FCC PART 15C
TEST REPORT
No. B17N00462-WLAN

for

HUAWEI Technologies Co., Ltd.

HUAWEI MediaPad M3 Lite

Model Name: CPN-W09

with

Hardware Version: A088e

Software Version: CPN-W09C331B005SP01

FCC ID: QISCPN-W09

Issued Date: 2017-06-26

Test Laboratory:

FCC 2.948 Listed: No.342690

Note:

Test Laboratory:

CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
B17N00462-WLAN	Rev.0	1st edition	2017-06-26

CONTENTS

1. Test Laboratory

1.1. Testing Location

Location: CTTL(South Branch)

Address: TCL International E city, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong, China 518000

1.2. Testing Environment

Normal Temperature: 15-35℃

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2017-05-02

Testing End Date: 2017-06-14

1.4. Signature

An Ran

(Prepared this test report)

Tang Weisheng

(Reviewed this test report)

Zhang Bojun

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Huawei Technologies Co., Ltd
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltdl., Bantian,Longgang District
City:	Shenzhen
Postal Code:	518129
Country:	P.R. China
Telephone:	15602311354
Fax:	/

2.2. Manufacturer Information

Company Name:	Huawei Technologies Co., Ltd
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltdl., Bantian,Longgang District
City:	Shenzhen
Postal Code:	518129
Country:	P.R. China
Telephone:	15602311354
Fax:	/

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	HUAWEI MediaPad M3 Lite
Model Name	CPN-W09
Market Name	HUAWEI MediaPad M3 Lite
RF Protocol	IEEE 802.11b/g/n20
Operating Frequency	2400MHz~2483.5MHz
Number of Channels	11
Antenna	Integrated
Power Supply	3.8V DC by Battery
FCC ID	QISCPN-W09

Note: Components list, please refer to documents of the manufacturer.

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version	Receive Date
EUT1	**/**	A088e	CPN-W09C331B005SP01	2017-04-18

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

AE ID*	Description	Mode	Manufacturer
AE1	Adapter	HW-050200U01	Shenzhen Huntkey Electric Co.,Ltd
AE2	Adapter	HW-050200U01	Huizhou BYD Electric Co.,Ltd
AE3	Adapter	HW-050200U01	Dongguan Phitek Electric Co.,Ltd
AE4	Battery	HB3080G1EBC	Huawei Technologies Co., Ltd
AE5	Battery	HB3080G1EBW	Huawei Technologies Co., Ltd

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment Under Test (EUT) are a model of CPN-W09 with integrated antenna.
It consists of normal options: travel charger, USB cable.
Manual and specifications of the EUT were provided to fulfil the test.
Samples undergoing test were selected by the client.

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz	2015
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013

5. Test Results

5.1. Summary of Test Results

No	Test cases	Sub-clause of Part15C	Verdict
0	Antenna Requirement	15.203	**P**
1	Maximum Peak Output Power	15.247 (b)	**P**
2	Peak Power Spectral Density	15.247 (e)	**P**
3	6dB Bandwidth	15.247 (a)	**P**
4	Band Edges Compliance	15.247 (d)	**P**
5	Transmitter Spurious Emission - Conducted	15.247 (d)	**P**
6	Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	**P**
7	AC Powerline Conducted Emission	15.107, 15.207	**P**

See **ANNEX A** for details.

5.2. Statements

CTTL has evaluated the test cases requested by the applicant/manufacturer as listed in section 5.1 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2.

5.3. Terms used in the result table

Terms used in Verdict column

P	Pass
NA	Not Available
F	Fail

Abbreviations

AC	Alternating Current
AFH	Adaptive Frequency Hopping
BW	Band Width
E.I.R.P.	equivalent isotropic radiated power
ISM	Industrial, Scientific and Medical
R&TTE	Radio and Telecommunications Terminal Equipment
RF	Radio Frequency
Tx	Transmitter

5.4. Laboratory Environment

Semi-anechoic chamber did not exceed following limits along the EMC testing

Temperature	Min. = 15 ˚C, Max. = 30 ˚C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Normalised site attenuation (NSA)	< ±4dB, 3m/10m distance, from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

Shielded room did not exceed following limits along the EMC testing

Temperature	Min. = 15 ˚C, Max. = 30 ˚C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

Fully-anechoic chamber did not exceed following limits along the EMC testing

Temperature	Min. = 15 ˚C, Max. = 30 ˚C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Voltage Standing Wave Ratio (VSWR)	≤6dB, from 1 to 18 GHz,3m distance

6. Test Facilities Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2018-01-18	1 year

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	LISN	ESH2-Z5	100196	Rohde & Schwarz	2018-01-05	1 year
2	Test Receiver	ESCI	100701	Rohde & Schwarz	2017-08-09	1 year
3	Loop Antenna	HLA6120	35779	TESEQ	2019-05-02	3 years
4	BiLog Antenna	VULB9163	9163 329	Schwarzbeck	2020-02-27	3 years
5	Horn Antenna	3117	00066585	ETS-Lindgren	2019-03-05	3 years
6	Test Receiver	ESR7	101675	Rohde & Schwarz	2017-07-21	1 year
7	Spectrum Analyzer	FSP 40	100378	Rohde & Schwarz	2017-12-15	1 year
8	Chamber	FACT5-2.0	4166	ETS-Lindgren	2018-05-13	3 years
9	Antenna	3160-09	LM4214/0011 8383	ETS-Lindgren	2018-07-14	3 years

Test software

No.	Equipment	Manufacturer	Version
1	TechMgr Software	CAICT	2.1.1
2	EMC32	Rohde & Schwarz	8.53.0
3	EMC32	Rohde & Schwarz	10.01.00

EUT is Qualcomm engineering software provided by the customer to control the transmitting signal. The EUT was programmed to be in continuously transmitting mode.

Anechoic chamber

Fully anechoic chamber by ETS-Lindgren.

ANNEX A: MEASUREMENT RESULTS FOR RECEIVER

A.0 Antenna requirement

Measurement Limit:

Standard	Requirement
FCC CRF Part 15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Conclusion: The Directional gains of antenna used for transmitting is -1.1dBi.
The RF transmitter uses an integrate antenna without connector.

A.1 Maximum Output Power - Conduced

Measurement Limit:

Standard	Limit (dBm)
FCC CRF Part 15.247(b) & RSS-247 Issue1 5.4	< 30

Measurement of Measurement :See ANSI C63.10-2013-Clause 11.9.2.2.2

The procedure for this method is as follows:

a) Set span to at least 1.5 times the OBW.

b) Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.

c) Set VBW ≥ [3 × RBW].

d) Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)

e) Sweep time = auto.

f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.

g) If transmit duty cycle < 98%, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at the maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”

h) Trace average at least 100 traces in power averaging (rms) mode.

i) Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

Measurement Results:

802.11b mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	14.29	15.80	14.45
	2	/	15.58	/
	5.5	/	15.31	/
	11	/	15.32	/

802.11g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11g	6	14.13	15.21	14.27
	9	/	15.13	/
	12	/	15.07	/
	18	/	14.93	/
	24	/	14.89	/
	36	/	14.76	/
	48	/	14.27	/
	54	/	13.85	/

802.11n-20MHz mode

Mode	Data Rate (MCS Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n (20MHz)	MCS0	14.05	15.56	14.29
	MCS1	/	15.34	/
	MCS2	/	15.10	/
	MCS3	/	14.95	/
	MCS4	/	15.01	/
	MCS5	/	14.51	/
	MCS6	/	14.05	/
	MCS7	/	13.45	/

*The data rate 1Mbps, 6Mbps, MCS0 are selected as worst condition, the following cases and test graphs are performed with this condition. The maximum power levels are set to 16(Ch6) and 14(Ch1, Ch11).The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

See ANNEX B for test graphs.

Conclusion: PASS

A.2 Peak Power Spectral Density

Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(e) & RSS-247 Issue1 5.2	< 8 dBm/3 kHz

Measurement Results:

Mode	Channel	Peak Power Spectral Density(dBm)		Conclusion
802.11b	1	Fig.1	-6.13	P
	6	Fig.2	-4.79	P
	11	Fig.3	-5.01	P
802.11g	1	Fig.4	-8.56	P
	6	Fig.5	-5.83	P
	11	Fig.6	-6.56	P
802.11n (20MHz)	1	Fig.7	-8.55	P
	6	Fig.8	-7.87	P
	11	Fig.9	-7.75	P

See ANNEX B for test graphs.

Conclusion: PASS

A.3 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a) & RSS-247 Issue1 5.2	≥ 500

Measurement Result:

Mode	Channel	Test Results (kHz)		conclusion
802.11b	1	Fig.10	8050	P
	6	Fig.11	9000	P
	11	Fig.12	8100	P
802.11g	1	Fig.13	16350	P
	6	Fig.14	16350	P
	11	Fig.15	16400	P
802.11n (20MHz)	1	Fig.16	17600	P
	6	Fig.17	17600	P
	11	Fig.18	17600	P

See ANNEX B for test graphs.

Conclusion: PASS

A.4 Band Edges Compliance

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d) & RSS-247 Issue1 5.5	> 20

Measurement Result:

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.19	P
	11	Fig.20	P
802.11g	1	Fig.21	P
	11	Fig.22	P
802.11n (20MHz)	1	Fig.23	P
	11	Fig.24	P

See ANNEX B for test graphs.

Conclusion: PASS

A.5 Transmitter Spurious Emission - Conducted

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d) & RSS-247 Issue1 5.5/RSS-Gen 6.13	20dB below peak output power in 100 kHz bandwidth

Measurement Results:

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.412 GHz	Fig.25	P
		1GHz-10GHz	Fig.26	P
	6	2.437 GHz	Fig.27	P
		1GHz-10GHz	Fig.28	P
	11	2.462 GHz	Fig.29	P
		1GHz-10GHz	Fig.30	P
802.11g	1	2.412 GHz	Fig.31	P
		1GHz-10GHz	Fig.32	P
	6	2.437 GHz	Fig.33	P
		1GHz-10GHz	Fig.34	P
	11	2.462 GHz	Fig.35	P
		1GHz-10GHz	Fig.36	P
802.11n (20MHz)	1	2.412 GHz	Fig.37	P
		1GHz-10GHz	Fig.38	P
	6	2.437 GHz	Fig.39	P
		1GHz-10GHz	Fig.40	P
	11	2.462 GHz	Fig.41	P
		1GHz-10GHz	Fig.42	P
/	All channels	30MHz~1GHz	Fig.43	P
		1GHz-26GHz	Fig.44	P

See ANNEX B for test graphs.

Conclusion: PASS

A.6 Transmitter Spurious Emission - Radiated

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209 & RSS-247 Issue1 5.5/RSS-Gen 6.13	20dB below peak output power

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

Limit in restricted band:

Frequency of emission (MHz)	Field strength(μV/m)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Condition:

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz/300kHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Note:

According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band below 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic.

The measurement results include the horizontal polarization and vertical polarization measurements.

Measurement Results:

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	1 GHz ~18 GHz	Fig.45	P
	6	1 GHz ~18 GHz	Fig.46	P
	11	1 GHz ~18 GHz	Fig.47	P
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.48	P
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.49	P
802.11g	1	1 GHz ~18 GHz	Fig.50	P
	6	1 GHz ~18 GHz	Fig.51	P
	11	1 GHz ~18 GHz	Fig.52	P
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.53	P
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.54	P
802.11n -20MHz	1	1 GHz ~18 GHz	Fig.55	P
	6	1 GHz ~18 GHz	Fig.56	P
	11	1 GHz ~18 GHz	Fig.57	P
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.58	P
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.59	P
/	All channels	9 kHz ~30 MHz	Fig.60	P
		30 MHz ~1 GHz	Fig.61	P
		18 GHz ~26.5 GHz	Fig.62	P

Worst Case Result

802.11b CH 6(1-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol	Corr. (dB)
13352.500000	54.34	74.00	19.66	V	19.8
14636.500000	56.97	74.00	17.03	H	21.4
15352.500000	57.87	74.00	16.13	V	22.5
16052.000000	60.71	74.00	13.29	H	25.3
17142.500000	61.61	74.00	12.39	V	26.6
17706.000000	60.97	74.00	13.03	H	27.6

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol	Corr. (dB)
13378.000000	43.23	54.00	10.77	V	19.6
14680.000000	44.95	54.00	9.05	H	21.4
15576.000000	46.77	54.00	7.23	V	23.8
16052.000000	48.33	54.00	5.67	V	25.3
17110.000000	50.19	54.00	3.81	H	26.2
17704.000000	49.93	54.00	4.07	H	27.5

802.11g CH6 (1GHz-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol	Corr. (dB)
13875.000000	56.05	74.00	17.95	V	20.3
14717.500000	56.47	74.00	17.53	V	21.4
15577.000000	57.95	74.00	16.05	V	23.8
16046.000000	59.92	74.00	14.08	H	25.1
16585.500000	62.41	74.00	11.59	V	26.4
17729.000000	61.39	74.00	12.61	V	27.4

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol	Corr. (dB)
13909.000000	44.57	54.00	9.43	H	21.1
14676.500000	45.20	54.00	8.80	V	21.4
15576.500000	46.83	54.00	7.17	H	23.8
15961.500000	48.29	54.00	5.71	H	25.4
16589.500000	50.24	54.00	3.76	H	26.3
17704.500000	50.12	54.00	3.88	H	27.6

802.11n-20MHz CH6 (1GHz-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol	Corr. (dB)
13911.000000	56.68	74.00	17.32	H	21.1
14662.000000	56.35	74.00	17.65	V	21.3
15576.500000	58.74	74.00	15.26	H	23.8
15713.000000	60.63	74.00	13.37	H	24.1
16444.000000	61.64	74.00	12.36	V	25.9
17725.000000	61.56	74.00	12.44	H	27.5

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol	Corr. (dB)
13905.500000	44.43	54.00	9.57	V	20.9
14683.000000	45.16	54.00	8.84	V	21.5
15576.500000	47.03	54.00	6.97	H	23.8
15968.500000	48.31	54.00	5.69	V	25.6
16592.500000	49.96	54.00	4.04	V	26.3
17701.000000	50.04	54.00	3.96	V	27.5

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and Antenna Factor, the gain of the preamplifier, the cable loss. P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result= P_{Mea} +Cable Loss +Antenna Factor-Gain of the preamplifier.

See ANNEX B for test graphs.

Conclusion: PASS

A.8 AC Powerline Conducted Emission

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement Result and limit:

WLAN (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.63	Fig.64	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)-AE1

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig 63	Fig 64	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Quasi-peak Limit)-AE2

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.65	Fig.66	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)-AE2

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig 65	Fig 66	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Quasi-peak Limit)-AE3

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.67	Fig.68	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)-AE3

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig 67	Fig 68	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

Note: The measurement results include the L1 and N measurements.

See ANNEX B for test graphs.

Conclusion: PASS

ANNEX B: TEST GRAPHS

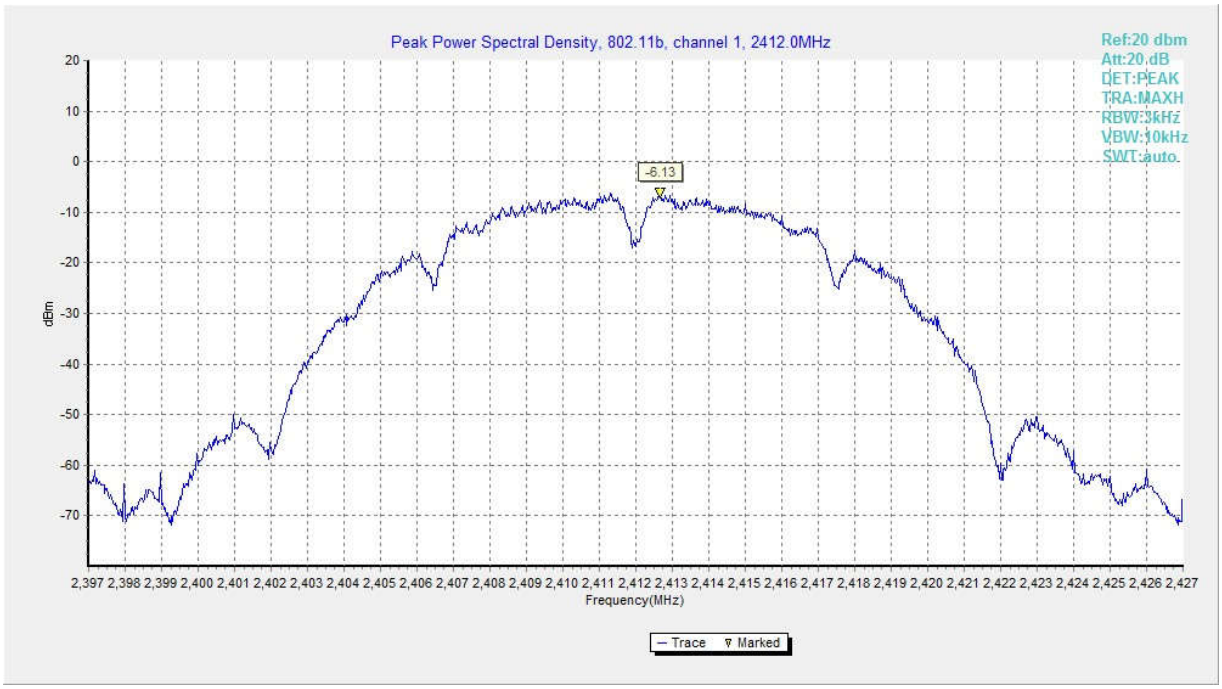

Fig.1 Power Spectral Density (802.11b, Ch 1)

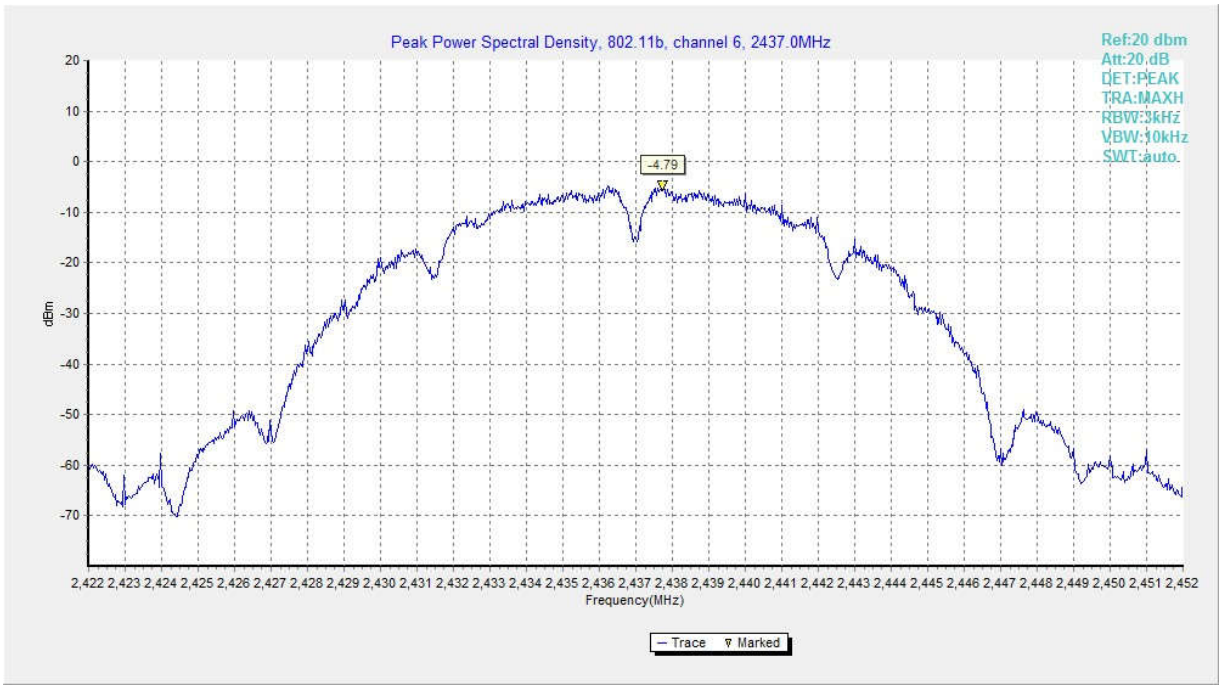

Fig.2 Power Spectral Density (802.11b, Ch 6)

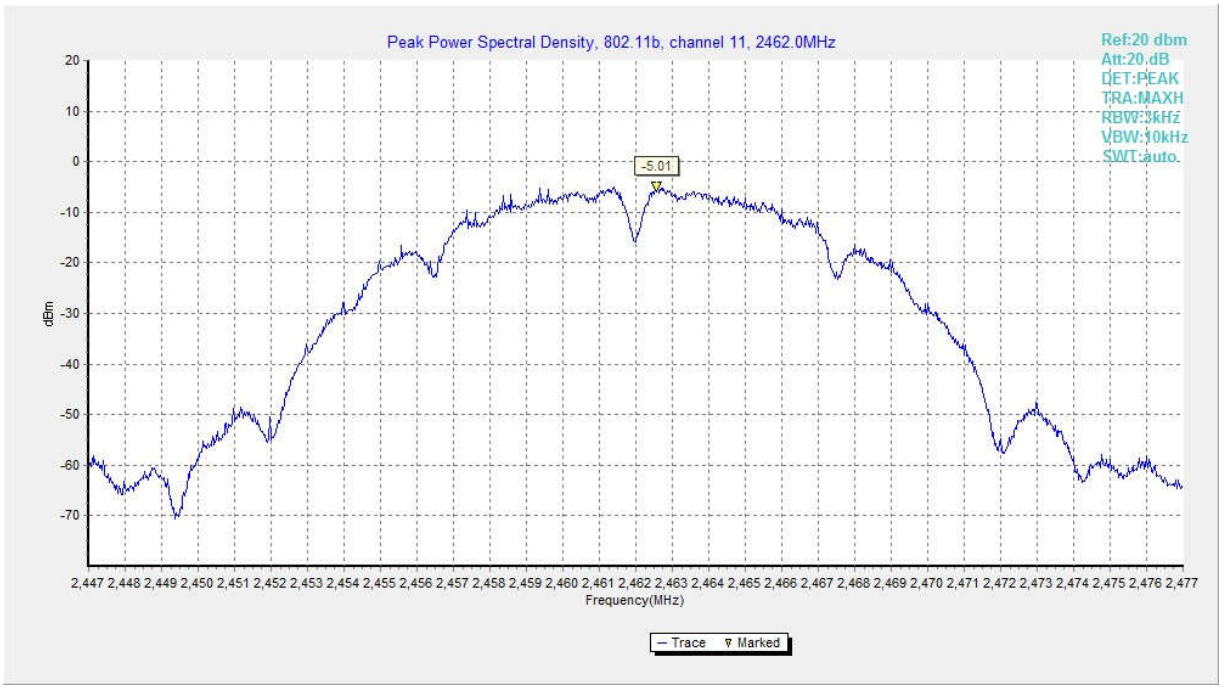

Fig.3 Power Spectral Density (802.11b, Ch 11)

