



*Full*

# TEST REPORT

**No. I17D00003-WLA**

*For*

**Client : Mobewire SAS**

**Production : Connected mobile with printer**

**Model Name : Mobiprint3**

**FCC ID: QPN-3Q-MOBIPRINT3**

**Hardware Version: V02**

**Software Version: V03**

**Issued date: 2017-05-12**

**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 ECIT Shanghai.

**Test Laboratory:**

ECIT Shanghai, East China Institute of Telecommunications

Add: 7-8F, G Area, No.668, Beijing East Road, Huangpu District, Shanghai, P. R. China

Tel: (+86)-021-63843300, E-Mail: [welcome@ecit.org.cn](mailto:welcome@ecit.org.cn)



# RF Test Report

Report No.: I17D00003-WLA

## Revision Version

Report Number	Revision	Date	Memo
I17D00003-WLA	00	2017-05-04	Initial creation of test report
I17D00003-WLA	01	2017-05-09	Secondary creation of test report
I17D00003-WLA	02	2017-05-10	Tertiary creation of test report
I17D00003-WLA	03	2017-05-12	Fourth creation of test report

**CONTENTS**

<b>1.</b>	<b>TEST LABORATORY</b> .....	<b>5</b>
<b>1.1.</b>	<b>TESTING LOCATION</b> .....	<b>5</b>
<b>1.2.</b>	<b>TESTING ENVIRONMENT</b> .....	<b>5</b>
<b>1.3.</b>	<b>PROJECT DATA</b> .....	<b>5</b>
<b>1.4.</b>	<b>SIGNATURE</b> .....	<b>5</b>
<b>2.</b>	<b>CLIENT INFORMATION</b> .....	<b>6</b>
<b>2.1.</b>	<b>APPLICANT INFORMATION</b> .....	<b>6</b>
<b>2.2.</b>	<b>MANUFACTURER INFORMATION</b> .....	<b>6</b>
<b>3.</b>	<b>EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)</b> .....	<b>7</b>
<b>3.1.</b>	<b>ABOUT EUT</b> .....	<b>7</b>
<b>3.2.</b>	<b>INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST</b> .....	<b>7</b>
<b>3.3.</b>	<b>INTERNAL IDENTIFICATION OF AE USED DURING THE TEST</b> .....	<b>7</b>
<b>4.</b>	<b>REFERENCE DOCUMENTS</b> .....	<b>8</b>
<b>4.1.</b>	<b>REFERENCE DOCUMENTS FOR TESTING</b> .....	<b>8</b>
<b>5.</b>	<b>SUMMARY OF TEST RESULTS</b> .....	<b>9</b>
<b>5.1.</b>	<b>NOTES</b> .....	<b>10</b>
<b>5.2.</b>	<b>STATEMENTS</b> .....	<b>10</b>
<b>6.</b>	<b>TEST RESULT</b> .....	<b>11</b>
<b>6.1.</b>	<b>MAXIMUM OUTPUT POWER</b> .....	<b>11</b>
<b>6.2.</b>	<b>PEAK POWER SPECTRAL DENSITY</b> .....	<b>13</b>
<b>6.3.</b>	<b>OCCUPIED 6DB BANDWIDTH</b> .....	<b>25</b>
<b>6.4.</b>	<b>BAND EDGES COMPLIANCE</b> .....	<b>36</b>
<b>6.5.</b>	<b>TRANSMITTER SPURIOUS EMISSION-CONDUCTED</b> .....	<b>45</b>
<b>6.6.</b>	<b>TRANSMITTER SPURIOUS EMISSION-RADIATED</b> .....	<b>68</b>
<b>6.7.</b>	<b>AC POWERLINE CONDUCTED EMISSION</b> .....	<b>122</b>



## ***RF Test Report***

Report No.: I17D00003-WLA

---

<b>7.</b>	<b>TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS .....</b>	<b>125</b>
<b>8.</b>	<b>TEST ENVIRONMENT .....</b>	<b>126</b>
<b>ANNEX A.</b>	<b>DEVIATIONS FROM PRESCRIBED TEST METHODS .....</b>	<b>127</b>

## 1. Test Laboratory

### 1.1. Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications
Address:	7-8F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai, P. R. China
Postal Code:	200001
Telephone:	(+86)-021-63843300
Fax:	(+86)-021-63843301

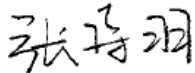
### 1.2. Testing Environment

Normal Temperature:	15-35°C
Extreme Temperature:	-10/+55°C
Relative Humidity:	20-75%

### 1.3. Project data

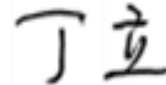
Project Leader:	Yu Anlu
Testing Start Date:	2017-01-06
Testing End Date:	2017-05-08

### 1.4. Signature



**Zhang Shiyu**

(Prepared this test report)



**Ding Li**

(Reviewed this test report)



**Zheng Zhongbin**

**Director of the laboratory**

(Approved this test report)

## 2. Client Information

### 2.1. Applicant Information

Company Name:           Mobiwire SAS  
Address:                 79 AVENUE FRANCOIS ARAGO 92017 NANTERRE CEDEX  
                              France.  
Telephone:              +33 1 78 14 09 58  
Postcode:                France 92017

### 2.2. Manufacturer Information

Company Name:           MOBIWIRE MOBILES (NINGBO) CO.,LTD  
Address:                 No.999,Dacheng East Road,Fenghua City,Zhejiang  
Telephone:              0574 59555707  
Postcode:                315500

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

#### 3.1. About EUT

EUT Description	Connected mobile with printer
Model name	Mobiprint3
WLAN Frequency	2412MHz-2472MHz
WLAN Channel	Channel1-Channel13
WLAN type of modulation	802.11b:DSSS 802.11g/n: OFDM
Extreme Temperature	-10/+55 °C
Nominal Voltage	7.4V
Extreme High Voltage	8.4V
Extreme Low Voltage	6.6V

Note: Photographs of EUT are shown in ANNEX A of this test report.

#### 3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N01	358154081052492	V02	V03	2017-01-06

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

#### 3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	RF cable	---
AE2	---	---

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

## 4. Reference Documents

### 4.1. 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, 2400-2483.5MHz, and 5725-5850MHz.	Jun,2016 Edition
ANSI 63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9KHz to 40GHz	2013



## 5. Summary of Test Results

A brief summary of the tests carried out is shown as following.

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

Please refer to part 5 for detail.

The measurements are according to Public notice KDB558074 and ANSI C63.4.

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 ECIT.
NA	Not Applicable, the test was not applicable.
F	Fail, the EUT does not comply with the essential requirements in the standard.

Test Conditions

Tnom	Normal temperature
Tmin	Low Temperature
Tmax	High Temperature
Vnom	Normal Voltage
Vmin	Low Voltage
Vmax	High Voltage
Hnom	Norm Humidity
Anom	Norm Air Pressure

For this report, all the test case listed above are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	Tnom	22°C
Voltage	Vnom	3.7V
Humidity	Hnom	32%
Air Pressure	Anom	1010hPa

**5.1. Notes**

All reported tests were carried out on a sample equipment to demonstrate limited compliance with section 3.

The test results of this test report relate exclusively to the item(s) tested as specified in section 5.

The following deviation from, additions to, or exclusions from the test specifications have been made. See section 3.

**5.2. Statements**

The product name Mobiprint3, supporting GPRS/EDGE/WCDMA/HSDPA/HSUPA/HSPA+/WLAN/BT/BLE/GPS, manufactured by MOBIWIRE MOBILES (NINGBO) CO.,LTD is a new product for testing.

ECIT has verified that the compliance of the tested device specified in section 5 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 5 of this test report.

## 6. Test result

### 6.1. Maximum Output Power

#### 6.1.1 Measurement Limit and method:

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

#### 6.1.2 Test procedure

The measurement is according to ANSI C63.10 clause 11.2

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set RBW  $\geq$  OBW, VBW  $\geq$  3RBW.
4. Detector : Peak.
5. Trace mode: Max Hold

#### 6.1.3 Measurement Uncertainty:

Measurement Uncertainty	0.75dB
-------------------------	--------

#### 6.1.4 Maximum Peak Output Power-conducted

##### Measurement Results:

##### 802.11b/g mode

Mode	Data Rate(Mbps)	Teat Result(dBm)				
		2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)	2467MHz (Ch12)	2472MHz (Ch13)
802.11b	1	18.14	17.62	17.02	17.40	17.29
	2	18.04	17.57	16.96	17.36	17.17
	5.5	17.76	17.40	16.81	17.04	17.00
	11	17.70	17.26	16.66	16.97	16.87
802.11g	6	21.40	21.37	21.06	21.22	21.07
	9	21.42	21.39	21.11	21.25	21.00
	12	21.29	21.17	20.23	21.05	20.85

	18	21.20	20.87	20.12	21.03	20.79
	24	21.40	21.30	20.65	21.32	20.98
	36	21.62	21.59	21.27	21.44	21.32
	48	21.41	21.37	20.51	21.27	21.01
	54	21.54	21.45	20.76	21.05	20.88

The data rate 1Mbps and 36Mbps are selected as worse condition, and the following cases are performed with this condition.

**802.11n mode**

Mode	Data Rate (Index)	Teat Result(dBm)				
		2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)	2467MHz (Ch12)	2472MHz (Ch13)
802.11n (20MHz)	MCS0	15.53	15.08	14.46	15.33	15.20
	MCS1	16.46	15.01	14.68	16.27	15.74
	MCS2	15.33	14.91	14.33	15.19	14.65
	MCS3	15.75	15.30	14.76	15.38	15.19
	MCS4	20.99	20.87	20.28	20.73	20.28
	MCS5	21.21	20.84	20.54	20.94	20.04
	MCS6	20.27	20.92	20.03	19.84	19.67
	MCS7	20.54	20.36	19.65	19.98	19.72
Mode	Data Rate (Index)	Teat Result(dBm)				
		2422MHz (Ch3)	2437MHz (Ch6)	2452MHz (Ch9)	2457MHz (Ch10)	2462MHz (Ch11)
802.11n (40MHz)	MCS0	19.48	19.19	18.57	18.48	18.27
	MCS1	19.47	19.34	18.71	18.49	18.25
	MCS2	18.77	18.67	18.95	17.92	17.66
	MCS3	20.06	19.75	19.09	19.88	19.45
	MCS4	20.43	20.17	19.46	20.17	19.72
	MCS5	20.86	20.80	20.15	20.28	20.04

	MCS6	21.15	20.96	20.28	20.34	20.03
	MCS7	20.98	20.61	20.21	20.22	19.80

The data rate MCS5 for 802.11n(20M)and MCS6 for 802.11n(40M) are selected as worse condition, and the following case are performed with this condition.

### 6.1.5 Maximum Average Output Power-conducted

#### 802.11b/g mode

Mode	Test Result(dBm)				
	2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)	2467MHz (Ch12)	2472MHz (Ch13)
802.11b	14.75	14.26	13.64	13.37	13.18
802.11g	12.81	12.22	11.67	11.29	11.07

#### 802.11n mode

Mode	Test Result(dBm)				
	2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)	2467MHz (Ch12)	2472MHz (Ch13)
802.11n( 20MHz)	10.96	10.25	9.46	9.88	9.63
Mode	Test Result(dBm)				
	2422MHz (Ch3)	2437MHz (Ch6)	2452MHz (Ch9)	2457MHz (Ch10)	2462MHz (Ch11)
802.11n( 40MHz)	10.66	10.17	9.80	9.27	8.94

**Conclusion: PASS**

## 6.2. Peak Power Spectral Density

### 6.2.1 Measurement Limit:

Standard	Limit
FCC CFR Part 15.247(e)	< 8dBm/3 KHz

### 6.2.2 Test procedures

The measurement is according to ANSI C63.10 clause 11.10.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set analyzer center frequency to DTS channel center frequency.
4. Set the span to 1.5 times the DTS bandwidth.
5. Set the RBW to  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
6. Set the VBW  $\geq [3 \times \text{RBW}]$ .
7. Detector = peak.
8. Sweep time = auto couple.
9. Trace mode = max hold.
10. Allow trace to fully stabilize.
11. Use the peak marker function to determine the maximum amplitude level within the RBW.
12. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

### 6.2.3 Measurement Uncertainty:

Measurement Uncertainty	0.75dB
-------------------------	--------

### 6.2.4 Measurement Results:

#### 802.11b/g mode

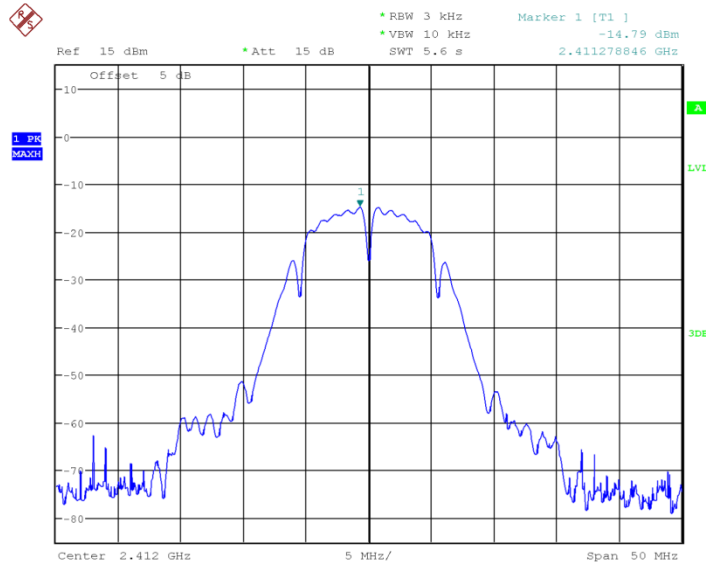
Mode	Channel	Power Spectral Density(dBm/3kHz)		Conclusion
802.11b	1	Fig 1.	-14.791	P
	6	Fig 2.	-15.406	P
	11	Fig 3.	-16.086	P
	12	Fig 4.	-14.987	P
	13	Fig 5.	-15.264	P
802.11g	1	Fig 6.	-13.905	P
	6	Fig 7.	-14.218	P
	11	Fig 8.	-15.636	P
	12	Fig 9.	-14.678	P
	13	Fig 10.	-14.822	P

802.11n mode

Mode	Channel	Power Spectral Density(dBm/3kHz)		Conclusion
802.11n(20MHz)	1	Fig 11.	-19.176	P
	6	Fig 12.	-19.237	P
	11	Fig 13.	-19.999	P
	12	Fig 14.	-18.851	P
	13	Fig 15.	-19.806	P
802.11n(40MHz)	3	Fig 16.	-21.239	P
	6	Fig 17.	-21.351	P
	9	Fig 18.	-21.712	P
	10	Fig 19.	-20.158	P
	11	Fig 20.	-19.675	P

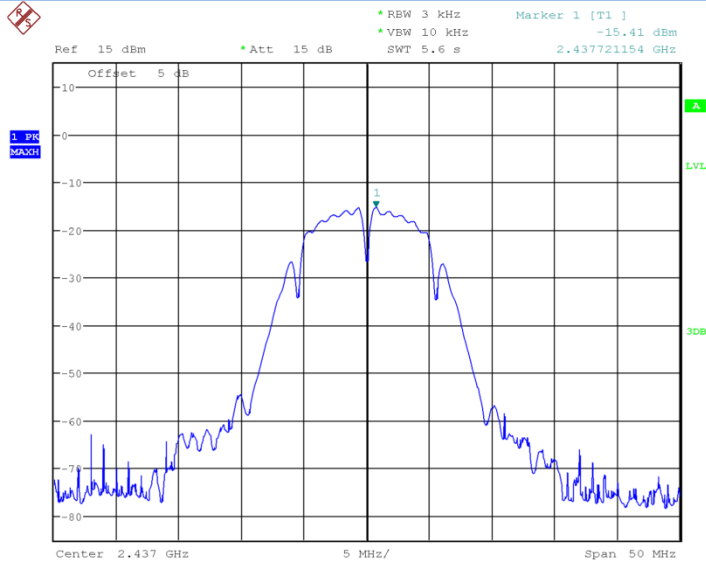
**Conclusion: PASS**

Test graphs as below:



