FCC PART 15.247

EMI MEASUREMENT AND TEST REPORT

For

Blupont Limited

Tianfa Building CD 218 RM, Tian'An Cyber Park, Tairan 5 Road, Futian District, Shenzhen, China

FCC ID:V36WL-700N-ART

Jun. 15, 2010

This Report Concerns: Original Report	Equipment Type： 802.11N WIRELESS ADAPTER
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Report No.:	BST10050552ER-3
Receive EUT Date/Test Date:	Jun. 08,2010/ Jun. 08-Jun. 15,2010
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1. GENERAL INFORMATION

1.1. Report information

1.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BST approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BST in any way guarantees the later performance of the product/equipment.

1.1.2.The sample/s mentioned in this report is/are supplied by Applicant, BST therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BST, unless the applicant has authorized BST in writing to do so.

Test Facility -
The test site used to collect the radiated data is located on the address of
emitel (Shenzhen) Limited
(FCC Registered Test Site Number: 746887) on
Building 2, 171 Meihua Road, Futian District, Shenzhen, 518049 China
The Test Site is constructed and calibrated to meet the FCC requirements.

1.2. Measurement Uncertainty

Available upon request.

2. PRODUCT DESCRIPTION

2.1. EUT Description

Applicant	:	Blupont Limited
Address	:	Tianfa Building CD 218 RM, Tian'An Cyber Park, Tairan 5 Road, Futian District, Shenzhen, China
Manufacturer	:	Blupont Limited
Address	:	Tianfa Building CD 218 RM, Tian'An Cyber Park, Tairan 5 Road, Futian District, Shenzhen, China
EUT Description	:	802.11N WIRELESS ADAPTER
Trade Name	:	BLUPONT
Modulation	:	OFDM
Model Number	:	WL-700N-ART
Antenna connected	:	Soldered
Antenna gain	:	0dBi(2.4GHz)
Antenna Manufacturer		Shuang ying electronics.,LTD.

2.2. Block Diagram of EUT Configuration

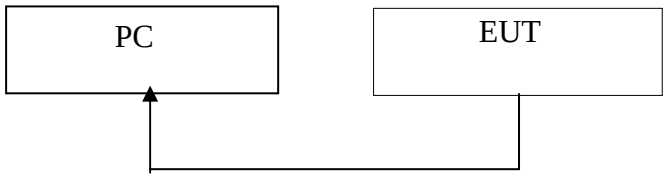


Figure 1 EUT SETUP

2.3. Support Equipment List

Table 2 Ancillary Equipment

Name	Model No	S/N	Manufacturer	Used "√"
PC	DELL 162L	CN-0TC672-71521-610-F4Q5	DELL	√

2.4. Test Conditions

Temperature: 23~25℃
Relative Humidity: 55~63 %

3. FCC ID LABEL

FCC ID:V36WL-700N-ART

Label Location on EUT

EUT Bottom View/ FCC ID Label Location

4. TEST RESULTS SUMMARY

FCC 15 Subpart C,Paragraph 15.247

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247 (i), §1.1307 (b)(1)	Maximum Permissible Exposure (MPE)	Pass
§15.203	Antenna Requirement	Pass
§15.207 (a)	Conducted Emissions	N/A
§15.247(d)	Spurious Emissions at Antenna Port	Pass
§15.205	Restricted Bands	Pass
§15.209, §15.205, 1§15.247(d)	Spurious Emissions	Pass
§15.247 (a)(2)	6 dB Bandwidth	Pass
§15.247(b)(3)	Maximum Peak Output Power	Pass
§15.247(d)	100kHz Bandwidth of Frequency Band Edge	Pass
§15.247(e)	Power Spectral Density	Pass

Modifications

No modification was made.

5. TEST EQUIPMENT USED

Equipment/Facilities	Manufacturer	Model #	Serial no.	Date of Cal.	Cal. Interval
Cable	Resenberger	N/A	NO.1	Mar 10，2010	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 10，2010	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 10，2010	1 Year
LISN	Rohde＆Schwarz	ESH3-Z5	100305	Mar 10，2010	1 Year
50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10, 2010	1 Year
EMI Test Receiver	Rohde＆Schwarz	ESP13	100180	Oct.18,2009	1 Year
Spectrum Analyzer	Rohde＆Schwarz	FSP40	100273	Sep.10,2009	1 Year
3m Semi-Anechoic Chamber	Albatross Projects	9m×6m×6m	N/A	Feb.20,2010	1 Year
Signal Generator	FLUKE	PM5418 + Y/C	LO747012	Feb.20,2010	1 Year
Signal Generator	FLUKE	PM5418TX	LO738007	Feb.20,2010	1 Year
Loop Antenna	SCHWARZBECK	FMZB1516	113	Jan.30,2010	1 Year
Trilog-Super Broadband Antenna	SCHWARZBECK	VULB9161	9161-4079	Sep.22,2009	1 Year
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-564	Sep.22,2009	1 Year
Ultra Broadband Antenna	Rohde＆Schwarz	HL-562	100110	June.15,2009	1 Year
AMN	Rohde＆Schwarz	ESH3-Z5	100196	Oct.11,2009	1 Year
AMN	Rohde＆Schwarz	ESH3-Z5	100197	Oct.11,2009	1 Year
Pulse Limiter	Rohde＆Schwarz	ESH3-Z2	N/A	N/A	N/A
Power Meter	Rohde＆Schwarz	NRVD	100041	Feb.20,2010	1 Year
EMI Test Receiver	Rohde＆Schwarz	ESCS30	100003	Feb.20,2010	1 Year
Coaxial Cable with N-connectors	SCHWARZBECK	AK9515H	95549	Sep.22,2009	1 Year
Radio Communication Test Set	Rohde＆Schwarz	CMS 54	846621/024	Feb.20,2010	1 Year
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb.20,2010	1 Year
Absorbing clamp	Rohde＆Schwarz	MDS-21	N/A	Oct.29,2009	1 Year

6. §15.247 (I) AND §1.1307 (B) (1) - MaximuM Permissible exposure (MPE)

6.1. Standard Applicable

According to subpart 15.247 (i) and subpart 1.1307 (b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3–3.0	614	1.63	*(100)	30
3.0–30	824/f	2.19/f	*(180/f2)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

6.2. Test Data

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$S = PG/4\pi R^2$
S: Power density, in mW/cm^2
P: Power input to the antenna, in mW
G: numeric gain of the antenna
R: distance to the center of the antenna, in cm

802.11b Mode

Maximum peak output power at antenna input terminal (dBm):	18.21
Maximum peak output power at antenna input terminal (mW):	66.222
Prediction distance (cm):	20
Prediction frequency (MHz):	2412
Antenna Gain, typical (dBi):	2.2
Maximum Antenna Gain (numeric):	1.66
Power density at predication frequency and distance (mW/cm^2):	0.0219
MPE limit for Occupational exposure at predication frequency (mW/cm^2):	1.0

802.11g Mode

Maximum peak output power at antenna input terminal (dBm):	14.58
Maximum peak output power at antenna input terminal (mW):	28.708
Prediction distance (cm):	20
Prediction frequency (MHz):	2437
Antenna Gain, typical (dBi):	2.2
Maximum Antenna Gain (numeric):	1.66
Power density at predication frequency and distance (mW/cm^2):	0.0095
MPE limit for Occupational exposure at predication frequency (mW/cm^2):	1.0

802.11n20 Mode

Maximum peak output power at antenna input terminal (dBm):	17.36
Maximum peak output power at antenna input terminal (mW):	54.450
Prediction distance (cm):	20
Prediction frequency (MHz):	2412
Antenna Gain, typical (dBi):	2.2
Maximum Antenna Gain (numeric):	1.66
Power density at predication frequency and distance (mW/cm^2):	0.0180
MPE limit for Occupational exposure at predication frequency (mW/cm^2):	1.0

802.11n40 Mode

Maximum peak output power at antenna input terminal (dBm):	16.89
Maximum peak output power at antenna input terminal (mW):	48.865
Prediction distance (cm):	20
Prediction frequency (MHz):	2412
Antenna Gain, typical (dBi):	2.2
Maximum Antenna Gain (numeric):	1.66
Power density at predication frequency and distance (mW/cm^2):	0.0161
MPE limit for Occupational exposure at predication frequency (mW/cm^2):	1.0

6.3. Test Result

The device is compliant with the requirement MPE limit of General Population/Uncontrolled Exposure at predication frequency 1.0 mW/cm^2 .And the precaution is outlined in the user's manual to prevent to high level of RF energy.

7. §15.203 - ANTENNA REQUIREMENT

7.1. Standard Applicable

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.2. Antenna Connector Construction

The EUT uses a unique coupling antenna. The Antenna gain is 0dBi.please refer to the EUT internal photos.

8. §15.207 - CONDUCTED EMISSIONS

8.1. Applicable Standard

The specification used was with the FCC Part 15.207 limits.

8.2. Test Procedure

During the conducted emission test, the EUT was connected to the outlet of the LISN. Maximizing procedure was performed on the six (6) highest emissions of the EUT. All data was recorded in the Quasi-peak and average detection mode.

8.3. Conducted Power line Emission Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
Frequency Range (MHZ)	Class A QP/AV	Class B QP/AV
0.15-0.5	79/66	65-56/56-46
0.5-5.0	73/60	56-46
5.0-3.0	73/60	60-50

Note: In the above table, the tighter limit applies at the band edges.

8.4. Conducted Power Line Test Result

N/A

9. §15.209, §15.205, §15.247(D) - Spurious Emissions

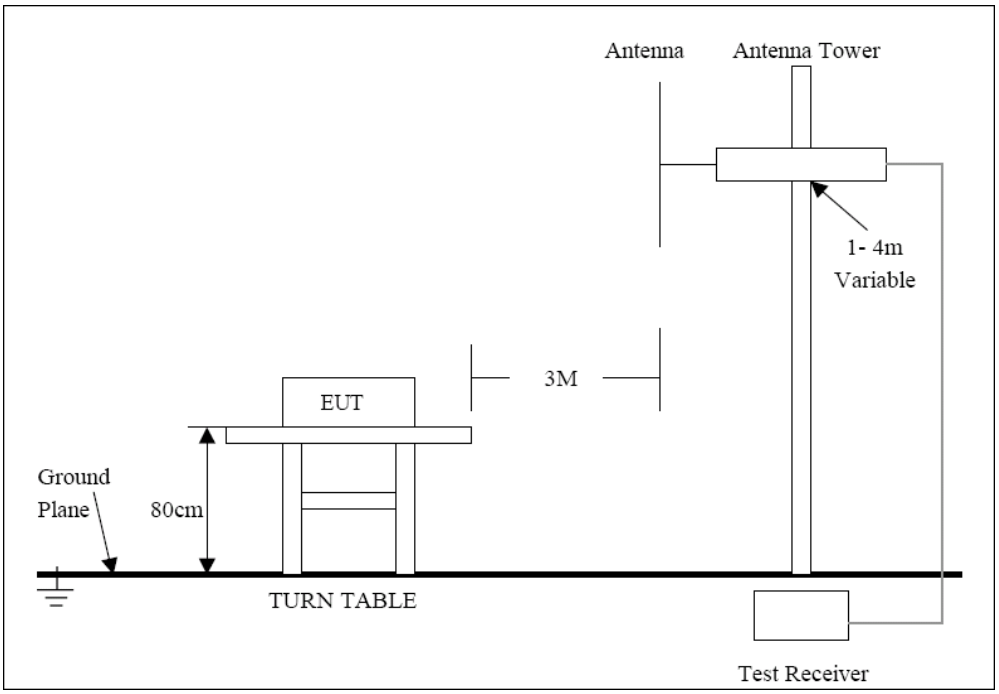
9.1. Test Equipment

Please refer to section 4 this report.

9.2. Test Procedure

The out of band emission tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part Subpart C limits.

9.3. Radiated Test Setup



For the accrual test configuration,pleas refer to the related items-photos of Testing.

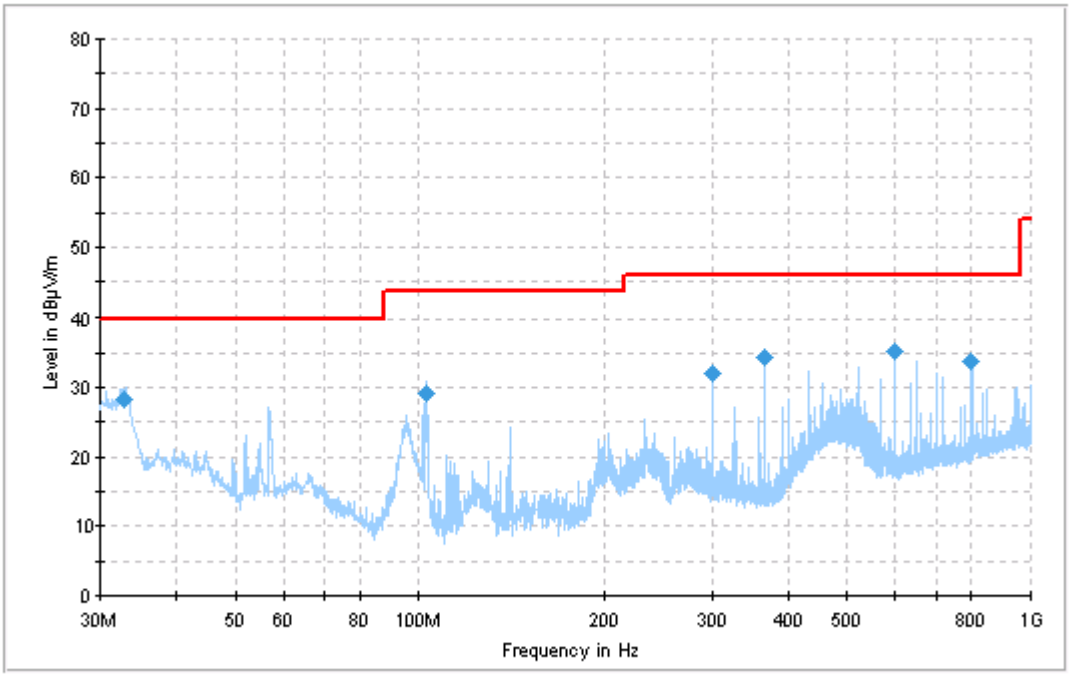
9.4. Radiated Emission Limit

CARRIER FREQUENCY WILL NOT EXCEEDS 48.0 dBuV/m AT 3M. OUT-OF-BAND EMISSIONS SHALL NOT EXCEED:

Frequency (MHz)	Distance (m)	Field Strength (dBuV/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
ABOVE 960	3	54.0

9.5. Radiated Emission Test Result

Test Mode: *Operating*



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
600.092375	35.2	105.0	V	3.0	-8.7	46.0	10.8
366.714625	34.4	171.0	V	0.0	-12.9	46.0	11.6
32.817875	28.3	334.0	H	284.0	-10.5	40.0	11.7
800.124350	33.7	129.0	V	179.0	-5.4	46.0	12.3
300.023750	32.0	110.0	H	334.0	-3.5	46.0	14.0
102.871250	29.1	142.0	H	0.0	-3.9	43.5	14.4

Above 1GHz:
802.11b

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
3216.17	37.12	AV	152	1.0	H	33.20	3.49	27.71	46.10	54	7.90
3216.25	38.24	AV	360	1.0	V	31.40	3.49	27.71	45.42	54	8.58
4824.00	26.16	AV	46	1.1	V	35.00	4.30	27.51	37.95	54	16.05
4824.00	24.15	AV	215	1.2	H	36.30	4.30	27.51	37.24	54	16.76
4824.00	38.32	PK	46	1.1	V	35.00	4.30	27.51	50.11	74	23.89
4824.00	36.45	PK	215	1.2	H	36.30	4.30	27.51	49.54	74	24.46
3216.25	41.40	PK	360	1.0	V	31.40	3.49	27.71	48.58	74	25.42
3216.17	39.56	PK	152	1.0	H	33.20	3.49	27.71	48.54	74	25.46
Middle Channel (2437MHz)											
3249.00	36.34	AV	53	1.0	H	33.20	3.49	27.71	45.32	54	8.68
3249.00	35.64	AV	360	1.0	V	31.40	3.49	27.71	42.82	54	11.18
4874.00	24.68	AV	35	1.3	H	36.30	4.30	27.51	37.77	54	16.23
4874.00	25.96	AV	33	1.1	V	35.00	4.30	27.51	37.75	54	16.25
4874.00	38.12	PK	33	1.1	V	35.00	4.30	27.51	49.91	74	24.09
4874.00	36.26	PK	35	1.3	H	36.30	4.30	27.51	49.35	74	24.65
3249.00	38.26	PK	53	1.0	H	33.20	3.49	27.71	47.24	74	26.76
3249.00	37.56	PK	360	1.0	V	31.40	3.49	27.71	44.74	74	29.26
HighChannel (2462MHz)											
2498.53	44.58	AV	329	1.1	V	30.60	3.10	27.54	50.74	54	3.26*
2498.76	35.16	AV	110	1.0	H	31.50	3.10	27.54	42.22	54	11.78
4924.00	25.61	AV	160	1.4	H	36.60	4.37	26.58	40.00	54	14.00
4924.00	26.68	AV	36	1.2	V	35.40	4.37	26.58	39.87	54	14.13
2498.53	56.84	PK	329	1.1	V	30.60	3.10	27.54	63.00	74	11.00
2498.76	47.02	PK	110	1.0	H	31.50	3.10	27.54	54.08	74	19.92
4924.00	38.62	PK	36	1.2	V	35.40	4.37	26.58	51.81	74	22.19
4924.00	37.11	PK	160	1.4	H	36.60	4.37	26.58	51.50	74	22.50