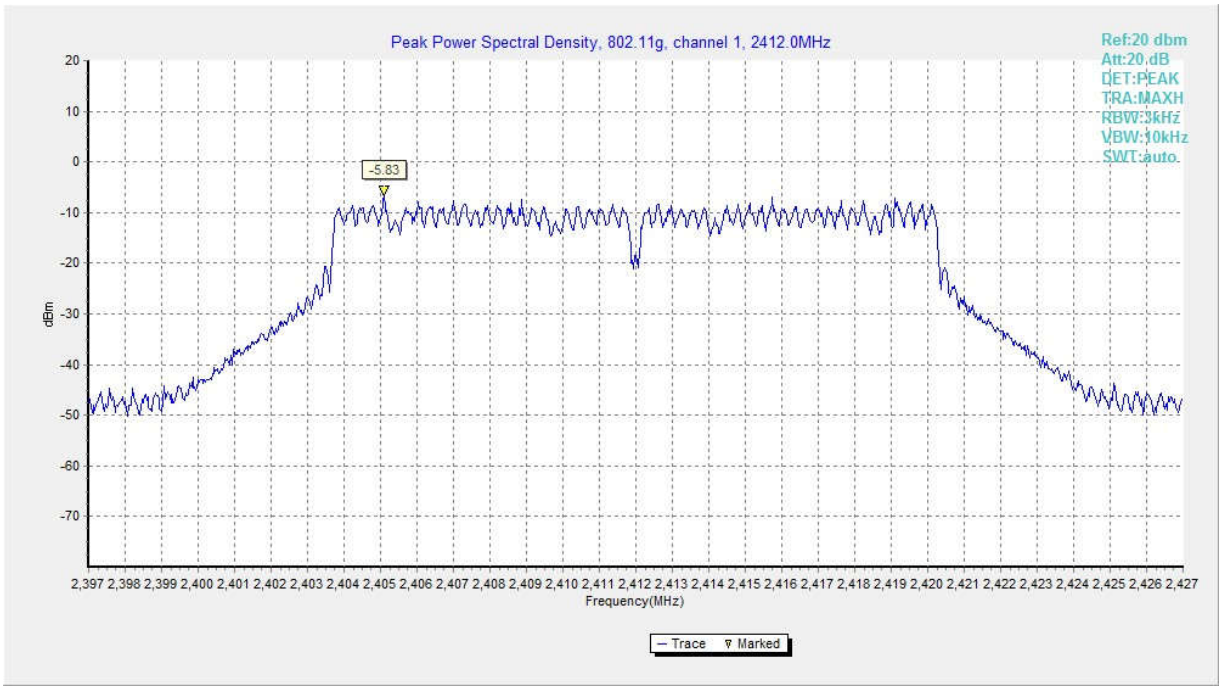

Fig.4 Power Spectral Density (802.11g, Ch 1)

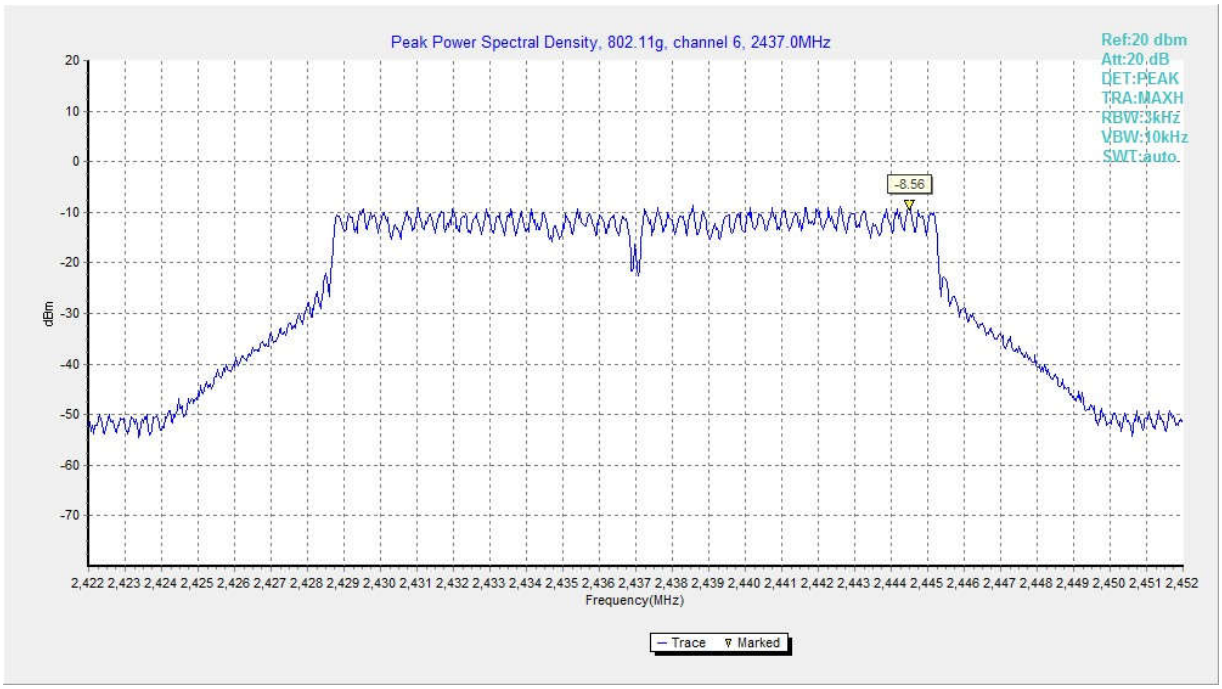

Fig.5 Power Spectral Density (802.11g, Ch 6)

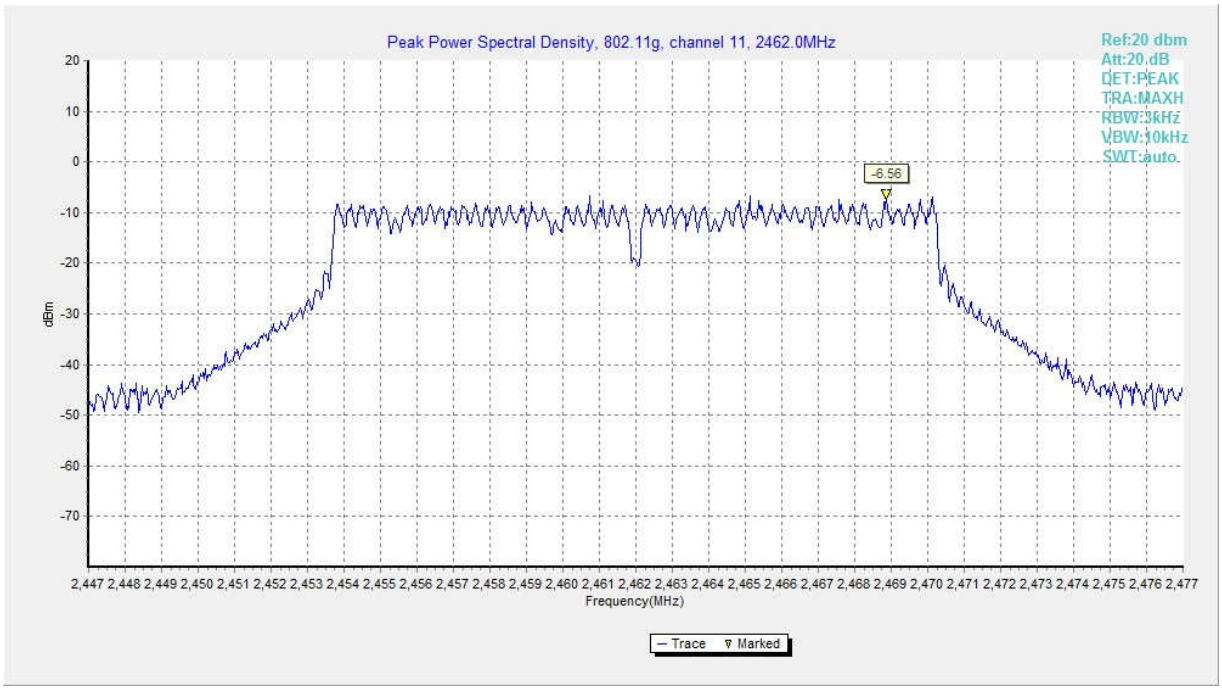

Fig.6 Power Spectral Density (802.11g, Ch 11)

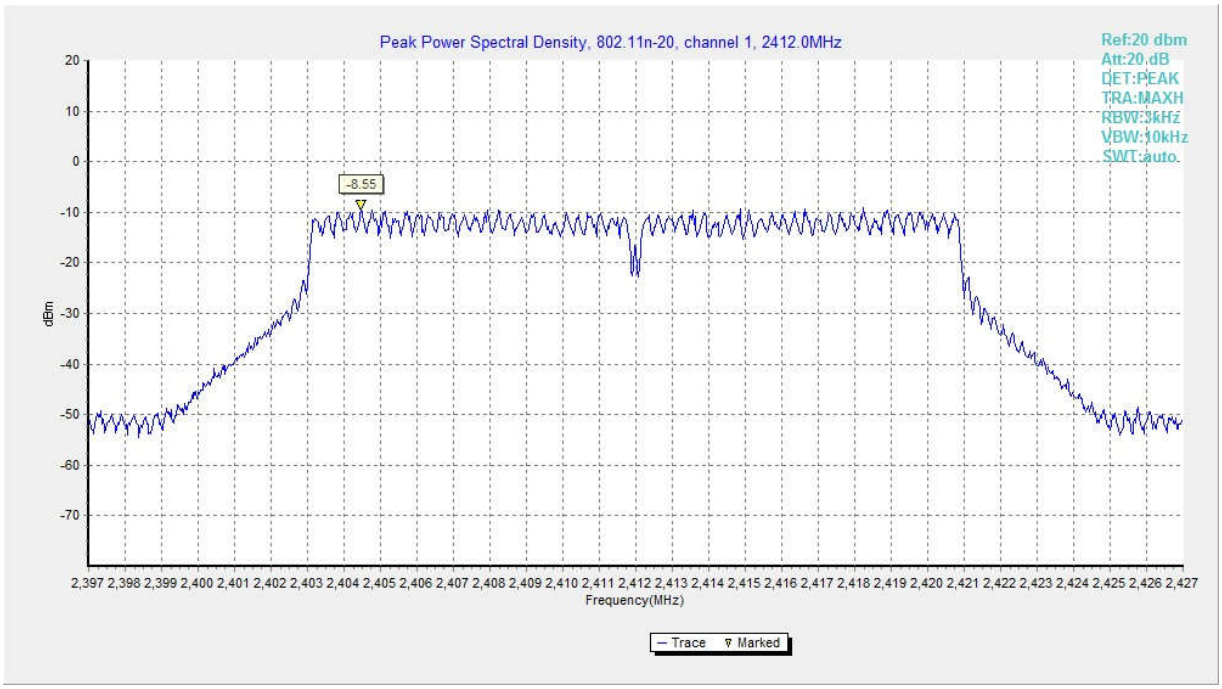

Fig.7 Power Spectral Density (802.11n-20MHz, Ch 1)

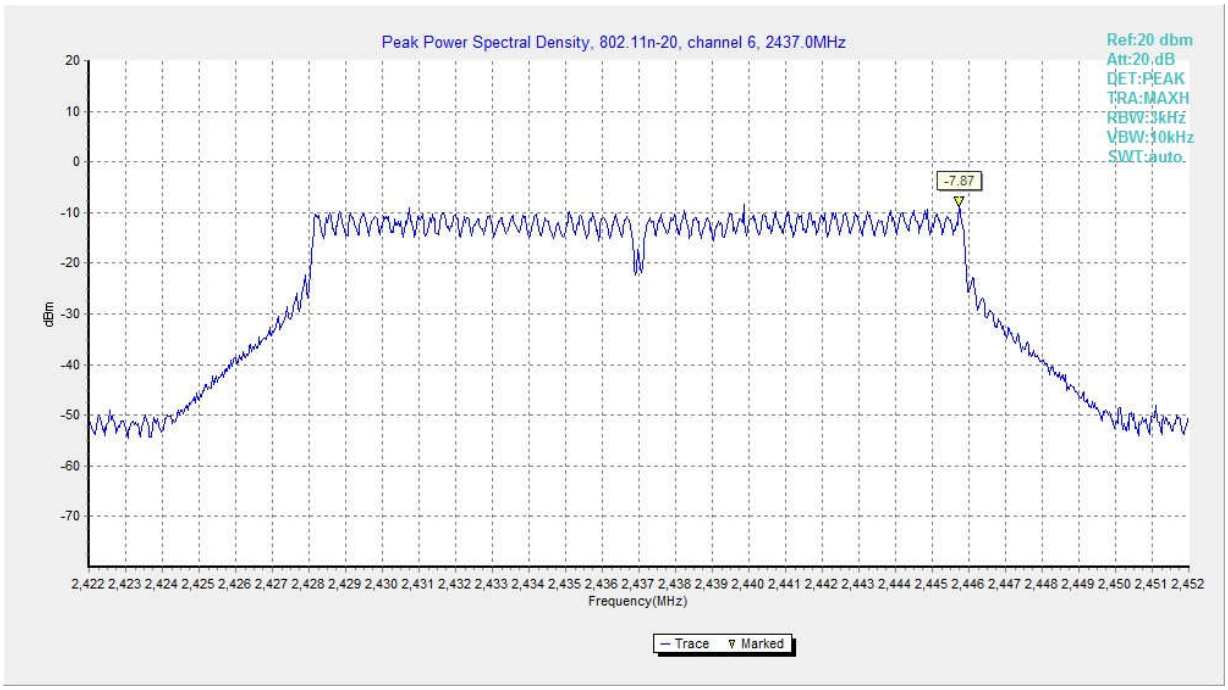

Fig.8 Power Spectral Density (802.11n-20MHz, Ch 6)

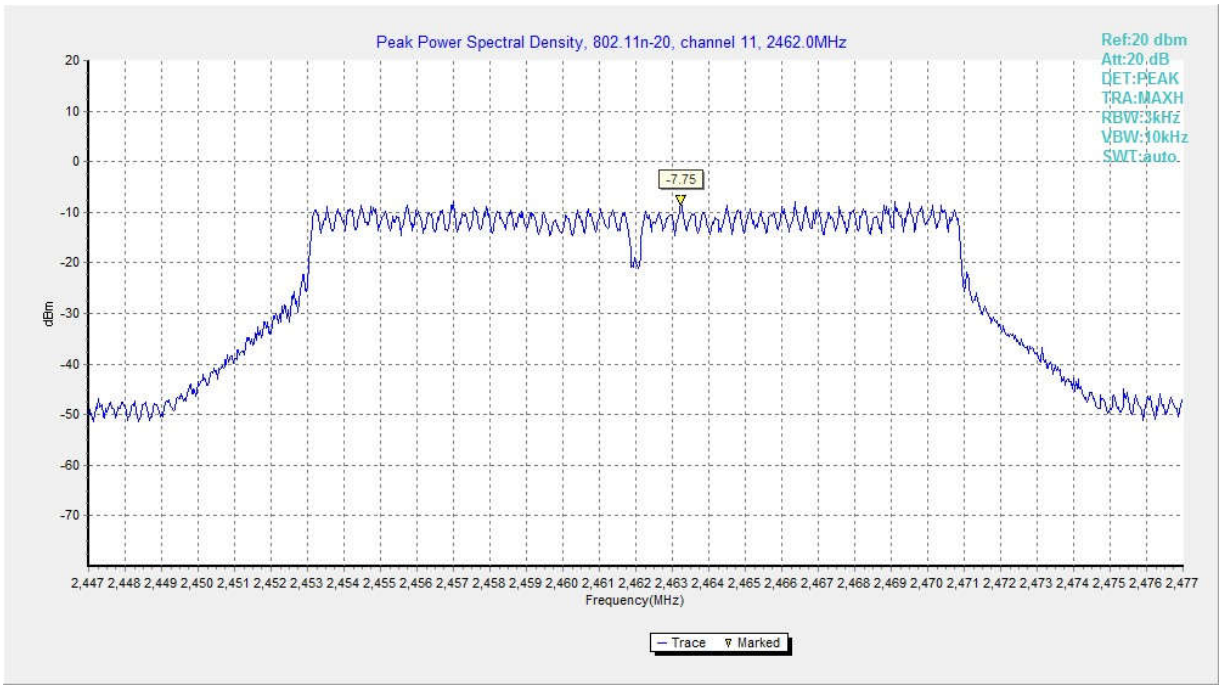

Fig.9 Power Spectral Density (802.11n-20MHz, Ch 11)

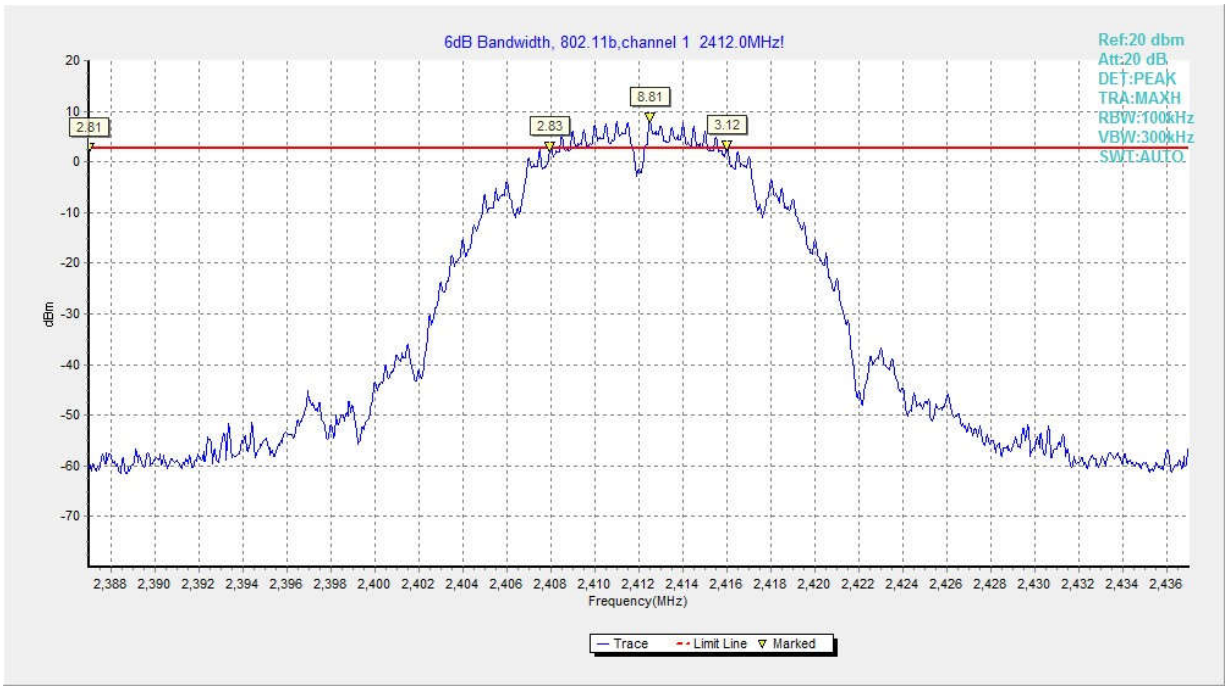

Fig.10 6dB Bandwidth (802.11b, Ch 1)

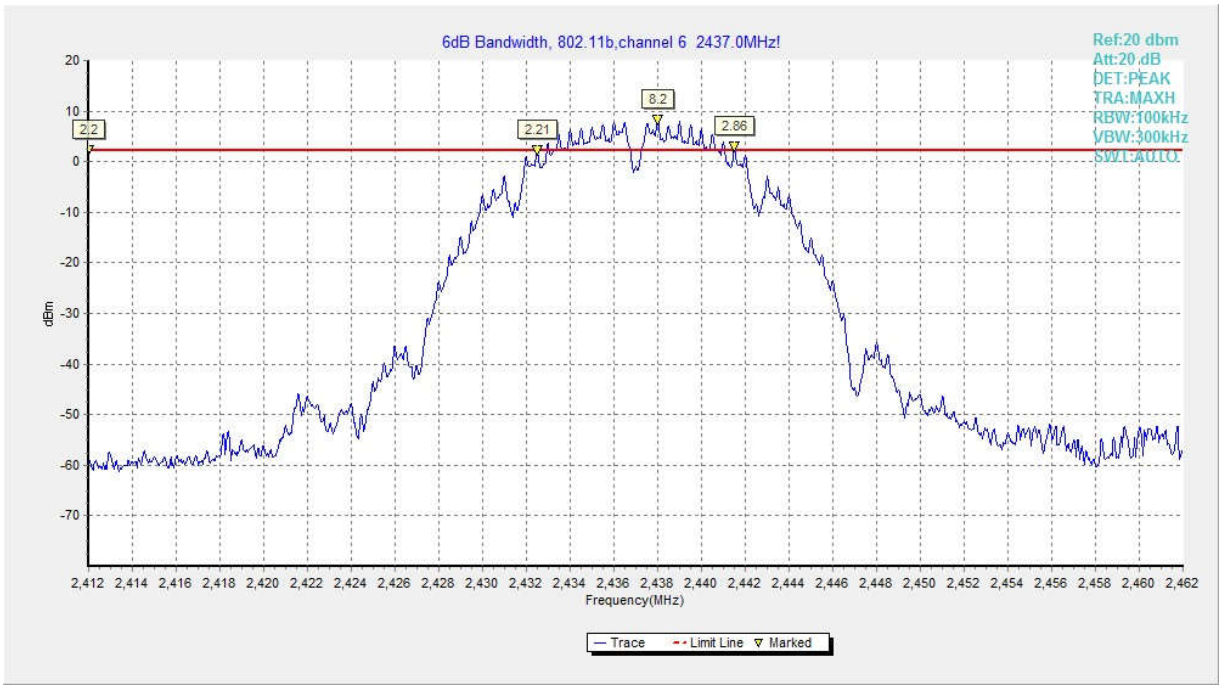

Fig.11 6dB Bandwidth (802.11b, Ch 6)

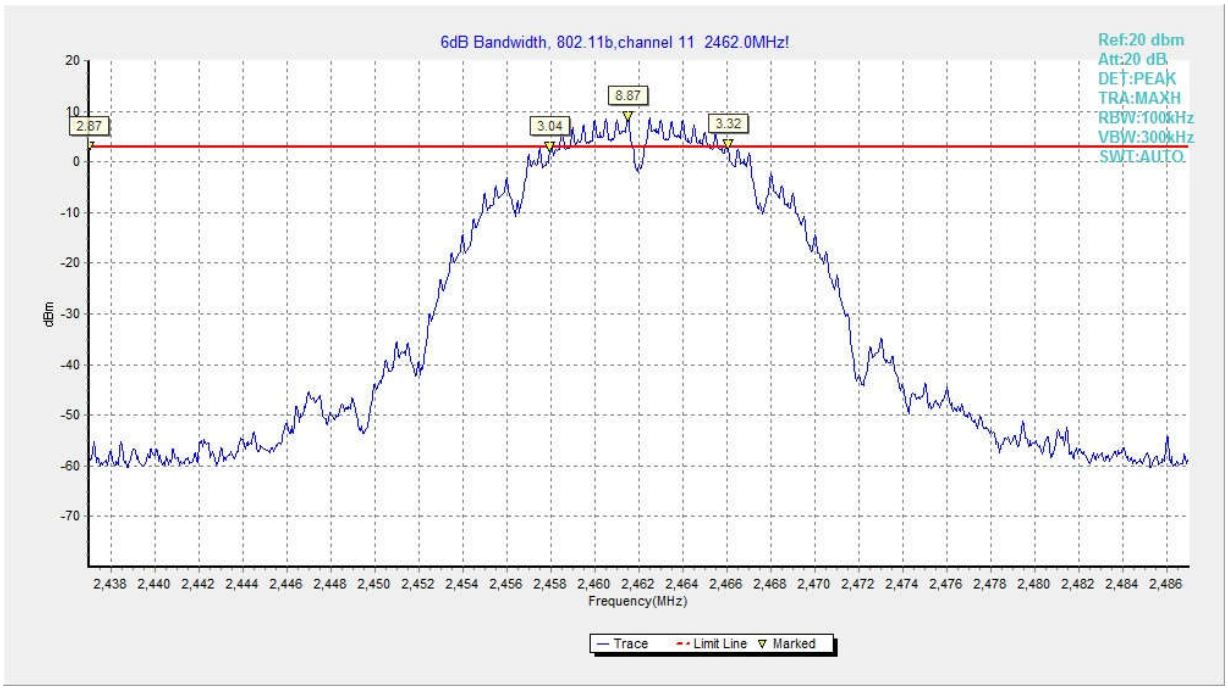

Fig.12 6dB Bandwidth (802.11b, Ch 11)

