

FCC RADIO TEST REPORT

Applicant's company	TRENDnet, Inc.
Applicant Address	20675 Manhattan Place, Torrance, CA 90501,U.S.A
FCC ID	XU8TEW715APO
Manufacturer's company	TRENDnet, Inc.
Manufacturer Address	20675 Manhattan Place, Torrance, CA 90501,U.S.A

Product Name	N150 Wireless Outdoor PoE Access Point
Brand Name	TRENDnet
Model Name	TEW-715APO
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Oct. 12, 2009
Final Test Date	Oct. 23, 2012
Submission Type	Original Equipment



Statement

Test result included in this report is for the IEEE 802.11n and IEEE 802.11b/g part of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2009** and **47 CFR FCC Part 15 Subpart C**.

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

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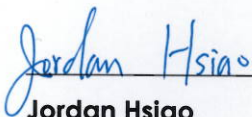
History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR9O1410	Rev. 01	Initial issue of report	Oct. 27, 2009
FR9O1410-11	Rev. 01	Removed one FAIRWAY WRG15F-120A adapter. Added one adapter , Brand: DVE DSA-12PFA-15 FUS 150080 (Adapter 2)	Jul. 17, 2012
FR9O1410-14	Rev. 01	Add POE Injector , respectively Foshan POE and BLUEMAX POE	Sep. 27, 2012
FR9O1410-15	Rev. 01	Change model number	Oct. 18, 2012
FR9O1410-15	Rev. 02	According to KDB 558074, measured to verify the new entry contains the Power Spectral Density and 6dB pectrum Bandwidth.	Oct. 31, 2012

1. CERTIFICATE OF COMPLIANCE

Product Name : N150 Wireless Outdoor PoE Access Point
Brand Name : TRENDnet
Model Name : TEW-715APO
Applicant : TRENDnet, Inc.
Test Rule Part(s) : 47 CFR FCC Part 15 Subpart C § 15.247

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Oct. 12, 2009 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

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	Rule Section	Description of Test	Result	Under Limit
4.1	15.207	AC Power Line Conducted Emissions	Complies	11.71 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	0.85 dB
4.3	15.247(e)	Power Spectral Density	Complies	7.79 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	0.71 dB
4.6	15.247(d)	Band Edge Emissions	Complies	0.03 dB
4.7	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Conducted Output Power	±0.8dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
6dB Spectrum Bandwidth	±8.5×10 ⁻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°C	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n

Items	Description
Product Type	IEEE 802.11n: WLAN (1TX, 1RX)
Radio Type	Intentional Transceiver
Power Type	From POE
Modulation	see the below table for IEEE 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11 for 20MHz bandwidth ; 7 for 40MHz bandwidth
Channel Band Width (99%)	MCS0 (20MHz): 17.76 MHz ; MCS0 (40MHz): 36.48 MHz
Conducted Output Power	MCS0 (20MHz): 23.92 dBm ; MCS0 (40MHz): 21.01 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11b/g

Items	Description
Product Type	802.11b/g:WLAN (1TX, 1RX)
Radio Type	Intentional Transceiver
Power Type	From POE
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54)
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11
Channel Band Width (99%)	11b: 15.76 MHz ; 11g: 16.64 MHz
Conducted Output Power	11b: 25.46 dBm ; 11g: 23.69 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna & Band width

Antenna	Single (TX)	
Band width Mode	20 MHz	40 MHz
IEEE 802.11b	V	X
IEEE 802.11g	V	X
IEEE 802.11n	V	V

IEEE 802.11n spec

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Datarate(Mbps)			
									800nsGI		400nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.200	15
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.400	30
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.700	45
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.900	60
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.300	90
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.800	120
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.000	135
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.200	150

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

3.2. Accessories

Power	Brand	Model	Rating
Adapter 1	DVE	DSA-12G-12 FUS 120120	Input: 100-240VAC, 50-60Hz, 0.3A Output: 12VDC, 1.0A
Adapter 2	DVE	DSA-12PFA-15 FUS 150080	Input: 100-240VAC, 50-60Hz, 0.5A Output: 15VDC, 0.8A
Power	Brand	Model	
POE	Foshan	GRT-XHCQ	
POE	BLUEMAX	B133-169	

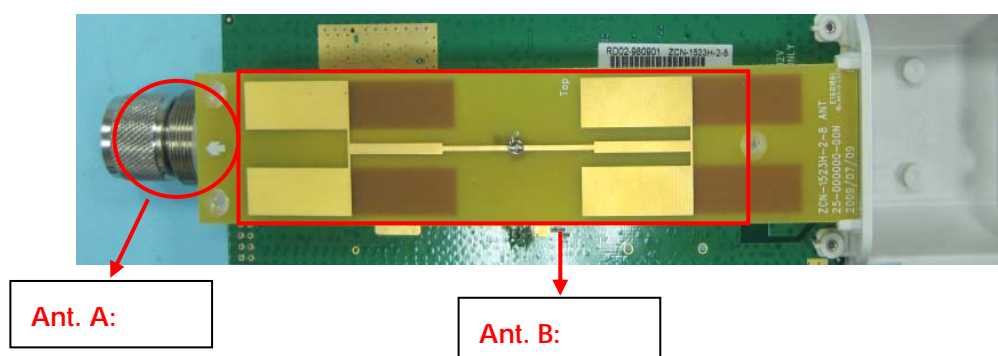
3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
A	ZCOM	WS-120	Dipole Antenna	N Type	2	TX / RX Ant.
B	ZCOM	ZCN-1523H-2-8	PCB Antenna	N/A	8.45	TX / RX Ant.

Note: The EUT has two types of antennas (1TX, 1RX).

Ant. A and Ant. B can be used as transmitting/receiving antenna.

These two antennas will be not transmitting simultaneously.



3.4. Table for Carrier Frequencies

There are two bandwidth systems for IEEE 802.11n.

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

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

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

3.5. Table for Test Modes

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

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	Normal Link	-	-	-
Maximum Peak Conducted Output Power	MCS0/20MHz	6.5 Mbps	1/6/11	A / B
	MCS0/40MHz	13.5 Mbps	3/6/9	A / B
	11b/BPSK	1 Mbps	1/6/11	A / B
	11g/BPSK	6 Mbps	1/6/11	A / B
Power Spectral Density 6dB Spectrum Bandwidth	MCS0/20MHz	6.5 Mbps	1/6/11	A / B
	MCS0/40MHz	13.5 Mbps	3/6/9	A / B
	11b/BPSK	1 Mbps	1/6/11	A / B
	11g/BPSK	6 Mbps	1/6/11	A / B
Radiated Emissions 9kHz~1GHz	Normal Link	-	-	-
Radiated Emissions 1GHz~10 th Harmonic	MCS0/20MHz	6.5 Mbps	1/6/11	A / B
	MCS0/40MHz	13.5 Mbps	3/6/9	A / B
	11b/BPSK	1 Mbps	1/6/11	A / B
	11g/BPSK	6 Mbps	1/6/11	A / B
Band Edge Emissions	MCS0/20MHz	6.5 Mbps	1/11	A / B
	MCS0/40MHz	13.5 Mbps	3/9	A / B
	11b/BPSK	1 Mbps	1/11	A / B
	11g/BPSK	6 Mbps	1/11	A / B

NOTE:

<For Conducted Emissions Test>:

Test Mode 1: EUT Horizontal + 12V adapter + Black POE

Test Mode 2: EUT Horizontal + 12V adapter + White POE

Test Mode 3: EUT Horizontal + 15V adapter + Black POE

Test Mode 4: EUT Horizontal + 15V adapter + White POE

Mode 3 performed as worse case, it was recorded in this report.

<For Radiated Emissions Test>:

Test Mode 1: EUT Horizontal + 12V adapter + Black POE

Test Mode 2: EUT Horizontal + 12V adapter + White POE

Test Mode 3: EUT Horizontal + 15V adapter + Black POE

Test Mode 4: EUT Horizontal + 15V adapter + White POE

For Radiated Emission test below 1GHz

Mode 3 performed as worse case, it was recorded in this report

3.6. Table for Testing Locations

<For Original Mode>

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

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

Please refer section 6 for Test Site Address.

3.7. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	E2KWM3945ABG
Notebook	ASUS	EEEPC8G-W001	PPD-AR5BXB63

3.8. Table for Parameters of Test Software Setting

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

<For Ant. A – Dipole Antenna>:

Power Parameters of IEEE 802.11n MCS0 20MHz Ant. A

Test Software Version	Revision 0.9 BUILD #9 ART_11n		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11n 20MHz Ant. A	17.5	21.5	18.5

Power Parameters of IEEE 802.11n MCS0 40MHz Ant. A

Test Software Version	Revision 0.9 BUILD #9 ART_11n		
Frequency	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n 40MHz Ant. A	15	20	15.5

Power Parameters of IEEE 802.11b/g Ant. A

Test Software Version	Revision 0.9 BUILD #9 ART_11n		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b Ant. A	22.5	24.5	24
IEEE 802.11g Ant. A	18	21	19.5

<For Ant. B – PCB Antenna>:

Power Parameters of IEEE 802.11n MCS0 20MHz Ant. B

Test Software Version	Revision 0.9 BUILD #9 ART_11n		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11n 20MHz Ant. B	16	18	16

Power Parameters of IEEE 802.11n MCS0 40MHz Ant. B

Test Software Version	Revision 0.9 BUILD #9 ART_11n		
Frequency	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n 40MHz Ant. B	13.5	18	13

Power Parameters of IEEE 802.11b/g Ant. B

Test Software Version	Revision 0.9 BUILD #9 ART_11n		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b Ant. B	21.5	23	21.5
IEEE 802.11g Ant. B	16.5	18.5	16.5

During the test, the following programs under WIN XP were executed:

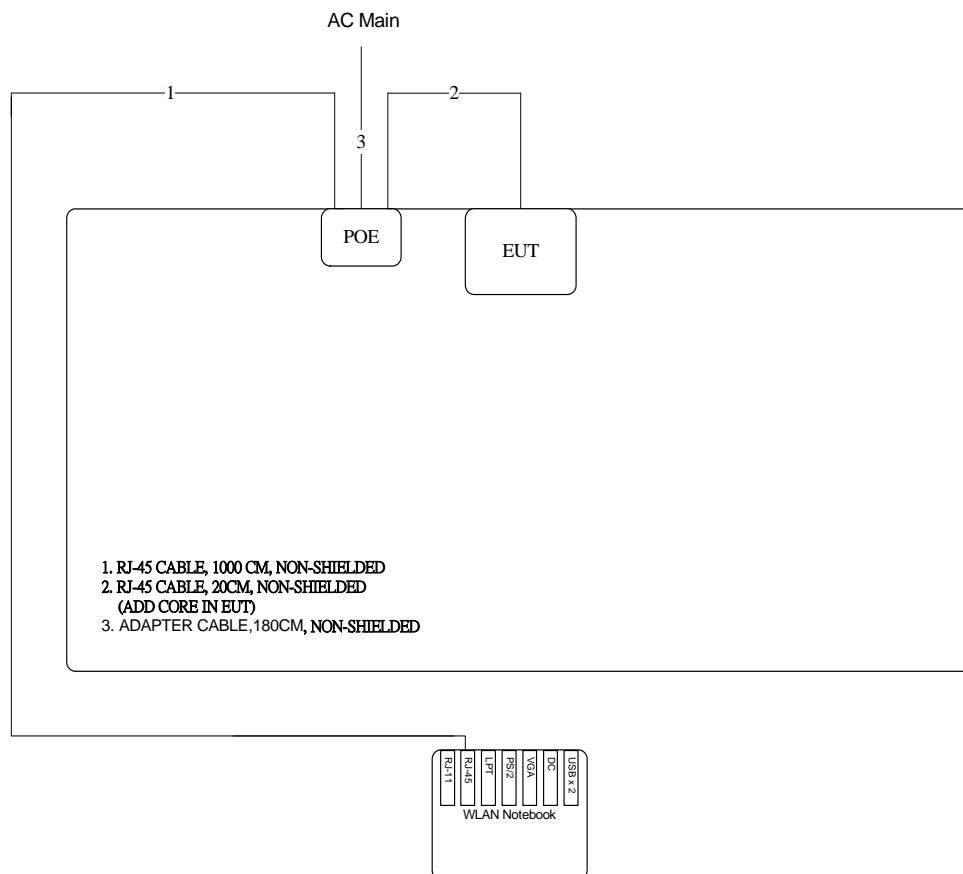
At the same time, "Revision 0.9 BUILD #9 ART_11n" was executed the test program to control the EUT continuously transmit RF signal.

3.9. Test Configurations

3.9.1. Radiation Emissions Test Configuration

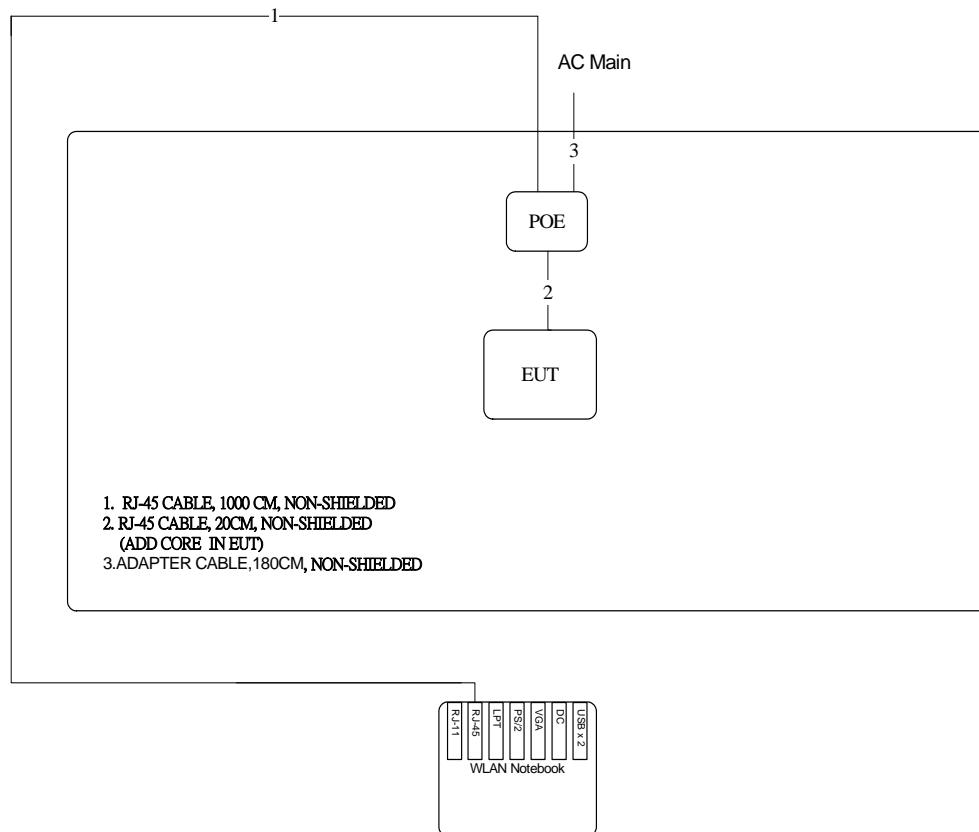
Test Configuration: 9KHz~1GHz

Test Mode: Mode 3



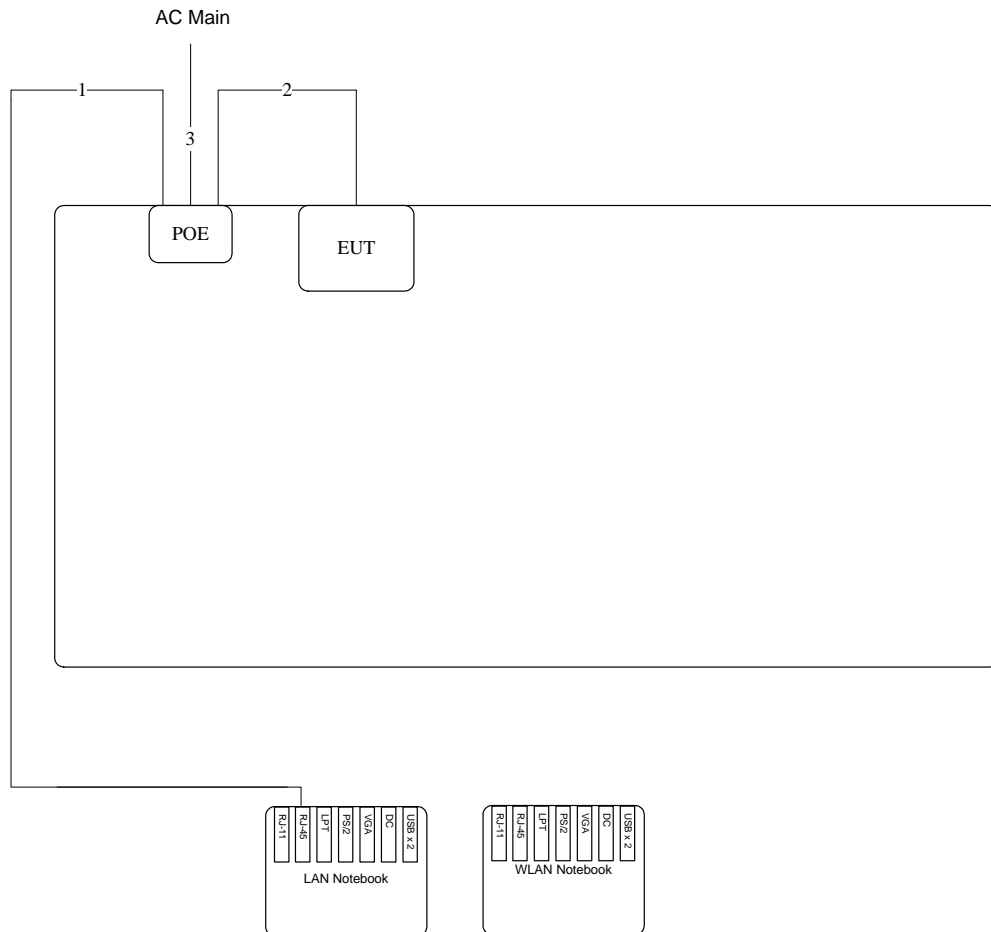
Test Configuration: above 1GHz

Test Mode: Mode 3



3.9.2. AC Power Line Conduction Emissions Test Configuration

Test Mode: Mode 3



Item	Connection	Shield	Length
1	RJ45 Cable	No	10M
2	RJ45 Cable	No	1M
3	Power Cable	No	1.5M

