



RFID 125kHz Template: Release October 10th, 2016

# TEST REPORT

N°: 146947-699381H

Version : 01

## Subject

**Radio spectrum matters**  
tests according to standards:  
47 CFR Part 15.209 & Part 15.207 & RSS-Gen Issue 4 

## Issued to

**Safran Identity and Security**  
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92130- ISSY-LES-MOULINEAUX  
FRANCE

## Apparatus under test

- ↳ Product
- ↳ Trade mark
- ↳ Manufacturer
- ↳ Model under test
- ↳ Serial number
- ↳ FCC ID
- ↳ IC ID

**MorphoAccess® SIGMA EXTREME Series**  
**Safran Identity and Security**  
**Safran Identity and Security**  
**MPH-AC002A**  
**1651OMX0000001**  
**ZBW-MPHAC002A**  
**11472A-MPHAC002A**

## Test date

: March 9, 2017 to March 14, 2017

## Test location

Fontenay Aux Roses & Ecuelles

## Composition of document

27 pages

## Document issued on

March 30, 2017

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



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## PUBLICATION HISTORY

Version	Date	Author	Modification
01	March 15, 2017	Mathieu CERISIER	Creation of the document



## SUMMARY

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## 1. TEST PROGRAM

### References

- 47 CFR Part 15.209 & 15.207
- RSS Gen Issue 4
- ANSI C63.10-2013

### Radio requirement:

Clause (47CFR Part 15.209 & 15.207 & RSS-Gen Issue 4) Test Description	Test result - Comments			
Occupied Bandwidth	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
AC Power Line Conducted Emission	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA(2)	<input type="checkbox"/> NP(1)
Transmitter Radiated Emission	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Receiver Radiated Emissions	<input checked="" type="checkbox"/> PASS (3)	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)

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

(1): Limited program

(2): EUT not directly or indirectly connected to the AC Power Public Network

(3): Testing covered the receive mode, and receiver spurious emissions are considered to be the same as transmitter.

PASS: EUT complies with standard's requirement

FAIL: EUT does not comply with standard's requirement

NA: Not Applicable

NP: Test Not Performed

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

### 2.1. INFORMATIONS

Morpho Access SIGMA Extreme — MA SIGMA Extreme is a biometric access controller terminal.

**MorphoAccess® Sigma Extreme device family standard models:**

	RFID			Fake Finger Detection (FFD)	
Model	Name	Part#	iClass	Mifare/Desfire	Prox
MPH-AC002A	MorphoAccess® SIGMA Extreme Prox MorphoAccess® SIGMA Extreme FFD Prox	293696171 293696204			✓ ✓ ✓

MPH-AC002A: Tests are performed on the most complete Product.

MorphoAccess® SIGMA Extreme Prox FFD

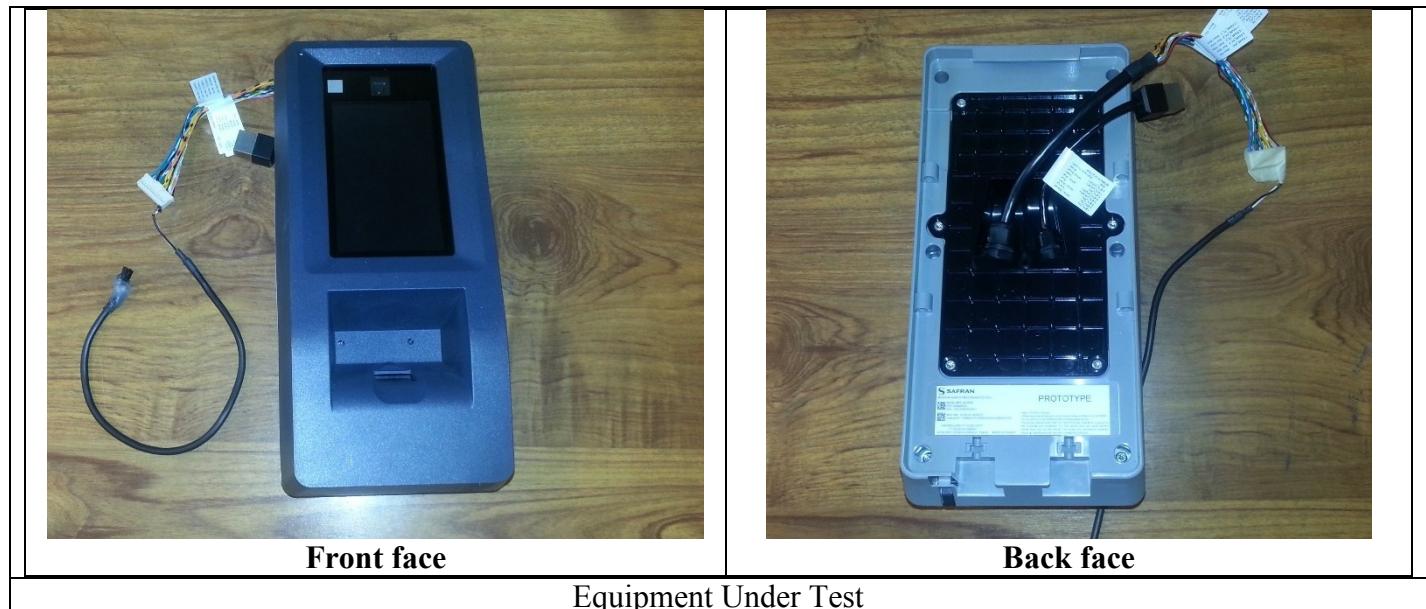
The product tested is the most representative product with radio 125kHz and the FFD function.

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

**Equipment under test (EUT):**

MPH-AC002A

Serial Number: 11472A-MPHAC002A



Equipment Under Test



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**Power supply:**

During all the tests, EUT is supplied by  $V_{nom}$ : VAC  
For measurement with different voltage, it will be presented in test method.

