FCC and IC RADIO TEST REPORT

according to

47 CFR FCC Part 15 Subpart C § 15.247 and IC RSS-210 Annex 8

Equipment Name	:	**MediaAccess Gateway TG582n v2 High Power**
Model Number	:	**TG582n v2 HP**
Product Code	:	**DSLWBA582TX, DSLWBA582US**
Filing Type	:	**New Application**
FCC ID	:	**RSE-TG582NV2HP**
IC	:	**431F-TG582NV2HP**
Trade Name	:	**technicolor**
Applicant	:	**Technicolor Delivery Technologies Belgium** Prins Boudewijnlaan 47 B-2650 Edegem Belgium

Statement

Test result included is only for the 802.11b/g/n 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 v03r01**,**KDB 662911 D01 v02 and IC RSS-210 issue 8.**

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

Testing Laboratory
1190

SPORTON International Inc.

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

Table of Contents

1 SUMMARY OF THE TEST RESULT 2
1.1 Information provided by the manufacturer 3
1.2 Application of harmonized standard 3
1.3 Cabling Attached to the Equipment 3
1.4 Panel Drawing 4
2 GENERAL INFORMATION 5
2.1 Product Details 5
2.2 Accessories 6
2.3 Table for Filed Antenna 6
2.4 Transmit Operating Modes 8
2.5 Table for Carrier Frequencies 9
2.6 Table for Test Modes 10
2.7 Table for Testing Locations 12
2.8 Table for Supporting Units 12
2.9 Table for Parameters of Test Software Setting 13
2.10 Test Configuration 15
3 TEST RESULT 17
3.1 AC Power Line Conducted Emissions Measurement 17
3.2 Maximum Conducted Output Power Measurement 21
3.3 Power Spectral Density Measurement 32
3.4 6dB Spectrum Bandwidth Measurement 57
3.5 Radiated Emissions Measurement 72
3.6 Band Edge and Fundamental Emissions Measurement 121
3.7 Antenna Requirements 166
4 LIST OF MEASURING EQUIPMENTS 167
5 TEST LOCATION 169
6 MEASUREMENT UNCERTAINTY 170
APPENDIX A. TEST PHOTO ..... A1 ~ A5
APPENDIX B. MAXIMUM PERMISSIBLE EXPOSURE ..... B1 ~ B3
APPENDIX C. PHOTOGRAPHS OF EUT ..... C1 ~ C9
APPENDIX D. SSROM VALUE AND CURPOWER VALUE ..... D1 ~ D33

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR361717	Rev.01	Initial issue of report	Oct. 09, 2013

Certificate No.: CB10207030

CERTIFICATE OF COMPLIANCE

according to

47 CFR FCC Part 15 Subpart C § 15.247 and IC RSS-210 issue 8

Equipment Name	: **MediaAccess Gateway TG582n v2 High Power**
Model Number	: **TG582n v2 HP**
Product Code	: **DSLWBA582TX, DSLWBA582US**
Trade Name	: technicolor
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Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Jun. 17, 2013 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.

Sam Chen

SPORTON International Inc.

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

1 SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C and IC RSS-210 issue 8					
Part	**FCC Rule Section**	**IC Rule Section**	**Description of Test**	**Result**	**Under Limit**
3.1	15.207	RSS-Gen 7.2.2	AC Power Line Conducted Emissions	Complies	15.10 dB
3.3	15.247(b)(3)	A8.4	Conducted Output Power	Complies	6.58 dB
3.4	15.247(e)	A8.2	Power Spectral Density	Complies	19.52 dB
3.5	15.247(a)(2)	A8.2	6dB Spectrum Bandwidth	Complies	-
3.6	15.247(d)	A8.5	Radiated Emissions	Complies	0.34 dB
3.8	15.247(d)	A8.5	Band Edge Emissions	Complies	0.23 dB
3.9	15.203	RSS-Gen 7.1.4	Antenna Requirements	Complies	-

1.1 Information provided by the manufacturer

Equipment Name: MediaAccess Gateway TG582n v2 High Power

Model Number:TG582n v2 HP

Product Code.: DSLWBA582TX, DSLWBA582US

Trade Name: technicolor

Power Supply: Switching-Type, 12Vdc, 0.75A, Manufacturer: OEM, MODEL:ADS012PL-W 120075

AC Power Cord: Wall-mount, 2pin

Hardware Version: Pem2

Interface Availability

Interface / Model Number	Product Code	DC 12Vdc /0.75A	ADSL: (ADSL/2/2+ Annex A, ADSL 2 L1)	Ethernet 10/100 Mbps	WLAN IEEE 802.11b/g/n (2.4GHz)
MediaAccess Gateway TG582n v2 High Power	DSLWBA582TX	●	●	●(4 port)	●
	DSLWBA582US	●	●	●(4 port)	●

● : Equipped

○ : Not Equipped

1.2 Application of harmonized standard

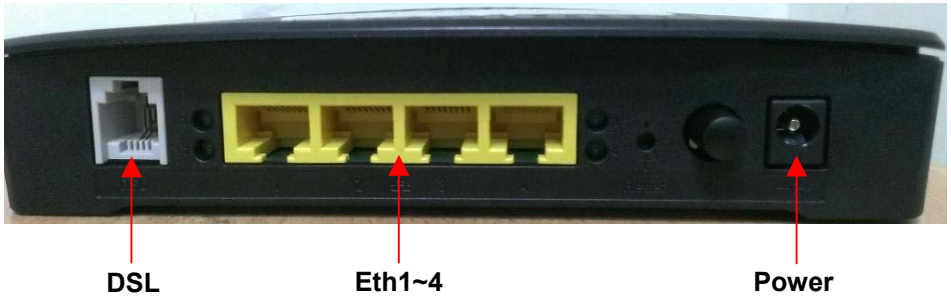
US Standard: 47 CFR FCC Part 15 Subpart C § 15.247
ANSI C63.10-2009
KDB 662911 D01 Multiple Transmitter Output v02. 05/28/2013
KDB 558074 D01 DTS Meas Guidance v03r01. 04/09/2013
IC Standard: IC RSS-210 issue 8

1.3 Cabling Attached to the Equipment

Table 1- Cable and Interconnection

Interface	Cable type	Cable length delivered with the modem	"Real life" Cable length that can be attached to this type of interface	Cable length to be used for testing	Internal/ external connection
DSL	UTP Cat 3	2 meter flat cable	> 10 meter	10 meter	External
Eth1	UTP Cat 5	2 meter	> 10 meter	10 meter	Internal
AC power	-	-	-	-	External

1.4 Panel Drawing



2 GENERAL INFORMATION

2.1 Product Details

The radio detail of IEEE 802.11b/g/n is shown in the table below. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

Items	Description		
Product	Stand alone		
Model Number	TG582n v2 HP		
FCC ID	RSE-TG582NV2HP		
IC	431F-TG582NV2HP		
Product Type	IEEE 802.11b: WLAN (1TX, 2RX) IEEE 802.11g: WLAN (1/2TX, 2RX) IEEE 802.11n (MCS0): WLAN (1/2TX, 2RX) IEEE 802.11n (MCS8): WLAN (2TX, 2RX)		
Power Type	From Power Adapter		
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11g and IEEE 802.11n		
Data Modulation	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11n: See the below table.		
Data Rate (Mbps)	11b mode :DSSS (1/2/5.5/11) 11g mode :OFDM (6/9/12/18/24/36/48/54) 11n(20MHz) mode(MCS0~MCS15); 11n(40MHz) mode(MCS0~MCS15)		
Nominal Chennel Bandwidth	20MHz / 40MHz		
Number of Channel	11 channels for 20MHz / 7 channels for 40MHz		
Channel Spacing	5MHz		
Channel Spacing	2400~2483.5MHz	■	IEEE 802.11b
		■	IEEE 802.11g
		■	IEEE 802.11n (20MHz)
		■	IEEE 802.11n (40MHz)
EUT Stage	■ Product Unit	□	Pre-Sample
Antenna Type	Please see Section 2.3		
I/O Ports	LAN Port x 4 / DSL Port x 1		
Software version	13.35.1390		

Channel Band Width (99%)	11b: 10.08 MHz ; 11g: 16.64 MHz 11n (20MHz): 17.76 MHz ; 11n (40MHz): 36.16 MHz
Conducted Output Power	11b: 20.78 dBm ; 11g: 20.31 dBm MCS0 (20MHz): 20.48 dBm ; MCS0 (40MHz): 17.32 dBm MCS8 (20MHz): 23.42 dBm ; MCS8 (40MHz): 20.29 dBm

2.2 Accessories

Power	Brand	Model	Rating
Switching-Type Power Adapter	OEM	ADS012PL-W 120075	Input:100-240V~ 50/60Hz, 0.5A Output: 12V, 750mA

2.3 Table for Filed Antenna

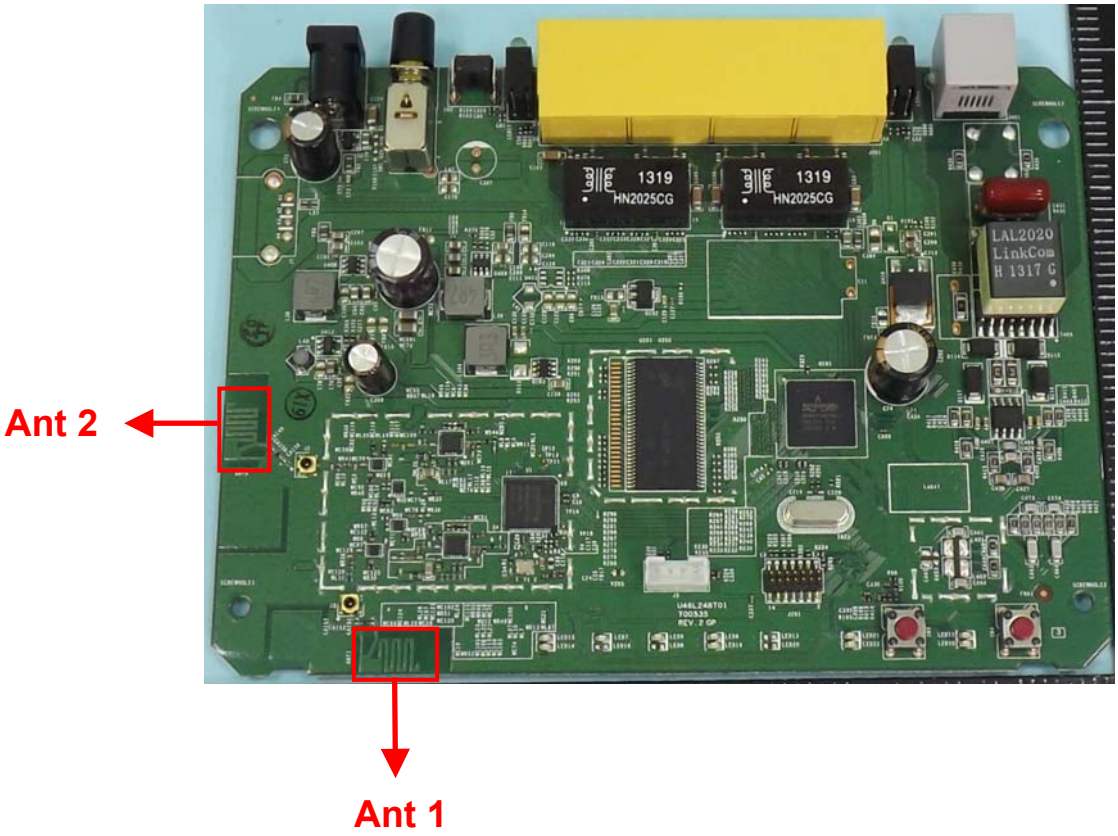
Ant.	Brand	Model Name	Antenna Type	Connector
1	-	-	Printed Antenna	N/A
2	-	-	Printed Antenna	N/A

Antenna & Bandwidth

Antenna	1st (TX)		2nd (TX)	
Bandwidth Mode	20 MHz	40 MHz	20 MHz	40 MHz
802.11b	V	X	X	X
802.11g	V	X	V	X
802.11n	V	V	V	V

Frequency	Antenna Gain (dBi)			
	Ant. 1 (WJ1)		Ant. 2 (WJ2)	
	20MHz	40MHz	20MHz	40MHz
2412MHz	2.92	-	3.30	-
2422MHz	-	3.16	-	2.99
2437MHz	3.32	3.32	3.26	3.26
2452MHz	-	2.95	-	3.06
2462MHz	3.22	-	3.09	-

Note: MediaAccess Gateway TG582n v2 High Power Printing Antenna Measurement-2013-06-27.pdf


Ant 2
Ant 1
1319
HN2025CG
1319
HN2025CG
LAL2020
LinkCom
H 1317 G

IEEE 802.11n Data Rate spec

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11n 20MHz 1 stream	MCS0	6.5	7.2	11n 40MHz 1 stream	MCS0	13.5	15
	MCS1	13	14.4		MCS1	27	30
	MCS2	19.5	21.7		MCS2	40.5	45
	MCS3	26	28.9		MCS3	54	60
	MCS4	39	43.3		MCS4	81	90
	MCS5	52	57.8		MCS5	108	120
	MCS6	58.5	65		MCS6	121.5	135
	MCS7	65	72.2		MCS7	135	150
11n 20MHz 2 stream	MCS8	13	14.4	11n 40MHz 2 stream	MCS8	27	30
	MCS9	26	28.9		MCS9	54	60
	MCS10	39	43.3		MCS10	81	90
	MCS11	52	57.8		MCS11	108	120
	MCS12	78	86.7		MCS12	162	180
	MCS13	104	115.6		MCS13	216	240
	MCS14	117	130		MCS14	243	270
	MCS15	130	144.4		MCS15	270	300

2.4 Transmit Operating Modes

Transmit Operating Mode							Transmit Muitiple Antennas					
☐	Operating mode 1 (single antenna)						■	1TX				
☐	Operating mode 2 (muitiple antenna, no beam forming)						■	2TX	☐	3TX	☐	4TX
☐	Operating mode 3 (muitiple antenna, with beam forming)						☐	2TX	☐	3TX	☐	4TX
☐	802.11b	Operating mode	■	1TX	☐	2TX	☐	3TX	☐	Cyclic shift		
☐	802.11g	Operating mode	■	1TX	■	2TX	☐	3TX	☐	Cyclic shift		
☐	802.11n(HT20)	Operating mode	■	1TX	■	2TX	☐	3TX	☐	Cyclic shift		
☐	802.11n(HT40)	Operating mode	■	1TX	■	2TX	☐	3TX	☐	Cyclic shift		

Note1: For IEEE802.11n, MCS0~MCS7: 1TX SISO & 2TX CDD mode; MCS8~MCS15: 2TX SDM mode

2.5 Table for Carrier Frequencies

Eleven channels are provided for 802.11b, 802.11g, 802.11n (20MHz):

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

Seven channels are provided for 802.11n (40MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400MHz ~ 2483.5 MHz	3	2422 MHz	7	2442MHz
	4	2427MHz	8	2447MHz
	5	2432MHz	9	2452MHz
	6	2437MHz	-	-

2.6 Table for Test Modes

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	Note	Channel	Data Rate	Antenna
AC Power Line Conducted Emissions	11n	OFDM/BPSK	6	-	1+2
Maximum Average Output Power	11b	DSSS/DBPSK	1/6/11	1Mbps	1
				1Mbps	2
	11g	OFDM/BPSK	1/6/11	6Mbps	1
				6Mbps	2
				6Mbps	1+2(CDD)
	11n(20MHz)		1/6/11	MCS0	1
				MCS0	2
				MCS0	1+2(CDD)
				MCS8	1+2(SDM)
	11n(40MHz)		3/6/9	MCS0	1
				MCS0	2
				MCS0	1+2(CDD)
				MCS8	1+2(SDM)
Power Spectral Density	11b	DSSS/DBPSK	1/6/11	1Mbps	2
	11g	OFDM/BPSK	1/6/11	6Mbps	2
			1/6/11	6Mbps	1+2(CDD)
	11n(20MHz)		1/6/11	MCS0	2
			1/6/11	MCS0	1+2(CDD)
	11n(40MHz)		3/6/9	MCS0	2
			3/6/9	MCS0	1+2(CDD)
6dB Spectrum Bandwidth	11b	DSSS/DBPSK	1/6/11	1Mbps	2
	11g	OFDM/BPSK	1/6/11	6Mbps	2
			1/6/11	6Mbps	1+2(CDD)
	11n(20MHz)		1/6/11	MCS0	2
			1/6/11	MCS0	1+2(CDD)
	11n(40MHz)		3/6/9	MCS0	2
			3/6/9	MCS0	1+2(CDD)

Band Edge Emissions (Radiated)	11b	DSSS/DBPSK	1/6/11	1Mbps	2
	11g	OFDM/BPSK	1/6/11	6Mbps	2
				6Mbps	1+2(CDD)
	11n(20MHz)		1/6/11	MCS0	2
				MCS0	1+2(CDD)
	11n(40MHz)		3/6/9	MCS0	2
				MCS0	1+2(CDD)
Radiated Emissions Above 1GHz (Radiated)	11b	DSSS/DBPSK	1/6/11	1Mbps	2
	11g	OFDM/BPSK	1/6/11	6Mbps	2
				6Mbps	1+2(CDD)
	11n(20MHz)		1/6/11	MCS0	2
				MCS0	1+2(CDD)
	11n(40MHz)		3/6/9	MCS0	2
				MCS0	1+2(CDD)
Radiated Emissions Below 1GHz(Radiated)	11n	OFDM/BPSK	6	-	1+2

2.7 Table for Testing Locations

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

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

2.8 Table for Supporting Units

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	QDS-BRCM1049LE

For Test Site No: 03CH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6220	D2A62L1989V5

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	E2K4965AGNM

2.9 Table for Parameters of Test Software Setting

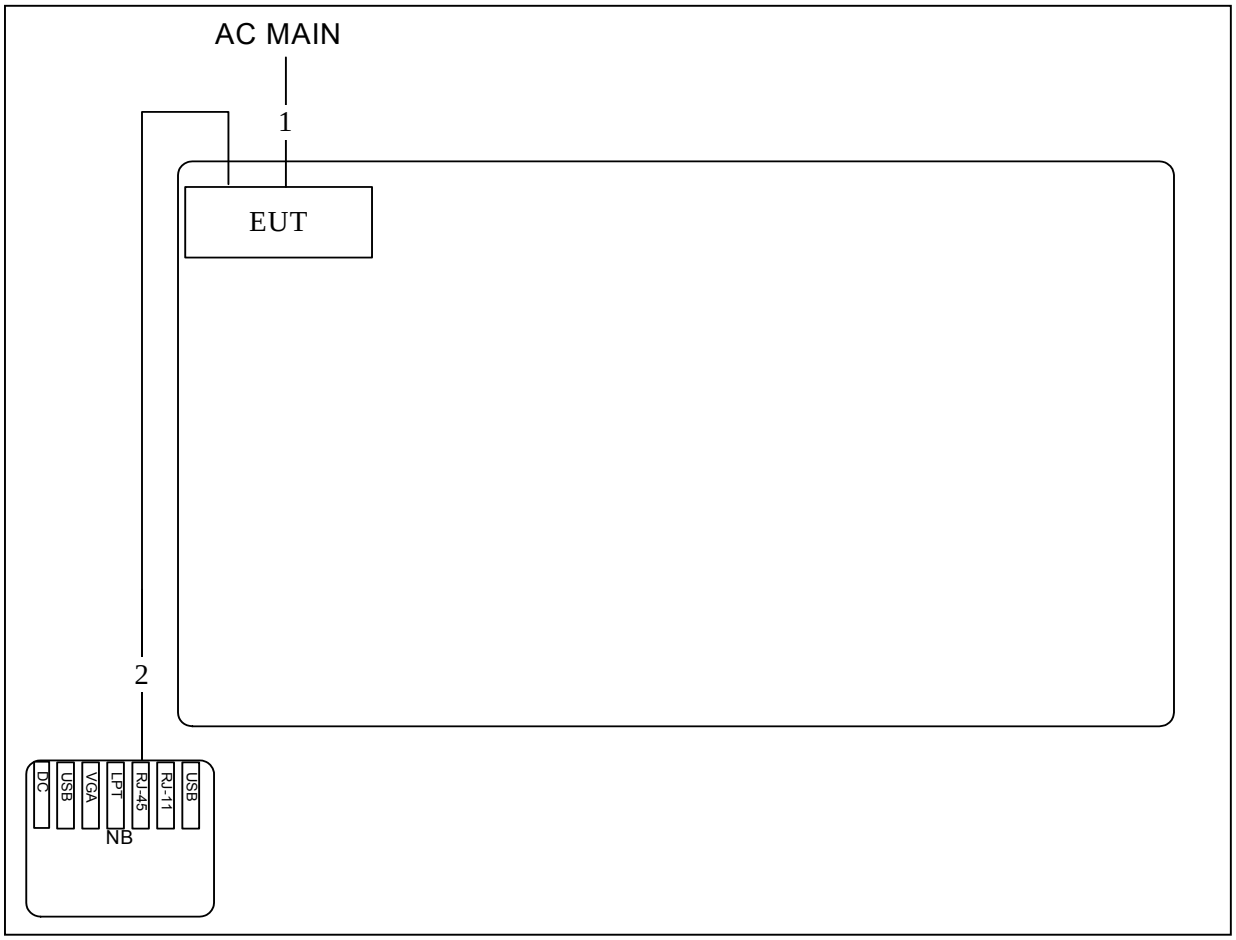
During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

The Power Setting Parameter					
Power Level		1			
Test Software Version		PuTTY 192.168.1.254			
Worst Modulation Mode		**Number of Transmit Chains (NTX)**	**Frequency (MHz)**	**Power Setting**	**Data Rate / MCS**
Ant. 1	802.11b	1Stream 1TX (SISO)	2412	18.00	1Mbps
Ant. 1	802.11b	1Stream 1TX (SISO)	2437	19.25	1Mbps
Ant. 1	802.11b	1Stream 1TX (SISO)	2462	20.75	1Mbps
Ant. 2	802.11b	1Stream 1TX (SISO)	2412	18.00	1Mbps
Ant. 2	802.11b	1Stream 1TX (SISO)	2437	19.25	1Mbps
Ant. 2	802.11b	1Stream 1TX (SISO)	2462	20.75	1Mbps
Ant. 1	802.11g	1Stream 1TX (SISO)	2412	16.75	6Mbps
Ant. 1	802.11g	1Stream 1TX (SISO)	2437	20.25	6Mbps
Ant. 1	802.11g	1Stream 1TX (SISO)	2462	16.75	6Mbps
Ant. 2	802.11g	1Stream 1TX (SISO)	2412	16.75	6Mbps
Ant. 2	802.11g	1Stream 1TX (SISO)	2437	20.25	6Mbps
Ant. 2	802.11g	1Stream 1TX (SISO)	2462	16.75	6Mbps
Ant. 1+2	802.11g	1Stream 2TX (CDD)	2412	16.25	6Mbps
Ant. 1+2	802.11g	1Stream 2TX (CDD)	2437	16.25	6Mbps
Ant. 1+2	802.11g	1Stream 2TX (CDD)	2462	16.25	6Mbps
Ant. 1	802.11n 20MHz	1Stream 1TX (SISO)	2412	16.75	MCS0
Ant. 1	802.11n 20MHz	1Stream 1TX (SISO)	2437	20.25	MCS0
Ant. 1	802.11n 20MHz	1Stream 1TX (SISO)	2462	16.75	MCS0
Ant. 2	802.11n 20MHz	1Stream 1TX (SISO)	2412	16.75	MCS0
Ant. 2	802.11n 20MHz	1Stream 1TX (SISO)	2437	20.25	MCS0
Ant. 2	802.11n 20MHz	1Stream 1TX (SISO)	2462	16.75	MCS0
Ant. 1+2	802.11n 20MHz	1Stream 2TX (CDD)	2412	16.25	MCS0
Ant. 1+2	802.11n 20MHz	1Stream 2TX (CDD)	2437	16.25	MCS0
Ant. 1+2	802.11n 20MHz	1Stream 2TX (CDD)	2462	16.25	MCS0
Ant. 1+2	802.11n 20MHz	2Stream 2TX (SDM)	2412	16.25	MCS8

Ant. 1+2	802.11n 20MHz	2Stream 2TX (SDM)	2437	20.25	MCS8
Ant. 1+2	802.11n 20MHz	2Stream 2TX (SDM)	2462	16.75	MCS8
Ant. 1	802.11n 40MHz	1Stream 1TX (SISO)	2422	15.50	MCS0
Ant. 1	802.11n 40MHz	1Stream 1TX (SISO)	2437	17.50	MCS0
Ant. 1	802.11n 40MHz	1Stream 1TX (SISO)	2452	12.50	MCS0
Ant. 2	802.11n 40MHz	1Stream 1TX (SISO)	2422	15.50	MCS0
Ant. 2	802.11n 40MHz	1Stream 1TX (SISO)	2437	17.50	MCS0
Ant. 2	802.11n 40MHz	1Stream 1TX (SISO)	2452	12.50	MCS0
Ant. 1+2	802.11n 40MHz	1Stream 2TX (CDD)	2422	15.75	MCS0
Ant. 1+2	802.11n 40MHz	1Stream 2TX (CDD)	2437	16.25	MCS0
Ant. 1+2	802.11n 40MHz	1Stream 2TX (CDD)	2452	14.75	MCS0
Ant. 1+2	802.11n 40MHz	2Stream 2TX (SDM)	2422	15.75	MCS8
Ant. 1+2	802.11n 40MHz	2Stream 2TX (SDM)	2437	17.25	MCS8
Ant. 1+2	802.11n 40MHz	2Stream 2TX (SDM)	2452	14.75	MCS8

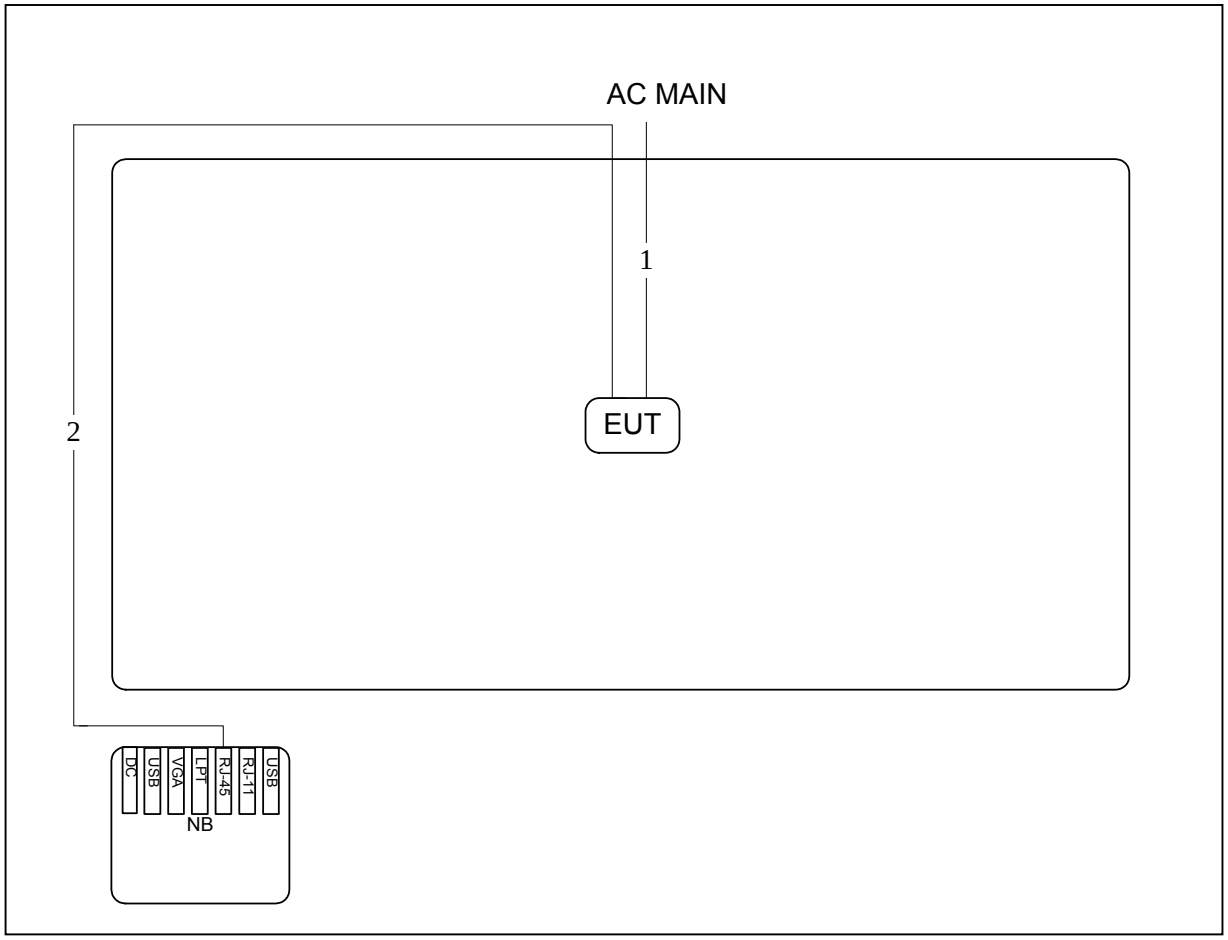
2.10 Test Configuration

2.10.1 AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shield	Length
1	Power cable	No	1.5M
2	RJ-45 cable	No	10M

2.10.2 Radiation Emissions Test Configuration



Item	Connection	Shield	Length
1	Power cable	No	1.5M
2	RJ-45 cable	No	10M

3 TEST RESULT

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 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

3.1.2 Measuring Instruments and Setting

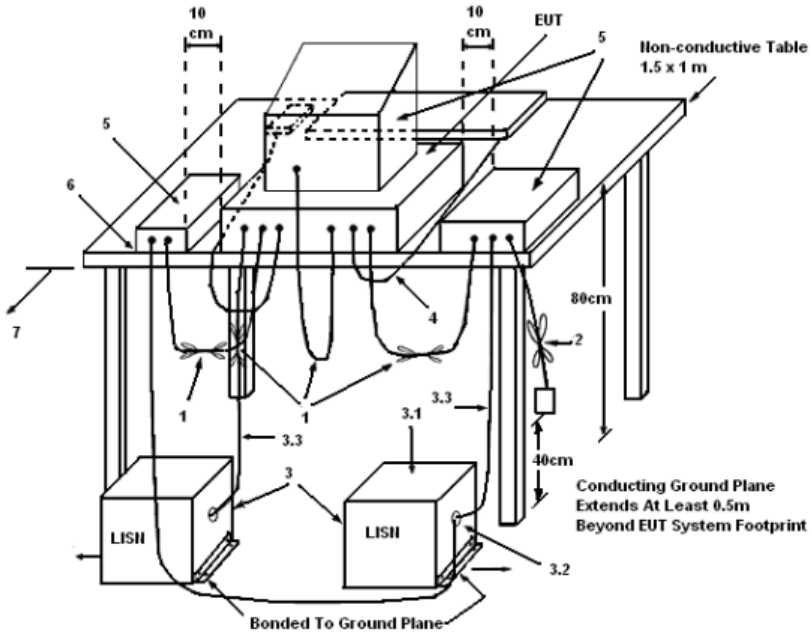
Please refer to section 4 of equipments list in this report. The following table is the setting of the receiver.

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

3.1.3 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.**

3.1.4 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.**
4. **All other equipment powered from additional LISN(s).**
5. **Multiple outlet strip can be used for multiple power cords of non-EUT equipment.**
6. **LISN at least 80 cm from nearest part of EUT chassis.**
7. **Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.**
8. **Non-EUT components of EUT system being tested.**
9. **Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.**
10. **Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.**

3.1.5 Test Deviation

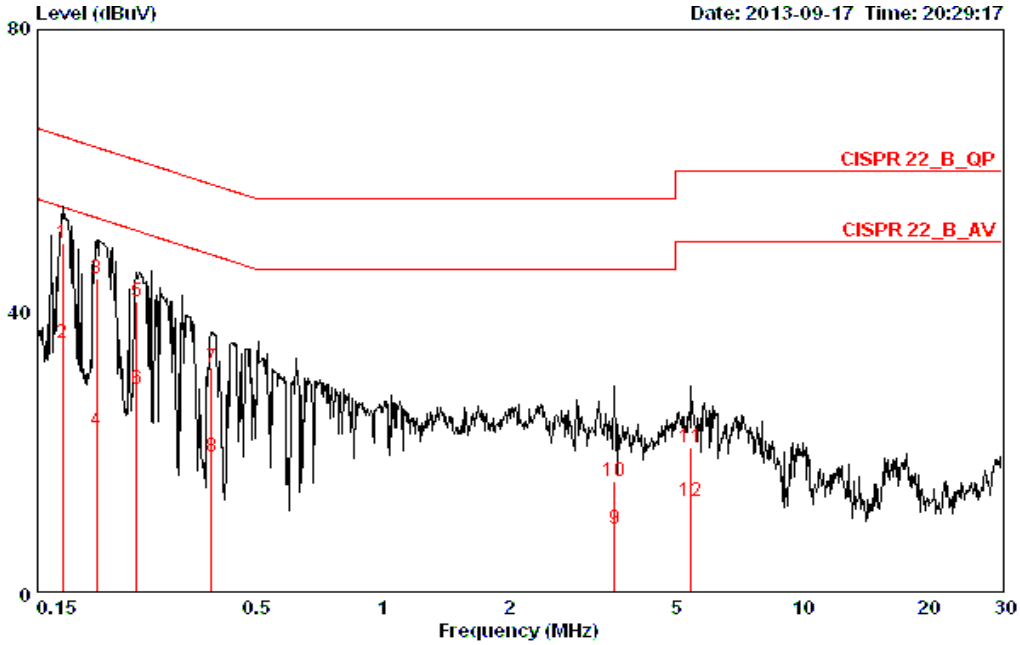
There is no deviation with the original standard.

3.1.6 EUT Operation during Test

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

3.1.7 Results of AC Power Line Conducted Emissions Measurement

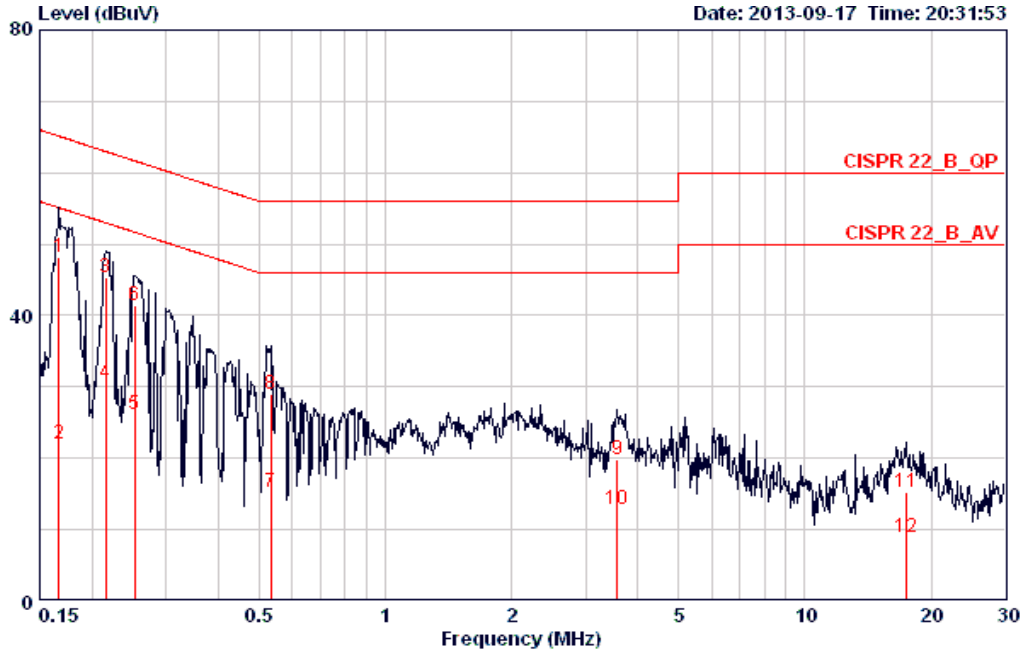
Temperature	24℃	**Humidity**	48%
Test Engineer	Hank Yang	**Phase**	Line
Configuration	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1 @	0.17215	49.76	-15.10	64.86	49.41	0.16	0.19	LINE	QP
2	0.17215	35.57	-19.29	54.86	35.22	0.16	0.19	LINE	AVERAGE
3	0.20723	44.58	-18.74	63.32	44.23	0.15	0.20	LINE	QP
4	0.20723	23.15	-30.17	53.32	22.80	0.15	0.20	LINE	AVERAGE
5	0.25888	41.39	-20.08	61.47	41.04	0.15	0.20	LINE	QP
6	0.25888	28.96	-22.51	51.47	28.61	0.15	0.20	LINE	AVERAGE
7	0.38929	32.12	-25.96	58.08	31.77	0.15	0.20	LINE	QP
8	0.38929	19.41	-28.67	48.08	19.06	0.15	0.20	LINE	AVERAGE
9	3.565	9.12	-36.88	46.00	8.63	0.21	0.28	LINE	AVERAGE
10	3.565	15.98	-40.02	56.00	15.49	0.21	0.28	LINE	QP
11	5.447	20.72	-39.28	60.00	20.15	0.25	0.32	LINE	QP
12	5.447	13.08	-36.92	50.00	12.51	0.25	0.32	LINE	AVERAGE

Note 1: The test was passed at the minimum margin that marked by the frame in the following data
Note 2: The emission levels of other frequencies were very low against the limit.
Note 3: Q.P. and AV. are abbreviations of quasi-peak and average individually.
Note 4: Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level
Note 5: Over Limit value = level - Limit value

Temperature	24℃	**Humidity**	48%
Test Engineer	Hank Yang	**Phase**	Neutral
Configuration	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1 @	0.16677	48.28	-16.84	65.12	48.01	0.08	0.19	NEUTRAL	QP
2	0.16677	22.11	-33.01	55.12	21.84	0.08	0.19	NEUTRAL	AVERAGE
3	0.21506	45.24	-17.77	63.01	44.96	0.08	0.20	NEUTRAL	QP
4	0.21506	30.58	-22.43	53.01	30.30	0.08	0.20	NEUTRAL	AVERAGE
5	0.25211	26.19	-25.50	51.69	25.91	0.08	0.20	NEUTRAL	AVERAGE
6	0.25211	41.36	-20.33	61.69	41.08	0.08	0.20	NEUTRAL	QP
7	0.53215	15.20	-30.80	46.00	14.92	0.08	0.20	NEUTRAL	AVERAGE
8	0.53215	28.90	-27.10	56.00	28.62	0.08	0.20	NEUTRAL	QP
9	3.565	19.78	-36.22	56.00	19.37	0.13	0.28	NEUTRAL	QP
10	3.565	12.84	-33.16	46.00	12.43	0.13	0.28	NEUTRAL	AVERAGE
11	17.383	15.29	-44.71	60.00	14.49	0.35	0.45	NEUTRAL	QP
12	17.383	9.04	-40.96	50.00	8.24	0.35	0.45	NEUTRAL	AVERAGE

Note 1: The test was passed at the minimum margin that marked by the frame in the following data
Note 2: The emission levels of other frequencies were very low against the limit.
Note 3: Q.P. and AV. are abbreviations of quasi-peak and average individually.
Note 4: Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level
Note 5: Over Limit value = level - Limit value

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

3.2.2 Measuring Instruments and Setting

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

Power Meter Parameter	Setting
Filter No.	Auto
Measurement time	0.135 s ~ 26 s
Power Sensor	MA2411B

3.2.3 Test Procedures

1. **Test was performed in accordance with Measurement of Digital Transmission Systems Operating under KDB 558074 D01 DTS Meas Guidance v03r01. 04/09/2013**
2. **The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor and enable the trigger function to get the all on time transmission . Record the average power level.**
3. **Multiple antenna system was performanced in accordance with KDB 662911 D01 Multiple Transmitter Output v02. 05/28/2013 Directional Gain Calculations for In-Band Measurements**

   (i) If any transmit signals are correlated with each other,

   Directional gain = G_{ANT} + 10 log(N_{ANT} / N_{SS}) dBi

   If all transmit signals are completely uncorrelated with each other,

   Directional gain = G_{ANT} dBi

   (ii) For power measurements on IEEE 802.11 devices,

   G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

   Array Gain = 0 dB (i.e., no array gain) for N_{ANT} ≤ 4;

   Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

   Array Gain = 5 log(N_{ANT} / N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with N_{ANT} ≥ 5.
4. **When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.**

3.2.4 Test Setup Layout

Maximum Conducted Output Power


3.2.5 Test Deviation

There is no deviation with the original standard.

3.2.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.2.7 Test Result for Maximum Conducted Output Power

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11b
Duty Cycle	100%	**Duty Factor**	0 dB

The power meter can be triggered/signal-gated such that the power is measured only when the EUT is transmitting at its maximum power control level.

Configuration IEEE 802.11b <Ant. 1>

Channel	Frequency	Conducted Power (dBm)	Antenna Gain (dBi)	Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.03	2.92	18.03	30.00	Complies
6	2437 MHz	19.35	3.32	19.35	30.00	Complies
11	2462 MHz	20.67	3.22	20.67	30.00	Complies

Note1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Configuration IEEE 802.11b <Ant. 2>

Channel	Frequency	Conducted Power (dBm)	Antenna Gain (dBi)	Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.27	3.30	18.27	30.00	Complies
6	2437 MHz	19.43	3.26	19.43	30.00	Complies
11	2462 MHz	20.78	3.09	20.78	30.00	Complies

Note1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11g
Duty Cycle	99.03%: Ant.1 / Ant. 2 95.37%: Ant.1 + Ant. 2	**Duty Factor**	0.04 dB: Ant.1 / Ant. 2 0.21 dB: Ant.1 + Ant. 2

The power meter can be triggered/signal-gated such that the power is measured only when the EUT is transmitting at its maximum power control level.

Configuration IEEE 802.11g <Ant. 1>

Channel	**Frequency**	**Conducted Power (dBm)**	**Antenna Gain (dBi)**	**Total Conducted Output Power (dBm)**	**Max. Limit (dBm)**	**Result**
1	2412 MHz	16.43	2.92	16.47	30.00	Complies
6	2437 MHz	20.27	3.32	20.31	30.00	Complies
11	2462 MHz	16.60	3.22	16.64	30.00	Complies

Note1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Note2:Total Conducted Output power = Condcuted + Duty Factor

Configuration IEEE 802.11g <Ant. 2>

Channel	**Frequency**	**Conducted Power (dBm)**	**Antenna Gain (dBi)**	**Total Conducted Output Power (dBm)**	**Max. Limit (dBm)**	**Result**
1	2412 MHz	16.82	3.30	16.86	30.00	Complies
6	2437 MHz	20.26	3.26	20.30	30.00	Complies
11	2462 MHz	16.83	3.09	16.87	30.00	Complies

Note1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Note2:Total Conducted Output power = Condcuted + Duty Factor

Configuration of IEEE 802.11g <CDD mode Ant. 1 + Ant. 2>

Channel	Frequency	Ant. 1 Conducted Power (dBm)	Ant. 1 Gain (dBi)	Ant. 2 Conducted Power (dBm)	Ant. 2 Gain (dBi)	Total Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	15.81	2.92	16.18	3.30	19.22	30.00	Complies
6	2437 MHz	15.94	3.32	15.92	3.26	19.15	30.00	Complies
11	2462 MHz	15.91	3.22	16.05	3.09	19.20	30.00	Complies

Note 1: Correlated Directional gain = G_{ANT} dBi + 10 log(N_{ANT} / N_{SS}) dBi

G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

For Power measurements : N_{ANT} ≤ 4; Array Gain= 0dBi

CH1=10 log[(1.959+2.138)/2] +0= 3.11dBi < 6dBi

CH6=10 log[(2.148+2.118)/2] +0= 3.29dBi < 6dBi

CH11=10 log[(2.099+2.037)/2] +0= 3.16dBi < 6dBi

Note 2: Total Power (dBm) = 10 log($10^{P1/10}$ + $10^{P2/10}$)+duty factor

P1 = Ant. 1 Conducted Power.

P2 = Ant. 2 Conducted Power.

EX: CH1

CH1 : Total Power = Ant1+Ant2= 15.81dBm+16.18dBm=10 log(38.11mW+41.5mW)+0.21= 19.22dBm

CH6 : Total Power = Ant1+Ant2= 15.94dBm+15.92dBm=10 log(39.26mW+39.08mW)+0.21= 19.15dBm

CH11 : Total Power = Ant1+Ant2= 15.91dBm+16.05dBm=10 log(38.99mW+40.27mW)+0.21= 19.2dBm

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11n
Duty Cycle	98.96%: Ant. 1 98.96%: Ant. 2 95.47%: Ant. 1 + Ant. 2 (CDD Mode) 97.97%: Ant. 1 + Ant. 2 (SDM Mode)	**Duty Factor**	0.05 dB: Ant. 1 0.05 dB: Ant. 2 0.20 dB: Ant. 1 + Ant. 2 (CDD Mode) 0.09 dB: Ant. 1 + Ant. 2 (SDM Mode)

The power meter can be triggered/signal-gated such that the power is measured only when the EUT is transmitting at its maximum power control level.

Configuration of IEEE 802.11n 20MHz MCS0 <Ant. 1>

Channel	Frequency	Conducted Power (dBm)	Antenna Gain (dBi)	Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	16.52	2.92	16.57	30.00	Complies
6	2437 MHz	20.43	3.32	20.48	30.00	Complies
11	2462 MHz	16.43	3.22	16.48	30.00	Complies

Note1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Note2:Total Conducted Output power = Condcuted + Duty Factor

Configuration of IEEE 802.11n 20MHz MCS0 <Ant. 2>

Channel	Frequency	Conducted Power (dBm)	Antenna Gain (dBi)	Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	16.81	3.30	16.86	30.00	Complies
6	2437 MHz	20.31	3.26	20.36	30.00	Complies
11	2462 MHz	16.78	3.09	16.83	30.00	Complies

Note1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Note2:Total Conducted Output power = Condcuted + Duty Factor

Configuration of IEEE 802.11n 20MHz MCS0 <CDD mode Ant. 1 + Ant. 2>

Channel	Frequency	Ant. 1 Conducted Power (dBm)	Ant. 1 Gain (dBi)	Ant. 2 Conducted Power (dBm)	Ant. 2 Gain (dBi)	Total Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	16.26	2.92	16.69	3.30	19.69	30.00	Complies
6	2437 MHz	16.28	3.32	16.42	3.26	19.56	30.00	Complies
11	2462 MHz	16.01	3.22	16.53	3.09	19.49	30.00	Complies

Note 1: Correlated Directional gain = G_{ANT} dBi + 10 log(N_{ANT} / N_{SS}) dBi

G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

For Power measurements : N_{ANT} ≤ 4; Array Gain= 0dBi

CH1=10 log[(1.959+2.138)/2] +0= 3.11dBi < 6dBi

CH6=10 log[(2.148+2.118)/2] +0= 3.29dBi < 6dBi

CH9=10 log[(2.099+2.037)/2] +0= 3.16dBi < 6dBi

Note 2: Total Power (dBm) = 10 log($10^{P1/10}$ + $10^{P2/10}$)+duty factor

P1 = Ant. 1 Conducted Power.

P2 = Ant. 2 Conducted Power.

EX: CH1

CH1 : Total Power = Ant1+Ant2= 16.26dBm+16.69dBm=10 log(42.27mW+46.67mW)+0.2= 19.69dBm

CH6 : Total Power = Ant1+Ant2= 16.28dBm+16.42dBm=10 log(42.46mW+43.85mW)+0.2= 19.56dBm

CH11 : Total Power = Ant1+Ant2= 16.01dBm+16.53dBm=10 log(39.90mW+44.98mW)+0.2= 19.49dBm

Configuration of IEEE 802.11n 20MHz MCS8 <SDM mode Ant. 1 + Ant. 2>

Channel	Frequency	Conducted Power (dBm)	Ant. 1 Gain (dBi)	Conducted Power (dBm)	Ant. 2 Gain (dBi)	Total Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	15.63	2.92	16.33	3.30	19.09	30.00	Complies
6	2437 MHz	20.23	3.32	20.40	3.26	23.42	30.00	Complies
11	2462 MHz	16.30	3.22	16.68	3.09	19.59	30.00	Complies

Note 1: Uncorrelated Directional gain = G_{ANT} dBi

G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

CH1=10 log[(1.959+2.138)/2] +0= 3.11dBi < 6dBi

CH6=10 log[(2.148+2.118)/2] +0= 3.29dBi < 6dBi

CH11=10 log[(2.099+2.037)/2] +0= 3.16dBi < 6dBi

Note 2: Total Power (dBm) = 10 log($10^{P1/10}$ + $10^{P2/10}$)+duty factor

P1 = Ant. 1 Conducted Power.

P2 = Ant. 2 Conducted Power.

EX: CH1

CH1 : Total Power = Ant1+Ant2= 15.63dBm+16.33dBm=10 log(36.56mW+42.95mW)+0.09= 19.09dBm

CH6 : Total Power = Ant1+Ant2= 20.23dBm+20.40dBm=10 log(105.44mW+109.65mW)+0.09= 23.42dBm

CH11 : Total Power = Ant1+Ant2=16.30dBm+16.68dBm=10 log(42.66mW+46.56mW)+0.09= 19.59dBm

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11n
Duty Cycle	97.89%: Ant. 1 97.89%: Ant. 2 91.17%: Ant. 1 + Ant. 2 (CDD Mode) 96.00%: Ant. 1 + Ant. 2 (SDM Mode)	**Duty Factor**	0.09 dB: Ant. 1 0.09 dB: Ant. 2 0.40 dB: Ant. 1 + Ant. 2 (CDD Mode) 0.18 dB: Ant. 1 + Ant. 2 (SDM Mode)

The power meter can be triggered/signal-gated such that the power is measured only when the EUT is transmitting at its maximum power control level.

Configuration of IEEE 802.11n 40MHz MCS0 <Ant. 1>

Channel	Frequency	Conducted Power (dBm)	Antenna Gain (dBi)	Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.33	3.16	15.42	30.00	Complies
6	2437 MHz	17.06	3.32	17.15	30.00	Complies
9	2452 MHz	10.93	2.95	11.02	30.00	Complies

Note1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Note2:Total Conducted Output power = Condcuted + Duty Factor

Configuration of IEEE 802.11n 40MHz MCS0 <Ant. 2>

Channel	Frequency	Conducted Power (dBm)	Antenna Gain (dBi)	Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.26	2.99	15.35	30.00	Complies
6	2437 MHz	17.23	3.26	17.32	30.00	Complies
9	2452 MHz	11.15	3.06	11.24	30.00	Complies

Note1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Note2:Total Conducted Output power = Condcuted + Duty Factor

Configuration of IEEE 802.11n 40MHz MCS0 <CDD mode Ant. 1 + Ant. 2>

Channel	Frequency	Ant. 1 Conducted Power (dBm)	Ant. 1 Gain (dBi)	Ant. 2 Conducted Power (dBm)	Ant. 2 Gain (dBi)	Total Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.31	3.16	15.64	2.99	18.89	30.00	Complies
6	2437 MHz	15.66	3.32	16.02	3.26	19.26	30.00	Complies
9	2452 MHz	14.05	2.95	14.42	3.06	17.65	30.00	Complies

Note 1: Correlated Directional gain = G_{ANT} dBi + 10 log(N_{ANT} / N_{SS}) dBi

G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

For Power measurements : N_{ANT} ≤ 4; Array Gain= 0dBi

CH3=10 log[(2.070+1.991)/2] +0= 3.08dBi < 6dBi

CH6=10 log[(2.148+2.118)/2] +0= 3.29dBi < 6dBi

CH9=10 log[(1.972+2.023)/2] +0= 3.01dBi < 6dBi

Note 2: Total Power (dBm) = 10 log($10^{P1/10}$ + $10^{P2/10}$)+duty factor

P1 = Ant. 1 Conducted Power.

P2 = Ant. 2 Conducted Power.

EX:CH1

CH3 : Total Power = Ant1+Ant2= 15.31dBm+15.64dBm=10 log(33.96mW+36.64mW)+0.4= 18.89dBm

CH6 : Total Power = Ant1+Ant2= 15.66dBm+16.02dBm=10 log(36.81mW+39.99mW)+0.4= 19.26dBm

CH9 : Total Power = Ant1+Ant2= 14.05dBm+14.42dBm=10 log(25.41mW+27.67mW)+0.4= 17.65dBm

Configuration of IEEE 802.11n 40MHz MCS8 <SDM mode Ant. 1 + Ant. 2>

Channel	Frequency	Ant. 1 Conducted Power (dBm)	Ant. 1 Gain (dBi)	Ant. 2 Conducted Power (dBm)	Ant. 2 Gain (dBi)	Total Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	14.94	3.16	15.95	2.99	18.66	30.00	Complies
6	2437 MHz	16.75	3.32	17.42	3.26	20.29	30.00	Complies
9	2452 MHz	14.15	2.95	14.61	3.06	17.57	30.00	Complies

Note 1: Uncorrelated Directional gain = G_{ANT} dBi

G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

CH3=10 log[(2.070+1.991)/2] +0= 3.08dBi < 6dBi

CH6=10 log[(2.148+2.118)/2] +0= 3.29dBi < 6dBi

CH9=10 log[(1.972+2.023)/2] +0= 3.01dBi < 6dBi

Note 2: Total Power (dBm) = 10 log($10^{P1/10}$ + $10^{P2/10}$)+duty factor

P1 = Ant. 1 Conducted Power.

P2 = Ant. 2 Conducted Power.

EX: CH1

CH3 : Total Power = Ant1+Ant2= 14.94dBm+15.95dBm=10 log(31.19mW+39.36mW)+0.18= 18.66dBm

CH6 : Total Power = Ant1+Ant2= 16.75dBm+17.42dBm=10 log(47.32mW+55.21mW)+0.18= 20.29dBm

CH9 : Total Power = Ant1+Ant2= 14.15dBm+14.61dBm=10 log(26.00mW+28.91mW)+0.18= 17.56dBm

3.3 Power Spectral Density Measurement

3.3.1 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.

3.3.2 Measuring Instruments and Setting

Please refer to section 4 of equipments list in this report. The following table is the setting of Spectrum Analyzer.

Power Meter Parameter	Setting
Attenuation	Auto
Span Frequency	Set span to at least 1.5 times the DTS channel bandwidth.
RBW	≥ 3 kHz.
VBW	≥3 x RBW.
Detector	RMS
Trace	Averaging(RMS) mode over a minimum of 100 traces
Sweep Time	Auto

3.3.3 Test Procedures

1. **Test was performed in accordance with Measurement of Digital Transmission Systems Operating under KDB 558074 D01 DTS Meas Guidance v03r01. 04/09/2013**
2. **Multiple antenna system was performanced in accordance with KDB 662911 D01 Multiple Transmitter Output v02. 05/28/2013 in-Band Power Spectral Density(PSD) Measurements(b) Measure and sum spectral maxima across the outputs. (as described in preceding section)**

   (i) If any transmit signals are correlated with each other,

   Directional gain = G_{ANT} + 10 log(N_{ANT} / N_{SS}) dBi

   If all transmit signals are completely uncorrelated with each other,

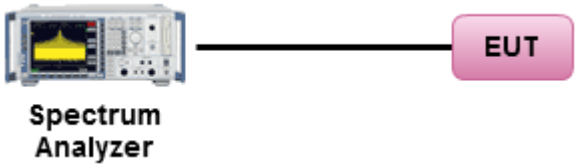
   Directional gain = G_{ANT} dBi

   (ii) For power spectral density (PSD) measurements on all devices,

   G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

   Array Gain = 10 log(N_{ANT} / N_{SS}) dB.
3. **The transmitter output (antenna port) was connected to the spectrum analyzer. This measurement requires that EUT could be configured to transmit continuously(at a minimun duty cycle of 98%) at full power over the measurement duration. Time intervals during which the transmitter is off or transmitting at reduced power levels shall not be included**
4. **The resulting PSD level must be ≤ 8 dBm.**

3.3.4 Test Setup Layout

Power Spectral Density


3.3.5 Test Deviation

There is no deviation with the original standard.