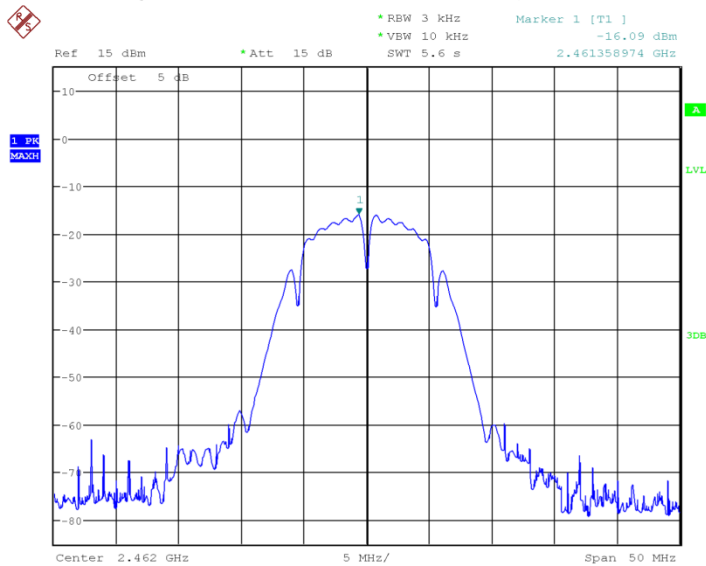
Date: 1.MAR.2017 07:55:46

**Fig 1. Power Spectral Density (802.1b,Ch1)**



Date: 1.MAR.2017 07:56:20

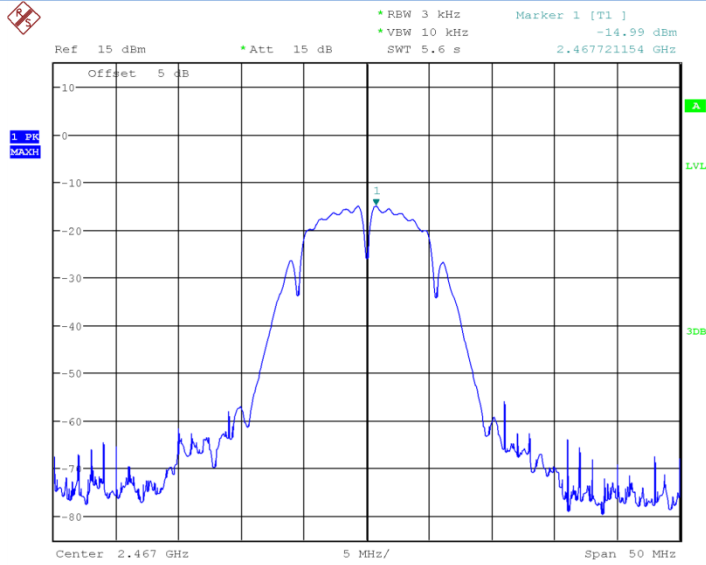
**Fig 2. Power Spectral Density (802.1b,Ch6)**



Date: 1.MAR.2017 07:57:27

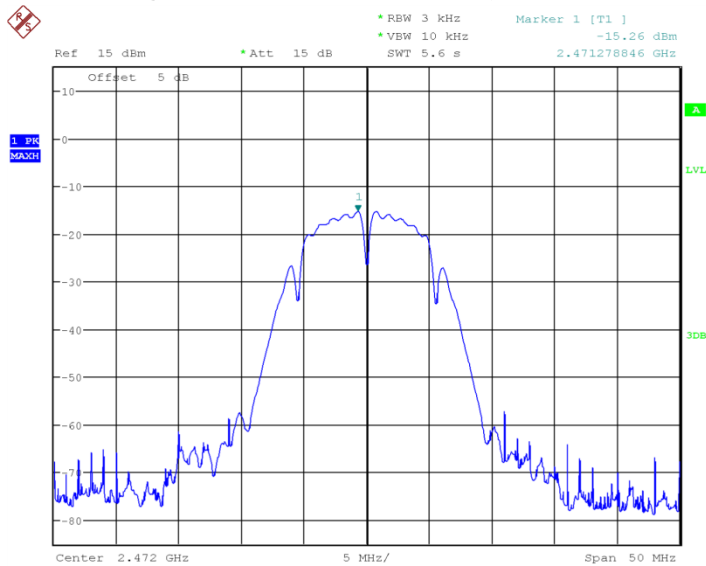
**Fig 3. Power Spectral Density (802.1b,Ch11)**





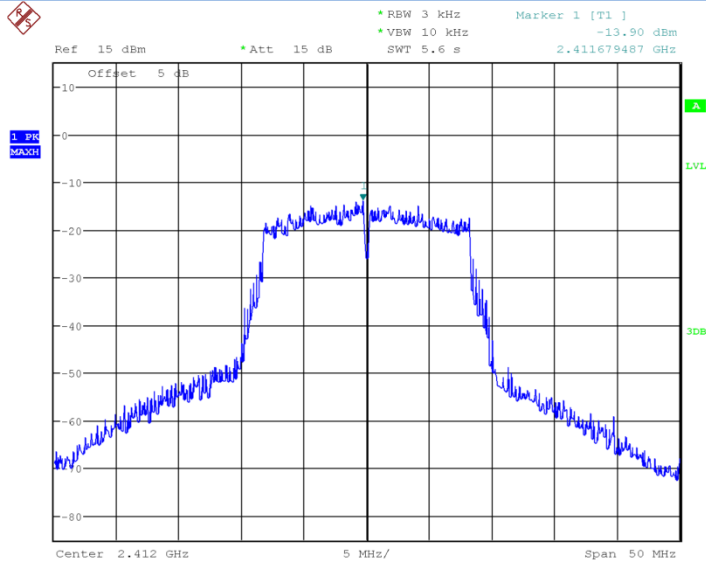
Date: 3.MAY.2017 08:04:20

**Fig.4 Power Spectral Density (802.1b,Ch12)**



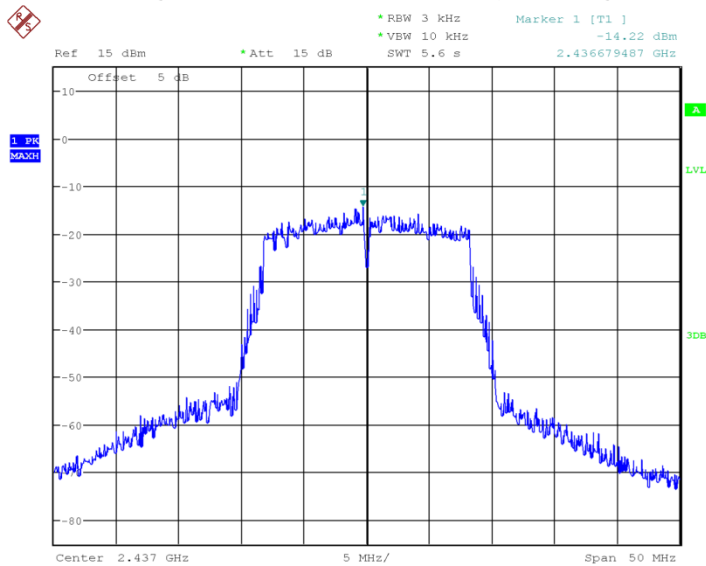
Date: 3.MAY.2017 08:08:19

**Fig.5 Power Spectral Density (802.1b,Ch13)**



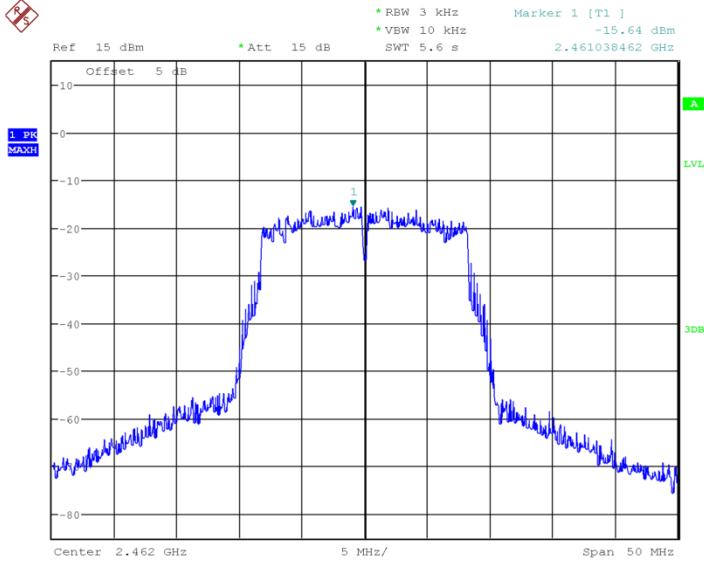
Date: 1.MAR.2017 07:58:05

**Fig.6 Power Spectral Density (802.1g,Ch1)**



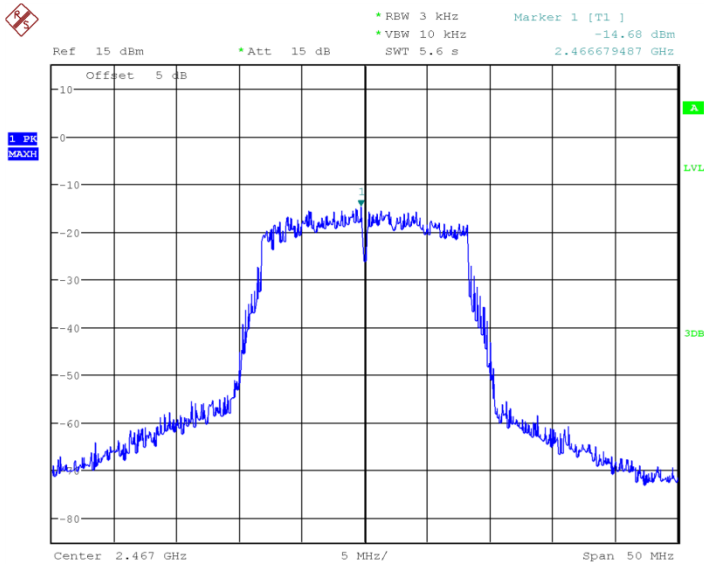
Date: 1.MAR.2017 07:58:30

**Fig.7 Power Spectral Density (802.1g,Ch6)**



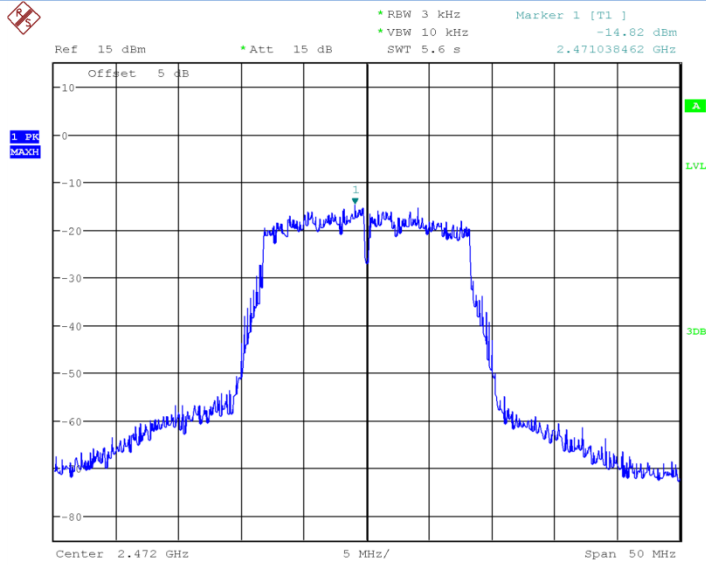
Date: 1.MAR.2017 07:58:59

**Fig.8 Power Spectral Density (802.1g,Ch11)**



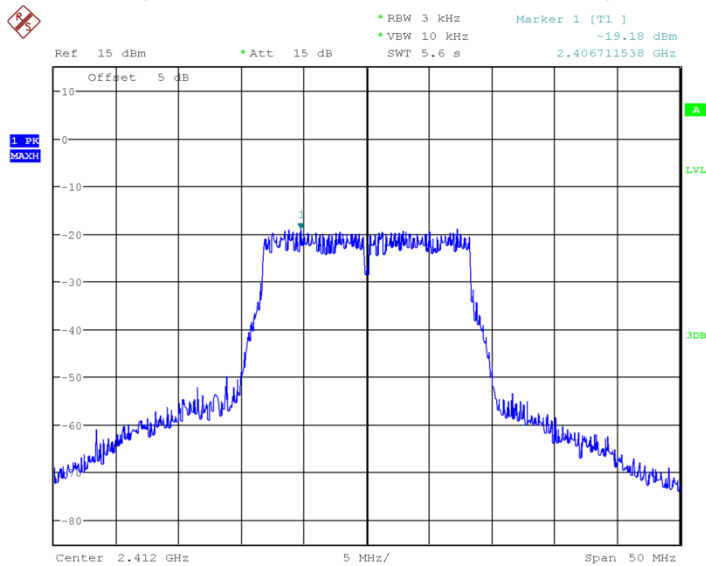
Date: 3.MAY.2017 08:12:01

**Fig.9 Power Spectral Density (802.1g,Ch12)**



Date: 3.MAY.2017 08:13:00

**Fig.10 Power Spectral Density (802.1g,Ch13)**

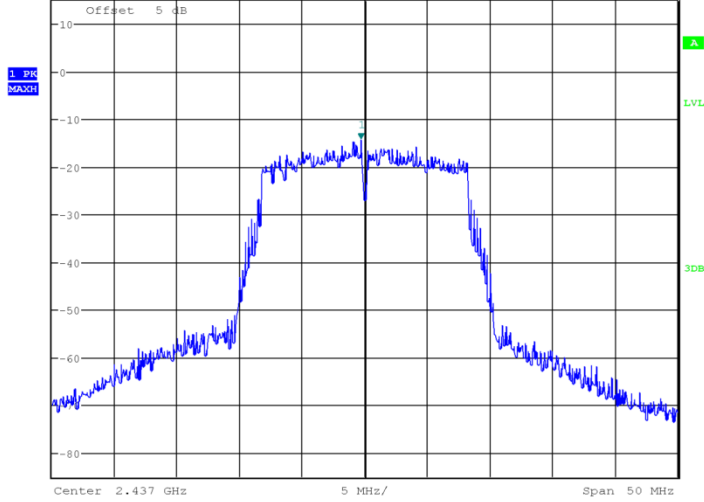


Date: 1.MAR.2017 08:00:13

**Fig.11 Power Spectral Density (802.1n-20MHz,Ch1)**



Ref 15 dBm    Att 15 dB    RBW 3 kHz    Marker 1 [T1]    -14.22 dBm  
VBW 10 kHz    SWT 5.6 s    2.436679487 GHz

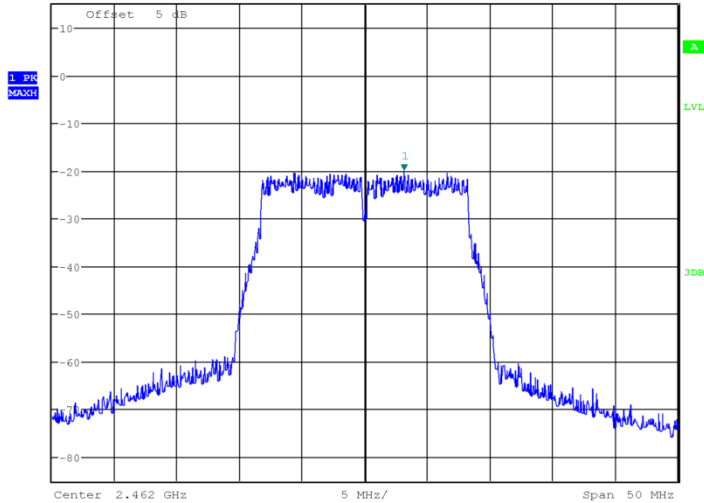


Date: 1.MAR.2017 07:58:30

### Fig.12 Power Spectral Density (802.1n-20MHz,Ch6)

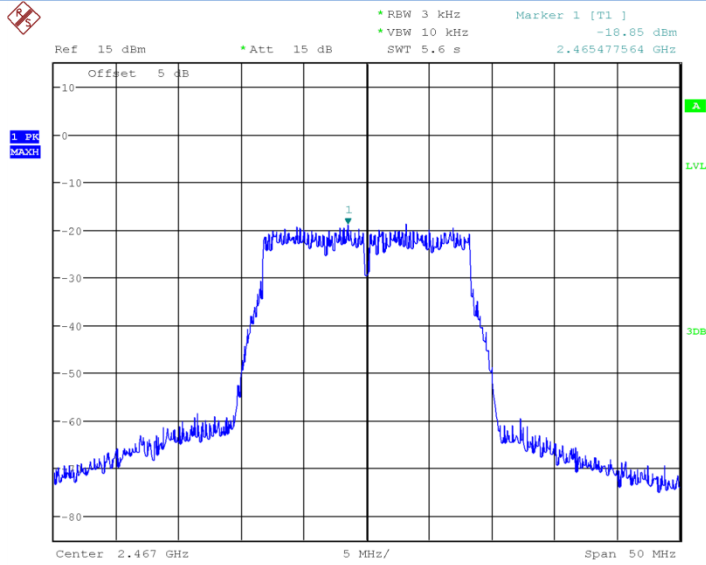


Ref 15 dBm    Att 15 dB    RBW 3 kHz    Marker 1 [T1]    -20.00 dBm  
VBW 10 kHz    SWT 5.6 s    2.465125000 GHz