Name	Type	Rating	Reference / Sn	Comments
Supply1	<input checked="" type="checkbox"/> AC <input type="checkbox"/> DC <input type="checkbox"/> Battery	100 – 240V ~ / 50 - 60Hz / 700mA	-	-

**Inputs/outputs - Cable:**

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
No	Ethernet	10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cable > 30m telecommunication port
No	USB Mini B	na	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cable < 3m
No	USB micro AB	na	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cable < 3m Service Only
No	RS422/ RS484	na	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cable > 30m not a telecommunication port
No	Wiegand	na	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cable > 30m not a telecommunication port
No	GPI/GPO	na	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cable > 30m static signals

**Auxiliary equipment used during test:**

Type	Reference	Sn	Comments
POE Injector – Zyxel 	POE-12HP	-	Not sold with the product

**Equipment information:**

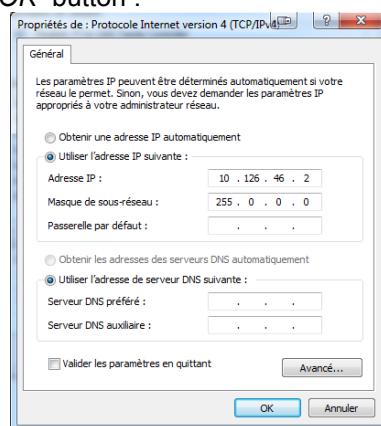
Type:	<input checked="" type="checkbox"/> <b>RFID</b>		
Frequency band:	[125] kHz		
Number of Channel:	1		
Antenna Type:	<input checked="" type="checkbox"/> Integral	<input type="checkbox"/> External	<input type="checkbox"/> Dedicated
Transmit chains:	1		
Receiver chains	1		
Type of equipment:	<input checked="" type="checkbox"/> Stand-alone	<input type="checkbox"/> Plug-in	<input type="checkbox"/> Combined
Equipment type:	<input checked="" type="checkbox"/> Production model		
Operating temperature range:	Tmin:	<input checked="" type="checkbox"/> -20°C	<input type="checkbox"/> 0°C
	Tnom:	20°C	
	Tmax:	<input type="checkbox"/> 35°C	<input type="checkbox"/> 55°C
Type of power source:	<input checked="" type="checkbox"/> AC power supply	<input type="checkbox"/> DC power supply	<input type="checkbox"/> Battery
Operating voltage range:	Vnom:	<input checked="" type="checkbox"/> 120V/60Hz	<input type="checkbox"/> XVdc

**2.3. RUNNING MODE**

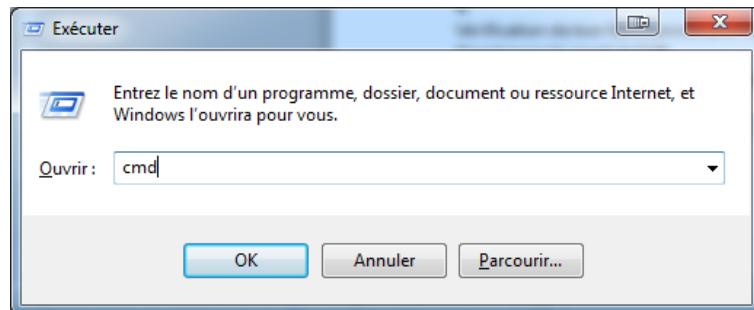
During the test, products must be ON and communication with a PC through **ping** command.  
 To send the ping command, the laptop must be configured previously as below:

## 1. Modify IP address of the laptop (Windows 7 procedure) :

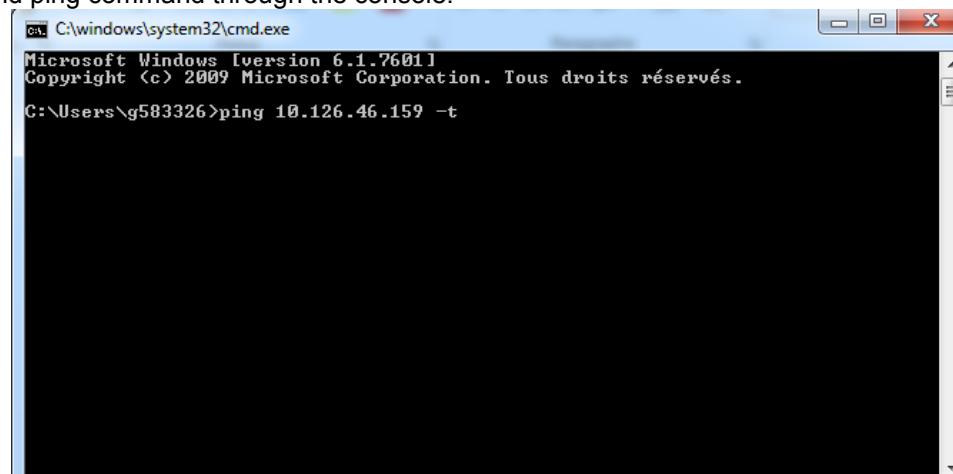
- Click on « *Demarrer* » menu
- Click on *Panneau de configuration* → *Centre Réseau et partage*
- Click on « *Modifier les paramètres de la carte* »
- Double click on « *Connexion au réseau local* »
- Double click on « *Protocol Internet version 4 (TCP/IPv4)* »
- Enter fields as below and click on “OK” button :



2. Open a windows console by clicking simultaneously on Windows button on the keyboard and “R” button.
3. The window below will open. Enter cmd in the field as below and click OK



4. Finally, send ping command through the console.



There are two different IP addresses according to the product under test.

