



LCIE

WiFi 2,4GHz Template: Release August 31th, 2016

# TEST REPORT

N°: 144014-691281-C

Version : 02

## Subject

**Radio spectrum matters  
tests according to standards:  
47 CFR Part 15.247 & RSS-247 Issue 1 & RSS-Gen Issue 4**

## Issued to

**Technicolor**  
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## FCC/IC registered contact

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## Apparatus under test

↪ Product **OTT STB**  
↪ Trade mark **AirTV Player**  
↪ Manufacturer **Technicolor (project ECHOSTAR)**  
↪ Model under test **UIW4010ECH**  
↪ Serial number **N°002**

## Test date

: September 1, 2016 to October 4, 2016

## Test location

Fontenay Aux Roses & Ecuelles

## Composition of document

77 pages

## Document issued on

October 19, 2016

**Written by :**  
Mathieu CERISIER  
**Tests operator**



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## PUBLICATION HISTORY

| <b>Version</b> | <b>Date</b>      | <b>Author</b>    | <b>Modification</b>  |
|----------------|------------------|------------------|--|
| 01             | October 6, 2016  | Mathieu CERISIER | Creation of the document   |
| 02             | October 19, 2016 | Mathieu CERISIER | Modification of accumulated gain & equipment information. Correction maximum output power & Photo suppressions |



## SUMMARY

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## 1. TEST PROGRAM

### References

- 47 CFR Part 15.247
- RSS 247 Issue 1
- RSS Gen Issue 4
- KDB 558074 D01 DTS Meas Guidance v03r05
- KDB 662911 D01 Multiple Transmitter Output v02r01
- ANSI C63.10-2013

### Radio requirement:

| Clause (47CFR Part 15.407 & RSS-247 Issue 1 & RSS-Gen Issue 4)<br>Test Description | Test result - Comments                              |                                      |                                       |                                       |
|--|---|--------------------------------------|---------------------------------------|---------------------------------------|
| Occupied Bandwidth <a href="#">P</a>   | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA</b>    | <input type="checkbox"/> <b>NP(1)</b> |
| 6dB Bandwidth <a href="#">P</a>  | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA()</b>  | <input type="checkbox"/> <b>NP(1)</b> |
| Duty Cycle <a href="#">P</a>   | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA</b>    | <input type="checkbox"/> <b>NP(1)</b> |
| Maximum Conducted Output Power <a href="#">P</a>                                   | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA</b>    | <input type="checkbox"/> <b>NP(1)</b> |
| Power Spectral Density <a href="#">P</a>   | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA</b>    | <input type="checkbox"/> <b>NP(1)</b> |
| Conducted Spurious Emission at the Band Edge <a href="#">P</a>                     | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA()</b>  | <input type="checkbox"/> <b>NP(1)</b> |
| Unwanted Emissions into Non-Restricted Frequency Bands <a href="#">P</a>           | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA()</b>  | <input type="checkbox"/> <b>NP(1)</b> |
| AC Power Line Conducted Emission <a href="#">P</a>                                 | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA(2)</b> | <input type="checkbox"/> <b>NP(1)</b> |
| Unwanted Emissions into Restricted Frequency Bands <a href="#">P</a>               | <input checked="" type="checkbox"/> <b>PASS</b>     | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA</b>    | <input type="checkbox"/> <b>NP(1)</b> |
| Receiver Radiated emissions <a href="#">P</a>                                      | <input checked="" type="checkbox"/> <b>PASS (3)</b> | <input type="checkbox"/> <b>FAIL</b> | <input type="checkbox"/> <b>NA</b>    | <input type="checkbox"/> <b>NP(1)</b> |

This table is a summary of test report, see conclusion of each clause of this test report for detail.

- (1): Limited program  
 (2): EUT not directly or indirectly connected to the AC Power Public Network  
 (3): Include in unwanted emission into non restricted frequency band

PASS: EUT complies with standard's requirement  
 FAIL: EUT does not comply with standard's requirement  
 NA: Not Applicable  
 NP: Test Not Performed

## 2. EQUIPMENT UNDER TEST: CONFIGURATION (DECLARED BY PROVIDER)

### 2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

#### Equipment under test (EUT):

AirTV Player UIW4010ECH

Serial Number: N°002

#### Inputs/outputs - Cable:

| Access | Type         | Length used (m) | Declared <3m                        | Shielded                 | Under test                          | Comments |
|--------|--------------|-----------------|-------------------------------------|--------------------------|-------------------------------------|----------|
| 1      | Power Supply | -               | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -        |
| 2      | HDMI         | 1,8             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | -        |

#### Auxiliary equipment used during test:

| Type   | Reference | Sn | Comments           |
|--------|-----------|----|--------------------|
| Laptop | LCIE      | -  | Use to set the EUT |

#### Equipment information:

| Type:                        | WIFI  |   |  |  |
|------------------------------|---|---|--|--|
| Frequency band:              | 2400MHz-2483.5MHz                                   |   |  |  |
| Standard:                    | <input checked="" type="checkbox"/> 802.11b         | <input checked="" type="checkbox"/> 802.11g   | <input checked="" type="checkbox"/> 802.11n HT20 | <input type="checkbox"/> 802.11n HT40    |
| Spectrum Modulation:         | <input checked="" type="checkbox"/> DSSS            |   | <input checked="" type="checkbox"/> OFDM         |  |
| Number of Channel:           | 11  |   |  |  |
| Spacing channel:             | 5MHz  |   |  |  |
| Channel bandwidth:           | <input checked="" type="checkbox"/> 20MHz           |   | <input type="checkbox"/> 40MHz                   |  |
| Antenna Type:                | <input checked="" type="checkbox"/> Integral        | <input type="checkbox"/> External             | <input type="checkbox"/> Dedicated               |  |
| Antenna connector:           | <input checked="" type="checkbox"/> Yes             | <input type="checkbox"/> No                   | <input type="checkbox"/> Temporary for test      |  |
| Transmit chains:             | <input type="checkbox"/> 1                          | <input checked="" type="checkbox"/> 2         | <input type="checkbox"/> 3                       | <input type="checkbox"/> 4               |
| Beam forming gain:           | <input type="checkbox"/> Yes: XdB                   |   | <input checked="" type="checkbox"/> No           |  |
| Receiver chains              | <input type="checkbox"/> 1                          | <input checked="" type="checkbox"/> 2         | <input type="checkbox"/> 3                       | <input type="checkbox"/> 4               |
| Type of equipment:           | <input checked="" type="checkbox"/> Stand-alone     | <input type="checkbox"/> Plug-in              | <input type="checkbox"/> Combined                |  |
| Ad-Hoc mode:                 | <input type="checkbox"/> Yes                        |   | <input checked="" type="checkbox"/> No           |  |
| Duty cycle:                  | <input checked="" type="checkbox"/> Continuous duty | <input type="checkbox"/> Intermittent duty    | <input type="checkbox"/> 100% duty               |  |
| Operating temperature range: | Tmin:   | <input type="checkbox"/> -20°C                | <input checked="" type="checkbox"/> 0°C          | <input type="checkbox"/> X°C             |
|                              | Tnom:   | 20°C  |  |  |
|                              | Tmax:   | <input type="checkbox"/> 35°C                 | <input type="checkbox"/> 55°C                    | <input checked="" type="checkbox"/> 40°C |
| Type of power source:        | <input checked="" type="checkbox"/> AC power supply | <input type="checkbox"/> DC power supply      | <input type="checkbox"/> Battery                 |  |
| Operating voltage range:     | Vnom:   | <input checked="" type="checkbox"/> 120V/60Hz | <input type="checkbox"/> X Vdc                   |  |

#### Antenna Characteristic

| Antenna assembly   | Gain (dBi) | Frequency Band (MHz) | Impedance(Ω) |
|--------------------|------------|----------------------|--------------|
| 1                  | 3.3        | 2400MHz-2472MHz      | 50           |
| 2                  | 4.5        | 2400MHz-2472MHz      | 50           |
| Accumulated (Note) | 3.9        | 2400MHz-2472MHz      | 50           |

Note: Calculated according to KDB 662911 D01 Multiple Transmitter Output v02r01 F) 2) d) (ii). All antennas can transmit simultaneously.



L C I E

| CHANNEL PLAN                     |                 |
|----------------------------------|-----------------|
| 802.11b / 802.11g / 802.11n HT20 |                 |
| Channel                          | Frequency (MHz) |
| <b>Cmin: 1</b>                   | <b>2412</b>     |
| 2                                | 2417            |
| 3                                | 2422            |
| 4                                | 2427            |
| 5                                | 2432            |
| <b>Cmid: 6</b>                   | <b>2437</b>     |
| 7                                | 2442            |
| 8                                | 2447            |
| 9                                | 2452            |
| 10                               | 2457            |
| <b>Cmax: 11</b>                  | <b>2462</b>     |

| CHANNEL PLAN   |                 |
|----------------|-----------------|
| 802.11n HT40   |                 |
| Channel        | Frequency (MHz) |
| <b>Cmin: 3</b> | <b>2422</b>     |
| 4              | 2427            |
| 5              | 2432            |
| <b>Cmid: 6</b> | <b>2437</b>     |
| 7              | 2442            |
| 8              | 2447            |
| <b>Cmax: 9</b> | <b>2452</b>     |



L C I E

| DATA RATE        |                 |                                     |
|------------------|-----------------|-------------------------------------|
| 802.11b          |                 |                                     |
| Data Rate (Mbps) | Modulation Type | Modulation Worst Case               |
| 1                | DBPSK           | <input type="checkbox"/>            |
| 2                | DQPSK           | <input type="checkbox"/>            |
| 5.5              | DQPSK           | <input type="checkbox"/>            |
| 11               | CCK             | <input checked="" type="checkbox"/> |

| DATA RATE        |                 |                                     |
|------------------|-----------------|-------------------------------------|
| 802.11g          |                 |                                     |
| Data Rate (Mbps) | Modulation Type | Modulation Worst Case               |
| 6                | BPSK            | <input checked="" type="checkbox"/> |
| 9                | BPSK            | <input type="checkbox"/>            |
| 12               | QPSK            | <input type="checkbox"/>            |
| 18               | QPSK            | <input type="checkbox"/>            |
| 24               | 16-QAM          | <input type="checkbox"/>            |
| 36               | 16-QAM          | <input type="checkbox"/>            |
| 48               | 64-QAM          | <input type="checkbox"/>            |
| 54               | 64-QAM          | <input type="checkbox"/>            |



L C I E

| DATA RATE         |           |                 |            |        |        |        |                  |                          |                                     |
|-------------------|-----------|-----------------|------------|--------|--------|--------|------------------|--------------------------|-------------------------------------|
| 802.11n HT20      |           |                 |            |        |        |        |                  |                          |                                     |
| Available for EUT | MCS Index | Spatial streams | Modulation |        |        |        | Data Rate (Mbps) |                          | Worst Case Modulation               |
|                   |           |                 |            |        |        |        | (GI = 800ns)     | (GI = 400ns)             |                                     |
| ☑                 | 0         | 1               | BPSK       |        |        |        | 6.5              | 7.2                      | <input type="checkbox"/>            |
|                   | 1         | 1               | QPSK       |        |        |        | 13               | 14.4                     | <input type="checkbox"/>            |
|                   | 2         | 1               | QPSK       |        |        |        | 19.5             | 21.7                     | <input type="checkbox"/>            |
|                   | 3         | 1               | 16-QAM     |        |        |        | 26               | 28.9                     | <input type="checkbox"/>            |
|                   | 4         | 1               | 16-QAM     |        |        |        | 39               | 43.3                     | <input type="checkbox"/>            |
|                   | 5         | 1               | 64-QAM     |        |        |        | 52               | 57.8                     | <input type="checkbox"/>            |
|                   | 6         | 1               | 64-QAM     |        |        |        | 58.5             | 65                       | <input type="checkbox"/>            |
|                   | 7         | 1               | 64-QAM     |        |        |        | 65               | 72.2                     | <input type="checkbox"/>            |
| 32                | 1         | BPSK            | -          | -      | -      | -      | -                | <input type="checkbox"/> |                                     |
| ☑                 | 8         | 2               | BPSK       |        |        |        | 13               | 14.4                     | <input checked="" type="checkbox"/> |
|                   | 9         | 2               | QPSK       |        |        |        | 26               | 28.9                     | <input type="checkbox"/>            |
|                   | 10        | 2               | QPSK       |        |        |        | 39               | 43.3                     | <input type="checkbox"/>            |
|                   | 11        | 2               | 16-QAM     |        |        |        | 52               | 57.8                     | <input type="checkbox"/>            |
|                   | 12        | 2               | 16-QAM     |        |        |        | 78               | 86.7                     | <input type="checkbox"/>            |
|                   | 13        | 2               | 64-QAM     |        |        |        | 104              | 115.6                    | <input type="checkbox"/>            |
|                   | 14        | 2               | 64-QAM     |        |        |        | 117              | 130.3                    | <input type="checkbox"/>            |
|                   | 15        | 2               | 64-QAM     |        |        |        | 130              | 144.4                    | <input type="checkbox"/>            |
|                   | 33        | 2               | 16-QAM     | QPSK   | -      | -      | 39               | 43.3                     | <input type="checkbox"/>            |
|                   | 34        | 2               | 64-QAM     | QPSK   | -      | -      | 52               | 57.8                     | <input type="checkbox"/>            |
|                   | 35        | 2               | 64-QAM     | 16-QAM | -      | -      | 65               | 72.2                     | <input type="checkbox"/>            |
|                   | 36        | 2               | 16-QAM     | QPSK   | -      | -      | 58.5             | 65                       | <input type="checkbox"/>            |
|                   | 37        | 2               | 64-QAM     | QPSK   | -      | -      | 78               | 86.7                     | <input type="checkbox"/>            |
|                   | 38        | 2               | 64-QAM     | 16-QAM | -      | -      | 97.5             | 108.3                    | <input type="checkbox"/>            |
| ☐                 | 16        | 3               | BPSK       |        |        |        | 19.5             | 21.7                     | <input type="checkbox"/>            |
|                   | 17        | 3               | QPSK       |        |        |        | 39               | 43.3                     | <input type="checkbox"/>            |
|                   | 18        | 3               | QPSK       |        |        |        | 58.5             | 65                       | <input type="checkbox"/>            |
|                   | 19        | 3               | 16-QAM     |        |        |        | 78               | 86.7                     | <input type="checkbox"/>            |
|                   | 20        | 3               | 16-QAM     |        |        |        | 117              | 130                      | <input type="checkbox"/>            |
|                   | 21        | 3               | 64-QAM     |        |        |        | 156              | 173.3                    | <input type="checkbox"/>            |
|                   | 22        | 3               | 64-QAM     |        |        |        | 175.5            | 195                      | <input type="checkbox"/>            |
|                   | 23        | 3               | 64-QAM     |        |        |        | 195              | 216.7                    | <input type="checkbox"/>            |
|                   | 39        | 3               | 16-QAM     | QPSK   | QPSK   | -      | 52               | 57.8                     | <input type="checkbox"/>            |
|                   | 40        | 3               | 16-QAM     | 16-QAM | QPSK   | -      | 65               | 72.2                     | <input type="checkbox"/>            |
|                   | 41        | 3               | 64-QAM     | QPSK   | QPSK   | -      | 65               | 72.2                     | <input type="checkbox"/>            |
|                   | 42        | 3               | 64-QAM     | 16-QAM | QPSK   | -      | 78               | 86.7                     | <input type="checkbox"/>            |
|                   | 43        | 3               | 64-QAM     | 16-QAM | 16-QAM | -      | 91               | 101.1                    | <input type="checkbox"/>            |
|                   | 44        | 3               | 64-QAM     | 64-QAM | QPSK   | -      | 91               | 101.1                    | <input type="checkbox"/>            |
|                   | 45        | 3               | 64-QAM     | 64-QAM | 16-QAM | -      | 104              | 115.6                    | <input type="checkbox"/>            |
|                   | 46        | 3               | 16-QAM     | QPSK   | QPSK   | -      | 78               | 86.7                     | <input type="checkbox"/>            |
|                   | 47        | 3               | 16-QAM     | 16-QAM | QPSK   | -      | 97.5             | 108.3                    | <input type="checkbox"/>            |
|                   | 48        | 3               | 64-QAM     | QPSK   | QPSK   | -      | 97.5             | 108.3                    | <input type="checkbox"/>            |
|                   | 49        | 3               | 64-QAM     | 16-QAM | QPSK   | -      | 117              | 130                      | <input type="checkbox"/>            |
|                   | 50        | 3               | 64-QAM     | 16-QAM | 16-QAM | -      | 136.5            | 151.7                    | <input type="checkbox"/>            |
| 51                | 3         | 64-QAM          | 64-QAM     | QPSK   | -      | 136.5  | 151.7            | <input type="checkbox"/> |                                     |
| 52                | 3         | 64-QAM          | 64-QAM     | 16-QAM | -      | 156    | 173.3            | <input type="checkbox"/> |                                     |
| ☐                 | 24        | 4               | BPSK       |        |        |        | 26               | 28.9                     | <input type="checkbox"/>            |
|                   | 25        | 4               | QPSK       |        |        |        | 52               | 57.8                     | <input type="checkbox"/>            |
|                   | 26        | 4               | QPSK       |        |        |        | 78               | 86.7                     | <input type="checkbox"/>            |
|                   | 27        | 4               | 16-QAM     |        |        |        | 104              | 115.6                    | <input type="checkbox"/>            |
|                   | 28        | 4               | 16-QAM     |        |        |        | 156              | 173.3                    | <input type="checkbox"/>            |
|                   | 29        | 4               | 64-QAM     |        |        |        | 208              | 231.1                    | <input type="checkbox"/>            |
|                   | 30        | 4               | 64-QAM     |        |        |        | 234              | 260                      | <input type="checkbox"/>            |
|                   | 31        | 4               | 64-QAM     |        |        |        | 260              | 288.9                    | <input type="checkbox"/>            |
|                   | 53        | 4               | 16-QAM     | QPSK   | QPSK   | QPSK   | 65               | 72.2                     | <input type="checkbox"/>            |
|                   | 54        | 4               | 16-QAM     | 16-QAM | QPSK   | QPSK   | 78               | 86.7                     | <input type="checkbox"/>            |
|                   | 55        | 4               | 16-QAM     | 16-QAM | 16-QAM | QPSK   | 91               | 101.1                    | <input type="checkbox"/>            |
|                   | 56        | 4               | 64-QAM     | QPSK   | QPSK   | QPSK   | 78               | 86.7                     | <input type="checkbox"/>            |
|                   | 57        | 4               | 64-QAM     | 16-QAM | QPSK   | QPSK   | 91               | 101.1                    | <input type="checkbox"/>            |
|                   | 58        | 4               | 64-QAM     | 16-QAM | 16-QAM | QPSK   | 104              | 115.6                    | <input type="checkbox"/>            |
|                   | 59        | 4               | 64-QAM     | 16-QAM | 16-QAM | 16-QAM | 117              | 130                      | <input type="checkbox"/>            |
|                   | 60        | 4               | 64-QAM     | QPSK   | QPSK   | QPSK   | 104              | 115.6                    | <input type="checkbox"/>            |
|                   | 61        | 4               | 64-QAM     | 16-QAM | 16-QAM | QPSK   | 117              | 130                      | <input type="checkbox"/>            |
|                   | 62        | 4               | 64-QAM     | 16-QAM | 16-QAM | 16-QAM | 130              | 144.4                    | <input type="checkbox"/>            |
|                   | 63        | 4               | 64-QAM     | 64-QAM | 64-QAM | QPSK   | 130              | 144.4                    | <input type="checkbox"/>            |
|                   | 64        | 4               | 64-QAM     | 64-QAM | 64-QAM | 16-QAM | 143              | 158.9                    | <input type="checkbox"/>            |
|                   | 65        | 4               | 16-QAM     | QPSK   | QPSK   | QPSK   | 97.5             | 108.3                    | <input type="checkbox"/>            |
|                   | 66        | 4               | 16-QAM     | 16-QAM | QPSK   | QPSK   | 117              | 130                      | <input type="checkbox"/>            |
|                   | 67        | 4               | 16-QAM     | 16-QAM | 16-QAM | QPSK   | 136.5            | 151.7                    | <input type="checkbox"/>            |
|                   | 68        | 4               | 64-QAM     | QPSK   | QPSK   | QPSK   | 117              | 130                      | <input type="checkbox"/>            |
|                   | 69        | 4               | 64-QAM     | 16-QAM | QPSK   | QPSK   | 136.5            | 151.7                    | <input type="checkbox"/>            |
|                   | 70        | 4               | 64-QAM     | 16-QAM | 16-QAM | QPSK   | 156              | 173.3                    | <input type="checkbox"/>            |
|                   | 71        | 4               | 64-QAM     | 16-QAM | 16-QAM | 16-QAM | 175.5            | 195                      | <input type="checkbox"/>            |
|                   | 72        | 4               | 64-QAM     | 64-QAM | QPSK   | QPSK   | 156              | 173.3                    | <input type="checkbox"/>            |
|                   | 73        | 4               | 64-QAM     | 64-QAM | 16-QAM | QPSK   | 175.5            | 195                      | <input type="checkbox"/>            |
|                   | 74        | 4               | 64-QAM     | 64-QAM | 16-QAM | 16-QAM | 195              | 216.7                    | <input type="checkbox"/>            |
|                   | 75        | 4               | 64-QAM     | 64-QAM | 64-QAM | QPSK   | 195              | 216.7                    | <input type="checkbox"/>            |
| 76                | 4         | 64-QAM          | 64-QAM     | 64-QAM | 16-QAM | 214.5  | 238.3            | <input type="checkbox"/> |                                     |





## 2.2. RUNNING MODE

The EUT is set in the following modes during tests:

- Permanent emission with modulation on a fixed channel in the data rate that produced the highest power
- Permanent reception

The product is capable of simultaneous emission in WIFI (2.4GHz or 5GHz) and Bluetooth (EDR or LE).

Following commands with the specific test software "DutApiMimoBtFmBridgeEth" are used to set the product:

- See document "LCIE\_Radio tests\_UIW4010ECH\_v4.docx" for the command used during test

## 2.3. EQUIPMENT MODIFICATION

- None       Modification:



### 3. OCCUPIED BANDWIDTH

#### 3.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : September 7, 2016  
Ambient temperature : 22 °C  
Relative humidity : 41 %

#### 3.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table  
 In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method  
 Radiated Method

- Test Procedure:

- RSS-Gen Issue 4 § 6.6  
 ANSI C63.10 § 6.9.2

#### 3.1. LIMIT

None

#### 3.2. TEST EQUIPMENT LIST

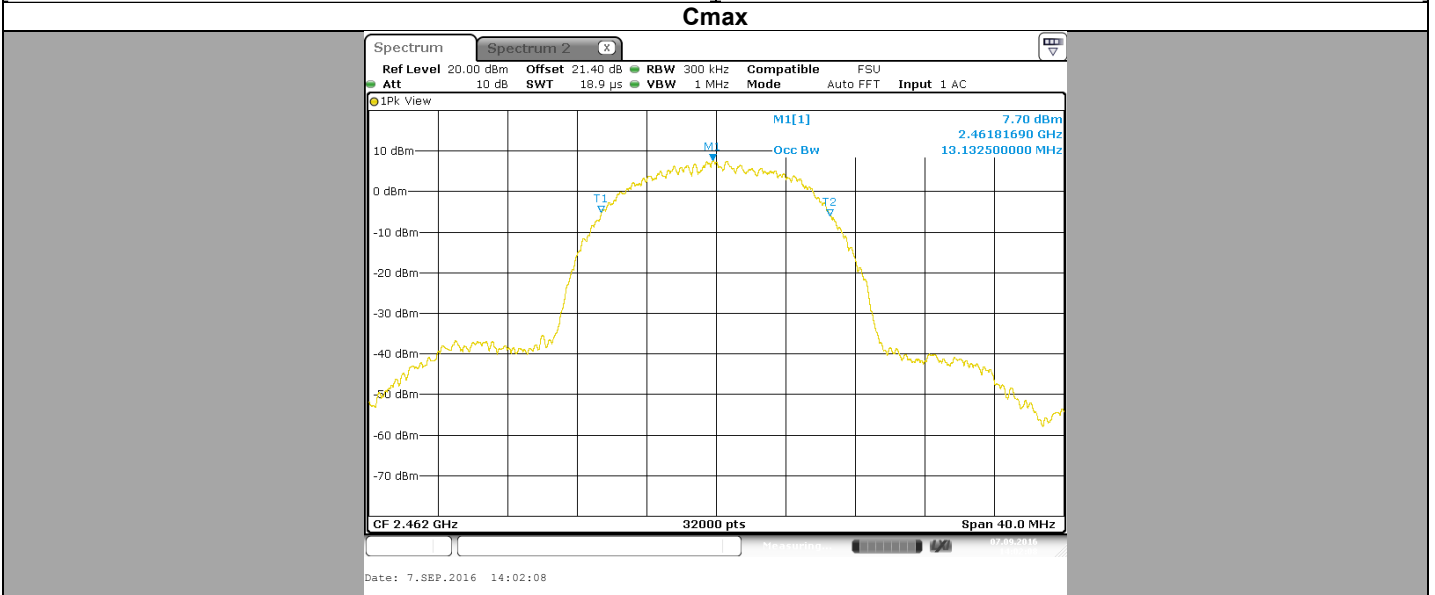
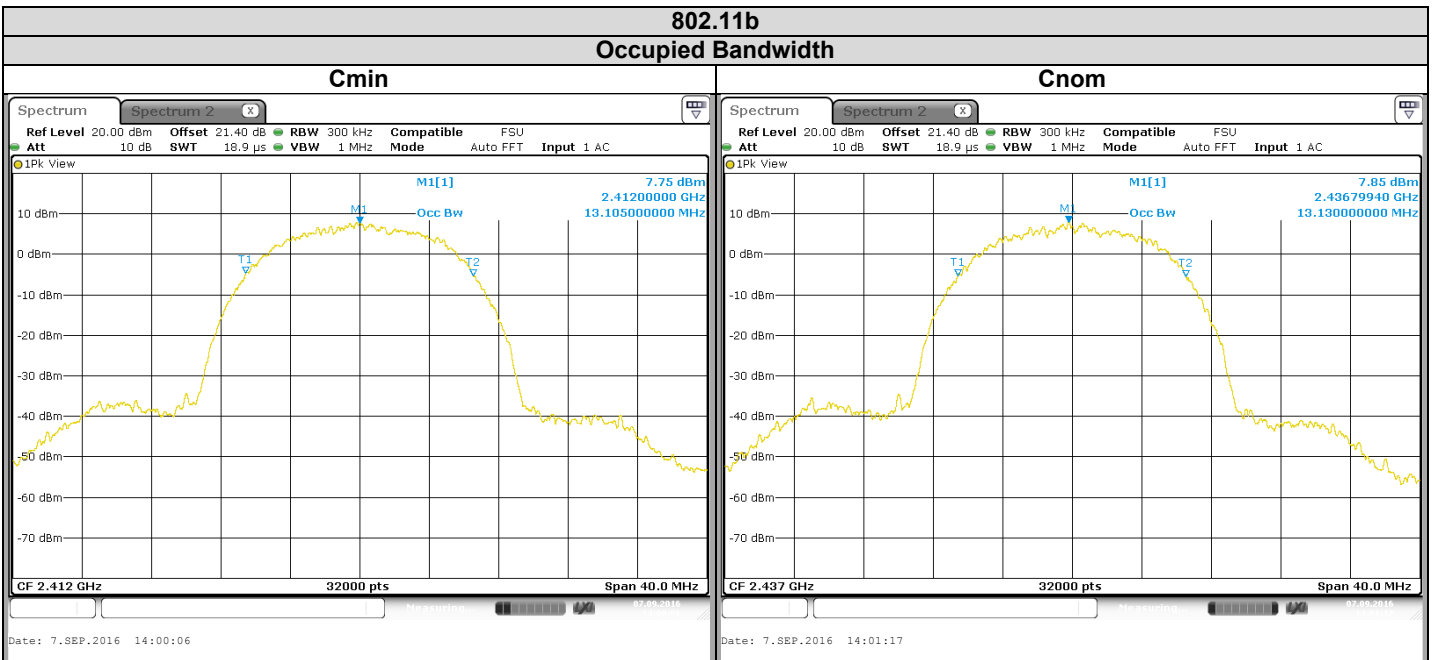
| DESCRIPTION                     | MANUFACTURER    | MODEL        | N° LCIE  | Calibration date                    | Calibration due                     |
|---------------------------------|-----------------|--------------|----------|-------------------------------------|-------------------------------------|
| Multi-meter                     | KEITHLEY        | 2000         | A1242090 | 2016/05                             | 2018/05                             |
| Programmable AC/DC power supply | -; KIKUSUI      | PCR500M      | A7049006 | Verified with calibrated multimeter | Verified with calibrated multimeter |
| EMI receiver                    | ROHDE & SCHWARZ | ESR 7        | A2642023 | 2015/03                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329661 | 2015/10                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329676 | 2015/10                             | 2016/10                             |

Note: In our quality system, the test equipment calibration due is more & less 2 months



L C I E

### 3.3. RESULTS

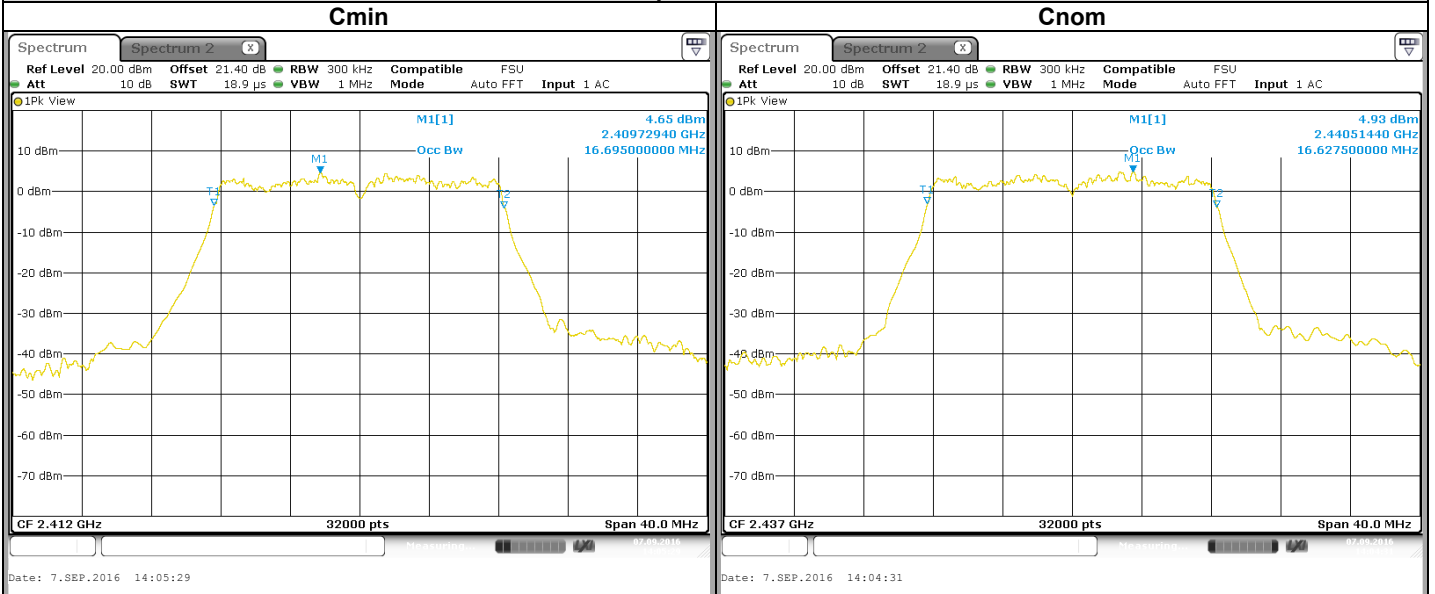


| Channel     | Occupied Bandwidth (MHz) |
|-------------|--------------------------|
| <b>Cmin</b> | 13,105                   |
| <b>Cnom</b> | 13,13                    |
| <b>Cmax</b> | 13,1325                  |

