EMITECH GROUPE

RR051-18-101779-2-A Ed. 0

Certification Radio test report

According to the standard:
CFR 47 FCC PART 15

Equipment under test:
PARROT SKYCONTROLLER 3

FCC ID: 2AG6IMPP3

Company:
PARROT DRONES

Distribution: Mr COLARD **(Company:** PARROT DRONE**)**

Number of pages: 119 with 4 appendixes

Ed.	Date	Modified Page(s)	Technical Verification and Quality Approval Name and Function / Visa
0	5-Jun-18	Creation	M. DUMESNIL, Radio Technical Manager

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This document is the result of testing a specimen or a sample of the product submitted. It does not imply an assessment of the conformity of the whole manufactured products of the tested sample.

S51 RTY 000 INT 00004 [01]

DESIGNATION OF PRODUCT:	**PARROT SKYCONTROLLER 3**
Serial number (S/N):	PI040443P18C000073
Reference / model (P/N):	MPP3
Software version:	*Hw/Sw Version* = 0 41078
MANUFACTURER:	PARROT DRONE

COMPANY SUBMITTING THE PRODUCT:

Company:	PARROT DRONE
Address:	174 QUAI DE JEMMAPES 75010 - PARIS FRANCE
Responsible:	Mr COLARD
***Persons present during the tests*:**	Mr COLARD (first day)
DATE(S) OF TEST:	From 16-Apr-18 to 30-May-18
TESTING LOCATION:	EMITECH ANGERS laboratory at JUIGNE SUR LOIRE (49) FRANCE FCC Accredited under US-EU MRA Designation Number: FR0009 Test Firm Registration Number: 873677
TESTED BY:	T. LEDRESSEUR
WRITTEN BY:	T. LEDRESSEUR

VISA: 

CONTENTS

1. INTRODUCTION

This report presents the results of radio test carried out on the following radio equipment: **PARROT SKYCONTROLLER 3**, in accordance with normative reference.

The product integrates a Wi-Fi radio part.
See test report RR051-18-101779-1-A for test on U-NII bands and RR051-18-101779-3-A for test on non-radio part.

2. PRODUCT DESCRIPTION

Class:	B
Utilization:	Residential
Antenna type and gain:	(2.5 dBi) 2 integral identical antennas For mode b the product will not emit simultaneously on the two chains, and for g and n the product emit on the two chains simultaneously
Directionnal gain:	For power measurements: 2.5 dBi For PSD measurements: 5.5 dBi
Operating frequency range:	From 2400 MHz to 2483.5MHz
Number of channels:	11
Channel spacing:	5 MHz
Channel bandwidth:	10 MHz and 20 MHz
Power setting	25 dBm for mode b and 23 dBm for mode g and n
Modulation:	DBPSK OFDM: BPSK OFDM: 64-QAM
Mode tested:	802.11 b 802.11 g 802.11 n
Data rate:	For 802.11b: 1Mbit/s For 802.11g: 6Mbit/s For 802.11n: MCS0
Channel tested:	Channel 1: 2412 MHz Channel 6: 2437 MHz Channel 11: 2462 MHz

Double radio function:	No. The product can't emit simultaneously in bands 2.4GHz and 5GHz or on different channels.
Correlated signal:	For mode g/n/a the signals are considered as correlated, the mode cyclic delay diversity (CDD) is used. (IEEE 802.11) The product is not using spatial multiplexing or intentional beamforming.
Power source:	3.3Vdc by internal battery During the charge of the battery the product is not functional.

Power level, frequency range and channels characteristics are not user adjustable.
The details pictures of the product and the circuit boards are joined with this file.

3. NORMATIVE REFERENCE

The standards and testing methods related throughout this report are those listed below.
They are applied on the whole test report even though the extensions (version, date and amendment) are not repeated.

CFR 47 FCC Part 15 (2018)	Radio Frequency Devices
ANSI C63.10	2013 Procedures for ComplianceTesting of Unlicensed Wireless Devices.
558074 D01 DTS v04	Guidance for Performing Compliance on Digital Transmission Systems Operating under §15.247
662911 D01 Multiple Transmitter Output V02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band
447498 D01 General RF Exposure Guidance v06	RF Exposure procedures and equipment authorization policies for mobile and portable equipment

4. TEST METHODOLOGY

Radio performance tests procedures given in CFR 47 part 15:

Subpart C – Intentional Radiators

Paragraph 203:	Antenna requirement
Paragraph 205:	Restricted bands of operation
Paragraph 209:	Radiated emission limits; general requirements
Paragraph 215:	Additional provisions to the general radiated emission limitations
Paragraph 247:	Operation within the bands 902-928 MHZ, 2400-2483.5 MHz and 5725-5850 MHz

5. TEST EQUIPMENT CALIBRATION DATES

Emitech Number	Model	Type	Last calibration	Calibration interval (years)	Next calibration due (1)
0	BAT-EMC V3.16.0.64	Software	/	/	/
4087	Filtek LP03/1000-7GH	Low Pass Filter	29/03/2018	2	29/03/2020
4088	R&S FSP40	Spectrum Analyzer	21/02/2018	2	21/02/2020
6606	Microtronics LPM 15601	Low Pass Filter	04/08/2017	2	04/08/2019
6607	Microtronics HPM 15600	High Pass Filter	04/08/2017	2	04/08/2019
6884	Suhner 1.5m	Cable	01/06/2016	2	01/06/2018
7190	R&S HL223	Antenna	15/03/2016	3	15/03/2019
7240	Emco 3110	Biconical antenna	15/03/2016	3	15/03/2019
8511	HP 8447D	Low-noise amplifier	01/02/2018	1	01/02/2019
8526	Schwarzbeck VHBB 9124	Biconical antenna	12/06/2015	3	12/06/2018
8535	EMCO 3115	Antenna	10/02/2016	4	10/02/2020
8543	Schwarzbeck UHALP 9108A	Log periodic antenna	12/06/2015	3	12/06/2018
8548	Midwest Microwave 10dB	Attenuator	05/04/2018	2	05/04/2020
8549	Midwest Microwave 20dB	Attenuator	09/06/2016	2	09/06/2018
8593	SIDT Cage 2	Anechoic chamber	/	/	/
8704	LUCIX Corp S180265L3201 LNA	Low-noise amplifier	02/06/2017	1	02/06/2018
8750	La Crosse Technology WS-9232	Meteo station	23/09/2016	2	23/09/2018
8786	ETS Lindgren 3160-09	Antenna	16/05/2016	3	16/05/2019
8896	ACQUISYS GPS8	Satellite synchronized frequency standard	/	/	/
8958	1060C	turntable	/	/	/
8974	STORM MICROWAE k-20cm	cable	19/11/2017	2	19/11/2019
8975	STORM MICROWAE k-20cm	cable	19/11/2017	2	19/11/2019
9398	N-1.5m	cable	29/03/2018	2	29/03/2020
9403	R&S ESU8	Spectrum Analyzer	11/08/2016	2	11/08/2018
10730	Mini-circuit ZFL-1000LN	Low-noise amplifier	12/02/2018	1	12/02/2019
10739	LUCIX Corp S005180M3201	Low-noise amplifier	29/03/2018	1	29/03/2019
10759	SIDT Cage 3	Anechoic chamber	/	/	/
10771	EMCO 3117	Antenna	23/11/2016	3	23/11/2019
10789	MATURO	Turntable and mat controller NCD	/	/	/
11592	R&S NRV-Z86	Power Sensor	02/06/2017	1	02/06/2018
12590	LUCIX Corp S005180M3201	Low-noise amplifier	22/08/2017	1	22/08/2018
12911	Huber + Suhner N-2m	cable	29/03/2018	2	29/03/2020

14302	SUCOFLEX N-1m	cable	28/11/2016	2	28/11/2018
14303	SUCOFLEX N-2m	cable	28/11/2016	2	28/11/2018
14304	SUCOFLEX N-2.5m	cable	28/11/2016	2	28/11/2018
14305	SUCOFLEX N-4m	cable	28/11/2016	2	28/11/2018
14831	Fluke 177	Multimeter	12/01/2018	2	12/01/2020

(1) With a tolerance of 2 months for all equipments.

6. TESTS RESULTS SUMMARY

Test procedure	Description of test	Respected criteria?				Comment
		Yes	No	NAp	NAs	
FCC Part 15.203	ANTENNA REQUIREMENT	X				*Note 1*
FCC Part 15.205	RESTRICTED BANDS OF OPERATION	X				
FCC Part 15.209	RADIATED EMISSION LIMITS; general requirements	X				*Note 2*
FCC part 15.215	ADDITIONAL PROVISIONS TO THE GENERAL RADIATED EMISSION LIMITATIONS					
	(a) Alternative to general radiated emission limits	X				
	(b) Unwanted emissions outside of §15.247 frequency bands	X				*Note 3*
	(c) 20 dB bandwidth and band-edge compliance	X				
FCC Part 15.247	OPERATION WITHIN THE BANDS 902-928 MHZ, 2400-2483.5 MHz and 5725-5850 MHz					
	(a) (1) Hopping systems			X		
	(a) (2) Digital modulation techniques	X				*Note 4*
	(b) Maximum peak output power	X				
	(c) Operation with directional antenna gains > 6 dBi			X		
	(d) Intentional radiator	X				
	(e) Peak power spectral density	X				
	(f) Hybrid system			X		
	(g) Frequency hopping requirements			X		
	(h) Frequency hopping intelligence			X		
	(i) RF exposure compliance	X				

NAp: Not Applicable NAs: Not Asked

Note 1: Integral antenna.

Note 2: See FCC part 15.247 (d).

Note 3: See FCC part 15.209. Unwanted emissions levels are all below the fundamental emission field strength level.

Note 4: The minimum 6 dB bandwidth of the equipment is 3996 kHz (see appendix 4).

7. MEASUREMENT UNCERTAINTY

To declare, or not, the compliance with the specifications, it was not explicitly taken into account of uncertainty associated with the result(s)

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for normal distribution corresponds to a coverage probability of approximately 95%.

Parameter	Emitech Uncertainty
RF power, conducted	± 0.75dB
Radiated emission valid to 26 GHz F < 62.5 MHz: 62.5 MHz < F < 1 GHz: 1 GHz < F < 26 GHz:	 ± 5.14 dB ± 5.13 dB ± 5.16 dB
AC Power Lines conducted emissions	± 3.38 dB
Temperature	± 1 °C
Humidity	± 5 %

8. ADDITIONAL PROVISIONS TO THE GENERAL RADIATED EMISSION LIMITATIONS

Temperature (°C) : 23 **Humidity (%HR):** 41 **Date :** April 18, 2018

Technician : T. LEDRESSEUR

Standard: FCC Part 15

Test procedure: Paragraph 15.215

Test set up:

Then the measurement is realized with the product on the most critical orientation.
The measure is realized in anechoic chamber.

The EUT is placed on a rotating table at 1.65 m from a ground plane.

Distance of antenna: 3 m

Antenna height: 1.65 meter (in anechoic room)

Test operating condition of the equipment:

The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate.

We used for power source the internal fully charged battery

Results:

Sample N° 1 Mode 802.11.b – bandwidth 10 MHz – RF1

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	RBW (kHz)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of-Band Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412	113	100	Peak	2399.24	57.82	55.18	83	27.82
2462	119.9	1000	Peak	2483.8	71.1	48.8	74	25.2
2462	119.9	1000	Average	2483.8	80.96	38.94	54	15.06

(1) Marker-Delta method

Sample N° 1 Mode 802.11.b – bandwidth 10 MHz – RF2

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	RBW (kHz)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of-Band Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412	113.19	100	Peak	2397.9	58.74	54.45	84	29.55
2462	120.17	1000	Peak	2446.7	70.83	49.34	74	24.66
2462	120.17	1000	Average	2483.7	81.04	39.13	54	14.87

(1) Marker-Delta method

Sample N° 1 Mode 802.11.g– bandwidth 10 MHz

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	RBW (kHz)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of-Band Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412	114.51	100	Peak	2399.96	54.9	59.61	84.51	24.9
2462	125.27	1000	Peak	2483.8	71.75	53.52	74	20.48
2462	125.27	1000	Average	2483.8	81.28	43.99	54	10.01

(1) Marker-Delta method

Sample N° 1 Mode 802.11.n– bandwidth 10 MHz

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	RBW (kHz)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of-Band Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412	111.72	100	Peak	2399.8	51.79	59.93	81.72	21.79
2462	124.24	1000	Peak	2484.4	71.04	53.2	74	20.8
2462	124.24	1000	Average	2483.54	80.42	43.82	54	10.18

(1) Marker-Delta method

Sample N° 1 Mode 802.11.b – bandwidth 20 MHz – RF1

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	RBW (kHz)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of-Band Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412	112.95	100	Peak	2398.6	51.02	61.93	82.95	21.02
2462	119.21	1000	Peak	2484	69.71	49.5	74	24.5
2462	119.21	1000	Average	2483.6	79.45	39.76	54	14.24

(1) Marker-Delta method

Sample N° 1 Mode 802.11.b – bandwidth 20 MHz – RF2

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	RBW (kHz)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of-Band Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412	112.9	100	Peak	2398.2	56.18	56.72	82.9	26.18
2462	118.83	1000	Peak	2484.8	70.77	48.44	74	25.56
2462	118.83	1000	Average	2483.7	79.77	39.44	54	14.56

(1) Marker-Delta method

Sample N° 1 Mode 802.11.g– bandwidth 20 MHz

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	RBW (kHz)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of-Band Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412	113.13	100	Peak	2399.8	37.24	75.89	83.13	7.24
2462	122.82	1000	Peak	2483.7	59.09	63.73	74	10.27
2462	122.82	1000	Average	2483.54	72.49	50.33	54	3.67

(1) Marker-Delta method

Sample N° 1 Mode 802.11.n– bandwidth 20 MHz

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	RBW (kHz)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of-Band Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412	112.28	100	Peak	2399.5	34.11	78.17	82.28	4.11
2462	122.6	1000	Peak	2483.6	58.16	64.44	74	9.56
2462	122.6	1000	Average	2483.54	70.71	51.89	54	2.11

(1) Marker-Delta method

Test conclusion:

RESPECTED STANDARD

9. MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER

Temperature (°C) : 23 **Humidity (%HR):** 41 **Date :** April 16, 2018 and April 18, 2018

Technician : T. LEDRESSEUR

Standard: FCC Part 15

Test procedure: paragraph 15.247 (b)

Method: AVGPM-G, paragraph 9.2.3.2 of KDB 558074

Test set up:

A wideband power sensor was connected on the RF output port of the EUT.
The response of the power sensor is then read by software on a computer and the gate function is used in order to determine the output power during ON time only.

This measure is repeated for each port of the EUT .
Then the results were summed in linear power unit for mode g and n.

Equipment under test operating condition:

The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate (see §2).

We used for power source the internal fully charged battery

Results:

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (W):		Limit (W) (1)
Chain 1	**Chain 2**	**Chain 1**	**Chain 2**	
24.16	23.99	0.261	0.251	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (W):		Limit (W) (1)
Chain 1	**Chain 2**	**Chain 1**	**Chain 2**	
23.76	23.8	0.238	0.240	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.b– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (W):		Limit (W) (1)
Chain 1	**Chain 2**	**Chain 1**	**Chain 2**	
24.05	23.79	0.254	0.239	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.81	21.87	151.71	153.82	0.306	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.74	21.74	149.28	149.28	0.299	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.84	21.89	152.76	154.53	0.307	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.55	21.09	142.89	128.53	0.271	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.55	21.16	142.89	130.62	0.274	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n– bandwidth 10 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.62	21.32	145.21	135.52	0.281	1

(1) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (W):		Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2	
24.21	24.22	0.264	0.264	1

(2) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (W):		Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2	
23.71	23.72	0.235	0.235	1

(2) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.b– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (W):		Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2	
24.04	23.56	0.254	0.227	1

(2) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.98	21.9	157.76	154.88	0.313	1

(2) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.75	21.84	149.62	152.76	0.302	1

(2) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.96	21.89	157.04	154.53	0.312	1

(2) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.8	21.74	151.36	149.28	0.301	1

(2) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.63	21.59	145.55	144.21	0.290	1

(2) For 2 antennas with 2.5 dBi

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n– bandwidth 20 MHz

Conducted Power (dBm):		Conducted Power (mW):		Total Conducted power (W)	Limit (W) (1)
Chain 1	Chain 2	Chain 1	Chain 2		
21.85	21.61	153.11	144.88	0.298	1

(2) For 2 antennas with 2.5 dBi

Test conclusion:

RESPECTED STANDARD

10. INTENTIONAL RADIATOR

Temperature (°C) : 21 to 23 **Humidity (%HR):** 55 **Date :** April 25, 2018 and April 26, 2018

Technician : T. LEDRESSEUR

Standard: FCC Part 15

Test procedure: paragraph 15.205, paragraph 15.209, paragraph 15.247 (d)

Method : Emissions in non-restricted frequency bands method of paragraph 11 of KDB 558074
Emissions in restricted frequency bands method of paragraph 12 of KDB 558074
Conducted measure are realized with the method 12.2.2
Average measure are realized with the method 12.2.5

Test set up:

The measure is realized first in conducted on each port of the product then repeated in radiated for measure of cabinet spurious

For cabinet spurious measurement the antennas ports are fitted with 50 ohm non-reactive load.

Except for band 2.15 GHz to 2.75 GHz, the measure is directly realized in radiated with the antennas of the product.

Frequency range: From 9 kHz to 10th harmonic of the highest fundamental frequency (25 GHz)

Detection mode: Quasi-peak (F < 1 GHz) Peak / Average (F > 1 GHz)

Bandwidth: 200Hz (9 kHz < F < 150kHz)
9 kHz (150 kHz < F < 30MHz)
120 kHz (30 MHz < F < 1 GHz)
100 kHz / 1 MHz (F > 1 GHz)

Distance of antenna: 10 m below 1 GHz
3 m between 1 GHz and 18 GHz
1 m between 18 GHz and 25 GHz

Conducted method

The equipment under test is connected to the measuring equipment via a 50 Ω attenuator.

Bandwidth: 200Hz (9 kHz < F < 150kHz)
9 kHz (150 kHz < F < 30MHz)
120 kHz (30 MHz < F < 1 GHz)
100 kHz / 1 MHz (F > 1 GHz)

The spurious are measured (in dBm) and the antenna gain is added (2.5 dBi) in order to determine the EIRP

The appropriate maximum ground reflection factor is added to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).

The measure is realized on each individual chain
The EIRP of all chains is summed in linear terms for mode g and n.

And the resultant EIRP level is converted to an equivalent electric field strength using the following relationship:

$E = EIRP - 20\log D + 104.8$
Where: E = electric field strength in dBµV/m,
EIRP = equivalent isotropic radiated power in dBm
D = specified measurement distance in meters.

Radiated method

First an exploratory radiated measurement was performed. During this phase the product is oriented in three orthogonal planes.

Then the final measurement is realized with the product on the most critical orientation.

The measure is realized on open area test site under 1 GHz and in anechoic chamber above 1 GHz.

When the system is tested in an open area test site (OATS), the EUT is placed on a rotating table, 0.8m from a ground plane.

When the system is tested in anechoic chamber, the EUT is placed on a rotating table, 1.65 m or 1.5 m from a ground plane.

Zero degree azimuths correspond to the front of the device under test.

For mode b the measure is realized on the two different chains separately.

Antenna height: 1 to 4 meters (in open area test site) / 1.65 or 1.5 meter (in anechoic room)

Antenna polarization: vertical and horizontal (only the highest level is recorded)

Equipment under test operating condition:

The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate.

We used for power source the internal fully charged battery

Duty cycle factor for average measurement is then added. (Correction= 10 log (1/X))

This factor is already included on the results (tables and graphs)

For detailed results at ±2 MHz of the edge of the band see §8.

Applicable limits: 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 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

In addition, radiated emissions which fall in the restricted band, as defined in section 15.205 (a), must also comply with the radiated emission limits specified in section 15.209 (a) (see section 15.205 (c)).

Conducted measurement

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	48.97	74	25.03
4824 (1)	Av	1000	44.84	54	9.16
7236	P	100	48.84	83	34.16
12060 (1)	P	1000	31.48 (2)	74	42.52

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205
(2) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (3)	P	1000	36.63 (4)	74	37.37
7311 (3)	P	1000	50.44	74	23.56
7311 (3)	Av	1000	41.32	54	12.68
9748	P	100	33.02	82	48.98
12185 (3)	P	1000	37.07 (4)	74	36.93

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205
(4) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (5)	P	1000	38.65 (6)	74	35.35
7386 (5)	P	1000	50.99	74	23.01
7386 (5)	Av	1000	42.49	54	11.51
9848	P	100	32.27	83.04	50.77
12310 (5)	P	1000	31.49 (6)	74	42.51

P= Peak, QP=Quasi-peak, Av=Average
(5) Restricted bands of operation in 15.205
(6) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	44.09 (2)	74	29.91
7236	P	100	49.57	83.19	33.62
9648	P	100	32.74	83.19	50.45
12060 (1)	P	1000	41.77 (2)	74	32.23

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205
(2) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (3)	P	1000	35.94 (4)	74	38.06
7311 (3)	P	1000	46.54	74	27.46
7311 (3)	Av	1000	38.76	54	15.24
12185 (3)	P	1000	41.54 (4)	74	32.46

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205
(4) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (5)	P	1000	37.38 (6)	74	36.62
7386 (5)	P	1000	47.85	74	26.15
7386 (5)	Av	1000	39.35	54	14.65

P= Peak, QP=Quasi-peak, Av=Average
(5) Restricted bands of operation in 15.205
(6) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	48.58 (2)	74	25.42
7236	P	100	48.18	84.51	36.33
9648	P	100	38.02	84.51	46.49

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205
(2) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (3)	P	1000	39.53 (4)	74	34.47
7311 (3)	P	1000	52.14 (4)	74	21.86
9748	P	100	38.47	82.62	44.15

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205
(4) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (5)	P	1000	40.57 (6)	74	33.43
7386 (5)	P	1000	53.13 (6)	74	20.87
9848	P	100	40.13	83.3	43.17

P= Peak, QP=Quasi-peak, Av=Average
(5) Restricted bands of operation in 15.205
(6) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	49.2 (2)	74	24.8
7236	P	100	48.41	81.72	33.31

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205
(2) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (3)	P	1000	40.63 (4)	74	33.37
7311 (3)	P	1000	51.98 (4)	74	22.02
9748	P	100	33.37	82.81	49.44

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205
(4) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (5)	P	1000	40.06 (6)	74	33.94
7386 (5)	P	1000	55.24	74	18.76
7386 (5)	Av	1000	33.69	54	20.31
9848	P	100	38.94	83.1	44.16

P= Peak, QP=Quasi-peak, Av=Average
(5) Restricted bands of operation in 15.205
(6) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	47.78 (2)	74	26.22
7236	P	100	47.86	82.95	35.09

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205
(2) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (3)	P	1000	33.34 (4)	74	40.66
7311 (3)	P	1000	49.11 (4)	74	24.89
9748	P	100	32.44	82.5	50.06
12185 (3)	P	1000	31.85 (4)	74	42.15

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205
(4) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (5)	P	1000	35.86 (6)	74	38.14
7386 (5)	P	1000	50.61 (6)	74	23.39
9848	P	100	33.58	81.94	48.36
12310 (5)	P	1000	33.6 (6)	74	40.4

P= Peak, QP=Quasi-peak, Av=Average
(5) Restricted bands of operation in 15.205
(6) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	39.78 (2)	74	34.22
7236	P	100	37.45	82.9	45.45

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205
(2) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (3)	P	1000	35.2 (4)	74	38.8
7311 (3)	P	1000	40.93 (4)	74	33.07
9748	P	100	31.96	81.44	49.48
12185 (3)	P	1000	31.54 (4)	74	42.46

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205
(4) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (5)	P	1000	34.89 (6)	74	39.11
7386 (5)	P	1000	43.4 (6)	74	30.6
9848	P	100	33.61	82.42	48.81

P= Peak, QP=Quasi-peak, Av=Average
(5) Restricted bands of operation in 15.205
(6) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	48.11 (2)	74	25.89
7236	P	100	46.01	83.13	37.12

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205
(2) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (3)	P	1000	38.77 (4)	74	35.23
7311 (3)	P	1000	48.76 (4)	74	25.24
9748	P	100	38.65	80.43	41.78

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205
(4) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (5)	P	1000	41.03 (6)	74	32.97
7386 (5)	P	1000	51.99 (6)	74	22.01
9848	P	100	39.61	82.56	42.95

P= Peak, QP=Quasi-peak, Av=Average
(5) Restricted bands of operation in 15.205
(6) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	48.87 (2)	74	25.13
7236	P	100	45.23	82.28	37.05
9648	P	100	37.57	82.28	44.71

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205
(2) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (3)	P	1000	39.73 (4)	74	34.27
7311 (3)	P	1000	49.1 (4)	74	24.9
9748	P	100	38.79	81.28	42.49

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205
(4) The peak level is lower than the average limit (54 dBµV/m)

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (5)	P	1000	39.26 (6)	74	34.74
7386 (5)	P	1000	50.67 (6)	74	23.33
9848	P	100	39.03	81.53	42.5
12310 (5)	P	1000	31.68 (6)	74	42.32

P= Peak, QP=Quasi-peak, Av=Average
(5) Restricted bands of operation in 15.205
(6) The peak level is lower than the average limit (54 dBµV/m)

Radiated measurement (cabinet structure)

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	-	74	-
7236	P	100	-	83	-
12060 (1)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (2)	P	1000	-	74	-
7311 (2)	P	1000	-	74	-
9748	P	100	-	82	-
12185 (2)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(2) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (3)	P	1000	-	74	-
7386 (3)	P	1000	-	74	-
9848	P	100	-	83.04	-
12310 (3)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	-	74	-
7236	P	100	-	83.19	-
9648	P	100	-	83.19	-
12060 (1)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (2)	P	1000	-	74	-
7311 (2)	P	1000	-	74	-
12185 (2)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(2) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (3)	P	1000	-	74	-
7386 (3)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	-	74	-
7236	P	100	-	84.51	-
9648	P	100	-	84.51	-

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (2)	P	1000	-	74	-
7311 (2)	P	1000	-	74	-
9748	P	100	-	82.62	-

P= Peak, QP=Quasi-peak, Av=Average
(2) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (3)	P	1000	-	74	-
7386 (3)	P	1000	-	74	-
9848	P	100	-	83.3	-

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	-	74	-
7236	P	100	-	81.72	-

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (2)	P	1000	-	74	-
7311 (2)	P	1000	-	74	-
9748	P	100	-	82.81	-

P= Peak, QP=Quasi-peak, Av=Average
(2) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n – Bandwidth 10 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (3)	P	1000	-	74	-
7386 (3)	P	1000	-	74	-
9848	P	100	-	83.1	-

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	-	74	-
7236	P	100	-	82.95	-

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (2)	P	1000	-	74	-
7311 (2)	P	1000	-	74	-
9748	P	100	-	82.5	-
12185 (2)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(2) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (3)	P	1000	-	74	-
7386 (3)	P	1000	-	74	-
9848	P	100	-	81.94	-
12310 (3)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	-	74	-
7236	P	100	-	82.9	-

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (2)	P	1000	-	74	-
7311 (2)	P	1000	-	74	-
9748	P	100	-	81.44	-
12185 (2)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(2) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (3)	P	1000	-	74	-
7386 (3)	P	1000	-	74	-
9848	P	100	-	82.42	-

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	-	74	-
7236	P	100	-	83.13	-

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (2)	P	1000	-	74	-
7311 (2)	P	1000	-	74	-
9748	P	100	-	80.43	-

P= Peak, QP=Quasi-peak, Av=Average
(2) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (3)	P	1000	-	74	-
7386 (3)	P	1000	-	74	-
9848	P	100	-	82.56	-

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4824 (1)	P	1000	-	74	-
7236	P	100	-	82.28	-
9648	P	100	-	82.28	-

P= Peak, QP=Quasi-peak, Av=Average
(1) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4874 (2)	P	1000	-	74	-
7311 (2)	P	1000	-	74	-
9748	P	100	-	81.28	-

P= Peak, QP=Quasi-peak, Av=Average
(2) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n – Bandwidth 20 MHz

Frequencies (MHz)	Detector P QP Av	RBW (kHz)	Field strength Measured at 3m (dBµV/m)	Limits (dBµV/m)	Margin (dB)
4924 (3)	P	1000	-	74	-
7386 (3)	P	1000	-	74	-
9848	P	100	-	81.53	-
12310 (3)	P	1000	-	74	-

P= Peak, QP=Quasi-peak, Av=Average
(3) Restricted bands of operation in 15.205

Not any cabinet spurious has been observed

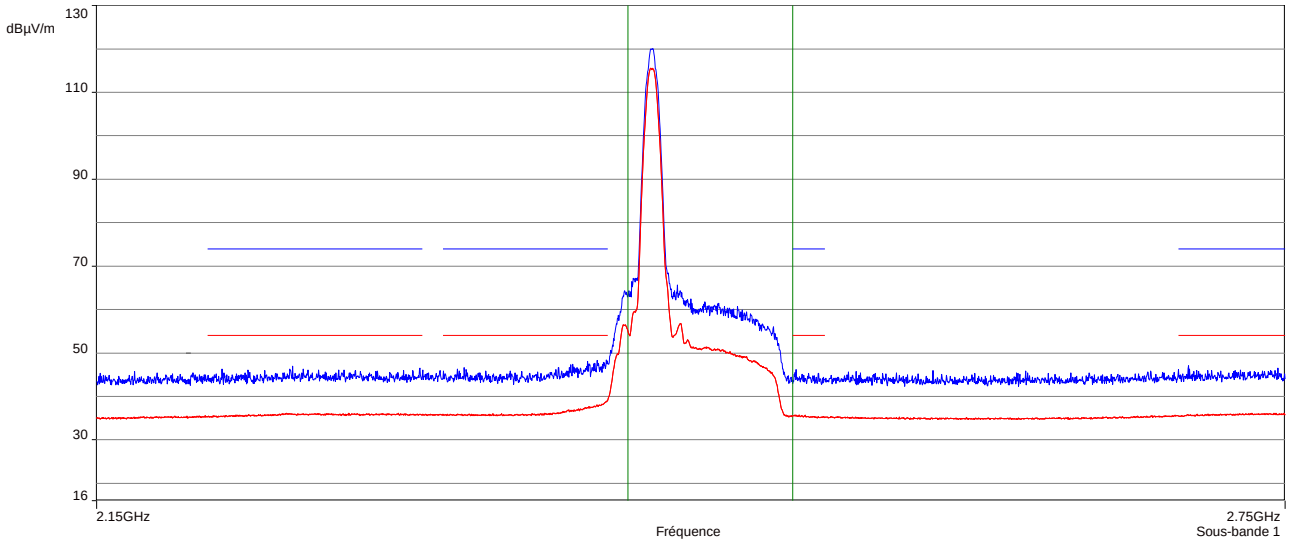
Radiated measurement

Band edge worst case measurement on worst critical positions.

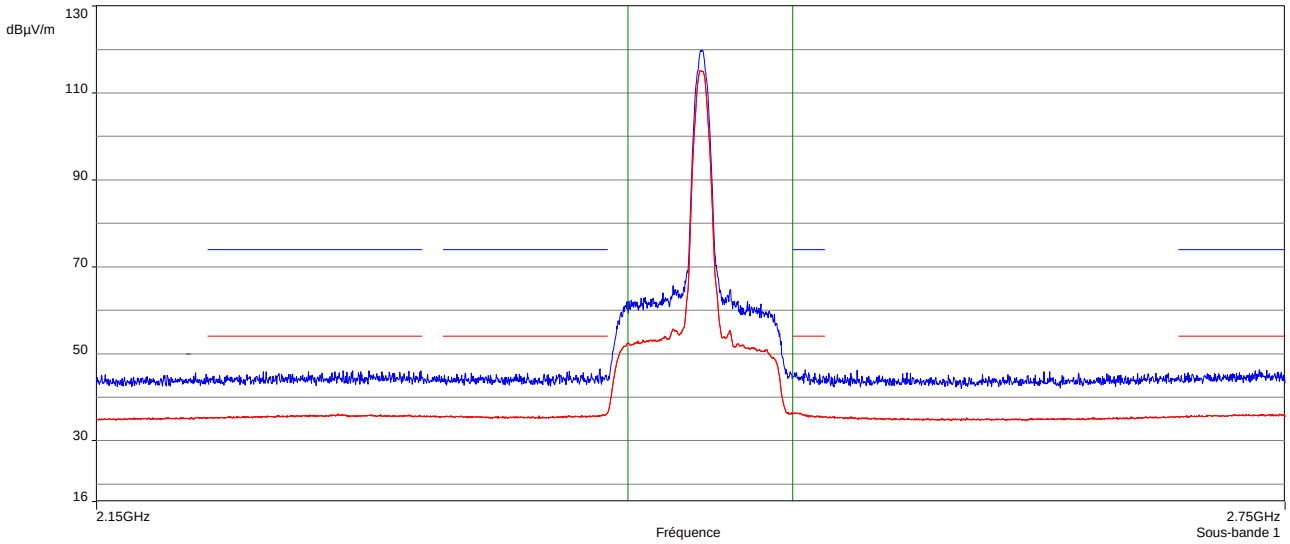
LEGEND:

- Results obtained with 1 MHz RBW
- Blue curve represent measure and limit with a peak detector
- Red curve with average detector.
- Green curve are the limit of the band.

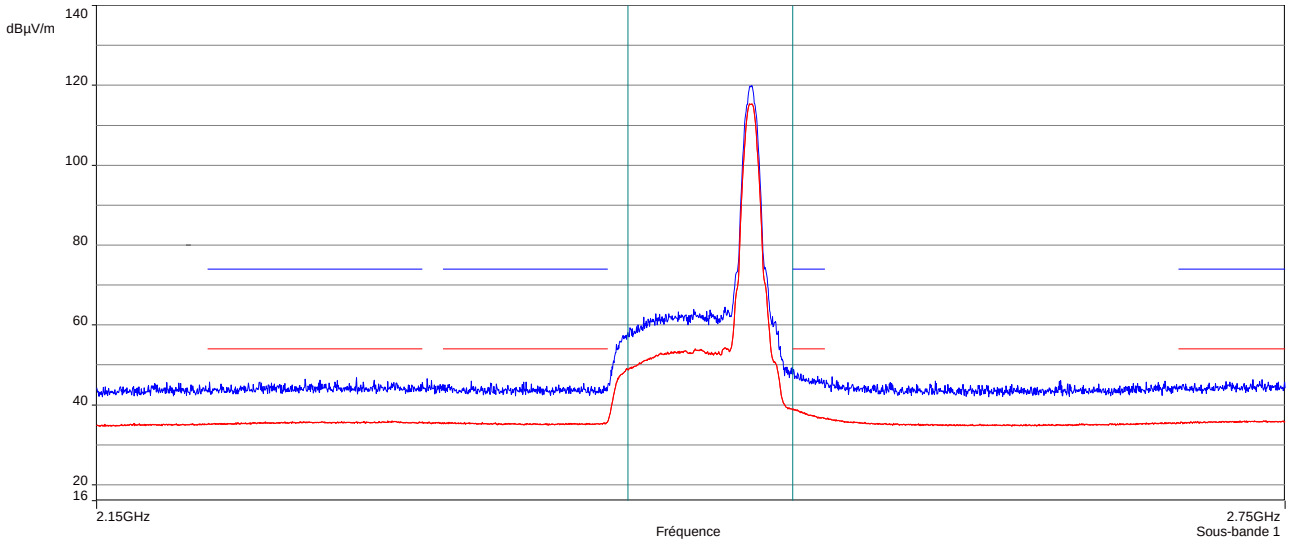
Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1



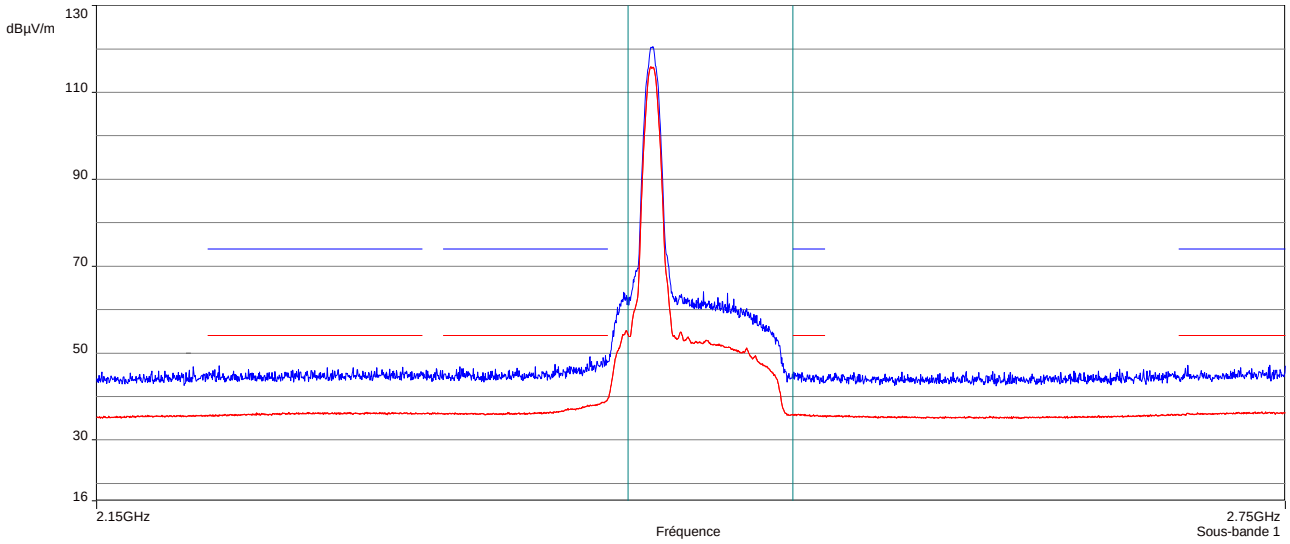
Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1



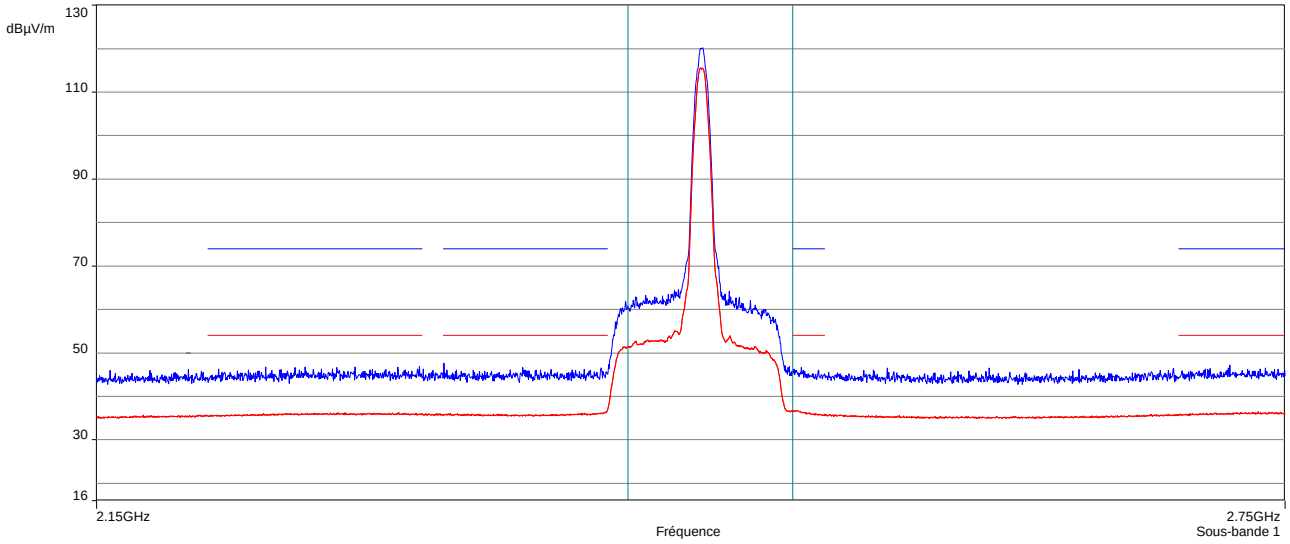
Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 1



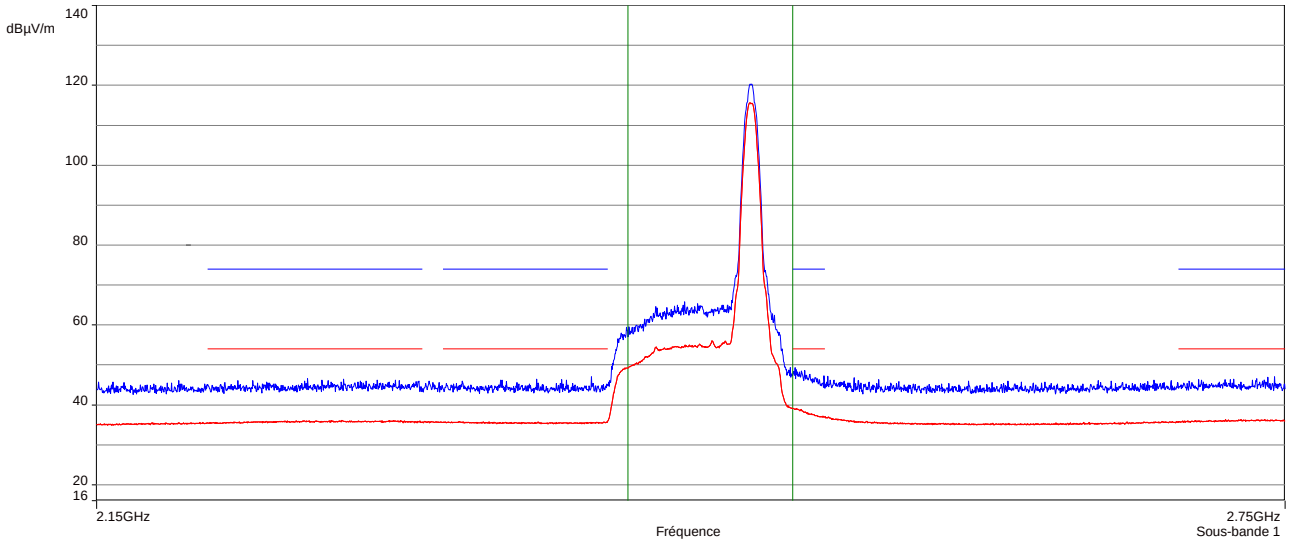
Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2



