



TEST REPORT

No. I22N01500-WLAN 2.4GHz

BLU Products, Inc.

Smart Phone

Model Name: B1550VL

with

Hardware Version: V1.0

Software Version: BLU_B1550VL_V12.0.02.05.02.17_FSec

FCC ID: YHLBLUB1550VL

Issued Date: 2022-09-09

Designation Number: CN1210

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

Test Laboratory:

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1. Summary of Test Report

1.1. Test Items

Description	Smart Phone
Model Name	B1550VL
Applicant's name	BLU Products, Inc.
Manufacturer's Name	BLU Products, Inc.

1.2. Test Standards

FCC Part15-2019; ANSI C63.10-2013

1.3. Test Result

Pass

Please refer to 5.2 Test Results.

1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China

1.5. Project data

Testing Start Date:	2022-07-14
Testing End Date:	2022-08-19

1.6. Signature

Lin Kanfeng
(Prepared this test report)

An Ran
(Reviewed this test report)

Zhang Bojun
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: BLU Products, Inc.
Address: 10814 NW 33rd St # 100 Doral, FL 33172, USA
Contact Person Zeng wei
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Telephone: 305.715.7171
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2.2. Manufacturer Information

Company Name: BLU Products, Inc.
Address: 10814 NW 33rd St # 100 Doral, FL 33172, USA
Contact Person Zeng wei
E-Mail zwei@ctasiasz.com
Telephone: 305.715.7171
Fax: 305.436.8819



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

3.1. About EUT

Description	Smart Phone
Model Name	B1550VL
RF Protocol	IEEE 802.11 b/g/n20
Operating Frequency	2412MHz~2462MHz
Number of Channels	11
Antenna Type	Integrated
Antenna Gain	2.4 dBi
Power Supply	3.85V DC by Battery
FCC ID	YHLBLUB1550VL
Condition of EUT as received	No abnormality in appearance

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version	Receive Date
UT01aa	350547790004382	V1.0	BLU_B1550VL_V12. 0.02.05.02.17_FSec	2022-07-12

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

3.3. Internal Identification of AE

AE ID*	Description	SN
AE1	Battery	/
AE2	Charger	/
AE1		
Model		TN-BP4000N1
Manufacturer		Guangdong Fenghua New Energy Co.,Ltd.
Capacity		4000mAh
Nominal Voltage		3.85V
AE2		
Model		TN-050200U3
Manufacturer		Guangdong Beicom Electronics Co.,Ltd.

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

3.4. General Description

The Equipment under Test (EUT) is a model of Smart Phone with integrated antenna and battery. It consists of normal options: Lithium Battery and Charger. 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	2019
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013



5. Test Results

5.1. Testing Environment

Normal Temperature: 15~35°C

Relative Humidity: 20~75%

5.2. Test Results

No	Test cases	Sub-clause of Part 15C	Verdict
0	Antenna Requirement	15.203	P
1	Maximum 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	Conducted Emission	15.247 (d)	P

See **ANNEX A** for details.

5.3. Statements

SAICT has evaluated the test cases requested by the applicant/manufacture as listed in section 5.2 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2.

Disclaimer:

A. After confirmation with the customer, the sample information provided by the customer may affect the validity of the measurement results in this report, and the impact and consequences arising therefrom shall be borne by the customer.

B. The samples in this report are provided by the customer, and the test results are only applicable to the samples received.



6. Test Equipments Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due Date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2022-12-29	1 year
2	Power Sensor	U2021XA	MY55430013	Keysight	2022-12-29	1 year
3	Data Acquisiton	U2531A	TW55443507	Keysight	/	/

Test software

No.	Equipment	Manufacturer	Version
1	TechMgr Software	CAICT	2.1.1

EUT is 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



7. Laboratory Environment

Shielded room

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω



8. Measurement Uncertainty

Test Name	Uncertainty ($k=2$)	
1. RF Output Power - Conducted	1.32dB	
2. Power Spectral Density - Conducted	1.32dBm/MHz	
3. Occupied channel bandwidth - Conducted	4.56kHz	
4. Transmitter Spurious Emission - Conducted	$30\text{MHz} \leq f < 1\text{GHz}$	1.41dB
	$1\text{GHz} \leq f < 7\text{GHz}$	1.92dB
	$7\text{GHz} \leq f < 13\text{GHz}$	2.31dB
	$13\text{GHz} \leq f \leq 26\text{GHz}$	2.61dB



ANNEX A: Detailed Test Results

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 2.4 dBi. The RF transmitter uses an integrate antenna without connector.



A.1 Maximum Output Power

Measurement of method :See ANSI C63.10-Clause 11.9.2.3.2

Method AVGP-M-G is a measurement using a gated RF average power meter.

Alternatively, measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Measurement Limit:

Standard	Limit (dBm)	E.I.R.P Limit (dBm)
FCC CRF Part 15.247(b)	< 30	< 36

Measurement Results:

802.11b/g mode

Mode	Date Rate (Mbps)	Test Result (dBm)		
		2412MHz (CH1)	2437MHz (CH6)	2462MHz (CH11)
802.11b	1	19.75	19.34	19.22
	2	/	19.28	/
	5.5	/	19.24	/
	11	/	19.21	/
802.11g	6	18.18	17.86	17.73
	9	/	17.83	/
	12	/	17.82	/
	18	/	17.78	/
	24	/	17.75	/
	36	/	17.71	/
	48	/	17.67	/
	54	/	17.65	/

802.11n HT20 mode

Mode	Date Rate (Index)	Test Result (dBm)		
		2412MHz (CH1)	2437MHz (CH6)	2462MHz (CH11)
802.11n HT20	MCS 0	18.12	17.82	17.68
	MCS 1	/	17.79	/
	MCS 2	/	17.74	/
	MCS 3	/	17.73	/
	MCS 4	/	17.69	/
	MCS 5	/	17.67	/
	MCS 6	/	17.64	/
	MCS 7	/	17.60	/



Note: The data rate 1Mbps (11b mode), 6Mbps (11g mode) and MCS0 (11n mode) are selected as the Worst-Case. The following cases and test graphs are performed with this condition. The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

E.I.R.P

Mode	Channel	Frequency (MHz)	E.I.R.P (dBm)	Conclusion
802.11b	CH 1	2412	22.15	P
	CH 6	2437	21.74	P
	CH 11	2462	21.62	P
802.11g	CH 1	2412	20.58	P
	CH 6	2437	20.26	P
	CH 11	2462	20.13	P
802.11n HT20	CH 1	2412	20.52	P
	CH 6	2437	20.22	P
	CH 11	2462	20.08	P

Note: E.I.R.P value= Conducted values (with conducted samples) + Antenna Gain.



A.2 Peak Power Spectral Density

Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(e)	< 8 dBm/3 kHz

Measurement Results:

Mode	Channel	Frequency (MHz)	Test Results (dBm)		Conclusion
802.11b	CH 1	2412	Fig.1	-3.63	P
	CH 6	2437	Fig.2	-3.90	P
	CH 11	2462	Fig.3	-3.63	P
802.11g	CH 1	2412	Fig.4	-7.55	P
	CH 6	2437	Fig.5	-7.34	P
	CH 11	2462	Fig.6	-7.35	P
802.11n HT20	CH 1	2412	Fig.7	-6.76	P
	CH 6	2437	Fig.8	-7.96	P
	CH 11	2462	Fig.9	-7.70	P

See below for test graphs.

Conclusion: PASS

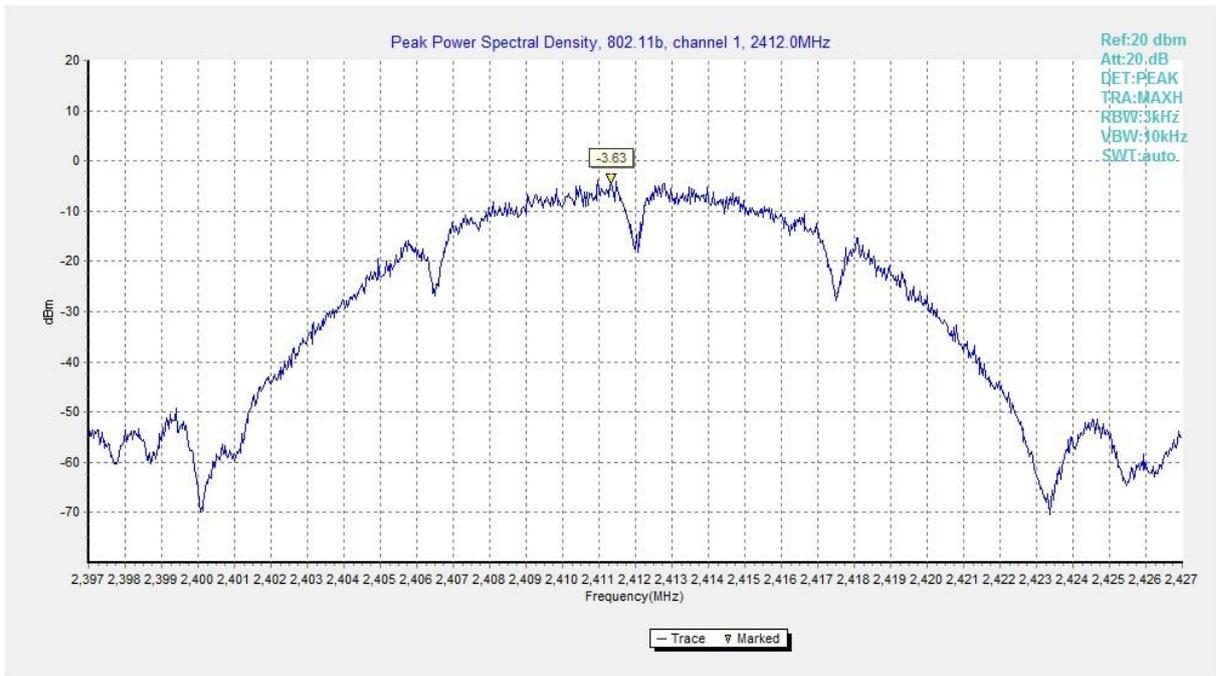


Fig.1 Power Spectral Density (802.11b, CH 1)

