# TEST REPORT

| | |
|---|---|
| **APPLICANT:** | FIMI S.r.l<br>Via SAUL BANFI, 1 – 21047 SARONNO (VA) - ITALY<br>Tel.+39 02 96175293<br>Fax. +39 02 96175332<br>marino.fusco@barco.com |
| **EUT DESCRIPTION** | 12” LCD ProScribe Xper Module Intel Atom |
| **EUT TRADEMARK** | PHILIPS |
| **EUT MODEL** | CMPD12CV-A |
| **SERIAL NUMBER** | 1DAEVTQGZZO-A00008 |
| **REFERENCE STANDARDS :** | FCC 47 CFR Part 15 Subpart C<br>§ 15.207; § 15.209; § 15.247 (see note in par 2.2) |
| **TEST REPORT NUMBER** | FCCTR_111477-3 |
| **TEST REPORT ISSUE DATE** | 12/03/2012 |
| **TESTING LABORATORY** | Prima Ricerca & Sviluppo S.r.l.<br>Via Campagna, 92 -22020 Faloppio (Co) –Italy |
| **TESTING LOCATION** | As Above |
| **DATE OF TEST SAMPLE RECEIPT** | 02/12/2011 |
| **DATE OF TEST** | 02/12/2011 – 01/02/12 |
| **TESTED BY** | Giacomo Armellini |
| **APPROVED BY** | Giovanni Molteni |

*The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have be obtained. Reproduction of this Test Report, should not be reproduced, except in full, without the written authorization of the Laboratory*

# 0. CONTENTS

**Page**



# 1. RELEASE CONTROL RECORD

| TEST REPORT NUMBER | REASON OF CHANGE | DATE OF ISSUE |
|---|---|---|
| FCCTR_111477-0 | Original Release | 23/12/2011 |
| FCCTR_111477-1 | Corrected of typical use definition | 23/01/2011 |
| FCCTR_111477-2 | Added new test on radiated spurious emissions | 10/02/2012 |
| FCCTR_111477-3 | Added list of equipment used | 12/03/2012 |


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# 2. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

## *2.1 E.U.T. identification*

| | |
|---|---|
| Brand name: | PHILIPS |
| EUT description | 12” LCD ProScribe Xper Module Intel Atom |
| Model name | CMPD12CV-A |
| Serial Number | 1DAEVTQGZZO-A00008 |
| Country of manufacturer: | ITALY |
| FCC ID (Product) | GZM802161 |
| Wi-Fi module | AW-NE139H IEEE 802.11b/g/n Wi-Fi Half Mini Card<br>AW-NE139H module adopts Realtek RTL8188CE-VL solution. The module design is based on the Realtek RTL8188CE-VL solution |

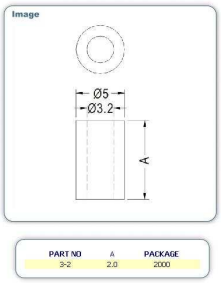
## *2.2 Technical data*

| | |
|---|---|
| FCC class: | Intentional radiators |
| Supply voltage: | 24Vdc – 1A |
| Typical usage : | Wireless smart display, released with Windows Embedded Standard (WES), designed for medical applications |
| EUT single or system: | Single |
| Composed by | Single unit |
| EUT dimensions : | See photographic documentation |

## *2.3 Modifications incorporated in E.U.T.*

The following items are the modifications introduced in the equipment under test :

- **nylon ring placed into the microphone hole to increase the clearance distance the nylon ring dimensions are shown in the below picture**





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## 2.4 Ports identification

This section contains descriptions of all ports, the length and the type of the cable provided by manufacturer needed for the tests. Moreover it is specified if the ports are ever or optionally connected.

| Port | | Description | Connection |
|---|---|---|---|
| 1 | Enclosure | Plastic case | Screws |
| 2 | AC power input/output ports | Port not present | --- |
| 3 | DC power input/output ports | 24Vdc | D_SUB9 connector * |
| 4 | Signal and control ports | Port not present | --- |
| 5 | Telecomm. ports | LAN | D_SUB9 connector * |
| 5 | Antenna port | Port not present (internal antenna) | --- |
| Note: During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT. | | | |

*** DC, Telecommunication lines are put together into a single cable with D_SUB9 connectors**

## 2.5 Auxiliary equipment

- Proscribe CV
- Keyboard DELL mod. R17D50
- Wireless Router BELKIN model F5D7230-4
- AC/DC Adapter Skynet electronic mod. SNP-A159

# 3. TEST CONDITIONS

## *3.1 Operating test modes and test conditions*

The equipment has been tested according to the operative conditions described in the user/installation manual provided by the manufacturer and by following reference standards : Reference Standard:

- FCC Part 15, Subpart C § 15.207; § 15.209; § 15.247

In the following table there are the operating conditions adopted during tests identified by an indicator (#..) at which has been referred the item “Operating condition of the equipment under test” of all technical sheets of the tests (see Section 4)

| Operating condition | Description |
|---|---|
| **#1** | System switched ON, master test pattern, setup keyboard connected on docking station with USB ports,<br>Ping with LAN e WLAN |

## *3.2 Test overview*

The appliance is classified as “*intentional radiator”* in conformity to FCC Part 15 Sub. B

The application is mainly used as wireless smart display, released with Windows Embedded Standard (WES), designed for medical applications.

**Note :**
**For the compliance to § 15.247 requirements, the host product Model CMPD12CV-A contains the RF component Realtek Mod. RTL8188CE 802.11b/g/n RTL8188CE miniCard integrated by the host product Manufacturer according to the RF module Manufacturer instructions. That module was authorized by FCC with the grant of certification the according to 47 CFR FCC Part 15 Subpart C (see Report No. RF981230H01Z issued by Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory on Nov. 09, 2011) so the EUT does not require additional testing,**


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## 4. REFERENCE STANDARD FOR PERFORMED TESTS

| Reference standard : | Title : |
|---|---|
| FCC Part 15 part A | Code of Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC) |
| FCC Part 15 part C | Code of Regulations Part 15 (Radio Frequency Devices), Subpart C (Intentional Radiators) of the Federal Communication Commission (FCC) |
| ANSI C63.4 | American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz |


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# 5. SUMMARY OF TEST RESULTS

## *5.1 Emission tests*

| | Port | Phenomena | Basic standard | Operating condition[1] | Result |
|---|---|---|---|---|---|
| 1 | Enclosure | Radiated Emissions | FCC Part 15<br>§ 15.209, § 15.247(d) | #1 | Within the limit |
| 2 | AC mains Input ports | RF Disturbance voltage:<br>• continuous | FCC Part 15<br>§ 15.207 | #1 | Within the limit |

[1] Ref. Tab. of Section 2


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# 6. TEST RESULTS

**TEST 1.**

# EMISSION OF MAINS TERMINAL DISTURBANCE VOLTAGE (CONTINUOUS DISTURBANCE)

***REFERENCE DOCUMENT*** FCC47CFR Part 15

- **TEST SETUP:** According to reference standard
- **TEST LOCATION:** Semianechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU40
  Artificial Network Rohde & Schwarz Mod. ESH3-Z5

- **TESTED PORT:** AC mains
- **FREQUENCY RANGE:** 0.15 - 30 MHz
- **EMISSION LIMITS:** Section 15.107 of Standard
- **MEASUREMENT UNCERTAINTY:** Total uncertainty (k=2) ± 2.5 dB

| **TEST CONDITIONS:** | | | **MEASURED** |
|---|---|---|---|
| Ambient temperature : | 15 - 35 ℃ | | 24 ± 3 ℃ |
| Ambient humidity : | 25 - 75 %rH | | 38 ± 5 %rH |
| Pressure : | 85 - 106 kPa | (860 mbar - 1060 mbar) | 975 ± 50 mbar |
| Voltage : | | | 115Vac 60Hz |

***OPERATING CONDITION (Rif. Section. 2) : #1***

***RESULT: WITHIN THE LIMIT***


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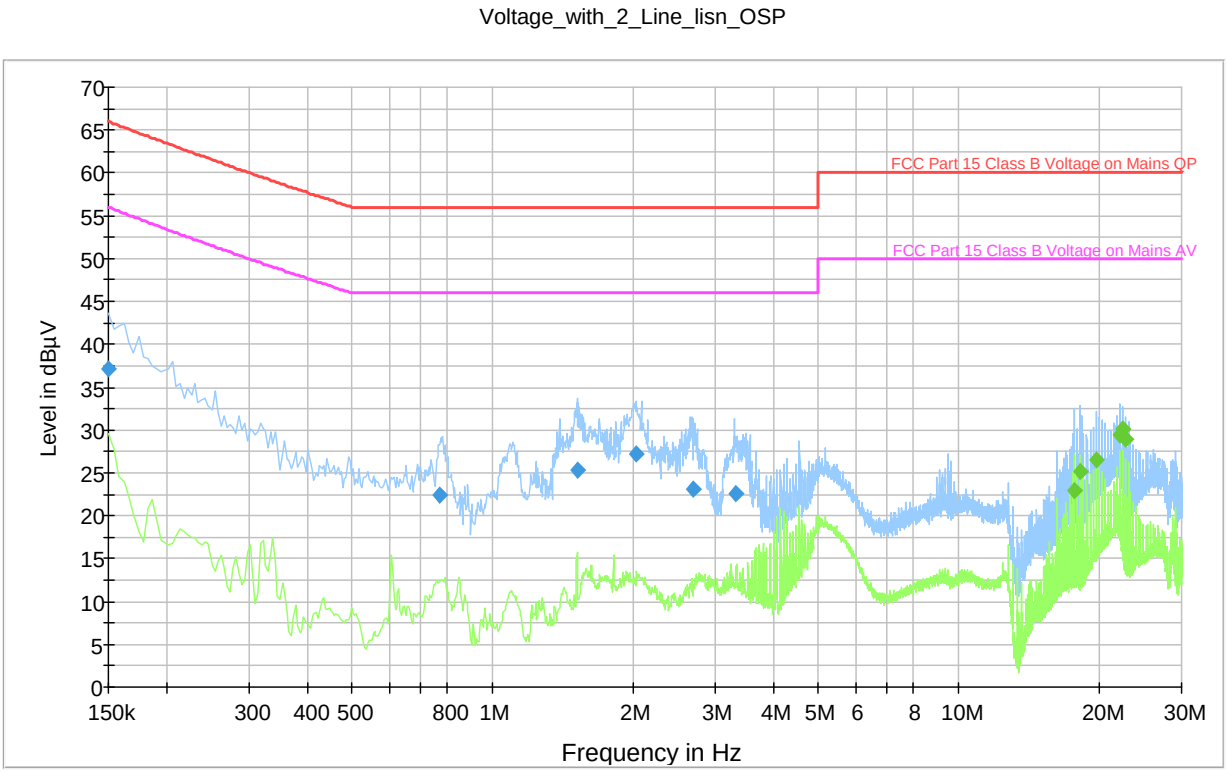
## L1




## Final Result Quasi-Peak

| Frequency (MHz) | QuasiPeak (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 0.150000 | 37.1 | 1000.0 | 9.000 | GN | L1 | 10.0 | 28.9 | 66.0 | |
| 0.768000 | 22.4 | 1000.0 | 9.000 | GN | L1 | 10.1 | 33.6 | 56.0 | |
| 1.516000 | 25.3 | 1000.0 | 9.000 | GN | L1 | 10.1 | 30.7 | 56.0 | |
| 2.028000 | 27.2 | 1000.0 | 9.000 | GN | L1 | 10.2 | 28.8 | 56.0 | |
| 2.688000 | 23.0 | 1000.0 | 9.000 | GN | L1 | 10.3 | 33.0 | 56.0 | |
| 3.324000 | 22.6 | 1000.0 | 9.000 | GN | L1 | 10.3 | 33.4 | 56.0 | |

## Final Result Average

| Frequency (MHz) | Average (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 17.696000 | 22.9 | 1000.0 | 9.000 | GN | L1 | 11.3 | 27.1 | 50.0 | |
| 18.244000 | 25.1 | 1000.0 | 9.000 | GN | L1 | 11.3 | 24.9 | 50.0 | |
| 19.716000 | 26.6 | 1000.0 | 9.000 | GN | L1 | 11.4 | 23.4 | 50.0 | |
| 22.144000 | 29.5 | 1000.0 | 9.000 | GN | L1 | 11.5 | 20.5 | 50.0 | |
| 22.444000 | 30.1 | 1000.0 | 9.000 | GN | L1 | 11.6 | 19.9 | 50.0 | |
| 22.748000 | 29.0 | 1000.0 | 9.000 | GN | L1 | 11.6 | 21.0 | 50.0 | |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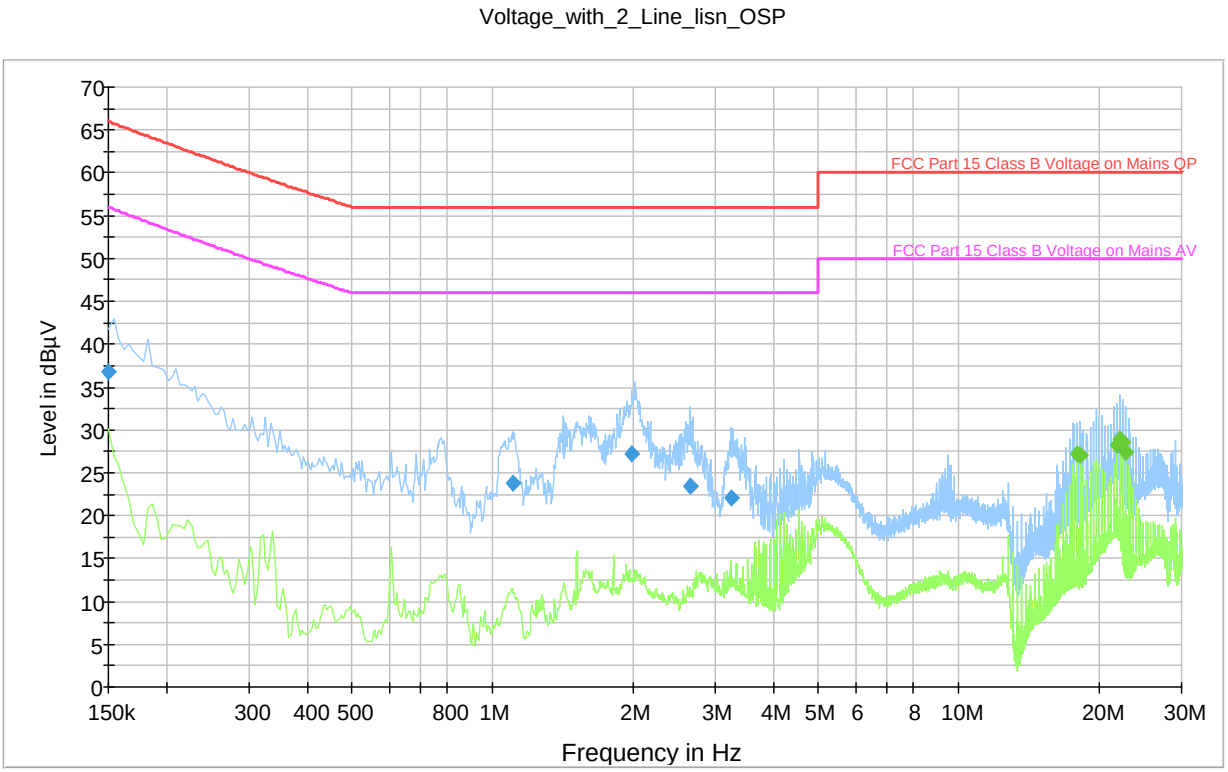
**N**