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

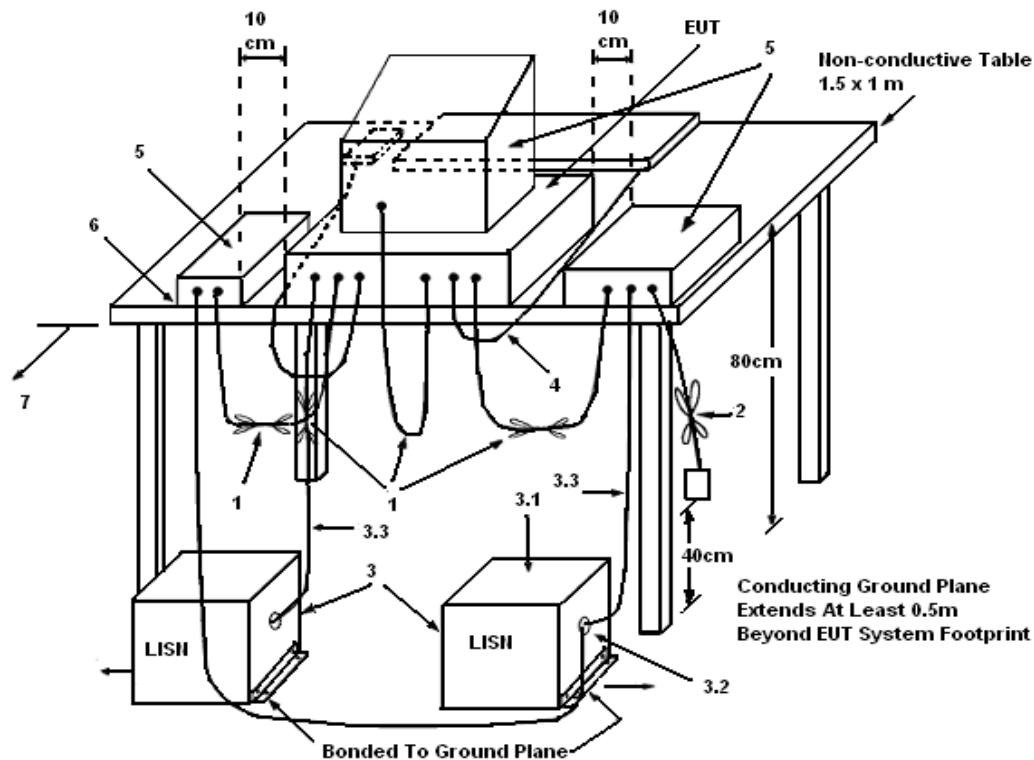
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

- (1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- (2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- (3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω . LISN can be placed on top of, or immediately beneath, reference ground plane.
- (3.1) All other equipment powered from additional LISN(s).
- (3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
- (3.3) LISN at least 80 cm from nearest part of EUT chassis.
- (4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
- (5) Non-EUT components of EUT system being tested.
- (6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
- (7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

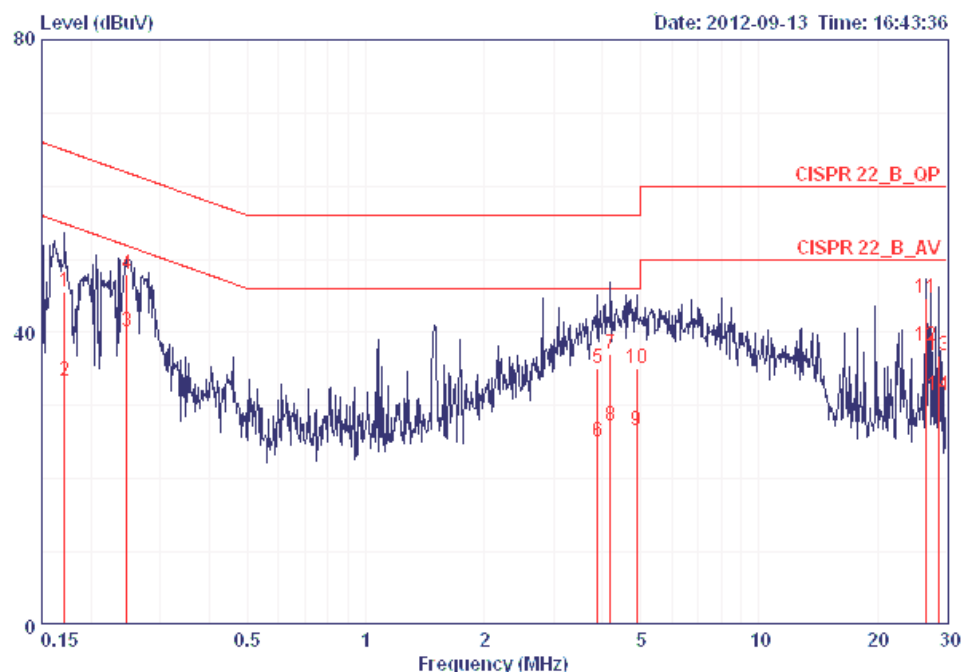
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

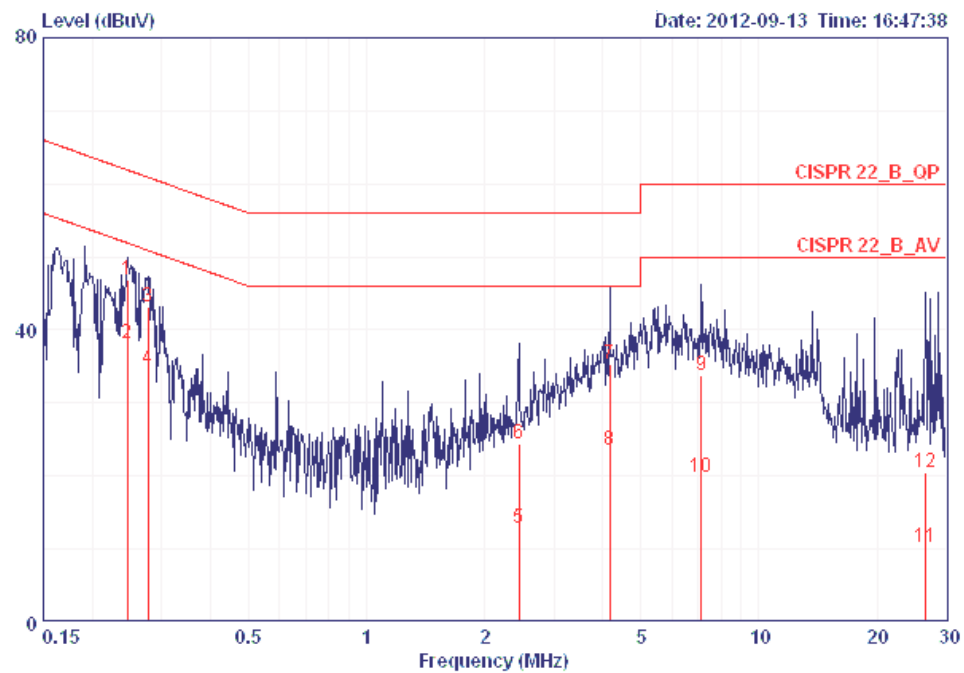
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24°C	Humidity	64%
Test Engineer	Ryo Fan	Phase	Line
Configuration	Normal Link / Mode 3		



	Freq	Level	Over	Limit	Read	LISN	Cable		
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.17125	45.49	-19.41	64.90	45.33	0.16	0.00	LINE	QP
2	0.17125	33.35	-21.55	54.90	33.19	0.16	0.00	LINE	AVERAGE
3	0.24682	40.15	-11.71	51.86	40.00	0.15	0.00	LINE	AVERAGE
4	0.24682	47.90	-13.96	61.86	47.75	0.15	0.00	LINE	QP
5	3.881	35.01	-20.99	56.00	34.79	0.22	0.00	LINE	QP
6	3.881	24.98	-21.02	46.00	24.76	0.22	0.00	LINE	AVERAGE
7	4.180	37.04	-18.96	56.00	36.82	0.22	0.00	LINE	QP
8	4.180	27.23	-18.77	46.00	27.01	0.22	0.00	LINE	AVERAGE
9	4.874	26.62	-19.38	46.00	26.38	0.24	0.00	LINE	AVERAGE
10	4.874	35.18	-20.82	56.00	34.94	0.24	0.00	LINE	QP
11	26.546	44.60	-15.40	60.00	43.98	0.62	0.00	LINE	QP
12	26.546	38.21	-11.79	50.00	37.59	0.62	0.00	LINE	AVERAGE
13	28.746	36.73	-23.27	60.00	36.07	0.66	0.00	LINE	QP
14	28.746	31.39	-18.61	50.00	30.73	0.66	0.00	LINE	AVERAGE

Temperature	24°C	Humidity	64%
Test Engineer	Ryo Fan	Phase	Neutral
Configuration	Normal Link / Mode 3		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.24552	46.83	-15.08	61.91	46.75	0.08	0.00	NEUTRAL	QP
2	0.24552	38.12	-13.79	51.91	38.04	0.08	0.00	NEUTRAL	AVERAGE
3	0.27734	43.24	-17.66	60.90	43.16	0.08	0.00	NEUTRAL	QP
4	0.27734	34.71	-16.19	50.90	34.63	0.08	0.00	NEUTRAL	AVERAGE
5	2.448	12.81	-33.19	46.00	12.70	0.11	0.00	NEUTRAL	AVERAGE
6	2.448	24.35	-31.65	56.00	24.24	0.11	0.00	NEUTRAL	QP
7	4.158	35.27	-20.73	56.00	35.14	0.13	0.00	NEUTRAL	QP
8	4.158	23.47	-22.53	46.00	23.34	0.13	0.00	NEUTRAL	AVERAGE
9	7.137	33.86	-26.14	60.00	33.67	0.19	0.00	NEUTRAL	QP
10	7.137	19.91	-30.09	50.00	19.72	0.19	0.00	NEUTRAL	AVERAGE
11	26.558	10.14	-39.86	50.00	9.62	0.52	0.00	NEUTRAL	AVERAGE
12	26.558	20.45	-39.55	60.00	19.93	0.52	0.00	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

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

4.2.2. Measuring Instruments and Setting

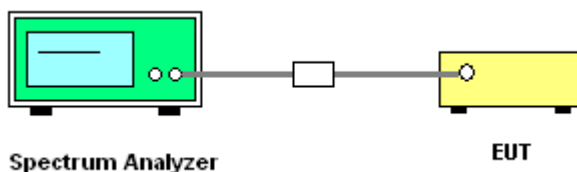
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with Measurement of Digital Transmission Systems Operating under Section 15.247 March 23, 2005.

4.2.4. Test Setup Layout



4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of Maximum Conducted Output Power

<For Ant. A - Dipole Antenna>:

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11n, Ant. A

Configuration IEEE 802.11n MCS0 20MHz Ant. A

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	19.30	30.00	Complies
6	2437 MHz	23.92	30.00	Complies
11	2462 MHz	20.00	30.00	Complies

Configuration IEEE 802.11n MCS0 40MHz Ant. A

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.70	30.00	Complies
6	2437 MHz	21.01	30.00	Complies
9	2452 MHz	16.22	30.00	Complies

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11b/g, Ant. A

Configuration IEEE 802.11b Ant. A

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	23.28	30.00	Complies
6	2437 MHz	25.46	30.00	Complies
11	2462 MHz	24.77	30.00	Complies

Configuration IEEE 802.11g Ant. A

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	20.38	30.00	Complies
6	2437 MHz	23.69	30.00	Complies
11	2462 MHz	21.13	30.00	Complies

<For Ant. B - PCB Antenna>:

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11n, Ant. B

Configuration IEEE 802.11n MCS0 20MHz Ant. B

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.50	27.55	Complies
6	2437 MHz	20.56	27.55	Complies
11	2462 MHz	18.72	27.55	Complies

Configuration IEEE 802.11n MCS0 40MHz Ant. B

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	14.99	27.55	Complies
6	2437 MHz	19.73	27.55	Complies
9	2452 MHz	14.45	27.55	Complies

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11b/g, Ant. A

Configuration IEEE 802.11b Ant. B

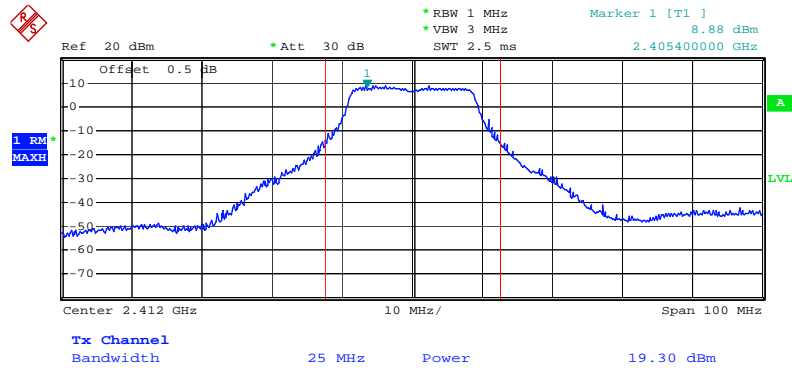
Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	22.68	27.55	Complies
6	2437 MHz	24.29	27.55	Complies
11	2462 MHz	22.93	27.55	Complies

Configuration IEEE 802.11g Ant. B

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	19.87	27.55	Complies
6	2437 MHz	21.80	27.55	Complies
11	2462 MHz	19.82	27.55	Complies

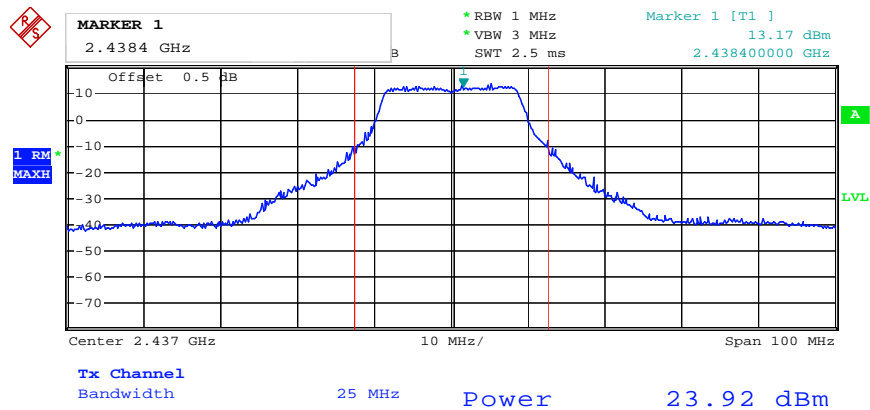
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. A / 2412 MHz



