FCC RADIO TEST REPORT

according to

47 CFR FCC Part 15 Subpart C § 15.247

Equipment	:	**TG789vn v3**
Model No.	:	**DSLCBA643PU**
Filing Type	:	**New Application**
FCC ID	:	**RSE-TG789VNV3**
Trade Name	:	**THOMSON, Technicolor**
Applicant	:	**Thomson Telecom 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** and **47 CFR FCC Part 15 Subpart C**.

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

Testing Laboratory
1190

SPORTON International Inc.

6F, No. 106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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History of This Test Report

Original Issue Date: Aug. 31, 2011

Report No.: FR141516

■ No additional attachment.

□ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

Certificate No.: CB10008103

CERTIFICATE OF COMPLIANCE

according to

47 CFR FCC Part 15 Subpart C § 15.247

Equipment : TG789vn v3
Model No. : DSLCBA643PU
Trade Name : THOMSON, Technicolor
Applicant : Thomson Telecom Belgium
Prins Boudewijnlaan 47 B-2650 Edegem Belgium

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

Jordan Hsiao 2011-8-31

Jordan Hsiao

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1 SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
3.1	15.207	AC Power Line Conducted Emissions	Complies	21.02 dB
3.3	15.247(b)(3)	Peak Output Power	Complies	4.19 dB
3.4	-	Average Output Power	Complies	-
3.5	15.247(e)	Power Spectral Density	Complies	9.08 dB
3.6	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
3.7	15.247(d)	Radiated Emissions	Complies	1.08 dB
3.9	15.247(d)	Band Edge Emissions	Complies	0.04 dB
3.10	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Peak Conducted Output Power	±0.8dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
6dB Spectrum Bandwidth	$\pm 8.5\times10^{-8}$	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7℃	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

1.1 Information provided by the manufacturer

The WLAN circuit of the following products is identical to TG789vn v3 but with lesser functions & components equipped or with minor modifications.

Therefore, the following variant products that existed at the time of the qualification of the TG789vn v3 can also be covered by this test report:

Interface Availability

Interface / Model	**DC 12Vdc , 2A**	**Phone**	**PSTN**	**DSL** (ADSL2+, VDSL2 17a:)	**WAN** (10/100/ 1000Mbps)	**Ethernet** (10/100 Mbps)	**USB 2. 0**	**WLAN IEEE 802.11b/g/n**
TG789vn v3 (EUT)	●	●(2 port)	●(1 port)	●(DSL over POTS)	●(1 port)	●(4 port)	●(2 port)	●
TG788vn	●	●(2 port)	○	●(DSL over POTS)	○	●(4 port)	●(2 port)	●
TG589vn v2	●	○	○	●(DSL over POTS)	○	●(4 port)	●(2 port)	●

● : Equipped

○ : Not Equipped

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 Type	IEEE 802.11b/g: WLAN (1TX, 2RX) IEEE 802.11n (MCS0): WLAN (1TX, 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	DSSS (DBPSK / DQPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	IEEE 802.11b: DSSS (1) IEEE 802.11g: OFDM (6) IEEE 802.11n: 20MHz bandwidth: OFDM (MCS0: 6.5 / MCS8: 13) 40MHz bandwidth: OFDM (MCS0: 13.5 / MCS8: 27)
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11b/g/n: 11
Channel Band Width (99%)	11b: 10.28 MHz ; 11g: 16.40 MHz ; 11n (20MHz): 17.52 MHz ; 11n (40MHz): 36.24 MHz
Conducted Output Power	11b: 24.49 dBm ; 11g: 25.81 dBm ; 11n (20MHz): 28.41 dBm ; 11n (40MHz): 24.67 dBm

2.2 Accessories

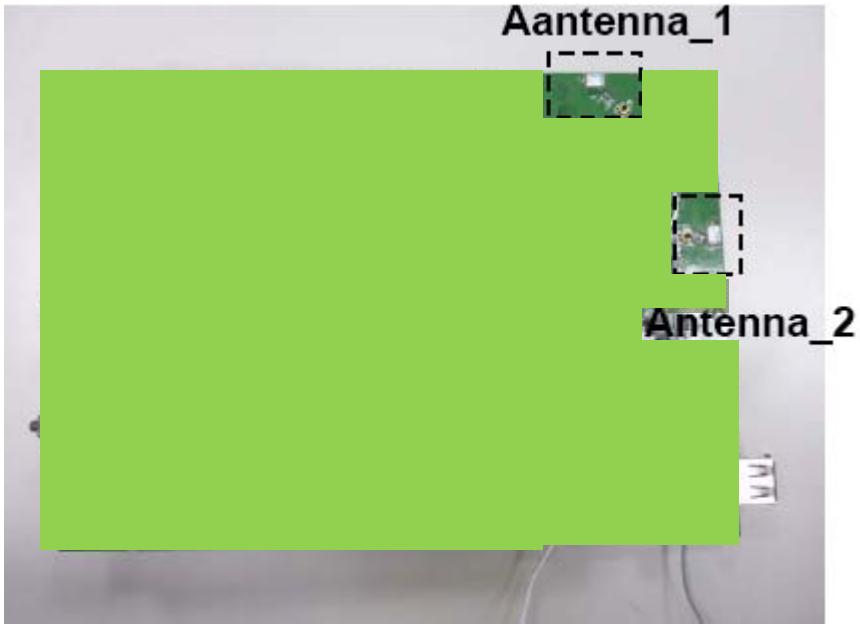
Power	Brand	Model	Rating
Switching-Type Power Adapter	AcBel	WAA012	Input:100-120V, 60Hz 0.6A Output: 12V, 2A

2.3 Table for Filed Antenna

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	X	X
802.11n	V	V	V	V

Frequency	Antenna Gain (dBi)			
	Ant. 1 (WJ1)		Ant. 2 (WJ2)	
	20MHz	40MHz	20MHz	40MHz
2412MHz	3.05	-	2.01	-
2422MHz	-	2.84	-	1.80
2437MHz	2.76	2.76	1.36	1.36
2452MHz	-	2.70	-	1.50
2462MHz	2.50	-	1.31	-



IEEE 802.11n Modulation Scheme

MCS Index	Nss	Modulation	R	NBPSC	NCBPS	NDBPS	Data rate(Mbps)
							800nsGI
					20MHz	20MHz	20MHz
0	1	BPSK	1/2	1	52	26	6.5
1	1	QPSK	1/2	2	104	52	13.0
2	1	QPSK	3/4	2	104	78	19.5
3	1	16-QAM	1/2	4	208	104	26.0
4	1	16-QAM	3/4	4	208	156	39.0
5	1	64-QAM	2/3	6	312	208	52.0
6	1	64-QAM	3/4	6	312	234	58.5
7	1	64-QAM	5/6	6	312	260	65.0
8	2	BPSK	1/2	1	104	52	13.0
9	2	QPSK	1/2	2	208	104	26.0
10	2	QPSK	3/4	2	208	156	39.0
11	2	16-QAM	1/2	4	416	208	52.0
12	2	16-QAM	3/4	4	416	312	78.0
13	2	64-QAM	2/3	6	624	416	104.0
14	2	64-QAM	3/4	6	624	468	117.0
15	2	64-QAM	5/6	6	624	520	130.0

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

2.4 Table for Carrier Frequencies

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

2.5 Table for Test Modes

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

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

Note: CTX = continuously transmitting

2.6 Table for Testing Locations

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

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

2.7 Table for Supporting Units

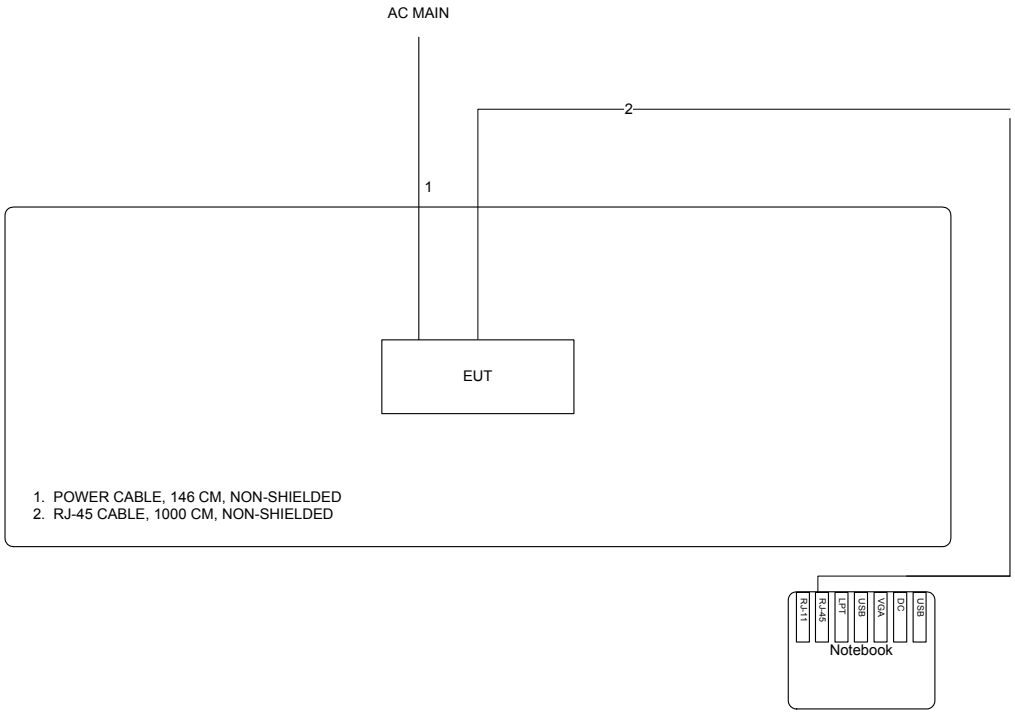
Support Unit	Brand	Model	FCC ID
Notebook	DELL	D400	E2K24GBRL

2.8 EUT Operation during Test

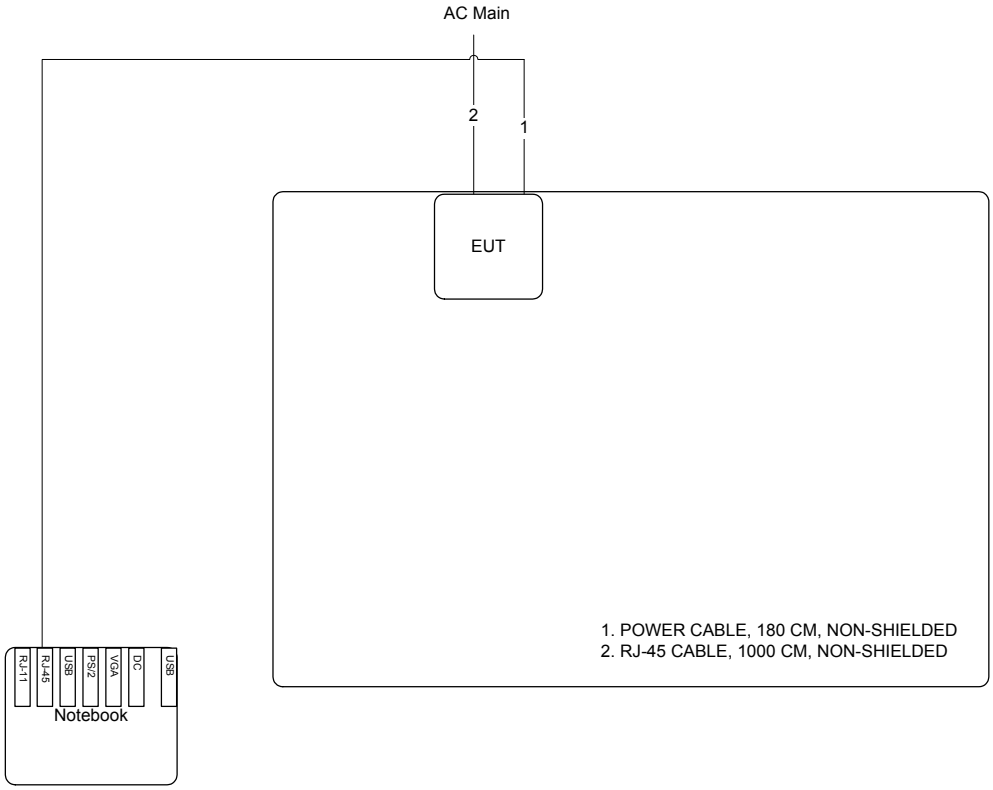
During the test, “DOS” under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

2.9 Test Configuration

2.9.1 Radiation Emissions Test Configuration



2.9.2 AC Power Line Conduction Emissions Test Configuration



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

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.

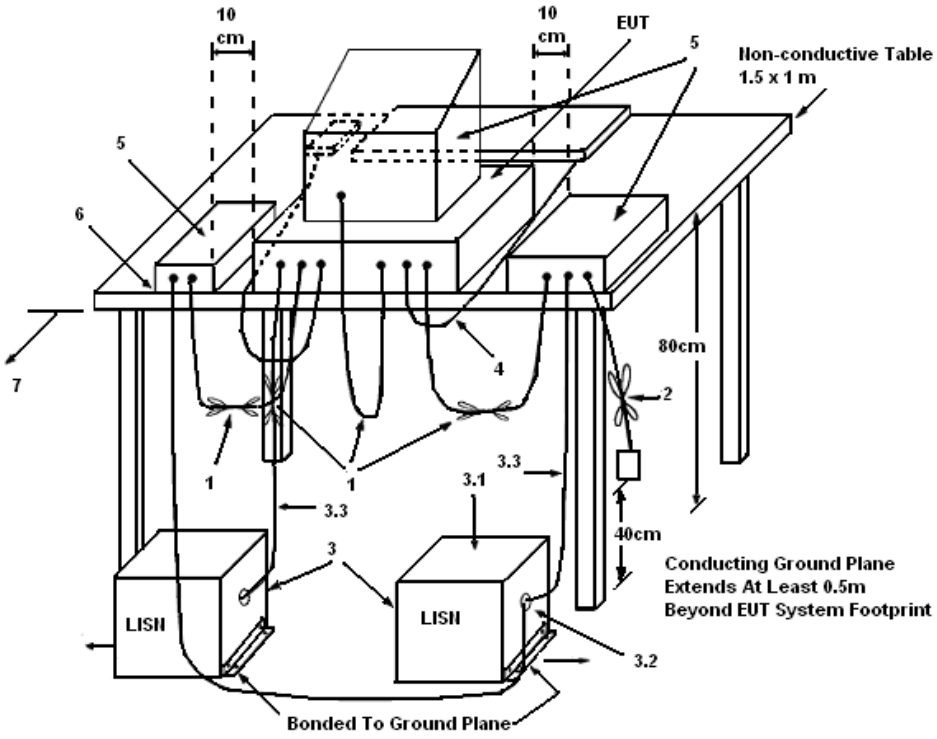
Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN). All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.

The frequency range from 150 KHz to 30 MHz was searched.

Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

3.1.5 Test Deviation

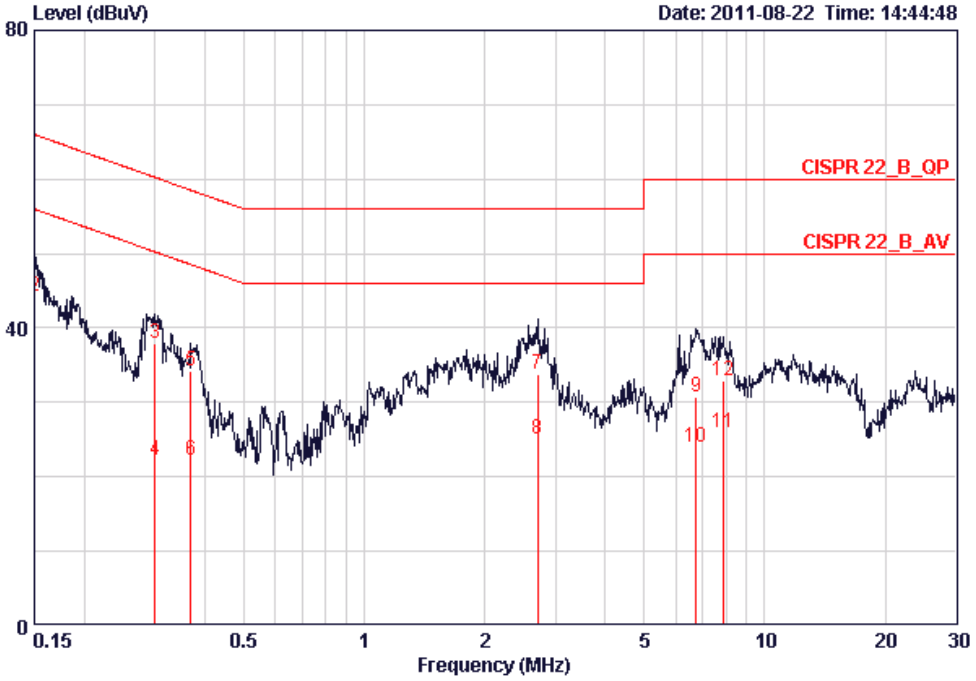
There is no deviation with the original standard.

3.1.6 EUT Operation during Test

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

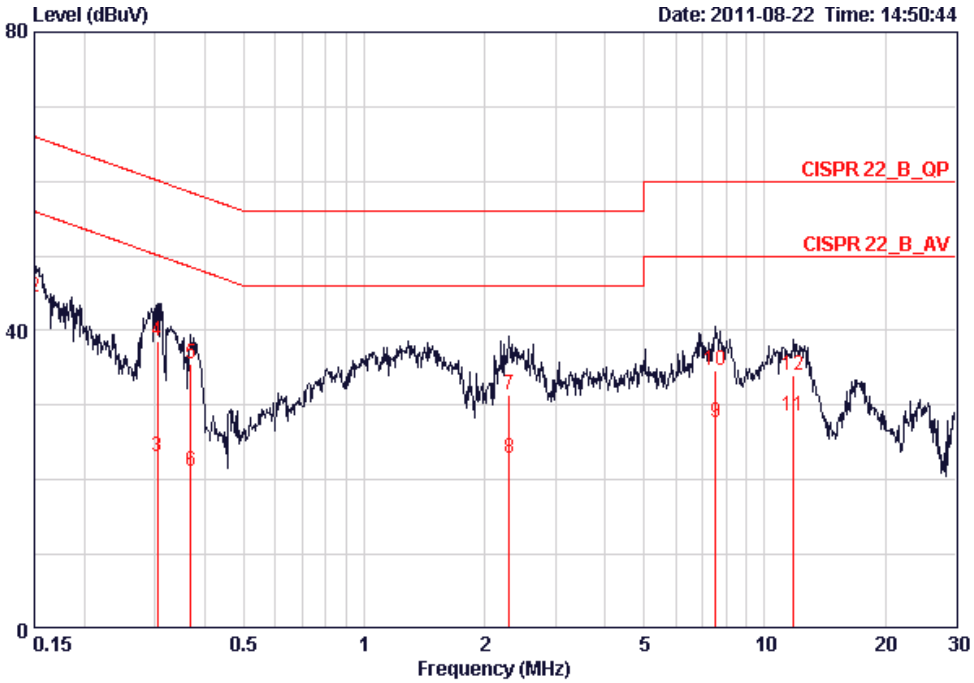
3.1.7 Results of AC Power Line Conducted Emissions Measurement

Temperature	24℃	**Humidity**	56%
Test Engineer	Sin Chang	**Phase**	Line
Configuration	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15000	29.74	-26.26	56.00	29.46	0.08	0.20	AVERAGE
2	0.15000	44.35	-21.65	66.00	44.07	0.08	0.20	QP
3	0.30028	37.91	-22.33	60.24	37.67	0.04	0.20	QP
4	0.30028	22.24	-28.00	50.24	22.00	0.04	0.20	AVERAGE
5	0.36920	34.32	-24.20	58.52	34.09	0.03	0.20	QP
6	0.36920	22.26	-26.26	48.52	22.03	0.03	0.20	AVERAGE
7	2.707	33.87	-22.13	56.00	33.60	0.07	0.20	QP
8 @	2.707	24.98	-21.02	46.00	24.71	0.07	0.20	AVERAGE
9	6.733	30.83	-29.17	60.00	30.25	0.24	0.34	QP
10	6.733	23.97	-26.03	50.00	23.39	0.24	0.34	AVERAGE
11	7.852	26.02	-23.98	50.00	25.34	0.28	0.40	AVERAGE
12	7.852	32.96	-27.04	60.00	32.28	0.28	0.40	QP

Temperature	24℃	**Humidity**	56%
Test Engineer	Sin Chang	**Phase**	Neutral
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15000	30.61	-25.39	56.00	30.30	0.11	0.20	AVERAGE
2	0.15000	44.50	-21.50	66.00	44.19	0.11	0.20	QP
3	0.30509	23.10	-27.00	50.10	22.83	0.07	0.20	AVERAGE
4	0.30509	38.57	-21.53	60.10	38.30	0.07	0.20	QP
5	0.36920	35.61	-22.91	58.52	35.34	0.07	0.20	QP
6	0.36920	21.24	-27.28	48.52	20.97	0.07	0.20	AVERAGE
7	2.297	31.48	-24.52	56.00	31.18	0.10	0.20	QP
8	2.297	22.90	-23.10	46.00	22.60	0.10	0.20	AVERAGE
9	7.526	27.76	-22.24	50.00	27.05	0.31	0.40	AVERAGE
10	7.526	34.60	-25.40	60.00	33.89	0.31	0.40	QP
11 @	11.807	28.55	-21.45	50.00	27.68	0.47	0.40	AVERAGE
12	11.807	34.08	-25.92	60.00	33.21	0.47	0.40	QP

Note: Level = Read Level + LISN Factor + Cable Loss.

3.2 Photographs of Conducted Power line Test Configuration

- The photographs show the configuration that generates the maximum emission.

FRONT VIEW **Please refer to RSE-TG789VNV3 Test Photo.**

REAR VIEW **Please refer to RSE-TG789VNV3 Test Photo.**

SIDE VIEW	**Please refer to RSE-TG789VNV3 Test Photo.**

3.3 Peak Output Power Measurement

3.3.1 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.

3.3.2 Measuring Instruments and Setting

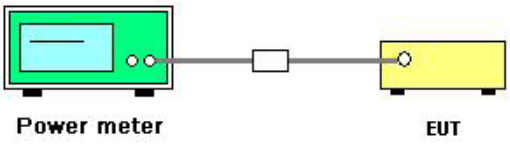
Please refer to section 5 of equipments list in this report. The following table is the setting of the peak power meter.

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

3.3.3 Test Procedures

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

3.3.4 Test Setup Layout



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 Peak Output Power

Test date	Aug. 23, 2011	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Sean Ku	**Configuration**	802.11b/g

<Ant. 1>

Configuration IEEE 802.11b

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	22.56	30.00	**Complies**
6	2437 MHz	23.65	30.00	**Complies**
11	2462 MHz	22.59	30.00	**Complies**

Configuration IEEE 802.11g

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	20.72	30.00	**Complies**
6	2437 MHz	25.71	30.00	**Complies**
11	2462 MHz	21.42	30.00	**Complies**

<Ant. 2>

Configuration IEEE 802.11b

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	23.61	30.00	**Complies**
6	2437 MHz	24.49	30.00	**Complies**
11	2462 MHz	22.87	30.00	**Complies**

Configuration IEEE 802.11g

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	22.73	30.00	**Complies**
6	2437 MHz	25.81	30.00	**Complies**
11	2462 MHz	23.15	30.00	**Complies**

Test date	Aug. 23, 2011	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Sean Ku	**Configuration**	802.11n

<Ant. 1>

Configuration of IEEE 802.11n MCS0 20MHz

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	21.15	30.00	**Complies**
6	2437 MHz	25.71	30.00	**Complies**
11	2462 MHz	20.28	30.00	**Complies**

<Ant. 2>

Configuration of IEEE 802.11n MCS0 20MHz

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	22.78	30.00	**Complies**
6	2437 MHz	25.80	30.00	**Complies**
11	2462 MHz	23.00	30.00	**Complies**

<Ant. 1 + Ant. 2>

Configuration of IEEE 802.11n MCS8 20MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
1	2412 MHz	20.17	21.33	23.80	30.00	**Complies**
6	2437 MHz	25.38	25.42	28.41	30.00	**Complies**
11	2462 MHz	21.32	22.31	24.85	30.00	**Complies**

For 802.11n MCS8 20MHz:

CH1: Total power = Ant. 1 + Ant. 2 = 20.17dBm + 21.33dBm = 103.99mW + 135.83mW = 239.82mW = 23.80dBm

CH6: Total power = Ant. 1 + Ant. 2 = 25.38dBm + 25.42dBm = 345.14mW + 348.34mW = 693.48mW = 28.41dBm

CH11: Total power = Ant. 1 + Ant. 2 = 21.32dBm + 22.31dBm = 135.52mW + 170.22mW = 305.74mW = 24.85dBm

<Ant. 1>

Configuration of IEEE 802.11n MCS0 40MHz

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	17.40	30.00	**Complies**
6	2437 MHz	21.28	30.00	**Complies**
9	2452 MHz	18.20	30.00	**Complies**

<Ant. 2>

Configuration of IEEE 802.11n MCS0 40MHz

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	19.71	30.00	**Complies**
6	2437 MHz	22.92	30.00	**Complies**
9	2452 MHz	21.88	30.00	**Complies**

<Ant. 1 + Ant. 2>

Configuration of IEEE 802.11n MCS8 40MHz

Channel	Frequency	Conducted Power (dBm)		Total Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2			
3	2422 MHz	18.32	19.50	21.96	30.00	**Complies**
6	2437 MHz	21.05	22.20	24.67	30.00	**Complies**
9	2452 MHz	19.42	20.78	23.16	30.00	**Complies**

For 802.11n MCS8 40MHz:

CH1: Total power = Ant. 1 + Ant. 2 = 18.32dBm + 19.50dBm = 67.92mW + 89.13mW = 157.05mW = 21.96dBm

CH6: Total power = Ant. 1 + Ant. 2 = 21.05dBm + 22.20dBm = 127.35mW + 165.96mW = 293.31mW = 24.67dBm

CH11: Total power = Ant. 1 + Ant. 2 = 19.42dBm + 20.78dBm = 87.50mW + 119.67mW = 207.17mW = 23.16dBm

3.4 Average Output Power Measurement

3.4.1 Measuring Instruments and Setting

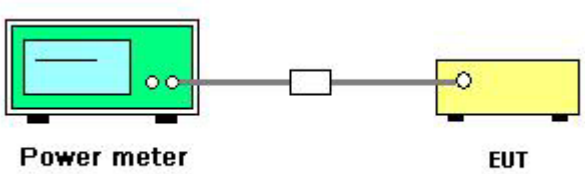
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

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

3.4.2 Test Procedures

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

3.4.3 Test Setup Layout



3.4.4 Test Deviation

There is no deviation with the original standard.

3.4.5 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

Note: Average output power is only for Maximum Permissible Exposure use.