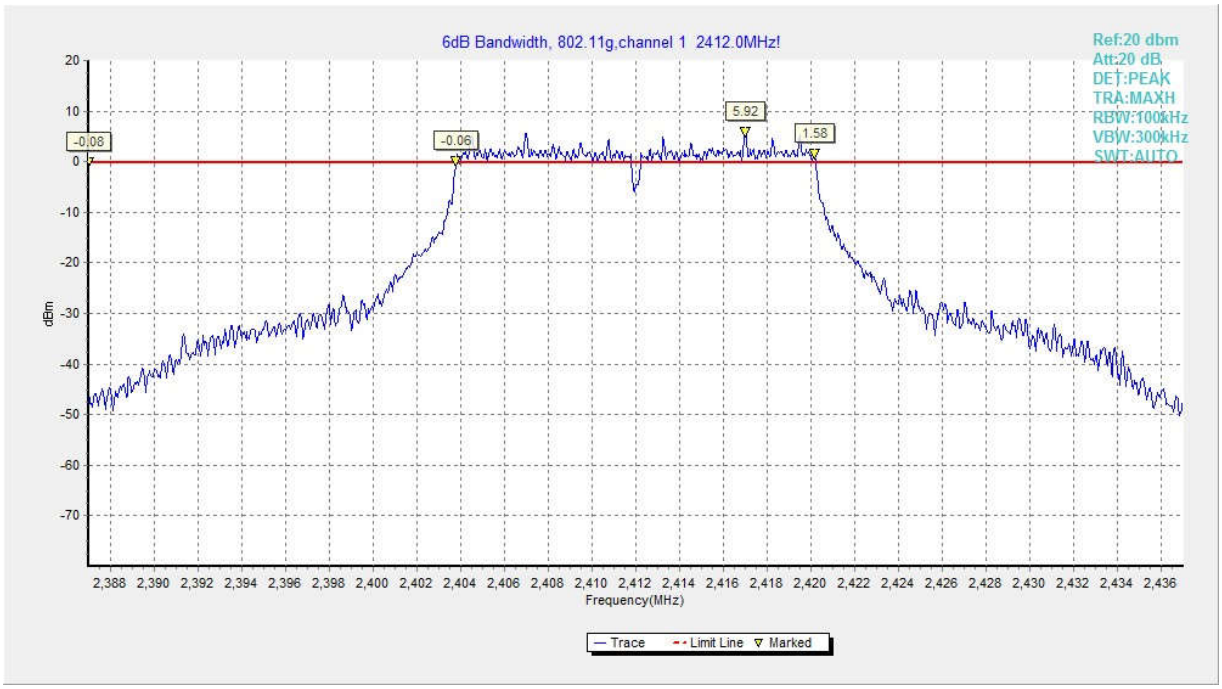

Fig.13 6dB Bandwidth (802.11g, Ch 1)

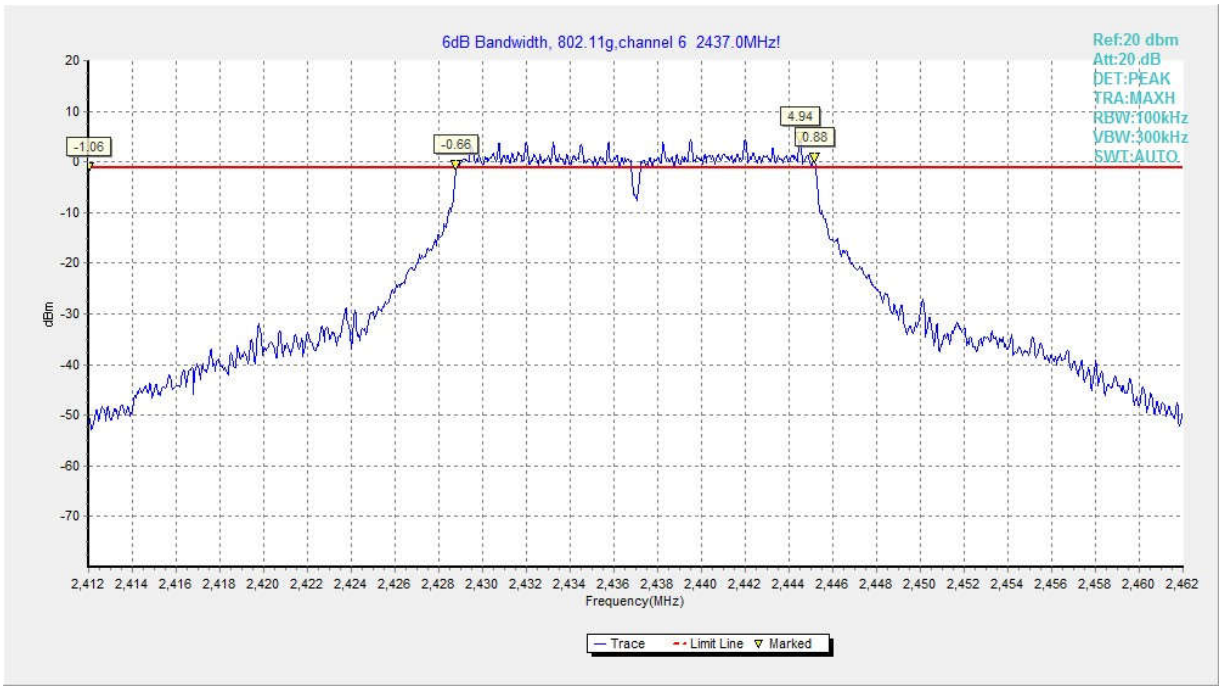

Fig.14 6dB Bandwidth (802.11g, Ch 6)

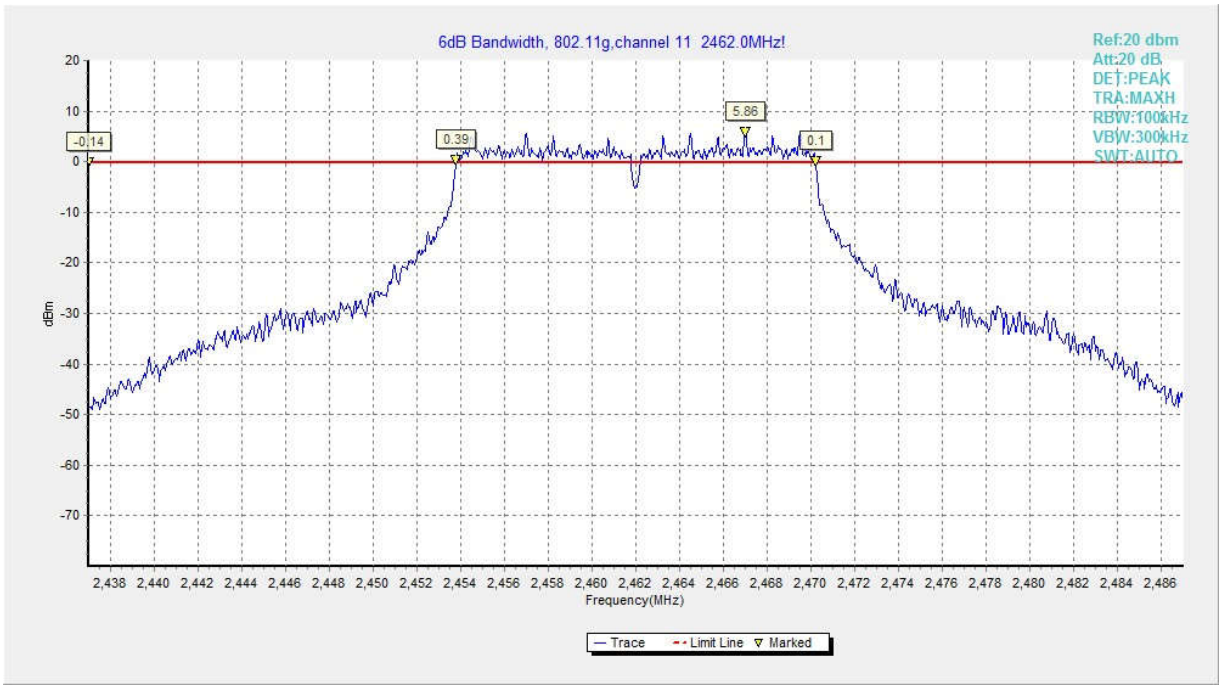

Fig.15 6dB Bandwidth (802.11g, Ch 11)

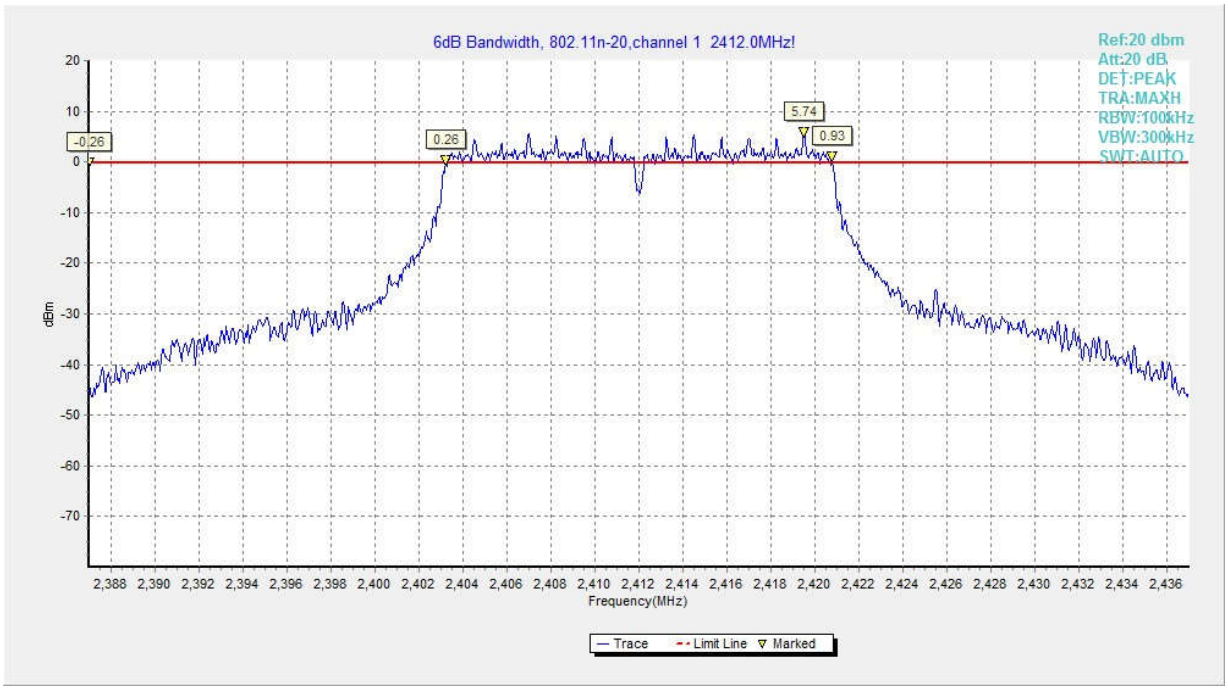

Fig.16 6dB Bandwidth (802.11 n-20MHz, Ch 1)

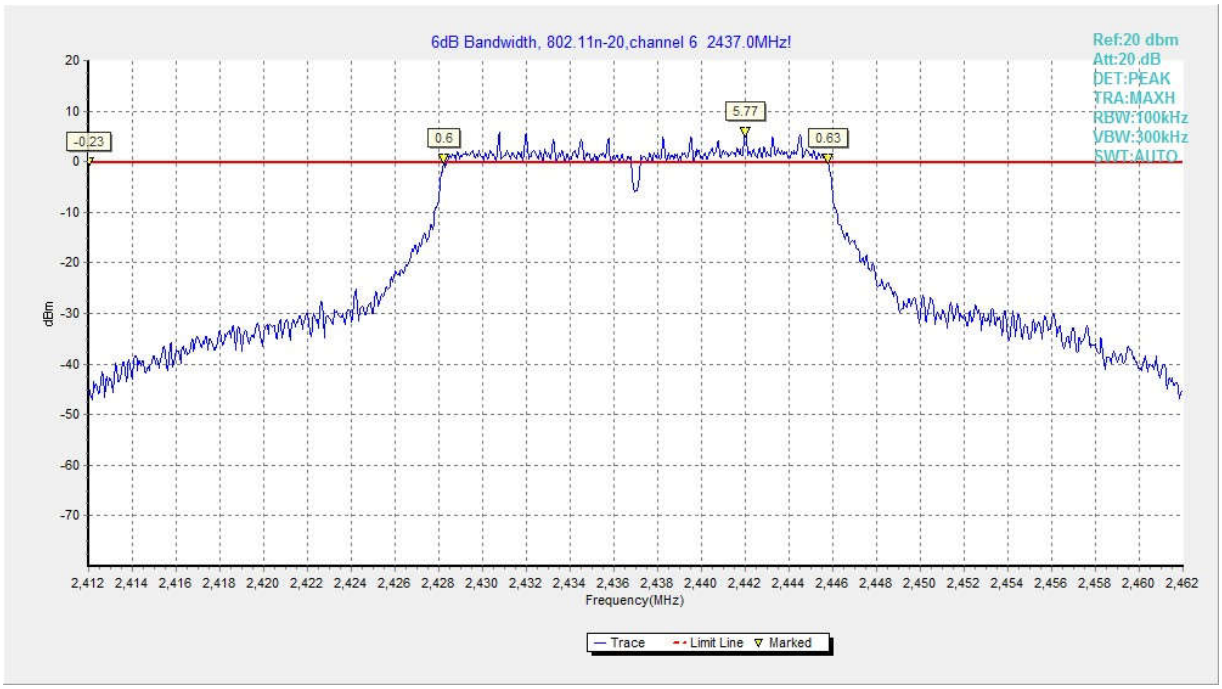

Fig.17 6dB Bandwidth (802.11 n-20MHz, Ch 6)

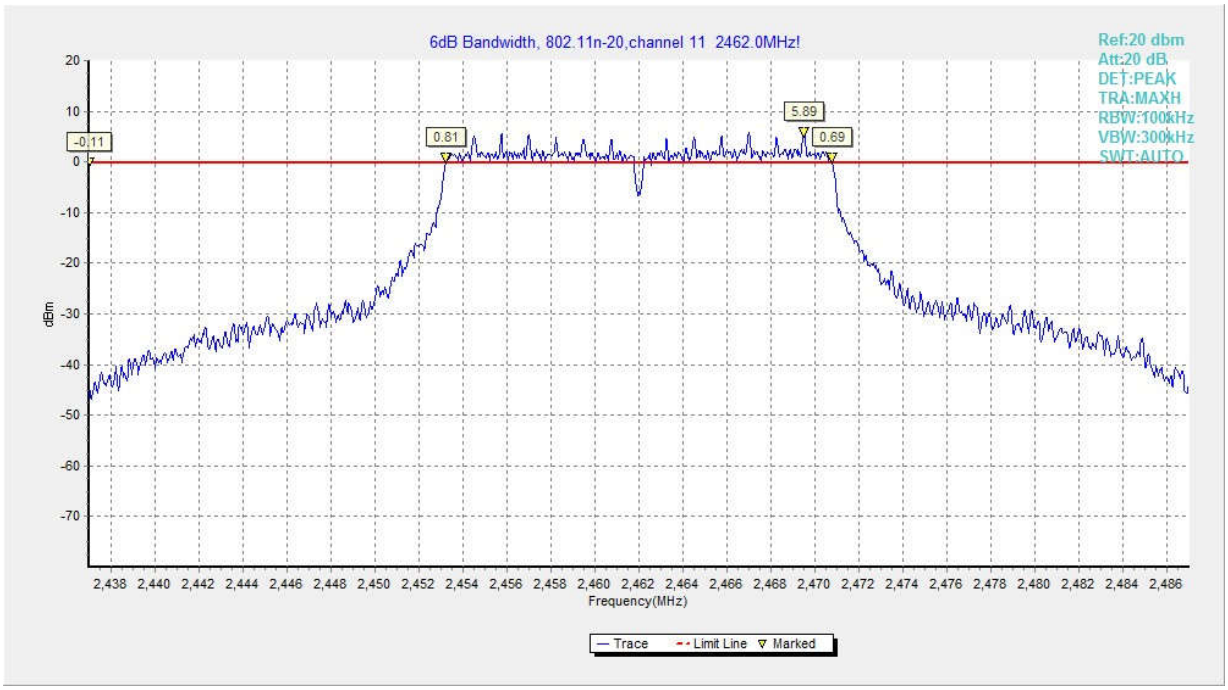

Fig.18 6dB Bandwidth (802.11 n-20MHz, Ch 11)

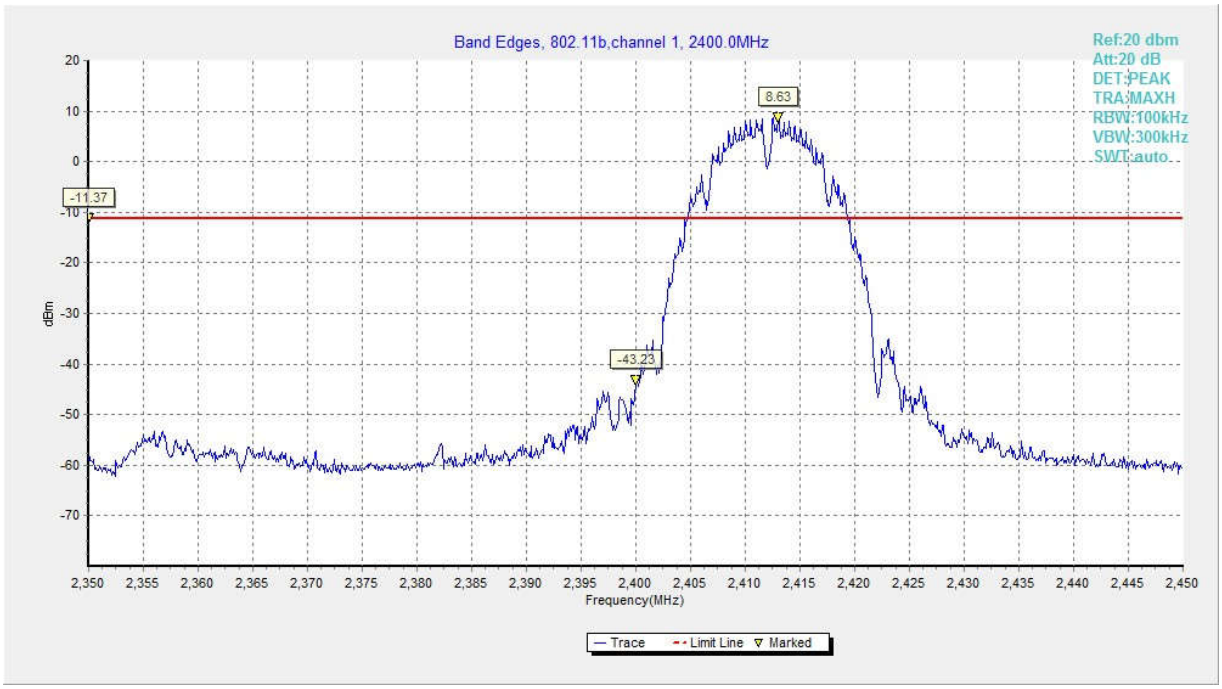

Fig.19 Band Edges (802.11b, Ch 1)

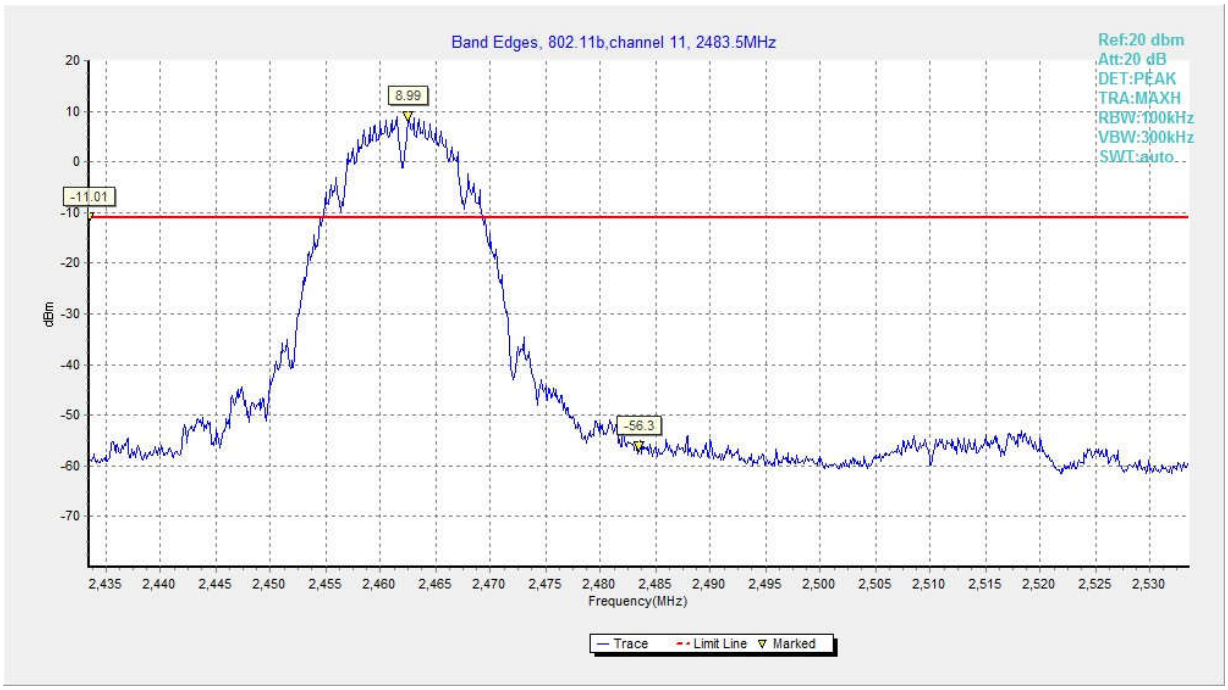

Fig.20 Band Edges (802.11b, Ch 11)

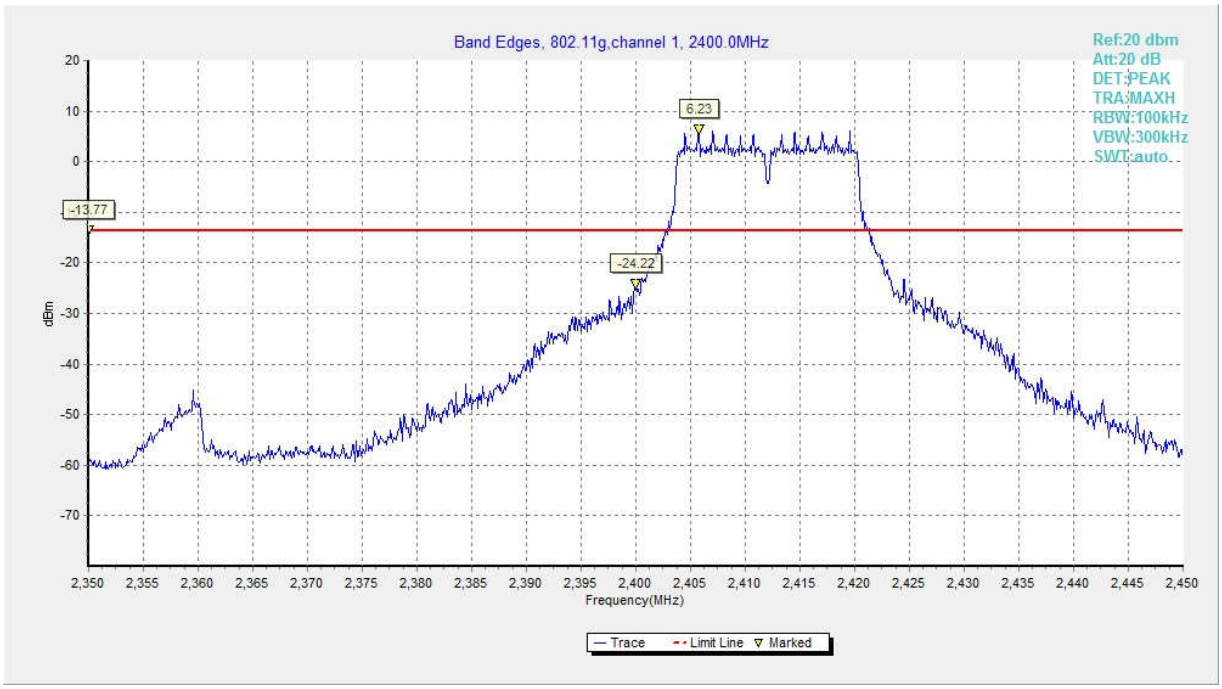

Fig.21 Band Edges (802.11g, Ch 1)

