

## RADIO TEST REPORT

According to the standard(s):

FCC part 15 Subpart C  
RSS-210 Issue 9, August 2016

Equipment under test:

MDMF22  
(Model: XP22H)

FCC ID: XFJ22H  
IC: 8392A-22H

Company:

XPLORER

Diffusion: Mr LOUBET

(Company: XPLORER)

Number of pages: 27 including 1 annex

| Ed. | Date       | Modified<br>page(s) | Technical verification<br>Quality approval                                                                                   |      |
|-----|------------|---------------------|------------------------------------------------------------------------------------------------------------------------------|------|
|     |            |                     | Name                                                                                                                         | Visa |
| 0   | 21 Nov. 18 | Creation            | Olivier HEYER<br>Laboratory Manager<br> |      |

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NAME OF THE EQUIPMENT UNDER TEST (E.U.T.) : MDMF22  
(Model: XP22H)

FCC ID: XFJ22H  
IC: 8392A-22H

Serial number : 202100

P/N : Not communicated

Software version : Not communicated

MANUFACTURER'S NAME : XPLOER

APPLICANT'S ADDRESS:

Company : XPLOER

Address : 40 chemin du Moulin  
31320 MERVILLA  
FRANCE

Person(s) present during the tests : No representative for company has been at test.

Responsible : Mr LOUBET

DATE(S) OF TESTS : Between October 31<sup>st</sup> and November 16<sup>th</sup> of 2018

TESTS LOCATION(S) : EMITECH MONTPELLIER laboratory in  
VENDARGUES (34) - FRANCE  
MRA US-EU Designation Number: FR0006  
IC Assigned Code:4379C

TESTS SUPERVISOR(S) : David MONTAULON

TESTS OPERATOR(S) : Morgan PATEY

## CONTENTS

|                                                    |        |
|----------------------------------------------------|--------|
| 1. INTRODUCTION .....                              | 4      |
| 2. REFERENCE DOCUMENT(S).....                      | 4      |
| 3. EQUIPMENT UNDER TEST CONFIGURATION.....         | 4      |
| 4. TECHNICAL SPECIFICATIONS .....                  | 5      |
| 5. SUMMARY OF TEST RESULTS.....                    | 6      |
| 6. CONDUCTED LIMITS .....                          | 7      |
| 7. OPERATION WITHIN THE BANDS 2400-2483.5MHZ ..... | 9      |
| 8. UNWANTED RADIATED EMISSIONS.....                | 12     |
| 9. OCCUPIED BANDWIDTH.....                         | 21     |
| <br>ANNEX: PHOTOGRAPH(S).....                      | <br>24 |

## 1. INTRODUCTION

This document submits the results of Electromagnetic Compatibility tests performed on the MDMF22 (denominated hereafter E.U.T.: equipment under test) according to document(s) listed below.

## 2. REFERENCE DOCUMENT(S)

|                             |                                                                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Code of Federal Regulations | Title 47 – Telecommunications<br>Chapter 1 – Federal Communications Commission<br>Subchapter A -General<br>Part 15 – Radio frequency devices<br>Subpart C – Intentional Radiators |
| RSS-210                     | Issue 9, August 2016<br>Licence-exempt Radio Apparatus: Category I Equipment                                                                                                      |
| RSS-Gen                     | Issue 5, April 2018<br>General Requirements for Compliance of Radio Apparatus                                                                                                     |
| ANSI C63.10                 | 2013<br>American National Standard of Procedures for Compliance Testing of<br>Unlicensed Wireless Devices.                                                                        |

## 3. EQUIPMENT UNDER TEST CONFIGURATION

**Equipment under test (E.U.T.) description:** The product is a search coil for a portable metal detector, generating a magnetic wave at low frequencies (under 100 kHz), commonly used to search for and discern metallic objects that are buried or masked by vegetation covering the ground. Such detectors are essentially used for leisure, to search for coins, jewels, treasures. It uses the well-known principle of measuring the phase between an alternating electromagnetic signal transmitted by a coil energized by an electric voltage, and the signal received by another coil close to the first one.

The search coil, the headphones and the remote control communicate with each other via a radio link. In the case of the search coil, a transceiver reference nRF24L01P from Nordic Semiconductor has been used to create this radio link.

Model: XP22H  
FCC ID: XFJ22H  
IC: 8392A-22H

#### 4. TECHNICAL SPECIFICATIONS

Frequency range used by E.U.T.: 2404MHz to 2476MHz

- Type of antenna: PCB antenna.
- Channel spacing: 2 MHz
- Frequency deviation: 320 kHz
- Data rate: 2 Mbps
- Maximum output power: +4 dBm
- Modulation: GFSK
- Duty cycle: 16.8% (168µs every millisecond)

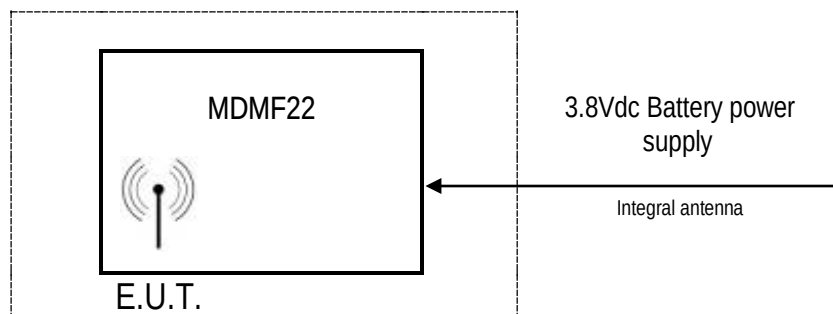
Test frequency: 2404MHz, 2440MHz; 2476MHz

Equipment: multi frequency  
Total channel available: 38

Power source: 3.8Vdc (Lithium/Leclanché battery)

Mechanical and electrical design:

|                              |                     |
|------------------------------|---------------------|
| Power source / Battery type: | 3.8Vdc rechargeable |
| Antenna type:                | Integral            |



Auxiliary test equipment: No

Equipment modifications applied during tests: No

## 5. SUMMARY OF TEST RESULTS

| Tests designation                                                                      | Results satisfying? | Comments               |
|----------------------------------------------------------------------------------------|---------------------|------------------------|
| Antenna requirement<br>- FCC part 15.203                                               | N.A                 | Integral antenna (PCB) |
| Restricted band of operation<br>- FCC part 15.205 / RSS-Gen §8.10                      | YES                 |                        |
| Conducted limits<br>- FCC part 15.207 / RSS-Gen §8.8                                   | YES                 |                        |
| Unwanted radiated emissions<br>- FCC part 15.209 / RSS-Gen §8.9                        | YES                 |                        |
| Operation within the bands 2400-2483.5MHz<br>- FCC part 15.249 / RSS-210 §B.10; 15.215 | YES                 |                        |
| Occupied bandwidth 99%<br>- RSS-Gen §6.7                                               | YES                 |                        |

N.P.: Not Performed.

N.A.: Not Applicable.

### ▪ In emission:

Sample submitted to test complies with prescriptions of standard(s) CFR 47 Part 15 - Subpart C and RSS-210 according to limits specified in this test report.

To declare, or not, the compliance with the specifications, it was not explicitly taken account of uncertainty associated with the results.

## 6. CONDUCTED LIMITS

Standards: FCC part 15.207 / RSS-Gen §8.8

Tests methods: ANSI C63.10

Test configuration: EUT is tested transmitting in charge.

| Tested cable(s)             | Measure with | E.U.T. height |
|-----------------------------|--------------|---------------|
| 110Vac/60Hz power supply RF | L.I.S.N.     | 40cm          |

| Frequency band | Tested cable(s)          | Resolution bandwidth | Video bandwidth | Detection mode   |
|----------------|--------------------------|----------------------|-----------------|------------------|
| 150kHz-30MHz   | 110Vac/60Hz power supply | 10KHz                | 30kHz           | Peak and average |

Test method deviation: No

Test equipment list:

| CATEGORY           | BRAND                | TYPE                    | N° EMITECH | CAL. DATE  | CAL. DUE.  |
|--------------------|----------------------|-------------------------|------------|------------|------------|
| Cable              | EMITECH              | Current absorber sheath | 10653      | 19/10/2018 | 19/12/2020 |
| Cable              | MICRO-COAX           | N-3m                    | 10535      | 06/04/2017 | 06/06/2019 |
| Cable              | MICRO-COAX           | N-5m                    | 10528      | 12/10/2017 | 12/12/2019 |
| LISN               | AFJ                  | LT42C\10                | 12007      | 14/08/2018 | 14/10/2019 |
| PE choke           | EMITECH              | PE choke 100A           | 10071      | #          | #          |
| PE choke           | EMITECH              | PE choke 16A            | 10080      | #          | #          |
| Receiver           | Agilent Technologies | E4440A                  | 5824       | 18/04/2018 | 18/06/2020 |
| Receiver           | Rohde & Schwarz      | ESHS10                  | 3371       | 20/09/2018 | 20/11/2019 |
| Shielded enclosure | RAY PROOF            | C.GS3                   | 1123       | #          | #          |
| Software           | Nexio                | BAT EMC                 | 0000       | #          | #          |
| Thermohygrometer   | Testo                | 608-H1                  | 7561       | 27/12/2016 | 27/02/2019 |
| Thermohygrometer   | Bioblock Scientific  | Météostar               | 0963       | 27/12/2016 | 27/02/2019 |

#: Permanent validity

BAT-EMC software version: V3.6.0.32

Results: See Graph(s) hereafter. Limits on the graphs are average and quasi-peak limits (upper limit).

