FCC PART 15C
TEST REPORT
No. I18Z61384-IOT01

for

LG Electronics USA, Inc.

Multi-band GSM/WCDMA/LTE phone with Bluetooth, WLAN

LM-X410YC, LMX410YC, X410YC

with

FCC ID: ZNFX410YC

Hardware Version: Rev.1.0

Software Version: V09p

Issued Date: 2018-09-05

TESTING
NVLAP LAB CODE 600118-0

Note:

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The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

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REPORT HISTORY

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I18Z61384-IOT01	Rev.0	1st edition	2018-08-23
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1. Test Laboratory

1.1. Testing Location

Location 1:CTTL(Huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

Location 2:CTTL(Shouxiang)

Address: No. 51 Shouxiang Science Building, Xueyuan Road, Haidian District, Beijing, P. R. China100191

1.2. Testing Environment

Normal Temperature: 15-35℃

Extreme Temperature: -10/+55℃

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2018-04-08

Testing End Date: 2018-08-23

1.4. Signature

Jiang Xue

(Prepared this test report)

Zheng Wei

(Reviewed this test report)

Gao Hong

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	LG Electronics USA, Inc.
Address:	1000 Sylvan Avenue, Englewood Cliffs NJ 07632
City:	Englewood
Postal Code:	/
Country:	USA
Telephone:	/
Fax:	/

2.2. Manufacturer Information

Company Name:	LG Electronics Inc.
Address:	LG Twin Tower 20, Yeouido-dong, Yeongdeungpo-gu Seoul, Korea 150-721
City:	Seoul
Postal Code:	/
Country:	Korea
Telephone:	/
Fax:	/

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

3.1. About EUT

Description	Multi-band GSM/WCDMA/LTE phone with Bluetooth, WLAN
Model name	LM-X410YC, LMX410YC, X410YC
FCC ID	ZNFX410YC
IC ID	/
With WLAN Function	Yes
Frequency Range	ISM 2400MHz~2483.5MHz
Type of Modulation	DSSS/CCK/OFDM
Number of Channels	11
Antenna	Integral Antenna
MAX Conducted Power	23.04 dBm(OFDM)
Power Supply	3.8V DC by Battery

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	359419090000224	Rev.1.0	V09p
EUT2	359419090000505	Rev.1.0	V09p

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

3.3. Internal Identification of AE

AE ID*	Description	SN	Remarks
AE1	Battery	/	/
AE2	Battery	/	/
AE3	Charger	/	/
AE4	USB cable	/	/

AE1

Model	BL-T36
Manufacturer	Shenzhen BYD Lithium Battery Company Limited
Capacitance	3000mAh
Nominal voltage	3.85V

AE2

Model	BL-T36
Manufacturer	TOCAD
Capacitance	3000mAh
Nominal voltage	3.85V

AE3

Model	EAY62768908
Manufacturer	Sunlin Electronics Co.,Ltd.
Length of cable	/

AE4	
Model	EAD62377927
Manufacturer	Ningbo
Length of cable	/

*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 Multi-band GSM/WCDMA/LTE phone with Bluetooth, WLAN with integrated antenna and inbuilt battery.
It has Bluetooth (EDR) function.
It consists of normal options: travel charger, USB cable and Phone.
Manual and specifications of the EUT were provided to fulfil the test.
Samples undergoing test were selected by the client.

3.5. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor k=2.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

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.	2016
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

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.247 (b)	/	BR
Peak Power Spectral Density	15.247 (e)	/	BR
Occupied 6dB Bandwidth	15.247 (a)	/	BR
Band Edges Compliance	15.247 (d)	/	BR
Transmitter Spurious Emission - Conducted	15.247 (d)	/	BR
Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	/	BR
AC Powerline Conducted Emission	15.107, 15.207	/	BR

Please refer to **ANNEX A** for detail.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by CTTL
NA	Not Applicable, The test was not applicable
BR	Re-use test data from basic model report.
F	Fail, The EUT does not comply with the essential requirements in the standard

5.2. Statements

The test cases as listed in section 5.1 of this report for the EUT specified in section 3 was performed by CTTL and according to the standards or reference documents listed in section 4.2 The EUT met all requirements of the standards or reference documents, and only the WLAN function was tested in this report.

5.3. Explanation of re-use of test data

The Equipment Under Test (EUT) model LM-X410YC (FCC ID: ZNFX410YC) is a variant product of LM-X410HC,LMX410HC,X410HC;LM-X410RC ,LMX410RC,X410RC (FCC ID: ZNFX410HC), according to the declaration of changes provided by the applicant and FCC KDB publication 484596, all the test results are derived from test report No. I18Z60356-IOT03, except the results of channel 12 and 13.

For detail differences between two models please refer the Declaration of Changes document.

For this report, all the test cases are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature 26℃

Voltage 3.8V

Humidity 44%

6. Test Facilities Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	1 year	2019-05-17
2	LISN	ENV216	101200	Rohde & Schwarz	1 year	2018-07-04
3	Test Receiver	ESCI	100344	Rohde & Schwarz	1 year	2019-02-28
4	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100376	Rohde & Schwarz	1 year	2018-12-27
2	BiLog Antenna	VULB9163	9163-514	Schwarzbeck	3 years	2020-02-23
3	EMI Antenna	3117	00139065	ETS-Lindgren	3 Years	2020-11-15
4	EMI Antenna	3116	2663	ETS-Lindgren	3 Years	2020-05-31
5	Vector Signal Analyzer	FSV	101047	Rohde & Schwarz	1 year	2019-07-27

7. Measurement Uncertainty

7.1. Maximum Output Power

Measurement Uncertainty: 0.387dB,k=1.96

7.2. Peak Power Spectral Density

8. Measurement Uncertainty: 0.705dB,k=1.96

8.1. DTS 6-dB Signal Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

8.2. Band Edges Compliance

9. Measurement Uncertainty : 0.62dB,k=1.96

9.1. Transmitter Spurious Emission

Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 2GHz	1.22
2GHz ≤ f ≤3.6GHz	1.22
3.6GHz ≤ f ≤8GHz	1.22
8GHz ≤ f ≤12.75GHz	1.51
12.75GHz ≤ f ≤26GHz	1.51
26GHz ≤ f ≤40GHz	1.59

Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	/
30MHz ≤ f ≤ 1GHz	5.40
1GHz ≤ f ≤18GHz	4.32
18GHz ≤ f ≤40GHz	5.26

9.2. AC Power-line Conducted Emission

10. Measurement Uncertainty : 3.08dB,k=2

ANNEX A: Detailed Test Results

A.1. Measurement Method

A.1.1. Conducted Measurements

Connect the EUT to the test system as Fig.A.1.1.1 shows.
Set the EUT to the required work mode.
Set the EUT to the required channel.
Set the Vector Signal Analyzer and start measurement.
Record the values. Vector Signal Analyzer

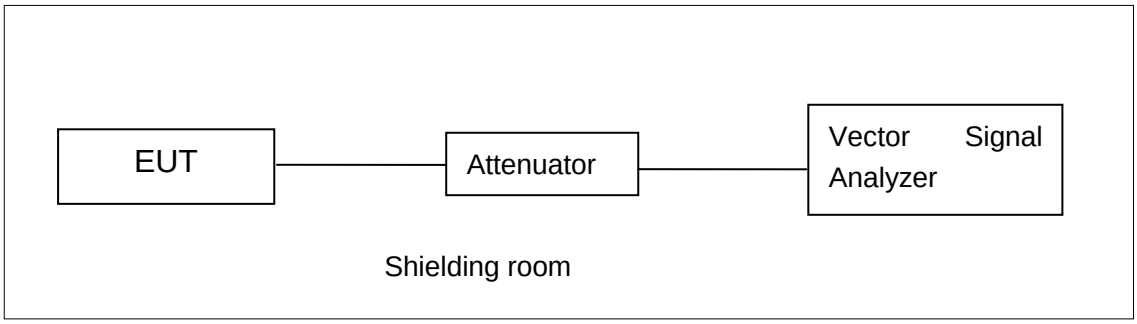

Fig.A.1.1.1: Test Setup Diagram for Conducted Measurements

A.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,
Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;
Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 10Hz;

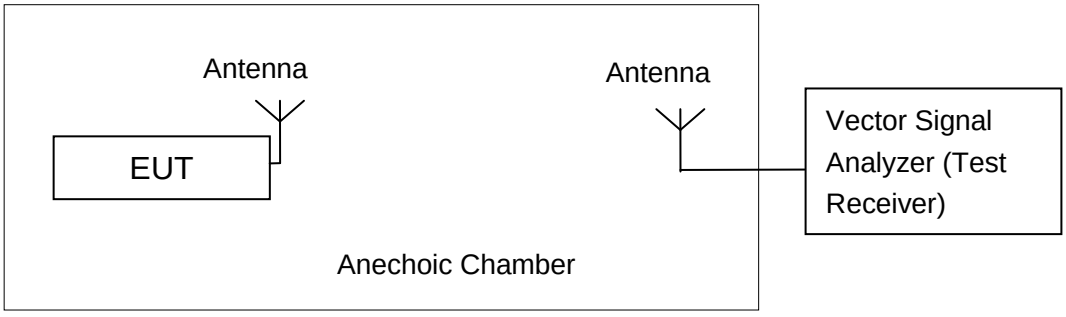

Fig.A.1.2.1: Test Setup Diagram for Radiated Measurements

A.2. Maximum Output Power

Method of Measurement: See ANSI C63.10-2013-clause 11.9.1.2

a) Set the RBW = 1 MHz.
b) Set the VBW = 3 MHz.
c) Set the span ≥ [1.5 × DTS bandwidth].
d) Detector = peak.
e) Sweep time = auto couple.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select the peak detector).

Measurement Limit:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)	< 30

EUT ID: EUT2

A.2.1. Peak Output Power-conducted

Measurement Results:

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)				
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)	2467 MHz (Ch12)	2472 MHz (Ch13)
802.11b	1	18.61	/	/	/	/
	2	18.91	/	/	/	/
	5.5	20.21	/	/	/	/
	11	21.76	22.44	21.93	14.03	13.72
802.11g	6	21.86	/	/	/	/
	9	21.82	/	/	/	/
	12	21.99	/	/	/	/
	18	21.83	/	/	/	/
	24	22.15	/	/	/	/
	36	22.16	22.73	22.42	14.73	14.49
	48	21.85	/	/	/	/
	54	21.81	/	/	/	/

The data rate 11Mbps and 36Mbps are selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)				
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)	2467 MHz (Ch12)	2472 MHz (Ch13)
802.11n (20MHz)	MCS0	21.81	/	/	/	/
	MCS1	21.56	/	/	/	/
	MCS2	21.74	/	/	/	/
	MCS3	22.09	/	/	/	/
	MCS4	22.13	/	/	/	/
	MCS5	22.53	23.04	22.88	14.92	14.76
	MCS6	21.95	/	/	/	/
	MCS7	20.87	/	/	/	/

The data rate MCS5 is selected as worse condition, and the following cases are performed with this condition.

Conclusion: Pass

A.2.2. Average Output Power-conducted

Method of Measurement: See ANSI C63.10-2013-clause 11.9.2.2.2

The procedure for this method is as follows:

a) Set span = 1.5OBW.

b) Set RBW = 1MHz.

c) Set VBW = 3MHz

d) Number of points in sweep = 625

e) Sweep time = auto.

f) Detector = RMS.

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 OFFintervals) 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 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.

802.11b/g mode

Mode	Test Result (dBm)				
	2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)	2467 MHz (Ch12)	2472 MHz (Ch13)
802.11b	16.06	16.69	16.61	7.28	7.35
802.11g	14.43	15.13	14.85	6.10	5.73

802.11n-HT20 mode

Mode	Test Result (dBm)				
	2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)	2467 MHz (Ch12)	2472 MHz (Ch13)
802.11n (20MHz)	14.44	15.11	15.04	5.75	5.68

Conclusion: Pass

A.3. Peak Power Spectral Density

Method of Measurement: See ANSI C63.10-2013-clause 11.10.2

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 times the DTS bandwidth.
c) Set the RBW to RBW = 3 kHz.
d) Set the VBW = 10 kHz.
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.

Measurement Limit:

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

Measurement Results:

802.11b/g mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11b	1	Fig.A.3.1	-8.28	**P**
	6	Fig.A.3.2	-6.30	**P**
	11	Fig.A.3.3	-8.44	**P**
	12	Fig.A.3.4	-16.50	**P**
	13	Fig.A.3.5	-15.46	**P**
802.11g	1	Fig.A.3.6	-11.51	**P**
	6	Fig.A.3.7	-10.70	**P**
	11	Fig.A.3.8	-11.10	**P**
	12	Fig.A.3.9	-18.67	**P**
	13	Fig.A.3.10	-18.96	**P**

802.11n-HT20 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11n (HT20)	1	Fig.A.3.11	-10.26	**P**
	6	Fig.A.3.12	-11.05	**P**
	11	Fig.A.3.13	-11.47	**P**
	12	Fig.A.3.14	-19.02	**P**
	13	Fig.A.3.15	-18.61	**P**

Conclusion: Pass

Test graphs as below:

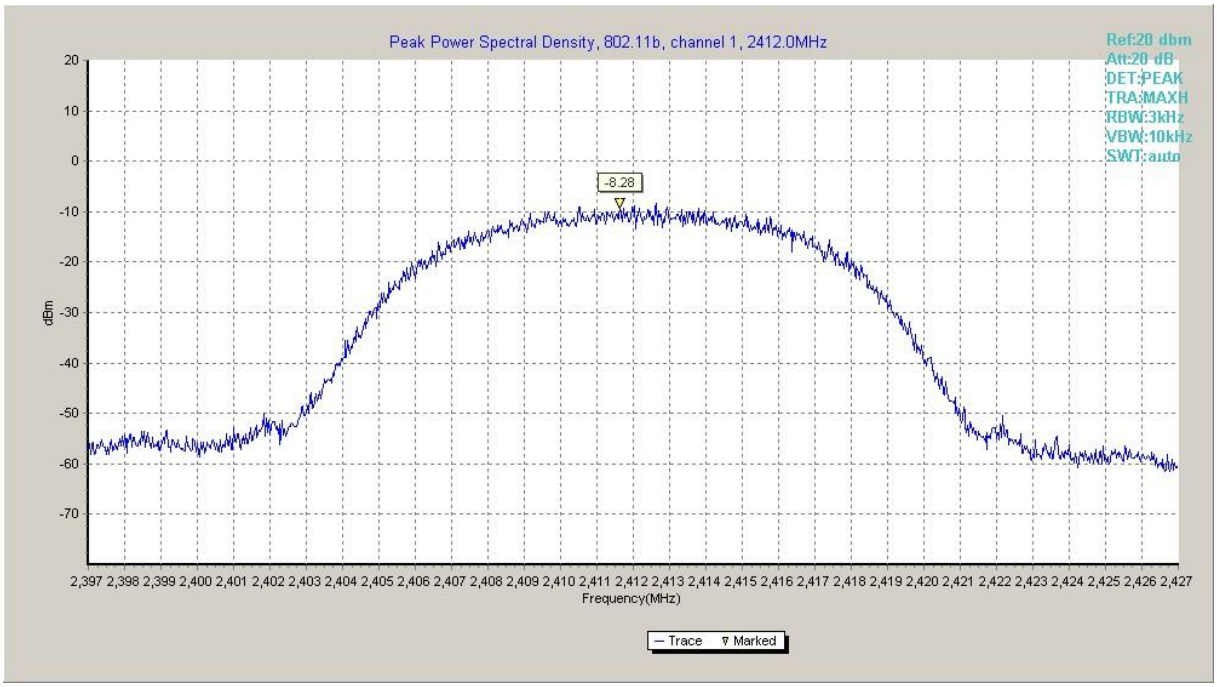

Fig.A.3.1 Power Spectral Density(802.11b,Ch1)

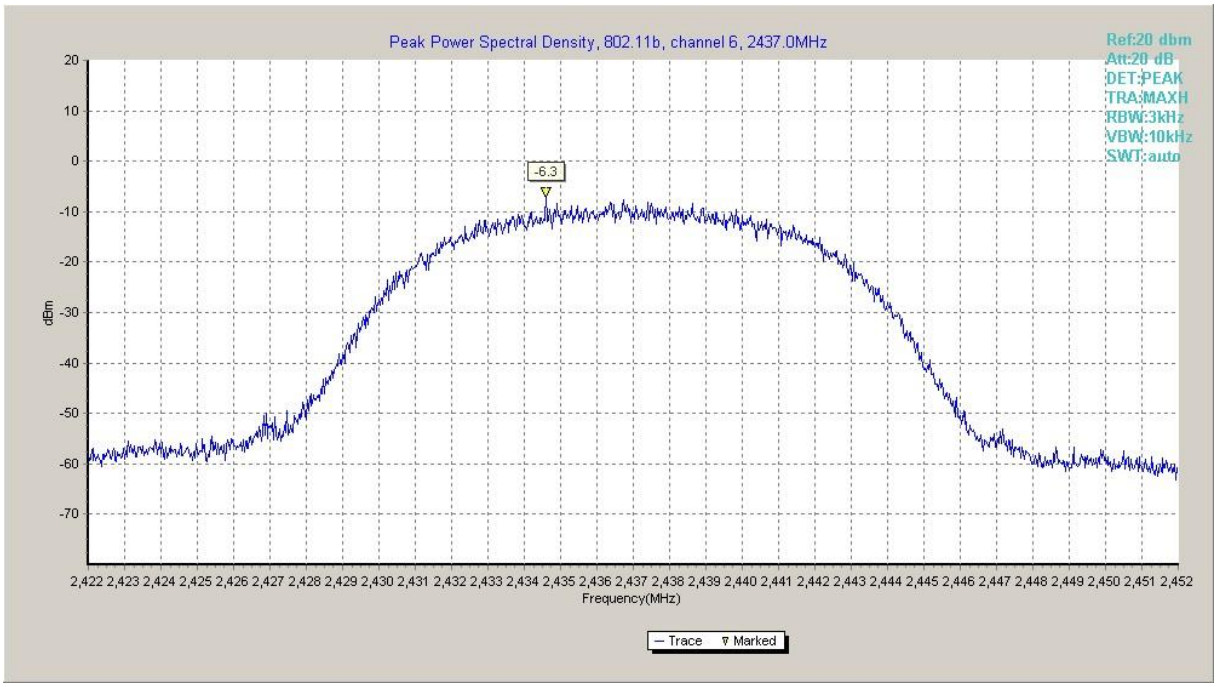

Fig.A.3.2 Power Spectral Density (802.11b, Ch 6)

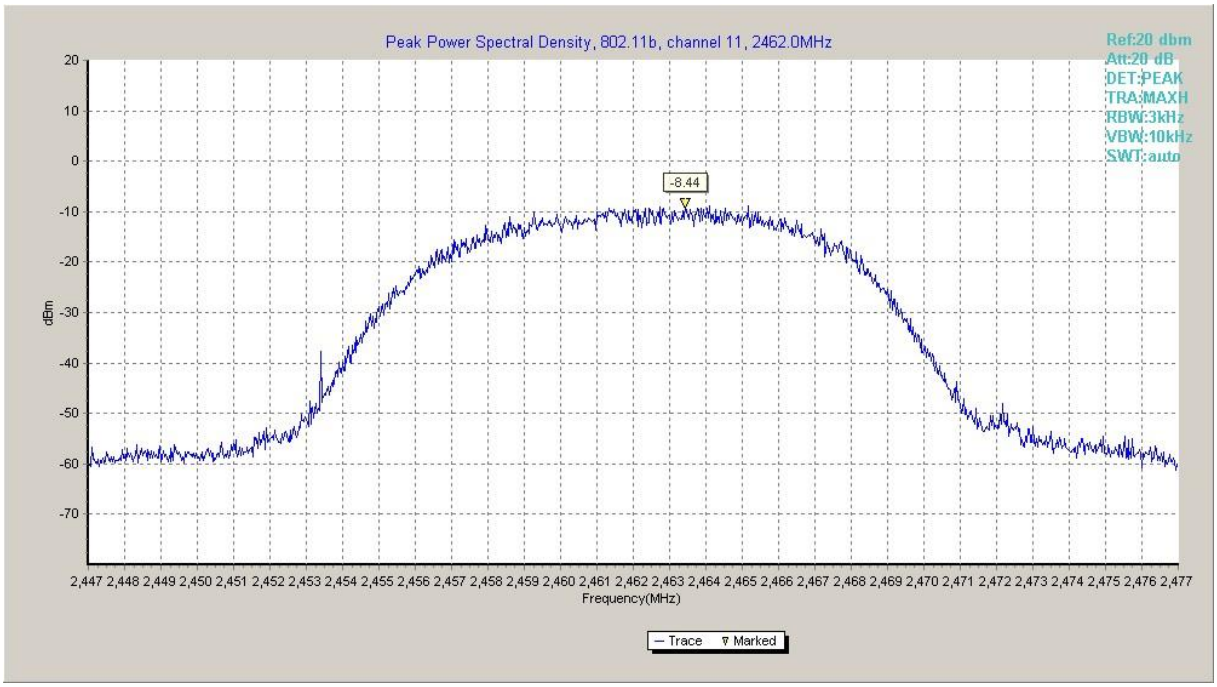

Fig.A.3.3 Power Spectral Density (802.11b, Ch 11)

