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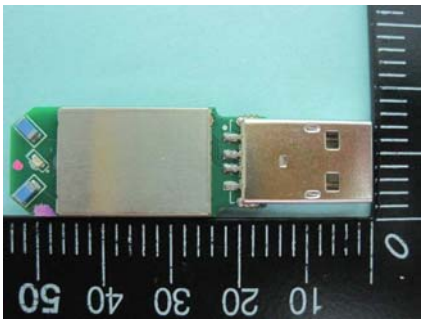
FCC RADIO TEST REPORT

Applicant's company	**Accton Technology Corporation**
Applicant Address	#1, Creation Rd. III, Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C.
FCC ID	**HED7822GMN**
Manufacturer's company	**Edimax Technology co., Ltd**
Manufacturer Address	6F., No.3, Wu-Chuan 3rd Road, Wu-Gu, New Taipei City 24891, Taiwan

Product Name	WiFi Module
Brand Name	Accton
Model Name	EW-7822GMn
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Oct. 05, 2012
Final Test Date	Oct. 24, 2012
Submission Type	Original Equipment



Statement

Test result included in this report is for the IEEE 802.11n and IEEE 802.11b/g part 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**, **47 CFR FCC Part 15 Subpart C**, **KDB 558074 D01 v02** and **KDB 662911 D01 v01r02**.

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

Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR2O0531	Rev. 01	Initial issue of report	Dec. 26, 2012

Certificate No.: CB10111143

1. CERTIFICATE OF COMPLIANCE

Product Name	:	WIFI Module
Brand Name	:	Accton
Model Name	:	EW-7822GMn
Applicant	:	Accton Technology Corporation
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 Oct. 05, 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	10.82 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	7.62 dB
4.3	15.247(e)	Power Spectral Density	Complies	13.29 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	0.01 dB
4.6	15.247(d)	Band Edge Emissions	Complies	0.14 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~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7℃	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n

Items	Description
Product Type	WLAN (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
Channel Number	11 for 20MHz bandwidth ; 7 for 40MHz bandwidth
Channel Band Width (99%)	MCS8 (20MHz): 17.84 MHz ; MCS15 (20MHz): 17.76 MHz MCS8 (40MHz): 36.16 MHz ; MCS15 (40MHz): 36.32 MHz
Maximum Conducted Output Power	MCS8 (20MHz): 22.38 dBm ; MCS15 (20MHz): 22.2 dBm MCS8 (40MHz): 21.65 dBm ; MCS15 (40MHz): 21.35 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11b/g

Items	Description
Product Type	802.11b :WLAN (1TX, 1RX) 802.11g :WLAN (1TX, 1RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11g
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
Channel Number	11
Channel Band Width (99%)	11b/1Mbps: 15.28 MHz ; 11b/11Mbps: 15.36 MHz 11g/6Mpbs: 16.56 MHz ; 11g/54Mpbs: 16.48 MHz
Maximum Conducted Output Power	11b/1Mbps: 14.55 dBm ; 11b/11Mbps: 15.93 dBm 11g/6Mpbs: 20.28 dBm ; 11g/54Mpbs: 19.37 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 802.11b	V	X	X	X
IEEE 802.11g	V	X	X	X
IEEE 802.11n	X	X	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	Part Number	Antenna Type	Connector	Gain (dBi)	Remark
1	Walsin	RFANT3216120A1T Series	Chip Antenna	N/A	2	TX/RX
2	Walsin	RFANT3216120A1T Series	Chip Antenna	N/A	2	TX/RX

Note: The EUT has two antennas.

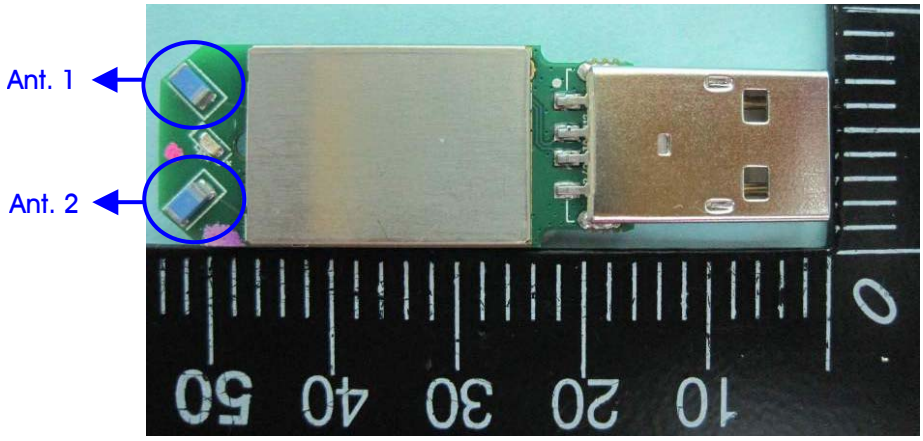
For IEEE 802.11b/g mode:

Ant. 1 can be used as receiving antenna.

Ant. 2 can be used as transmitting antenna.

For IEEE 802.11n mode:

Ant. 1 and Ant. 2 will transmit/receive the same signal simultaneously.



3.4. Table for Carrier Frequencies

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	-	-

3.5. Table for Test Modes

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

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	Normal Link	-	-	-
Maximum Conducted Output Power	MCS8/20MHz	14 Mbps	1/6/11	1/2/1+2
	MCS15/20MHz	144 Mbps	1/6/11	1/2/1+2
	MCS8/40MHz	30 Mbps	3/6/9	1/2/1+2
	MCS15/40MHz	300 Mbps	3/6/9	1/2/1+2
	11b/BPSK	1 Mbps	1/6/11	2
	11b/BPSK	11 Mbps	1/6/11	2
	11g/BPSK	6 Mbps	1/6/11	2
	11g/BPSK	54 Mbps	1/6/11	2
Power Spectral Density	MCS8/20MHz	14 Mbps	1/6/11	1/2
	MCS15/20MHz	144 Mbps	1/6/11	1/2
	MCS8/40MHz	30 Mbps	3/6/9	1/2
	MCS15/40MHz	300 Mbps	3/6/9	1/2
	11b/BPSK	1 Mbps	1/6/11	2
	11b/BPSK	11 Mbps	1/6/11	2
	11g/BPSK	6 Mbps	1/6/11	2
	11g/BPSK	54 Mbps	1/6/11	2
6dB Spectrum Bandwidth	MCS8/20MHz	14 Mbps	1/6/11	1+2
	MCS15/20MHz	144 Mbps	1/6/11	1+2
	MCS8/40MHz	30 Mbps	3/6/9	1+2
	MCS15/40MHz	300 Mbps	3/6/9	1+2
	11b/BPSK	1 Mbps	1/6/11	2
	11b/BPSK	11 Mbps	1/6/11	2
	11g/BPSK	6 Mbps	1/6/11	2
	11g/BPSK	54 Mbps	1/6/11	2
Radiated Emissions 9kHz~1GHz	Normal Link	-	-	-
Radiated Emissions 1GHz~10th Harmonic	MCS8/20MHz	14 Mbps	1/6/11	1+2
	MCS15/20MHz	144 Mbps	1/6/11	1+2
	MCS8/40MHz	30 Mbps	3/6/9	1+2
	MCS15/40MHz	300 Mbps	3/6/9	1+2
	11b/BPSK	1 Mbps	1/6/11	2
	11b/BPSK	11 Mbps	1/6/11	2
	11g/BPSK	6 Mbps	1/6/11	2
	11g/BPSK	54 Mbps	1/6/11	2

Test Items	Mode	Data Rate	Channel	Antenna
Band Edge Emissions	MCS8/20MHz	14 Mbps	1/6/11	1+2
	MCS15/20MHz	144 Mbps	1/6/11	1+2
	MCS8/40MHz	30 Mbps	3/6/9	1+2
	MCS15/40MHz	300 Mbps	3/6/9	1+2
	11b/BPSK	1 Mbps	1/6/11	2
	11b/BPSK	11 Mbps	1/6/11	2
	11g/BPSK	6 Mbps	1/6/11	2
	11g/BPSK	54 Mbps	1/6/11	2

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1: Normal Link

For Radiated Emission test (30MHz ~ 1GHz):

Mode 1: EUT in X-axis

Mode 2: EUT in Y-axis

Mode 3: EUT in Z-axis

Due to Mode 1 generated the worst test result, so it was recorded in this report.

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).

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
Wireless AP	BELKIN	WG7016G22-LF-AK	DoC

3.8. Table for Parameters of Test Software Setting

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

Power Parameters of IEEE 802.11n

Test Software Version	MP_Kit_RTL11n_SingleChip_9xC_USB_v013_20100610		
Frequency	2412 MHz	2437 MHz	2462 MHz
20MHz / MCS8	62/63	61/63	60/63
20MHz / MCS15	62/63	61/63	61/63
Frequency	2422 MHz	2437 MHz	2452 MHz
40MHz / MCS8	61/63	61/63	57/59
40MHz / MCS15	61/63	61/63	59/61

Power Parameters of IEEE 802.11b/g

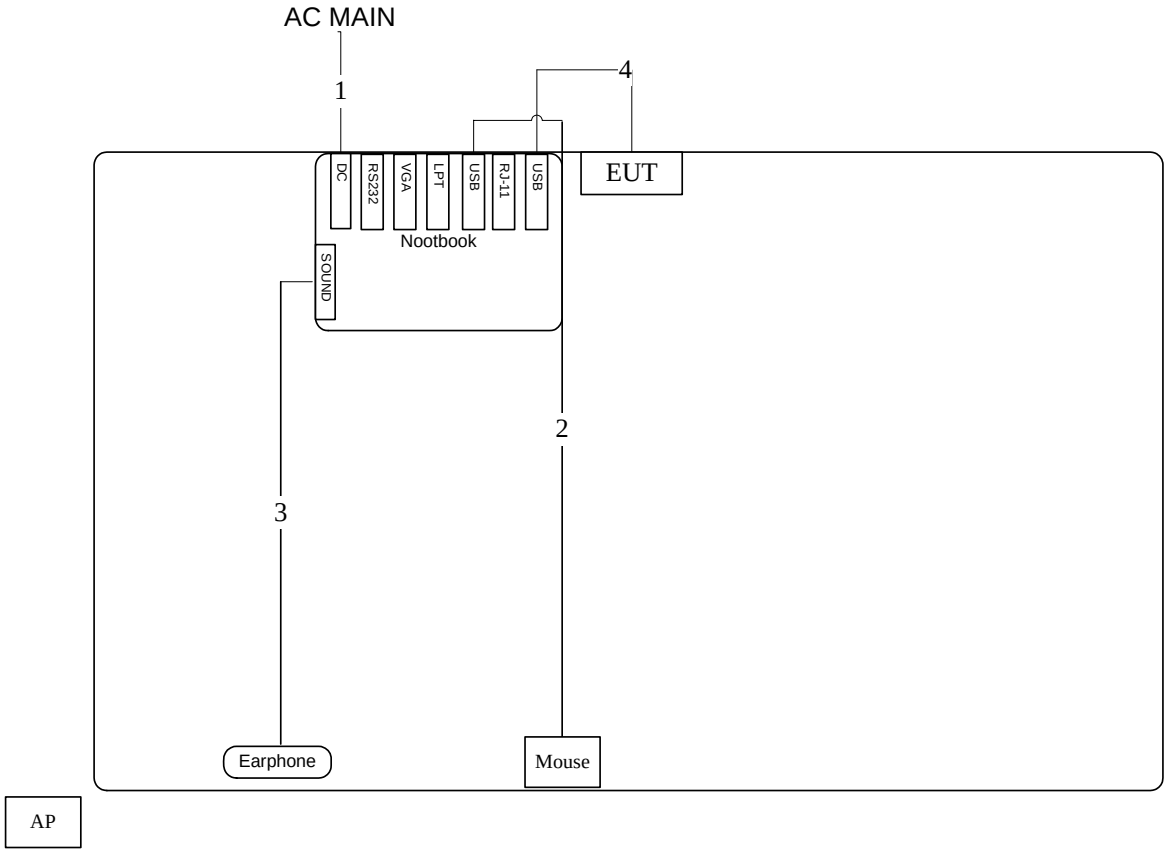
Test Software Version	MP_Kit_RTL11n_SingleChip_9xC_USB_v013_20100610		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b / 1Mbps	40	38	38
IEEE 802.11b / 11Mbps	44	43	43
IEEE 802.11g / 6Mbps	63	63	60
IEEE 802.11g / 54Mbps	63	63	61

During the test, "MP_Kit_RTL11n_SingleChip_9xC_USB_v013_20100610" under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

3.9. Test Configurations

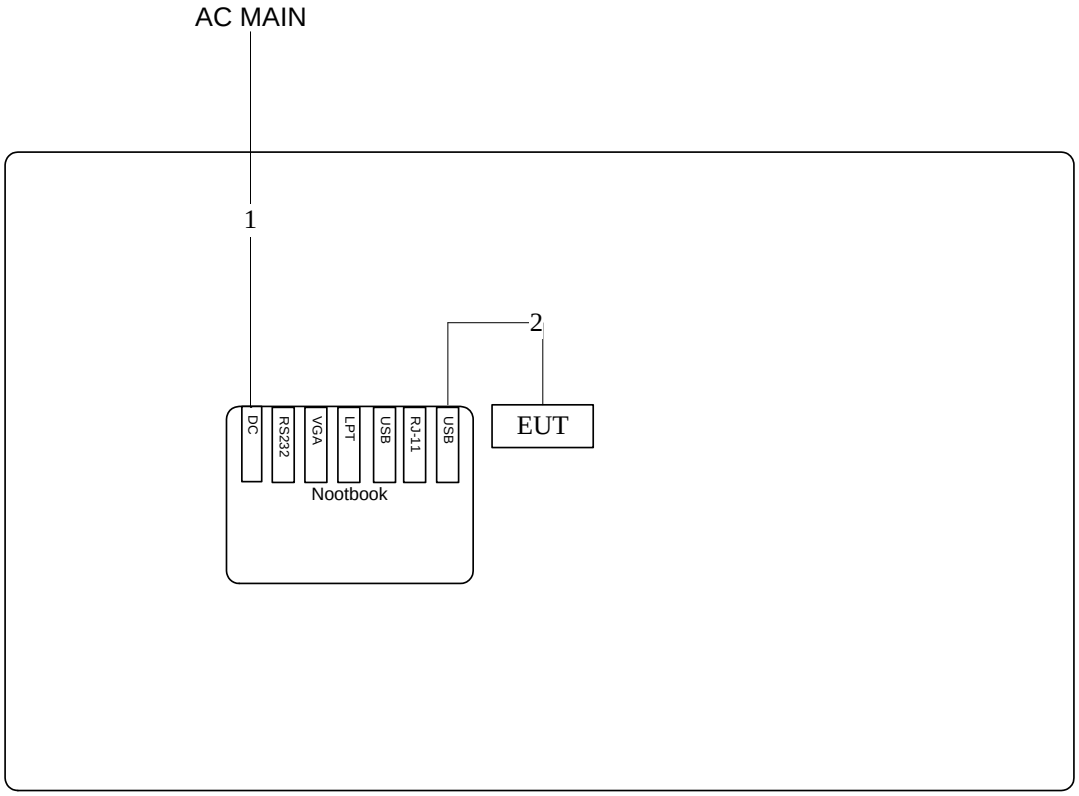
3.9.1. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz



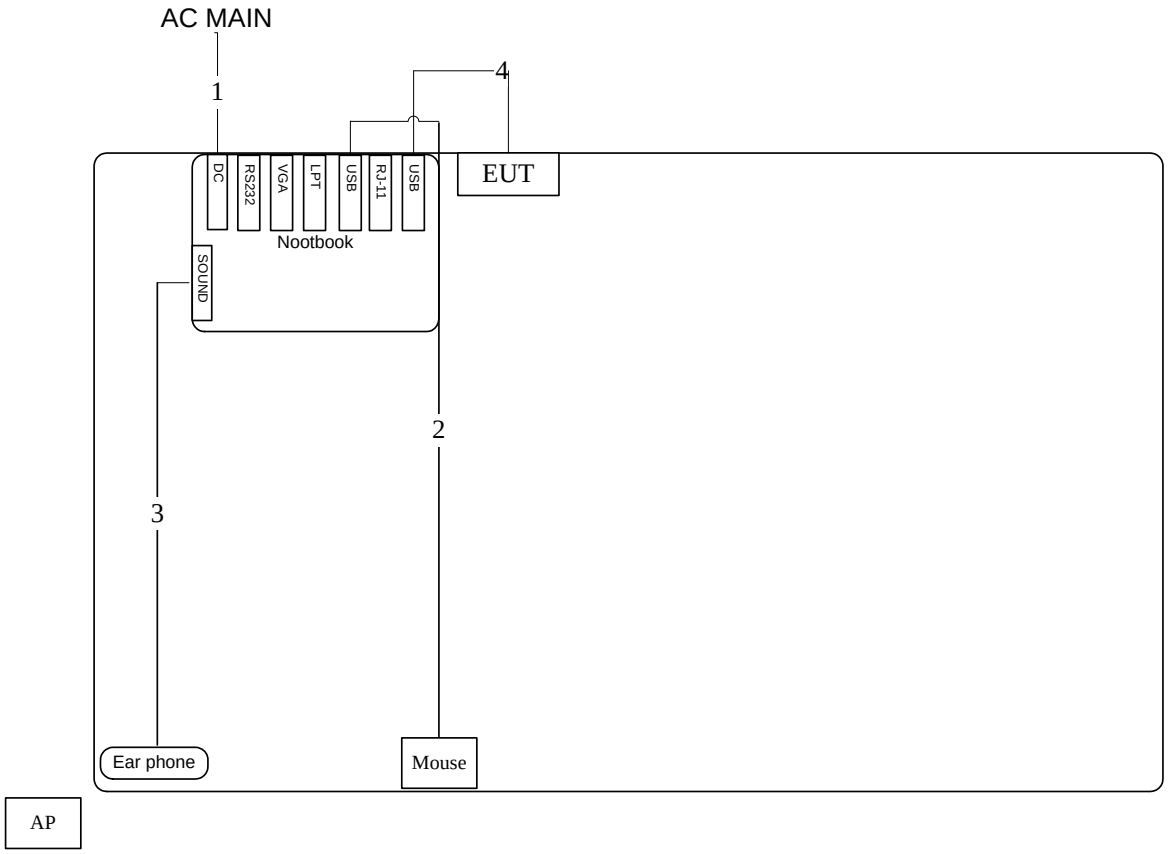
Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6M	-
2	USB cable	No	1.8M	-
3	Audio cable	No	1.1M	-
4	USB cable	No	1.5M	-

Test Configuration: above 1GHz



Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6M	-
2	USB cable	No	1.5M	-

3.9.2. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6M	-
2	USB cable	No	1.8M	-
3	Audio cable	No	1.1M	-
4	USB cable	No	1.5M	-

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

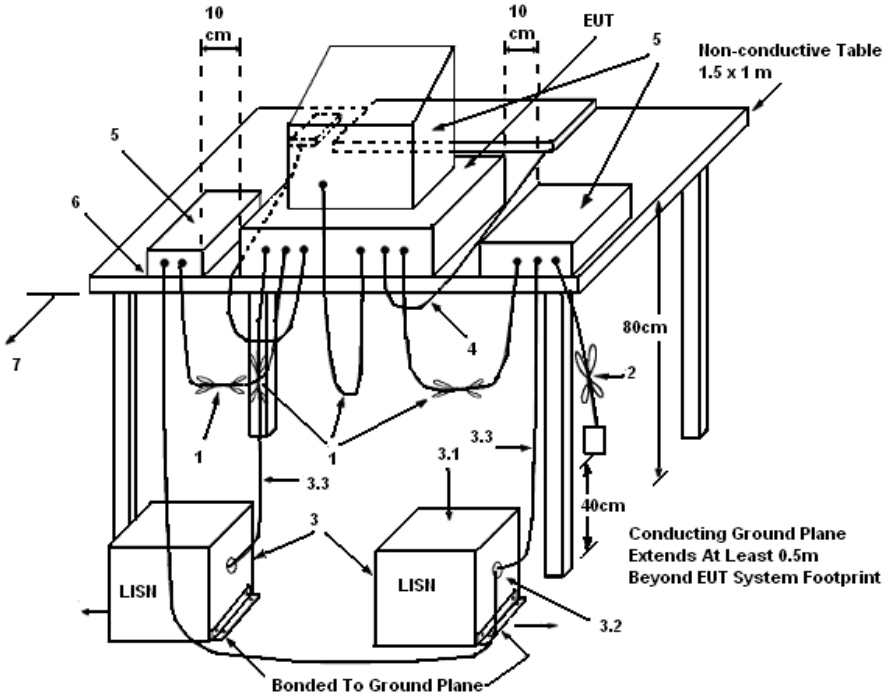
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

