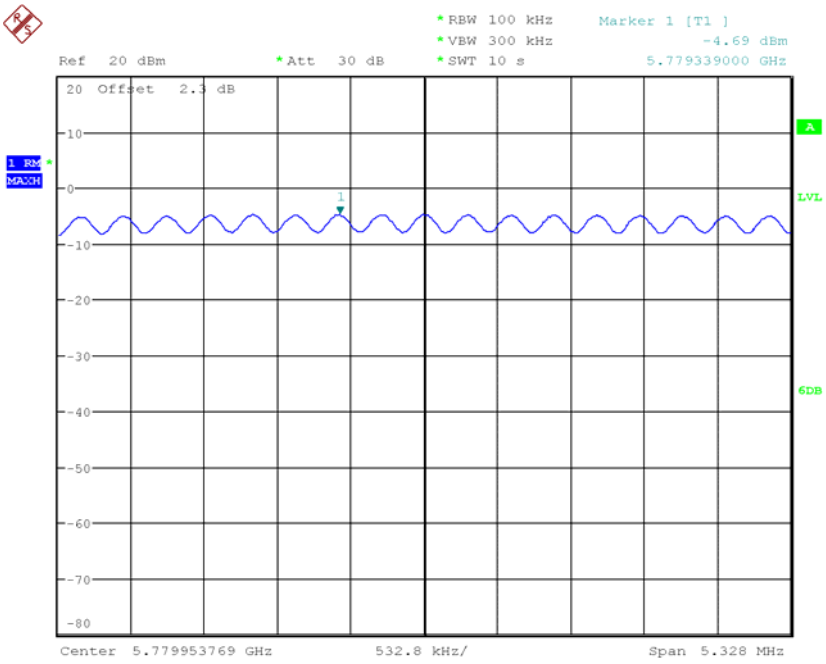
Date: 10.JUL.2012 08:39:01

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / 2437 MHz / Ant. 2 (2TX)



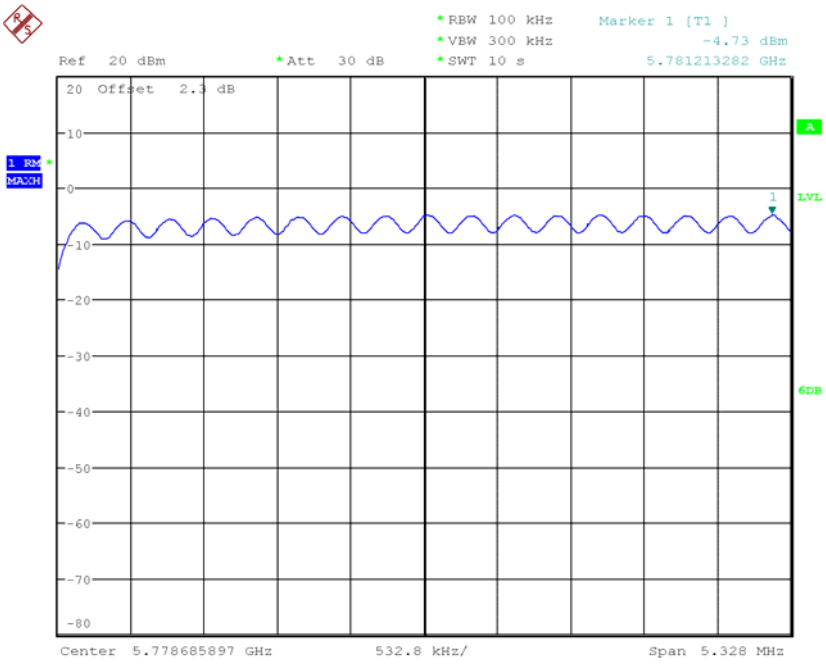
Date: 10.JUL.2012 08:38:17

Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / 5785 MHz / ANT. 1 (1TX)



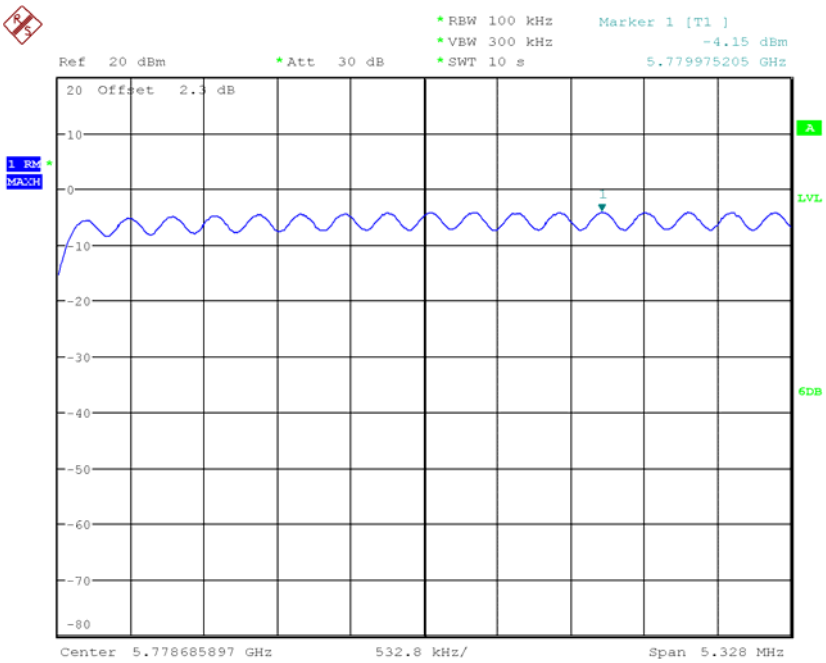
Date: 18.JUL.2012 18:29:25

Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / 5785 MHz / Ant. 1 (2TX)



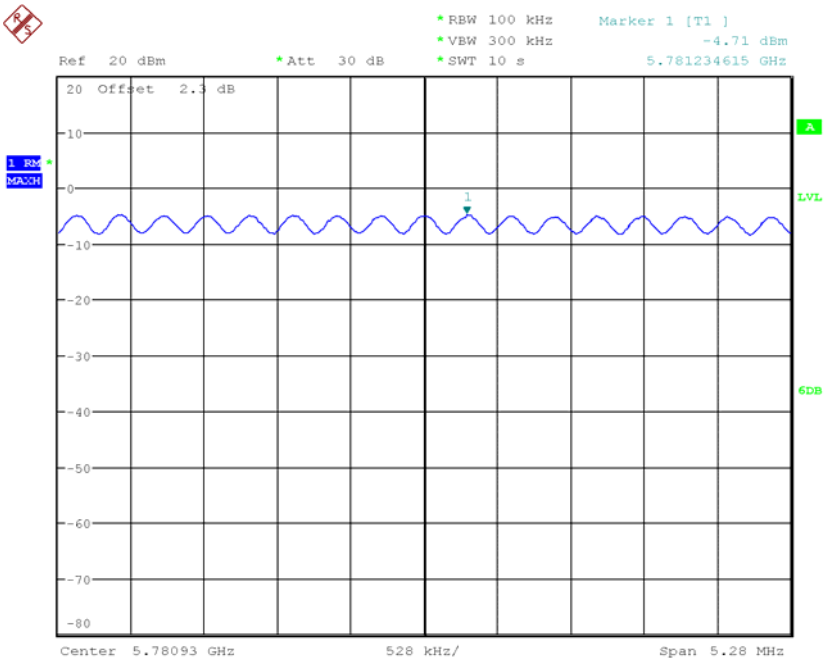
Date: 18.JUL.2012 17:52:35

Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / 5785 MHz / Ant. 2 (2TX)



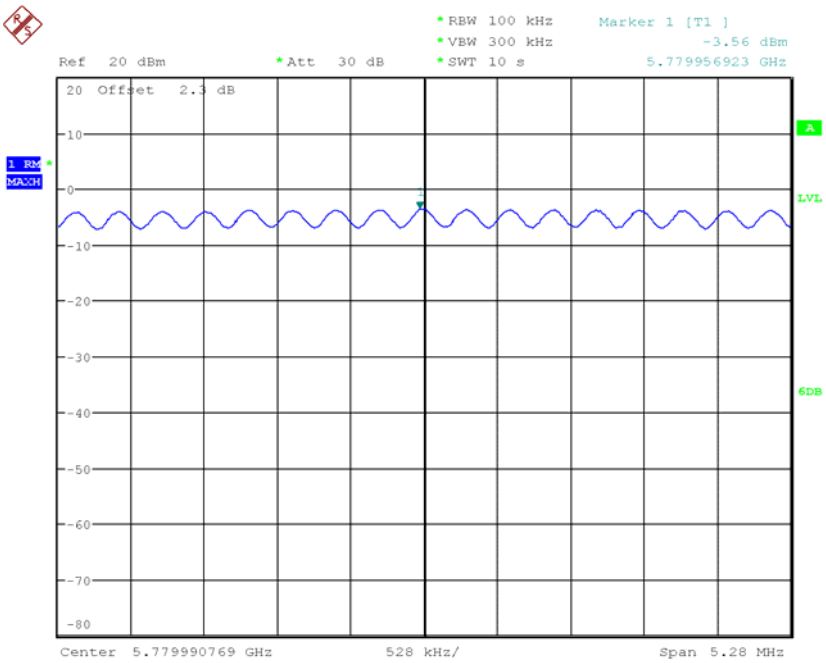
Date: 18.JUL.2012 17:54:33

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / 5785 MHz / Ant. 1 (2TX)



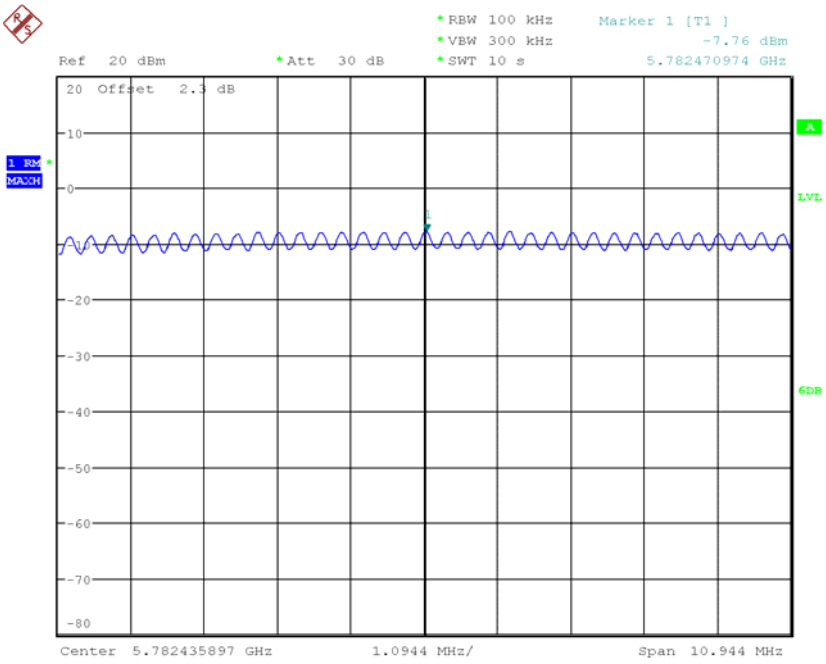
Date: 18.JUL.2012 18:08:06

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / 5785 MHz / Ant. 2 (2TX)

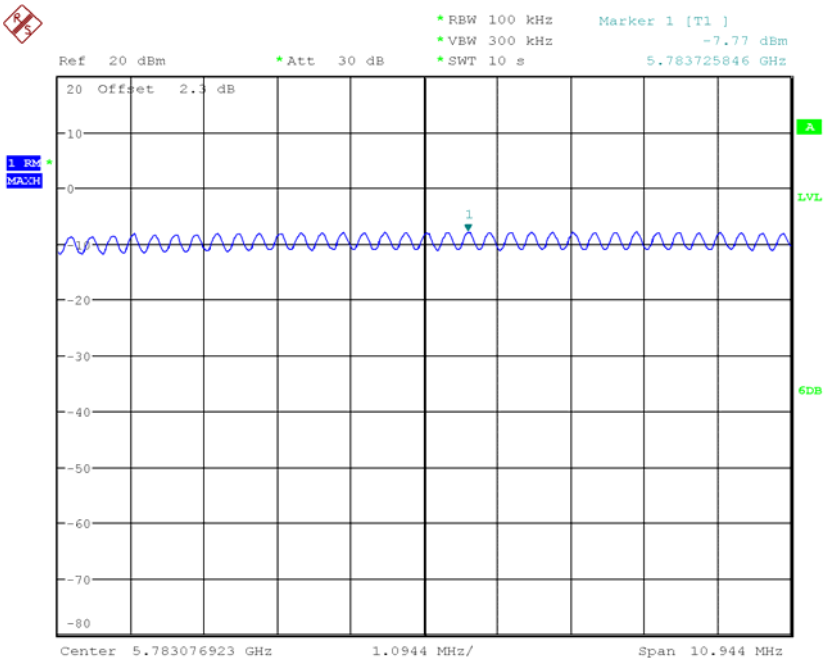


Date: 18.JUL.2012 18:06:33

Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz / ANT. 1 (1TX)

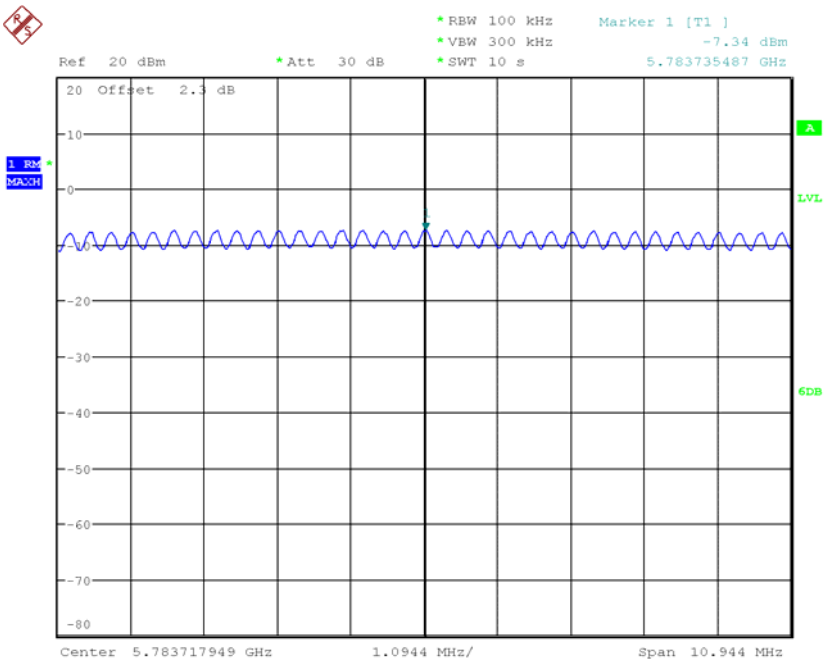


Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz / Ant. 1 (2TX)



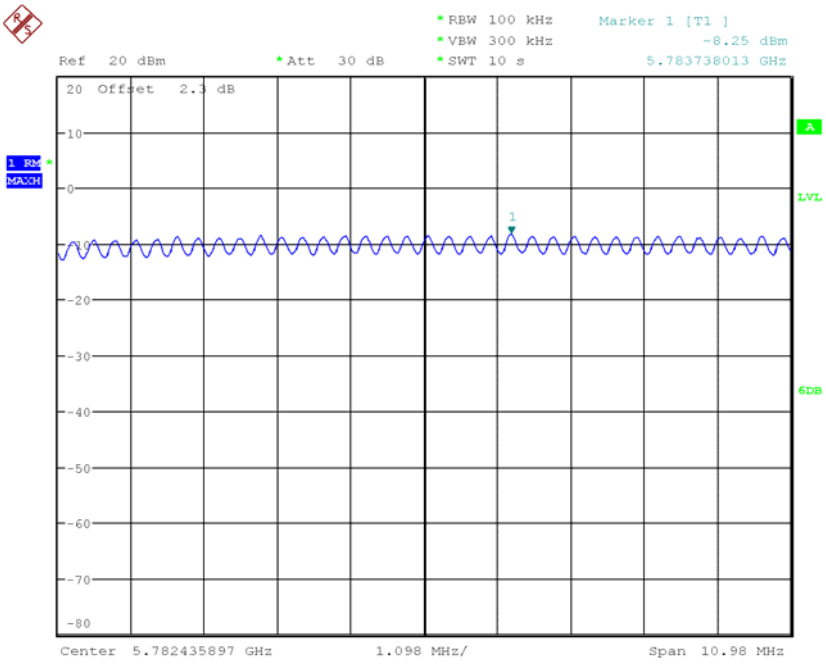
Date: 18.JUL.2012 18:11:27

Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz / Ant. 2 (2TX)



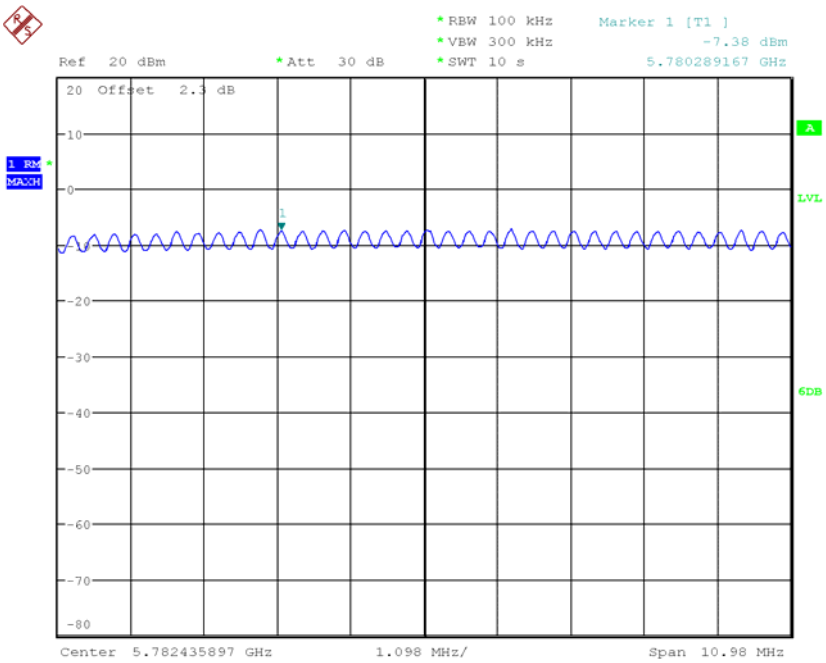
Date: 18.JUL.2012 18:14:10

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / 5795 MHz / Ant. 1 (2TX)



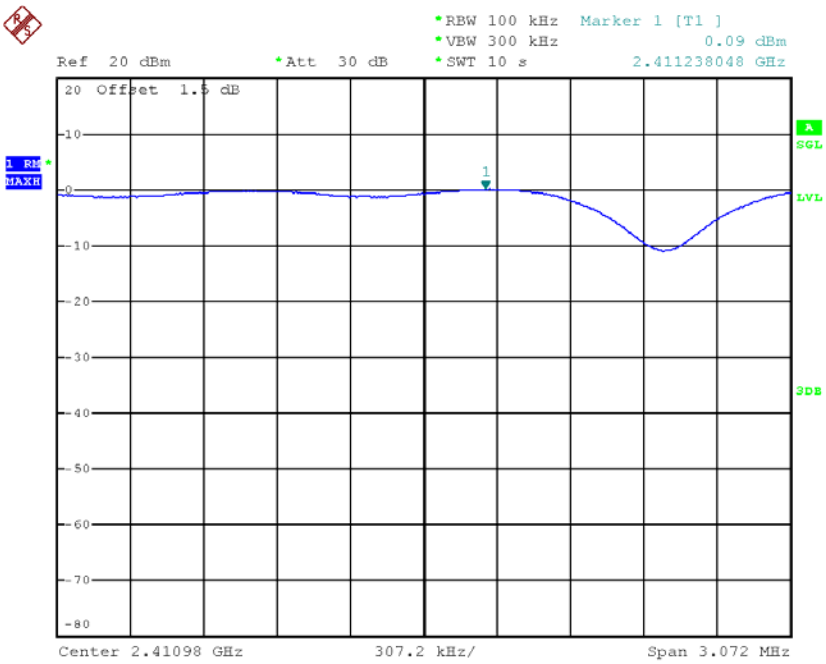
Date: 18.JUL.2012 18:20:15

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / 5795 MHz / Ant. 2 (2TX)