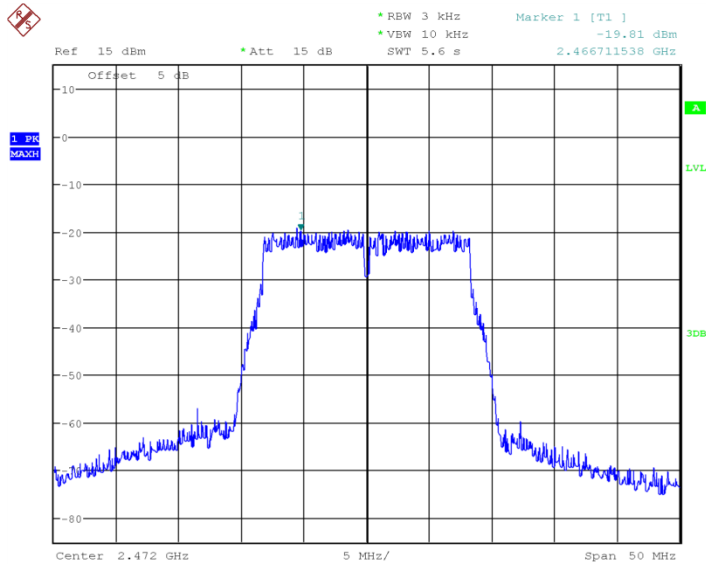
Date: 1.MAR.2017 08:01:26

### Fig.13 Power Spectral Density (802.1n-20MHz,Ch11)



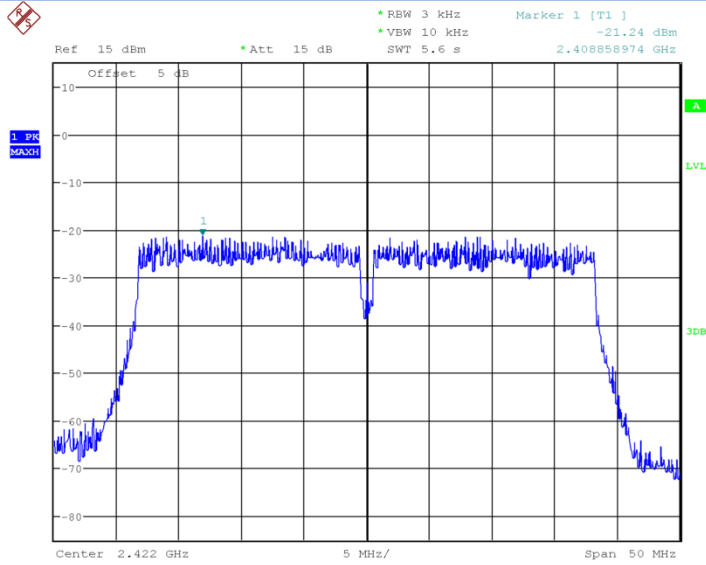
Date: 3.MAY.2017 08:14:21

**Fig.14 Power Spectral Density (802.1n-20MHz,Ch12)**



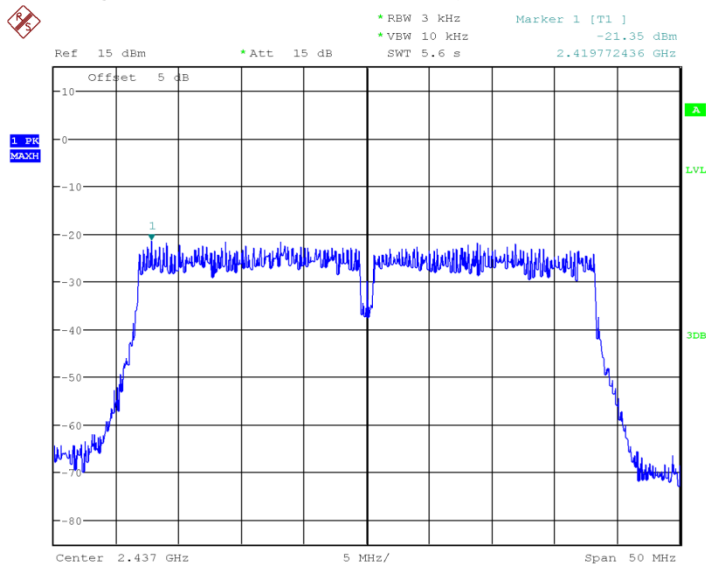
Date: 3.MAY.2017 08:19:24

**Fig.15 Power Spectral Density (802.1n-20MHz,Ch13)**



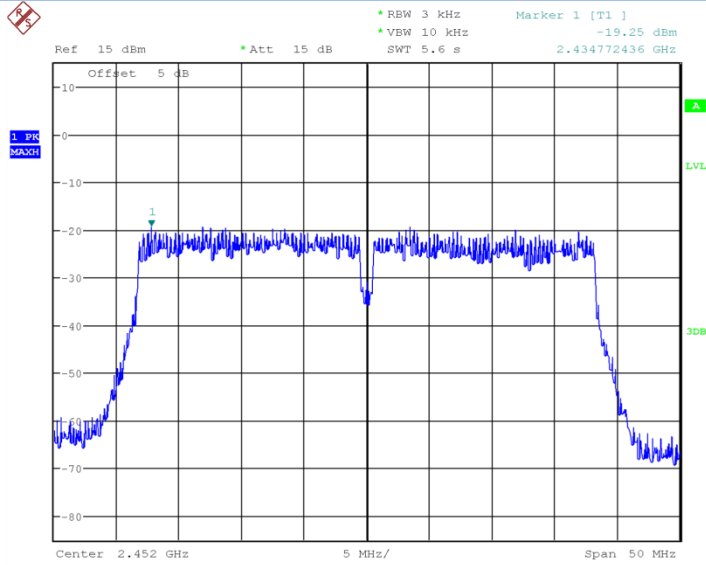
Date: 1.MAR.2017 08:38:57

**Fig.16 Power Spectral Density (802.1n-40MHz,Ch3)**

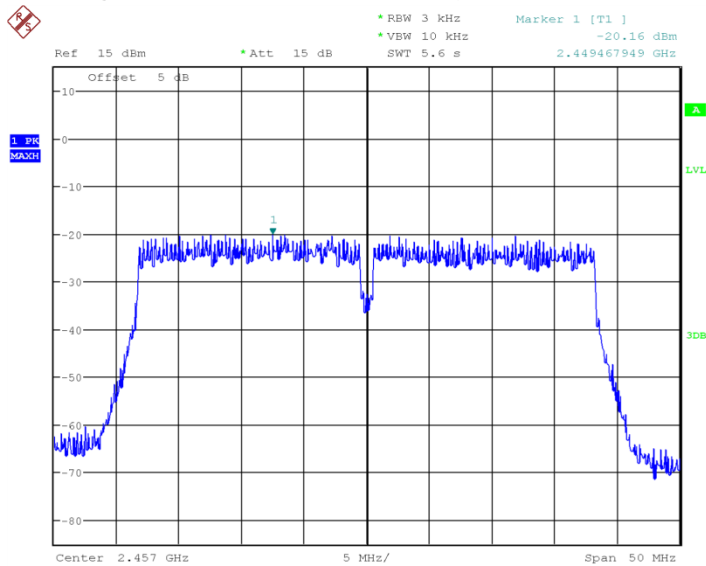


Date: 1.MAR.2017 08:39:25

**Fig.17 Power Spectral Density (802.1n-40MHz,Ch6)**



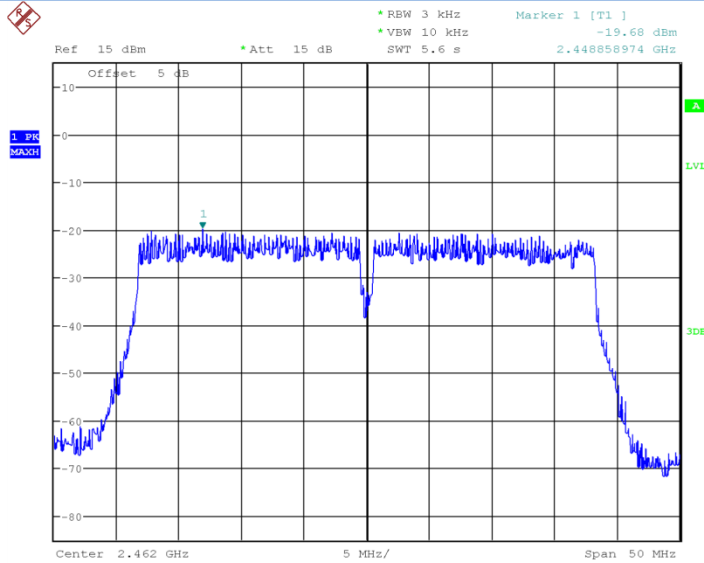
Date: 3.MAY.2017 12:01:05

**Fig.18 Power Spectral Density (802.1n-40MHz,Ch9)**

Date: 3.MAY.2017 08:24:08

**Fig.19 Power Spectral Density (802.1n-40MHz,Ch10)**





Date: 3.MAY.2017 08:29:27

**Fig.20 Power Spectral Density (802.1n-40MHz,Ch11)**

### 6.3. Occupied 6dB Bandwidth

#### 6.3.1 Measurement Limit:

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

#### 6.3.2 Test procedure

The measurement is according to ANSI C63.10 clause 11.8.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set RBW = 100 kHz.
4. Set the VBW  $\geq [3 \times \text{RBW}]$ .
5. Detector = peak.
6. Trace mode = max hold.
7. Sweep = auto couple.
8. Allow the trace to stabilize.
9. 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.

#### 6.3.4 Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
-------------------------	---------

### 6.3.5 Measurement Result:

#### 802.11b/g mode

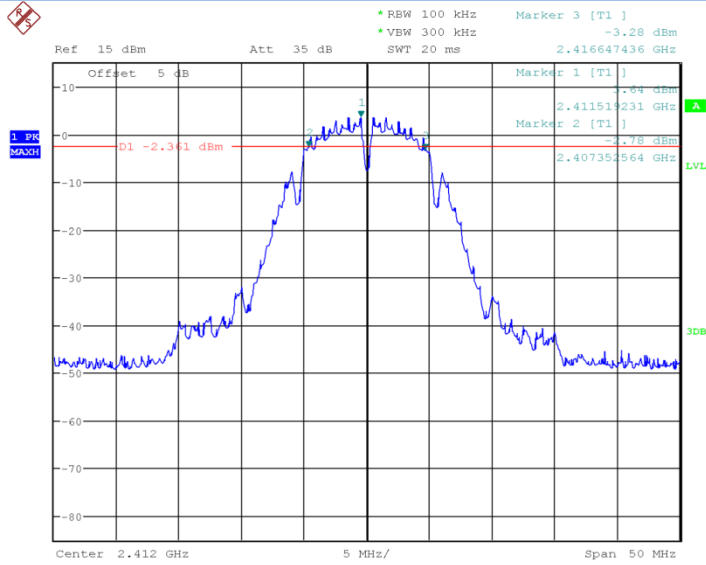
Mode	Channel	Occupied 6dB Bandwidth(KHz)		Conclusion
802.11b	1	Fig 21.	9.295	P
	6	Fig 22.	9.295	P
	11	Fig 23.	9.295	P
	12	Fig 24.	9.295	P
	13	Fig 25.	9.295	P
802.11g	1	Fig 26.	16.506	P
	6	Fig 27.	16.506	P
	11	Fig 28.	16.506	P
	12	Fig 29.	16.506	P
	13	Fig 30.	16.506	P

#### 802.11n mode

Mode	Channel	Occupied 6dB Bandwidth(KHz)		Conclusion
802.11n(20MHz)	1	Fig 31.	16.587	P
	6	Fig 32.	16.667	P
	11	Fig 33.	16.667	P
	12	Fig 34.	16.667	P
	13	Fig 35.	16.667	P
802.11n(40MHz)	3	Fig 36.	36.538	P
	6	Fig 37.	36.538	P
	9	Fig 38.	36.538	P
	10	Fig 39.	36.538	P
	11	Fig 40.	36.538	P