## Final Result Quasi-Peak

| Frequency (MHz) | QuasiPeak (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 0.150000 | 36.8 | 1000.0 | 9.000 | GN | N | 10.0 | 29.2 | 66.0 | |
| 1.108000 | 23.8 | 1000.0 | 9.000 | GN | N | 10.1 | 32.2 | 56.0 | |
| 1.992000 | 27.1 | 1000.0 | 9.000 | GN | N | 10.2 | 28.9 | 56.0 | |
| 2.664000 | 23.5 | 1000.0 | 9.000 | GN | N | 10.2 | 32.5 | 56.0 | |
| 3.248000 | 22.1 | 1000.0 | 9.000 | GN | N | 10.2 | 33.9 | 56.0 | |
| 22.136000 | 28.4 | 1000.0 | 9.000 | GN | N | 11.2 | 31.6 | 60.0 | |

## Final Result Average

| Frequency (MHz) | Average (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 17.896000 | 27.3 | 1000.0 | 9.000 | GN | N | 11.0 | 22.7 | 50.0 | |
| 18.200000 | 27.0 | 1000.0 | 9.000 | GN | N | 11.1 | 23.0 | 50.0 | |
| 21.840000 | 28.2 | 1000.0 | 9.000 | GN | N | 11.2 | 21.8 | 50.0 | |
| 22.144000 | 28.9 | 1000.0 | 9.000 | GN | N | 11.2 | 21.1 | 50.0 | |
| 22.444000 | 28.6 | 1000.0 | 9.000 | GN | N | 11.3 | 21.4 | 50.0 | |
| 22.748000 | 27.5 | 1000.0 | 9.000 | GN | N | 11.3 | 22.5 | 50.0 | |

**TEST 2.**

# RADIATED SPURIOUS EMISSIONS

***REFERENCE DOCUMENT*** FCC47CFR Part 15

- **TEST LOCATION:** Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU40
  Chase Antenna Mod. CBL 6111
  Rohde & Schwarz Antenna Mod. HBL050
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.109 of reference document
- **UNCERTAINTY OF MEASURE:** Combined uncertainty = ± 1.75 dB
  Total uncertainty = (k=2) ± 3.5 dB

| **TEST CONDITIONS:** | | | **MEASURED** |
|---|---|---|---|
| Ambient temperature : | 15 - 35 ℃ | | 23,5 ± 3 ℃ |
| Ambient humidity : | 25 - 75 %rH | | 39 ± 5 %rH |
| Pressure : | 85 - 106 kPa | (860 mbar - 1060 mbar) | 950 ± 50 mbar |
| Voltage : | | | 115Vac 60Hz |

***OPERATING CONDITION (Rif. Section. 2) :*** *#1*

***RESULT: WITHIN THE LIMIT***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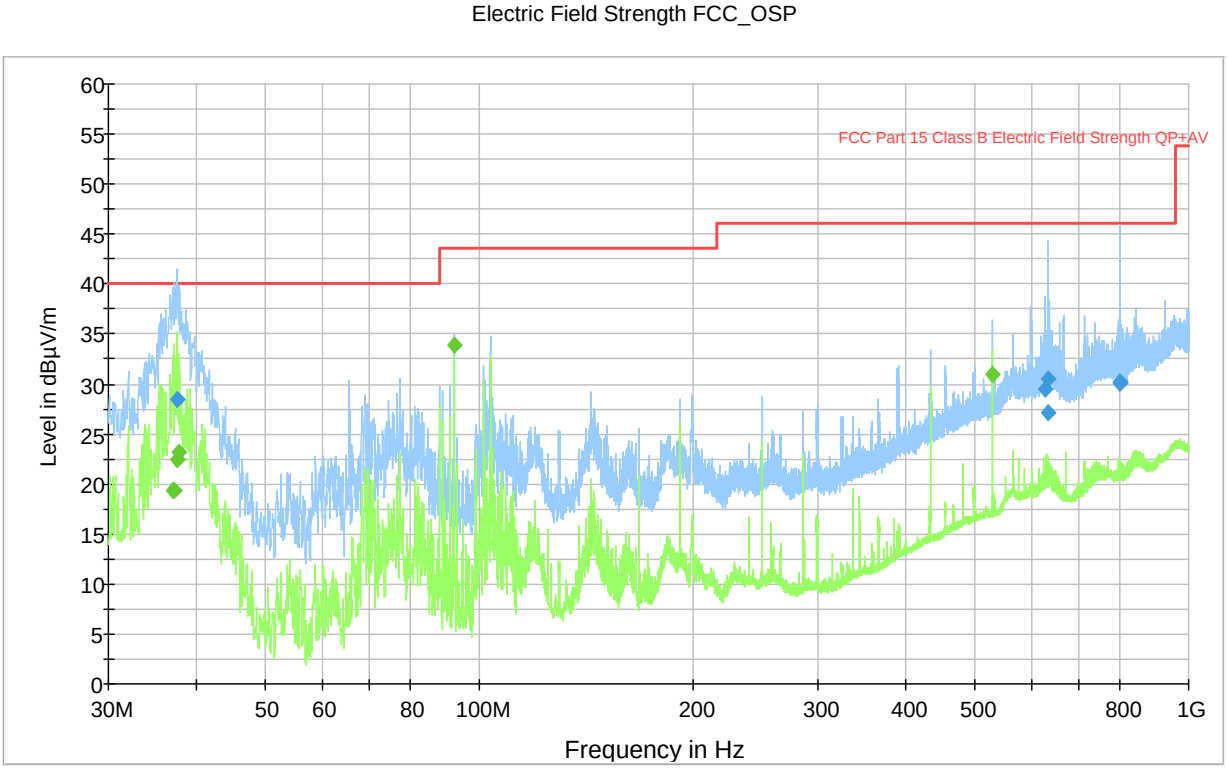
## Vertical polarization 30MHz – 1GHz (WORST CASE)




## Final Result Quasi-Peak

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|---|---|
| 37.440000 | 28.5 | 1000.0 | 120.000 | 100.0 | V | 88.0 | 15.7 | 11.5 | 40.0 |
| 628.040000 | 29.6 | 1000.0 | 120.000 | 100.0 | V | 67.0 | 24.2 | 16.4 | 46.0 |
| 632.040000 | 27.1 | 1000.0 | 120.000 | 220.0 | V | 66.0 | 24.2 | 18.9 | 46.0 |
| 632.360000 | 30.5 | 1000.0 | 120.000 | 175.0 | V | 21.0 | 24.2 | 15.5 | 46.0 |
| 799.400000 | 30.1 | 1000.0 | 120.000 | 124.0 | V | 15.0 | 26.0 | 15.9 | 46.0 |
| 800.240000 | 30.1 | 1000.0 | 120.000 | 120.0 | V | 7.0 | 26.0 | 15.9 | 46.0 |

## Final Result Average

| Frequency (MHz) | Average (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|
| 37.000000 | 19.4 | 1000.0 | 120.000 | 100.0 | V | 0.0 | 15.9 | |
| 37.200000 | 19.3 | 1000.0 | 120.000 | 100.0 | V | 80.0 | 15.8 | |
| 37.480000 | 22.5 | 1000.0 | 120.000 | 100.0 | V | 111.0 | 15.7 | |
| 37.760000 | 23.2 | 1000.0 | 120.000 | 100.0 | V | 111.0 | 15.6 | |
| 92.200000 | 33.9 | 1000.0 | 120.000 | 159.0 | V | 172.0 | 10.3 | |
| 528.000000 | 31.0 | 1000.0 | 120.000 | 106.0 | V | 277.0 | 21.6 | |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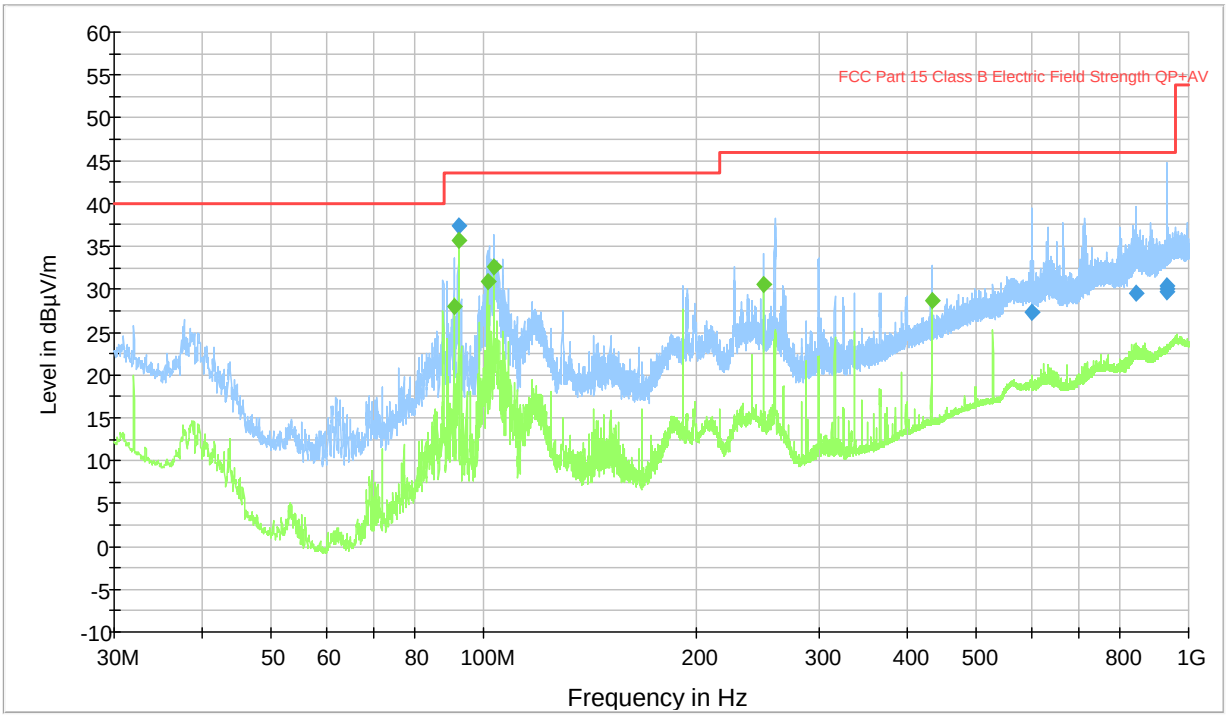
## Horizontal polarization 30MHz – 1GHz (WORST CASE)

Electric Field Strength FCC_OSP




## Final Result Quasi-Peak

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|---|---|
| 92.160000 | 37.3 | 1000.0 | 120.000 | 298.0 | H | 293.0 | 10.3 | 6.2 | 43.5 |
| 599.880000 | 27.3 | 1000.0 | 120.000 | 120.0 | H | 293.0 | 23.3 | 18.7 | 46.0 |
| 840.720000 | 29.6 | 1000.0 | 120.000 | 299.0 | H | 112.0 | 27.4 | 16.4 | 46.0 |
| 929.000000 | 29.7 | 1000.0 | 120.000 | 290.0 | H | 90.0 | 28.4 | 16.3 | 46.0 |
| 929.360000 | 30.0 | 1000.0 | 120.000 | 271.0 | H | 280.0 | 28.4 | 16.0 | 46.0 |
| 932.400000 | 30.4 | 1000.0 | 120.000 | 175.0 | H | 68.0 | 28.5 | 15.6 | 46.0 |

## Final Result Average

| Frequency (MHz) | Average (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|
| 90.880000 | 28.0 | 1000.0 | 120.000 | 252.0 | H | 293.0 | 10.2 | |
| 92.200000 | 35.7 | 1000.0 | 120.000 | 281.0 | H | 293.0 | 10.3 | |
| 101.400000 | 30.9 | 1000.0 | 120.000 | 309.0 | H | 271.0 | 11.5 | |
| 103.720000 | 32.7 | 1000.0 | 120.000 | 294.0 | H | 280.0 | 11.8 | |
| 250.040000 | 30.6 | 1000.0 | 120.000 | 115.0 | H | 270.0 | 14.6 | |
| 432.000000 | 28.8 | 1000.0 | 120.000 | 309.0 | H | 272.0 | 19.7 | |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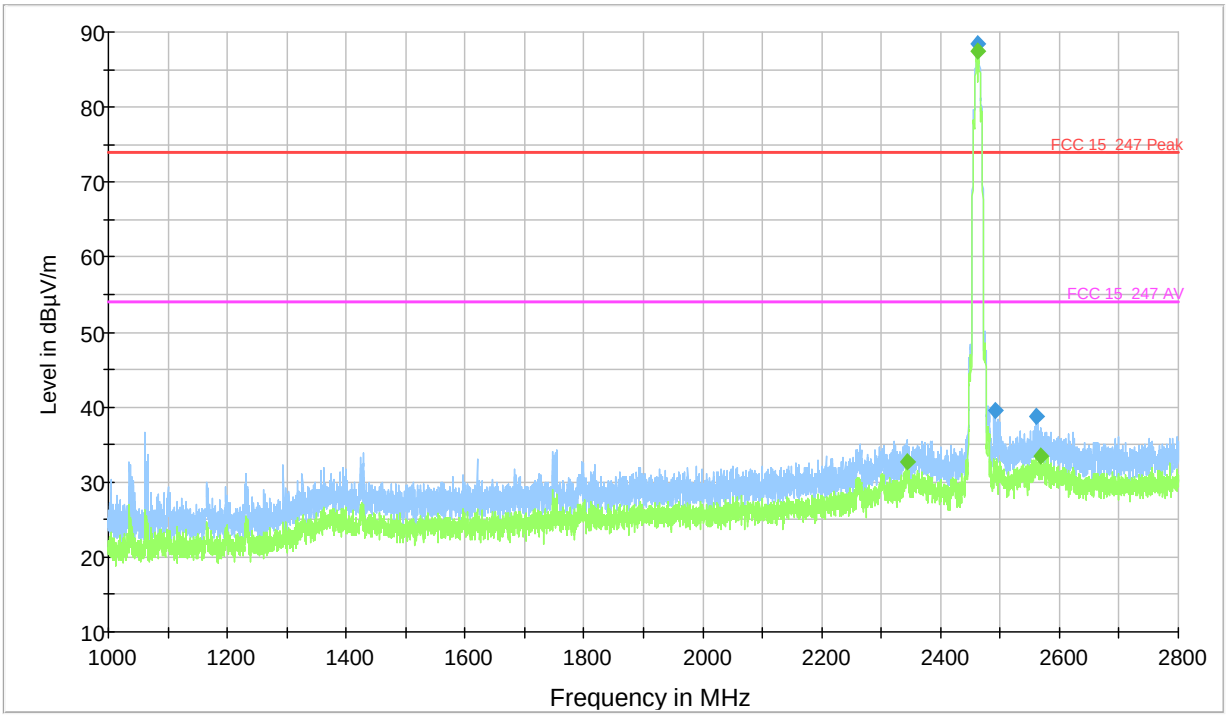
## 802.11b – Ch11 – Vertical 1GHz – 2.8GHz (WORST CASE)

FCC_SWEEP_SPURIUS




## Final Result 1

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2462.500000 | 88.5 | 100.0 | V | 1.0 | -1.4 | -14.50 | 74.00 |
| 2491.120000 | 39.6 | 100.0 | V | 1.0 | -1.2 | 34.40 | 74.00 |
| 2561.140000 | 38.7 | 100.0 | V | 1.0 | -0.9 | 35.30 | 74.00 |

