FCC Part 15
EMI TEST REPORT

of

E.U.T. : Intelligent Gateway

FCC ID. : D6XIG7500

Model No. : IG7500

for

APPLICANT : TECOM CO., LTD.

ADDRESS : 23, R&D Road 2 Science-Based Industrial Park
Hsin-Chu Taiwan R.O.C.

Test Performed by

ELECTRONICS TESTING CENTER, TAIWAN
NO. 34. LIN 5. DINGFU, LINKOU DIST.,
NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.
Tel : (02)26023052 Fax : (02)26010910
http://www.etc.org.tw ; e-mail: emc@etc.org.tw
Report Number : 12-01-RBF-128-04

TEST REPORT CERTIFICATION

Applicant : TECOM CO., LTD.
23, R&D Road 2 Science-Based Industrial Park Hsin-Chu Taiwan R.O.C.

Manufacturer : TECOM CO., LTD.
23, R&D Road 2 Science-Based Industrial Park Hsin-Chu Taiwan R.O.C.

Description of EUT

a) Type of EUT : Intelligent Gateway

b) Trade Name : MOCET/TECOM/AccessLine/Xblue

c) Model No. : IG7500

e) Power Supply : Adaptor Model No.: LTE18W-S2
I/P: 100-240Vac, 50/60Hz, 0.5A;
O/P: 12Vdc, 1.5A

Regulation Applied : FCC Rules and Regulations Part 15 Subpart C

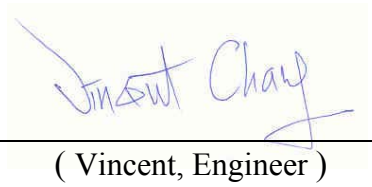
I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.4, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Note: 1. The result of the testing report relate only to the item tested.
2. The testing report shall not be reproduced expect in full, without the written approval of ETC

Summary of Tests

Test	Results
Radiated Emission	**Pass**
Conducted Emission	**Pass**
Emission Bandwidth	**Pass**
Output Power	**Pass**
100 kHz Bandwidth of Band Edges	**Pass**
Power Density	**Pass**
Out-of-Band Conducted Emission	**Pass**

Date Test Item Received	:	Jan. 20, 2012
Date Test Campaign Completed	:	Jun. 04, 2012
Date of Issue	:	Jun. 08, 2012

Test Engineer : 

(Vincent, Engineer)

Approve & Authorized Signer : 

S. S. Liou, Section Manager
EMC Dept. II of ELECTRONICS
TESTING CENTER, TAIWAN

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1 GENERAL INFORMATION

1.1 Product Description

a) Type of EUT : Intelligent Gateway
b) Trade Name : MOCET/TECOM/AccessLine/Xblue
c) Model No. : IG7500
d) Power Supply : Adaptor Model No.: LTE18W-S2
I/P: 100-240Vac, 50/60Hz, 0.5A;
O/P: 12Vdc, 1.5A

1.2 Characteristics of Device

GENERAL DESCRIPTION OF EUT

PRODUCT	Intelligent Gateway
MODEL NO.	IG7500
FCC ID	D6XIG7500
POWER SUPPLY	Adaptor Model No.: LTE18W-S2 I/P: 100-240Vac, 50/60Hz, 0.5A; O/P: 12Vdc, 1.5A
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11 / 5.5 / 2 / 1Mbps 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps Draft 802.11n (20MHz) (800ns GI): 130 / 117 / 104 / 78 / 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps. Draft 802.11n (40MHz) (400ns GI): 270 / 243 / 216 / 162 / 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps.
FREQUENCY RANGE	802.11b & 802.11g: 2412 ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz)

Operated in 2400 ~ 2483.5MHz band:
Eleven channels are provided for 802.11b, 802.11g, draft 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		

1.3 Test Methodology

Both conducted and radiated emissions were performed according to the procedures illustrated in ANSI C63.4 (2003). Other required measurements were illustrated in separate sections of this test report for details.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the roof top of Building at NO. 34. LIN 5. DINGFU, LINKOU DIST.,

NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.
This site has been fully described in a report submitted to your office, and accepted in a letter dated Jan. 11, 2011

2 PROVISIONS APPLICABLE

2.1 Definition

Unintentional radiator:
A device that intentionally generates and radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:
A digital device which is marketed for use in commercial or business environment; exclusive of a device which is market for use by the general public, or which is intended to be used in the home.

Class B Digital Device :
A digital device which is marketed for use in a residential environment notwithstanding use in a commercial, business of industrial environment. Example of such devices that are marketed for the general public.

Note : A manufacturer may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

Intentional radiator:
A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Requirement for Compliance

(1) Conducted Emission Requirement

Except for Class A digital devices, for equpment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency MHz	Quasi Peak dB μV	Average dB μV
0.15 - 0.5	66-56*	56-46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

* Decreases with the logarithm of the frequency

(2) Radiated Emission Requirement

For unintentional device, according to §15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency MHz	Distance Meters	Radiated dB μV/m	Radiated μV/m
30 - 88	3	40.0	100
88 - 216	3	43.5	150
216 - 960	3	46.0	200
Above 960	3	54.0	500

For intentional device, according to §15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

(3) Antenna Requirement

For intentional device, according to §15.203, 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.

(4) Bandwidth Requirement

For direct sequence system, according to 15.247(a)(2), the minimum 6dB bandwidth shall be at least 500 kHz.

(5) Output Power Requirement

For direct sequence system, according to 15.247(b), the maximum peak output power of the transmitter shall not exceed 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(6) 100 kHz Bandwidth of Frequency Band Edges Requirement

According to 15.247(c), if any 100 kHz bandwidth outside these frequency bands, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be either at least 20 dB below that in any 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in §15.209(a), whichever results in the lesser attenuation.

(7) Power Density Requirement

According to 15.247(d), for direct sequence systems, the transmitted power density averaged over any 1 second interval shall not be greater than 8 dBm in any 3 kHz bandwidth within these bands.

2.3 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.15
0.495 - 0.505 **	16.69475 - 16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425 - 16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475 - 156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3360-4400	Above 38.6
13.36-13.41			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2.4 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device :

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.5 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

The Federal Communications Commission Radio Frequency Interference Statement includes the following paragraph.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio / TV technician for help.

3. SYSTEM TEST CONFIGURATION

3.1 Justification

For both radiated and conducted emissions below 1 GHz, the system was configured for testing in a typical fashion as a customer would normally use it. The peripherals other than EUT were connected in normally standing by situation. Measurement was performed under the condition that a computer program was exercised to simulate data communication of EUT, and the transmission rate was set to maximum allowed by EUT. Three highest emissions were verified with varying placement of the cables connected to EUT to maximize the emission from EUT.

For conducted and radiated spurious emissions, whichever RF channel is operated, the digital circuits function identically. As the reason, measurement of radiated emissions from digital circuits is only performed with channel 7 by transmitting mode.

3.2 Devices for Tested System

Device	Manufacture	Model	Cable Description
Intelligent	TECOM CO.,	IG7500	1.8m Unshielded AC Adaptor
Gateway *	LTD.		RJ-45 Unshielded Cable 0.8m * 5
WD Hard Disk*2	---	---	0.3 m Unshielded USB Cable *2
Telephone * 2	---	---	RJ-11 Unshielded Cable 0.8m * 2
I-Pod	Apple	A1051	1.0m Unshielded USB Cable

Remark "*" means equipment under test.

4 RADIATED EMISSION MEASUREMENT

4.1 Applicable Standard

For unintentional radiator, the radiated emission shall comply with §15.109(a).
For intentional radiators, according to §15.247 (a), operation under this provision is limited to frequency hopping and direct sequence spread spectrum, and the out band emission shall be comply with §15.247 (c)

4.2 Measurement Procedure

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.
5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.
7. Check the three frequencies of highest emission with varying the placement of cables associated with EUT to obtain the worse case and record the result.

Figure 1 : Frequencies measured below 1 GHz configuration

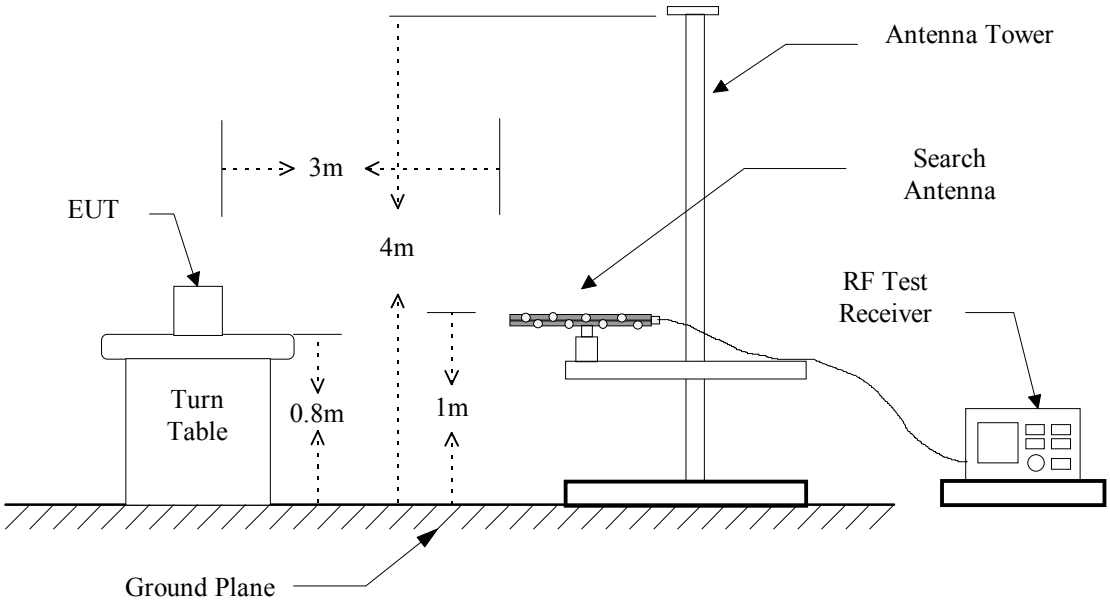
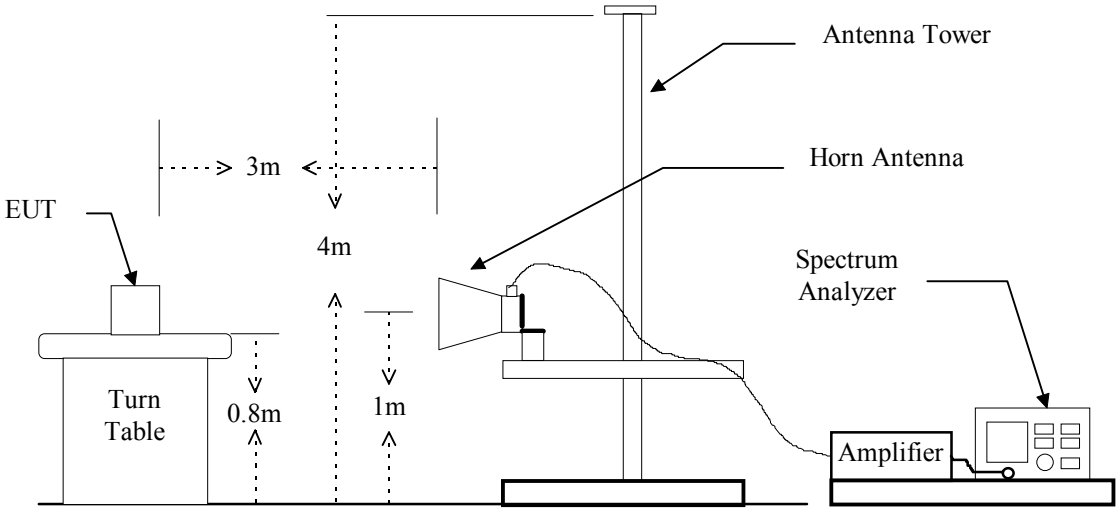


Figure 2 : Frequencies measured above 1 GHz configuration



4.3 Measuring Instrument

The following instrument are used for radiated emissions measurement:

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum	Rohde & Schwarz	FSP40	2011/09/21	2012/09/20
EMI Test Receiver	Rohde & Schwarz	ESCI	2011/05/09	2012/05/08
Test Receiver	Rohde & Schwarz	ESVS30	2011/05/14	2012/05/13
Double Ridged Antenna	EMCO	3115	2011/05/30	2012/05/29
Double Ridged Guide Horn Antenna	EMCO	3116	2011/10/24	2012/10/26
Log-periodic Antenna	EMCO	3146	2011/11/04	2012/11/03
Biconical Antenna	EMCO	3110B	2011/11/18	2012/11/17
Amplifier	HP	8449B	2011/12/28	2012/12/27
Amplifier	HP	8447D	2011/05/27	2012/05/26
Amplifier	HP	83051A	2011/05/31	2012/05/30

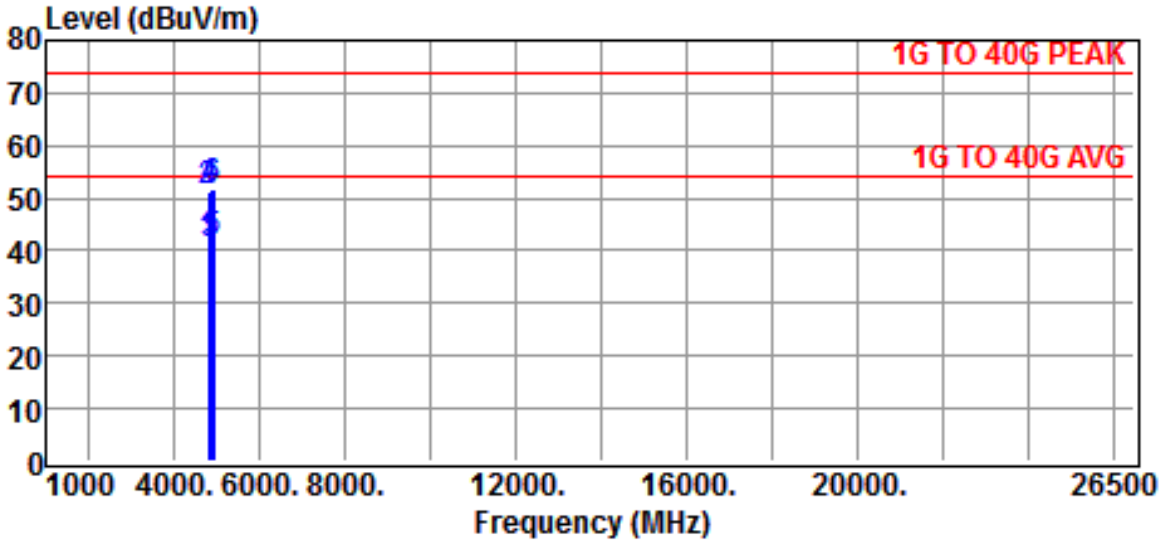
Measuring instrument setup in measured frequency band when specified detector function is used :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	N/A
	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	10 Hz

4.4 Radiated Emission Data

4.4.1 RF Portion

A. (802.11b)

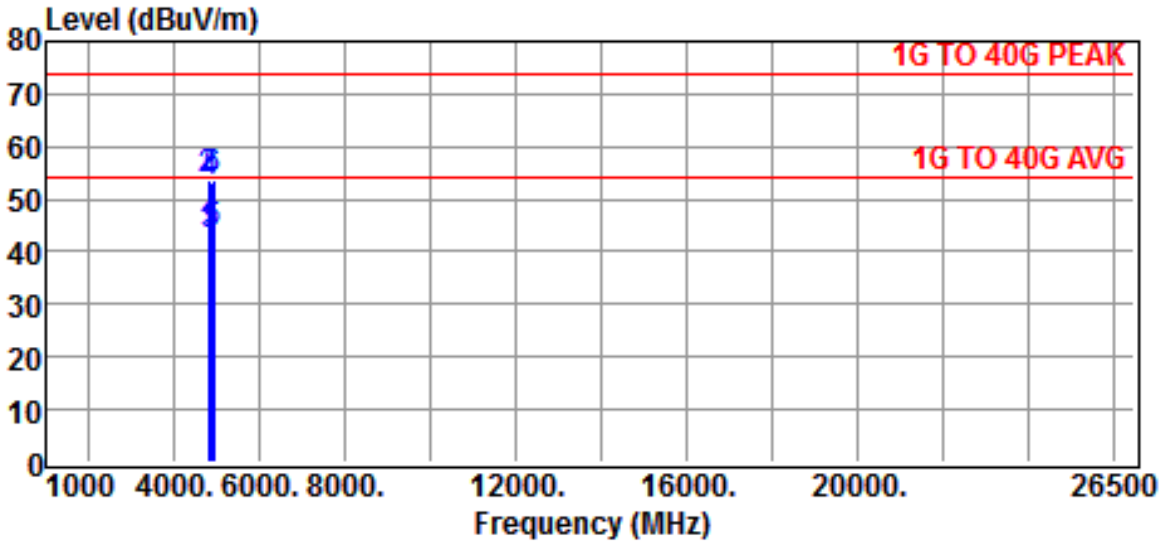


Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:HORIZONTAL
Model	:802.11B	Detector	:
Power Rating	:100-240V	Engineer	:VC
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:TX RX-CHLo:2412MHz,Mi:2437MHz,Hi:2462MHz	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4824.0000	40.6	0.6	41.2	54.0	-12.8	Average
4824.0000	50.5	0.6	51.1	74.0	-22.9	Peak
4874.0000	40.7	0.7	41.4	54.0	-12.6	Average
4874.0000	51.0	0.7	51.7	74.0	-22.3	Peak
4924.0000	40.5	1.0	41.5	54.0	-12.5	Average
4924.0000	50.5	1.0	51.5	74.0	-22.5	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



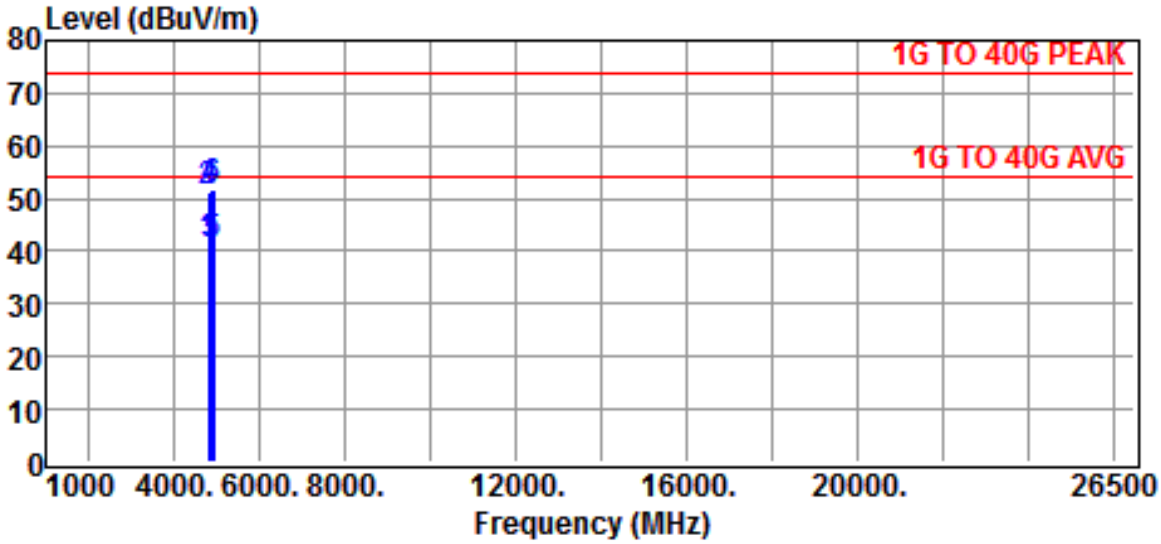
Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:VERTICAL
Model	:802.11B	Detector	:
Power Rating	:100-240V	Engineer	:VC
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:TX RX-CHLo:2412MHz,Mi:2437MHz,Hi:2462MHz	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4824.0000	42.5	0.6	43.1	54.0	-10.9	Average
4824.0000	52.9	0.6	53.5	74.0	-20.5	Peak
4874.0000	42.2	0.7	42.9	54.0	-11.1	Average
4874.0000	52.4	0.7	53.1	74.0	-20.9	Peak
4924.0000	42.5	1.0	43.5	54.0	-10.5	Average
4924.0000	52.6	1.0	53.6	74.0	-20.4	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

B. (802.11g)

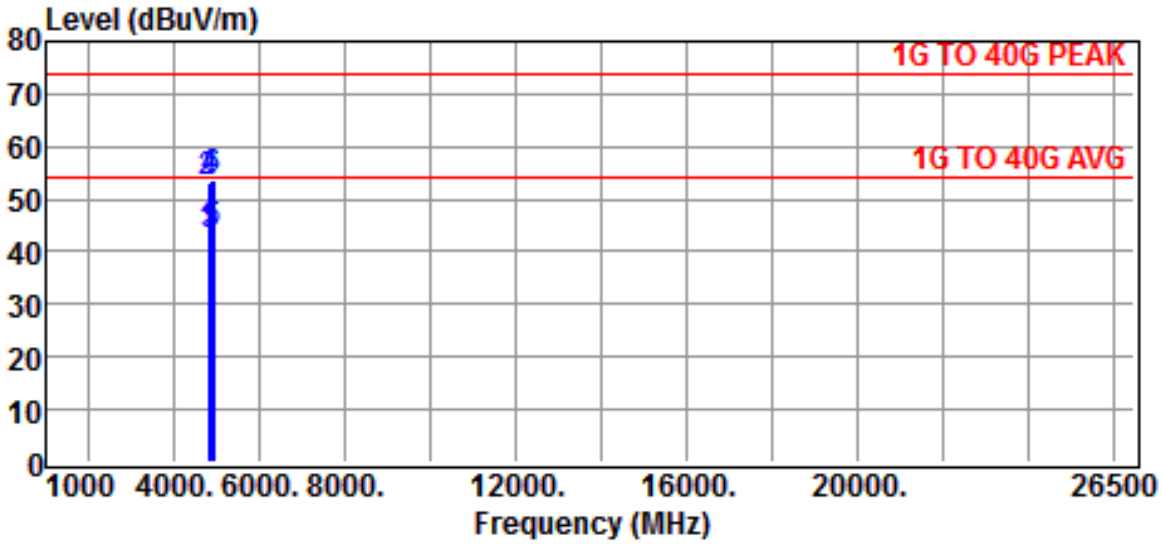


Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:HORIZONTAL
Model	:802.11G	Detector	:
Power Rating	:100-240V	Engineer	:VC
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:TX RX-CHLo:2412MHz,Mi:2437MHz,Hi:2462MHz	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4824.0000	40.6	0.6	41.2	54.0	-12.8	Average
4824.0000	50.6	0.6	51.2	74.0	-22.8	Peak
4874.0000	40.7	0.7	41.4	54.0	-12.6	Average
4874.0000	51.0	0.7	51.7	74.0	-22.3	Peak
4924.0000	40.1	1.0	41.1	54.0	-12.9	Average
4924.0000	50.8	1.0	51.8	74.0	-22.2	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



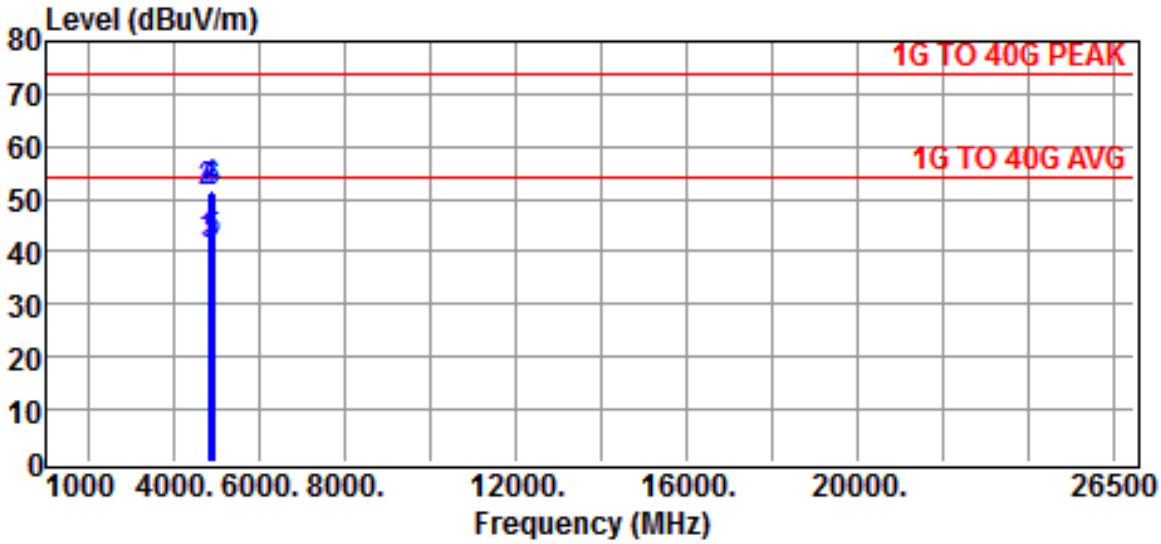
Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:VERTICAL
Model	:802.11G	Detector	:
Power Rating	:100-240V	Engineer	:VC
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:TX RX-CHLo:2412MHz,Mi:2437MHz,Hi:2462MHz	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4824.0000	42.6	0.6	43.2	54.0	-10.8	Average
4824.0000	52.6	0.6	53.2	74.0	-20.8	Peak
4874.0000	42.6	0.7	43.3	54.0	-10.7	Average
4874.0000	53.0	0.7	53.7	74.0	-20.3	Peak
4924.0000	42.4	1.0	43.4	54.0	-10.6	Average
4924.0000	52.7	1.0	53.7	74.0	-20.3	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

C. (802.11n HT-20)

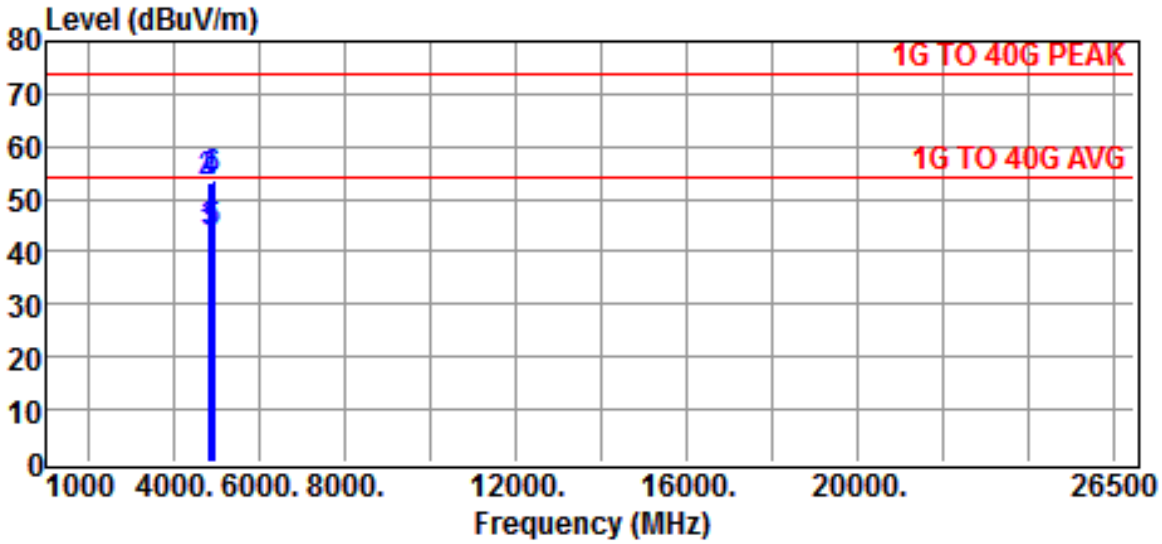


Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:HORIZONTAL
Model	:802.11N-20M	Detector	:
Power Rating	:100-240V	Engineer	:VC
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:TX RX-CHLo:2412MHz,Mi:2437MHz,Hi:2462MHz	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4824.0000	40.9	0.6	41.5	54.0	-12.5	Average
4824.0000	50.6	0.6	51.2	74.0	-22.8	Peak
4874.0000	40.6	0.7	41.3	54.0	-12.7	Average
4874.0000	51.0	0.7	51.7	74.0	-22.3	Peak
4924.0000	40.8	1.0	41.8	54.0	-12.2	Average
4924.0000	50.3	1.0	51.3	74.0	-22.7	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



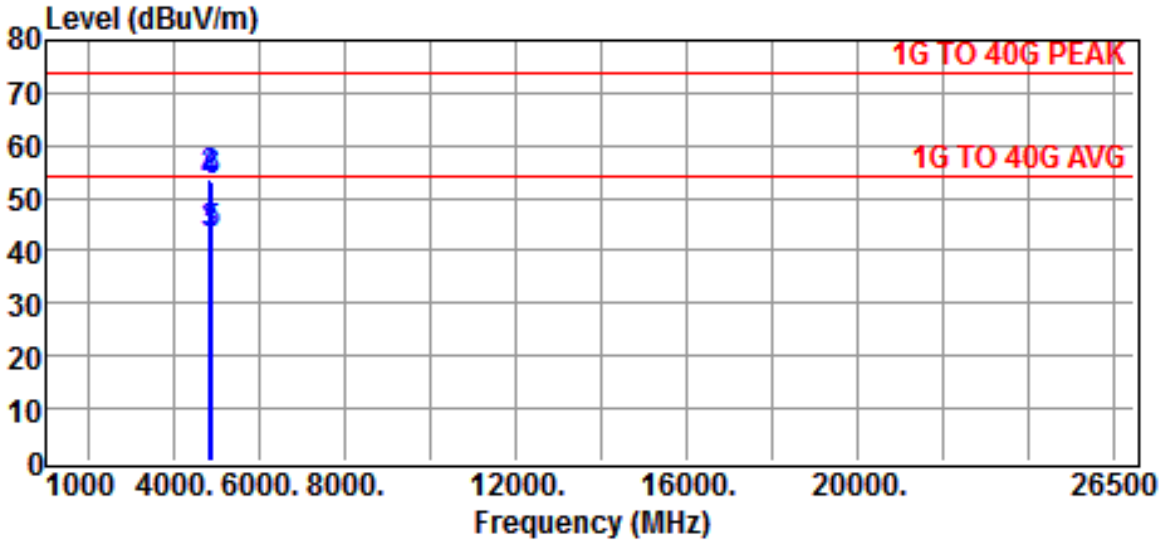
Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:VERTICAL
Model	:802.11N-20M	Detector	:
Power Rating	:100-240V	Engineer	:VC
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:TX RX-CHLo:2412MHz,Mi:2437MHz,Hi:2462MHz	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4824.0000	42.3	0.6	42.9	54.0	-11.1	Average
4824.0000	52.6	0.6	53.2	74.0	-20.8	Peak
4874.0000	42.8	0.7	43.5	54.0	-10.5	Average
4874.0000	52.7	0.7	53.4	74.0	-20.6	Peak
4924.0000	42.4	1.0	43.4	54.0	-10.6	Average
4924.0000	52.8	1.0	53.8	74.0	-20.2	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

D. (802.11n HT-40)

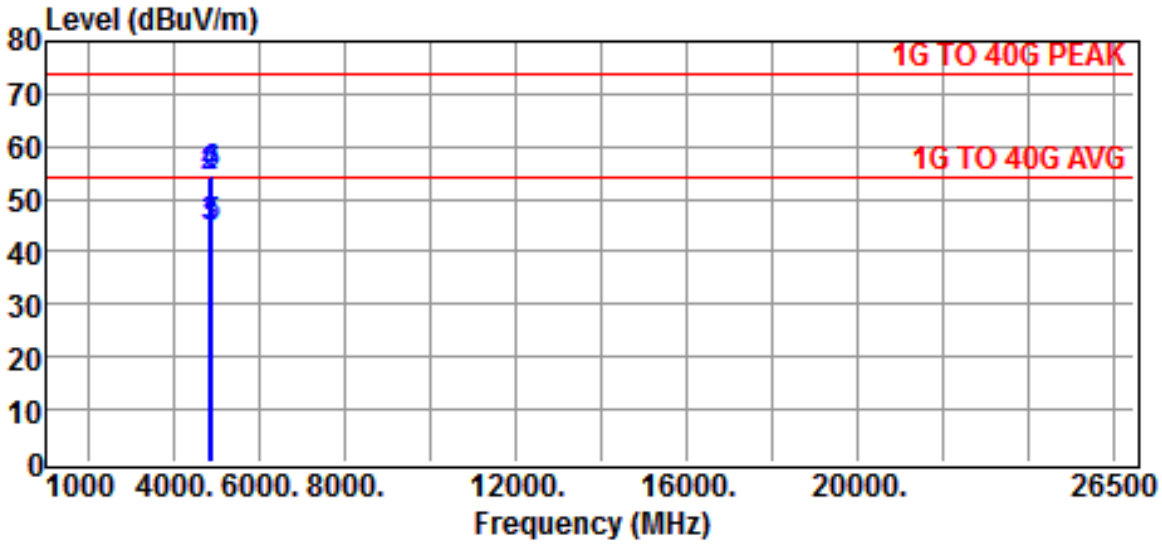


Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:HORIZONTAL
Model	:802.11N-40M	Detector	:
Power Rating	:100-240V	Engineer	:VC
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:TX RX-CHLo:2422MHz,Mi:2437MHz,Hi:2452MHz	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4844.0000	42.6	0.7	43.3	54.0	-10.7	Average
4844.0000	52.9	0.7	53.6	74.0	-20.4	Peak
4874.0000	42.4	0.7	43.1	54.0	-10.9	Average
4874.0000	52.3	0.7	53.0	74.0	-21.0	Peak
4904.0000	42.3	0.9	43.2	54.0	-10.8	Average
4904.0000	52.1	0.9	53.0	74.0	-21.0	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:VERTICAL
Model	:802.11N-40M	Detector	:
Power Rating	:100-240V	Engineer	:VC
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:TX RX-CHLo:2422MHz,Mi:2437MHz,Hi:2452MHz	Humi.	:65 %

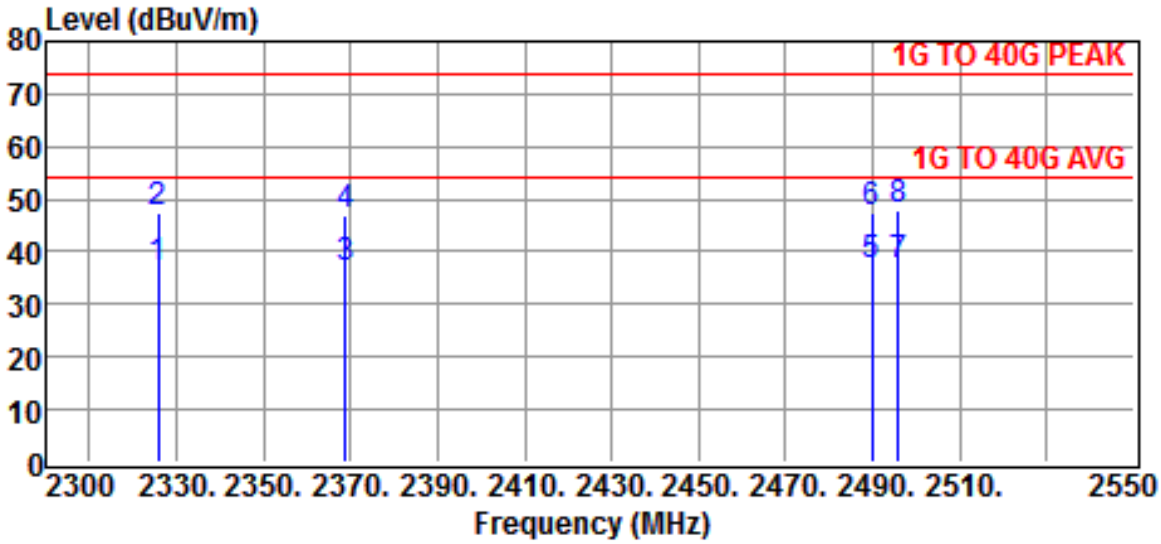
Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4844.0000	43.6	0.7	44.3	54.0	-9.7	Average
4844.0000	53.2	0.7	53.9	74.0	-20.1	Peak
4874.0000	43.7	0.7	44.4	54.0	-9.6	Average
4874.0000	54.0	0.7	54.7	74.0	-19.3	Peak
4904.0000	43.5	0.9	44.4	54.0	-9.6	Average
4904.0000	53.9	0.9	54.8	74.0	-19.2	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

4.4.2 Radiated Eimssion of Restricted bands

Mode: 802.11b

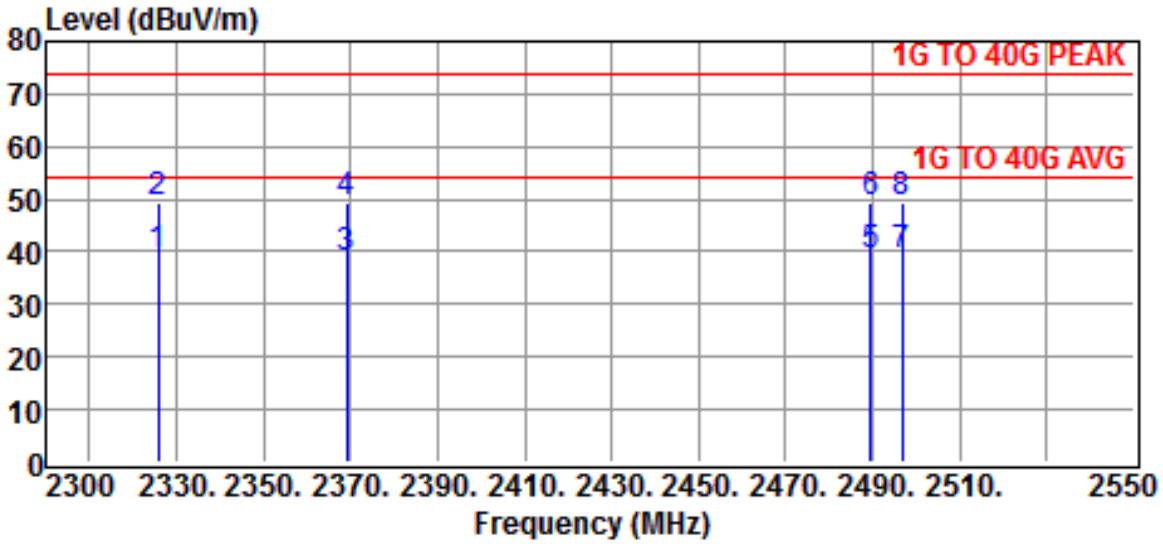


Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:HORIZONTAL
Model	:802.11B	Detector	:
Power Rating	:100-240V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:CH LO & HI - Restricted Bands	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2325.8500	43.1	-6.4	36.7	54.0	-17.3	Average
2325.8500	53.6	-6.4	47.2	74.0	-26.8	Peak
2368.7500	43.2	-6.3	36.9	54.0	-17.1	Average
2368.7500	53.2	-6.3	46.9	74.0	-27.1	Peak
2489.8500	43.2	-5.9	37.3	54.0	-16.7	Average
2489.8500	53.4	-5.9	47.5	74.0	-26.5	Peak
2495.7400	43.2	-5.9	37.3	54.0	-16.7	Average
2495.7400	53.9	-5.9	48.0	74.0	-26.0	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



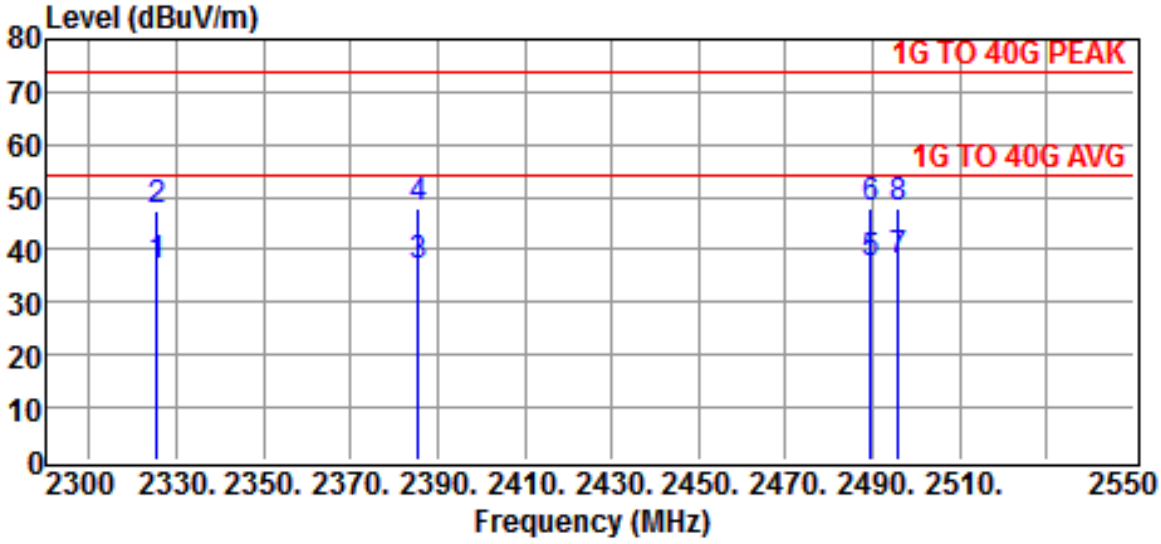
Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:VERTICAL
Model	:802.11B	Detector	:
Power Rating	:100-240V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:CH LO & HI - Restricted Bands	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2325.9600	45.6	-6.4	39.2	54.0	-14.8	Average
2325.9600	55.9	-6.4	49.5	74.0	-24.5	Peak
2369.2500	45.2	-6.3	38.9	54.0	-15.1	Average
2369.2500	55.7	-6.3	49.4	74.0	-24.6	Peak
2489.6500	45.2	-5.9	39.3	54.0	-14.7	Average
2489.6500	55.3	-5.9	49.4	74.0	-24.6	Peak
2496.8500	45.2	-5.9	39.3	54.0	-14.7	Average
2496.8500	55.1	-5.9	49.2	74.0	-24.8	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

