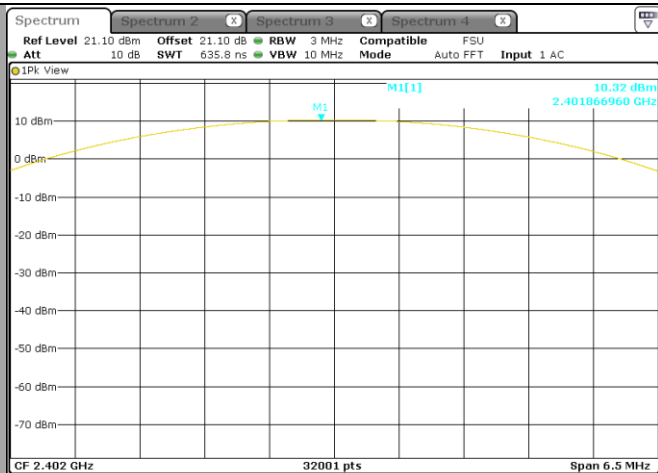


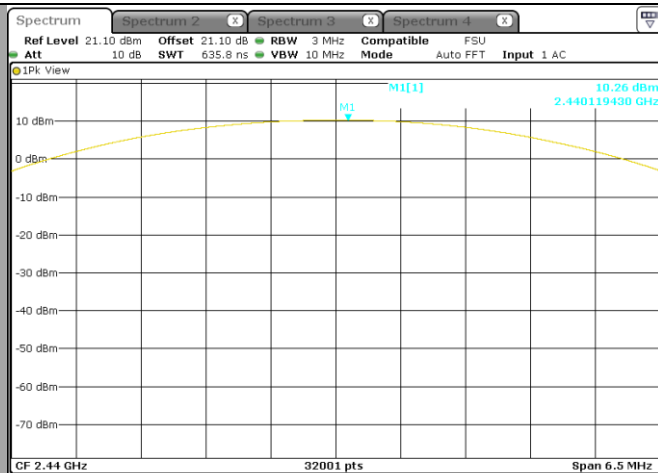
**$\pi/4$  DQPSK**

**Cmin**

**Cnom**

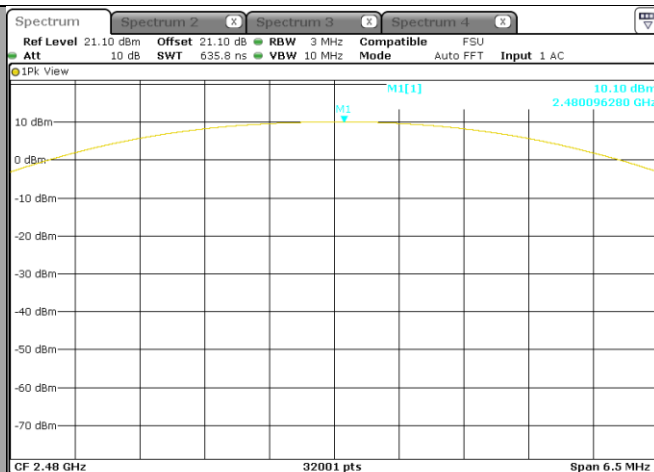


Date: 26 SEP 2018 16:27:11



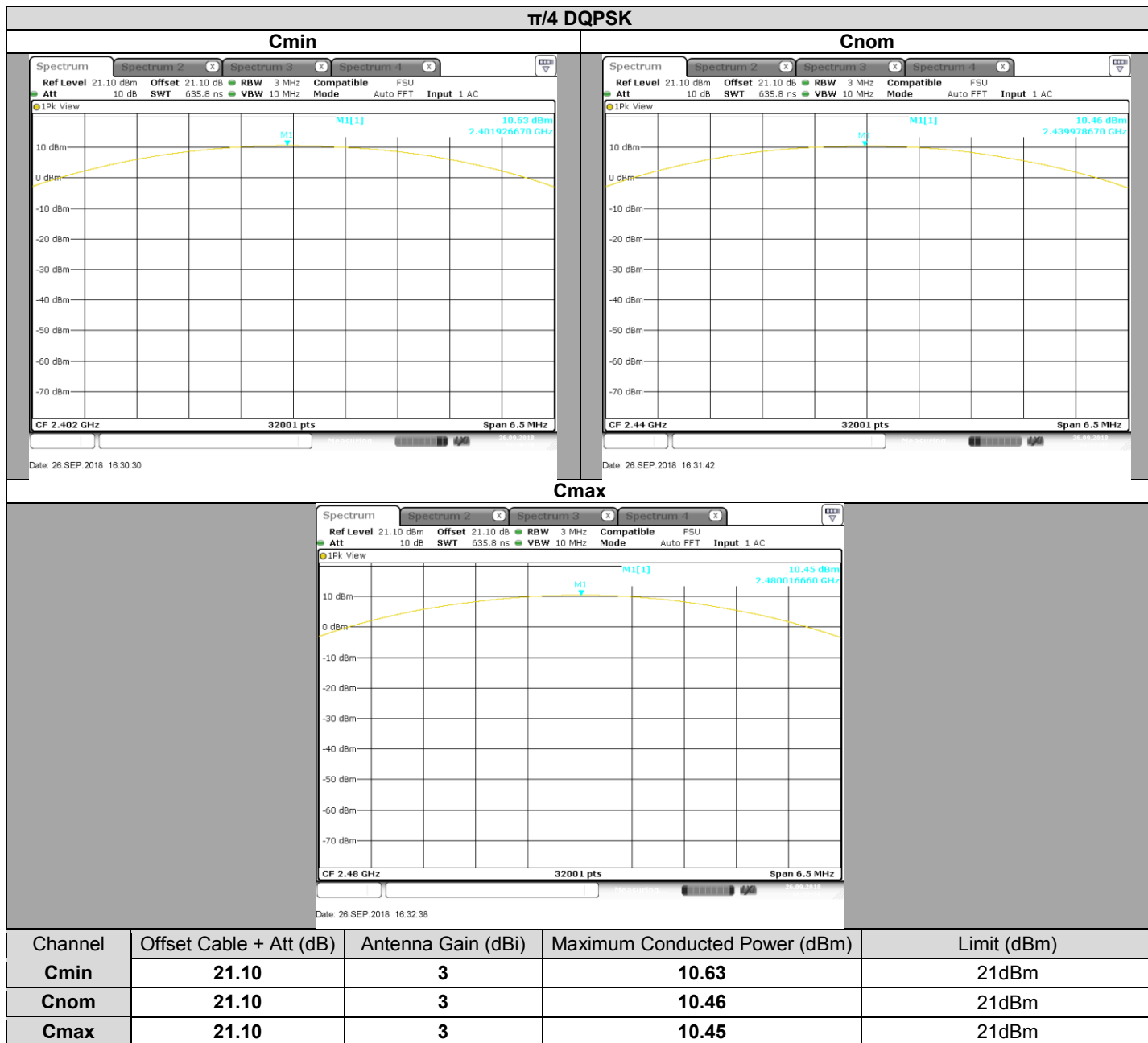
Date: 26 SEP 2018 16:28:25

**Cmax**



Date: 26 SEP 2018 16:29:21

| Channel     | Offset Cable + Att (dB) | Antenna Gain (dBi) | Maximum Conducted Power (dBm) | Limit (dBm) |
|-------------|-------------------------|--------------------|-------------------------------|-------------|
| <b>Cmin</b> | <b>21.10</b>            | <b>3</b>           | <b>10.32</b>                  | 21dBm       |
| <b>Cnom</b> | <b>21.10</b>            | <b>3</b>           | <b>10.26</b>                  | 21dBm       |
| <b>Cmax</b> | <b>21.10</b>            | <b>3</b>           | <b>10.10</b>                  | 21dBm       |



## 9.6. CONCLUSION

Maximum Conducted Output Power measurement performed on the sample of the product **Sagemcom® Sound Box SBDV01**, SN: **253770742**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247** limits.

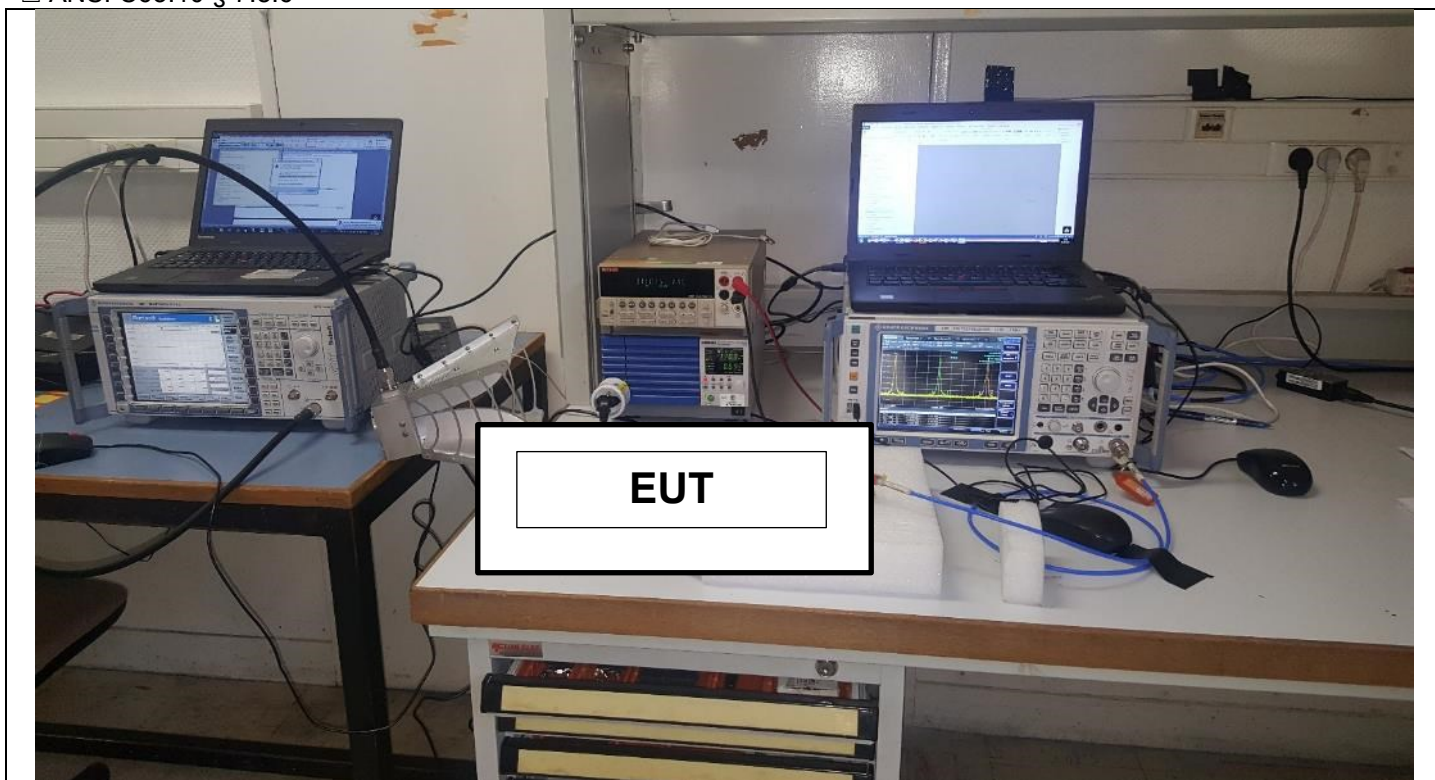
## 10. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS AT THE BAND EDGE

### 10.1. TEST CONDITIONS

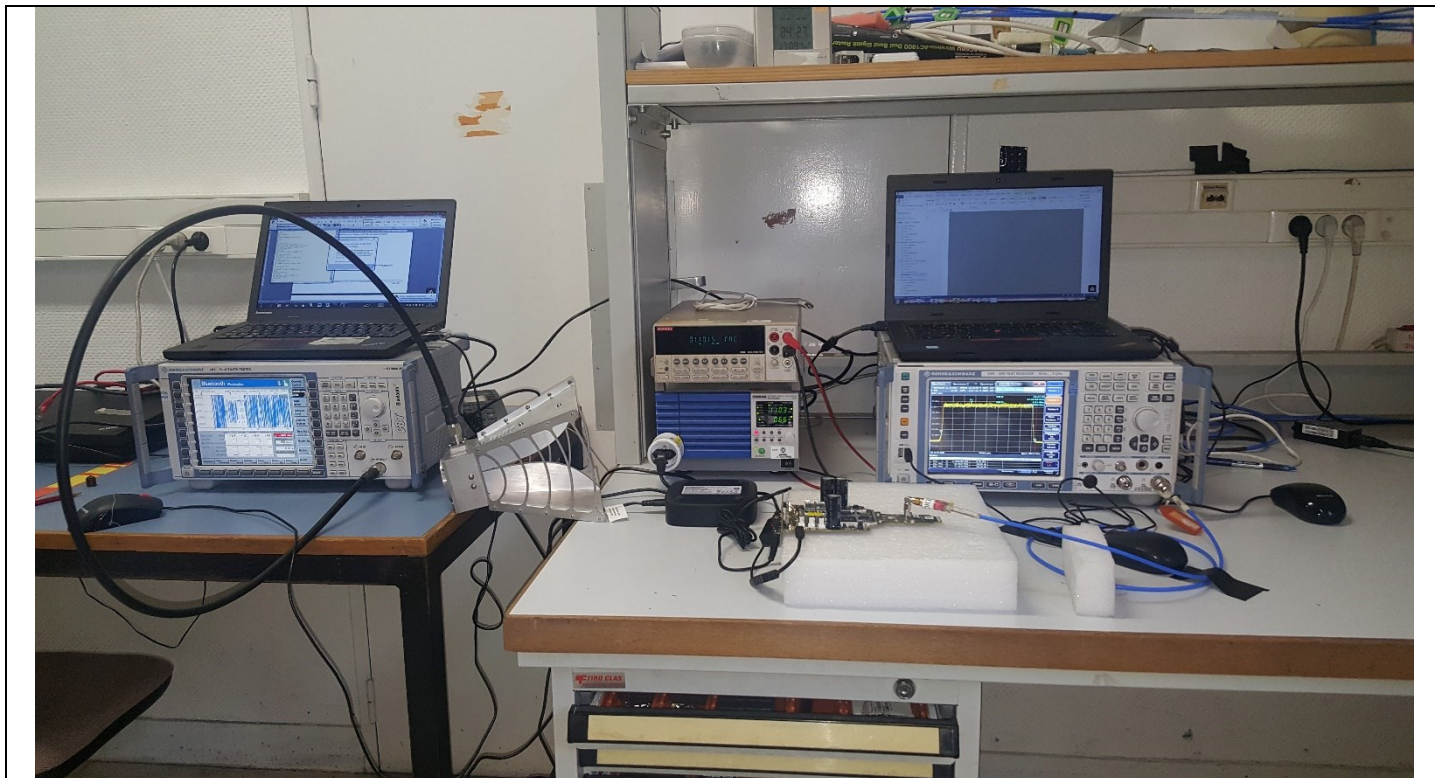
Test performed by : Armand MAHOUNGOU  
Date of test : September 26, 2018 to September 27, 2018  
Ambient temperature : 26°C & 24°C  
Relative humidity : 44% & 47%

### 10.2. 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:
  - ☒ ANSI C63.10 § 7.8.6



Photograph for Unwanted Emission into non-restricted frequency bands at the band edge



Photograph for Unwanted Emission into non-restricted frequency bands at the band edge

### 10.3. LIMIT

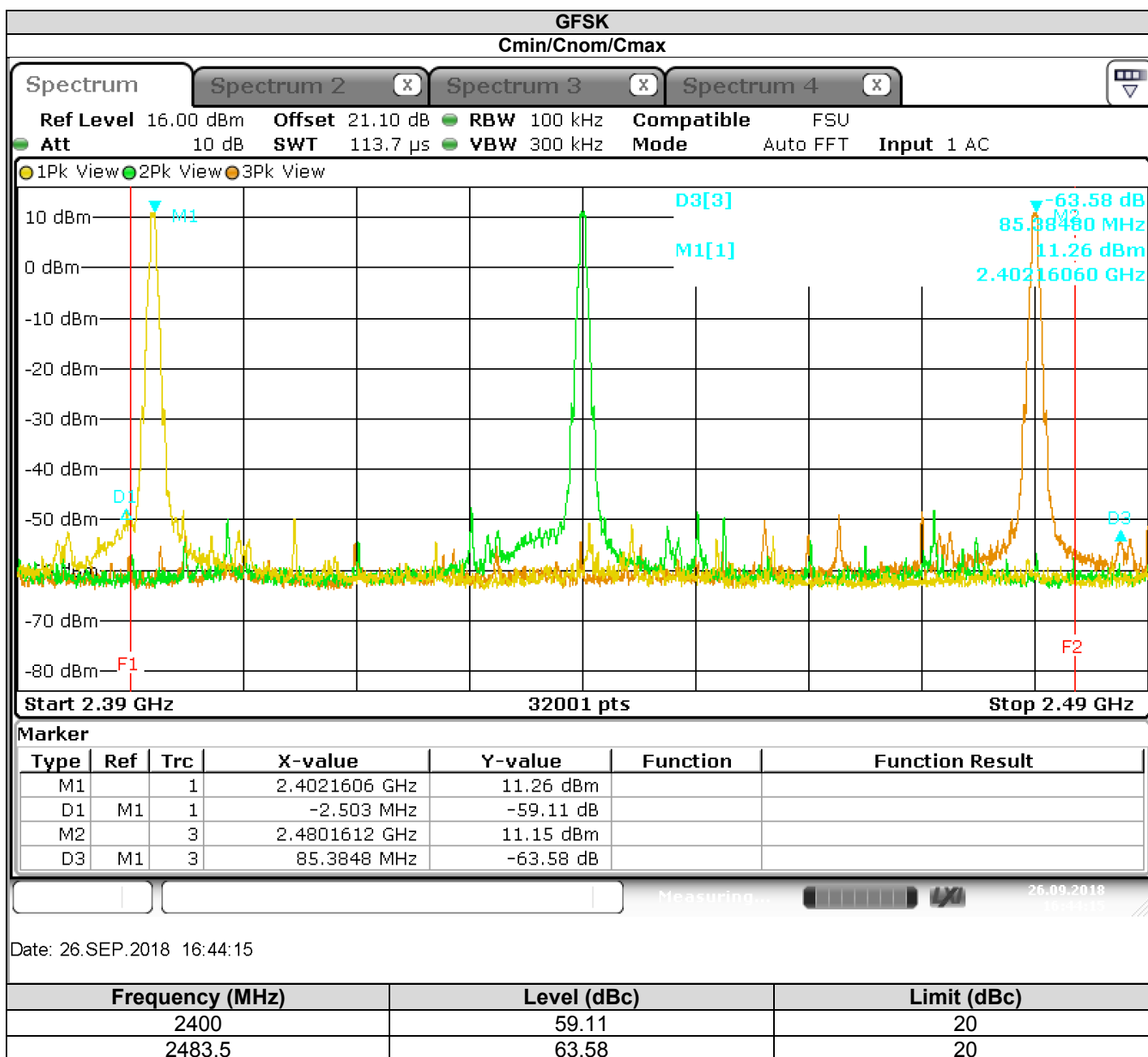
All Spurious Emissions must be at least 20dB below the Fundamental Radiator Level at the Band Edge Edge “2400MHz & 2483,5MHz”

### 10.4. TEST EQUIPMENT LIST

| DESCRIPTION  | MANUFACTURER    | MODEL        | N° LCIE  | Cal_Date            | Cal_Due             |
|--------------|-----------------|--------------|----------|---------------------|---------------------|
| EMI receiver | ROHDE & SCHWARZ | ESR 7        | A2642023 | 2016/11             | 2018/11             |
| Multimeter   | KEITHLEY        | 2000         | A1242090 | 2017/05             | 2019/05             |
| Power supply | KIKUSUI         | PCR500M      | A7040079 | Cal with Multimeter | Cal with Multimeter |
| Cable        | TELEDYNE        | 920-0202-048 | A5329674 | 2017/10             | 2018/10             |