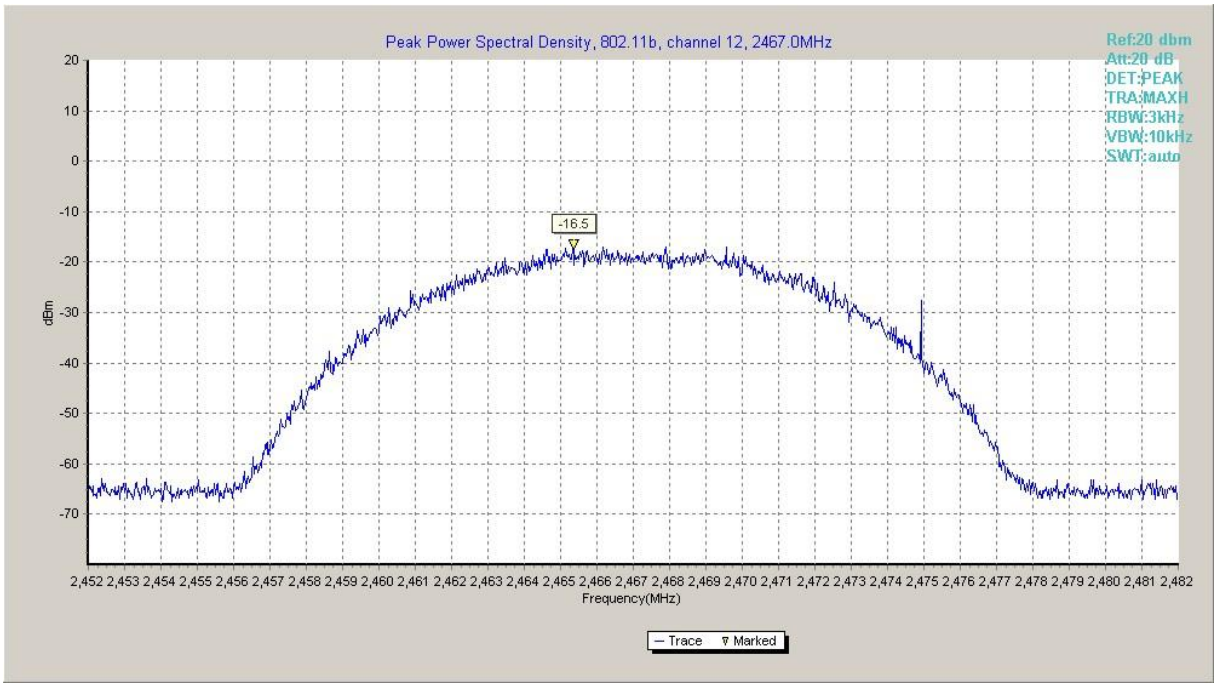

Fig.A.3.4 Power Spectral Density (802.11b, Ch 12)

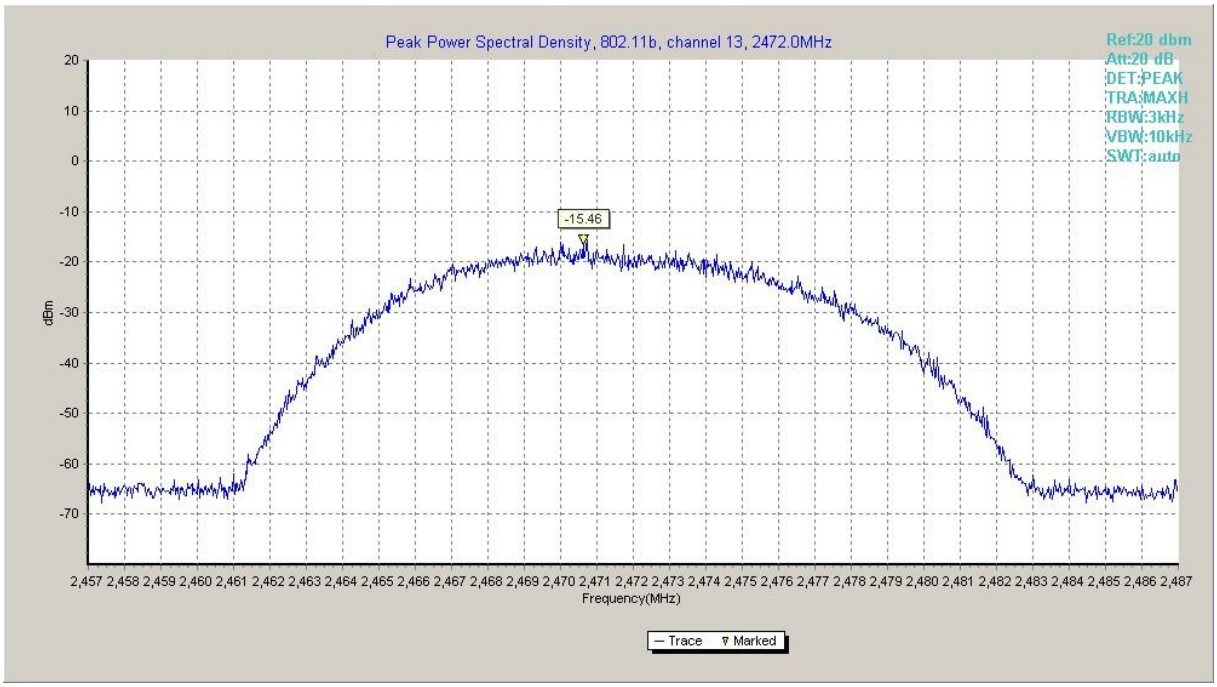

Fig.A.3.5 Power Spectral Density (802.11b, Ch 13)

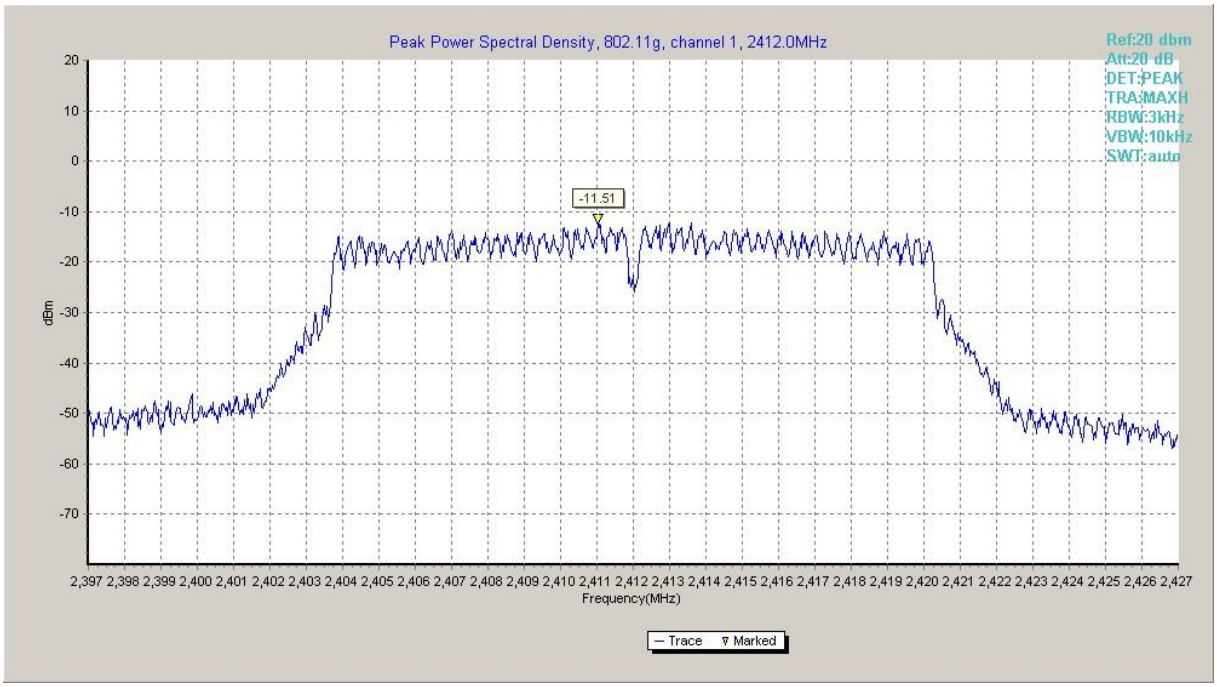

Fig.A.3.6 Power Spectral Density (802.11g, Ch 1)

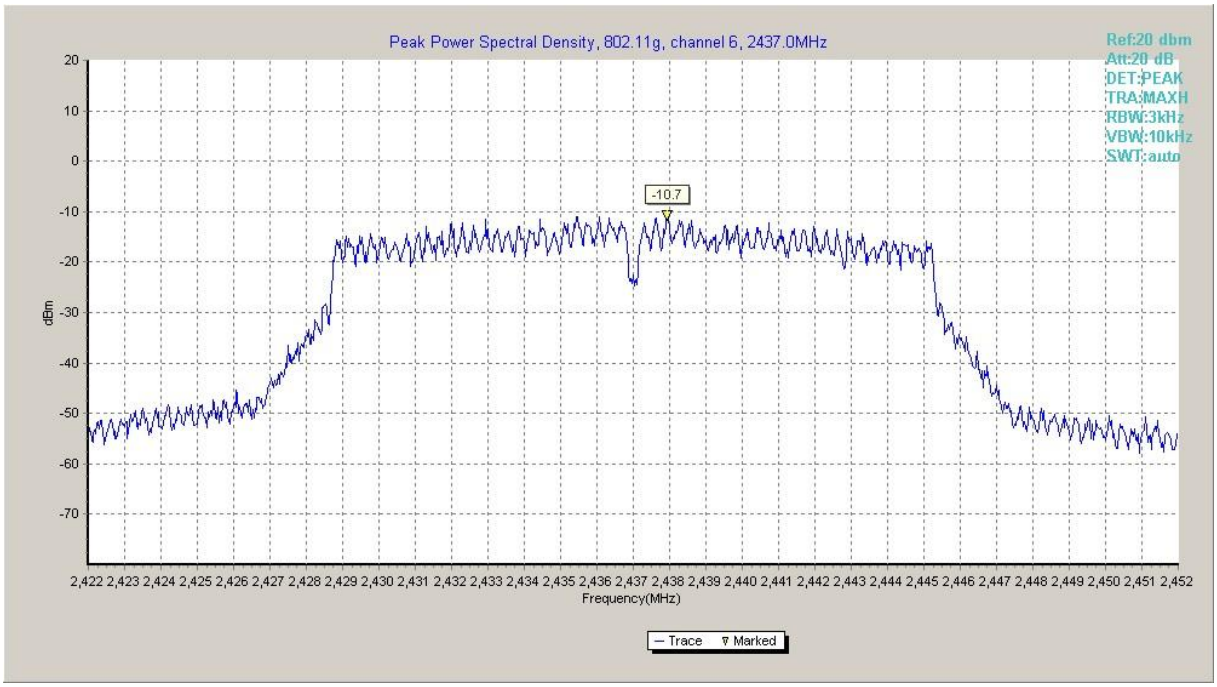

Fig.A.3.7 Power Spectral Density (802.11g, Ch 6)

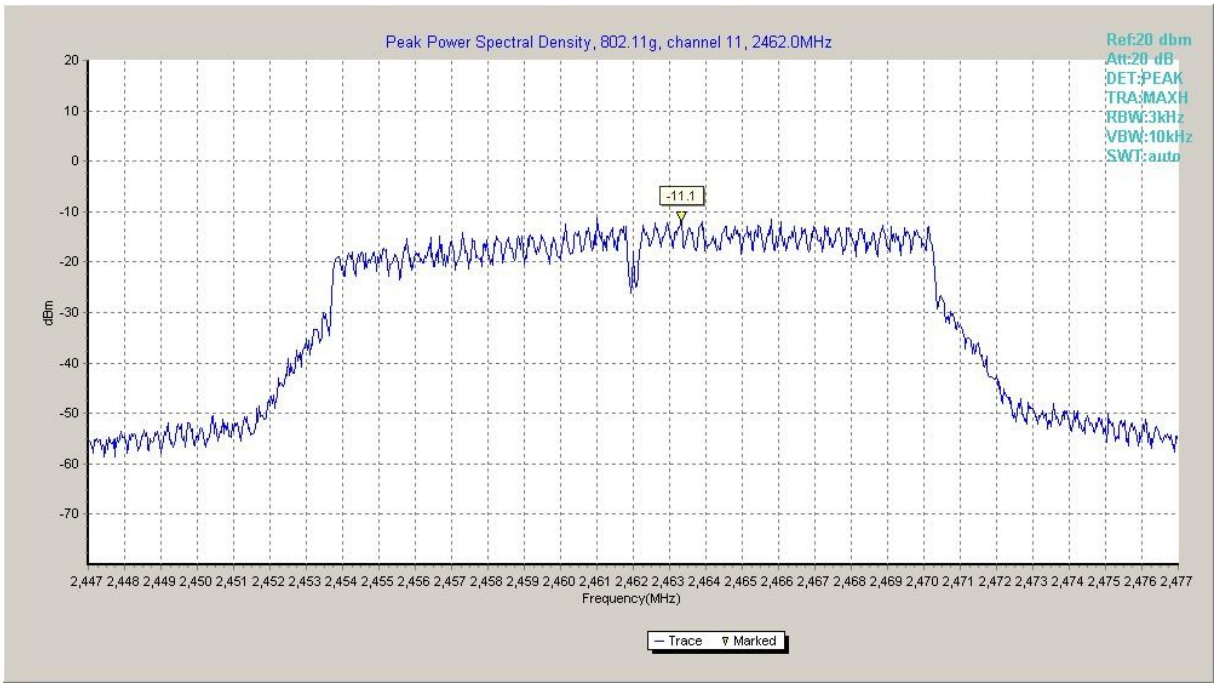

Fig.A.3.8 Power Spectral Density (802.11g, Ch 11)

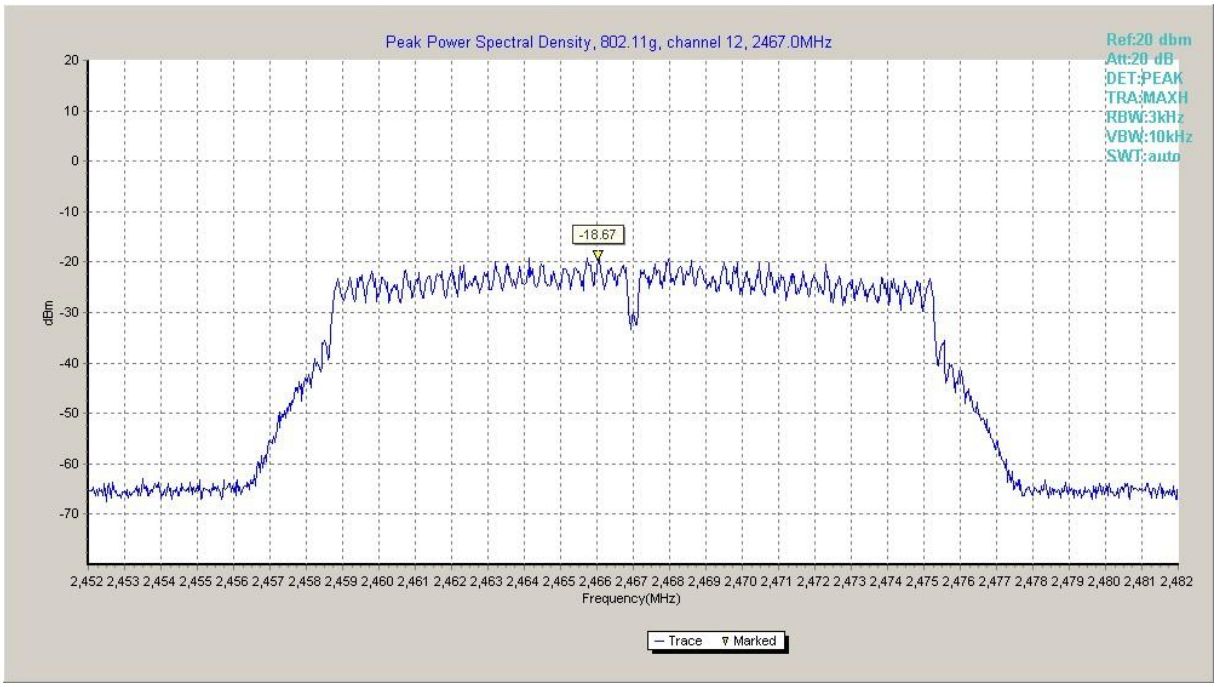

Fig.A.3.9 Power Spectral Density (802.11g, Ch 12)

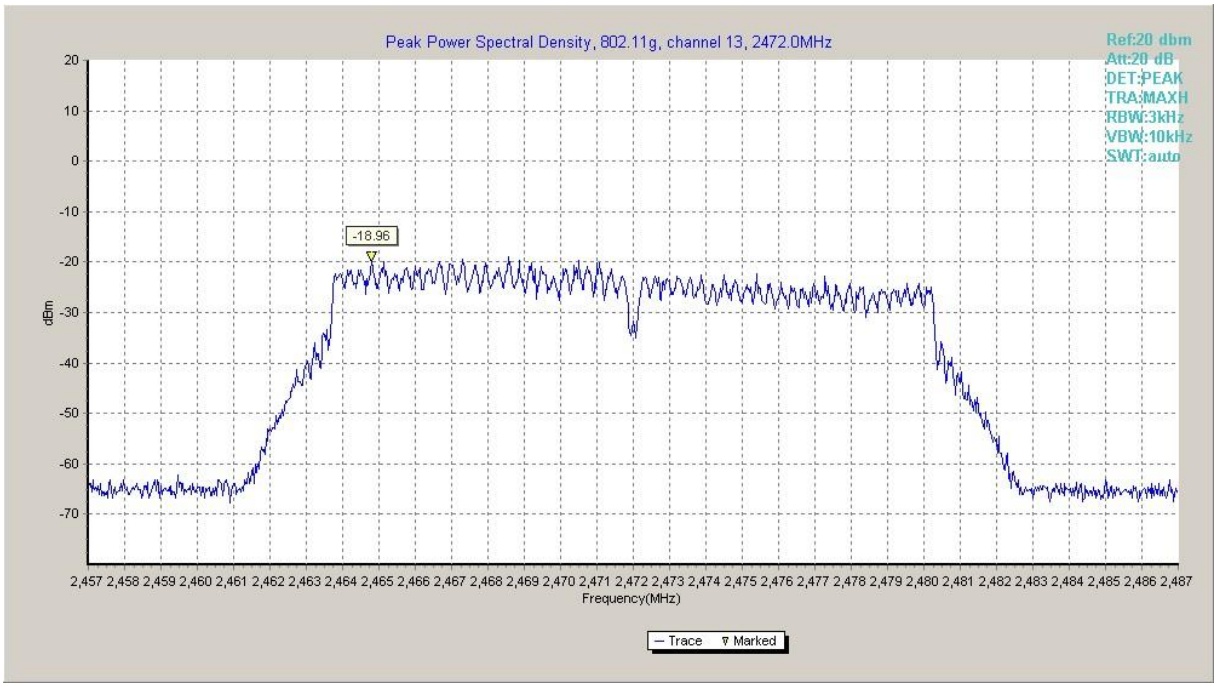

Fig.A.3.10 Power Spectral Density (802.11g, Ch 13)