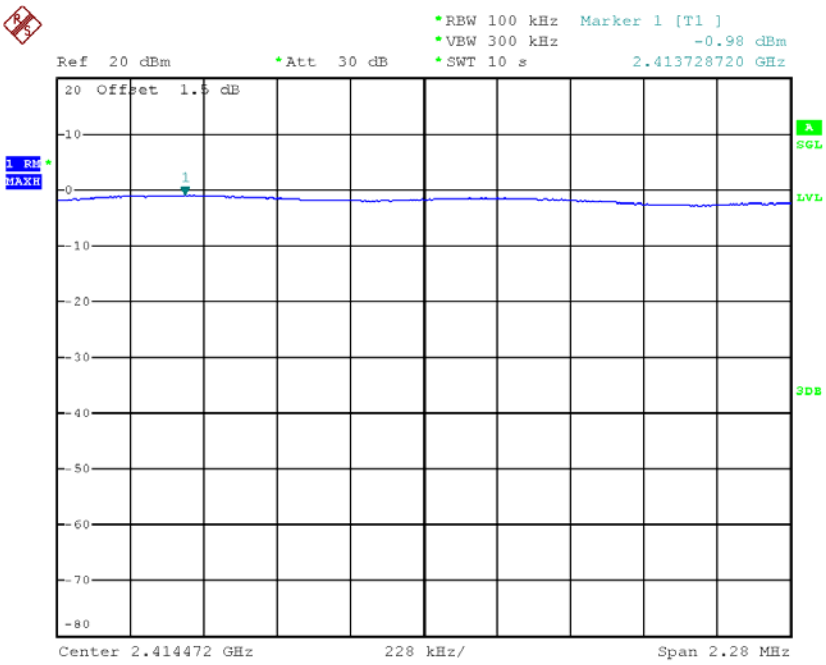
Date: 18.JUL.2012 18:17:40

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / ANT. 1 (1TX)



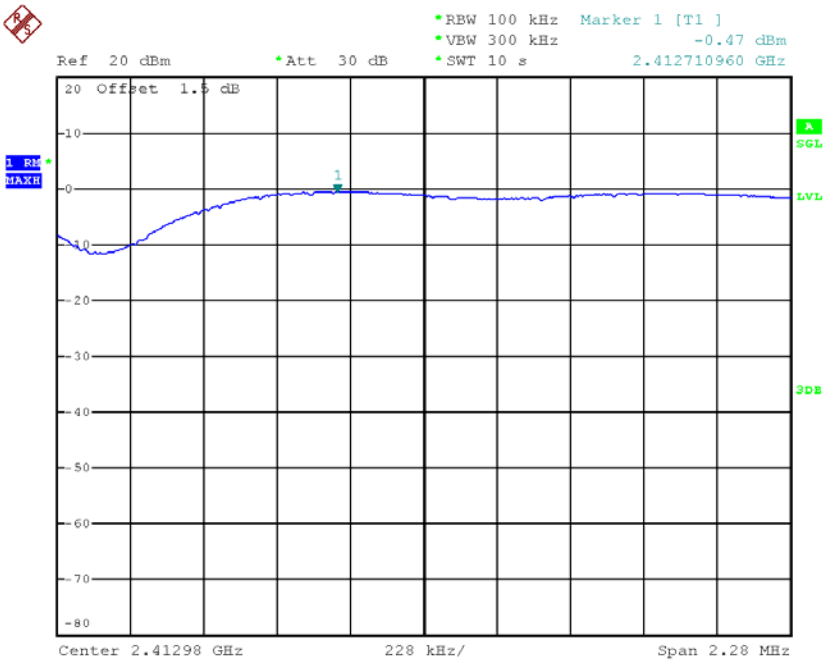
Date: 10.JUL.2012 07:43:14

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Ant. 1 (2TX)



Date: 10.JUL.2012 08:43:28

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Ant. 2 (2TX)



Date: 10.JUL.2012 08:42:32

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

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

4.4.2. Measuring Instruments and Setting

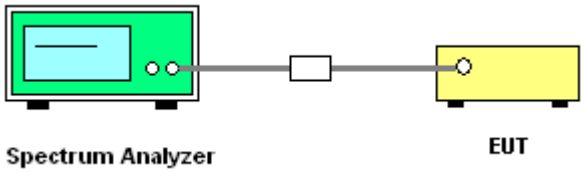
Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RB	1-5 % of the emission bandwidth (EBW)
VB	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB 558074 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS)Operating Under §15.247 section 5.1.1 EBW Measurement Procedure
3. Multiple antenna systems was performed in accordance with KDB 662911 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

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 6dB Spectrum Bandwidth

Temperature	25℃	Humidity	60%
Test Engineer	Denis Su	Configurations	IEEE 802.11n

For 2.4GHz Band

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	17.68	18.40	500.00	**Complies**
6	2437 MHz	17.68	28.32	500.00	**Complies**
11	2462 MHz	17.76	18.40	500.00	**Complies**

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	13.92	17.84	500.00	**Complies**
6	2437 MHz	17.04	24.64	500.00	**Complies**
11	2462 MHz	16.64	17.84	500.00	**Complies**

Configuration IEEE 802.11n MCS8 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	17.68	18.00	500.00	**Complies**
6	2437 MHz	17.68	21.68	500.00	**Complies**
11	2462 MHz	17.60	18.08	500.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.60	38.16	500.00	**Complies**
6	2437 MHz	36.48	38.28	500.00	**Complies**
9	2452 MHz	36.72	38.04	500.00	**Complies**

Configuration IEEE 802.11n MCS0 40MH

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	35.76	37.56	500.00	**Complies**
6	2437 MHz	35.40	37.56	500.00	**Complies**
9	2452 MHz	35.64	37.80	500.00	**Complies**

Configuration IEEE 802.11n MCS8 40MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.60	37.68	500.00	**Complies**
6	2437 MHz	36.84	37.80	500.00	**Complies**
9	2452 MHz	36.60	37.80	500.00	**Complies**

For 5GHz Band

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	17.68	24.32	500.00	**Complies**
157	5785 MHz	17.76	27.68	500.00	**Complies**
165	5825 MHz	17.68	27.12	500.00	**Complies**

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	17.76	21.84	500.00	**Complies**
157	5785 MHz	17.76	27.76	500.00	**Complies**
165	5825 MHz	17.68	26.56	500.00	**Complies**

Configuration IEEE 802.11n MCS8 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	17.60	21.36	500.00	**Complies**
157	5785 MHz	17.60	27.52	500.00	**Complies**
165	5825 MHz	17.52	25.68	500.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	36.72	39.36	500.00	**Complies**
159	5795 MHz	36.48	44.76	500.00	**Complies**

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	36.72	39.12	500.00	**Complies**
159	5795 MHz	36.48	45.96	500.00	**Complies**

Configuration IEEE 802.11n MCS8 40MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	36.36	38.28	500.00	**Complies**
159	5795 MHz	36.60	45.48	500.00	**Complies**

Temperature	25℃	Humidity	60%
Test Engineer	Denis Su	Configurations	IEEE 802.11b

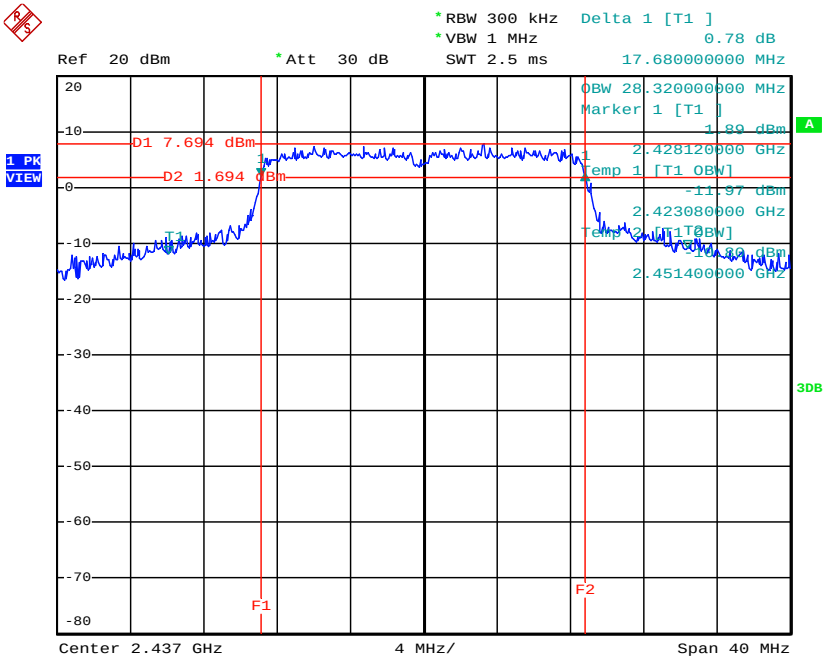
Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	10.24	14.64	500.00	**Complies**
6	2437 MHz	10.24	14.40	500.00	**Complies**
11	2462 MHz	10.24	14.56	500.00	**Complies**

Configuration IEEE 802.11b

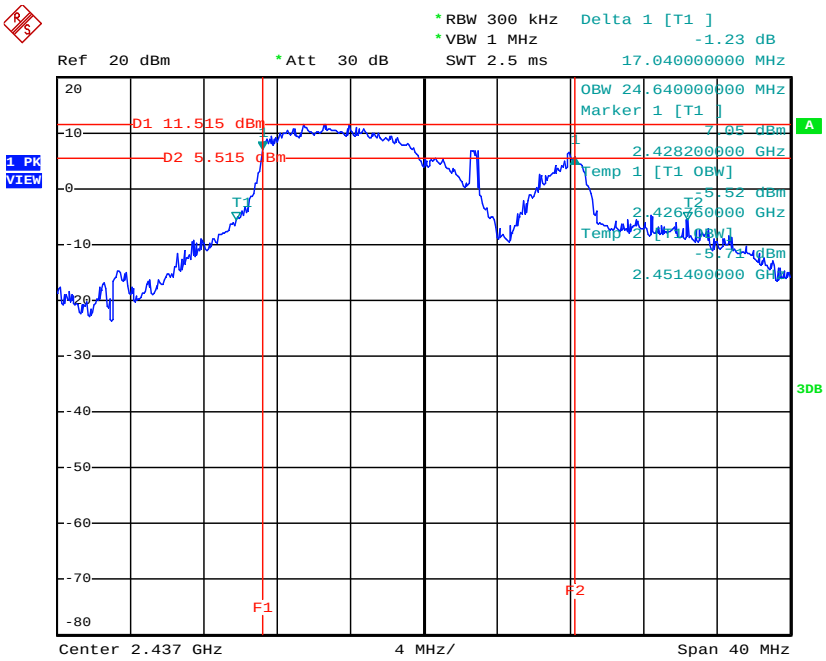
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	7.60	15.20	500.00	**Complies**
6	2437 MHz	7.28	14.80	500.00	**Complies**
11	2462 MHz	6.80	14.72	500.00	**Complies**

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / 2437 MHz / ANT. 1 (1TX)



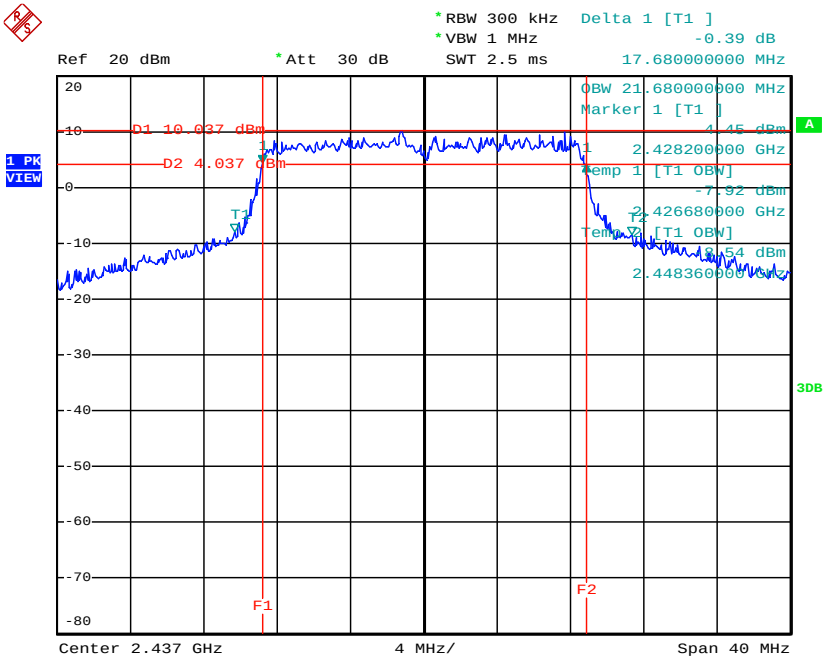
Date: 9.JUL.2012 15:57:52

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / 2437 MHz / ANT. 1+2 (2TX)



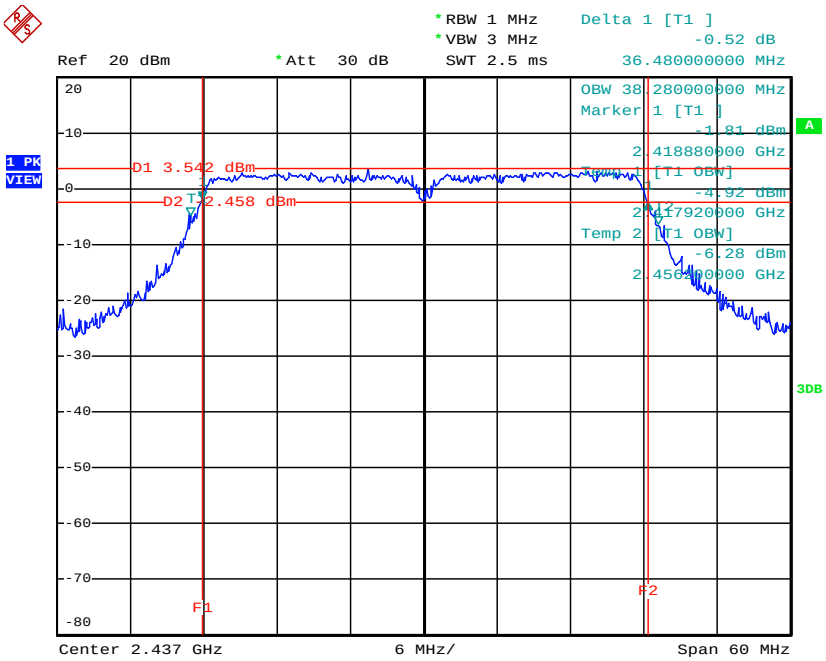
Date: 9.JUL.2012 15:48:30

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / 2437 MHz / ANT. 1+2 (2TX)



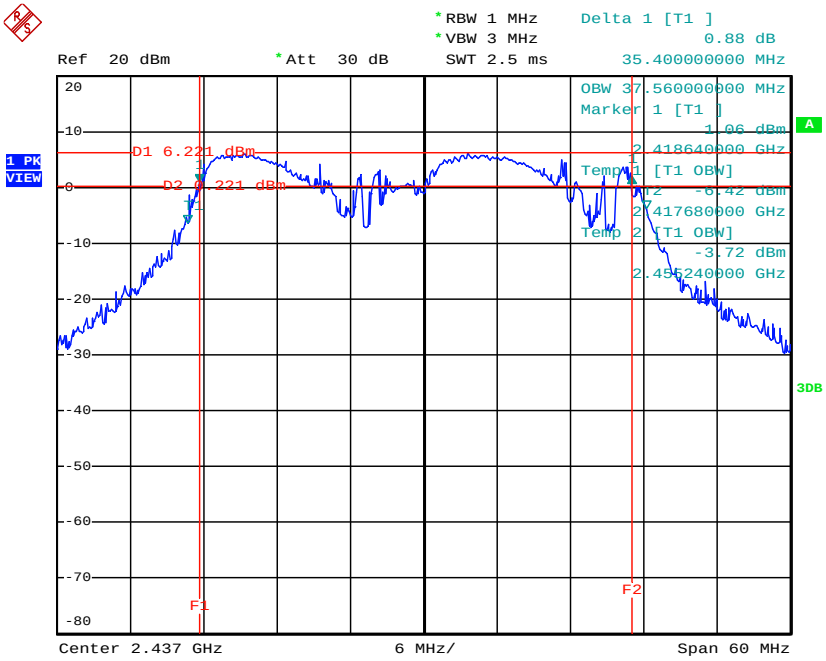
Date: 9.JUL.2012 15:53:36

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / 2437 MHz / ANT. 1 (1TX)

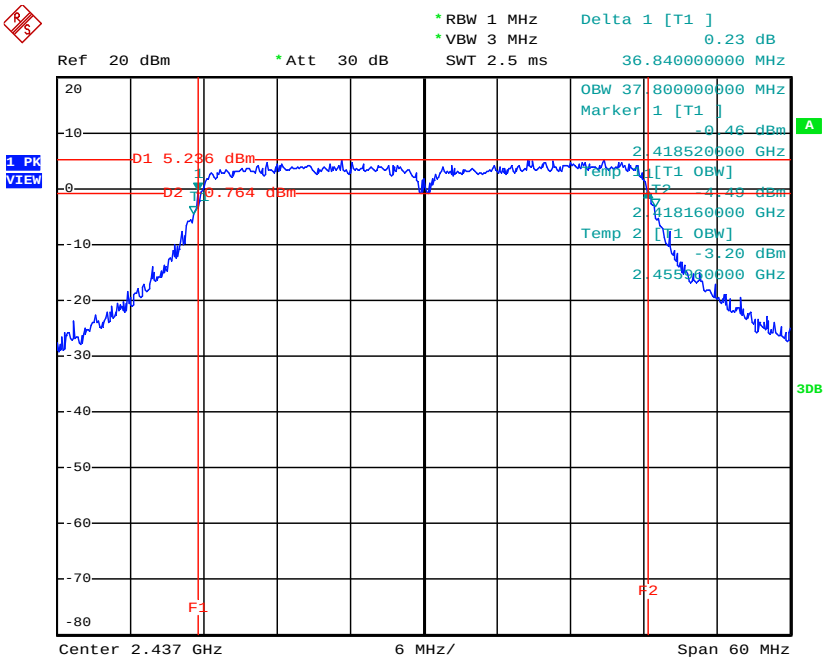


Date: 9.JUL.2012 15:59:00

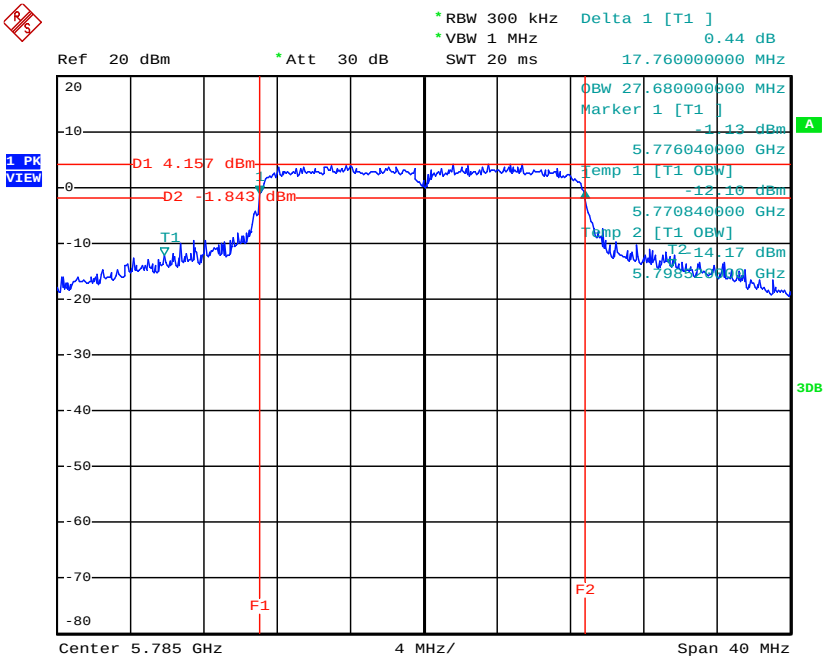
6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / 2437 MHz / ANT. 1+2 (2TX)



6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / 2437 MHz / ANT. 1+2 (2TX)

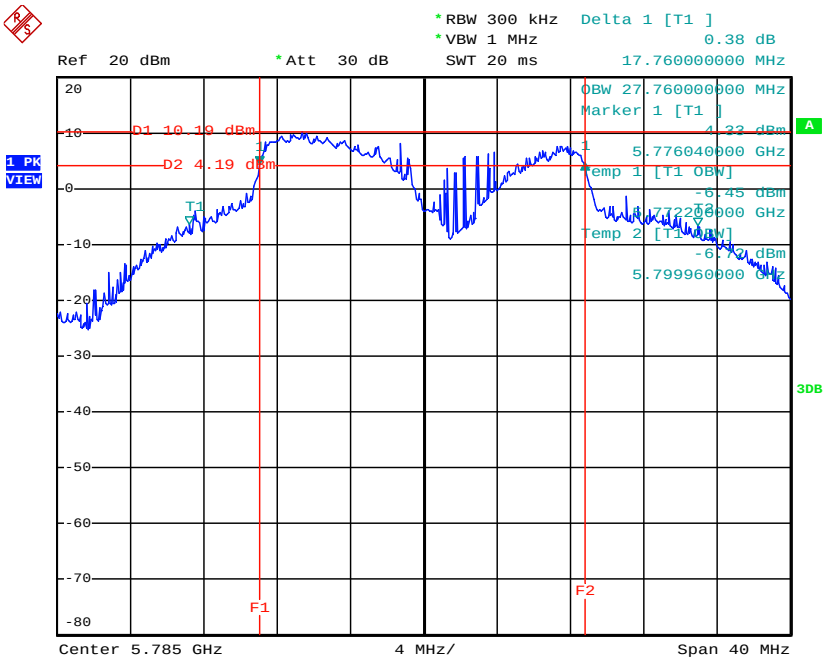


6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / 5785 MHz / ANT. 1 (1TX)