Mode: 802.11g

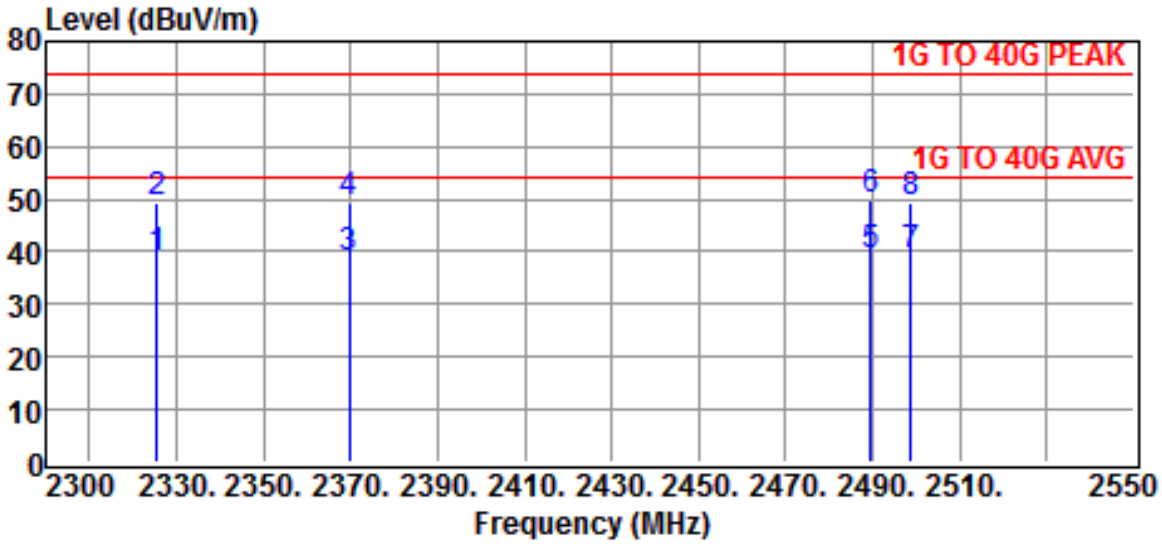


Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:HORIZONTAL
Model	:802.11G	Detector	:
Power Rating	:100-240V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:CH LO & HI - Restricted Bands	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2325.6500	43.5	-6.4	37.1	54.0	-16.9	Average
2325.6500	53.9	-6.4	47.5	74.0	-26.5	Peak
2385.5200	43.2	-6.2	37.0	54.0	-17.0	Average
2385.5200	53.9	-6.2	47.7	74.0	-26.3	Peak
2489.6500	43.5	-5.9	37.6	54.0	-16.4	Average
2489.6500	53.7	-5.9	47.8	74.0	-26.2	Peak
2495.7500	43.9	-5.9	38.0	54.0	-16.0	Average
2495.7500	53.7	-5.9	47.8	74.0	-26.2	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



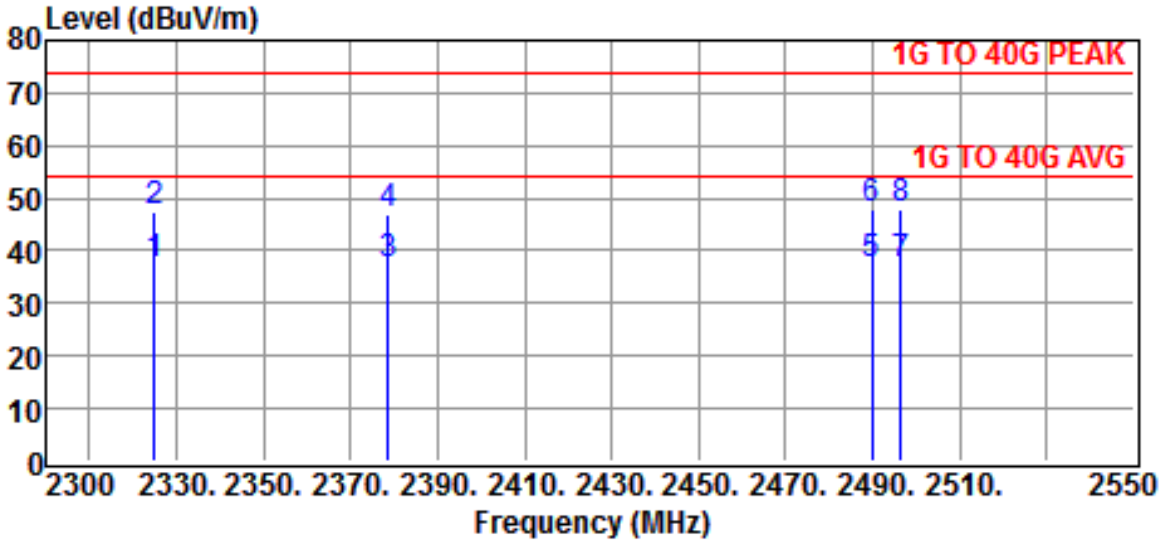
Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:VERTICAL
Model	:802.11G	Detector	:
Power Rating	:100-240V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:CH LO & HI - Restricted Bands	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2325.6500	45.2	-6.4	38.8	54.0	-15.2	Average
2325.6500	55.9	-6.4	49.5	74.0	-24.5	Peak
2369.5800	45.3	-6.3	39.0	54.0	-15.0	Average
2369.5800	55.8	-6.3	49.5	74.0	-24.5	Peak
2489.5200	45.2	-5.9	39.3	54.0	-14.7	Average
2489.5200	55.7	-5.9	49.8	74.0	-24.2	Peak
2498.7400	45.2	-5.9	39.3	54.0	-14.7	Average
2498.7400	55.3	-5.9	49.4	74.0	-24.6	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

Mode: 802.11n HT-20

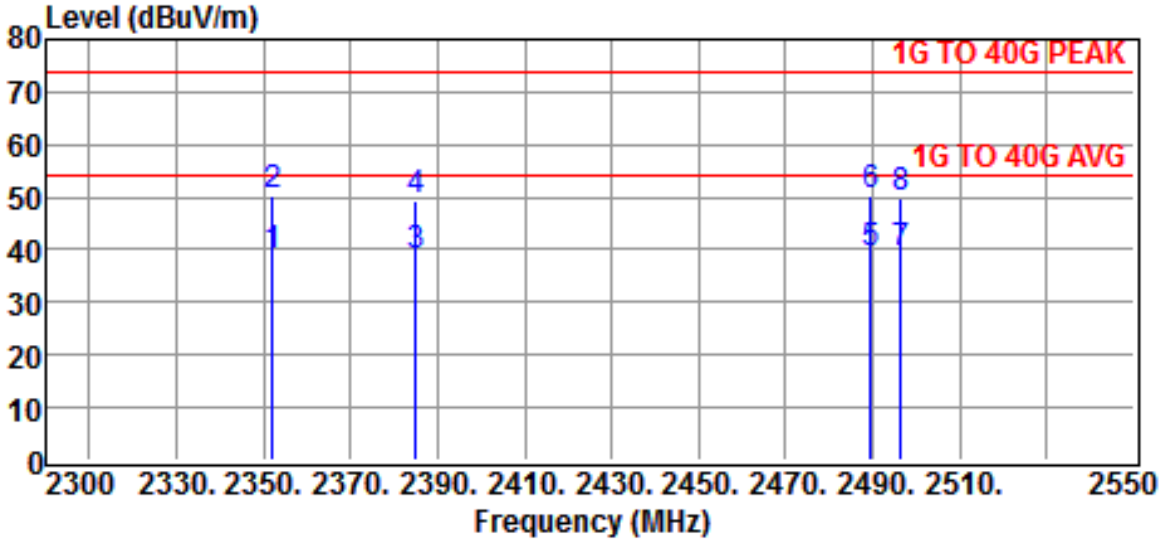


Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:HORIZONTAL
Model	:802.11N-20M	Detector	:
Power Rating	:100-240V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:CH LO & HI - Restricted Bands	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2325.1100	43.8	-6.4	37.4	54.0	-16.6	Average
2325.1100	53.7	-6.4	47.3	74.0	-26.7	Peak
2378.5800	43.6	-6.3	37.3	54.0	-16.7	Average
2378.5800	53.2	-6.3	46.9	74.0	-27.1	Peak
2489.6900	43.2	-5.9	37.3	54.0	-16.7	Average
2489.6900	53.7	-5.9	47.8	74.0	-26.2	Peak
2496.4500	43.5	-5.9	37.6	54.0	-16.4	Average
2496.4500	53.7	-5.9	47.8	74.0	-26.2	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



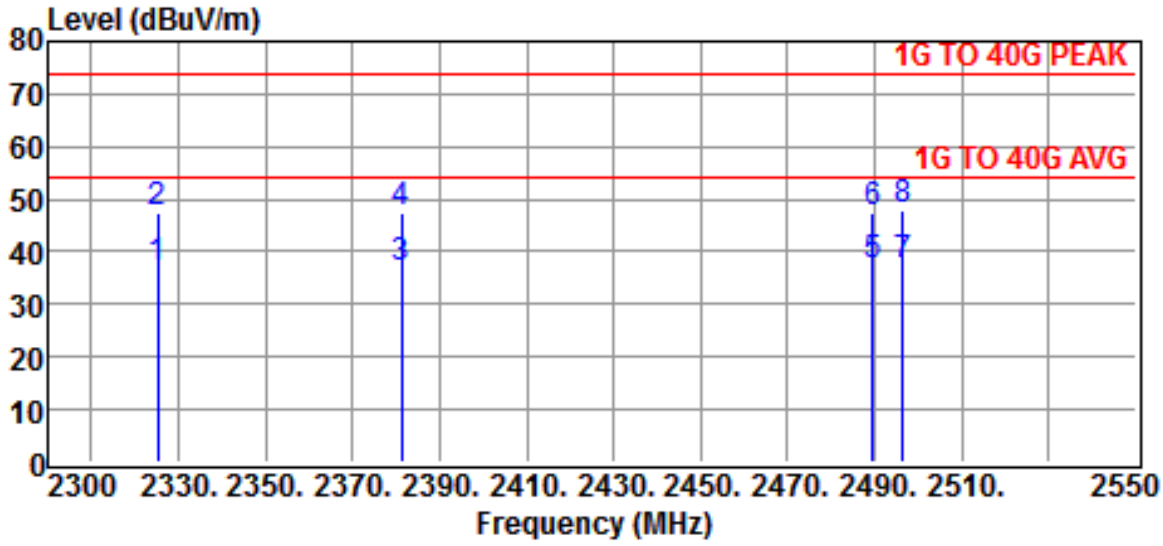
Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:VERTICAL
Model	:802.11N-20M	Detector	:
Power Rating	:100-240V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:CH LO & HI - Restricted Bands	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2352.1100	45.2	-6.3	38.9	54.0	-15.1	Average
2352.1100	56.5	-6.3	50.2	74.0	-23.8	Peak
2385.1100	45.2	-6.3	38.9	54.0	-15.1	Average
2385.1100	55.9	-6.3	49.6	74.0	-24.4	Peak
2489.5500	45.2	-5.9	39.3	54.0	-14.7	Average
2489.5500	56.1	-5.9	50.2	74.0	-23.8	Peak
2496.5200	45.1	-5.9	39.2	54.0	-14.8	Average
2496.5200	55.5	-5.9	49.6	74.0	-24.4	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

Mode: 802.11n HT-40

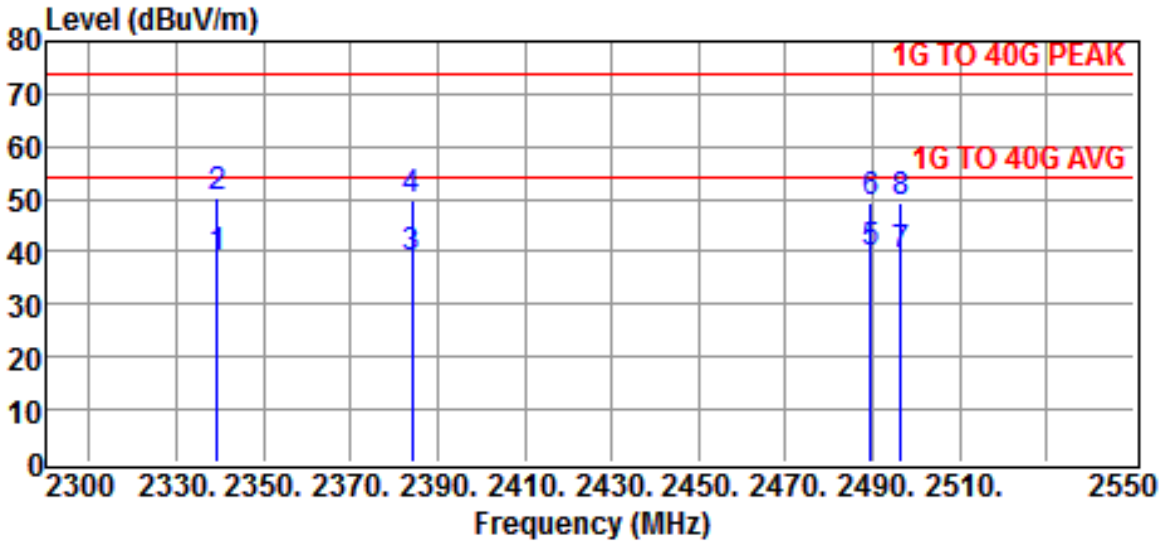


Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:HORIZONTAL
Model	:802.11N-40M	Detector	:
Power Rating	:100-240V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:CH LO & HI - Restricted Bands	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2325.1500	43.5	-6.4	37.1	54.0	-16.9	Average
2325.1500	53.8	-6.4	47.4	74.0	-26.6	Peak
2381.2500	43.2	-6.3	36.9	54.0	-17.1	Average
2381.2500	54.0	-6.3	47.7	74.0	-26.3	Peak
2489.5200	43.2	-5.9	37.3	54.0	-16.7	Average
2489.5200	53.4	-5.9	47.5	74.0	-26.5	Peak
2496.5200	43.5	-5.9	37.6	54.0	-16.4	Average
2496.5200	53.7	-5.9	47.8	74.0	-26.2	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



Site	:chamber #2	Date	:2012-04-18
EUT	:2.4GHz	Ant. Pol.	:VERTICAL
Model	:802.11N-40M	Detector	:
Power Rating	:100-240V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:20˚C
Memo	:CH LO & HI - Restricted Bands	Humi.	:65 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2339.4500	45.2	-6.3	38.9	54.0	-15.1	Average
2339.4500	56.4	-6.3	50.1	74.0	-23.9	Peak
2384.1500	45.3	-6.3	39.0	54.0	-15.0	Average
2384.1500	56.4	-6.3	50.1	74.0	-23.9	Peak
2489.5500	45.7	-5.9	39.8	54.0	-14.2	Average
2489.5500	55.2	-5.9	49.3	74.0	-24.7	Peak
2496.4500	45.1	-5.9	39.2	54.0	-14.8	Average
2496.4500	55.1	-5.9	49.2	74.0	-24.8	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

4.4.3 Other Emission

a) Emission frequencies below 1 GHz

Operation Mode : Internet Operation (Worst case)

Test Date : Apr 21, 2012 Temperature : 25 °C Humidity : 65 %

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)
52.14	V	18.0	9.0	27.0	30.0	-3.2	175	1.0
172.02	V	13.6	12.3	25.9	30.0	-4.5	182	1.0
187.41	V	15.5	11.7	27.2	30.0	-4.3	194	1.0
234.66	H	13.8	14.4	28.2	37.0	-3.0	74	1.5
484.10	V	11.5	22.6	34.1	37.0	-3.7	198	1.0
624.10	V	8.4	25.8	34.2	37.0	-4.2	199	1.0

Operation Mode : RJ-11 Link (Worst case)

Test Date : Apr 21, 2012 Temperature : 25 °C Humidity : 65 %

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)
70.77	V	16.3	8.7	25.0	30.0	-5.0	175	1.0
172.02	V	13.1	12.3	25.4	30.0	-4.6	180	1.0
234.66	H	13.8	14.4	28.2	37.0	-8.8	83	1.5
484.10	V	11.4	22.6	34.0	37.0	-3.0	197	1.0
624.10	V	8.2	25.8	34.0	37.0	-3.0	182	1.0
750.30	V	5.5	28.7	34.2	37.0	-2.8	192	1.0

Note :

1. Remark "---" means that the emissions level is too low to be measured.

2. The expanded uncertainty of the radiated emission tests is 3.53 dB.

a) Emission frequencies above 1 GHz

Radiated emission frequencies above 1 GHz to 25 GHz were too low to be measured with a pre-amplifier of 35 dB.

Operation Mode : USB*3 Operation mode (Worst case)

Test Date : Apr 21, 2012 Temperature : 25 °C Humidity : 65 %

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)
52.14	V	18.0	9.0	27.0	30.0	-3.0	177	1.0
187.41	V	15.8	11.7	27.5	30.0	-2.5	185	1.0
484.10	V	11.5	22.6	34.1	37.0	-2.9	192	1.0
750.10	V	5.3	28.7	34.0	37.0	-3.0	184	1.0
825.70	V	4.5	29.7	34.2	37.0	-2.8	179	1.0
875.40	V	3.9	30.3	34.2	37.0	-2.8	180	1.0

Operation Mode : Wifi Operation mode (Worst case)

Test Date : Apr 21, 2012 Temperature : 25 °C Humidity : 65 %

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)
52.14	V	18.1	9.0	27.1	30.0	-2.9	175	1.0
172.02	V	13.3	12.3	25.6	30.0	-4.4	182	1.0
374.20	V	12.7	19.3	32.0	37.0	-5.0	194	1.0
484.10	V	11.4	22.6	34.0	37.0	-3.0	175	1.0
624.10	V	8.3	25.8	34.1	37.0	-2.9	182	1.0
775.30	V	5.3	28.9	34.2	37.0	-2.8	191	1.0

Note :

1. Remark "---" means that the emissions level is too low to be measured.

2. The expanded uncertainty of the radiated emission tests is 3.53 dB.

a) Emission frequencies above 1 GHz

Radiated emission frequencies above 1 GHz to 25 GHz were too low to be measured with a pre-amplifier of 35 dB.

4.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor, High Pass Filter Loss(if used) and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

where

Corrected Factor = Antenna FACTOR + Cable Loss + High Pass Filter Loss - Amplifier Gain

4.6 Photos of Radiation Measuring Setup

5 CONDUCTED EMISSION MEASUREMENT

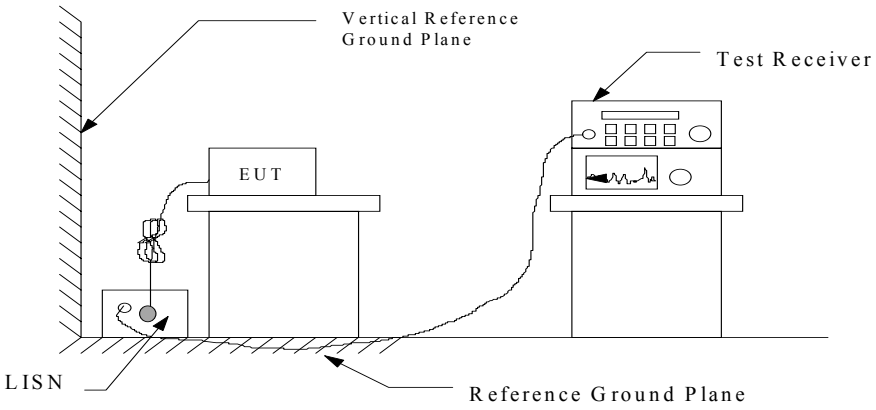
5.1 Standard Applicable

For unintentional and intentional device, Line Conducted Emission Limits are in accordance to § 15.107(a) and § 15.207(a) respectively. Both Limits are identical specification.

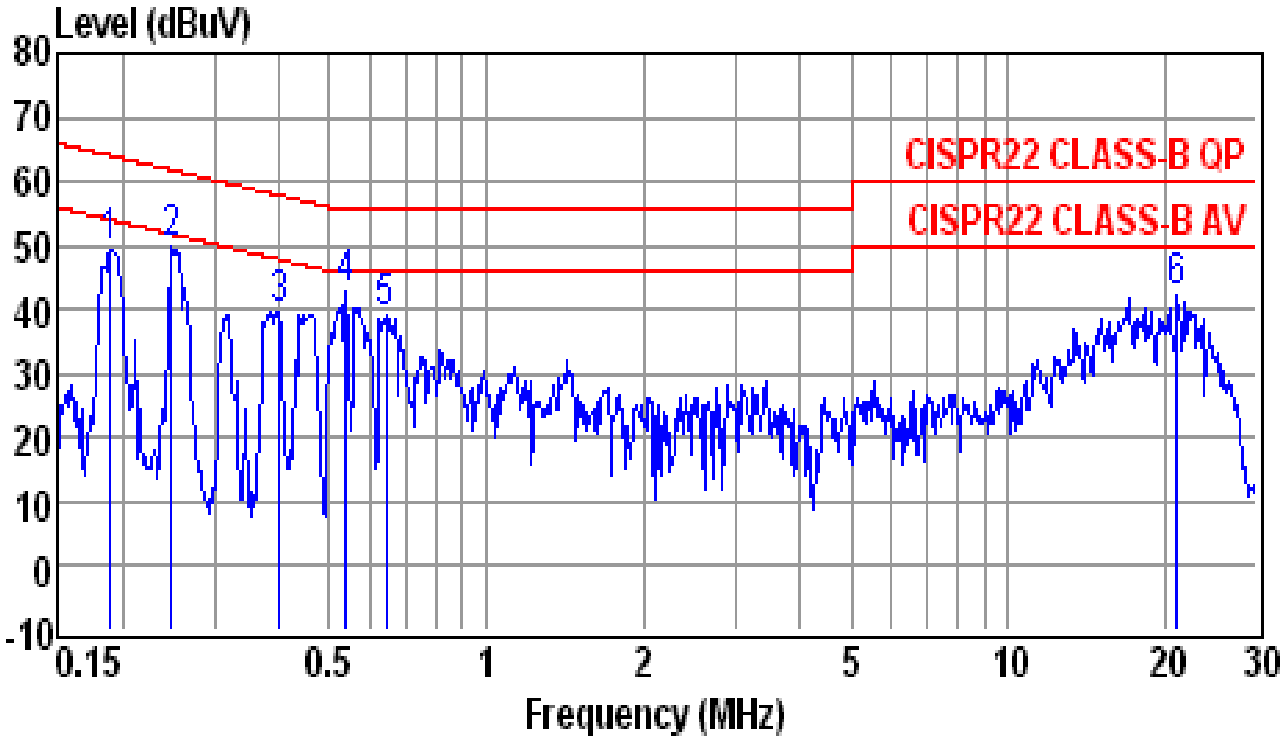
5.2 Measurement Procedure

1. Setup the configuration per figure 3.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 6 or 8 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 3 : Conducted emissions measurement configuration



5.3 Conducted Emission Data

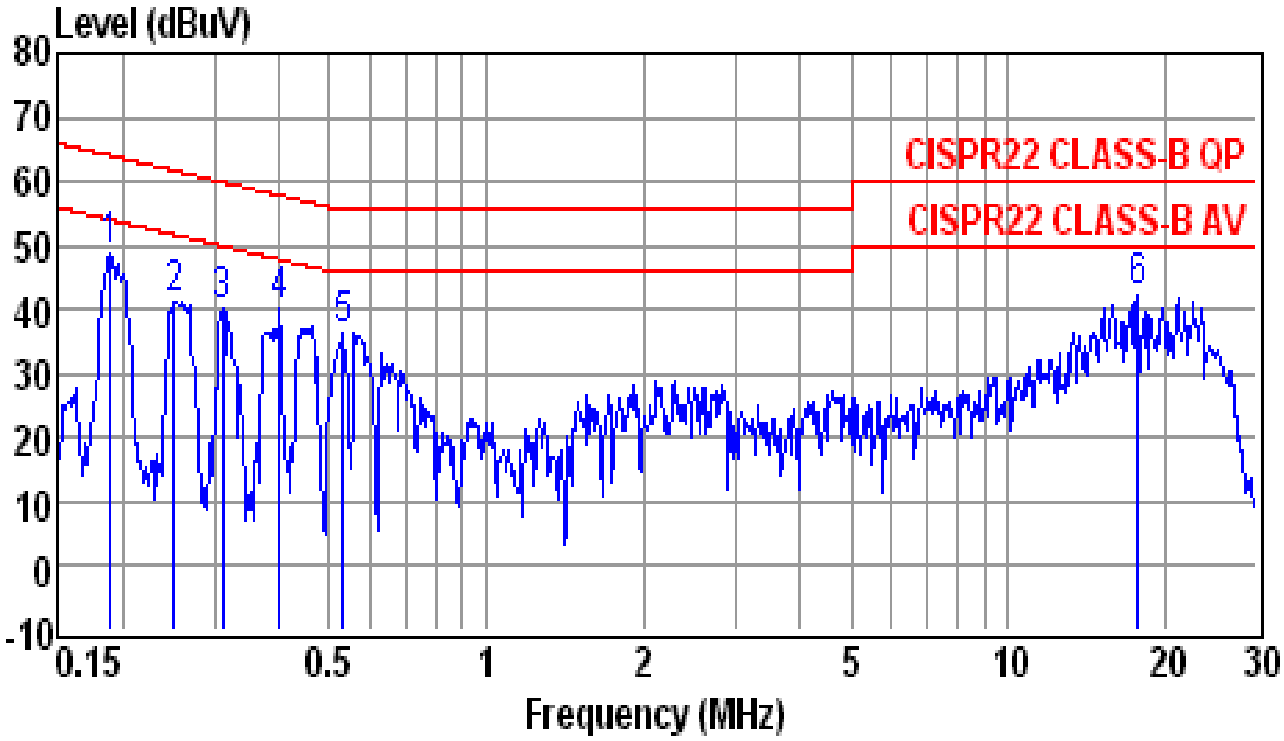


Site	: conducted #1	Date	: 04-19-2012
Condition	: CISPR22 CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 25 ℃ / 65%	Test Mode	:
EUT	: IG7500	Power Rating	: 100-240V
Memo	: INTERNET MODE	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1894	49.4	0.1	49.5	64.1	-14.6	QP
0.2481	49.5	0.1	49.6	61.8	-12.2	QP
0.3997	39.6	0.2	39.8	57.9	-18.1	QP
0.5378	42.8	0.2	43.0	56.0	-13.0	QP
0.6406	38.8	0.2	39.0	56.0	-17.0	QP
21.1470	41.7	0.8	42.5	60.0	-17.5	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

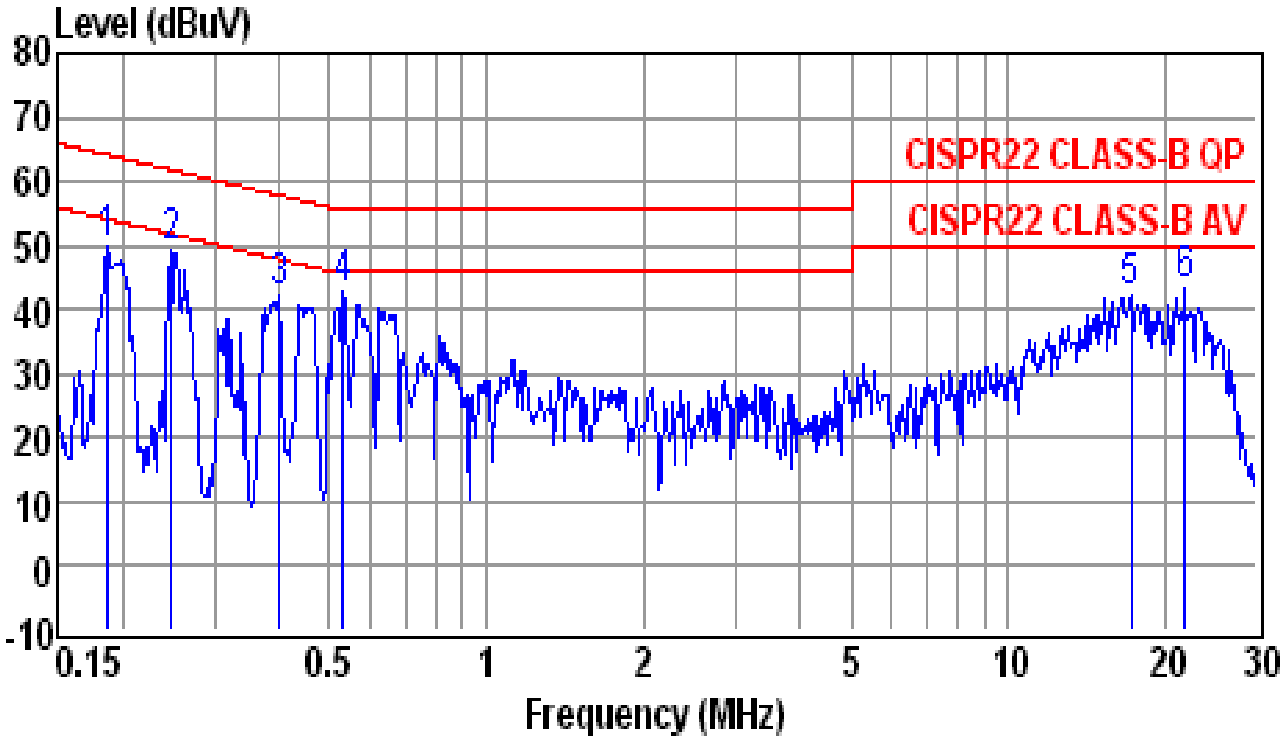


Site	: conducted #1	Date	: 04-19-2012
Condition	: CISPR22 CLASS-B QP	LISN	: LINE
Tem / Hum	: 25 ℃ / 65%	Test Mode	:
EUT	: IG7500	Power Rating	: 100-240V
Memo	: INTERNET MODE	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1894	48.8	0.1	48.9	64.1	-15.2	QP
0.2521	41.3	0.1	41.4	61.7	-20.3	QP
0.3116	40.1	0.1	40.2	59.9	-19.7	QP
0.3997	40.0	0.2	40.2	57.9	-17.7	QP
0.5293	36.4	0.2	36.6	56.0	-19.4	QP
17.7550	41.4	0.7	42.1	60.0	-17.9	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

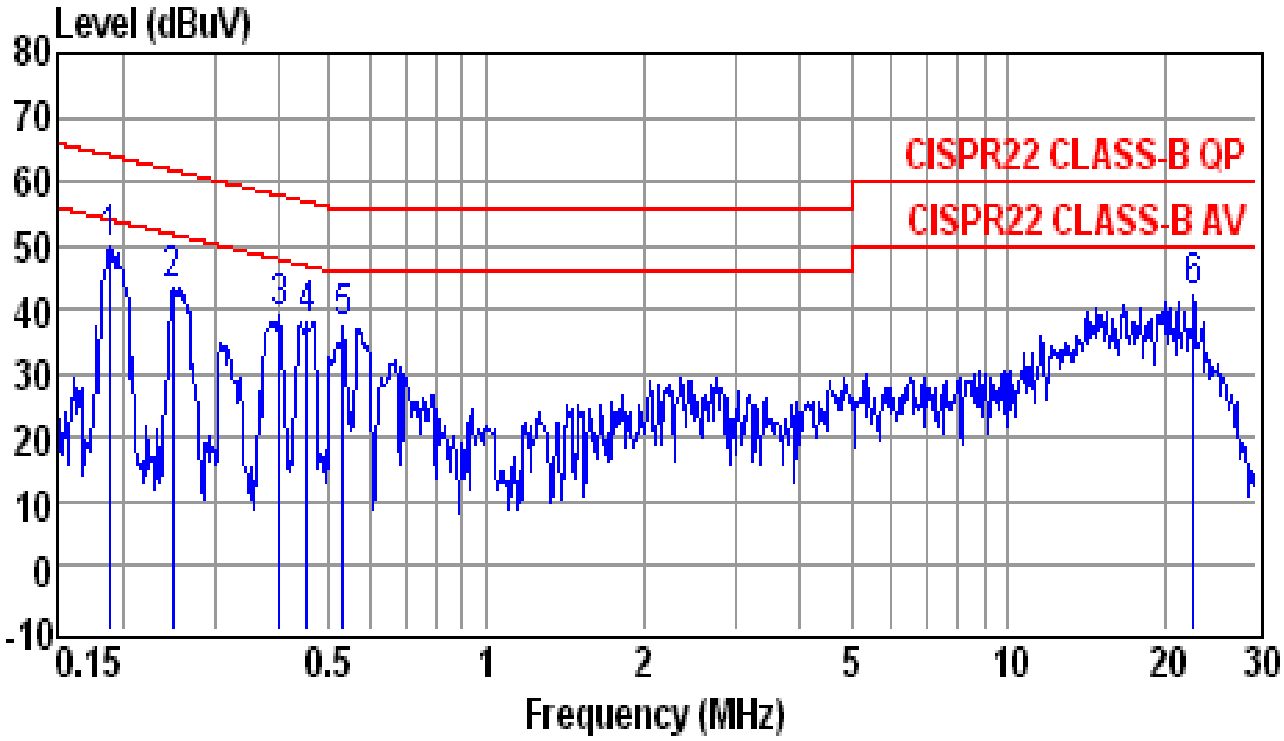


Site	: conducted #1	Date	: 04-19-2012
Condition	: CISPR22 CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 25 ℃ / 65%	Test Mode	:
EUT	: IG7500	Power Rating	: 100-240V
Memo	: RJ-11 LINK MODE	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1874	49.9	0.1	50.0	64.2	-14.2	QP
0.2481	49.3	0.1	49.4	61.8	-12.4	QP
0.3997	42.2	0.2	42.4	57.9	-15.5	QP
0.5322	42.6	0.2	42.8	56.0	-13.2	QP
17.1990	41.8	0.7	42.5	60.0	-17.5	QP
21.8300	42.7	0.8	43.5	60.0	-16.5	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

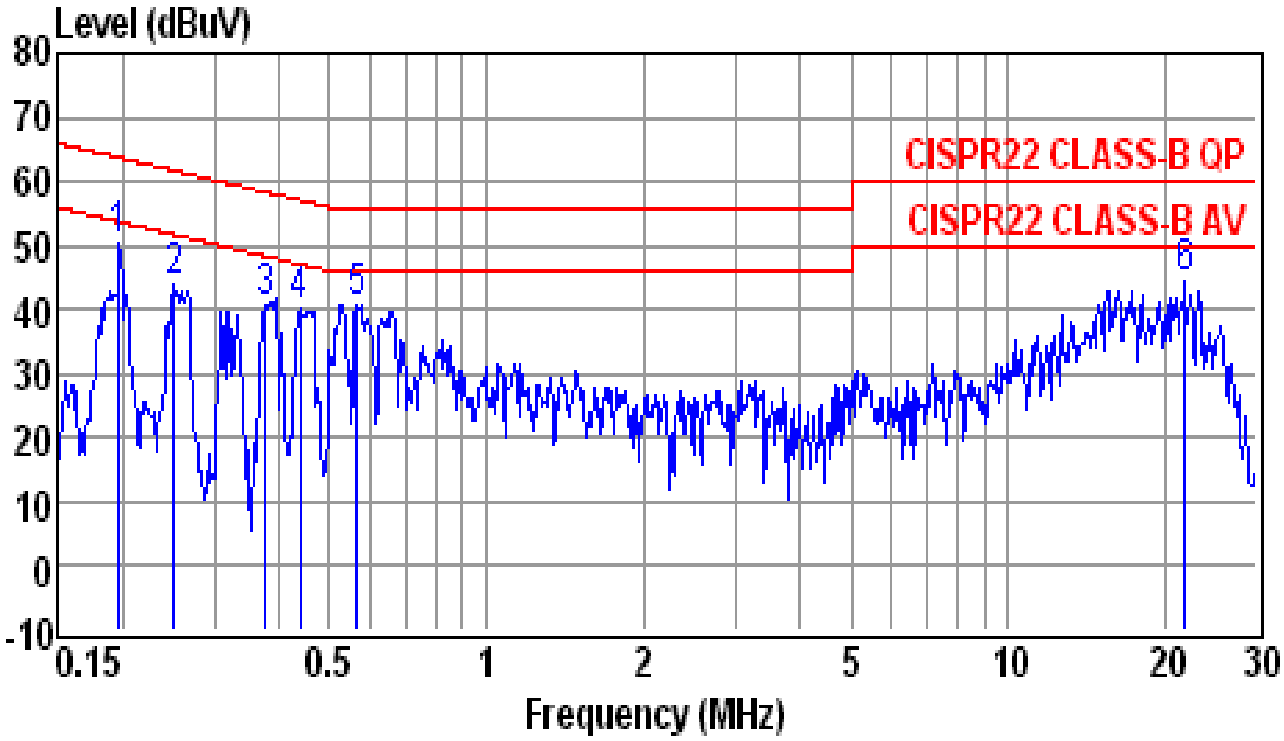


Site	: conducted #1	Date	: 04-19-2012
Condition	: CISPR22 CLASS-B QP	LISN	: LINE
Tem / Hum	: 25 ℃ / 65%	Test Mode	:
EUT	: IG7500	Power Rating	: 100-240V
Memo	: RJ-11 LINK MODE	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1894	49.5	0.1	49.6	64.1	-14.5	QP
0.2495	43.2	0.1	43.3	61.8	-18.5	QP
0.3997	38.7	0.2	38.9	57.9	-19.0	QP
0.4516	37.9	0.2	38.1	56.8	-18.7	QP
0.5322	37.2	0.2	37.4	56.0	-18.6	QP
22.6550	41.2	0.8	42.0	60.0	-18.0	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

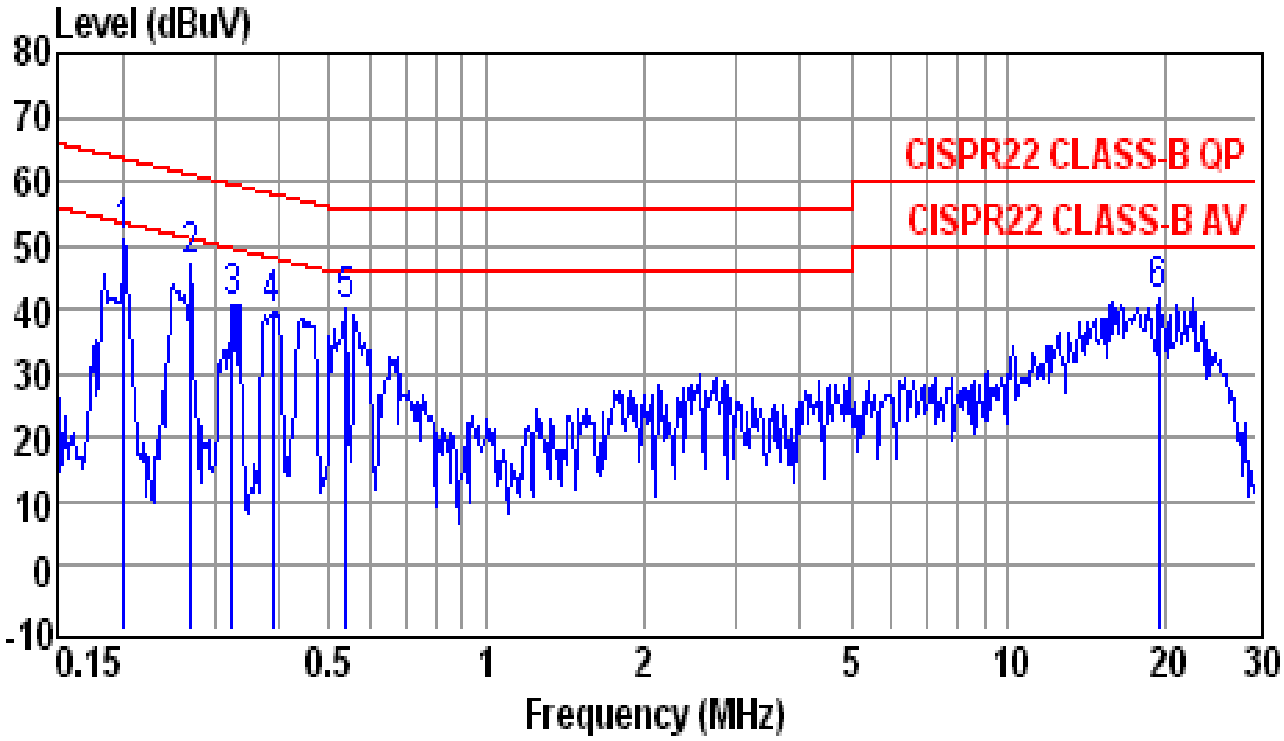


Site	: conducted #1	Date	: 04-19-2012
Condition	: CISPR22 CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 25 ℃ / 65%	Test Mode	:
EUT	: IG7500	Power Rating	: 100-240V
Memo	: USB*3 OPERATION MODE	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1965	50.1	0.1	50.2	63.8	-13.6	QP
0.2521	43.7	0.1	43.8	61.7	-17.9	QP
0.3771	40.5	0.1	40.6	58.3	-17.7	QP
0.4397	40.2	0.2	40.4	57.1	-16.7	QP
0.5641	40.7	0.2	40.9	56.0	-15.1	QP
21.8300	43.4	0.8	44.2	60.0	-15.8	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