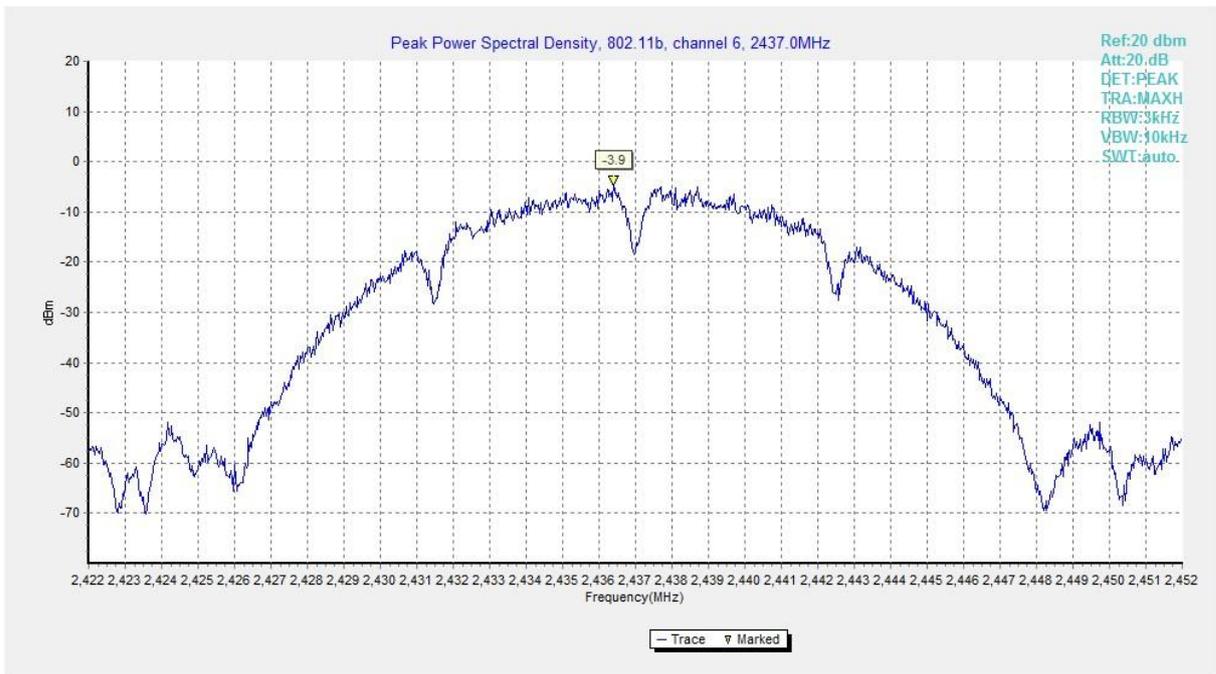


Fig.2 Power Spectral Density (802.11b, CH 6)

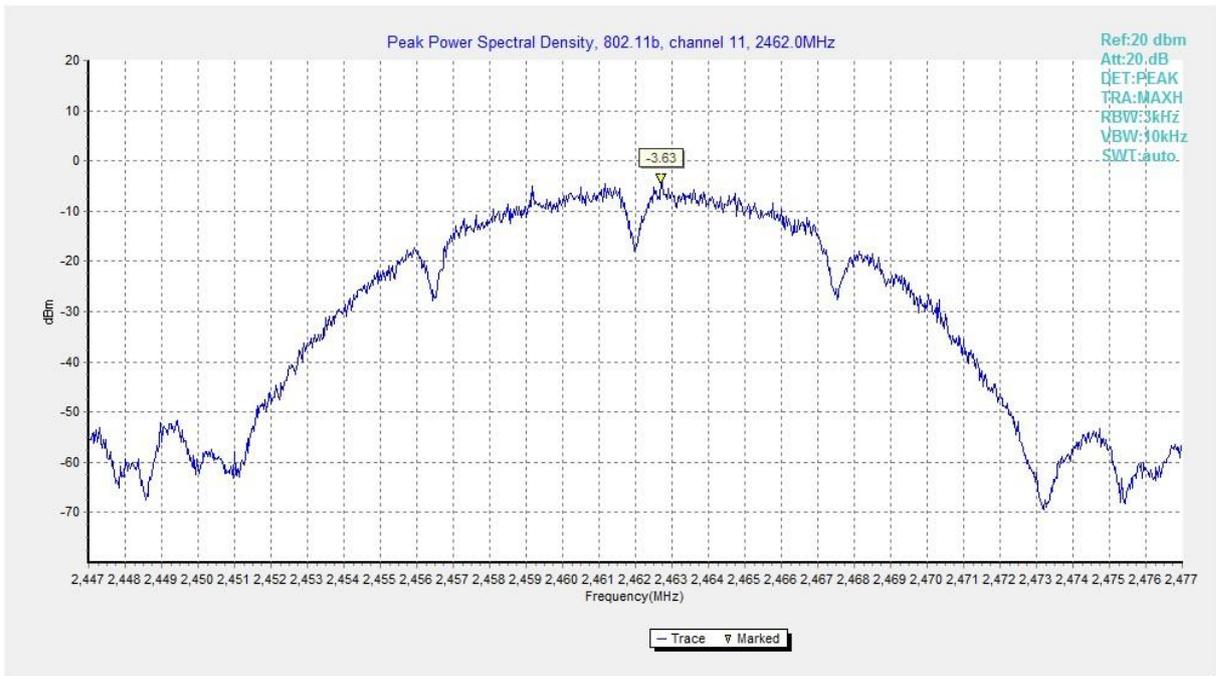


Fig.3 Power Spectral Density (802.11b, CH 11)

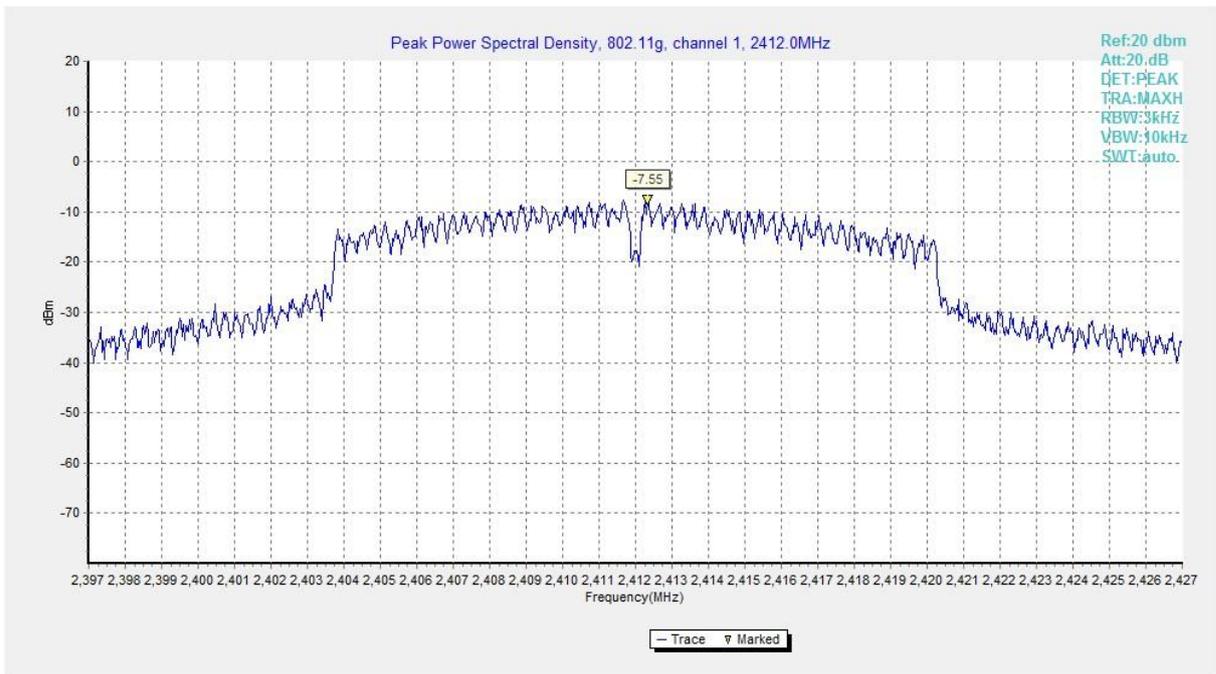


Fig.4 Power Spectral Density (802.11g, CH 1)

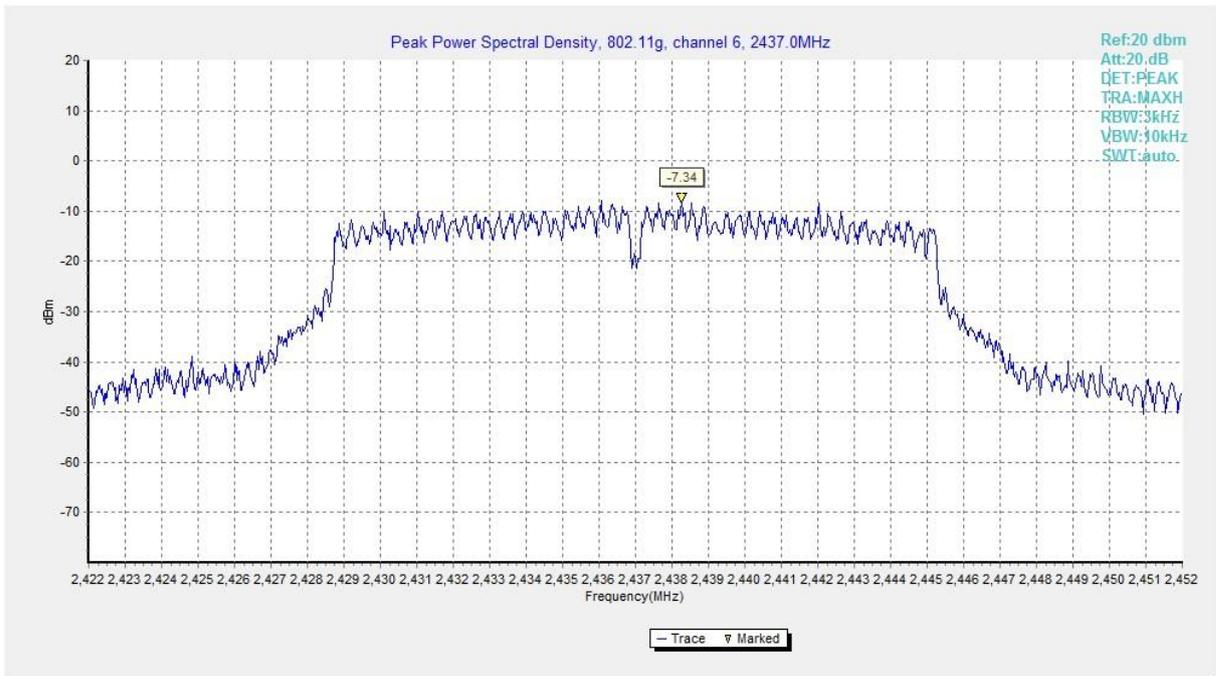


Fig.5 Power Spectral Density (802.11g, CH 6)