Measurement uncertainty: +/- 3.53 dB

## Conducted emission 110Vac/60Hz power supply

EMI2485

Date: 09/11/2018 09:12:10

Technician: MPA

Detection:  
Peak and average

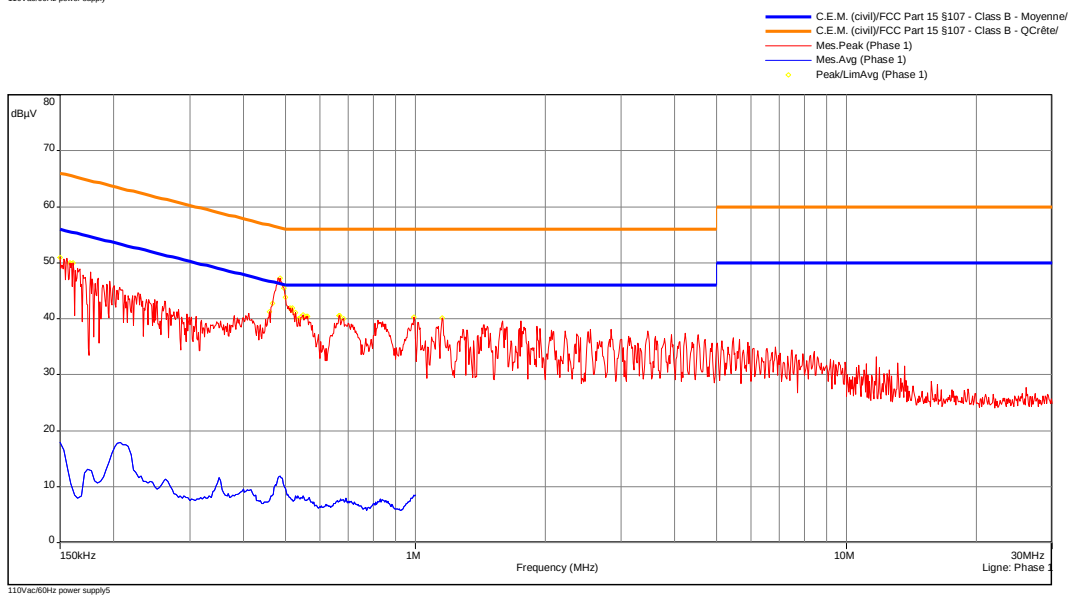
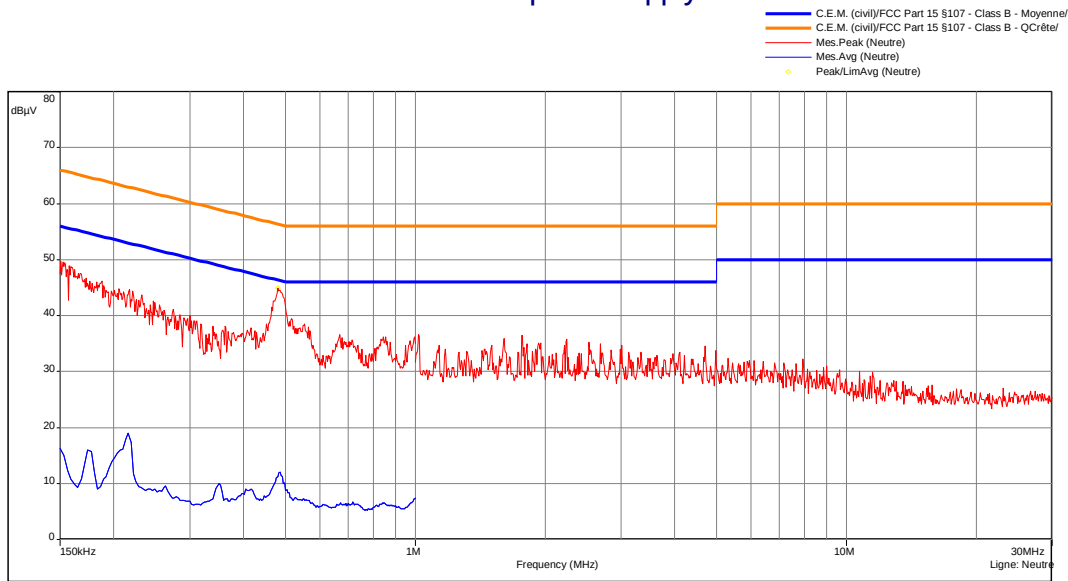
T (°C): 26.5

H (%): 49

P (hpa): 1010

Comments:  
/

Modification(s) during test:



## 7. OPERATION WITHIN THE BANDS 2400-2483.5MHZ

Standard: CFR 47 Part 15 – Subpart C §15.249 / RSS-210 §B.10

Test method: ANSI C63.10

Test configuration:

| Frequency band  | Resolution bandwidth | Video bandwidth | Detection mode | E.U.T. height |
|-----------------|----------------------|-----------------|----------------|---------------|
| 2399MHz-2485MHz | 1MHz                 | 3MHz            | Max-hold Peak  | 150cm         |

Test is done in fully anechoic shielded chamber at 3m. E.U.T. is set on a Styrofoam table. Measurements are done in max-hold peak detection, maximized at 360°.

Measurements are performed on lower, middle and upper channels groups.

Test method deviation: No

Test equipment list:

| CATEGORY           | BRAND                | TYPE              | N° EMITECH | CAL. DATE  | CAL. DUE.  |
|--------------------|----------------------|-------------------|------------|------------|------------|
| Antenna            | ETS-Lindgren         | 3117              | 8387       | 23/04/2018 | 23/06/2019 |
| Cable              | MegaPhase            | TM18-N1N1-197     | 12840      | 09/05/2018 | 09/07/2020 |
| Cable              | MegaPhase            | TM18-N1N1-118     | 12841      | 09/05/2018 | 09/07/2020 |
| Cable              | MegaPhase            | TM18-N1N1-118     | 12842      | 09/05/2018 | 09/07/2020 |
| Preamplifier       | Techniwave           | APS16-0087        | 14040      | 31/01/2018 | 31/03/2019 |
| Receiver           | Agilent Technologies | E4440A            | 5824       | 18/04/2018 | 18/06/2020 |
| Shielded enclosure | RAY PROOF            | C.V1              | 1123       | #          | #          |
| Software           | Nexio                | BAT EMC v3.6.0.32 | 0000       | #          | #          |
| Thermohygrometer   | Bioblock Scientific  | Météostar         | 0963       | 27/12/2016 | 27/02/2019 |
| Thermohygrometer   | Testo                | 608-H1            | 7562       | 27/12/2016 | 27/02/2019 |

#: Permanent validity

BAT-EMC software version: V3.6.0.32

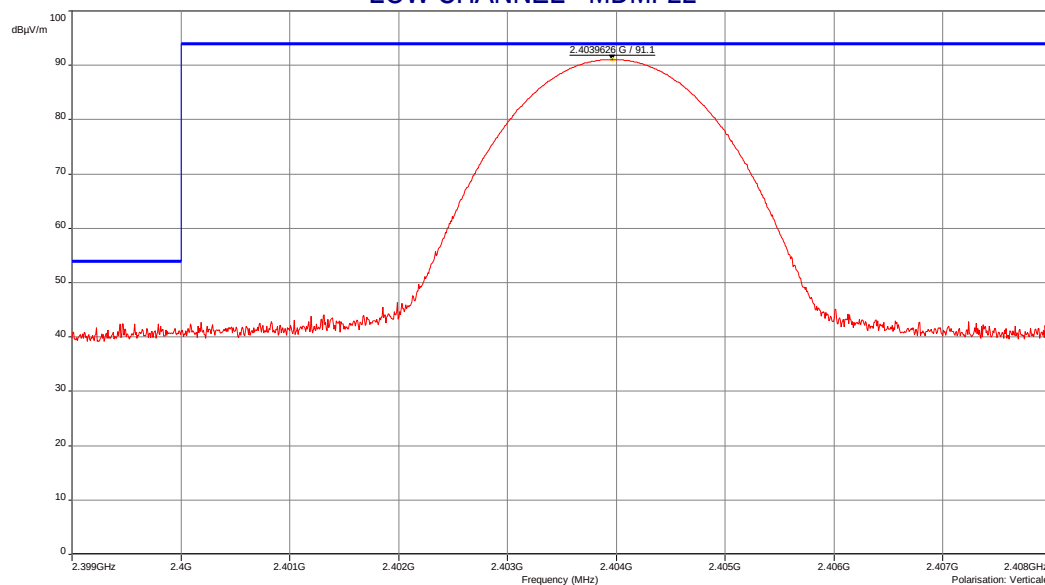
Results: See Graph(s) hereafter.