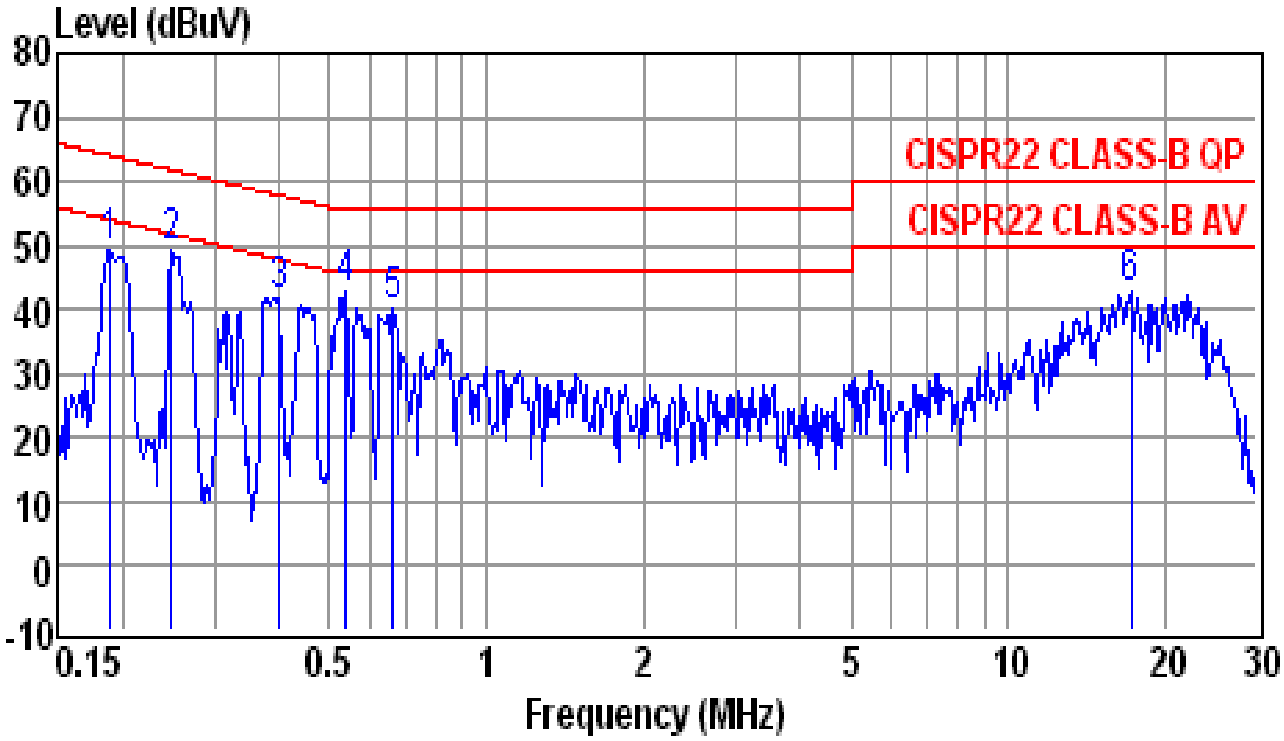


Site	: conducted #1	Date	: 04-19-2012
Condition	: CISPR22 CLASS-B QP	LISN	: LINE
Tem / Hum	: 25 ℃ / 65%	Test Mode	:
EUT	: IG7500	Power Rating	: 100-240V
Memo	: USB*3 OPERATION MODE	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.2018	50.9	0.1	51.0	63.5	-12.5	QP
0.2701	47.3	0.1	47.4	61.1	-13.7	QP
0.3251	40.8	0.1	40.9	59.6	-18.7	QP
0.3893	39.6	0.1	39.7	58.1	-18.4	QP
0.5378	39.8	0.2	40.0	56.0	-16.0	QP
19.5320	41.1	0.8	41.9	60.0	-18.1	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

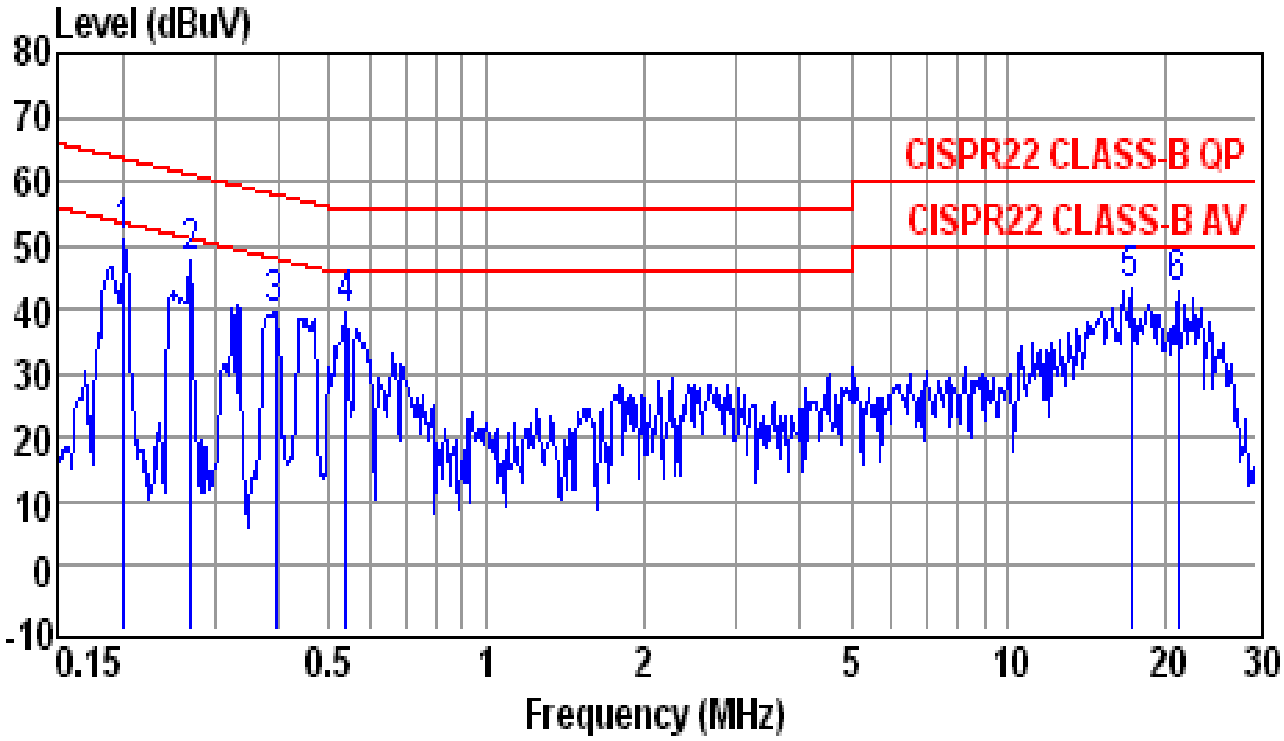


Site	: conducted #1	Date	: 04-19-2012
Condition	: CISPR22 CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 25 ℃ / 65%	Test Mode	:
EUT	: IG7500	Power Rating	: 100-240V
Memo	: WIFI MODE	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1904	49.4	0.1	49.5	64.0	-14.5	QP
0.2481	49.3	0.1	49.4	61.8	-12.4	QP
0.3997	41.6	0.2	41.8	57.9	-16.1	QP
0.5378	42.7	0.2	42.9	56.0	-13.1	QP
0.6613	39.7	0.2	39.9	56.0	-16.1	QP
17.1990	42.2	0.7	42.9	60.0	-17.1	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss



Site	: conducted #1	Date	: 04-19-2012
Condition	: CISPR22 CLASS-B QP	LISN	: LINE
Tem / Hum	: 25 ℃ / 65%	Test Mode	:
EUT	: IG7500	Power Rating	: 100-240V
Memo	: WIFI MODE	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.2018	50.9	0.1	51.0	63.5	-12.5	QP
0.2701	47.6	0.1	47.7	61.1	-13.4	QP
0.3934	39.6	0.1	39.7	58.0	-18.3	QP
0.5378	39.4	0.2	39.6	56.0	-16.4	QP
17.1990	42.8	0.7	43.5	60.0	-16.5	QP
21.2600	42.0	0.8	42.8	60.0	-17.2	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

5.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

RESULT = READING + LISN FACTOR

Assume a receiver reading of 22.5 dB μ V is obtained, and LISN Factor is 0.1 dB, then the total of disturbance voltage is 22.6 dB μ V.

RESULT = 22.5 + 0.1 = 22.6 dB μ V
Level in μ V = Common Antilogarithm[(22.6 dB μ V)/20]
= 13.48 μ V

5.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test .

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	2011/05/09	2012/05/07
LISN	EMCO	3625/2	2012/03/30	2013/04/02
LISN	Rohde & Schwarz	ESH2-Z5	2011/08/24	2012/08/23

5.6 Photos of Conduction Measuring Setup

6 ANTENNA REQUIREMENT

6.1 Standard Applicable

For intentional device, according to §15.203, 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.

And according to §15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.2 Antenna Construction and Directional Gain

The antenna gain is 3.5 +10log(2)=3.5+3=6.5dBi so the power should be reduced by 0.5dB Hence the maximum peak output power of the transmitter shall not exceed 29.5 dBm.

Please see constraction Photos of Exhibit B and the antenna specification for details.

7 EMISSION BANDWIDTH MEASUREMENT

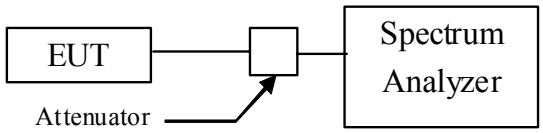
7.1 Standard Applicable

According to 15.247(a)(2), for direct sequence system, the minimum 6dB bandwidth shall be at least 500 kHz.

7.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Figure 4: Emission bandwidth measurement configuration.



7.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum Analyzer	Rohde & Schwarz	FSP40	2011/09/21	2012/09/20

7.4 Measurement Data

Test Date : Apr. 21, 2012 Temperature : 25 °C Humidity : 65 %

A. 802.11b @1 Mbps

a) Channel Low: 6 dB Emission Bandwidth is 11.2 MHz
b) Channel Mid: 6 dB Emission Bandwidth is 11.4 MHz
c) Channel High: 6 dB Emission Bandwidth is 11.4 MHz

B. 802.11g @6 Mbps

a) Channel Low: 6 dB Emission Bandwidth is 16.4 MHz
b) Channel Mid: 6 dB Emission Bandwidth is 16.4 MHz
c) Channel High: 6 dB Emission Bandwidth is 16.4 MHz

C. 802.11n HT-20 Antenna 1 @6.5 Mbps

a) Channel Low: 6 dB Emission Bandwidth is 15.7 MHz
b) Channel Mid: 6 dB Emission Bandwidth is 16.8 MHz
c) Channel High: 6 dB Emission Bandwidth is 15.5 MHz

D. 802.11n HT-20 Antenna 2 @6.5 Mbps

a) Channel Low: 6 dB Emission Bandwidth is 15.3 MHz
b) Channel Mid: 6 dB Emission Bandwidth is 16.1 MHz
c) Channel High: 6 dB Emission Bandwidth is 15.3 MHz

E. 802.11n HT-40 Antenna 1 @13.5 Mbps

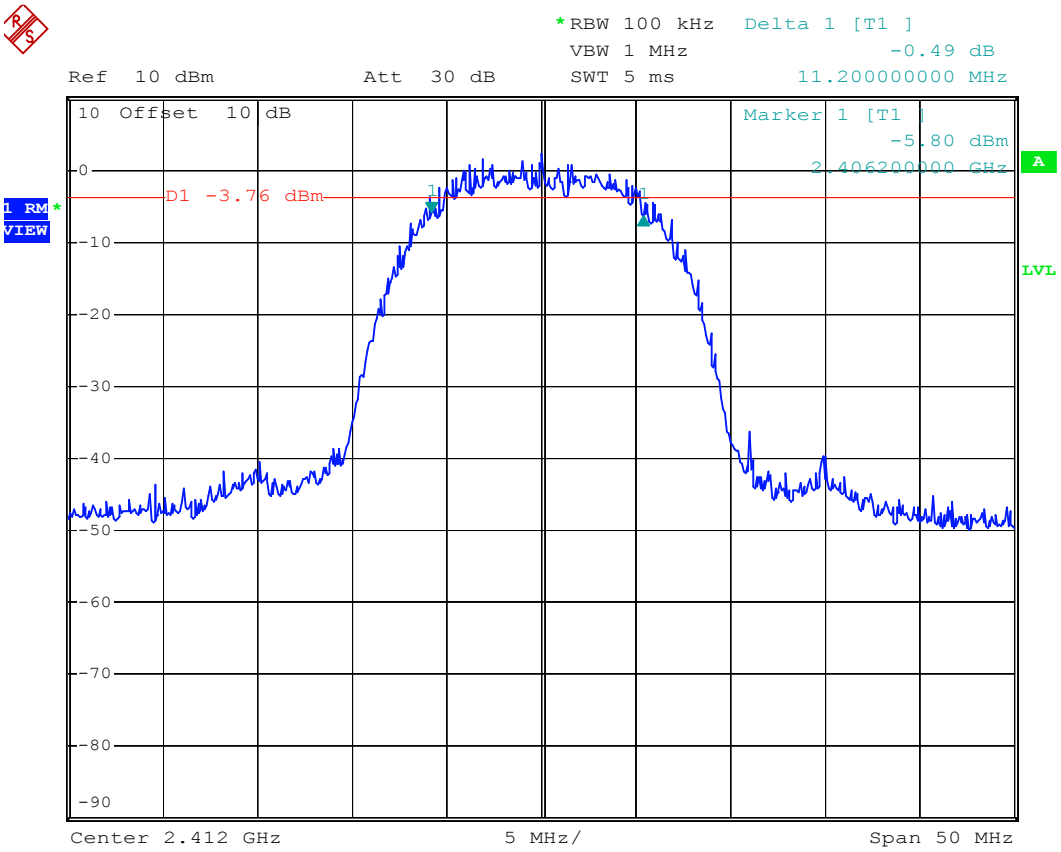
a) Channel Low: 6 dB Emission Bandwidth is 35.2 MHz
b) Channel Mid: 6 dB Emission Bandwidth is 35.7 MHz
c) Channel High: 6 dB Emission Bandwidth is 35.4 MHz

F. 802.11n HT-40 Antenna 2 @13.5 Mbps

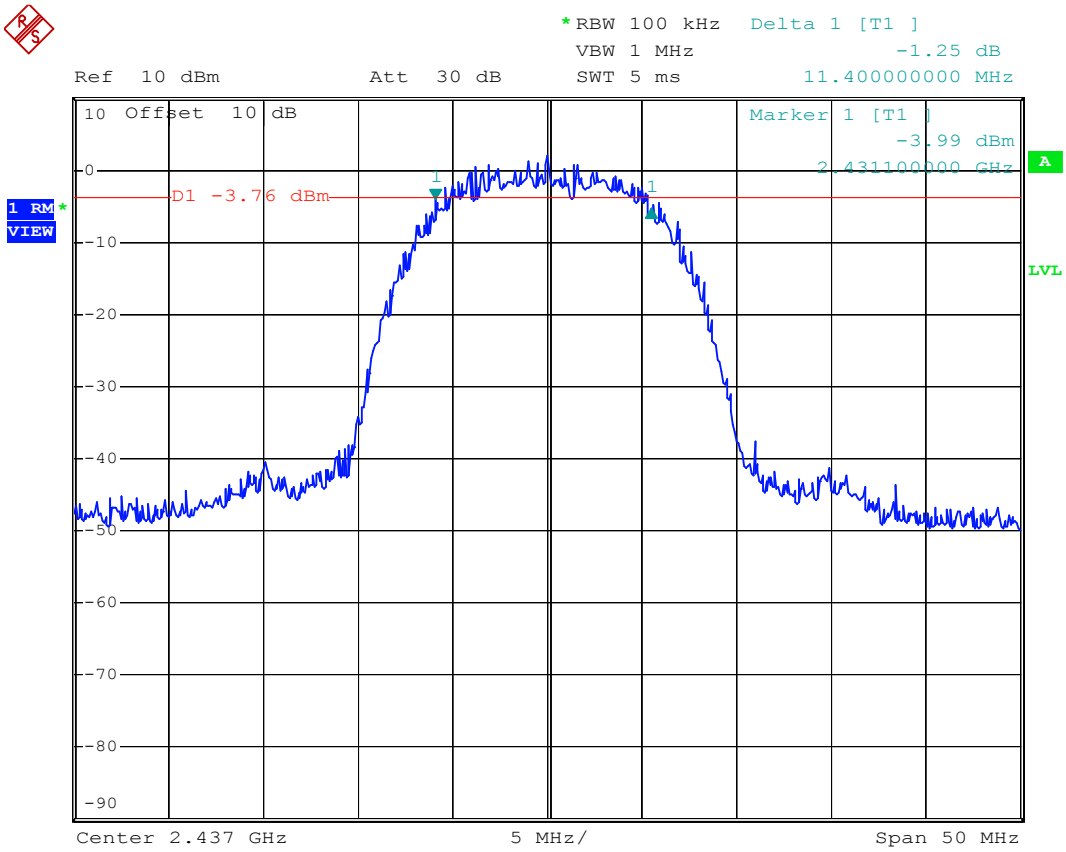
a) Channel Low: 6 dB Emission Bandwidth is 35.3 MHz
b) Channel Mid: 6 dB Emission Bandwidth is 35.5 MHz
c) Channel High: 6 dB Emission Bandwidth is 35.3 MHz

Note : The expanded uncertainty: frequency × 1.65×10^{-6} (1 GHz < f ≤ 18 GHz).

