*Full*

# TEST REPORT

## No. I18D00212-SRD03

*For*

**Client : Hisense International Co., Ltd.**

**Production : Mobile Phone**

**Model Name : KS907**

**Brand Name : Hisense**

**FCC ID : 2ADOBKS907**

**Hardware Version: V1.00**

**Software Version: Hisense_F17_4G_40_S02_20181018**

**Issued date: 2018-12-13**

**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

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**Revision Version**

| Report Number | Revision | Date | Memo |
|---|---|---|---|
| I18D00212-SRD03 | 00 | 2018-12-04 | Initial creation of test report |
| I18D00212-SRD03 | 01 | 2018-12-13 | Second creation of test report |

# CONTENTS

# 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 |
| FCC registration No | 958356 |

## 1.2. Testing Environment

| | |
|---|---|
| Normal Temperature: | 15-35℃ |
| Extreme Temperature: | -30/+50℃ |
| Relative Humidity: | 20-75% |

## 1.3. Project data

| | |
|---|---|
| Project Leader: | Xu Yuting |
| Testing Start Date: | 2018-11-02 |
| Testing End Date: | 2018-11-30 |

## 1.4. Signature

**Yang Dejun**
**(Prepared this test report)**

**Shi Hongqi**
**(Reviewed this test report)**

**Zheng Zhongbin**
**(Approved this test report)**

# 2. Client Information

## 2.1. Applicant Information

| | |
|---|---|
| Company Name: | Hisense International Co., Ltd. |
| Address: | Floor 22, Hisense Tower, 17 Donghai Xi Road, Qingdao, 266071, China |
| Telephone: | / |
| Postcode: | / |

## 2.2. Manufacturer Information

| | |
|---|---|
| Company Name: | Hisense Communications Co., Ltd. |
| Address: | 218 Qianwangang Road, Qingdao Economic & Technological Development Zone, Qingdao, China |
| Telephone: | / |
| Postcode: | / |

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

## 3.1. About EUT

| | |
|---|---|
| EUT Description | Mobile Phone |
| Model name | KS907 |
| WLAN Frequency(2.4G) | 2412MHz-2462MHz |
| WLAN Channel(2.4G) | Channel1-Channel11 |
| WLAN type of modulation | 802.11b:DSSS<br>802.11g/n: OFDM |
| GSM Frequency Band | GSM850/GSM900/GSM1900 |
| UMTS Frequency Band | Band 1/2/5 |
| CDMA Frequency Band | NA |
| LTE Frequency Band | Band 2/4/5/7/28 |
| Additional Communication Function | BT/BLE/2.4G WLAN 802.11 b/g/n20/5G WLAN 802.11 a/n20 |
| Extreme Temperature | -30/+50℃ |
| Nominal Voltage | 3.8V |
| Extreme High Voltage | 4.35V |
| Extreme Low Voltage | 3.5V |

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* | Model Name | SN or IMEI | HW Version | SW Version | Date of receipt |
|---|---|---|---|---|---|
| N30(Main supply) | KS907 | 868806030189550 | V1.00 | Hisense_F17_4G_40_S02_20181018 | 2018-10-29 |
| N24(Main supply) | KS907 | 868806030189576 | V1.00 | Hisense_F17_4G_40_S02_20181018 | 2018-10-29 |
| N34(Secondary supply) | KS907 | / | V1.00 | Hisense_F17_4G_40_S02_20181018 | 2018-11-26 |

*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 | --- |

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

## 3.4. The difference between two models

Main supply is same as Secondary supply, the two samples are only different on the supplier of TP/LCM/Front and Real CAM/Flash.

# 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:<br>15.205 Restricted bands of operation;<br>15.209 Radiated emission limits, general requirements;<br>15.247 Operation within the bands 902-928MHz,<br>2400-2483.5MHz, and 5725-5850MHz. | 2017/10/01 |
| ANSI 63.10 | American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices | 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 | 25℃ |
| Voltage | Vnom | 3.8V |
| Humidity | Hnom | 48% |
| 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.

## 5.2. Statements

The KS907, supporting GSM/GPRS/EDGE/WCDMA/LTE/BT/BLE/WLAN, manufactured by Hisense Communications Co., Ltd. , which is a new product for testing.

Note: The product has two prototypes, the two samples are only different on the supplier of TP/LCM/Front and Real CAM/Flash. In this report, we test all cases about main supply, and we only test worse case about secondary supply.

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 11.9

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 ⩾ OBW, VBW ⩾ 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) |
| 802.11b | 1 | 13.94 | / | / |
| | 2 | 14.07 | / | / |
| | 5.5 | 15.07 | / | / |
| | 11 | 16.93 | 16.54 | 16.42 |
| 802.11g | 6 | 17.17 | / | / |
| | 9 | 16.67 | / | / |
| | 12 | 17.39 | / | / |
| | 18 | 17.54 | / | / |

| | | | | |
|---|---|---|---|---|
| | 24 | 17.86 | / | / |
| | 36 | 17.73 | / | / |
| | 48 | 18.15 | / | / |
| | 54 | 18.40 | 18.02 | 17.81 |

The data rate 11 Mbps and 54 Mbps 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) |
| 802.11n(20MHz) | MCS0 | 10.50 | / | / |
| | MCS1 | 10.84 | / | / |
| | MCS2 | 11.05 | / | / |
| | MCS3 | 11.36 | / | / |
| | MCS4 | 11.53 | / | / |
| | MCS5 | 11.79 | / | / |
| | MCS6 | 12.23 | / | / |
| | MCS7 | 13.13 | 13.06 | 13.01 |

The data rate MCS7 for 802.11n(20M) is 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) |
| 802.11b | 13.22 | 13.27 | 12.71 |
| 802.11g | 12.43 | 12.36 | 11.89 |

**802.11n mode**

| Mode | Test Result(dBm) | | |
|---|---|---|---|
| | 2412MHz (Ch1) | 2437MHz (Ch6) | 2462MHz (Ch11) |
| 802.11n(20MHz) | 11.48 | 11.6 | 11.04 |

**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 11.10.2.

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 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 kHz ≤ RBW ≤ 100 kHz.
6. Set the VBW ≥ [3 × 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. | -4.708 | P |
| | 6 | Fig 2. | -5.033 | P |
| | 11 | Fig 3. | -4.802 | P |
| 802.11g | 1 | Fig 4. | -4.708 | P |
| | 6 | Fig 5. | -4.914 | P |
| | 11 | Fig 6. | -5.266 | P |

**802.11n mode**

| Mode | Channel | Power Spectral Density(dBm/3kHz) | | Conclusion |
|---|---|---|---|---|
| 802.11n(20MHz) | 1 | Fig 7. | -5.983 | P |
| | 6 | Fig 8. | -7.311 | P |
| | 11 | Fig 9. | -6.933 | P |

**Conclusion: PASS**

**Test graphs as below:**

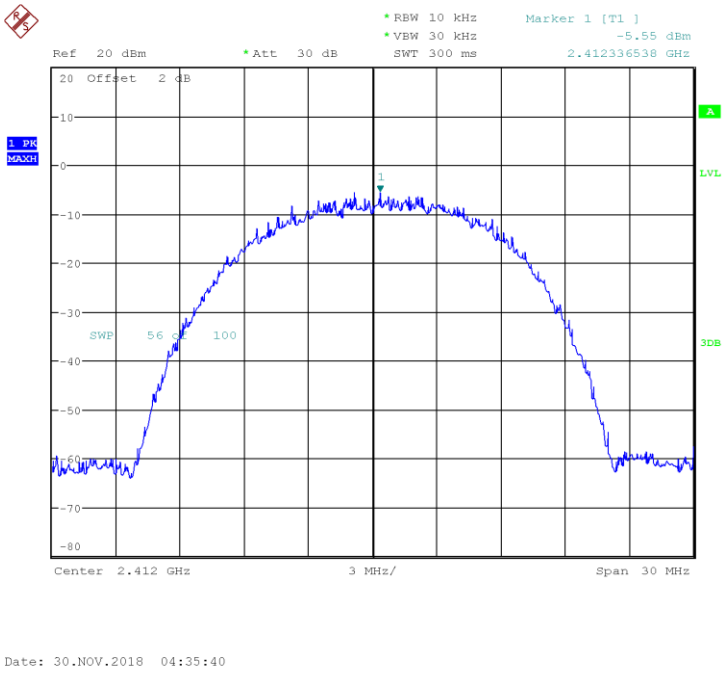



**Fig 1. Power Spectral Density (802.11b, Ch1)**

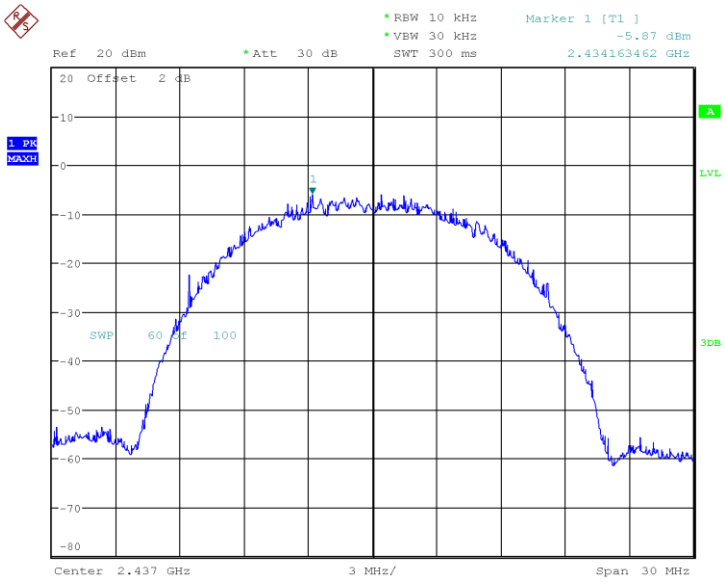



**Fig 2. Power Spectral Density (802.11b, Ch6)**

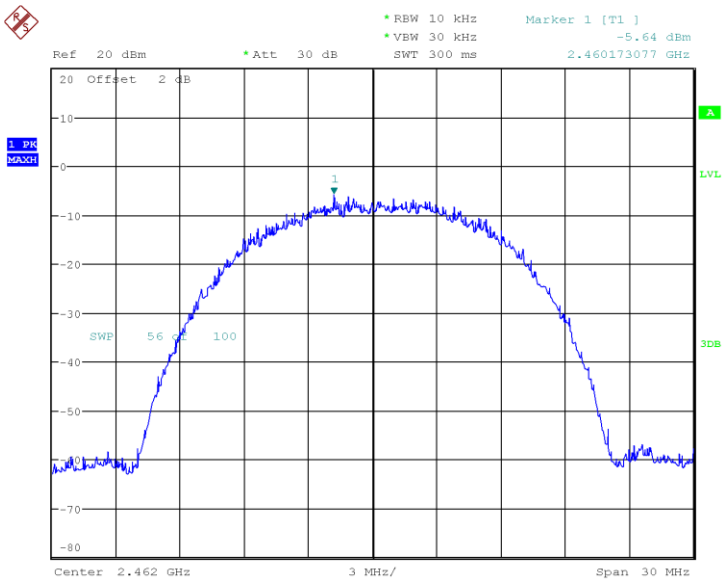



**Fig 3. Power Spectral Density (802.11b, Ch11)**

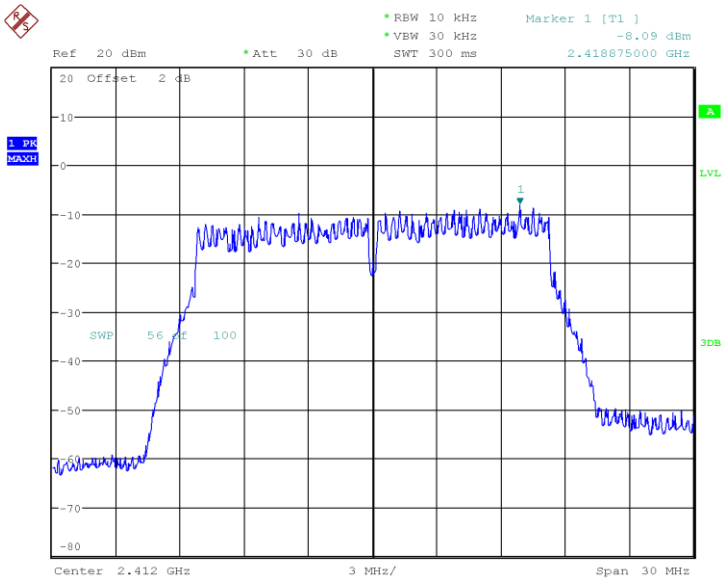



**Fig 4. Power Spectral Density (802.11g, Ch1)**

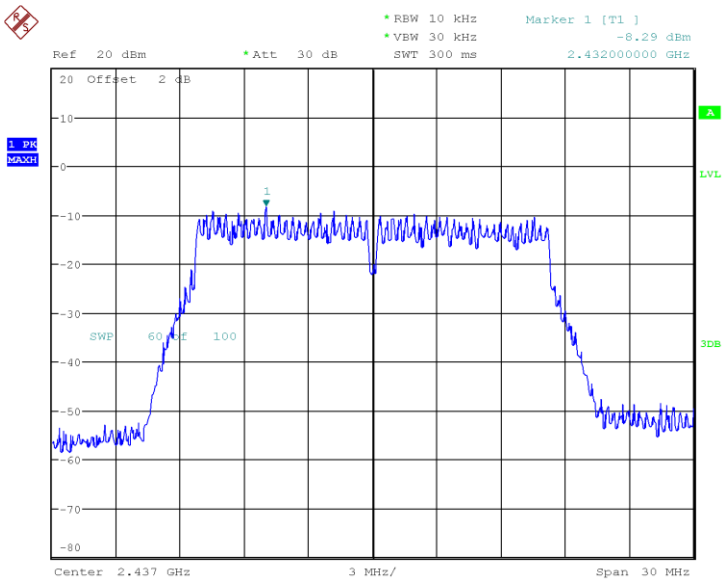



**Fig 5. Power Spectral Density (802.11g, Ch6)**

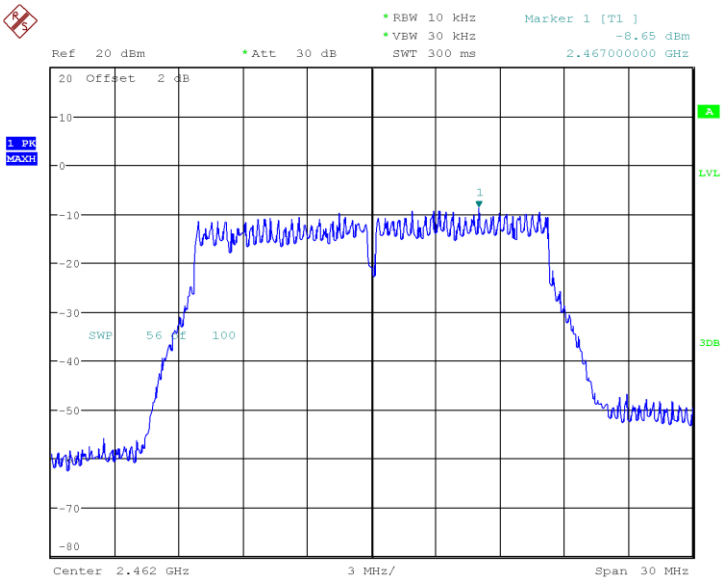



**Fig 6. Power Spectral Density (802.11g, Ch11)**

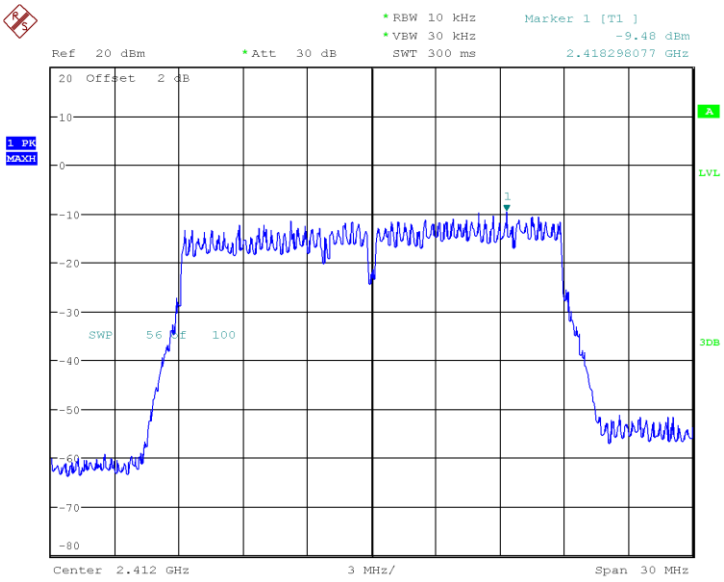



**Fig 7. Power Spectral Density (802.11n-20MHz, Ch1)**

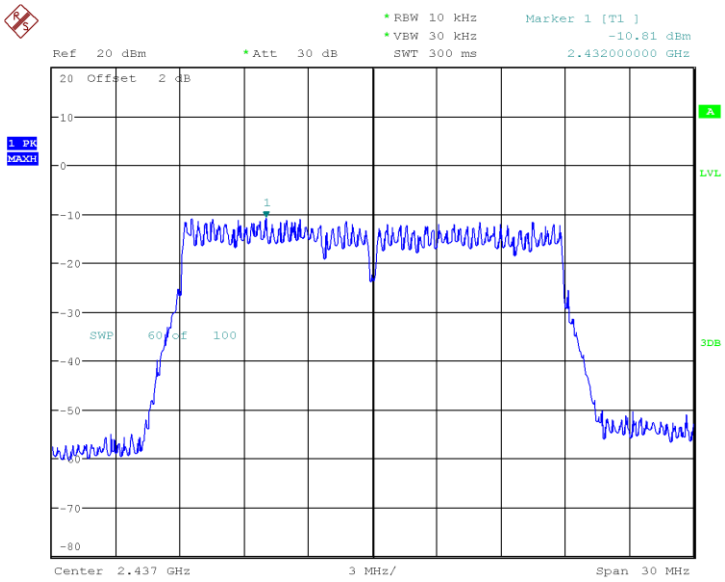



**Fig 8. Power Spectral Density (802.11n-20MHz, Ch6)**

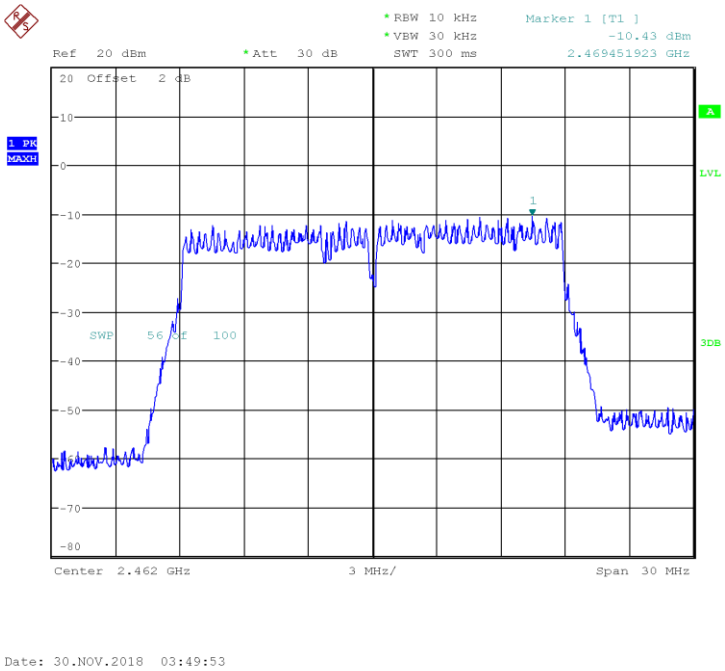



**Fig 9. Power Spectral Density (802.11n-20MHz, Ch11)**

## 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 ⩾ [3 × 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(MHz) | | Conclusion |
|---|---|---|---|---|
| 802.11b | 1 | Fig 10. | 9.455 | P |
| | 6 | Fig 11. | 10.096 | P |
| | 11 | Fig 12. | 10.256 | P |
| 802.11g | 1 | Fig 13. | 16.506 | P |
| | 6 | Fig 14. | 16.506 | P |
| | 11 | Fig 15. | 16.506 | P |