3.4.6 Test Result of Average Output Power

Test date	Aug. 23, 2011	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Sean Ku	**Configuration**	802.11b/g

<Ant. 1>

Configuration IEEE 802.11b

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	18.78
6	2437 MHz	19.86
11	2462 MHz	18.77

Configuration IEEE 802.11g

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	11.17
6	2437 MHz	18.94
11	2462 MHz	12.04

<Ant. 2>

Configuration IEEE 802.11b

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	19.96
6	2437 MHz	20.94
11	2462 MHz	19.22

Configuration IEEE 802.11g

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	13.42
6	2437 MHz	20.29
11	2462 MHz	13.99

Test date	Aug. 23, 2011	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Sean Ku	**Configuration**	802.11n

<Ant. 1>

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	11.35
6	2437 MHz	19.44
11	2462 MHz	10.63

<Ant. 2>

Configuration IEEE 802.11n MCS0 20MHz

Channel	Frequency	Average Conducted Power (dBm)
1	2412 MHz	13.17
6	2437 MHz	20.41
11	2462 MHz	13.35

<Ant. 1 + Ant. 2>

Configuration IEEE 802.11n MCS8 20MHz

Channel	Frequency	Average Conducted Power (dBm)		
		Ant. 1	Ant. 2	Total
1	2412 MHz	10.85	11.08	13.98
6	2437 MHz	19.34	20.06	22.73
11	2462 MHz	11.98	13.00	15.53

For 802.11n MCS8 20MHz:

CH1: Total power = Ant. 1 + Ant. 2 = 10.85dBm + 11.08dBm = 12.16mW + 12.82mW = 24.98mW = 13.98dBm

CH6: Total power = Ant. 1 + Ant. 2 = 19.34dBm + 20.06dBm = 85.90mW + 101.39mW = 187.29mW = 22.73dBm

CH11: Total power = Ant. 1 + Ant. 2 = 11.98dBm + 13.00dBm = 15.78mW + 19.95mW = 35.73mW = 15.53dBm

<Ant. 1>

Configuration IEEE 802.11n MCS8 40MHz

Channel	Frequency	Average Conducted Power (dBm)
3	2422 MHz	8.31
6	2437 MHz	12.31
9	2452 MHz	9.17

<Ant. 2>

Configuration IEEE 802.11n MCS0 40MHz

Channel	Frequency	Average Conducted Power (dBm)
3	2422 MHz	10.65
6	2437 MHz	14.03
9	2452 MHz	12.92

<Ant. 1 + Ant. 2>

Configuration IEEE 802.11n MCS8 40MHz

Channel	Frequency	Average Conducted Power (dBm)		
		Ant. 1	Ant. 2	Total
3	2422 MHz	9.06	10.21	12.68
6	2437 MHz	12.09	13.33	15.76
9	2452 MHz	10.13	11.60	13.94

For 802.11n MCS8 40MHz:

CH1: Total power = Ant. 1 + Ant. 2 = 9.06dBm + 10.21dBm = 8.05mW + 10.50mW = 18.55mW = 12.68dBm

CH6: Total power = Ant. 1 + Ant. 2 = 12.09dBm + 13.33dBm = 16.18mW + 21.53mW = 37.71mW = 15.76dBm

CH11: Total power = Ant. 1 + Ant. 2 = 10.13dBm + 11.60dBm = 10.30mW + 14.45mW = 24.75mW = 13.94dBm

3.5 Power Spectral Density Measurement

3.5.1 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.

3.5.2 Measuring Instruments and Setting

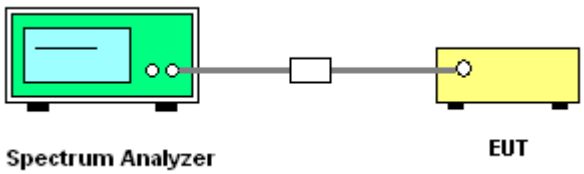
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	30MHz
RB	3 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	10s

3.5.3 Test Procedures

The transmitter output (antenna port) was connected to the spectrum analyzer.
Set RBW of spectrum analyzer to 3 kHz and VBW to 30 kHz. Set Detector to Peak, Trace to Max Hold.
Mark the frequency with maximum peak power as the center of the display of the spectrum.
Set the span to 30MHz and the sweep time to 10s and record the maximum peak value.

3.5.4 Test Setup Layout



3.5.5 Test Deviation

There is no deviation with the original standard.

3.5.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.5.7 Test Result of Power Spectral Density

Test date	Aug. 23, 2011	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Sean Ku	**Configuration**	802.11b/g

<Ant. 1>

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-3.48	8.00	**Complies**
6	2437 MHz	-1.81	8.00	**Complies**
11	2462 MHz	-3.48	8.00	**Complies**

Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-12.26	8.00	**Complies**
6	2437 MHz	-4.49	8.00	**Complies**
11	2462 MHz	-11.47	8.00	**Complies**

<Ant. 2>

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-2.96	8.00	**Complies**
6	2437 MHz	-1.92	8.00	**Complies**
11	2462 MHz	-3.28	8.00	**Complies**

Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-11.33	8.00	**Complies**
6	2437 MHz	-4.92	8.00	**Complies**
11	2462 MHz	-10.35	8.00	**Complies**

Test date	Aug. 23, 2011	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Sean Ku	**Configuration**	802.11n

<Ant. 1>

Configuration of IEEE 802.11n MCS0 20MHz

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-13.52	8.00	**Complies**
6	2437 MHz	-6.49	8.00	**Complies**
11	2462 MHz	-13.69	8.00	**Complies**

<Ant. 2>

Configuration of IEEE 802.11n MCS0 20MHz

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-10.75	8.00	**Complies**
6	2437 MHz	-3.96	8.00	**Complies**
11	2462 MHz	-11.53	8.00	**Complies**

<Ant. 1 + Ant. 2>

Configuration of IEEE 802.11n MCS8 20MHz

Channel	Frequency	Power Density (dBm/3kHz)		Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2			
1	2412 MHz	-12.17	-10.69	-8.36	8.00	**Complies**
6	2437 MHz	-5.03	-3.32	-1.08	8.00	**Complies**
11	2462 MHz	-11.68	-10.78	-8.20	8.00	**Complies**

<Ant. 1>

Configuration of IEEE 802.11n MCS0 40MHz

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	-19.10	8.00	**Complies**
6	2437 MHz	-14.84	8.00	**Complies**
9	2452 MHz	-15.10	8.00	**Complies**

<Ant. 2>

Configuration of IEEE 802.11n MCS0 40MHz

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	-16.90	8.00	**Complies**
6	2437 MHz	-12.29	8.00	**Complies**
9	2452 MHz	-16.88	8.00	**Complies**

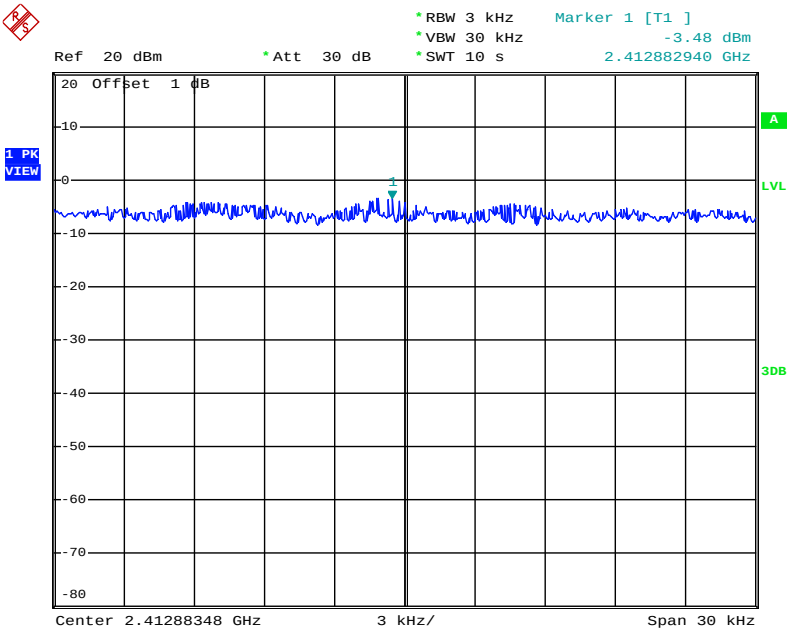
<Ant. 1 + Ant. 2>

Configuration of IEEE 802.11n MCS8 40MHz

Channel	Frequency	Power Density (dBm/3kHz)		Total Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
		Ant. 1	Ant. 2			
3	2422 MHz	-19.60	-15.96	-14.40	8.00	**Complies**
6	2437 MHz	-14.73	-13.17	-10.87	8.00	**Complies**
9	2452 MHz	-16.75	-14.02	-12.16	8.00	**Complies**

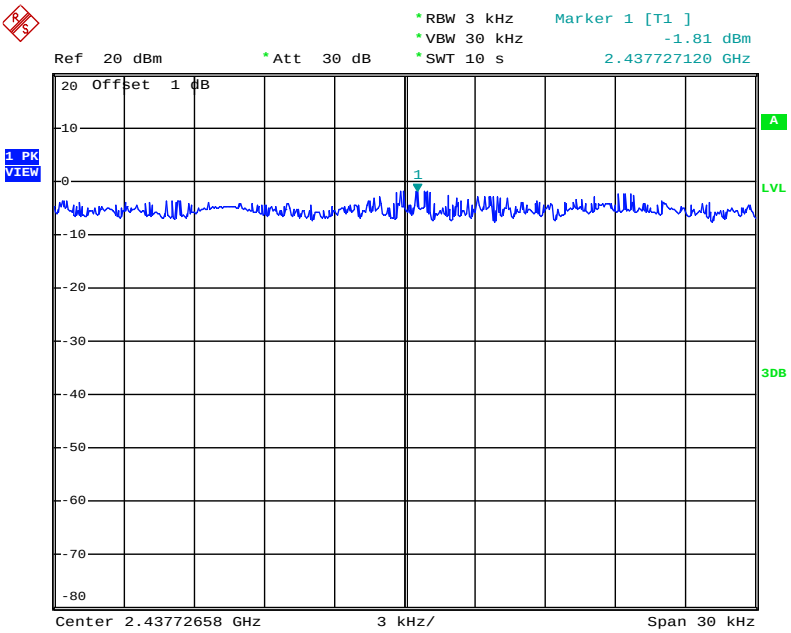
<Ant. 1>

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz



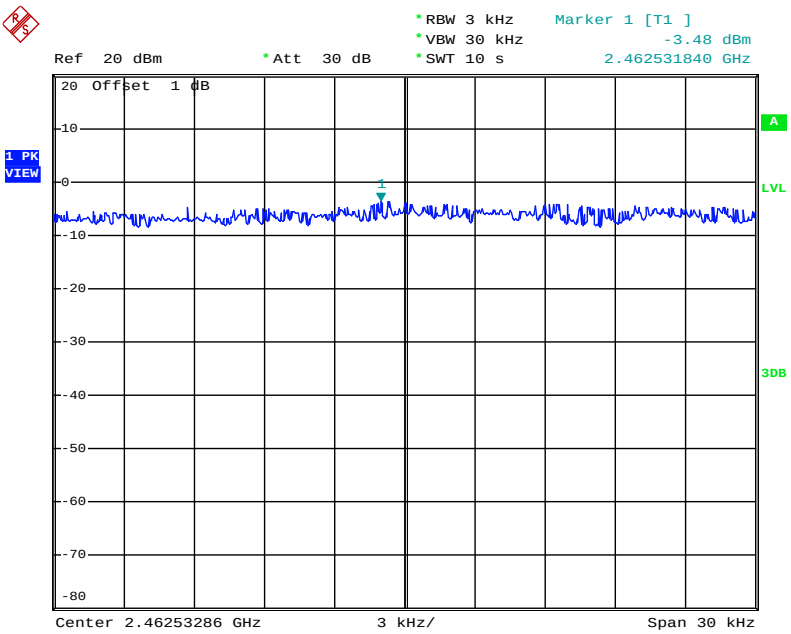
Date: 23.AUG.2011 10:47:42

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz



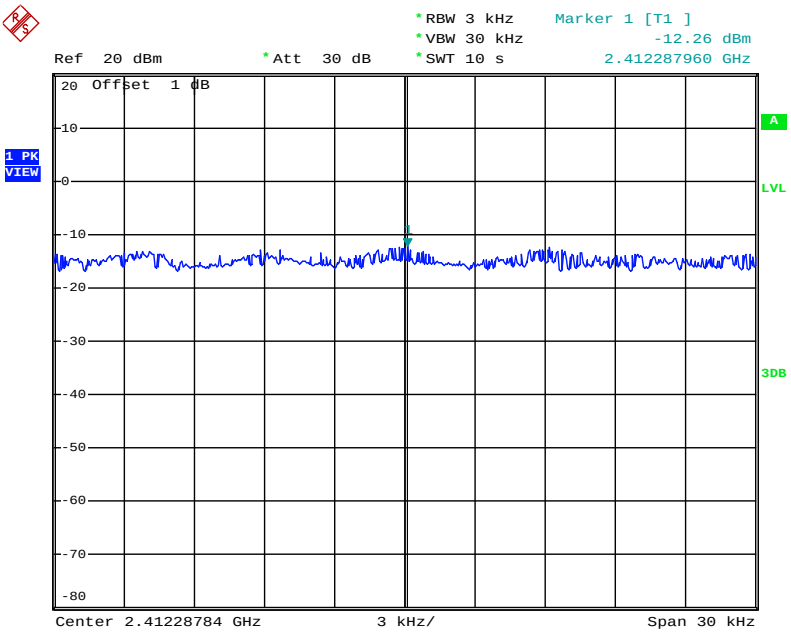
Date: 23.AUG.2011 10:49:25

Power Density Plot on Configuration IEEE 802.11b / 2462 MHz



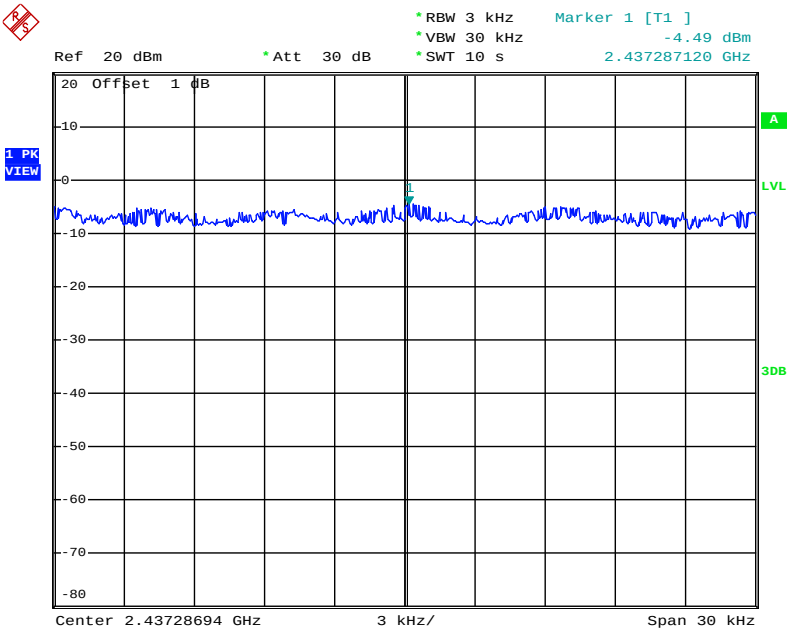
Date: 23.AUG.2011 10:52:04

Power Density Plot on Configuration IEEE 802.11g / 2412 MHz



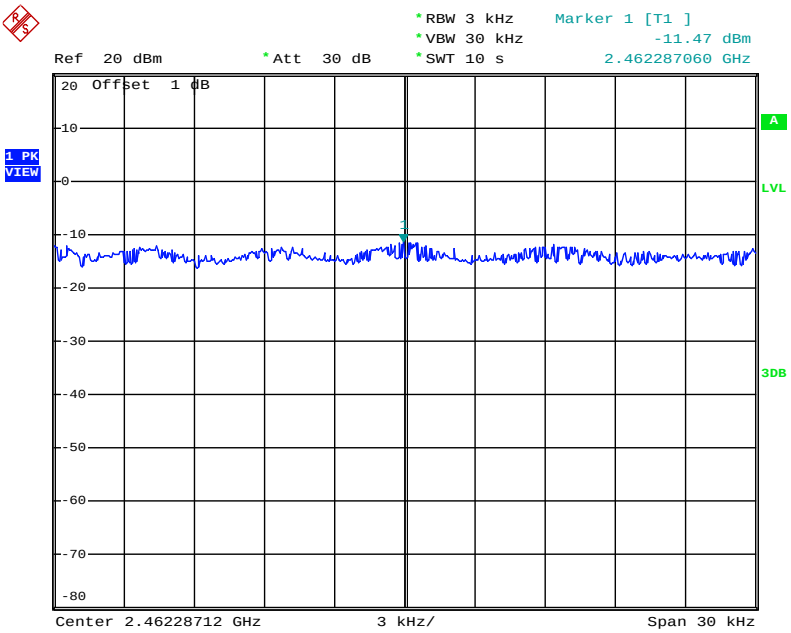
Date: 23.AUG.2011 11:00:58

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz



Date: 23.AUG.2011 10:58:00

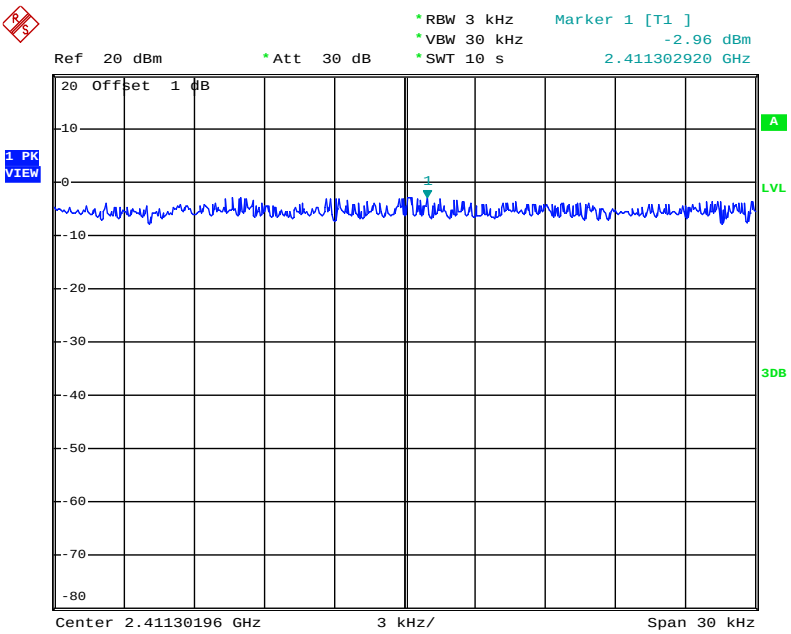
Power Density Plot on Configuration IEEE 802.11g / 2462 MHz



Date: 23.AUG.2011 10:54:27

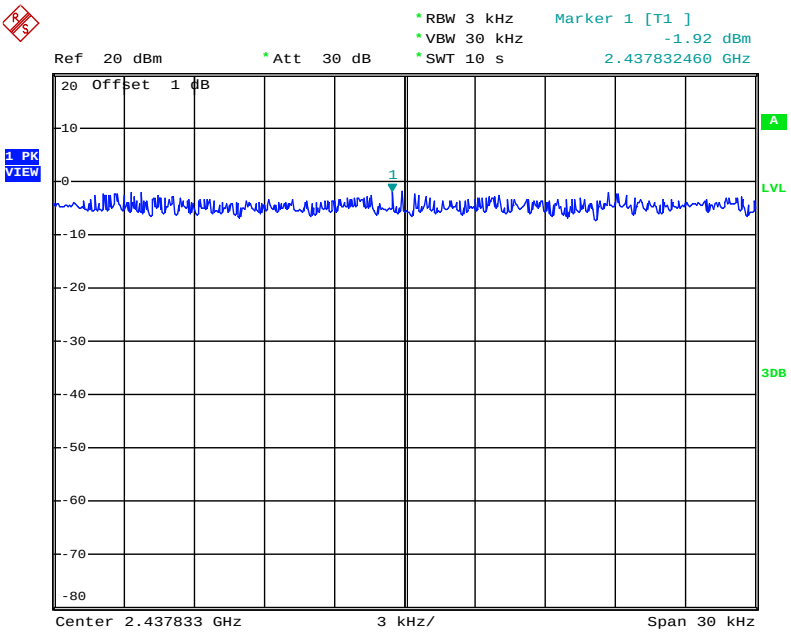
<Ant. 2>

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz



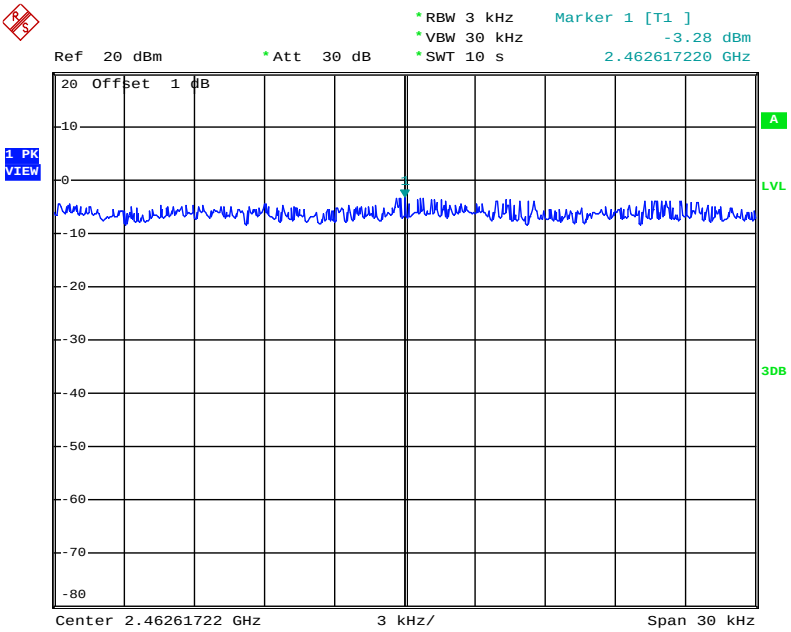
Date: 23.AUG.2011 11:28:50

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz



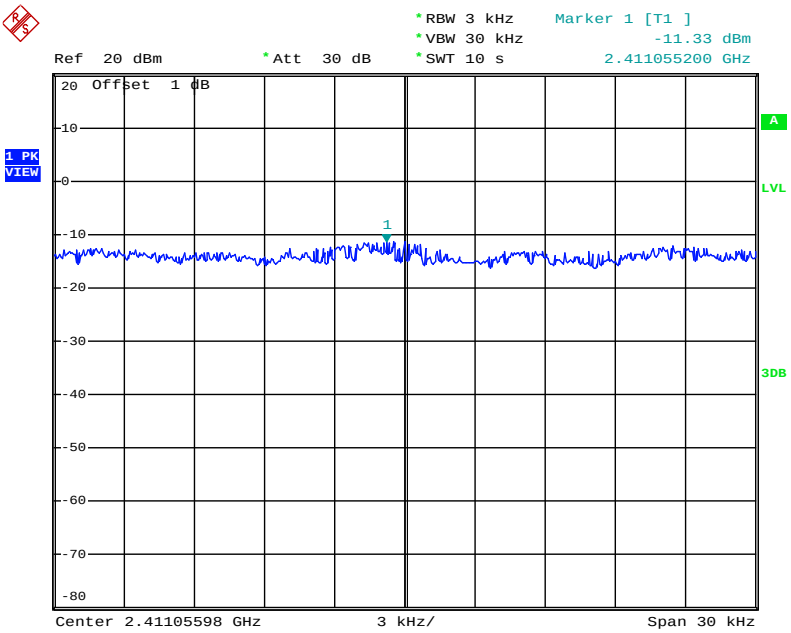
Date: 23.AUG.2011 11:32:05

Power Density Plot on Configuration IEEE 802.11b / 2462 MHz



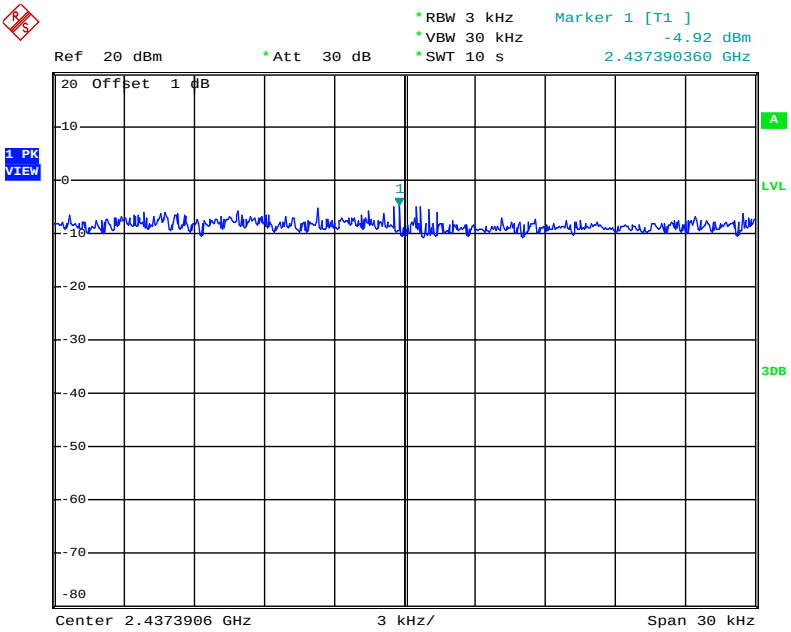
Date: 23.AUG.2011 11:37:30

Power Density Plot on Configuration IEEE 802.11g / 2412 MHz



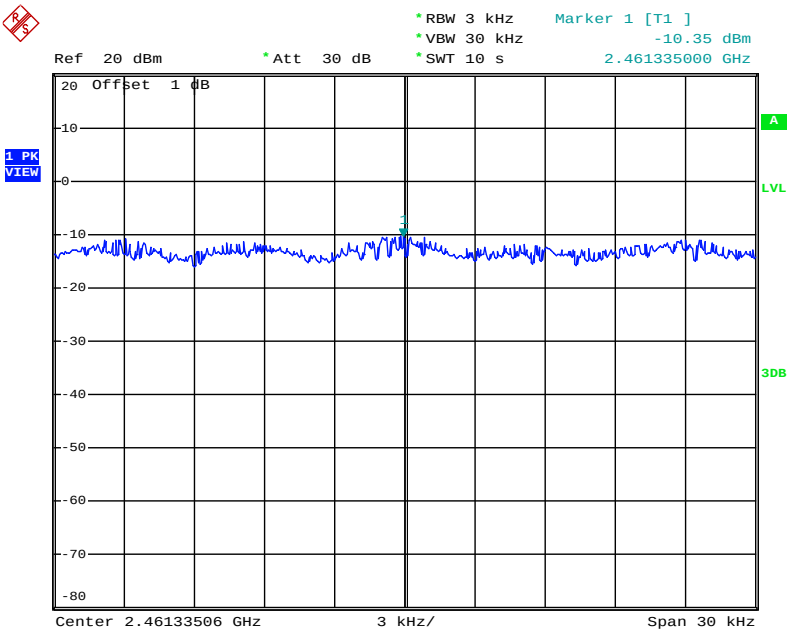
Date: 23.AUG.2011 11:51:37

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz



Date: 23.AUG.2011 11:49:30

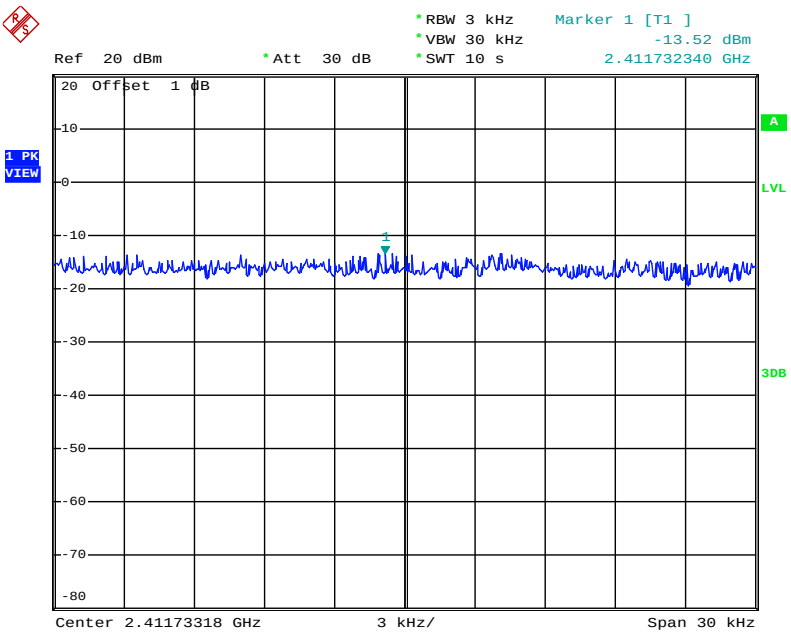
Power Density Plot on Configuration IEEE 802.11g / 2462 MHz