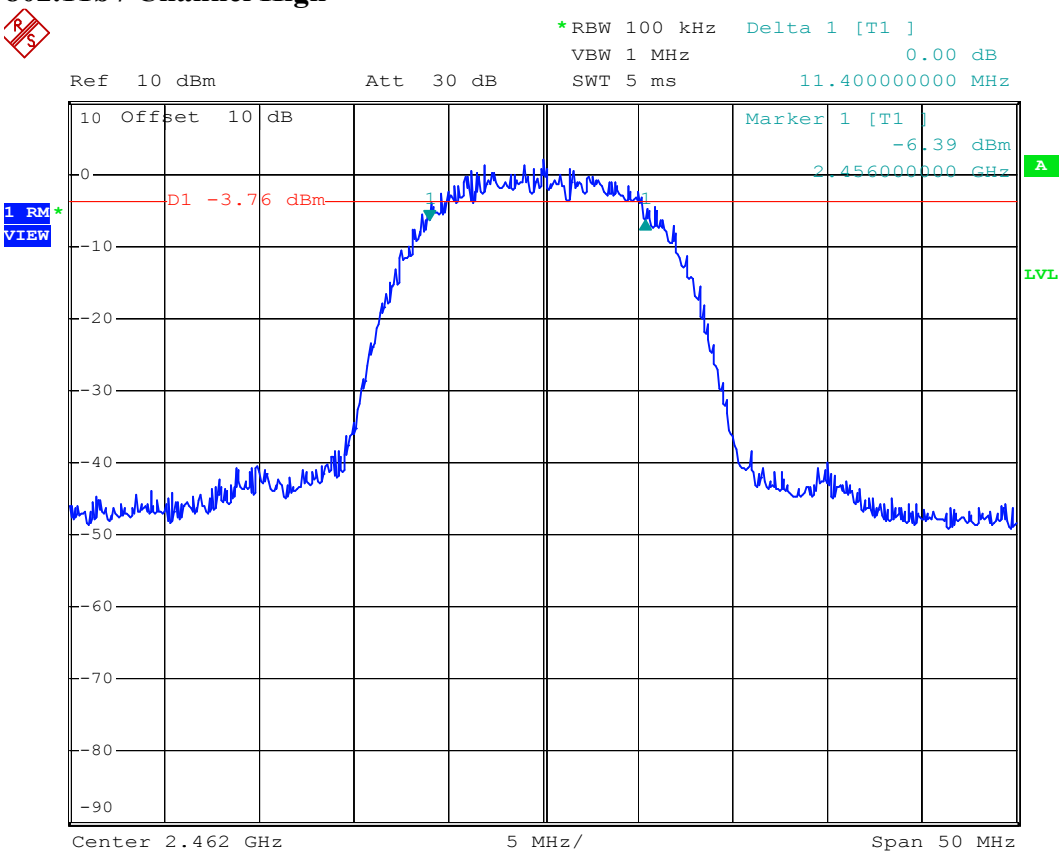
802.11b / Channel Low



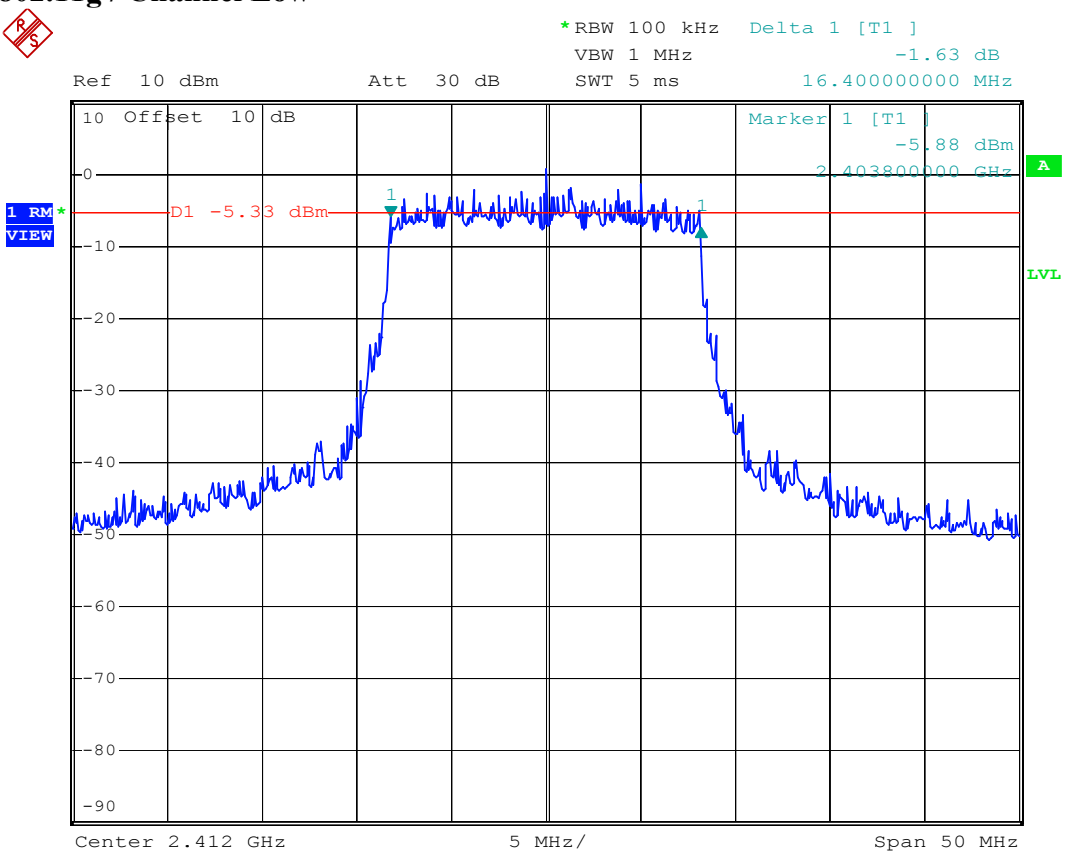
802.11b / Channel Mid



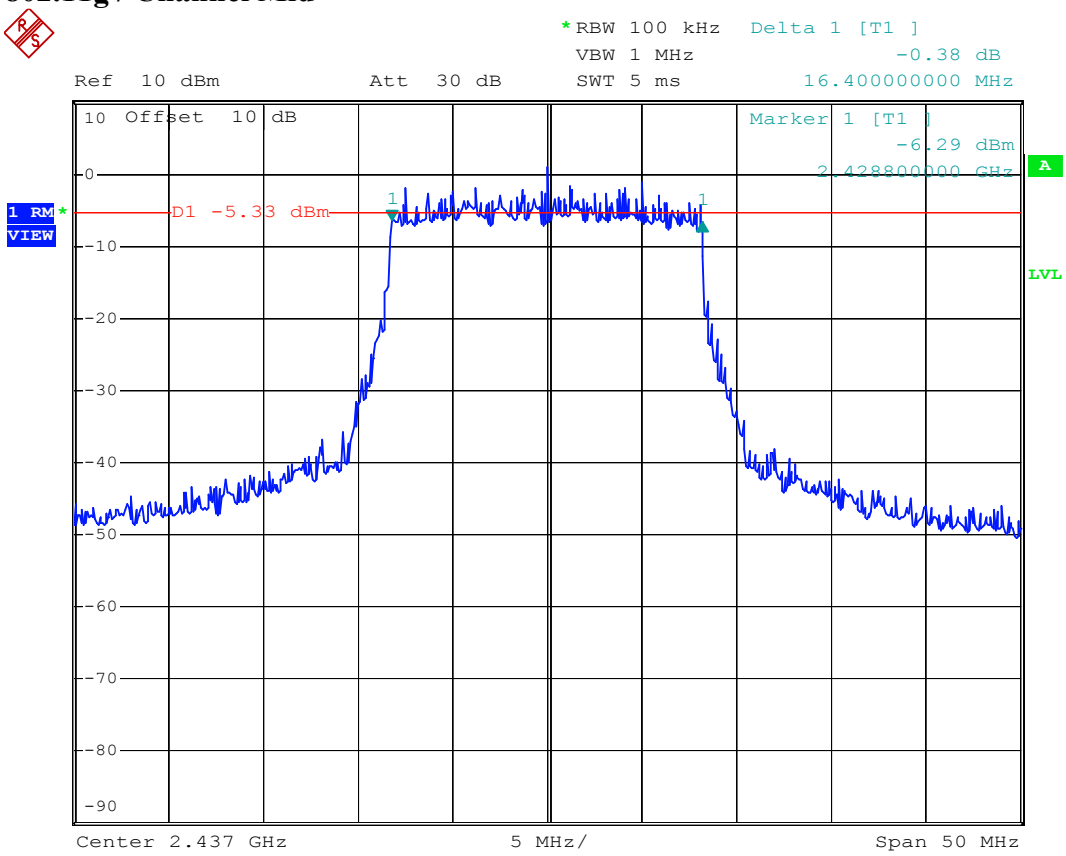
802.11b / Channel High



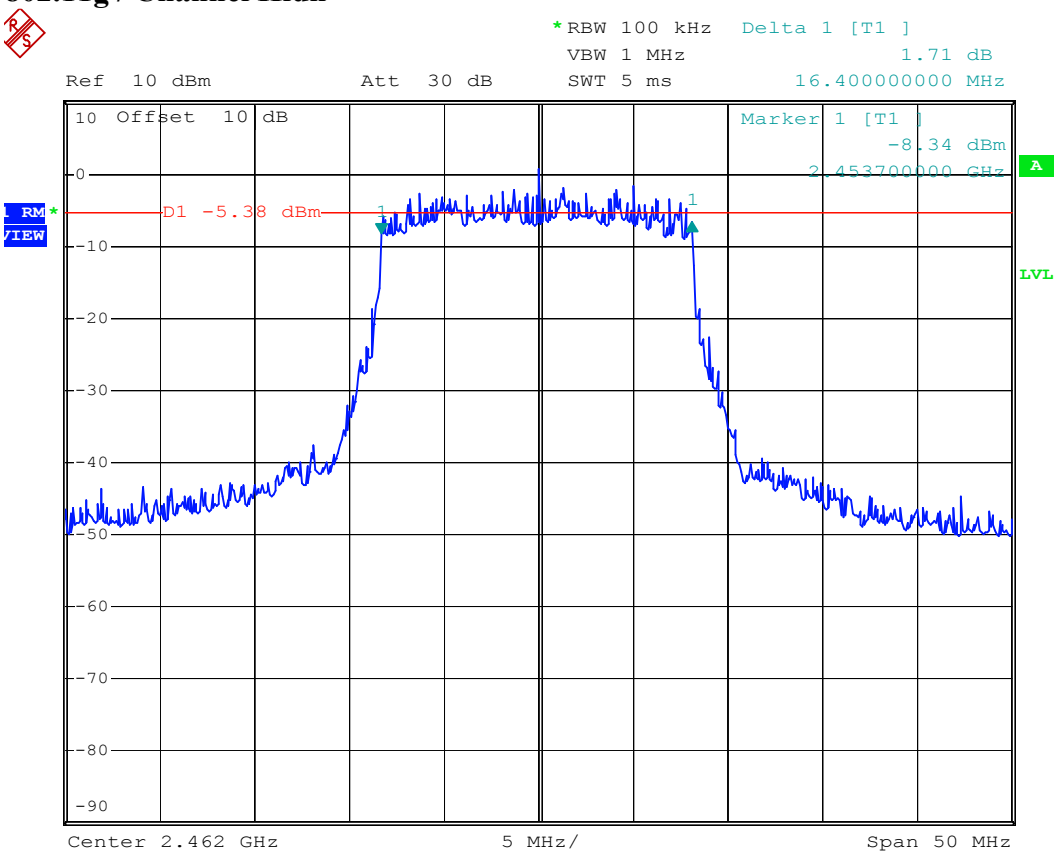
802.11g / Channel Low



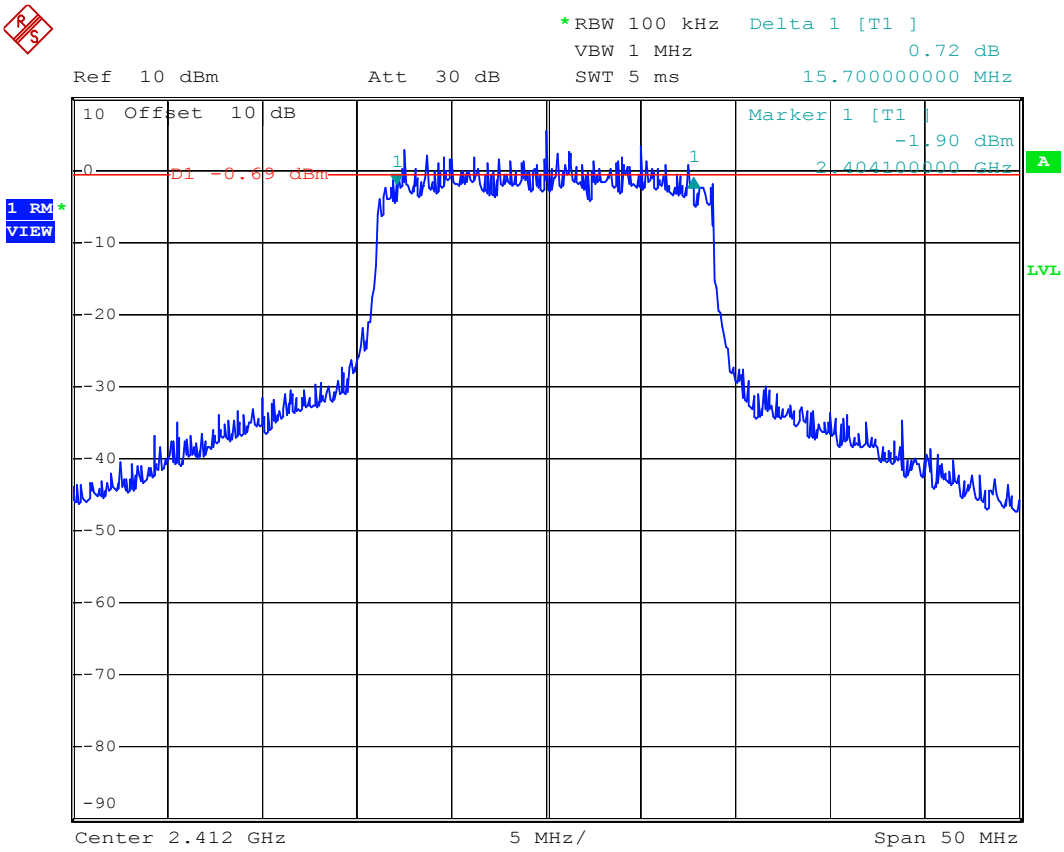
802.11g / Channel Mid



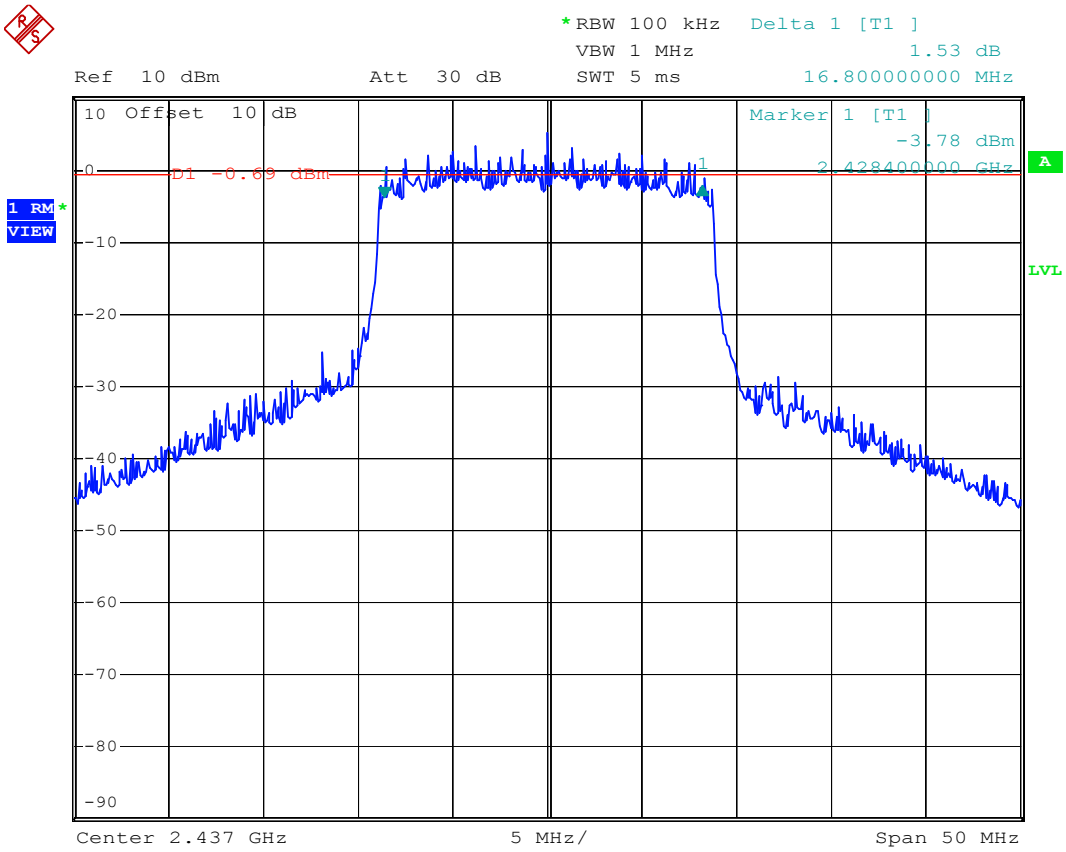
802.11g / Channel Hidh



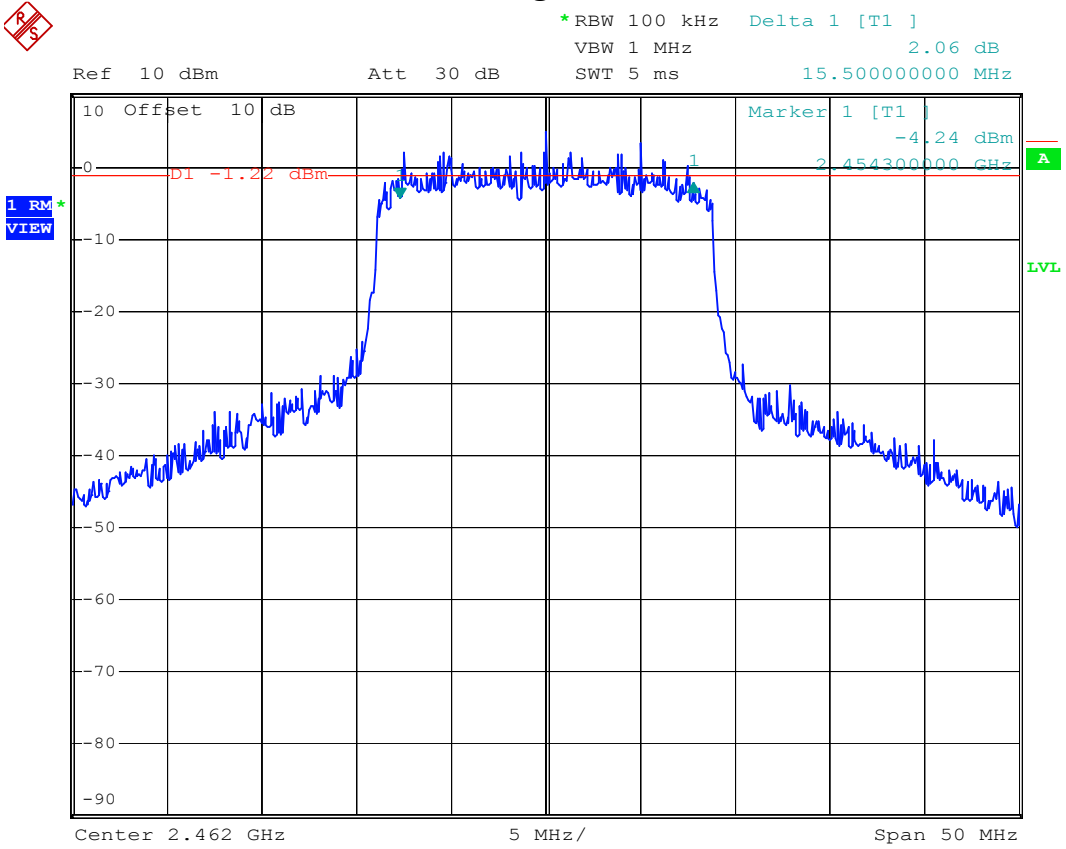
802.11n HT-20/Antenna 1/ Channel Low



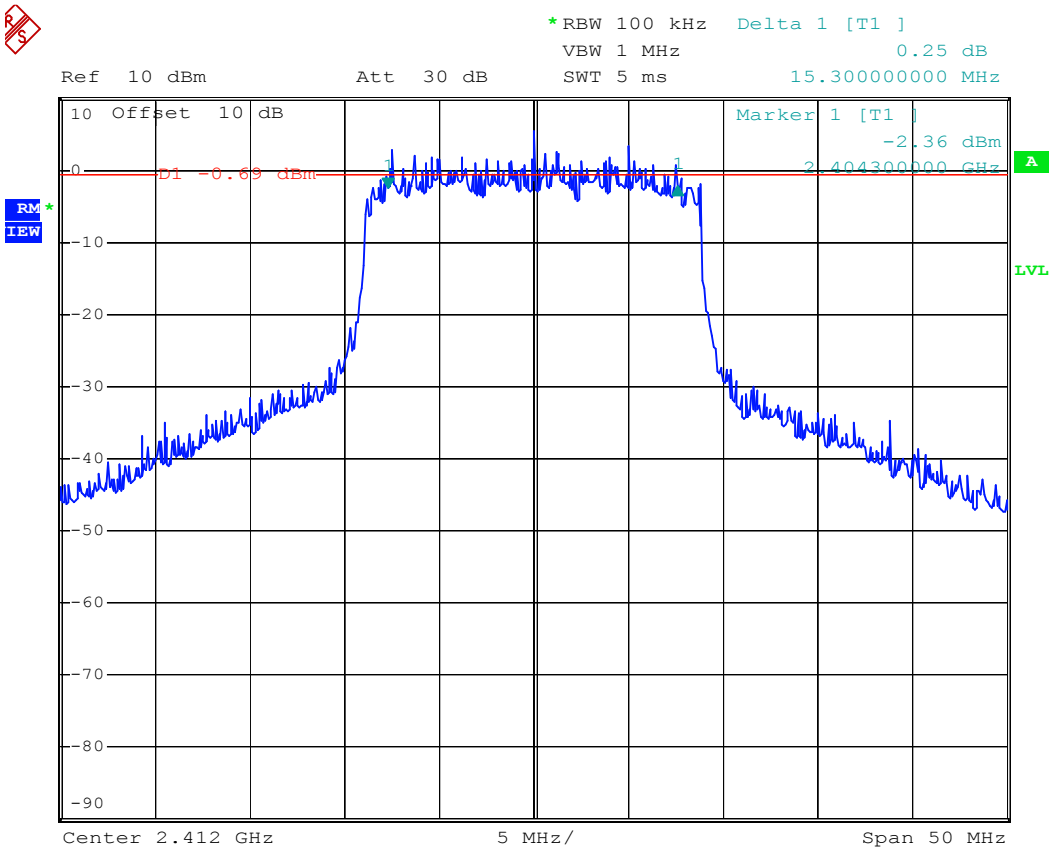
802.11n HT-20/Antenna 1/ Channel Mid



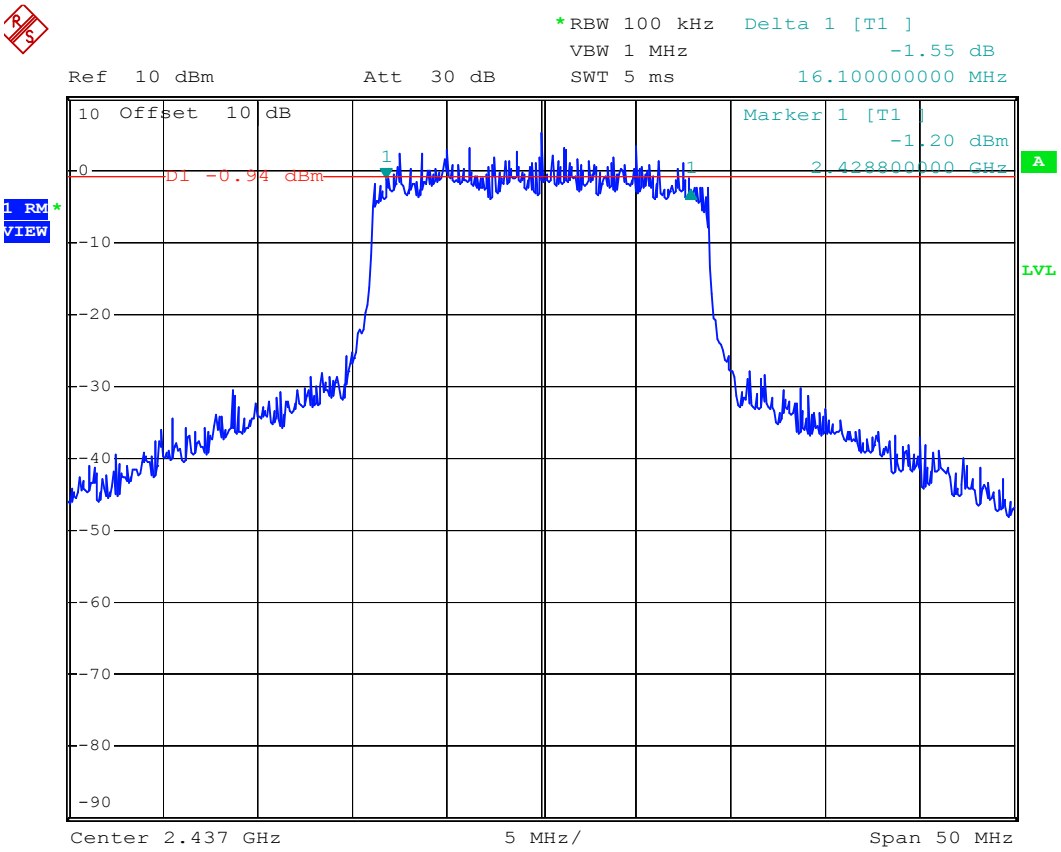
802.11n HT-20/Antenna 1/ Channel High



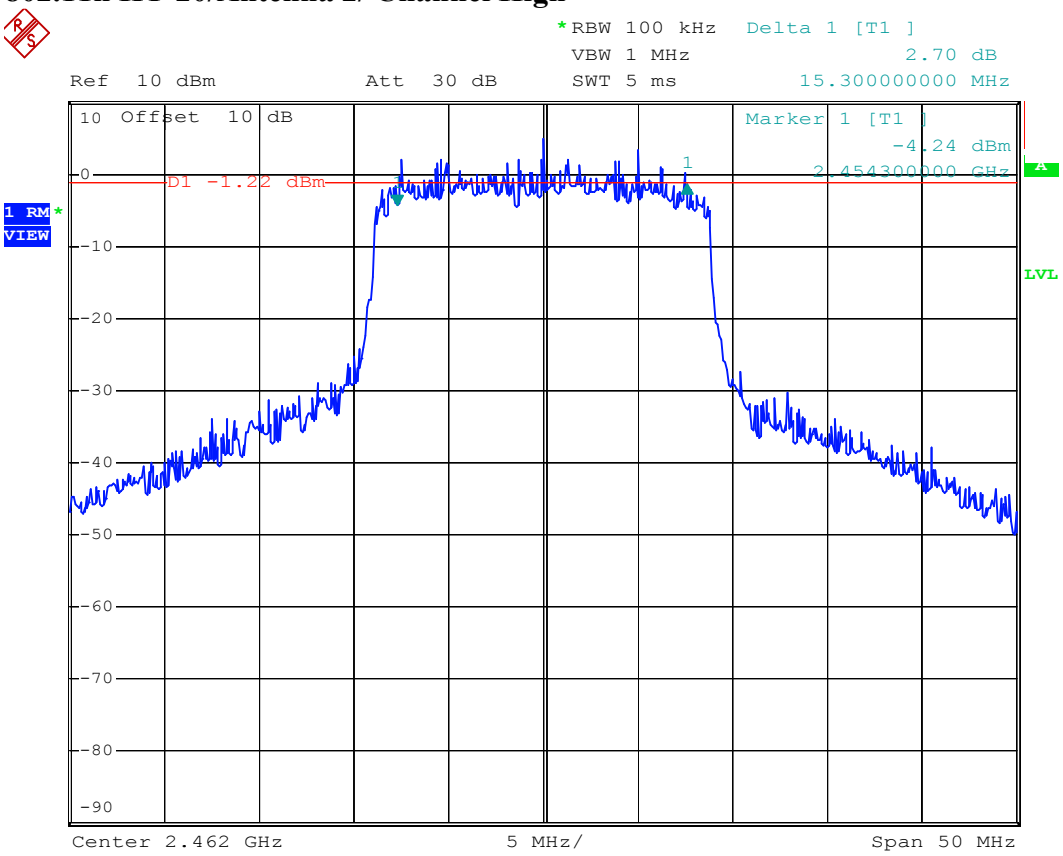
802.11n HT-20/Antenna 2/ Channel Low



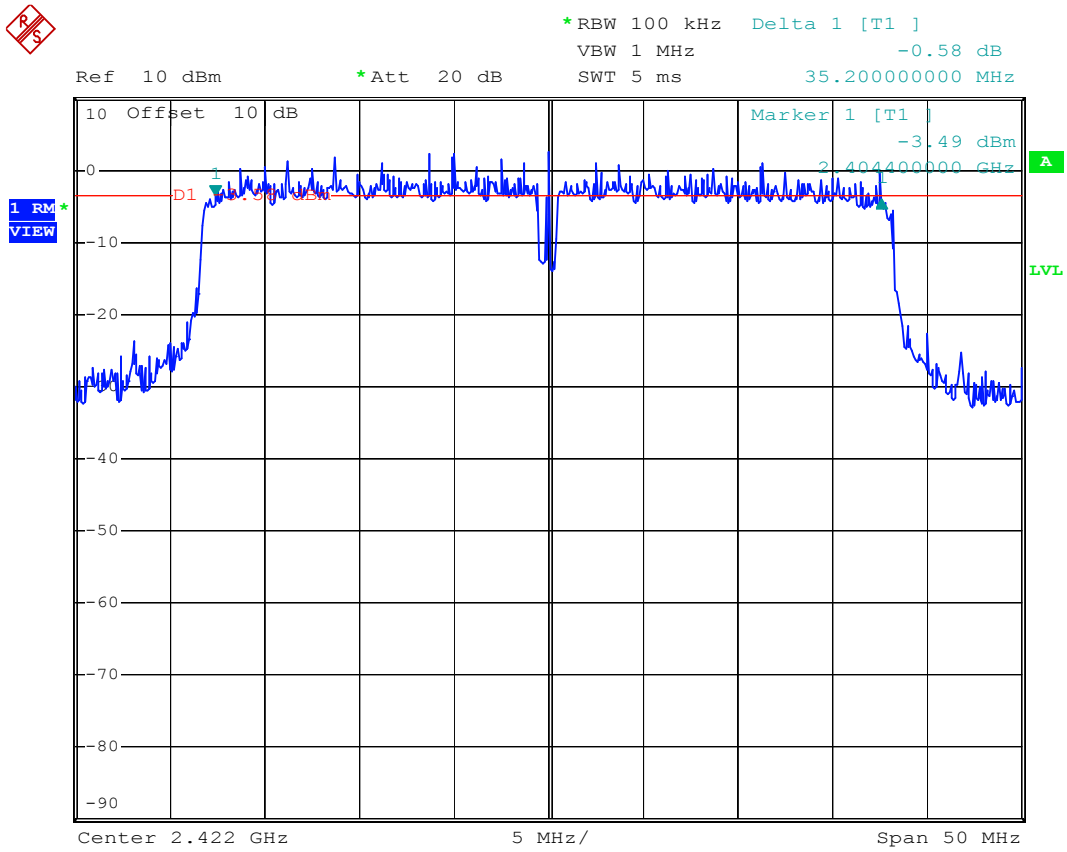
802.11n HT-20/Antenna 2/ Channel Mid



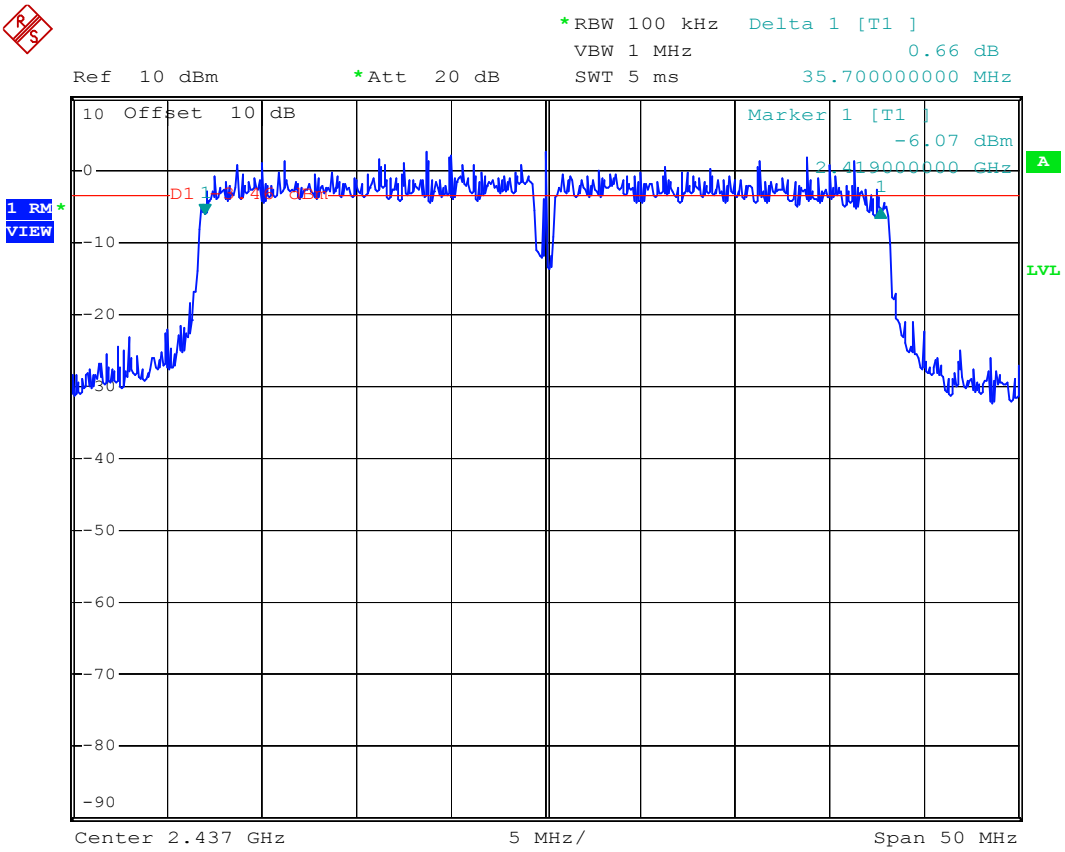
802.11n HT-20/Antenna 2/ Channel High



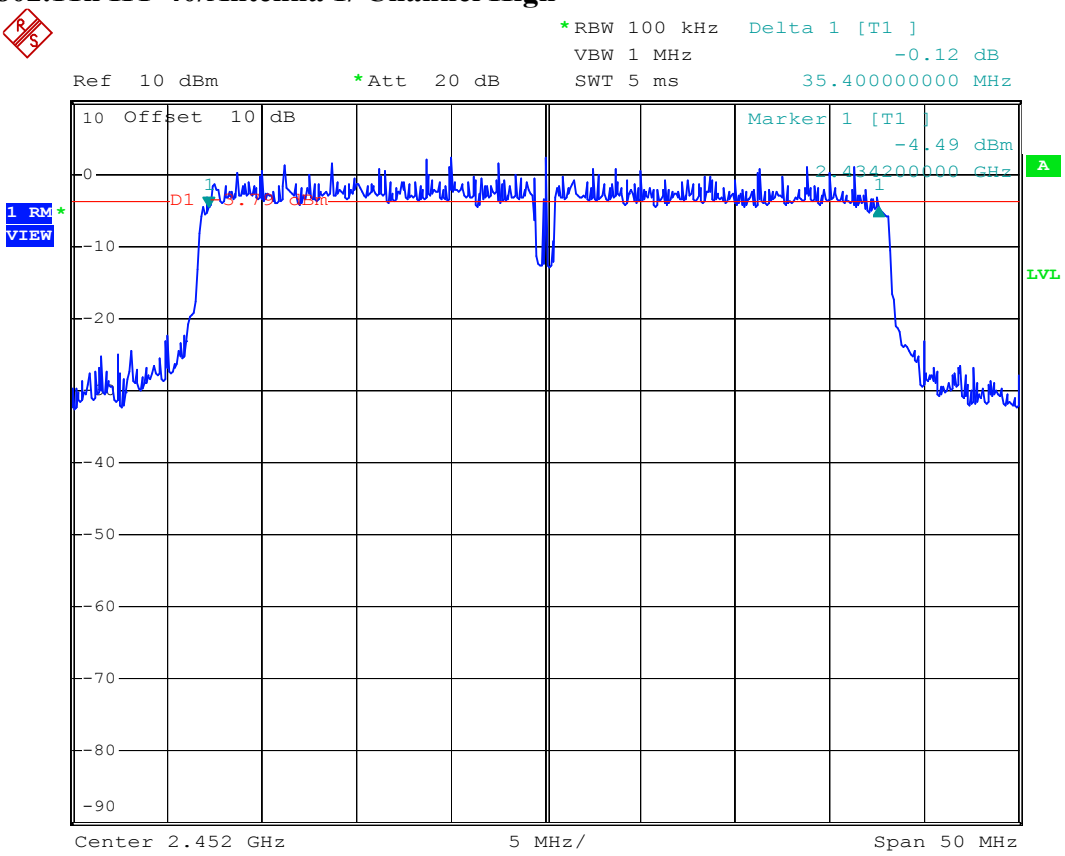
802.11n HT-40/Antenna 1/ Channel Low



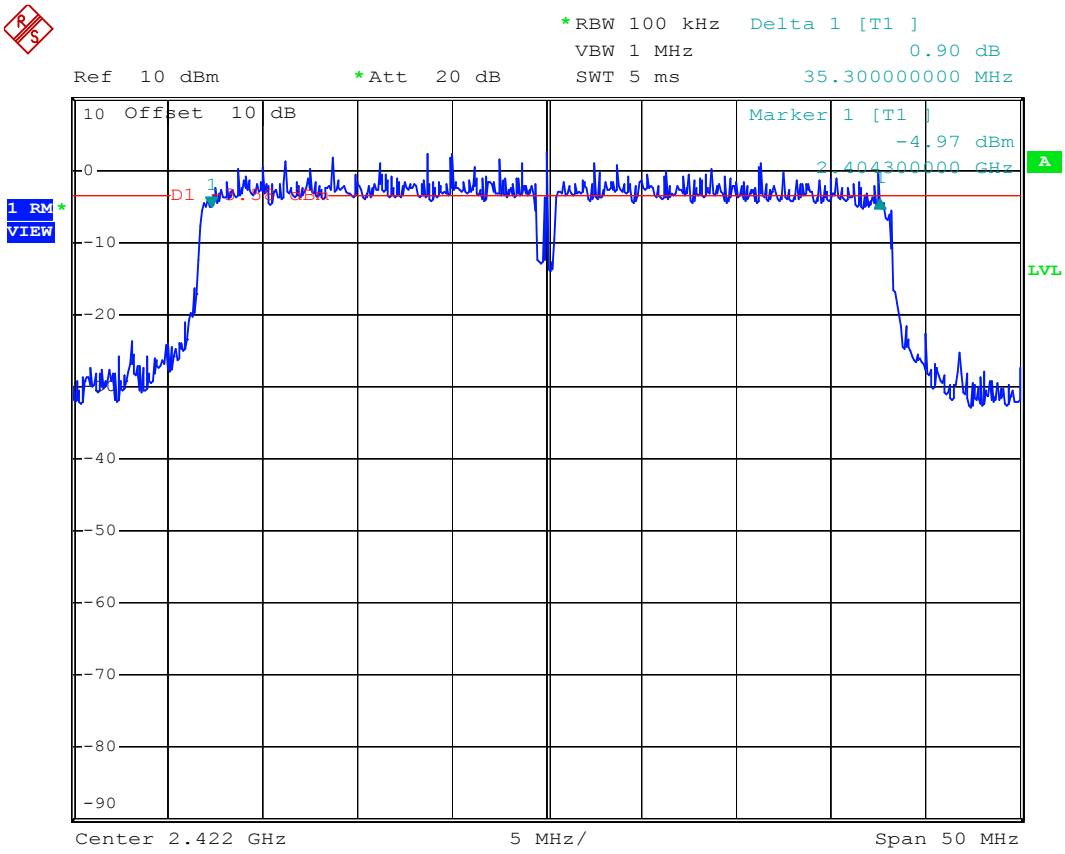
802.11n HT-40/Antenna 1/ Channel Mid



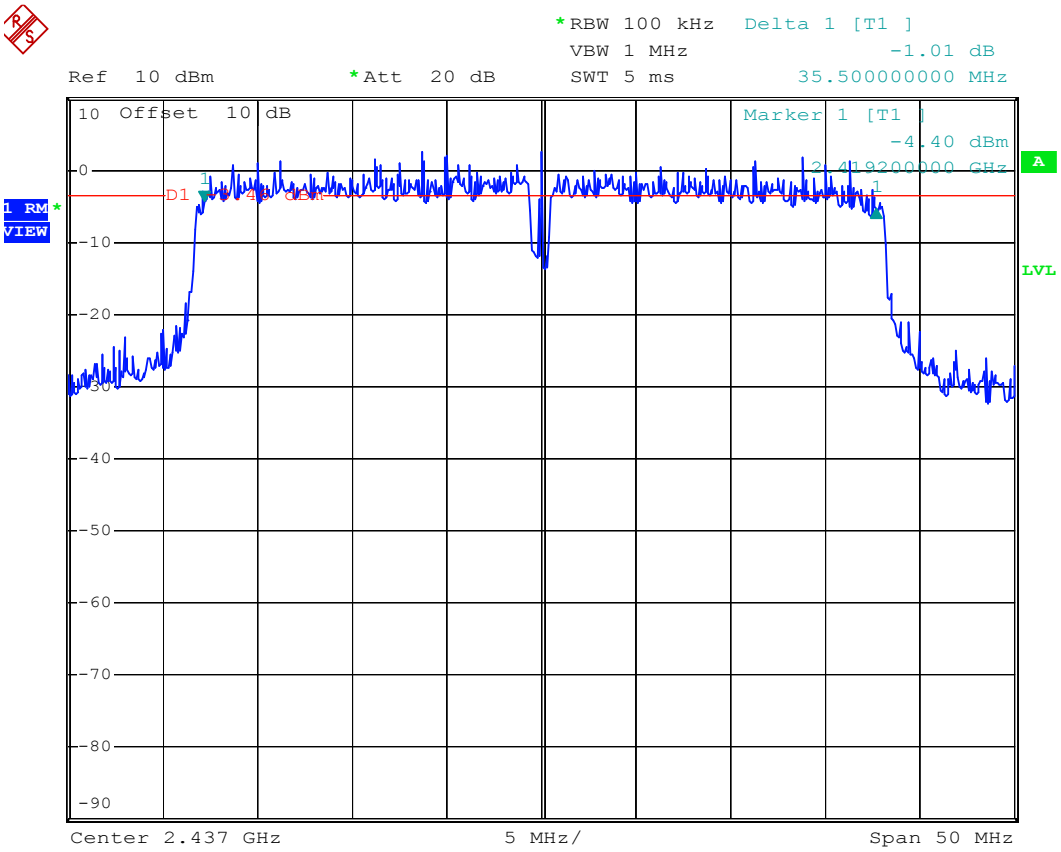
802.11n HT-40/Antenna 1/ Channel High



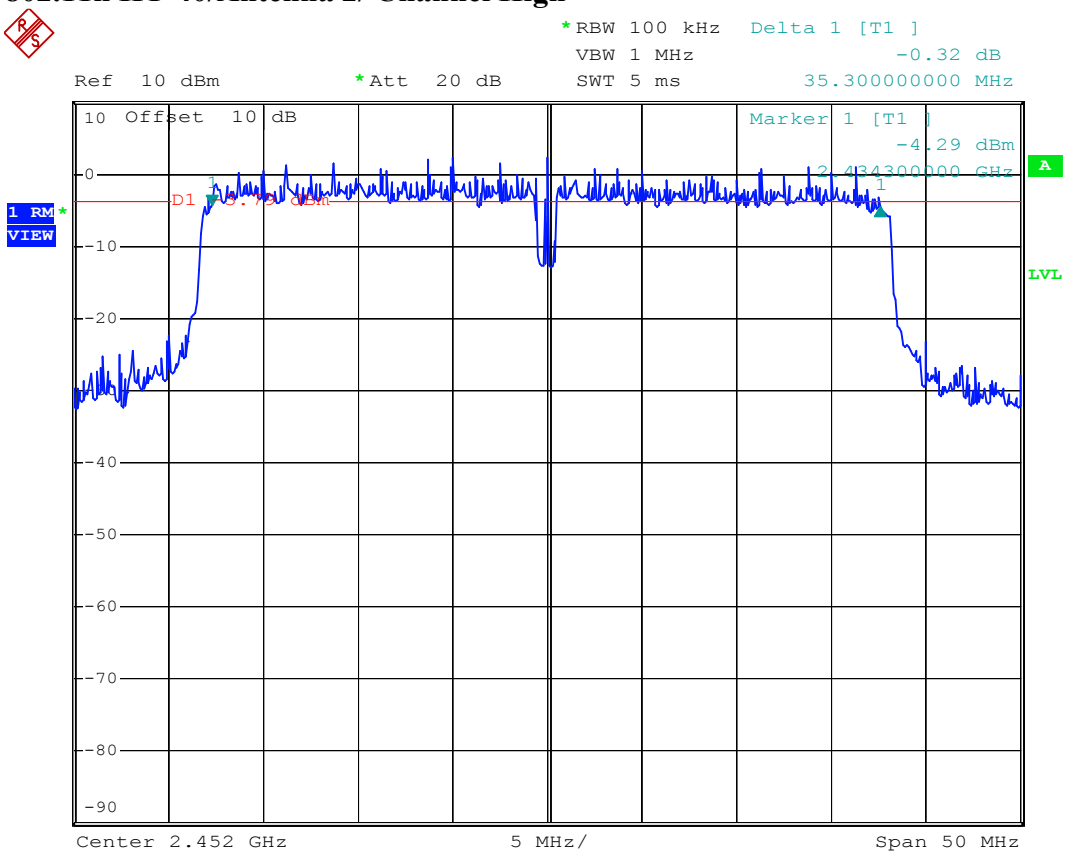
802.11n HT-40/Antenna 2/ Channel Low



802.11n HT-40/Antenna 2/ Channel Mid



802.11n HT-40/Antenna 2/ Channel High



8 OUTPUT POWER MEASUREMENT

8.1 Standard Applicable

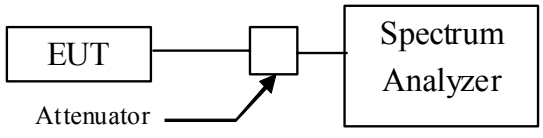
For direct sequence system, according to 15.247(b), the maximum peak output power of the transmitter shall not exceed 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.2 Measurement Procedure

Measurement Procedure: PK2

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 5 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Set the RBW = 1 MHz.
4. Set the VBW = 3 MHz.
5. Set the span to a value that is 5-30 % greater than the EBW.
6. Detector = peak.
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.
10. Use channel power function and record the level displayed.
11. Repeat above procedures until all frequencies measured were complete.

Figure 5: Output power and measurement configuration.



8.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum Analyzer	Rohde & Schwarz	FSP40	2011/09/21	2012/09/20

8.4 Measurement Data

Test Date : Jun. 04, 2012 Temperature : 26 °C Humidity : 60 %

The antenna gain is 3.5 +10log(2)=3.5+3=6.5dBi so the power should be reduced by 0.5dB Hence the maximum peak output power of the transmitter shall not exceed 29.5 dBm.

Measurement Procedure: PK2

A. 802.11b @1 Mbps

a) Channel Low: Output Peak Power is 15.57 dBm **36.058** mW
b) Channel Mid: Output Peak Power is 15.38 dBm **34.514** mW
c) Channel High: Output Peak Power is 15.11 dBm **32.434** mW

B. 802.11g @6 Mbps

a) Channel Low: Output Peak Power is 14.49 dBm **28.119** mW
b) Channel Mid: Output Peak Power is 14.17 dBm **26.122** mW
c) Channel High: Output Peak Power is 14.29 dBm **26.853** mW

C1. 802.11n HT-20 Antenna 1 @6.5 Mbps

a) Channel Low: Output Peak Power is 18.73 dBm **74.645** mW
b) Channel Mid: Output Peak Power is 18.47 dBm **70.307** mW
c) Channel High: Output Peak Power is 18.25 dBm **66.834** mW

C2. 802.11n HT-20 Antenna 2 @6.5 Mbps

a) Channel Low: Output Peak Power is 18.7 dBm **74.131** mW
b) Channel Mid: Output Peak Power is 18.51 dBm **70.958** mW
c) Channel High: Output Peak Power is 18.21 dBm **66.222** mW

C3. 802.11n HT-20 Combined peak out power @6.5 Mbps

a) Channel Low: Output Peak Power is 74.645 + 74.131 =148.776 mW(21.72 dBm)
b) Channel Mid: Output Peak Power is 70.307 + 70.958 =141.265 mW(21.50 dBm)
c) Channel High: Output Peak Power is 68.834 + 66.222 =133.056 mW(21.24 dBm)

D1. 802.11n HT-40 Antenna 1 @13.5 Mbps

a) Channel Low: Output Peak Power is 18.38 dBm **68.865** mW
b) Channel Mid: Output Peak Power is 17.51 dBm **56.364** mW
c) Channel High: Output Peak Power is 17.48 dBm **55.976** mW

D2. 802.11n HT-40 Antenna 2 @13.5 Mbps

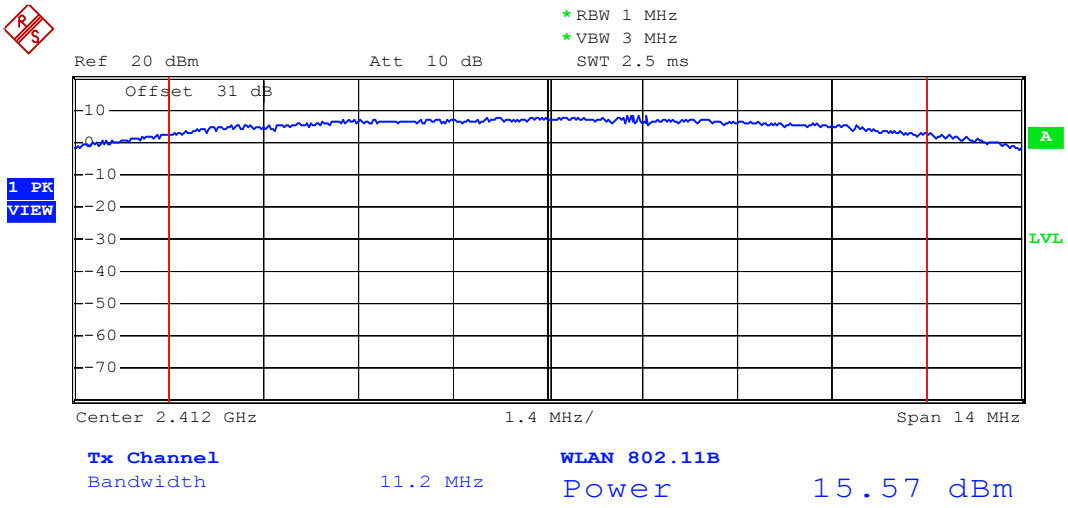
a) Channel Low: Output Peak Power is 18.07 dBm **64.121** mW
b) Channel Mid: Output Peak Power is 17.41 dBm **55.081** mW
c) Channel High: Output Peak Power is 17.38 dBm **54.702** mW

D1. 802.11n HT-40 Combined peak out power @13.5 Mbps

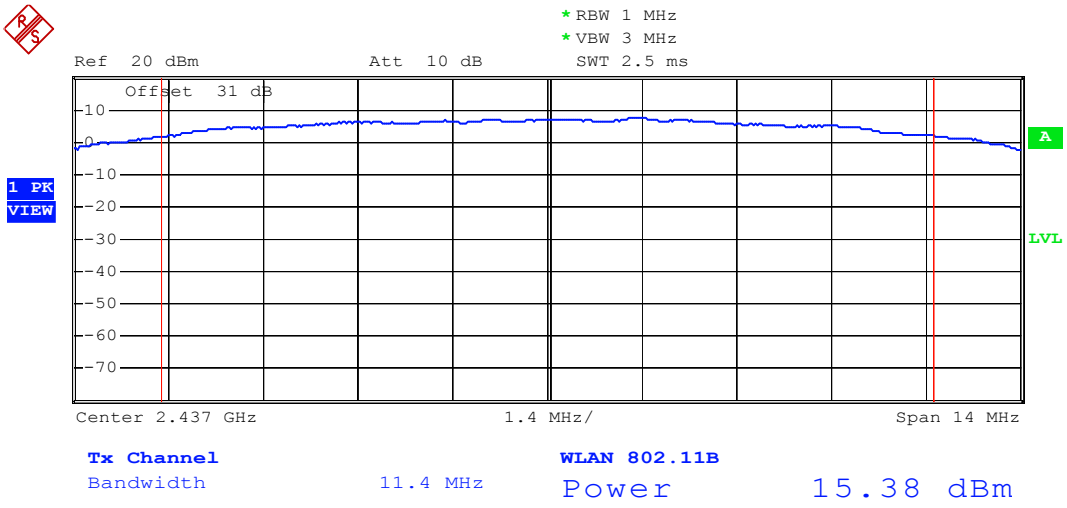
a) Channel Low: Output Peak Power is 68.865 + 64.121 =132.986 mW(21.23 dBm)
b) Channel Mid: Output Peak Power is 56.364 + 55.081 =111.445 mW(20.47 dBm)
c) Channel High: Output Peak Power is 55.976 + 54.702 =110.678 mW(20.44 dBm)

Note : The expanded uncertainty: 2dB.