802.11g

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
2349.49	43.56	AV	172	1.1	V	30.30	3.01	27.54	49.33	54	4.67
3215.91	34.89	AV	152	1.0	H	33.20	3.49	27.71	43.87	54	10.13
4824.00	23.45	AV	215	1.2	H	36.30	4.30	27.51	36.54	54	17.46
4824.00	24.56	AV	215	1.0	V	35.00	4.30	27.51	36.35	54	17.65
2349.49	55.72	PK	172	1.1	V	30.30	3.01	27.54	61.49	74	12.51
4824.00	36.78	PK	215	1.0	V	35.00	4.30	27.51	48.57	74	25.43
4824.00	35.26	PK	215	1.2	H	36.30	4.30	27.51	48.35	74	25.65
3215.91	37.80	PK	152	1.0	H	33.20	3.49	27.71	46.78	74	27.22
Middle Channel (2437MHz)											
3249.34	36.36	AV	360	1.0	H	33.20	3.49	27.71	45.34	54	8.66
3249.00	34.02	AV	33	1.0	V	31.40	3.49	27.71	41.20	54	12.80
4874.00	23.78	AV	220	1.1	H	36.30	4.30	27.51	36.87	54	17.13
4874.00	23.78	AV	185	1.0	V	35.00	4.30	27.51	35.57	54	18.43
4874.00	35.65	PK	220	1.1	H	36.30	4.30	27.51	48.74	74	25.26
3249.34	39.41	PK	360	1.0	H	33.20	3.49	27.71	48.39	74	25.61
4874.00	35.99	PK	185	1.0	V	35.00	4.30	27.51	47.78	74	26.22
3249.00	36.99	PK	33	1.0	V	31.40	3.49	27.71	44.17	74	29.83
HighChannel (2462MHz)											
2483.62	44.86	AV	27	1.0	V	30.60	3.08	27.54	51.00	54	3.00*
2486.53	39.06	AV	1.2	1.5	H	31.50	3.08	27.54	46.10	54	7.90
4924.00	24.52	AV	215	1.1	H	36.60	4.37	26.58	38.91	54	15.09
4924.00	25.04	AV	318	1.2	V	35.40	4.37	26.58	38.23	54	15.77
2483.62	58.16	PK	27	1.0	V	30.60	3.08	27.54	64.30	74	9.70
4924.00	36.68	PK	215	1.1	H	36.60	4.37	26.58	51.07	74	22.93
4924.00	37.12	PK	318	1.2	V	35.40	4.37	26.58	50.31	74	23.69
2486.53	51.16	PK	1.2	1.0	H	31.50	3.08	27.54	58.20	74	15.80

802.11n 20

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
3216.63	40.80	AV	140	1.3	H	33.20	3.49	27.71	49.78	54	4.22
3216.63	41.26	AV	160	1.1	V	31.40	3.49	27.71	48.44	54	5.56
4824.00	24.36	AV	220	1.0	H	36.30	4.30	27.51	37.45	54	16.55
4824.00	23.69	AV	180	1.3	V	35.00	4.30	27.51	35.48	54	18.52
3216.63	43.90	PK	140	1.3	H	33.20	3.49	27.71	52.88	74	21.12
3216.63	43.89	PK	160	1.1	V	31.40	3.49	27.71	51.07	74	22.93
4824.00	36.14	PK	220	1.0	H	36.30	4.30	27.51	49.23	74	24.77
4824.00	35.36	PK	180	1.3	V	35.00	4.30	27.51	47.15	74	26.85
Middle Channel (2437MHz)											
2503.67	44.21	AV	145	1.0	V	30.06	3.10	27.54	49.83	54	4.17
2503.67	37.56	AV	300	1.0	H	31.50	3.10	27.54	44.62	54	9.38
4874.00	24.86	AV	210	1.0	H	36.30	4.30	27.51	37.95	54	16.05
4874.00	24.01	AV	120	1.4	V	35.00	4.30	27.51	35.80	54	18.20
4874.00	37.15	PK	210	1.0	H	36.30	4.30	27.51	50.24	74	23.76
4874.00	36.47	PK	120	1.4	V	35.00	4.30	27.51	48.26	74	25.74
2503.67	56.49	PK	145	1.0	V	30.06	3.10	27.54	62.11	74	11.89
2503.67	50.94	PK	300	1.0	H	31.50	3.10	27.54	58.00	74	16.00
HighChannel (2462MHz)											
3282.54	38.45	AV	247	1.5	H	32.90	3.49	27.71	47.13	54	6.87
3282.54	38.87	AV	175	1.0	V	31.40	3.49	27.71	46.05	54	7.95
4924.00	25.46	AV	215	1.1	H	36.60	4.37	26.58	39.85	54	14.15
4924.00	23.75	AV	180	1.0	V	35.40	4.37	26.58	36.94	54	17.06
4924.00	37.89	PK	215	1.1	H	36.60	4.37	26.58	52.28	74	21.72
4924.00	36.01	PK	180	1.0	V	35.40	4.37	26.58	49.20	74	24.80
3282.54	41.36	PK	247	1.5	H	32.90	3.49	27.71	50.04	74	23.96
3282.54	41.78	PK	175	1.0	V	31.40	3.49	27.71	48.96	74	25.04

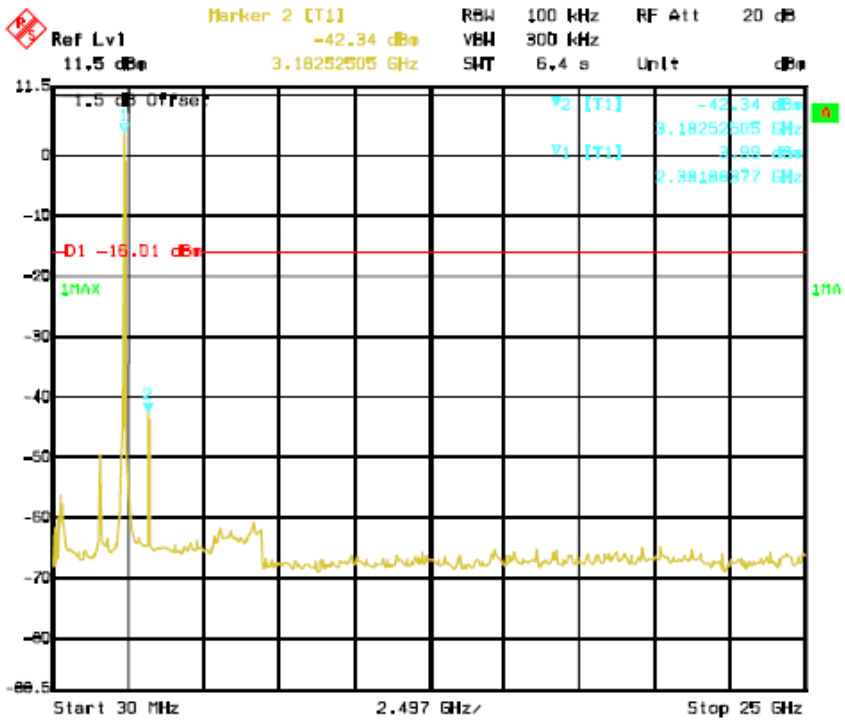
802.11n 40

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
3231.11	39.87	AV	69	1.0	H	33.20	3.49	27.71	48.85	54	5.15
3231.11	39.78	AV	120	1.0	V	31.40	3.49	27.71	46.96	54	7.04
4844.00	25.36	AV	312	1.2	H	36.30	4.30	27.51	38.45	54	15.55
4844.00	24.13	AV	246	1.1	V	35.00	4.30	27.51	35.92	54	18.08
3231.11	42.93	PK	69	1.0	H	33.20	3.49	27.71	51.91	74	22.09
3231.11	42.86	PK	120	1.0	V	31.40	3.49	27.71	50.04	74	23.96
4844.00	37.12	PK	312	1.2	H	36.30	4.30	27.51	50.12	74	23.79
4844.00	36.48	PK	246	1.1	V	35.00	4.30	27.51	48.27	74	25.73
Middle Channel (2437MHz)											
3250.59	39.42	AV	54	1.0	H	33.20	3.49	27.71	48.40	54	5.60
3249.34	38.56	AV	325	1.0	V	31.40	3.49	27.71	45.74	54	8.26
4874.00	25.76	AV	325	1.3	H	36.30	4.30	27.51	38.85	54	15.15
4874.00	24.92	AV	160	1.1	V	35.00	4.30	27.51	36.71	54	17.29
3250.59	42.32	PK	54	1.0	H	33.20	3.49	27.71	51.30	74	22.70
4874.00	38.01	PK	325	1.3	H	36.30	4.30	27.51	51.10	74	22.90
3249.34	41.80	PK	325	1.0	V	31.40	3.49	27.71	48.98	74	25.02
4874.00	37.16	PK	160	1.1	V	35.00	4.30	27.51	48.95	74	25.05
HighChannel (2462MHz)											
3271.23	39.75	AV	160	1.2	H	32.90	3.49	27.71	48.43	54	5.57
3271.23	38.12	AV	120	1.1	V	31.40	3.49	27.71	45.30	54	8.70
4904.00	26.12	AV	35	1.3	H	36.60	4.37	26.58	40.51	54	13.49
4904.00	25.47	AV	216	1.2	V	35.40	4.37	26.58	38.66	54	15.34
4904.00	38.36	PK	35	1.3	H	36.60	4.37	26.58	52.78	74	21.25
4904.00	37.68	PK	216	1.2	V	35.40	4.37	26.58	50.87	74	23.13
3271.23	41.81	PK	160	1.2	H	32.90	3.49	27.71	50.49	74	23.51
3282.54	40.66	PK	120	1.3	V	31.40	3.49	27.71	47.84	74	26.16

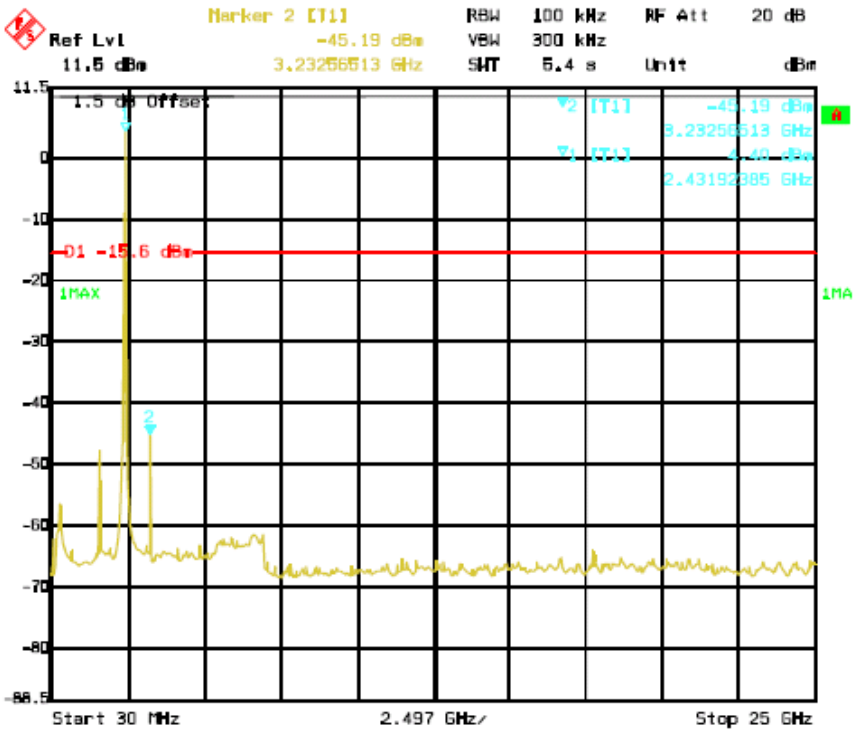
Antenna port conducted spurious emissions

802.11b mode:

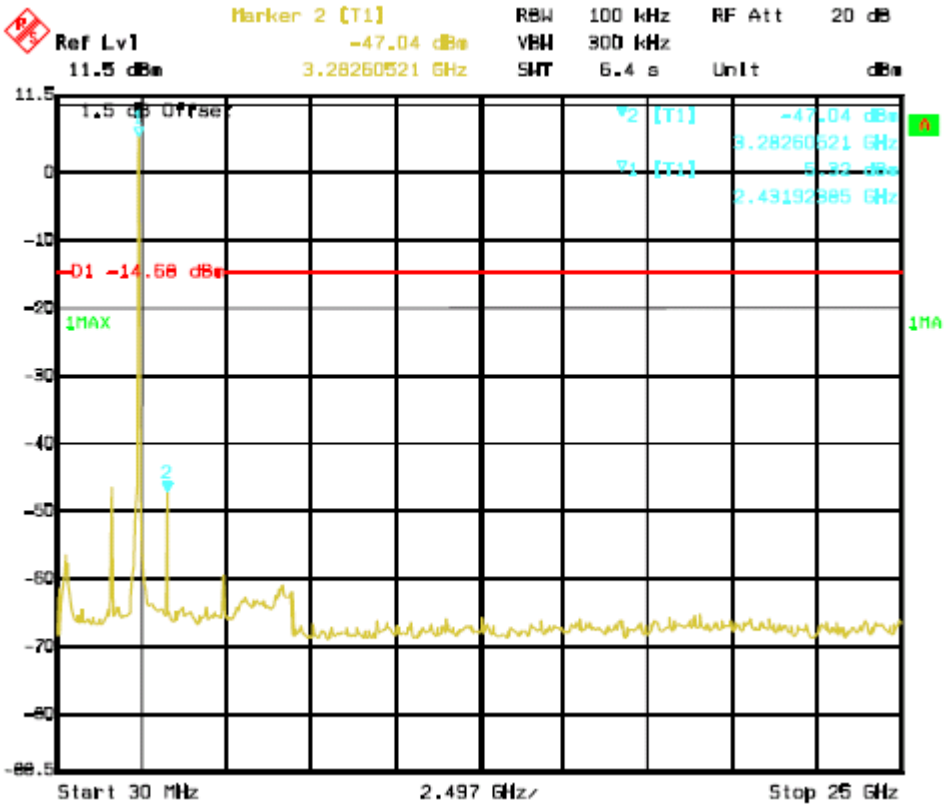
Low channel



Middle channel

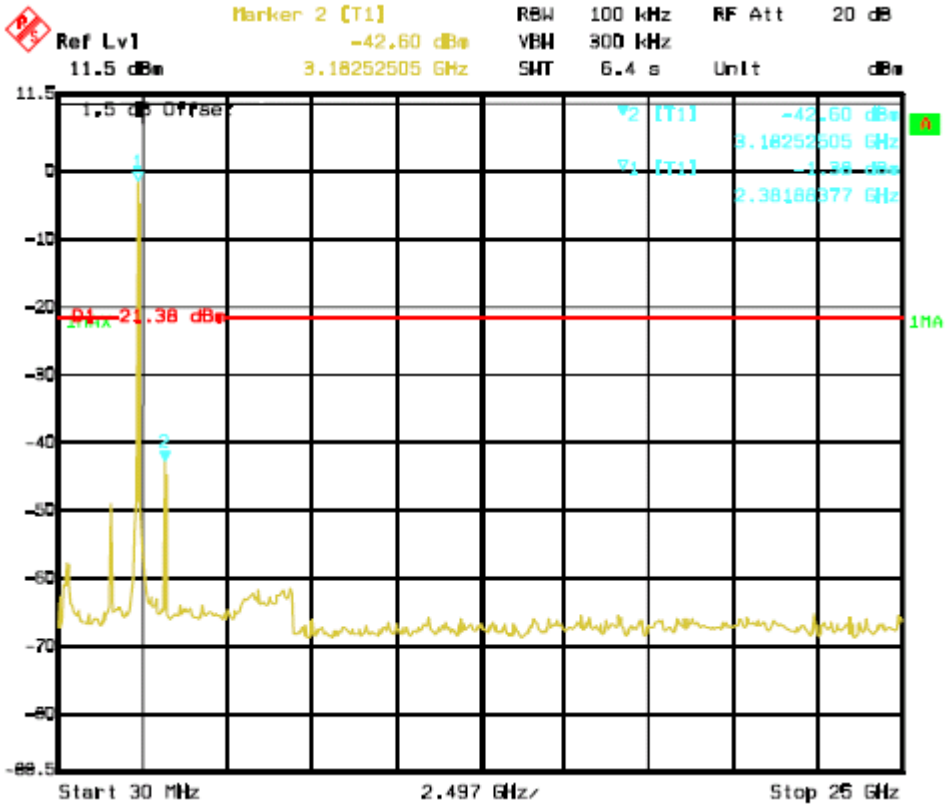


High channel

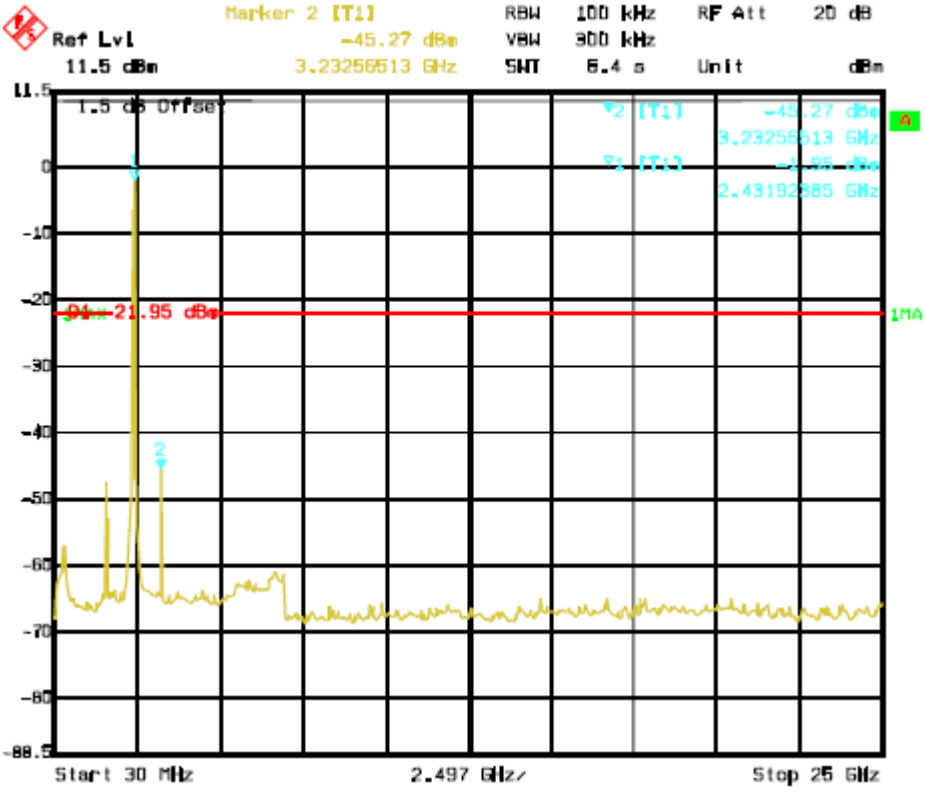


802.11g mode:

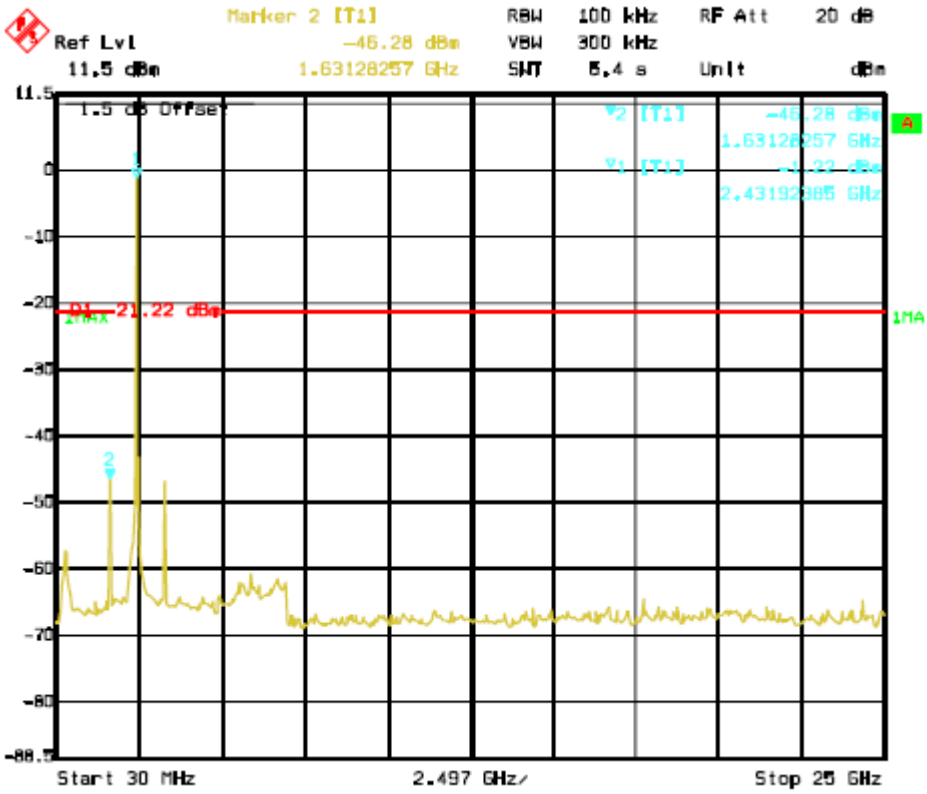
Low channel



Middle channel

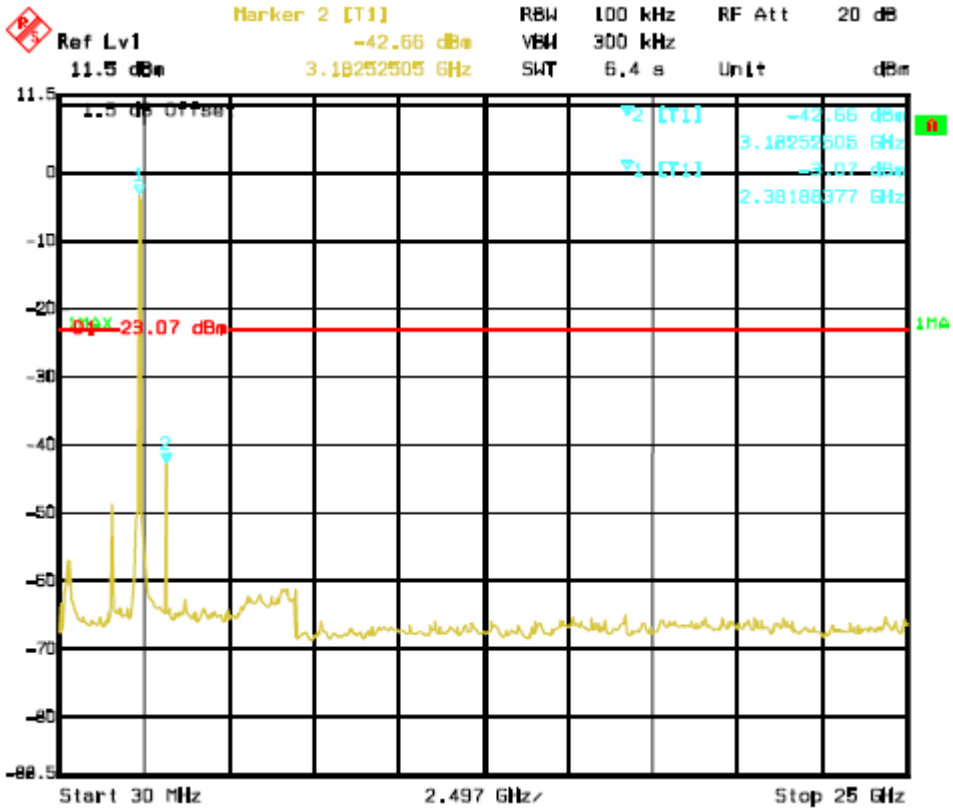


High channel

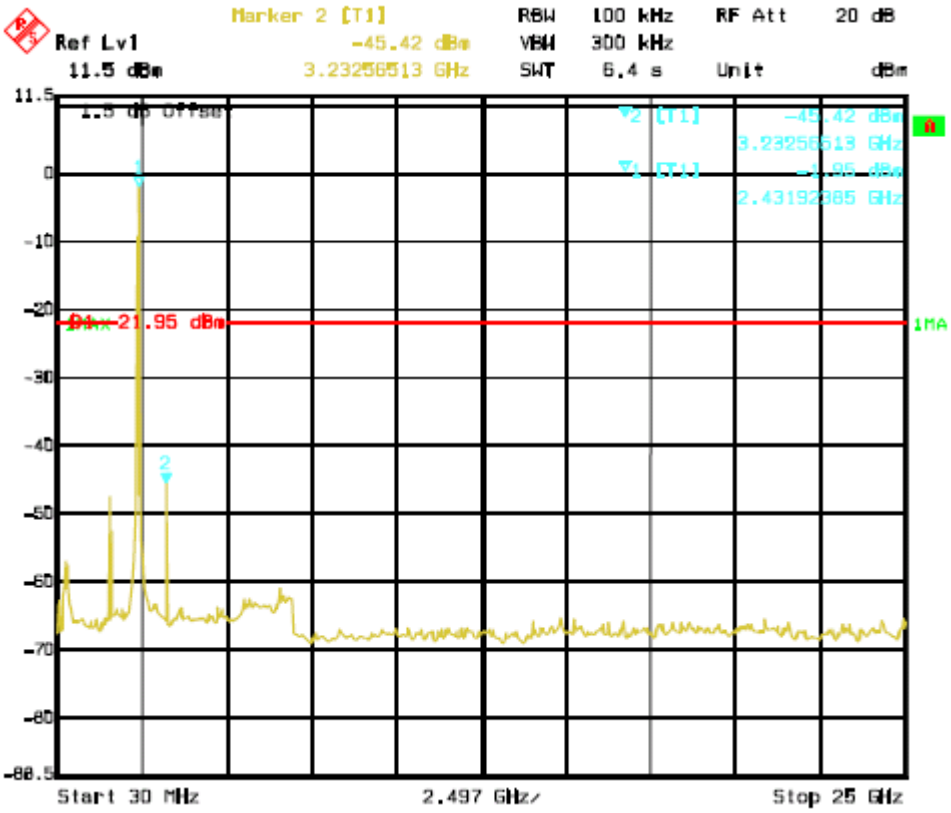


802.11n 20 mode:

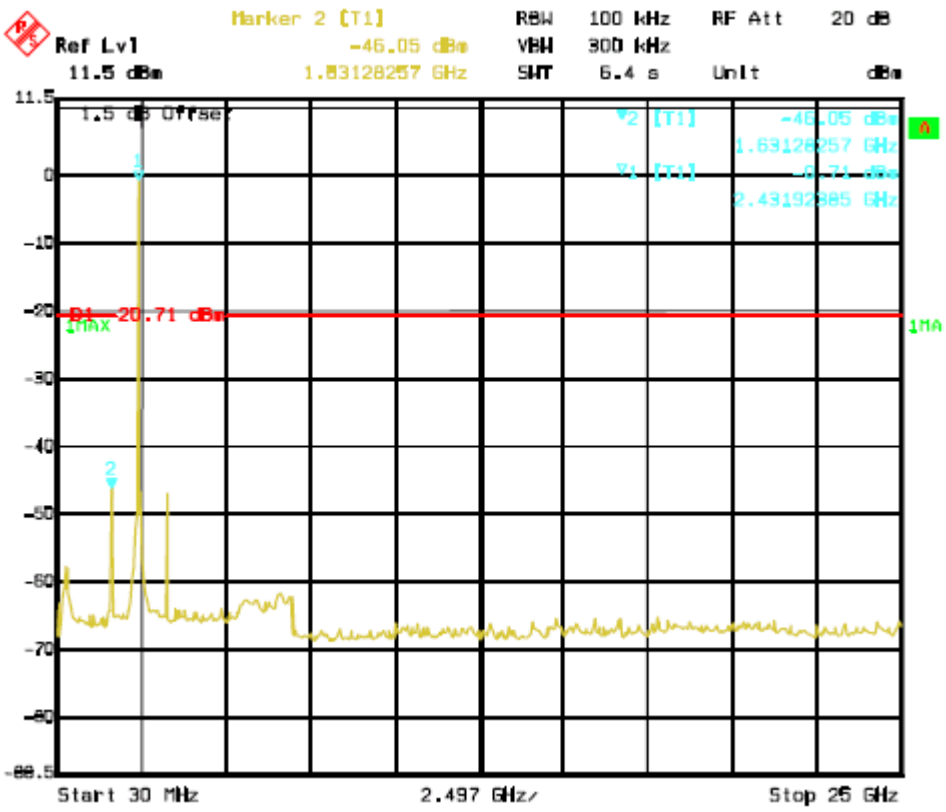
Low channel



Middle channel

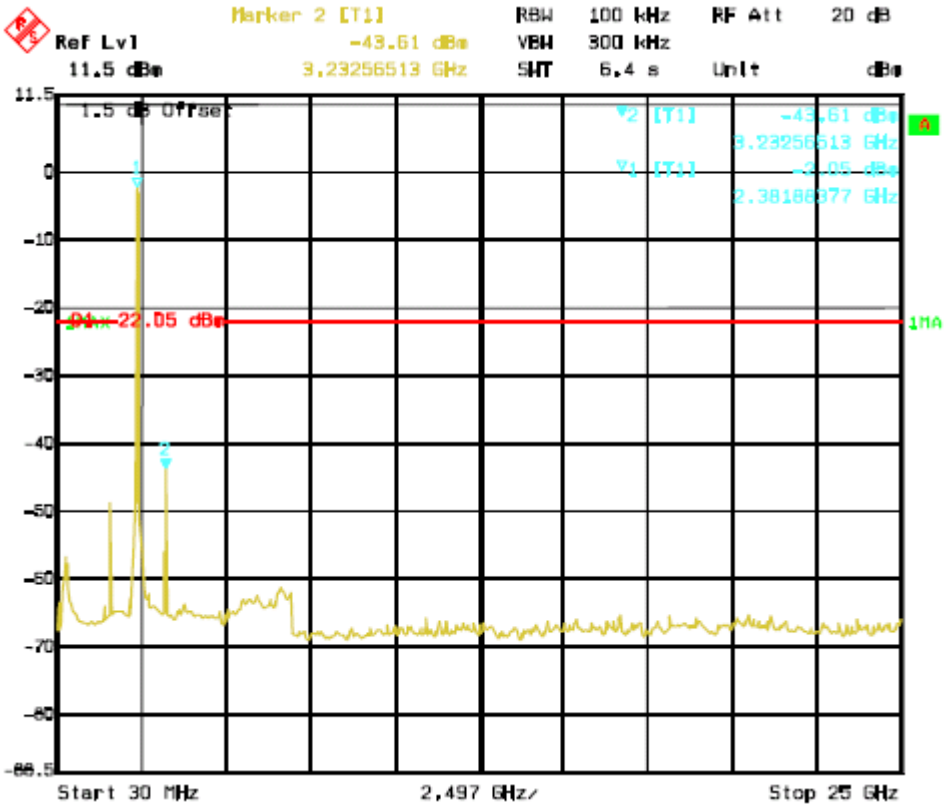


High channel

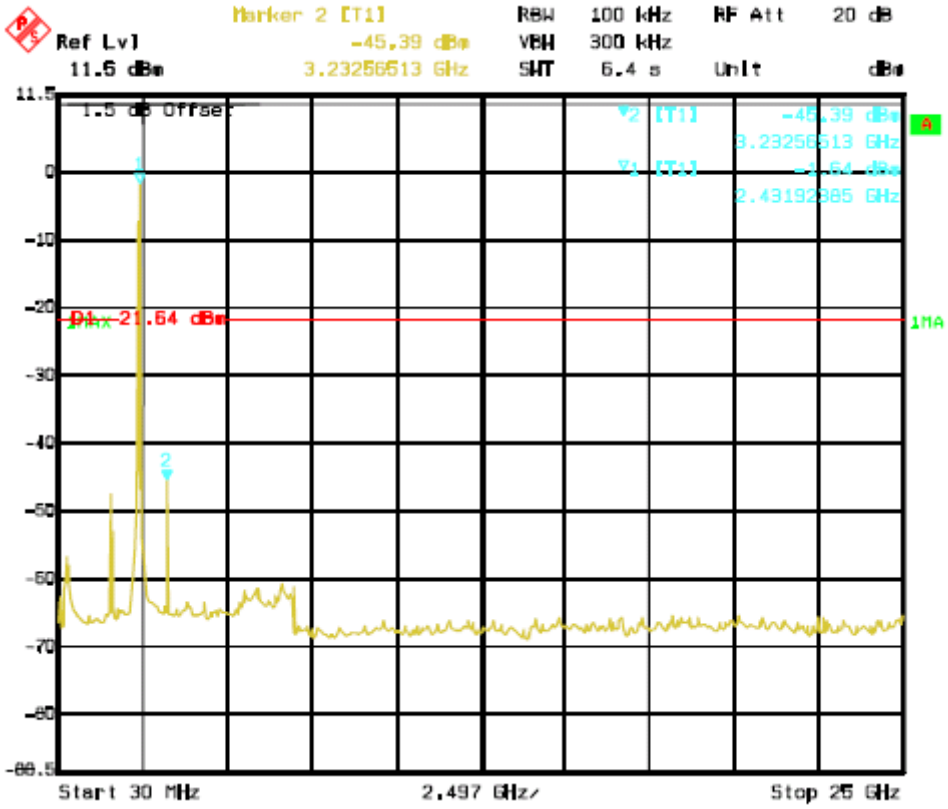


802.11n 40 mode:

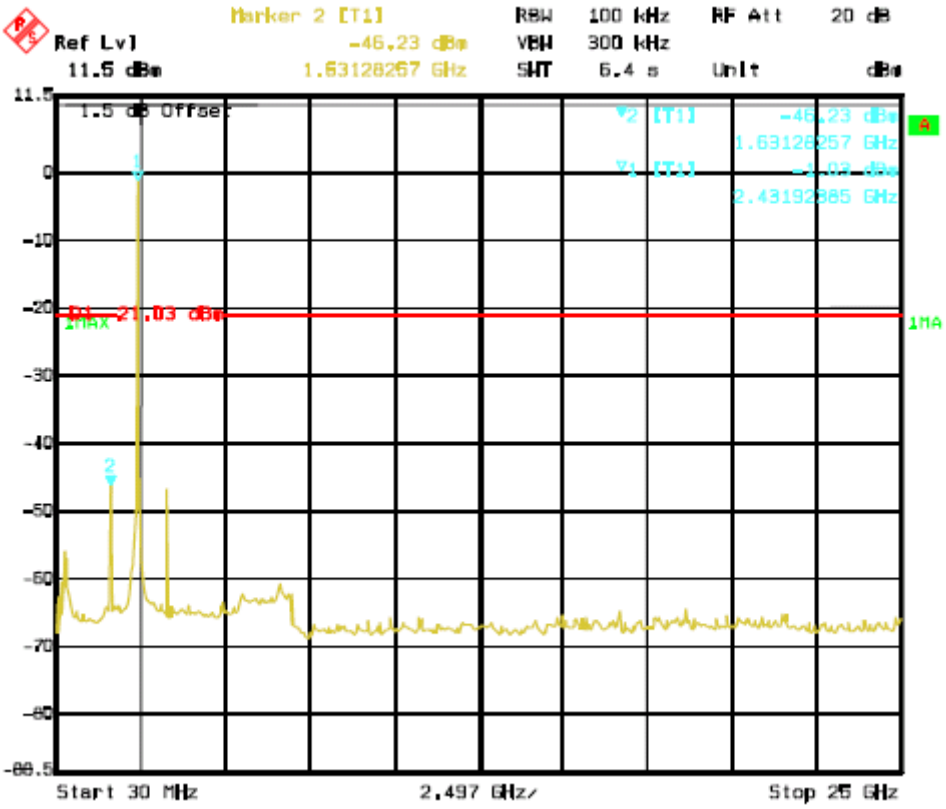
Low channel



Middle channel



High channel



10. §15.247(A) (2) – 6DB BANDWIDTH TESTING

10.1. Test Equipment

Please refer to Section 4 this report.

10.2.Test Procedure

1. Set EUT in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100KHz,VB𝕎≥RBW,Span=40MHz,Sweep=auto.
4. Mark the peak frequency and -6dB(upper and lower)frequency.
5. Repeat until all the rest channels are investigated.

10.3.Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

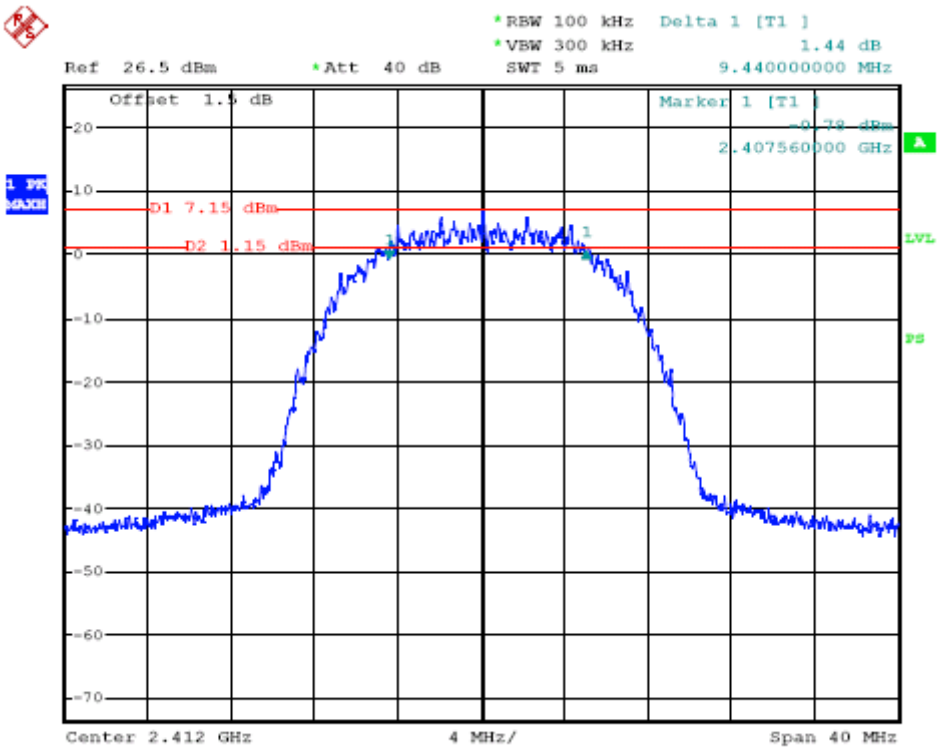
10.3.Test Result:Pass.

Please refer to the following tables

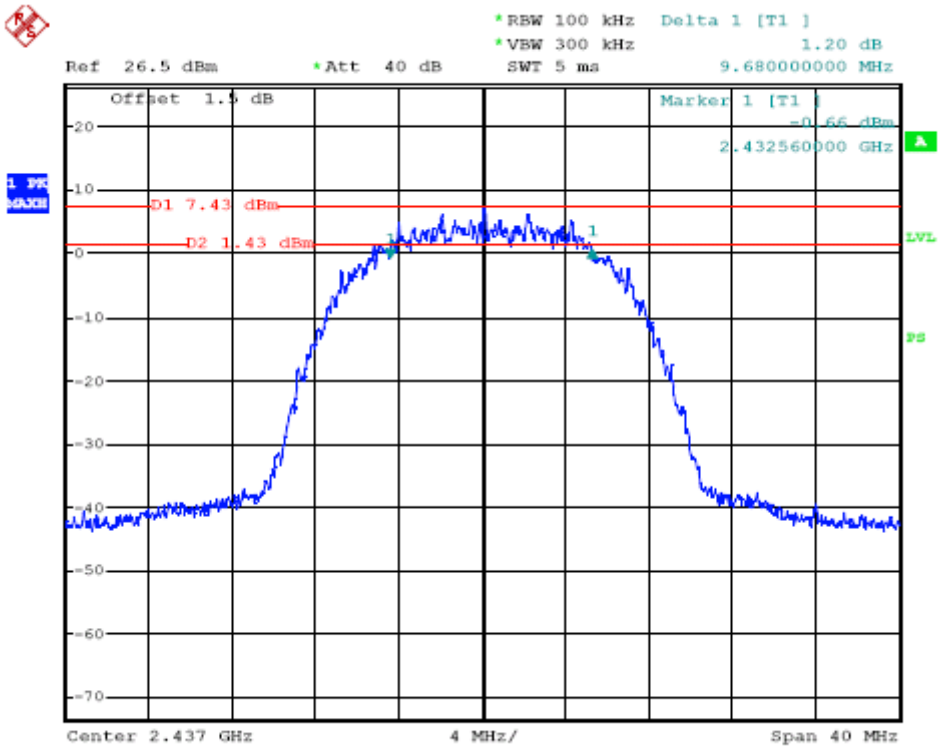
Channel Frequency (MHz)	Data Rate (Mbps)	6dB Bandwidth (kHz)	Limit (kHz)	Ref. Plot
802.11b Mode				
2412	1	9440	＞500	PLOT 1
2437	1	9680	＞500	PLOT 2
2462	1	9920	＞500	PLOT 3
802.11g Mode				
2412	6	16520	＞500	PLOT 4
2437	6	16640	＞500	PLOT 5
2462	6	16560	＞500	PLOT 6
802.11n 20 Mode				
2412	6.5	17680	＞500	PLOT 7
2437	6.5	17520	＞500	PLOT 8
2462	6.5	17680	＞500	PLOT 9
802.11n 40 Mode				
2412	6.5	36800	＞500	PLOT 10
2437	6.5	36800	＞500	PLOT 11
2462	6.5	36640	＞500	PLOT 12

802.11b Mode:

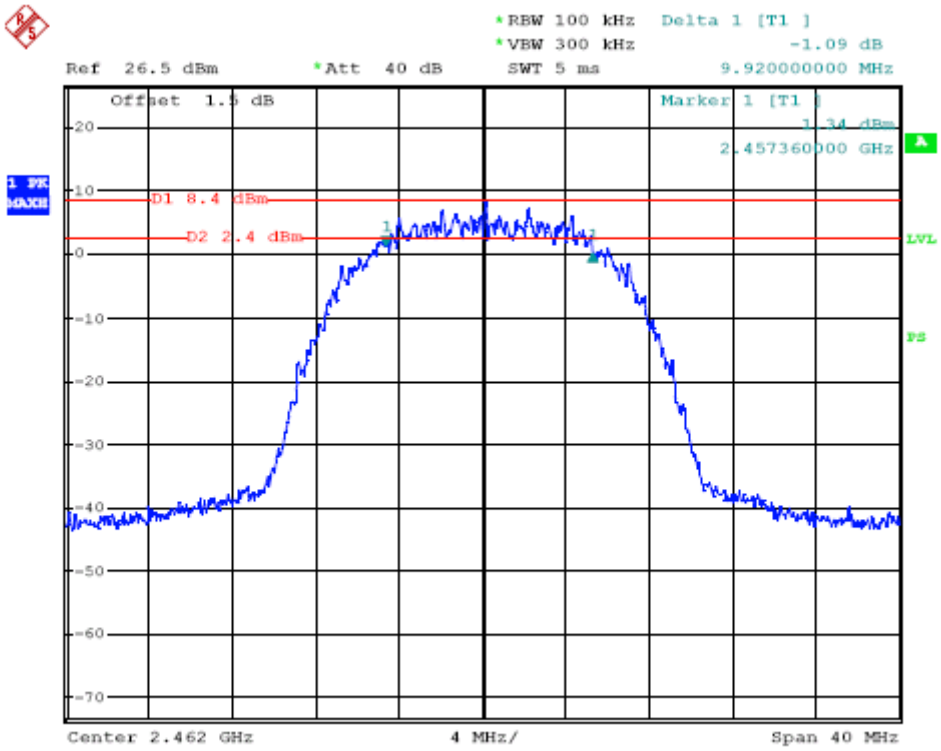
Low Channel



Middle Channel

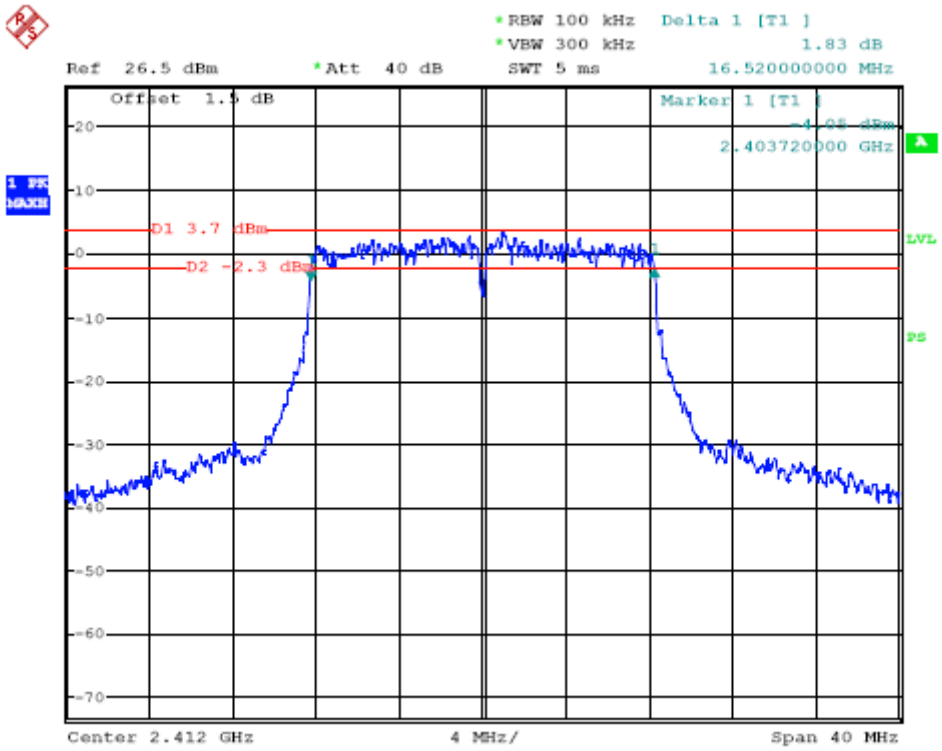


High Channel

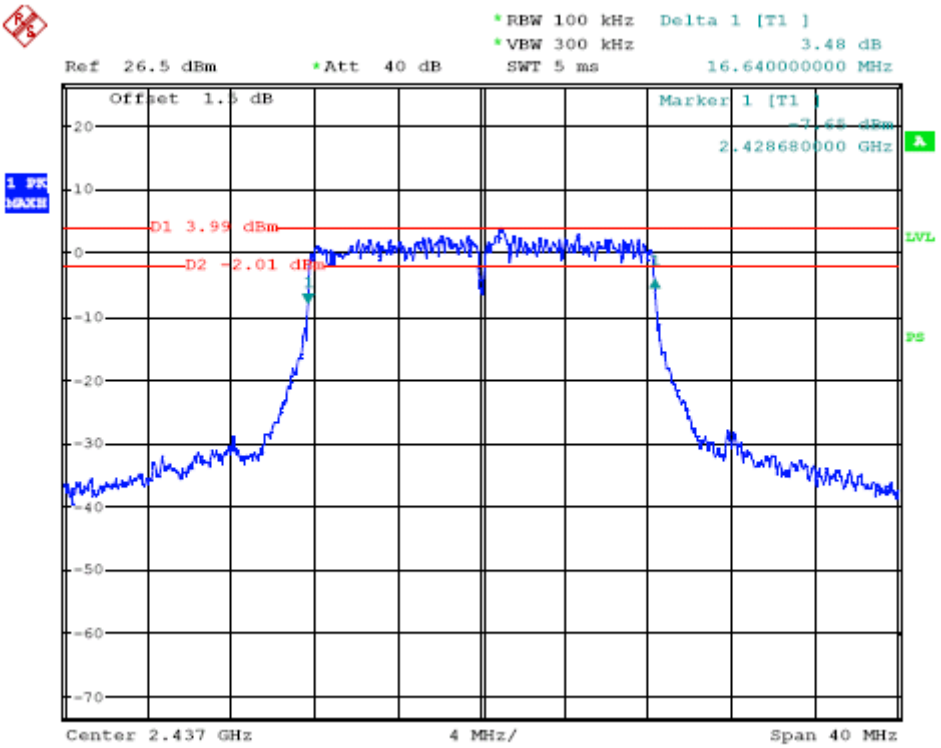


802.11g Mode:

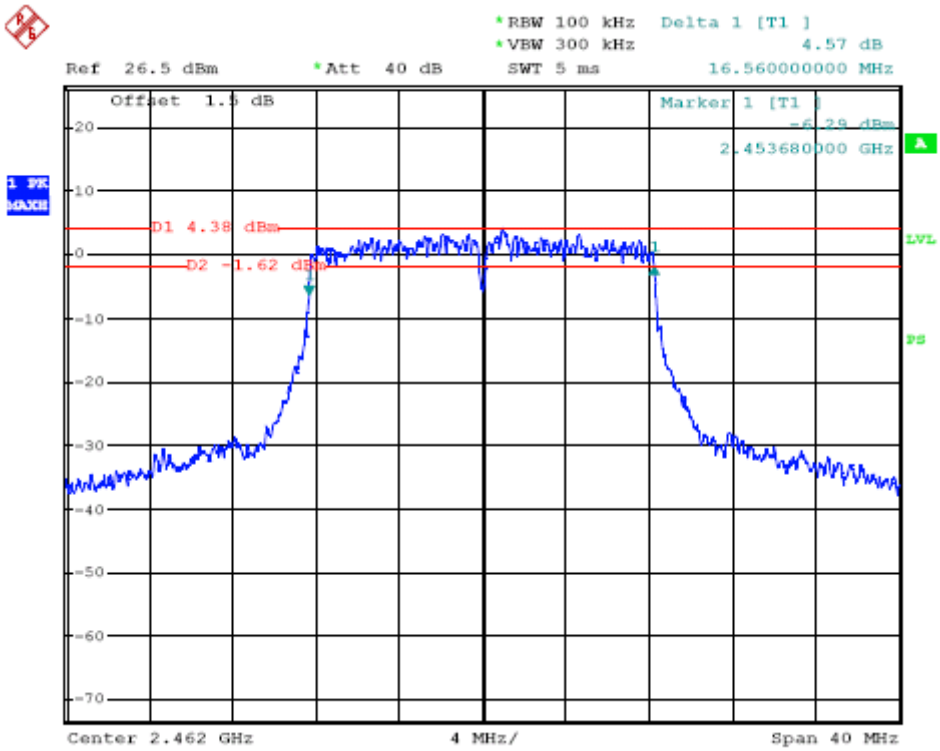
Low Channel



Middle Channel

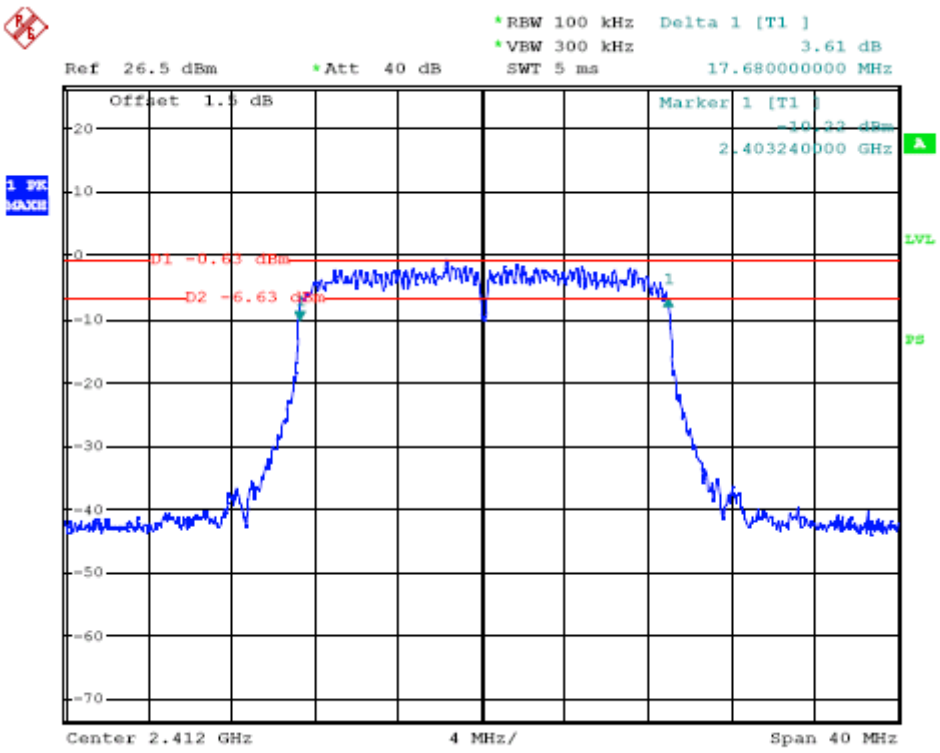


High Channel

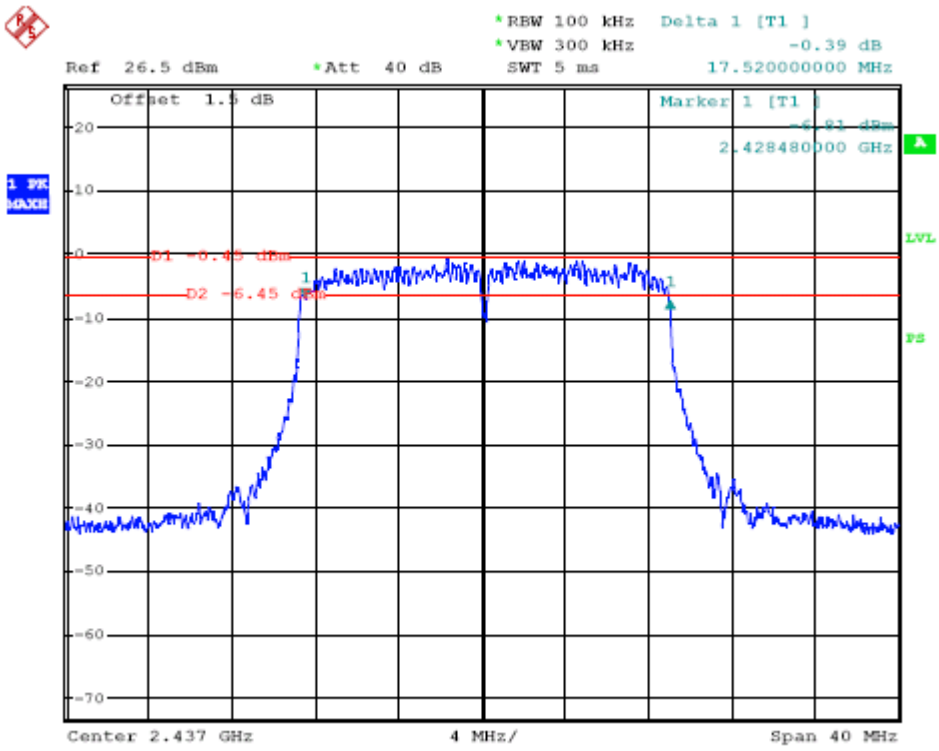


802.11n 20 Mode:

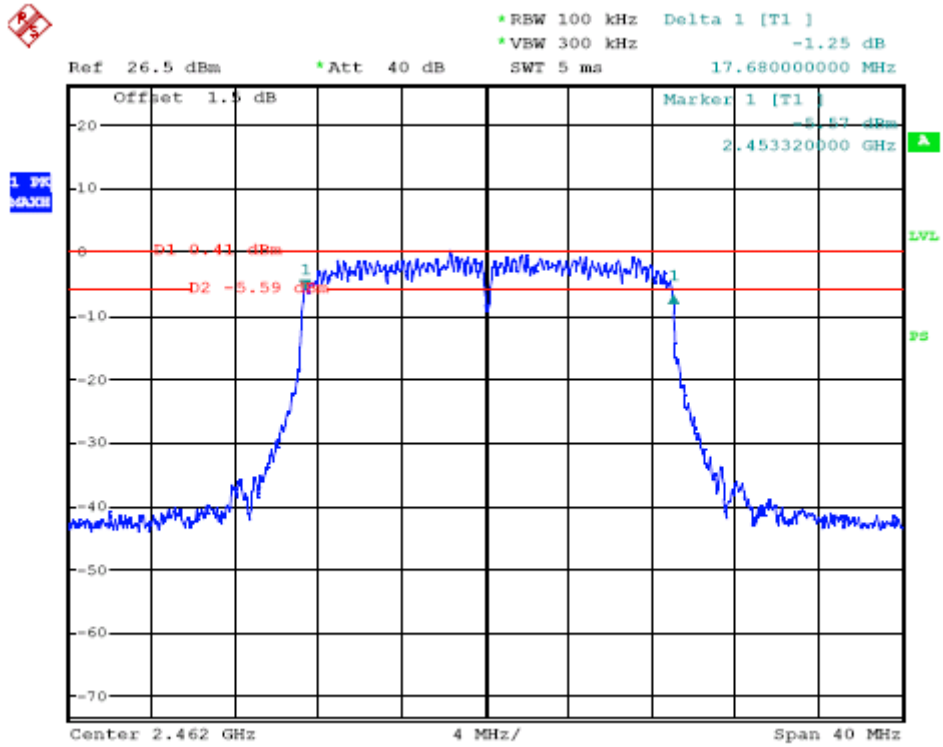
Low Channel



Middle Channel

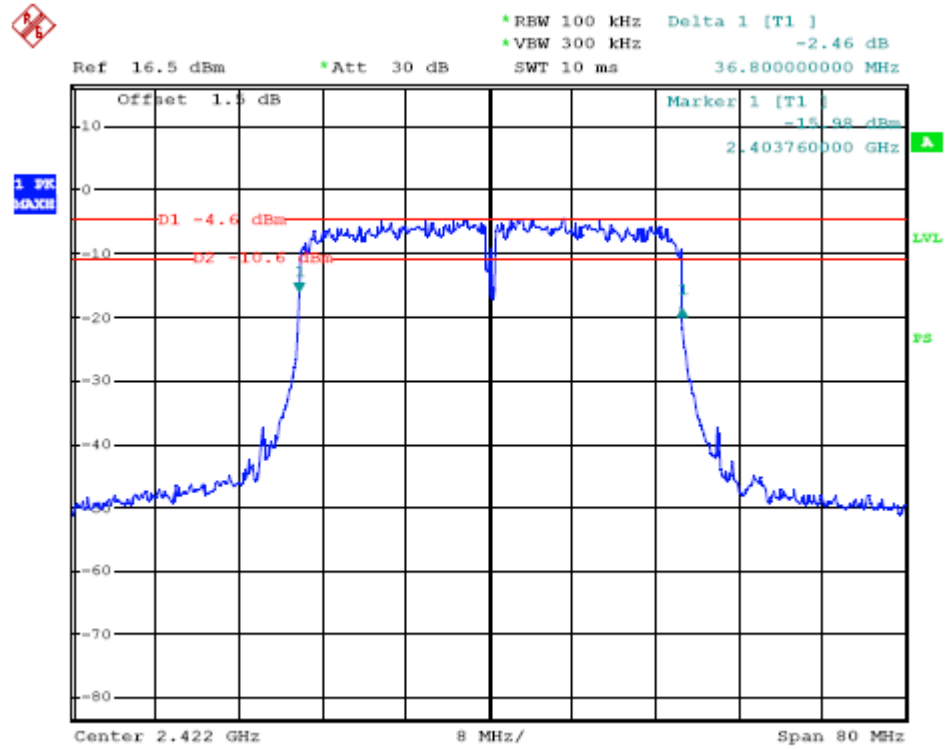


High Channel

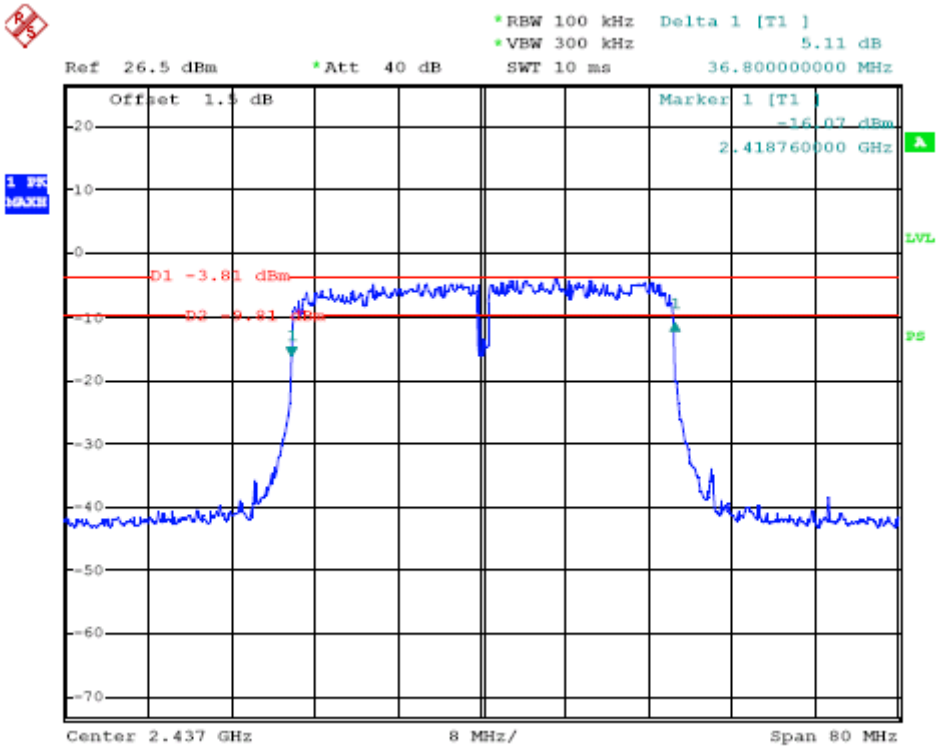


802.11n 40 Mode:

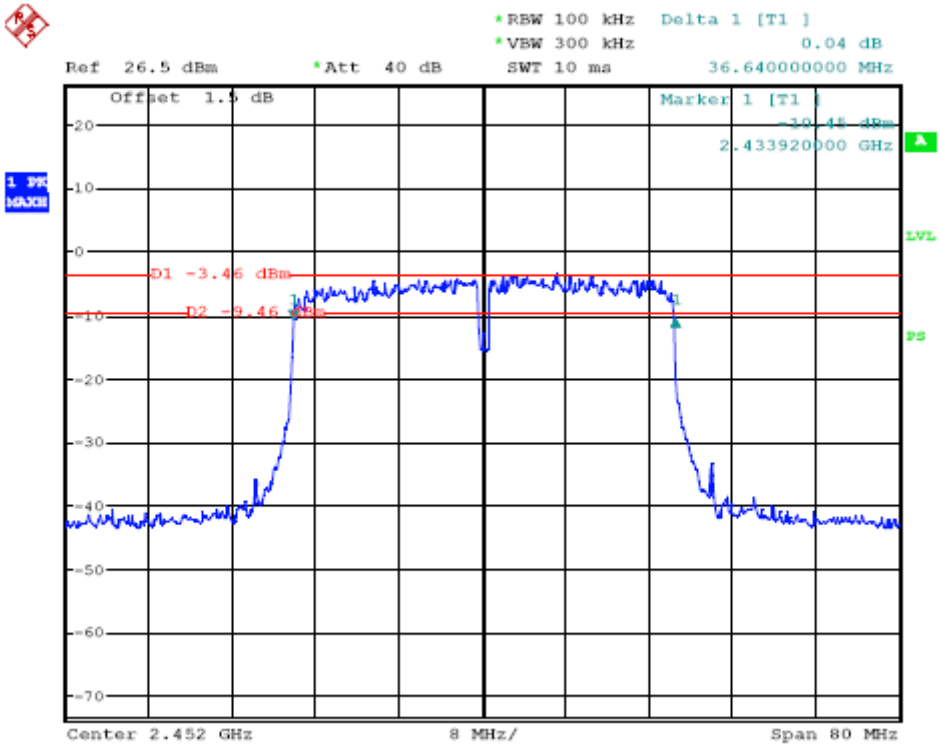
Low Channel



Middle Channel



High Channel



11. §15.247(B) (3) - Maximum Peak Output Power

11.1. Test Equipment

Please refer to Section 4 this report.