**802.11n mode**

| Mode | Channel | Occupied 6dB Bandwidth(MHz) | | Conclusion |
|---|---|---|---|---|
| 802.11n(20MHz) | 1 | Fig 16. | 17.37 | P |
| | 6 | Fig 17. | 17.76 | P |
| | 11 | Fig 18. | 17.63 | P |

**Conclusion: PASS**

**Test graphs as below:**

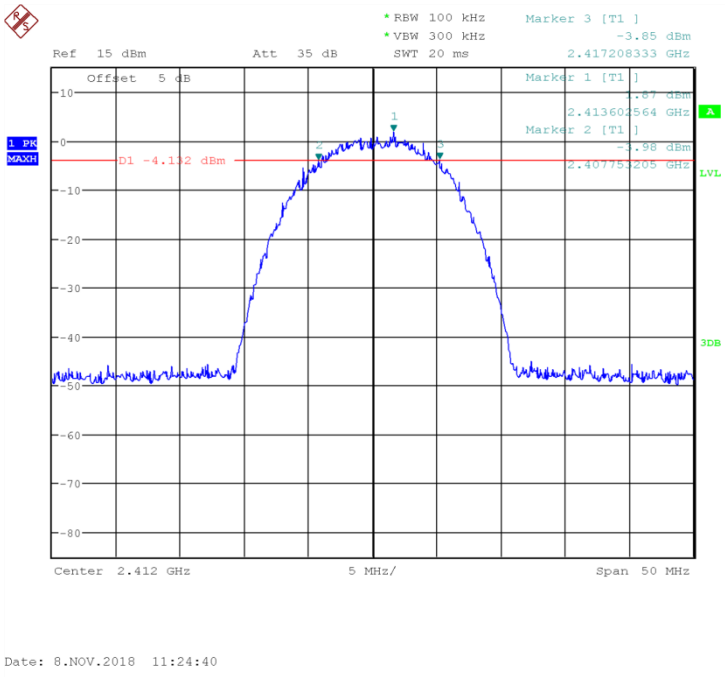



**Fig 10. Occupied 6dB Bandwidth (802.11b, Ch1)**

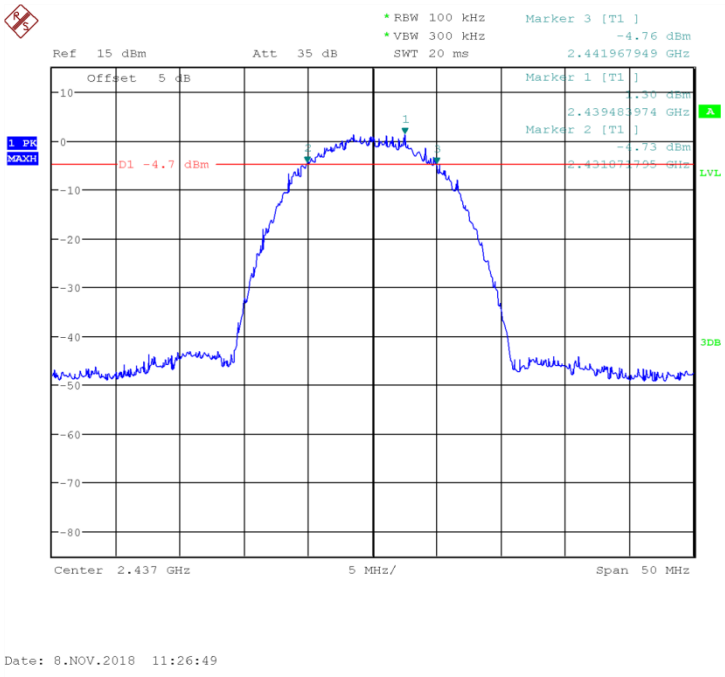



**Fig 11. Occupied 6dB Bandwidth (802.11b, Ch6)**

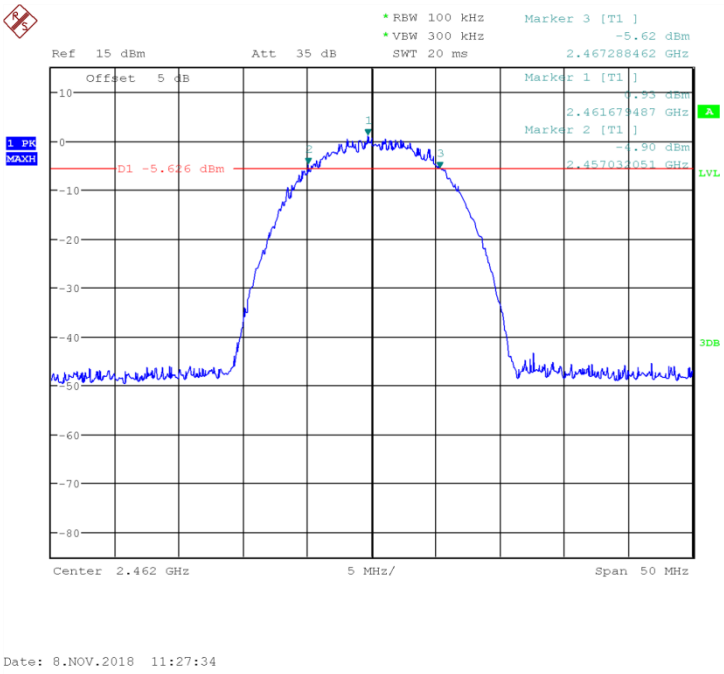



**Fig 12. Occupied 6dB Bandwidth (802.11b, Ch11)**

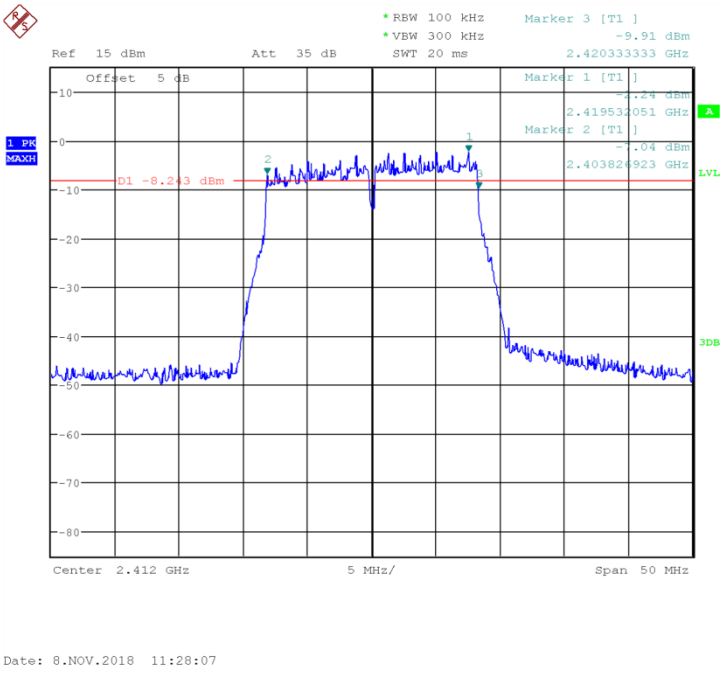



**Fig 13. Occupied 6dB Bandwidth (802.11g, Ch1)**

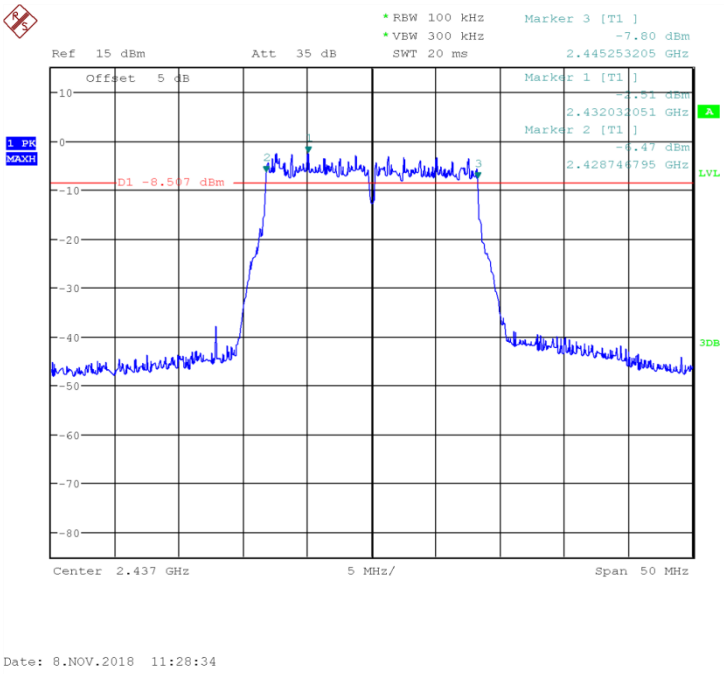



**Fig 14. Occupied 6dB Bandwidth (802.11g, Ch6)**

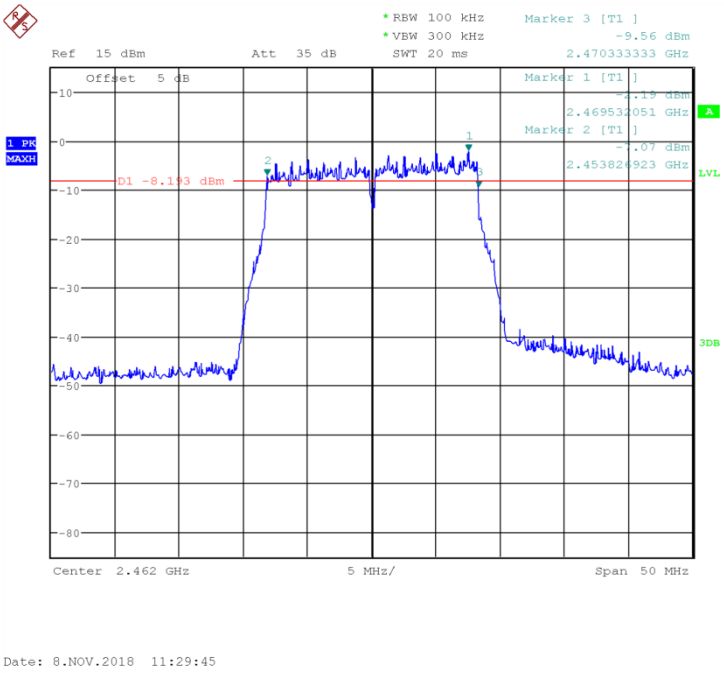



**Fig 15. Occupied 6dB Bandwidth (802.11g, Ch11)**

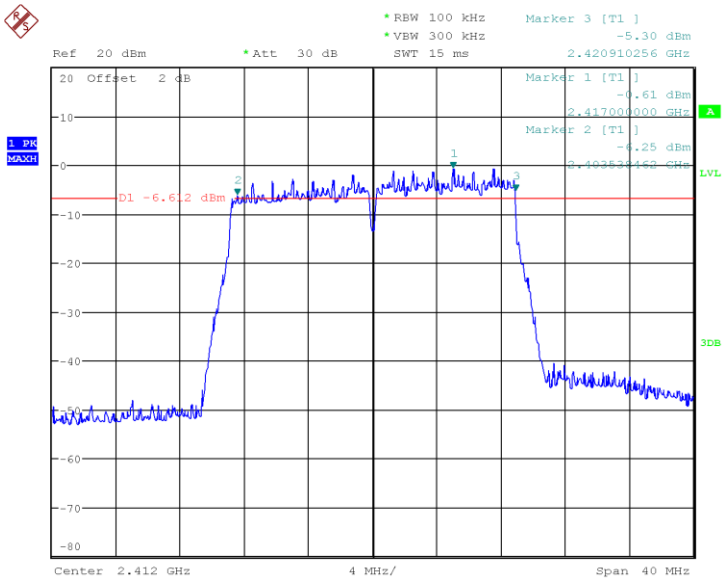



**Fig 16. Occupied 6dB Bandwidth (802.11n-20MHz, Ch1)**

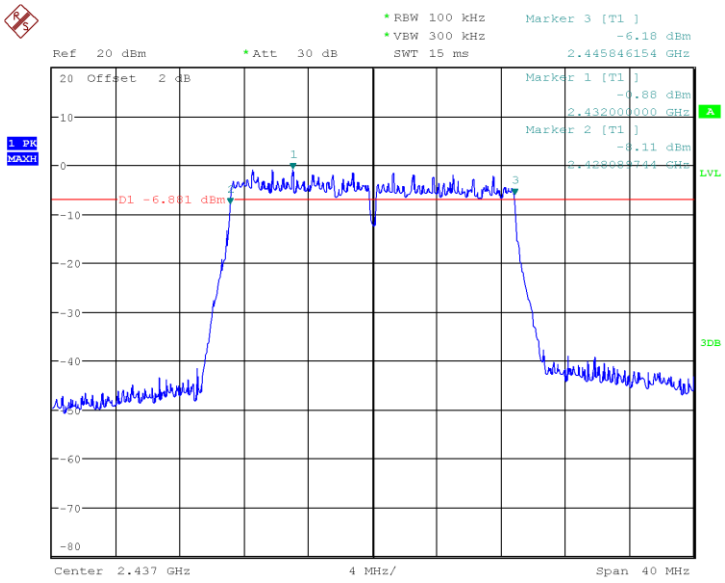



**Fig 17. Occupied 6dB Bandwidth (802.11n-20MHz, Ch6)**

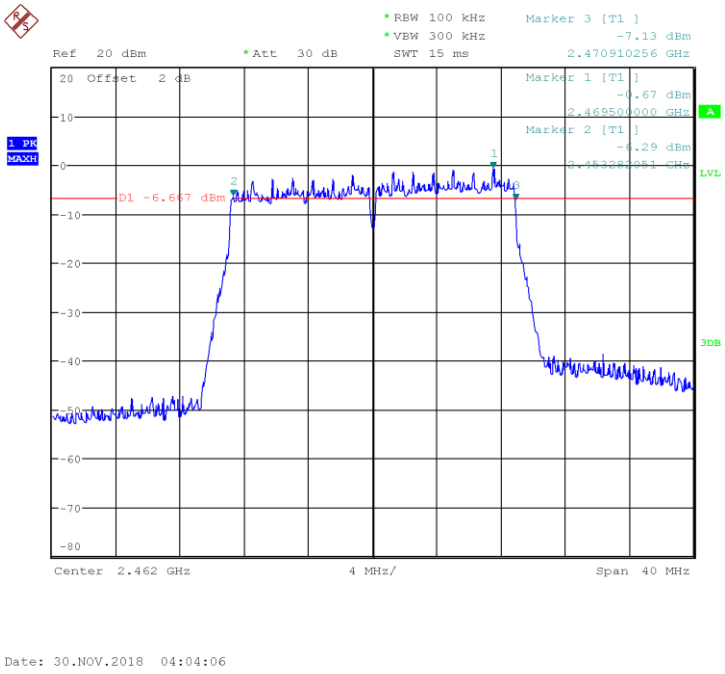



**Fig 18. Occupied 6dB Bandwidth (802.11n-20MHz, Ch11)**

## 6.4. Band Edges Compliance

### 6.4.1 Measurement Limit:

| Standard | Limited(dBc) |
|---|---|
| FCC 47 CFR Part 15.247(d) | >30 |

### 6.4.2 Test procedures

The measurement is according to ANSI C63.10 clause11.13.