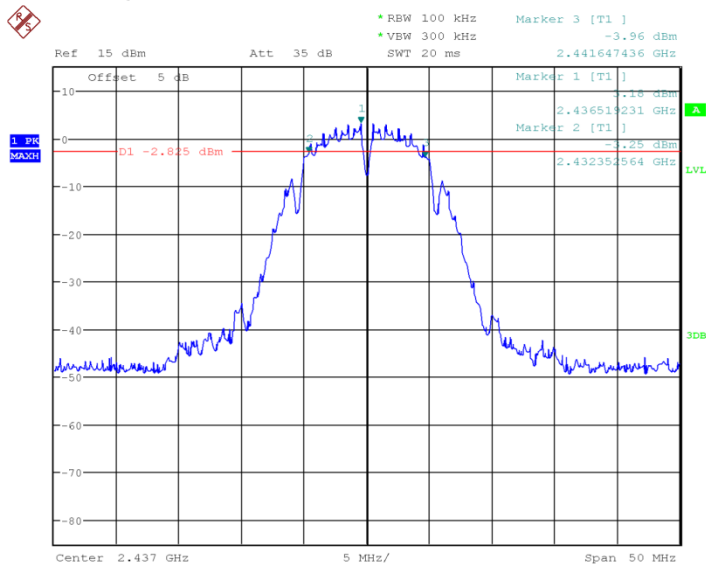
**Conclusion: PASS**

**Test graphs as below:**



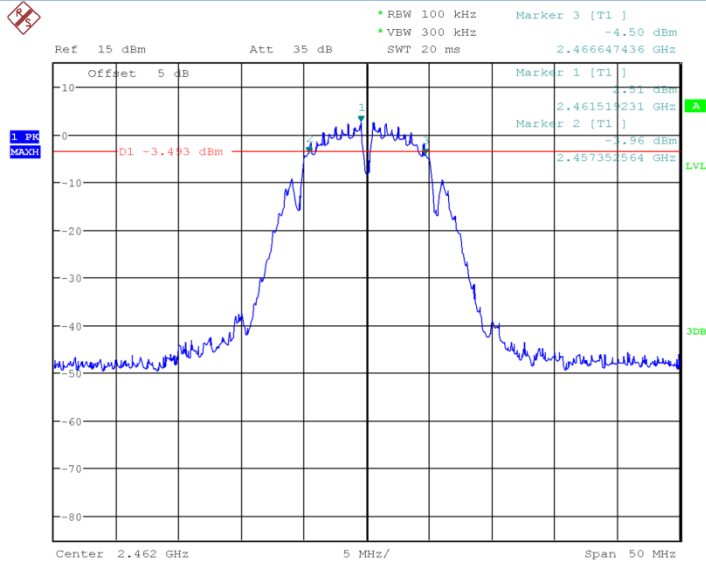
Date: 1.MAR.2017 08:07:28

**Fig.21 Occupied 6dB Bandwidth (802.11b, Ch1)**



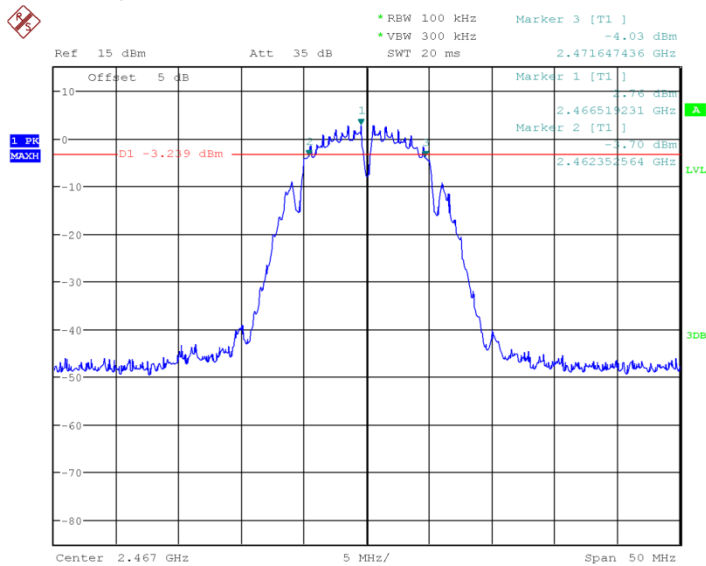
Date: 1.MAR.2017 08:09:13

**Fig.22 Occupied 6dB Bandwidth (802.11b, Ch6)**



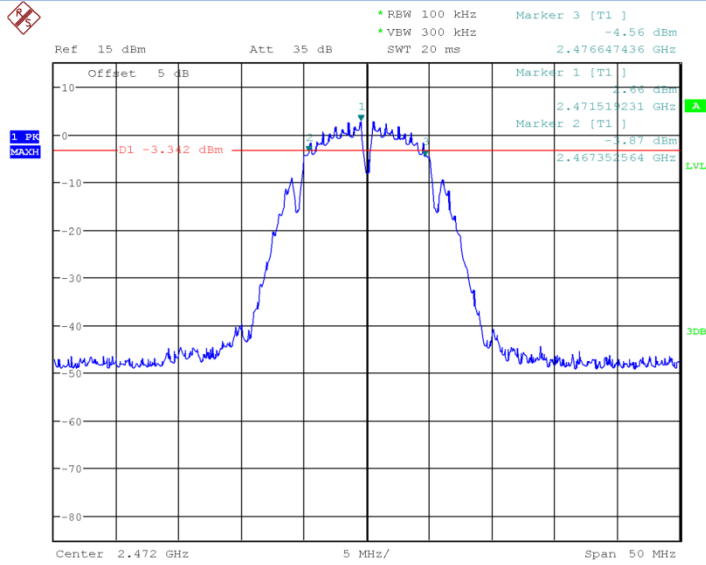
Date: 1.MAR.2017 08:09:47

**Fig.23 Occupied 6dB Bandwidth (802.11b, Ch11)**



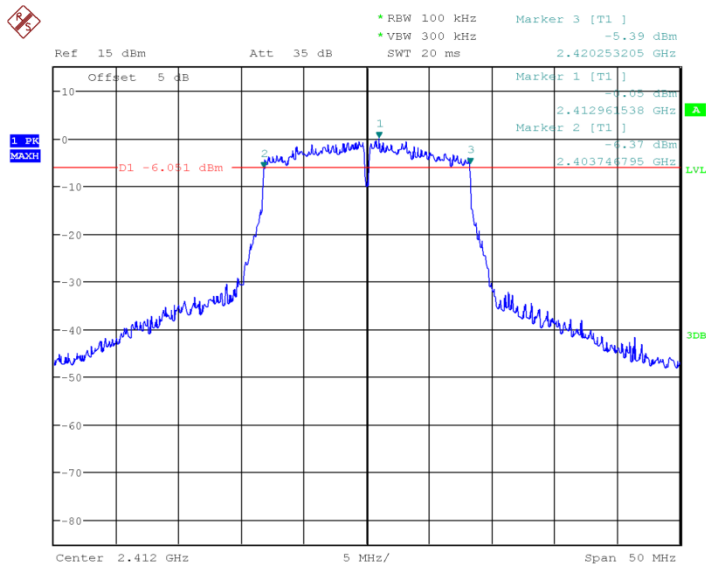
Date: 3.MAY.2017 08:32:44

**Fig.24 Occupied 6dB Bandwidth (802.11b, Ch12)**



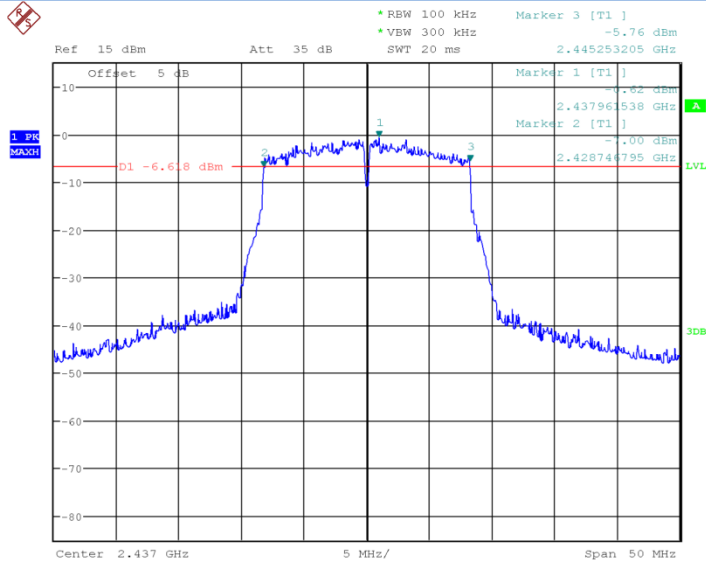
Date: 3.MAY.2017 08:33:40

**Fig.25 Occupied 6dB Bandwidth (802.11b, Ch13)**



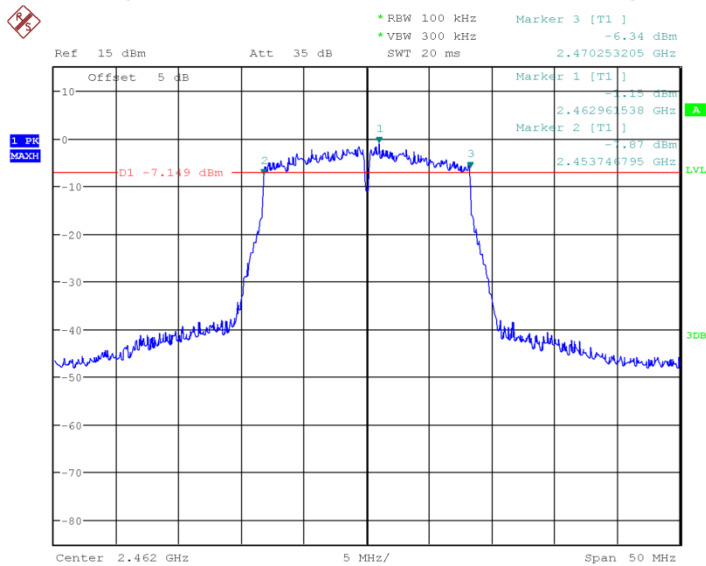
Date: 1.MAR.2017 08:10:21

**Fig.26 Occupied 6dB Bandwidth (802.11g, Ch1)**



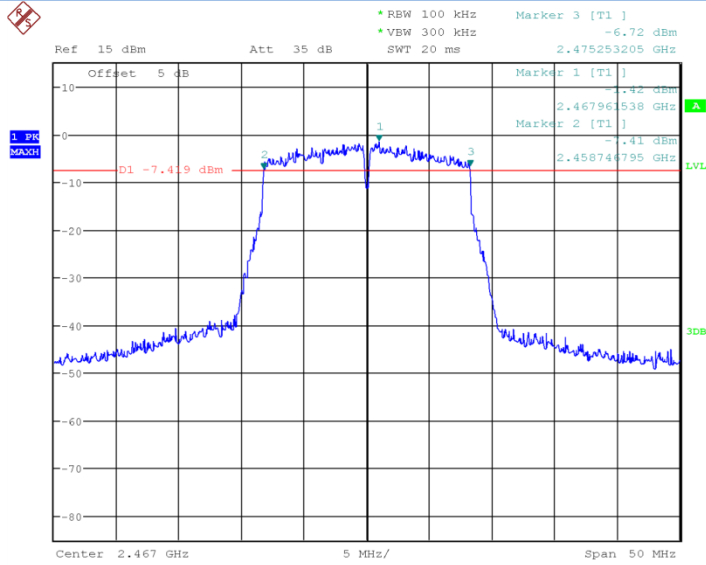
Date: 1.MAR.2017 08:10:57

**Fig.27 Occupied 6dB Bandwidth (802.11g, Ch6)**



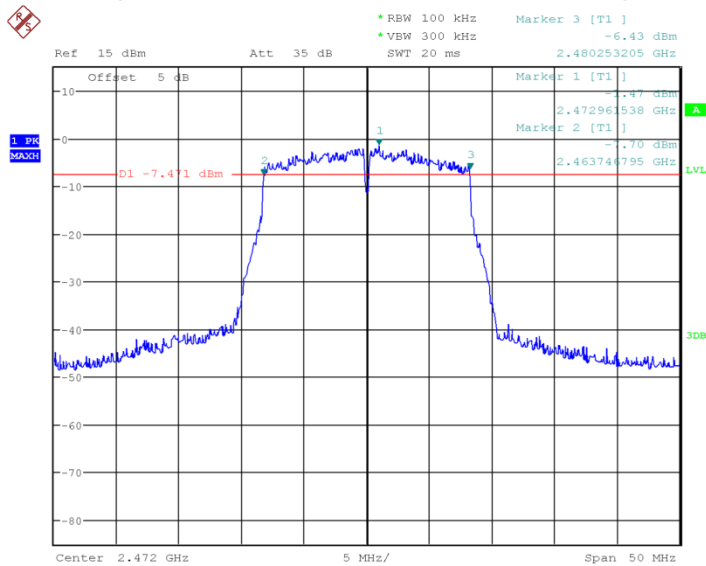
Date: 1.MAR.2017 08:11:29

**Fig.28 Occupied 6dB Bandwidth (802.11g, Ch11)**



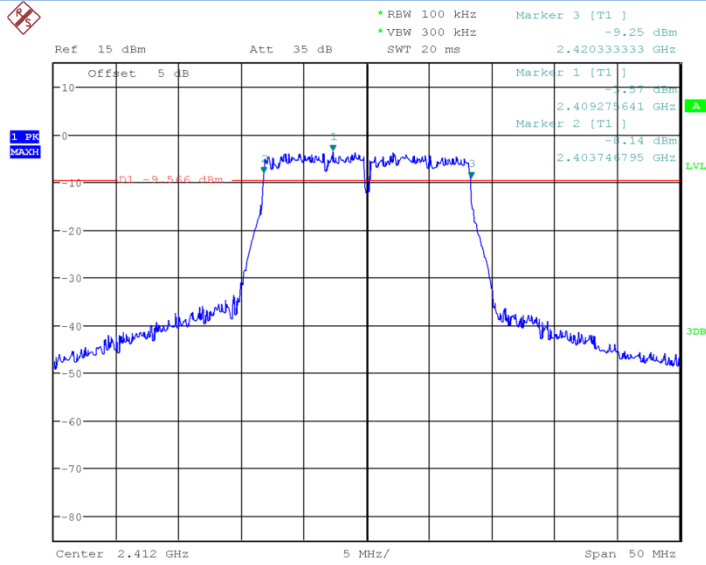
Date: 3.MAY.2017 08:36:18

**Fig.29 Occupied 6dB Bandwidth (802.11g, Ch12)**



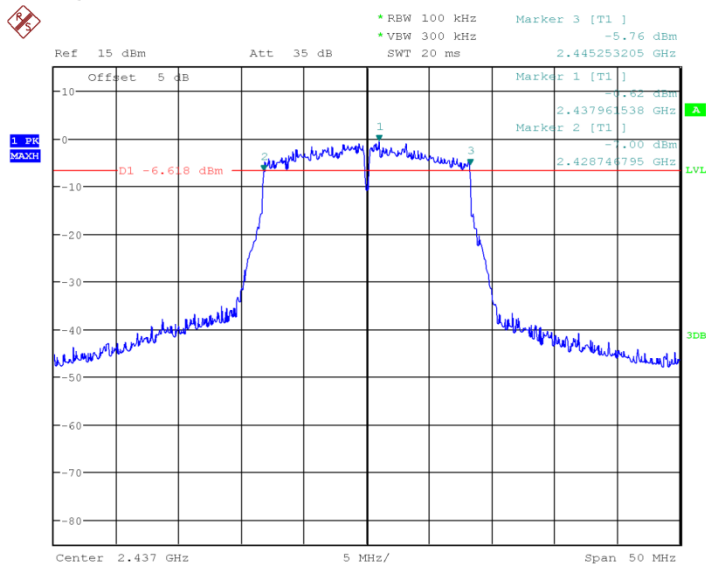
Date: 3.MAY.2017 08:36:44

**Fig.30 Occupied 6dB Bandwidth (802.11g, Ch13)**



Date: 1.MAR.2017 08:12:10

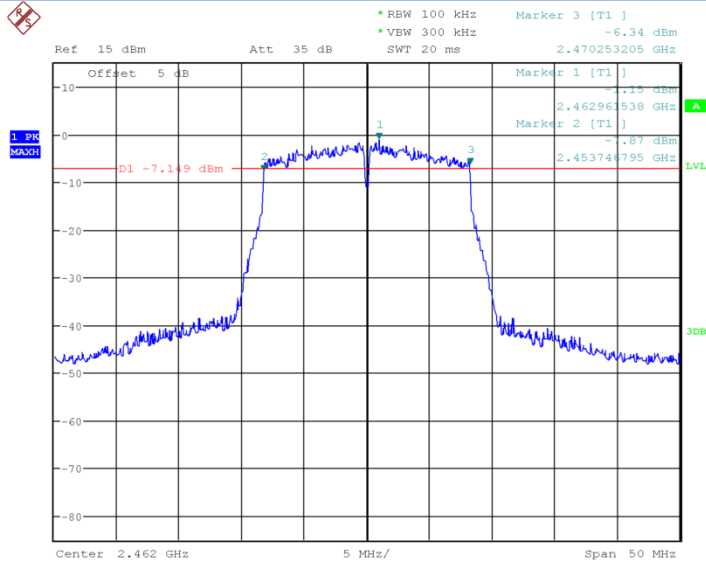
**Fig.31 Occupied 6dB Bandwidth (802.11n-20MHz, Ch1)**



Date: 1.MAR.2017 08:10:57

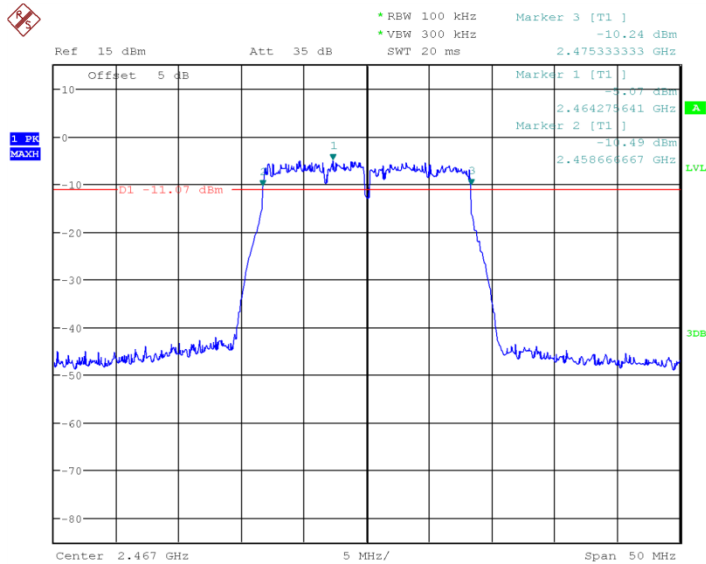
**Fig.32 Occupied 6dB Bandwidth (802.11n-20MHz, Ch6)**