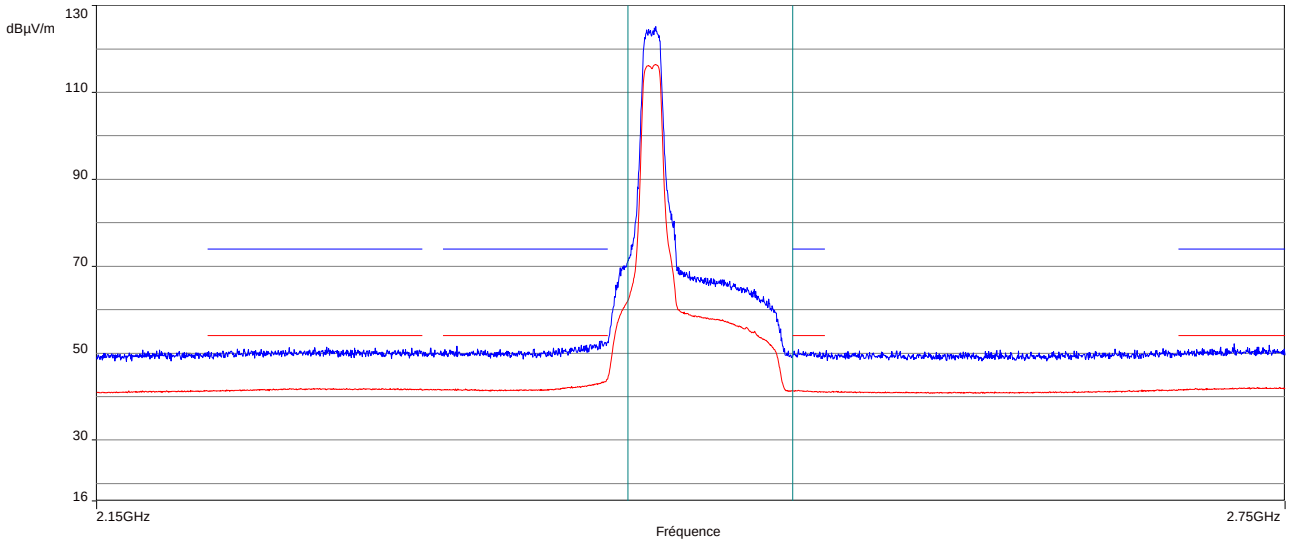
Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2



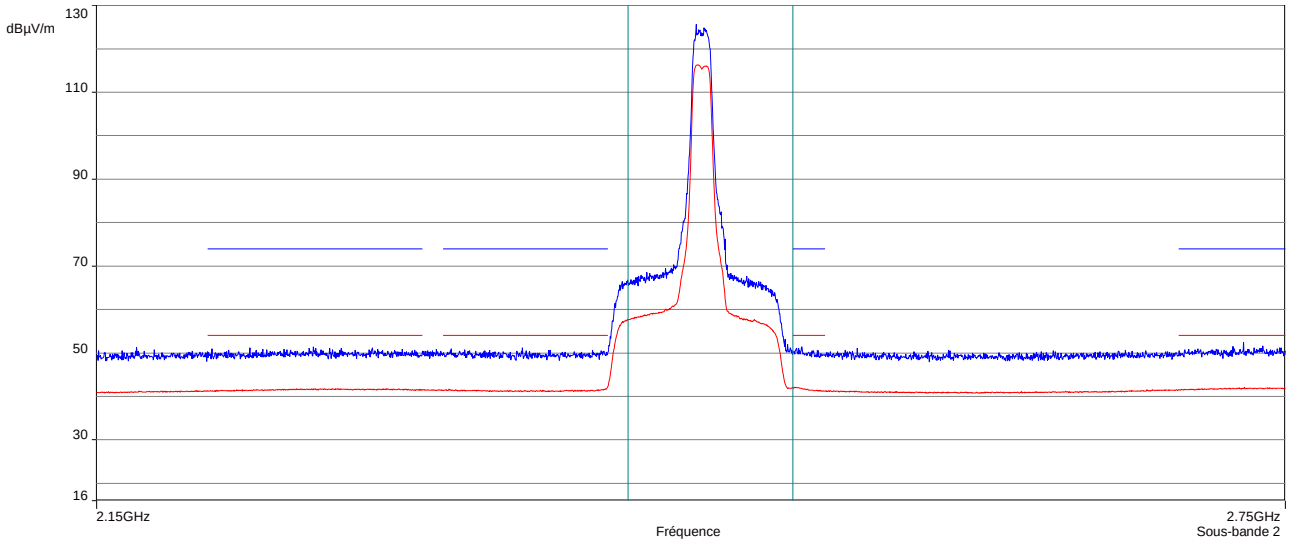
Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 10 MHz – RF 2



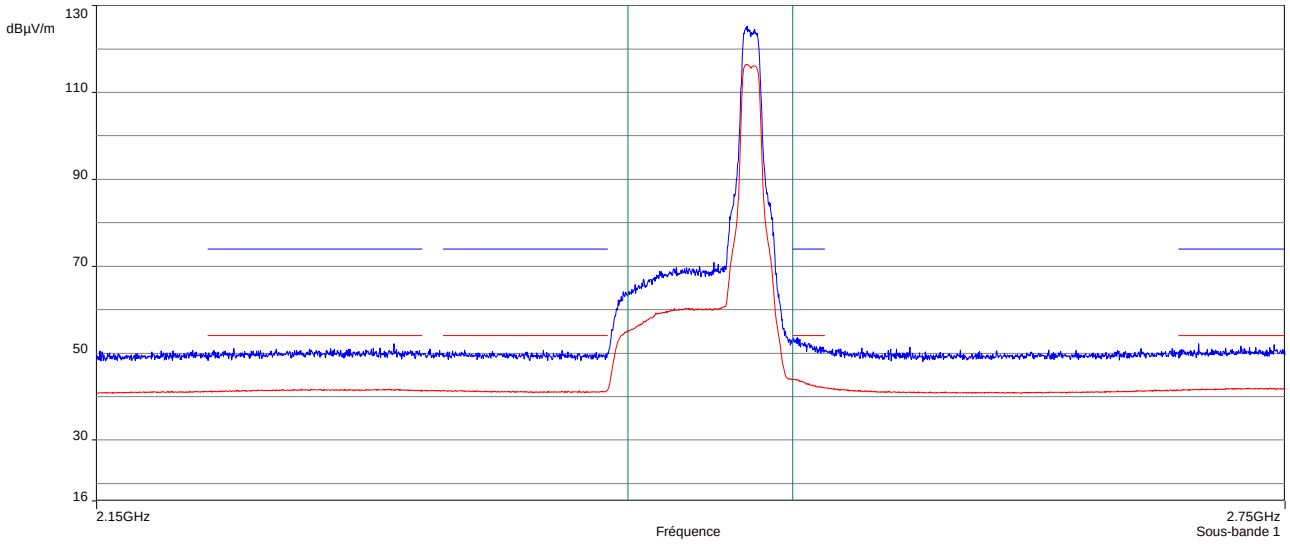
Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g – Bandwidth 10 MHz



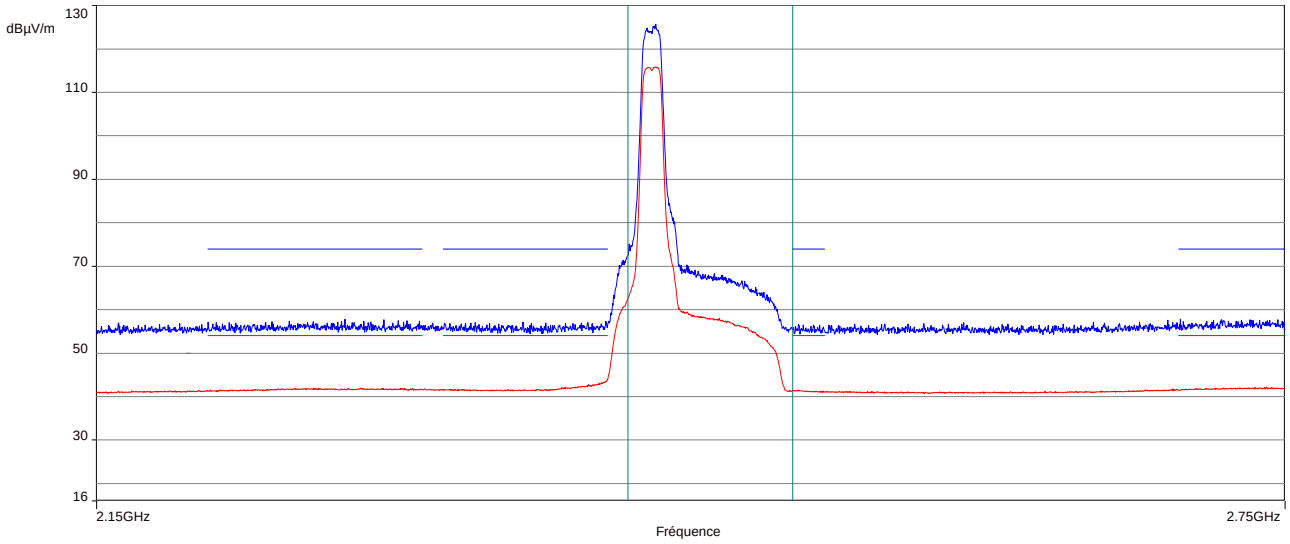
Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g – Bandwidth 10 MHz



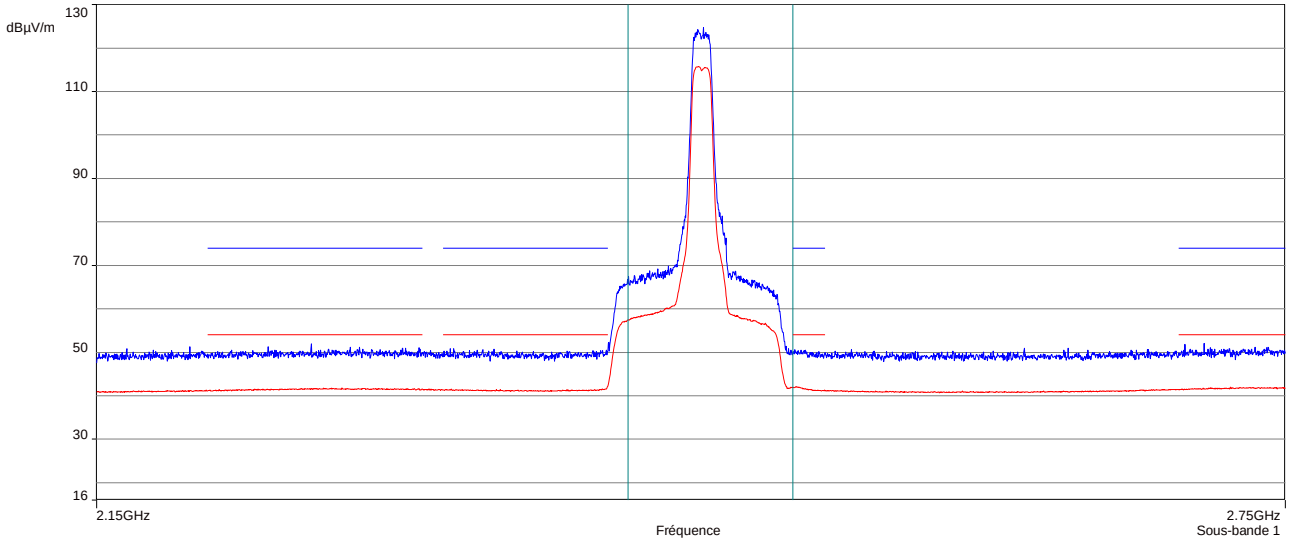
Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g – Bandwidth 10 MHz



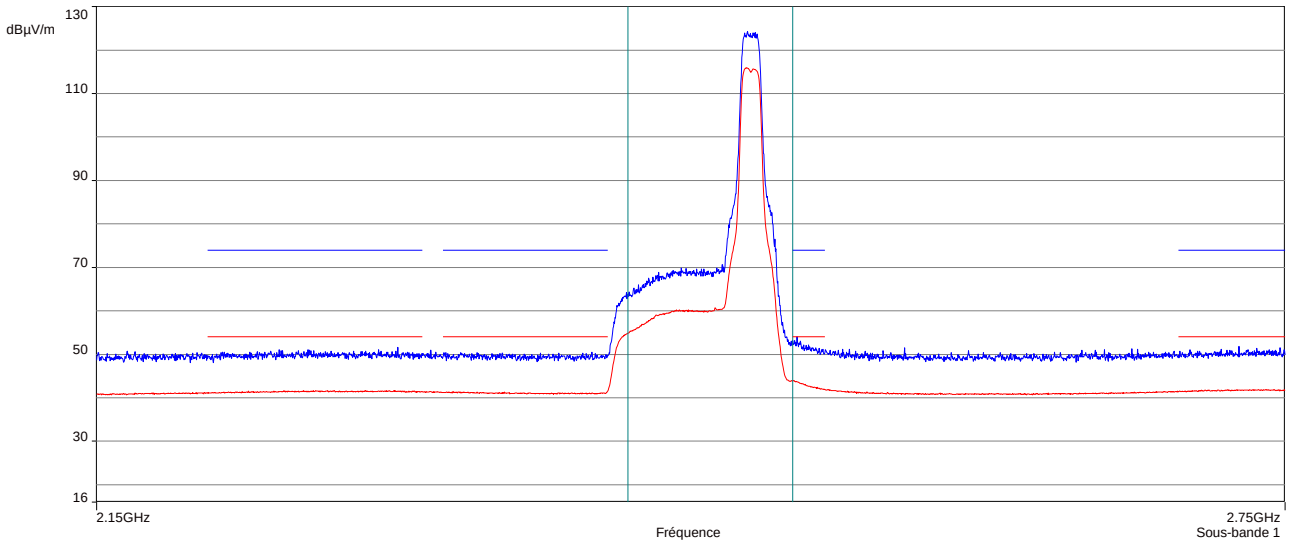
Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n – Bandwidth 10 MHz



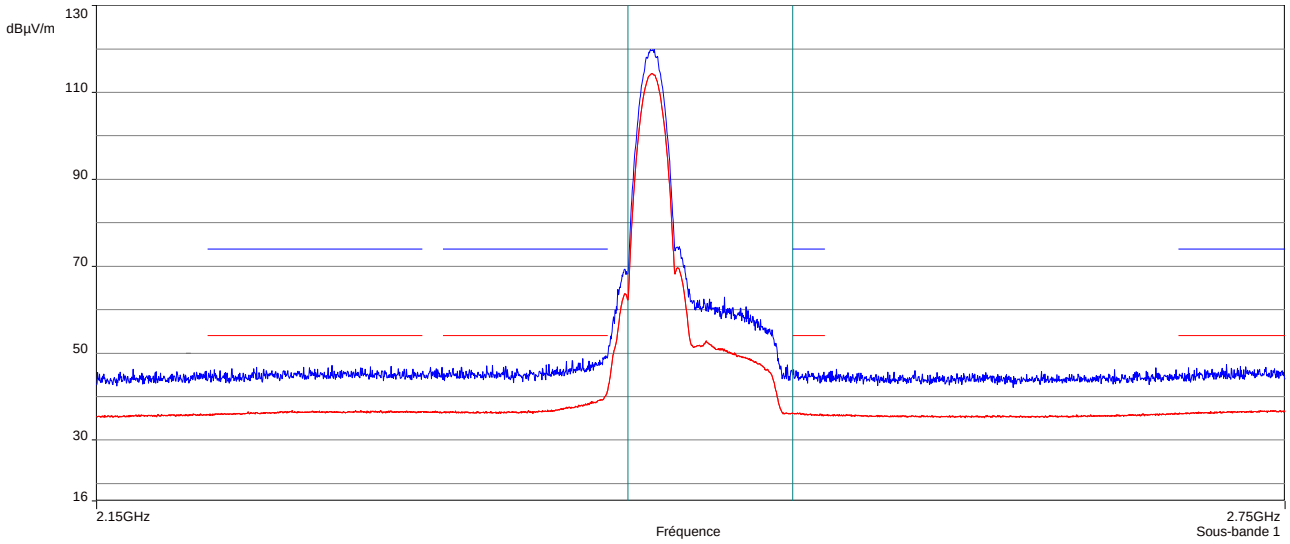
Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n – Bandwidth 10 MHz



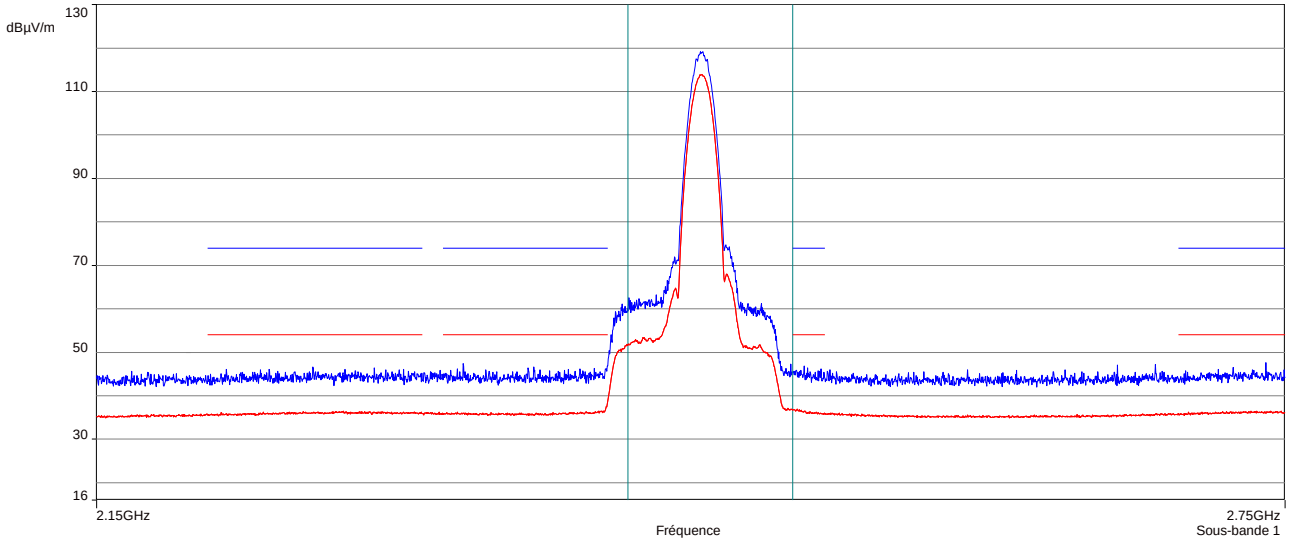
Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n – Bandwidth 10 MHz



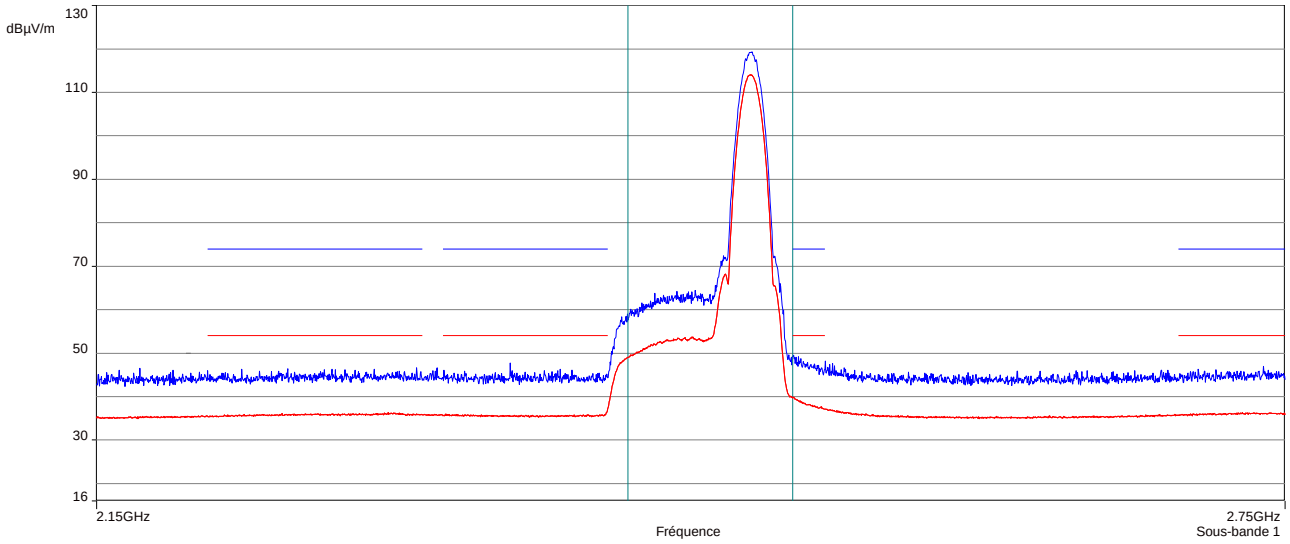
Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1



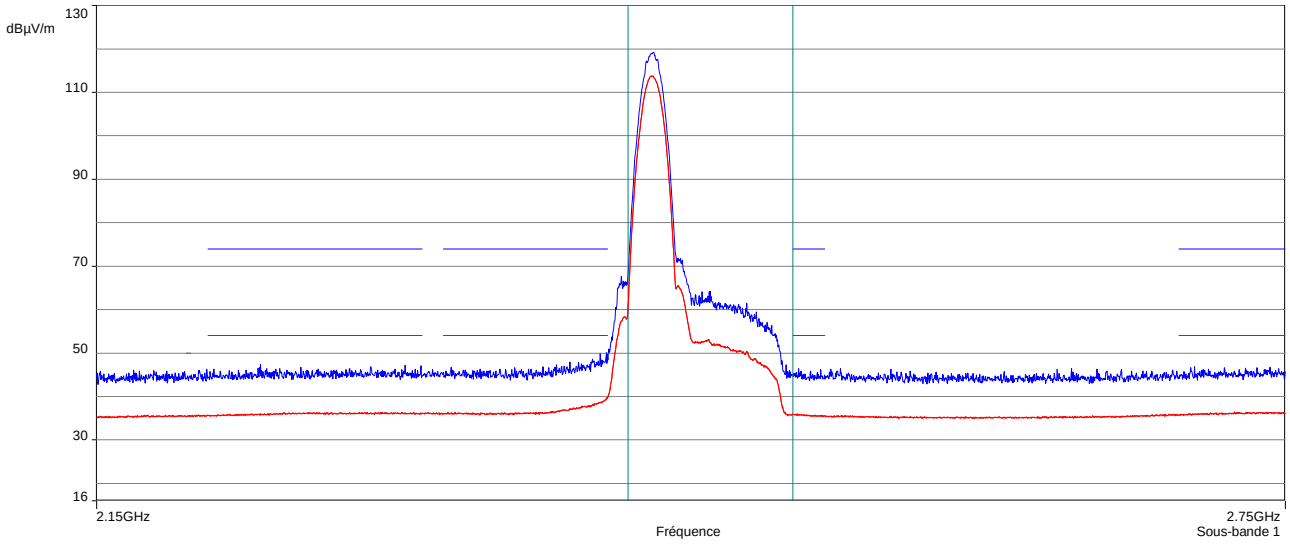
Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1



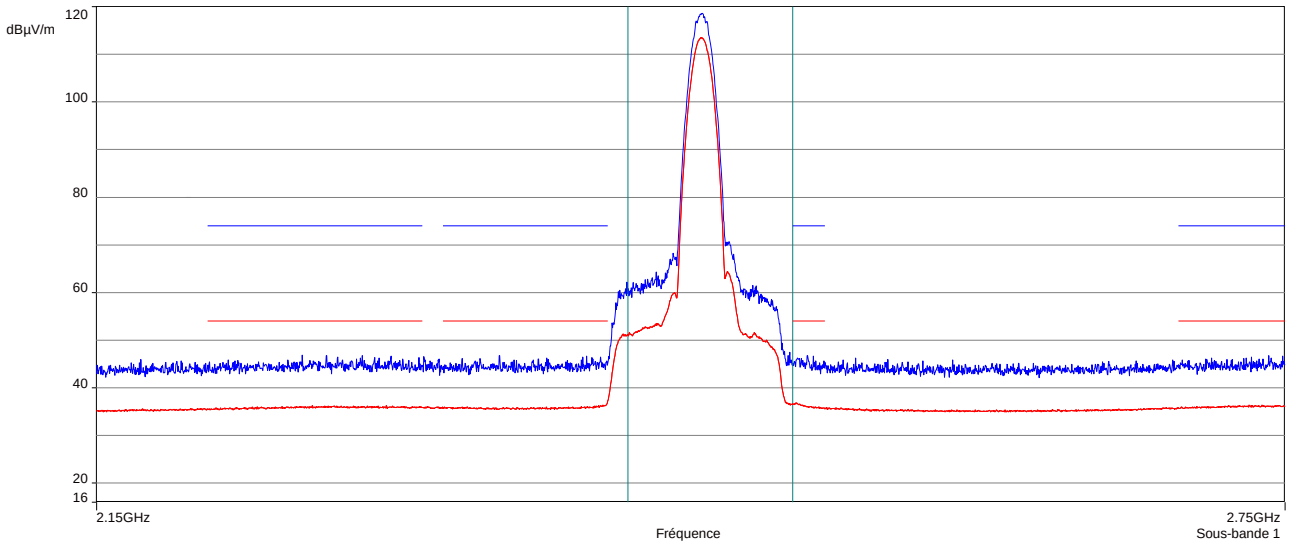
Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 1



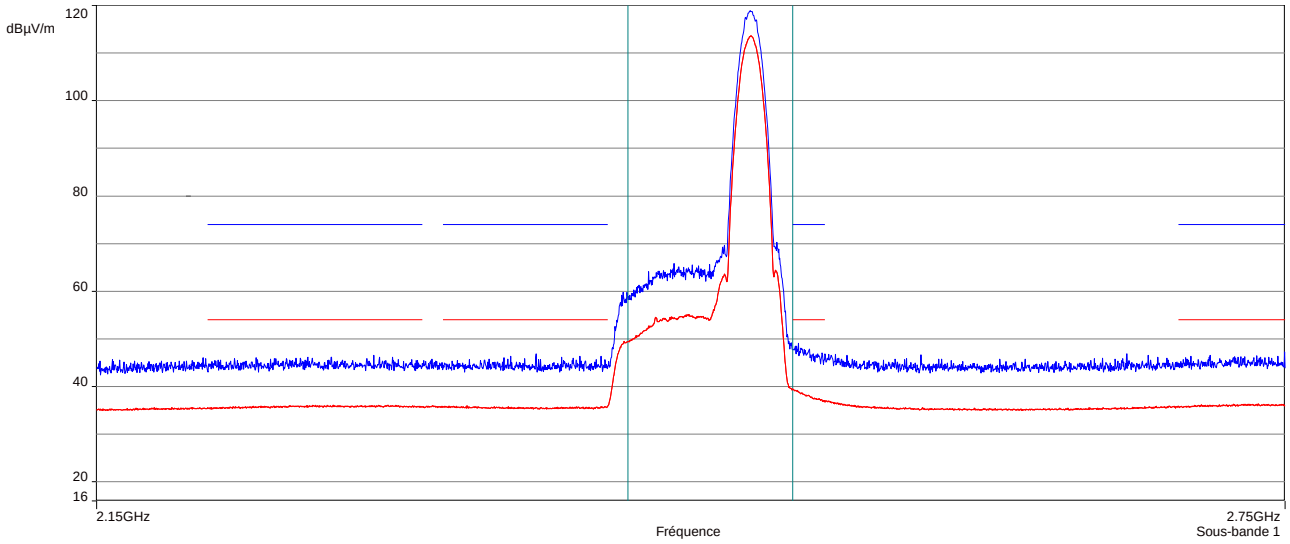
Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2



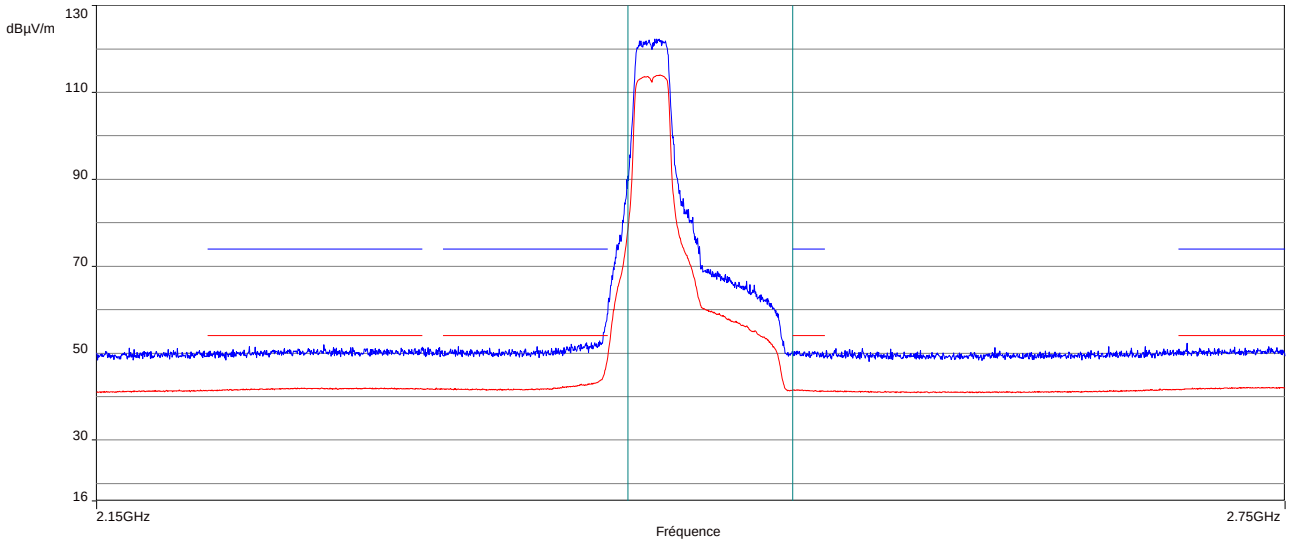
Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2



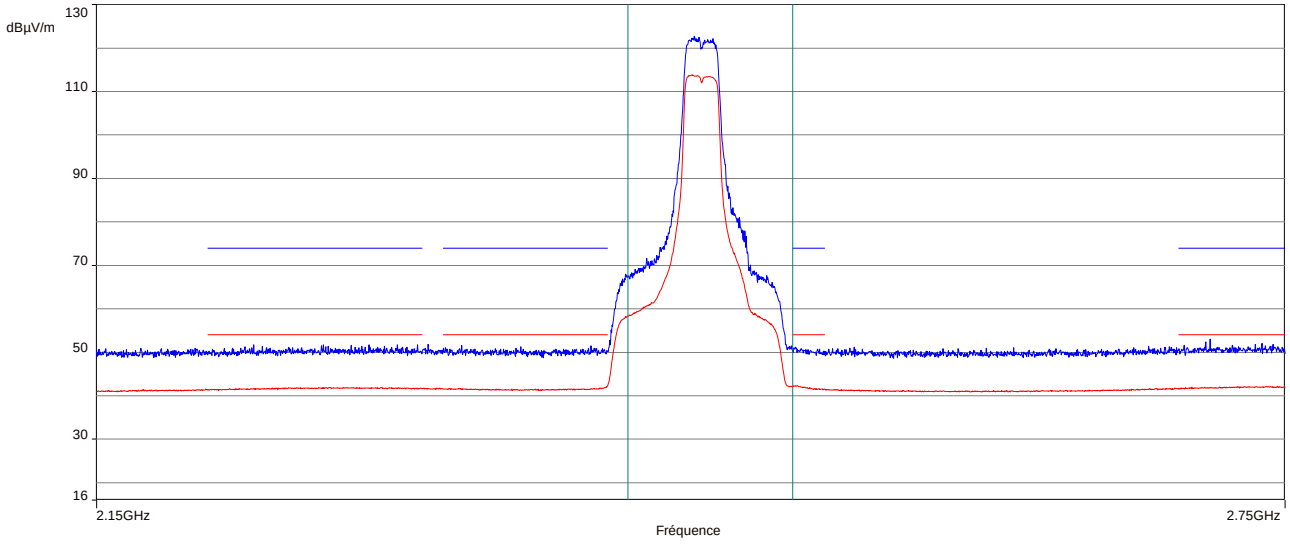
Sample N° 1 Channel 11 (F = 2462MHz) – Mode 802.11.b – Bandwidth 20 MHz – RF 2



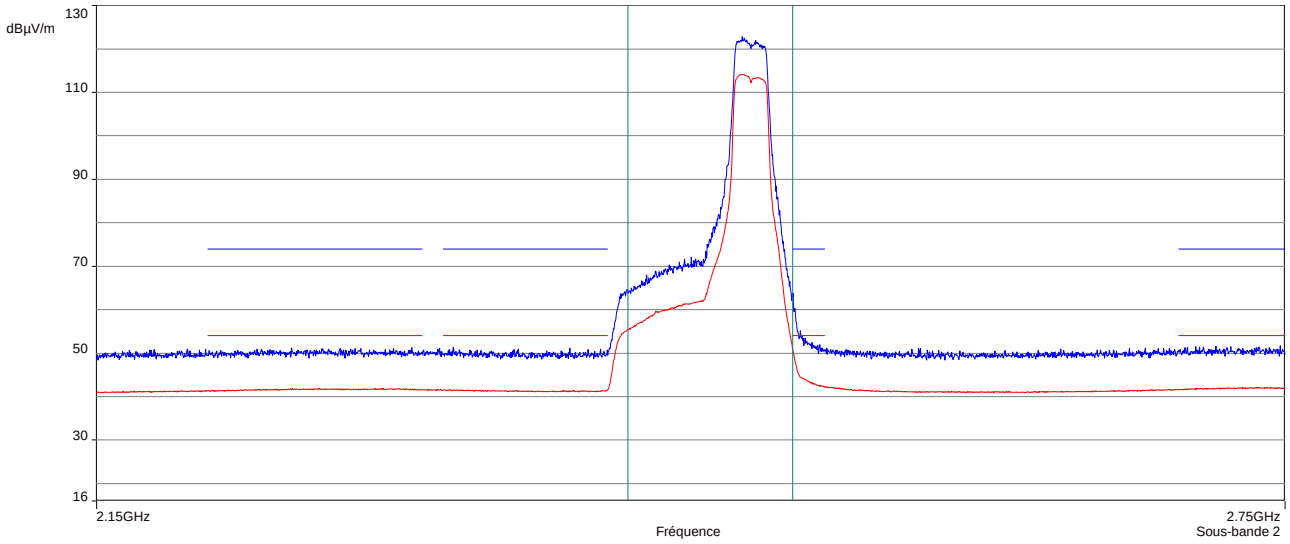
Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g – Bandwidth 20 MHz



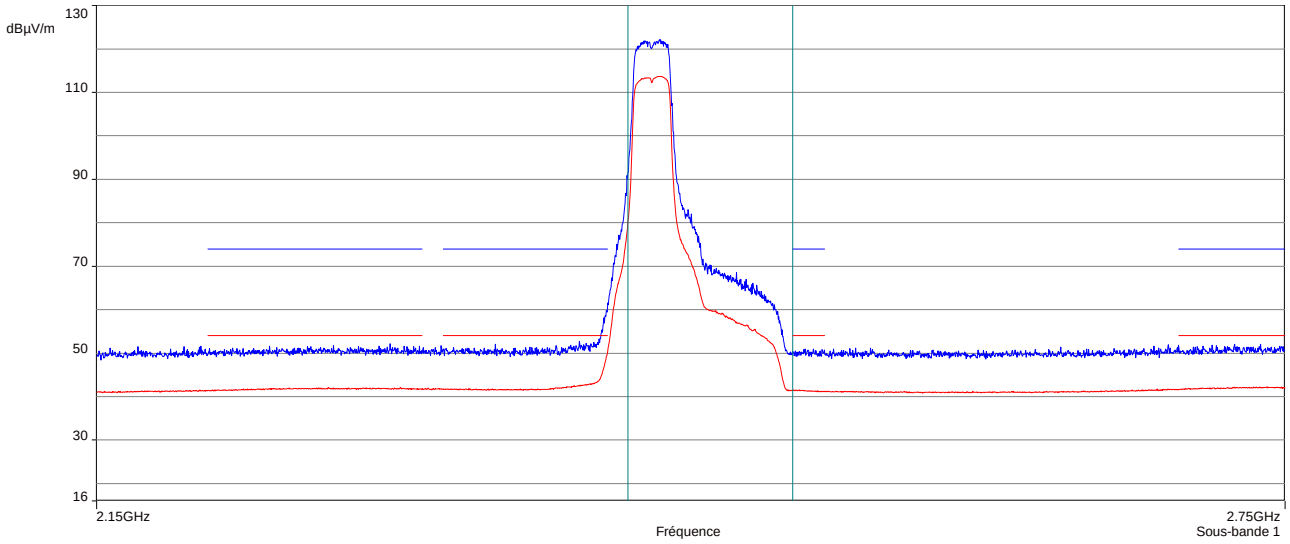
Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g – Bandwidth 20 MHz



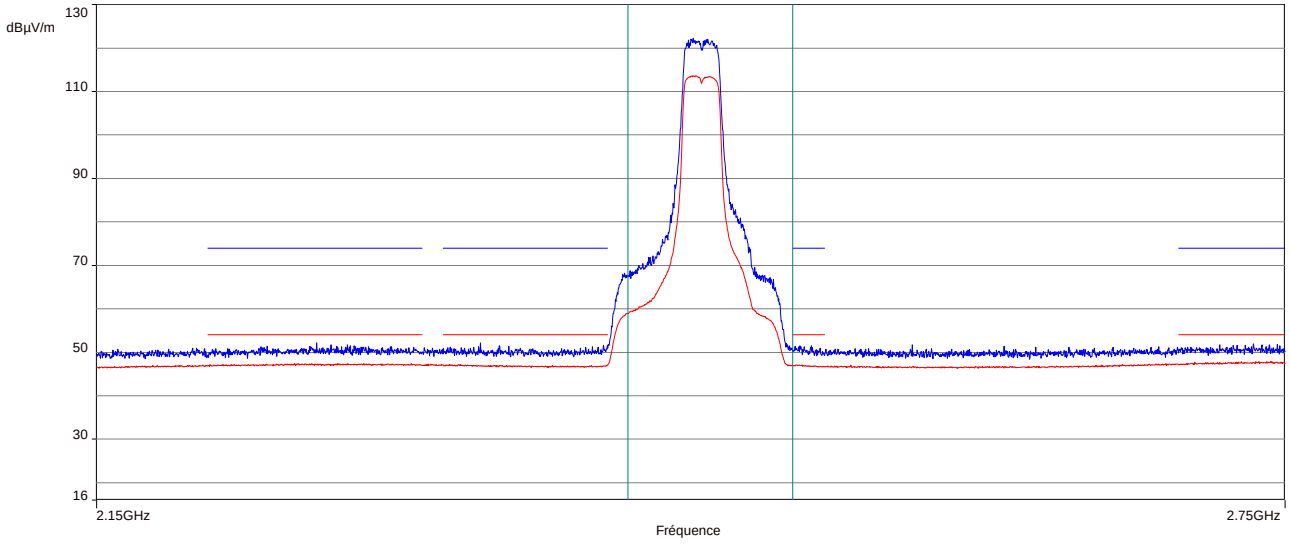
Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g – Bandwidth 20 MHz



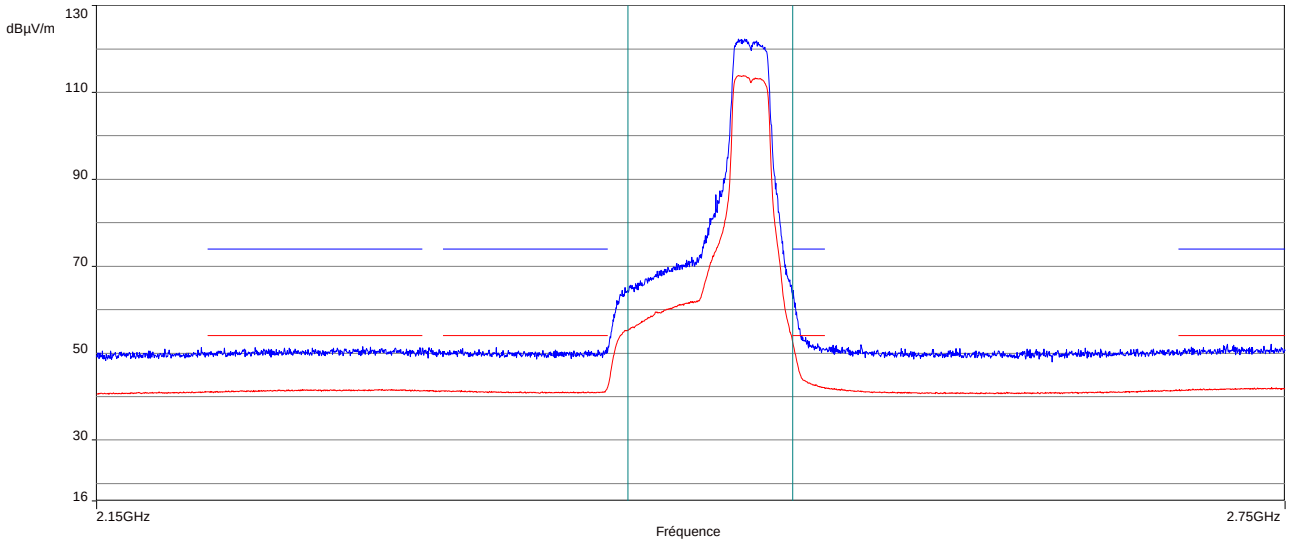
Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n – Bandwidth 20 MHz



Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n – Bandwidth 20 MHz



Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n – Bandwidth 20 MHz



Test conclusion:

RESPECTED STANDARD

11. MAXIMUM CONDUCTED POWER DENSITY

Temperature (°C) : 23 **Humidity (%HR):** 41 **Date :** April 16, 2018 to April 18, 2018

Technician : T. LEDRESSEUR

Standard: FCC Part 15

Test procedure: paragraph 15.247 (e)

Method: AVGPSD-2 of paragraph 10.5 of KDB 558074

Test set up:

Bandwidth selected	**10 MHz**	**20 MHz**
Span	20 MHz	40 MHz
RBW	10 kHz	10 kHz
VBW	30 kHz	30 kHz
detector	RMS	RMS
Points	5001	10001
Trace mode	Avg power	Avg power
Number of traces	100	100

The measure is repeated on each output port of the EUT. Then the results were summed in linear power unit for mode g and n.

Equipment under test operating condition:
The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate.