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 ⩾ [3 × RBW].
7. Detector = RMS.
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 19. | P |
| | 11 | Fig 20. | P |
| 802.11g | 1 | Fig 21. | P |
| | 11 | Fig 22. | P |

**802.11n mode**

| Mode | Channel | Test Results | Conclusion |
|---|---|---|---|
| 802.11n(20MHz) | 1 | Fig 23. | P |
| | 11 | Fig 24. | P |

**Conclusion: PASS**

**Test graphs as blew:**

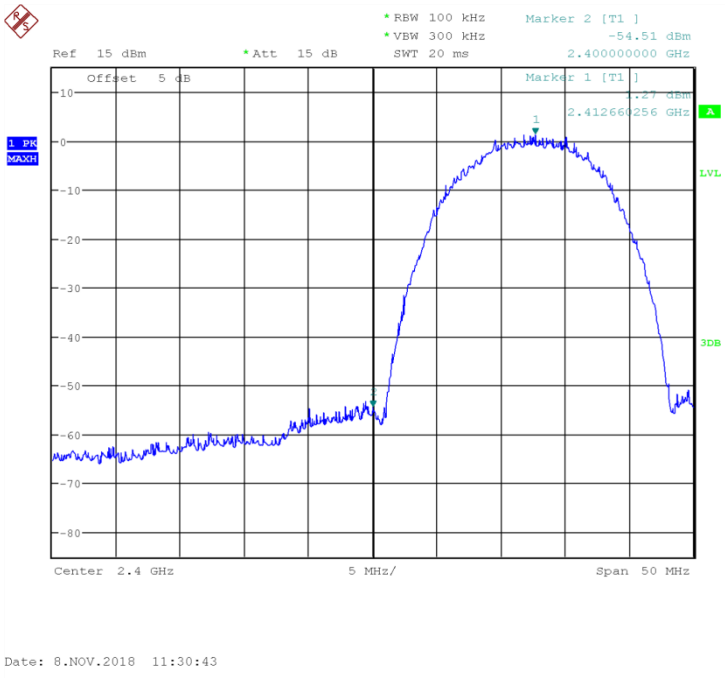



**Fig 19. Band Edges (802.11b, Ch1)**

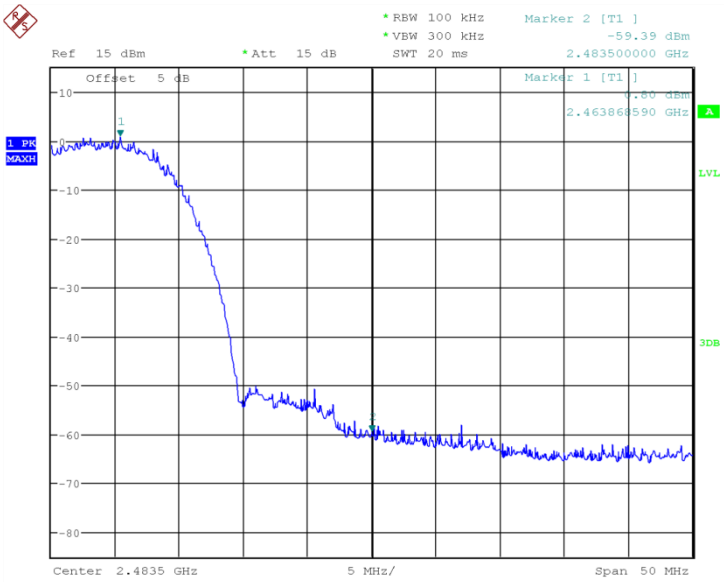



**Fig 20. Band Edges (802.11b, Ch11)**

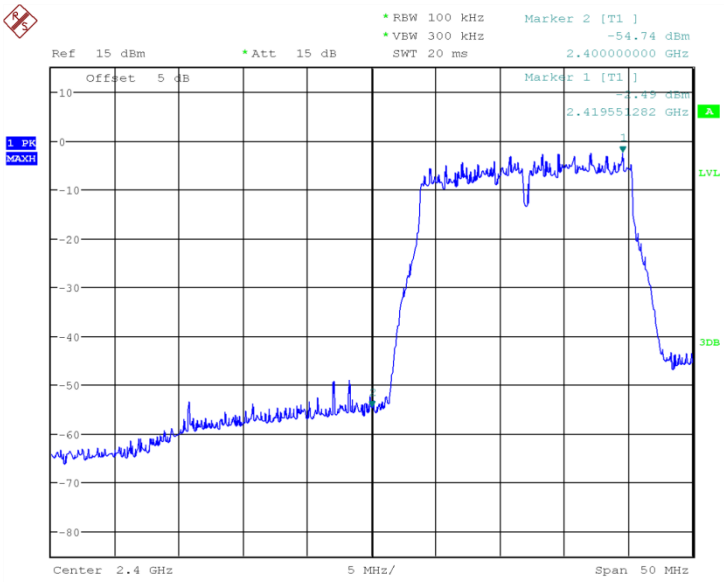



**Fig 21. Band Edges (802.11g, Ch1)**

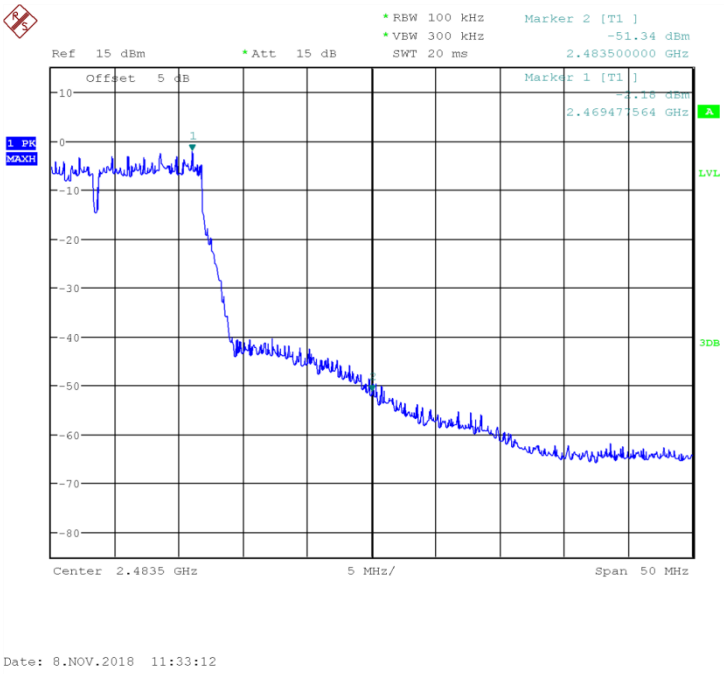



**Fig 22. Band Edges (802.11g, Ch11)**

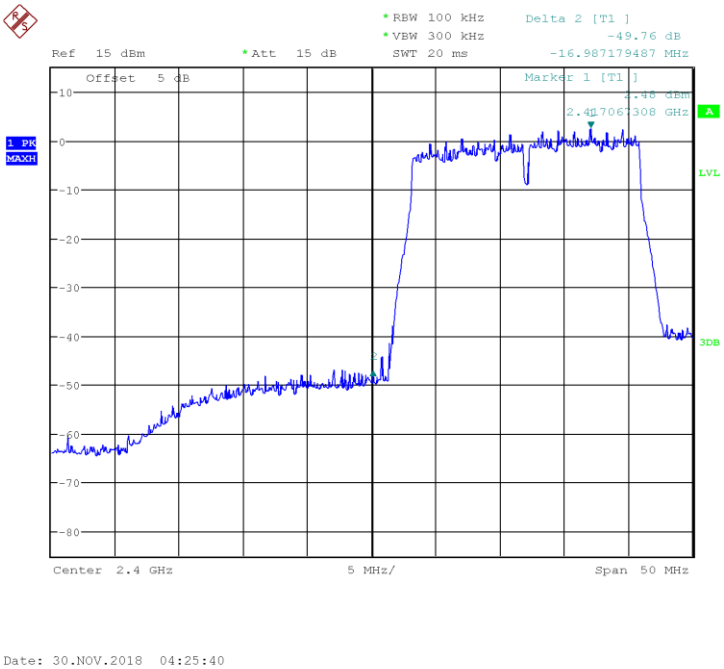



**Fig 23. Band Edges (802.11n-20MHz, Ch1)**

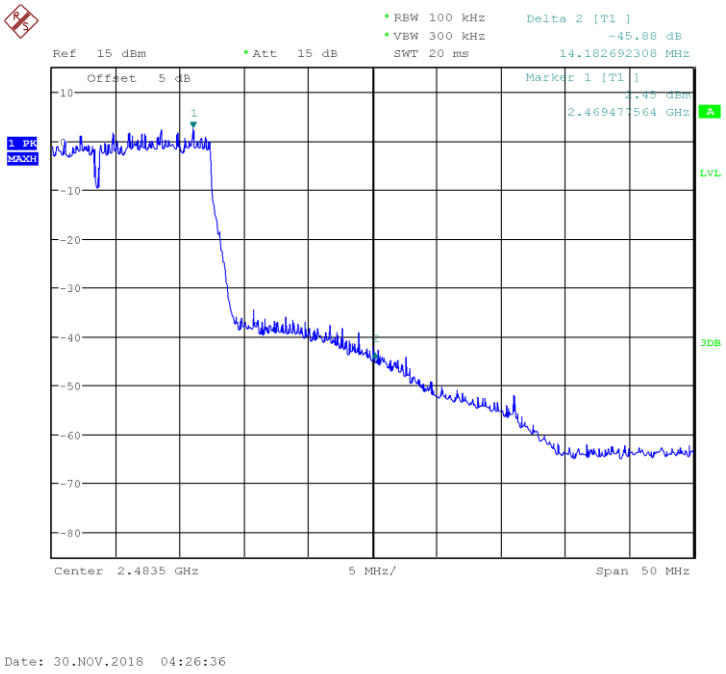



**Fig 24. Band Edges (802.11n-20MHz, Ch11)**

## 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 ≥ 1.5 times the DTS bandwidth.
5. Set the RBW = 100 kHz.
6. Set the VBW ≥ [3 × 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 ⩾ [3 × 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 |
|---|---|
| 30MHz⩽ f ⩽2GHz | 0.63 |
| 2GHz⩽ f ⩽3.6GHz | 0.82 |
| 3.6GHz⩽ f ⩽8GHz | 1.55 |
| 8GHz⩽ f ⩽20GHz | 1.86 |
| 20GHz⩽ f ⩽22GHz | 1.90 |
| 22GHz⩽ f ⩽26GHz | 2.20 |

**6.5.4 Measurement Result:**

**802.11b/g mode**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| 802.11b | 1 | 2.412GHz | Fig 25. | P |
| | | 30MHz~26GHz | Fig 26. | P |
| | 6 | 2.437GHz | Fig 27. | P |
| | | 30MHz~26GHz | Fig 28. | P |
| | 11 | 2.462GHz | Fig 29. | P |
| | | 30MHz~26GHz | Fig 30. | P |
| 802.11g | 1 | 2.412GHz | Fig 31. | P |
| | | 30MHz~26GHz | Fig 32. | P |
| | 6 | 2.437GHz | Fig 33. | P |

| | | | | |
|---|---|---|---|---|
| | | 30MHz~26GHz | Fig 34. | P |
| | 11 | 2.462GHz | Fig 35. | P |
| | | 30MHz~26GHz | Fig 36. | P |

**802.11n mode**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| 802.11n(20MHz) | 1 | 2.412GHz | Fig 37. | P |
| | | 30MHz~26GHz | Fig 38. | P |
| | 6 | 2.437GHz | Fig 39. | P |
| | | 30MHz~26GHz | Fig 40. | P |
| | 11 | 2.462GHz | Fig 41. | P |
| | | 30MHz~26GHz | Fig 42. | P |

