



LCIE



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# TEST REPORT

N°: 172110-763959-A

Version : 01

## Subject

Radio spectrum matters  
tests according to standards:  
47 CFR Part 15.225 & RSS 210 Issue 10 & RSS-Gen Issue 5

## Issued to

ARTIRIS SAS  
15 Rue Ruhmkorff  
75017-PARIS  
FRANCE

## Apparatus under test

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

Perfume Diffusor  
COMPOZ  
ARTIRIS  
COMPOZ5  
20346DNG01000A  
2A3HA-COMPOZ5  
27857-COMPOZ5

## Conclusion

See Test Program chapter

## Test date

October 18, 2021 to November 16, 2021

## Test location

Fontenay Aux Roses & Ecuelles

## ISED Company Number

6230B-1

## FCC Registration Number

582868

## FCC Designation Number

FR0010

## Sample receipt date

October 13, 2021

## Composition of document

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## Document issued on

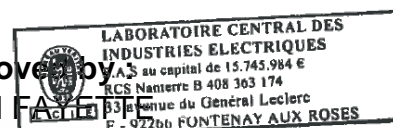
November 18, 2021

### Written by :

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Tests operator

Approved by  
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01	November 18, 2021	Laurent DENEUX	Creation of the document

*Each new edition of this test report replaces and cancels the previous edition. The control of the old editions of report is under responsibility of client.*



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## 1. TEST PROGRAM

### References

- 47 CFR Part 15.225 (2020)
- RSS 210 Issue 10
- RSS Gen Issue 5
- ANSI C63.10 (2013)

### Radio requirement:

Clause (47CFR Part 15.225 & RSS-210 Issue 9 & RSS-Gen Issue 5) 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)
20dB 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)
Frequency Tolerance	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Field strength within the band 13.110-14.010MHz	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Field strength outside of the bands 13.110-14.010 MHz	<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. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):**

Equipment under test (EUT):  
**COMPOZ COMPOZ5**

**Serial Number: 20346DNG01000A**



Without copper plate

Equipment Under Test



L C I E



With copper plate

Equipment Under Test

**Power supply:**

Name	Type	Rating	Reference / Sn	Comments
Supply1	<input checked="" type="checkbox"/> AC <input type="checkbox"/> DC <input type="checkbox"/> Battery	100-240V, 50-60Hz, 1A	GTM46402-3612	-

**Inputs/outputs - Cable:**

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
1	Power supply	1.8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

**Auxiliary equipment used during test:**

Type	Reference	Sn	Comments
Power supply AC/DC	GTM46402-3612	-	GlobTek



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**Equipment information (declaration of provider):**

Type:	<input checked="" type="checkbox"/> RFID		
Frequency band:	[13.553 to 13.567] MHz		
Number of Channel:	1		
Antenna Type:	<input checked="" type="checkbox"/> Integral	<input type="checkbox"/> External	<input type="checkbox"/> Dedicated
Antenna Requirements §15.203	The transmitter uses an integral antenna and it permanently connected		
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 arrangement:	<input checked="" type="checkbox"/> Tabletop	<input type="checkbox"/> Floor-standing	<input type="checkbox"/> Multiple orientations
Equipment type:	<input checked="" type="checkbox"/> Production model		<input type="checkbox"/> Pre-production model
Operating temperature range:	Tmin:	<input checked="" type="checkbox"/> -20°C	<input type="checkbox"/> X°C
	Tnom:	20°C	
	Tmax:	<input checked="" type="checkbox"/> 50°C	<input type="checkbox"/> X°C
Operating voltage:	Vmin (85% Vnom):	<input checked="" type="checkbox"/> 102V/60Hz	<input type="checkbox"/> XVdc*
	Vnom:	<input checked="" type="checkbox"/> 120V/60Hz	<input type="checkbox"/> XVdc*
	Vmax (115% Vnom):	<input checked="" type="checkbox"/> 138V/60Hz	<input type="checkbox"/> XVdc*
	Vmin (85% Vnom):	<input checked="" type="checkbox"/> 204V/60Hz	<input type="checkbox"/> XVdc*
	Vnom:	<input checked="" type="checkbox"/> 240V/50Hz	<input type="checkbox"/> XVdc*
	Vmax (115% Vnom):	<input checked="" type="checkbox"/> 276V/50Hz	<input type="checkbox"/> XVdc*

Hardware information		
Software (if applicable):	V. :	-

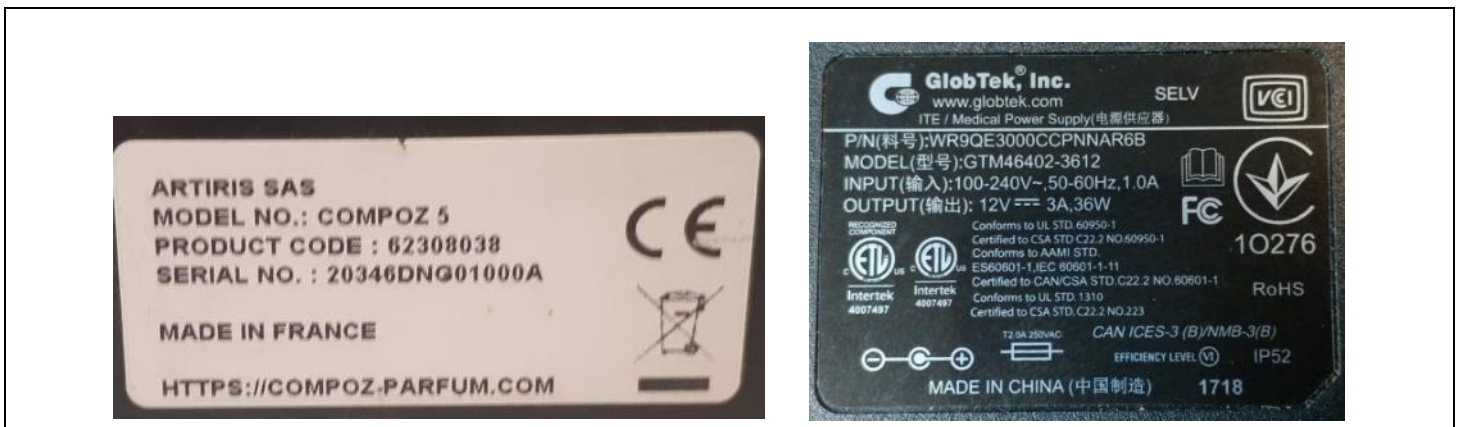
## 2.2. RUNNING MODE

Test mode	Description of test mode
Test mode 1	Permanent emission with modulation on a fixed channel in the data rate that produced the highest power without copper plate
Test mode 2	Permanent emission with modulation on a fixed channel in the data rate that produced the highest power with copper plate

Test	Running mode	
Occupied Bandwidth	<input checked="" type="checkbox"/> Test mode 1	<input type="checkbox"/> Alternative test mode()
Frequency Tolerance	<input checked="" type="checkbox"/> Test mode 1	<input type="checkbox"/> Alternative test mode()
AC Power Line Conducted Emission	<input checked="" type="checkbox"/> Test mode 1	<input type="checkbox"/> Alternative test mode()
Field strength within the band 13.110-14.010MHz	<input checked="" type="checkbox"/> Test mode 1 & 2	<input type="checkbox"/> Alternative test mode()
Field strength outside of the bands 13.110-14.010 MHz	<input checked="" type="checkbox"/> Test mode 1 & 2	<input type="checkbox"/> Alternative test mode()
Receiver Radiated Emissions	<input checked="" type="checkbox"/> Test mode 1 & 2 (1)	<input type="checkbox"/> Alternative test mode()

(1) Note: The test can't be performed because the transmitter and receiver are operating at the same frequency and the transmitter cannot be switched off as the carrier is used as receiver injection signal

## 2.3. EQUIPMENT LABELLING



## 2.4. EQUIPMENT MODIFICATION

None       Modification:





## 2.5. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follow:

$$FS = RA + AF + CF - AG$$

Where      FS = Field Strength  
              RA = Receiver Amplitude  
              AF = Antenna Factor  
              CF = Cable Factor  
              AG = Amplifier Gain

Assume a receiver reading of 52.5dB $\mu$ V is obtained. The antenna factor of 7.4 and a cable factor of 1.1 are added. The amplifier gain of 29dB is subtracted, giving a field strength of 32 dB $\mu$ V/m.

$$FS = 52.5 + 7.4 + 1.1 - 29 = 32 \text{ dB}\mu\text{V/m}$$

The 32 dB $\mu$ V/m value can be mathematically converted to its corresponding level in  $\mu$ V/m.

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(32\text{dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m.}$$

## 2.6. CALIBRATION DATE

The calibration intervals are extended at 12+2 months. This extended interval is based on the fact that there is sufficient calibration data to statistically establish a trend or based on experience of use of the test equipment to assure good measurement results for a longer period

### 3. OCCUPIED BANDWIDTH

#### 3.1. TEST CONDITIONS

Test performed by : Julien PALARD  
Date of test : October 21, 2021  
Ambient temperature : 24 °C  
Relative humidity : 47 %

#### 3.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table
- In a climatic chamber
- In an anechoic chamber

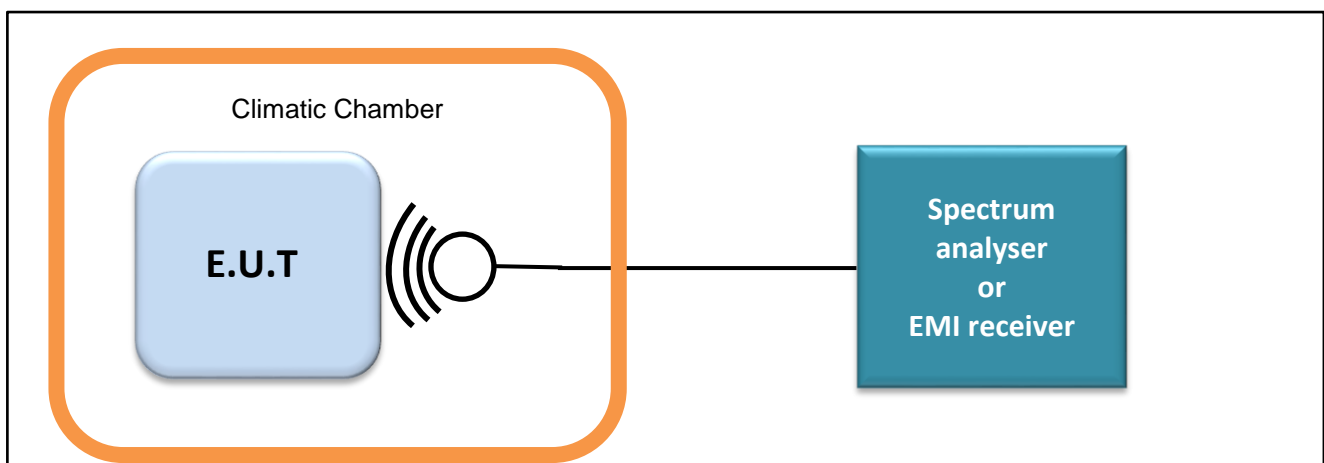
- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