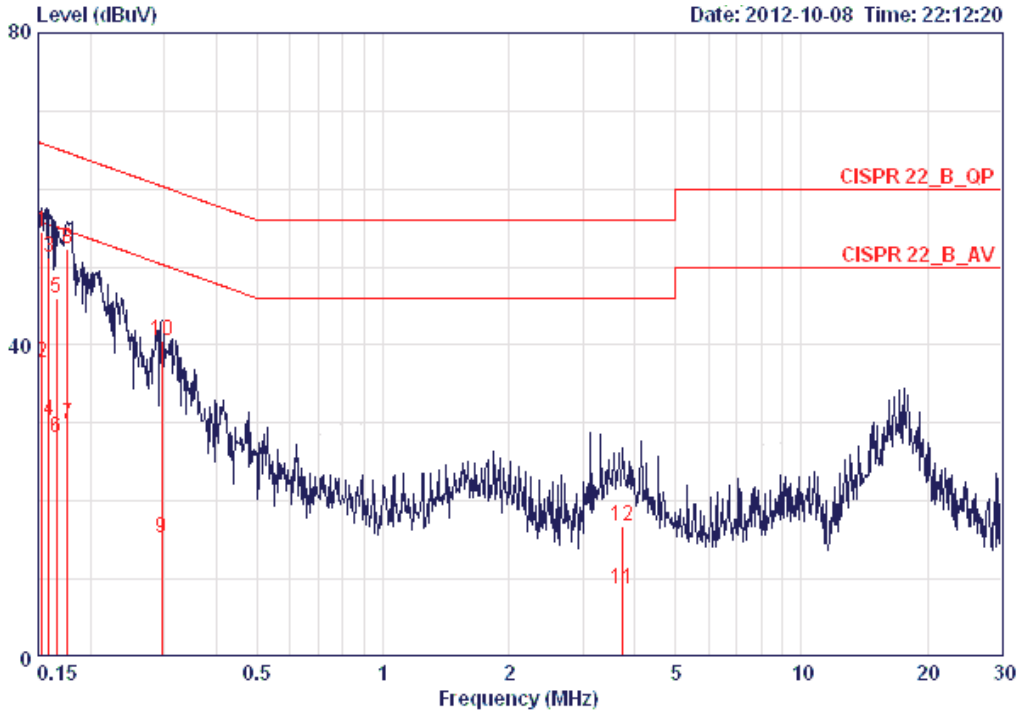
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

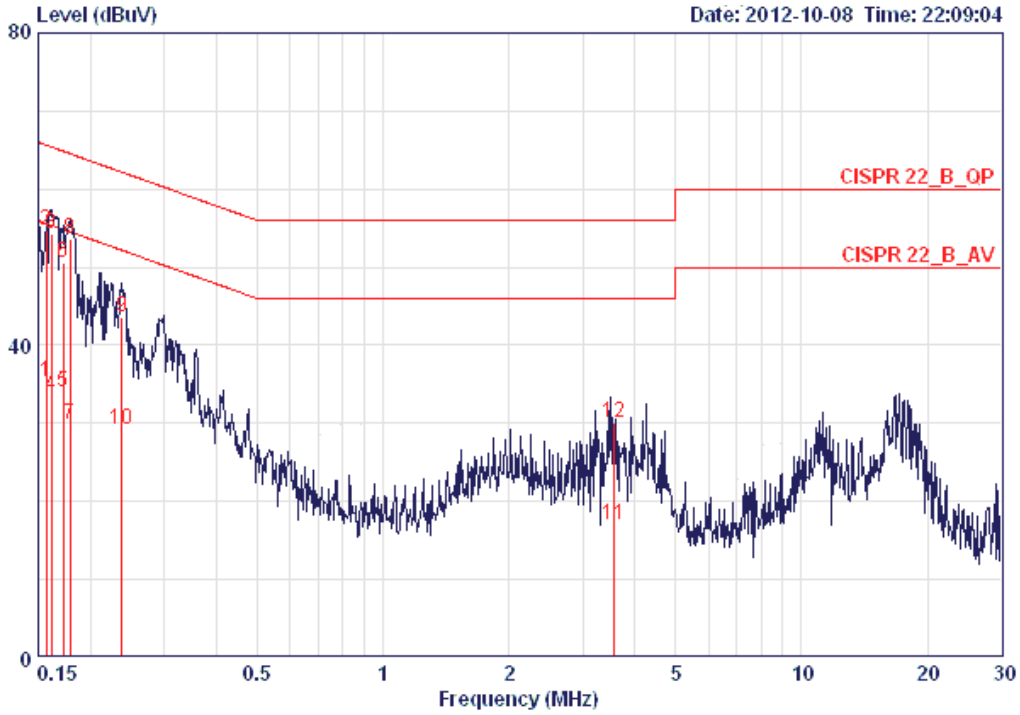
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	25°C	Humidity	61%
Test Engineer	Justin Chiu	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 @	0.15321	54.44	-11.38	65.82	54.08	0.16	0.20	LINE	QP
2	0.15321	37.73	-18.09	55.82	37.37	0.16	0.20	LINE	AVERAGE
3	0.15900	51.20	-14.32	65.52	50.84	0.16	0.20	LINE	QP
4	0.15900	30.39	-25.13	55.52	30.03	0.16	0.20	LINE	AVERAGE
5	0.16589	46.06	-19.10	65.16	45.70	0.16	0.20	LINE	QP
6	0.16589	28.06	-27.10	55.16	27.70	0.16	0.20	LINE	AVERAGE
7	0.17584	29.93	-24.75	54.68	29.58	0.15	0.20	LINE	AVERAGE
8	0.17584	52.36	-12.32	64.68	52.01	0.15	0.20	LINE	QP
9	0.29555	15.26	-35.11	50.37	14.91	0.15	0.20	LINE	AVERAGE
10	0.29555	40.50	-19.87	60.37	40.15	0.15	0.20	LINE	QP
11	3.740	8.82	-37.18	46.00	8.30	0.22	0.30	LINE	AVERAGE
12	3.740	16.76	-39.24	56.00	16.24	0.22	0.30	LINE	QP

Temperature	25°C	Humidity	61%
Test Engineer	Justin Chiu	Phase	Neutral
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	0.15650	35.21	-20.44	55.65	34.93	0.08	0.20	NEUTRAL	AVERAGE
2 @	0.15650	54.73	-10.92	65.65	54.45	0.08	0.20	NEUTRAL	QP
3 @	0.16155	54.29	-11.09	65.38	54.01	0.08	0.20	NEUTRAL	QP
4	0.16155	33.62	-21.76	55.38	33.34	0.08	0.20	NEUTRAL	AVERAGE
5	0.17215	34.04	-20.82	54.86	33.76	0.08	0.20	NEUTRAL	AVERAGE
6	0.17215	50.67	-14.19	64.86	50.39	0.08	0.20	NEUTRAL	QP
7	0.17866	29.86	-24.69	54.55	29.58	0.08	0.20	NEUTRAL	AVERAGE
8 @	0.17866	53.73	-10.82	64.55	53.45	0.08	0.20	NEUTRAL	QP
9	0.23784	43.53	-18.64	62.17	43.25	0.08	0.20	NEUTRAL	QP
10	0.23784	29.24	-22.93	52.17	28.96	0.08	0.20	NEUTRAL	AVERAGE
11	3.550	17.07	-28.93	46.00	16.64	0.13	0.30	NEUTRAL	AVERAGE
12	3.550	29.99	-26.01	56.00	29.56	0.13	0.30	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for 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

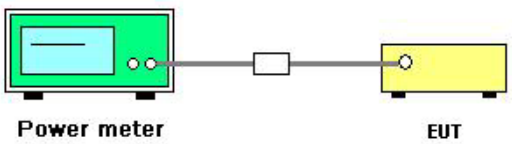
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

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

4.2.3. Test Procedures

1. Test procedures refer KDB558074 v01 r02 section 8.2.3 option 3.
2. This procedure provides an alternative for determining the RMS output power using a broadband RF average power meter with a thermocouple detector.

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 Maximum Conducted Output Power

Temperature	26°C	Humidity	63%
Test Engineer	Denis Su	Configurations	IEEE 802.11n
Test Date	Oct. 24, 2012		

Configuration IEEE 802.11n MCS8 20MHz / Ant.1+Ant.2

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
1	2412 MHz	19.36	18.55	21.98	30.00	Complies
6	2437 MHz	19.78	18.68	22.28	30.00	Complies
11	2462 MHz	19.48	19.25	22.38	30.00	Complies

Configuration IEEE 802.11n MCS15 20MHz / Ant.1+Ant.2

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
1	2412 MHz	19.16	19.21	22.20	30.00	Complies
6	2437 MHz	19.06	18.63	21.86	30.00	Complies
11	2462 MHz	19.11	18.72	21.93	30.00	Complies

Configuration IEEE 802.11n MCS8 40MHz / Ant.1+Ant.2

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
3	2422 MHz	19.18	18.02	21.65	30.00	Complies
6	2437 MHz	18.88	17.86	21.41	30.00	Complies
9	2452 MHz	18.40	16.80	20.68	30.00	Complies

Configuration IEEE 802.11n MCS15 40MHz / Ant.1+Ant.2

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
3	2422 MHz	18.55	18.12	21.35	30.00	Complies
6	2437 MHz	17.96	18.11	21.05	30.00	Complies
9	2452 MHz	17.58	17.26	20.43	30.00	Complies

Temperature	26°C	Humidity	63%
Test Engineer	Denis Su	Configurations	IEEE 802.11b/g
Test Date	Oct. 24, 2012		

Configuration IEEE 802.11b / 1Mbps / Ant.2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	14.55	30.00	Complies
6	2437 MHz	13.82	30.00	Complies
11	2462 MHz	14.12	30.00	Complies

Configuration IEEE 802.11b / 11Mbps / Ant.2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	15.93	30.00	Complies
6	2437 MHz	15.26	30.00	Complies
11	2462 MHz	15.16	30.00	Complies

Configuration IEEE 802.11g / 6Mbps / Ant.2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	20.03	30.00	Complies
6	2437 MHz	20.28	30.00	Complies
11	2462 MHz	18.76	30.00	Complies

Configuration IEEE 802.11g / 54Mbps / Ant.2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	19.32	30.00	Complies
6	2437 MHz	19.37	30.00	Complies
11	2462 MHz	18.68	30.00	Complies

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 8 dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.2. Measuring Instruments and Setting

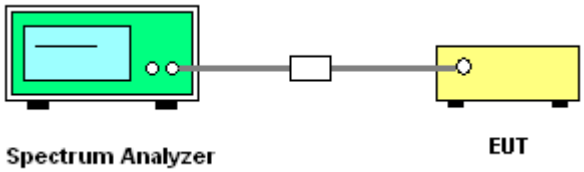
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the span to 1.5 times the DTS channel bandwidth.
RB	100 kHz
VB	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto couple

4.3.3. Test Procedures

1. Test procedures refer KDB558074 v01 r02 section 9.1 option 1
2. Spectrum analyzer must be capable of utilizing a number of measurement points in each sweep that is greater than or equal to twice the span/RBW in order to ensure bin-to-bin spacing of ≤ RBW/2 so that narrowband signals are not lost between frequency bins.
3. 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.
4. 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).
5. Use the peak marker function to determine the maximum level in any 100 kHz band segment within the fundamental EBW.
6. 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).
7. The resulting PSD level must be ≤ 8 dBm.
8. 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	26°C	Humidity	63%
Test Engineer	Denis Su	Configurations	IEEE 802.11n

Configuration IEEE 802.11n MCS8 20MHz / Ant.1+Ant.2

Channel	Frequency	Power Density (dBm/100kHz)		BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)		Single Port Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2		Ant. 1	Ant. 2		
1	2412 MHz	4.01	4.91	-15.23	-11.22	-10.32	4.99	Complies
6	2437 MHz	4.07	5.19	-15.23	-11.16	-10.04	4.99	Complies
11	2462 MHz	4.40	5.32	-15.23	-10.83	-9.91	4.99	Complies

Note: PSD Limit =(8dBm/MHz –(10log(2))=4.99dBm/MHz

Configuration IEEE 802.11n MCS15 20MHz / Ant.1+Ant.2

Channel	Frequency	Power Density (dBm/100kHz)		BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)		Single Port Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2		Ant. 1	Ant. 2		
1	2412 MHz	6.17	6.93	-15.23	-9.06	-8.30	4.99	Complies
6	2437 MHz	6.05	5.03	-15.23	-9.18	-10.20	4.99	Complies
11	2462 MHz	5.61	5.88	-15.23	-9.62	-9.35	4.99	Complies

Note: PSD Limit =(8dBm/MHz –(10log(2))=4.99dBm/MHz

Configuration IEEE 802.11n MCS8 40MHz / Ant.1+Ant.2

Channel	Frequency	Power Density (dBm/100kHz)		BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)		Single Port Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2		Ant. 1	Ant. 2		
3	2422 MHz	1.94	2.46	-15.23	-13.29	-12.77	4.99	Complies
6	2437 MHz	1.34	1.67	-15.23	-13.89	-13.56	4.99	Complies
9	2452 MHz	-0.06	0.43	-15.23	-15.29	-14.80	4.99	Complies

Note: PSD Limit =(8dBm/MHz –(10log(2))=4.99dBm/MHz

Configuration IEEE 802.11n MCS15 40MHz / Ant.1+Ant.2

Channel	Frequency	Power Density (dBm/100kHz)		BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)		Single Port Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2		Ant. 1	Ant. 2		
3	2422 MHz	2.44	1.66	-15.23	-12.79	-13.57	4.99	Complies
6	2437 MHz	2.36	2.28	-15.23	-12.87	-12.95	4.99	Complies
9	2452 MHz	2.09	1.10	-15.23	-13.14	-14.13	4.99	Complies

Note: PSD Limit =(8dBm/MHz –(10log(2))=4.99dBm/MHz

All the test values were listed in the report.

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

Temperature	26°C	Humidity	63%
Test Engineer	Denis Su	Configurations	IEEE 802.11b/g

Configuration IEEE 802.11b / 1Mbps / Ant.2

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	4.31	-15.23	-10.92	8.00	Complies
6	2437 MHz	3.54	-15.23	-11.69	8.00	Complies
11	2462 MHz	3.50	-15.23	-11.73	8.00	Complies

Configuration IEEE 802.11b / 11Mbps / Ant.2

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	5.58	-15.23	-9.65	8.00	Complies
6	2437 MHz	5.22	-15.23	-10.01	8.00	Complies
11	2462 MHz	4.96	-15.23	-10.27	8.00	Complies

Configuration IEEE 802.11g / 6Mbps / Ant.2

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	5.20	-15.23	-10.03	8.00	Complies
6	2437 MHz	5.35	-15.23	-9.88	8.00	Complies
11	2462 MHz	4.11	-15.23	-11.12	8.00	Complies

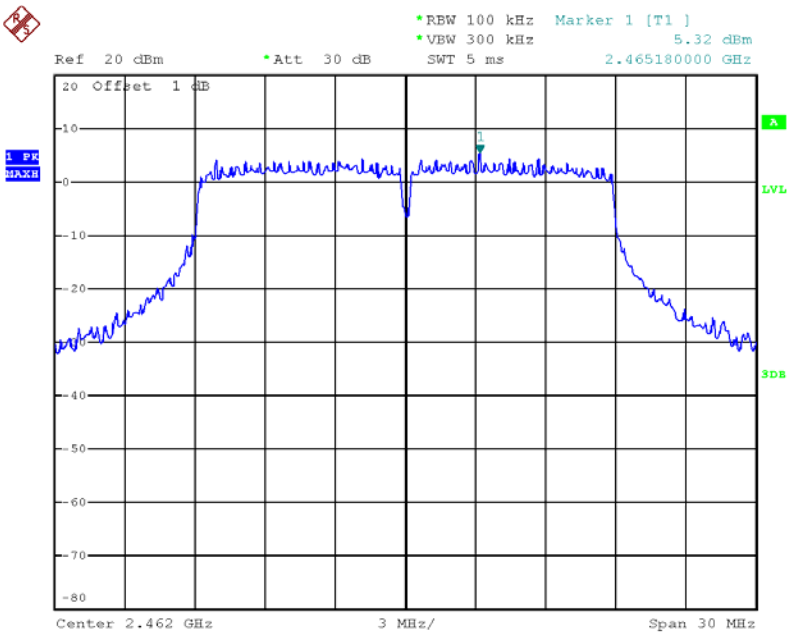
Configuration IEEE 802.11g / 54Mbps / Ant.2

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	7.17	-15.23	-8.06	8.00	Complies
6	2437 MHz	7.34	-15.23	-7.89	8.00	Complies
11	2462 MHz	6.33	-15.23	-8.90	8.00	Complies

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

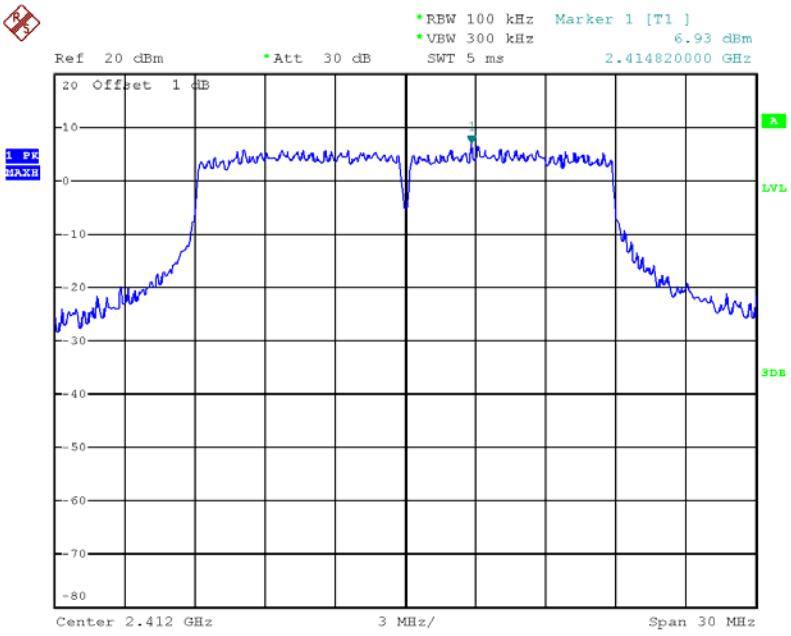
For plots, only the channel with maximum results was shown.

Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 2 / 2462 MHz



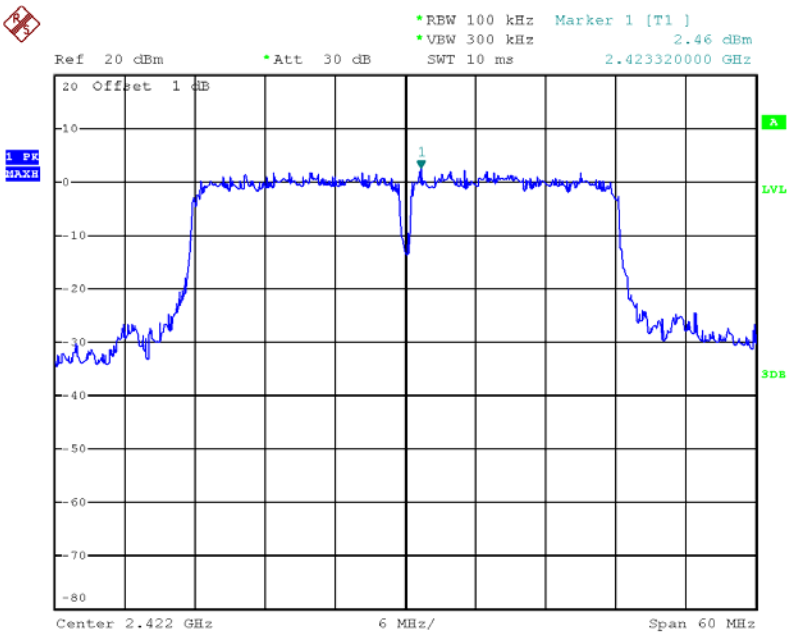
Date: 24.OCT.2012 18:45:16

Power Density Plot on Configuration IEEE 802.11n MCS15 20MHz / Ant. 2 / 2412 MHz



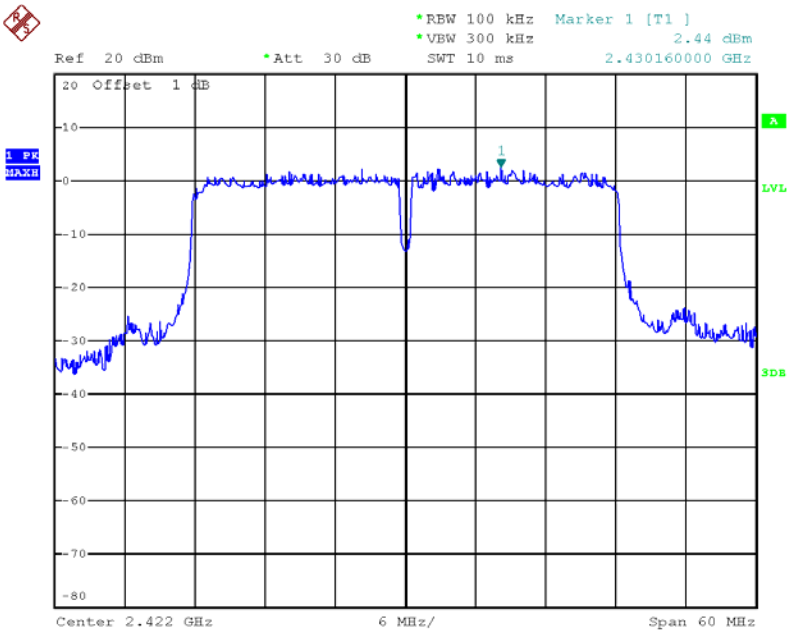
Date: 24.OCT.2012 18:28:20

Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 2 / 2422 MHz



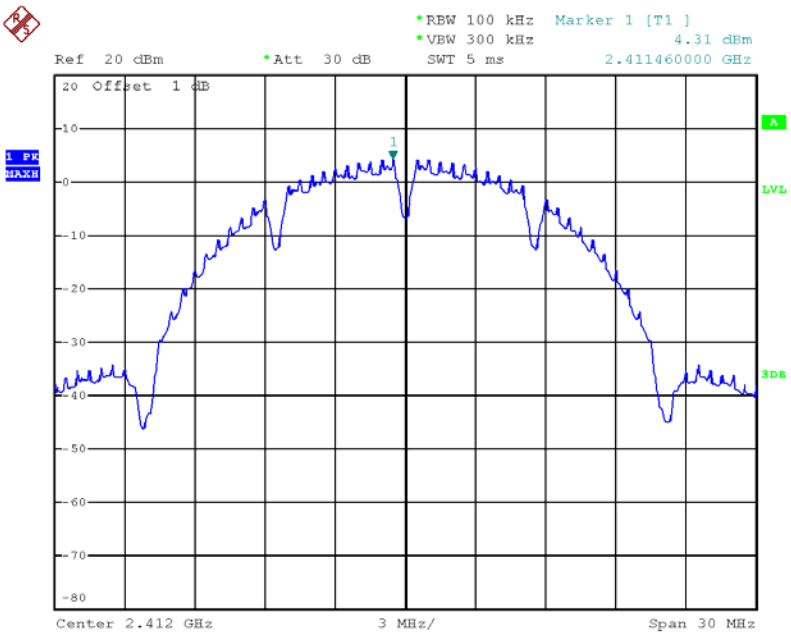
Date: 24.OCT.2012 18:36:48

Power Density Plot on Configuration IEEE 802.11n MCS15 40MHz / Ant. 1 / 2422 MHz



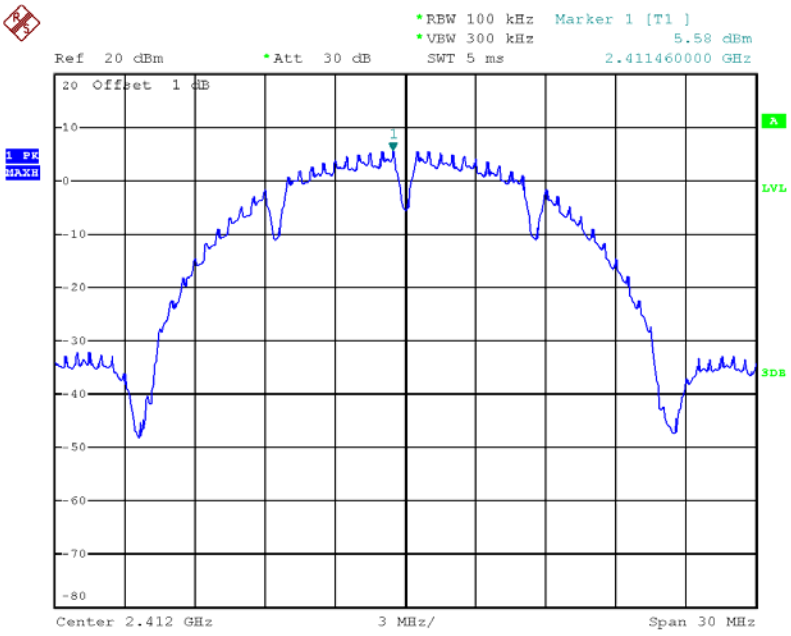
Date: 24.OCT.2012 18:35:08

Power Density Plot on Configuration IEEE 802.11b / 1Mbps / Ant.2 / 2412 MHz



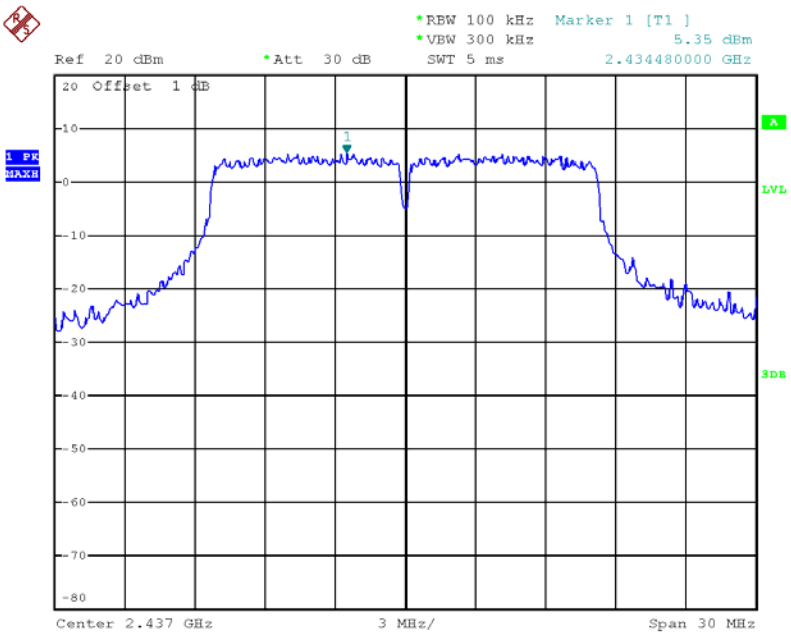
Date: 24.OCT.2012 18:17:27

Power Density Plot on Configuration IEEE 802.11b / 11Mbps / Ant.2 / 2412 MHz



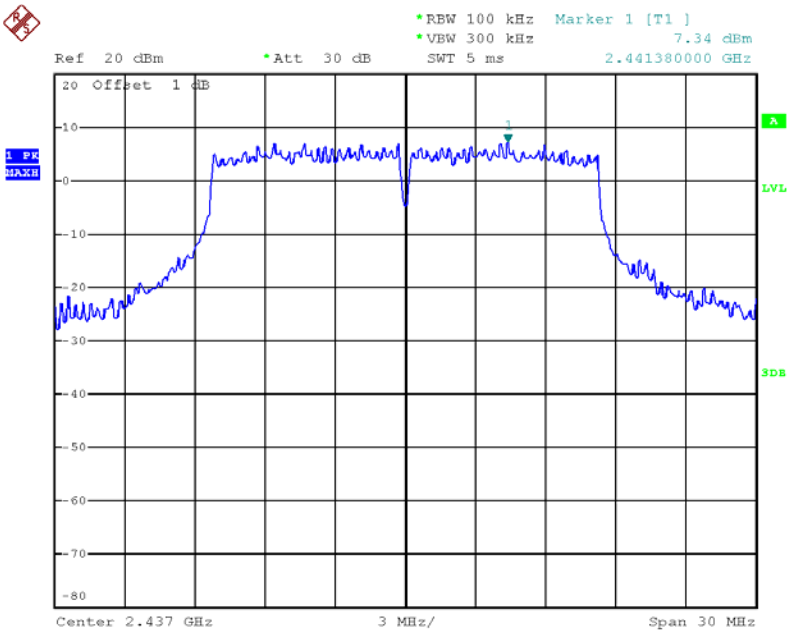
Date: 24.OCT.2012 18:26:37

Power Density Plot on Configuration IEEE 802.11g / 6Mbps / Ant.2 / 2437 MHz



Date: 24.OCT.2012 18:20:41

Power Density Plot on Configuration IEEE 802.11g / 54Mbps / Ant.2 / 2437 MHz



Date: 24.OCT.2012 18:23:46

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

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

4.4.2. Measuring Instruments and Setting

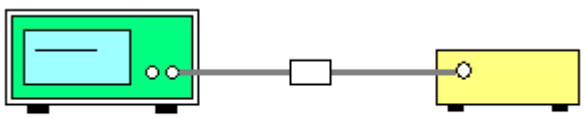
Please refer to section 5 of equipments list in this report. The following table is the setting of the Spectrum Analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RB	1-5 % or DTS BW, not exceed 100KHz
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 system 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	26°C	Humidity	63%
Test Engineer	Denis Su	Configurations	IEEE 802.11n

Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 + Ant. 2

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	17.76	17.84	500	Complies
6	2437 MHz	17.76	17.68	500	Complies
11	2462 MHz	17.68	17.68	500	Complies

Configuration IEEE 802.11n MCS15 20MHz / Ant. 1 + Ant. 2

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

Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 + Ant. 2

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.32	36.16	500	Complies
6	2437 MHz	36.32	36.16	500	Complies
9	2452 MHz	36.32	36.00	500	Complies

Configuration IEEE 802.11n MCS15 40MHz / Ant. 1 + Ant. 2

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.32	36.32	500	Complies
6	2437 MHz	36.48	36.32	500	Complies
9	2452 MHz	36.32	36.16	500	Complies

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

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

Temperature	26°C	Humidity	63%
Test Engineer	Denis Su	Configurations	IEEE 802.11b/g

Configuration IEEE 802.11b / 1Mbps / Ant.2

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	10.08	15.28	500	Complies
6	2437 MHz	10.08	15.28	500	Complies
11	2462 MHz	10.08	15.28	500	Complies

Configuration IEEE 802.11b / 11Mbps / Ant.2

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	10.08	15.36	500	Complies
6	2437 MHz	10.08	15.36	500	Complies
11	2462 MHz	10.08	15.28	500	Complies

Configuration IEEE 802.11g / 6Mbps / Ant.2

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.48	16.56	500	Complies
6	2437 MHz	16.56	16.56	500	Complies
11	2462 MHz	16.48	16.48	500	Complies

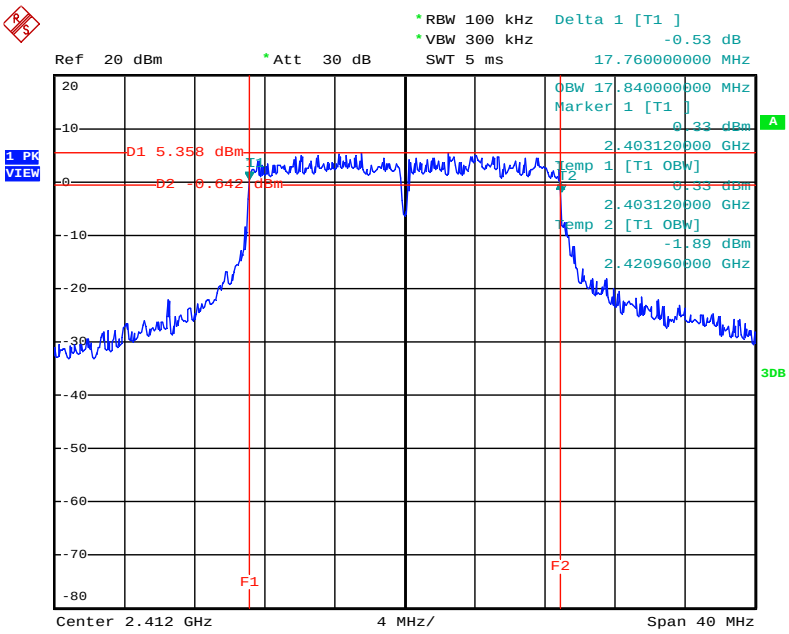
Configuration IEEE 802.11g / 54Mbps / Ant.2

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.48	16.48	500	Complies
6	2437 MHz	16.48	16.48	500	Complies
11	2462 MHz	16.48	16.48	500	Complies

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

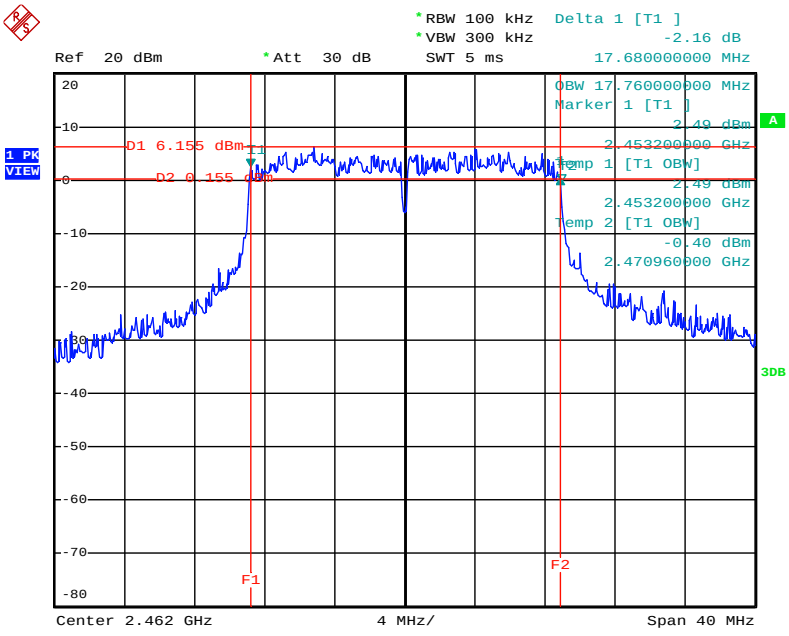
For plots, only the channel with maximum results was shown.

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



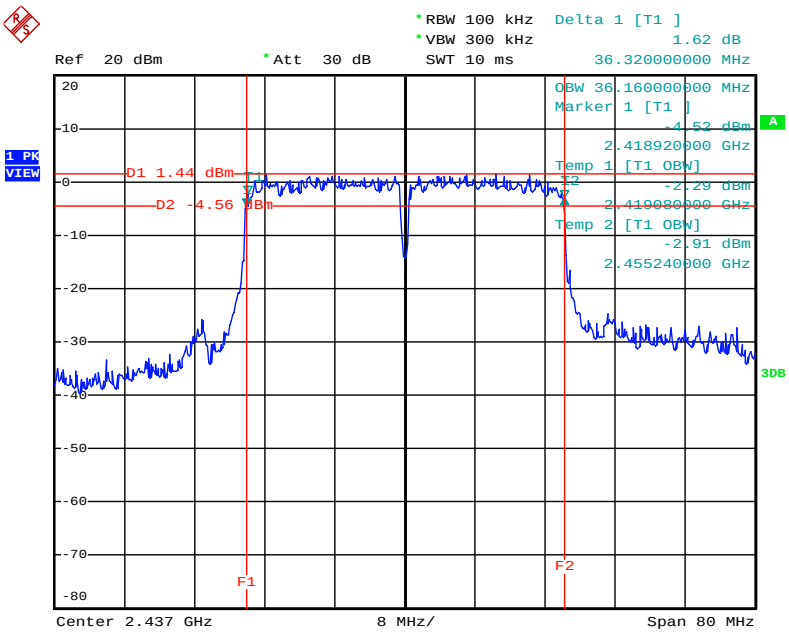
Date: 24.OCT.2012 18:05:45

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS15 20MHz / Ant. 1 + Ant. 2 / 2462 MHz



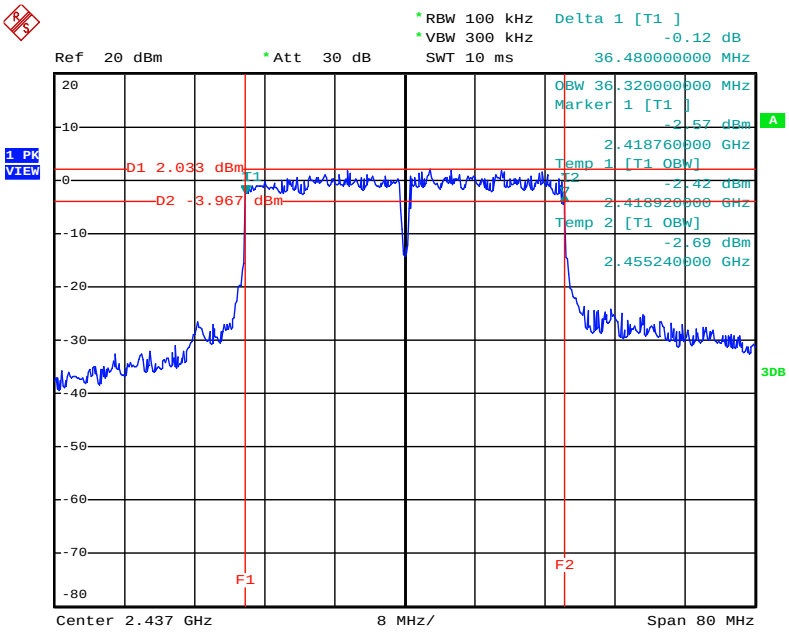
Date: 24.OCT.2012 18:08:27

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 + Ant. 2 / 2437 MHz



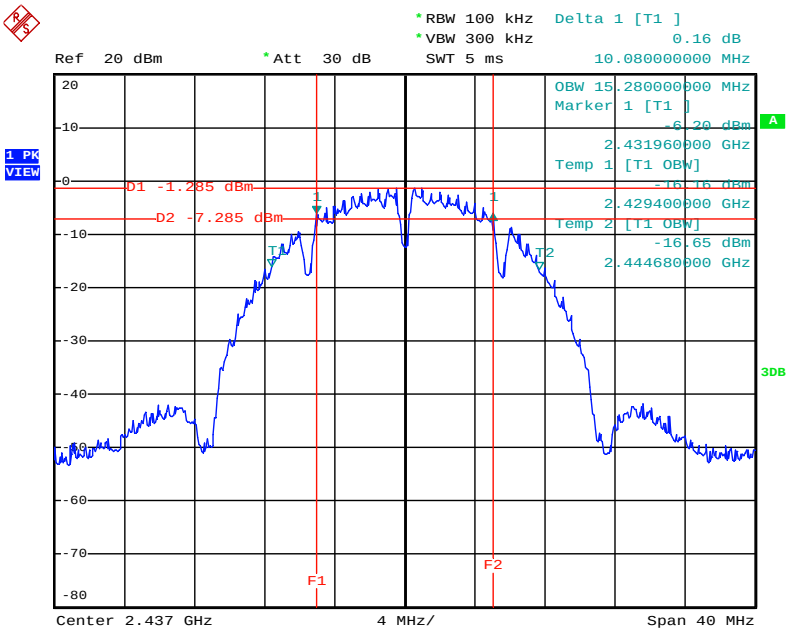
Date: 24.OCT.2012 18:10:30

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS15 40MHz / Ant. 1 + Ant. 2 / 2437 MHz