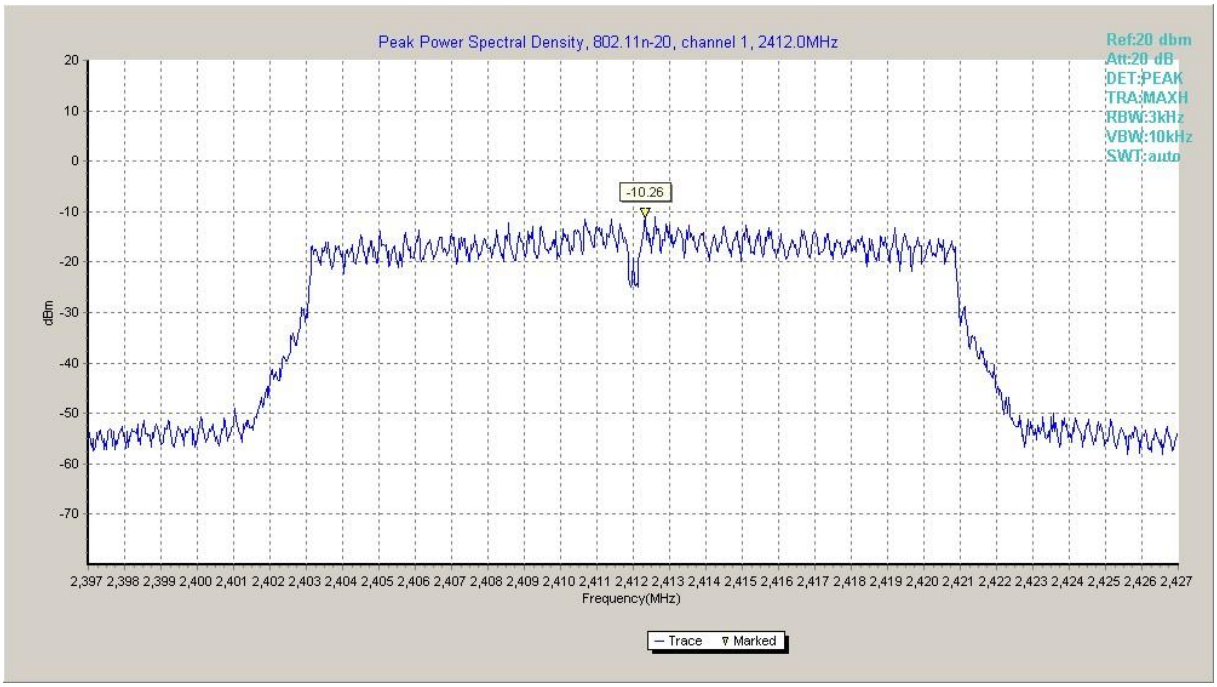

Fig.A.3.11 Power Spectral Density (802.11n-HT20, Ch 1)

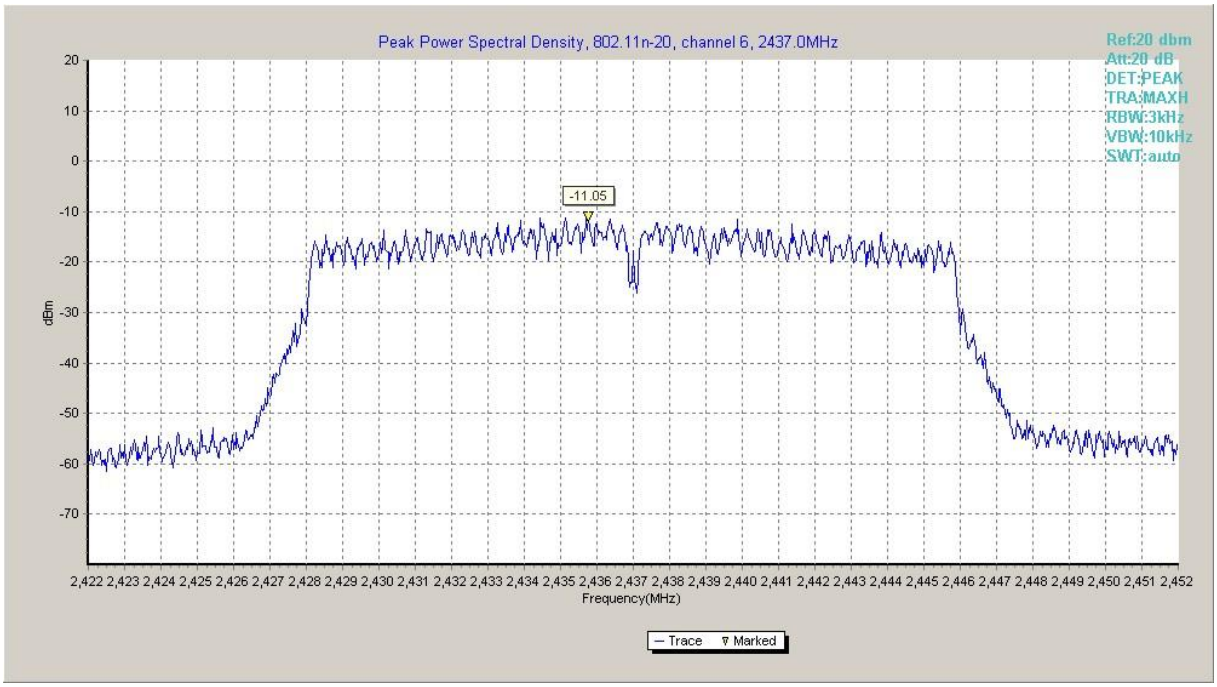

Fig.A.3.12 Power Spectral Density (802.11n-HT20, Ch 6)

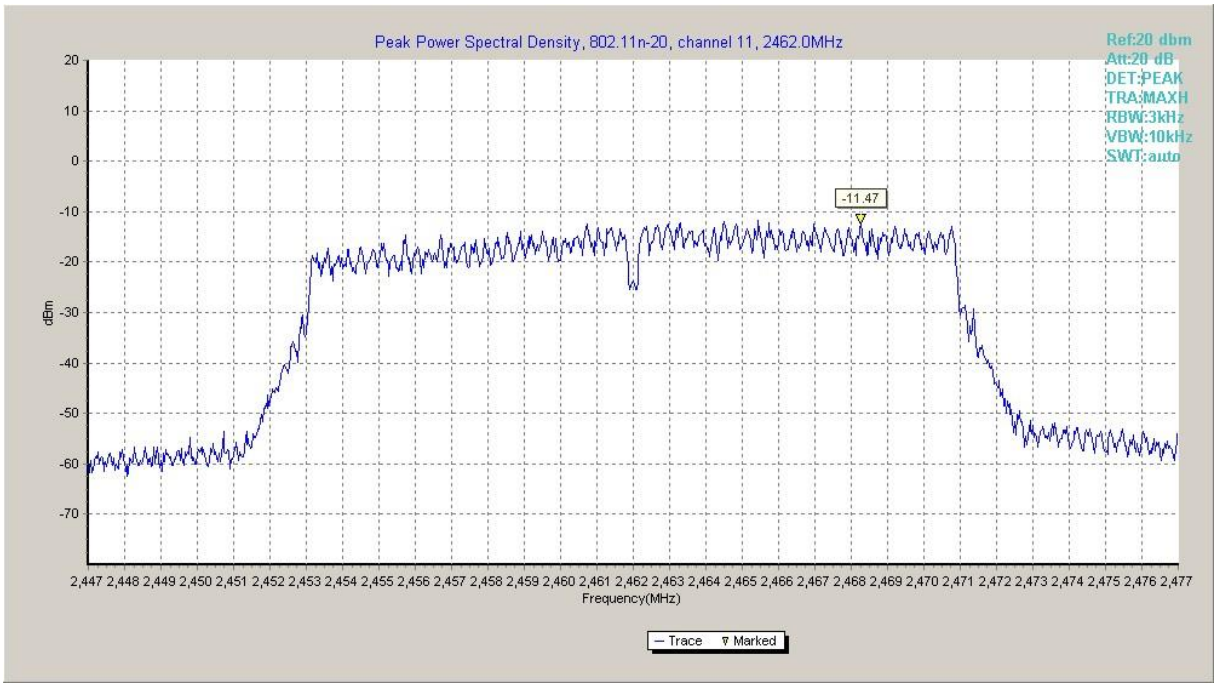

Fig.A.3.13 Power Spectral Density (802.11n-HT20, Ch 11)

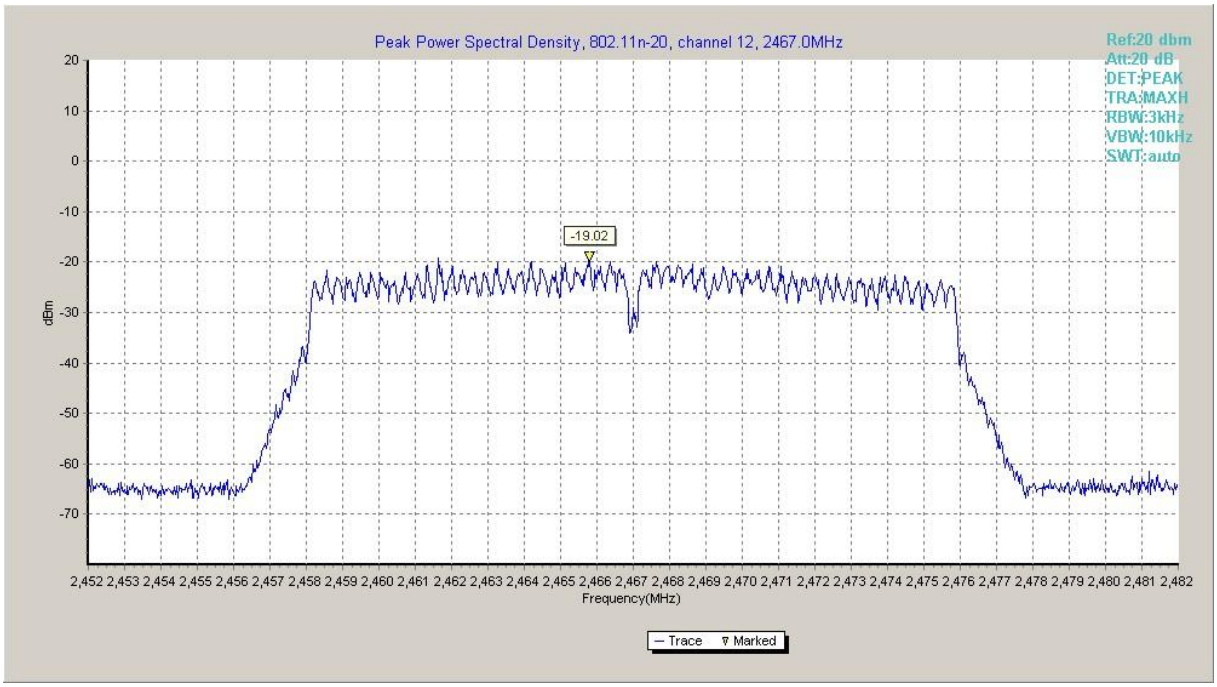

Fig.A.3.14 Power Spectral Density (802.11n-HT20, Ch 12)

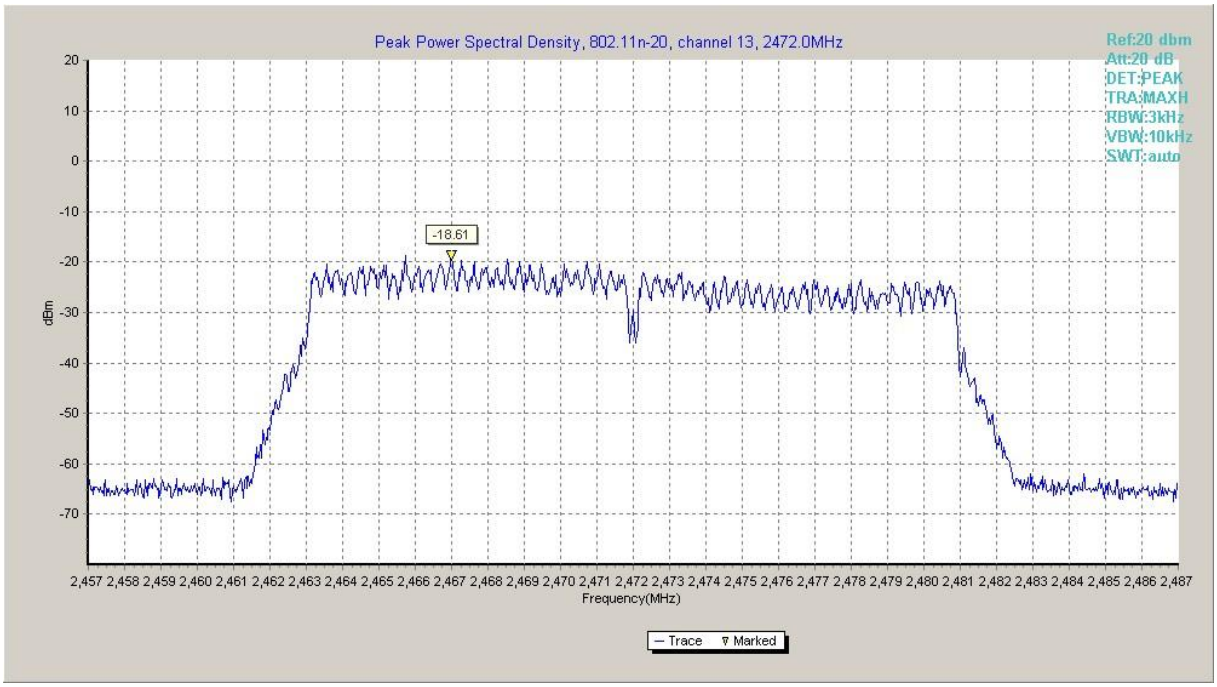

Fig.A.3.15 Power Spectral Density (802.11n-HT20, Ch 13)

A.4. DTS 6-dB Signal Bandwidth

Method of Measurement: See ANSI C63.10-2013 section 11.8.1.

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) = 300 kHz.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Measurement Limit:

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

EUT ID: EUT2

Measurement Result:

802.11b/g mode

Mode	Channel	Occupied 6dB Bandwidth (MHz)		conclusion
802.11b	1	Fig.A.4.1	8.95	P
	6	Fig.A.4.2	9.45	P
	11	Fig.A.4.3	9.25	P
	12	Fig.A.4.4	9.45	P
	13	Fig.A.4.5	9.25	P
802.11g	1	Fig.A.4.6	16.35	P
	6	Fig.A.4.7	15.10	P
	11	Fig.A.4.8	15.80	P
	12	Fig.A.4.9	16.05	P
	13	Fig.A.4.10	15.75	P

802.11n-HT20 mode

Mode	Channel	Occupied 6dB Bandwidth (MHz)		conclusion
802.11n (HT20)	1	Fig.A.4.11	17.60	P
	6	Fig.A.4.12	15.95	P
	11	Fig.A.4.13	16.95	P
	12	Fig.A.4.14	17.55	P
	13	Fig.A.4.15	17.30	P

Conclusion: Pass

Test graphs as below:

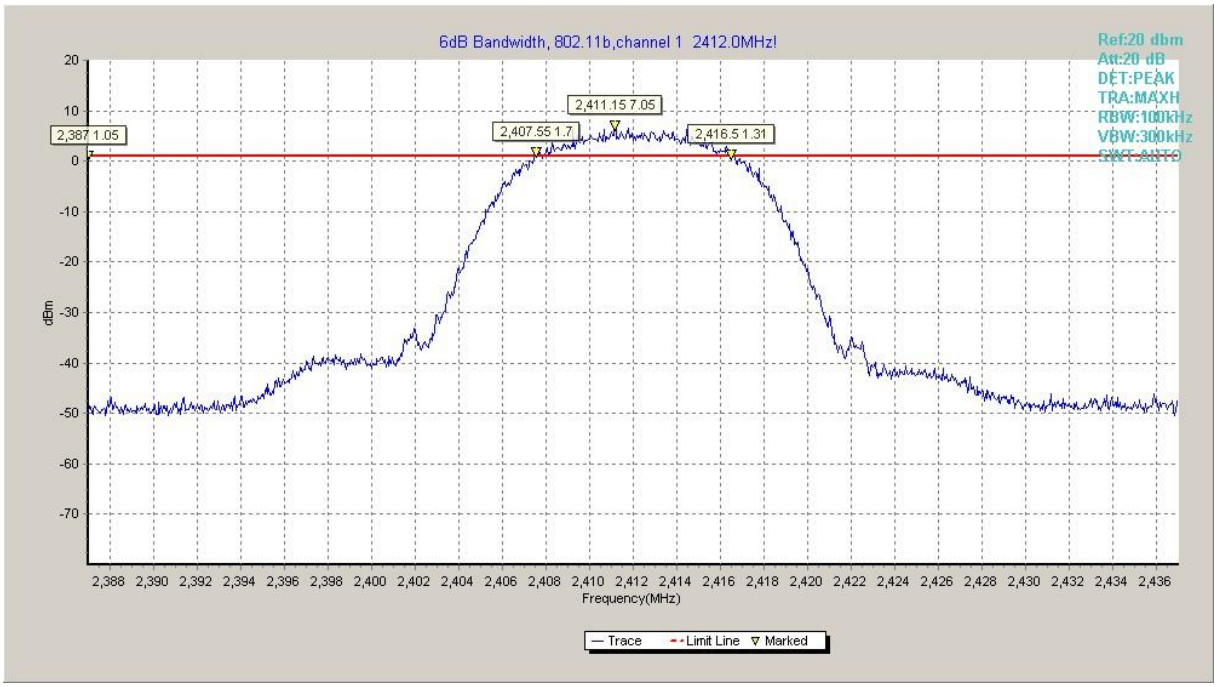

Fig.A.4.1 Occupied 6dB Bandwidth(802.11b,Ch 1)

Fig.A.4.2 Occupied 6dB Bandwidth (802.11b, Ch 6)

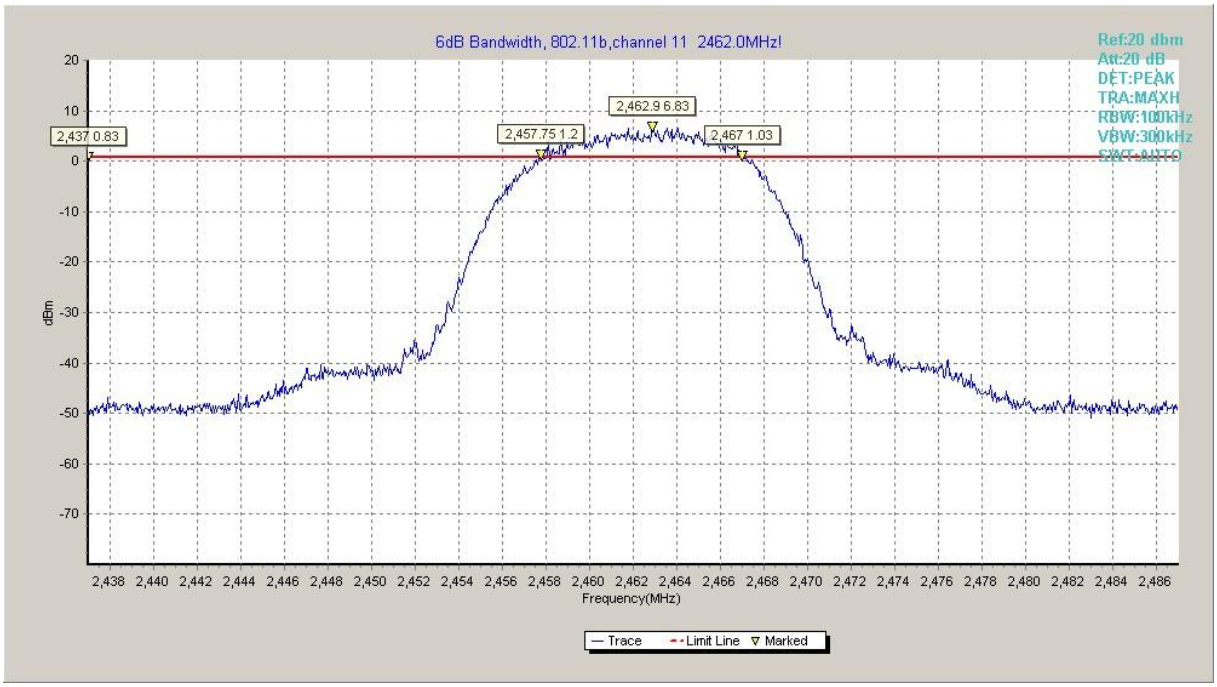

Fig.A.4.3 Occupied 6dB Bandwidth (802.11b, Ch 11)