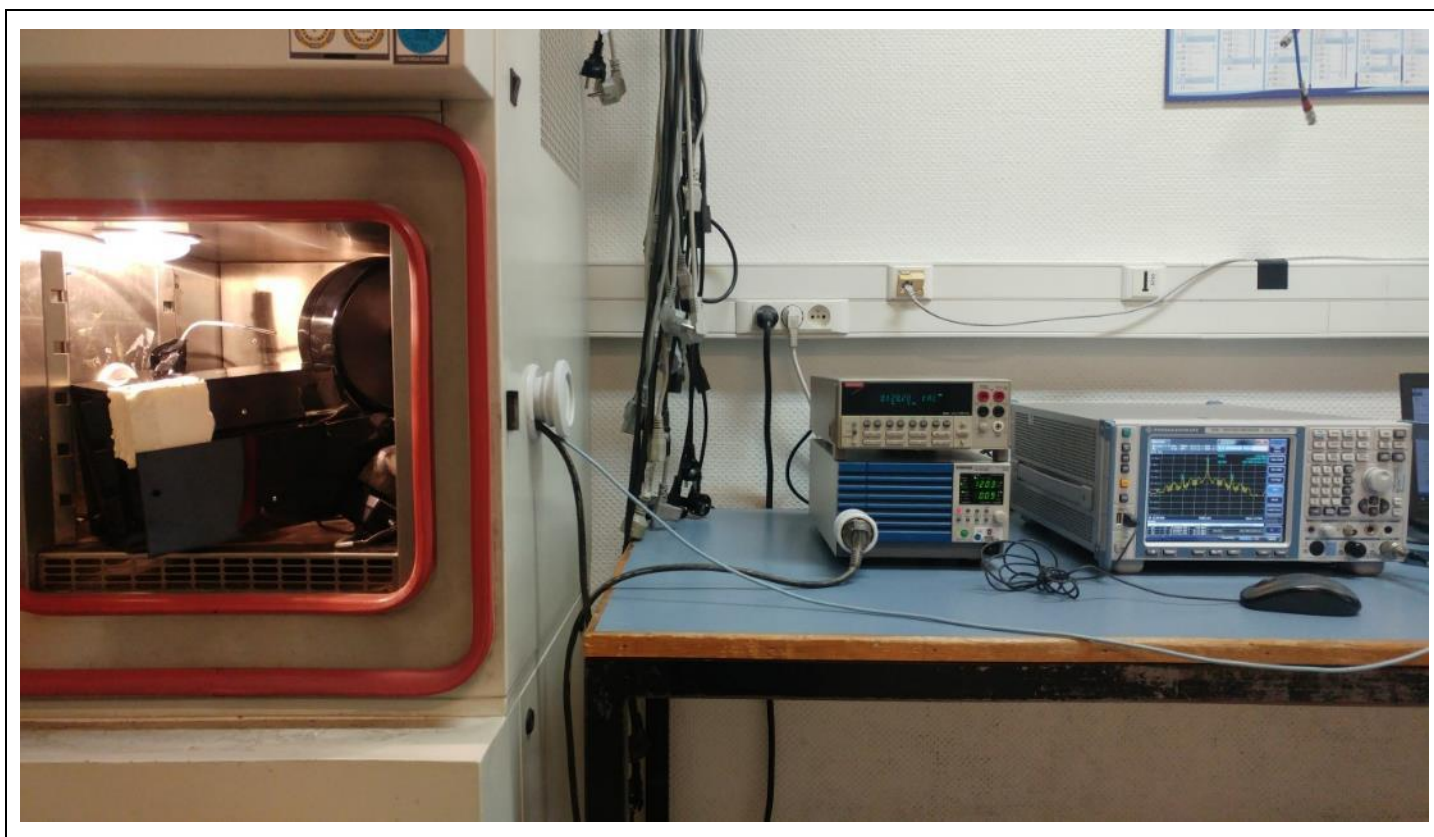
The EUT is turned ON and connected to measurement instrument; the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

- Test Procedure:

- RSS-Gen Issue 5 § 6.7
  - RBW used in the range of 1% to 5% of the anticipated emission bandwidth
  - Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
  - Detector = Peak.
  - Trace mode = Max Hold.
  - Sweep = Auto couple.
  - Allow the trace to stabilize.
  - OBW 99% function of spectrum analyzer used



Test set up of Occupied Bandwidth



Photograph for Occupied bandwidth

### 3.3. LIMIT

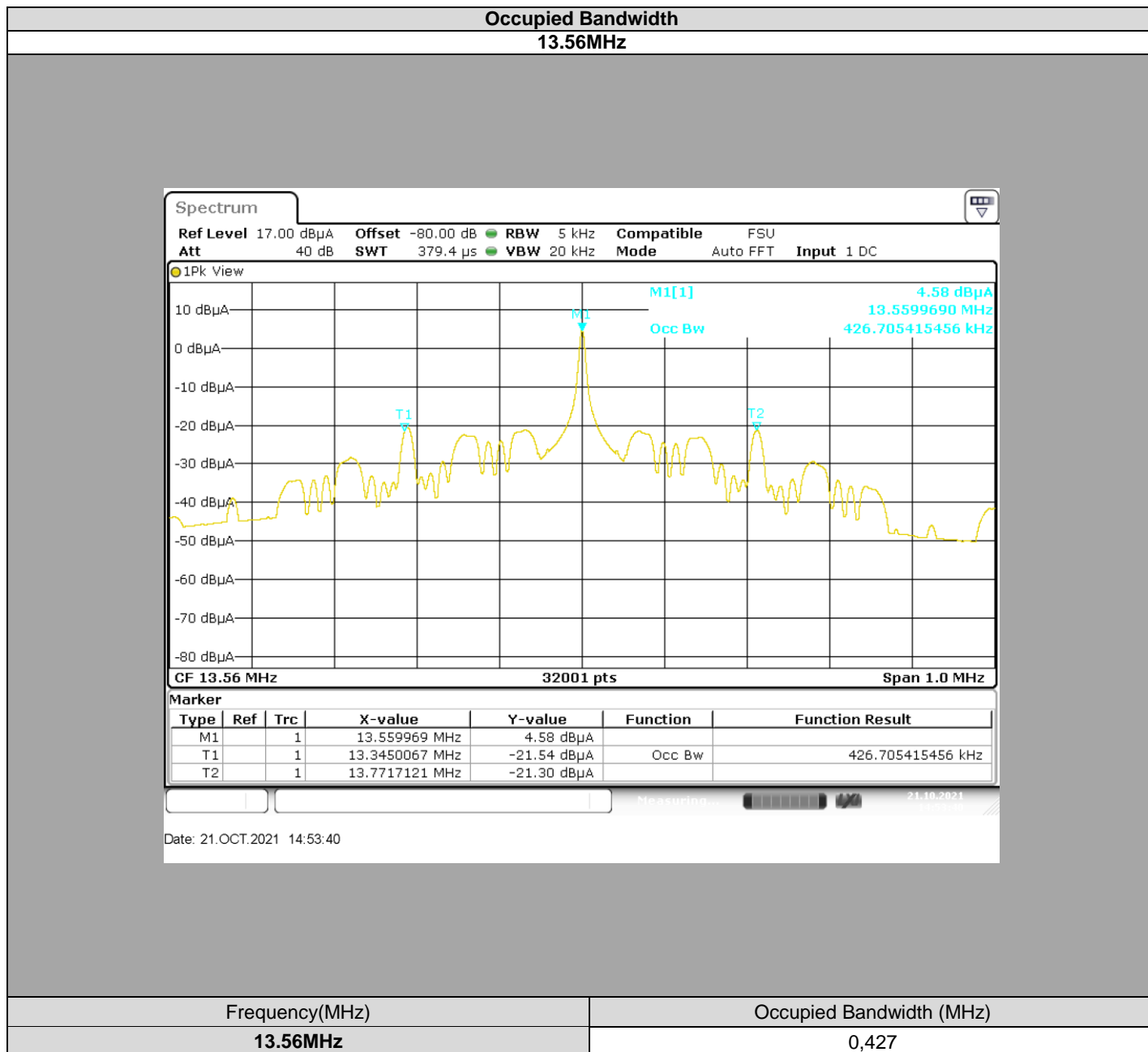
None

### 3.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Climatic chamber	SECASI	SLT34	D1024029	See Hygrometer	See Hygrometer
Hygrometer	AOIP	TM360	B4041042	2021/04	2023/04
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642026	2021/09	2023/09
Multimeter	KEITHLEY	2000	A1241084	2021/05	2023/05
Power supply	KIKUSUI	PCR500M	A7040079	See Multimeter	See Multimeter
13,56MHz Test fixture Antenna	-	-	A5329422	See EMI Receiver	See EMI Receiver

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

### 3.5. RESULTS



### 3.6. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **COMPOZ COMPOZ5**, SN: **20346DNG01000A**, in configuration and description presented in this test report, show levels **compliant** to the **RSS-GEN** limits.

## 4. 20dB EMISSION BANDWIDTH

### 4.1. TEST CONDITIONS

Test performed by : Julien PALARD  
Date of test : October 21, 2021  
Ambient temperature : 24 °C  
Relative humidity : 47 %

### 4.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table
- In a climatic chamber
- In an anechoic chamber

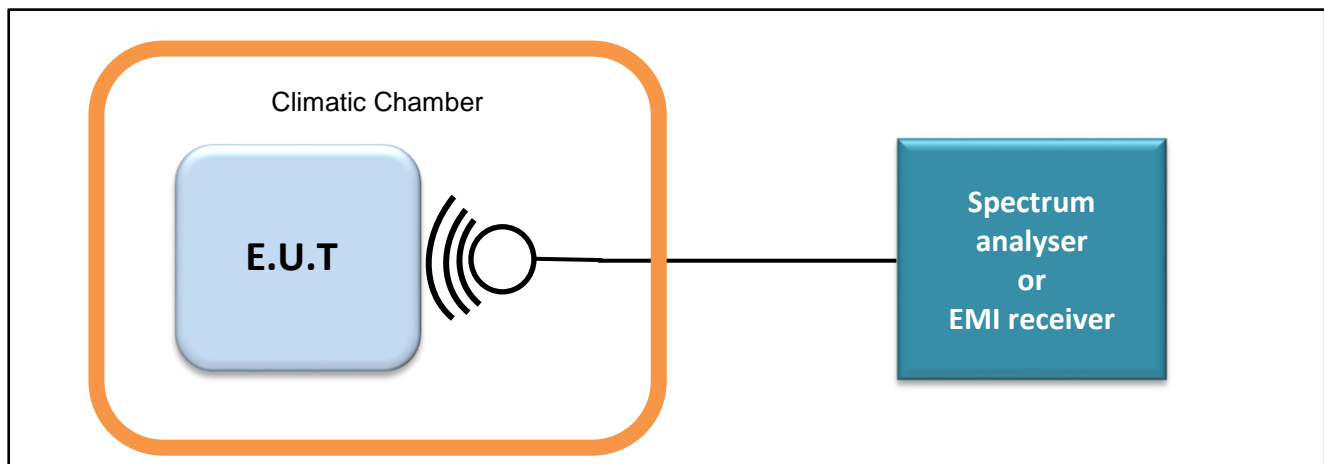
- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

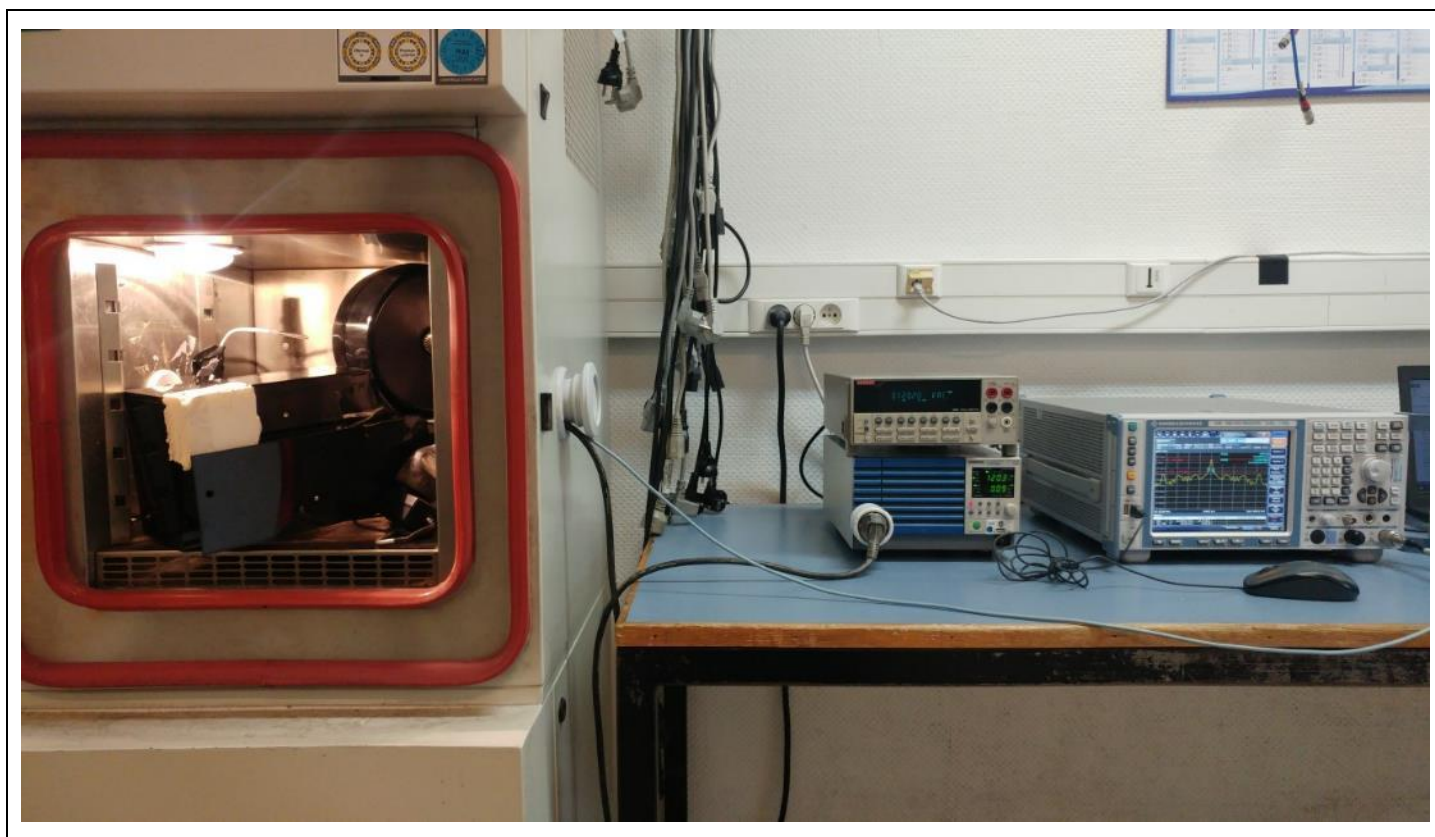
- Test Procedure:

- ANSI C63.10 § 6.9.2:

The EUT is placed in an anechoic chamber; levels have been corrected to be in compliant with the Peak Output Power measured. The EUT is turn ON and using the MaxHold function, the frequency separation of two frequencies that were attenuated 20dB from the Peak Output Power level. A delta marker is used to measure the frequency difference as the emission bandwidth.