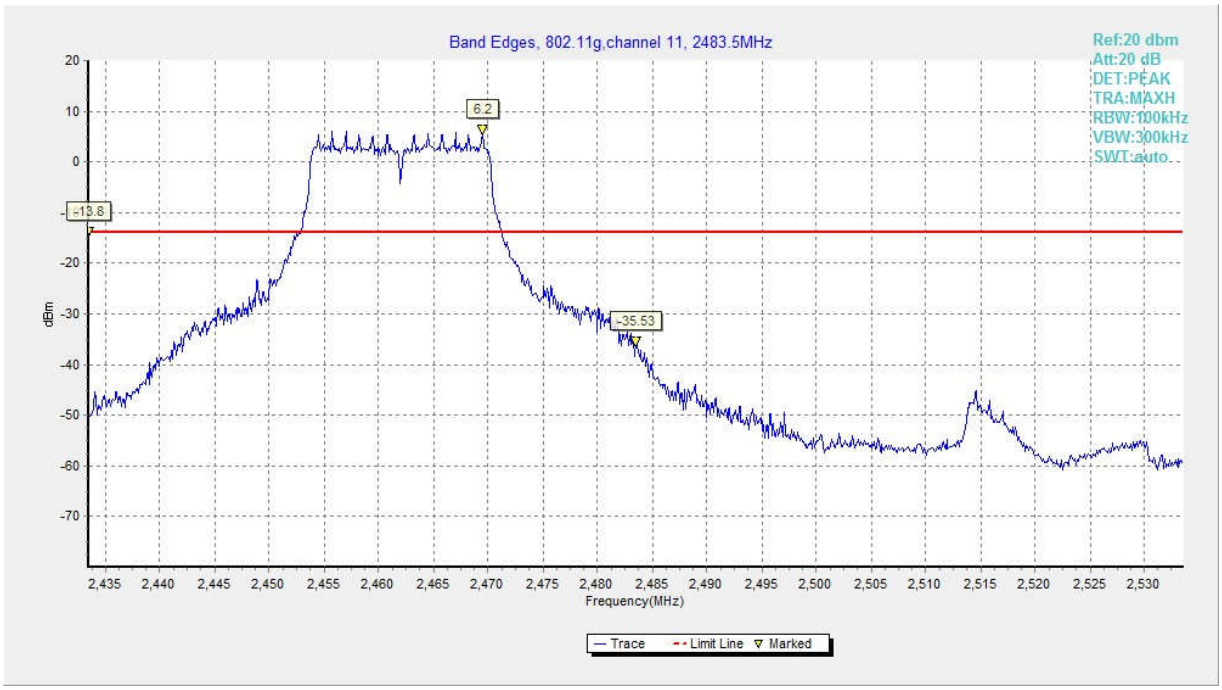

Fig.22 Band Edges (802.11g, Ch 11)

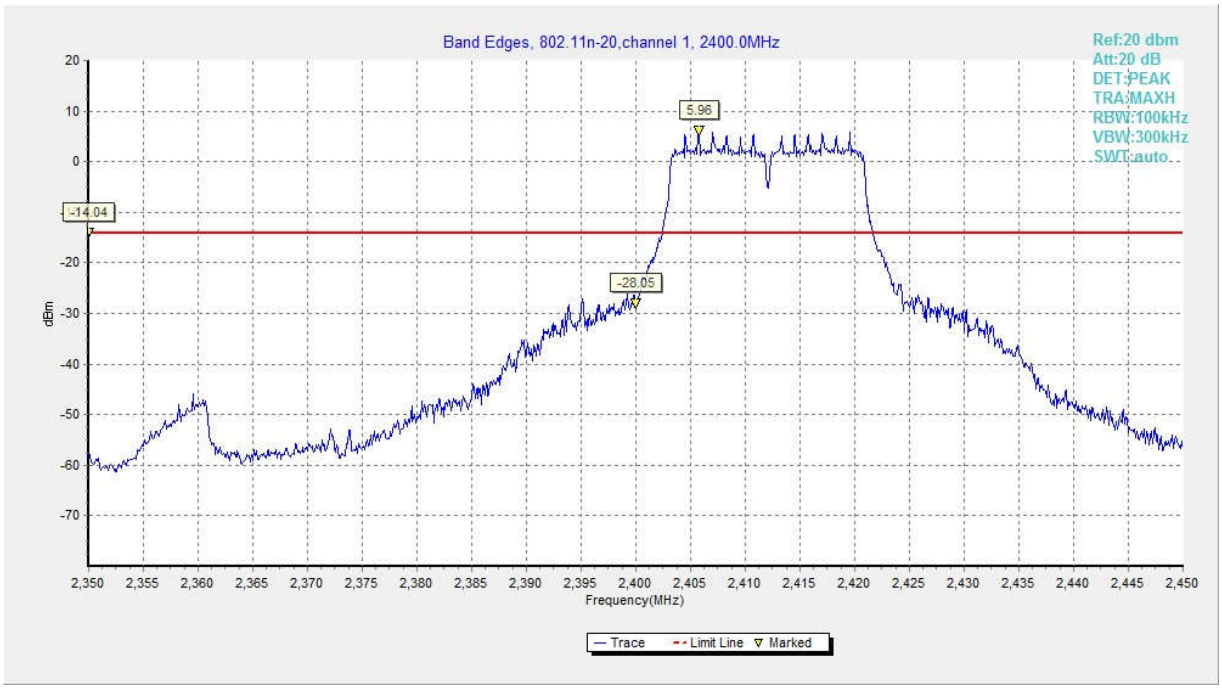

Fig.23 Band Edges (802.11 n-20MHz, Ch 1)

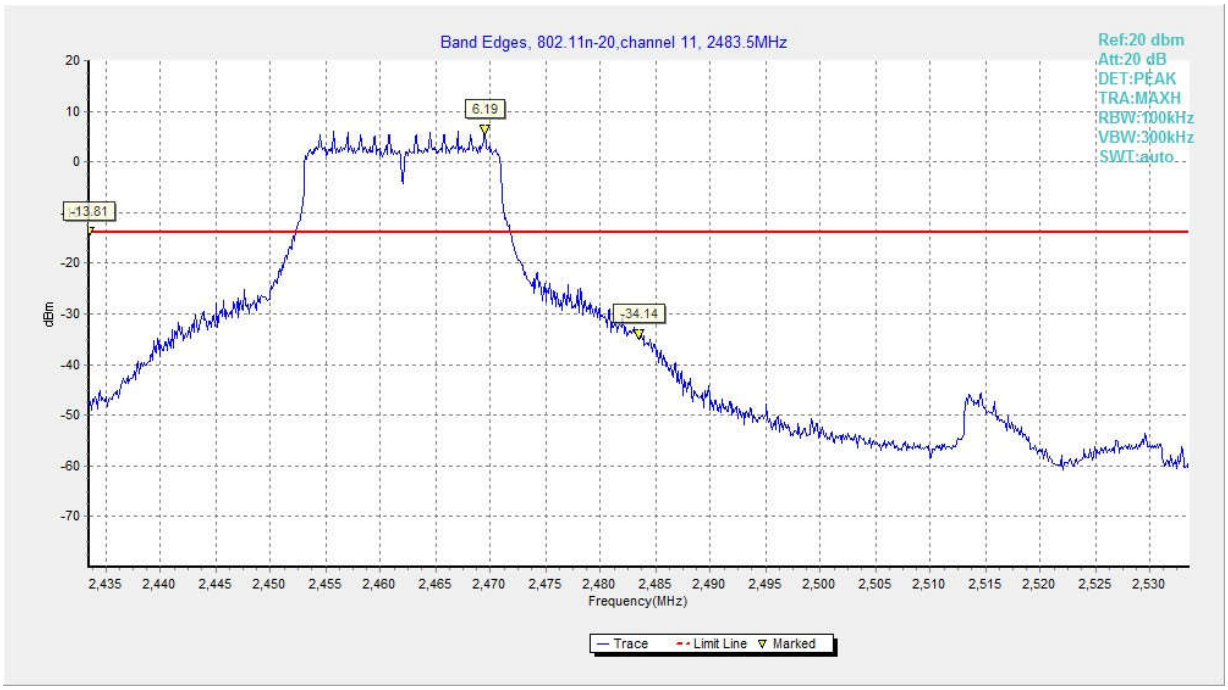

Fig.24 Band Edges (802.11 n-20MHz, Ch 11)

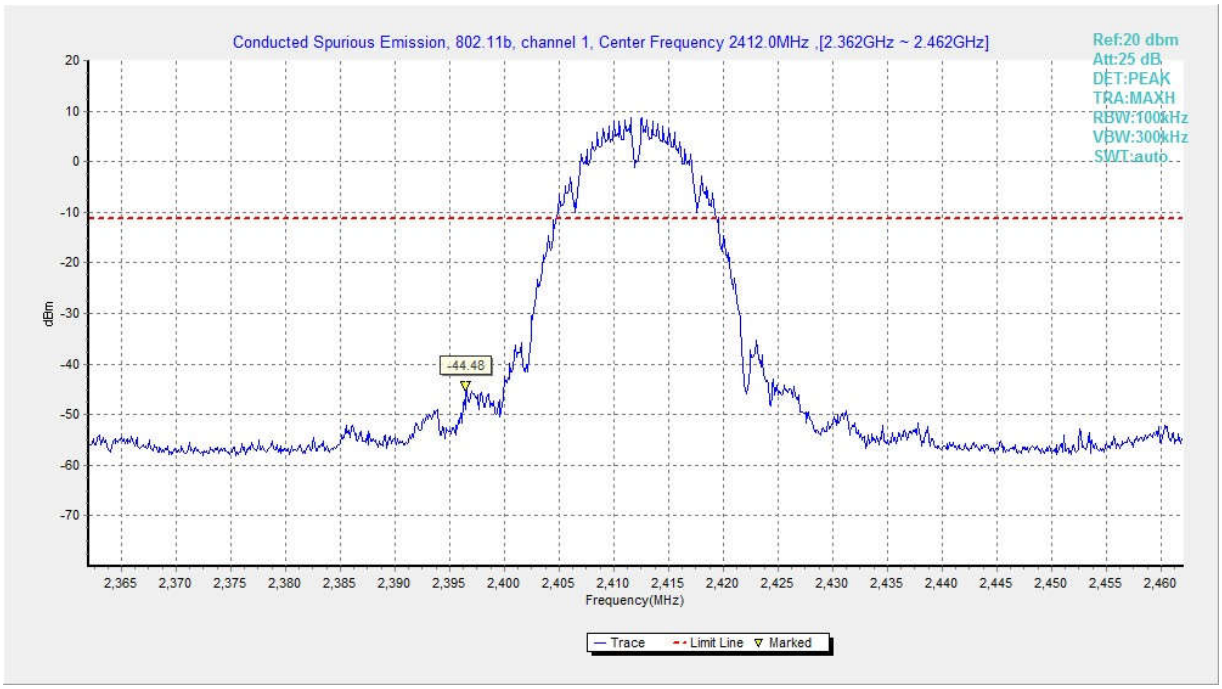

Fig.25 Conducted Spurious Emission (802.11b, Ch1, Center Frequency)

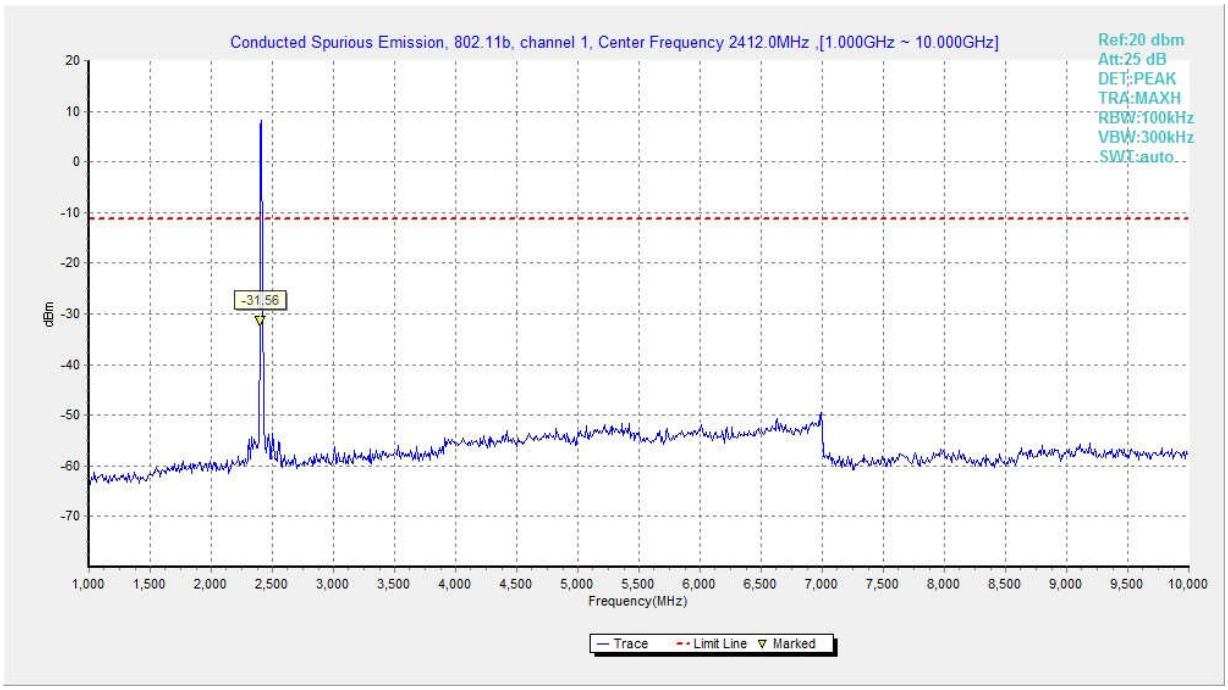

Fig.26 Conducted Spurious Emission (802.11b, Ch1, 1 GHz-10 GHz)

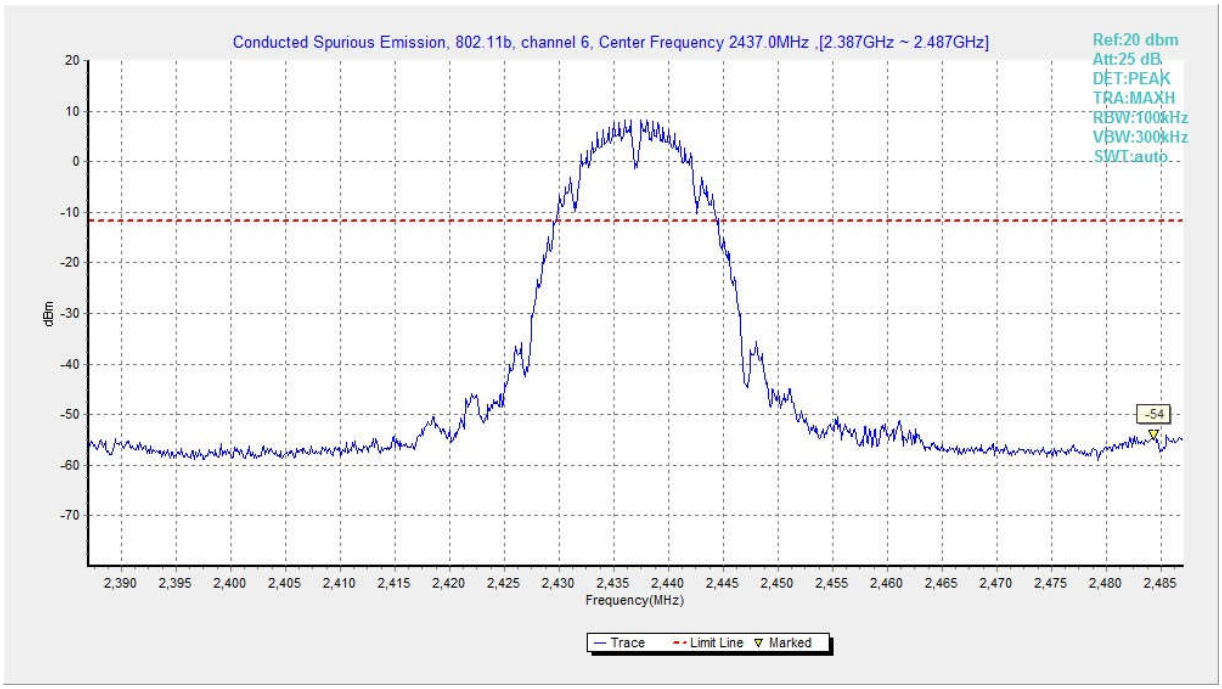

Fig.27 Conducted Spurious Emission (802.11b, Ch6, Center Frequency)

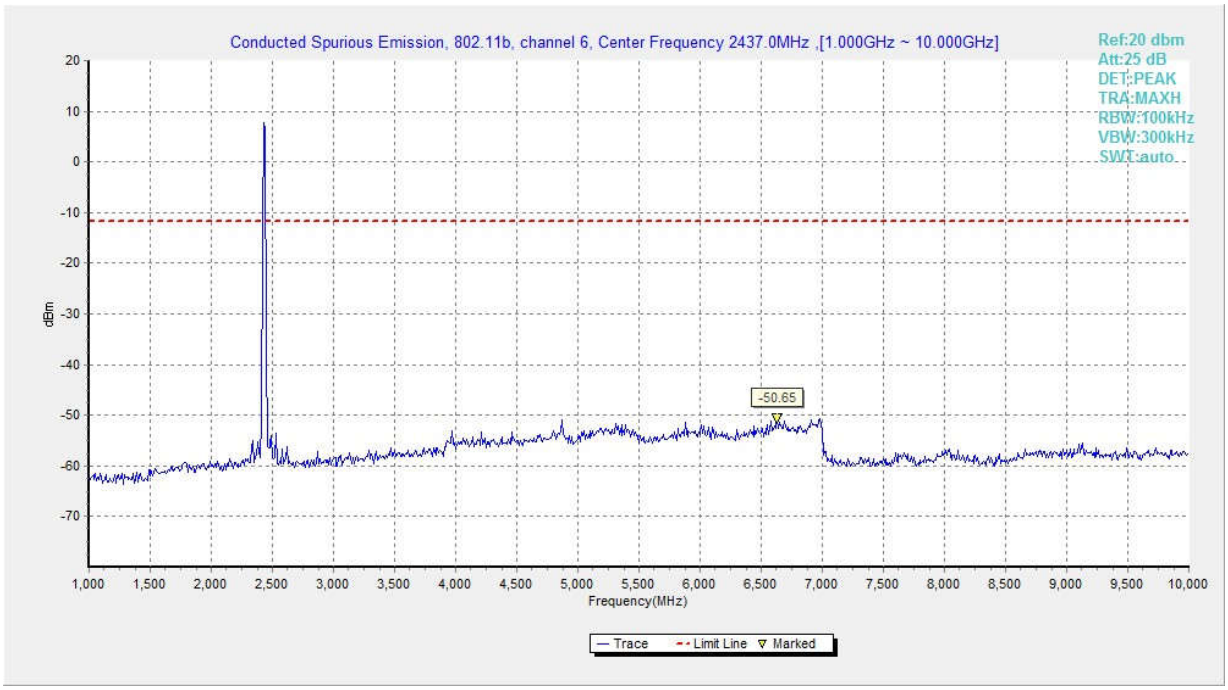

Fig.28 Conducted Spurious Emission (802.11b, Ch6, 1 GHz-10 GHz)

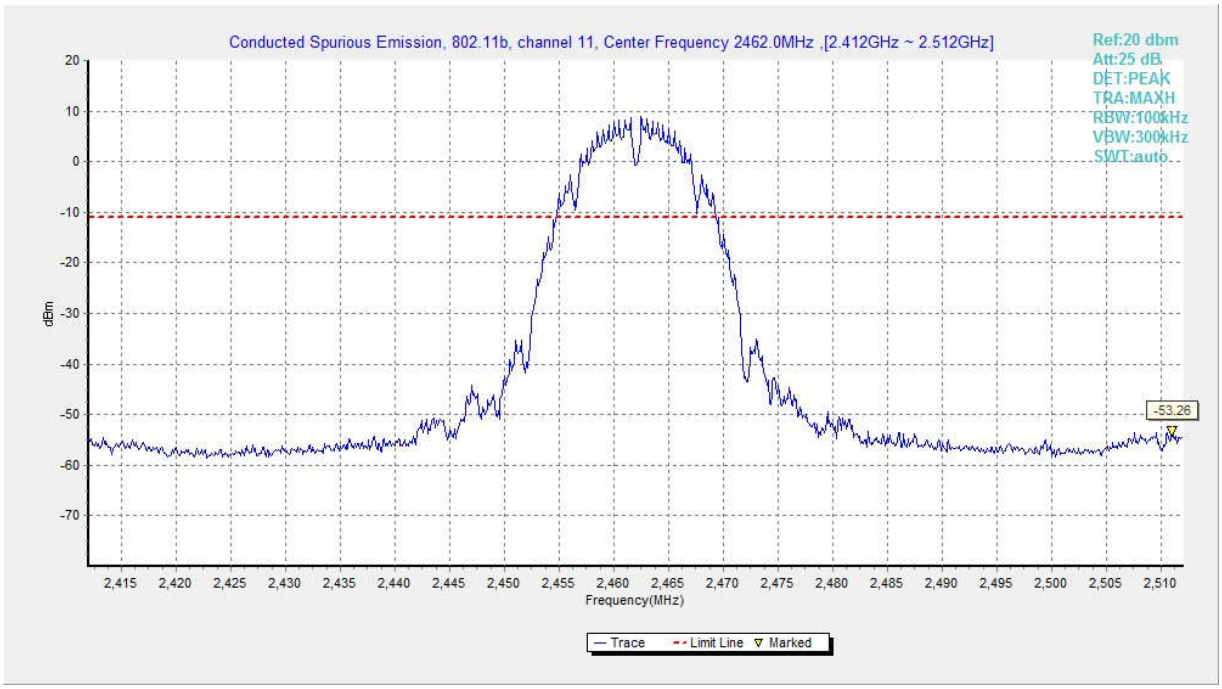

Fig.29 Conducted Spurious Emission (802.11b, Ch11, Center Frequency)

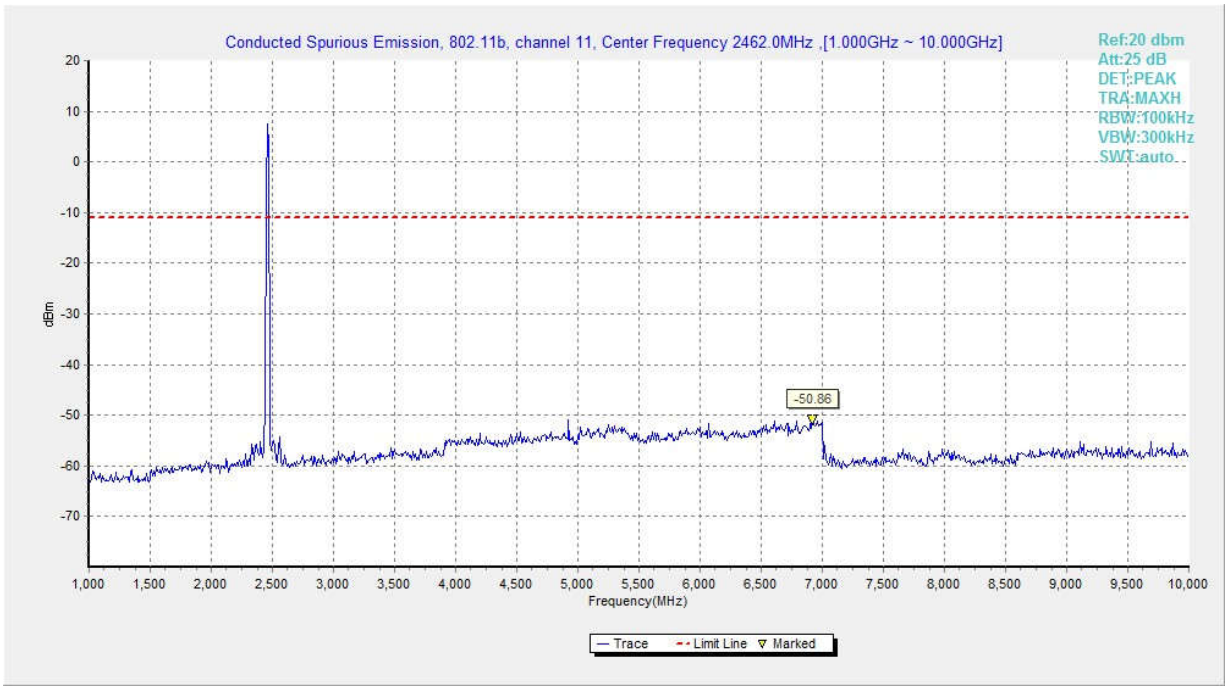

Fig.30 Conducted Spurious Emission (802.11b, Ch11, 1 GHz-10 GHz)