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

## 10.5. RESULTS

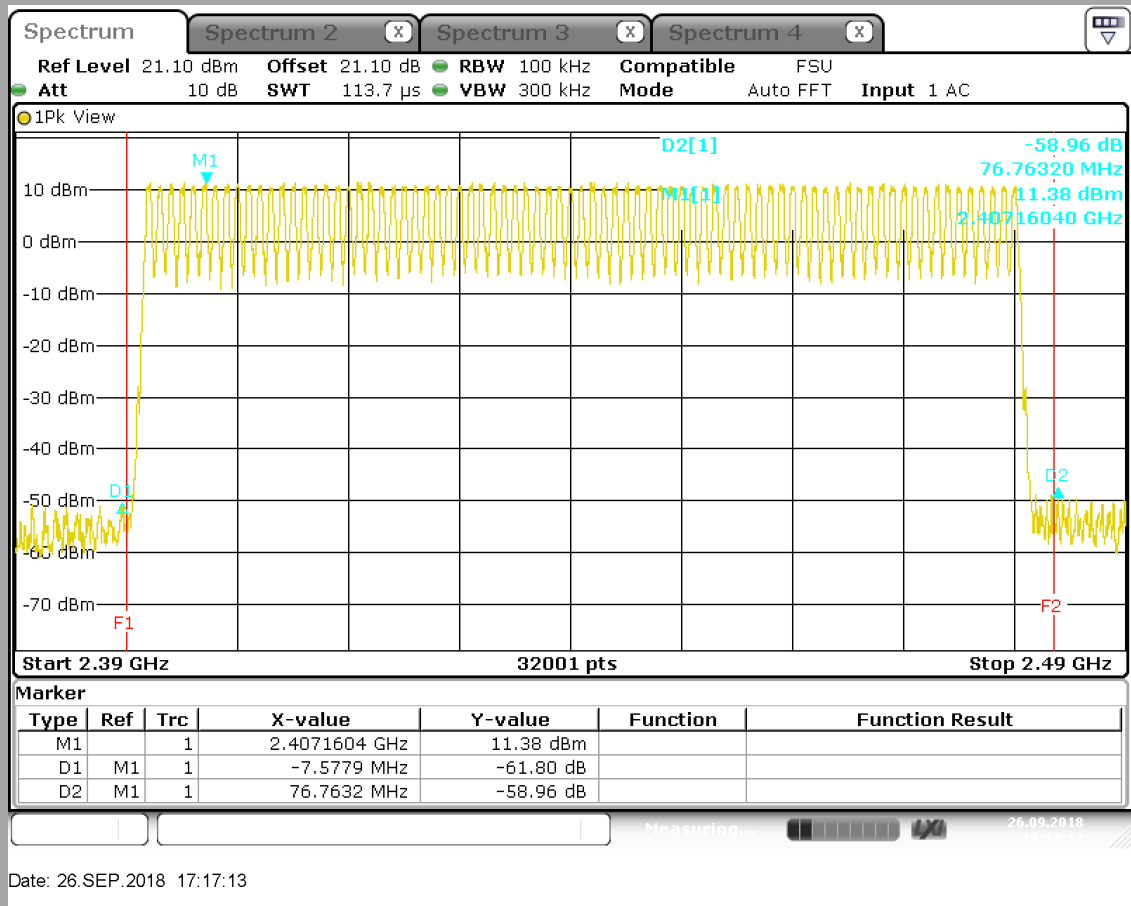




L C I E

## GFSK

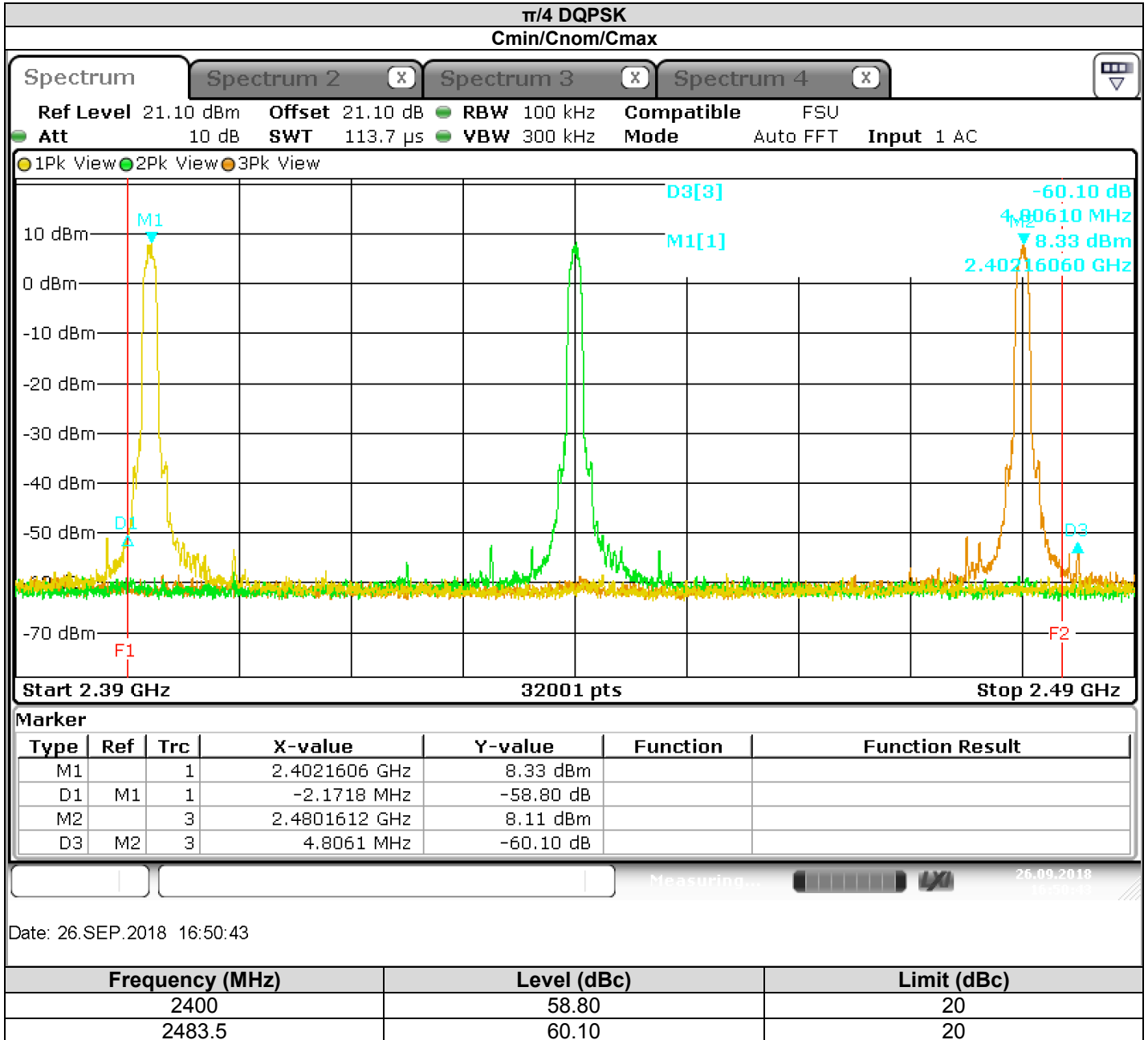
### Call



| Frequency (MHz) | Level (dBc) | Limit (dBc) |
|-----------------|-------------|-------------|
| 2400            | 61.80       | 20          |
| 2483.5          | 58.96       | 20          |

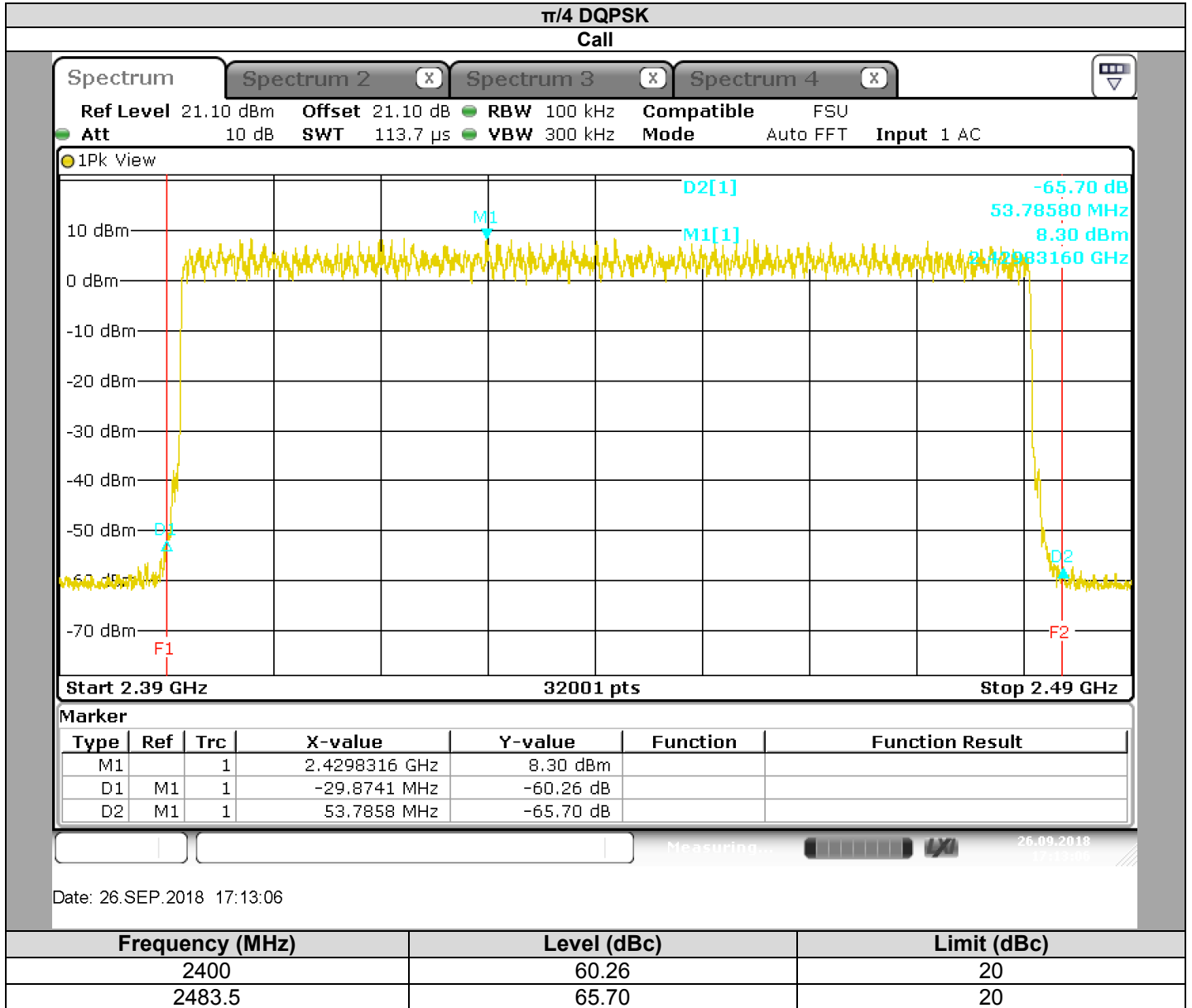


L C I E



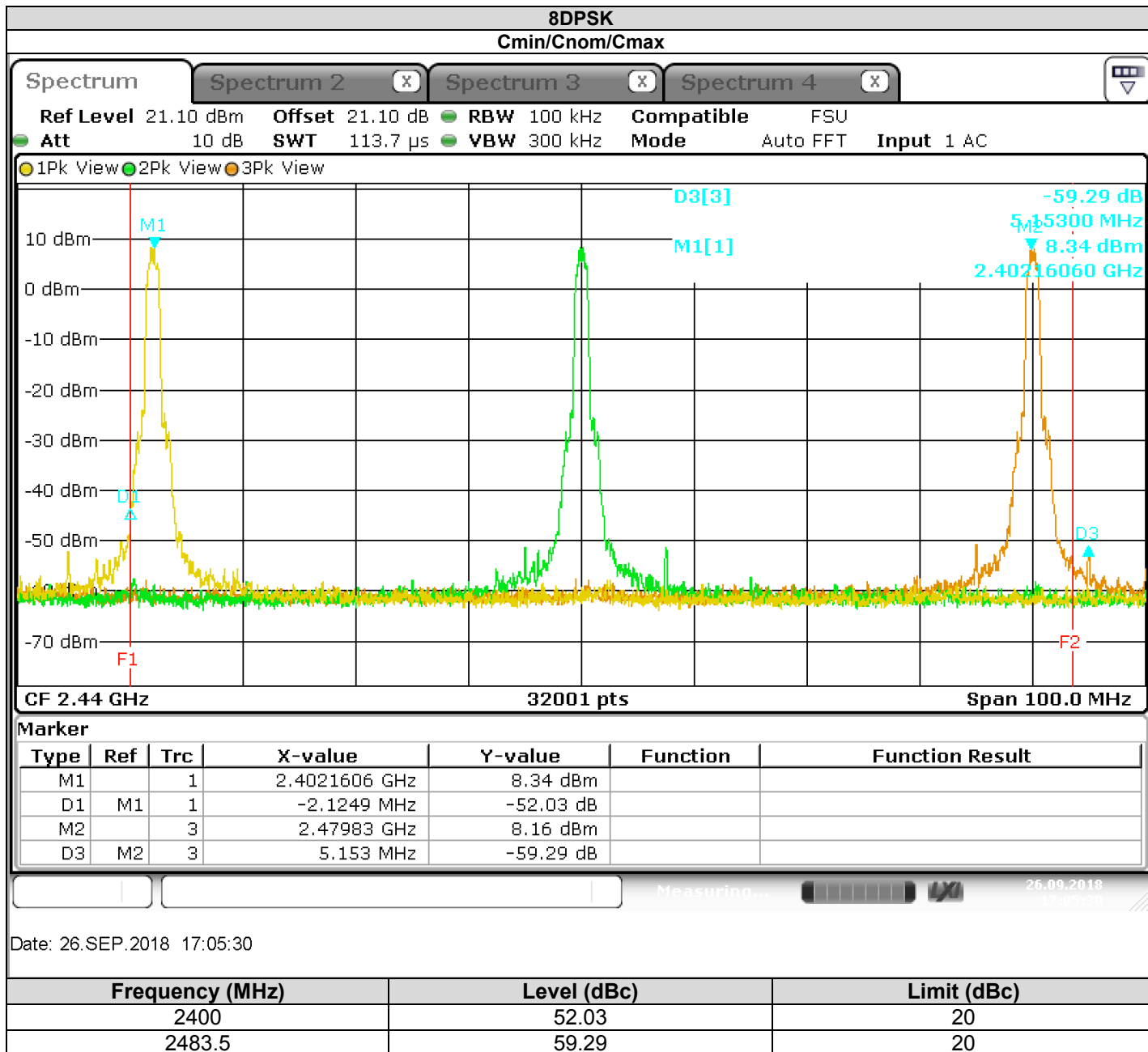


L C I E



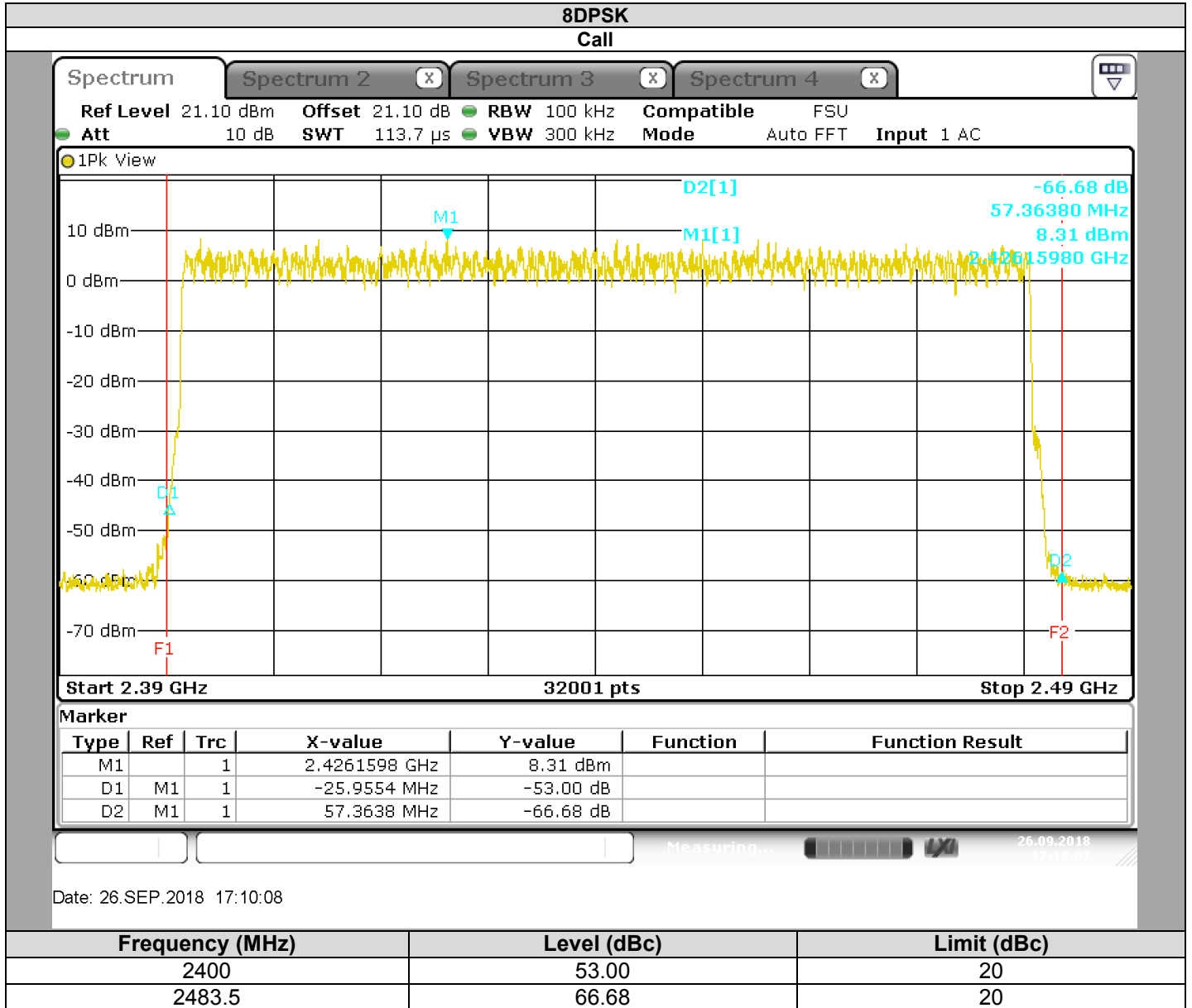


L C I E





L C I E



## 10.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands at the band edge measurement performed on the sample of the product **Sagemcom® Sound Box SBDV01**, SN: **253770742**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247** limits.