Date: 23.AUG.2011 11:45:39

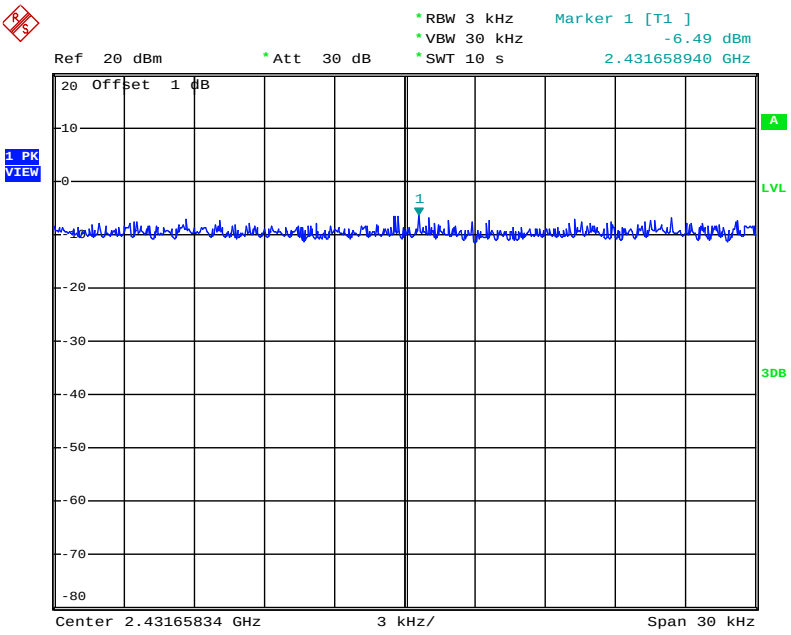
<Ant. 1>

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



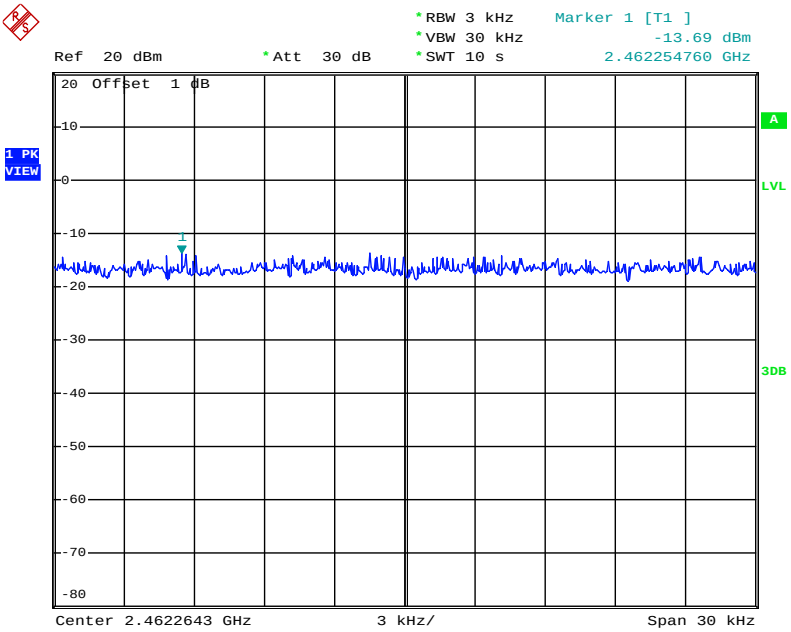
Date: 23.AUG.2011 11:03:45

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



Date: 23.AUG.2011 11:05:49

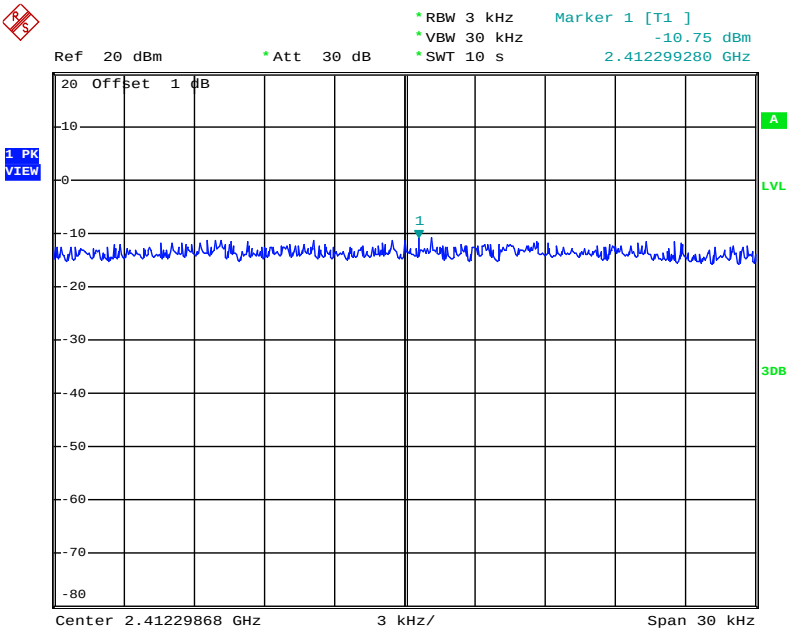
Power Density Plot on Configuration of IEEE 802.11n MCS0 20MHz / 2462 MHz



Date: 23.AUG.2011 11:07:50

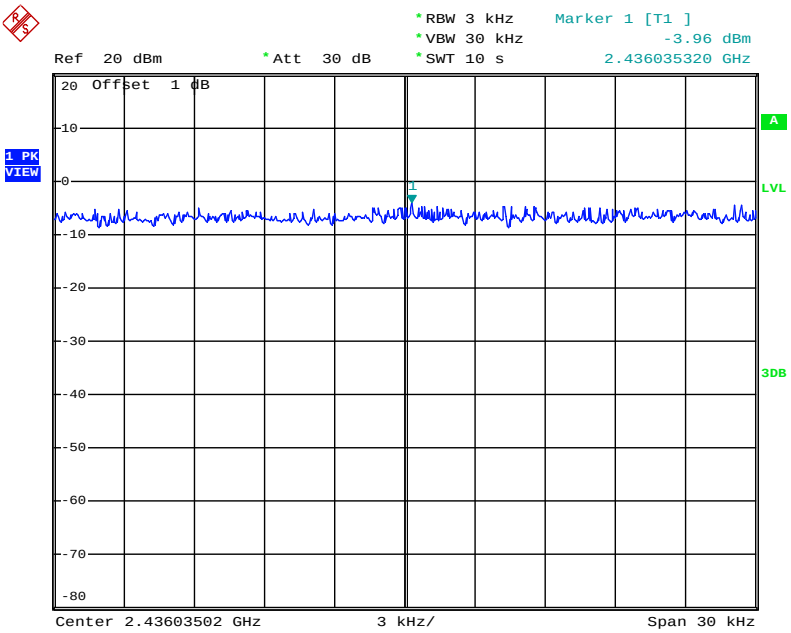
<Ant. 2>

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



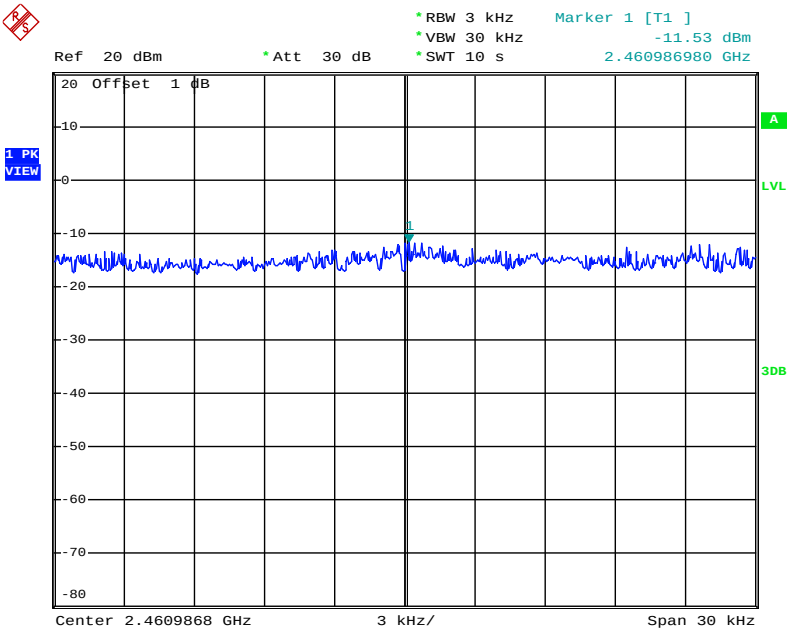
Date: 23.AUG.2011 13:31:16

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



Date: 23.AUG.2011 13:35:35

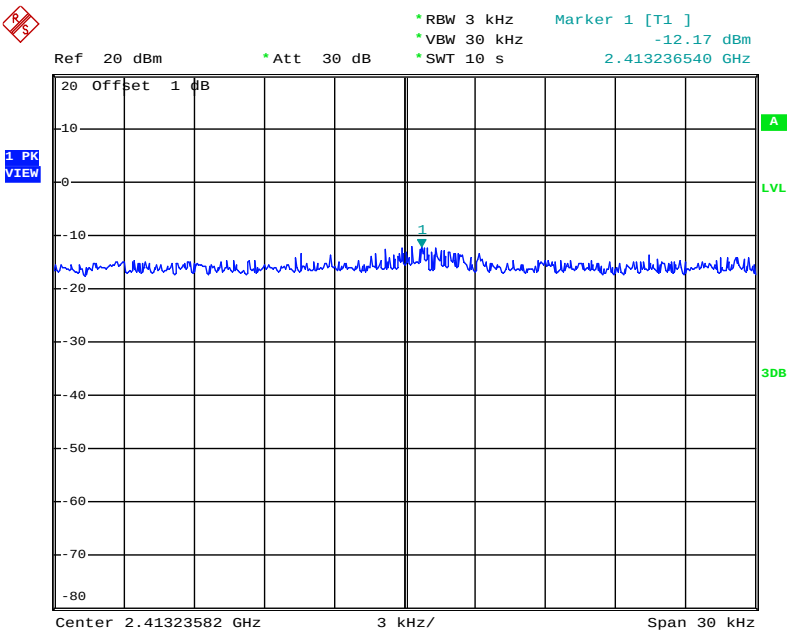
Power Density Plot on Configuration of IEEE 802.11n MCS0 20MHz / 2462 MHz



Date: 23.AUG.2011 13:41:07

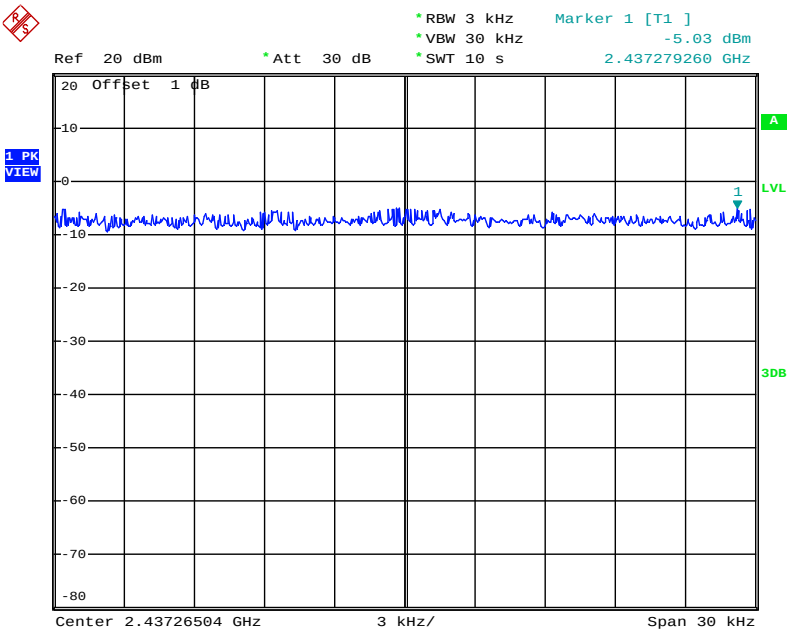
<Ant. 1>

Power Density Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2412 MHz



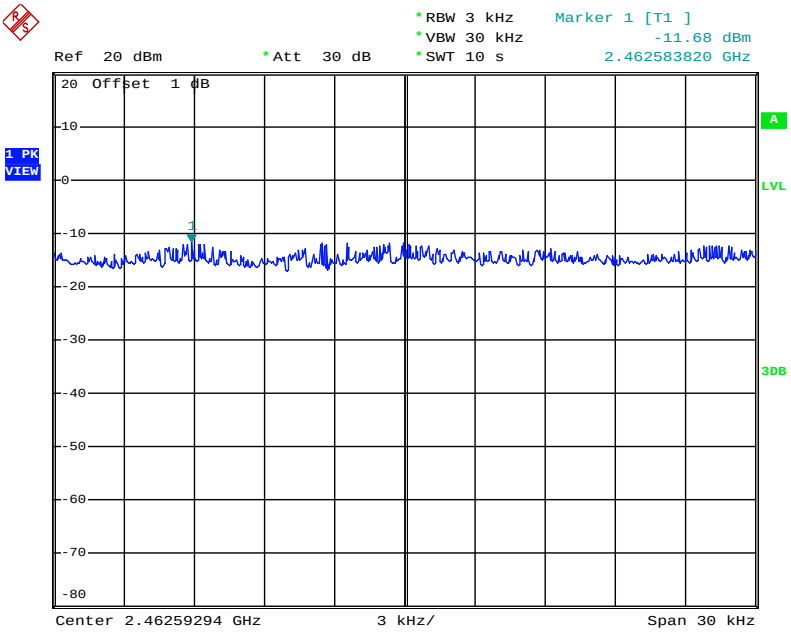
Date: 23.AUG.2011 14:36:23

Power Density Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2437 MHz



Date: 23.AUG.2011 14:38:43

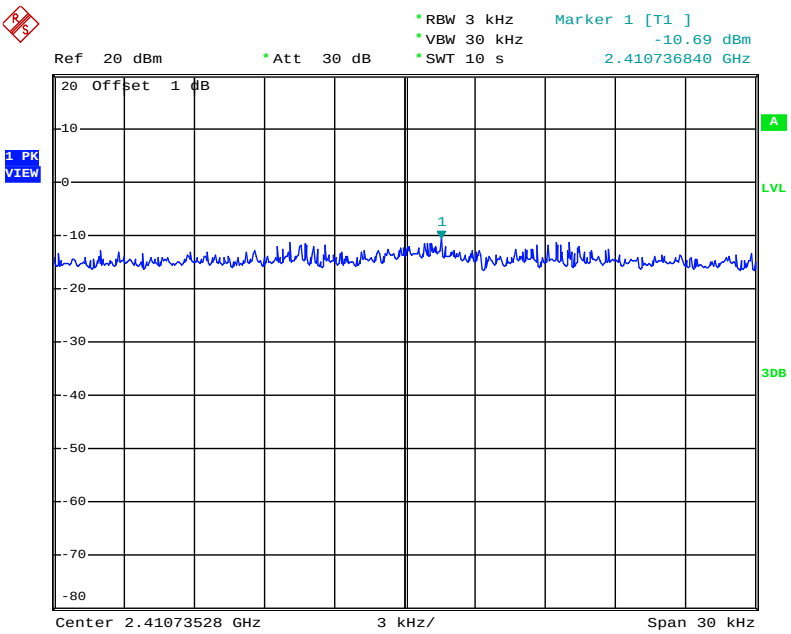
Power Density Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2462 MHz



Date: 23.AUG.2011 14:47:20

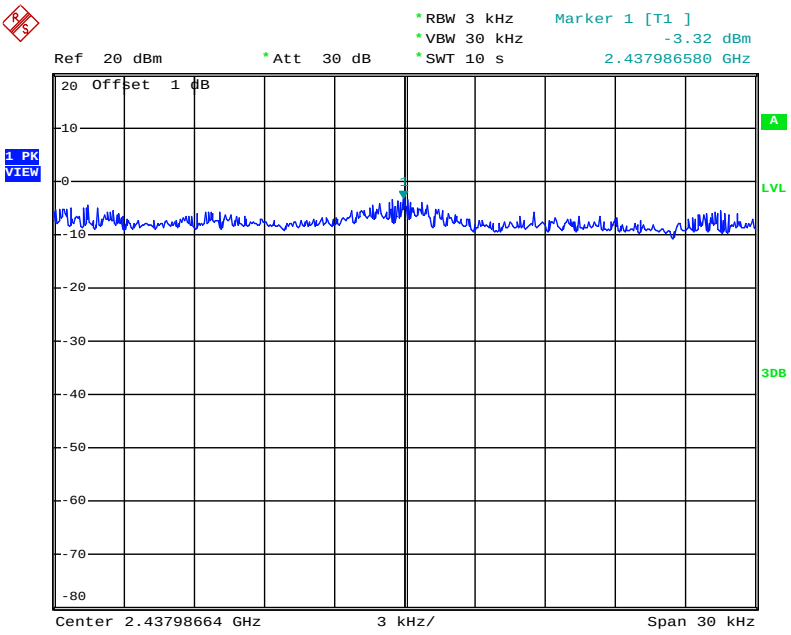
<Ant. 2>

Power Density Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2412 MHz



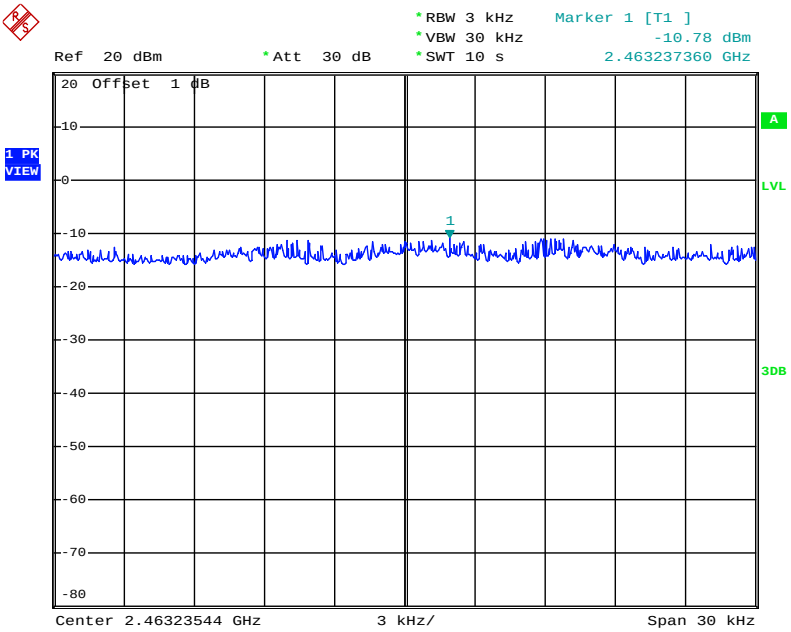
Date: 23.AUG.2011 14:34:10

Power Density Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2437 MHz



Date: 23.AUG.2011 14:40:50

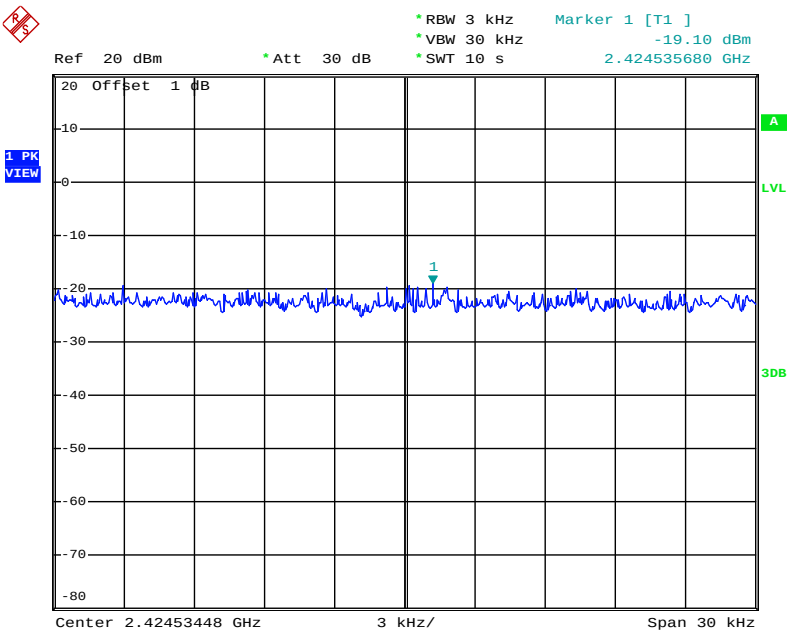
Power Density Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2462 MHz



Date: 23.AUG.2011 14:43:25

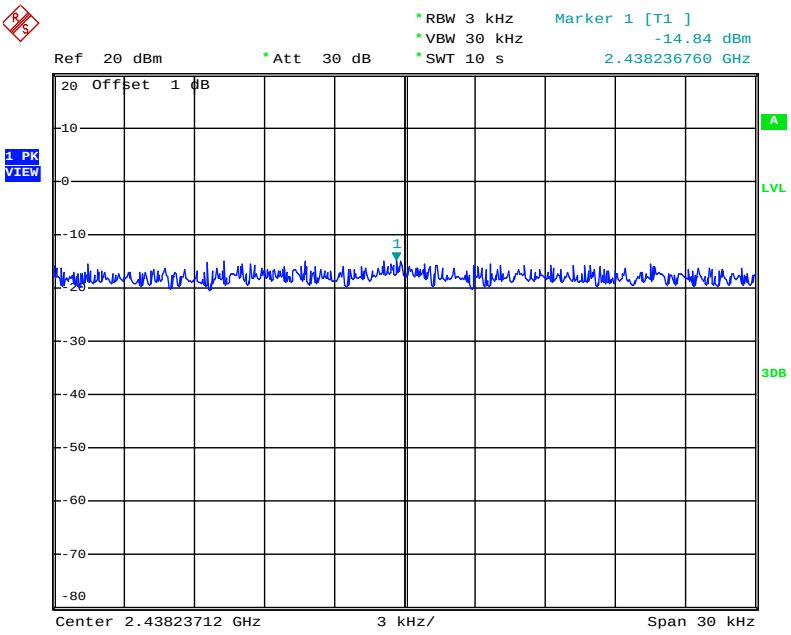
<Ant. 1>

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



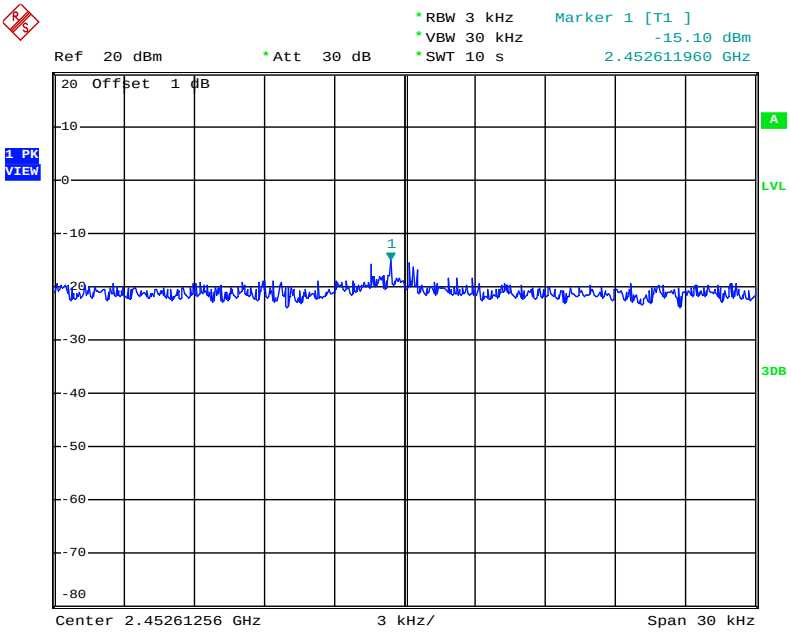
Date: 23.AUG.2011 11:12:20

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



Date: 23.AUG.2011 11:18:22

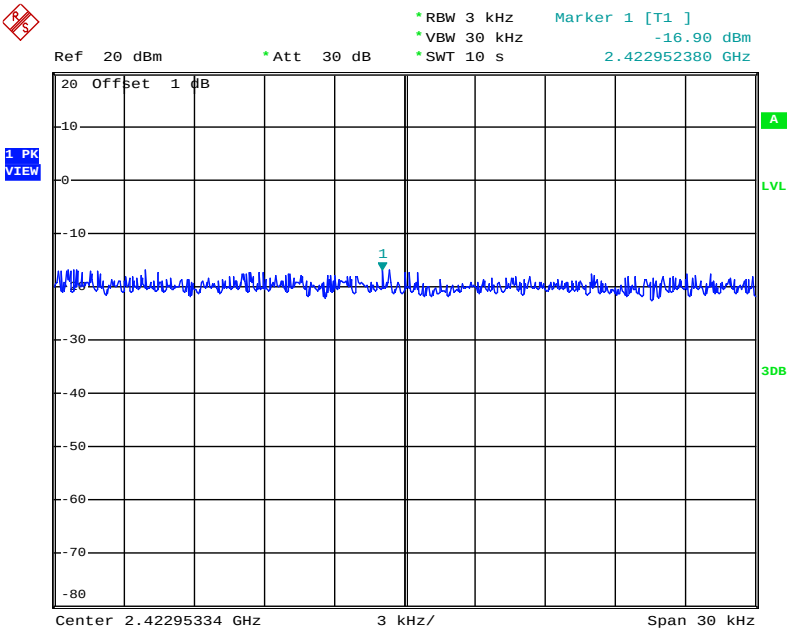
Power Density Plot on Configuration of IEEE 802.11n MCS0 40MHz / 2452 MHz