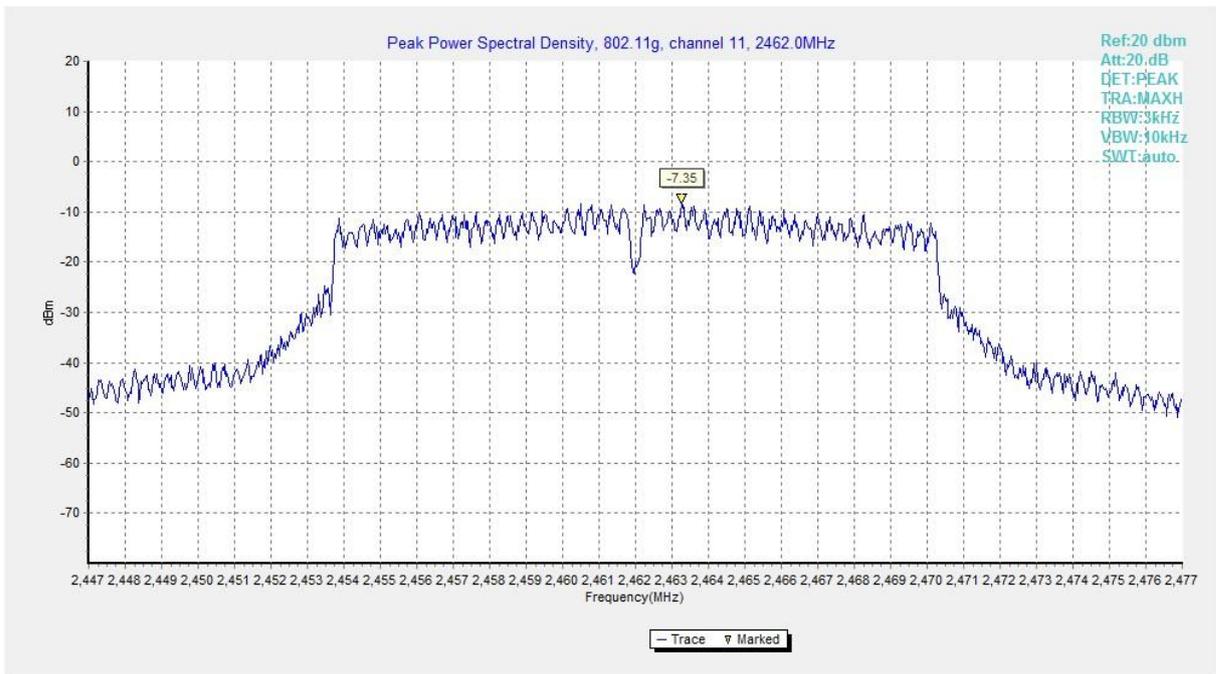


Fig.6 Power Spectral Density (802.11g, CH 11)

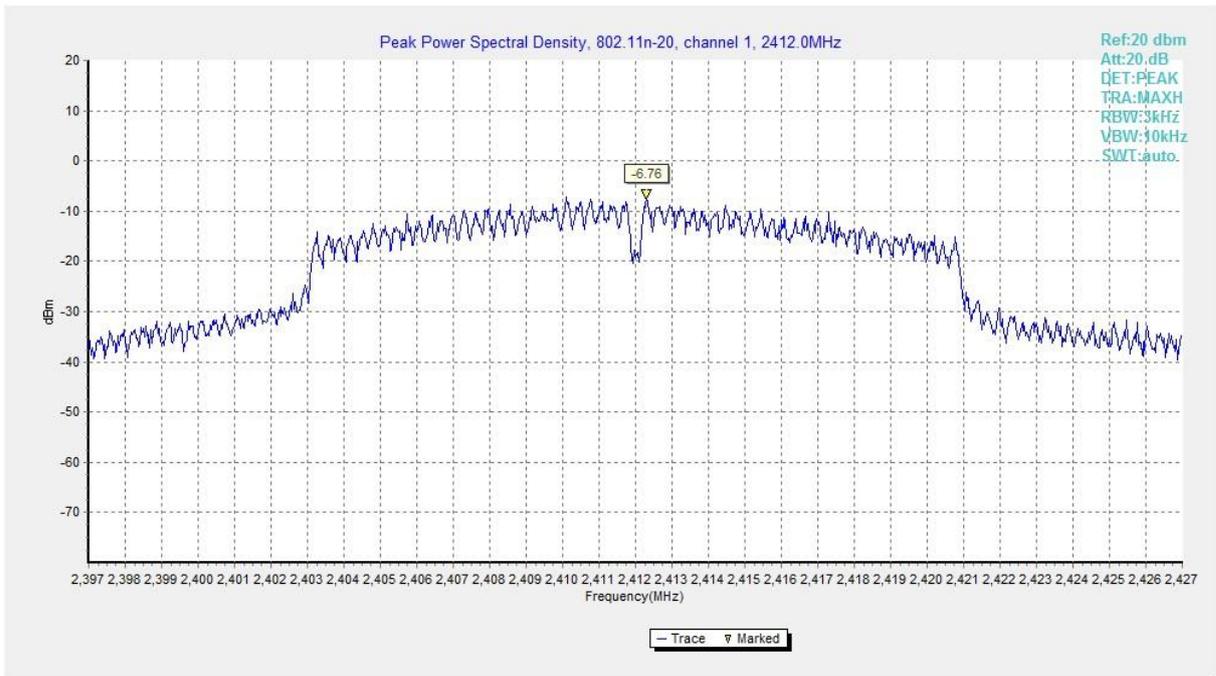


Fig.7 Power Spectral Density (802.11n HT20, CH 1)

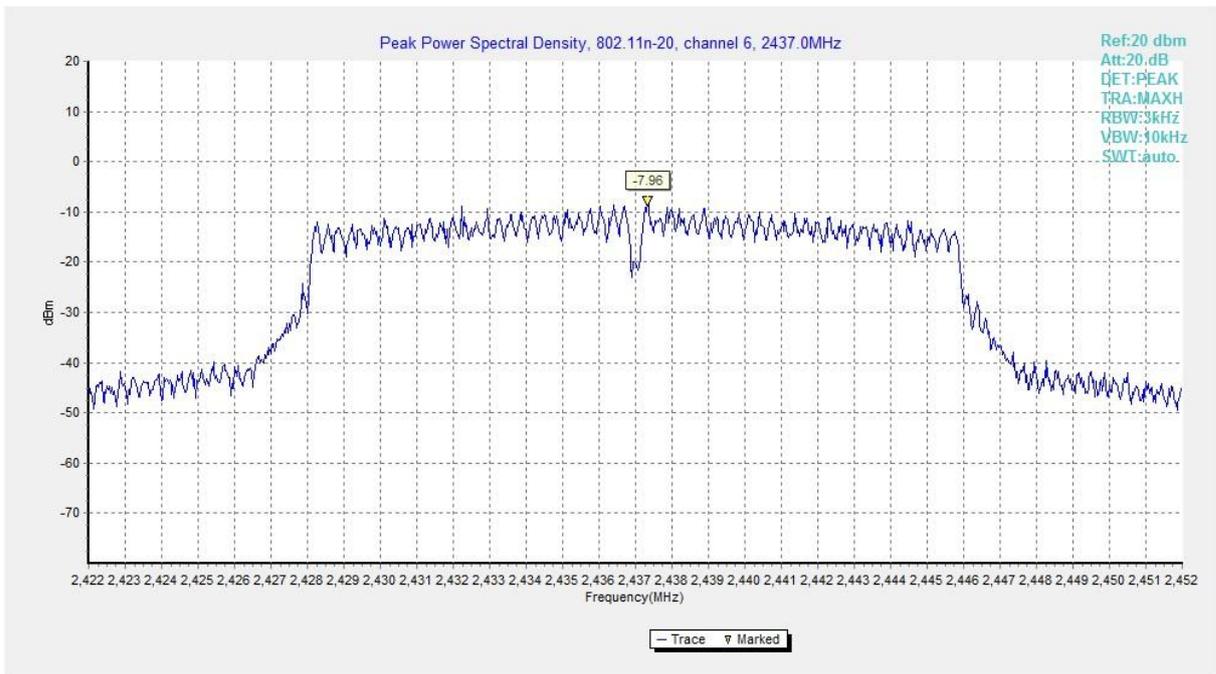


Fig.8 Power Spectral Density (802.11n HT20, CH 6)

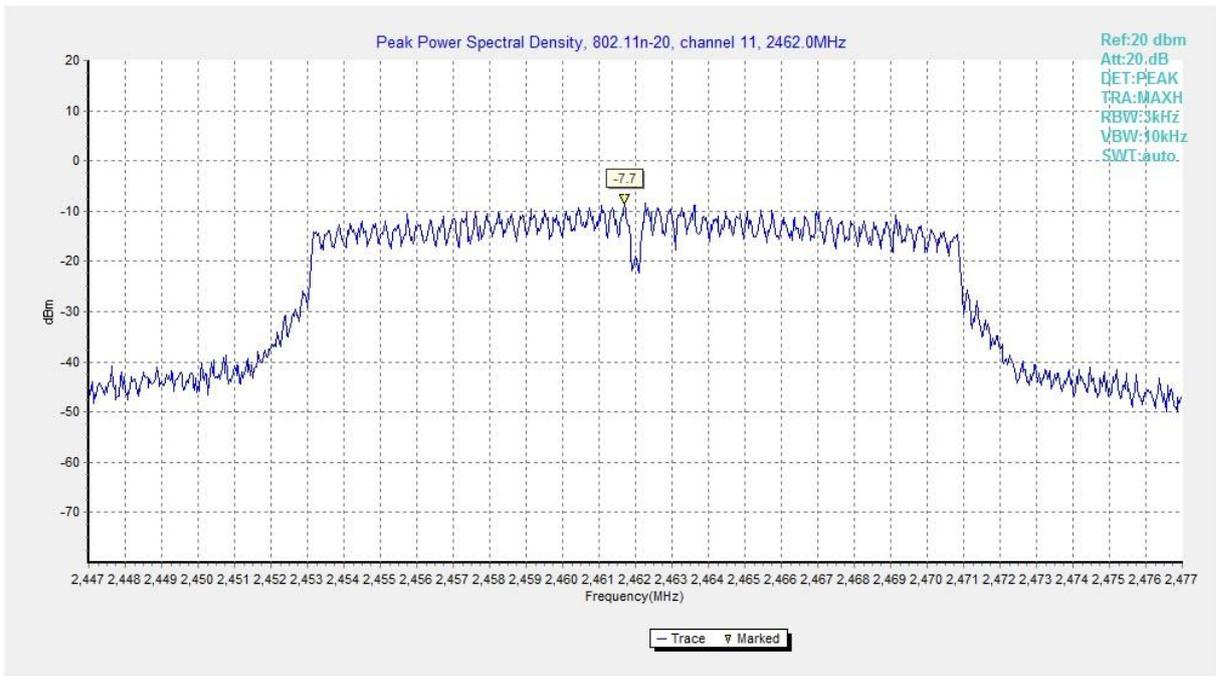


Fig.9 Power Spectral Density (802.11n HT20, CH 11)



A.3 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

Measurement Result:

Mode	Channel	Frequency (MHz)	Test Results (kHz)		Conclusion
802.11b	CH 1	2412	Fig.10	8550	P
	CH 6	2437	Fig.11	8100	P
	CH 11	2462	Fig.12	8150	P
802.11g	CH 1	2412	Fig.13	15700	P
	CH 6	2437	Fig.14	15250	P
	CH 11	2462	Fig.15	15700	P
802.11n HT20	CH 1	2412	Fig.16	16100	P
	CH 6	2437	Fig.17	15100	P
	CH 11	2462	Fig.18	16000	P

See below for test graphs.