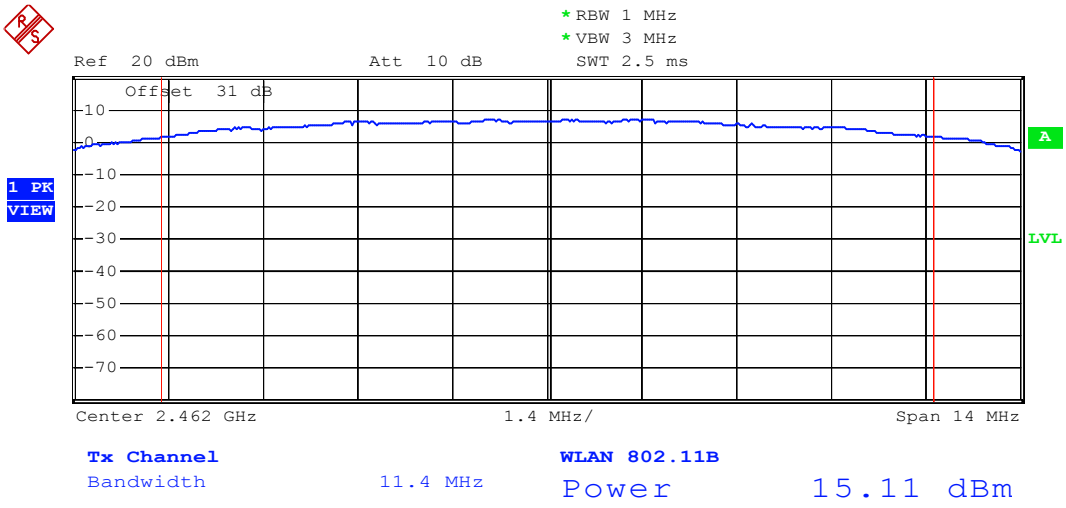
802.11b/ Channel Low



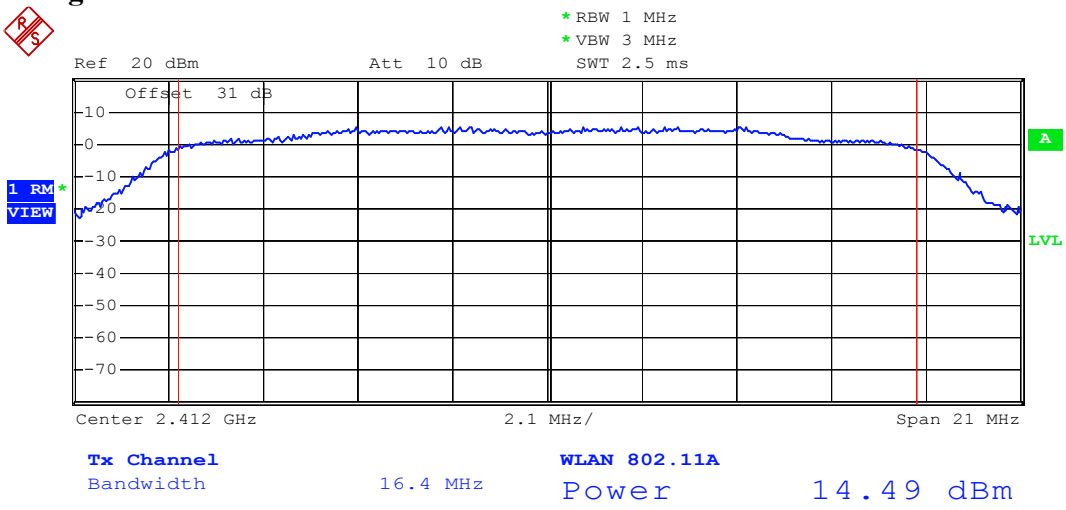
802.11b/ Channel Mid



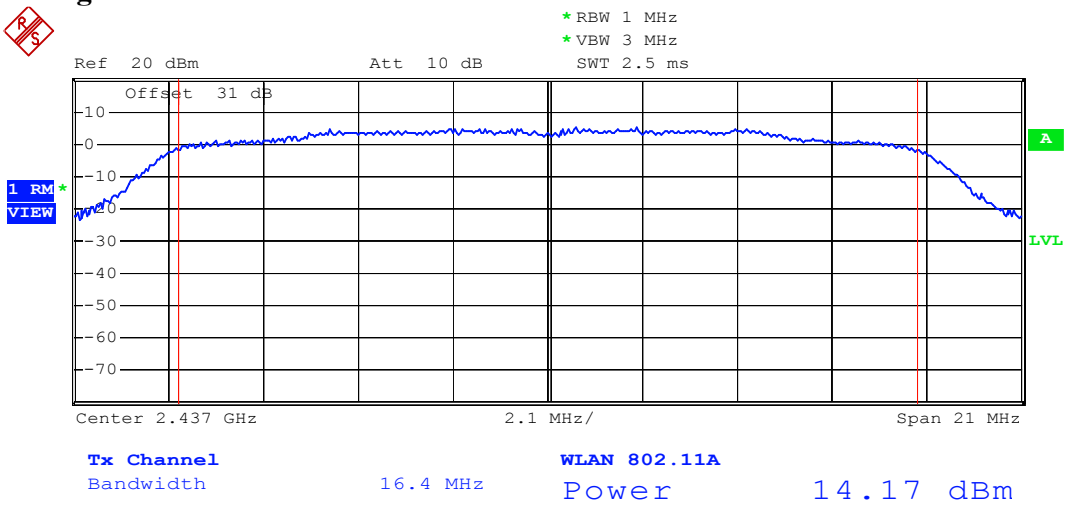
802.11b/ Channel High



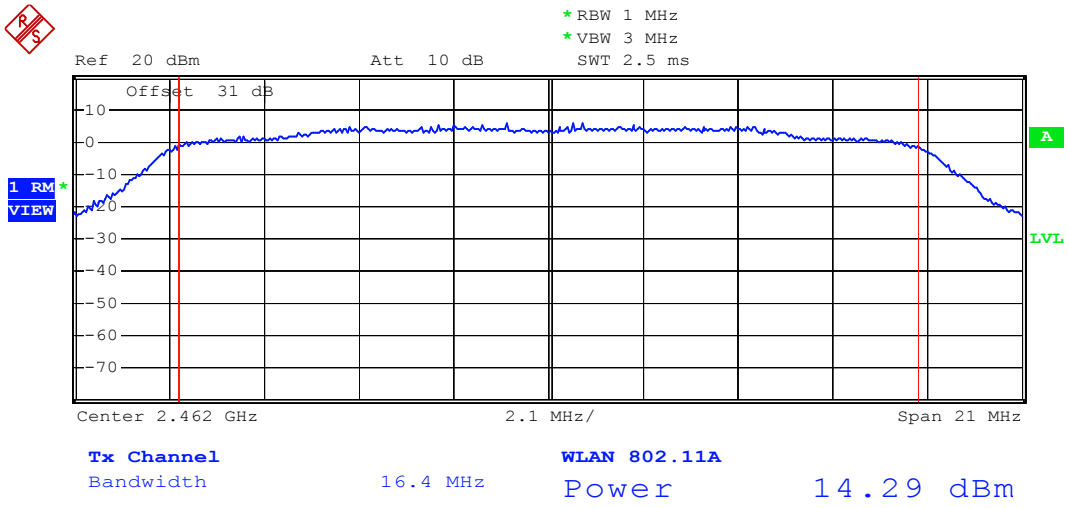
802.11g/ Channel Low



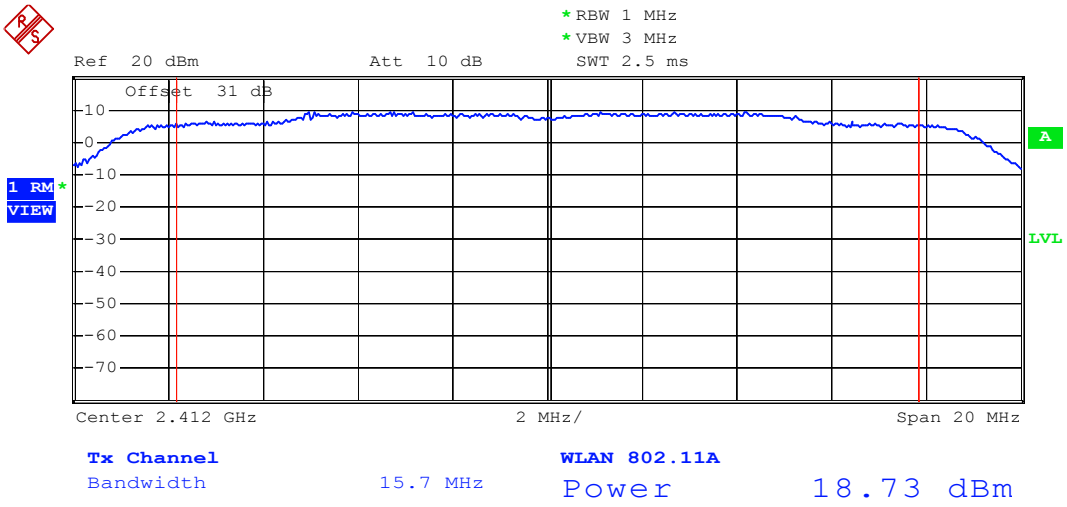
802.11g/ Channel Mid



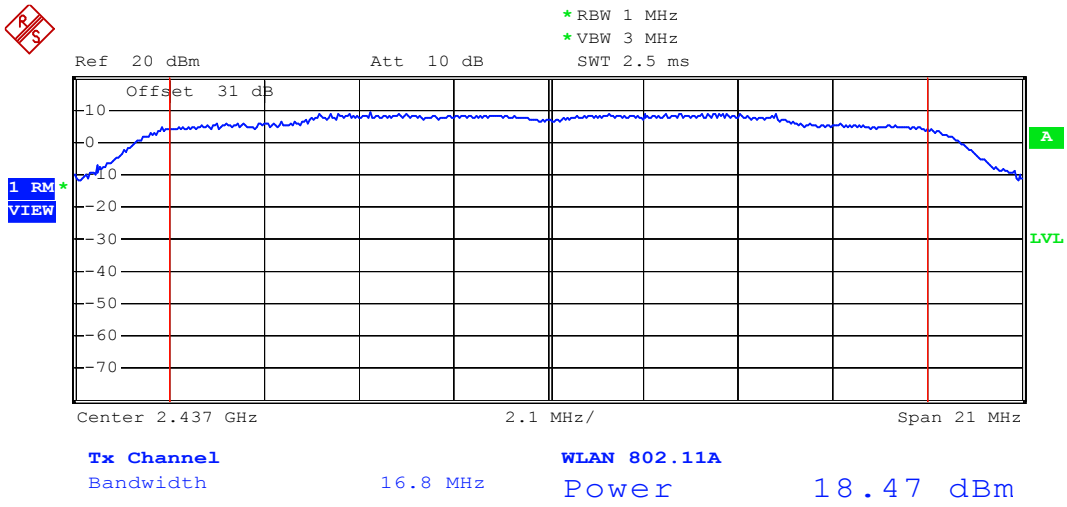
802.11g/ Channel High



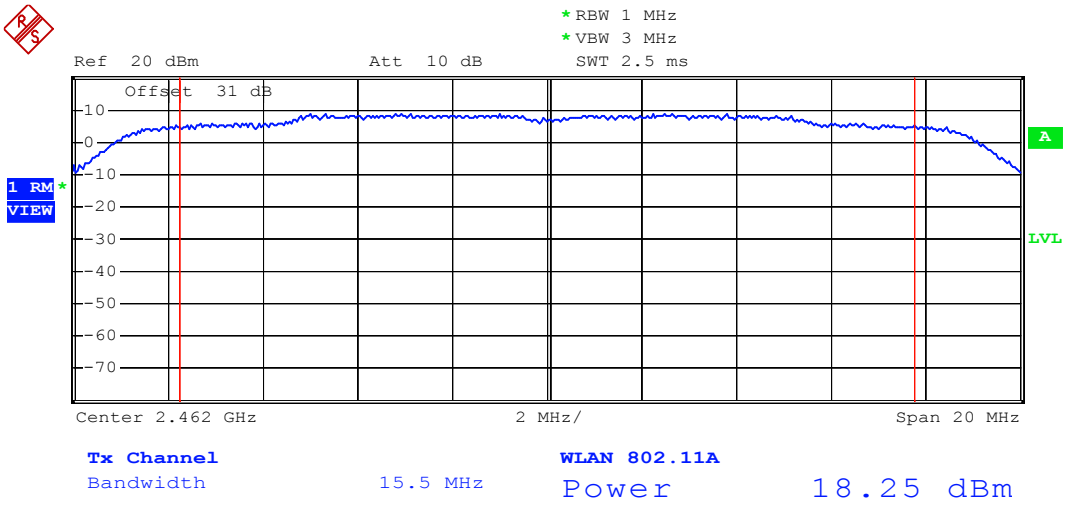
802.11n HT-20 /Antenna 1/ Channel low



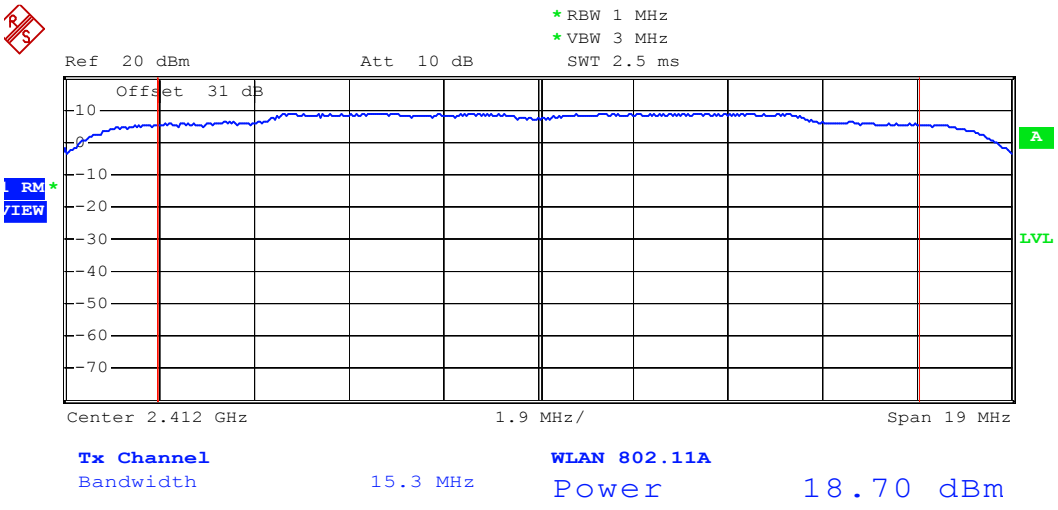
802.11n HT-20 /Antenna 1/ Channel Mid



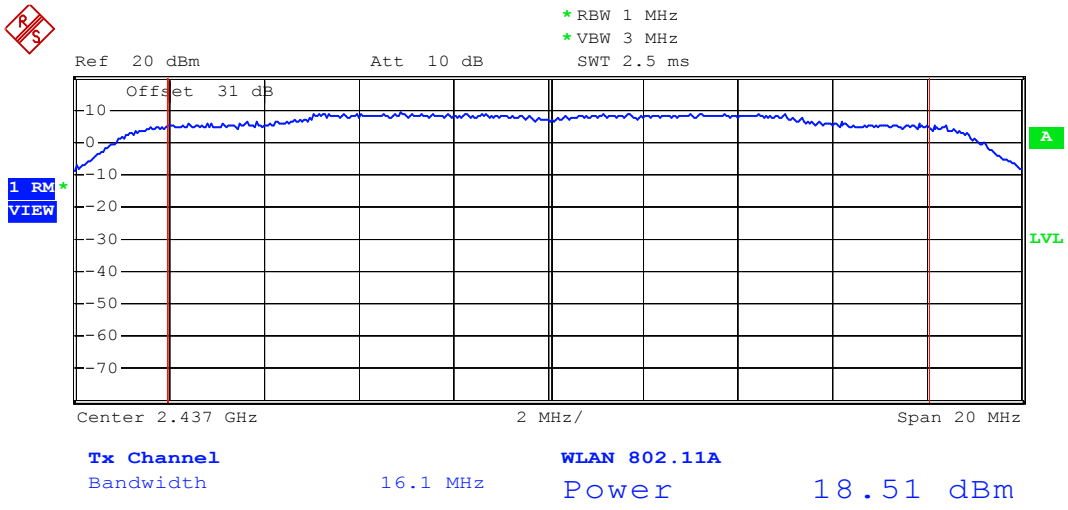
802.11n HT-20 /Antenna 1/ Channel High



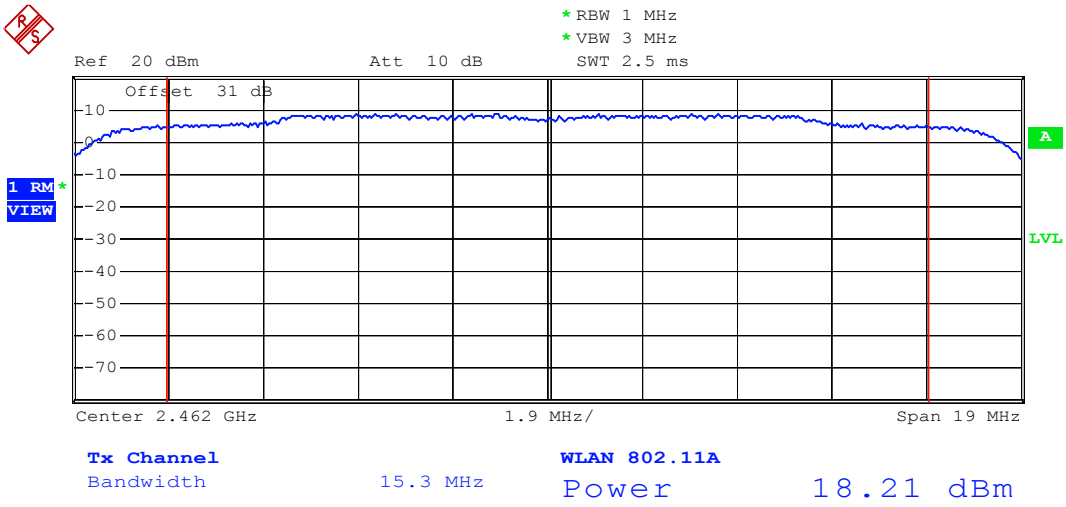
802.11n HT-20 /Antenna 2/ Channel low



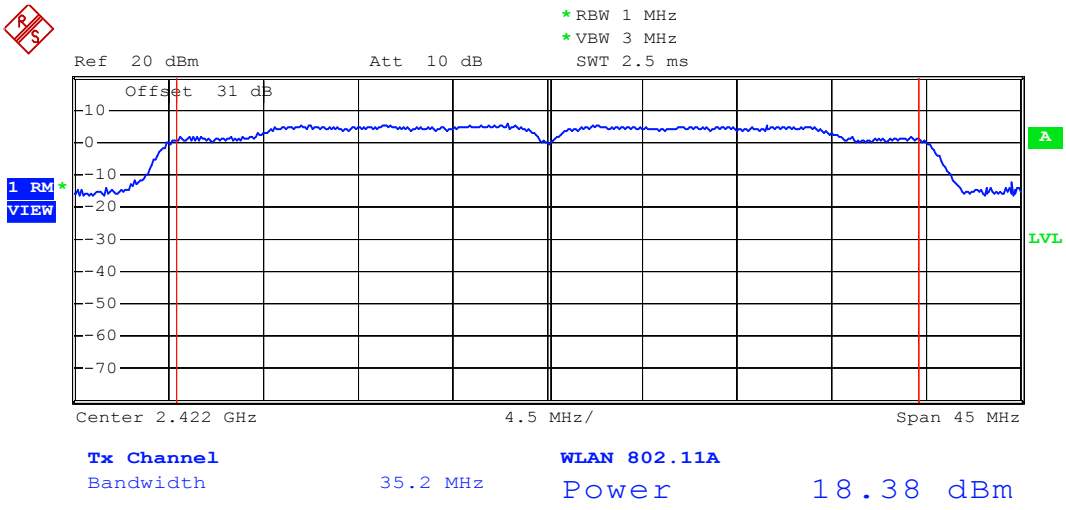
802.11n HT-20 /Antenna 2/ Channel Mid



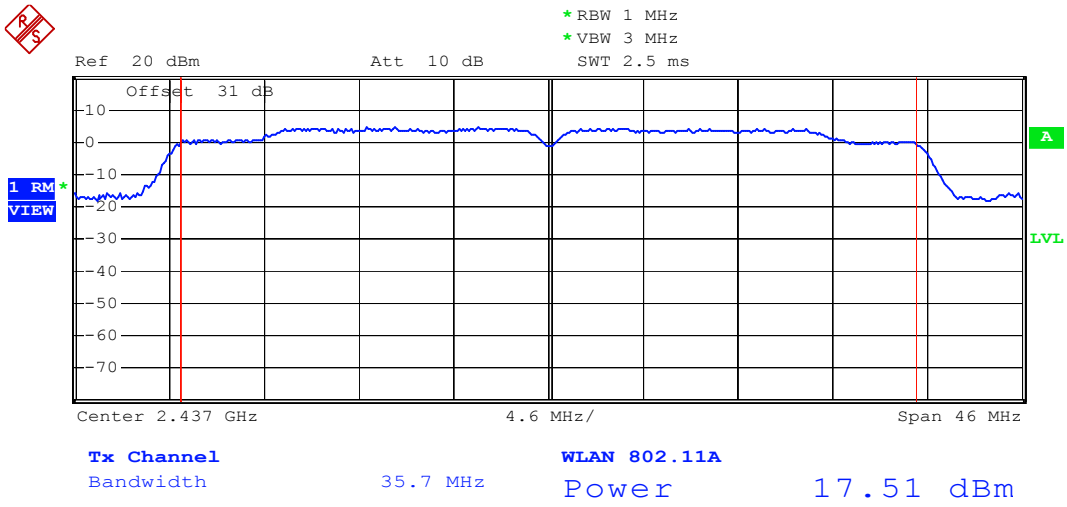
802.11n HT-20 /Antenna 2/ Channel High



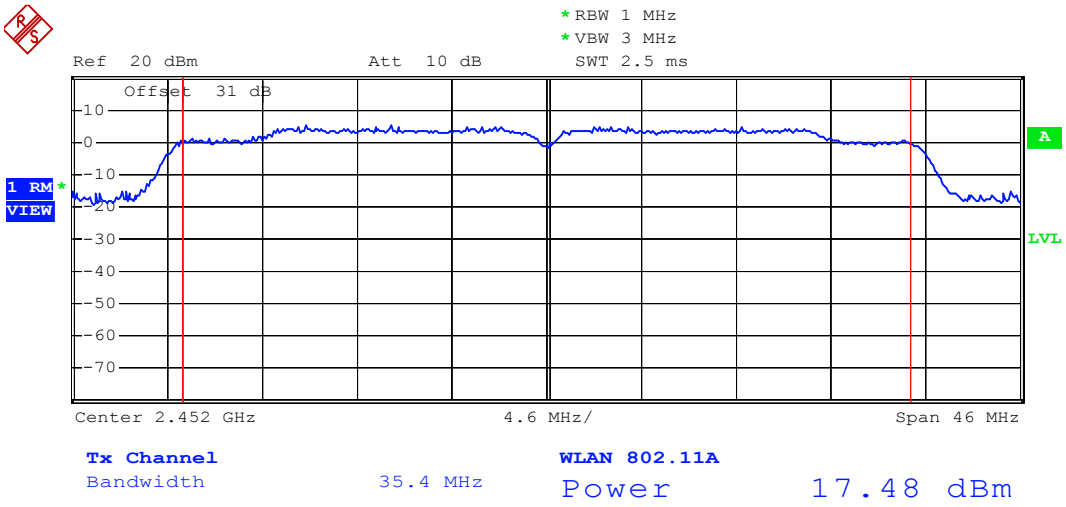
802.11n HT-40 /Antenna 1/ Channel low



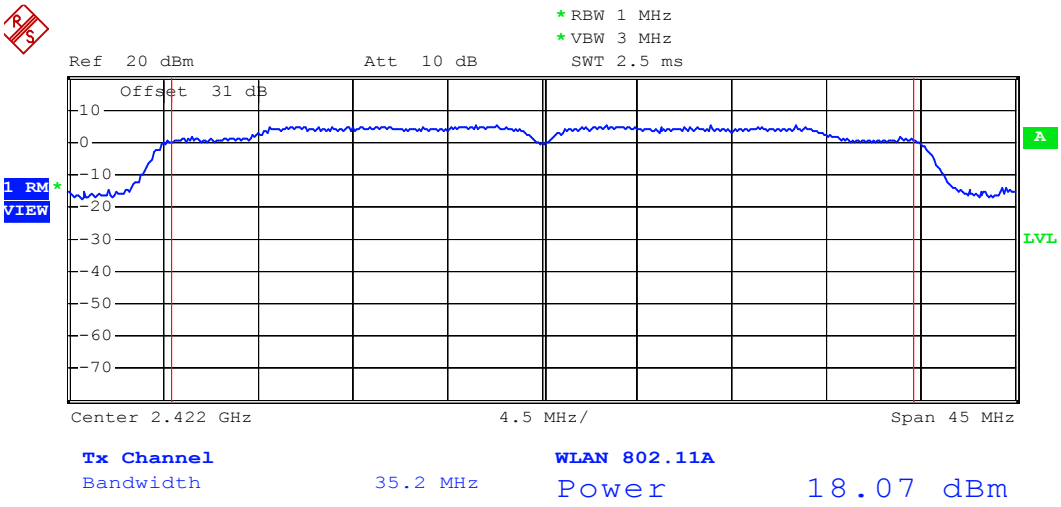
802.11n HT-40 /Antenna 1/ Channel Mid



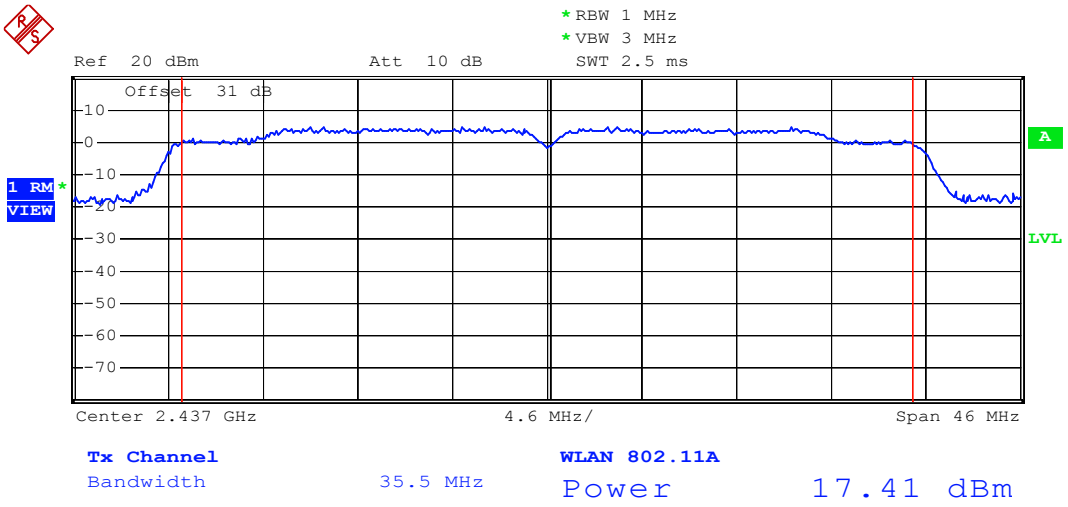
802.11n HT-40 /Antenna 1 Channel High



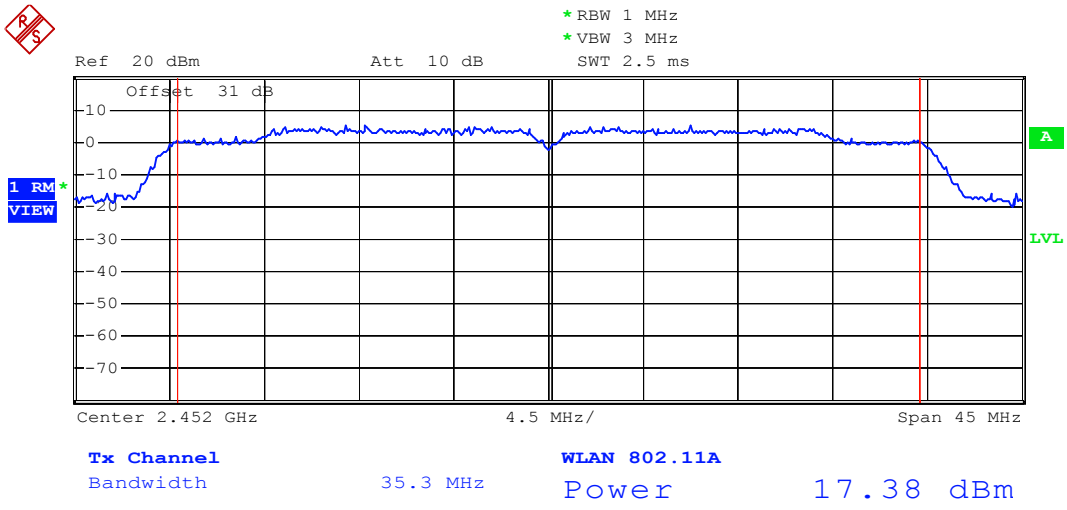
802.11n HT-40 /Antenna 2/ Channel low



802.11n HT-40 /Antenna 2/ Channel Mid



802.11n HT-40 /Antenna 2/ Channel High



9 100 kHz BANDWIDTH OF BAND EDGES MEASUREMENT

9.1 Standard Applicable

According to 15.247(c), if any 100 kHz bandwidth outside these frequency bands, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be either at least 20 dB below that in any 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in §15.209(a), whichever results in the lesser attenuation.

9.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Set both RBW of spectrum analyzer to 100kHz and VBW to 1 MHz with a convenient frequency span including 100kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

9.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum Analyzer	Rohde & Schwarz	FSP40	2011/09/21	2012/09/20

9.4 Measurement Data

Test Date : Apr. 21, 2012 Temperature : 25 °C Humidity : 65 %

A. 802.11b @1 Mbps

a) Lower Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.
b) Upper Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.

B. 802.11g @6 Mbps

a) Lower Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.
b) Upper Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.

C. 802.11n HT-20 Antenna 1 @6.5 Mbps

a) Lower Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.
b) Upper Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.

D. 802.11n HT-20 Antenna 2 @6.5 Mbps

a) Lower Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.
b) Upper Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.

E. 802.11n HT-40 Antenna 1 @13.5 Mbps

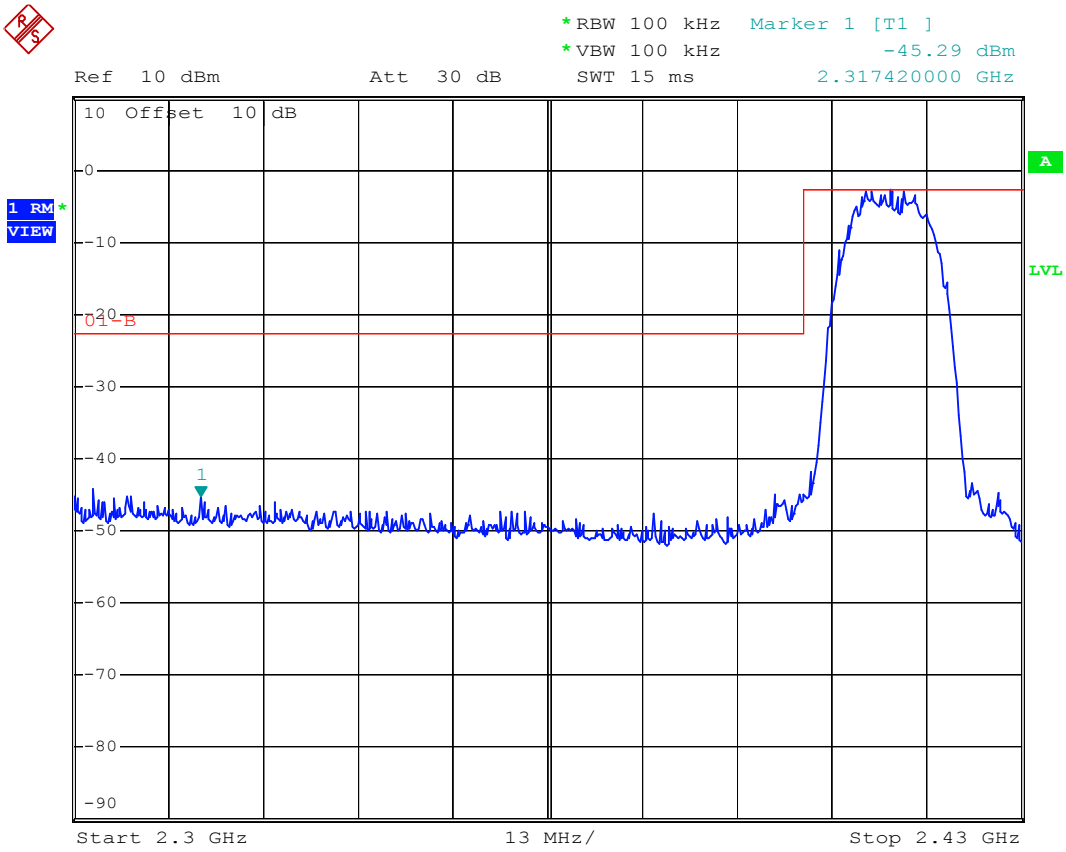
a) Lower Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.
b) Upper Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.

F. 802.11n HT-40 Antenna 2 @13.5 Mbps

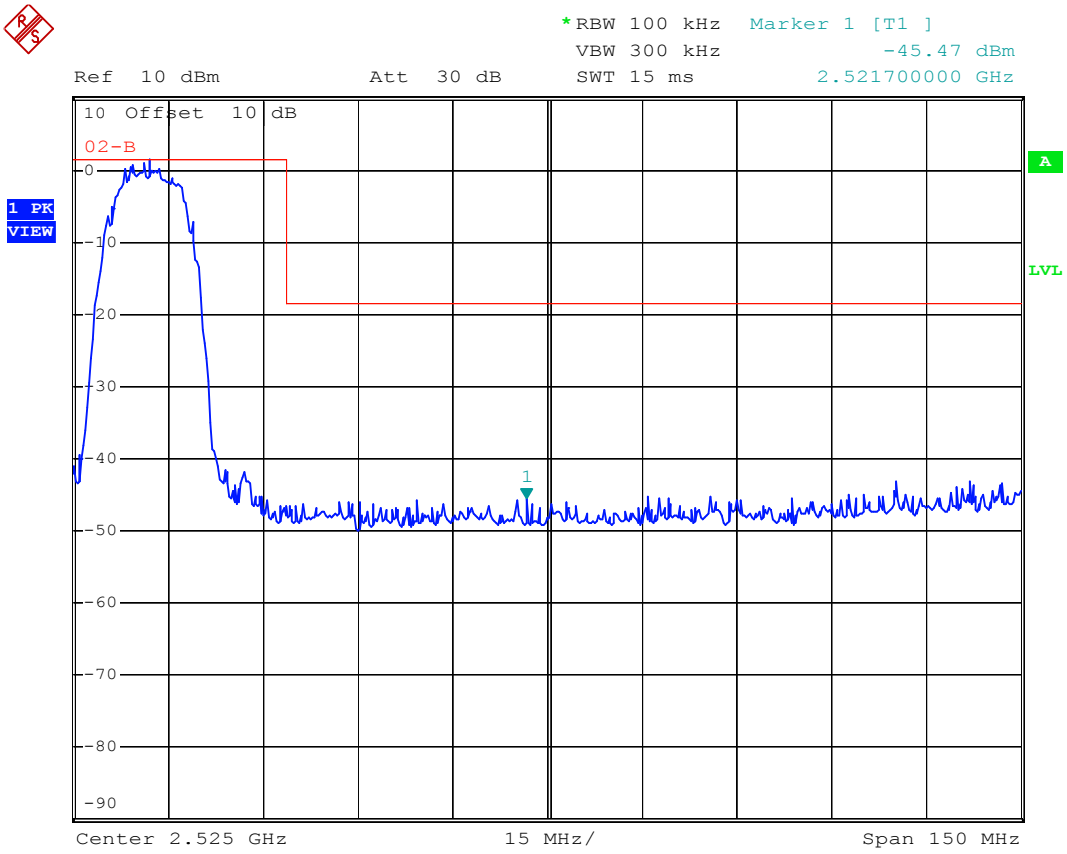
c) Lower Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.
d) Upper Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.

Note : The expanded uncertainty: 2dB.

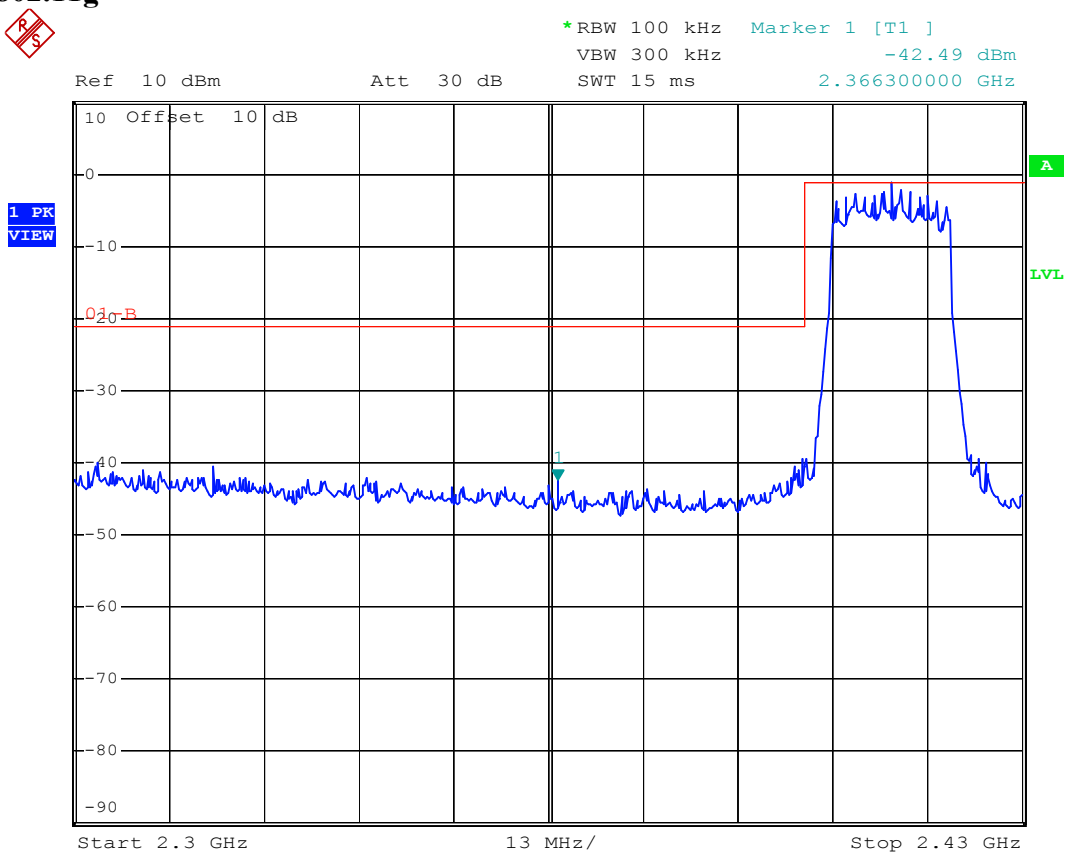
802.11b


*RBW 100 kHz
Marker 1 [T1]
*VBW 100 kHz
-45.29 dBm
Ref 10 dBm
Att 30 dB
SWT 15 ms
2.317420000 GHz
10 Offset 10 dB
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
D1-B
1
1 RM*
VIEW
A
LVL
Start 2.3 GHz
13 MHz/
Stop 2.43 GHz

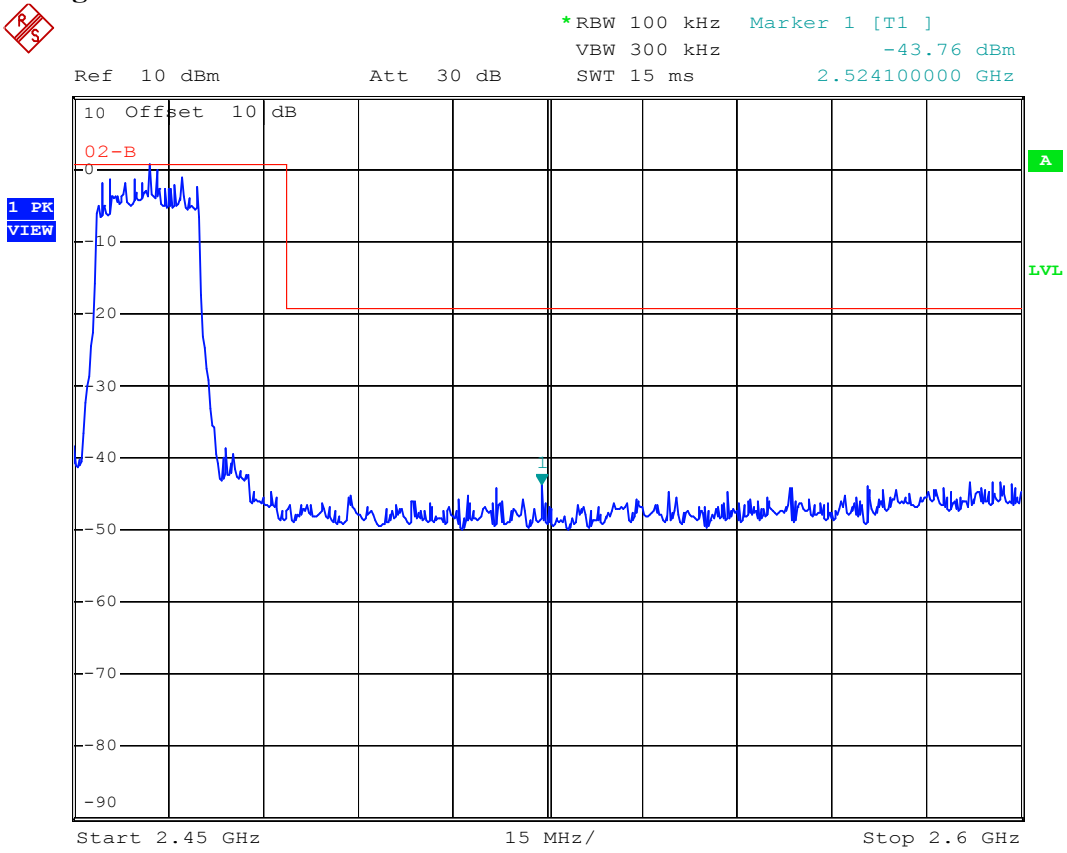
802.11b


*RBW 100 kHz
Marker 1 [T1]
VBW 300 kHz
-45.47 dBm
Ref 10 dBm
Att 30 dB
SWT 15 ms
2.521700000 GHz
10 Offset 10 dB
02-B
1 PK
VIEW
A
LVL
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
1
Center 2.525 GHz
15 MHz/
Span 150 MHz

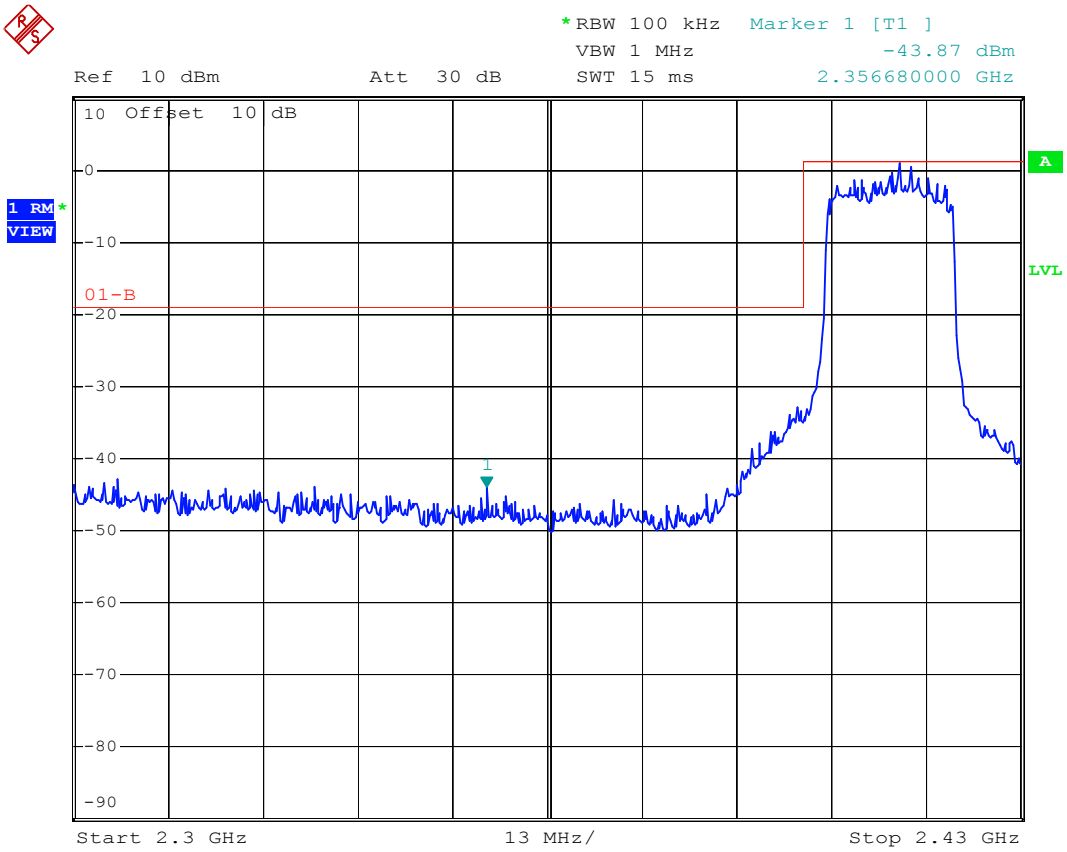
802.11g


*RBW 100 kHz
VBW 300 kHz
SWT 15 ms
Marker 1 [T1]
-42.49 dBm
2.366300000 GHz
Ref 10 dBm
Att 30 dB
10 Offset 10 dB
1 PK
VIEW
A
LVL
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Start 2.3 GHz
13 MHz/
Stop 2.43 GHz

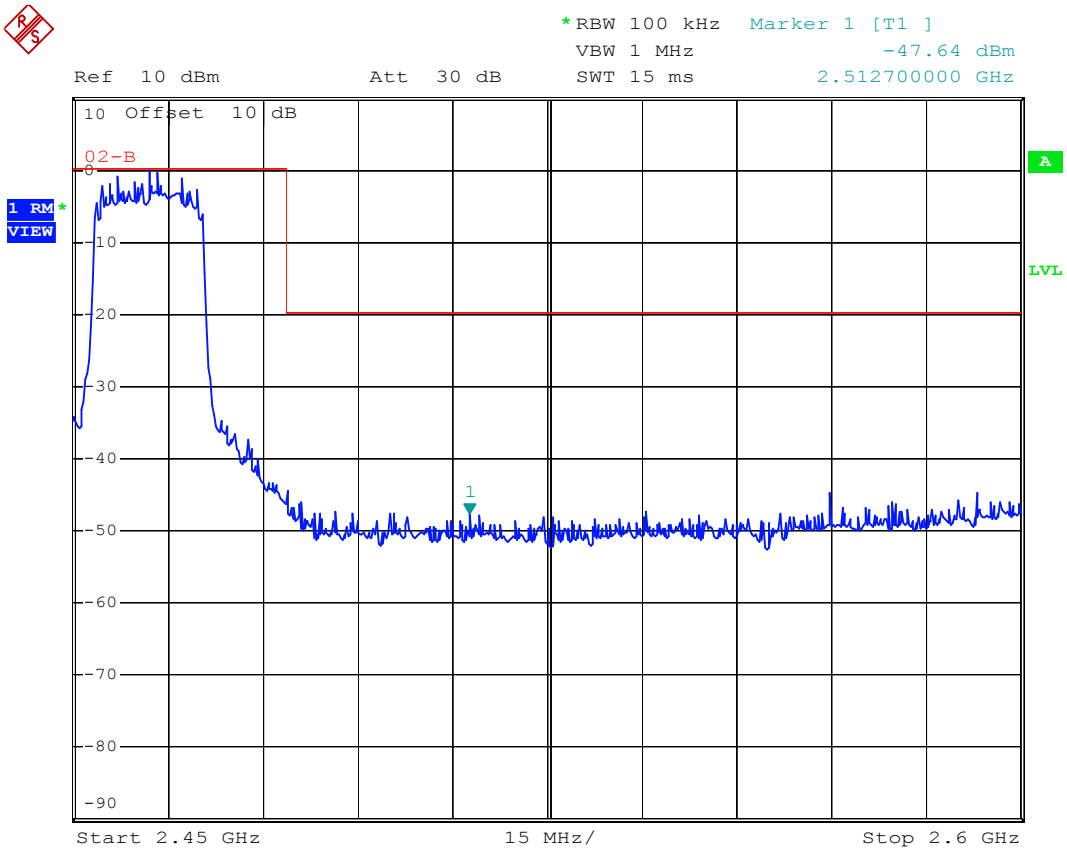
802.11g


*RBW 100 kHz
Marker 1 [T1]
VBW 300 kHz
-43.76 dBm
Ref 10 dBm
Att 30 dB
SWT 15 ms
2.524100000 GHz
10 Offset 10 dB
02-B
1 PK
VIEW
A
LVL
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Start 2.45 GHz
15 MHz/
Stop 2.6 GHz