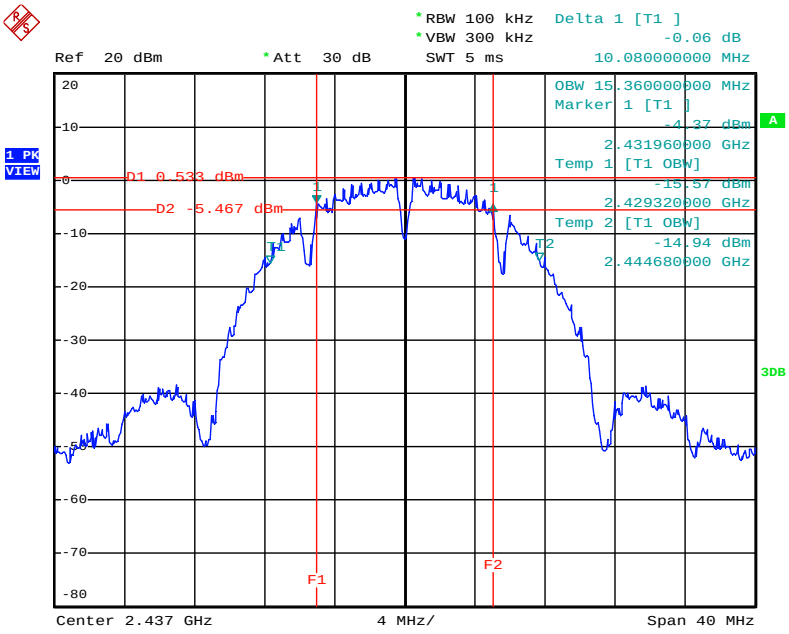
Date: 24.OCT.2012 18:11:03

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 1Mbps / Ant.2 / 2437 MHz



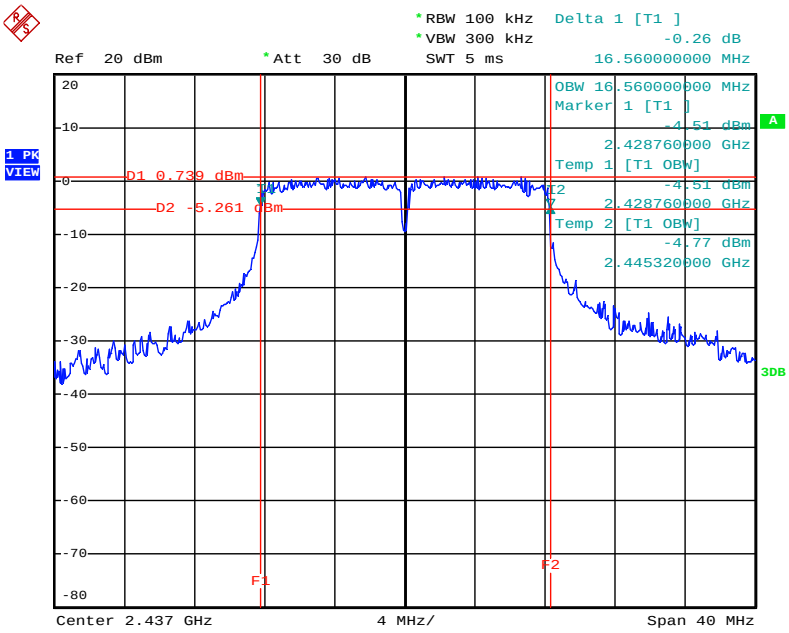
Date: 24.OCT.2012 18:00:12

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 11Mbps / Ant.2 / 2437 MHz



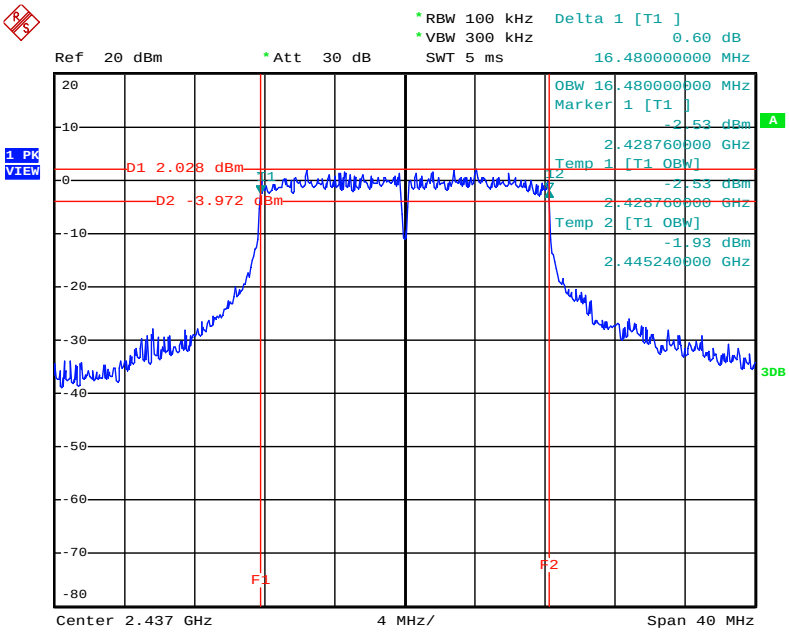
Date: 24.OCT.2012 18:01:25

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 1Mbps / Ant.2 / 2437 MHz



Date: 24.OCT.2012 18:04:11

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 11Mbps / Ant.2 / 2437 MHz



Date: 24.OCT.2012 18:02:48

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	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 3MHz for peak

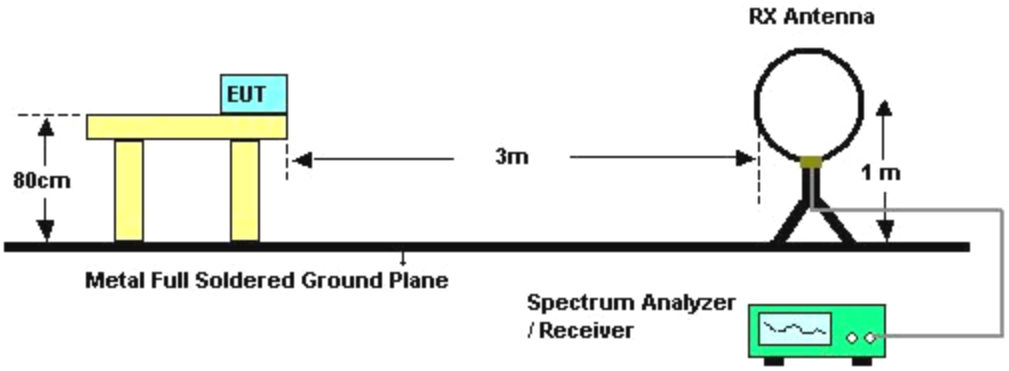
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.5.3. Test Procedures

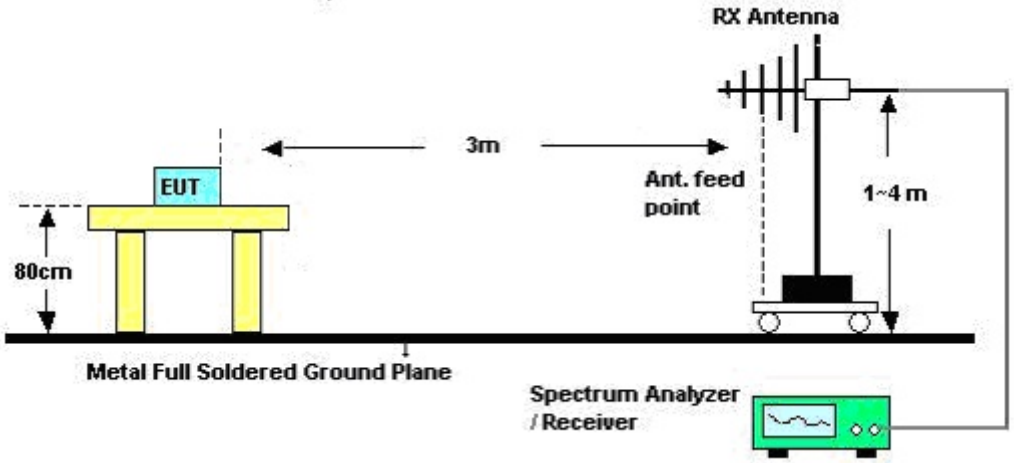
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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	26°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	Normal Link
Test Date	Oct. 09, 2012		

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

Note:

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

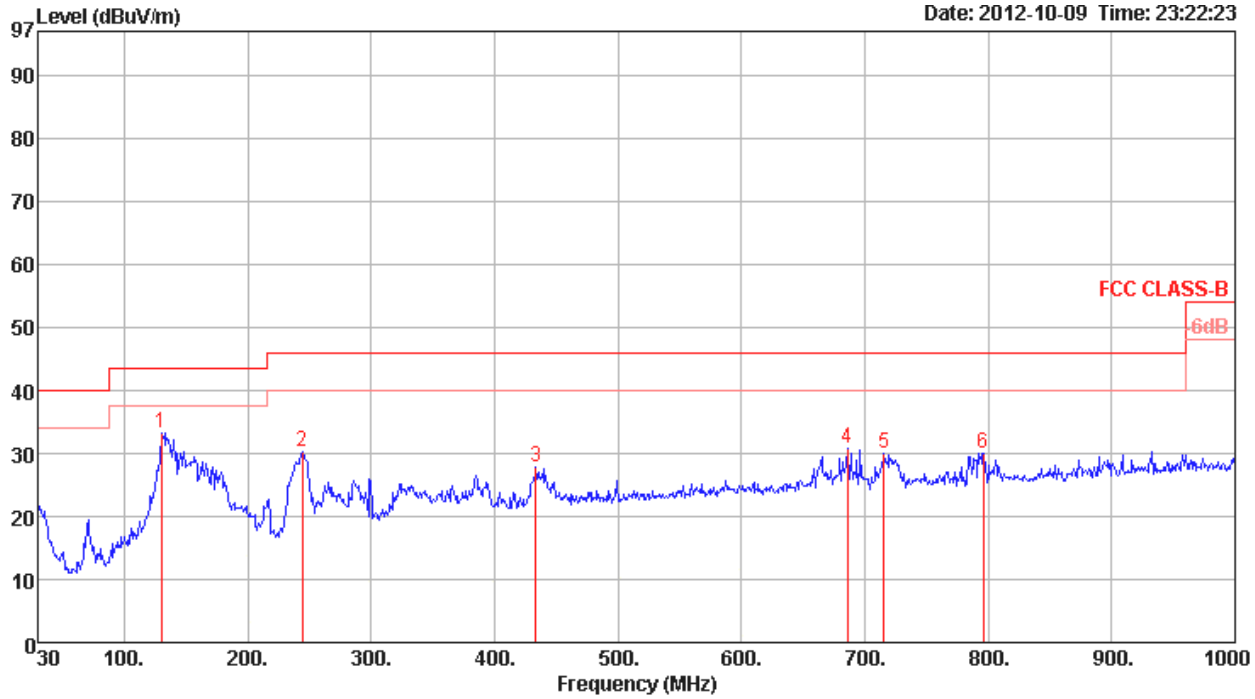
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

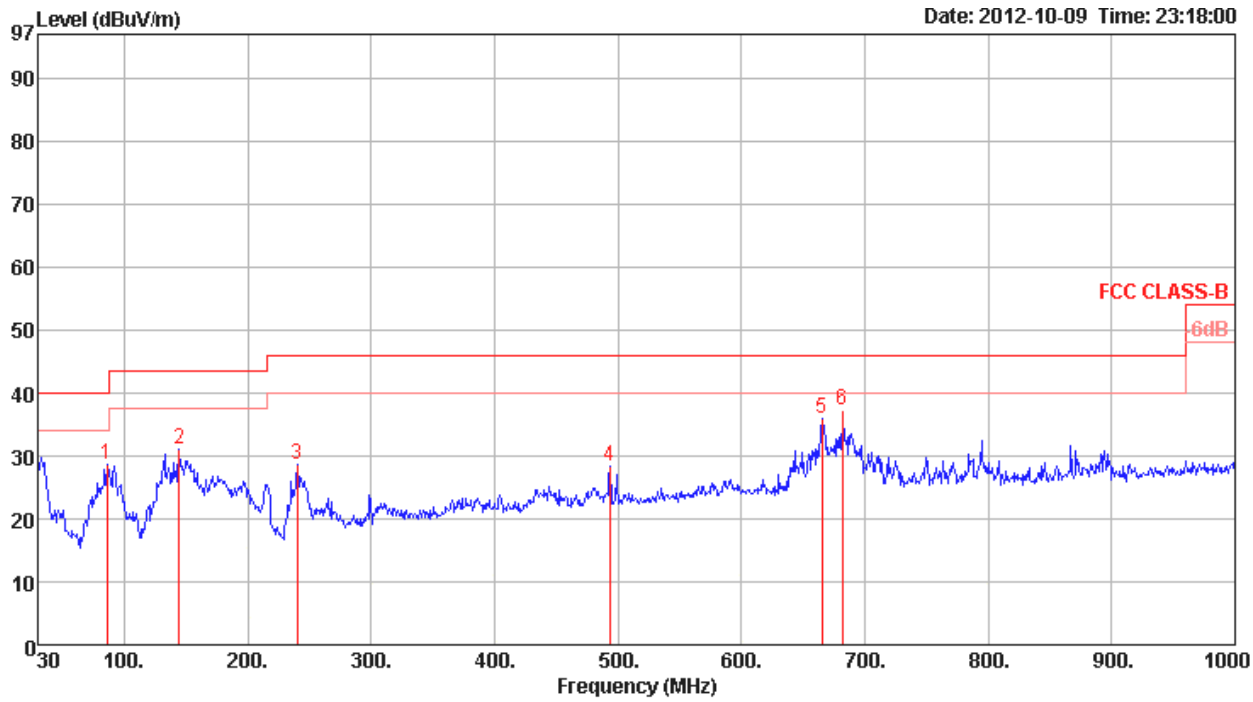
Temperature	26°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	Normal Link

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	129.91	33.15	43.50	-10.35	47.04	1.30	12.26	27.45	QP	100	178	HORIZONTAL
2	244.37	30.20	46.00	-15.80	42.99	1.88	12.34	27.01	QP	100	188	HORIZONTAL
3	433.52	27.90	46.00	-18.10	36.57	2.50	16.59	27.76	QP	100	66	HORIZONTAL
4	685.72	30.82	46.00	-15.18	36.43	3.36	19.04	28.01	QP	100	356	HORIZONTAL
5	715.79	29.92	46.00	-16.08	35.28	3.37	19.20	27.93	QP	100	358	HORIZONTAL
6	796.30	30.08	46.00	-15.92	34.64	3.32	19.74	27.62	QP	100	166	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	86.26	28.53	40.00	-11.47	46.83	1.10	8.26	27.66	QP	100	350	VERTICAL
2	144.46	31.03	43.50	-12.47	44.87	1.42	12.12	27.38	QP	100	356	VERTICAL
3	240.49	28.57	46.00	-17.43	41.68	1.86	12.05	27.02	QP	100	5	VERTICAL
4	493.66	28.43	46.00	-17.57	36.29	2.69	17.52	28.07	QP	100	180	VERTICAL
5	665.35	35.89	46.00	-10.11	41.50	3.44	18.98	28.03	QP	100	12	VERTICAL
6	681.84	37.32	46.00	-8.68	42.94	3.37	19.03	28.02	QP	100	22	VERTICAL

Note:

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

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

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

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

Temperature	26°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / Ant. 1 + Ant. 2
Test Date	Oct. 08, 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	4822.30	49.22	74.00	-24.78	47.88	3.31	33.06	35.03	Peak	100	167	HORIZONTAL
2	4824.70	36.16	54.00	-17.84	34.82	3.31	33.06	35.03	Average	100	167	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	4823.40	36.12	54.00	-17.88	34.78	3.31	33.06	35.03	Average	100	77	VERTICAL
2	4825.00	51.06	74.00	-22.94	49.72	3.31	33.06	35.03	Peak	100	77	VERTICAL

Temperature	26°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / Ant. 1 + Ant. 2
Test Date	Oct. 08, 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	4865.10	48.40	74.00	-25.60	46.98	3.33	33.12	35.03	Peak	100	19	HORIZONTAL
2	4873.80	34.83	54.00	-19.17	33.37	3.33	33.16	35.03	Average	100	19	HORIZONTAL
3	7309.11	32.47	54.00	-21.53	27.85	4.06	35.96	35.40	Average	100	115	HORIZONTAL
4	7309.26	47.29	74.00	-26.71	42.67	4.06	35.96	35.40	Peak	100	115	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	4873.60	40.22	54.00	-13.78	38.76	3.33	33.16	35.03	Average	100	210	VERTICAL
2	4874.90	51.01	74.00	-22.99	49.55	3.33	33.16	35.03	Peak	100	210	VERTICAL
3	7302.30	43.99	74.00	-30.01	39.41	4.06	35.92	35.40	Peak	100	33	VERTICAL
4	7306.60	32.93	54.00	-21.07	28.35	4.06	35.92	35.40	Average	100	33	VERTICAL

Temperature	26℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 11 / Ant. 1 + Ant. 2
Test Date	Oct. 08, 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	4924.60	39.14	54.00	-14.86	37.54	3.35	33.26	35.01	Average	100	340	HORIZONTAL
2	4924.90	52.07	74.00	-21.93	50.47	3.35	33.26	35.01	Peak	100	340	HORIZONTAL
3	7384.12	46.10	74.00	-27.90	41.35	4.06	36.09	35.40	Peak	100	80	HORIZONTAL
4	7385.61	33.55	54.00	-20.45	28.80	4.06	36.09	35.40	Average	100	80	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	4923.20	39.09	54.00	-14.91	37.49	3.35	33.26	35.01	Average	100	345	VERTICAL
2	4925.80	51.58	74.00	-22.42	49.98	3.35	33.26	35.01	Peak	100	345	VERTICAL
3	7385.50	35.78	54.00	-18.22	31.03	4.06	36.09	35.40	Average	100	82	VERTICAL
4	7385.50	47.83	74.00	-26.17	43.08	4.06	36.09	35.40	Peak	100	82	VERTICAL

Temperature	26℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS15 20MHz Ch 1 / Ant. 1 + Ant. 2
Test Date	Oct. 23, 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	4822.10	49.89	74.00	-24.11	48.55	3.31	33.06	35.03	Peak	100	307	HORIZONTAL
2	4824.30	37.13	54.00	-16.87	35.79	3.31	33.06	35.03	Average	100	307	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	4821.90	50.11	74.00	-23.89	48.77	3.31	33.06	35.03	Peak	100	276	VERTICAL
2	4824.40	37.90	54.00	-16.10	36.56	3.31	33.06	35.03	Average	100	276	VERTICAL

Temperature	26°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS15 20MHz Ch 6 / Ant. 1 + Ant. 2
Test Date	Oct. 23, 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	4873.80	50.99	74.00	-23.01	49.53	3.33	33.16	35.03	Peak	100	329	HORIZONTAL
2	4874.30	38.72	54.00	-15.28	37.26	3.33	33.16	35.03	Average	100	329	HORIZONTAL
3	7289.80	43.46	74.00	-30.54	38.91	4.06	35.89	35.40	Peak	100	290	HORIZONTAL
4	7301.70	31.14	54.00	-22.86	26.56	4.06	35.92	35.40	Average	100	290	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	4874.20	38.32	54.00	-15.68	36.86	3.33	33.16	35.03	Average	100	276	VERTICAL
2	4875.40	51.68	74.00	-22.32	50.22	3.33	33.16	35.03	Peak	100	276	VERTICAL
3	7313.10	37.65	54.00	-16.35	33.03	4.06	35.96	35.40	Average	147	286	VERTICAL
4	7316.60	50.31	74.00	-23.69	45.69	4.06	35.96	35.40	Peak	147	286	VERTICAL

Temperature	26°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS15 20MHz Ch 11 / Ant. 1 + Ant. 2
Test Date	Oct. 23, 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	4923.90	48.91	74.00	-25.09	47.31	3.35	33.26	35.01	Peak	100	328	HORIZONTAL
2	4924.40	36.26	54.00	-17.74	34.66	3.35	33.26	35.01	Average	100	328	HORIZONTAL
3	7380.40	32.43	54.00	-21.57	27.68	4.06	36.09	35.40	Average	100	241	HORIZONTAL
4	7385.20	44.70	74.00	-29.30	39.95	4.06	36.09	35.40	Peak	100	241	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	4924.10	50.54	74.00	-23.46	48.94	3.35	33.26	35.01	Peak	117	325	VERTICAL
2	4924.20	38.34	54.00	-15.66	36.74	3.35	33.26	35.01	Average	117	325	VERTICAL
3	7386.40	37.69	54.00	-16.31	32.94	4.06	36.09	35.40	Average	140	275	VERTICAL
4	7392.30	50.65	74.00	-23.35	45.90	4.06	36.09	35.40	Peak	140	275	VERTICAL

Temperature	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / Ant. 1 + Ant. 2
Test Date	Oct. 08, 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	4847.10	37.16	54.00	-16.84	35.78	3.32	33.09	35.03	Average	100	267	HORIZONTAL
2	4854.80	44.63	74.00	-29.37	43.22	3.32	33.12	35.03	Peak	100	267	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	4847.10	39.11	54.00	-14.89	37.73	3.32	33.09	35.03	Average	100	197	VERTICAL
2	4848.40	50.93	74.00	-23.07	49.55	3.32	33.09	35.03	Peak	100	197	VERTICAL

Temperature	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / Ant. 1 + Ant. 2
Test Date	Oct. 08, 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	4858.50	47.43	74.00	-26.57	46.02	3.32	33.12	35.03	Peak	100	37	HORIZONTAL
2	4871.30	36.52	54.00	-17.48	35.06	3.33	33.16	35.03	Average	100	37	HORIZONTAL
3	7310.89	33.66	54.00	-20.34	29.04	4.06	35.96	35.40	Average	100	73	HORIZONTAL
4	7313.25	47.60	74.00	-26.40	42.98	4.06	35.96	35.40	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	4878.50	38.83	54.00	-15.17	37.37	3.33	33.16	35.03	Average	100	31	VERTICAL
2	4878.90	46.55	74.00	-27.45	45.09	3.33	33.16	35.03	Peak	100	31	VERTICAL
3	7311.88	34.49	54.00	-19.51	29.87	4.06	35.96	35.40	Average	100	205	VERTICAL
4	7313.05	47.88	74.00	-26.12	43.26	4.06	35.96	35.40	Peak	100	205	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / Ant. 1 + Ant. 2
Test Date	Oct. 08, 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	4907.30	34.97	54.00	-19.03	33.42	3.34	33.23	35.02	Average	100	360	HORIZONTAL
2	4908.40	46.91	74.00	-27.09	45.36	3.34	33.23	35.02	Peak	100	360	HORIZONTAL
3	7355.18	33.58	54.00	-20.42	28.90	4.06	36.02	35.40	Average	100	308	HORIZONTAL
4	7358.24	46.54	74.00	-27.46	41.86	4.06	36.02	35.40	Peak	100	308	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4905.20	48.53	74.00	-25.47	46.98	3.34	33.23	35.02	Peak	100	203	VERTICAL
2	4910.40	37.37	54.00	-16.63	35.82	3.34	33.23	35.02	Average	100	203	VERTICAL
3	7354.60	34.42	54.00	-19.58	29.74	4.06	36.02	35.40	Average	100	67	VERTICAL
4	7357.47	46.94	74.00	-27.06	42.26	4.06	36.02	35.40	Peak	100	67	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS15 40MHz Ch 3 / Ant. 1 + Ant. 2
Test Date	Oct. 23, 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	4841.80	48.30	74.00	-25.70	46.92	3.32	33.09	35.03	Peak	100	327	HORIZONTAL
2	4844.50	35.53	54.00	-18.47	34.15	3.32	33.09	35.03	Average	100	327	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	4845.00	36.02	54.00	-17.98	34.64	3.32	33.09	35.03	Average	100	275	VERTICAL
2	4845.30	48.54	74.00	-25.46	47.16	3.32	33.09	35.03	Peak	100	275	VERTICAL