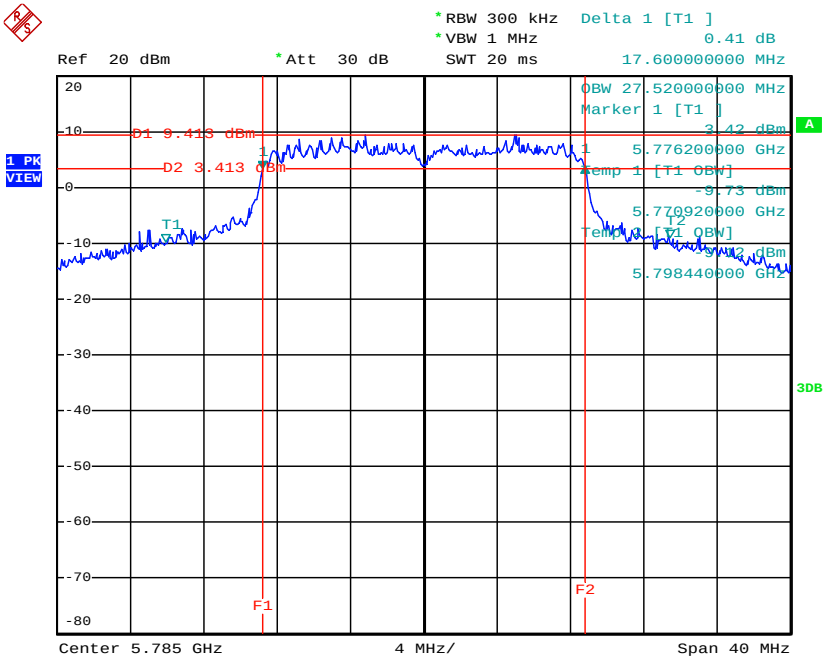
Date: 11.JUL.2012 09:05:34

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / 5785 MHz / ANT. 1+2 (2TX)



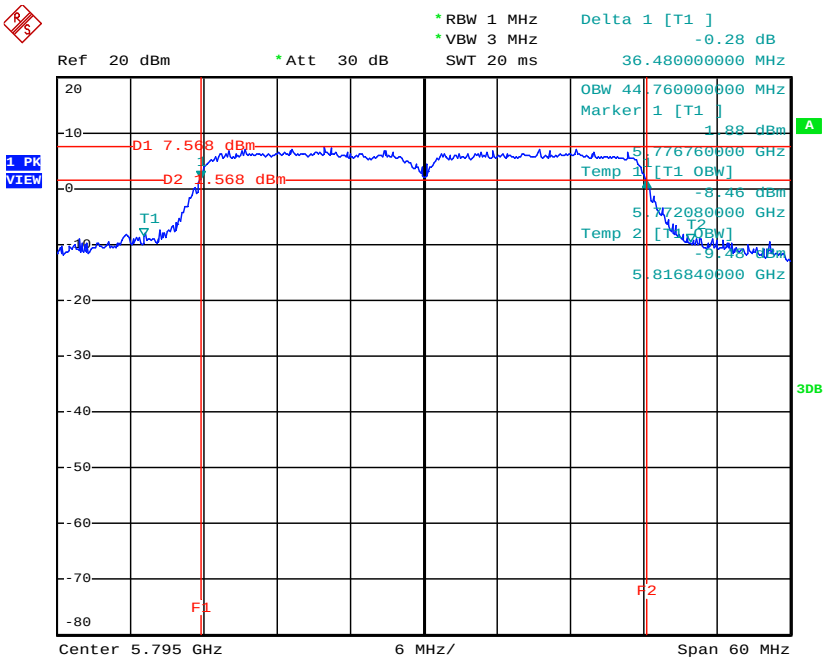
Date: 11.JUL.2012 09:08:16

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / 5785 MHz / ANT. 1+2 (2TX)



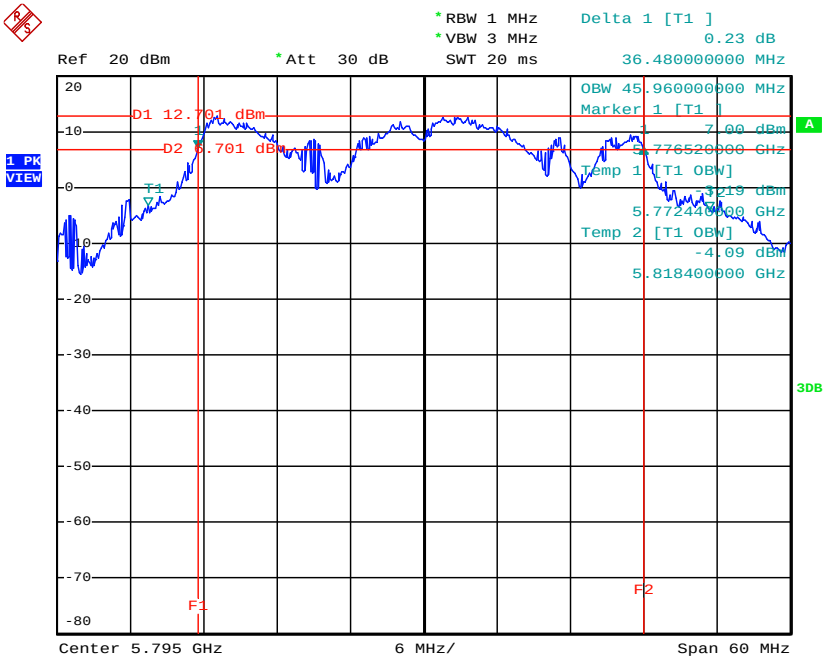
Date: 11.JUL.2012 09:11:58

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz / ANT. 1 (1TX)



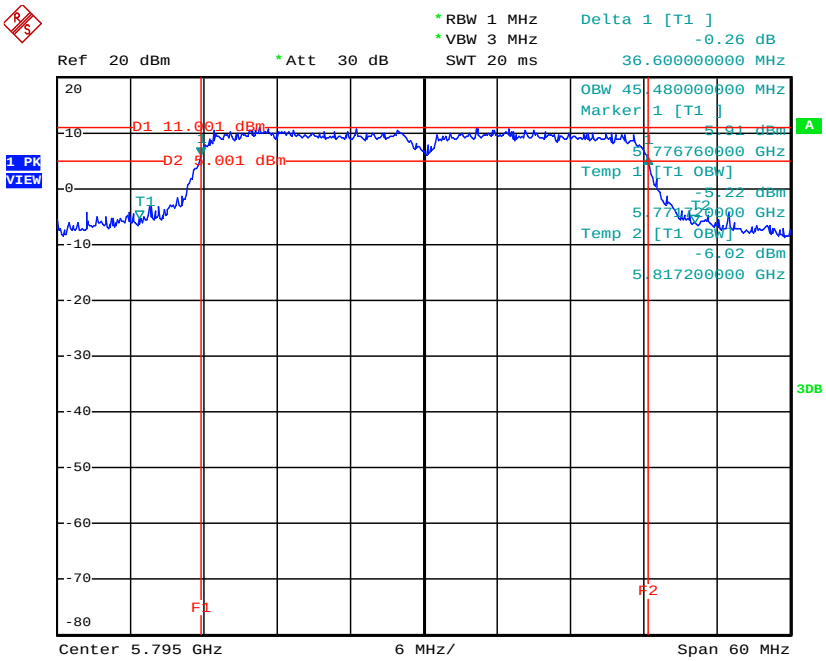
Date: 11.JUL.2012 09:22:17

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz / ANT. 1+2 (2TX)



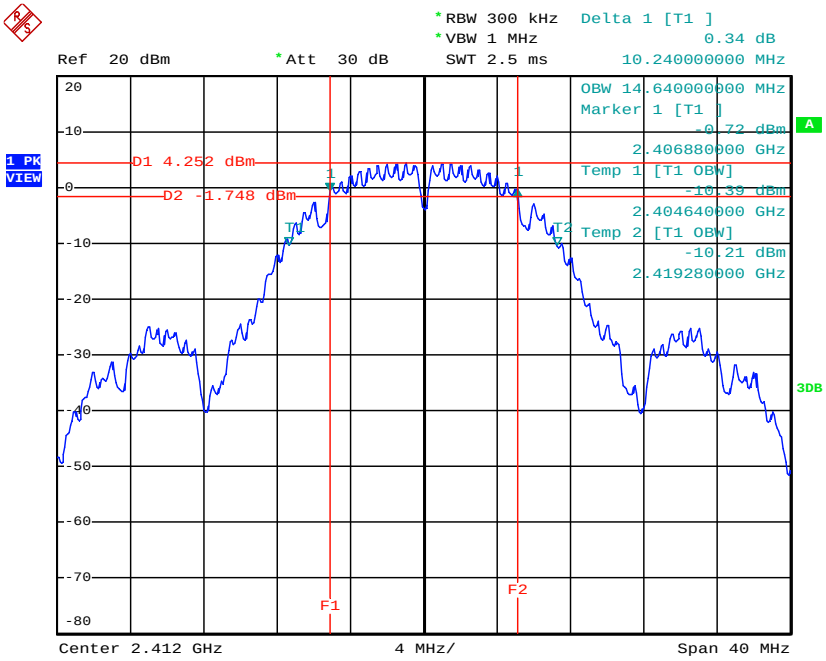
Date: 11.JUL.2012 09:19:35

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / 5795 MHz / ANT. 1+2 (2TX)



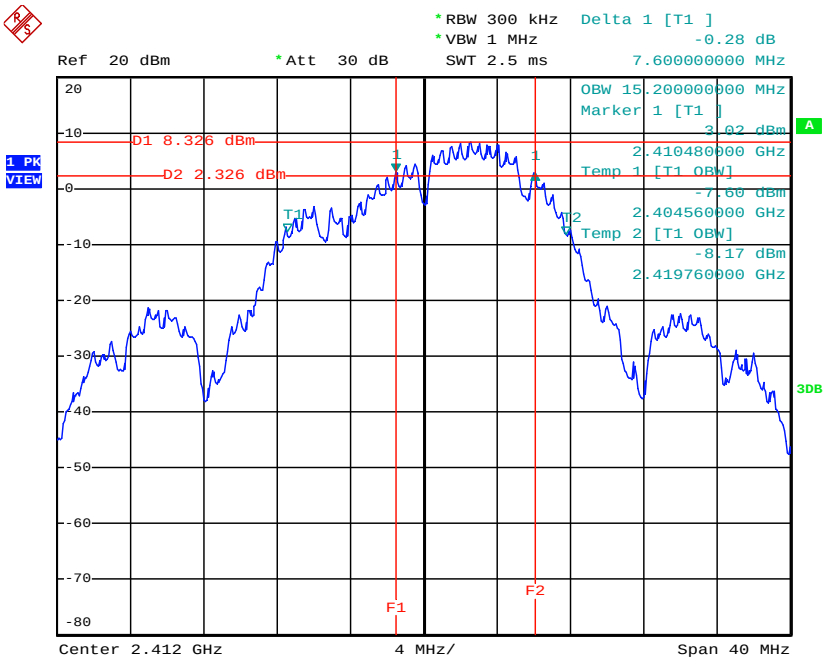
Date: 11.JUL.2012 09:13:01

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / ANT. 1 (1TX)



Date: 9.JUL.2012 15:54:55

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / ANT. 1+2 (2TX)



Date: 9.JUL.2012 15:45:45

4.5. Radiated Emissions Measurement

4.5.1. Limit

30dBc 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

4.5.2. 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	1GHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 3MHz for peak

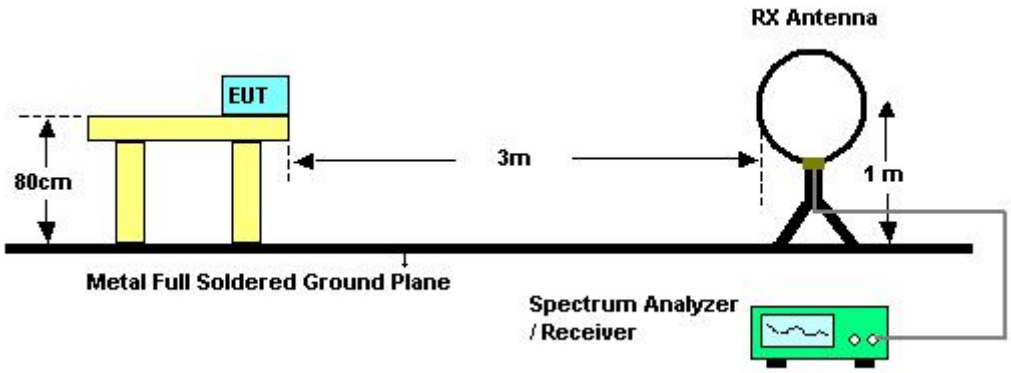
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RB 120kHz for QP

4.5.3. Test Procedures

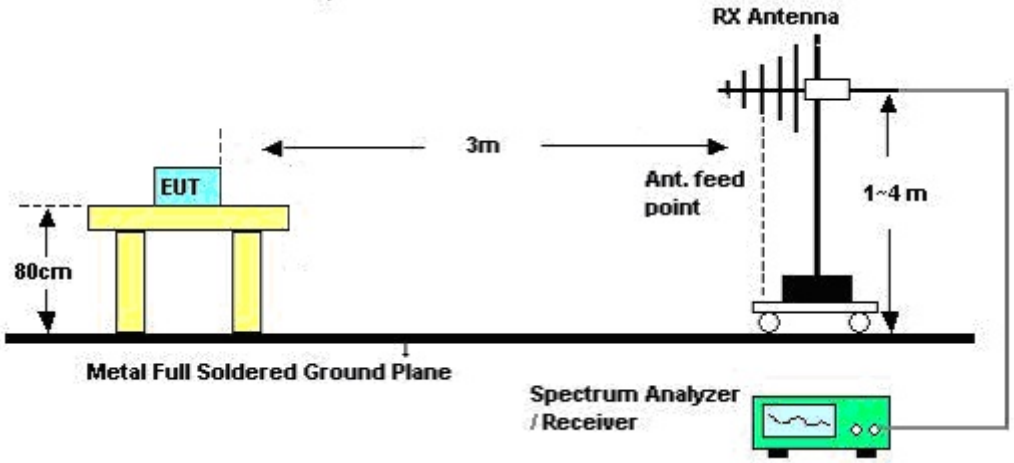
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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 3MHz 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.

4.5.4. Test Setup Layout

For radiated emissions below 1GHz



For radiated emissions above 1GHz



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

Temperature	25℃	Humidity	65%
Test Engineer	Sean Ku	Configurations	Normal Link
Test Date	Jul. 10, 2012		

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.

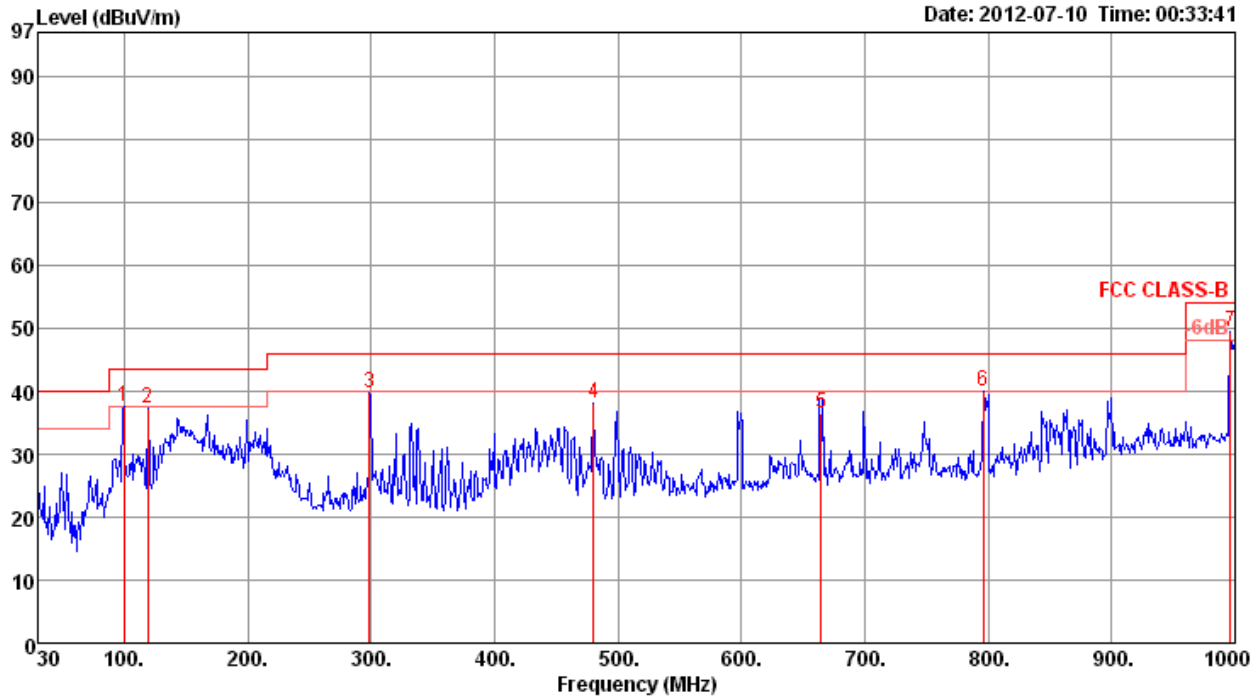
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

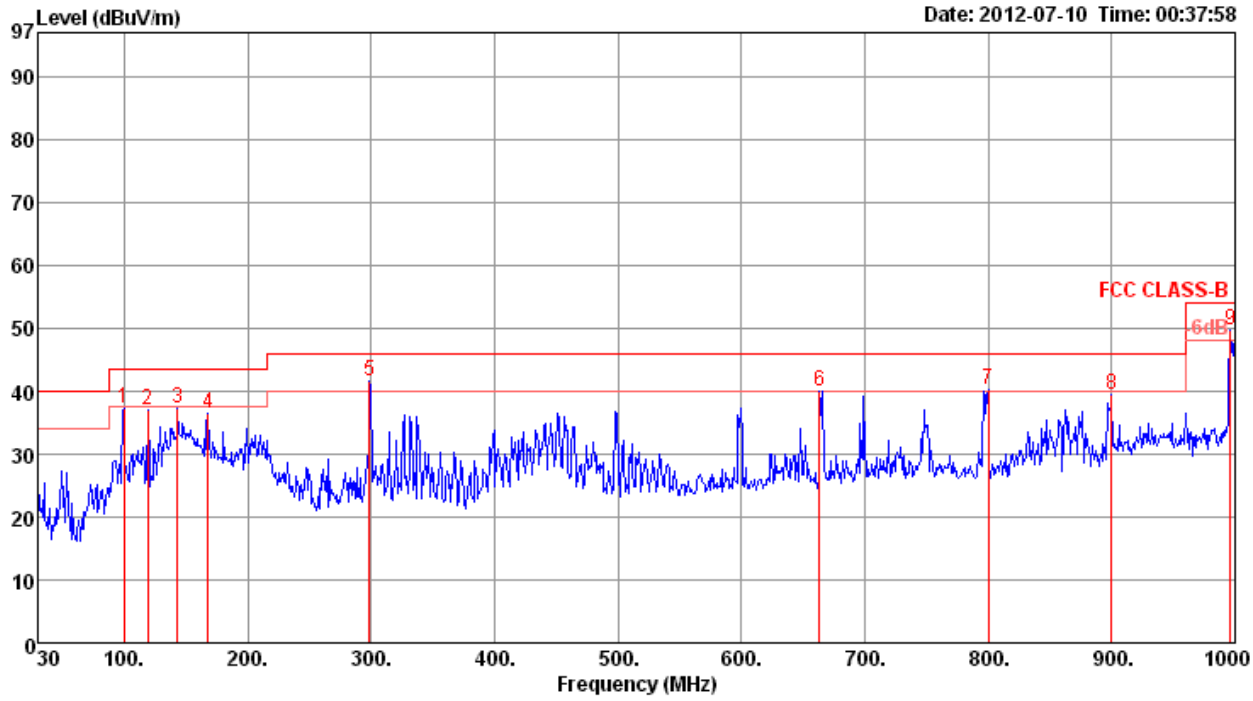
Temperature	25℃	Humidity	65%
Test Engineer	Sean Ku	Configurations	Normal Link

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	99.84	37.64	43.50	-5.86	53.05	1.20	10.99	27.60	Peak	400	0	VERTICAL
2	119.24	37.16	43.50	-6.34	51.00	1.20	12.46	27.50	Peak	400	0	VERTICAL
3	298.69	39.59	46.00	-6.41	51.04	2.10	13.35	26.90	Peak	400	0	VERTICAL
4	480.08	38.20	46.00	-7.80	46.23	2.66	17.31	28.00	Peak	400	0	VERTICAL
5	664.38	36.45	46.00	-9.55	42.07	3.44	18.98	28.04	Peak	400	0	VERTICAL
6	796.30	40.01	46.00	-5.99	44.57	3.32	19.74	27.62	Peak	400	0	VERTICAL
7	996.12	49.50	54.00	-4.50	51.57	3.69	21.26	27.02	Peak	400	0	VERTICAL