## Final Result 2

| Frequency (MHz) | Average-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2342.980000 | 32.6 | 100.0 | V | 1.0 | -2.2 | 21.40 | 54.00 |
| 2462.860000 | 87.4 | 100.0 | V | 1.0 | -1.4 | -33.40 | 54.00 |
| 2567.980000 | 33.4 | 100.0 | V | 1.0 | -0.9 | 20.60 | 54.00 |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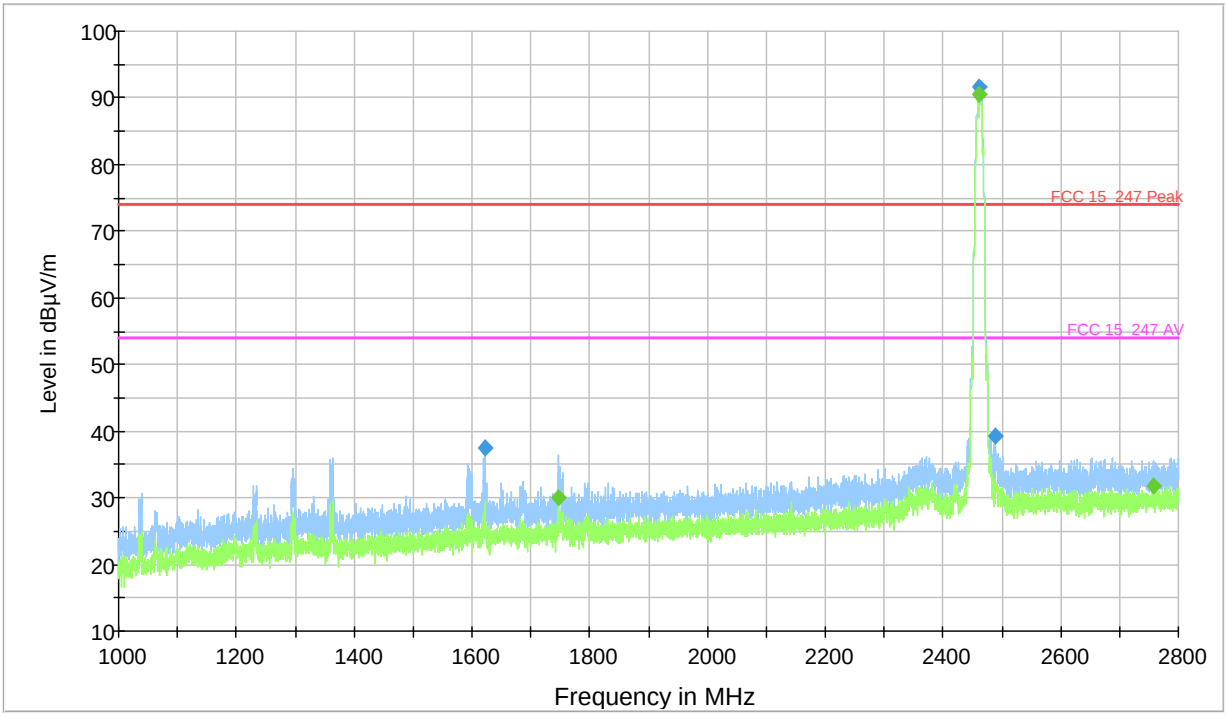
## 802.11b – Ch11 – Horizontal 1GHz – 2.8GHz (WORST CASE)

FCC_SWEEP_SPURIUS




## Final Result 1

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 1622.980000 | 37.5 | 100.0 | H | 1.0 | -6.5 | 36.50 | 74.00 |
| 2462.500000 | 91.6 | 100.0 | H | 1.0 | -1.4 | -17.60 | 74.00 |
| 2488.960000 | 39.3 | 100.0 | H | 1.0 | -1.2 | 34.70 | 74.00 |

## Final Result 2

| Frequency (MHz) | Average-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 1747.900000 | 29.9 | 100.0 | H | 1.0 | -5.7 | 24.10 | 54.00 |
| 2461.240000 | 90.6 | 100.0 | H | 1.0 | -1.4 | -36.60 | 54.00 |
| 2757.520000 | 31.8 | 100.0 | H | 1.0 | 0.3 | 22.20 | 54.00 |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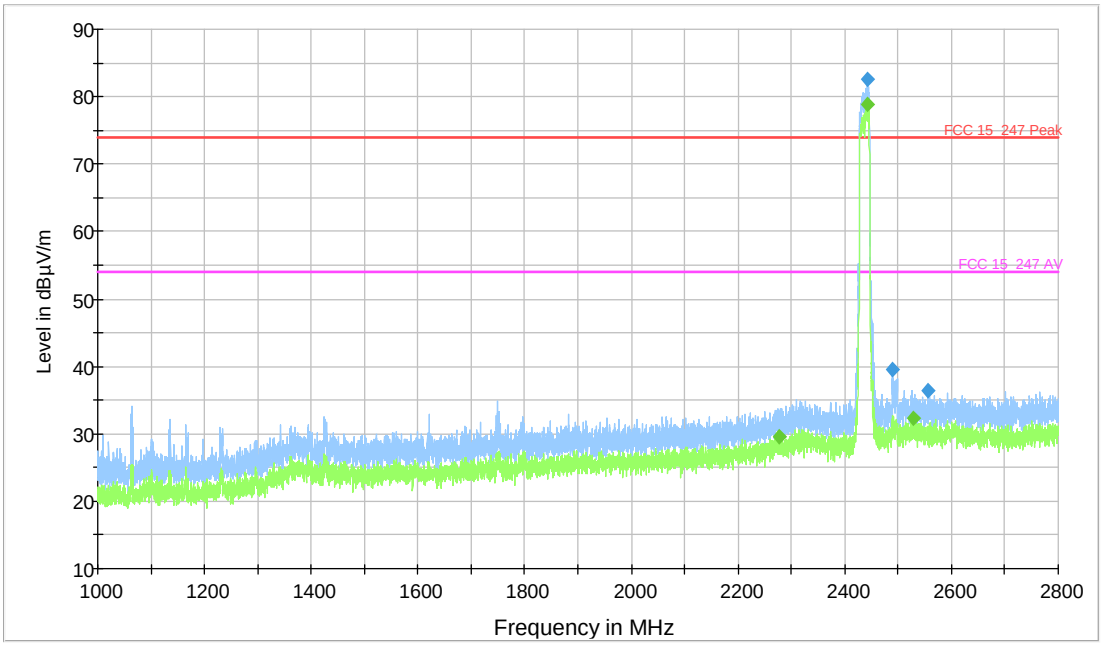
## 802.11g – Ch6 – Vertical 1GHz – 2.8GHz (WORST CASE)

FCC_SWEEP_SPURIUS




## Final Result 1

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2441.620000 | 82.6 | 100.0 | V | 1.0 | -1.5 | -8.60 | 74.00 |
| 2489.320000 | 39.5 | 100.0 | V | 1.0 | -1.2 | 34.50 | 74.00 |
| 2555.200000 | 36.5 | 100.0 | V | 1.0 | -0.9 | 37.50 | 74.00 |

## Final Result 2

| Frequency (MHz) | Average-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2278.000000 | 29.6 | 100.0 | V | 1.0 | -2.5 | 24.40 | 54.00 |
| 2441.800000 | 78.9 | 100.0 | V | 1.0 | -1.5 | -24.90 | 54.00 |
| 2529.280000 | 32.3 | 100.0 | V | 1.0 | -1.0 | 21.70 | 54.00 |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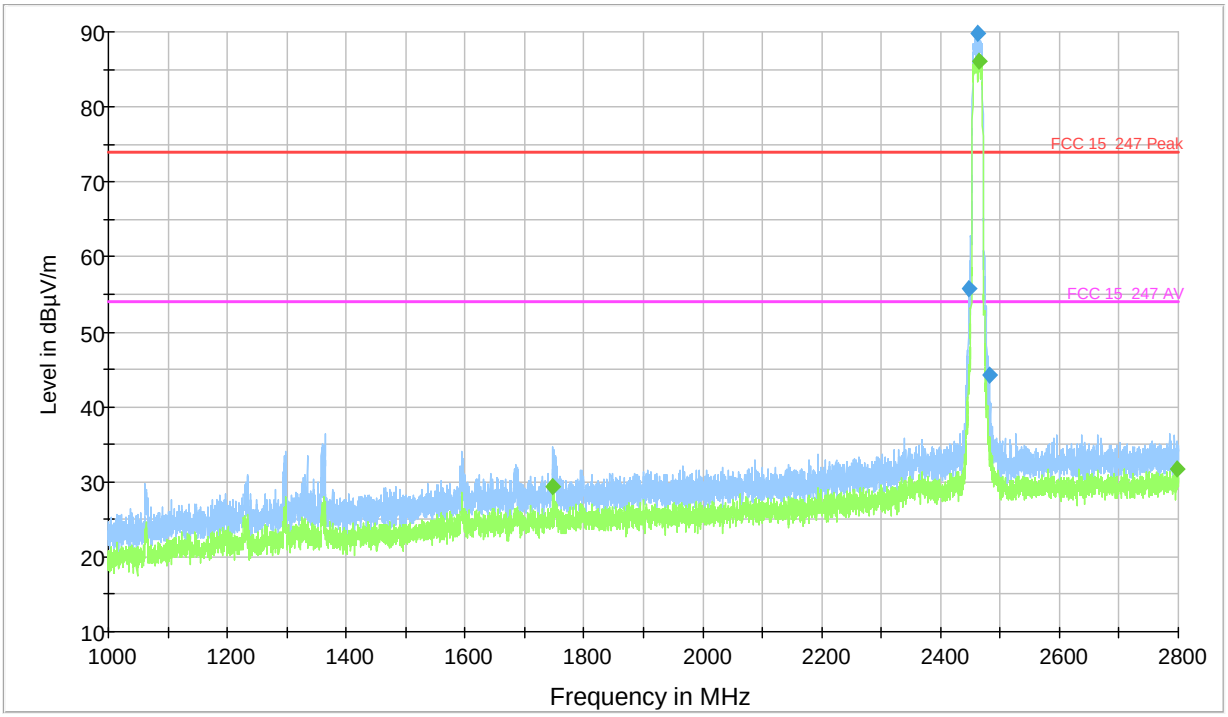
## 802.11g – Ch6 – Horizontal  1GHz – 2.8GHz (WORST CASE)

FCC_SWEEP_SPURIUS




## Final Result 1

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2448.280000 | 55.8 | 100.0 | H | 1.0 | -1.4 | 18.20 | 74.00 |
| 2462.860000 | 89.7 | 100.0 | H | 1.0 | -1.4 | -15.70 | 74.00 |
| 2482.120000 | 44.3 | 100.0 | H | 1.0 | -1.3 | 29.70 | 74.00 |

## Final Result 2

| Frequency (MHz) | Average-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 1747.900000 | 29.5 | 100.0 | H | 1.0 | -5.7 | 24.50 | 54.00 |
| 2465.380000 | 86.2 | 100.0 | H | 1.0 | -1.4 | -32.20 | 54.00 |
| 2797.120000 | 31.8 | 100.0 | H | 1.0 | 0.5 | 22.20 | 54.00 |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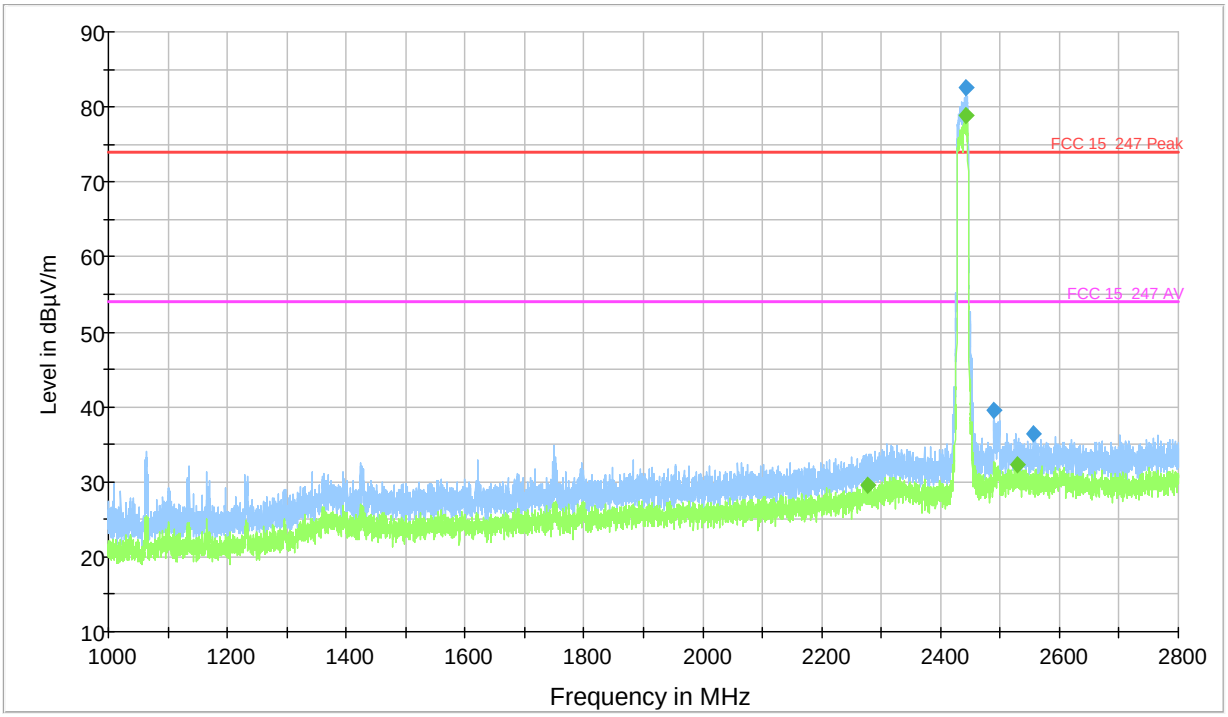
## 802.11n – 20M - Ch6 – Vertical 1GHz – 2.8GHz (WORST CASE)

FCC_SWEEP_SPURIUS




## Final Result 1

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2441.620000 | 82.6 | 100.0 | V | 1.0 | -1.5 | -8.60 | 74.00 |
| 2489.320000 | 39.5 | 100.0 | V | 1.0 | -1.2 | 34.50 | 74.00 |
| 2555.200000 | 36.5 | 100.0 | V | 1.0 | -0.9 | 37.50 | 74.00 |

## Final Result 2

| Frequency (MHz) | Average-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2278.000000 | 29.6 | 100.0 | V | 1.0 | -2.5 | 24.40 | 54.00 |
| 2441.800000 | 78.9 | 100.0 | V | 1.0 | -1.5 | -24.90 | 54.00 |
| 2529.280000 | 32.3 | 100.0 | V | 1.0 | -1.0 | 21.70 | 54.00 |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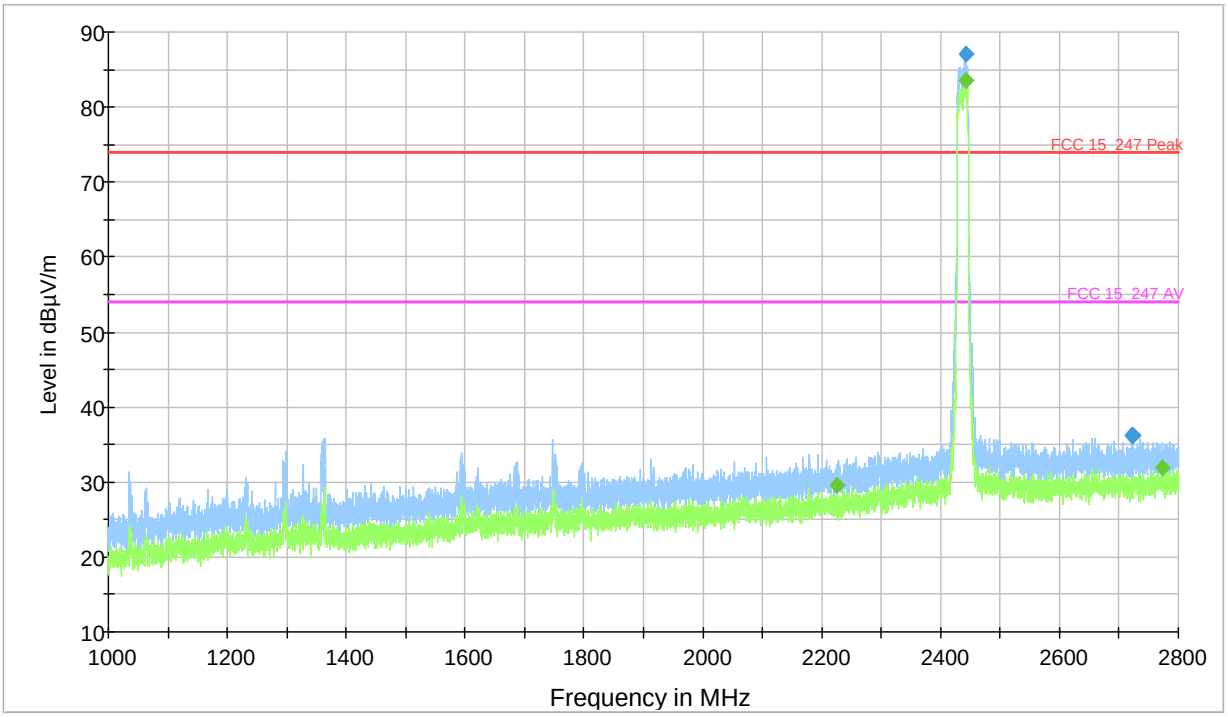
## 802.11n – 20M - Ch6 – Horizontal 1GHz – 2.8GHz (WORST CASE)