### MDMF22

| Frequency (MHz) | Polar.   | Azimuth (degree) | Antenna Height (cm) | Meas Peak (dBμV/m) | Lim Peak (dBμV/m) | Meas Aver (dBμV/m) | Lim Aver (dBμV/m) | Comments |
|-----------------|----------|------------------|---------------------|--------------------|-------------------|--------------------|-------------------|----------|
| 2404            | Vertical | 180              | 150                 | 93.7               | 114               | 93.5               | 94                | C        |
| 2440            | Vertical | 180              | 150                 | 93.2               | 114               | 93.0               | 94                | C        |
| 2476            | Vertical | 180              | 150                 | 92.5               | 114               | 92.2               | 94                | C        |

Measurement uncertainty: +/- 5.16 dB (f>1GHz)

### Band Edge LOW CHANNEL - MDMF22



EMI4076

Date: 15/11/2018 10:01:33

Technician: MPA

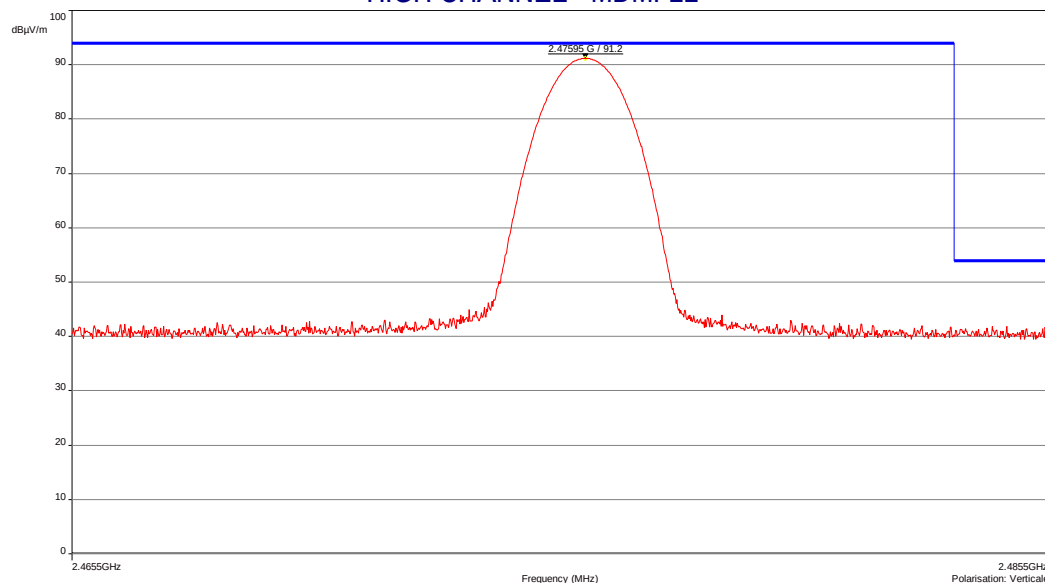
Detection:  
Peak

T (°C): 24.8  
H (%): 52.6  
P (hpa): 1009

Comments:

Modification(s) during test:

### Band Edge HIGH CHANNEL - MDMF22



EMI4077

Date: 15/11/2018 10:04:18

Technician: MPA

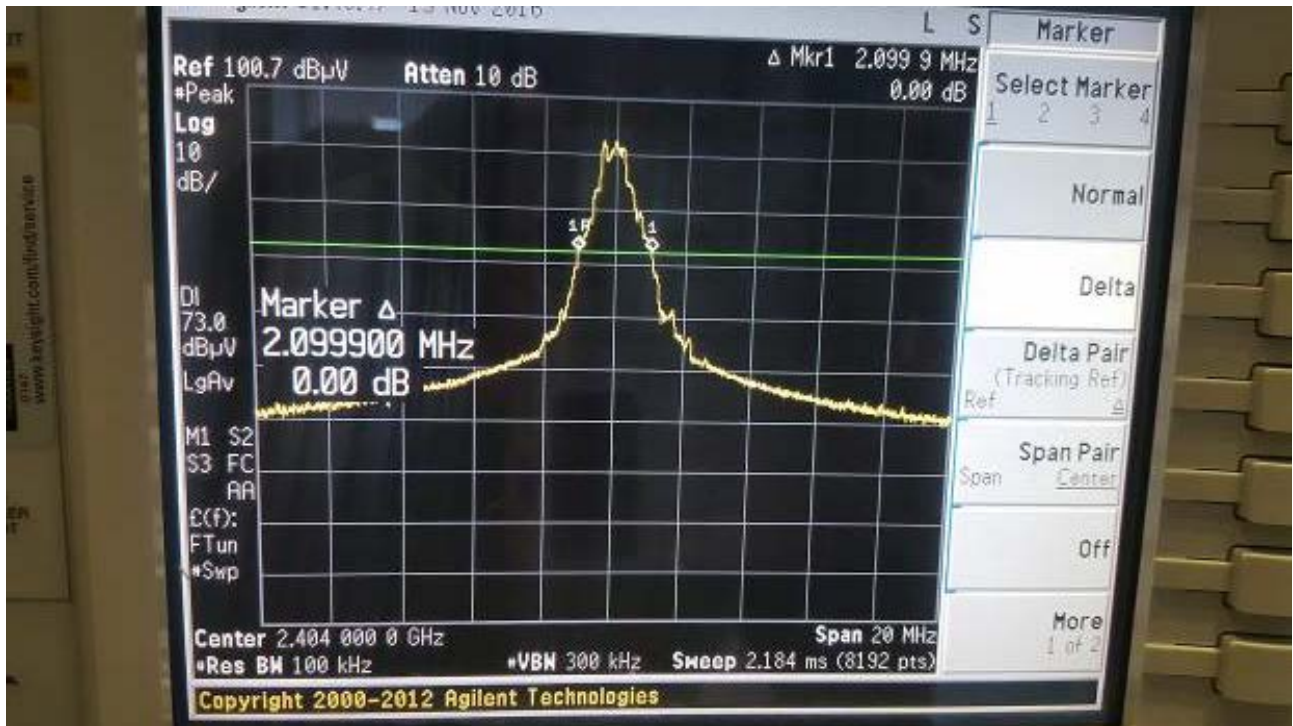
Detection:  
Peak and average

T (°C): 24.8  
H (%): 52.6  
P (hpa): 1009

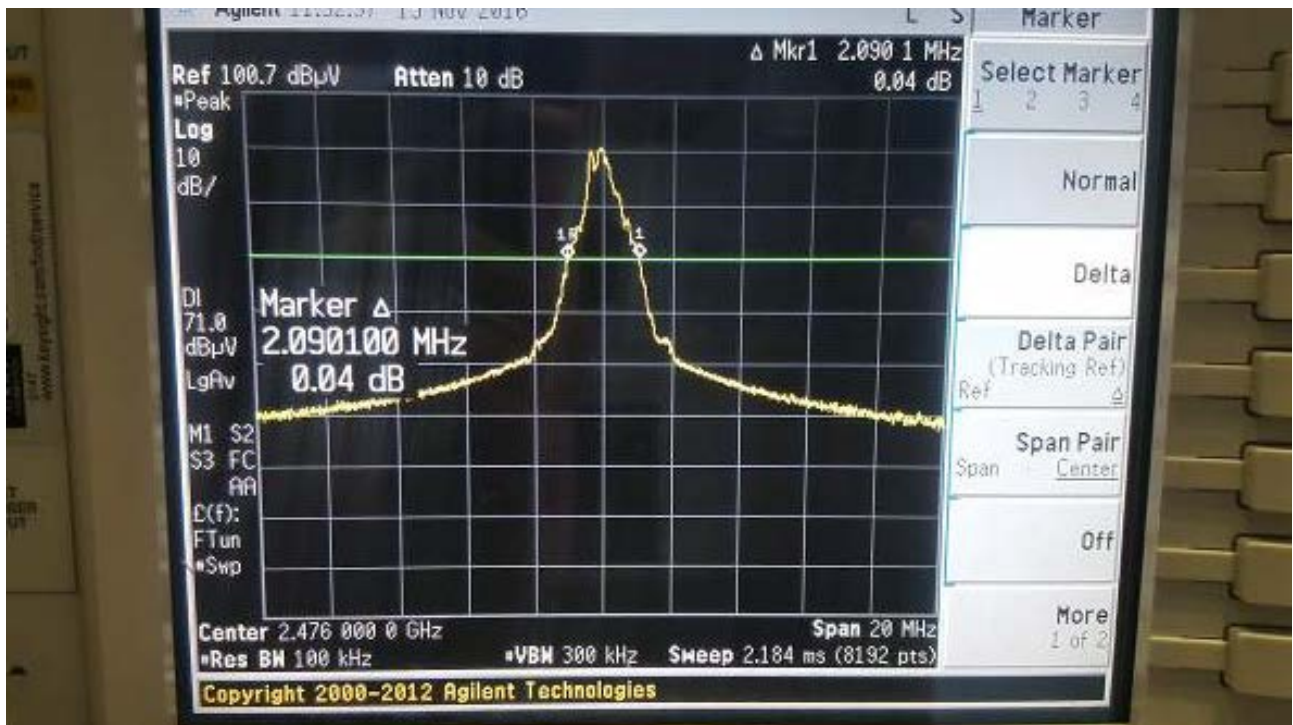
Comments:

Modification(s) during test:

20dB Bandwidth MDMF22 Low Channel: 2.0999MHz (RBW=100 kHz)



20dB Bandwidth MDMF22 High Channel: 2.0901 MHz (RBW=100 kHz)



Unwanted RADIATED emissions

Standards: CFR 47 Part 15 – Subpart C §15.209 / RSS-Gen §8.9

Tests methods: ANSI C63.10

a) Measurement in fully anechoic chamber:

| Frequency band | Tested side | Resolution bandwidth | Video bandwidth | Detection mode   | E.U.T. height |
|----------------|-------------|----------------------|-----------------|------------------|---------------|
| 9kHz-150kHz    | Front side  | 200Hz                | 1kHz            | Peak             | 80cm          |
| 150kHz-30MHz   | Front side  | 10kHz                | 30kHz           | Peak             | 80cm          |
| 30MHz-1GHz     | Front side  | 100kHz               | 300kHz          | Peak             | 80cm          |
| 1GHz-25GHz     | Front side  | 1MHz                 | 3MHz            | Peak and average | 150cm         |

In order to find highest levels, tests are done on 3 axes of E.U.T. Measurements are done in max-hold peak detection maximized at 360°. E.U.T. is set on a Styrofoam table.