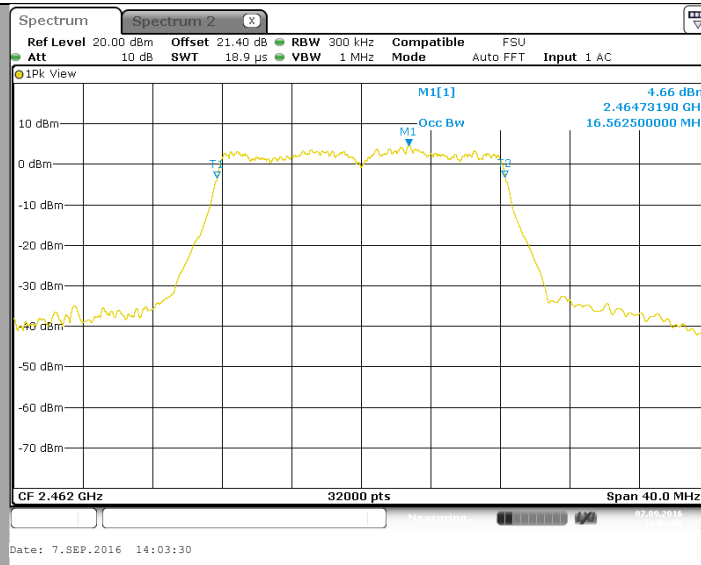


L C I E

**802.11g**  
**Occupied Bandwidth**



**Cmax**



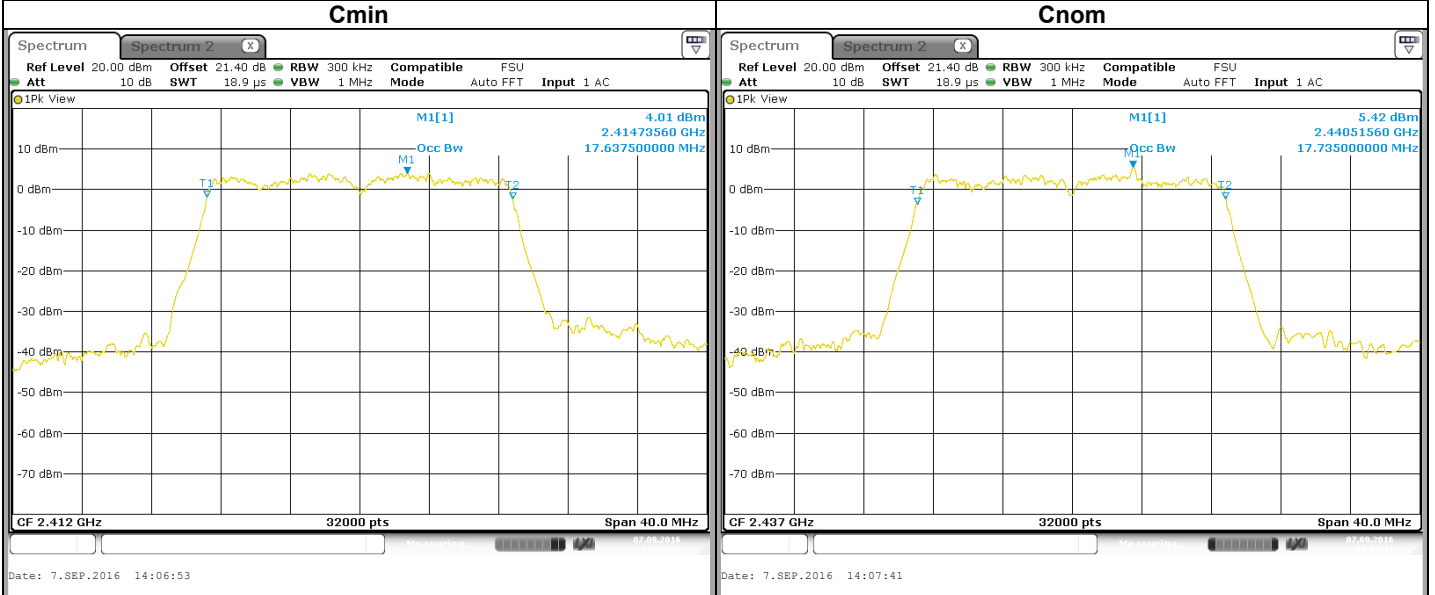
| Channel     | Occupied Bandwidth (MHz) |
|-------------|--------------------------|
| <b>Cmin</b> | 16,695                   |
| <b>Cnom</b> | 16,6275                  |
| <b>Cmax</b> | 16,5625                  |



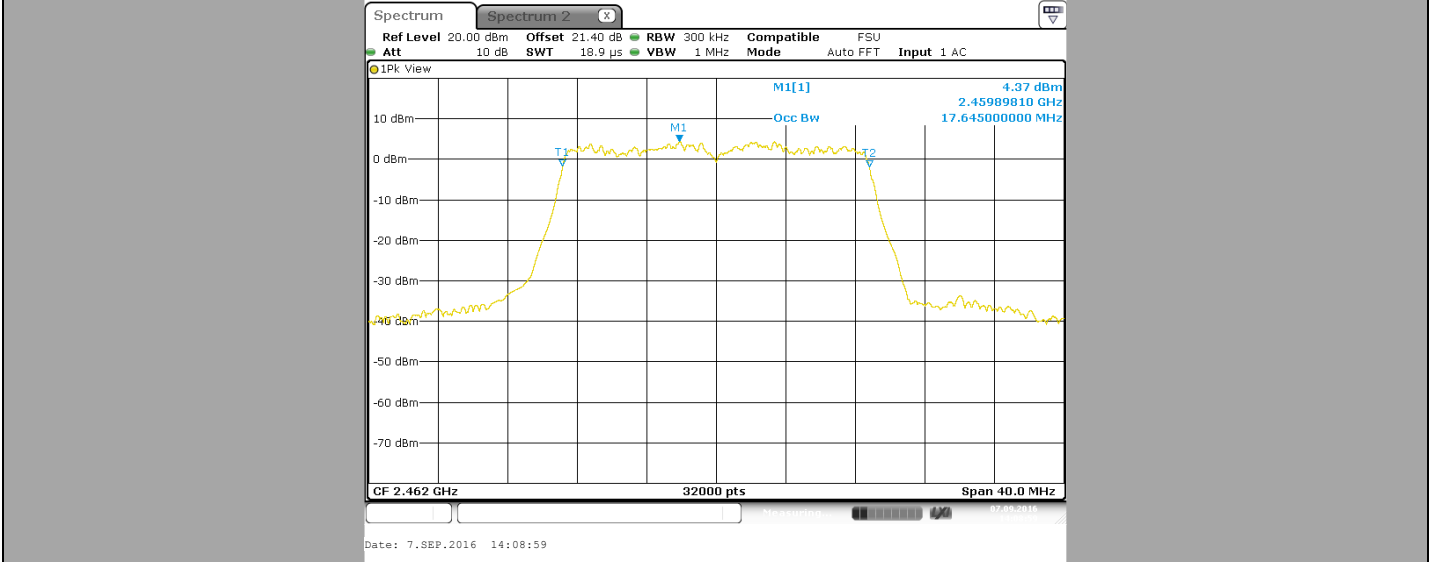
L C I E

802.11n HT20

Occupied Bandwidth



Cmax



| Channel | Occupied Bandwidth (MHz) |
|---------|--------------------------|
| Cmin    | 17,6375                  |
| Cnom    | 17,735                   |
| Cmax    | 17,645                   |



### 3.1. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS-GEN ISSUE 4** limits.



#### 4. 6dB EMISSION BANDWIDTH

##### 4.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : September 7, 2016  
Ambient temperature : 22 °C  
Relative humidity : 41 %

##### 4.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v03r05 § 8.1
- KDB 558074 D01 DTS Meas Guidance v03r05 § 8.2

##### 4.3. LIMIT

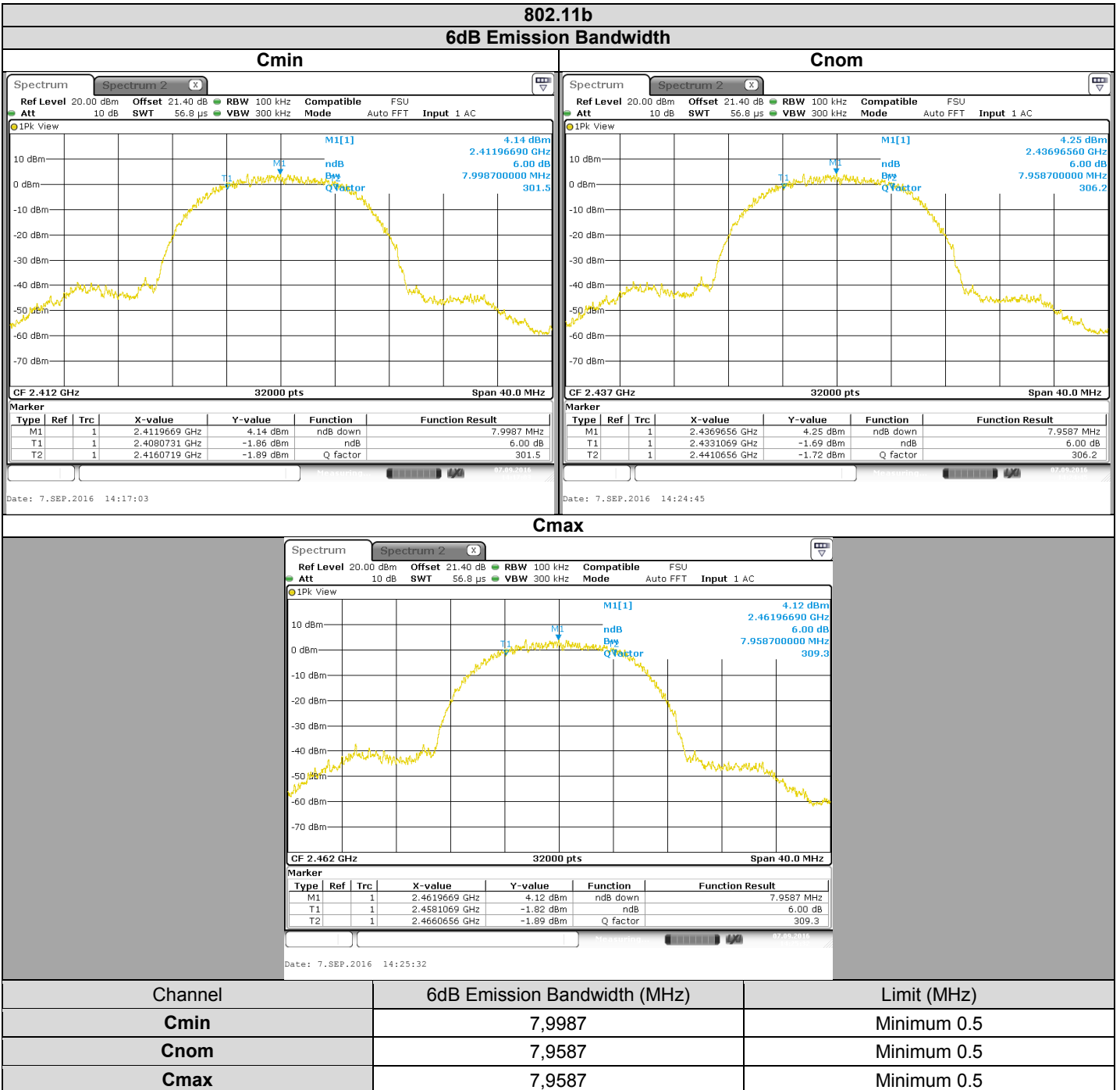
The 6dB bandwidth shall be at least 500kHz

##### 4.4. TEST EQUIPMENT LIST

| DESCRIPTION                     | MANUFACTURER    | MODEL        | N° LCIE  | Calibration date                    | Calibration due                     |
|---------------------------------|-----------------|--------------|----------|-------------------------------------|-------------------------------------|
| Multi-meter                     | KEITHLEY        | 2000         | A1242090 | 2016/05                             | 2018/05                             |
| Programmable AC/DC power supply | -; KIKUSUI      | PCR500M      | A7049006 | Verified with calibrated multimeter | Verified with calibrated multimeter |
| EMI receiver                    | ROHDE & SCHWARZ | ESR 7        | A2642023 | 2015/03                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329661 | 2015/10                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329676 | 2015/10                             | 2016/10                             |

Note: In our quality system, the test equipment calibration due is more & less 2 months

## 4.5. RESULTS



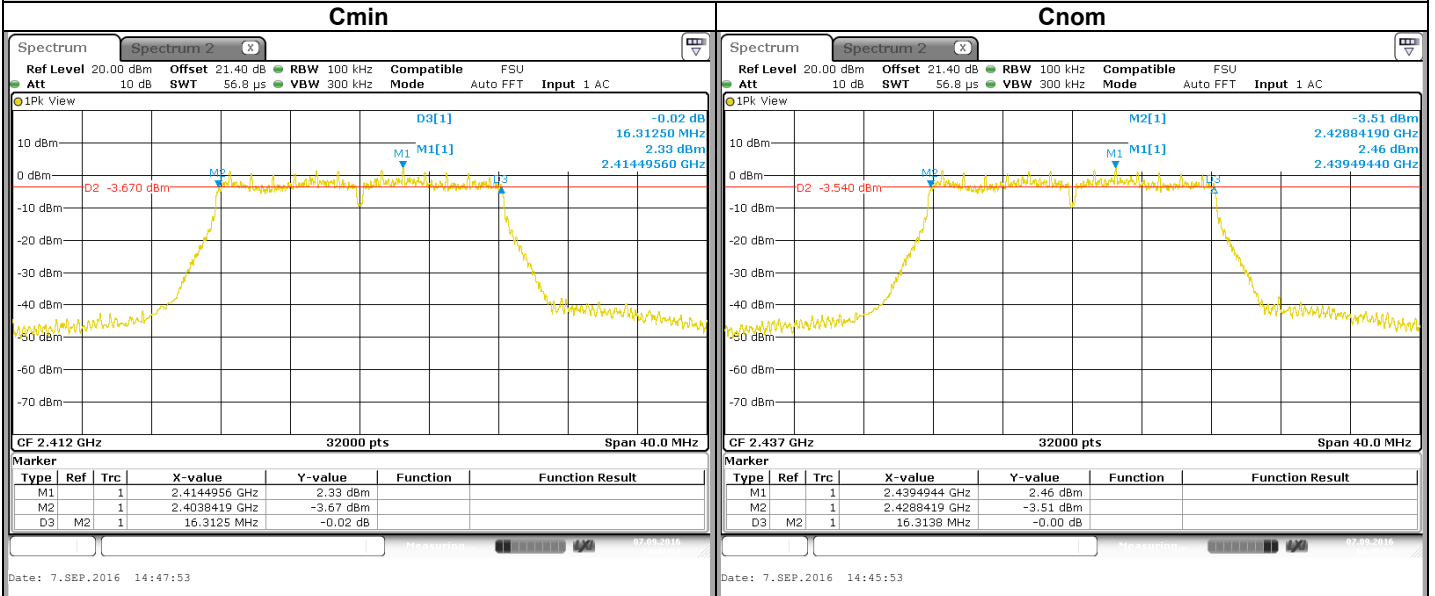




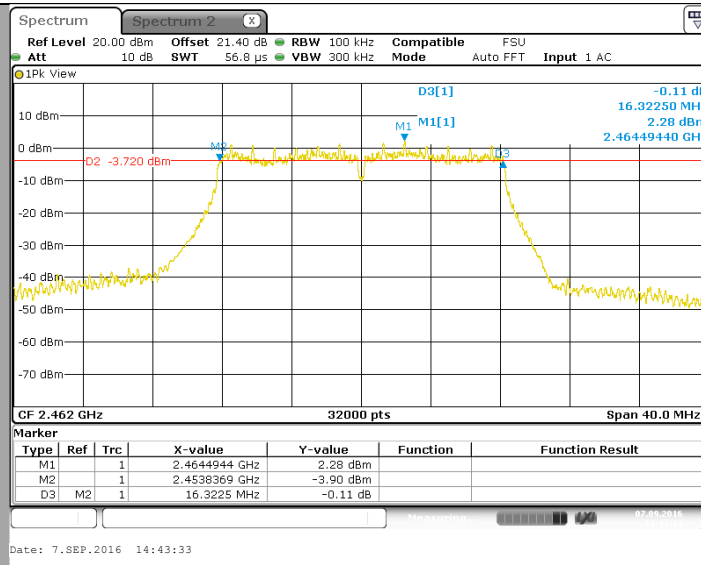
L C I E

802.11g

6dB Emission Bandwidth



Cmax



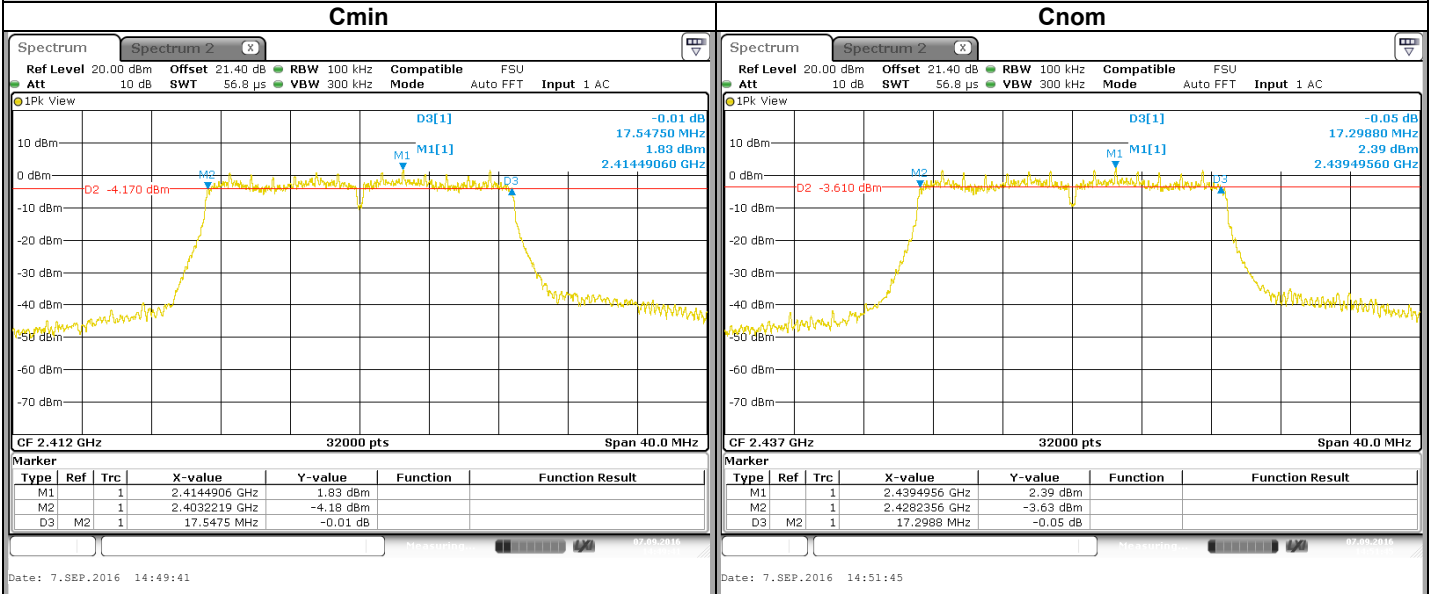
| Channel | 6dB Emission Bandwidth (MHz) | Limit (MHz) |
|---------|------------------------------|-------------|
| Cmin    | 16,3125                      | Minimum 0.5 |
| Cnom    | 16,3138                      | Minimum 0.5 |
| Cmax    | 16,3225                      | Minimum 0.5 |



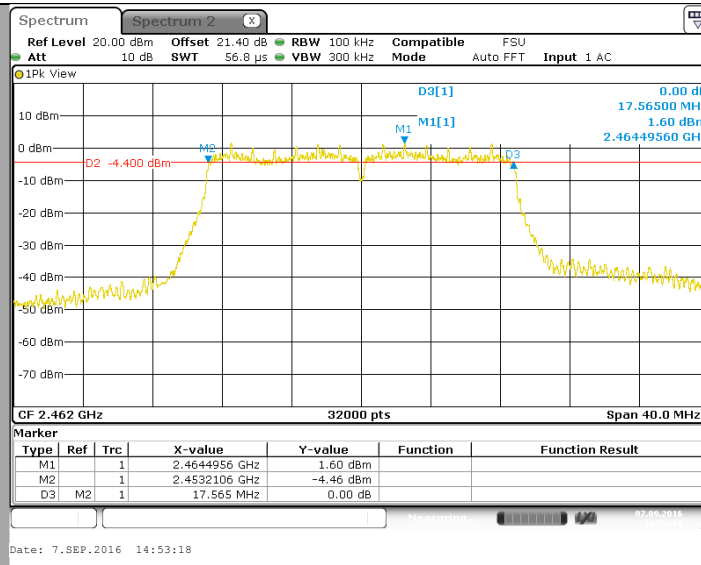
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802.11n HT20

6dB Emission Bandwidth



Cmax



| Channel | 6dB Emission Bandwidth (MHz) | Limit (MHz) |
|---------|------------------------------|-------------|
| Cmin    | 17,5475                      | Minimum 0.5 |
| Cnom    | 17,2988                      | Minimum 0.5 |
| Cmax    | 17,565                       | Minimum 0.5 |



#### 4.6. CONCLUSION

6dB Emission Bandwidth measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.



## 5. DUTY CYCLE

### 5.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : September 8, 2016  
Ambient temperature : 24 °C  
Relative humidity : 47 %

### 5.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table  
 In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method  
 Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v03r05 § 6.0 b)

### 5.3. LIMIT

None

### 5.4. TEST EQUIPMENT LIST

| DESCRIPTION                     | MANUFACTURER    | MODEL        | N° LCIE  | Calibration date                    | Calibration due                     |
|---------------------------------|-----------------|--------------|----------|-------------------------------------|-------------------------------------|
| Multi-meter                     | KEITHLEY        | 2000         | A1242090 | 2016/05                             | 2018/05                             |
| Programmable AC/DC power supply | -; KIKUSUI      | PCR500M      | A7049006 | Verified with calibrated multimeter | Verified with calibrated multimeter |
| EMI receiver                    | ROHDE & SCHWARZ | ESR 7        | A2642023 | 2015/03                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329661 | 2015/10                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329676 | 2015/10                             | 2016/10                             |

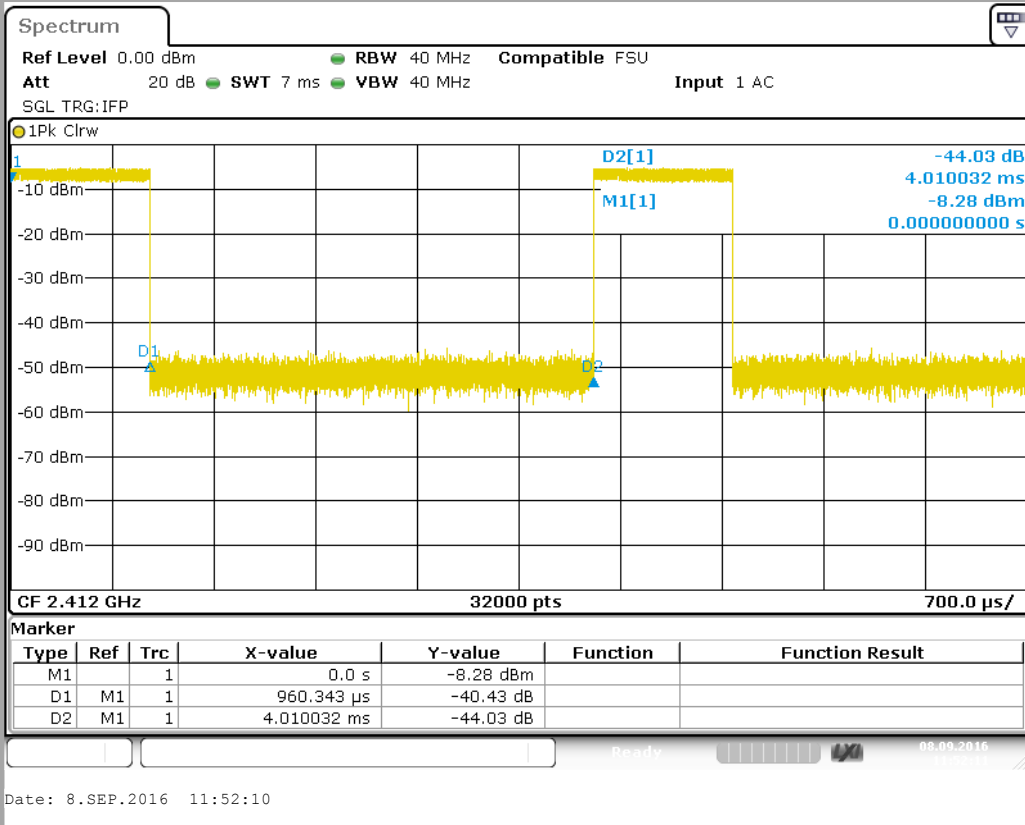
Note: In our quality system, the test equipment calibration due is more & less 2 months



L C I E

5.5. RESULTS

802.11b  
Duty Cycle  
Channel

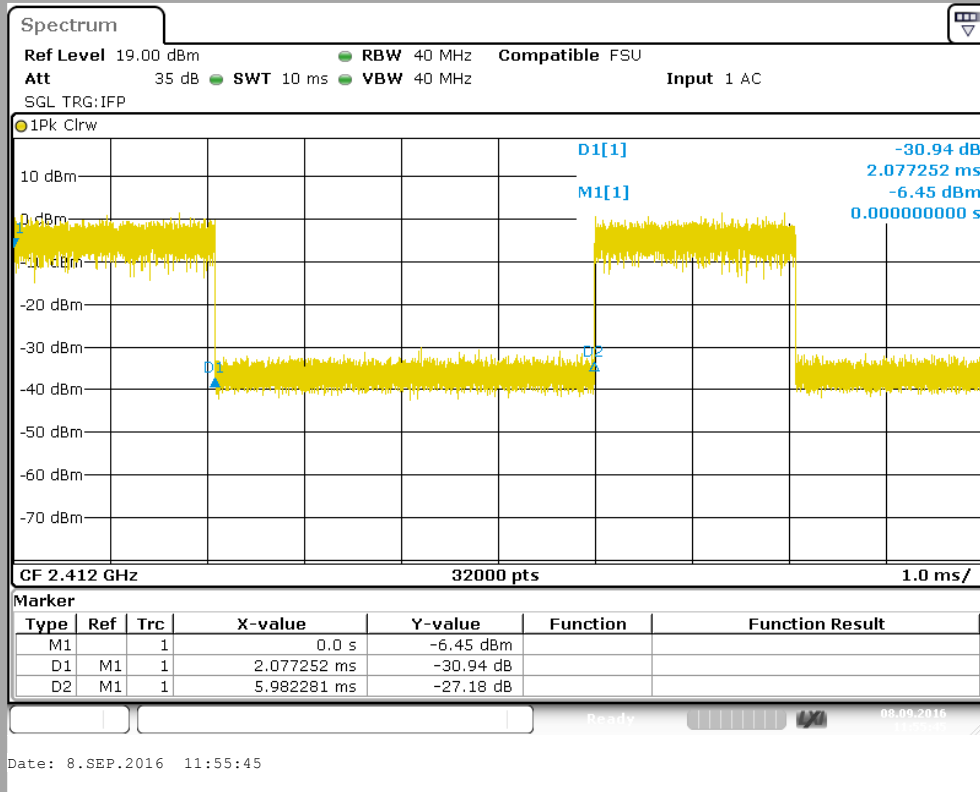


| Channel | Duty Cycle (%) | Duty Cycle Correction (dB) |
|---------|----------------|----------------------------|
| Channel | 23,95          | 6,21                       |

802.11g  
Duty Cycle  
Channel



L C I E

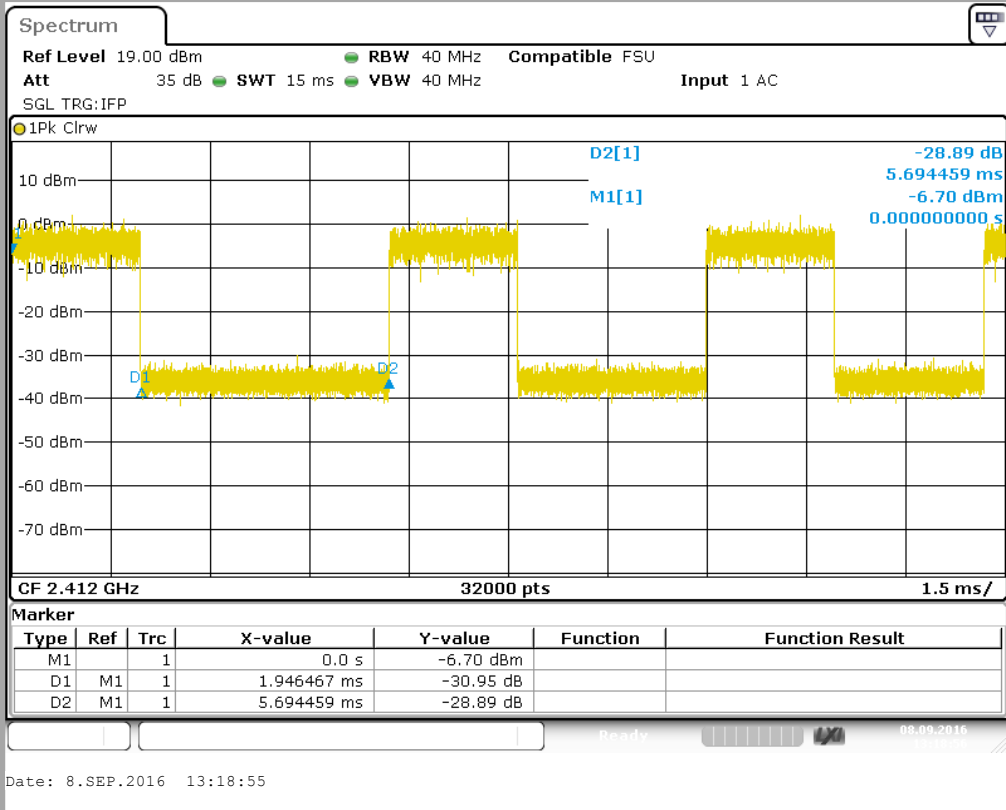


| Channel        | Duty Cycle (%) | Duty Cycle Correction (dB) |
|----------------|----------------|----------------------------|
| <b>Channel</b> | 34,72          | 4,59                       |



L C I E

**802.11n HT20  
Duty Cycle  
Channel**



| Channel        | Duty Cycle (%) | Duty Cycle Correction (dB) |
|----------------|----------------|----------------------------|
| <b>Channel</b> | 34,18          | 4,66                       |

**5.6. CONCLUSION**

Duty Cycle measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.