FCC_SWEEP_SPURIUS




## Final Result 1

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2441.260000 | 87.2 | 100.0 | H | 1.0 | -1.5 | -13.20 | 74.00 |
| 2721.160000 | 36.2 | 100.0 | H | 1.0 | -0.1 | 37.80 | 74.00 |
| 2723.680000 | 36.2 | 100.0 | H | 1.0 | 0.0 | 37.80 | 74.00 |

## Final Result 2

| Frequency (MHz) | Average-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2225.980000 | 29.6 | 100.0 | H | 1.0 | -2.9 | 24.40 | 54.00 |
| 2443.060000 | 83.5 | 100.0 | H | 1.0 | -1.4 | -29.50 | 54.00 |
| 2771.920000 | 31.9 | 100.0 | H | 1.0 | 0.4 | 22.10 | 54.00 |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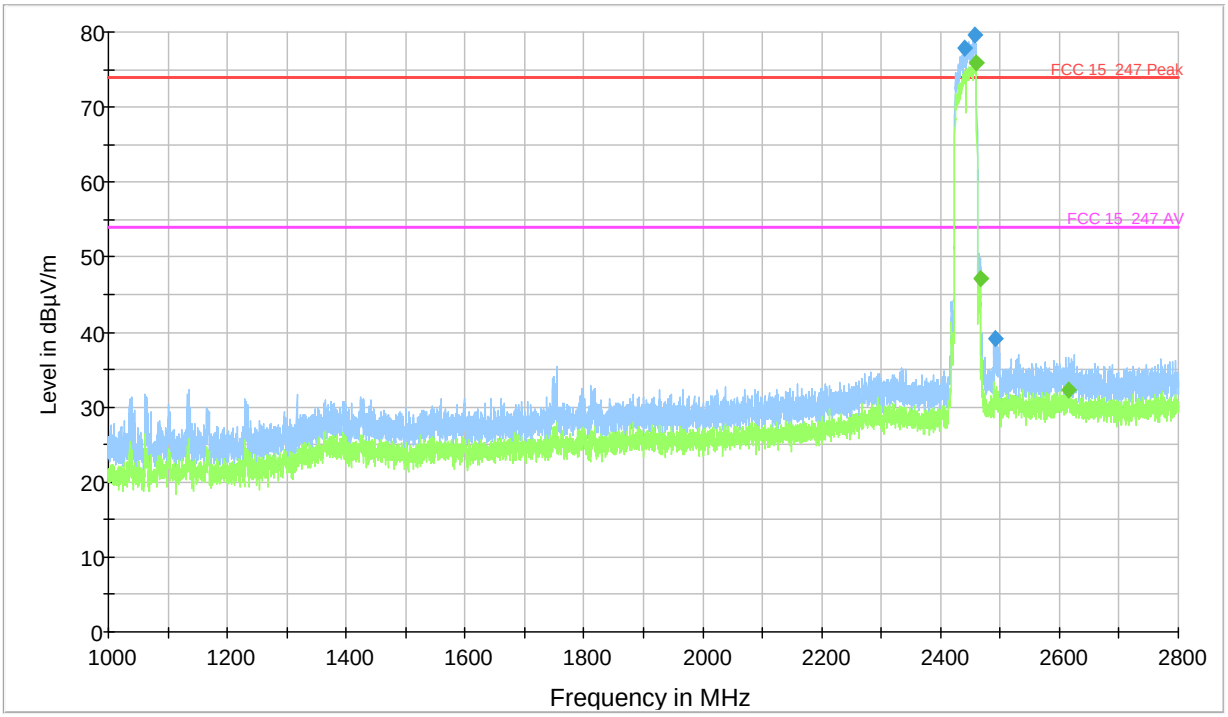
## 802.11n – 40M – Ch7 – Vertical 1GHz – 2.8GHz (WORST CASE)

FCC_SWEEP_SPURIUS




## Final Result 1

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2440.360000 | 77.9 | 100.0 | V | 1.0 | -1.5 | -3.90 | 74.00 |
| 2457.280000 | 79.5 | 100.0 | V | 1.0 | -1.4 | -5.50 | 74.00 |
| 2490.760000 | 39.1 | 100.0 | V | 1.0 | -1.2 | 34.90 | 74.00 |

## Final Result 2

| Frequency (MHz) | Average-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2458.900000 | 76.0 | 100.0 | V | 1.0 | -1.4 | -22.00 | 54.00 |
| 2465.920000 | 47.2 | 100.0 | V | 1.0 | -1.3 | 6.80 | 54.00 |
| 2614.600000 | 32.3 | 100.0 | V | 1.0 | -0.5 | 21.70 | 54.00 |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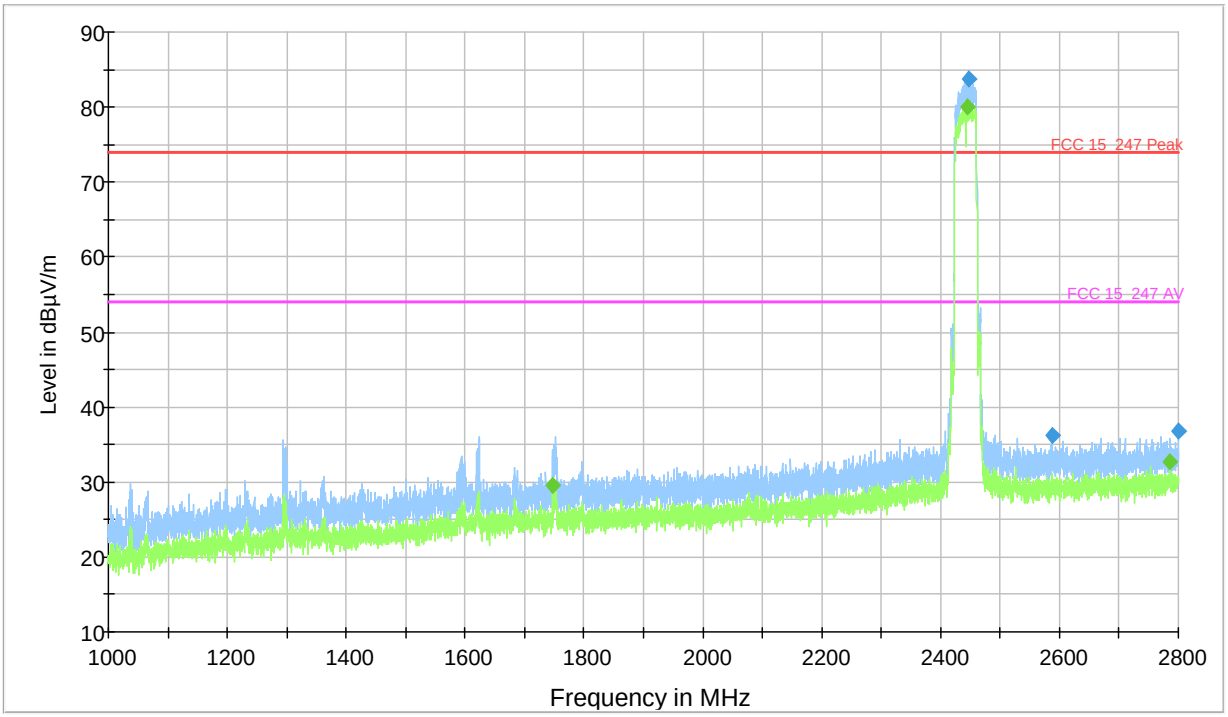
## 802.11n – 40M – Ch7 – Horizontal 1GHz – 2.8GHz (WORST CASE)

FCC_SWEEP_SPURIUS




## Final Result 1

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2447.740000 | 83.7 | 100.0 | H | 1.0 | -1.4 | -9.70 | 74.00 |
| 2588.860000 | 36.2 | 100.0 | H | 1.0 | -0.6 | 37.80 | 74.00 |
| 2800.000000 | 36.8 | 100.0 | H | 1.0 | 0.5 | 37.20 | 74.00 |

## Final Result 2

| Frequency (MHz) | Average-ClearWrite (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 1747.900000 | 29.5 | 100.0 | H | 1.0 | -5.7 | 24.50 | 54.00 |
| 2445.040000 | 80.1 | 100.0 | H | 1.0 | -1.4 | -26.10 | 54.00 |
| 2785.600000 | 32.8 | 100.0 | H | 1.0 | 0.4 | 21.20 | 54.00 |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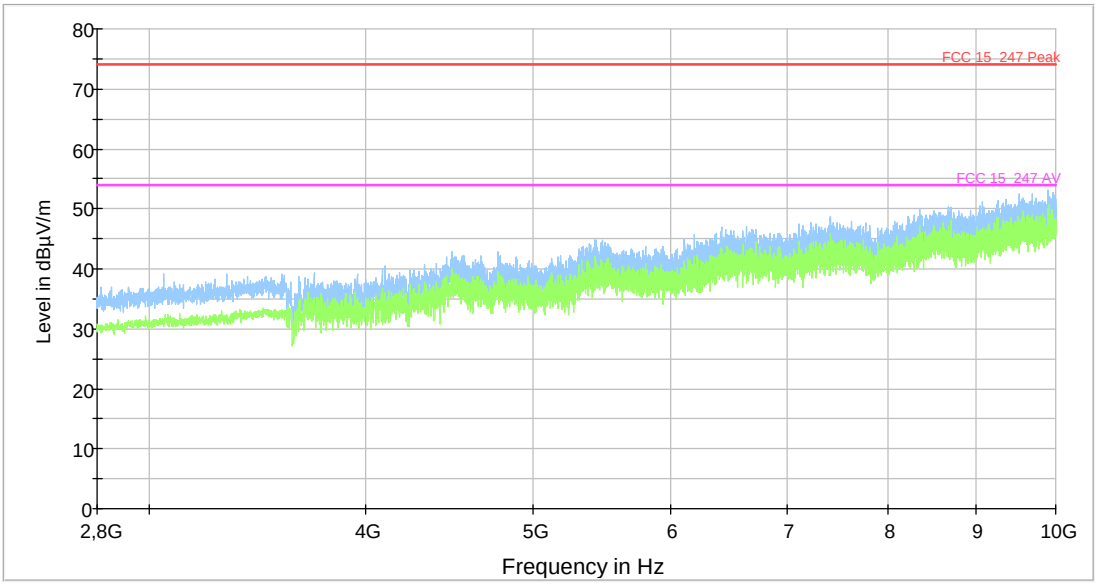
## 802.11b – Ch1 – Vertical 2.8GHz – 10GHz

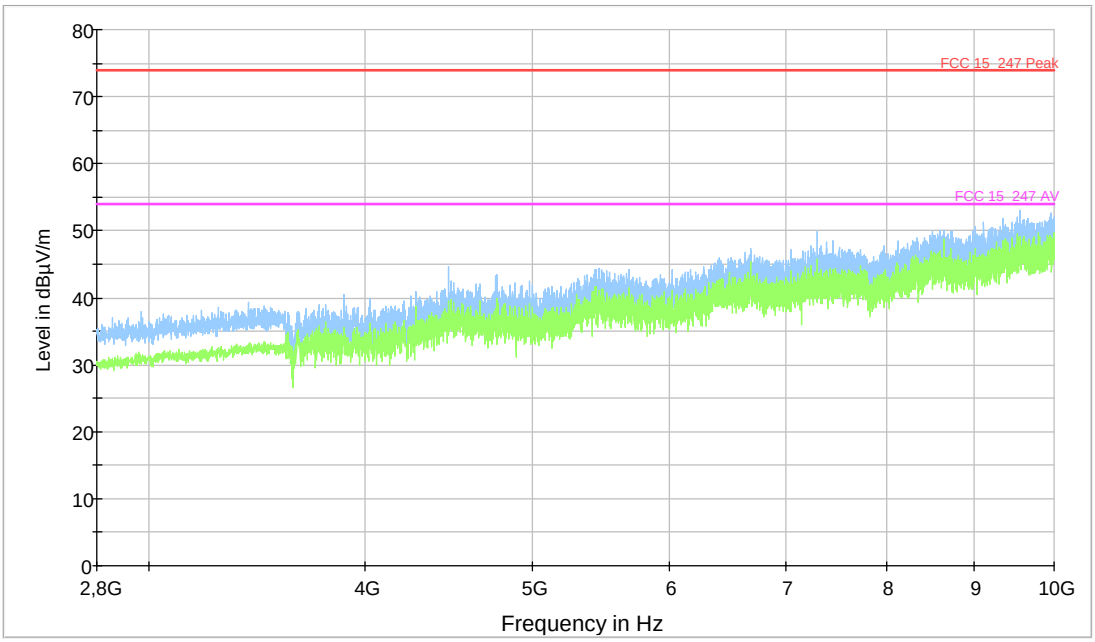
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11b – Ch1 – Horizontal 2.8GHz – 10GHz

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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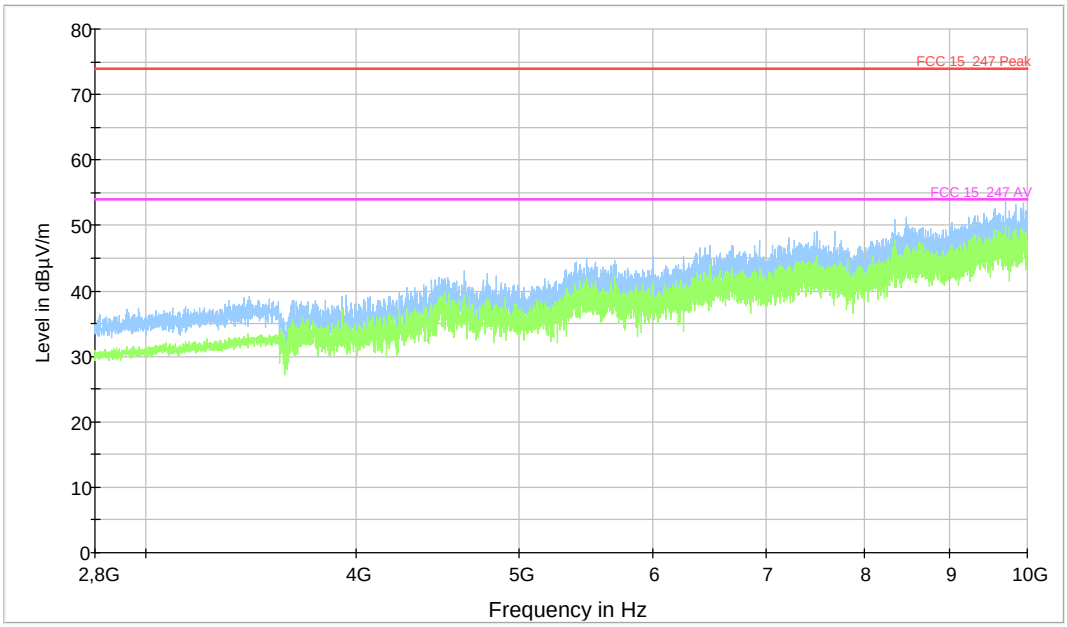
## 802.11b – Ch6 – Vertical - 2.8GHz – 10GHz