We used for power source the internal fully charged battery

- According with KDB 662911 the antenna gain is calculated as follow:

Total gain = antenna gain (dBi) + array gain
With Array Gain = 10 log(NANT/NSS) dB = 3 and with NANT=2 and NSS=1

Total gain = 2.5 +3 = 5.5 dBi

- See appendix for plot

- In addition during the measure the duty cycle for all mode is adjusted as follow:

Dutyc cycle factor = 10 log(1/x)

Results:

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Duty cycle factor (dB)	Maximum PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2			
0.89	0.56	0.03	0.92	8

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Duty cycle factor (dB)	Maximum PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2			
1.38	0.58	0.03	1.41	8

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.b – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Duty cycle factor (dB)	Maximum PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2			
10.2	0.57	0.03	1.05	8

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	Sum of PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-4.59	-4.47	0.35	0.36	0.7	-1.52	0.28	-1.24	8

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	Sum of PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-4.67	-4.22	0.34	0.38	0.72	-1.43	0.28	-1.15	8

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	Sum of PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-4.86	-4.14	0.33	0.39	0.71	-1.47	0.28	-1.19	8

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	Sum of PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-4.99	-5.65	0.32	0.27	0.59	-2.3	0.28	-2.02	8

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	Sum of PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-5.05	-5.77	0.31	0.26	0.58	-2.38	0.28	-2.10	8

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n – bandwidth 10 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	Sum of PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-4.98	-5.42	0.32	0.29	0.6	-2.18	0.28	-1.90	8

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.b – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Duty cycle factor (dB)	Maximum PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2			
-2.1	-2.16	0.04	-2.06	8

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.b – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Duty cycle factor (dB)	Maximum PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2			
-3.14	-2.99	0.04	-2.95	8

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.b – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Duty cycle factor (dB)	Maximum PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2			
-2.26	-3.29	0.04	-2.22	8

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.g – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-7.54	-7.36	0.18	0.18	0.36	-4.44	0.33	-4.11	8

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.g – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-7.66	-7.81	0.17	0.17	0.34	-4.72	0.33	-4.39	8

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.g – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-7.61	-7.66	0.17	0.17	0.34	-4.62	0.33	-4.29	8

Sample N° 1 Channel 1 (F = 2412 MHz) – Mode 802.11.n – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-7.5	-7.64	0.18	.17	0.35	-4.56	0.28	-4.28	8

Sample N° 1 Channel 6 (F = 2437 MHz) – Mode 802.11.n – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-7.75	-7.71	0.17	0.17	0.34	-4.72	0.28	-4.44	8

Sample N° 1 Channel 11 (F = 2462 MHz) – Mode 802.11.n – bandwidth 20 MHz

Power Spectral Density (dBm/10kHz):		Power Spectral Density (mW/10kHz):		Sum of PSD (mW/10kHz)	Sum of PSD (dBm/10kHz)	Duty cycle factor (dB)	PSD (dBm/10kHz)	Limit (dBm/3kHz)
Chain 1	Chain 2	Chain 1	Chain 2					
-7.94	-8.08	0.16	0.16	0.32	-5.0	0.28	-4.72	8

Test conclusion:

RESPECTED STANDARD

□□□ End of report, (4) appendixes to be forwarded □□□

APPENDIX 1: Test equipment list

Additional provisions to the general radiated emission limitations

TYPE	MANUFACTURER	EMITECH NUMBER
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Full anechoic chamber	EMITECH	10759
Turntable and mat controller NCD	MATURO	10789
Spectrum Analyzer FSP40	Rohde & Schwarz	4088
Antenna 3115	EMCO	8535
Cable N-1m	SUCOFLEX	14302
Cable N-2m	SUCOFLEX	14303
Cable N-2.5m	SUCOFLEX	14304
Cable N-4m	SUCOFLEX	14305
Cable N-1.5m	-	9398
Antenna 3117	ETS-Lindgren	10771
Low-noise amplifier S005180M3201	LUCIX Corp.	12590
Attenuator 10 dB DC-18GHz 10dB	Midwest Microwave	8548
Multimeter 177	Fluke	14831
Meteo station WS-9232	La Crosse Technology	8750
Software	BAT-EMC V3.16.0.64	0000

Power limits

TYPE	MANUFACTURER	EMITECH NUMBER
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Spectrum Analyzer ESU 8	Rohde & Schwarz	9403
Wideband sensor Z86	Rohde & Schwarz	11592
Attenuator 20 dB DC-18GHz 20dB	Midwest Microwave	8549
Multimeter 177	Fluke	14831
Meteo station WS-9232	La Crosse Technology	8750

Intentional radiator

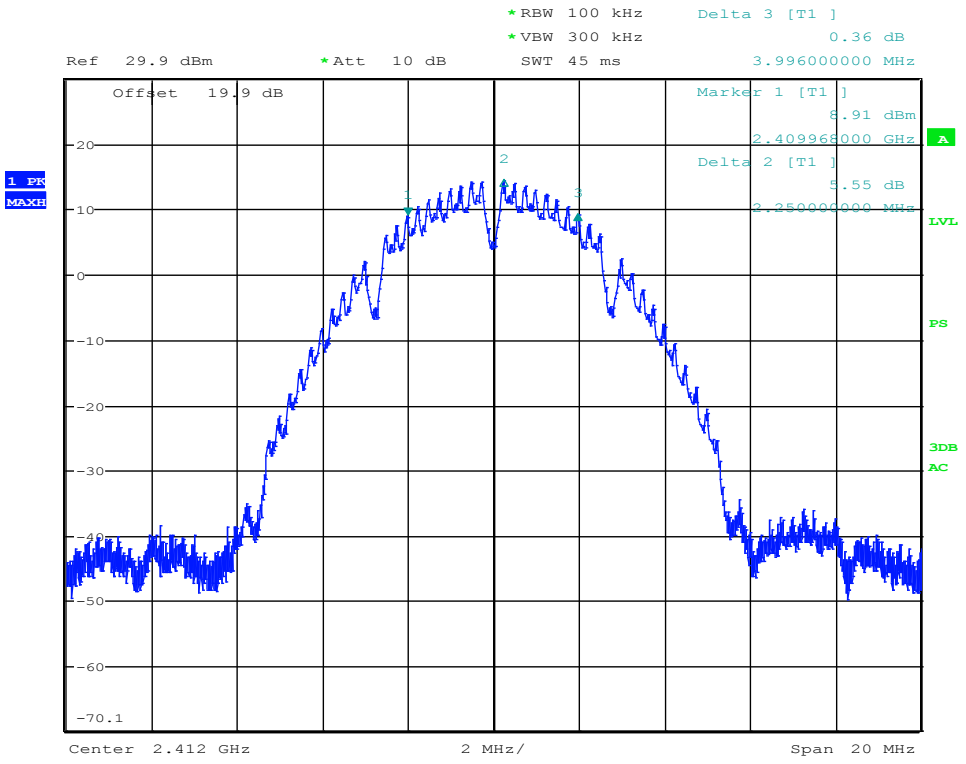
TYPE	MANUFACTURER	EMITECH NUMBER
Anechoic Chamber	EMITECH	8593
Turntable controller 1060C	EMCO	8958
Full anechoic chamber	EMITECH	10759
Turntable and mat controller NCD	MATURO	10789
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Cable N-5m	Huber + Suhner	12911
Cable N-1m	Huber + Suhner	12912
Cable N-1.5m	Suhner	6884
Cable N-1m	SUCOFLEX	14302
Cable N-2m	SUCOFLEX	14303
Cable N-2.5m	SUCOFLEX	14304
Cable N-4m	SUCOFLEX	14305
Cable N-1.5m	-	9398
Cable k-20cm	STORM MICROWAE	8974
Cable k-20cm	STORM MICROWAE	8975
Spectrum Analyzer FSP40	Rohde & Schwarz	4088
Biconical antenna VHBB 9124	Schwarzbeck	8526
Biconical antenna 3110	Emco	7240
Log periodic antenna UHALP 9108A	Schwarzbeck	8543
Log periodic antenna HL223	Rohde & Schwarz	7190
Antenna 3115	EMCO	8535
Antenna 3117	ETS-Lindgren	10771
Antenna M3160-09	ETS-Lindgren	8786
Low-noise amplifier 8447D	Hewlett Packard	8511
Low-noise amplifier ZFL-1000LN	Mini-circuit	10730
Low-noise amplifier S005180M3201	LUCIX Corp.	10739
Low-noise amplifier S005180M3201	LUCIX Corp.	12590
Low-noise amplifier S180265L3201 LNA	LUCIX Corp.	8704
Low pass filter LP03/1000-7GH	Filtek	4087
Low Pass Filter LPM15601	Microtronics	6606
High Pass Filter LPM15600	Microtronics	6607
Multimeter 177	Fluke	14831
Meteo station WS-9232	La Crosse Technology	8750
Software	BAT-EMC V3.16.0.64	0000

Peak power density

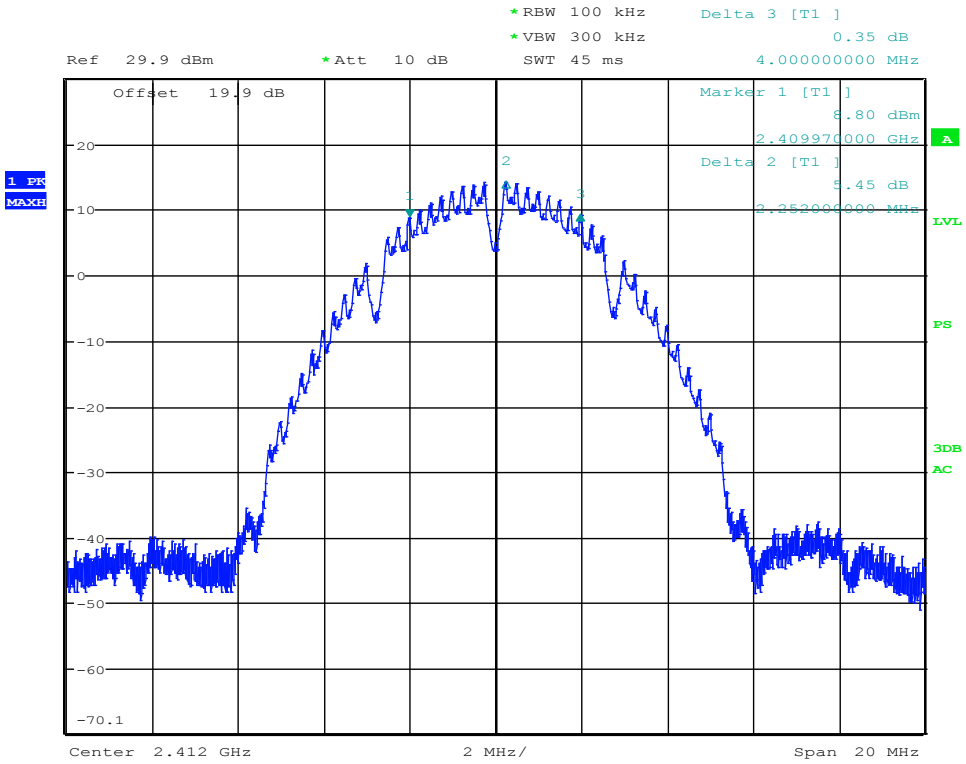
TYPE	MANUFACTURER	EMITECH NUMBER
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Spectrum Analyzer ESU 8	Rohde & Schwarz	9403
Attenuator 20 dB DC-18GHz 20dB	Midwest Microwave	8549
Multimeter 177	Fluke	14831
Meteo station WS-9232	La Crosse Technology	8750

APPENDIX 2: 6 dB bandwidth

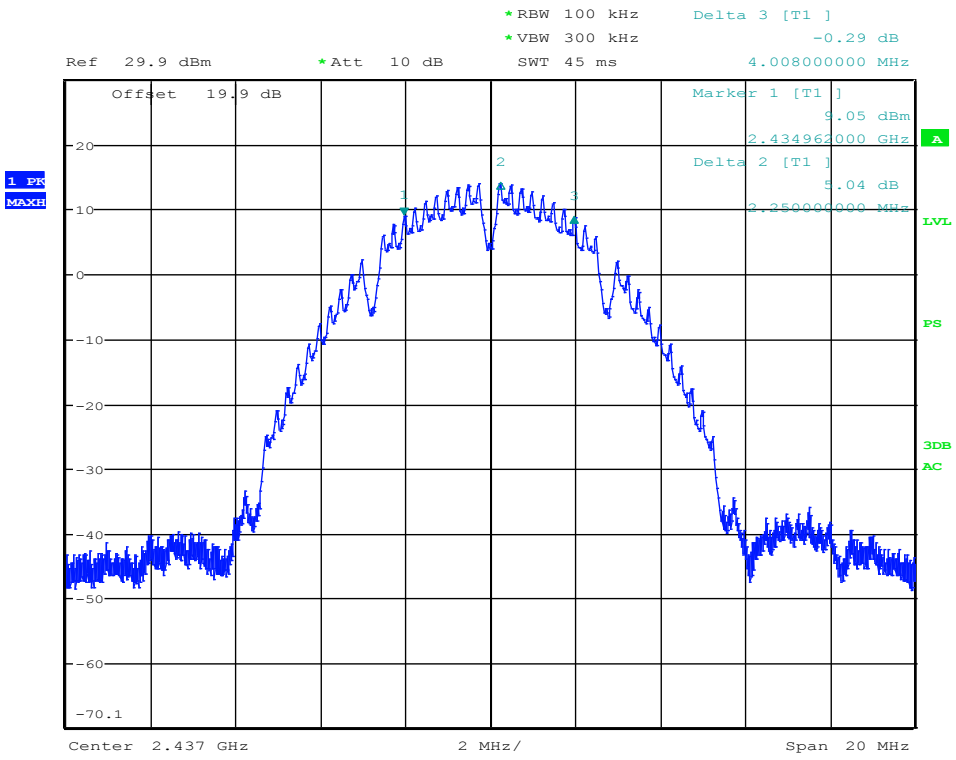
Low Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



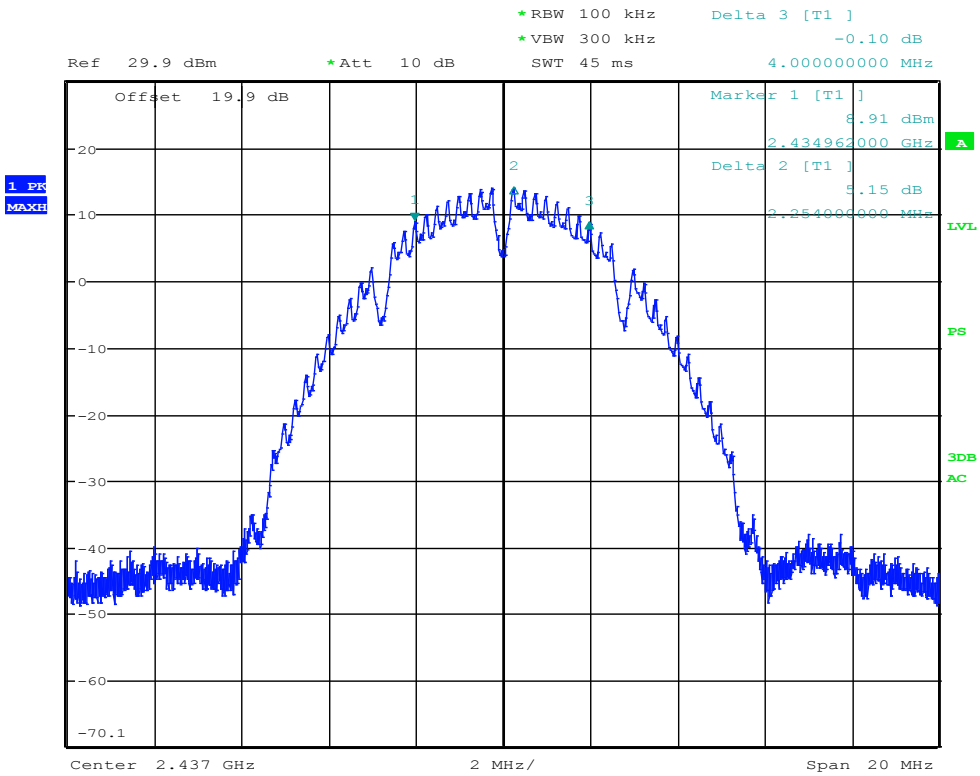
Low Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



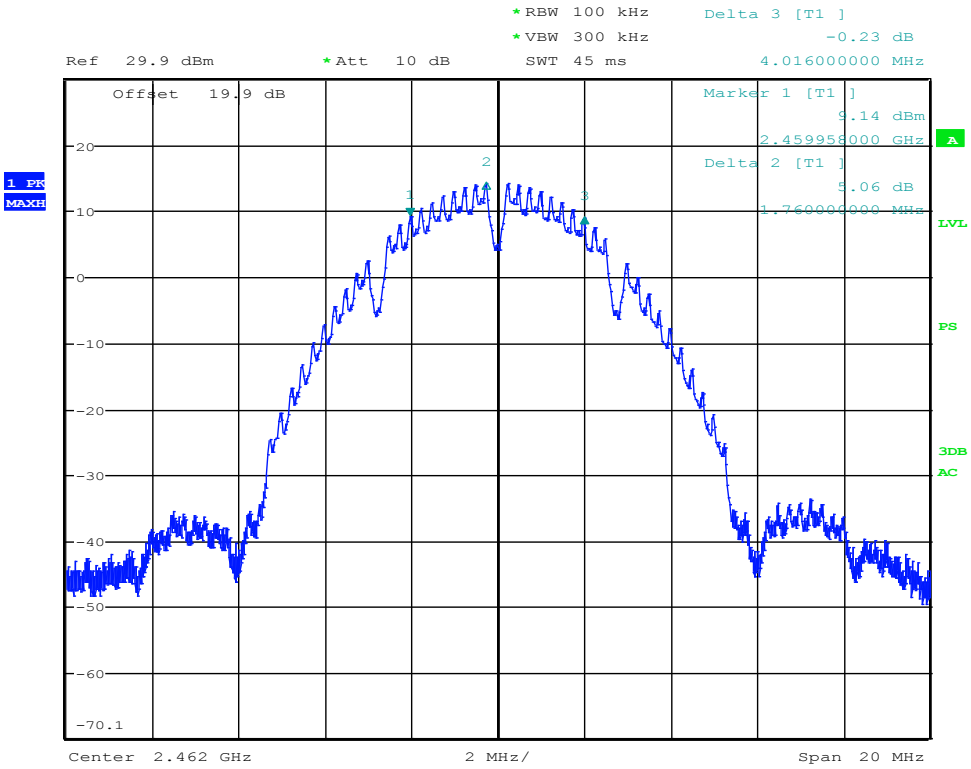
Central Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



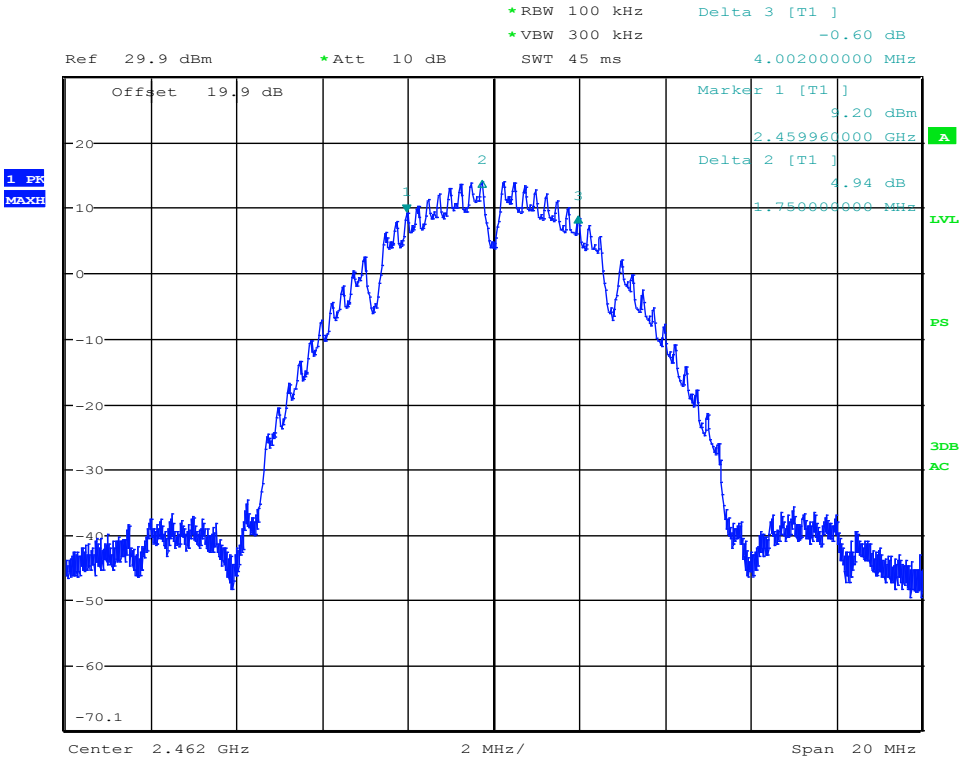
Central Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



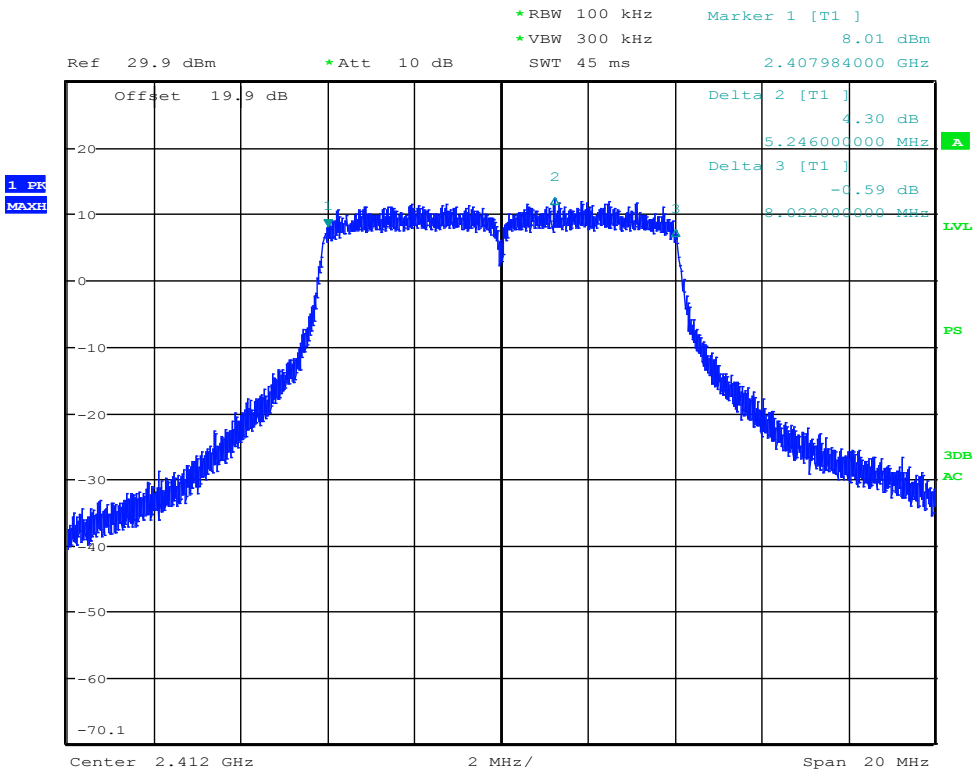
High Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



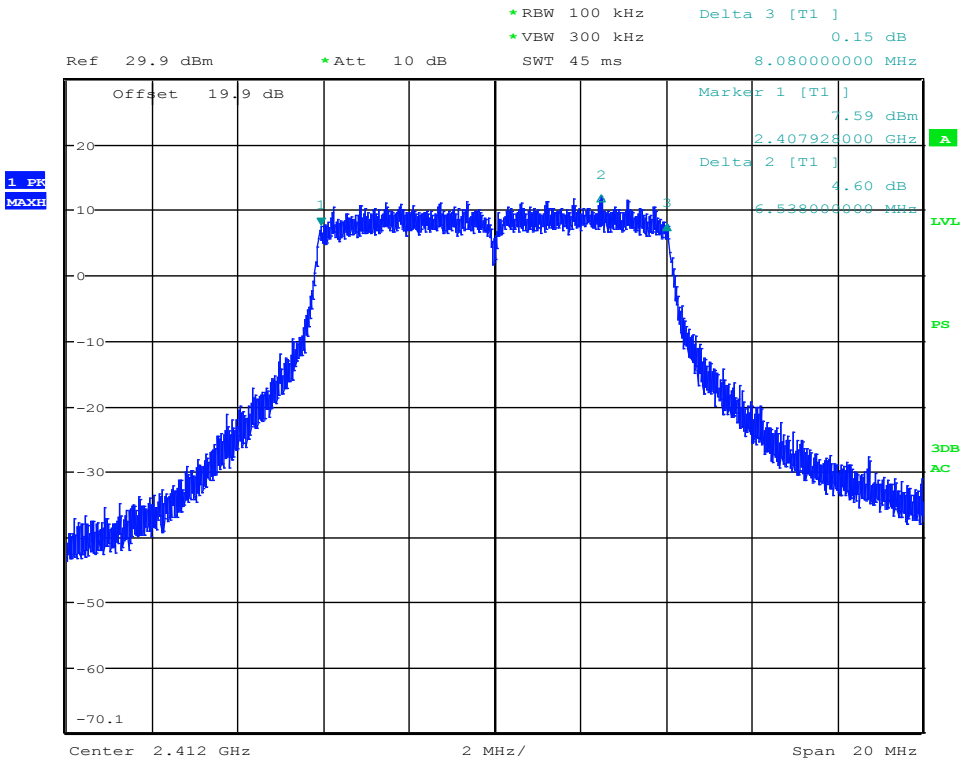
High Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



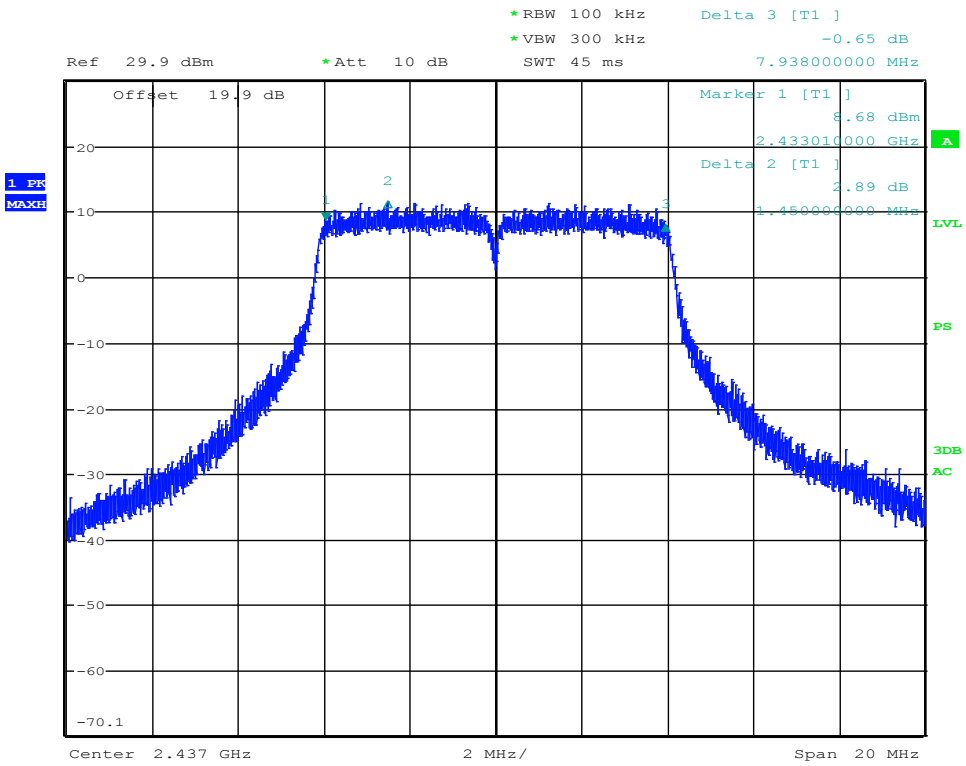
Low Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



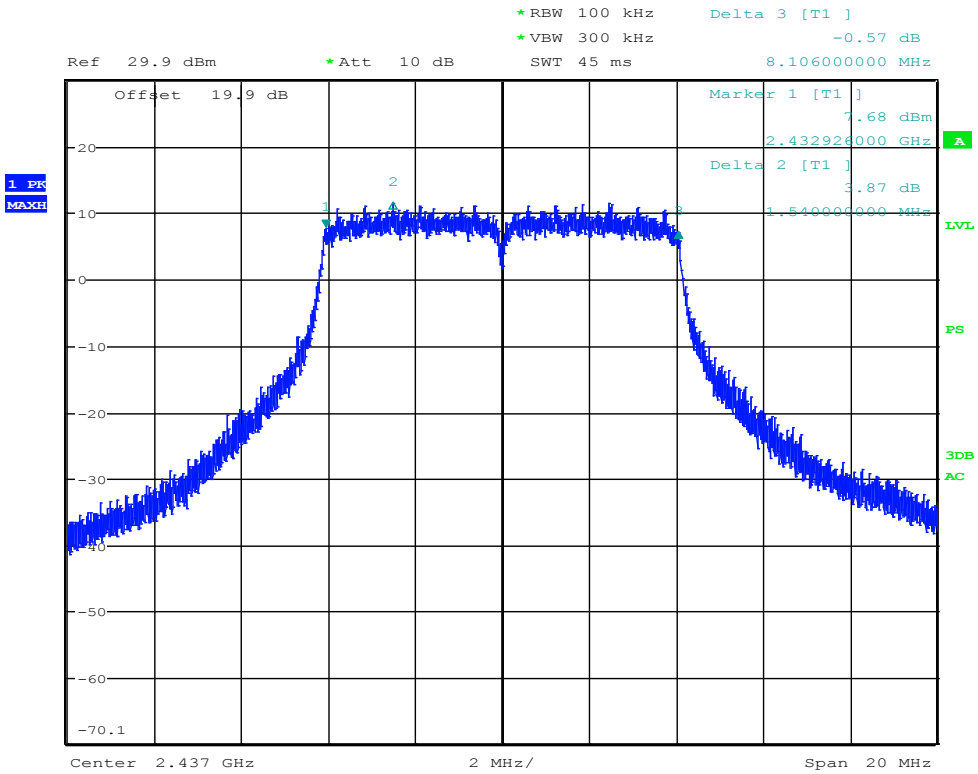
Low Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



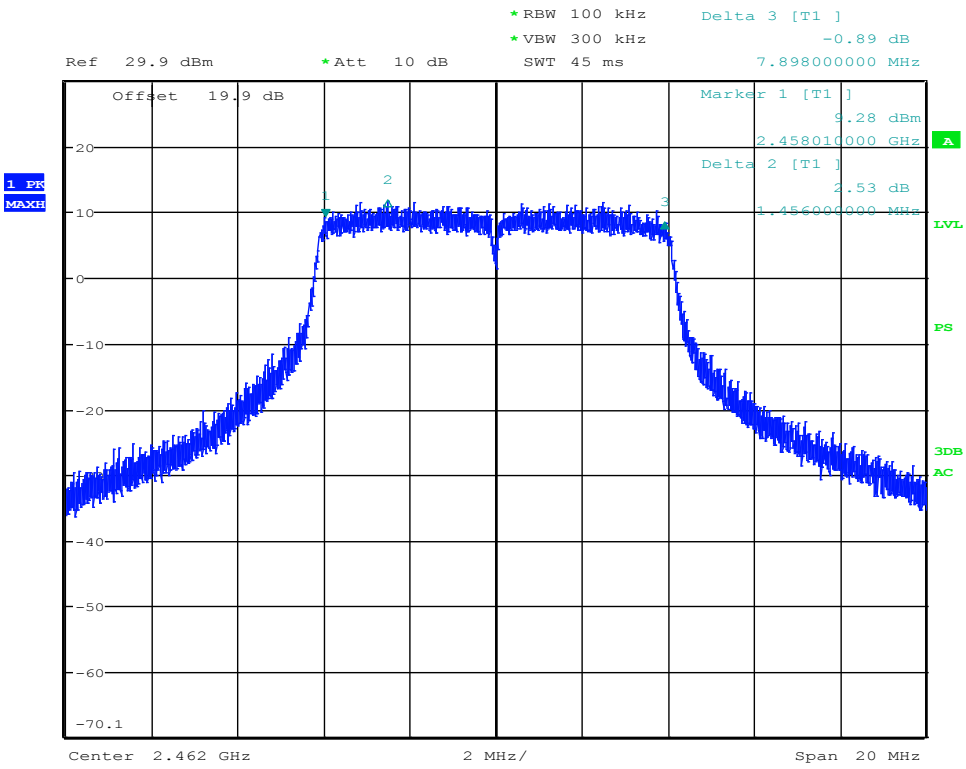
Central Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



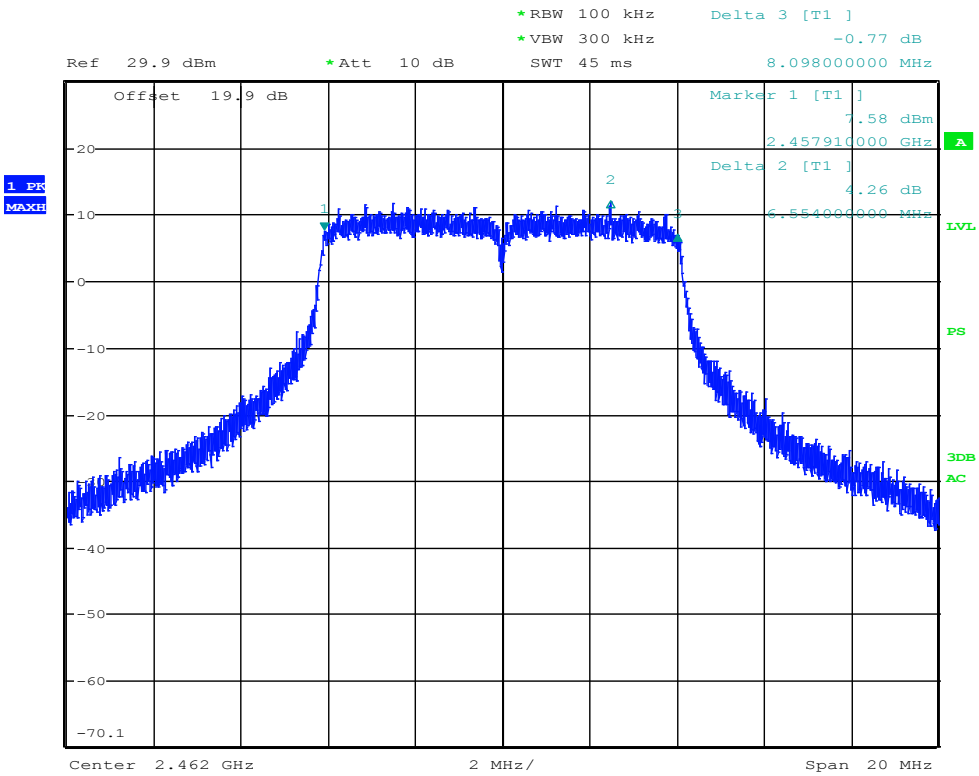
Central Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



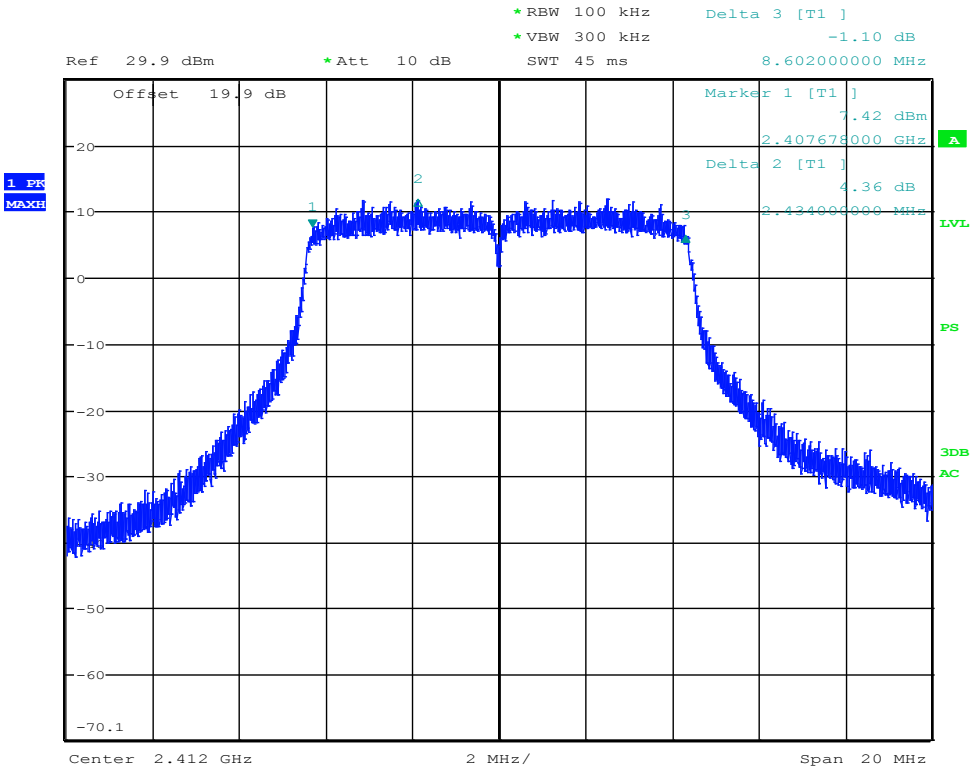
High Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



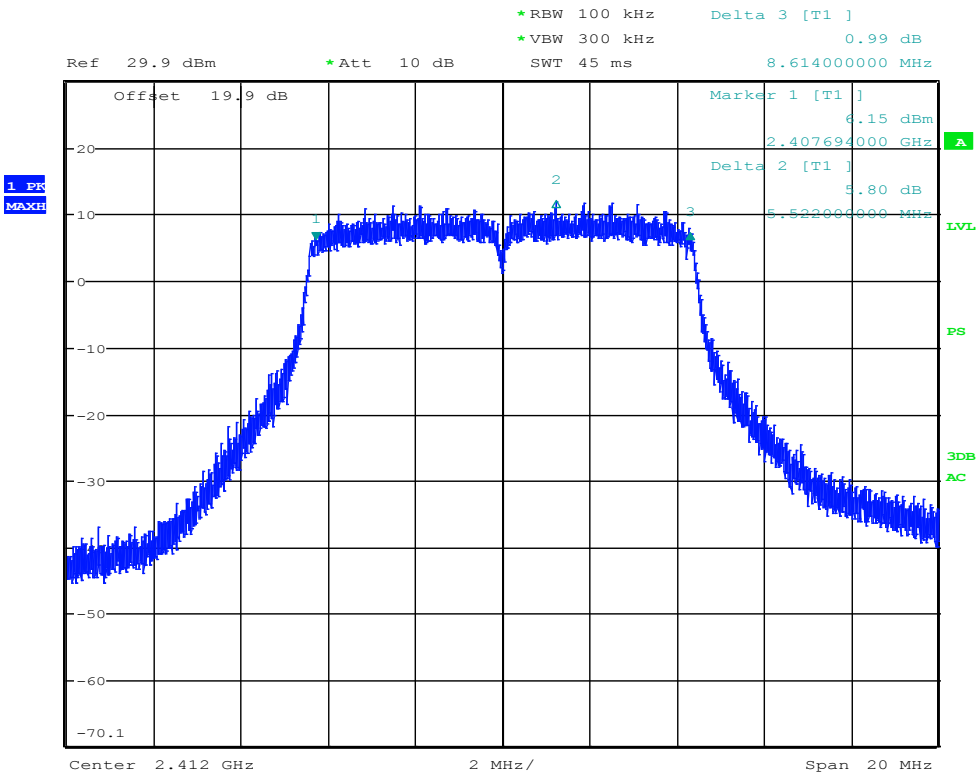
High Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



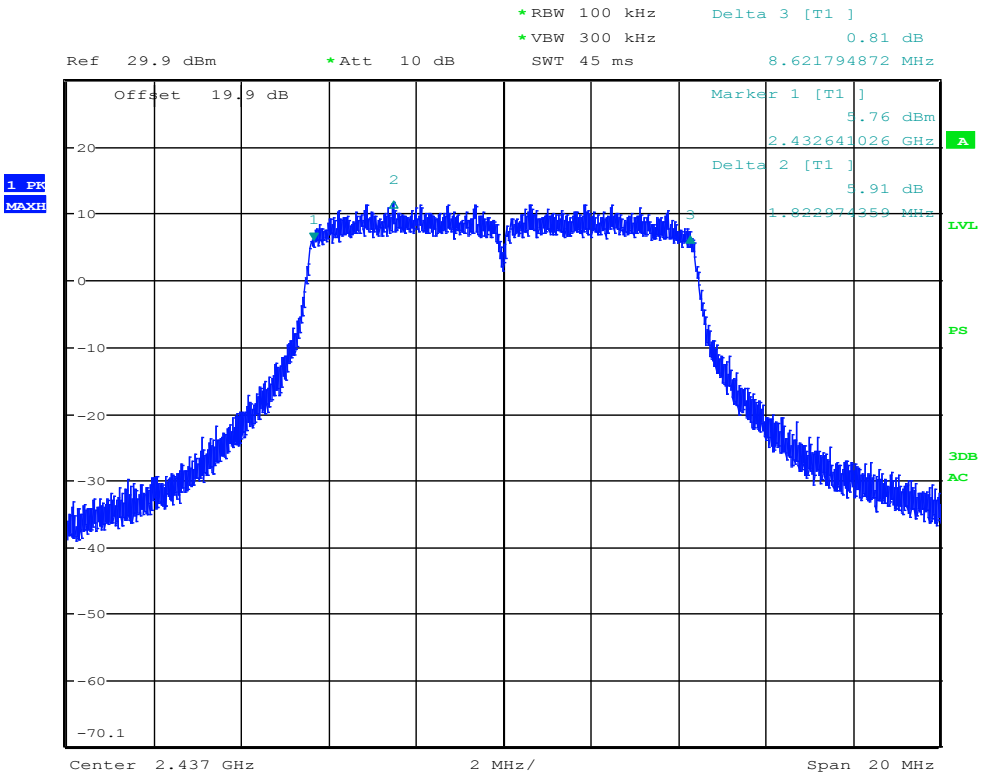
Low Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



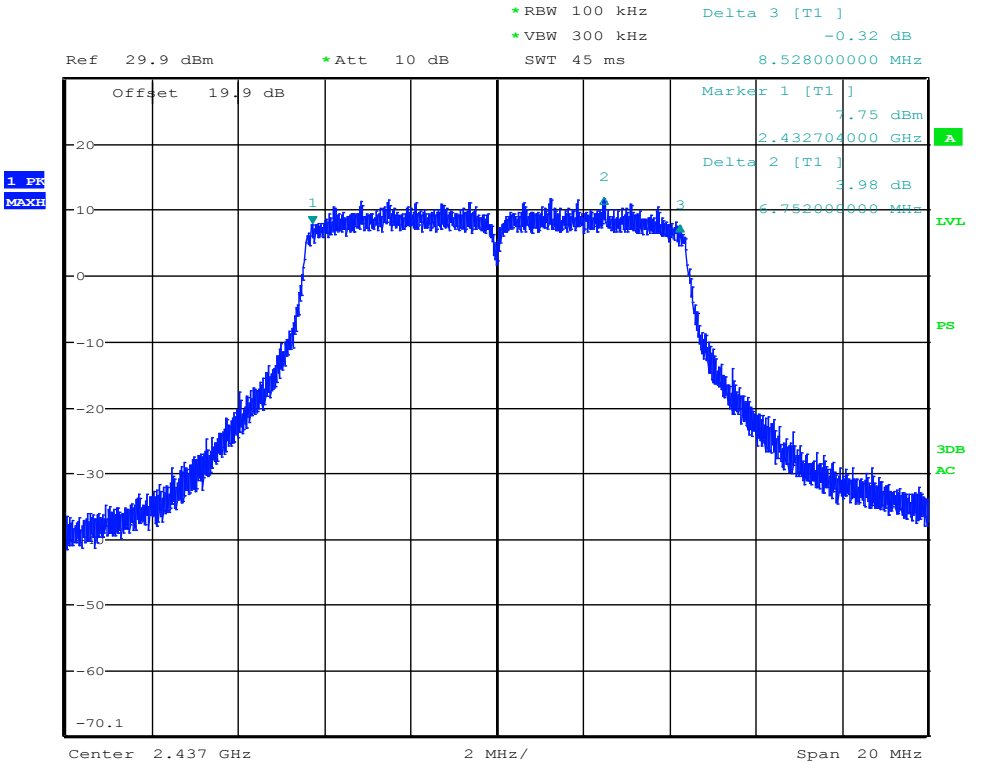
Low Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