## 6. MAXIMUM CONDUCTED OUTPUT POWER

### 6.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : September 8, 2016 to October 4, 2016  
Ambient temperature : 24 °C  
Relative humidity : 47 %

### 6.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table  
 In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method  
 Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v03r05 § 9.2.2.2 (Method AVGSA-1)  
 KDB 558074 D01 DTS Meas Guidance v03r05 § 9.2.2.4 (Method AVGSA-2)  
 KDB 662911 D01 Multiple Transmitter Output v02r01

### 6.3. LIMIT

Maximum Conducted Output power:

2400MHz-2483.5MHz: Shall not exceed 30dBm

Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

### 6.4. TEST EQUIPMENT LIST

| DESCRIPTION                     | MANUFACTURER    | MODEL        | N° LCIE  | Calibration date                    | Calibration due                     |
|---------------------------------|-----------------|--------------|----------|-------------------------------------|-------------------------------------|
| Multi-meter                     | KEITHLEY        | 2000         | A1242090 | 2016/05                             | 2018/05                             |
| Programmable AC/DC power supply | -; KIKUSUI      | PCR500M      | A7049006 | Verified with calibrated multimeter | Verified with calibrated multimeter |
| EMI receiver                    | ROHDE & SCHWARZ | ESR 7        | A2642023 | 2015/03                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédynne       | 920-0202-048 | A5329661 | 2015/10                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédynne       | 920-0202-048 | A5329676 | 2015/10                             | 2016/10                             |

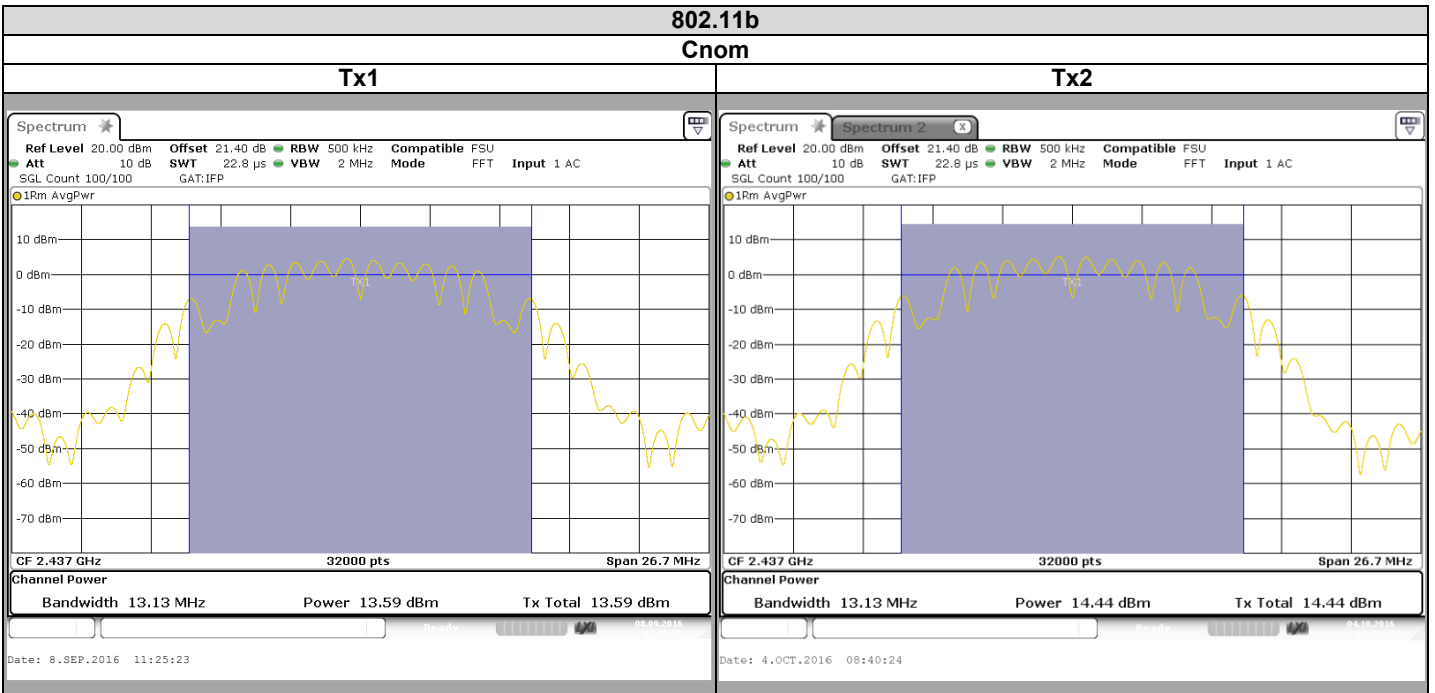
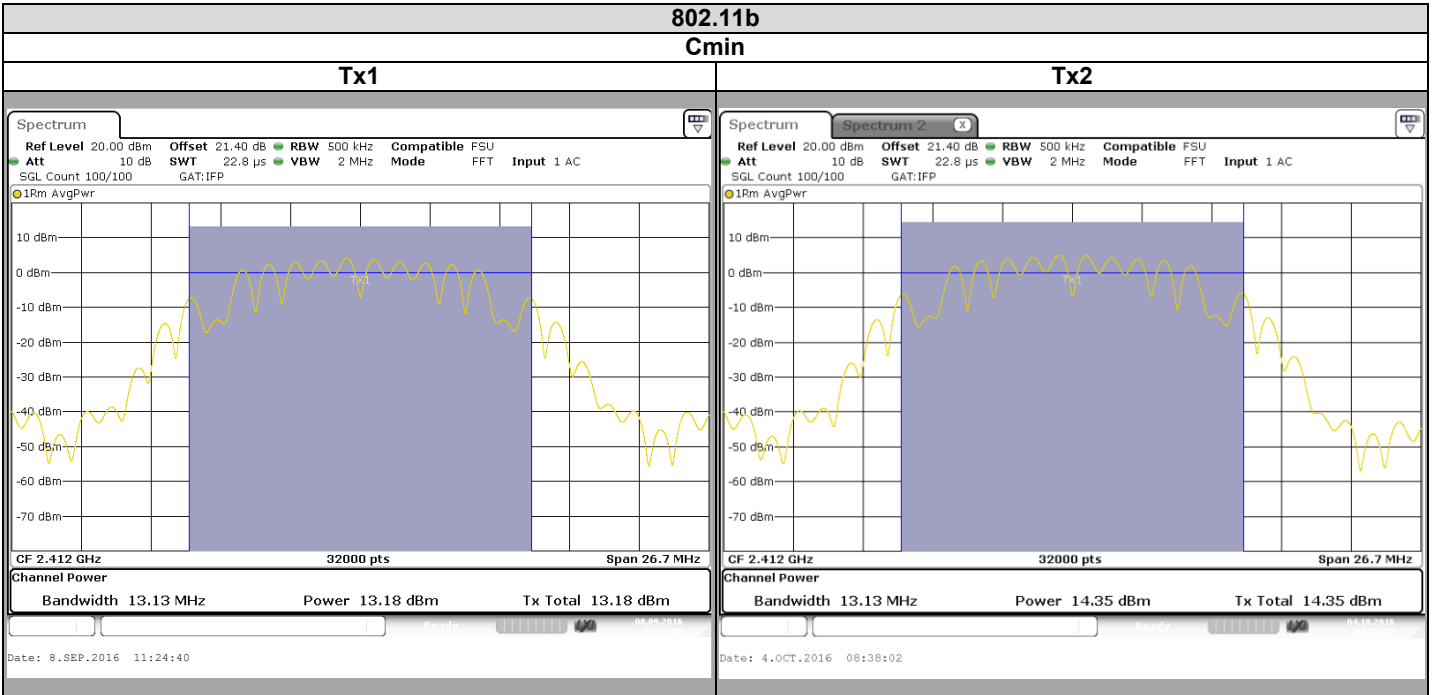
Note: In our quality system, the test equipment calibration due is more & less 2 months





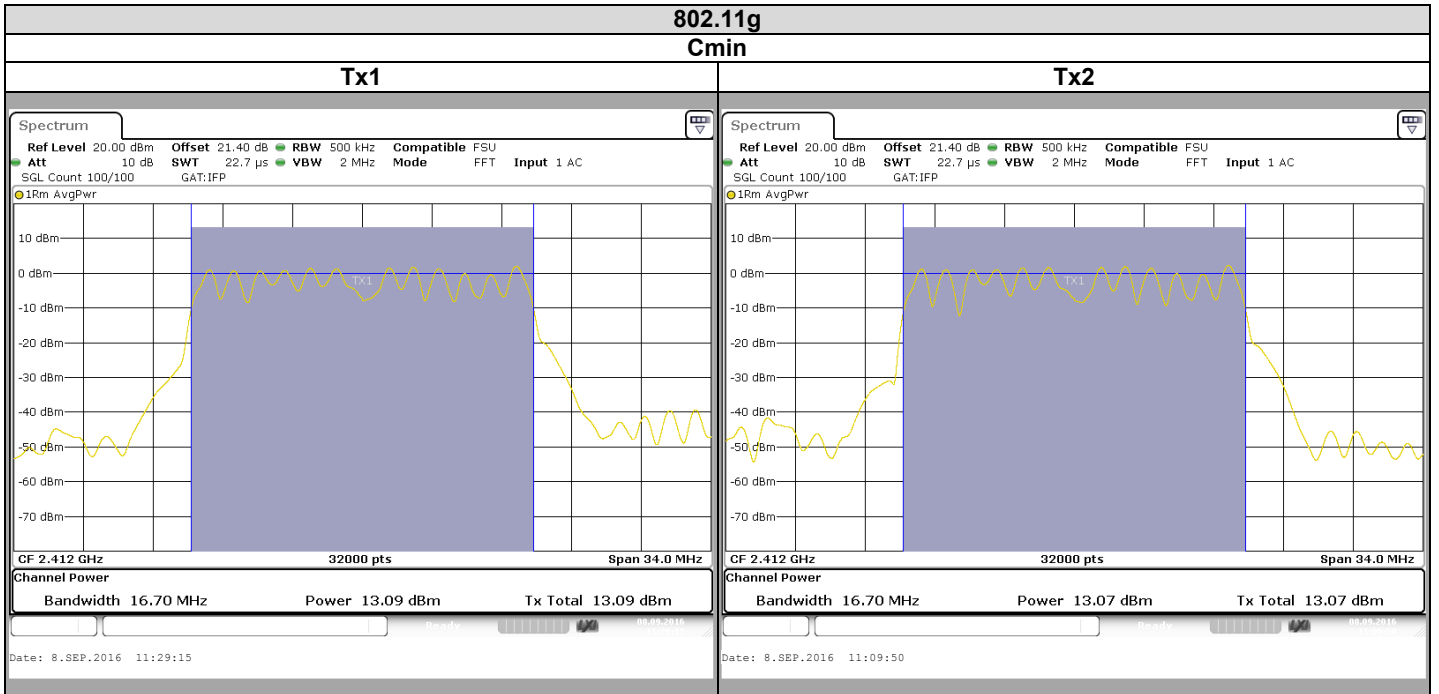
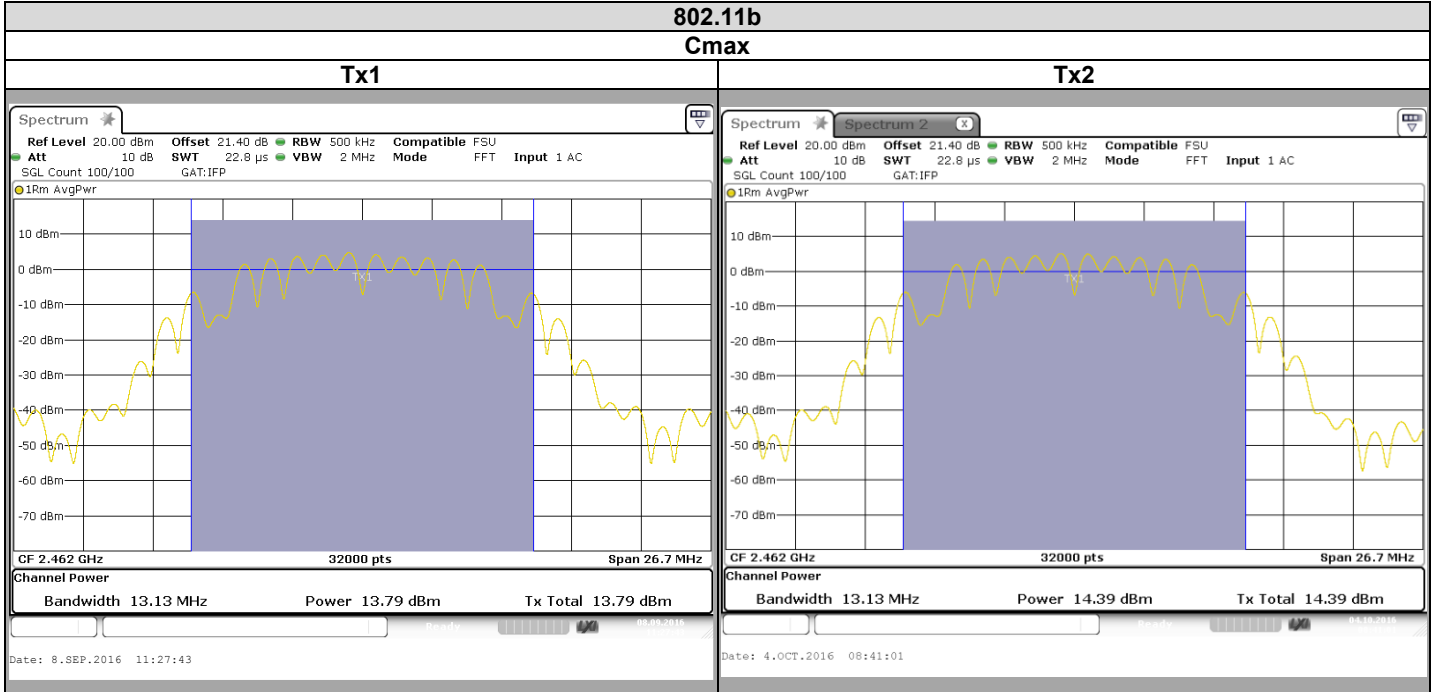
L C I E

## 6.5. RESULTS



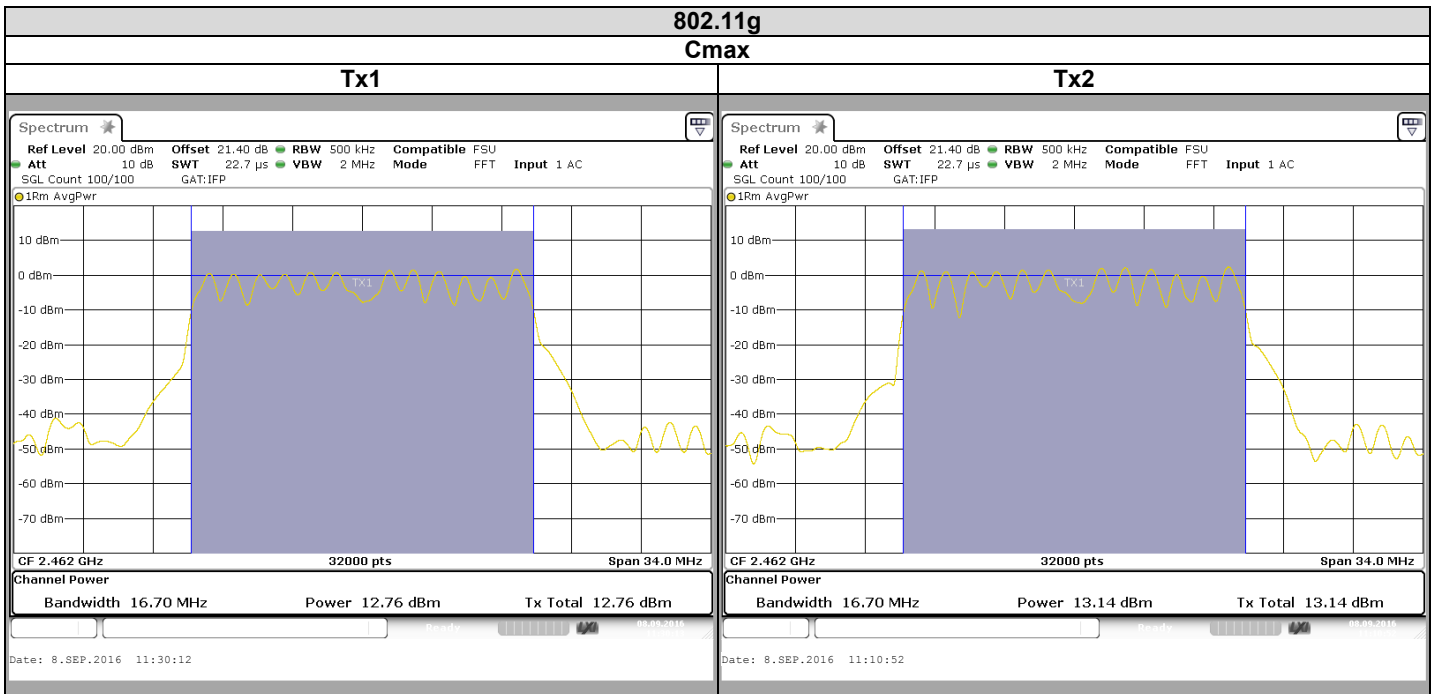
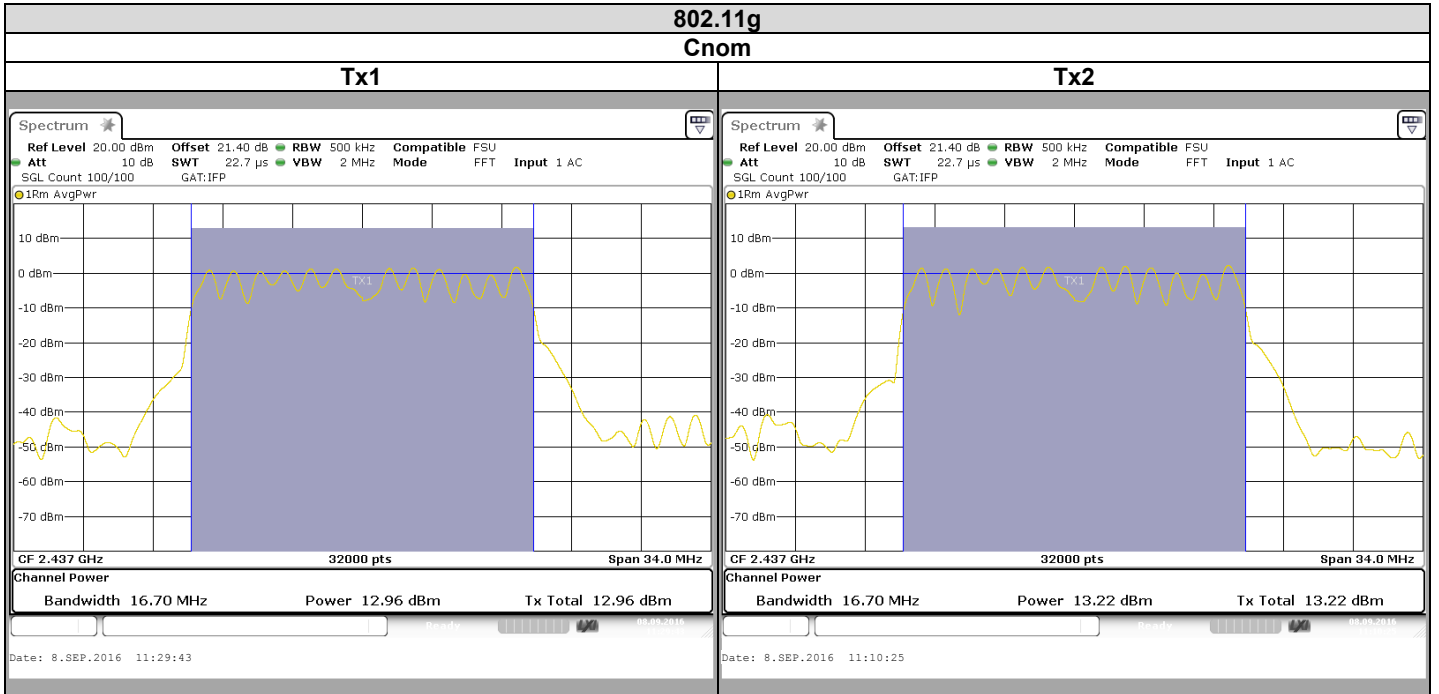


L C I E



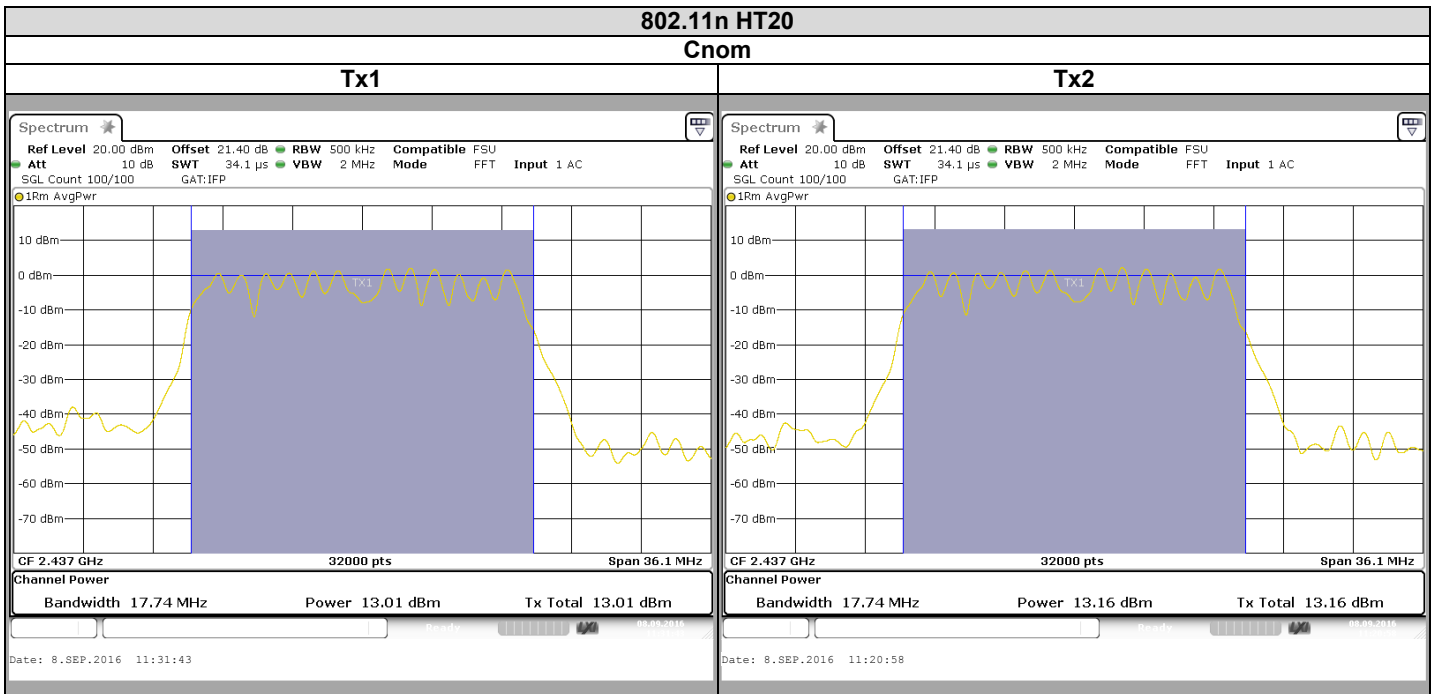
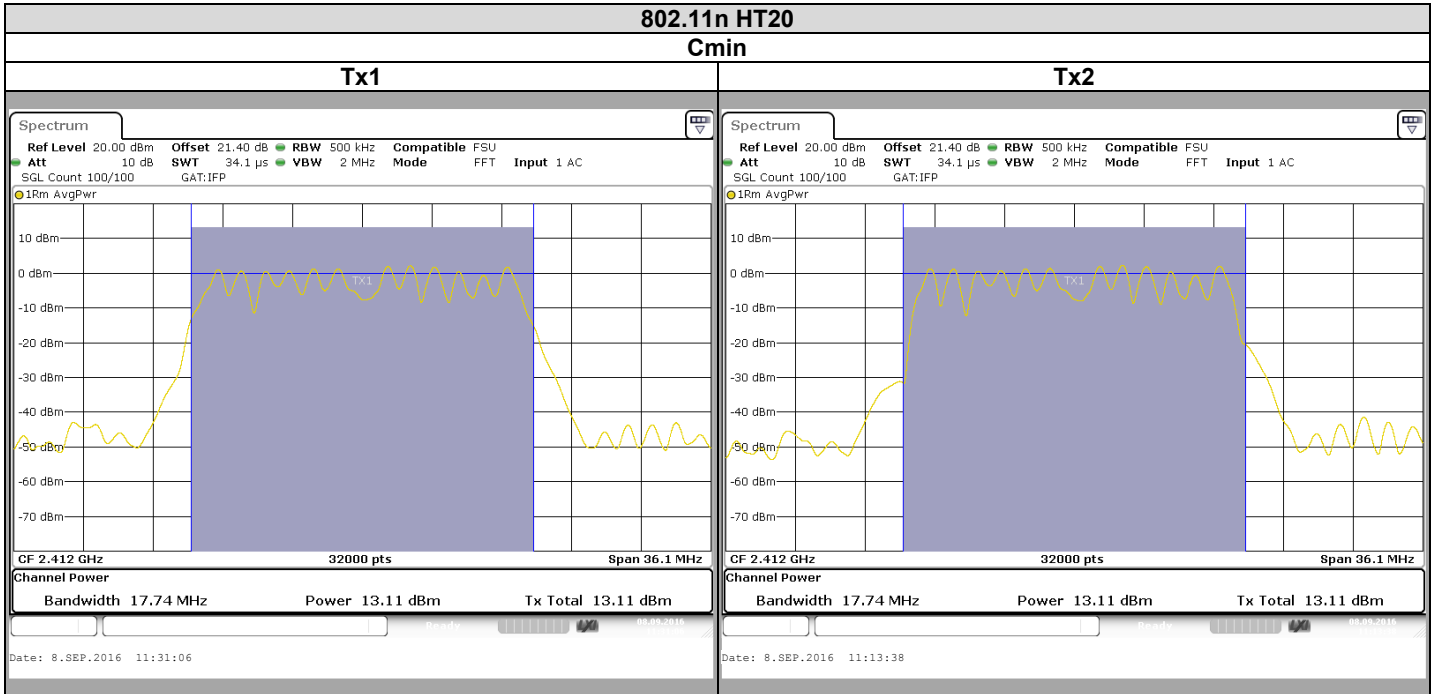


L C I E



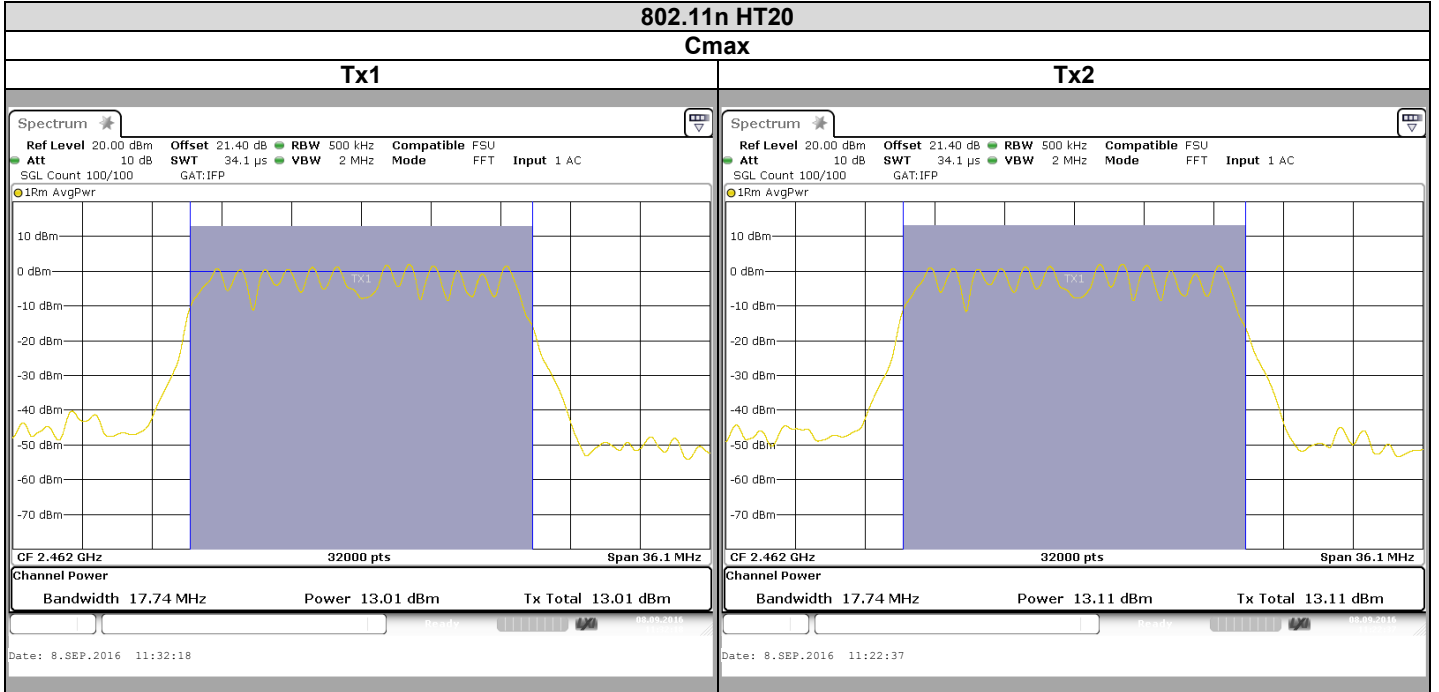


L C I E





L C I E





Spectrum Analyzer Offset:  
Cable Loss + Attenuator = 21,4dB

| 802.11b |           |           |           |           |                            |                               |             |
|---------|-----------|-----------|-----------|-----------|----------------------------|-------------------------------|-------------|
| Channel | Tx1 (dBm) | Tx2 (dBm) | Tx3 (dBm) | Tx4 (dBm) | Overall Antenna Gain (dBi) | Maximum Conducted Power (dBm) | Limit (dBm) |
| Cmin    | 13,18     | 14,35     |           |           | 3.9                        | 16,81                         | 30          |
| Cnom    | 13,59     | 14,44     |           |           | 3.9                        | 17,05                         | 30          |
| Cmax    | 13,79     | 14,39     |           |           | 3.9                        | 17,11                         | 30          |

| 802.11g |           |           |           |           |                            |                               |             |
|---------|-----------|-----------|-----------|-----------|----------------------------|-------------------------------|-------------|
| Channel | Tx1 (dBm) | Tx2 (dBm) | Tx3 (dBm) | Tx4 (dBm) | Overall Antenna Gain (dBi) | Maximum Conducted Power (dBm) | Limit (dBm) |
| Cmin    | 13,09     | 13,07     |           |           | 3.9                        | 16,09                         | 30          |
| Cnom    | 12,96     | 13,22     |           |           | 3.9                        | 16,10                         | 30          |
| Cmax    | 12,76     | 13,14     |           |           | 3.9                        | 15,96                         | 30          |

| 802.11n HT20 |           |           |           |           |                            |                               |             |
|--------------|-----------|-----------|-----------|-----------|----------------------------|-------------------------------|-------------|
| Channel      | Tx1 (dBm) | Tx2 (dBm) | Tx3 (dBm) | Tx4 (dBm) | Overall Antenna Gain (dBi) | Maximum Conducted Power (dBm) | Limit (dBm) |
| Cmin         | 13,11     | 13,11     |           |           | 3.9                        | 16,12                         | 30          |
| Cnom         | 13,01     | 13,16     |           |           | 3.9                        | 16,09                         | 30          |
| Cmax         | 13,01     | 13,11     |           |           | 3.9                        | 16,07                         | 30          |

## 6.6. CONCLUSION

Maximum Conducted Output Power measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.