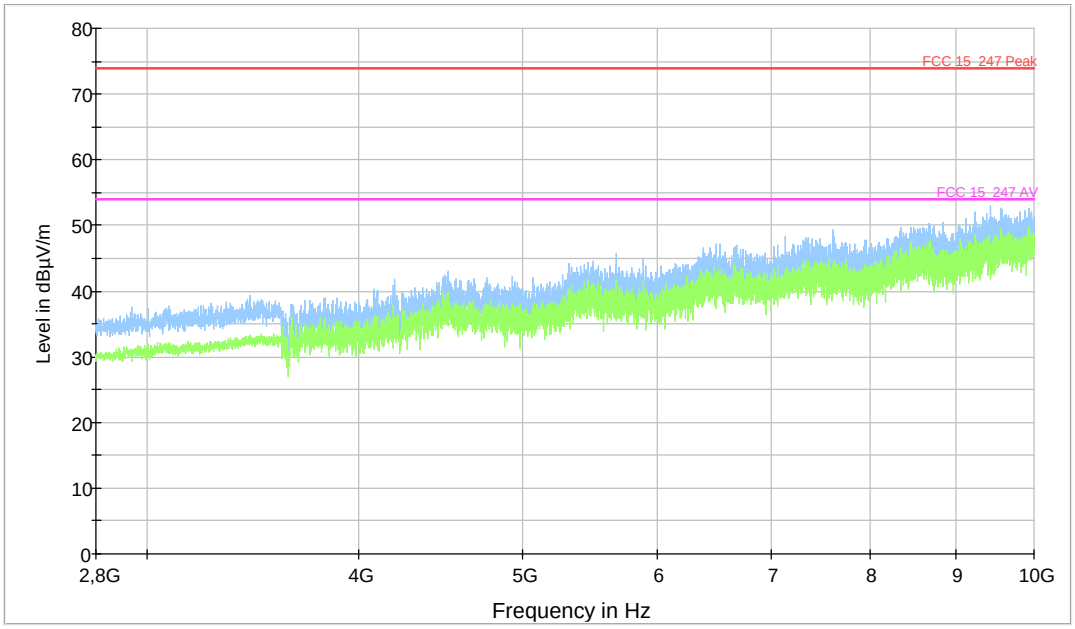
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11b – Ch6 – Horizontal - 2.8GHz – 10GHz

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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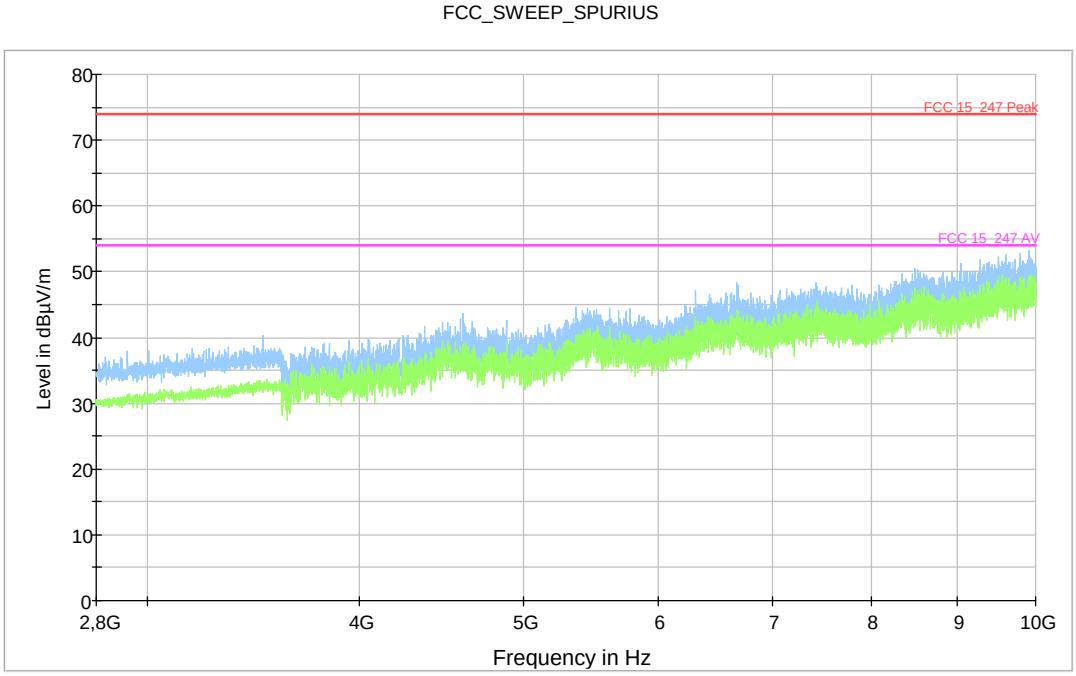
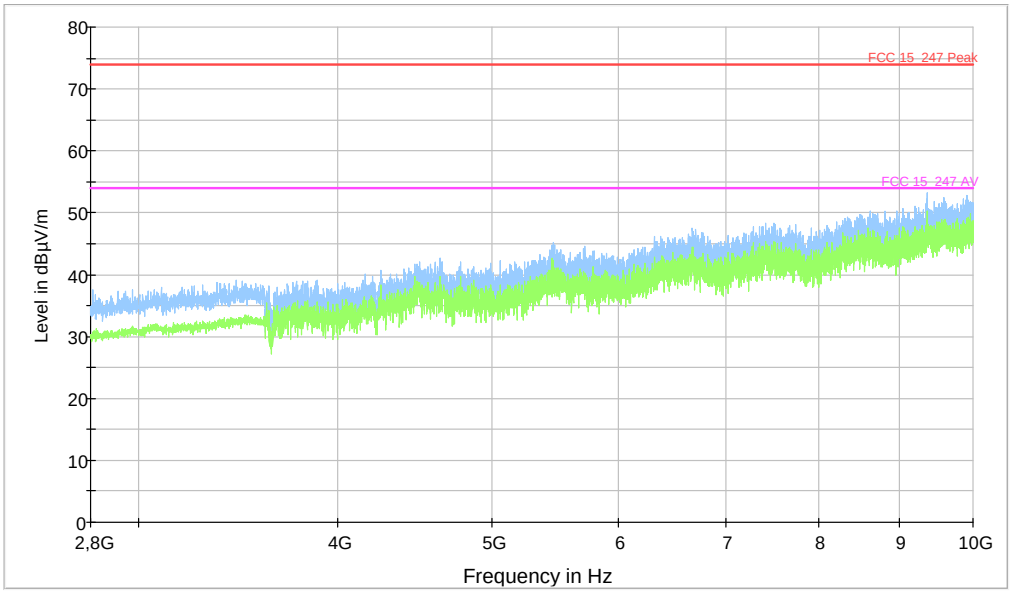
## 802.11b – Ch13 – Vertical - 2.8GHz – 10GHz




***Above 10GHz no spurious have been detected***

## 802.11b – Ch13 – Horizontal - 2.8GHz – 10GHz




***Above 10GHz no spurious have been detected***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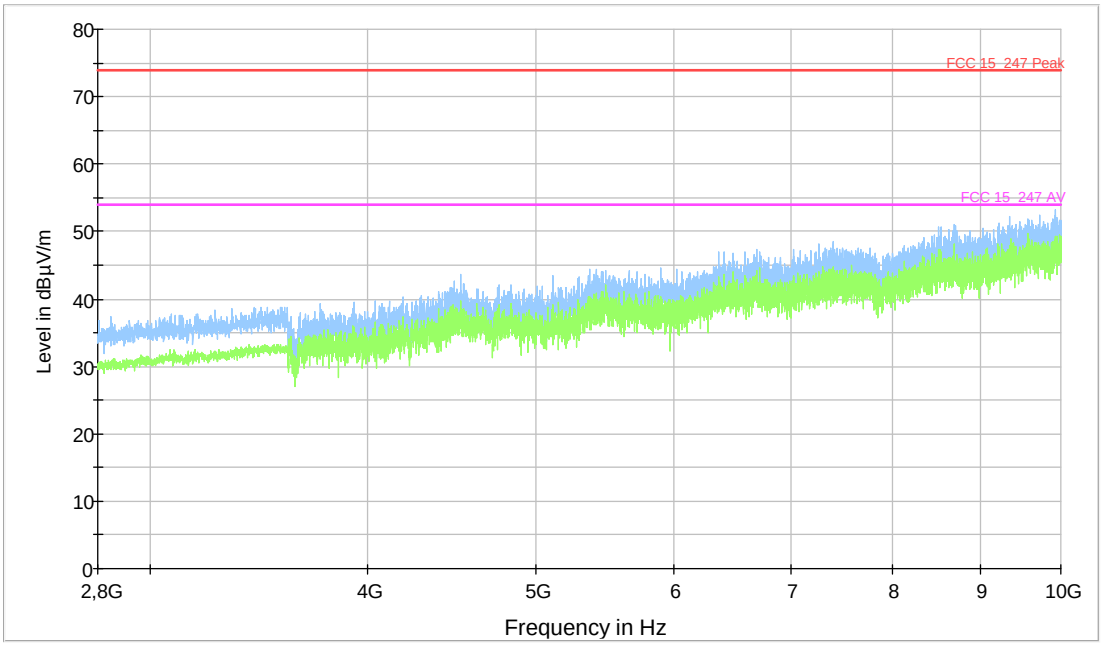
## 802.11g – Ch1 – Vertical – 2.8GHz – 10GHz

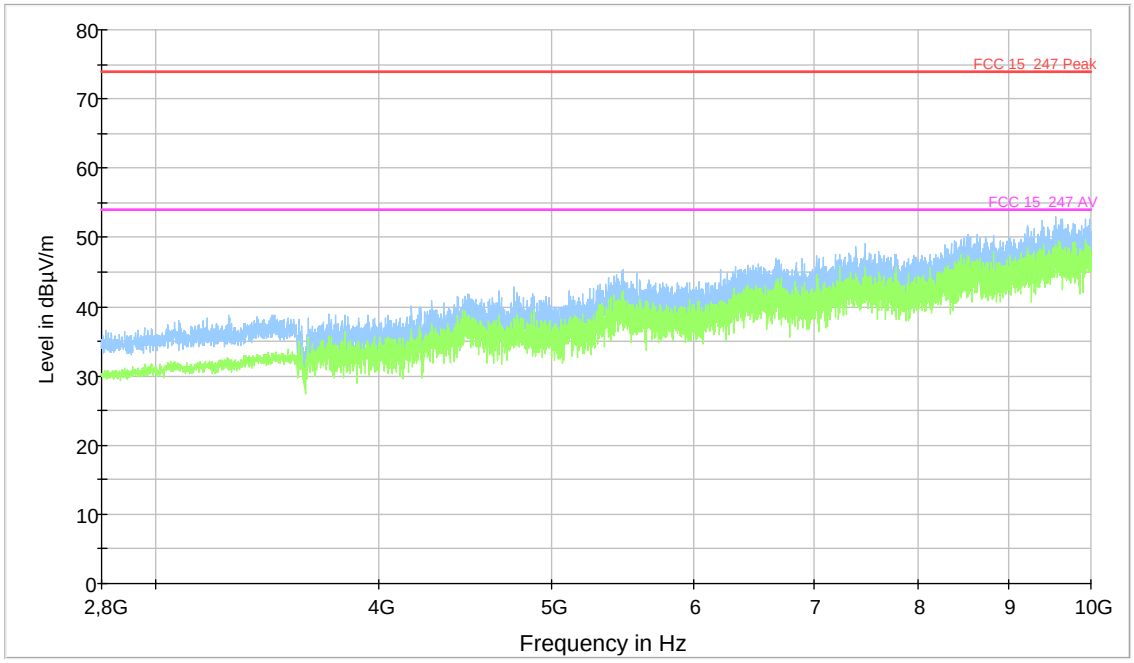
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11g – Ch1 – Horizontal – 2.8 – 10GHz

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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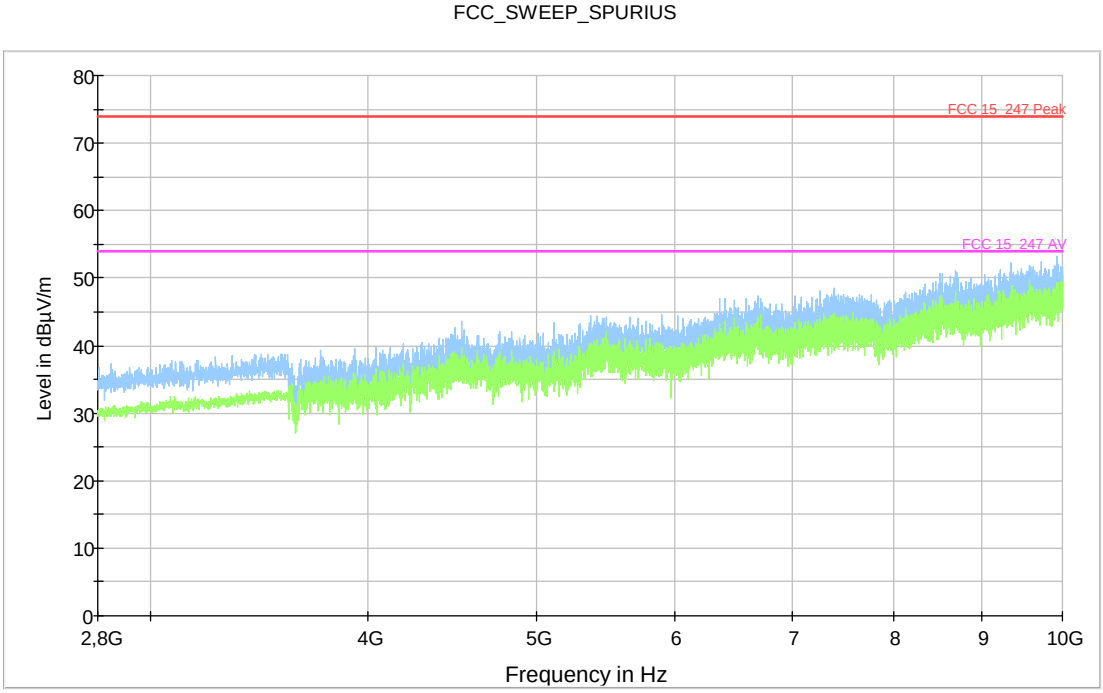
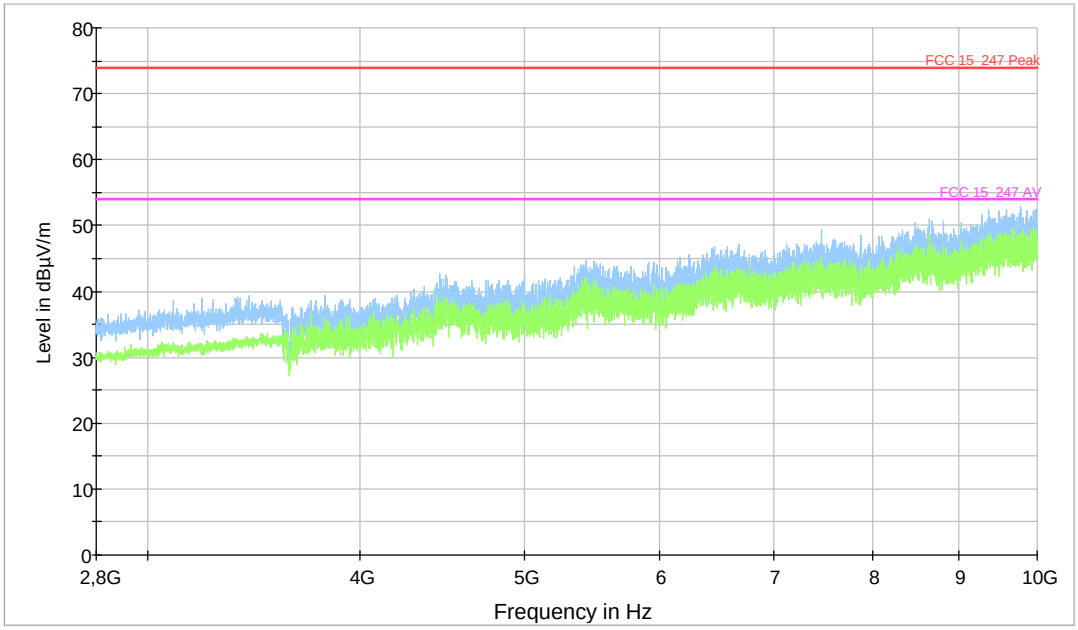
## 802.11g – Ch6 – Vertical - 2.8 – 10GHz