3.3.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.3.7 Test Result of Power Spectral Density

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11b
Duty Cycle	100%	**Duty Factor**	0 dB

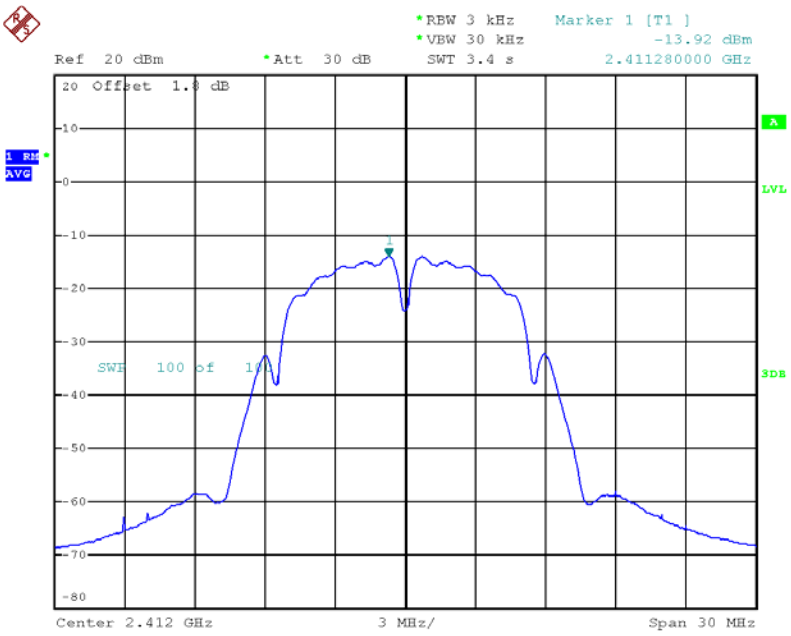
Configuration IEEE 802.11b <Worst mode: Ant. 2>

Channel	Frequency	Power Density (dBm/3kHz)	Total Power Density (dBm/3kHz)	Antenna Gain (dBi)	Power Density Limit (dBm/3kHz)	Result
1	2412 MHz	-13.92	-13.92	3.30	8.00	Complies
6	2437 MHz	-12.70	-12.70	3.26	8.00	Complies
11	2462 MHz	-11.52	-11.52	3.09	8.00	Complies

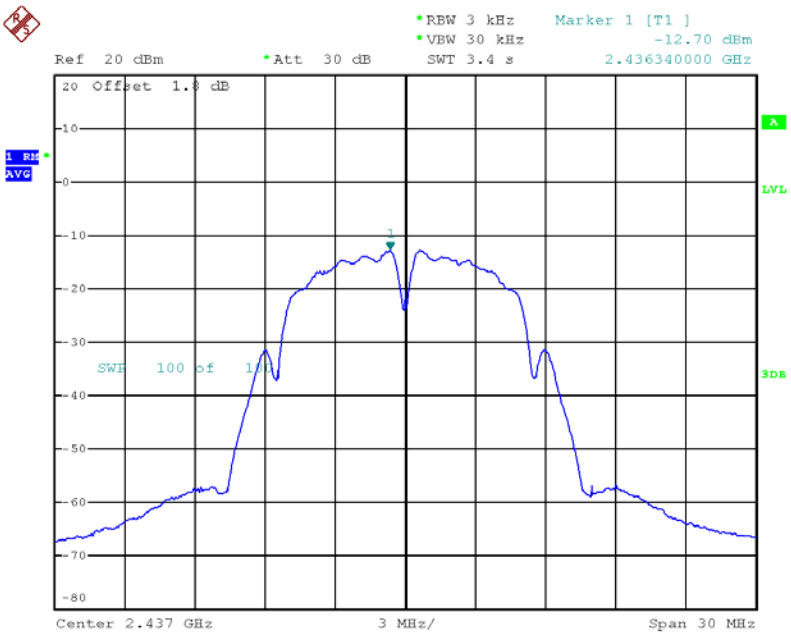
Note 1: Uncorrelated Directional gain = G $_{ANT}$ dBi, < 6dBi

Note 2: Power Density + Duty Factor = Total Power Density

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

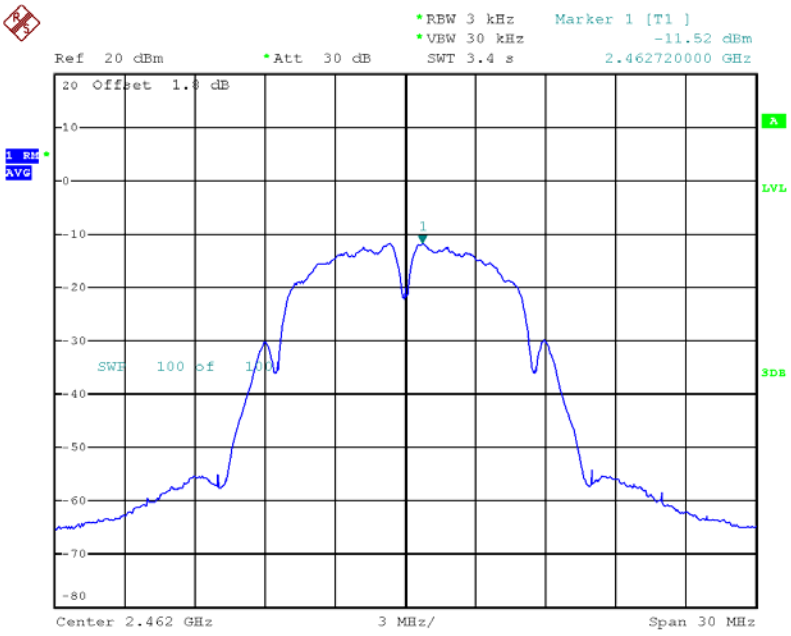


Power Density Plot on Configuration IEEE 802.11b / Ant. 2 / 2437 MHz



Date: 16.SEP.2013 13:28:00

Power Density Plot on Configuration IEEE 802.11b / Ant. 2 / 2462 MHz



Date: 16.SEP.2013 13:29:30

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11g
Duty Cycle	99.03%: Ant. 2 95.37%: Ant. 1 + Ant. 2 (CDD Mode)	**Duty Factor**	0.04 dB: Ant. 2 0.21 dB: Ant. 1 + Ant. 2 (CDD Mode)

Configuration IEEE 802.11g <Worst mode: Ant. 2>

Channel	Frequency	Power Density (dBm/3kHz)	Total Power Density (dBm/3kHz)	Antenna Gain (dBi)	Power Density Limit (dBm/3kHz)	Result
1	2412 MHz	-18.24	-18.20	3.30	8.00	Complies
6	2437 MHz	-15.07	-15.03	3.26	8.00	Complies
11	2462 MHz	-18.26	-18.22	3.09	8.00	Complies

Note 1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Note 2: Power Density + Duty Factor = Total Power Density

Configuration IEEE 802.11g <CDD mode: Ant. 1 + Ant. 2>

Channel	Frequency	Ant. 1 Power Density (dBm/3kHz)	Ant. 1 Gain (dBi)	Ant. 2 Power Density (dBm/3kHz)	Ant. 2 Gain (dBi)	Total Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
1	2412 MHz	-19.17	2.92	-19.36	3.30	-16.05	7.88	Complies
6	2437 MHz	-19.46	3.32	-19.46	3.26	-16.24	7.70	Complies
11	2462 MHz	-19.90	3.22	-19.18	3.09	-16.31	7.83	Complies

Note 1: Correlated Directional gain = G_{ANT} dBi + 10 log(N_{ANT} / N_{SS}) dBi

G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

For PSD measurements : Array Gain= 10 log(N_{ANT})dBi=10 log(2)=3.01dB

CH1=10 log[(1.959+2.138)/2] + 3.01= 6.12dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.12 dB =7.88 dBm/3kHz

CH6=10 log[(2.148+2.118)/2] + 3.01= 6.30dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.30 dB =7.70 dBm/3kHz

CH11=10 log[(2.099+2.037)/2] + 3.01= 6.17dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.17 dB =7.83 dBm/3kHz

Note 2 :Total PSD (dBm/3kHz) = 10 log($10^{P1/10}$ + $10^{P2/10}$) + duty factor

P1 = Ant. 1 PSD. P2 = Ant. 2 PSD.

Duty Factor = 0.21 dB

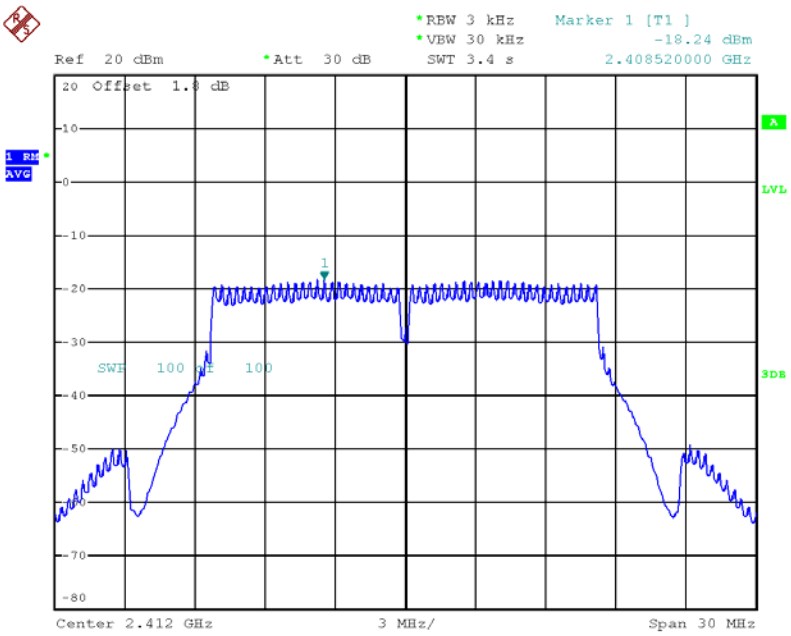
EX: CH1

CH1 : Total PSD = Ant1+Ant2= (-19.17dBm/3kHz)+(-19.36dBm/3kHz)=10 log(0.01221mW/3kHz+0.01159mW/3kHz)+0.21= -16.05dBm /3kHz

CH6 : Total PSD = Ant1+Ant2= (-19.46dBm/3kHz)+(-19.46dBm/3kHz)=10 log(0.01132mW/3kHz+0.01132mW/3kHz)+0.21= -16.24dBm /3kHz

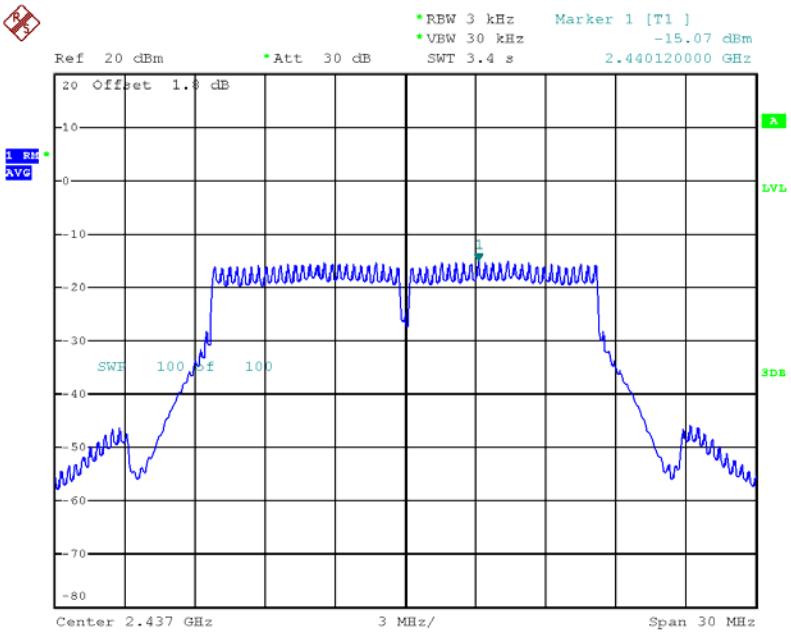
CH11 : Total PSD = Ant1+Ant2= (-19.90dBm/3kHz)+(-19.18dBm/3kHz)=10 log(0.01023mW/3kHz+0.01208mW/3kHz)+0.21= -16.31dBm /3kHz

Power Density Plot on Configuration IEEE 802.11g / Ant. 2 / 2412 MHz



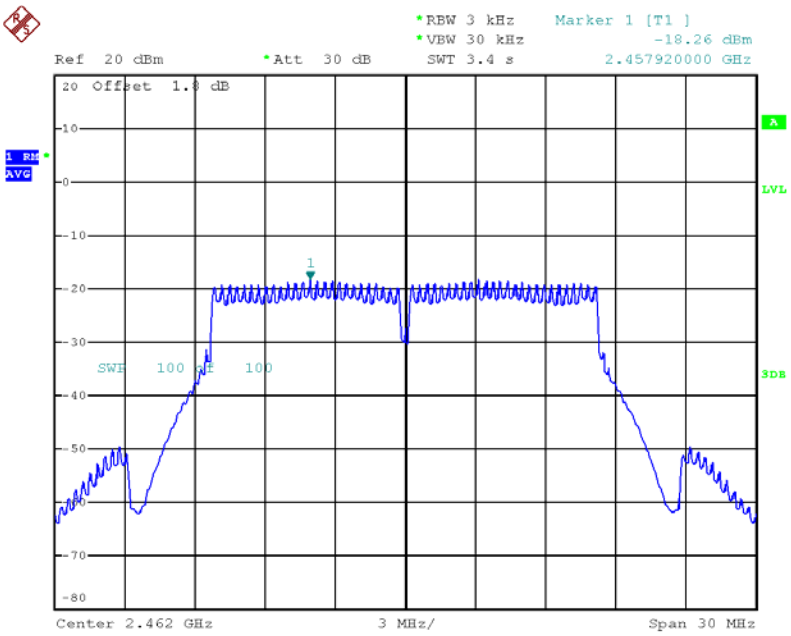
Date: 16.SEP.2013 13:34:35

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



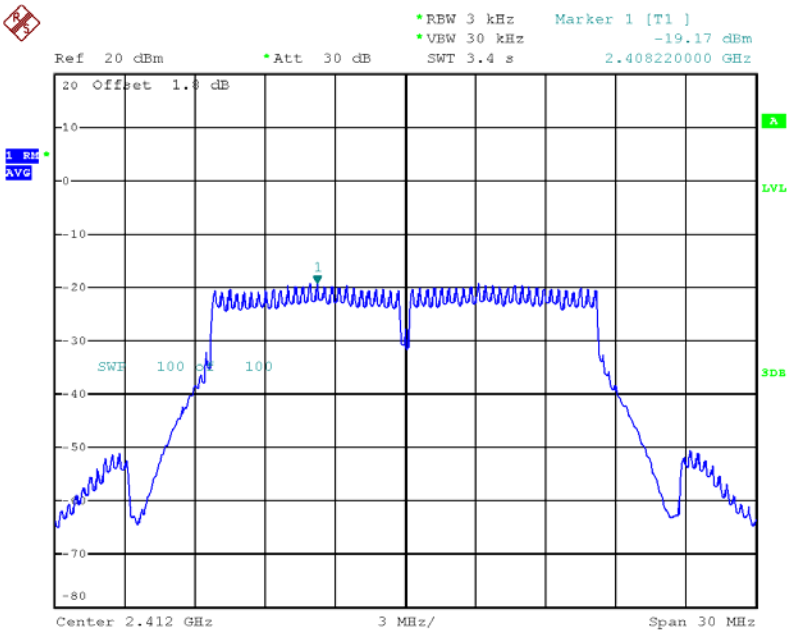
Date: 16.SEP.2013 13:32:53

Power Density Plot on Configuration IEEE 802.11g / Ant. 2 / 2462 MHz



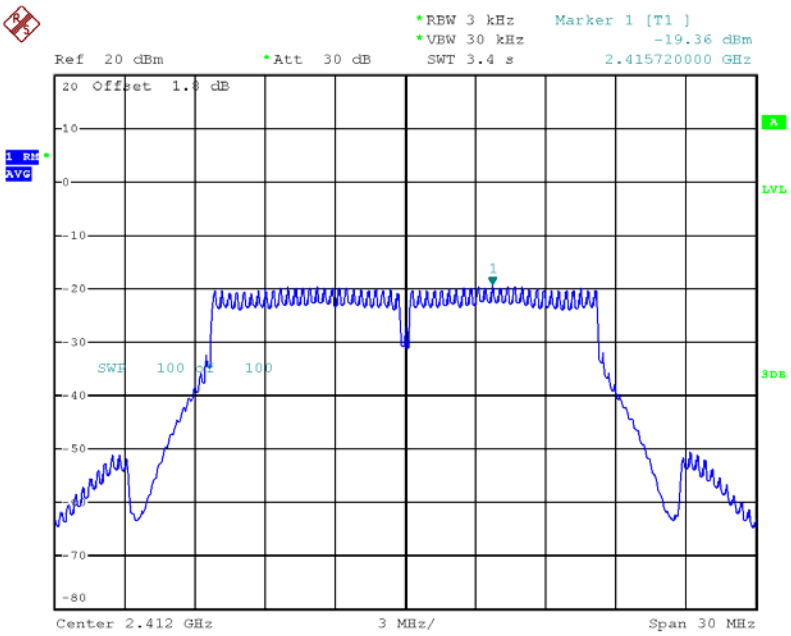
Date: 16.SEP.2013 13:31:19

Power Density Plot on Configuration IEEE 802.11g / CDD mode / Ant. 1 / 2412 MHz



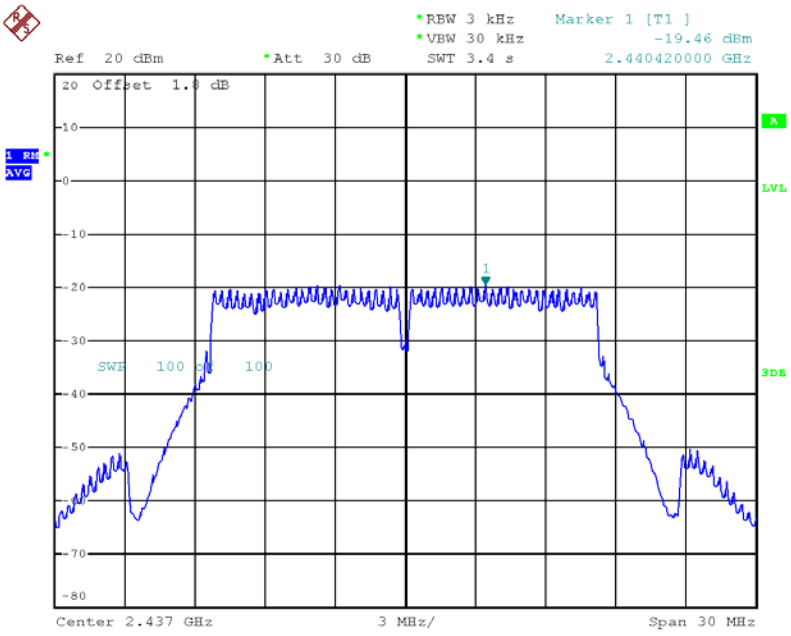
Date: 16.SEP.2013 13:53:49

Power Density Plot on Configuration IEEE 802.11g / CDD mode / Ant. 2 / 2412 MHz



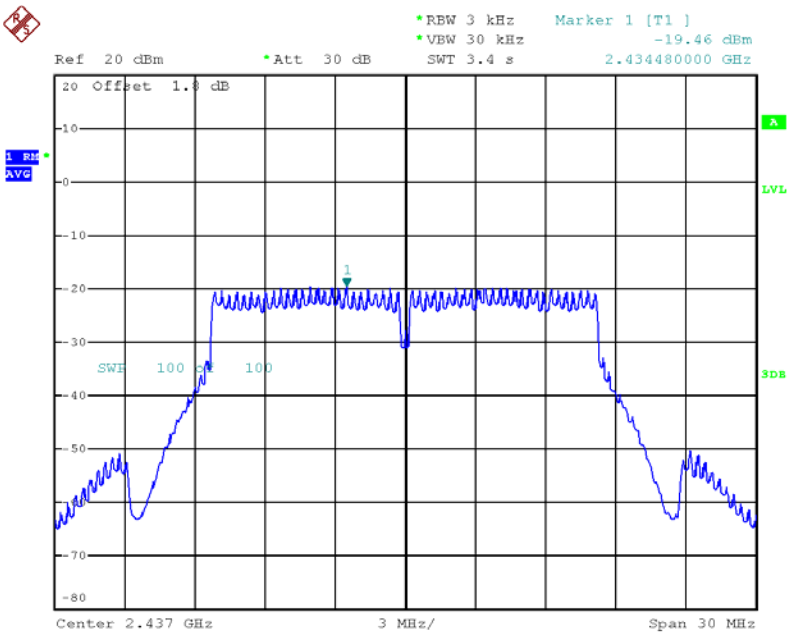
Date: 16.SEP.2013 13:52:55

Power Density Plot on Configuration IEEE 802.11g / CDD mode / Ant. 1 / 2437 MHz



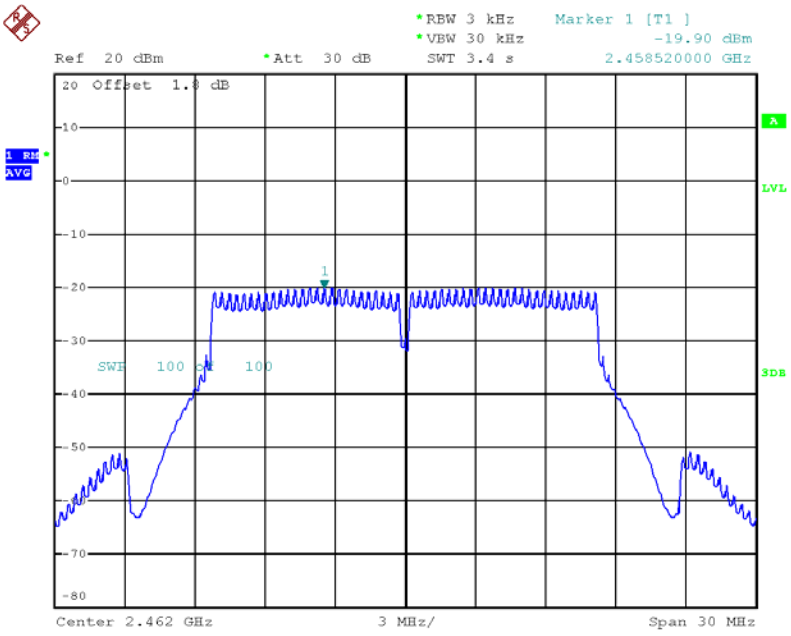
Date: 16.SEP.2013 13:54:58

Power Density Plot on Configuration IEEE 802.11g / CDD mode / Ant. 2 / 2437 MHz



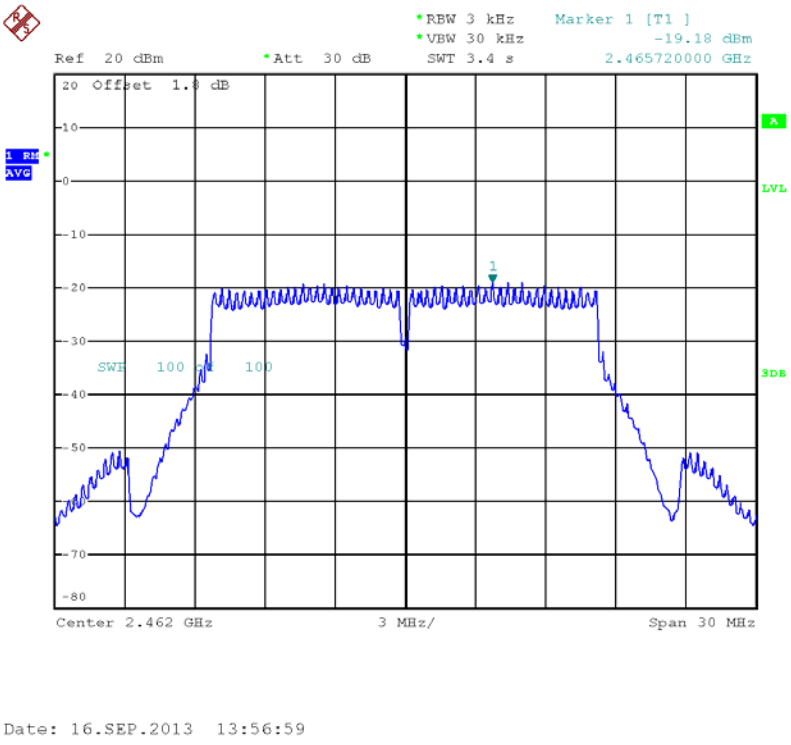
Date: 16.SEP.2013 13:56:00

Power Density Plot on Configuration IEEE 802.11g / CDD mode / Ant. 1 / 2462 MHz



Date: 16.SEP.2013 14:04:34

Power Density Plot on Configuration IEEE 802.11g / CDD mode / Ant. 2 / 2462 MHz



Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11n
Duty Cycle	98.96%: Ant. 2 95.47%: Ant. 1 + Ant. 2	**Duty Factor**	0.05 dB: Ant. 2 0.20 dB: Ant. 1 + Ant. 2

Configuration of IEEE 802.11n 20MHz MCS0 <Worst mode: Ant. 2>

Channel	Frequency	Power Density (dBm/3kHz)	Total Power Density (dBm/3kHz)	Antenna Gain (dBi)	Power Density Limit (dBm/3kHz)	Result
1	2412 MHz	-18.26	-18.21	3.30	8.00	Complies
6	2437 MHz	-15.20	-15.15	3.26	8.00	Complies
11	2462 MHz	-18.41	-18.36	3.09	8.00	Complies

Note 1: Uncorrelated Directional gain = G_{ANT} dBi, < 6dBi

Note 2: Power Density + Duty Factor = Total Power Density

Configuration of IEEE 802.11n 20MHz MCS0 <CDD mode: Ant. 1 + Ant. 2>

Channel	Frequency	Ant. 1 Power Density (dBm/3kHz)	Ant. 1 Gain (dBi)	Ant. 2 Power Density (dBm/3kHz)	Ant. 2 Gain (dBi)	Total Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
1	2412 MHz	-19.42	2.92	-19.29	3.30	-16.14	7.88	Complies
6	2437 MHz	-19.45	3.32	-19.10	3.26	-16.06	7.70	Complies
11	2462 MHz	-19.86	3.22	-19.83	3.09	-16.63	7.83	Complies

Note 1: Correlated Directional gain = G_{ANT} dBi + 10 log(N_{ANT} / N_{SS}) dBi

G_{ANT} =10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi

For PSD measurements : Array Gain= 10 log(N_{ANT})dBi=10 log(2)=3.01dB

CH1=10 log[(1.959+2.138)/2] + 3.01= 6.12dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.12 dB =7.88 dBm/3kHz

CH6=10 log[(2.148+2.118)/2] + 3.01= 6.30dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.30 dB =7.70 dBm/3kHz

CH9=10 log[(1.972+2.023)/2] + 3.01= 6.02dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.02 dB =7.98 dBm/3kHz

Note 2 :Total PSD (dBm/3kHz) = 10 log($10^{P1/10}$ + $10^{P2/10}$) + Duty Factor

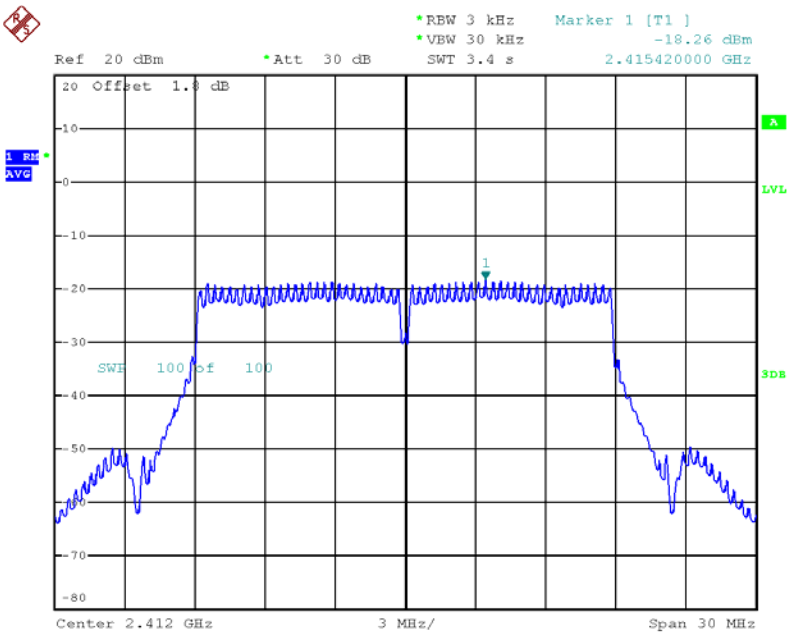
P1 = Ant. 1 PSD. P2 = Ant. 2 PSD. Duty Factor = 0.2 dB

CH1 : Total PSD = Ant1+Ant2= (-19.42dBm/3kHz)+(-19.29dBm/3kHz)=10 log(0.01134mW/3kHz+0.01178mW/3kHz)+0.2= -16.14dBm /3kHz

CH6 : Total PSD = Ant1+Ant2= (-19.45dBm/3kHz)+(-19.10dBm/3kHz)=10 log(0.01235mW/3kHz+0.01230mW/3kHz)+0.2= -16.06dBm /3kHz

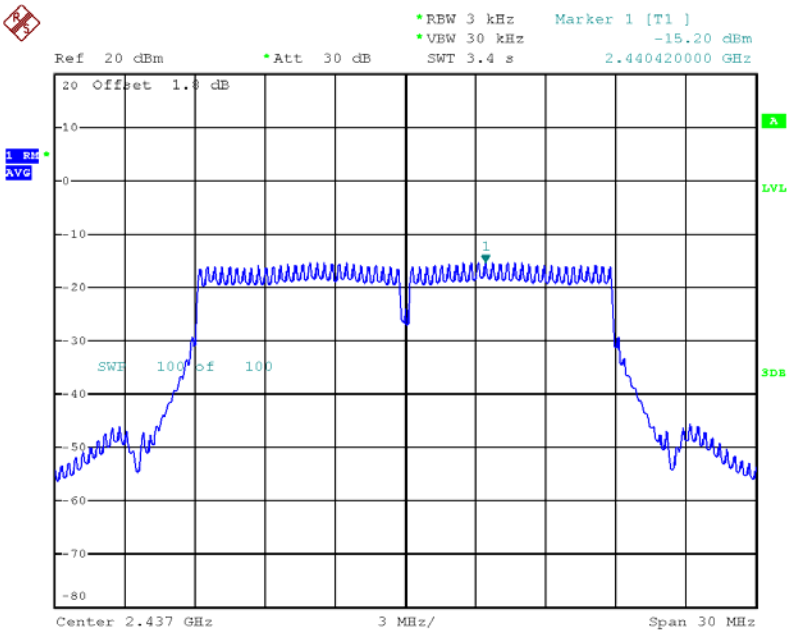
CH11 : Total PSD = Ant1+Ant2= (-19.86dBm/3kHz)+(-19.83dBm/3kHz)=10 log(0.01033mW/3kHz+0.01040mW/3kHz)+0.2= -16.63dBm /3kHz

Power Density Plot on Configuration of IEEE 802.11n 20MHz MCS0 / Ant. 2/ 2412 MHz



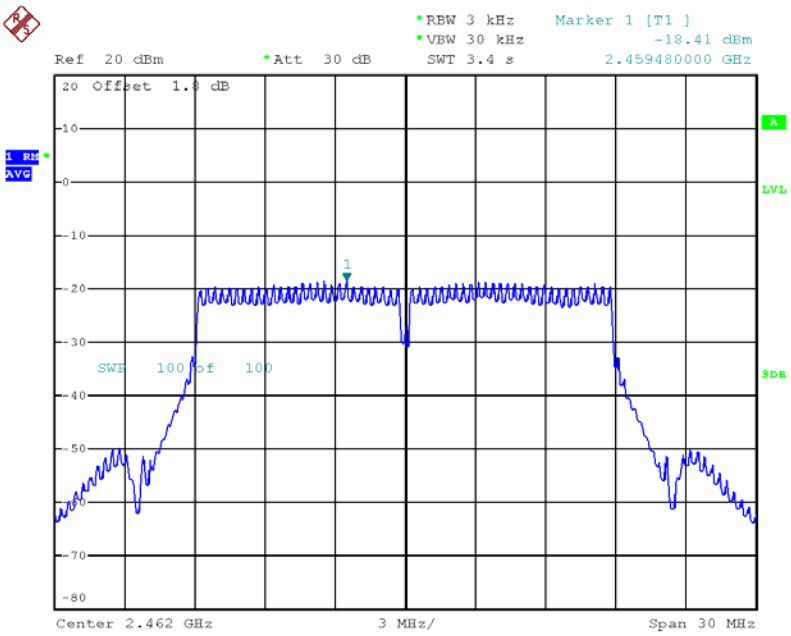
Date: 16.SEP.2013 13:35:56

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



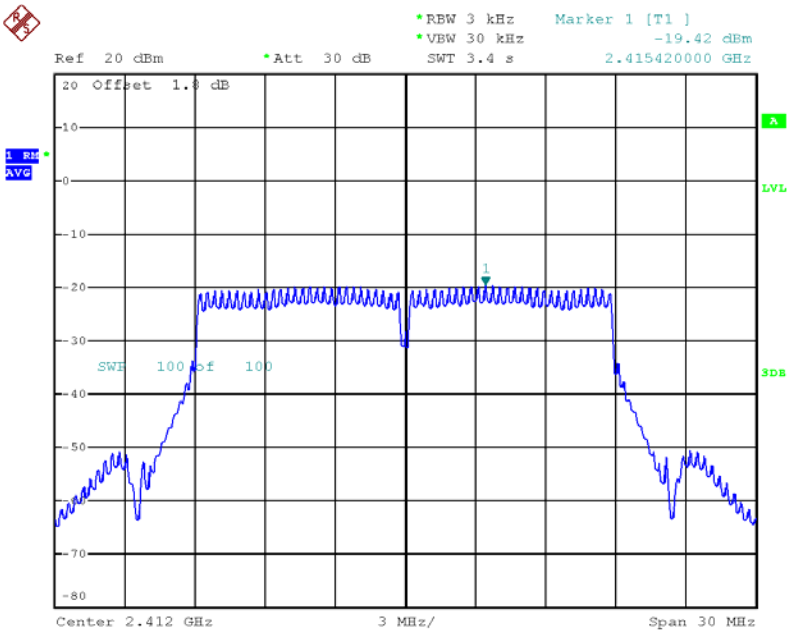
Date: 16.SEP.2013 13:42:42

Power Density Plot on Configuration of IEEE 802.11n 20MHz MCS0 / Ant. 2 / 2462 MHz



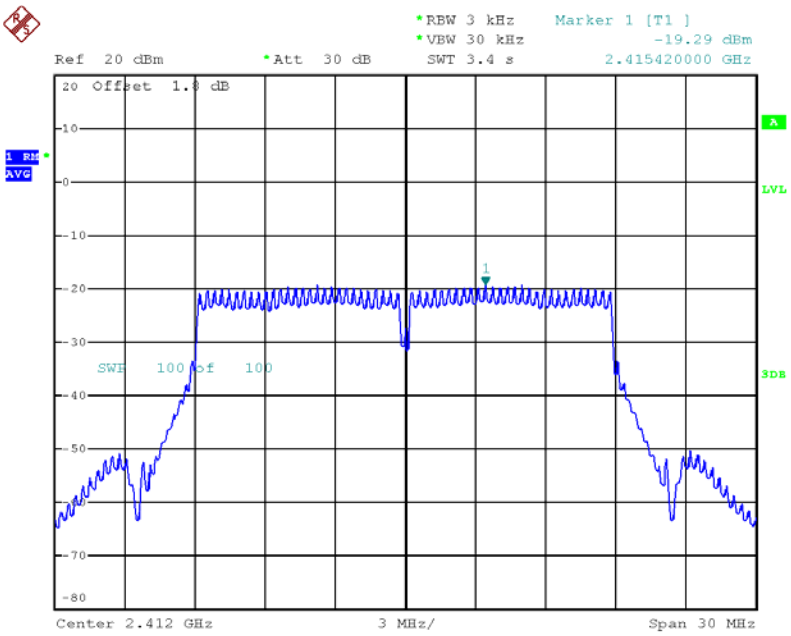
Date: 16.SEP.2013 13:44:07

Power Density Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 1 / 2412 MHz



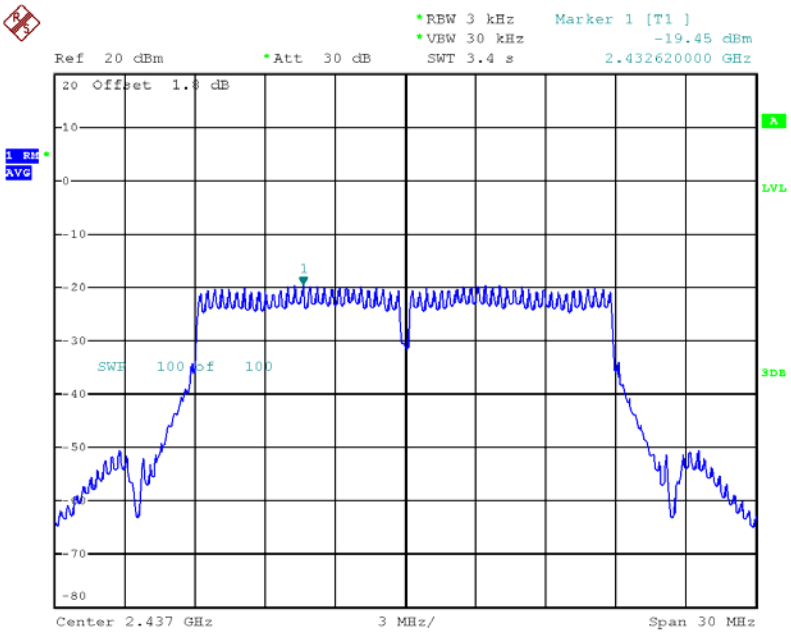
Date: 16.SEP.2013 14:49:38

Power Density Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 2 / 2412 MHz



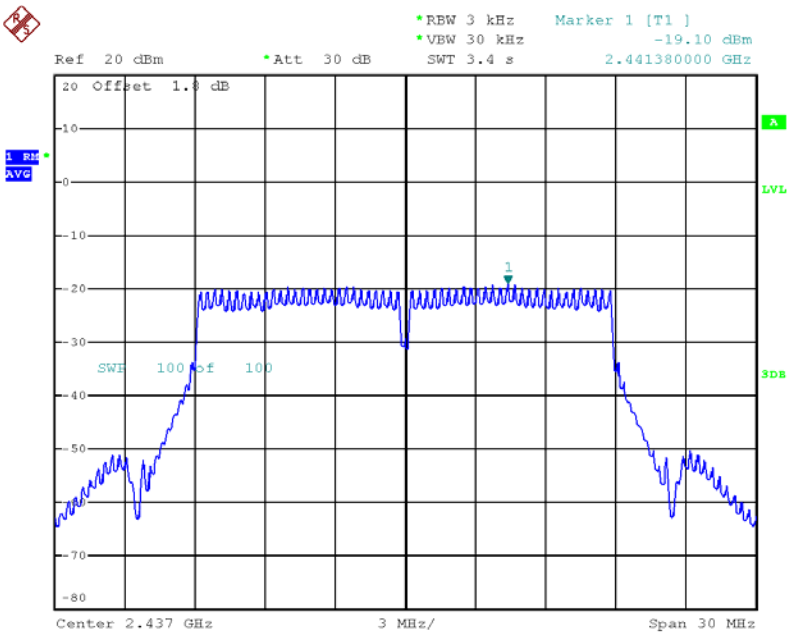
Date: 16.SEP.2013 14:51:48

Power Density Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 1 / 2437 MHz



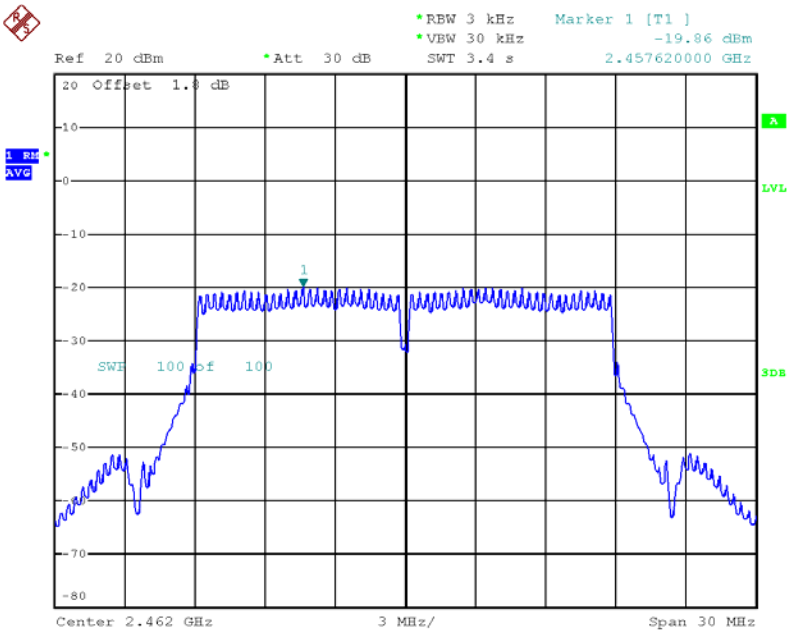
Date: 16.SEP.2013 14:54:59

Power Density Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 2 / 2437 MHz



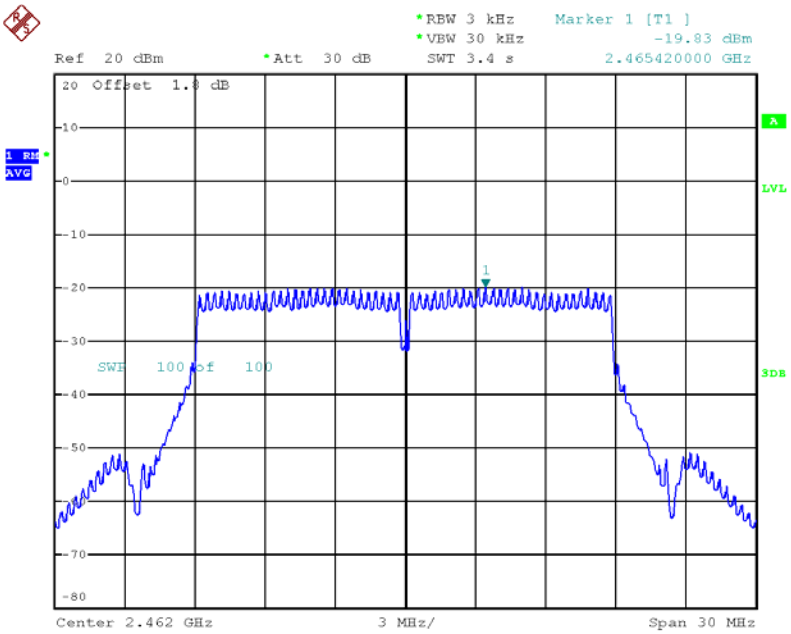
Date: 16.SEP.2013 14:53:12

Power Density Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 1 / 2462 MHz



Date: 16.SEP.2013 14:56:33

Power Density Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 2 / 2462 MHz



Date: 16.SEP.2013 14:58:19

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11n
Duty Cycle	97.89%: Ant. 2 91.17%: Ant. 1 + Ant. 2	**Duty Factor**	0.09 dB: Ant. 2 0.40 dB: Ant. 1 + Ant. 2

Configuration of IEEE 802.11n 40MHz MCS0 <Worst mode: Ant. 2>

Channel	Frequency	Power Density (dBm/3kHz)	Total Power Density (dBm/3kHz)	Antenna Gain (dBi)	Power Density Limit (dBm/3kHz)	Result
3	2422 MHz	-23.04	-22.95	2.99	8.00	Complies
6	2437 MHz	-20.55	-20.46	3.26	8.00	Complies
9	2452 MHz	-27.38	-27.29	3.06	8.00	Complies

Note 1: Uncorrelated Directional gain = G $_{ANT}$ dBi, < 6dBi

Note 2: Power Density + Duty Factor = Total Power Density

Configuration of IEEE 802.11n 40MHz MCS0 <CDD mode: Ant. 1 + Ant. 2>

Channel	Frequency	Ant. 1 Power Density (dBm/3kHz)	Ant. 1 Gain (dBi)	Ant. 2 Power Density (dBm/3kHz)	Ant. 2 Gain (dBi)	Total Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
3	2422 MHz	-23.19	3.16	-22.94	2.99	-19.65	7.91	Complies
6	2437 MHz	-22.65	3.32	-22.39	3.26	-19.11	7.70	Complies
9	2452 MHz	-24.46	2.95	-23.84	3.06	-20.73	7.98	Complies

Note 1: Correlated Directional gain = G $_{ANT}$ dBi + 10 log(N $_{ANT}$ / N $_{SS}$) dBi

G $_{ANT}$ =10 log[(10 $^{G1/10}$ + 10 $^{G2/10}$ + … + 10 $^{GN/10}$)/N $_{ANT}$] dBi

For PSD measurements : Array Gain= 10 log(N $_{ANT}$)dBi=10 log(2)=3.01dB

CH3=10 log[(2.070+1.991)/2] + 3.01= 6.09dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.09 dB =7.91 dBm/3kHz

CH6=10 log[(2.148+2.118)/2] + 3.01= 6.30dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.30 dB =7.70 dBm/3kHz

CH9=10 log[(1.972+2.023)/2] + 3.01= 6.02dBi > 6dBi; PSD limit = 8dBm/3kHz - 0.02 dB =7.98 dBm/3kHz

Note 2 :Total PSD (dBm/3kHz) = 10 log($10^{P1/10}$ + $10^{P2/10}$) + duty factor

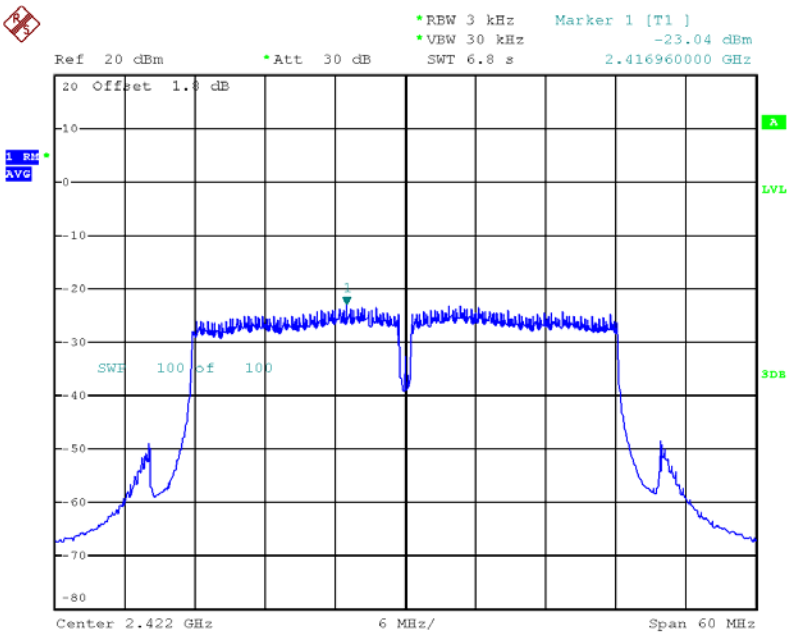
P1 = Ant. 1 PSD. P2 = Ant. 2 PSD. Duty Factor = 0.4 dB

CH3 : Total PSD = Ant1+Ant2= (-23.19dBm/3kHz)+(-22.94dBm/3kHz)=10 log(0.00480mW/3kHz+0.00508mW/3kHz)+0.4= -19.65dBm /3kHz

CH6 : Total PSD = Ant1+Ant2= (-22.65dBm/3kHz)+(-22.39dBm/3kHz)=10 log(0.00543mW/3kHz+0.00577mW/3kHz)+0.4= -19.11dBm /3kHz

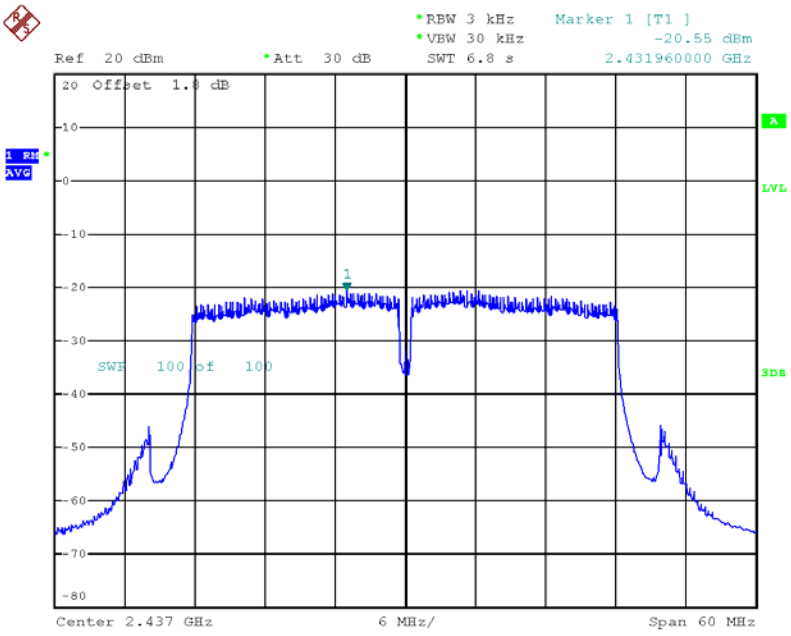
CH9 : Total PSD = Ant1+Ant2= (-24.46dBm/3kHz)+(-23.84dBm/3kHz)=10 log(0.00358mW/3kHz+0.00413mW/3kHz)+0.4= -20.73dBm /3kHz

Power Density Plot on Configuration of IEEE 802.11n 40MHz MCS0 / Ant. 2 / 2422 MHz



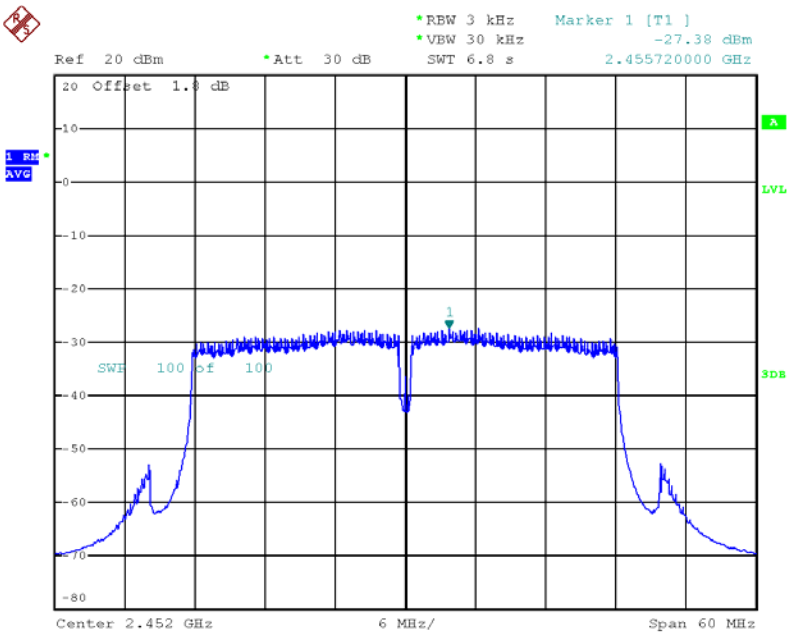
Date: 16.SEP.2013 13:45:44

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



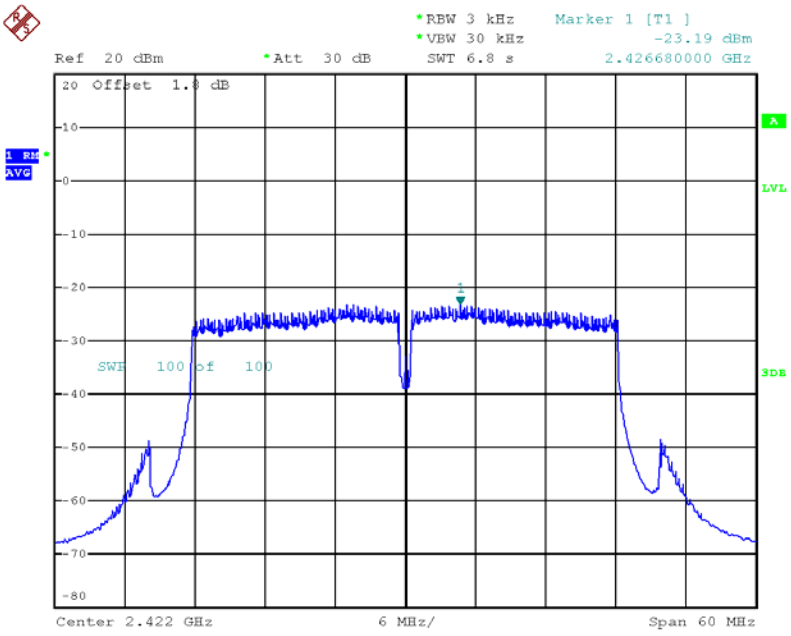
Date: 16.SEP.2013 13:47:33

Power Density Plot on Configuration of IEEE 802.11n 40MHz MCS0 / Ant. 2 / 2452 MHz



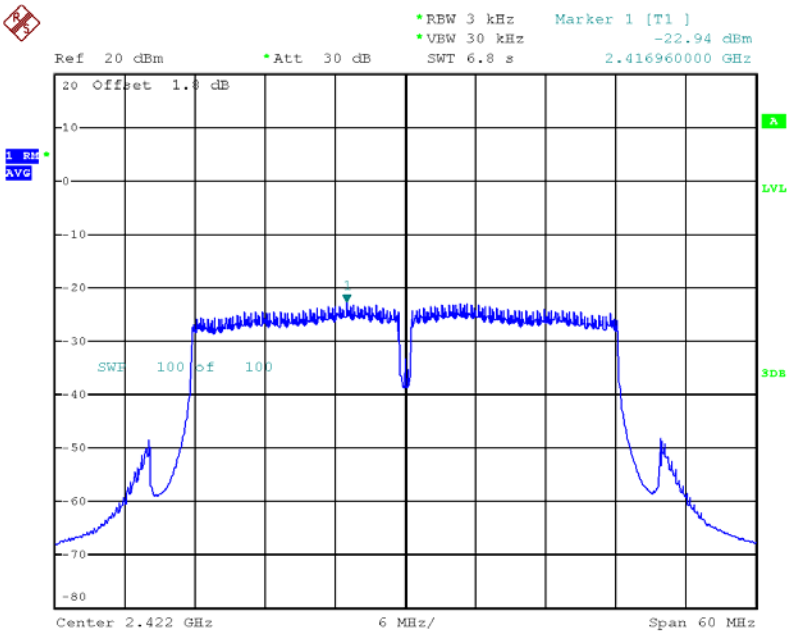
Date: 16.SEP.2013 13:50:15

Power Density Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 1 / 2422 MHz



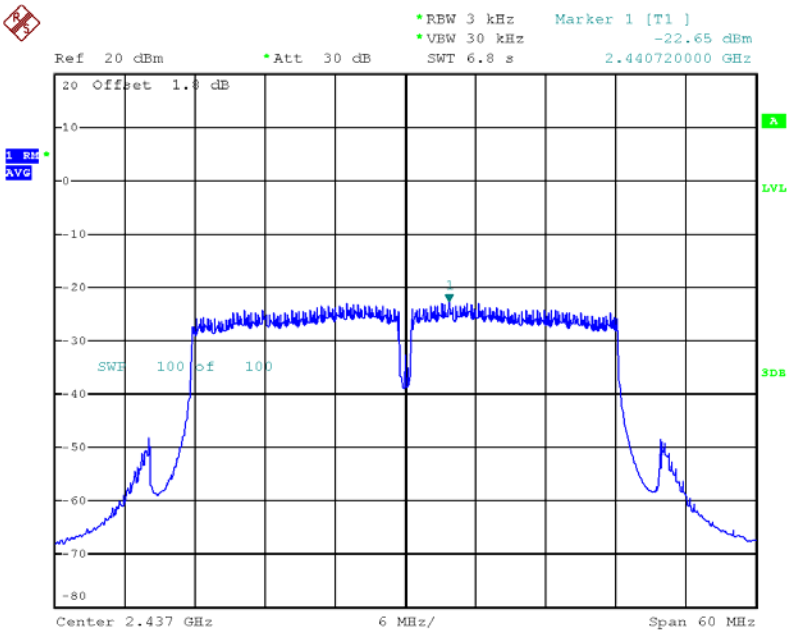
Date: 16.SEP.2013 14:35:44

Power Density Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 2 / 2422 MHz



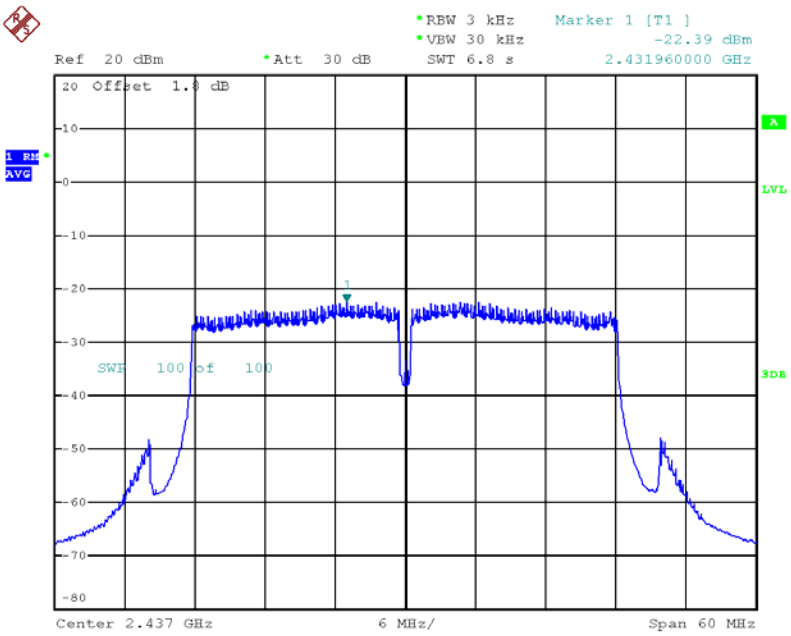
Date: 16.SEP.2013 14:39:40

Power Density Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 1 / 2437 MHz



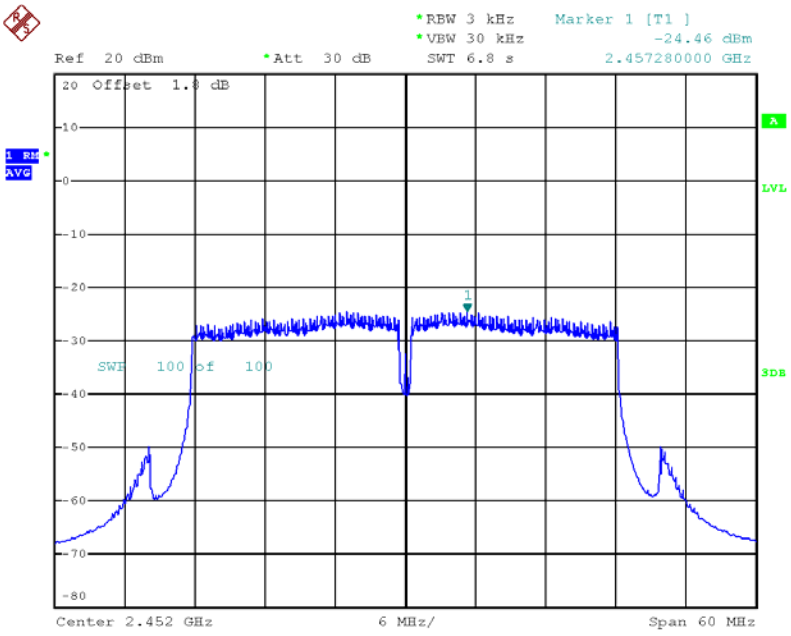
Date: 16.SEP.2013 14:43:10

Power Density Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 2 / 2437 MHz



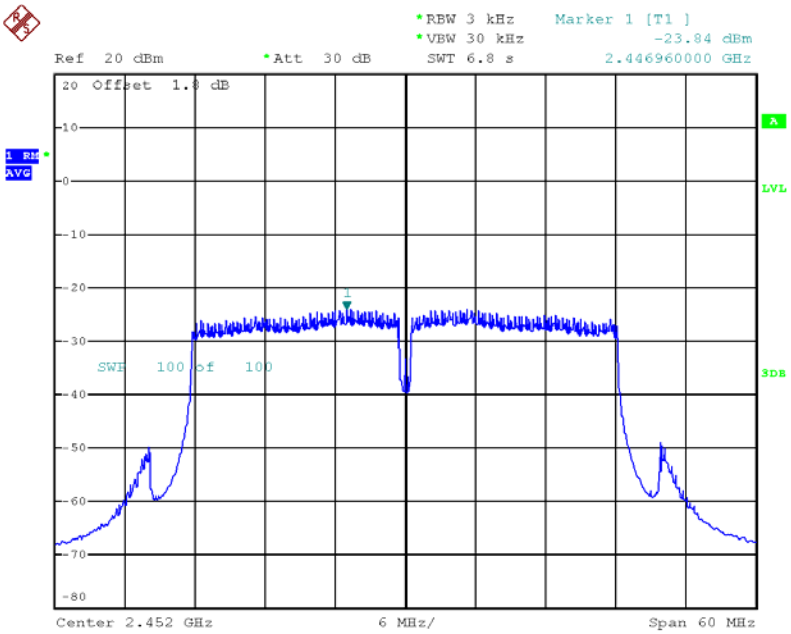
Date: 16.SEP.2013 14:41:44

Power Density Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 1 / 2452 MHz



Date: 16.SEP.2013 14:45:46

Power Density Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 2 / 2452 MHz



Date: 16.SEP.2013 14:47:12

3.4 6dB Spectrum Bandwidth Measurement

3.4.1 Limit

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

3.4.2 Measuring Instruments and Setting

Please refer to section 4 of equipments list in this report. The following table is the setting of Spectrum Analyzer.