Measurements below 30MHz are done with a loop antenna on a normalized Open Area Test Site as describe in the standard. Measure is done with an antenna position of 0°, 90° and 45°.

Below 1GHz pre-measurements are done in a semi anechoic chamber at 3m. Finals measurements are conducted on a normalized Open Area Test Site.

Above 1GHz test is done in fully anechoic shielded chamber at 3m.

Limits: From 9 kHz to 30MHz: Limit indicated on the curves is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

From 30MHz to 1GHz: quasi peak limit provided is the limit given in 15.209 and RSS Gen.

Above 1GHz average limits in restricted bands and general limits are 54dBμV/m.

Test method deviation: From 9 kHz to 30MHz: measurements are made in peak detection instead of average mode in frequency band 9 kHz-500 kHz

- Measurements are given in dBμA/m instead of μV/m
- Measuring distance is 3 meters instead of 30 and 300 meters

Radiated emissions limits in this frequency band are specified at 30 or 300 meters. Pre measurement distance used during the test, subject of this report, is 3 meters. Then published limits come from a theoretical conversion using an extrapolation factor of 40dB / decade.

Measuring distance: 3 meters

# Test equipment list:

| CATEGORY           | BRAND                  | TYPE           | N° EMITECH | CAL. DATE  | CAL. DUE.  |
|--------------------|------------------------|----------------|------------|------------|------------|
| Antenna            | Rohde & Schwarz        | HFH2-Z2        | 5825       | 20/09/2017 | 20/11/2019 |
| Antenna            | Electro Metrics        | BIA-30HF       | 1107       | 13/06/2018 | 13/09/2021 |
| Antenna            | Rohde & Schwarz        | HL223          | 1137       | 13/06/2018 | 13/09/2021 |
| Antenna            | ETS lindgren           | 3160-09        | 14690      | 25/09/2017 | 25/11/2020 |
| Antenna            | ETS-Lindgren           | 3117           | 8387       | 23/04/2018 | 23/06/2019 |
| Cable              | C&C                    | N-3m           | 10558      | 12/10/2017 | 12/12/2019 |
| Cable              | C&C                    | N-5m           | 10560      | 12/10/2017 | 12/12/2019 |
| Cable              | MegaPhase              | TM18-N1N1-197  | 12840      | 09/05/2018 | 09/07/2020 |
| Cable              | MegaPhase              | TM18-N1N1-118  | 12841      | 09/05/2018 | 09/07/2020 |
| Cable              | MegaPhase              | TM18-N1N1-118  | 12842      | 09/05/2018 | 09/07/2020 |
| Cable              | SUCOFLEX               | SMA-2m         | 12913      | 29/03/2018 | 29/05/2020 |
| Cable              | SUCOFLEX               | K-2m           | 12917      | 11/04/2018 | 11/06/2020 |
| Cable              | Pasternack             | SMA-0.5m       | 3544       | 29/03/2018 | 29/05/2020 |
| Filter             | Micro-Tronics          | HPM 15162      | 10273      | 05/10/2016 | 05/12/2018 |
| Filter             | Wainwright Instruments | WRCG 2400/2483 | 9771       | 05/10/2016 | 05/12/2018 |
| Preamplifier       | Techniwave             | APS16-0087     | 14040      | 31/01/2018 | 31/03/2019 |
| Preamplifier       | Wright Technologie     | ASL40-B3015    | 14851      | 07/03/2018 | 07/05/2019 |
| Preamplifier       | IMPULSE                | CA118-546ACN   | 9169       | 29/10/2018 | 29/12/2019 |
| Receiver           | Agilent Technologies   | E4440A         | 5824       | 18/04/2018 | 18/06/2020 |
| Shielded enclosure | RAY PROOF              | C.V1           | 1123       | #          | #          |
| Software           | Nexio                  | BAT EMC        | 0000       | #          | #          |
| Thermohygrometer   | Bioblock Scientific    | Météostar      | 0963       | 27/12/2016 | 27/02/2019 |
| Thermohygrometer   | Testo                  | 608-H1         | 7561       | 27/12/2016 | 27/02/2019 |

#: Permanent validity

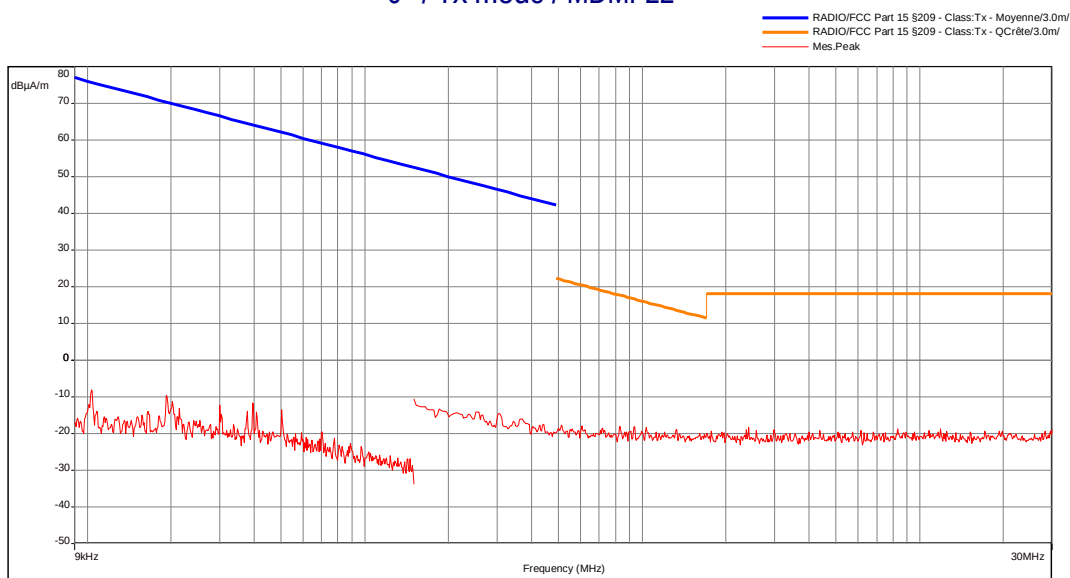
BAT-EMC software version: V3.6.0.32

**Results:** See Graphs hereafter.

Above 18GHz no significant radiated emissions were detected.

### Radiated field strength 0° / Tx mode / MDMF22

EMI2545



Date: 12/11/2018 16:20:23

Technician: MPA

Detection:  
Peak

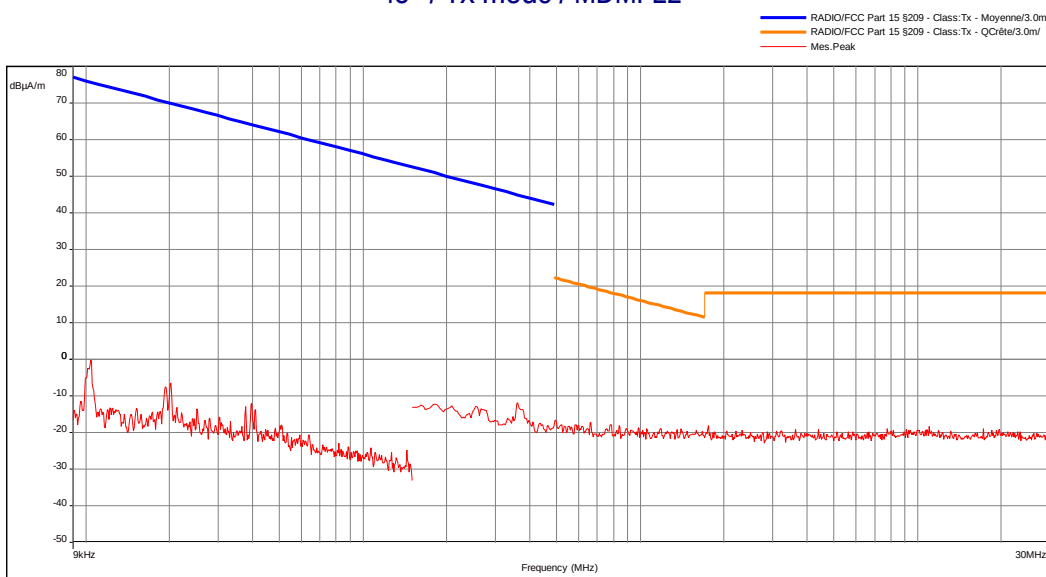
T (°C): 25.7  
H (%): 25.9  
P (hpa): 1010

Comments:

Modification(s) during test:  
None

### Radiated field strength 45° / Tx mode / MDMF22

EMI2546



Date: 12/11/2018 16:33:37

Technician: MPA

Detection:  
Peak

T (°C): 25.3  
H (%): 25.9  
P (hpa): 1010

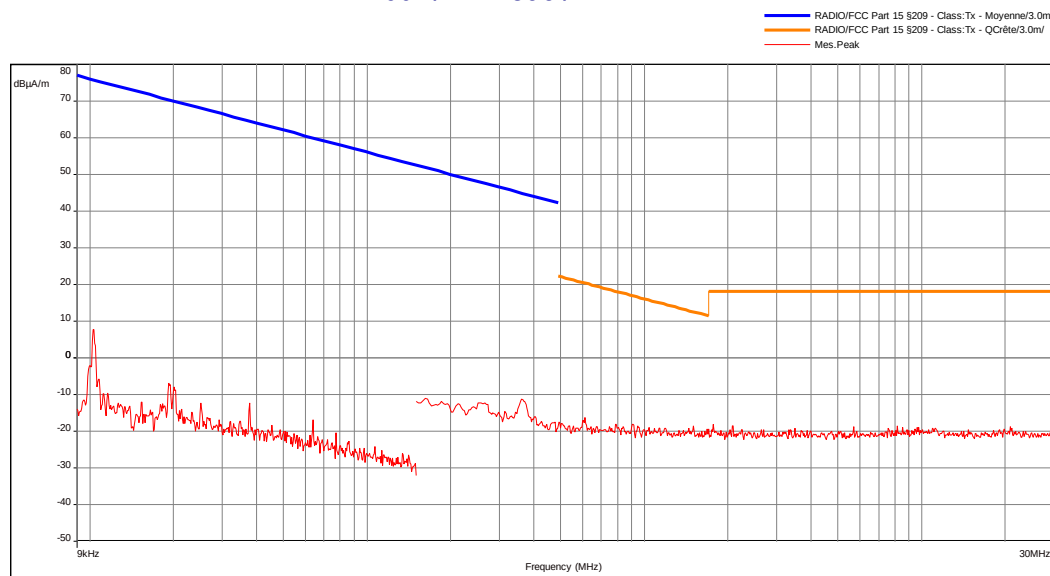
Comments:

Modification(s) during test:  
None

## Radiated field strength

90° / Tx mode / MDMF22

EMI2547



Date: 12/11/2018 16:35:52

Technician: MPA

Detection:  
Peak

T (°C): 25.7  
H (%): 25.9  
P (hpa): 1010

Comments:

Modification(s) during test:  
None

## TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES &lt;30MHz - TABULATED RESULTS (MAX VALUES)

## TX MODE / MDMF22

| Frequency<br>MHz | Antenna position | Level peak<br>dBμA/m | Limit<br>dBμA/m | Margin<br>dB |
|------------------|------------------|----------------------|-----------------|--------------|
| 0.010            | 90°              | 7.74                 | 76.10           | 68.36        |
| 0.019            | 45°              | -6.51                | 70.53           | 77.04        |
| 0.040            | 0°               | -11.69               | 64.06           | 75.75        |
| 0.050            | 0°               | -13.60               | 62.12           | 75.72        |
| 0.365            | 90°              | -11.47               | 44.86           | 56.33        |

All other unwanted radiated spurious are at least 20dB below specified limits.

## Radiated electric field measurement

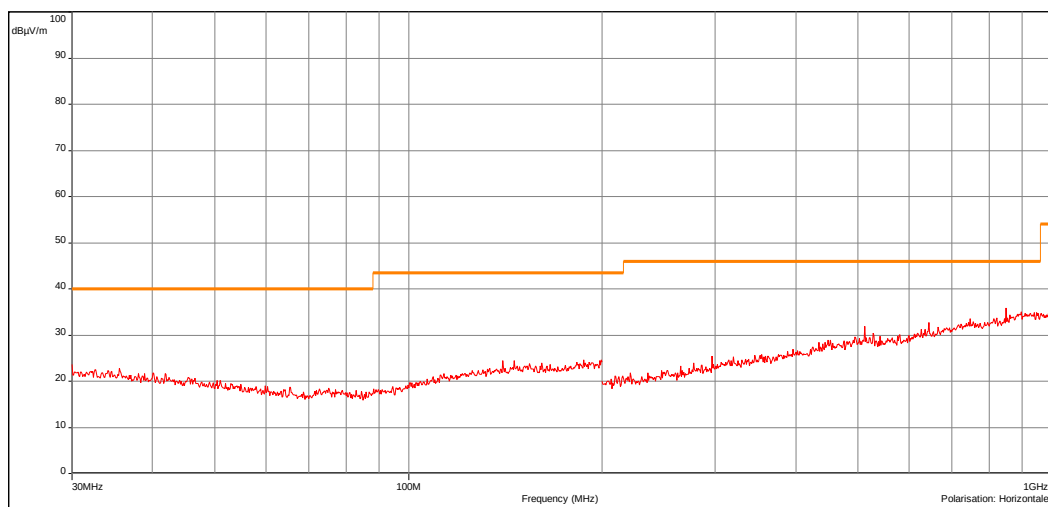
EMI2507

## MDMF22 - Tx &lt; 1GHz

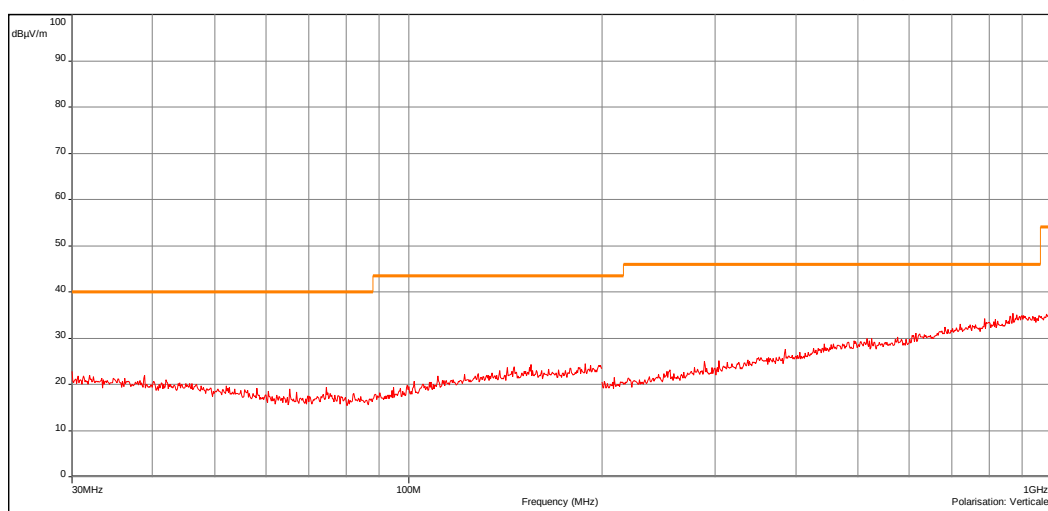
RADIO/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/  
 RADIO/FCC Part 15 §209 - Class:Tx - QCrête/3.0m/  
 RADIO/FCC Part 15 §209 - Class:Tx - Crête/3.0m/  
 Mes. Peak (Horizontale)

Date: 12/11/2018 11:56:58

Technician: MPA

Detection:  
Peak


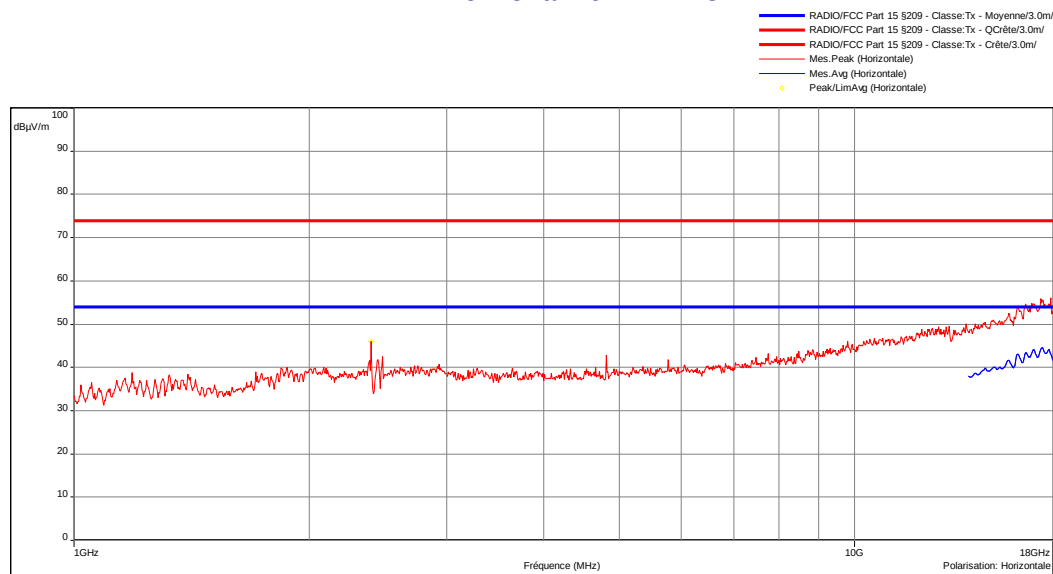
RADIO/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/  
 RADIO/FCC Part 15 §209 - Class:Tx - QCrête/3.0m/  
 RADIO/FCC Part 15 §209 - Class:Tx - Crête/3.0m/  
 Mes. Peak (Verticale)