Test set up of 20dB Emission Bandwidth



Photograph for 20dB emission bandwidth

#### 4.3. LIMIT

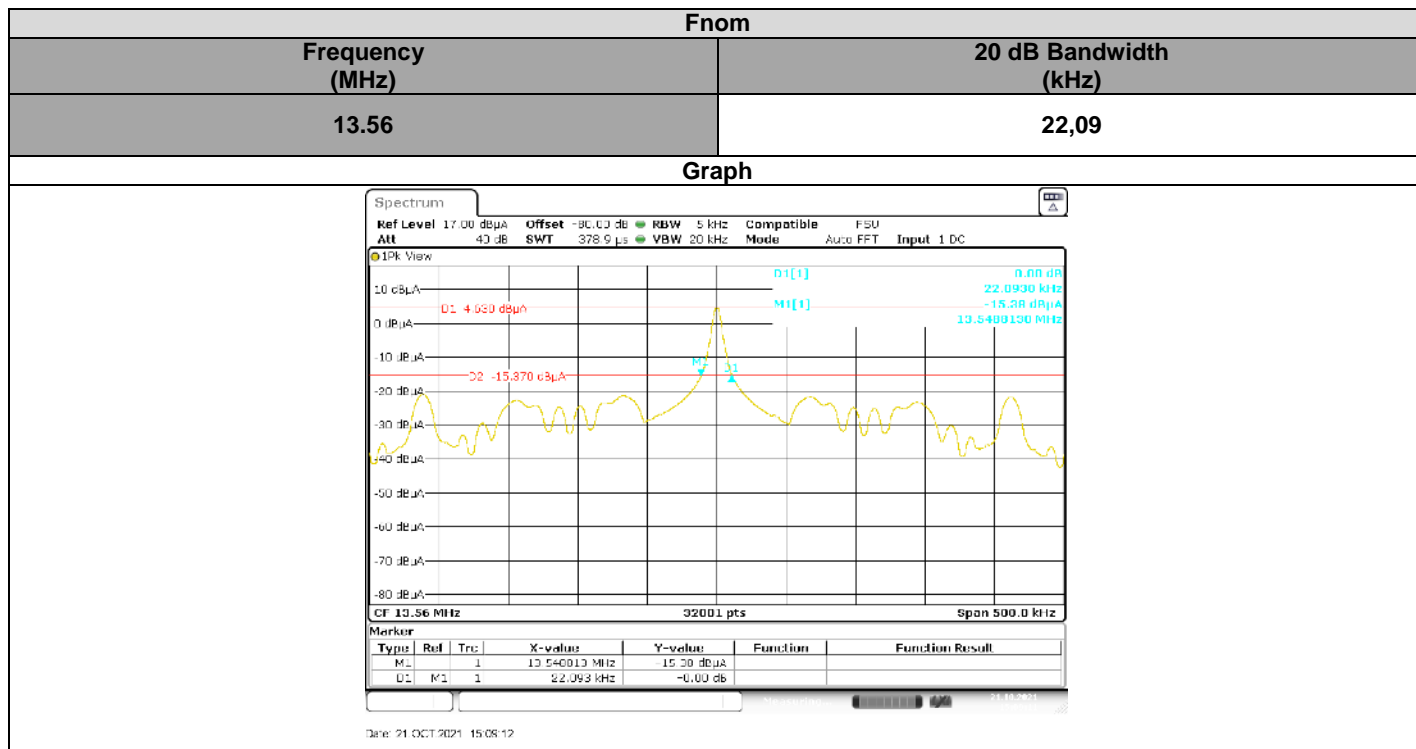
No Limit

#### 4.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Climatic chamber	SECASI	SLT34	D1024029	See Hygrometer	See Hygrometer
Hygrometer	AOIP	TM360	B4041042	2021/04	2023/04
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642026	2021/09	2023/09
Multimeter	KEITHLEY	2000	A1241084	2021/05	2023/05
Power supply	KIKUSUI	PCR500M	A7040079	See Multimeter	See Multimeter
13,56MHz Test fixture Antenna	-	-	A5329422	See EMI Receiver	See EMI Receiver

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

#### 4.5. RESULTS



#### 4.6. CONCLUSION

20dB Emission Bandwidth measurement performed on the sample of the product **COMPOZ COMPOZ5**, SN: **20346DNG01000A**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.225 & RSS 210 limits.

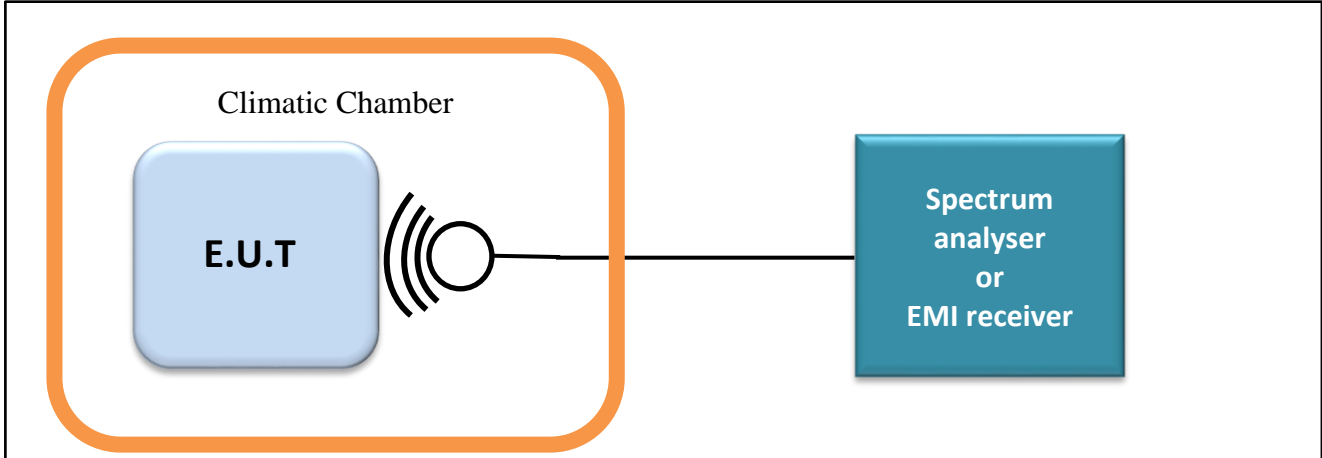
## 5. FREQUENCY TOLERANCE

### 5.1. TEST CONDITIONS

Test performed by : Julien PALARD  
Date of test : October 22, 2021  
Ambient temperature : 25 °C  
Relative humidity : 43 %

### 5.2. TEST SETUP

- The Equipment Under Test is installed:
  - On a table
  - In a climatic chamber
  - In an anechoic chamber
- Measurement is performed with a spectrum analyzer in:
  - Conducted Method
  - Radiated Method
- Test Procedure:
  - ANSI C63.10 § 6.8



Test set up of Occupied Bandwidth





Photograph for Frequency Tolerance



Photograph for Frequency Tolerance

### 5.3. LIMIT

$\pm 0.01\%$  ( $\pm 100\text{ppm}$ )



#### 5.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Climatic chamber	SECASI	SLT34	D1024029	See Hygrometer	See Hygrometer
Hygrometer	AOIP	TM360	B4041042	2021/04	2023/04
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642026	2021/09	2023/09
Multimeter	KEITHLEY	2000	A1241084	2021/05	2023/05
Power supply	KIKUSUI	PCR500M	A7040079	See Multimeter	See Multimeter
13,56MHz Test fixture Antenna	-	-	A5329422	See EMI Receiver	See EMI Receiver

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

## 5.5. RESULTS

Frequency	13,56							
EUT ACTIVATION	Start up							
Voltage	Vnom							
Temperature	-20	-10	0	10	20	30	40	50
Frequency (MHz)	13,55997141	13,55999719	13,55999453	13,55997	13,55993625	13,55989641	13,55986766	13,55985563
Frequency Drift (%)	-0,0002	0,0000	0,0000	-0,0002	-0,0005	-0,0008	-0,0010	-0,0011
EUT ACTIVATION	2min							
Voltage	Vnom							
Temperature	-20	-10	0	10	20	30	40	50
Frequency (MHz)	13,55997	13,55999734	13,55999453	13,55997	13,55993672	13,55989672	13,55986782	13,55985547
Frequency Drift (%)	-0,0002	0,0000	0,0000	-0,0002	-0,0005	-0,0008	-0,0010	-0,0011
EUT ACTIVATION	5min							
Voltage	Vnom							
Temperature	-20	-10	0	10	20	30	40	50
Frequency (MHz)	13,55997031	13,55999719	13,559995	13,55997016	13,55993672	13,55989735	13,55986797	13,55985516
Frequency Drift (%)	-0,0002	0,0000	0,0000	-0,0002	-0,0005	-0,0008	-0,0010	-0,0011
EUT ACTIVATION	10min							
Voltage	Vnom							
Temperature	-20	-10	0	10	20	30	40	50
Frequency (MHz)	13,55997	13,55999734	13,559995	13,55997031	13,55993688	13,55989766	13,55986829	13,55985516
Frequency Drift (%)	-0,0002	0,0000	0,0000	-0,0002	-0,0005	-0,0008	-0,0010	-0,0011

Voltage	Vmin = 102V	Vnom = 120V	Vmax = 138V
Temperature	Tnom		
Frequency (MHz)	13,55993281	13,55993281	13,55993281
Frequency Drift (%)	-0,0005	-0,0005	-0,0005

Voltage	Vmin = 204V	Vnom = 240V	Vmax = 276
Temperature	Tnom		
Frequency (MHz)	13,5599328	13,5599328	13,5599328
Frequency Drift (%)	-0,0005	-0,0005	-0,0005

## 5.6. CONCLUSION

Frequency tolerance measurement performed on the sample of the product **COMPOZ COMPOZ5**, SN: **20346DNG01000A**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.225 & RSS 210 limits.

## 6. AC POWER LINE CONDUCTED EMISSIONS

### 6.1. TEST CONDITIONS

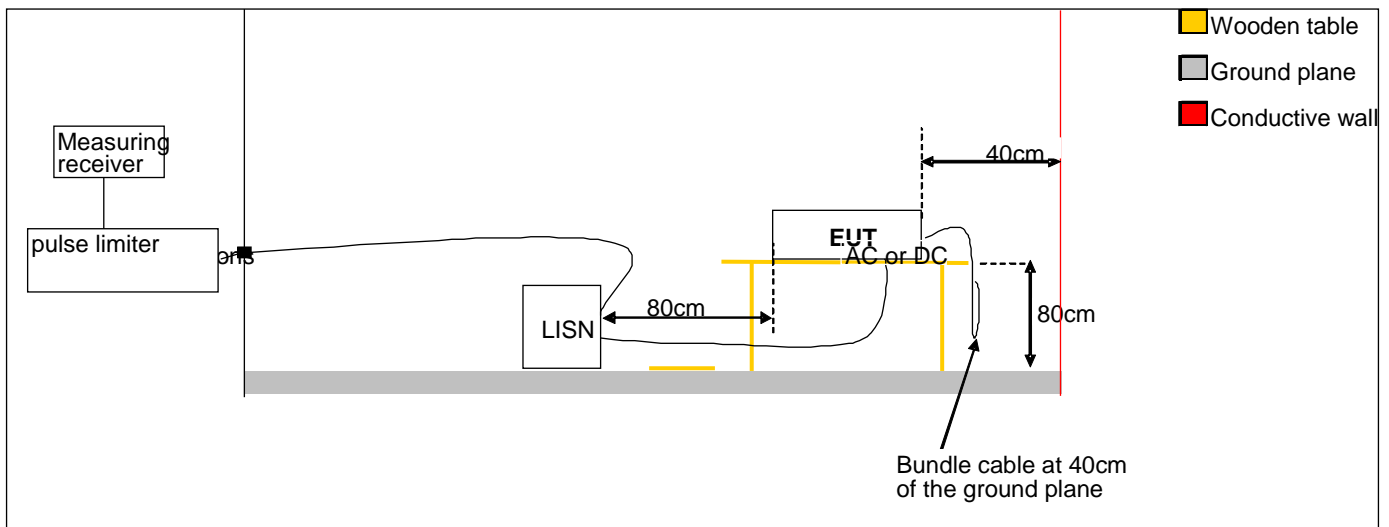
Test performed by : Laurent DENEUX  
 Date of test : October 18, 2021  
 Ambient temperature : 21 °C  
 Relative humidity : 46 %