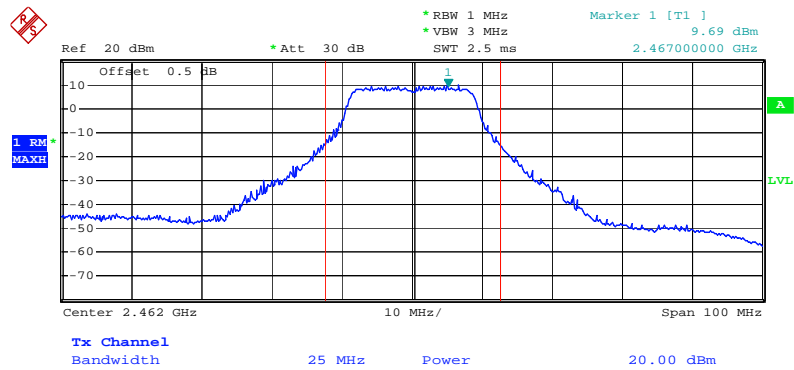
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. A / 2437 MHz



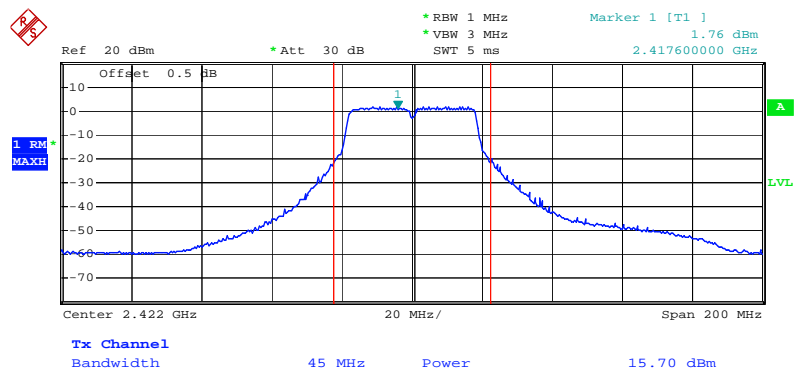
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. A / 2462 MHz



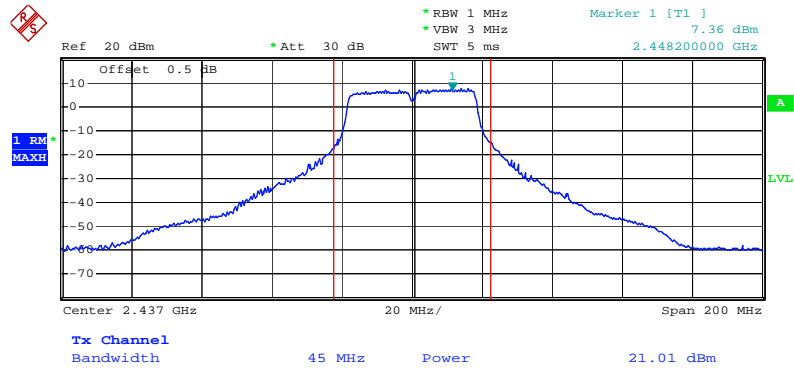
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. A / 2422 MHz



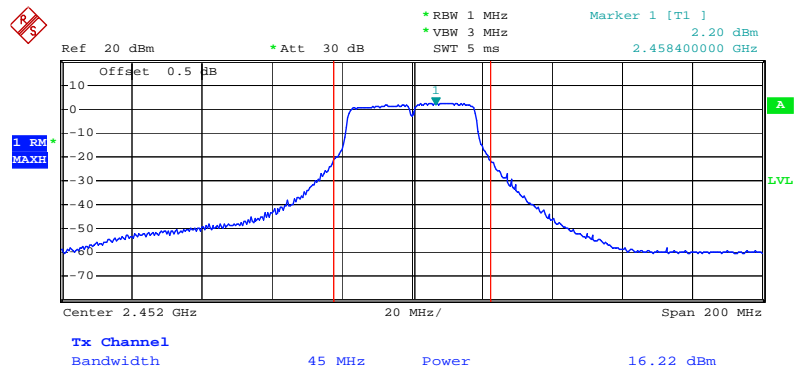
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. A / 2437 MHz



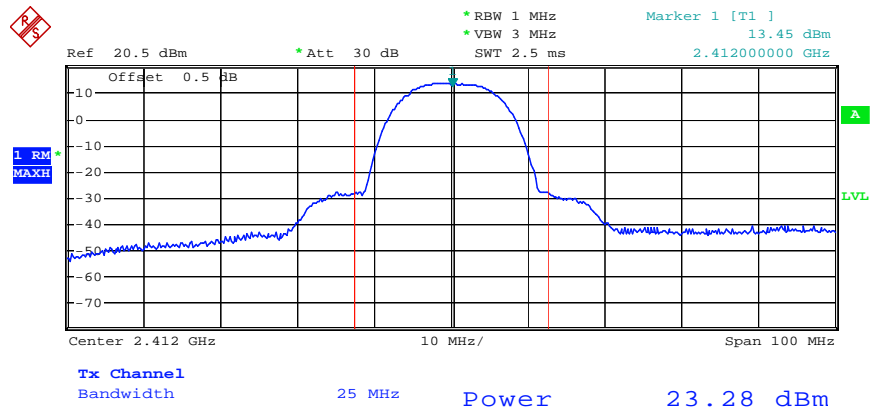
Date: 19.OCT.2009 22:40:46

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. A / 2452 MHz



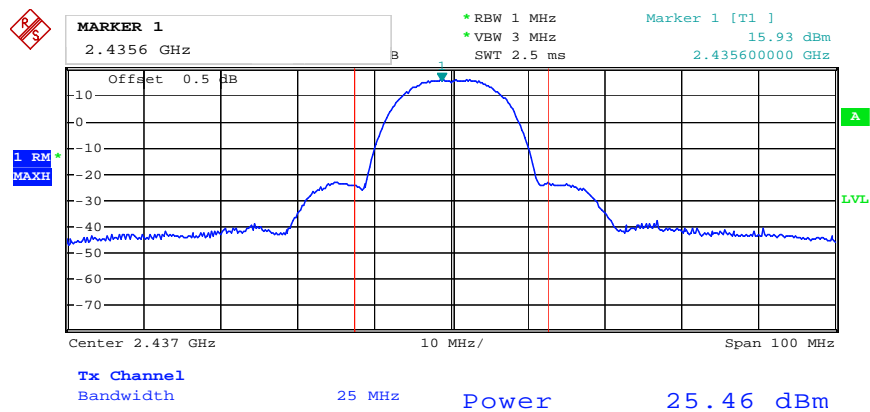
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Conducted Output Power Plot on Configuration IEEE 802.11b Ant. A / 2412 MHz



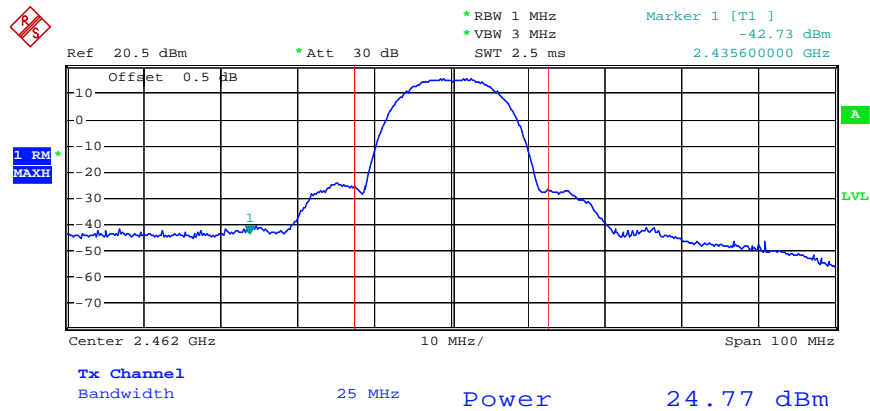
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Conducted Output Power Plot on Configuration IEEE 802.11b Ant. A / 2437 MHz



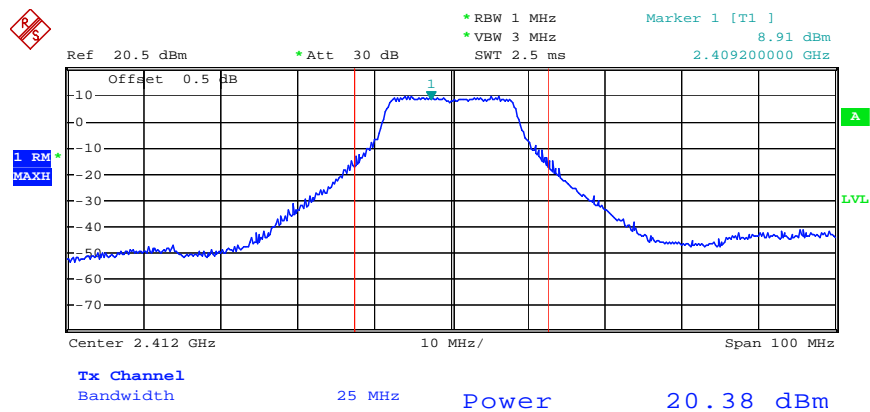
Date: 15.OCT.2009 18:20:45

Conducted Output Power Plot on Configuration IEEE 802.11b Ant. A / 2462 MHz



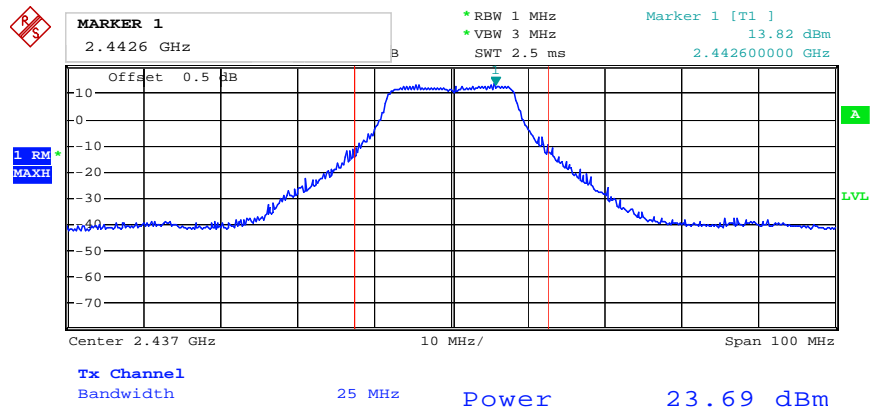
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Conducted Output Power Plot on Configuration IEEE 802.11g Ant. A / 2412 MHz



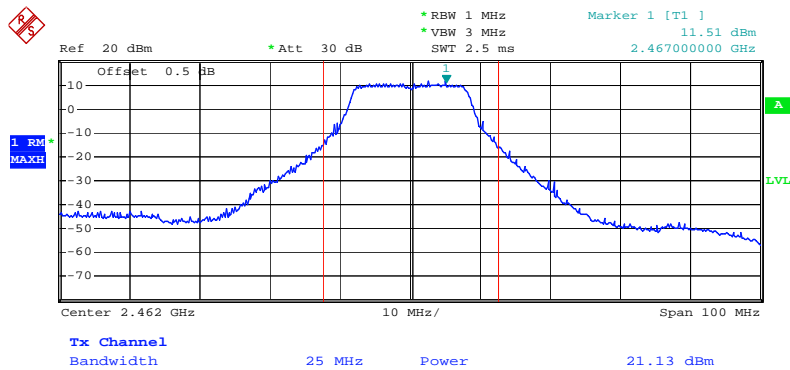
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Conducted Output Power Plot on Configuration IEEE 802.11g Ant. A / 2437 MHz



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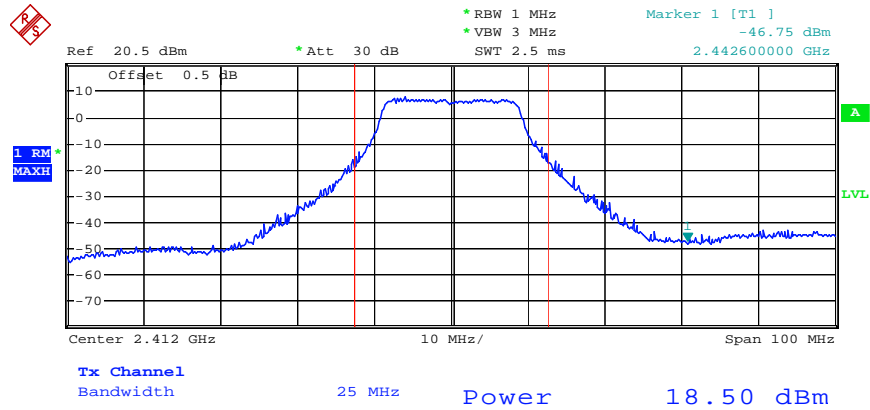
Conducted Output Power Plot on Configuration IEEE 802.11g Ant. A / 2462 MHz



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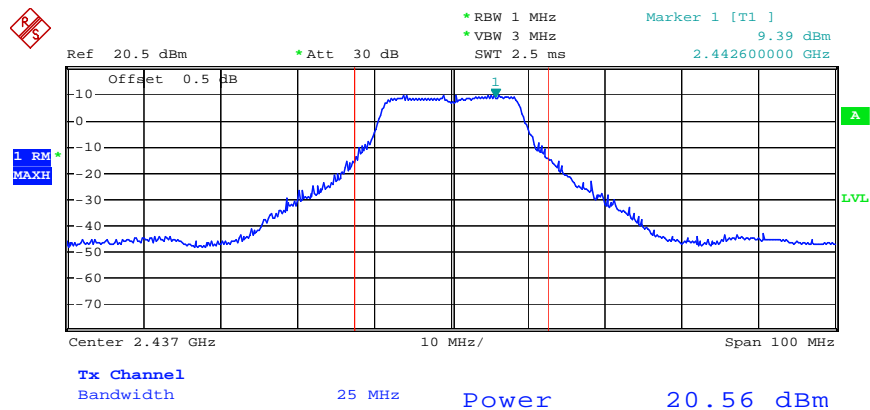
<For Ant. B - PCB Antenna>:

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. B / 2412 MHz



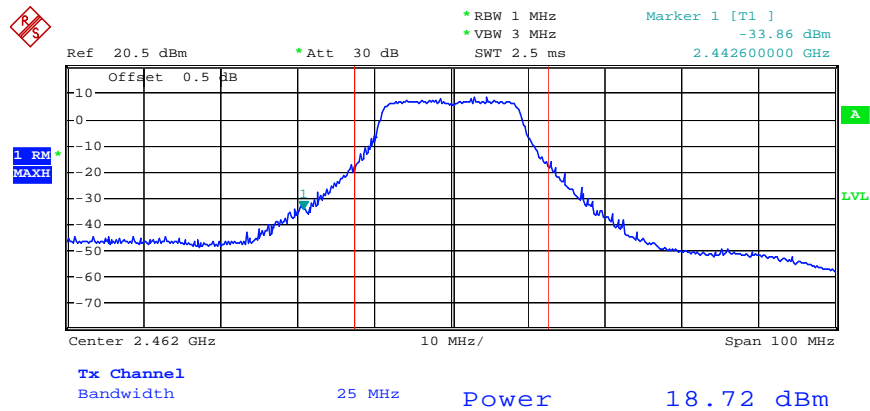
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. B / 2437 MHz