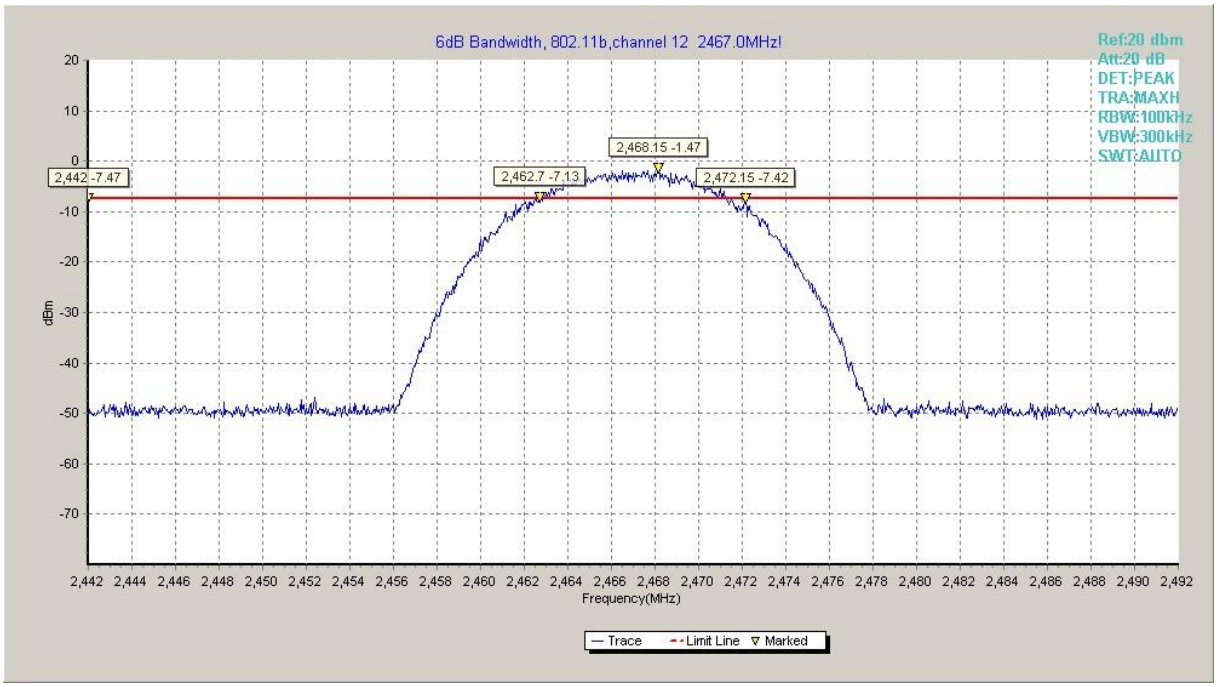

Fig.A.4.4 Occupied 6dB Bandwidth (802.11b, Ch 12)

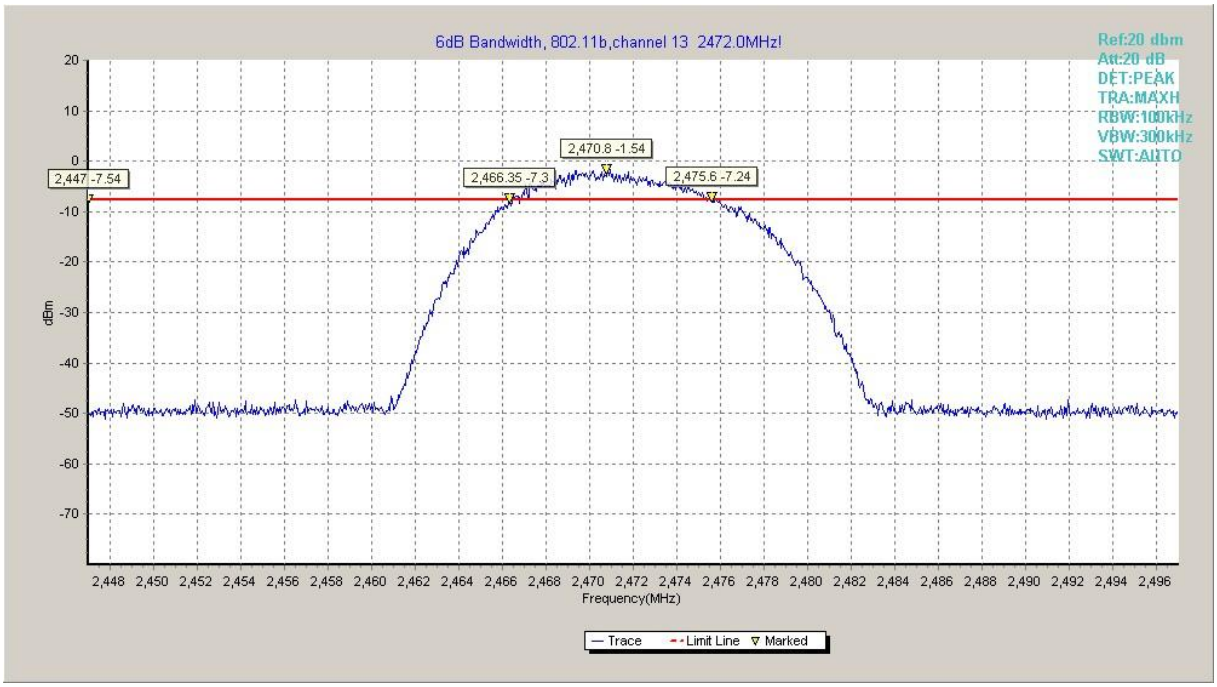

Fig.A.4.5 Occupied 6dB Bandwidth (802.11b, Ch 13)

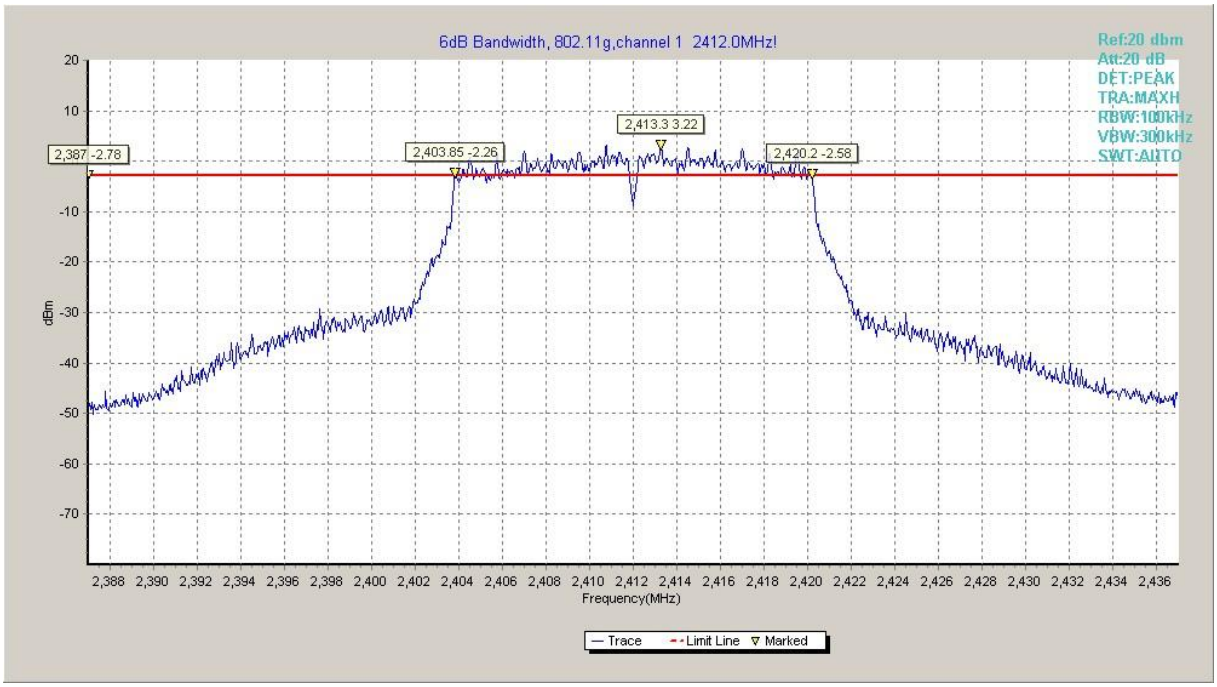

Fig.A.4.6 Occupied 6dB Bandwidth (802.11g, Ch 1)

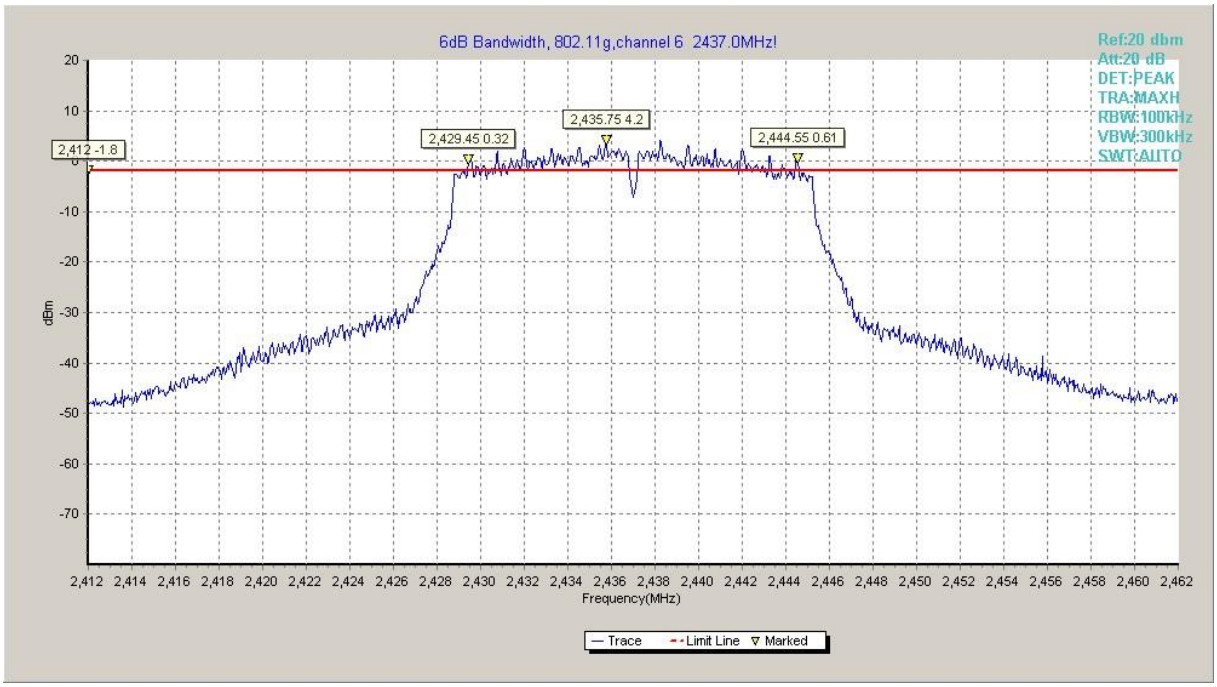

Fig.A.4.7 Occupied 6dB Bandwidth (802.11g, Ch 6)

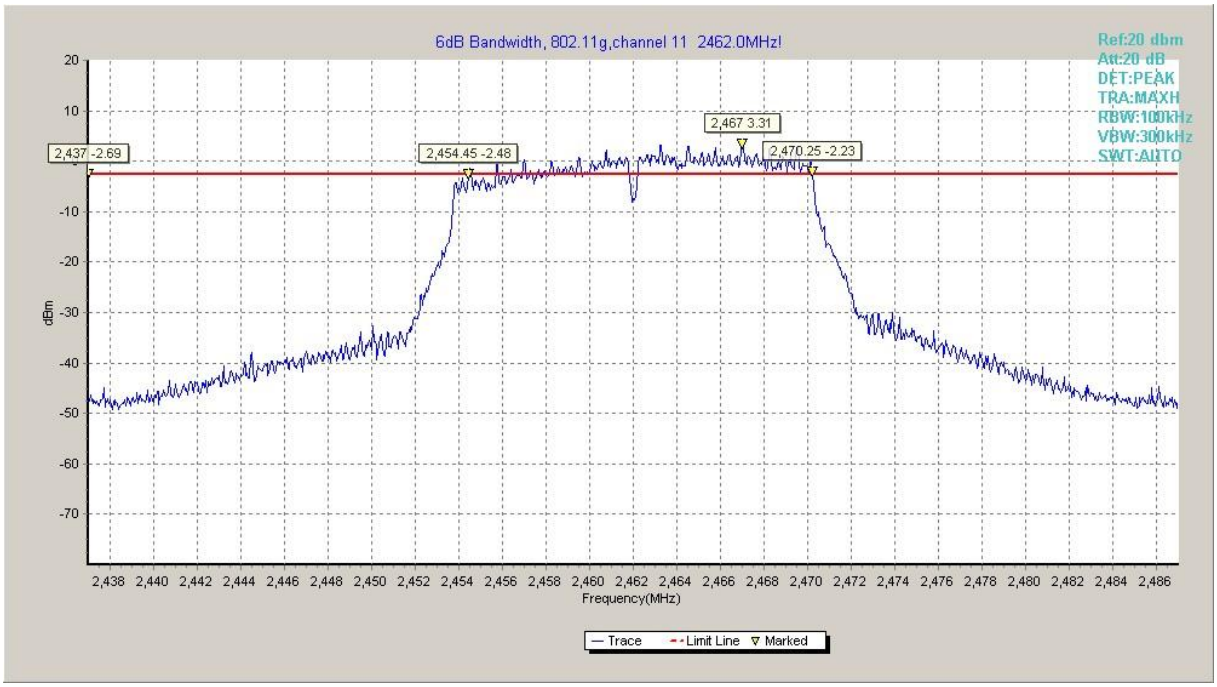

Fig.A.4.8 Occupied 6dB Bandwidth (802.11g, Ch 11)

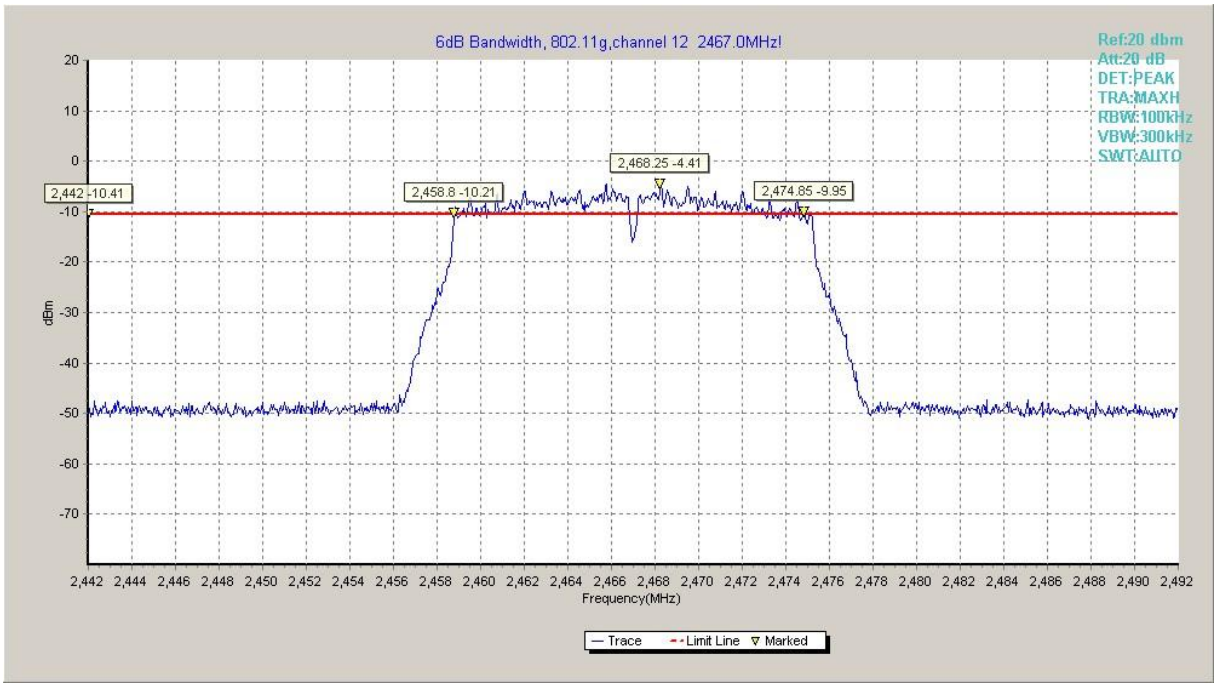

Fig.A.4.9 Occupied 6dB Bandwidth (802.11g, Ch 12)

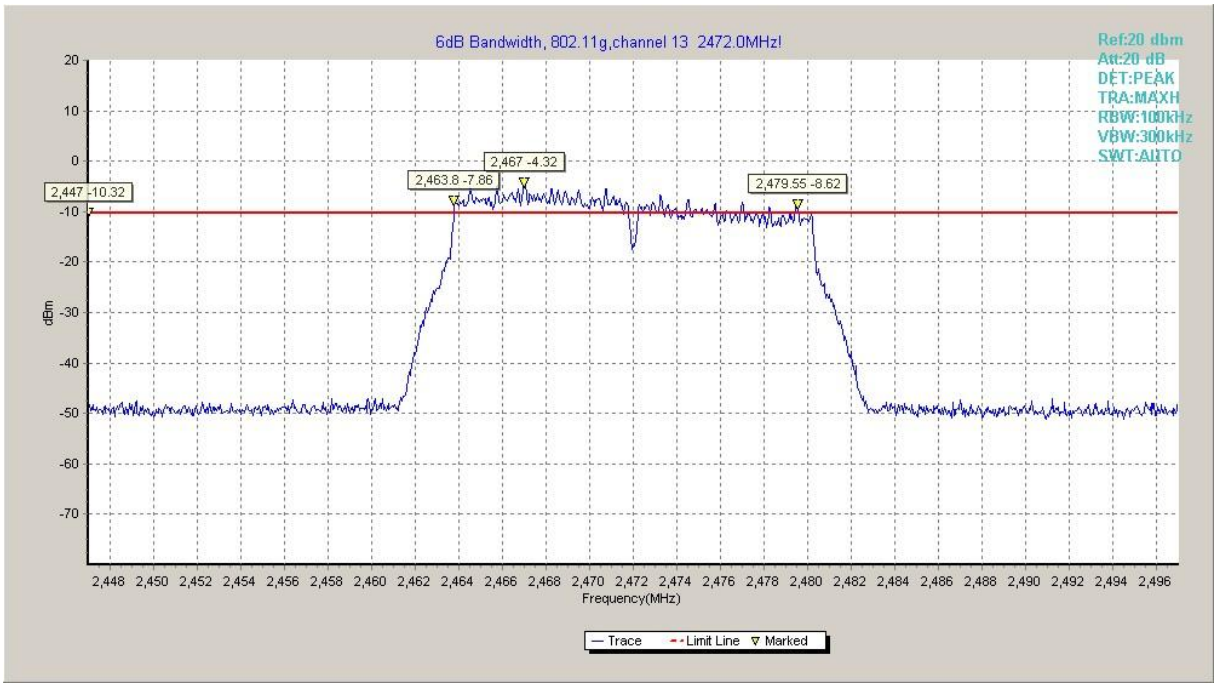

Fig.A.4.10 Occupied 6dB Bandwidth (802.11g, Ch 13)