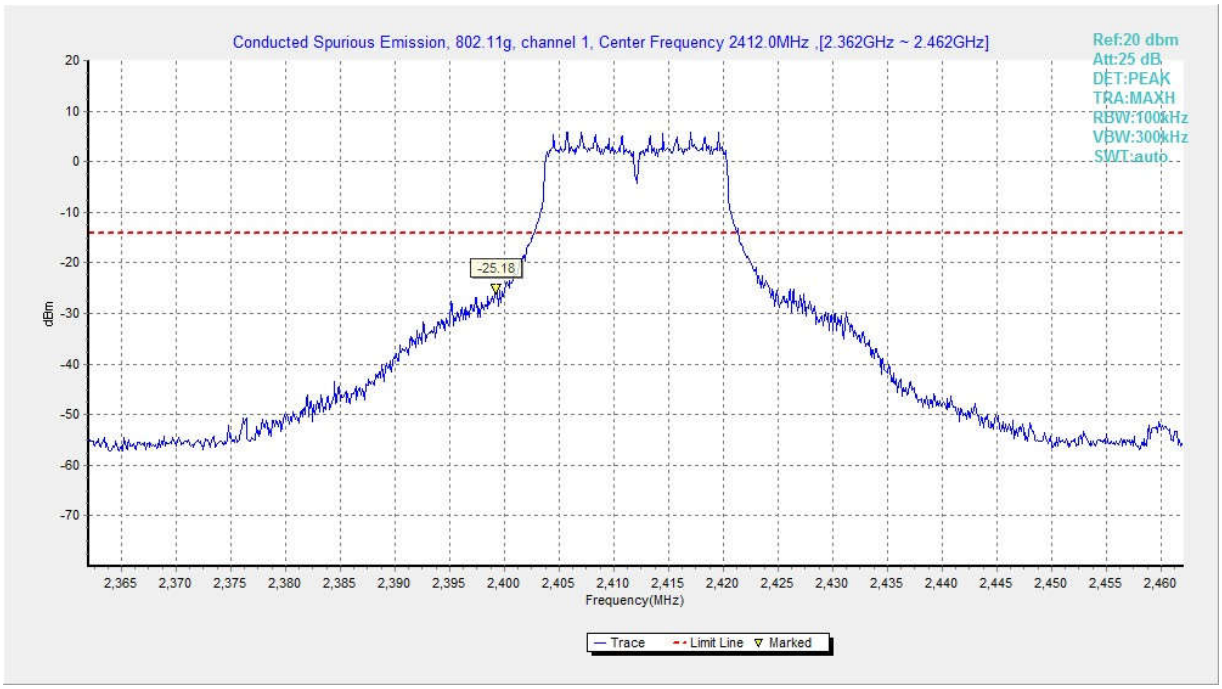

Fig.31 Conducted Spurious Emission (802.11g, Ch1, Center Frequency)

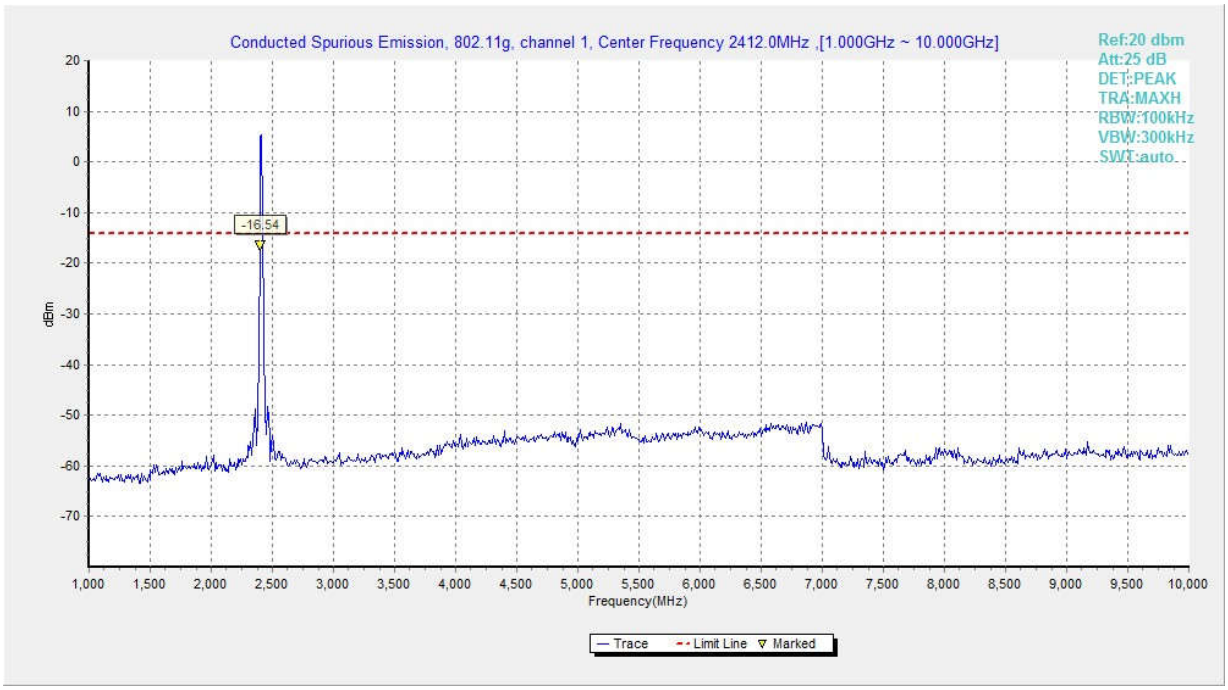

Fig.32 Conducted Spurious Emission (802.11g, Ch1, 1 GHz-10 GHz)

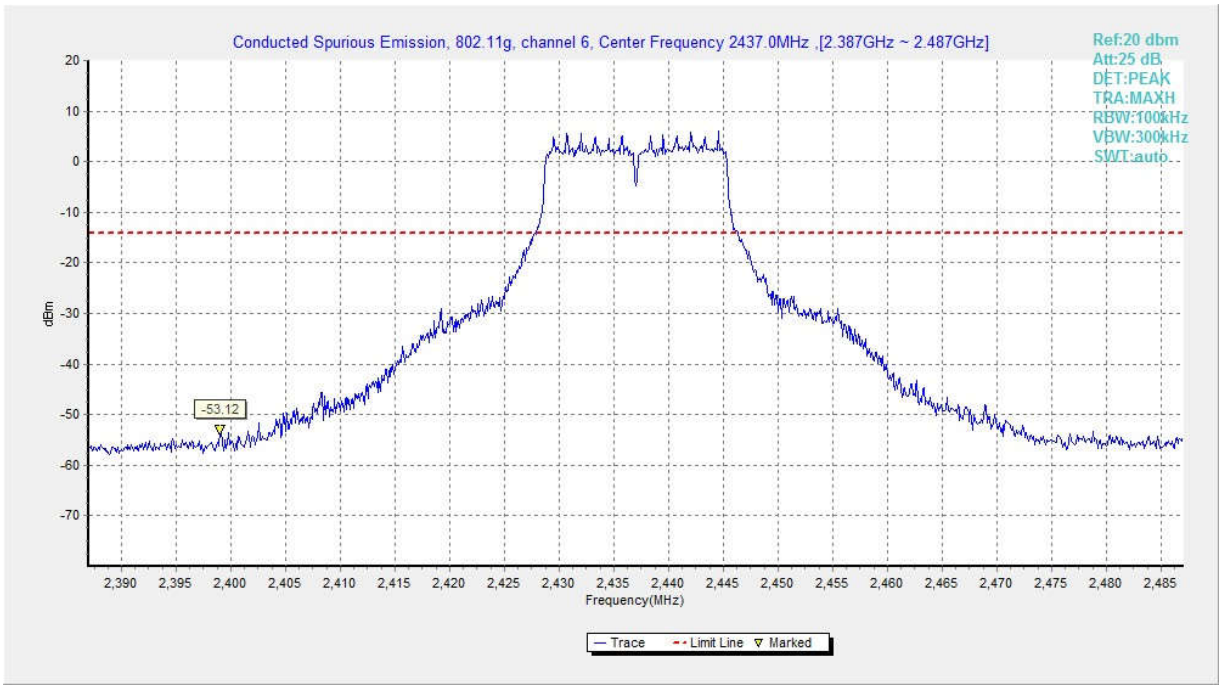

Fig.33 Conducted Spurious Emission (802.11g, Ch6, Center Frequency)

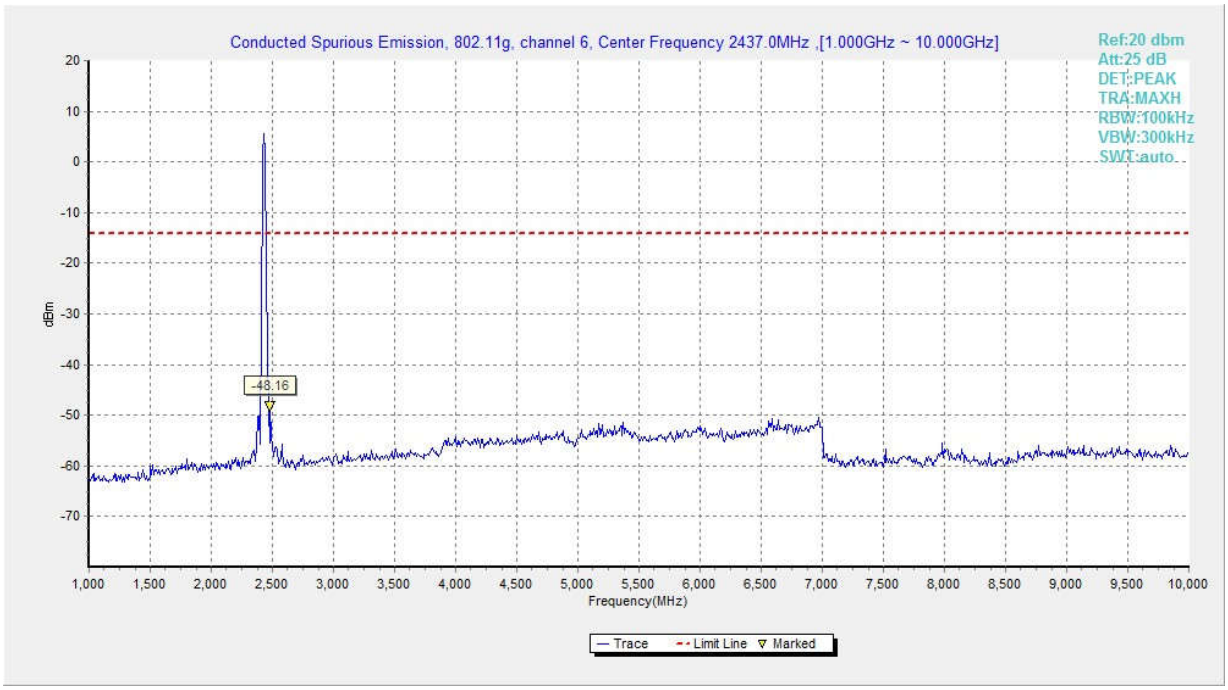

Fig.34 Conducted Spurious Emission (802.11g, Ch6, 1 GHz-10 GHz)

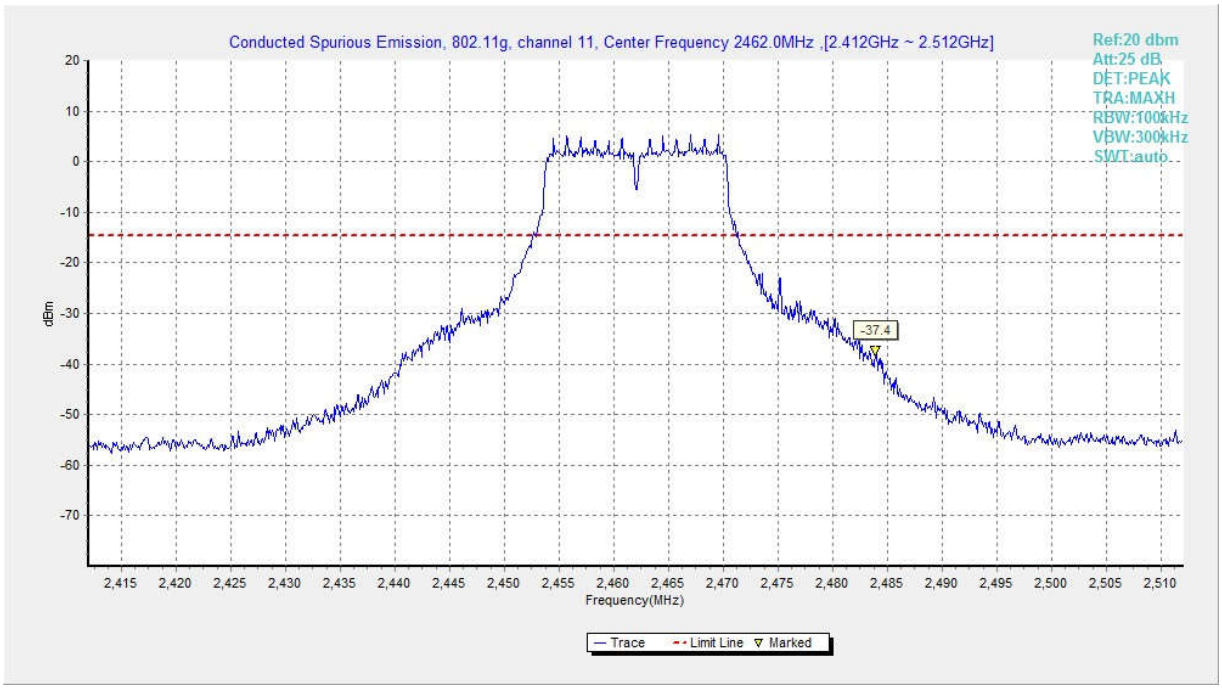

Fig.35 Conducted Spurious Emission (802.11g, Ch11, Center Frequency)

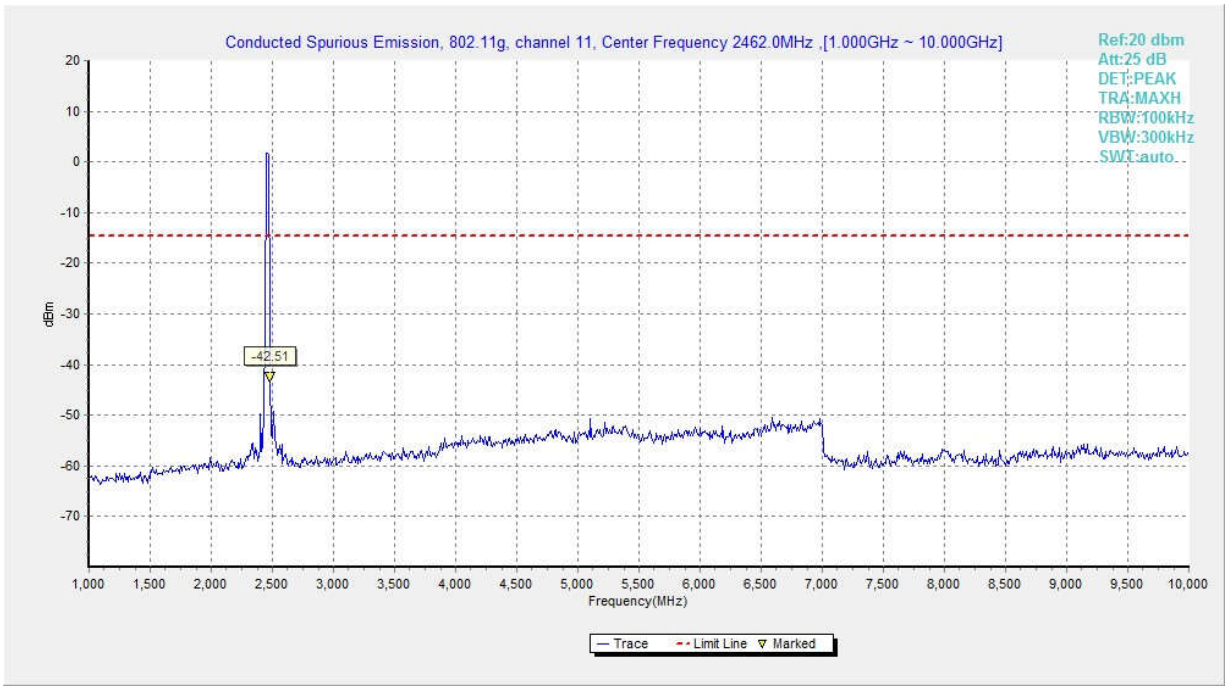

Fig.36 Conducted Spurious Emission (802.11g, Ch11, 1 GHz-10 GHz)

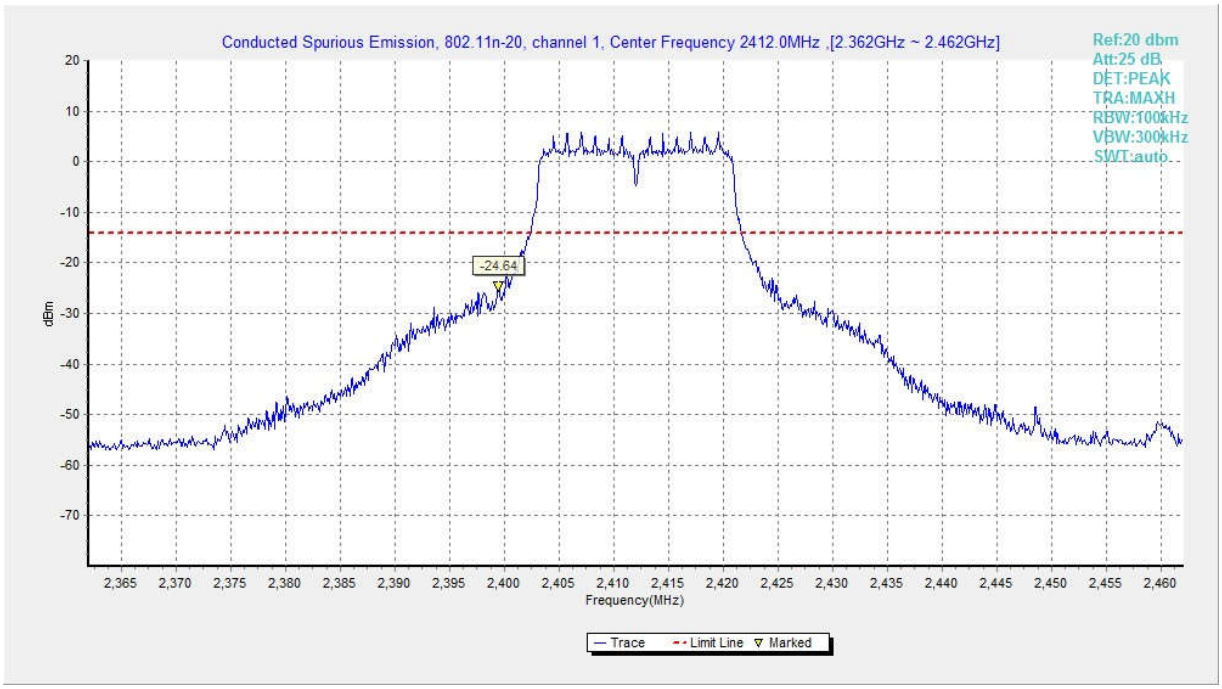

Fig.37 Conducted Spurious Emission (802.11n-20MHz, Ch1, Center Frequency)

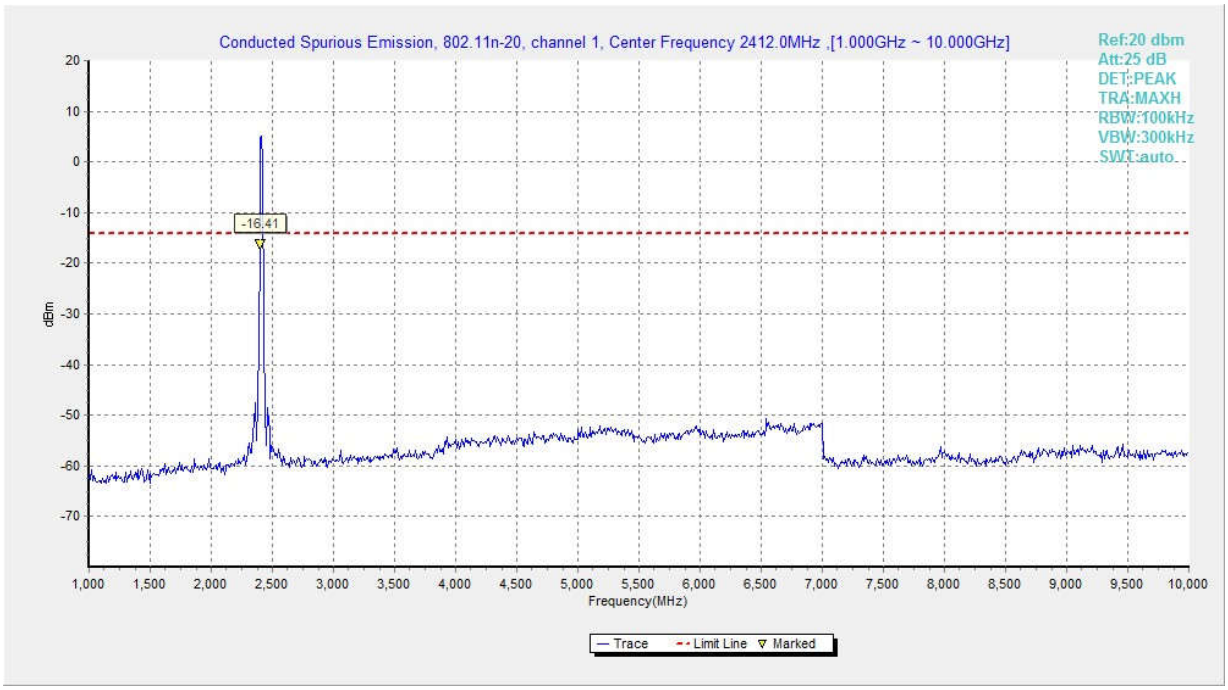

Fig.38 Conducted Spurious Emission (802.11n-20MHz, Ch1, 1 GHz-10 GHz)