Date: 23.AUG.2011 11:20:23

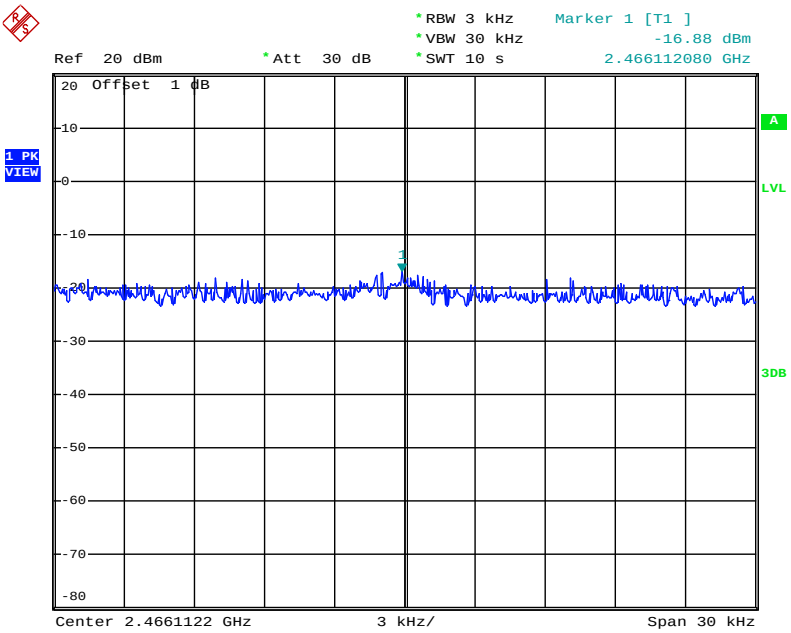
<Ant. 2>

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



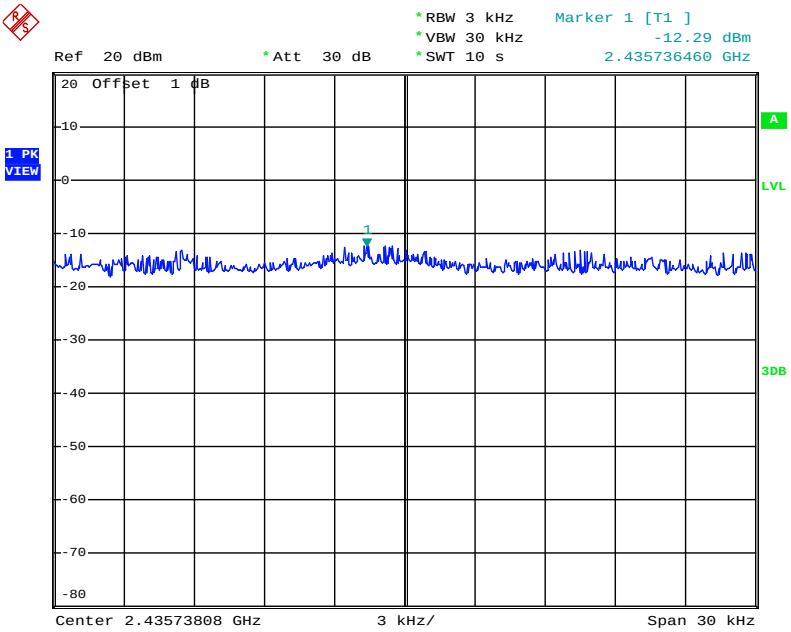
Date: 23.AUG.2011 13:45:00

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



Date: 23.AUG.2011 13:58:38

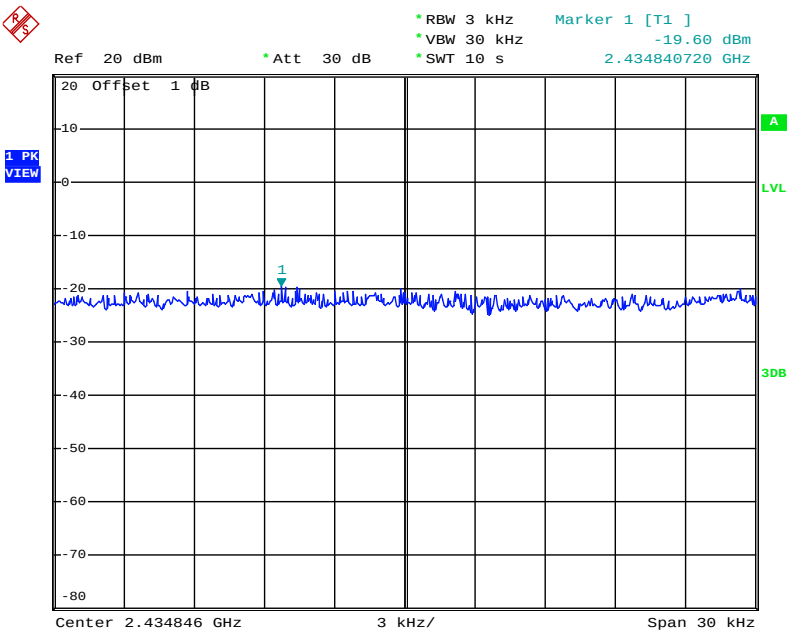
Power Density Plot on Configuration of IEEE 802.11n MCS0 40MHz / 2452 MHz



Date: 23.AUG.2011 13:50:02

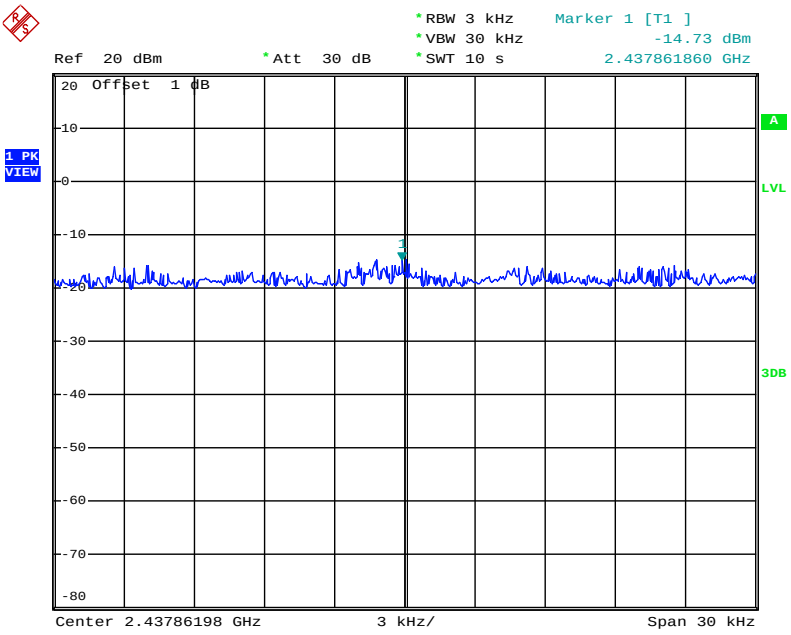
<Ant. 1>

Power Density Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2422 MHz



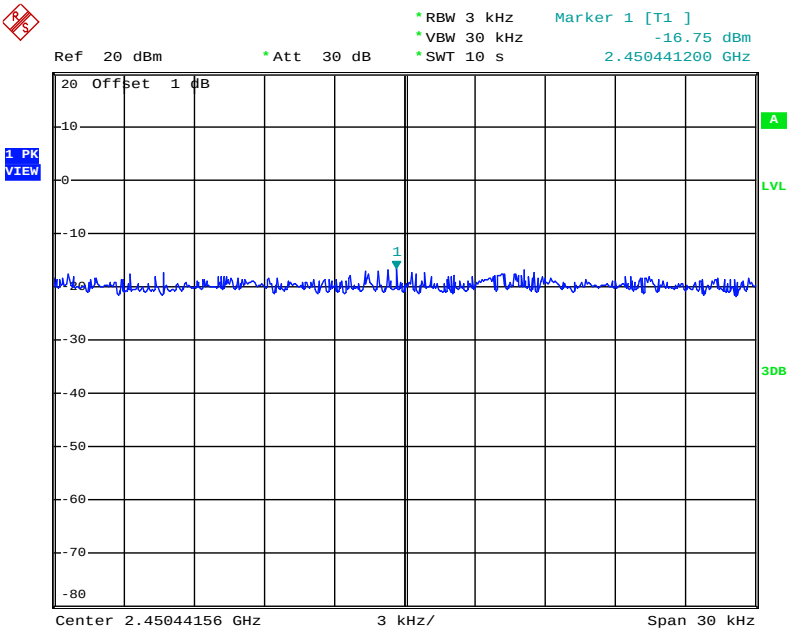
Date: 23.AUG.2011 14:28:47

Power Density Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2437 MHz



Date: 23.AUG.2011 14:25:32

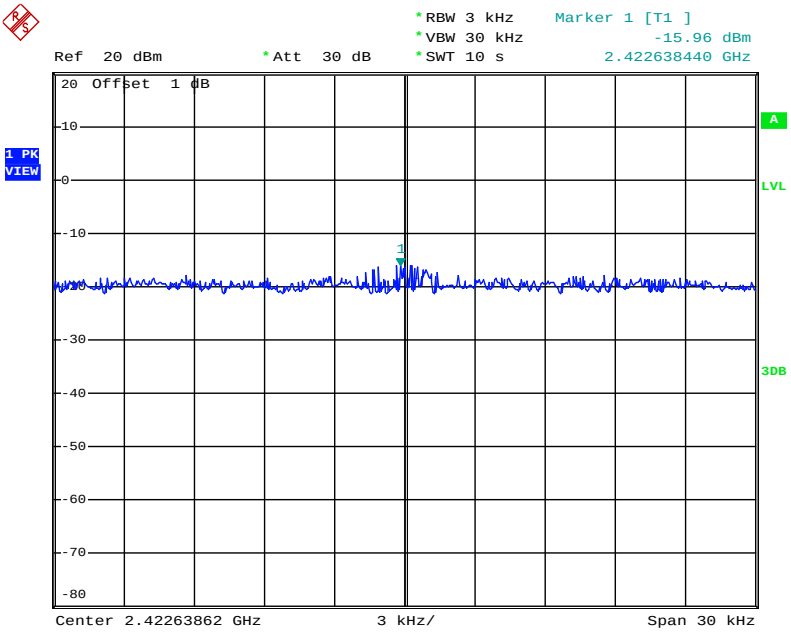
Power Density Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2452 MHz



Date: 23.AUG.2011 14:17:35

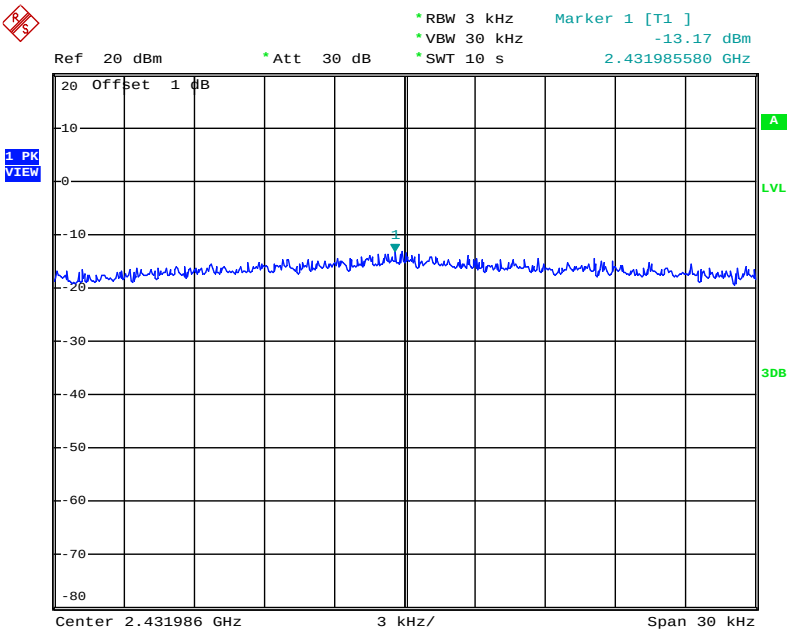
<Ant. 2>

Power Density Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2422 MHz



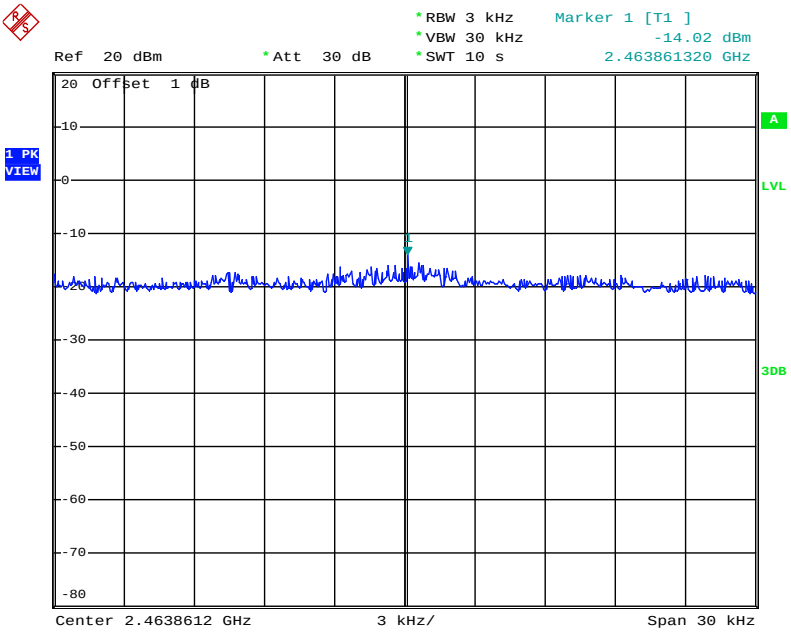
Date: 23.AUG.2011 14:31:34

Power Density Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2437 MHz



Date: 23.AUG.2011 14:22:53

Power Density Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2452 MHz



Date: 23.AUG.2011 14:19:47

3.6 6dB Spectrum Bandwidth Measurement

3.6.1 Limit

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

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

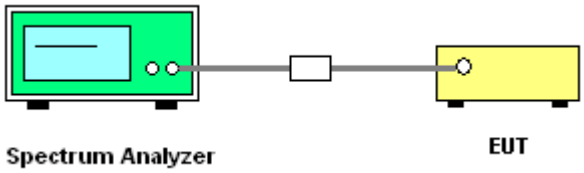
3.6.3 Test Procedures

The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.

The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were used.

Measured the spectrum width with power higher than 6dB below carrier.

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 6dB Spectrum Bandwidth

Test date	Aug. 23, 2011	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Sean Ku	**Configuration**	802.11b/g

<Ant. 1>

Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	8.08	10.12	500	**Complies**
6	2437 MHz	8.56	10.20	500	**Complies**
11	2462 MHz	8.08	10.12	500	**Complies**

Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	15.36	16.32	500	**Complies**
6	2437 MHz	15.12	16.32	500	**Complies**
11	2462 MHz	14.44	16.36	500	**Complies**

<Ant. 2>

Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	7.56	10.16	500	**Complies**
6	2437 MHz	8.12	10.28	500	**Complies**
11	2462 MHz	8.00	10.12	500	**Complies**

Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	15.12	16.32	500	**Complies**
6	2437 MHz	15.12	16.40	500	**Complies**
11	2462 MHz	14.48	16.32	500	**Complies**

Test date	Aug. 23, 2011	**Test Site No.**	TH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Sean Ku	**Configuration**	802.11n

<Ant. 1>

Configuration of IEEE 802.11n MCS0 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	15.00	17.48	500	**Complies**
6	2437 MHz	14.48	17.52	500	**Complies**
11	2462 MHz	15.08	17.52	500	**Complies**

<Ant. 2>

Configuration of IEEE 802.11n MCS0 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	14.80	17.52	500	**Complies**
6	2437 MHz	15.12	17.52	500	**Complies**
11	2462 MHz	15.04	17.52	500	**Complies**

<Ant. 1 + Ant. 2>

Configuration of IEEE 802.11n MCS8 20MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.28	17.52	500	**Complies**
6	2437 MHz	15.16	17.52	500	**Complies**
11	2462 MHz	15.04	17.52	500	**Complies**

<Ant. 1>

Configuration of IEEE 802.11n MCS0 40MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	35.76	36.24	500	**Complies**
6	2437 MHz	35.60	36.24	500	**Complies**
9	2452 MHz	36.16	36.24	500	**Complies**

<Ant. 2>

Configuration of IEEE 802.11n MCS0 40MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.32	36.24	500	**Complies**
6	2437 MHz	36.32	36.24	500	**Complies**
9	2452 MHz	35.76	36.24	500	**Complies**

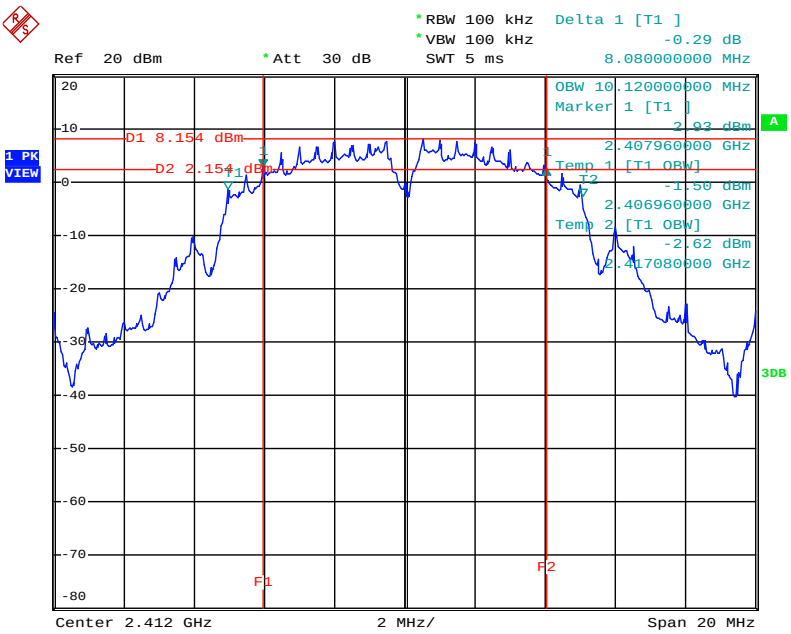
<Ant. 1 + Ant. 2>

Configuration of IEEE 802.11n MCS8 40MHz

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	35.12	36.24	500	**Complies**
6	2437 MHz	33.28	36.24	500	**Complies**
9	2452 MHz	35.36	36.24	500	**Complies**