***Above 10GHz no spurious have been detected***

## 802.11g – Ch6 – Horizontal - 2.8 – 10GHz




***Above 10GHz no spurious have been detected***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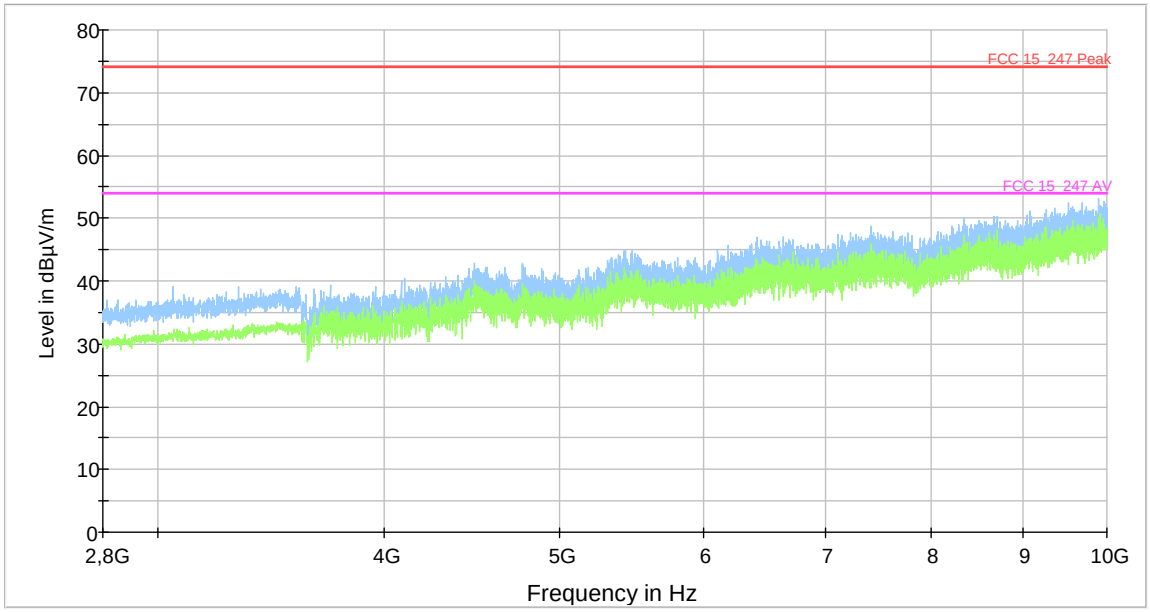
## 802.11g – Ch13 – Vertical - 2.8 – 10GHz

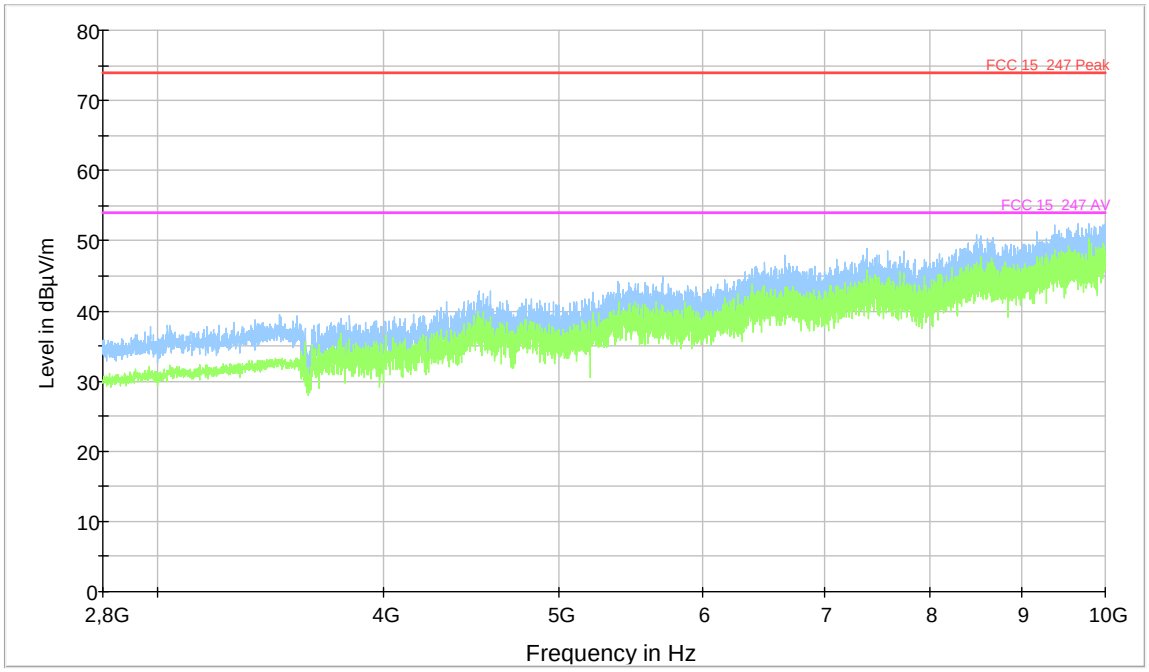
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11g – Ch13 – Horizontal - 2.8 – 10GHz

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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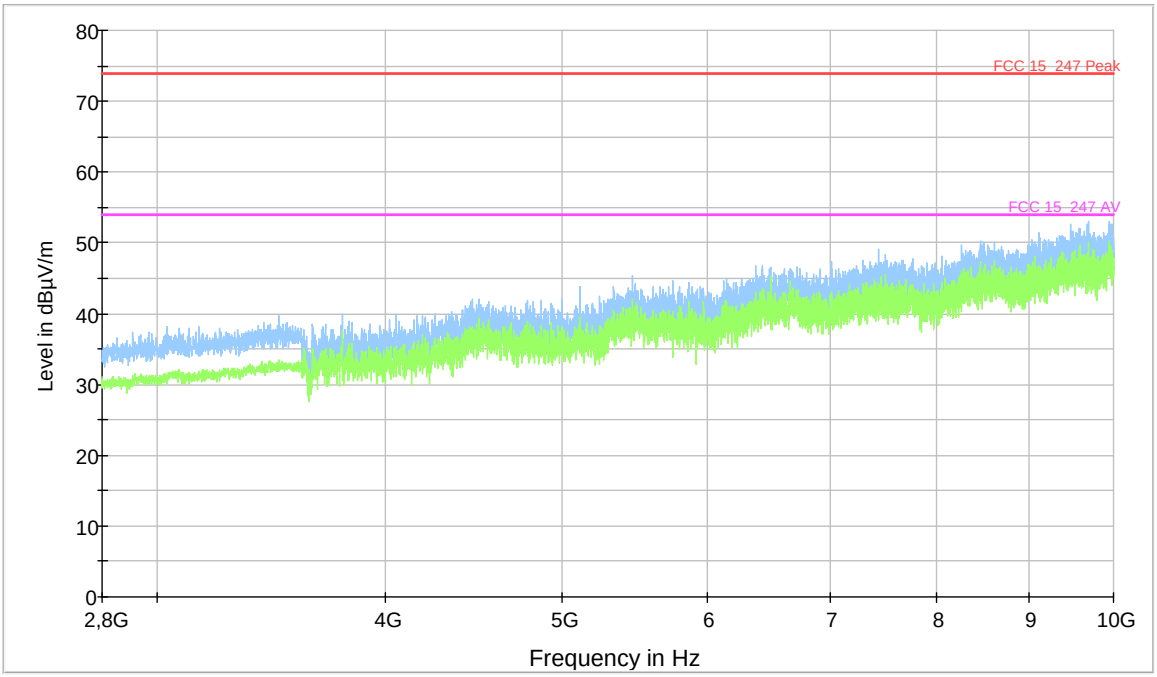
## 802.11n – 20M - Ch1 – Vertical - 2.8 – 10GHz

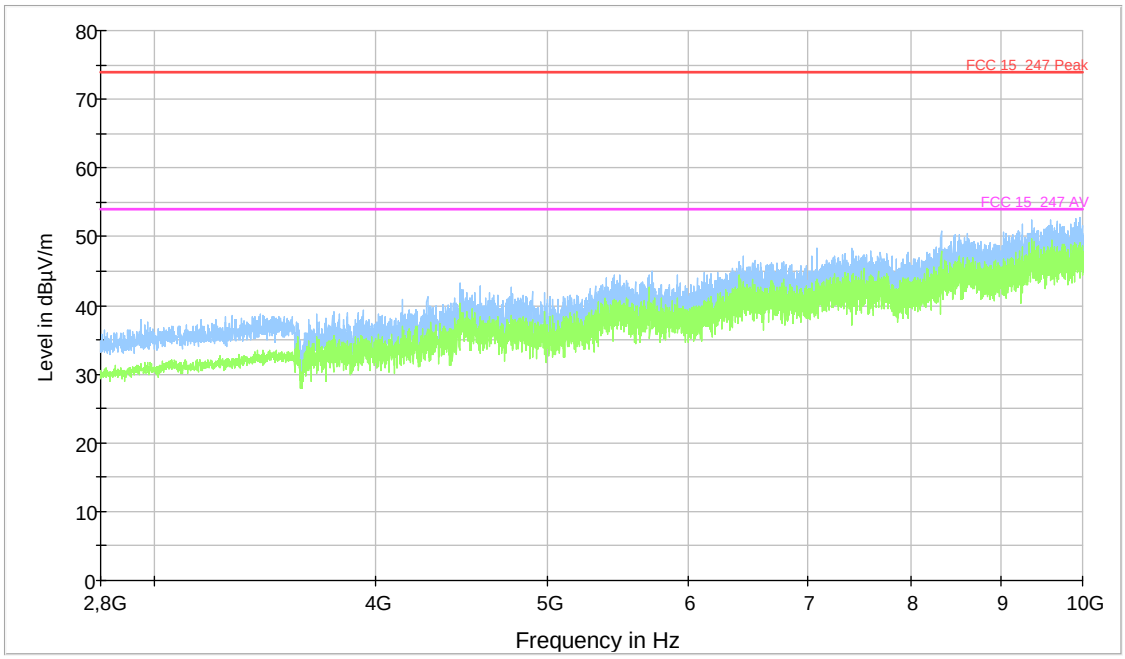
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11n – 20M - Ch1 – Horizontal - 2.8 – 10GHz

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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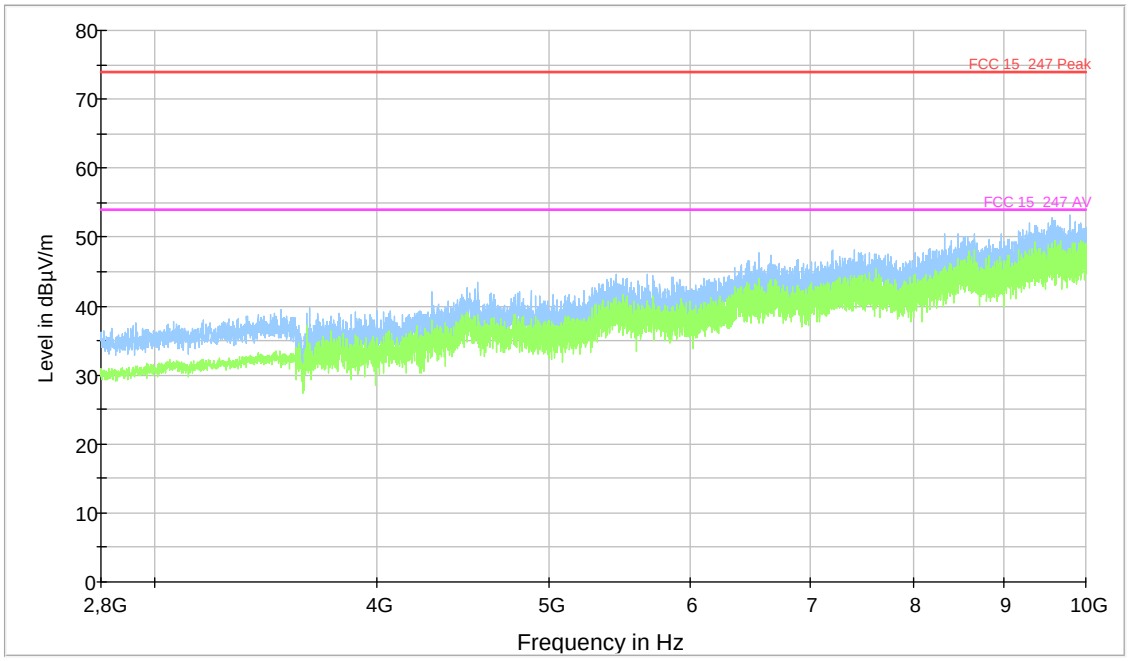
## 802.11n – 20M - Ch6 – Vertical - 2.8 – 10GHz

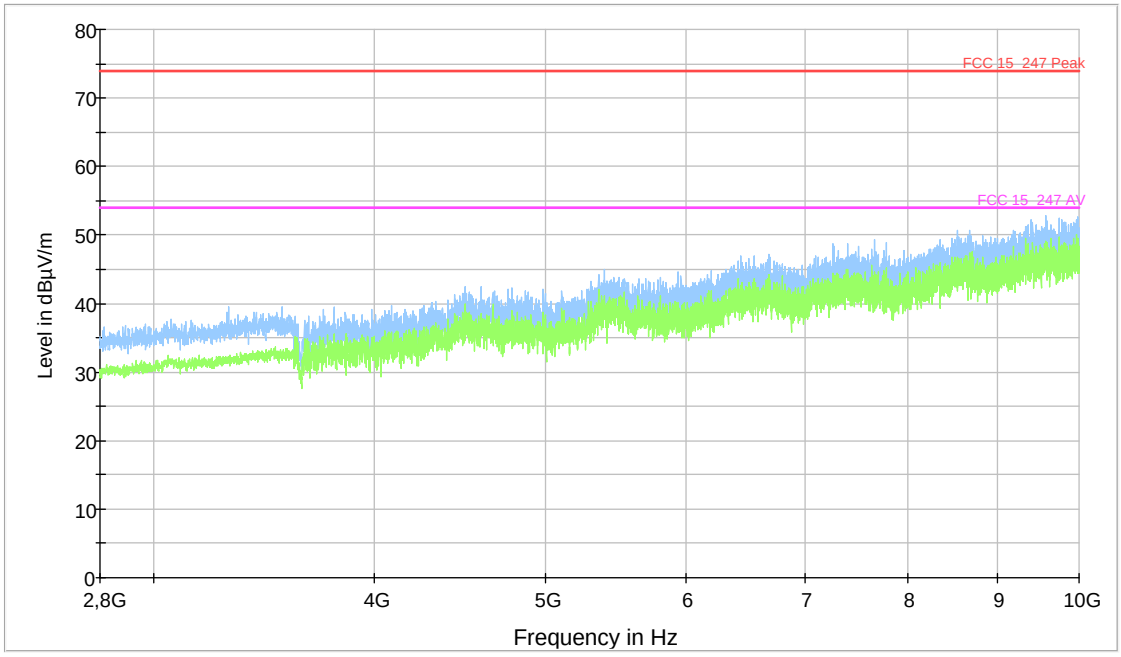
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11n – 20M - Ch6 – Horizontal - 2.8 – 10GHz