### 6.2. TEST SETUP

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

Voltage table used (for Power Line Conducted Emissions):

Type	Measurement performed:	
<input checked="" type="checkbox"/> AC / <input type="checkbox"/> DC (Auxiliary used)	<input checked="" type="checkbox"/> 120VAC/60Hz	<input checked="" type="checkbox"/> 240VAC/50Hz
<input type="checkbox"/> USB (Laptop auxiliary)	<input type="checkbox"/> 120VAC/60Hz (Laptop auxiliary)	<input type="checkbox"/> 240VAC/50Hz(Laptop auxiliary)





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Photograph for AC Power Line Conducted Emissions (Front view)



Photograph for AC Power Line Conducted Emissions (Rear view)



### 6.3. LIMIT

Frequency range	Level	Detector
0,15kHz to 0,5MHz	66dB $\mu$ V to 56 $\mu$ V*	QPeak
	56dB $\mu$ V to 46 $\mu$ V*	Average
0,5MHz to 5MHz	56dB $\mu$ V	QPeak
	46dB $\mu$ V	Average
5MHz to 30MHz	60B $\mu$ V	QPeak
	50dB $\mu$ V	Average

\*Decreases with the logarithm of the frequency

### 6.4. TEST EQUIPMENT LIST

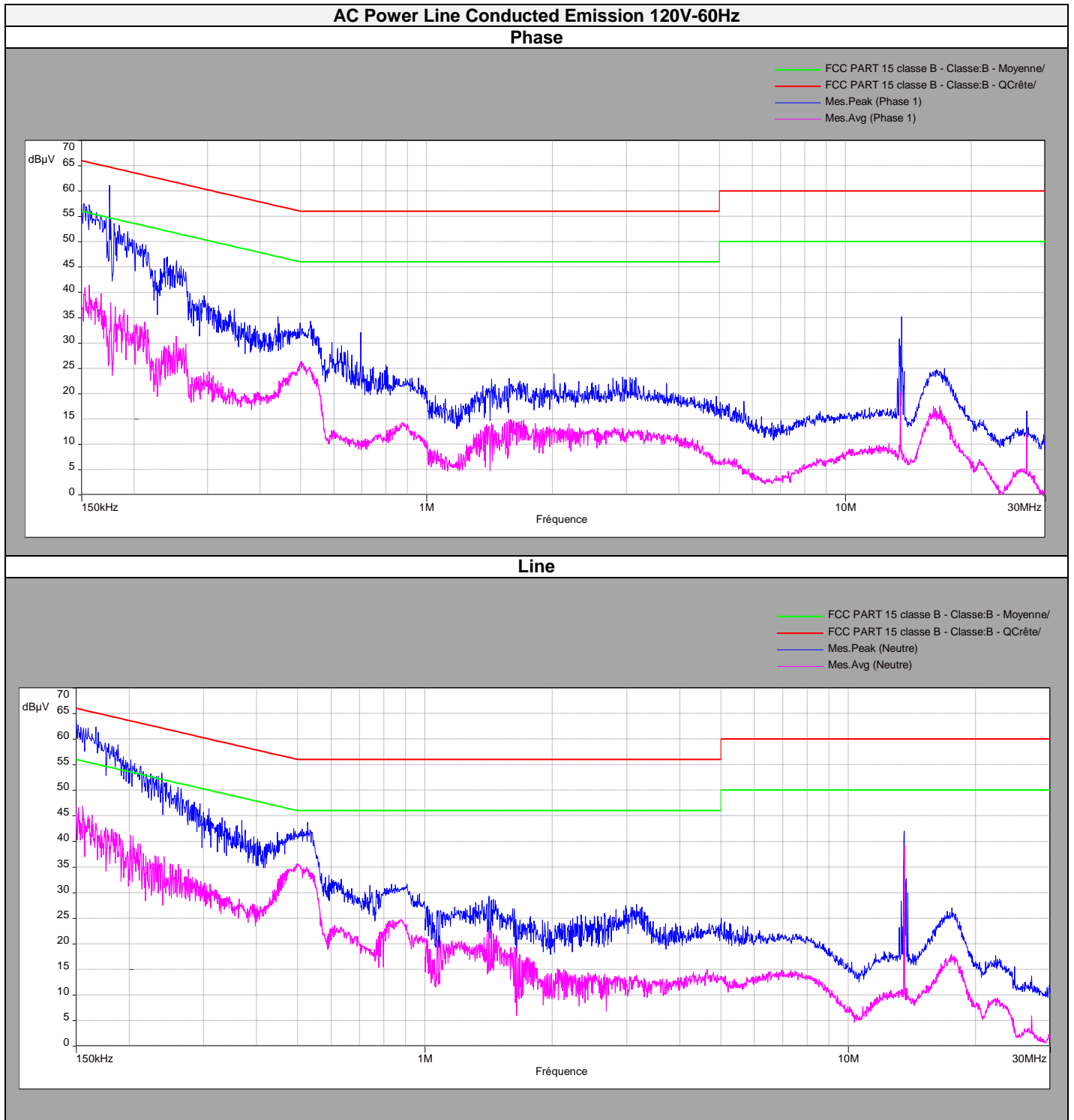
Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Receiver	RHODE & SCHWARZ	ESU	A2642018	2020/10	2022/10
V ISLN	ROHDE & SCHWARZ	ESH2-Z5	C2322001	2021/10	2022/10
Pulse limiter	ROHDE & SCHWARZ	ESH3-Z2	A2649008	2021/06	2022/06
Cable	-	-	A5329417	2020/12	2021/12
Cable	-	-	A5329589	2020/11	2021/11
Reference ground plan 2 x 3m	L.C.I.E.	-	-	-	-

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

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

None       Divergence:

## 6.6. RESULTS







L C I E

Phase Line							
Frequency (MHz)	Peak Level (dB $\mu$ V)	Quasi-Peak Level (dB $\mu$ V)	Quasi-Peak Limit (dB $\mu$ V)	Margin Quasi-Peak (dB $\mu$ V)	Average Level (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Margin Average (dB $\mu$ V)
0.15	57.3	-	66	8.7	39.3	56	16.7
0.5	34	-	56	22	26	46	20
2.93	23.3	-	56	32.7	13.2	46	32.8
13.56	35.2	-	60	24.8	20.3	50	29.7
16.8	24.5	-	60	35.5	17.4	50	32.6

Neutral Line							
Frequency (MHz)	Peak Level (dB $\mu$ V)	Quasi-Peak Level (dB $\mu$ V)	Quasi-Peak Limit (dB $\mu$ V)	Margin Quasi-Peak (dB $\mu$ V)	Average Level (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Margin Average (dB $\mu$ V)
0.15	66	-	64	-2	45.4	56	10.6
0.528	43.7	-	56	12.3	35	46	11
1.43	28.5	-	56	27.5	22.5	46	23.5
13.56	42	-	60	18	39.2	50	10.8
17.56	27	-	60	33	16.7	50	33.3

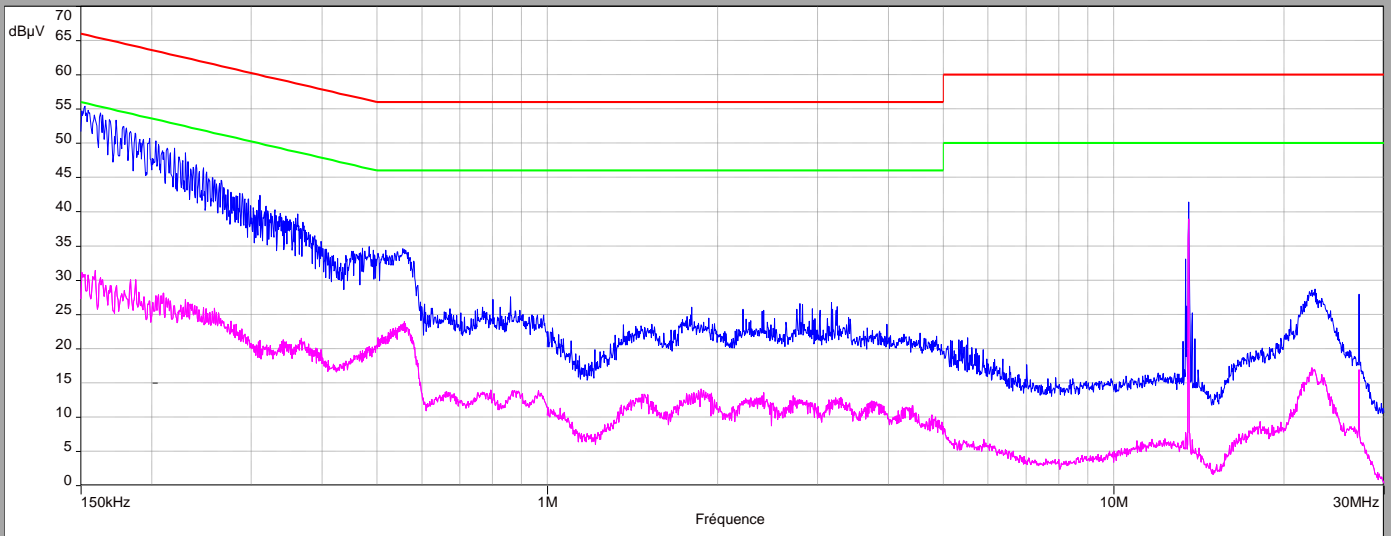


L C I E

### AC Power Line Conducted Emission 240V-50Hz

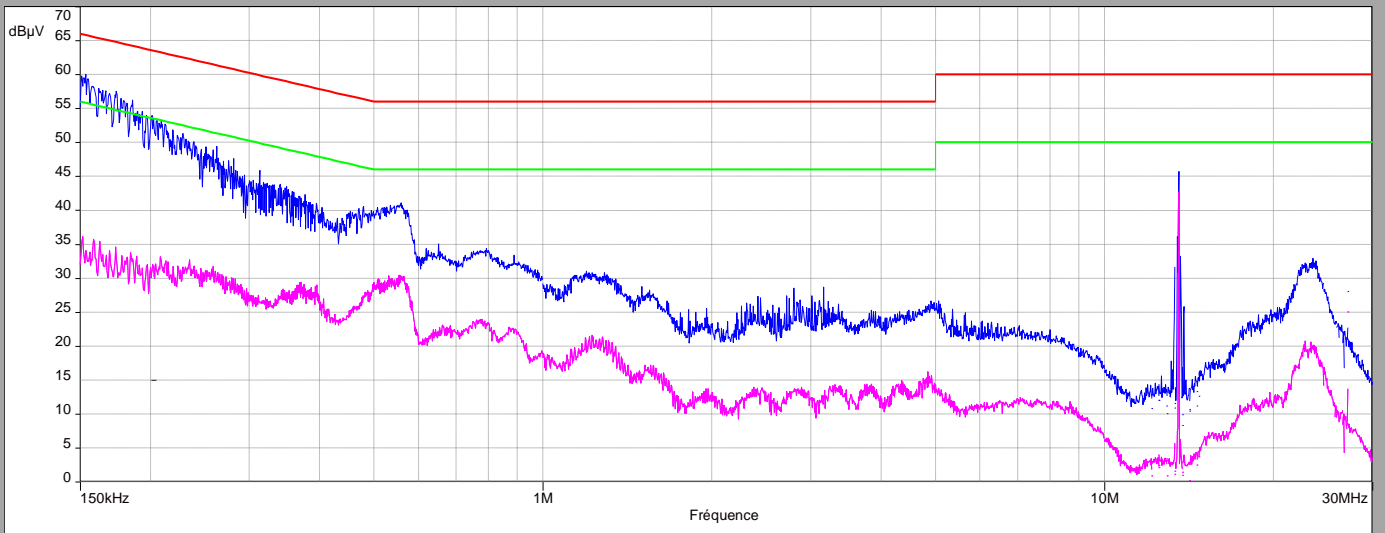
#### Phase

- FCC PART 15 classe B - Classe:B - Moyenne/
- FCC PART 15 classe B - Classe:B - QCrête/
- Mes.Peak (Phase 1)
- Mes.Avg (Phase 1)



#### Line

- FCC PART 15 classe B - Classe:B - Moyenne/
- FCC PART 15 classe B - Classe:B - QCrête/
- Mes.Peak (Neutre)
- Mes.Avg (Neutre)





L C I E

Phase Line							
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)
0.15	55	-	66	11	30.4	56	25.6
0.555	34.6	-	56	21.4	23.8	46	22.2
2.8	26.7	-	56	29.3	13	46	33
13.56	41.5	-	60	18.5	38.8	50	11.2
22.66	27.2	-	60	32.8	16.7	50	33.3

Neutral Line							
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)
0.15	60	-	66	6	36	56	20
0.56	41	-	56	15	29.6	46	16.4
1.22	30.8	-	56	25.2	21.6	46	24.4
13.56	46	-	60	14	42.7	50	7.3
23.5	32.8	-	60	27.2	20	50	30

## 6.7. CONCLUSION

Ac Power Line Conducted Emission measurement performed on the sample of the product **COMPOZ COMPOZ5**, SN: **20346DNG01000A**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.225 & RSS Gen limits.