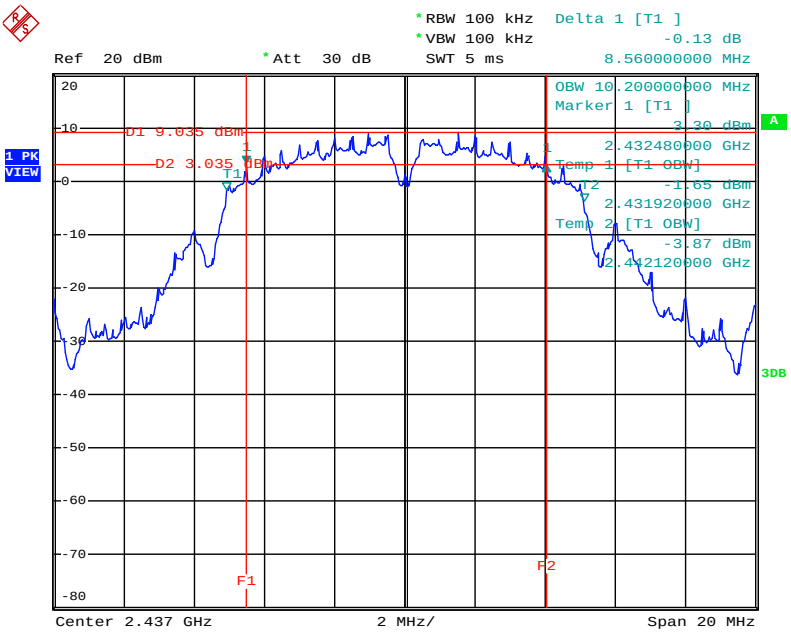
<Ant. 1>

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



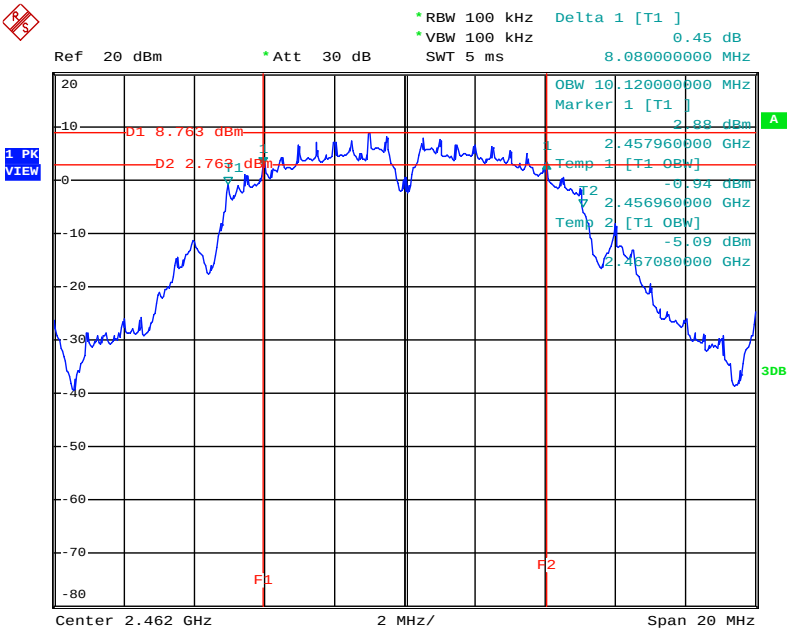
Date: 23.AUG.2011 10:24:45

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



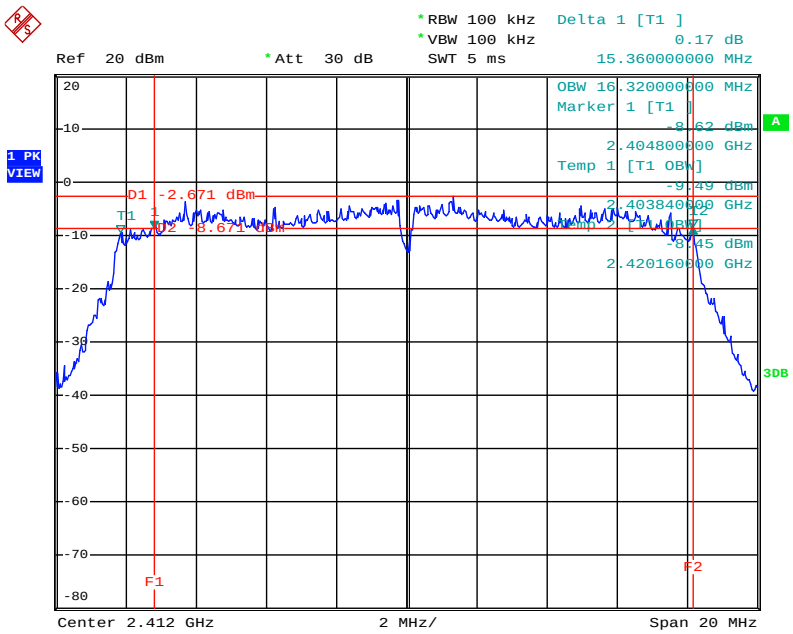
Date: 23.AUG.2011 10:49:59

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



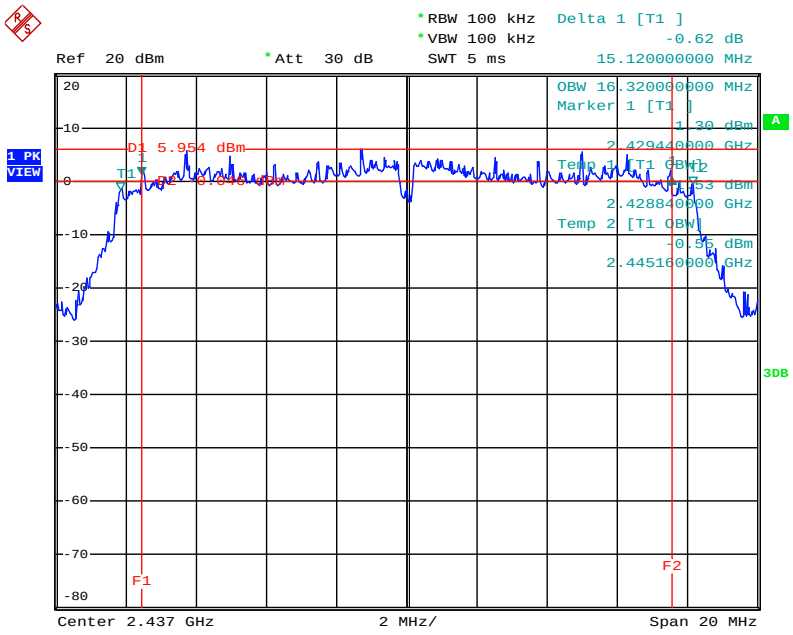
Date: 23.AUG.2011 10:51:16

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



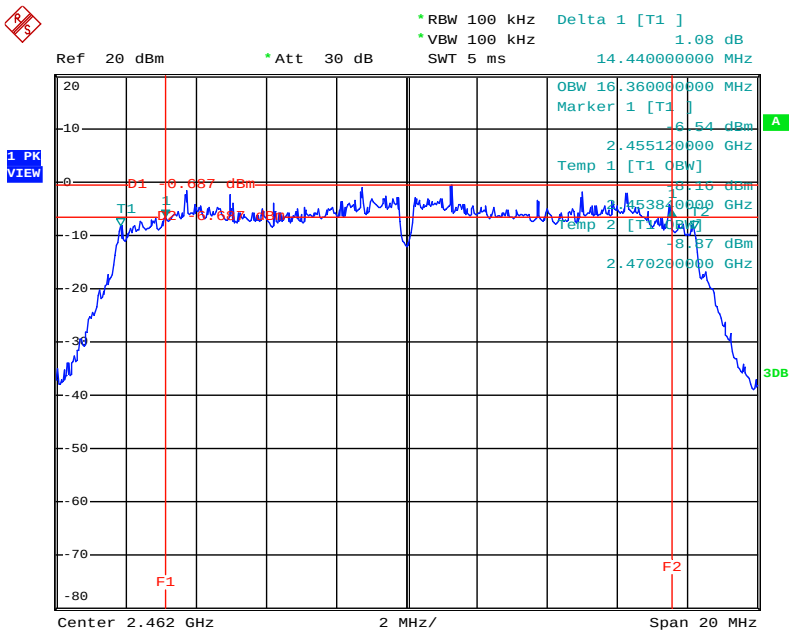
Date: 23.AUG.2011 11:01:26

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



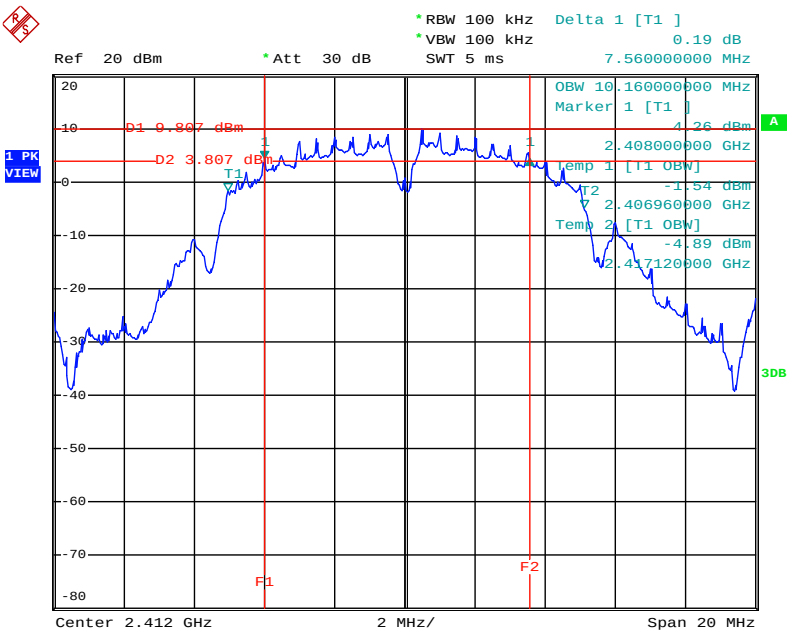
Date: 23.AUG.2011 10:57:09

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



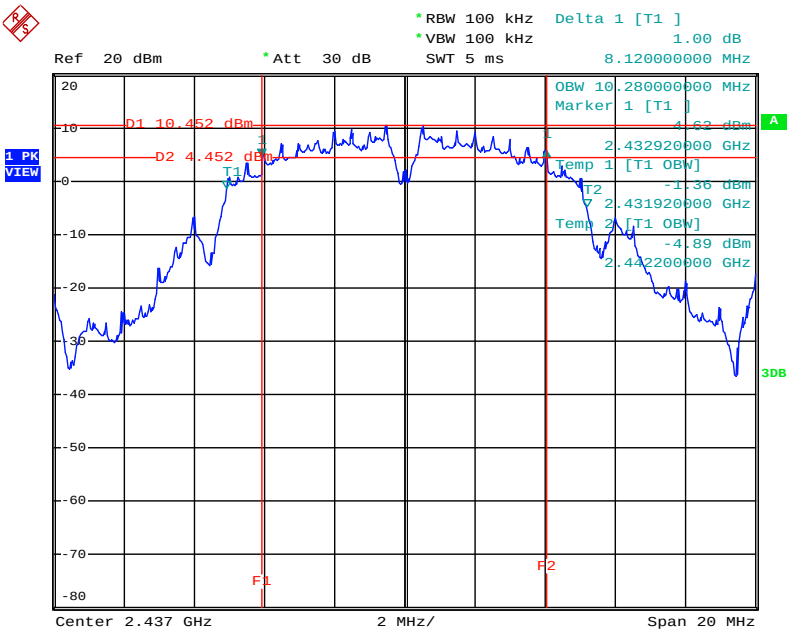
<Ant. 2>

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



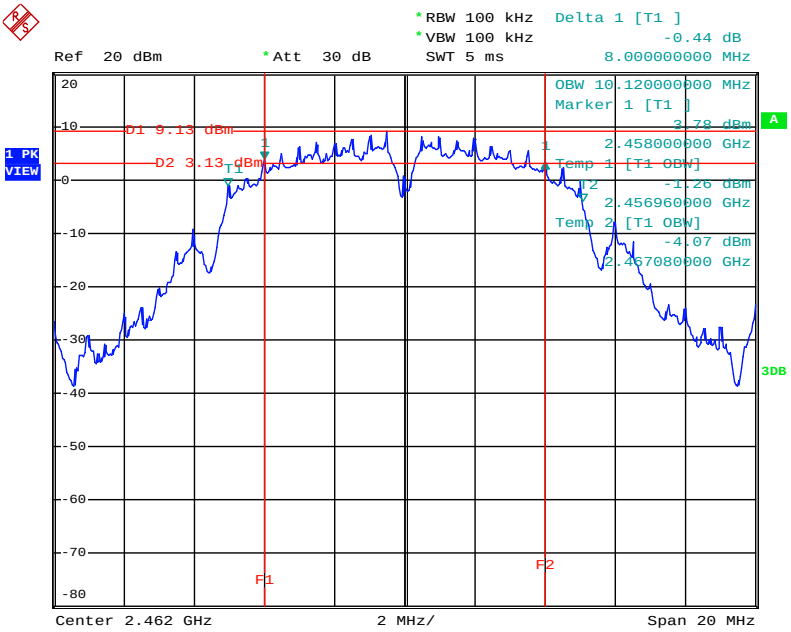
Date: 23.AUG.2011 11:24:20

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

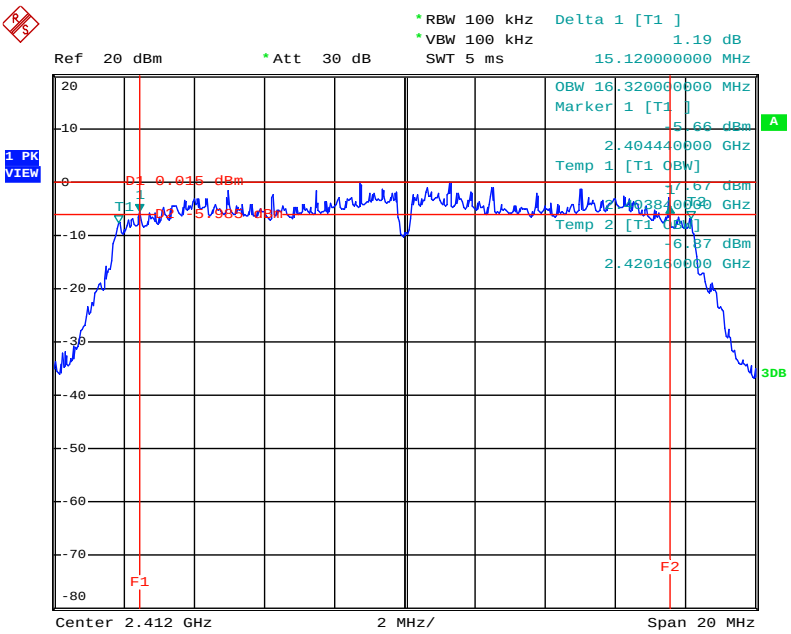


Date: 23.AUG.2011 11:32:48

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

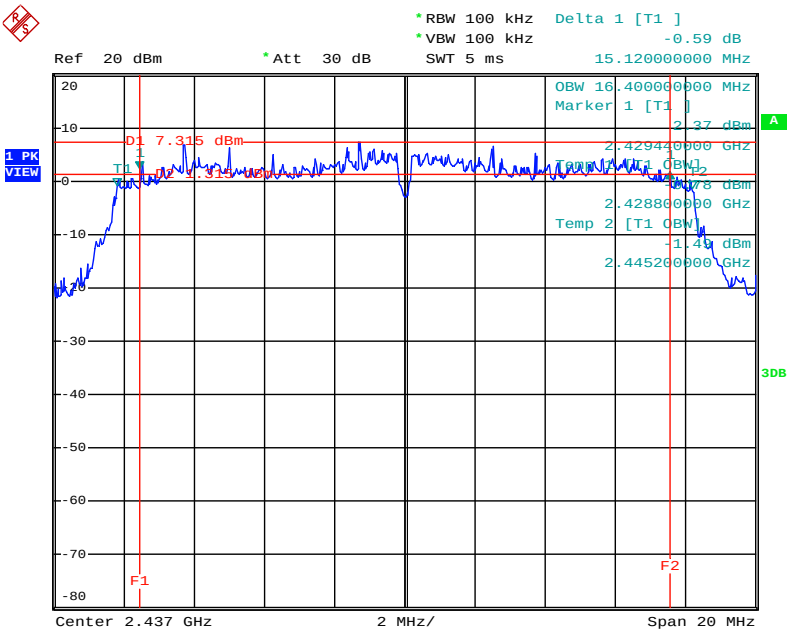


6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2412 MHz



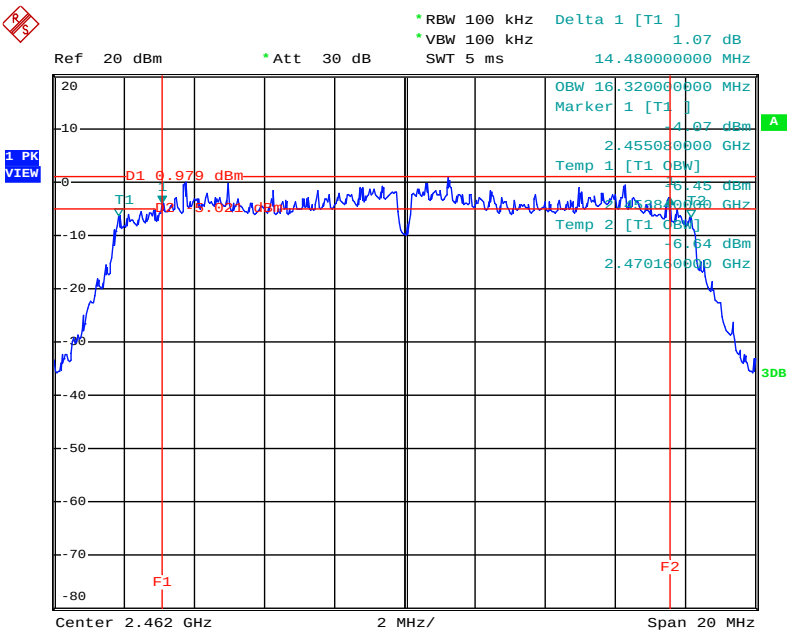
Date: 23.AUG.2011 11:52:10

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



Date: 23.AUG.2011 11:48:19

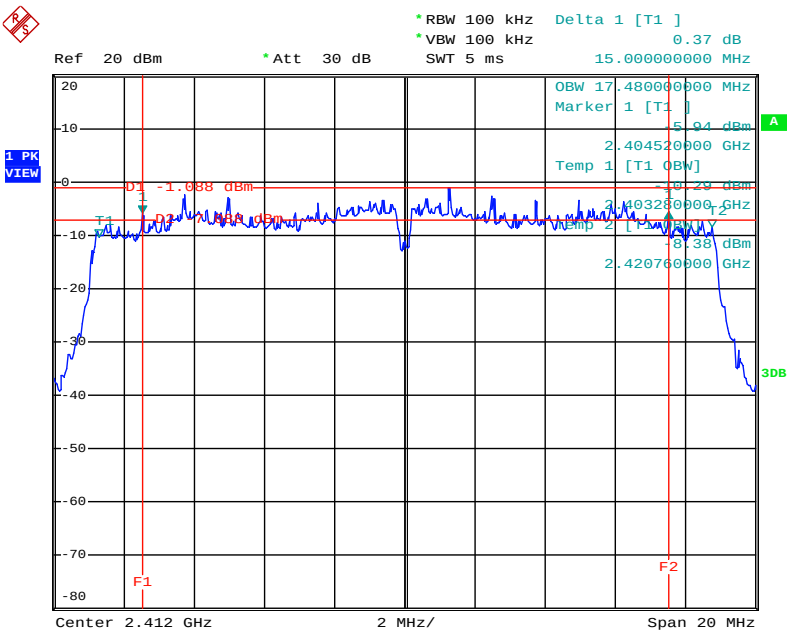
6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2462 MHz



Date: 23.AUG.2011 11:46:25

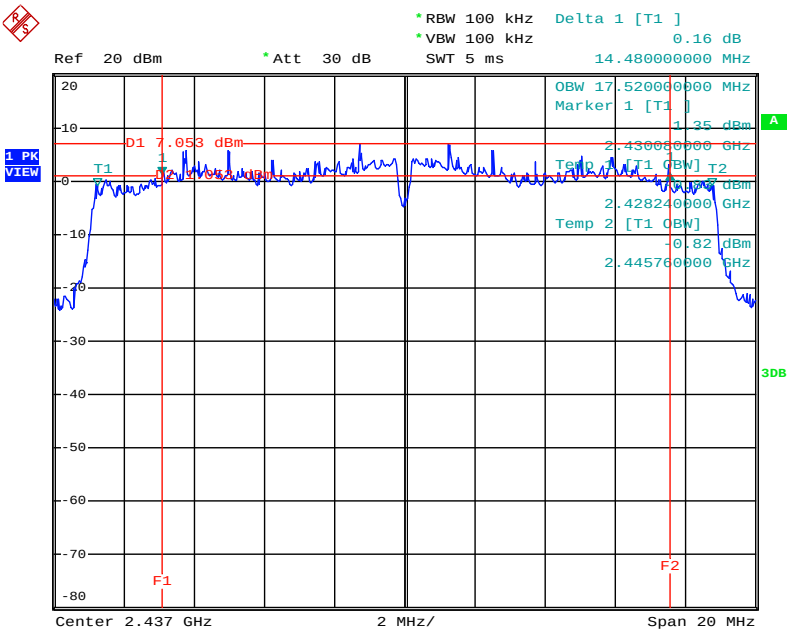
<Ant. 1>

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



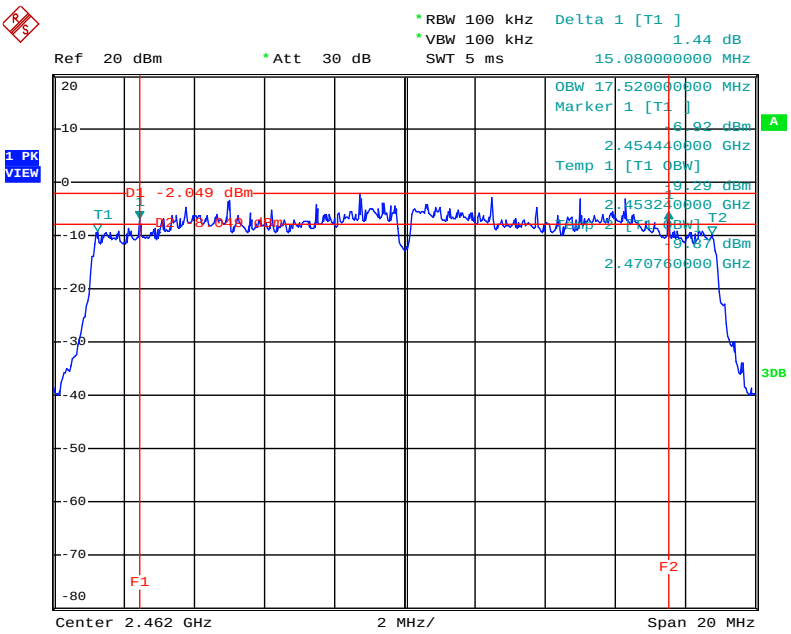
Date: 23.AUG.2011 11:02:48

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



Date: 23.AUG.2011 11:06:13

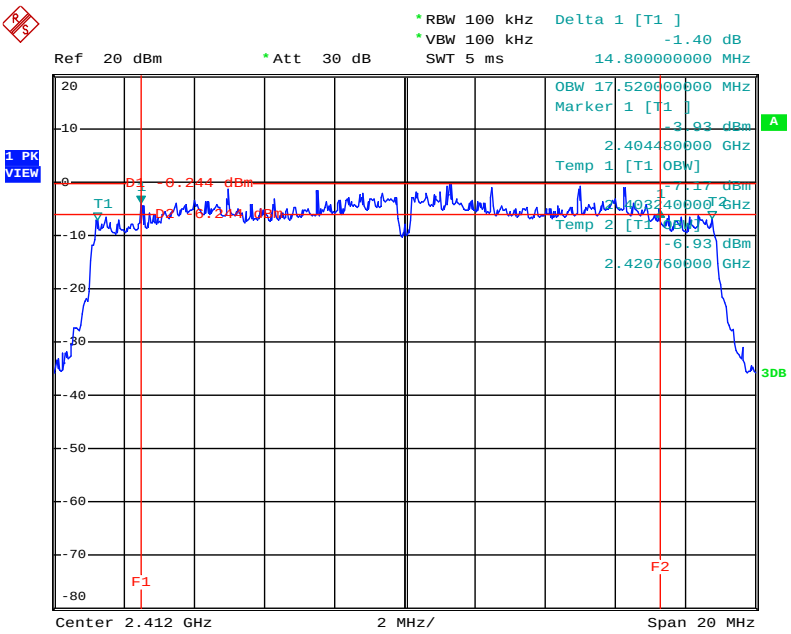
6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS0 20MHz / 2462 MHz



Date: 23.AUG.2011 11:07:11

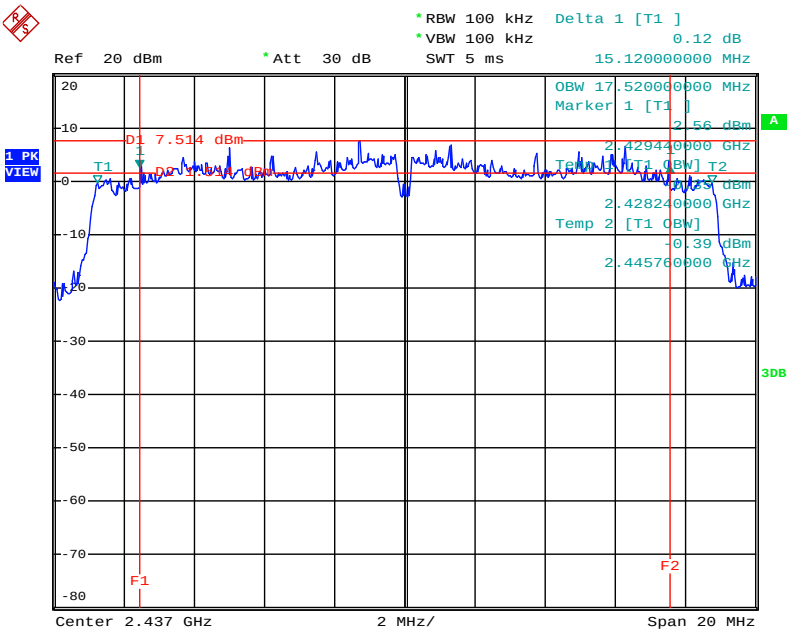
<Ant. 2>

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



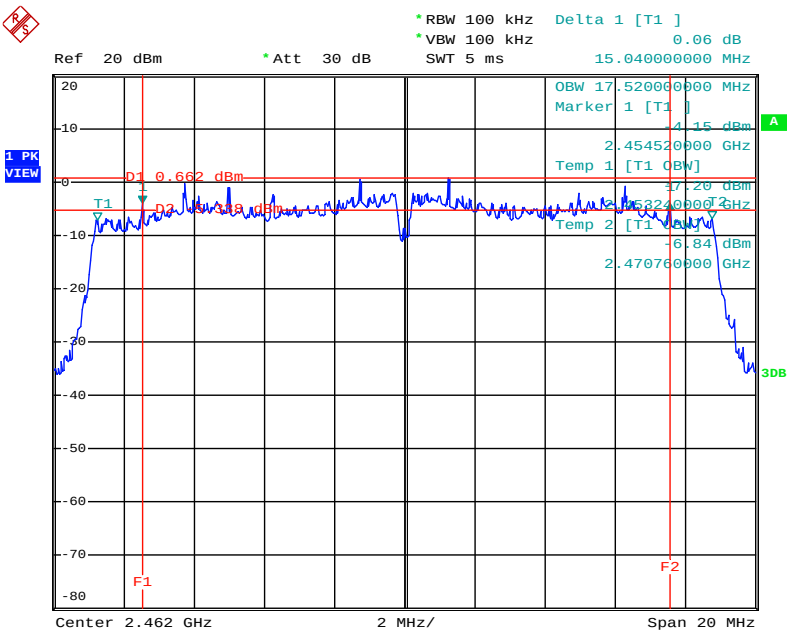
Date: 23.AUG.2011 13:32:21

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



Date: 23.AUG.2011 13:36:32

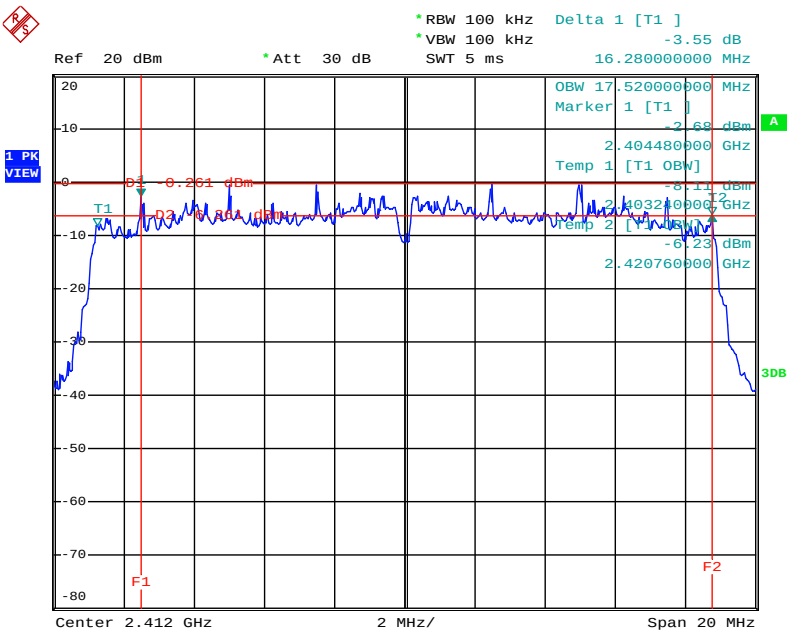
6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS0 20MHz / 2462 MHz



Date: 23.AUG.2011 13:38:38

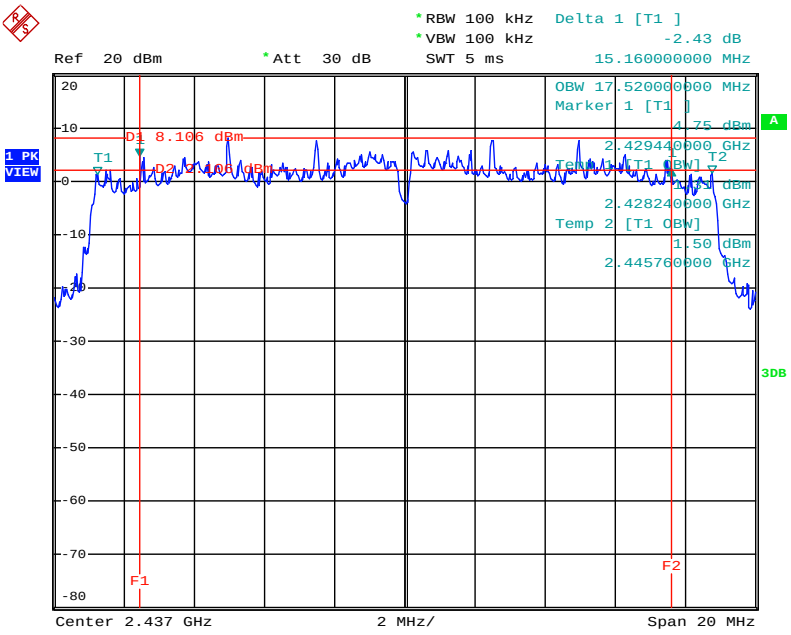
<Ant. 1 + Ant. 2>

6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2412 MHz



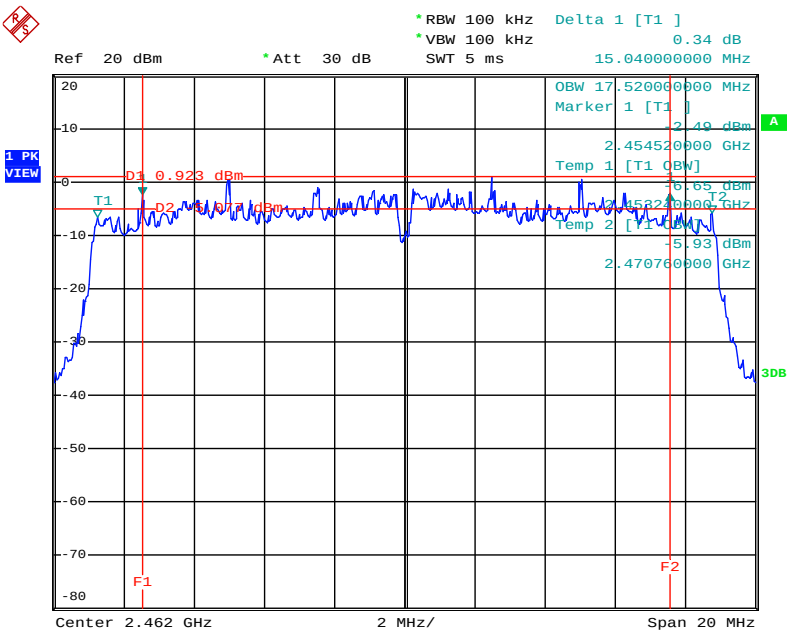
Date: 23.AUG.2011 14:05:37

6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2437 MHz



Date: 23.AUG.2011 14:07:26

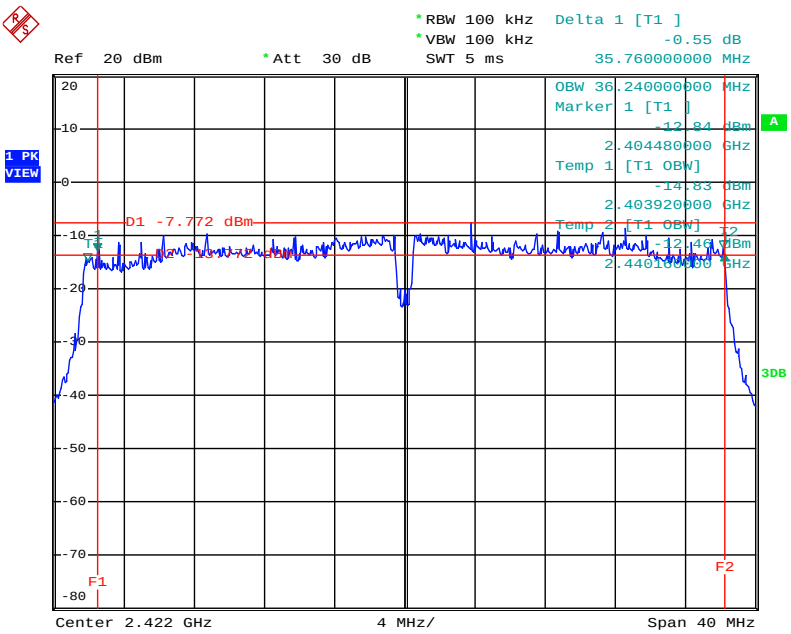
6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS8 20MHz / 2462 MHz



Date: 23.AUG.2011 14:08:19

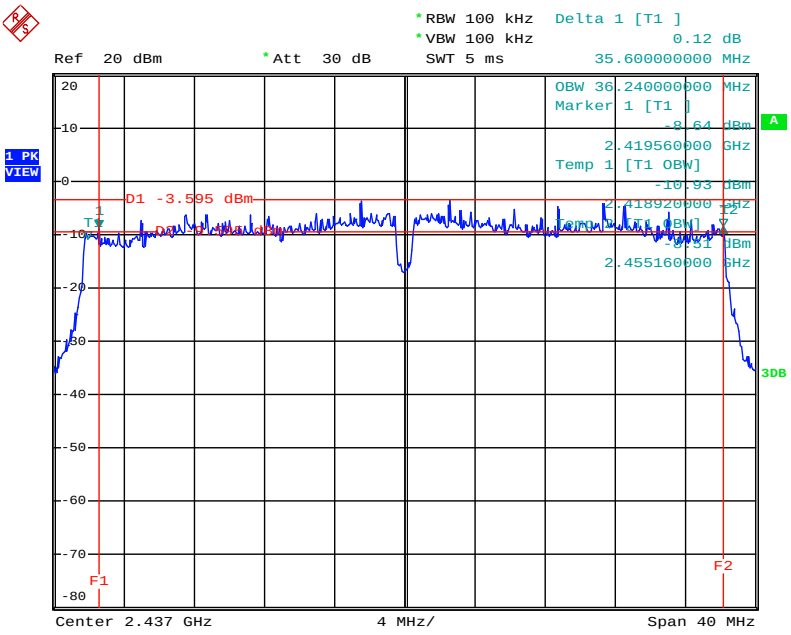
<Ant. 1>

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



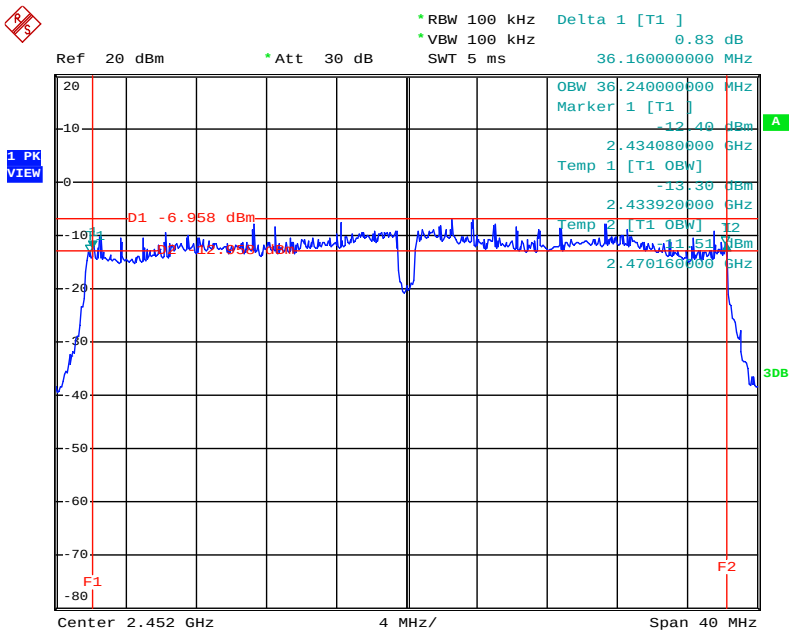
Date: 23.AUG.2011 11:13:52

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



Date: 23.AUG.2011 11:16:57

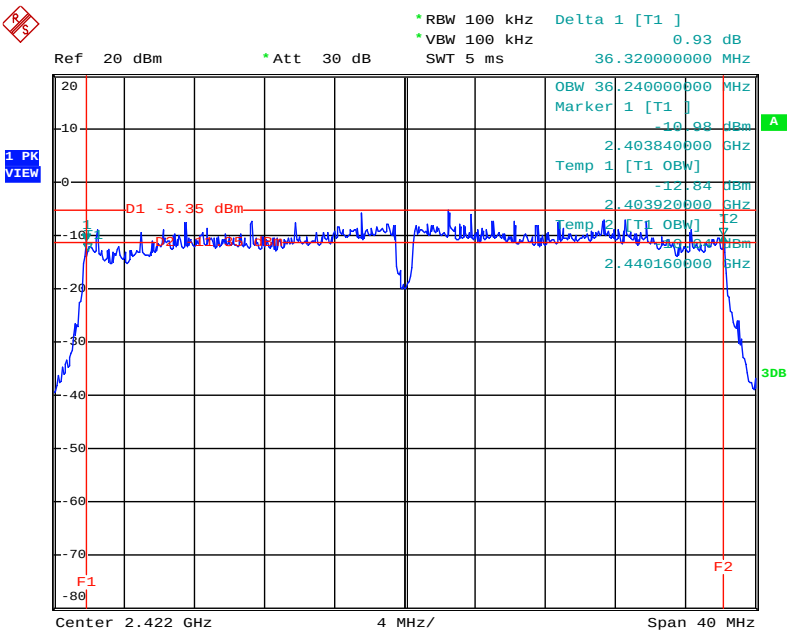
6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS0 40MHz / 2452 MHz