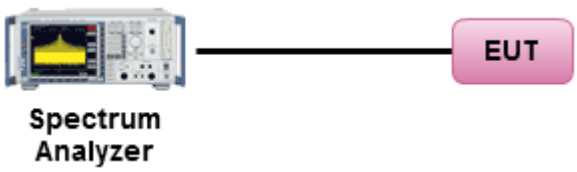
Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100 kHz.
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.4.3 Test Procedures

1. **Test was performed in accordance with Measurement of Digital Transmission Systems Operating under KDB 558074 D01 DTS Meas Guidance v03r01. 04/09/2013**
2. **Multiple antennas system was performed in accordance with KDB 662911 D01 Multiple Transmitter Output v02. 05/28/2013 Emission Testing of Transmitters with Multiple Outputs in the Same Band**
3. **The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.**
4. **Measured the spectrum width with power higher than 6d account by this measurement.**

3.4.4 Test Setup Layout

6dB Spectrum Bandwidth



3.4.5 Test Deviation

There is no deviation with the original standard.

3.4.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

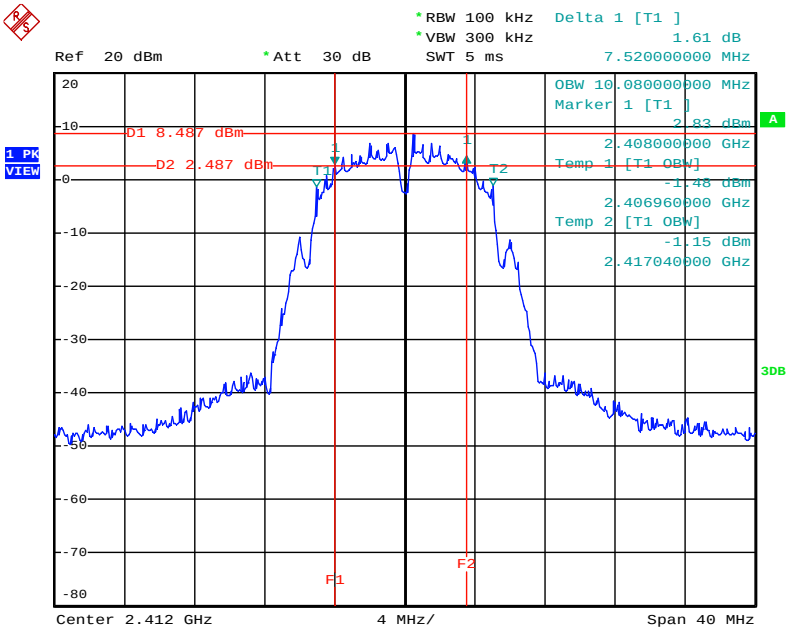
3.4.7 Test Result of 6dB Spectrum Bandwidth

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11b

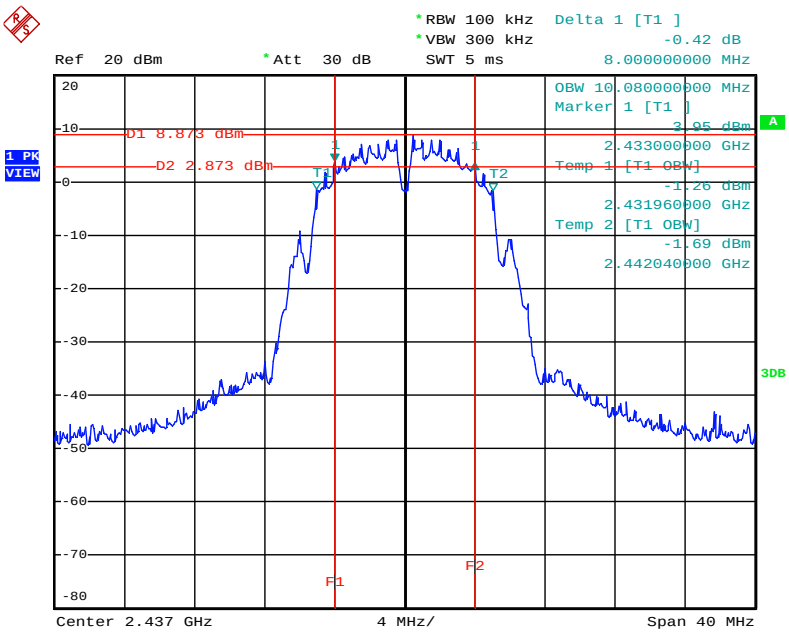
Configuration IEEE 802.11b <Worst mode: Ant. 2>

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	7.52	10.08	500	Complies
6	2437 MHz	8.00	10.08	500	Complies
11	2462 MHz	8.00	10.08	500	Complies

6 dB Bandwidth Plot on Configuration IEEE 802.11b / Ant. 2 / 2412 MHz

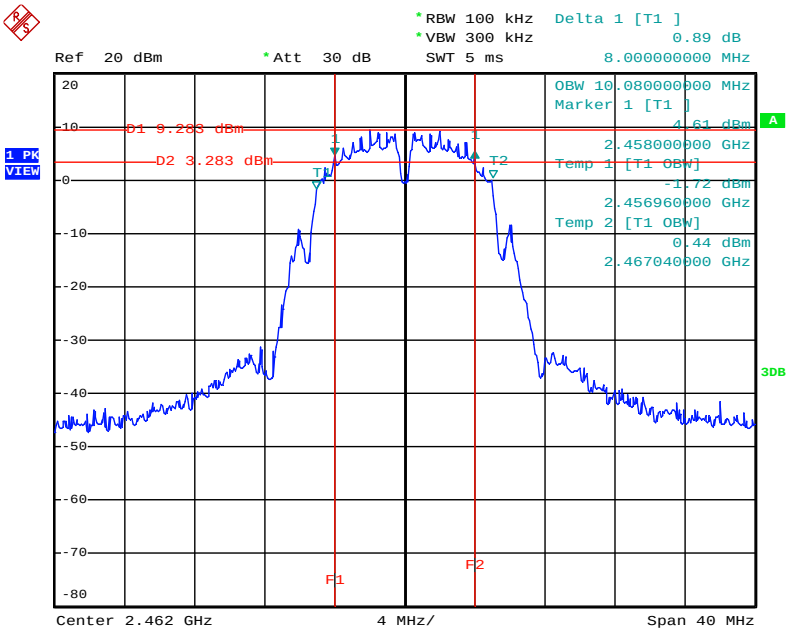


6 dB Bandwidth Plot on Configuration IEEE 802.11b / Ant. 2 / 2437 MHz



Date: 16.SEP.2013 12:51:55

6 dB Bandwidth Plot on Configuration IEEE 802.11b / Ant. 2 / 2462 MHz



Date: 16.SEP.2013 12:52:28

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11g

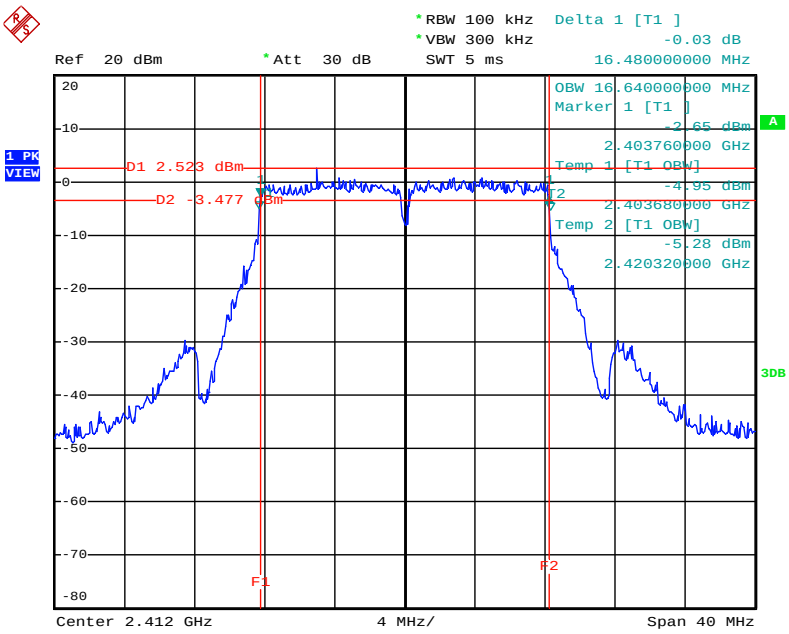
Configuration IEEE 802.11g <Worst mode: Ant. 2>

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.48	16.64	500	Complies
6	2437 MHz	16.48	16.64	500	Complies
11	2462 MHz	16.48	16.64	500	Complies

Configuration IEEE 802.11g <CDD mode: Ant. 1 + Ant. 2>

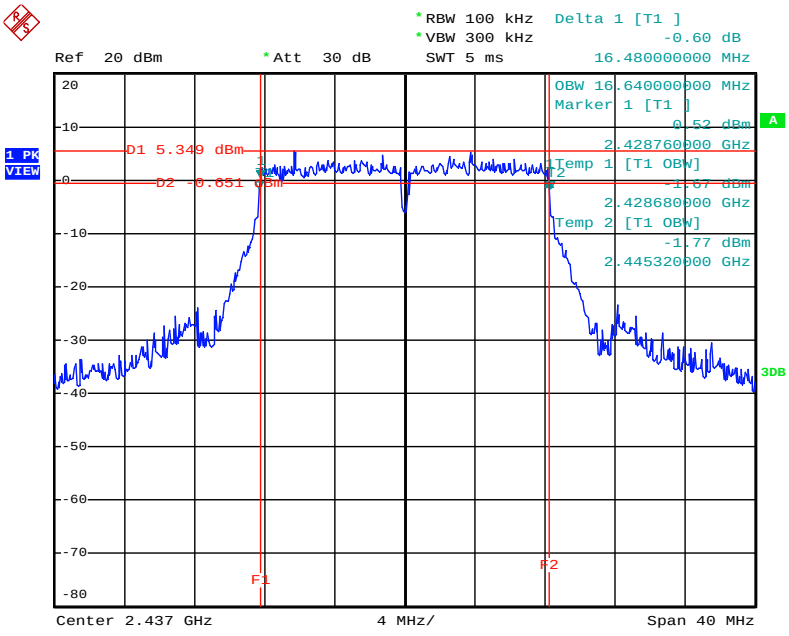
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	15.28	15.84	500	Complies
6	2437 MHz	15.12	15.84	500	Complies
11	2462 MHz	15.04	15.84	500	Complies

6 dB Bandwidth Plot on Configuration IEEE 802.11g / Ant. 2 / 2412 MHz



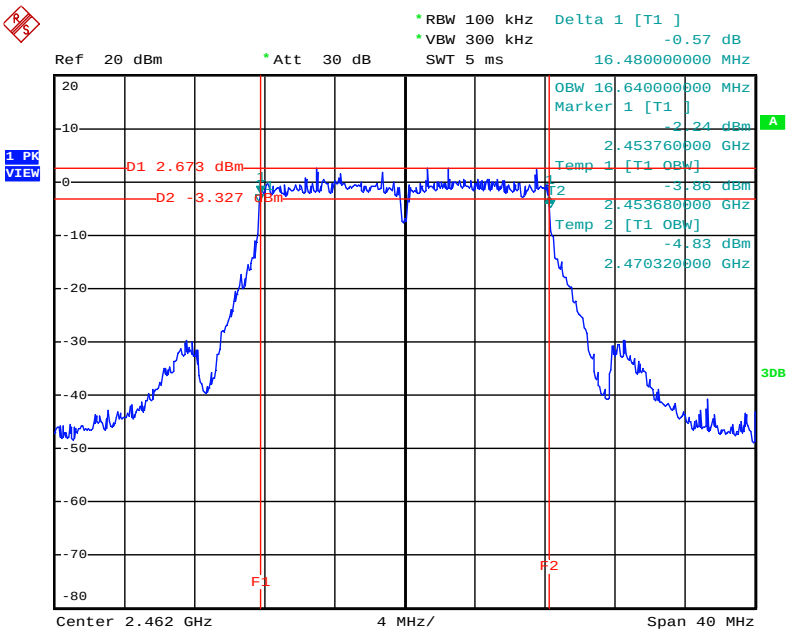
Date: 16.SEP.2013 12:56:57

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



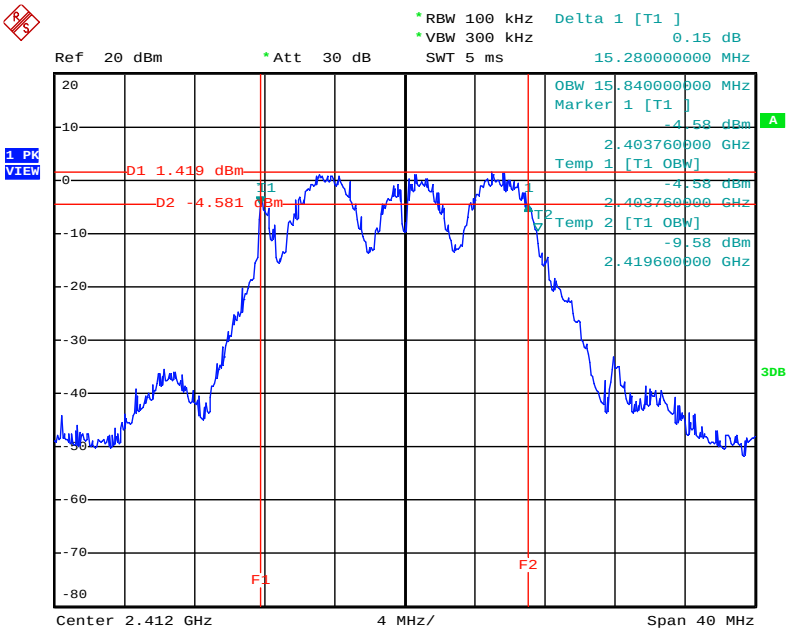
Date: 16.SEP.2013 12:56:27

6 dB Bandwidth Plot on Configuration IEEE 802.11g / Ant. 2 / 2462 MHz



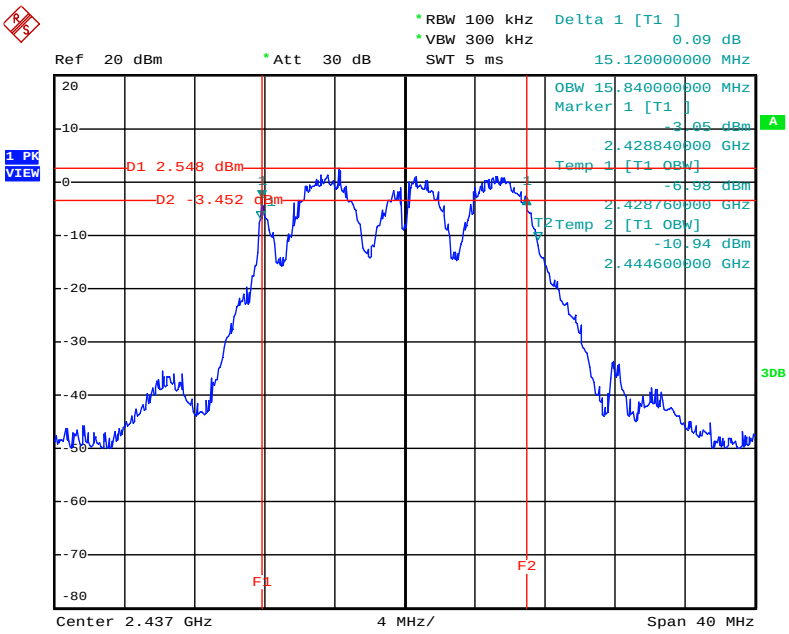
Date: 16.SEP.2013 12:55:54

6 dB Bandwidth Plot on Configuration IEEE 802.11g / CDD mode / Ant. 1 + Ant. 2 / 2412 MHz



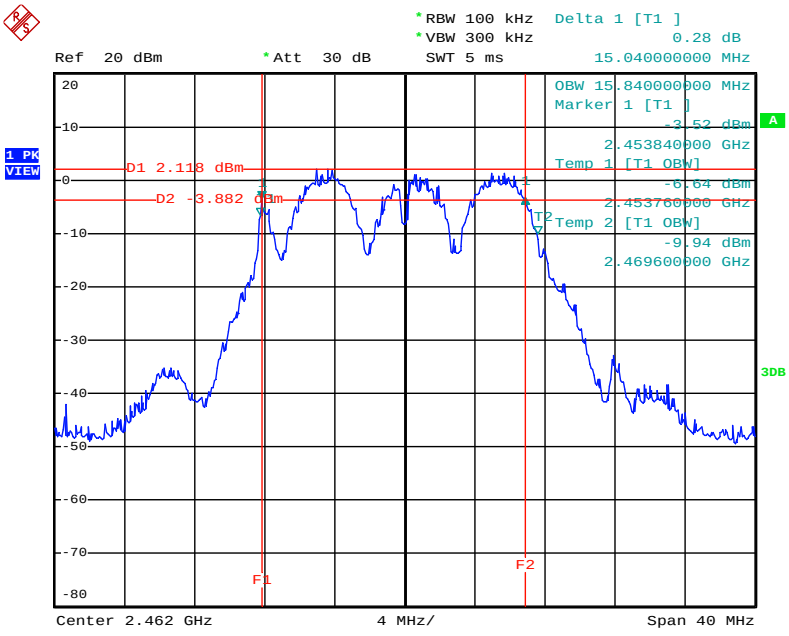
Date: 16.SEP.2013 12:48:40

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



Date: 16.SEP.2013 12:47:40

6 dB Bandwidth Plot on Configuration IEEE 802.11g / CDD mode / Ant. 1 + Ant. 2 / 2462 MHz



Date: 16.SEP.2013 12:45:19

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11n

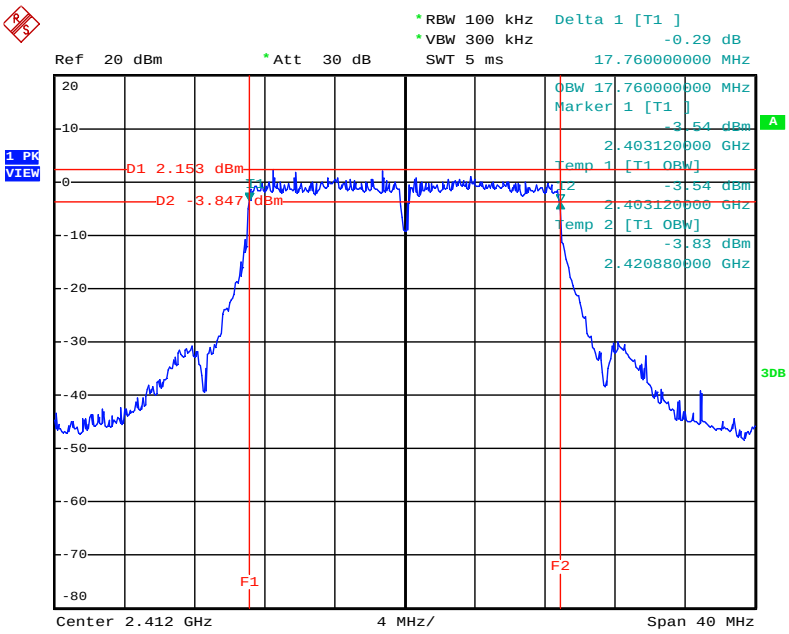
Configuration of IEEE 802.11n 20MHz MCS0 <Worst mode: Ant. 2>

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	17.76	17.76	500	Complies
6	2437 MHz	17.60	17.68	500	Complies
11	2462 MHz	17.60	17.76	500	Complies

Configuration of IEEE 802.11n 20MHz MCS0 <CDD mode: Ant. 1 + Ant. 2>

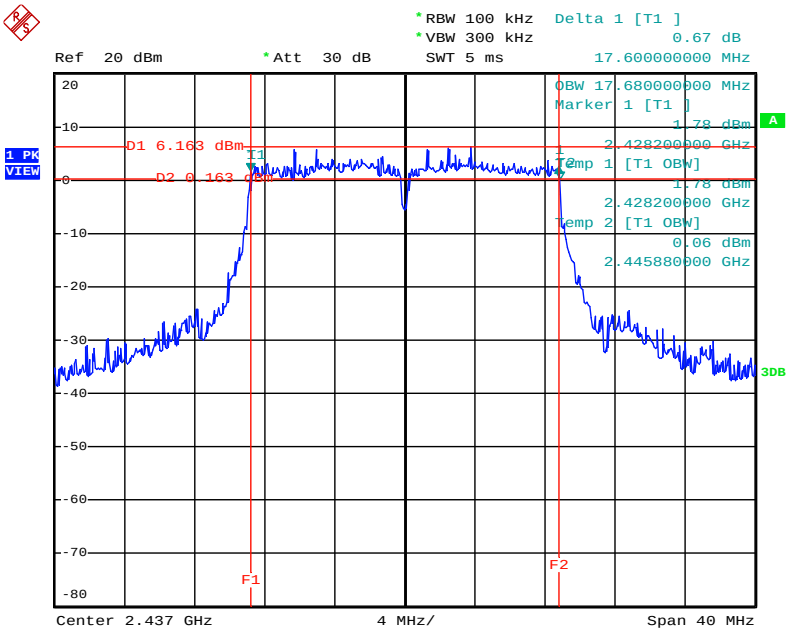
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.16	17.20	500	Complies
6	2437 MHz	16.08	17.12	500	Complies
11	2462 MHz	16.40	17.12	500	Complies

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 20MHz MCS0 / Ant. 2 / 2412 MHz



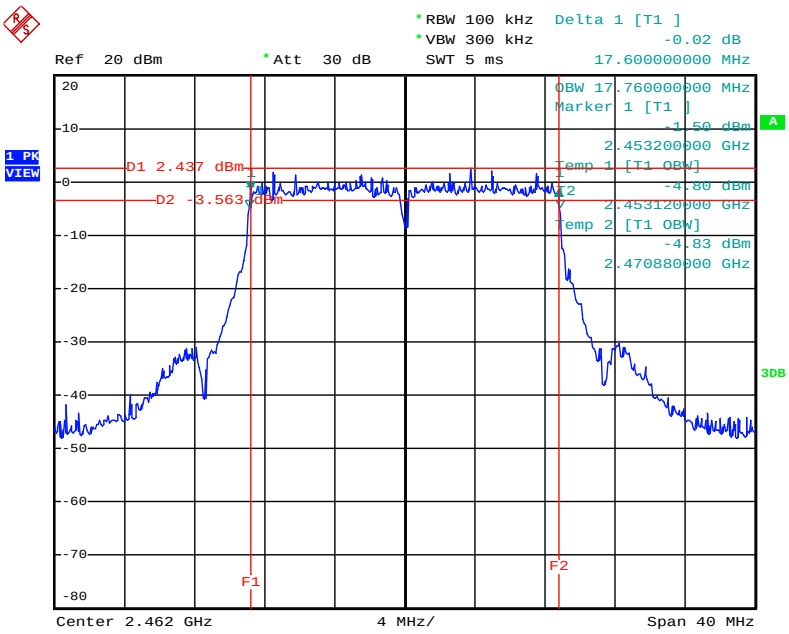
Date: 16.SEP.2013 13:06:57

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 20MHz MCS0 / Ant. 2 / 2437 MHz



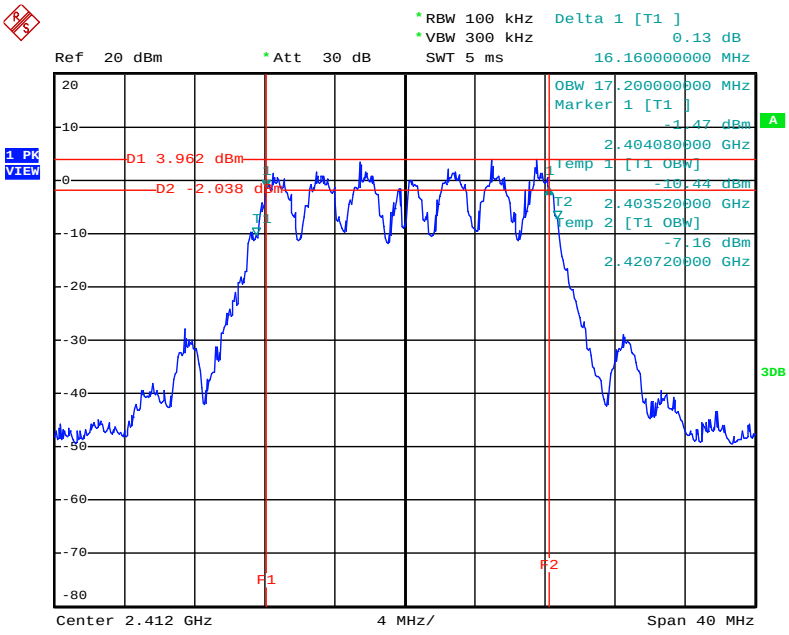
Date: 16.SEP.2013 13:07:39

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 20MHz MCS0 / Ant. 2 / 2462 MHz



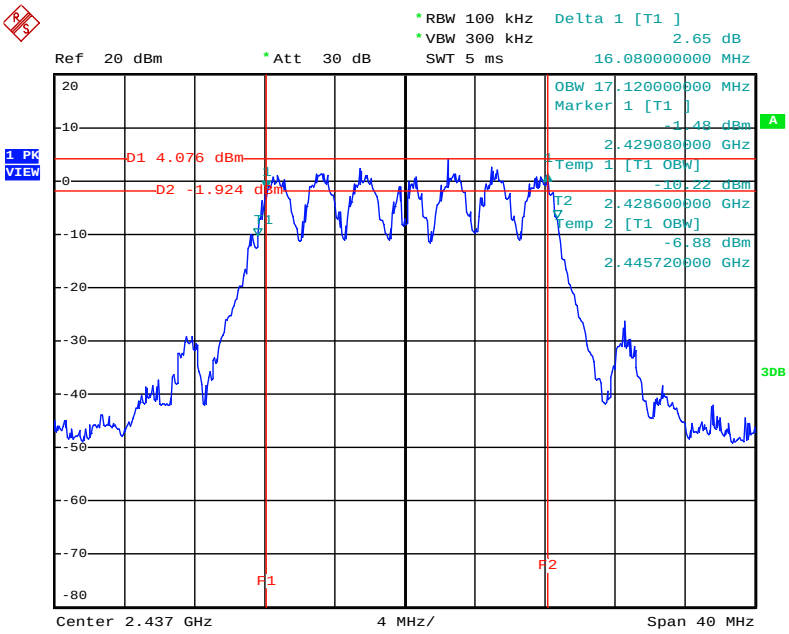
Date: 16.SEP.2013 13:08:11

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 1 + Ant. 2 / 2412 MHz



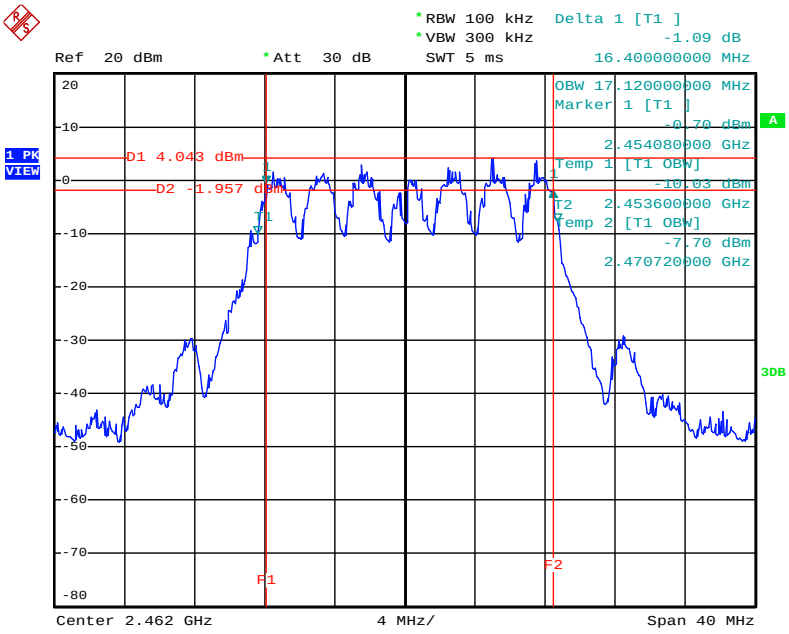
Date: 16.SEP.2013 12:42:47

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 1 + Ant. 2 / 2437 MHz



Date: 16.SEP.2013 12:43:37

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 20MHz MCS0 / CDD mode / Ant. 1 + Ant. 2 / 2462 MHz



Date: 16.SEP.2013 12:44:17

Test date	Sep. 16, 2013	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	63%
Test Engineer	Benson Peng	**Configuration**	802.11n

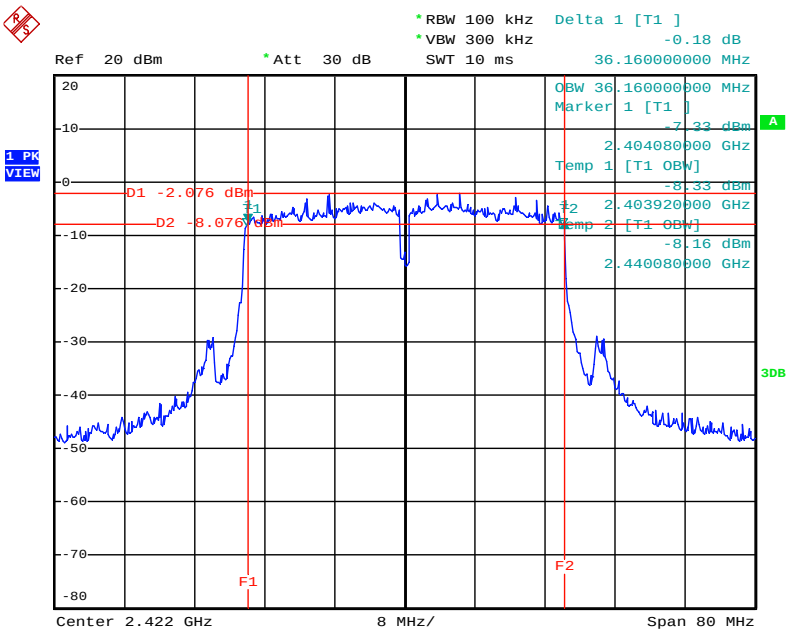
Configuration of IEEE 802.11n 40MHz MCS0 <Worst mode: Ant. 2>

Channel	**Frequency**	**6dB Bandwidth (MHz)**	**99% Occupied Bandwidth (MHz)**	**Min. Limit (kHz)**	**Test Result**
3	2422 MHz	36.16	36.16	500	**Complies**
6	2437 MHz	35.52	36.16	500	**Complies**
9	2452 MHz	35.52	36.16	500	**Complies**

Configuration of IEEE 802.11n 40MHz MCS0 <CDD mode: Ant. 1 + Ant. 2>

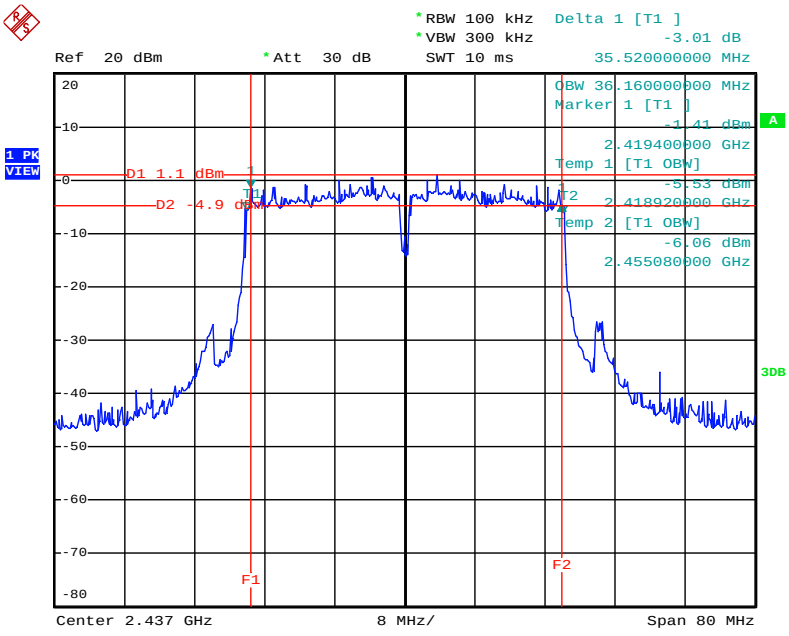
Channel	**Frequency**	**6dB Bandwidth (MHz)**	**99% Occupied Bandwidth (MHz)**	**Min. Limit (kHz)**	**Test Result**
3	2422 MHz	35.52	36.16	500	**Complies**
6	2437 MHz	35.52	36.16	500	**Complies**
9	2452 MHz	35.84	36.16	500	**Complies**

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 40MHz MCS0 / Ant. 2 / 2422 MHz



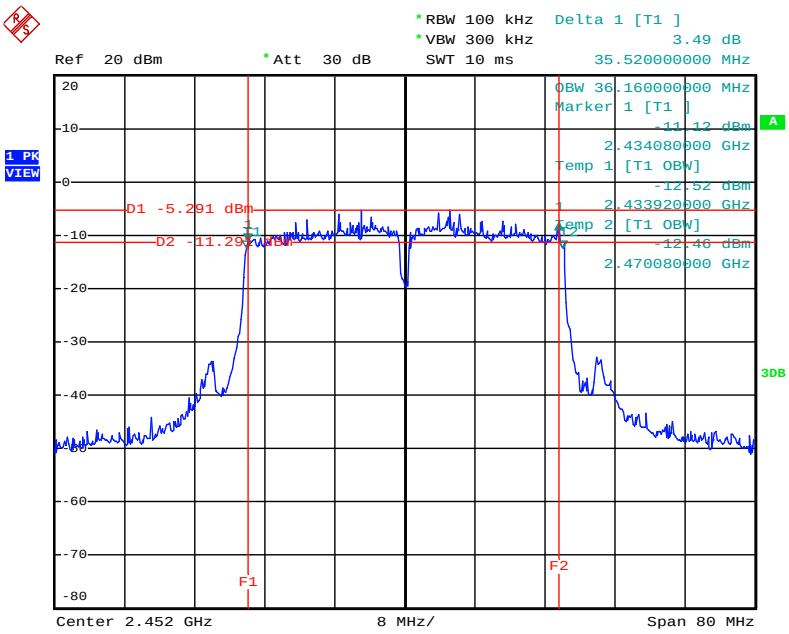
Date: 16.SEP.2013 13:09:00

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 40MHz MCS0 / Ant. 2 / 2437 MHz



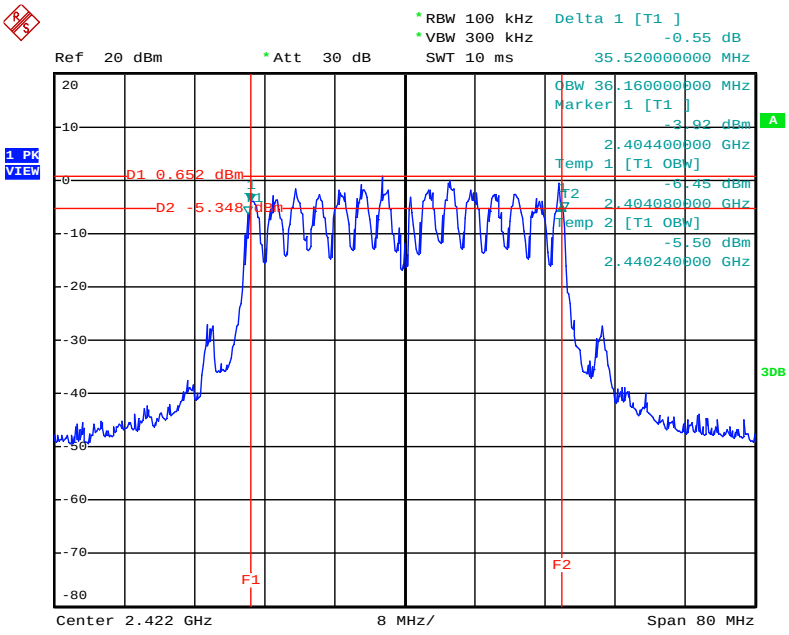
Date: 16.SEP.2013 13:09:31

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 40MHz MCS0 / Ant. 2 / 2452 MHz



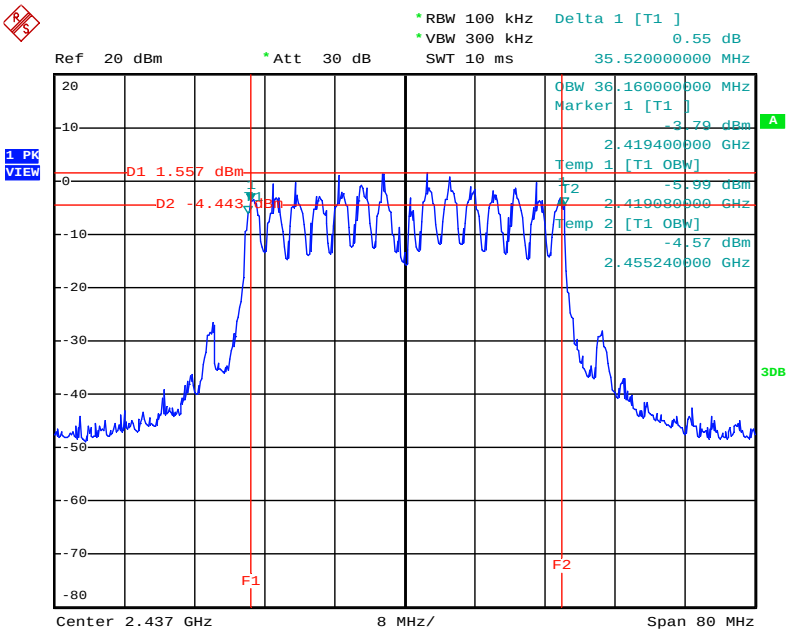
Date: 16.SEP.2013 13:10:04

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 1 + Ant. 2 / 2422 MHz



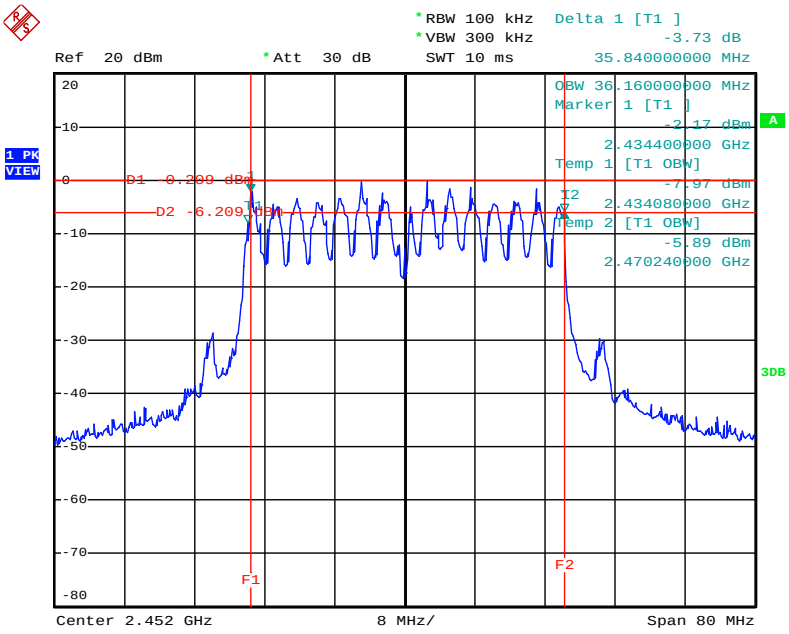
Date: 16.SEP.2013 15:30:26

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 1 + Ant. 2 / 2437 MHz



Date: 16.SEP.2013 15:29:49

6 dB Bandwidth Plot on Configuration of IEEE 802.11n 40MHz MCS0 / CDD mode / Ant. 1 + Ant. 2 / 2452 MHz



Date: 16.SEP.2013 15:28:50

3.5 Radiated Emissions Measurement

3.5.1 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) and 2.2(a), then the 15.209(a) and 2.2(b) limit in the table below has to be followed..

Frequencies (MHz)	Field Strength (microvolt/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

3.5.2 Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1GHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	100kHz / 300kHz for peak

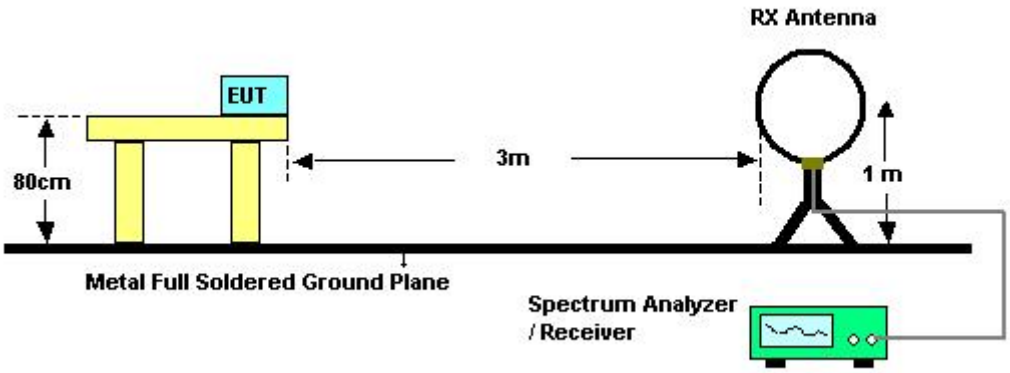
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RBW 120kHz for QP

3.5.3 Test Procedures

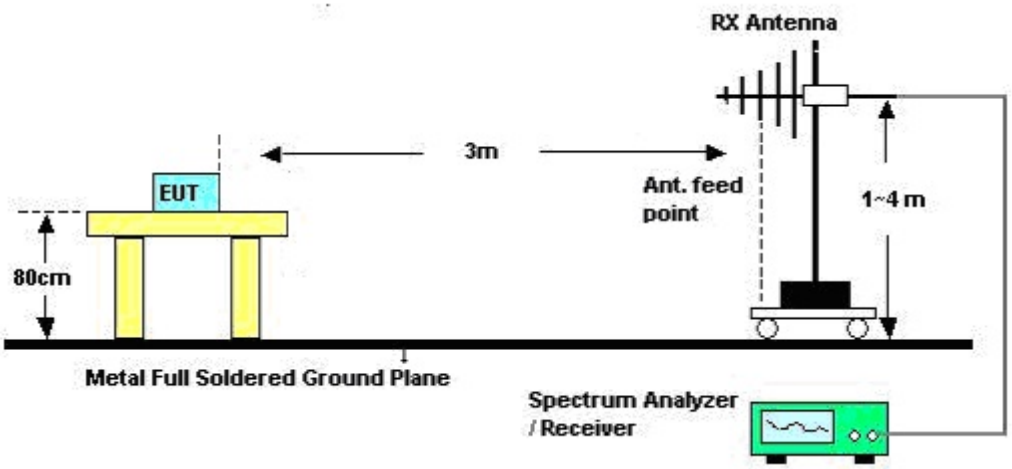
1. **Test was performed in accordance with Measurement of Digital Transmission Systems Operating under KDB 558074 D01 DTS Meas Guidance v03r01. 04/09/2013**
2. **Multiple antennas system was performed in accordance with KDB 662911 D01 Multiple Transmitter Output v02. 05/28/2013 Emission Testing of Transmitters with Multiple Outputs in the Same Band, The worst case directional gain will occur when N_{SS} = 1; therefore, it is especially important to ensure that the device complies with all emission limits for the case of N_{SS} = 1, (or with the lowest possible value of N_{SS} = 1, if the device always uses spatial multiplexing). The application filing must clearly include a proper justification for the lowest value N_{SS} used.**
3. **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.**
4. **Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.**
5. **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.**
6. **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.**
7. **Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.**
8. **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.**
9. **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.**
10. **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.**
11. **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.**
12. **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.**

3.5.4 Test Setup Layout

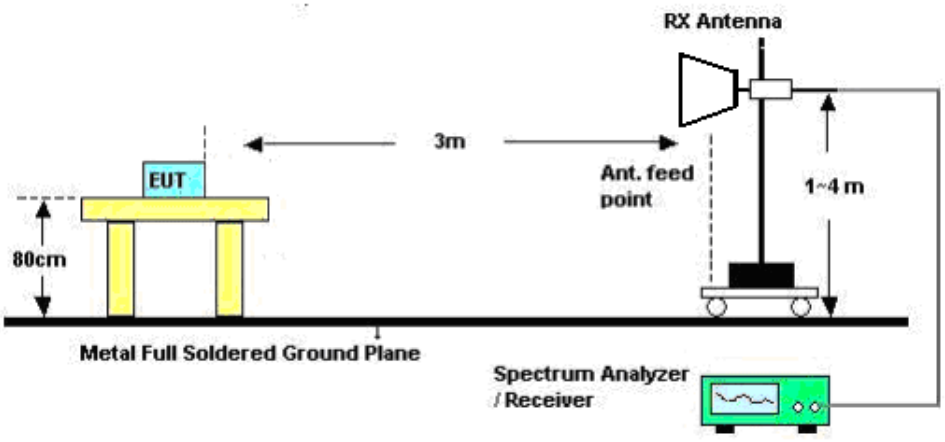
For Radiated Emissions below 1GHz (9kHz~30MHz)



For Radiated Emissions below 1GHz (30MHz~1GHz)



For Radiated Emissions above 1GHz



3.5.5 Test Deviation

There are no deviations with the original standard.

3.5.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Frequency Range	9kHz~30MHz	**Test Site No.**	03CH01-CB
Temperature	25.6℃	**Humidity**	56%
Test Engineer	Nick Peng	**Configurations**	CTX
Test Date	Sep. 17, 2013		

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

Note:

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

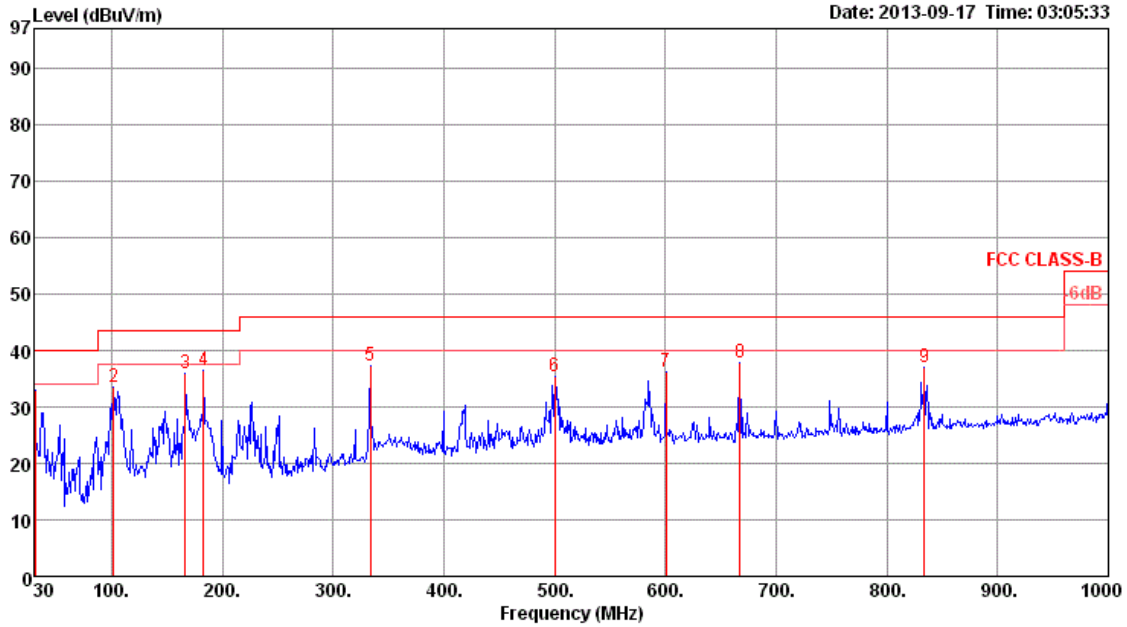
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

3.5.8 Results of Radiated Emissions (30MHz~1GHz)

Frequency Range	30MHz~1GHz	**Test Site No.**	03CH01-CB
Temperature	25.6℃	**Humidity**	56%
Test Engineer	Nick Peng	**Configurations**	CTX

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	30.97	32.88	40.00	-7.12	41.83	0.63	18.22	27.80	Peak	100	0	HORIZONTAL
2	101.78	33.44	43.50	-10.06	48.71	1.18	11.14	27.59	Peak	100	0	HORIZONTAL
3	166.77	35.96	43.50	-7.54	49.23	1.46	12.54	27.27	Peak	100	0	HORIZONTAL
4	183.26	36.39	43.50	-7.11	49.46	1.58	12.53	27.18	Peak	100	0	HORIZONTAL
5	333.61	37.33	46.00	-8.67	48.10	2.08	14.28	27.13	Peak	100	0	HORIZONTAL
6	500.45	35.38	46.00	-10.62	43.18	2.67	17.63	28.10	Peak	100	0	HORIZONTAL
7	600.36	36.31	46.00	-9.69	42.83	2.81	18.77	28.10	Peak	100	0	HORIZONTAL
8	667.29	37.96	46.00	-8.04	43.98	3.03	18.98	28.03	Peak	100	0	HORIZONTAL
9	834.13	37.00	46.00	-9.00	41.18	3.32	20.03	27.53	Peak	100	0	HORIZONTAL

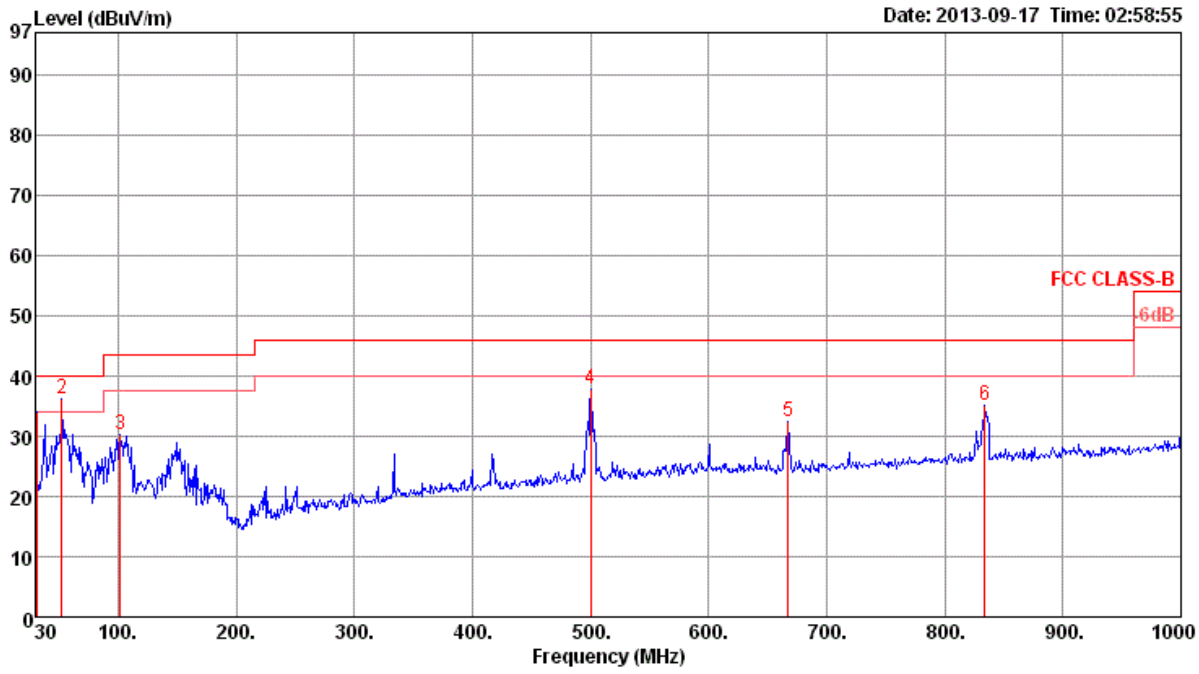
Note:

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.