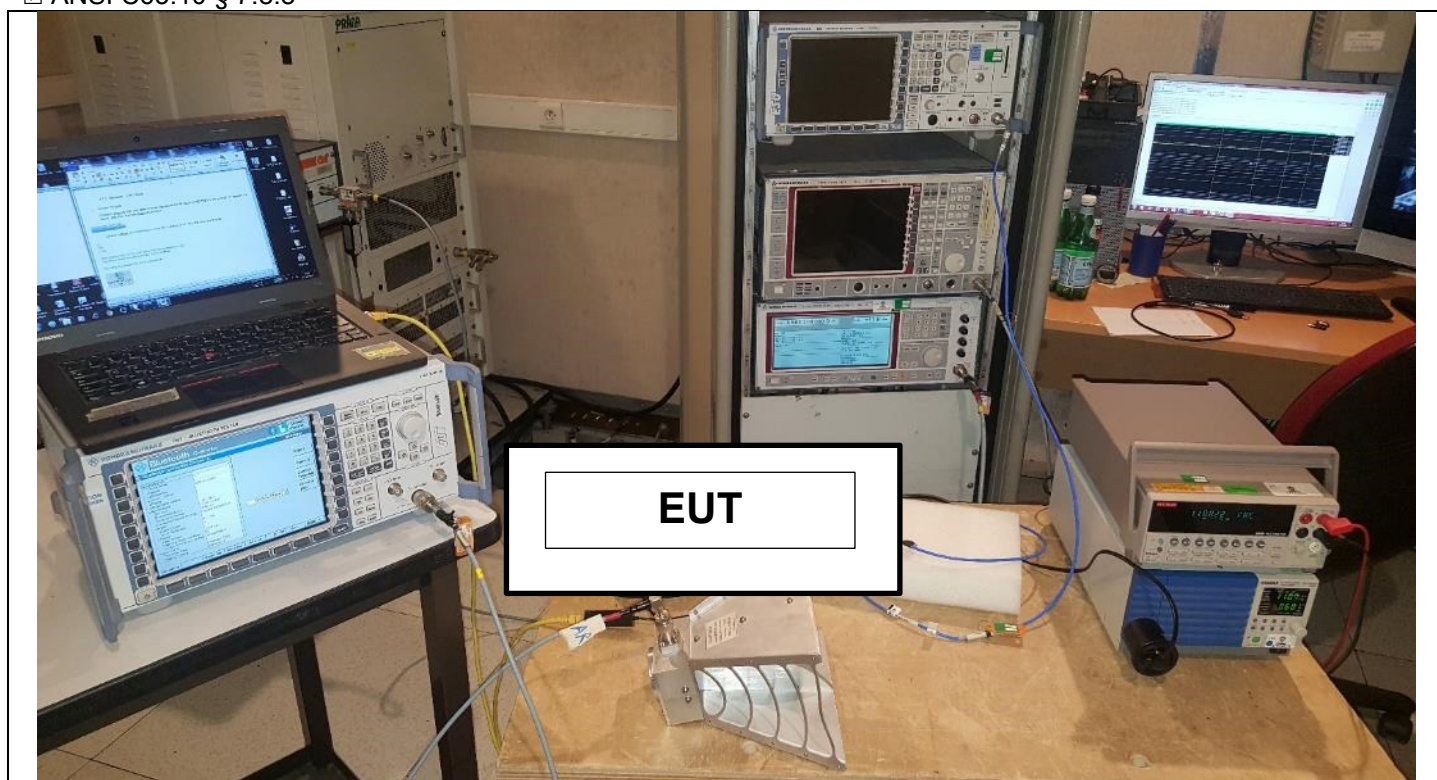
## 11. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS

### 11.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU  
Date of test : September 28, 2018 to October 1, 2018  
Ambient temperature : 25°C & 27°C  
Relative humidity : 43% & 46%

### 11.2. 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:
  - ☒ ANSI C63.10 § 7.8.8



Photograph for Unwanted Emission into non-restricted frequency bands



### 11.3. LIMIT

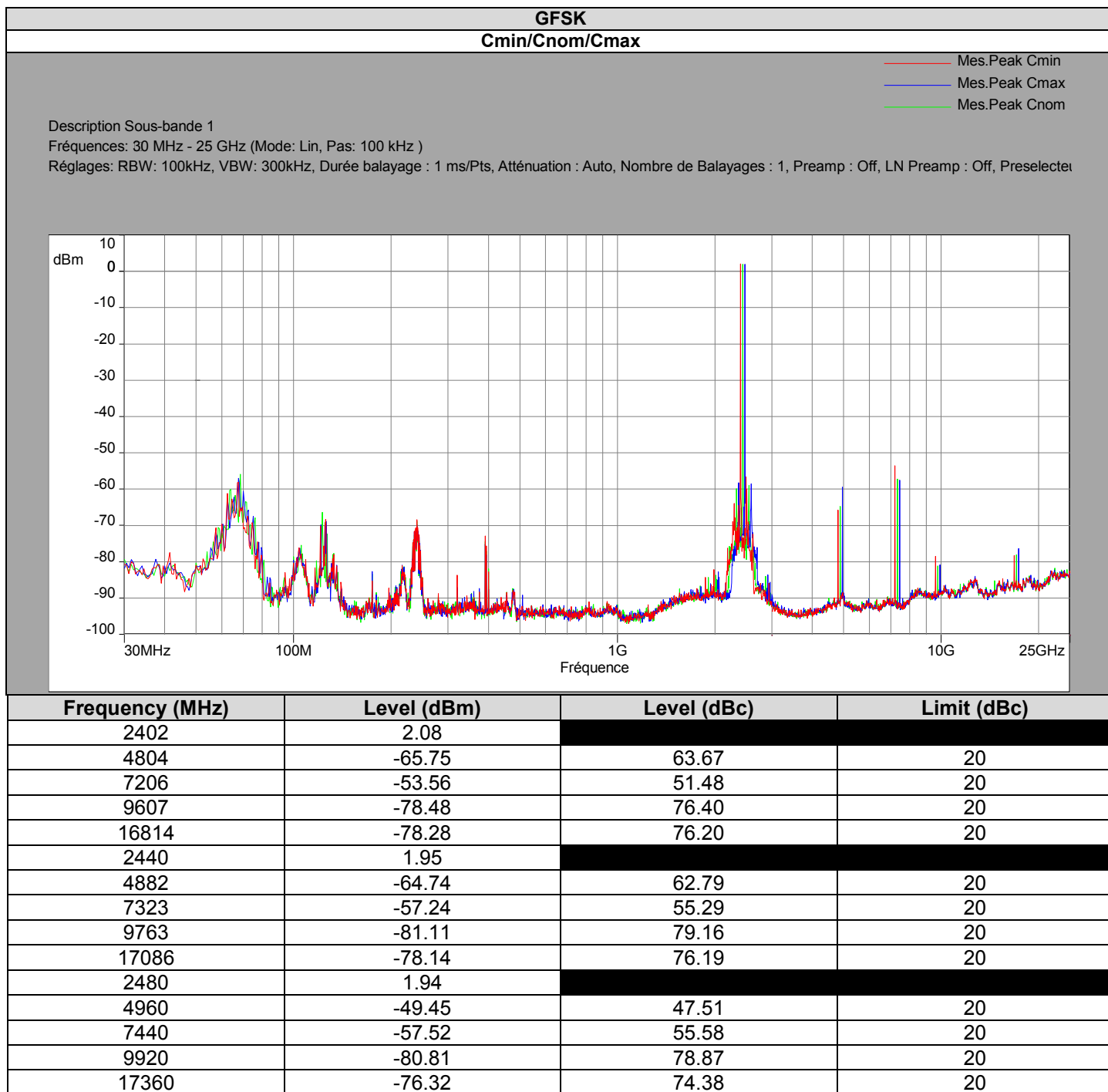
All Spurious Emissions must be at least 20dB below the Fundamental Radiator Level

### 11.4. TEST EQUIPMENT LIST

| DESCRIPTION    | MANUFACTURER    | MODEL             | N° LCIE  | Cal_Date            | Cal_Due             |
|----------------|-----------------|-------------------|----------|---------------------|---------------------|
| EMI receiver   | ROHDE & SCHWARZ | ESI40 1088 740K40 | A2642010 | 2018/07             | 2020/07             |
| Multimeter     | KEITHLEY        | 2000              | A1242090 | 2017/05             | 2019/05             |
| Power supply   | KIKUSUI         | PCR500M           | A7040079 | Cal with Multimeter | Cal with Multimeter |
| Cable          | Télédyne        | 084-0555-2MTR     | A5329758 | 2017/10             | 2018/10             |
| Attenuator 3dB | WEINSCHEL       | WA54-3-12         | A7122223 | 2017/10             | 2018/10             |

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

## 11.5. RESULTS



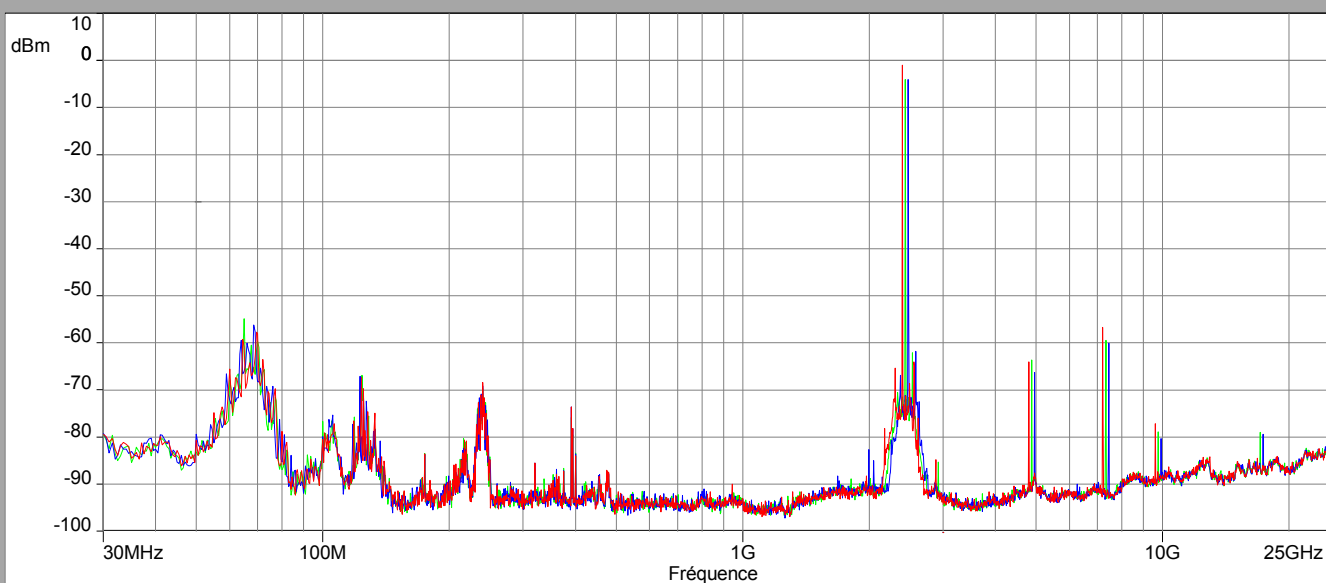
**$\pi/4$  DQPSK**  
**Cmin/Cnom/Cmax**

— Mes.Peak Cmin  
— Mes.Peak Cmax  
— Mes.Peak Cnom

Description Sous-bande 1

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

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



| Frequency (MHz) | Level (dBm) | Level (dBc) | Limit (dBc) |
|-----------------|-------------|-------------|-------------|
| 2402            | -1.04       |             |             |
| 4804            | -64.02      | 62.98       | 20          |
| 7206            | -56.74      | 55.70       | 20          |
| 9607            | -77.45      | 76.41       | 20          |
| 16814           | -84.50      | 83.46       | 20          |
| 2440            | -4.02       |             |             |
| 4882            | -63.68      | 59.66       | 20          |
| 7323            | -59.48      | 55.46       | 20          |
| 9763            | -78.94      | 74.90       | 20          |
| 17086           | -78.98      | 74.96       | 20          |
| 2480            | -4.10       |             |             |
| 4960            | -66.31      | 62.21       | 20          |
| 7440            | -60.40      | 56.30       | 20          |
| 9920            | -80.36      | 76.26       | 20          |
| 17360           | -79.46      | 75.36       | 20          |

### 8DPSK

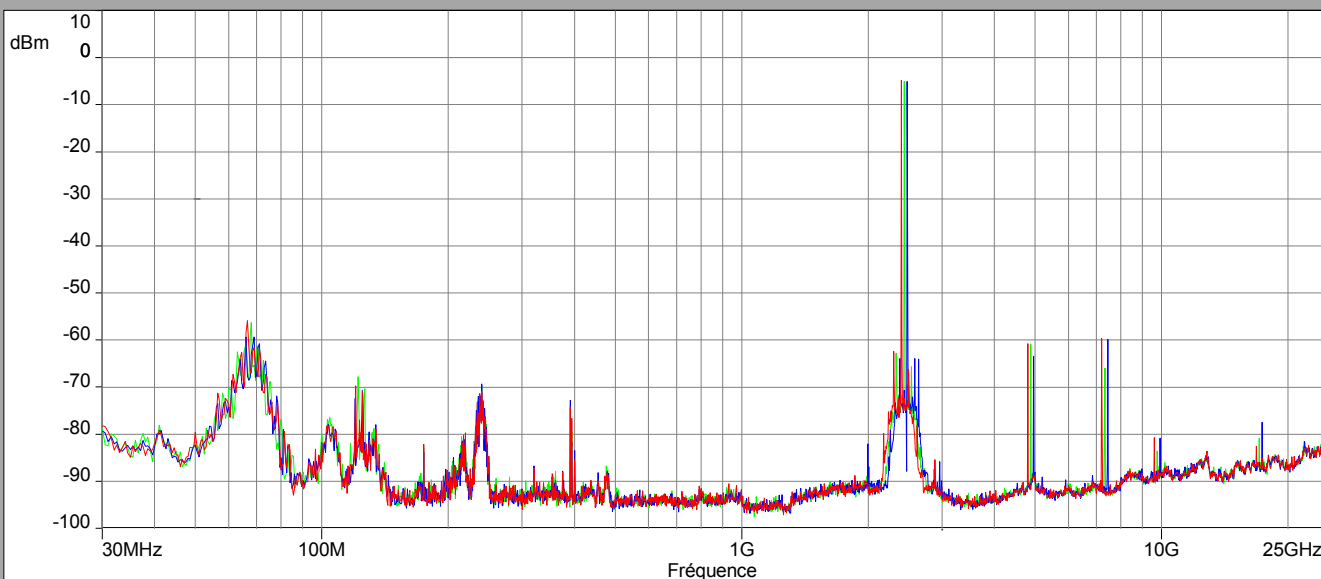
#### Cmin/Cnom/Cmax

— Mes.Peak Cmin  
— Mes.Peak Cmax  
— Mes.Peak Cnom

Description Sous-bande 1

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

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



| Frequency (MHz) | Level (dBm) | Level (dBc) | Limit (dBc) |
|-----------------|-------------|-------------|-------------|
| 2402            | -4.84       |             |             |
| 4804            | -60.78      | 55.94       | 20          |
| 7206            | -59.67      | 54.83       | 20          |
| 9607            | -80.73      | 75.89       | 20          |
| 16814           | -82.56      | 77.72       | 20          |
| 2440            | -5.06       |             |             |
| 4882            | -60.88      | 55.82       | 20          |
| 7323            | -65.94      | 60.88       | 20          |
| 9763            | -83.56      | 78.50       | 20          |
| 17086           | -80.80      | 75.74       | 20          |
| 2480            | -5.08       |             |             |
| 4960            | -63.46      | 58.38       | 20          |
| 7440            | -59.90      | 54.82       | 20          |
| 9920            | -80.83      | 75.75       | 20          |
| 17360           | -77.48      | 72.40       | 20          |

## 11.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands measurement performed on the sample of the product **Sagemcom® Sound Box SBDV01**, SN: **253770742**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247** limits.

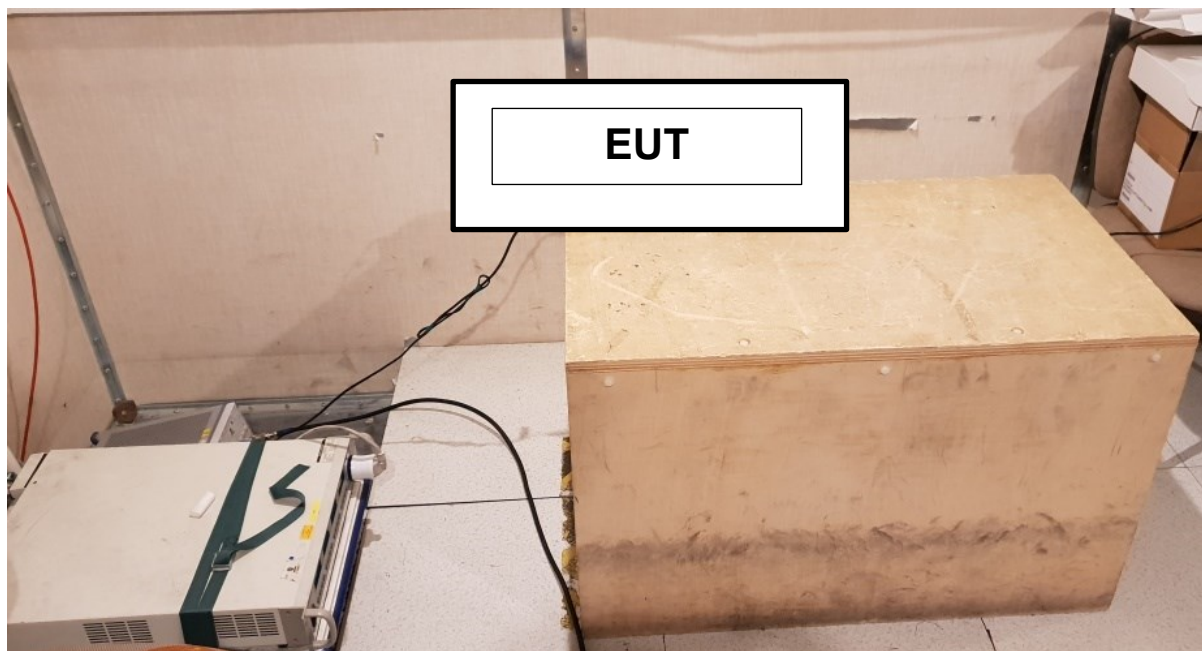
## 12. AC POWER LINE CONDUCTED EMISSIONS

### 12.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU  
Date of test : September 24, 2018  
Ambient temperature : 24 °C  
Relative humidity : 45 %

### 12.2. 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  $50\Omega / 50\mu\text{H}$ . Interconnecting cables and equipment's were moved to position that maximized emission.