Date: 23.AUG.2011 11:21:15

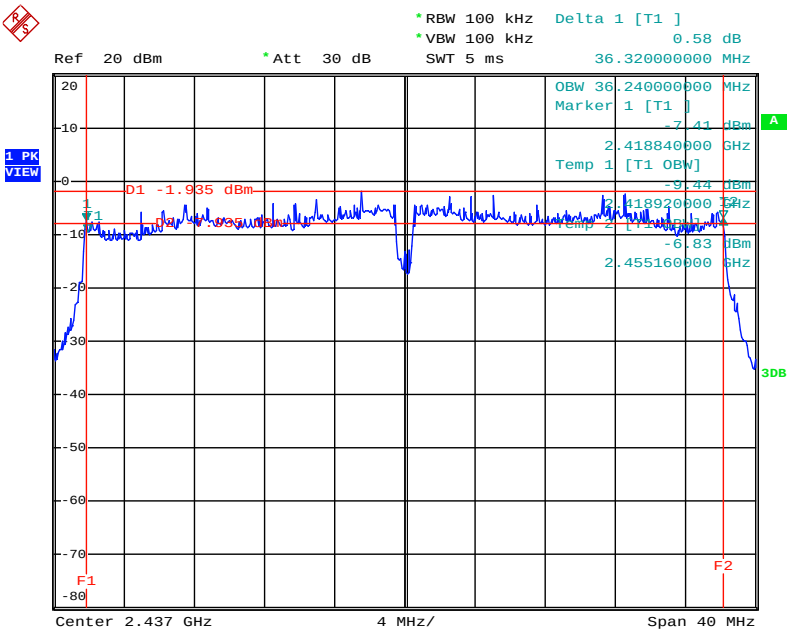
<Ant. 2>

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



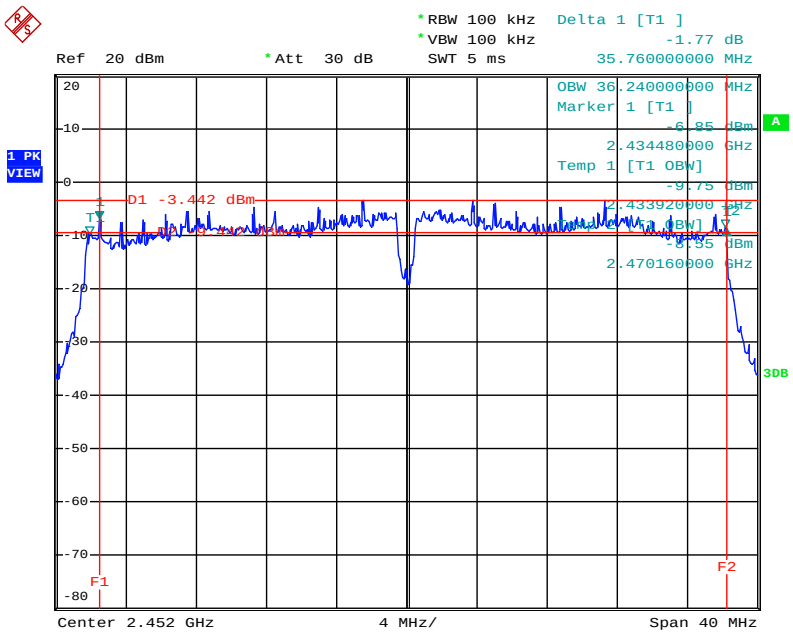
Date: 23.AUG.2011 13:46:27

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



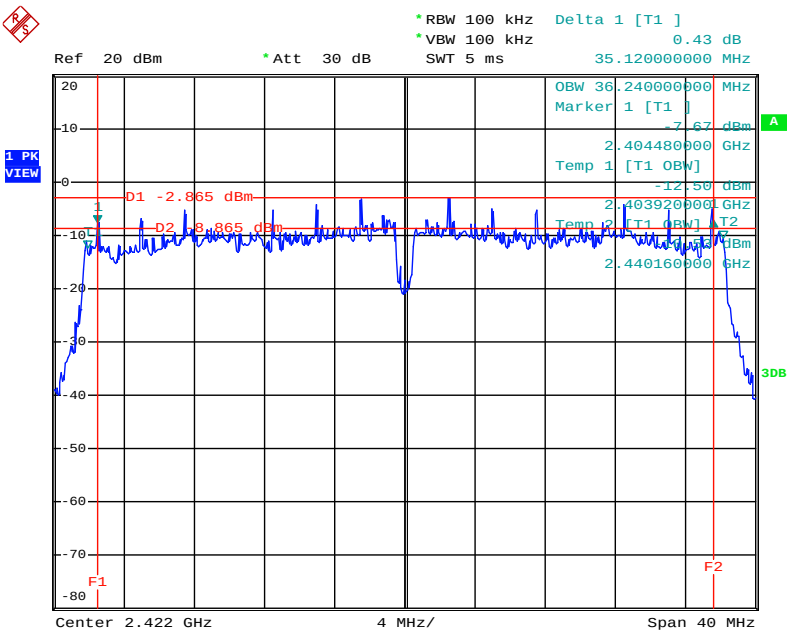
Date: 23.AUG.2011 13:53:54

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



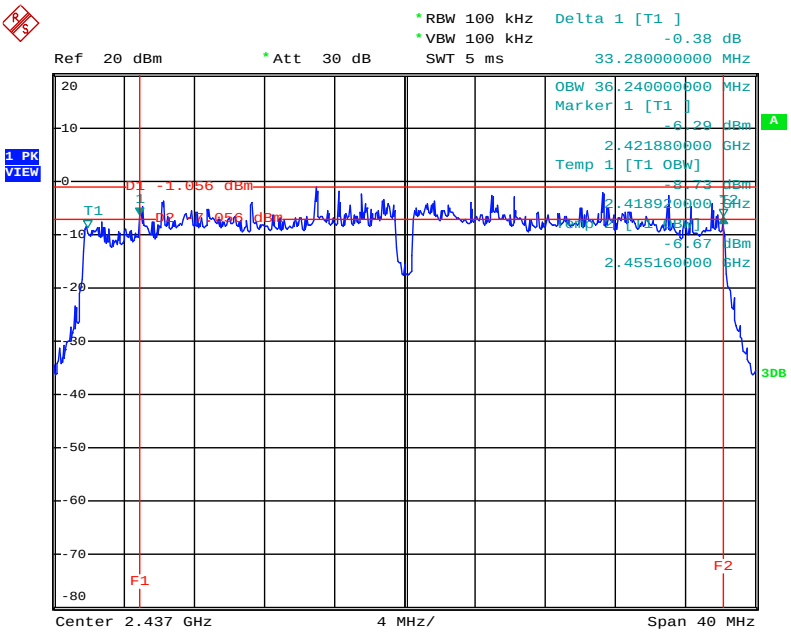
<Ant. 1 + Ant. 2>

6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2422 MHz



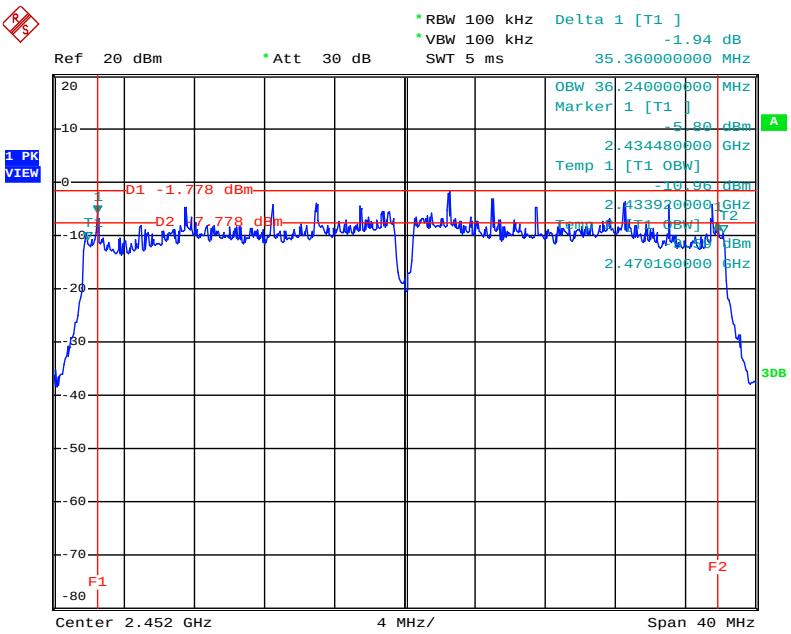
Date: 23.AUG.2011 14:12:16

6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2437 MHz



Date: 23.AUG.2011 14:13:13

6 dB Bandwidth Plot on Configuration of IEEE 802.11n MCS8 40MHz / 2452 MHz



Date: 23.AUG.2011 14:14:02

3.7 Radiated Emissions Measurement

3.7.1 Limit

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

Frequencies (MHz)	Field Strength (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

3.7.2 Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak

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

3.7.3 Test Procedures

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.

Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

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.

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.

Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.

For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.

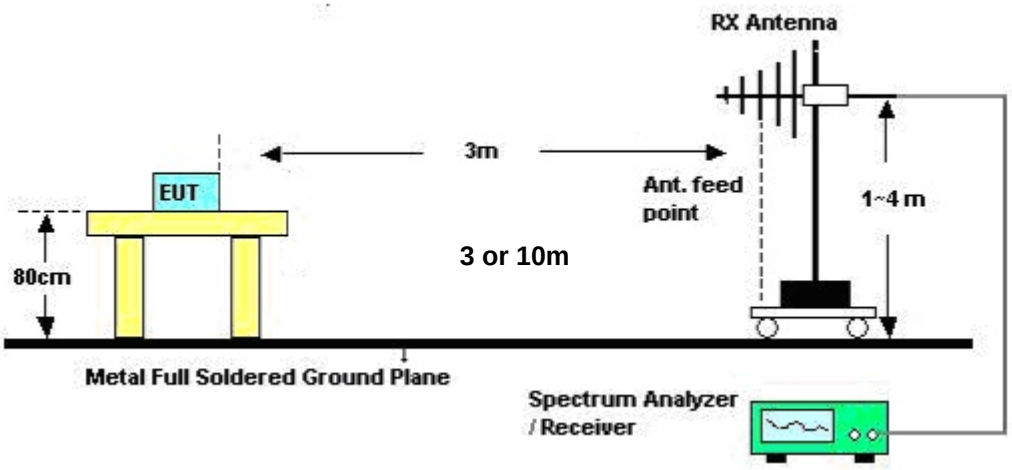
When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 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.

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.

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.

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.

3.7.4 Test Setup Layout



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1m.

Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

3.7.5 Test Deviation

There is no deviation with the original standard.

3.7.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Frequency Range	9kHz~30MHz	**Test Site No.**	03CH01-CB
Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Configurations**	CTX
Test Date	Aug. 22, 2011		

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

Note:

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

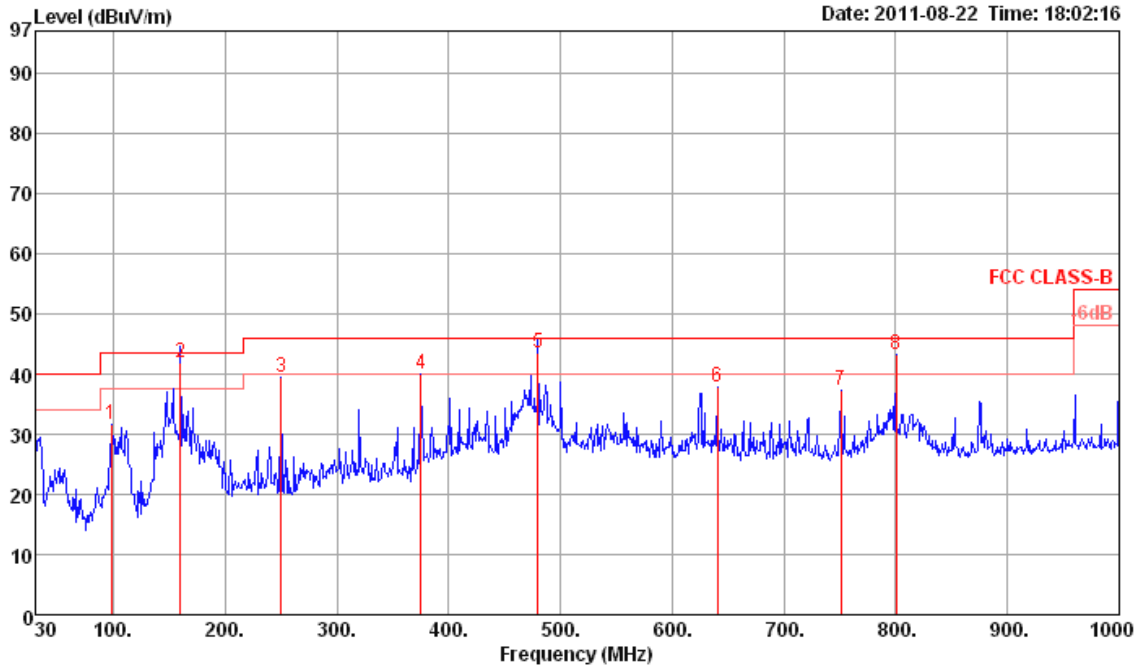
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

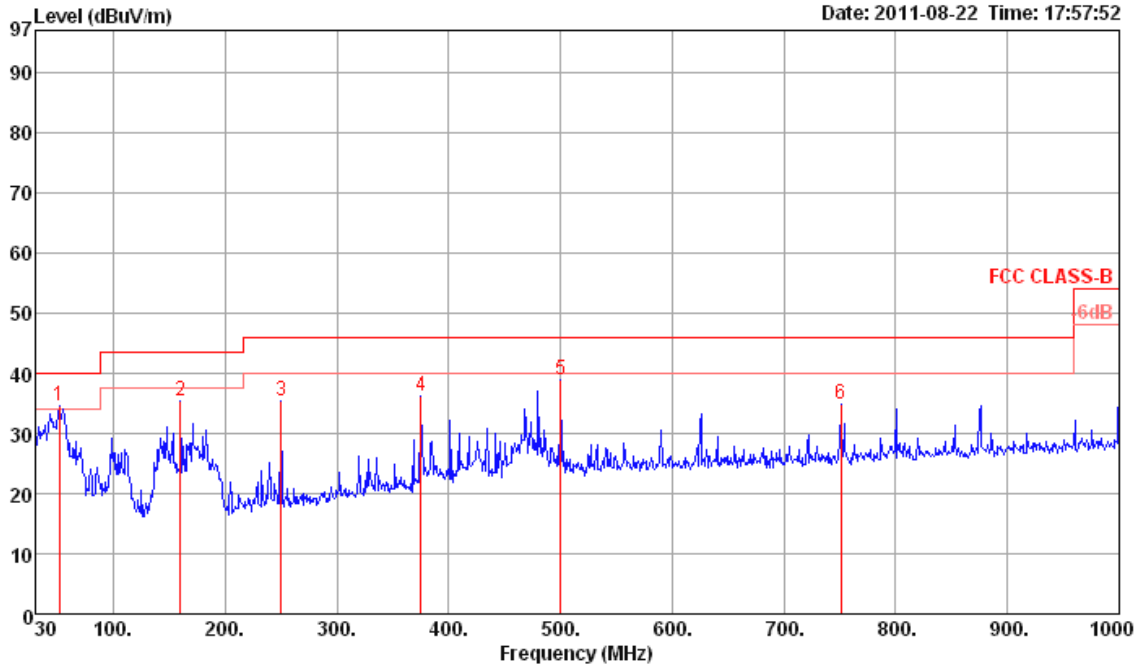
Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Configurations	CTX		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	97.90	31.62	43.50	-11.88	47.48	1.16	10.59	27.61	Peak	HORIZONTAL
2	159.98	41.83	43.50	-1.67	55.60	1.50	12.03	27.30	QP	HORIZONTAL
3	250.19	39.53	46.00	-6.47	51.86	1.90	12.77	27.00	Peak	HORIZONTAL
4	375.32	39.92	46.00	-6.08	49.70	2.25	15.40	27.43	Peak	HORIZONTAL
5	480.08	43.57	46.00	-2.43	51.60	2.66	17.31	28.00	QP	HORIZONTAL
6	640.13	37.93	46.00	-8.07	43.95	3.14	18.90	28.06	Peak	HORIZONTAL
7	750.71	37.40	46.00	-8.60	42.27	3.50	19.43	27.80	Peak	HORIZONTAL
8	800.18	43.26	46.00	-2.74	47.79	3.30	19.77	27.60	QP	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	51.34	34.59	40.00	-5.41	53.31	0.72	8.35	27.79	Peak	VERTICAL
2	159.98	35.45	43.50	-8.05	49.22	1.50	12.03	27.30	Peak	VERTICAL
3	250.19	35.52	46.00	-10.48	47.85	1.90	12.77	27.00	Peak	VERTICAL
4	375.32	36.30	46.00	-9.70	46.08	2.25	15.40	27.43	Peak	VERTICAL
5	500.45	38.80	46.00	-7.20	46.57	2.70	17.63	28.10	Peak	VERTICAL
6	750.71	34.79	46.00	-11.21	39.66	3.50	19.43	27.80	Peak	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.

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11b Ch 1 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.87	51.75	74.00	-22.25	49.30	4.26	33.39	35.20	Peak	HORIZONTAL
2	4823.94	47.57	54.00	-6.43	45.12	4.26	33.39	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.94	40.95	54.00	-13.05	38.50	4.26	33.39	35.20	Average	VERTICAL
2	4823.99	47.59	74.00	-26.41	45.14	4.26	33.39	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11b Ch 6 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.93	50.45	74.00	-23.55	47.84	4.33	33.48	35.20	Peak	HORIZONTAL
2	4873.98	46.56	54.00	-7.44	43.95	4.33	33.48	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.98	41.67	54.00	-12.33	39.06	4.33	33.48	35.20	Average	VERTICAL
2	4873.99	47.13	74.00	-26.87	44.52	4.33	33.48	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11b Ch 11 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4924.01	49.74	74.00	-24.26	46.97	4.39	33.58	35.20	Peak	HORIZONTAL
2	4924.14	44.20	54.00	-9.80	41.43	4.39	33.58	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.93	45.80	54.00	-8.20	43.03	4.39	33.58	35.20	Average	VERTICAL
2	4923.99	49.84	74.00	-24.16	47.07	4.39	33.58	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11g Ch 1 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.69	42.92	74.00	-31.08	40.47	4.26	33.39	35.20	Peak	HORIZONTAL
2	4824.02	30.03	54.00	-23.97	27.58	4.26	33.39	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4824.01	30.20	54.00	-23.80	27.75	4.26	33.39	35.20	Average	VERTICAL
2	4824.01	30.20	74.00	-43.80	27.75	4.26	33.39	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11g Ch 6 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4874.08	33.21	54.00	-20.79	30.60	4.33	33.48	35.20	Average	HORIZONTAL
2	4874.15	47.33	74.00	-26.67	44.72	4.33	33.48	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.57	30.44	54.00	-23.56	27.83	4.33	33.48	35.20	Average	VERTICAL
2	4874.41	43.77	74.00	-30.23	41.16	4.33	33.48	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11g Ch 11 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.52	42.86	74.00	-31.14	40.09	4.39	33.58	35.20	Peak	HORIZONTAL
2	4923.72	29.96	54.00	-24.04	27.19	4.39	33.58	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.89	29.26	54.00	-24.74	26.49	4.39	33.58	35.20	Average	VERTICAL
2	4923.90	42.63	74.00	-31.37	39.86	4.39	33.58	35.20	Peak	VERTICAL

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

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11b Ch 1 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.99	51.36	54.00	-2.64	48.91	4.26	33.39	35.20	Average	HORIZONTAL
2	4823.99	54.37	74.00	-19.63	51.92	4.26	33.39	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.99	44.50	54.00	-9.50	42.05	4.26	33.39	35.20	Average	VERTICAL
2	4824.05	49.42	74.00	-24.58	46.97	4.26	33.39	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11b Ch 6 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.84	55.37	74.00	-18.63	52.76	4.33	33.48	35.20	Peak	HORIZONTAL
2	4873.93	52.92	54.00	-1.08	50.31	4.33	33.48	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.94	43.43	54.00	-10.57	40.82	4.33	33.48	35.20	Average	VERTICAL
2	4873.96	48.36	74.00	-25.64	45.75	4.33	33.48	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11b Ch 11 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.94	53.92	74.00	-20.08	51.15	4.39	33.58	35.20	Peak	HORIZONTAL
2	4923.97	51.10	54.00	-2.90	48.33	4.39	33.58	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.91	49.32	74.00	-24.68	46.55	4.39	33.58	35.20	Peak	VERTICAL
2	4923.95	45.73	54.00	-8.27	42.96	4.39	33.58	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11g Ch 1 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.78	42.54	74.00	-31.46	40.09	4.26	33.39	35.20	Peak	HORIZONTAL
2	4823.91	30.25	54.00	-23.75	27.80	4.26	33.39	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.77	29.12	54.00	-24.88	26.67	4.26	33.39	35.20	Average	VERTICAL
2	4824.23	42.84	74.00	-31.16	40.39	4.26	33.39	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11g Ch 6 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4874.13	38.18	54.00	-15.82	35.57	4.33	33.48	35.20	Average	HORIZONTAL
2	4874.15	53.53	74.00	-20.47	50.92	4.33	33.48	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.76	46.66	74.00	-27.34	44.05	4.33	33.48	35.20	Peak	VERTICAL
2	4874.56	33.52	54.00	-20.48	30.91	4.33	33.48	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11g Ch 11 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.51	42.57	74.00	-31.43	39.80	4.39	33.58	35.20	Peak	HORIZONTAL
2	4923.94	29.91	54.00	-24.09	27.14	4.39	33.58	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4924.04	42.05	74.00	-31.95	39.28	4.39	33.58	35.20	Peak	VERTICAL
2	4924.20	29.94	54.00	-24.06	27.17	4.39	33.58	35.20	Average	VERTICAL

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

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 20MHz Ch 1 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.50	30.64	54.00	-23.36	28.19	4.26	33.39	35.20	Average	HORIZONTAL
2	4824.04	42.50	74.00	-31.50	40.05	4.26	33.39	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.71	30.00	54.00	-24.00	27.55	4.26	33.39	35.20	Average	VERTICAL
2	4824.17	43.22	74.00	-30.78	40.77	4.26	33.39	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 20MHz Ch 6 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4874.00	34.50	54.00	-19.50	31.89	4.33	33.48	35.20	Average	HORIZONTAL
2	4874.03	47.38	74.00	-26.62	44.77	4.33	33.48	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.75	45.97	74.00	-28.03	43.36	4.33	33.48	35.20	Peak	VERTICAL
2	4874.11	32.02	54.00	-21.98	29.41	4.33	33.48	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 20MHz Ch 11 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.83	42.30	74.00	-31.70	39.53	4.39	33.58	35.20	Peak	HORIZONTAL
2	4924.01	28.99	54.00	-25.01	26.22	4.39	33.58	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.92	30.02	54.00	-23.98	27.25	4.39	33.58	35.20	Average	VERTICAL
2	4924.12	42.34	74.00	-31.66	39.57	4.39	33.58	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 20MHz Ch 1 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.53	42.58	74.00	-31.42	40.13	4.26	33.39	35.20	Peak	HORIZONTAL
2	4823.83	30.24	54.00	-23.76	27.79	4.26	33.39	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.54	29.24	54.00	-24.76	26.79	4.26	33.39	35.20	Average	VERTICAL
2	4824.32	42.75	74.00	-31.25	40.30	4.26	33.39	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 20MHz Ch 6 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.54	52.72	74.00	-21.28	50.11	4.33	33.48	35.20	Peak	HORIZONTAL
2	4873.98	38.10	54.00	-15.90	35.49	4.33	33.48	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4874.08	48.56	74.00	-25.44	45.95	4.33	33.48	35.20	Peak	VERTICAL
2	4874.32	34.91	54.00	-19.09	32.30	4.33	33.48	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 20MHz Ch 11 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.84	42.70	74.00	-31.30	39.93	4.39	33.58	35.20	Peak	HORIZONTAL
2	4923.93	30.20	54.00	-23.80	27.43	4.39	33.58	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.90	42.57	74.00	-31.43	39.80	4.39	33.58	35.20	Peak	VERTICAL
2	4924.01	30.33	54.00	-23.67	27.56	4.39	33.58	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS8 20MHz Ch 1 / Ant. 1 + Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.78	31.63	54.00	-22.37	29.18	4.26	33.39	35.20	Average	HORIZONTAL
2	4824.38	43.90	74.00	-30.10	41.45	4.26	33.39	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4823.51	30.09	54.00	-23.91	27.64	4.26	33.39	35.20	Average	VERTICAL
2	4823.94	43.01	74.00	-30.99	40.56	4.26	33.39	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS8 20MHz Ch 6 / Ant. 1 + Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4874.39	52.29	74.00	-21.71	49.68	4.33	33.48	35.20	Peak	HORIZONTAL
2	4874.39	38.97	54.00	-15.03	36.36	4.33	33.48	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4874.21	34.19	54.00	-19.81	31.58	4.33	33.48	35.20	Average	VERTICAL
2	4874.44	47.82	74.00	-26.18	45.21	4.33	33.48	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS8 20MHz Ch 11 / Ant. 1 + Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.60	44.87	74.00	-29.13	42.10	4.39	33.58	35.20	Peak	HORIZONTAL
2	4923.74	31.49	54.00	-22.51	28.72	4.39	33.58	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4923.98	42.62	74.00	-31.38	39.85	4.39	33.58	35.20	Peak	VERTICAL
2	4924.19	30.51	54.00	-23.49	27.74	4.39	33.58	35.20	Average	VERTICAL

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

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 40MHz Ch 3 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4843.57	29.29	54.00	-24.71	26.78	4.29	33.42	35.20	Average	HORIZONTAL
2	4844.23	42.15	74.00	-31.85	39.64	4.29	33.42	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4843.98	28.39	54.00	-25.61	25.88	4.29	33.42	35.20	Average	VERTICAL
2	4844.26	41.93	74.00	-32.07	39.42	4.29	33.42	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 40MHz Ch 6 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.86	29.27	54.00	-24.73	26.66	4.33	33.48	35.20	Average	HORIZONTAL
2	4874.39	43.51	74.00	-30.49	40.90	4.33	33.48	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.87	42.36	74.00	-31.64	39.75	4.33	33.48	35.20	Peak	VERTICAL
2	4874.50	30.00	54.00	-24.00	27.39	4.33	33.48	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 40MHz Ch 9 / Ant. 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4903.97	43.21	74.00	-30.79	40.54	4.36	33.51	35.20	Peak	HORIZONTAL
2	4904.43	30.36	54.00	-23.64	27.69	4.36	33.51	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4903.85	29.52	54.00	-24.48	26.85	4.36	33.51	35.20	Average	VERTICAL
2	4903.91	42.77	74.00	-31.23	40.10	4.36	33.51	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 40MHz Ch 3 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4903.71	44.15	74.00	-29.85	41.48	4.36	33.51	35.20	Peak	HORIZONTAL
2	4903.93	31.54	54.00	-22.46	28.87	4.36	33.51	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4903.82	42.76	74.00	-31.24	40.09	4.36	33.51	35.20	Peak	VERTICAL
2	4904.06	30.33	54.00	-23.67	27.66	4.36	33.51	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 40MHz Ch 6 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.70	42.50	74.00	-31.50	39.89	4.33	33.48	35.20	Peak	HORIZONTAL
2	4873.74	29.94	54.00	-24.06	27.33	4.33	33.48	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.93	29.33	54.00	-24.67	26.72	4.33	33.48	35.20	Average	VERTICAL
2	4874.16	43.05	74.00	-30.95	40.44	4.33	33.48	35.20	Peak	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS0 40MHz Ch 9 / Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4843.56	42.31	74.00	-31.69	39.80	4.29	33.42	35.20	Peak	HORIZONTAL
2	4844.19	28.28	54.00	-25.72	25.77	4.29	33.42	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4843.51	41.78	74.00	-32.22	39.27	4.29	33.42	35.20	Peak	VERTICAL
2	4844.50	29.21	54.00	-24.79	26.70	4.29	33.42	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS8 40MHz Ch 3 / Ant. 1 + Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4843.91	29.31	54.00	-24.69	26.80	4.29	33.42	35.20	Average	HORIZONTAL
2	4843.94	42.08	74.00	-31.92	39.57	4.29	33.42	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4843.85	42.83	74.00	-31.17	40.32	4.29	33.42	35.20	Peak	VERTICAL
2	4844.17	29.35	54.00	-24.65	26.84	4.29	33.42	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS8 40MHz Ch 6 / Ant. 1 + Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4873.91	45.44	74.00	-28.56	42.83	4.33	33.48	35.20	Peak	HORIZONTAL
2	4874.09	30.29	54.00	-23.71	27.68	4.33	33.48	35.20	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4874.06	42.36	74.00	-31.64	39.75	4.33	33.48	35.20	Peak	VERTICAL
2	4874.36	30.09	54.00	-23.91	27.48	4.33	33.48	35.20	Average	VERTICAL

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Aug. 19, 2011	**Configurations**	IEEE 802.11n MCS8 40MHz Ch 9 / Ant. 1 + Ant. 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4903.68	32.50	54.00	-21.50	29.83	4.36	33.51	35.20	Average	HORIZONTAL
2	4904.25	42.94	74.00	-31.06	40.27	4.36	33.51	35.20	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		
1	4903.76	43.32	74.00	-30.68	40.65	4.36	33.51	35.20	Peak	VERTICAL
2	4903.92	29.30	54.00	-24.70	26.63	4.36	33.51	35.20	Average	VERTICAL

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

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

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

3.8 Photographs of Radiated Emission Test Configuration

- For radiated emissions 9kHz~30MHz

FRONT VIEW

REAR VIEW

- Frequency Range from 30MHz~1000MHz

FRONT VIEW **Please refer to RSE-TG789VNV3 Test Photo.**

REAR VIEW **Please refer to RSE-TG789VNV3 Test Photo.**

- Frequency Range above 1000MHz

FRONT VIEW	**Please refer to RSE-TG789VNV3 Test Photo.**
REAR VIEW	**Please refer to RSE-TG789VNV3 Test Photo.**

3.9 Band Edge and Fundamental Emissions Measurement

3.9.1 Limit

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

Frequencies (MHz)	Field Strength (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

3.9.2 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 Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
Preamp	ON
Filter type	6dB
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak

3.9.3 Test Procedures

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

3.9.4 Test Setup Layout

This test setup layout is the same as that shown in section 3.5.4.