- MPH-AC002A - MA-Extreme Prox FFD: IP address = 10.126.46.159
- MPH-AC002B - MA-Extreme iClass FFD: IP address = 10.126.46.159

So one of the two commands below must be sent to the good product:

- **MPH-AC002A : ping 10.126.46.159 -t**
- **MPH-AC002B : ping 10.126.46.159 -t**

To validate that the product works properly, procedure here under must be followed:

- Check Ping command response on the laptop. Command response must be successful.  
Response awaited for MPH-AC002x product:  
**Réponse de 10.126.46.159 : octets=32 temps<1ms TTL=64**
- Place your finger on the biometric sensor and after several seconds a closed door must appear on the screen or a second try window then a closed door must appear.
- Place a RFID card below biometric sensor and after several seconds a closed door or a Hold Card pop up must appear on the screen.

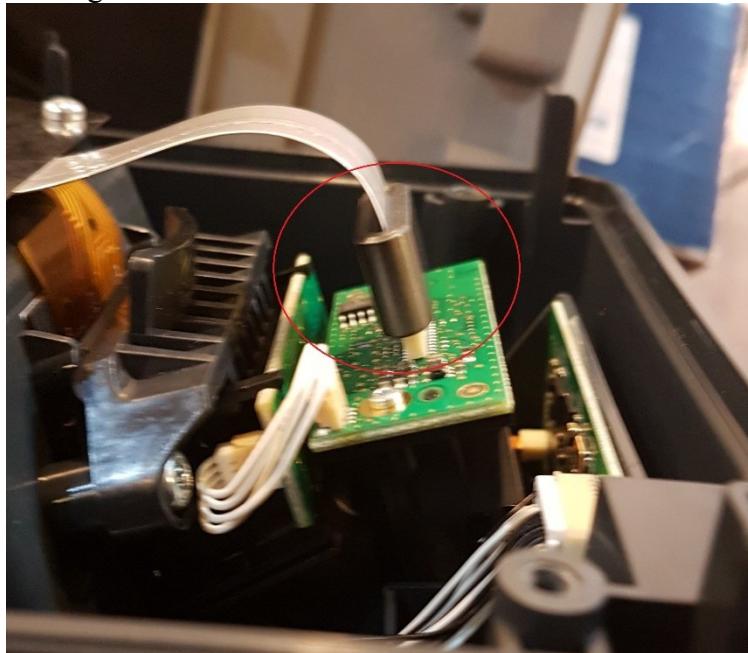
## 2.4. EQUIPMENT LABELLING



## 2.5. EQUIPMENT MODIFICATION

None  Modification:

-adding a ferrite reference 7427226 on a flat cable.



### 3. OCCUPIED BANDWIDTH

#### 3.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : March 14, 2017  
Ambient temperature : 25 °C  
Relative humidity : 41 %

#### 3.2. TEST SETUP

- The Equipment Under Test is installed:

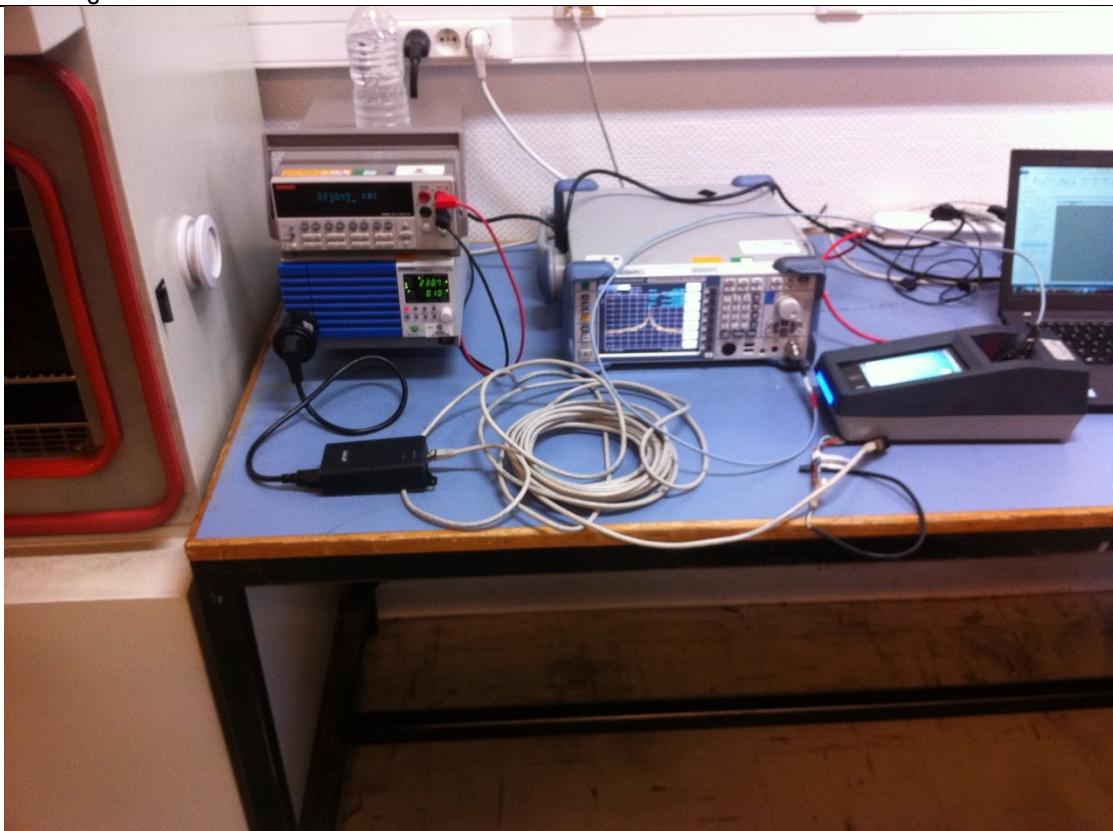
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method (Test Fixture)

- Test Procedure:

- RSS-Gen Issue 4 § 6.6



Photograph for Occupied bandwidth



### 3.1. LIMIT

None

### 3.2. TEST EQUIPMENT LIST

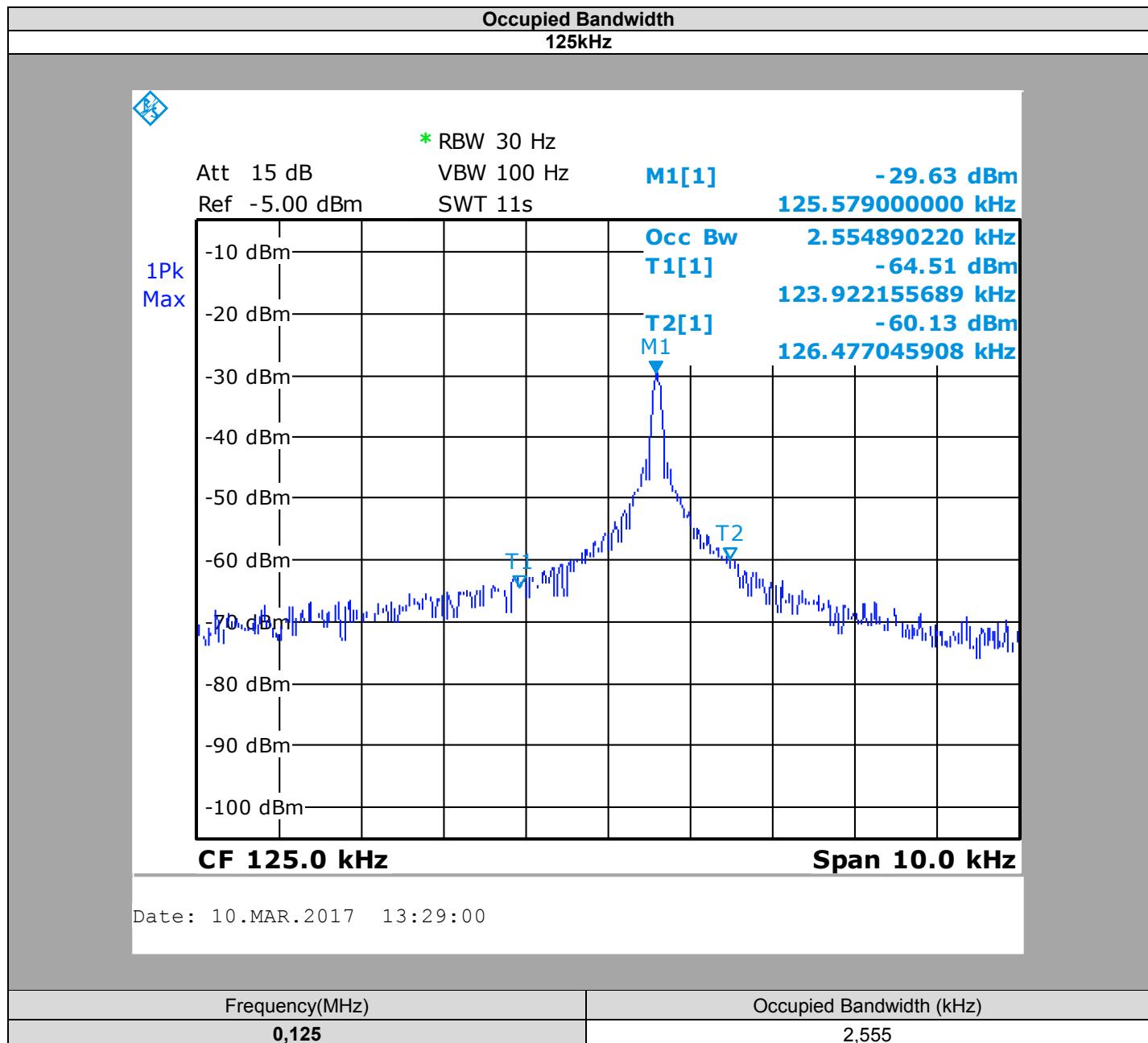
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Spectrum analyzer	ROHDE & SCHWARZ	FSL6	A4060032	2015/04	2017/04
Cable	CABLES & CONNECTIQUES	-	A5329422	-	-
Programmable AC/DC power supply	-; KIKUSUI	PCR500M	A7040079	2016/06	2018/06
Multi-meter	KEITHLEY	2000	A1242090	2015/06	2017/06

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



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### 3.3. RESULTS



### 3.1. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the **MPH-AC002A, SN:16510MX0000001**, in configuration and description presented in this test report, show levels **compliant** to the **RSS-GEN ISSUE 4** limits.

## 4. AC POWER LINE CONDUCTED EMISSIONS

### 4.1. TEST CONDITIONS

Test performed by : Laurent DENEUX  
Date of test : March 9, 2017 to March 10, 2017  
Ambient temperature : 21 °C  
Relative humidity : 53 %

### 4.2. 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)



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Photograph for AC Power Line Conducted Emissions (Rear view)



#### 4.3. 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

#### 4.4. TEST EQUIPMENT LIST

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	ROHDE & SCHWARZ	ESIB26	A2642021	2015-12	2017-12
V ISLN	ROHDE & SCHWARZ	ESH2-Z5	C2322001	2016-05	2017-05
Pulse limiter	ROHDE & SCHWARZ	ESH3-Z2	A2649008	2016-03	2017-03
Cable	-	-	A5329417	2016-10	2017-10
Cable	-	-	A5329589	2016-10	2017-10
Ground plane	LCIE	-	-	-	-