Conclusion: PASS



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

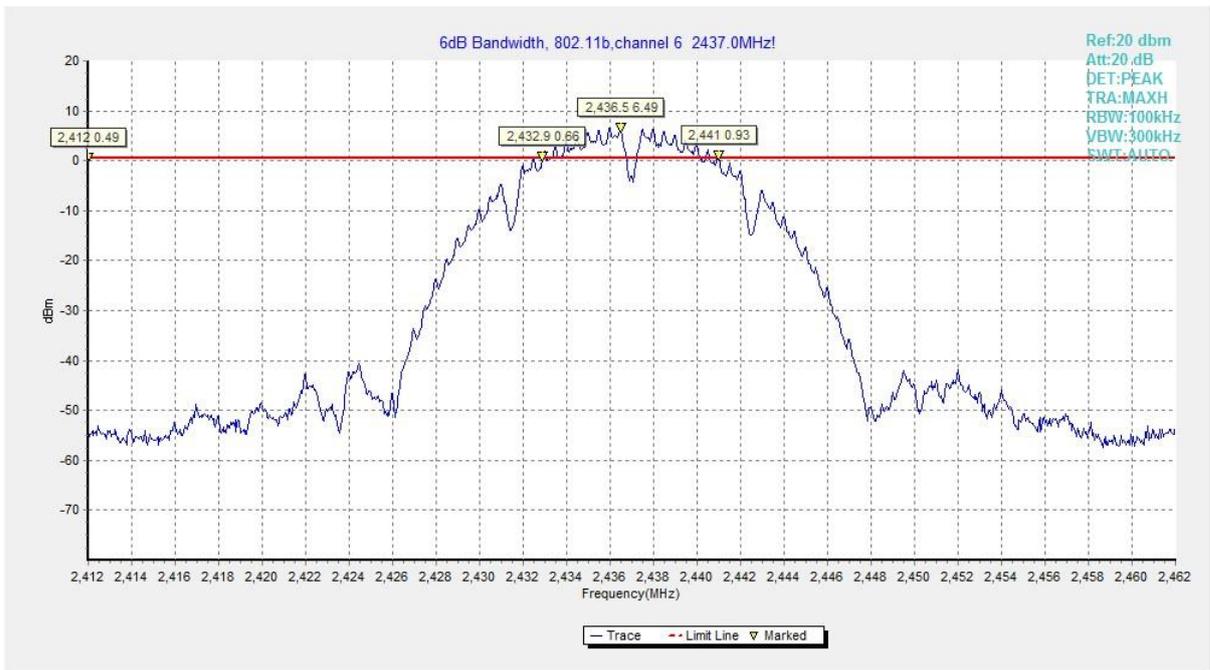


Fig.11 6dB Bandwidth (802.11b, CH 6)

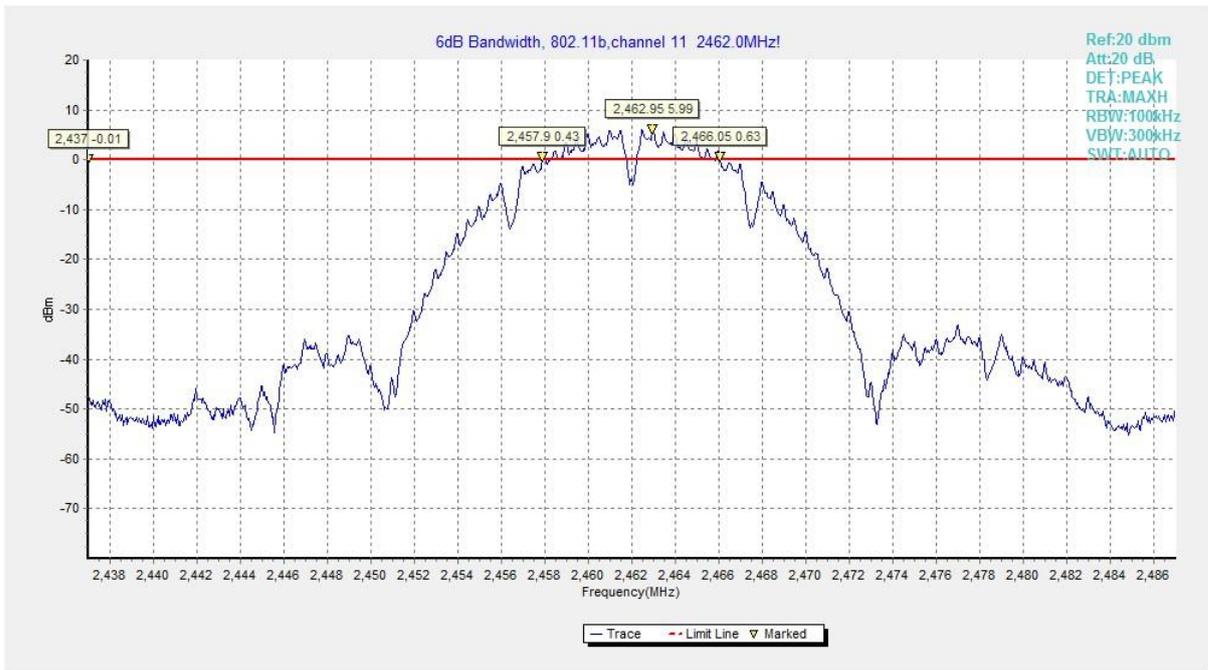


Fig.12 6dB Bandwidth (802.11b, CH 11)

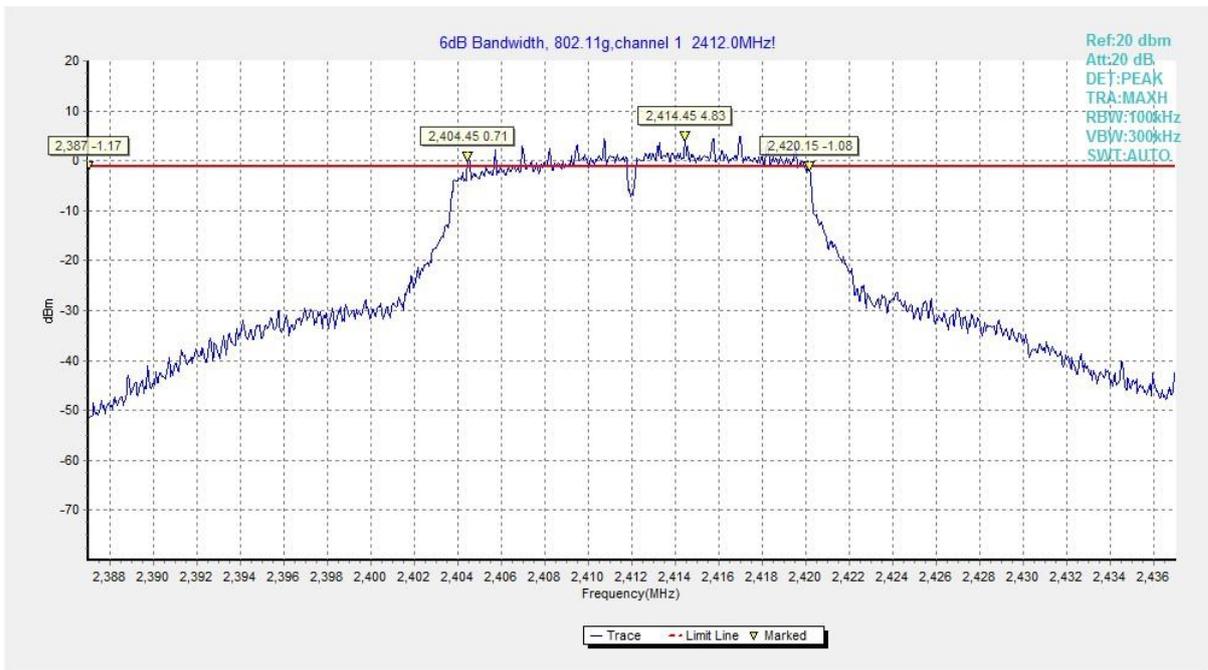


Fig.13 6dB Bandwidth (802.11g, CH 1)

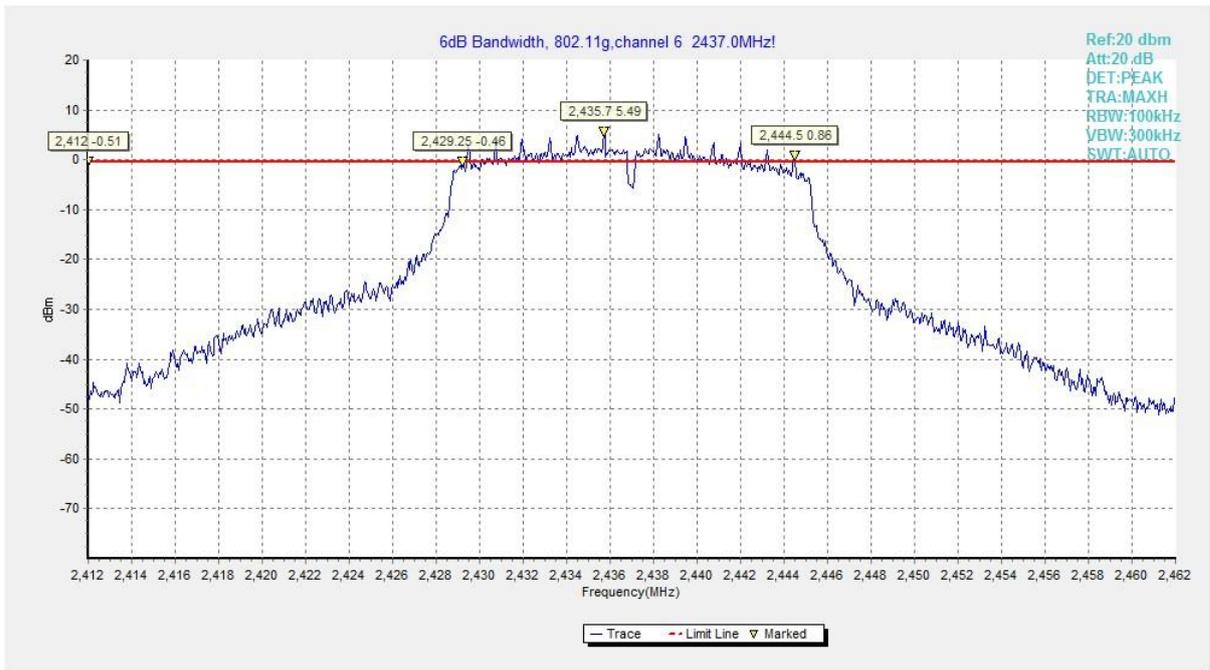


Fig.14 6dB Bandwidth (802.11g, CH 6)