Temperature	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS15 40MHz Ch 6 / Ant. 1 + Ant. 2
Test Date	Oct. 23, 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	4874.60	36.21	54.00	-17.79	34.75	3.33	33.16	35.03	Average	100	329	HORIZONTAL
2	4875.20	49.24	74.00	-24.76	47.78	3.33	33.16	35.03	Peak	100	329	HORIZONTAL
3	7287.60	31.21	54.00	-22.79	26.66	4.06	35.89	35.40	Average	100	203	HORIZONTAL
4	7297.20	43.62	74.00	-30.38	39.04	4.06	35.92	35.40	Peak	100	203	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	4880.40	49.19	74.00	-24.81	47.73	3.33	33.16	35.03	Peak	100	275	VERTICAL
2	4881.60	36.76	54.00	-17.24	35.30	3.33	33.16	35.03	Average	100	275	VERTICAL
3	7310.60	33.29	54.00	-20.71	28.67	4.06	35.96	35.40	Average	100	270	VERTICAL
4	7311.60	46.13	74.00	-27.87	41.51	4.06	35.96	35.40	Peak	100	270	VERTICAL

Temperature	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS15 40MHz Ch 9 / Ant. 1 + Ant. 2
Test Date	Oct. 23, 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	4901.60	48.53	74.00	-25.47	47.02	3.34	33.19	35.02	Peak	100	329	HORIZONTAL
2	4905.00	35.05	54.00	-18.95	33.50	3.34	33.23	35.02	Average	100	329	HORIZONTAL
3	7372.50	44.42	74.00	-29.58	39.70	4.06	36.06	35.40	Peak	100	229	HORIZONTAL
4	7374.40	31.86	54.00	-22.14	27.14	4.06	36.06	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	4901.60	47.58	74.00	-26.42	46.07	3.34	33.19	35.02	Peak	100	276	VERTICAL
2	4905.00	34.71	54.00	-19.29	33.16	3.34	33.23	35.02	Average	100	276	VERTICAL
3	7366.00	42.21	74.00	-31.79	37.49	4.06	36.06	35.40	Peak	100	308	VERTICAL
4	7368.40	33.26	54.00	-20.74	28.54	4.06	36.06	35.40	Average	100	308	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11b CH 1 / 1Mbps / Ant.2
Test Date	Oct. 06, 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	4824.02	50.35	54.00	-3.65	49.01	3.31	33.06	35.03	Average	140	331	HORIZONTAL
2	4824.04	53.07	74.00	-20.93	51.73	3.31	33.06	35.03	Peak	140	331	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	4824.00	55.84	74.00	-18.16	54.50	3.31	33.06	35.03	Peak	103	137	VERTICAL
2	4824.01	53.92	54.00	-0.08	52.58	3.31	33.06	35.03	Average	103	137	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11b CH 6 / 1Mbps / Ant.2
Test Date	Oct. 06, 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	4874.02	50.05	54.00	-3.95	48.59	3.33	33.16	35.03	Average	182	313	HORIZONTAL
2	4874.05	52.53	74.00	-21.47	51.07	3.33	33.16	35.03	Peak	182	313	HORIZONTAL
3	7310.72	32.79	54.00	-21.21	28.17	4.06	35.96	35.40	Average	100	273	HORIZONTAL
4	7313.88	46.18	74.00	-27.82	41.56	4.06	35.96	35.40	Peak	100	273	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	4873.98	55.26	74.00	-18.74	53.80	3.33	33.16	35.03	Peak	101	139	VERTICAL
2	4874.01	53.40	54.00	-0.60	51.94	3.33	33.16	35.03	Average	101	139	VERTICAL
3	7310.24	32.78	54.00	-21.22	28.16	4.06	35.96	35.40	Average	100	202	VERTICAL
4	7312.28	45.57	74.00	-28.43	40.95	4.06	35.96	35.40	Peak	100	202	VERTICAL

Temperature	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11b CH 11 / 1Mbps / Ant.2
Test Date	Oct. 06, 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	4923.95	51.64	74.00	-22.36	50.04	3.35	33.26	35.01	Peak	117	231	HORIZONTAL
2	4924.02	49.26	54.00	-4.74	47.66	3.35	33.26	35.01	Average	117	231	HORIZONTAL
3	7386.88	45.53	74.00	-28.47	40.78	4.06	36.09	35.40	Peak	100	116	HORIZONTAL
4	7387.92	32.45	54.00	-21.55	27.70	4.06	36.09	35.40	Average	100	116	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	4923.98	56.27	74.00	-17.73	54.67	3.35	33.26	35.01	Peak	100	142	VERTICAL
2	4924.02	53.93	54.00	-0.07	52.33	3.35	33.26	35.01	Average	100	142	VERTICAL
3	7385.36	33.93	54.00	-20.07	29.18	4.06	36.09	35.40	Average	100	249	VERTICAL
4	7386.54	46.78	74.00	-27.22	42.03	4.06	36.09	35.40	Peak	100	249	VERTICAL

Temperature	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11b CH 1 / 11Mbps / Ant.2
Test Date	Oct. 23, 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	4824.01	55.52	74.00	-18.48	54.18	3.31	33.06	35.03	Peak	180	155	HORIZONTAL
2	4824.03	53.96	54.00	-0.04	52.62	3.31	33.06	35.03	Average	180	155	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	4824.01	54.85	74.00	-19.15	53.51	3.31	33.06	35.03	Peak	101	276	VERTICAL
2	4824.01	53.09	54.00	-0.91	51.75	3.31	33.06	35.03	Average	101	276	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11b CH 6 / 11Mbps / Ant.2
Test Date	Oct. 23, 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	4874.01	51.77	54.00	-2.23	50.31	3.33	33.16	35.03	Average	100	328	HORIZONTAL
2	4874.04	53.97	74.00	-20.03	52.51	3.33	33.16	35.03	Peak	100	328	HORIZONTAL
3	7310.28	31.83	54.00	-22.17	27.21	4.06	35.96	35.40	Average	100	68	HORIZONTAL
4	7311.22	44.04	74.00	-29.96	39.42	4.06	35.96	35.40	Peak	100	68	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	4874.00	53.99	54.00	-0.01	52.53	3.33	33.16	35.03	Average	100	275	VERTICAL
2	4874.10	55.13	74.00	-18.87	53.67	3.33	33.16	35.03	Peak	100	275	VERTICAL
3	7310.21	35.07	54.00	-18.93	30.45	4.06	35.96	35.40	Average	100	36	VERTICAL
4	7311.69	45.71	74.00	-28.29	41.09	4.06	35.96	35.40	Peak	100	36	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11b CH 11 / 11Mbps / Ant.2
Test Date	Oct. 23, 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	4924.04	51.23	74.00	-22.77	49.63	3.35	33.26	35.01	Peak	100	328	HORIZONTAL
2	4924.06	49.28	54.00	-4.72	47.68	3.35	33.26	35.01	Average	100	328	HORIZONTAL
3	7384.72	32.81	54.00	-21.19	28.06	4.06	36.09	35.40	Average	100	192	HORIZONTAL
4	7387.13	44.77	74.00	-29.23	40.02	4.06	36.09	35.40	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	4923.97	54.73	74.00	-19.27	53.13	3.35	33.26	35.01	Peak	103	324	VERTICAL
2	4924.06	53.41	54.00	-0.59	51.81	3.35	33.26	35.01	Average	103	324	VERTICAL
3	7384.58	46.84	74.00	-27.16	42.09	4.06	36.09	35.40	Peak	100	37	VERTICAL
4	7385.29	36.76	54.00	-17.24	32.01	4.06	36.09	35.40	Average	100	37	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11g CH 1 / 6Mbps / Ant.2
Test Date	Oct. 06, 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	4820.30	54.54	74.00	-19.46	53.20	3.31	33.06	35.03	Peak	163	118	HORIZONTAL
2	4824.10	41.47	54.00	-12.53	40.13	3.31	33.06	35.03	Average	163	118	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4820.30	59.48	74.00	-14.52	58.14	3.31	33.06	35.03	Peak	101	191	VERTICAL
2	4824.30	43.68	54.00	-10.32	42.34	3.31	33.06	35.03	Average	101	191	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11g CH 6 / 6Mbps / Ant.2
Test Date	Oct. 06, 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	4890.40	54.72	74.00	-19.28	53.22	3.34	33.19	35.03	Peak	159	314	HORIZONTAL
2	4892.20	40.96	54.00	-13.04	39.46	3.34	33.19	35.03	Average	159	314	HORIZONTAL
3	7335.80	47.56	74.00	-26.44	42.91	4.06	35.99	35.40	Peak	100	177	HORIZONTAL
4	7339.70	34.91	54.00	-19.09	30.26	4.06	35.99	35.40	Average	100	177	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	4892.20	50.50	74.00	-23.50	49.00	3.34	33.19	35.03	Peak	100	136	VERTICAL
2	4894.20	44.84	54.00	-9.16	43.33	3.34	33.19	35.02	Average	100	136	VERTICAL
3	7337.80	51.05	74.00	-22.95	46.40	4.06	35.99	35.40	Peak	100	78	VERTICAL
4	7338.80	37.98	54.00	-16.02	33.33	4.06	35.99	35.40	Average	100	78	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11g CH 11 / 6Mbps / Ant.2
Test Date	Oct. 06, 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	4940.40	51.41	74.00	-22.59	49.75	3.37	33.30	35.01	Peak	150	100	HORIZONTAL
2	4944.10	38.00	54.00	-16.00	36.34	3.37	33.30	35.01	Average	150	100	HORIZONTAL
3	7410.50	45.46	74.00	-28.54	40.64	4.06	36.16	35.40	Peak	100	226	HORIZONTAL
4	7419.80	33.59	54.00	-20.41	28.76	4.07	36.16	35.40	Average	100	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	4940.30	57.78	74.00	-16.22	56.12	3.37	33.30	35.01	Peak	100	137	VERTICAL
2	4944.10	44.01	54.00	-9.99	42.35	3.37	33.30	35.01	Average	100	137	VERTICAL
3	7414.00	36.25	74.00	-37.75	31.42	4.07	36.16	35.40	Peak	100	218	VERTICAL
4	7416.00	48.05	74.00	-25.95	43.22	4.07	36.16	35.40	Peak	100	218	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11g CH 1 / 54Mbps / Ant.2
Test Date	Oct. 23, 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	4821.96	52.56	74.00	-21.44	51.22	3.31	33.06	35.03	Peak	160	309	HORIZONTAL
2	4825.56	39.91	54.00	-14.09	38.57	3.31	33.06	35.03	Average	160	309	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4822.00	51.97	74.00	-22.03	50.63	3.31	33.06	35.03	Peak	174	267	VERTICAL
2	4825.52	39.76	54.00	-14.24	38.42	3.31	33.06	35.03	Average	174	267	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11g CH 6 / 54Mbps / Ant.2
Test Date	Oct. 23, 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	4873.64	53.49	74.00	-20.51	52.03	3.33	33.16	35.03	Peak	176	338	HORIZONTAL
2	4875.60	40.92	54.00	-13.08	39.46	3.33	33.16	35.03	Average	176	338	HORIZONTAL
3	7308.04	33.01	54.00	-20.99	28.39	4.06	35.96	35.40	Average	100	6	HORIZONTAL
4	7308.24	45.94	74.00	-28.06	41.32	4.06	35.96	35.40	Peak	100	6	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	4876.00	41.81	54.00	-12.19	40.35	3.33	33.16	35.03	Average	146	275	VERTICAL
2	4876.12	53.77	74.00	-20.23	52.31	3.33	33.16	35.03	Peak	146	275	VERTICAL
3	7307.56	38.09	54.00	-15.91	33.47	4.06	35.96	35.40	Average	136	248	VERTICAL
4	7307.76	52.52	74.00	-21.48	47.90	4.06	35.96	35.40	Peak	136	248	VERTICAL

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11g CH 11 / 54Mbps / Ant.2
Test Date	Oct. 23, 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	4923.40	46.89	74.00	-27.11	45.29	3.35	33.26	35.01	Peak	181	326	HORIZONTAL
2	4924.12	33.94	54.00	-20.06	32.34	3.35	33.26	35.01	Average	181	326	HORIZONTAL
3	7391.36	45.07	74.00	-28.93	40.32	4.06	36.09	35.40	Peak	100	187	HORIZONTAL
4	7395.44	31.62	54.00	-22.38	26.83	4.06	36.13	35.40	Average	100	187	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	4925.28	47.47	74.00	-26.53	45.87	3.35	33.26	35.01	Peak	162	276	VERTICAL
2	4925.56	34.80	54.00	-19.20	33.20	3.35	33.26	35.01	Average	162	276	VERTICAL
3	7382.16	32.17	54.00	-21.83	27.42	4.06	36.09	35.40	Average	100	236	VERTICAL
4	7382.20	44.20	74.00	-29.80	39.45	4.06	36.09	35.40	Peak	100	236	VERTICAL

Note:
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6. 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

The test procedure is the same as section 4.5.3, only the freqeuncy 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	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 1, 6, 11 / Ant. 1 + Ant. 2
Test Date	Oct. 08, 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	2388.00	62.69	74.00	-11.31	32.31	2.21	28.17	0.00	Peak	100	352	VERTICAL
2	2390.00	50.69	54.00	-3.31	20.30	2.22	28.17	0.00	Average	100	352	VERTICAL
3	2406.40	91.66	54.00			2.22	28.21	0.00	Average	100	352	VERTICAL
4	2417.40	102.10	74.00			2.23	28.25	0.00	Peak	100	352	VERTICAL

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	2386.00	54.24	74.00	-19.76	23.86	2.21	28.17	0.00	Peak	100	149	VERTICAL
2	2390.00	42.11	54.00	-11.89	11.72	2.22	28.17	0.00	Average	100	149	VERTICAL
3	2435.40	101.76	74.00			2.23	28.29	0.00	Peak	100	149	VERTICAL
4	2440.20	90.73	54.00			2.23	28.29	0.00	Average	100	149	VERTICAL
5	2483.50	42.62	54.00	-11.38	11.99	2.26	28.37	0.00	Average	100	149	VERTICAL
6	2486.30	55.01	74.00	-18.99	24.34	2.26	28.41	0.00	Peak	100	149	VERTICAL

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

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2467.00	103.44	74.00			2.26	28.33	0.00	Peak	108	269	VERTICAL
2	2468.00	93.40	54.00			2.26	28.33	0.00	Average	108	269	VERTICAL
3	2483.50	53.08	54.00	-0.92	22.45	2.26	28.37	0.00	Average	108	269	VERTICAL
4	2483.90	67.69	74.00	-6.31	37.06	2.26	28.37	0.00	Peak	108	269	VERTICAL

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

Temperature	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS15 20MHz Ch 1, 6, 11 / Ant. 1 + Ant. 2
Test Date	Oct. 23, 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	2389.80	63.11	74.00	-10.89	32.72	2.22	28.17	0.00	Peak	100	161	VERTICAL
2	2390.00	52.40	54.00	-1.60	22.01	2.22	28.17	0.00	Average	100	161	VERTICAL
3	2405.80	92.74	54.00			2.22	28.21	0.00	Average	100	161	VERTICAL
4	2407.60	103.17	74.00			2.22	28.21	0.00	Peak	100	161	VERTICAL

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	2385.20	54.12	74.00	-19.88	23.74	2.21	28.17	0.00	Peak	100	159	VERTICAL
2	2390.00	42.75	54.00	-11.25	12.36	2.22	28.17	0.00	Average	100	159	VERTICAL
3	2434.60	104.14	74.00			2.23	28.29	0.00	Peak	100	159	VERTICAL
4	2437.80	93.28	54.00			2.23	28.29	0.00	Average	100	159	VERTICAL
5	2485.10	43.49	54.00	-10.51	12.82	2.26	28.41	0.00	Average	100	159	VERTICAL
6	2486.30	55.37	74.00	-18.63	24.70	2.26	28.41	0.00	Peak	100	159	VERTICAL

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

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2466.20	103.72	74.00			2.24	28.33	0.00	Peak	100	154	VERTICAL
2	2468.20	92.88	54.00			2.26	28.37	0.00	Average	100	154	VERTICAL
3	2483.50	53.86	54.00	-0.14	23.23	2.26	28.37	0.00	Average	100	154	VERTICAL
4	2483.50	66.68	74.00	-7.32	36.05	2.26	28.37	0.00	Peak	100	154	VERTICAL

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

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 3, 6, 9 / Ant. 1 + Ant. 2
Test Date	Oct. 08, 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	2389.60	64.13	74.00	-9.87	33.75	2.21	28.17	0.00	Peak	106	271	VERTICAL
2	2390.00	51.64	54.00	-2.36	21.25	2.22	28.17	0.00	Average	106	271	VERTICAL
3	2430.40	89.31	54.00			2.23	28.25	0.00	Average	106	271	VERTICAL
4	2432.00	99.74	74.00			2.23	28.25	0.00	Peak	106	271	VERTICAL

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

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2390.00	44.34	54.00	-9.66	13.95	2.22	28.17	0.00	Average	100	206	HORIZONTAL
2	2390.00	56.90	74.00	-17.10	26.51	2.22	28.17	0.00	Peak	100	206	HORIZONTAL
3	2427.40	94.84	74.00			2.23	28.25	0.00	Peak	100	206	HORIZONTAL
4	2430.20	83.92	54.00			2.23	28.25	0.00	Average	100	206	HORIZONTAL
5	2483.50	46.53	54.00	-7.47	15.89	2.26	28.38	0.00	Average	100	206	HORIZONTAL
6	2483.50	59.71	74.00	-14.29	29.07	2.26	28.38	0.00	Peak	100	206	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	2466.00	98.87	74.00			2.24	28.33	0.00	Peak	106	267	VERTICAL
2	2468.00	89.21	54.00			2.26	28.33	0.00	Average	106	267	VERTICAL
3	2485.10	66.60	74.00	-7.40	35.93	2.26	28.41	0.00	Peak	106	267	VERTICAL
4	2486.70	53.16	54.00	-0.84	22.49	2.26	28.41	0.00	Average	106	267	VERTICAL

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

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS15 40MHz Ch 3, 6, 9 / Ant. 1 + Ant. 2
Test Date	Oct. 23, 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	2388.40	63.75	74.00	-10.25	33.37	2.21	28.17	0.00	Peak	100	150	HORIZONTAL
2	2390.00	52.35	54.00	-1.65	21.96	2.22	28.17	0.00	Average	100	150	HORIZONTAL
3	2427.60	98.90	74.00			2.23	28.25	0.00	Peak	100	150	HORIZONTAL
4	2430.40	87.61	54.00			2.23	28.25	0.00	Average	100	150	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	2389.20	58.82	74.00	-15.18	28.44	2.21	28.17	0.00	Peak	100	149	HORIZONTAL
2	2390.00	47.24	54.00	-6.76	16.85	2.22	28.17	0.00	Average	100	149	HORIZONTAL
3	2428.20	100.26	74.00			2.23	28.25	0.00	Peak	100	149	HORIZONTAL
4	2430.60	88.09	54.00			2.23	28.25	0.00	Average	100	149	HORIZONTAL
5	2483.50	49.22	54.00	-4.78	18.58	2.26	28.38	0.00	Average	100	149	HORIZONTAL
6	2485.90	61.41	74.00	-12.59	30.73	2.26	28.42	0.00	Peak	100	149	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	2443.20	99.92	74.00			2.24	28.29	0.00	Peak	100	160	VERTICAL
2	2448.80	88.85	54.00			2.24	28.29	0.00	Average	100	160	VERTICAL
3	2483.50	53.16	54.00	-0.84	22.53	2.26	28.37	0.00	Average	100	160	VERTICAL
4	2484.70	64.79	74.00	-9.21	34.16	2.26	28.37	0.00	Peak	100	160	VERTICAL

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

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11b CH 1, 6, 11 / 1Mbps / Ant.2
Test Date	Oct. 06, 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	2387.20	42.12	54.00	-11.88	11.74	2.21	28.17	0.00	Average	108	263	VERTICAL
2	2388.20	52.92	74.00	-21.08	22.54	2.21	28.17	0.00	Peak	108	263	VERTICAL
3	2411.20	93.27	54.00			2.22	28.21	0.00	Average	108	263	VERTICAL
4	2413.00	97.28	74.00			2.22	28.21	0.00	Peak	108	263	VERTICAL