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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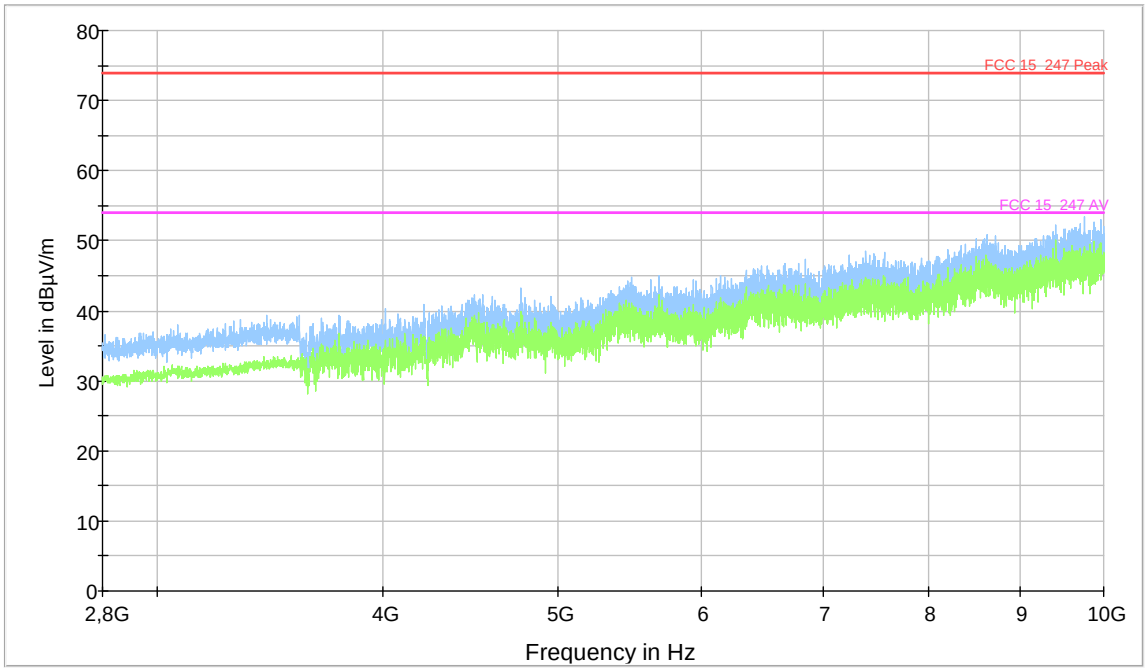
## 802.11n – 20M - Ch13 – Vertical - 2.8 – 10GHz

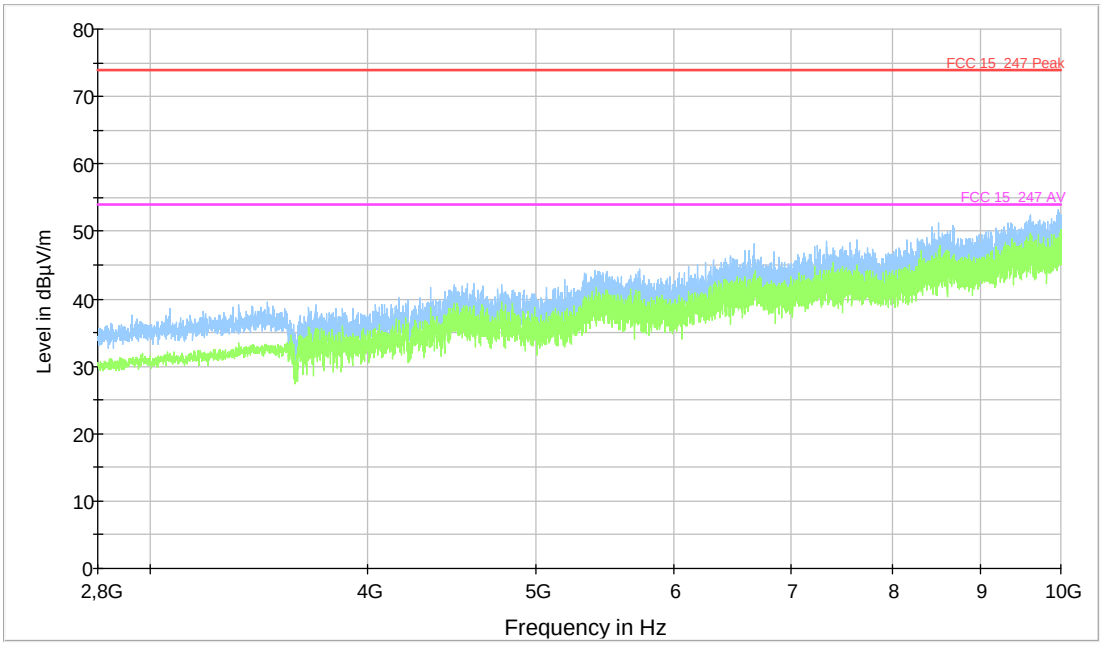
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11n – 20M - Ch13 – Horizontal - 2.8 – 10GHz

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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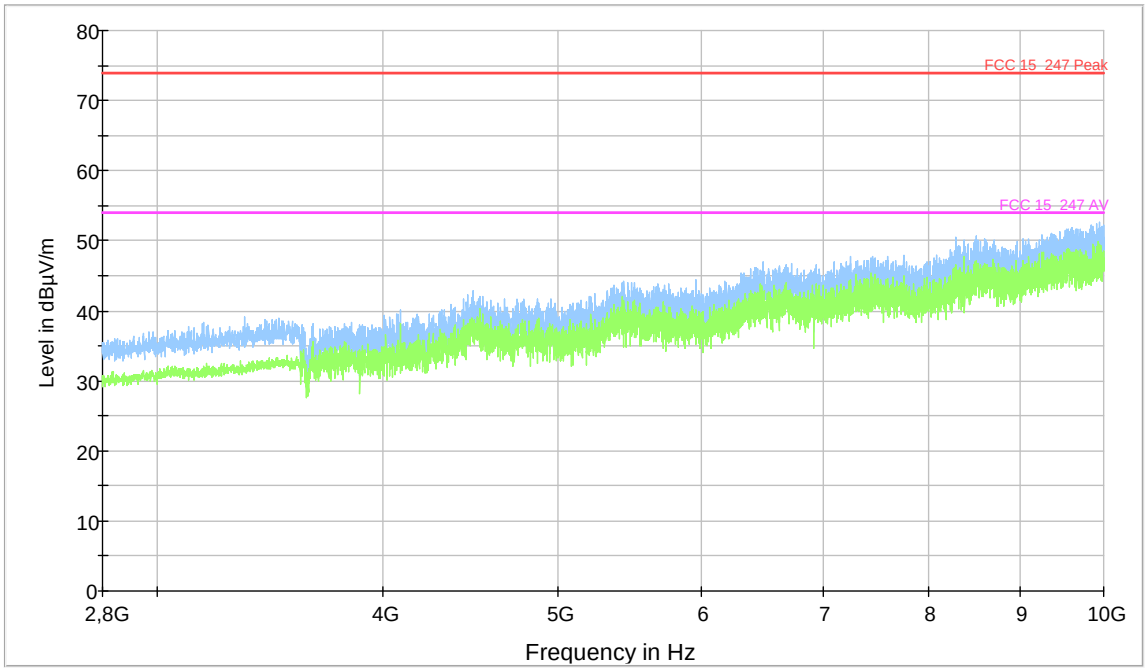
## 802.11n – 40M – Ch3 – Vertical

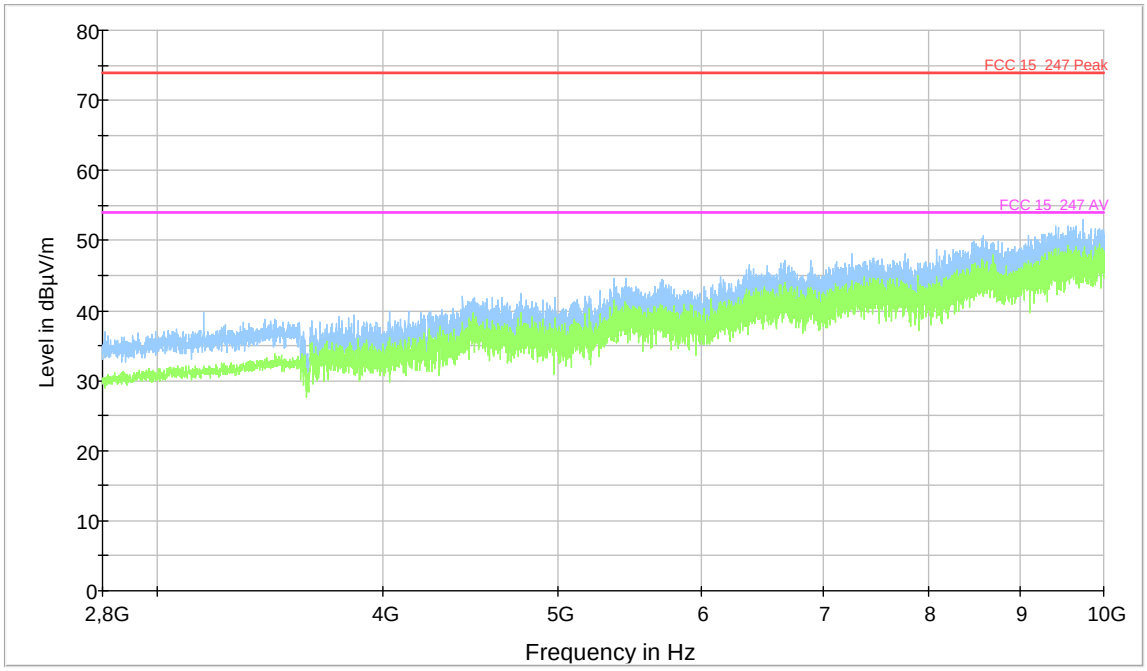
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11n – 40M – Ch3 – Horizontal

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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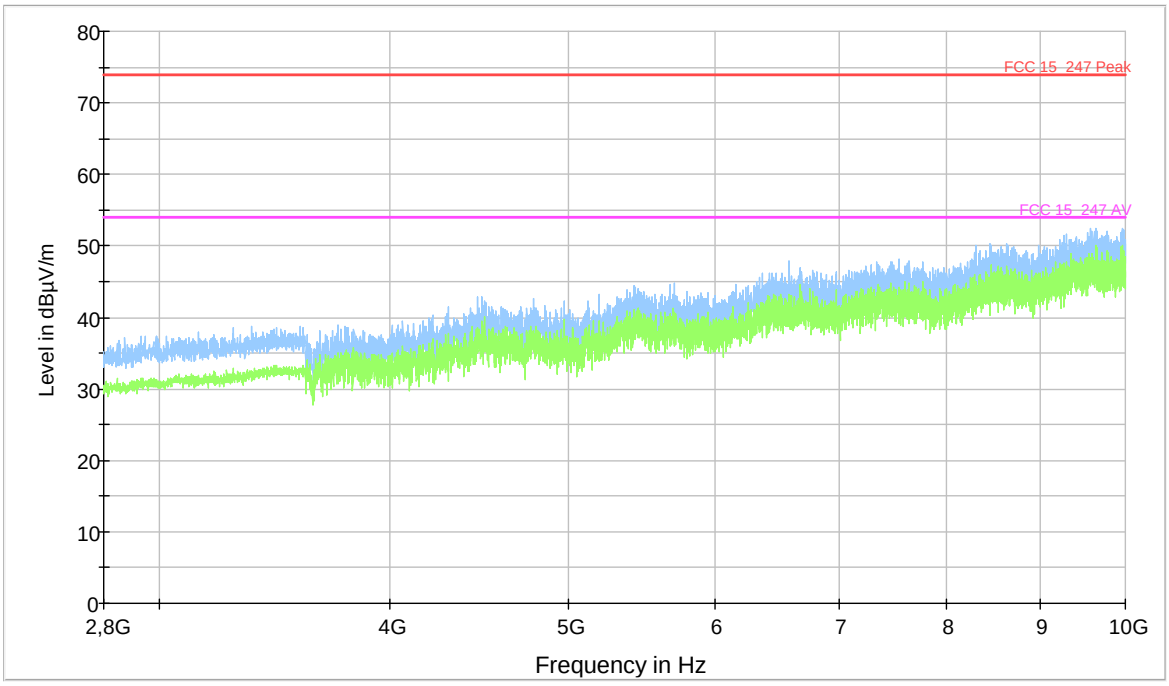
## 802.11n – 40M – Ch7 – Vertical

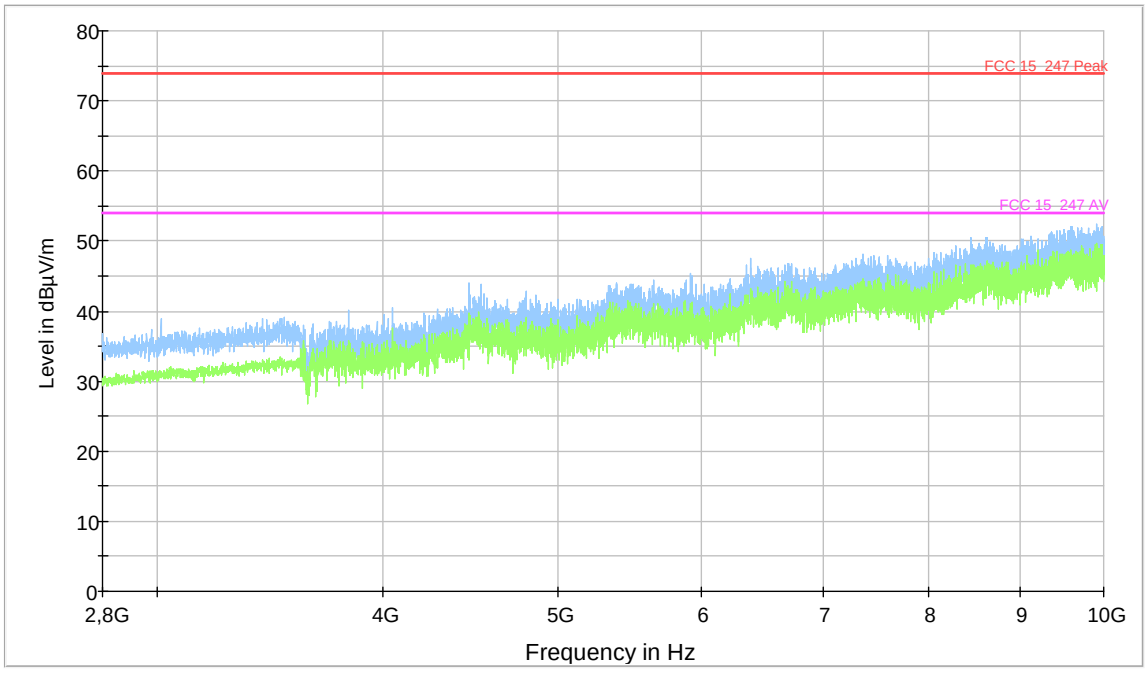
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11n – 40M – Ch7 – Horizontal