**Conclusion: PASS**

**Test graphs as below:**

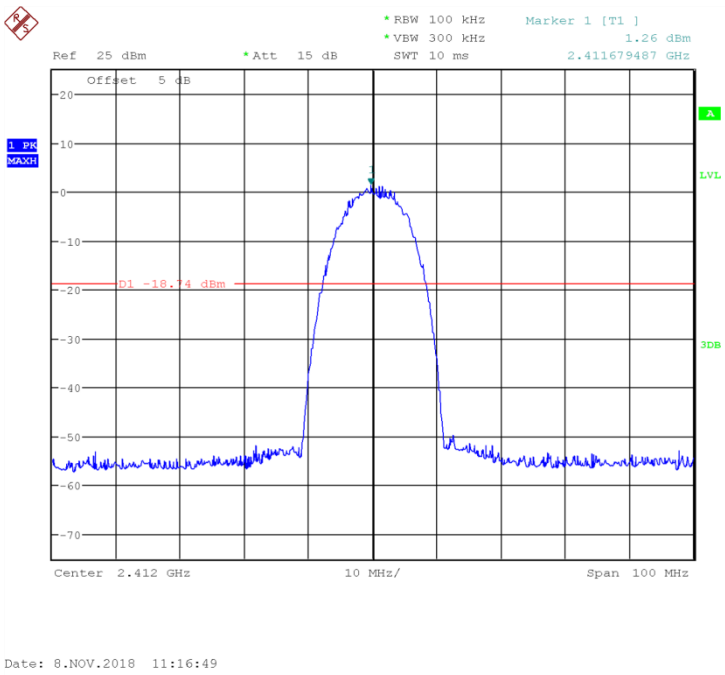



**Fig 25. Conducted Spurious Emission (802.11b, Ch1)**

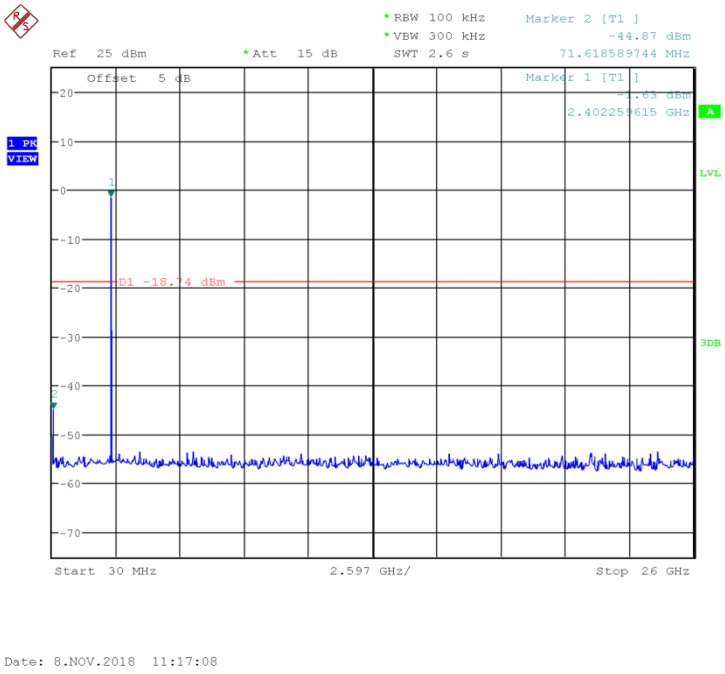



**Fig 26. Conducted Spurious Emission (802.11b, Ch1, 30MHz~26GHz)**

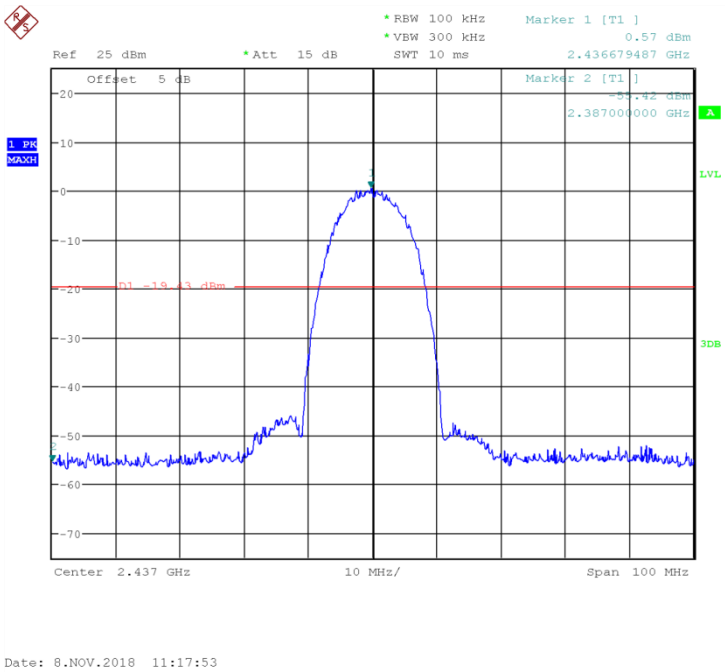



**Fig 27. Conducted Spurious Emission (802.11b, Ch6)**

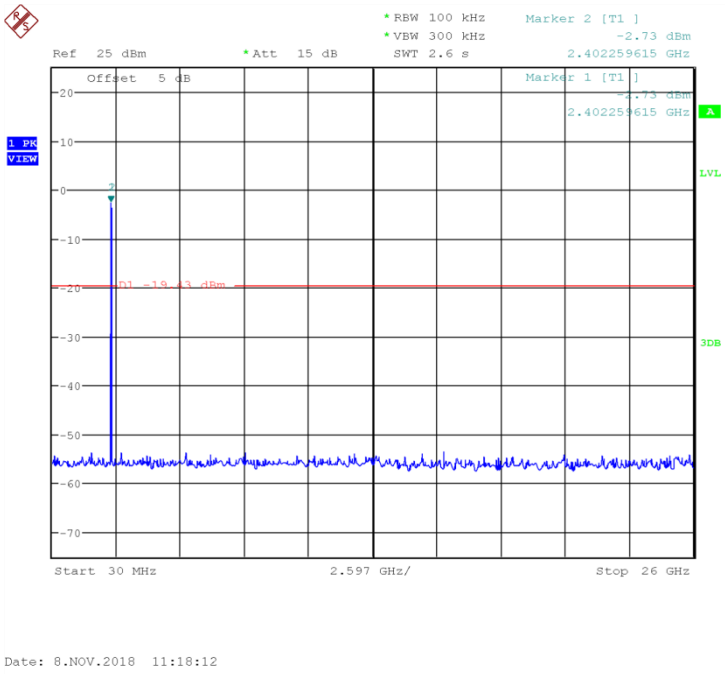



**Fig 28. Conducted Spurious Emission (802.11b, Ch6, 30MHz~26GHz)**

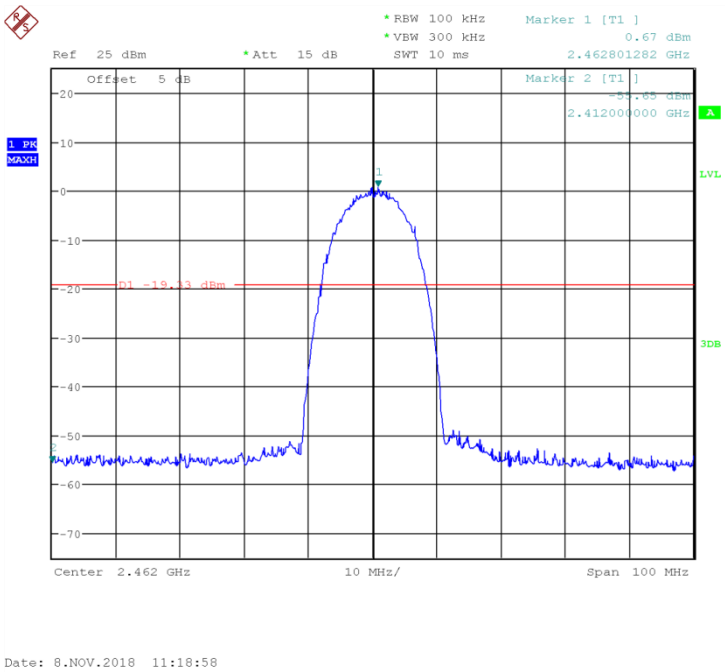



**Fig 29. Conducted Spurious Emission (802.11b, Ch11)**

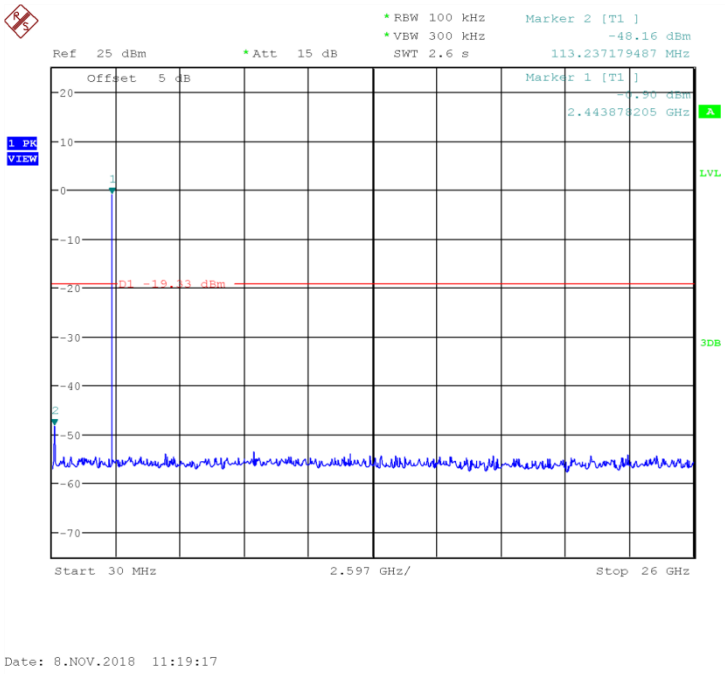



**Fig 30. Conducted Spurious Emission (802.11b, Ch11, 30MHz~26GHz)**

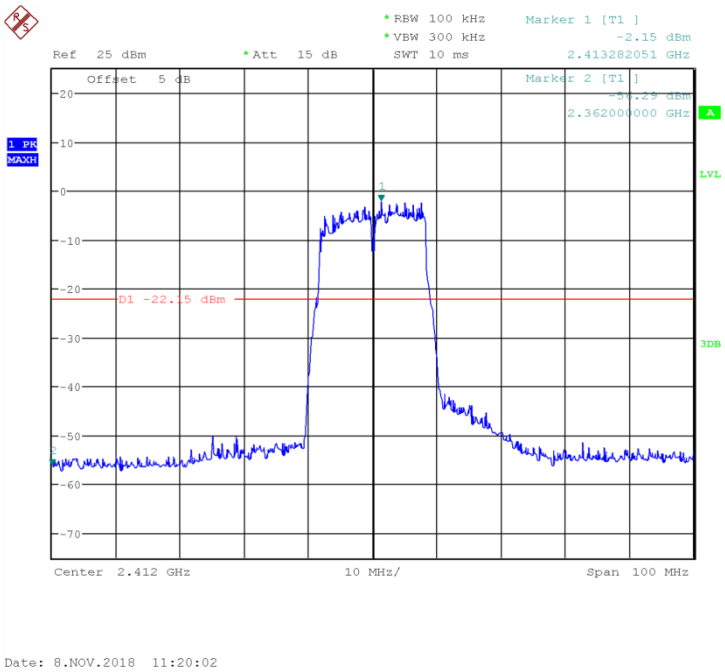



**Fig 31. Conducted Spurious Emission (802.11g, Ch1)**

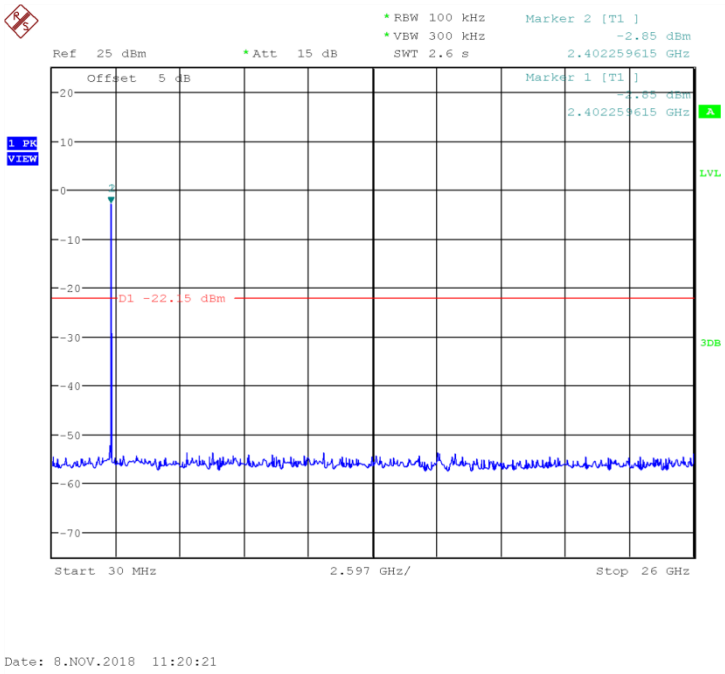



**Fig 32. Conducted Spurious Emission (802.11g, Ch1, 30MHz~26GHz)**

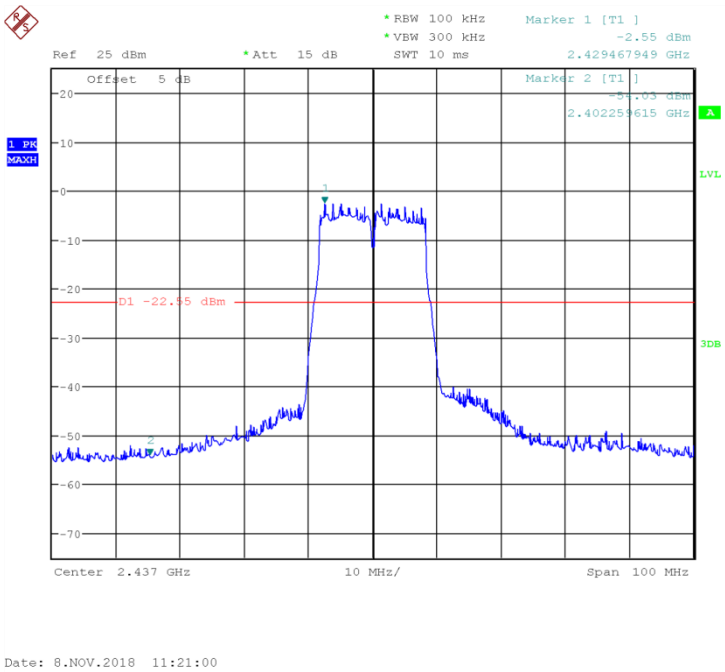



**Fig 33. Conducted Spurious Emission (802.11g, Ch6)**

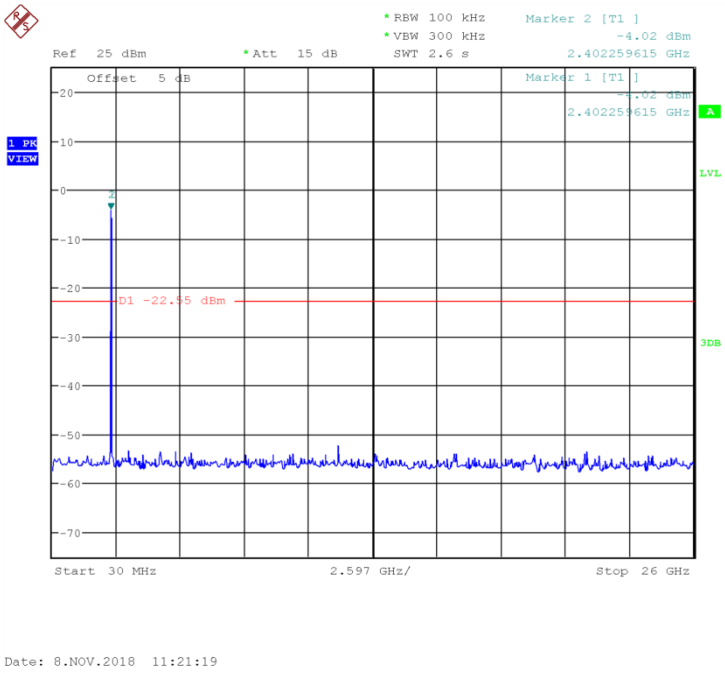



**Fig 34. Conducted Spurious Emission (802.11g, Ch6, 30MHz~26GHz)**

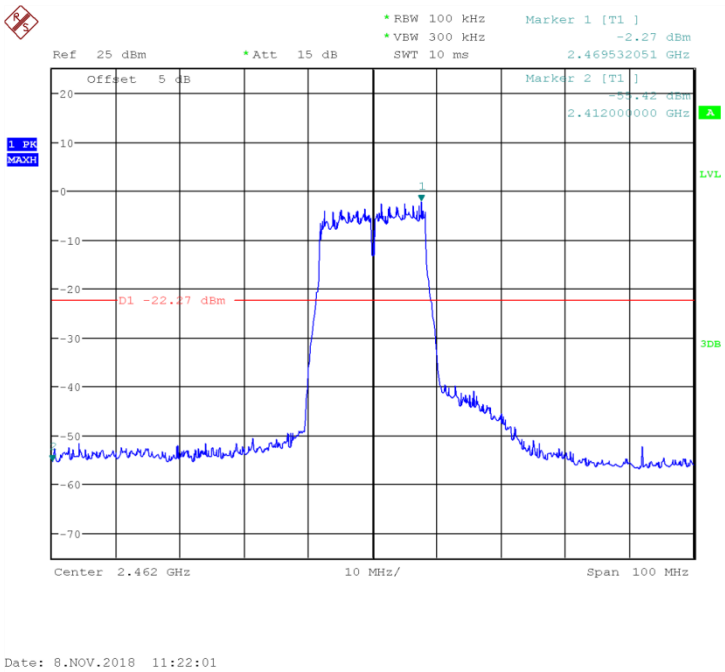



**Fig 35. Conducted Spurious Emission (802.11g, Ch11)**

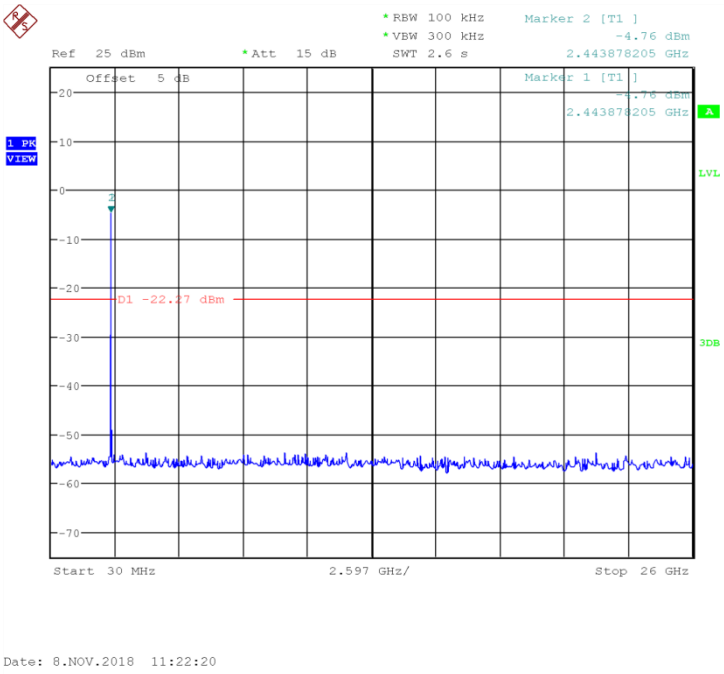



**Fig 36. Conducted Spurious Emission (802.11g, Ch11, 30MHz~26GHz)**

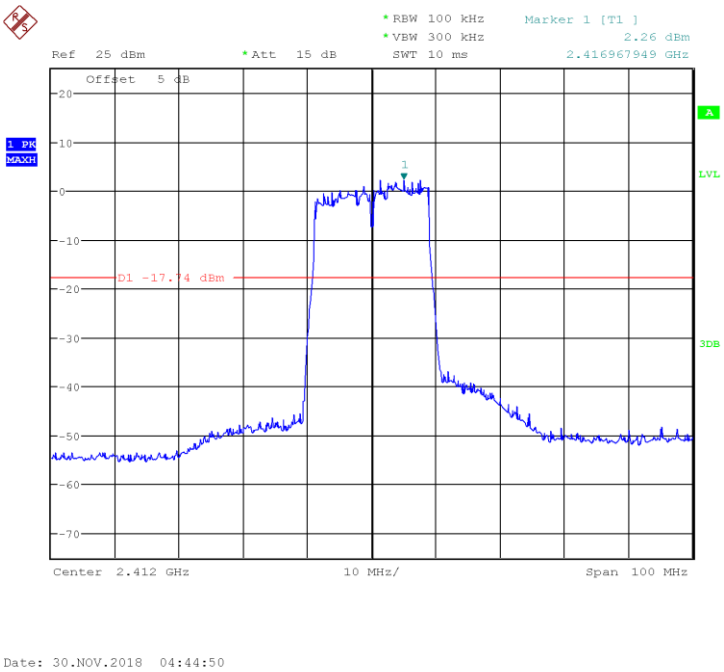



**Fig 37. Conducted Spurious Emission (802.11n-20MHz, Ch1)**

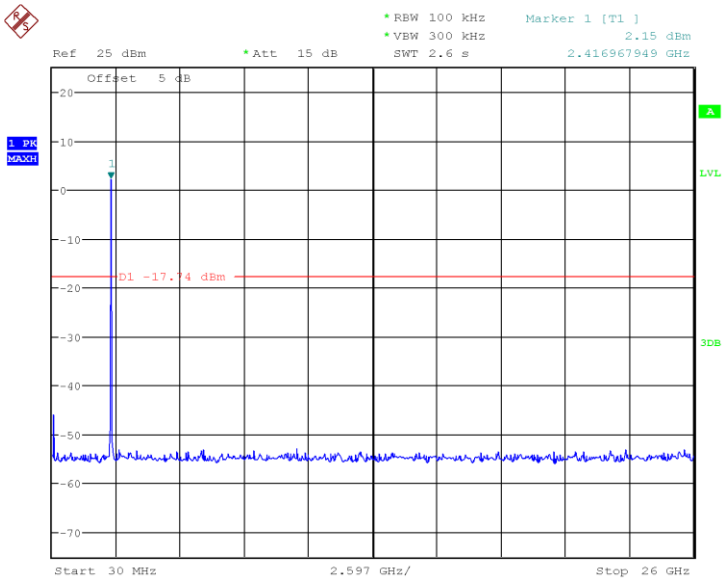



**Fig 38. Conducted Spurious Emission (802.11n-20MHz, Ch1, 30MHz~26GHz)**

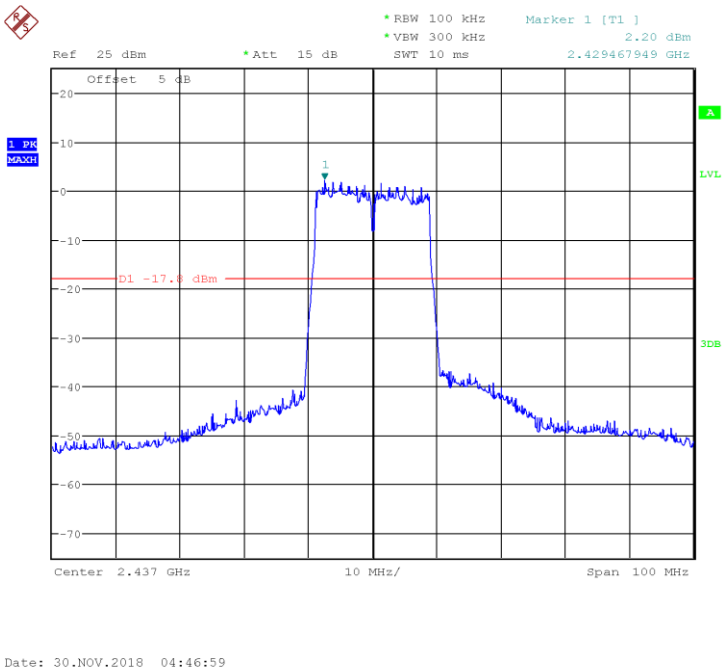



**Fig 39. Conducted Spurious Emission (802.11n-20MHz, Ch6)**

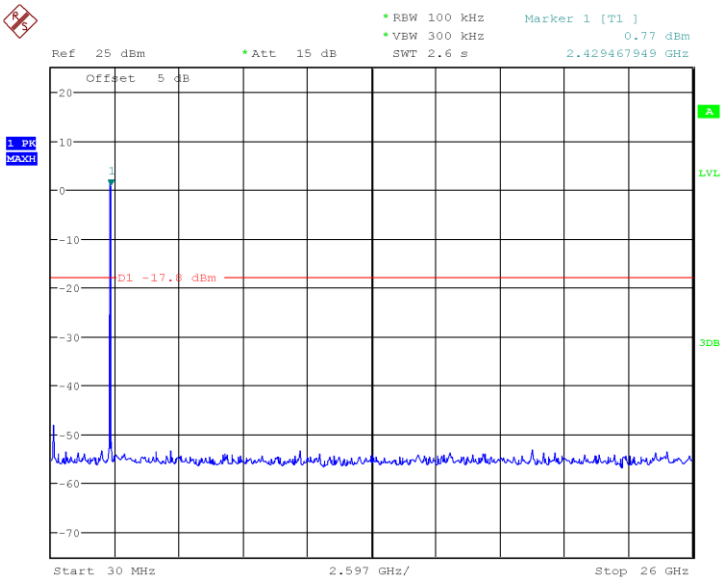



**Fig 40. Conducted Spurious Emission (802.11n-20MHz, Ch6, 30MHz~26GHz)**

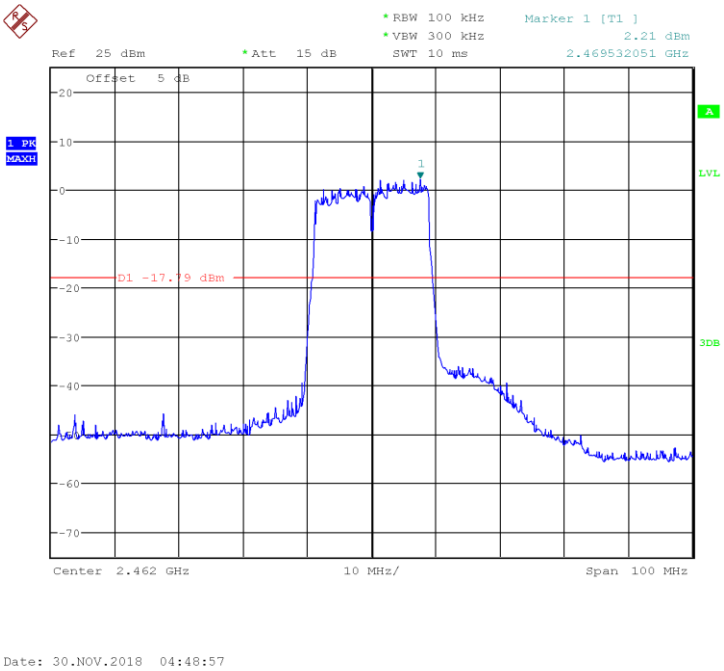



**Fig 41. Conducted Spurious Emission (802.11n-20MHz, Ch11)**

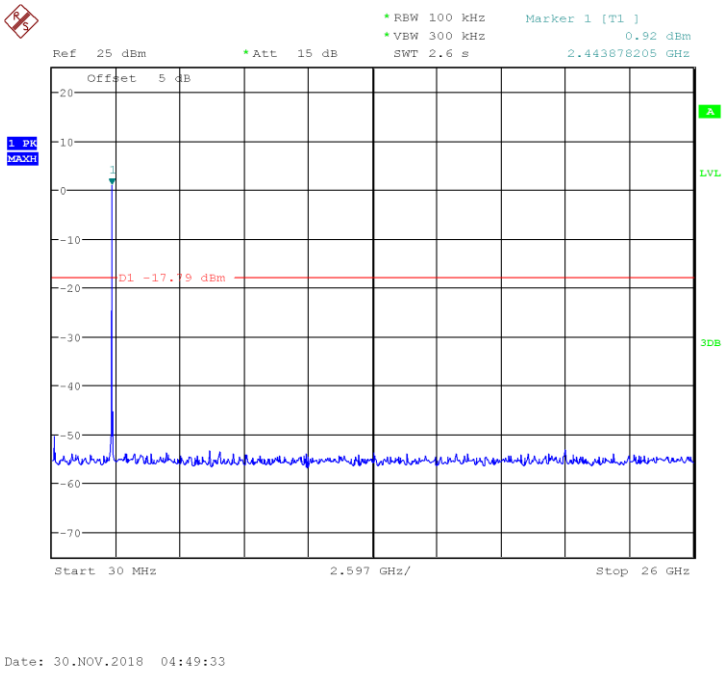



**Fig 42. Conducted Spurious Emission (802.11n-20MHz, Ch11, 30MHz~26GHz)**

## 6.6. Transmitter Spurious Emission-Radiated

### 6.6.1 Measurement Limit:

| Standard | Limit |
|---|---|
| FCC 47 CFR Part 15.247,15.205,15.209 | 20dB below peak output power |

In addition, radiated emissions which fall in the restricted bands, as defined in 25.205(a), must also comply with the radiated emission limits specified in 15.209(a)(see 15.205(c)). The measurement is according to ANSI C63.10 clause 11.11 and 11.12.