## 7. POWER SPECTRAL DENSITY

### 7.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : September 8, 2016  
Ambient temperature : 24 °C  
Relative humidity : 47 %

### 7.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table  
 In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method  
 Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v03r05 § 10.2 (Method PKPSD)  
 KDB 558074 D01 DTS Meas Guidance v03r05 § 10.3 (Method AVGPSD-1)  
 KDB 662911 D01 Multiple Transmitter Output v02r01 E 2) b)

### 7.3. LIMIT

Power Spectral Density:

2400MHz-2483.5MHz: Shall not exceed 8dBm/3kHz

Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

### 7.4. TEST EQUIPMENT LIST

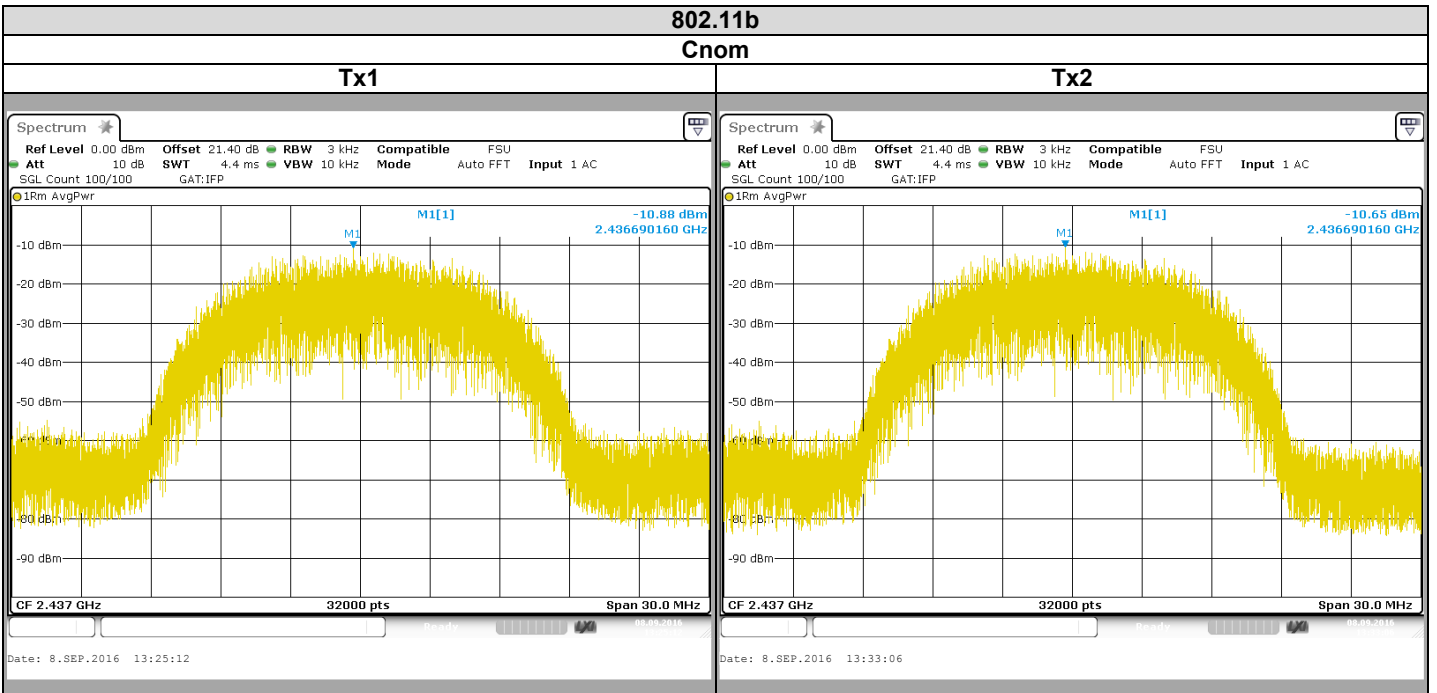
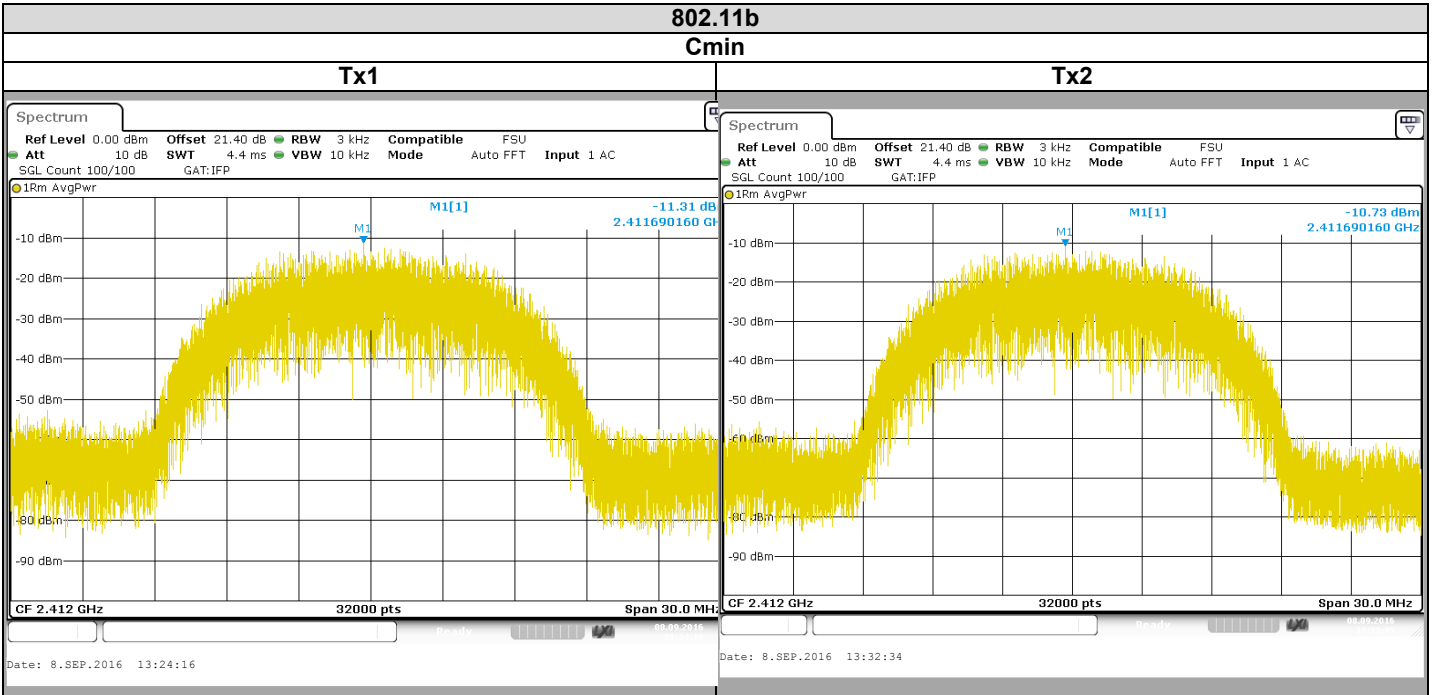
| DESCRIPTION                     | MANUFACTURER    | MODEL        | N° LCIE  | Calibration date                    | Calibration due                     |
|---------------------------------|-----------------|--------------|----------|-------------------------------------|-------------------------------------|
| Multi-meter                     | KEITHLEY        | 2000         | A1242090 | 2016/05                             | 2018/05                             |
| Programmable AC/DC power supply | -; KIKUSUI      | PCR500M      | A7049006 | Verified with calibrated multimeter | Verified with calibrated multimeter |
| EMI receiver                    | ROHDE & SCHWARZ | ESR 7        | A2642023 | 2015/03                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329661 | 2015/10                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329676 | 2015/10                             | 2016/10                             |

Note: In our quality system, the test equipment calibration due is more & less 2 months



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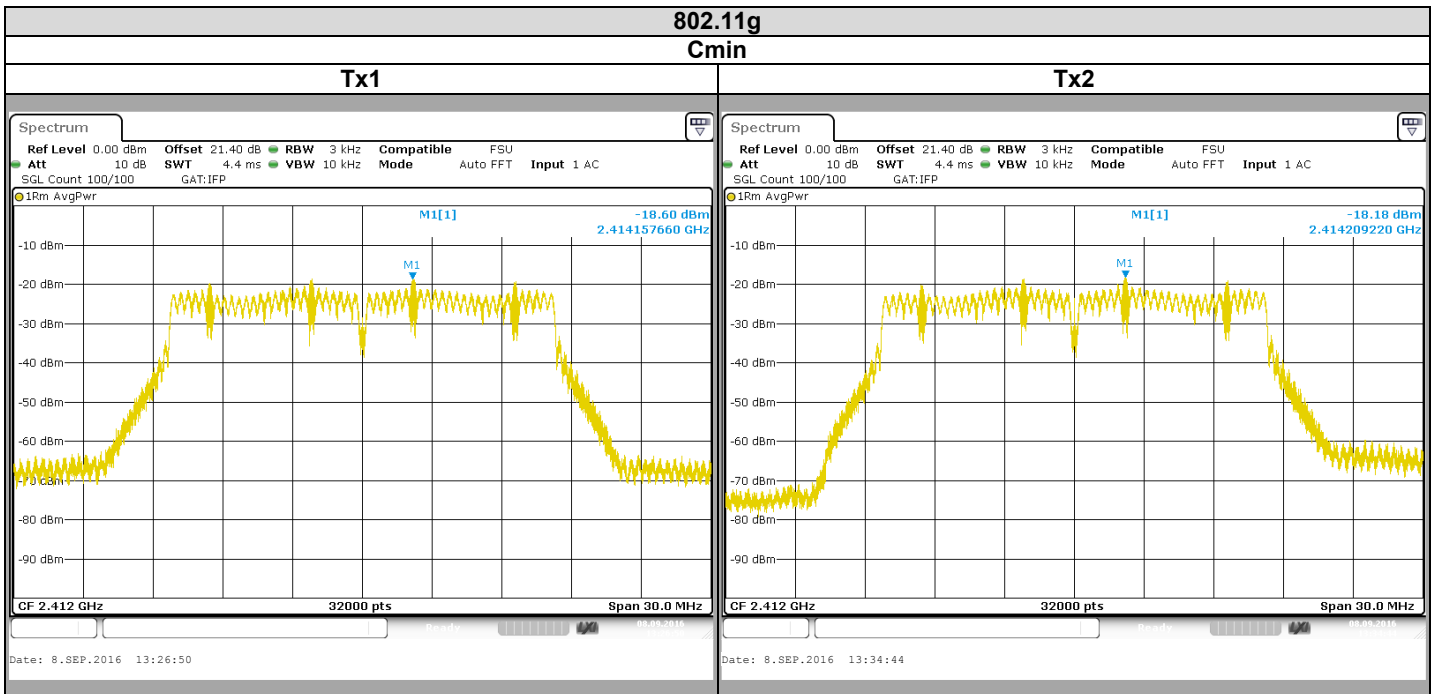
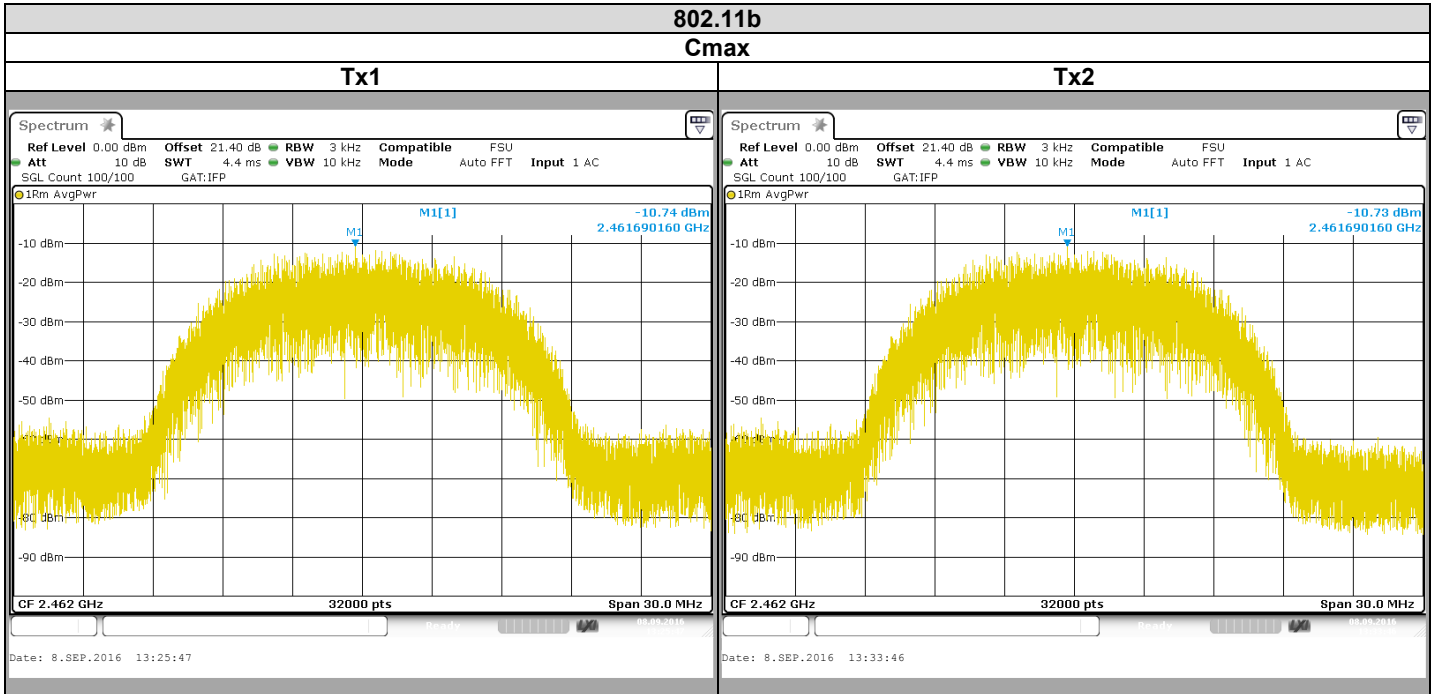
## 7.5. RESULTS





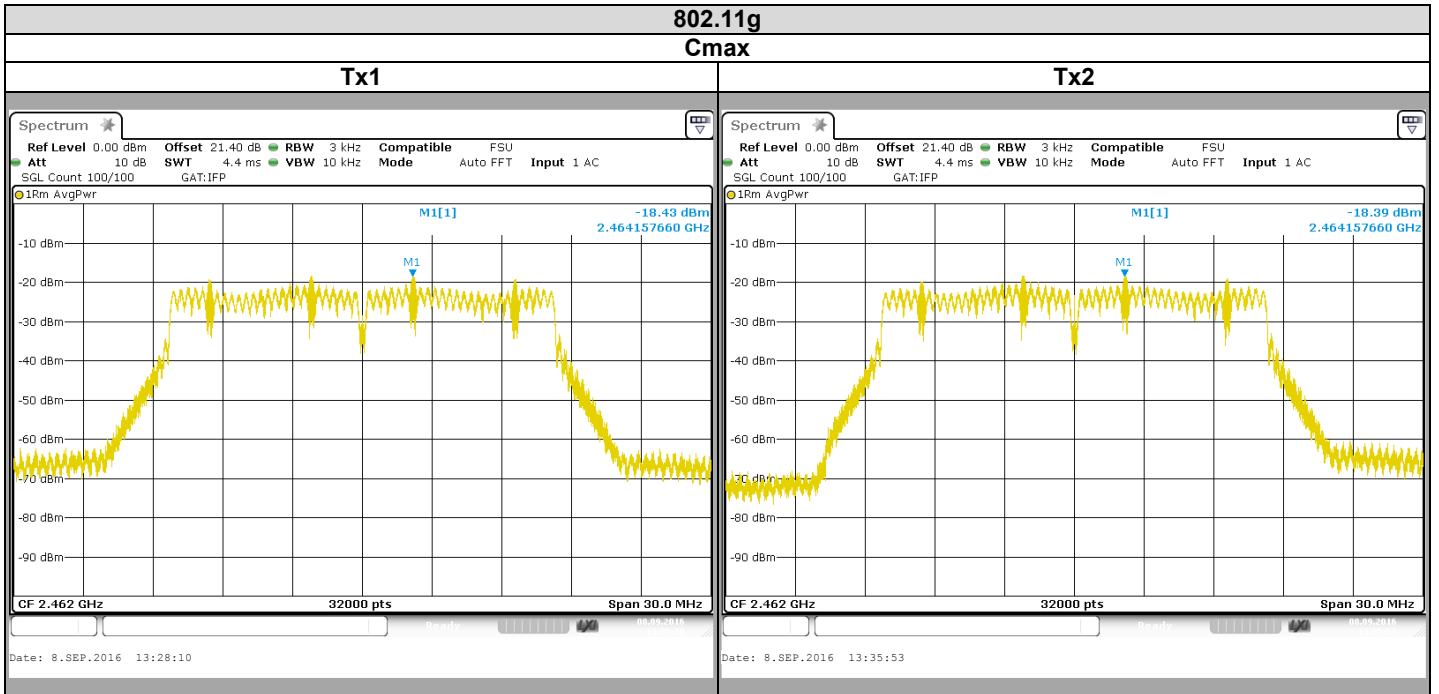
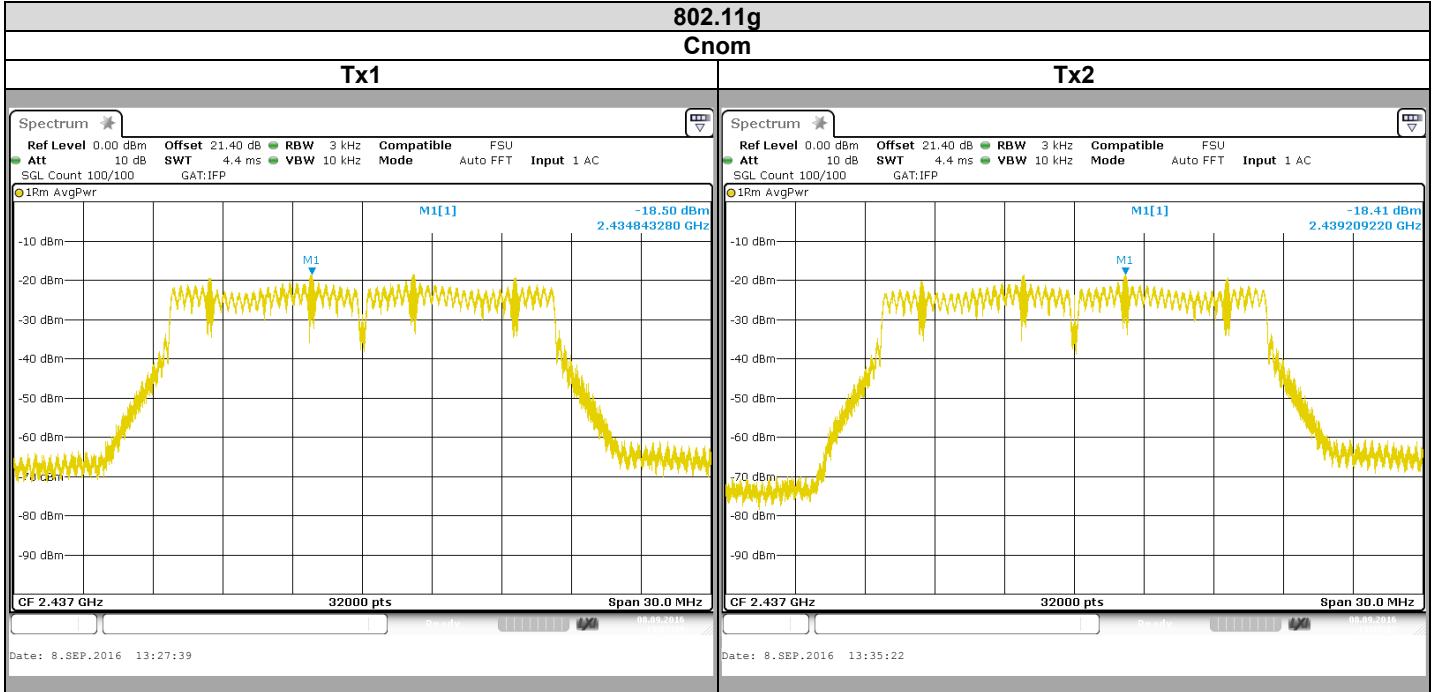


L C I E





L C I E



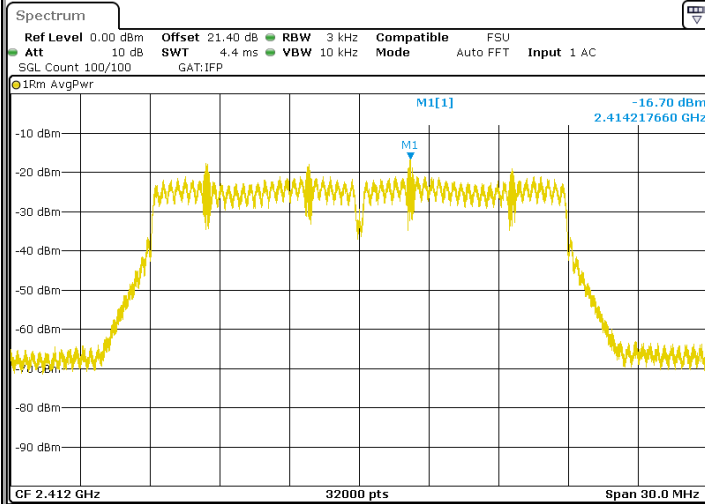


L C I E

### 802.11n HT20

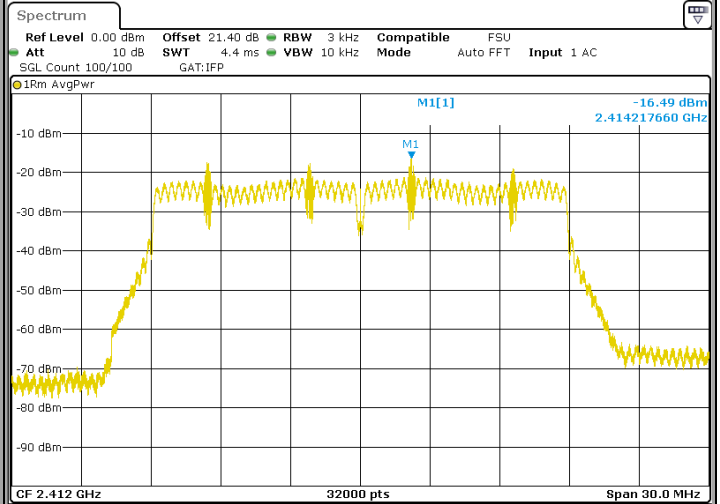
#### Cmin

##### Tx1



Date: 8.SEP.2016 13:29:06

##### Tx2

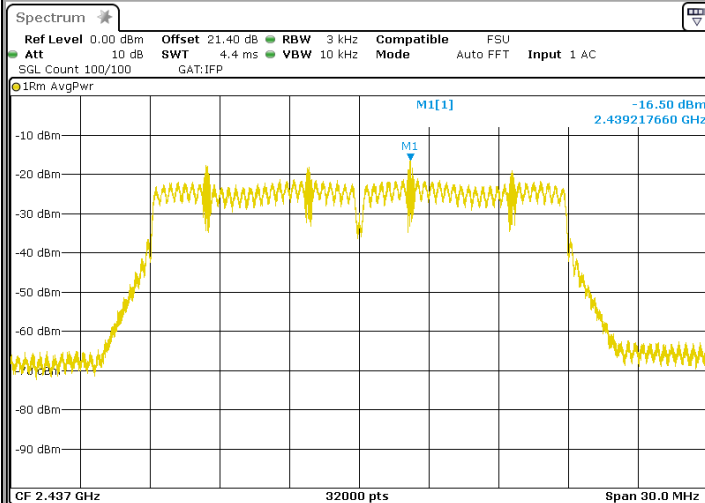


Date: 8.SEP.2016 13:36:45

### 802.11n HT20

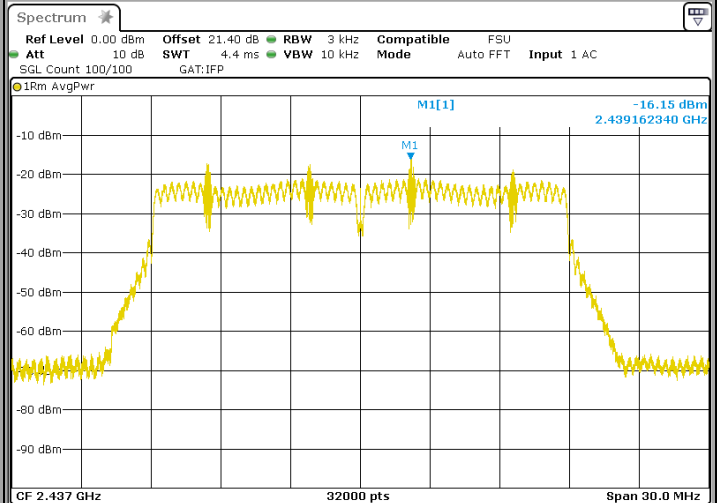
#### Cnom

##### Tx1



Date: 8.SEP.2016 13:29:47

##### Tx2



Date: 8.SEP.2016 13:37:14



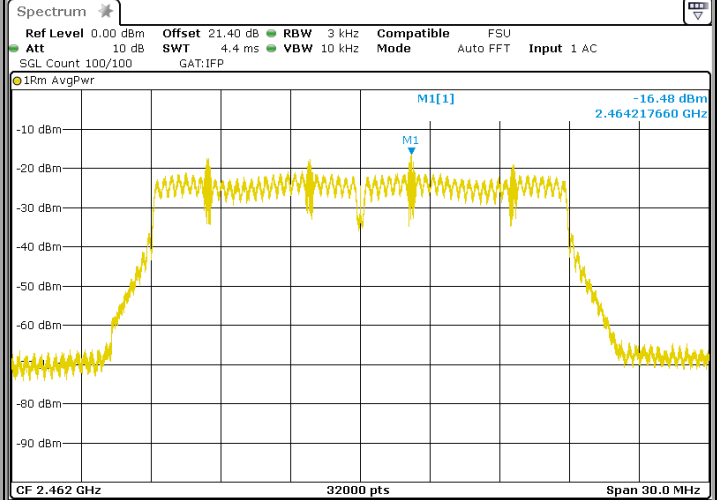
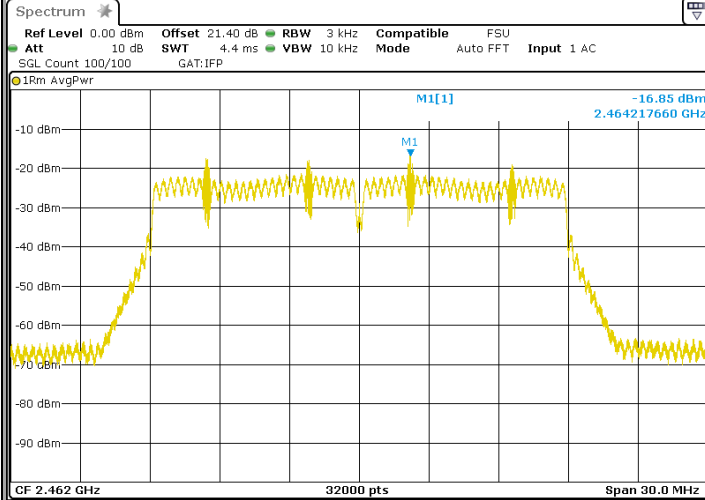
L C I E

802.11n HT20

Cmax

Tx1

Tx2



Date: 8.SEP.2016 13:30:22

Date: 8.SEP.2016 13:37:47



Spectrum Analyzer Offset:  
Cable Loss + Attenuator= 21,4dB

| 802.11b |                   |                   |                   |                   |                                  |                                 |                     |
|---------|-------------------|-------------------|-------------------|-------------------|----------------------------------|---------------------------------|---------------------|
| Channel | Tx1<br>(dBm/3kHz) | Tx2<br>(dBm/3kHz) | Tx3<br>(dBm/3kHz) | Tx4<br>(dBm/3kHz) | Overall<br>Antenna Gain<br>(dBi) | Power Spectral<br>Density (dBm) | Limit<br>(dBm/3kHz) |
| Cmin    | -11,31            | -10,73            |                   |                   | 3.9                              | -8,00                           | 8                   |
| Cnom    | -10,88            | -10,65            |                   |                   | 3.9                              | -7,75                           | 8                   |
| Cmax    | -10,74            | -10,73            |                   |                   | 3.9                              | -7,72                           | 8                   |

| 802.11g |                   |                   |                   |                   |                                  |                                 |                     |
|---------|-------------------|-------------------|-------------------|-------------------|----------------------------------|---------------------------------|---------------------|
| Channel | Tx1<br>(dBm/3kHz) | Tx2<br>(dBm/3kHz) | Tx3<br>(dBm/3kHz) | Tx4<br>(dBm/3kHz) | Overall<br>Antenna Gain<br>(dBi) | Power Spectral<br>Density (dBm) | Limit<br>(dBm/3kHz) |
| Cmin    | -18,6             | -18,18            |                   |                   | 3.9                              | -15,37                          | 8                   |
| Cnom    | -18,5             | -18,41            |                   |                   | 3.9                              | -15,44                          | 8                   |
| Cmax    | -18,43            | -18,39            |                   |                   | 3.9                              | -15,40                          | 8                   |

| 802.11n HT20 |                   |                   |                   |                   |                                  |                                 |                     |
|--------------|-------------------|-------------------|-------------------|-------------------|----------------------------------|---------------------------------|---------------------|
| Channel      | Tx1<br>(dBm/3kHz) | Tx2<br>(dBm/3kHz) | Tx3<br>(dBm/3kHz) | Tx4<br>(dBm/3kHz) | Overall<br>Antenna Gain<br>(dBi) | Power Spectral<br>Density (dBm) | Limit<br>(dBm/3kHz) |
| Cmin         | -16,7             | -16,49            |                   |                   | 3.9                              | -13,58                          | 8                   |
| Cnom         | -16,5             | -16,15            |                   |                   | 3.9                              | -13,31                          | 8                   |
| Cmax         | -16,85            | -16,48            |                   |                   | 3.9                              | -13,65                          | 8                   |

## 7.6. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.



## 8. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS AT THE BAND EDGE

### 8.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : September 8, 2016  
Ambient temperature : 24 °C  
Relative humidity : 47 %

### 8.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table  
 In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method  
 Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v03r05 § 11  
 KDB 662911 D01 Multiple Transmitter Output v02r01

### 8.3. LIMIT

All Spurious Emissions must be at least Choose limit below the Fundamental Radiator Level at the Band Edge Edge "2400MHz & 2483,5MHz"