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

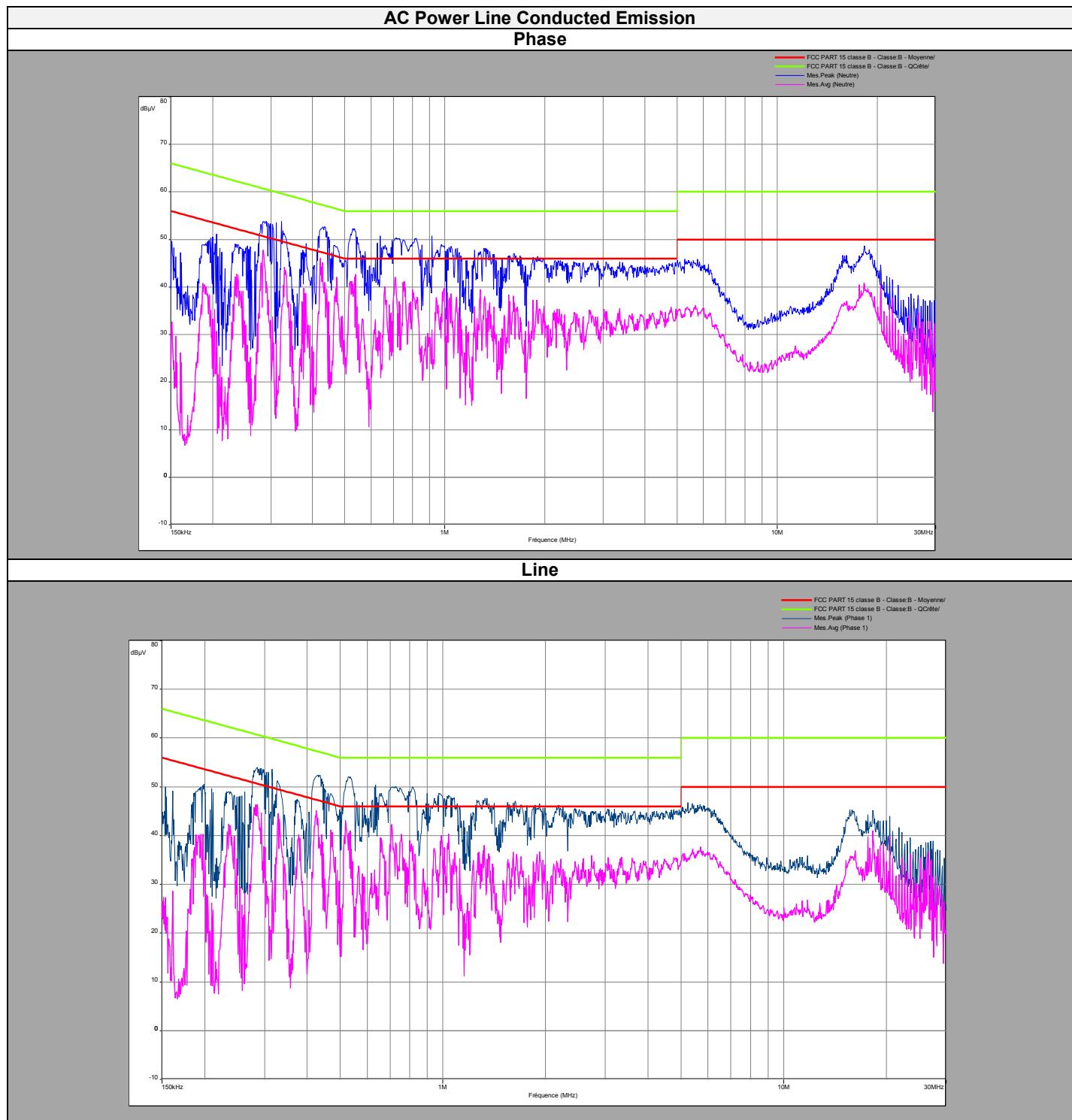
#### 4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

Divergence:



## 4.6. RESULTS





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**Phase Line**

Frequency (kHz)	Peak Level (dB $\mu$ V)	Quasi-Peak Level (dB $\mu$ V)	Quasi-Peak Limit (dB $\mu$ V)	Average Level (dB $\mu$ V)	Average Limit (dB $\mu$ V)
150	49.4	-	66	33	56
289	54	-	60.5	47.7	50.5
711	50	-	56	42.2	46
5689	45	-	60	36.3	50
18309	48.7	-	60	40.4	50

**Neutral Line**

Frequency (kHz)	Peak Level (dB $\mu$ V)	Quasi-Peak Level (dB $\mu$ V)	Quasi-Peak Limit (dB $\mu$ V)	Average Level (dB $\mu$ V)	Average Limit (dB $\mu$ V)
150	50	-	66	27.4	56
289	53.5	-	60.5	46.3	50.5
1038	48.3	-	56	39.6	46
5696	46.4	-	60	36.4	50
18242	45.2	-	60	41	50

#### 4.7. CONCLUSION

Ac Power Line Conducted Emission measurement performed on the sample of the product **MPH-AC002A**, SN: **16510MX0000001**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.207 & RSS Gen ISSUE 4 limits.

## 5. TRANSMITTER RADIATED EMISSION

### 5.1. TEST CONDITIONS

Test performed by : Laurent DENEUX  
Date of test : March 9, 2017 to March 10, 2017  
Ambient temperature : 21 °C  
Relative humidity : 53 %

### 5.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013). The EUT is placed **on an open area test site**. Distance between measuring antenna and the EUT is **3m**.

Test is performed in parallel and perpendicular 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.

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 place at 1.5m high above 1GHz and at 0.8m high under 1GHz.

. Distance between measuring antenna and the EUT is **10m**.