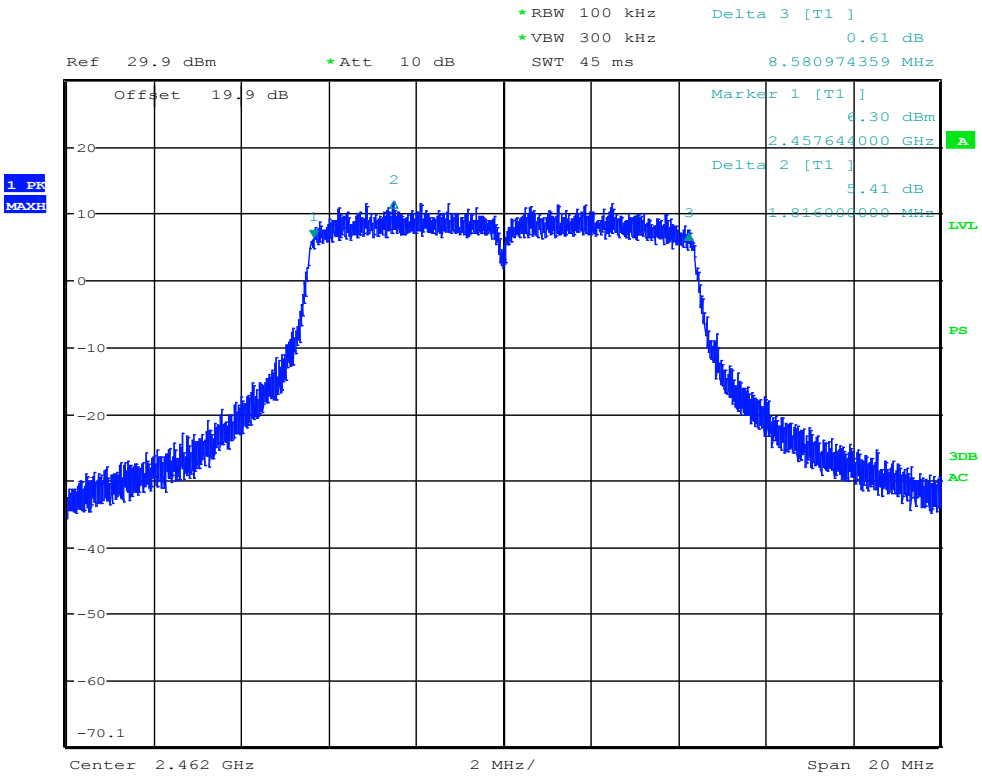
Central Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



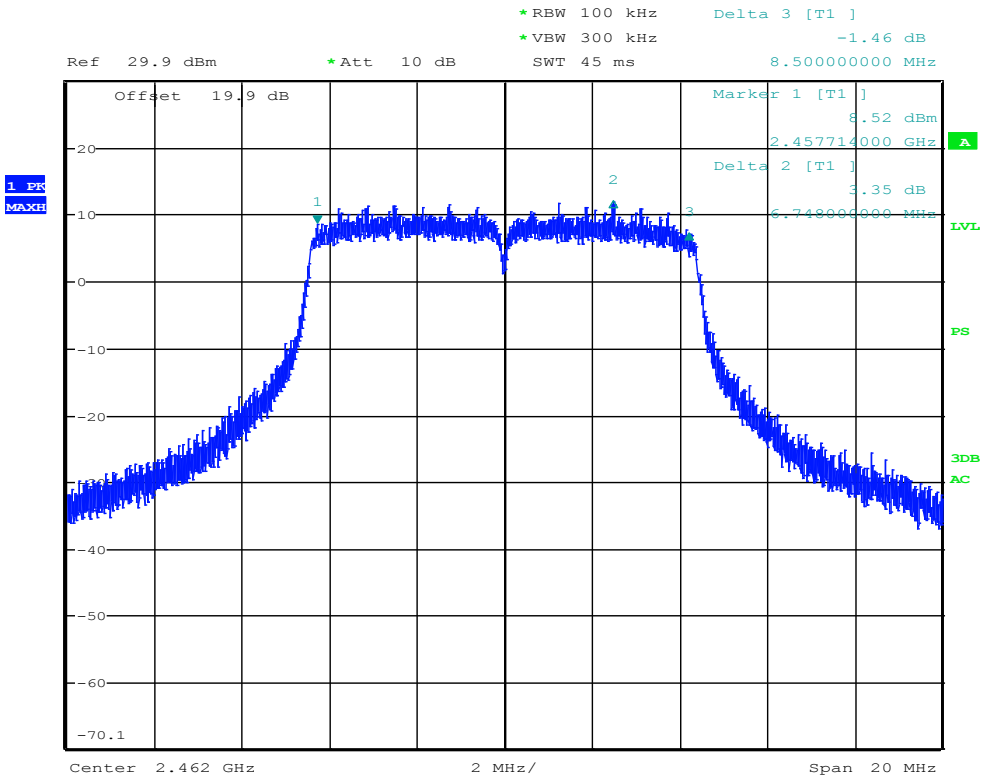
Central Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



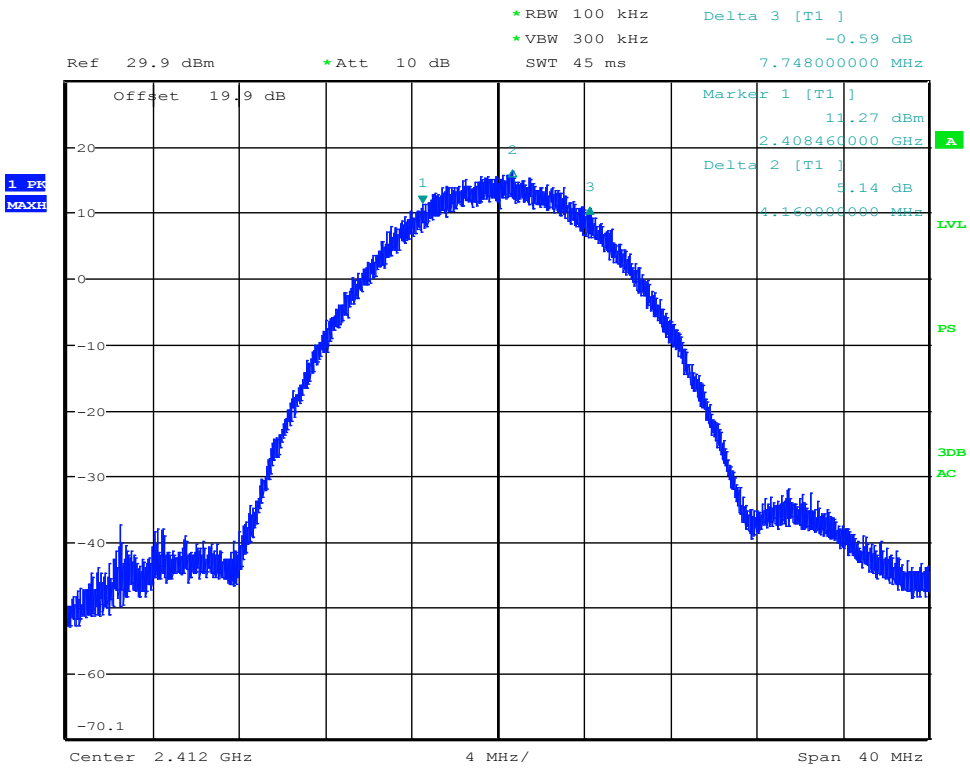
High Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



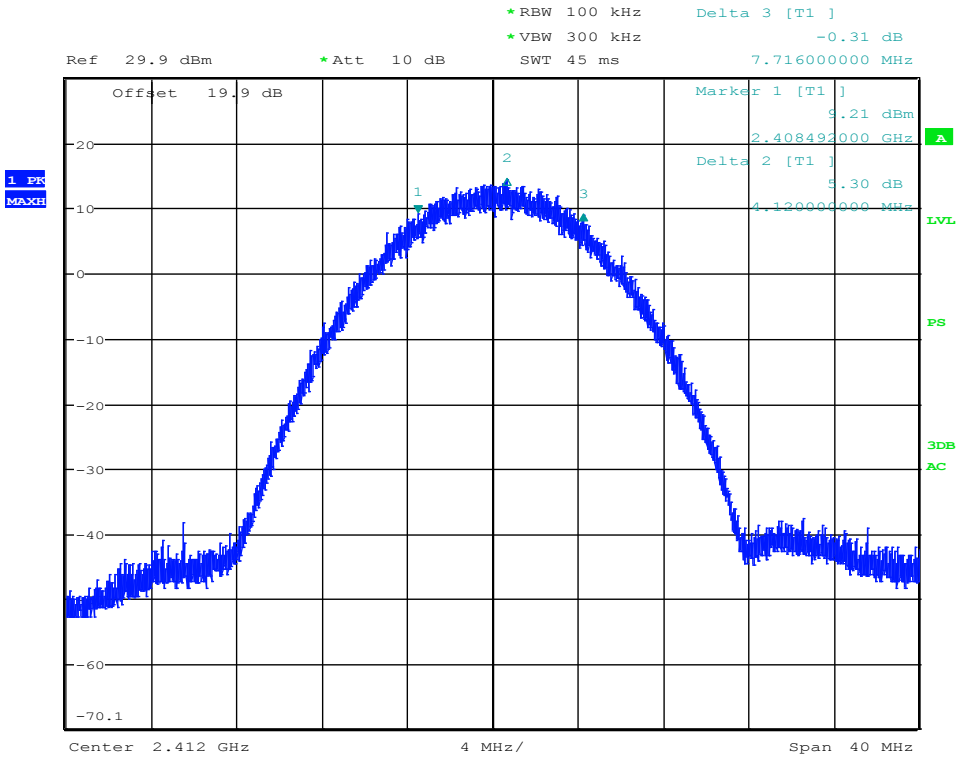
High Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



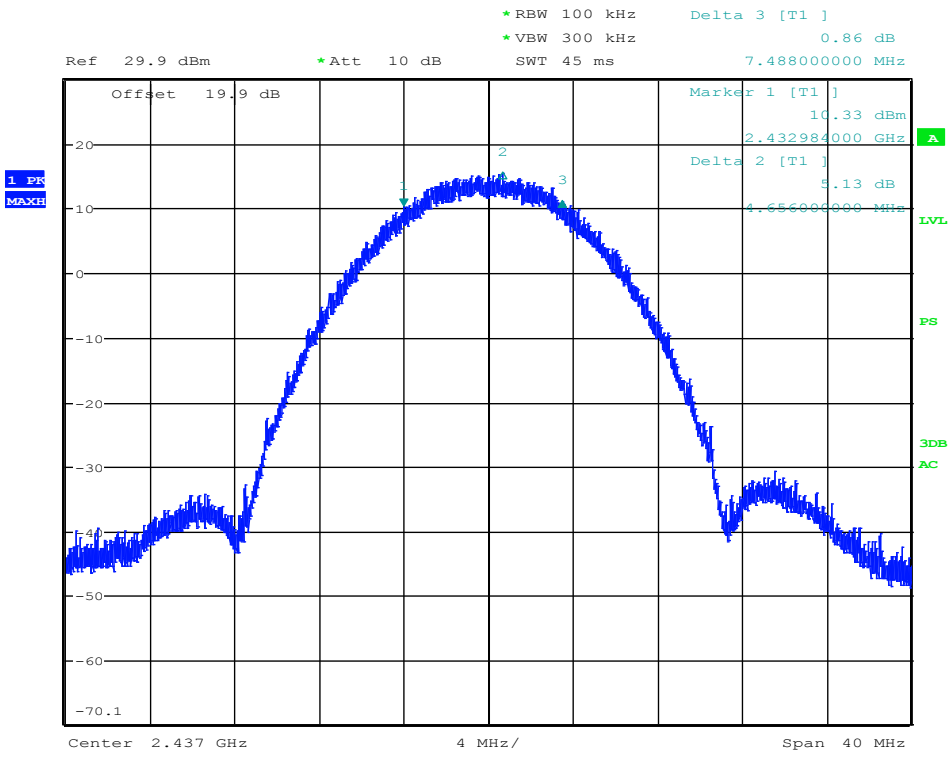
Low Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



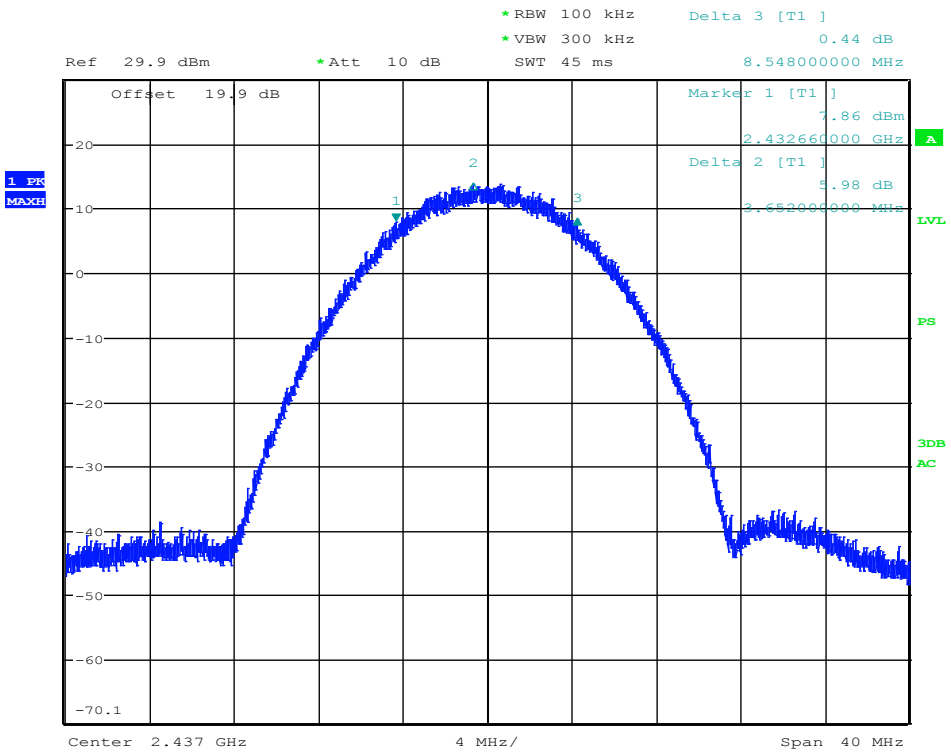
Low Channel – Mode 802.11.b – RF 2– bandwidth 20 MHz



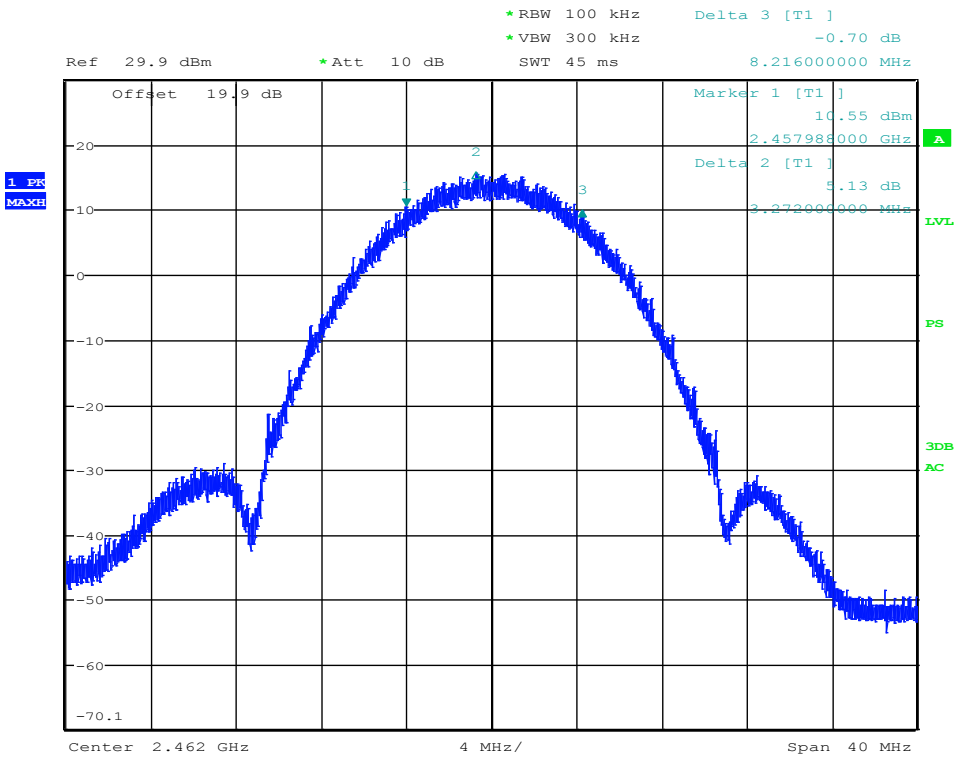
Central Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



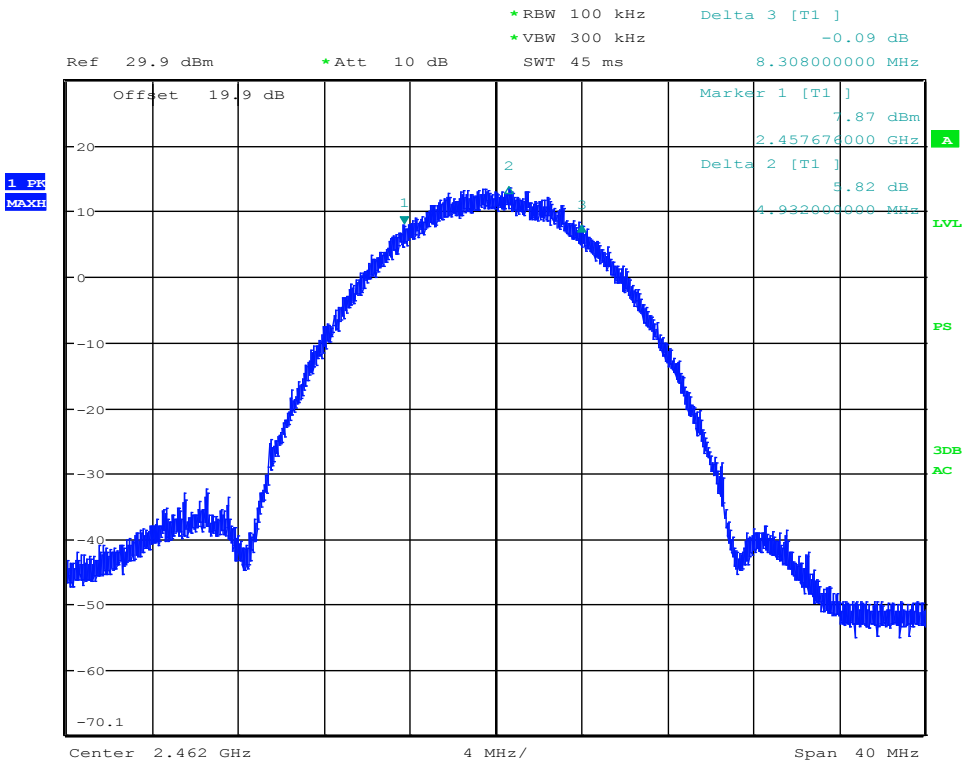
Central Channel – Mode 802.11.b – RF 2– bandwidth 20 MHz



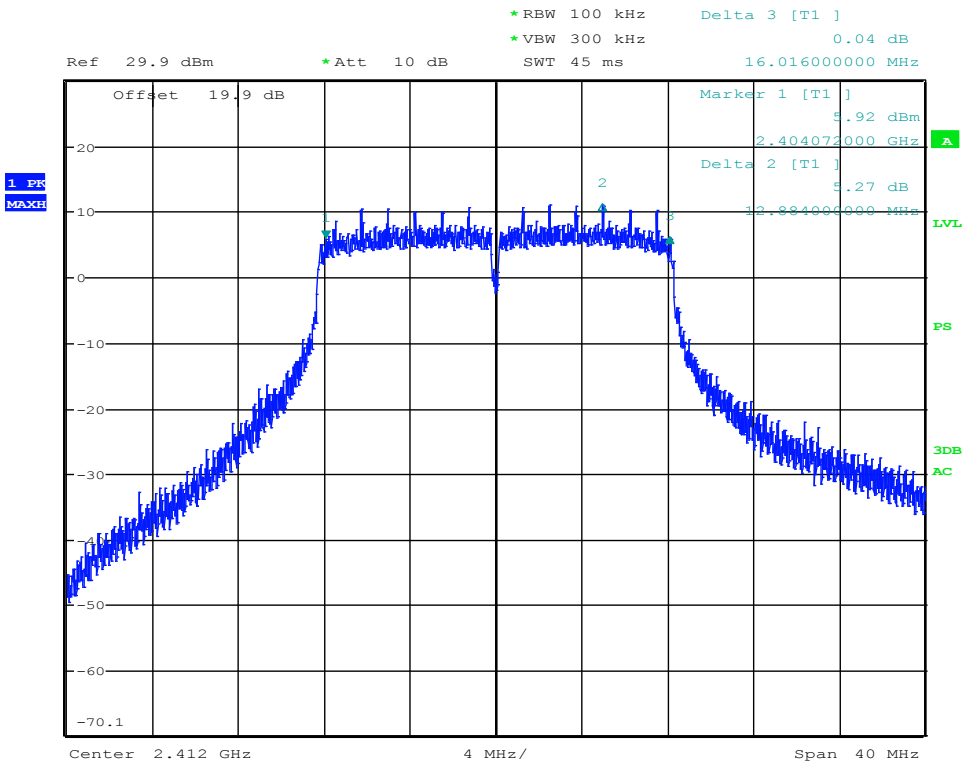
High Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



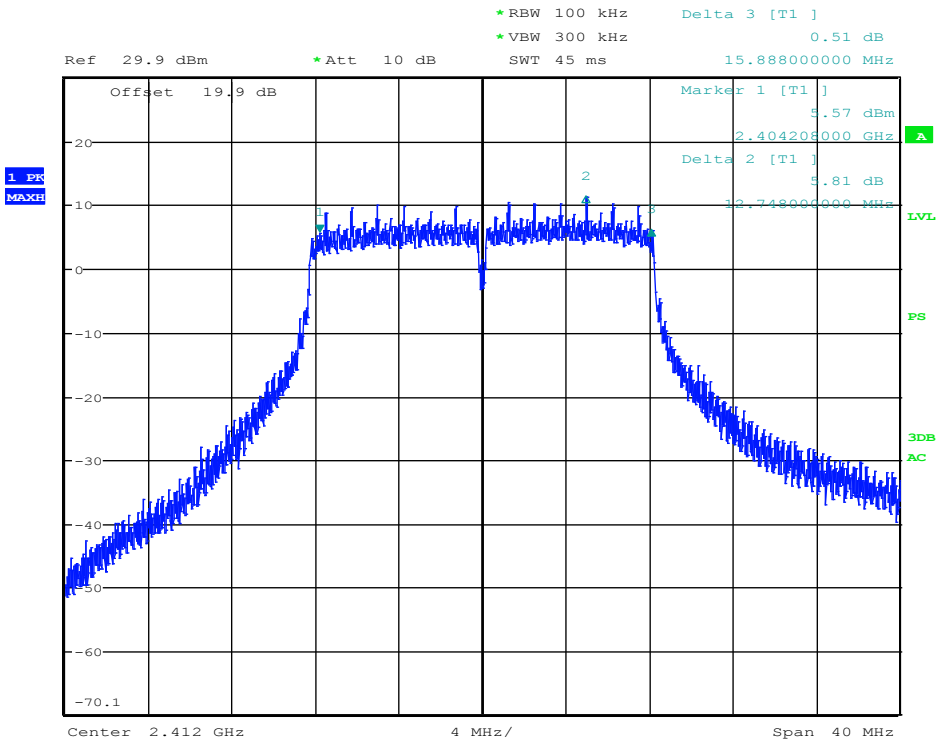
High Channel – Mode 802.11.b – RF 2– bandwidth 20 MHz



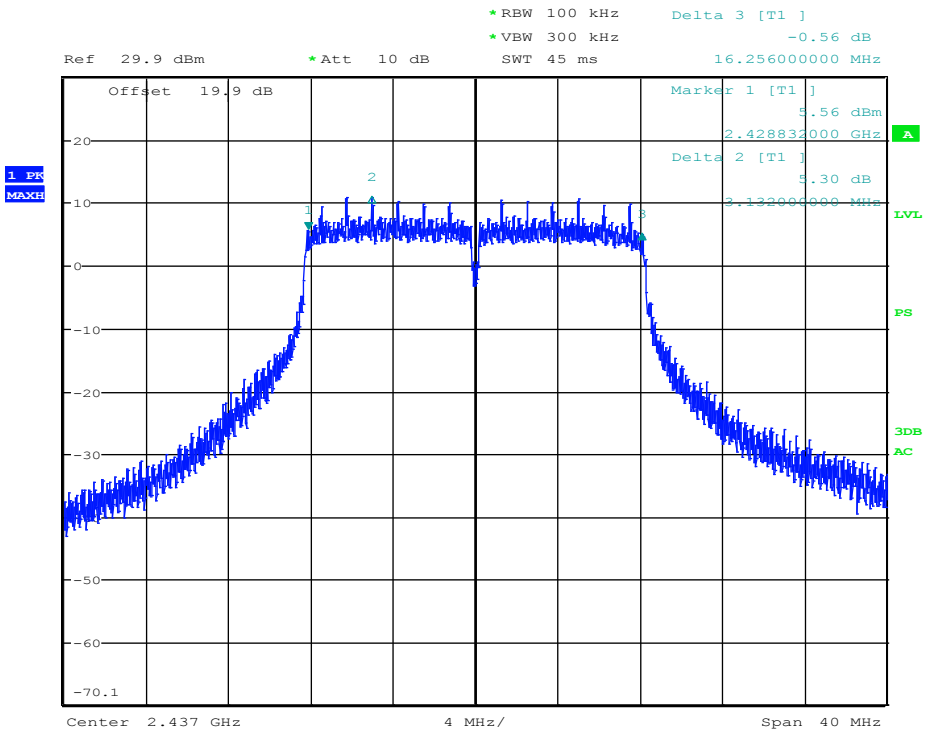
Low Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



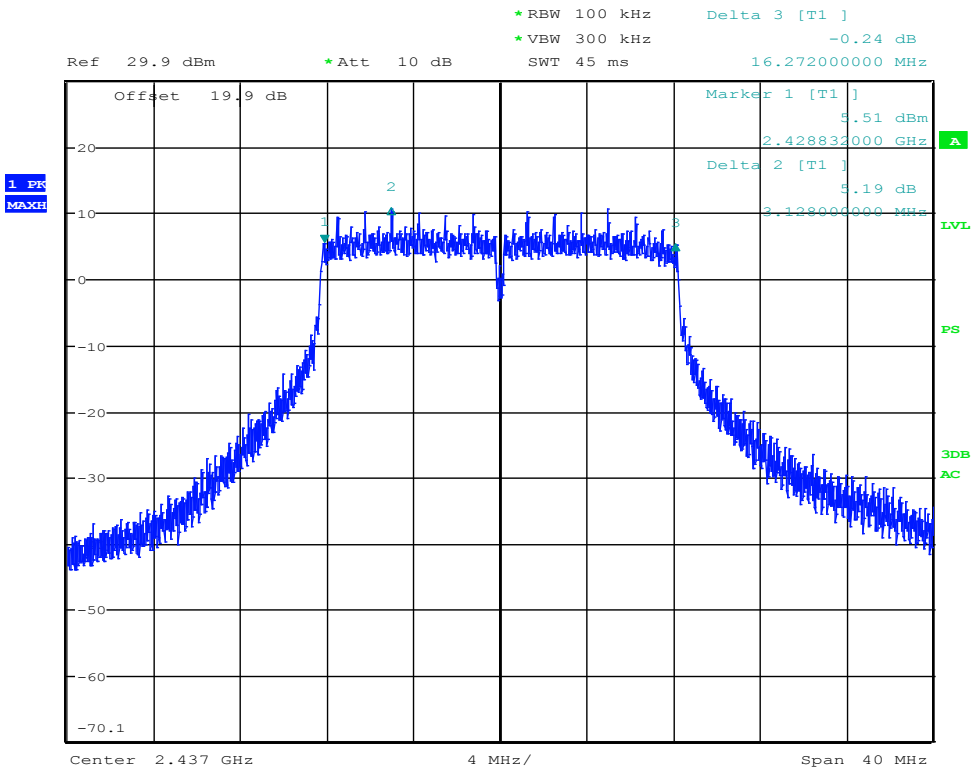
Low Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



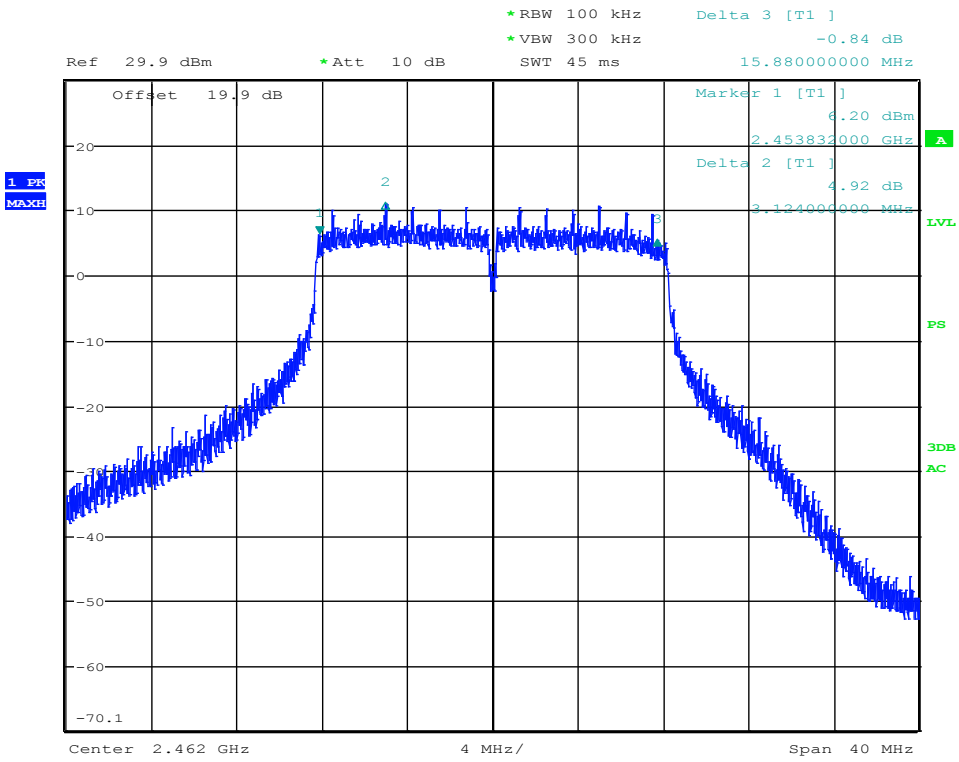
Central Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



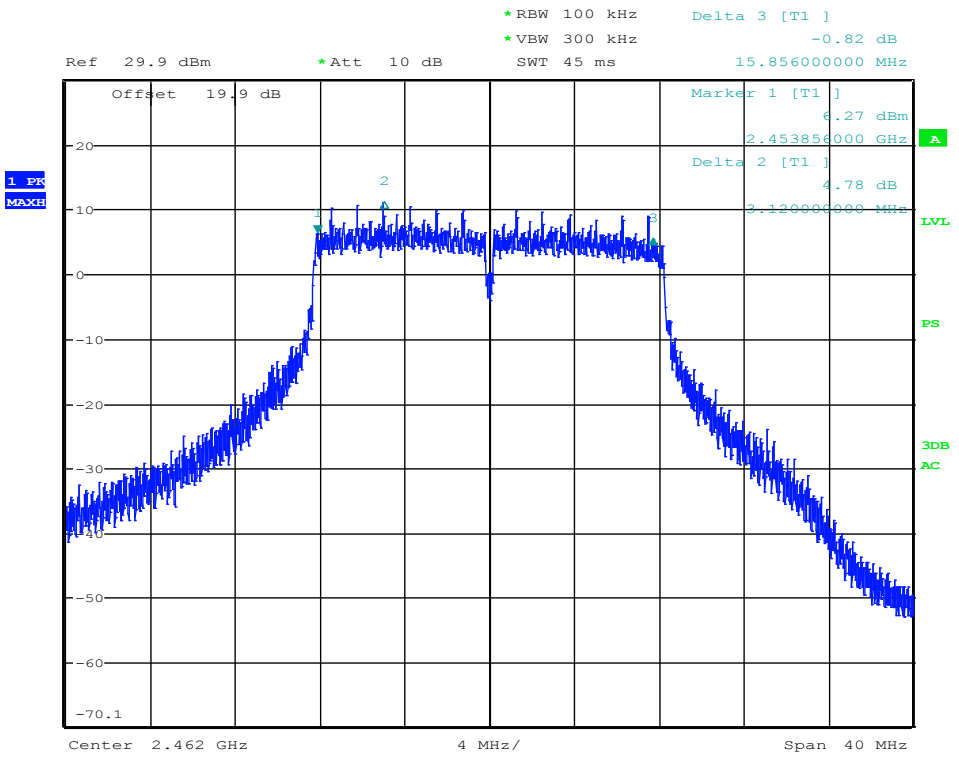
Central Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



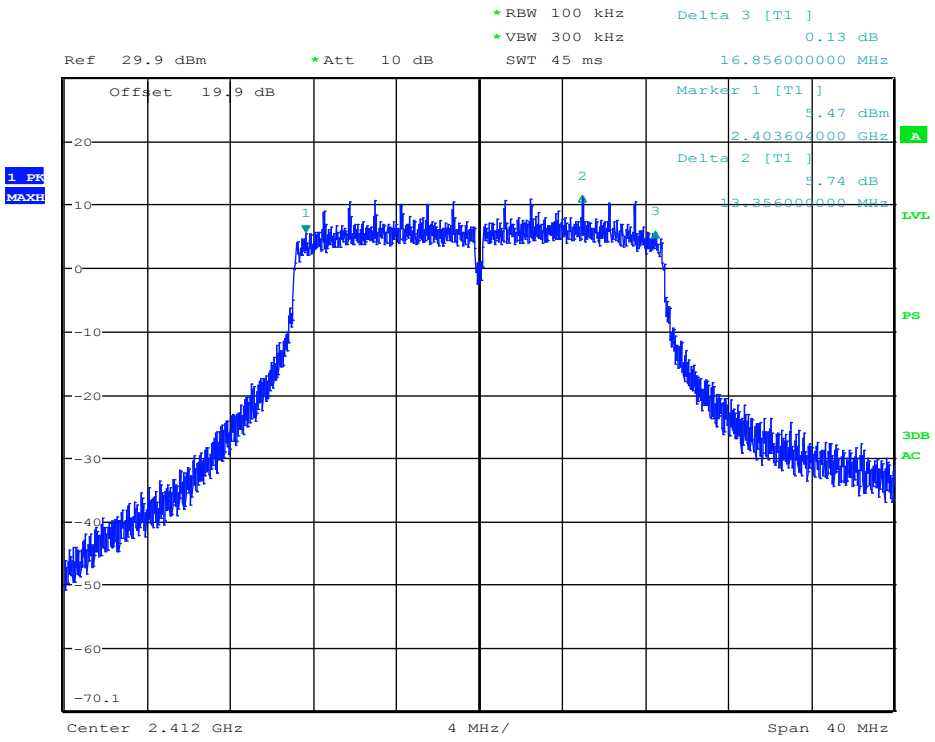
High Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



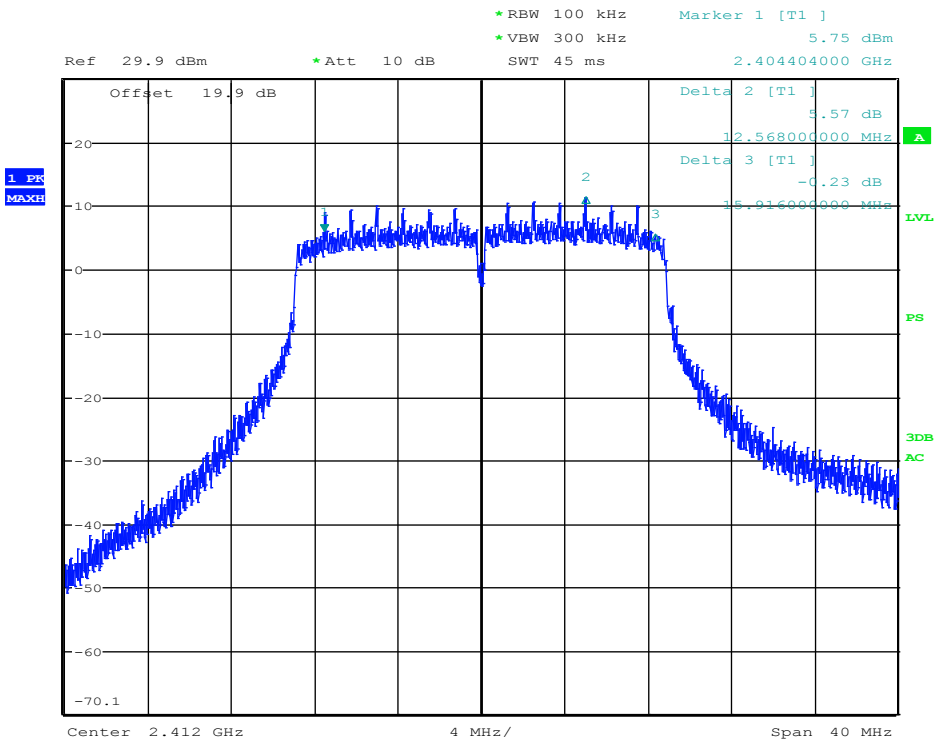
High Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



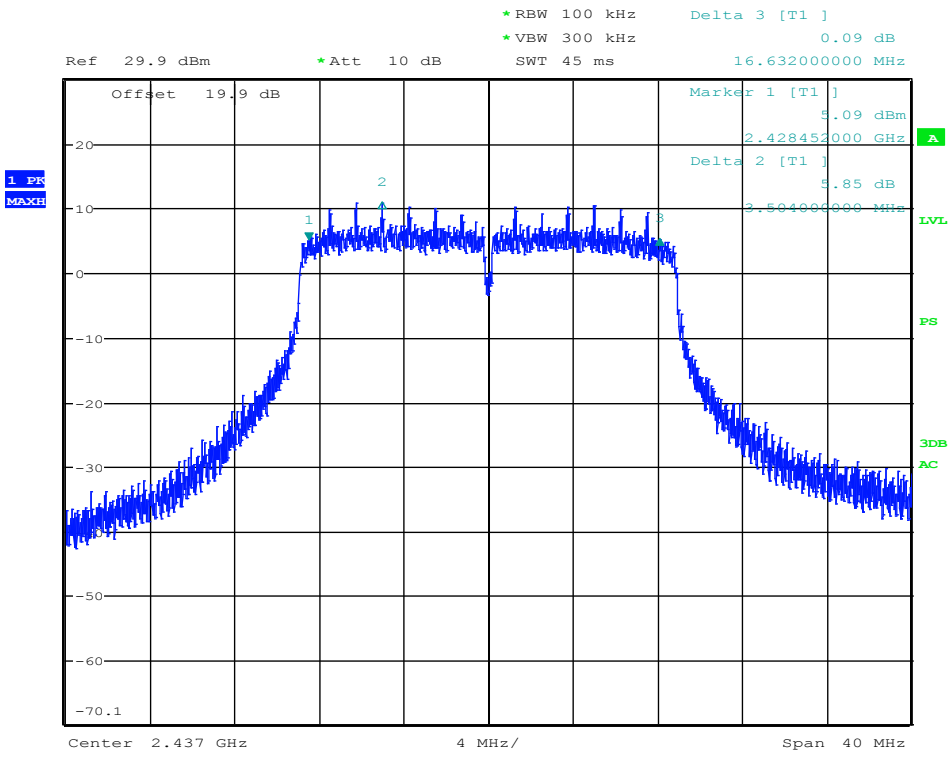
Low Channel – Mode 802.11.n – RF1– bandwidth 20 MHz



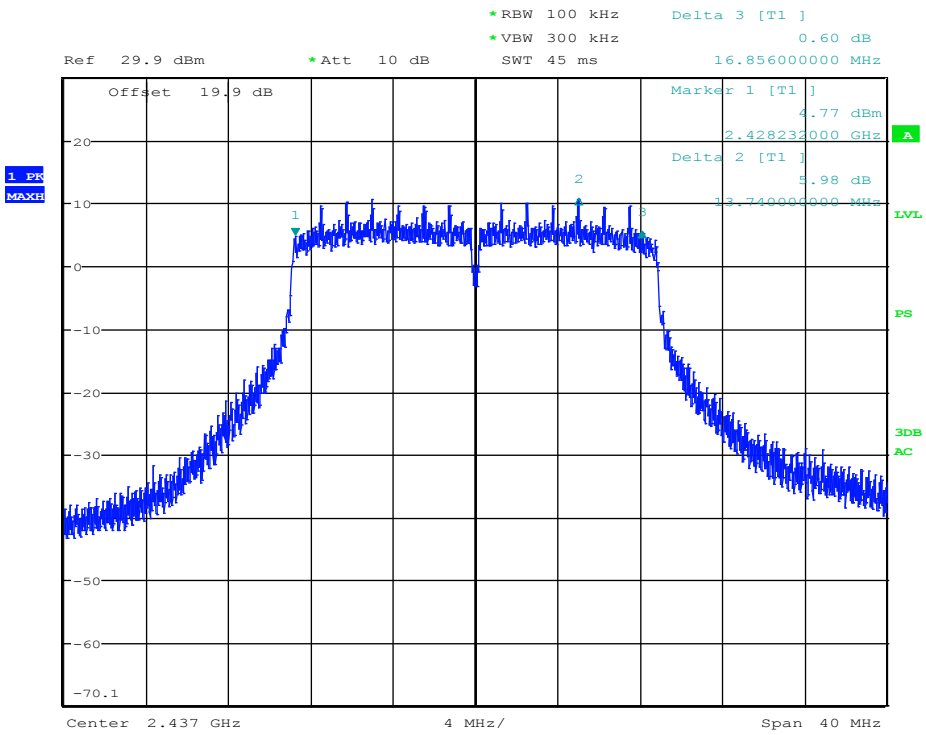
Low Channel – Mode 802.11.n – RF2– bandwidth 20 MHz