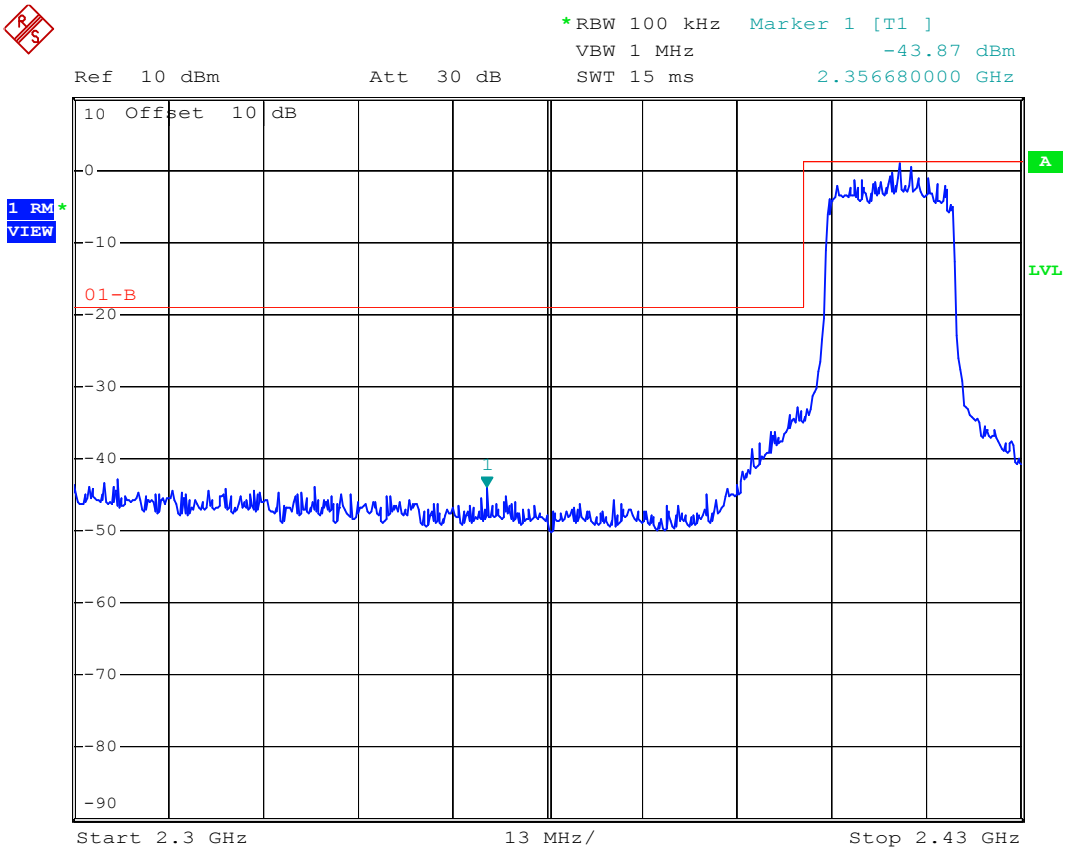
802.11n HT-20 / Antenna 1



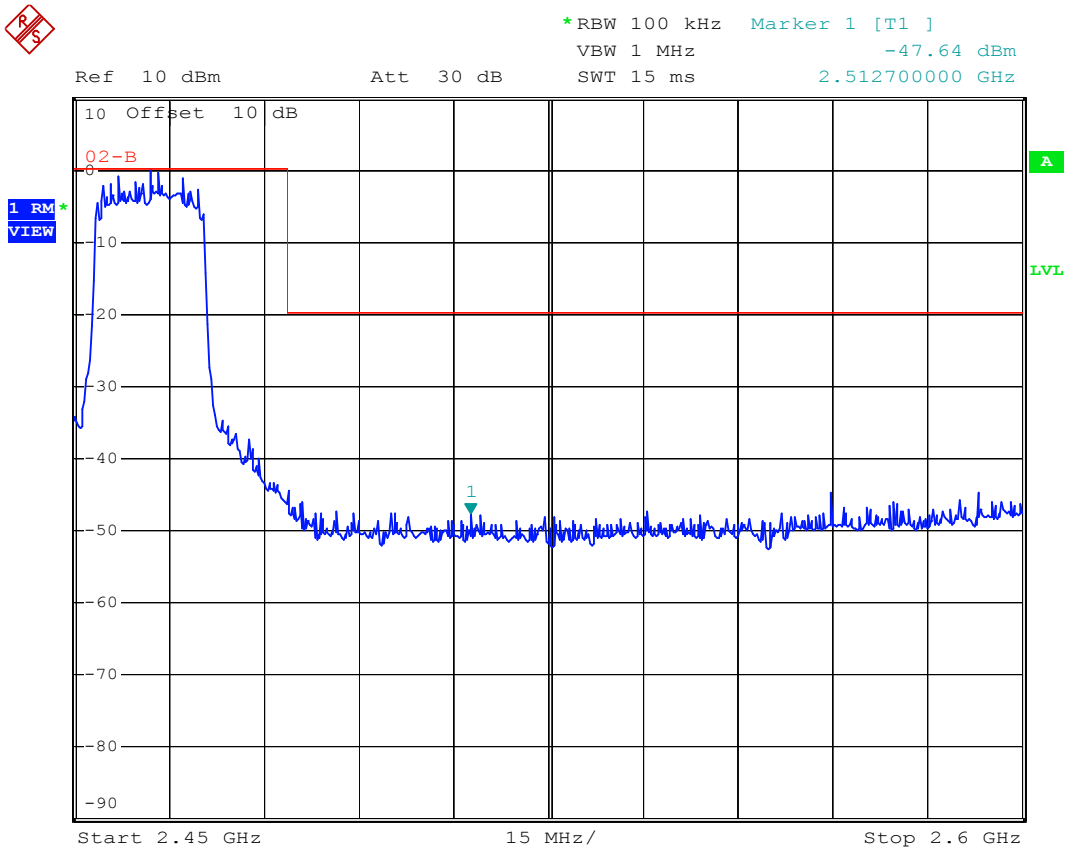
802.11n HT-20 / Antenna 1



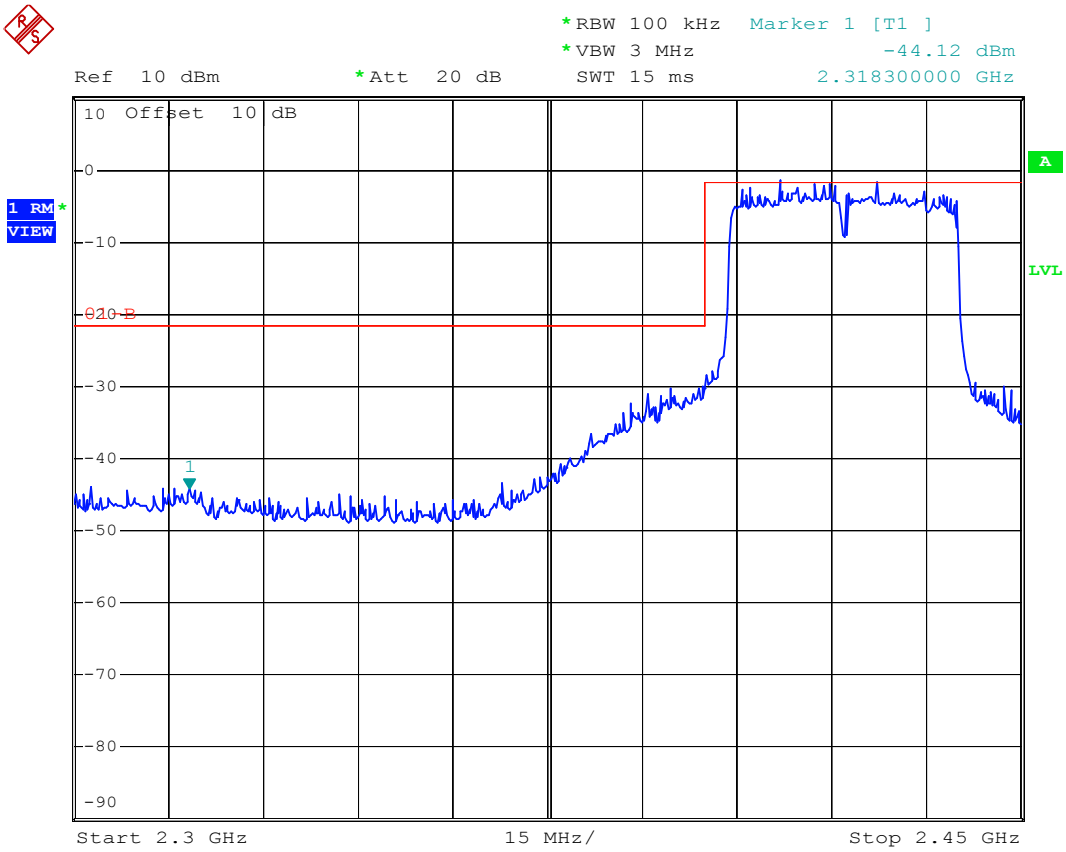
802.11n HT-20 / Antenna 2



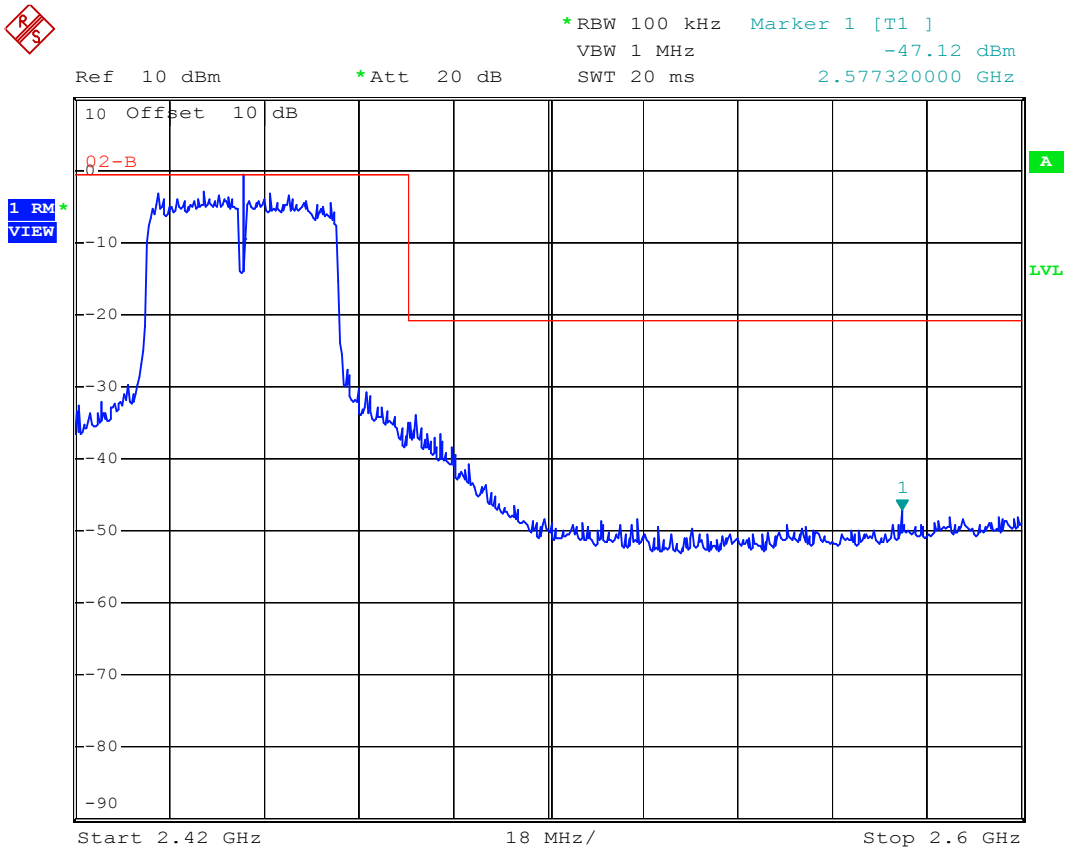
802.11n HT-20 / Antenna 2



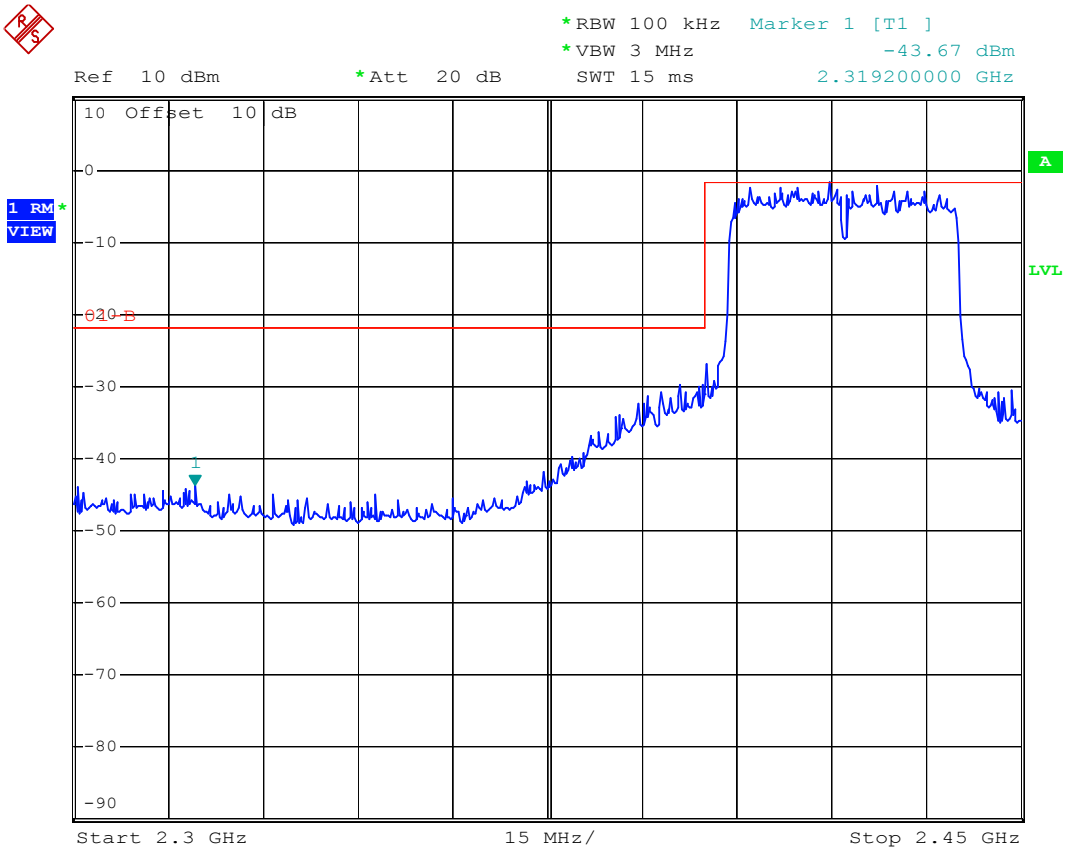
802.11n HT-40/ Antenna 1



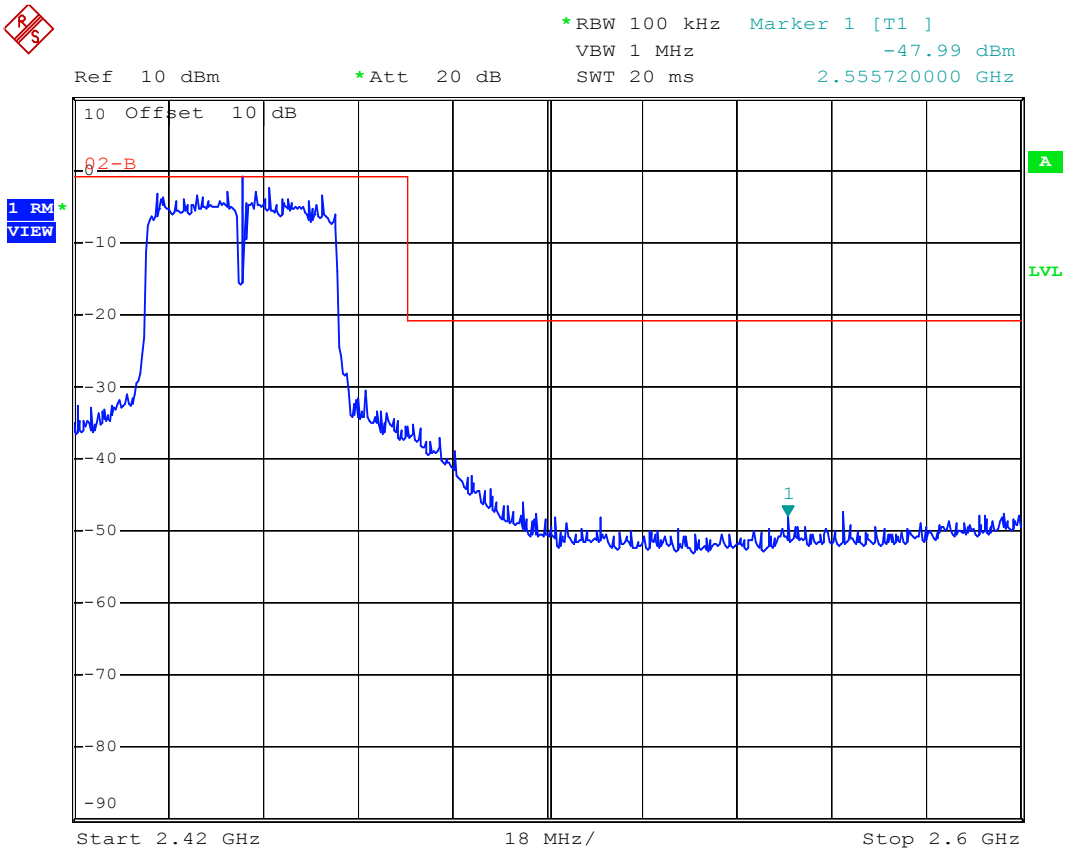
802.11n HT-40/ Antenna 1



802.11n HT-40/ Antenna 2



802.11n HT-40/ Antenna 2



10 POWER DENSITY MEASUREMENT

10.1 Standard Applicable

According to 15.247(d), for direct sequence systems, the transmitted power density averaged over any 1 second interval shall not be greater than 8 dBm in any 3 kHz bandwidth within these bands.

10.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 5 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set EUT to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Set the RBW = 100 kHz.
4. Set the VBW ≥ 300 kHz.
5. Set the span to 5-30 % greater than the EBW.
6. Detector = peak.
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.
10. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
11. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).
12. Repeat above procedures until all measured frequencies were complete.

10.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum Analyzer	Rohde & Schwarz	FSP40	2011/09/21	2012/09/20

10.4 Measurement Data

Test Date : Jun. 04, 2012 Temperature : 26 °C Humidity : 60 %

A. 802.11b @1 Mbps

a) Channel Low: Maximun PSD is 6.46 -15.2 = -8.74 dBm
b) Channel Mid: Maximun PSD is 5.63 -15.2 = -9.57 dBm
c) Channel High: Maximun PSD is 6.24 -15.2 = -8.96 dBm

B. 802.11g @6 Mbps

a) Channel Low: Maximun PSD is 5.31 -15.2 = -9.89 dBm
b) Channel Mid: Maximun PSD is 5.25 -15.2 = -9.95 dBm
c) Channel High: Maximun PSD is 5.32 -15.2 = -8.88 dBm

C. 802.11n HT-20 Antenna 1 @6.5 Mbps

a) Channel Low: Maximun PSD is 4.79 -15.2 = -10.41 dBm
b) Channel Mid: Maximun PSD is 5.13 -15.2 = -10.07 dBm
c) Channel High: Maximun PSD is 6.11 -15.2 = -9.09 dBm

D. 802.11n HT-20 Antenna 2 @6.5 Mbps

a) Channel Low: Maximun PSD is 4.36 -15.2 = -10.84 dBm
b) Channel Mid: Maximun PSD is 4.65 -15.2 = -10.55 dBm
c) Channel High: Maximun PSD is 5.98 -15.2 = -9.22 dBm

E. 802.11n HT-40 Antenna 1 @13.5 Mbps

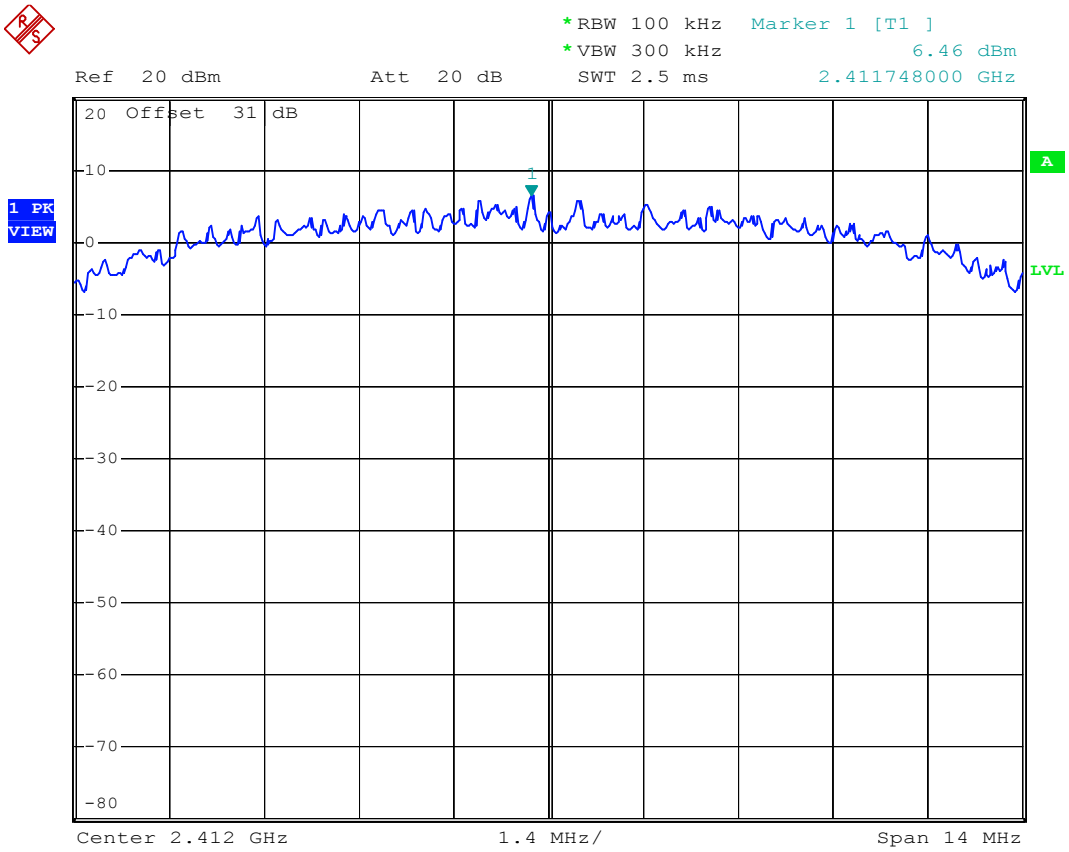
a) Channel Low: Maximun PSD is 1.33 -15.2 = -13.87 dBm
b) Channel Mid: Maximun PSD is 1.39 -15.2 = -13.81 dBm
c) Channel High: Maximun PSD is 2.06 -15.2 = -13.41 dBm

F. 802.11n HT-40 Antenna 2 @13.5 Mbps

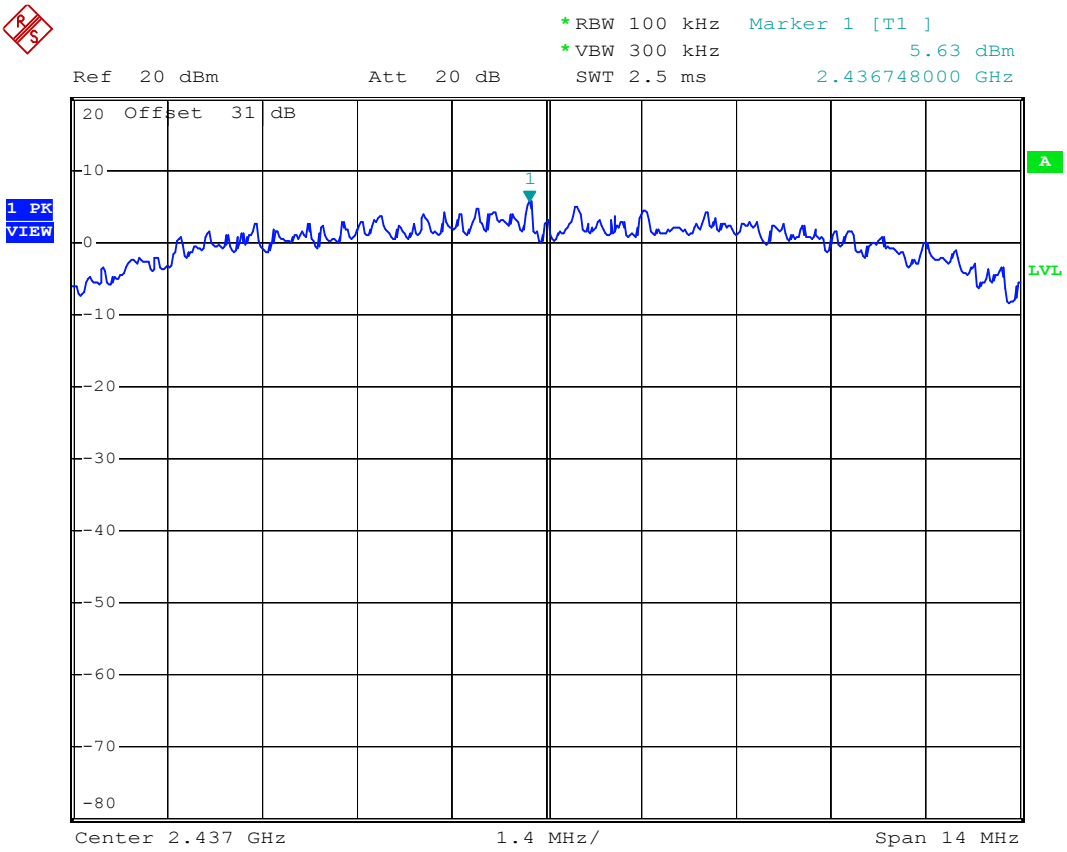
a) Channel Low: Maximun PSD is 1.18 -15.2 = -14.02 dBm
b) Channel Mid: Maximun PSD is 1.32 -15.2 = -13.88 dBm
c) Channel High: Maximun PSD is 1.62 -15.2 = -13.58 dBm

Note : The expanded uncertainty: 2dB.

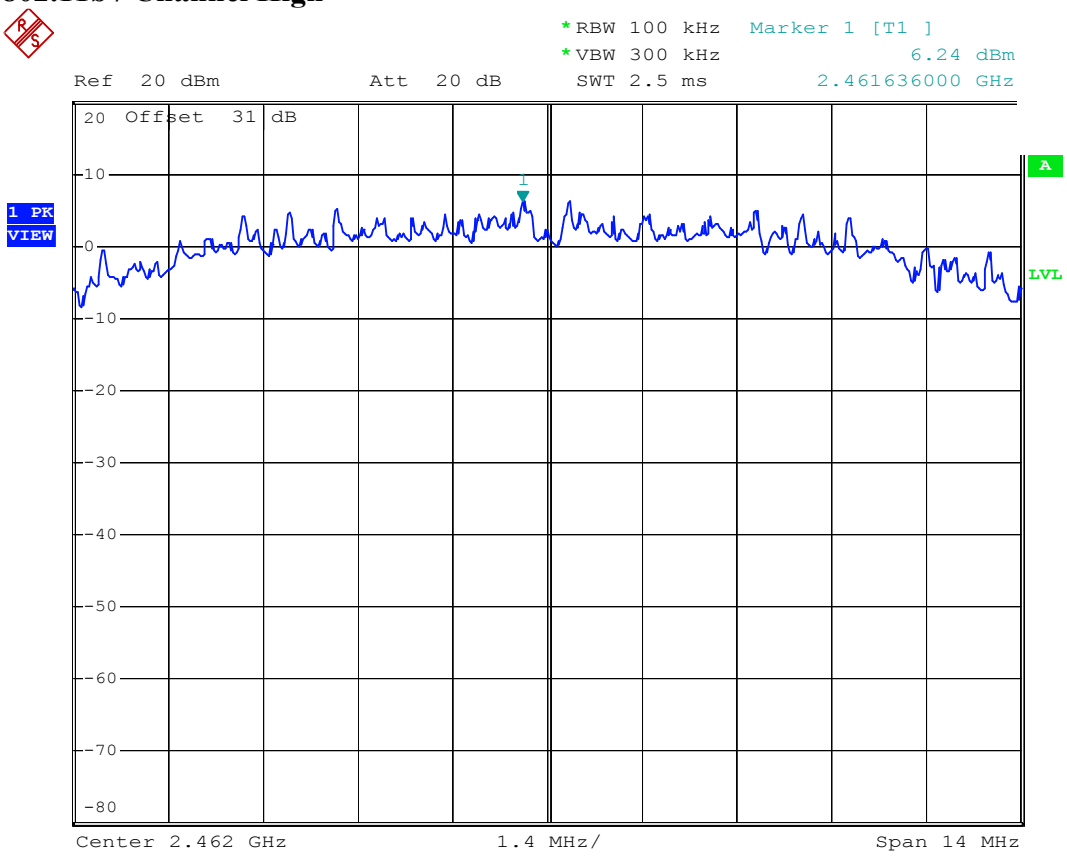
802.11b / Channel Low



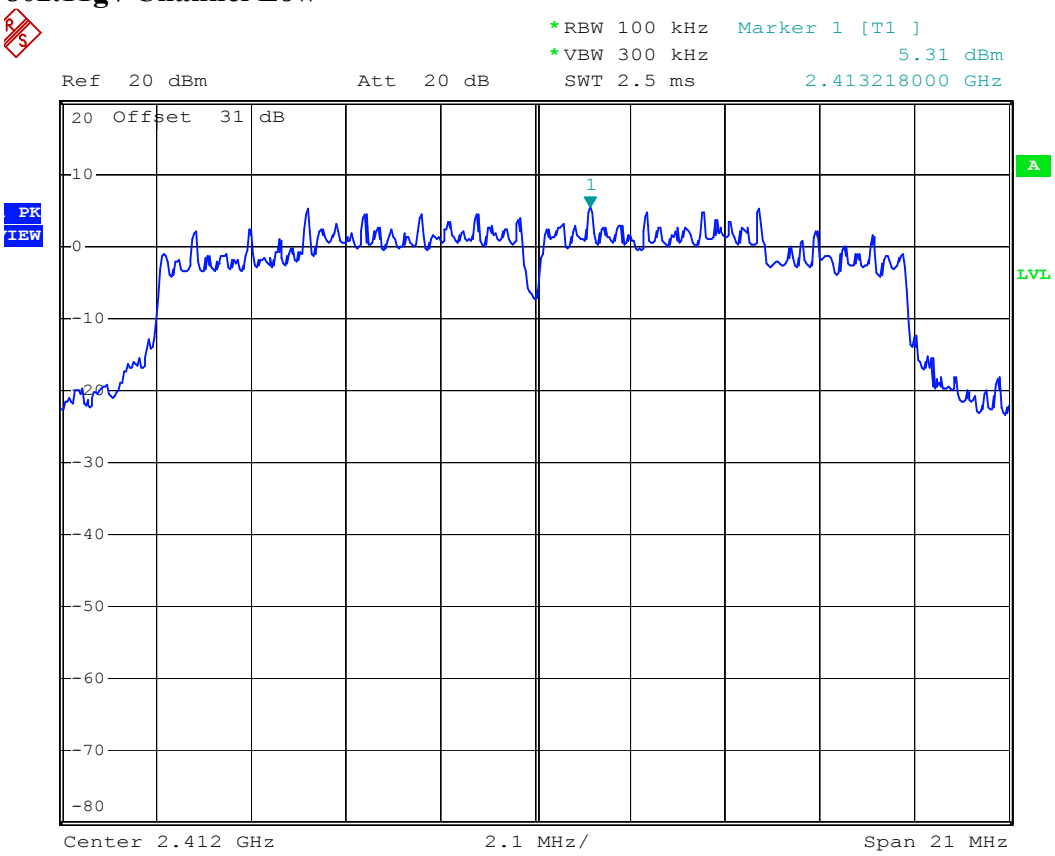
802.11b / Channel Mid



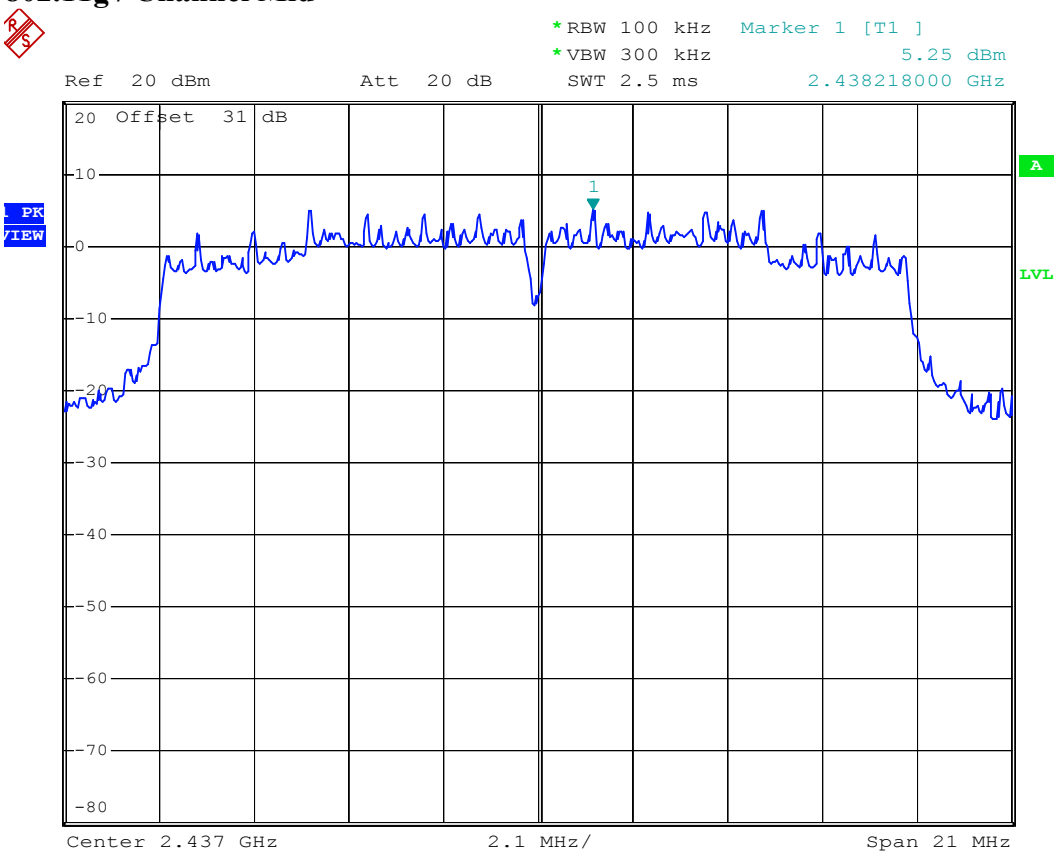
802.11b / Channel High



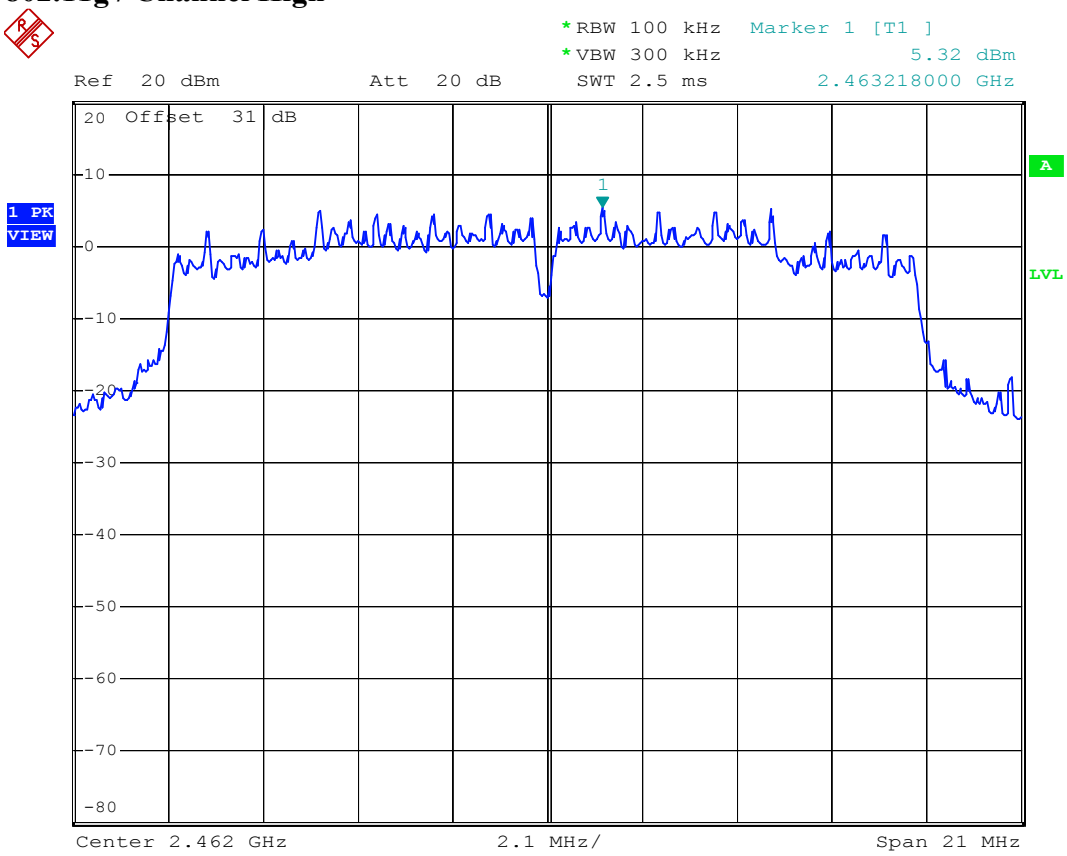
802.11g / Channel Low



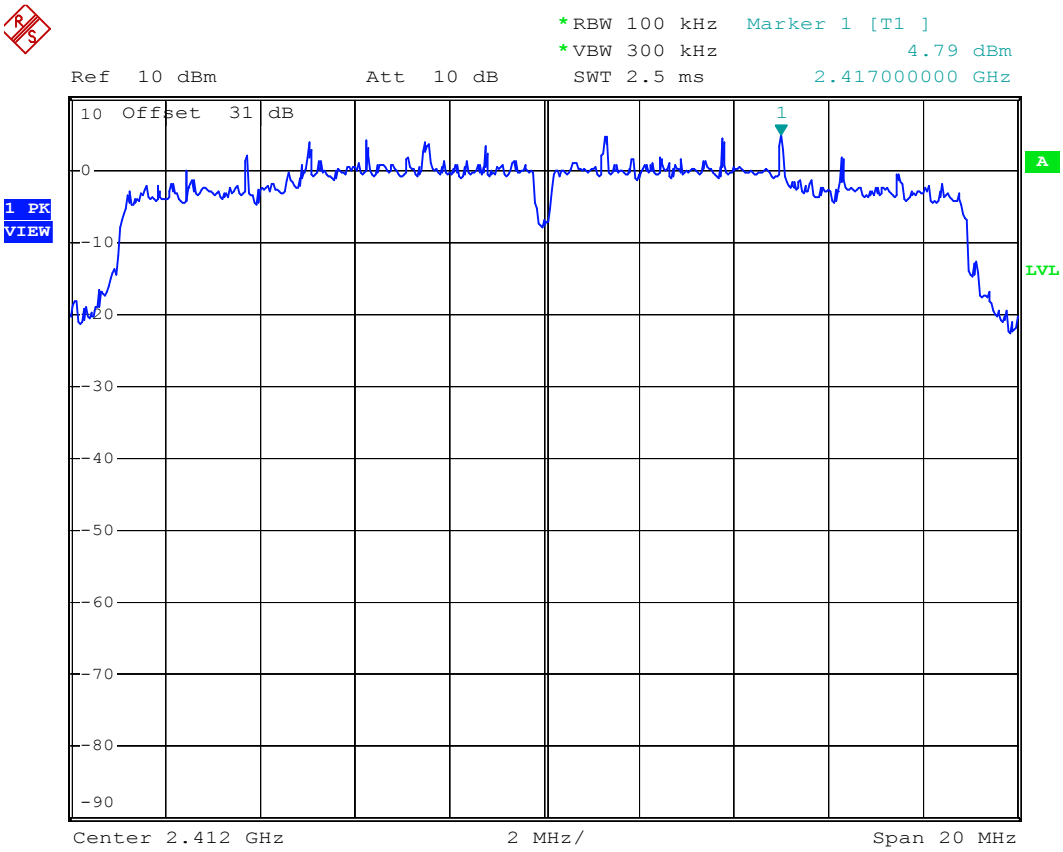
802.11g / Channel Mid



802.11g / Channel High

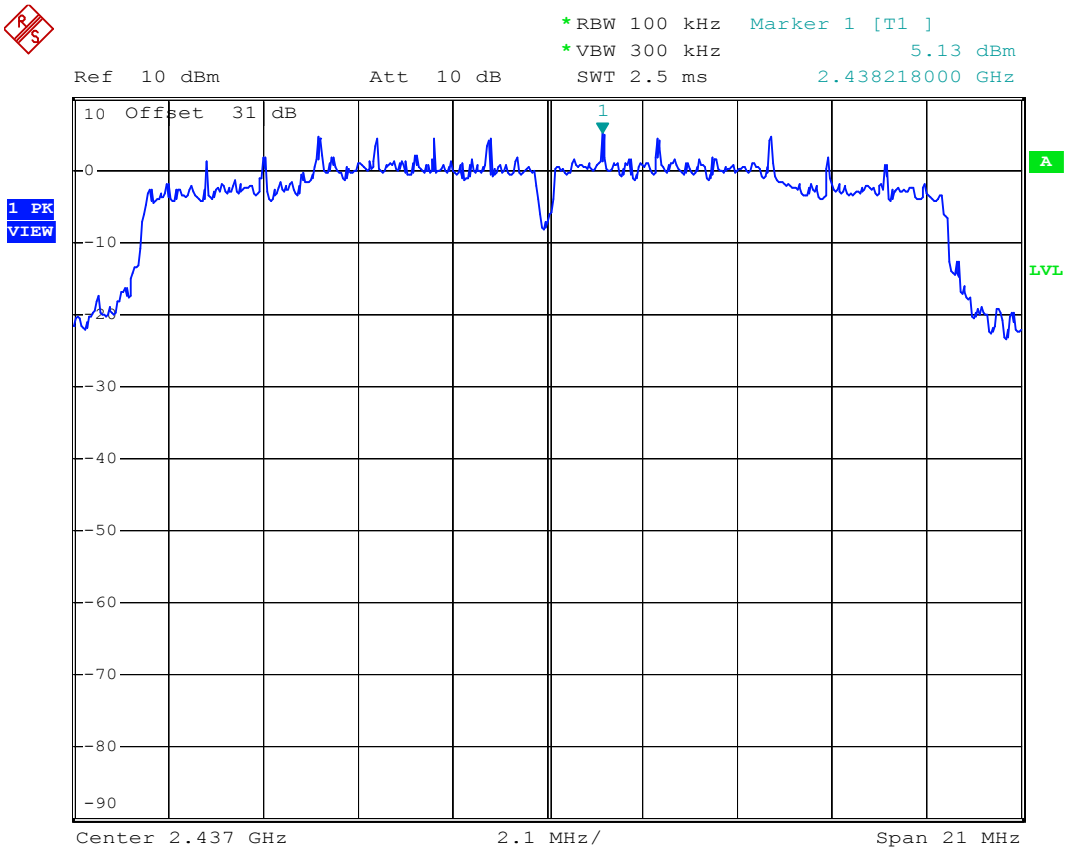


802.11n HT-20/Antenna 1/ Channel Low



V

802.11n HT-20/Antenna 1/ Channel Mid



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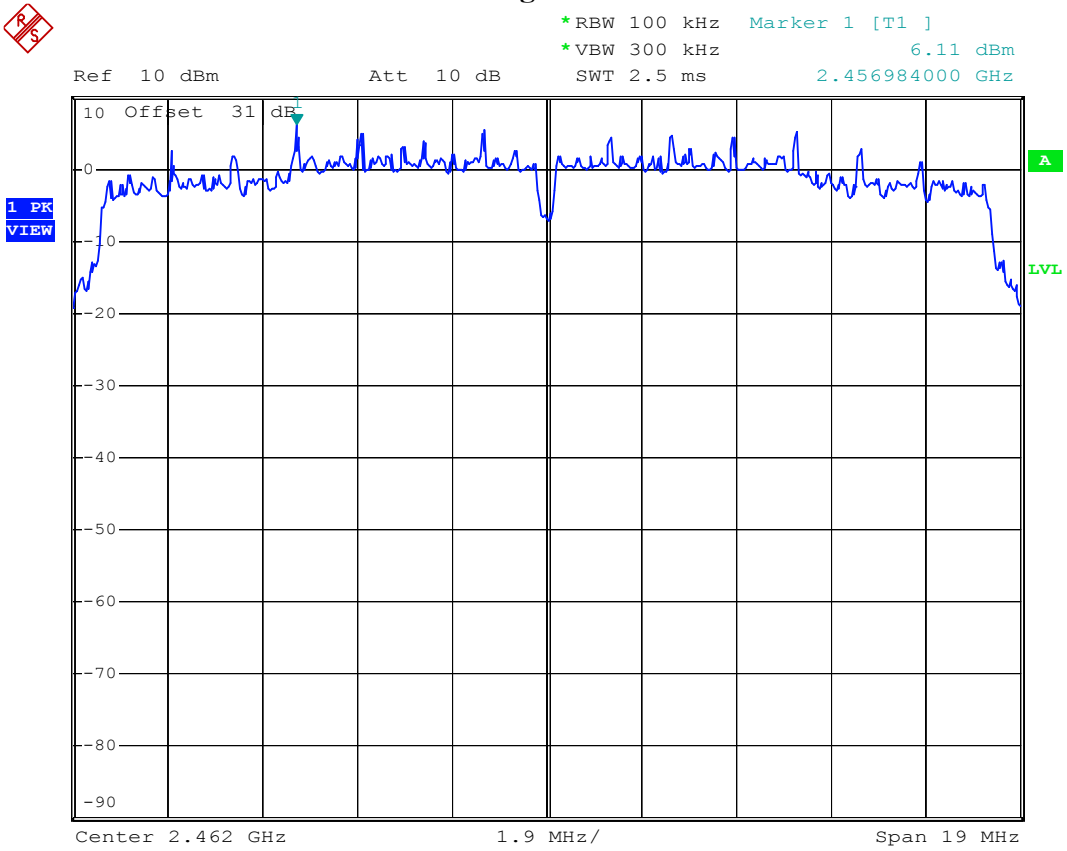