## Radiated electric field measurement

EMI2497

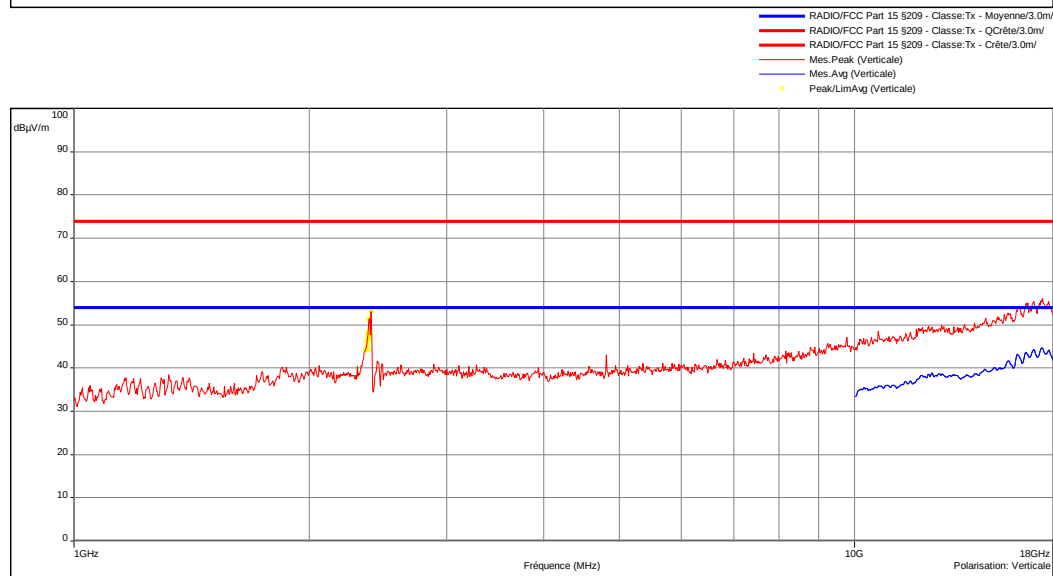
## MDF22 - Low Channel - Tx &gt; 1GHz



Date: 12/11/2018 17:18:40

Technician: MPA

Detection:  
Peak

Comments:  
2.402-2.476GHz: Rejected main carrier


## Radiated electric field measurement

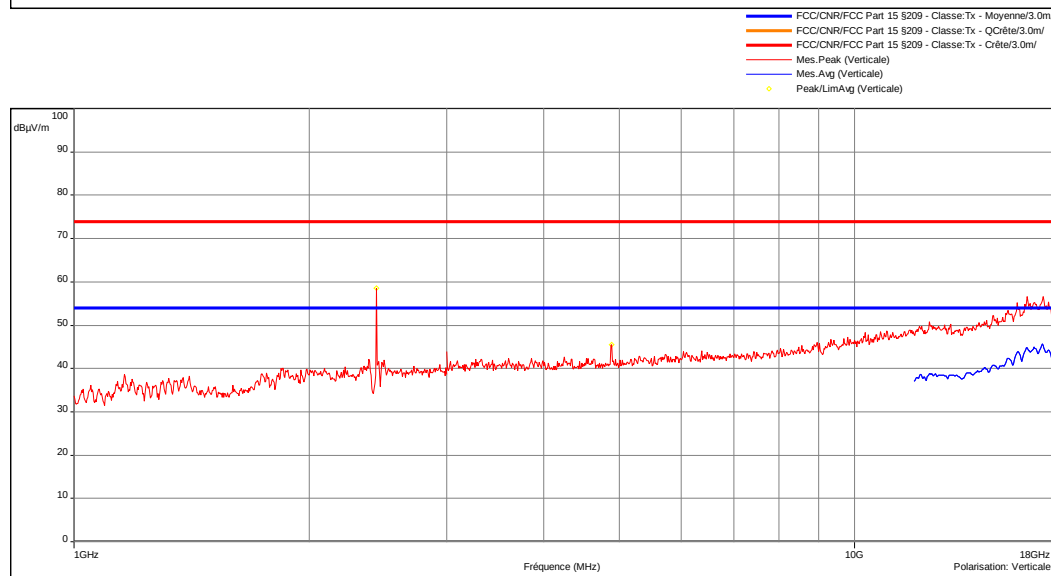
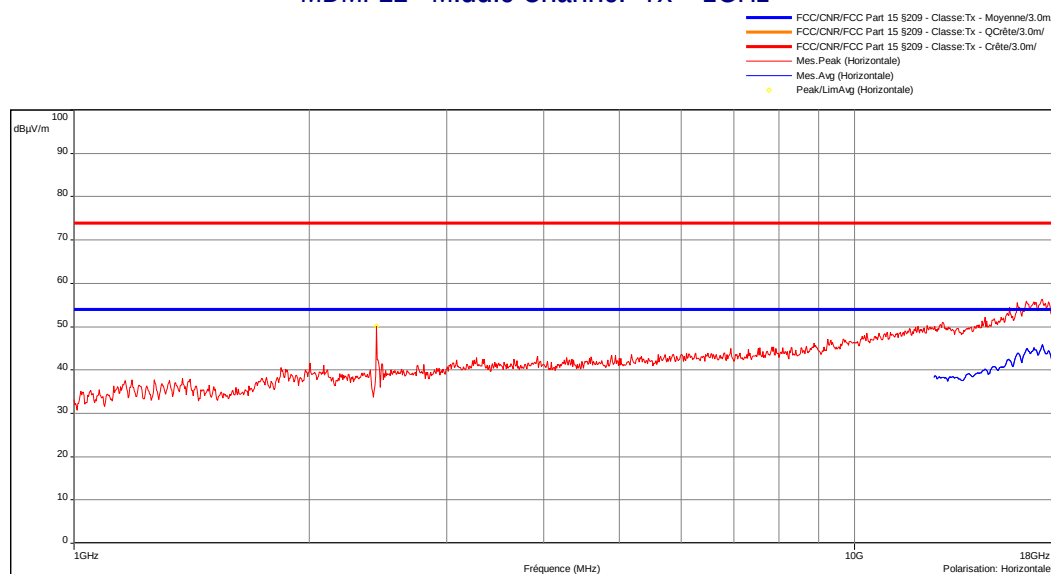
## MDMF22 - Middle Channel -Tx &gt; 1GHz