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	30.97	34.13	40.00	-5.87	43.08	0.63	18.22	27.80	Peak	400	0	VERTICAL
2	52.31	36.21	40.00	-3.79	54.96	0.86	8.18	27.79	Peak	400	0	VERTICAL
3	101.78	30.23	43.50	-13.27	45.50	1.18	11.14	27.59	Peak	400	0	VERTICAL
4	500.45	37.84	46.00	-8.16	45.64	2.67	17.63	28.10	Peak	400	0	VERTICAL
5	667.29	32.46	46.00	-13.54	38.48	3.03	18.98	28.03	Peak	400	0	VERTICAL
6	834.13	35.20	46.00	-10.80	39.38	3.32	20.03	27.53	Peak	400	0	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).

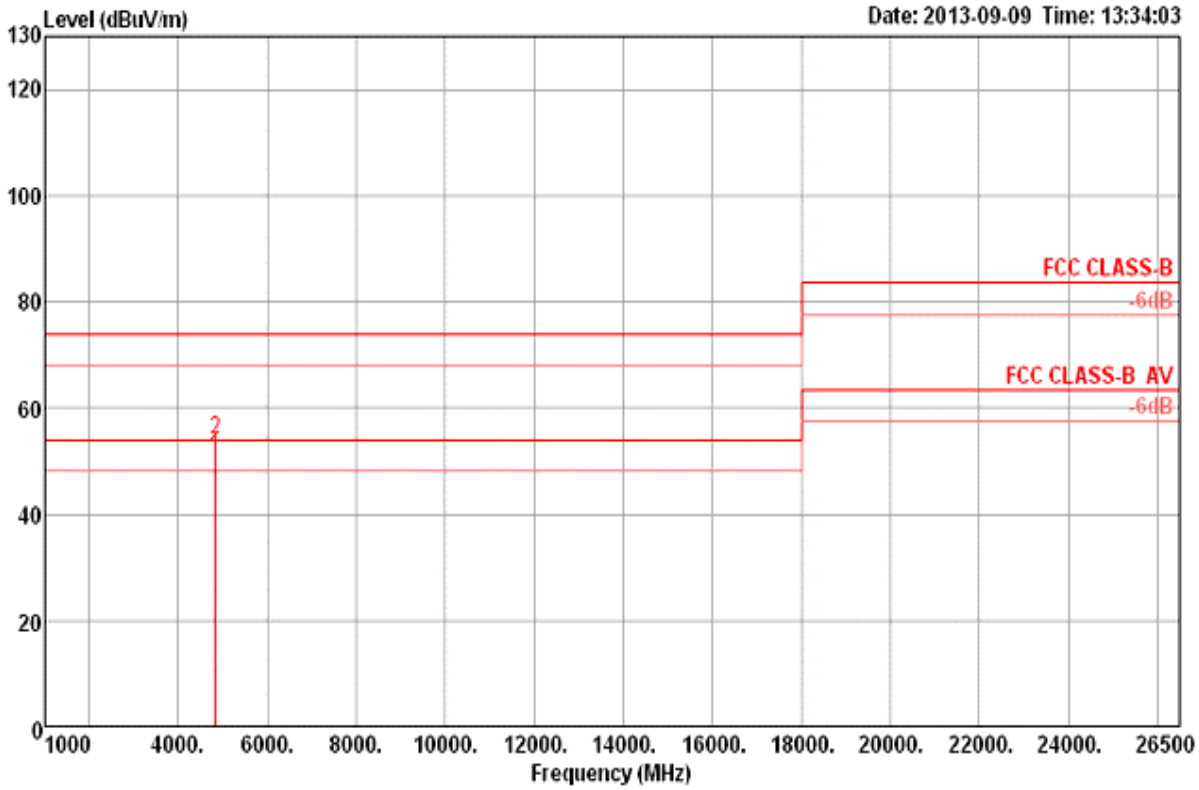
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

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

Following channel(s) was (were) selected for the final test as listed below.

MODE	TX Chain	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	Ant.2	1, 6, 11	DSSS	DBPSK	1
802.11g	Ant.2	1, 6, 11	OFDM	BPSK	6
802.11g	Ant.1+2 (CDD)	1, 6, 11	OFDM	BPSK	6
802.11n 20MHz	Ant.2	1, 6, 11	OFDM	BPSK	MCS0 (6.5)
802.11n 20MHz	Ant.1+2 (CDD)	1, 6, 11	OFDM	BPSK	MCS0 (6.5)
802.11n 40MHz	Ant.2	3, 6, 9	OFDM	BPSK	MCS0 (13.5)
802.11n 40MHz	Ant.1+2 (CDD)	3, 6, 9	OFDM	BPSK	MCS0 (13.5)

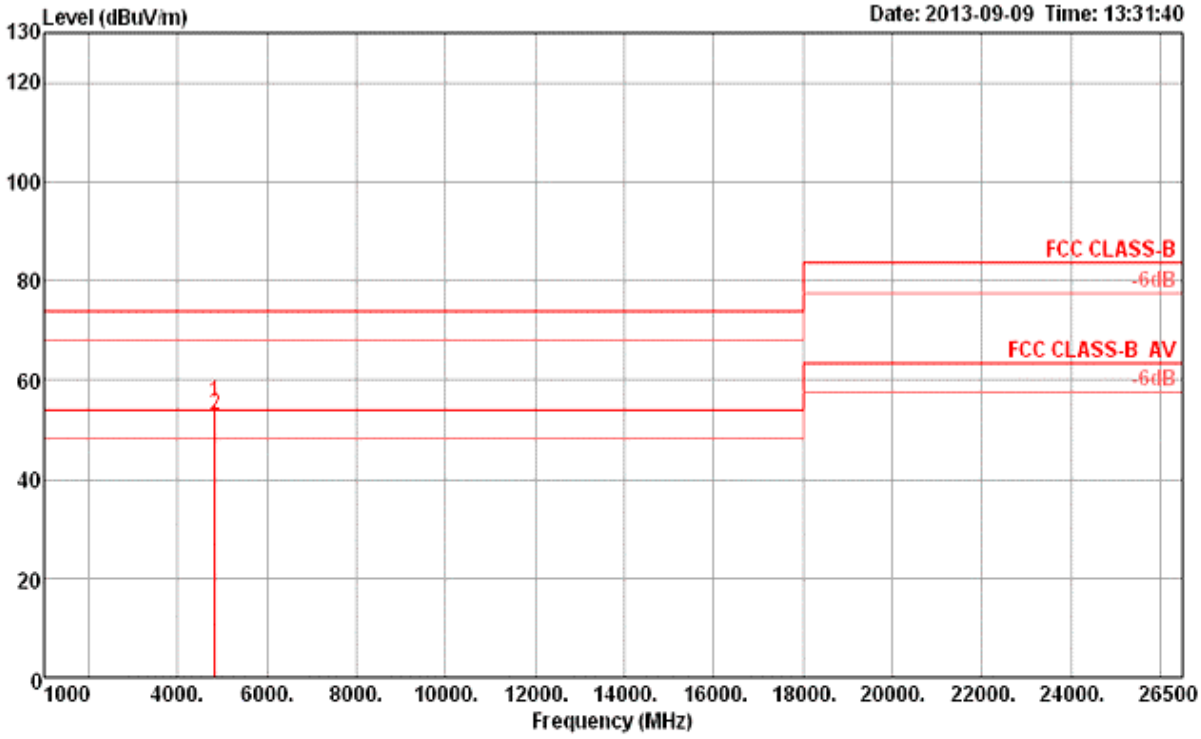
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11b CH 1 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4823.94	50.86	54.00	-3.14	49.52	3.31	33.06	35.03	Average	200	150	HORIZONTAL
2	4824.06	53.98	74.00	-20.02	52.64	3.31	33.06	35.03	Peak	200	150	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

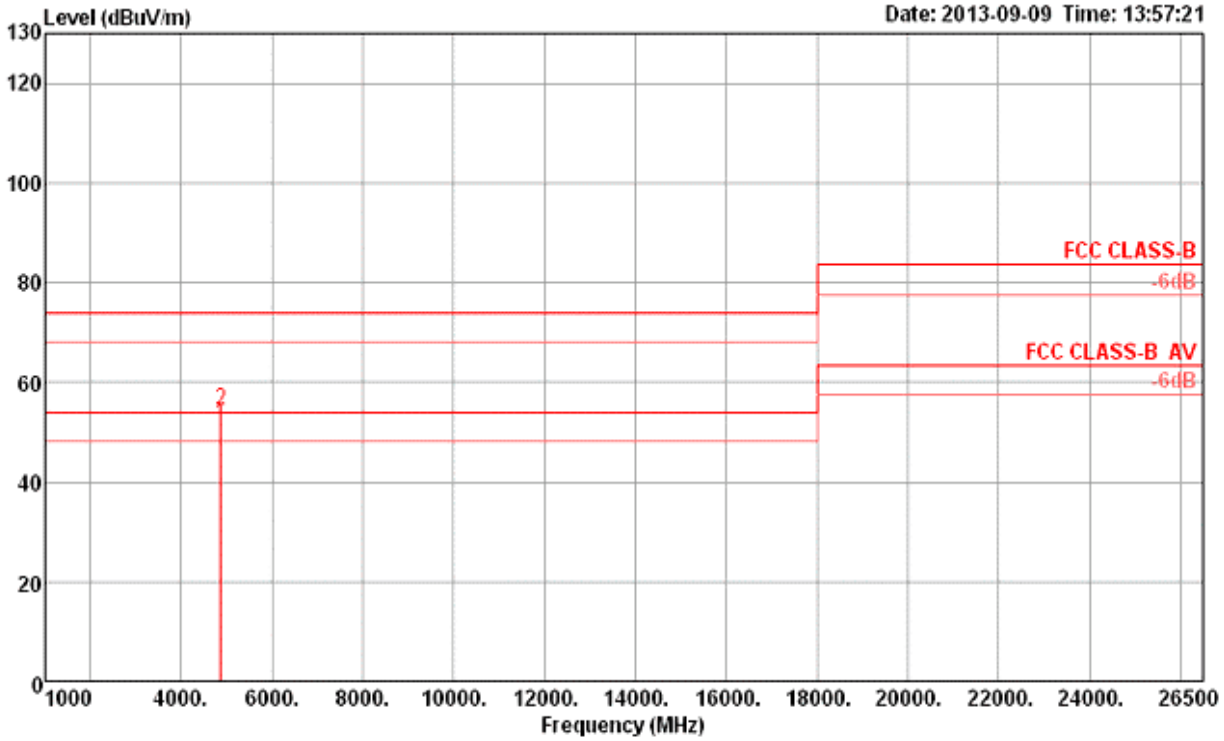
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11b CH 1 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4823.92	55.37	74.00	-18.63	54.03	3.31	33.06	35.03	Peak	112	90	VERTICAL
2	4823.96	52.98	54.00	-1.02	51.64	3.31	33.06	35.03	Average	112	90	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

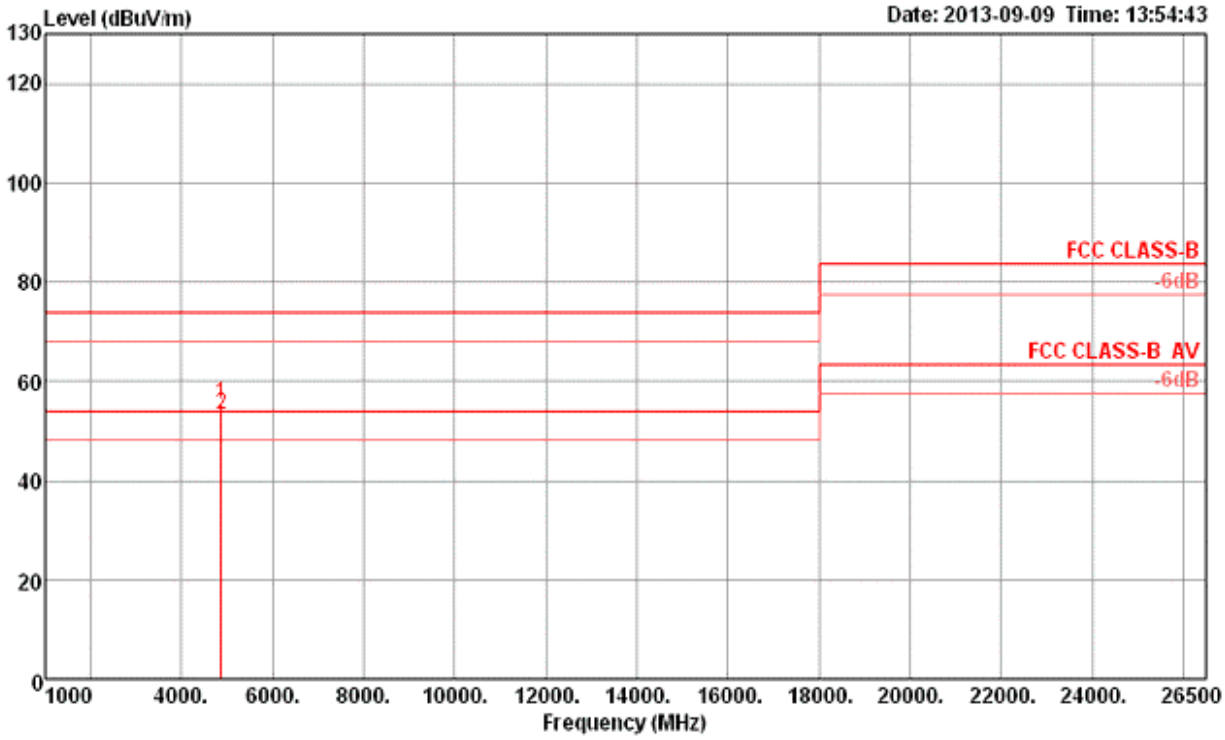
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11b CH 6 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4873.93	51.28	54.00	-2.72	49.82	3.33	33.16	35.03	Average	200	153	HORIZONTAL
2	4874.05	54.18	74.00	-19.82	52.72	3.33	33.16	35.03	Peak	200	153	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

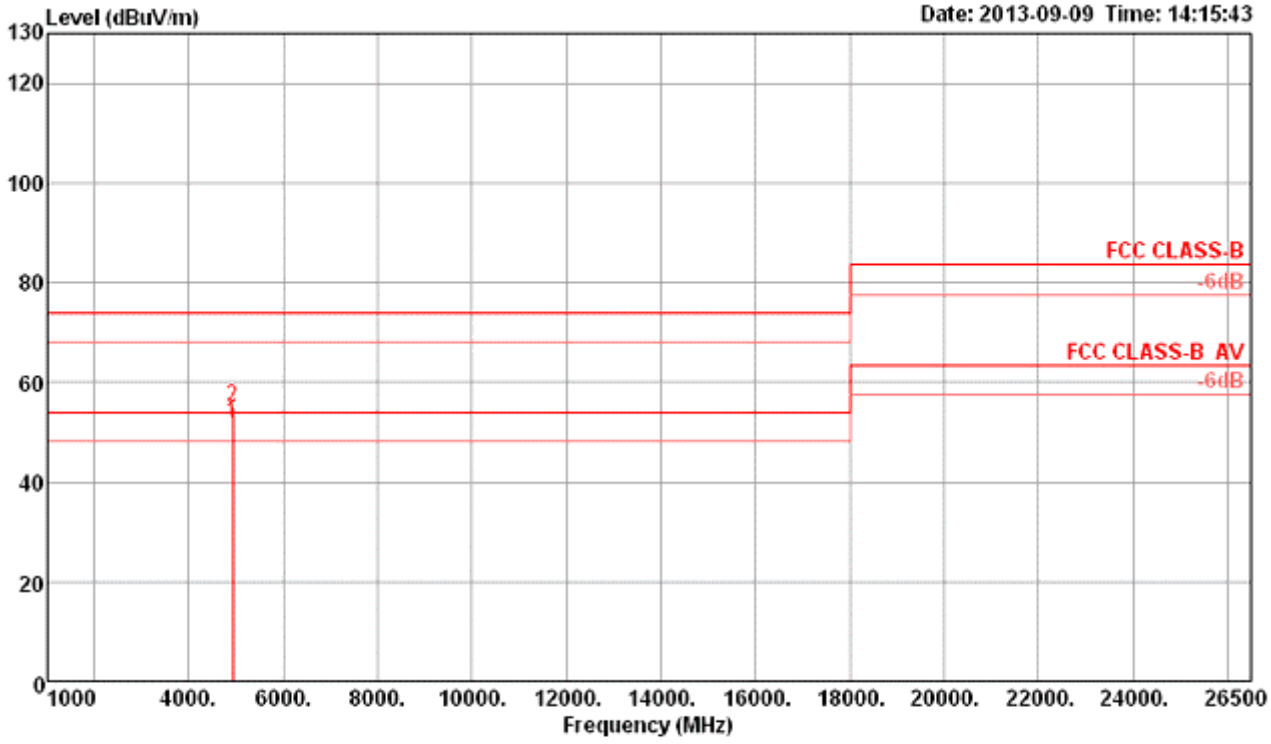
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11b CH 6 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4873.90	55.24	74.00	-18.76	53.78	3.33	33.16	35.03	Peak	139	103	VERTICAL
2	4873.94	53.09	54.00	-0.91	51.63	3.33	33.16	35.03	Average	139	103	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

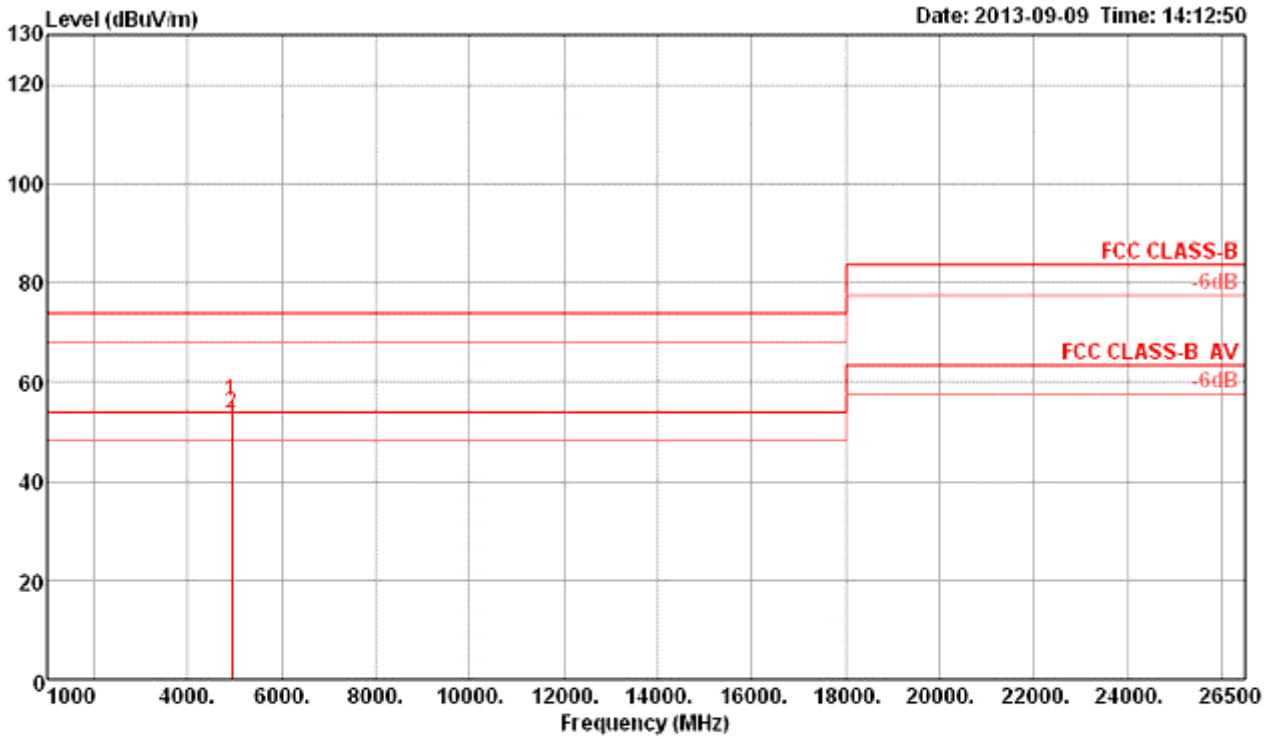
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11b CH 11 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4923.96	51.94	54.00	-2.06	50.34	3.35	33.26	35.01	Average	181	153	HORIZONTAL
2	4924.02	55.06	74.00	-18.94	53.46	3.35	33.26	35.01	Peak	181	153	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

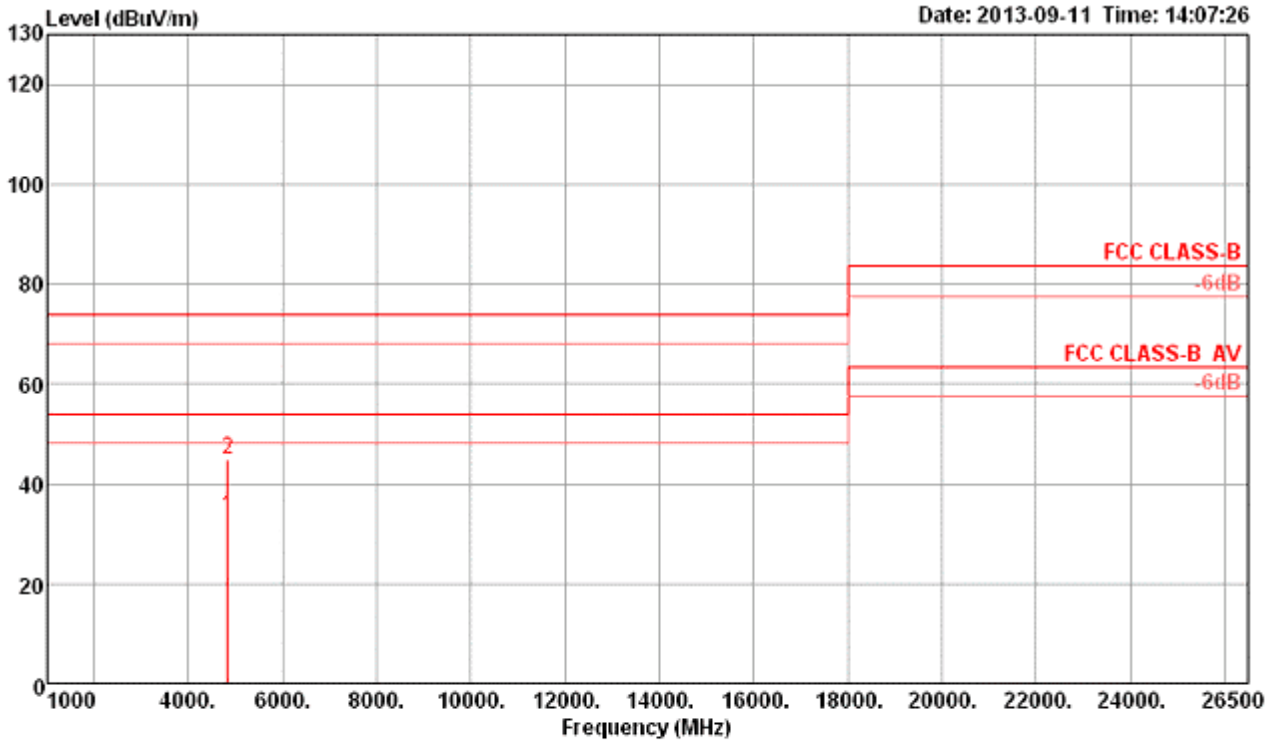
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11b CH 11 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4923.86	56.14	74.00	-17.86	54.54	3.35	33.26	35.01	Peak	118	284	VERTICAL
2	4923.99	53.66	54.00	-0.34	52.06	3.35	33.26	35.01	Average	118	284	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

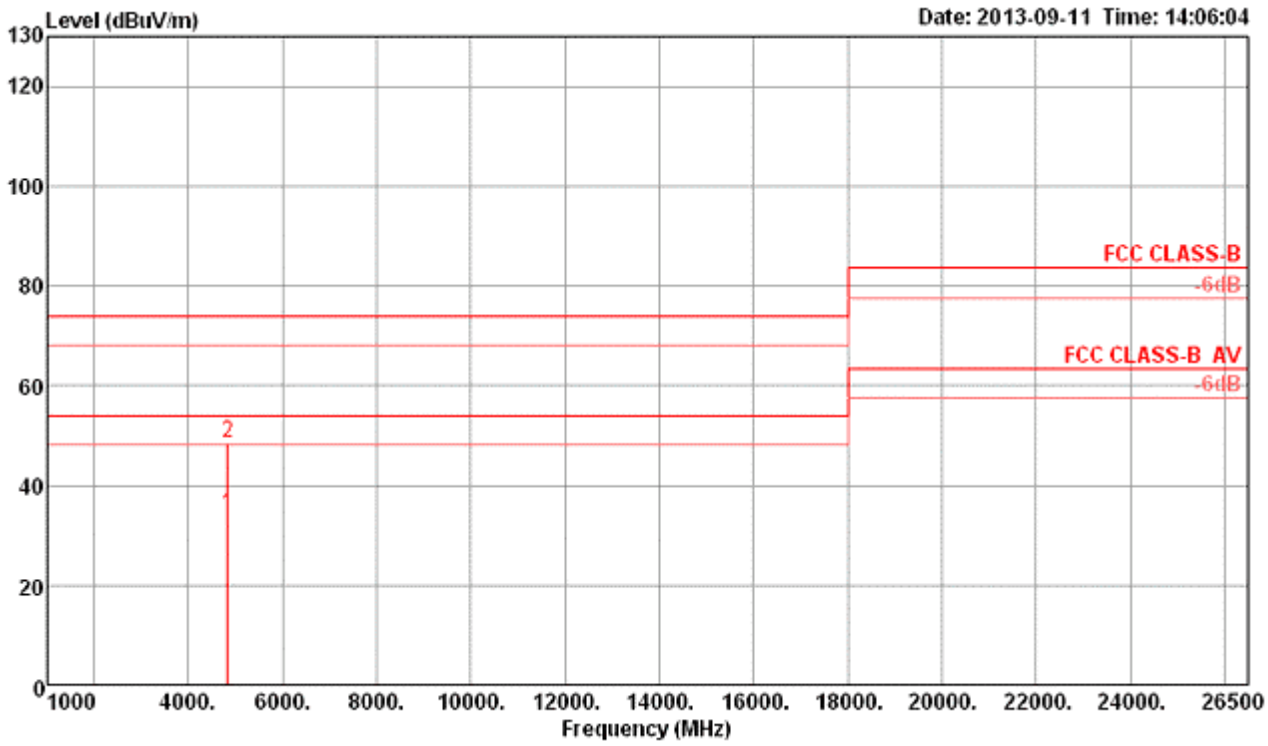
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 1 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4824.12	33.41	54.00	-20.59	32.07	3.31	33.06	35.03	Average	110	145	HORIZONTAL
2	4825.16	44.93	74.00	-29.07	43.59	3.31	33.06	35.03	Peak	110	145	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

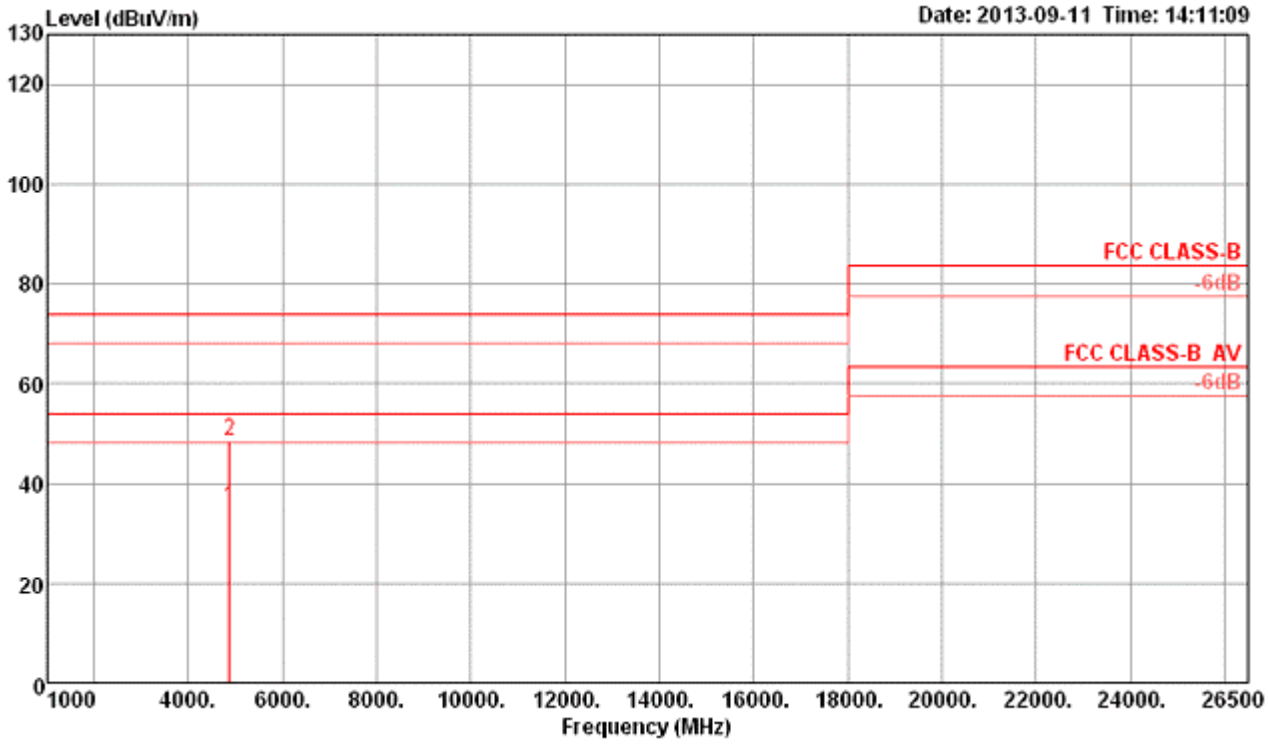
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 1 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4823.24	33.94	54.00	-20.06	32.60	3.31	33.06	35.03	Average	122	286	VERTICAL
2	4824.00	48.56	74.00	-25.44	47.22	3.31	33.06	35.03	Peak	122	286	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

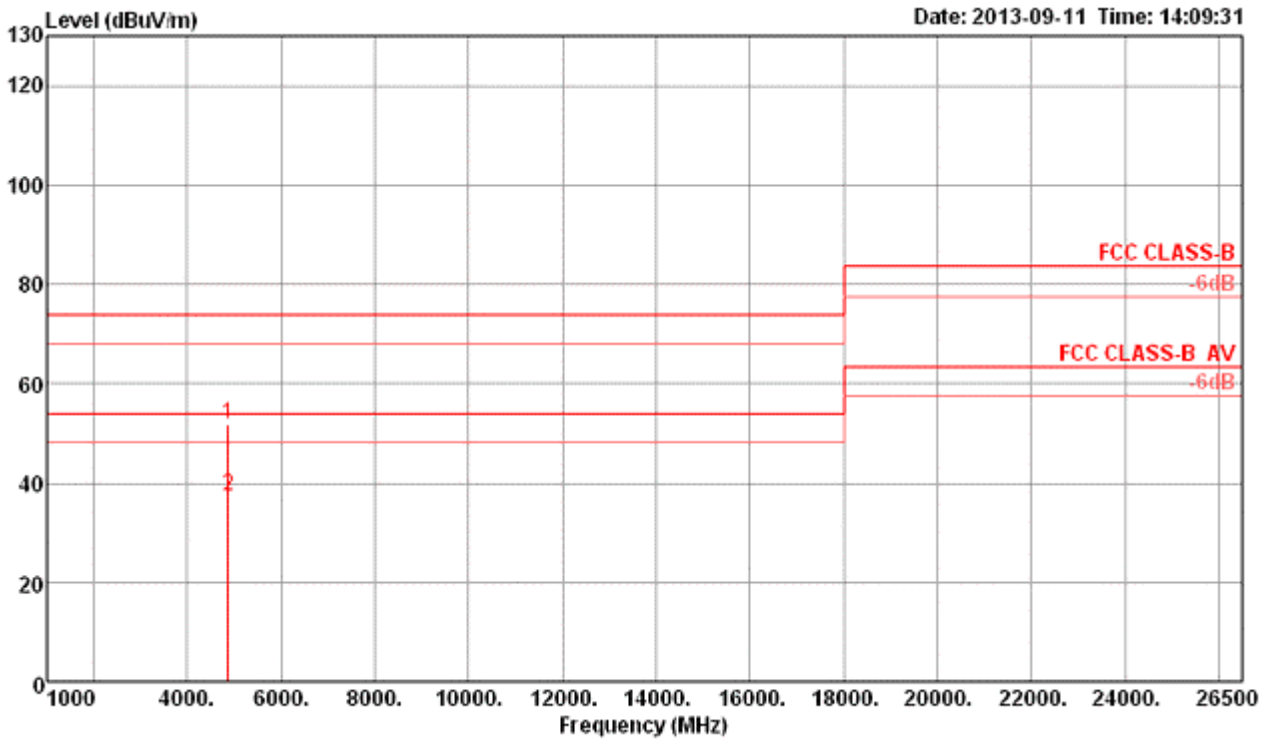
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 6 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4873.00	35.24	54.00	-18.76	33.78	3.33	33.16	35.03	Average	162	146	HORIZONTAL
2	4874.96	48.41	74.00	-25.59	46.95	3.33	33.16	35.03	Peak	162	146	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

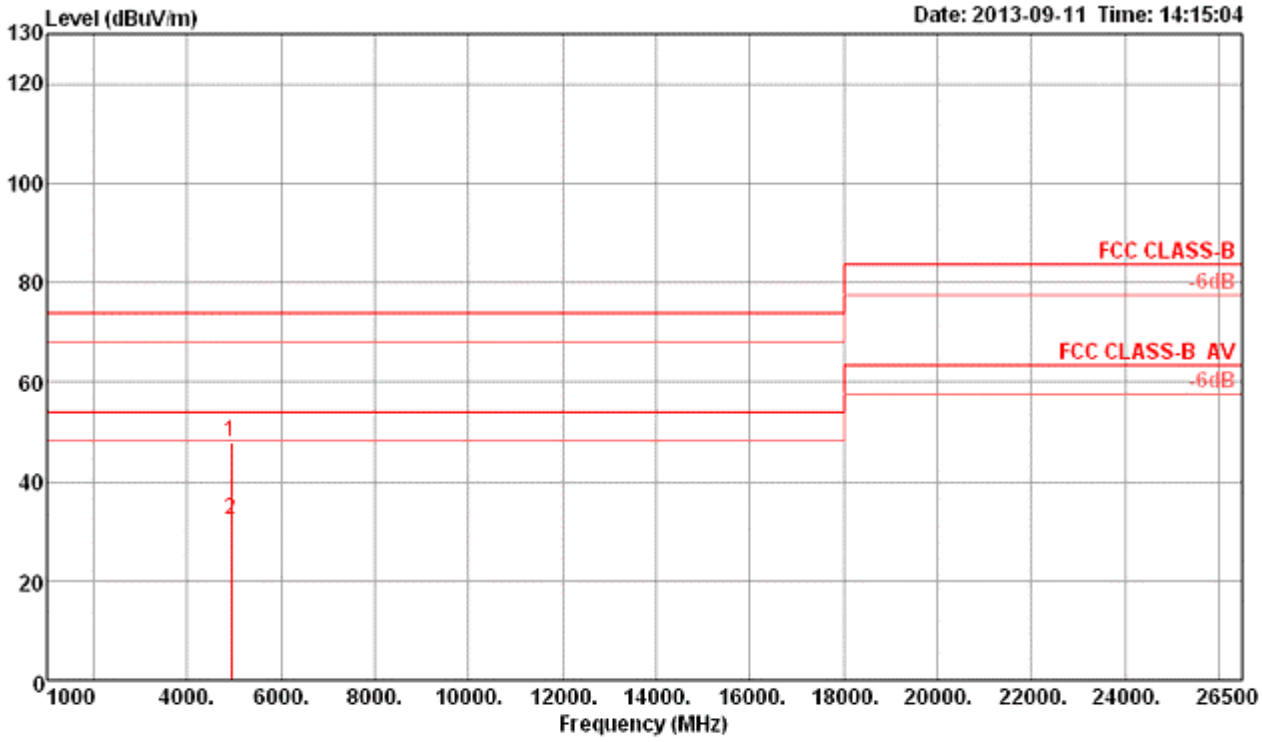
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 6 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4873.32	51.73	74.00	-22.27	50.27	3.33	33.16	35.03	Peak	108	207	VERTICAL
2	4873.84	37.13	54.00	-16.87	35.67	3.33	33.16	35.03	Average	108	207	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

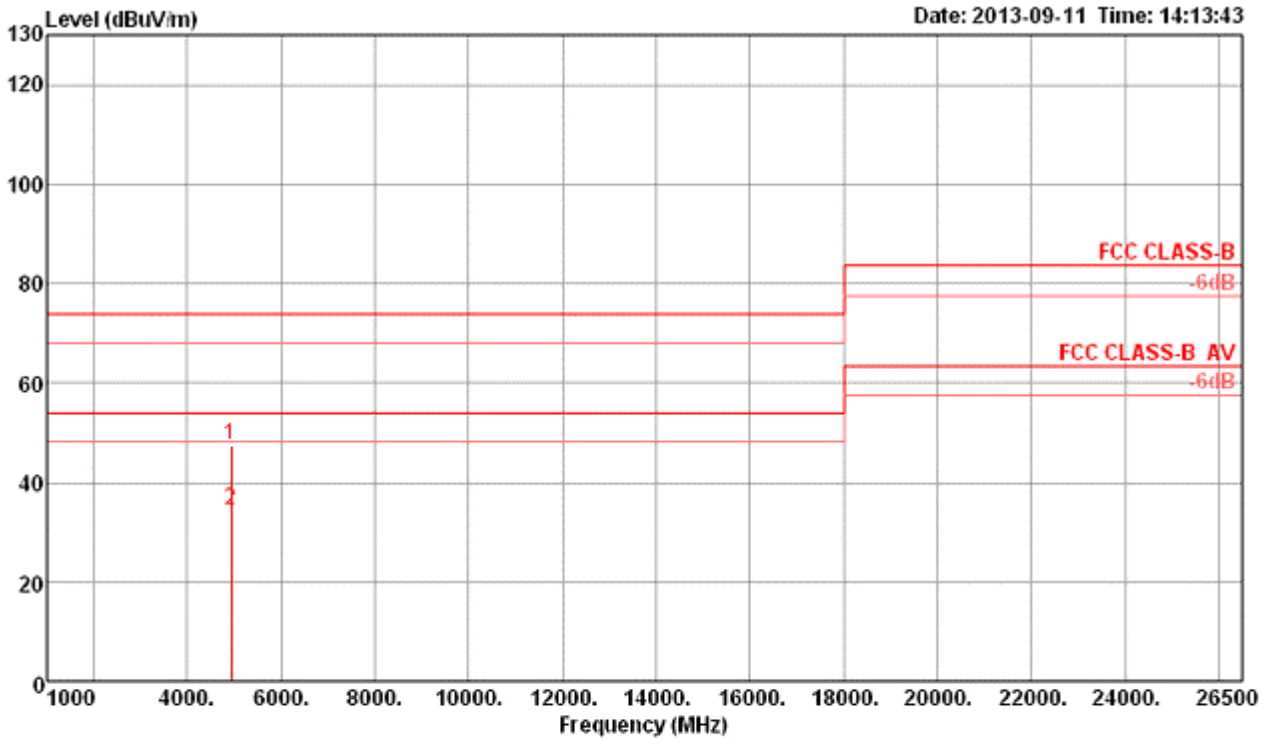
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 11 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4922.80	47.71	74.00	-26.29	46.11	3.35	33.26	35.01	Peak	103	104	HORIZONTAL
2	4924.16	32.36	54.00	-21.64	30.76	3.35	33.26	35.01	Average	103	104	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

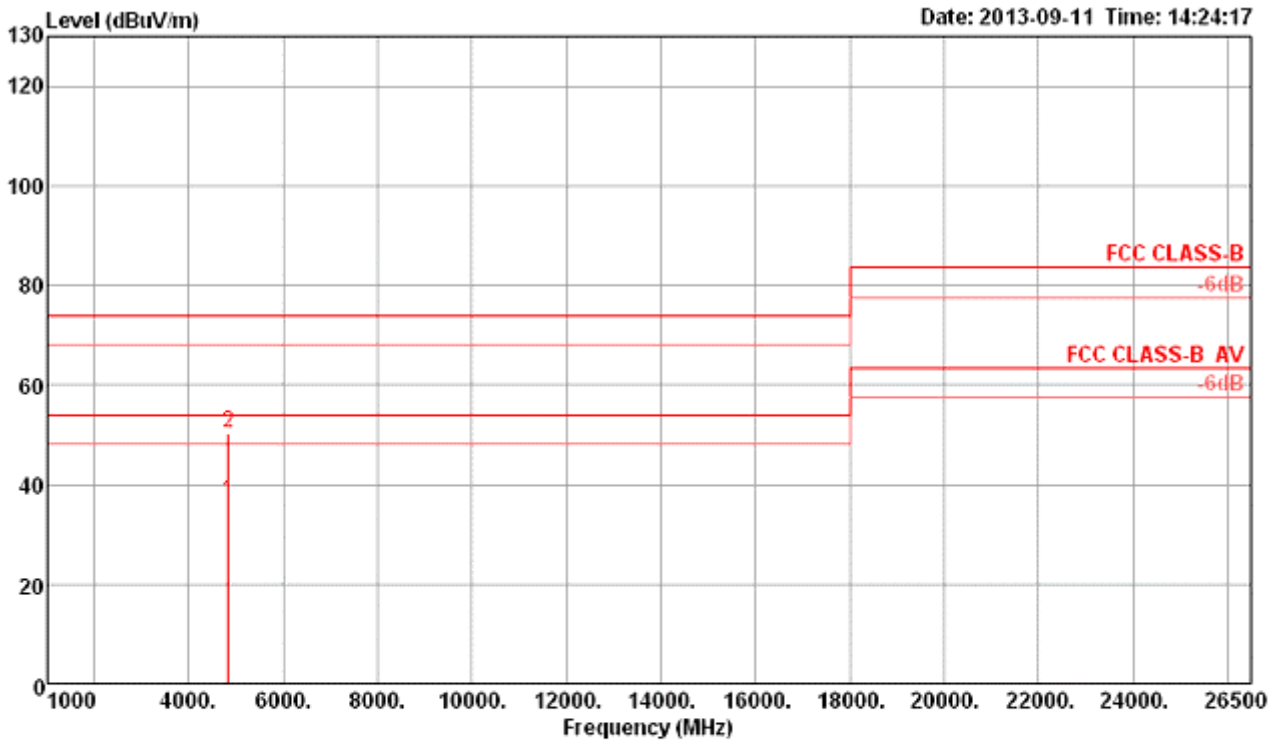
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 11 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4922.72	47.54	74.00	-26.46	45.94	3.35	33.26	35.01	Peak	106	252	VERTICAL
2	4924.16	34.41	54.00	-19.59	32.81	3.35	33.26	35.01	Average	106	252	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

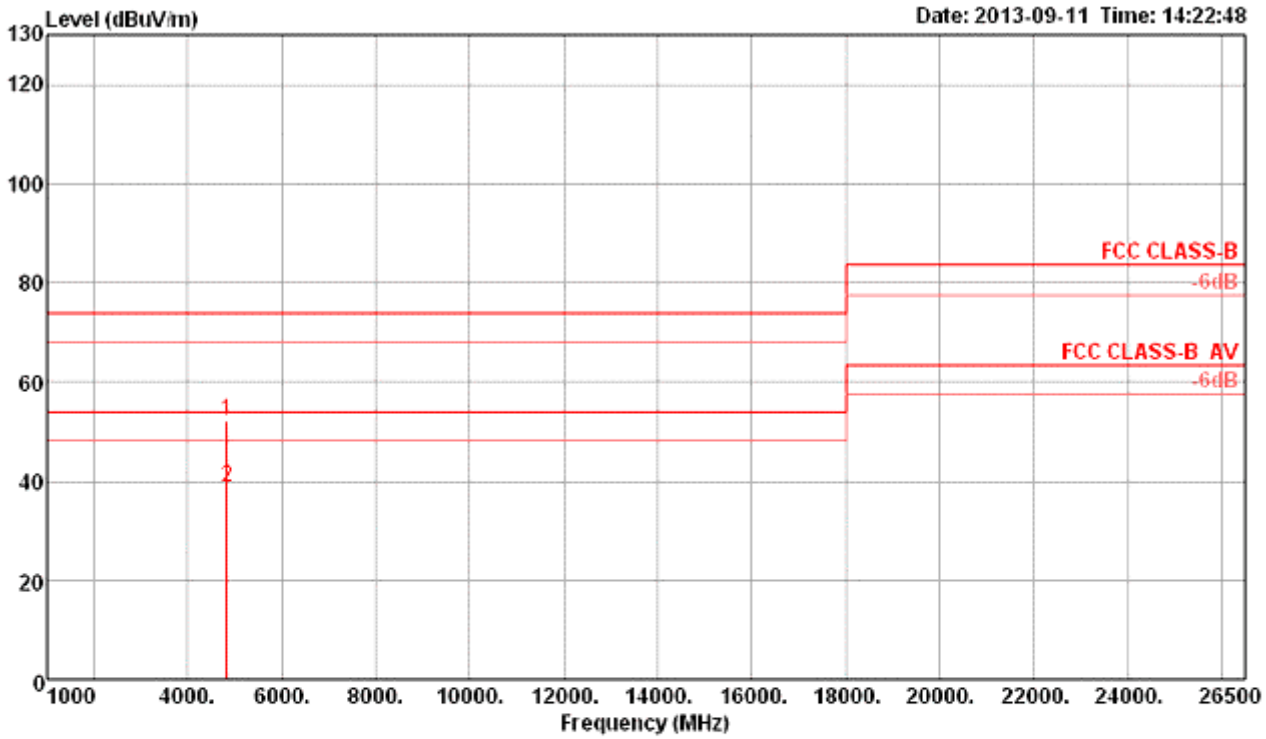
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 1 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4824.88	36.45	54.00	-17.55	35.11	3.31	33.06	35.03	Average	134	110	HORIZONTAL
2	4825.12	50.39	74.00	-23.61	49.05	3.31	33.06	35.03	Peak	134	110	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

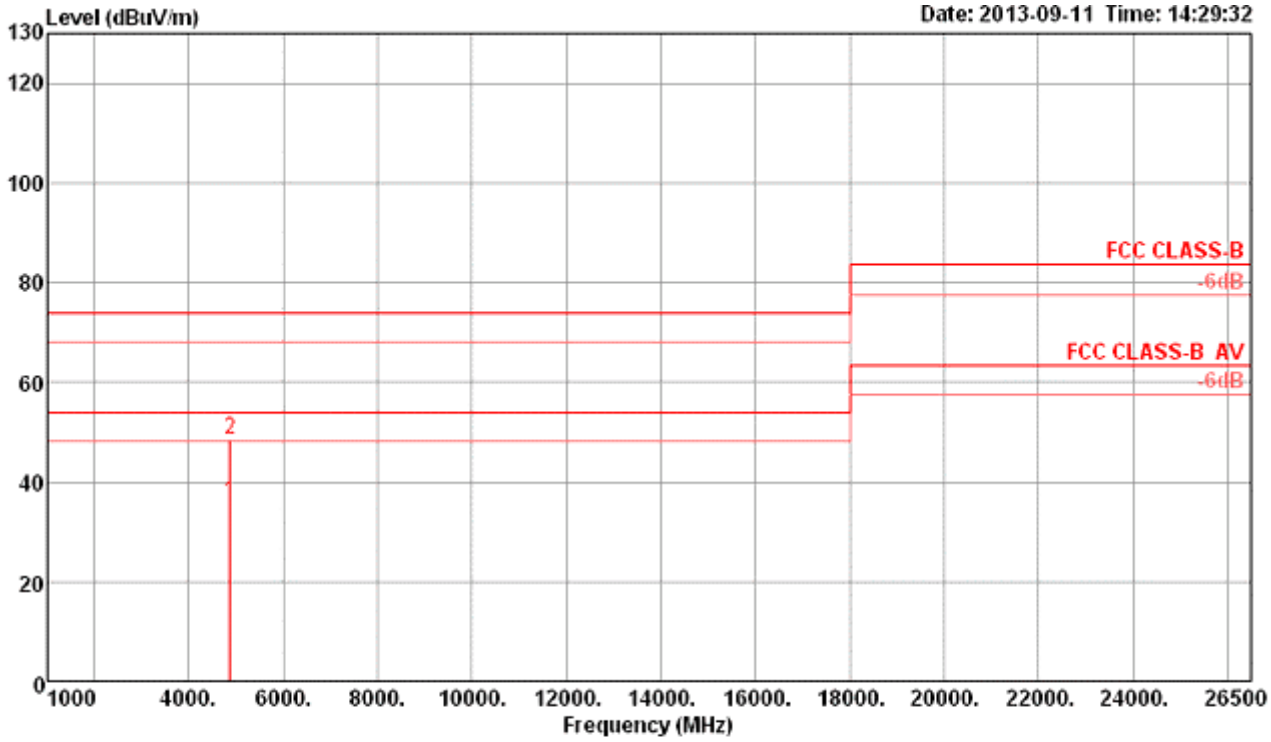
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 1 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4824.32	52.16	74.00	-21.84	50.82	3.31	33.06	35.03	Peak	136	247	VERTICAL
2	4824.44	38.65	54.00	-15.35	37.31	3.31	33.06	35.03	Average	136	247	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

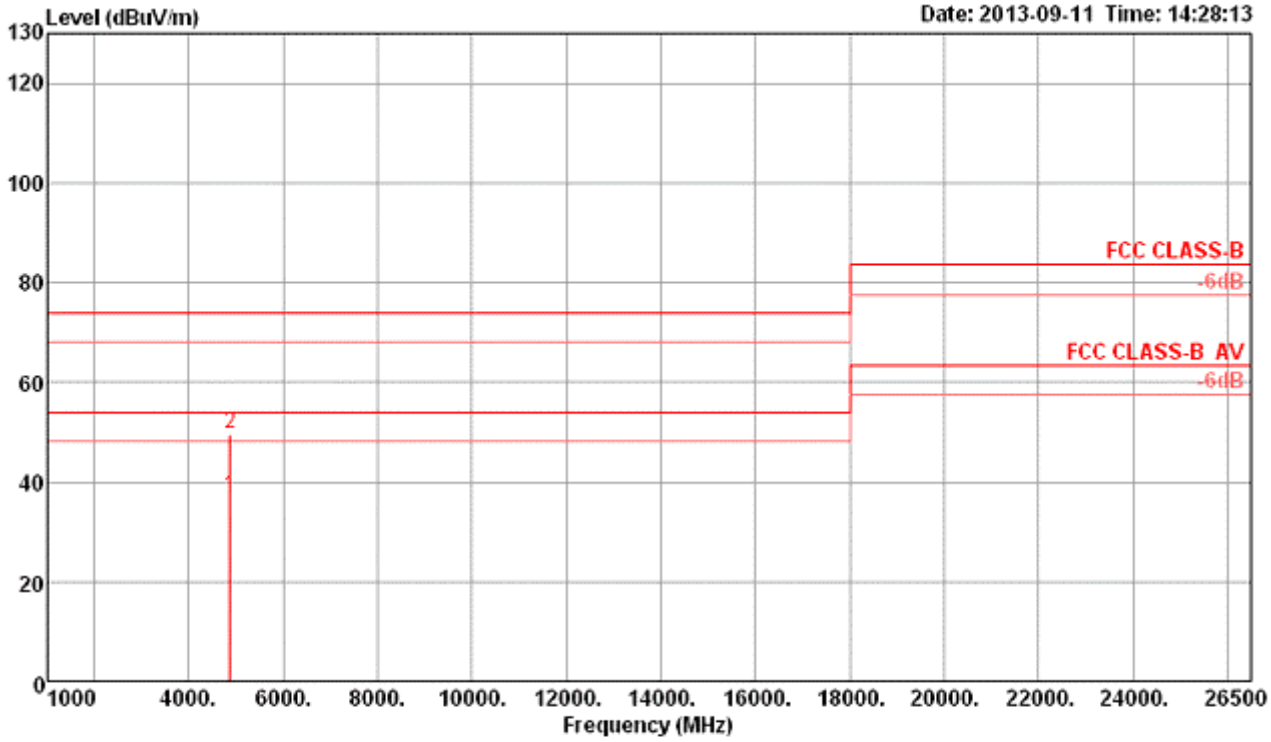
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4874.28	35.69	54.00	-18.31	34.23	3.33	33.16	35.03	Average	143	114	HORIZONTAL
2	4875.28	48.50	74.00	-25.50	47.04	3.33	33.16	35.03	Peak	143	114	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