### 6.6.2 Limit in restricted band:

| Frequency of emission(MHz) | Field strength(uV/m) | Field strength(dBuV/m) |
|---|---|---|
| 30~88 | 100 | 40 |
| 88~216 | 150 | 43.5 |
| 216~960 | 200 | 46 |
| Above 960 | 500 | 54 |

### 6.6.3 Test procedures

Portable, small, lightweight, or modular devices that may be handheld, worn on the body,

or placed on a table during operation shall be positioned on a nonconducting platform, the top of which is 80 cm above the reference ground plane. The preferred area occupied by the EUT arrangement is 1 m by 1.5 m, For emissions testing at or below 1 GHz, the table height shall be 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. but it may be larger or smaller to accommodate various sized EUTs. For testing purposes, ceiling- and wall-mounted devices also shall be positioned on a tabletop (see also ANSI C63.4-2013 section 6.3.4 and 6.3.5). In making any tests involving handheld, body-worn, or ceiling-mounted equipment, it is essential to recognize that the measured levels may be dependent on the orientation (attitude) of the three orthogonal axes of the EUT. Thus, exploratory tests as specified in 8.3.1 shall be carried out for various axes orientations to determine the attitude having maximum or near-maximum emission level.

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

| Frequency of emission (MHz) | RBW/VBW | Sweep Times (s) |
|---|---|---|
| 30~1000 | 100KHz/300KHz | 5 |
| 1000~4000 | 1MHz/3MHz | 15 |
| 4000~18000 | 1MHz/3MHz | 40 |
| 18000~26500 | 1MHz/3MHz | 20 |

**Main supply**

**802.11b/g mode**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| 802.11b | Power（low） | 2.31GHz~2.5GHz | Fig 43. | P |
| | Power（high） | 2.31GHz~2.5GHz | Fig 44. | P |
| | 1 | 30MHz~1GHz | Fig 45. | P |
| | | 1GHz~3GHz | Fig 46. | P |
| | | 3GHz~18GHz | Fig 47. | P |
| 802.11g | Power（low） | 2.31GHz~2.5GHz | Fig 48. | P |
| | Power（high） | 2.31GHz~2.5GHz | Fig 49. | P |

| | | | | |
|---|---|---|---|---|
| | 1 | 30MHz~1GHz | Fig 50. | P |
| | | 1GHz~3GHz | Fig 51. | P |
| | | 3GHz~18GHz | Fig 52. | P |

**802.11n mode**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| 802.11n(20MHz) | Power（low） | 2.31GHz~2.5GHz | Fig 53. | P |
| | Power（high） | 2.31GHz~2.5GHz | Fig 54. | P |
| | 1 | 30MHz~1GHz | Fig 55. | P |
| | | 1GHz~3GHz | Fig 56. | P |
| | | 3GHz~18GHz | Fig 57. | P |

**Conclusion: PASS**

**Note:**

A ”reference path loss” is established and $A_{Rpi}$ is the attenuation of “reference path loss”, and including the gain of receive antenna , the gain of the preamplifier, the cable loss.

$P_{Mea}$ is the field strength recorded from the instrument.

The measurement results are obtained as described below:

ARpi = Cable loss + Antenna Gain-Preamplifier gain

Result = $P_{Mea}$ + Cable loss + Antenna Gain-Preamplifier gain = $P_{Mea}$ + ARpi .

**802.11b mode**

**Ch1 30MHz~1GHz**

| Frequency(MHz) | Result(dBuV/m) | ARpI (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 34.0 | 19.58 | -22 | 41.58 | V |
| 35.0 | 19.52 | -22 | 41.52 | V |
| 40.7 | 31.22 | -21 | 52.22 | V |
| 92.5 | 28.58 | -25 | 53.58 | V |
| 181.9 | 31.11 | -25 | 56.11 | V |
| 190.7 | 30.15 | -25 | 55.15 | V |

**Ch1 1GHz~3GHz(Peak)**

| Frequency(MHz) | Result(dBuV/m) | ARpI (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 2548.5 | 53.51 | 7 | 46.51 | V |
| 2655.9 | 54.43 | 8 | 46.43 | V |
| 2736.2 | 54.98 | 8 | 46.98 | V |
| 2826.8 | 54.68 | 8 | 46.68 | H |
| 2894.7 | 55.42 | 9 | 46.42 | H |
| 2985.1 | 55.25 | 9 | 46.25 | H |

**Ch1 1GHz~3GHz(Average)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 2655.9 | 42.42 | 8 | 34.42 | V |
| 2736.2 | 42.37 | 8 | 34.37 | V |
| 2826.8 | 42.63 | 8 | 34.63 | H |
| 2894.7 | 43.31 | 9 | 34.31 | H |
| 2985.1 | 43.42 | 9 | 34.42 | H |

**Ch1 3GHz~18GHz(Peak)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 13828.6 | 53.37 | 19 | 34.37 | V |
| 14301.1 | 54.74 | 21 | 33.74 | V |
| 15431.3 | 55.8 | 23 | 32.8 | H |
| 16122.8 | 58.99 | 25 | 33.99 | H |
| 16840.2 | 60.1 | 27 | 33.1 | H |
| 17538.2 | 59.84 | 28 | 31.84 | V |

**Ch1 3GHz~18GHz(Average)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 14301.1 | 42.63 | 21 | 21.63 | V |
| 15431.3 | 43.78 | 23 | 20.78 | H |
| 16122.8 | 46.49 | 25 | 21.49 | H |

| | | | | |
|---|---|---|---|---|
| 16840.2 | 47.52 | 27 | 20.52 | H |
| 17538.2 | 47.81 | 28 | 19.81 | V |

**802.11g**

**Ch1 30MHz~1GHz**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 34.4 | 20.36 | -22 | 42.36 | V |
| 36.1 | 20.65 | -22 | 42.65 | V |
| 40.6 | 25.9 | -21 | 46.9 | V |
| 92.1 | 30.5 | -25 | 55.5 | H |
| 137.0 | 17.07 | -28 | 45.07 | V |
| 177.8 | 13.05 | -25 | 38.05 | V |

**Ch1 1GHz~3GHz(Peak)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 2543.9 | 54.64 | 7 | 47.64 | V |
| 2666.3 | 54.35 | 8 | 46.35 | H |
| 2737.6 | 54.34 | 8 | 46.34 | H |
| 2834.5 | 54.4 | 8 | 46.4 | H |
| 2899.3 | 55.06 | 9 | 46.06 | V |
| 2975.6 | 55.39 | 9 | 46.39 | H |

**Ch1 1GHz~3GHz(Average)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 2543.9 | 41.64 | 7 | 34.64 | V |
| 2666.3 | 42.39 | 8 | 34.39 | H |
| 2737.6 | 42.38 | 8 | 34.38 | H |
| 2834.5 | 42.46 | 8 | 34.46 | H |
| 2899.3 | 43.22 | 9 | 34.22 | V |

| | | | | |
|---|---|---|---|---|
| 2975.6 | 43.33 | 9 | 34.33 | H |

**Ch1 3GHz~18GHz(Peak)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 13529.3 | 53.08 | 18 | 35.08 | V |
| 14284.5 | 54.29 | 21 | 33.29 | V |
| 15701.2 | 56.53 | 23 | 33.53 | V |
| 16267.8 | 58.42 | 25 | 33.42 | V |
| 16881.5 | 59.84 | 27 | 32.84 | V |
| 17557.3 | 60.49 | 28 | 32.49 | V |

**Ch1 3GHz~18GHz(Average)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 14284.5 | 42.4 | 21 | 21.4 | V |
| 15701.2 | 44.69 | 23 | 21.69 | V |
| 16267.8 | 46.17 | 25 | 21.17 | V |
| 16881.5 | 47.91 | 27 | 20.91 | V |
| 17557.3 | 47.86 | 28 | 19.86 | V |

**802.11n-20MHz**

**Ch1 30MHz~1GHz**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 33.3 | 11.35 | -22 | 33.35 | V |
| 35.7 | 11.58 | -22 | 33.58 | V |
| 36.8 | 11.48 | -21 | 32.48 | V |
| 64.7 | 8.86 | -23 | 31.86 | V |
| 110.5 | 8.9 | -24 | 32.9 | V |
| 220.9 | 14.95 | -24 | 38.95 | V |

**Ch1 1GHz~3GHz(Peak)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 2596.5 | 55.33 | 7 | 48.33 | V |
| 2673.2 | 55.02 | 8 | 47.02 | H |
| 2708.4 | 54.37 | 8 | 46.37 | V |
| 2791.2 | 54.19 | 8 | 46.19 | H |
| 2859.4 | 54.34 | 8 | 46.34 | V |
| 2933.7 | 55.36 | 9 | 46.36 | H |

**Ch1 1GHz~3GHz(Peak)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 2596.5 | 41.81 | 7 | 34.81 | V |
| 2673.2 | 42.36 | 8 | 34.36 | H |
| 2708.4 | 42.34 | 8 | 34.34 | V |
| 2791.2 | 42.51 | 8 | 34.51 | H |
| 2859.4 | 42.75 | 8 | 34.75 | V |
| 2933.7 | 43.44 | 9 | 34.44 | H |

**Ch1 3GHz~18GHz(Peak)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 13834.0 | 52.93 | 18 | 34.93 | H |
| 14285.9 | 54.3 | 21 | 33.3 | V |
| 15438.7 | 55.94 | 23 | 32.94 | V |
| 16297.5 | 58.4 | 26 | 32.4 | V |
| 16814.9 | 59.21 | 27 | 32.21 | H |
| 17612.8 | 59.63 | 28 | 31.63 | V |

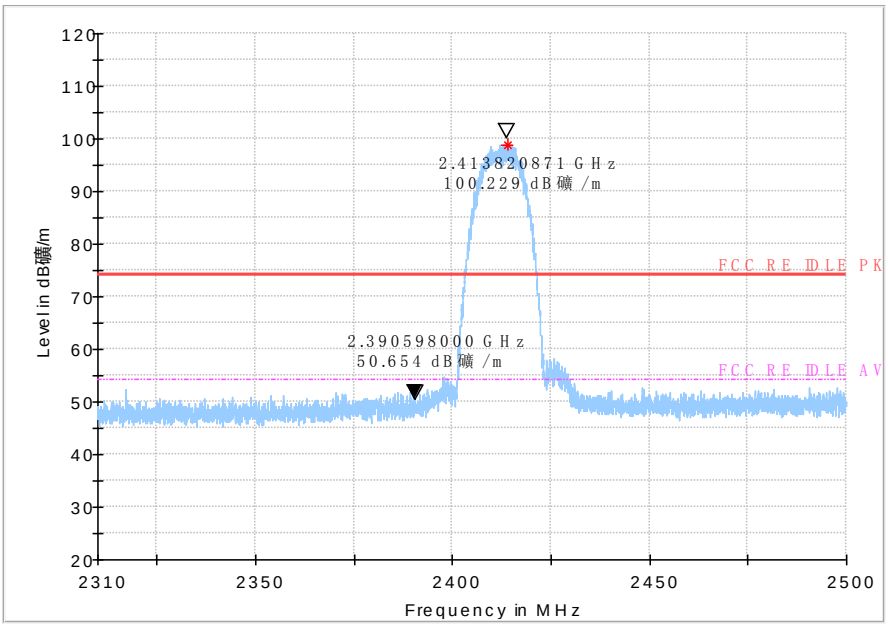
**Ch1 3GHz~18GHz(Average)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 14285.9 | 42.43 | 21 | 21.43 | V |

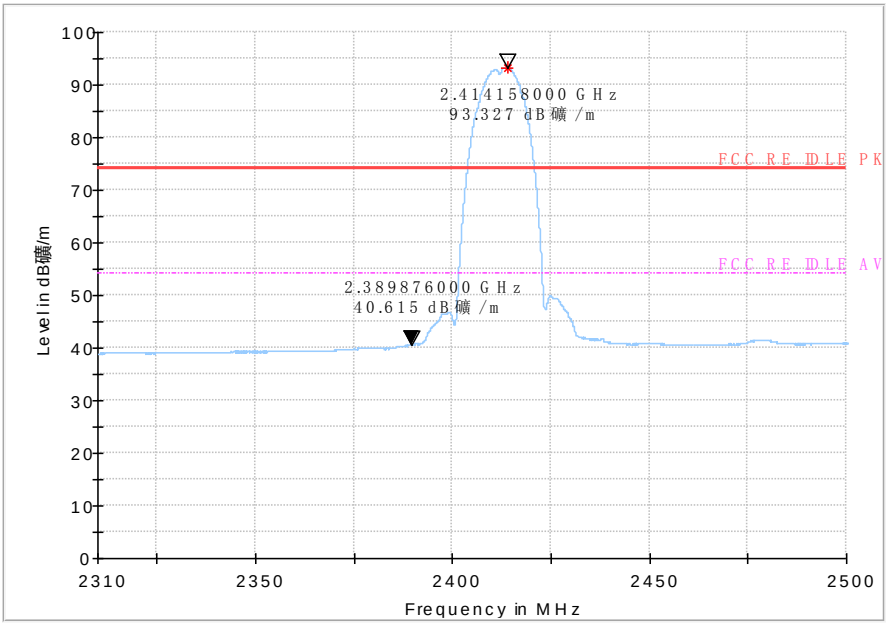
| | | | | |
|---|---|---|---|---|
| 15438.7 | 43.82 | 23 | 20.82 | V |
| 16297.5 | 46.26 | 26 | 20.26 | V |
| 16814.9 | 47.19 | 27 | 20.19 | H |
| 17612.8 | 47.79 | 28 | 19.79 | V |