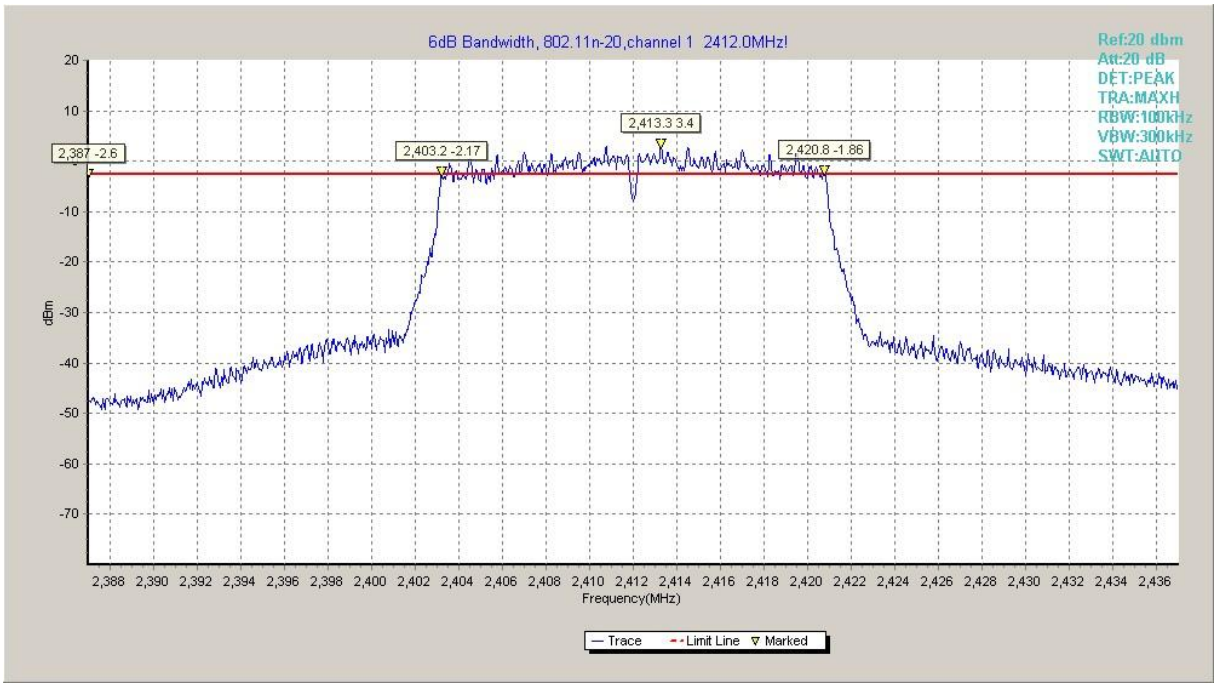

Fig.A.4.11 Occupied 6dB Bandwidth (802.11n-20MHz, Ch 1)

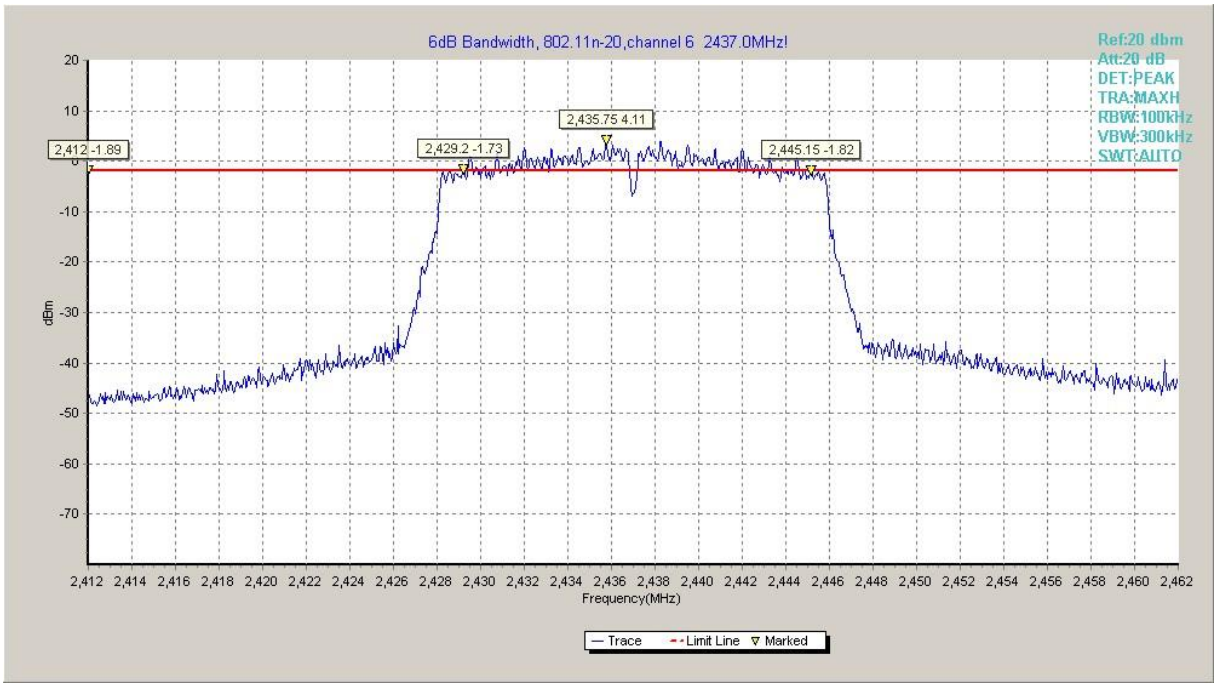

Fig.A.4.12 Occupied 6dB Bandwidth (802.11n-HT20, Ch 6)

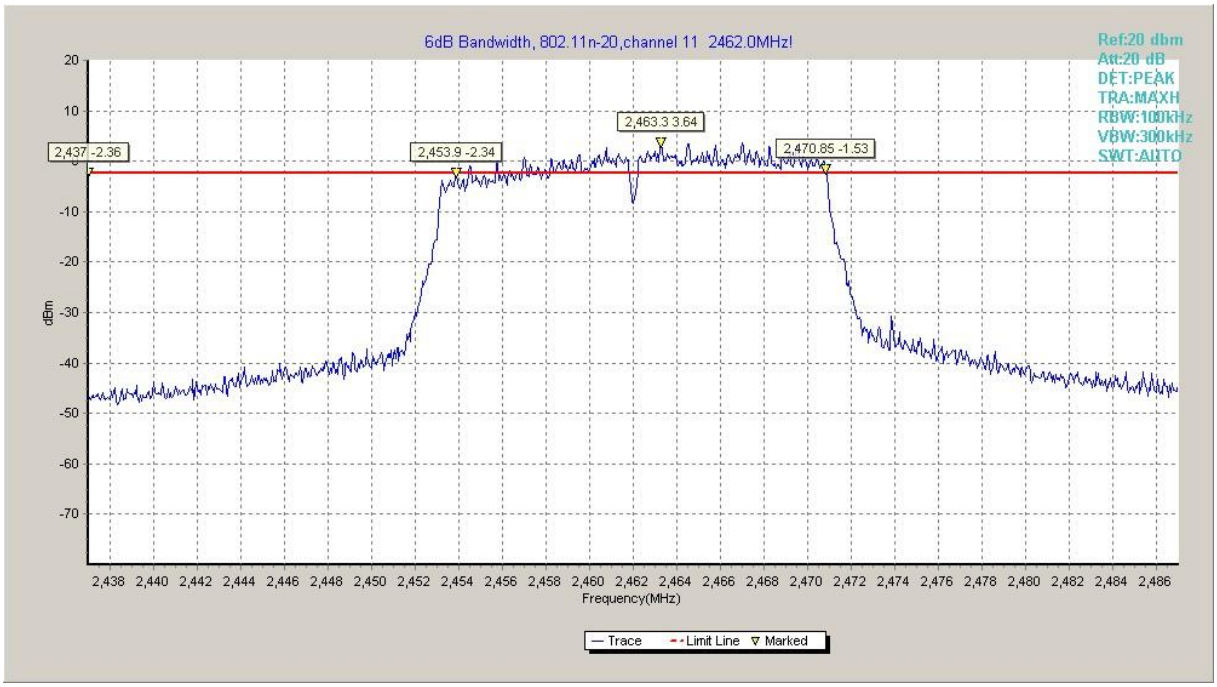

Fig.A.4.13 Occupied 6dB Bandwidth (802.11n-HT20, Ch 11)

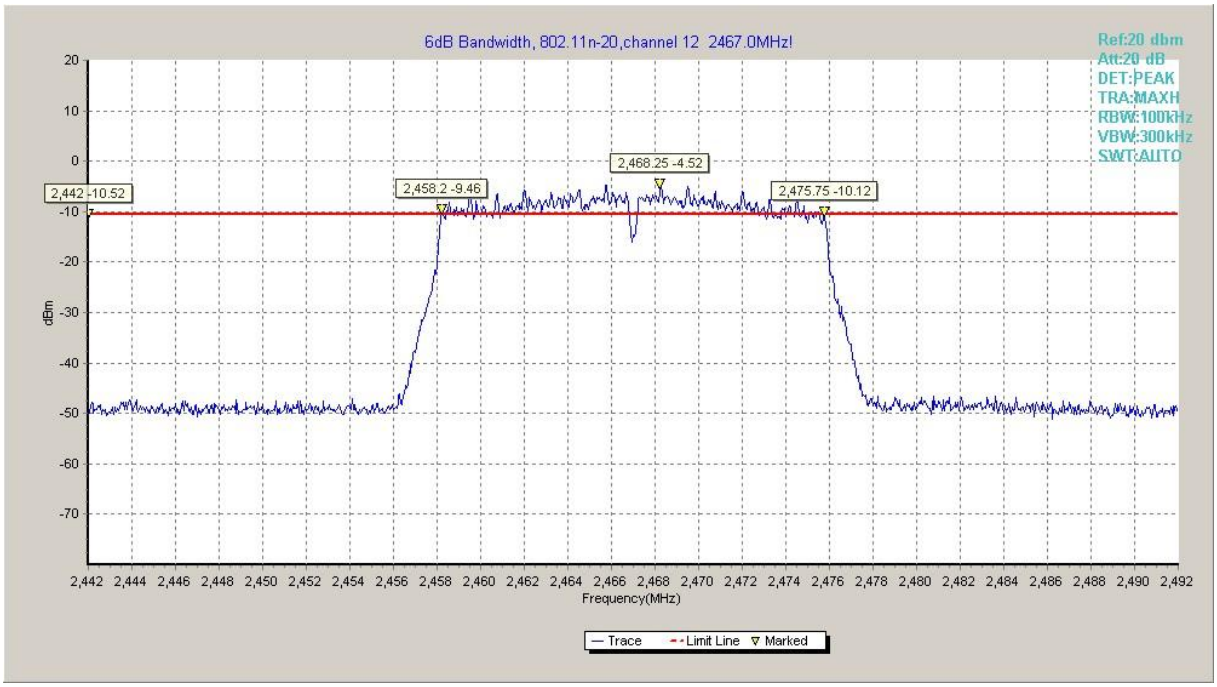

Fig.A.4.14 Occupied 6dB Bandwidth (802.11n-HT20, Ch 12)

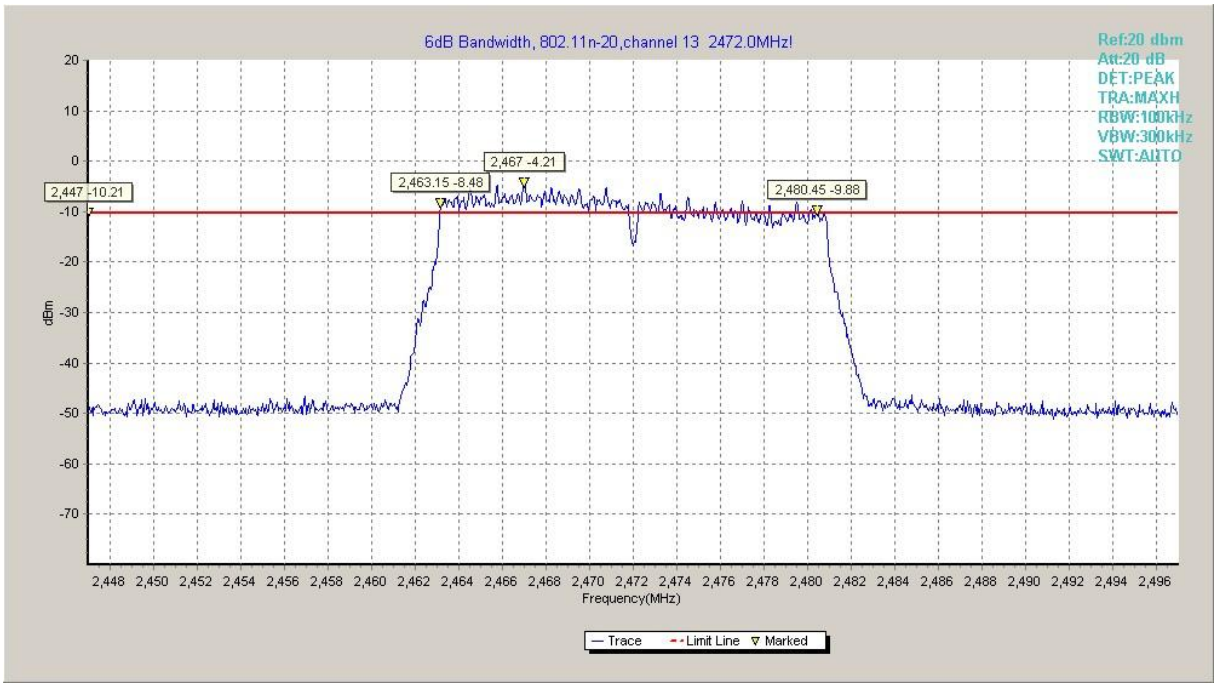

Fig.A.4.15 Occupied 6dB Bandwidth (802.11n-HT20, Ch 13)

A.5. Band Edges Compliance

Method of Measurement: See ANSI C63.10-2013-clause 6.10.4

Connect the spectrum analyzer to the EUT using an appropriate RF cable connected to the EUT output. Configure the spectrum analyzer settings as described below.

a) Set Span = 100MHz
b) Sweep Time: coupled
c) Set the RBW= 100 kHz
c) Set the VBW= 300 kHz
d) Detector: Peak
e) Trace: Max hold

Measurement Limit:

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

EUT ID: EUT2

Measurement Result:

802.11b/g mode

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.A.5.1	**P**
	11	Fig.A.5.2	**P**
	12	Fig.A.5.3	**P**
	13	Fig.A.5.4	**P**
802.11g	1	Fig.A.5.5	**P**
	11	Fig.A.5.6	**P**
	12	Fig.A.5.7	**P**
	13	Fig.A.5.8	**P**

802.11n-HT20 mode

Mode	Channel	Test Results	Conclusion
802.11n (HT20)	1	Fig.A.5.9	**P**
	11	Fig.A.5.10	**P**
	12	Fig.A.5.11	**P**
	13	Fig.A.5.12	**P**

Conclusion: Pass

Test graphs as below:

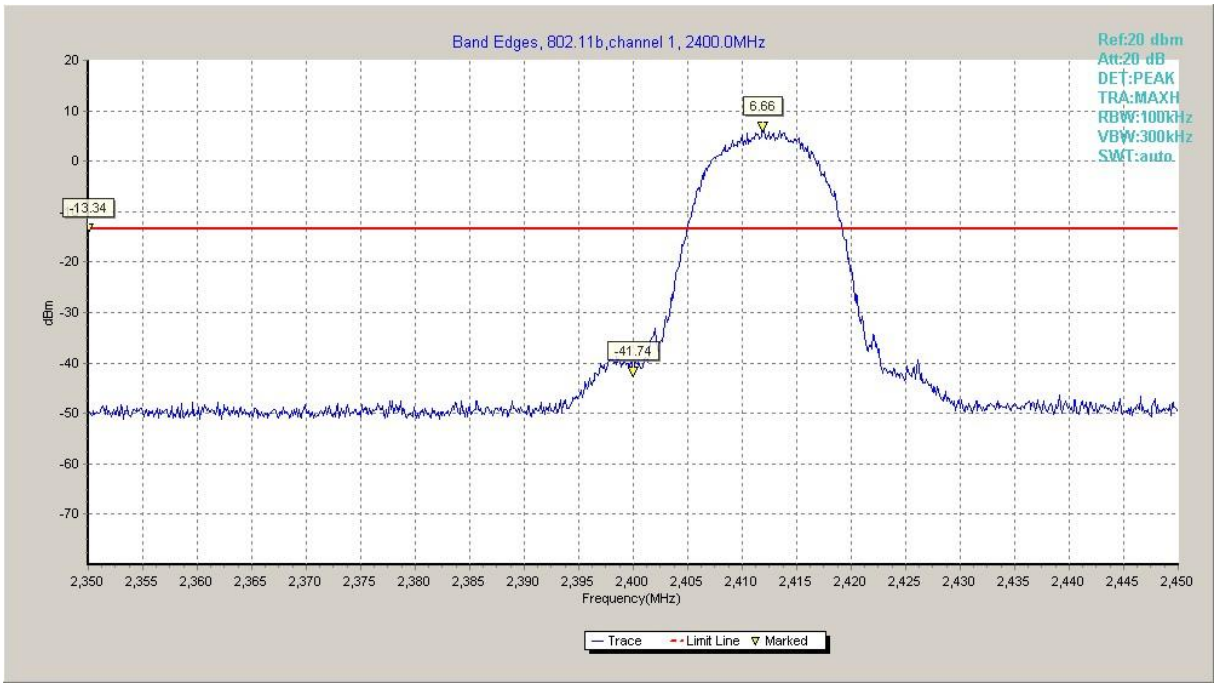

Fig.A.5.1 Band Edges (802.11b, Ch 1)

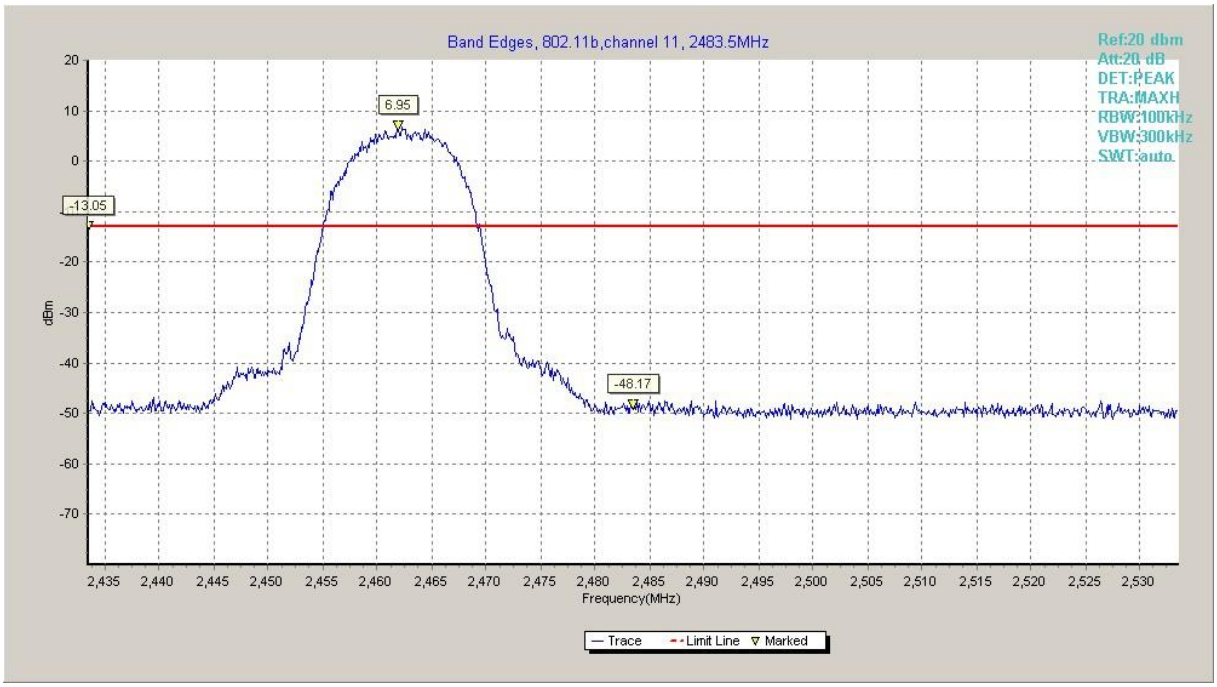

Fig.A.5.2 Band Edges (802.11b, Ch 11)