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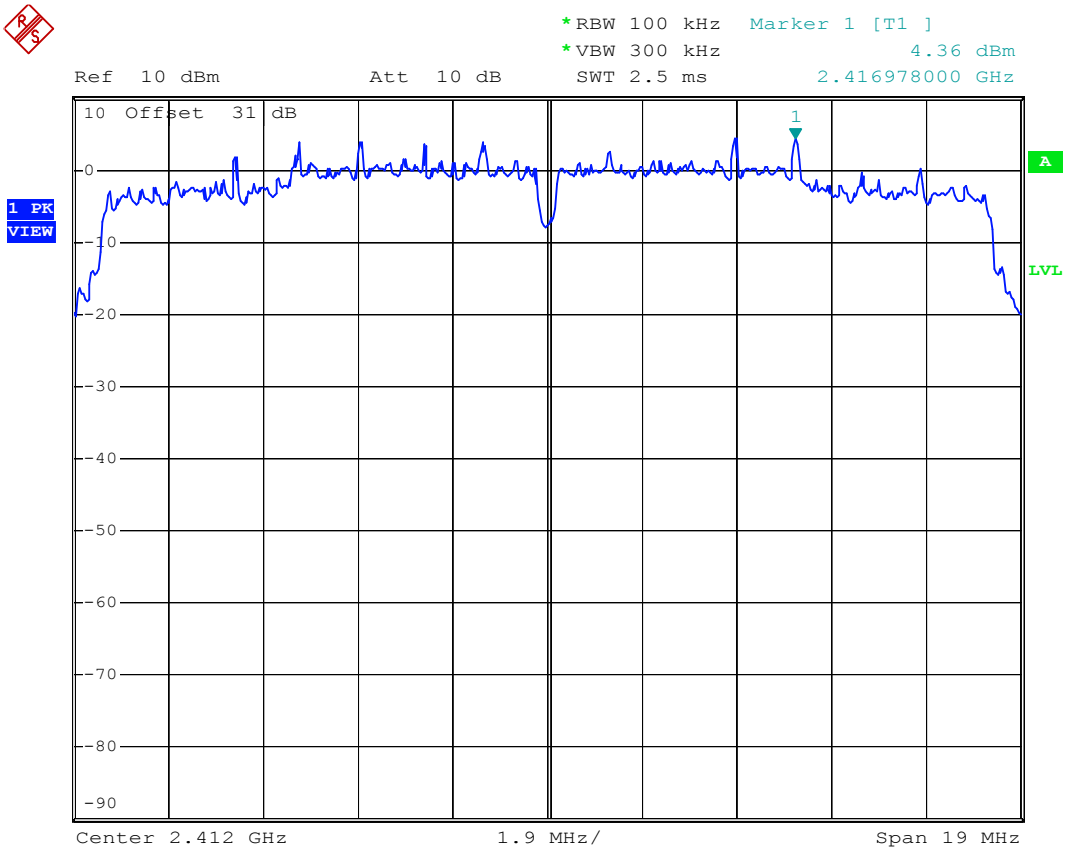

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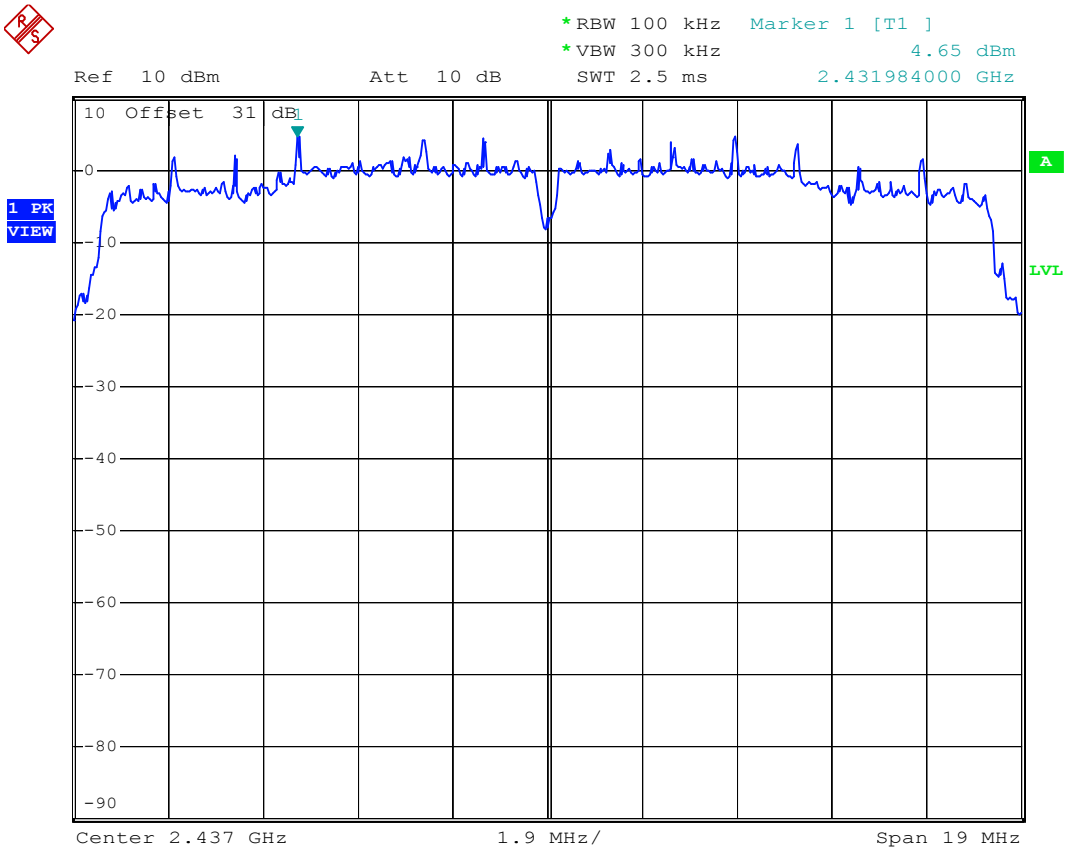
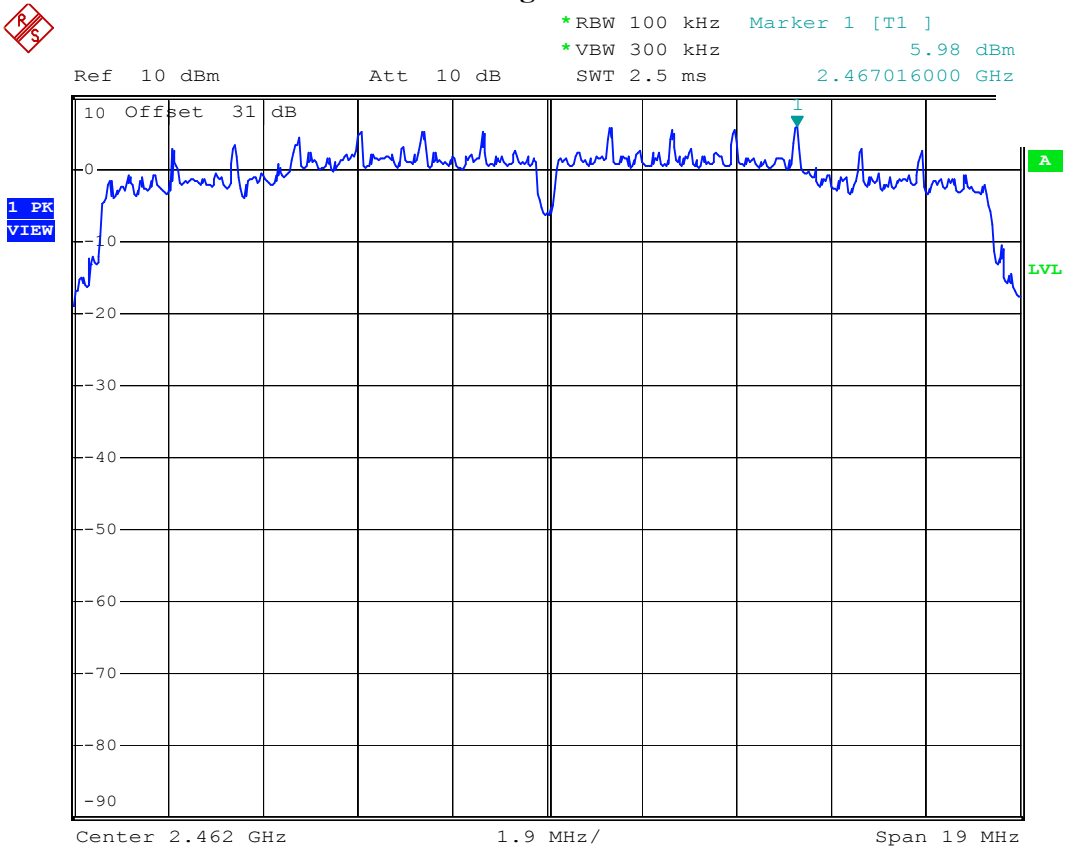
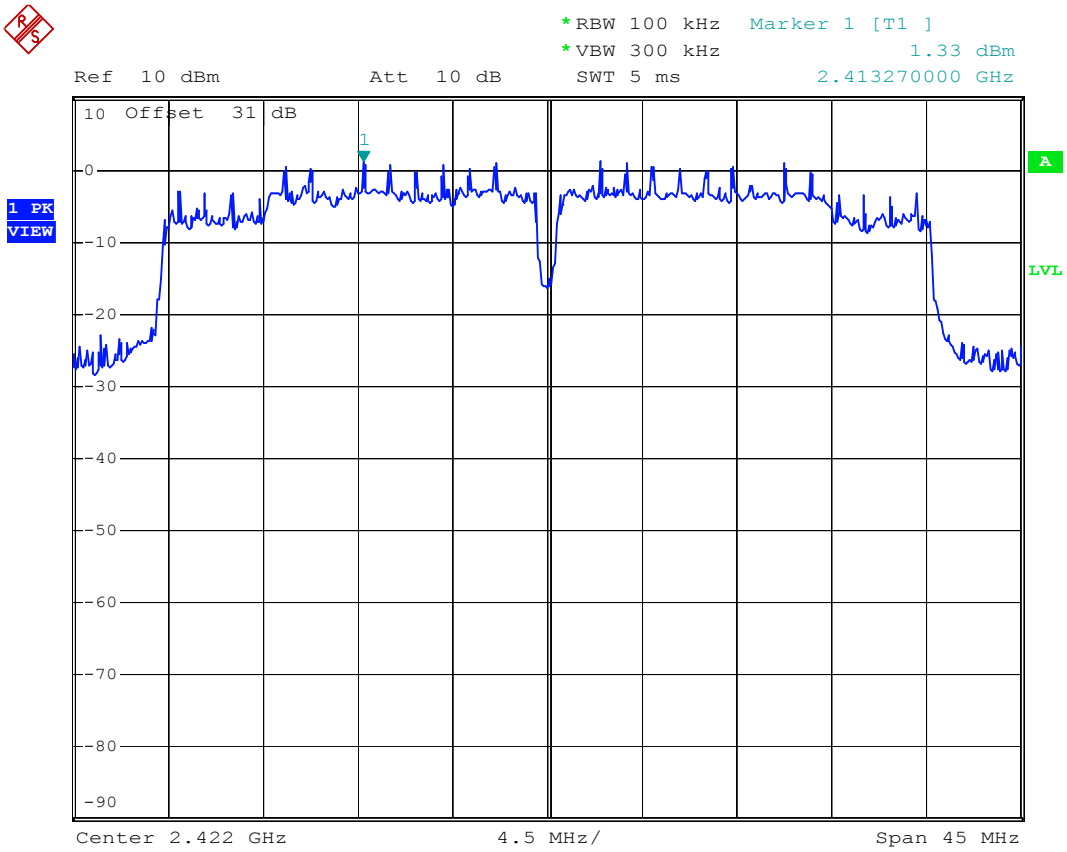


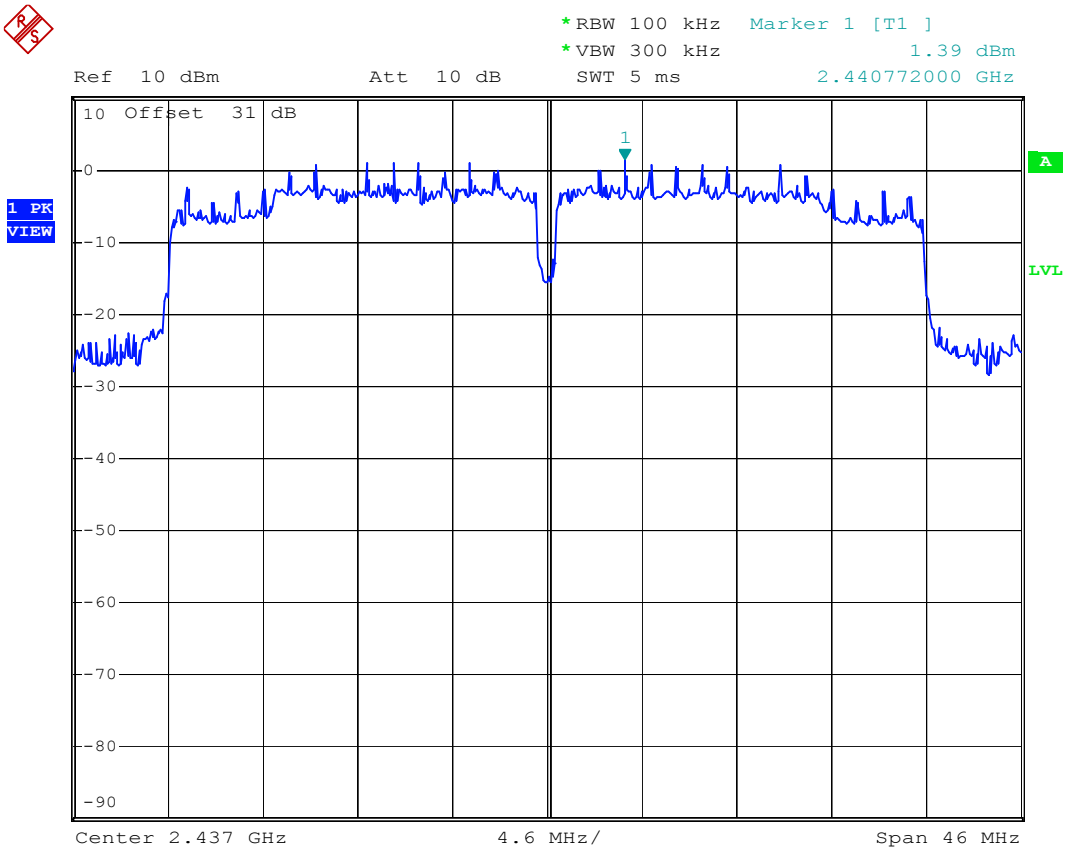
802.11n HT-20/Antenna 2/ Channel High



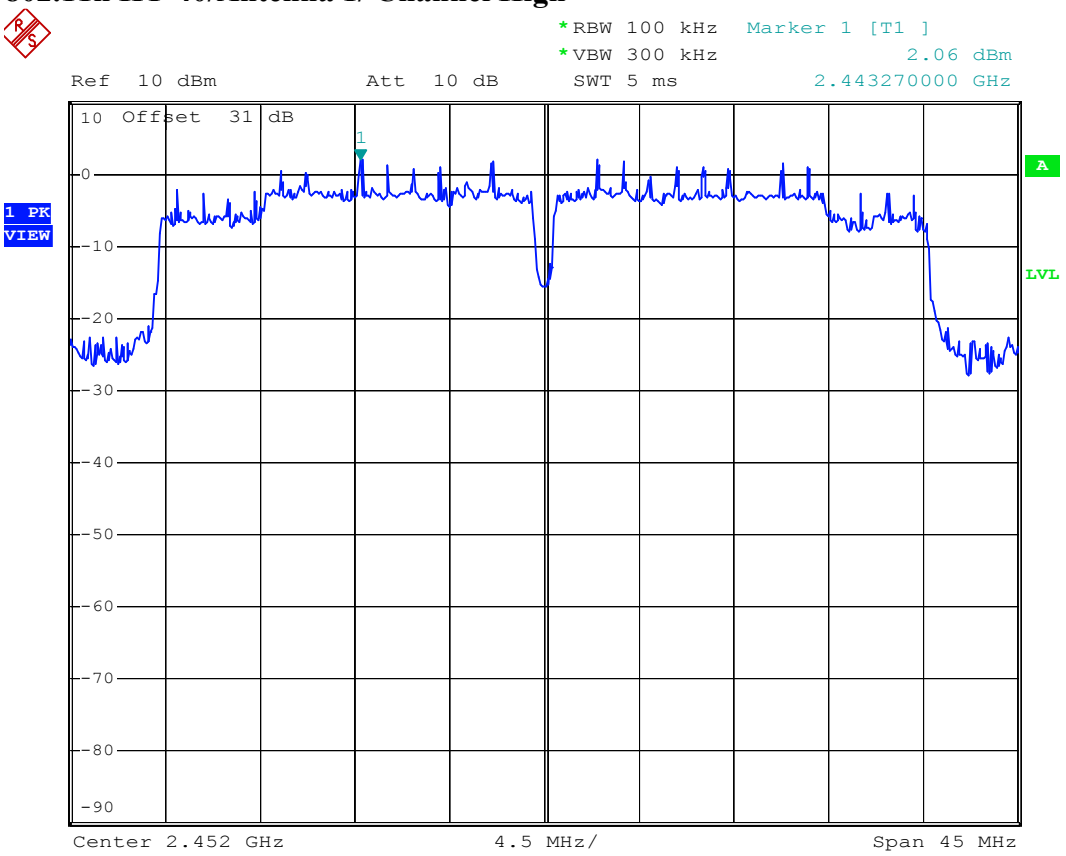
802.11n HT-40/Antenna 1/ Channel Low



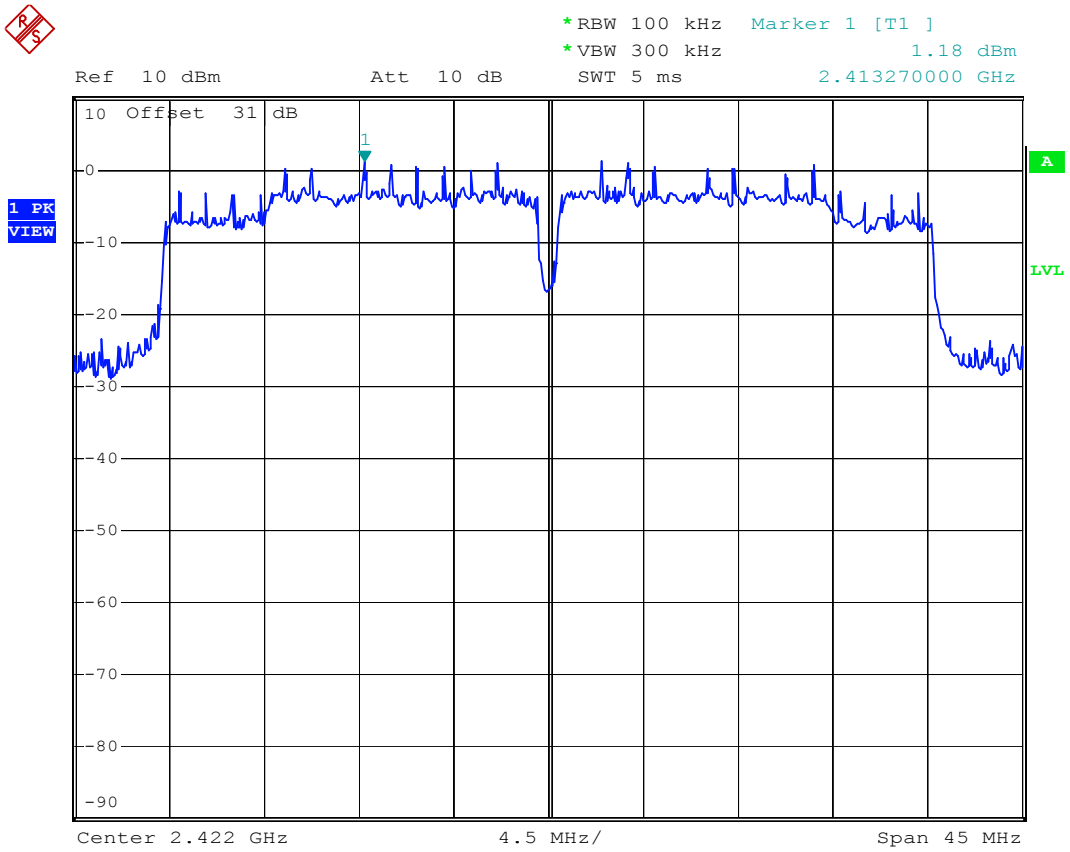
802.11n HT-40/Antenna 1/ Channel Mid



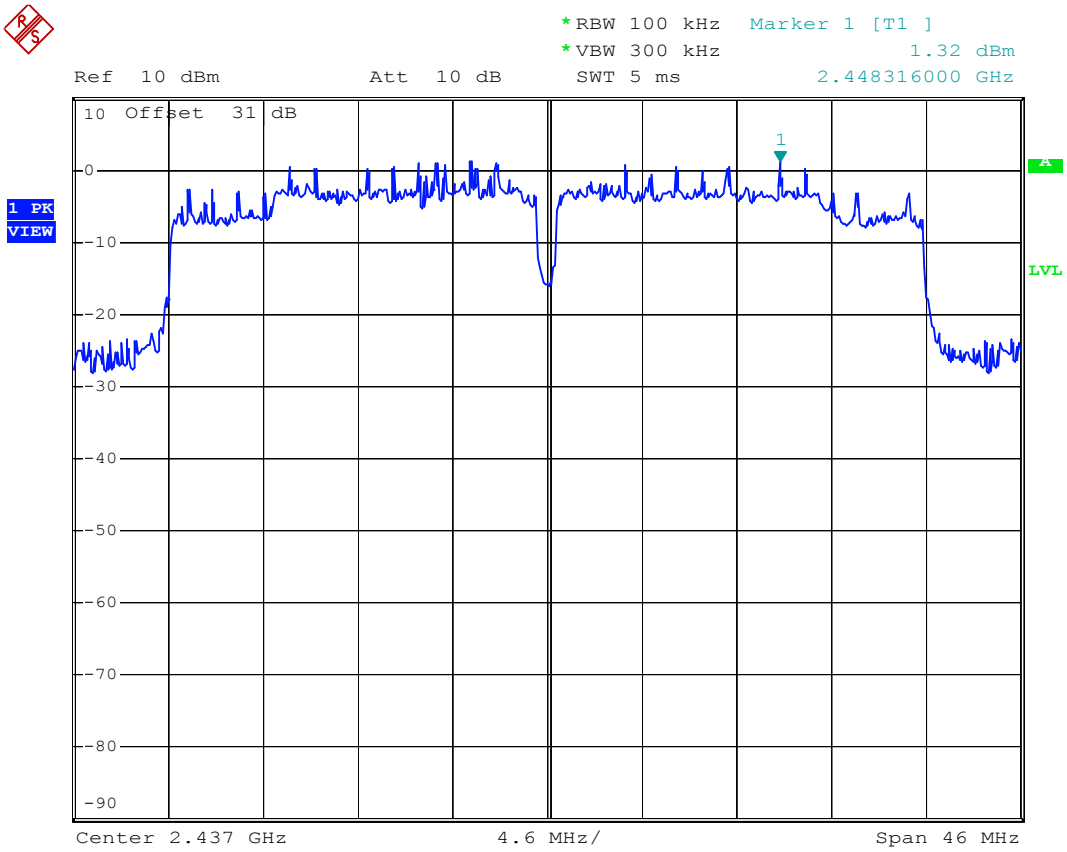
802.11n HT-40/Antenna 1/ Channel High



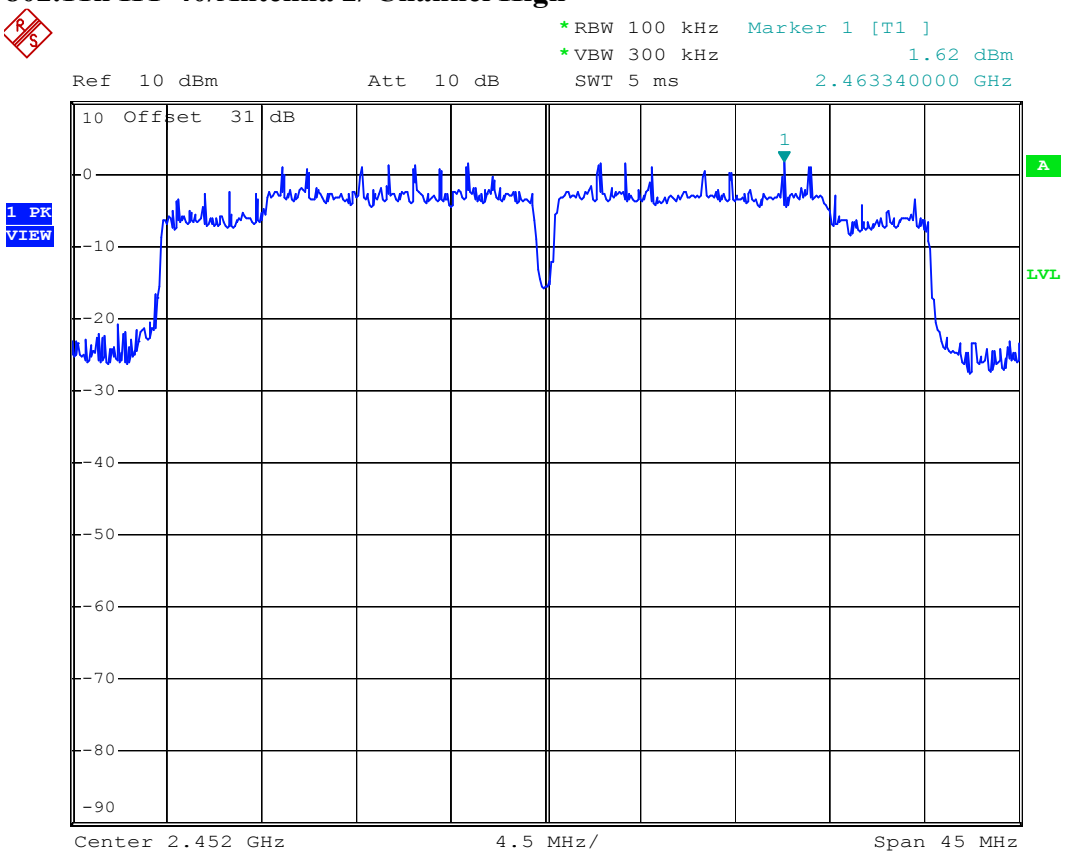
802.11n HT-40/Antenna 2/ Channel Low



802.11n HT-40/Antenna 2/ Channel Mid



802.11n HT-40/Antenna 2/ Channel High



11. OUT-OF-BAND CONDUCTED EMISSION MEASUREMENT

11.1 Standard Applicable

According to 15.247(c), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

11.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
   RBW = 100 kHz
   VBW ≥ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold.
4. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. Plot the result on the screen of spectrum analyzer.
5. Repeat above procedures until all measured frequencies were complete.

11.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum Analyzer	Rohde & Schwarz	FSP40	2011/09/21	2012/09/20

11.4 Measurement Data

Test Date : Apr. 21, 2012 Temperature : 25 °C Humidity : 65 %

A. 802.11b @1 Mbps

Mode: Channel Low, Mid, High

1 GHz to 25 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

B. 802.11g @6 Mbps

Mode: Channel Low, Mid, High

1 GHz to 25 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

C. 802.11n HT-20 Antenna 1 @6.5 Mbps

Mode: Channel Low, Mid, High

1 GHz to 25 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

D. 802.11n HT-20 Antenna 2 @6.5 Mbps

Mode: Channel Low, Mid, High

1 GHz to 25 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

E. 802.11n HT-40 Antenna 1 @13.5 Mbps

Mode: Channel Low, Mid, High

1 GHz to 25 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

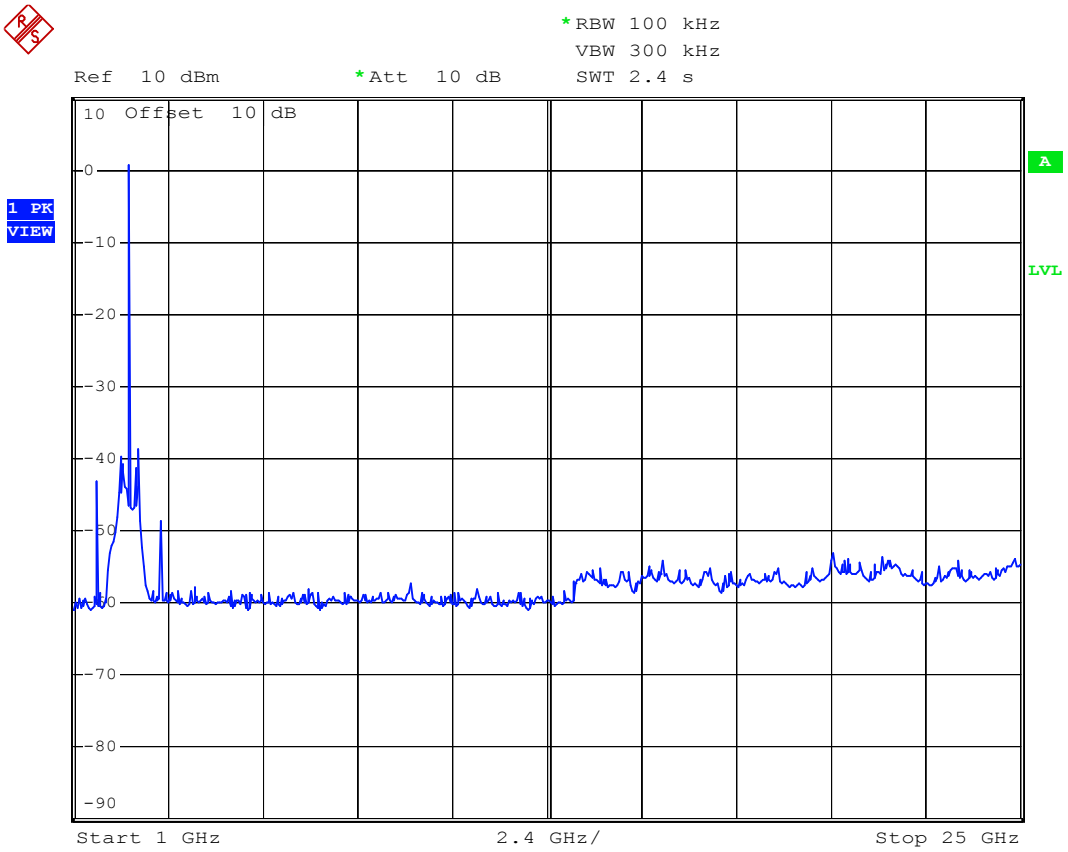
F. 802.11n HT-40 Antenna 2 @13.5 Mbps

Mode: Channel Low, Mid, High

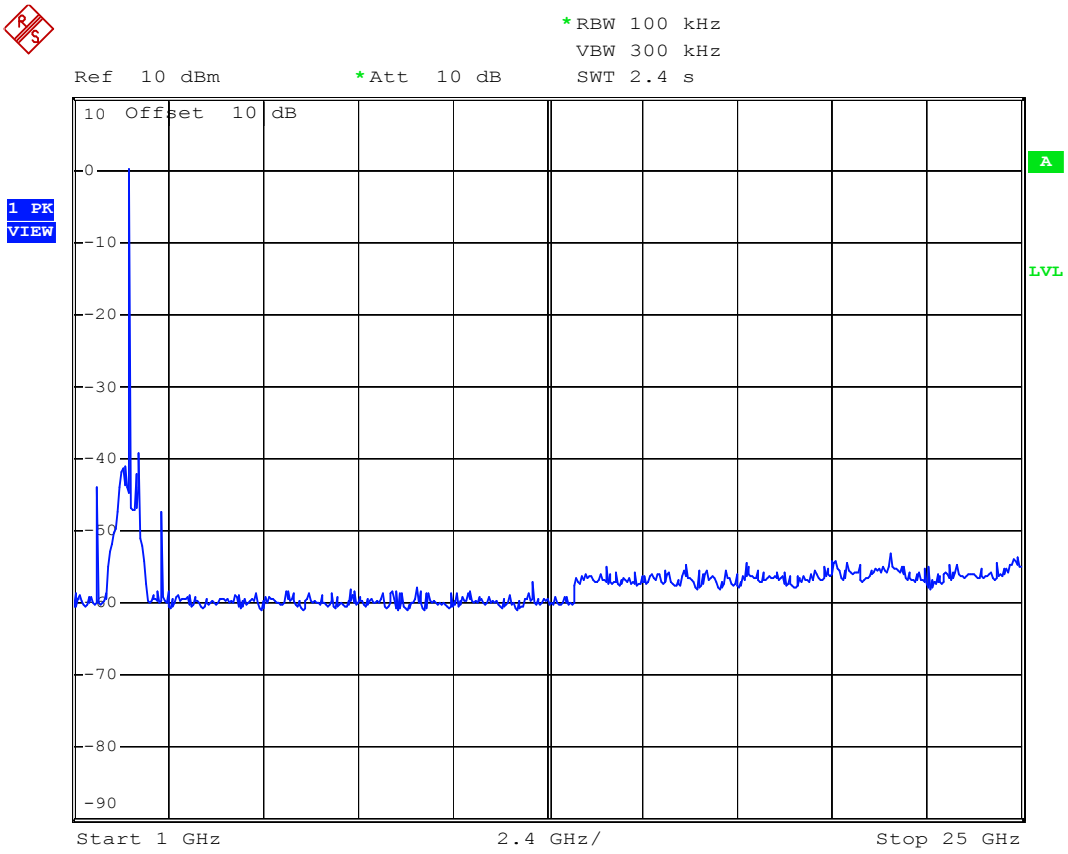
1 GHz to 25 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

Note : The expanded uncertainty: 2dB.