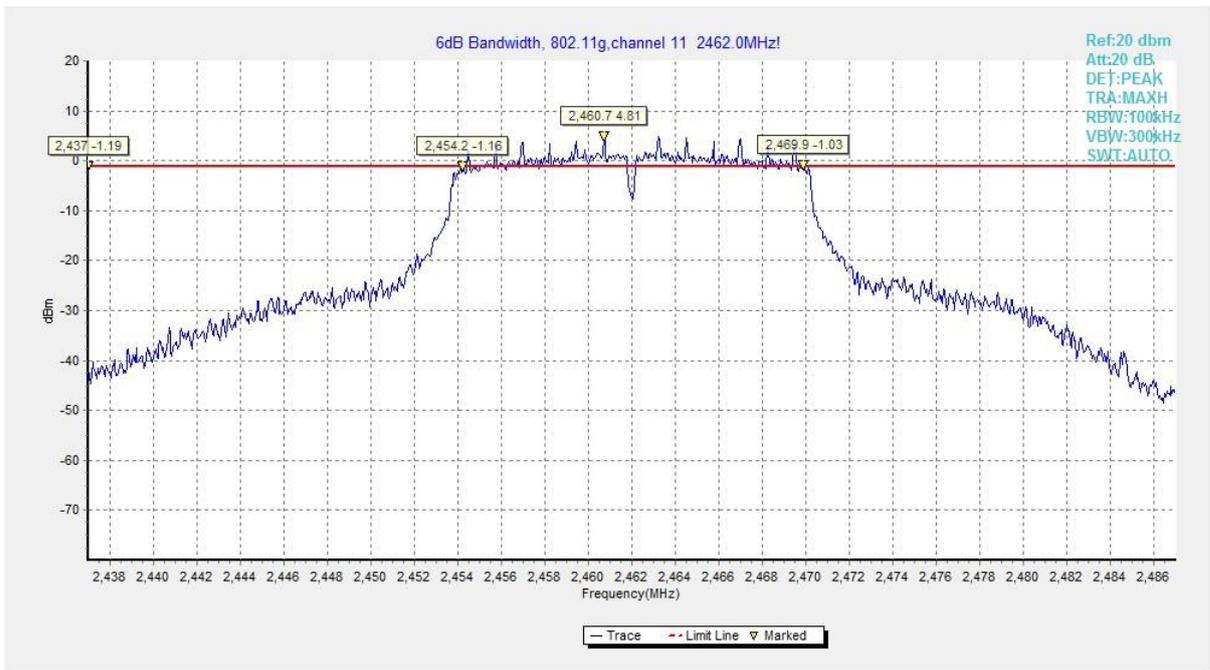


Fig.15 6dB Bandwidth (802.11g, CH 11)

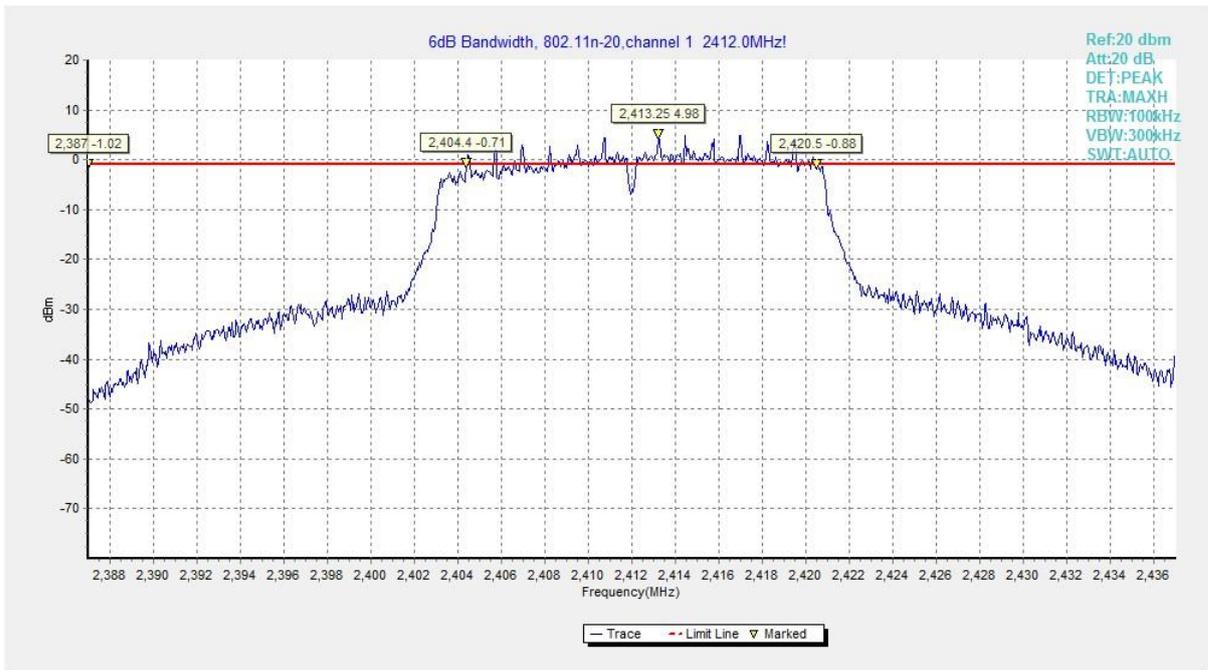


Fig.16 6dB Bandwidth (802.11n HT20, CH 1)

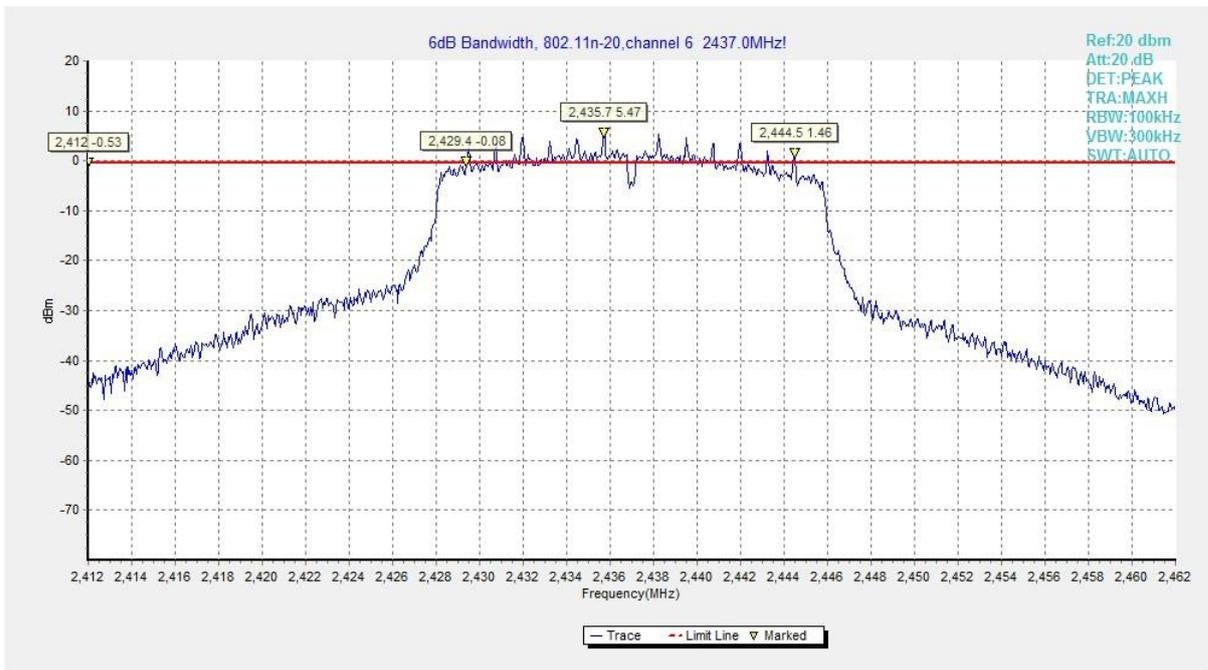


Fig.17 6dB Bandwidth (802.11n HT20, CH 6)

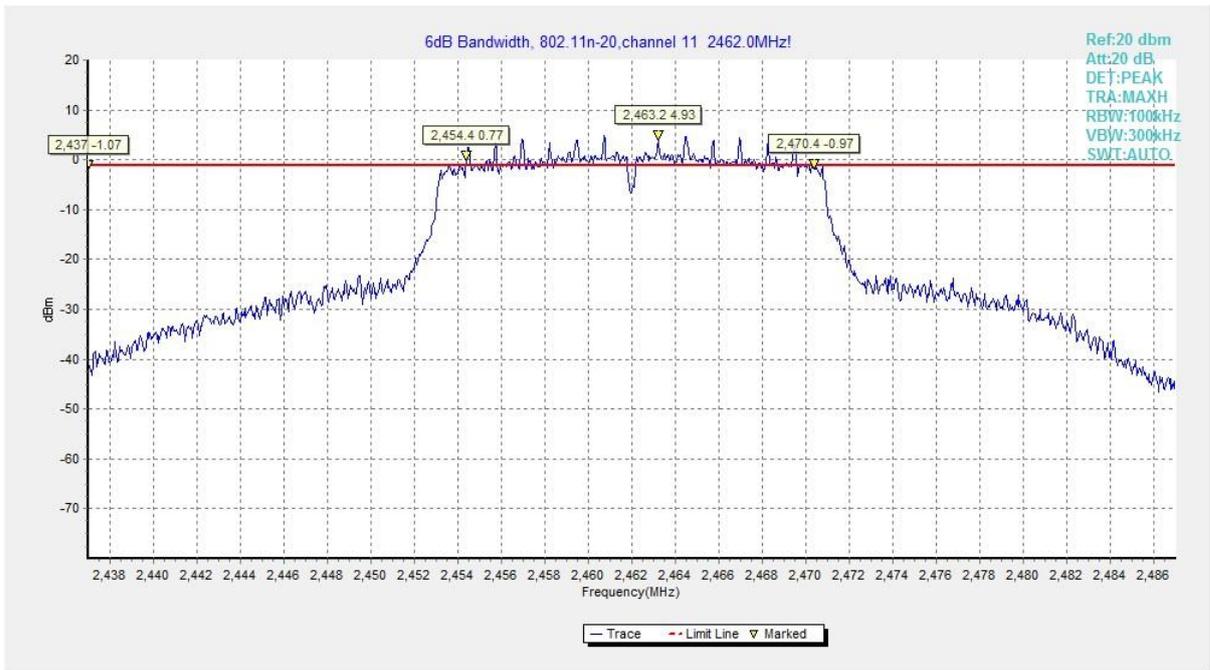


Fig.18 6dB Bandwidth (802.11n HT20, CH 11)



A.4 Band Edges Compliance

Measurement Limit:

Standard	Limit (dB)
FCC 47 CFR Part 15.247 (d)	> 20

Measurement Result:

Mode	Channel	Frequency (MHz)	Test Results (dB)		Conclusion
802.11b	CH 1	2412	Fig.19	50.10	P
	CH 11	2462	Fig.20	56.84	P
802.11g	CH 1	2412	Fig.21	35.40	P
	CH 11	2462	Fig.22	43.59	P
802.11n HT20	CH 1	2412	Fig.23	33.35	P
	CH 11	2462	Fig.24	42.22	P

See below for test graphs.