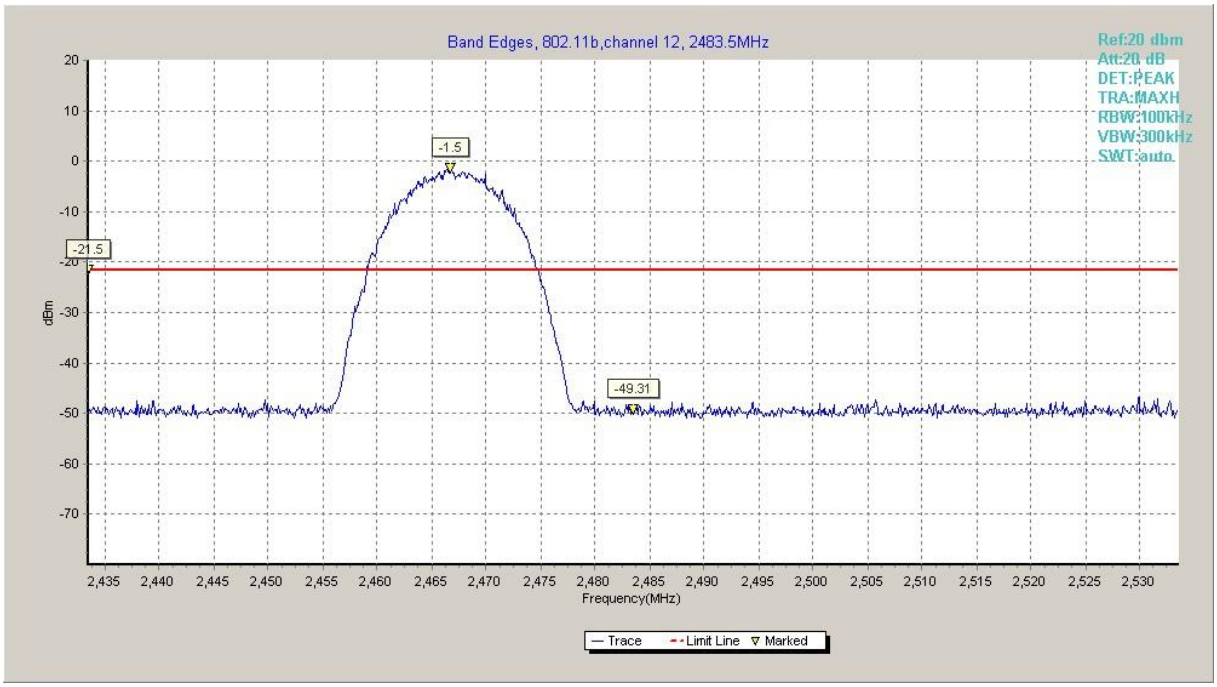

Fig.A.5.3 Band Edges (802.11b, Ch 12)

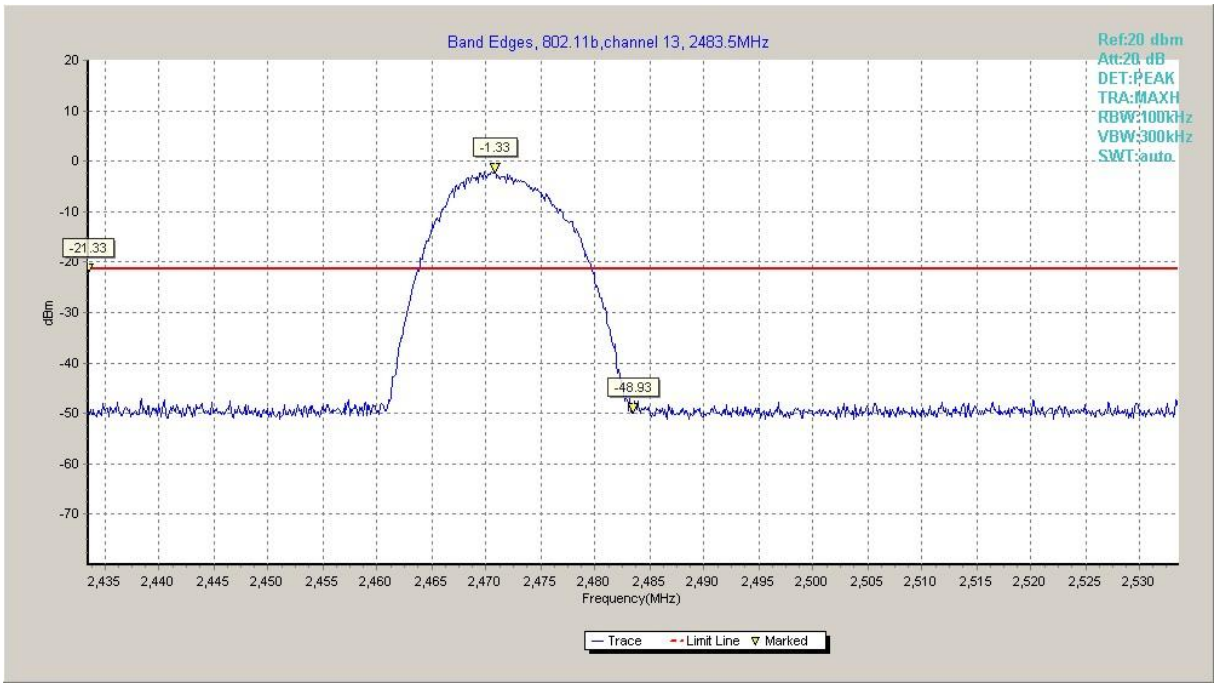

Fig.A.5.4 Band Edges (802.11b, Ch 13)

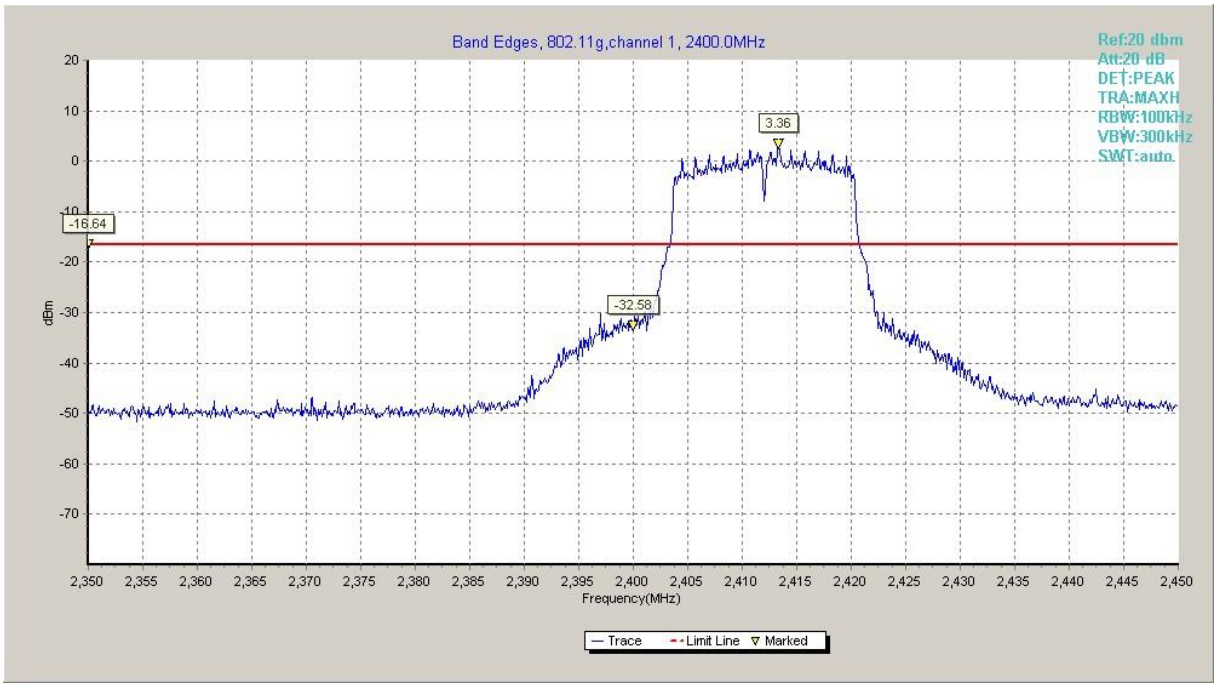

Fig.A.5.5 Band Edges (802.11g, Ch 1)

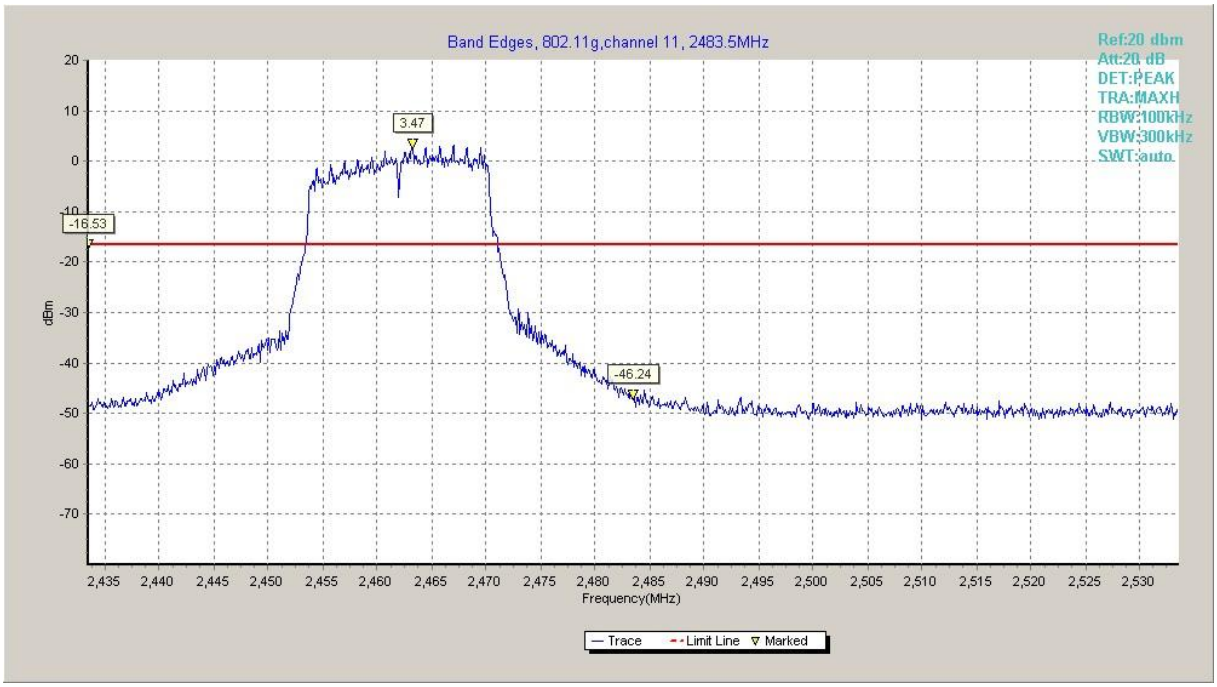

Fig.A.5.6 Band Edges (802.11g, Ch 11)

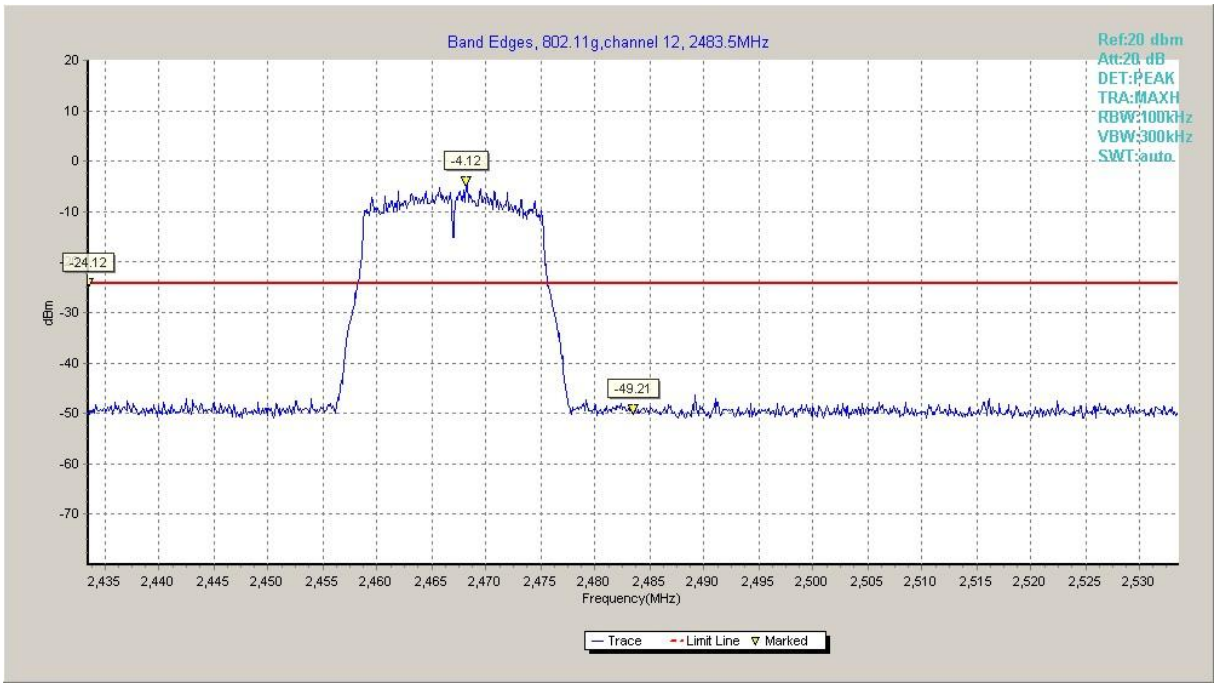

Fig.A.5.7 Band Edges (802.11g, Ch 12)

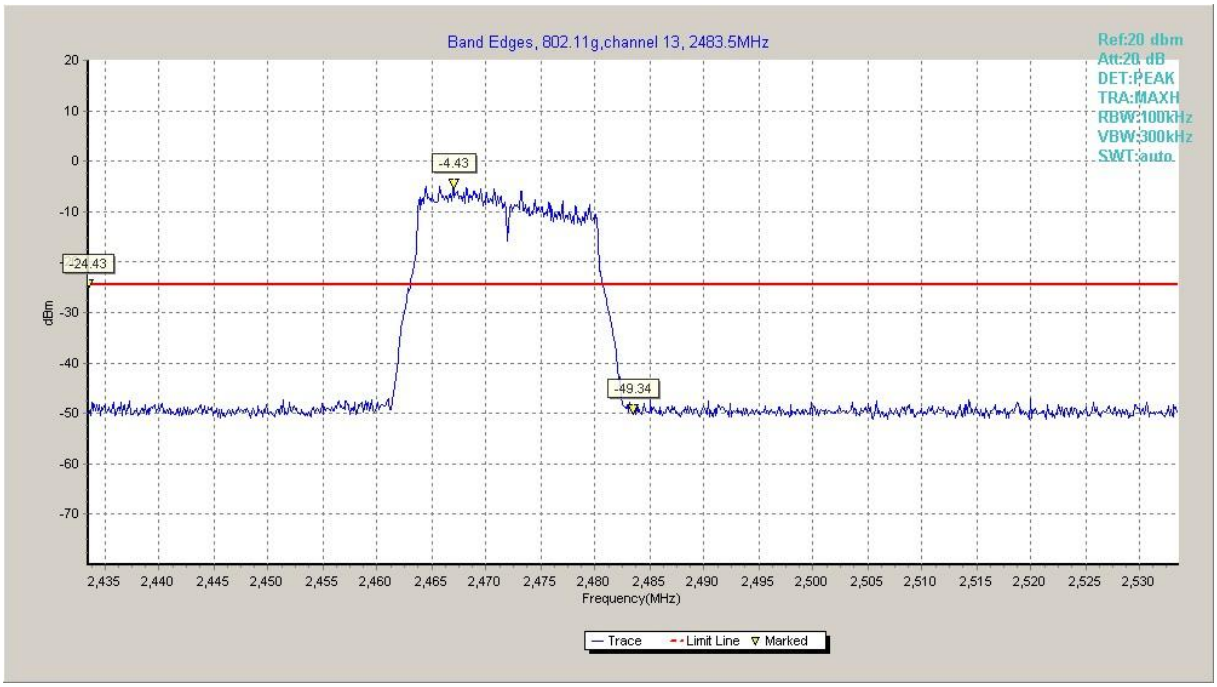

Fig.A.5.8 Band Edges (802.11g, Ch 13)

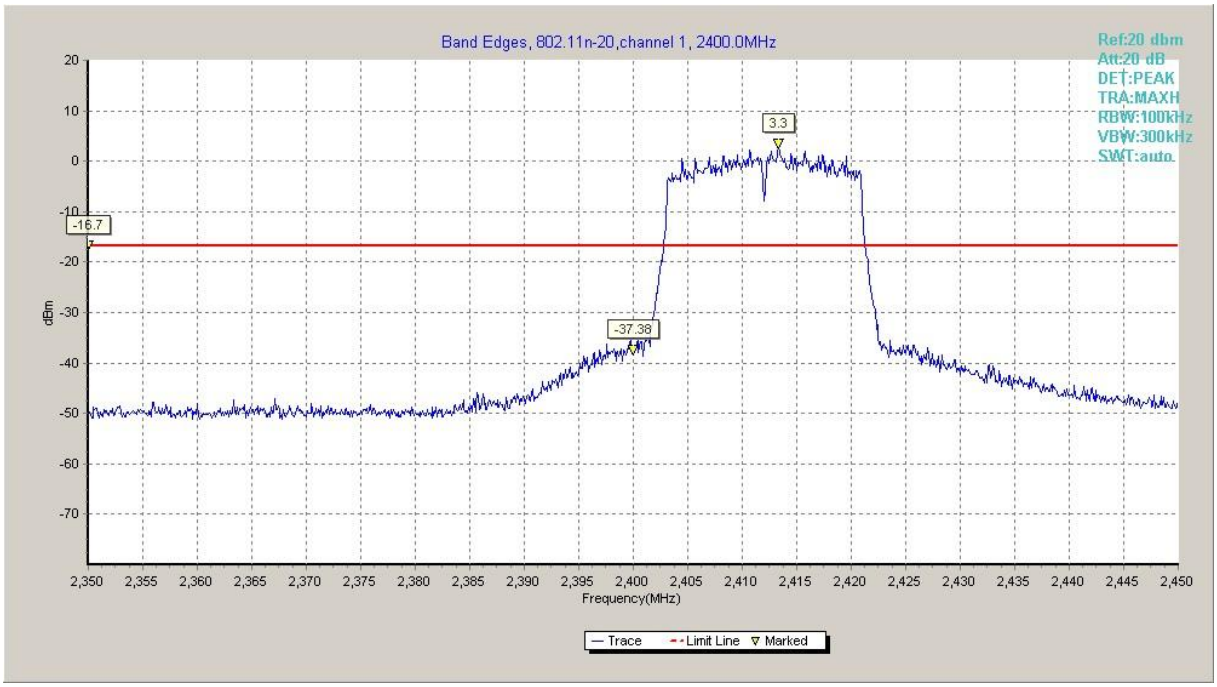

Fig.A.5.9 Band Edges (802.11n-HT20, Ch 1)