Photograph for Transmitter Radiated Emission



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Photograph for Transmitter Radiated Emission



Photograph for Transmitter Radiated Emission



### 5.3. LIMIT

#### Limit at 3m:

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

#### Limit at 10m:

30MHz to 88MHz: 29.5dB $\mu$ V/m QPeak  
88MHz to 216MHz: 33dB $\mu$ V/m QPeak  
216MHz to 960MHz: 35.5dB $\mu$ V/m QPeak  
960MHz to 1000MHz: 43.5dB $\mu$ V/m QPeak  
Above 1000MHz: 63.5B $\mu$ V/m Peak  
43.5B $\mu$ V/m Average

### 5.4. TEST EQUIPMENT LIST

Apparatus	Trade Mark	Type	Registration number	Cal. Date	Cal. Due
Open test site	LCIE	-	F2000400	2016-05	2017-05
EMI Test Receiver	ROHDE & SCHWARZ	ESIB26	A2642021	2015-12	2017-12
Preamplifier	HELWETT PACKARD	8449B	A7080071	2016-01	2017-01
Bilog antenna	CHASE	CBL 6112A	C2040040	2016-01	2017-01
Loop antenna	RHODE & SCHWARZ	HFH2-Z2	C2040007	2015-11	2017-11
Horn	ETS	3115	C2042023	2016-01	2017-01
Cable	-	-	A5329542	2016-03	2017-03
Cable	-	-	A5329449	2016-10	2017-10
Cable	-	-	A5329368	2016-05	2017-05
Cable	-	-	A5329444	2016-10	2017-10

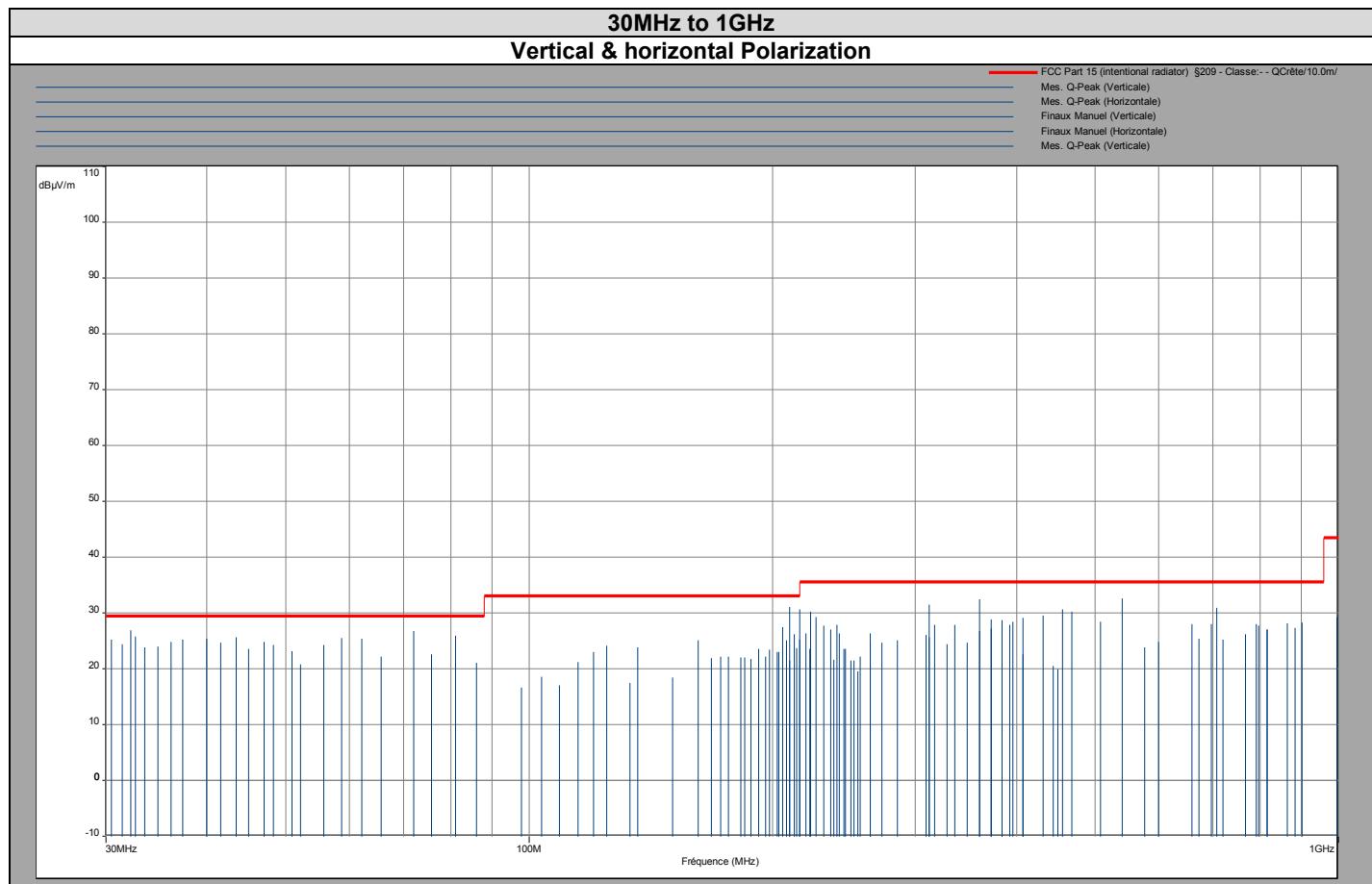
Note: In our quality system, the test equipment calibration due is more & less 2 months

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

None  Divergence:



## 5.6. RESULTS

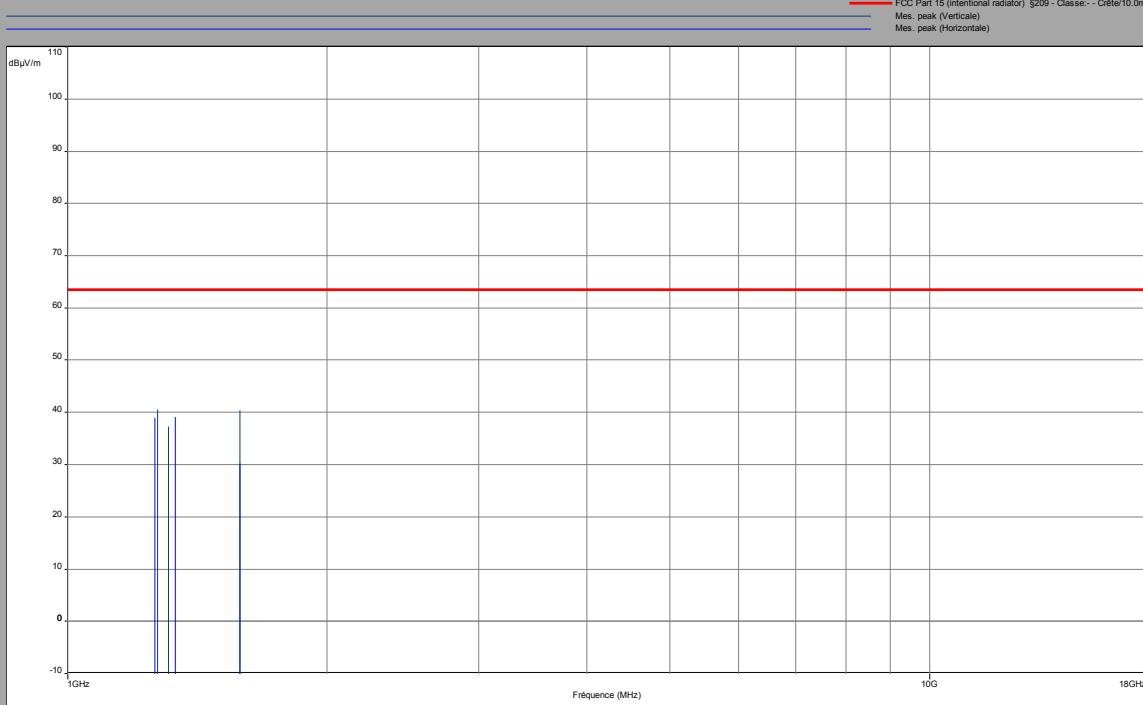




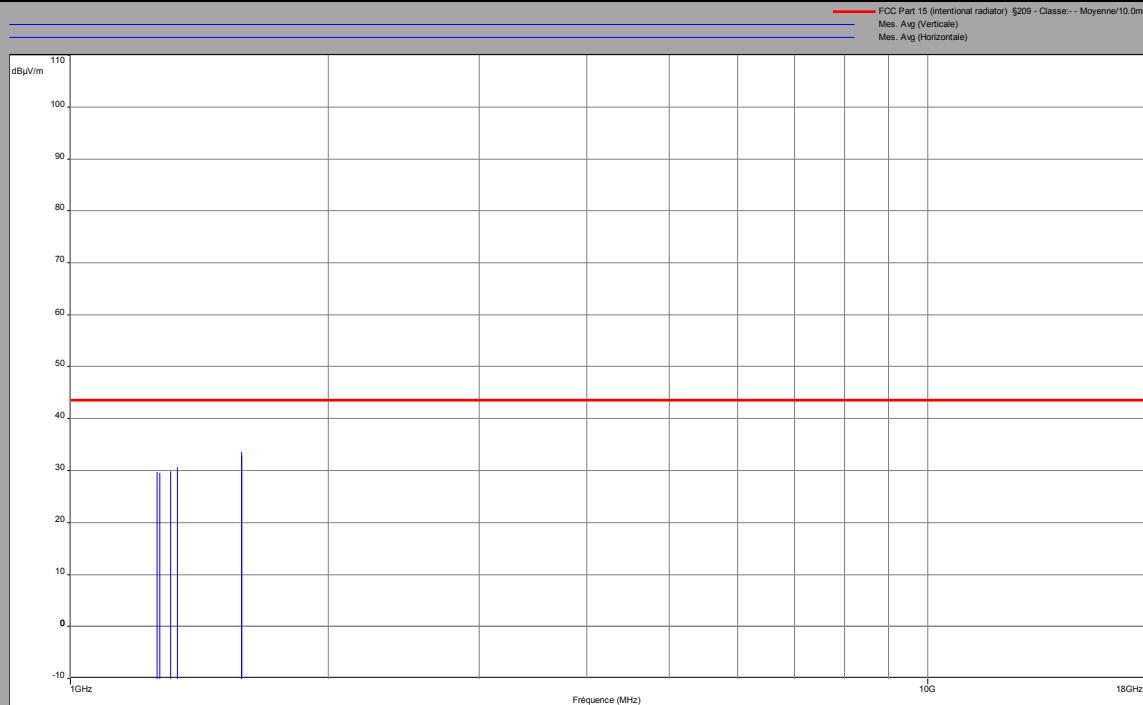
L C I E

### Above 1GHz

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



#### Vertical & horizontal Polarization ( average value)





L C I E

Perpendicular antenna

Below 30Mhz

Frequency (MHz)	QPeak Level (dB $\mu$ V/m)	Limit (3m) (dB $\mu$ V/m)
0.125	68.1	105.6
3.052	37	69.5
3.484	39.7	69.5
3.924	41.3	69.5
4.36	43.1	69.5
4.792	45.2	69.5
5.23	47.9	69.5
5.666	46.5	69.5
6.098	48.1	69.5
6.536	42.3	69.5
6.972	43	69.5
7.408	39.2	69.5

Paralell antenna

Frequency (MHz)	QPeak Level (dB $\mu$ V/m)	Limit (3m) (dB $\mu$ V/m)
0.125	62.8	105.6
2.172	41.1	69.5
3.91	42.7	69.5
4.348	46	69.5
4.782	44.8	69.5
5.216	48.3	69.5
5.65	46.4	69.5
6.084	41.9	69.5
6.516	42.4	69.5