**Note: Only the worst case is written in the report.**

**Test graphs as below:**

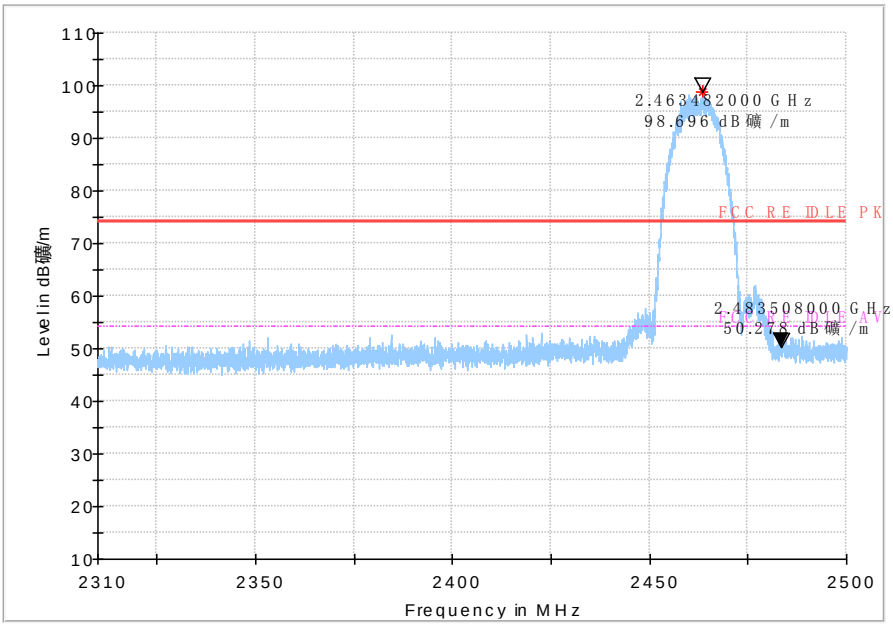



**Peak detector**

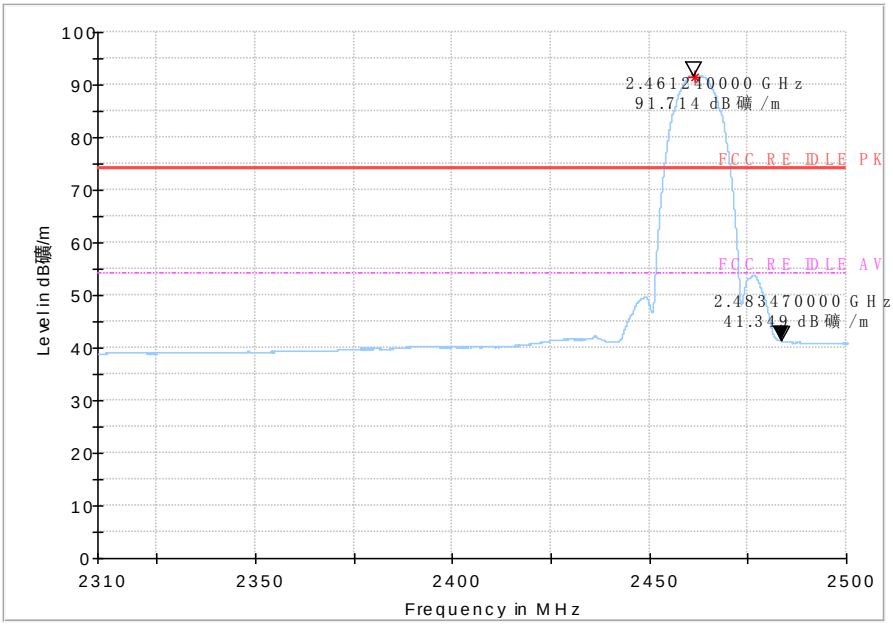



**AV detector**

**Fig 43. Radiated emission (Power): 802.11b, low channel**




**Peak detector**




**AV detector**

**Fig 44. Radiated emission (Power): 802.11b, high channel**

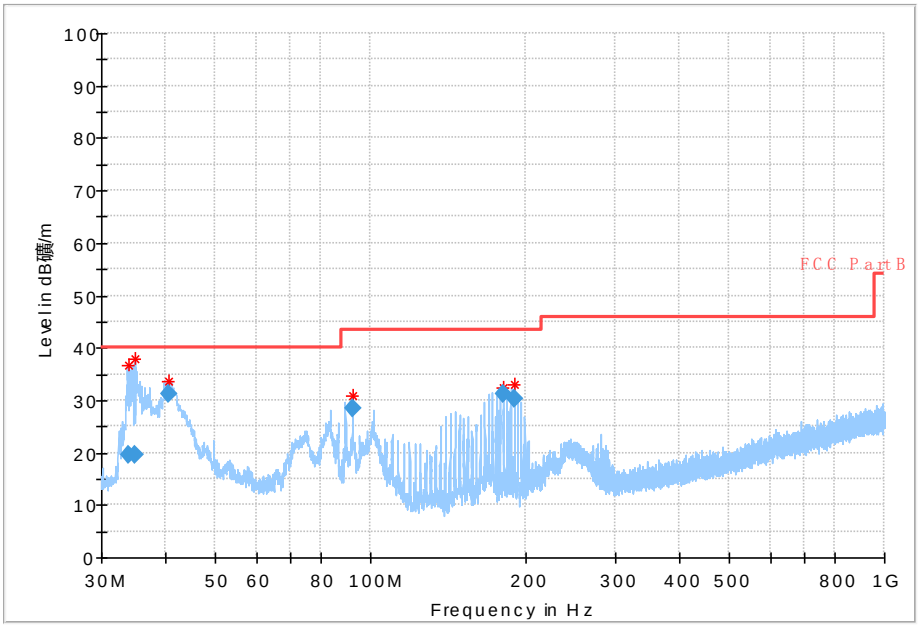



**Fig 45. Radiated Spurious Emission (802.11b, Ch1,30MHz~1GHz)**

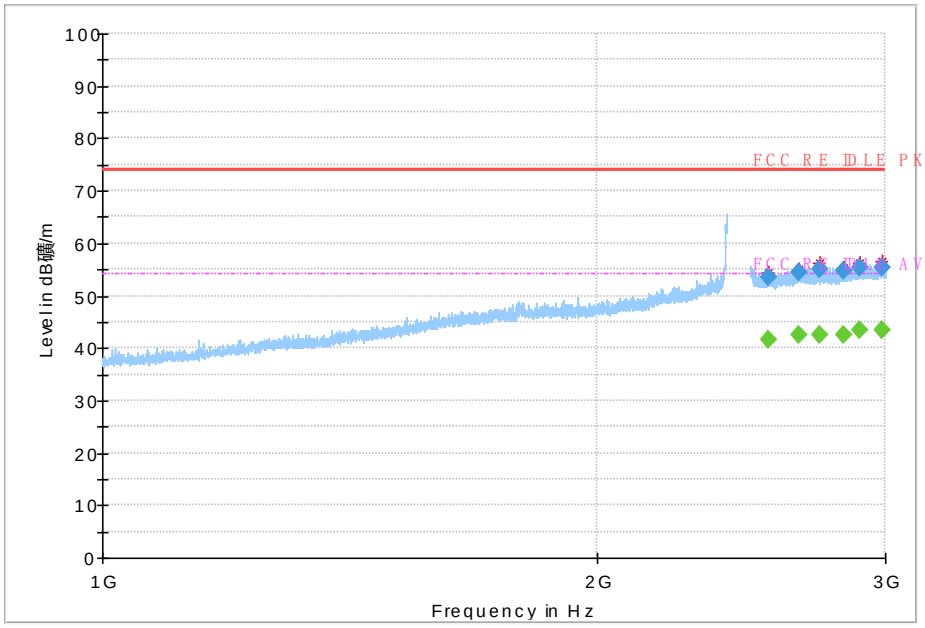



**Fig 46. Radiated Spurious Emission (802.11b, Ch1,1GHz~3GHz)**

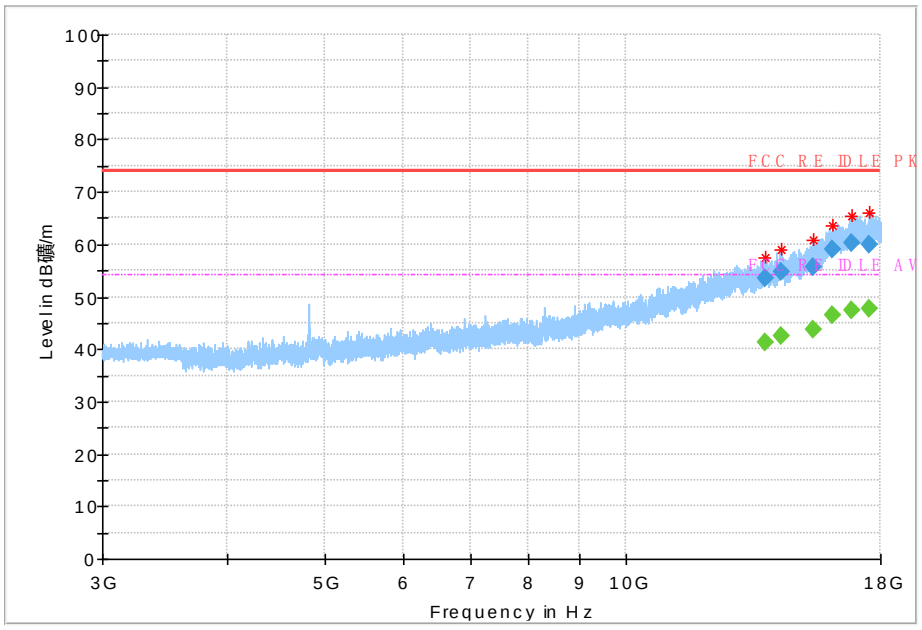
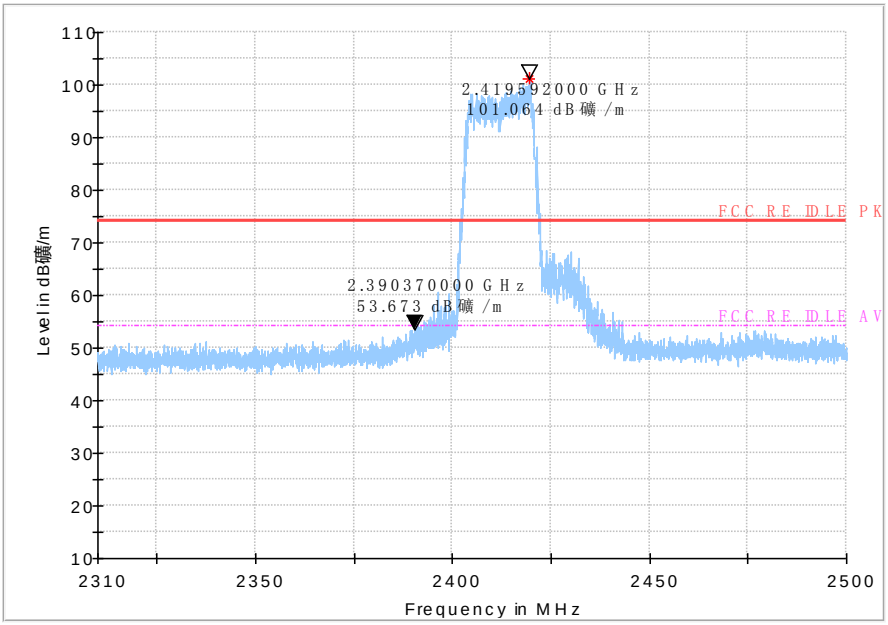
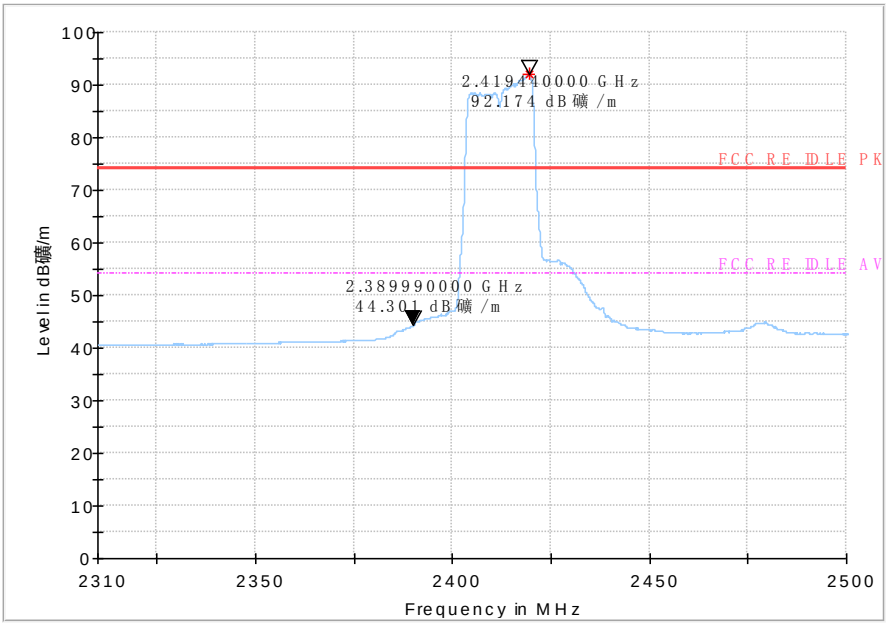