Photograph for AC Power Line Conducted Emissions (Front view)



Photograph for AC Power Line Conducted Emissions (Rear view)

### 12.3. LIMIT

#### Quasi-Peak

0,15kHz to 0,5MHz: 66dB $\mu$ V to 56dB $\mu$ V\*

0,5MHz to 5MHz: 56dB $\mu$ V

5MHz to 30MHz: 60dB $\mu$ V

#### Average

0,15kHz to 0,5MHz: 56dB $\mu$ V to 46dB $\mu$ V\*

0,5MHz to 5MHz: 46dB $\mu$ V

5MHz to 30MHz: 50dB $\mu$ V

\*Decreases with the logarithm of the frequency

### 12.4. TEST EQUIPMENT LIST

| Description     | Constructor           | Model  | N°       | Cal. Date | Cal. Due |
|-----------------|-----------------------|--------|----------|-----------|----------|
| EMI Receiver    | ROHDE & SCHWARZ       | ESU26  | A2642018 | 2016/10   | 2018/10  |
| RSIL            | ROHDE & SCHWARZ       | ENV215 | C2320162 | 2018/01   | 2019/01  |
| AC power supply | ADAPTIVE POWER SYSTEM | FC210  | A7360017 | -         | -        |
| Cable           | -                     | -      | A5329712 | 2018/03   | 2019/03  |

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

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

☒ None

☐ Divergence:

## 12.6. RESULTS

### 120V / 60Hz

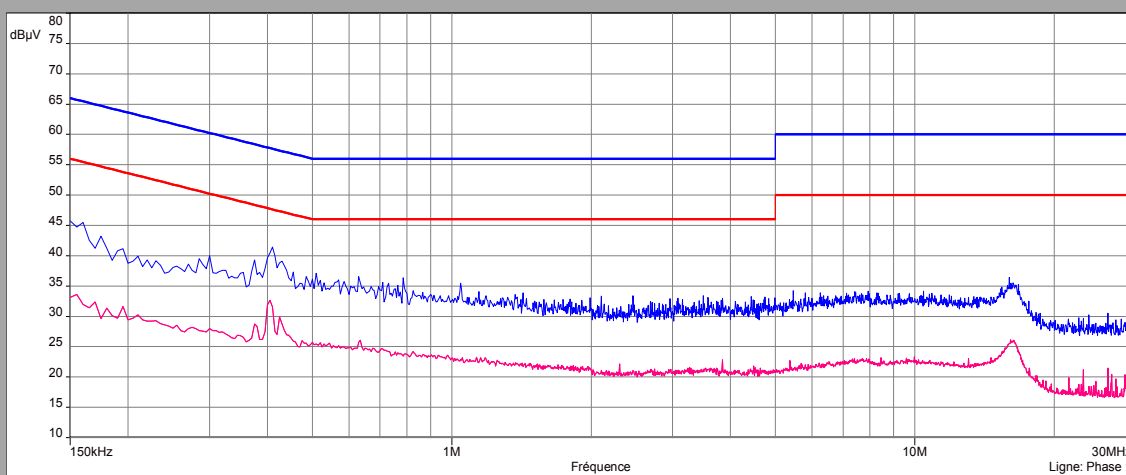
#### Phase

Description Sous-bande 1

Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)

Réglages: RBW: 9kHz, VBW: Auto, Durée balayage: 50 ms/Pts, Atténuation: 10 dB, Nombre de Balayages: 1, Preamp: Off, LN Preamp: Off, Preselecteur: On

Ligne: Phase 1



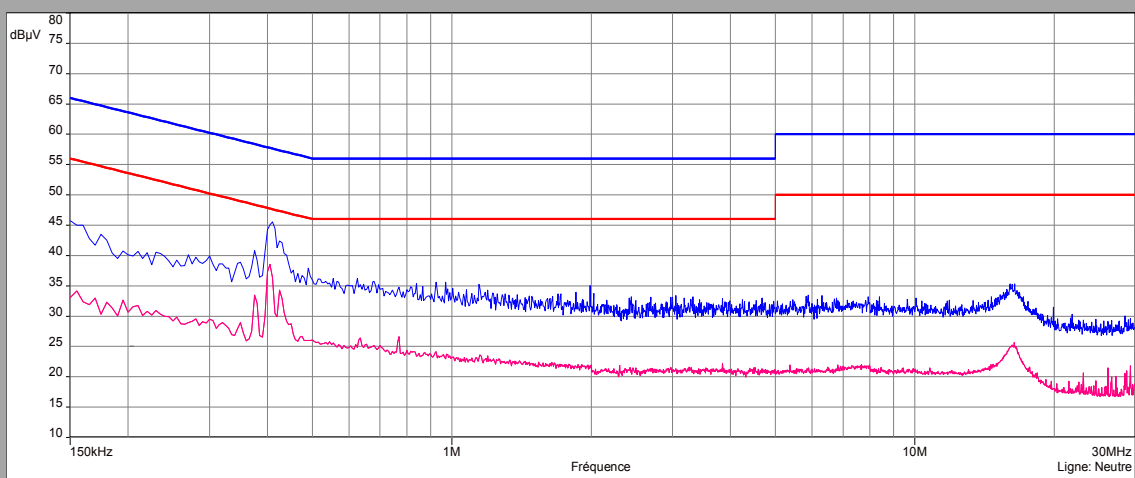
#### Line

Description Sous-bande 2

Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)

Réglages: RBW: 9kHz, VBW: Auto, Durée balayage: 50 ms/Pts, Atténuation: 10 dB, Nombre de Balayages: 1, Preamp: Off, LN Preamp: Off, Preselecteur: On

Ligne: Neutre



| Phase Line 120V / 60Hz |                   |                         |                         |                          |                    |                      |                     |
|------------------------|-------------------|-------------------------|-------------------------|--------------------------|--------------------|----------------------|---------------------|
| Frequency (MHz)        | Peak Level (dBμV) | Quasi-Peak Level (dBμV) | Quasi-Peak Limit (dBμV) | Margin Quasi-Peak (dBμV) | Average Level (dB) | Average Limit (dBμV) | Margin Average (dB) |
| 0.41                   | 41.43             | -                       | 57.65                   | 16.22                    | 32.68              | 47.65                | 14.97               |
| 2.305                  | 33.38             | -                       | 56                      | 22.62                    | 22.17              | 46                   | 23.83               |
| 3.840                  | 33.26             | -                       | 56                      | 22.74                    | 22.86              | 46                   | 23.14               |
| 23.13                  | 29.75             | -                       | 60                      | 30.25                    | 21.20              | 50                   | 28.8                |
| 26.11                  | 30.49             | -                       | 60                      | 29.51                    | 21.44              | 50                   | 28.56               |
| 29.23                  | 29.65             | -                       | 60                      | 30.35                    | 21.64              | 50                   | 28.36               |

| Neutral Line 120V / 60Hz |                   |                         |                         |                          |                    |                      |                     |
|--------------------------|-------------------|-------------------------|-------------------------|--------------------------|--------------------|----------------------|---------------------|
| Frequency (MHz)          | Peak Level (dBμV) | Quasi-Peak Level (dBμV) | Quasi-Peak Limit (dBμV) | Margin Quasi-Peak (dBμV) | Average Level (dB) | Average Limit (dBμV) | Margin Average (dB) |
| 0.41                     | 45.56             | -                       | 57.65                   | 12.09                    | 38.59              | 47.65                | 9.06                |
| 0.77                     | 34.78             | -                       | 56                      | 21.22                    | 26.64              | 46                   | 16.36               |
| 3.840                    | 32.90             | -                       | 56                      | 23.1                     | 22.20              | 46                   | 23.8                |
| 23.13                    | 30.34             | -                       | 60                      | 29.66                    | 20.67              | 50                   | 29.33               |
| 26.11                    | 29.20             | -                       | 60                      | 30.8                     | 21.46              | 50                   | 28.54               |
| 29.23                    | 30.3              | -                       | 60                      | 29.7                     | 21.80              | 50                   | 28.2                |

## 240V / 50Hz

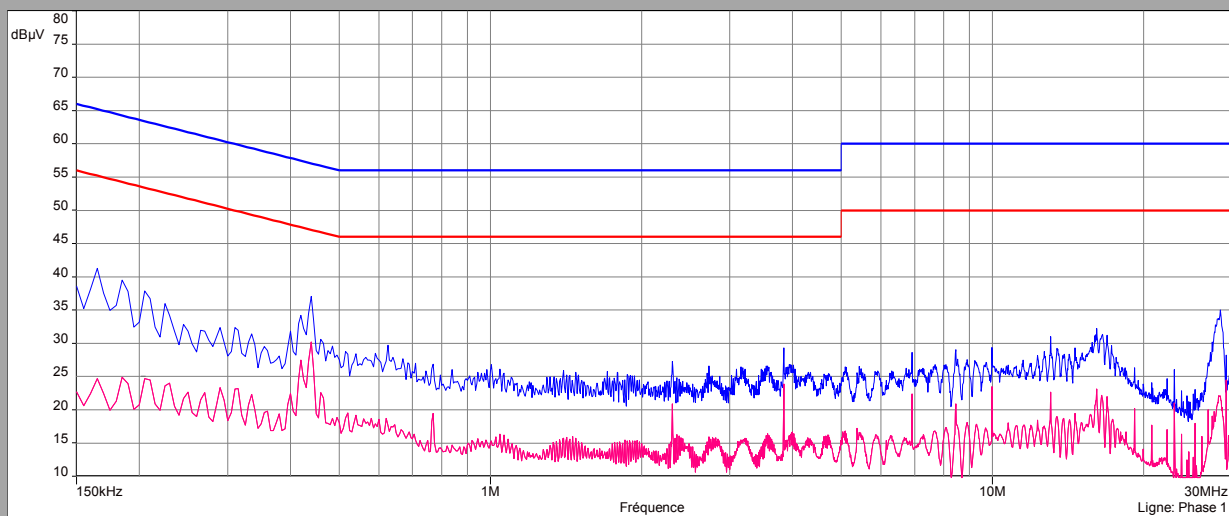
### Phase

Description Sous-bande 1

Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)

Réglages: RBW: 9kHz, VBW: Auto, Durée balayage: 50 ms/Pts, Atténuation: 10 dB, Nombre de Balayages: 1, Preamp: Off, LN Preamp: Off, Preselecteur: On  
Ligne: Phase 1

— FCC/FCC 15.107 - Classe:B - Moyenne/  
 — FCC/FCC 15.107 - Classe:B - QCrête/  
 — Mes.Peak (Phase 1)  
 — Mes.Avg (Phase 1)



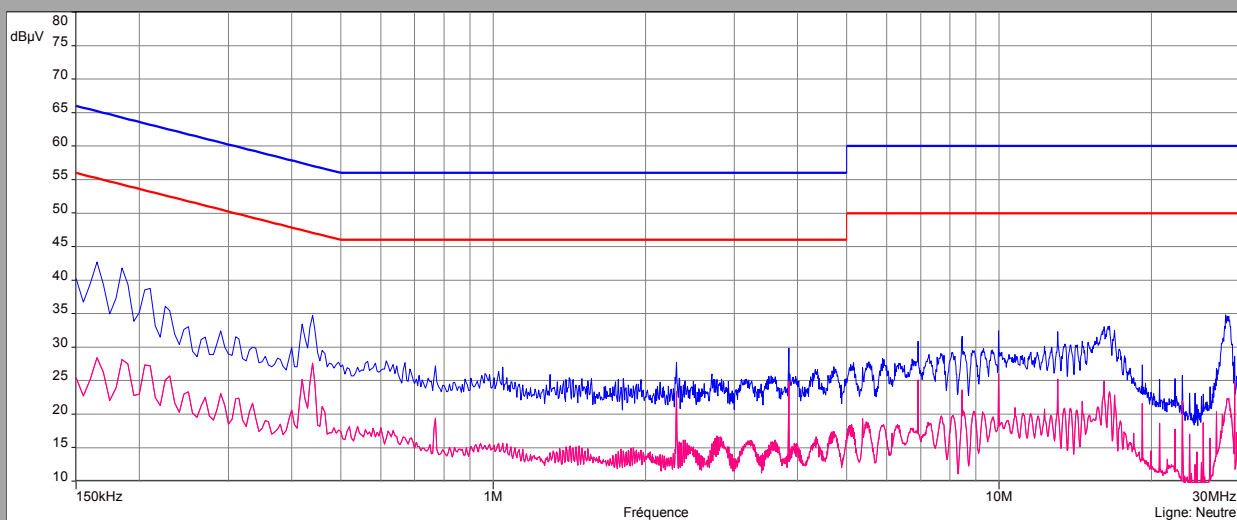
### Line

Description Sous-bande 2

Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)

Réglages: RBW: 9kHz, VBW: Auto, Durée balayage: 50 ms/Pts, Atténuation: 10 dB, Nombre de Balayages: 1, Preamp: Off, LN Preamp: Off, Preselecteur: On  
Ligne: Neutre

— FCC/FCC 15.107 - Classe:B - Moyenne/  
 — FCC/FCC 15.107 - Classe:B - QCrête/  
 — Mes.Peak (Neutre)  
 — Mes.Avg (Neutre)



| Phase Line 240V / 50Hz |                   |                         |                         |                          |                      |                      |                       |
|------------------------|-------------------|-------------------------|-------------------------|--------------------------|----------------------|----------------------|-----------------------|
| Frequency (MHz)        | Peak Level (dBμV) | Quasi-Peak Level (dBμV) | Quasi-Peak Limit (dBμV) | Margin Quasi-Peak (dBμV) | Average Level (dBμV) | Average Limit (dBμV) | Margin Average (dBμV) |
| 0.44                   | 37.06             | -                       | 57.06                   | 20.0                     | 30.17                | 47.06                | 16.89                 |
| 2.305                  | 27.27             | -                       | 56                      | 28.73                    | 20.89                | 46                   | 25.11                 |
| 3.840                  | 29.32             | -                       | 56                      | 26.68                    | 23.89                | 46                   | 22.11                 |
| 13.05                  | 31.02             | -                       | 60                      | 28.98                    | 22.62                | 50                   | 27.38                 |
| 16.13                  | 27.80             | -                       | 60                      | 20.80                    | 23.12                | 50                   | 26.88                 |
| 28.22                  | 35.02             | -                       | 60                      | 24.98                    | 22.11                | 50                   | 27.89                 |

| Neutral Line 240V / 50Hz |                   |                         |                         |                          |                      |                      |                       |
|--------------------------|-------------------|-------------------------|-------------------------|--------------------------|----------------------|----------------------|-----------------------|
| Frequency (MHz)          | Peak Level (dBμV) | Quasi-Peak Level (dBμV) | Quasi-Peak Limit (dBμV) | Margin Quasi-Peak (dBμV) | Average Level (dBμV) | Average Limit (dBμV) | Margin Average (dBμV) |
| 0.44                     | 34.74             | -                       | 57.06                   | 22.32                    | 27.59                | 47.06                | 19.47                 |
| 2.305                    | 27.75             | -                       | 56                      | 28.25                    | 23.37                | 46                   | 22.63                 |
| 3.840                    | 29.88             | -                       | 56                      | 26.12                    | 24.91                | 46                   | 21.09                 |
| 13.05                    | 32.30             | -                       | 60                      | 27.70                    | 25.23                | 50                   | 24.77                 |
| 16.13                    | 33.12             | -                       | 60                      | 26.88                    | 24.86                | 50                   | 25.14                 |
| 28.22                    | 34.82             | -                       | 60                      | 25.18                    | 22.33                | 50                   | 27.67                 |

## 12.7. CONCLUSION

Ac Power Line Conducted Emission measurement performed on the sample of the product **Sagemcom® Sound Box SBDV01**, SN: **253770742**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.247 limits.

## 13. UNWANTED EMISSIONS IN RESTRICTED FREQUENCY BANDS

### 13.1. TEST CONDITIONS

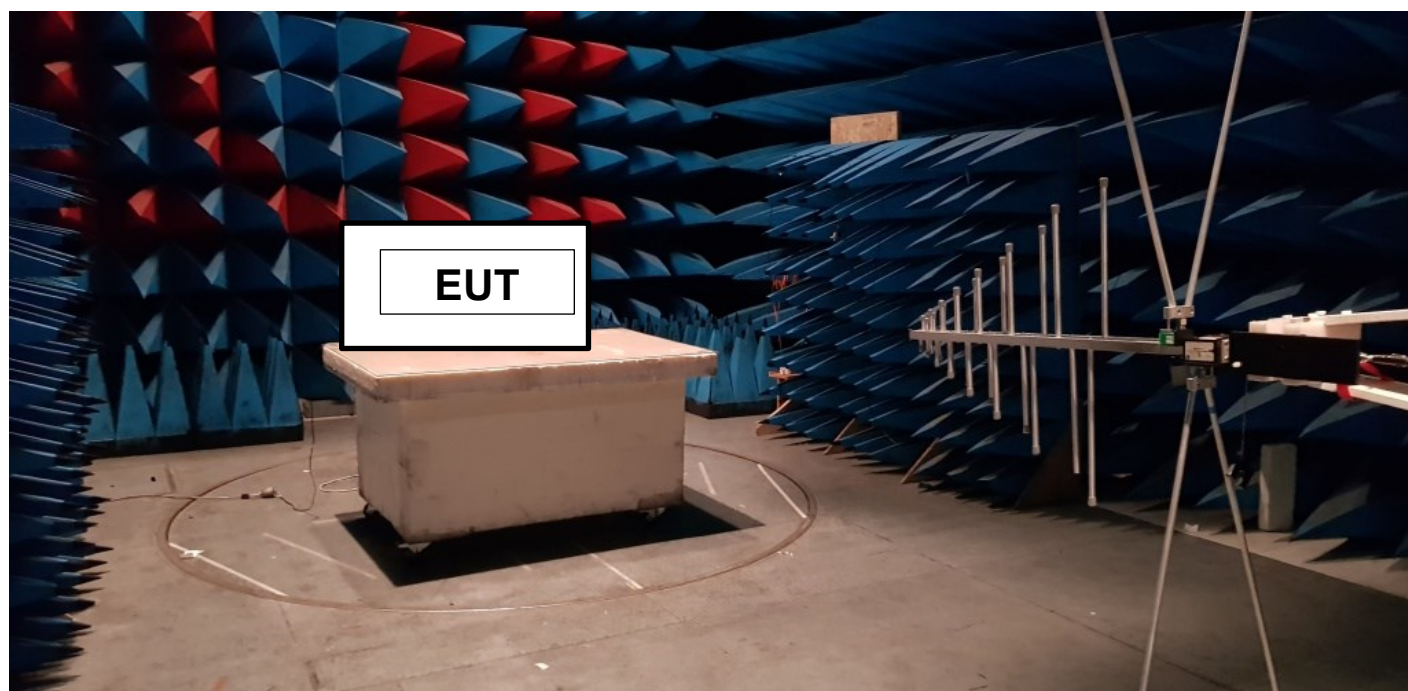
Test performed by : Armand MAHOUNGOU  
Date of test : September 14, 2018 to October 2, 2018  
Ambient temperature : 25°C & 27°C  
Relative humidity : 47% & 44%

### 13.2. TEST SETUP

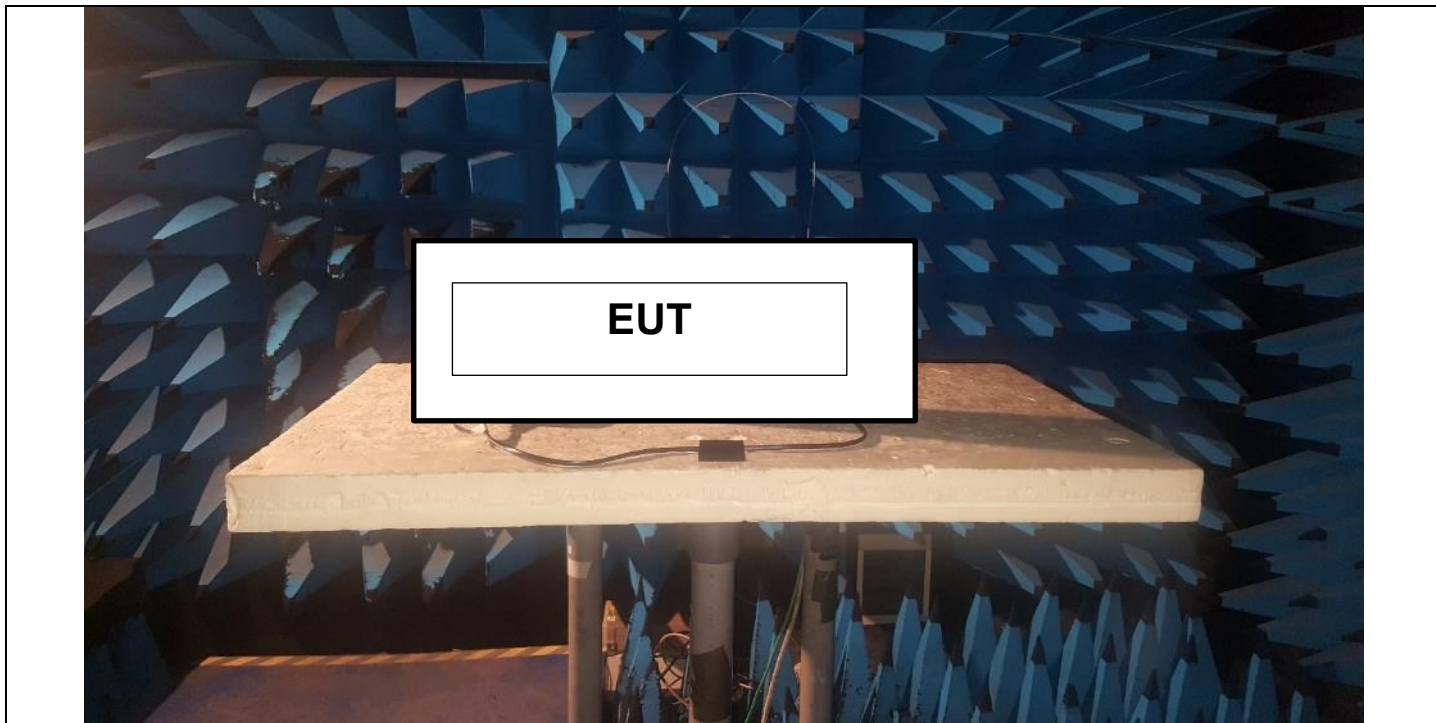
The product has been tested according to ANSI C63.10 (2013).

Test is performed in parallel, perpendicular and ground parallel axis with a loop antenna below 30MHz. Measurement bandwidth was 200Hz below 150kHz and 9kHz between 150kHz & 30MHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height was 1m. The EUT is placed **in a semi-anechoic chamber**. Distance between measuring antenna and the EUT is **3m**.