3.9.5 Test Deviation

There is no deviation with the original standard.

3.9.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.9.7 Test Result of Band Edge and Fundamental Emissions

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11b CH 1 / Ant. 1

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	53.71	54.00	-0.29	23.32	2.22	28.17	0.00	92	126	Average	VERTICAL
2	2390.00	60.95	74.00	-13.05	30.56	2.22	28.17	0.00	92	126	Peak	VERTICAL
3	2411.20	108.92				2.22	28.21	0.00	92	126	Average	VERTICAL
4	2411.20	112.72				2.22	28.21	0.00	92	126	Peak	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11b CH 6 / Ant. 1

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.36	56.69	74.00	-17.31	26.31	2.21	28.17	0.00	49	144	Peak	HORIZONTAL
2	2390.00	45.93	54.00	-8.07	15.54	2.22	28.17	0.00	49	144	Average	HORIZONTAL
3	2436.04	116.46				2.23	28.29	0.00	49	144	Peak	HORIZONTAL
4	2436.20	112.54				2.23	28.29	0.00	49	144	Average	HORIZONTAL
5	2483.50	45.91	54.00	-8.09	15.27	2.26	28.38	0.00	49	144	Average	HORIZONTAL
6	2483.66	58.15	74.00	-15.85	27.51	2.26	28.38	0.00	49	144	Peak	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11b CH 11 / Ant. 1

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2461.04	112.51				2.24	28.33	0.00	48	143	Peak	HORIZONTAL
2	2461.20	108.70				2.24	28.33	0.00	48	143	Average	HORIZONTAL
3	2483.50	53.92	54.00	-0.08	23.28	2.26	28.38	0.00	48	143	Average	HORIZONTAL
4	2483.50	61.77	74.00	-12.23	31.13	2.26	28.38	0.00	48	143	Peak	HORIZONTAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11b CH 1 / Ant. 2

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	53.61	54.00	-0.39	23.22	2.22	28.17	0.00	247	105	Average	VERTICAL
2	2390.00	60.12	74.00	-13.88	29.73	2.22	28.17	0.00	247	105	Peak	VERTICAL
3	2411.04	112.36				2.22	28.21	0.00	247	105	Peak	VERTICAL
4	2411.20	108.31				2.22	28.21	0.00	247	105	Average	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11b CH 6 / Ant. 2

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	45.06	54.00	-8.94	14.67	2.22	28.17	0.00	269	124	Average	VERTICAL
2	2390.00	57.53	74.00	-16.47	27.14	2.22	28.17	0.00	269	124	Peak	VERTICAL
3	2436.04	114.96				2.23	28.29	0.00	269	124	Peak	VERTICAL
4	2436.20	110.93				2.23	28.29	0.00	269	124	Average	VERTICAL
5	2483.50	46.24	54.00	-7.76	15.61	2.26	28.37	0.00	269	124	Average	VERTICAL
6	2484.62	58.68	74.00	-15.32	28.05	2.26	28.37	0.00	269	124	Peak	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11b CH 11 / Ant. 2

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2460.72	108.21				2.24	28.33	0.00	273	124	Average	VERTICAL
2	2461.20	112.40				2.24	28.33	0.00	273	124	Peak	VERTICAL
3	2483.50	53.51	54.00	-0.49	22.88	2.26	28.37	0.00	273	124	Average	VERTICAL
4	2483.50	62.77	74.00	-11.23	32.14	2.26	28.37	0.00	273	124	Peak	VERTICAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	May 31, 2011	**Configuration**	802.11g CH 1 / Ant. 1

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.68	53.25	54.00	-0.75	22.87	2.21	28.17	0.00	52	122	Average	HORIZONTAL
2	2389.84	70.13	74.00	-3.87	39.74	2.22	28.17	0.00	52	122	Peak	HORIZONTAL
3	2412.80	98.50				2.22	28.21	0.00	52	122	Average	HORIZONTAL
4	2418.25	109.59				2.23	28.25	0.00	52	122	Peak	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11g CH 6 / Ant. 1

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	52.91	54.00	-1.09	22.52	2.22	28.17	0.00	131	147	Average	HORIZONTAL
2	2390.00	70.55	74.00	-3.45	40.16	2.22	28.17	0.00	131	147	Peak	HORIZONTAL
3	2437.48	117.57				2.23	28.29	0.00	131	147	Peak	HORIZONTAL
4	2437.80	107.21				2.23	28.29	0.00	131	147	Average	HORIZONTAL
5	2483.50	51.04	54.00	-2.96	20.40	2.26	28.38	0.00	131	147	Average	HORIZONTAL
6	2483.66	64.81	74.00	-9.19	34.17	2.26	28.38	0.00	131	147	Peak	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	May 31, 2011	**Configuration**	802.11g CH 11 / Ant. 1

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2461.20	98.42				2.24	28.33	0.00	130	152	Average	HORIZONTAL
2	2461.20	109.38				2.24	28.33	0.00	130	152	Peak	HORIZONTAL
3	2483.50	53.67	54.00	-0.33	23.03	2.26	28.38	0.00	130	152	Average	HORIZONTAL
4	2483.50	67.34	74.00	-6.66	36.70	2.26	28.38	0.00	130	152	Peak	HORIZONTAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	May 31, 2011	**Configuration**	802.11g CH 1 / Ant. 2

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.84	67.82	74.00	-6.18	37.43	2.22	28.17	0.00	258	125	Peak	VERTICAL
2	2390.00	53.35	54.00	-0.65	22.96	2.22	28.17	0.00	258	125	Average	VERTICAL
3	2411.52	99.01				2.22	28.21	0.00	258	125	Average	VERTICAL
4	2412.00	110.24				2.22	28.21	0.00	258	125	Peak	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11g CH 6 / Ant. 2

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	52.97	54.00	-1.03	22.58	2.22	28.17	0.00	267	126	Average	VERTICAL
2	2390.00	71.45	74.00	-2.55	41.06	2.22	28.17	0.00	267	126	Peak	VERTICAL
3	2437.80	106.65				2.23	28.29	0.00	267	126	Average	VERTICAL
4	2438.60	117.15				2.23	28.29	0.00	267	126	Peak	VERTICAL
5	2483.50	52.44	54.00	-1.56	21.81	2.26	28.37	0.00	267	126	Average	VERTICAL
6	2484.62	65.44	74.00	-8.56	34.81	2.26	28.37	0.00	267	126	Peak	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	May 31, 2011	**Configuration**	802.11g CH 11 / Ant. 2

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2463.12	98.12				2.24	28.33	0.00	251	100	Average	VERTICAL
2	2463.44	108.02				2.24	28.33	0.00	251	100	Peak	VERTICAL
3	2483.50	53.18	54.00	-0.82	22.55	2.26	28.37	0.00	251	100	Average	VERTICAL
4	2483.82	67.63	74.00	-6.37	37.00	2.26	28.37	0.00	251	100	Peak	VERTICAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 20MHz CH 1 / Ant. 1

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.84	67.78	74.00	-6.22	37.39	2.22	28.17	0.00	136	150	Peak	HORIZONTAL
2	2390.00	53.92	54.00	-0.08	23.53	2.22	28.17	0.00	136	150	Average	HORIZONTAL
3	2411.52	98.11				2.22	28.21	0.00	136	150	Average	HORIZONTAL
4	2411.52	107.79				2.22	28.21	0.00	136	150	Peak	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 20MHz CH 6 / Ant. 1

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.52	72.93	74.00	-1.07	42.55	2.21	28.17	0.00	47	119	Peak	HORIZONTAL
2	2390.00	53.01	54.00	-0.99	22.62	2.22	28.17	0.00	47	119	Average	HORIZONTAL
3	2436.52	106.09				2.23	28.29	0.00	47	119	Average	HORIZONTAL
4	2437.96	115.75				2.23	28.29	0.00	47	119	Peak	HORIZONTAL
5	2483.50	51.27	54.00	-2.73	20.63	2.26	28.38	0.00	47	119	Average	HORIZONTAL
6	2483.50	64.36	74.00	-9.64	33.72	2.26	28.38	0.00	47	119	Peak	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 20MHz CH 11 / Ant. 1

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2461.04	106.51				2.24	28.33	0.00	130	144	Peak	VERTICAL
2	2462.80	97.46				2.24	28.33	0.00	130	144	Average	VERTICAL
3	2483.50	53.31	54.00	-0.69	22.68	2.26	28.37	0.00	130	144	Average	VERTICAL
4	2483.50	67.06	74.00	-6.94	36.43	2.26	28.37	0.00	130	144	Peak	VERTICAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 20MHz CH 1 / Ant. 2

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.04	67.88	74.00	-6.12	37.50	2.21	28.17	0.00	269	128	Peak	VERTICAL
2	2390.00	53.89	54.00	-0.11	23.50	2.22	28.17	0.00	269	128	Average	VERTICAL
3	2411.68	98.69				2.22	28.21	0.00	269	128	Average	VERTICAL
4	2412.80	107.66				2.22	28.21	0.00	269	128	Peak	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 20MHz CH 6 / Ant. 2

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	53.57	54.00	-0.43	23.18	2.22	28.17	0.00	270	127	Average	VERTICAL
2	2436.20	106.30				2.23	28.29	0.00	270	127	Average	VERTICAL
3	2438.44	116.30				2.23	28.29	0.00	270	127	Peak	VERTICAL
4	2483.50	51.04	54.00	-2.96	20.41	2.26	28.37	0.00	270	127	Average	VERTICAL

Item 2, 3 are the fundamental frequency at 2437 MHz.

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 20MHz CH 11 / Ant. 2

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2461.36	98.89				2.24	28.33	0.00	269	126	Average	VERTICAL
2	2463.28	108.73				2.24	28.33	0.00	269	126	Peak	VERTICAL
3	2483.50	53.73	54.00	-0.27	23.10	2.26	28.37	0.00	269	126	Average	VERTICAL
4	2483.50	68.34	74.00	-5.66	37.71	2.26	28.37	0.00	269	126	Peak	VERTICAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS8 20MHz CH 1 / Ant.1 + Ant. 2

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.84	68.64	74.00	-5.36	38.25	2.22	28.17	0.00	139	149	Peak	HORIZONTAL
2	2390.00	53.47	54.00	-0.53	23.08	2.22	28.17	0.00	139	149	Average	HORIZONTAL
3	2410.40	106.98				2.22	28.21	0.00	139	149	Peak	HORIZONTAL
4	2411.36	96.65				2.22	28.21	0.00	139	149	Average	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS8 20MHz CH 6 / Ant.1 + Ant. 2

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.20	72.90	74.00	-1.10	42.52	2.21	28.17	0.00	270	126	Peak	VERTICAL
2	2390.00	49.78	54.00	-4.22	19.39	2.22	28.17	0.00	270	126	Average	VERTICAL
3	2436.20	104.69				2.23	28.29	0.00	270	126	Average	VERTICAL
4	2437.64	116.37				2.23	28.29	0.00	270	126	Peak	VERTICAL
5	2483.50	48.15	54.00	-5.85	17.52	2.26	28.37	0.00	270	126	Average	VERTICAL
6	2483.82	62.01	74.00	-11.99	31.38	2.26	28.37	0.00	270	126	Peak	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS8 20MHz CH 11 / Ant.1 + Ant. 2

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2461.04	98.49				2.24	28.33	0.00	270	125	Average	VERTICAL
2	2462.64	110.13				2.24	28.33	0.00	270	125	Peak	VERTICAL
3	2483.50	53.87	54.00	-0.13	23.24	2.26	28.37	0.00	270	125	Average	VERTICAL
4	2484.62	68.75	74.00	-5.25	38.12	2.26	28.37	0.00	270	125	Peak	VERTICAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 40MHz CH 3 / Ant. 1

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.68	66.93	74.00	-7.07	36.55	2.21	28.17	0.00	56	120	Peak	HORIZONTAL
2	2390.00	53.96	54.00	-0.04	23.57	2.22	28.17	0.00	56	120	Average	HORIZONTAL
3	2420.40	91.94				2.23	28.25	0.00	56	120	Average	HORIZONTAL
4	2421.04	102.20				2.23	28.25	0.00	56	120	Peak	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 40MHz CH 6 / Ant. 1

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.36	70.87	74.00	-3.13	40.49	2.21	28.17	0.00	53	147	Peak	HORIZONTAL
2	2390.00	53.93	54.00	-0.07	23.54	2.22	28.17	0.00	53	147	Average	HORIZONTAL
3	2434.44	107.76				2.23	28.29	0.00	53	147	Peak	HORIZONTAL
4	2438.60	96.43				2.23	28.29	0.00	53	147	Average	HORIZONTAL
5	2483.50	49.86	54.00	-4.14	19.22	2.26	28.38	0.00	53	147	Average	HORIZONTAL
6	2483.82	65.90	74.00	-8.10	35.26	2.26	28.38	0.00	53	147	Peak	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 40MHz CH 9 / Ant. 1

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2453.92	92.61				2.24	28.33	0.00	51	143	Average	HORIZONTAL
2	2454.24	103.15				2.24	28.33	0.00	51	143	Peak	HORIZONTAL
3	2483.50	53.06	54.00	-0.94	22.42	2.26	28.38	0.00	51	143	Average	HORIZONTAL
4	2486.06	65.84	74.00	-8.16	35.16	2.26	28.42	0.00	51	143	Peak	HORIZONTAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 40MHz CH 3 / Ant. 2

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2383.59	68.97	74.00	-5.03	38.59	2.21	28.17	0.00	270	127	Peak	VERTICAL
2	2388.72	53.00	54.00	-1.00	22.62	2.21	28.17	0.00	270	127	Average	VERTICAL
3	2420.72	91.98				2.23	28.25	0.00	270	127	Average	VERTICAL
4	2423.60	103.76				2.23	28.25	0.00	270	127	Peak	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 40MHz CH 6 / Ant. 2

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.36	67.82	74.00	-6.18	37.44	2.21	28.17	0.00	293	100	Peak	VERTICAL
2	2390.00	53.56	54.00	-0.44	23.17	2.22	28.17	0.00	293	100	Average	VERTICAL
3	2438.28	104.58				2.23	28.29	0.00	293	100	Peak	VERTICAL
4	2438.60	94.42				2.23	28.29	0.00	293	100	Average	VERTICAL
5	2483.50	49.66	54.00	-4.34	19.03	2.26	28.37	0.00	293	100	Average	VERTICAL
6	2483.50	64.65	74.00	-9.35	34.02	2.26	28.37	0.00	293	100	Peak	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS0 40MHz CH 9 / Ant. 2

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2453.28	93.46				2.24	28.33	0.00	245	100	Average	VERTICAL
2	2454.24	103.86				2.24	28.33	0.00	245	100	Peak	VERTICAL
3	2483.50	53.94	54.00	-0.06	23.31	2.26	28.37	0.00	245	100	Average	VERTICAL
4	2483.50	66.75	74.00	-7.25	36.12	2.26	28.37	0.00	245	100	Peak	VERTICAL

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

Note:

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

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS8 40MHz CH 3 / Ant.1 + Ant. 2

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2388.08	69.30	74.00	-4.70	38.92	2.21	28.17	0.00	270	128	Peak	VERTICAL
2	2390.00	53.92	54.00	-0.08	23.53	2.22	28.17	0.00	270	128	Average	VERTICAL
3	2419.12	104.92				2.23	28.25	0.00	270	128	Peak	VERTICAL
4	2420.08	90.95				2.23	28.25	0.00	270	128	Average	VERTICAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS8 40MHz CH 6 / Ant.1 + Ant. 2

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	53.39	54.00	-0.61	23.00	2.22	28.17	0.00	49	145	Average	HORIZONTAL
2	2390.00	70.62	74.00	-3.38	40.23	2.22	28.17	0.00	49	145	Peak	HORIZONTAL
3	2438.92	95.20				2.23	28.29	0.00	49	145	Average	HORIZONTAL
4	2439.24	107.11				2.23	28.29	0.00	49	145	Peak	HORIZONTAL
5	2483.50	49.41	54.00	-4.59	18.77	2.26	28.38	0.00	49	145	Average	HORIZONTAL
6	2483.82	61.61	74.00	-12.39	30.97	2.26	28.38	0.00	49	145	Peak	HORIZONTAL

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

Temperature	25℃	**Humidity**	60%
Test Engineer	Satoshi Yang	**Test Site No.**	03CH01-CB
Test Date	Jun. 10, 2011	**Configuration**	802.11n MCS8 40MHz CH 9 / Ant.1 + Ant. 2

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2449.76	106.21				2.24	28.29	0.00	271	129	Peak	VERTICAL
2	2450.40	92.19				2.24	28.29	0.00	271	129	Average	VERTICAL
3	2483.50	53.84	54.00	-0.16	23.21	2.26	28.37	0.00	271	129	Average	VERTICAL
4	2483.50	69.07	74.00	-4.93	38.44	2.26	28.37	0.00	271	129	Peak	VERTICAL

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

Note:

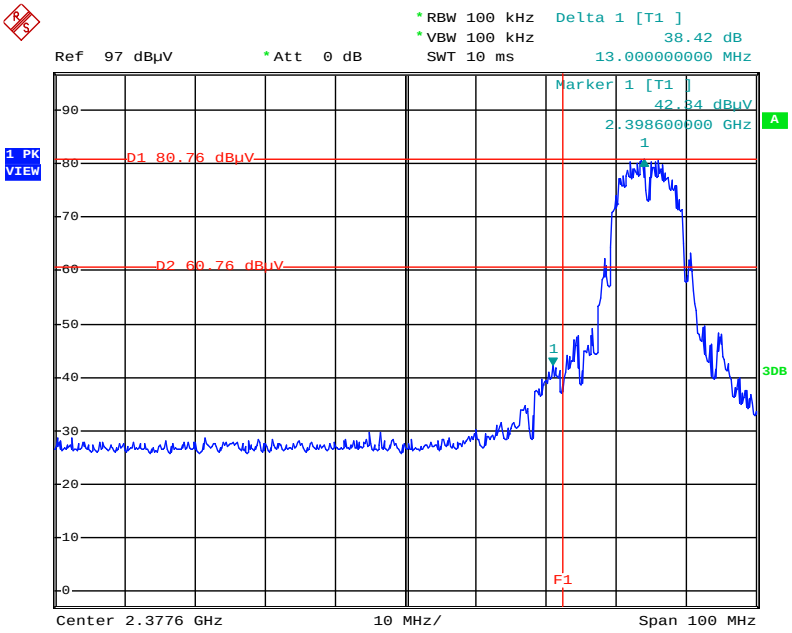
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

For Emission not in Restricted Band

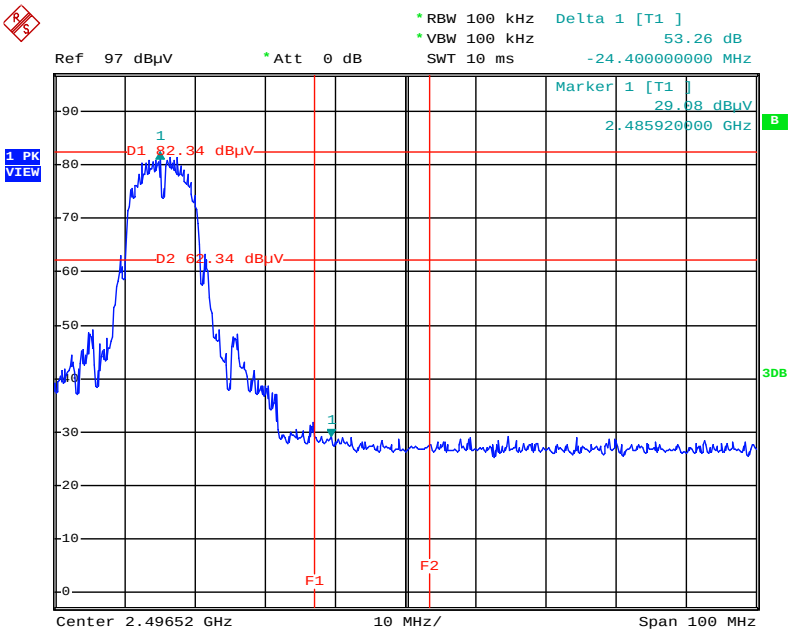
<Ant. 1>

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



Date: 20.AUG.2011 01:49:01

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



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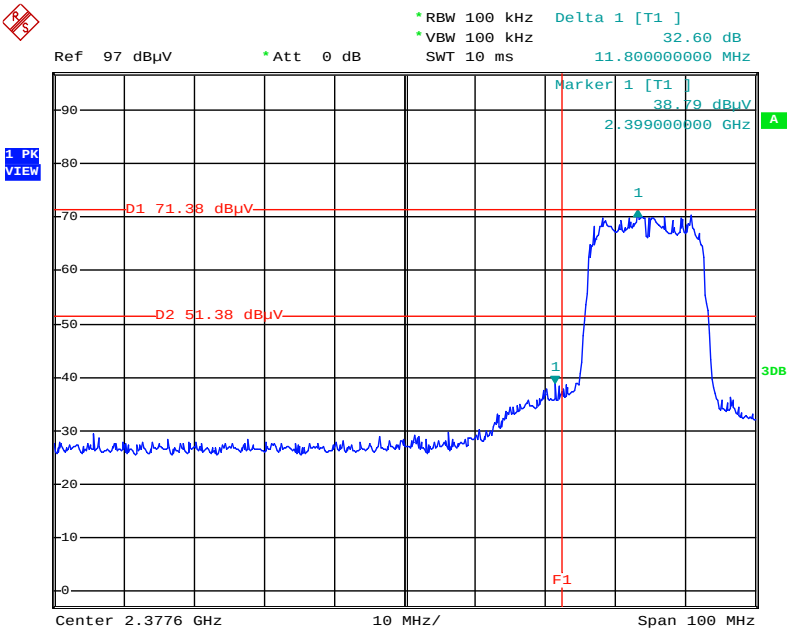
Low Band Edge Plot on Configuration IEEE 802.11g / 2412 MHz



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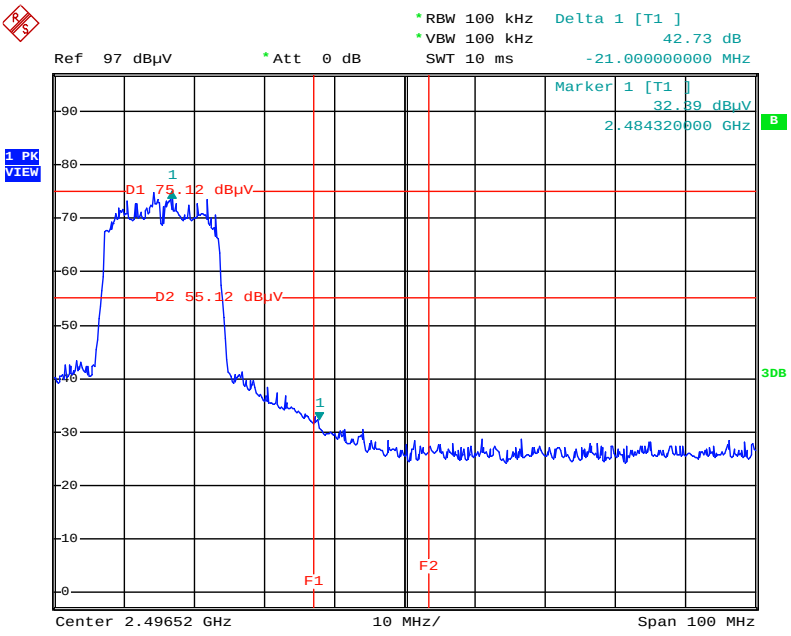
High Band Edge Plot on Configuration IEEE 802.11g / 2462 MHz