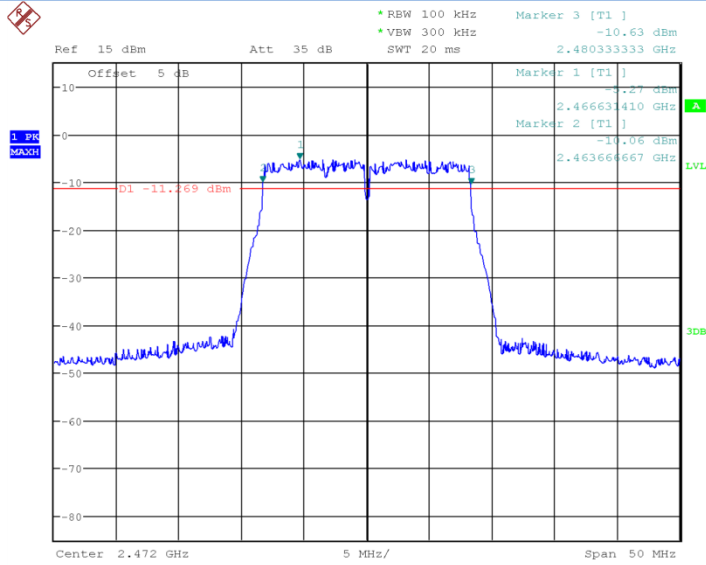
Date: 1.MAR.2017 08:11:29

**Fig.33 Occupied 6dB Bandwidth (802.11n-20MHz, Ch11)**



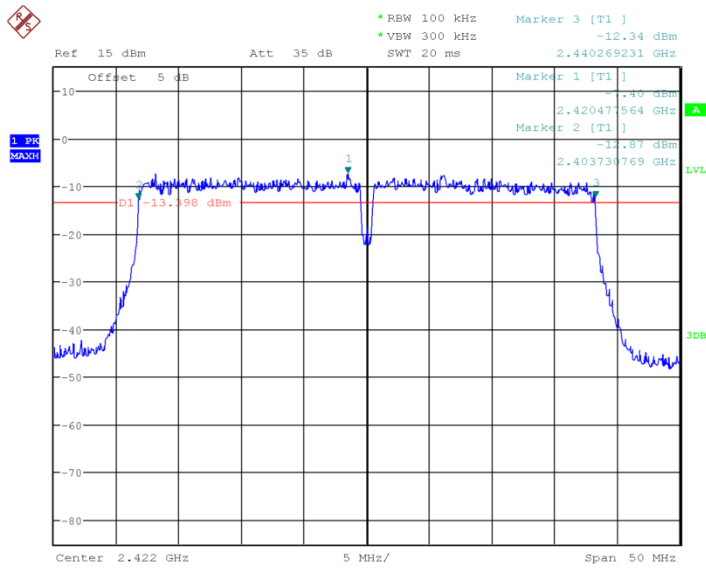
Date: 3.MAY.2017 08:38:22

**Fig.34 Occupied 6dB Bandwidth (802.11n-20MHz, Ch12)**



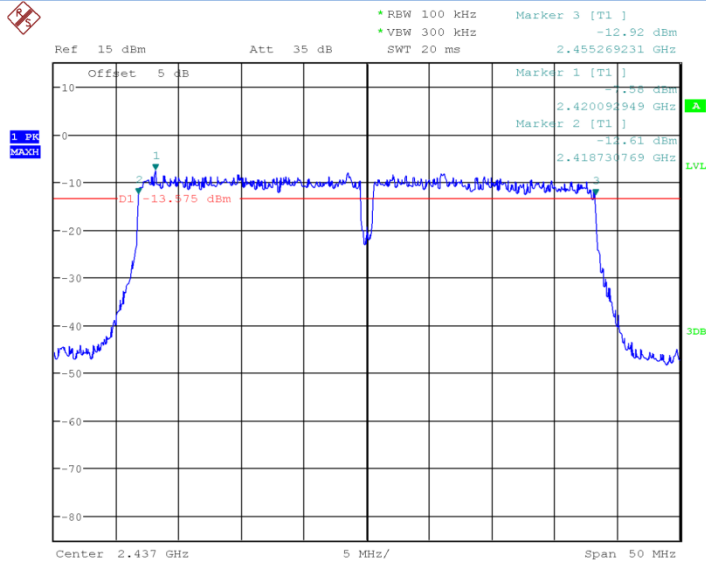
Date: 3.MAY.2017 08:38:55

**Fig.35 Occupied 6dB Bandwidth (802.11n-20MHz, Ch13)**



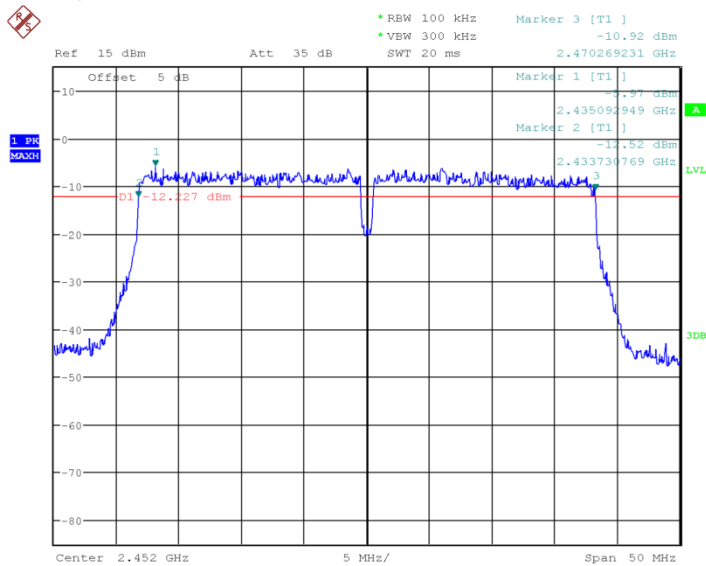
Date: 1.MAR.2017 08:42:24

**Fig.36 Occupied 6dB Bandwidth (802.11n-40MHz, Ch3)**



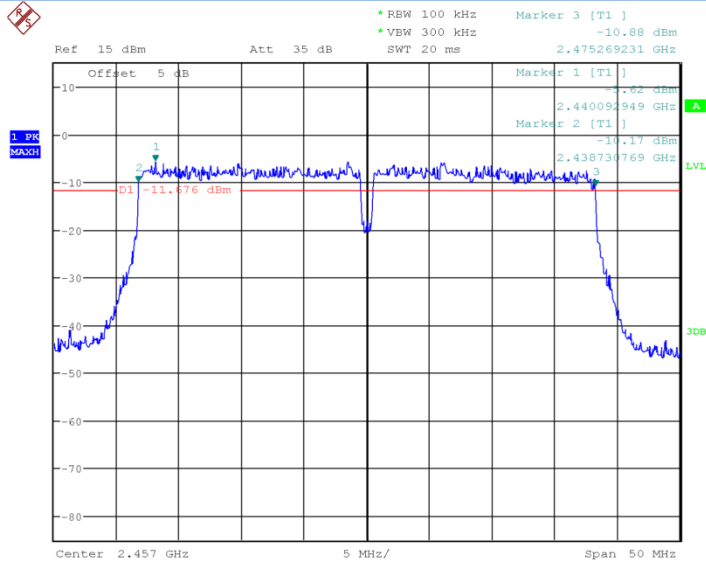
Date: 1.MAR.2017 08:46:48

**Fig.37 Occupied 6dB Bandwidth (802.11n-40MHz, Ch6)**



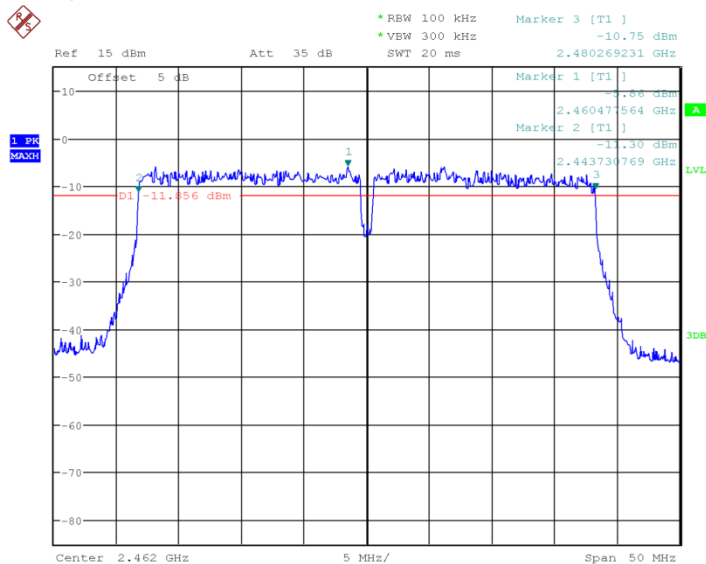
Date: 3.MAY.2017 12:01:48

**Fig.38 Occupied 6dB Bandwidth (802.11n-40MHz, Ch9)**



Date: 3.MAY.2017 08:40:23

**Fig.39 Occupied 6dB Bandwidth (802.11n-40MHz, Ch10)**



Date: 3.MAY.2017 08:40:55

**Fig.40 Occupied 6dB Bandwidth (802.11n-40MHz, Ch11)**

## 6.4. Band Edges Compliance

### 6.4.1 Measurement Limit:

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

### 6.4.2 Test procedures

The measurement is according to ANSI C63.10 clause 11.13.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set instrument center frequency to the frequency of the emission to be measured (must be within 2MHz of the authorized band edge).
4. Set span to 2 MHz.
5. RBW = 100 kHz.
6. VBW  $\geq$  [3  $\times$  RBW].
7. Detector = peak.
8. Sweep time = auto.
9. Trace mode = max hold.
10. Allow sweep to continue until the trace stabilizes

### 6.4.3 Measurement Uncertainty:

Measurement Uncertainty	0.75dB
-------------------------	--------

### 6.4.4 Measurement results

#### 802.11b/g mode

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig 41.	P
	11	Fig 42.	P
	12	Fig 43.	P
	13	Fig 44.	P
802.11g	1	Fig 45.	P
	11	Fig 46.	P
	12	Fig 47.	P
	13	Fig 48.	P

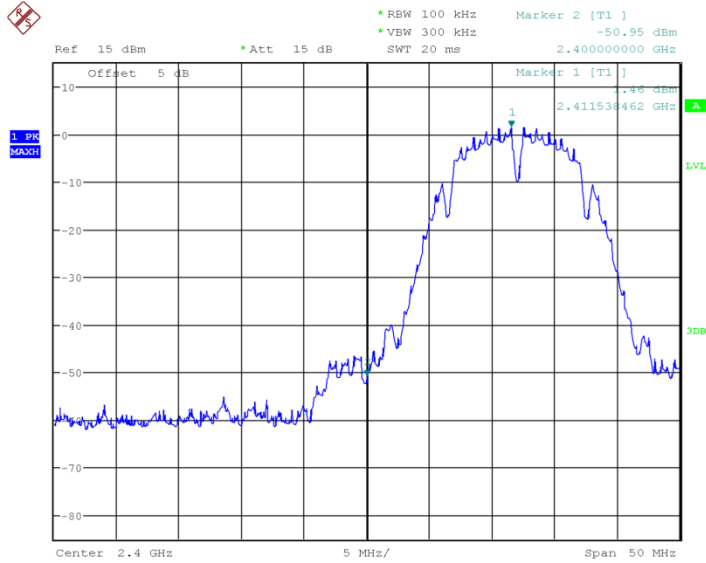
#### 802.11n mode

Mode	Channel	Test Results	Conclusion
802.11n(20MHz)	1	Fig 49.	P
	11	Fig 50.	P
	12	Fig 51.	P
	13	Fig 52.	P