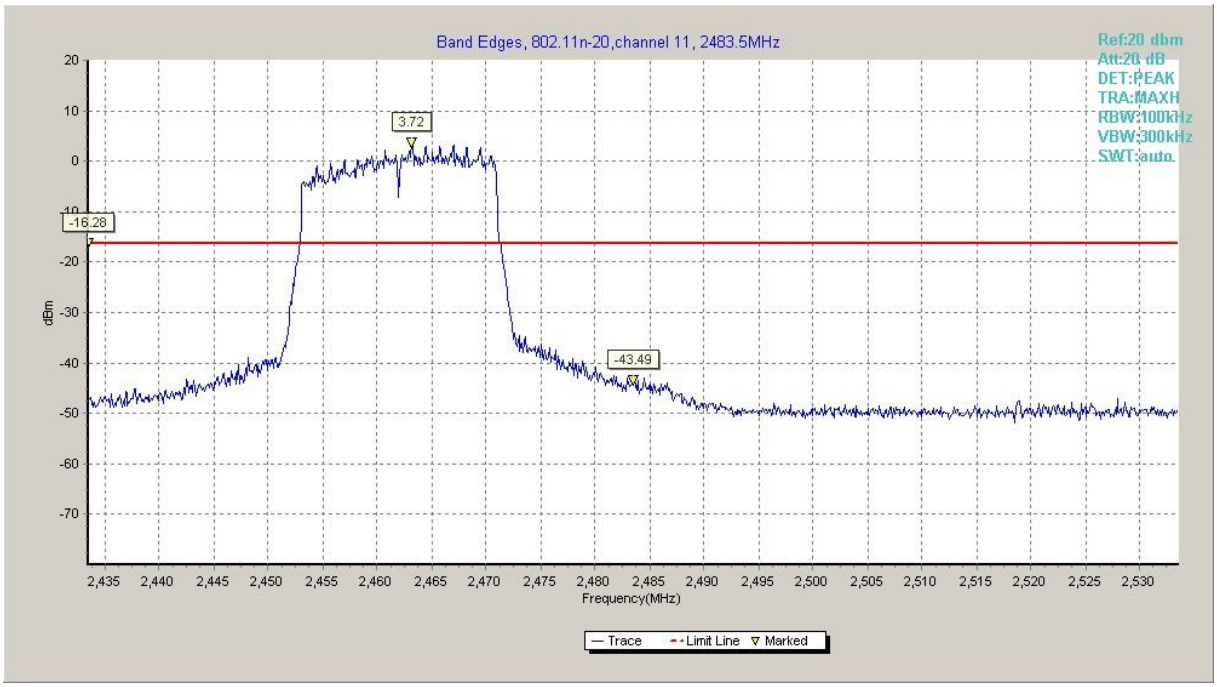

Fig.A.5.10 Band Edges (802.11n-HT20, Ch 11)

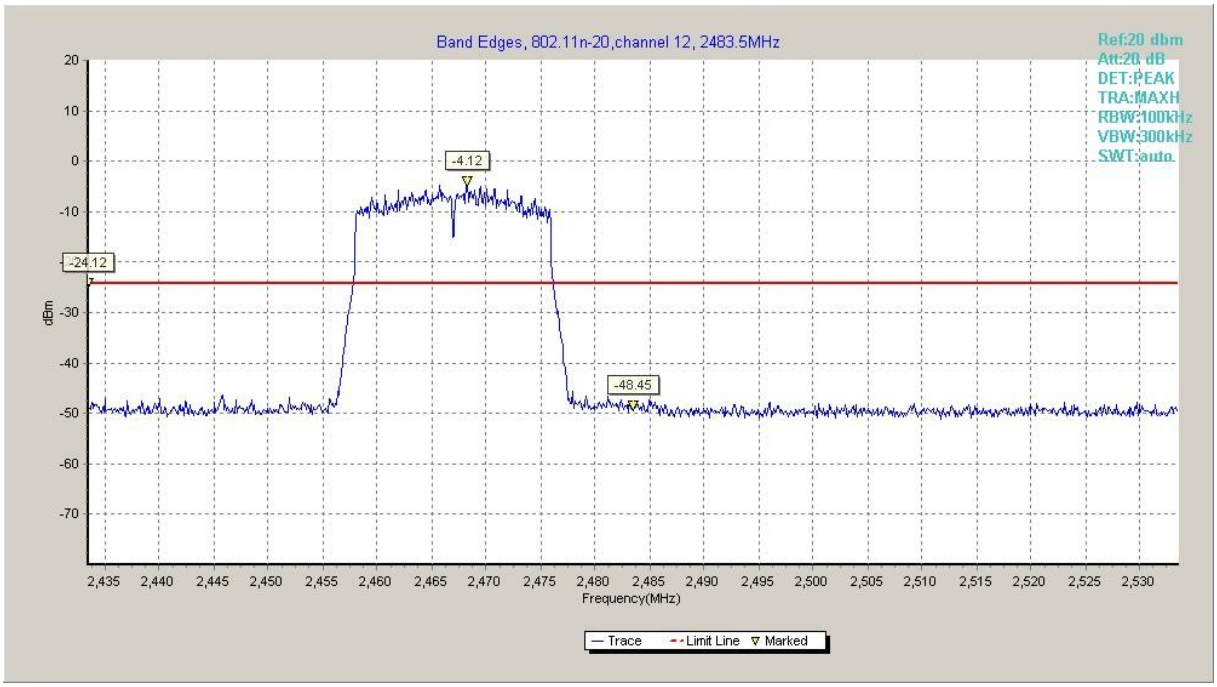

Fig.A.5.11 Band Edges (802.11n-HT20, Ch 12)

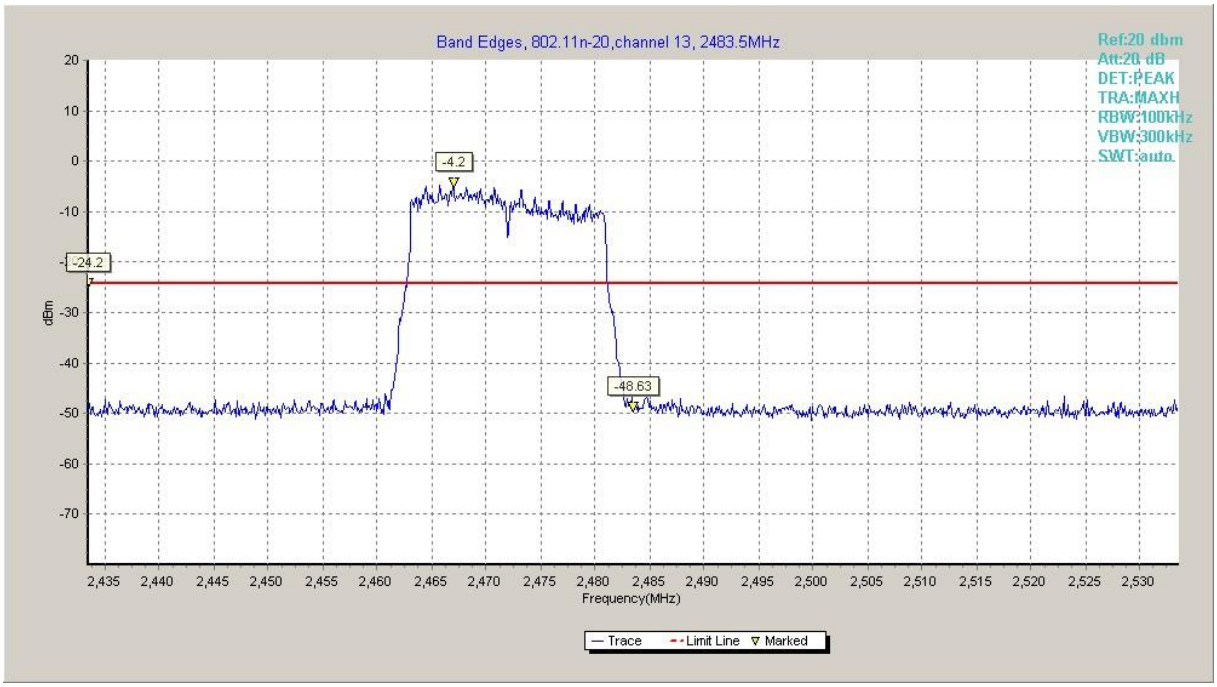

Fig.A.5.12 Band Edges (802.11n-HT20, Ch 13)

A.6. Transmitter Spurious Emission

A.6.1 Transmitter Spurious Emission – Conducted

Method of Measurement: See ANSI C63.10-2013-clause 11.11.2

Establish a reference level by using the following procedure:

a) Set instrument center frequency to DTS channel center frequency
b) Set the span to ≥ 1.5 times the DTS bandwidth
c) Set the RBW= 100 kHz
d) Set the VBW= 300 kHz
e) Detector = Peak
f) Sweep time = auto couple
g) Trace mode = max hold
h) Allow trace to fully stabilize
i) Use the peak marker function to determine the maximum PSD level

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

Establish an emission level by using the following procedure:

a) Set the center frequency and span to encompass frequency range to be measured.
b) Set the RBW = 100 kHz.
c) Set the VBW = 300 kHz.
d) Detector = peak.
e) Sweep time = auto couple.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

EUT ID: EUT2

Measurement Results:

802.11b mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.412 GHz	Fig.A.6.1.1	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.2	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.3	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.4	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.5	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.6	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.7	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.8	**P**
	6	2.437 GHz	Fig.A.6.1.9	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.10	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.11	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.12	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.13	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.14	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.15	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.16	**P**
	11	2.462 GHz	Fig.A.6.1.17	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.18	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.19	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.20	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.21	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.22	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.23	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.24	**P**
	12	2.462 GHz	Fig.A.6.1.25	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.26	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.27	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.28	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.29	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.30	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.31	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.32	**P**
	13	2.462 GHz	Fig.A.6.1.33	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.34	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.35	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.36	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.37	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.38	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.39	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.40	**P**

802.11g mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11g	1	2.412 GHz	Fig.A.6.1.41	P
		30 MHz ~ 1 GHz	Fig.A.6.1.42	P
		1 GHz ~ 2.5 GHz	Fig.A.6.1.43	P
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.44	P
		7.5 GHz ~ 10 GHz	Fig.A.6.1.45	P
		10 GHz ~ 15 GHz	Fig.A.6.1.46	P
		15 GHz ~ 20 GHz	Fig.A.6.1.47	P
		20 GHz ~ 26 GHz	Fig.A.6.1.48	P
	6	2.437 GHz	Fig.A.6.1.49	P
		30 MHz ~ 1 GHz	Fig.A.6.1.50	P
		1 GHz ~ 2.5 GHz	Fig.A.6.1.51	P
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.52	P
		7.5 GHz ~ 10 GHz	Fig.A.6.1.53	P
		10 GHz ~ 15 GHz	Fig.A.6.1.54	P
		15 GHz ~ 20 GHz	Fig.A.6.1.55	P
		20 GHz ~ 26 GHz	Fig.A.6.1.56	P
	11	2.462 GHz	Fig.A.6.1.57	P
		30 MHz ~ 1 GHz	Fig.A.6.1.58	P
		1 GHz ~ 2.5 GHz	Fig.A.6.1.59	P
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.60	P
		7.5 GHz ~ 10 GHz	Fig.A.6.1.61	P
		10 GHz ~ 15 GHz	Fig.A.6.1.62	P
		15 GHz ~ 20 GHz	Fig.A.6.1.63	P
		20 GHz ~ 26 GHz	Fig.A.6.1.64	P
	12	2.462 GHz	Fig.A.6.1.65	P
		30 MHz ~ 1 GHz	Fig.A.6.1.66	P
		1 GHz ~ 2.5 GHz	Fig.A.6.1.67	P
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.68	P
		7.5 GHz ~ 10 GHz	Fig.A.6.1.69	P
		10 GHz ~ 15 GHz	Fig.A.6.1.70	P
		15 GHz ~ 20 GHz	Fig.A.6.1.71	P
		20 GHz ~ 26 GHz	Fig.A.6.1.72	P
	13	2.462 GHz	Fig.A.6.1.73	P
		30 MHz ~ 1 GHz	Fig.A.6.1.74	P
		1 GHz ~ 2.5 GHz	Fig.A.6.1.75	P
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.76	P
		7.5 GHz ~ 10 GHz	Fig.A.6.1.77	P
		10 GHz ~ 15 GHz	Fig.A.6.1.78	P
		15 GHz ~ 20 GHz	Fig.A.6.1.79	P
		20 GHz ~ 26 GHz	Fig.A.6.1.80	P

802.11n-HT20 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	1	2.412 GHz	Fig.A.6.1.81	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.82	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.83	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.84	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.85	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.86	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.87	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.88	**P**
	6	2.437 GHz	Fig.A.6.1.89	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.90	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.91	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.92	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.93	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.94	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.95	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.96	**P**
	11	2.462 GHz	Fig.A.6.1.97	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.98	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.99	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.100	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.101	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.102	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.103	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.104	**P**
	12	2.462 GHz	Fig.A.6.1.105	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.106	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.107	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.108	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.109	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.110	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.111	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.112	**P**
	13	2.462 GHz	Fig.A.6.1.113	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.114	**P**
		1 GHz ~ 2.5 GHz	Fig.A.6.1.115	**P**
		2.5 GHz ~ 7.5 GHz	Fig.A.6.1.116	**P**
		7.5 GHz ~ 10 GHz	Fig.A.6.1.117	**P**
		10 GHz ~ 15 GHz	Fig.A.6.1.118	**P**
		15 GHz ~ 20 GHz	Fig.A.6.1.119	**P**
		20 GHz ~ 26 GHz	Fig.A.6.1.120	**P**

Conclusion: Pass

Test graphs as below:

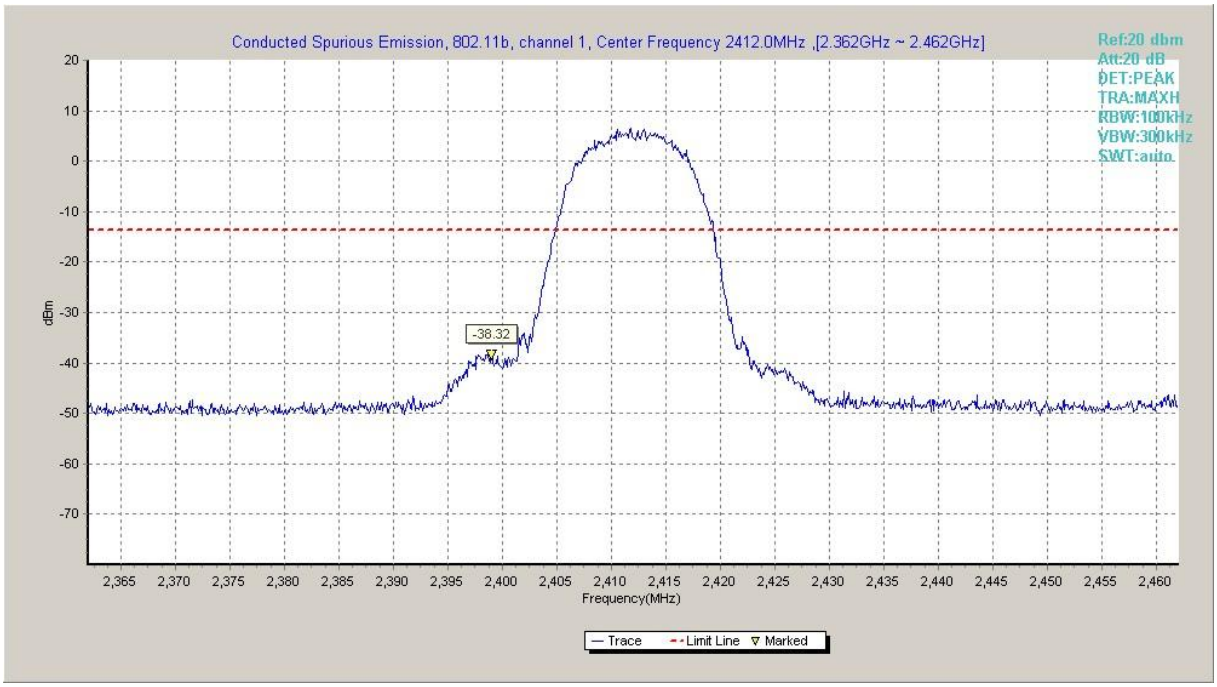

Fig.A.6.1.1 Transmitter Spurious Emission - Conducted (802.11b, Ch1, Center Frequency)

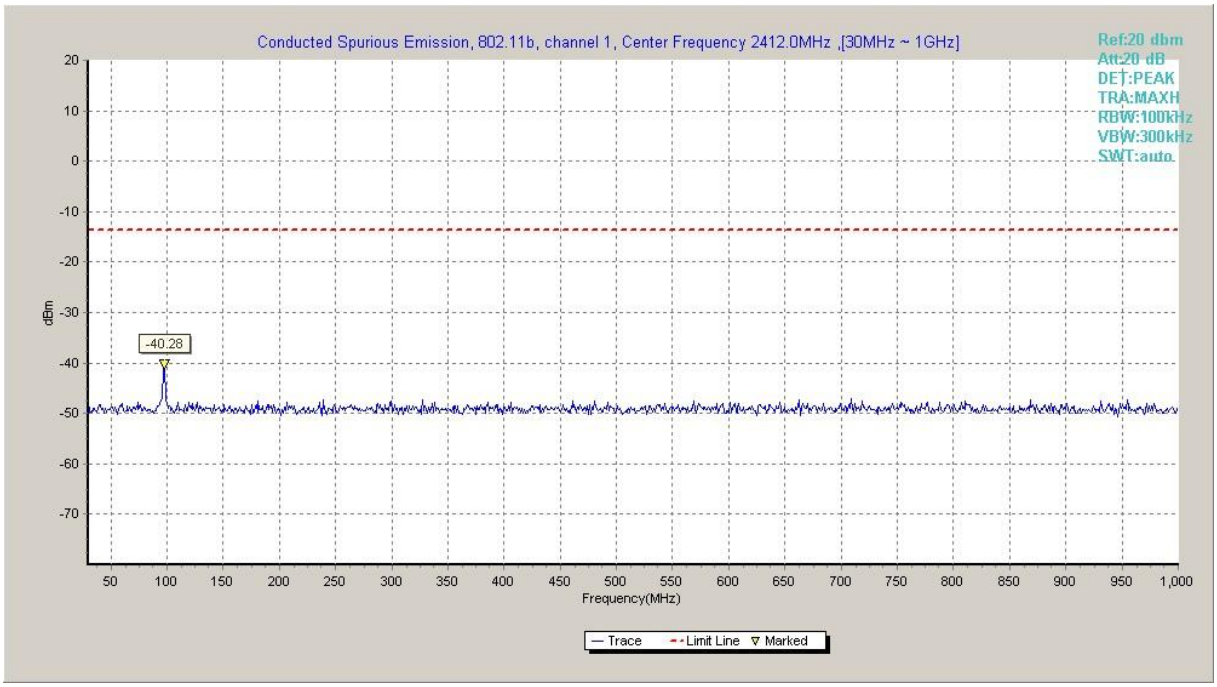

Fig.A.6.1.2 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 30 MHz-1 GHz)

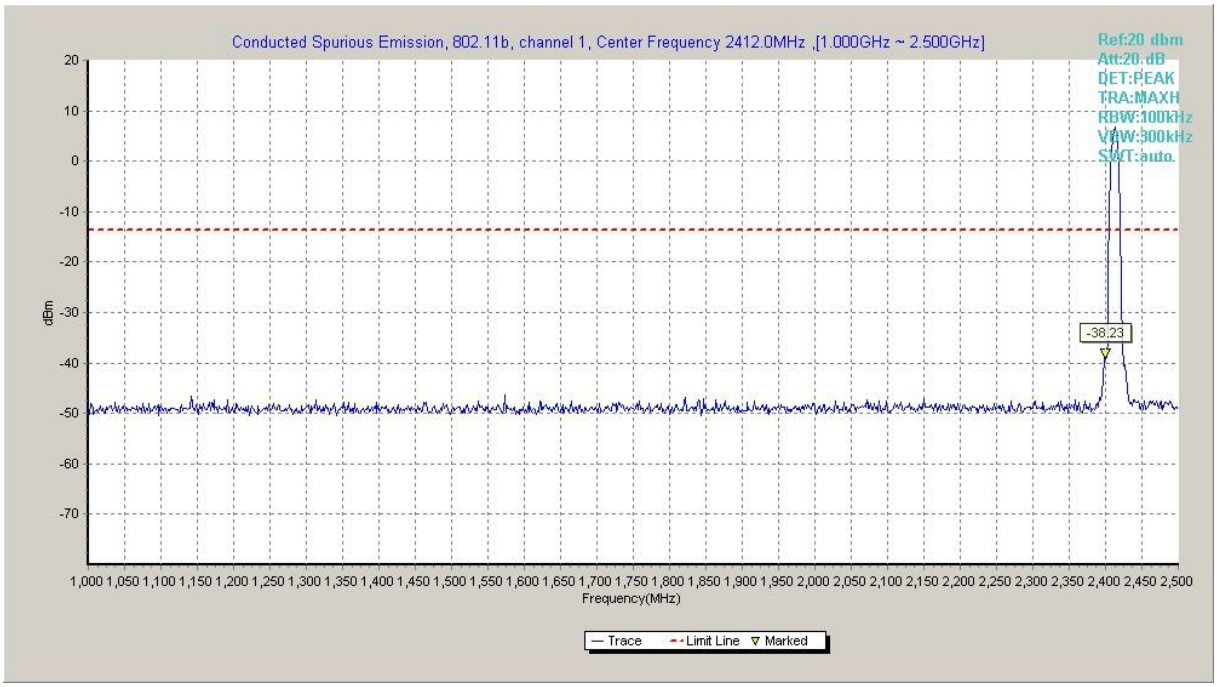

Fig.A.6.1.3 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 1 GHz-2.5 GHz)