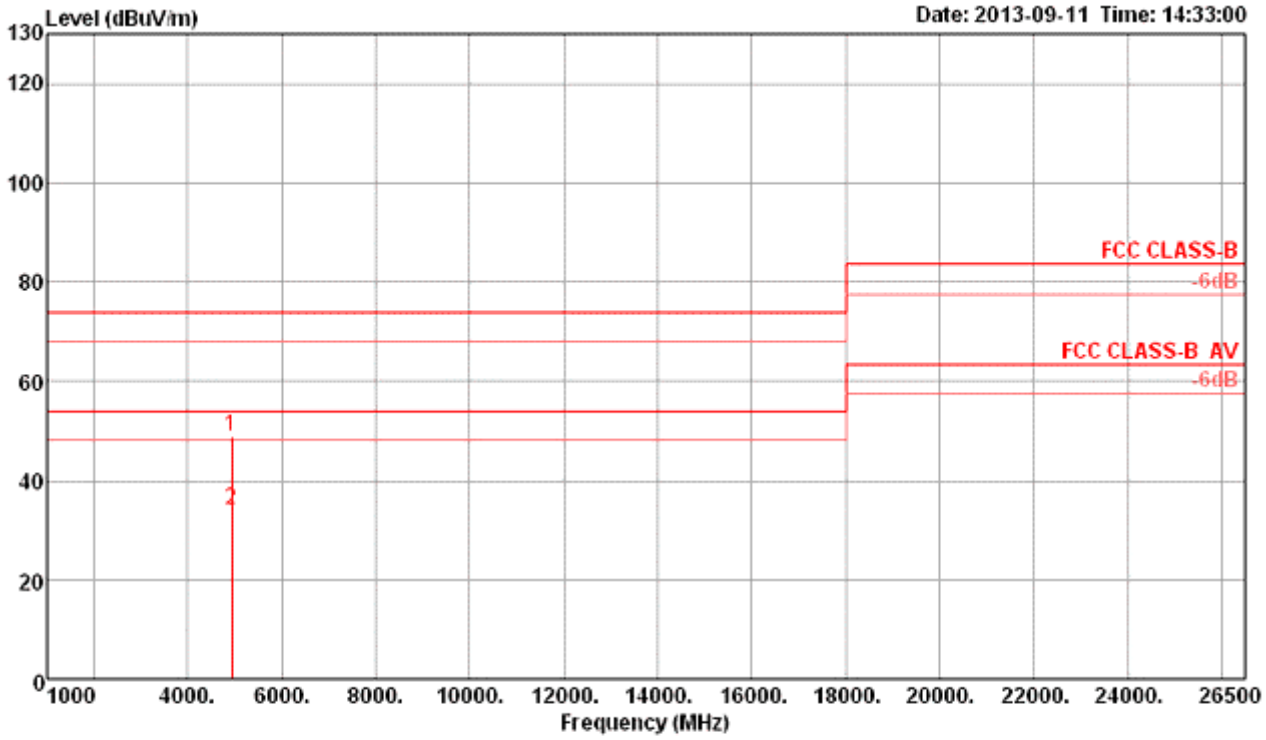
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4875.72	37.11	54.00	-16.89	35.65	3.33	33.16	35.03	Average	117	45	VERTICAL
2	4875.76	49.76	74.00	-24.24	48.30	3.33	33.16	35.03	Peak	117	45	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

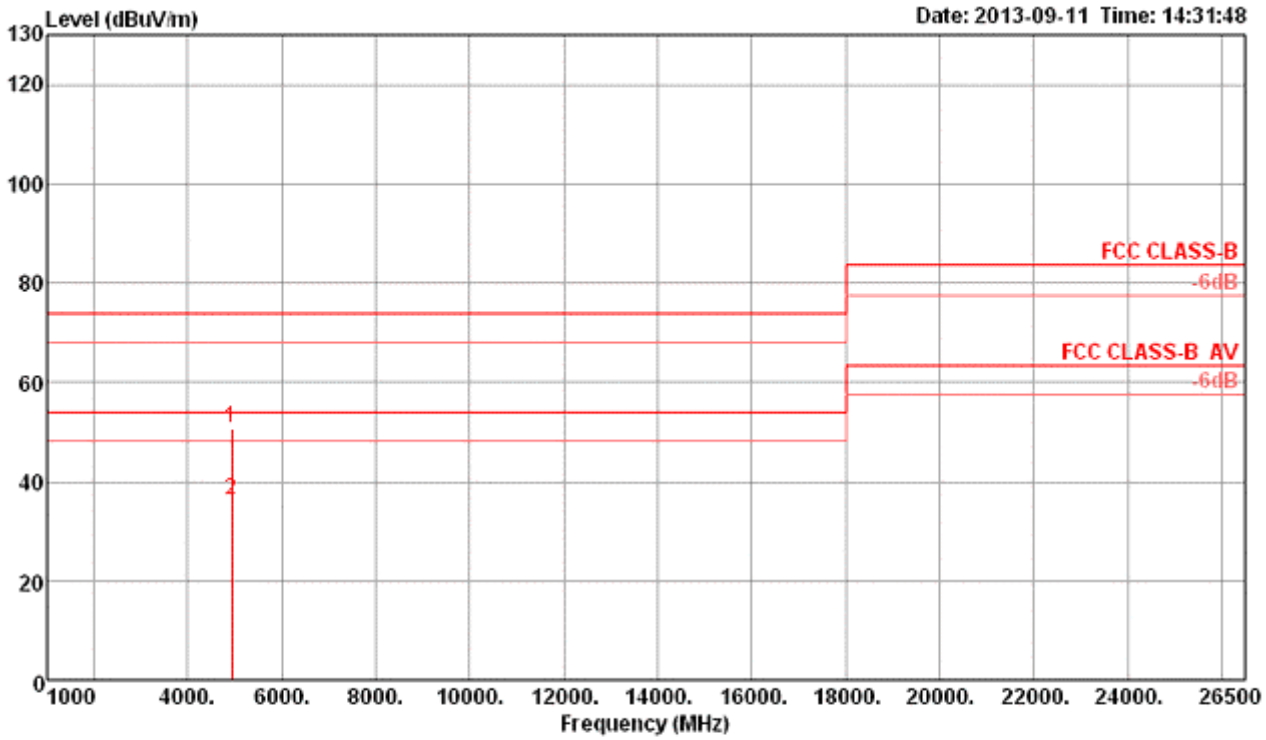
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 11 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4925.36	48.89	74.00	-25.11	47.29	3.35	33.26	35.01	Peak	104	88	HORIZONTAL
2	4925.72	34.21	54.00	-19.79	32.61	3.35	33.26	35.01	Average	104	88	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

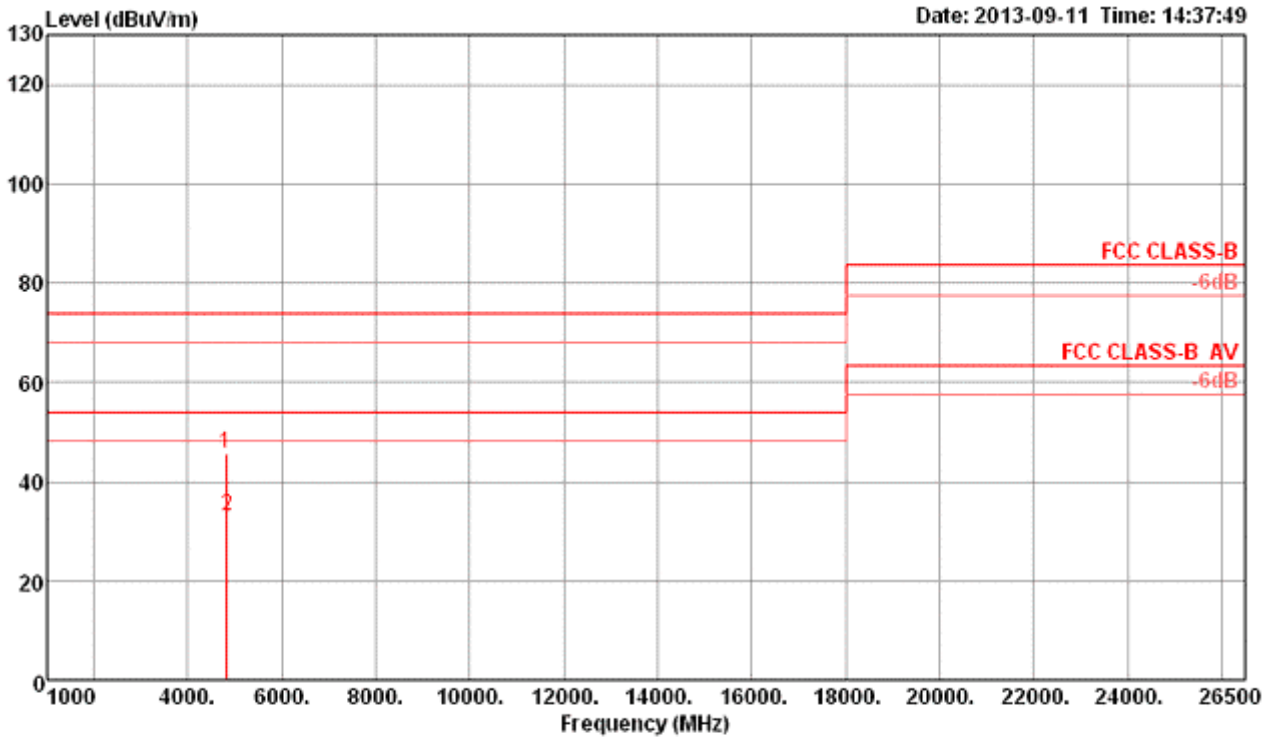
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11g CH 11 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4923.00	50.73	74.00	-23.27	49.13	3.35	33.26	35.01	Peak	115	59	VERTICAL
2	4924.32	36.25	54.00	-17.75	34.65	3.35	33.26	35.01	Average	115	59	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

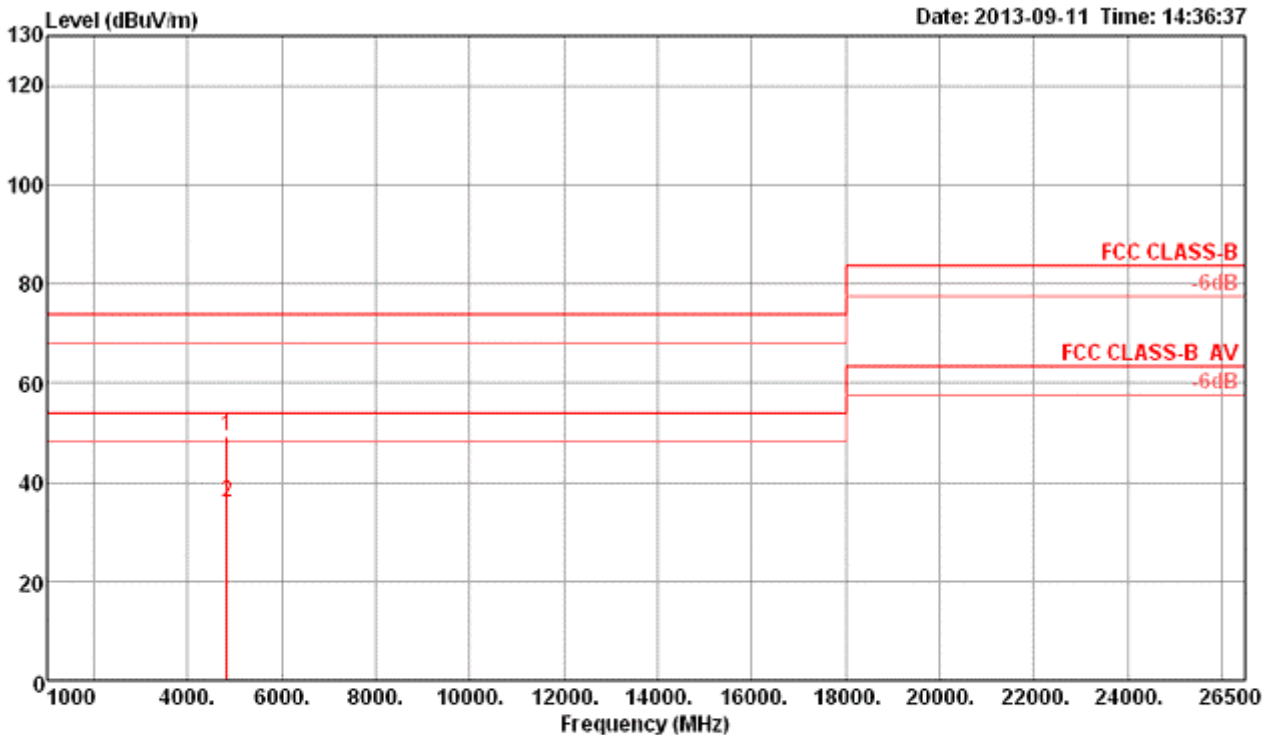
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 1 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4820.44	45.73	74.00	-28.27	44.39	3.31	33.06	35.03	Peak	118	141	HORIZONTAL
2	4824.12	32.78	54.00	-21.22	31.44	3.31	33.06	35.03	Average	118	141	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

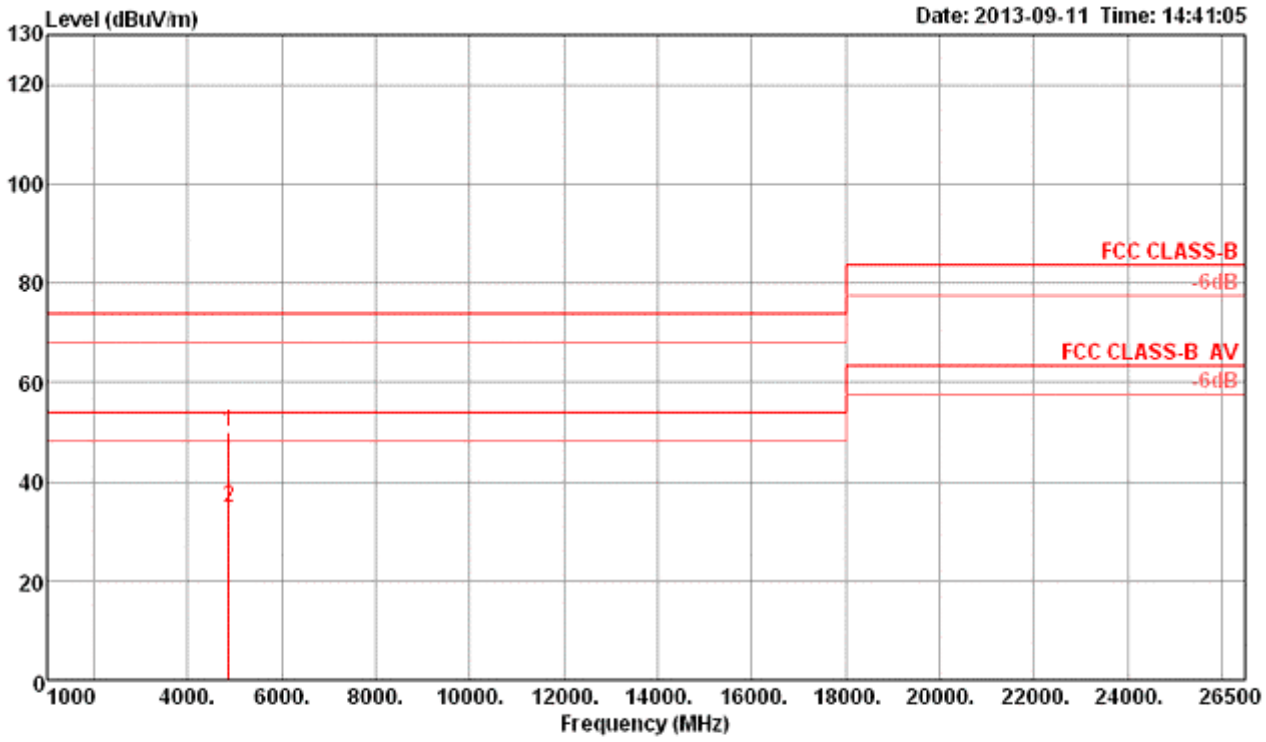
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 1 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4824.36	49.13	74.00	-24.87	47.79	3.31	33.06	35.03	Peak	111	205	VERTICAL
2	4824.60	35.80	54.00	-18.20	34.46	3.31	33.06	35.03	Average	111	205	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

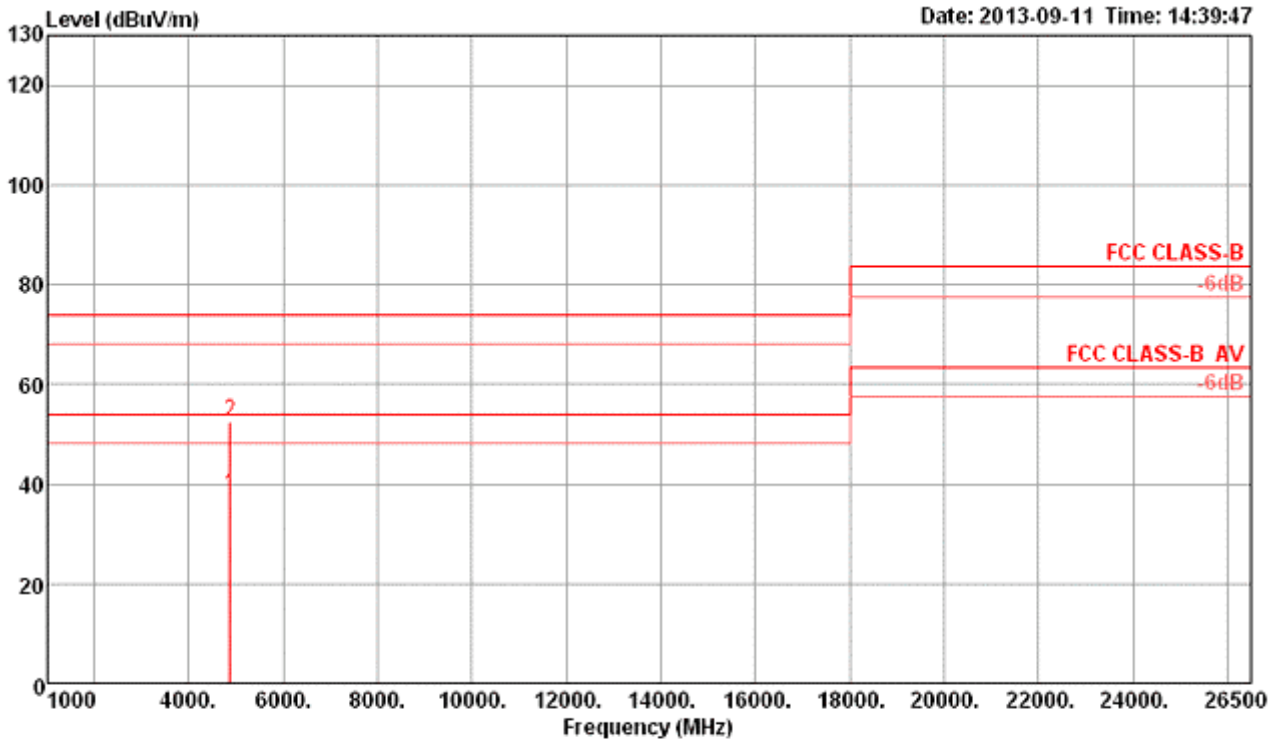
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 6 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4873.20	50.15	74.00	-23.85	48.69	3.33	33.16	35.03	Peak	103	144	HORIZONTAL
2	4873.28	34.82	54.00	-19.18	33.36	3.33	33.16	35.03	Average	103	144	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

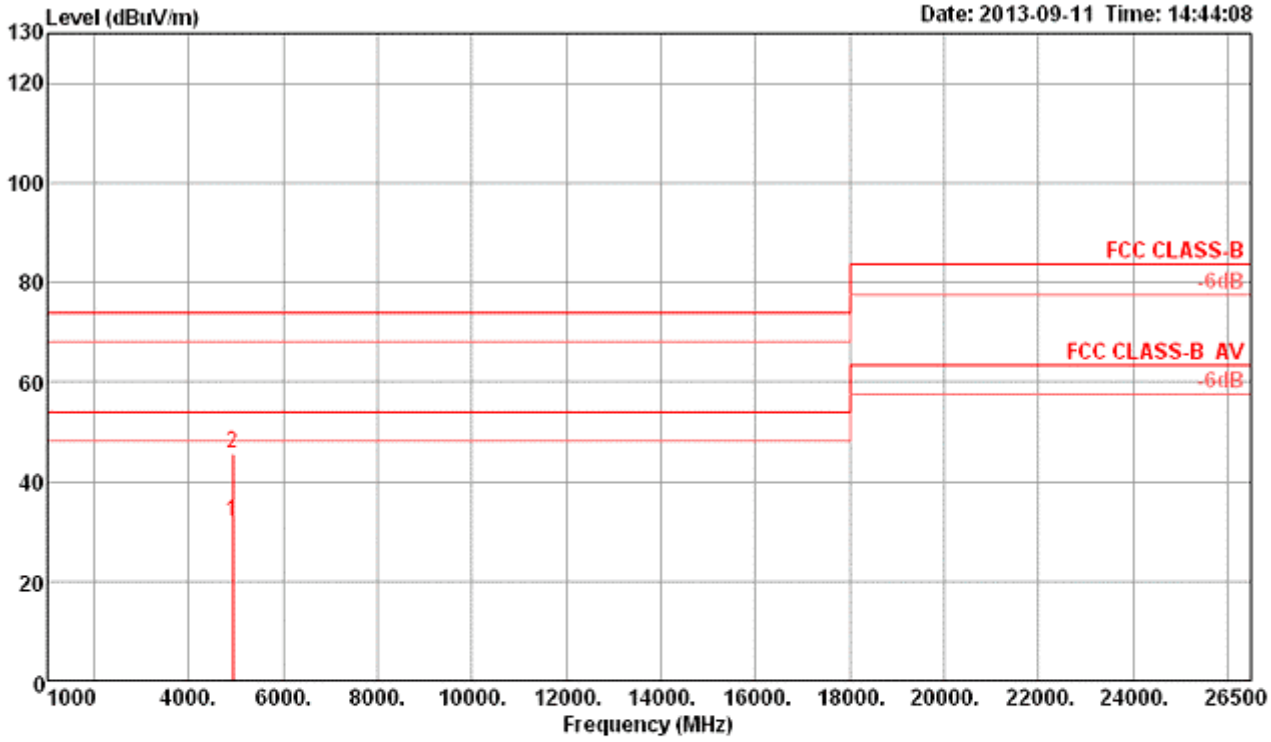
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 6 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4874.04	37.51	54.00	-16.49	36.05	3.33	33.16	35.03	Average	109	222	VERTICAL
2	4875.12	52.59	74.00	-21.41	51.13	3.33	33.16	35.03	Peak	109	222	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

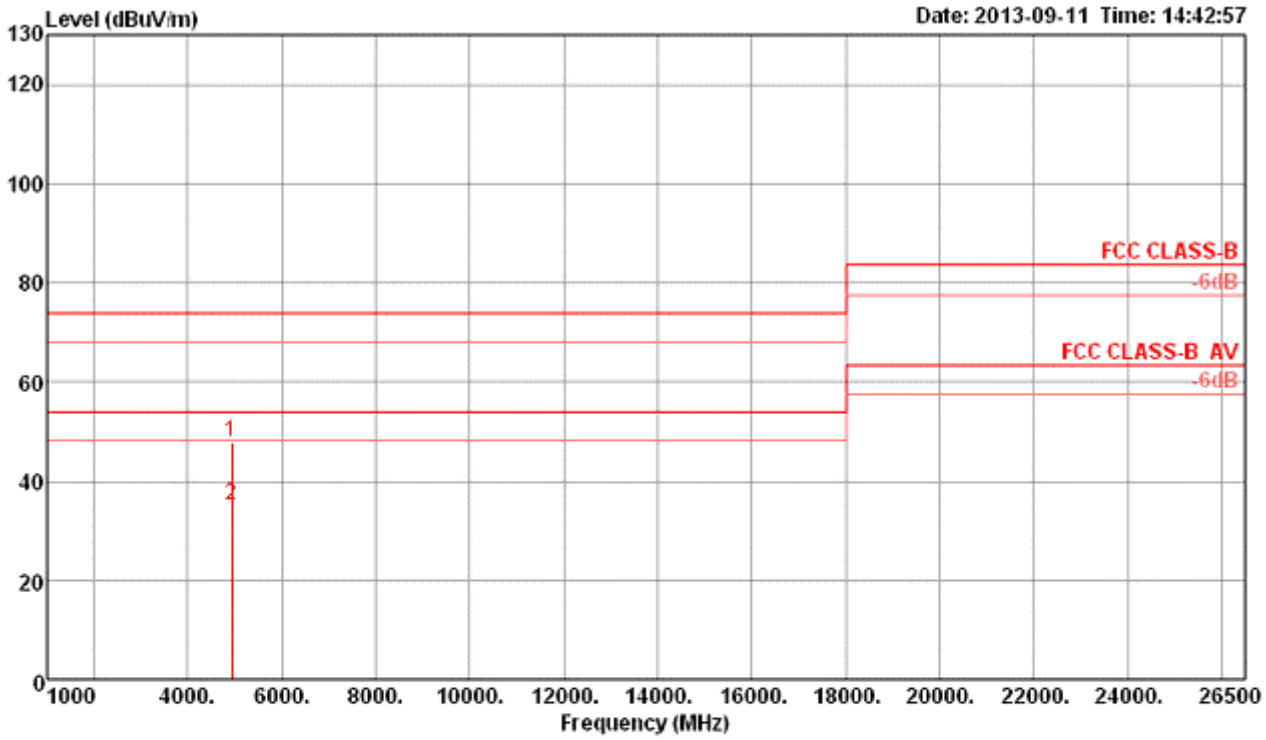
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 11 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	32.03	54.00	-21.97	30.43	3.35	33.26	35.01	Average	127	105	HORIZONTAL
2	4925.08	45.80	74.00	-28.20	44.20	3.35	33.26	35.01	Peak	127	105	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

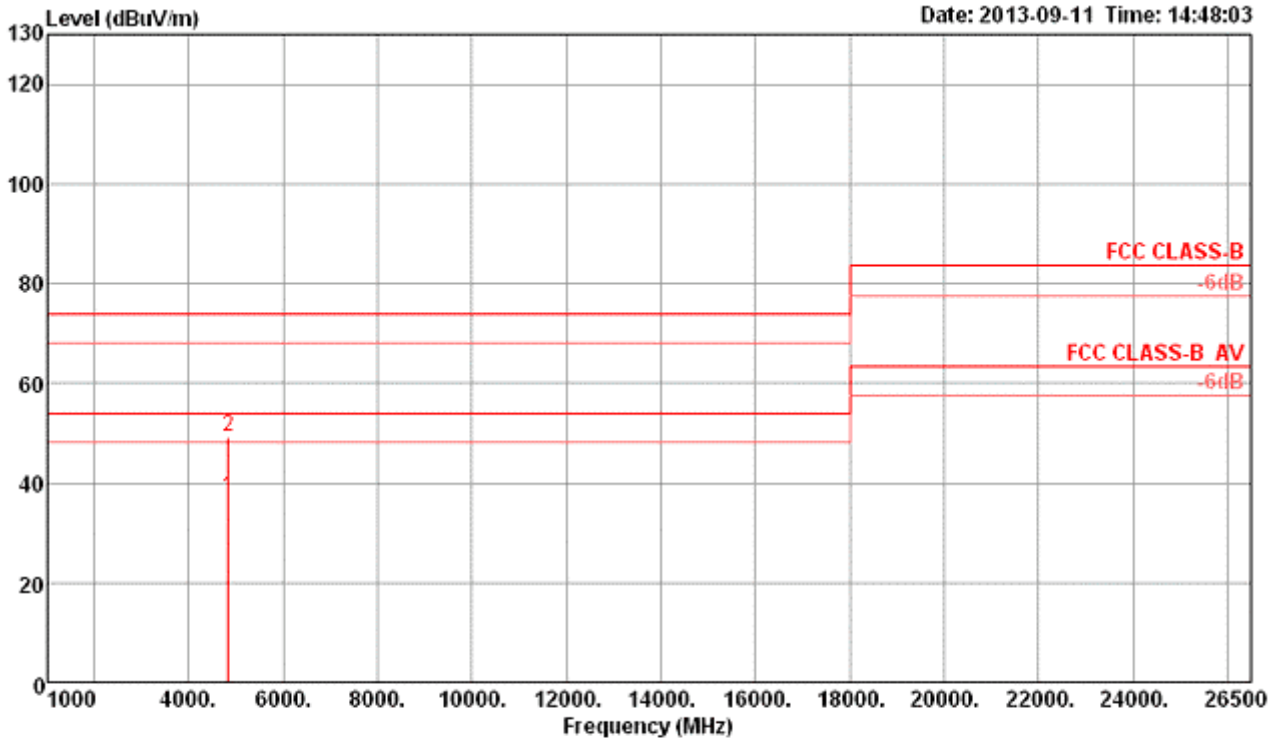
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 11 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4923.88	47.96	74.00	-26.04	46.36	3.35	33.26	35.01	Peak	112	340	VERTICAL
2	4923.96	35.26	54.00	-18.74	33.66	3.35	33.26	35.01	Average	112	340	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

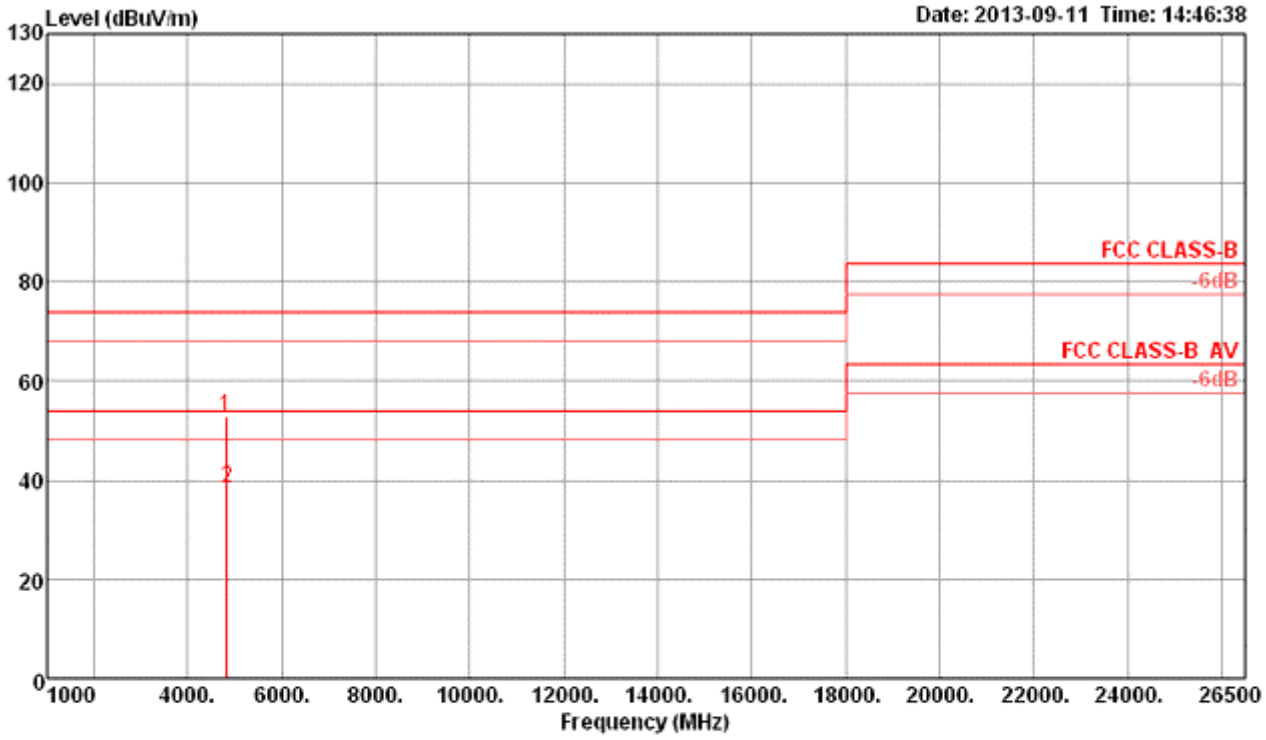
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 1 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4824.32	36.80	54.00	-17.20	35.46	3.31	33.06	35.03	Average	132	114	HORIZONTAL
2	4824.56	49.33	74.00	-24.67	47.99	3.31	33.06	35.03	Peak	132	114	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

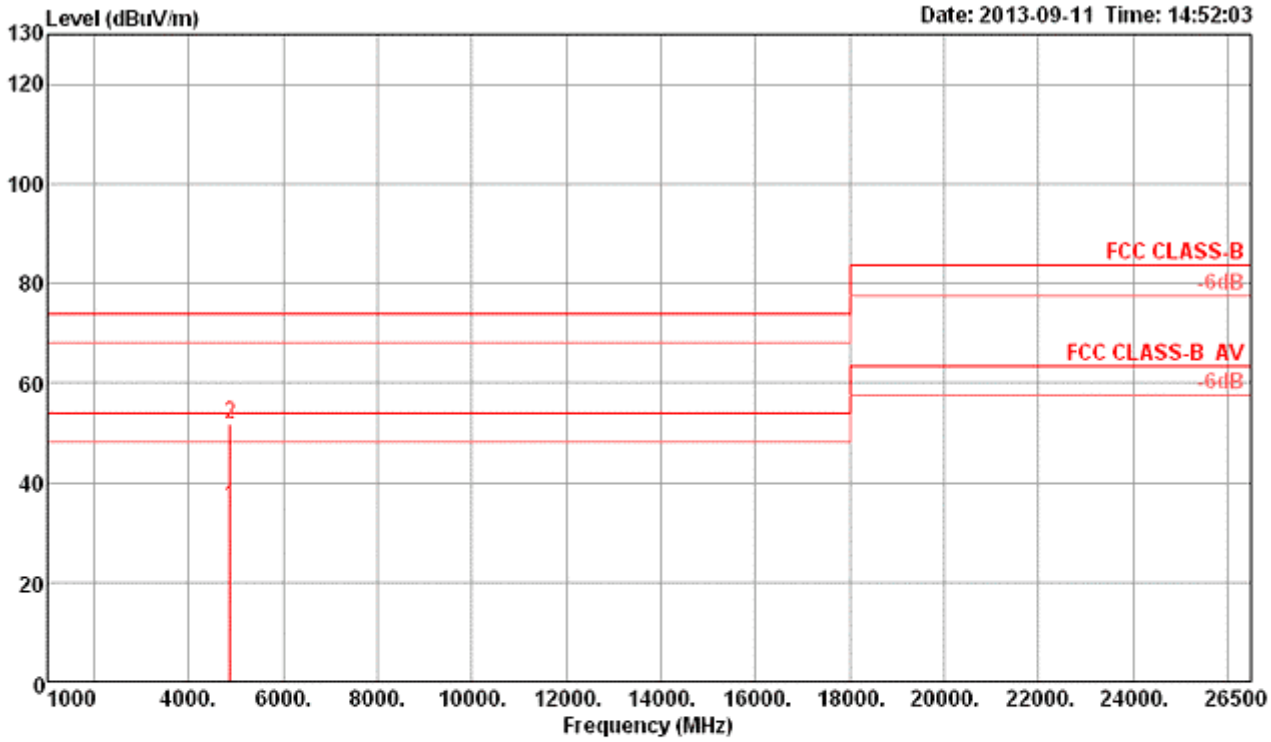
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 1 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4821.72	52.75	74.00	-21.25	51.41	3.31	33.06	35.03	Peak	125	254	VERTICAL
2	4824.52	38.33	54.00	-15.67	36.99	3.31	33.06	35.03	Average	125	254	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

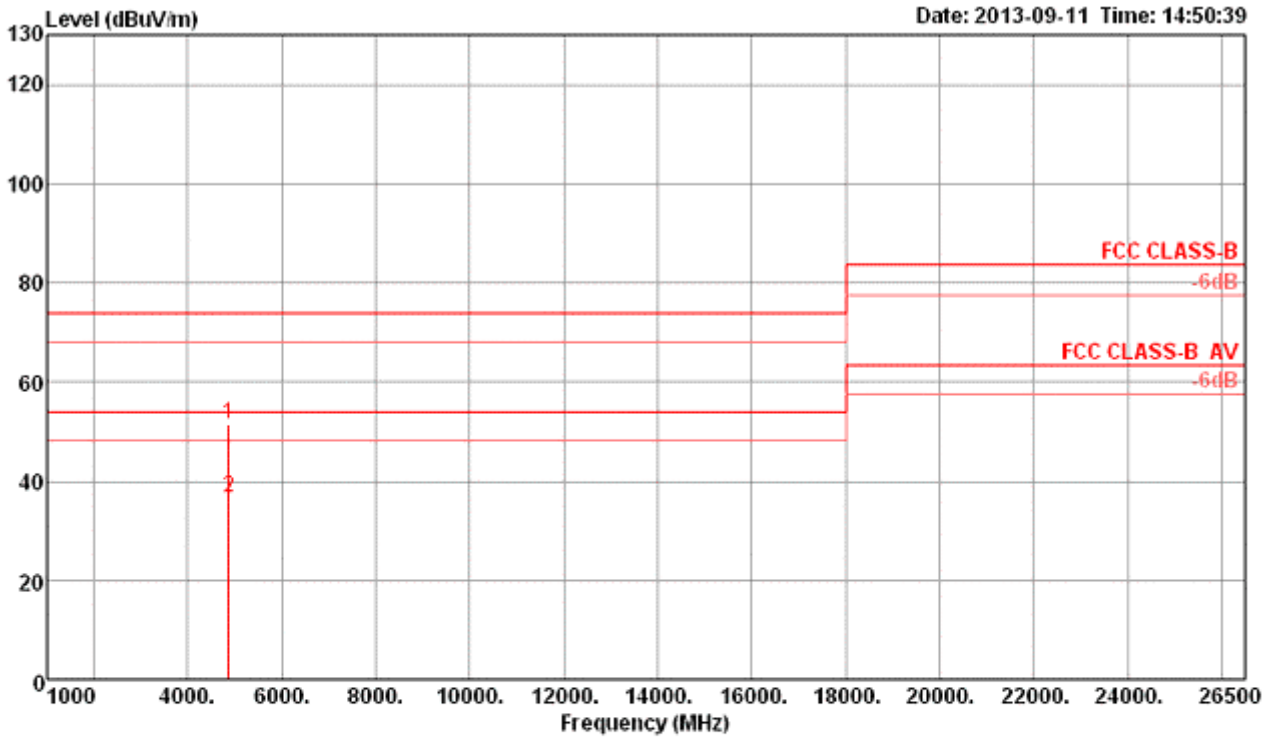
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4871.96	35.25	54.00	-18.75	33.79	3.33	33.16	35.03	Average	103	320	HORIZONTAL
2	4875.04	51.92	74.00	-22.08	50.46	3.33	33.16	35.03	Peak	103	320	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

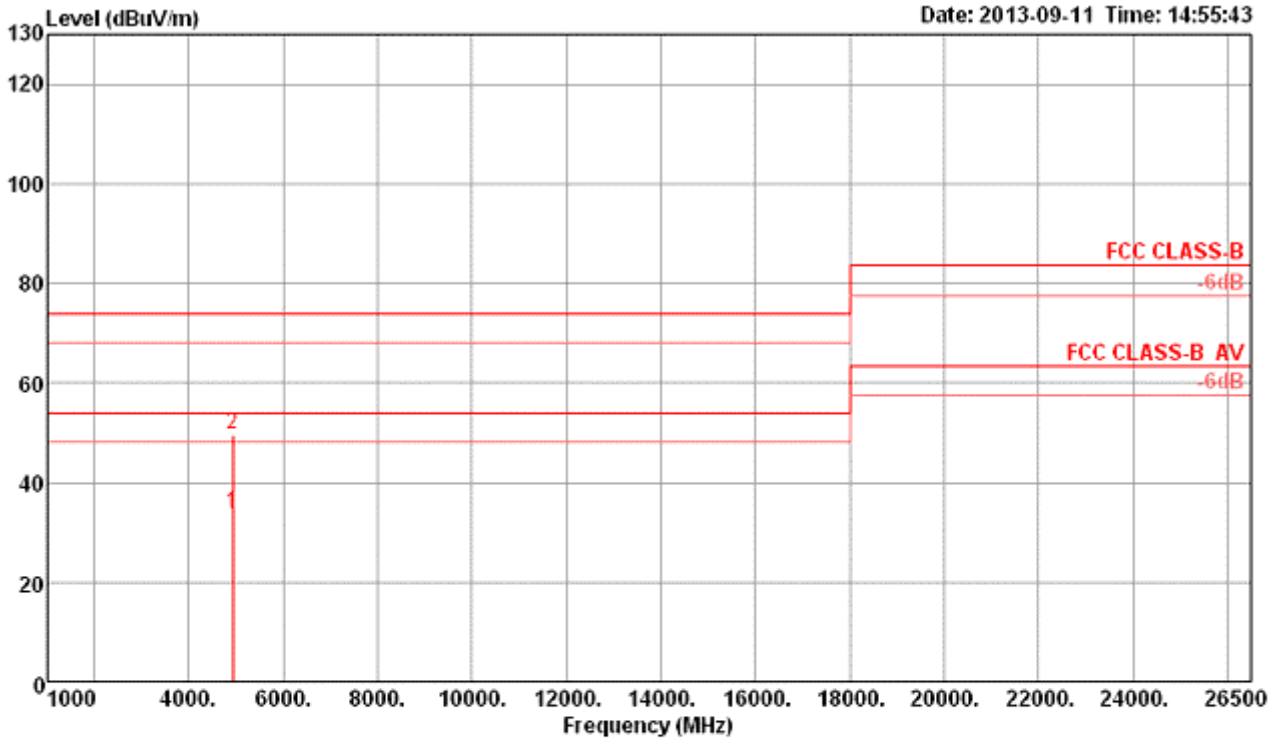
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4872.28	51.26	74.00	-22.74	49.80	3.33	33.16	35.03	Peak	149	75	VERTICAL
2	4874.68	36.71	54.00	-17.29	35.25	3.33	33.16	35.03	Average	149	75	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

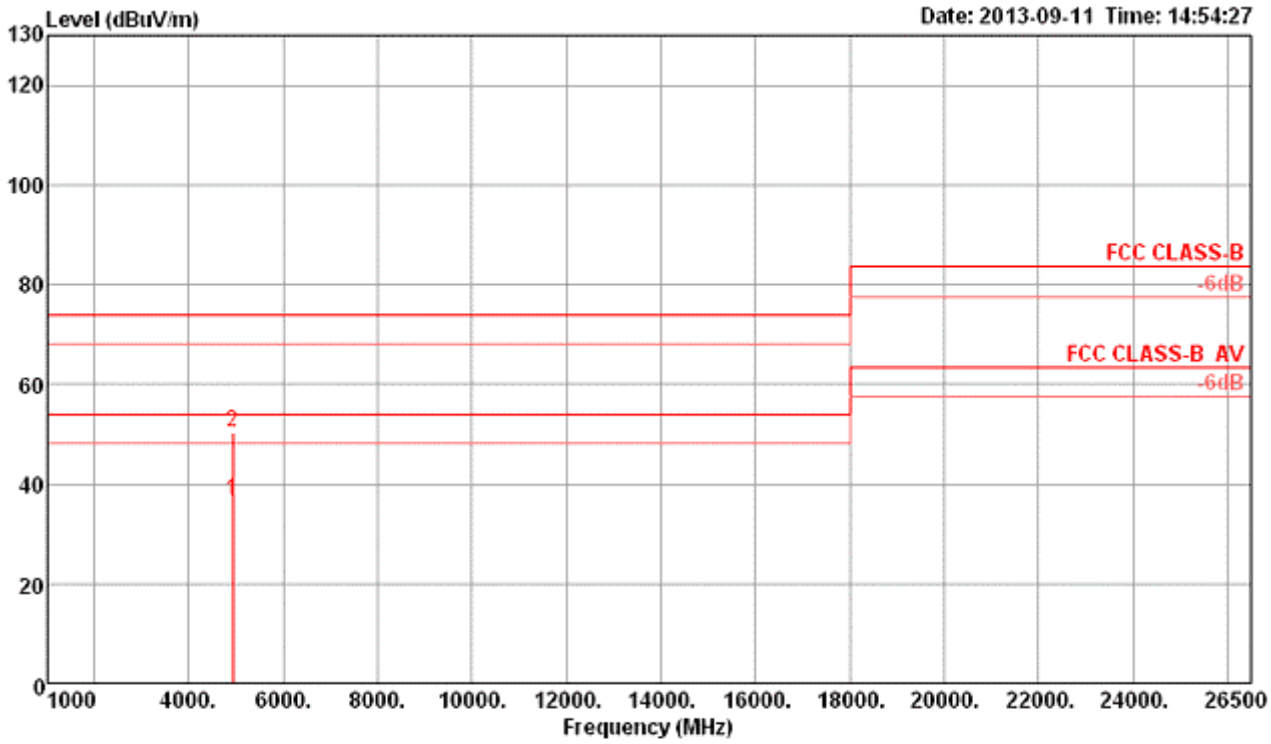
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 11 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4925.20	33.63	54.00	-20.37	32.03	3.35	33.26	35.01	Average	102	341	HORIZONTAL
2	4925.24	49.72	74.00	-24.28	48.12	3.35	33.26	35.01	Peak	102	341	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

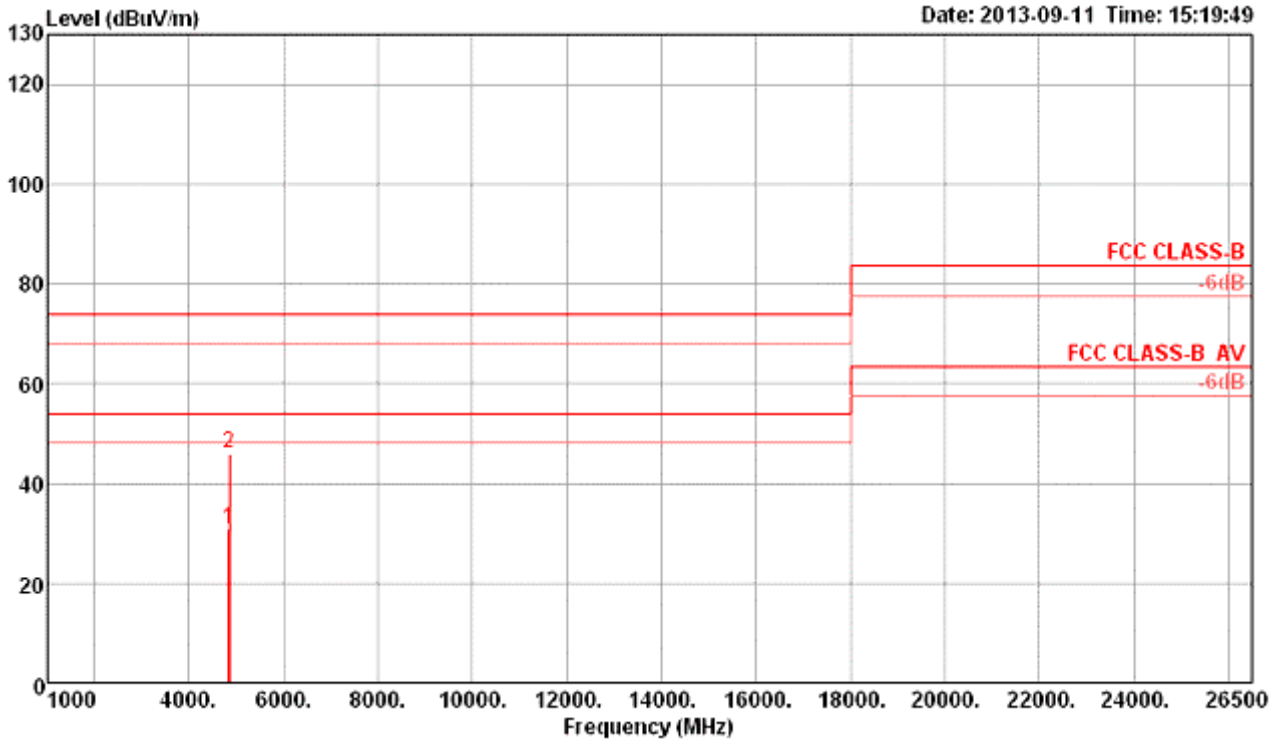
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 11 / CDD Mode / Ant. 1 + Ant. 2**				**Polarization**	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4922.16	36.51	54.00	-17.49	34.91	3.35	33.26	35.01	Average	159	71	VERTICAL
2	4924.84	50.41	74.00	-23.59	48.81	3.35	33.26	35.01	Peak	159	71	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

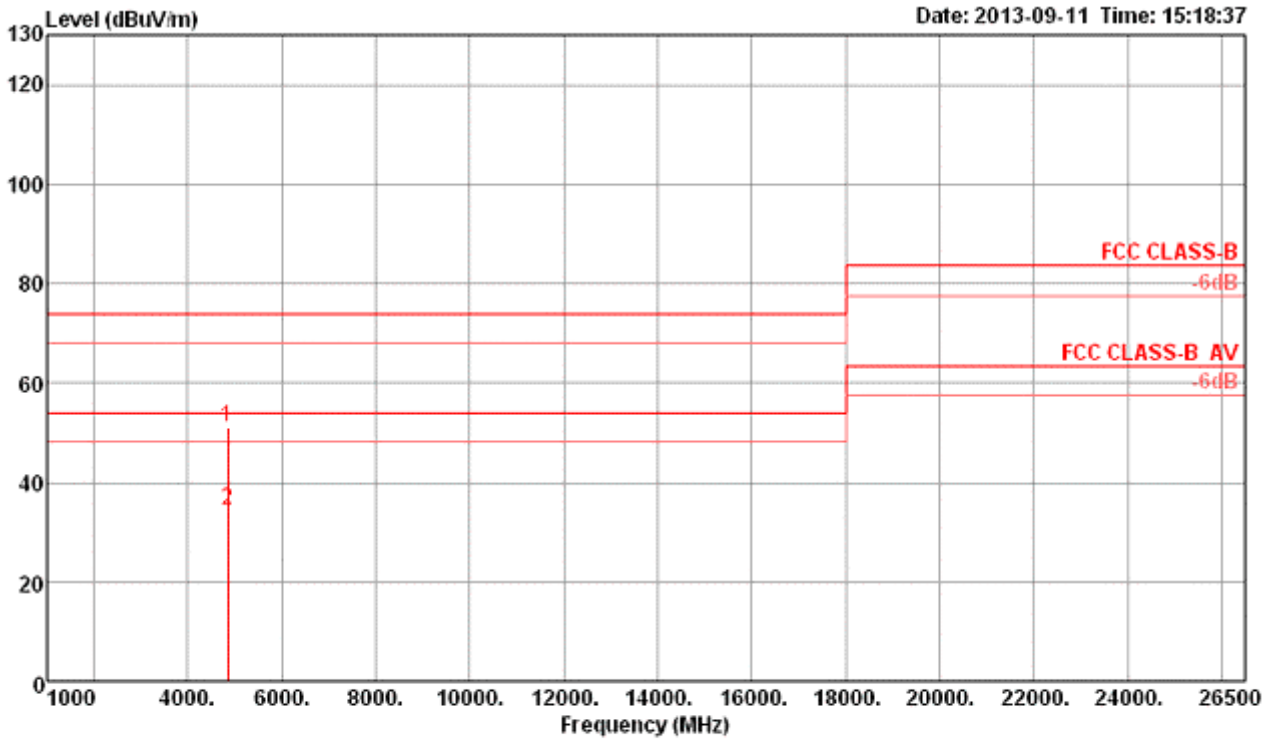
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 3 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4841.24	30.80	54.00	-23.20	29.42	3.32	33.09	35.03	Average	100	106	HORIZONTAL
2	4845.48	46.14	74.00	-27.86	44.76	3.32	33.09	35.03	Peak	100	106	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

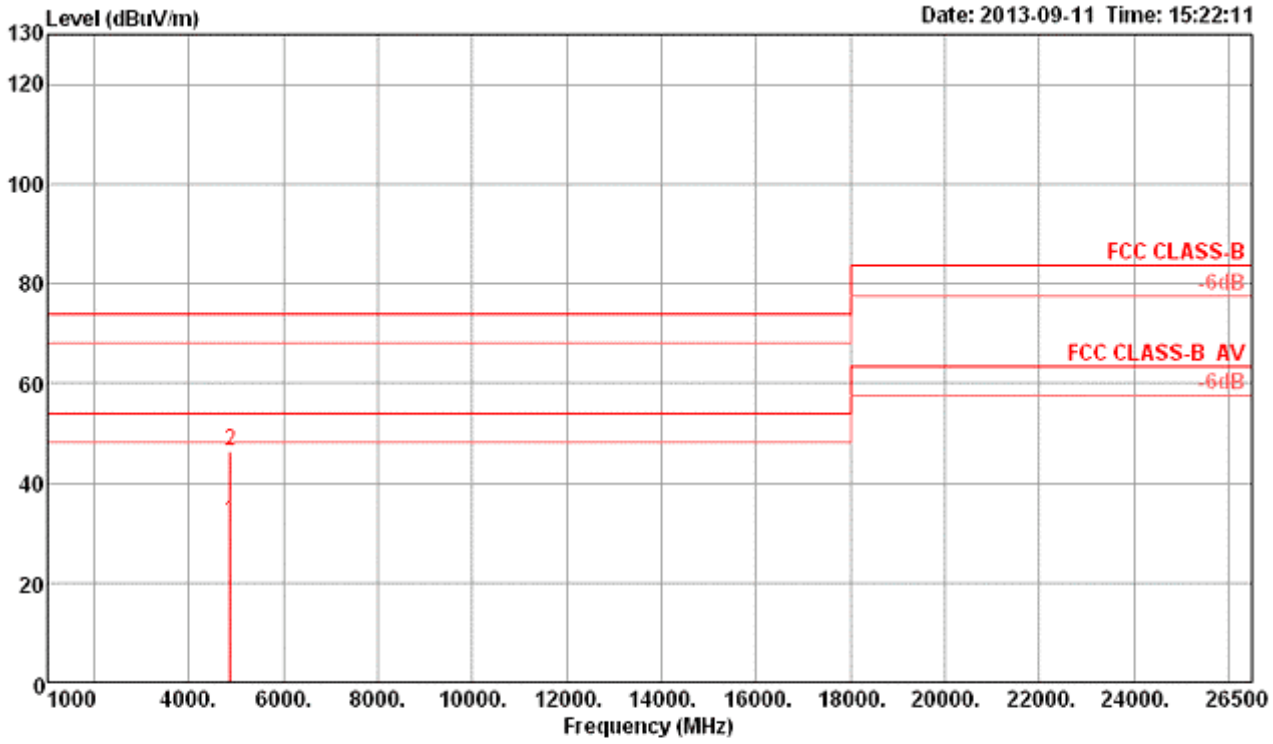
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 3 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4842.80	51.20	74.00	-22.80	49.82	3.32	33.09	35.03	Peak	100	221	VERTICAL
2	4843.96	34.46	54.00	-19.54	33.08	3.32	33.09	35.03	Average	100	221	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