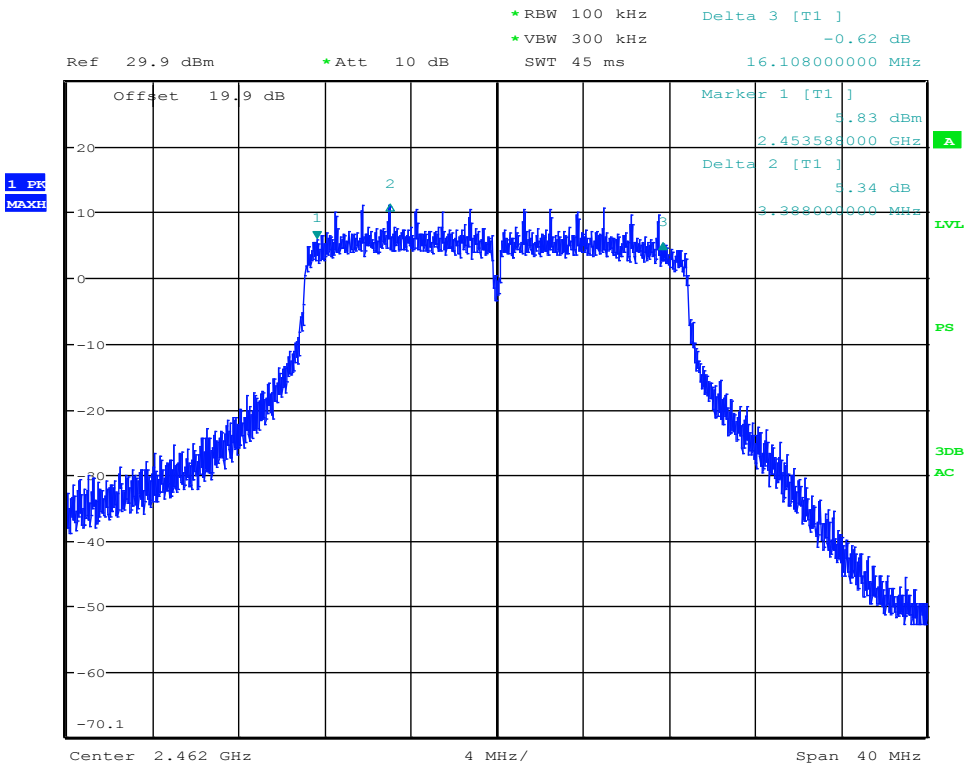
Central Channel – Mode 802.11.n – RF1– bandwidth 20 MHz



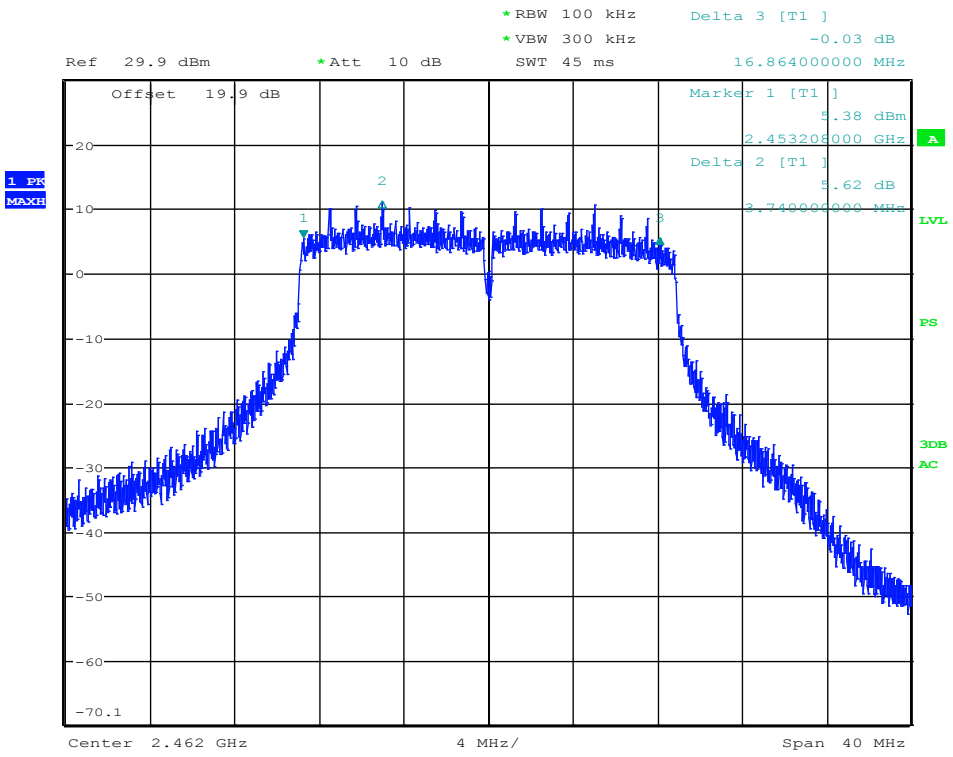
Central Channel – Mode 802.11.n – RF2– bandwidth 20 MHz



High Channel – Mode 802.11.n – RF1– bandwidth 20 MHz

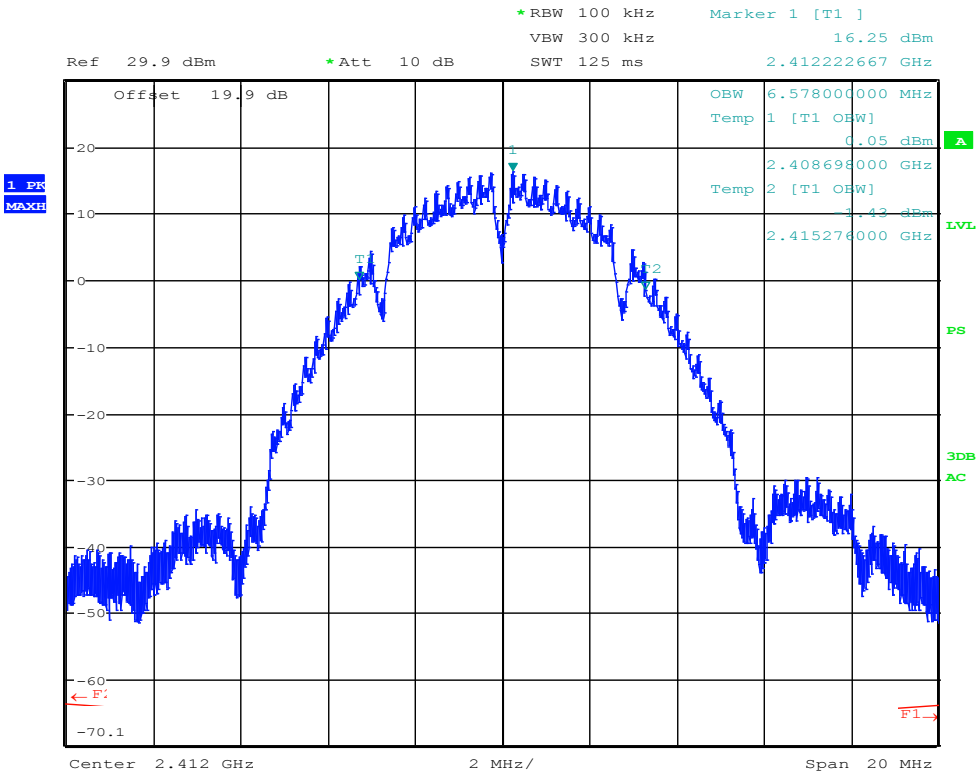


High Channel – Mode 802.11.n – RF2– bandwidth 20 MHz

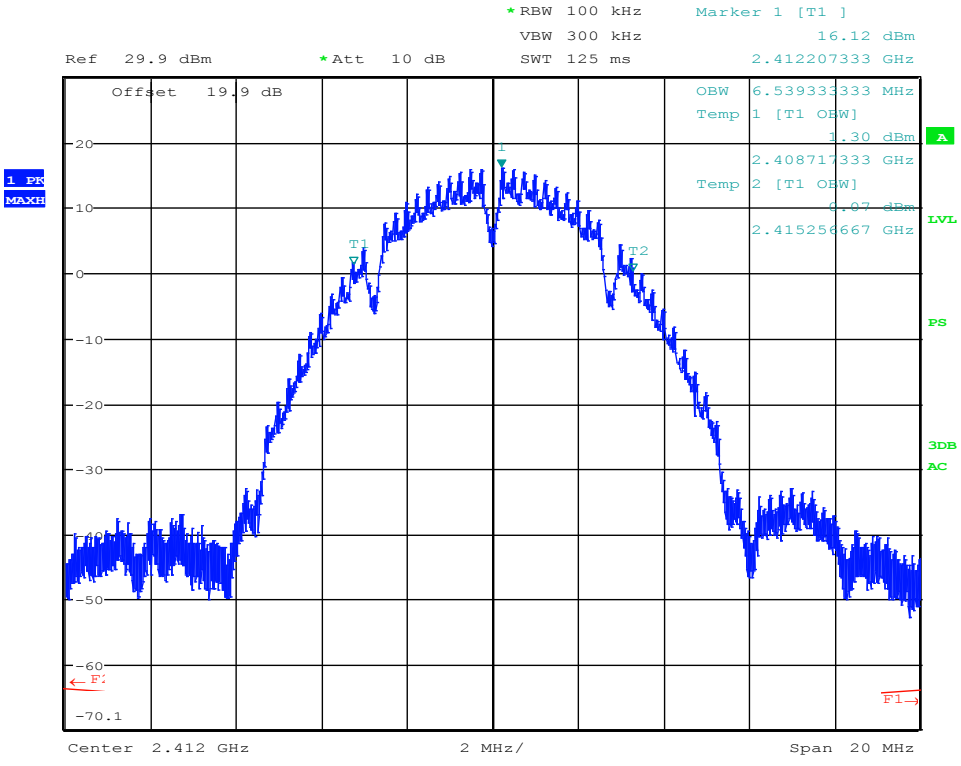


APPENDIX 3: 99% bandwidth

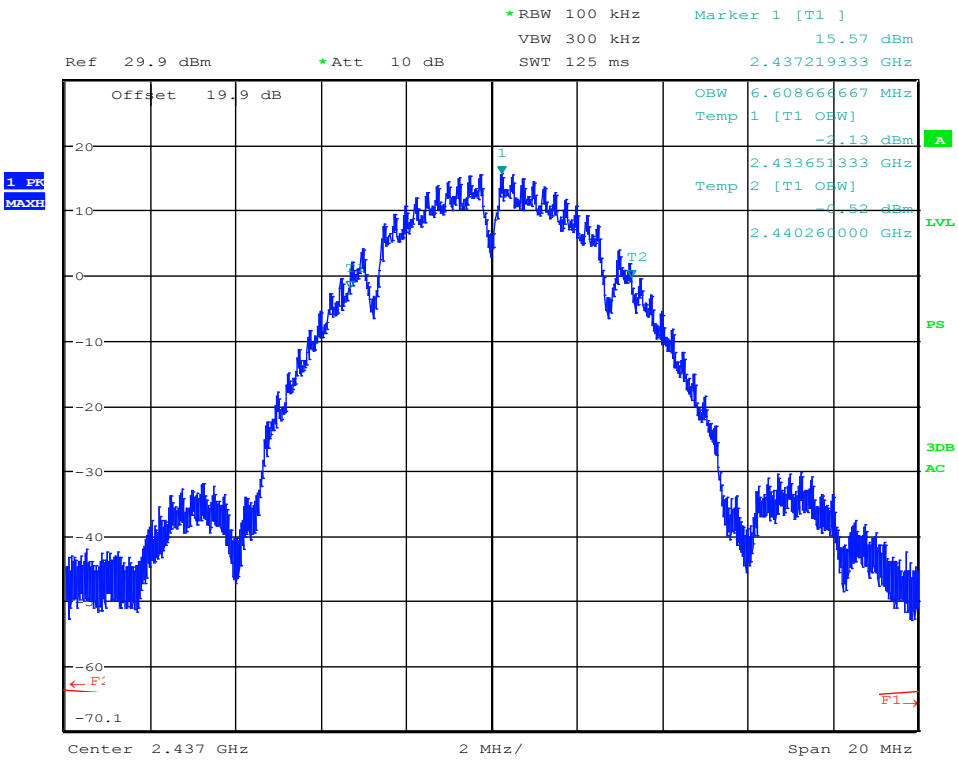
Low Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



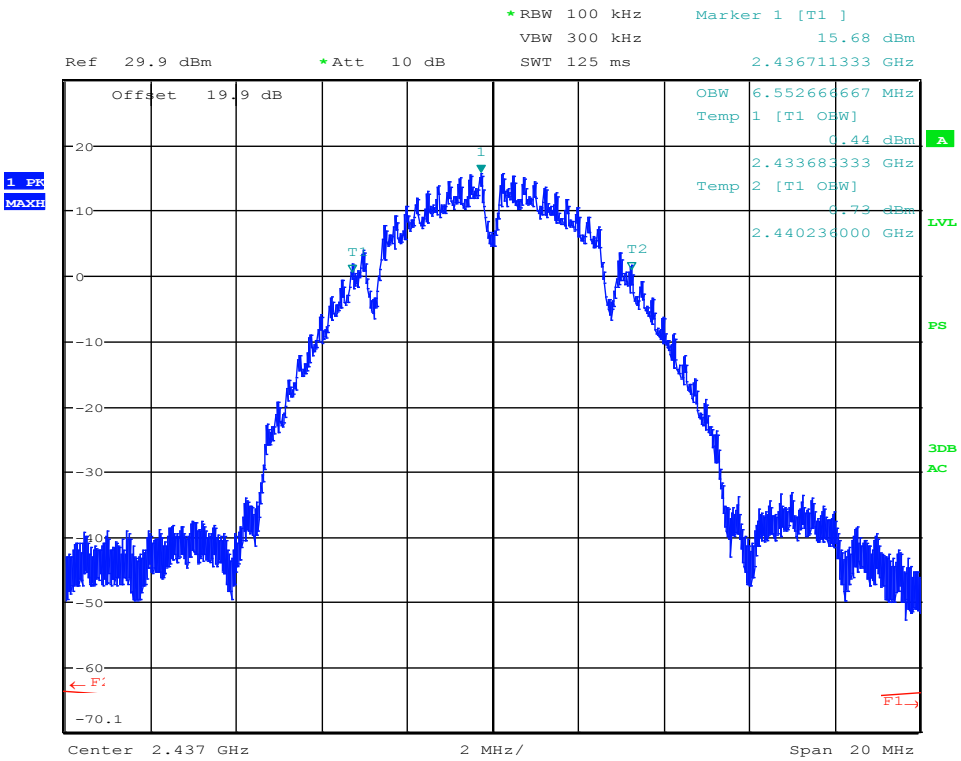
Low Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



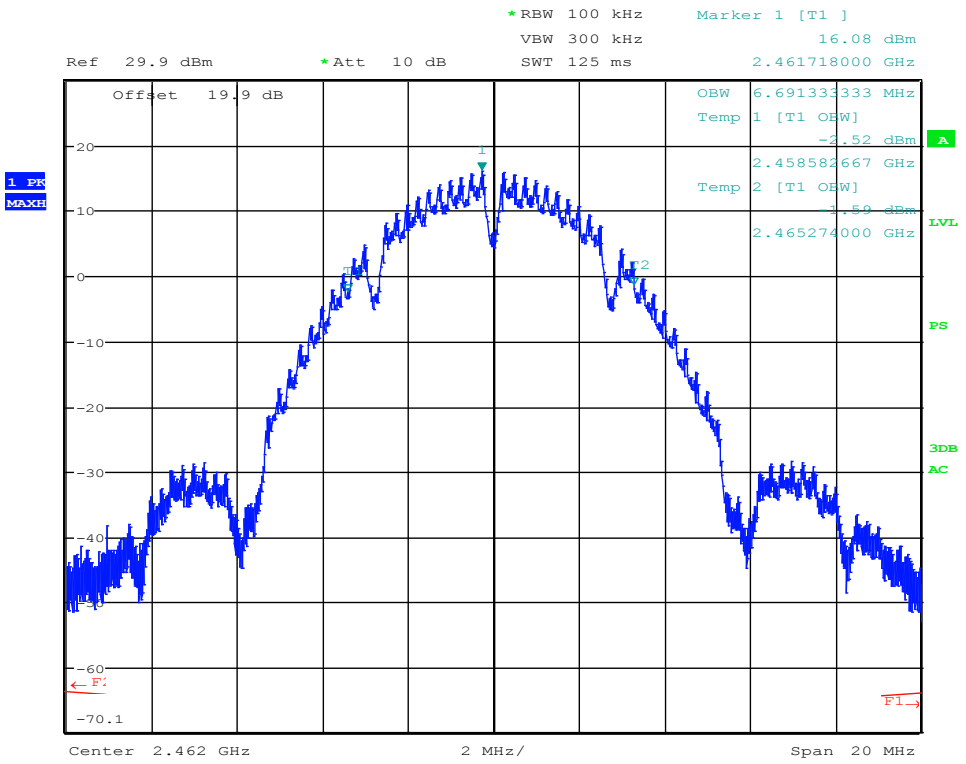
Central Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



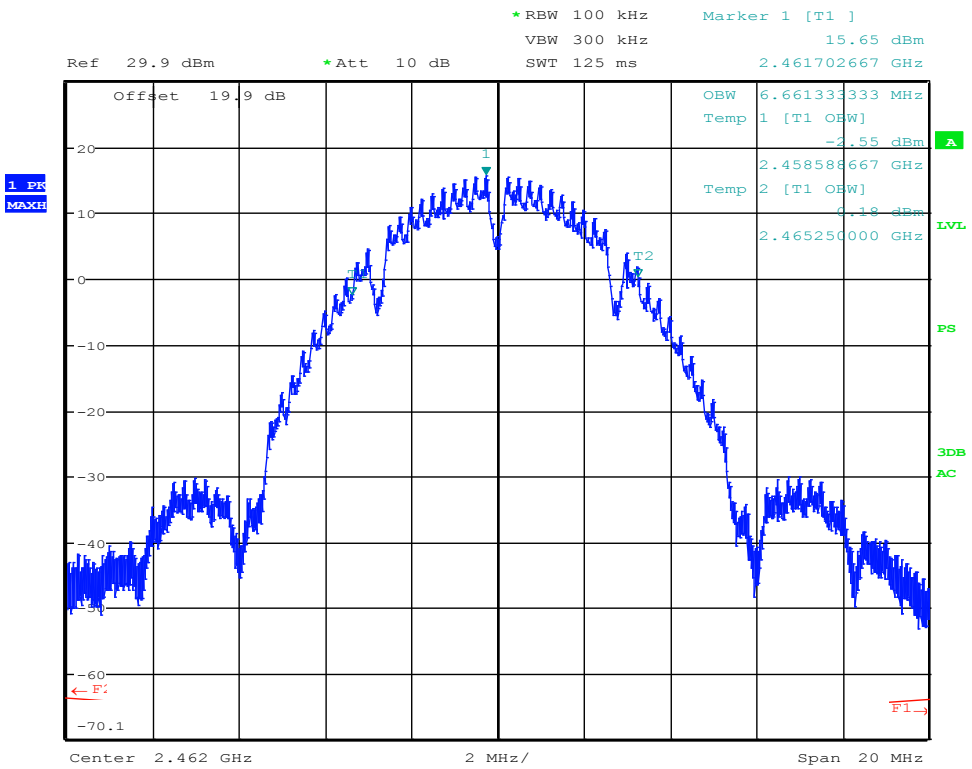
Central Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



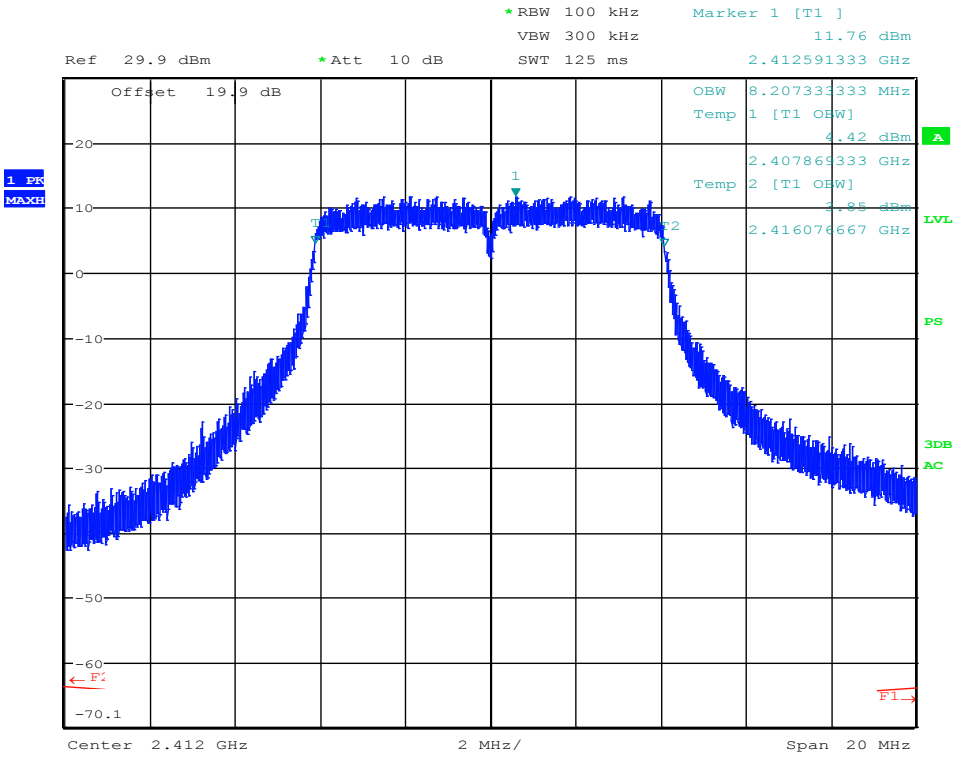
High Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



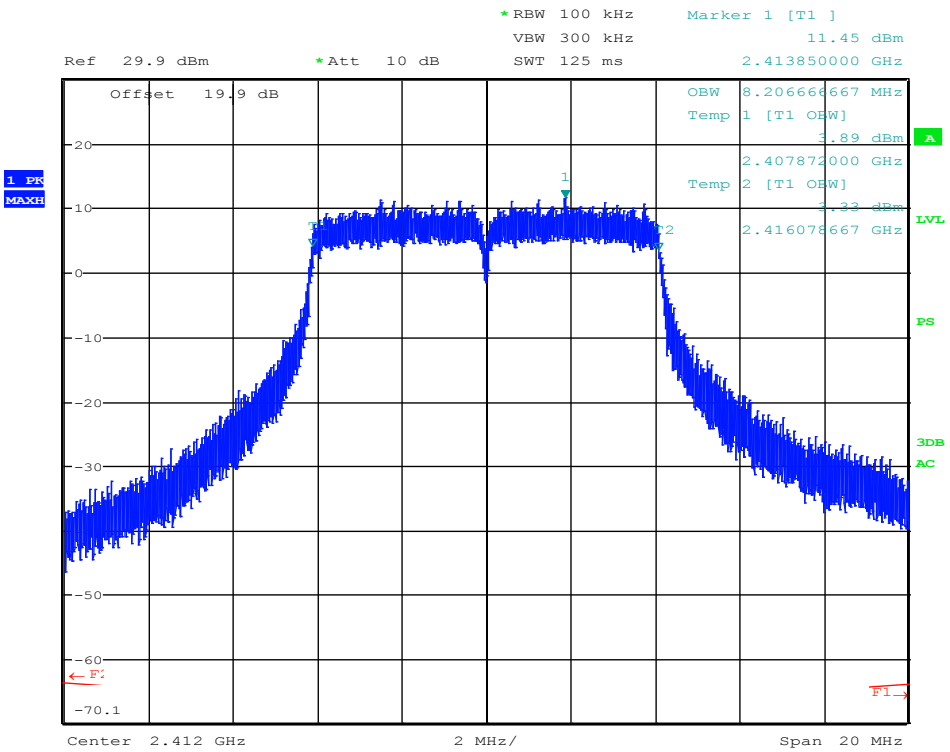
High Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



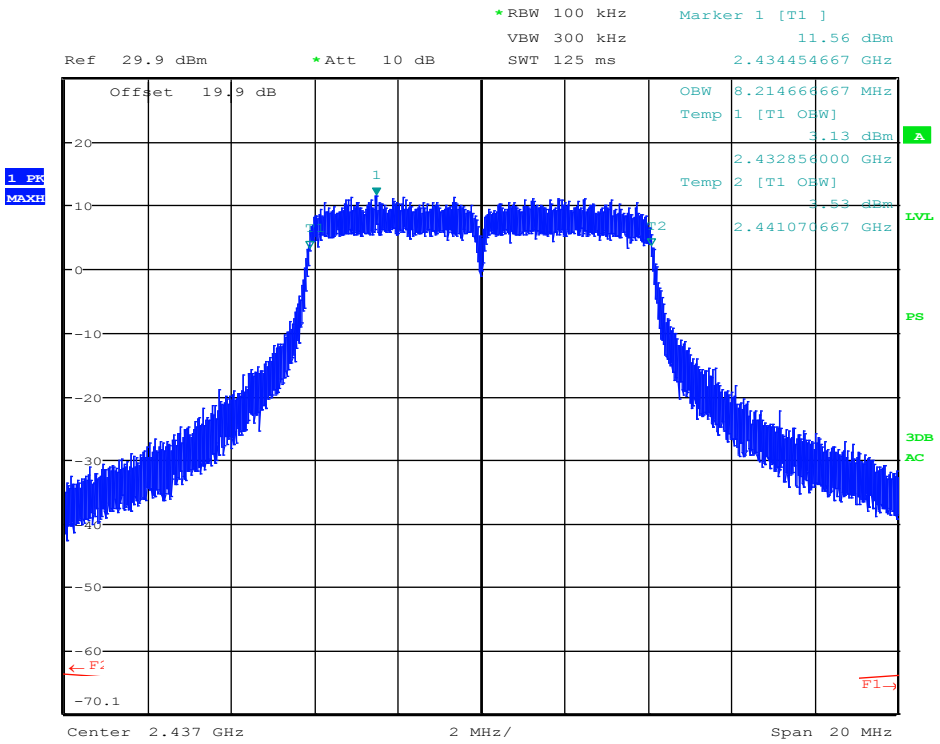
Low Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



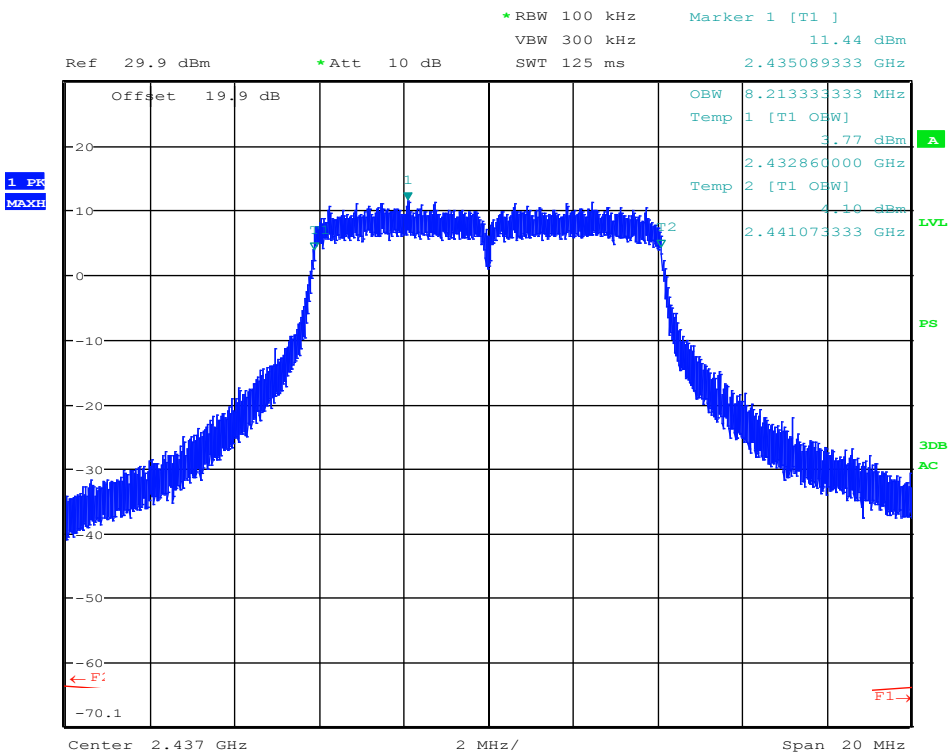
Low Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



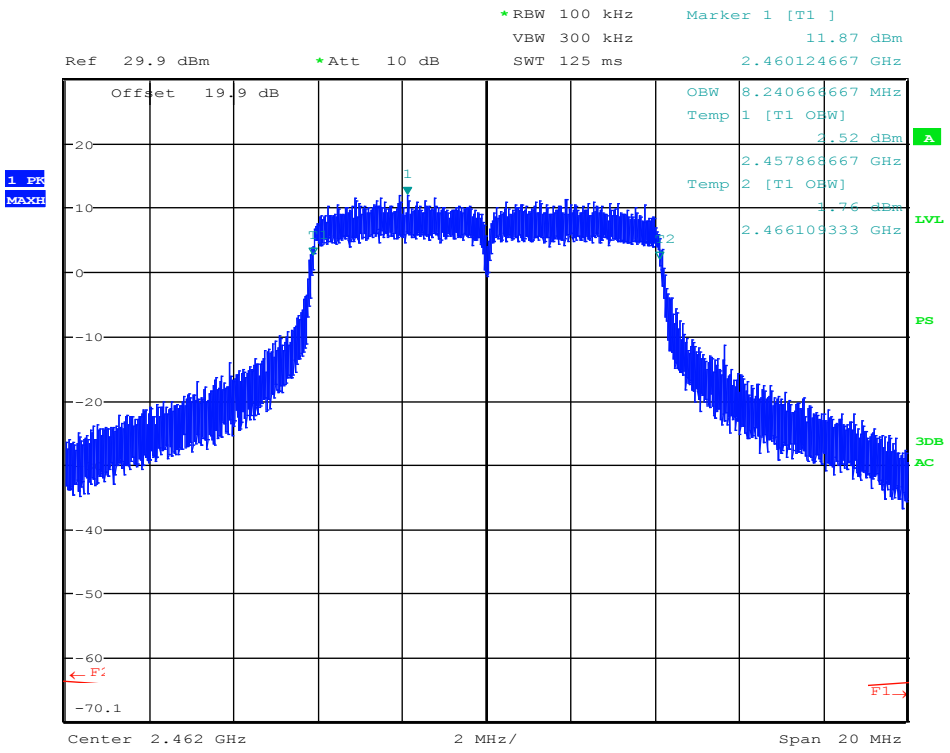
Central Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



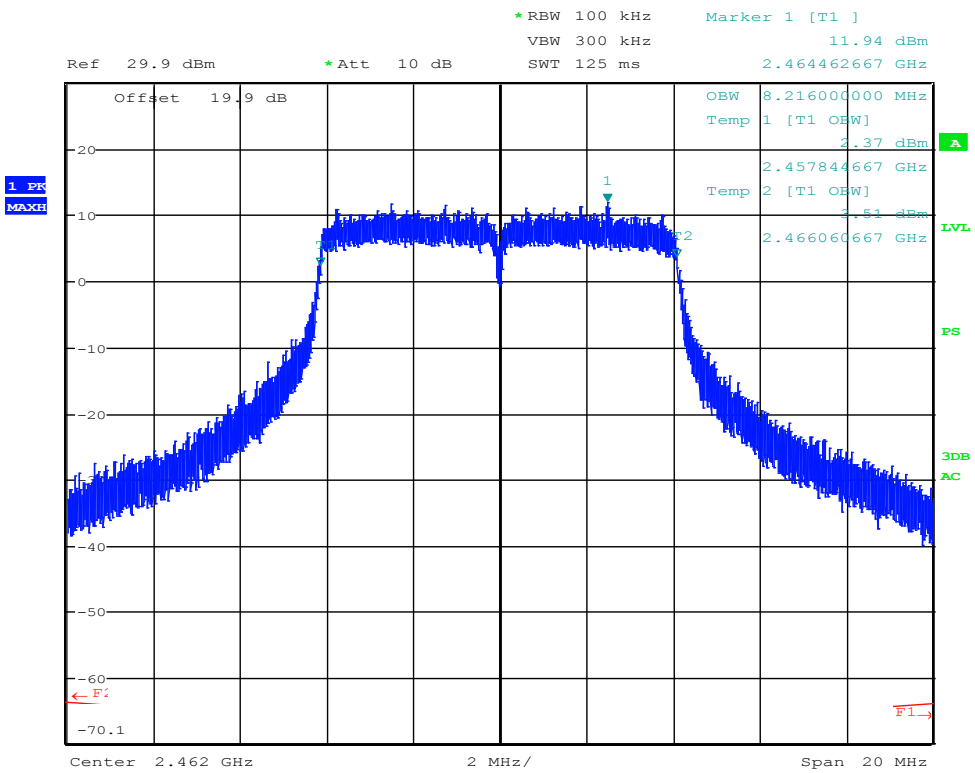
Central Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



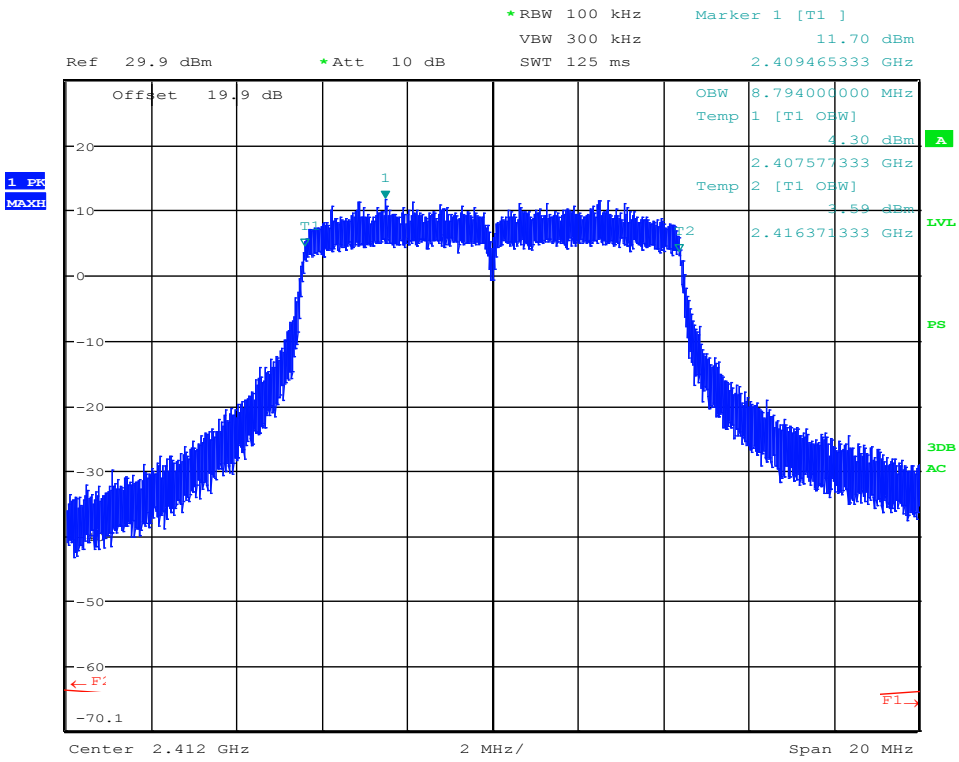
High Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



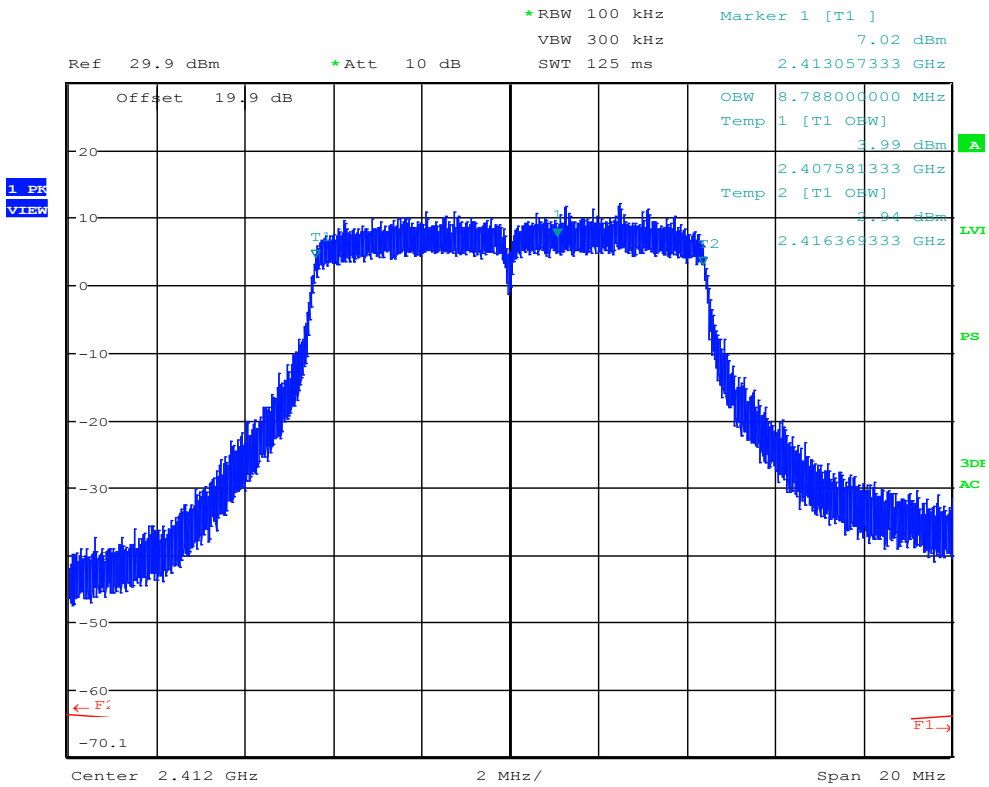
High Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



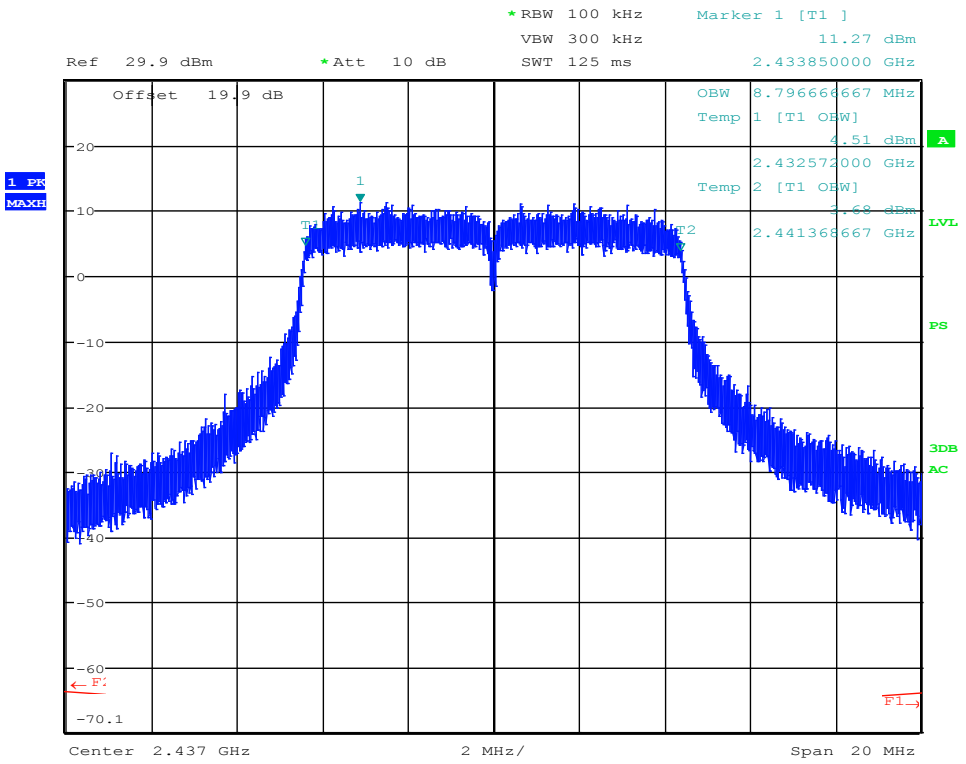
Low Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



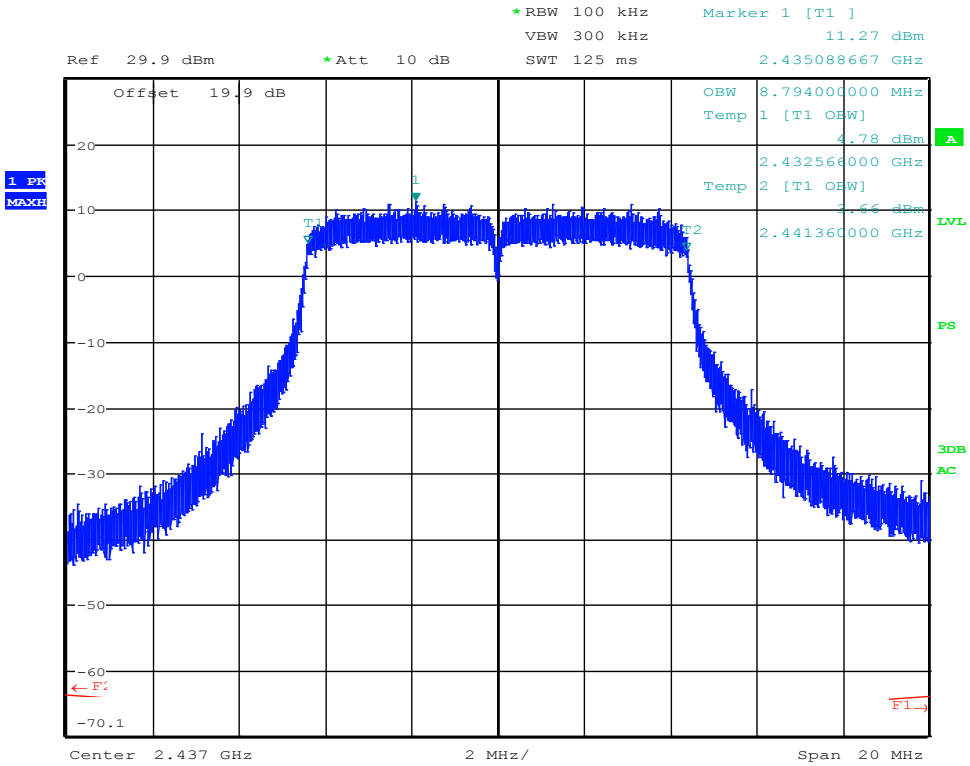
Low Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



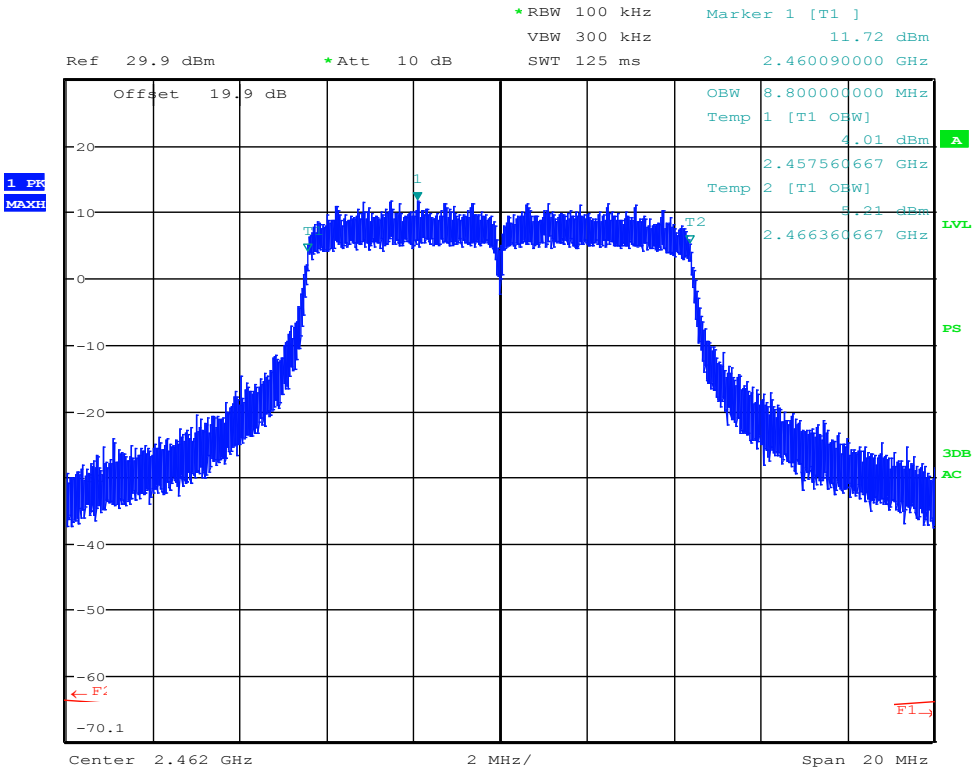
Central Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