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	99.84	37.23	43.50	-6.27	52.64	1.20	10.99	27.60	Peak	100	0	HORIZONTAL
2	119.24	37.15	43.50	-6.35	50.99	1.20	12.46	27.50	Peak	100	0	HORIZONTAL
3	143.49	37.21	43.50	-6.29	51.00	1.42	12.17	27.38	Peak	100	0	HORIZONTAL
4	167.74	36.36	43.50	-7.14	49.47	1.54	12.61	27.26	Peak	100	0	HORIZONTAL
5	298.69	41.51	46.00	-4.49	52.96	2.10	13.35	26.90	Peak	100	0	HORIZONTAL
6	663.41	40.09	46.00	-5.91	45.71	3.45	18.97	28.04	Peak	100	0	HORIZONTAL
7	800.18	40.37	46.00	-5.63	44.90	3.30	19.77	27.60	Peak	100	0	HORIZONTAL
8	900.09	39.48	46.00	-6.52	42.75	3.60	20.53	27.40	Peak	100	0	HORIZONTAL
9	996.12	49.61	54.00	-4.39	51.68	3.69	21.26	27.02	Peak	100	0	HORIZONTAL

Note:

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

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

4.5.9. Results for Radiated Emissions (1GHz~10th Harmonic)

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 1 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4823.77	46.05	74.00	-27.95	44.71	3.31	33.06	35.03	Peak	145	69	HORIZONTAL
2	4824.27	31.86	54.00	-22.14	30.52	3.31	33.06	35.03	Average	145	69	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	4823.72	42.49	74.00	-31.51	41.15	3.31	33.06	35.03	Peak	100	329	VERTICAL
2	4824.26	29.77	54.00	-24.23	28.43	3.31	33.06	35.03	Average	100	329	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 6 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4869.71	57.09	74.00	-16.91	55.67	3.33	33.12	35.03	Peak	125	59	HORIZONTAL
2	4873.82	43.66	54.00	-10.34	42.20	3.33	33.16	35.03	Average	125	59	HORIZONTAL
3	7311.83	57.32	74.00	-16.68	52.70	4.06	35.96	35.40	Peak	100	25	HORIZONTAL
4	7312.83	42.55	54.00	-11.45	37.93	4.06	35.96	35.40	Average	100	25	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	4872.86	53.13	74.00	-20.87	51.67	3.33	33.16	35.03	Peak	100	23	VERTICAL
2	4873.18	38.13	54.00	-15.87	36.67	3.33	33.16	35.03	Average	100	23	VERTICAL
3	7311.29	56.16	74.00	-17.84	51.54	4.06	35.96	35.40	Peak	117	304	VERTICAL
4	7313.28	41.80	54.00	-12.20	37.18	4.06	35.96	35.40	Average	117	304	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch11 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4922.97	34.61	54.00	-19.39	33.01	3.35	33.26	35.01	Average	125	65	HORIZONTAL
2	4926.48	48.02	74.00	-25.98	46.42	3.35	33.26	35.01	Peak	125	65	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	4923.58	44.06	74.00	-29.94	42.46	3.35	33.26	35.01	Peak	100	320	VERTICAL
2	4923.63	30.76	54.00	-23.24	29.16	3.35	33.26	35.01	Average	100	320	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 1 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4827.13	45.94	74.00	-28.06	44.60	3.31	33.06	35.03	Peak	122	239	HORIZONTAL
2	4827.78	32.72	54.00	-21.28	31.38	3.31	33.06	35.03	Average	122	239	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	4821.74	32.21	54.00	-21.79	30.87	3.31	33.06	35.03	Average	100	167	VERTICAL
2	4823.14	45.77	74.00	-28.23	44.43	3.31	33.06	35.03	Peak	100	167	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 6 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4876.16	52.39	74.00	-21.61	50.93	3.33	33.16	35.03	Peak	100	258	HORIZONTAL
2	4877.93	39.96	54.00	-14.04	38.50	3.33	33.16	35.03	Average	100	258	HORIZONTAL
3	7312.92	62.82	74.00	-11.18	58.20	4.06	35.96	35.40	Peak	100	229	HORIZONTAL
4	7313.72	49.08	54.00	-4.92	44.46	4.06	35.96	35.40	Average	100	229	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	4875.36	41.77	54.00	-12.23	40.31	3.33	33.16	35.03	Average	100	196	VERTICAL
2	4876.00	54.26	74.00	-19.74	52.80	3.33	33.16	35.03	Peak	100	196	VERTICAL
3	7308.28	49.80	54.00	-4.20	45.18	4.06	35.96	35.40	Average	100	229	VERTICAL
4	7318.13	59.43	74.00	-14.57	54.81	4.06	35.96	35.40	Peak	100	229	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch11 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4922.80	42.02	74.00	-31.98	40.42	3.35	33.26	35.01	Peak	100	38	HORIZONTAL
2	4923.36	32.30	54.00	-21.70	30.70	3.35	33.26	35.01	Average	100	38	HORIZONTAL
3	7390.89	33.58	54.00	-20.42	28.83	4.06	36.09	35.40	Average	100	360	HORIZONTAL
4	7394.65	47.03	74.00	-26.97	42.24	4.06	36.13	35.40	Peak	100	360	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	4923.84	29.90	54.00	-24.10	28.30	3.35	33.26	35.01	Average	100	197	VERTICAL
2	4925.20	41.95	74.00	-32.05	40.35	3.35	33.26	35.01	Peak	100	197	VERTICAL
3	7389.13	45.53	74.00	-28.47	40.78	4.06	36.09	35.40	Peak	100	221	VERTICAL
4	7395.22	33.18	54.00	-20.82	28.39	4.06	36.13	35.40	Average	100	221	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4825.35	29.41	54.00	-24.59	28.07	3.31	33.06	35.03	Average	100	194	HORIZONTAL
2	4827.46	42.47	74.00	-31.53	41.13	3.31	33.06	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	4823.36	42.43	74.00	-31.57	41.09	3.31	33.06	35.03	Peak	100	205	VERTICAL
2	4826.44	29.21	54.00	-24.79	27.87	3.31	33.06	35.03	Average	100	205	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4874.13	56.49	74.00	-17.51	55.03	3.33	33.16	35.03	Peak	129	73	HORIZONTAL
2	4875.67	45.14	54.00	-8.86	43.68	3.33	33.16	35.03	Average	129	73	HORIZONTAL
3	7300.66	63.78	74.00	-10.22	59.20	4.06	35.92	35.40	Peak	101	182	HORIZONTAL
4	7312.28	51.94	54.00	-2.06	47.32	4.06	35.96	35.40	Average	101	182	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	4872.40	41.56	54.00	-12.44	40.10	3.33	33.16	35.03	Average	100	192	VERTICAL
2	4873.49	50.61	74.00	-23.39	49.15	3.33	33.16	35.03	Peak	100	192	VERTICAL
3	7316.77	45.50	54.00	-8.50	40.88	4.06	35.96	35.40	Average	129	290	VERTICAL
4	7317.17	57.27	74.00	-16.73	52.65	4.06	35.96	35.40	Peak	129	290	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 20MHz Ch11 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4923.04	31.70	54.00	-22.30	30.10	3.35	33.26	35.01	Average	100	332	HORIZONTAL
2	4936.50	41.62	74.00	-32.38	40.02	3.35	33.26	35.01	Peak	100	332	HORIZONTAL
3	7384.97	33.30	54.00	-20.70	28.55	4.06	36.09	35.40	Average	100	213	HORIZONTAL
4	7385.04	46.89	74.00	-27.11	42.14	4.06	36.09	35.40	Peak	100	213	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	4924.19	29.30	54.00	-24.70	27.70	3.35	33.26	35.01	Average	100	246	VERTICAL
2	4927.88	40.75	74.00	-33.25	39.15	3.35	33.26	35.01	Peak	100	246	VERTICAL
3	7372.54	45.40	74.00	-28.60	40.68	4.06	36.06	35.40	Peak	100	143	VERTICAL
4	7383.56	33.08	54.00	-20.92	28.33	4.06	36.09	35.40	Average	100	144	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 3 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4844.04	41.31	74.00	-32.69	39.93	3.32	33.09	35.03	Peak	100	329	HORIZONTAL
2	4844.25	28.60	54.00	-25.40	27.22	3.32	33.09	35.03	Average	100	329	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	4843.72	41.99	74.00	-32.01	40.61	3.32	33.09	35.03	Peak	100	133	VERTICAL
2	4843.94	28.56	54.00	-25.44	27.18	3.32	33.09	35.03	Average	100	133	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 6 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4873.50	29.58	54.00	-24.42	28.12	3.33	33.16	35.03	Average	100	73	HORIZONTAL
2	4874.07	43.15	74.00	-30.85	41.69	3.33	33.16	35.03	Peak	100	73	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	4873.75	29.75	54.00	-24.25	28.29	3.33	33.16	35.03	Average	100	316	VERTICAL
2	4874.02	43.79	74.00	-30.21	42.33	3.33	33.16	35.03	Peak	100	316	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 9 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4903.63	28.89	54.00	-25.11	27.38	3.34	33.19	35.02	Average	100	163	HORIZONTAL
2	4903.89	41.69	74.00	-32.31	40.18	3.34	33.19	35.02	Peak	100	163	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	4903.52	28.86	54.00	-25.14	27.35	3.34	33.19	35.02	Average	100	246	VERTICAL
2	4903.77	42.14	74.00	-31.86	40.63	3.34	33.19	35.02	Peak	100	246	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 3 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4842.99	28.39	54.00	-25.61	27.01	3.32	33.09	35.03	Average	100	0	HORIZONTAL
2	4844.02	41.23	74.00	-32.77	39.85	3.32	33.09	35.03	Peak	100	0	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	4840.84	28.68	54.00	-25.32	27.30	3.32	33.09	35.03	Average	100	346	VERTICAL
2	4844.95	41.14	74.00	-32.86	39.76	3.32	33.09	35.03	Peak	100	346	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 6 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4869.24	27.41	54.00	-26.59	25.99	3.33	33.12	35.03	Average	100	103	HORIZONTAL
2	4872.85	40.55	74.00	-33.45	39.09	3.33	33.16	35.03	Peak	100	103	HORIZONTAL
3	7309.11	32.47	54.00	-21.53	27.85	4.06	35.96	35.40	Average	100	171	HORIZONTAL
4	7320.94	44.81	74.00	-29.19	40.19	4.06	35.96	35.40	Peak	100	171	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	4874.21	27.92	54.00	-26.08	26.46	3.33	33.16	35.03	Average	100	44	VERTICAL
2	4878.36	40.41	74.00	-33.59	38.95	3.33	33.16	35.03	Peak	100	44	VERTICAL
3	7311.96	32.48	54.00	-21.52	27.86	4.06	35.96	35.40	Average	100	156	VERTICAL
4	7318.47	45.22	74.00	-28.78	40.60	4.06	35.96	35.40	Peak	100	156	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 9 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4901.32	27.95	54.00	-26.05	26.44	3.34	33.19	35.02	Average	100	122	HORIZONTAL
2	4902.53	41.19	74.00	-32.81	39.68	3.34	33.19	35.02	Peak	100	122	HORIZONTAL
3	7346.71	45.40	74.00	-28.60	40.72	4.06	36.02	35.40	Peak	100	171	HORIZONTAL
4	7355.33	32.50	54.00	-21.50	27.82	4.06	36.02	35.40	Average	100	171	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	4901.98	40.37	74.00	-33.63	38.86	3.34	33.19	35.02	Peak	100	163	VERTICAL
2	4904.16	27.90	54.00	-26.10	26.39	3.34	33.19	35.02	Average	100	163	VERTICAL
3	7350.78	32.45	54.00	-21.55	27.77	4.06	36.02	35.40	Average	100	221	VERTICAL
4	7362.15	45.23	74.00	-28.77	40.51	4.06	36.06	35.40	Peak	100	221	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4813.04	28.45	54.00	-25.55	27.16	3.31	33.02	35.04	Average	100	350	HORIZONTAL
2	4830.99	41.10	74.00	-32.90	39.76	3.31	33.06	35.03	Peak	100	350	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	4814.58	28.26	54.00	-25.74	26.97	3.31	33.02	35.04	Average	100	323	VERTICAL
2	4824.32	40.82	74.00	-33.18	39.48	3.31	33.06	35.03	Peak	100	323	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4854.19	28.37	54.00	-25.63	26.96	3.32	33.12	35.03	Average	100	271	HORIZONTAL
2	4871.63	40.78	74.00	-33.22	39.32	3.33	33.16	35.03	Peak	100	333	HORIZONTAL
3	7292.92	45.94	74.00	-28.06	41.36	4.06	35.92	35.40	Peak	100	360	HORIZONTAL
4	7304.27	32.77	54.00	-21.23	28.19	4.06	35.92	35.40	Average	100	360	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	4854.83	40.93	74.00	-33.07	39.52	3.32	33.12	35.03	Peak	100	1	VERTICAL
2	4874.13	28.38	54.00	-25.62	26.92	3.33	33.16	35.03	Average	100	2	VERTICAL
3	7292.92	45.94	74.00	-28.06	41.36	4.06	35.92	35.40	Peak	100	360	VERTICAL
4	7323.82	32.88	54.00	-21.12	28.26	4.06	35.96	35.40	Average	100	360	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4900.99	41.18	74.00	-32.82	39.67	3.34	33.19	35.02	Peak	100	217	HORIZONTAL
2	4915.54	28.39	54.00	-25.61	26.83	3.35	33.23	35.02	Average	100	217	HORIZONTAL
3	7340.30	32.90	54.00	-21.10	28.25	4.06	35.99	35.40	Average	100	350	HORIZONTAL
4	7368.37	45.97	74.00	-28.03	41.25	4.06	36.06	35.40	Peak	100	350	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	4914.00	40.86	74.00	-33.14	39.31	3.34	33.23	35.02	Peak	100	217	VERTICAL
2	4917.01	28.65	54.00	-25.35	27.09	3.35	33.23	35.02	Average	100	217	VERTICAL
3	7339.85	45.31	74.00	-28.69	40.66	4.06	35.99	35.40	Peak	100	360	VERTICAL
4	7368.82	32.99	54.00	-21.01	28.27	4.06	36.06	35.40	Average	100	360	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 149 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	11489.60	47.76	54.00	-6.24	39.15	5.11	38.78	35.28	Average	101	227	HORIZONTAL
2	11490.64	62.36	74.00	-11.64	53.75	5.11	38.78	35.28	Peak	101	227	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	11490.00	45.66	54.00	-8.34	37.05	5.11	38.78	35.28	Average	101	174	VERTICAL
2	11490.16	60.19	74.00	-13.81	51.58	5.11	38.78	35.28	Peak	101	174	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 157 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	11569.01	63.51	74.00	-10.49	54.85	5.13	38.83	35.30	Peak	103	226	HORIZONTAL
2	11570.38	50.43	54.00	-3.57	41.76	5.14	38.83	35.30	Average	103	226	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	11569.42	48.14	54.00	-5.86	39.48	5.13	38.83	35.30	Average	100	171	VERTICAL
2	11569.52	59.89	74.00	-14.11	51.23	5.13	38.83	35.30	Peak	100	171	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 165 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	11651.35	46.84	54.00	-7.16	38.12	5.16	38.86	35.30	Average	100	205	HORIZONTAL
2	11652.34	60.21	74.00	-13.79	51.49	5.16	38.86	35.30	Peak	100	205	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	11643.65	58.17	74.00	-15.83	49.45	5.16	38.86	35.30	Peak	100	171	VERTICAL
2	11649.49	45.14	54.00	-8.86	36.42	5.16	38.86	35.30	Average	100	171	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 149 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11486.47	52.49	54.00	-1.51	43.88	5.11	38.78	35.28	Average	121	229	HORIZONTAL
2	11487.85	67.86	74.00	-6.14	59.25	5.11	38.78	35.28	Peak	121	229	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	11484.65	68.63	74.00	-5.37	60.02	5.11	38.78	35.28	Peak	100	274	VERTICAL
2	11487.63	51.70	54.00	-2.30	43.09	5.11	38.78	35.28	Average	100	274	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 157 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11568.75	67.52	74.00	-6.48	58.86	5.13	38.83	35.30	Peak	100	198	HORIZONTAL
2	11568.94	53.59	54.00	-0.41	44.93	5.13	38.83	35.30	Average	100	198	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	11563.46	66.93	74.00	-7.07	58.28	5.13	38.82	35.30	Peak	100	280	VERTICAL
2	11567.60	52.64	54.00	-1.36	43.98	5.13	38.83	35.30	Average	100	280	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 165 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11648.17	51.85	54.00	-2.15	43.13	5.16	38.86	35.30	Average	100	186	HORIZONTAL
2	11648.56	66.17	74.00	-7.83	57.45	5.16	38.86	35.30	Peak	100	186	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	11647.69	67.14	74.00	-6.86	58.42	5.16	38.86	35.30	Peak	110	276	VERTICAL
2	11649.04	51.60	54.00	-2.40	42.88	5.16	38.86	35.30	Average	110	276	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 20MHz Ch 149 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11489.84	68.63	74.00	-5.37	60.02	5.11	38.78	35.28	Peak	100	196	HORIZONTAL
2	11490.64	53.07	54.00	-0.93	44.46	5.11	38.78	35.28	Average	100	196	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	11490.08	68.67	74.00	-5.33	60.06	5.11	38.78	35.28	Peak	106	277	VERTICAL
2	11490.64	52.51	54.00	-1.49	43.90	5.11	38.78	35.28	Average	106	277	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 20MHz Ch 157 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11569.33	53.69	54.00	-0.31	45.03	5.13	38.83	35.30	Average	100	196	HORIZONTAL
2	11570.19	70.03	74.00	-3.97	61.36	5.14	38.83	35.30	Peak	100	196	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	11569.13	52.63	54.00	-1.37	43.97	5.13	38.83	35.30	Average	100	149	VERTICAL
2	11569.90	67.53	74.00	-6.47	58.86	5.14	38.83	35.30	Peak	100	149	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 20MHz Ch 165 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11650.19	57.57	74.00	-16.43	48.85	5.16	38.86	35.30	Peak	100	194	HORIZONTAL
2	11651.83	51.11	54.00	-2.89	42.39	5.16	38.86	35.30	Average	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	11649.13	51.53	54.00	-2.47	42.81	5.16	38.86	35.30	Average	100	280	VERTICAL
2	11650.10	59.96	74.00	-14.04	51.24	5.16	38.86	35.30	Peak	100	280	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 151 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	11505.93	42.25	54.00	-11.75	33.62	5.12	38.79	35.28	Average	100	230	HORIZONTAL
2	11508.72	54.75	74.00	-19.25	46.12	5.12	38.79	35.28	Peak	100	230	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	11509.87	53.17	74.00	-20.83	44.54	5.12	38.79	35.28	Peak	100	179	VERTICAL
2	11511.25	39.47	54.00	-14.53	30.84	5.12	38.79	35.28	Average	100	179	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 159 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	11587.92	60.11	74.00	-13.89	51.44	5.14	38.83	35.30	Peak	101	224	HORIZONTAL
2	11588.56	47.24	54.00	-6.76	38.57	5.14	38.83	35.30	Average	101	224	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	11589.55	45.65	54.00	-8.35	36.98	5.14	38.83	35.30	Average	100	171	VERTICAL
2	11590.29	57.78	74.00	-16.22	49.11	5.14	38.83	35.30	Peak	100	171	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 151 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11502.60	59.44	74.00	-14.56	50.81	5.12	38.79	35.28	Peak	124	221	HORIZONTAL
2	11502.98	46.18	54.00	-7.82	37.55	5.12	38.79	35.28	Average	124	221	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	11502.82	45.95	54.00	-8.05	37.32	5.12	38.79	35.28	Average	100	271	VERTICAL
2	11504.10	57.66	74.00	-16.34	49.03	5.12	38.79	35.28	Peak	100	271	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 159 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11584.62	52.96	54.00	-1.04	44.29	5.14	38.83	35.30	Average	147	208	HORIZONTAL
2	11587.82	66.87	74.00	-7.13	58.20	5.14	38.83	35.30	Peak	147	208	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	11586.92	52.25	54.00	-1.75	43.58	5.14	38.83	35.30	Average	105	271	VERTICAL
2	11587.05	66.95	74.00	-7.05	58.28	5.14	38.83	35.30	Peak	105	271	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 40MHz Ch 151 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11507.69	43.05	54.00	-10.95	34.42	5.12	38.79	35.28	Average	100	191	HORIZONTAL
2	11510.19	59.50	74.00	-14.50	50.87	5.12	38.79	35.28	Peak	100	191	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	11510.87	42.08	54.00	-11.92	33.45	5.12	38.79	35.28	Average	100	192	VERTICAL
2	11520.67	54.43	74.00	-19.57	45.79	5.13	38.80	35.29	Peak	100	192	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 40MHz Ch 159 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	11589.68	50.14	54.00	-3.86	41.47	5.14	38.83	35.30	Average	100	192	HORIZONTAL
2	11590.00	66.67	74.00	-7.33	58.00	5.14	38.83	35.30	Peak	100	192	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	11582.31	47.38	54.00	-6.62	38.71	5.14	38.83	35.30	Average	100	148	VERTICAL
2	11590.48	61.86	74.00	-12.14	53.19	5.14	38.83	35.30	Peak	100	148	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11b Ch 1 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4823.94	55.47	74.00	-18.53	54.13	3.31	33.06	35.03	Peak	100	147	HORIZONTAL
2	4823.97	53.12	54.00	-0.88	51.78	3.31	33.06	35.03	Average	100	147	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	4823.97	52.49	74.00	-21.51	51.15	3.31	33.06	35.03	Peak	100	102	VERTICAL
2	4823.97	49.74	54.00	-4.26	48.40	3.31	33.06	35.03	Average	100	102	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11b Ch 6 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4873.91	55.22	74.00	-18.78	53.76	3.33	33.16	35.03	Peak	146	280	HORIZONTAL
2	4873.97	53.44	54.00	-0.56	51.98	3.33	33.16	35.03	Average	146	280	HORIZONTAL
3	7310.22	37.34	54.00	-16.66	32.72	4.06	35.96	35.40	Average	100	326	HORIZONTAL
4	7310.63	48.57	74.00	-25.43	43.95	4.06	35.96	35.40	Peak	100	326	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	4873.97	49.55	54.00	-4.45	48.09	3.33	33.16	35.03	Average	100	148	VERTICAL
2	4873.98	52.52	74.00	-21.48	51.06	3.33	33.16	35.03	Peak	100	148	VERTICAL
3	7311.75	48.07	74.00	-25.93	43.45	4.06	35.96	35.40	Peak	100	322	VERTICAL
4	7311.79	39.28	54.00	-14.72	34.66	4.06	35.96	35.40	Average	100	322	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11b Ch11 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	4923.99	53.78	54.00	-0.22	52.18	3.35	33.26	35.01	Average	100	88	HORIZONTAL
2	4924.06	55.58	74.00	-18.42	53.98	3.35	33.26	35.01	Peak	100	88	HORIZONTAL
3	7387.22	51.33	54.00	-2.67	46.58	4.06	36.09	35.40	Average	100	322	HORIZONTAL
4	7387.51	56.99	74.00	-17.01	52.24	4.06	36.09	35.40	Peak	100	322	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	4923.92	53.50	74.00	-20.50	51.90	3.35	33.26	35.01	Peak	100	328	VERTICAL
2	4923.96	50.83	54.00	-3.17	49.23	3.35	33.26	35.01	Average	100	328	VERTICAL
3	7385.42	57.09	74.00	-16.91	52.34	4.06	36.09	35.40	Peak	125	325	VERTICAL
4	7387.22	51.83	54.00	-2.17	47.08	4.06	36.09	35.40	Average	125	325	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11b Ch 1 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4823.99	50.35	54.00	-3.65	49.01	3.31	33.06	35.03	Average	100	42	HORIZONTAL
2	4824.06	52.71	74.00	-21.29	51.37	3.31	33.06	35.03	Peak	100	42	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	4823.93	55.38	74.00	-18.62	54.04	3.31	33.06	35.03	Peak	100	39	VERTICAL
2	4823.97	53.62	54.00	-0.38	52.28	3.31	33.06	35.03	Average	100	39	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11b Ch 6 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	51.53	54.00	-2.47	50.07	3.33	33.16	35.03	Average	138	32	HORIZONTAL
2	4874.06	53.63	74.00	-20.37	52.17	3.33	33.16	35.03	Peak	138	32	HORIZONTAL
3	7310.23	51.70	54.00	-2.30	47.08	4.06	35.96	35.40	Average	100	274	HORIZONTAL
4	7311.99	57.24	74.00	-16.76	52.62	4.06	35.96	35.40	Peak	100	274	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	4873.97	54.36	74.00	-19.64	52.90	3.33	33.16	35.03	Peak	100	75	VERTICAL
2	4873.99	52.20	54.00	-1.80	50.74	3.33	33.16	35.03	Average	100	75	VERTICAL
3	7310.25	52.44	54.00	-1.56	47.82	4.06	35.96	35.40	Average	157	38	VERTICAL
4	7310.38	57.95	74.00	-16.05	53.33	4.06	35.96	35.40	Peak	157	38	VERTICAL