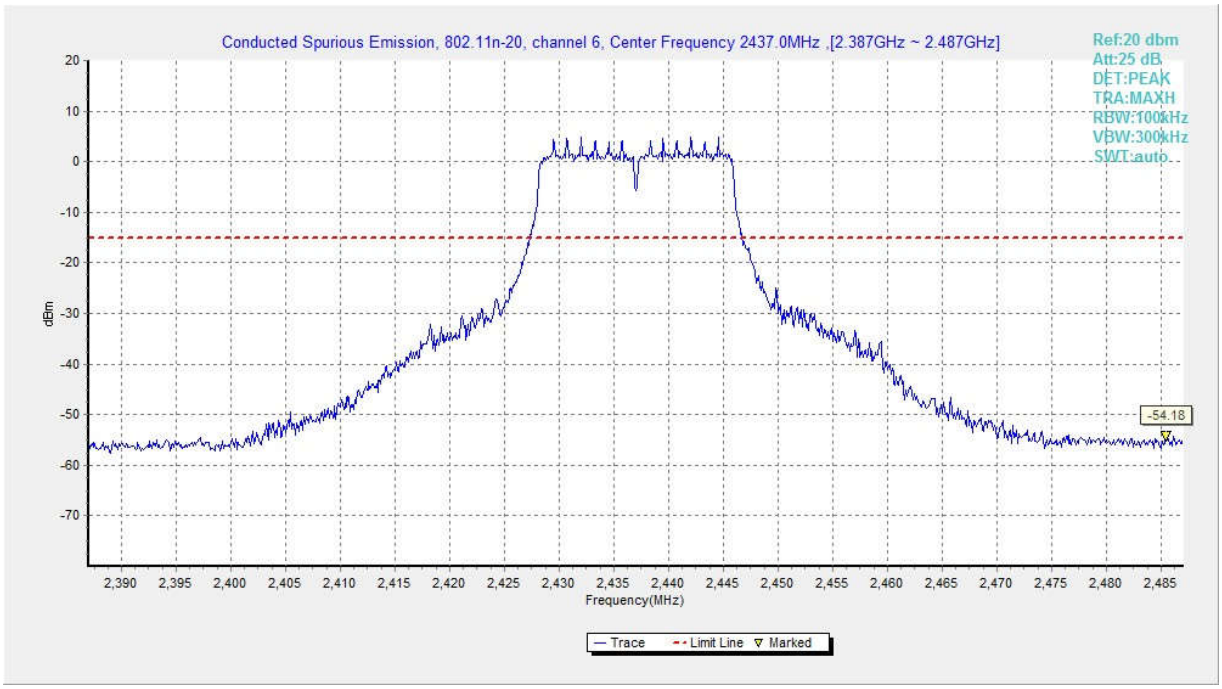

Fig.39 Conducted Spurious Emission (802.11n-20MHz, Ch6, Center Frequency)

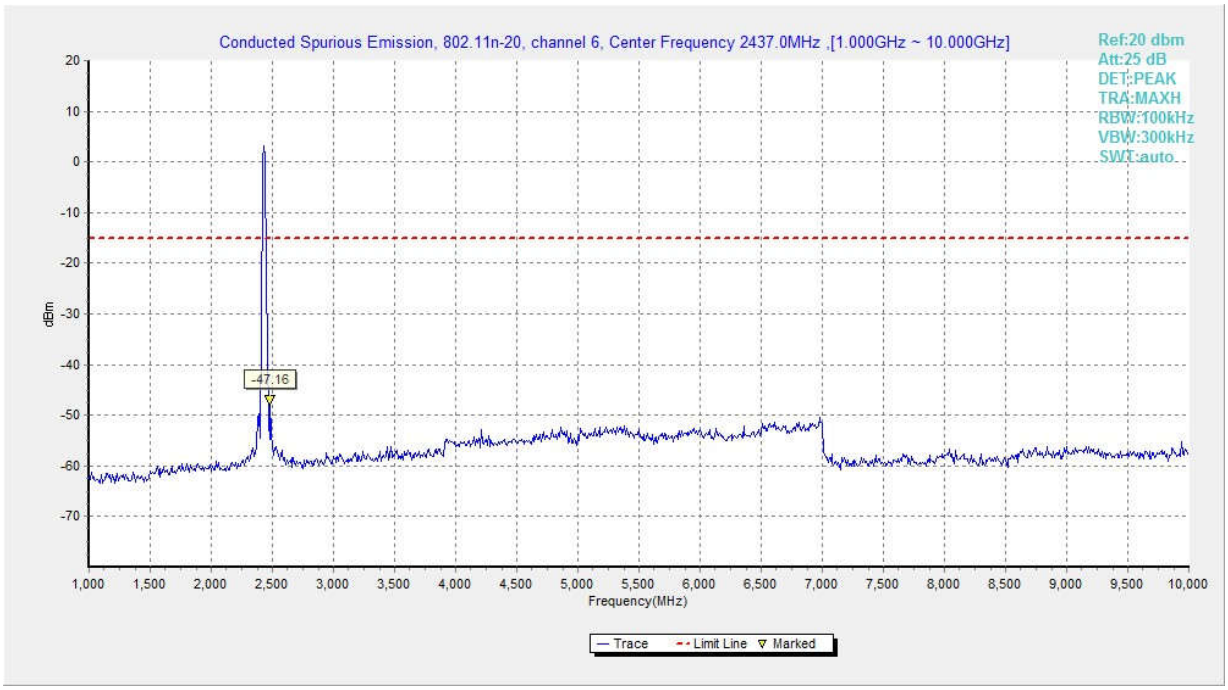

Fig.40 Conducted Spurious Emission (802.11n-20MHz, Ch6, 1 GHz-10 GHz)

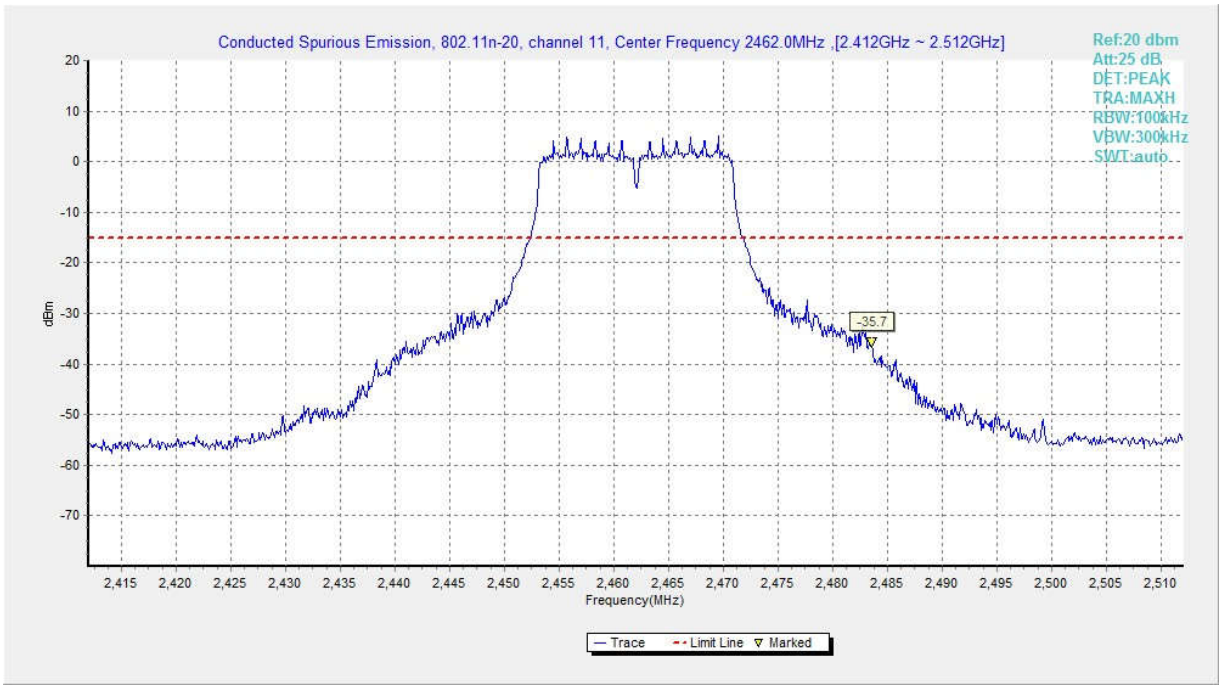

Fig.41 Conducted Spurious Emission (802.11n-20MHz, Ch11, Center Frequency)

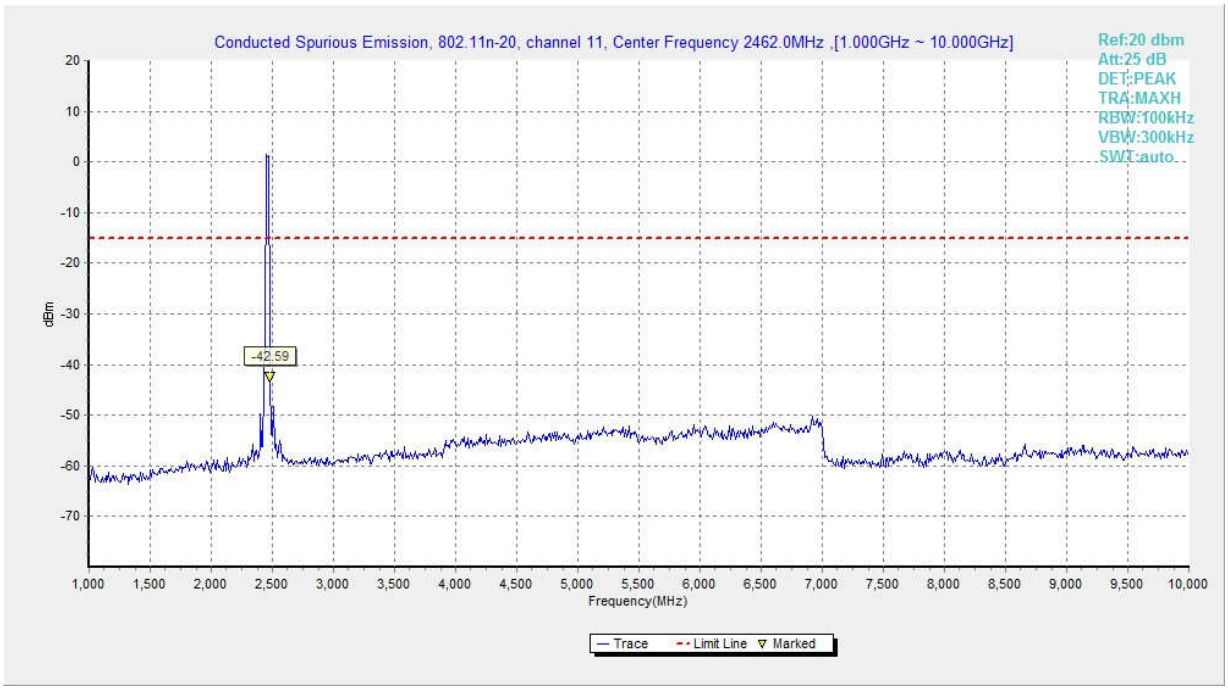

Fig.42 Conducted Spurious Emission (802.11n-20MHz, Ch11, 1 GHz-10 GHz)

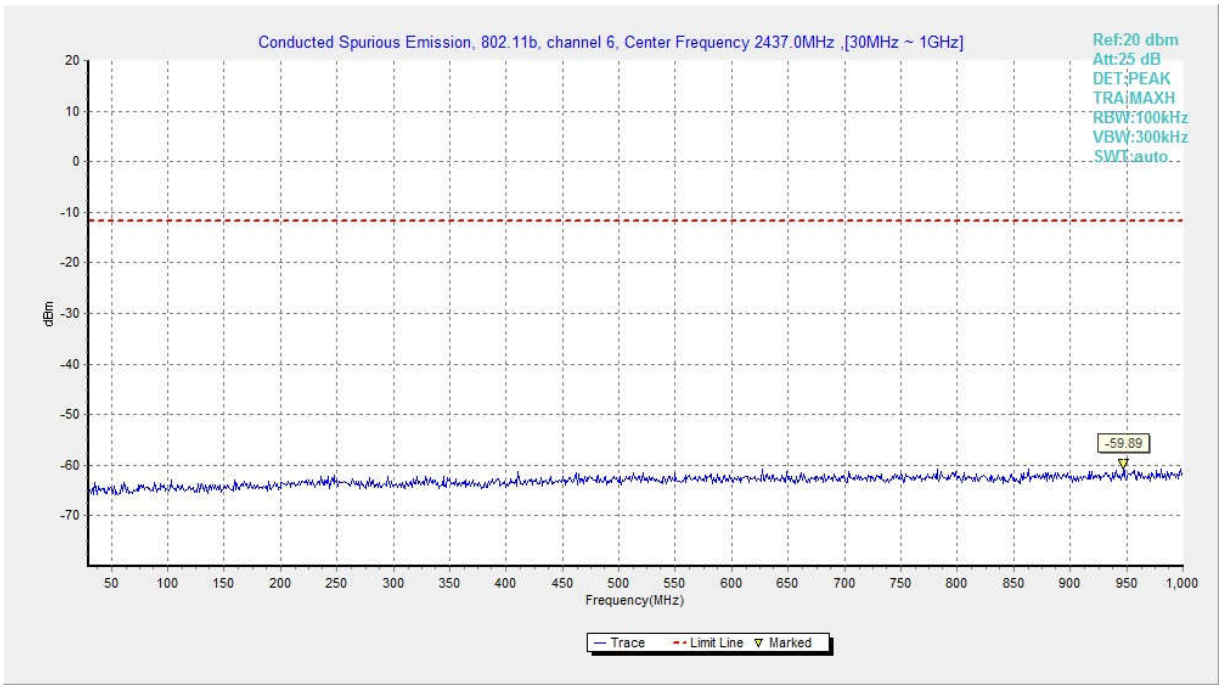

Fig.43 Conducted Spurious Emission (All channels, 30 MHz-1 GHz)

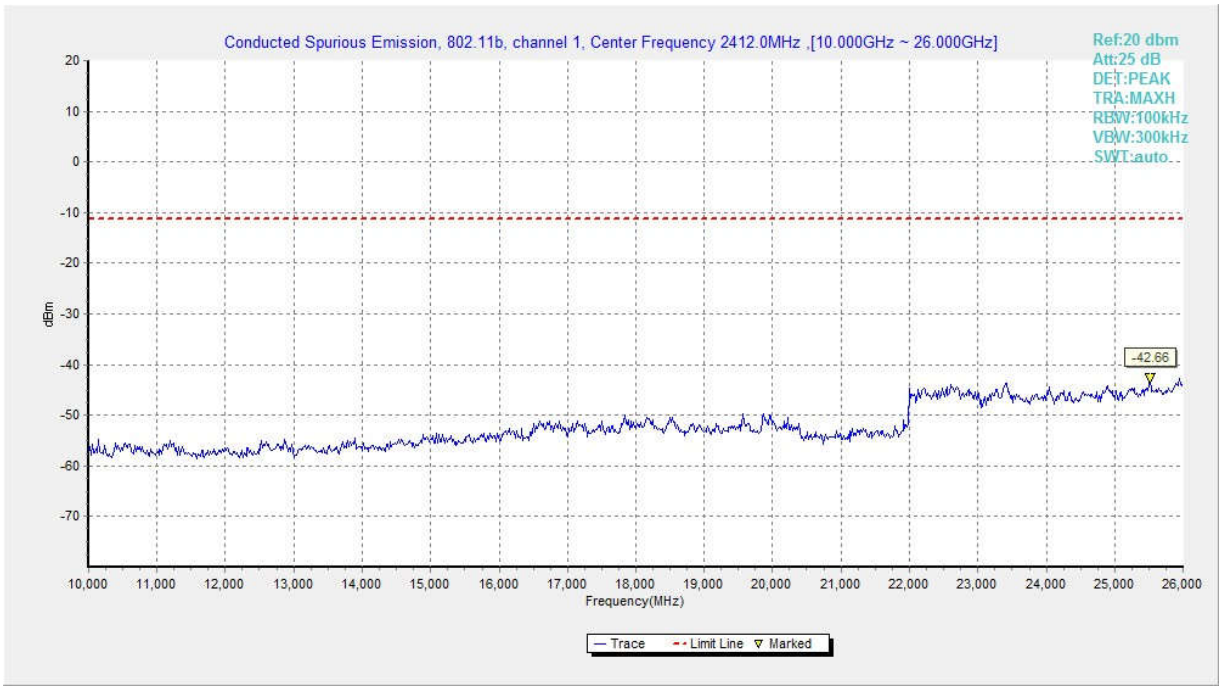

Fig.44 Conducted Spurious Emission (All channels, 10 GHz-26 GHz)

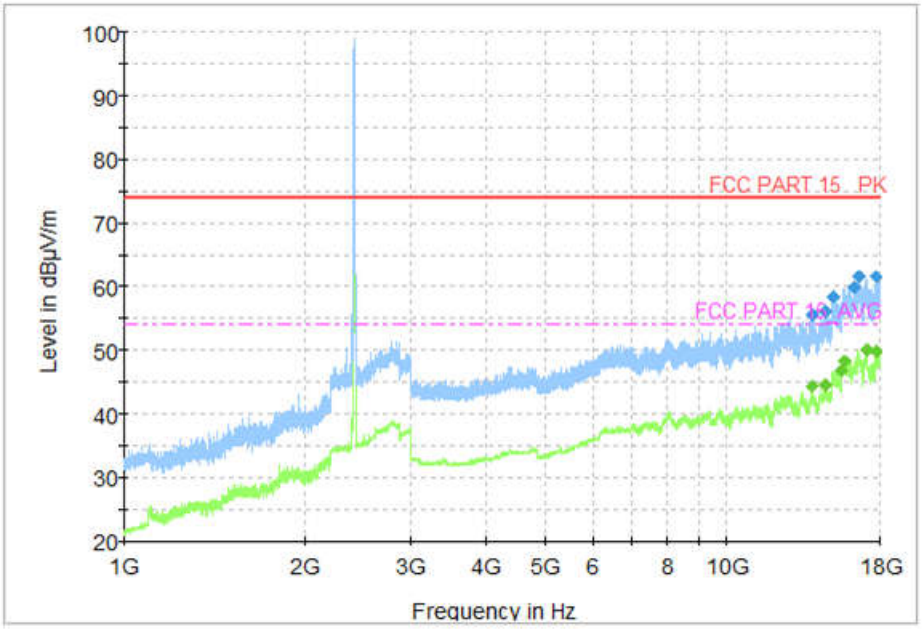

Fig.45 Radiated Spurious Emission (802.11b, Ch1, 1 GHz-18GHz)

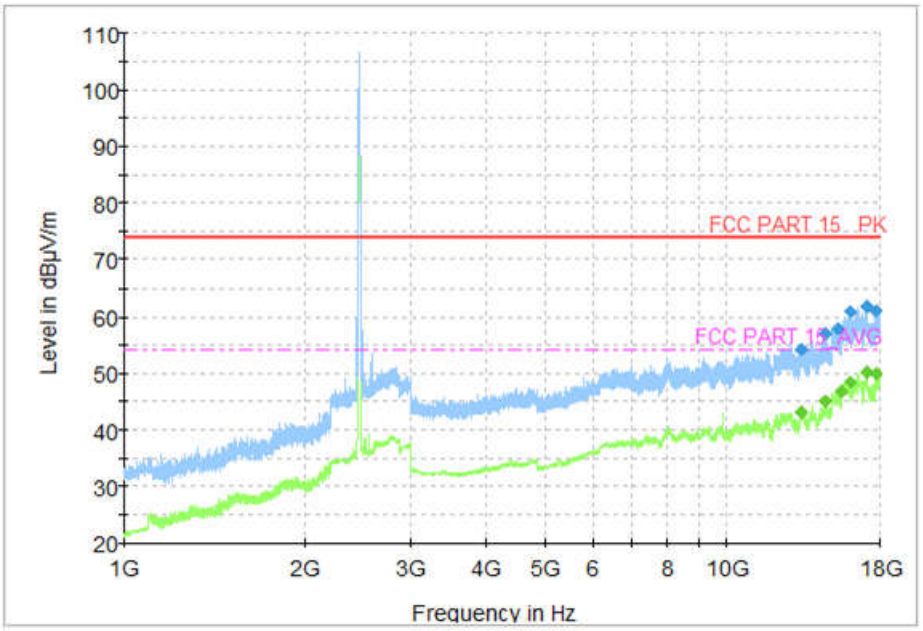

Fig.46 Radiated Spurious Emission (802.11b, Ch6, 1 GHz-18GHz)

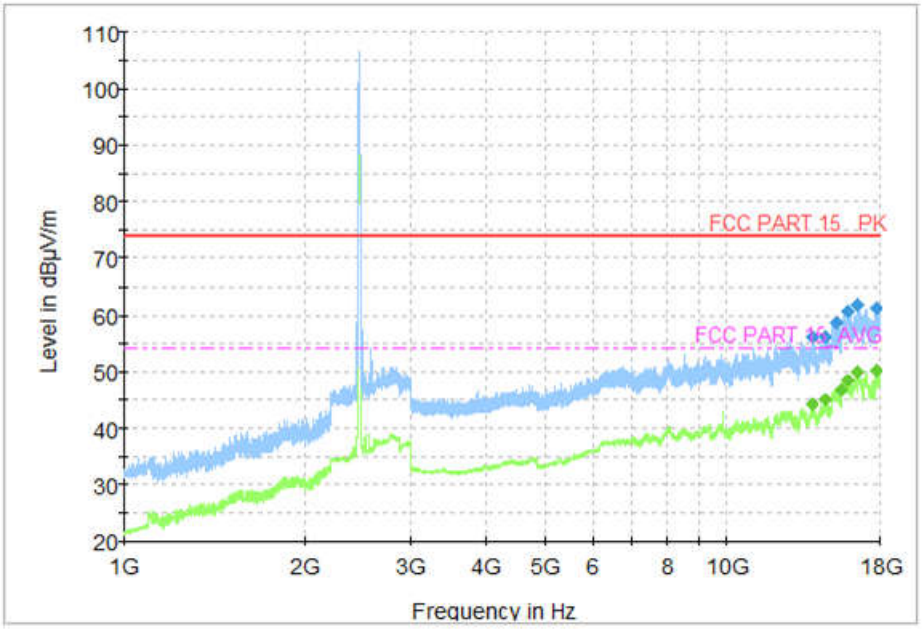

Fig.47 Radiated Spurious Emission (802.11b, Ch11, 1 GHz-18GHz)

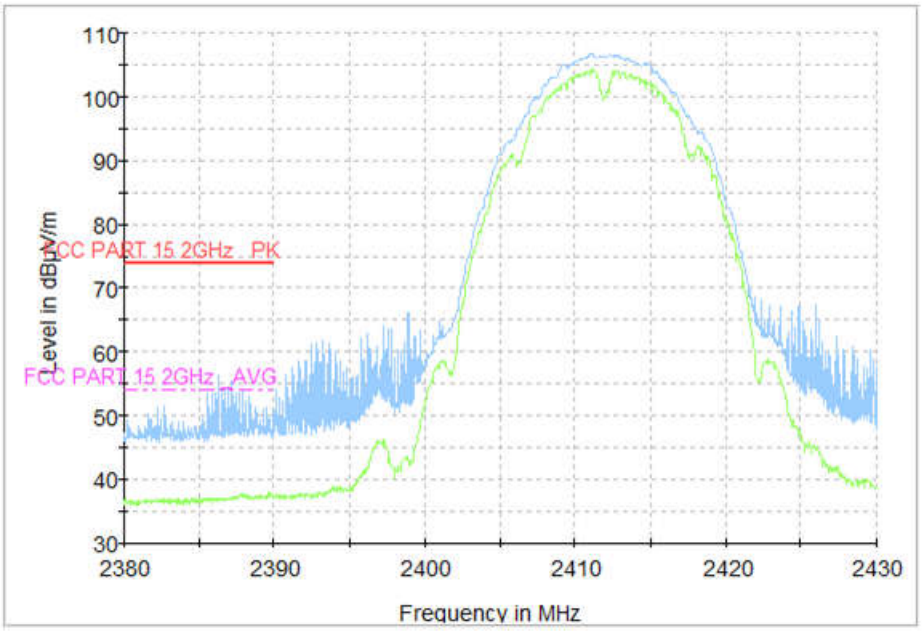

Fig.48 Radiated Restricted Band (802.11b, Ch1, 2380GHz~2450GHz)