### 8.4. TEST EQUIPMENT LIST

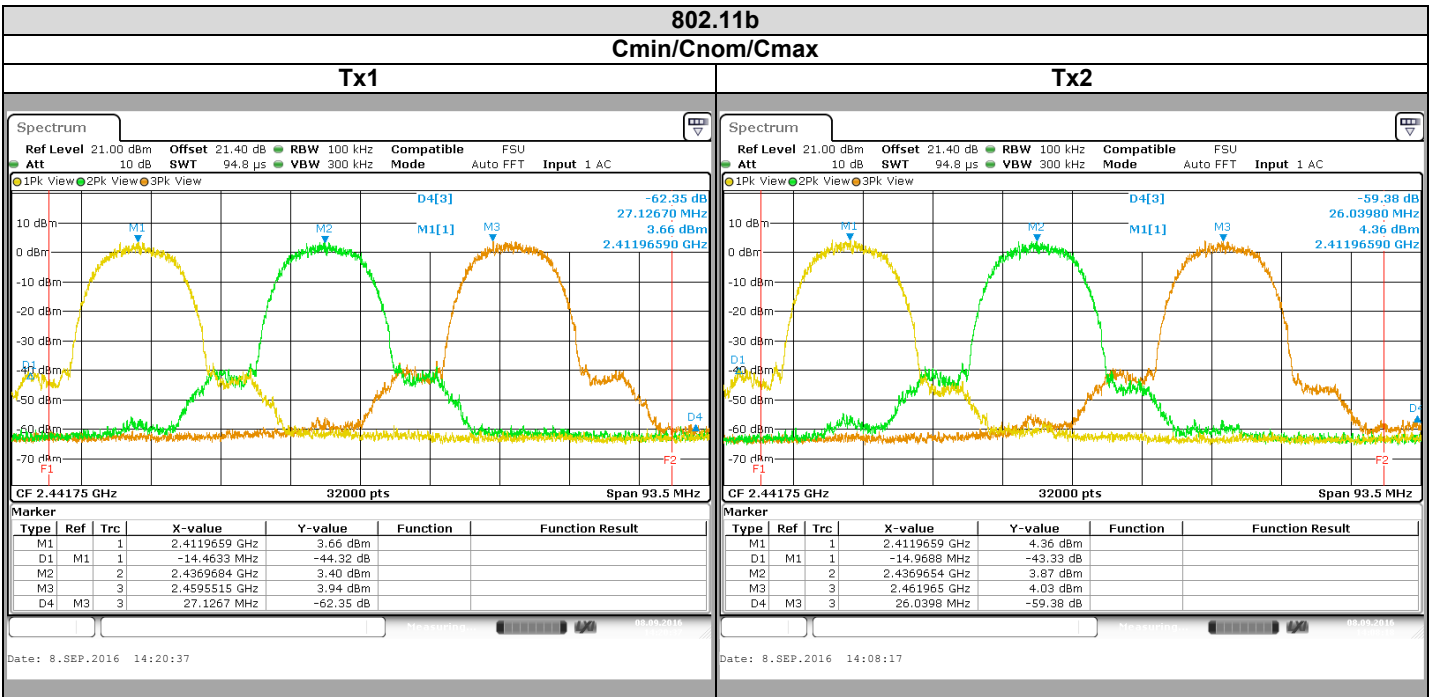
| DESCRIPTION                     | MANUFACTURER    | MODEL        | N° LCIE  | Calibration date                    | Calibration due                     |
|---------------------------------|-----------------|--------------|----------|-------------------------------------|-------------------------------------|
| Multi-meter                     | KEITHLEY        | 2000         | A1242090 | 2016/05                             | 2018/05                             |
| Programmable AC/DC power supply | -; KIKUSUI      | PCR500M      | A7049006 | Verified with calibrated multimeter | Verified with calibrated multimeter |
| EMI receiver                    | ROHDE & SCHWARZ | ESR 7        | A2642023 | 2015/03                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329661 | 2015/10                             | 2016/10                             |
| RF cable & 20 dB attenuator     | Télédyne        | 920-0202-048 | A5329676 | 2015/10                             | 2016/10                             |

Note: In our quality system, the test equipment calibration due is more & less 2 months



L C I E

8.5. RESULTS



| Frequency (MHz) | Level (dBc) | Limit (dBc) |
|-----------------|-------------|-------------|
| Below 2400      | 43,33       | 30          |
| Above 2483.5    | 59,38       | 30          |



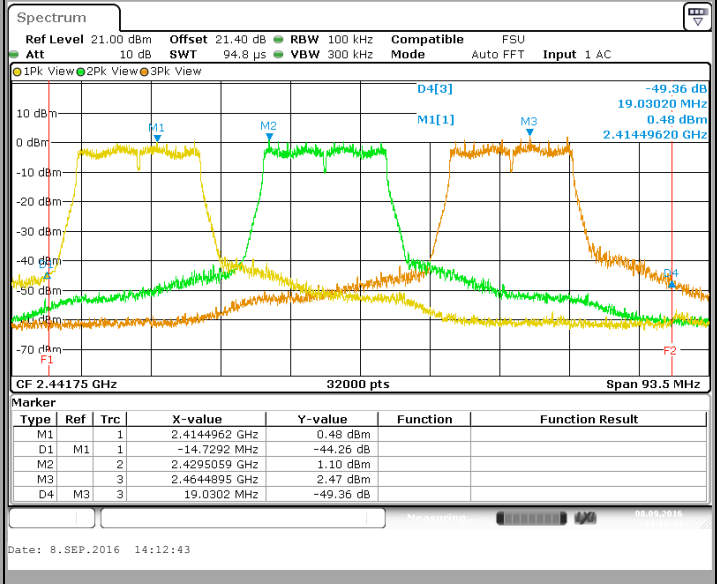
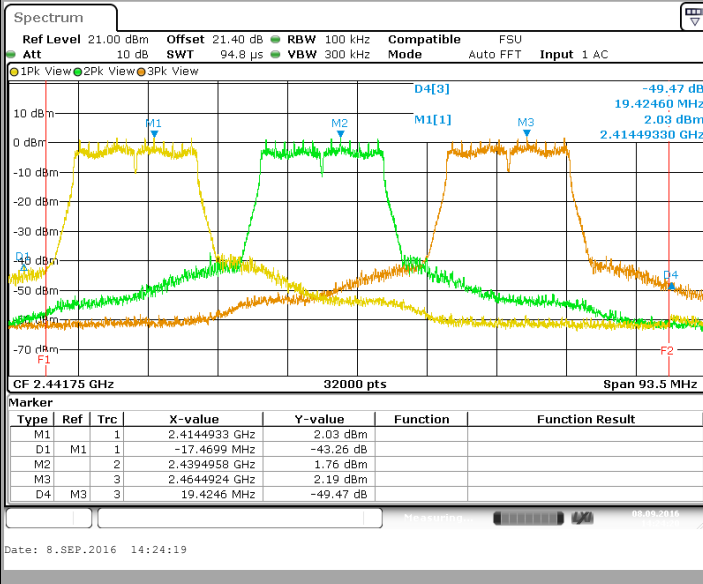
L C I E

802.11g

Cmin/Cnom/Cmax

Tx1

Tx2



| Frequency (MHz) | Level (dBc) | Limit (dBc) |
|-----------------|-------------|-------------|
| Below 2400      | 43,26       | 30          |
| Above 2483.5    | 49,36       | 30          |





L C I E



**8.6. CONCLUSION**

Unwanted Emission into non-restricted frequency bands at the band edge measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.



## 9. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS

### 9.1. TEST CONDITIONS

Test performed by : Arnaud FAYETTE  
Date of test : September 1, 2016  
Ambient temperature : 24 °C  
Relative humidity : 44 %

### 9.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table  
 In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method  
 Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v03r05 § 11  
 KDB 662911 D01 Multiple Transmitter Output v02r01

### 9.3. LIMIT

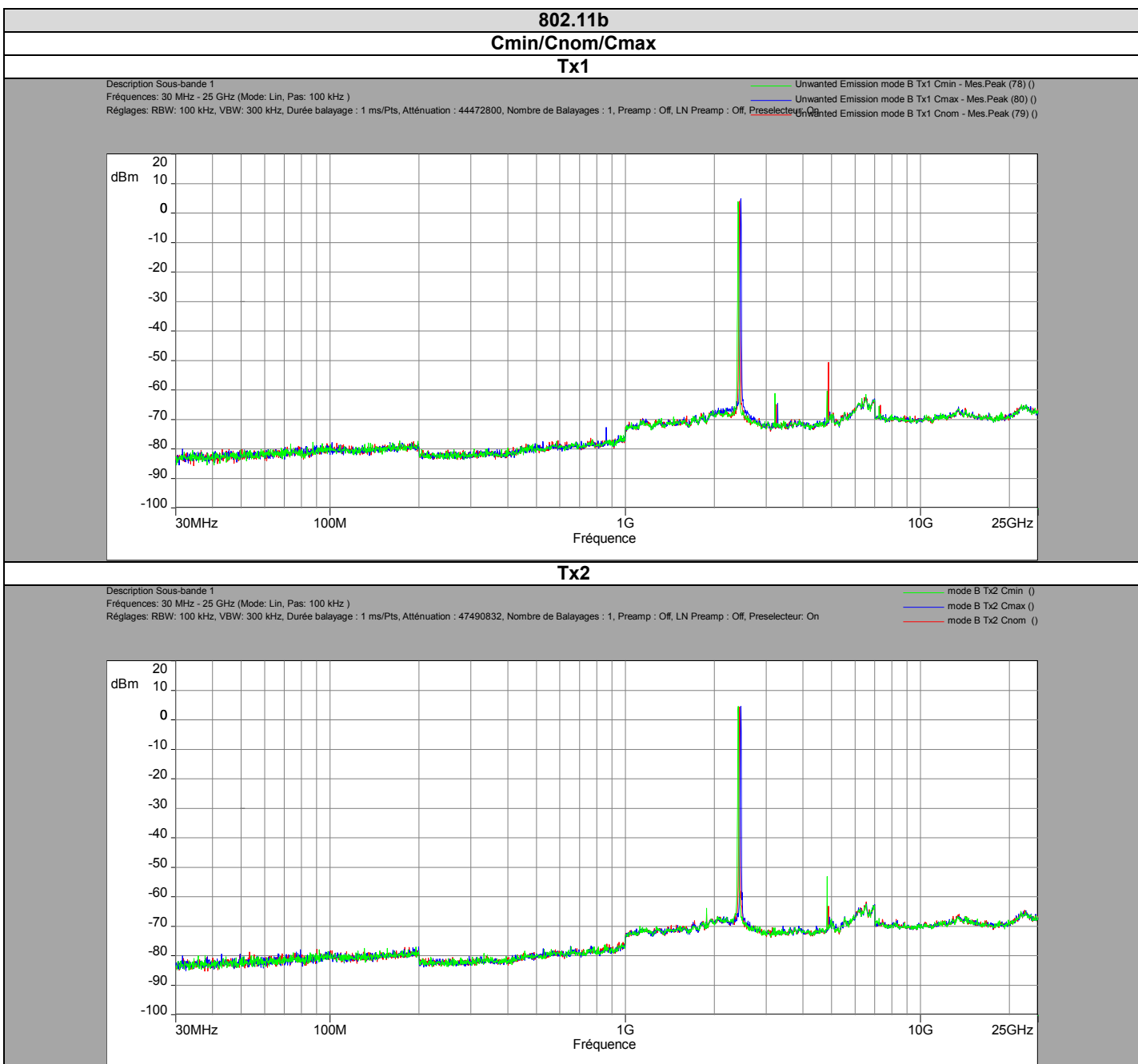
All Spurious Emissions must be at least 30dB (Average Conducted Power) below the Fundamental Radiator Level

### 9.4. TEST EQUIPMENT LIST

| DESCRIPTION                     | MANUFACTURER    | MODEL             | N° LCIE  | Calibration date | Calibration due |
|---------------------------------|-----------------|-------------------|----------|------------------|-----------------|
| Multi-meter                     | KEITHLEY        | 2000              | A1242090 | 2017/06          | 2017/06         |
| Programmable AC/DC power supply | -; KIKUSUI      | PCR500M           | A7040079 | 2016/06          | 2017/06         |
| EMI receiver                    | ROHDE & SCHWARZ | ESI40 1088 740K40 | A2642010 | 2016/07          | 2017/07         |
| Cable                           | sans; ATEM      | SMA 0.5m          | A5329645 | 2015/08          | 2016/08         |
| Rejector filter 2,4GHz          | -               | 2.45GHz           | A7484048 | 2015/12          | 2016/12         |

Note: In our quality system, the test equipment calibration due is more & less 2 months

## 9.5. RESULTS





L C I E

### 802.11g

#### Cmin/Cnom/Cmax

##### Tx1

Description Sous-bande 1

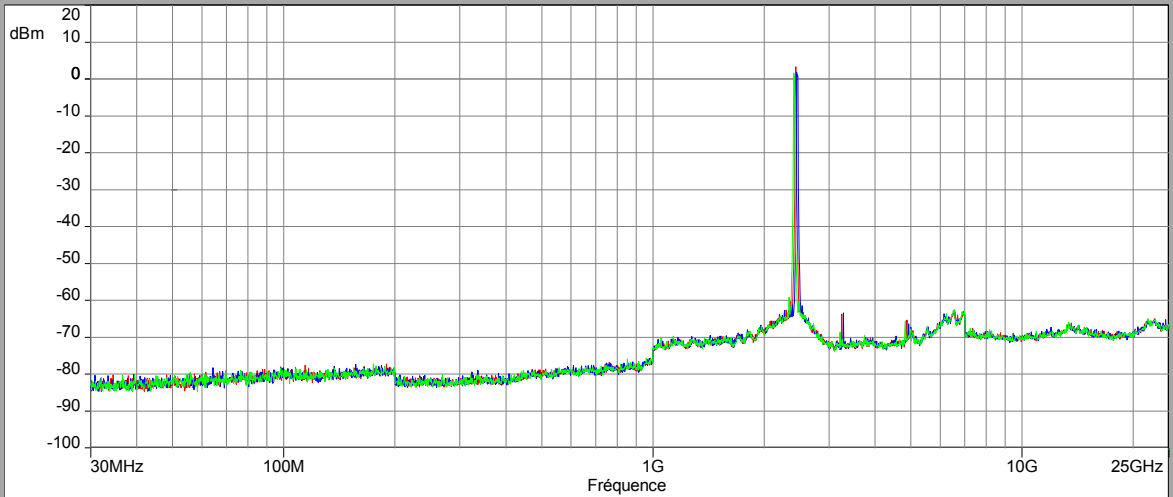
Fréquences: 30 MHz - 25 GHz (Mode: Lin, Pas: 100 kHz)

Réglages: RBW: 100 kHz, VBW: 300 kHz, Durée balayage: 1 ms/Pts, Atténuation: 46115144, Nombre de Balayages: 1, Preamp: Off, LN Preamp: Off, Preselecteur: On

Unwanted Emission mode G Tx1 Cmin - Mes.Peak (81) ()

Unwanted Emission mode G Tx1 Cmax - Mes.Peak (83) ()

Unwanted Emission mode G Tx1 Cnom - Mes.Peak (82) ()



##### Tx2

Description Sous-bande 1

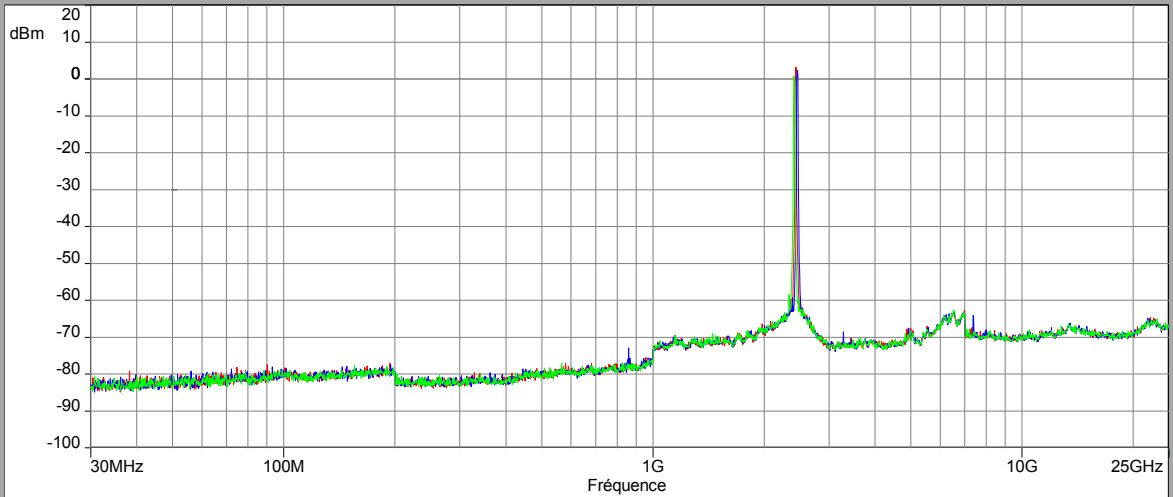
Fréquences: 30 MHz - 25 GHz (Mode: Lin, Pas: 100 kHz)

Réglages: RBW: 100 kHz, VBW: 300 kHz, Durée balayage: 1 ms/Pts, Atténuation: 43960112, Nombre de Balayages: 1, Preamp: Off, LN Preamp: Off, Preselecteur: On

mode G Tx2 Cmin ()

mode G Tx2 Cmax ()

mode G Tx2 Cnom ()





L C I E

### 802.11n HT20

#### Cmin/Cnom/Cmax

##### Tx1

Description Sous-bande 1

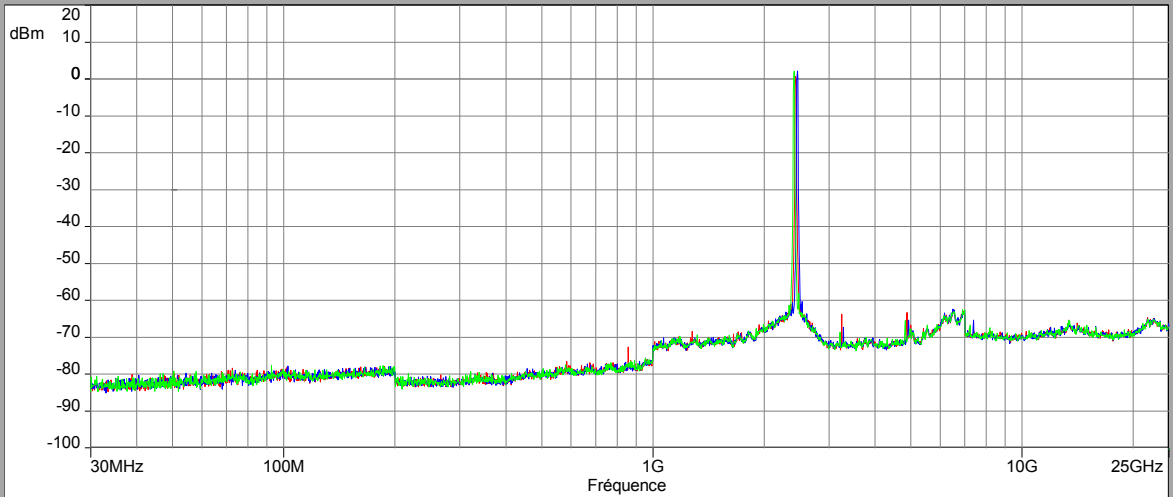
Fréquences: 30 MHz - 25 GHz (Mode: Lin, Pas: 100 kHz)

Réglages: RBW: 100 kHz, VBW: 300 kHz, Durée balayage: 1 ms/Pts, Atténuation: 197621584, Nombre de Balayages: 1, Preamp: Off, LN Preamp: Off, Preselecteur: On

Unwanted Emission mode nHT20 Tx1 Cmin - Mes.Peak (84) ()

Unwanted Emission mode nHT20 Tx1 Cmax - Mes.Peak (86) ()

Unwanted Emission mode nHT20 Tx1 Cnom - Mes.Peak (85) ()



##### Tx2

Description Sous-bande 1

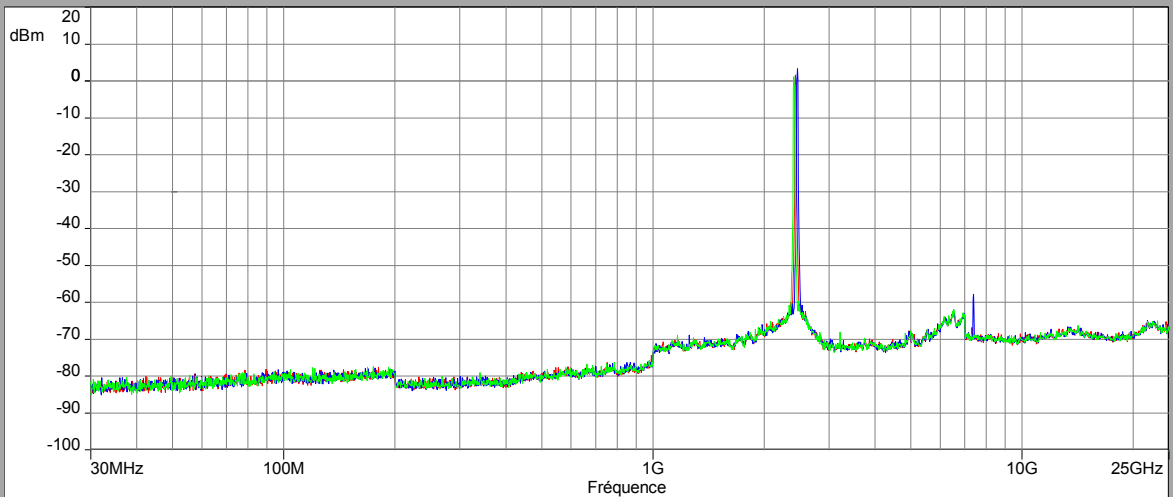
Fréquences: 30 MHz - 25 GHz (Mode: Lin, Pas: 100 kHz)

Réglages: RBW: 100 kHz, VBW: 300 kHz, Durée balayage: 1 ms/Pts, Atténuation: 44363120, Nombre de Balayages: 1, Preamp: Off, LN Preamp: Off, Preselecteur: On

mode nHT20 Tx2 Cmin ()

mode nHT20 Tx2 Cmax ()

mode nHT20 Tx2 Cnom ()





L C I E

| 802.11b         |             |             |             |
|-----------------|-------------|-------------|-------------|
| Frequency (MHz) | Level (dBm) | Level (dBc) | Limit (dBc) |
| 2412            | 3,91        |             |             |
| 3216            | -61,08      | 64,99       | 30          |
| 4824            | -60,37      | 64,27       | 30          |
| 7235            | -65,47      | 69,38       | 30          |
| 2437            | 4,05        |             |             |
| 3249            | -64,96      | 69,01       | 30          |
| 4874            | -50,65      | 54,70       | 30          |
| 7309            | -65,09      | 69,14       | 30          |
| 2462            | 4,573       |             |             |
| 3422            | -69,92      | 74,49       | 30          |
| 4923            | -66,87      | 71,44       | 30          |
| 8367            | -68,02      | 72,60       | 30          |

| 802.11g         |             |             |             |
|-----------------|-------------|-------------|-------------|
| Frequency (MHz) | Level (dBm) | Level (dBc) | Limit (dBc) |
| 2412            | 1,61        |             |             |
| 3216            | -68,62      | 70,24       | 30          |
| 4824            | -65,61      | 67,22       | 30          |
| 6888            | -63,06      | 64,67       | 30          |
| 2437            | 3,32        |             |             |
| 3249            | -63,73      | 67,05       | 30          |
| 4873            | -65,36      | 68,68       | 30          |
| 6693            | -63,96      | 67,28       | 30          |
| 2462            | 1,83        |             |             |
| 3283            | -63,47      | 65,30       | 30          |
| 4924            | -66,36      | 68,20       | 30          |
| 6156            | -63,67      | 65,51       | 30          |

| 802.11n HT20    |             |             |             |
|-----------------|-------------|-------------|-------------|
| Frequency (MHz) | Level (dBm) | Level (dBc) | Limit (dBc) |
| 2412            | 2,09        |             |             |
| 3216            | -68,62      | 70,71       | 30          |
| 4825            | -65,49      | 67,57       | 30          |
| 6900            | -62,55      | 64,64       | 30          |
| 2437            | 0,75        |             |             |
| 3249            | -63,73      | 64,48       | 30          |
| 4874            | -63,26      | -64,01      | 30          |
| 6950            | -62,92      | 63,67       | 30          |
| 2462            | 2,18        |             |             |
| 3283            | -67,34      | 69,52       | 30          |
| 4921            | -65,35      | 67,53       | 30          |
| 7389            | -65,33      | 67,51       | 30          |



## 9.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.

## 10. AC POWER LINE CONDUCTED EMISSIONS

### 10.1. TEST CONDITIONS

Test performed by : Laurent DENEUX  
 Date of test : September 19, 2016  
 Ambient temperature : 20°C  
 Relative humidity : 47%

### 10.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013) method. The EUT is placed on the ground reference plane, at 80cm from the LISN. The distance between the EUT and the vertical ground plane is 40cm. Auxiliaries are powered by another LISN. The cable has been shorted to 1meter length. The EUT is powered through the LISN. Measurement is made with a receiver in peak mode. This was followed by a Quasi-Peak, i.e. CISPR measurement for any strong signal. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary. The LISN (measure) is 50Ω / 50μH. Interconnecting cables and equipment's were moved to position that maximized emission.

### 10.3. LIMIT

#### Quasi-Peak

0,15kHz to 0,5MHz: 66dBμV to 56dBμV\*

0,5MHz to 5MHz: 56dBμV

5MHz to 30MHz: 60dBμV

#### Average

0,15kHz to 0,5MHz: 56dBμV to 46dBμV\*

0,5MHz to 5MHz: 46dBμV

5MHz to 30MHz: 50dBμV

\*Decreases with the logarithm of the frequency

### 10.4. TEST EQUIPMENT LIST

| Test Equipment Used |                 |         |            |           |          |
|---------------------|-----------------|---------|------------|-----------|----------|
| Description         | Manufacturer    | Model   | Identifier | Cal. Date | Cal. Due |
| EMI Test Receiver   | ROHDE & SCHWARZ | ESR     | 101403     | 2016-06   | 2017-06  |
| V ISLN              | ROHDE & SCHWARZ | ESH2-Z5 | C2322001   | 2016-05   | 2017-05  |
| Pulse limiter       | ROHDE & SCHWARZ | ESH3-Z2 | A2649008   | 2016-03   | 2017-03  |
| Cable               | -               | -       | A5329417   | 2015-10   | 2016-10  |
| Ground plane        | LCIE            | -       | -          | -         |          |

Note: In our quality system, the test equipment calibration due is more & less 2 months

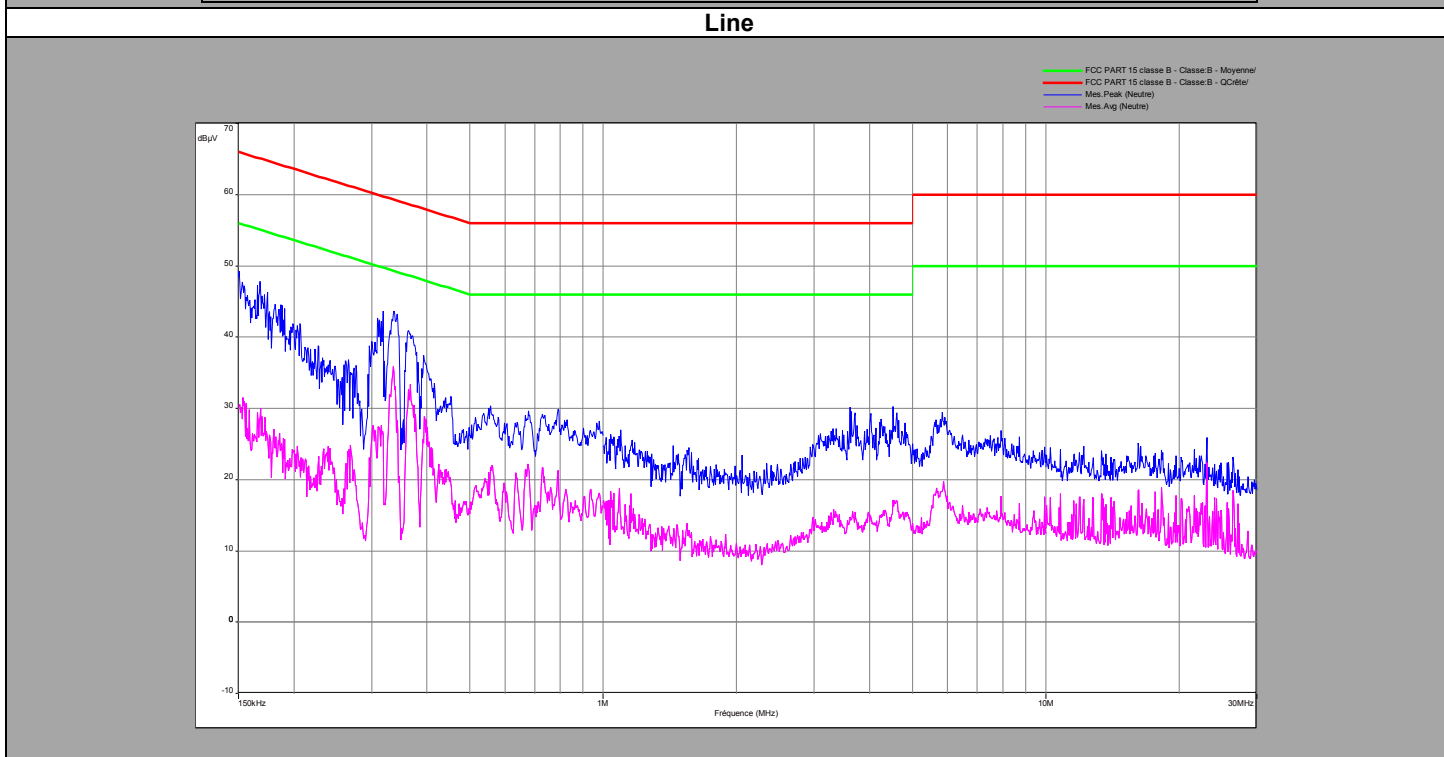
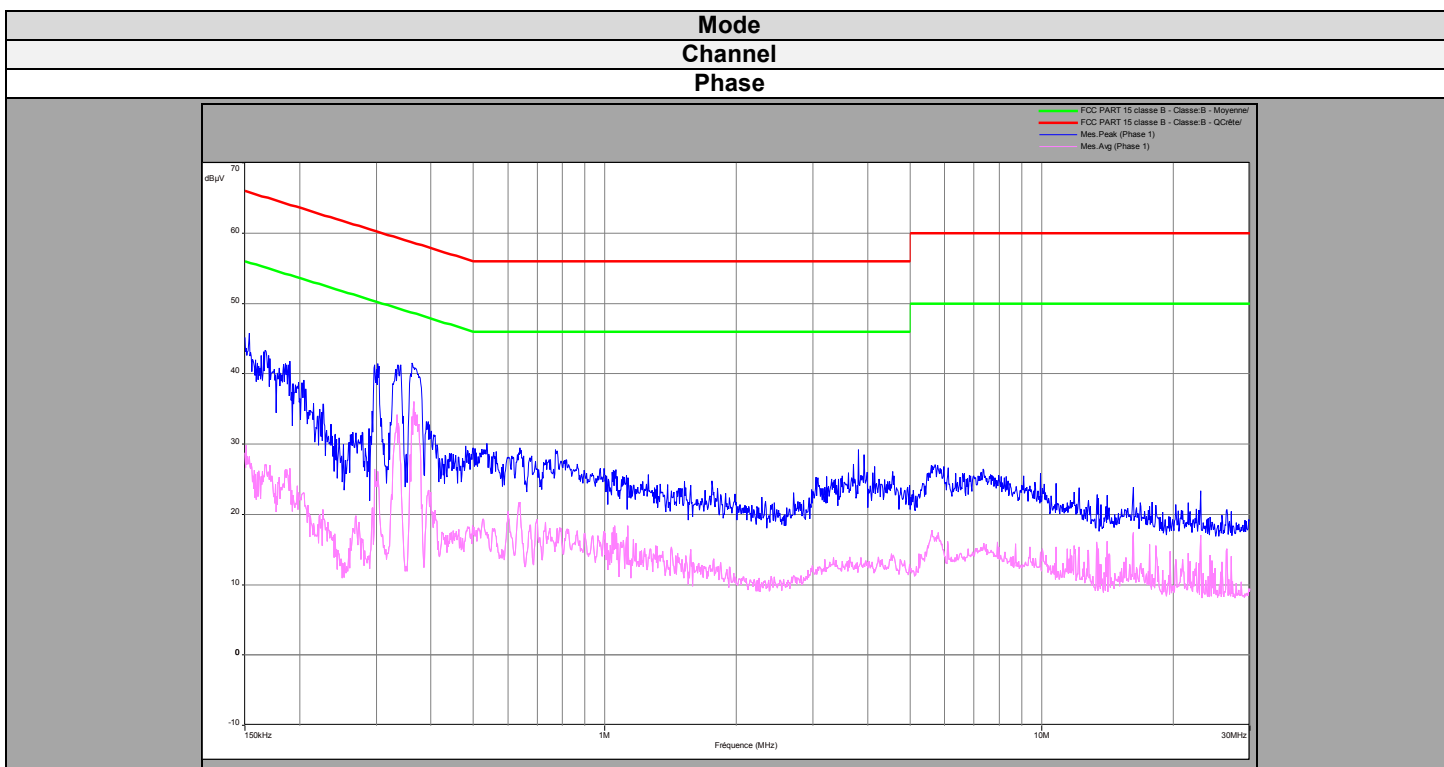




#### 10.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None       Divergence:

## 10.6. RESULTS





| Phase Line      |                         |                               |                               |                            |                            |
|-----------------|-------------------------|-------------------------------|-------------------------------|----------------------------|----------------------------|
| Frequency (MHz) | Peak Level (dB $\mu$ V) | Quasi-Peak Level (dB $\mu$ V) | Quasi-Peak Limit (dB $\mu$ V) | Average Level (dB $\mu$ V) | Average Limit (dB $\mu$ V) |
| 0.153           | 45.7                    | -                             | 65.8                          | 28.                        | 55.8                       |
| 0.361           | 41.5                    | -                             | 58.7                          | 36                         | 48.7                       |
| 0.638           | 29.4                    | -                             | 56                            | 21.8                       | 46                         |
| 6.11            | 26.5                    | -                             | 60                            | 16.2                       | 50                         |
| 23.13           | 23.3                    | -                             | 60                            | 17                         | 50                         |

| Neutral Line    |                         |                               |                               |                            |                            |
|-----------------|-------------------------|-------------------------------|-------------------------------|----------------------------|----------------------------|
| Frequency (MHz) | Peak Level (dB $\mu$ V) | Quasi-Peak Level (dB $\mu$ V) | Quasi-Peak Limit (dB $\mu$ V) | Average Level (dB $\mu$ V) | Average Limit (dB $\mu$ V) |
| 0.167           | 47.8                    | -                             | 65                            | 31.5                       | 55                         |
| 0.337           | 43.6                    | -                             | 59.3                          | 35.8                       | 49.3                       |
| 0.678           | 29.6                    | -                             | 56                            | 22.2                       | 46                         |
| 5.842           | 29.4                    | -                             | 60                            | 20                         | 50                         |
| 23.128          | 26                      | -                             | 60                            | 22.4                       | 50                         |

## 10.7. CONCLUSION

Ac Power Line Conducted Emission measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.407 & RSS 247 ISSUE 1 limits.