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	2389.40	53.80	74.00	-20.20	23.42	2.21	28.17	0.00	Peak	107	264	VERTICAL
2	2390.00	41.89	54.00	-12.11	11.50	2.22	28.17	0.00	Average	107	264	VERTICAL
3	2436.20	91.99	54.00			2.23	28.29	0.00	Average	107	264	VERTICAL
4	2436.20	95.82	74.00			2.23	28.29	0.00	Peak	107	264	VERTICAL
5	2483.50	42.25	54.00	-11.75	11.62	2.26	28.37	0.00	Average	107	264	VERTICAL
6	2483.90	52.76	74.00	-21.24	22.13	2.26	28.37	0.00	Peak	107	264	VERTICAL

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

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2463.00	94.22	74.00			2.24	28.33	0.00	Peak	100	243	VERTICAL
2	2463.80	90.19	54.00			2.24	28.33	0.00	Average	100	243	VERTICAL
3	2486.30	42.44	54.00	-11.56	11.77	2.26	28.41	0.00	Average	100	243	VERTICAL
4	2487.10	54.43	74.00	-19.57	23.76	2.26	28.41	0.00	Peak	100	243	VERTICAL

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

Temperature	23°C	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11b CH 1, 6, 11 / 11Mbps / Ant.2
Test Date	Oct. 23, 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	2386.40	43.16	54.00	-10.84	12.78	2.21	28.17	0.00	Average	100	8	VERTICAL
2	2388.00	54.21	74.00	-19.79	23.83	2.21	28.17	0.00	Peak	100	8	VERTICAL
3	2411.00	97.70	74.00			2.22	28.21	0.00	Peak	100	8	VERTICAL
4	2411.20	93.83	54.00			2.22	28.21	0.00	Average	100	8	VERTICAL

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	2358.00	42.80	54.00	-11.20	12.51	2.19	28.10	0.00	Average	100	9	VERTICAL
2	2365.60	55.87	74.00	-18.13	25.56	2.21	28.10	0.00	Peak	100	9	VERTICAL
3	2436.20	93.61	54.00			2.23	28.29	0.00	Average	100	9	VERTICAL
4	2436.20	97.47	74.00			2.23	28.29	0.00	Peak	100	9	VERTICAL
5	2483.50	42.74	54.00	-11.26	12.11	2.26	28.37	0.00	Average	100	9	VERTICAL
6	2487.50	54.79	74.00	-19.21	24.12	2.26	28.41	0.00	Peak	100	9	VERTICAL

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

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2461.20	91.15	54.00			2.24	28.33	0.00	Average	100	95	HORIZONTAL
2	2461.20	95.08	74.00			2.24	28.33	0.00	Peak	100	95	HORIZONTAL
3	2487.10	54.38	74.00	-19.62	23.70	2.26	28.42	0.00	Peak	100	95	HORIZONTAL
4	2488.10	43.22	54.00	-10.78	12.54	2.26	28.42	0.00	Average	100	95	HORIZONTAL

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

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11g CH 1, 6, 11 / 6Mbps / Ant.2
Test Date	Oct. 06, 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	2389.80	67.29	74.00	-6.71	36.90	2.22	28.17	0.00	Peak	108	261	VERTICAL
2	2390.00	53.27	54.00	-0.73	22.88	2.22	28.17	0.00	Average	108	261	VERTICAL
3	2414.20	93.22	54.00			2.22	28.21	0.00	Average	108	261	VERTICAL
4	2414.80	102.68	74.00			2.22	28.21	0.00	Peak	108	261	VERTICAL

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	2389.00	54.62	74.00	-19.38	24.24	2.21	28.17	0.00	Peak	108	262	VERTICAL
2	2390.00	42.33	54.00	-11.67	11.94	2.22	28.17	0.00	Average	108	262	VERTICAL
3	2430.60	102.45	74.00			2.23	28.25	0.00	Peak	108	262	VERTICAL
4	2432.40	92.83	54.00			2.23	28.25	0.00	Average	108	262	VERTICAL
5	2483.50	43.00	54.00	-11.00	12.37	2.26	28.37	0.00	Average	108	262	VERTICAL
6	2484.30	54.41	74.00	-19.59	23.78	2.26	28.37	0.00	Peak	108	262	VERTICAL

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

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2467.60	92.12	54.00			2.26	28.33	0.00	Average	105	262	VERTICAL
2	2468.20	101.42	74.00			2.26	28.37	0.00	Peak	105	262	VERTICAL
3	2483.50	53.49	54.00	-0.51	22.86	2.26	28.37	0.00	Average	105	262	VERTICAL
4	2483.50	69.81	74.00	-4.19	39.18	2.26	28.37	0.00	Peak	105	262	VERTICAL

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

Temperature	23℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11g CH 1, 6, 11 / 54Mbps / Ant.2
Test Date	Oct. 23, 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	49.92	54.00	-4.08	19.53	2.22	28.17	0.00	Average	100	31	VERTICAL
2	2390.00	64.14	74.00	-9.86	33.75	2.22	28.17	0.00	Peak	100	31	VERTICAL
3	2409.00	102.38	74.00			2.22	28.21	0.00	Peak	100	31	VERTICAL
4	2410.20	91.93	54.00			2.22	28.21	0.00	Average	100	31	VERTICAL

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	2388.40	54.58	74.00	-19.42	24.20	2.21	28.17	0.00	Peak	100	156	HORIZONTAL
2	2390.00	42.67	54.00	-11.33	12.28	2.22	28.17	0.00	Average	100	156	HORIZONTAL
3	2432.20	90.02	54.00			2.23	28.25	0.00	Average	100	156	HORIZONTAL
4	2439.00	100.40	74.00			2.23	28.29	0.00	Peak	100	156	HORIZONTAL
5	2483.50	43.07	54.00	-10.93	12.43	2.26	28.38	0.00	Average	100	156	HORIZONTAL
6	2483.50	53.93	74.00	-20.07	23.29	2.26	28.38	0.00	Peak	100	156	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	2465.20	102.59	74.00			2.24	28.33	0.00	Peak	100	337	VERTICAL
2	2465.60	92.09	54.00			2.24	28.33	0.00	Average	100	337	VERTICAL
3	2483.50	53.65	54.00	-0.35	23.02	2.26	28.37	0.00	Average	100	337	VERTICAL
4	2483.50	68.18	74.00	-5.82	37.55	2.26	28.37	0.00	Peak	100	337	VERTICAL

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

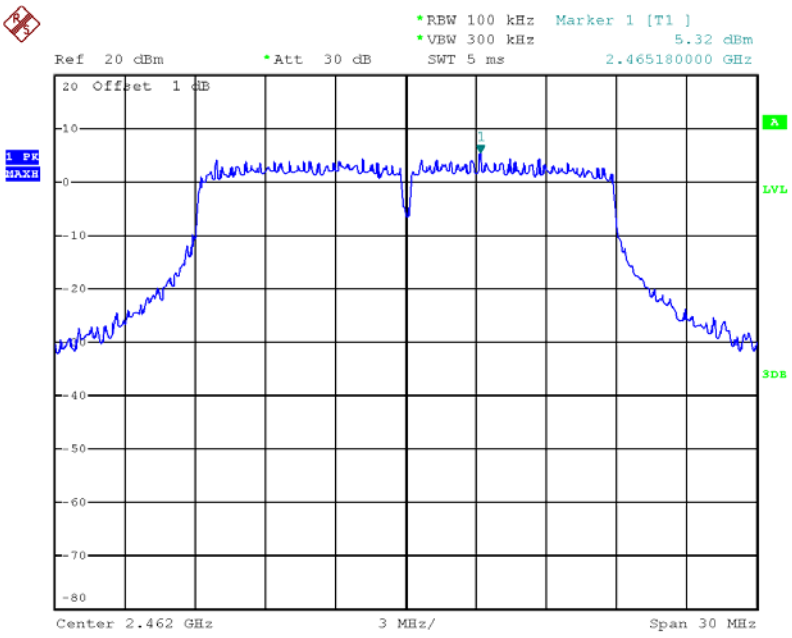
Note:

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

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

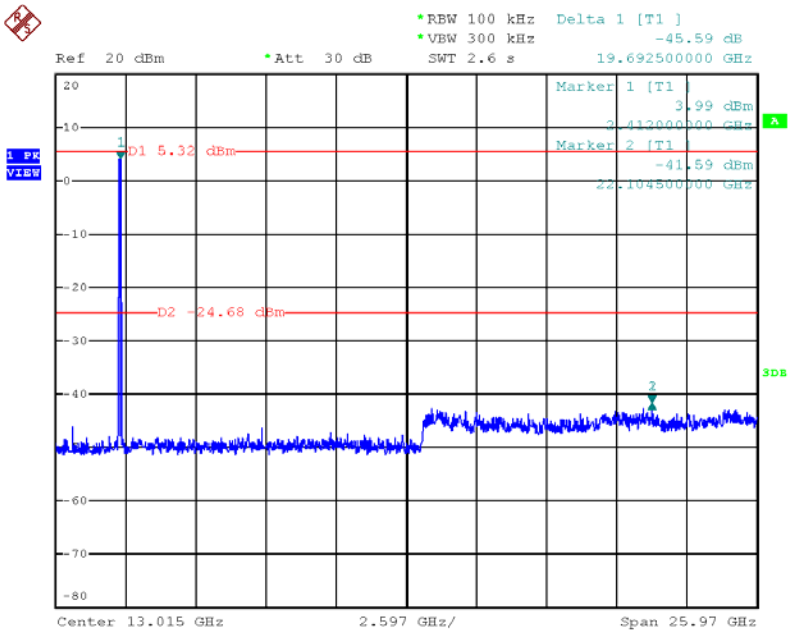
For Emission not in Restricted Band

Plot on Configuration IEEE 802.11n MCS8 20MHz / Reference Level



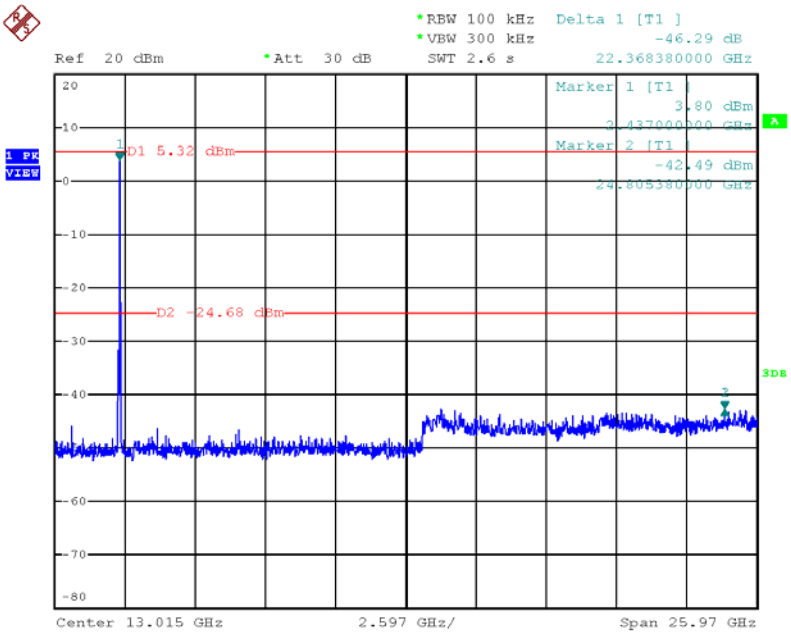
Date: 24.OCT.2012 18:45:16

Plot on Configuration IEEE 802.11n MCS8 20MHz / CH 1 (down 30dBc)



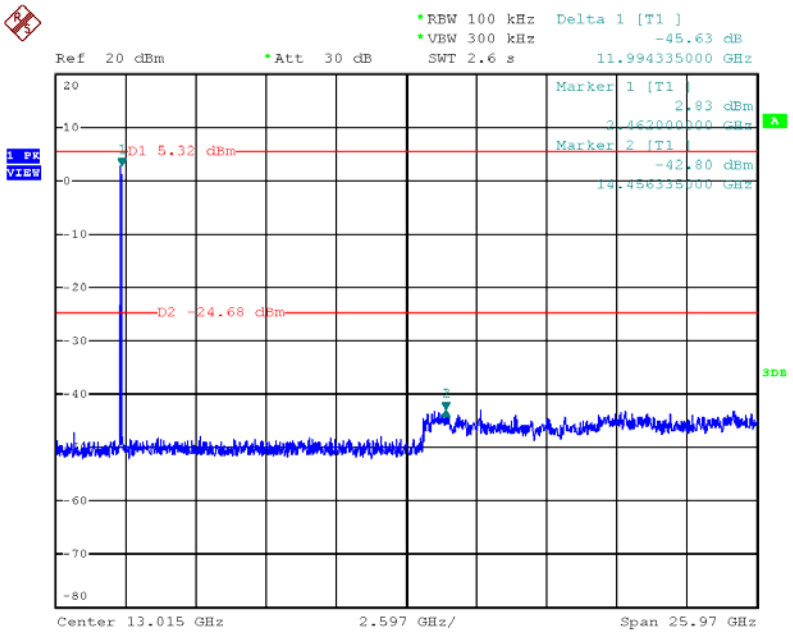
Date: 24.OCT.2012 19:23:39

Plot on Configuration IEEE 802.11n MCS8 20MHz / CH 6 (down 30dBc)



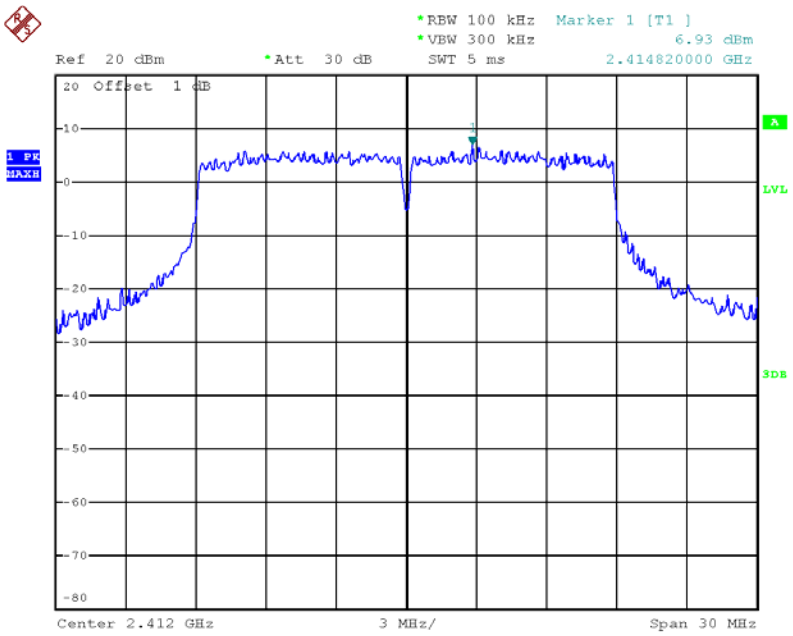
Date: 24.OCT.2012 19:24:23

Plot on Configuration IEEE 802.11n MCS8 20MHz / CH 11 (down 30dBc)



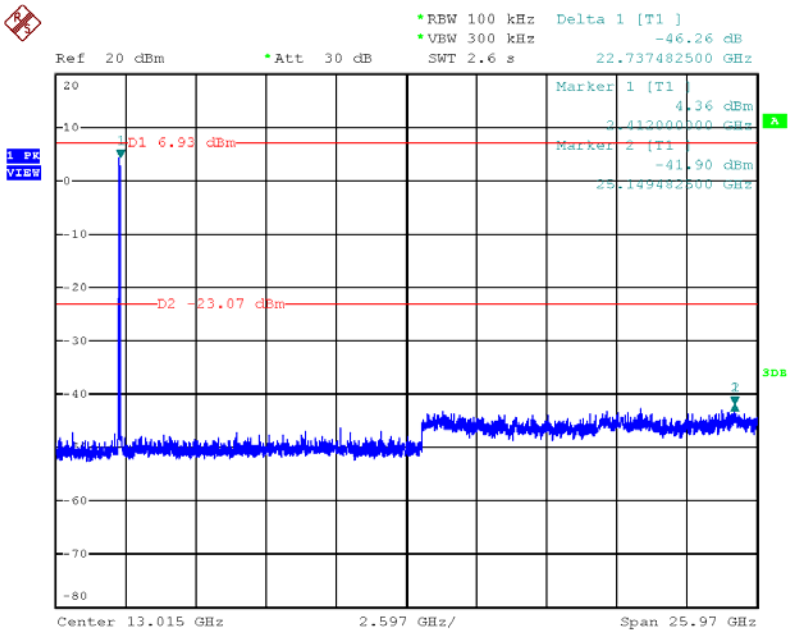
Date: 24.OCT.2012 19:25:03

Plot on Configuration IEEE 802.11n MCS15 20MHz / Reference Level



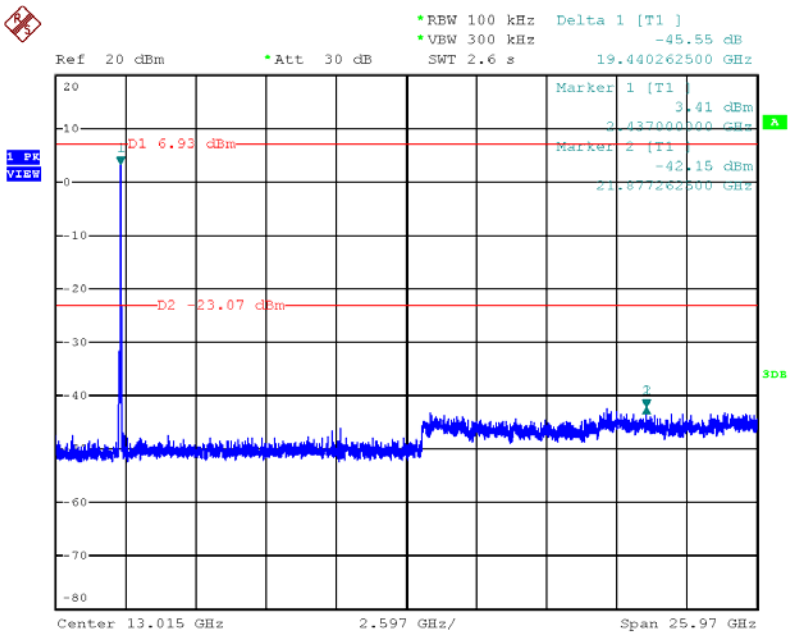
Date: 24.OCT.2012 18:28:20

Plot on Configuration IEEE 802.11n MCS15 20MHz / CH 1 (down 30dBc)



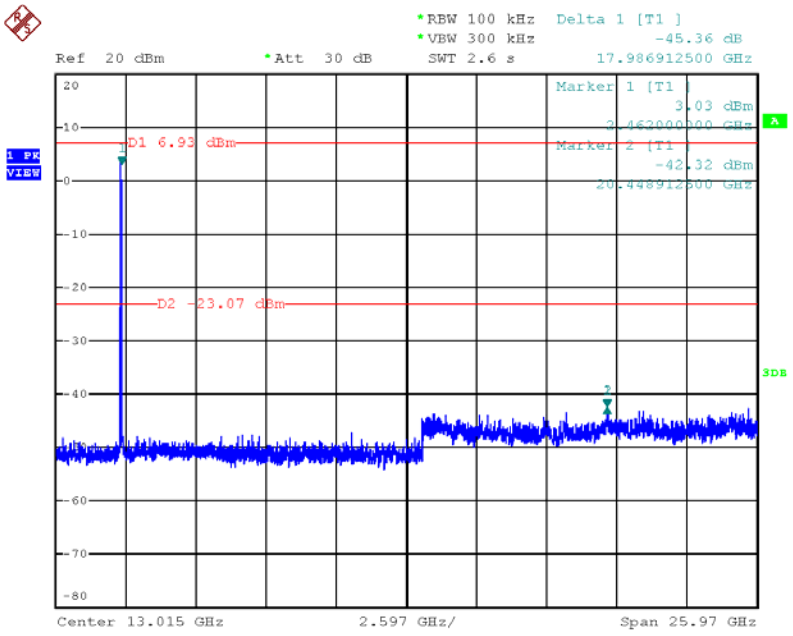
Date: 24.OCT.2012 19:32:44

Plot on Configuration IEEE 802.11n MCS15 20MHz / CH 6 (down 30dBc)



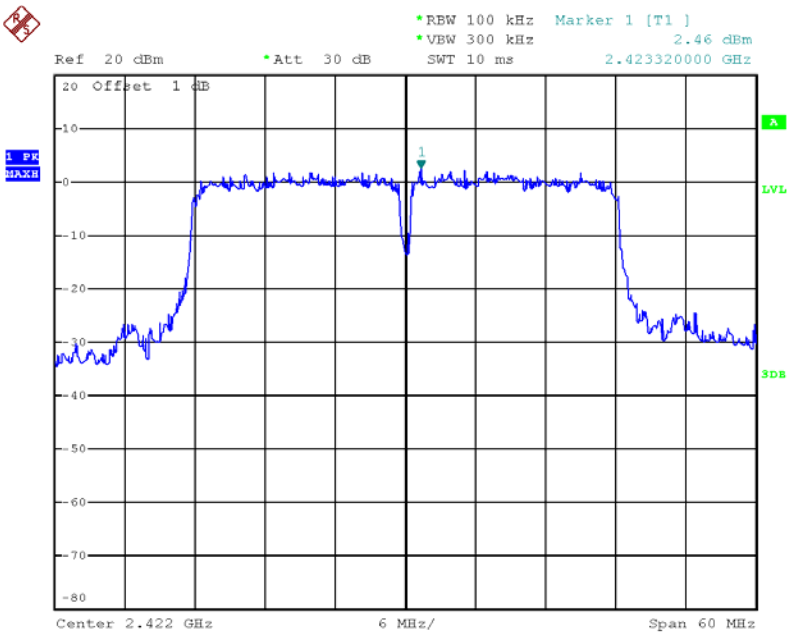
Date: 24.OCT.2012 19:33:41

Plot on Configuration IEEE 802.11n MCS15 20MHz / CH 11 (down 30dBc)