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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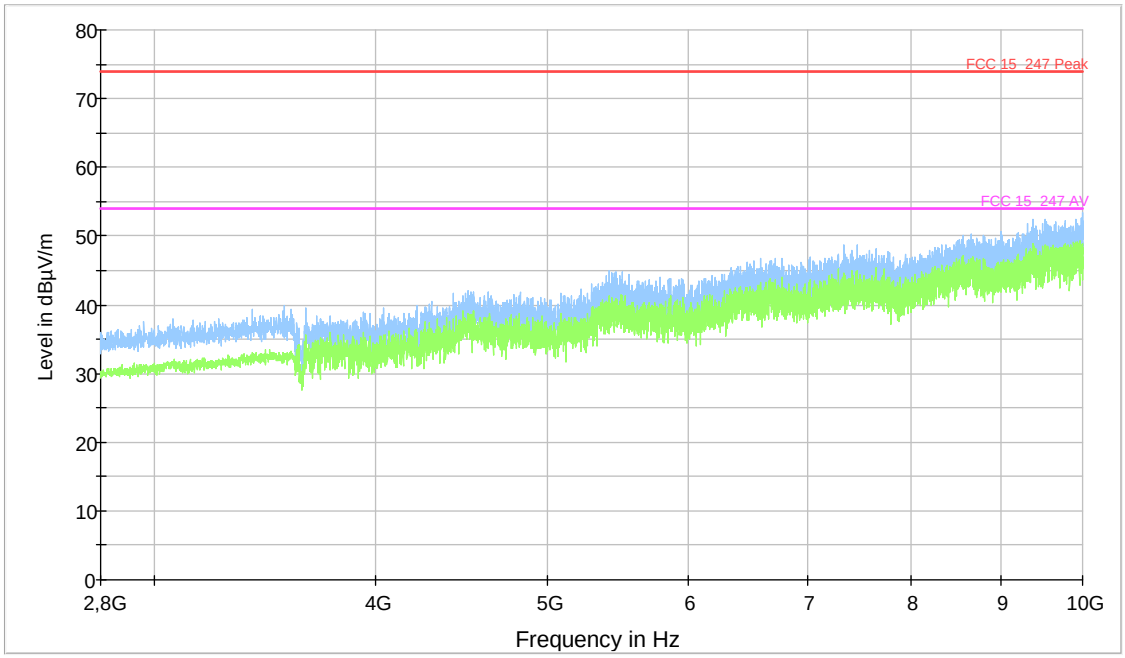
## 802.11n – 40M - Ch11 – Vertical

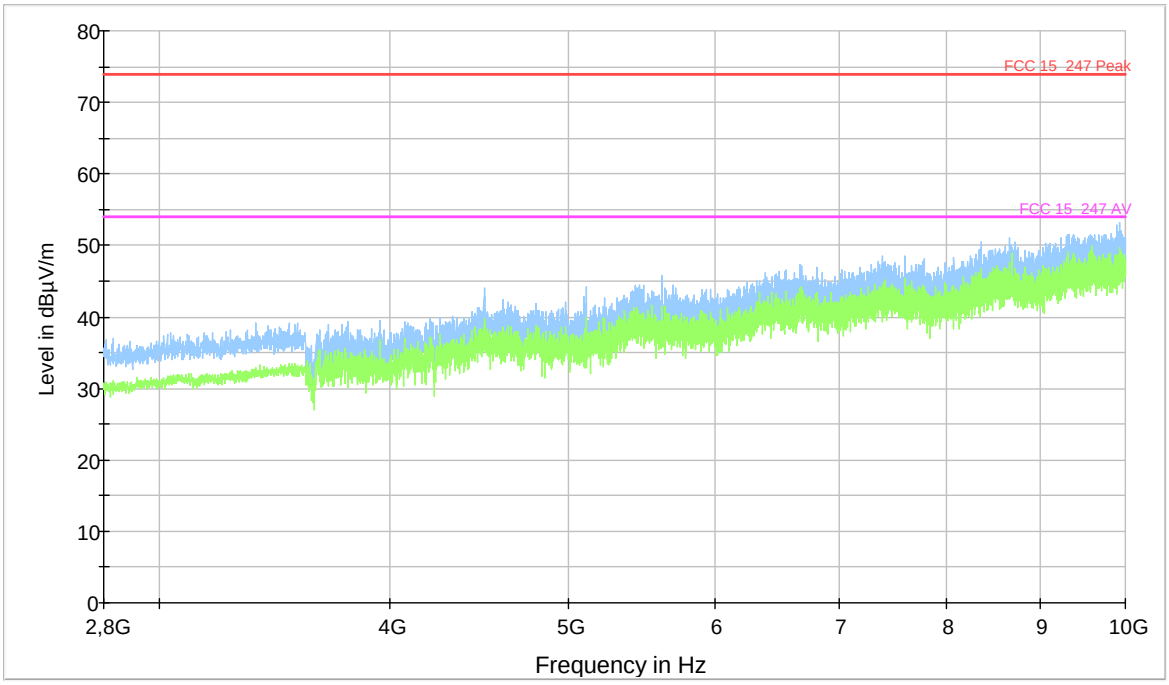
FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***

## 802.11n – 40M - Ch11 – Horizontal

FCC_SWEEP_SPURIUS




***Above 10GHz no spurious have been detected***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# 7. LIST OF EQUIPMENT USED

| EQUIPMENT | IDENTIFICATION NUMBER | CAL. DUE | CERTIFICATE NUMBER |
|---|---|---|---|
| EMI TEST RECEIVER 20HZ 40GHZ | EMC.359 | AUG.2012 | INRIM 11-0490-05 |
| ARTIFICIAL MAINS NETWORK | EMC.173 | AUG-2012 | INRIM 11-0490-04 |
| RF SEMI-ANECHOIC CHAMBER (CSSA) | EMC.191 | AUG 2012 | PRS NSA-2010 |
| BILOG ANTENNA | EMC.023 | MAY 2014 | SAIBERSDORF EH-A315/11 |
| LOG PERIODICA ANTENNA | EMC.391 | DEC 2012 | RHODE & S. |
| VOLTAGE GENERATOR | EMC.397 | FEB.2013 | SPS A4909D |
| SPECTRUM ANALYZER | EMC.332 | APR.2012 | PRS EMC332_2011 |


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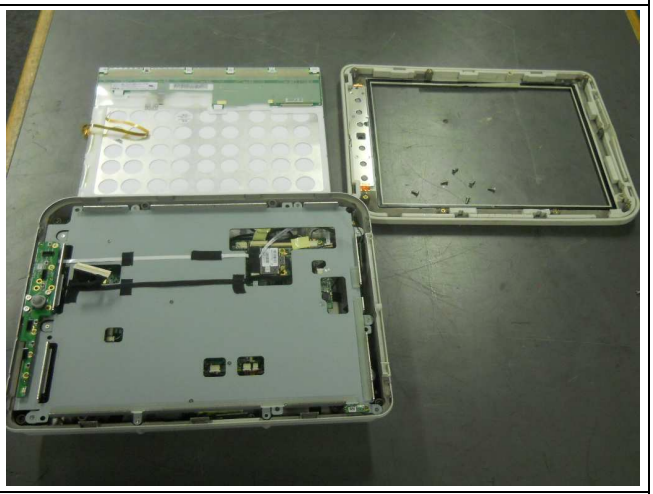
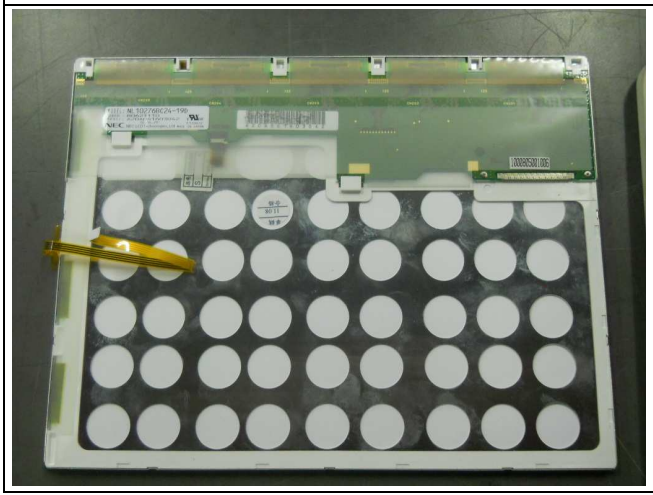
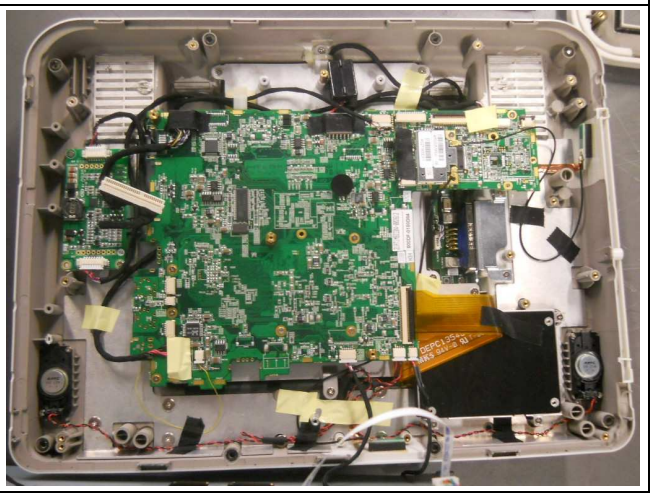
# 8. EUT PHOTOGRAPHIC DOCUMENTATION

**PHOTO N° 1 – SYSTEM IDENTIFICATION**







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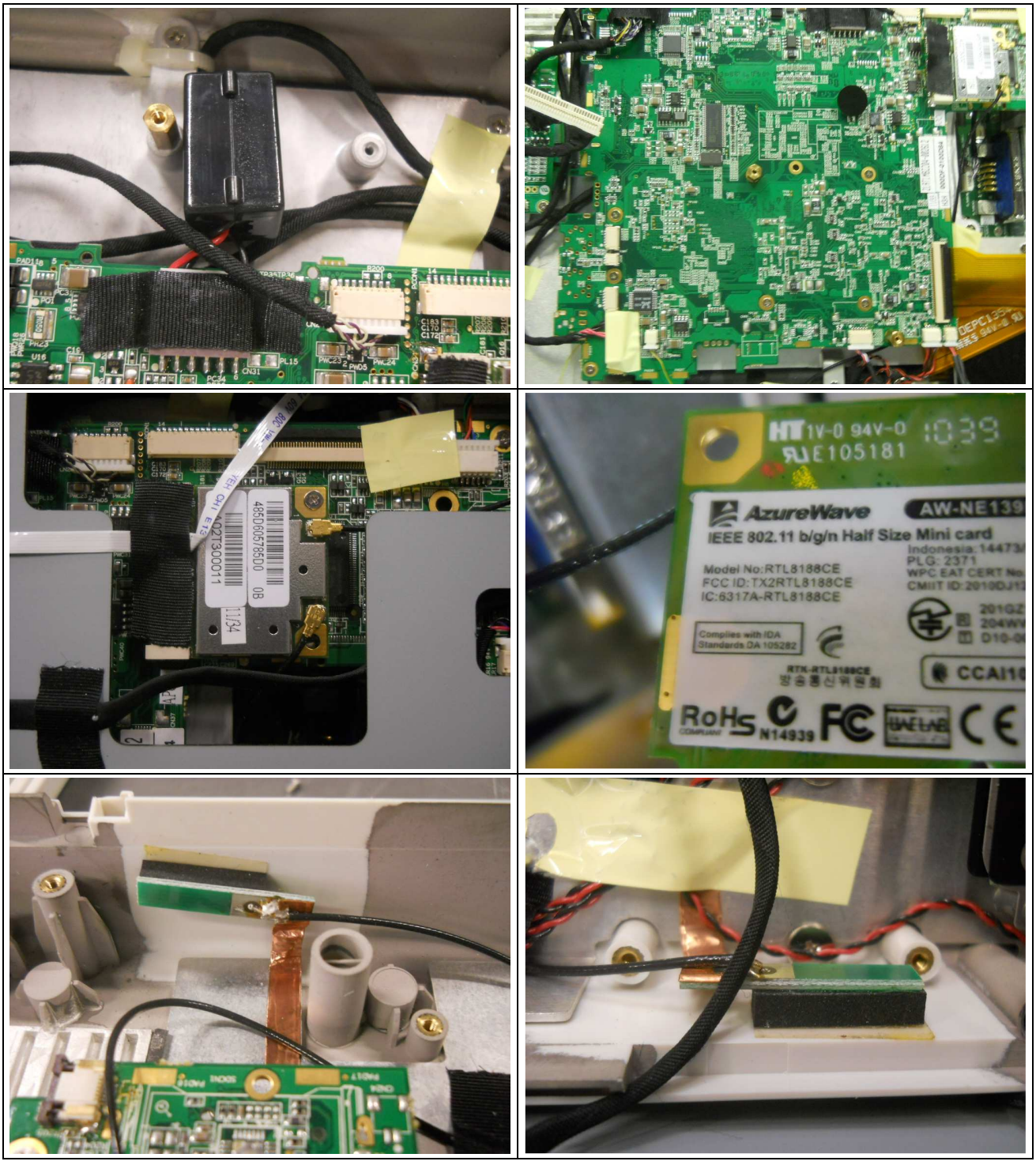



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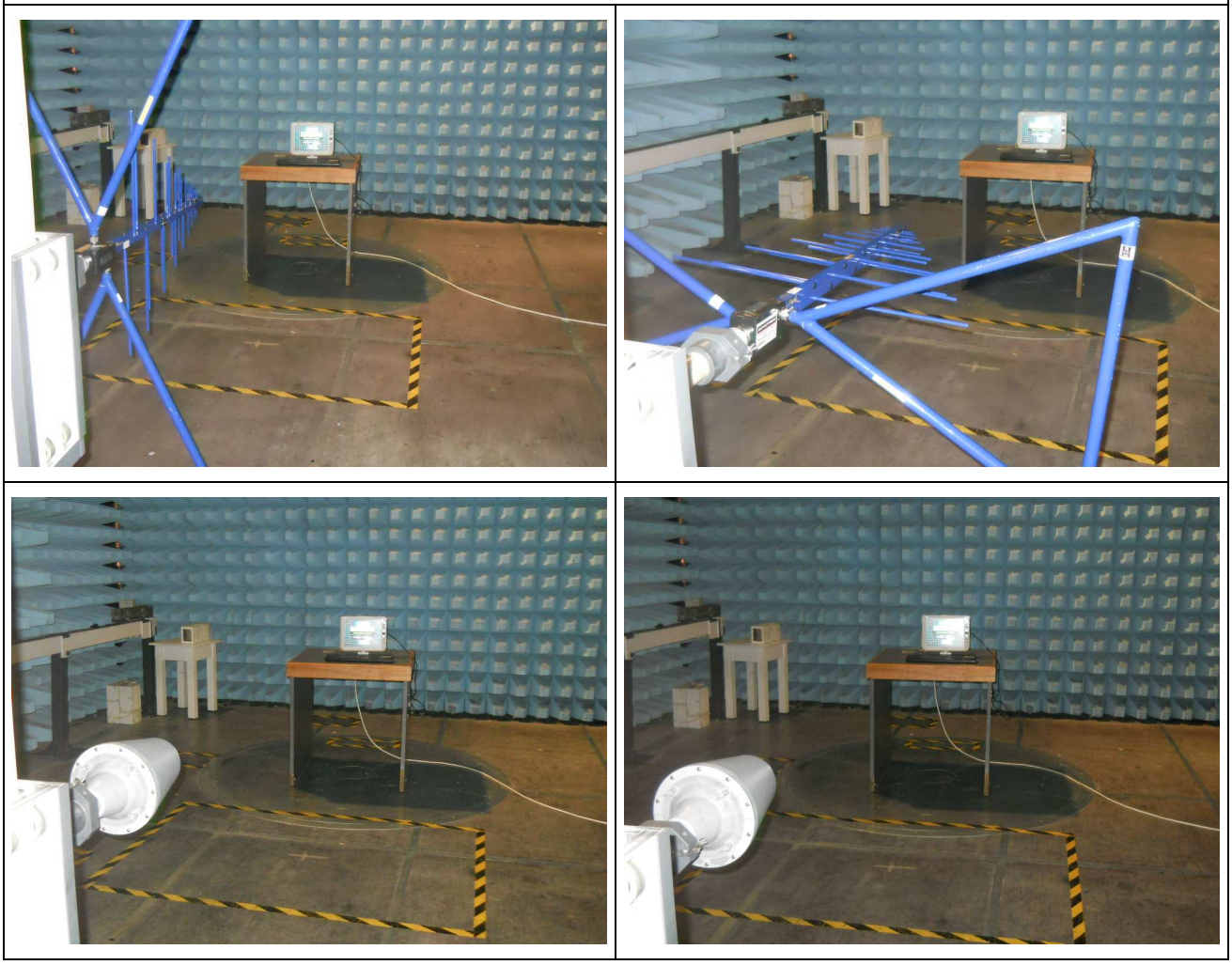
## PHOTO N°2–RADIATED EMISSION SET UP

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