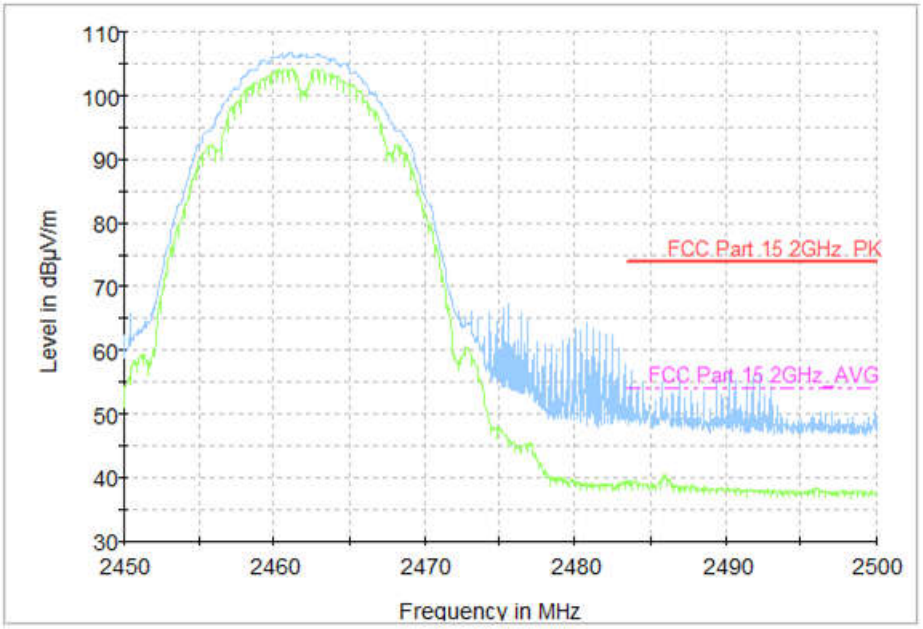

Fig.49 Radiated Restricted Band (802.11b, Ch11, 2450GHz~2500GHz)

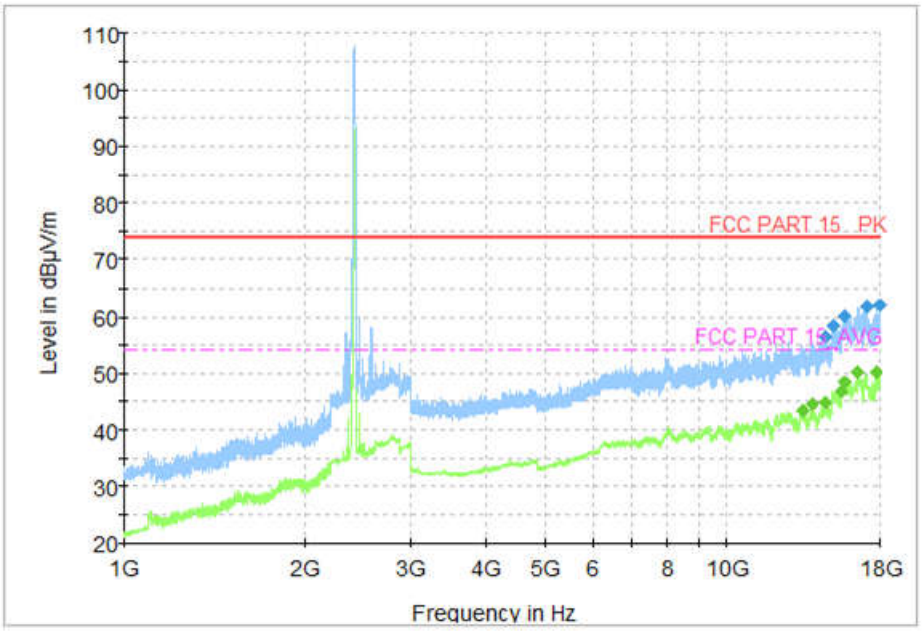

Fig.50 Radiated Spurious Emission (802.11g, Ch1, 1 GHz-18 GHz)

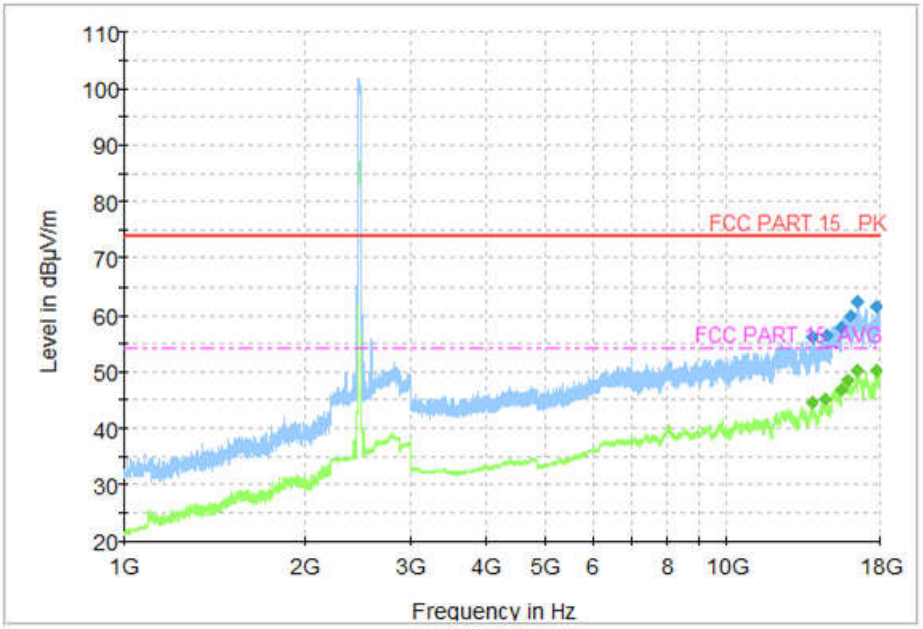

Fig.51 Radiated Spurious Emission (802.11g, Ch6, 1 GHz-18 GHz)

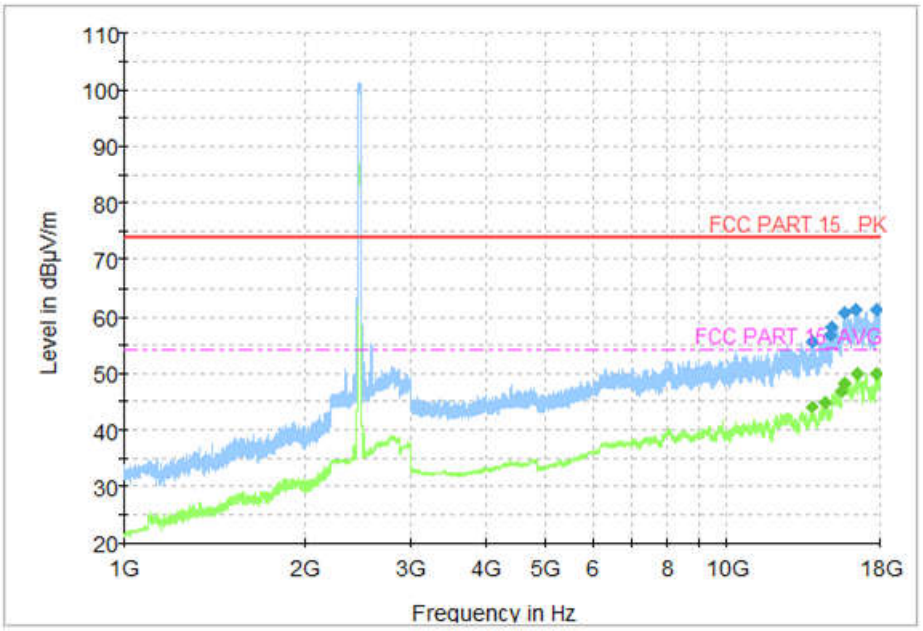

Fig.52 Radiated Spurious Emission (802.11g, Ch11, 1 GHz-18 GHz)

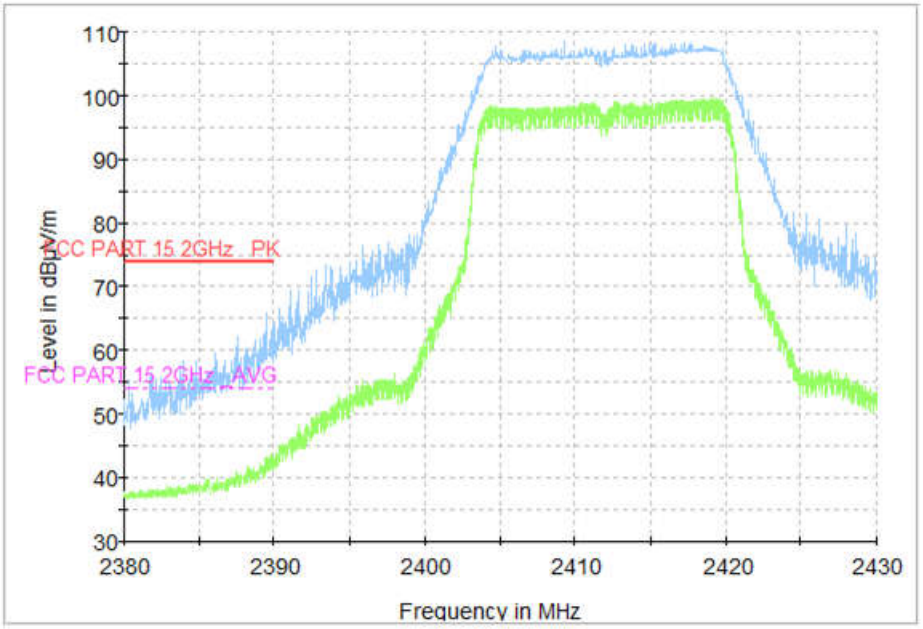

Fig.53 Radiated Restricted Band (802.11g, Ch1, 2380GHz~2450GHz)

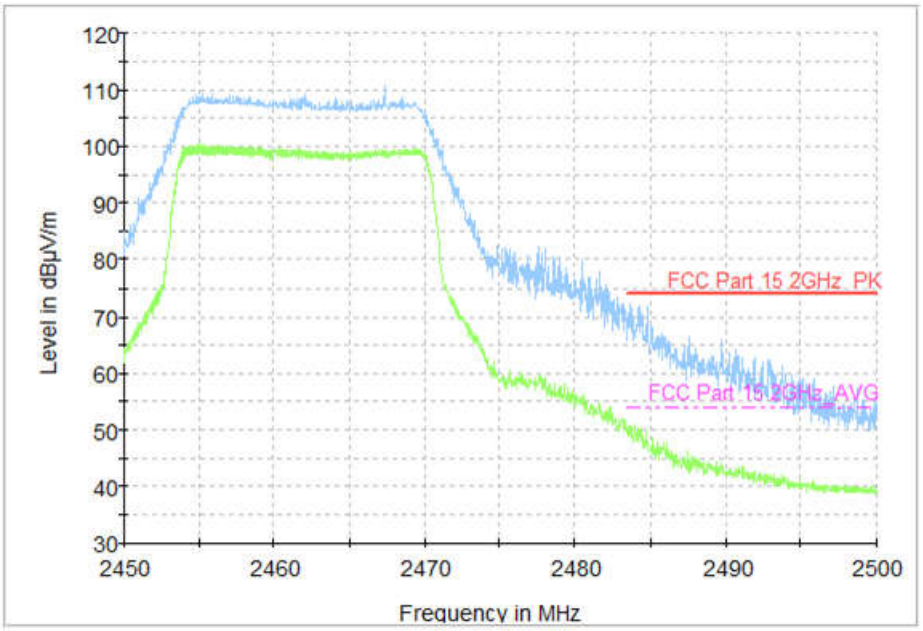

Fig.54 Radiated Restricted Band (802.11g, Ch11, 2450GHz~2500GHz)

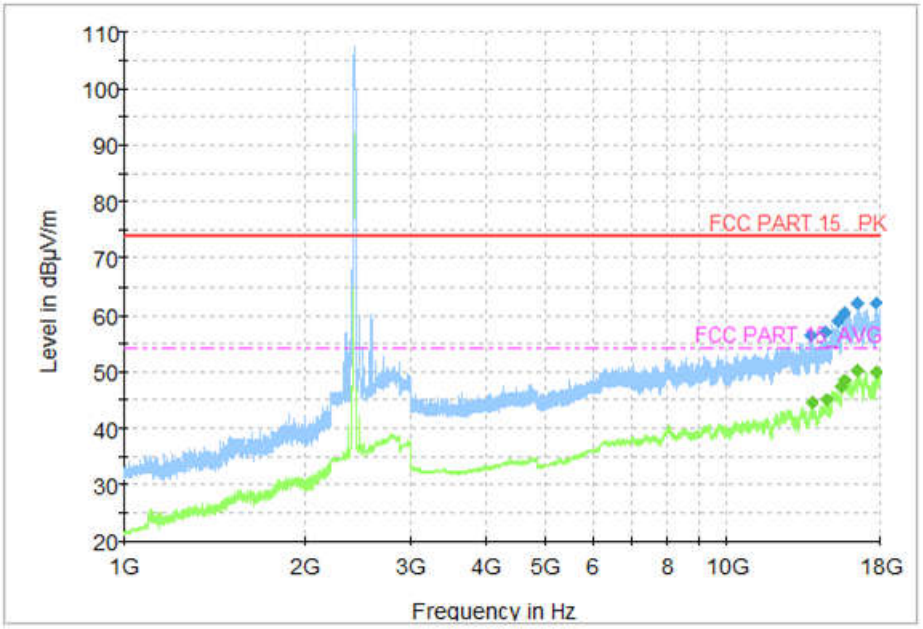

Fig.55 Radiated Spurious Emission (802.11n-20MHz, Ch1, 1 GHz-18 GHz)

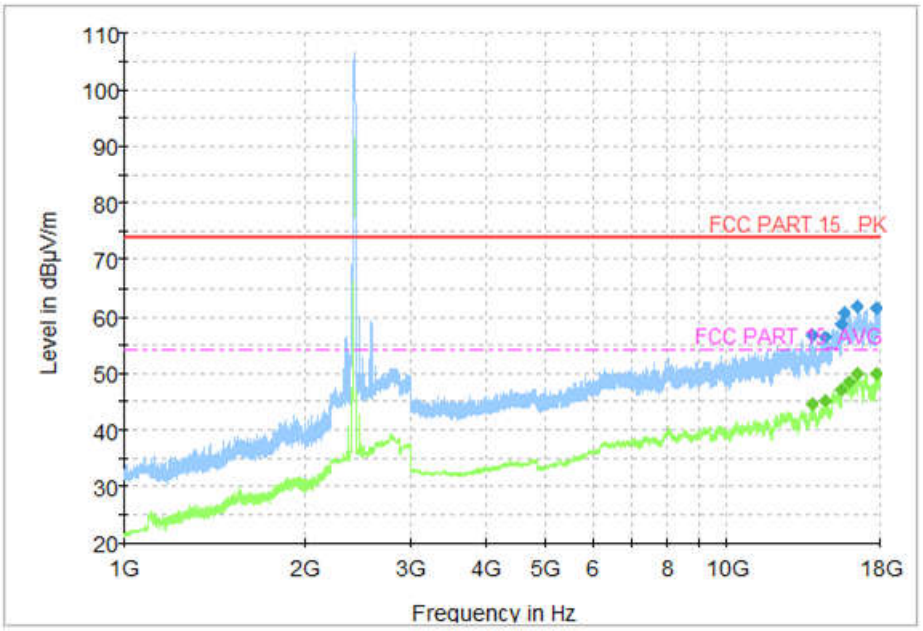

Fig.56 Radiated Spurious Emission (802.11n-20MHz, Ch6, 1 GHz-18 GHz)

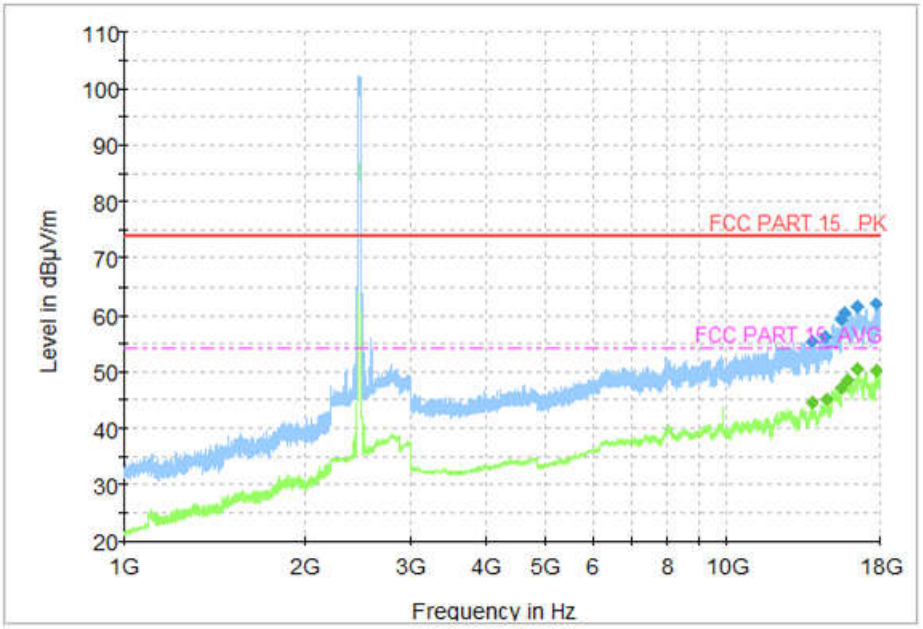

Fig.57 Radiated Spurious Emission (802.11n-20MHz, Ch11, 1 GHz-18 GHz)

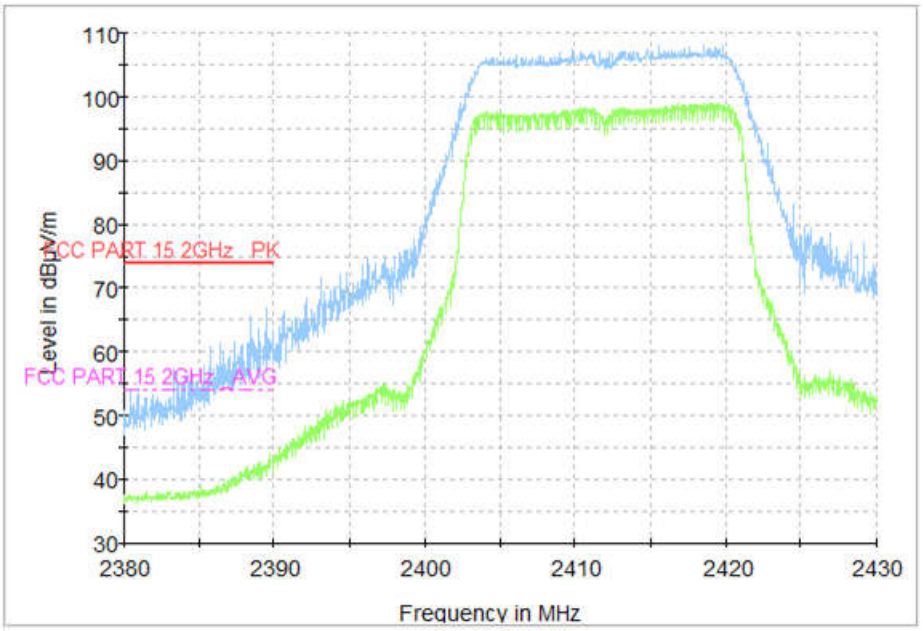

Fig.58 Radiated Emission Power (802.11n-20MHz, Ch1, 2380GHz~2450GHz)

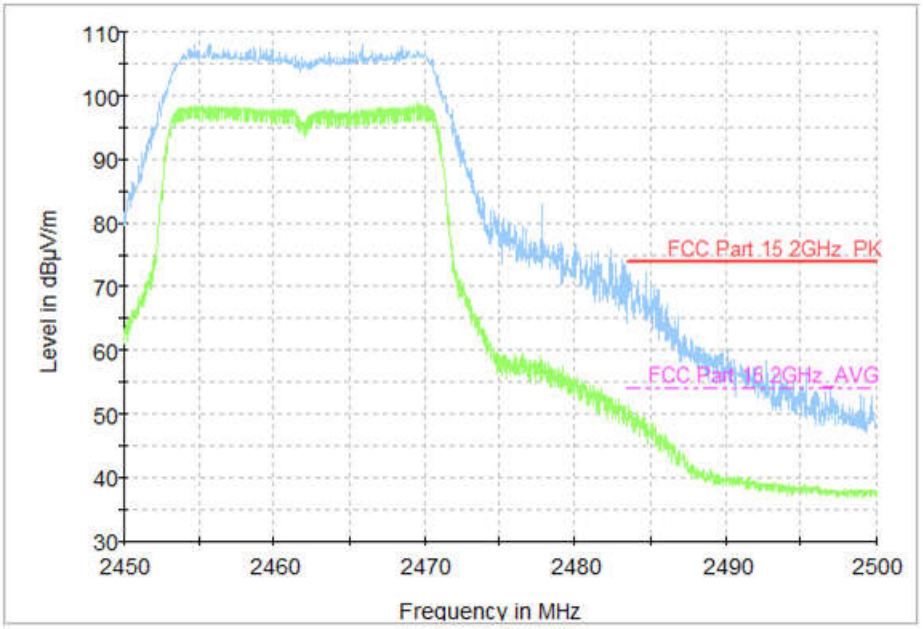

Fig.59 Radiated Restricted Band (802.11n-20MHz, Ch11, 2450GHz~2500GHz)

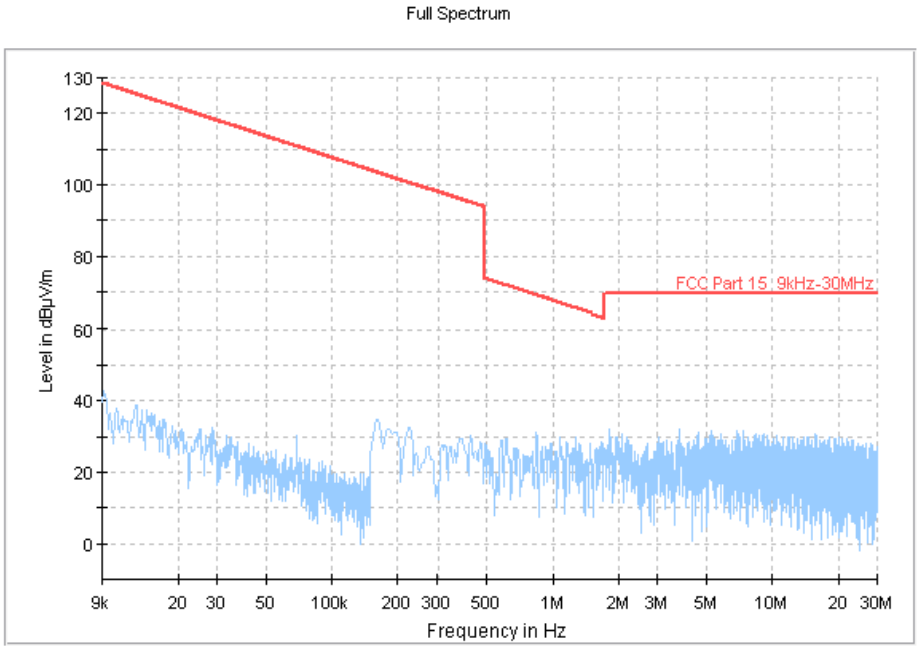

Fig.60 Radiated Spurious Emission (802.11n-20MHz, Ch6, 9KHz-30 MHz)

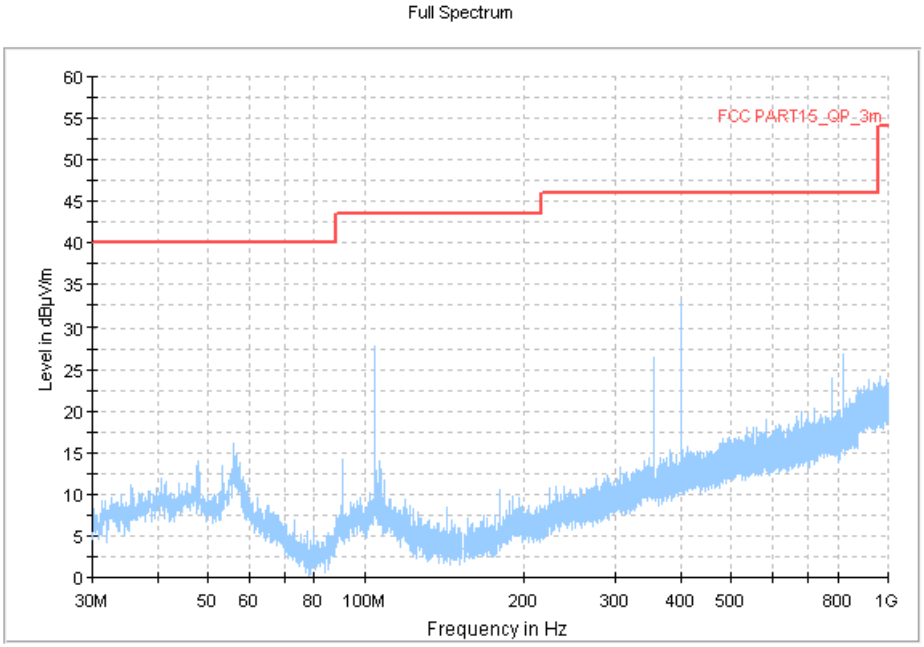

Fig.61 Radiated Spurious Emission (802.11n-20MHz, Ch6, 30MHz-1 GHz)