## 7. FIELD STRENGTH OUTSIDE OF THE BANDS 13.110-14.010 MHz

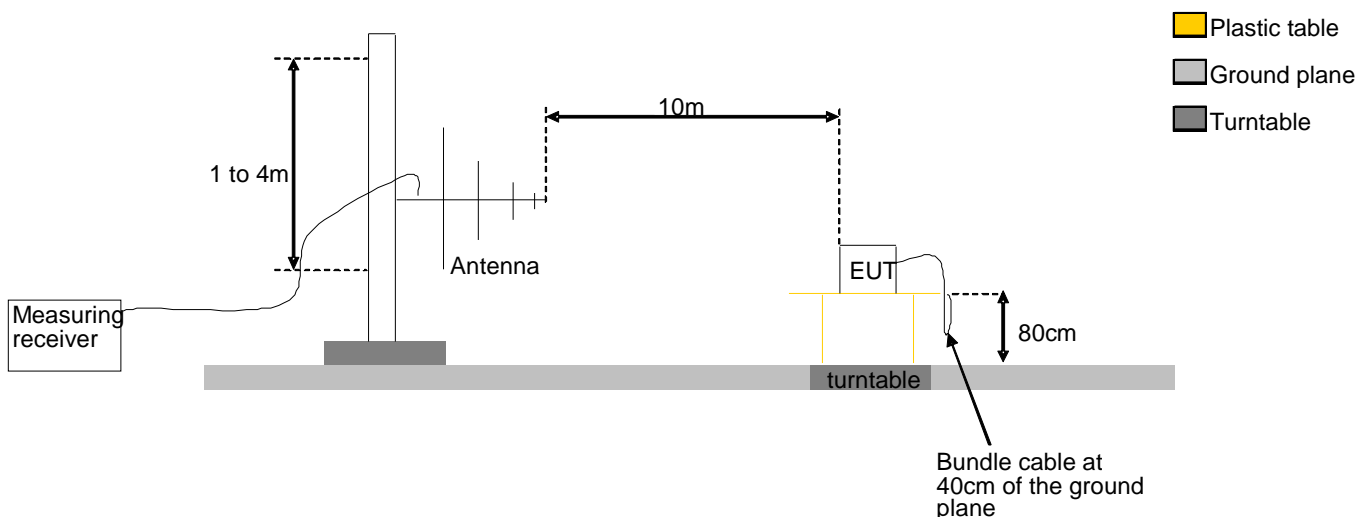
### 7.1. TEST CONDITIONS

Test performed by : Laurent DENEUX  
 Date of test : October 18, 2021 to Novembre 16, 2021  
 Ambient temperature : 20 °C  
 Relative humidity : 48 %

### 7.2. TEST SETUP

The product has been tested according to ANSI C63.10 and FCC part 15 subpart C:

Frequency range :	Below 30MHz	From 30MHz to 1GHz	Above 1GHz
Antenna Polarization :	Parallel, Perpendicular And Ground parallel	Horizontal And Vertical	Horizontal And Vertical
Antenna Height :	1m	Varied from 1m to 4m	Varied from 1m to 4m
Antenna Type :	Loop	Bi-Log	Horn
RBW Filter :	200Hz below 150kHz 9kHz above 150kHz	120kHz	1MHz
Maximization :	Turntable rotation of 360 degrees range		
EUT height :	0.8m		1.5m
Test site :	Open Aera Test Site	Open Aera Test Site	Open Aera Test Site
Distance EUT-Antenna :	3m	10m	10m



Test Set up for radiated measurement in open area test site



Photograph for Field strength outside of the bands 13.110-14.010 MHz



Photograph for Field strength outside of the bands 13.110-14.010 MHz



Photograph for Field strength outside of the bands 13.110-14.010 MHz



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### 7.3. LIMIT

Measure at 300m		
Frequency range	Level	Detector
9kHz-490kHz	67.6dB $\mu$ V/m /F(kHz)	QPeak
Measure at 30m		
Frequency range	Level	Detector
490kHz-1.705MHz	87.6dB $\mu$ V/m /F(kHz)	QPeak
1.705MHz-30MHz	29.5dB $\mu$ V/m	QPeak
Measure at 10m		
Frequency range	Level	Detector
30MHz to 88MHz	29.5dB $\mu$ V/m	QPeak
88MHz to 216MHz	33dB $\mu$ V/m	QPeak
216MHz to 960MHz	35.5B $\mu$ V/m	QPeak
960MHz to 1000MHz	43.5dB $\mu$ V/m	QPeak
Above 1000MHz	63.5dB $\mu$ V/m	Peak
	43.5dB $\mu$ V/m	Average
Measure at 3m		
Frequency range	Level	Detector
30MHz to 88MHz	40dB $\mu$ V/m	QPeak
88MHz to 216MHz	43.5dB $\mu$ V/m	QPeak
216MHz to 960MHz	46B $\mu$ V/m	QPeak
960MHz to 1000MHz	54dB $\mu$ V/m	QPeak
Above 1000MHz	74dB $\mu$ V/m	Peak
	54dB $\mu$ V/m	Average



#### 7.4. TEST EQUIPMENT LIST

Description	Manufacturer	Model	Identifier	Last Calibration date	Calibration due date
Open test site	LCIE	-	F2000400	2021-02	2022-02
EMI Test Receiver	ROHDE & SCHWARZ	ESU	A2642018	2020-10	2022-10
Preamplifier	R&S	8449B	A4069002	2020-09	2022-09
Cable	-	-	A5329416	2021-02	2022-02
Cable	-	-	A5329442	2020-12	2021-12
Cable	-	-	A5329542	2020-11	2021-11
Loop antenna	R&S	HFH2-Z2	C2040269	2020-09	2022-09
Horn antenna	EMCO	3115	C2042016	2020-04	2023-04
Antenne bilog	CHASE	CBL 6112A	C2040040	2021-04	2022-04
Cable	-	-	A5329876	2020-12	2021-12
Cable	-	-	A5329449	2020-12	2021-12

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

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

None       Divergence:



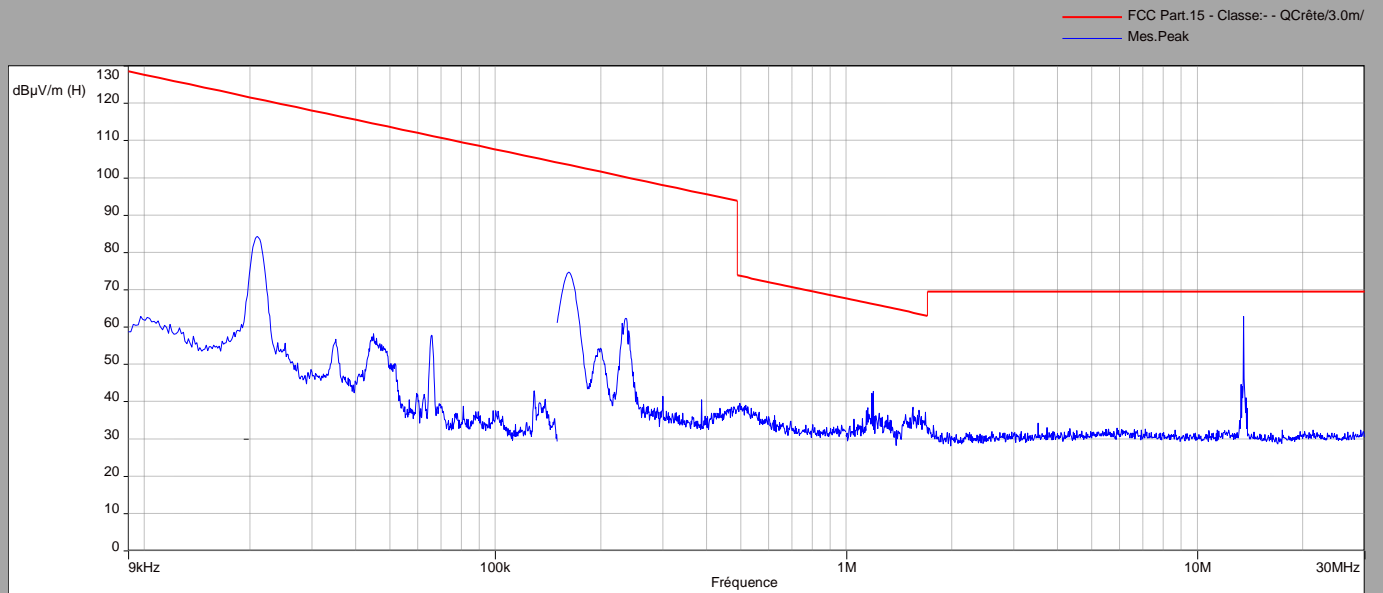


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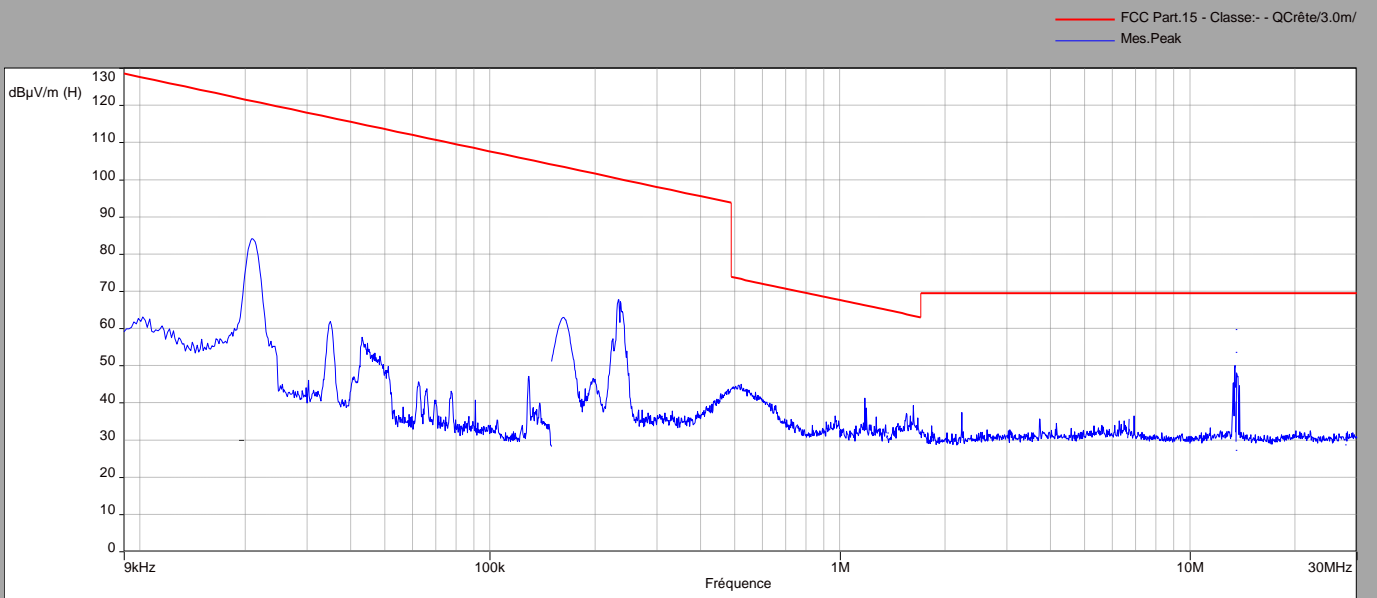
## 7.6. RESULTS