**Fig 47. Radiated Spurious Emission (802.11b, Ch1,3GHz~18GHz)**

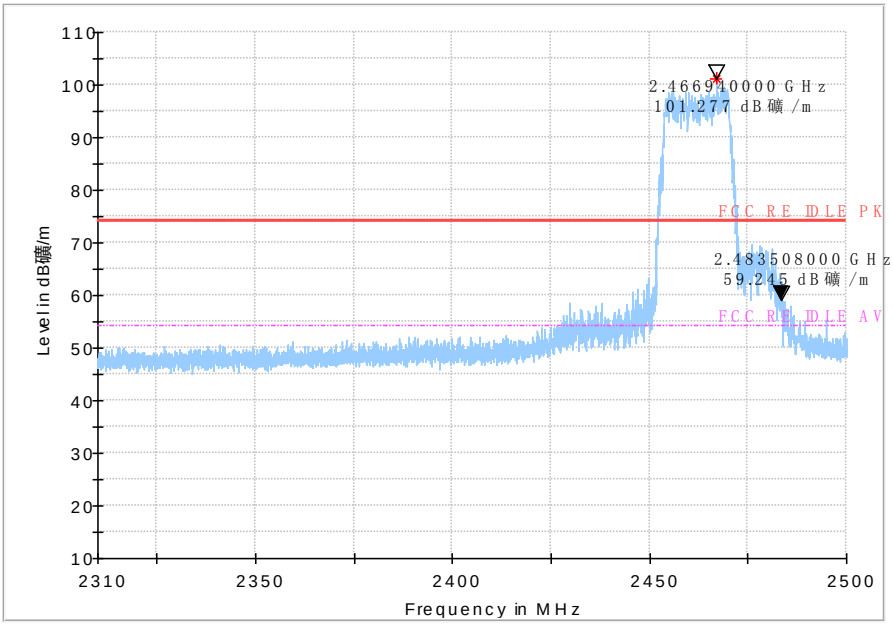



**Peak detector**

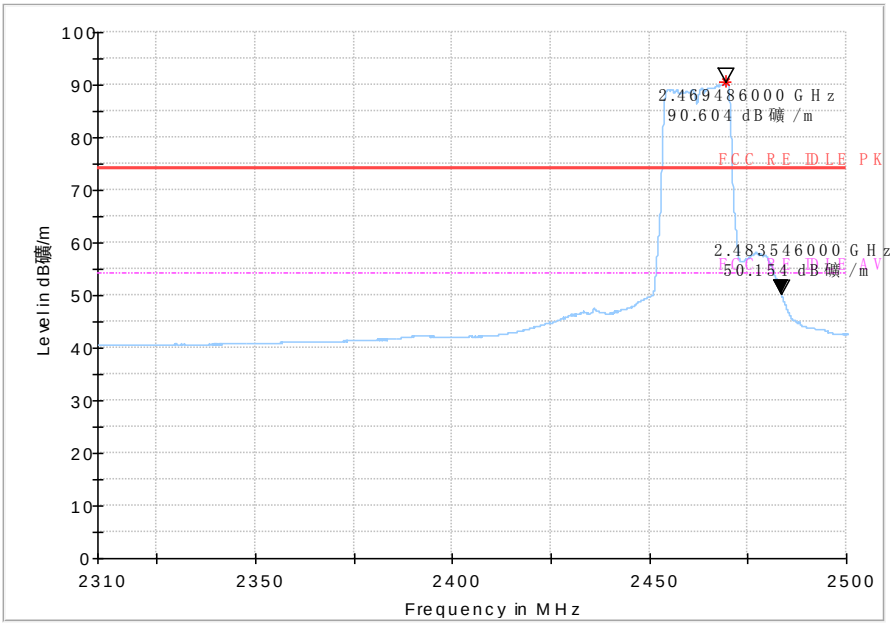



**AV detector**

**Fig 48. Fig.102 Radiated emission (Power): 802.11g, low channel**




**Peak detector**




**AV detector**

**Fig 49. Radiated emission (Power): 802.11g, high channel**

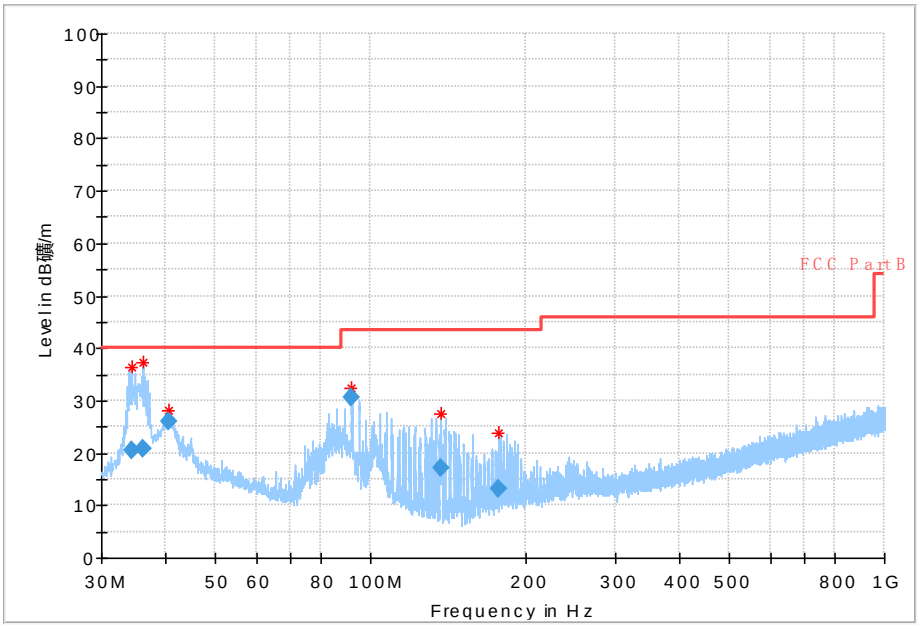



**Fig 50. Radiated Spurious Emission (802.11g, Ch1,30MHz~1GHz)**

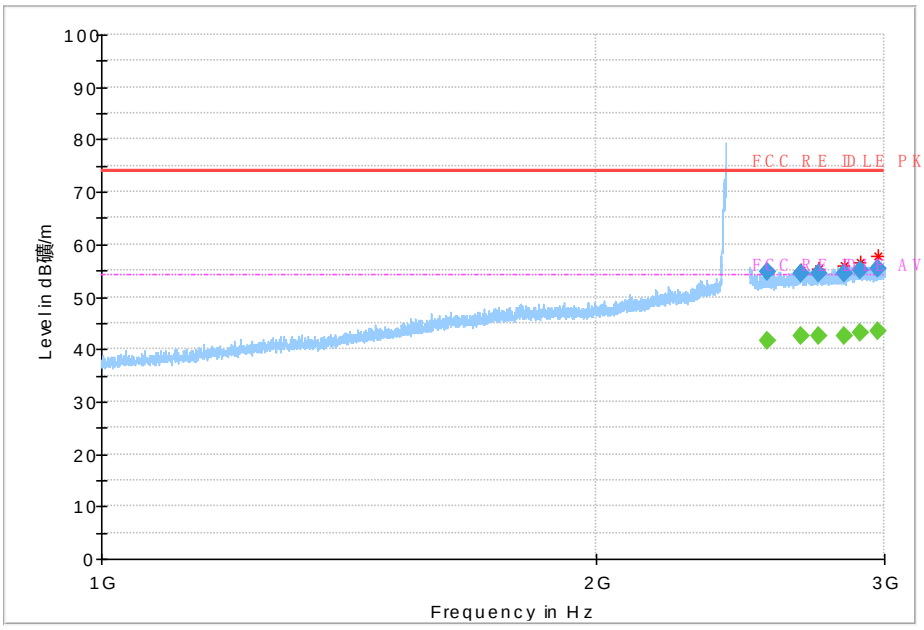



**Fig 51. Radiated Spurious Emission (802.11g, Ch1,1GHz~3GHz)**

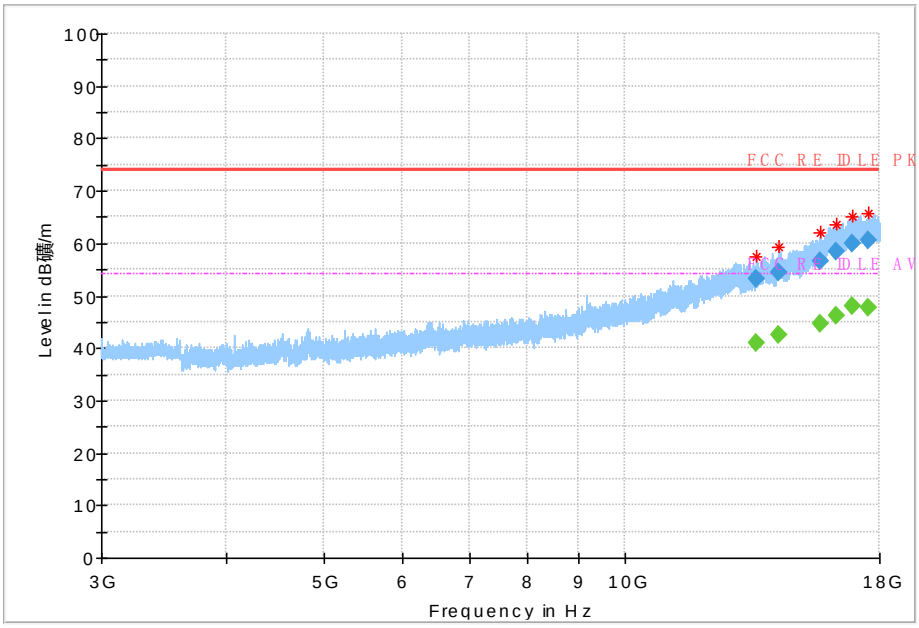
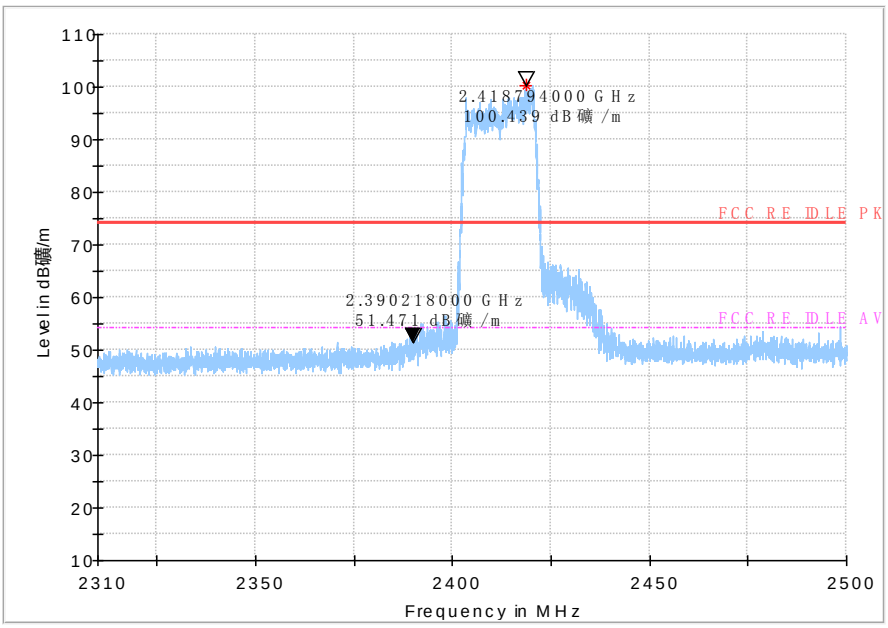
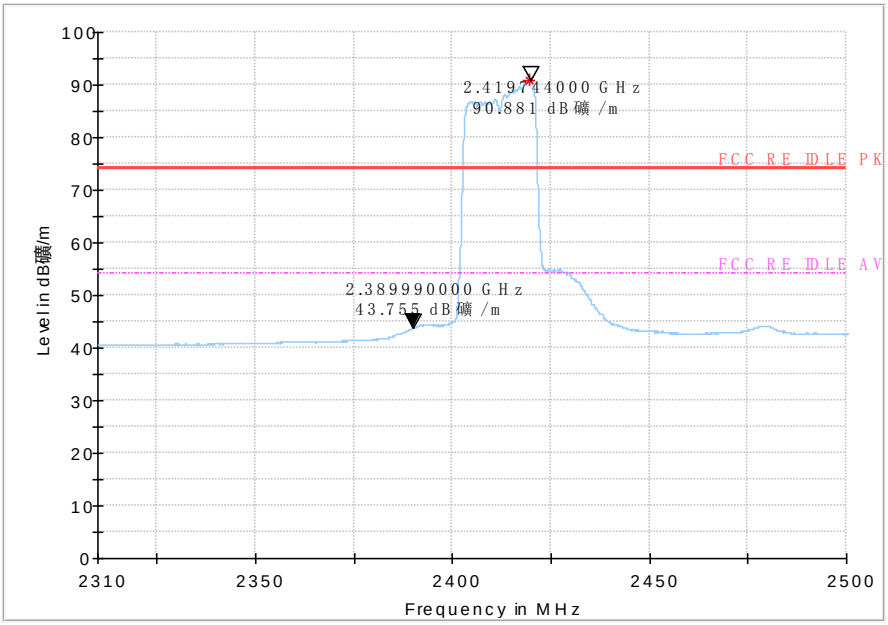



**Fig 52. Radiated Spurious Emission (802.11g, Ch1,3GHz~18GHz)**

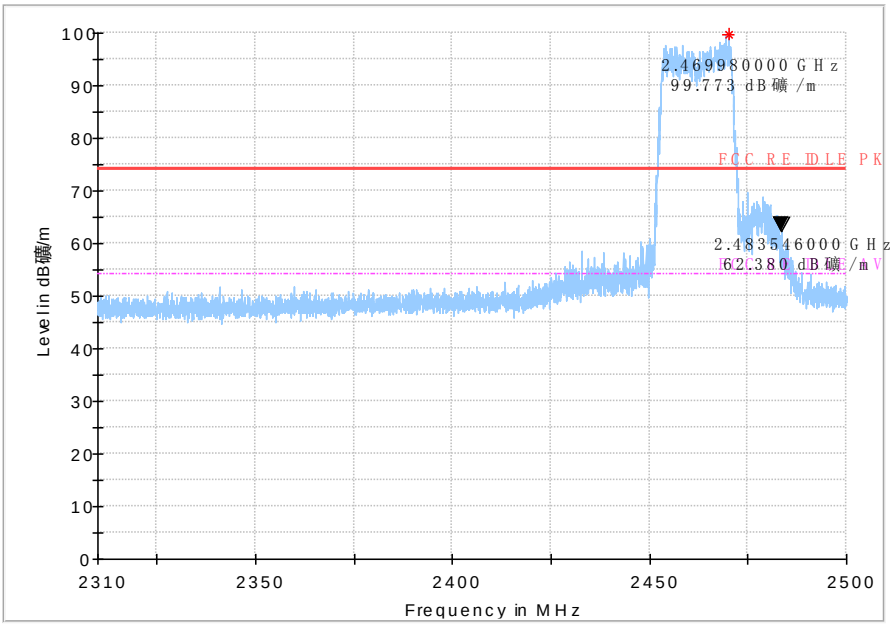



**Peak detector**

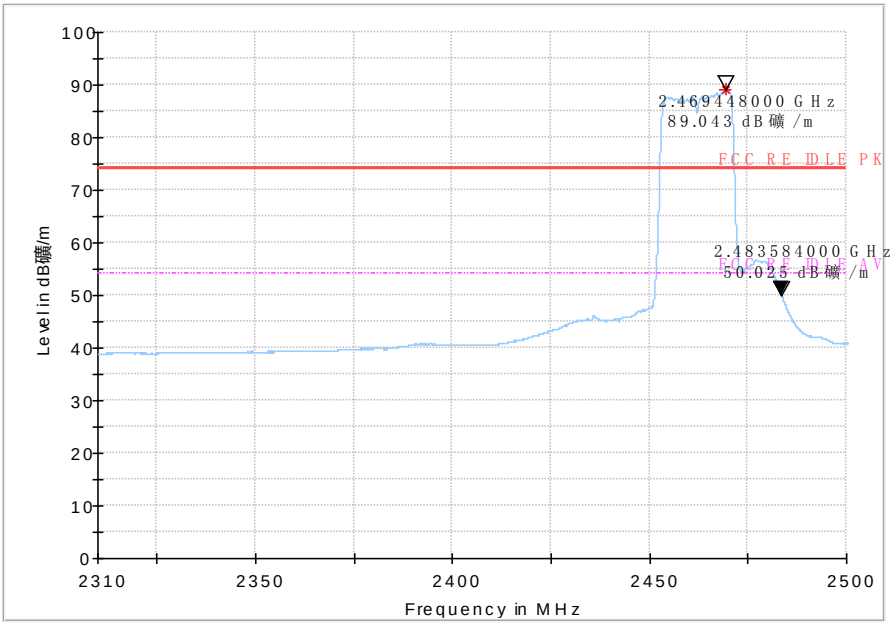



**AV detector**

**Fig 53. Radiated emission (Power): 802.11n, low channel**




**Peak detector**




**AV detector**

**Fig 54. Radiated emission (Power): 802.11n, high channel**

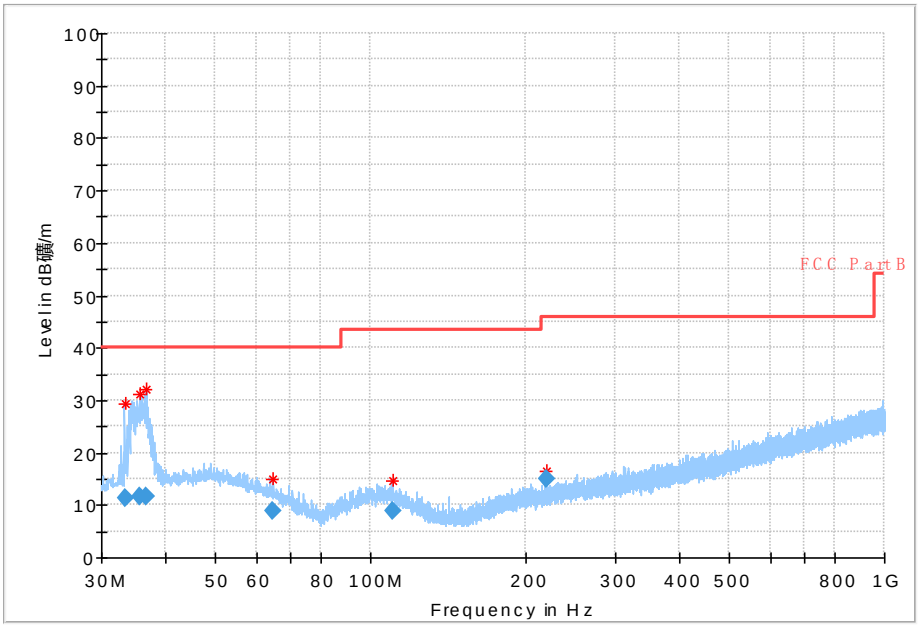



**Fig 55. Radiated Spurious Emission (802.11 n-20MHz, Ch1,30MHz~1GHz)**

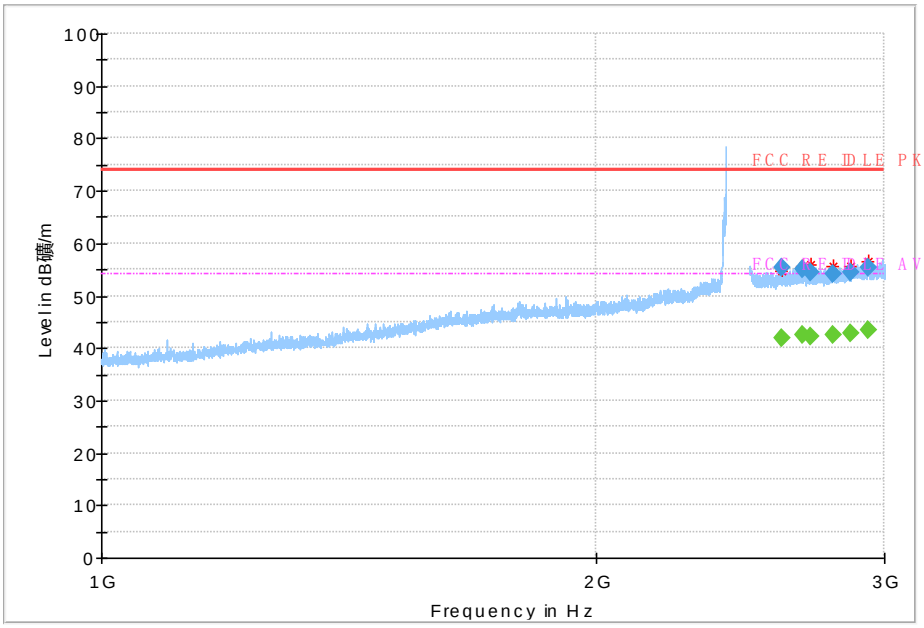



**Fig 56. Radiated Spurious Emission (802.11 n-20MHz, Ch1,1GHz~3GHz)**

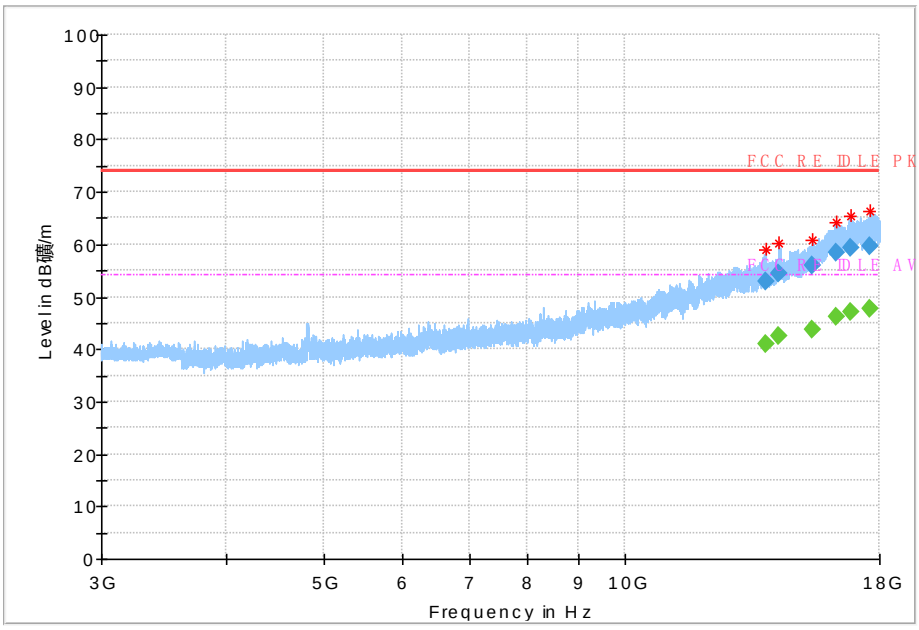



**Fig 57. Radiated Spurious Emission (802.11 n-20MHz, Ch1,3GHz~18GHz)**

**Secondary supply**

**802.11b mode**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 802.11b | Power（low） | 2.31GHz~2.5GHz | Fig 58. | P |
| | Power（high） | 2.31GHz~2.5GHz | Fig 59. | P |
| | 1 | 30MHz~1GHz | Fig 60. | P |
| | | 1GHz~3GHz | Fig 61. | P |
| | | 3GHz~18GHz | Fig 62. | P |

**802.11b mode**

**Ch1 30MHz~1GHz**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 34.2 | 12.87 | -22 | 34.87 | V |
| 36.6 | 14 | -21.5 | 35.5 | V |
| 52.2 | 12.02 | -20.4 | 32.42 | V |
| 98.9 | 8.88 | -23.6 | 32.48 | V |
| 220.9 | 13.92 | -24 | 37.92 | V |
| 386.6 | 13.82 | -19.5 | 33.32 | V |

**Ch1 1GHz~3GHz(Peak)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 2549.1 | 55.09 | 7.2 | 47.89 | H |
| 2639.4 | 54.23 | 7.6 | 46.63 | H |
| 2729.0 | 54.58 | 7.8 | 46.78 | V |
| 2799.6 | 55.27 | 7.9 | 47.37 | H |
| 2853.4 | 55.1 | 8.4 | 46.7 | H |
| 2923.9 | 56.08 | 8.8 | 47.28 | V |

**Ch1 1GHz~3GHz(Average)**

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 2549.1 | 41.91 | 7.2 | 34.71 | H |
| 2639.4 | 42.18 | 7.6 | 34.58 | H |

| | | | | |
|---|---|---|---|---|
| 2729.0 | 42.36 | 7.8 | 34.56 | V |
| 2799.6 | 42.7 | 7.9 | 34.8 | H |
| 2853.4 | 42.93 | 8.4 | 34.53 | H |
| 2923.9 | 43.52 | 8.8 | 34.72 | V |

**Ch1 3GHz~18GHz(Peak)**

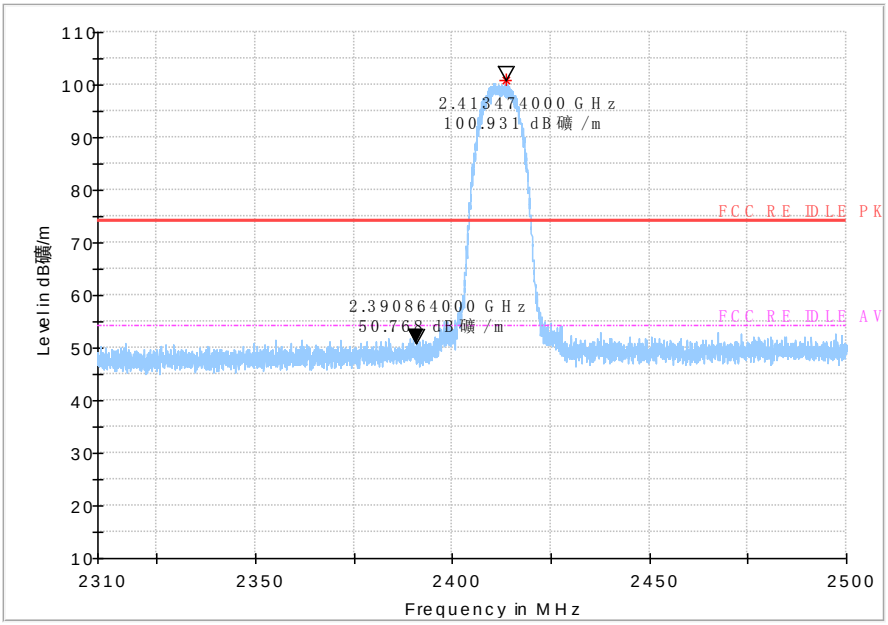
| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 13922.9 | 52.97 | 18.5 | 34.47 | V |
| 14286.9 | 54.73 | 20.6 | 34.13 | H |
| 14715.2 | 55.32 | 21.1 | 34.22 | V |
| 15586.0 | 57.68 | 22.8 | 34.88 | H |
| 16311.8 | 58.5 | 25.8 | 32.7 | V |
| 17168.8 | 59.99 | 27.2 | 32.79 | H |

**Ch1 3GHz~18GHz(Average)**

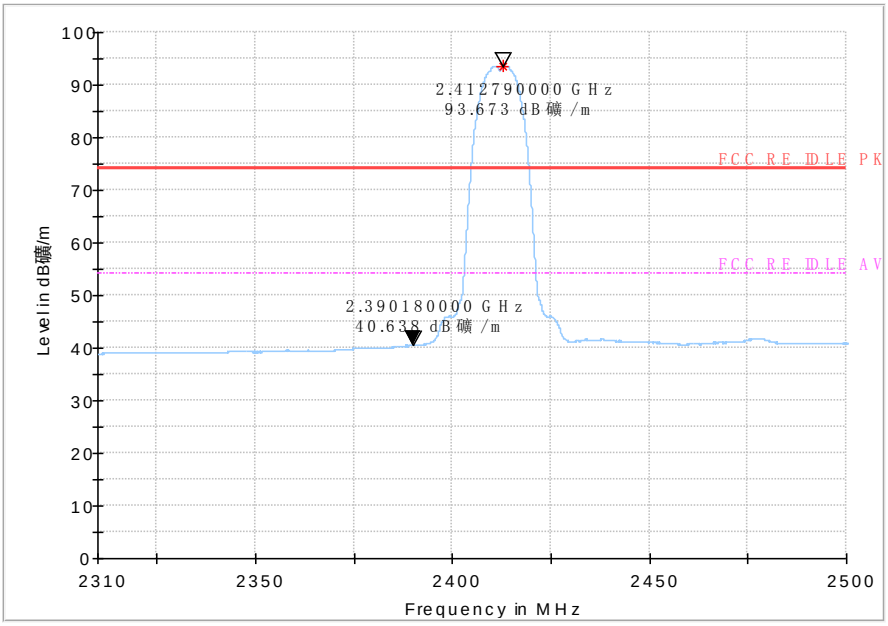
| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|---|---|---|---|---|
| 14286.9 | 42.57 | 20.6 | 21.97 | H |
| 14715.2 | 43.17 | 21.1 | 22.07 | V |
| 15586.0 | 44.62 | 22.8 | 21.82 | H |
| 16311.8 | 46.38 | 25.8 | 20.58 | V |
| 17168.8 | 47.62 | 27.2 | 20.42 | H |