11.2.Test Procedure

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz.
3. Set VBW ≥ 3 MHz.
4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to "free run".
6. Trace average 100 traces in power averaging mode.
7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

11.3.Applicable Standard

According to §15.247(b) (3), for systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

11.4. Test Result

Pass

802.11b Mode:

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)	Limit (dBm)
Low	2412	1	17.13	30
Mid	2437	1	17.34	30
High	2462	1	18.21	30

802.11g Mode:

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)	Limit (dBm)
Low	2412	6	14.12	30
Mid	2437	6	14.38	30
High	2462	6	14.58	30

802.11n 20 Mode:

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)	Limit (dBm)
Low	2412	6.5	17.16	30
Mid	2437	6.5	17.16	30
High	2462	6.5	17.36	30

802.11n 40 Mode:

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)	Limit (dBm)
Low	2412	6.5	16.54	30
Mid	2437	6.5	16.63	30
High	2462	6.5	16.89	30

12. §15.247(D) – 100 KHZ Bandwidth of Frequency Band Edge

12.1.Test Equipment

Please refer to Section 4 this report.

12.2.Test 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 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 RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.

Note: For Rdstricted Band

RBW=1MHz

VBW=1 MHz

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.

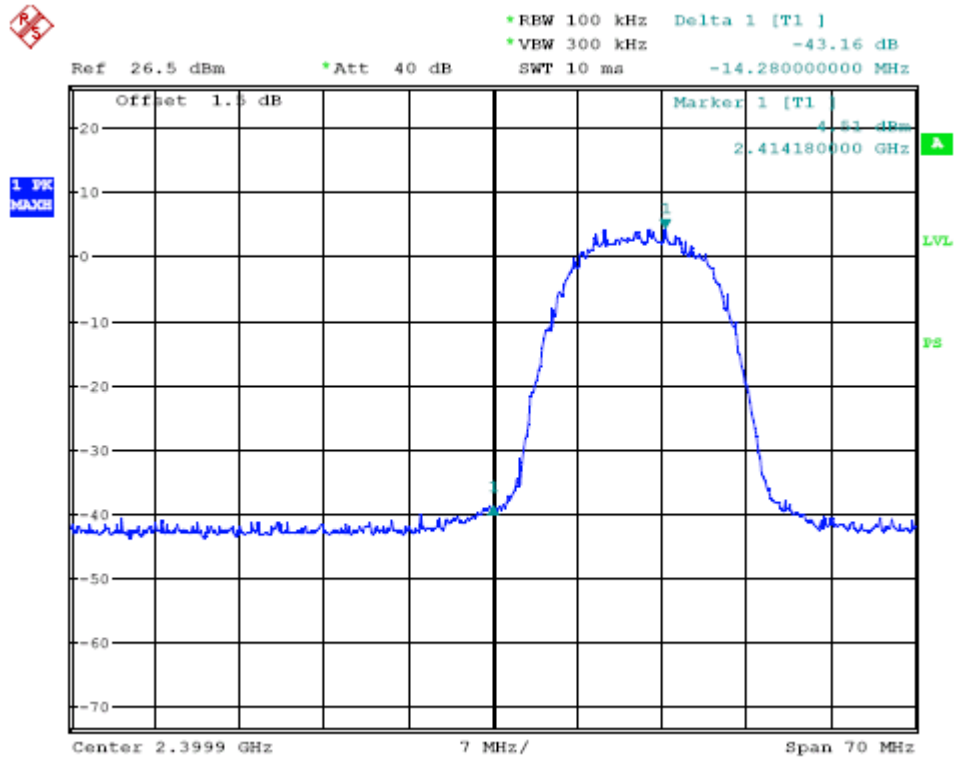
12.3.Applicable Standard

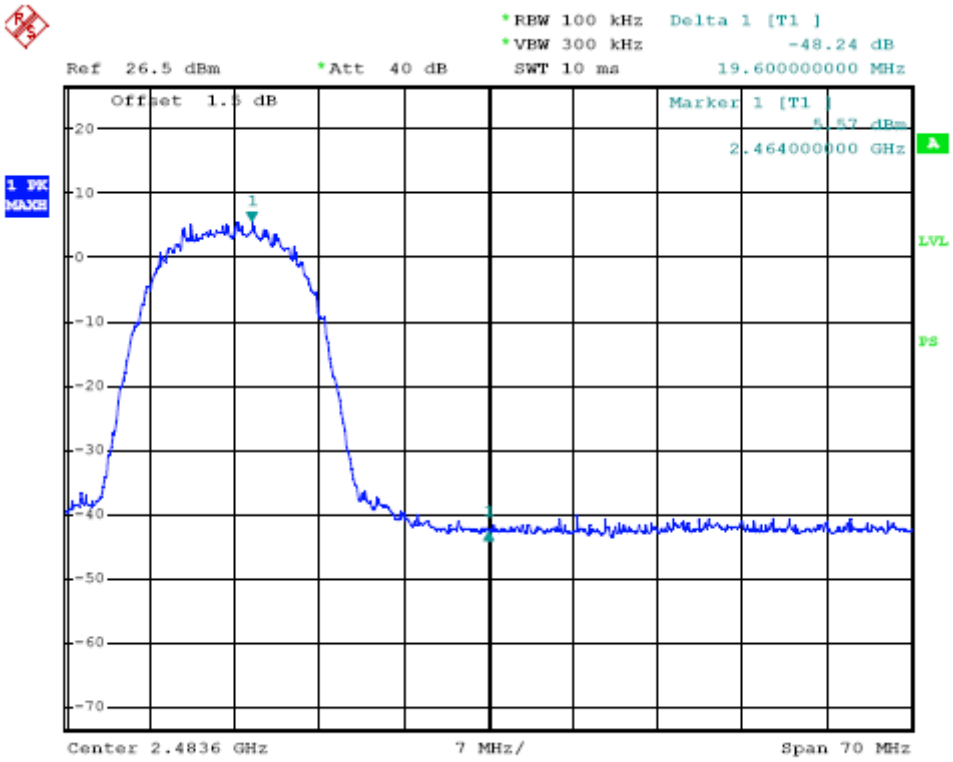
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

12.4.Test Result

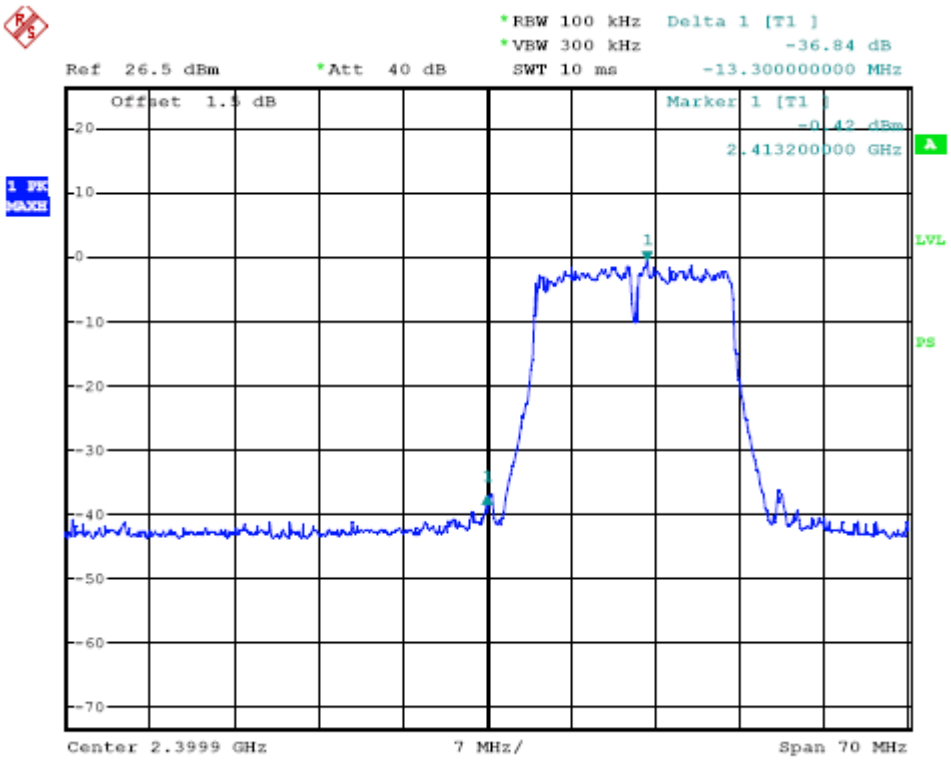
PASS

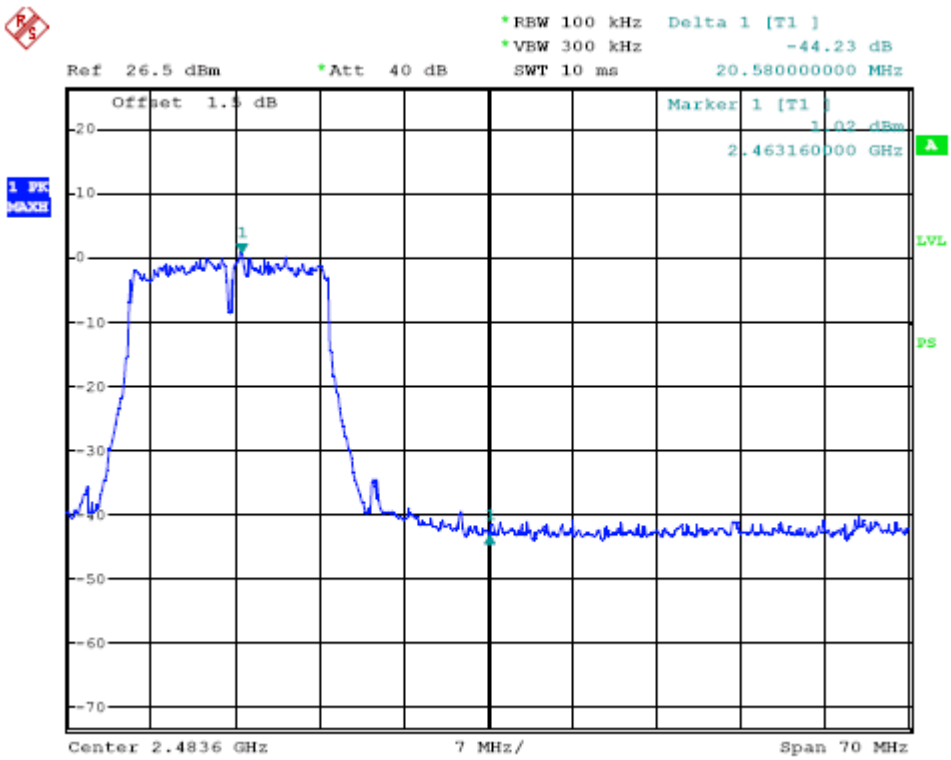
802.11b Mode:


*RBW 100 kHz
*VBW 300 kHz
SWT 10 ms
Delta 1 [T1]
-43.16 dB
-14.280000000 MHz
Ref 26.5 dBm
*Att 40 dB
Offset 1.5 dB
Marker 1 [T1]
4.83 dBm
2.414180000 GHz
1 PK MAXH
LVL
PS
Center 2.3999 GHz
7 MHz/
Span 70 MHz

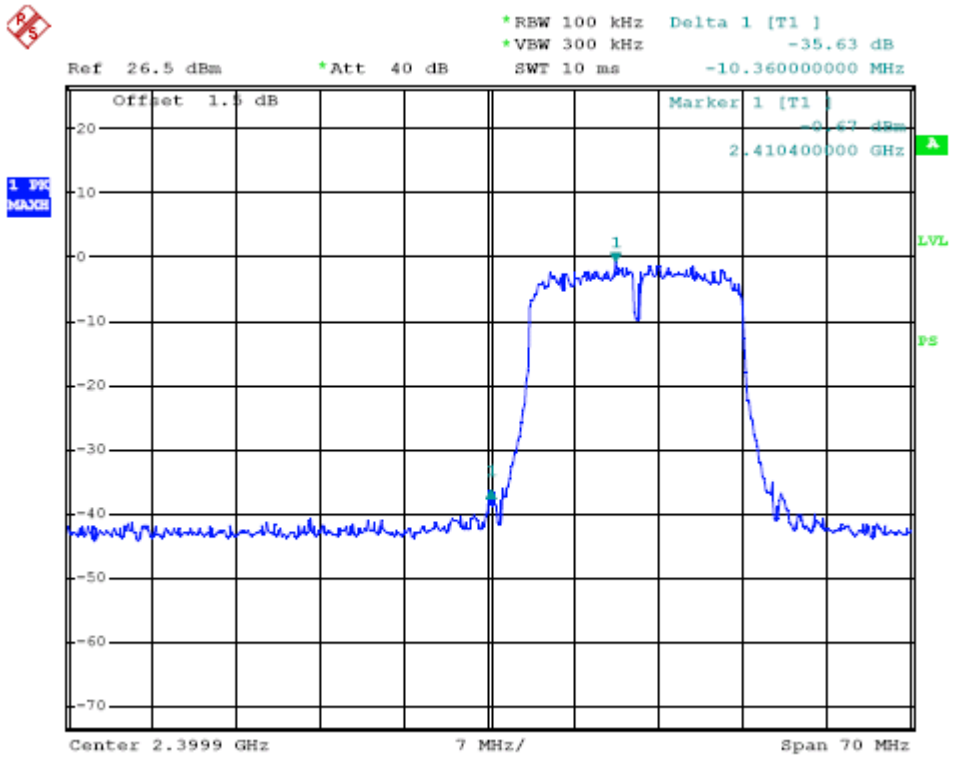

*RBW 100 kHz
*VBW 300 kHz
SWT 10 ms
Delta 1 [T1]
-48.24 dB
19.600000000 MHz
Ref 26.5 dBm
*Att 40 dB
Offset 1.5 dB
Marker 1 [T1]
5.57 dBm
2.464000000 GHz
1 PK MAXH
LVL
PS
Center 2.4836 GHz
7 MHz/
Span 70 MHz

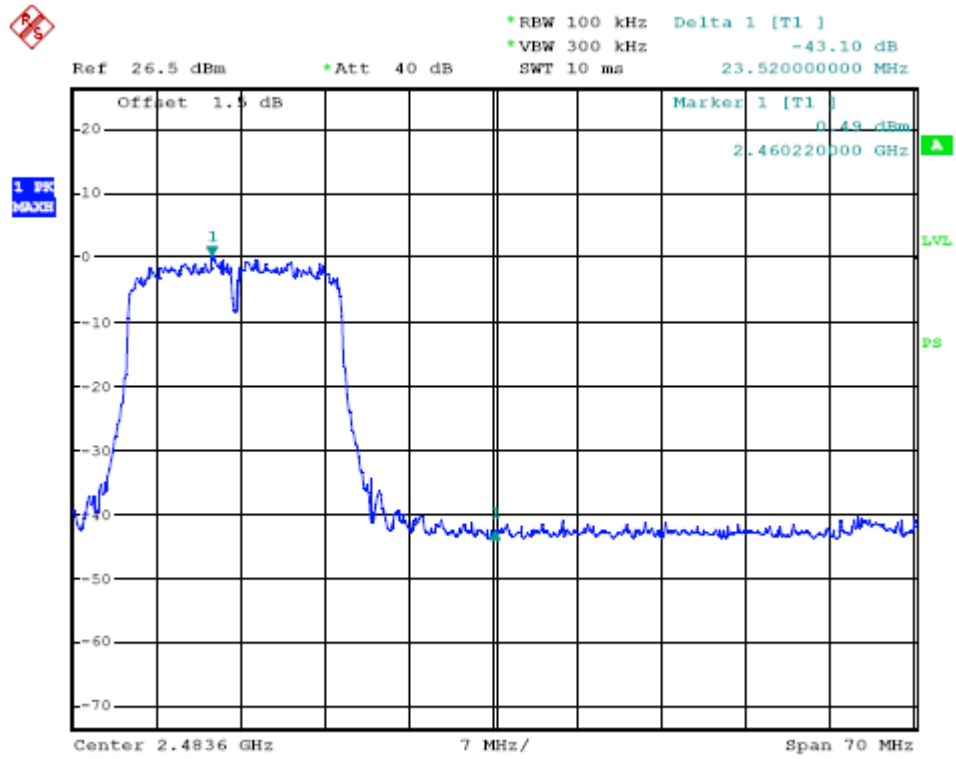
802.11g Mode:


*RBW 100 kHz
*VBW 300 kHz
SWT 10 ms
Delta 1 [T1]
-36.84 dB
-13.300000000 MHz
Ref 26.5 dBm
*Att 40 dB
Offset 1.5 dB
Marker 1 [T1]
-0.42 dBm
2.413200000 GHz
1 PK MAXH
A
LVL
PS
Center 2.3999 GHz
7 MHz/
Span 70 MHz