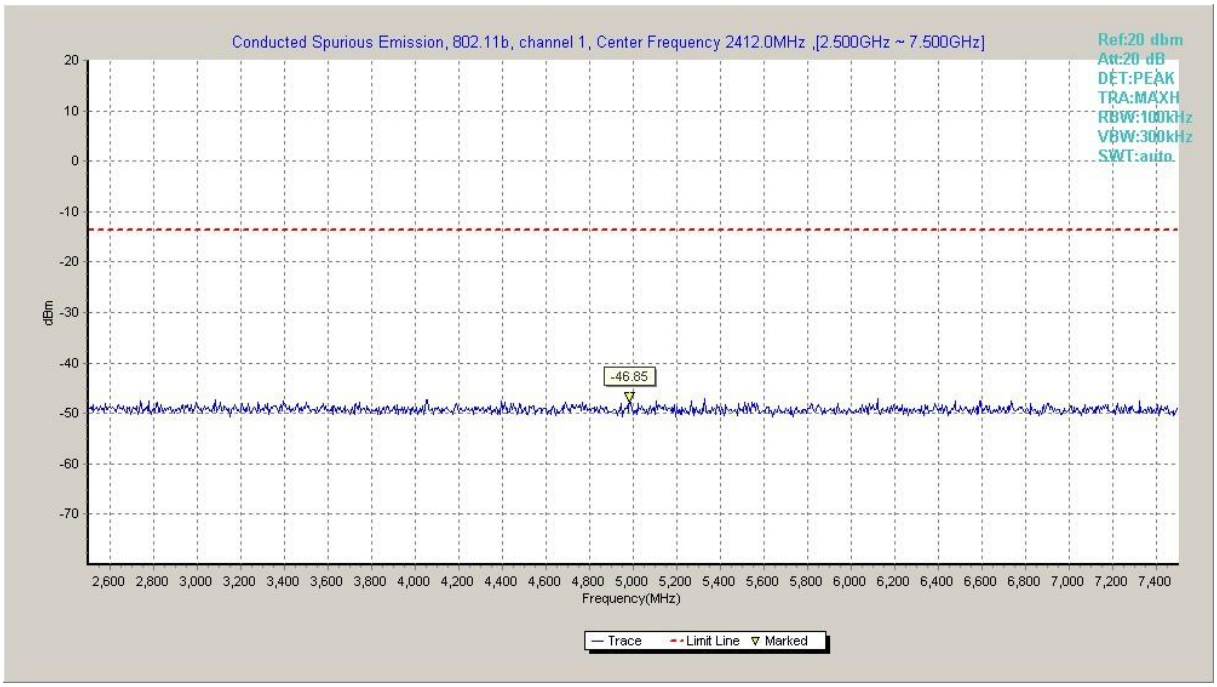

Fig.A.6.1.4 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 2.5 GHz-7.5 GHz)

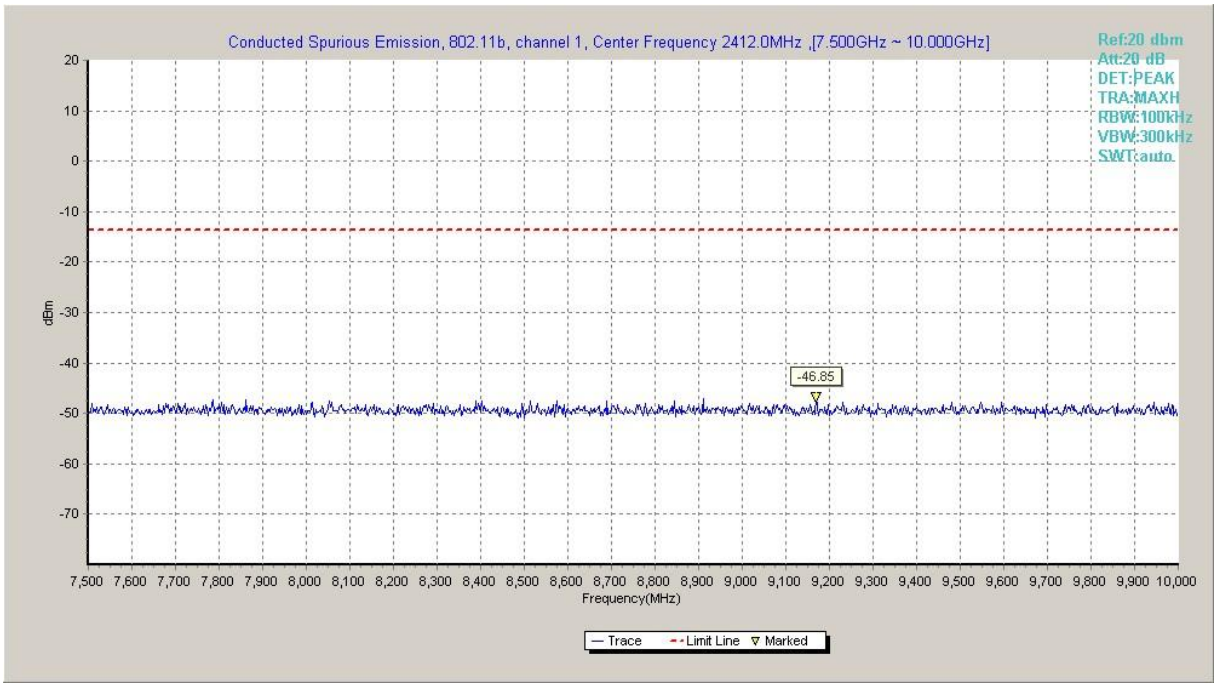

Fig.A.6.1.5 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 7.5 GHz-10 GHz)

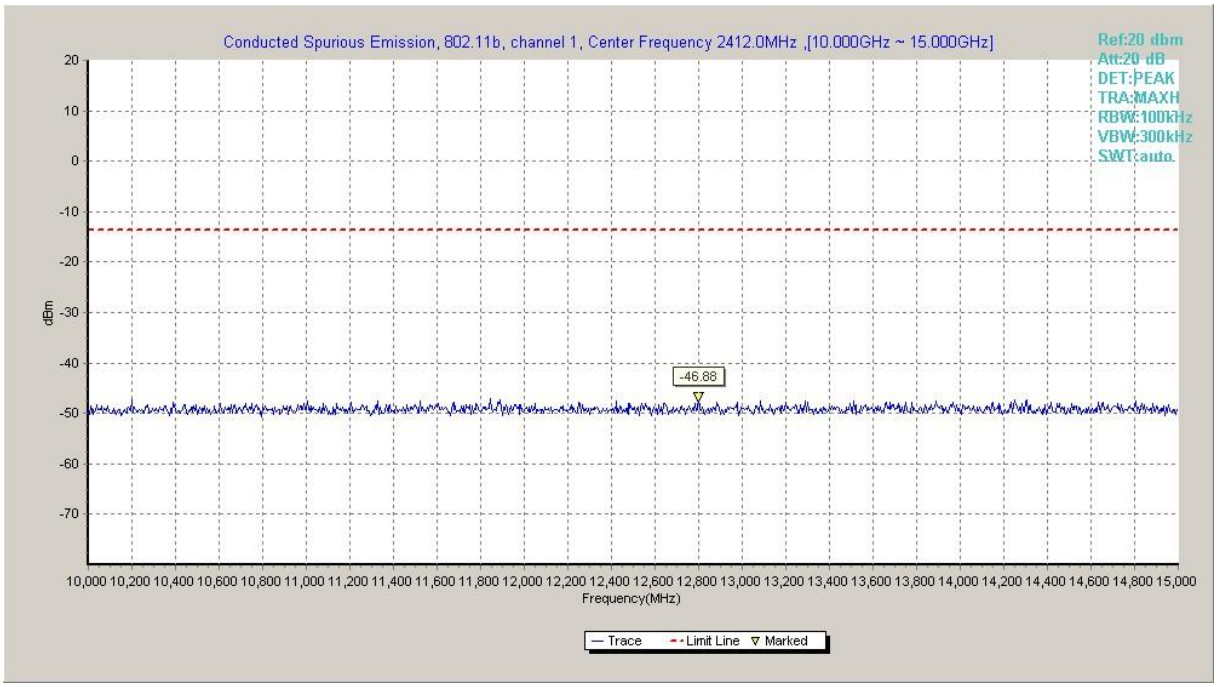

Fig.A.6.1.6 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 10 GHz-15 GHz)

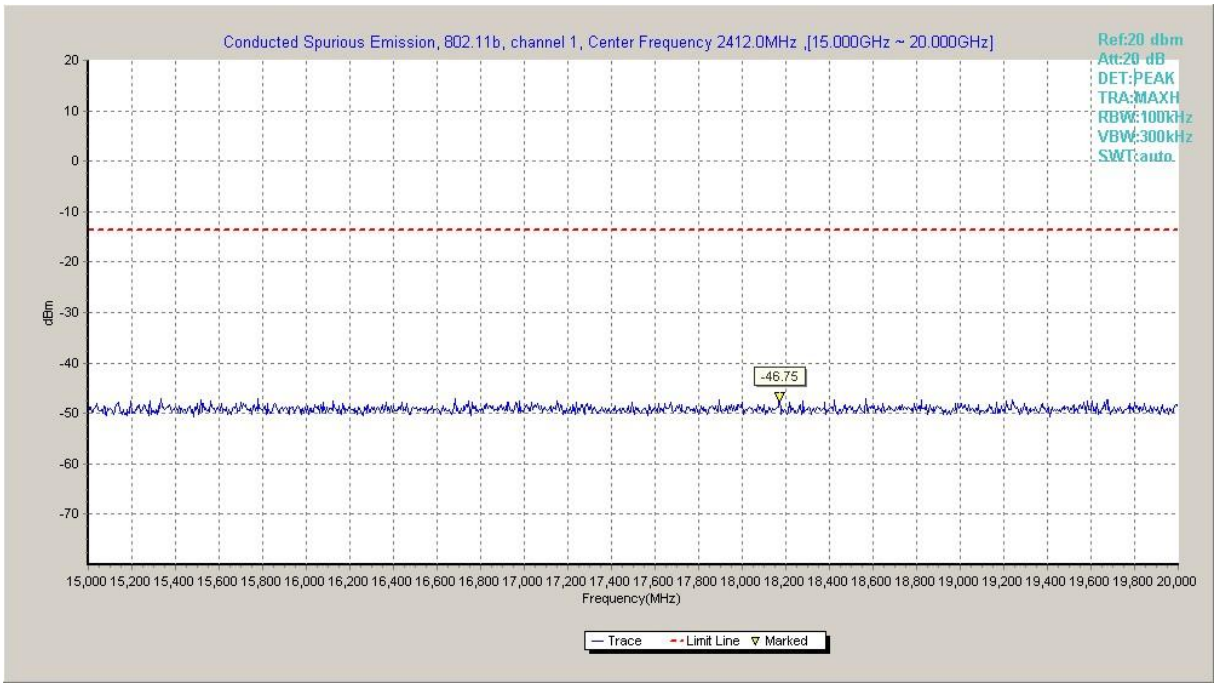

Fig.A.6.1.7 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 15 GHz-20 GHz)

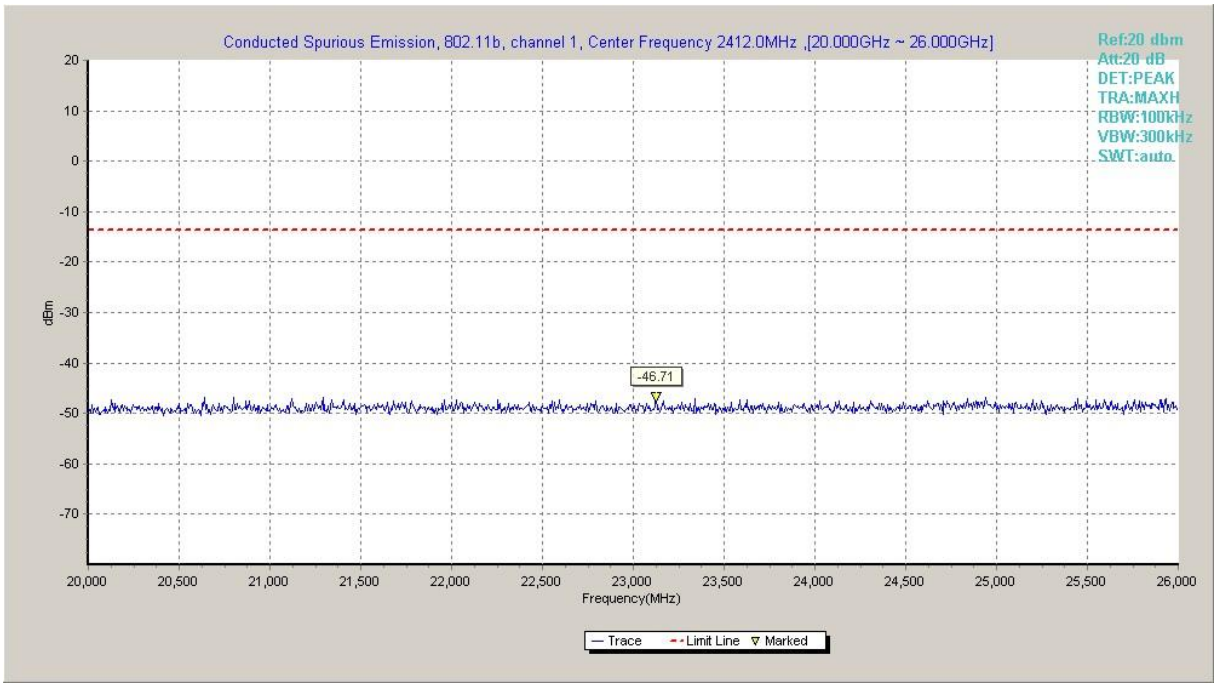

Fig.A.6.1.8 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 20 GHz-26 GHz)

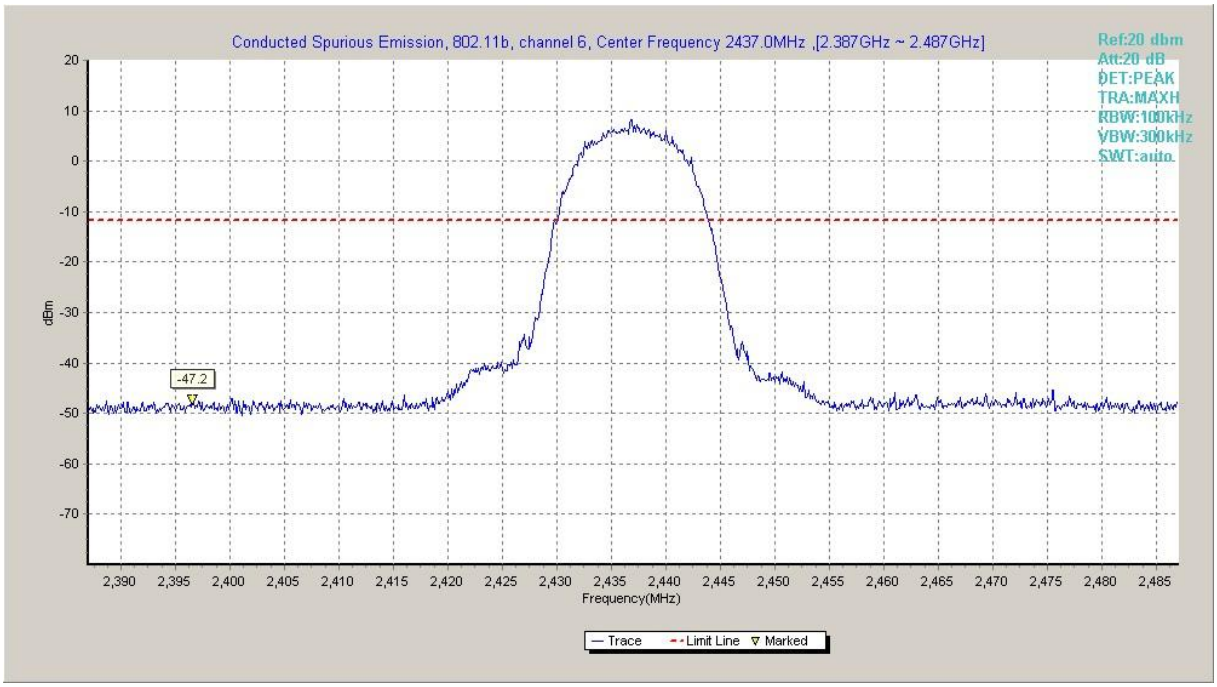

Fig.A.6.1.9 Transmitter Spurious Emission - Conducted (802.11b, Ch6, Center Frequency)

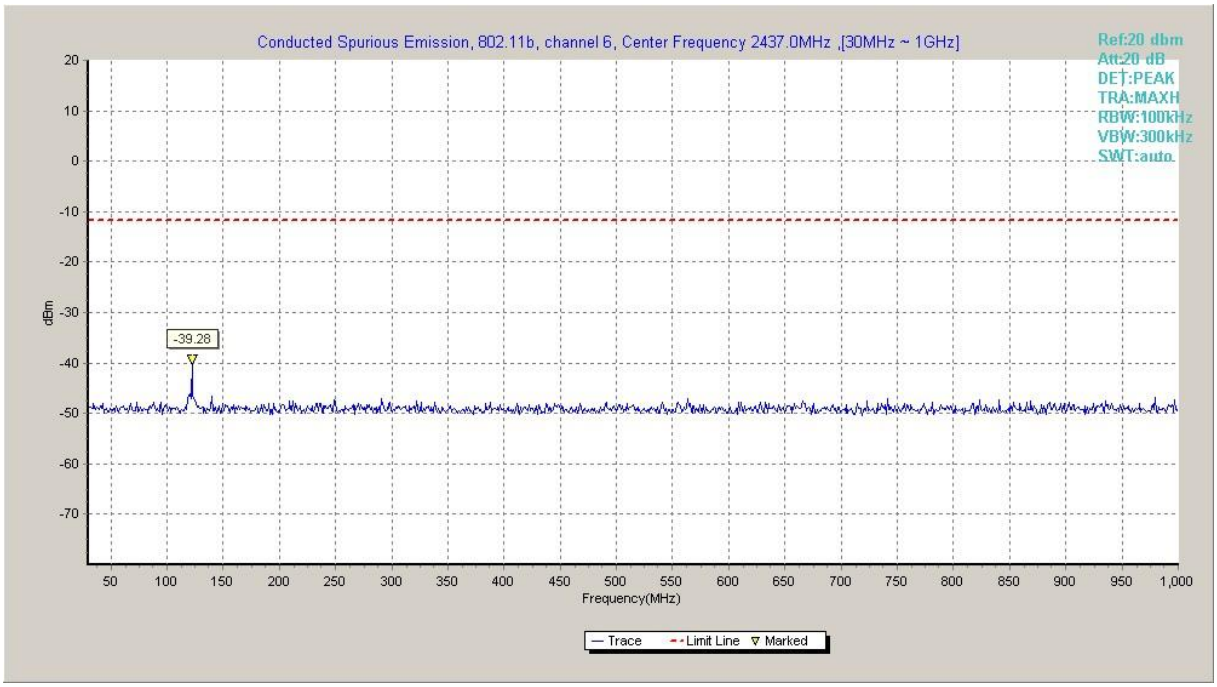

Fig.A.6.1.10 Transmitter Spurious Emission - Conducted (802.11b, Ch6, 30 MHz-1 GHz)