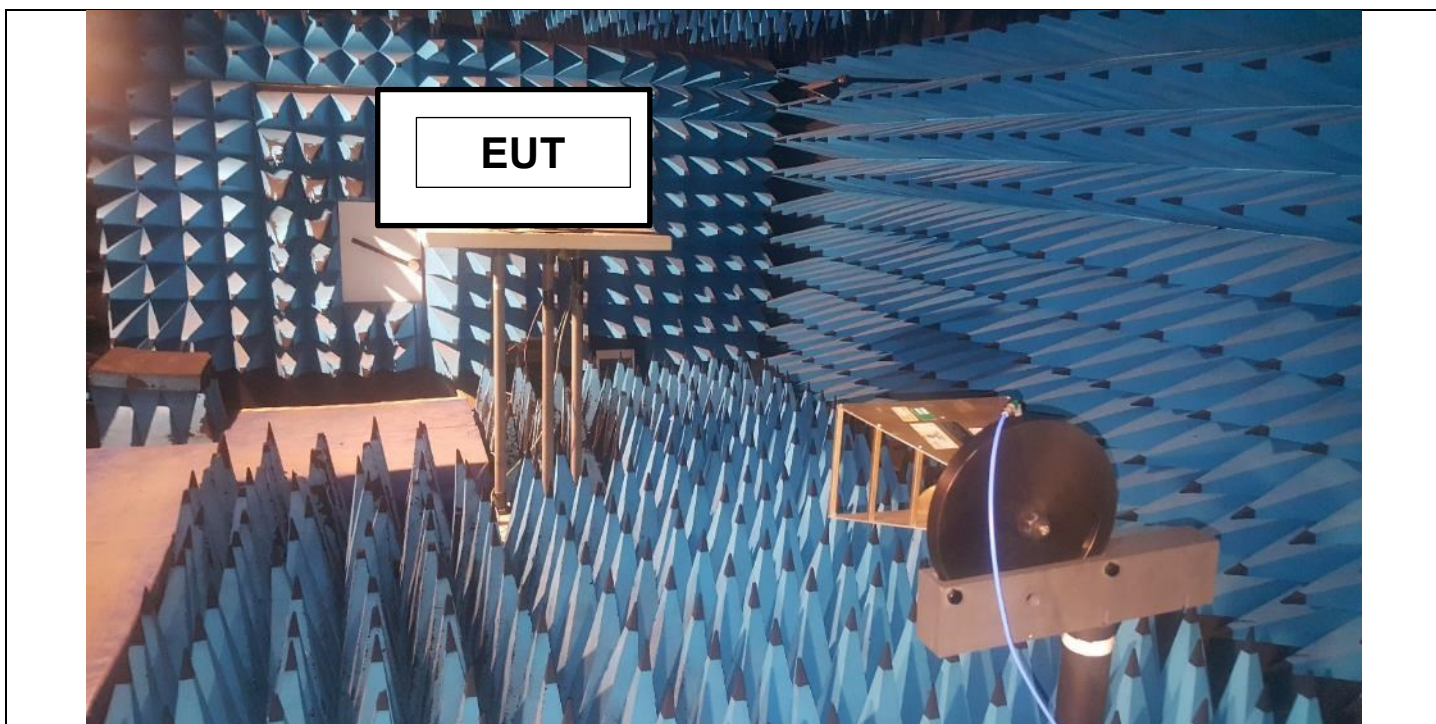
Test is performed in horizontal (H) and vertical (V) polarization with **bilog** between 30MHz & 1GHz and with a horn antenna above 1GHz. Measurement bandwidth was 120kHz below 1GHz and 1MHz above 1GHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. 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. The EUT is placed **in a full anechoic chamber** above 1GHz and **in a semi-anechoic chamber** from 30MHz to 1GHz. Distance between measuring antenna and the EUT is **3m**.



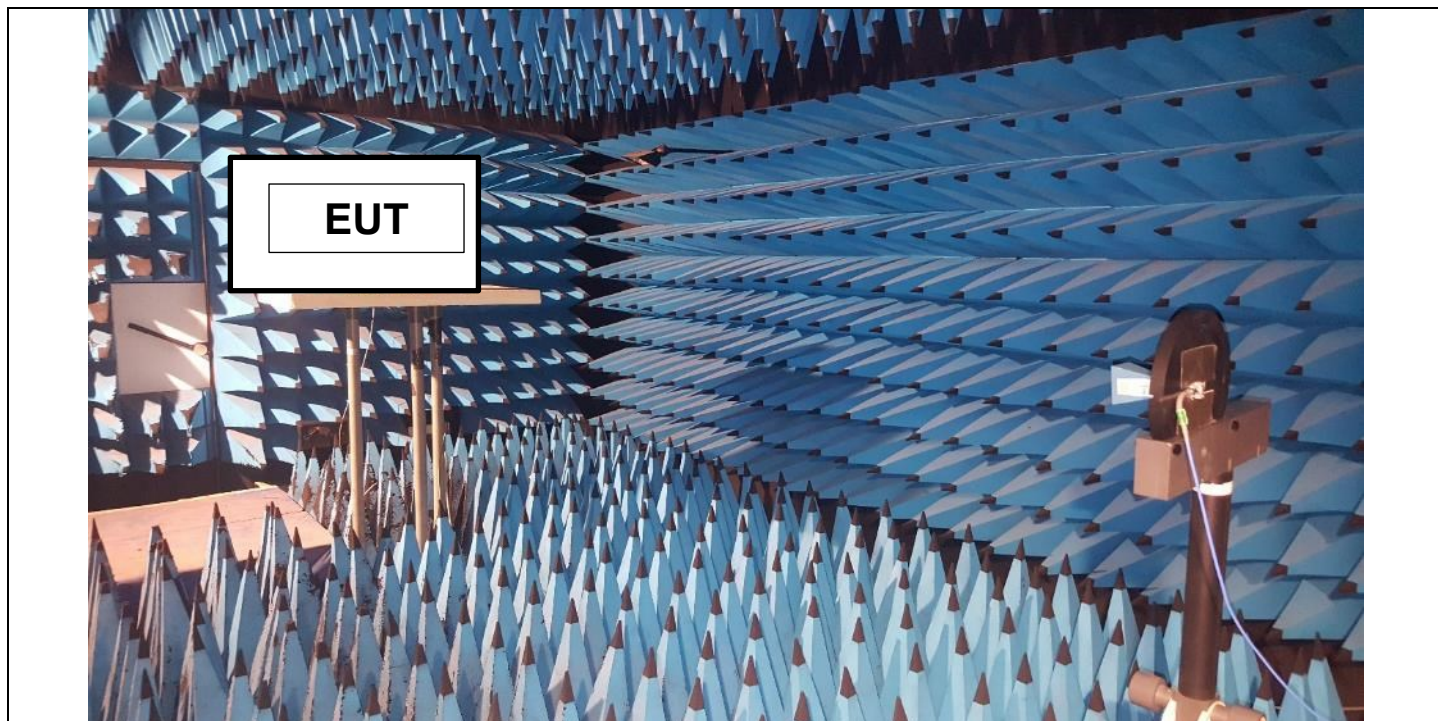
Photograph for Unwanted Emission in restricted frequency bands



Photograph for Unwanted Emission in restricted frequency bands



Photograph for Unwanted Emission in restricted frequency bands



Photograph for Unwanted Emission in restricted frequency bands

### 13.3. LIMIT

#### Limit at 3m:

|                       |                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------|
| 9kHz to 0,490MHz:     | $2400/F(\text{kHz})\mu\text{V/m}$ (300m) or $20\log(2400/F(\text{kHz}))\text{dB}\mu\text{V/m}$ (3m) QPeak    |
| 0,490MHz to 1.705MHz: | $240000/F(\text{kHz})\mu\text{V/m}$ (30m) or $20\log(240000/F(\text{kHz}))\text{dB}\mu\text{V/m}$ (3m) QPeak |
| 1.705MHz to 30MHz:    | $30\mu\text{V/m}$ (30m) or $\text{dB}\mu\text{V/m}$ (3m) QPeak                                               |
| 30MHz to 88MHz:       | $40\text{dB}\mu\text{V/m}$ QPeak                                                                             |
| 88MHz to 216MHz:      | $43,5\text{dB}\mu\text{V/m}$ QPeak                                                                           |
| 216MHz to 960MHz:     | $46\text{dB}\mu\text{V/m}$ QPeak                                                                             |
| 960MHz to 1000MHz:    | $54\text{dB}\mu\text{V/m}$ QPeak                                                                             |
| Above 1000MHz:        | $74\text{dB}\mu\text{V/m}$ Peak<br>$54\text{dB}\mu\text{V/m}$ Average                                        |

#### Limit at 10m:

|                    |                                                                           |
|--------------------|---------------------------------------------------------------------------|
| 30MHz to 88MHz:    | $29,5\text{dB}\mu\text{V/m}$ QPeak                                        |
| 88MHz to 216MHz:   | $33\text{dB}\mu\text{V/m}$ QPeak                                          |
| 216MHz to 960MHz:  | $35,5\text{dB}\mu\text{V/m}$ QPeak                                        |
| 960MHz to 1000MHz: | $43,5\text{dB}\mu\text{V/m}$ QPeak                                        |
| Above 1000MHz:     | $63,5\text{dB}\mu\text{V/m}$ Peak<br>$43,5\text{dB}\mu\text{V/m}$ Average |



#### 13.4. TEST EQUIPMENT LIST

| DESCRIPTION               | MANUFACTURER    | MODEL             | N° LCIE  | Cal_Date            | Cal_Due             |
|---------------------------|-----------------|-------------------|----------|---------------------|---------------------|
| EMI receiver              | ROHDE & SCHWARZ | ESI40 1088 740K40 | A2642010 | 2018/07             | 2019/07             |
| Full anechoic chamber     | SIEPEL          | -                 | D3044019 | 2014/10             | 2018/10             |
| Preamplifier              | LCIE            | LCIE-ALB-001      | A7080073 | 2016/10             | 2018/10             |
| Horn antenna              | AH SYSTEMS      | SAS 571           | C2042041 | 2017/09             | 2019/09             |
| Horn antenna (18-26,5GHz) | PASTERNAK       | PE9852/2F-20      | C2042048 | 2017/12             | 2019/12             |
| Cable                     | Télédyné        | 084-0505-1MTR     | A5329757 | 2018/03             | 2019/03             |
| Cable                     | Télédyné        | 084-0555-3MTR     | A5329760 | 2018/03             | 2019/03             |
| Cable                     | Télédyné        | 084-555-1.5MTR    | A5329759 | 2018/03             | 2019/03             |
| Multimeter                | KEITHLEY        | 2000              | A1242090 | 2017/05             | 2019/05             |
| Power supply              | KIKUSUI         | PCR500M           | A7040079 | Cal with Multimeter | Cal with Multimeter |
| Bilog antenna             | SCHWARZBECK     | VULB9160          | C2040150 | 2018/04             | 2019/04             |
| Cable                     | -               | -                 | A5329711 | 2018/06             | 2019/06             |
| Horn antenna              | A-infoMW        | Broadband 1-18    | C2042056 | 2016/07             | 2018/07             |
| SEMI ANECHOIC CHAMBER     | SIEPEL          | ANE               | D3044008 | 2014/10             | 2018/10             |
| EMI Receiver              | ROHDE & SCHWARZ | ESU26             | A2642018 | 2016/10             | 2018/10             |
| Preamplifier              | LCIE            | -                 | A7086012 | 2018/03             | 2019/03             |
| Loop antenna              | SCHWARZBECK     | FMZB1513          | C2040209 | 2018/03             | 2020/03             |
| Rejector filter 2,4GHz    | -               | 2.45GHz           | A7484048 | 2017/11             | 2018/11             |

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

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

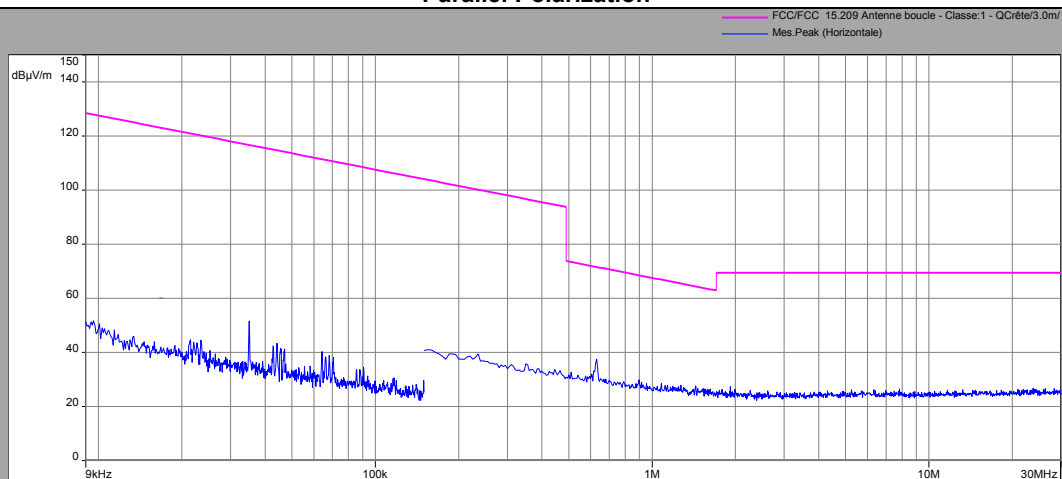
☒ None ☐ Divergence:

## 13.6. RESULTS

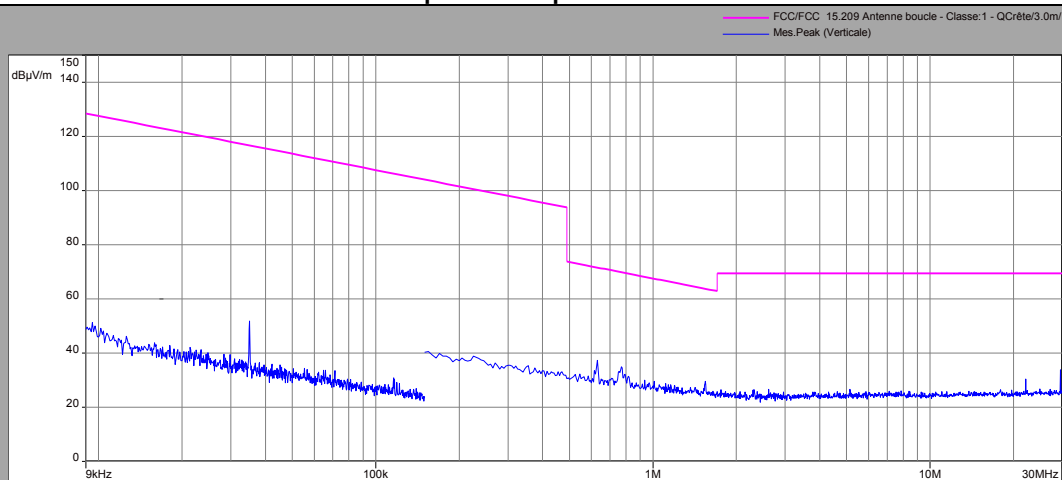
**9kHz – 30 MHz**

**Cmin**

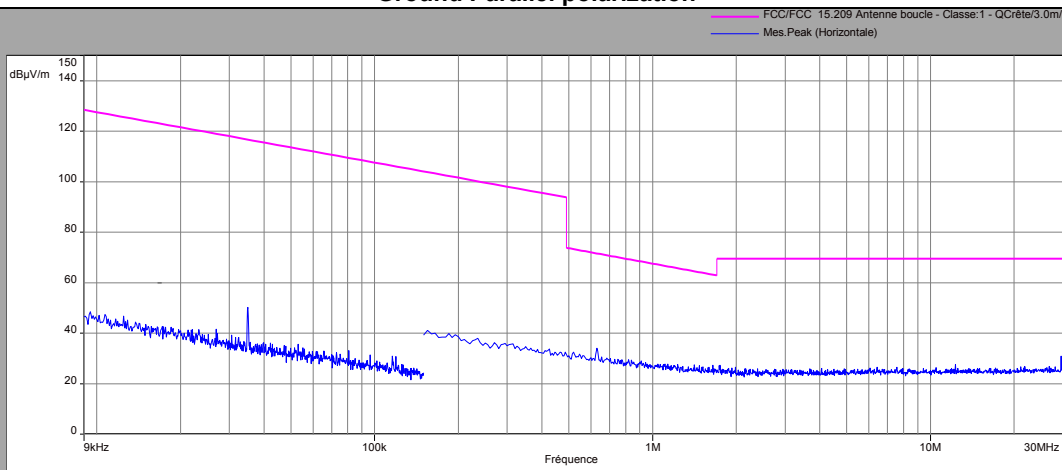
**Parallel Polarization**

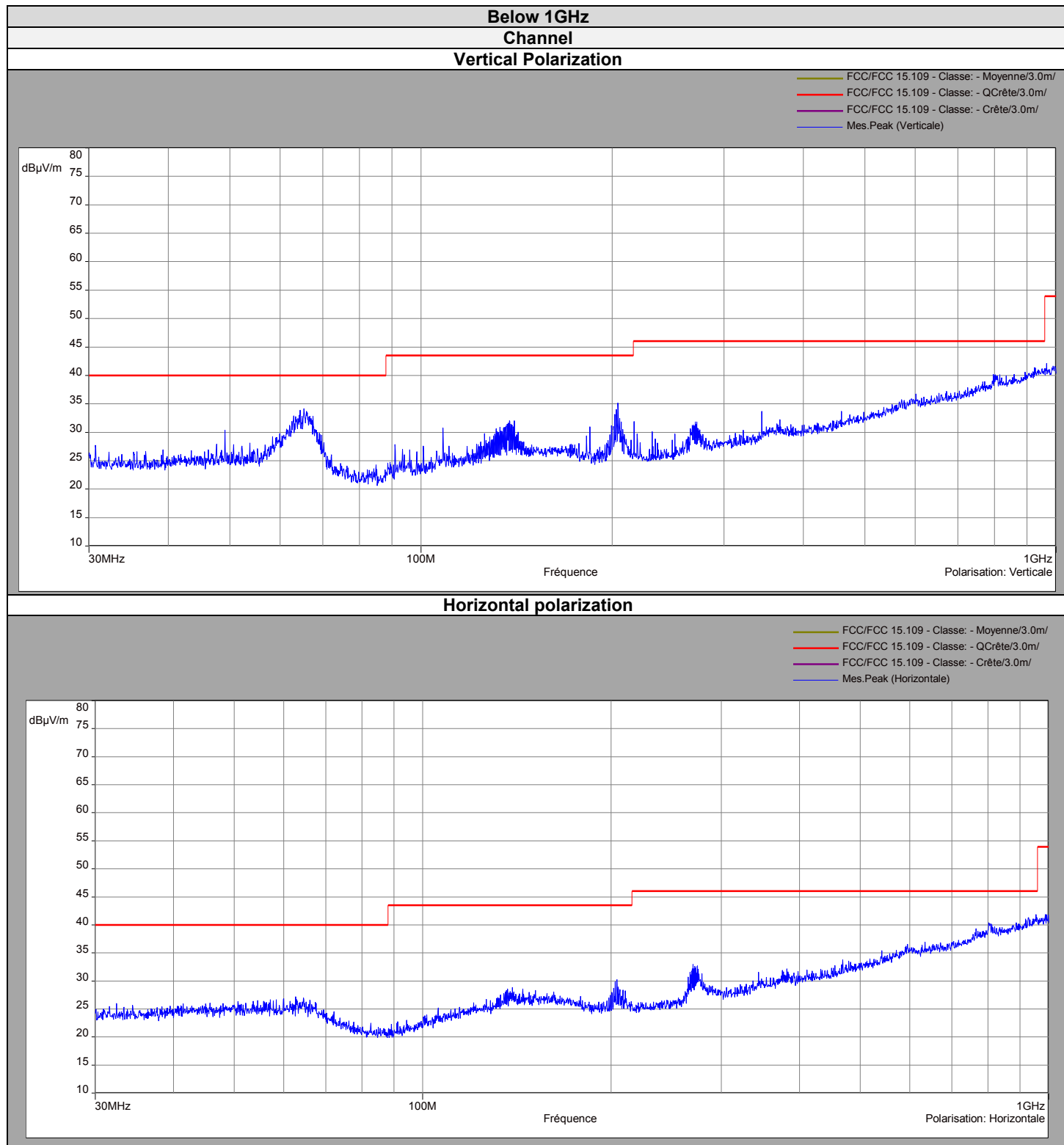


**Perpendicular polarization**



**Ground Parallel polarization**





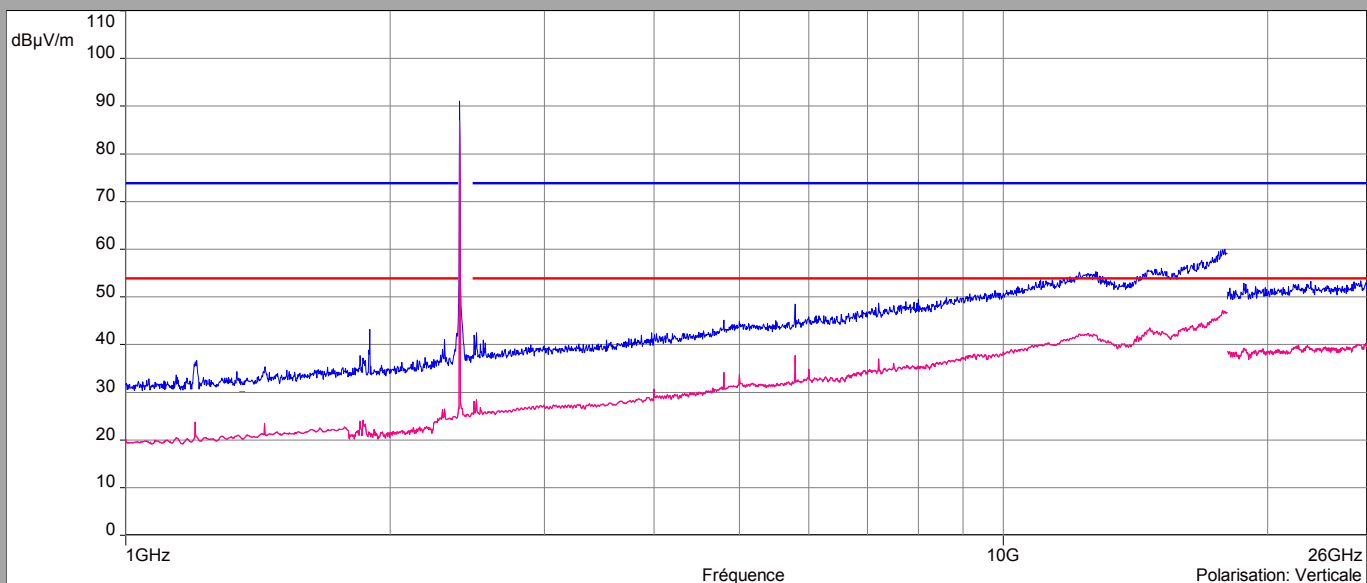
**GFSK**

**Above 1GHz**

**Cmin**

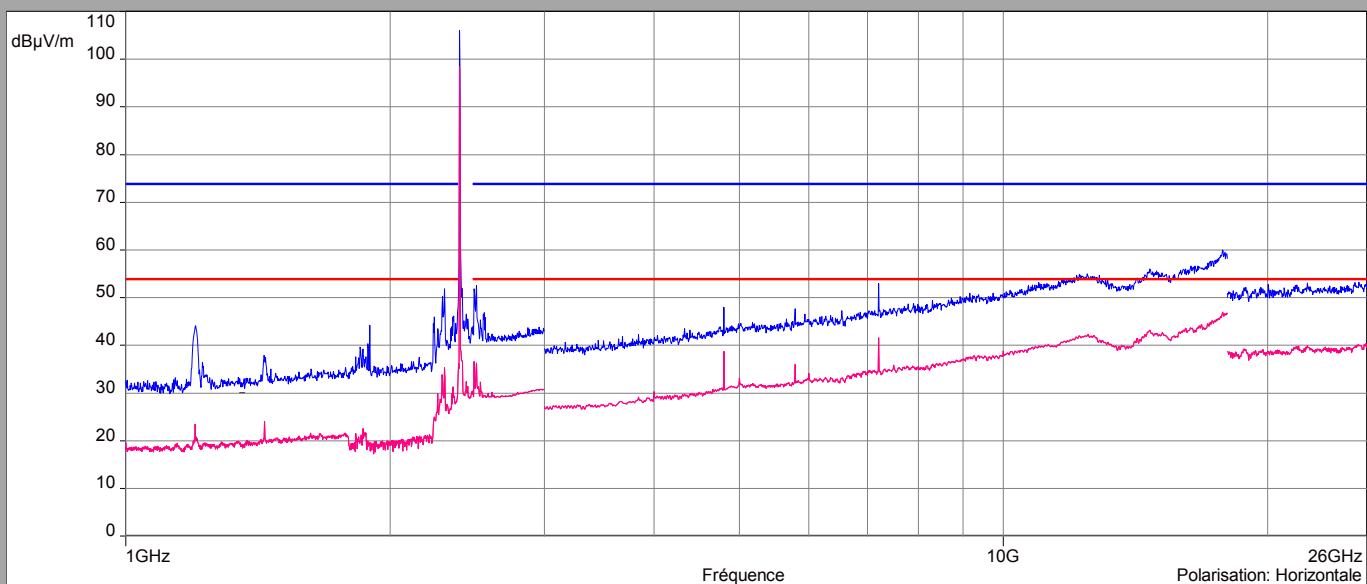
**Vertical Polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)



**Horizontal polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)



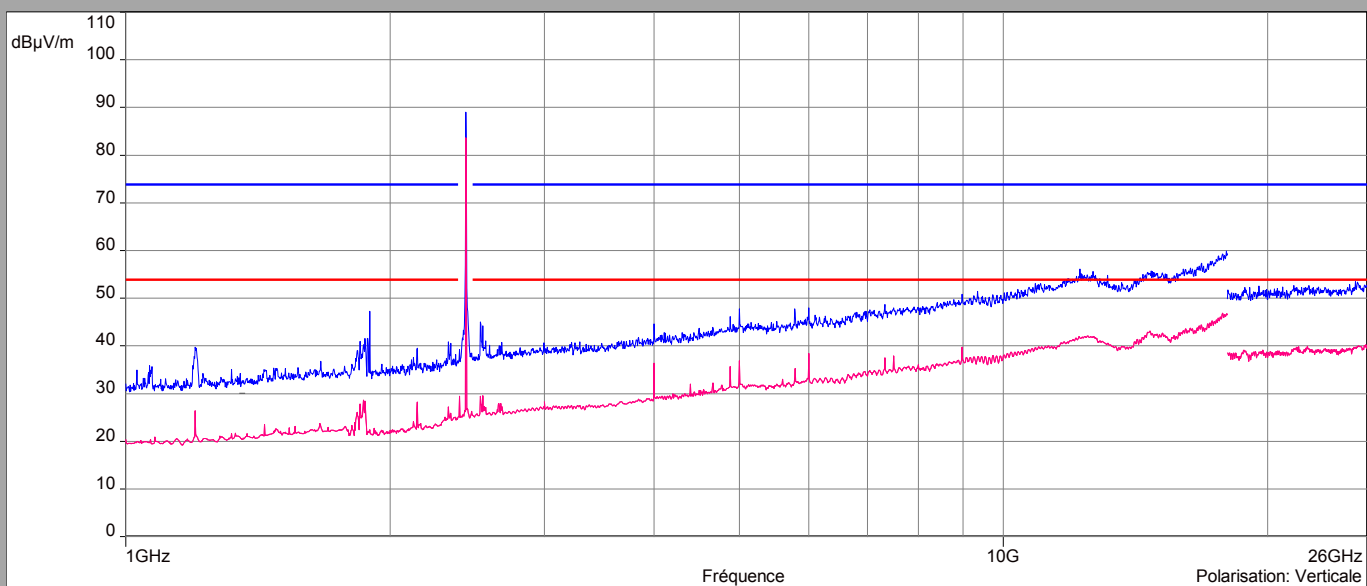
**GFSK**

**Above 1GHz**

**Cnom**

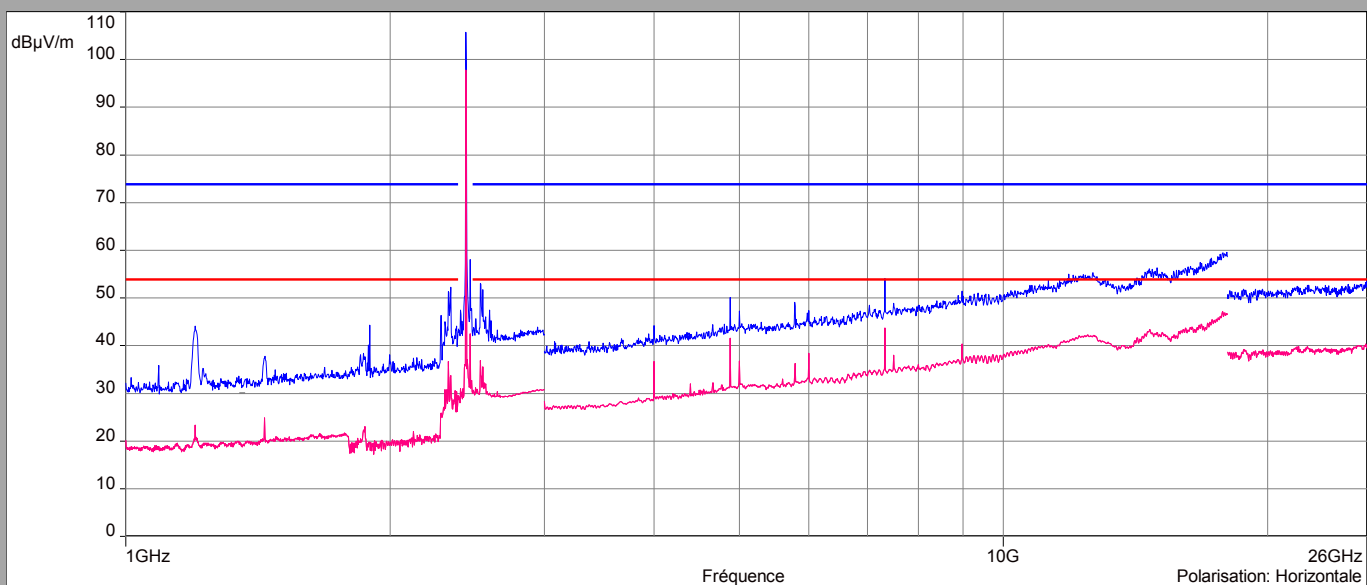
**Vertical Polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)



**Horizontal polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)



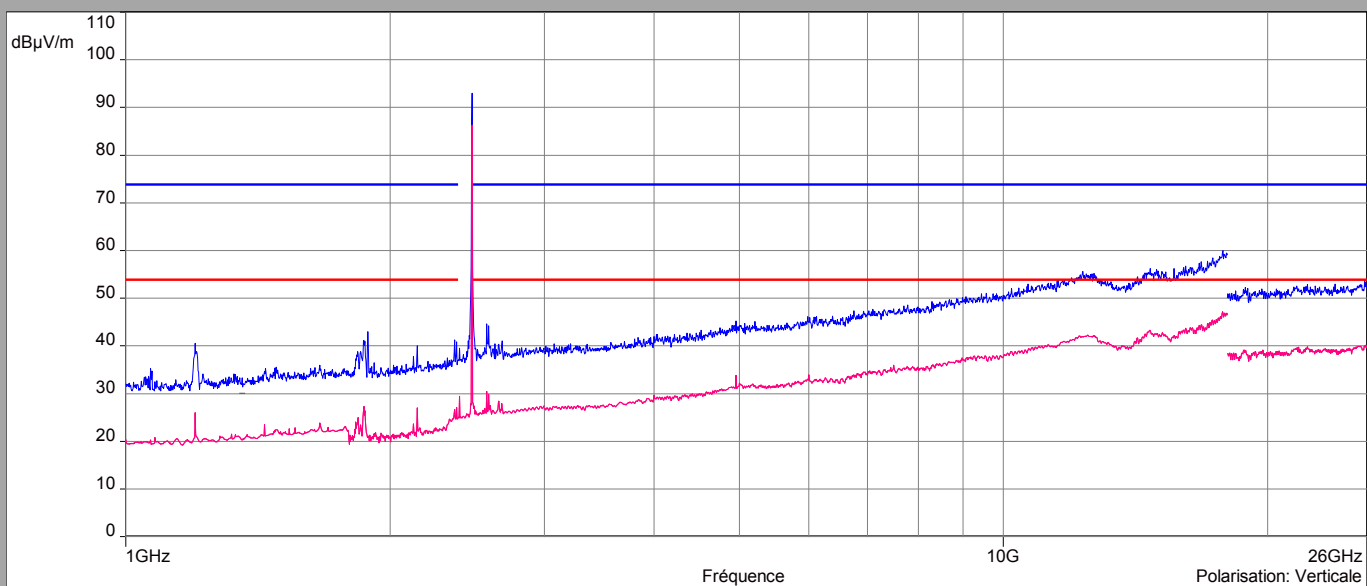
**GFSK**

**Above 1GHz**

**Cmax**

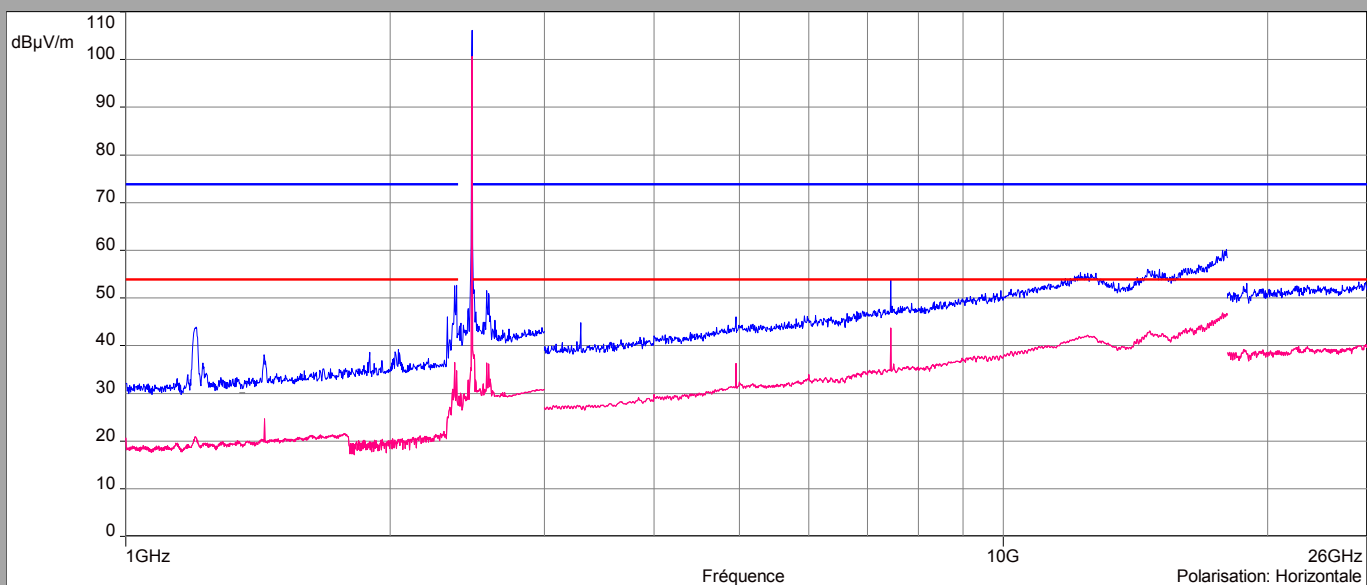
**Vertical Polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)



**Horizontal polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)



## GFSK

### Above 1GHz Zoom 2310MHz-2500MHz

#### Cmin/Cnom/Cmax

##### Vertical Polarization

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Avg Cmax - Verticale (Verticale)
- Mes.Peak Cnom - Verticale (Verticale)
- Mes.Avg Cnom - Verticale (Verticale)
- Mes.Peak Cmin - Verticale (Verticale)
- Mes.Peak Cmax - Verticale (Verticale)
- Mes.Avg Cmin - Verticale (Verticale)

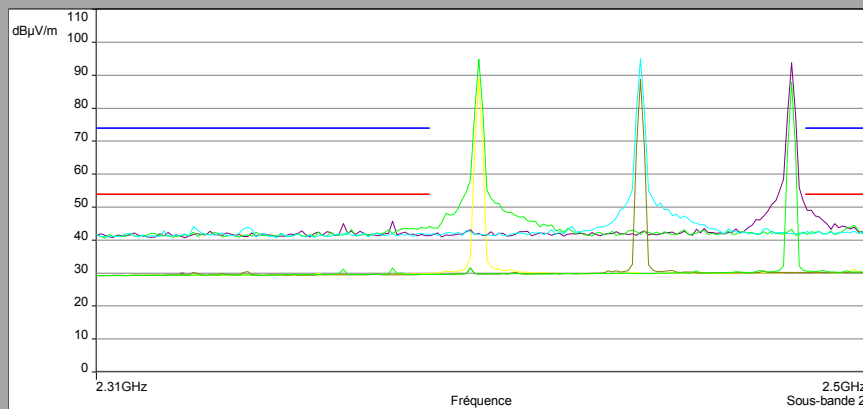
Description Sous-bande 2

Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 1 MHz )

Réglages: RBW: 1MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : Auto, Nombre de Balayages : 1, Preamp : C

Polarisation:Verticale

Distance: 3 m



##### Horizontal polarization

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak Cmin - Horizontale (Horizontale)
- Mes.Peak Cmax - Horizontale (Horizontale)
- Mes.Avg Cmin - Horizontale (Horizontale)
- Mes.Avg Cmax - Horizontale (Horizontale)
- Mes.Peak Cnom - Horizontale (Horizontale)
- Mes.Avg Cnom - Horizontale (Horizontale)