## 11. UNWANTED EMISSIONS

### 11.1. TEST CONDITIONS

Test performed by : Laurent DENEUX  
 Date of test : September 21, 2016 to September 23, 2016  
 Ambient temperature : 22°C  
 Relative humidity : 51%

### 11.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013). The EUT is placed **on an open area test site**. Distance between measuring antenna and the EUT is **10m**. Test is performed in horizontal (H) and vertical (V) polarization with **bilog** antenna below 1GHz and with a horn antenna above 1GHz. Measurement bandwidth was 120kHz below 1GHz and 1MHz above 1GHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height search was performed from 1 to 4m. The EUT is placed at 1.5m high above 1GHz and at 0.8m high under 1GHz.

### 11.3. LIMIT

#### Limit at 3m:

30MHz to 88MHz: 40dBµV/m QPeak  
 88MHz to 216MHz: 43,5dBµV/m QPeak  
 216MHz to 960MHz: 46dBµV/m QPeak  
 960MHz to 1000MHz: 54dBµV/m QPeak  
 Above 1000MHz: 74dBµV/m Peak  
 54dBµV/m Average

### 11.4. TEST EQUIPMENT LIST

| Test Equipment Used |                 |              |            |           |          |
|---------------------|-----------------|--------------|------------|-----------|----------|
| Description         | Manufacturer    | Model        | Identifier | Cal. Date | Cal. Due |
| EMI Test Receiver   | ROHDE & SCHWARZ | ESR          | 101403     | 2016-06   | 2017-06  |
| Open test site      | LCIE            | -            | F2000400   | 2016-05   | 2017-05  |
| Preamplifier        | HEWLETT PACKARD | 8449B        | A4069002   | 2016-01   | 2017-01  |
| Bilog antenna       | CHASE           | CBL<br>6112A | C2040040   | 2016-01   | 2017-01  |
| Horn antenna        | AH SYSTEMS      | SAS-572      | C2042026   | 2016-04   | 2018-04  |
| Horn antenna        | EMCO            | .3115        | C2042016   | 2016-02   | 2017-02  |
| Cable               | -               | -            | A5329542   | 2016-02   | 2017-02  |
| Cable               | -               | -            | A5329449   | 2015-11   | 2016-11  |
| Cable               | -               | -            | A5329368   | 2015-11   | 2016-11  |
| cable               | -               | -            | A5329444   | 2015-11   | 2016-11  |

Note: In our quality system, the test equipment calibration due is more & less 2 months



### 11.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None       Divergence:

### 11.6. RESULTS



L C I E

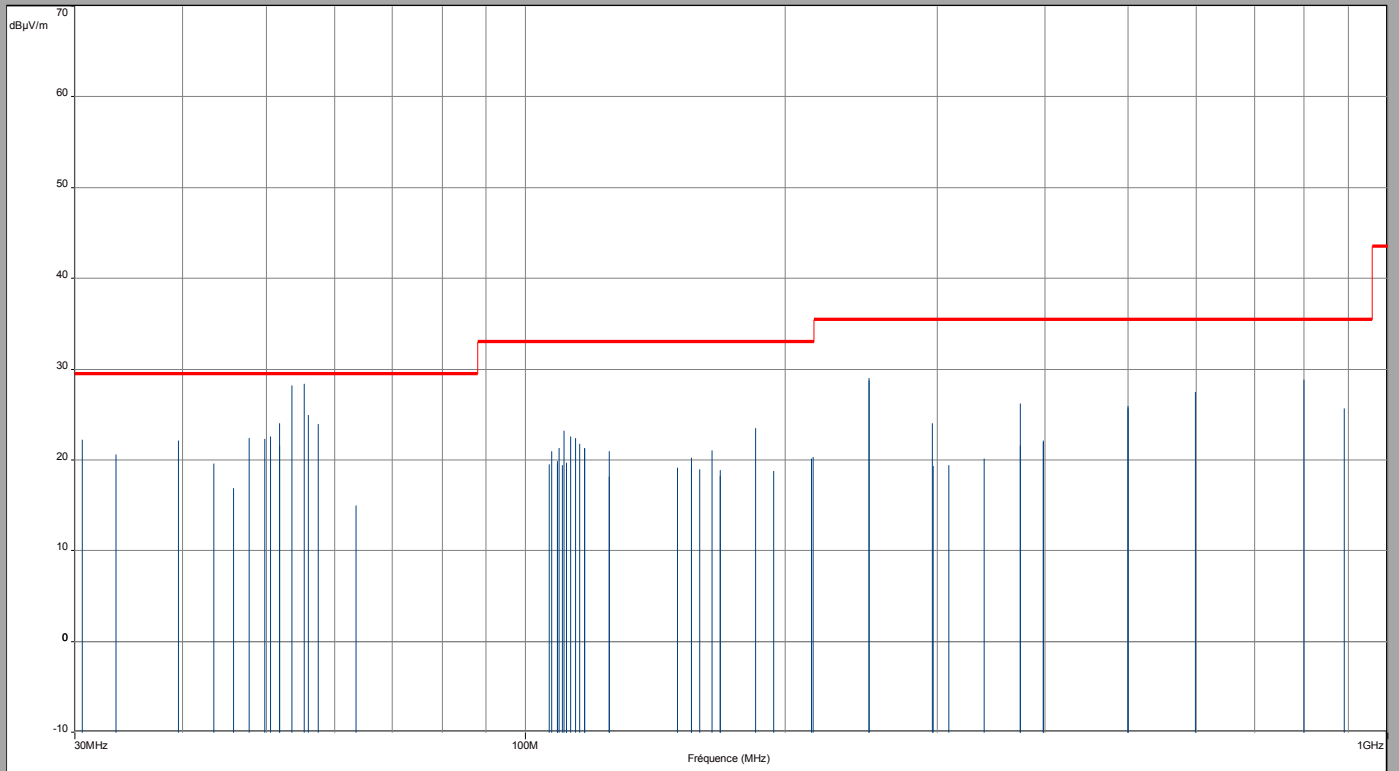
802.11b / 802.11G / 802.11n HT20

Cnom

Below 1GHz

Vertical & horizontal polarization

FCC Part 15 (intentional radiator) §209 - Classe:-- QCRéte/10.0m/  
Mes. Q-Peak (Verticale)  
Mes. Q-Peak (Horizontale)  
Finaux Manuel (Verticale)  
Finaux Manuel (Horizontale)