EMI2498

Date: 12/11/2018 17:25:18

Technician: MPA

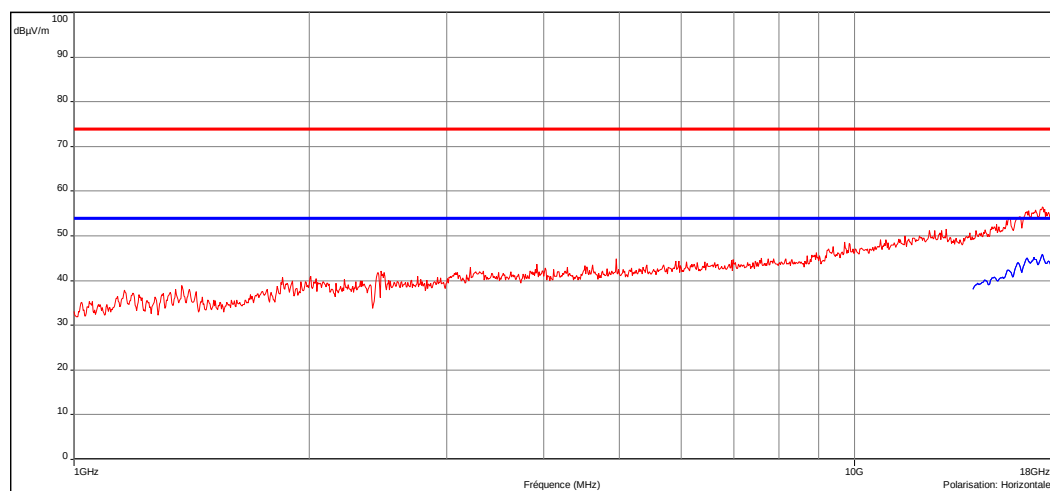
Detection:  
Peak

Comments:  
2.402-2.476GHz: Rejected main  
carrier


## Radiated electric field measurement

### MDMF22 / HIGH CHANNEL - Tx > 1GHz

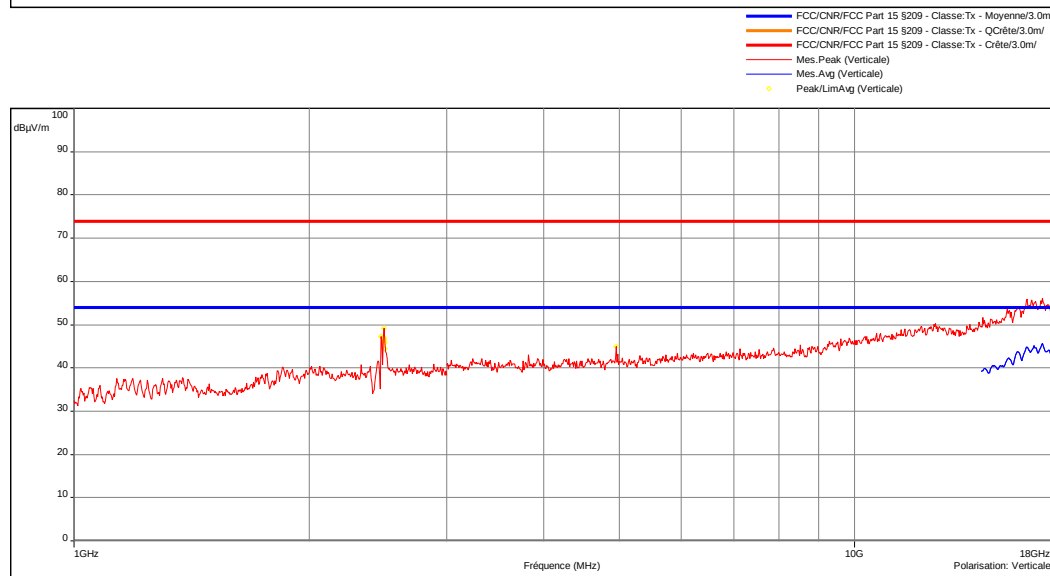
EMI2499



Date: 12/11/2018 17:28:37

Technician: MPA

Detection:  
Peak

Comments:  
2.402-2.476GHz: Rejected main carrier


### b) Measurement at 3 meters on open area test site:

Temperature (°C): 26.5

Humidity (%HR): 45

Pressure (hPa): -

**Test configuration:** For each measured frequencies, E.U.T is set via a turntable in order to find the highest level. Test antenna is set between 1m and 4m in order to find the highest level in vertical and horizontal polarization. Only highest levels are recorded.

| Frequency band | Initial position (0°) | Resolution bandwidth | Measuring distance | Detection mode | E.U.T. height |
|----------------|-----------------------|----------------------|--------------------|----------------|---------------|
| 9kHz-150kHz    | Front side            | 200Hz                | 10m                | Quasi-peak     | 80cm          |
| 150kHz-30MHz   | Front side            | 10kHz                | 10m                | Quasi-peak     | 80cm          |
| 30MHz-1GHz     | Front side            | 120kHz               | 3m                 | Quasi-peak     | 80cm          |

**Test method deviation:** Between 9 kHz to 30MHz: measurements are given in dBµA/m instead of dBµV/m (conversion factor: 51.5dB) and measuring distance is 10 meters instead of 300m.

### Test equipment list:

| CATEGORY             | BRAND                | TYPE        | N° EMITECH | CAL. DATE  | CAL. DUE.  |
|----------------------|----------------------|-------------|------------|------------|------------|
| Antenna              | Electro Metrics      | BIA-30HF    | 1107       | 13/06/2018 | 13/09/2021 |
| Antenna              | Rohde & Schwarz      | HFH2-Z2     | 5825       | 20/09/2017 | 20/11/2019 |
| Antenna              | Rohde & Schwarz      | HL223       | 1137       | 13/06/2018 | 13/09/2021 |
| Antenna mast         | INNCO                | MA4000-EP-O | 10261      | #          | #          |
| Cable                | Huber Suhner         | N-20m       | 8385       | 11/10/2017 | 11/12/2019 |
| Cable                | Huber Suhner         | N-14m       | 8146       | 11/10/2017 | 11/12/2019 |
| Mast controller      | INNCO                | CO3000      | 10260      | #          | #          |
| Open area test site  | EMITECH              | Salinelles  | 3482       | 10/10/2017 | 10/12/2020 |
| Receiver             | Agilent Technologies | E4440A      | 5824       | 18/04/2018 | 18/06/2020 |
| Receiver             | Rohde & Schwarz      | ESVS10      | 3211       | 24/09/2018 | 24/11/2019 |
| Thermohygrometer     | Testo                | 608-H2      | 12269      | 27/11/2017 | 27/01/2020 |
| Turntable            | Heinrich Deisel      | D4420       | 4038       | #          | #          |
| Turntable controller | Heinrich Deisel      | HD100       | 4036       | #          | #          |

#: Permanent validity

### Results:

No unwanted radiated spurious are at least 20 dB below specified limits

### Measurement uncertainty:

- +/- 4.84 dB ( $f < 200\text{MHz}$ , Vertical)
- +/- 4.62 dB ( $f < 200\text{MHz}$ , Horizontal)
- +/- 4.77 dB ( $f > 200\text{MHz}$  and  $f < 1\text{GHz}$ , Vertical)
- +/- 4.78 dB ( $f > 200\text{MHz}$  and  $f < 1\text{GHz}$ , Horizontal)
- +/- 5.16 dB ( $f > 1\text{GHz}$ )

## 8. OCCUPIED BANDWITH

Standard: CNR-Gen § 6.7

Test method: CNR-Gen § 6.7

Test configuration: Measurement is done on an Open Area Test Site. For each measured frequencies, E.U.T. is set via a turntable in order to find the highest level. Test antenna is set to 1.5m in order to find the highest level in vertical and horizontal polarization.

| Frequency band  | Resolution bandwidth | Video bandwidth | Detection mode | E.U.T. height |
|-----------------|----------------------|-----------------|----------------|---------------|
| 2399MHz-2485MHz | 1MHz                 | 3MHz            | Max-hold Peak  | 80cm          |

Test method deviation: No

Test equipment list:

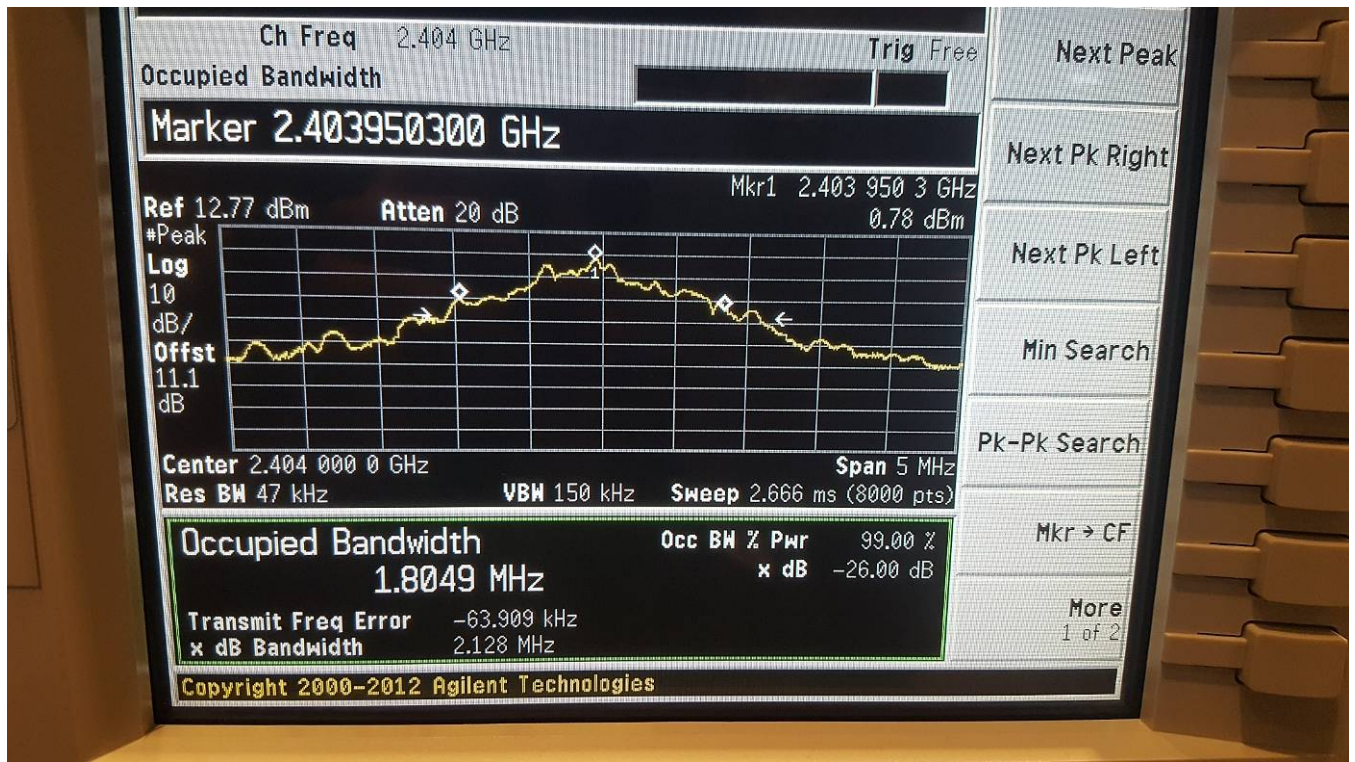
| CATEGORY           | BRAND                | TYPE          | N°<br>EMITECH | CAL. DATE  | CAL. DUE   |
|--------------------|----------------------|---------------|---------------|------------|------------|
| Antenna            | ETS-Lindgren         | 3117          | 8387          | 13/06/2018 | 13/09/2021 |
| Cable              | MegaPhase            | TM18-N1N1-197 | 12840         | 09/05/2018 | 09/07/2020 |
| Cable              | MegaPhase            | TM18-N1N1-118 | 12841         | 09/05/2018 | 09/07/2020 |
| Cable              | MegaPhase            | TM18-N1N1-118 | 12842         | 09/05/2018 | 09/07/2020 |
| Preamplifier       | Techniwave           | APS16-0087    | 14040         | 31/01/2018 | 31/03/2019 |
| Receiver           | Agilent Technologies | E4440A        | 5824          | 18/04/2018 | 18/06/2020 |
| Shielded enclosure | RAY PROOF            | C.V1          | 1123          | #          | #          |
| Software           | Nexio                | BAT EMC       | 0000          | #          | #          |
| Thermohygrometer   | Bioblock Scientific  | Météostar     | 0963          | 27/12/2016 | 27/02/2019 |
| Thermohygrometer   | Testo                | 608-H1        | 7561          | 27/12/2016 | 27/02/2019 |