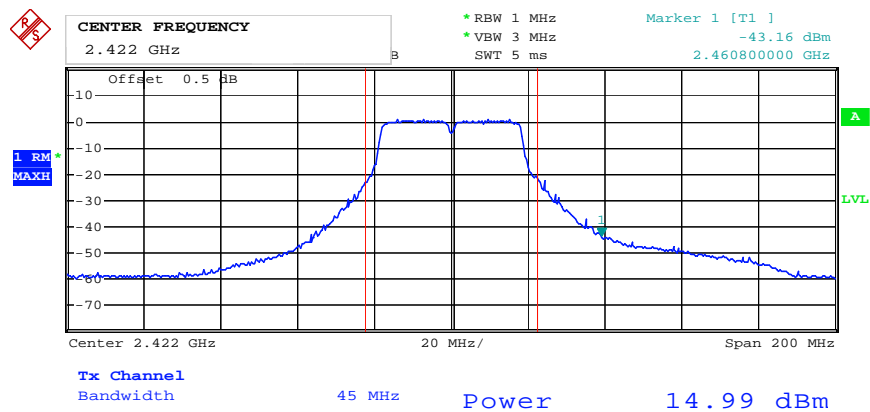
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. B / 2462 MHz



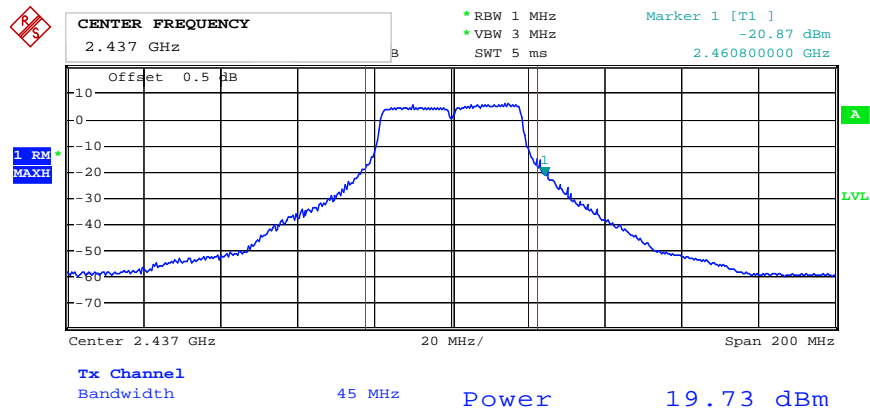
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. B / 2422 MHz



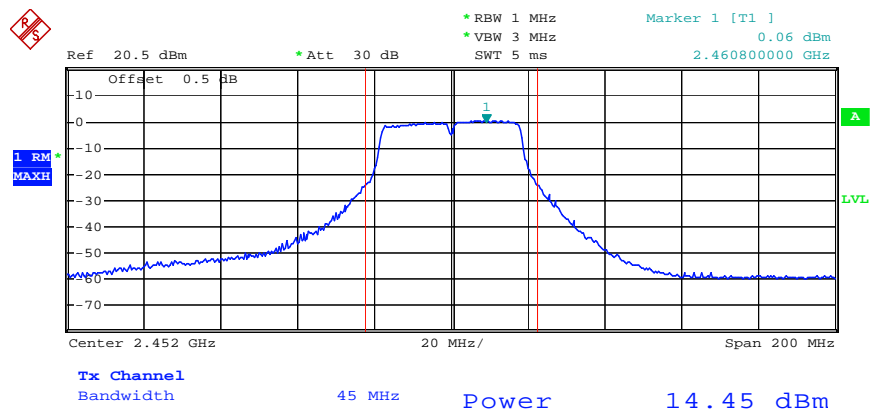
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Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. B / 2437 MHz



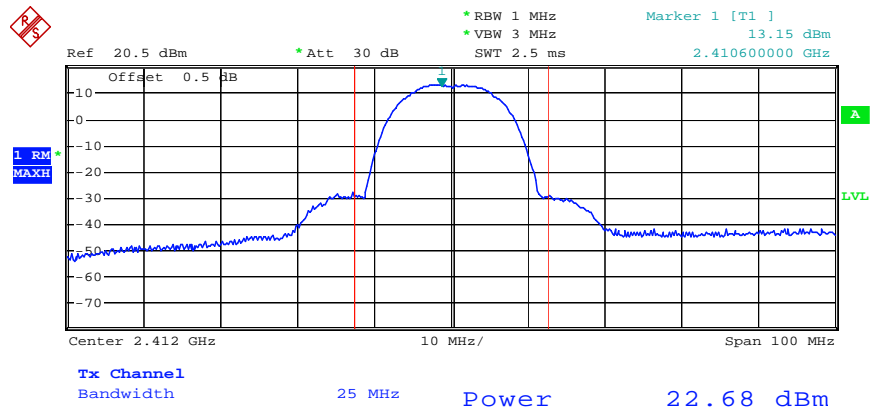
Date: 15.OCT.2009 20:08:02

Conducted Output Power Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. B / 2452 MHz



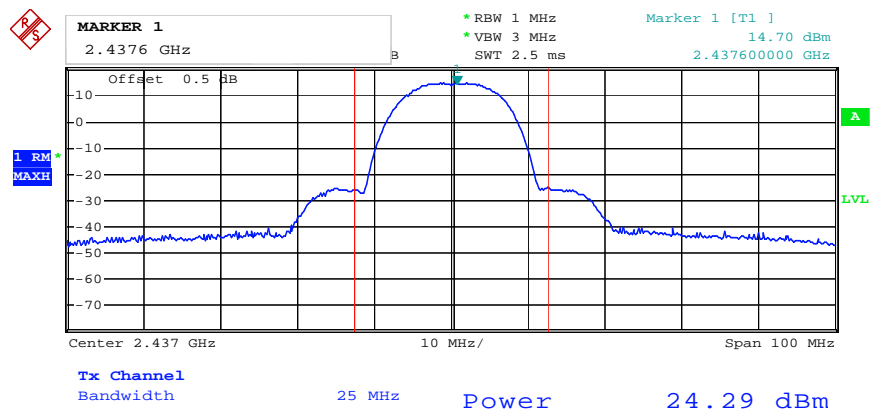
Date: 15.OCT.2009 20:04:33

Conducted Output Power Plot on Configuration IEEE 802.11b Ant. B / 2412 MHz



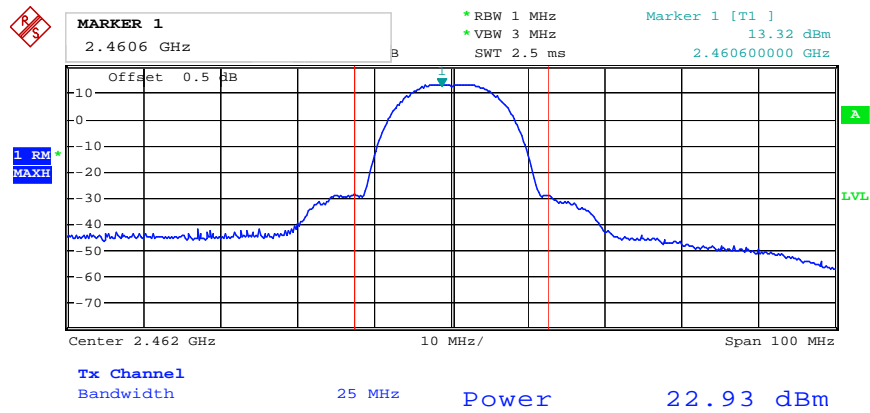
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Conducted Output Power Plot on Configuration IEEE 802.11b Ant. B / 2437 MHz



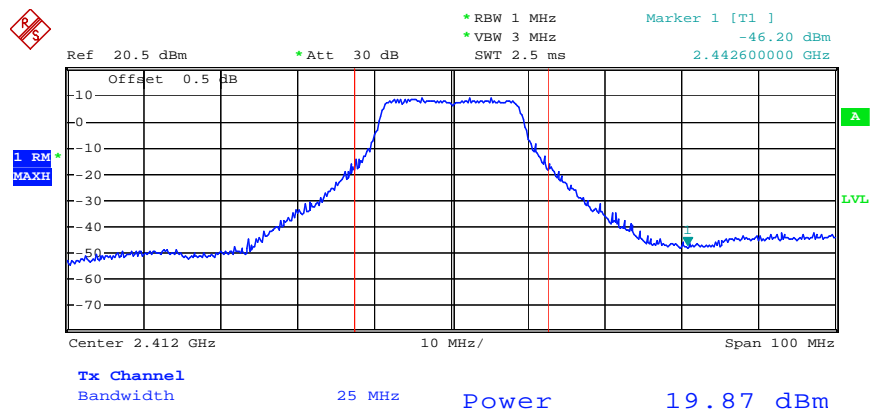
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Conducted Output Power Plot on Configuration IEEE 802.11b Ant. B / 2462 MHz



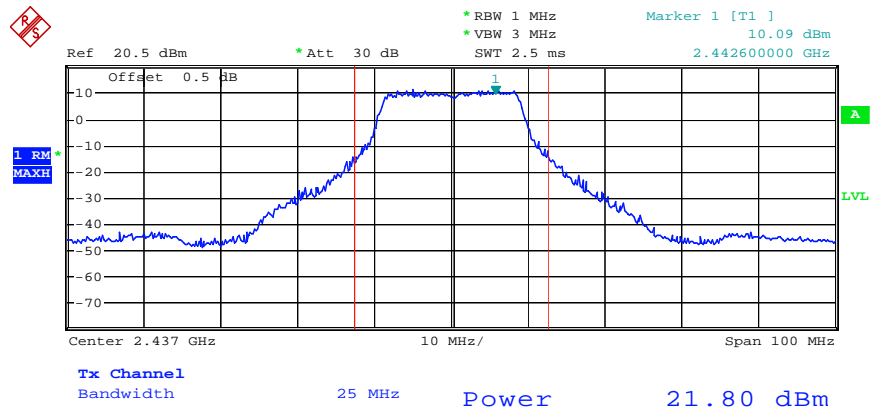
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Conducted Output Power Plot on Configuration IEEE 802.11g Ant. B / 2412 MHz



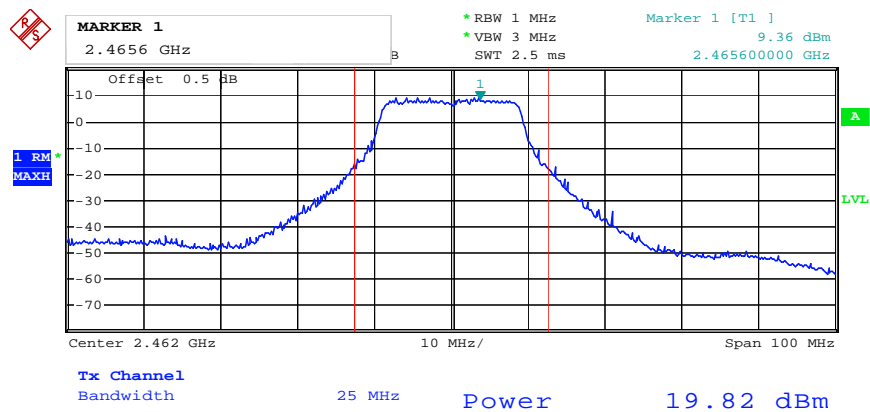
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Conducted Output Power Plot on Configuration IEEE 802.11g Ant. B / 2437 MHz



Date: 15.OCT.2009 20:15:46

Conducted Output Power Plot on Configuration IEEE 802.11g Ant. B / 2462 MHz



Date: 15.OCT.2009 20:13:51

4.3. Power Spectral Density Measurement

4.3.1. Limit

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

4.3.2. Measuring Instruments and Setting

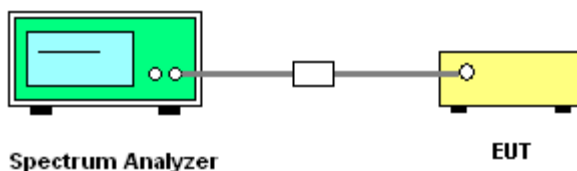
Please refer to section 5 of equipments list in this report. The following table is the setting of Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the analyzer span to 5-30% greater than the EBW.
RB	100 kHz
VB	300 kHz
Detector	PEAK
Trace	MAX HOLD
Sweep Time	AUTO

4.3.3. Test Procedures

1. Use this procedure when the maximum conducted output power in the fundamental emission is used to demonstrate compliance. The EUT must be configured to transmit continuously at full power over the measurement duration.
2. Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span/RBW}$ (use of a greater number of measurement points than this minimum requirement is recommended).
3. Use the peak marker function to determine the maximum level in any 100 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent level in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where: $\text{BWCF} = 10\log (3 \text{ kHz}/100 \text{ kHz} = -15.2 \text{ dB})$.
5. The resulting PSD level must be $\leq 8 \text{ dBm}$.
6. When measuring power spectral density with multiple antenna systems, add every result of the values by mathematic formula.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Power Spectral Density

<For Ant. A - Dipole Antenna>:

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11n, Ant. A

Configuration IEEE 802.11n MCS0 20MHz Ant. A

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	7.18	-15.23	-8.05	8.00	Complies
6	2437 MHz	11.40	-15.23	-3.83	8.00	Complies
11	2462 MHz	7.53	-15.23	-7.70	8.00	Complies

Configuration IEEE 802.11n MCS0 40MHz Ant. A

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
3	2422 MHz	1.87	-15.23	-13.36	8.00	Complies
6	2437 MHz	7.35	-15.23	-7.88	8.00	Complies
9	2452 MHz	1.83	-15.23	-13.40	8.00	Complies

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11b/g, Ant. A

Configuration IEEE 802.11b Ant. A

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	13.64	-15.23	-1.59	8.00	Complies
6	2437 MHz	15.44	-15.23	0.21	8.00	Complies
11	2462 MHz	14.67	-15.23	-0.56	8.00	Complies

Configuration IEEE 802.11g Ant. A

Channel	Frequency	Power Density (dBm/100kHz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	7.42	-15.23	-7.81	8.00	Complies
6	2437 MHz	10.67	-15.23	-4.56	8.00	Complies
11	2462 MHz	8.50	-15.23	-6.73	8.00	Complies

<For Ant. B - PCB Antenna>:

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11n, Ant. B

Configuration IEEE 802.11n MCS0 20MHz Ant. B

Channel	Frequency	Power Density (dBm/100k Hz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	5.65	-15.23	-9.58	8.00	Complies
6	2437 MHz	7.51	-15.23	-7.72	8.00	Complies
11	2462 MHz	5.25	-15.23	-9.98	8.00	Complies

Configuration IEEE 802.11n MCS0 40MHz Ant. B

Channel	Frequency	Power Density (dBm/100k Hz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
3	2422 MHz	0.11	-15.23	-15.12	8.00	Complies
6	2437 MHz	4.18	-15.23	-11.05	8.00	Complies
9	2452 MHz	-1.03	-15.23	-16.26	8.00	Complies

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11b/g, Ant. B

Configuration IEEE 802.11b Ant. B

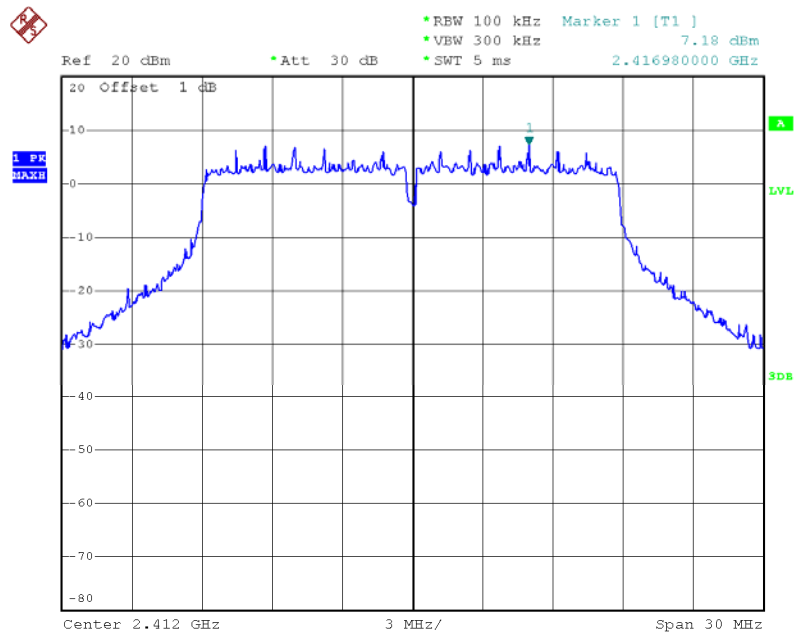
Channel	Frequency	Power Density (dBm/100k Hz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	12.83	-15.23	-2.40	8.00	Complies
6	2437 MHz	13.87	-15.23	-1.36	8.00	Complies
11	2462 MHz	12.19	-15.23	-3.04	8.00	Complies