Conclusion: PASS



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



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

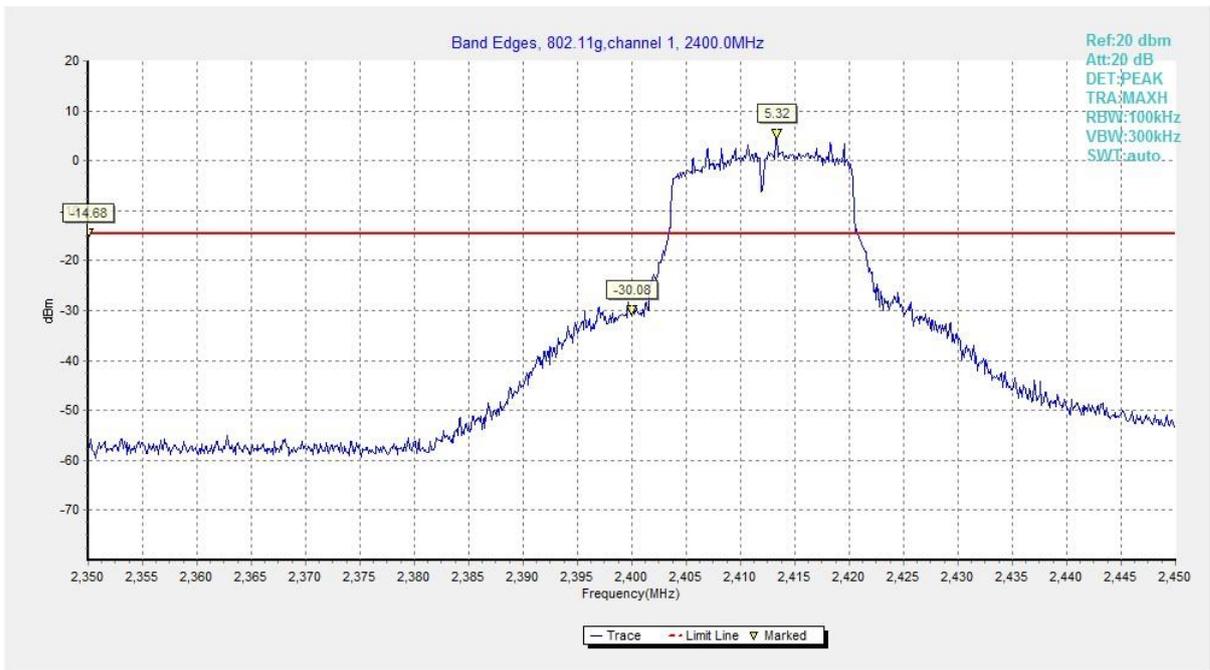


Fig.21 Band Edges (802.11g, CH 1)



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

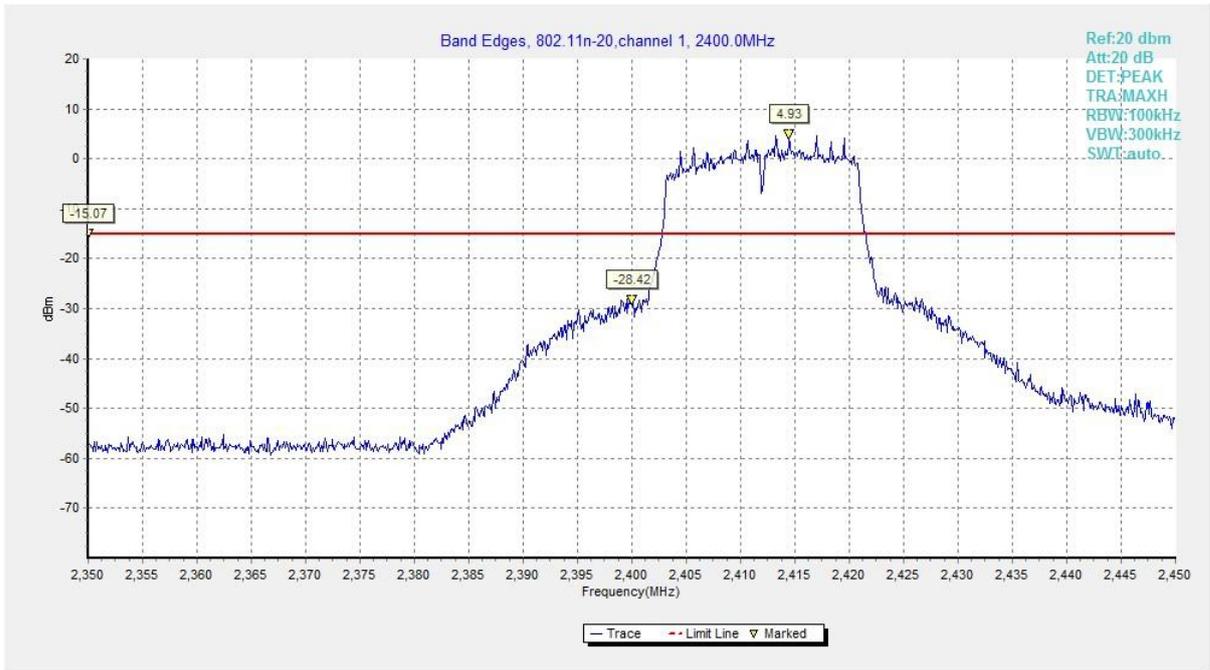


Fig.23 Band Edges (802.11n HT20, CH 1)

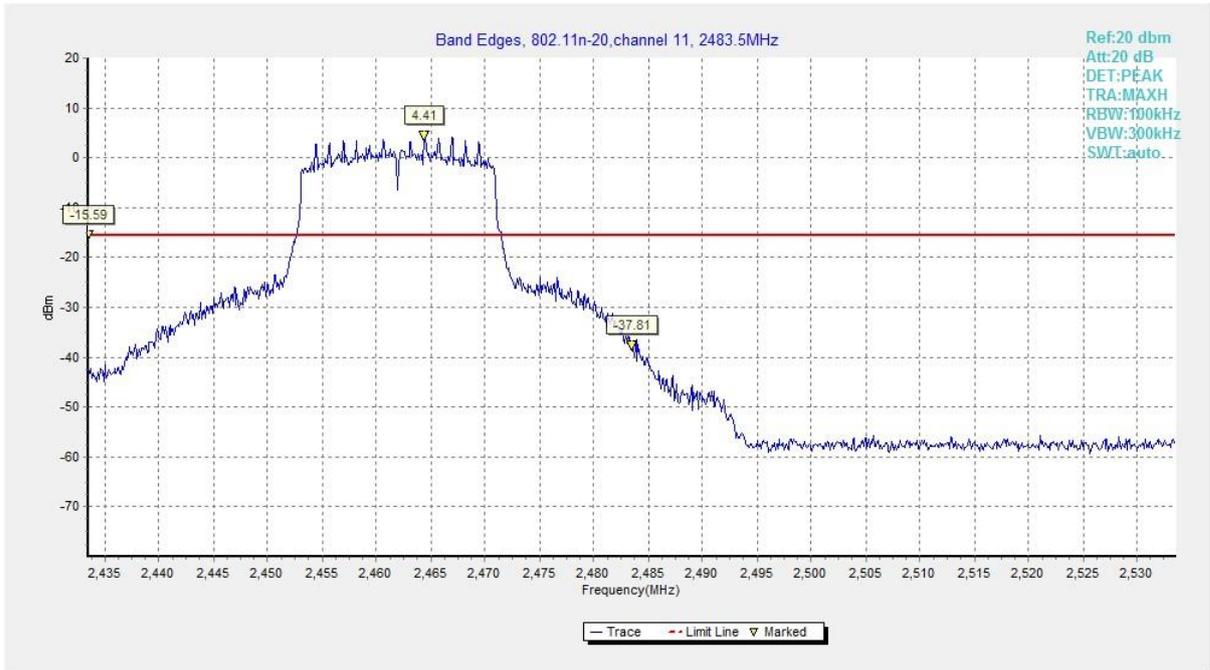


Fig.24 Band Edges (802.11n HT20, CH 11)



A.5 Conducted Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	30dB below peak output power in 100kHz bandwidth

Measurement Results:

Mode	Channel	Frequency (MHz)	Frequency Range	Test Results	Conclusion
802.11b	CH 1	2412	30MHz-26GHz	Fig.25	P
	CH 6	2437	30MHz-26GHz	Fig.26	P
	CH 11	2462	30MHz-26GHz	Fig.27	P
802.11g	CH 1	2412	30MHz-26GHz	Fig.28	P
	CH 6	2437	30MHz-26GHz	Fig.29	P
	CH 11	2462	30MHz-26GHz	Fig.30	P
802.11n HT20	CH 1	2412	30MHz-26GHz	Fig.31	P
	CH 6	2437	30MHz-26GHz	Fig.32	P
	CH 11	2462	30MHz-26GHz	Fig.33	P

See below for test graphs.

Conclusion: PASS

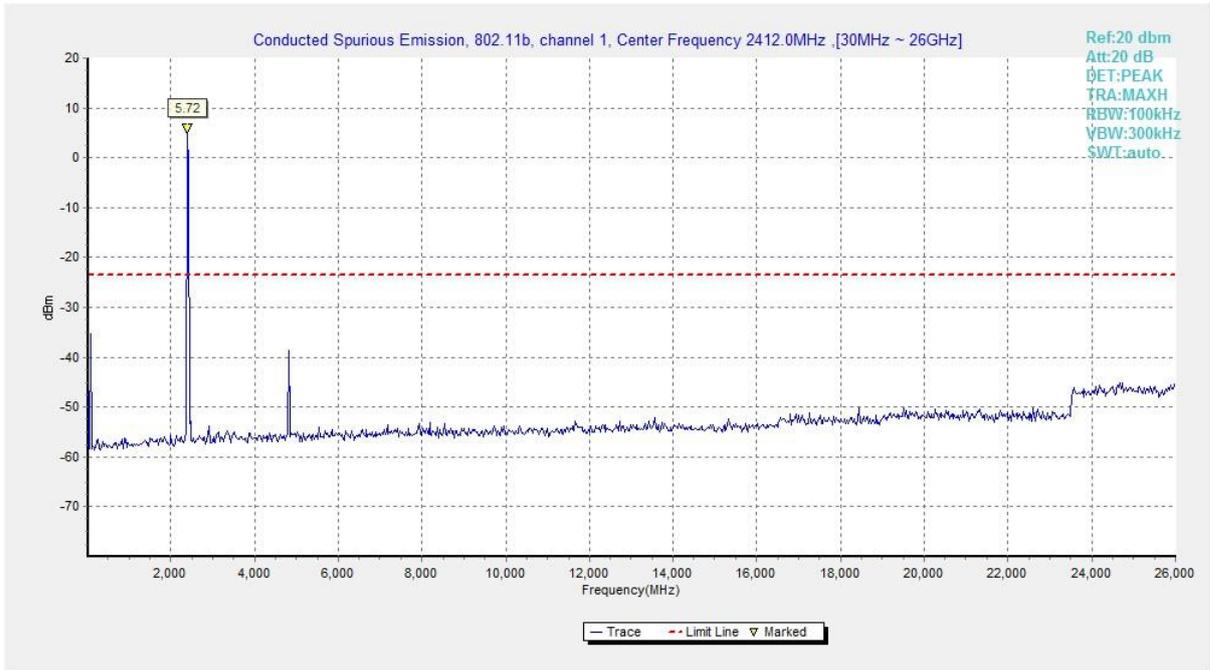


Fig.25 Conducted Spurious Emission (802.11b, CH1)