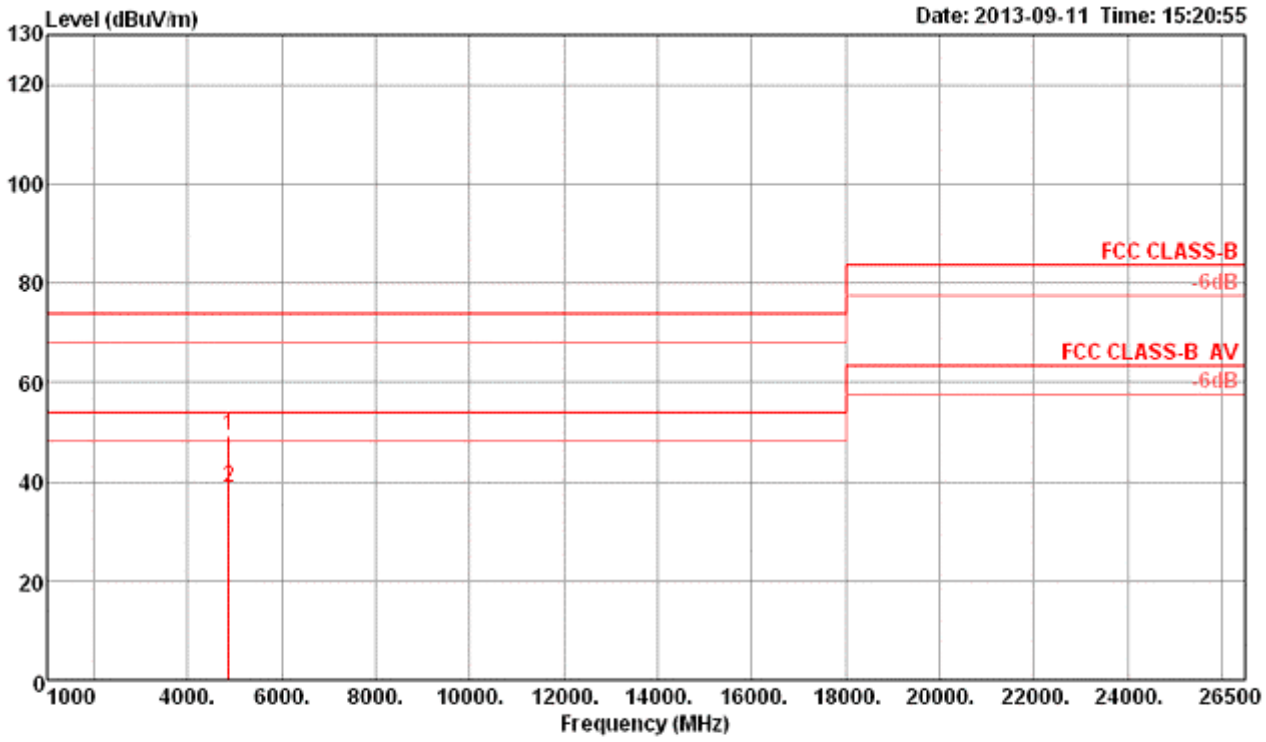
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 6 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4874.23	32.36	54.00	-21.64	30.90	3.33	33.16	35.03	Average	100	183	HORIZONTAL
2	4874.29	46.47	74.00	-27.53	45.01	3.33	33.16	35.03	Peak	100	183	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

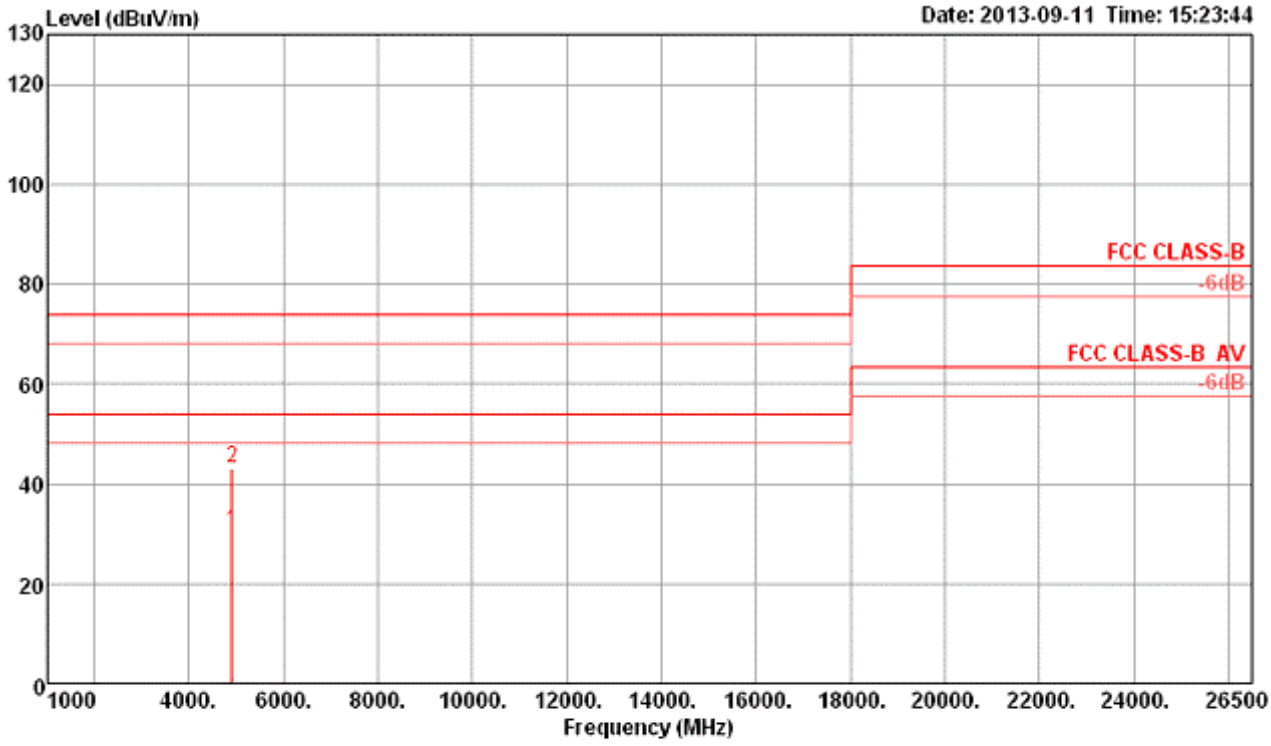
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 6 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4872.56	49.31	74.00	-24.69	47.85	3.33	33.16	35.03	Peak	100	282	VERTICAL
2	4876.44	38.62	54.00	-15.38	37.16	3.33	33.16	35.03	Average	100	282	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

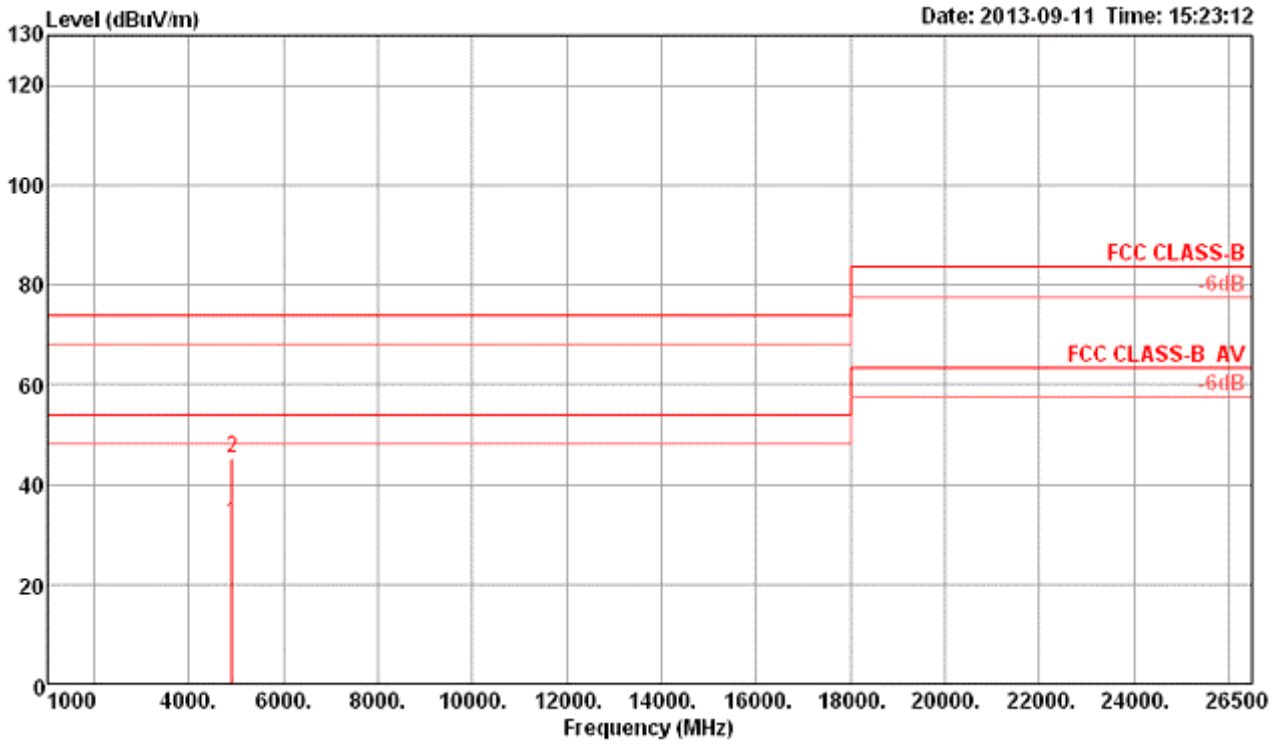
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 9 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4904.23	30.28	54.00	-23.72	28.77	3.34	33.19	35.02	Average	100	258	HORIZONTAL
2	4904.28	43.16	74.00	-30.84	41.65	3.34	33.19	35.02	Peak	100	258	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

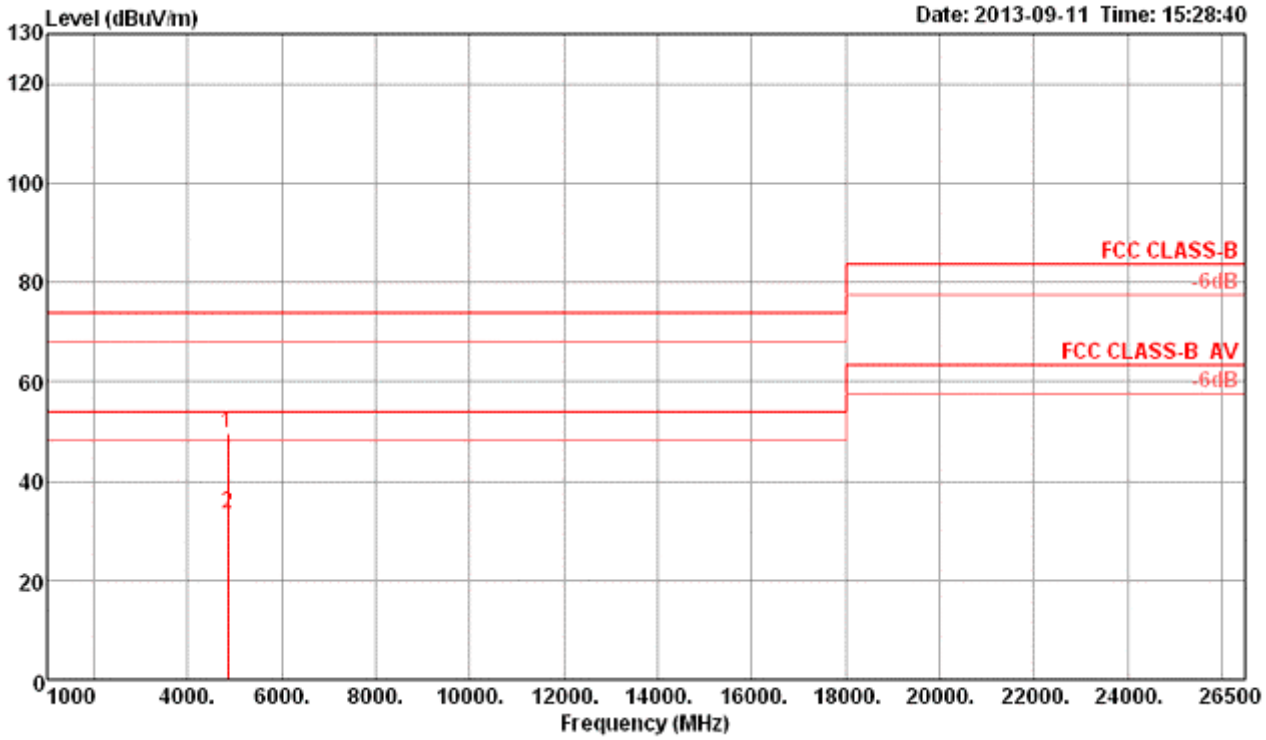
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 9 / Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4903.57	32.23	54.00	-21.77	30.72	3.34	33.19	35.02	Average	100	336	VERTICAL
2	4903.77	45.44	74.00	-28.56	43.93	3.34	33.19	35.02	Peak	100	336	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

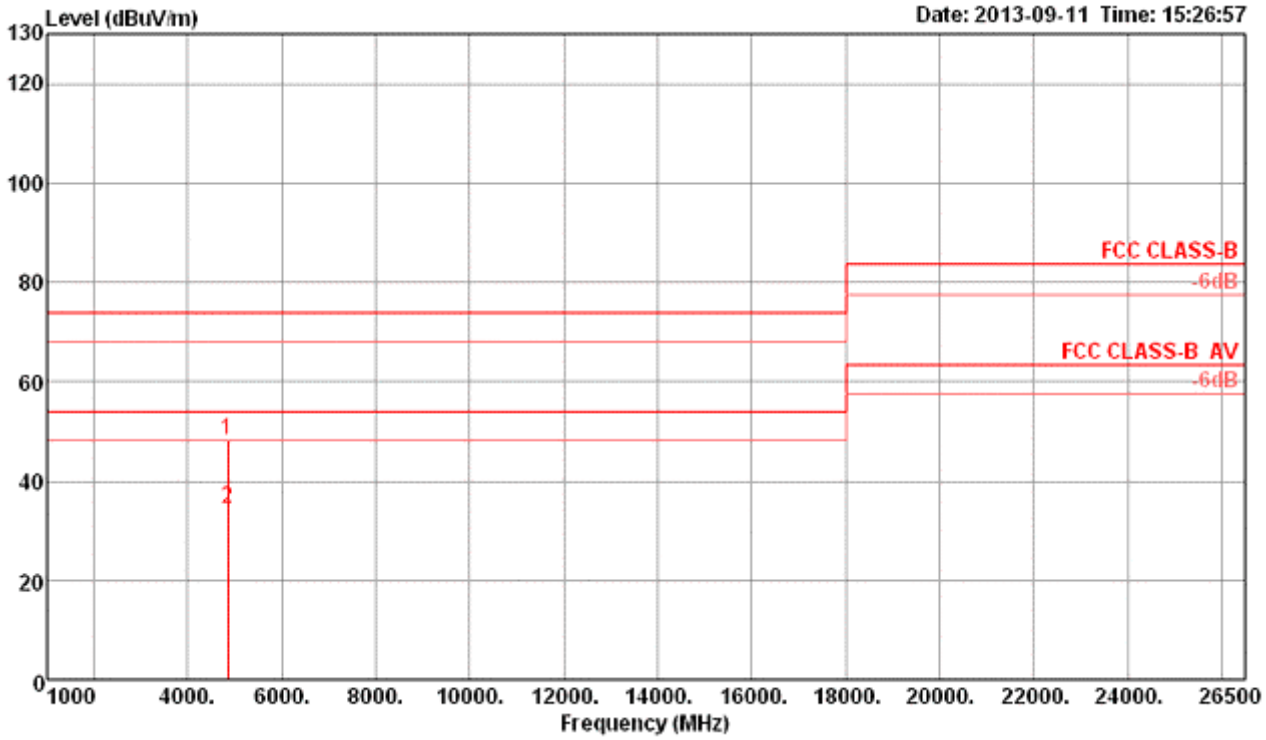
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 3 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4842.84	49.78	74.00	-24.22	48.40	3.32	33.09	35.03	Peak	100	100	HORIZONTAL
2	4844.72	33.17	54.00	-20.83	31.79	3.32	33.09	35.03	Average	100	100	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

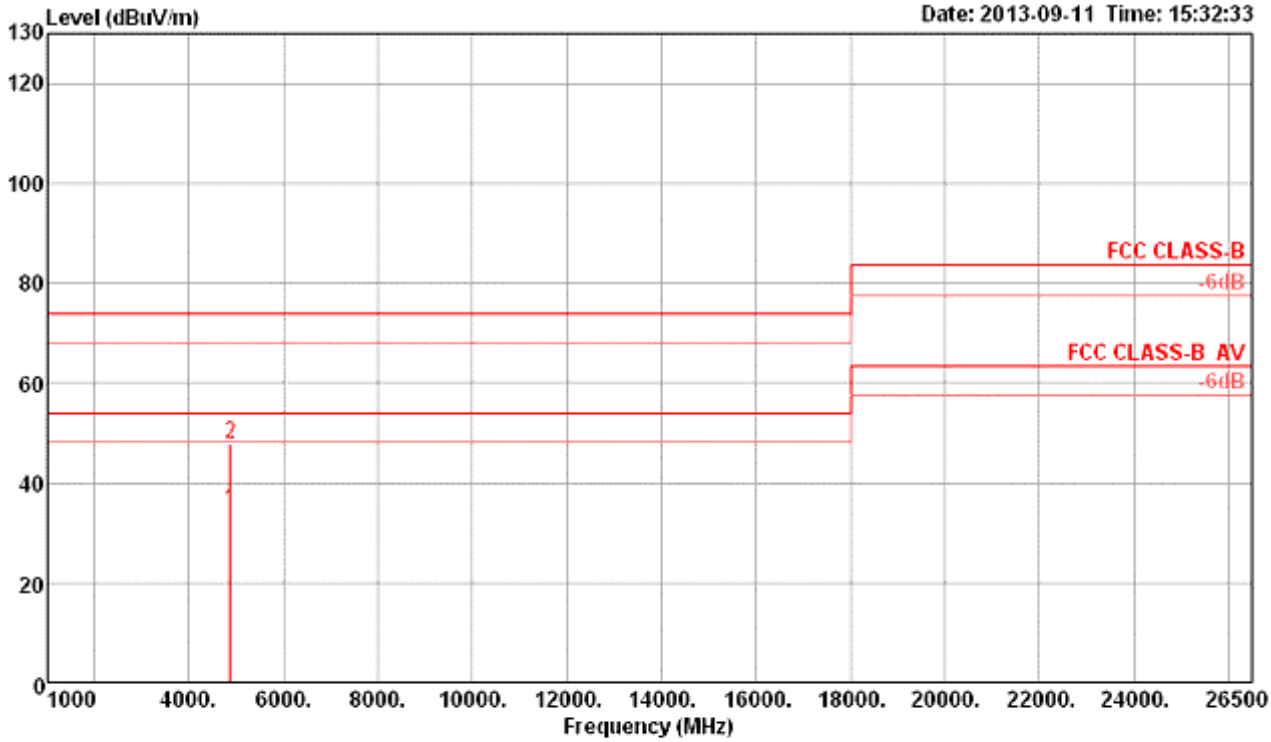
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 3 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4842.48	48.01	74.00	-25.99	46.63	3.32	33.09	35.03	Peak	122	216	VERTICAL
2	4846.44	34.45	54.00	-19.55	33.07	3.32	33.09	35.03	Average	122	216	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

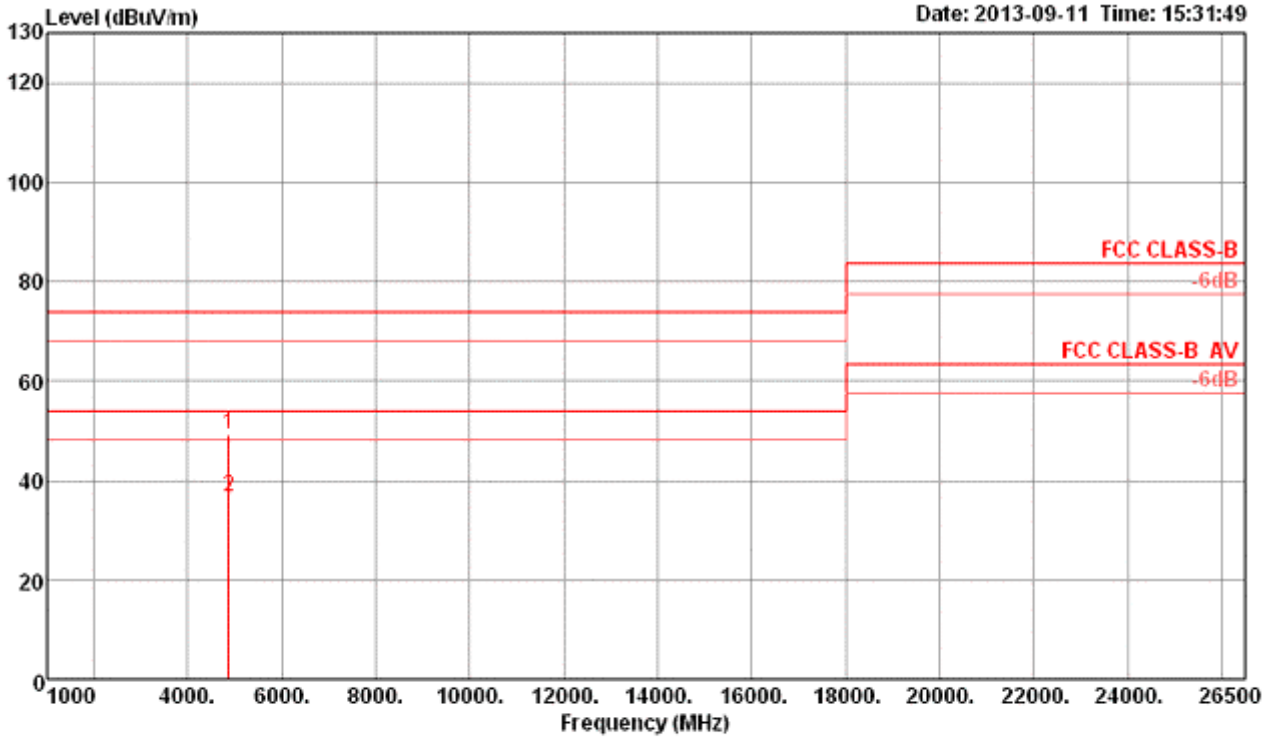
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	34.34	54.00	-19.66	32.88	3.33	33.16	35.03	Average	100	211	HORIZONTAL
2	4874.29	47.88	74.00	-26.12	46.42	3.33	33.16	35.03	Peak	100	211	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

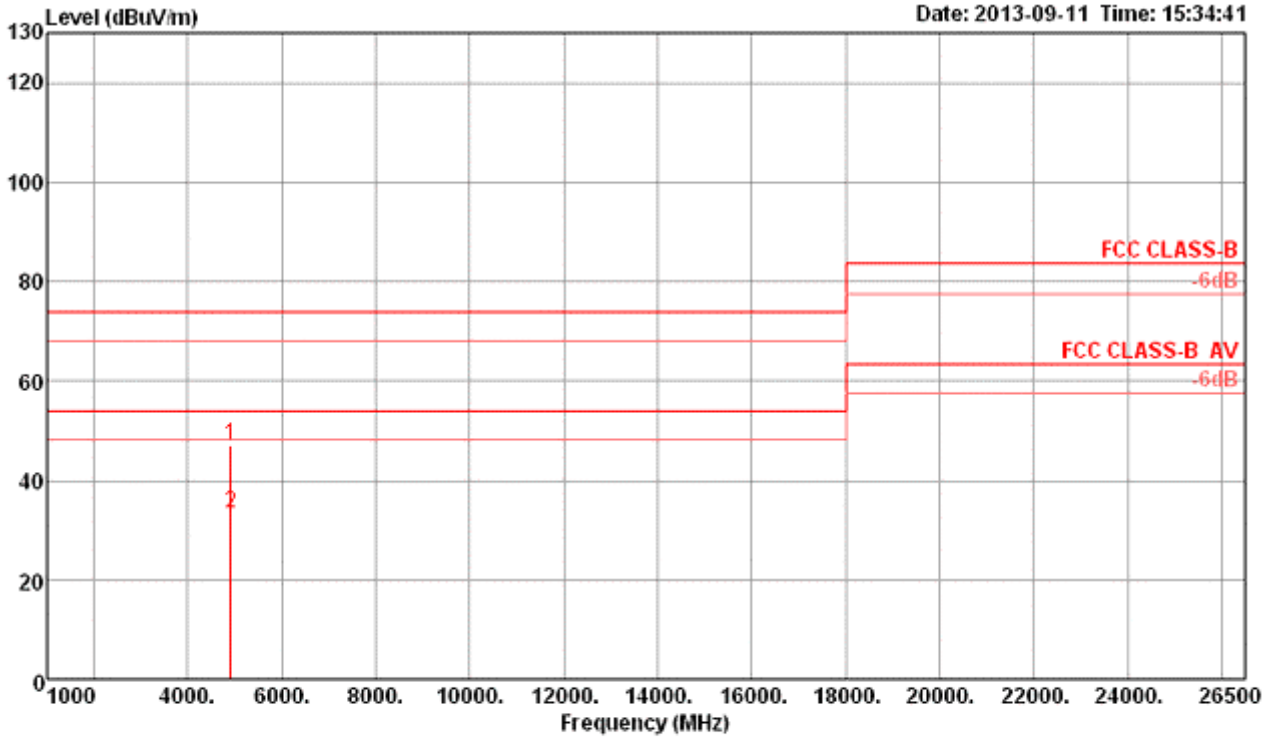
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	4874.28	49.39	74.00	-24.61	47.93	3.33	33.16	35.03	Peak	104	162	VERTICAL
2	4874.39	36.58	54.00	-17.42	35.12	3.33	33.16	35.03	Average	104	162	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

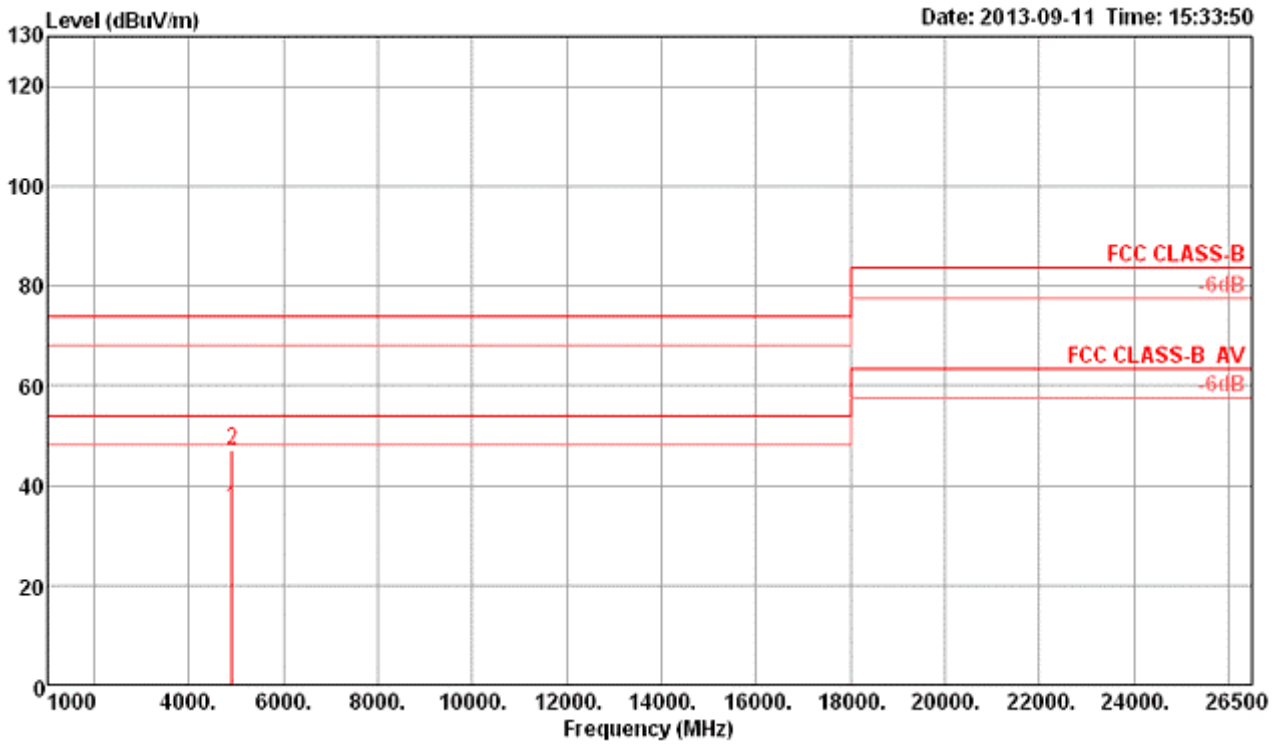
Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 9 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4903.88	47.24	74.00	-26.76	45.73	3.34	33.19	35.02	Peak	104	252	HORIZONTAL
2	4904.12	33.16	54.00	-20.84	31.65	3.34	33.19	35.02	Average	104	252	HORIZONTAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Transmitter Radiated Emissions (1GHz~10th Harmonic)						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 9 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	V
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	4903.60	35.41	54.00	-18.59	33.90	3.34	33.19	35.02	Average	119	186	VERTICAL
2	4904.17	47.23	74.00	-26.77	45.72	3.34	33.19	35.02	Peak	119	186	VERTICAL

Note 1:The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

3.6 Band Edge and Fundamental Emissions Measurement

3.6.1 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a) and 2.2(a), then the 15.209(a) and 2.2(b) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (microvolt/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

3.6.2 Measuring Instruments and Setting

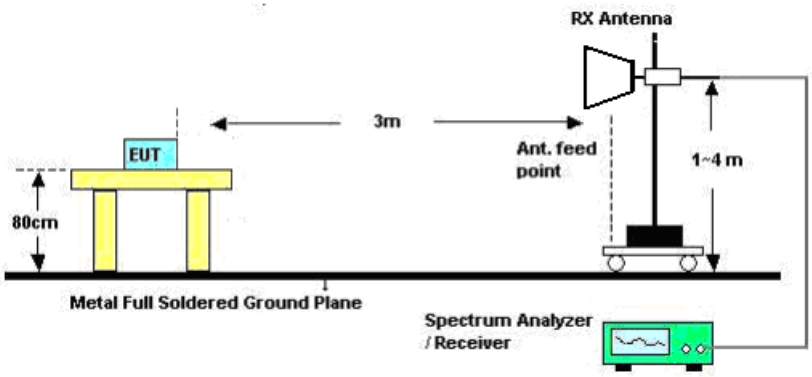
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Analyzer	Setting
Attenuation	Auto
Span Frequency	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	100 kHz /300 kHz for Peak

3.6.3 Test Procedures

1. **The test procedure is the same as section 3.5.3, only the freqeuncy range investigated is limited to 100MHz around bandedges.**
2. **In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA00-705 will be followed.**

3.6.4 Test Setup Layout



3.6.5 Test Deviation

There is no deviation with the original standard.

3.6.6 EUT Operation during Test

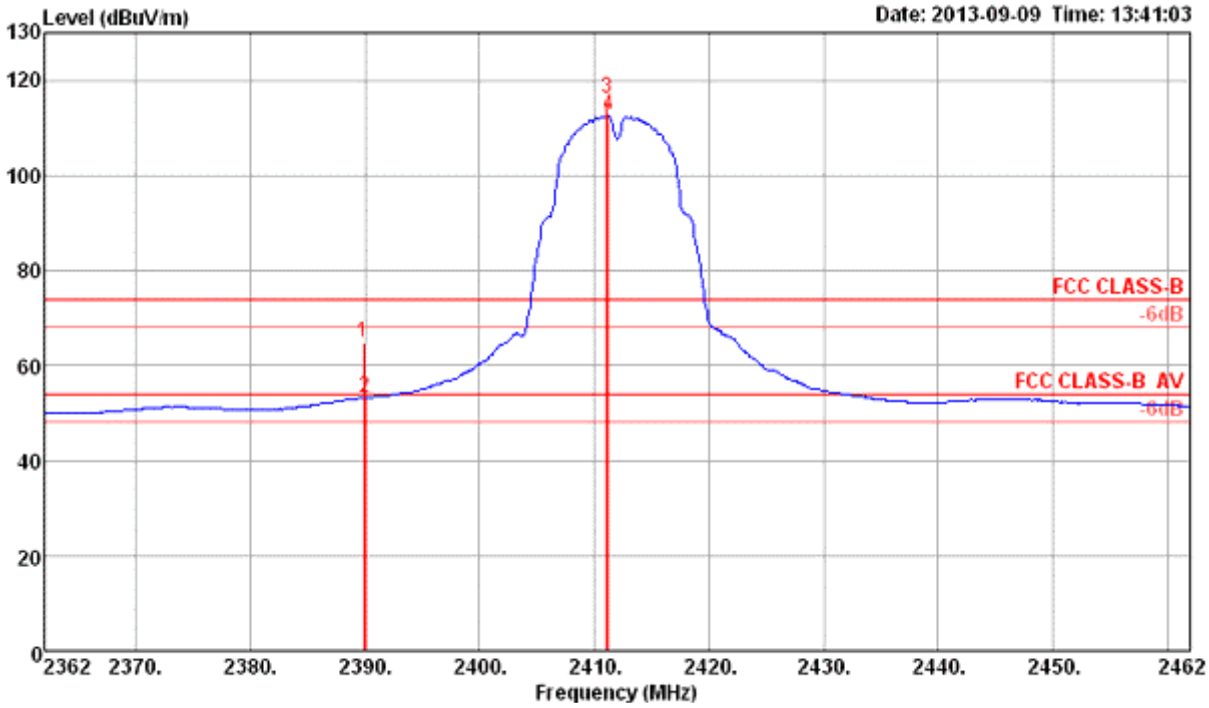
The EUT was programmed to be in continuously transmitting mode.

3.6.7 Test Result of Band Edge and Fundamental Emissions

Following channel(s) was (were) selected for the final test as listed below.

MODE	TX Chain	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	Ant.2	1, 6, 11	DSSS	DBPSK	1
802.11g	Ant.2	1, 6, 11	OFDM	BPSK	6
802.11g	Ant.1+2 (CDD)	1, 6, 11	OFDM	BPSK	6
802.11n 20MHz	Ant.2	1, 6, 11	OFDM	BPSK	MCS0 (6.5)
802.11n 20MHz	Ant.1+2 (CDD)	1, 6, 11	OFDM	BPSK	MCS0 (6.5)
802.11n 40MHz	Ant.2	3, 6, 9	OFDM	BPSK	MCS0 (13.5)
802.11n 40MHz	Ant.1+2 (CDD)	3, 6, 9	OFDM	BPSK	MCS0 (13.5)

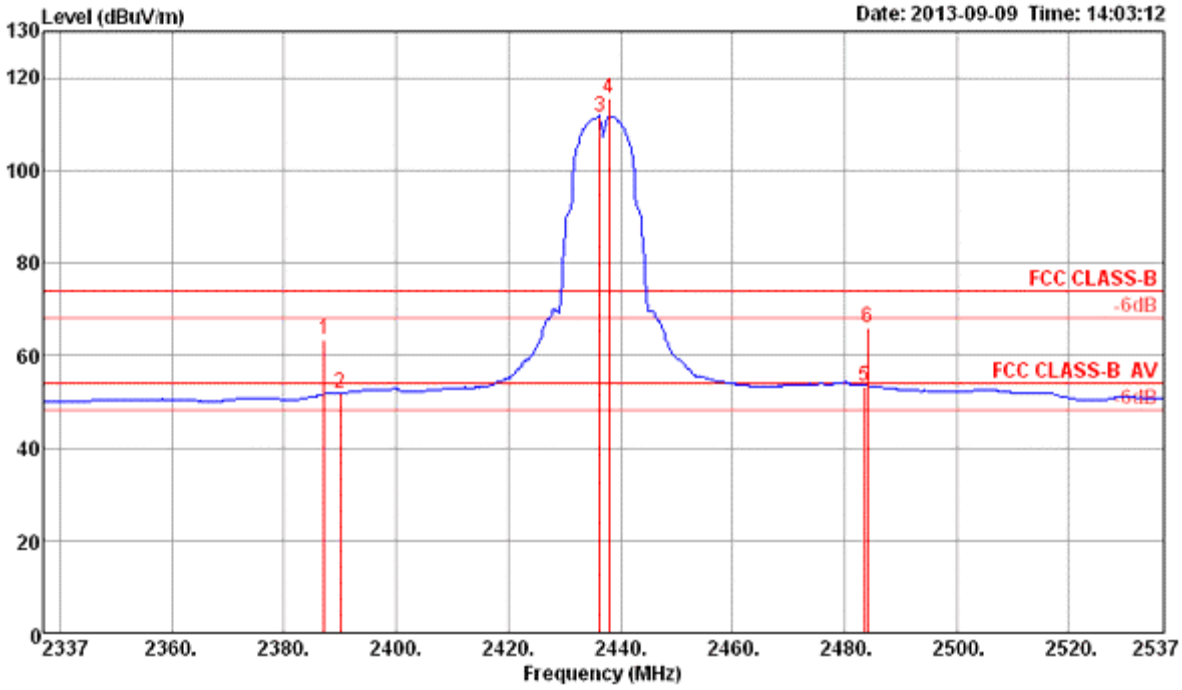
Band Edge and Fundamental Emissions					
Operating Mode	**IEEE 802.11b CH 1 / Ant. 2**			Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.84	64.93	74.00	-9.07	34.54	2.22	28.17	0.00	Peak	100	212	HORIZONTAL
2	2390.00	53.17	54.00	-0.83	22.78	2.22	28.17	0.00	Average	100	212	HORIZONTAL
3	2411.04	116.34			85.91	2.22	28.21	0.00	Peak	100	212	HORIZONTAL
4	2411.20	112.61			82.18	2.22	28.21	0.00	Average	100	212	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2412 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

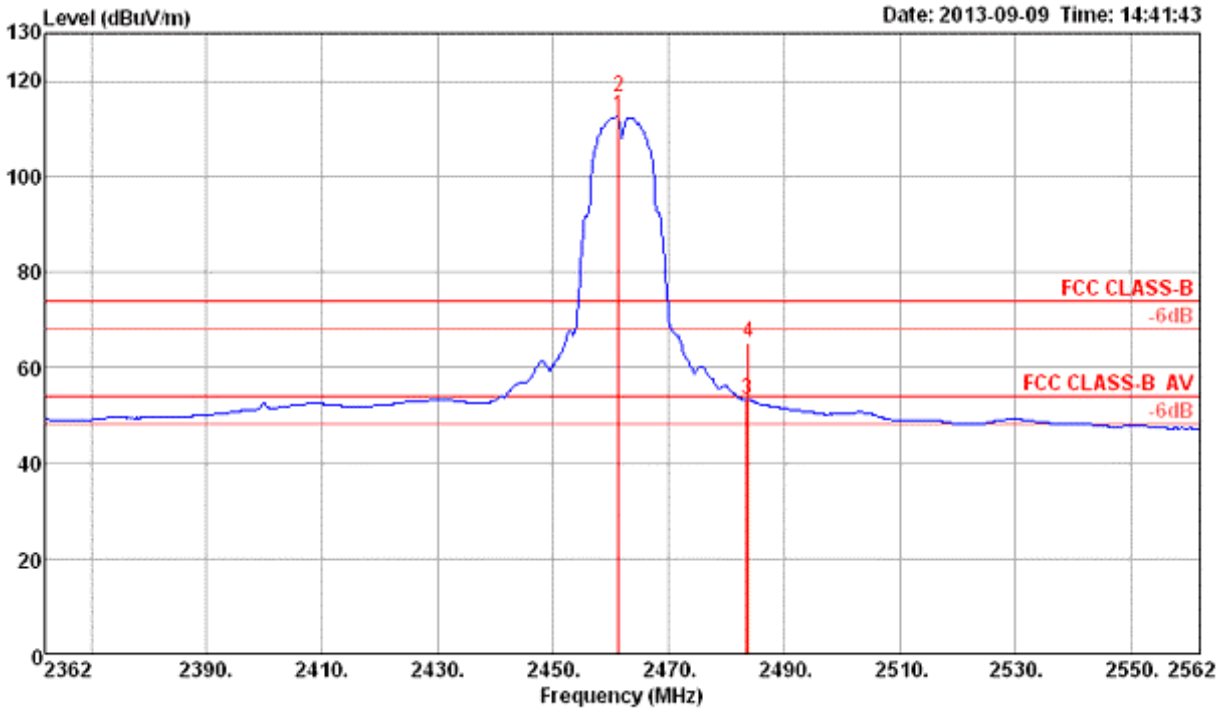
Band Edge and Fundamental Emissions						
Operating Mode	**I IEEE 802.11b CH 6 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2387.12	63.32	74.00	-10.68	32.94	2.21	28.17	0.00	Peak	100	216	HORIZONTAL
2	2390.00	51.85	54.00	-2.15	21.46	2.22	28.17	0.00	Average	100	216	HORIZONTAL
3	2436.36	111.66			81.14	2.23	28.29	0.00	Average	100	216	HORIZONTAL
4	2437.96	115.61			85.09	2.23	28.29	0.00	Peak	100	216	HORIZONTAL
5	2483.50	53.37	54.00	-0.63	22.73	2.26	28.38	0.00	Average	100	216	HORIZONTAL
6	2484.14	65.87	74.00	-8.13	35.23	2.26	28.38	0.00	Peak	100	216	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2437 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

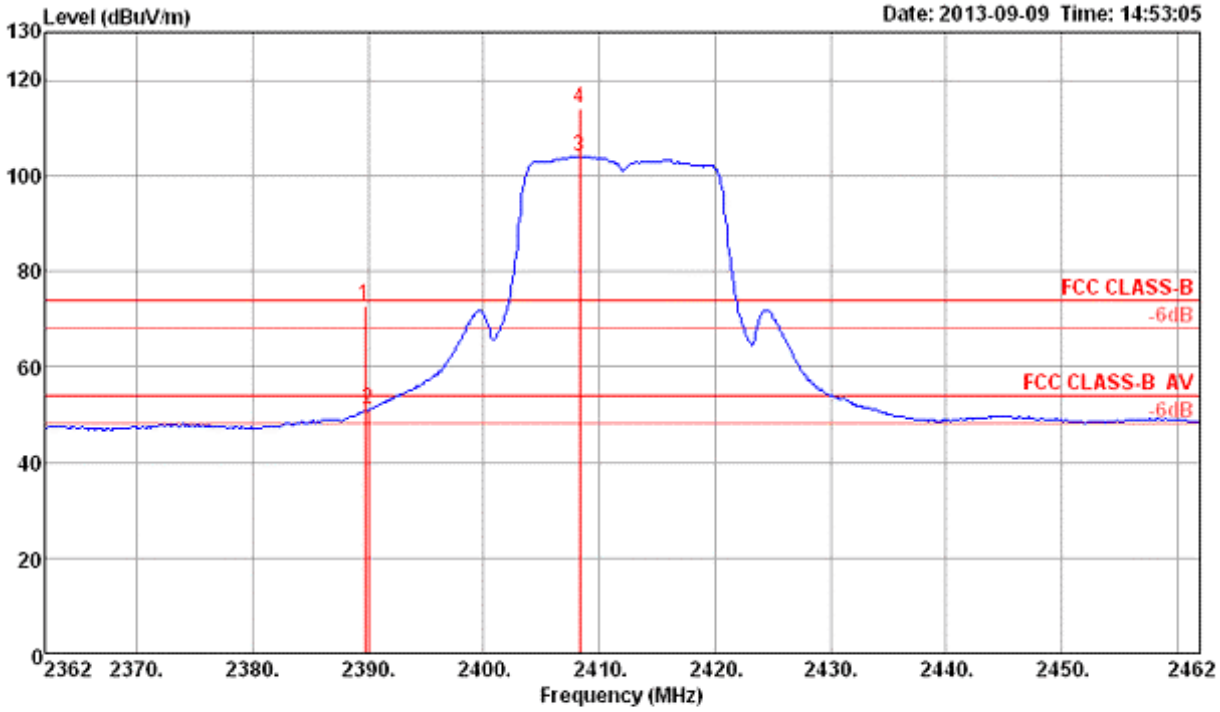
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11b CH 11 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2461.36	112.69			82.12	2.24	28.33	0.00	Average	114	208	HORIZONTAL
2	2461.36	116.53			85.96	2.24	28.33	0.00	Peak	114	208	HORIZONTAL
3	2483.50	53.34	54.00	-0.66	22.70	2.26	28.38	0.00	Average	114	208	HORIZONTAL
4	2483.82	65.11	74.00	-8.89	34.47	2.26	28.38	0.00	Peak	114	208	HORIZONTAL

Note 1: Item 1, 2 are the fundamental frequency at 2462MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

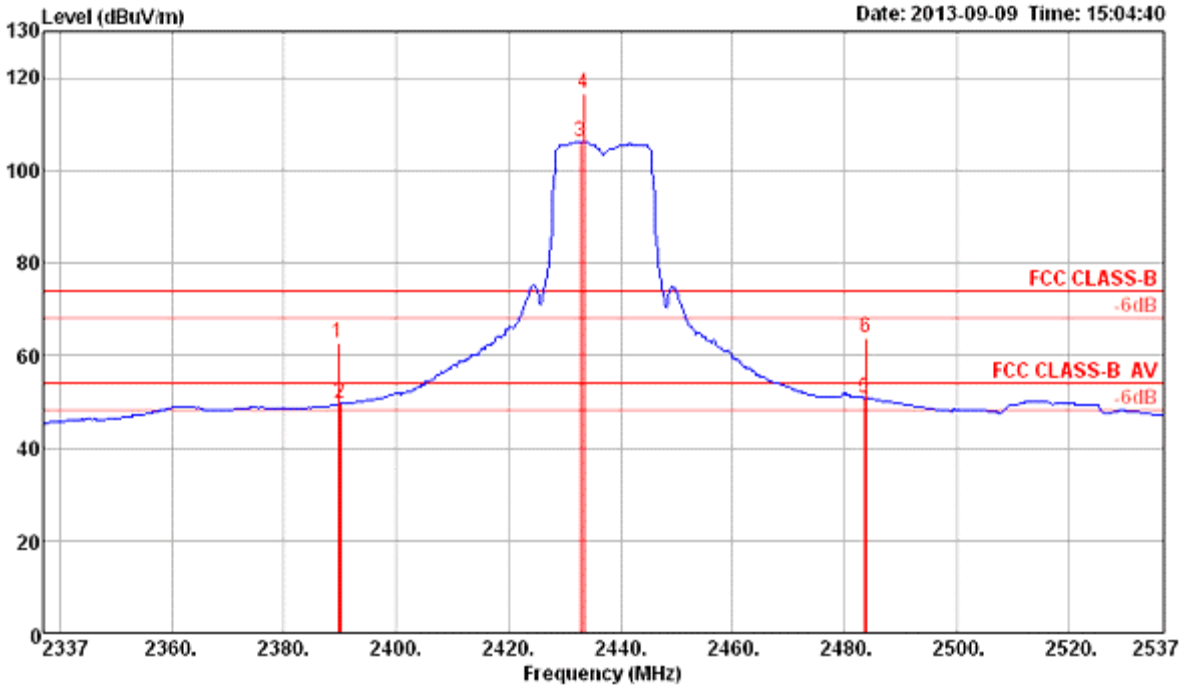
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11g CH 1 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.68	72.71	74.00	-1.29	42.33	2.21	28.17	0.00	Peak	111	197	HORIZONTAL
2	2390.00	50.88	54.00	-3.12	20.49	2.22	28.17	0.00	Average	111	197	HORIZONTAL
3	2408.31	103.99			73.56	2.22	28.21	0.00	Average	111	197	HORIZONTAL
4	2408.31	114.20			83.77	2.22	28.21	0.00	Peak	111	197	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2412 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

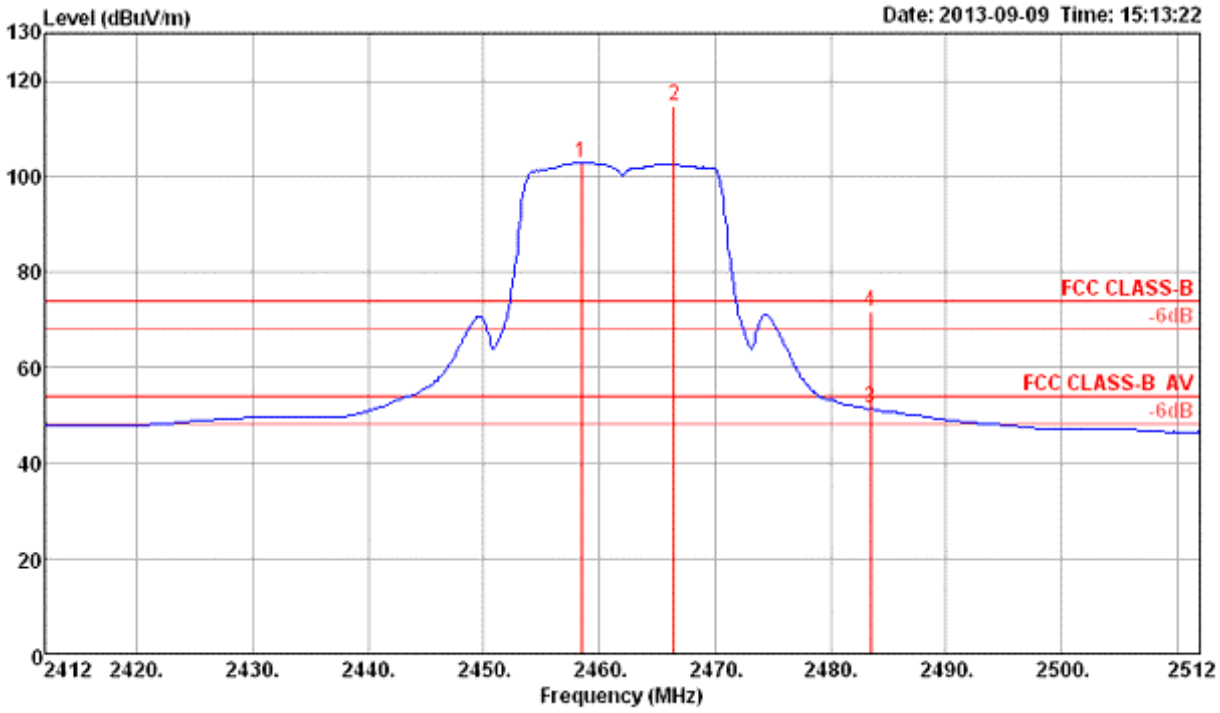
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11g CH 6 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.68	62.69	74.00	-11.31	32.31	2.21	28.17	0.00	Peak	113	208	HORIZONTAL
2	2390.00	49.47	54.00	-4.53	19.08	2.22	28.17	0.00	Average	113	208	HORIZONTAL
3	2432.83	106.17			75.69	2.23	28.25	0.00	Average	113	208	HORIZONTAL
4	2433.47	116.74			86.26	2.23	28.25	0.00	Peak	113	208	HORIZONTAL
5	2483.50	50.79	54.00	-3.21	20.15	2.26	28.38	0.00	Average	113	208	HORIZONTAL
6	2483.82	63.89	74.00	-10.11	33.25	2.26	28.38	0.00	Peak	113	208	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2437 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

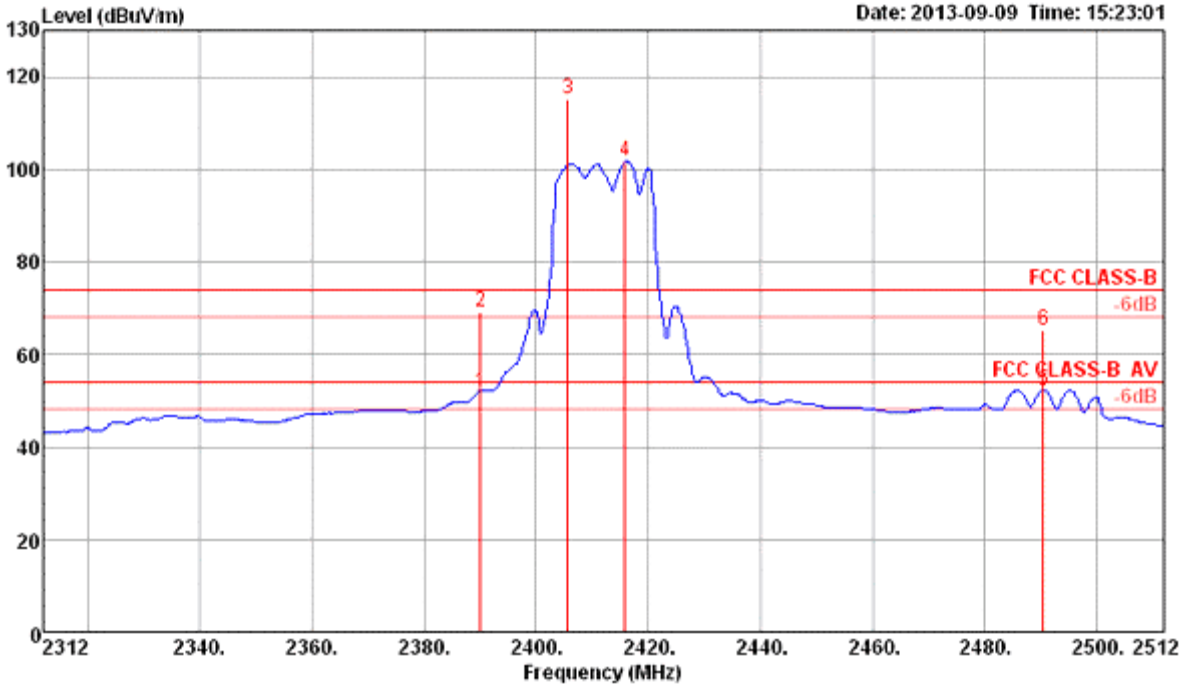
Band Edge and Fundamental Emissions					
Operating Mode	**IEEE 802.11g CH 11 / Ant. 2**			Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**



	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	2458.47	102.94			72.37	2.24	28.33	0.00	Average	112	206	HORIZONTAL
2	2466.49	114.72			84.13	2.26	28.33	0.00	Peak	112	206	HORIZONTAL
3	2483.50	51.26	54.00	-2.74	20.62	2.26	28.38	0.00	Average	112	206	HORIZONTAL
4	2483.50	71.74	74.00	-2.26	41.10	2.26	28.38	0.00	Peak	112	206	HORIZONTAL

Note 1: Item 1, 2 are the fundamental frequency at 2462MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

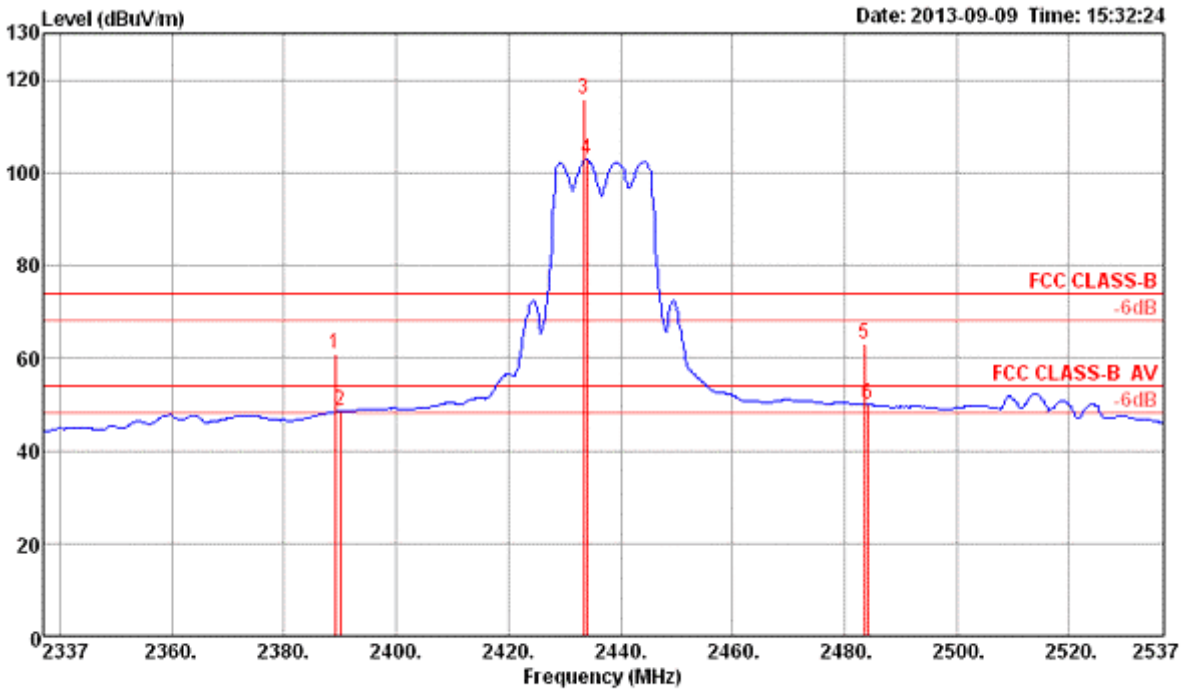
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11g CH 1 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	51.88	54.00	-2.12	21.49	2.22	28.17	0.00	Average	146	207	HORIZONTAL
2	2390.00	69.17	74.00	-4.83	38.78	2.22	28.17	0.00	Peak	146	207	HORIZONTAL
3	2405.59	115.21			84.78	2.22	28.21	0.00	Peak	146	207	HORIZONTAL
4	2415.85	101.66			71.22	2.23	28.21	0.00	Average	146	207	HORIZONTAL
5	2490.55	52.23	54.00	-1.77	21.55	2.26	28.42	0.00	Average	146	207	HORIZONTAL
6	2490.55	65.11	74.00	-8.89	34.43	2.26	28.42	0.00	Peak	146	207	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2412 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