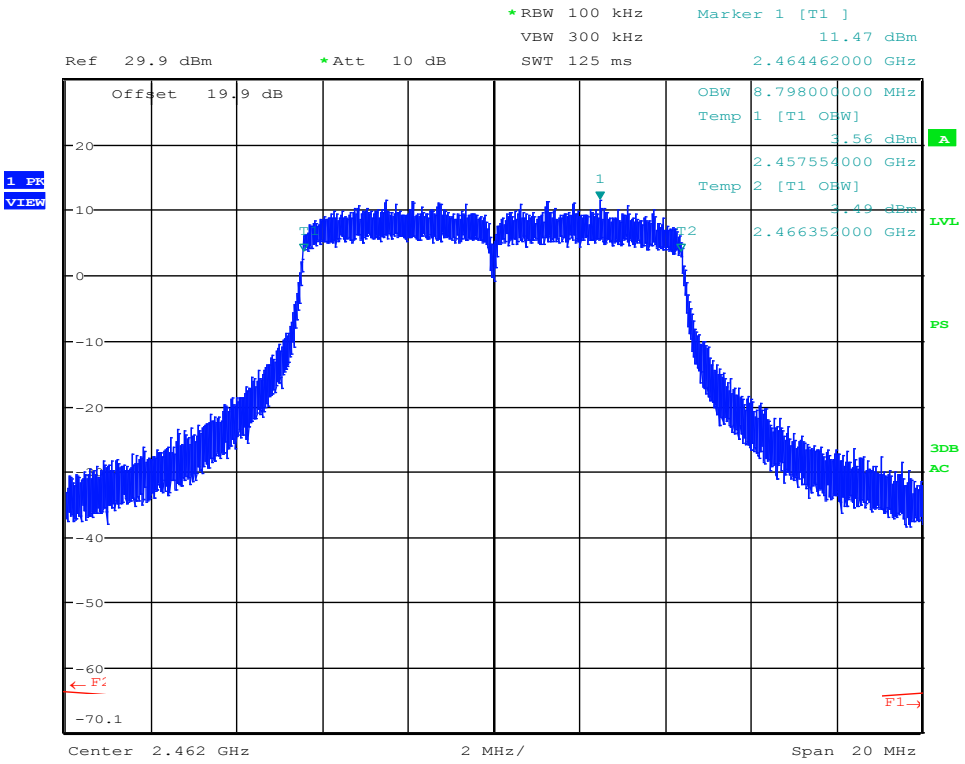
Central Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



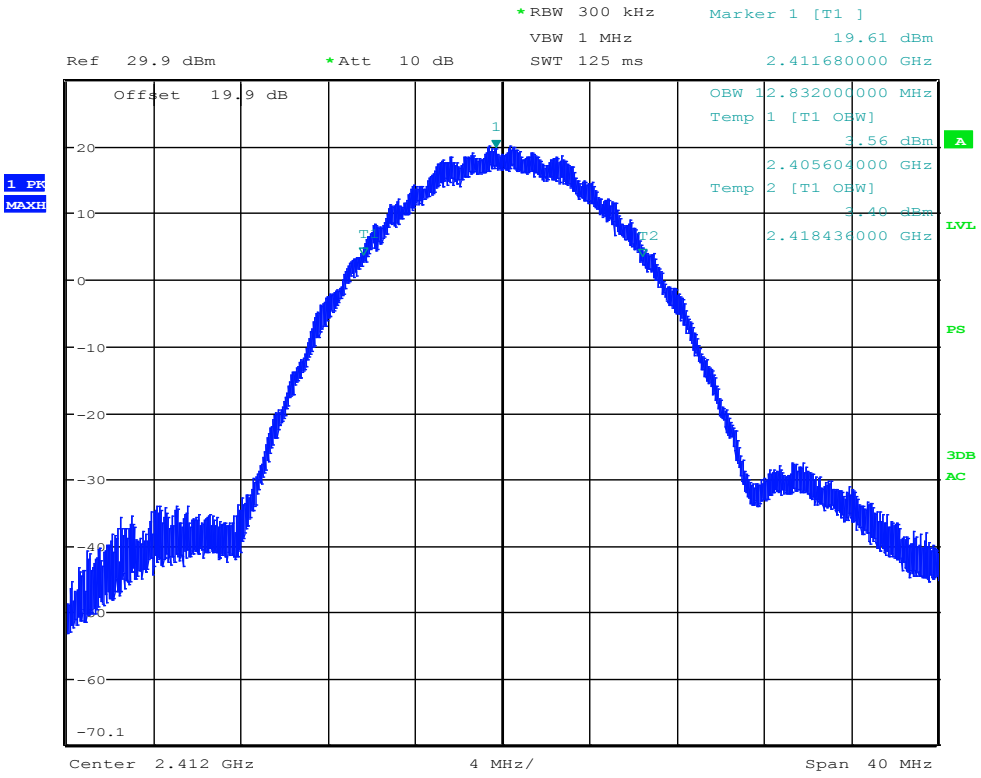
High Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



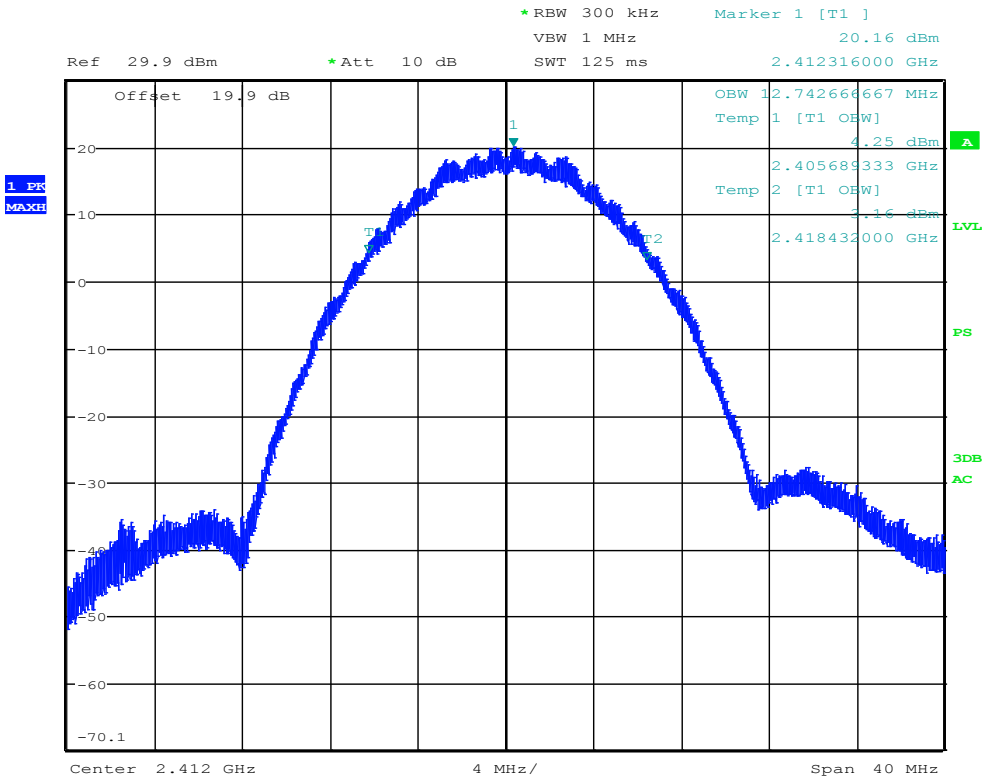
High Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



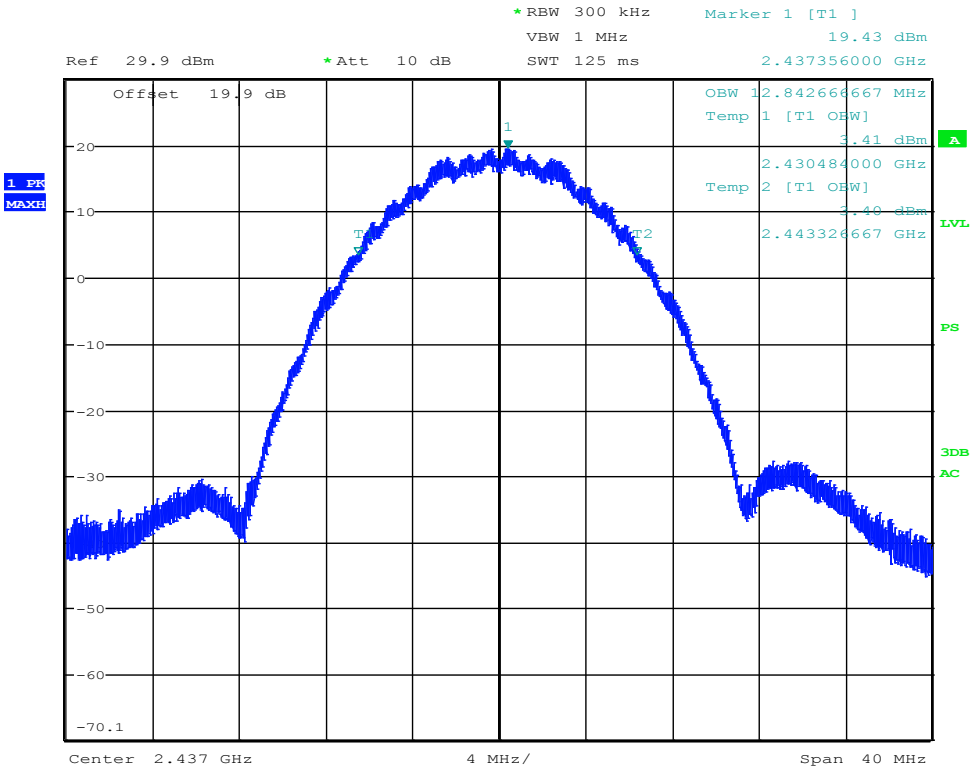
Low Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



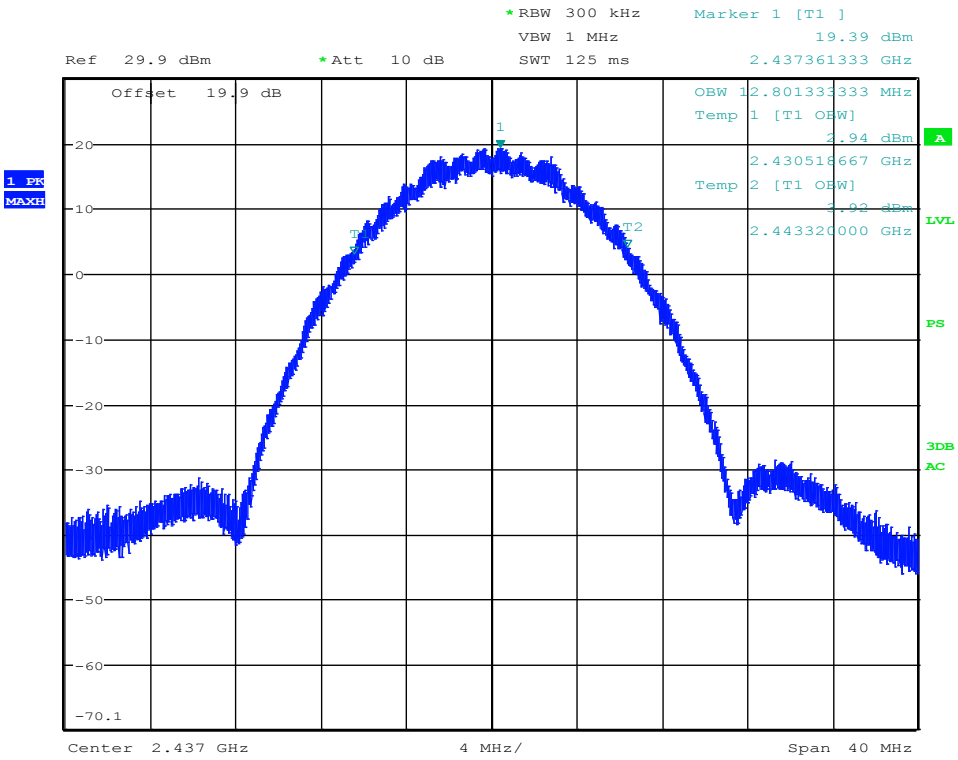
Low Channel – Mode 802.11.b – RF 2– bandwidth 20 MHz



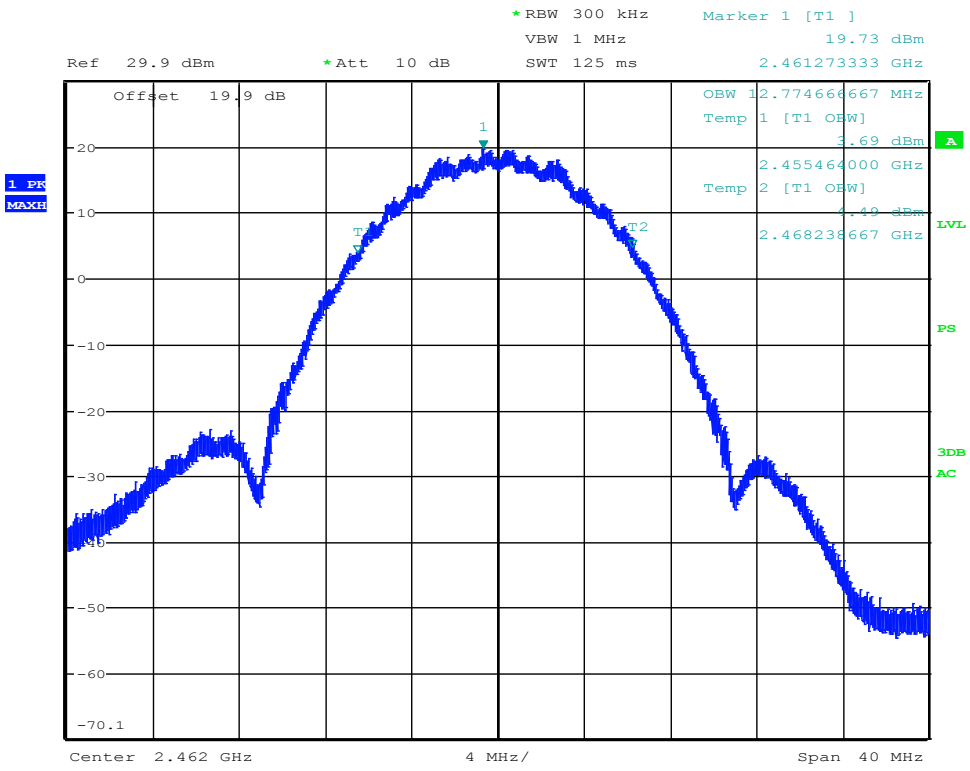
Central Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



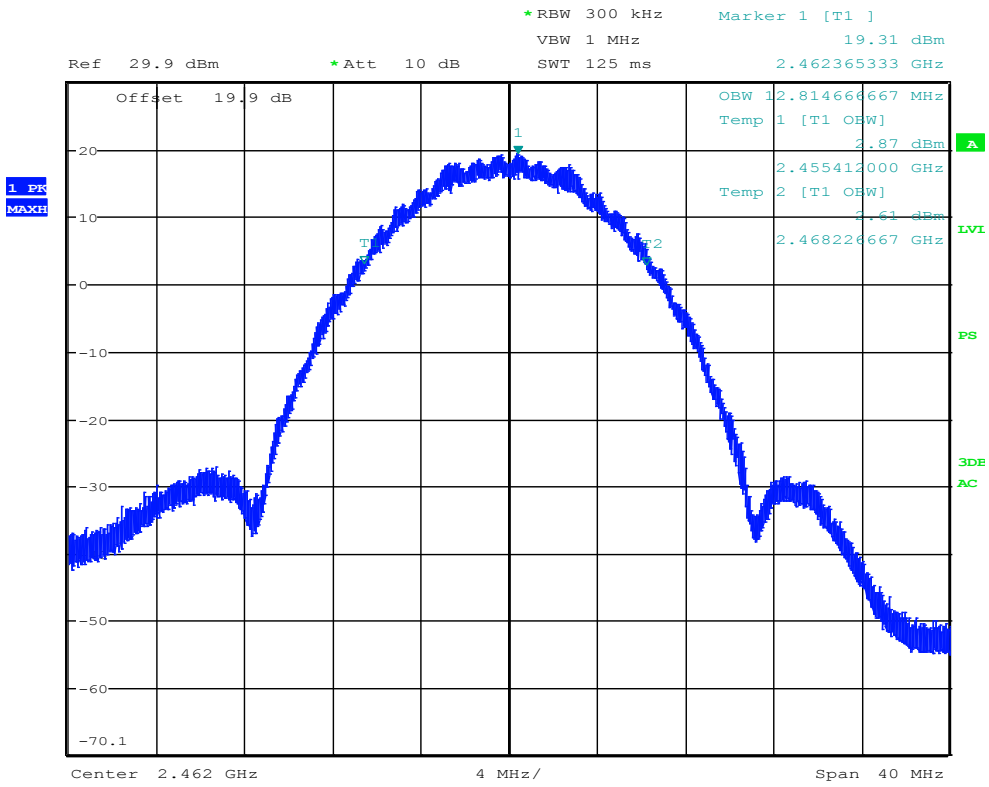
Central Channel – Mode 802.11.b – RF 2– bandwidth 20 MHz



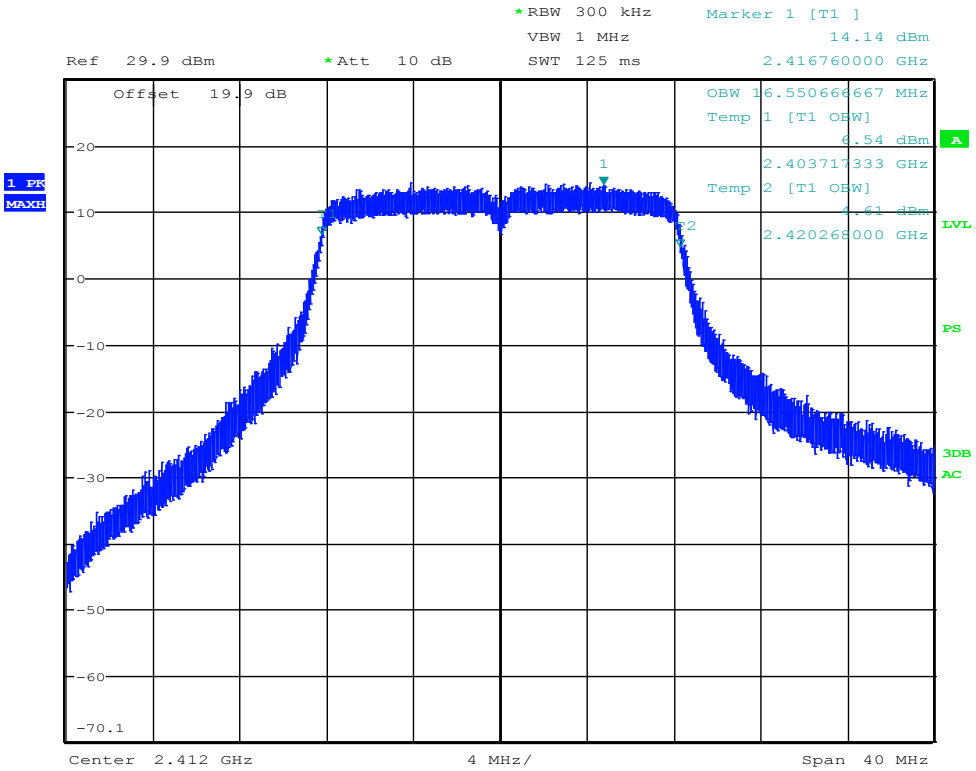
High Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



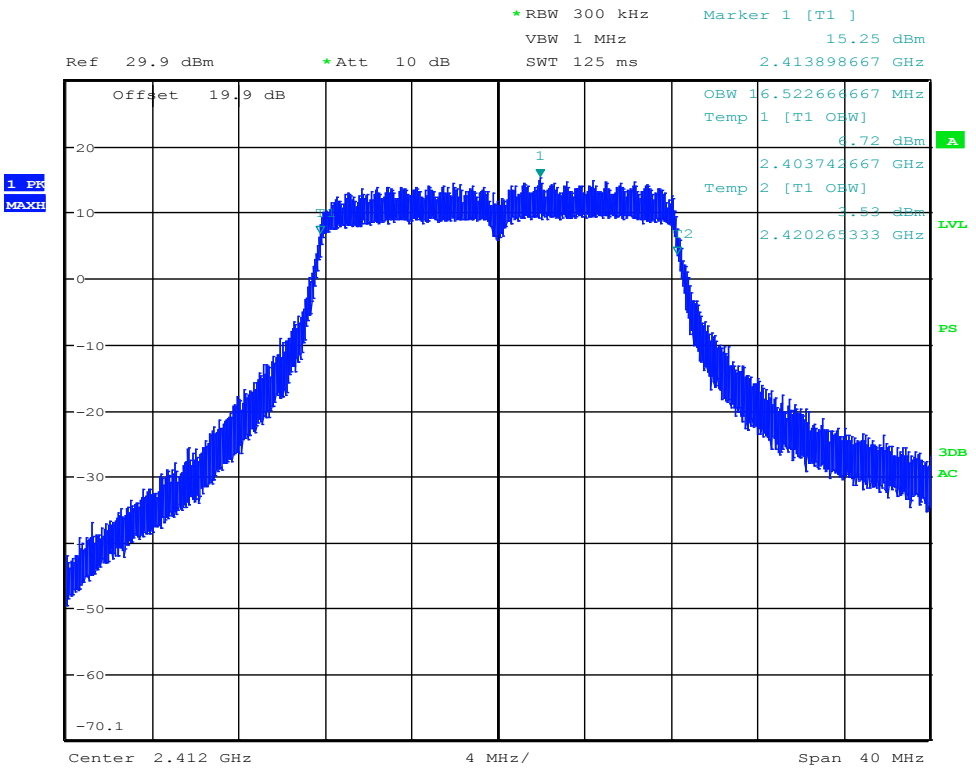
High Channel – Mode 802.11.b – RF 2– bandwidth 20 MHz



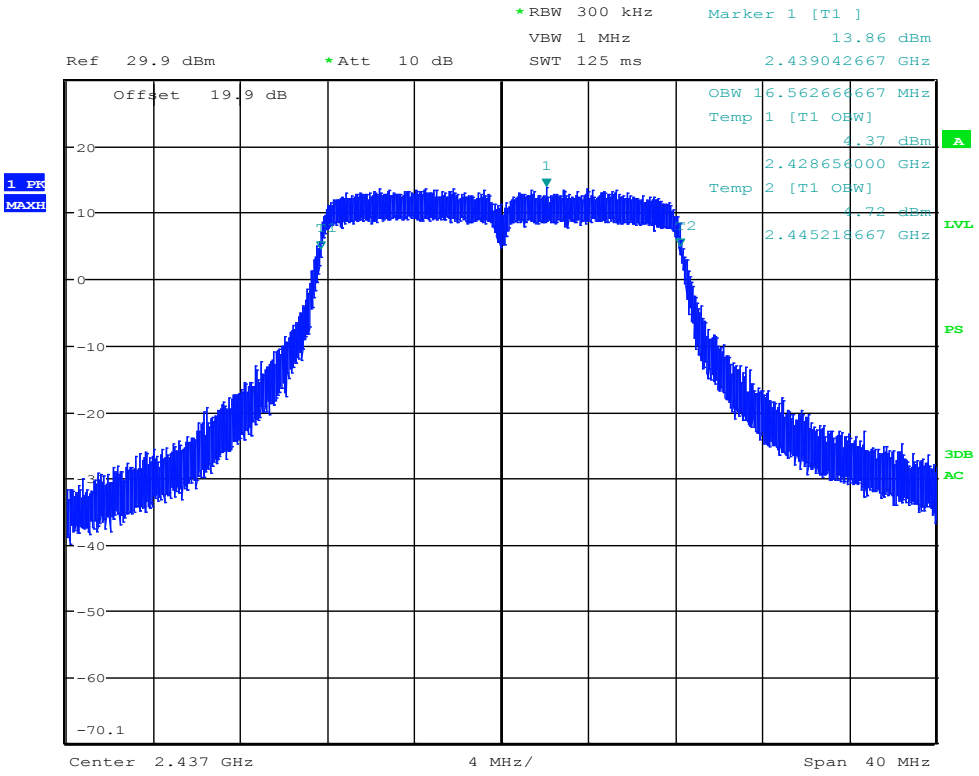
Low Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



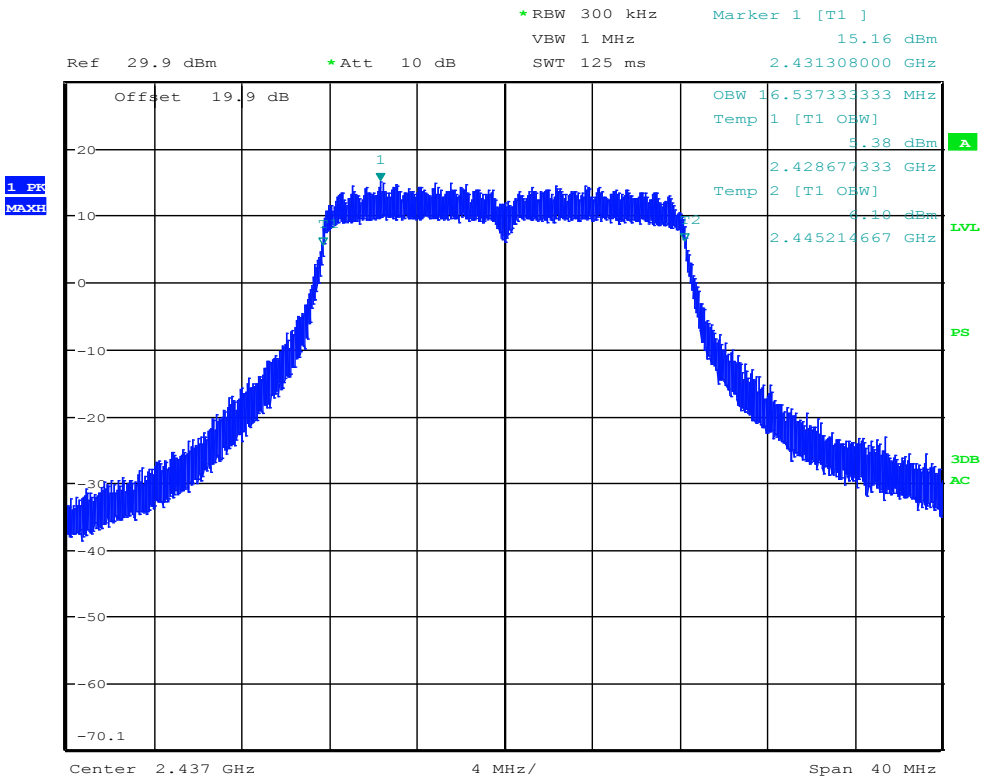
Low Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



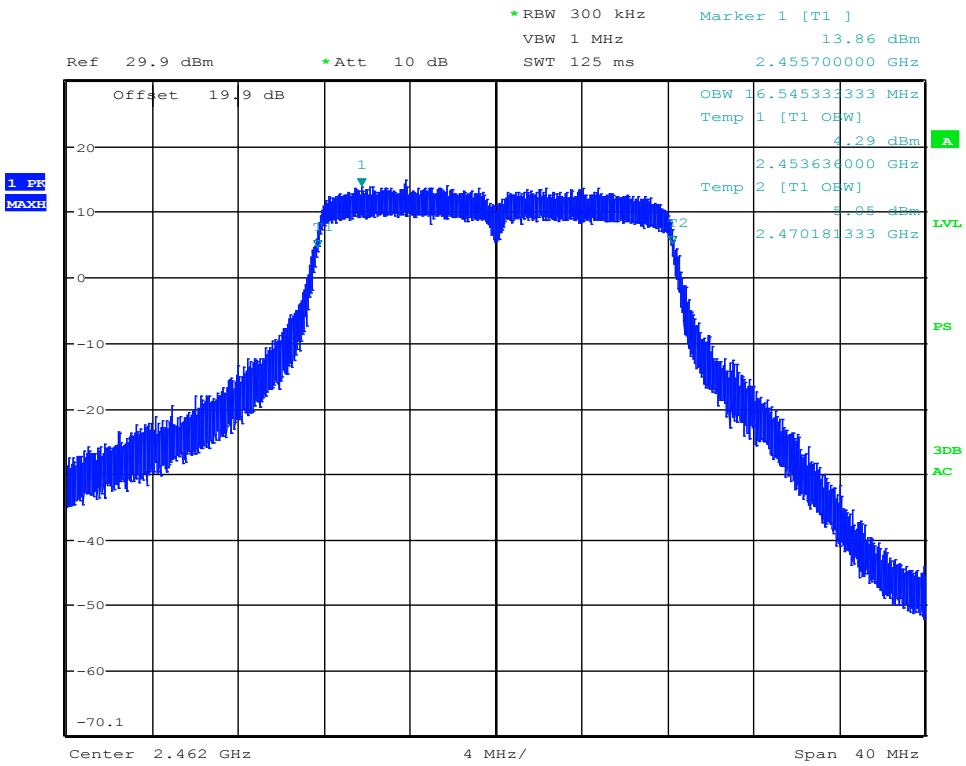
Central Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



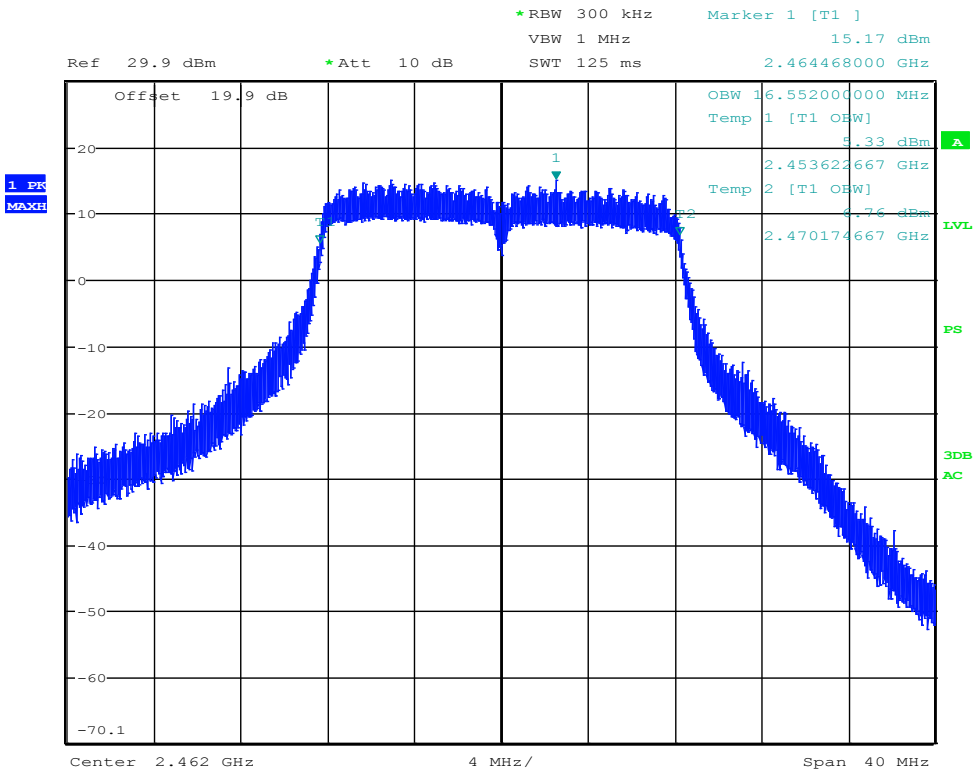
Central Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



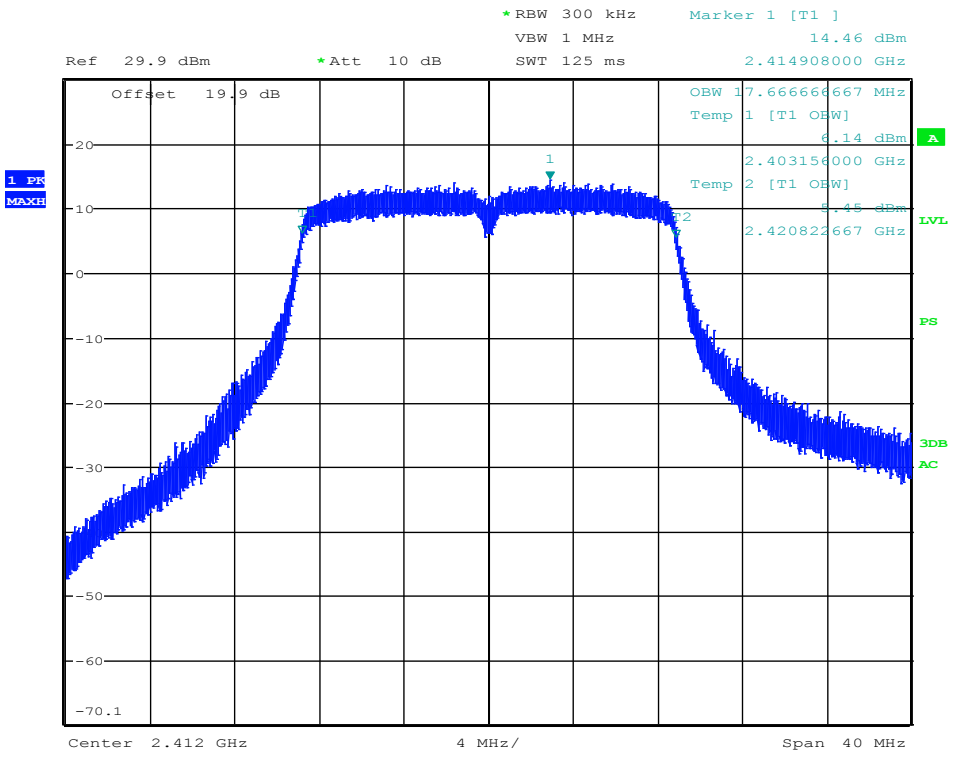
High Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



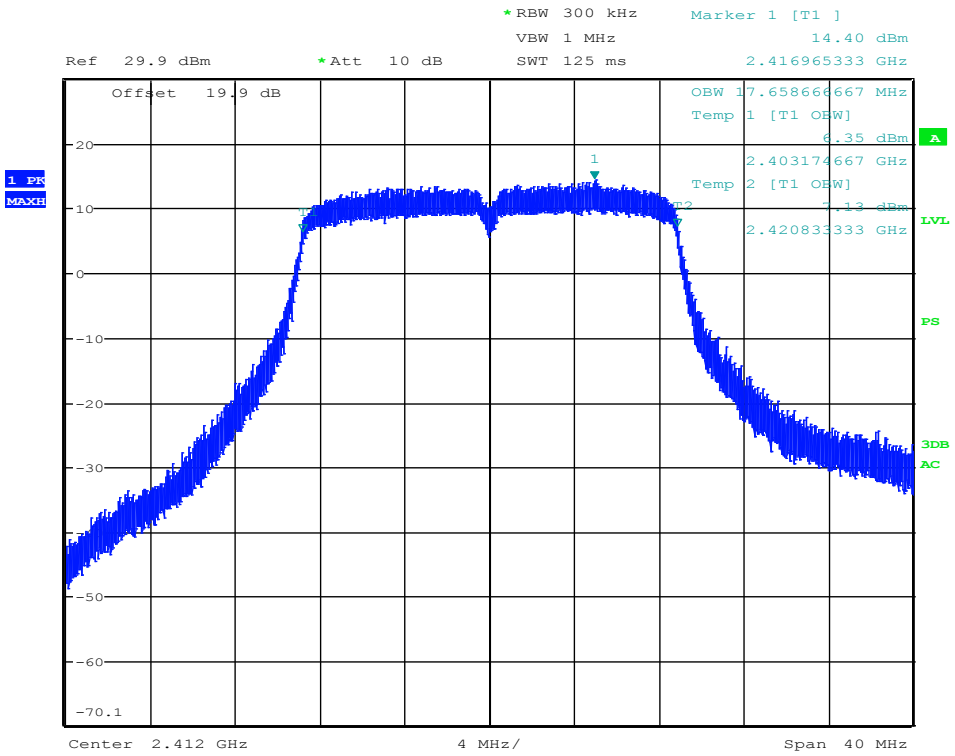
High Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



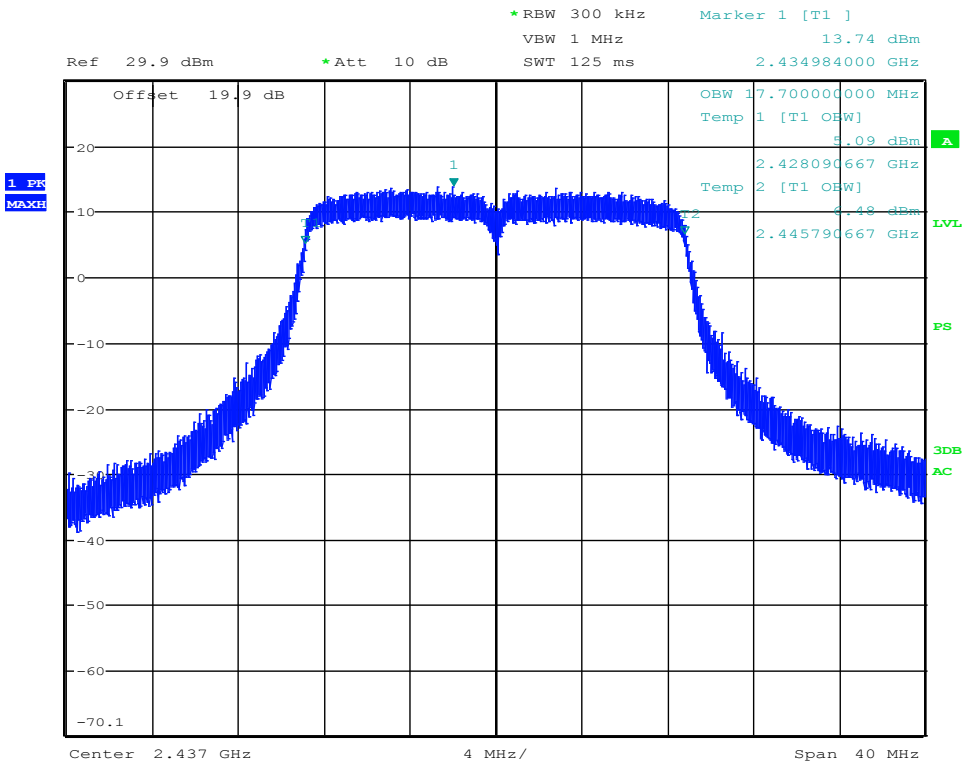
Low Channel – Mode 802.11.n – RF1– bandwidth 20 MHz



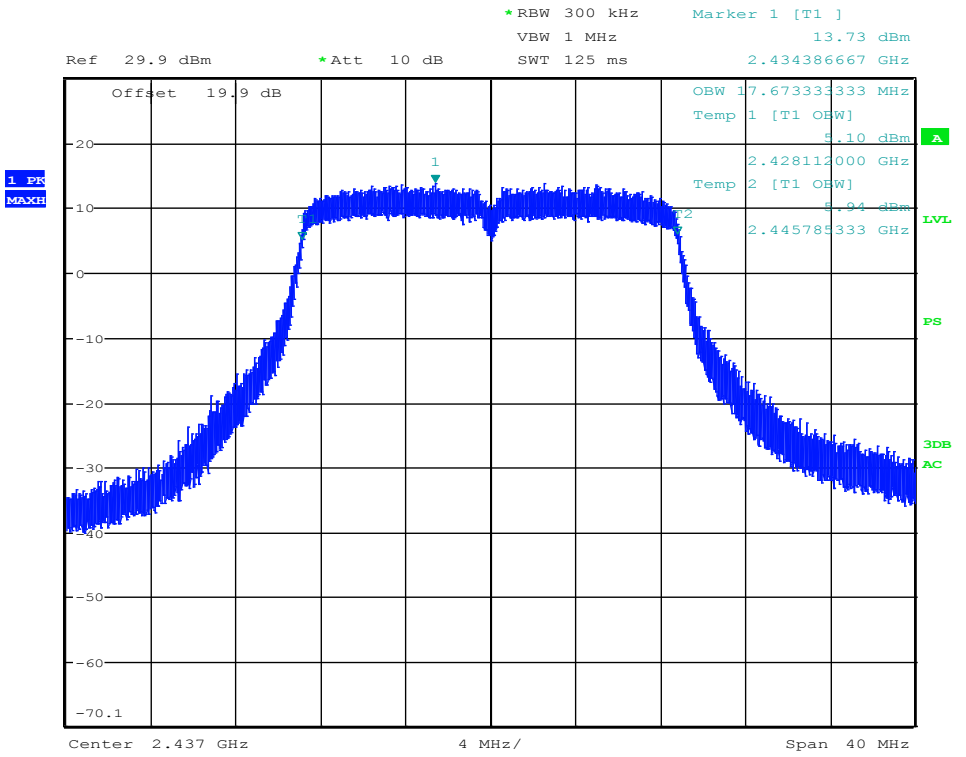
Low Channel – Mode 802.11.n – RF2– bandwidth 20 MHz



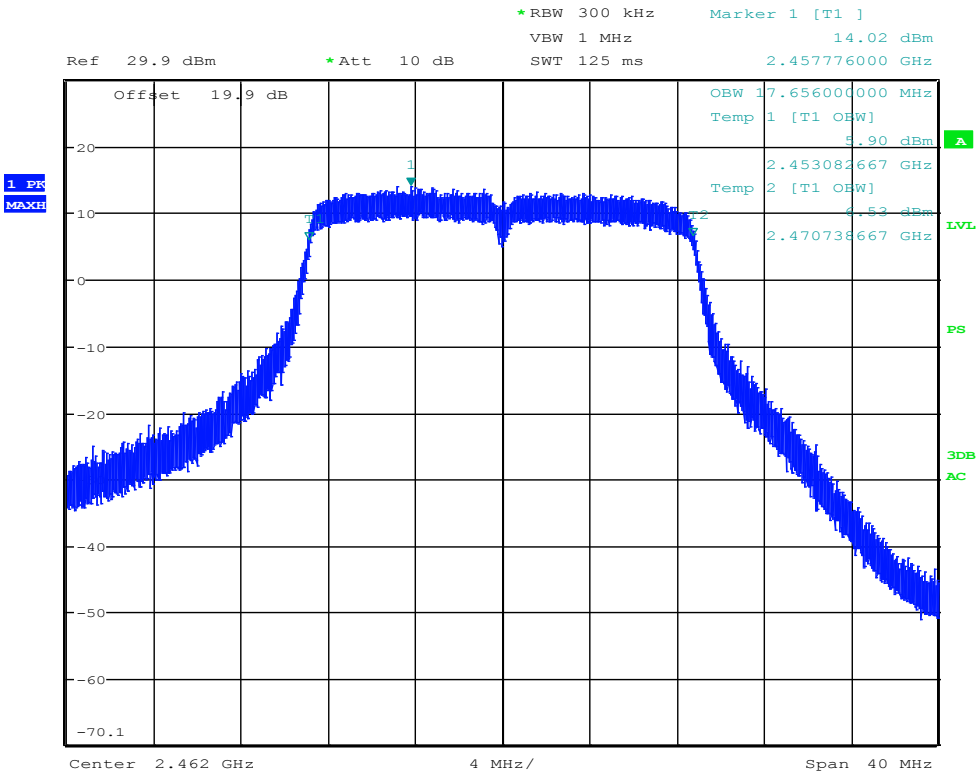
Central Channel – Mode 802.11.n – RF1– bandwidth 20 MHz