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**30MHz to 1GHz**

Polarization	Frequency (MHz)	QPeak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)
Vertical	30.5	25.3	29.5
Vertical	31.4	24.5	29.5
Vertical	32.2	26.9	29.5
Vertical	32.6	25.8	29.5
Vertical	33.5	23.9	29.5
Vertical	34.8	24.1	29.5
Vertical	36.1	24.9	29.5
Vertical	37.3	25.2	29.5
Vertical	40.0	25.4	29.5
Vertical	41.6	24.7	29.5
Vertical	43.5	25.8	29.5
Vertical	45.0	23.6	29.5
Vertical	47.0	24.9	29.5
Vertical	48.3	24.3	29.5
Vertical	50.9	23.2	29.5
Vertical	52.2	20.9	29.5
Vertical	55.7	24.3	29.5
Vertical	58.7	25.5	29.5
Vertical	62.1	25.4	29.5
Vertical	65.7	22.2	29.5
Vertical	72.0	26.8	29.5
Vertical	75.7	22.7	29.5
Vertical	81.2	26.0	29.5
Vertical	86.1	21.1	29.5
Vertical	97.8	16.7	33
Vertical	103.7	18.6	33
Vertical	108.9	17.1	33
Vertical	115.0	21.2	33
Vertical	120.0	23.1	33
Vertical	124.8	24.2	33
Vertical	133.3	17.5	33
Vertical	136.3	23.9	33
Vertical	150.3	18.4	33
Vertical	161.9	25.2	33
Vertical	168.0	22.0	33
Vertical	172.4	22.2	33
Vertical	176.1	22.3	33
Vertical	182.8	22.1	33
Vertical	184.8	22.1	33
Vertical	188.0	21.8	33
Vertical	192.0	23.6	33
Vertical	198.0	23.5	33
Vertical	202.7	23.0	33
Vertical	203.3	23.0	33
Vertical	205.8	27.5	33



L C I E

30MHz to 1GHz			
Polarization	Frequency (MHz)	QPeak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)
Vertical	208.0	25.1	33
Vertical	210.0	31.1	33
Vertical	212.8	26.3	33
Vertical	216.0	30.6	33
Vertical	219.9	26.4	35.5
Vertical	222.6	30.2	35.5
Vertical	226.2	29.2	35.5
Vertical	231.1	27.8	35.5
Vertical	236.0	27.1	35.5
Vertical	240.0	28.0	35.5
Vertical	241.4	26.4	35.5
Vertical	244.9	23.6	35.5
Vertical	250.0	21.5	35.5
Vertical	251.8	21.5	35.5
Vertical	254.9	19.5	35.5
Vertical	256.3	22.2	35.5
Vertical	264.0	26.4	35.5
Vertical	273.0	24.7	35.5
Vertical	284.9	25.1	35.5
Vertical	312.0	31.6	35.5
Vertical	316.9	27.9	35.5
Vertical	328.4	24.4	35.5
Vertical	336.0	27.9	35.5
Vertical	348.0	24.7	35.5
Vertical	360.0	32.5	35.5
Vertical	372.0	28.9	35.5
Vertical	384.0	28.7	35.5
Vertical	396.0	28.4	35.5
Vertical	408.0	29.2	35.5
Vertical	432.0	29.6	35.5
Vertical	444.0	20.6	35.5
Vertical	450.0	20.0	35.5
Vertical	456.0	30.7	35.5
Vertical	468.0	30.3	35.5
Vertical	540.0	32.6	35.5
Vertical	600.0	24.9	35.5
Vertical	659.8	28.0	35.5
Vertical	672.0	25.4	35.5
Vertical	696.0	28.1	35.5
Vertical	708.0	30.9	35.5
Vertical	720.0	25.3	35.5
Vertical	792.0	28.0	35.5
Vertical	816.0	27.1	35.5
Vertical	864.0	28.1	35.5
Vertical	884.0	27.3	35.5
Vertical	996.0	29.2	43.5



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30MHz to 1GHz			
Polarization	Frequency (MHz)	QPeak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)
Horizontal	196.2	22.2	33
Horizontal	210	21.5	33
Horizontal	214	23.7	33
Horizontal	216	25.2	33
Horizontal	222.2	23.7	35.5
Horizontal	238.2	21.7	35.5
Horizontal	246.2	23.6	35.5
Horizontal	264	24.9	35.5
Horizontal	309.1	26.2	35.5
Horizontal	312	25.7	35.5
Horizontal	360	26.8	35.5
Horizontal	372	27.2	35.5
Horizontal	384	27.4	35.5
Horizontal	392.5	27.9	35.5
Horizontal	408	22.6	35.5
Horizontal	508	28.4	35.5
Horizontal	576	23.9	35.5
Horizontal	768	26.3	35.5
Horizontal	796	27.7	35.5
Horizontal	816	27.1	35.5
Horizontal	902	28.4	35.5

Above 1GHz						
Polarization	Frequency (MHz)	Duty cycle correction (dB)	Average Level (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Peak Level (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)
Vertical	1272		29.7	43.5	40.6	63.5
Vertical	1308		29.9	43.5	37.2	63.5
Vertical	1584		32.9	43.5	40.4	63.5
Horizontal	1262		29.7	43.5	39.0	63.5
Horizontal	1332		30.6	43.5	39.1	63.5
Horizontal	1584		33.6	43.5	30.2	63.5

## 5.7. CONCLUSION

Unwanted Emission in restricted frequency bands measurement performed on the sample of the product **MPH-AC002A**, SN: **16510MX0000001**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.209 & RSS-Gen ISSUE 4 limits.



## 6. UNCERTAINTIES CHART

47 CFR Part 15.209 & 15.207 Kind of test	Wide uncertainty (k=2) $\pm x$ (dB) / (Hz)/ 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