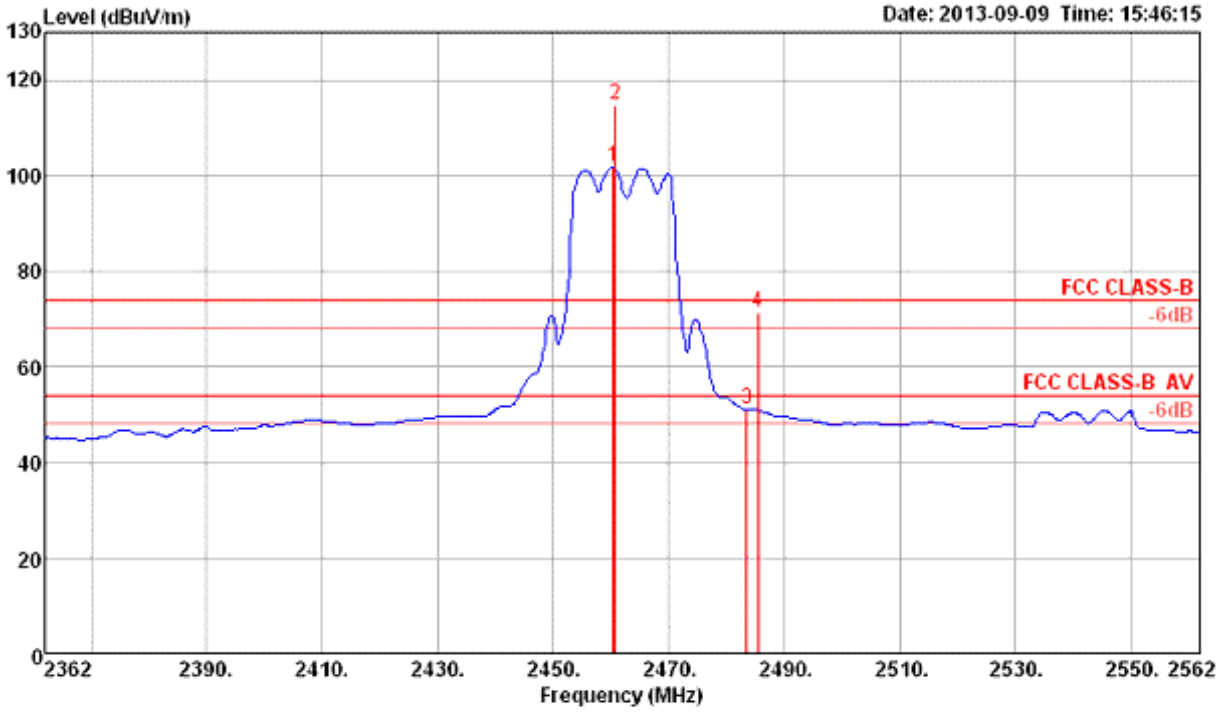
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11g CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.04	60.90	74.00	-13.10	30.52	2.21	28.17	0.00	Peak	112	70	HORIZONTAL
2	2390.00	48.42	54.00	-5.58	18.03	2.22	28.17	0.00	Average	112	70	HORIZONTAL
3	2433.47	115.85			85.37	2.23	28.25	0.00	Peak	112	70	HORIZONTAL
4	2434.12	102.67			72.15	2.23	28.29	0.00	Average	112	70	HORIZONTAL
5	2483.50	63.01	74.00	-10.99	32.37	2.26	28.38	0.00	Peak	112	70	HORIZONTAL
6	2484.14	50.02	54.00	-3.98	19.38	2.26	28.38	0.00	Average	112	70	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2437 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

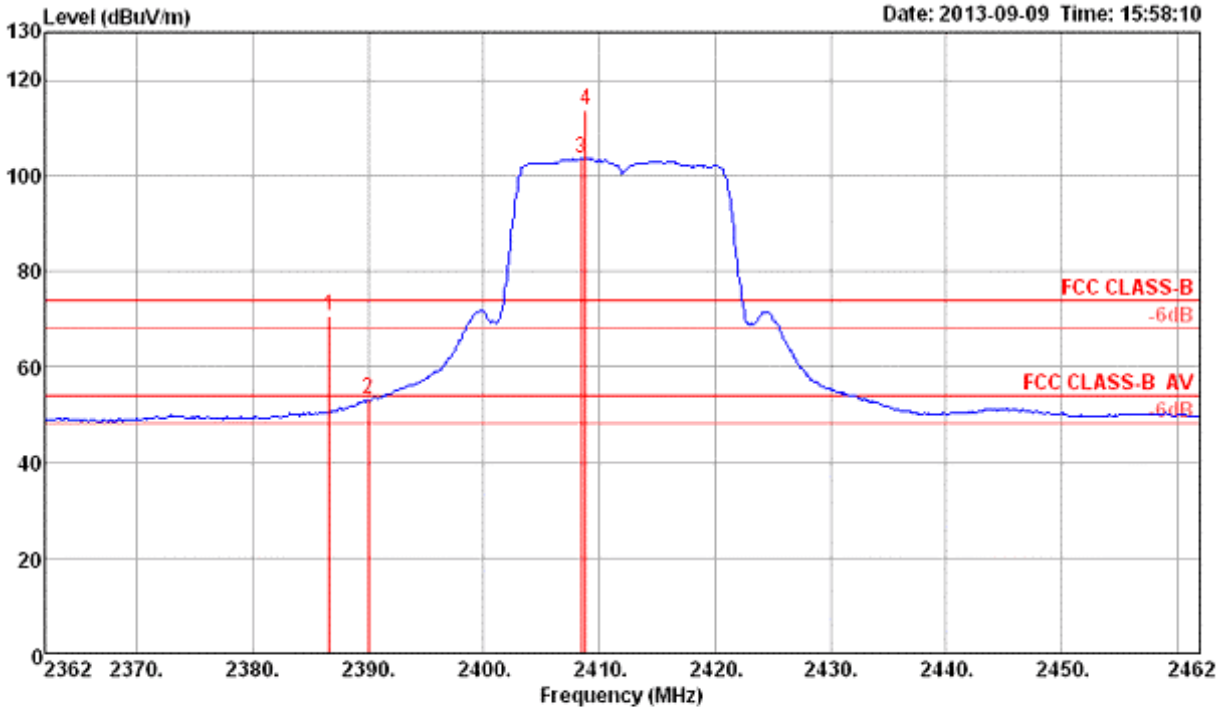
Band Edge and Fundamental Emissions					
Operating Mode	**IEEE 802.11g CH 11 / CDD Mode / Ant. 1 + Ant. 2**			Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2460.40	101.65			71.08	2.24	28.33	0.00	Average	111	208	HORIZONTAL
2	2460.72	114.63			84.06	2.24	28.33	0.00	Peak	111	208	HORIZONTAL
3	2483.50	51.05	54.00	-2.95	20.41	2.26	28.38	0.00	Average	111	208	HORIZONTAL
4	2485.42	71.42	74.00	-2.58	40.74	2.26	28.42	0.00	Peak	111	208	HORIZONTAL

Note 1: Item 1, 2 are the fundamental frequency at 2462MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

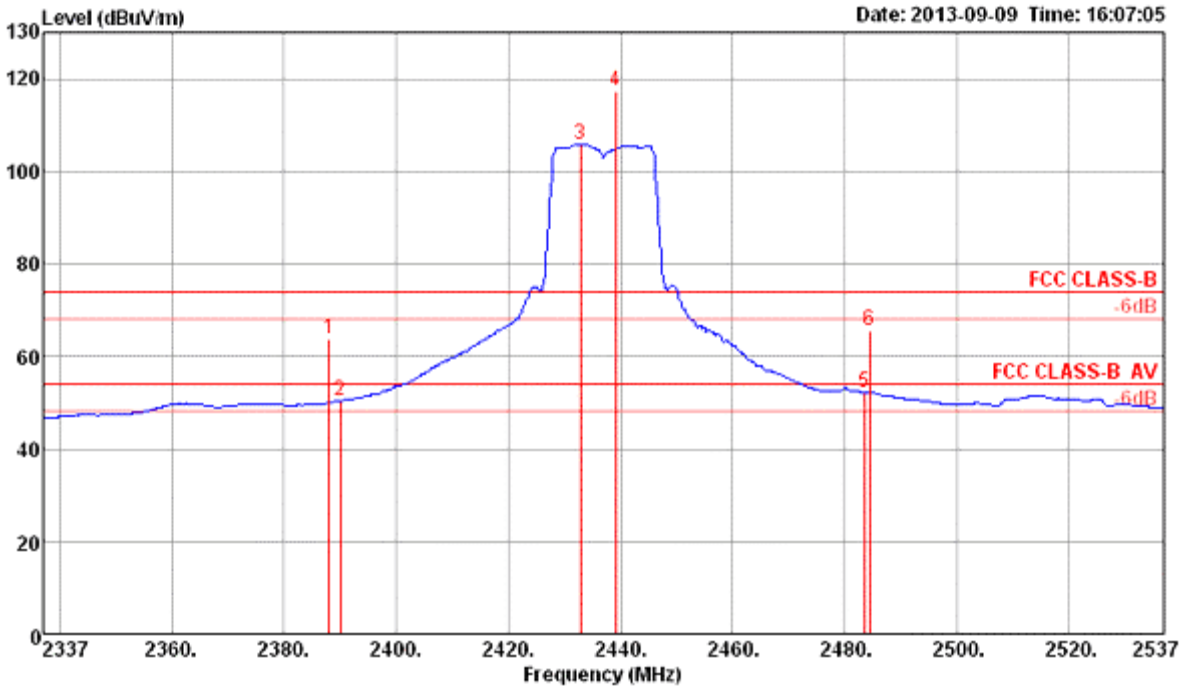
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 1 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2386.64	70.70	74.00	-3.30	40.32	2.21	28.17	0.00	Peak	112	199	HORIZONTAL
2	2390.00	53.07	54.00	-0.93	22.68	2.22	28.17	0.00	Average	112	199	HORIZONTAL
3	2408.47	103.66			73.23	2.22	28.21	0.00	Average	112	199	HORIZONTAL
4	2408.80	113.86			83.43	2.22	28.21	0.00	Peak	112	199	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2412 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

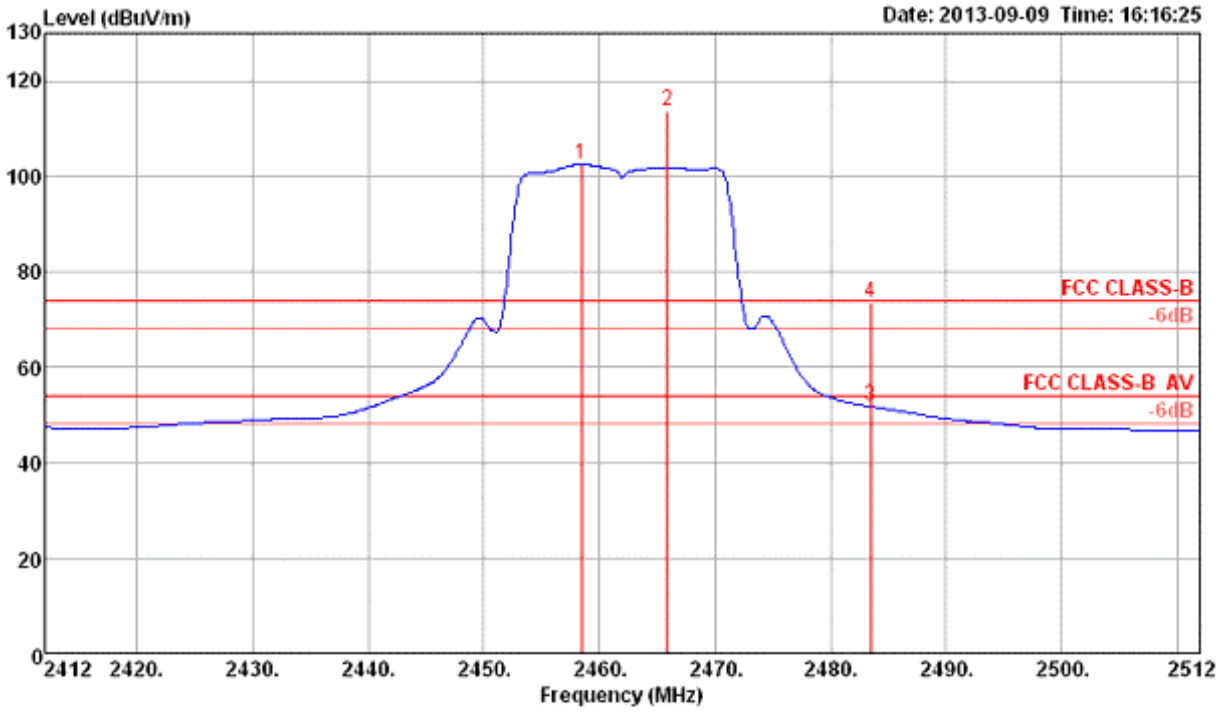
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 6 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2388.08	63.57	74.00	-10.43	33.19	2.21	28.17	0.00	Peak	113	208	HORIZONTAL
2	2390.00	50.37	54.00	-3.63	19.98	2.22	28.17	0.00	Average	113	208	HORIZONTAL
3	2432.83	105.82			75.34	2.23	28.25	0.00	Average	113	208	HORIZONTAL
4	2439.24	117.32			86.80	2.23	28.29	0.00	Peak	113	208	HORIZONTAL
5	2483.50	52.20	54.00	-1.80	21.56	2.26	28.38	0.00	Average	113	208	HORIZONTAL
6	2484.46	65.49	74.00	-8.51	34.85	2.26	28.38	0.00	Peak	113	208	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2437 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

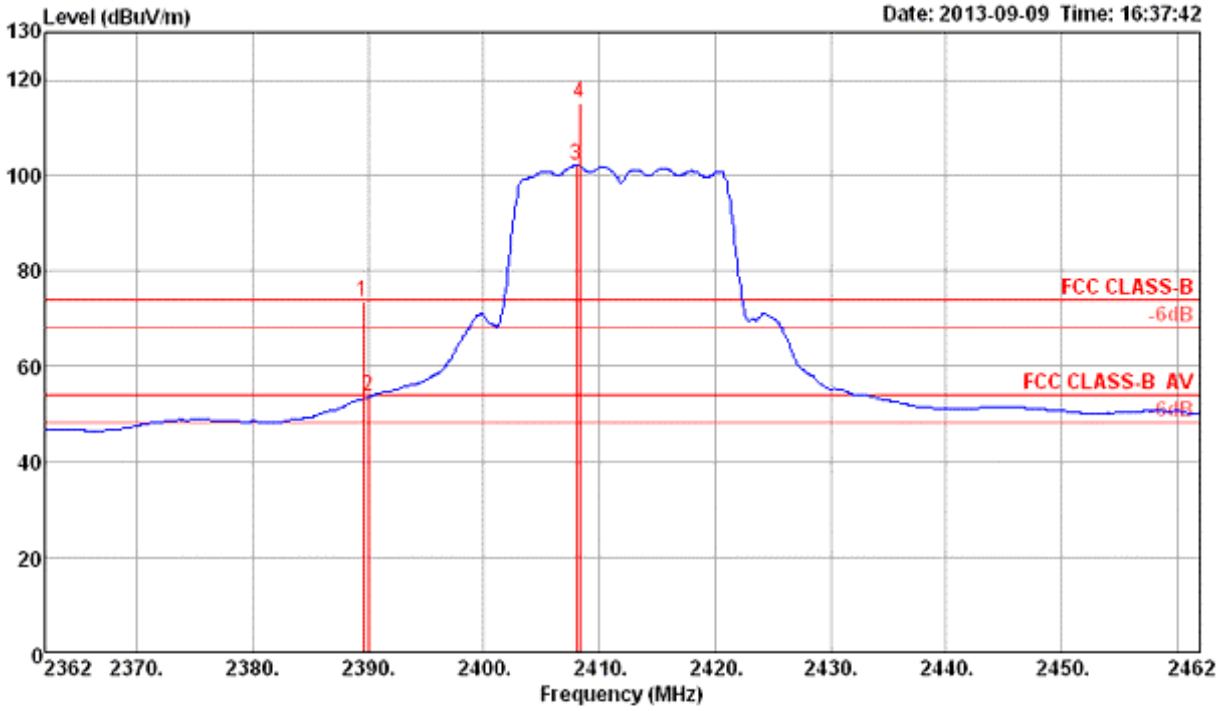
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 11 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2458.47	102.40			71.83	2.24	28.33	0.00	Average	110	203	HORIZONTAL
2	2465.85	113.64			83.07	2.24	28.33	0.00	Peak	110	203	HORIZONTAL
3	2483.50	51.63	54.00	-2.37	20.99	2.26	28.38	0.00	Average	110	203	HORIZONTAL
4	2483.50	73.51	74.00	-0.49	42.87	2.26	28.38	0.00	Peak	110	203	HORIZONTAL

Note 1: Item 1, 2 are the fundamental frequency at 2462MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

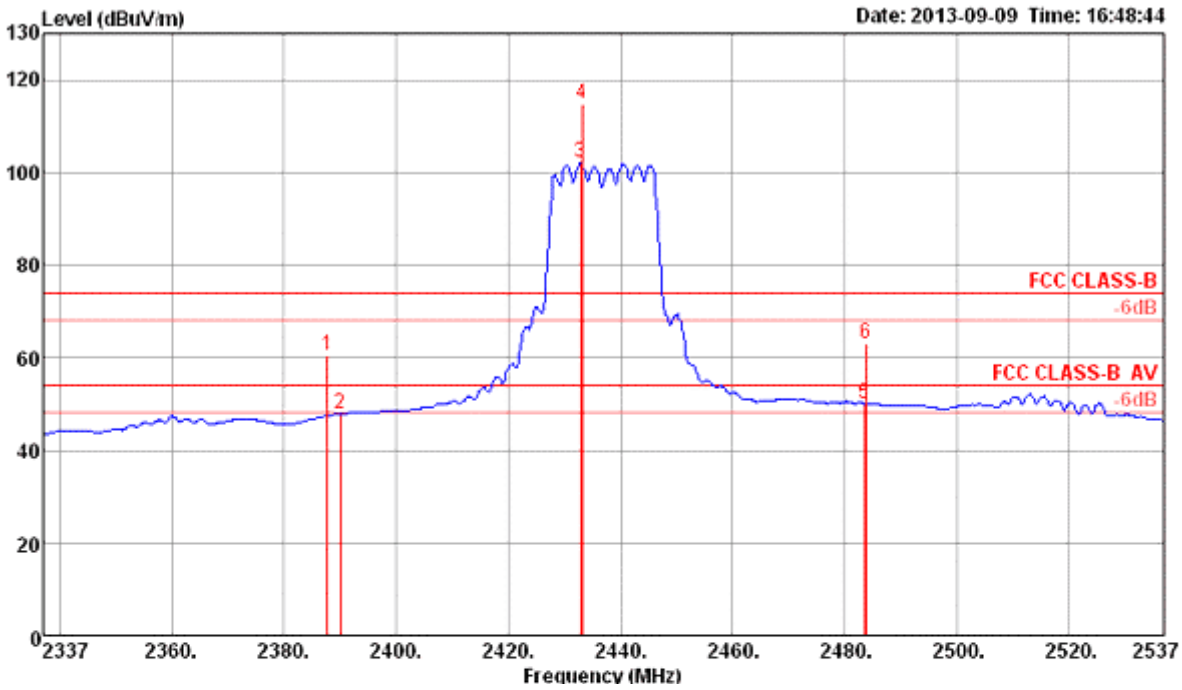
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 1 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2389.52	73.48	74.00	-0.52	43.10	2.21	28.17	0.00	Peak	112	52	HORIZONTAL
2	2390.00	53.42	54.00	-0.58	23.03	2.22	28.17	0.00	Average	112	52	HORIZONTAL
3	2407.99	102.07			71.64	2.22	28.21	0.00	Average	112	52	HORIZONTAL
4	2408.31	115.00			84.57	2.22	28.21	0.00	Peak	112	52	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2412 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

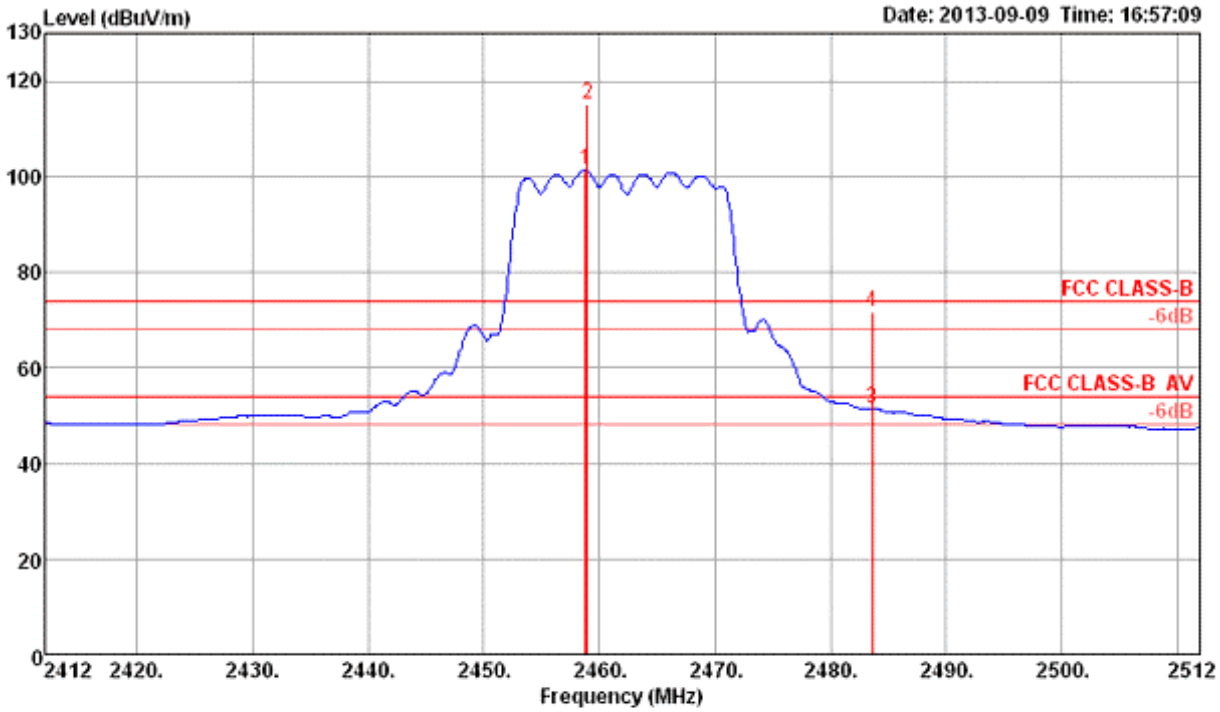
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2387.76	60.35	74.00	-13.65	29.97	2.21	28.17	0.00	Peak	112	74	HORIZONTAL
2	2390.00	47.81	54.00	-6.19	17.42	2.22	28.17	0.00	Average	112	74	HORIZONTAL
3	2432.83	101.97			71.49	2.23	28.25	0.00	Average	112	74	HORIZONTAL
4	2433.15	114.70			84.22	2.23	28.25	0.00	Peak	112	74	HORIZONTAL
5	2483.50	50.04	54.00	-3.96	19.40	2.26	28.38	0.00	Average	112	74	HORIZONTAL
6	2483.82	62.91	74.00	-11.09	32.27	2.26	28.38	0.00	Peak	112	74	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2437 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

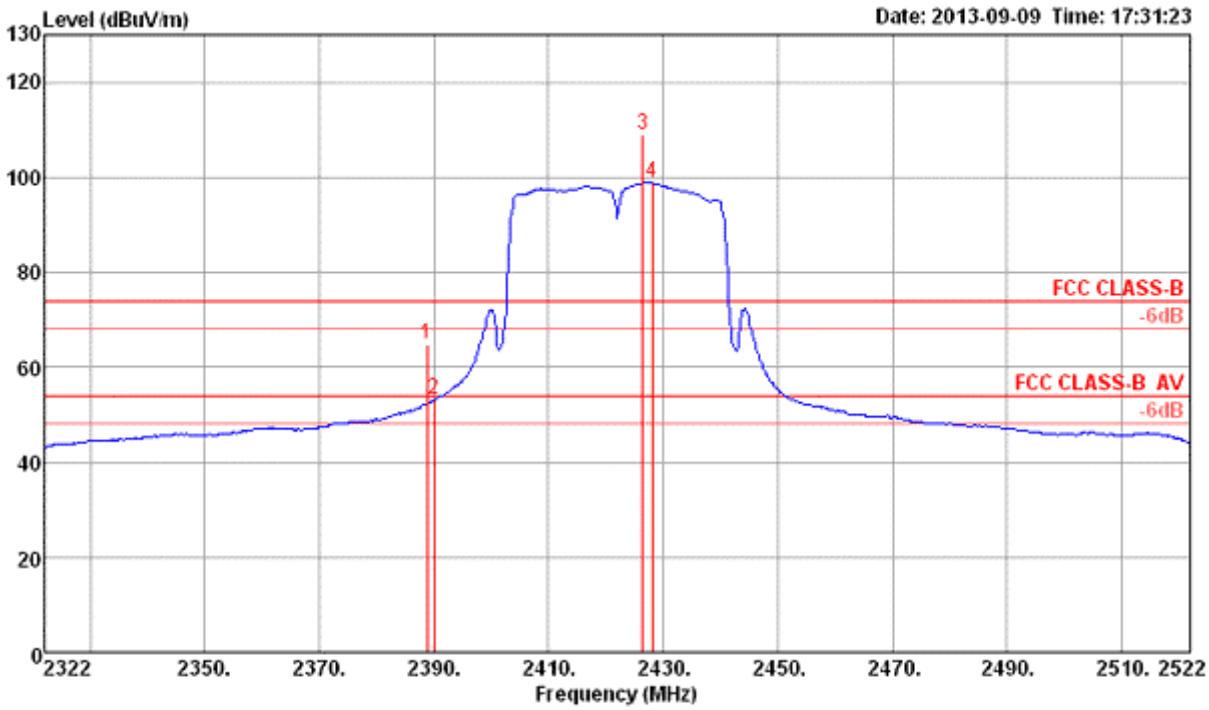
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 20MHz MCS0 CH 11 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2458.80	101.28			70.71	2.24	28.33	0.00	Average	113	203	HORIZONTAL
2	2458.96	115.26			84.69	2.24	28.33	0.00	Peak	113	203	HORIZONTAL
3	2483.66	51.45	54.00	-2.55	20.81	2.26	28.38	0.00	Average	113	203	HORIZONTAL
4	2483.66	71.62	74.00	-2.38	40.98	2.26	28.38	0.00	Peak	113	203	HORIZONTAL

Note 1: Item 1, 2 are the fundamental frequency at 2462MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

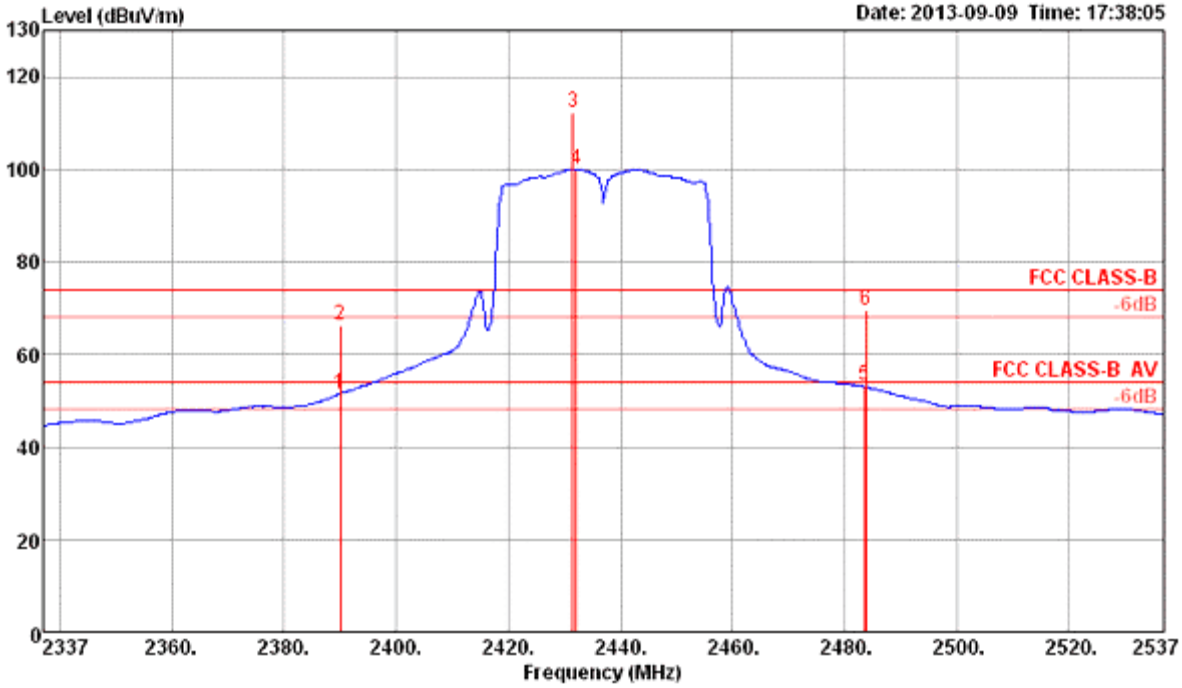
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 3 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2388.72	65.00	74.00	-9.00	34.62	2.21	28.17	0.00	Peak	111	199	HORIZONTAL
2	2390.00	53.16	54.00	-0.84	22.77	2.22	28.17	0.00	Average	111	199	HORIZONTAL
3	2426.49	109.08			78.60	2.23	28.25	0.00	Peak	111	199	HORIZONTAL
4	2428.09	98.94			68.46	2.23	28.25	0.00	Average	111	199	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2422 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

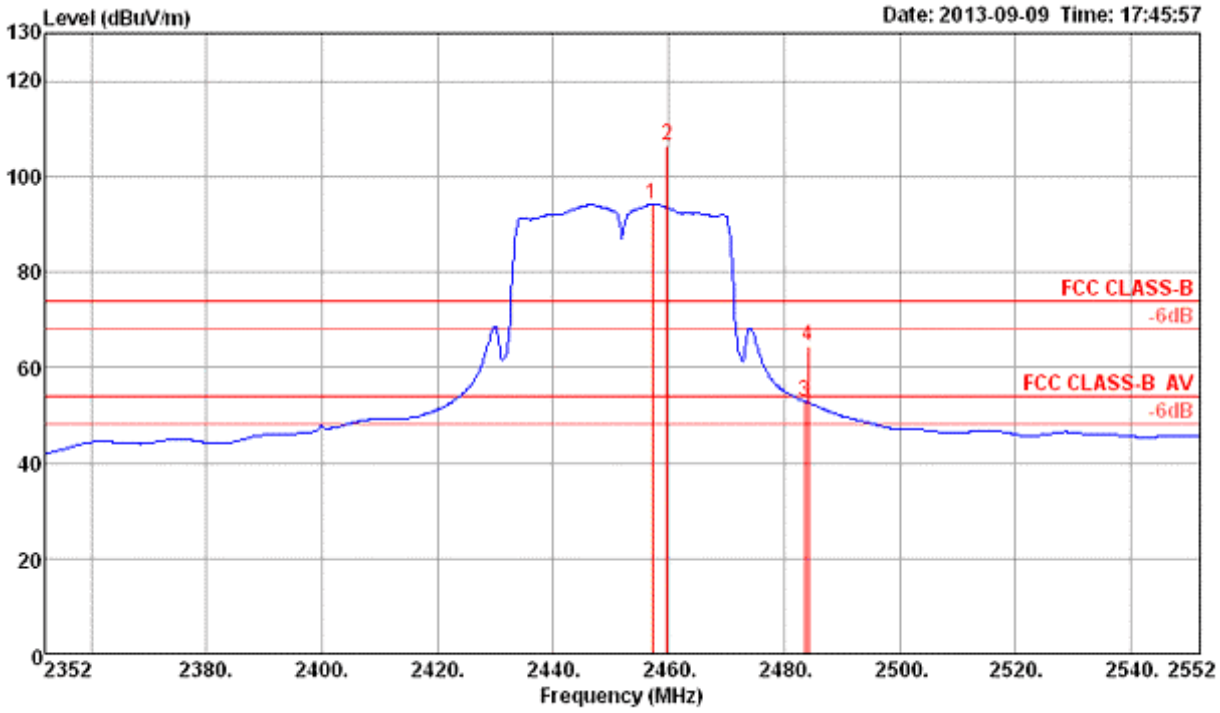
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 6 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	51.40	54.00	-2.60	21.01	2.22	28.17	0.00	Average	112	207	HORIZONTAL
2	2390.00	66.44	74.00	-7.56	36.05	2.22	28.17	0.00	Peak	112	207	HORIZONTAL
3	2431.55	112.28			81.80	2.23	28.25	0.00	Peak	112	207	HORIZONTAL
4	2432.19	100.08			69.60	2.23	28.25	0.00	Average	112	207	HORIZONTAL
5	2483.50	53.18	54.00	-0.82	22.54	2.26	28.38	0.00	Average	112	207	HORIZONTAL
6	2483.82	69.53	74.00	-4.47	38.89	2.26	28.38	0.00	Peak	112	207	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2437 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

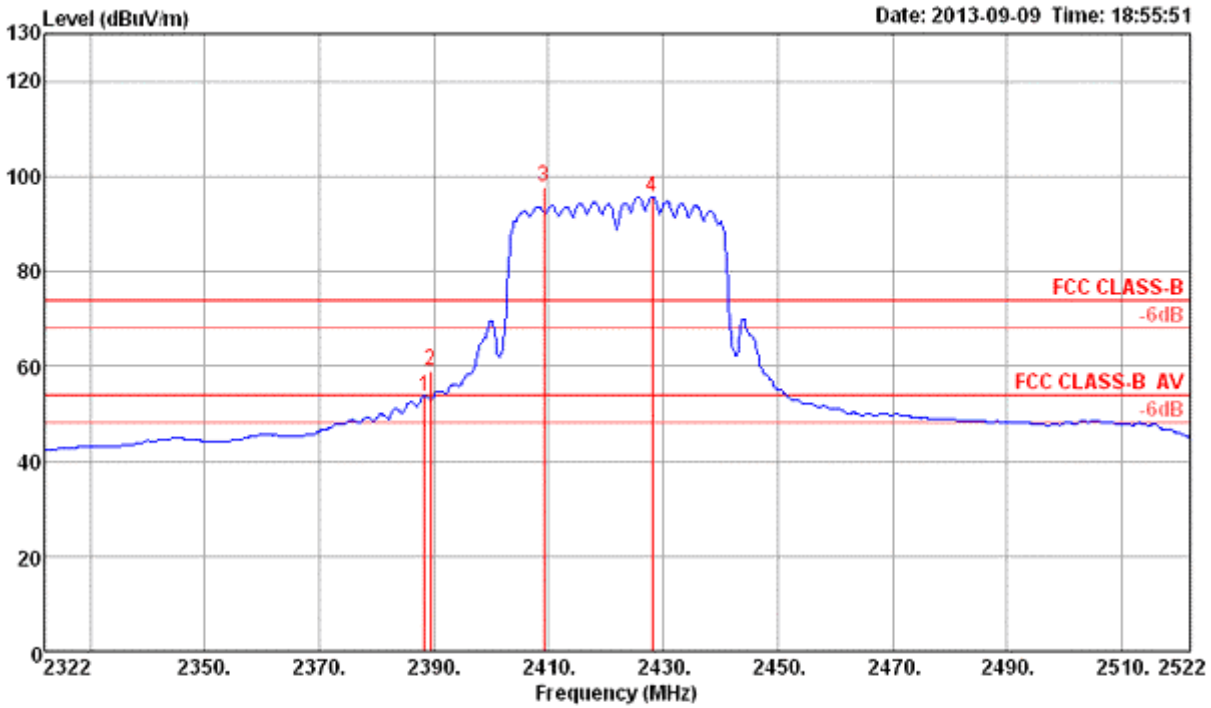
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 9 / Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2457.13	94.08			63.51	2.24	28.33	0.00	Average	111	207	HORIZONTAL
2	2459.69	106.58			76.01	2.24	28.33	0.00	Peak	111	207	HORIZONTAL
3	2483.50	52.87	54.00	-1.13	22.23	2.26	28.38	0.00	Average	111	207	HORIZONTAL
4	2484.14	64.47	74.00	-9.53	33.83	2.26	28.38	0.00	Peak	111	207	HORIZONTAL

Note 1: Item 1, 2 are the fundamental frequency at 2452 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

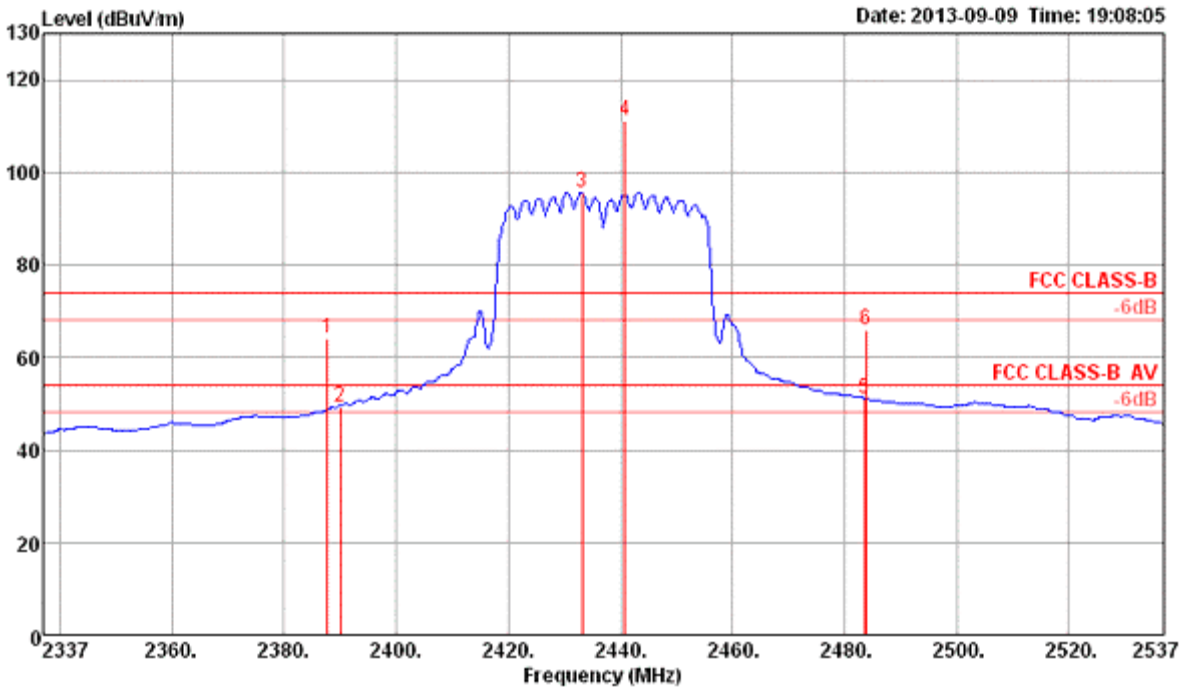
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 3 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	53.77	54.00	-0.23	23.39	2.21	28.17	0.00	Average	110	62	HORIZONTAL
2	2389.36	59.09	74.00	-14.91	28.71	2.21	28.17	0.00	Peak	110	62	HORIZONTAL
3	2409.18	97.78			67.35	2.22	28.21	0.00	Peak	110	62	HORIZONTAL
4	2428.09	95.56			65.08	2.23	28.25	0.00	Average	110	62	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2422 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

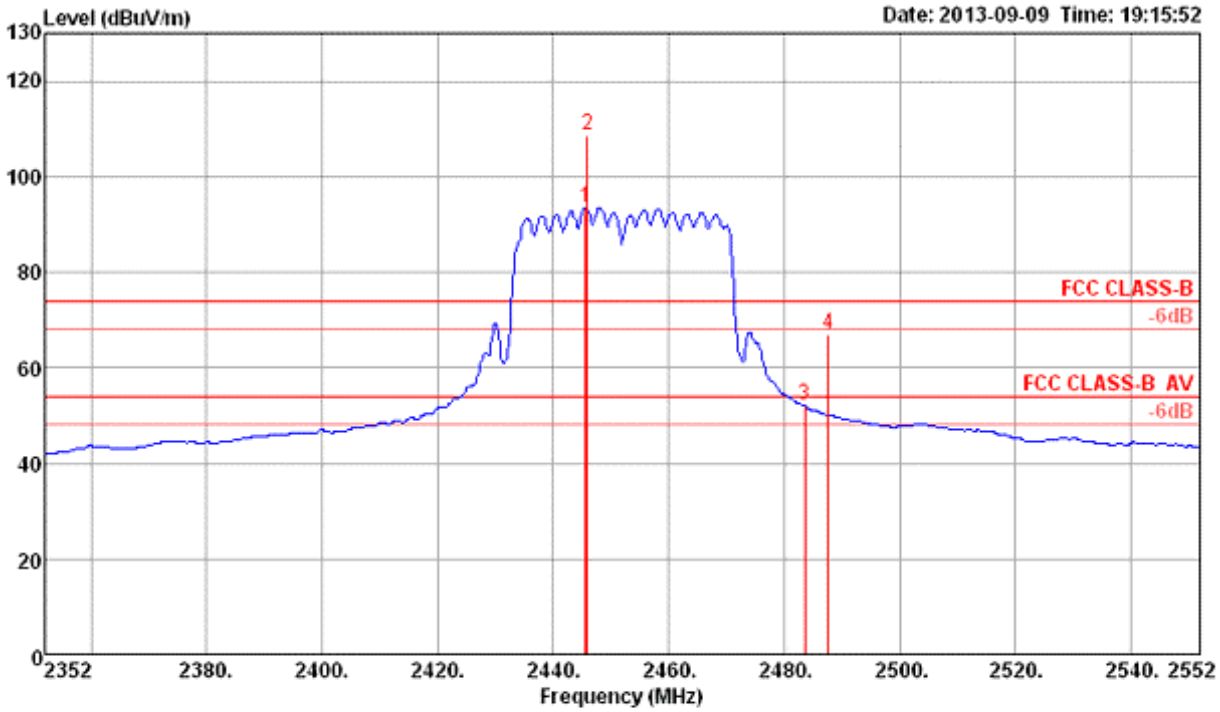
Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 6 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2387.76	63.95	74.00	-10.05	33.57	2.21	28.17	0.00	Peak	110	66	HORIZONTAL
2	2390.00	49.41	54.00	-4.59	19.02	2.22	28.17	0.00	Average	110	66	HORIZONTAL
3	2433.15	95.59			65.11	2.23	28.25	0.00	Average	110	66	HORIZONTAL
4	2440.85	111.09			80.56	2.24	28.29	0.00	Peak	110	66	HORIZONTAL
5	2483.50	51.15	54.00	-2.85	20.51	2.26	28.38	0.00	Average	110	66	HORIZONTAL
6	2483.82	65.95	74.00	-8.05	35.31	2.26	28.38	0.00	Peak	110	66	HORIZONTAL

Note 1: Item 3, 4 are the fundamental frequency at 2437 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Band Edge and Fundamental Emissions						
Operating Mode	**IEEE 802.11n 40MHz MCS0 CH 9 / CDD Mode / Ant. 1 + Ant. 2**				Polarization	H
Temperature	25.6℃	**Humidity**	56%	**Test Engineer**	**Serway Li**	



	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	2445.59	93.51			62.98	2.24	28.29	0.00	Average	111	68	HORIZONTAL
2	2445.91	108.58			78.05	2.24	28.29	0.00	Peak	111	68	HORIZONTAL
3	2483.50	52.04	54.00	-1.96	21.40	2.26	28.38	0.00	Average	111	68	HORIZONTAL
4	2487.67	67.09	74.00	-6.91	36.41	2.26	28.42	0.00	Peak	111	68	HORIZONTAL

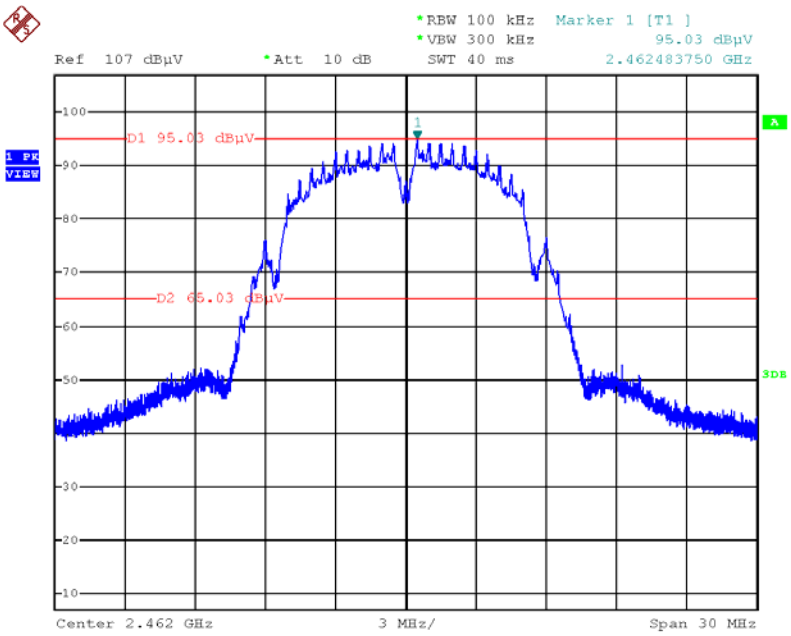
Note 1: Item 1, 2 are the fundamental frequency at 2452 MHz
Note 2: Emission level (dBuV/m) = 20 log Emission level (uV/m).
Note 3: Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Note 4: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

3.6.8 Results of Emission not in Restricted Band

Following channel(s) was (were) selected for the final test as listed below.

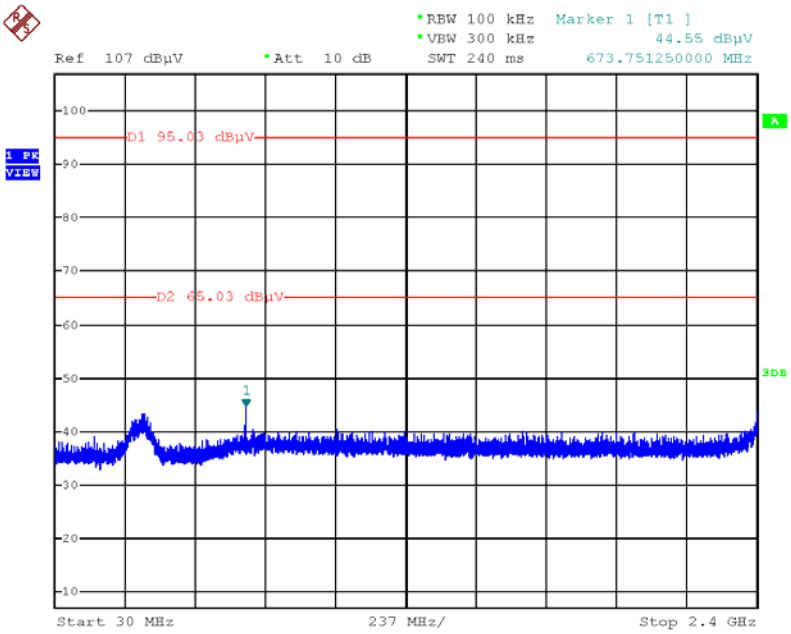
MODE	TX Chain	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	Ant.2	1, 11	DSSS	DBPSK	1
802.11g	Ant.2	1, 11	OFDM	BPSK	6
802.11g	Ant.1+2 (CDD)	1, 11	OFDM	BPSK	6
802.11n 20MHz	Ant.2	1, 11	OFDM	BPSK	MCS0 (6.5)
802.11n 20MHz	Ant.1+2 (CDD)	1, 11	OFDM	BPSK	MCS0 (6.5)
802.11n 40MHz	Ant.2	3, 9	OFDM	BPSK	MCS0 (13.5)
802.11n 40MHz	Ant.1+2 (CDD)	3, 9	OFDM	BPSK	MCS0 (13.5)