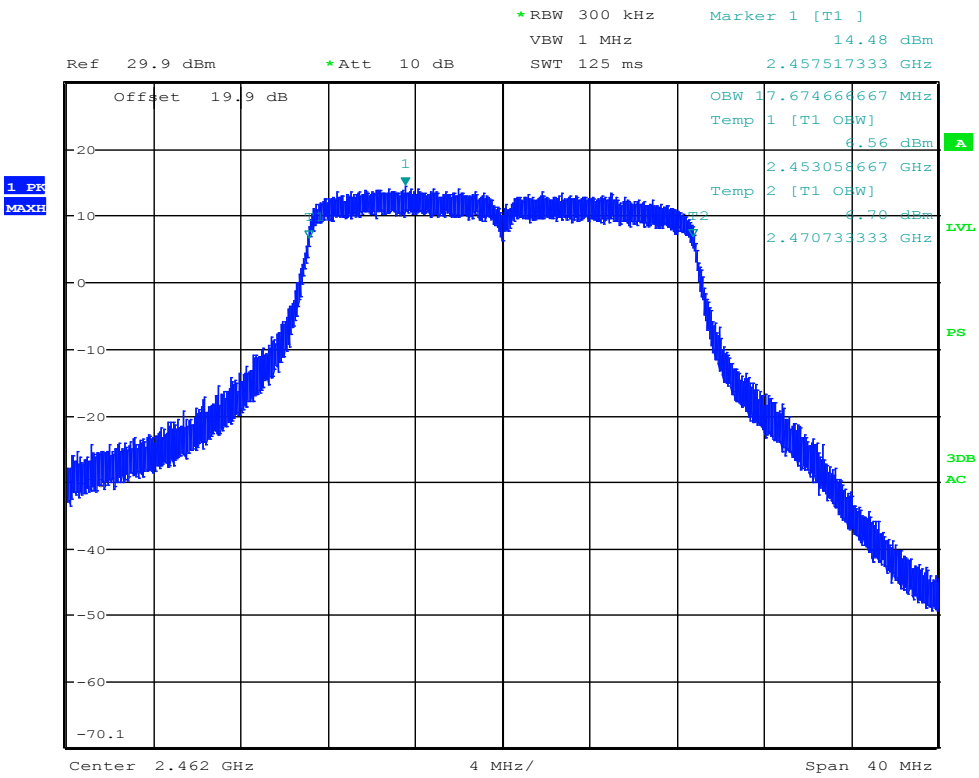
Central Channel – Mode 802.11.n – RF2– bandwidth 20 MHz



High Channel – Mode 802.11.n – RF1– bandwidth 20 MHz

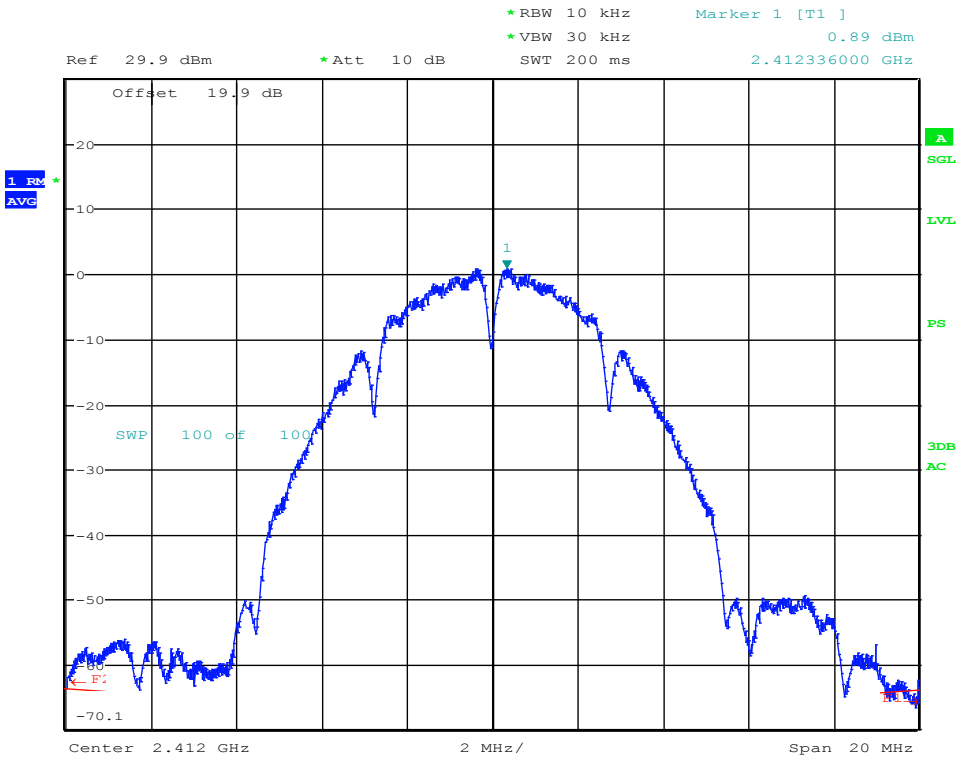


High Channel – Mode 802.11.n – RF2– bandwidth 20 MHz

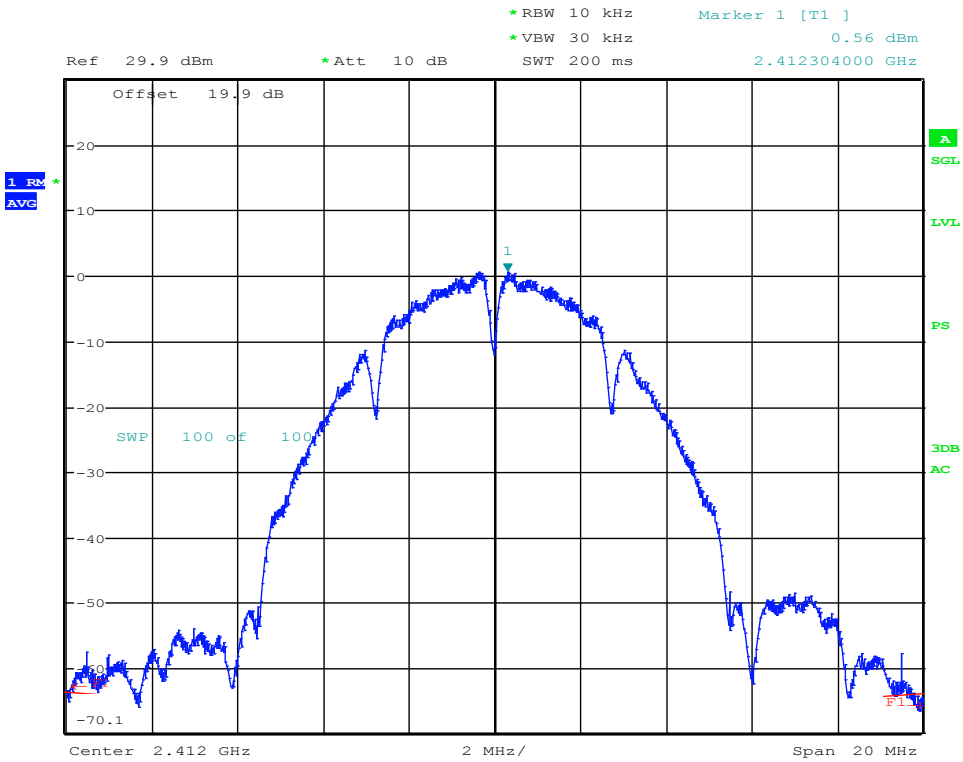


APPENDIX 4: Spectral density

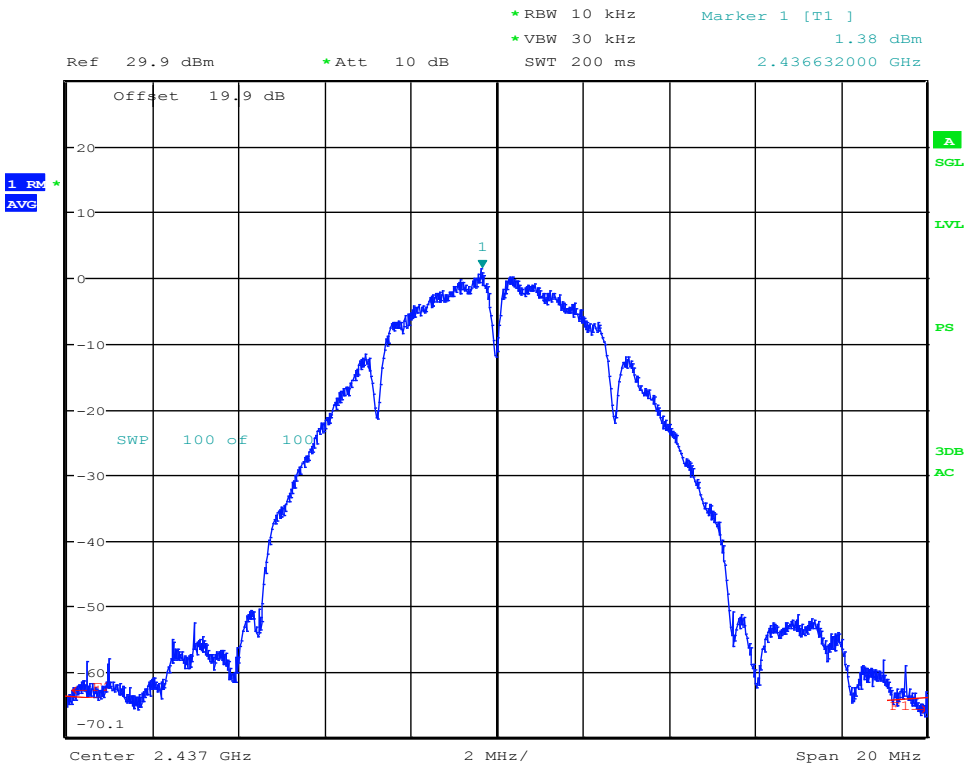
Low Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



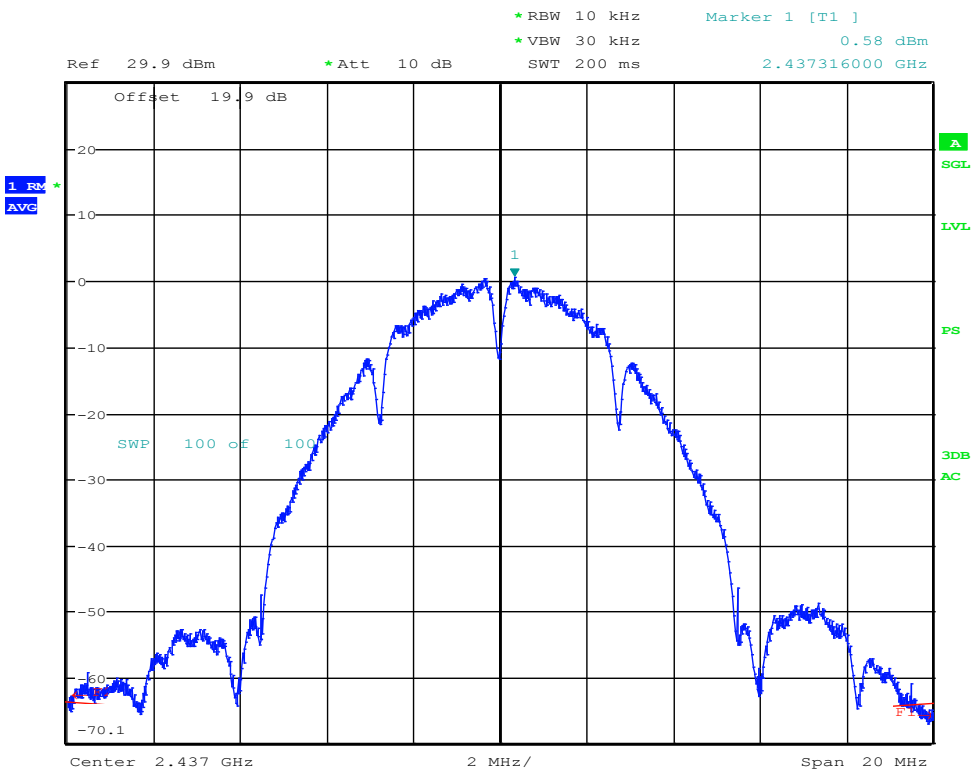
Low Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



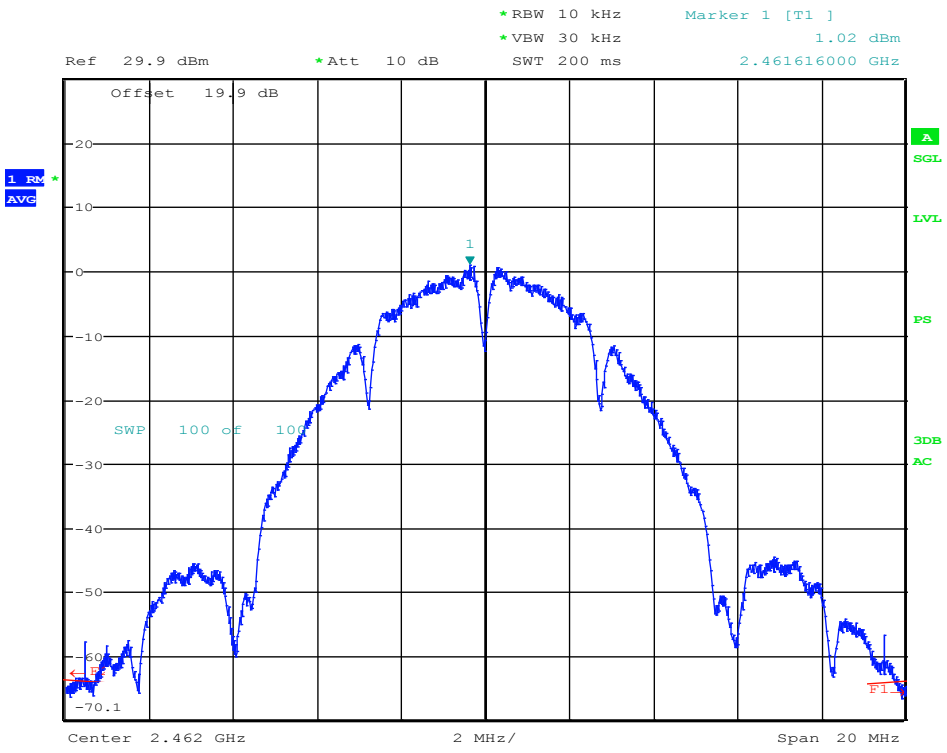
Central Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



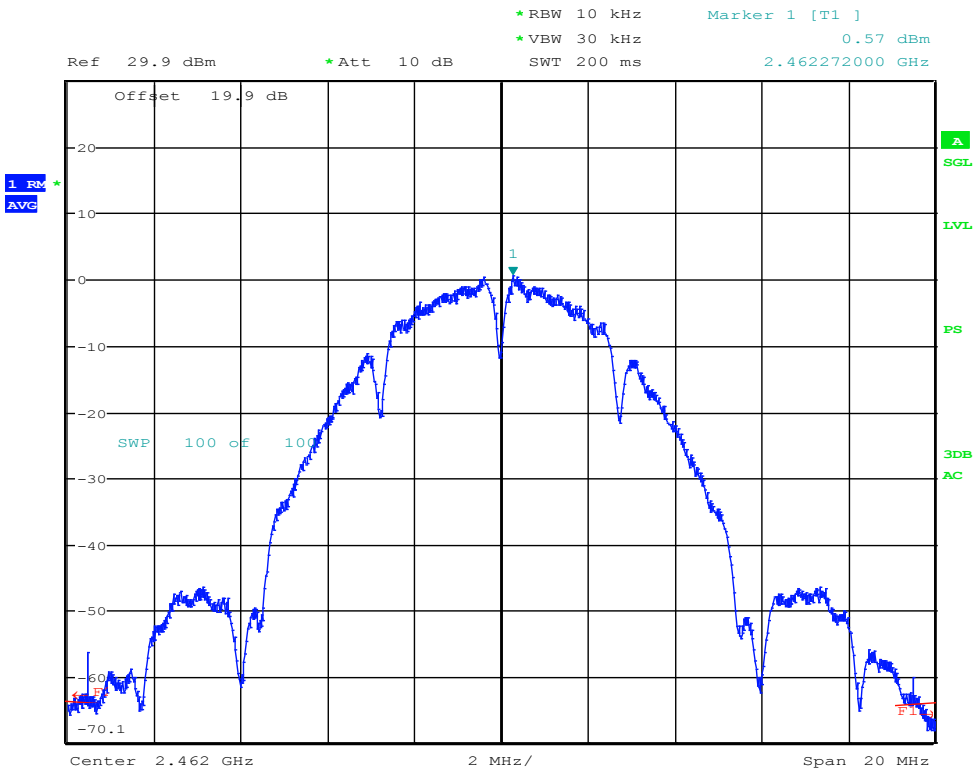
Central Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



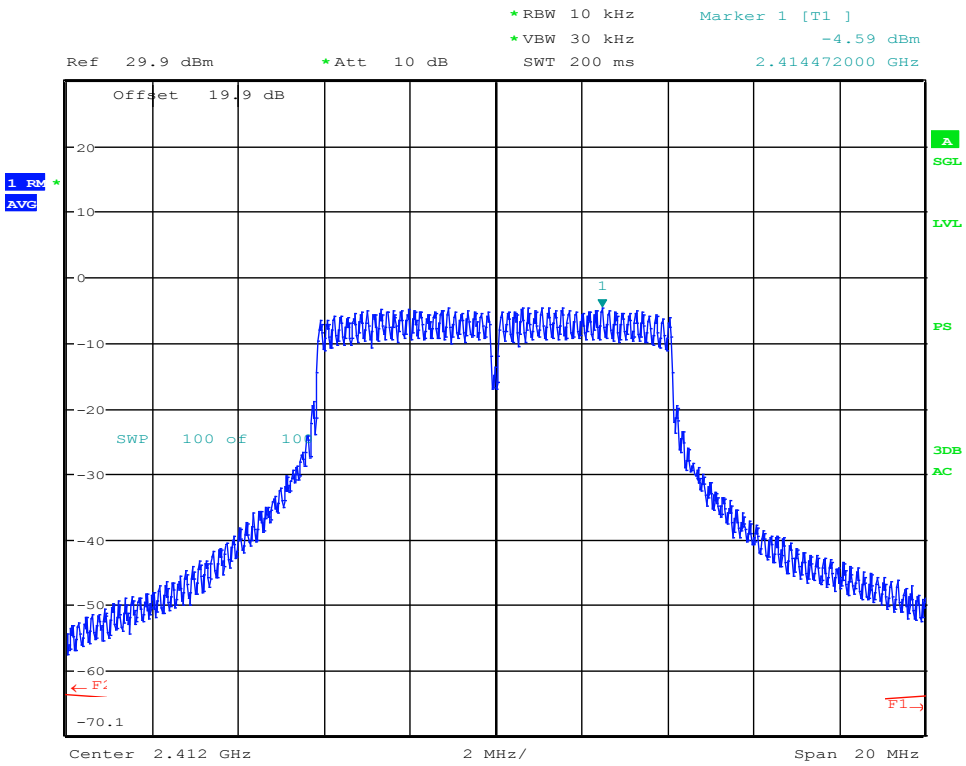
High Channel – Mode 802.11.b – RF 1– bandwidth 10 MHz



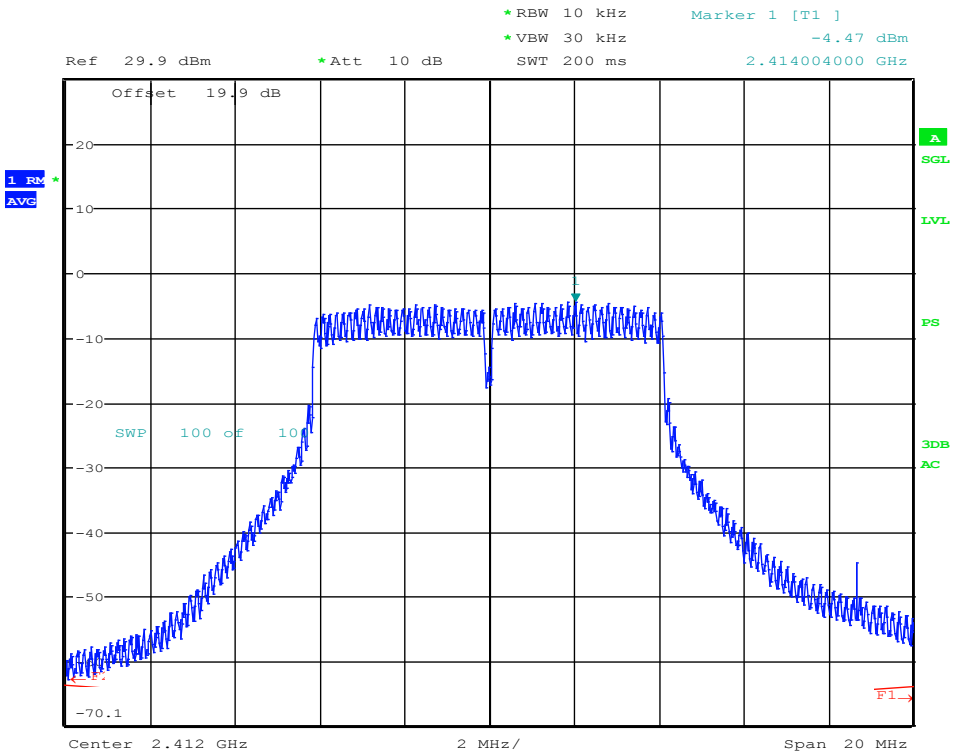
High Channel – Mode 802.11.b – RF 2– bandwidth 10 MHz



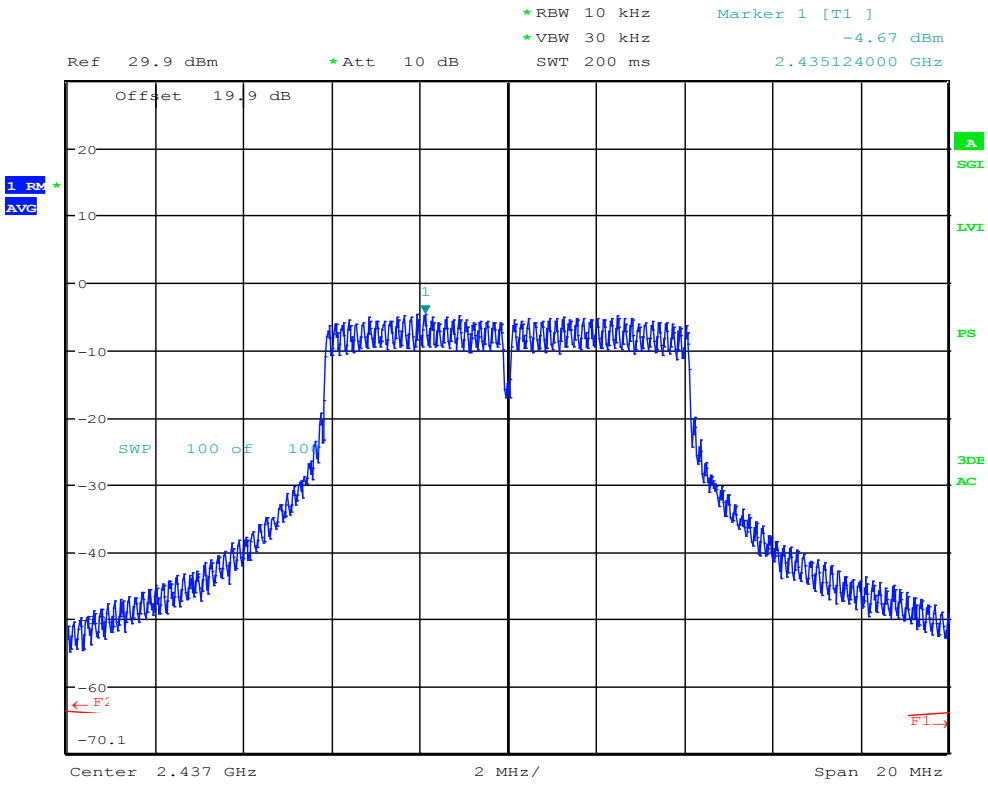
Low Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



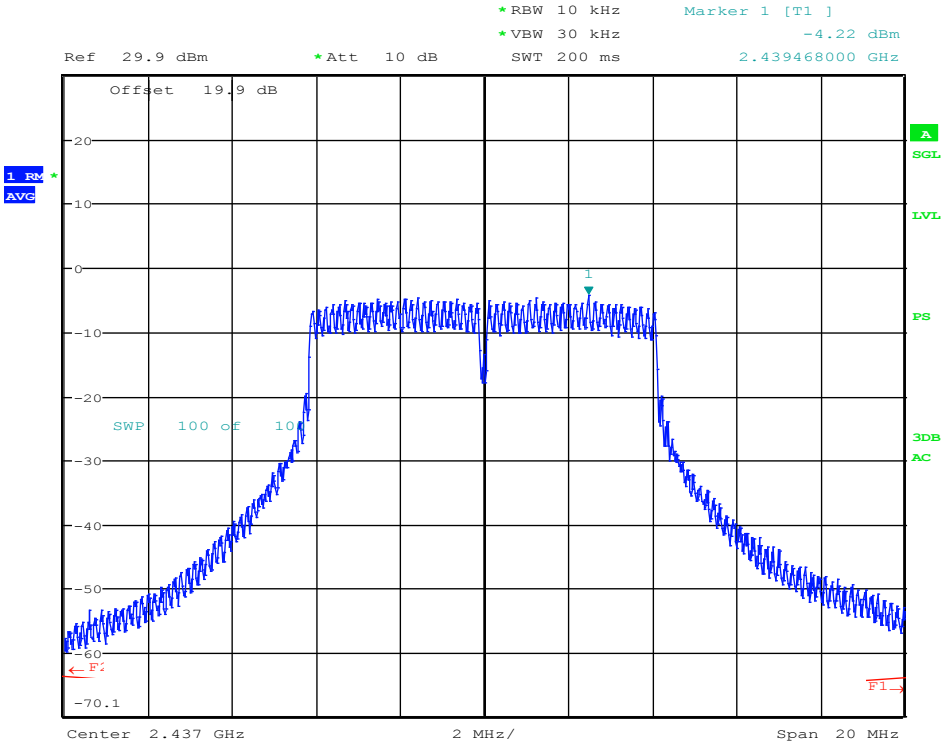
Low Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



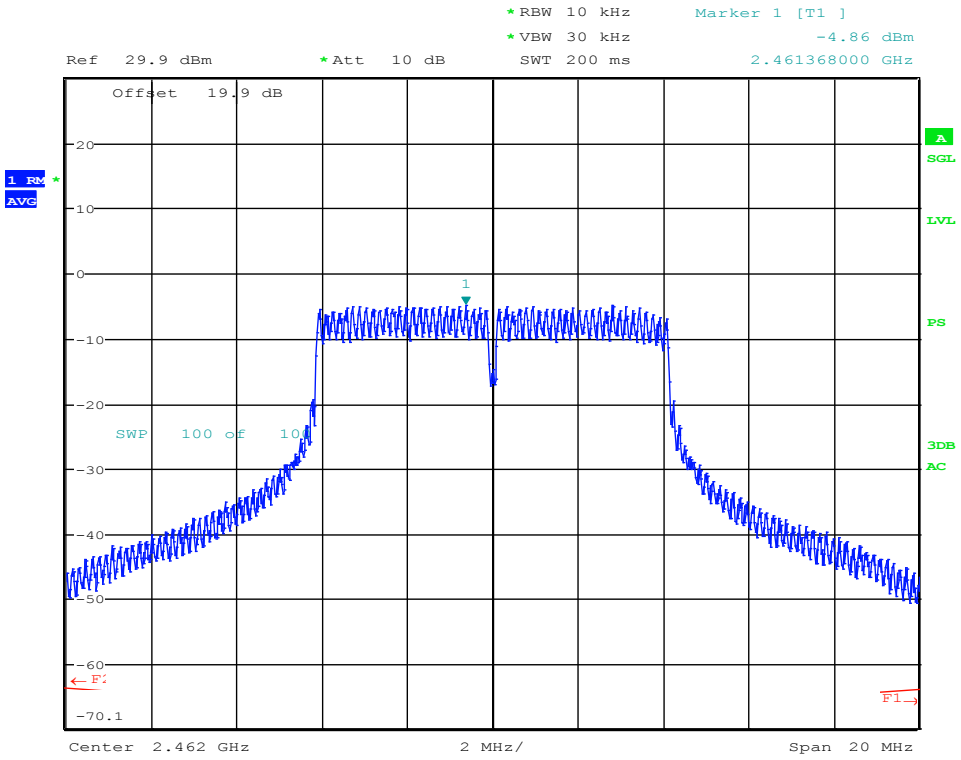
Central Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



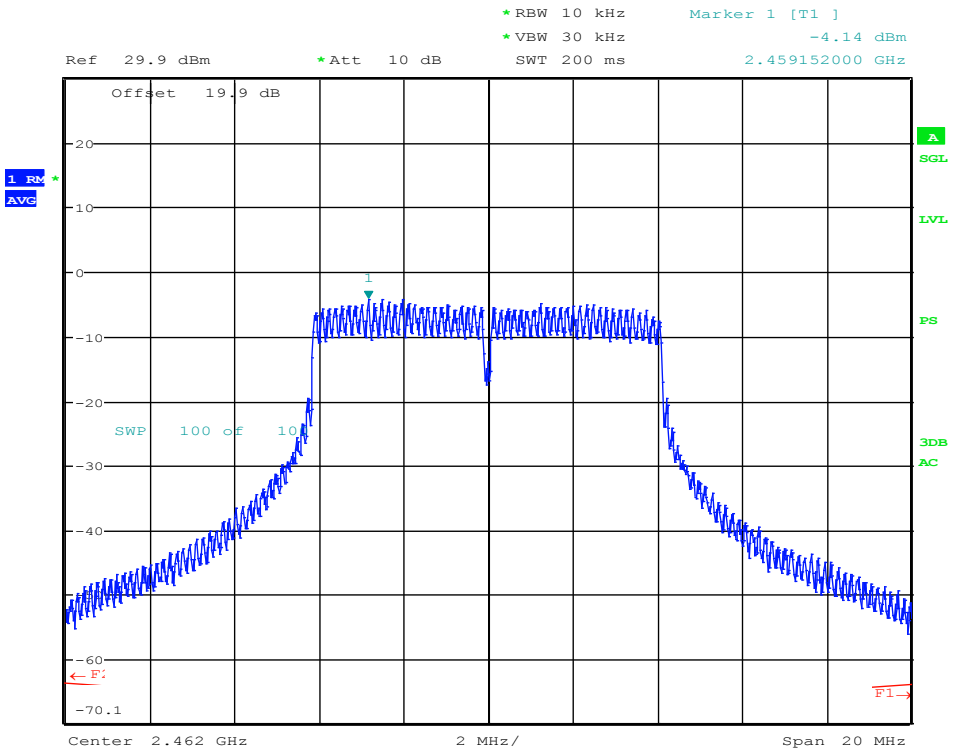
Central Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



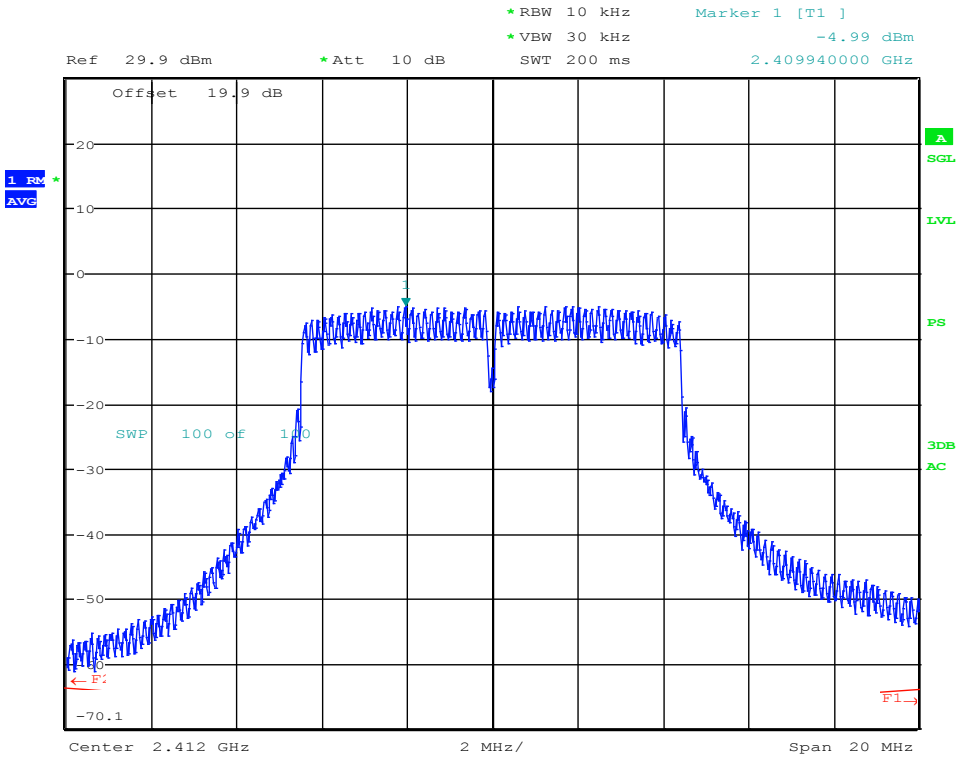
High Channel – Mode 802.11.g – RF 1– bandwidth 10 MHz



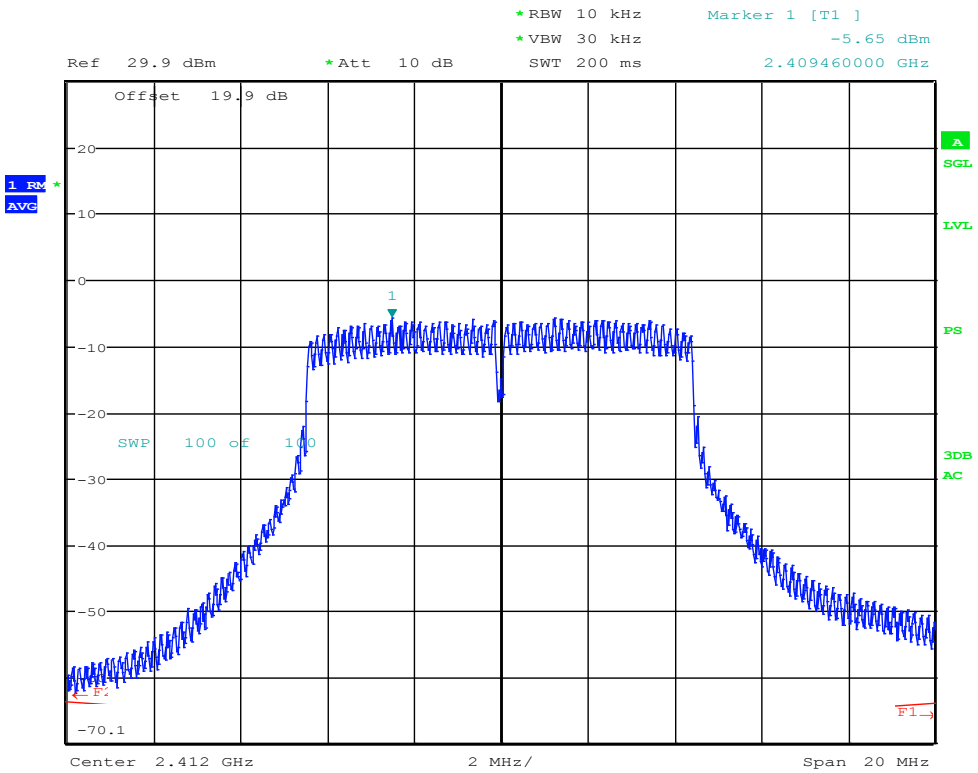
High Channel – Mode 802.11.g – RF 2– bandwidth 10 MHz



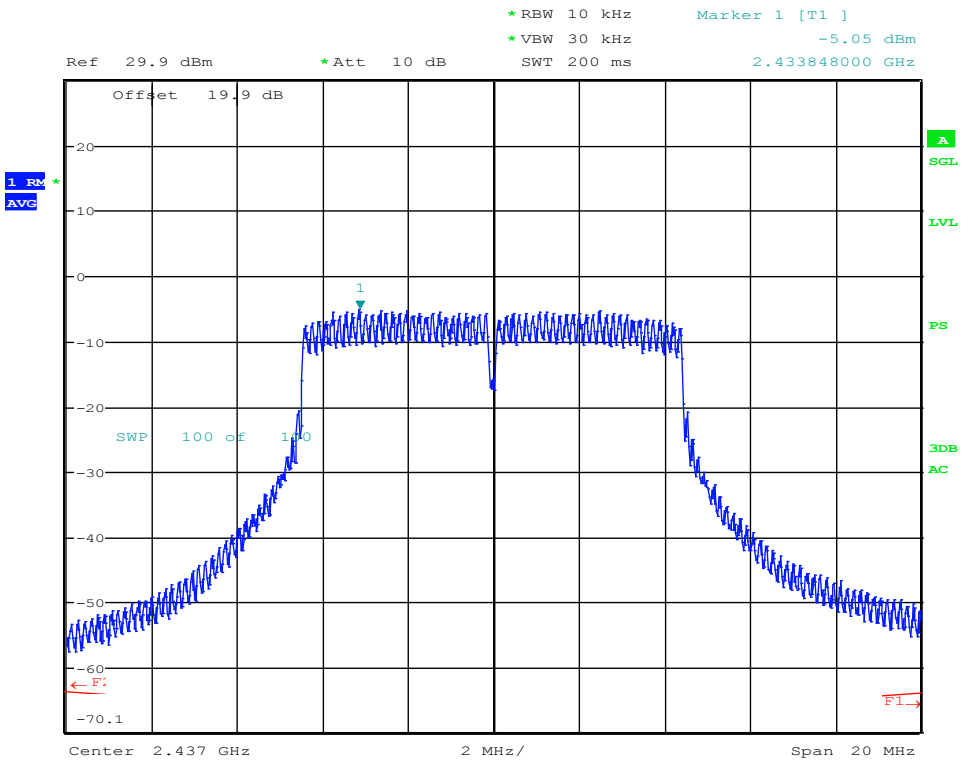
Low Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



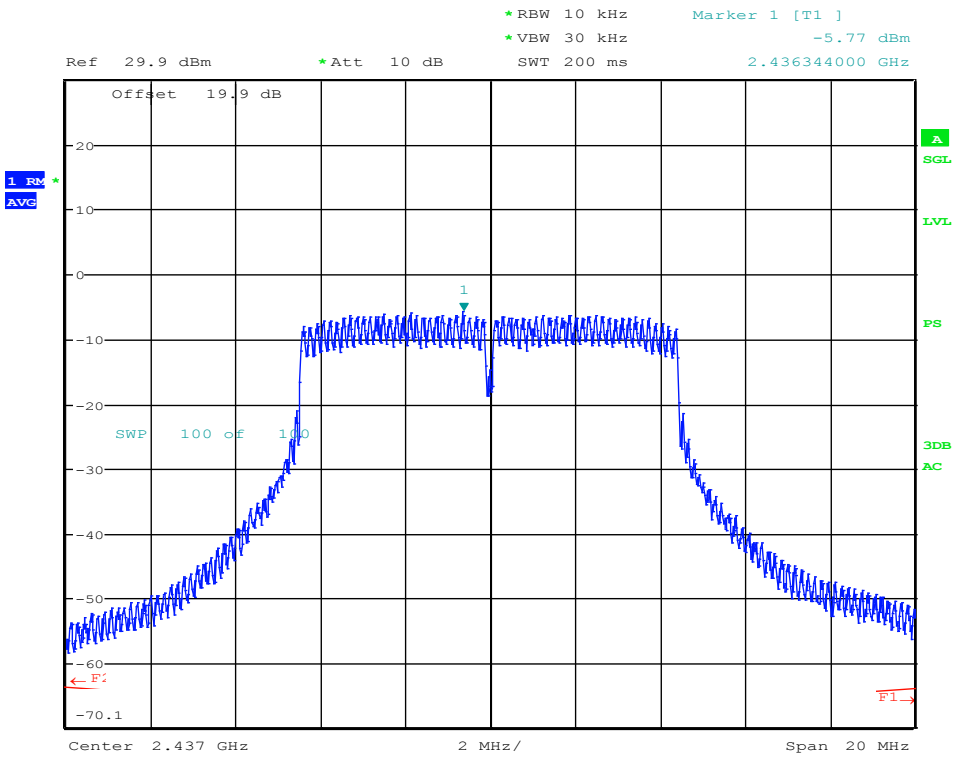
Low Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



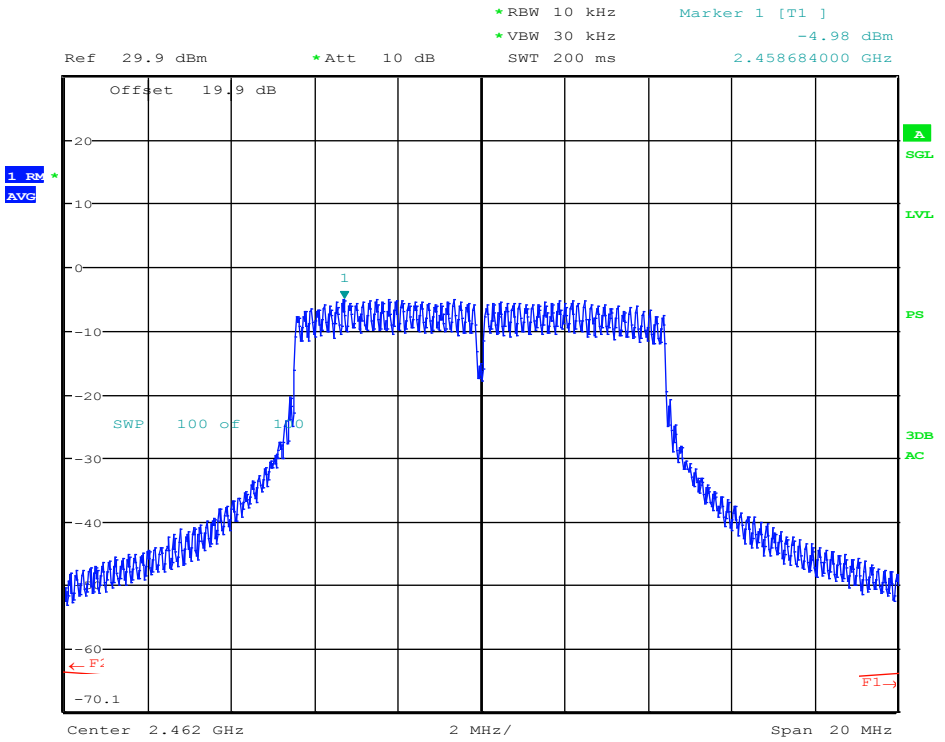
Central Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