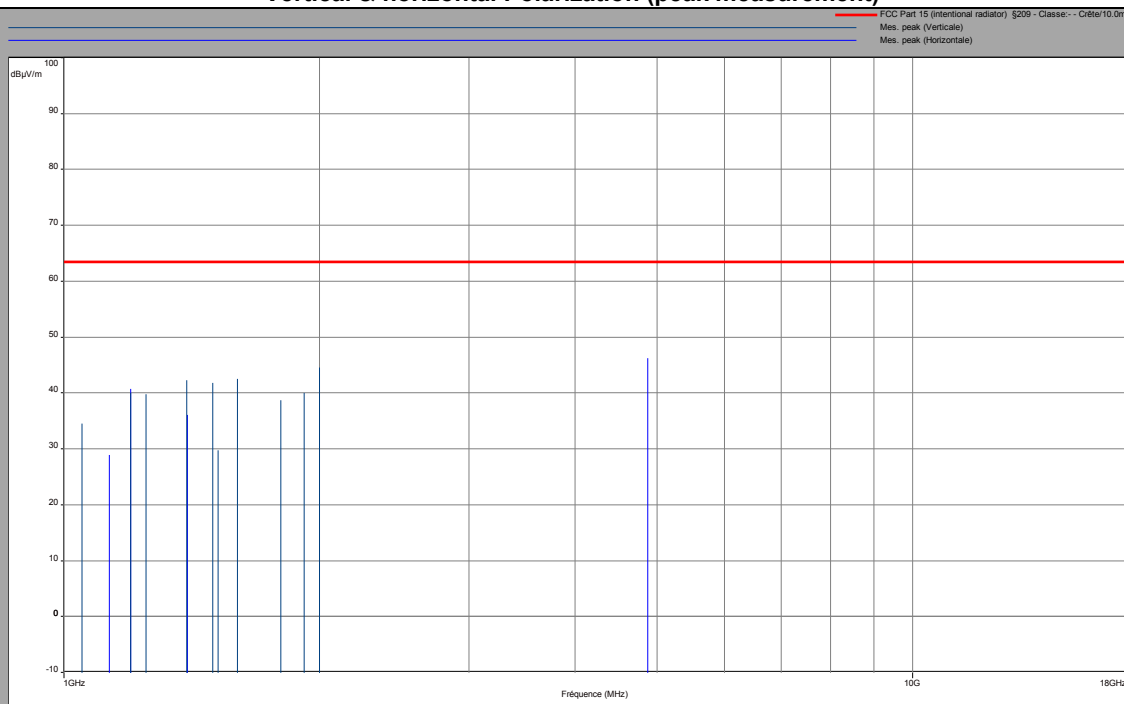


**802.11b / 802.11G / 802.11n HT20**

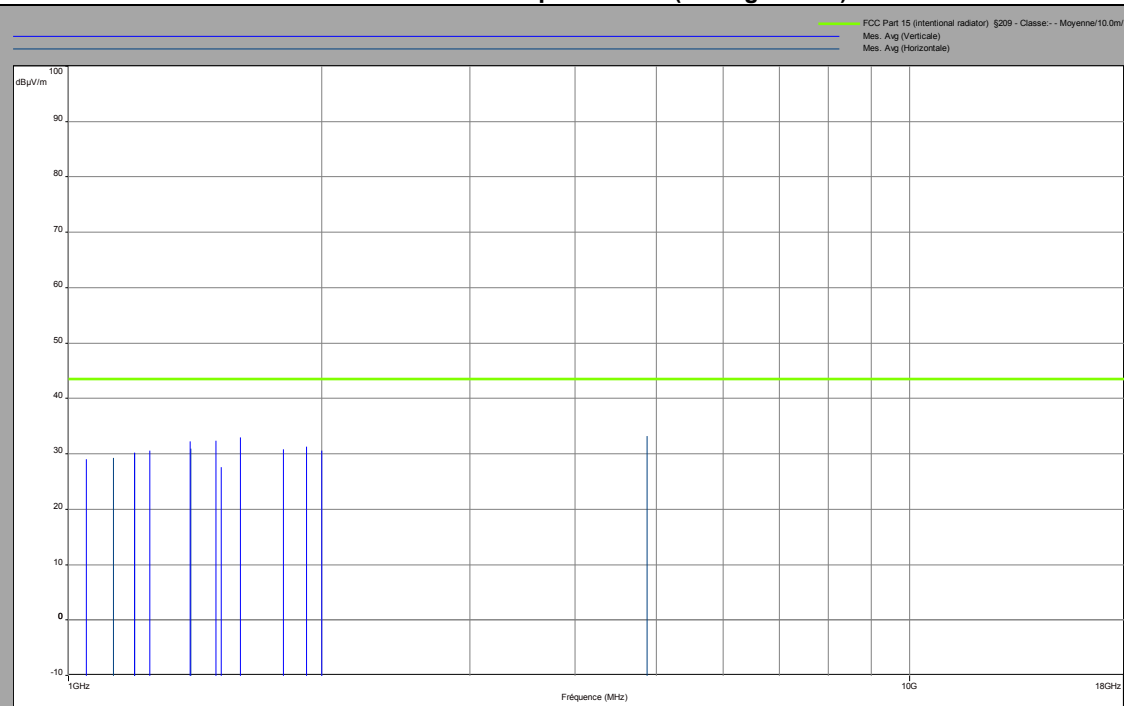
**Cnom**

**Above 1GHz**

**Vertical & horizontal Polarization (peak measurement)**



**Vertical & Horizontal polarization(average value)**





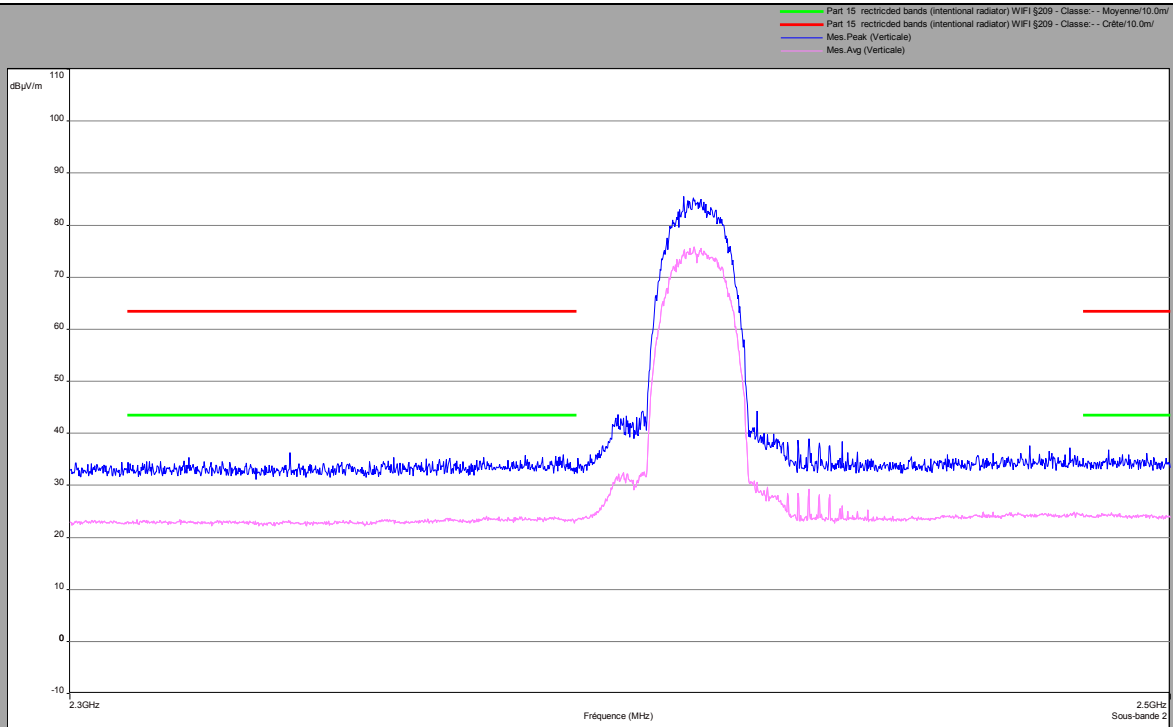
L C I E

### 802.11b

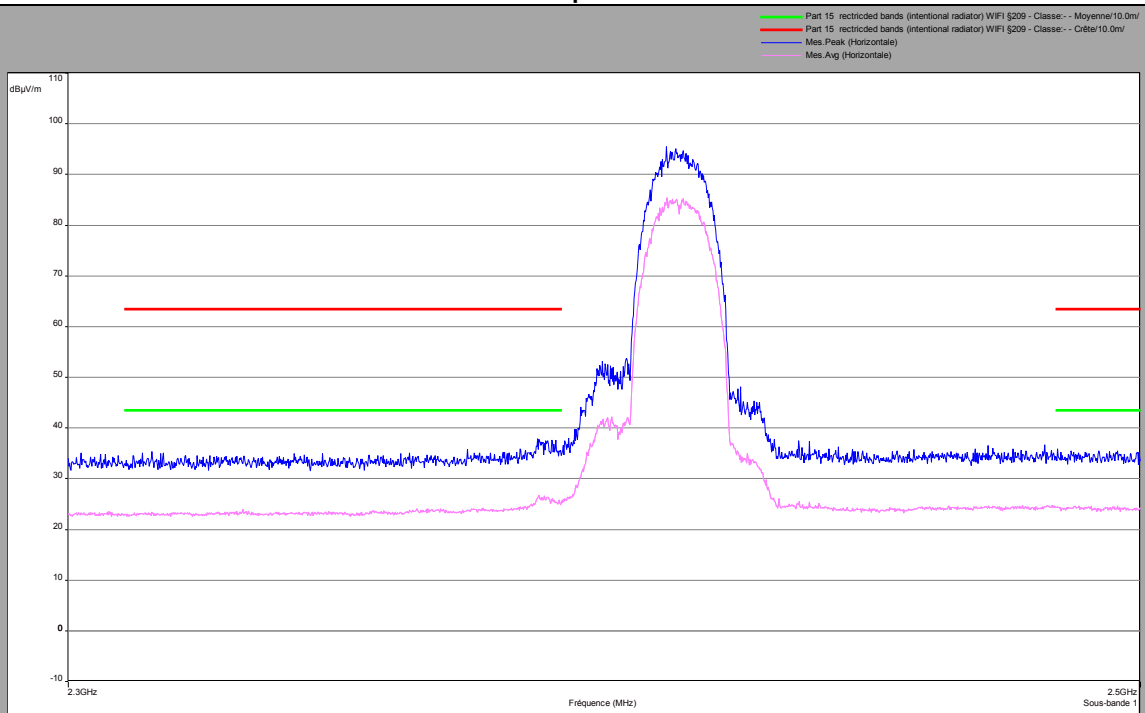
### Cmin

### Zoom 2310MHz-2500MHz

### Vertical Polarization



### Horizontal polarization







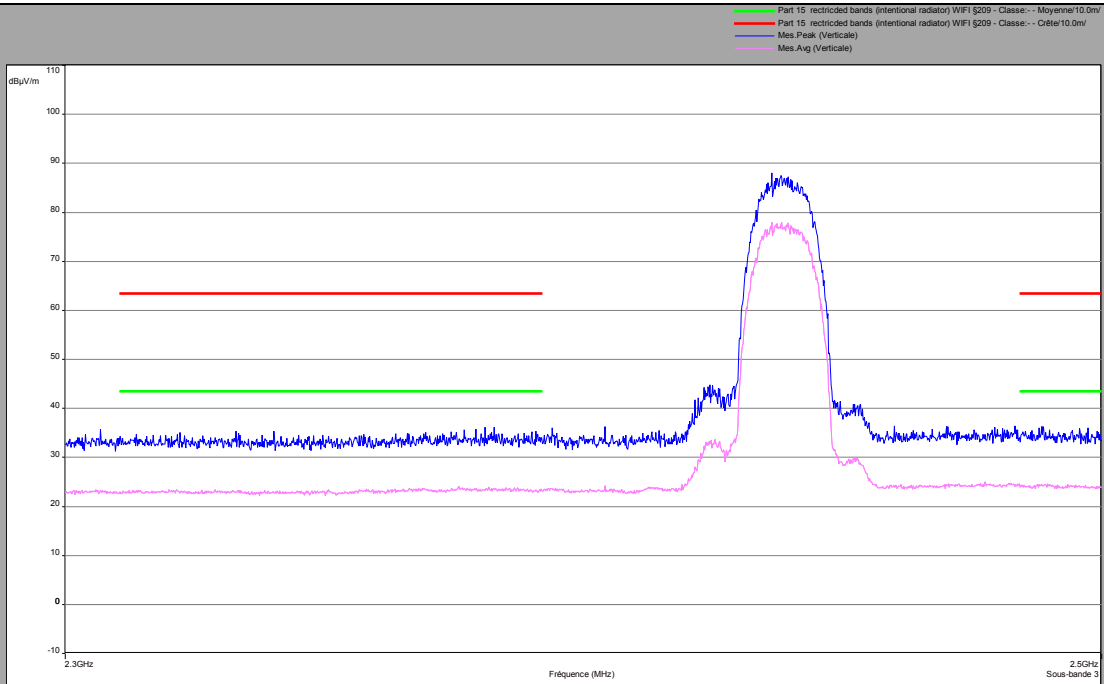
L C I E

802.11b

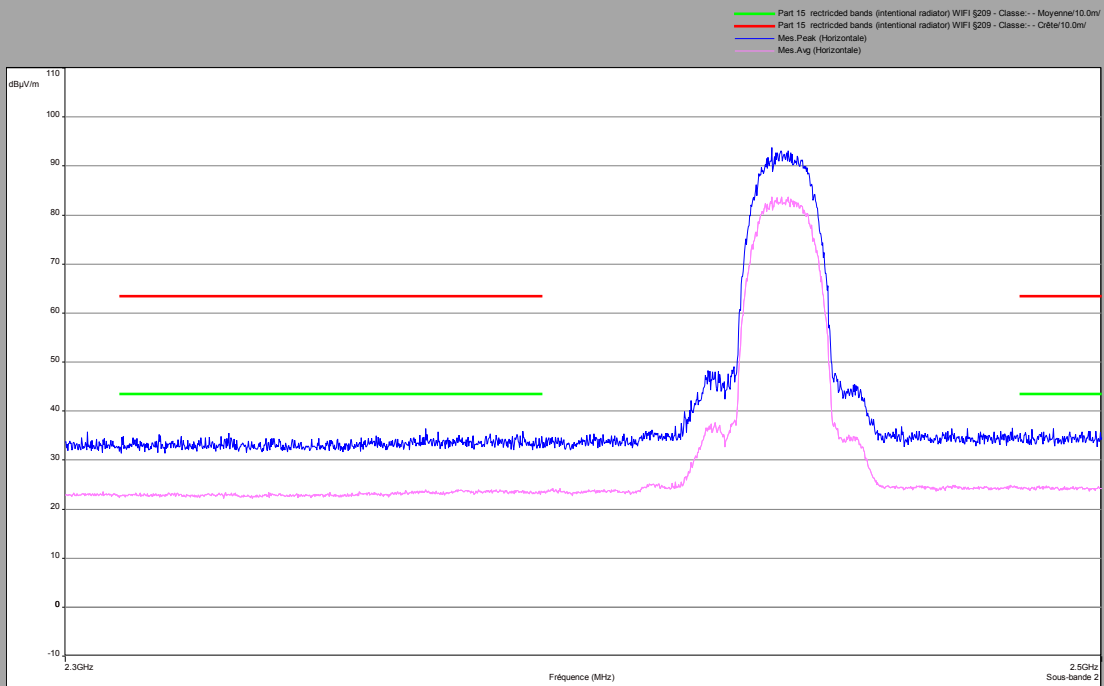
Cnom

Zoom 2310MHz-2500MHz

Vertical Polarization



Horizontal polarization





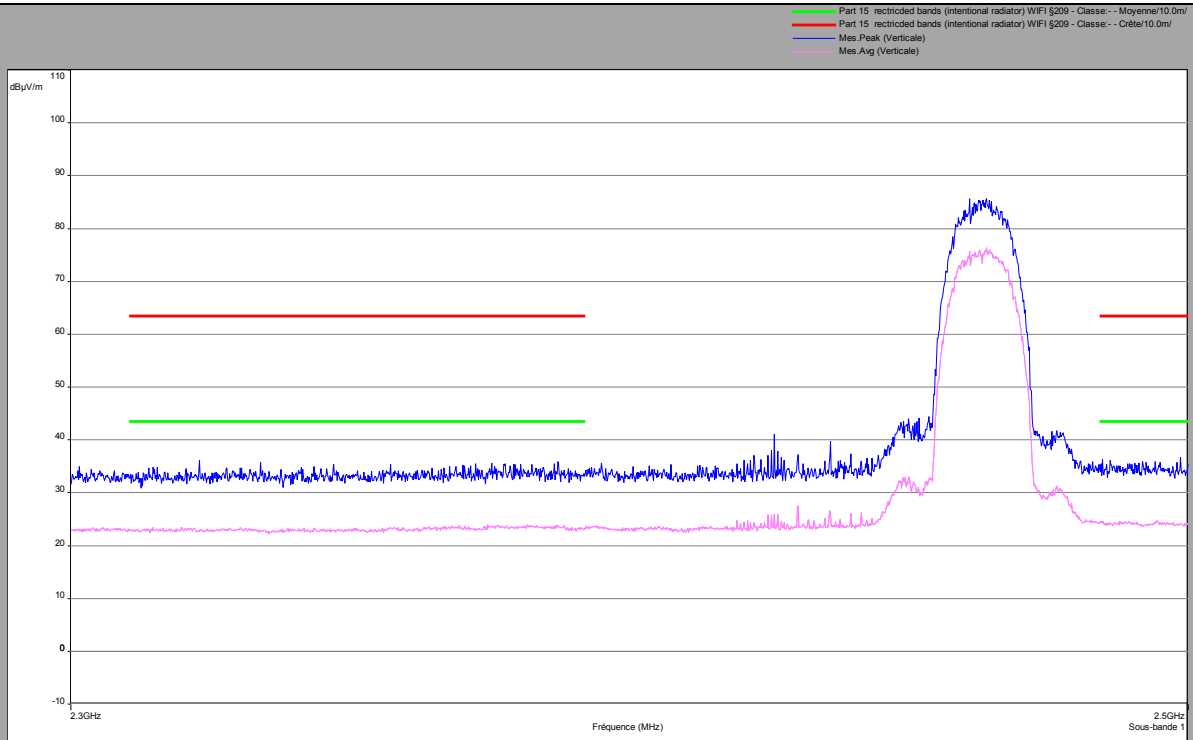
L C I E

802.11b

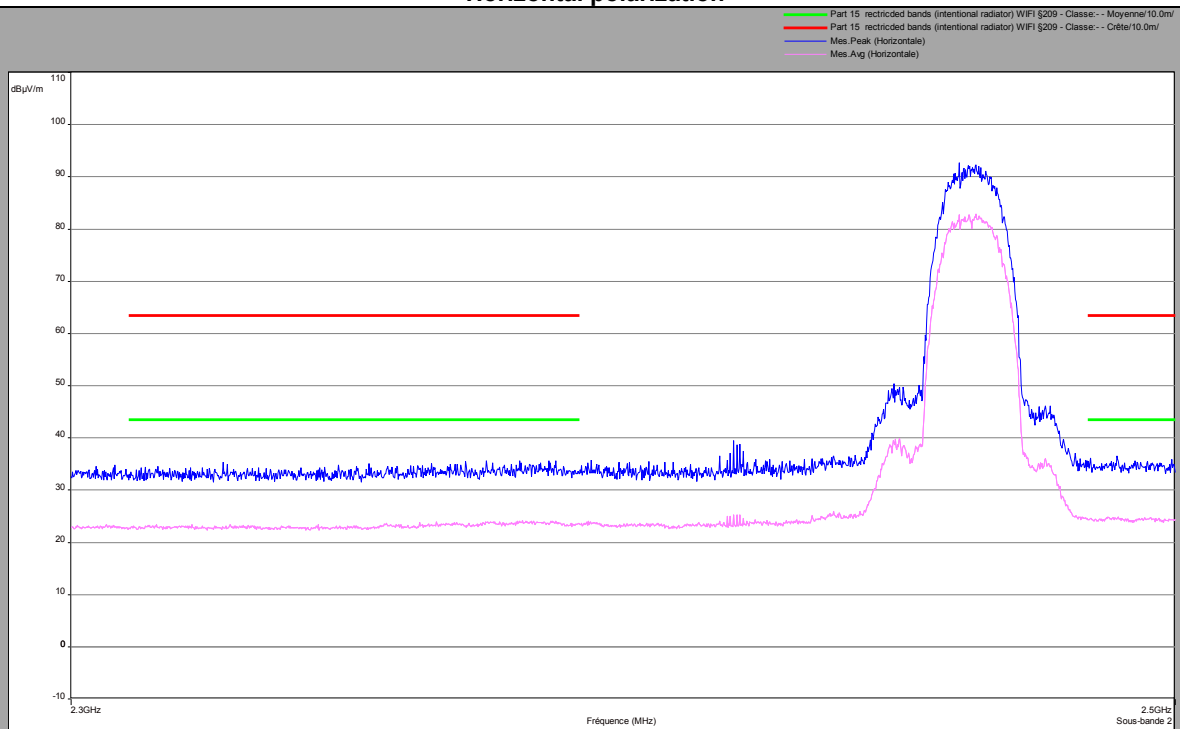
Cmax

Zoom 2310MHz-2500MHz

Vertical Polarization



Horizontal polarization

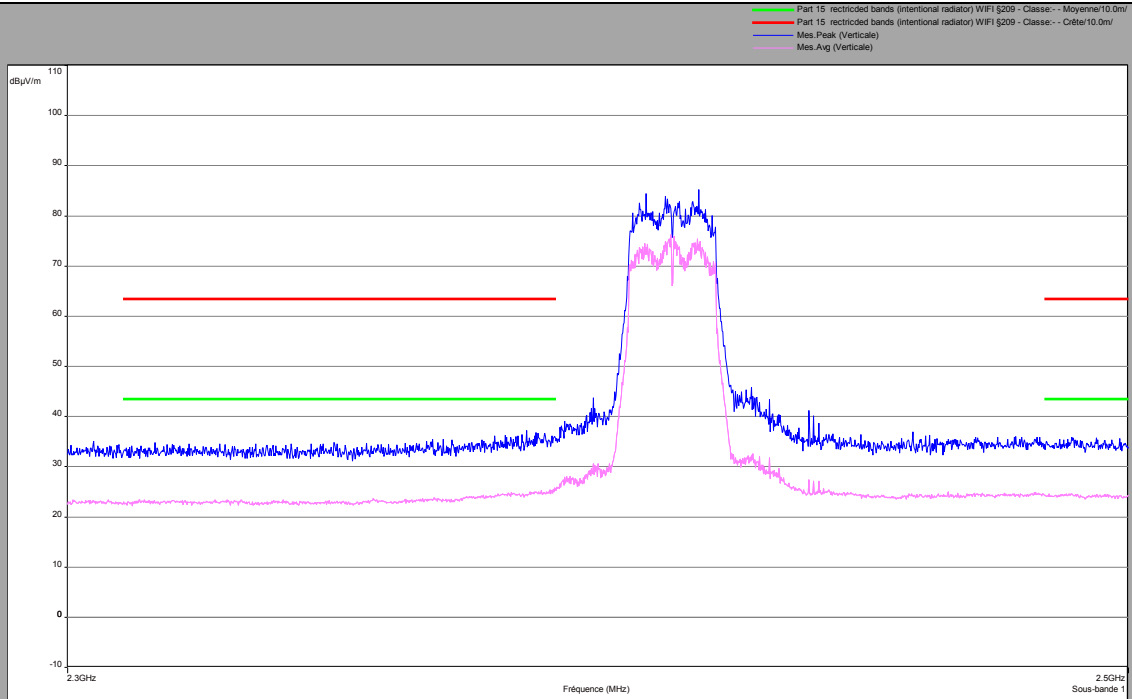




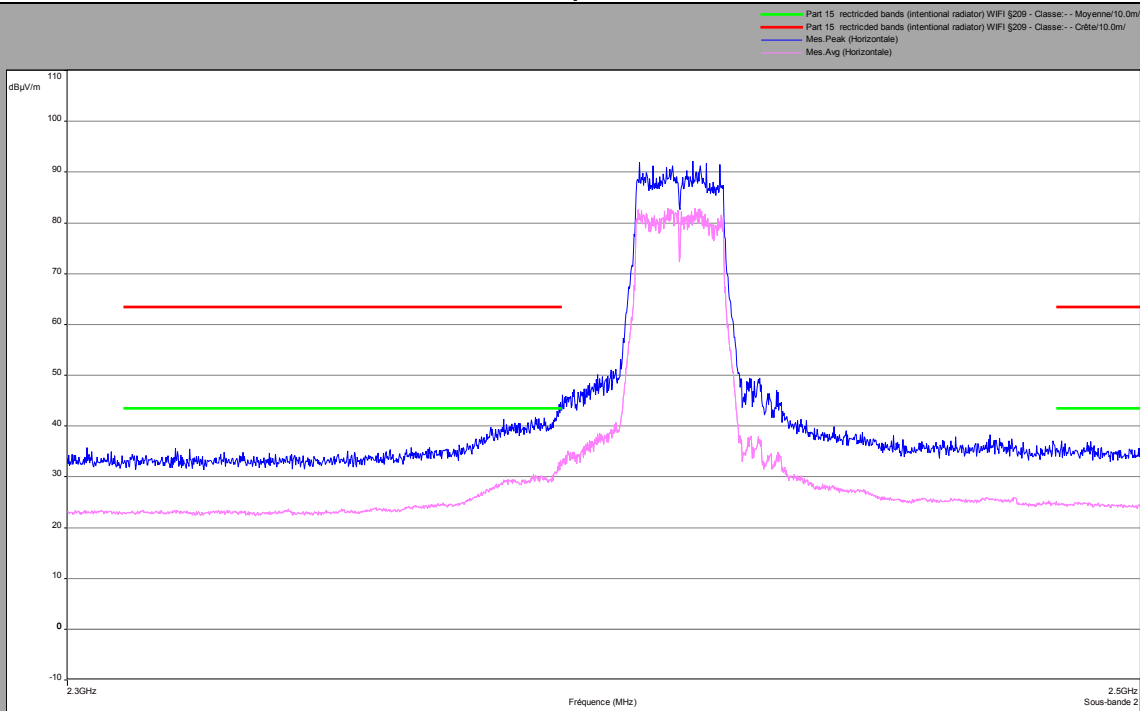
L C I E

802.11g  
Cmin

Zoom 2310MHz-2500MHz  
Vertical Polarization



Horizontal polarization





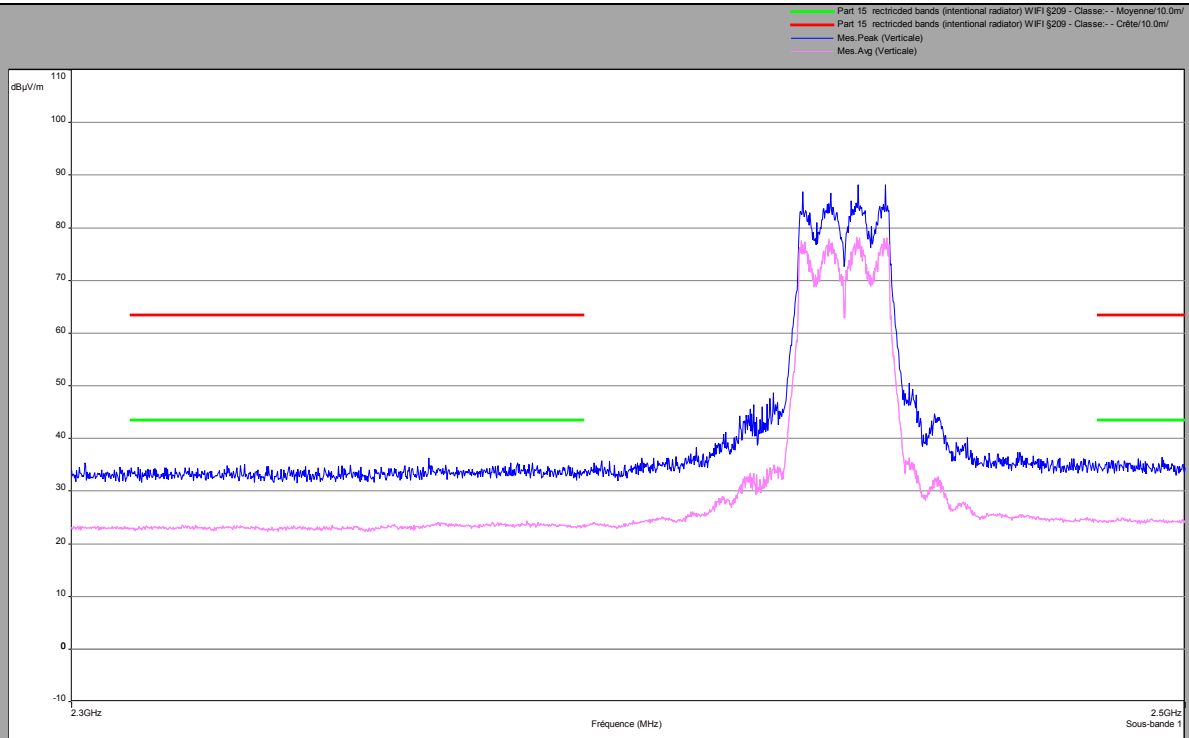
L C I E

802.11g

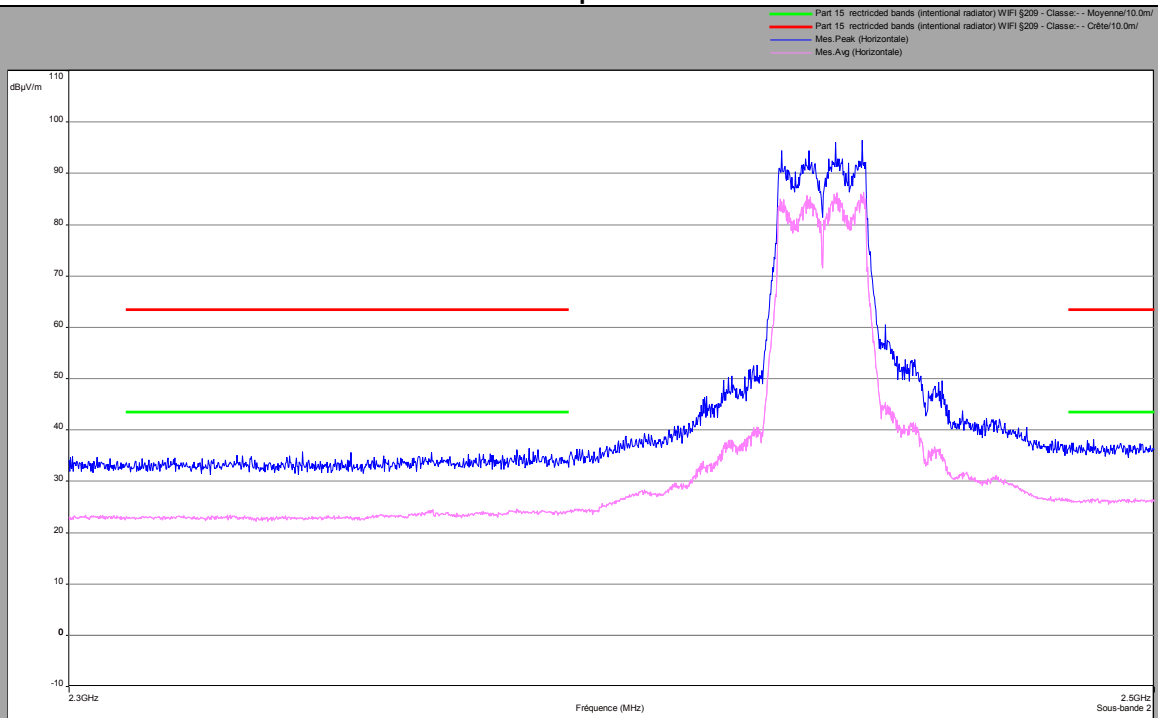
Cnom

Zoom 2310MHz-2500MHz

Vertical Polarization



Horizontal polarization





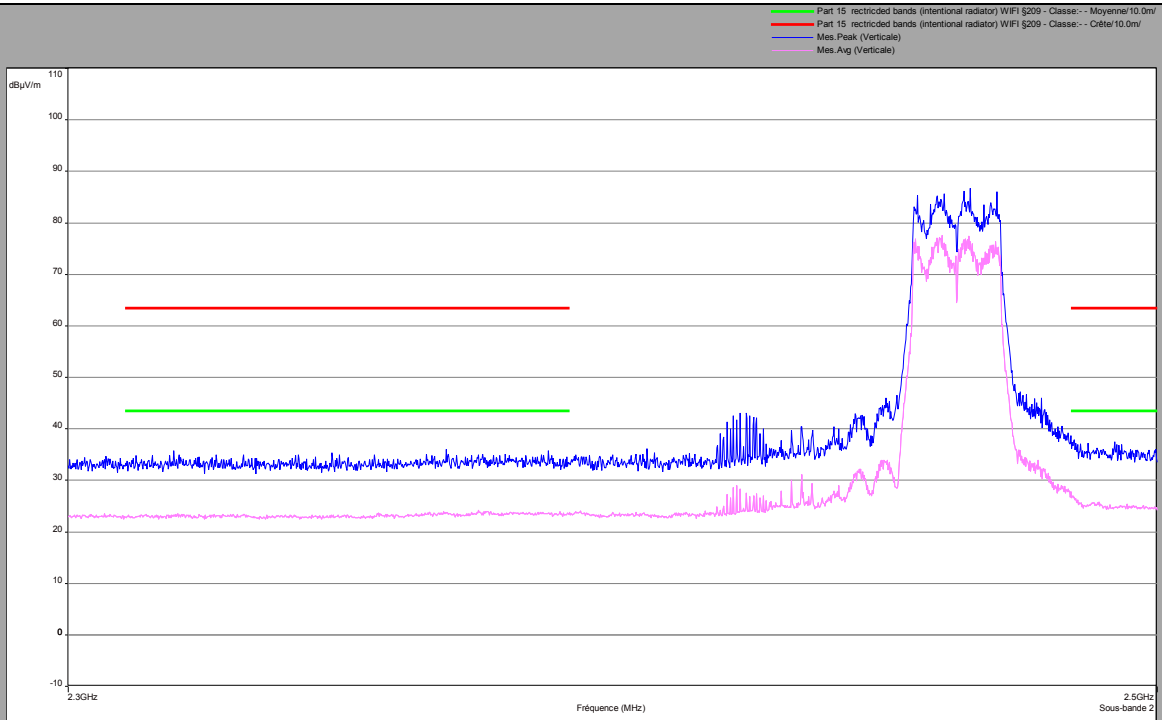
L C I E

802.11g

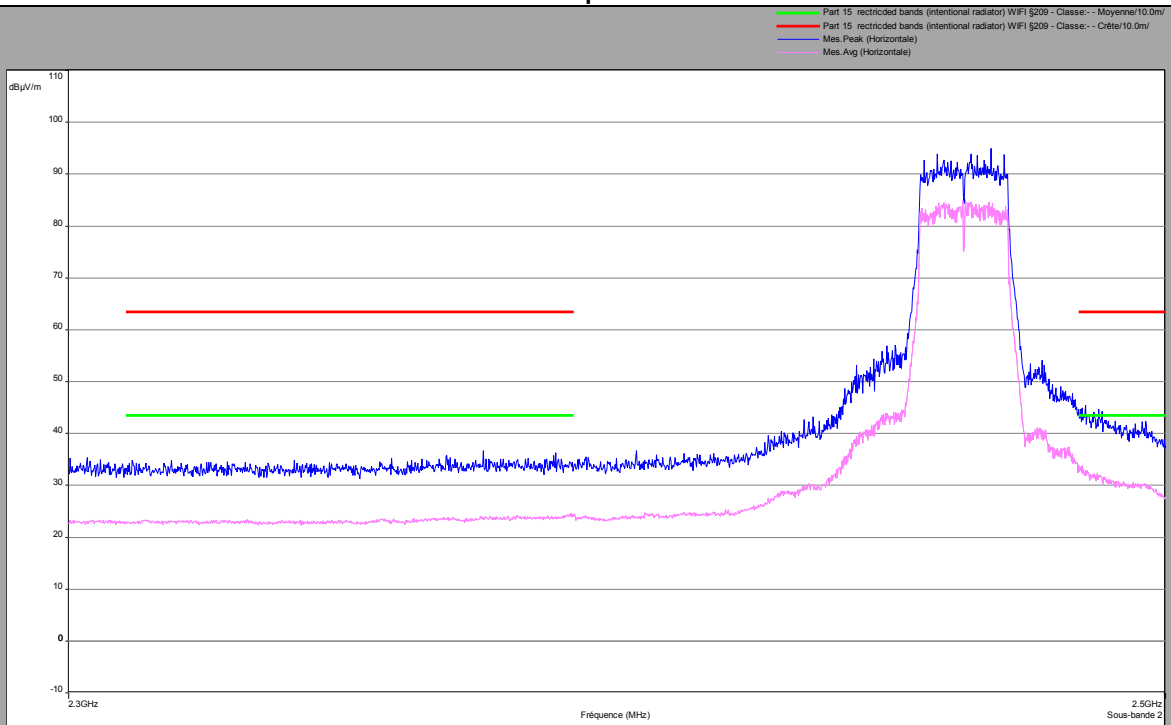
Cmax

Zoom 2310MHz-2500MHz

Vertical Polarization



Horizontal polarization





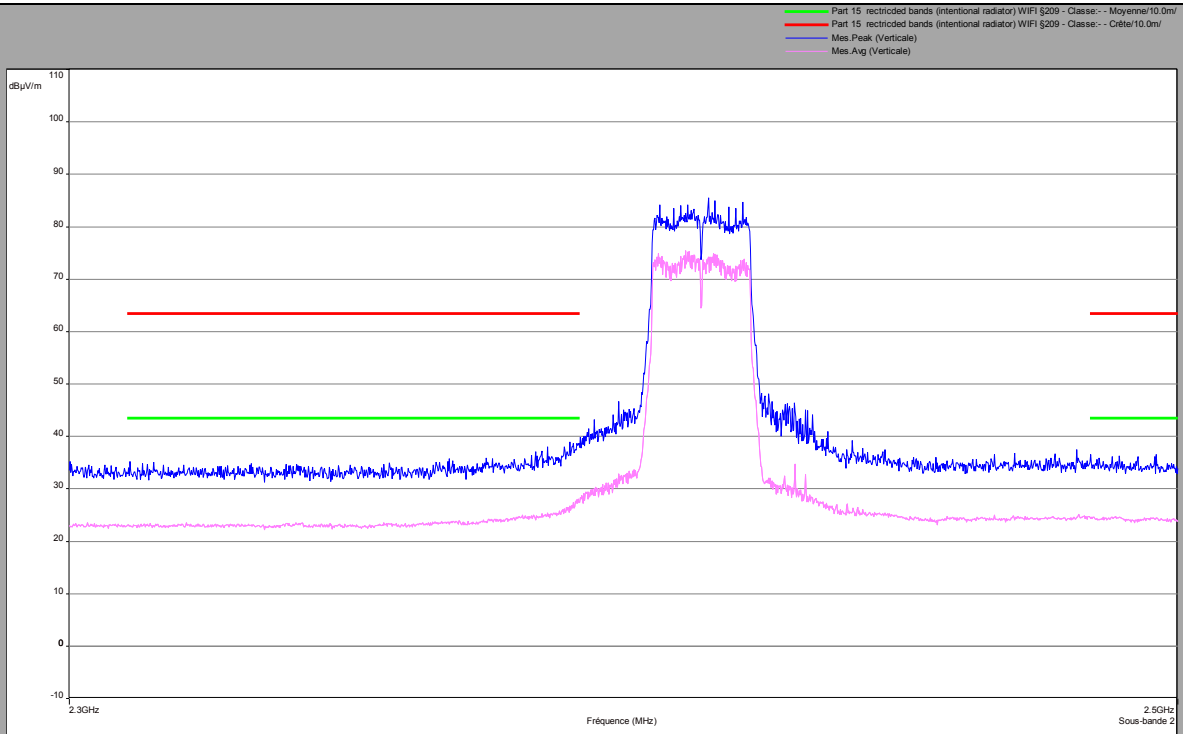
L C I E

802.11n HT20

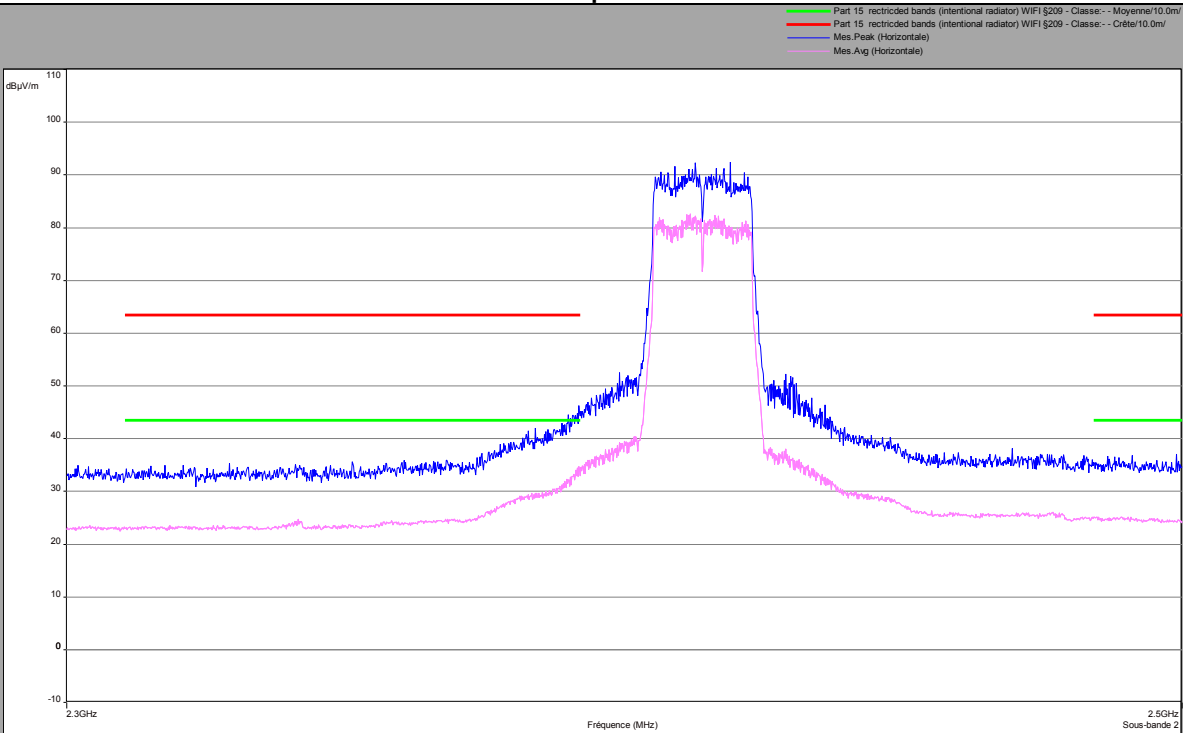
Cmin

Zoom 2310MHz-2500MHz

Vertical Polarization



Horizontal polarization





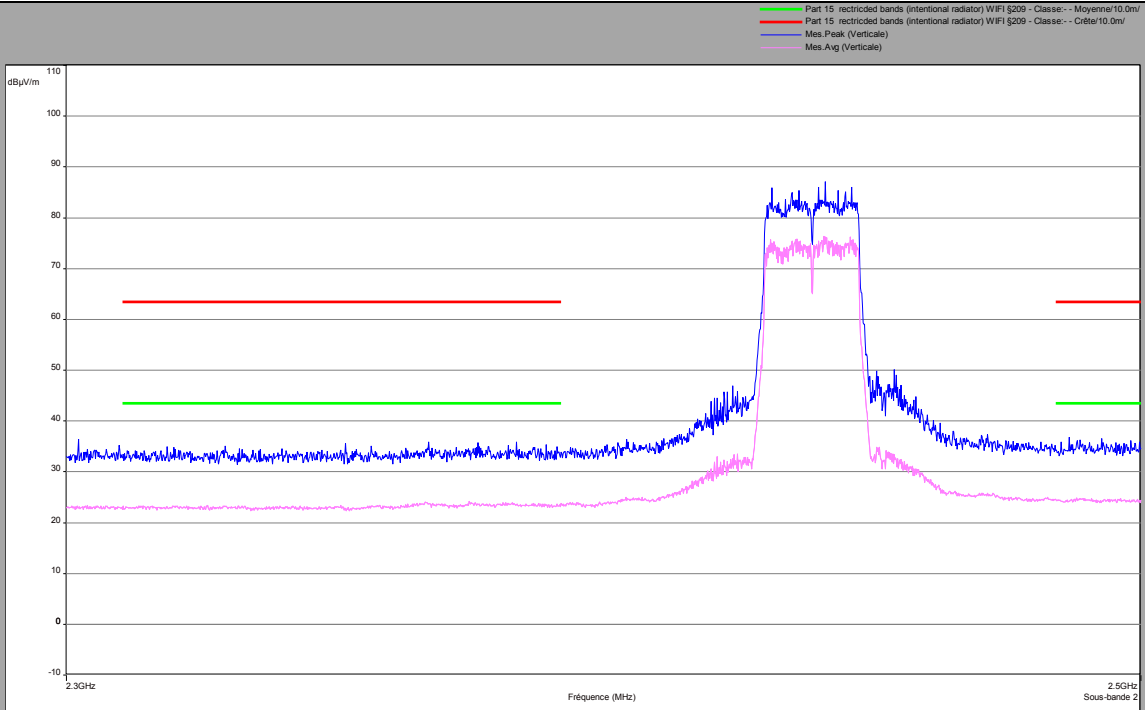
L C I E

### 802.11n HT20

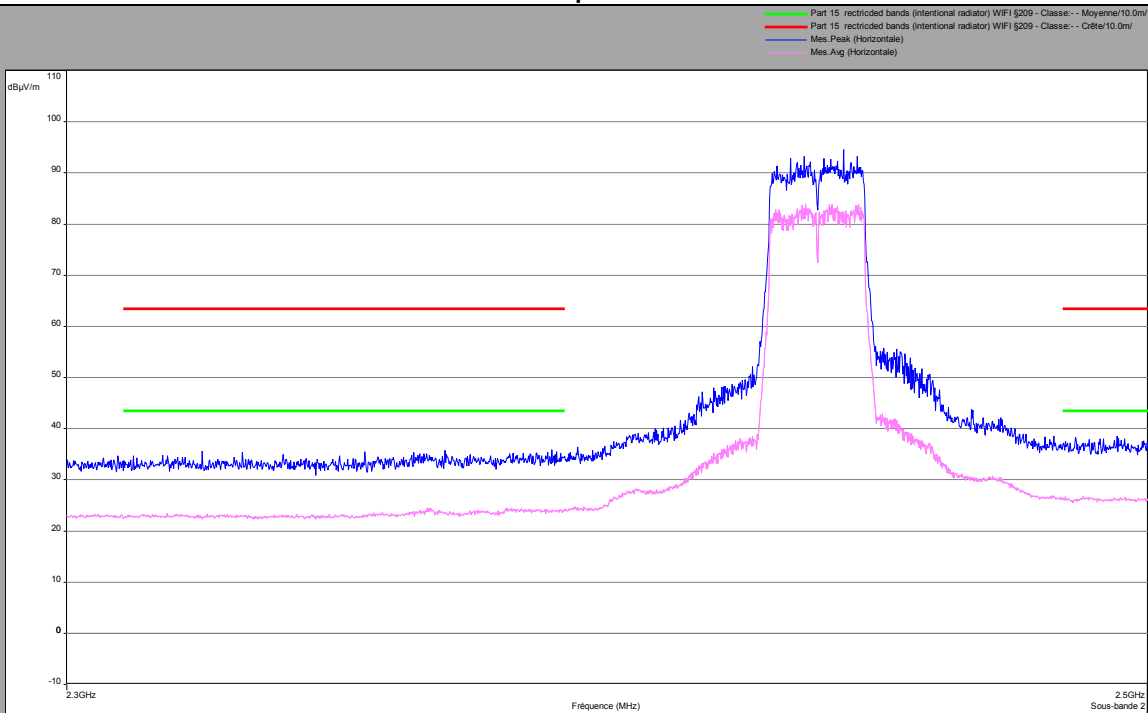
Cnom

Above 1GHz

### Vertical Polarization



### Horizontal polarization





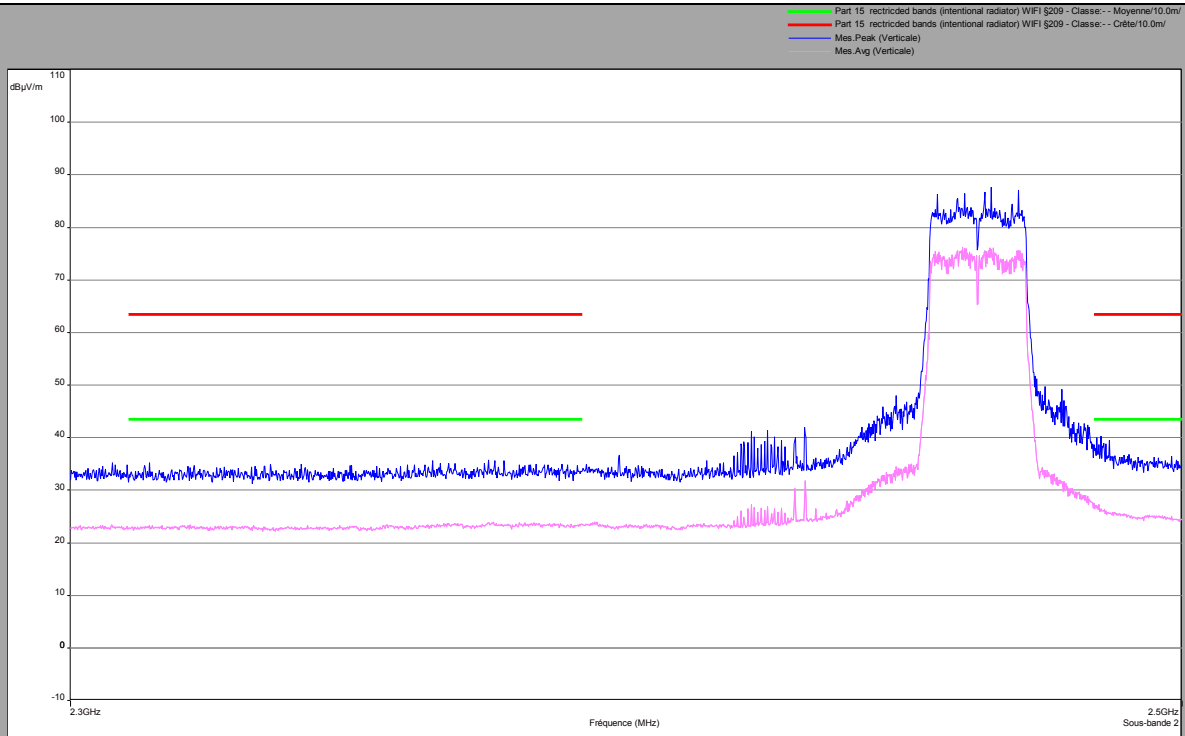
L C I E

802.11n HT20

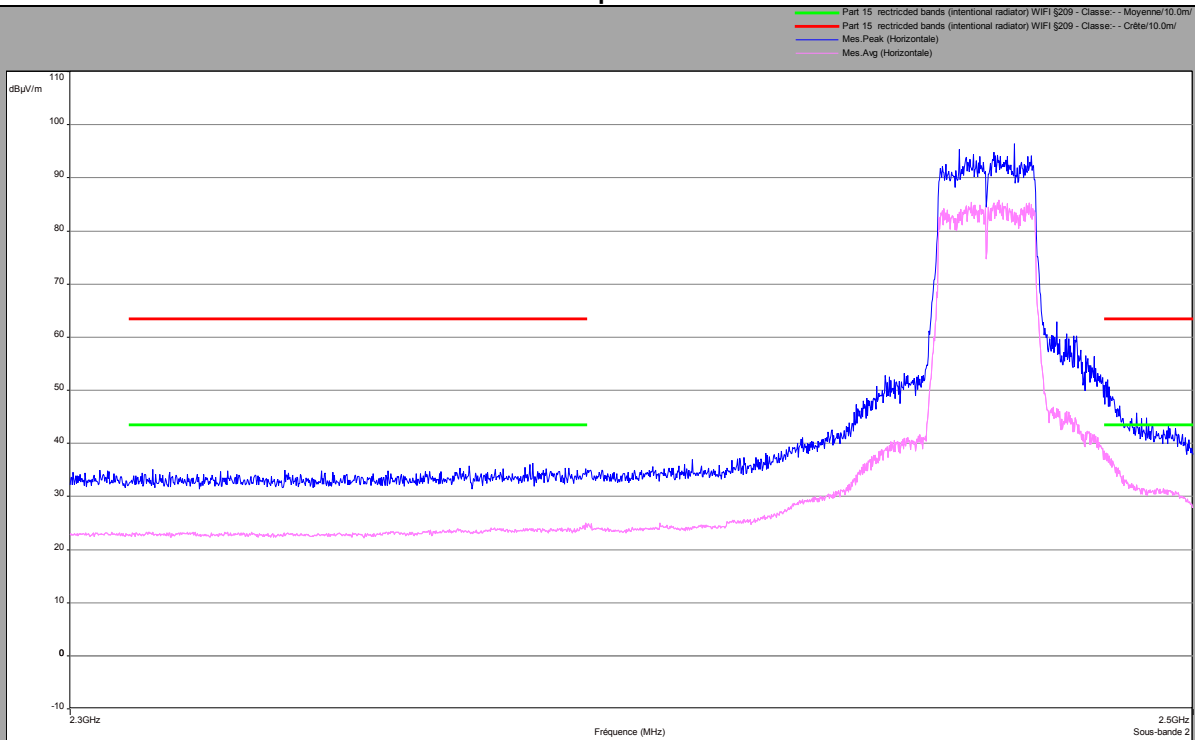
Cmax

Zoom 2310MHz-2500MHz

Vertical Polarization



Horizontal polarization







L C I E

| Below 1GHz   |                 |                            |                      |
|--------------|-----------------|----------------------------|----------------------|
| Polarization | Frequency (MHz) | QPeak Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) |
| Vertical     | 30.6            | 22.27                      | 29.5                 |
| Vertical     | 33.5            | 20.67                      | 29.5                 |
| Vertical     | 39.6            | 22.14                      | 29.5                 |
| Vertical     | 43.5            | 19.67                      | 29.5                 |
| Vertical     | 45.8            | 16.89                      | 29.5                 |
| Vertical     | 47.8            | 22.45                      | 29.5                 |
| Vertical     | 49.8            | 22.31                      | 29.5                 |
| Vertical     | 50.6            | 22.64                      | 29.5                 |
| Vertical     | 51.8            | 21.61                      | 29.5                 |
| Vertical     | 51.8            | 24.1                       | 29.5                 |
| Vertical     | 53.6            | 28.23                      | 29.5                 |
| Vertical     | 55.3            | 28.41                      | 29.5                 |
| Vertical     | 56              | 25                         | 29.5                 |
| Vertical     | 57.5            | 23.93                      | 29.5                 |
| Vertical     | 63.6            | 14.97                      | 29.5                 |
| Vertical     | 106.6           | 19.52                      | 33                   |
| Vertical     | 107.3           | 20.96                      | 33                   |
| Vertical     | 108.8           | 19.88                      | 33                   |
| Vertical     | 109.4           | 21.38                      | 33                   |
| Vertical     | 110.3           | 19.41                      | 33                   |
| Vertical     | 110.9           | 23.21                      | 33                   |
| Vertical     | 111.6           | 19.71                      | 33                   |
| Vertical     | 112.8           | 22.62                      | 33                   |
| Vertical     | 114.2           | 22.45                      | 33                   |
| Vertical     | 115.6           | 21.84                      | 33                   |
| Vertical     | 117.1           | 21.35                      | 33                   |
| Vertical     | 117.1           | 21.28                      | 33                   |
| Vertical     | 125             | 20.96                      | 33                   |
| Vertical     | 150             | 19.13                      | 33                   |
| Vertical     | 155.6           | 19.32                      | 33                   |
| Vertical     | 159.1           | 18.99                      | 33                   |
| Vertical     | 164.5           | 21.04                      | 33                   |
| Vertical     | 168             | 18.91                      | 33                   |
| Vertical     | 185             | 23.56                      | 33                   |
| Vertical     | 194             | 18.81                      | 33                   |
| Vertical     | 215.4           | 20.33                      | 33                   |
| Vertical     | 250             | 29.02                      | 35.5                 |
| Vertical     | 297             | 19.36                      | 35.5                 |
| Vertical     | 309.5           | 19.43                      | 35.5                 |
| Vertical     | 340             | 20.15                      | 35.5                 |
| Vertical     | 375             | 21.62                      | 35.5                 |
| Vertical     | 398.3           | 22.18                      | 35.5                 |
| Vertical     | 500             | 25.94                      | 35.5                 |
| Vertical     | 598             | 27.53                      | 35.5                 |
| Vertical     | 800             | 28.84                      | 35.5                 |
| Vertical     | 891.1           | 25.66                      | 35.5                 |