802.11n(40MHz)	3	Fig 53.	P
	9	Fig 54.	P
	10	Fig 55.	P
	11	Fig 56.	P

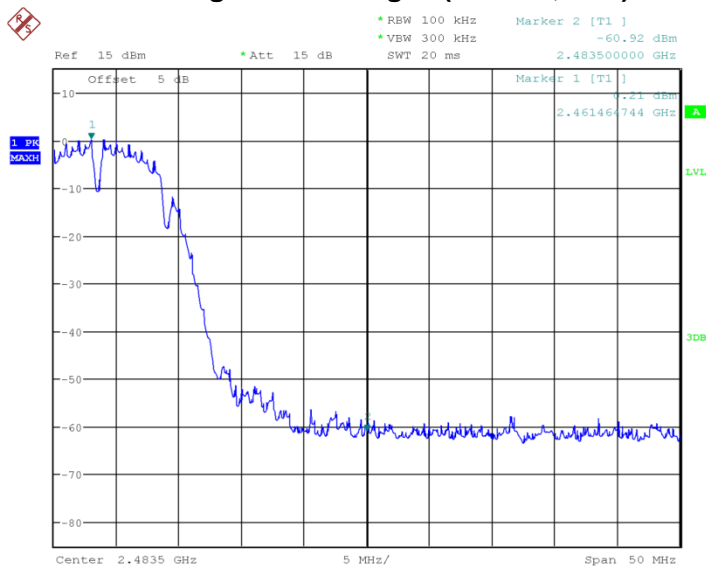
**Conclusion: PASS**

**Test graphs as blew:**



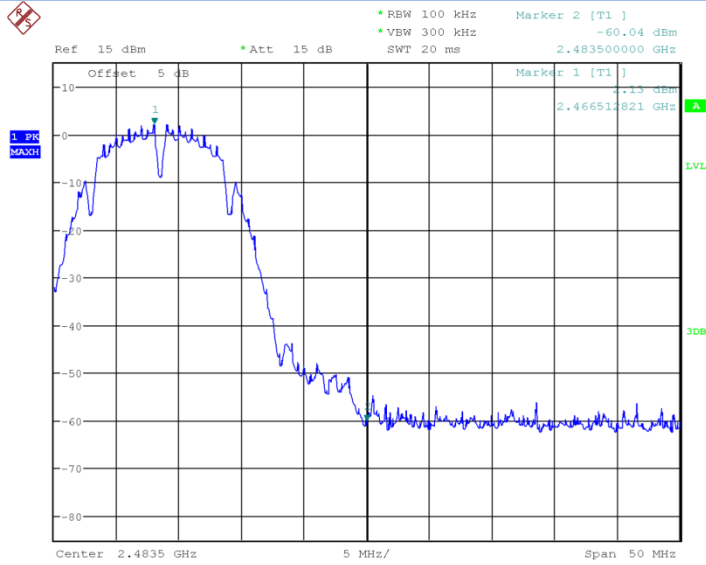
Date: 1.MAR.2017 08:16:31

**Fig.41 Band Edges (802.11b, Ch1)**



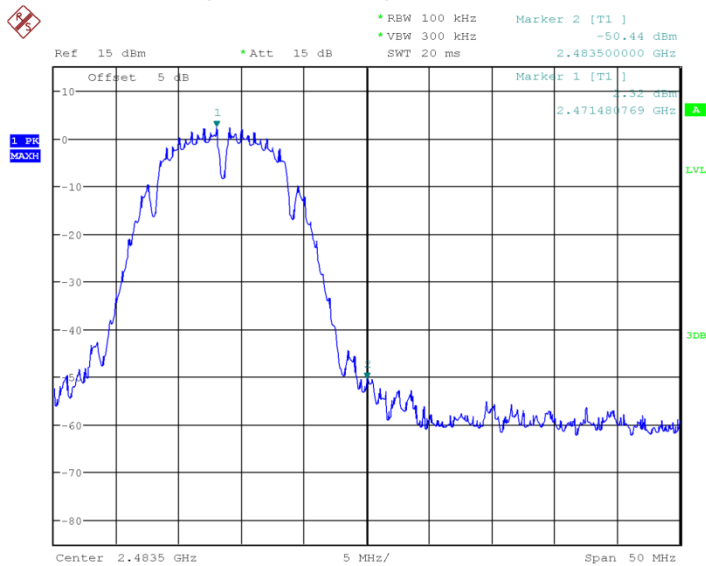
Date: 1.MAR.2017 08:16:59

**Fig.42 Band Edges (802.11b, Ch11)**



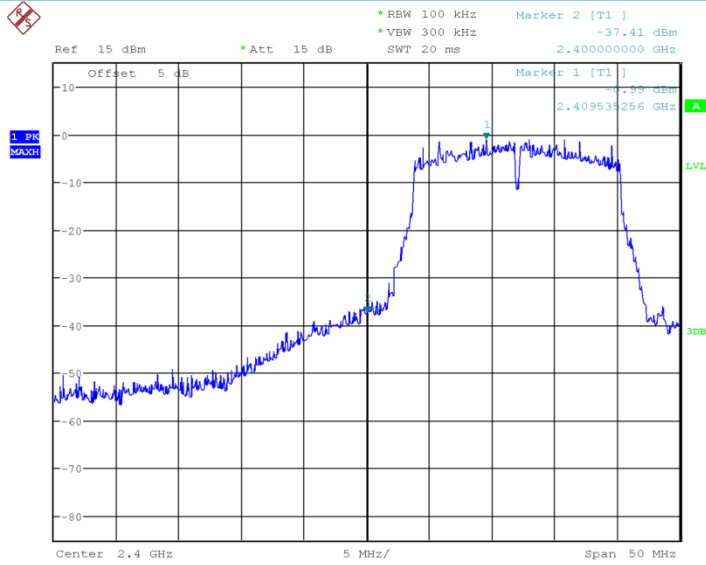
Date: 3.MAY.2017 08:58:25

**Fig.43 Band Edges (802.11b, Ch12)**



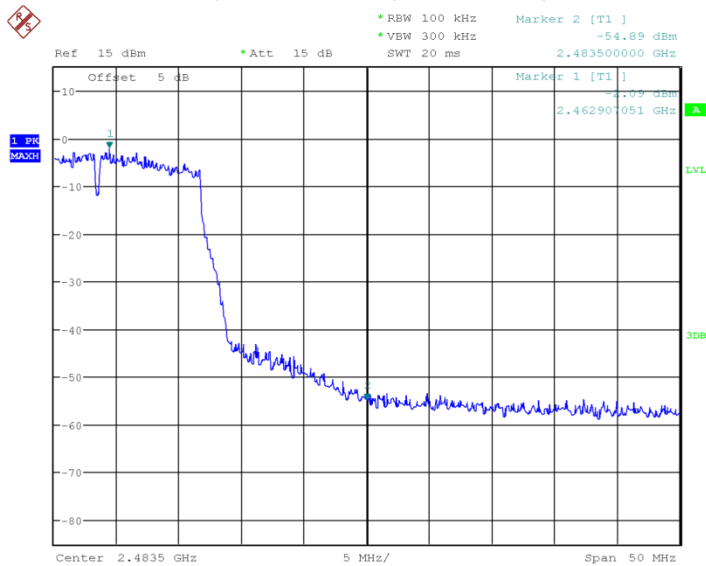
Date: 3.MAY.2017 09:01:17

**Fig.44 Band Edges (802.11b, Ch13)**



Date: 1.MAR.2017 08:18:24

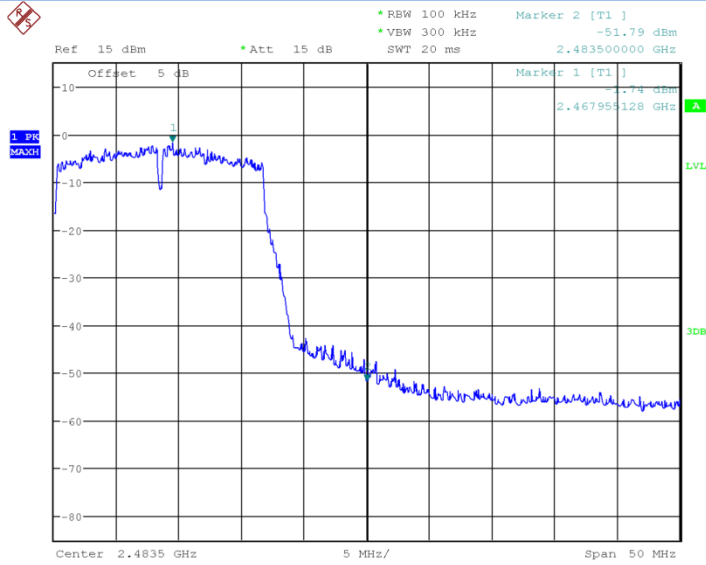
**Fig.45 Band Edges (802.11g, Ch1)**



Date: 1.MAR.2017 08:19:42

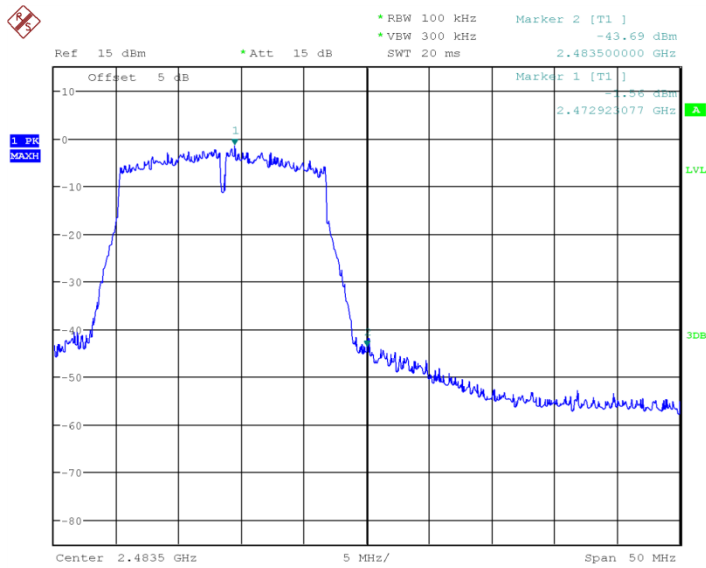
**Fig.46 Band Edges (802.11g, Ch11)**





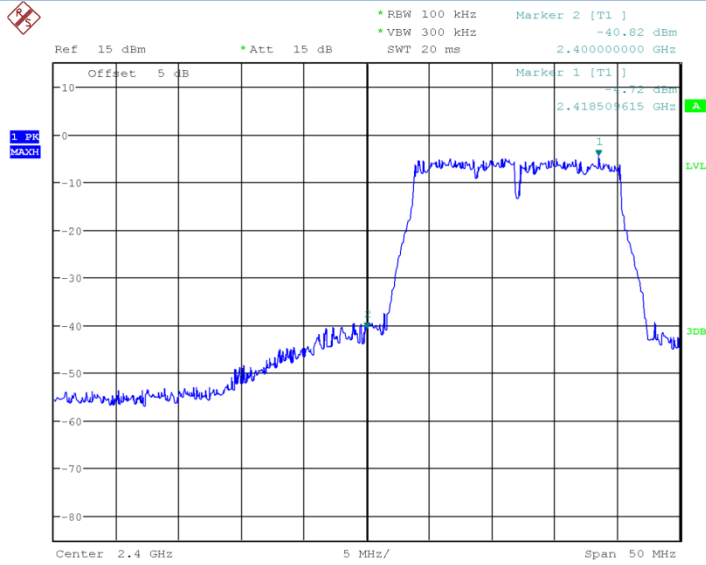
Date: 3.MAY.2017 09:03:19

**Fig.47 Band Edges (802.11g, Ch12)**



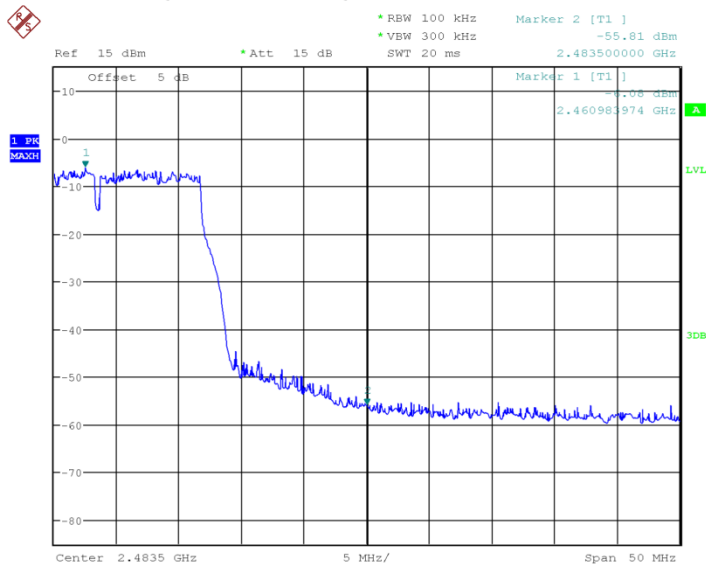
Date: 3.MAY.2017 09:06:41

**Fig.48 Band Edges (802.11g, Ch13)**



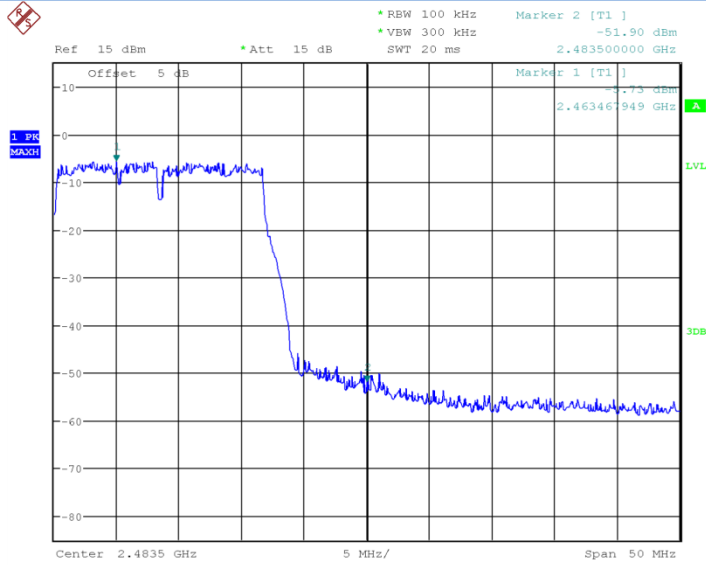
Date: 1.MAR.2017 08:20:27

**Fig.49 Band Edges (802.11n-20MHz, Ch1)**



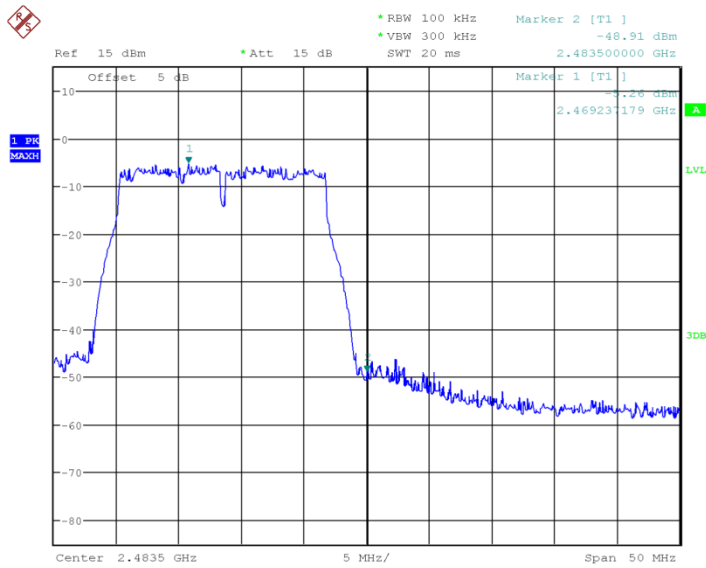
Date: 1.MAR.2017 08:21:58

**Fig.50 Band Edges (802.11b-20MHz, Ch11)**



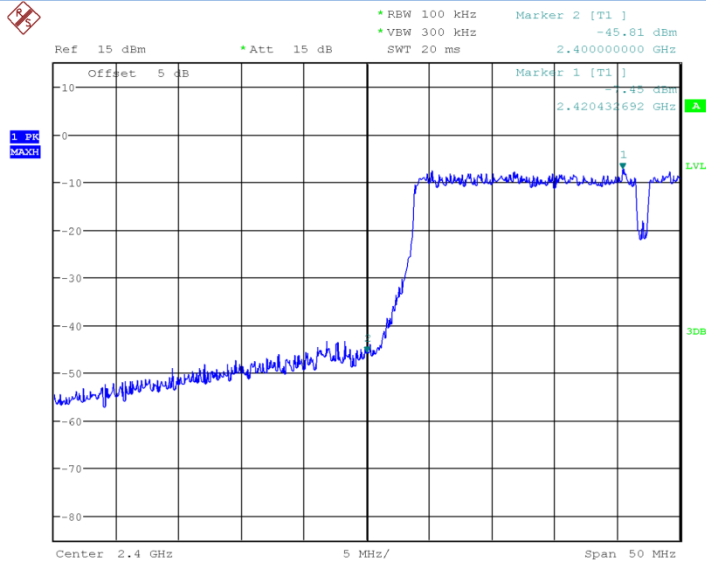
Date: 3.MAY.2017 09:08:17

**Fig.51 Band Edges (802.11b-20MHz, Ch12)**



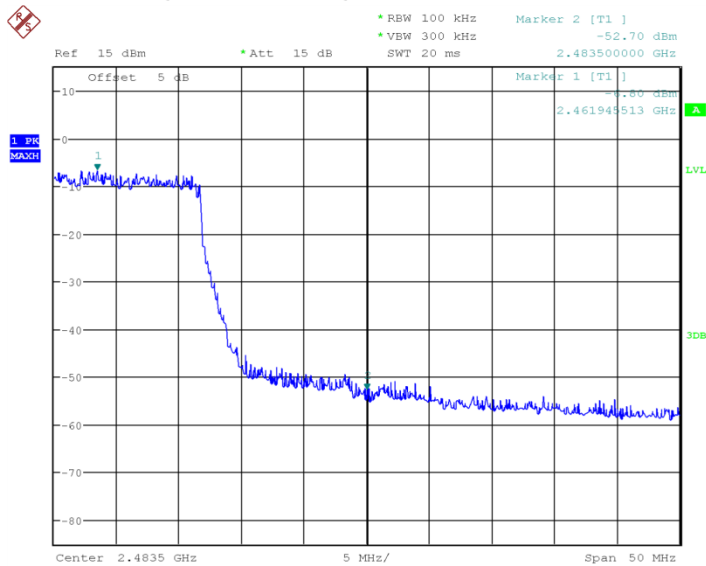
Date: 3.MAY.2017 09:09:02

**Fig.52 Band Edges (802.11b-20MHz, Ch13)**



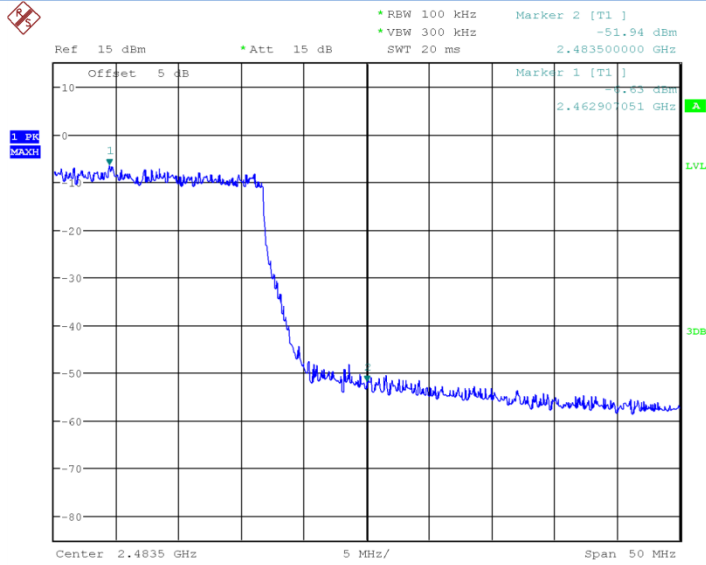
Date: 1.MAR.2017 09:10:24

**Fig.53 Band Edges (802.11n-40MHz, Ch3)**



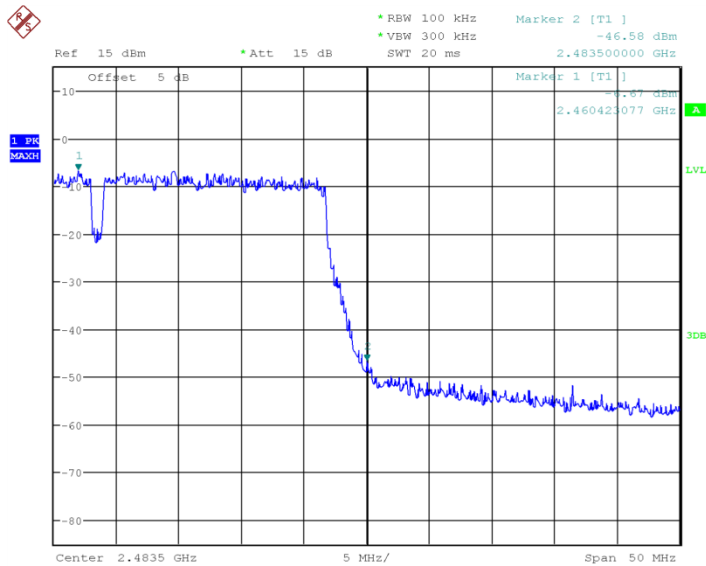
Date: 3.MAY.2017 12:03:01

**Fig.54 Band Edges (802.11b-40MHz, Ch9)**



Date: 3.MAY.2017 09:19:15

**Fig.55 Band Edges (802.11b-40MHz, Ch10)**



Date: 3.MAY.2017 09:22:09

**Fig.56 Band Edges (802.11b-40MHz, Ch11)**

## 6.5. Transmitter Spurious Emission-conducted

### 6.5.1 Measurement Limit:

Standard	Limit
----------	-------

FCC 47 CFR Part 15.247(d)	20dB below peak output power in 100KHz bandwidth
---------------------------	--

### 6.5.2 Test procedures

This measurement is according to ANSI C63.10 clause 11.11.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.