Configuration IEEE 802.11g Ant. B

Channel	Frequency	Power Density (dBm/100k Hz)	BWCF factor (100KHz to 3KHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
1	2412 MHz	6.26	-15.23	-8.97	8.00	Complies
6	2437 MHz	7.77	-15.23	-7.46	8.00	Complies
11	2462 MHz	5.87	-15.23	-9.36	8.00	Complies

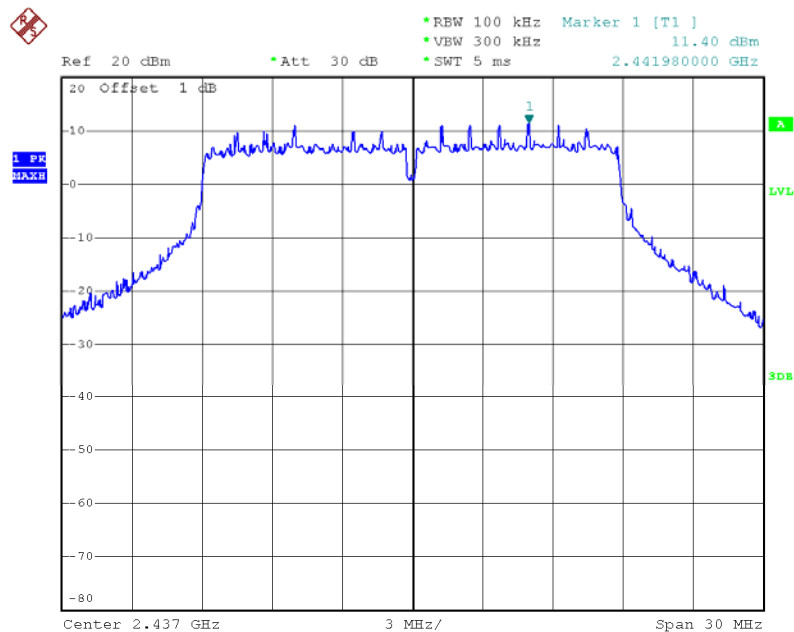
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Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. A / 2412 MHz



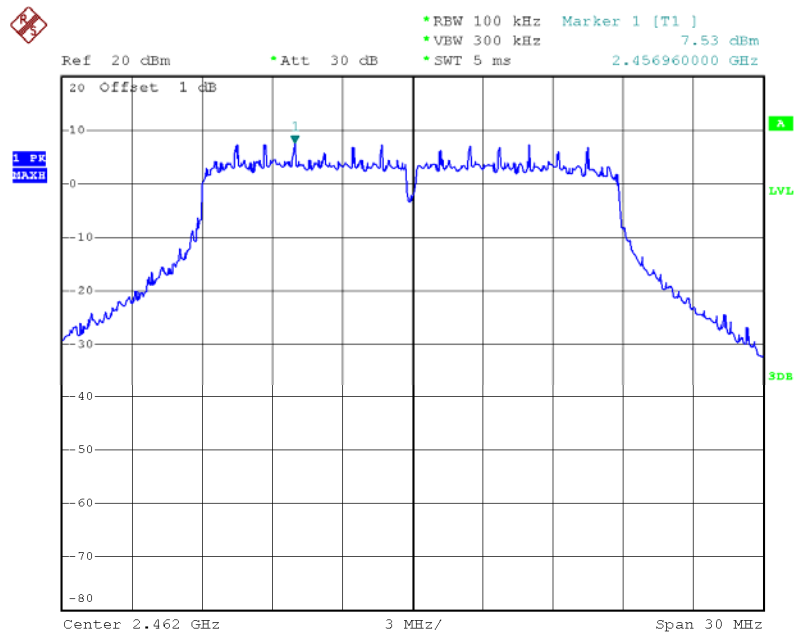
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Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. A / 2437 MHz



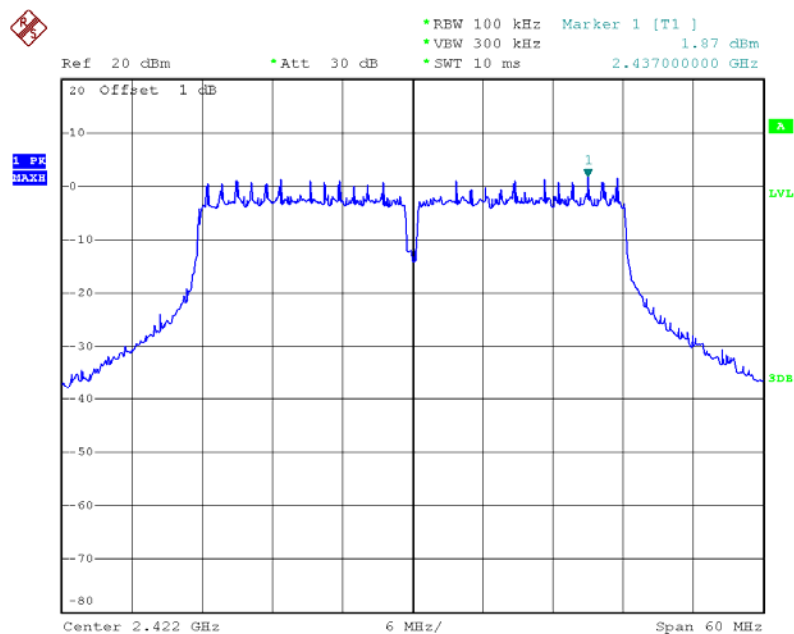
Date: 23.OCT.2012 01:09:47

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



Date: 23.OCT.2012 01:11:17

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



Date: 23.OCT.2012 01:16:54



Ref 20 dBm Att 30 dB RBW 100 kHz VEW 300 kHz SWT 10 ms

Marker 1 [T1] 7.35 dBm 2.448280000 GHz

20 Offset 1 dB

1 PK MAXH

Center 2.437 GHz 6 MHz/ Span 60 MHz

Ref 20 dBm Att 30 dB

- *REW 100 kHz
- *VEW 300 kHz
- *SWT 10 ms

Marker 1 [T1] 1.83 dBm 2.455720000 GHz

20 Offset 1 dB

1.83 dBm

Center 2.452 GHz 6 MHz/ Span 60 MHz

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Issued Date : Oct. 31, 2012



Ref 20 dBm Att 30 dB RBW 100 kHz VBW 300 kHz SWT 5 ms

Marker 1 [T1] 13.64 dBm 2.410980000 GHz

20 Offset 1 dB

1 PK MAXH

Center 2.412 GHz 3 MHz/ Span 30 MHz

Ref 20 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] 15.44 dBm
 *VEW 300 kHz 2.437480000 GHz
 *SWT 5 ms

20 Offset 1 dB

1 PK MAX

Center 2.437 GHz 3 MHz/ Span 30 MHz

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Issued Date : Oct. 31, 2012



Ref 20 dBm • Att 30 dB • RBW 100 kHz Marker 1 [T1] 14.67 dBm
 • VBW 300 kHz • SWT 5 ms 2.462960000 GHz

20 Offset 1 dB

1 PK
MAXH

Center 2.462 GHz 3 MHz/ Span 30 MHz

Ref 20 dBm * Att 30 dB * RBW 100 kHz Marker 1 [T1] 7.42 dBm
 * VEW 300 kHz 2.406960000 GHz
 * SWT 5 ms

20 Offset 1 dB

1.00
MAX

Center 2.412 GHz 3 MHz/ Span 30 MHz

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Issued Date : Oct. 31, 2012



Ref 20 dBm *Att 30 dB *RBW 100 kHz *VEW 300 kHz *SWT 5 ms Marker 1 [T1] 10.67 dBm 2.444440000 GHz

20 Offset 1 dB

1 PK 10.67

Center 2.437 GHz 3 MHz/ Span 30 MHz

Ref 20 dBm Att 30 dB

- *REW 100 kHz
- *VBW 300 kHz
- *SWT 5 ms

Marker 1 [T1] 8.50 dBm 2.455700000 GHz

20 Offset 1 dB

1

10

0

-10

-20

-30

-40

-50

-60

-70

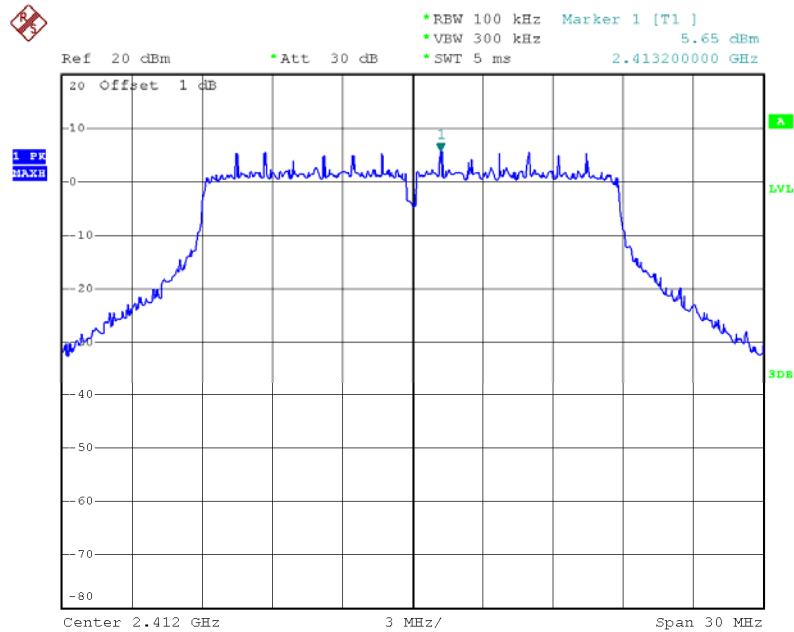
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Center 2.462 GHz 3 MHz/ Span 30 MHz

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Issued Date : Oct. 31, 2012

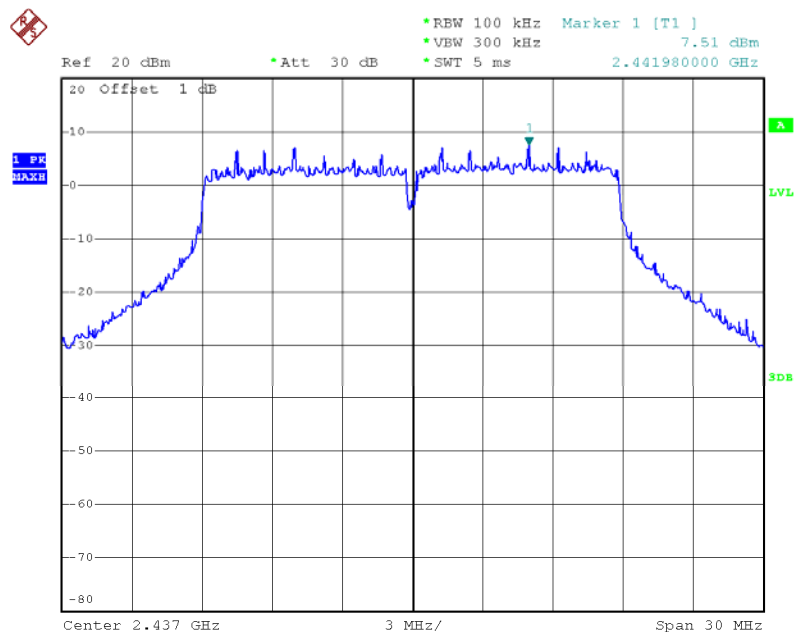
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Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. B / 2412 MHz



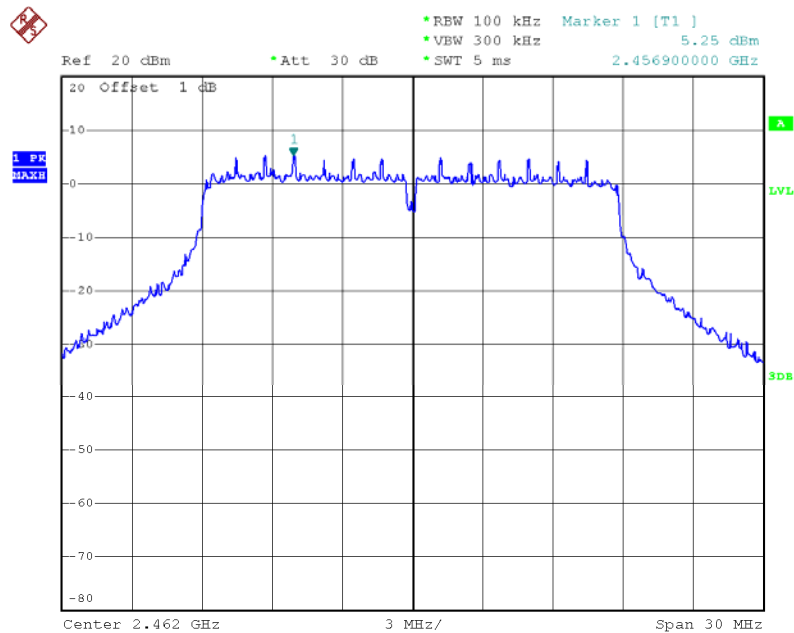
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Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. B / 2437 MHz



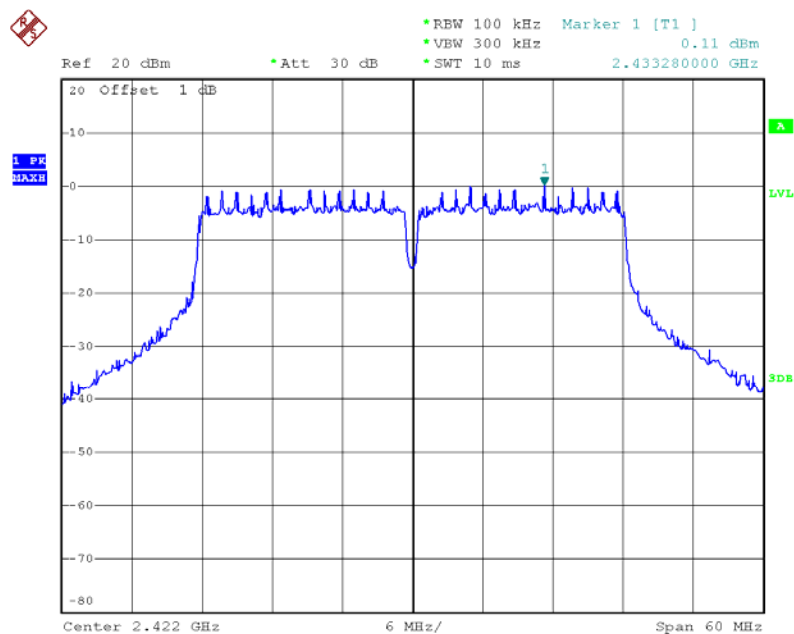
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Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. B / 2462 MHz



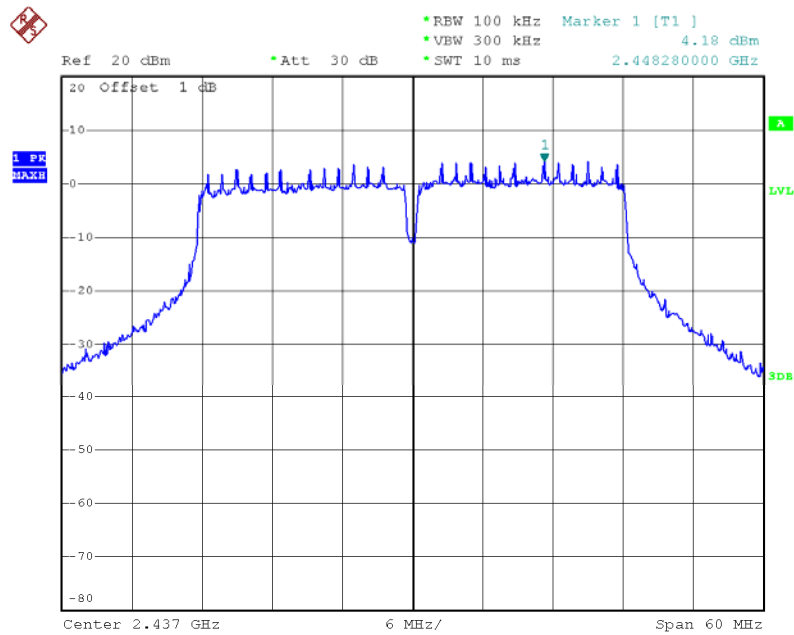
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Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. B / 2422 MHz