**Note: Only the worst case is written in the report.**

**Test graphs as below:**

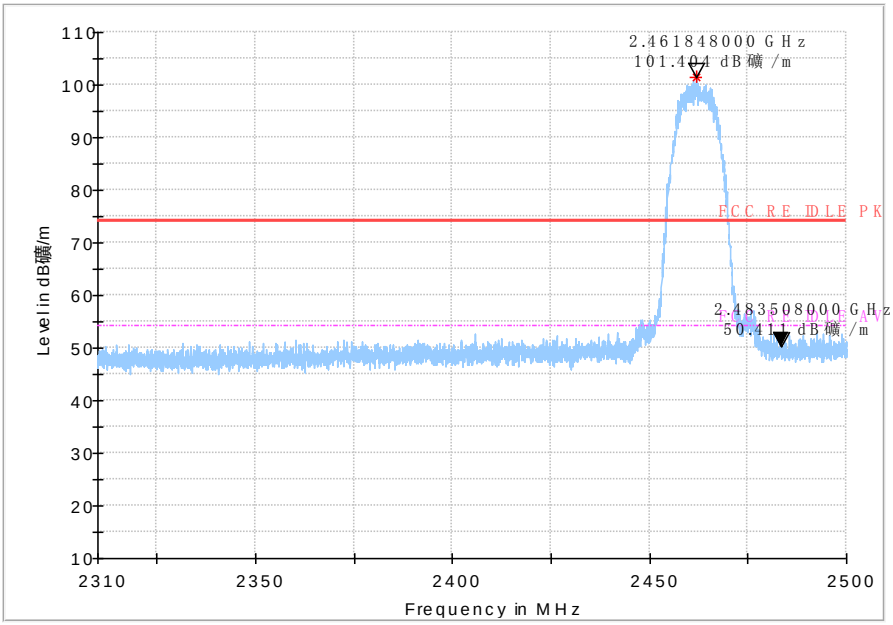



**Peak detector**

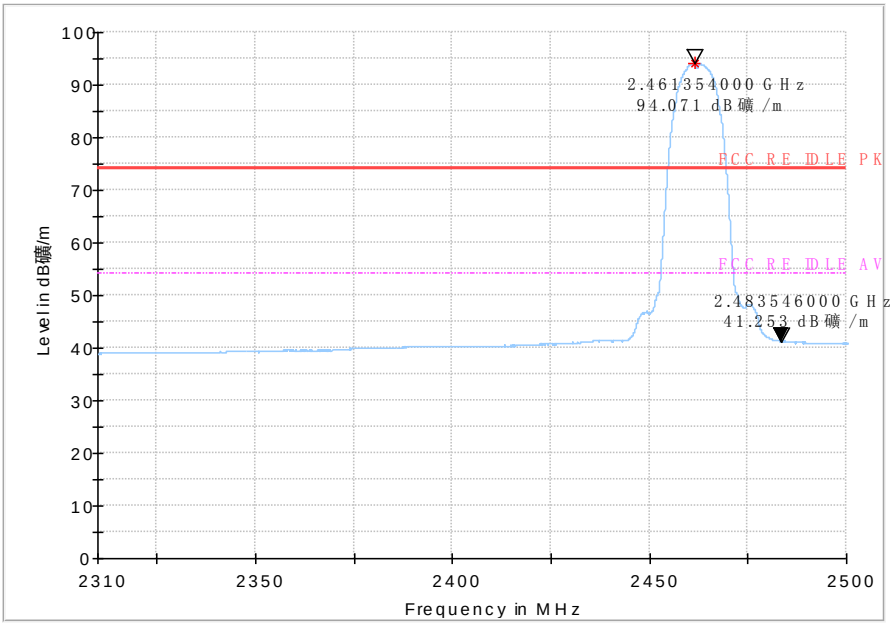



**AV detector**

**Fig 58. Radiated emission (Power): 802.11b, low channel**




**Peak detector**




**AV detector**

**Fig 59. Radiated emission (Power): 802.11b, high channel**

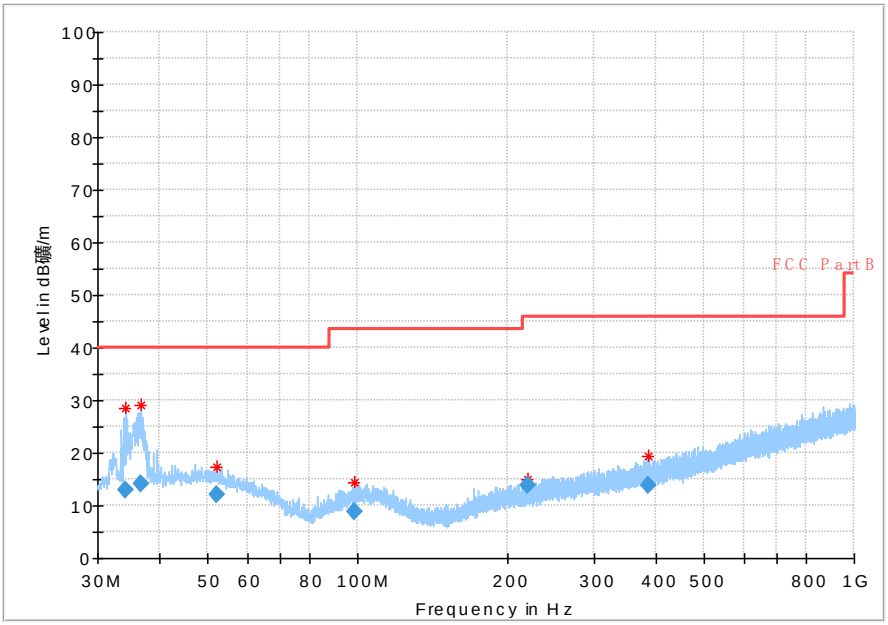



**Fig 60. Radiated Spurious Emission (802.11b, Ch1,30MHz~1GHz)**

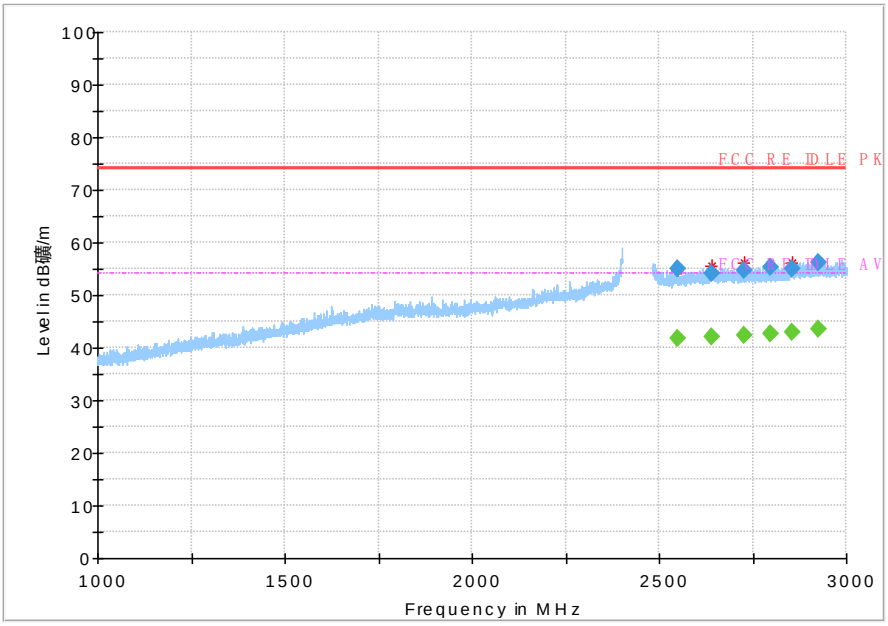



**Fig 61. Radiated Spurious Emission (802.11b, Ch1,1GHz~3GHz)**

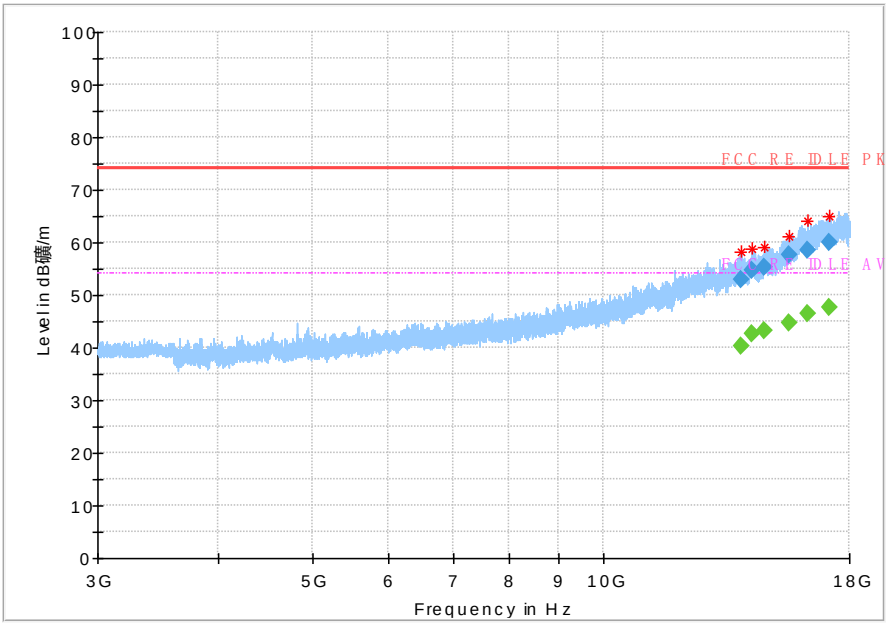
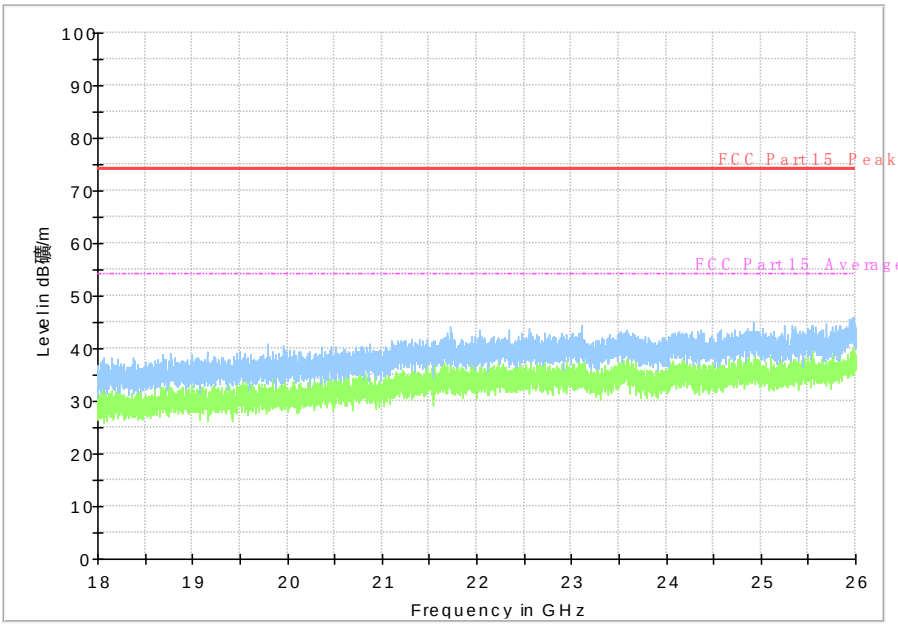



**Fig 62. Radiated Spurious Emission (802.11b, Ch1,3GHz~18GHz)**




**All Channel**

## 6.7. AC Powerline Conducted Emission

**Method of Measurement: See ANSI C63.10 clause 6.2**

1 The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.

2 If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.

3 The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.

4 If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.

If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.36 Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

**Test Condition:**

| Voltage（V） | Frequency（Hz） |
|---|---|
| 120 | 60 |

**Measurement Result and limit:**

(Quasi-peak-average Limit)

| Frequency range (MHz) | Quasi-peak Limit (dBμV) | Average Limit (dBμV) | Result (dBμV) With charger 802.11b | Conclusion |
|---|---|---|---|---|
| 0.15 to 0.5 | 66 to 56 | 56 to 46 | Fig 63. | P |
| 0.5 to 5 | 56 | 46 | | |
| 5 to 30 | 60 | 50 | | |
| NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz. | | | | |

**Conclusion: Pass**

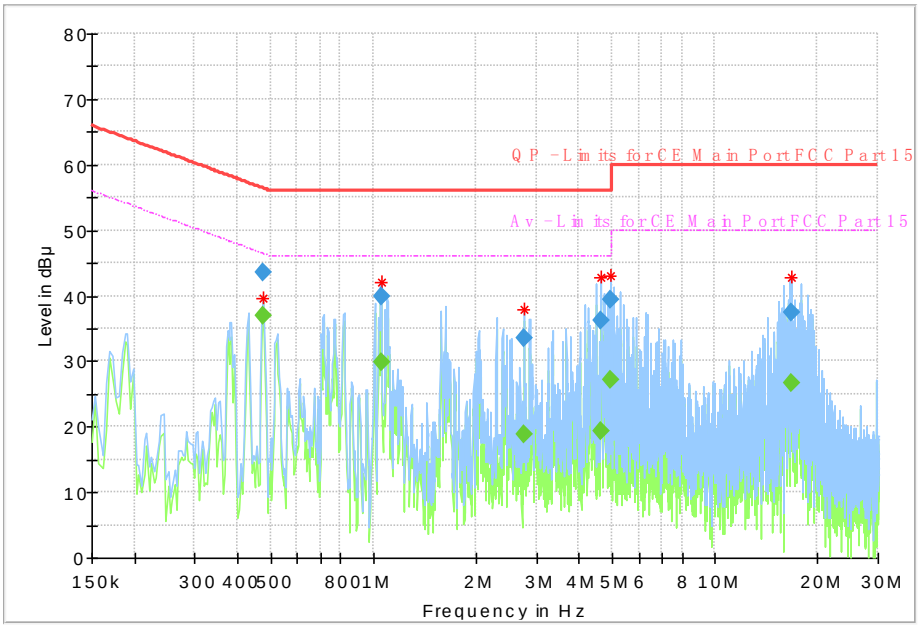



**Fig 63. AC Powerline Conducted Emission**

| Frequency (MHz) | QuasiPeak (dB µ V) | Average (dB µ V) | Limit (dB µ | Margin (dB) | Meas. Time | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|---|
| 0.478350 | --- | 37.00 | 46.37 | 9.37 | 1000.0 | 9.000 | L1 | ON | 9.7 |
| 0.478350 | 43.48 | --- | 56.37 | 12.88 | 1000.0 | 9.000 | L1 | ON | 9.7 |
| 1.052963 | --- | 29.86 | 46.00 | 16.14 | 1000.0 | 9.000 | L1 | ON | 9.7 |
| 1.052963 | 39.84 | --- | 56.00 | 16.16 | 1000.0 | 9.000 | L1 | ON | 9.7 |
| 2.765606 | --- | 18.80 | 46.00 | 27.20 | 1000.0 | 9.000 | L1 | ON | 9.7 |
| 2.765606 | 33.56 | --- | 56.00 | 22.44 | 1000.0 | 9.000 | L1 | ON | 9.7 |
| 4.623769 | --- | 19.35 | 46.00 | 26.65 | 1000.0 | 9.000 | L1 | ON | 9.8 |
| 4.623769 | 36.17 | --- | 56.00 | 19.83 | 1000.0 | 9.000 | L1 | ON | 9.8 |
| 4.970775 | --- | 27.05 | 46.00 | 18.95 | 1000.0 | 9.000 | L1 | ON | 9.8 |
| 4.970775 | 39.45 | --- | 56.00 | 16.55 | 1000.0 | 9.000 | L1 | ON | 9.8 |
| 16.746600 | --- | 26.60 | 50.00 | 23.40 | 1000.0 | 9.000 | L1 | ON | 9.9 |
| 16.746600 | 37.48 | --- | 60.00 | 22.52 | 1000.0 | 9.000 | L1 | ON | 9.9 |

# 7. Test Equipment and Ancillaries Used For Tests

The test equipment and ancillaries used are as follows.

**Conducted test system**

| No. | Equipment | Model | Serial Number | Manufacturer | Calibration date | Cal.interval |
|---|---|---|---|---|---|---|
| 1 | Vector Signal Analyzer | FSQ26 | 101096 | Rohde&Schwarz | 2018-05-11 | 1 Year |
| 2 | DC Power Supply | ZUP60-14 | LOC-220Z006-0007 | TDL-Lambda | 2018-05-11 | 1 Year |

**Radiated emission test system**

| No. | Equipment | Model | Serial Number | Manufacturer | Calibration date | Cal.interval |
|---|---|---|---|---|---|---|
| 1 | Universal Radio Communication Tester | CMU200 | 123123 | R&S | 2018-05-11 | 1 Year |
| 2 | EMI Test Receiver | ESU40 | 100307 | R&S | 2018-05-11 | 1 Year |
| 3 | TRILOG Broadband Antenna | VULB9163 | VULB9163-515 | Schwarzbeck | 2017-02-25 | 3 Year |
| 4 | Double-ridged Waveguide Antenna | ETS-3117 | 00135890 | ETS | 2017-01-11 | 3 Year |
| 5 | 2-Line V-Network | ENV216 | 101380 | R&S | 2018-05-11 | 1 Year |

**Anechoic chamber**

Fully anechoic chamber by Frankonia German.

# 8. Test Environment

**Shielding Room1** (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 35 ℃ |
| Relative humidity | Min. = 20 %, Max. = 75 % |
| Shielding effectiveness | > 100 dB |
| Ground system resistance | < 0.5 |

**Control room** did not exceed following limits along the EMC testing:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 35 ℃ |
| Relative humidity | Min. =25 %, Max. = 75 % |
| Shielding effectiveness | > 100 dB |
| Electrical insulation | > 10 k |
| Ground system resistance | < 0.5 |

**Fully-anechoic chamber1** (6.9 meters×10.9 meters×5.4 meters) did not exceed following limits along the EMC testing:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 35 ℃ |
| Relative humidity | Min. = 25 %, Max. = 75 % |
| Shielding effectiveness | > 100 dB |
| Electrical insulation | > 10 k |
| Ground system resistance | < 0.5 |
| VSWR | Between 0 and 6 dB, from 1GHz to 18GHz |
| Site Attenuation Deviation | Between -4 and 4 dB,30MHz to 1GHz |
| Uniformity of field strength | Between 0 and 6 dB, from 80MHz to 3000 MHz |

# ANNEX A. Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

# ANNEX B. Accreditation Certificate

Accredited Laboratory

A2LA has accredited

EAST CHINA INSTITUTE OF TELECOMMUNICATIONS

*Shanghai, People's Republic of China*

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 15th day of March 2017.

President and CEO
For the Accreditation Council
Certificate Number 3682.01
Valid to February 28, 2019

*For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.*

************End The Report************