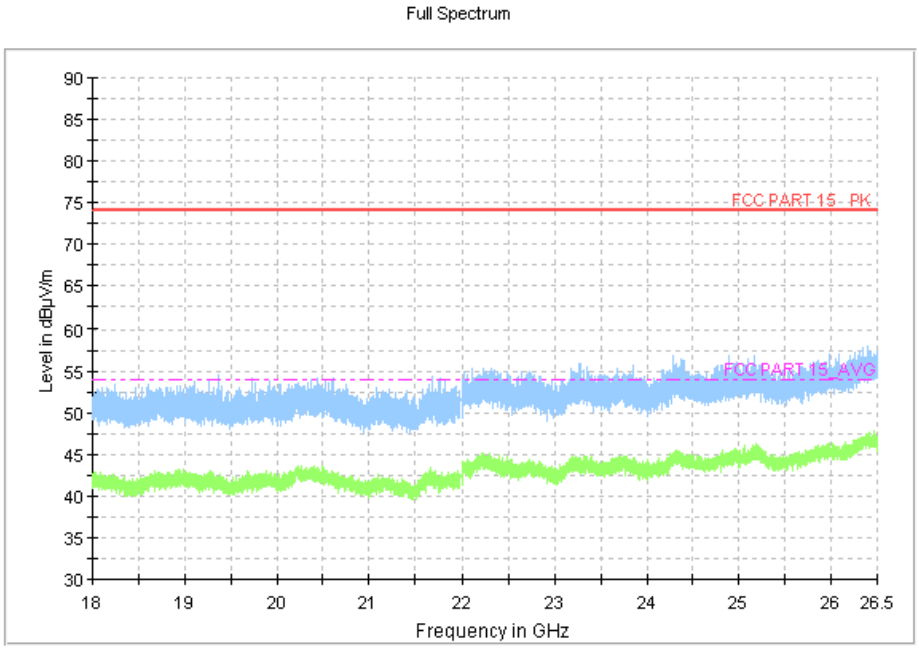

Fig.62 Radiated Spurious Emission (802.11n-20MHz, Ch6, 18 GHz-26.5 GHz)

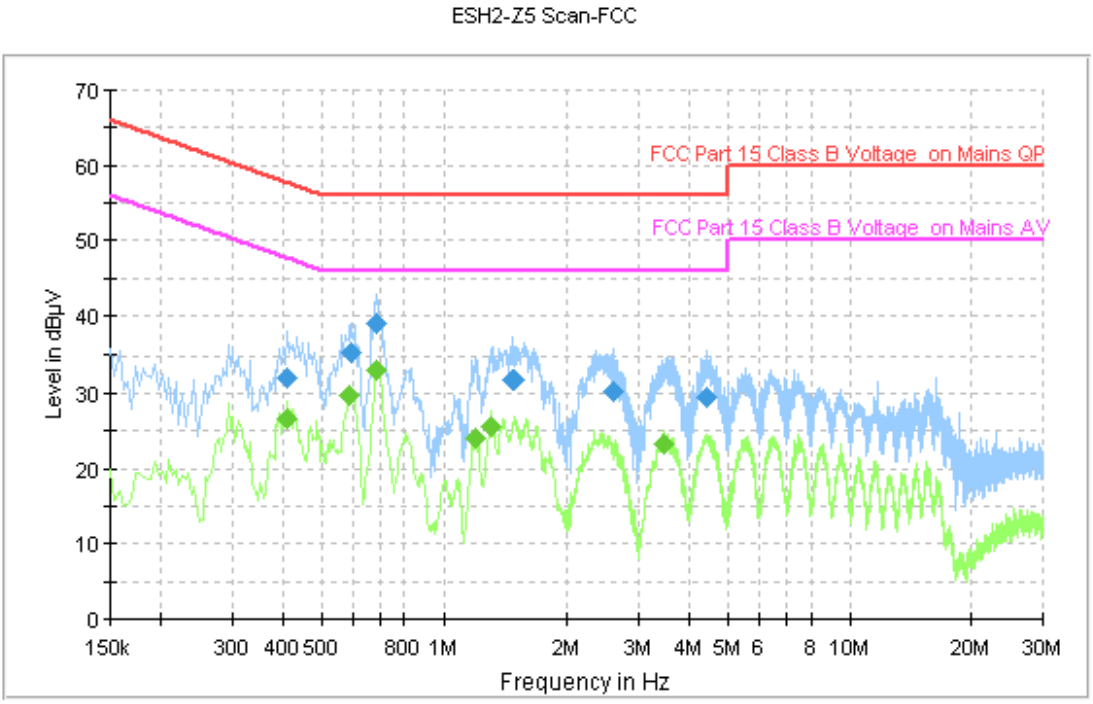

Fig.63 AC Powerline Conducted Emission (Traffic, AE1)

MEASUREMENT RESULT: "QuasiPeak"

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.410000	32.1	GND	N	9.7	25.6	57.6
0.590000	35.3	GND	N	9.6	20.7	56.0
0.686000	39.1	GND	N	9.5	16.9	56.0
1.474000	31.8	GND	N	9.6	24.2	56.0
2.606000	30.3	GND	N	9.6	25.7	56.0
4.414000	29.4	GND	N	9.6	26.6	56.0

MEASUREMENT RESULT: "Average"

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.410000	26.7	GND	N	9.7	21.0	47.6
0.586000	29.6	GND	N	9.6	16.4	46.0
0.686000	33.1	GND	N	9.5	12.9	46.0
1.206000	24.0	GND	N	9.5	22.0	46.0
1.314000	25.6	GND	N	9.6	20.4	46.0
3.454000	23.1	GND	N	9.6	22.9	46.0

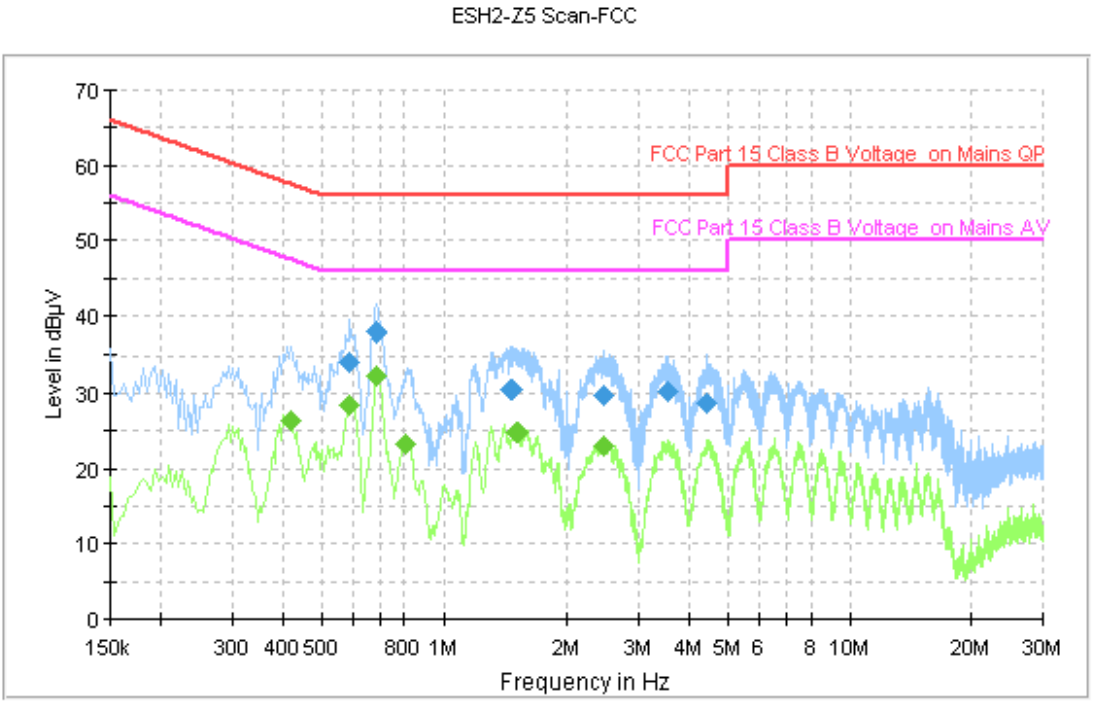

Fig.64 AC Power line Conducted Emission (Idle, AE1)

MEASUREMENT RESULT: "QuasiPeak"

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.586000	34.1	GND	N	9.6	21.9	56.0
0.686000	38.0	GND	N	9.5	18.0	56.0
1.466000	30.5	GND	N	9.5	25.5	56.0
2.454000	29.6	GND	N	9.6	26.4	56.0
3.550000	30.2	GND	N	9.6	25.8	56.0
4.426000	28.7	GND	N	9.6	27.3	56.0

MEASUREMENT RESULT: "Average"

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.418000	26.5	GND	N	9.7	21.0	47.5
0.586000	28.4	GND	N	9.6	17.6	46.0
0.686000	32.4	GND	N	9.5	13.6	46.0
0.810000	23.3	GND	N	9.6	22.7	46.0
1.506000	24.9	GND	N	9.6	21.1	46.0
2.454000	23.1	GND	N	9.6	22.9	46.0

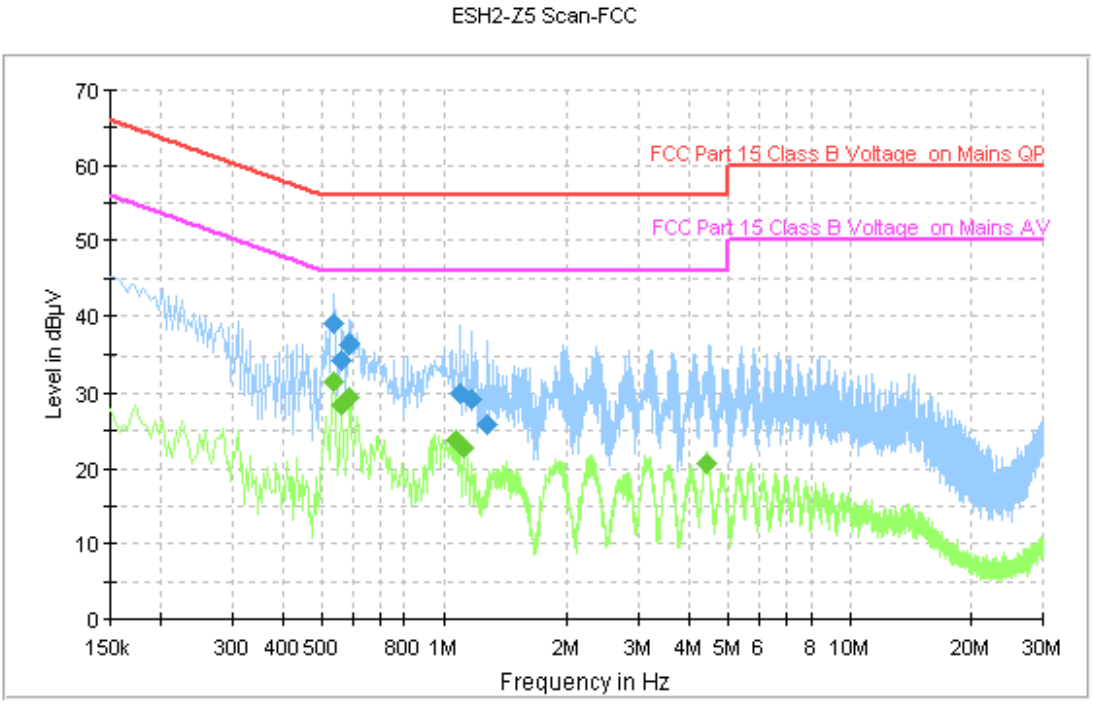

Fig.65 AC Powerline Conducted Emission (Traffic, AE2)

MEASUREMENT RESULT: "QuasiPeak"

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.538000	38.9	GND	N	9.7	17.1	56.0
0.558000	34.3	GND	N	9.7	21.7	56.0
0.586000	36.5	GND	N	9.6	19.5	56.0
1.102000	29.9	GND	N	9.6	26.1	56.0
1.178000	29.1	GND	N	9.5	26.9	56.0
1.286000	25.7	GND	N	9.6	30.3	56.0

MEASUREMENT RESULT: "Average"

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.538000	31.6	GND	N	9.7	14.4	46.0
0.558000	28.5	GND	N	9.7	17.5	46.0
0.586000	29.5	GND	N	9.6	16.5	46.0
1.074000	23.8	GND	N	9.6	22.2	46.0
1.122000	22.7	GND	N	9.6	23.3	46.0
4.422000	20.6	GND	N	9.6	25.4	46.0

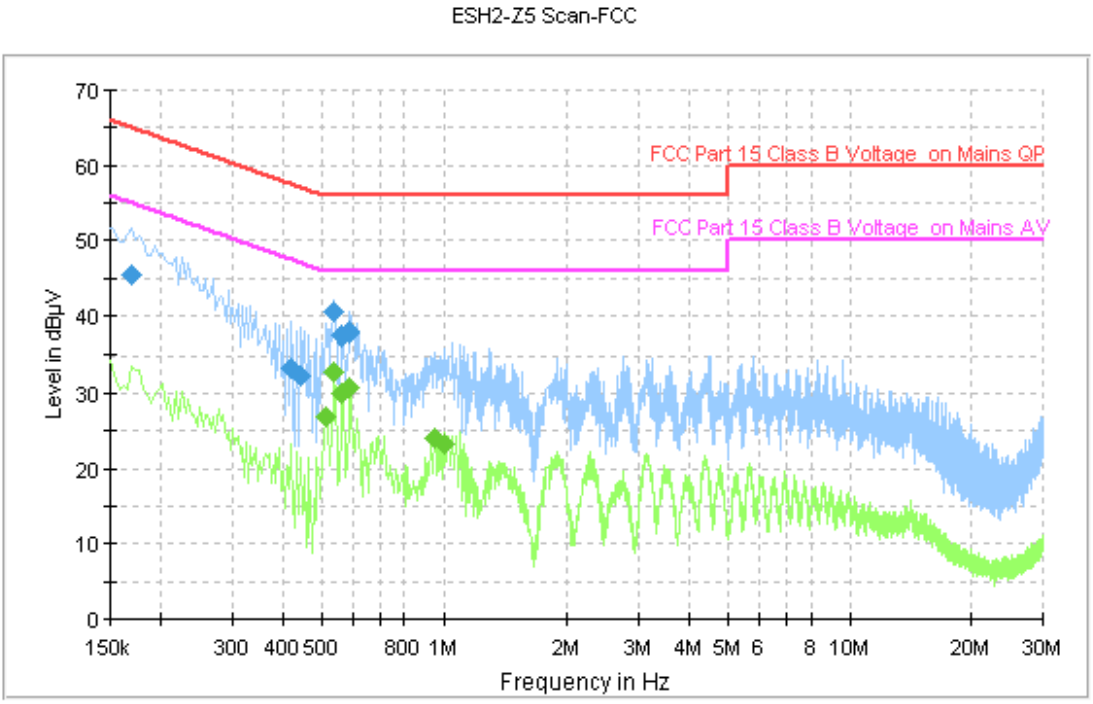

Fig.66 AC Power line Conducted Emission (Idle, AE2)

MEASUREMENT RESULT: "QuasiPeak"

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.170000	45.4	GND	N	9.6	19.5	65.0
0.418000	33.3	GND	N	9.7	24.2	57.5
0.442000	32.3	GND	N	9.7	24.8	57.0
0.538000	40.4	GND	N	9.7	15.6	56.0
0.562000	37.4	GND	N	9.7	18.6	56.0
0.586000	37.9	GND	N	9.6	18.1	56.0

MEASUREMENT RESULT: "Average"

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.510000	26.8	GND	N	9.7	19.2	46.0
0.538000	32.9	GND	N	9.7	13.1	46.0
0.562000	30.0	GND	N	9.7	16.0	46.0
0.586000	30.7	GND	N	9.6	15.3	46.0
0.954000	24.0	GND	N	9.6	22.0	46.0
1.002000	23.3	GND	N	9.5	22.7	46.0

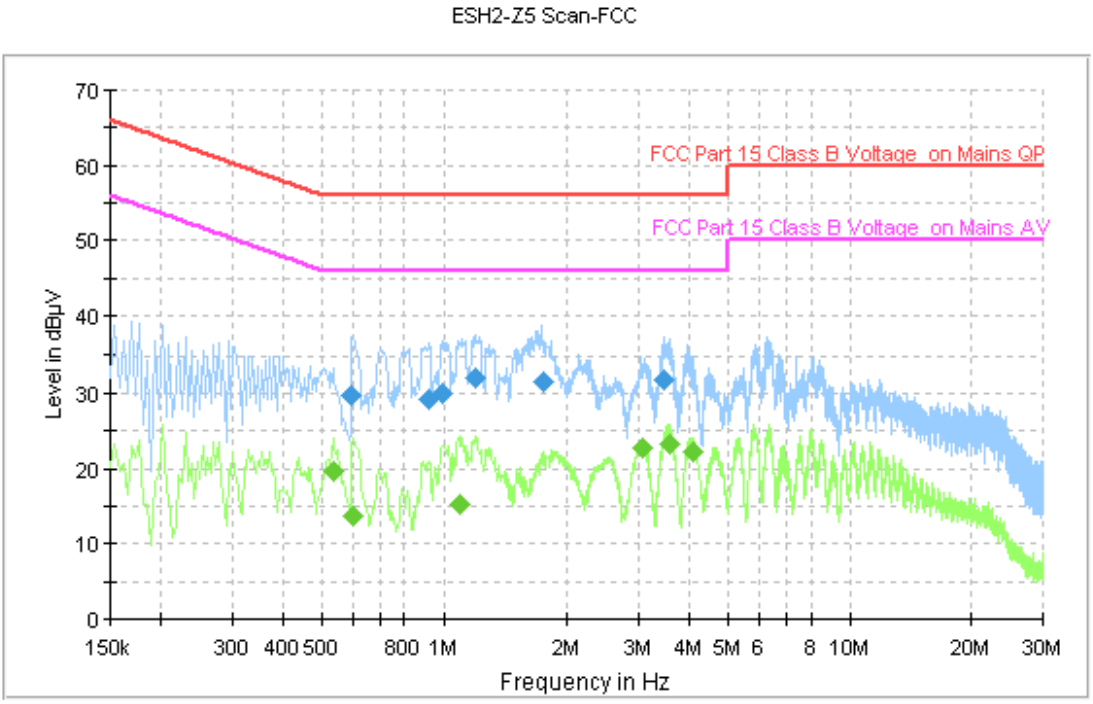

Fig.67 AC Powerline Conducted Emission (Traffic, AE3)

MEASUREMENT RESULT: "QuasiPeak"

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.594000	29.8	GND	N	9.6	26.2	56.0
0.922000	29.3	GND	N	9.6	26.7	56.0
0.990000	29.9	GND	N	9.6	26.1	56.0
1.194000	31.9	GND	N	9.5	24.1	56.0
1.742000	31.6	GND	N	9.6	24.4	56.0
3.470000	31.8	GND	N	9.6	24.2	56.0

MEASUREMENT RESULT: "Average"

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.534000	19.7	GND	N	9.7	26.3	46.0
0.598000	13.6	GND	N	9.6	32.4	46.0
1.102000	15.3	GND	N	9.6	30.7	46.0
3.062000	22.6	GND	N	9.6	23.4	46.0
3.590000	23.3	GND	N	9.6	22.7	46.0
4.078000	22.1	GND	N	9.6	23.9	46.0

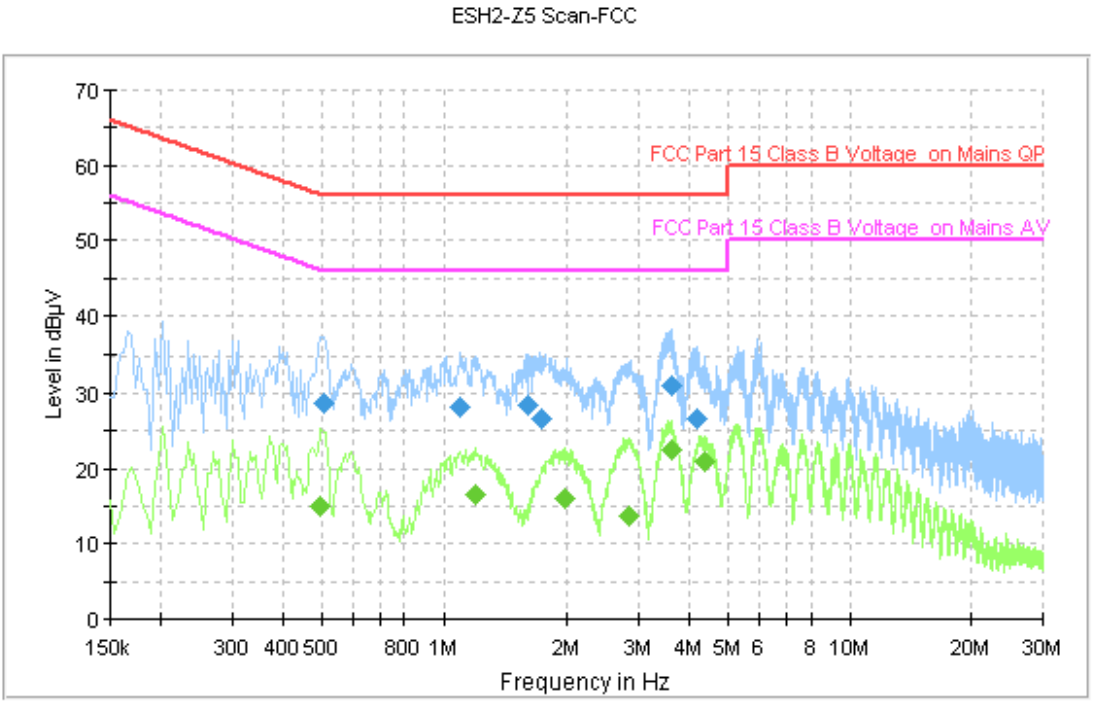

Fig.68 AC Power line Conducted Emission (Idle, AE3)

MEASUREMENT RESULT: "QuasiPeak"

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.506000	28.7	GND	N	9.7	27.3	56.0
1.102000	28.2	GND	N	9.6	27.8	56.0
1.598000	28.5	GND	N	9.6	27.5	56.0
1.722000	26.7	GND	N	9.6	29.3	56.0
3.630000	31.0	GND	N	9.6	25.0	56.0
4.186000	26.7	GND	N	9.6	29.3	56.0

MEASUREMENT RESULT: "Average"

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.498000	14.9	GND	N	9.7	31.2	46.0
1.202000	16.4	GND	N	9.5	29.6	46.0
1.966000	16.0	GND	N	9.6	30.0	46.0
2.834000	13.7	GND	N	9.6	32.3	46.0
3.630000	22.5	GND	N	9.6	23.5	46.0
4.398000	20.9	GND	N	9.6	25.1	46.0

ANNEX C: Persons involved in this testing

Test Name	Tester
Maximum Peak Output Power	An Ran, Tang Weisheng
Peak Power Spectral Density	An Ran, Tang Weisheng
Occupied 6dB Bandwidth	An Ran, Tang Weisheng
Band Edges Compliance	An Ran, Tang Weisheng
Transmitter Spurious Emission - Conducted	An Ran, Tang Weisheng
Transmitter Spurious Emission - Radiated	An Ran, Tang Weisheng
AC Powerline Conducted Emission	An Ran, Tang Weisheng

*****END OF REPORT*****