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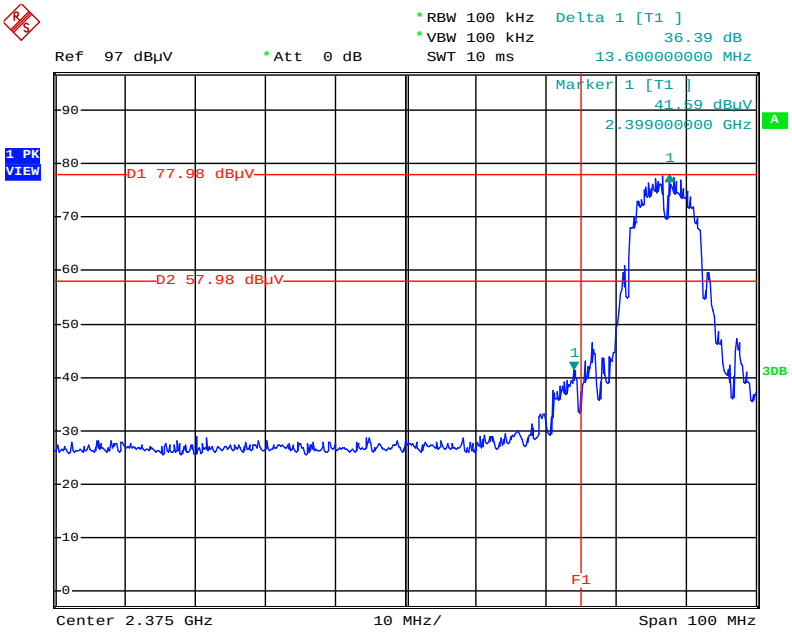
<Ant. 2>

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



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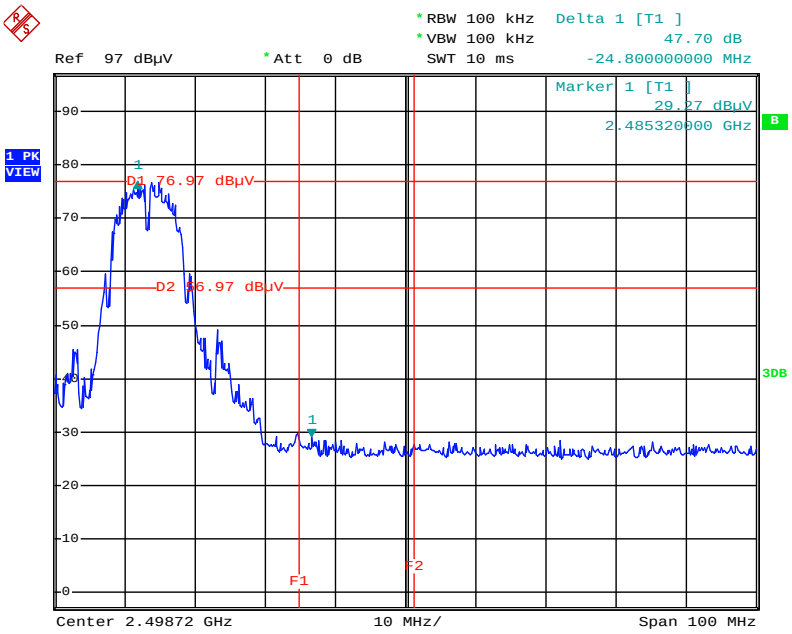
High Band Edge Plot on Configuration IEEE 802.11b / 2462 MHz



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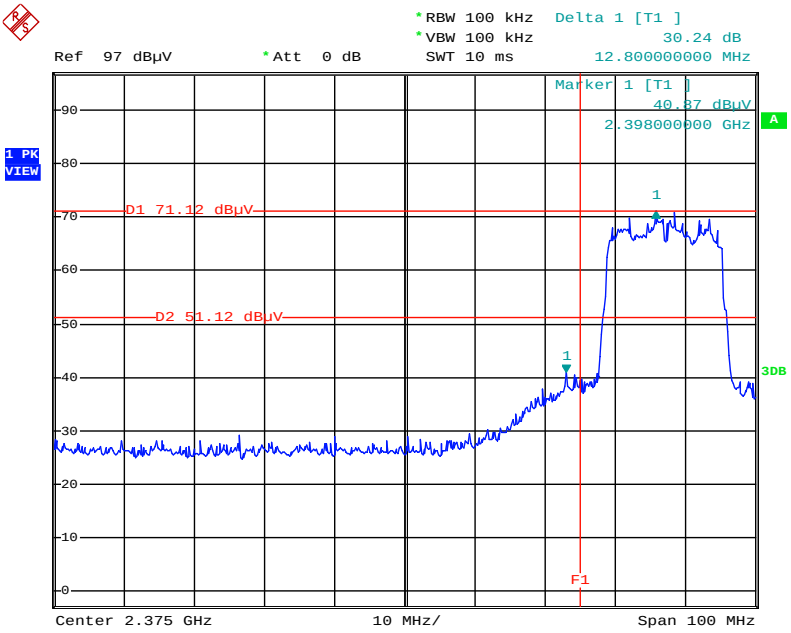
Low Band Edge Plot on Configuration IEEE 802.11g / 2412 MHz



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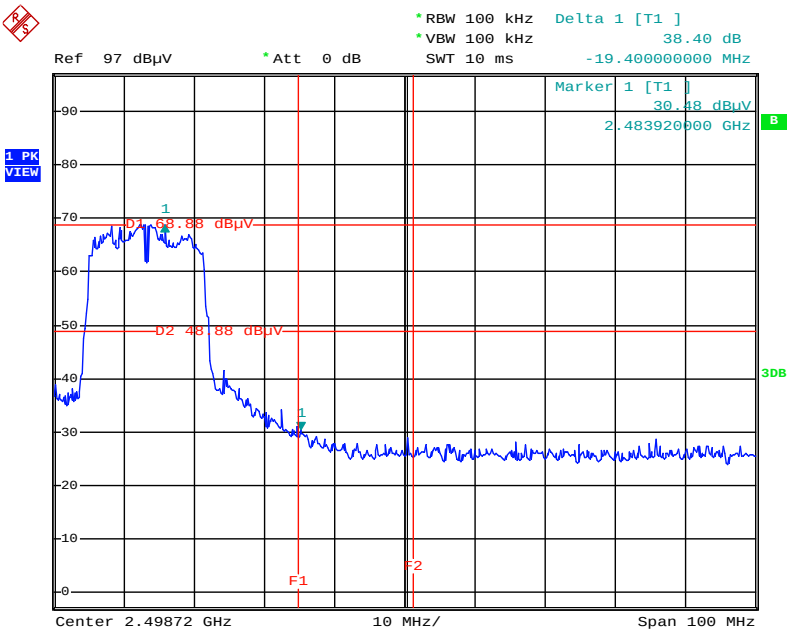
High Band Edge Plot on Configuration IEEE 802.11g / 2462 MHz



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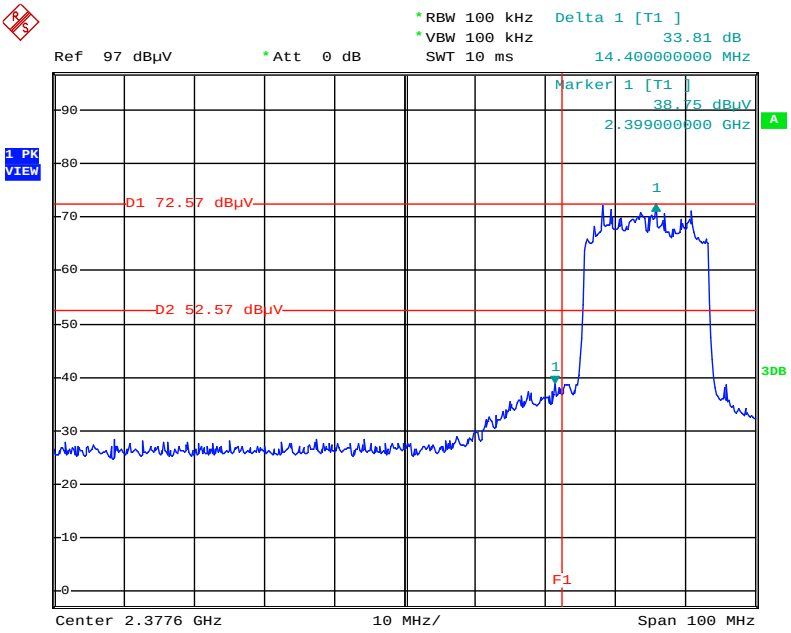
<Ant. 1>

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



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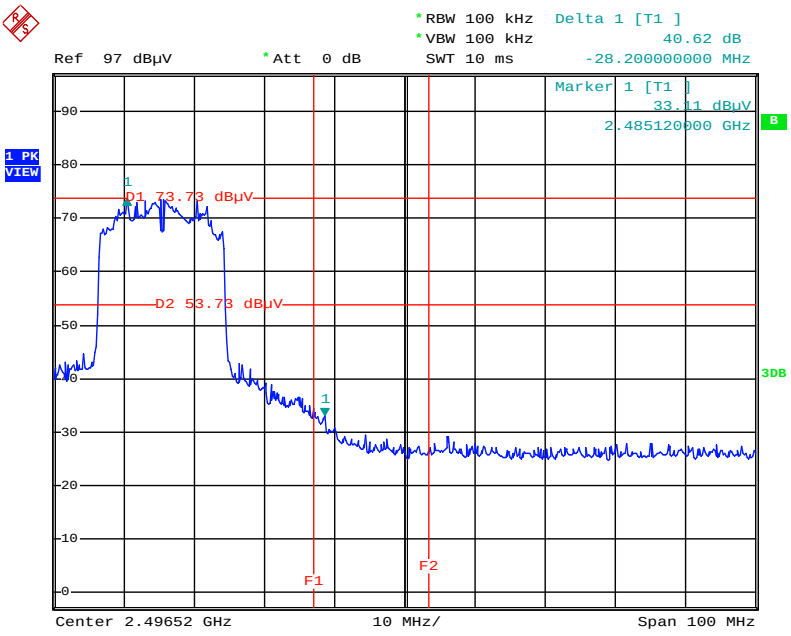
High Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / 2462 MHz



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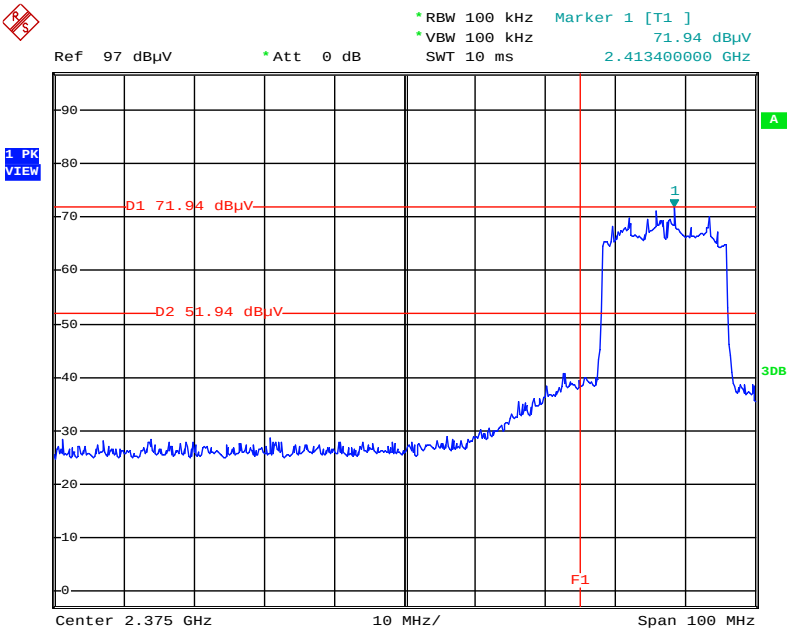
<Ant. 2>

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



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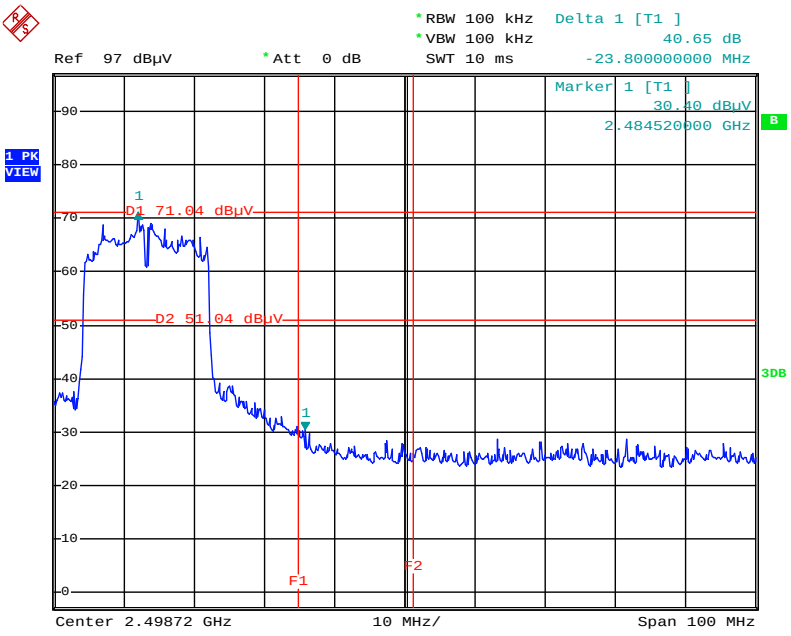
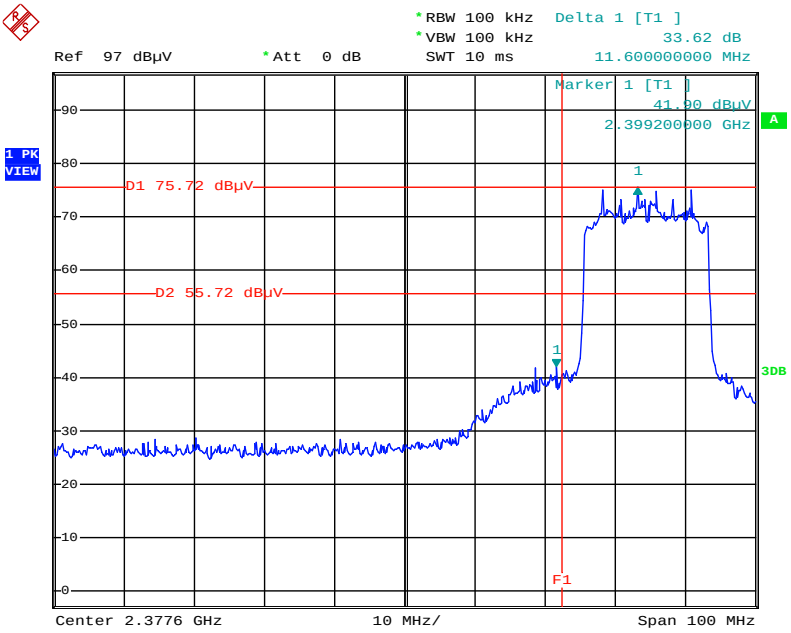
High Band Edge Plot on Configuration IEEE 802.11n MCS0 20MHz / 2462 MHz



Date: 20.AUG.2011 02:56:24

<Ant. 1 + Ant. 2>

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / 2412 MHz



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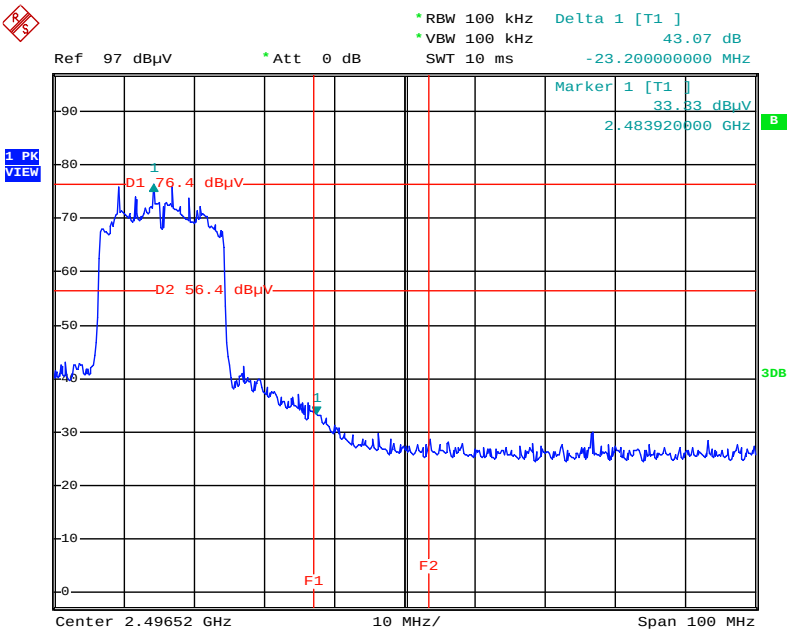
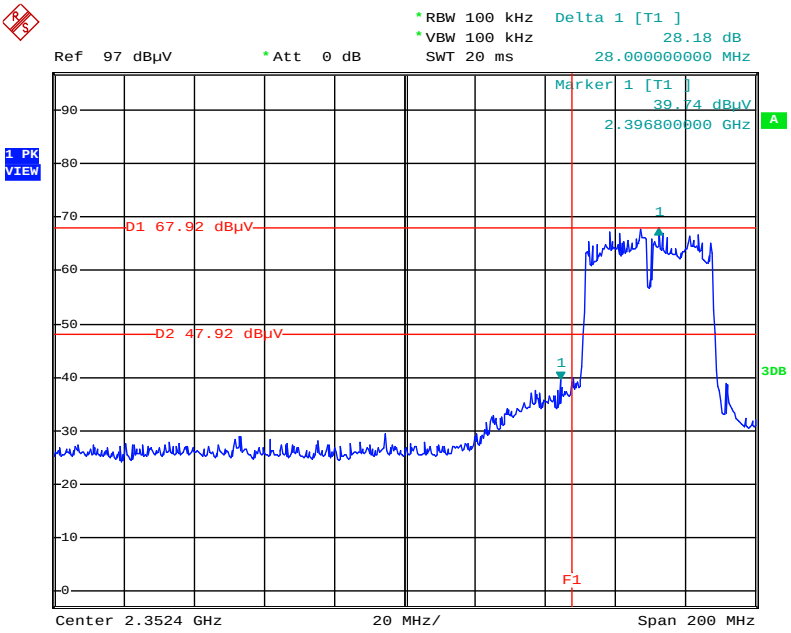
High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz / 2462 MHz



Date: 20.AUG.2011 02:43:20

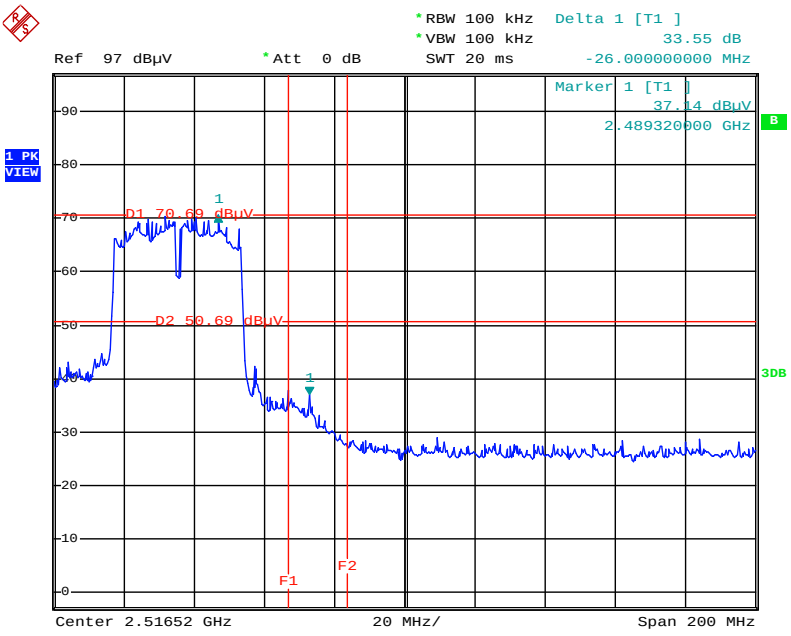
<Ant. 1>

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



Date: 20.AUG.2011 02:01:45

High Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / 2452 MHz



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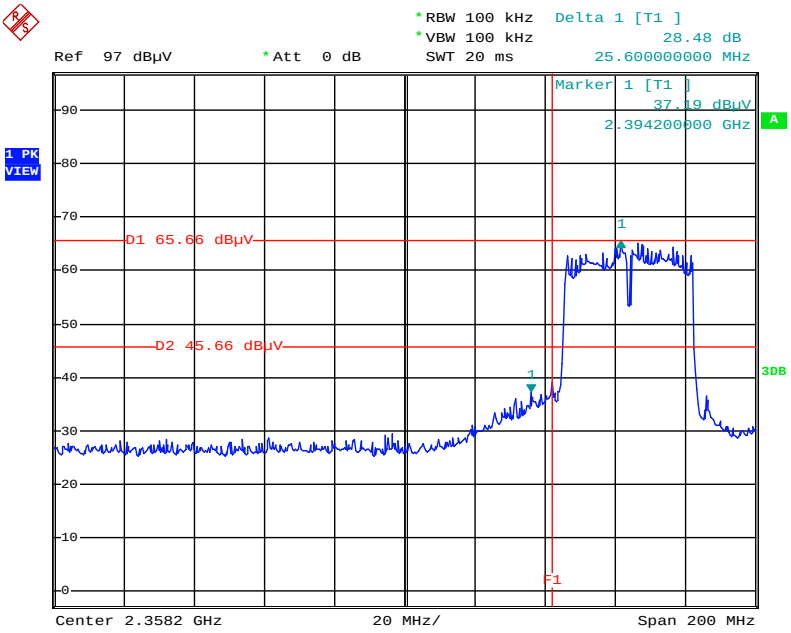
<Ant. 2>

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



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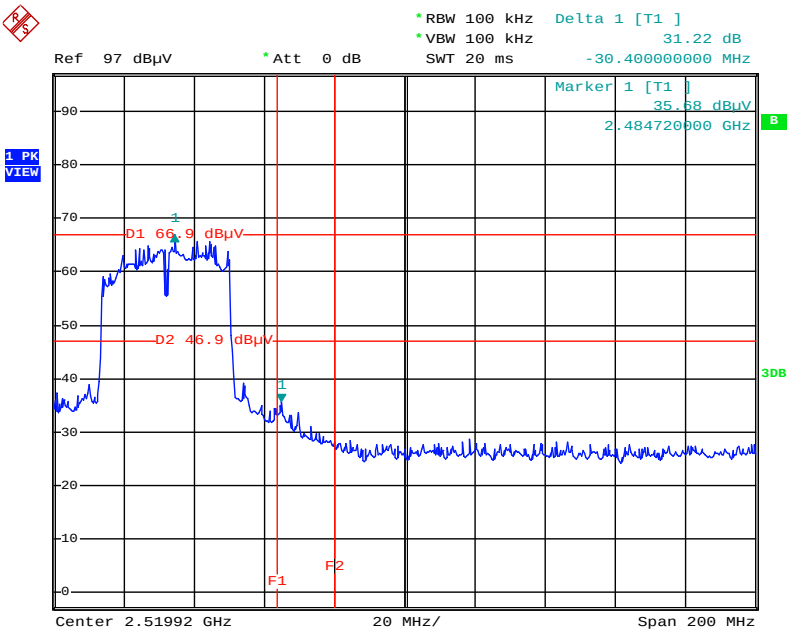
High Band Edge Plot on Configuration IEEE 802.11n MCS0 40MHz / 2452 MHz



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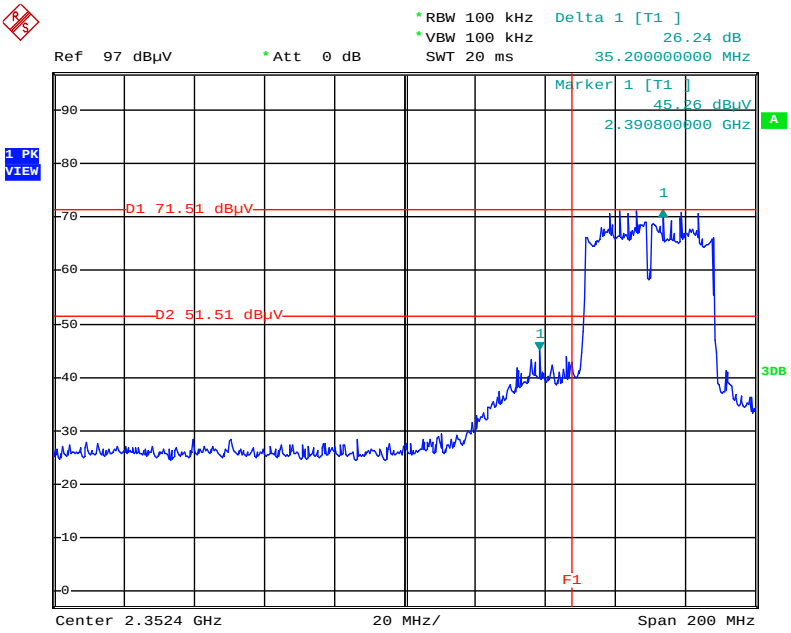
<Ant. 1 + Ant. 2>

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / 2422 MHz



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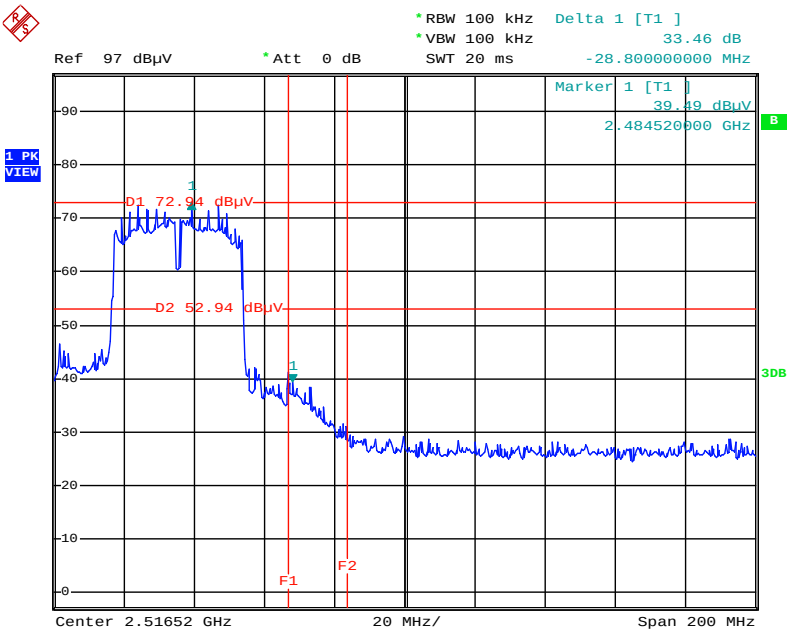
High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz / 2452 MHz



Date: 20.AUG.2011 02:47:43

3.10 Antenna Requirements

3.10.1 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.

3.10.2 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	Sep. 01, 2010	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Oct. 28, 2010	Conduction (CO01-CB)
V- LISN	Schwarzbeck	NSLK 8127	8127-478	9K ~ 30MHz	Nov. 16, 2010	Conduction (CO01-CB)
PULSE LIMITER	R&S	ESH3-Z2	100430	9K~30MHz	Jan. 04, 2011	Conduction (CO01-CB)
COND Cable	-	Cable	-	0.15MHz~30MHz	Dec. 04, 2010	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	Oct. 17, 2010	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 22, 2010	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Oct. 08, 2010	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 17, 2010	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Nov. 23, 2010	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26.5GHz ~ 40GHz	Jul. 29, 2010	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26.5GHz ~ 40GHz	Jul. 29, 2011	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP	100304	9kHz ~ 40GHz	Nov. 22, 2010	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9KHz ~ 2.75GHz	Mar. 22, 2011	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9 kHz - 30 MHz	Sep. 09, 2010*	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N/A	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N/A	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz - 1 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	N/A	1 GHz – 26.5 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz – 26.5 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV30	101026	9KHz~30GHz	Jul. 27, 2011	Conducted (TH01-CB)
RF Power Divider	HP	11636A	00306	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)
RF Power Splitter	Anaren	44100	1839	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)

RF Power Splitter	Anaren	42100	17930	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-12	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-13	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Sep. 13, 2010	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 08, 2010	Conducted (TH01-CB)

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

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 TAF CERTIFICATE OF ACCREDITATION

Certificate No.：L1190-110702

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

Certificate of Accreditation

This is to certify that

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

is accredited in respect of laboratory

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

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

P1, total 22 pages

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