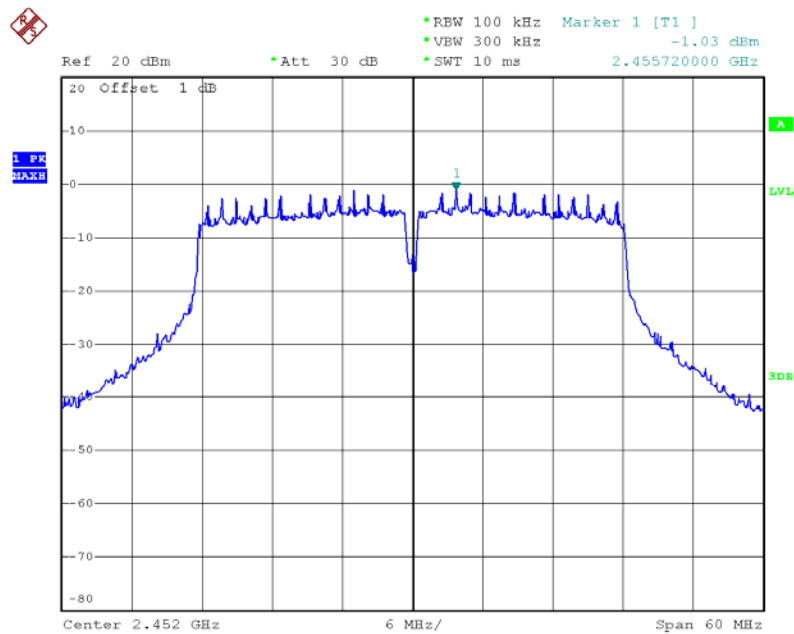
Date: 23.OCT.2012 01:17:44

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



Date: 23.OCT.2012 01:15:29

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



Date: 23.OCT.2012 01:14:46



Ref 20 dBm Att 30 dB RBW 100 kHz VBW 300 kHz SWT 5 ms Marker 1 [T1] 12.83 dBm 2.410440000 GHz

20 Offset 1 dB

1 PK MAXH

Center 2.412 GHz 3 MHz/ Span 30 MHz

Ref 20 dBm • Att 30 dB • RBW 100 kHz Marker 1 [T1] 13.87 dBm
 • VEW 300 kHz 2.437960000 GHz
 • SWT 5 ms

20 Offset 1 dB

1 PK MAX

Center 2.437 GHz 3 MHz/ Span 30 MHz

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Issued Date : Oct. 31, 2012



Ref 20 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] 12.19 dBm
 *VW 300 kHz *SWT 5 ms 2.460440000 GHz

20 Offset 1 dB

1 PE
MAX

Center 2.462 GHz 3 MHz/ Span 30 MHz

Ref 20 dBm Att 30 dB

- *RBW 100 kHz
- *VBW 300 kHz
- *SWT 5 ms

Marker 1 [T1] 6.26 dBm 2.416980000 GHz

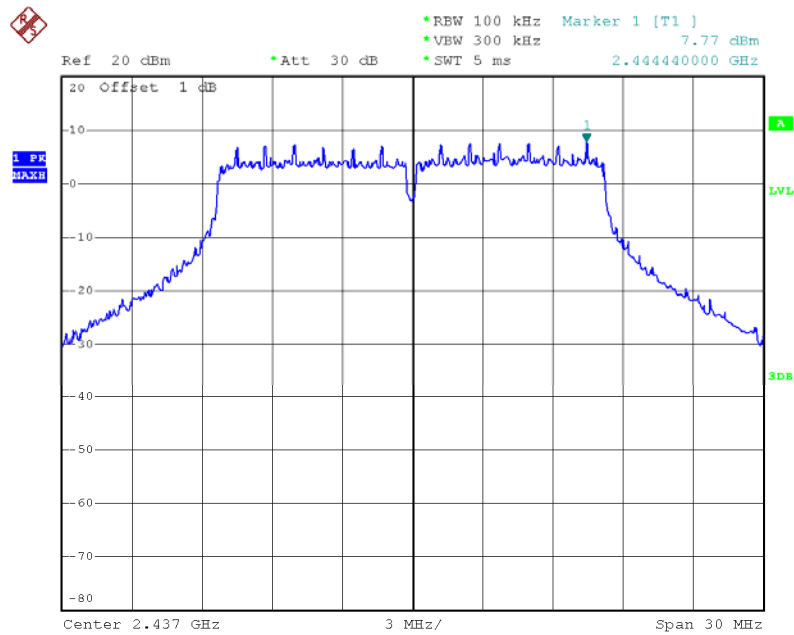
20 Offset 1 dB

1.00 dBm

Center 2.412 GHz 3 MHz/ Span 30 MHz

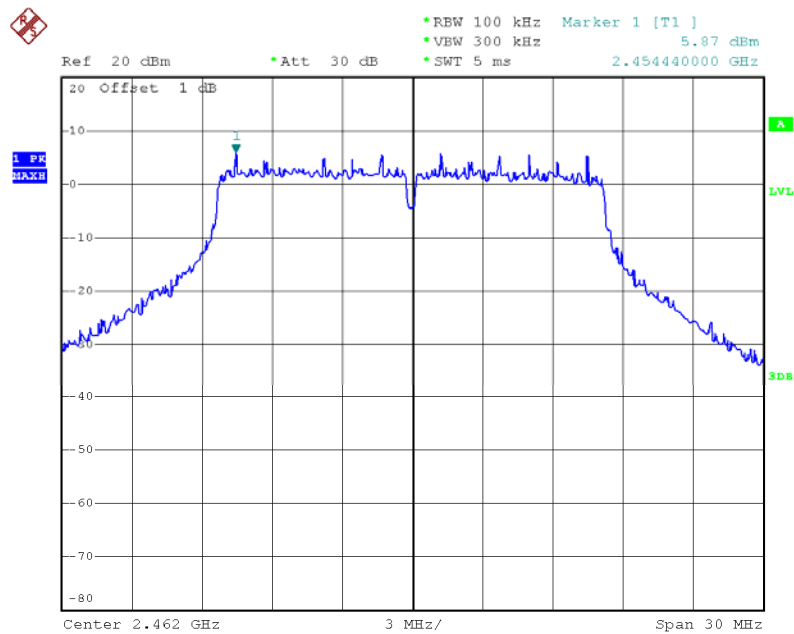
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Issued Date : Oct. 31, 2012

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



Date: 23.OCT.2012 01:05:07

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



Date: 23.OCT.2012 01:04:13

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

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

4.4.2. Measuring Instruments and Setting

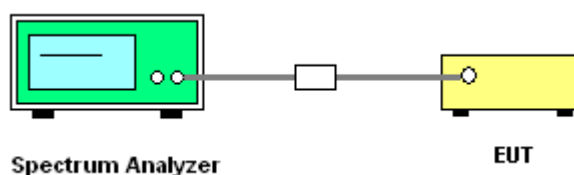
Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RB	1-5 % of the emission bandwidth (EBW)
VB	$\geq 3 \times \text{RBW}$
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. Test Procedures

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

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of 6dB Spectrum Bandwidth

<For Ant. A – Dipole Antenna>:

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11n, Ant. A

Configuration IEEE 802.11n MCS0 20MHz Ant. A

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	17.84	17.76	500	Complies
6	2437 MHz	17.60	17.76	500	Complies
11	2462 MHz	17.20	17.76	500	Complies

Configuration IEEE 802.11n MCS0 40MHz Ant. A

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.48	36.48	500	Complies
6	2437 MHz	35.84	36.48	500	Complies
9	2452 MHz	35.20	36.48	500	Complies

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11b/g, Ant. A

Configuration IEEE 802.11b Ant. A

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	12.08	15.68	500	Complies
6	2437 MHz	12.00	15.76	500	Complies
11	2462 MHz	12.08	15.52	500	Complies

Configuration IEEE 802.11g Ant. A

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.40	16.56	500	Complies
6	2437 MHz	16.56	16.64	500	Complies
11	2462 MHz	16.40	16.56	500	Complies

<For Ant. B – PCB Antenna>:

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11n, Ant. B

Configuration IEEE 802.11n MCS0 20MHz Ant. B

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

Configuration IEEE 802.11n MCS0 40MHz Ant. B

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	36.48	36.48	500	Complies
6	2437 MHz	35.84	36.48	500	Complies
9	2452 MHz	35.52	36.32	500	Complies

Temperature	23°C	Humidity	60%
Test Engineer	Beck Wu	Configurations	IEEE 802.11b/g, Ant. B

Configuration IEEE 802.11b Ant. B

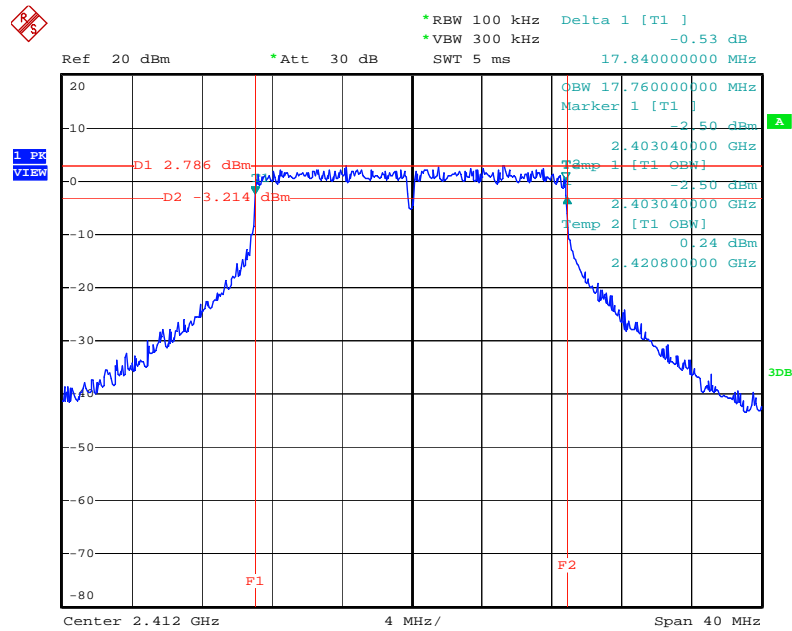
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	12.08	15.60	500	Complies
6	2437 MHz	11.12	15.68	500	Complies
11	2462 MHz	12.56	15.52	500	Complies

Configuration IEEE 802.11g Ant. B

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.32	16.56	500	Complies
6	2437 MHz	16.32	16.64	500	Complies
11	2462 MHz	16.40	16.56	500	Complies

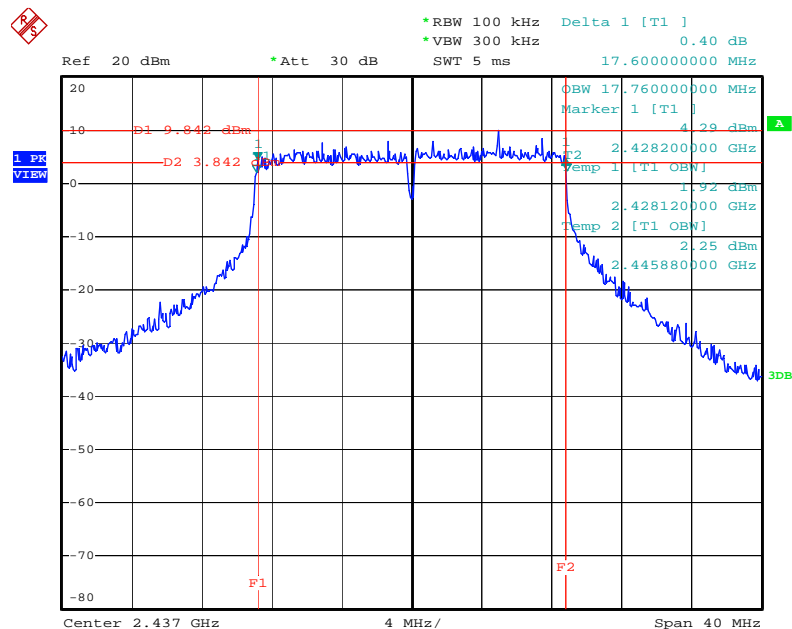
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. A / 2412 MHz



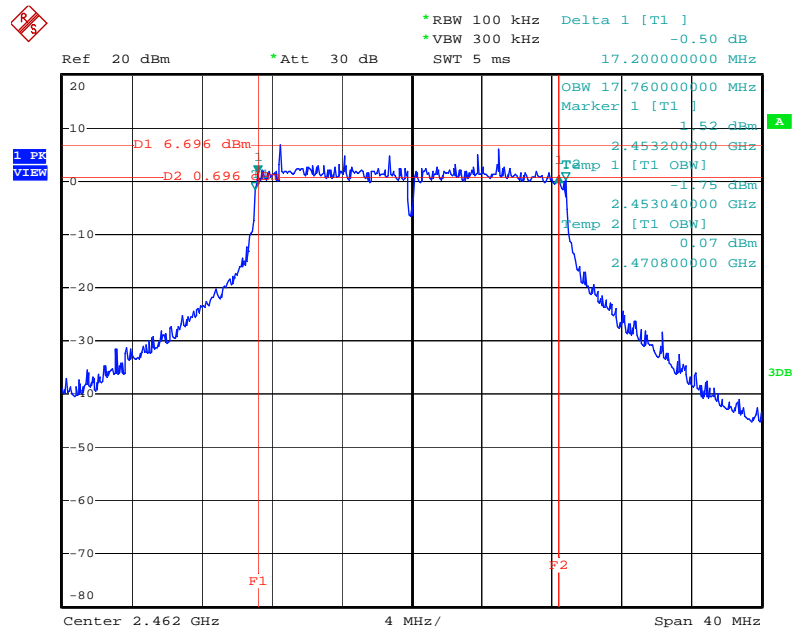
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. A / 2437 MHz



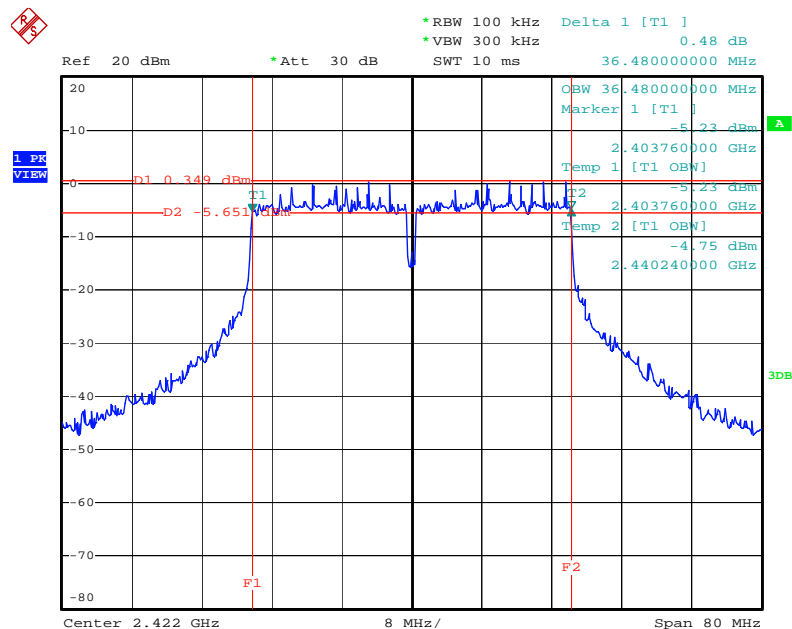
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. A / 2462 MHz