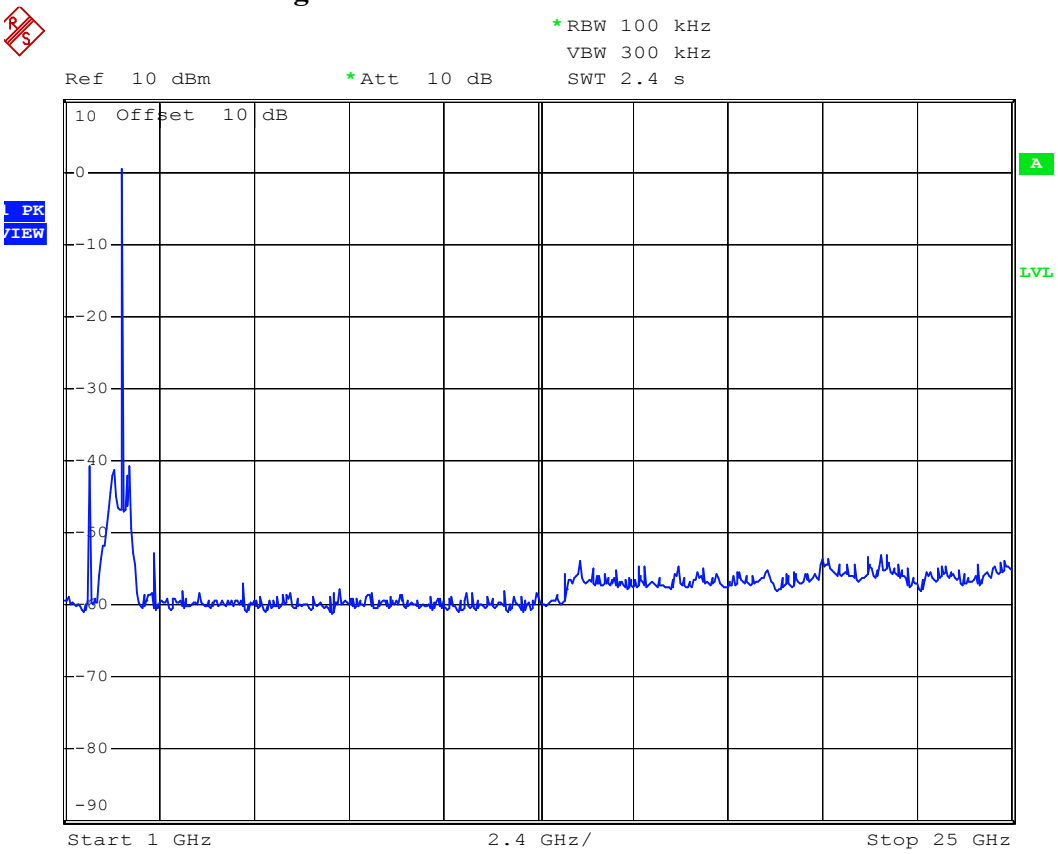
802.11b / Channel Low



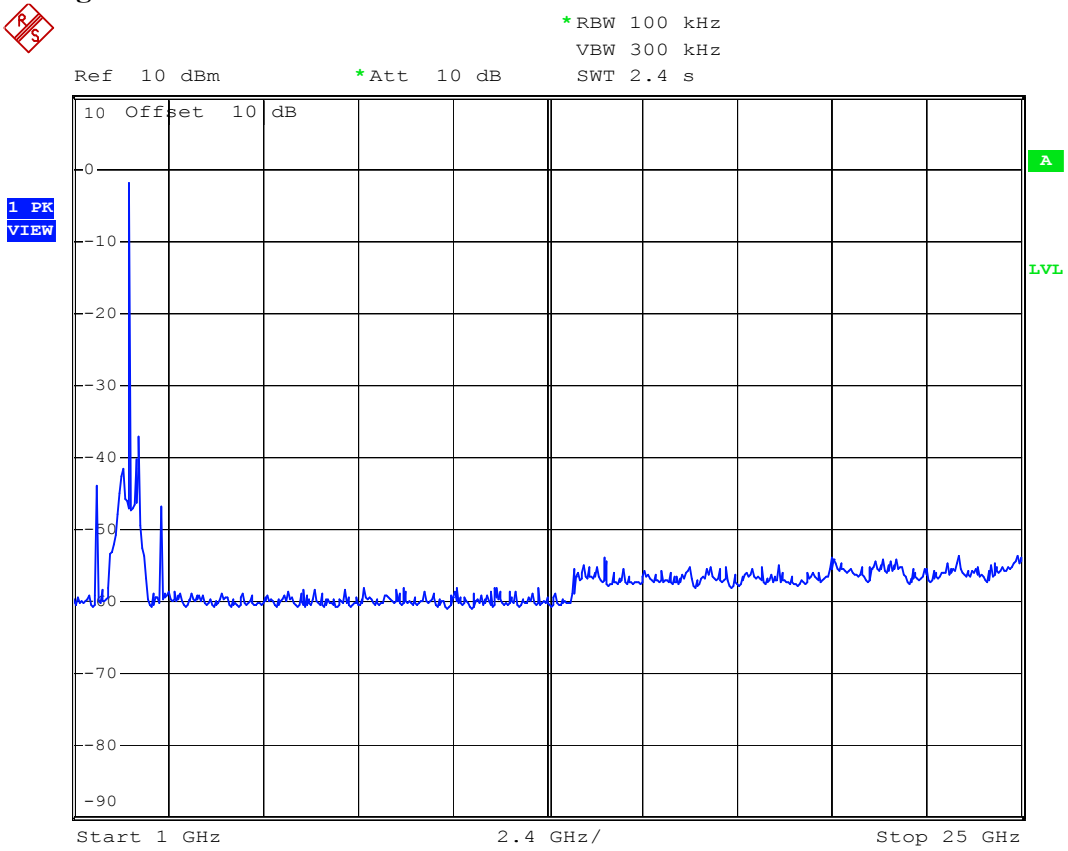
802.11b / Channel Mid



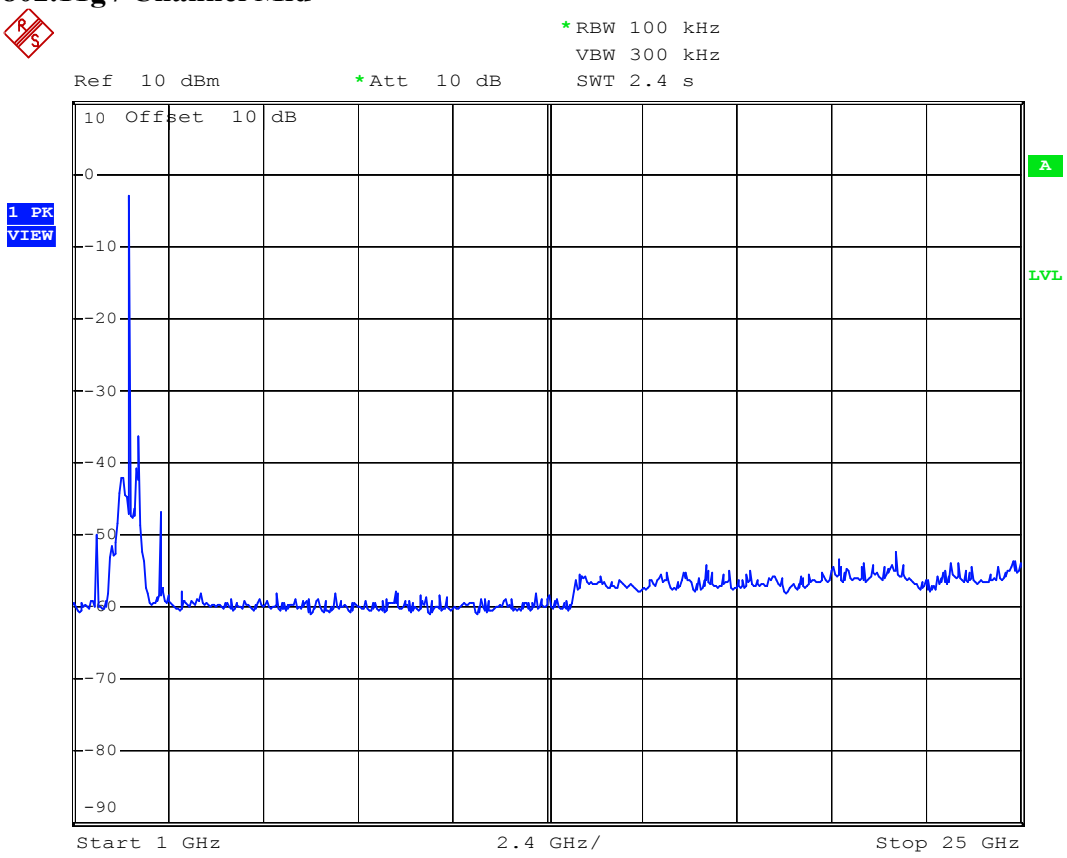
802.11b / Channel High



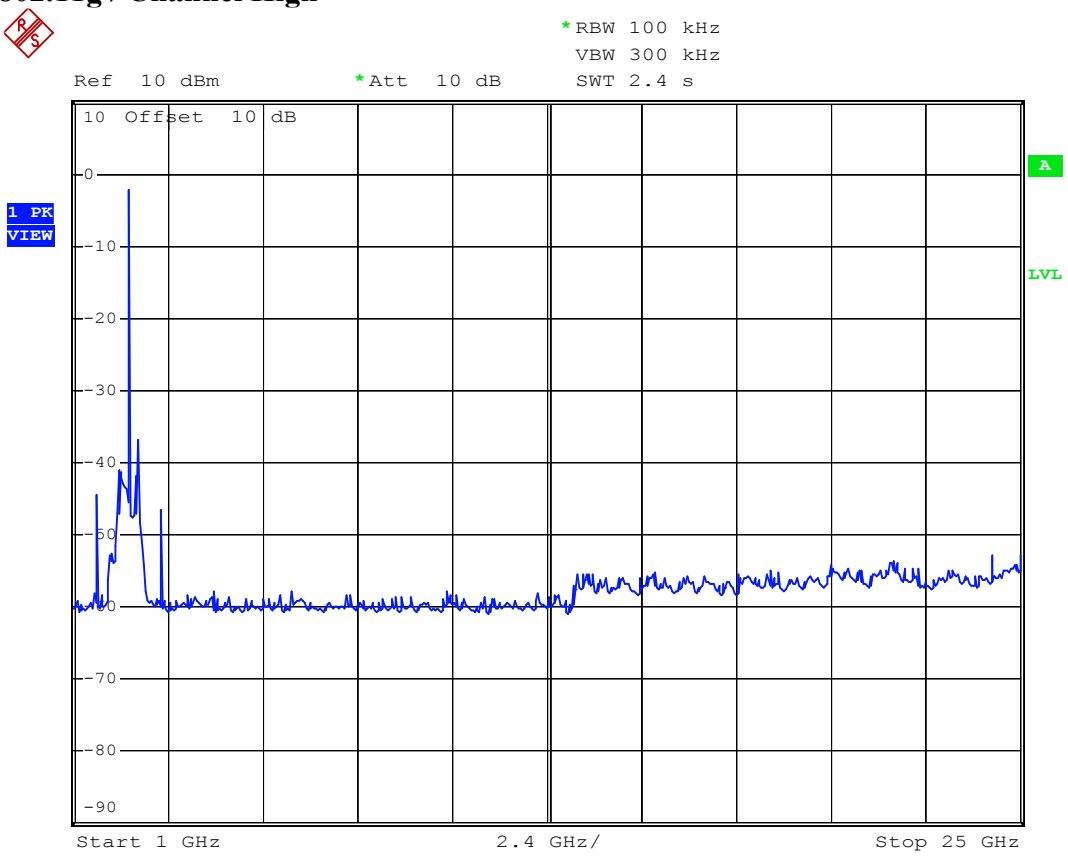
802.11g / Channel Low



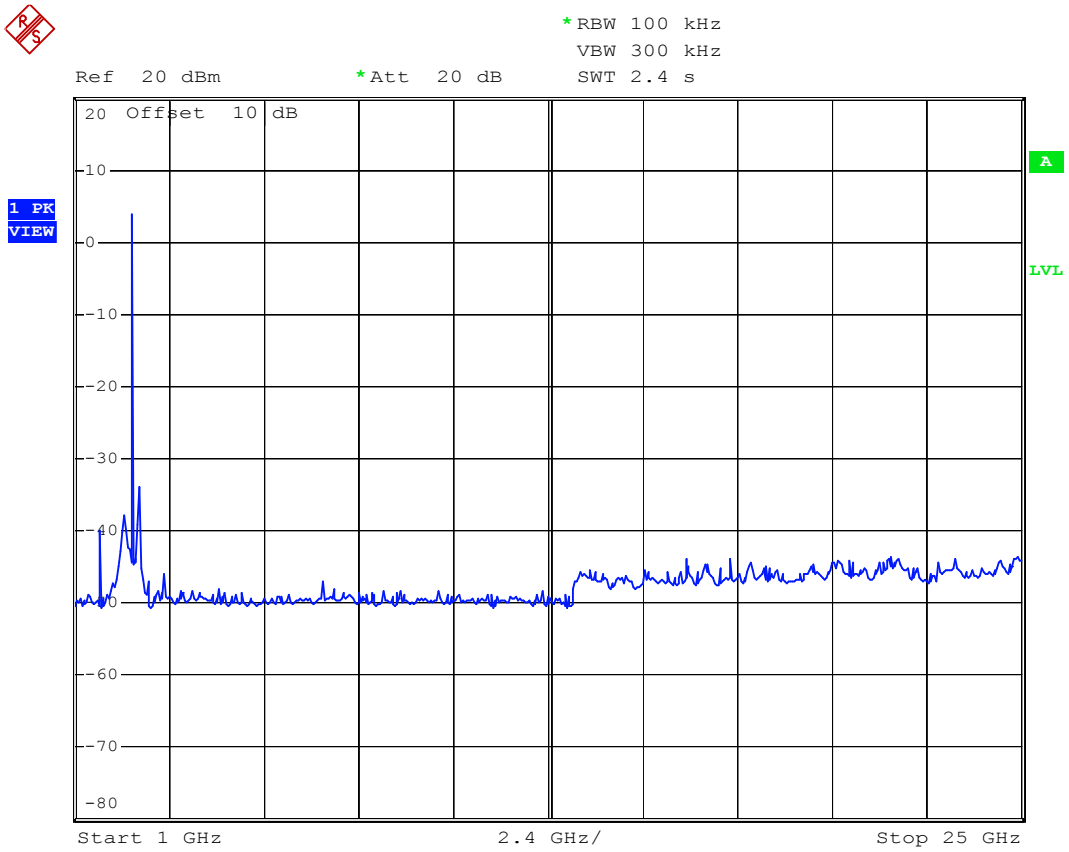
802.11g / Channel Mid



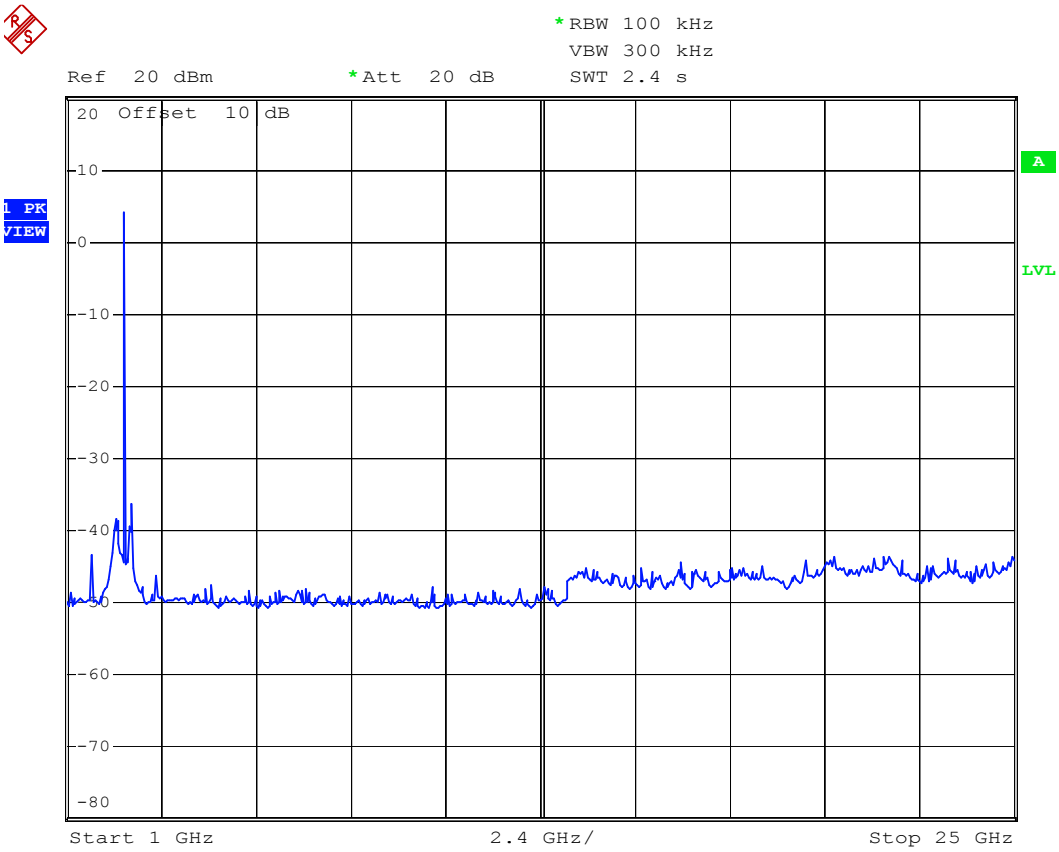
802.11g / Channel High



802.11n HT-20/Antenna 1/ Channel Low



802.11n HT-20/Antenna 1/ Channel Mid



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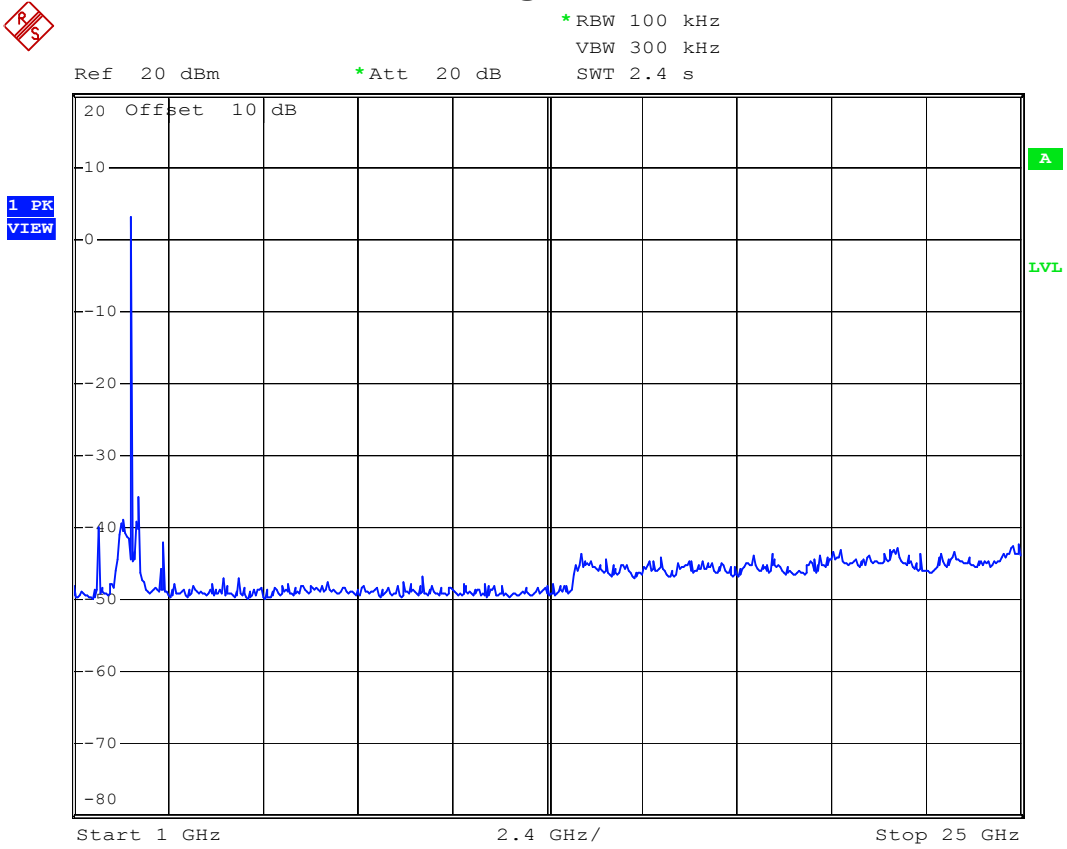

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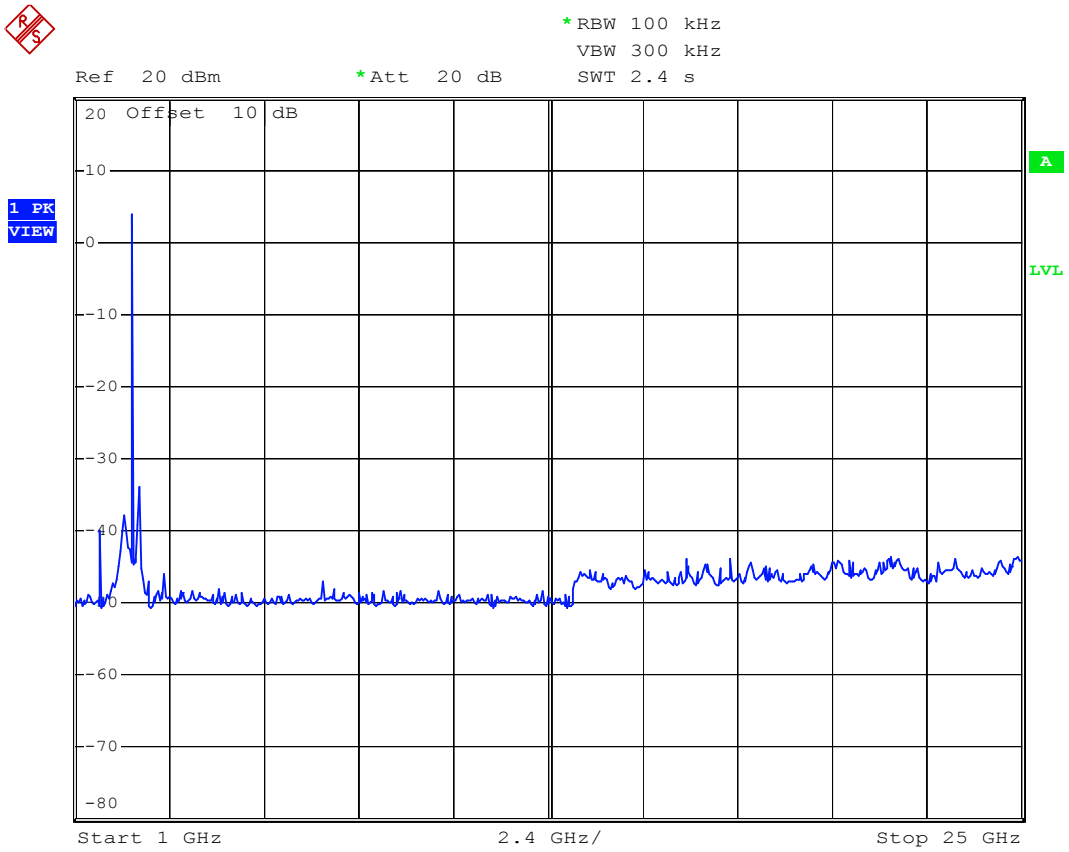

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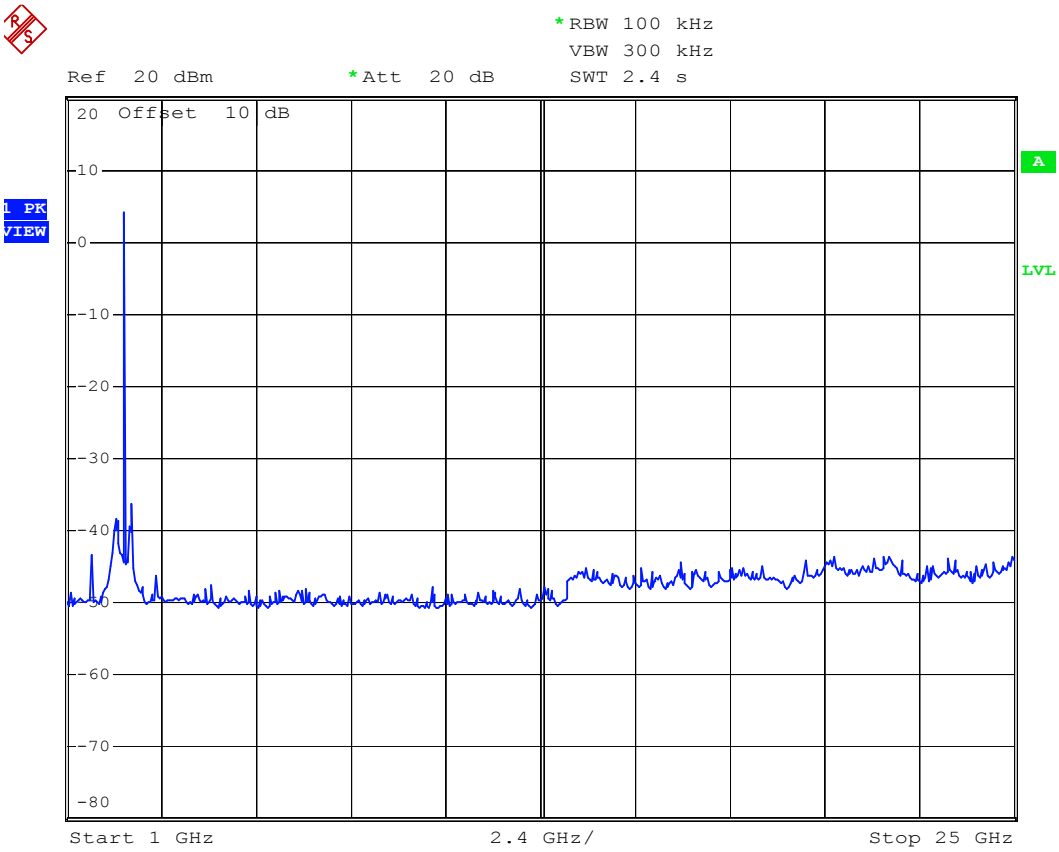
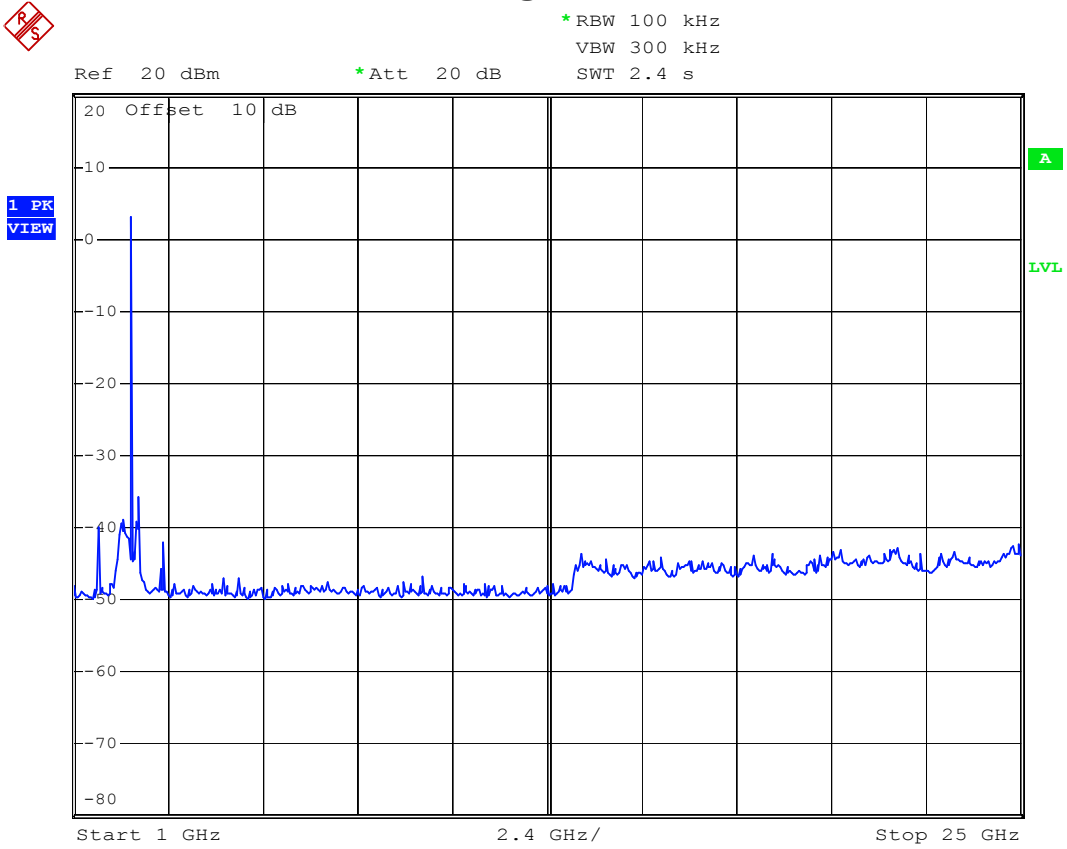
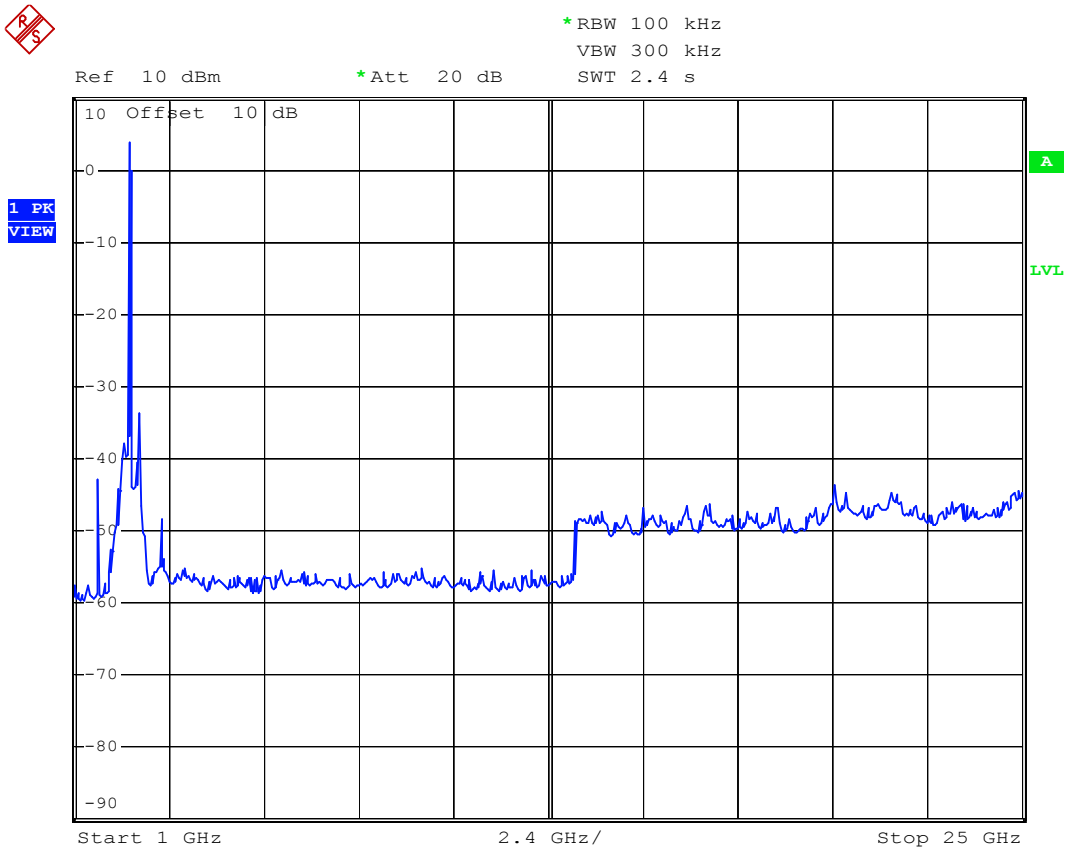


802.11n HT-20/Antenna 2/ Channel High



802.11n HT-40/Antenna 1/ Channel Low



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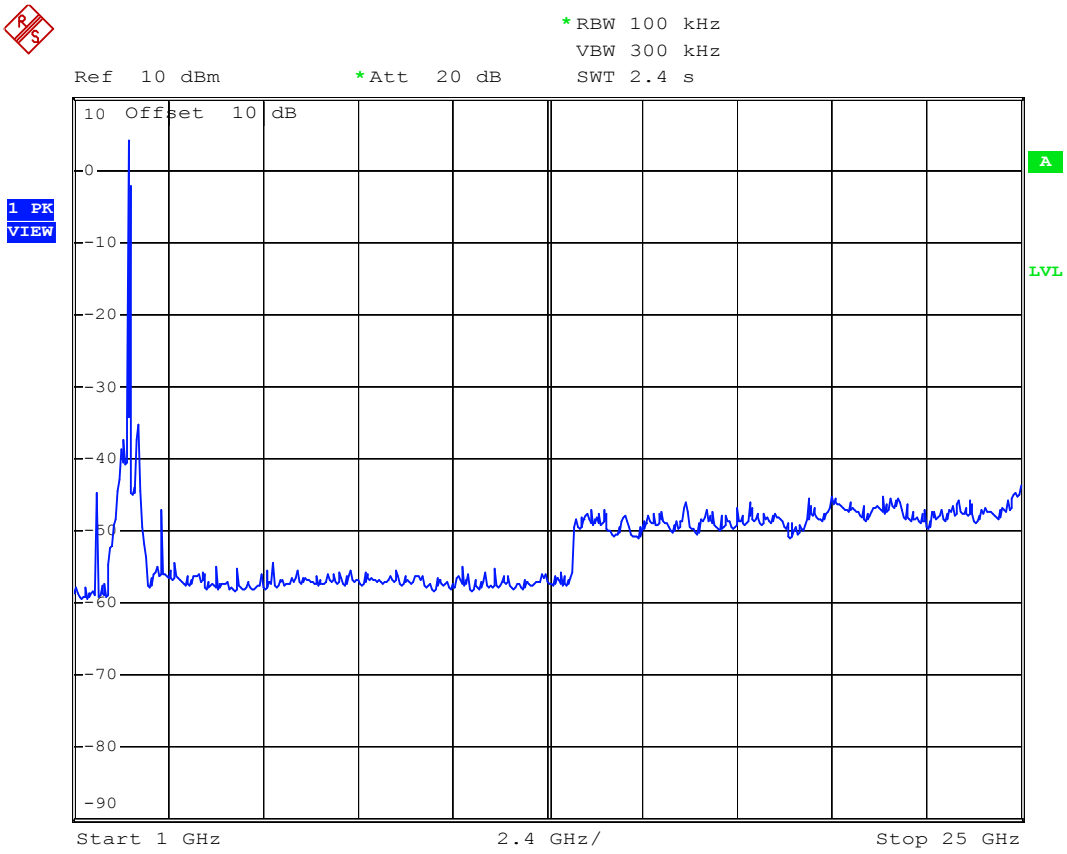
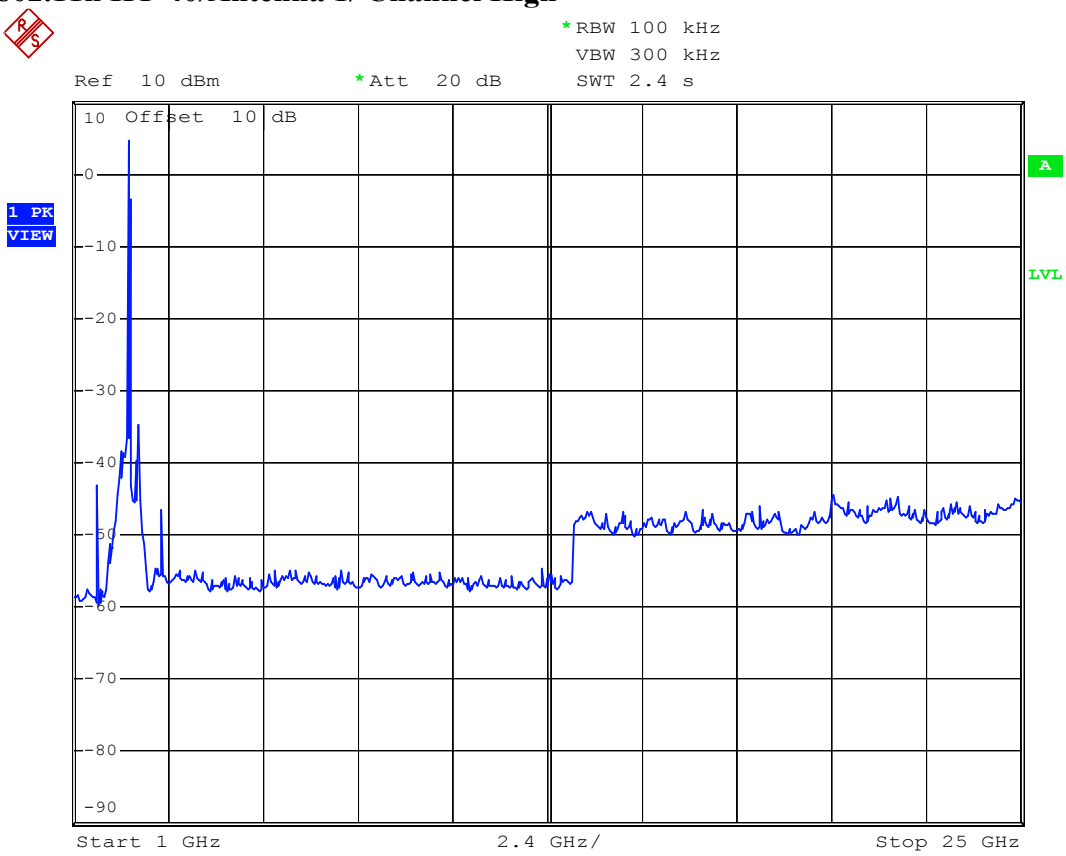


802.11n HT-40/Antenna 1/ Channel High



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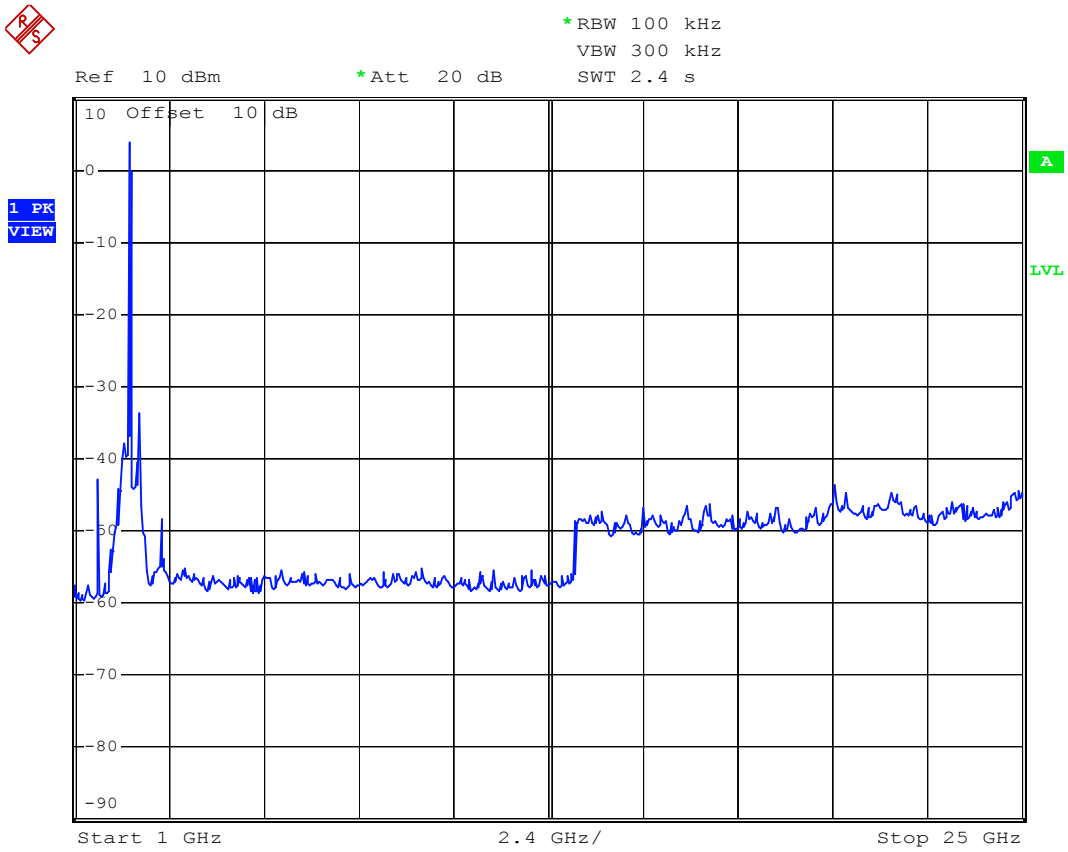

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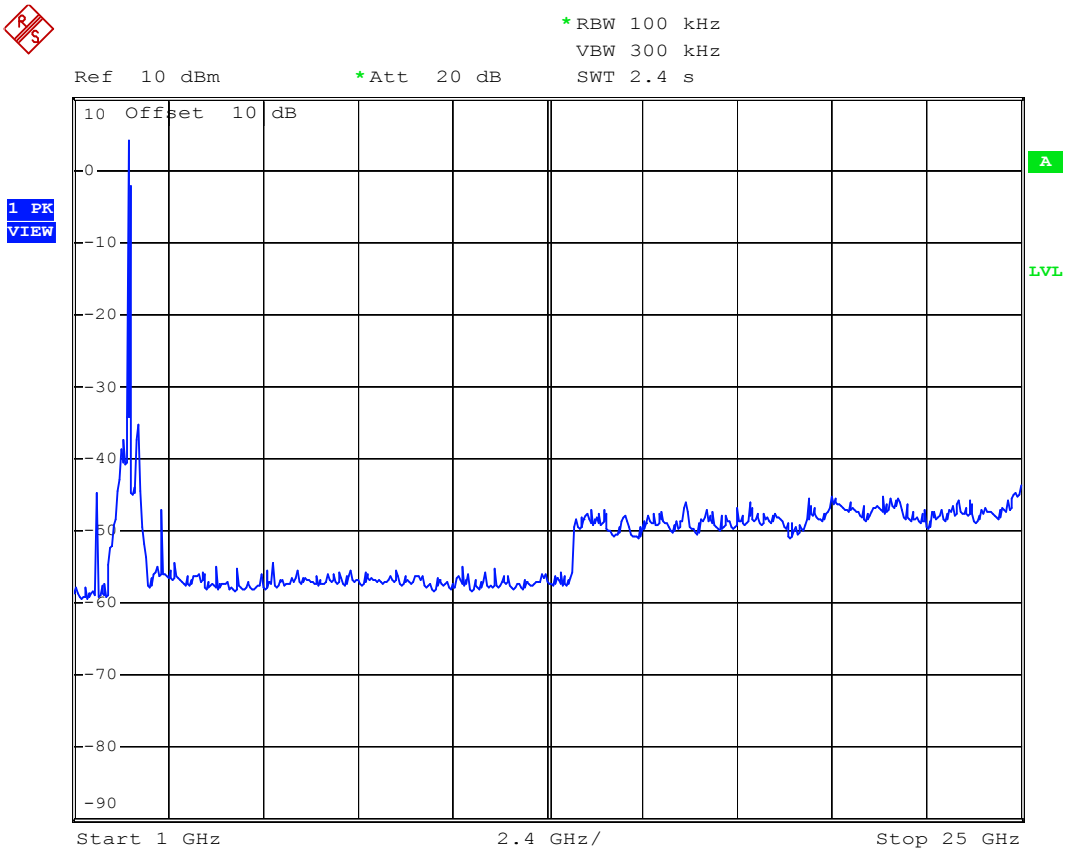

802.11n HT-40/Antenna 2/ Channel High