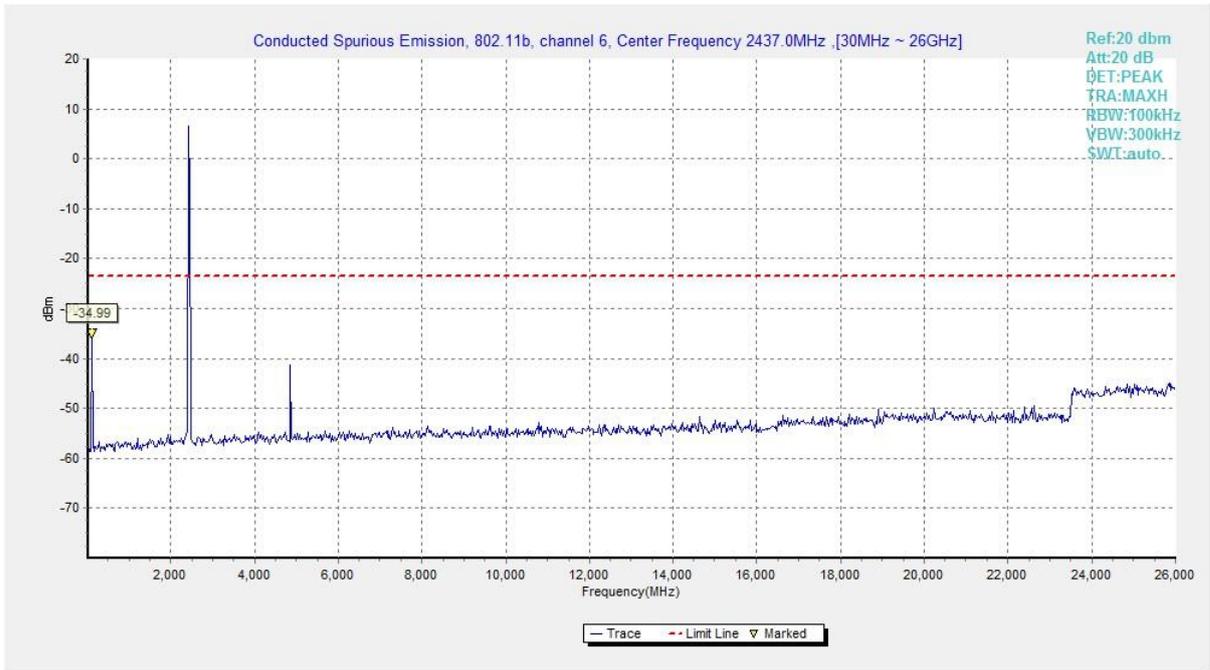


Fig.26 Conducted Spurious Emission (802.11b, CH6)

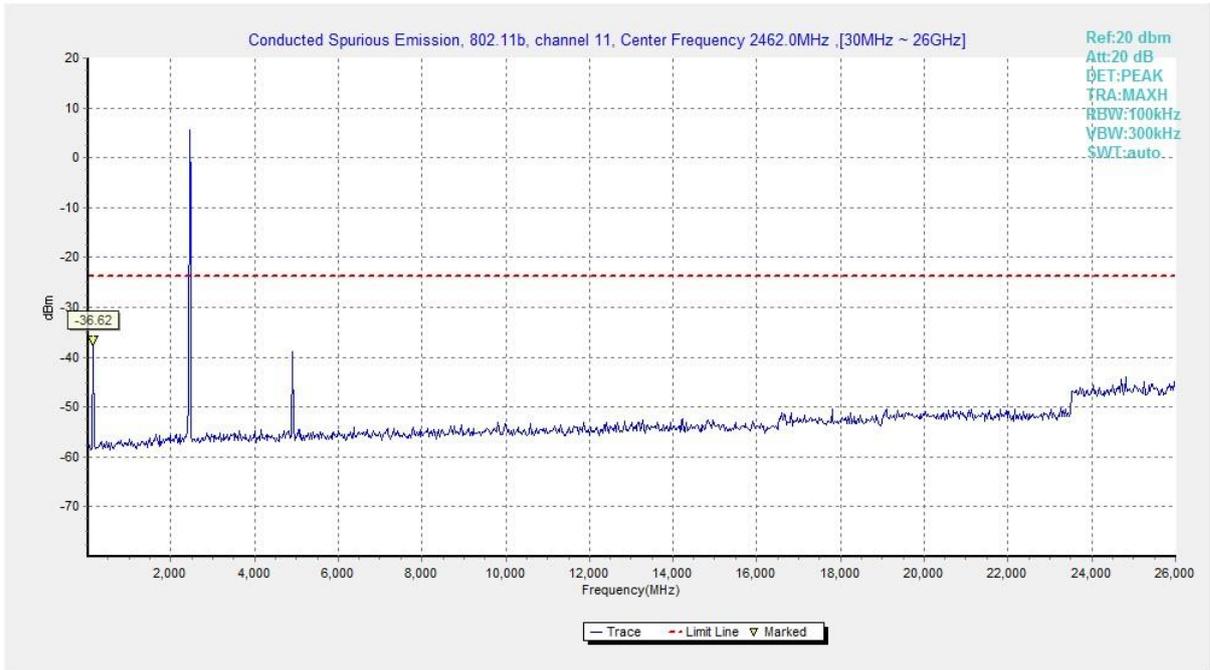


Fig.27 Conducted Spurious Emission (802.11b, CH11)

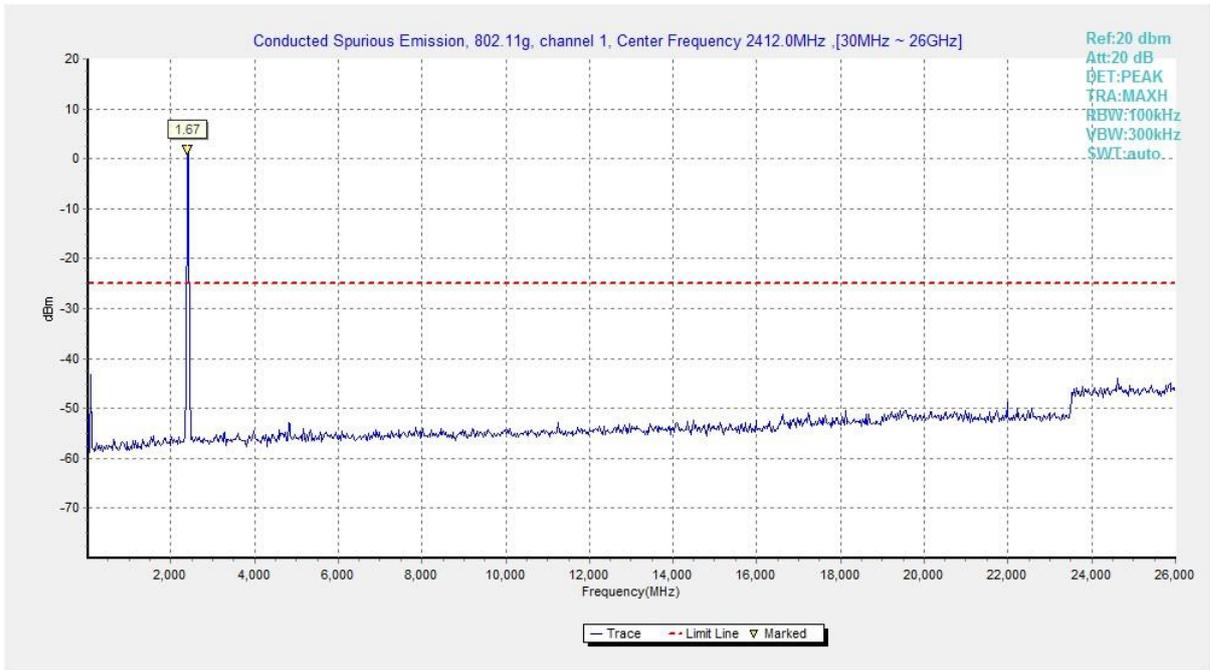


Fig.28 Conducted Spurious Emission (802.11g, CH1)

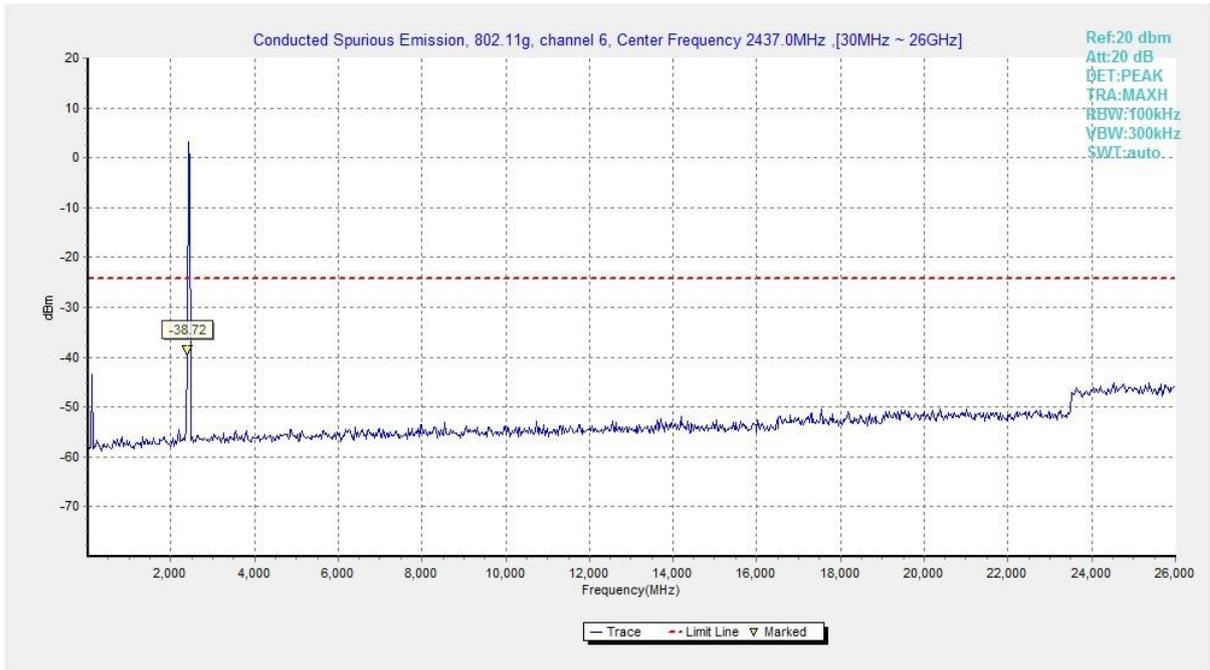


Fig.29 Conducted Spurious Emission (802.11g, CH6)