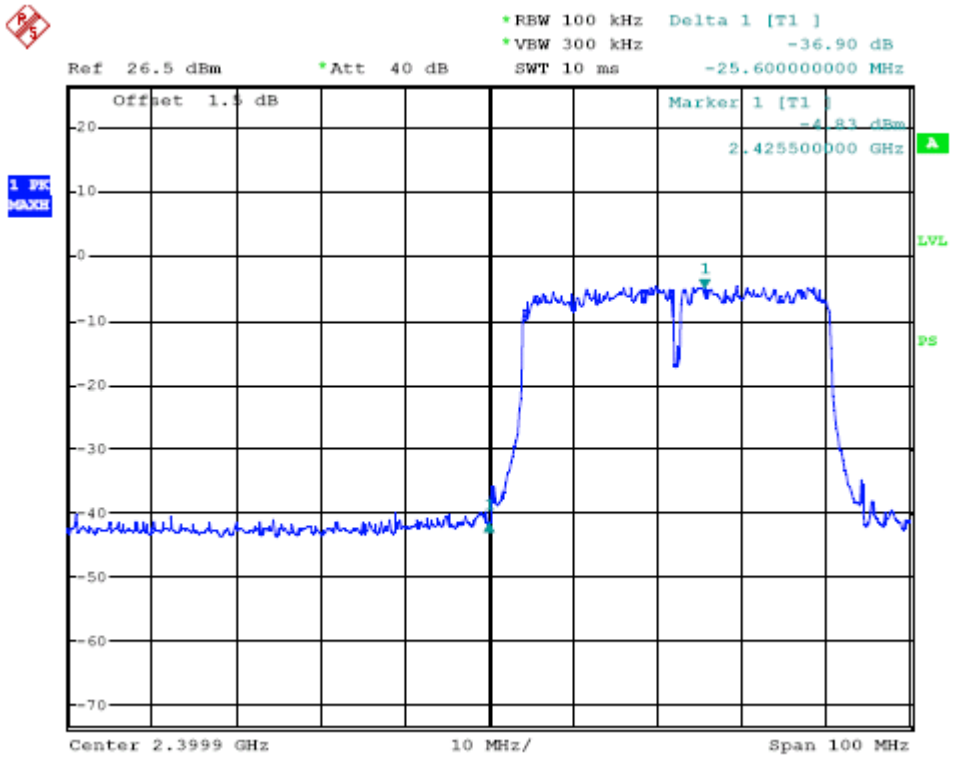

*RBW 100 kHz
*VBW 300 kHz
SWT 10 ms
Delta 1 [T1]
-44.23 dB
20.580000000 MHz
Ref 26.5 dBm
*Att 40 dB
Offset 1.5 dB
Marker 1 [T1]
1.02 dBm
2.463160000 GHz
1 PK MAXH
A
LVL
PS
Center 2.4836 GHz
7 MHz/
Span 70 MHz

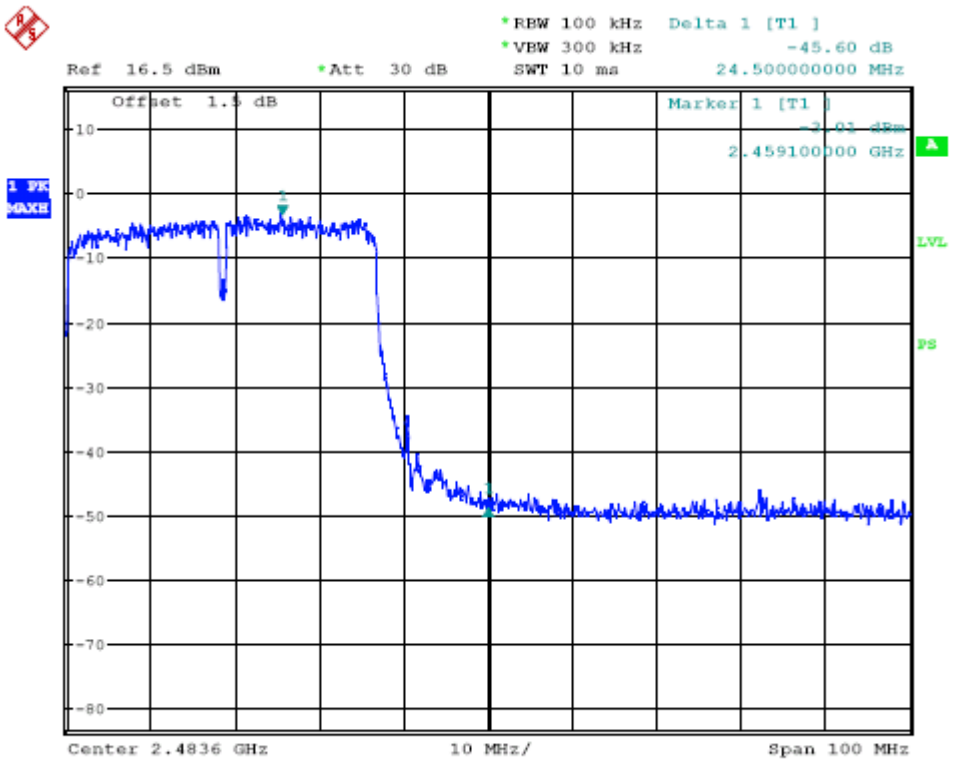
802.11n 20 Mode:





802.11n 40 Mode:





13. §15.247(E) - Power Spectral Density

13.1. Test Equipment

Please refer to Section 4 this report.

13.2.Test Procedure

1,Set EUT in the transmitting mode.
2,Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3,Set the spectrum analyzer as RBW=3KHz,VBW=10KHz,Span=1.5MHz,Sweep=500S.
4,Record the max.reading
5, Repeat the above procedure until the measurements for all frequencies are completed.

13.3.Applicable Standard

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. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

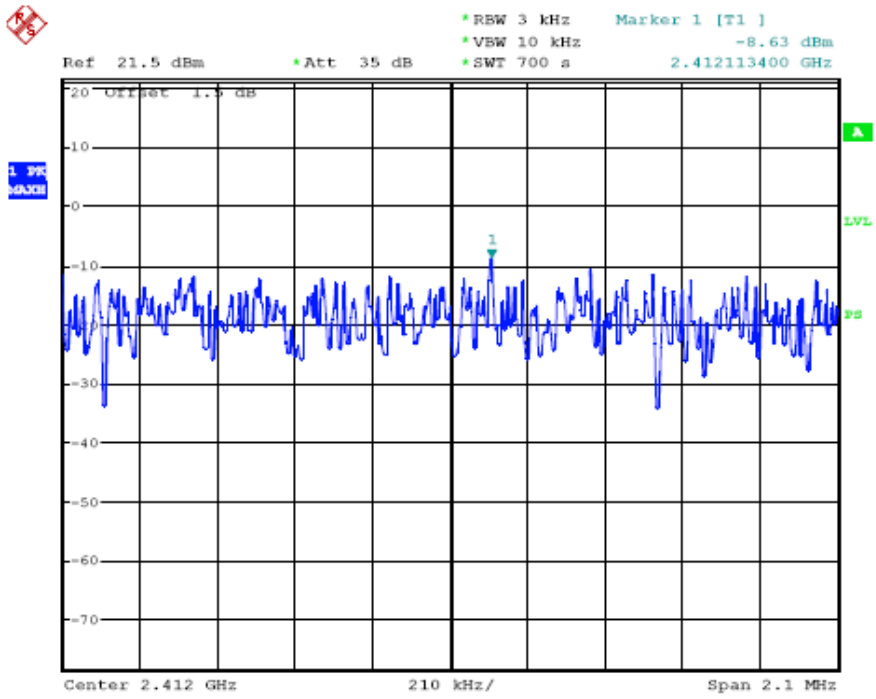
13.4.Test Result

PASS

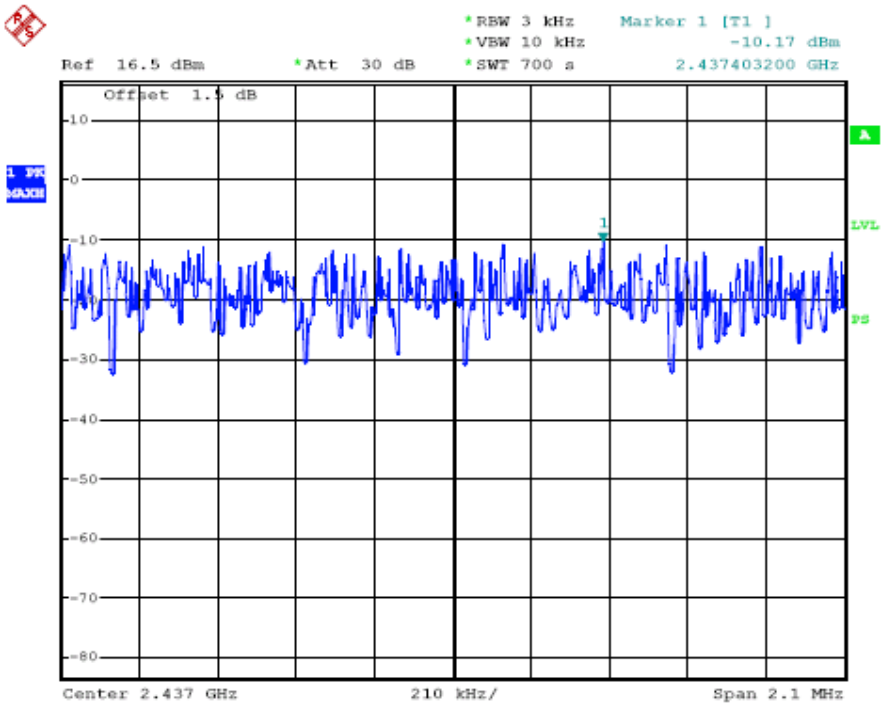
Channel Frequency (MHz)	Data Rate (Mbps)	PSD (dBm/3kHz)	Limit (dBm/3kHZ)	RESULT
802.11b Mode				
2412	1	-8.63	8	Compliant
2437	1	-10.17	8	Compliant
2462	1	-9.16	8	Compliant
802.11g Mode				
2412	6	-12.73	8	Compliant
2437	6	-13.23	8	Compliant
2462	6	-12.96	8	Compliant
802.11n 20 Mode				
2412	6.5	-12.51	8	Compliant
2437	6.5	-12.82	8	Compliant
2462	6.5	-12.57	8	Compliant
802.11n 40 Mode				
2412	6.5	-18.40	8	Compliant
2437	6.5	-18.11	8	Compliant
2462	6.5	-17.25	8	Compliant

802.11b Mode:

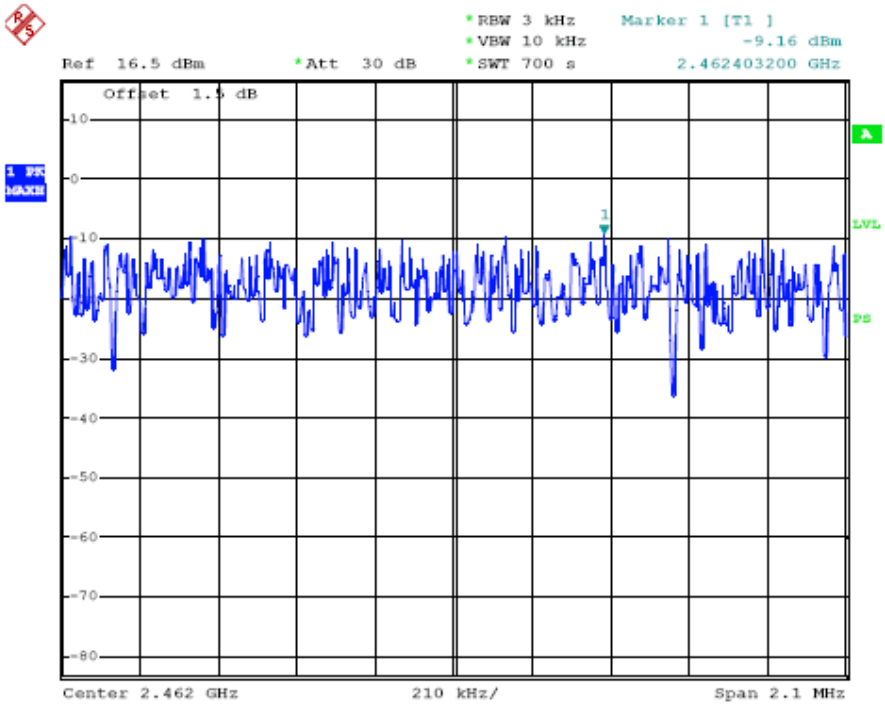
Low Channel



Middle Channel

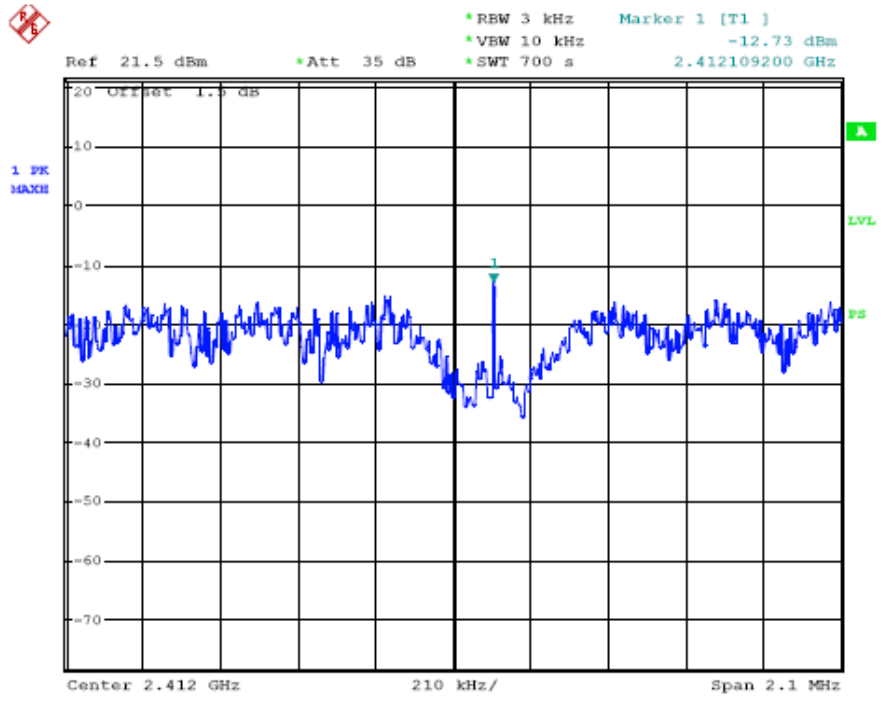


High Channel

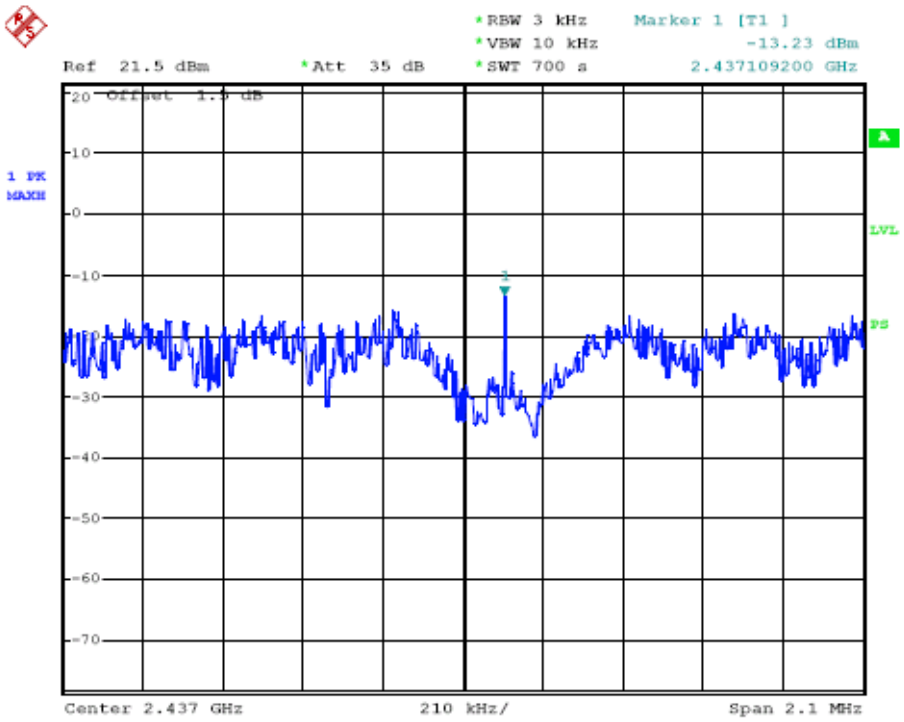


802.11g Mode:

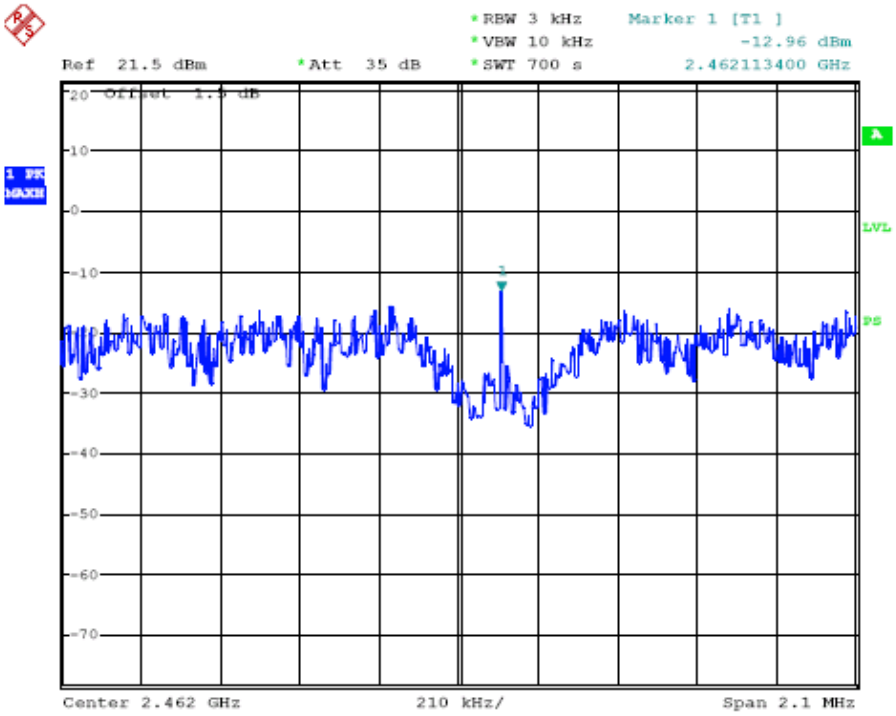
Low Channel



Middle Channel

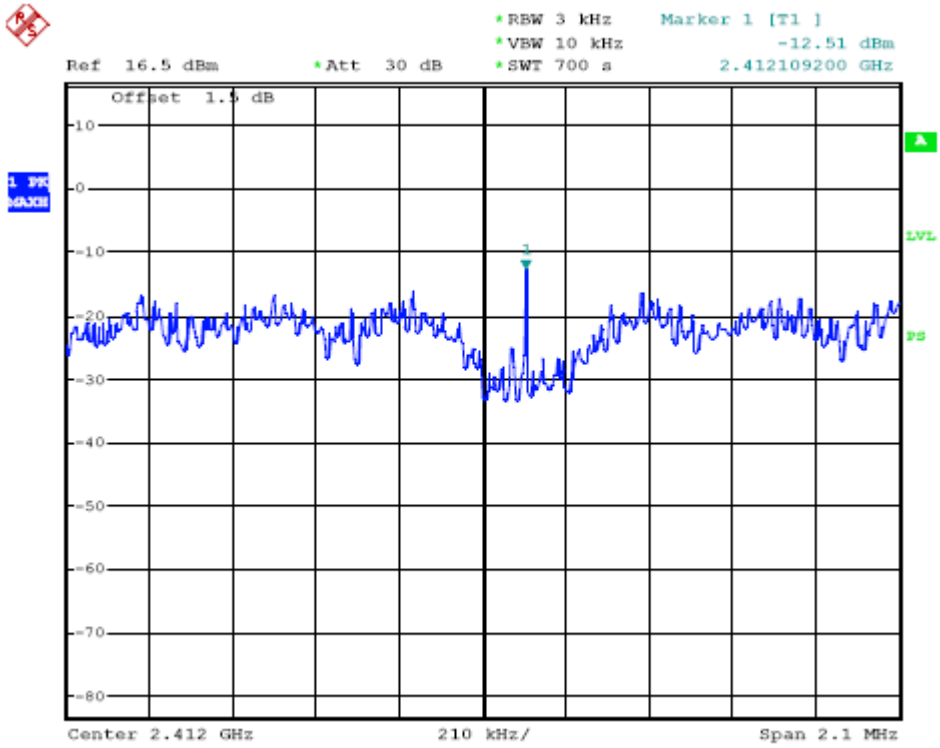


High Channel

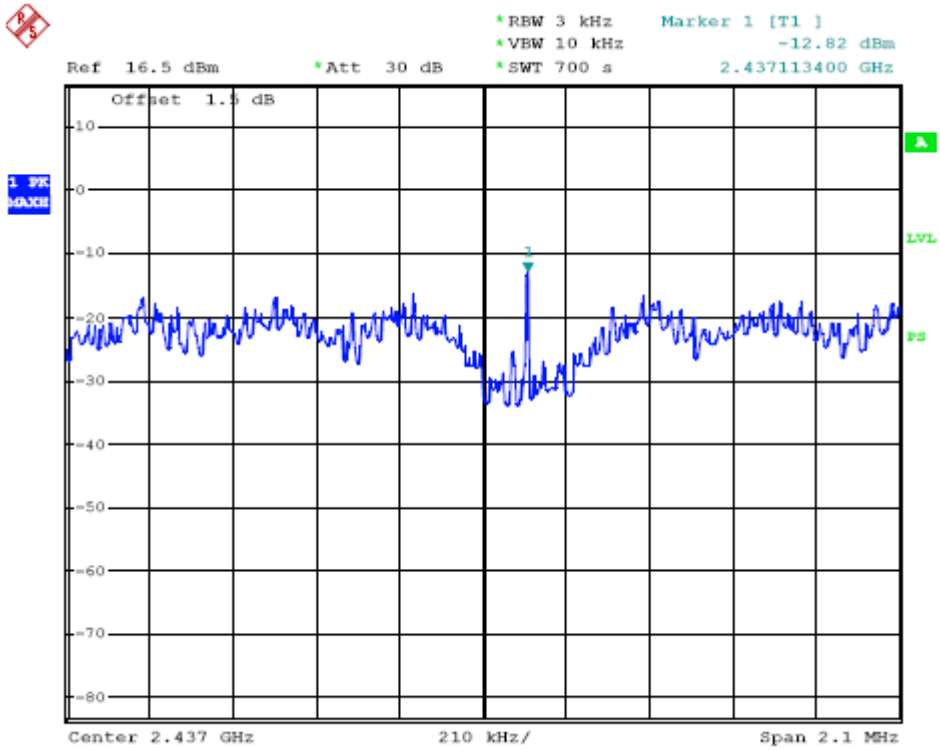


802.11n 20 Mode:

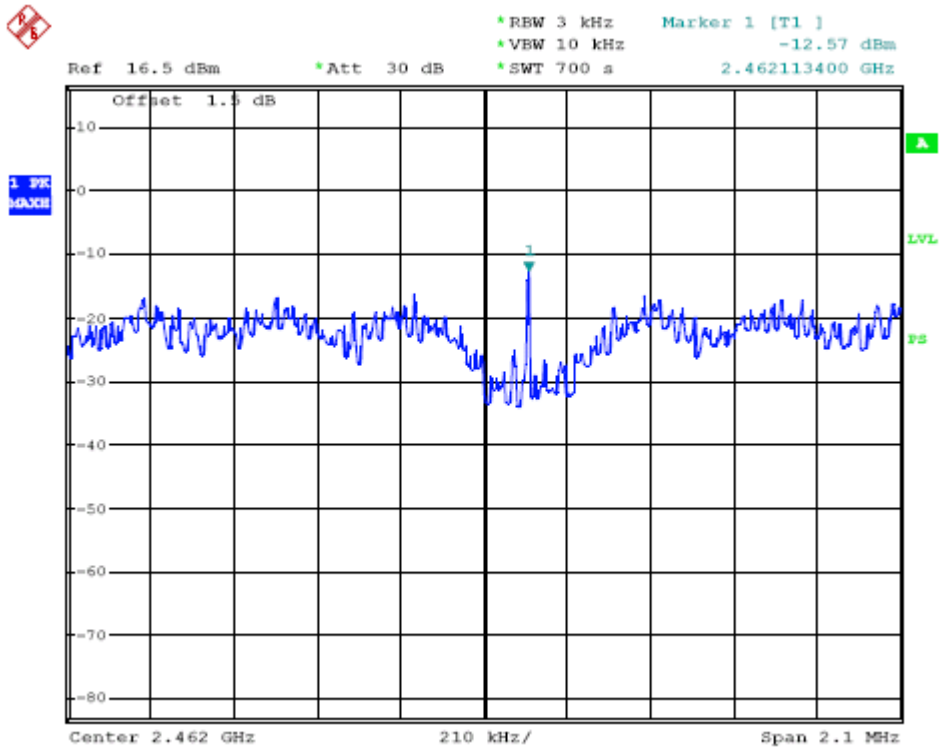
Low Channel



Middle Channel

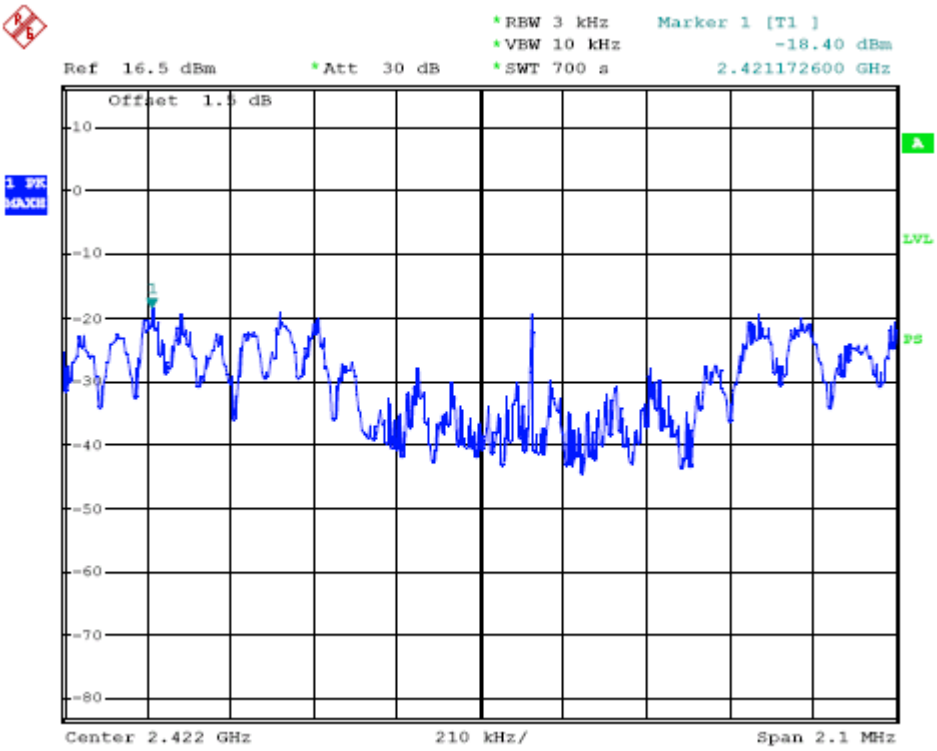


High Channel

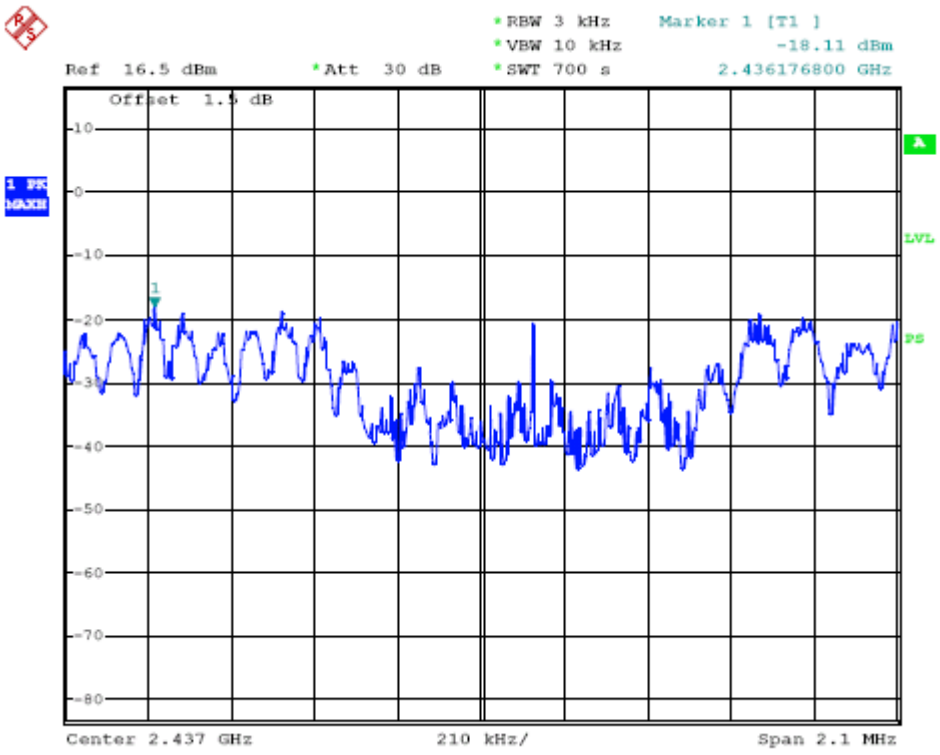


802.11n 40 Mode:

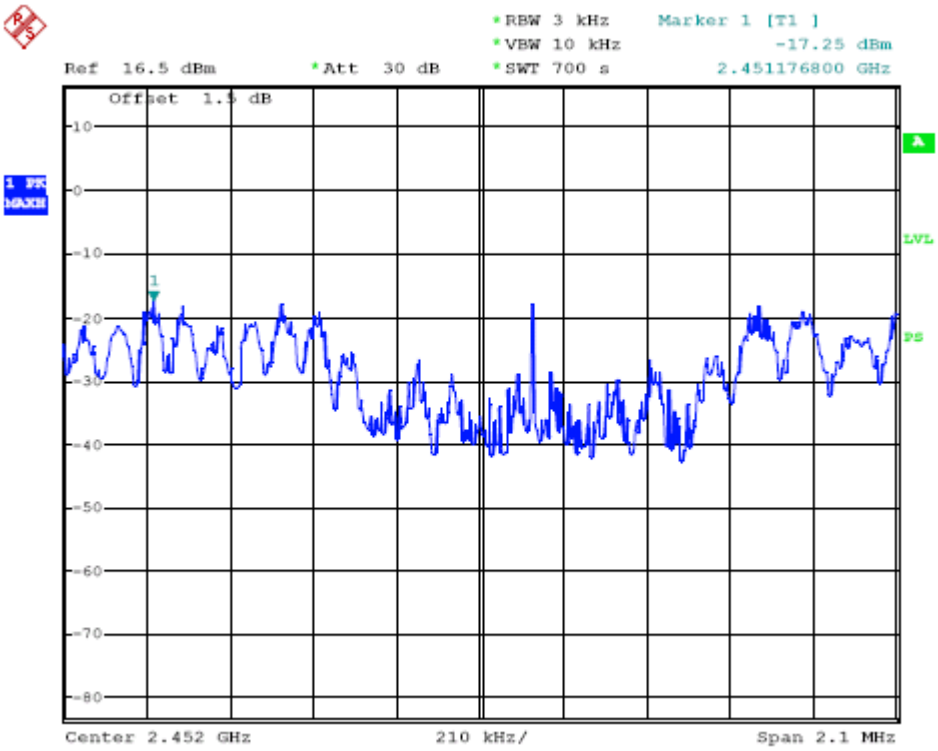
Low Channel



Middle Channel


RBW 3 kHz
VBW 10 kHz
SWT 700 s
Marker 1 [T1]
-18.11 dBm
2.436176800 GHz
Ref 16.5 dBm
Att 30 dB
Offset 1.5 dB
LVL
Center 2.437 GHz
210 kHz/
Span 2.1 MHz

Low Channel


RBW 3 kHz
VBW 10 kHz
SWT 700 s
Marker 1 [T1]
-17.25 dBm
2.451176800 GHz
Ref 16.5 dBm
Att 30 dB
Offset 1.5 dB
LVL
Center 2.452 GHz
210 kHz/
Span 2.1 MHz