#: Permanent validity

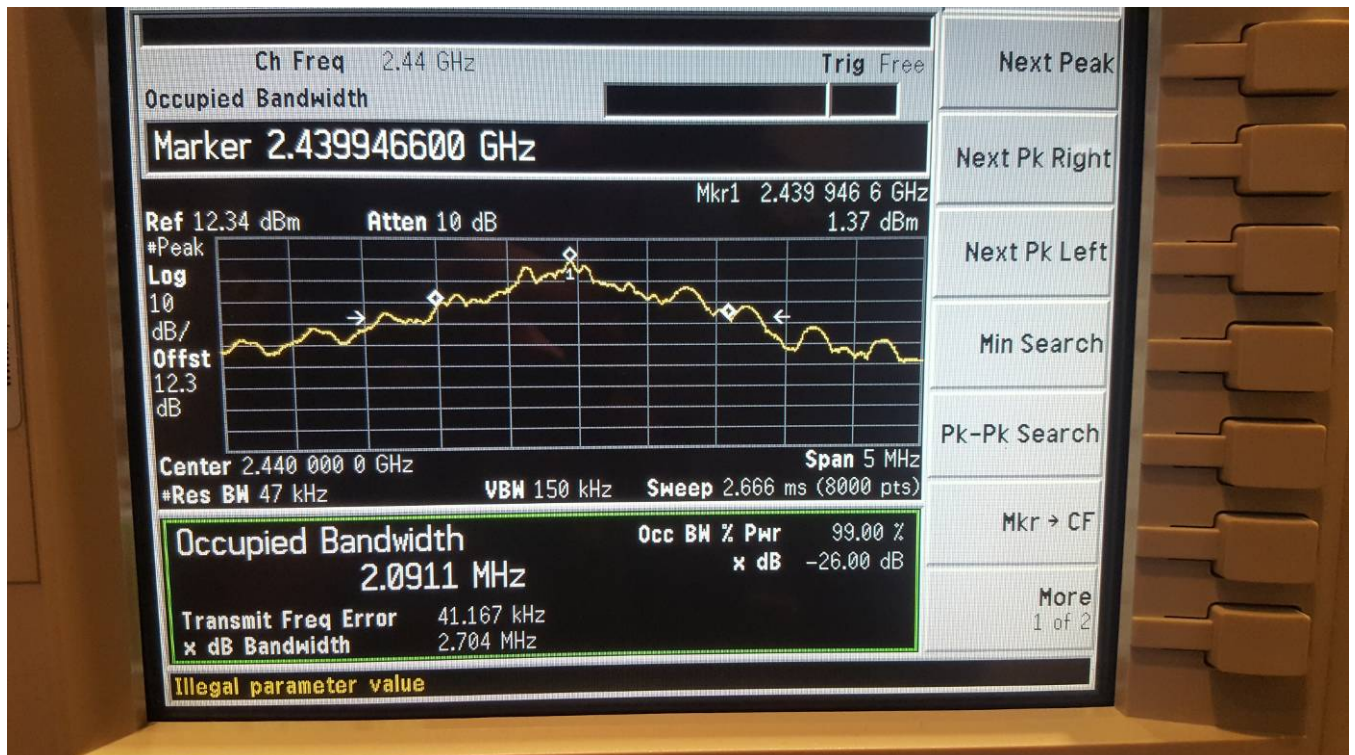
BAT-EMC software version: V3.6.0.32

Results: See Graph(s) hereafter

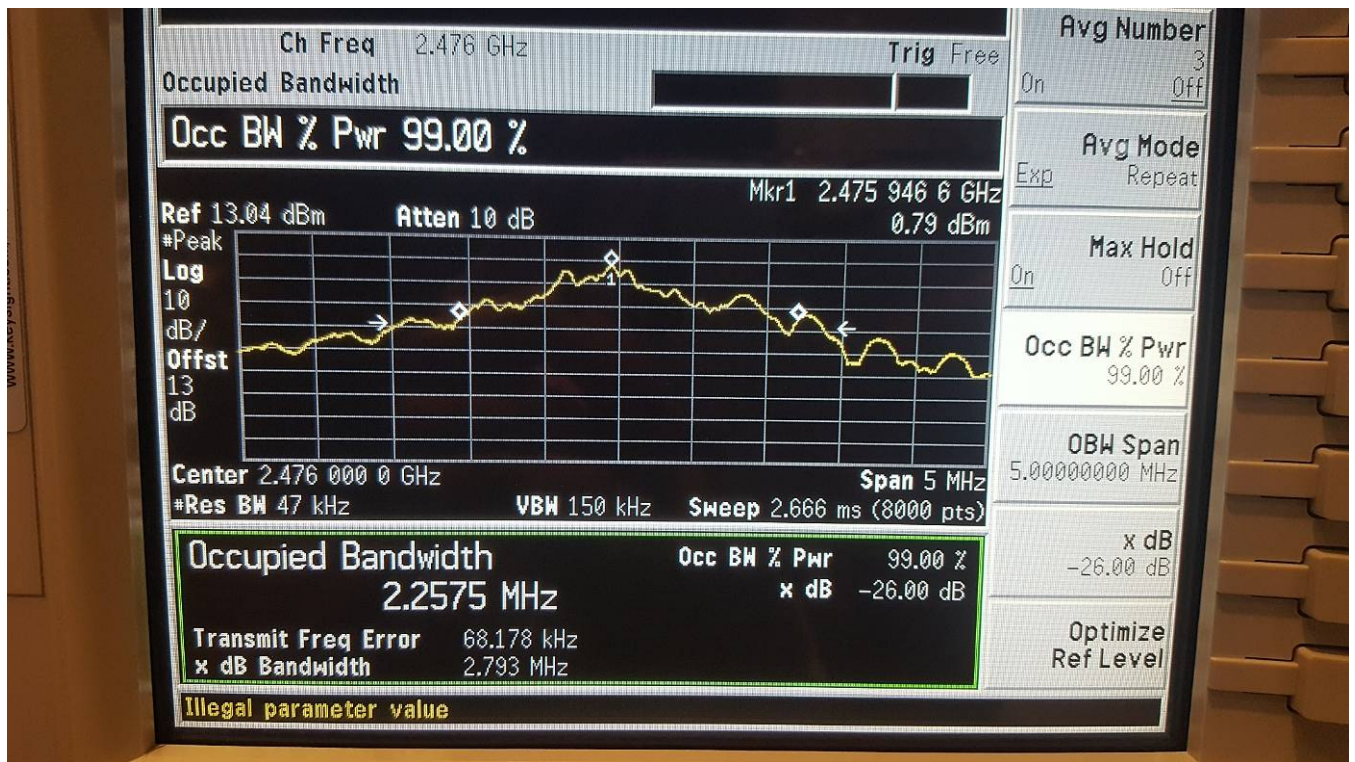
Occupied Bandwidth 99% Low Channel: 1.8049 MHz (RBW=47 kHz)



Occupied Bandwidth 99% Middle Channel: 2.0911 MHz (RBW=47 kHz)



Occupied Bandwidth 99% High Channel: 2.2575 MHz (RBW=47 kHz)



□□□ End of report – 1 annex to be forwarded □□□

# ANNEX: PHOTOGRAPH(S)

E.U.T. (front side)  
MDMF22



E.U.T. internal view



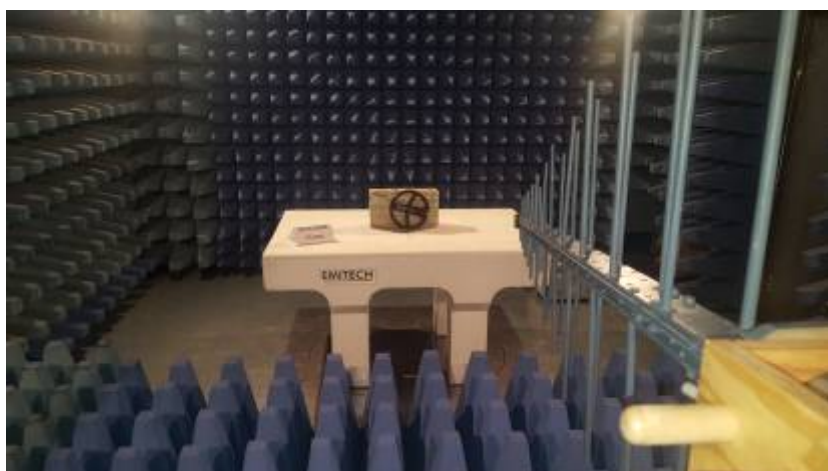
E.U.T. internal view



Radiated pre measurement



Radiated pre measurement


Unwanted emissions ( $f > 1\text{GHz}$ )


Unwanted emissions ( $f < 30\text{MHz}$ )  
(OATS)



Unwanted emissions ( $f < 1\text{GHz}$ )  
(OATS)



Unwanted emissions ( $f < 1\text{GHz}$ )  
(OATS)