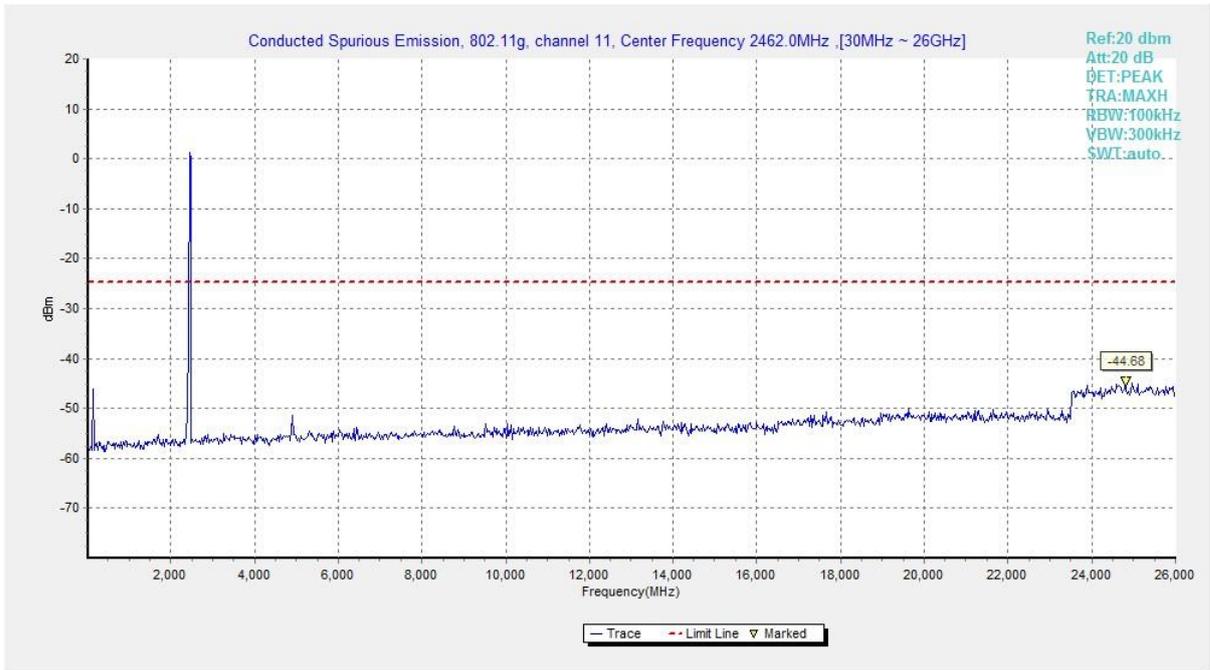


Fig.30 Conducted Spurious Emission (802.11g, CH11)

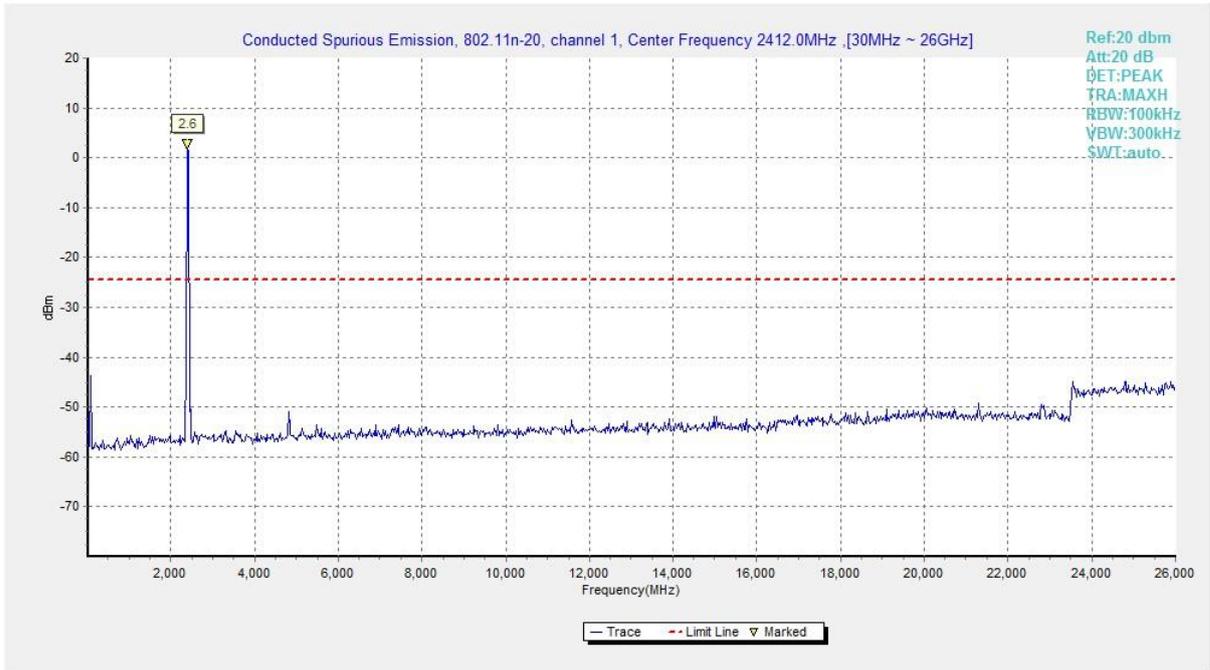


Fig.31 Conducted Spurious Emission (802.11n HT20, CH1)

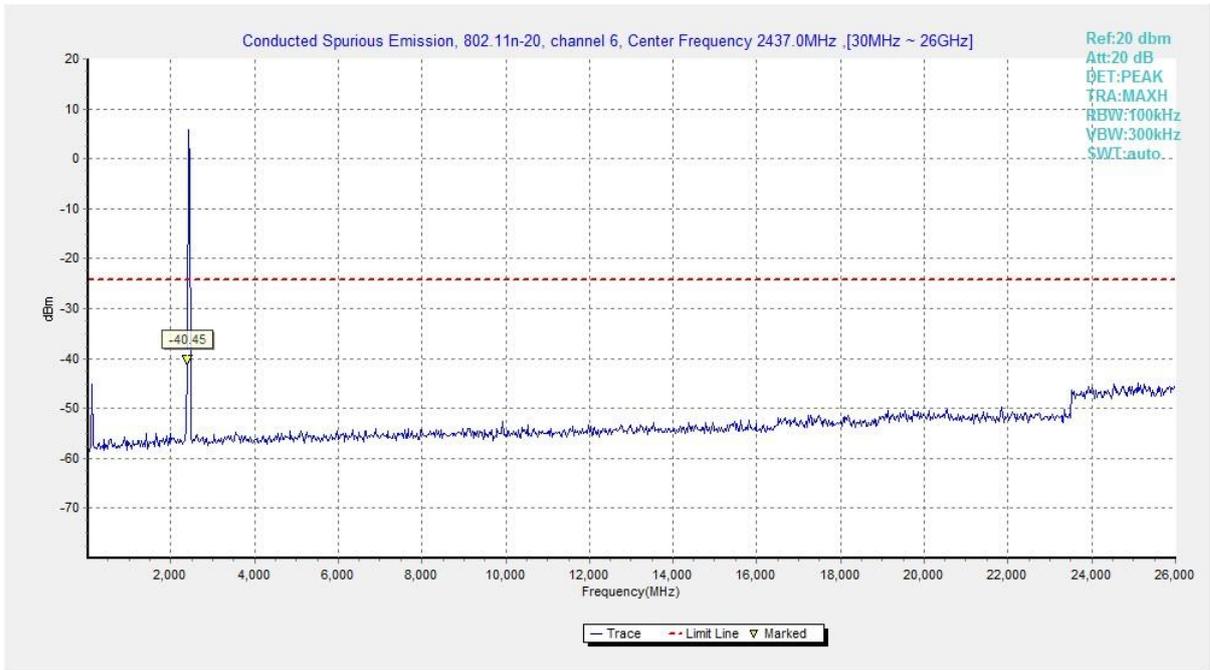


Fig.32 Conducted Spurious Emission (802.11n HT20, CH6)

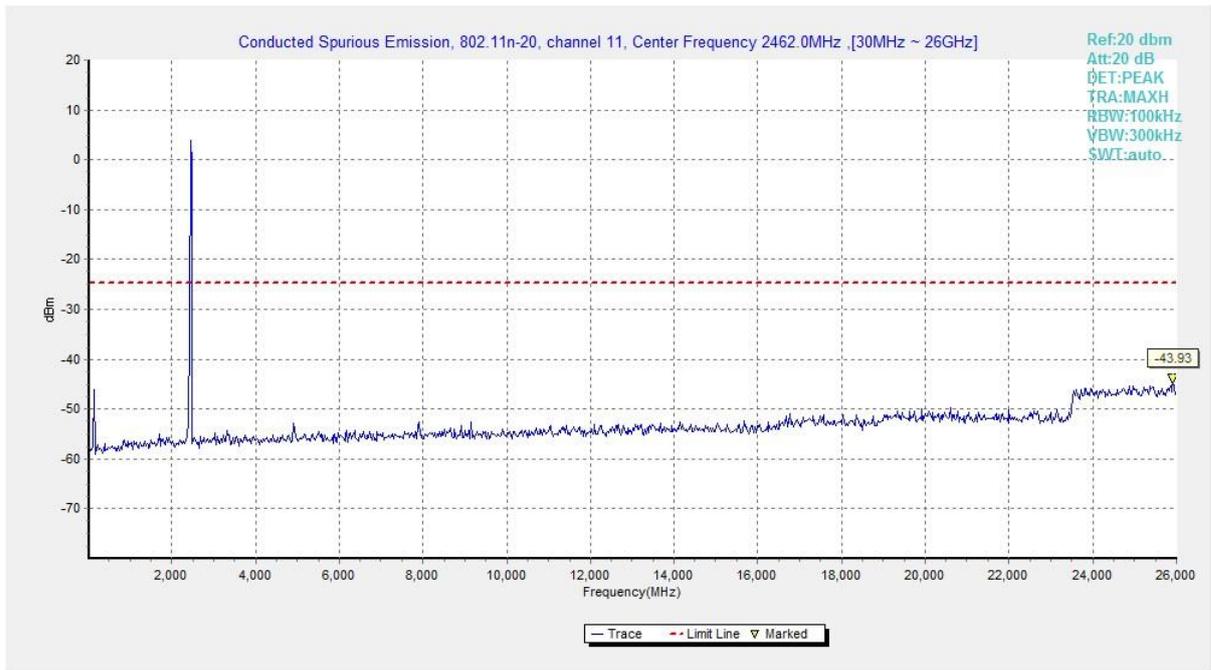


Fig.33 Conducted Spurious Emission (802.11n HT20, CH11)

END OF REPORT