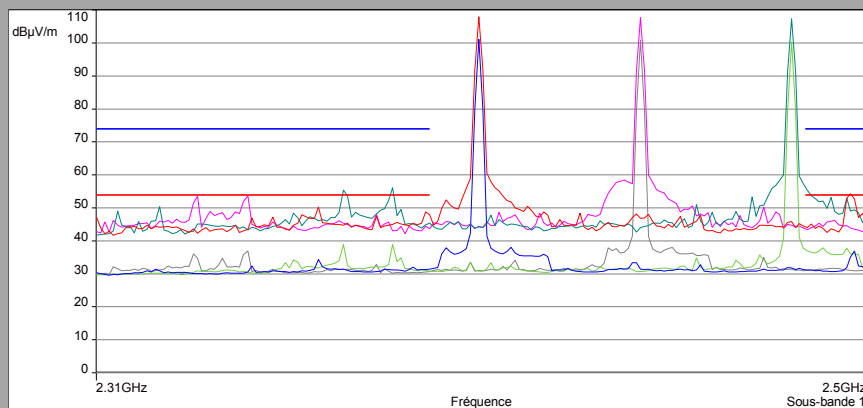
Description Sous-bande 1

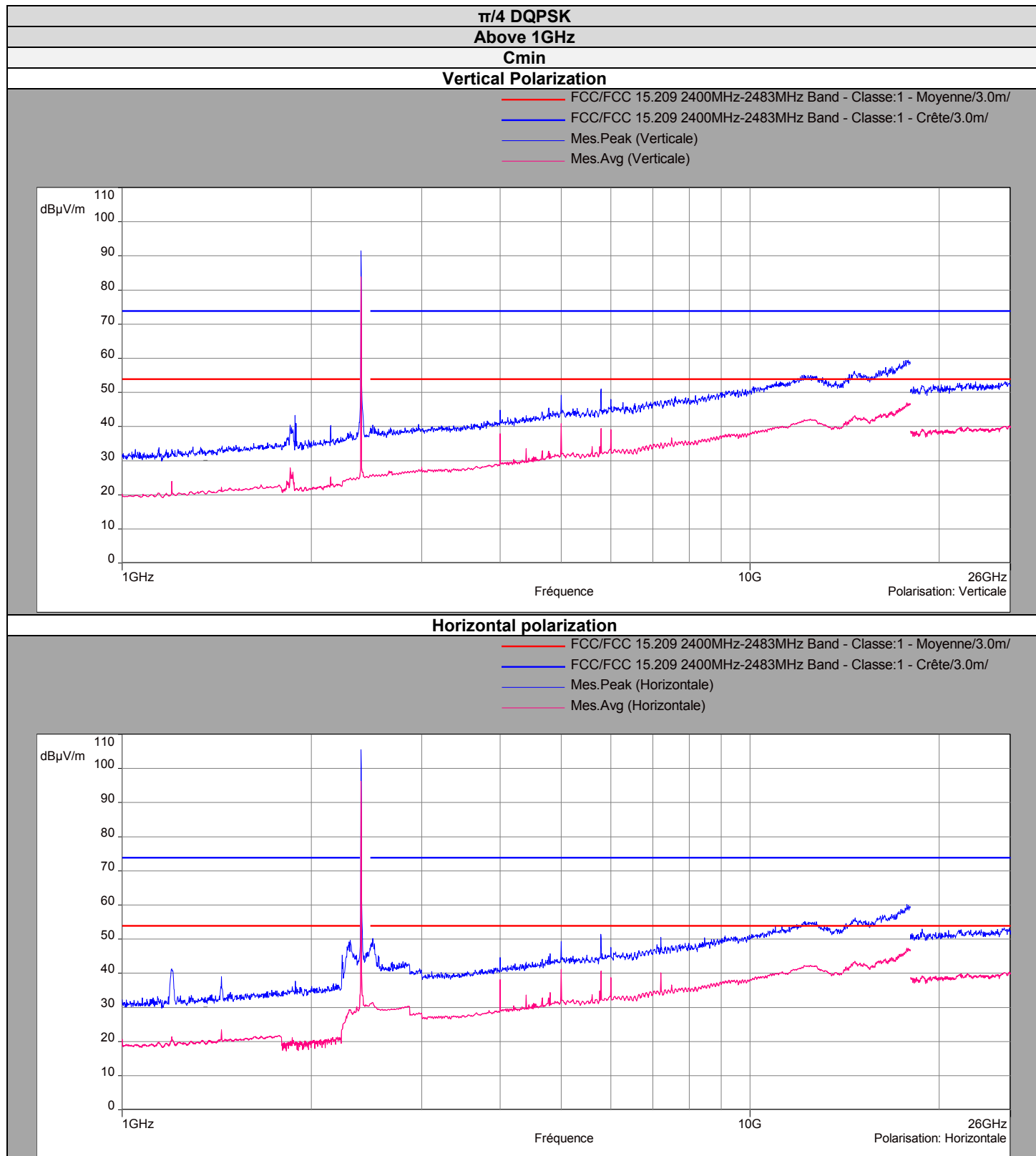
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 1 MHz )

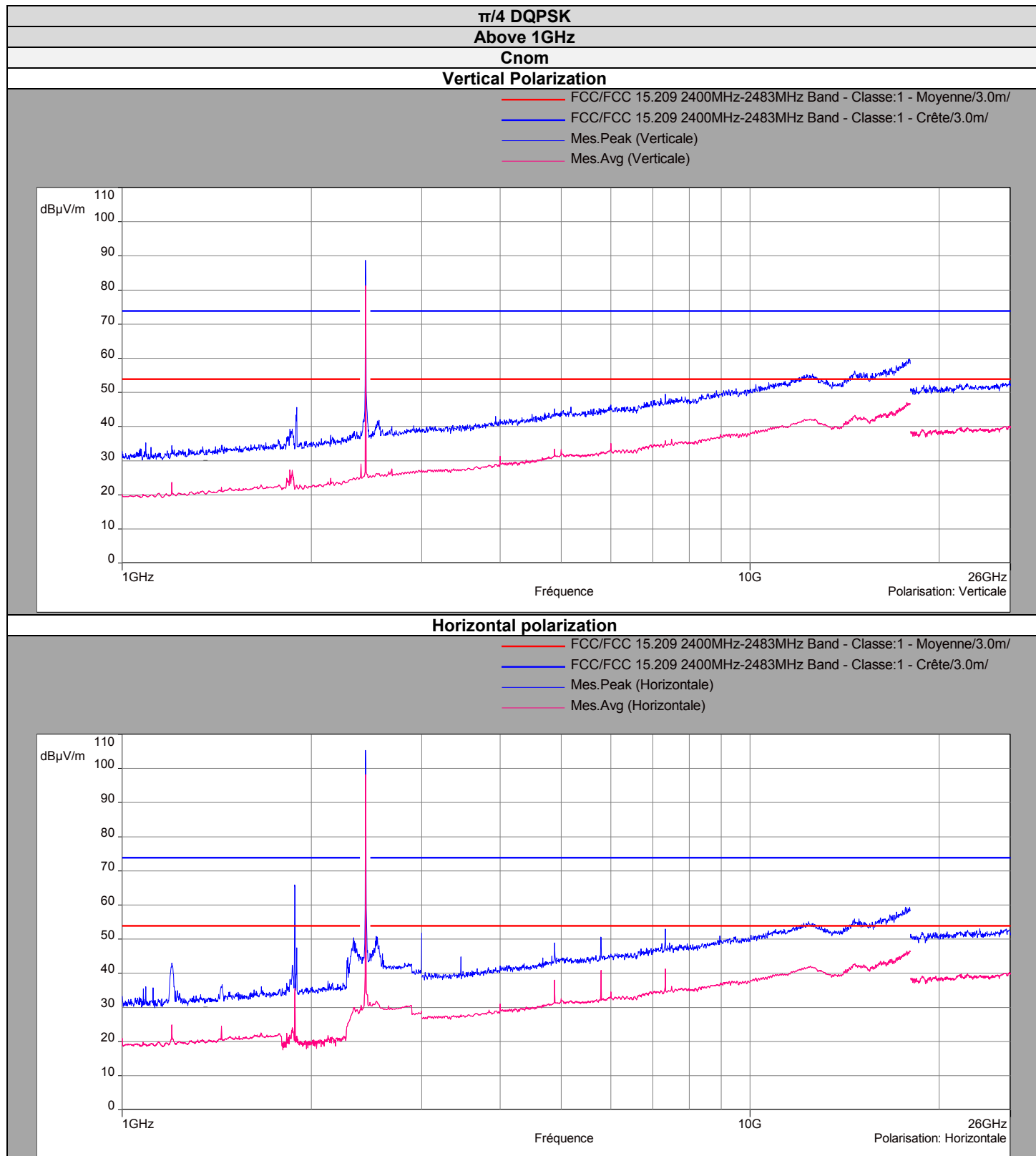
Réglages: RBW: 1MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : Auto, Nombre de Balayages : 1, Preamp : C

Polarisation:Horizontale

Distance: 3 m







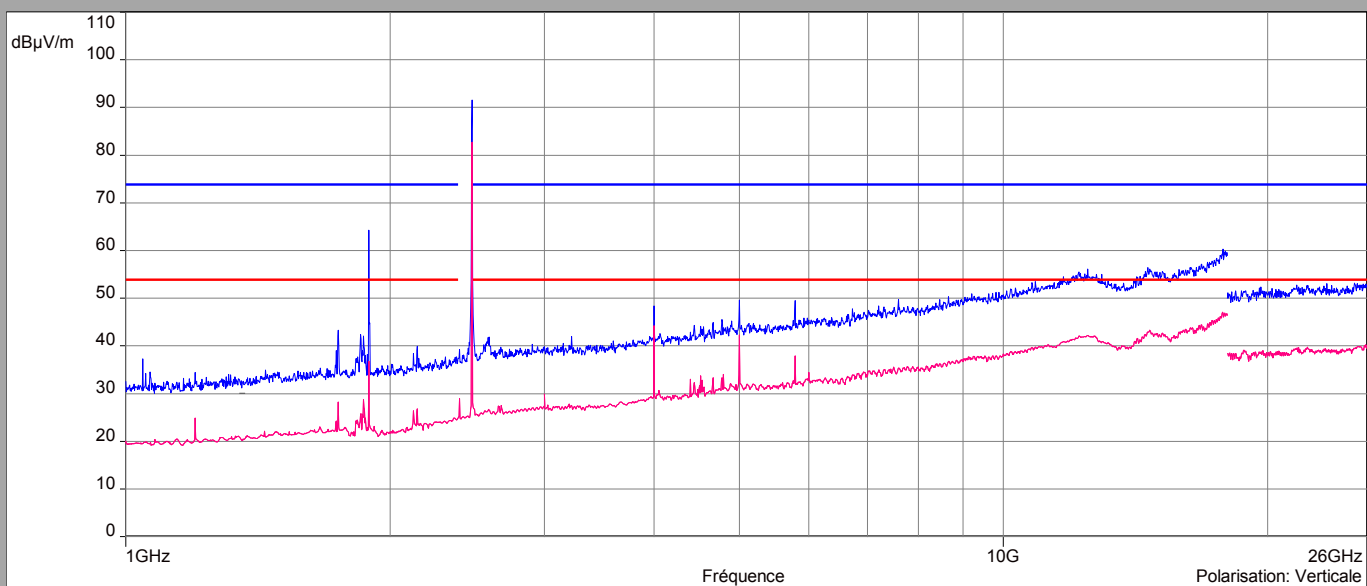
**$\pi/4$  DQPSK**

**Above 1GHz**

**Cmax**

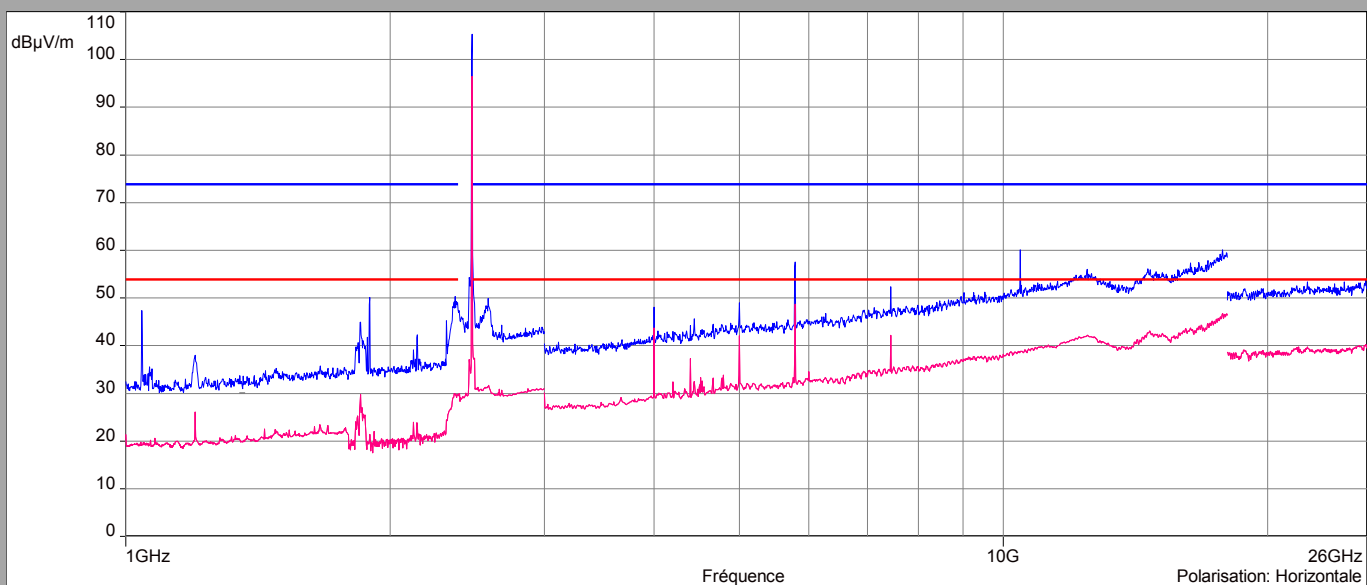
**Vertical Polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)



**Horizontal polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)



**$\pi/4$  DQPSK**

**Above 1GHz Zoom 2310MHz-2500MHz**

**Cmin/Cnom/Cmax**

**Vertical Polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Avg Cmax - Verticale (Verticale)
- Mes.Peak Cnom - Verticale (Verticale)
- Mes.Avg Cnom - Verticale (Verticale)
- Mes.Peak Cmin - Verticale (Verticale)
- Mes.Peak Cmax - Verticale (Verticale)
- Mes.Avg Cmin - Verticale (Verticale)

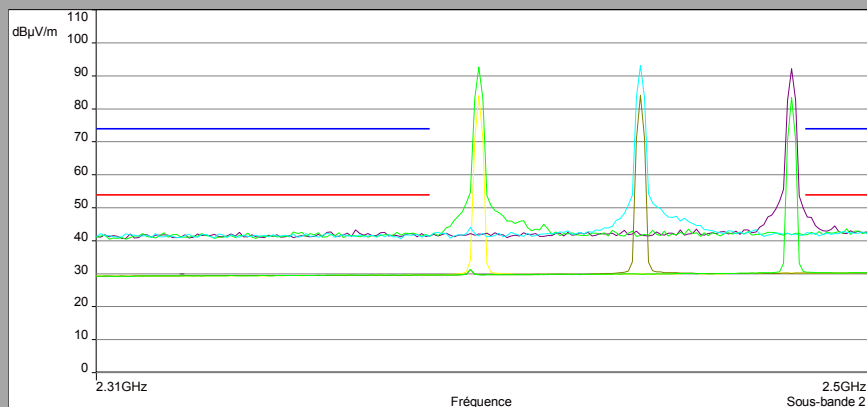
Description Sous-bande 2

Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 1 MHz )

Réglages: RBW: 1MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : Auto, Nombre de Balayages : 1, Preamp : C

Polarisation:Verticale

Distance: 3 m



**Horizontal polarization**

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak Cmin - Horizontale (Horizontale)
- Mes.Peak Cmax - Horizontale (Horizontale)
- Mes.Avg Cmin - Horizontale (Horizontale)
- Mes.Avg Cmax - Horizontale (Horizontale)
- Mes.Peak Cnom - Horizontale (Horizontale)
- Mes.Avg Cnom - Horizontale (Horizontale)

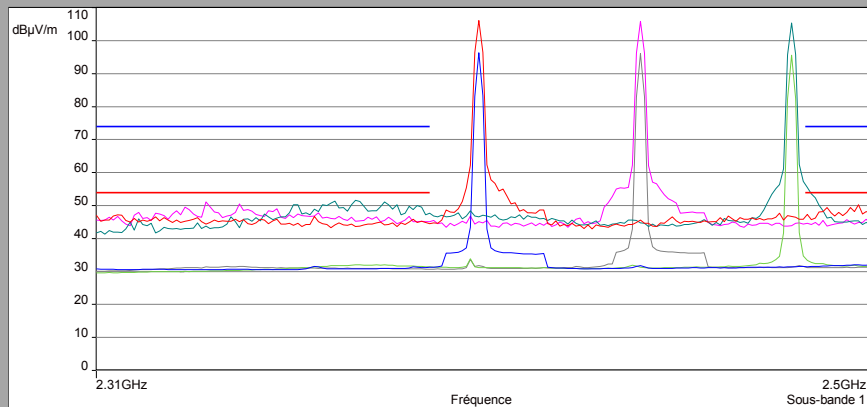
Description Sous-bande 1

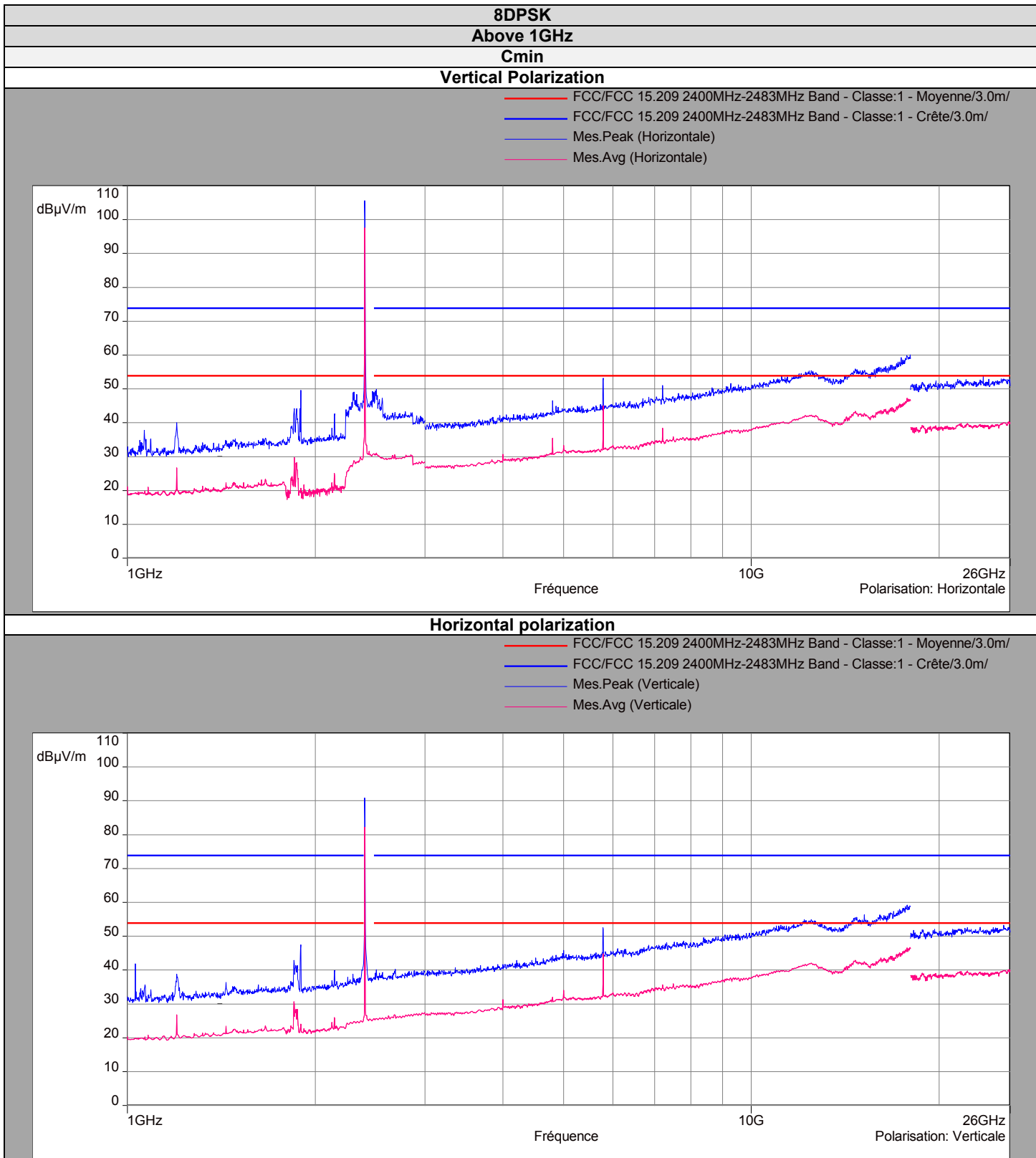
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 1 MHz )