Reference level measurement

3. Set instrument center frequency to DTS channel center frequency.
4. Set the span to  $\geq 1.5$  times the DTS bandwidth.
5. Set the RBW = 100 kHz.
6. Set the VBW  $\geq [3 \times \text{RBW}]$ .
7. Detector = peak.
8. Sweep time = auto couple.
9. Trace mode = max hold.
10. Allow trace to fully stabilize.
11. Use the peak marker function to determine the maximum PSD level.

Emission level measurement

12. Set the center frequency and span to encompass frequency range to be measured.
13. Set the RBW = 100 kHz.
14. Set the VBW  $\geq [3 \times \text{RBW}]$ .
15. Detector = peak.
16. Sweep time = auto couple.
17. Trace mode = max hold.
18. Allow trace to fully stabilize.
19. Use the peak marker function to determine the maximum amplitude level.

### 6.5.3 Measurement Uncertainty:

Frequency Range	Uncertainty
$30\text{MHz} \leq f \leq 2\text{GHz}$	0.63
$2\text{GHz} \leq f \leq 3.6\text{GHz}$	0.82
$3.6\text{GHz} \leq f \leq 8\text{GHz}$	1.55
$8\text{GHz} \leq f \leq 20\text{GHz}$	1.86
$20\text{GHz} \leq f \leq 22\text{GHz}$	1.90
$22\text{GHz} \leq f \leq 26\text{GHz}$	2.20

### 6.5.4 Measurement Result:

**802.11b/g mode**

Mode	Channel	Frequency Range	Test Results	Conclusion	
802.11b	1	2.412GHz	Fig 57.	P	
		30MHz~26GHz	Fig 58.	P	
	6	2.437GHz	Fig 59.	P	
		30MHz~26GHz	Fig 60.	P	
	11	2.462GHz	Fig 61.	P	
		30MHz~26GHz	Fig 62.	P	
	12	2.467GHz	Fig 63.	P	
		30MHz~26GHz	Fig 64.	P	
	13	2.472GHz	Fig 65.	P	
		30MHz~26GHz	Fig 66.	P	
	802.11g	1	2.412GHz	Fig 67.	P
			30MHz~26GHz	Fig 68.	P
		6	2.437GHz	Fig 69.	P
			30MHz~26GHz	Fig 70.	P
11		2.462GHz	Fig 71.	P	
		30MHz~26GHz	Fig 72.	P	
12		2.467GHz	Fig 73.	P	
		30MHz~26GHz	Fig 74.	P	
13		2.472GHz	Fig 75.	P	
		30MHz~26GHz	Fig 76.	P	

**802.11n mode**

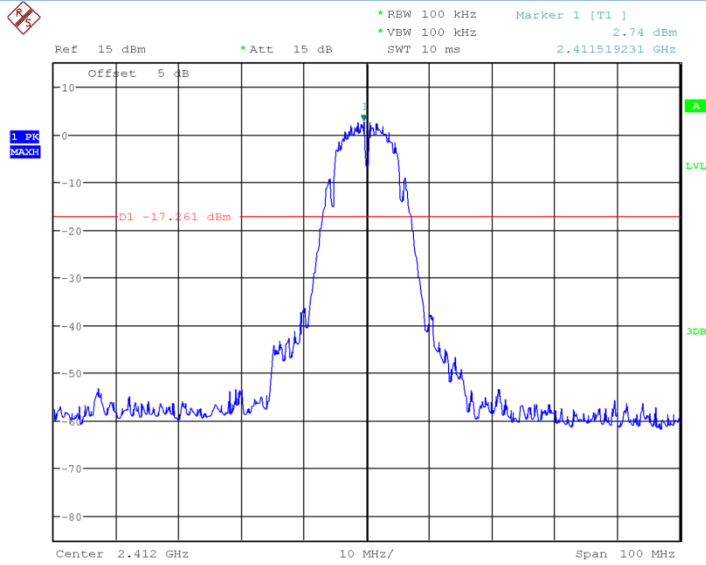
Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n(20MHz)	1	2.412GHz	Fig 77.	P
		30MHz~26GHz	Fig 78.	P

	6	2.437GHz	Fig 79.	P
		30MHz~26GHz	Fig 80.	P
	11	2.462GHz	Fig 81.	P
		30MHz~26GHz	Fig 82.	P
	12	2.467GHz	Fig 83.	P
		30MHz~26GHz	Fig 84.	P
13	2.472GHz	Fig 85.	P	
	30MHz~26GHz	Fig 86.	P	
802.11n(40MHz)	3	2.422GHz	Fig 87.	P
		30MHz~26GHz	Fig 88.	P
	6	2.437GHz	Fig 89.	P
		30MHz~26GHz	Fig 90.	P
	9	2.452GHz	Fig 91.	P
		30MHz~26GHz	Fig 92.	P
	10	2.457GHz	Fig 93.	P
		30MHz~26GHz	Fig 94.	P
	11	2.462GHz	Fig 95.	P
		30MHz~26GHz	Fig 96.	P