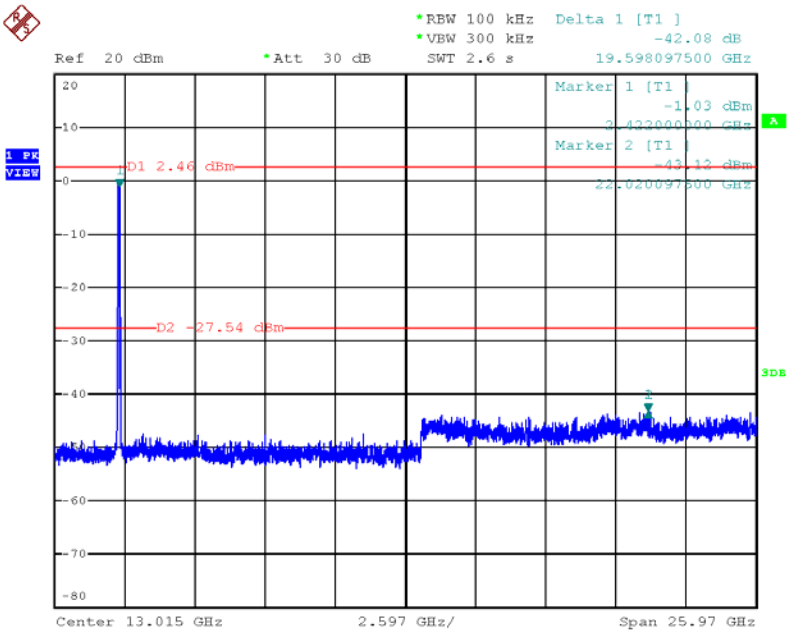
Date: 24.OCT.2012 19:34:14

Plot on Configuration IEEE 802.11n MCS8 40MHz / Reference Level



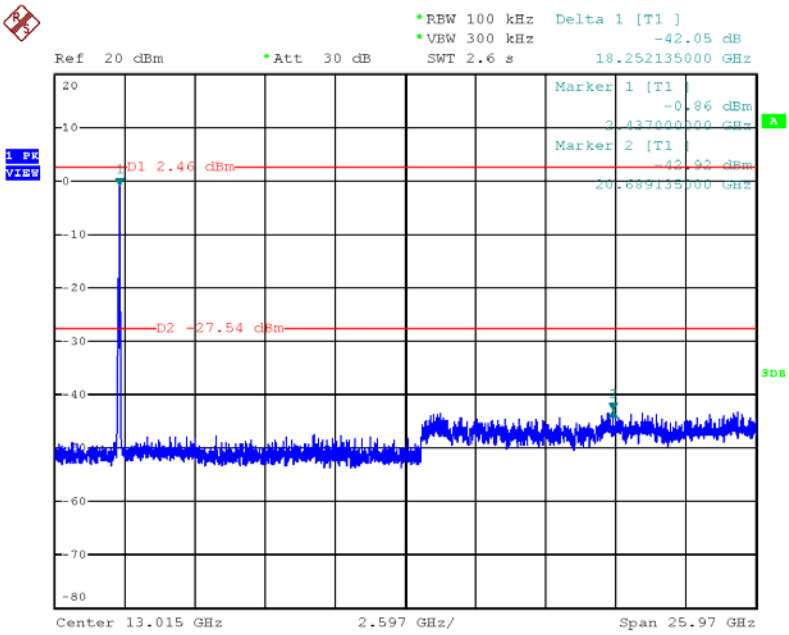
Date: 24.OCT.2012 18:36:48

Plot on Configuration IEEE 802.11n MCS8 40MHz / CH 3 (down 30dBc)



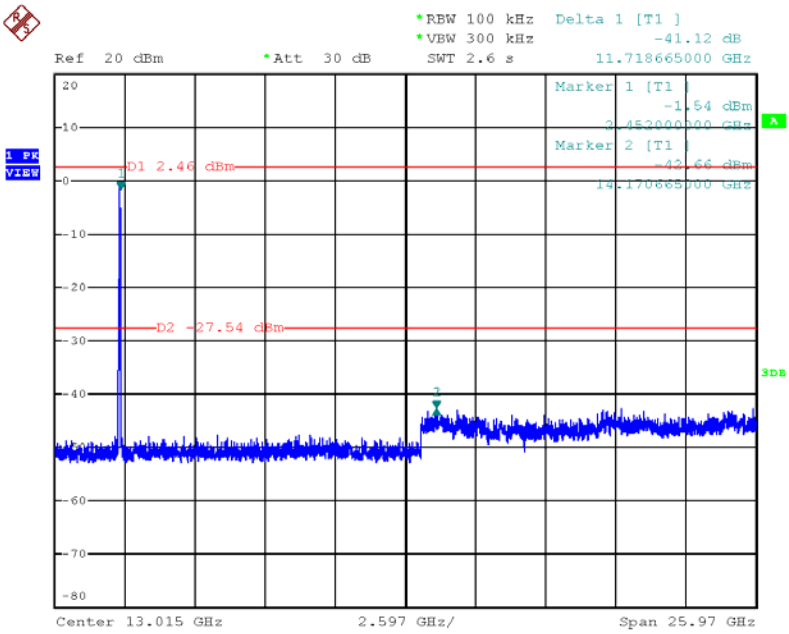
Date: 24.OCT.2012 19:26:48

Plot on Configuration IEEE 802.11n MCS8 40MHz / CH 6 (down 30dBc)



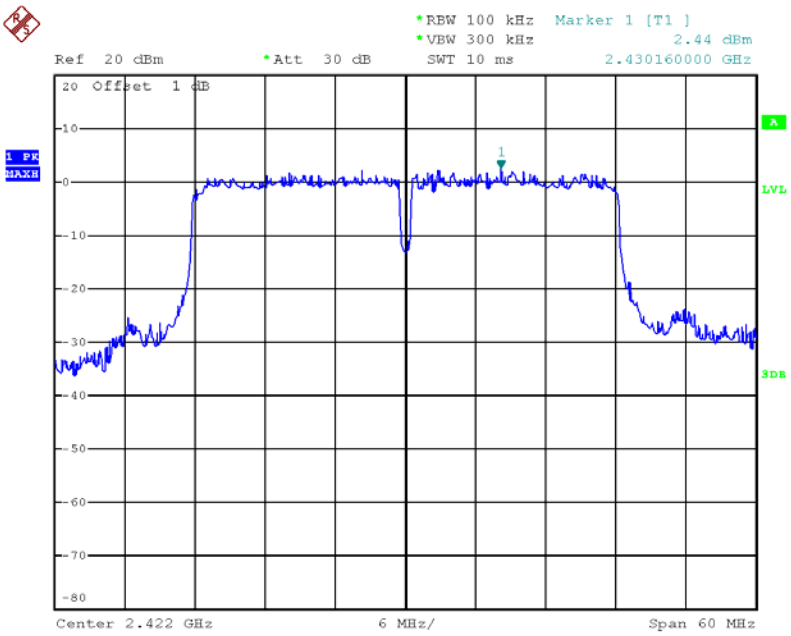
Date: 24.OCT.2012 19:27:31

Plot on Configuration IEEE 802.11n MCS8 40MHz / CH 9 (down 30dBc)



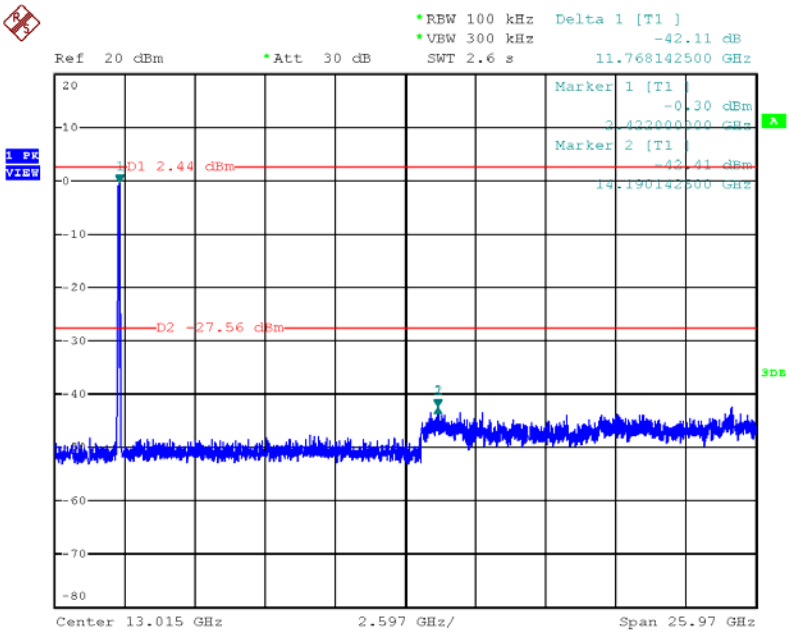
Date: 24.OCT.2012 19:28:12

Plot on Configuration IEEE 802.11n MCS15 40MHz / Reference Level



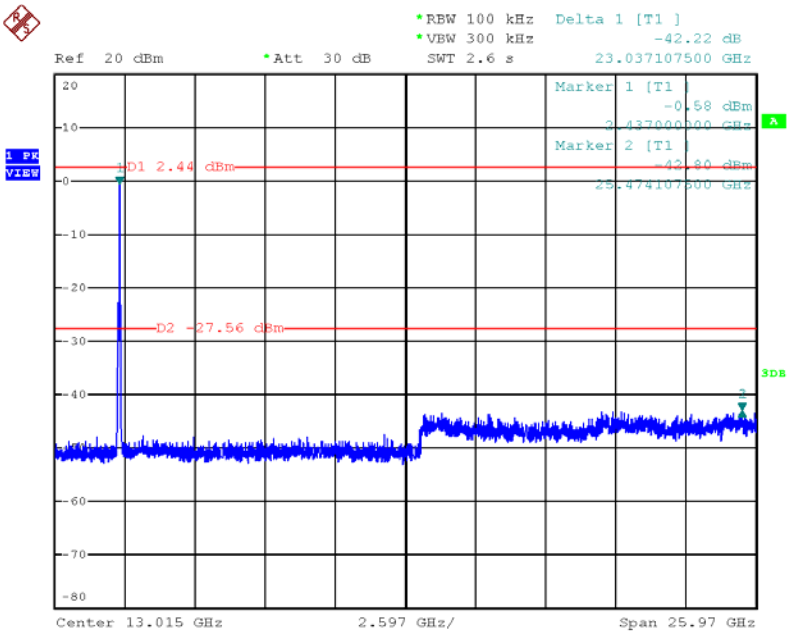
Date: 24.OCT.2012 18:35:08

Plot on Configuration IEEE 802.11n MCS15 40MHz / CH 3 (down 30dBc)



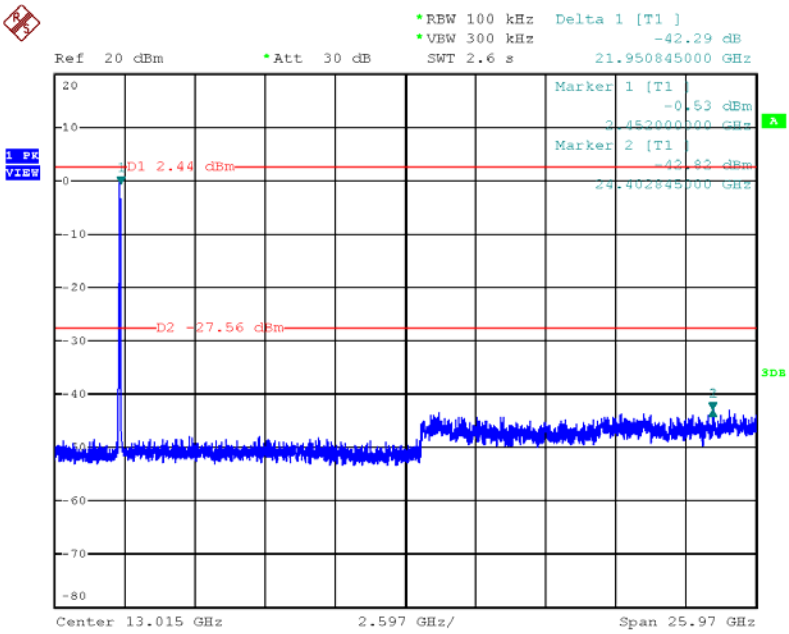
Date: 24.OCT.2012 19:31:47

Plot on Configuration IEEE 802.11n MCS15 40MHz / CH 6 (down 30dBc)



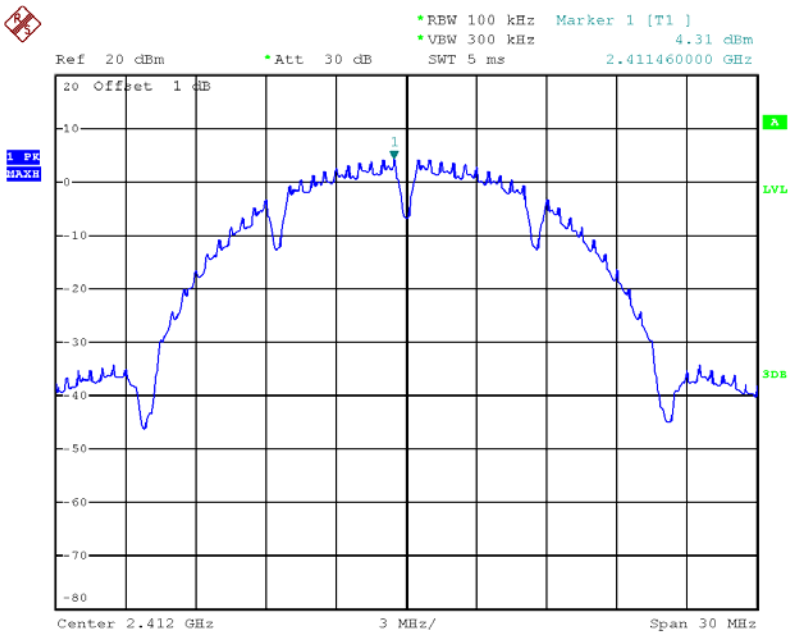
Date: 24.OCT.2012 19:31:16

Plot on Configuration IEEE 802.11n MCS15 40MHz / CH 9 (down 30dBc)



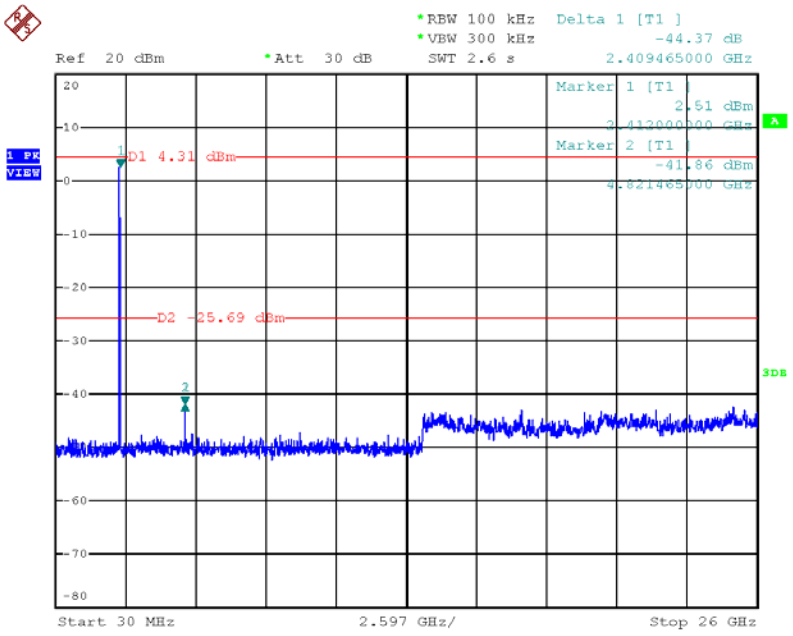
Date: 24.OCT.2012 19:30:29

Plot on Configuration IEEE 802.11b / 1Mbps / Reference Level



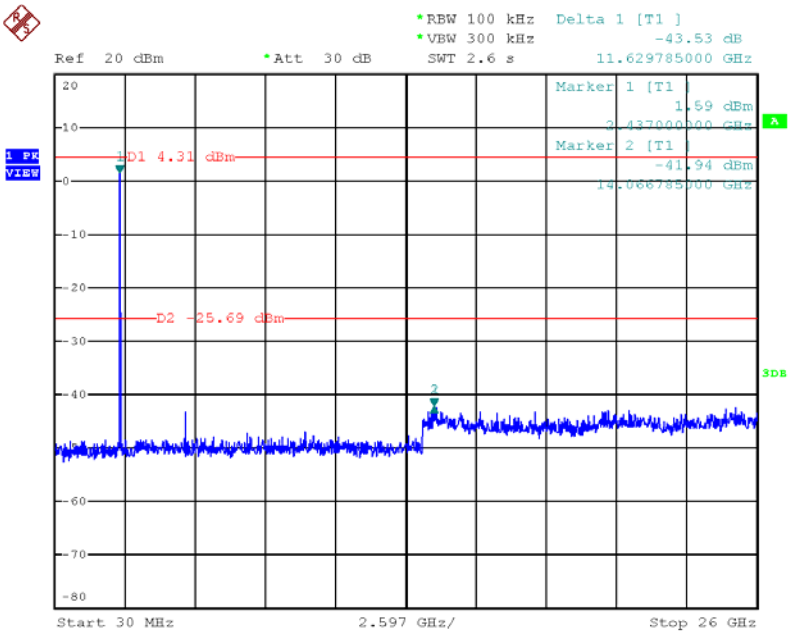
Date: 24.OCT.2012 18:17:27

Plot on Configuration IEEE 802.11b / 1Mbs / CH 1 (down 30dBc)



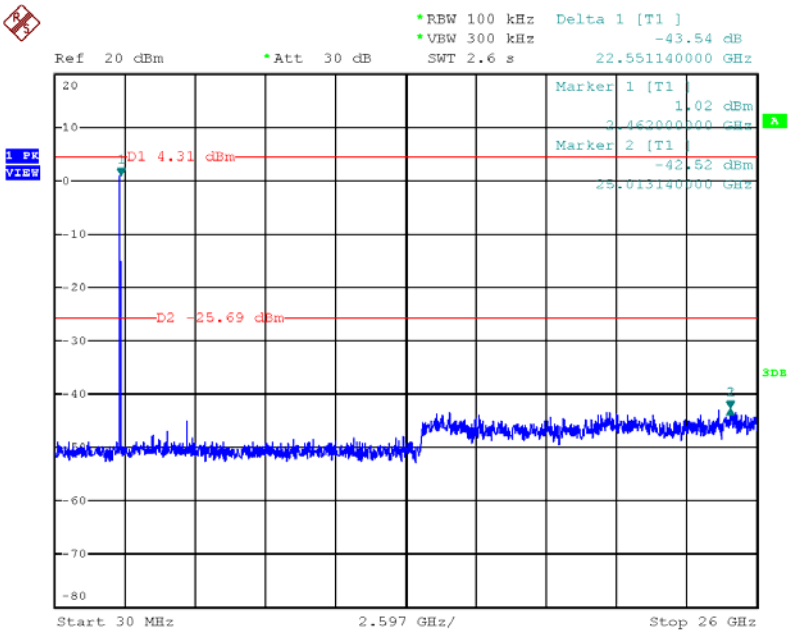
Date: 24.OCT.2012 19:18:06

Plot on Configuration IEEE 802.11b / 1Mbps / CH 6 (down 30dBc)