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11b Ch11 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	4923.97	55.61	74.00	-18.39	54.01	3.35	33.26	35.01	Peak	127	89	HORIZONTAL
2	4923.99	53.65	54.00	-0.35	52.05	3.35	33.26	35.01	Average	127	89	HORIZONTAL
3	7386.72	47.41	54.00	-6.59	42.66	4.06	36.09	35.40	Average	102	38	HORIZONTAL
4	7386.96	53.78	74.00	-20.22	49.03	4.06	36.09	35.40	Peak	102	38	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	4923.91	53.65	74.00	-20.35	52.05	3.35	33.26	35.01	Peak	100	42	VERTICAL
2	4923.99	51.23	54.00	-2.77	49.63	3.35	33.26	35.01	Average	100	42	VERTICAL
3	7386.72	40.64	54.00	-13.36	35.89	4.06	36.09	35.40	Average	100	116	VERTICAL
4	7387.17	50.14	74.00	-23.86	45.39	4.06	36.09	35.40	Peak	100	116	VERTICAL

4.6. Band Edge Emissions Measurement

4.6.1. Limit

30dBc 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 the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (Emission in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	100 KHz / 300 KHz for Peak

4.6.3. 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.

4.6.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.5.4.

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. Test Result of Band Edge and Fundamental Emissions

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 1, 6, 11 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	52.16	54.00	-1.84	21.77	2.22	28.17	0.00	Average	100	54	HORIZONTAL
2	2390.00	70.67	74.00	-3.33	40.28	2.22	28.17	0.00	Peak	100	54	HORIZONTAL
3	2406.87				63.48	2.22	28.21	0.00	Average	100	54	HORIZONTAL
4	2408.80				75.00	2.22	28.21	0.00	Peak	100	54	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	2390.00	49.65	54.00	-4.35	19.26	2.22	28.17	0.00	Average	100	118	HORIZONTAL
2	2390.00	71.16	74.00	-2.84	40.77	2.22	28.17	0.00	Peak	100	118	HORIZONTAL
3	2431.55				70.18	2.23	28.25	0.00	Average	100	118	HORIZONTAL
4	2432.19				81.05	2.23	28.25	0.00	Peak	100	118	HORIZONTAL
5	2483.50	50.16	54.00	-3.84	19.52	2.26	28.38	0.00	Average	100	118	HORIZONTAL
6	2485.26	68.14	74.00	-5.86	37.46	2.26	28.42	0.00	Peak	100	118	HORIZONTAL

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	2456.71				62.73	2.24	28.33	0.00	Average	150	48	HORIZONTAL
2	2458.15				73.57	2.24	28.33	0.00	Peak	150	48	HORIZONTAL
3	2483.50	51.25	54.00	-2.75	20.61	2.26	28.38	0.00	Average	150	48	HORIZONTAL
4	2483.66	72.28	74.00	-1.72	41.64	2.26	28.38	0.00	Peak	150	48	HORIZONTAL

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

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 20MHz Ch 1, 6, 11 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	2389.52	71.93	74.00	-2.07	41.55	2.21	28.17	0.00	Peak	184	82	HORIZONTAL
2	2390.00	52.92	54.00	-1.08	22.53	2.22	28.17	0.00	Average	184	82	HORIZONTAL
3	2405.27				79.19	2.22	28.21	0.00	Peak	184	82	HORIZONTAL
4	2406.23				68.52	2.22	28.21	0.00	Average	184	82	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	2390.00	50.11	54.00	-3.89	19.72	2.22	28.17	0.00	Average	194	98	HORIZONTAL
2	2390.00	73.00	74.00	-1.00	42.61	2.22	28.17	0.00	Peak	194	98	HORIZONTAL
3	2430.59				76.09	2.23	28.25	0.00	Average	194	98	HORIZONTAL
4	2430.59				87.28	2.23	28.25	0.00	Peak	194	98	HORIZONTAL
5	2487.67	71.02	74.00	-2.98	40.34	2.26	28.42	0.00	Peak	194	98	HORIZONTAL
6	2488.63	49.04	54.00	-4.96	18.36	2.26	28.42	0.00	Average	194	98	HORIZONTAL

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	2466.97				67.95	2.26	28.33	0.00	Average	149	253	HORIZONTAL
2	2467.77				78.44	2.26	28.33	0.00	Peak	149	253	HORIZONTAL
3	2483.50	52.78	54.00	-1.22	22.14	2.26	28.38	0.00	Average	149	253	HORIZONTAL
4	2483.66	72.72	74.00	-1.28	42.08	2.26	28.38	0.00	Peak	149	253	HORIZONTAL

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

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 20MHz Ch 1, 6, 11 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	2389.36	70.69	74.00	-3.31	40.31	2.21	28.17	0.00	Peak	184	82	HORIZONTAL
2	2389.52	52.77	54.00	-1.23	22.39	2.21	28.17	0.00	Average	184	82	HORIZONTAL
3	2410.56				67.02	2.22	28.21	0.00	Average	184	82	HORIZONTAL
4	2415.21				80.04	2.22	28.21	0.00	Peak	184	82	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	2387.44	67.95	74.00	-6.05	37.57	2.21	28.17	0.00	Peak	150	75	HORIZONTAL
2	2390.00	48.56	54.00	-5.44	18.17	2.22	28.17	0.00	Average	150	75	HORIZONTAL
3	2443.09				71.76	2.24	28.29	0.00	Average	150	75	HORIZONTAL
4	2443.73				84.58	2.24	28.29	0.00	Peak	150	75	HORIZONTAL
5	2483.50	50.91	54.00	-3.09	20.27	2.26	28.38	0.00	Average	150	75	HORIZONTAL
6	2483.82	68.56	74.00	-5.44	37.92	2.26	28.38	0.00	Peak	150	75	HORIZONTAL

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	2466.97				76.29	2.26	28.33	0.00	Peak	145	247	HORIZONTAL
2	2468.73				63.29	2.26	28.38	0.00	Average	145	247	HORIZONTAL
3	2483.50	52.40	54.00	-1.60	21.76	2.26	28.38	0.00	Average	145	247	HORIZONTAL
4	2483.50	68.50	74.00	-5.50	37.86	2.26	28.38	0.00	Peak	145	247	HORIZONTAL

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

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 3, 6, 9 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	2389.04	69.09	74.00	-4.91	38.71	2.21	28.17	0.00	Peak	100	52	HORIZONTAL
2	2390.00	52.53	54.00	-1.47	22.14	2.22	28.17	0.00	Average	100	52	HORIZONTAL
3	2408.54				60.23	2.22	28.21	0.00	Average	100	52	HORIZONTAL
4	2410.14				71.61	2.22	28.21	0.00	Peak	100	52	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	69.90	74.00	-4.10	39.52	2.21	28.17	0.00	Peak	155	79	HORIZONTAL
2	2390.00	52.65	54.00	-1.35	22.26	2.22	28.17	0.00	Average	155	79	HORIZONTAL
3	2419.69				74.30	2.23	28.25	0.00	Peak	155	79	HORIZONTAL
4	2421.62				63.09	2.23	28.25	0.00	Average	155	79	HORIZONTAL
5	2483.50	50.40	54.00	-3.60	19.76	2.26	28.38	0.00	Average	155	79	HORIZONTAL
6	2484.14	65.07	74.00	-8.93	34.43	2.26	28.38	0.00	Peak	155	79	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	2435.33				61.11	2.23	28.29	0.00	Average	190	65	HORIZONTAL
2	2436.30				72.37	2.23	28.29	0.00	Peak	190	65	HORIZONTAL
3	2483.50	52.39	54.00	-1.61	21.75	2.26	28.38	0.00	Average	190	65	HORIZONTAL
4	2483.50	68.38	74.00	-5.62	37.74	2.26	28.38	0.00	Peak	190	65	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS0 40MHz Ch 3, 6, 9 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	2388.88	68.85	74.00	-5.15	38.47	2.21	28.17	0.00	Peak	185	79	HORIZONTAL
2	2390.00	52.99	54.00	-1.01	22.60	2.22	28.17	0.00	Average	185	79	HORIZONTAL
3	2425.21				75.42	2.23	28.25	0.00	Peak	185	79	HORIZONTAL
4	2426.33				64.38	2.23	28.25	0.00	Average	185	79	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	2386.47	63.70	74.00	-10.30	33.32	2.21	28.17	0.00	Peak	150	86	HORIZONTAL
2	2388.08	46.34	54.00	-7.66	15.96	2.21	28.17	0.00	Average	150	86	HORIZONTAL
3	2441.49				75.26	2.24	28.29	0.00	Peak	150	86	HORIZONTAL
4	2442.77				64.23	2.24	28.29	0.00	Average	150	86	HORIZONTAL
5	2483.18	72.16	74.00	-1.84	41.52	2.26	28.38	0.00	Peak	150	86	HORIZONTAL
6	2483.50	51.86	54.00	-2.14	21.22	2.26	28.38	0.00	Average	150	86	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	2468.51				61.30	2.26	28.38	0.00	Average	191	84	HORIZONTAL
2	2469.47				71.70	2.26	28.38	0.00	Peak	191	84	HORIZONTAL
3	2487.19	52.39	54.00	-1.61	21.71	2.26	28.42	0.00	Average	191	84	HORIZONTAL
4	2487.35	69.80	74.00	-4.20	39.12	2.26	28.42	0.00	Peak	191	84	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11n MCS8 40MHz Ch 3, 6, 9 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	2388.56	69.68	74.00	-4.32	39.30	2.21	28.17	0.00	Peak	149	58	HORIZONTAL
2	2390.00	52.95	54.00	-1.05	22.56	2.22	28.17	0.00	Average	149	58	HORIZONTAL
3	2436.58				60.22	2.23	28.29	0.00	Average	149	58	HORIZONTAL
4	2438.19				73.87	2.23	28.29	0.00	Peak	149	58	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	2390.00	50.16	54.00	-3.84	19.77	2.22	28.17	0.00	Average	188	80	HORIZONTAL
2	2390.00	62.83	74.00	-11.17	32.44	2.22	28.17	0.00	Peak	188	80	HORIZONTAL
3	2425.14				74.90	2.23	28.25	0.00	Peak	188	80	HORIZONTAL
4	2425.78				62.77	2.23	28.25	0.00	Average	188	80	HORIZONTAL
5	2483.50	52.89	54.00	-1.11	22.25	2.26	28.38	0.00	Average	188	80	HORIZONTAL
6	2483.82	66.86	74.00	-7.14	36.22	2.26	28.38	0.00	Peak	188	80	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	2435.65	102.46	74.00	28.46	71.94	2.23	28.29	0.00	Peak	189	249	HORIZONTAL
2	2436.62				60.94	2.23	28.29	0.00	Average	189	249	HORIZONTAL
3	2483.50				22.36	2.26	28.38	0.00	Average	189	249	HORIZONTAL
4	2487.67	68.92	74.00	-5.08	38.24	2.26	28.42	0.00	Peak	189	249	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	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11b CH 1, 6, 11 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	2389.20	47.25	54.00	-6.75	16.87	2.21	28.17	0.00	Average	100	62	HORIZONTAL
2	2389.52	58.55	74.00	-15.45	28.17	2.21	28.17	0.00	Peak	100	62	HORIZONTAL
3	2410.24				75.24	2.22	28.21	0.00	Average	100	62	HORIZONTAL
4	2411.04				78.63	2.22	28.21	0.00	Peak	100	62	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	2389.36	57.91	74.00	-16.09	27.53	2.21	28.17	0.00	Peak	192	90	HORIZONTAL
2	2390.00	45.60	54.00	-8.40	15.21	2.22	28.17	0.00	Average	192	90	HORIZONTAL
3	2435.24				75.65	2.23	28.29	0.00	Average	192	90	HORIZONTAL
4	2436.04				79.24	2.23	28.29	0.00	Peak	192	90	HORIZONTAL
5	2483.50	45.88	54.00	-8.12	15.24	2.26	28.38	0.00	Average	192	90	HORIZONTAL
6	2483.82	56.90	74.00	-17.10	26.26	2.26	28.38	0.00	Peak	192	90	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	2460.72				73.09	2.24	28.33	0.00	Average	151	81	HORIZONTAL
2	2461.04				76.63	2.24	28.33	0.00	Peak	151	81	HORIZONTAL
3	2483.50	51.38	54.00	-2.62	20.74	2.26	28.38	0.00	Average	151	81	HORIZONTAL
4	2483.50	59.29	74.00	-14.71	28.65	2.26	28.38	0.00	Peak	151	81	HORIZONTAL

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

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11b CH 1, 6, 11 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	2386.15	47.64	54.00	-6.36	17.26	2.21	28.17	0.00	Average	190	162	HORIZONTAL
2	2386.15	58.57	74.00	-15.43	28.19	2.21	28.17	0.00	Peak	190	162	HORIZONTAL
3	2410.24				76.90	2.22	28.21	0.00	Average	190	162	HORIZONTAL
4	2411.04				80.32	2.22	28.21	0.00	Peak	190	162	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	2389.36	56.64	74.00	-17.36	26.26	2.21	28.17	0.00	Peak	153	159	HORIZONTAL
2	2390.00	45.52	54.00	-8.48	15.13	2.22	28.17	0.00	Average	153	159	HORIZONTAL
3	2435.24				75.91	2.23	28.29	0.00	Average	153	159	HORIZONTAL
4	2436.04				79.48	2.23	28.29	0.00	Peak	153	159	HORIZONTAL
5	2483.50	45.81	54.00	-8.19	15.17	2.26	28.38	0.00	Average	153	159	HORIZONTAL
6	2483.50	55.94	74.00	-18.06	25.30	2.26	28.38	0.00	Peak	153	159	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	2459.28				73.17	2.24	28.33	0.00	Average	154	102	HORIZONTAL
2	2459.60				76.96	2.24	28.33	0.00	Peak	154	102	HORIZONTAL
3	2485.58	58.49	74.00	-15.51	27.81	2.26	28.42	0.00	Peak	154	102	HORIZONTAL
4	2486.22	47.62	54.00	-6.38	16.94	2.26	28.42	0.00	Average	154	102	HORIZONTAL

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

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11g CH 1, 6, 11 / ANT. 1 (1TX)
Test Date	Jun. 28, 2012		

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	2389.84	69.99	74.00	-4.01	39.60	2.22	28.17	0.00	Peak	100	63	HORIZONTAL
2	2390.00	52.99	54.00	-1.01	22.60	2.22	28.17	0.00	Average	100	63	HORIZONTAL
3	2408.47				65.63	2.22	28.21	0.00	Average	100	63	HORIZONTAL
4	2409.92				75.51	2.22	28.21	0.00	Peak	100	63	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	2388.24	69.35	74.00	-4.65	38.97	2.21	28.17	0.00	Peak	100	124	HORIZONTAL
2	2390.00	49.90	54.00	-4.10	19.51	2.22	28.17	0.00	Average	100	124	HORIZONTAL
3	2431.71				70.80	2.23	28.25	0.00	Average	100	124	HORIZONTAL
4	2432.67				81.29	2.23	28.25	0.00	Peak	100	124	HORIZONTAL
5	2483.50	48.87	54.00	-5.13	18.23	2.26	28.38	0.00	Average	100	124	HORIZONTAL
6	2483.50	65.64	74.00	-8.36	35.00	2.26	28.38	0.00	Peak	100	124	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	2456.23				64.56	2.24	28.33	0.00	Average	150	55	HORIZONTAL
2	2456.23				74.79	2.24	28.33	0.00	Peak	150	55	HORIZONTAL
3	2483.50	52.96	54.00	-1.04	22.32	2.26	28.38	0.00	Average	150	55	HORIZONTAL
4	2483.50	72.47	74.00	-1.53	41.83	2.26	28.38	0.00	Peak	150	55	HORIZONTAL

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

Temperature	26℃	Humidity	60%
Test Enginee	Benson Peng	Configurations	IEEE 802.11g CH 1, 6, 11 / ANT. 1+2 (2TX)
Test Date	Jun. 28, 2012		

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	2389.52	52.75	54.00	-1.25	22.37	2.21	28.17	0.00	Average	185	90	HORIZONTAL
2	2389.68	70.83	74.00	-3.17	40.45	2.21	28.17	0.00	Peak	185	90	HORIZONTAL
3	2407.83				82.14	2.22	28.21	0.00	Peak	185	90	HORIZONTAL
4	2412.96				72.28	2.22	28.21	0.00	Average	185	90	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	2390.00	50.74	54.00	-3.26	20.35	2.22	28.17	0.00	Average	199	90	HORIZONTAL
2	2390.00	70.67	74.00	-3.33	40.28	2.22	28.17	0.00	Peak	199	90	HORIZONTAL
3	2430.43				77.28	2.23	28.25	0.00	Average	199	90	HORIZONTAL
4	2430.43				87.89	2.23	28.25	0.00	Peak	199	90	HORIZONTAL
5	2485.42	72.71	74.00	-1.29	42.03	2.26	28.42	0.00	Peak	199	90	HORIZONTAL
6	2485.90	52.26	54.00	-1.74	21.58	2.26	28.42	0.00	Average	199	90	HORIZONTAL