**Conclusion: PASS**

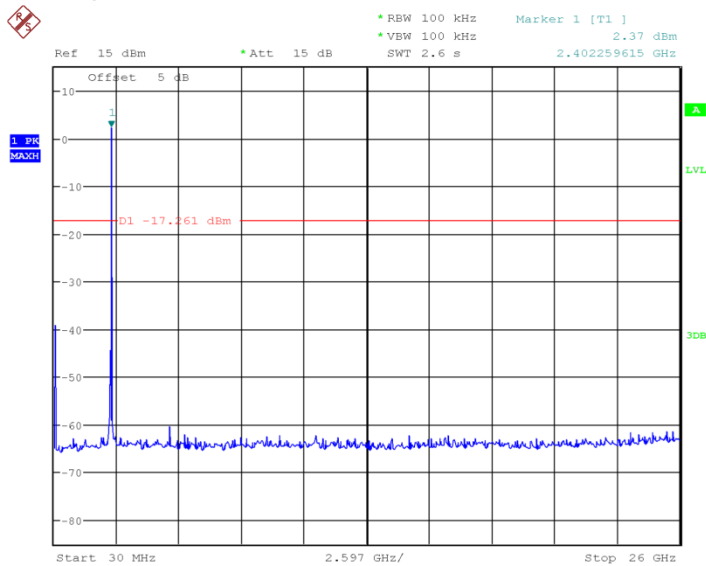
**Test graphs as below:**





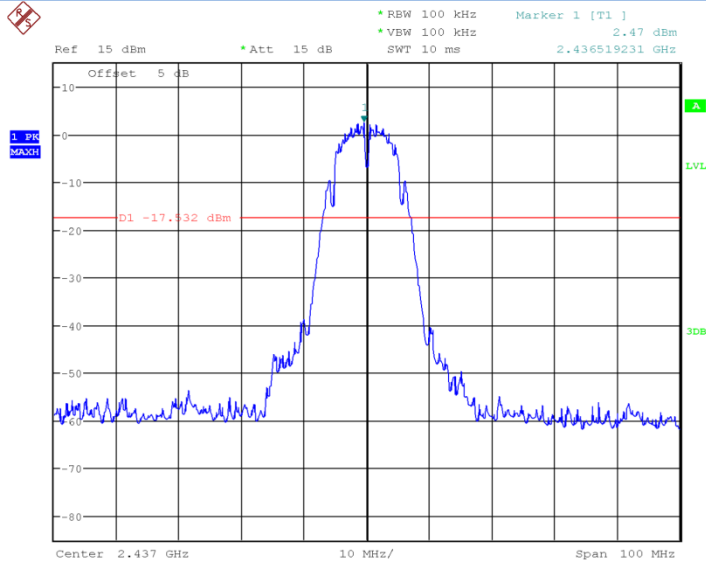
Date: 1.MAR.2017 08:24:20

**Fig.57 Conducted Spurious Emission (802.11b, Ch1)**



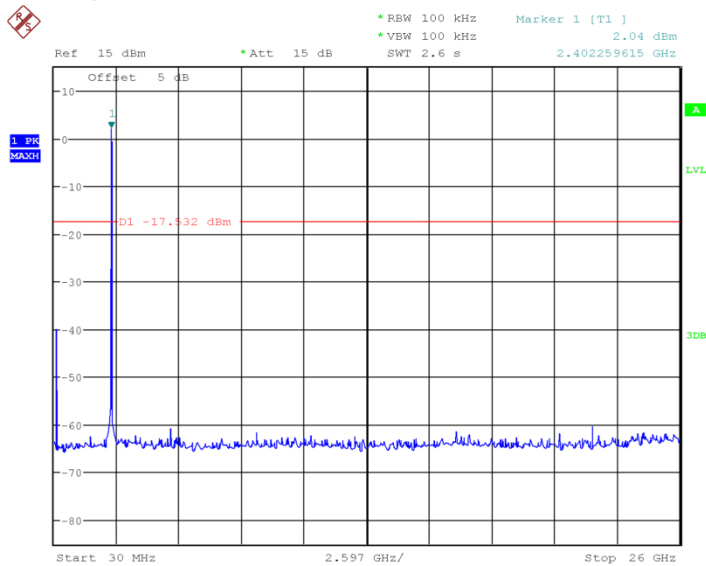
Date: 1.MAR.2017 08:24:43

**Fig.58 Conducted Spurious Emission (802.11b, Ch1, 30MHz~26GHz)**



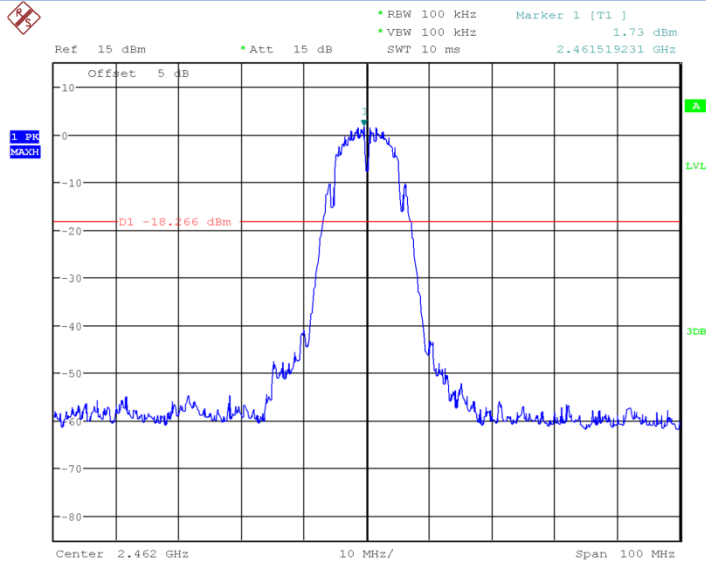
Date: 1.MAR.2017 08:25:24

**Fig.59 Conducted Spurious Emission (802.11b, Ch6)**



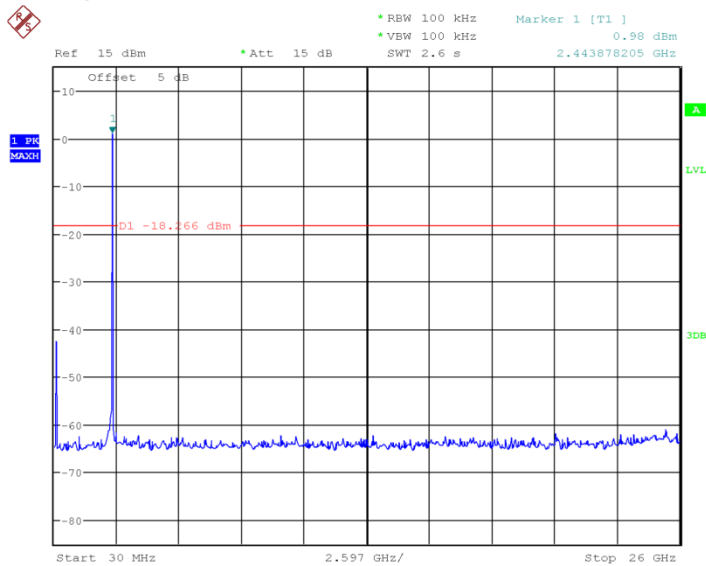
Date: 1.MAR.2017 08:25:47

**Fig.60 Conducted Spurious Emission (802.11b, Ch6, 30MHz~26GHz)**



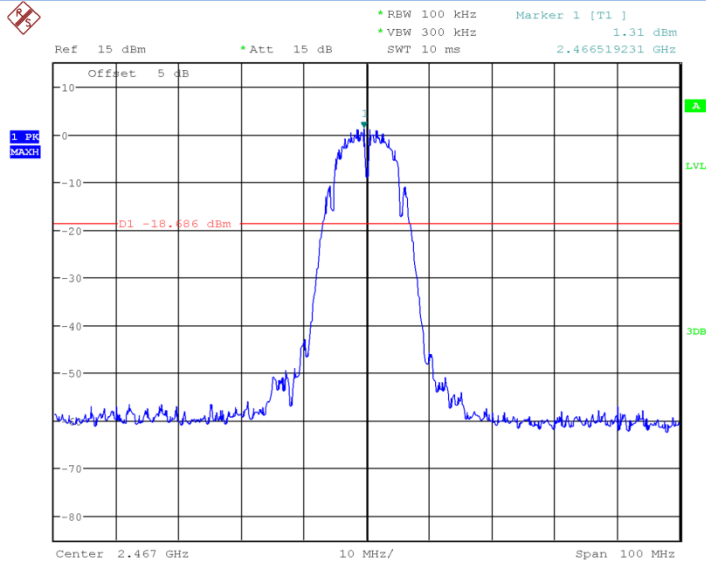
Date: 1.MAR.2017 08:26:26

**Fig.61 Conducted Spurious Emission (802.11b, Ch11)**



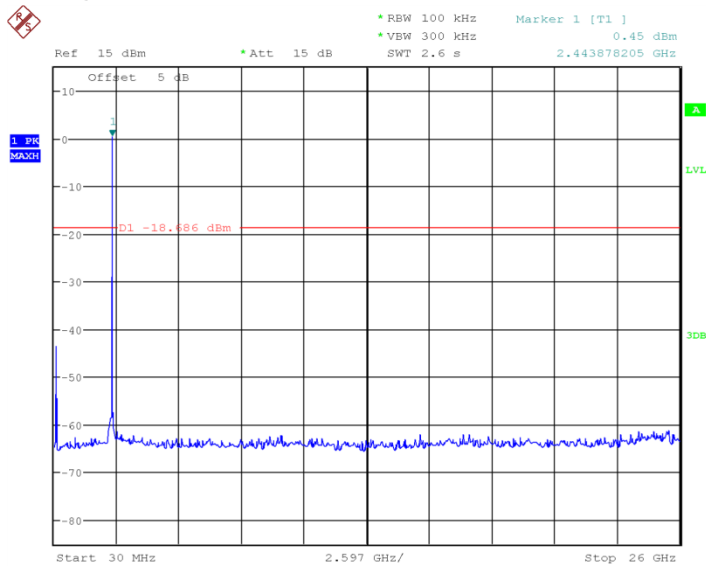
Date: 1.MAR.2017 08:26:49

**Fig.62 Conducted Spurious Emission (802.11b, Ch11, 30MHz~26GHz)**



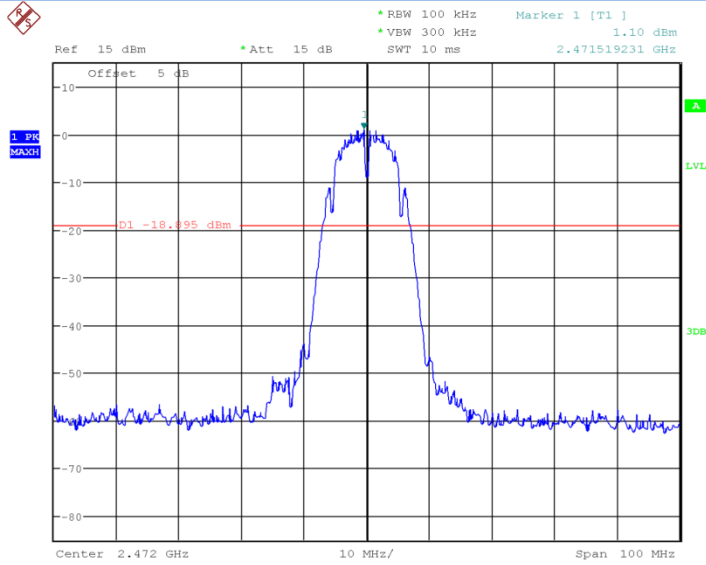
Date: 3.MAY.2017 09:34:29

**Fig.63 Conducted Spurious Emission (802.11b, Ch12)**



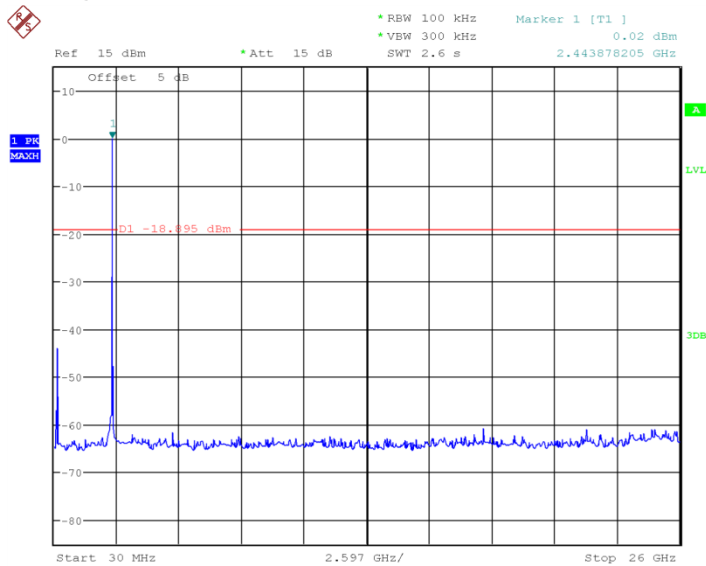
Date: 3.MAY.2017 09:34:52

**Fig.64 Conducted Spurious Emission (802.11b, Ch12, 30MHz~26GHz)**



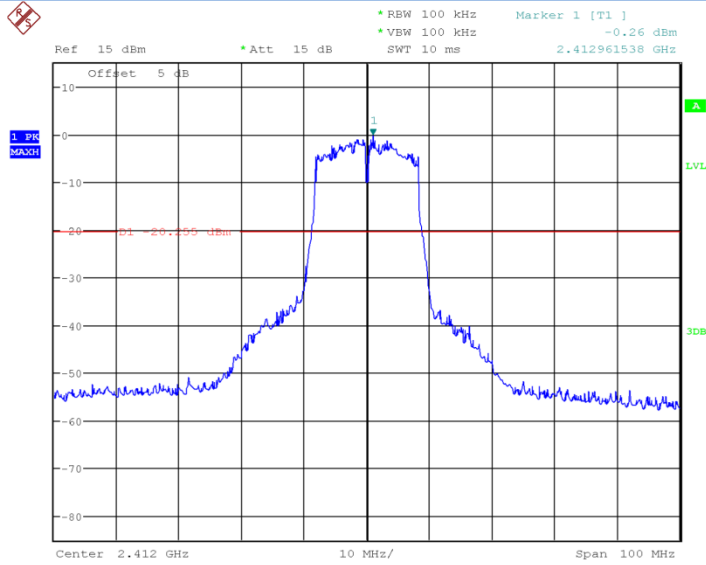
Date: 3.MAY.2017 11:33:15

**Fig.65 Conducted Spurious Emission (802.11b, Ch13)**



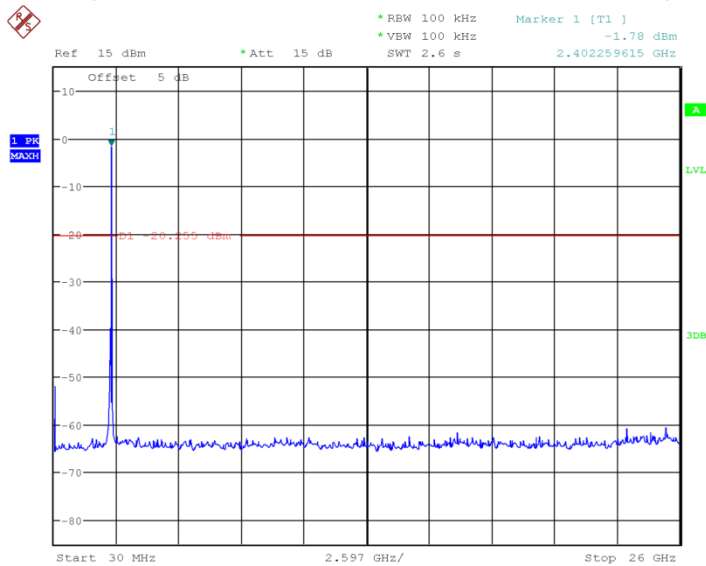
Date: 3.MAY.2017 11:33:38

**Fig.66 Conducted Spurious Emission (802.11b, Ch13, 30MHz~26GHz)**



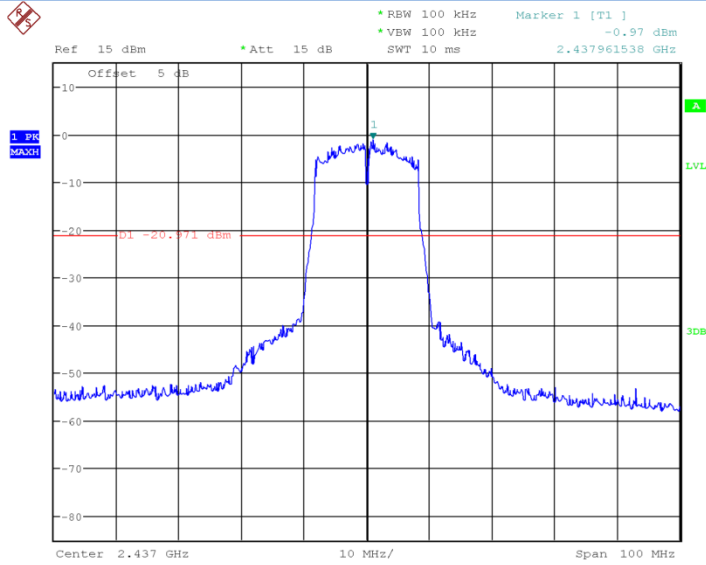
Date: 1.MAR.2017 08:27:57

**Fig.67 Conducted Spurious Emission (802.11g, Ch1)**



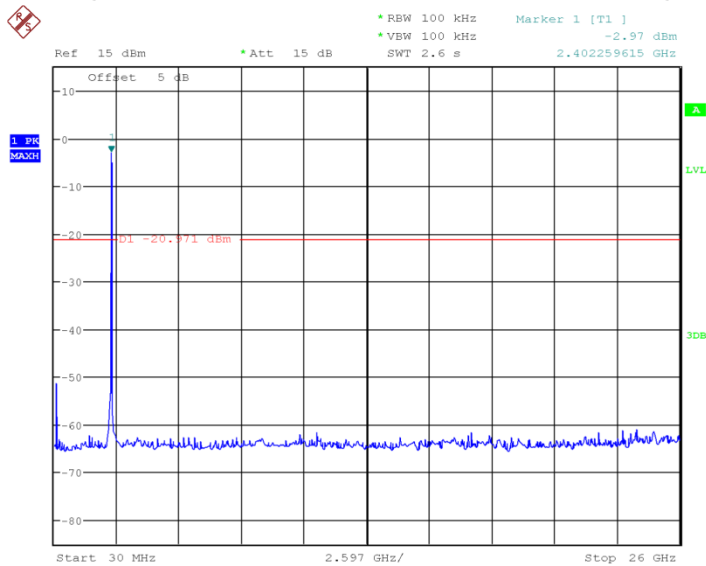
Date: 1.MAR.2017 08:28:20

**Fig.68 Conducted Spurious Emission (802.11g, Ch1, 30MHz~26GHz)**



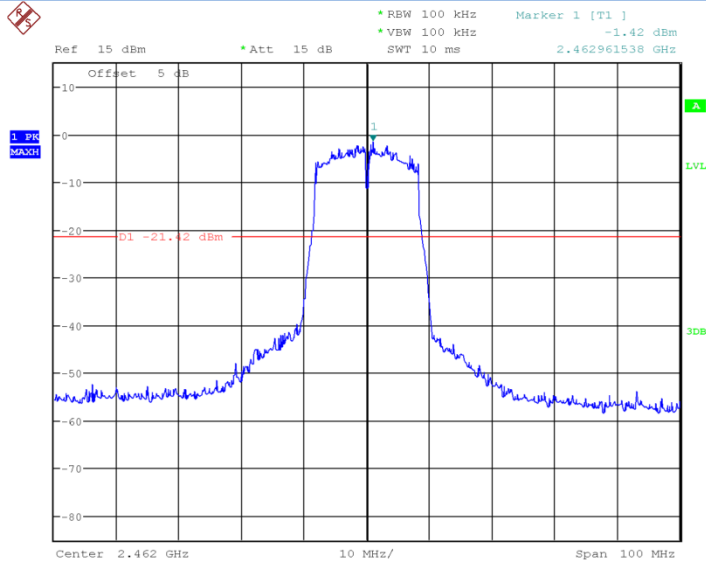
Date: 1.MAR.2017 08:29:07

**Fig.69 Conducted Spurious Emission (802.11g, Ch6)**



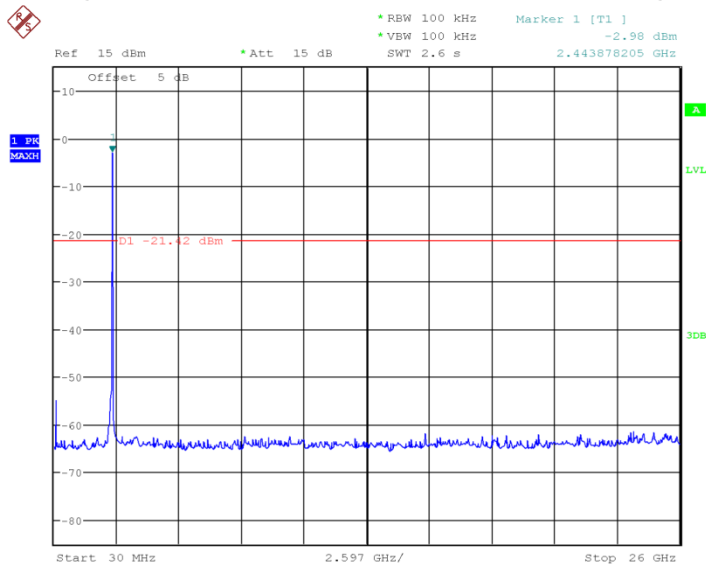
Date: 1.MAR.2017 08:29:30

**Fig.70 Conducted Spurious Emission (802.11g, Ch6, 30MHz~26GHz)**



Date: 1.MAR.2017 08:33:02

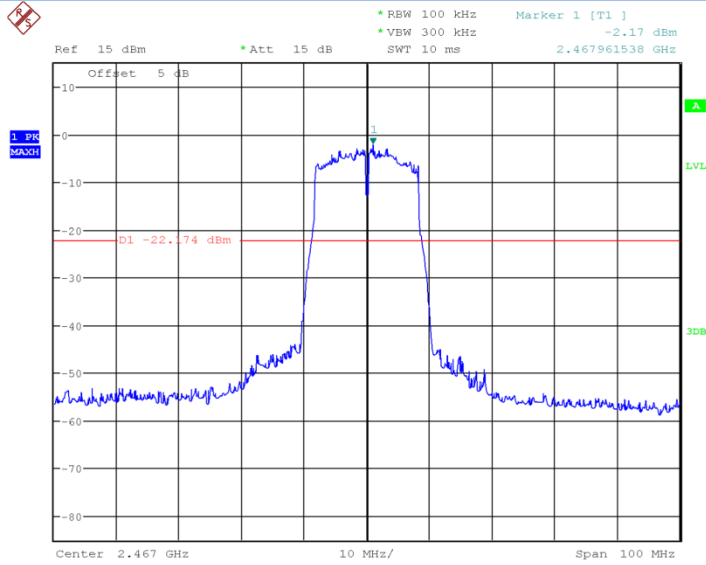
**Fig.71 Conducted Spurious Emission (802.11g, Ch11)**



Date: 1.MAR.2017 08:33:25

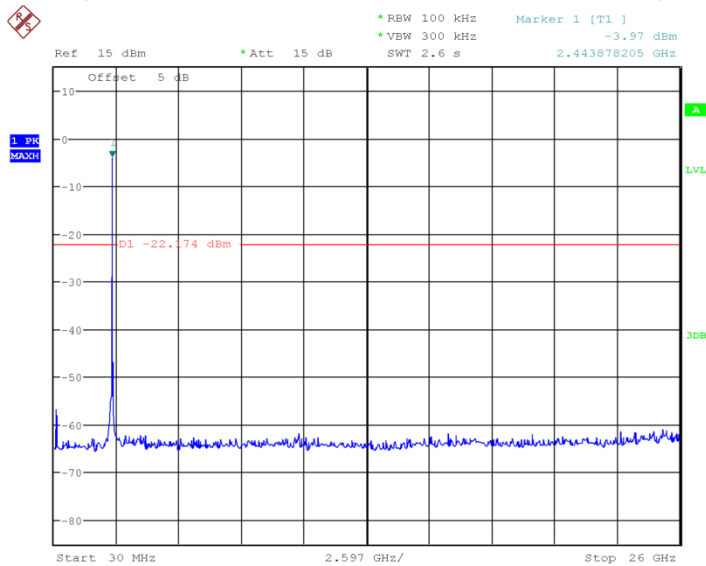
**Fig.72 Conducted Spurious Emission (802.11g, Ch11, 30MHz~26GHz)**





Date: 3.MAY.2017 11:37:26

**Fig.73 Conducted Spurious Emission (802.11g, Ch12)**



Date: 3.MAY.2017 11:37:50

**Fig.74 Conducted Spurious Emission (802.11g, Ch12, 30MHz~26GHz)**