L C I E

| Below 1GHz   |                 |                            |                      |
|--------------|-----------------|----------------------------|----------------------|
| Polarization | Frequency (MHz) | QPeak Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) |
| Horizontal   | 108.8           | 19.57                      | 33                   |
| Horizontal   | 111.6           | 17.53                      | 33                   |
| Horizontal   | 125             | 18.15                      | 33                   |
| Horizontal   | 155.6           | 20.28                      | 33                   |
| Horizontal   | 168             | 18.29                      | 33                   |
| Horizontal   | 214.7           | 20.13                      | 33                   |
| Horizontal   | 250             | 28.82                      | 35.5                 |
| Horizontal   | 296.3           | 24.05                      | 35.5                 |
| Horizontal   | 375             | 26.21                      | 35.5                 |
| Horizontal   | 398.4           | 21.98                      | 35.5                 |
| Horizontal   | 500             | 25.74                      | 35.5                 |



L C I E

| 802.11b      |                 |                              |   |                              |                           |                           |
|--------------|-----------------|------------------------------|---|------------------------------|---------------------------|---------------------------|
| Above 1GHz   |                 |                              |   |                              |                           |                           |
| Cmin         |                 |                              |   |                              |                           |                           |
| Polarization | Frequency (MHz) | Average Level (dB $\mu$ V/m) | Average Level + Duty Cycle (dB $\mu$ V/m) | Average Limit (dB $\mu$ V/m) | Peak Level (dB $\mu$ V/m) | Peak Limit (dB $\mu$ V/m) |
| Vertical     | 1049,9          | 29,02                        | 35,23                                     | 43.5                         | 34.49                     | 63.5                      |
| Vertical     | 1197,7          | 30,29                        | 36,5                                      | 43.5                         | 40.09                     | 63.5                      |
| Vertical     | 1250            | 30,64                        | 36,85                                     | 43.5                         | 39.77                     | 63.5                      |
| Vertical     | 1395,3          | 32,26                        | 38,47                                     | 43.5                         | 42.36                     | 63.5                      |
| Vertical     | 1497            | 32,46                        | 38,67                                     | 43.5                         | 41.89                     | 63.5                      |
| Vertical     | 1520,3          | 27,65                        | 33,86                                     | 43.5                         | 29.81                     | 63.5                      |
| Vertical     | 1600            | 32,94                        | 39,15                                     | 43.5                         | 42.58                     | 63.5                      |
| Vertical     | 1800            | 30,8                         | 37,01                                     | 43.5                         | 38.77                     | 63.5                      |
| Vertical     | 1920            | 31,36                        | 37,57                                     | 43.5                         | 40.03                     | 63.5                      |
| Vertical     | 2000            | 30,57                        | 36,78                                     | 43.5                         | 44.63                     | 63.5                      |
| Vertical     | 2390            | 24,4                         | 30,61                                     | 43.5                         | 35.2                      | 63.5                      |
| Vertical     | 2483,5          | 24,2                         | 30,41                                     | 43.5                         | 36.7                      | 63.5                      |
| Horizontal   | 1130,3          | 29,29                        | 35,5                                      | 43.5                         | 29.91                     | 63.5                      |
| Horizontal   | 1198,1          | 30,12                        | 36,33                                     | 43.5                         | 40.76                     | 63.5                      |
| Horizontal   | 1397,4          | 30,95                        | 37,16                                     | 43.5                         | 36.13                     | 63.5                      |
| Horizontal   | 2390            | 24,3                         | 30,51                                     | 43.5                         | 37.6                      | 63.5                      |
| Horizontal   | 2483,5          | 24,4                         | 30,61                                     | 43.5                         | 36                        | 63.5                      |
| Horizontal   | 4824            | 33,28                        | 39,49                                     | 43.5                         | 46.29                     | 63.5                      |



L C I E

| 802.11b      |                 |                              |   |                              |                           |                           |
|--------------|-----------------|------------------------------|---|------------------------------|---------------------------|---------------------------|
| Above 1GHz   |                 |                              |   |                              |                           |                           |
| Cnom         |                 |                              |   |                              |                           |                           |
| Polarization | Frequency (MHz) | Average Level (dB $\mu$ V/m) | Average Level + Duty Cycle (dB $\mu$ V/m) | Average Limit (dB $\mu$ V/m) | Peak Level (dB $\mu$ V/m) | Peak Limit (dB $\mu$ V/m) |
| Vertical     | 1049,9          | 29,02                        | 35,23                                     | 43.5                         | 34.49                     | 63.5                      |
| Vertical     | 1197,7          | 30,29                        | 36,5                                      | 43.5                         | 40.09                     | 63.5                      |
| Vertical     | 1250            | 30,64                        | 36,85                                     | 43.5                         | 39.77                     | 63.5                      |
| Vertical     | 1395,3          | 32,26                        | 38,47                                     | 43.5                         | 42.36                     | 63.5                      |
| Vertical     | 1497            | 32,46                        | 38,67                                     | 43.5                         | 41.89                     | 63.5                      |
| Vertical     | 1520,3          | 27,65                        | 33,86                                     | 43.5                         | 29.81                     | 63.5                      |
| Vertical     | 1600            | 32,94                        | 39,15                                     | 43.5                         | 42.58                     | 63.5                      |
| Vertical     | 1800            | 30,8                         | 37,01                                     | 43.5                         | 38.77                     | 63.5                      |
| Vertical     | 1920            | 31,36                        | 37,57                                     | 43.5                         | 40.03                     | 63.5                      |
| Vertical     | 2000            | 30,57                        | 36,78                                     | 43.5                         | 44.63                     | 63.5                      |
| Vertical     | 2390            | 23,5                         | 29,71                                     | 43.5                         | 35.4                      | 63.5                      |
| Vertical     | 2483,5          | 24                           | 30,21                                     | 43.5                         | 36.3                      | 63.5                      |
| Horizontal   | 1130,3          | 29,29                        | 35,5                                      | 43.5                         | 29.91                     | 63.5                      |
| Horizontal   | 1198,1          | 30,12                        | 36,33                                     | 43.5                         | 40.76                     | 63.5                      |
| Horizontal   | 1397,4          | 30,95                        | 37,16                                     | 43.5                         | 36.13                     | 63.5                      |
| Horizontal   | 2390            | 24                           | 30,21                                     | 43.5                         | 35.8                      | 63.5                      |
| Horizontal   | 2483,5          | 24,4                         | 30,61                                     | 43.5                         | 36.3                      | 63.5                      |
| Horizontal   | 4874            | 32,65                        | 38,86                                     | 43.5                         | 47.31                     | 63.5                      |



L C I E

| 802.11b      |                 |                              |   |                              |                           |                           |
|--------------|-----------------|------------------------------|---|------------------------------|---------------------------|---------------------------|
| Above 1GHz   |                 |                              |   |                              |                           |                           |
| Cmax         |                 |                              |   |                              |                           |                           |
| Polarization | Frequency (MHz) | Average Level (dB $\mu$ V/m) | Average Level + Duty Cycle (dB $\mu$ V/m) | Average Limit (dB $\mu$ V/m) | Peak Level (dB $\mu$ V/m) | Peak Limit (dB $\mu$ V/m) |
| Vertical     | 1049,9          | 29,02                        | 35,23                                     | 43.5                         | 34.49                     | 63.5                      |
| Vertical     | 1197,7          | 30,29                        | 36,5                                      | 43.5                         | 40.09                     | 63.5                      |
| Vertical     | 1250            | 30,64                        | 36,85                                     | 43.5                         | 39.77                     | 63.5                      |
| Vertical     | 1395,3          | 32,26                        | 38,47                                     | 43.5                         | 42.36                     | 63.5                      |
| Vertical     | 1497            | 32,46                        | 38,67                                     | 43.5                         | 41.89                     | 63.5                      |
| Vertical     | 1520,3          | 27,65                        | 33,86                                     | 43.5                         | 29.81                     | 63.5                      |
| Vertical     | 1600            | 32,94                        | 39,15                                     | 43.5                         | 42.58                     | 63.5                      |
| Vertical     | 1800            | 30,8                         | 37,01                                     | 43.5                         | 38.77                     | 63.5                      |
| Vertical     | 1920            | 31,36                        | 37,57                                     | 43.5                         | 40.03                     | 63.5                      |
| Vertical     | 2000            | 30,57                        | 36,78                                     | 43.5                         | 44.63                     | 63.5                      |
| Vertical     | 2390            | 24,5                         | 30,71                                     | 43.5                         | 35.5                      | 63.5                      |
| Vertical     | 2483,5          | 24,6                         | 30,81                                     | 43.5                         | 36.3                      | 63.5                      |
| Horizontal   | 1130,3          | 29,29                        | 35,5                                      | 43.5                         | 29.91                     | 63.5                      |
| Horizontal   | 1198,1          | 30,12                        | 36,33                                     | 43.5                         | 40.76                     | 63.5                      |
| Horizontal   | 1397,4          | 30,95                        | 37,16                                     | 43.5                         | 36.13                     | 63.5                      |
| Horizontal   | 2390            | 24                           | 30,21                                     | 43.5                         | 35.6                      | 63.5                      |
| Horizontal   | 2483,5          | 24,4                         | 30,61                                     | 43.5                         | 36.5                      | 63.5                      |
| Horizontal   | 4924            | 34,12                        | 40,33                                     | 43.5                         | 46.84                     | 63.5                      |



L C I E

| 802.11g      |                 |                              |   |                              |                           |                           |
|--------------|-----------------|------------------------------|---|------------------------------|---------------------------|---------------------------|
| Above 1GHz   |                 |                              |   |                              |                           |                           |
| Cmin         |                 |                              |   |                              |                           |                           |
| Polarization | Frequency (MHz) | Average Level (dB $\mu$ V/m) | Average Level + Duty Cycle (dB $\mu$ V/m) | Average Limit (dB $\mu$ V/m) | Peak Level (dB $\mu$ V/m) | Peak Limit (dB $\mu$ V/m) |
| Vertical     | 1049,9          | 29,02                        | 33,61                                     | 43.5                         | 34.49                     | 63.5                      |
| Vertical     | 1197,7          | 30,29                        | 34,88                                     | 43.5                         | 40.09                     | 63.5                      |
| Vertical     | 1250            | 30,64                        | 35,23                                     | 43.5                         | 39.77                     | 63.5                      |
| Vertical     | 1395,3          | 32,26                        | 36,85                                     | 43.5                         | 42.36                     | 63.5                      |
| Vertical     | 1497            | 32,46                        | 37,05                                     | 43.5                         | 41.89                     | 63.5                      |
| Vertical     | 1520,3          | 27,65                        | 32,24                                     | 43.5                         | 29.81                     | 63.5                      |
| Vertical     | 1600            | 32,94                        | 37,53                                     | 43.5                         | 42.58                     | 63.5                      |
| Vertical     | 1800            | 30,8                         | 35,39                                     | 43.5                         | 38.77                     | 63.5                      |
| Vertical     | 1920            | 31,36                        | 35,95                                     | 43.5                         | 40.03                     | 63.5                      |
| Vertical     | 2000            | 30,57                        | 35,16                                     | 43.5                         | 44.63                     | 63.5                      |
| Vertical     | 2390            | 25                           | 29,59                                     | 43.5                         | 36.7                      | 63.5                      |
| Vertical     | 2483,5          | 24,5                         | 29,09                                     | 43.5                         | 35.8                      | 63.5                      |
| Horizontal   | 1130,3          | 29,29                        | 33,88                                     | 43.5                         | 29.91                     | 63.5                      |
| Horizontal   | 1198,1          | 30,12                        | 34,71                                     | 43.5                         | 40.76                     | 63.5                      |
| Horizontal   | 1397,4          | 30,95                        | 35,54                                     | 43.5                         | 36.13                     | 63.5                      |
| Horizontal   | 2390            | 31                           | 35,59                                     | 43.5                         | 43                        | 63.5                      |
| Horizontal   | 2483,5          | 24,7                         | 29,29                                     | 43.5                         | 37.1                      | 63.5                      |
| Horizontal   | 4824            | 33,28                        | 37,87                                     | 43.5                         | 46.29                     | 63.5                      |



L C I E

| 802.11g      |                 |                              |   |                              |                           |                           |
|--------------|-----------------|------------------------------|---|------------------------------|---------------------------|---------------------------|
| Above 1GHz   |                 |                              |   |                              |                           |                           |
| Cnom         |                 |                              |   |                              |                           |                           |
| Polarization | Frequency (MHz) | Average Level (dB $\mu$ V/m) | Average Level + Duty Cycle (dB $\mu$ V/m) | Average Limit (dB $\mu$ V/m) | Peak Level (dB $\mu$ V/m) | Peak Limit (dB $\mu$ V/m) |
| Vertical     | 1049,9          | 29,02                        | 33,61                                     | 43.5                         | 34.49                     | 63.5                      |
| Vertical     | 1197,7          | 30,29                        | 34,88                                     | 43.5                         | 40.09                     | 63.5                      |
| Vertical     | 1250            | 30,64                        | 35,23                                     | 43.5                         | 39.77                     | 63.5                      |
| Vertical     | 1395,3          | 32,26                        | 36,85                                     | 43.5                         | 42.36                     | 63.5                      |
| Vertical     | 1497            | 32,46                        | 37,05                                     | 43.5                         | 41.89                     | 63.5                      |
| Vertical     | 1520,3          | 27,65                        | 32,24                                     | 43.5                         | 29.81                     | 63.5                      |
| Vertical     | 1600            | 32,94                        | 37,53                                     | 43.5                         | 42.58                     | 63.5                      |
| Vertical     | 1800            | 30,8                         | 35,39                                     | 43.5                         | 38.77                     | 63.5                      |
| Vertical     | 1920            | 31,36                        | 35,95                                     | 43.5                         | 40.03                     | 63.5                      |
| Vertical     | 2000            | 30,57                        | 35,16                                     | 43.5                         | 44.63                     | 63.5                      |
| Vertical     | 2390            | 24,2                         | 28,79                                     | 43.5                         | 34.8                      | 63.5                      |
| Vertical     | 2483,5          | 24,4                         | 28,99                                     | 43.5                         | 35.6                      | 63.5                      |
| Horizontal   | 1130,3          | 29,29                        | 33,88                                     | 43.5                         | 29.91                     | 63.5                      |
| Horizontal   | 1198,1          | 30,12                        | 34,71                                     | 43.5                         | 40.76                     | 63.5                      |
| Horizontal   | 1397,4          | 30,95                        | 35,54                                     | 43.5                         | 36.13                     | 63.5                      |
| Horizontal   | 2390            | 24,4                         | 28,99                                     | 43.5                         | 35.7                      | 63.5                      |
| Horizontal   | 2483,5          | 26,3                         | 30,89                                     | 43.5                         | 38                        | 63.5                      |
| Horizontal   | 4874            | 32,65                        | 37,24                                     | 43.5                         | 47.31                     | 63.5                      |



L C I E

| 802.11g      |                 |                        |                                     |                        |                     |                     |
|--------------|-----------------|------------------------|-------------------------------------|------------------------|---------------------|---------------------|
| Above 1GHz   |                 |                        |                                     |                        |                     |                     |
| Cmax         |                 |                        |                                     |                        |                     |                     |
| Polarization | Frequency (MHz) | Average Level (dBµV/m) | Average Level + Duty Cycle (dBµV/m) | Average Limit (dBµV/m) | Peak Level (dBµV/m) | Peak Limit (dBµV/m) |
| Vertical     | 1049,9          | 29,02                  | 33,61                               | 43.5                   | 34.49               | 63.5                |
| Vertical     | 1197,7          | 30,29                  | 34,88                               | 43.5                   | 40.09               | 63.5                |
| Vertical     | 1250            | 30,64                  | 35,23                               | 43.5                   | 39.77               | 63.5                |
| Vertical     | 1395,3          | 32,26                  | 36,85                               | 43.5                   | 42.36               | 63.5                |
| Vertical     | 1497            | 32,46                  | 37,05                               | 43.5                   | 41.89               | 63.5                |
| Vertical     | 1520,3          | 27,65                  | 32,24                               | 43.5                   | 29.81               | 63.5                |
| Vertical     | 1600            | 32,94                  | 37,53                               | 43.5                   | 42.58               | 63.5                |
| Vertical     | 1800            | 30,8                   | 35,39                               | 43.5                   | 38.77               | 63.5                |
| Vertical     | 1920            | 31,36                  | 35,95                               | 43.5                   | 40.03               | 63.5                |
| Vertical     | 2000            | 30,57                  | 35,16                               | 43.5                   | 44.63               | 63.5                |
| Vertical     | 2390            | 24,7                   | 29,29                               | 43.5                   | 35.7                | 63.5                |
| Vertical     | 2483,5          | 27,7                   | 32,29                               | 43.5                   | 38.6                | 63.5                |
| Horizontal   | 1130,3          | 29,29                  | 33,88                               | 43.5                   | 29.91               | 63.5                |
| Horizontal   | 1198,1          | 30,12                  | 34,71                               | 43.5                   | 40.76               | 63.5                |
| Horizontal   | 1397,4          | 30,95                  | 35,54                               | 43.5                   | 36.13               | 63.5                |
| Horizontal   | 2390            | 24                     | 28,59                               | 43.5                   | 36.3                | 63.5                |
| Horizontal   | 2483,5          | 32,2                   | 36,79                               | 43.5                   | 45.4                | 63.5                |
| Horizontal   | 4924            | 34,12                  | 38,71                               | 43.5                   | 46.84               | 63.5                |





L C I E

| 802.11n HT20 |                 |                        |                                     |                        |                     |                     |
|--------------|-----------------|------------------------|-------------------------------------|------------------------|---------------------|---------------------|
| Above 1GHz   |                 |                        |                                     |                        |                     |                     |
| Cmin         |                 |                        |                                     |                        |                     |                     |
| Polarization | Frequency (MHz) | Average Level (dBµV/m) | Average Level + Duty Cycle (dBµV/m) | Average Limit (dBµV/m) | Peak Level (dBµV/m) | Peak Limit (dBµV/m) |
| Vertical     | 1049,9          | 29,02                  | 33,68                               | 43.5                   | 34.49               | 63.5                |
| Vertical     | 1197,7          | 30,29                  | 34,95                               | 43.5                   | 40.09               | 63.5                |
| Vertical     | 1250            | 30,64                  | 35,3                                | 43.5                   | 39.77               | 63.5                |
| Vertical     | 1395,3          | 32,26                  | 36,92                               | 43.5                   | 42.36               | 63.5                |
| Vertical     | 1497            | 32,46                  | 37,12                               | 43.5                   | 41.89               | 63.5                |
| Vertical     | 1520,3          | 27,65                  | 32,31                               | 43.5                   | 29.81               | 63.5                |
| Vertical     | 1600            | 32,94                  | 37,6                                | 43.5                   | 42.58               | 63.5                |
| Vertical     | 1800            | 30,8                   | 35,46                               | 43.5                   | 38.77               | 63.5                |
| Vertical     | 1920            | 31,36                  | 36,02                               | 43.5                   | 40.03               | 63.5                |
| Vertical     | 2000            | 30,57                  | 35,23                               | 43.5                   | 44.63               | 63.5                |
| Vertical     | 2390            | 26,5                   | 31,16                               | 43.5                   | 39                  | 63.5                |
| Vertical     | 2483,5          | 24,3                   | 28,96                               | 43.5                   | 36.6                | 63.5                |
| Horizontal   | 1130,3          | 29,29                  | 33,95                               | 43.5                   | 29.91               | 63.5                |
| Horizontal   | 1198,1          | 30,12                  | 34,78                               | 43.5                   | 40.76               | 63.5                |
| Horizontal   | 1397,4          | 30,95                  | 35,61                               | 43.5                   | 36.13               | 63.5                |
| Horizontal   | 2390            | 32,1                   | 36,76                               | 43.5                   | 44.6                | 63.5                |
| Horizontal   | 2483,5          | 25                     | 29,66                               | 43.5                   | 36.7                | 63.5                |
| Horizontal   | 4824            | 33,28                  | 37,94                               | 43.5                   | 46.29               | 63.5                |



L C I E

| 802.11n HT20 |                 |                              |   |                              |                           |                           |
|--------------|-----------------|------------------------------|---|------------------------------|---------------------------|---------------------------|
| Above 1GHz   |                 |                              |   |                              |                           |                           |
| Cnom         |                 |                              |   |                              |                           |                           |
| Polarization | Frequency (MHz) | Average Level (dB $\mu$ V/m) | Average Level + Duty Cycle (dB $\mu$ V/m) | Average Limit (dB $\mu$ V/m) | Peak Level (dB $\mu$ V/m) | Peak Limit (dB $\mu$ V/m) |
| Vertical     | 1049,9          | 29,02                        | 33,68                                     | 43.5                         | 34.49                     | 63.5                      |
| Vertical     | 1197,7          | 30,29                        | 34,95                                     | 43.5                         | 40.09                     | 63.5                      |
| Vertical     | 1250            | 30,64                        | 35,3                                      | 43.5                         | 39.77                     | 63.5                      |
| Vertical     | 1395,3          | 32,26                        | 36,92                                     | 43.5                         | 42.36                     | 63.5                      |
| Vertical     | 1497            | 32,46                        | 37,12                                     | 43.5                         | 41.89                     | 63.5                      |
| Vertical     | 1520,3          | 27,65                        | 32,31                                     | 43.5                         | 29.81                     | 63.5                      |
| Vertical     | 1600            | 32,94                        | 37,6                                      | 43.5                         | 42.58                     | 63.5                      |
| Vertical     | 1800            | 30,8                         | 35,46                                     | 43.5                         | 38.77                     | 63.5                      |
| Vertical     | 1920            | 31,36                        | 36,02                                     | 43.5                         | 40.03                     | 63.5                      |
| Vertical     | 2000            | 30,57                        | 35,23                                     | 43.5                         | 44.63                     | 63.5                      |
| Vertical     | 2390            | 24,6                         | 29,26                                     | 43.5                         | 35                        | 63.5                      |
| Vertical     | 2483,5          | 24,3                         | 28,96                                     | 43.5                         | 36                        | 63.5                      |
| Horizontal   | 1130,3          | 29,29                        | 33,95                                     | 43.5                         | 29.91                     | 63.5                      |
| Horizontal   | 1198,1          | 30,12                        | 34,78                                     | 43.5                         | 40.76                     | 63.5                      |
| Horizontal   | 1397,4          | 30,95                        | 35,61                                     | 43.5                         | 36.13                     | 63.5                      |
| Horizontal   | 2390            | 24                           | 28,66                                     | 43.5                         | 36                        | 63.5                      |
| Horizontal   | 2483,5          | 26                           | 30,66                                     | 43.5                         | 37.4                      | 63.5                      |
| Horizontal   | 4874            | 32,65                        | 37,31                                     | 43.5                         | 47.31                     | 63.5                      |



L C I E

| 802.11n HT20 |                 |                        |                        |                     |                     |
|--------------|-----------------|------------------------|------------------------|---------------------|---------------------|
| Above 1GHz   |                 |                        |                        |                     |                     |
| Cmax         |                 |                        |                        |                     |                     |
| Polarization | Frequency (MHz) | Average Level (dBµV/m) | Average Limit (dBµV/m) | Peak Level (dBµV/m) | Peak Limit (dBµV/m) |
| Vertical     | 1049.9          | 29.02                  | 43.5                   | 34.49               | 63.5                |
| Vertical     | 1197.7          | 30.29                  | 43.5                   | 40.09               | 63.5                |
| Vertical     | 1250            | 30.64                  | 43.5                   | 39.77               | 63.5                |
| Vertical     | 1395.3          | 32.26                  | 43.5                   | 42.36               | 63.5                |
| Vertical     | 1497            | 32.46                  | 43.5                   | 41.89               | 63.5                |
| Vertical     | 1520.3          | 27.65                  | 43.5                   | 29.81               | 63.5                |
| Vertical     | 1600            | 32.94                  | 43.5                   | 42.58               | 63.5                |
| Vertical     | 1800            | 30.8                   | 43.5                   | 38.77               | 63.5                |
| Vertical     | 1920            | 31.36                  | 43.5                   | 40.03               | 63.5                |
| Vertical     | 2000            | 30.57                  | 43.5                   | 44.63               | 63.5                |
| Vertical     | 2390            | 23.4                   | 43.5                   | 35                  | 63.5                |
| Vertical     | 2483.5          | 26.5                   | 43.5                   | 40                  | 63.5                |
| Horizontal   | 1130.3          | 29.29                  | 43.5                   | 29.91               | 63.5                |
| Horizontal   | 1198.1          | 30.12                  | 43.5                   | 40.76               | 63.5                |
| Horizontal   | 1397.4          | 30.95                  | 43.5                   | 36.13               | 63.5                |
| Horizontal   | 2390            | 25                     | 43.5                   | 35.5                | 63.5                |
| Horizontal   | 2483.5          | 38                     | 43.5                   | 52                  | 63.5                |
| Horizontal   | 4924            | 34.12                  | 43.5                   | 46.84               | 63.5                |

| 802.11n HT20 |                 |                        |                                     |                        |                     |                     |
|--------------|-----------------|------------------------|-------------------------------------|------------------------|---------------------|---------------------|
| Above 1GHz   |                 |                        |                                     |                        |                     |                     |
| Cmax         |                 |                        |                                     |                        |                     |                     |
| Polarization | Frequency (MHz) | Average Level (dBµV/m) | Average Level + Duty Cycle (dBµV/m) | Average Limit (dBµV/m) | Peak Level (dBµV/m) | Peak Limit (dBµV/m) |
| Vertical     | 1049,9          | 29,02                  | 33,68                               | 43.5                   | 34.49               | 63.5                |
| Vertical     | 1197,7          | 30,29                  | 34,95                               | 43.5                   | 40.09               | 63.5                |
| Vertical     | 1250            | 30,64                  | 35,3                                | 43.5                   | 39.77               | 63.5                |
| Vertical     | 1395,3          | 32,26                  | 36,92                               | 43.5                   | 42.36               | 63.5                |
| Vertical     | 1497            | 32,46                  | 37,12                               | 43.5                   | 41.89               | 63.5                |
| Vertical     | 1520,3          | 27,65                  | 32,31                               | 43.5                   | 29.81               | 63.5                |
| Vertical     | 1600            | 32,94                  | 37,6                                | 43.5                   | 42.58               | 63.5                |
| Vertical     | 1800            | 30,8                   | 35,46                               | 43.5                   | 38.77               | 63.5                |
| Vertical     | 1920            | 31,36                  | 36,02                               | 43.5                   | 40.03               | 63.5                |
| Vertical     | 2000            | 30,57                  | 35,23                               | 43.5                   | 44.63               | 63.5                |
| Vertical     | 2390            | 23,4                   | 28,06                               | 43.5                   | 35                  | 63.5                |
| Vertical     | 2483,5          | 26,5                   | 31,16                               | 43.5                   | 40                  | 63.5                |
| Horizontal   | 1130,3          | 29,29                  | 33,95                               | 43.5                   | 29.91               | 63.5                |
| Horizontal   | 1198,1          | 30,12                  | 34,78                               | 43.5                   | 40.76               | 63.5                |
| Horizontal   | 1397,4          | 30,95                  | 35,61                               | 43.5                   | 36.13               | 63.5                |
| Horizontal   | 2390            | 25                     | 29,66                               | 43.5                   | 35.5                | 63.5                |
| Horizontal   | 2483,5          | 38                     | 42,66                               | 43.5                   | 52                  | 63.5                |
| Horizontal   | 4924            | 34,12                  | 38,78                               | 43.5                   | 46.84               | 63.5                |



## 11.7. CONCLUSION

Unwanted emissions measurement performed on the sample of the product **AirTV Player UIW4010ECH**, SN: **N°002**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.247 & RSS 247 ISSUE 1 limits.

## 12. UNCERTAINTIES CHART

| 47 CFR Part 15.209 & 15.207<br>Kind of test   | Wide uncertainty<br>laboratory<br>(k=2) ±x(dB) / (Hz)/<br>ms | Uncertainty limit |
|---|--|-------------------|
| Measurement of conducted disturbances in voltage on the AC power port (9 kHz – 150 kHz)                 | 2,67   | 3.8               |
| Measurement of conducted disturbances in voltage on the AC power port (150 kHz – 30 MHz)                | 2,67   | 3.4               |
| Measurement of conducted disturbances in voltage on the telecommunication port. (AAN)                   | 3,67   | 5.0               |
| Measurement of conducted disturbances in current (current clamp)  | 2,73   | 2.9               |
| Measurement of disturbance power  | 2,67   | 4.5               |
| Measurement of radiated magnetic field from 10kHz to 30MHz in SAC V01                                   | 4,48   | /                 |
| Measurement of radiated magnetic field from 10kHz to 30MHz in SAC C01                                   | 4,48   | /                 |
| Measurement of radiated electric field from 30 to 1000MHz in horizontal position on the OATS (Ecuellas) | 4,88   | 6.3               |
| Measurement of radiated electric field from 1 to 18GHz on the Ecuellas site                             | 5.16   | /                 |
| Measurement of radiated electric field from 30 to 1000MHz in vertical position on the OATS (Ecuellas)   | 4,99   | 6.3               |
| Measurement of radiated electric field from 30 to 1000MHz in horizontal position in SAC C01             | 5,08   | 6.3               |
| Measurement of radiated electric field from 30 to 1000MHz in vertical position in SAC C01               | 5,16   | 6.3               |
| Measurement of radiated electric field from 30 to 1000MHz in horizontal position in SAC V01             | 5,08   | 6.3               |
| Measurement of radiated electric field from 30 to 1000MHz in vertical position in SAC V01               | 5,15   | 6.3               |
| Measurement of radiated electric field from 1 to 6 GHz C01  | 5,1  | 5.2               |
| Measurement of radiated electric field from 1 to 6 GHz V01  | 4,85   | 5.2               |
| Measurement of radiated magnetic field from 10kHz to 30MHz on the OATS (Ecuellas)                       | 4,48   | /                 |

The uncertainty values calculated by the laboratory are lower than limit uncertainty values defined by the CISPR. The conformity of the sample is directly established by the applicable limits values. This table includes all uncertainties maximum feasible for testing in the laboratory, whether or not made in this report