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

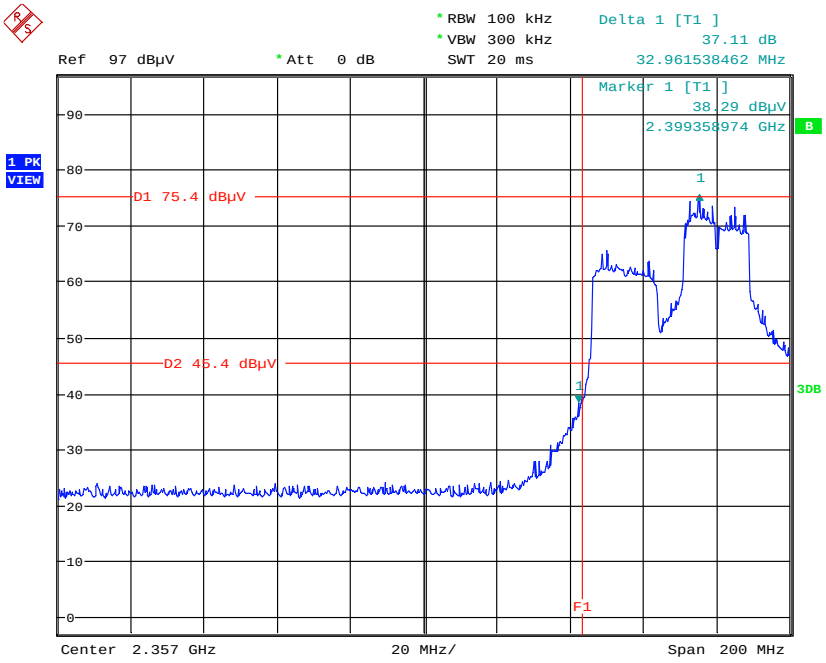
Channel 11

	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	2468.09				68.60	2.26	28.38	0.00	Average	216	265	HORIZONTAL
2	2468.41				79.46	2.26	28.38	0.00	Peak	216	265	HORIZONTAL
3	2483.50	52.03	54.00	-1.97	21.39	2.26	28.38	0.00	Average	216	265	HORIZONTAL
4	2483.98	70.16	74.00	-3.84	39.52	2.26	28.38	0.00	Peak	216	265	HORIZONTAL

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

For Emission not in Restricted Band

Plot on Configuration IEEE 802.11n MCS0 20MHz / 2412 MHz / ANT. 1 (1TX)



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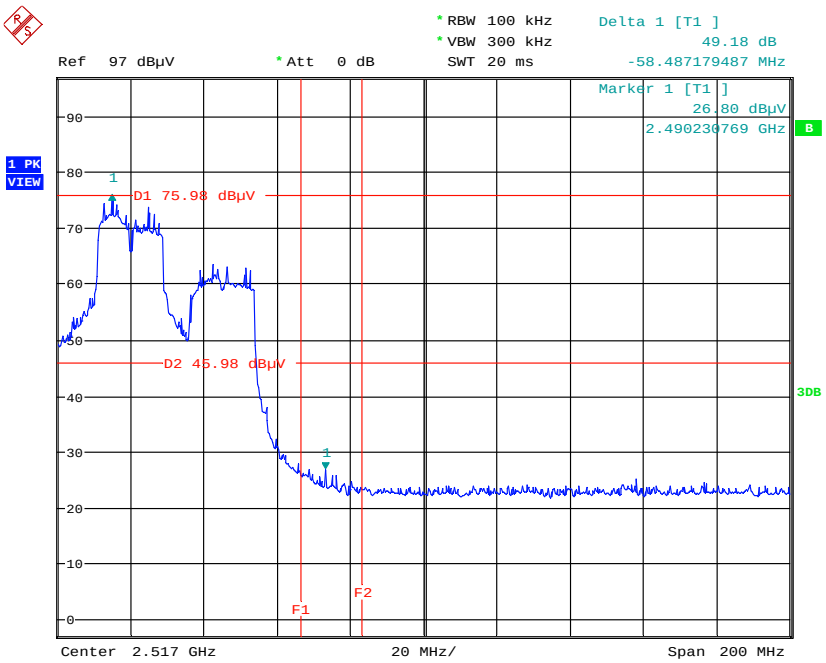
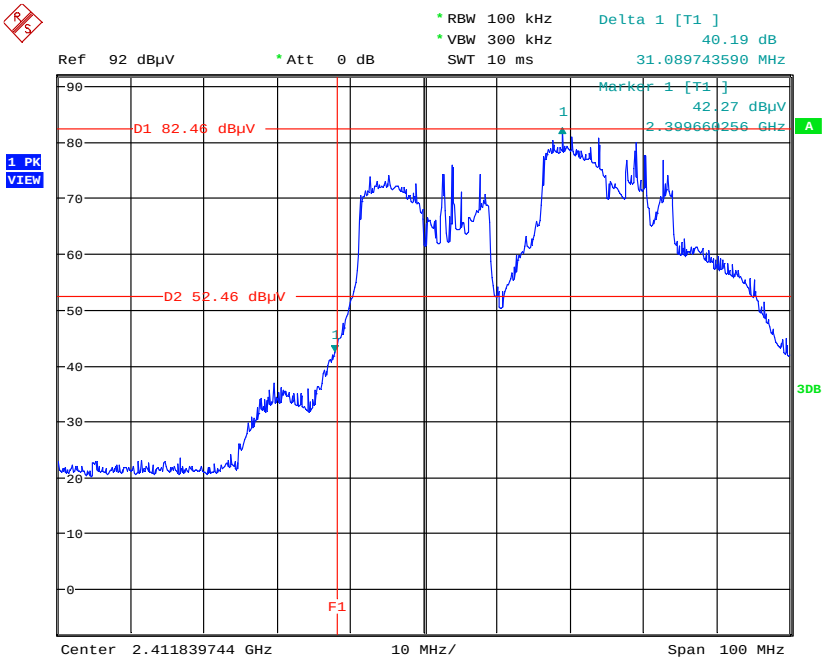
Plot on Configuration IEEE 802.11n MCS0 20MHz / 2462 MHz / ANT. 1 (1TX)



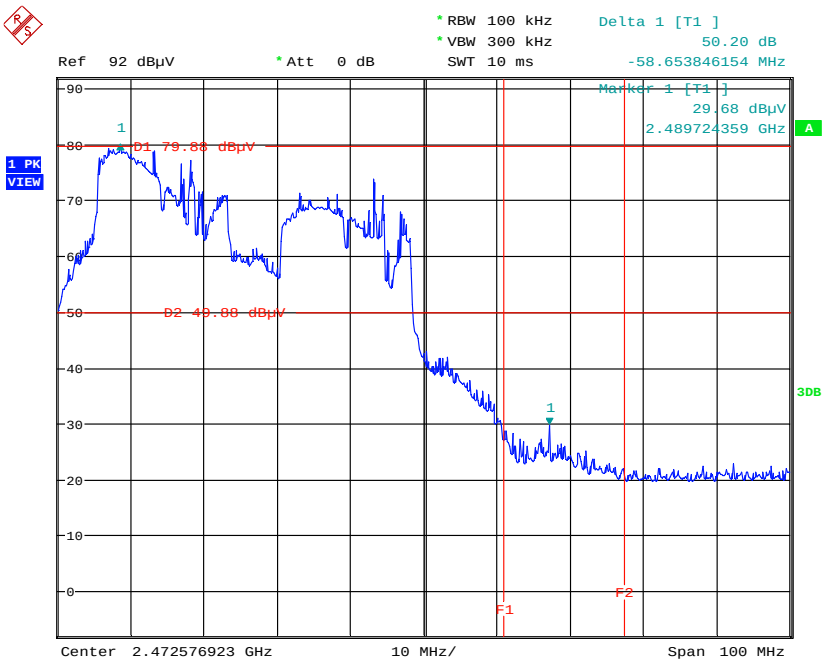
Date: 28.JUN.2012 00:21:52

Plot on Configuration IEEE 802.11n MCS0 20MHz / 2412 MHz / ANT. 1 +2(2TX)



Date: 6.JUL.2012 17:21:37

Plot on Configuration IEEE 802.11n MCS0 20MHz / 2462 MHz / ANT. 1 +2(2TX)



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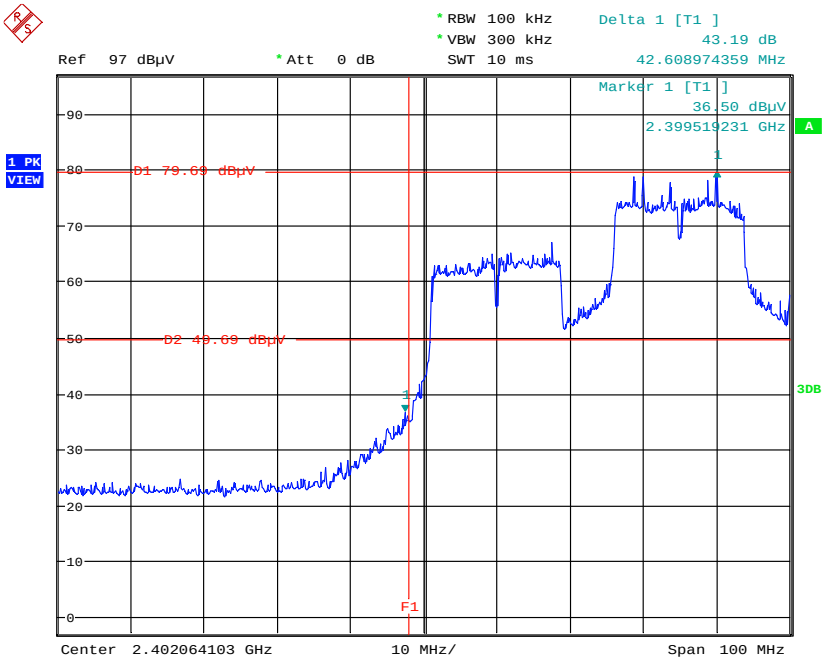
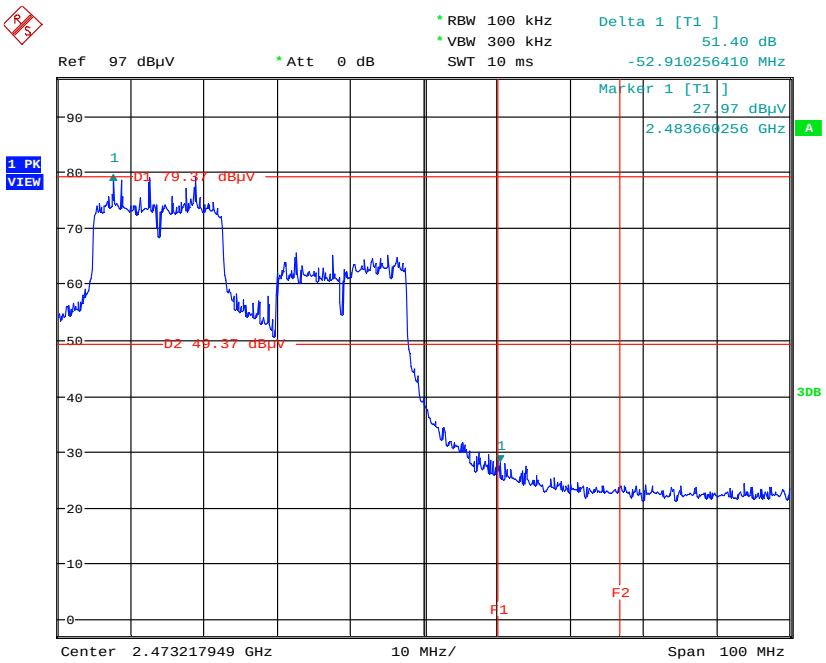


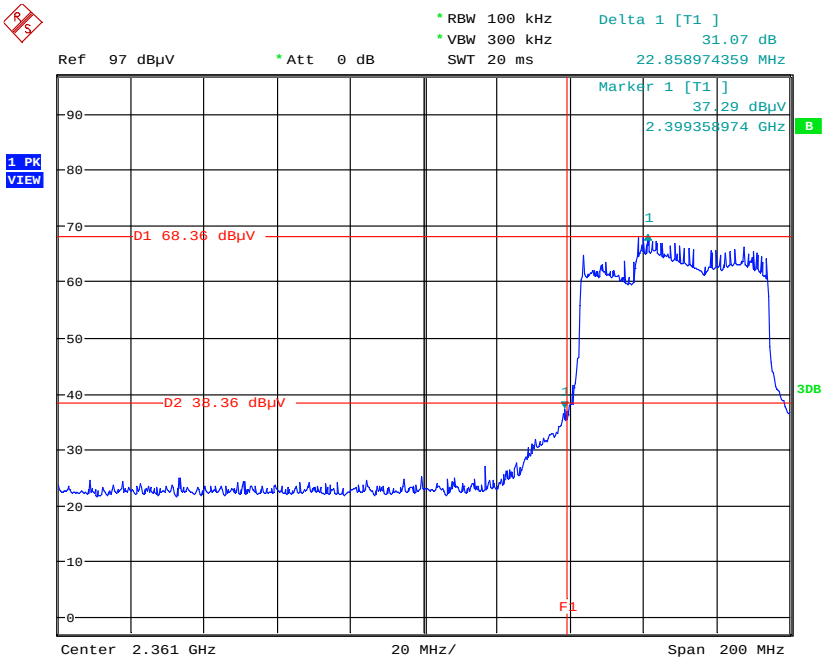
Date: 6.JUL.2012 21:39:17

Plot on Configuration IEEE 802.11n MCS8 20MHz / 2462 MHz / ANT. 1 +2(2TX)



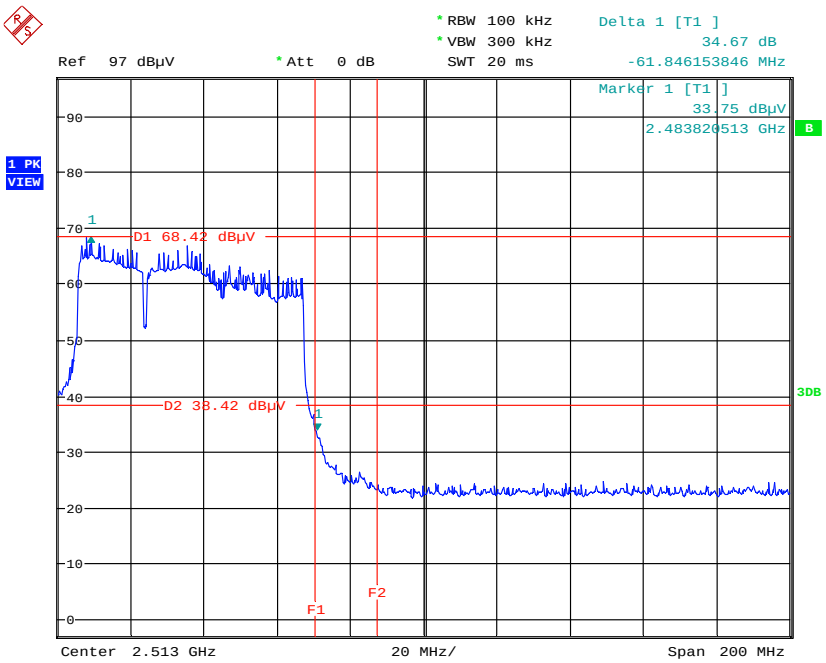
Date: 6.JUL.2012 21:40:57

Plot on Configuration IEEE 802.11n MCS0 40MHz / 2422 MHz / ANT. 1 (1TX)



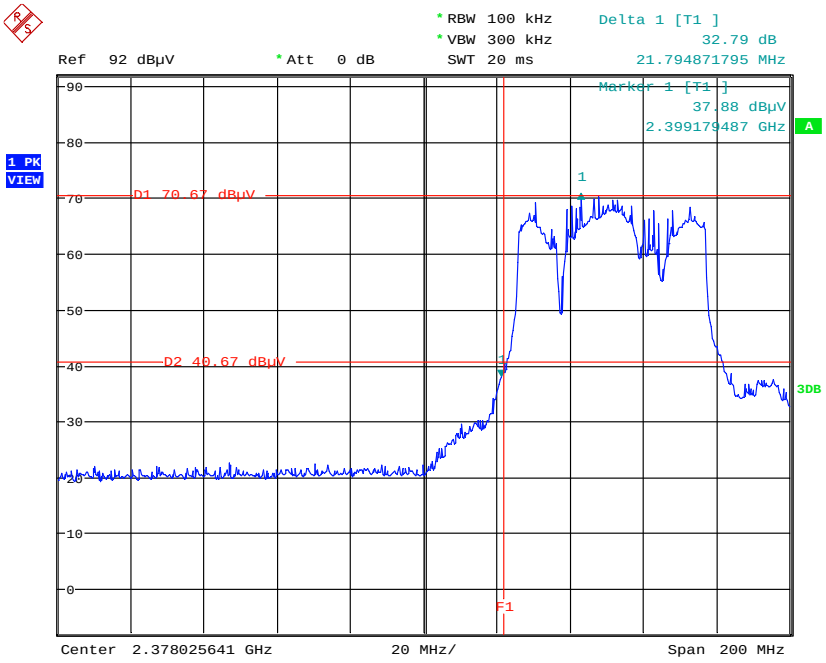
Date: 28.JUN.2012 00:55:28

Plot on Configuration IEEE 802.11n MCS0 40MHz / 2452 MHz / ANT. 1 (1TX)



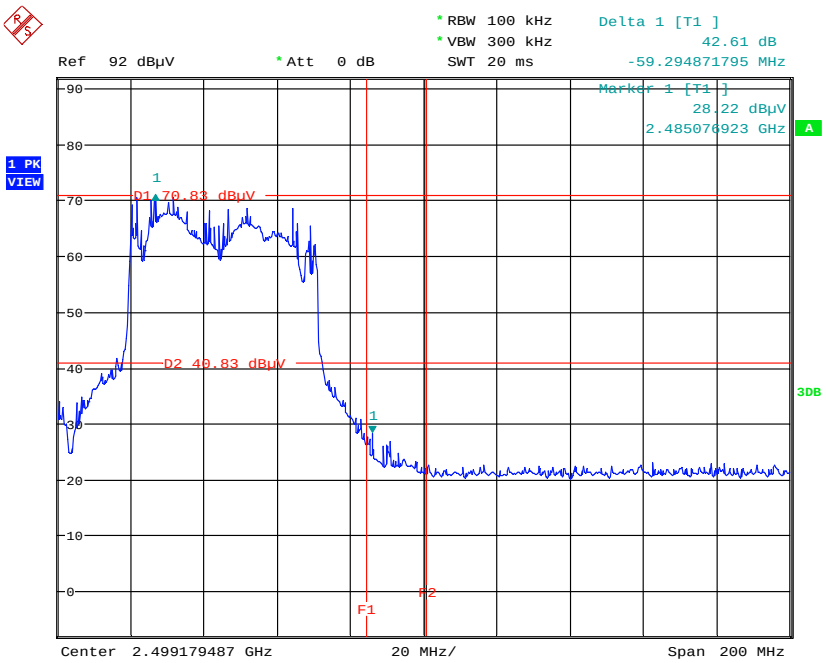
Date: 28.JUN.2012 00:57:17

Plot on Configuration IEEE 802.11n MCS0 40MHz /2422 MHz / ANT. 1 +2(2TX)



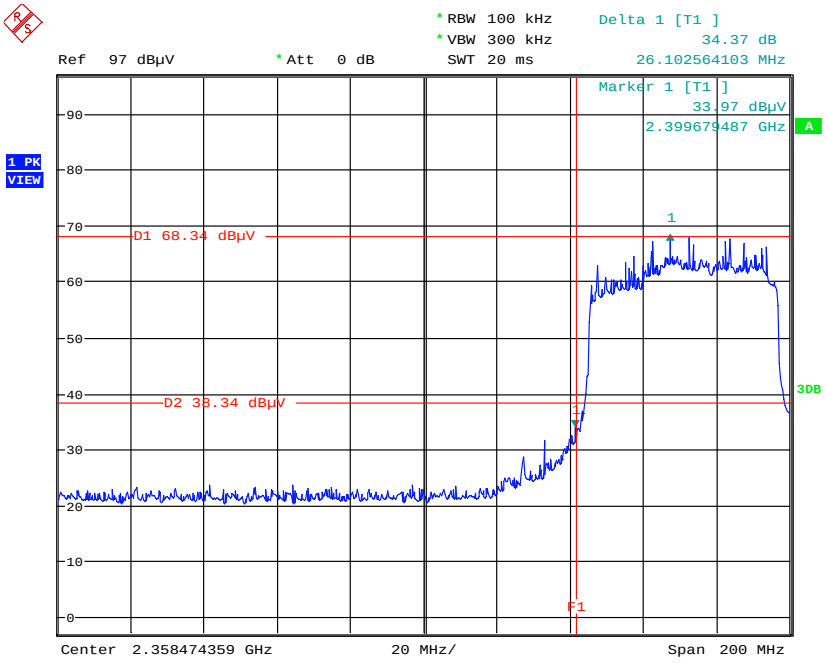
Date: 6.JUL.2012 17:27:15

Plot on Configuration IEEE 802.11n MCS0 40MHz / 2452 MHz / ANT. 1 +2(2TX)