### 9kHz to 30MHz without copper plate

#### Parallel Axis



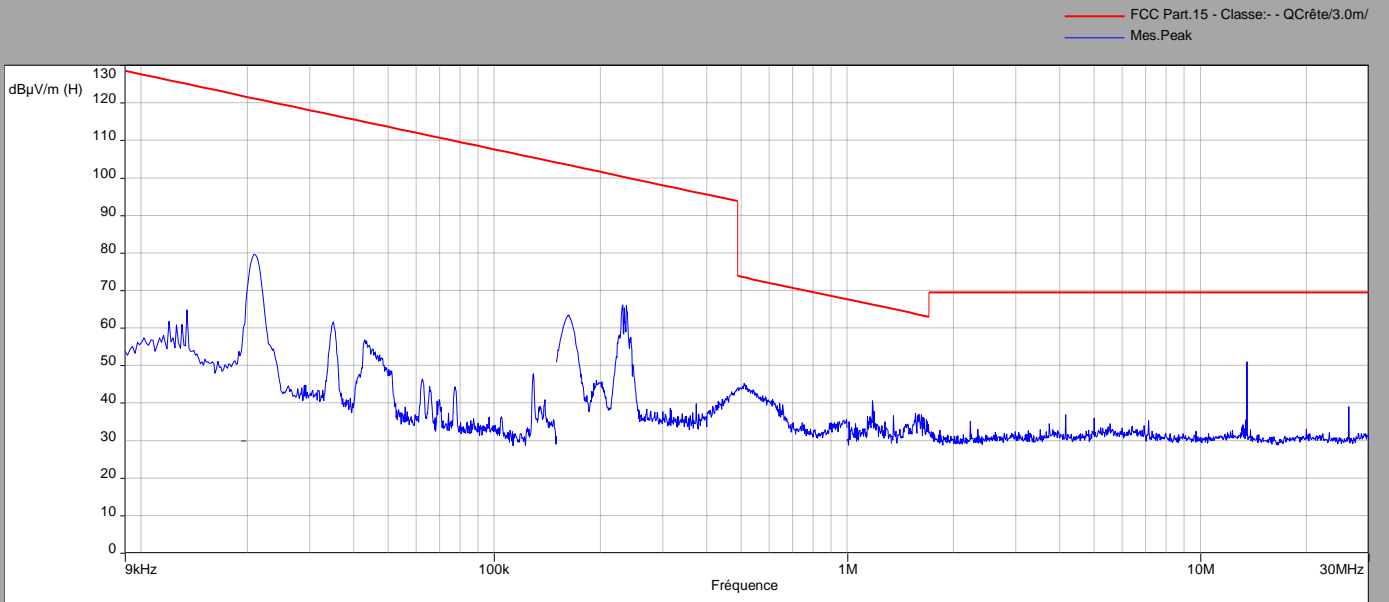
#### Perpendicular Axis





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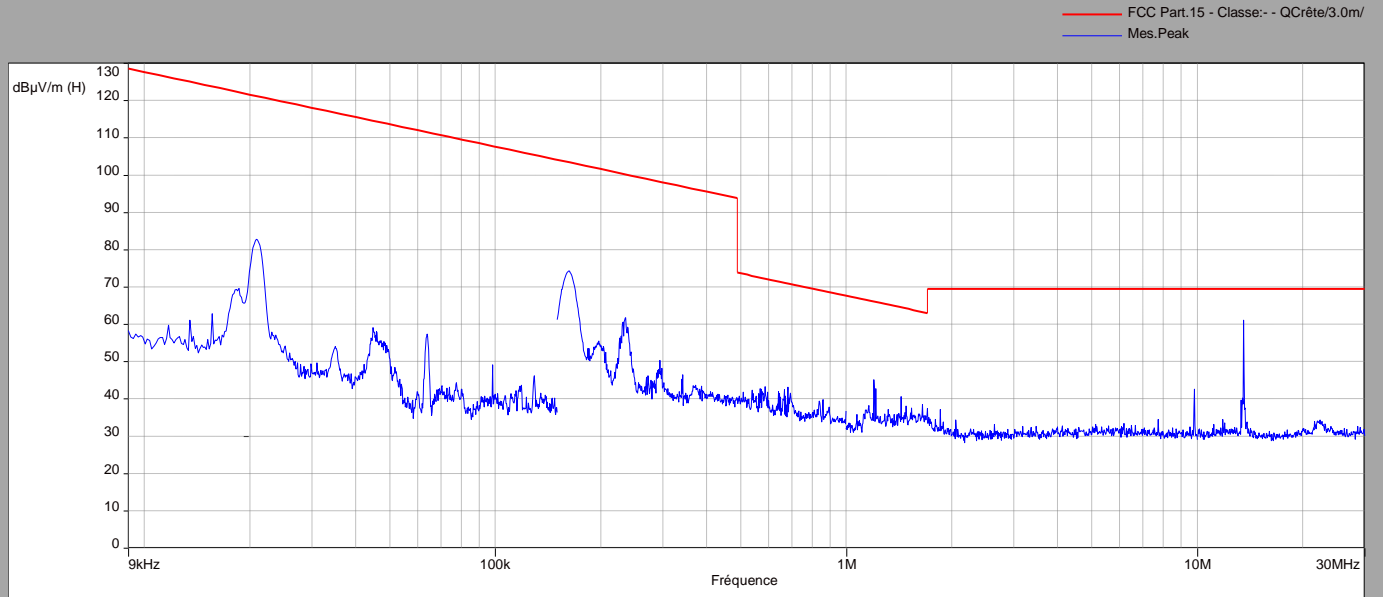
### Ground Parallel Axis without copper plate



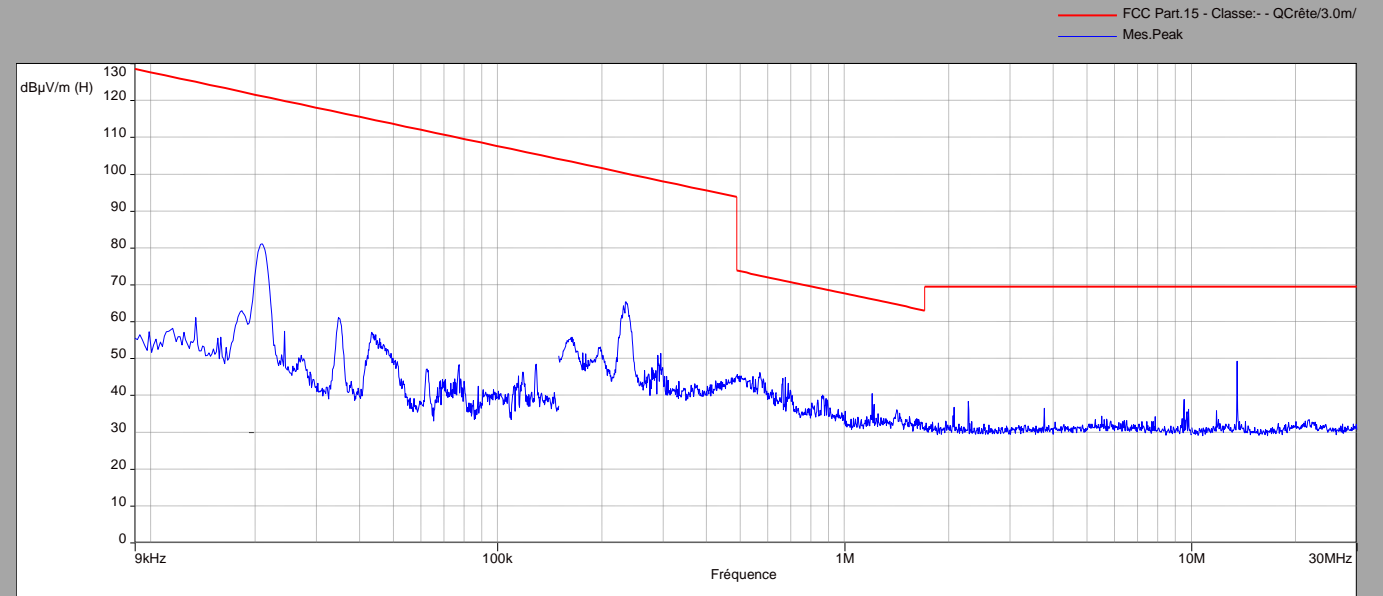


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9kHz to 30MHz with copper plate  
Parallel Axis



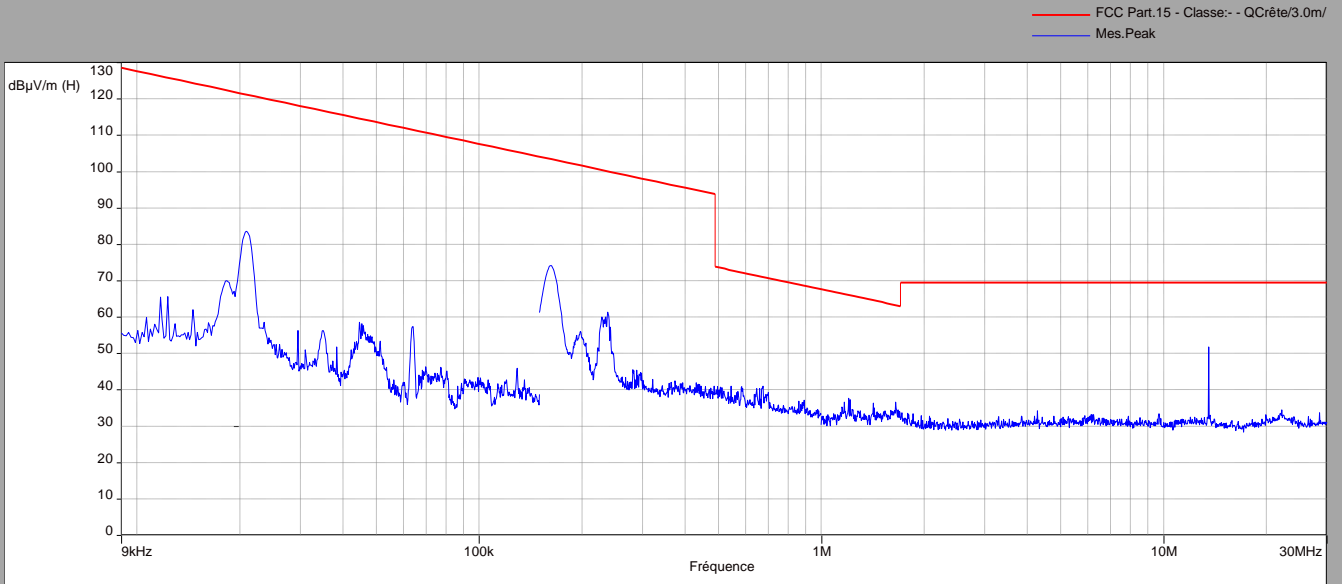
Perpendicular Axis





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### Ground Parallel Axis with copper plate