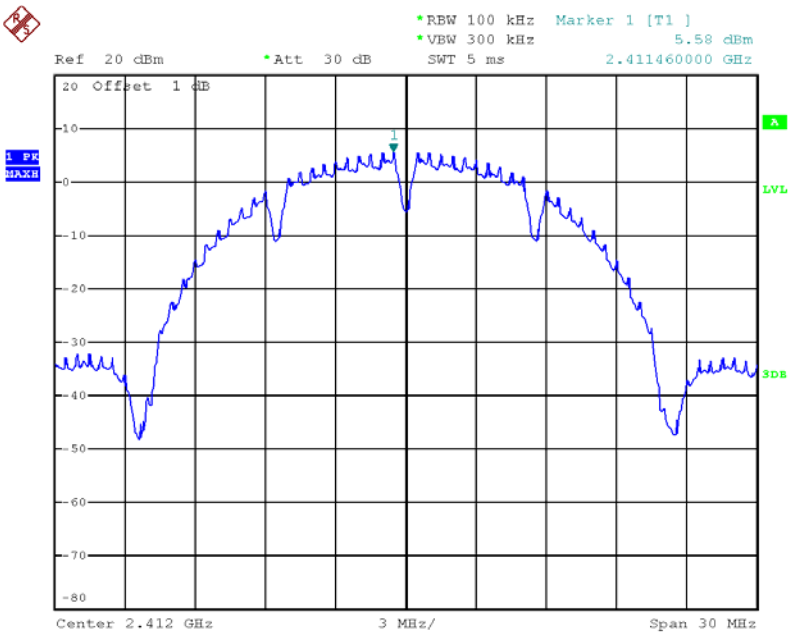
Date: 24.OCT.2012 19:18:47

Plot on Configuration IEEE 802.11b / 1Mbps / CH 11 (down 30dBc)



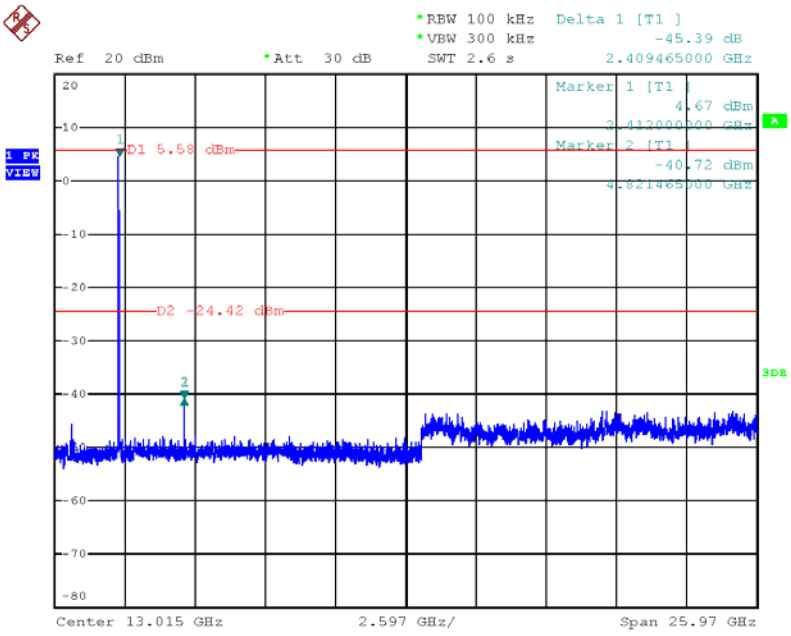
Date: 24.OCT.2012 19:19:30

Plot on Configuration IEEE 802.11b / 11Mbps / Reference Level



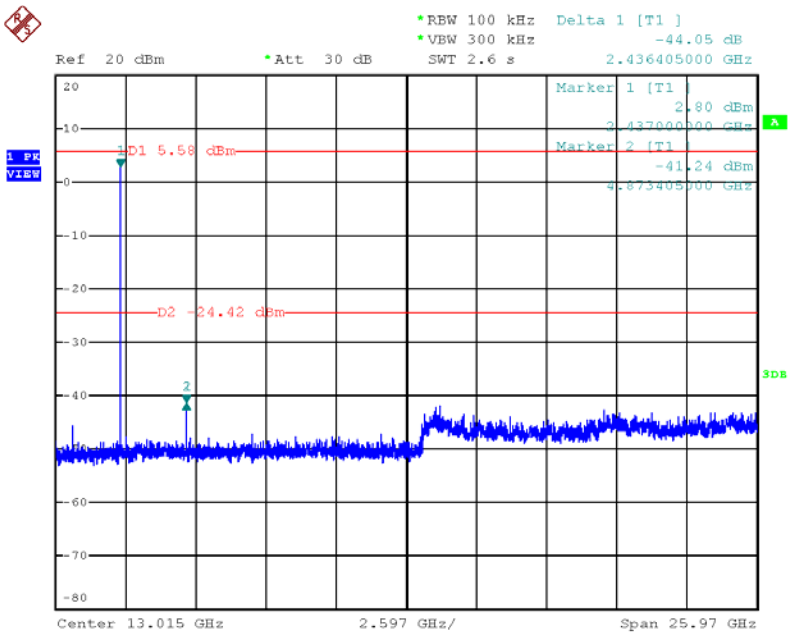
Date: 24.OCT.2012 18:26:37

Plot on Configuration IEEE 802.11b / 11Mbs / CH 1 (down 30dBc)



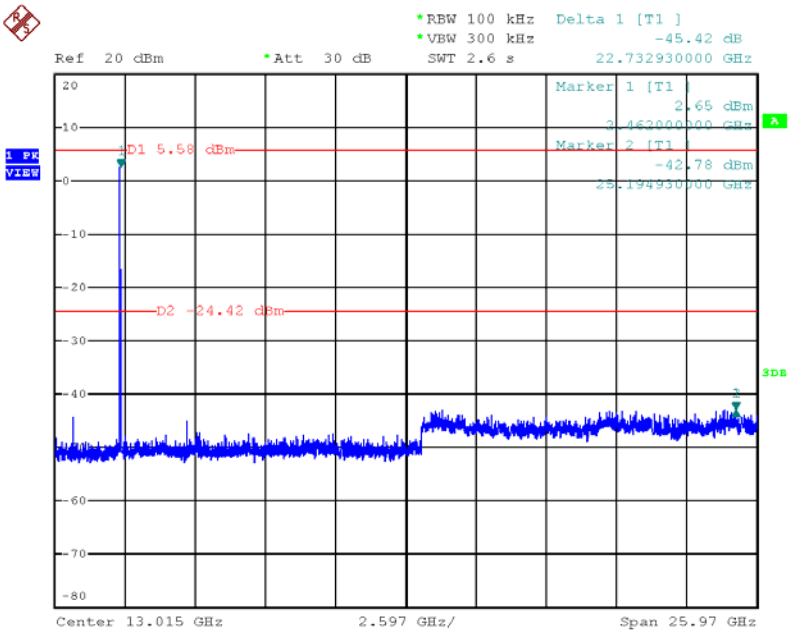
Date: 24.OCT.2012 19:38:38

Plot on Configuration IEEE 802.11b / 11Mbps / CH 6 (down 30dBc)



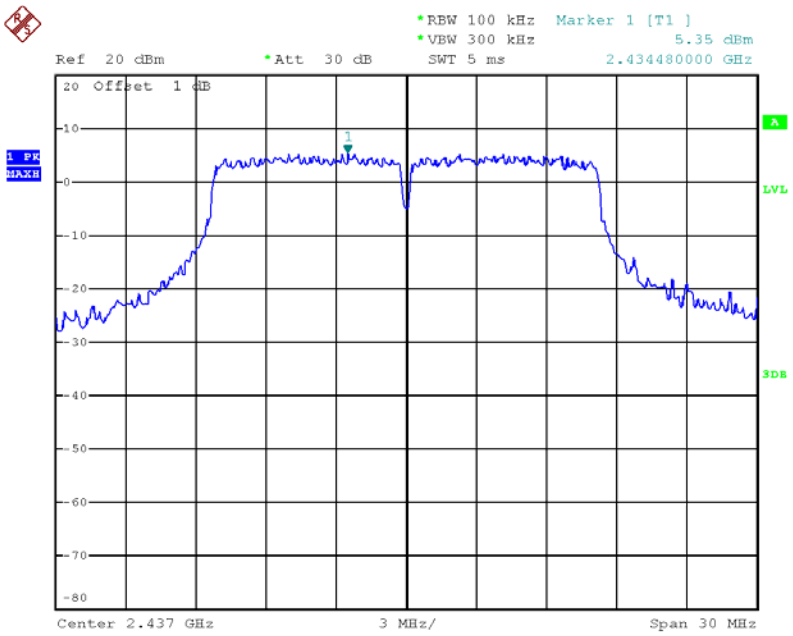
Date: 24.OCT.2012 19:41:24

Plot on Configuration IEEE 802.11b / 11Mbps / CH 11 (down 30dBc)



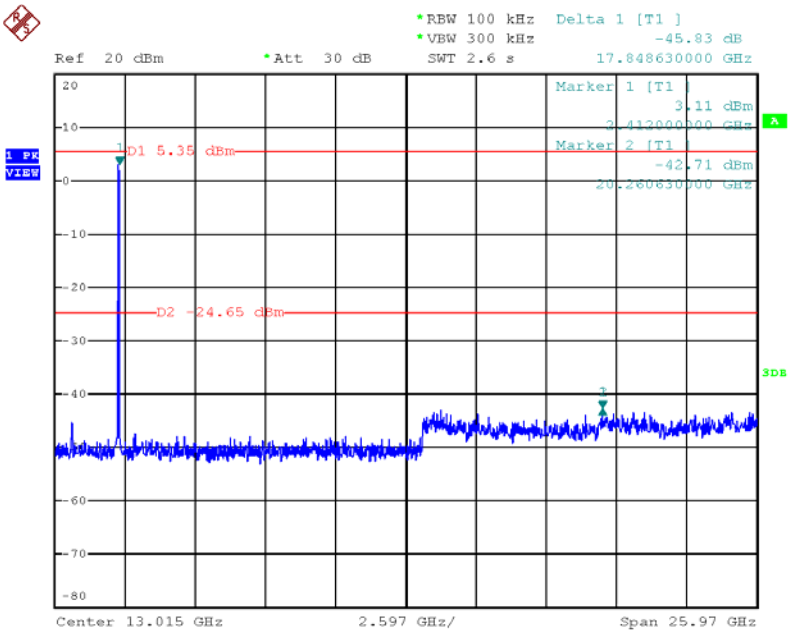
Date: 24.OCT.2012 19:42:36

Plot on Configuration IEEE 802.11g / 6Mbps / Reference Level



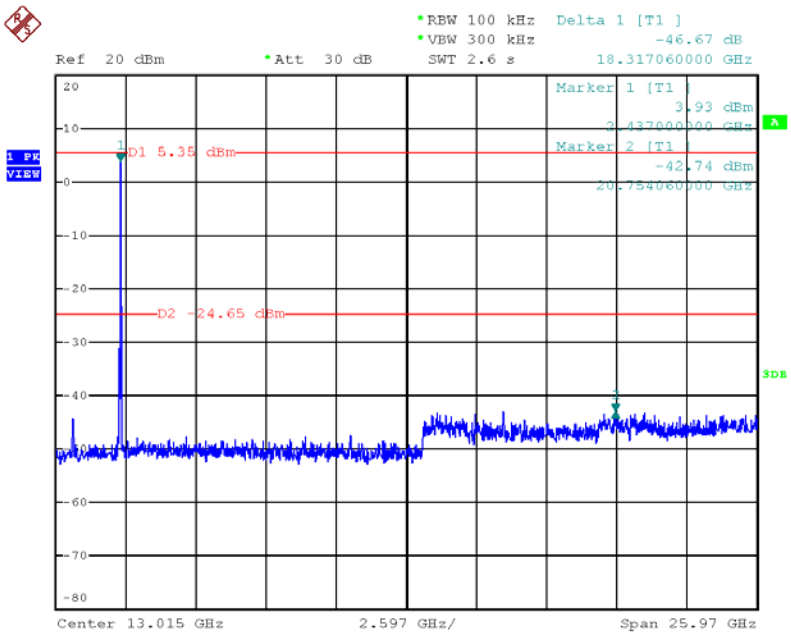
Date: 24.OCT.2012 18:20:41

Plot on Configuration IEEE 802.11g / 6Mpbs / CH 1 (down 30dBc)



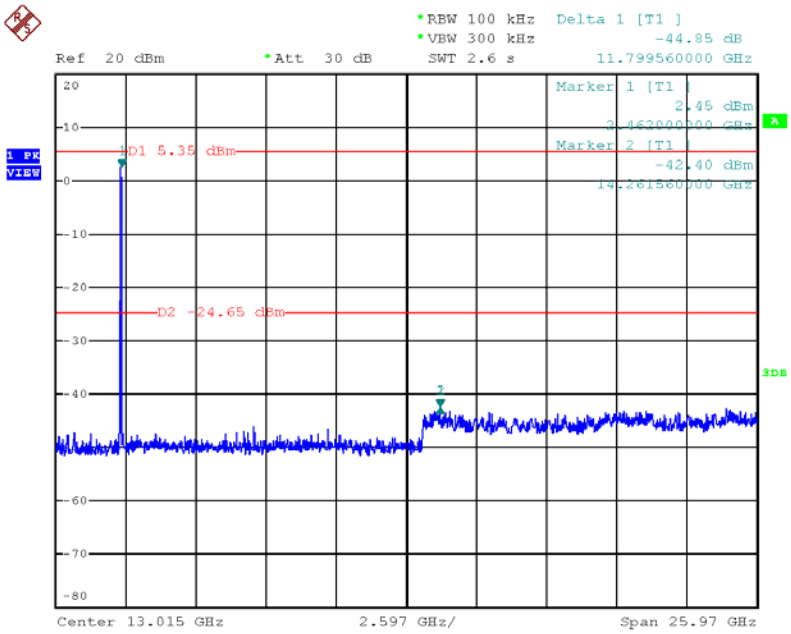
Date: 24.OCT.2012 19:22:06

Plot on Configuration IEEE 802.11g / 6Mbps / CH 6 (down 30dBc)



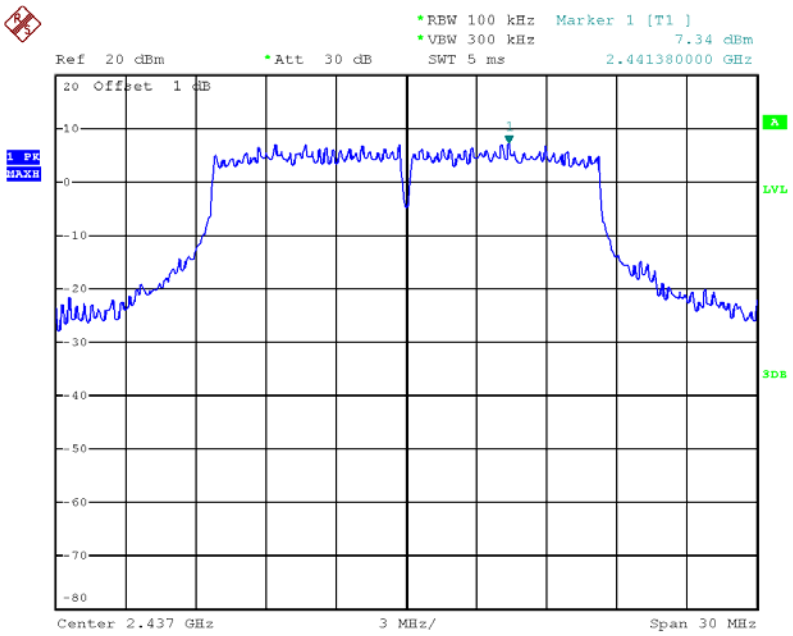
Date: 24.OCT.2012 19:21:35

Plot on Configuration IEEE 802.11g / 6Mbps / CH 11 (down 30dBc)



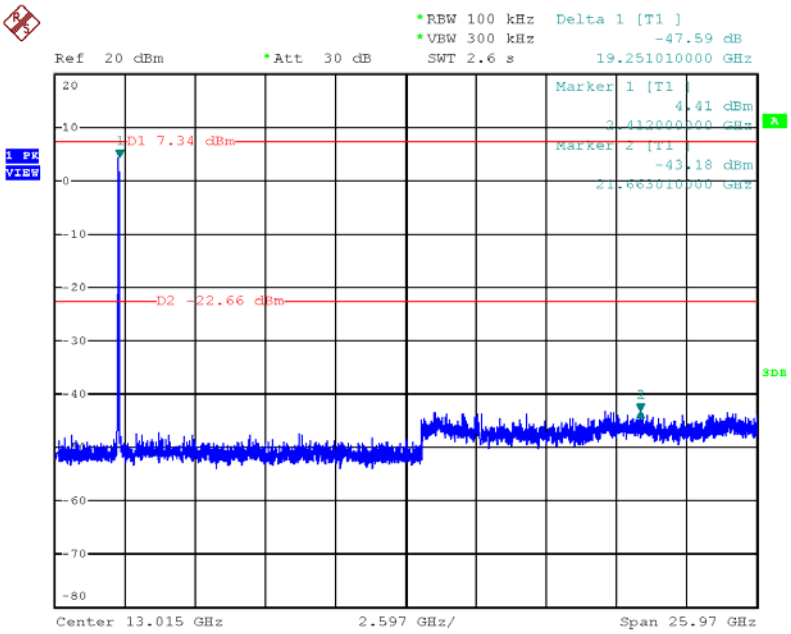
Date: 24.OCT.2012 19:20:58

Plot on Configuration IEEE 802.11g / 54Mbps / Reference Level



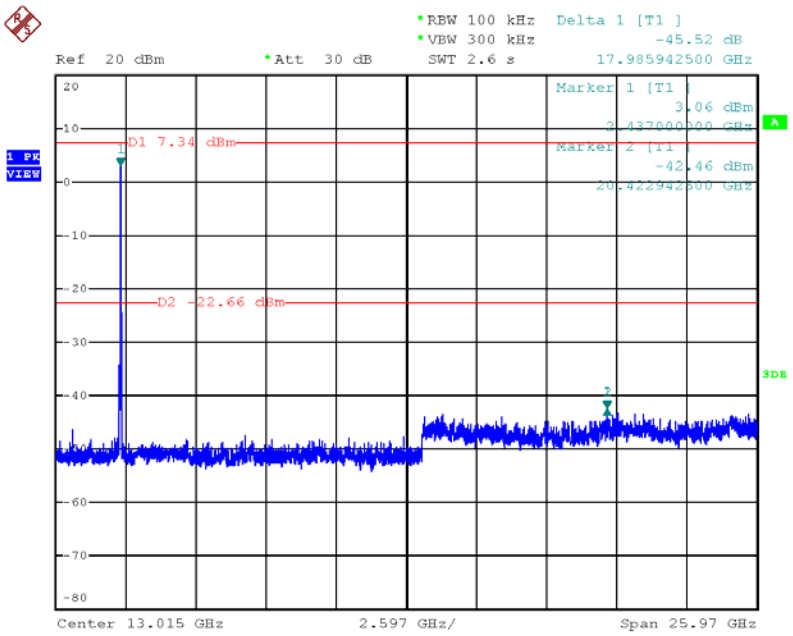
Date: 24.OCT.2012 18:23:46

Plot on Configuration IEEE 802.11g / 54Mpbs / CH 1 (down 30dBc)



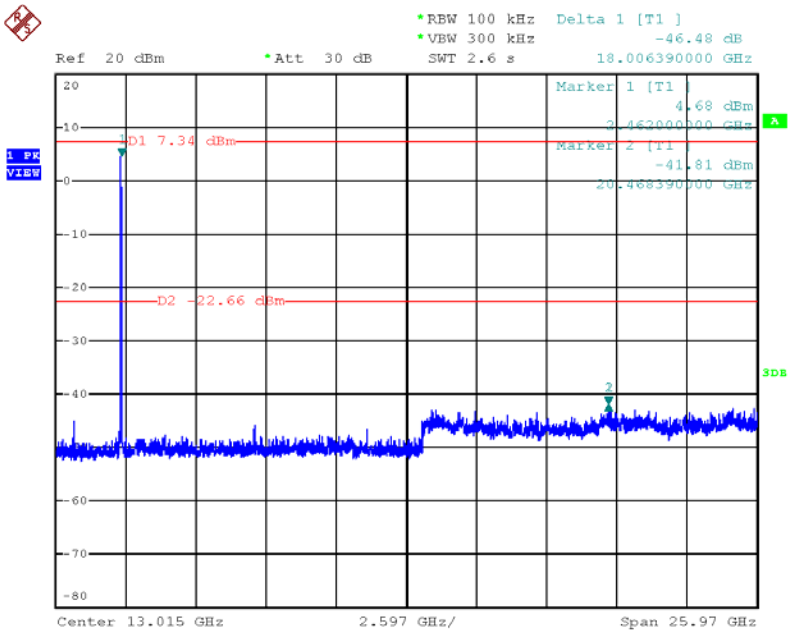
Date: 24.OCT.2012 19:36:54

Plot on Configuration IEEE 802.11g / 54Mbps / CH 6 (down 30dBc)



Date: 24.OCT.2012 19:36:25

Plot on Configuration IEEE 802.11g / 54Mbps / CH 11 (down 30dBc)



Date: 24.OCT.2012 19:35:56

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	Oct. 24, 2011	Conduction (CO01-CB)
EMI Test Receiver	R&S	ESCS 30	100377	9kHz ~ 2.75GHz	Oct. 23, 2012	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	2944A10783	9kHz ~ 1.3GHz	Feb. 17, 2012	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. 31, 2012	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. 08, 2012*	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	Oct. 08, 2012	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 05, 2012	Conducted (TH01-CB)
RF Power Divider	HP	11636A	00306	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)

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

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

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

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