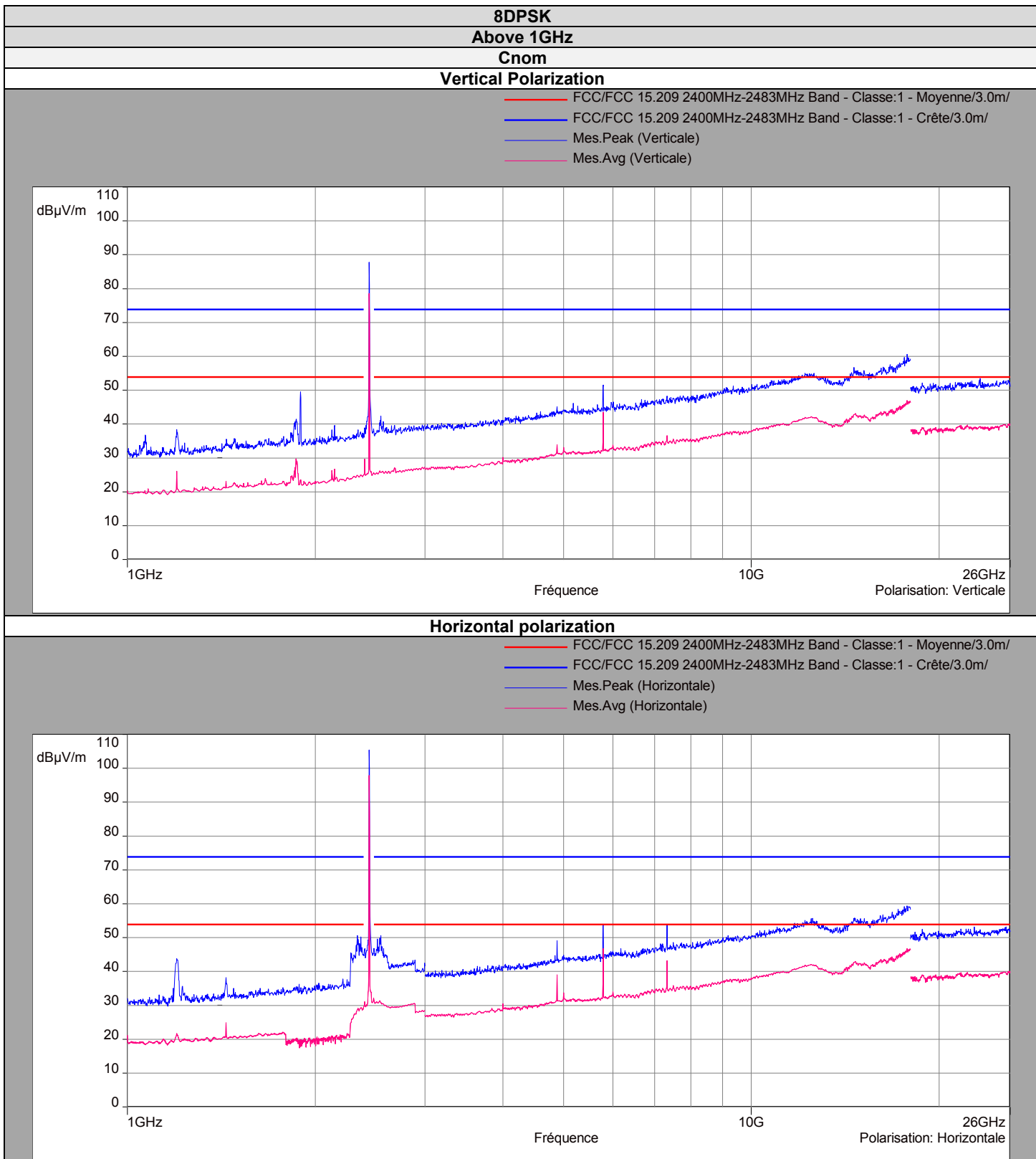
Réglages: RBW: 1MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : Auto, Nombre de Balayages : 1, Preamp : C

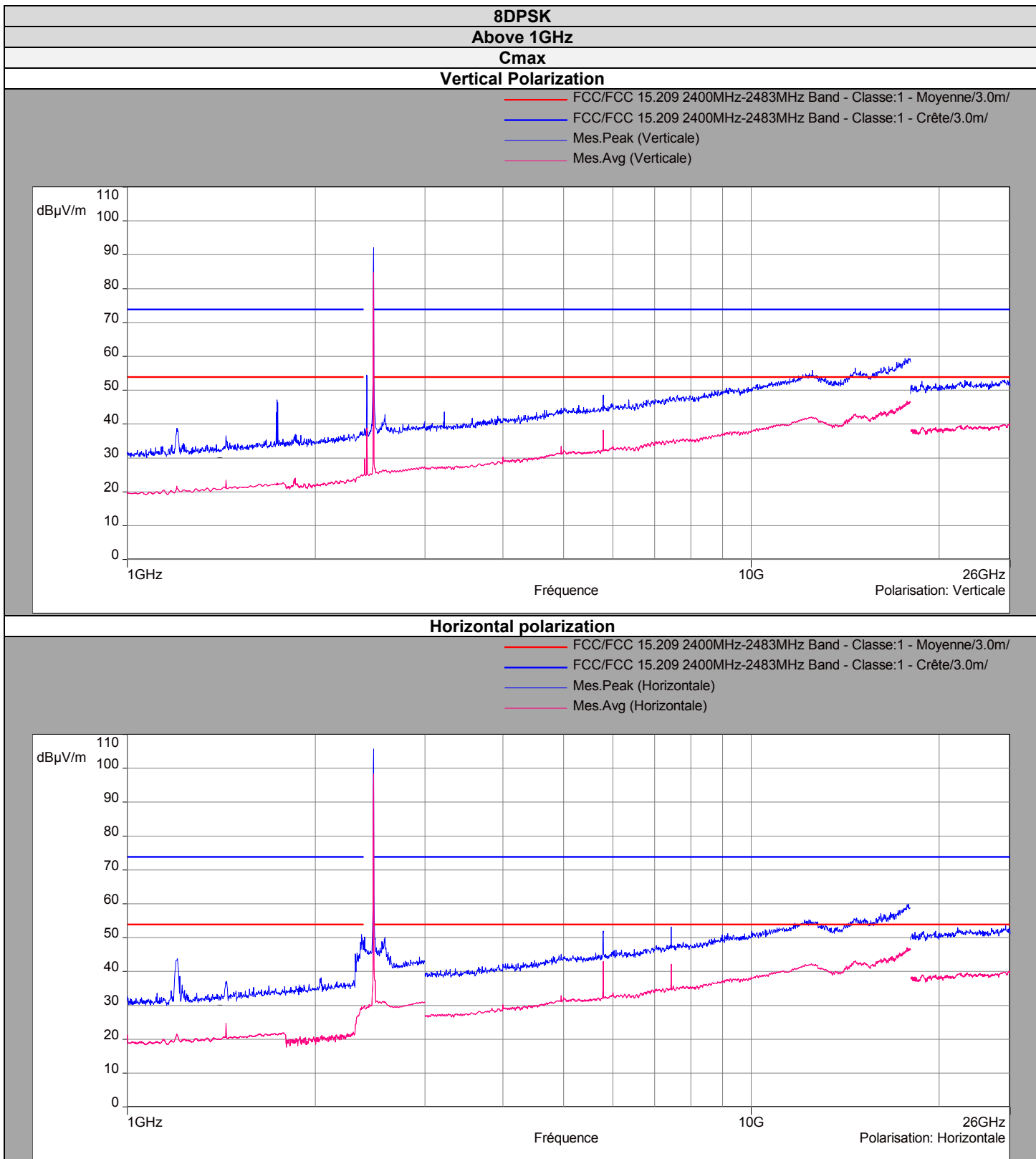
Polarisation:Horizontale

Distance: 3 m









## 8DPSK

### Above 1GHz Zoom 2310MHz-2500MHz

#### Cmin/Cnom/Cmax

#### Vertical Polarization

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Avg Cmax - Verticale (Verticale)
- Mes.Peak Cnom - Verticale (Verticale)
- Mes.Avg Cnom - Verticale (Verticale)
- Mes.Peak Cmin - Verticale (Verticale)
- Mes.Peak Cmax - Verticale (Verticale)
- Mes.Avg Cmin - Verticale (Verticale)

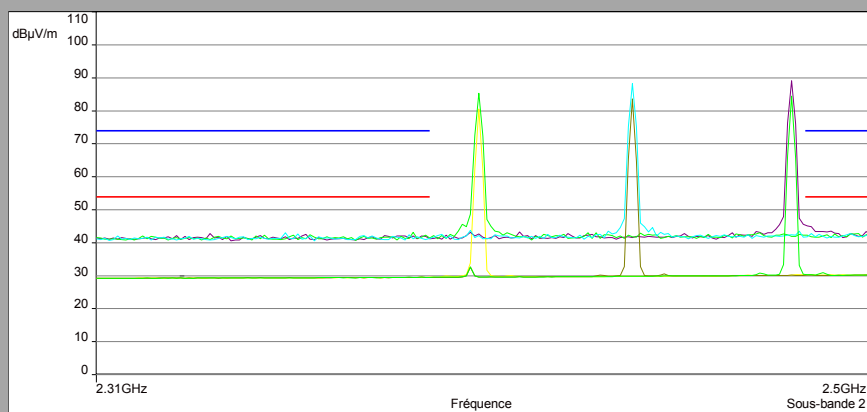
Description Sous-bande 2

Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 1 MHz )

Réglages: RBW: 1MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : Auto, Nombre de Balayages : 1, Preamp : C

Polarisation:Verticale

Distance: 3 m



#### Horizontal polarization

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
- Mes.Peak Cmin - Horizontale (Horizontale)
- Mes.Peak Cmax - Horizontale (Horizontale)
- Mes.Avg Cmin - Horizontale (Horizontale)
- Mes.Avg Cmax - Horizontale (Horizontale)
- Mes.Peak Cnom - Horizontale (Horizontale)
- Mes.Avg Cnom - Horizontale (Horizontale)

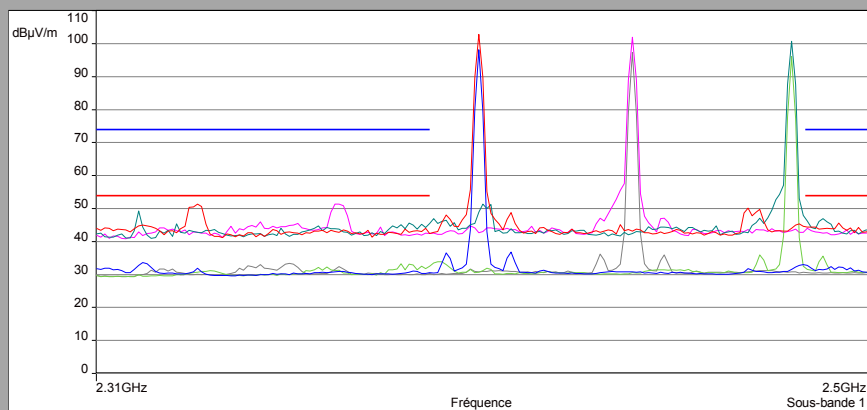
Description Sous-bande 1

Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 1 MHz )

Réglages: RBW: 1MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : Auto, Nombre de Balayages : 1, Preamp : C

Polarisation:Horizontale

Distance: 3 m



| 9kHz to 30MHz                                         |                 |                     |                      |                |
|-------------------------------------------------------|-----------------|---------------------|----------------------|----------------|
| Polarization                                          | Frequency (MHz) | Peak Level (dBµV/m) | QPeak Level (dBµV/m) | Limit (dBµV/m) |
| all emissions were greater than 20 dB below the limit |                 |                     |                      |                |

| 30MHz – 1GHz |                 |                     |                      |                |             |
|--------------|-----------------|---------------------|----------------------|----------------|-------------|
| Polarization | Frequency (MHz) | Peak Level (dBµV/m) | QPeak Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
| Verticale    | 65.4            | 34.15               | -                    | 40.0           | 5.85        |
| Verticale    | 49.15           | 30.37               | -                    | 40.0           | 9.62        |
| Verticale    | 108.3           | 30.79               | -                    | 43.5           | 12.71       |
| Verticale    | 204.26          | 35.14               | -                    | 43.5           | 8.36        |
| Horizontale  | 204.32          | 30.23               | -                    | 43.5           | 13.27       |
| Verticale    | 796.58          | 40.19               | -                    | 46.0           | 5.81        |

| GFSK           |                 |                        |                                            |                        |                           |                     |                     |                        |
|----------------|-----------------|------------------------|--------------------------------------------|------------------------|---------------------------|---------------------|---------------------|------------------------|
| Above 1GHz     |                 |                        |                                            |                        |                           |                     |                     |                        |
| Cmin/Cnom/Cmax |                 |                        |                                            |                        |                           |                     |                     |                        |
| Polarization   | Frequency (MHz) | Average Level (dBµV/m) | Average Level + Duty Cycle Factor (dBµV/m) | Average Limit (dBµV/m) | Average Margin Level (dB) | Peak Level (dBµV/m) | Peak Limit (dBµV/m) | Peak Margin Level (dB) |
| Horizontale    | 1201            | 23.47                  | 30.15                                      | 54                     | 30.53                     | 44.16               | 74                  | 29.84                  |
| Horizontale    | 1898            | 22.47                  | 29.15                                      | 54                     | 31.53                     | 44.22               | 74                  | 29.78                  |
| Horizontale    | 2390            | 31.40                  | 38.08                                      | 54                     | 22.60                     | 47.97               | 74                  | 26.03                  |
| Verticale      | 2390            | 29.87                  | 36.55                                      | 54                     | 24.13                     | 44.12               | 74                  | 29.88                  |
| Horizontale    | 2483.5          | 36.92                  | 43.60                                      | 54                     | 17.08                     | 55.32               | 74                  | 18.68                  |
| Verticale      | 2483.5          | 30.60                  | 37.28                                      | 54                     | 23.40                     | 49.07               | 74                  | 24.93                  |
| Horizontale    | 4804            | 38.68                  | 45.36                                      | 54                     | 15.32                     | 47.95               | 74                  | 26.05                  |
| Horizontale    | 4884            | 41.60                  | 48.28                                      | 54                     | 12.40                     | 50.11               | 74                  | 23.89                  |
| Horizontale    | 7206            | 41.55                  | 48.23                                      | 54                     | 12.45                     | 52.94               | 74                  | 21.06                  |
| Horizontale    | 7326            | 43.70                  | 50.38                                      | 54                     | 10.30                     | 54.10               | 74                  | 19.90                  |
| Horizontale    | 7440            | 43.69                  | 50.37                                      | 54                     | 10.31                     | 53.84               | 74                  | 20.16                  |

| <b><math>\pi/4</math> DQPSK</b> |                        |                                              |                                                                  |                                              |                                  |                                           |                                           |                               |
|---------------------------------|------------------------|----------------------------------------------|------------------------------------------------------------------|----------------------------------------------|----------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------|
| <b>Above 1GHz</b>               |                        |                                              |                                                                  |                                              |                                  |                                           |                                           |                               |
| <b>Cmin/Cnom/Cmax</b>           |                        |                                              |                                                                  |                                              |                                  |                                           |                                           |                               |
| <b>Polarization</b>             | <b>Frequency (MHz)</b> | <b>Average Level (dB<math>\mu</math>V/m)</b> | <b>Average Level + Duty Cycle Factor (dB<math>\mu</math>V/m)</b> | <b>Average Limit (dB<math>\mu</math>V/m)</b> | <b>Average Margin Level (dB)</b> | <b>Peak Level (dB<math>\mu</math>V/m)</b> | <b>Peak Limit (dB<math>\mu</math>V/m)</b> | <b>Peak Margin Level (dB)</b> |
| Horizontale                     | 1200                   | 21.38                                        | 28.07                                                            | 54                                           | 32.62                            | 41.23                                     | 74                                        | 32.77                         |
| Horizontale                     | 1440                   | 23.48                                        | 30.17                                                            | 54                                           | 30.52                            | 38.97                                     | 74                                        | 35.03                         |
| Horizontale                     | 1883                   | 35.57                                        | 42.26                                                            | 54                                           | 18.43                            | 65.09                                     | 74                                        | 08.91                         |
| Verticale                       | 1885                   | 27.90                                        | 34.59                                                            | 54                                           | 26.10                            | 43.33                                     | 74                                        | 30.67                         |
| Horizontale                     | 2390                   | 31.24                                        | 37.93                                                            | 54                                           | 22.76                            | 44.65                                     | 74                                        | 29.35                         |
| Verticale                       | 2390                   | 29.60                                        | 36.29                                                            | 54                                           | 24.40                            | 41.27                                     | 74                                        | 32.73                         |
| Horizontale                     | 2483.5                 | 33.42                                        | 40.11                                                            | 54                                           | 20.58                            | 55.50                                     | 74                                        | 18.50                         |
| Verticale                       | 2483.5                 | 30.45                                        | 37.14                                                            | 54                                           | 23.55                            | 47.20                                     | 74                                        | 26.80                         |
| Horizontale                     | 4884                   | 37.97                                        | 44.66                                                            | 54                                           | 16.03                            | 48.88                                     | 74                                        | 25.12                         |
| Horizontale                     | 5000                   | 41.60                                        | 48.29                                                            | 54                                           | 12.40                            | 49.34                                     | 74                                        | 24.66                         |
| Horizontale                     | 5787                   | 40.83                                        | 47.52                                                            | 54                                           | 13.17                            | 50.65                                     | 74                                        | 23.35                         |
| Horizontale                     | 5791                   | 47.81                                        | 54.50                                                            | 54                                           | 06.19                            | 51.51                                     | 74                                        | 22.49                         |
| Horizontale                     | 7326                   | 41.23                                        | 47.92                                                            | 54                                           | 12.77                            | 52.94                                     | 74                                        | 21.06                         |
| Horizontale                     | 10447                  | 39.25                                        | 45.94                                                            | 54                                           | 14.75                            | 60.10                                     | 74                                        | 13.90                         |

| <b>8DPSK</b>          |                        |                                              |                                                                  |                                              |                                  |                                           |                                           |                               |
|-----------------------|------------------------|----------------------------------------------|------------------------------------------------------------------|----------------------------------------------|----------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------|
| <b>Above 1GHz</b>     |                        |                                              |                                                                  |                                              |                                  |                                           |                                           |                               |
| <b>Cmin/Cnom/Cmax</b> |                        |                                              |                                                                  |                                              |                                  |                                           |                                           |                               |
| <b>Polarization</b>   | <b>Frequency (MHz)</b> | <b>Average Level (dB<math>\mu</math>V/m)</b> | <b>Average Level + Duty Cycle Factor (dB<math>\mu</math>V/m)</b> | <b>Average Limit (dB<math>\mu</math>V/m)</b> | <b>Average Margin Level (dB)</b> | <b>Peak Level (dB<math>\mu</math>V/m)</b> | <b>Peak Limit (dB<math>\mu</math>V/m)</b> | <b>Peak Margin Level (dB)</b> |
| Horizontale           | 1200                   | 26.73                                        | 33.41                                                            | 54                                           | 27.27                            | 43.80                                     | 74                                        | 30.20                         |
| Verticale             | 1896                   | 29.78                                        | 36.46                                                            | 54                                           | 24.22                            | 49.64                                     | 74                                        | 24.36                         |
| Horizontale           | 2390                   | 31.65                                        | 38.33                                                            | 54                                           | 22.35                            | 47.97                                     | 74                                        | 26.03                         |
| Verticale             | 2390                   | 29.60                                        | 36.28                                                            | 54                                           | 24.40                            | 41.74                                     | 74                                        | 32.26                         |
| Horizontale           | 2483.5                 | 33.93                                        | 40.61                                                            | 54                                           | 20.07                            | 55.28                                     | 74                                        | 18.72                         |
| Verticale             | 2483.5                 | 30.72                                        | 37.40                                                            | 54                                           | 23.28                            | 47.26                                     | 74                                        | 26.74                         |
| Horizontale           | 4884                   | 39.04                                        | 45.72                                                            | 54                                           | 14.96                            | 49.07                                     | 74                                        | 24.93                         |
| Horizontale           | 5791                   | 44.98                                        | 51.66                                                            | 54                                           | 09.02                            | 53.75                                     | 74                                        | 20.25                         |
| Horizontale           | 7326                   | 43.15                                        | 49.83                                                            | 54                                           | 10.85                            | 53.89                                     | 74                                        | 20.11                         |
| Horizontale           | 7440                   | 42.16                                        | 48.84                                                            | 54                                           | 11.84                            | 53.20                                     | 74                                        | 20.80                         |

### 13.7. CONCLUSION

Unwanted Emission in restricted frequency bands measurement performed on the sample of the product **Sagemcom® Sound Box SBDV01**, SN: **253770742**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.247 limits.

## 14. UNCERTAINTIES CHART

| 47 CFR Part 15.209 & 15.207<br>Kind of test                                                             | Wide uncertainty<br>laboratory<br>(k=2) $\pm x(\text{dB}) / (\text{Hz}) / \text{ms}$ | 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 (Ecuelles) | 4,88                                                                                 | 6.3               |
| Measurement of radiated electric field from 1 to 18GHz on the Ecuelles site                             | 5.16                                                                                 | /                 |
| Measurement of radiated electric field from 30 to 1000MHz in vertical position on the OATS (Ecuelles)   | 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 (Ecuelles)                       | 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