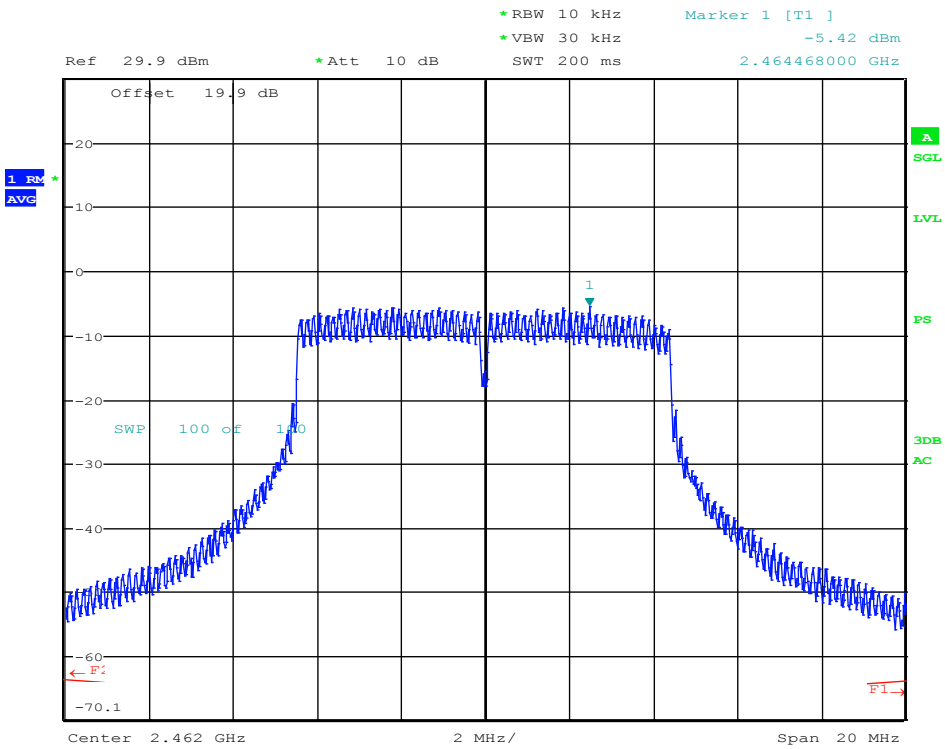
Central Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



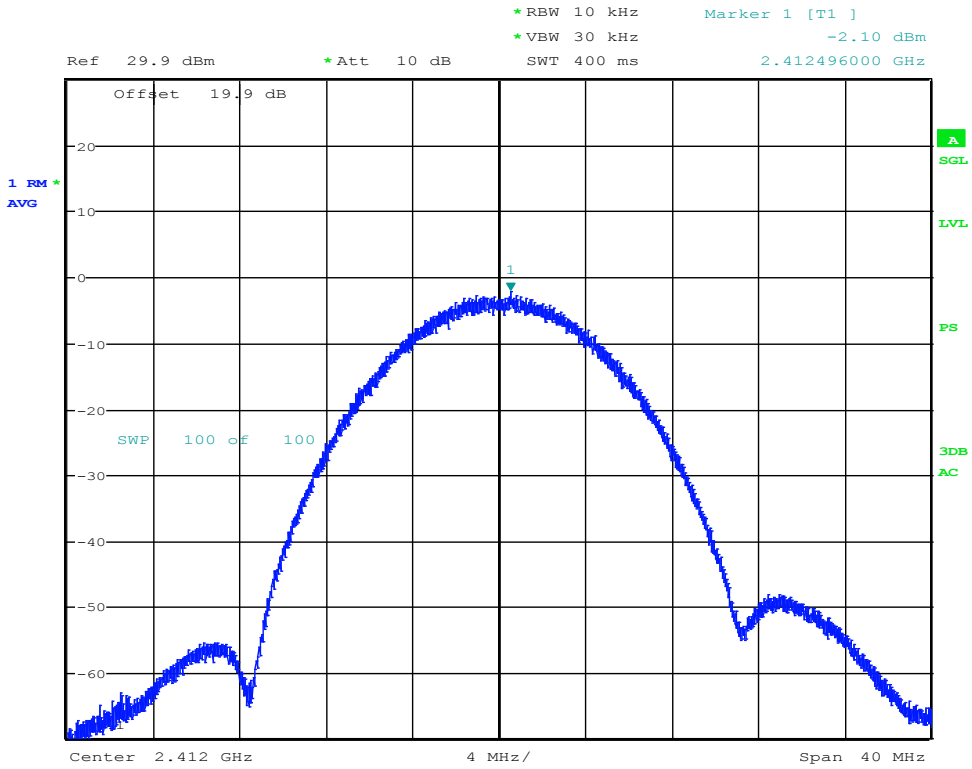
High Channel – Mode 802.11.n – RF1– bandwidth 10 MHz



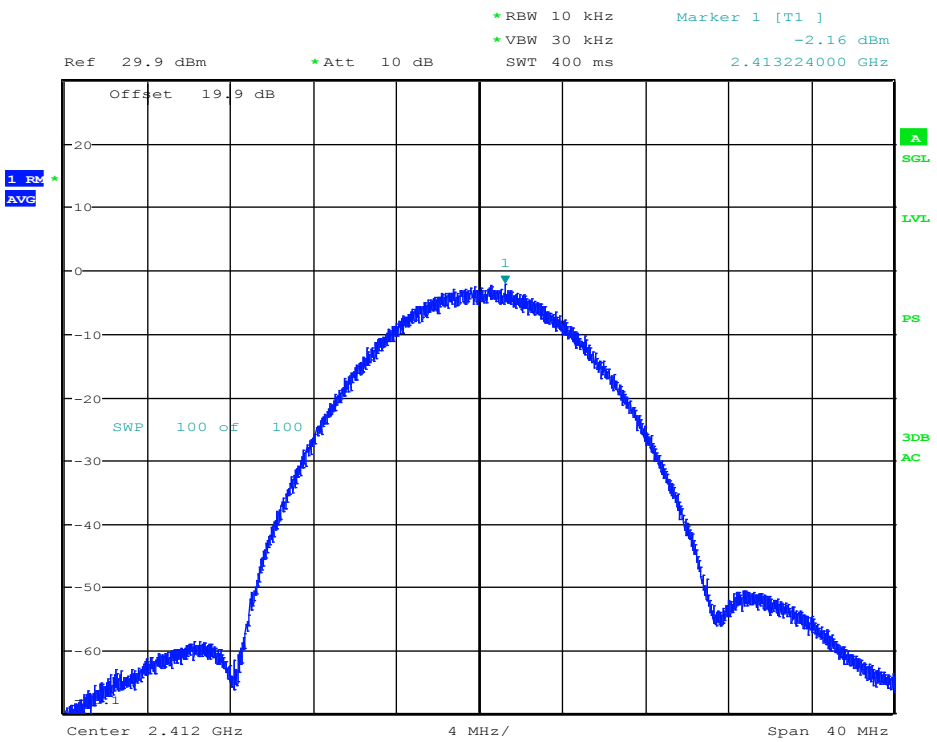
High Channel – Mode 802.11.n – RF2– bandwidth 10 MHz



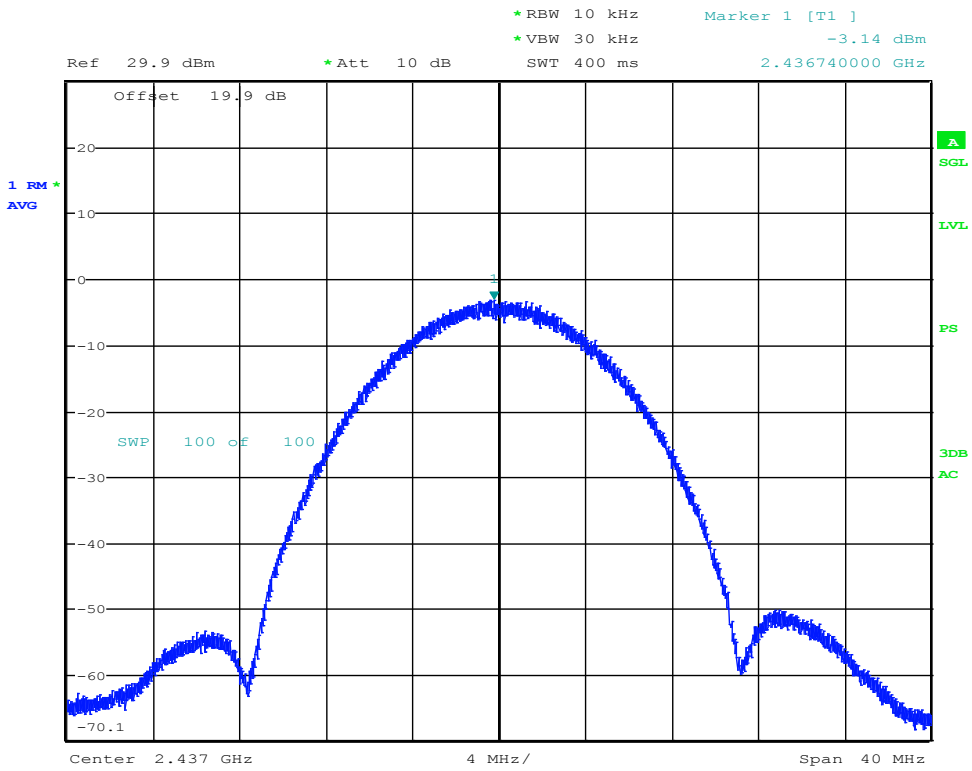
Low Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



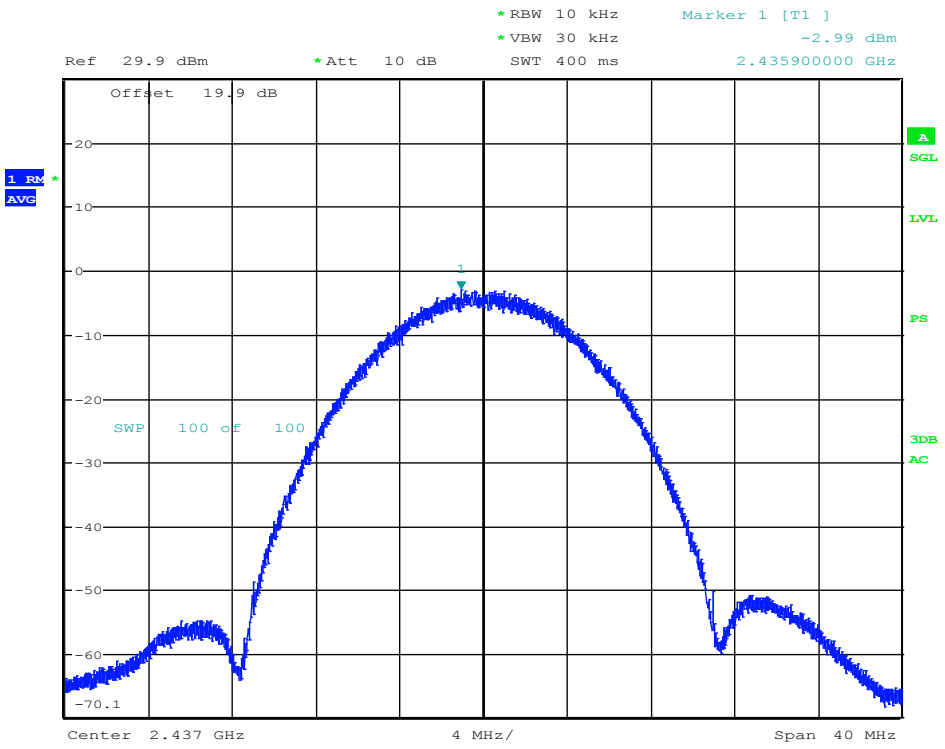
Low Channel – Mode 802.11.b – RF 2– bandwidth 20 MHz



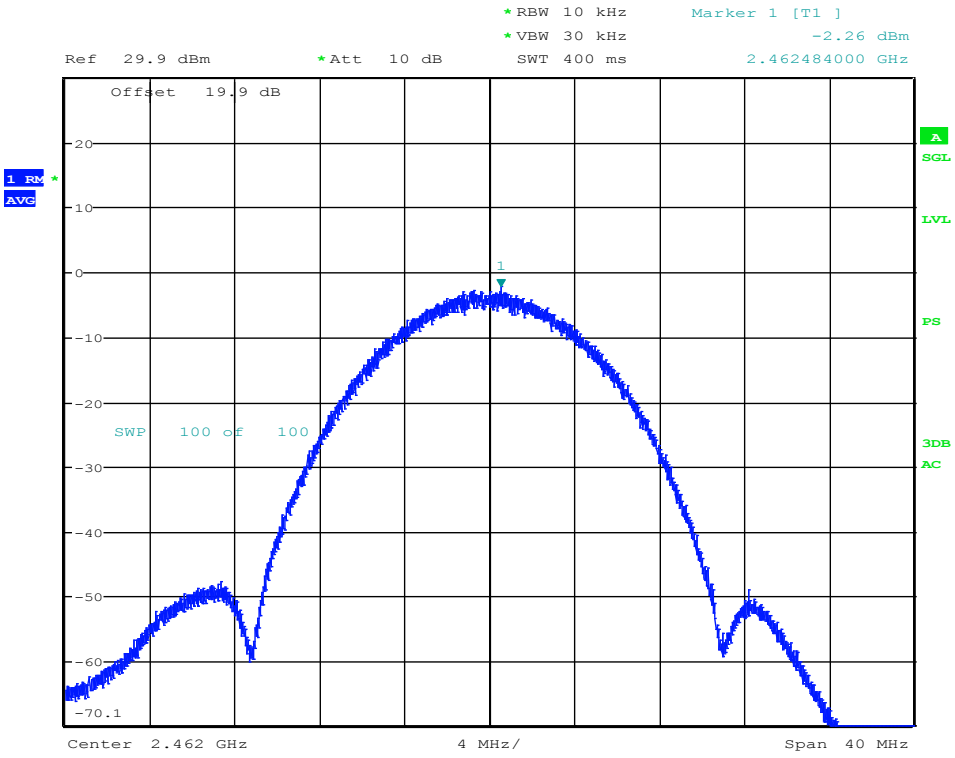
Central Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



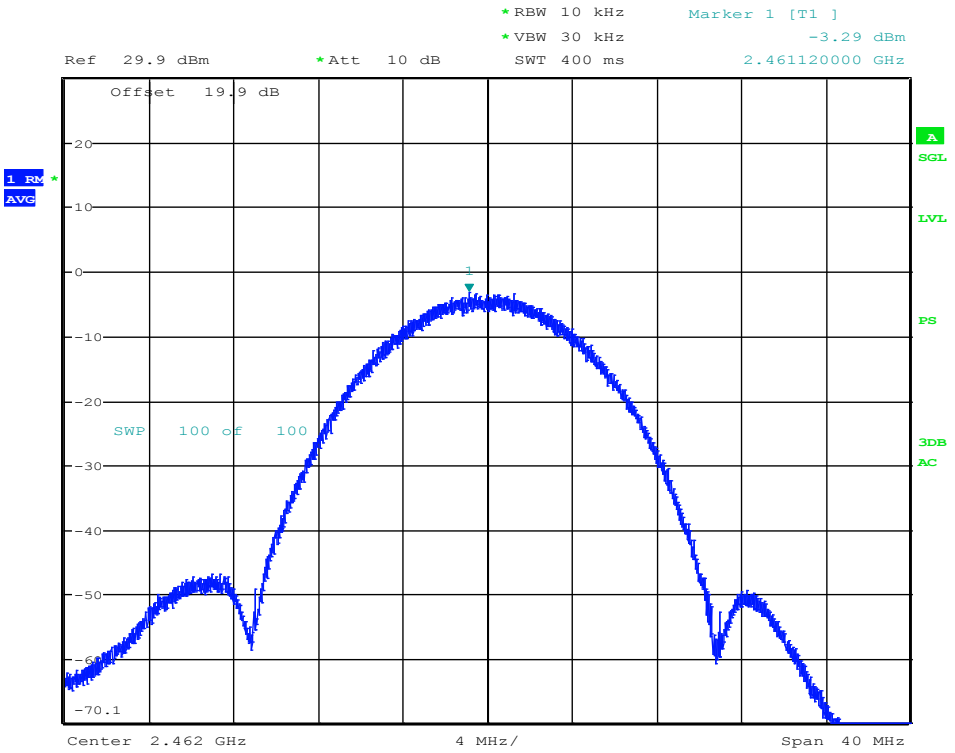
Central Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



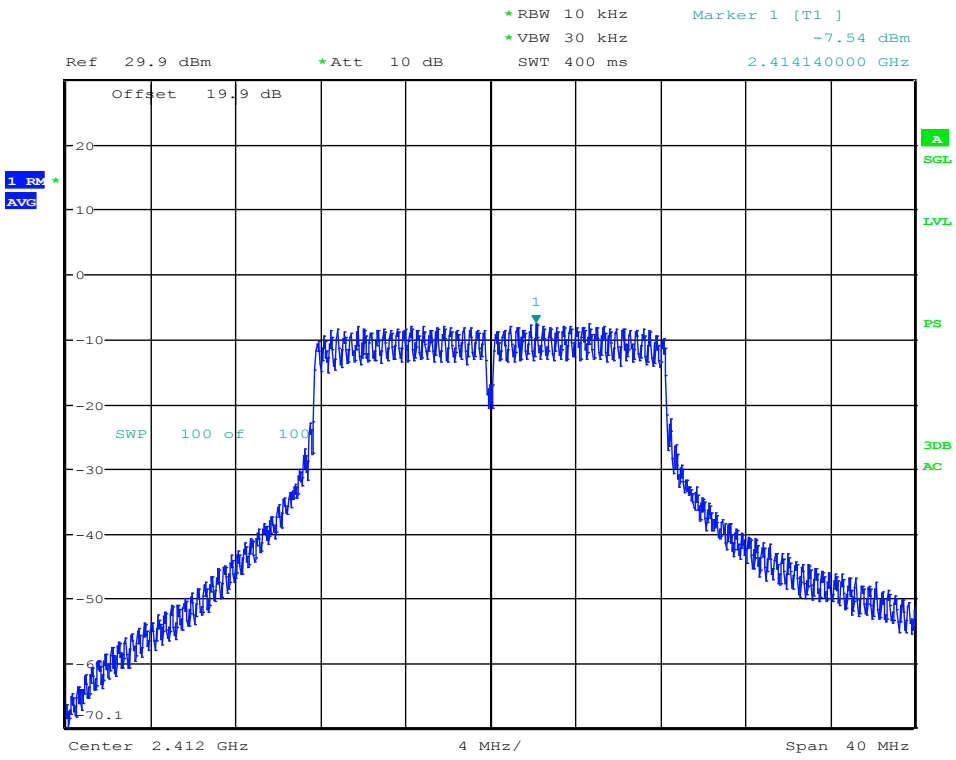
High Channel – Mode 802.11.b – RF 1– bandwidth 20 MHz



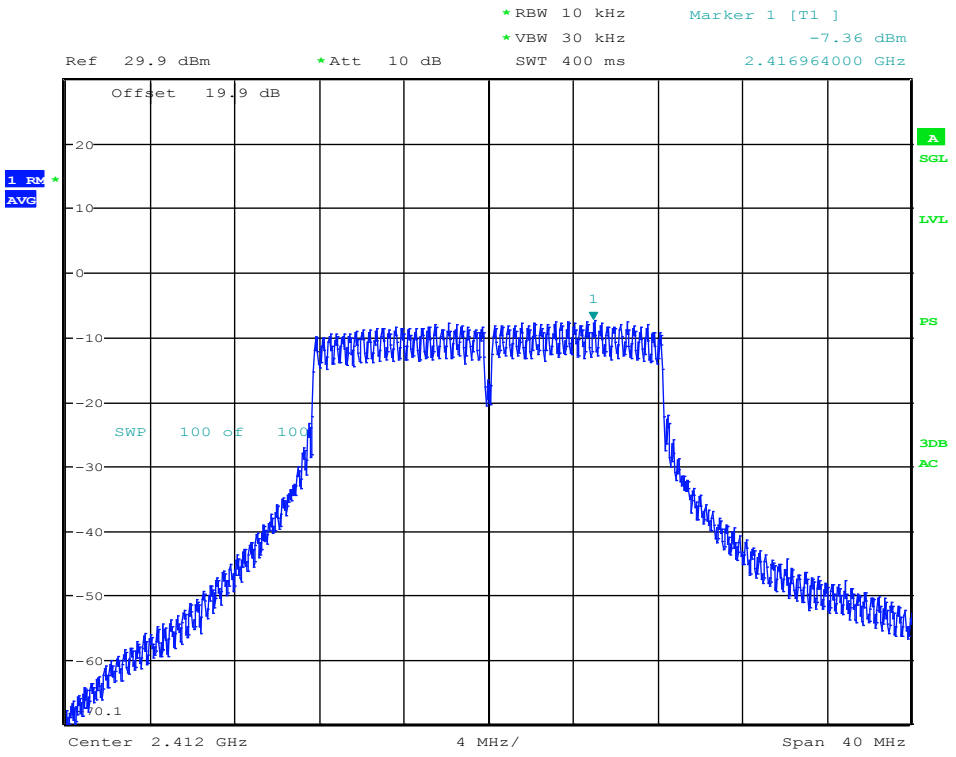
High Channel – Mode 802.11.b – RF 2– bandwidth 20 MHz



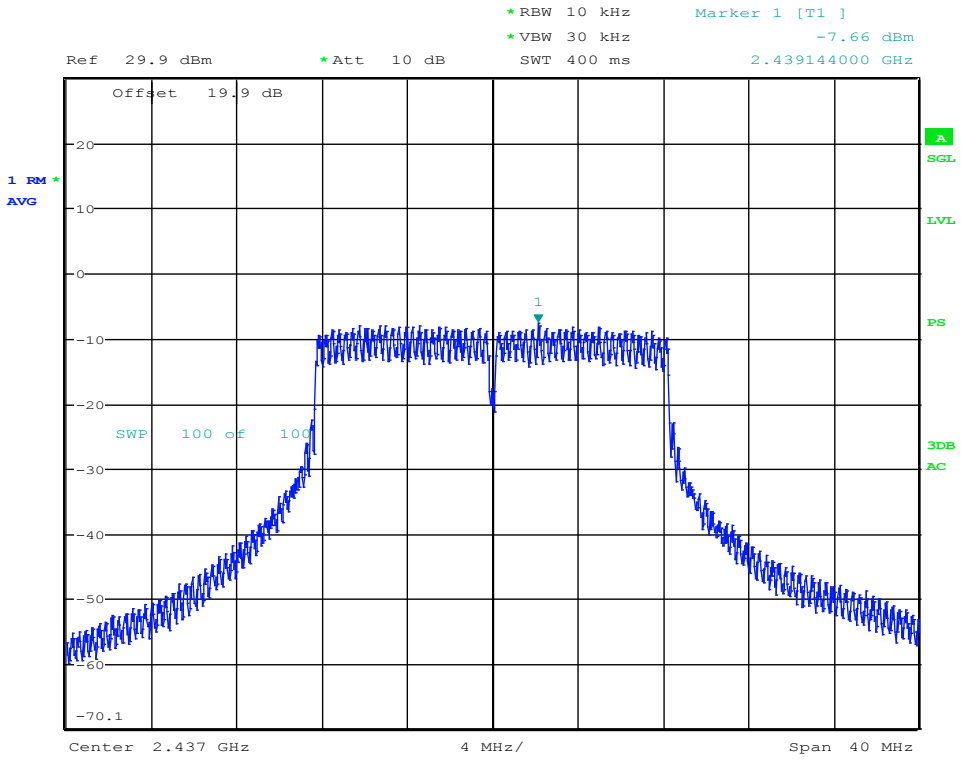
Low Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



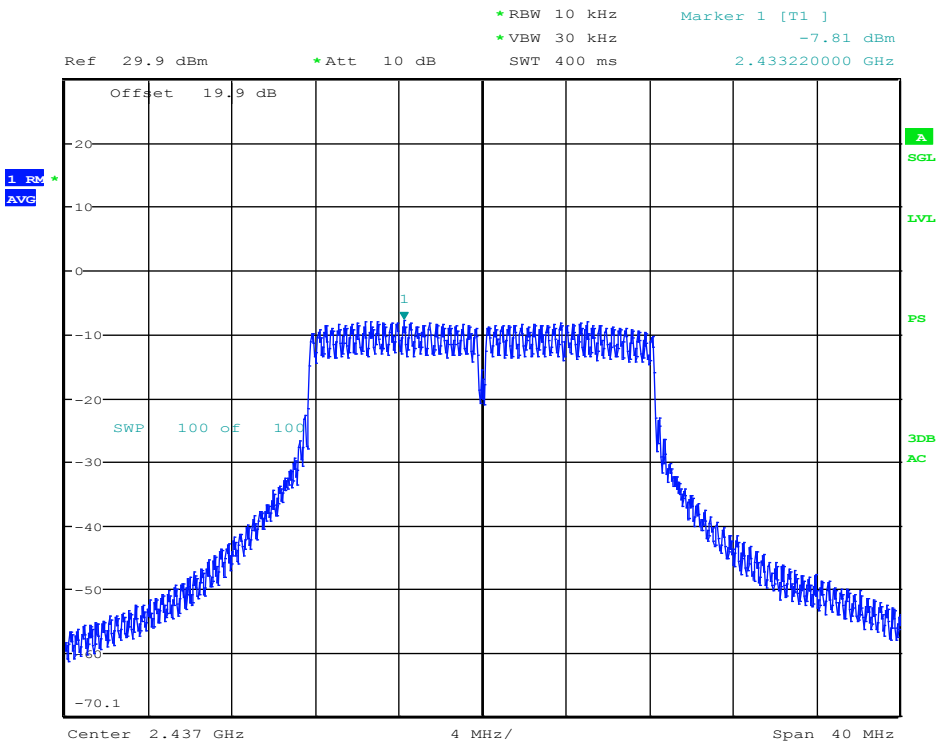
Low Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



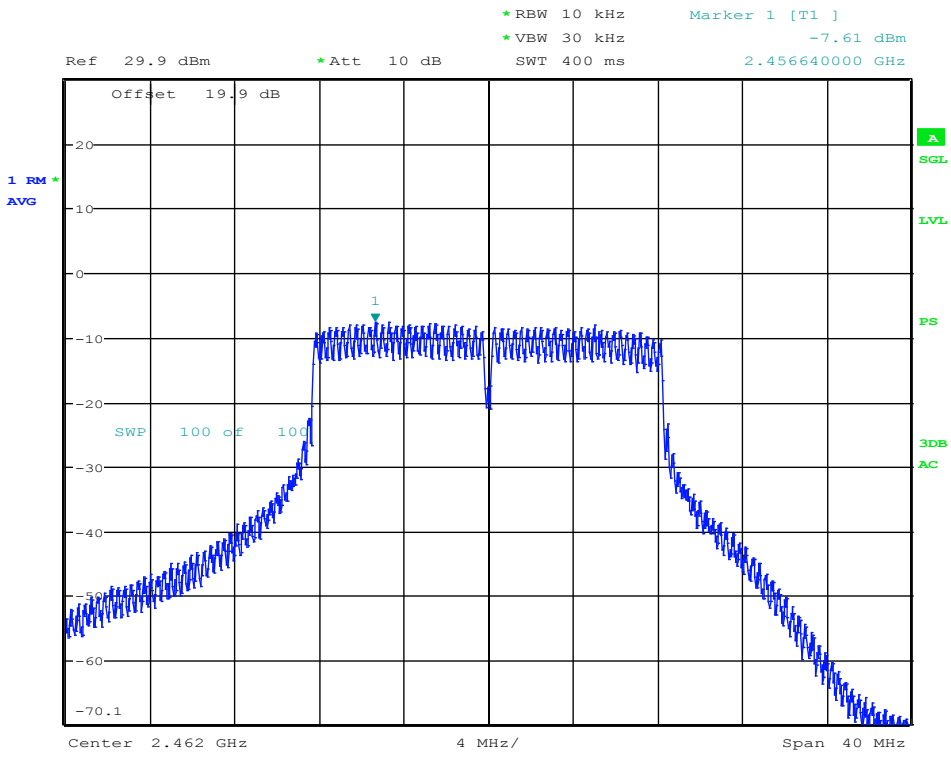
Central Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



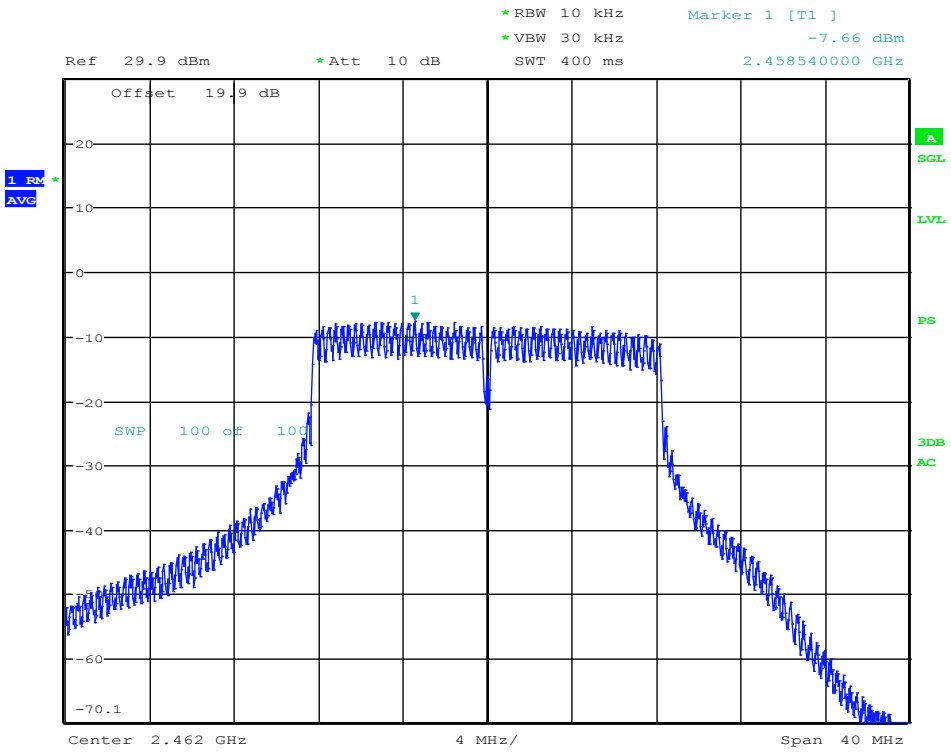
Central Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



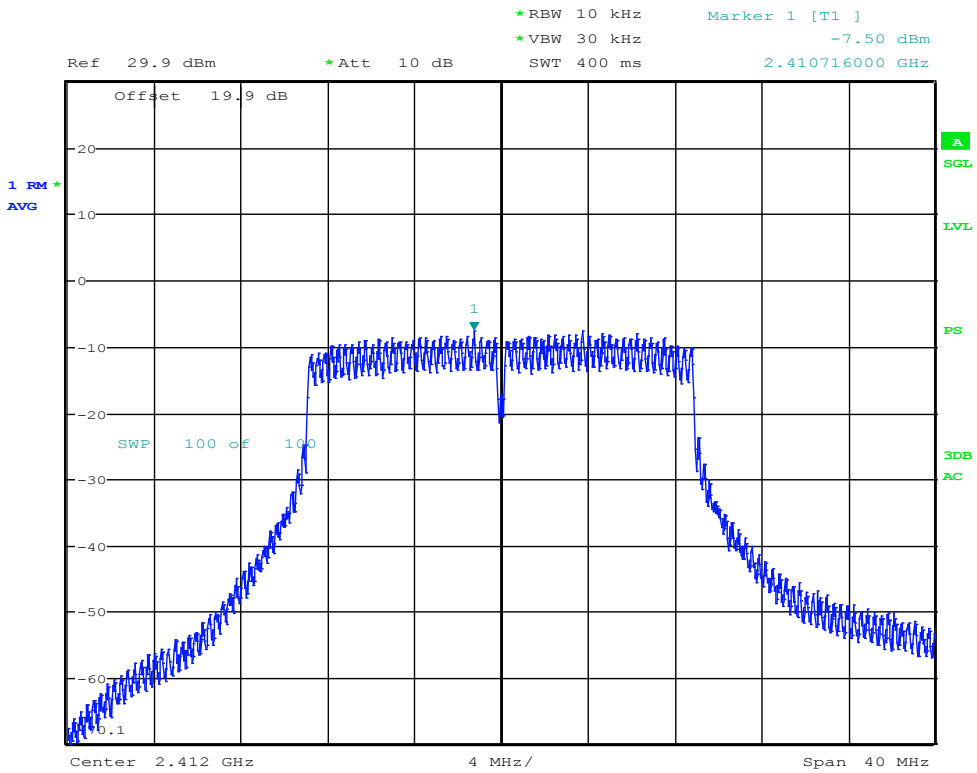
High Channel – Mode 802.11.g – RF 1– bandwidth 20 MHz



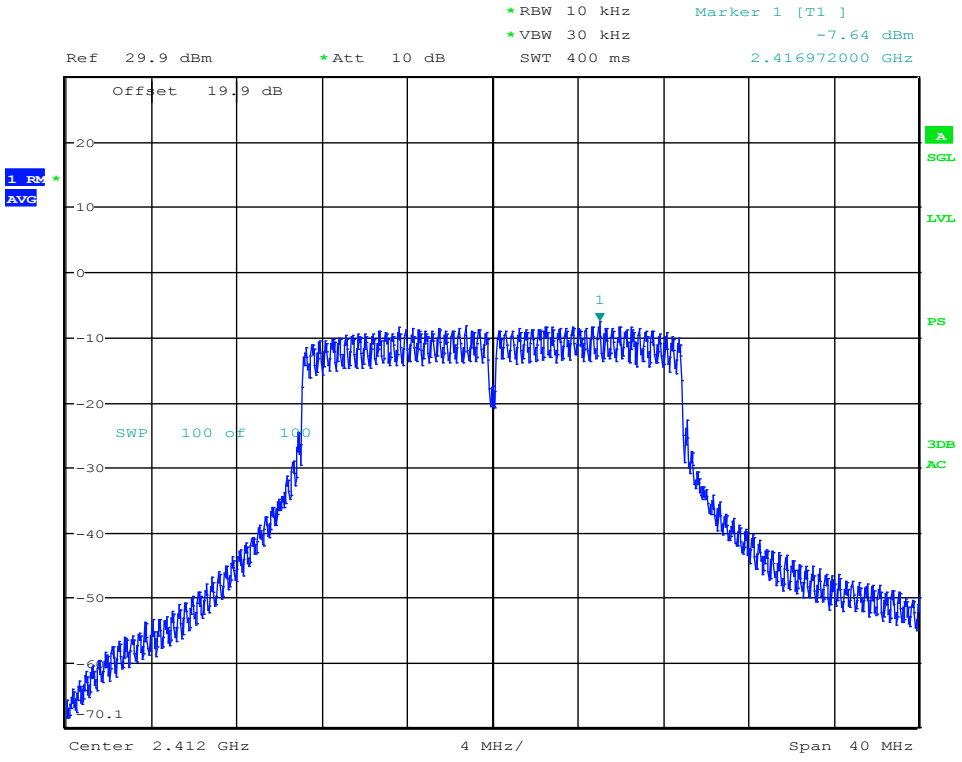
High Channel – Mode 802.11.g – RF 2– bandwidth 20 MHz



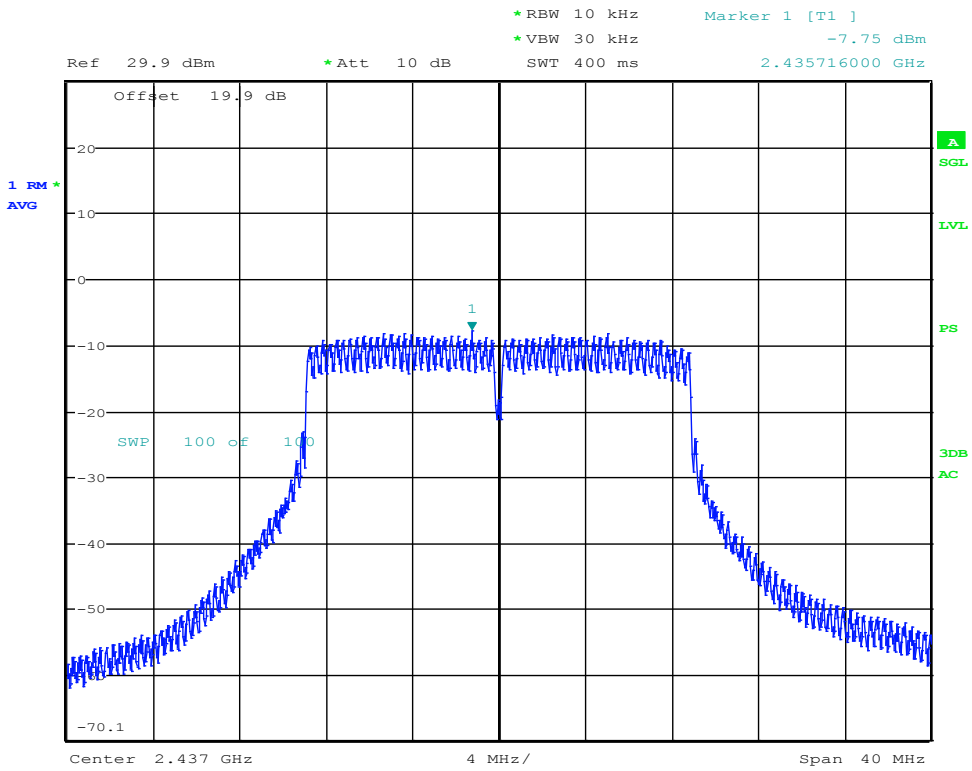
Low Channel – Mode 802.11.n – RF1– bandwidth 20 MHz



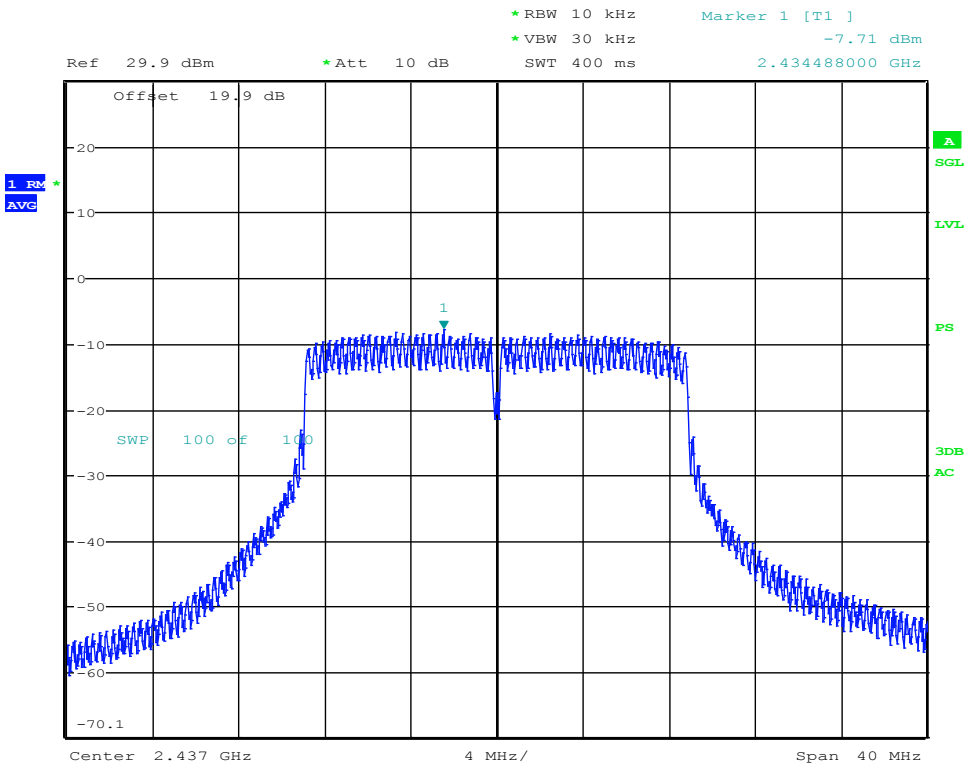
Low Channel – Mode 802.11.n – RF2– bandwidth 20 MHz



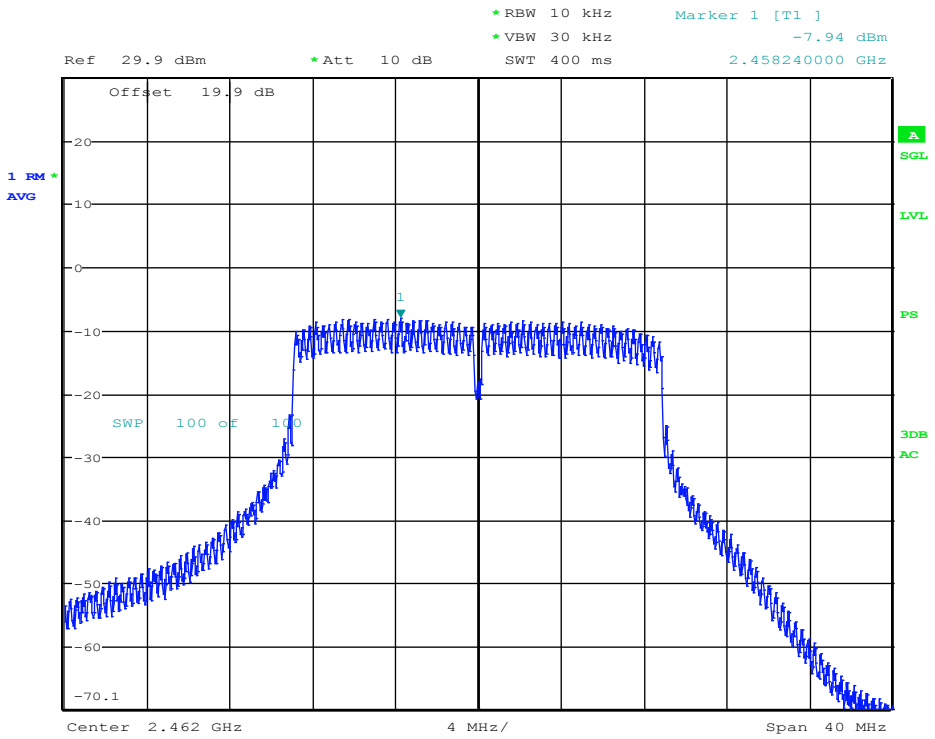
Central Channel – Mode 802.11.n – RF1– bandwidth 20 MHz



Central Channel – Mode 802.11.n – RF2– bandwidth 20 MHz



High Channel – Mode 802.11.n – RF1– bandwidth 20 MHz



High Channel – Mode 802.11.n – RF2– bandwidth 20 MHz