Low Band Edge Plot on Configuration IEEE 802.11b / Reference Level / Ant. 2



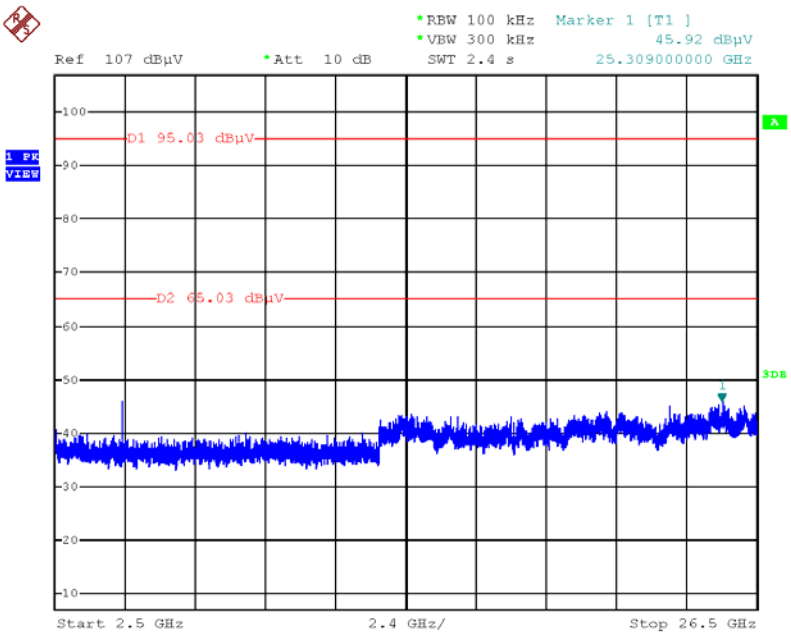
Date: 11.SEP.2013 18:11:22

Low Band Edge Plot on Configuration IEEE 802.11b / 2412 MHz / Ant. 2



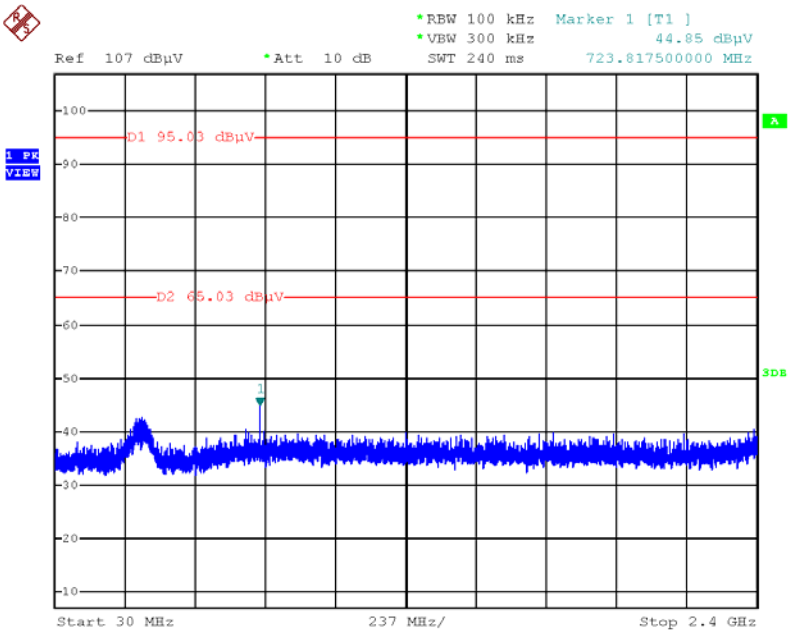
Date: 11.SEP.2013 18:16:34

Low Band Edge Plot on Configuration IEEE 802.11b / 2412 MHz / Ant. 2



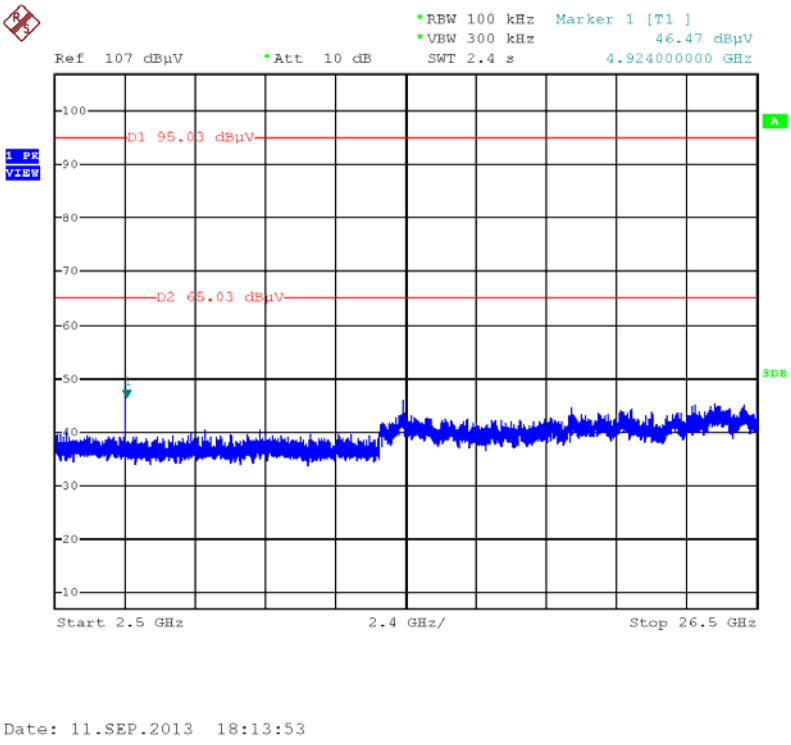
Date: 11.SEP.2013 18:17:16

Low Band Edge Plot on Configuration IEEE 802.11b / 2462 MHz / Ant. 2

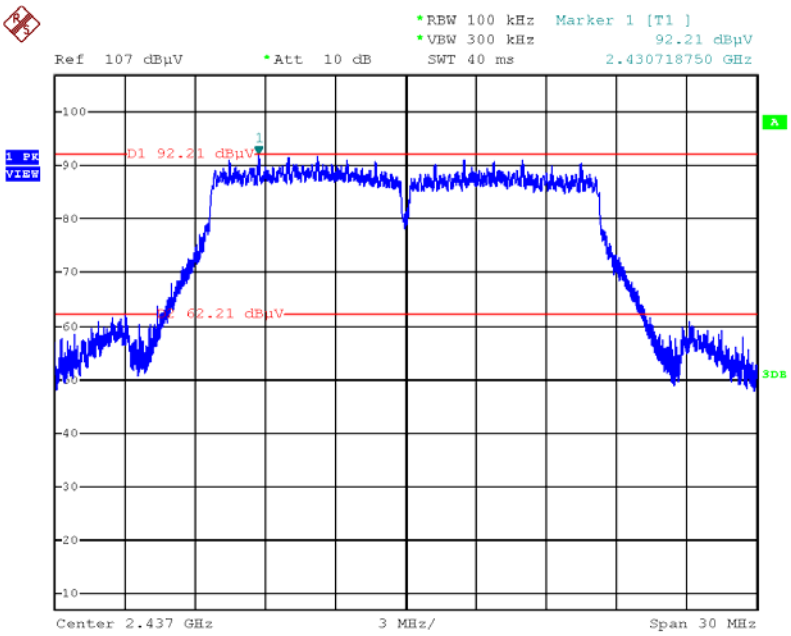


Date: 11.SEP.2013 18:14:46

Low Band Edge Plot on Configuration IEEE 802.11b / 2462 MHz / Ant. 2

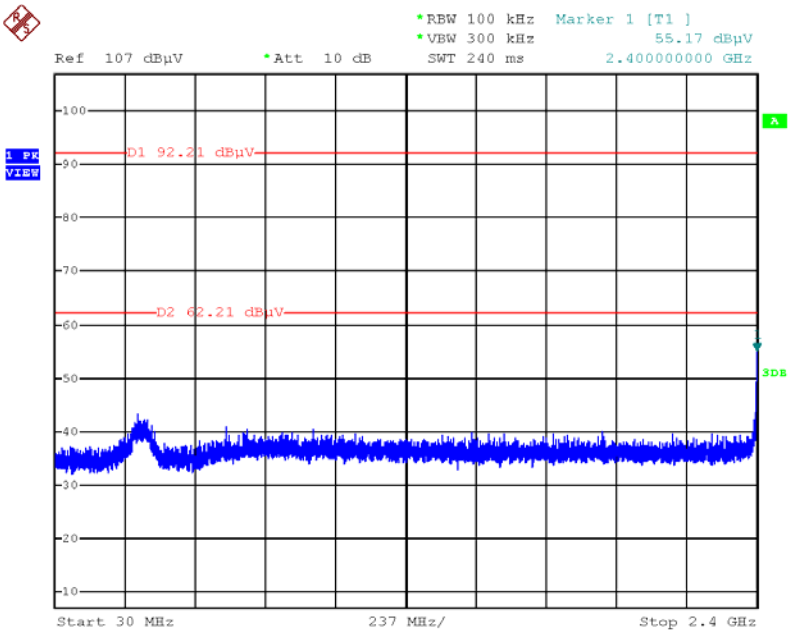


Low Band Edge Plot on Configuration IEEE 802.11g / Reference Level / Ant. 2



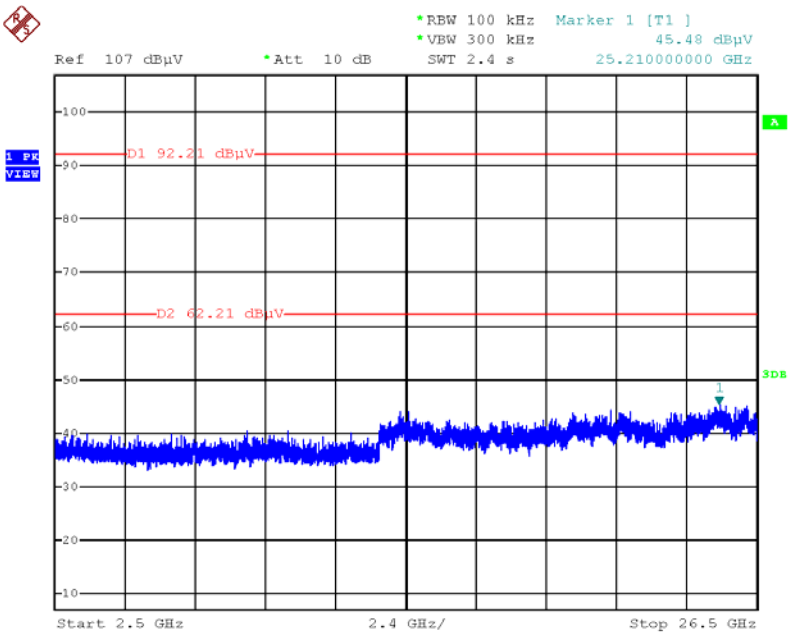
Date: 11.SEP.2013 18:19:17

Low Band Edge Plot on Configuration IEEE 802.11g / 2412 MHz / Ant. 2



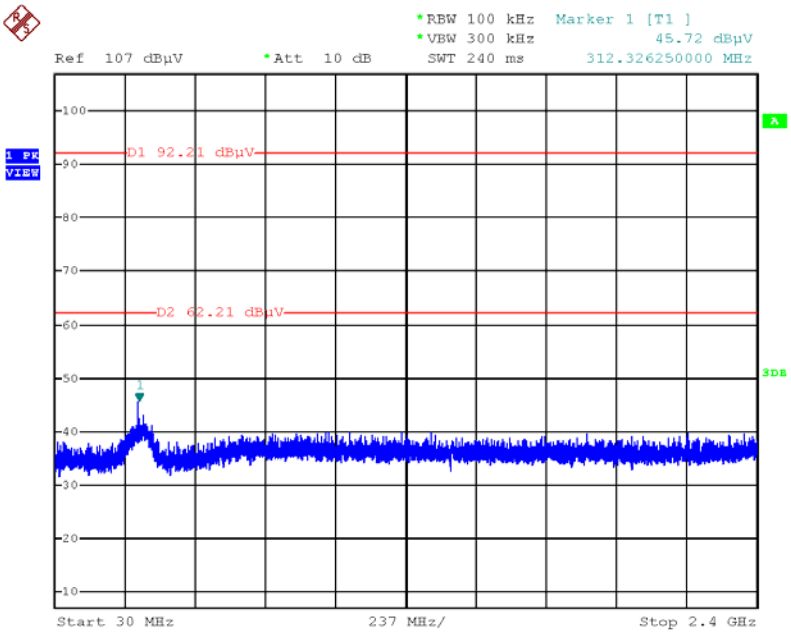
Date: 11.SEP.2013 18:20:23

Low Band Edge Plot on Configuration IEEE 802.11g / 2412 MHz / Ant. 2



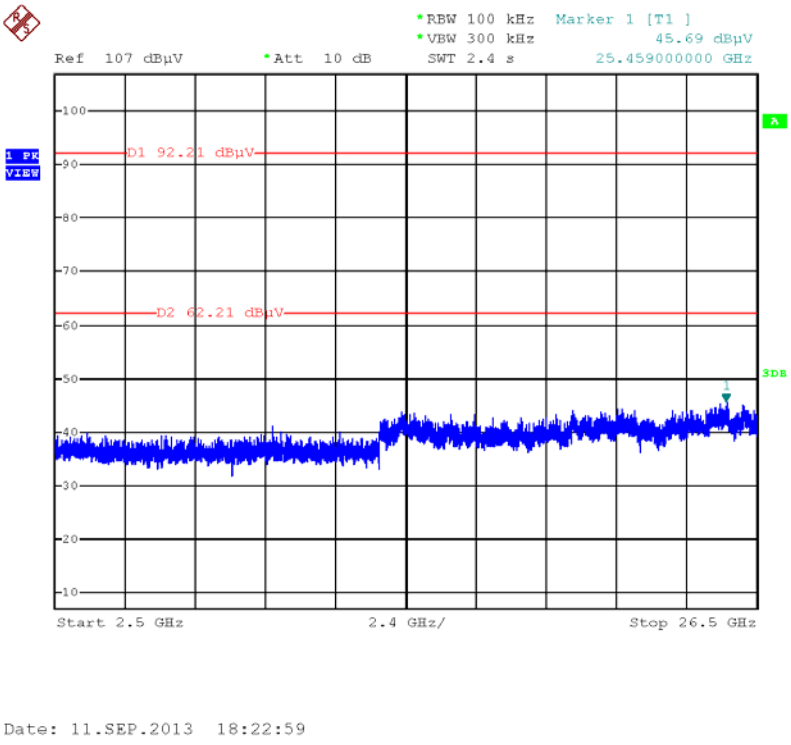
Date: 11.SEP.2013 18:21:07

Low Band Edge Plot on Configuration IEEE 802.11g / 2462 MHz / Ant. 2

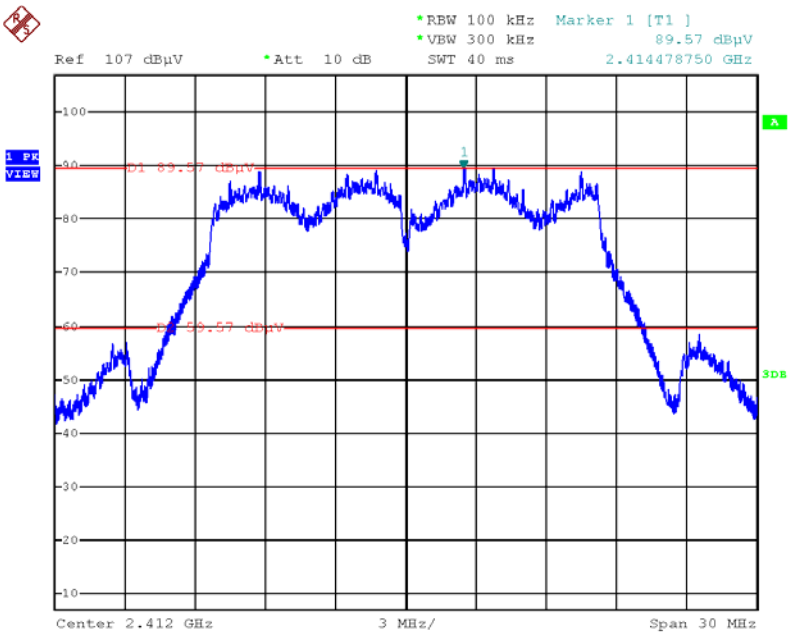


Date: 11.SEP.2013 18:22:19

Low Band Edge Plot on Configuration IEEE 802.11g / 2462 MHz / Ant. 2

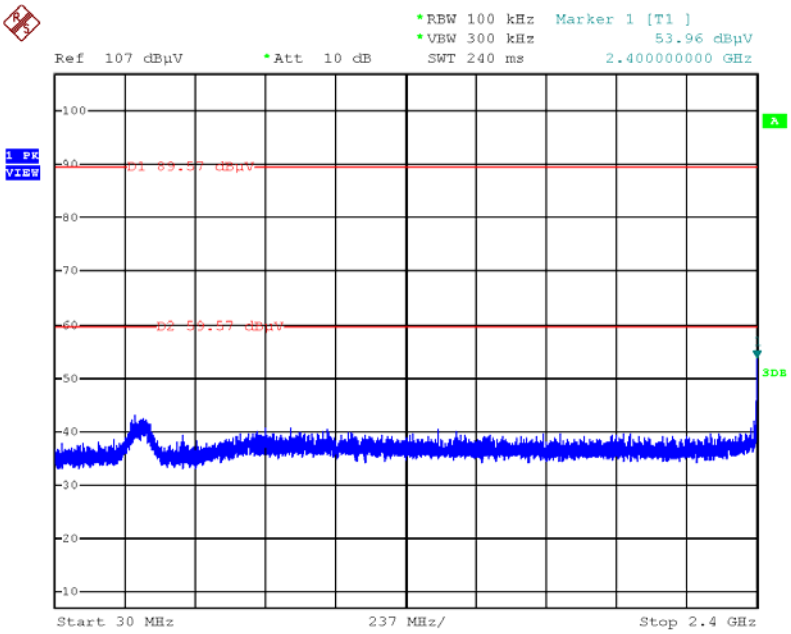


Low Band Edge Plot on Configuration IEEE 802.11g / Reference Level / CDD Mode / Ant. 1 + Ant. 2



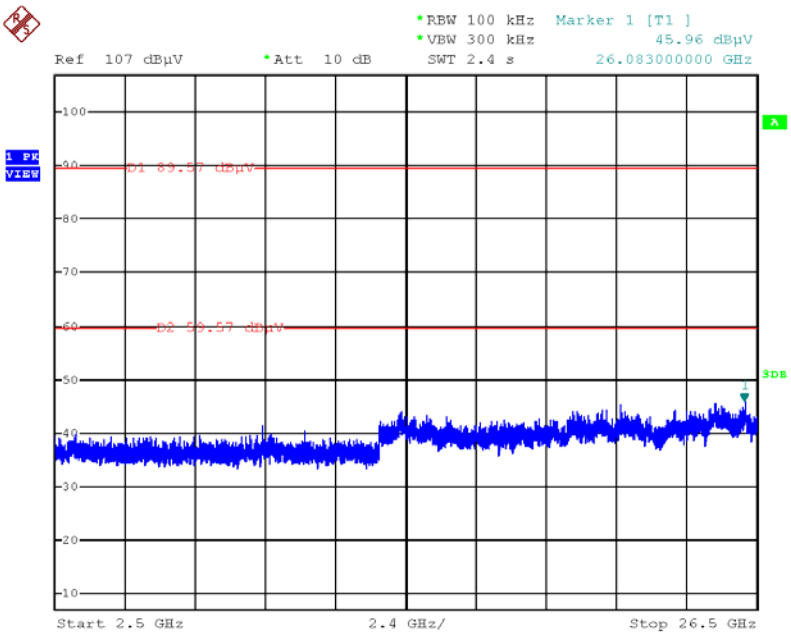
Date: 11.SEP.2013 19:05:45

Low Band Edge Plot on Configuration IEEE 802.11g / 2412 MHz / CDD Mode / Ant. 1 + Ant. 2



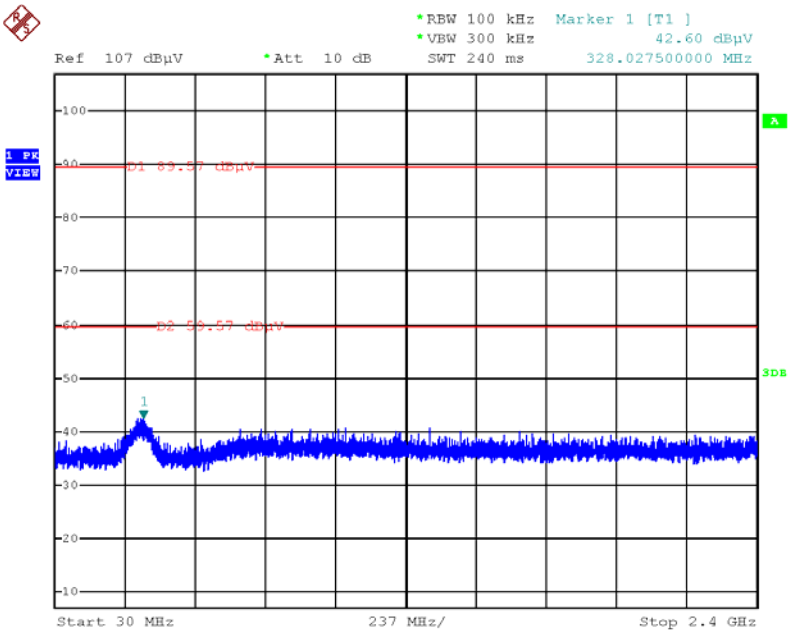
Date: 11.SEP.2013 19:06:33

Low Band Edge Plot on Configuration IEEE 802.11g / 2412 MHz / CDD Mode / Ant. 1 + Ant. 2



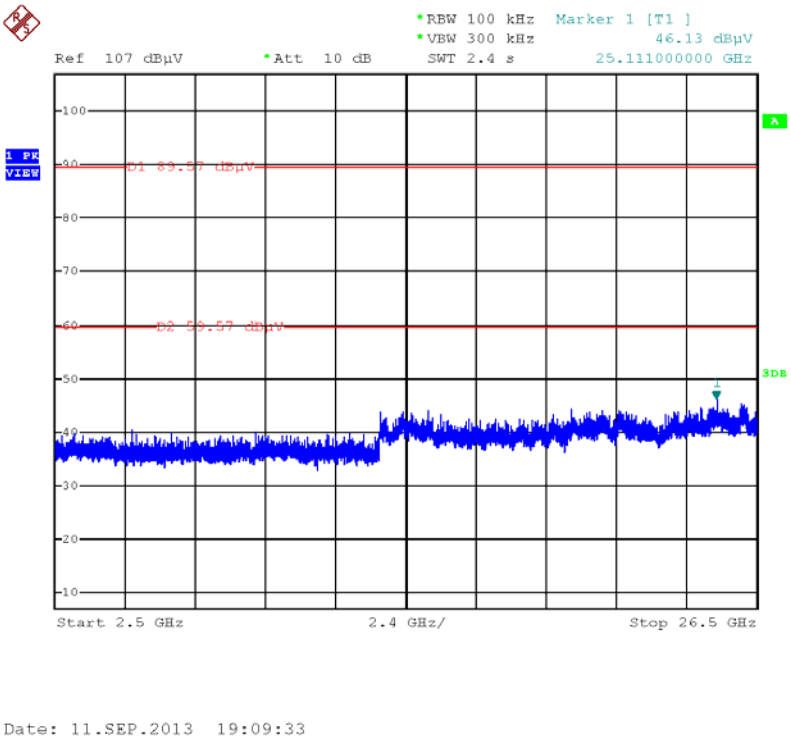
Date: 11.SEP.2013 19:07:11

Low Band Edge Plot on Configuration IEEE 802.11g / 2462 MHz / CDD Mode / Ant. 1 + Ant. 2



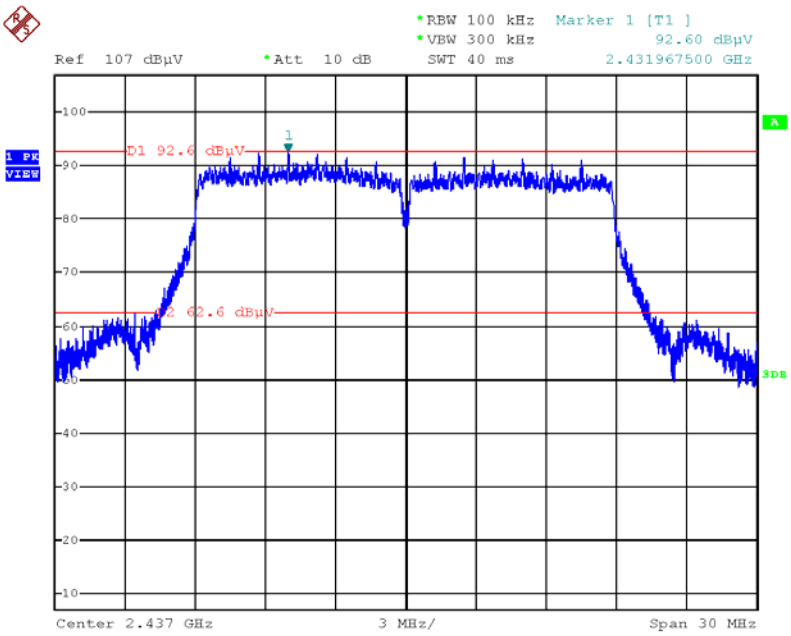
Date: 11.SEP.2013 19:08:48

Low Band Edge Plot on Configuration IEEE 802.11g / 2462 MHz / CDD Mode / Ant. 1 + Ant. 2



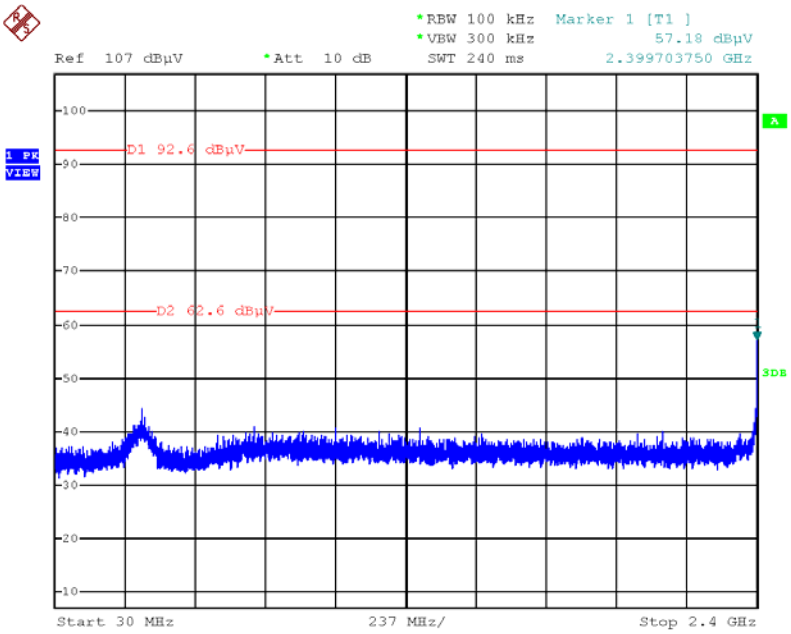
Date: 11.SEP.2013 19:09:33

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / Reference Level / Ant. 2



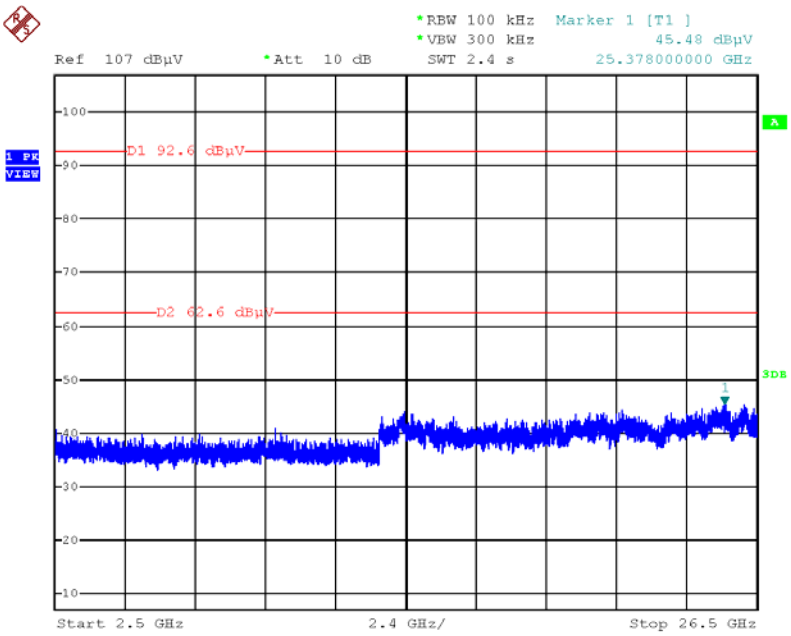
Date: 11.SEP.2013 18:25:49

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / 2412 MHz / Ant. 2



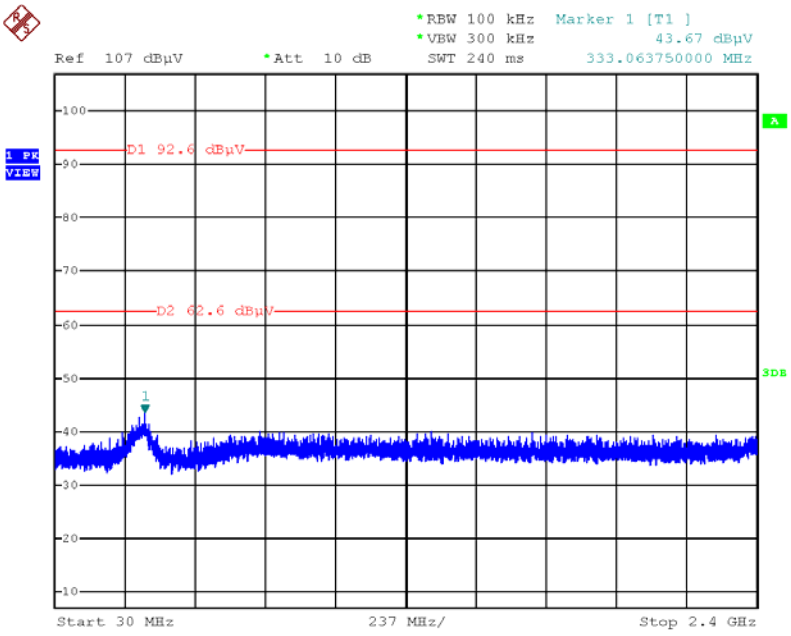
Date: 11.SEP.2013 18:32:11

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / 2412 MHz / Ant. 2



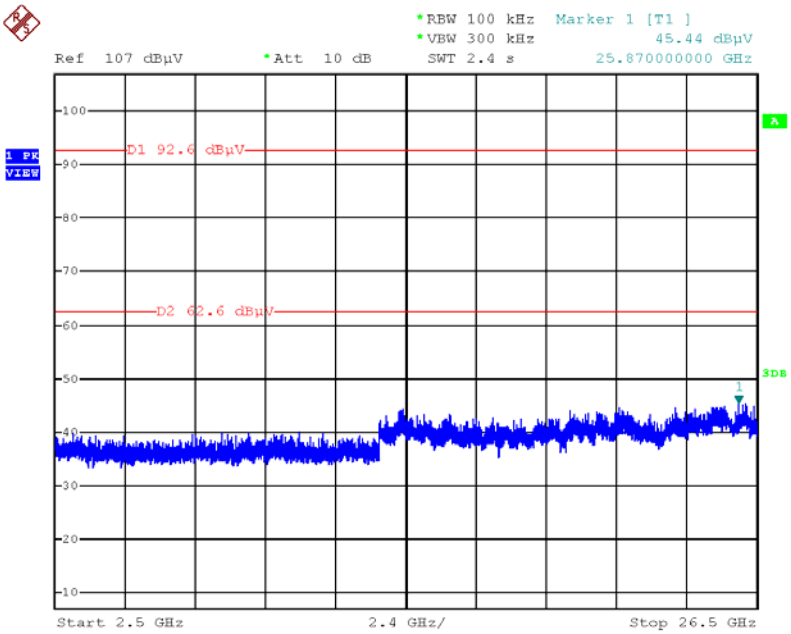
Date: 11.SEP.2013 18:33:02

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / 2462 MHz / Ant. 2



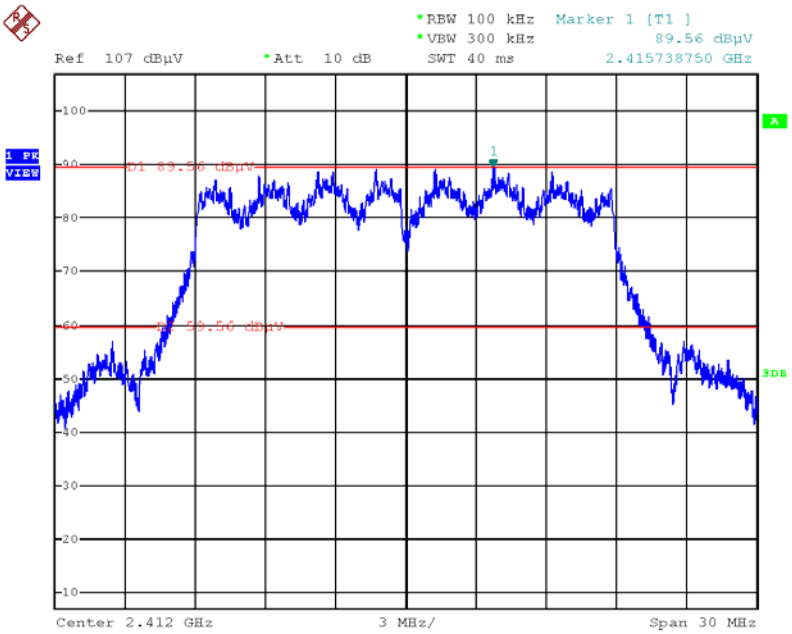
Date: 11.SEP.2013 18:34:13

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / 2462 MHz / Ant. 2



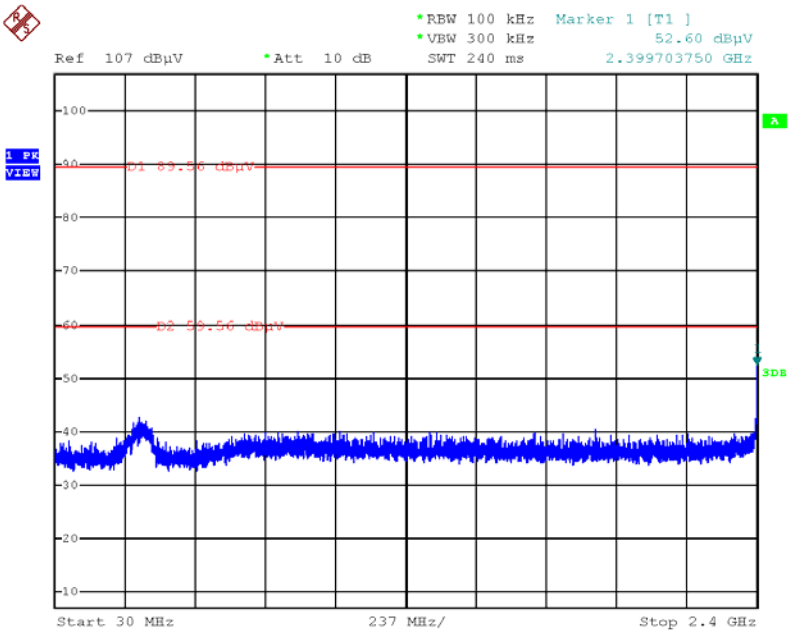
Date: 11.SEP.2013 18:35:01

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / Reference Level / CDD Mode / Ant. 1 + Ant. 2



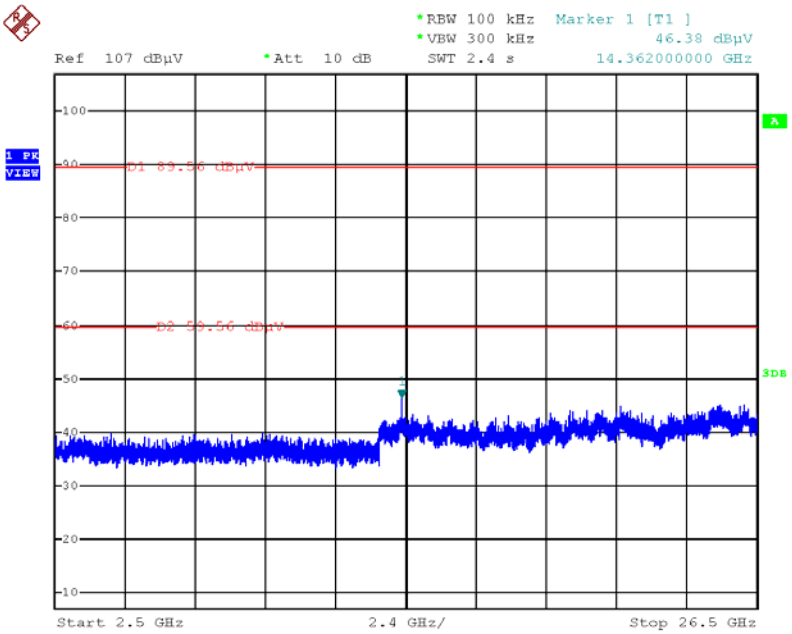
Date: 11.SEP.2013 18:57:52

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / 2412 MHz / CDD Mode / Ant. 1 + Ant. 2



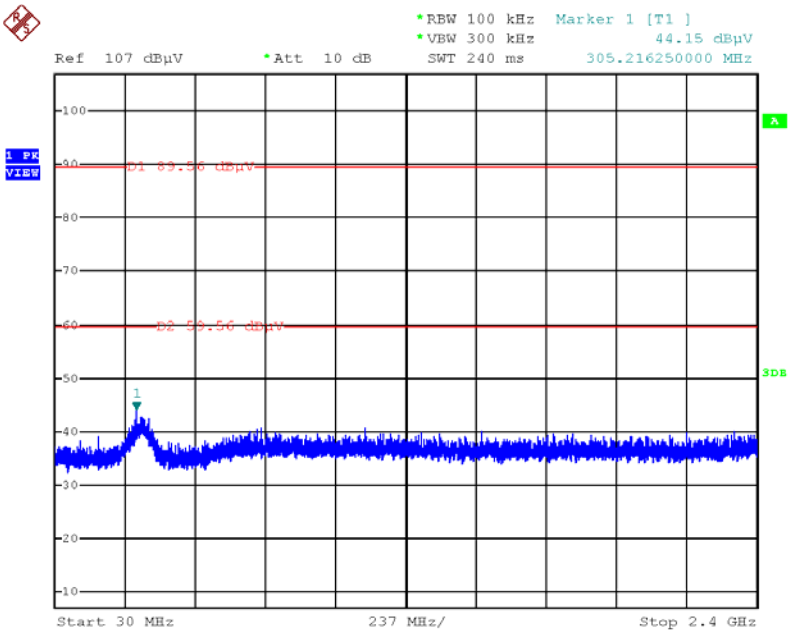
Date: 11.SEP.2013 18:58:29

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / 2412 MHz / CDD Mode / Ant. 1 + Ant. 2



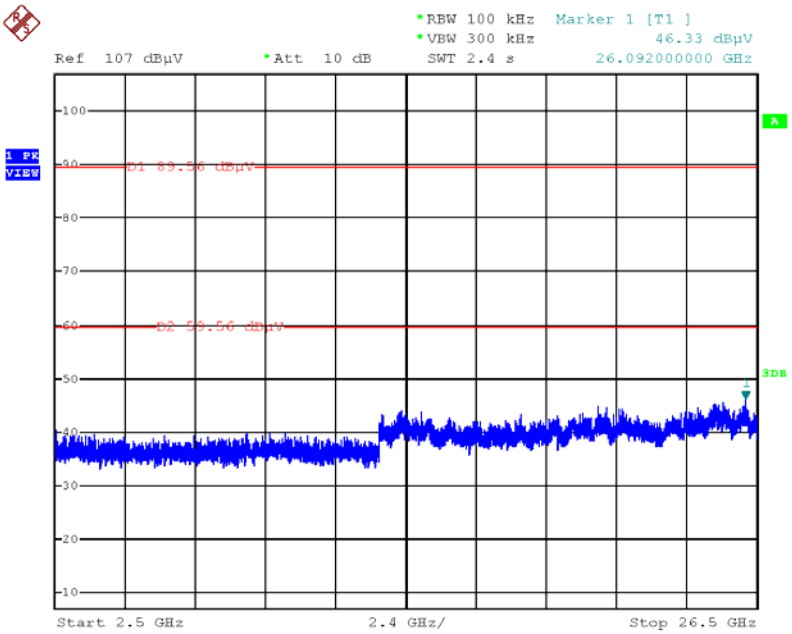
Date: 11.SEP.2013 18:59:07

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / 2462 MHz / CDD Mode / Ant. 1 + Ant. 2



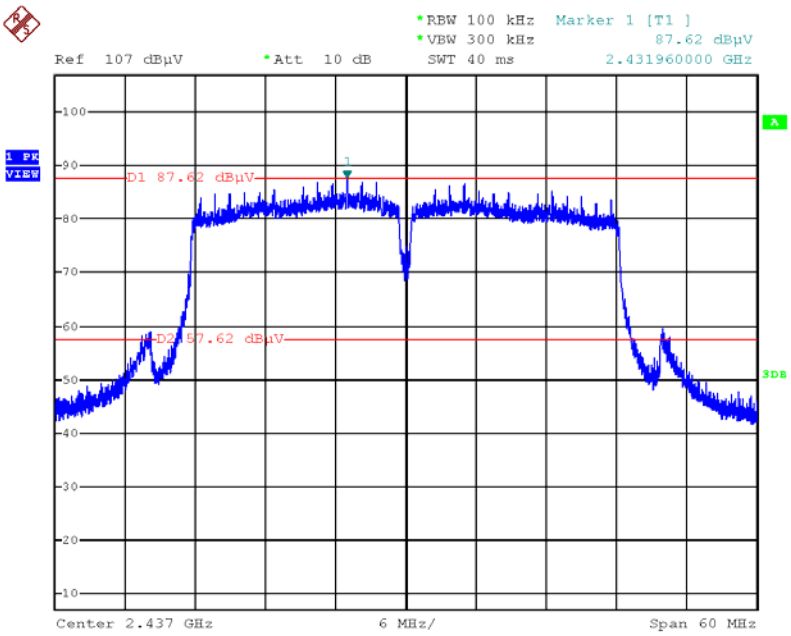
Date: 11.SEP.2013 19:01:11

Low Band Edge Plot on Configuration IEEE 802.11n 20MHz MCS0 / 2462 MHz / CDD Mode / Ant. 1 + Ant. 2



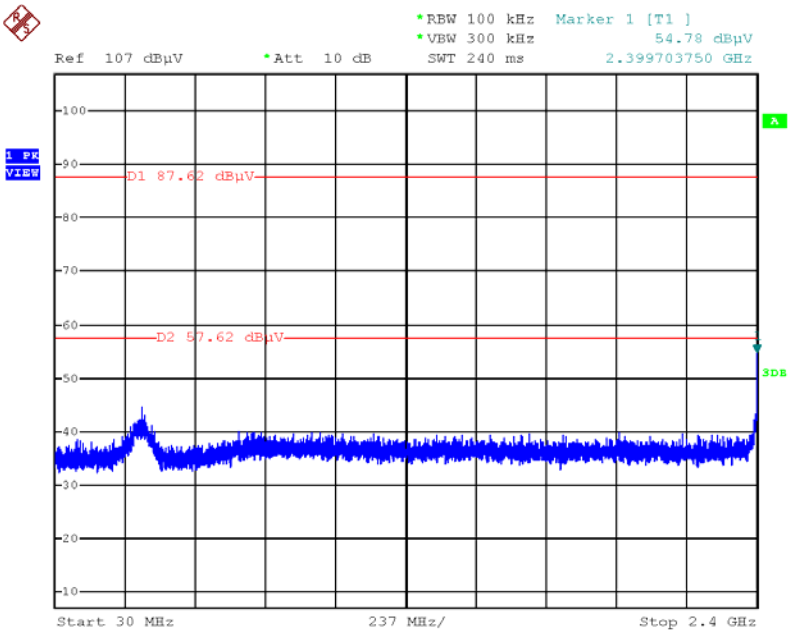
Date: 11.SEP.2013 19:01:48

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / Reference Level / Ant. 2



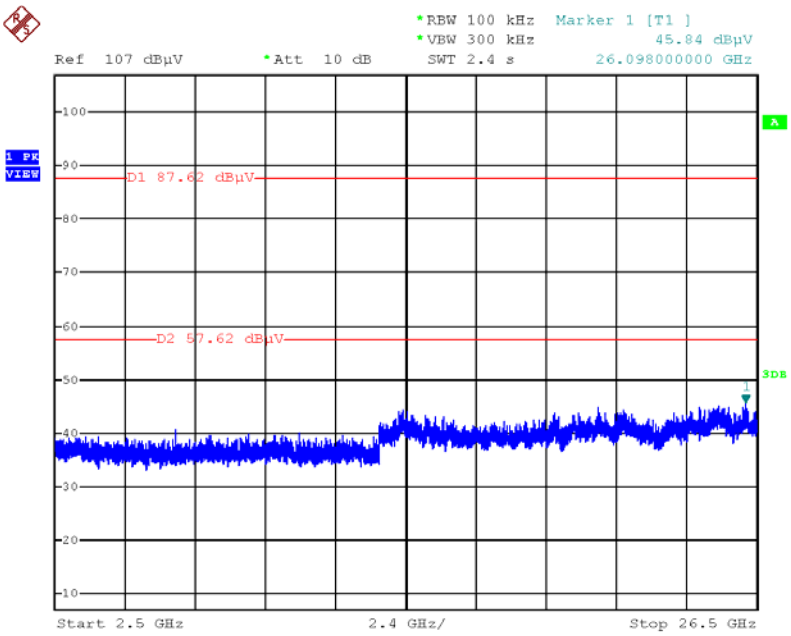
Date: 11.SEP.2013 18:37:57

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / 2422 MHz / Ant. 2



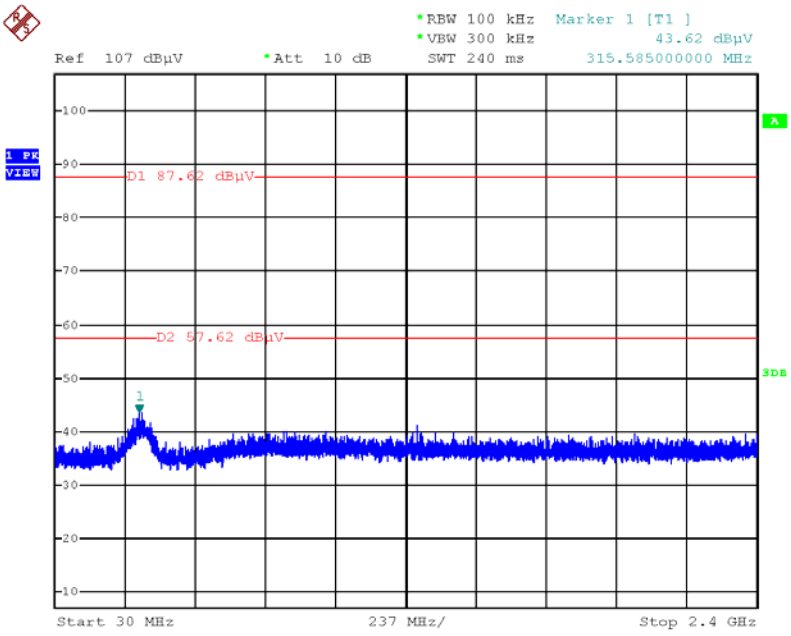
Date: 11.SEP.2013 18:39:07

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / 2422 MHz / Ant. 2



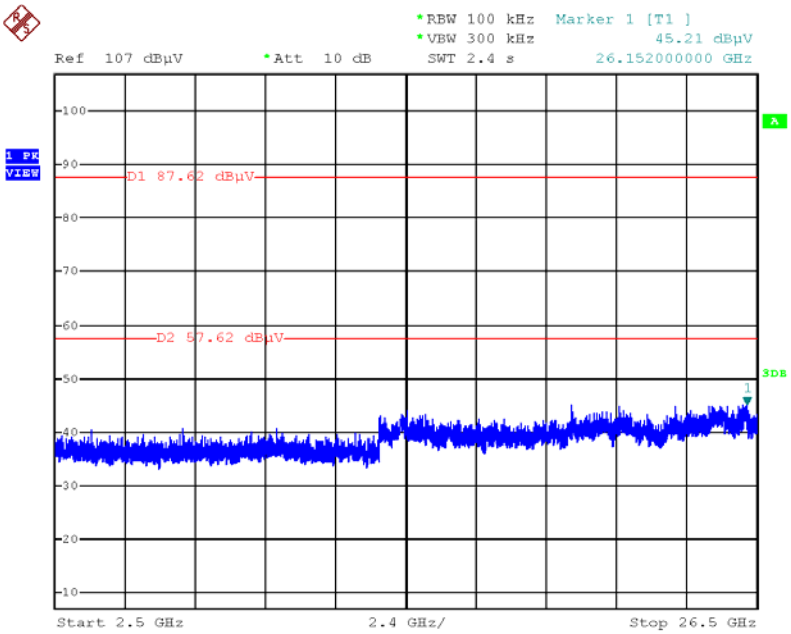
Date: 11.SEP.2013 18:40:02

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / 2452 MHz / Ant. 2

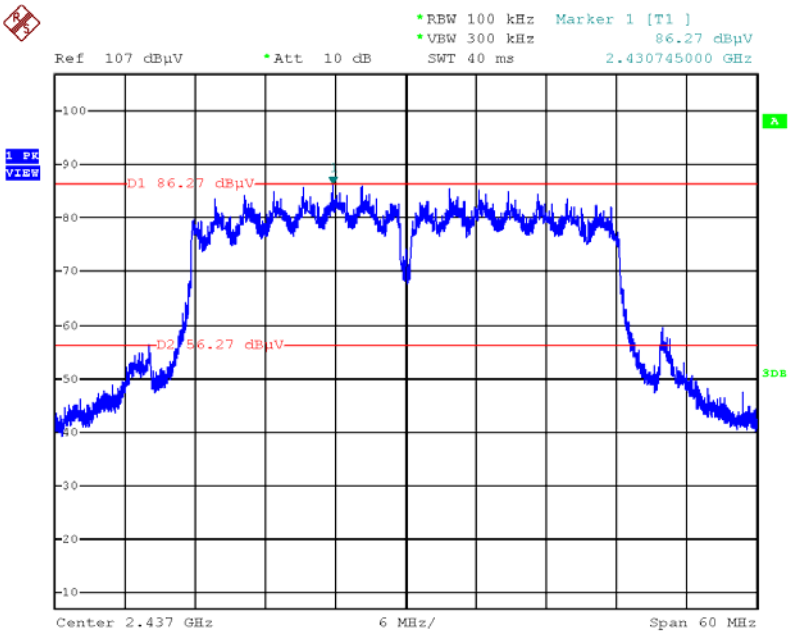


Date: 11.SEP.2013 18:41:15

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / 2452 MHz / Ant. 2

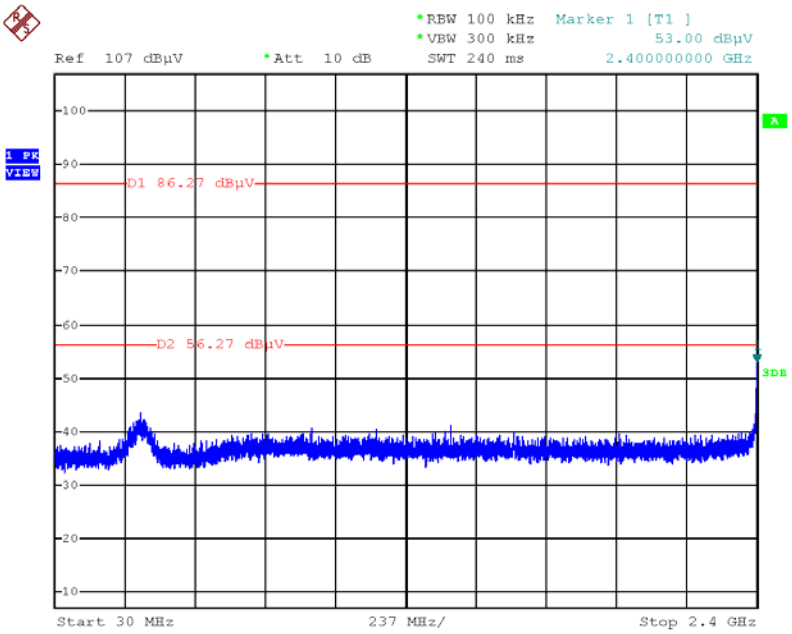


Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / Reference Level / CDD Mode / Ant. 1 + Ant. 2



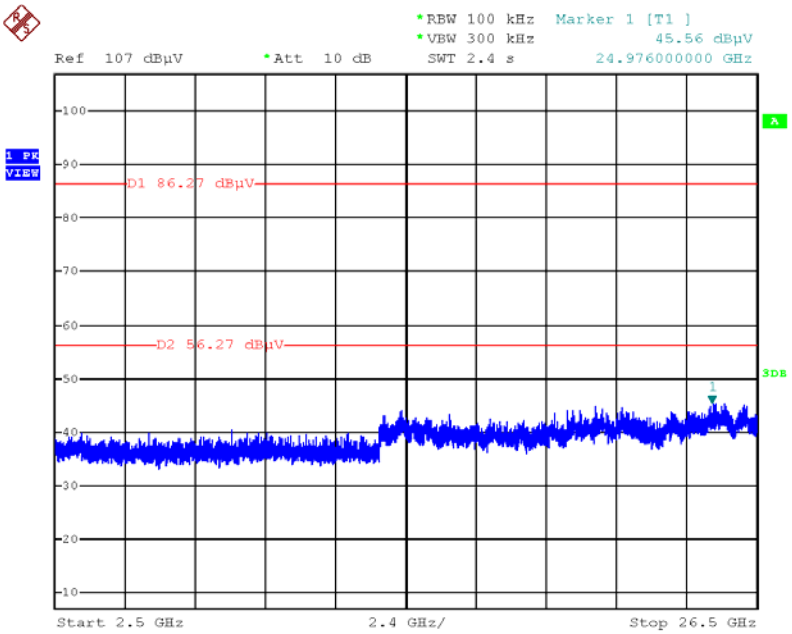
Date: 11.SEP.2013 18:50:12

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / 2422 MHz / CDD Mode / Ant. 1 + Ant. 2



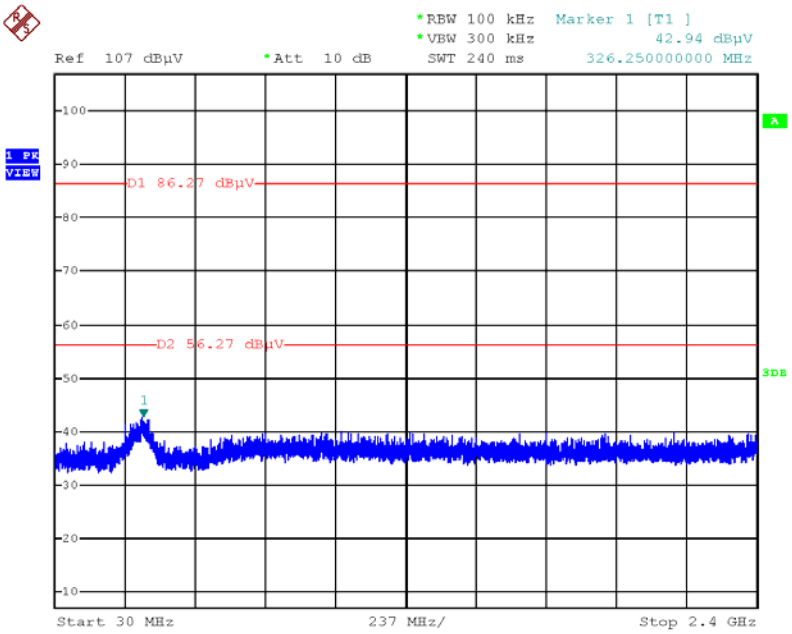
Date: 11.SEP.2013 18:51:48

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / 2422 MHz / CDD Mode / Ant. 1 + Ant. 2



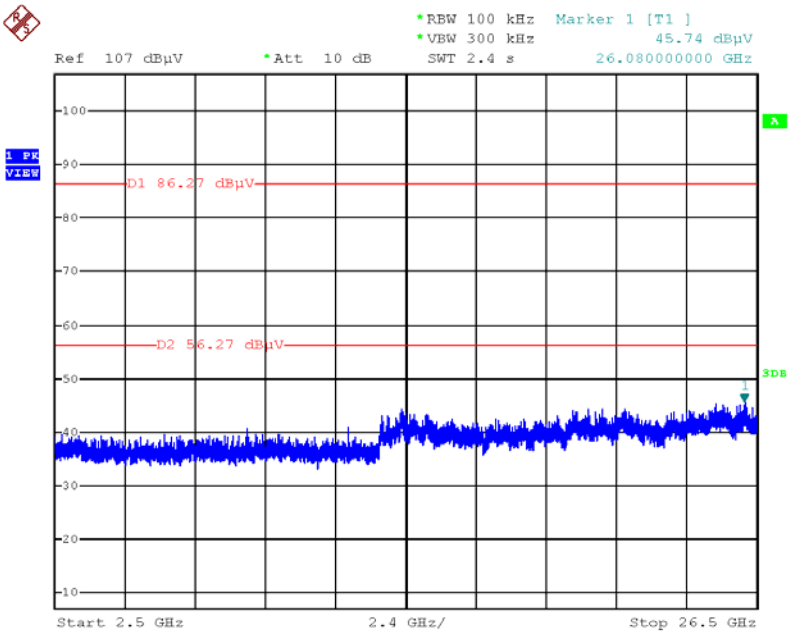
Date: 11.SEP.2013 18:52:28

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / 2452 MHz / CDD Mode / Ant. 1 + Ant. 2



Date: 11.SEP.2013 18:53:51

Low Band Edge Plot on Configuration IEEE 802.11n 40MHz MCS0 / 2452 MHz / CDD Mode / Ant. 1 + Ant. 2



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3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Connector Construction

Please refer to section 2.3 in this test report; antenna connector complied with the requirements.

4 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. 23, 2012	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Nov. 26, 2012	Conduction (CO01-CB)
V- LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Jul. 17, 2013	Conduction (CO01-CB)
Impulsbegrenzer Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz~30MHz	Feb. 21, 2013	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	0.15MHz~30MHz	Dec. 04, 2012	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	-	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	Apr. 16, 2013	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9 kHz - 30 MHz	Nov. 05, 2012*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 27, 2012	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Nov. 23, 2012	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 27, 2012	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Nov. 23, 2012	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26.5GHz ~ 40GHz	Jul. 31, 2013	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100056	9kHz~40GHz	Nov. 16, 2012	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9kHz ~ 2.75GHz	Apr. 12, 2013	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N.C.R	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N.C.R	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz - 1 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	N/A	1 GHz – 26.5 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz – 26.5 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
Signal analyzer	R&S	FSV40	100979	9kHz~40GHz	Oct. 08, 2012	Conducted (TH01-CB)
RF Power Divider	Woken	2 Way	0120A02056002D	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)
RF Power Divider	Woken	3 Way	MDC2366	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Power Divider	Woken	4 Way	0120A04056002D	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Nov. 28, 2012	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Nov. 27, 2012	Conducted (TH01-CB)

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

*Calibration Interval of instruments listed above is two year.

N.C.R. means Non-Calibration required.

5 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

6 MEASUREMENT UNCERTAINTY

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

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.026	dB	normal(k=2)	0.013
Cable loss	0.002	dB	normal(k=2)	0.001
AMN/LISN specification	1.200	dB	normal(k=2)	0.600
Mismatch Receiver VSWR 1= AMN/LISN VSWR 2=	-0.080	dB	U-shaped	0.060
combined standard uncertainty Ue(y)	1.2			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.4			

Uncertainty of Conducted Emission Measurement

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Cable loss	0.038	dB	normal(k=2)	0.019
Attenuator	0.047	dB	normal(k=2)	0.024
Power Meter specification	0.300	dB	normal(k=2)	0.150
Power Sensor specification	0.300	dB	normal(k=2)	0.150
Mismatch Receiver VSWR 1= Antenna VSWR 2= Pre Amplifier VSWR 3=	-0.080	dB	U-shaped	0.060
combined standard uncertainty Ue(y)	0.403			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	0.806			

Uncertainty of Radiated Emission Measurement (30MHz ~ 1,000MHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1727	dB	normal(k=1)	0.1727
Cable loss	0.1736	dB	normal(k=2)	0.0868
Antenna gain	0.1687	dB	normal(k=2)	0.0843
Site imperfection	0.4898	dB	Triangular	0.2
Pre-amplifier gain	0.3661	dB	normal(k=2)	0.183
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.5	dB	rectangular	0.2887
combined standard uncertainty Ue(y)	1.1434			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.2869			

Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1908	dB	normal(k=1)	0.1908
Cable loss	0.1685	dB	normal(k=2)	0.0843
Antenna gain	0.1912	dB	normal(k=2)	0.0956
Site imperfection	1.3091	dB	Triangular	0.5344
Pre-amplifier gain	0.3043	dB	normal(k=2)	0.1521
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.8	dB	rectangular	0.4619
combined standard uncertainty Ue(y)	1.2965			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.593			

Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1864	dB	normal(k=1)	0.1864
Cable loss	0.1666	dB	normal(k=2)	0.0833
Antenna gain	0.1904	dB	normal(k=2)	0.0952
Site imperfection	0.4882	dB	Triangular	0.1993
Pre-amplifier gain	0.2688	dB	normal(k=2)	0.1344
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.8	dB	rectangular	0.4619
combined standard uncertainty Ue(y)	1.1874			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.3749			