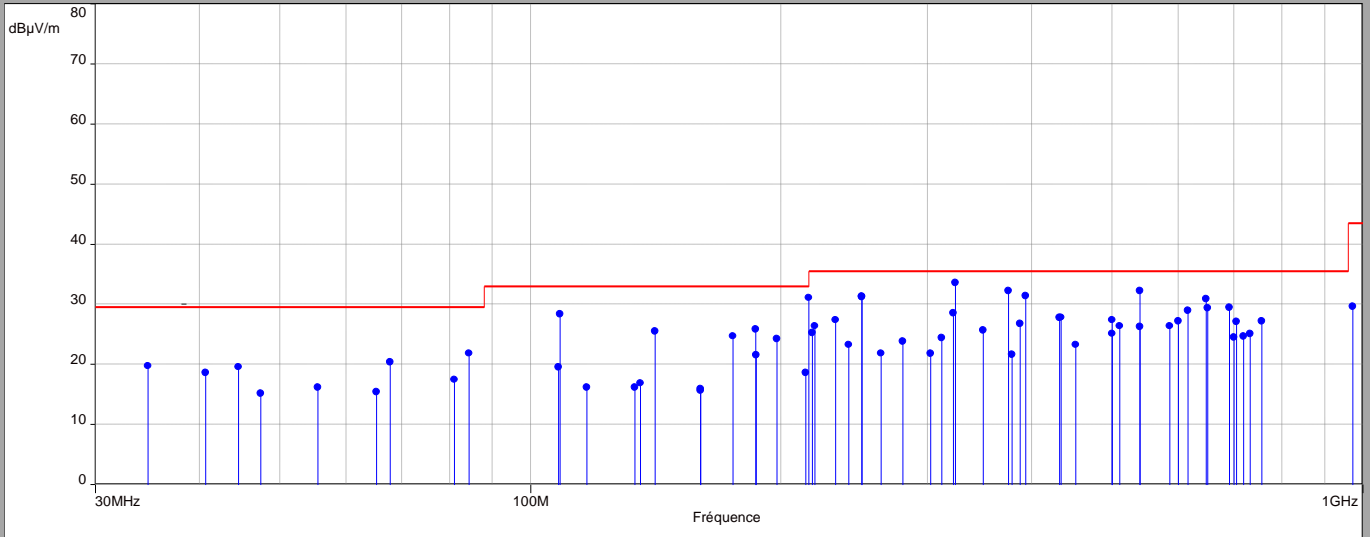




L C I E

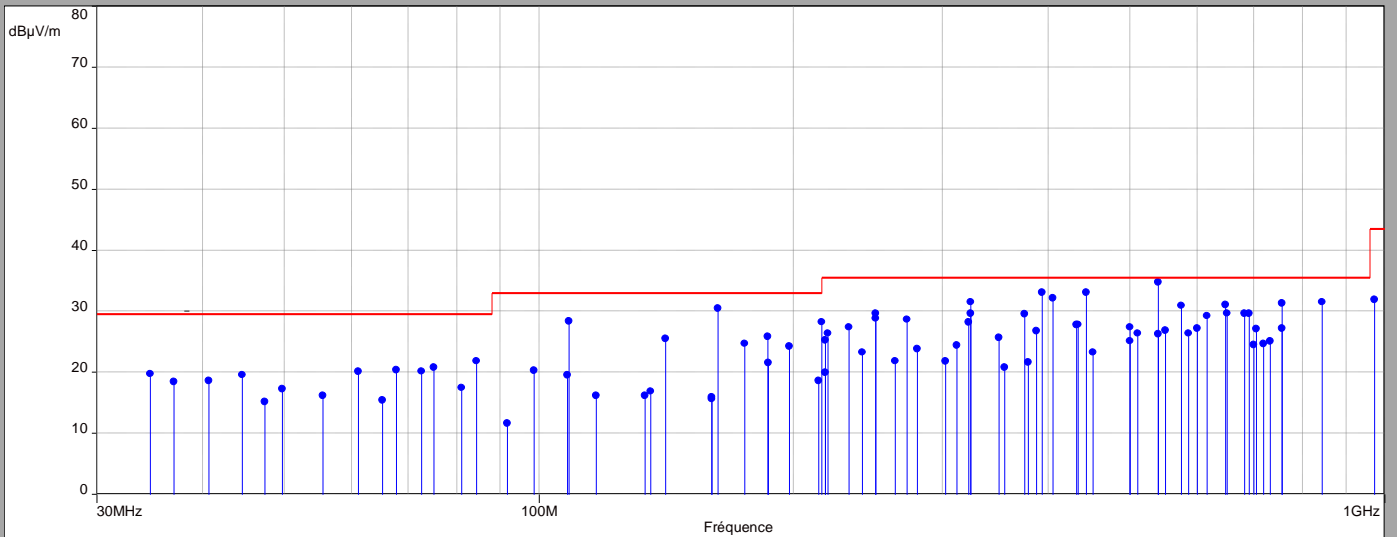
### 30MHz to 1GHz without copper plate Vertical & horizontal Polarization

— FCC Part 15 (intentional radiator) §209 - Classe:- - QCrête/10.0m/  
• Mes. Q-Peak (Verticale)  
• Mes. Q-Peak (Horizontale)



### 30MHz to 1GHz with copper plate Vertical & horizontal Polarization

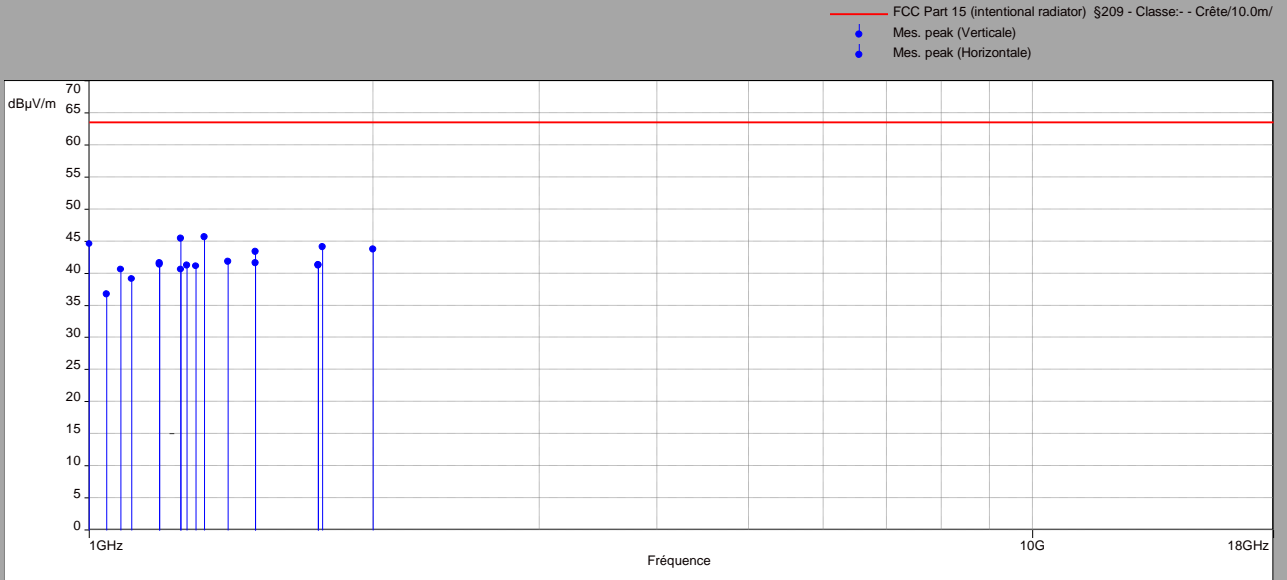
— FCC Part 15 (intentional radiator) §209 - Classe:- - QCrête/10.0m/  
• Mes. Q-Peak (Mes. Q-Peak) (Verticale)  
• Mes. Q-Peak (Mes. Q-Peak) (Horizontale)



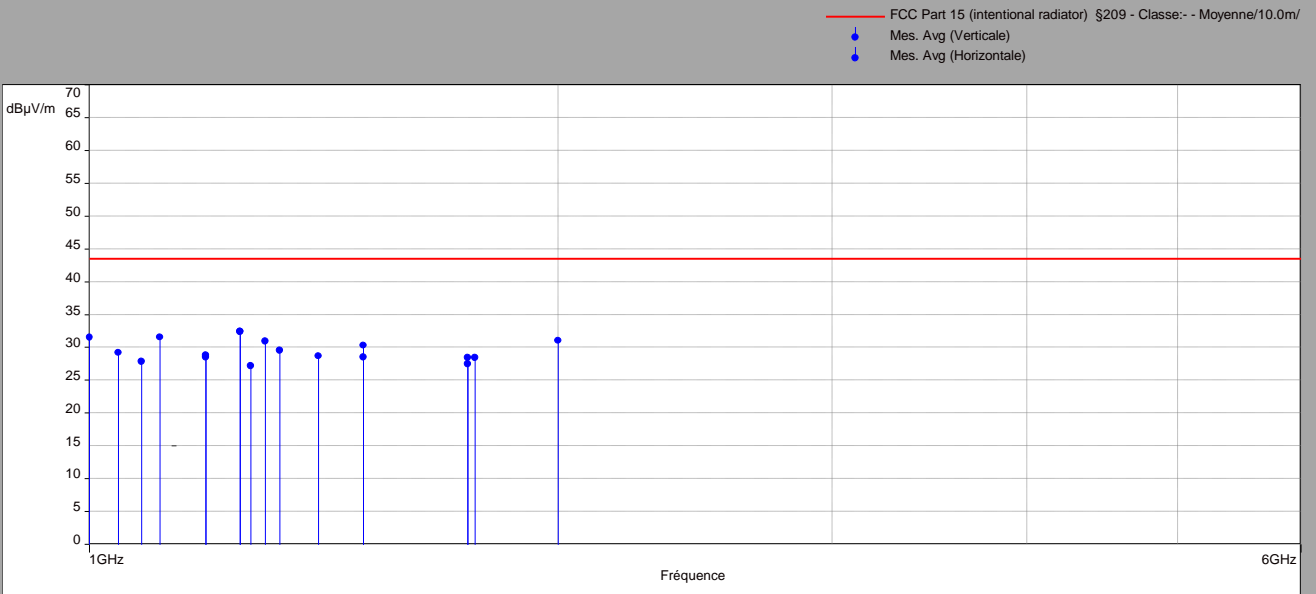


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### 1GHz to 6GHz (peak measurement) without copper plate Vertical & horizontal Polarization



### 1GHz to 6GHz (average value) without copper plate Vertical & horizontal Polarization

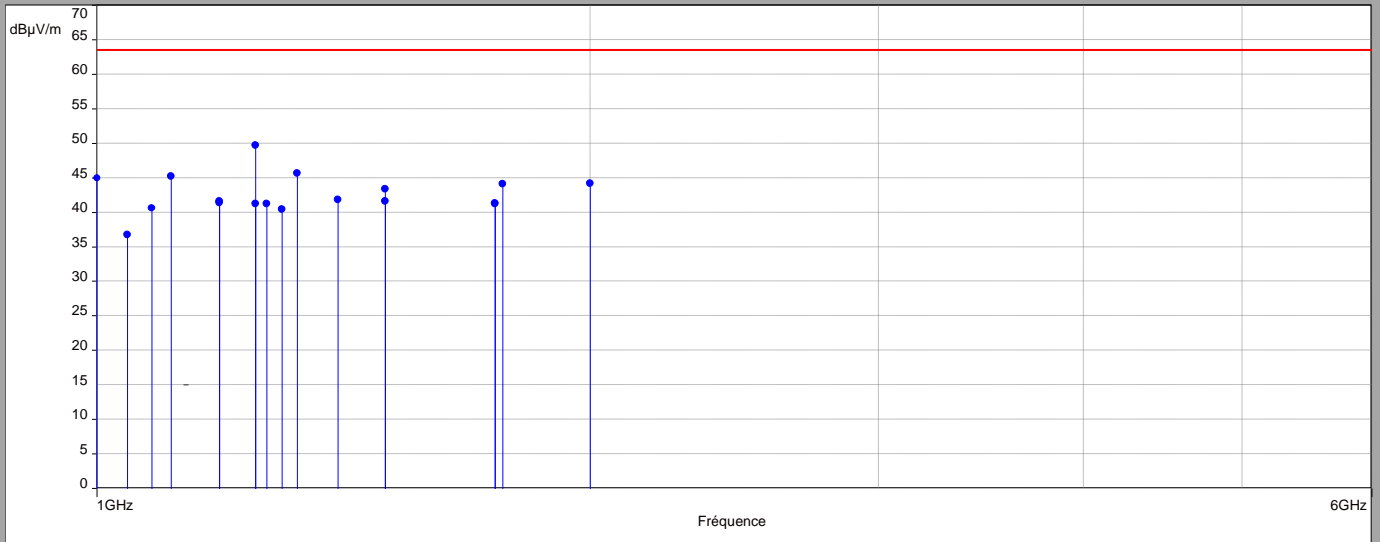




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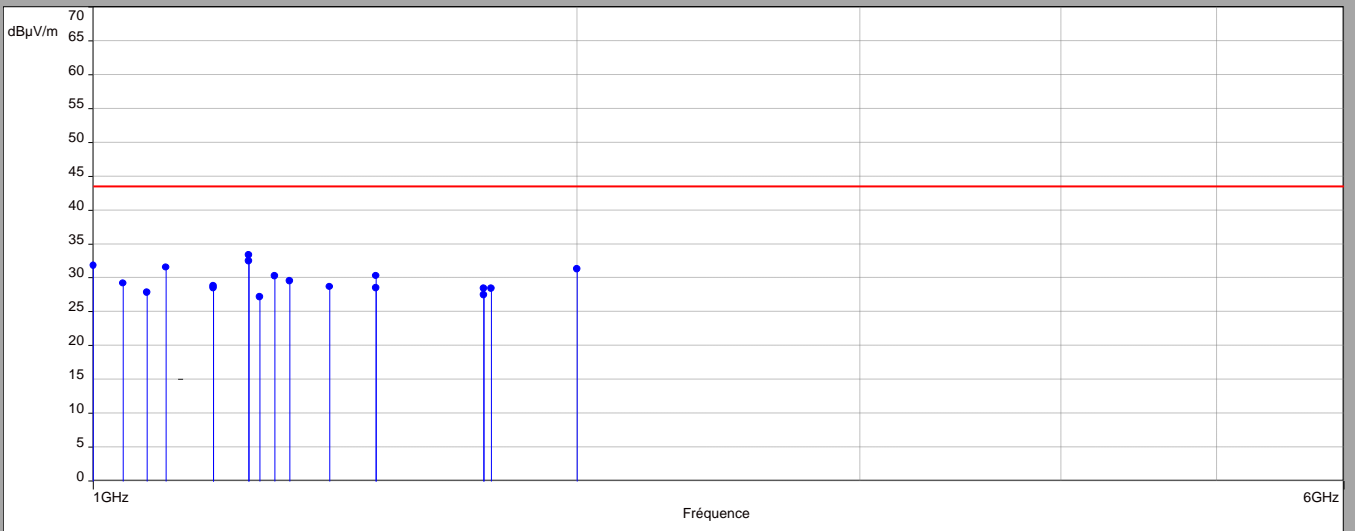
**1GHz to 6GHz (peak measurement) with copper plate**  
**Vertical & horizontal Polarization**

- FCC Part 15 (intentional radiator) §209 - Classe:- - Crête/10.0m/
- Mes.Peak (Mes. peak) (Verticale)
- Mes.Peak (Mes. peak) (Horizontale)