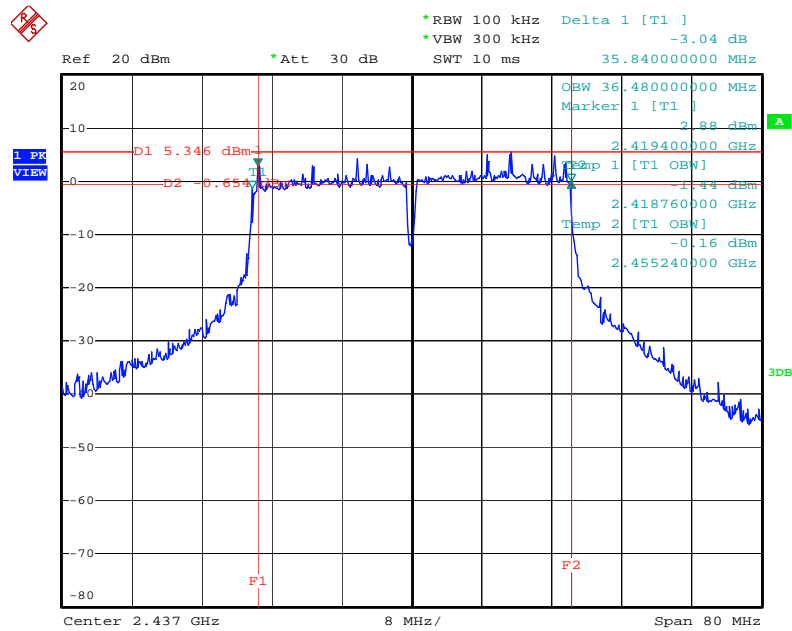
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. A / 2422 MHz



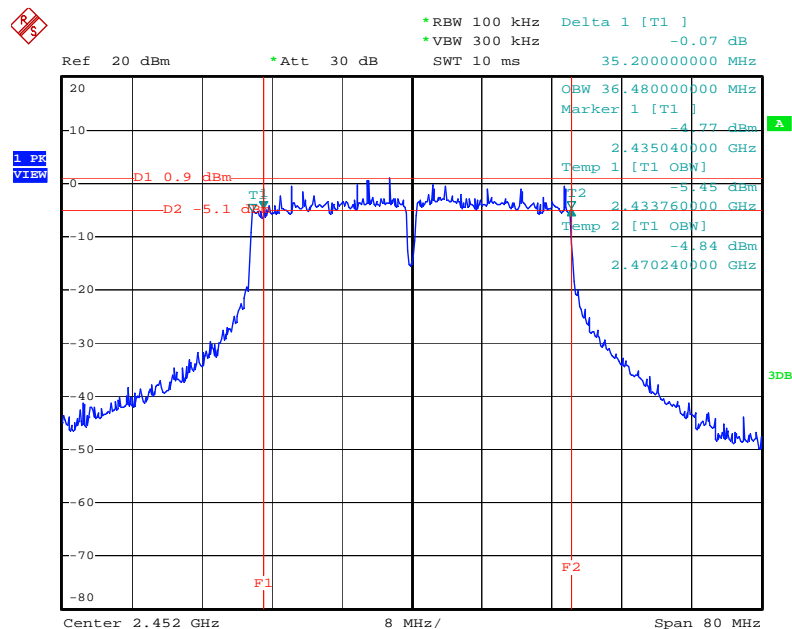
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. A / 2437 MHz



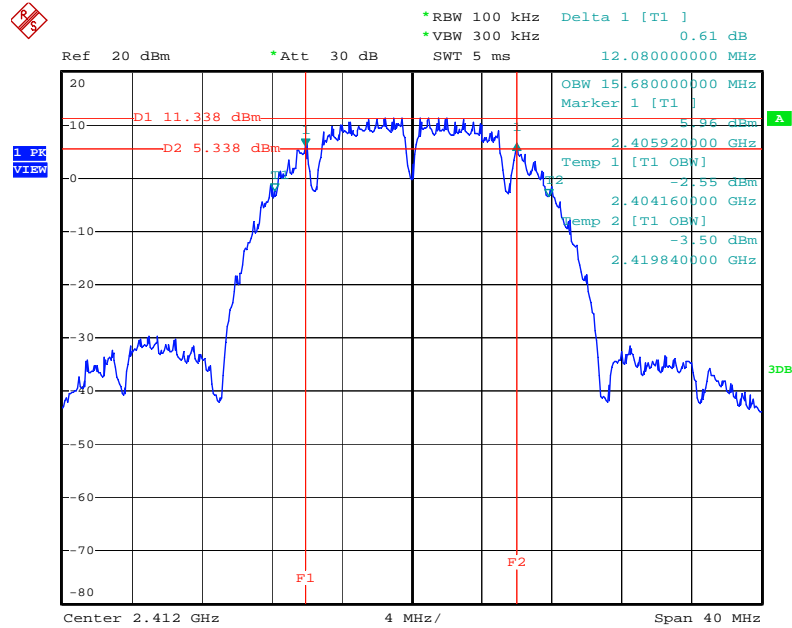
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. A / 2452 MHz



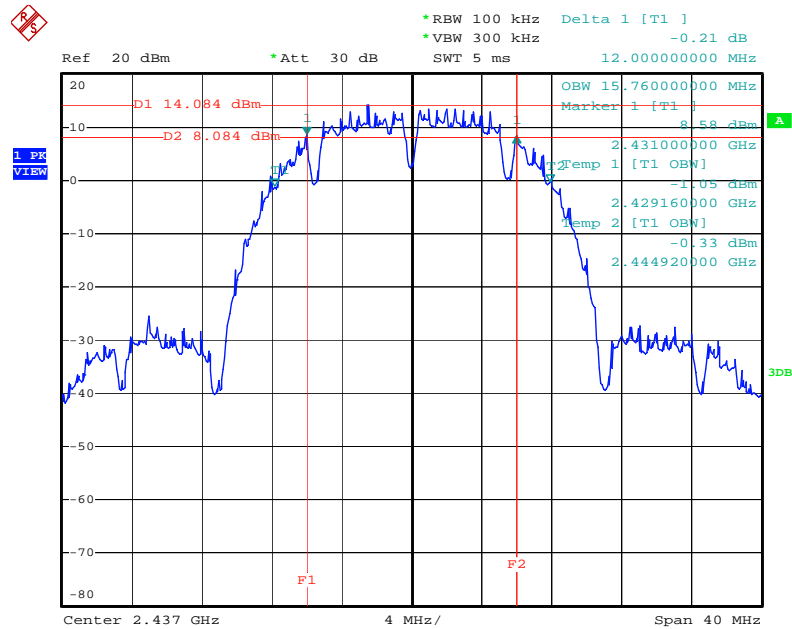
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6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. A / 2412 MHz



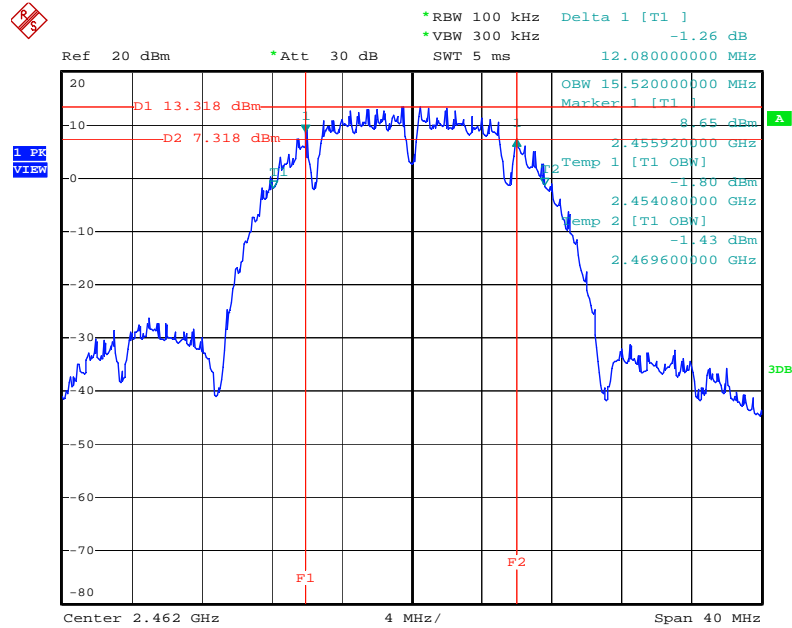
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6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. A / 2437 MHz



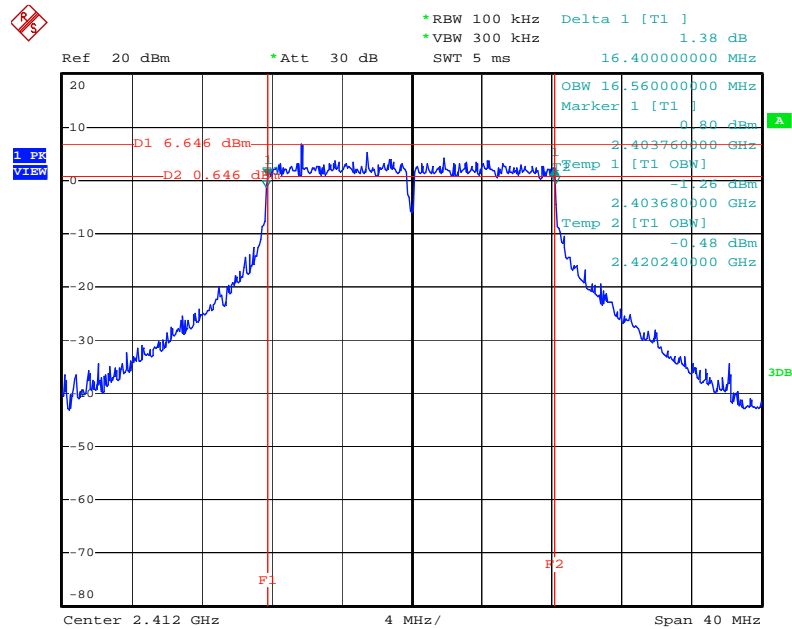
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6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. A / 2462 MHz



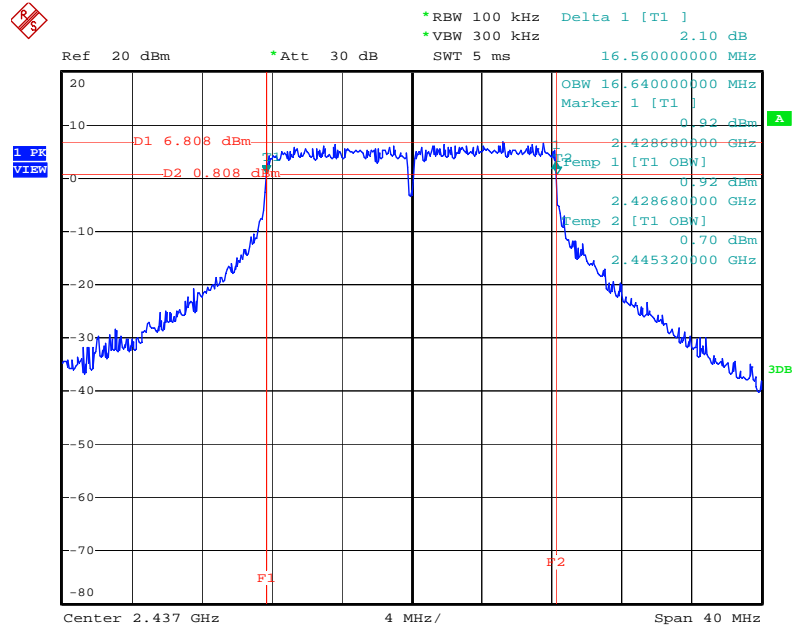
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6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. A / 2412 MHz



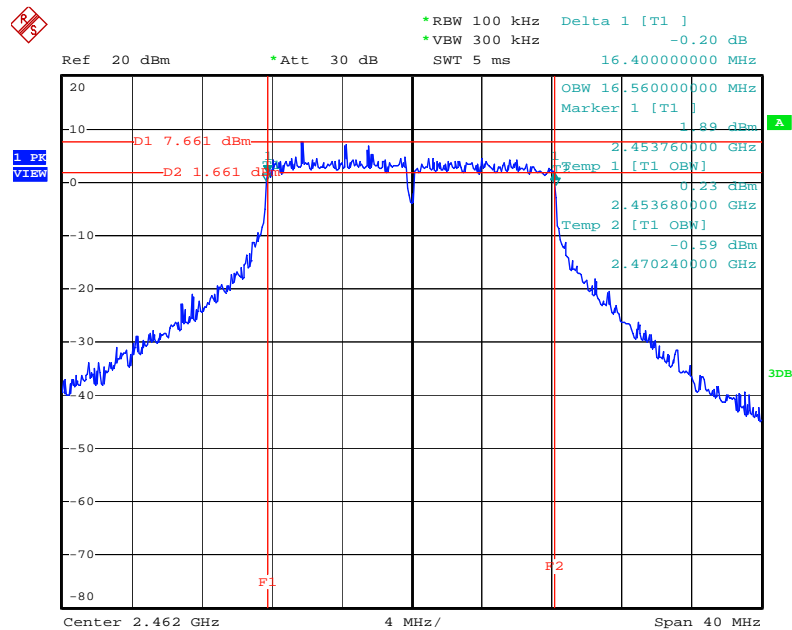
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6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. A / 2437 MHz



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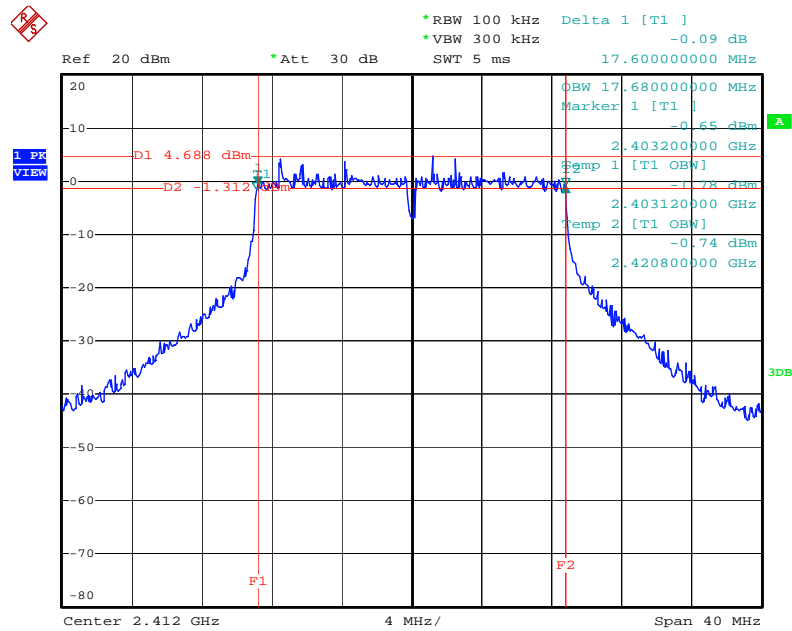
6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. A / 2462 MHz



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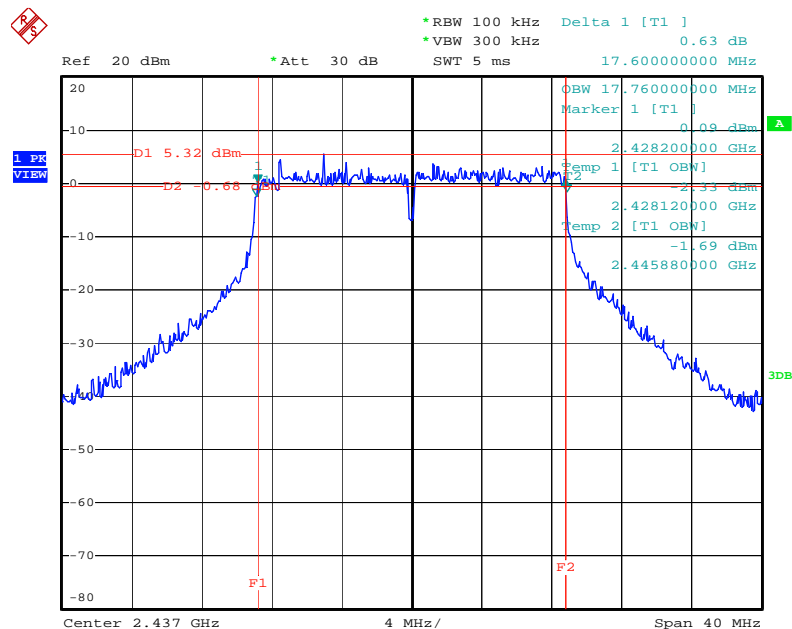
<For Ant. B – PCB Antenna>:

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



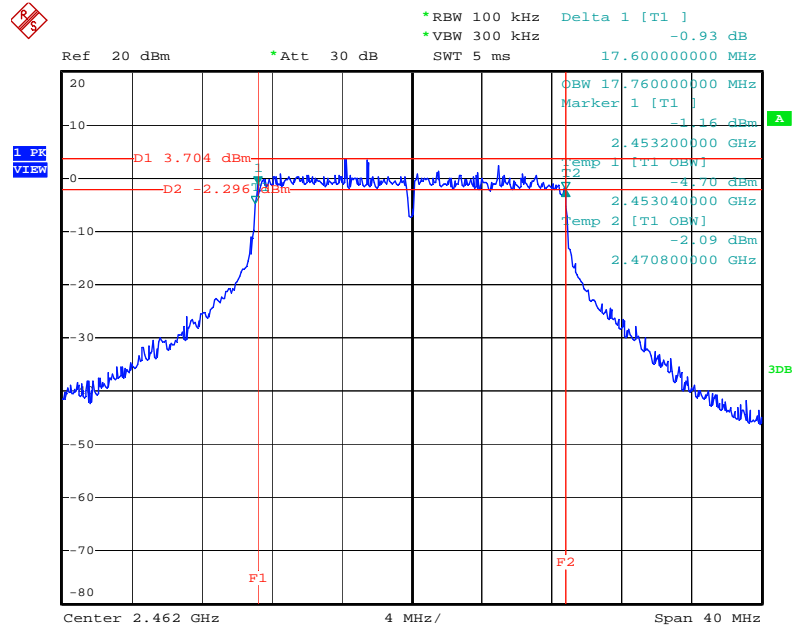
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. B / 2437 MHz



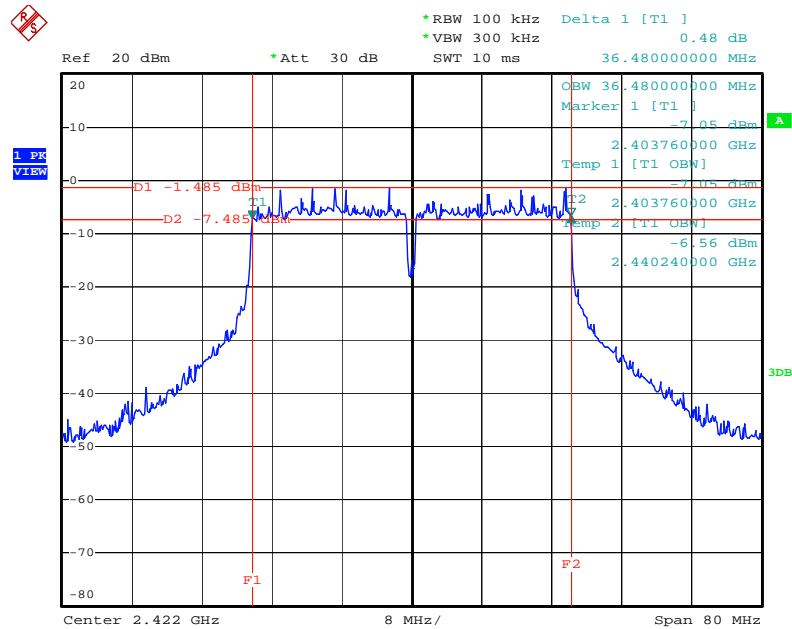
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz Ant. B / 2462 MHz



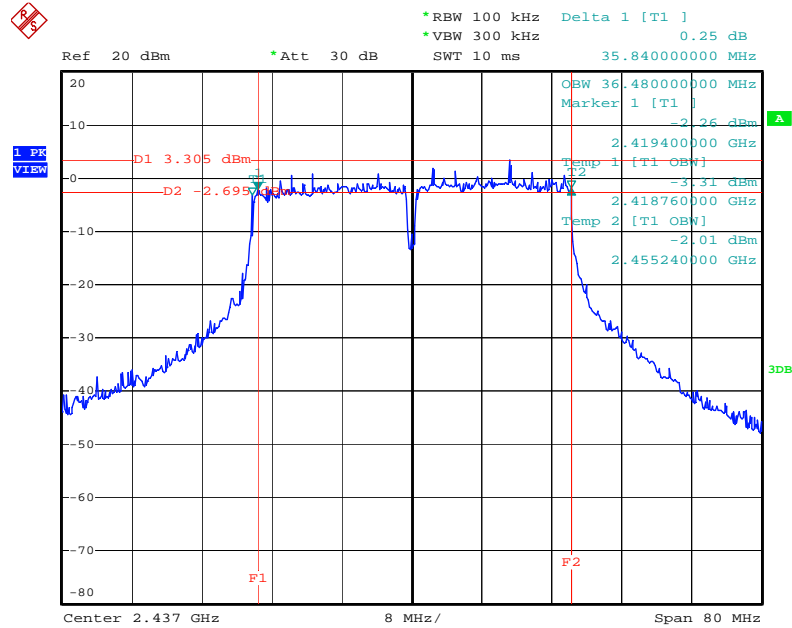
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. B / 2422 MHz



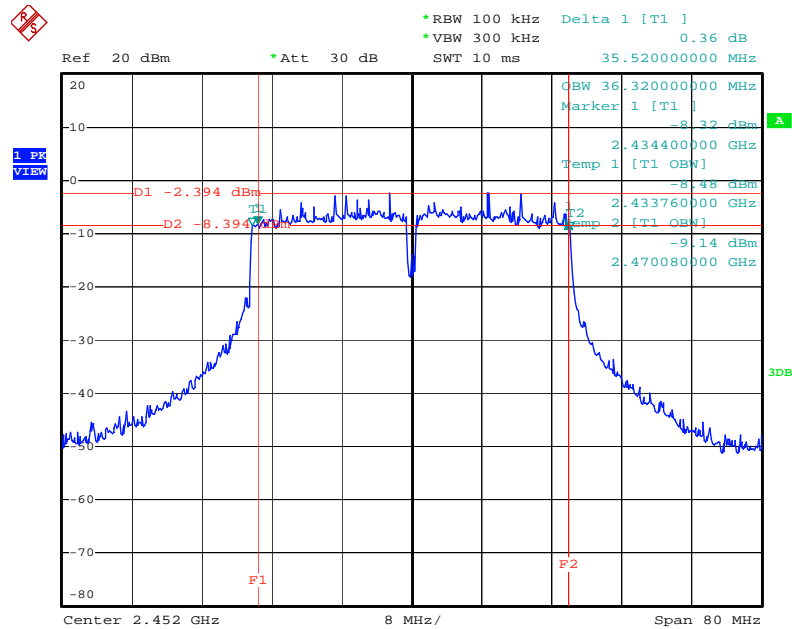
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. B / 2437 MHz



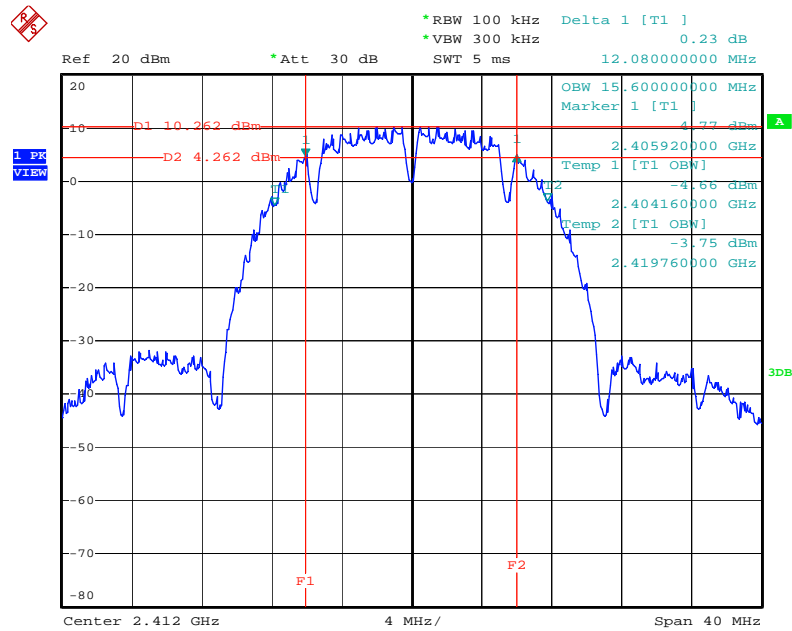
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6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz Ant. B / 2452 MHz



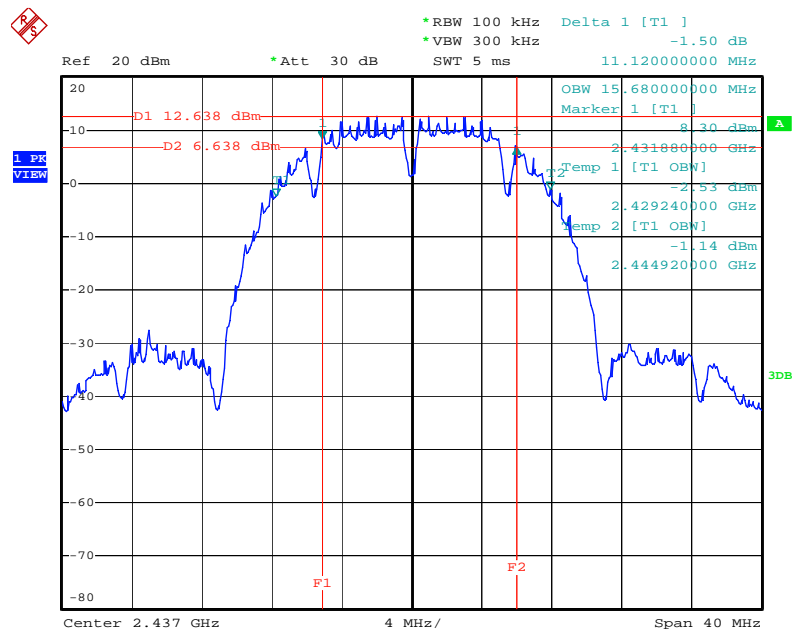
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6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. B / 2412 MHz



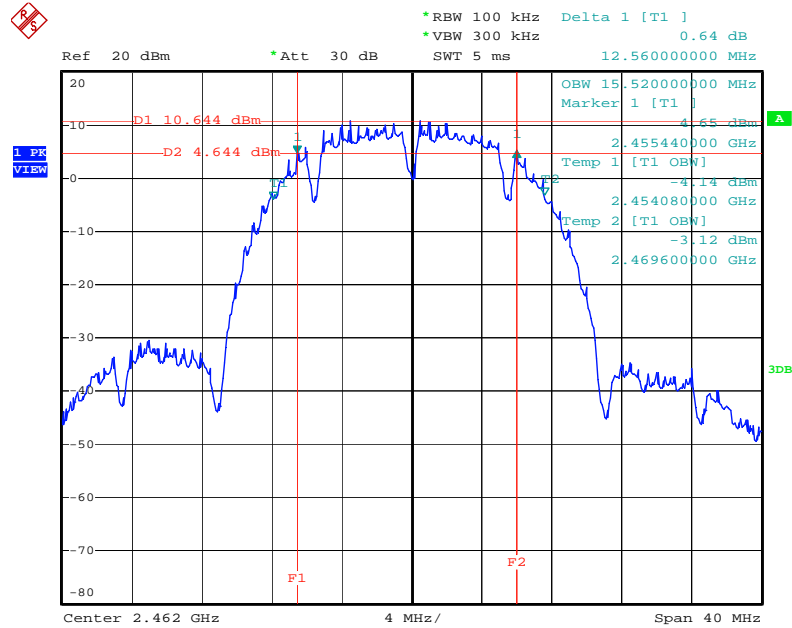
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6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. B / 2437 MHz



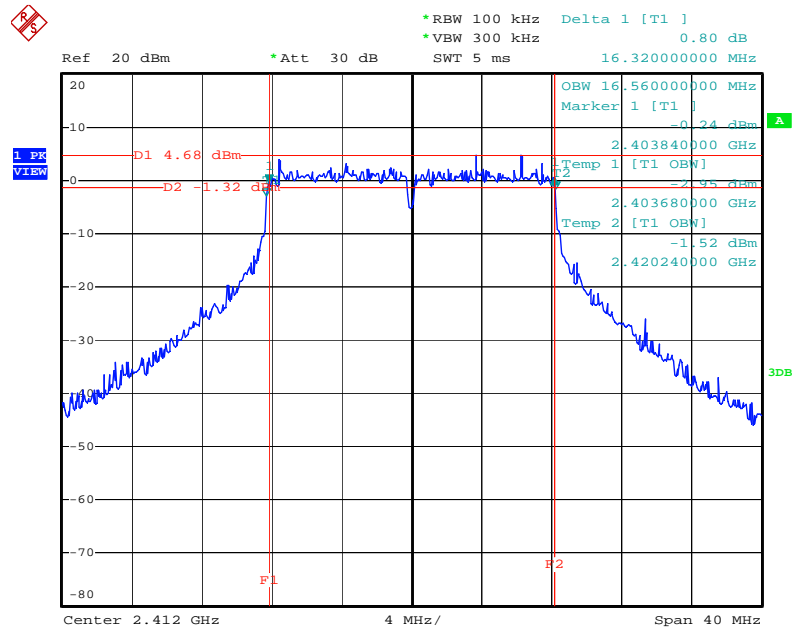
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6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. B / 2462 MHz



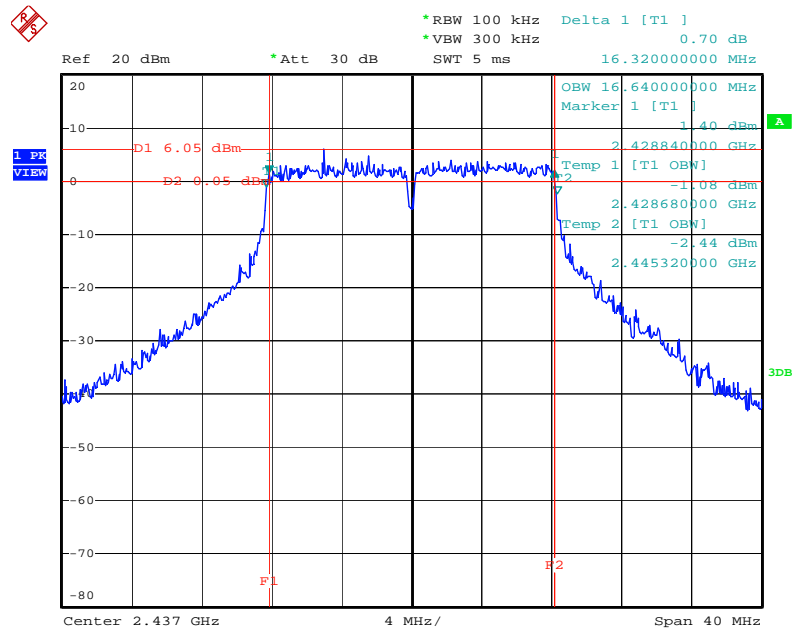
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6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. B / 2412 MHz



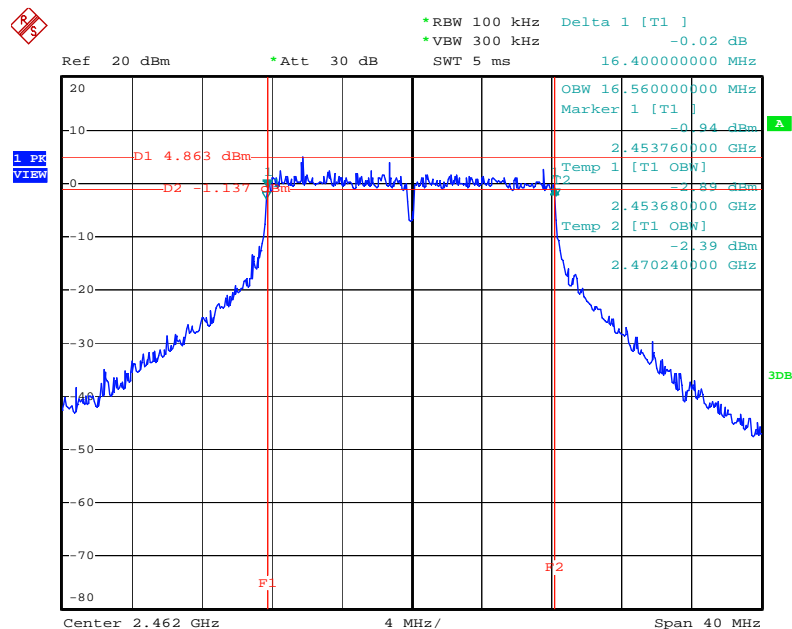
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6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. B / 2437 MHz



Date: 22.OCT.2012 23:43:55

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



Date: 22.OCT.2012 23:44:35