Date: 6.JUL.2012 17:29:15

Plot on Configuration IEEE 802.11n MCS8 40MHz / 2422 MHz / ANT. 1 +2(2TX)



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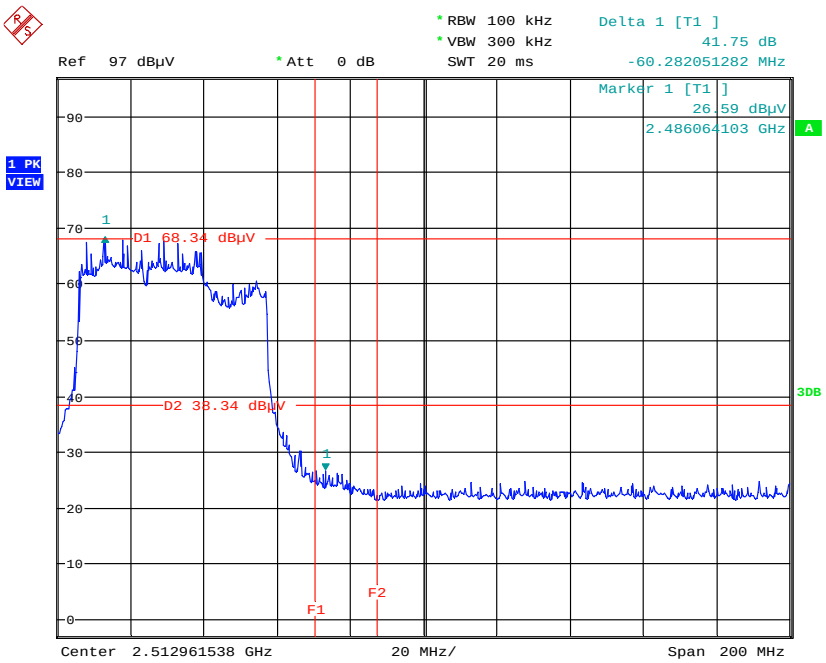
Plot on Configuration IEEE 802.11n MCS8 40MHz / 2452 MHz / ANT. 1 +2(2TX)



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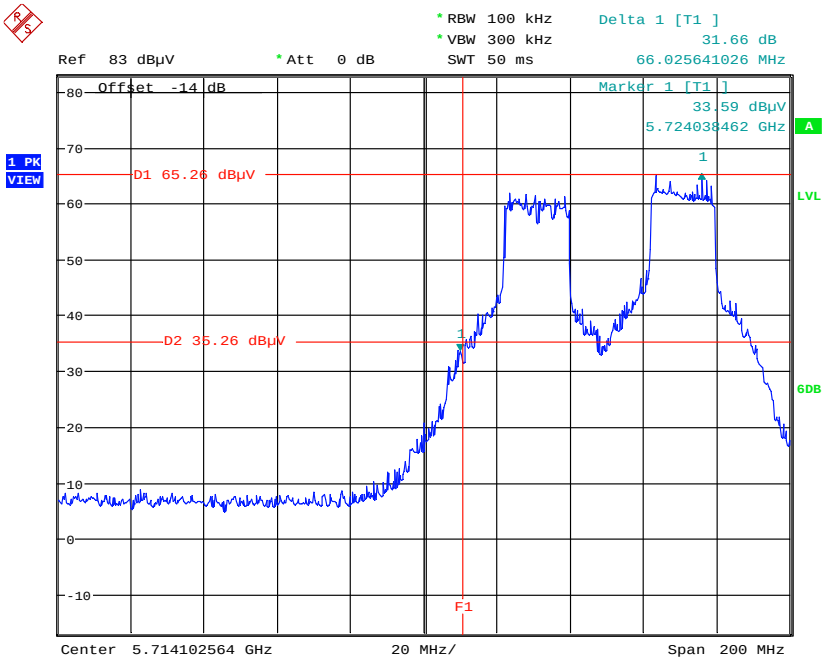
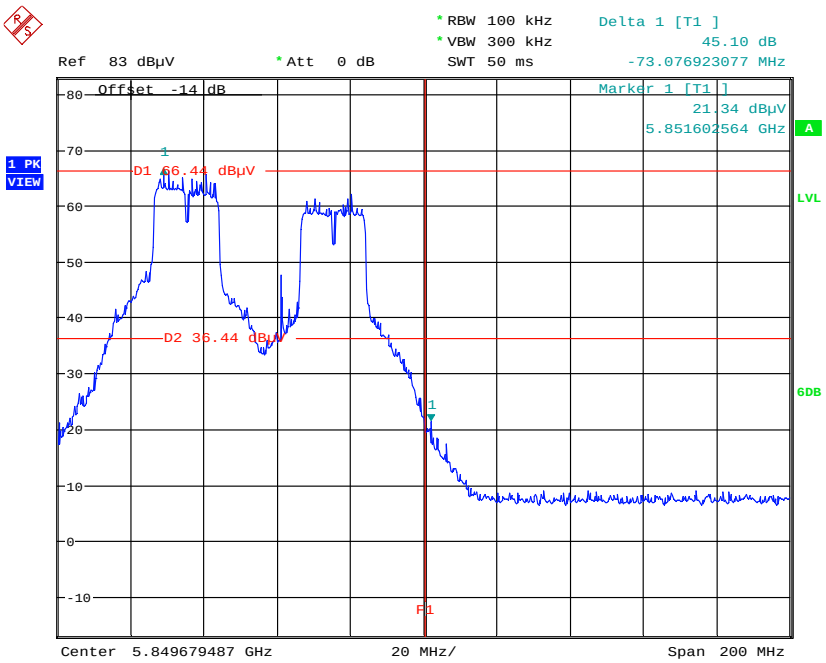


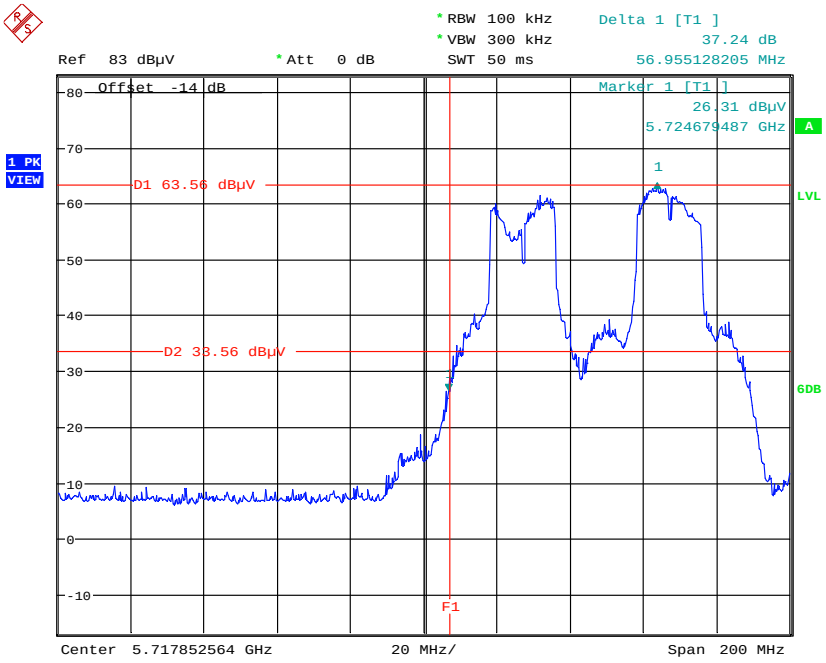
Date: 23.JUL.2012 18:57:22

Plot on Configuration IEEE 802.11n MCS0 20MHz / 5825 MHz / ANT. 1 (1TX)



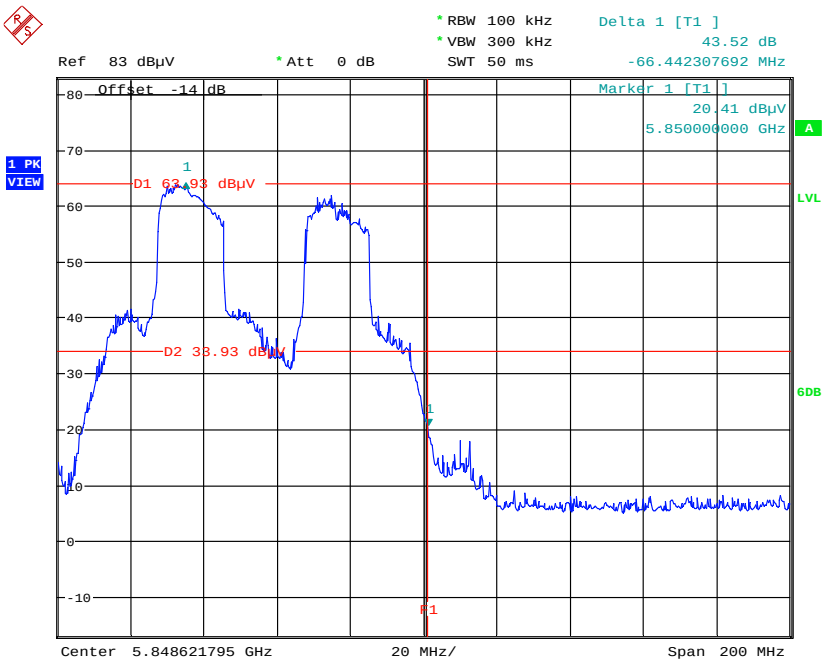
Date: 23.JUL.2012 19:02:59

Plot on Configuration IEEE 802.11n MCS0 20MHz / 5745 MHz / ANT. 1 +2(2TX)



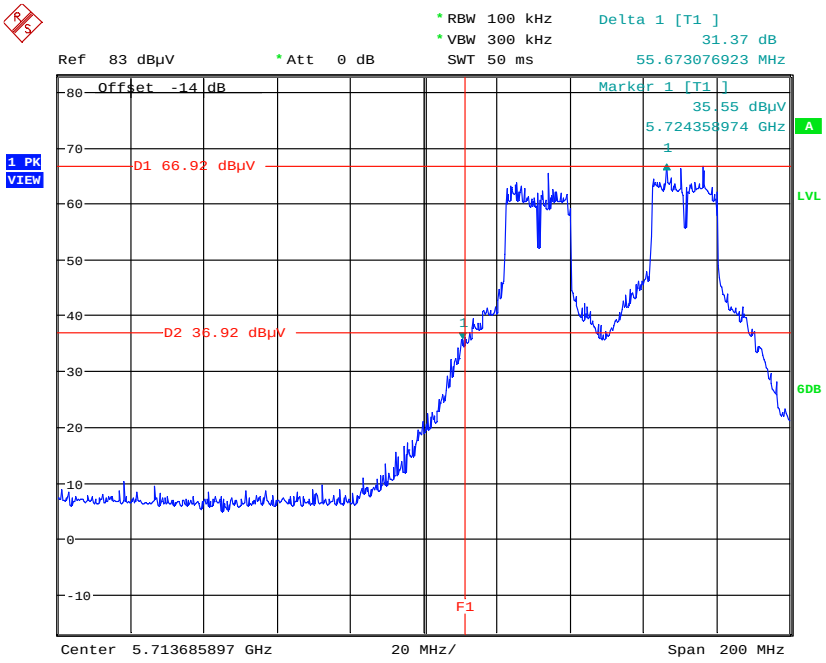
Date: 23.JUL.2012 18:31:47

Plot on Configuration IEEE 802.11n MCS0 20MHz / 5825 MHz / ANT. 1 +2(2TX)



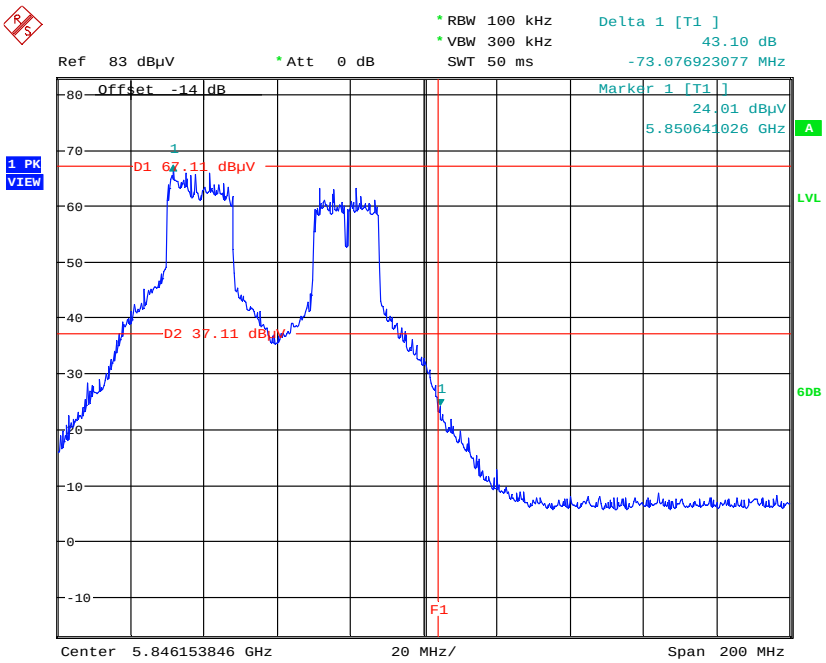
Date: 23.JUL.2012 18:34:50

Plot on Configuration IEEE 802.11n MCS8 20MHz / 5745 MHz / ANT. 1 +2(2TX)



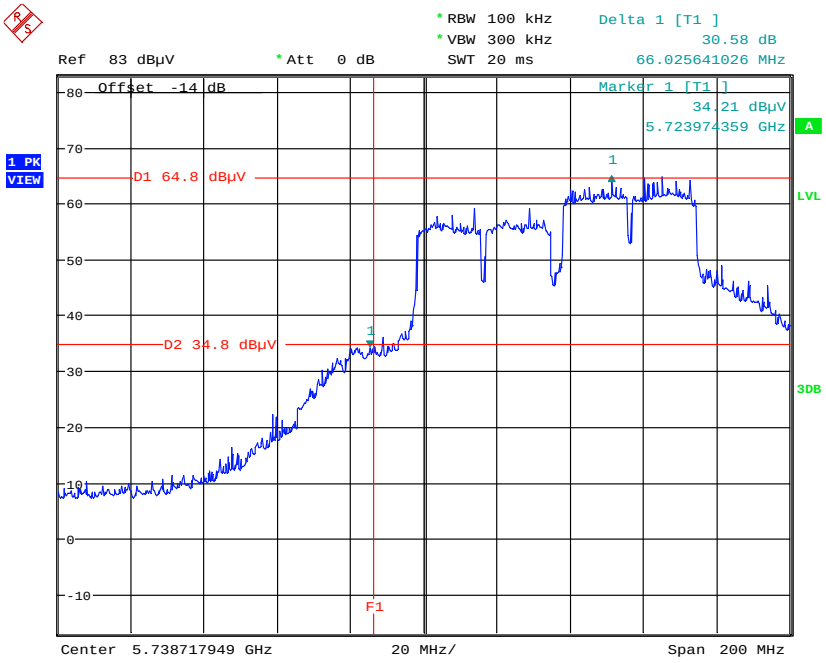
Date: 23.JUL.2012 18:43:06

Plot on Configuration IEEE 802.11n MCS8 20MHz / 5825 MHz / ANT. 1 +2(2TX)



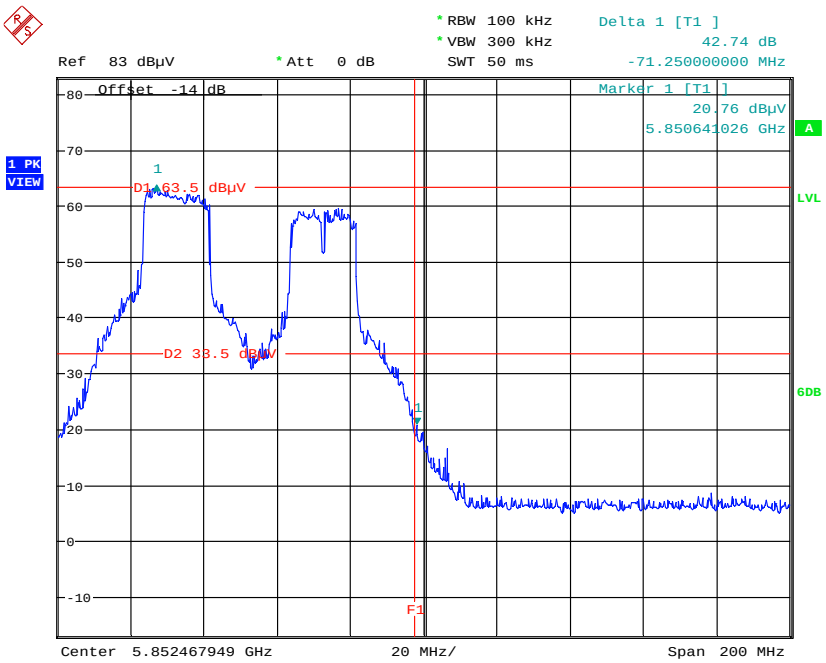
Date: 23.JUL.2012 18:44:58

Plot on Configuration IEEE 802.11n MCS0 40MHz / 5755 MHz / ANT. 1 (1TX)



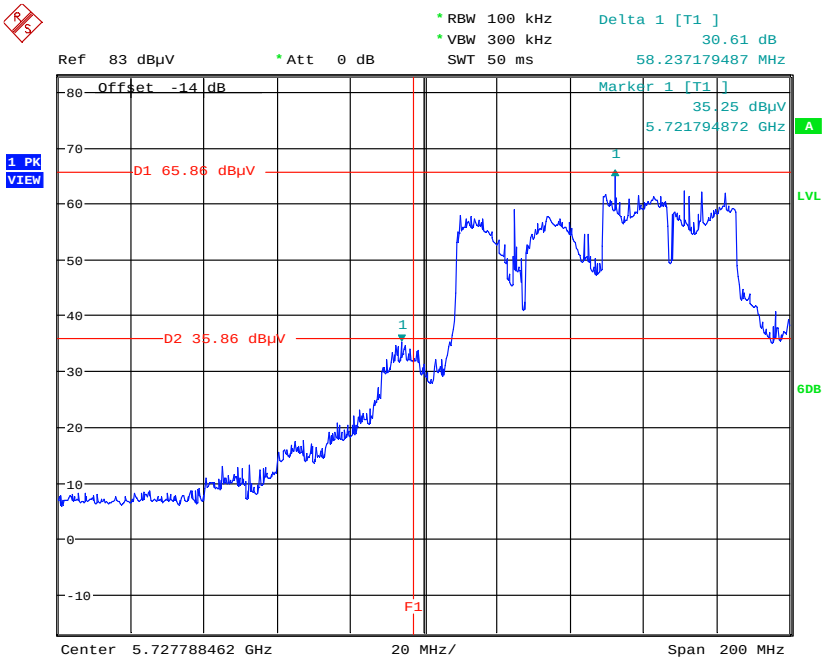
Date: 6.JUL.2012 18:24:25

Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz / ANT. 1 (1TX)



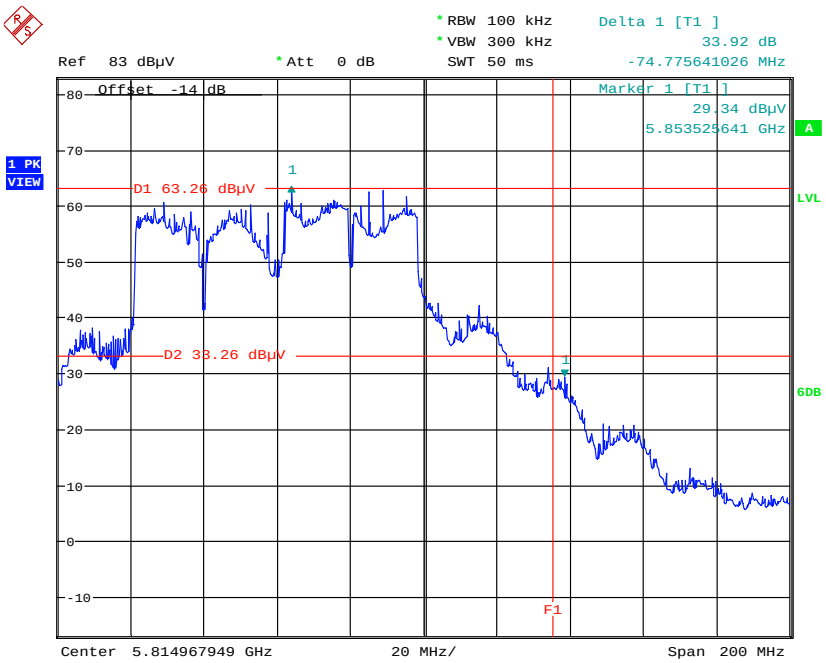
Date: 23.JUL.2012 18:23:22

Plot on Configuration IEEE 802.11n MCS0 40MHz / 5755 MHz / ANT. 1 +2(2TX)