**1GHz to 6GHz (average value) with copper plate**  
**Vertical & horizontal Polarization**

- FCC Part 15 (intentional radiator) §209 - Classe:- - Moyenne/10.0m/
- Mes.Avg (Mes. Avg) (Verticale)
- Mes.Avg (Mes. Avg) (Horizontale)





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**Final measurement:**

**With and without copper plate**

9kHz to 30MHz					
Polarization	Frequency (MHz)	Peak Level (dB $\mu$ V/m)	QPeak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin QPeak (dB $\mu$ V/m)
all emissions were greater than 20 dB below the limit					

**Final measurement:**

**Without copper plate**

30MHz to 1GHz					
Polarization	Frequency (MHz)	Peak Level (dB $\mu$ V/m)	QPeak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin QPeak (dB $\mu$ V/m)
Vertical	40.6	-	18.56	29.5	10.94
Vertical	108.48	-	28.32	33	4.68
Vertical	216	-	31.11	33	1.89
Vertical	219.7	-	26.38	35.5	9.12
Vertical	324	-	33.57	35.5	1.93
Horizontal	250	-	31.24	35.5	4.26
Horizontal	375	-	32.19	35.5	3.31
Horizontal	540	-	32.25	35.5	3.25
Horizontal	648	-	30.88	35.5	4.62
Horizontal	972.1	-	29.62	43.5	13.88

**With copper plate**

30MHz to 1GHz					
Polarization	Frequency (MHz)	Peak Level (dB $\mu$ V/m)	QPeak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin QPeak (dB $\mu$ V/m)
Vertical	108.48	-	28.32	33	4.68
Vertical	216	-	28.28	33	4.72
Vertical	324	-	31.56	35.5	3.94
Vertical	393.2	-	33.08	35.5	2.42
Vertical	405.1	-	32.11	35.5	3.39
Vertical	756.1	-	31.3	35.5	4.2
Horizontal	162.7	-	30.45	33	2.55
Horizontal	443.4	-	33.04	35.5	2.46
Horizontal	540	-	34.71	35.5	0.79
Horizontal	575	-	30.94	35.5	4.56





**Without copper plate**

	Frequency (MHz)	level peak(dBµV/m)	level average (dBµV/m)	limit peak FCC part.15	Marge peak Fcc Part.15	limit paverage FCC part.15	Marge Average/ Part.15
Vertical	1043.7	36.75	31.54	63.5	26.75	43.5	11.96
Vertical	1188.1	41.58	31.6	63.5	21.92	43.5	11.9
Vertical	1270	41.2	28.79	63.5	22.3	43.5	14.71
Vertical	1297.6	41.12	32.38	63.5	22.38	43.5	11.12
Vertical	1325.5	45.66	32.43	63.5	17.84	43.5	11.07
Vertical	1500	43.33	30.94	63.5	20.17	43.5	12.56
Vertical	1750	41.26	29.53	63.5	22.24	43.5	13.97
Vertical	1768.3	44.1	28.74	63.5	19.4	43.5	14.76
Horizontal	1000	44.59	30.35	63.5	18.91	43.5	13.15
Horizontal	1750	41.19	28.43	63.5	22.31	43.5	15.07
Horizontal	2000	43.76	31.09	63.5	19.74	43.5	12.41

**With copper plate**

	Frequency (MHz)	level peak(dBµV/m)	level average (dBµV/m)	limit peak FCC part.15	Marge peak Fcc Part.15	limit paverage FCC part.15	Marge Average/ Part.15
Vertical	1109.7	45.21	31.6	63.5	18.29	43.5	11.9
Vertical	1188.1	41.58	28.79	63.5	21.92	43.5	14.71
Vertical	1250	49.68	33.37	63.5	13.82	43.5	10.13
Vertical	1297.6	40.41	30.26	63.5	23.09	43.5	13.24
Vertical	1325.5	45.66	29.53	63.5	17.84	43.5	13.97
Vertical	1403.6	41.82	28.74	63.5	21.68	43.5	14.76
Vertical	1500	43.33	30.35	63.5	20.17	43.5	13.15
Vertical	1750	41.26	28.45	63.5	22.24	43.5	15.05
Horizontal	1000	44.95	31.82	63.5	18.55	43.5	11.68
Horizontal	1250	41.26	32.48	63.5	22.24	43.5	11.02
Horizontal	2000	44.18	31.3	63.5	19.32	43.5	12.2

**7.7. CONCLUSION**

Field strength outside of the bands 13.110-14.010 MHz measurement performed on the sample of the product **COMPOZ COMPOZ5**, SN: **20346DNG01000A**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.225 & RSS-Gen limits.

## 8. FIELD STRENGTH WITHIN THE BAND 13.110-14.010MHZ

### 8.1. TEST CONDITIONS

Test performed by : Laurent DENEUX  
 Date of test : October 18, 2021 to November 16, 2021  
 Ambient temperature : 20 °C  
 Relative humidity : 48 %

### 8.2. TEST SETUP

Measurement procedure:

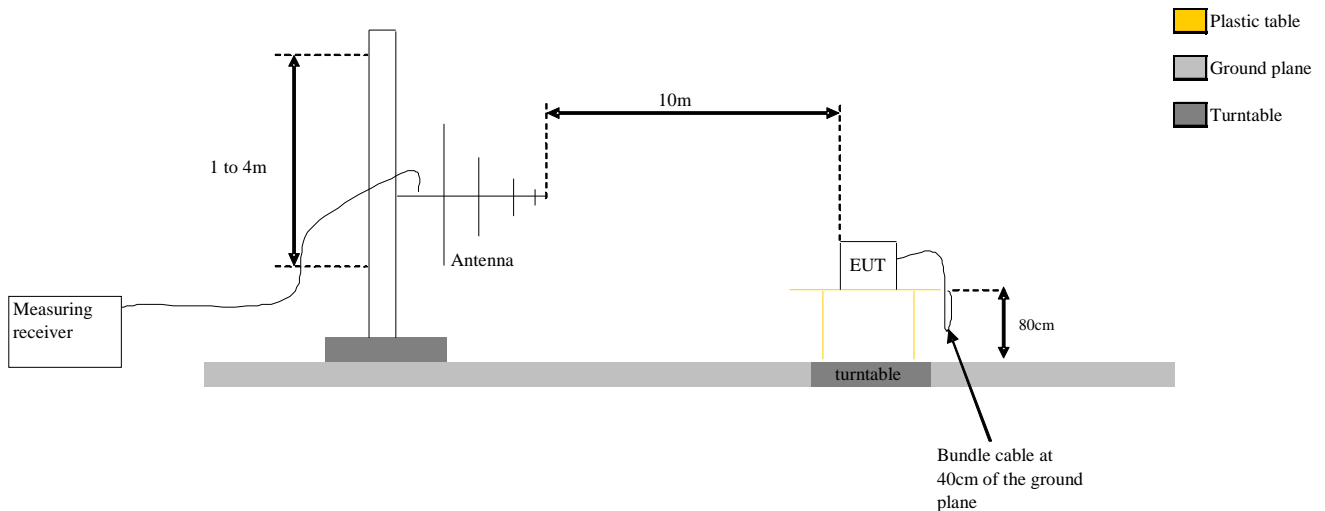
- Open Area Test Site
- Open Area Test Site + Test fixture in climatic chamber

The product has been tested according to ANSI C63.10.

The EUT is placed **on an open area test site**. Distance between measuring antenna and the EUT is **Distance**.

Test is performed in parallel, perpendicular and ground parallel axis with a loop antenna below 30MHz.

Measurement bandwidth was 9kHz between 150kHz & 30MHz. The level has been maximised by the turntable rotation of 360 degrees range on all axis of EUT used in normal configuration. Antenna height search was performed from 1 to 4m. The EUT is place at 0.8m.



Test Set up for radiated measurement in open area test site

For measurement with test fixture is used, the power level calibration of the spectrum analyzer shall then be related to the power level or field strength measured with temperature during OATS measure taking in consideration in climatic chamber. The calculation will be used to calculate the absolute level of the sideband power.

#### **Frequency band 13.110-14.010MHz**

Following plots show radiated emission level in the frequency band 13.110-14.010MHz with a RBW of 9kHz and a quasi-peak detector. The graphs are obtained with a measuring receiver.



Photograph for Field strength within the band 13.110-14.010MHz

### 8.3. LIMIT

Frequency (MHz)	Field strength ( $\mu\text{V/m}$ ) @30m	Field strength ( $\text{dB}\mu\text{V/m}$ ) @30m	Field strength ( $\text{dB}\mu\text{V/m}$ ) @3m
13.553-13.567	15 848	84.0	124.0
13.410-13.553 13.567-13.710	334.0	50.5	90.5
13.110-13.410 13.710-14.010	106.0	40.5	80.5
Below 13.110MHz Above 14.010MHz	30.0	29.5	69.5

### 8.4. TEST EQUIPMENT LIST

Description	Manufacturer	Model	Identifier	Last Calibration date	Calibration due date
Open test site	LCIE	-	F2000400	2021-02	2022-02
EMI Test Receiver	ROHDE & SCHWARZ	ESU	A2642018	2020-10	2022-10
Cable	-	-	A5329416	2021-02	2022-02
Cable	-	-	A5329442	2020-12	2021-12
Loop antenna	R&S	HFH2-Z2	C2040269	2020-09	2022-09

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

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

None       Divergence:



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## 8.6. RESULTS

Parallel Axis without copper plate			
Frequency (MHz)	Peak Level (dB $\mu$ V/m) (3m)	QPeak Level (dB $\mu$ V/m) (3m)	Limit (dB $\mu$ V/m) (3m)
Below 13.110	-	29.5	69.5
13.110 to 13.410	-	41.7	80.5
13.410 to 13.553	-	41	90.5
13.553 to 13.567	-	64.6	124.0
13.567 to 13.710	-	43.2	90.5
13.710 to 14.010	-	40.9	80.5
Above 14.010	-	30.7	69.5

Ground Parallel Axis without copper plate			
Frequency (MHz)	Peak Level (dB $\mu$ V/m) (3m)	QPeak Level (dB $\mu$ V/m) (3m)	Limit (dB $\mu$ V/m) (3m)
Below 13.110	-	30.8	69.5
13.110 to 13.410	-	45.3	80.5
13.410 to 13.553	-	50	90.5
13.553 to 13.567	-	61.6	124.0
13.567 to 13.710	-	47.6	90.5
13.710 to 14.010	-	44.6	80.5
Above 14.010	-	32	69.5

Perpendicular Axis without copper plate			
Frequency (MHz)	Peak Level (dB $\mu$ V/m) (3m)	QPeak Level (dB $\mu$ V/m) (3m)	Limit (dB $\mu$ V/m) (3m)
Below 13.110	-	32	69.5
13.110 to 13.410	-	34.2	80.5
13.410 to 13.553	-	35.5	90.5
13.553 to 13.567	-	50.9	124
13.567 to 13.710	-	31.5	90.5
13.710 to 14.010	-	31	80.5
Above 14.010	-	32.8	69.5



Parallel Axis with copper plate			
Frequency (MHz)	Peak Level (dBµV/m) (3m)	QPeak Level (dBµV/m) (3m)	Limit (dBµV/m) (3m)
Below 13.110	-	31.7	69.5
13.110 to 13.410	-	39.8	80.5
13.410 to 13.553	-	40.1	90.5
13.553 to 13.567	-	62.1	124.0
13.567 to 13.710	-	37.9	90.5
13.710 to 14.010	-	33.1	80.5
Above 14.010	-	31	69.5

Ground Parallel Axis with copper plate			
Frequency (MHz)	Peak Level (dBµV/m) (3m)	QPeak Level (dBµV/m) (3m)	Limit (dBµV/m) (3m)
Below 13.110	-	30.6	69.5
13.110 to 13.410	-	33.1	80.5
13.410 to 13.553	-	36.9	90.5
13.553 to 13.567	-	50.3	124.0
13.567 to 13.710	-	36.3	90.5
13.710 to 14.010	-	33.3	80.5
Above 14.010	-	31.8	69.5

Perpendicular Axis with copper plate			
Frequency (MHz)	Peak Level (dBµV/m) (3m)	QPeak Level (dBµV/m) (3m)	Limit (dBµV/m) (3m)
Below 13.110	-	29.5	69.5
13.110 to 13.410	-	31.9	80.5
13.410 to 13.553	-	34.2	90.5
13.553 to 13.567	-	50.7	124
13.567 to 13.710	-	35.4	90.5
13.710 to 14.010	-	32.6	80.5
Above 14.010	-	30.7	69.5

## 8.7. CONCLUSION

Field strength within the band 13.110-14.010MHz measurement performed on the sample of the product **COMPOZ COMPOZ5**, SN: **20346DNG01000A**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.225 & RSS 210 limits.

## 9. UNCERTAINTIES CHART

47 CFR Part 15.209 & 15.207 Kind of test	Wide uncertainty laboratory (k=2) ±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