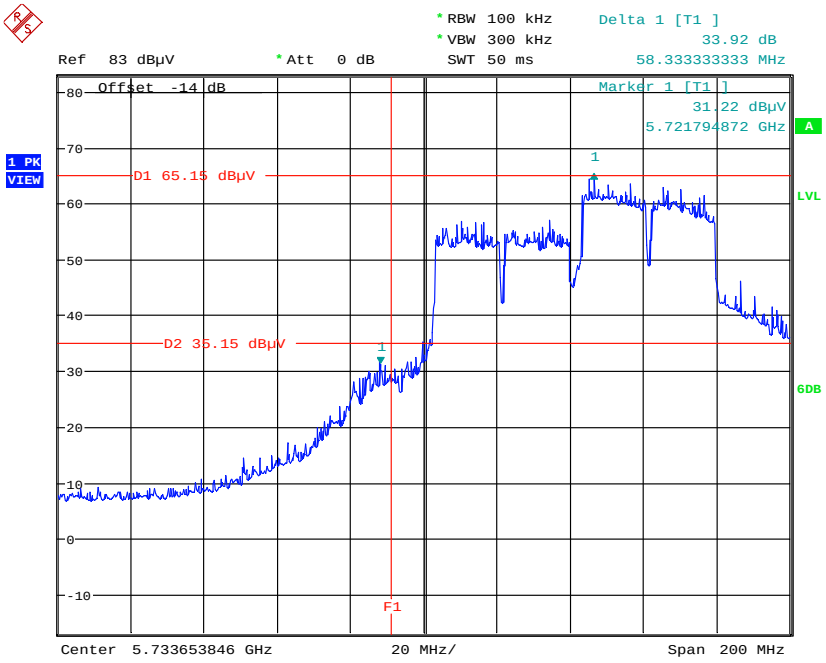
Date: 23.JUL.2012 18:39:18

Plot on Configuration IEEE 802.11n MCS0 40MHz / 5795 MHz / ANT. 1 +2(2TX)



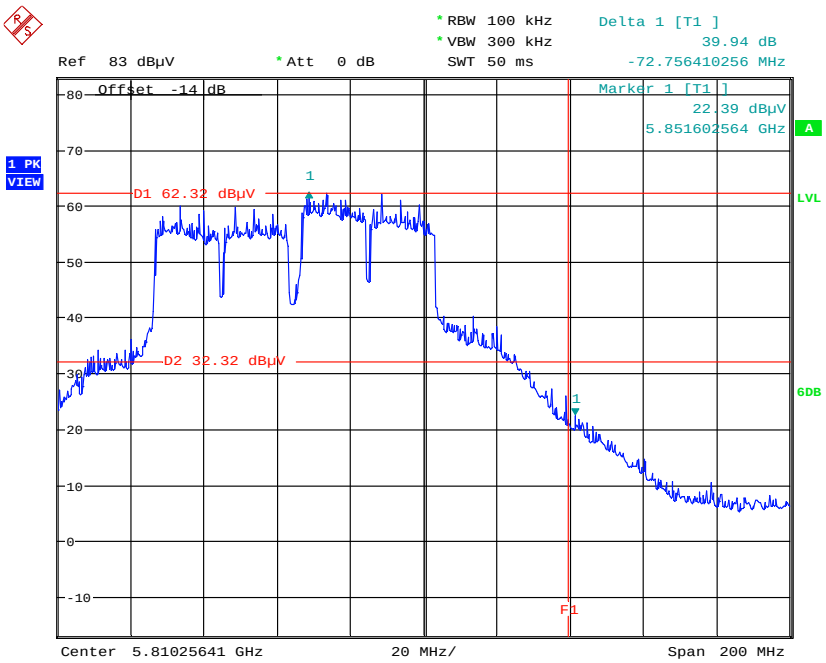
Date: 23.JUL.2012 18:40:46

Plot on Configuration IEEE 802.11n MCS8 40MHz / 5755 MHz / ANT. 1 +2(2TX)



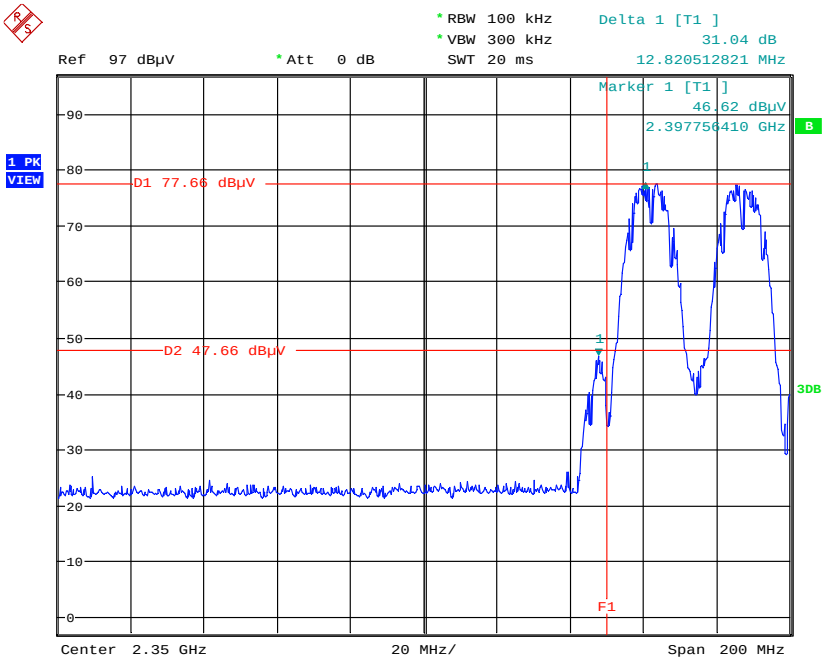
Date: 23.JUL.2012 18:50:16

Plot on Configuration IEEE 802.11n MCS8 40MHz / 5795 MHz / ANT. 1 +2(2TX)



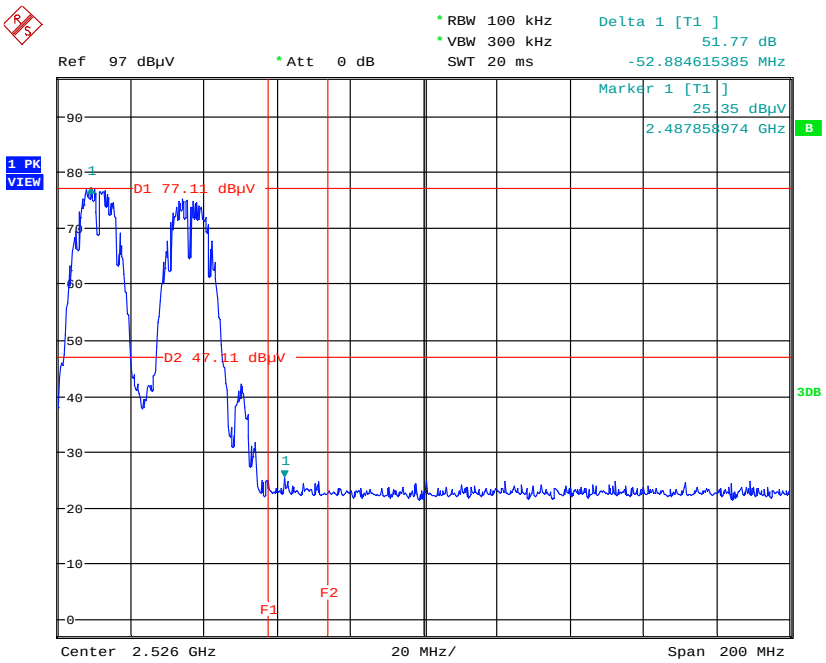
Date: 23.JUL.2012 18:52:14

Plot on Configuration IEEE 802.11b / 2412 MHz / ANT. 1 (1TX)



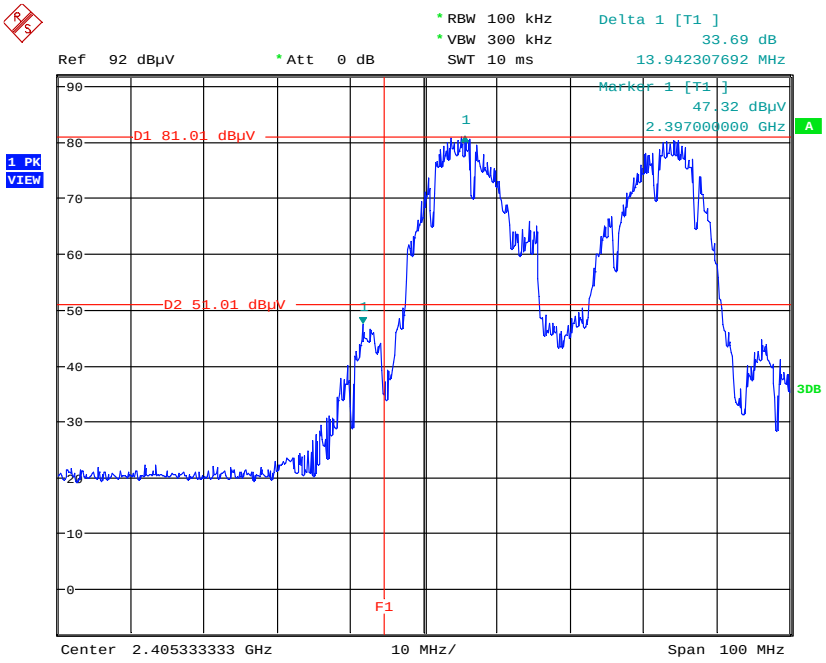
Date: 27.JUN.2012 22:50:51

Plot on Configuration IEEE 802.11b / 2462 MHz / ANT. 1 (1TX)



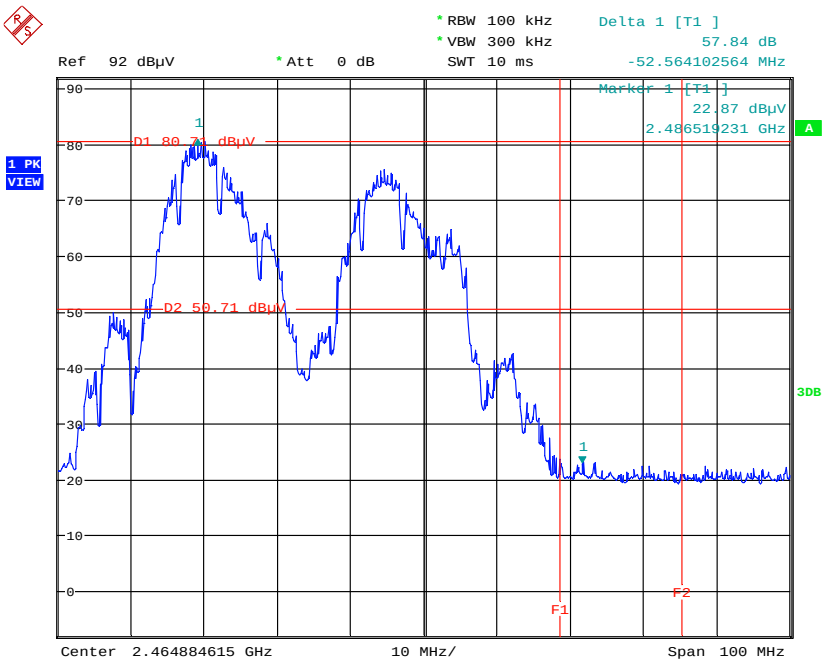
Date: 27.JUN.2012 22:56:09

Plot on Configuration IEEE 802.11b / 2412 MHz / ANT. 1 +2(2TX)



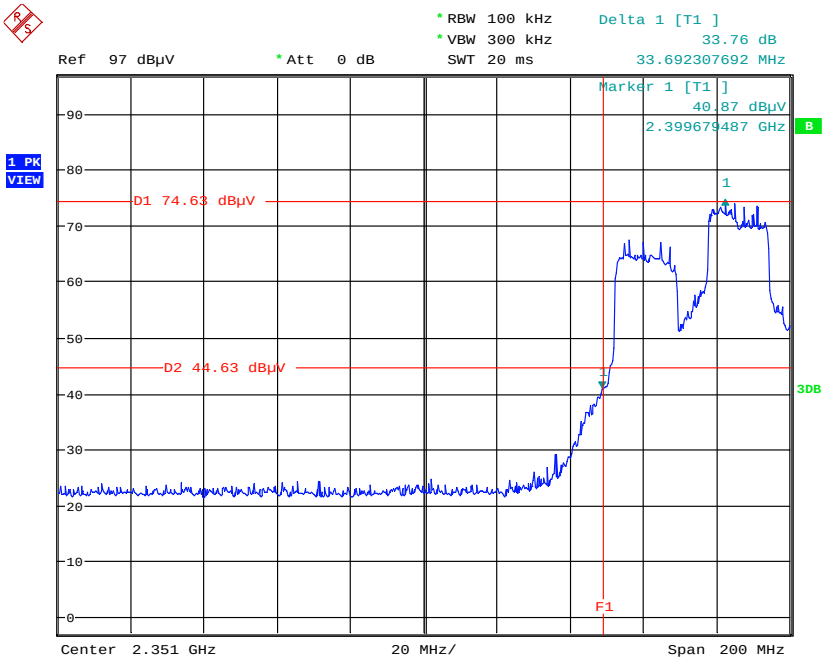
Date: 6.JUL.2012 17:09:53

Plot on Configuration IEEE 802.11b / 2462 MHz / ANT. 1 +2(2TX)



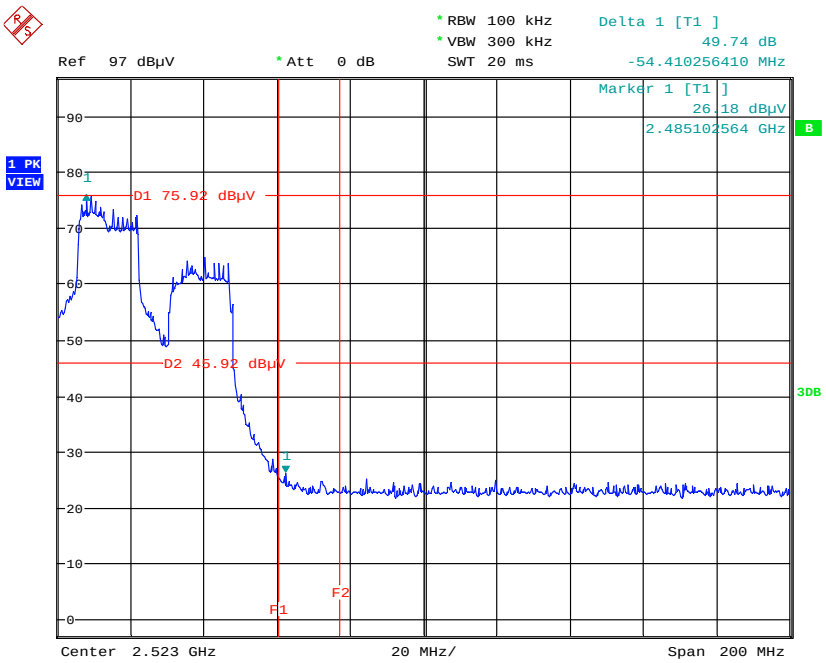
Date: 6.JUL.2012 17:11:51

Plot on Configuration IEEE 802.11g / 2412 MHz / ANT. 1 (1TX)



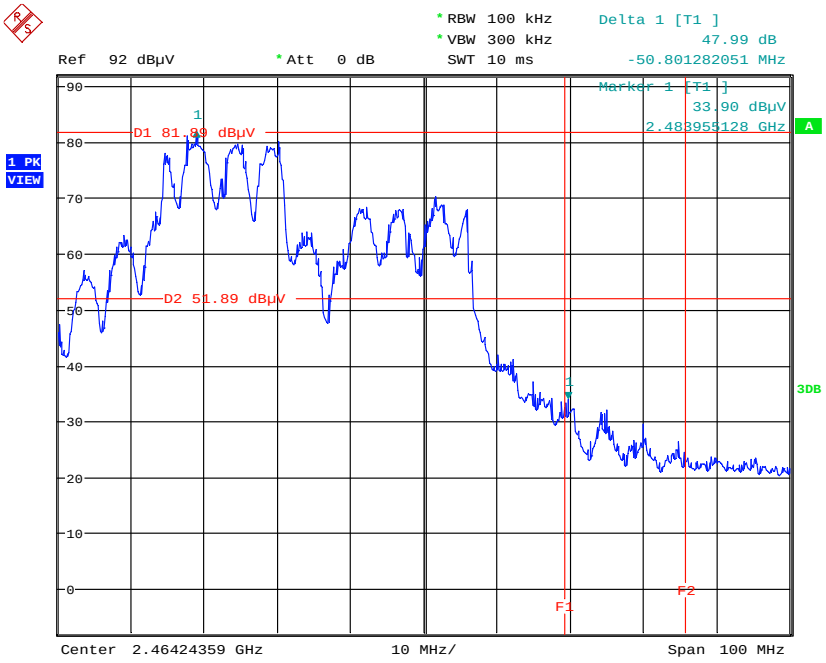
Date: 27.JUN.2012 23:33:21

Plot on Configuration IEEE 802.11g / 2462 MHz / ANT. 1 (1TX)



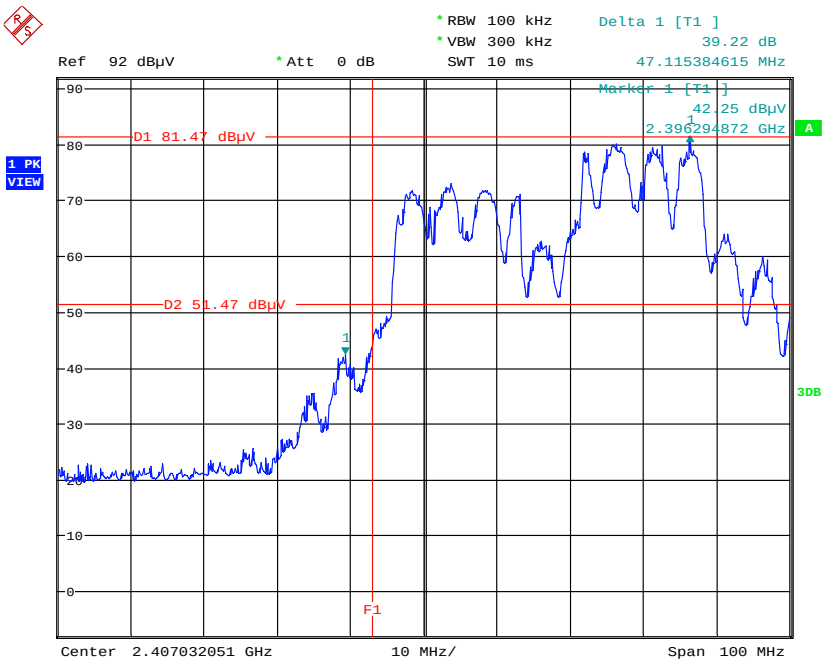
Date: 27.JUN.2012 23:35:11

Plot on Configuration IEEE 802.11g / 2412 MHz / ANT. 1 +2(2TX)



Date: 6.JUL.2012 17:14:40

Plot on Configuration IEEE 802.11g / 2462 MHz / ANT. 1 +2(2TX)



Date: 6.JUL.2012 17:16:07

4.7. Antenna Requirements

4.7.1. 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.

4.7.2. 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	Nov. 14, 2011	Conduction (CO01-CB)
V- LISN	Schwarzbeck	NSLK 8127	8127-478	9K ~ 30MHz	Jun. 22, 2012	Conduction (CO01-CB)
PULSE LIMITER	R&S	ESH3-Z2	100430	9K~30MHz	Feb. 03, 2012	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	0.15MHz~30MHz	Dec. 4, 2011	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	Jan. 11, 2012	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 25, 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, 2010	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Nov. 29, 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 (05CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9KHz ~ 2.75GHz	Mar. 20, 2012	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)
Signal analyzer	R&S	FSV40	100979	9KHz~40GHz	Sep. 26, 2011	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 05, 2012	Conducted (TH01-CB)
Thermo-Hygro Meter	N/A	HC 520	#1	15~70 degree	Nov. 02, 2010	Conducted (TH01-CB)
Signal Generator	R&S	SMR40	100302	10MHz-40GHz	Nov. 22, 2011	Conducted (TH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Power Divider	HP	11636A	00306	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)
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)
Signal generator	R&S	SMU200A	102782	10MHz-40GHz	Jun. 07, 2012	Conducted (TH01-CB)
Horn Antenna	COM-POWER	AH-118	071187	1GHz – 18GHz	May. 09, 2012	Conducted (TH01-CB)
Horn Antenna	COM-POWER	AH-118	071042	1GHz – 18GHz	Nov. 01, 2011	Radiation (05CH01-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