902MHz-928MHz Template: Release August 08th, 2017

TEST REPORT

N°: 149480-706272 **Version : 01**

Subject **Radio spectrum matters**
tests according to standards:
47 CFR Part 15.247 & RSS-247 Issue 2 & RSS-Gen Issue 4

Issued to

VELUX America Inc. 1418 Evans Pond Road, Greenwood, SC 29649, USA	VELUX Canada Inc 2740 Sherwood Heights, Drive, Oakville, Ontario L6J7V5, CANADA

Apparatus under test

Product	**VELUX ACTIVE DEPARTURE SWITCH**
Trade mark	**VELUX ACTIVE with NETATMO**
Manufacturer	**VELUX A/S**
Model under test	**NXD01S**
Serial number	**-**
FCC ID	**XSG-831593**
IC ID	**8642A-831593**
Industry Canada Number	6230B(FAR) & 6230B-1(Ecuelles)

Test date : November 17, 2017 to November 23, 2017
Test location Fontenay Aux Roses
Composition of document 35 pages

Document issued on December 21, 2017

Written by :
Armand MAHOUNGOU
Tests operator

Approved by :
Arnaud FAYETTE
Technical manager

PUBLICATION HISTORY

Version	Date	Author	Modification
01	November 24, 2017	Armand MAHOUNGOU	Creation of the document

SUMMARY

1. TEST PROGRAM

References

- **47 CFR Part 15.247**
- **RSS 247 Issue 2**
- **RSS Gen Issue 4**
- **KDB 558074 D01 DTS Meas Guidance v04**
- **ANSI C63.10-2013**

Radio requirement:

Clause (47CFR Part 15.247 & RSS-247 Issue 2 & RSS-Gen Issue 4) Test Description	Test result - Comments			
Occupied Bandwidth	☑ PASS	☐ FAIL	☐ NA	☐ NP(1)
6dB Bandwidth	☑ PASS	☐ FAIL	☐ NA()	☐ NP(1)
Duty Cycle	☑ PASS	☐ FAIL	☐ NA	☐ NP(1)
Maximum Conducted Output Power	☑ PASS	☐ FAIL	☐ NA	☐ NP(1)
Power Spectral Density	☑ PASS	☐ FAIL	☐ NA	☐ NP(1)
Conducted Spurious Emission at the Band Edge	☑ PASS	☐ FAIL	☐ NA()	☐ NP(1)
Unwanted Emissions into Non-Restricted Frequency Bands	☑ PASS	☐ FAIL	☐ NA()	☐ NP(1)
AC Power Line Conducted Emission	☐ PASS	☐ FAIL	☑ NA(2)	☐ NP(1)
Unwanted Emissions into Restricted Frequency Bands	☑ PASS	☐ FAIL	☐ NA	☐ NP(1)
Receiver Radiated emissions	☑ PASS (3)	☐ FAIL	☐ NA	☐ 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): Include in unwanted emission into non restricted frequency band

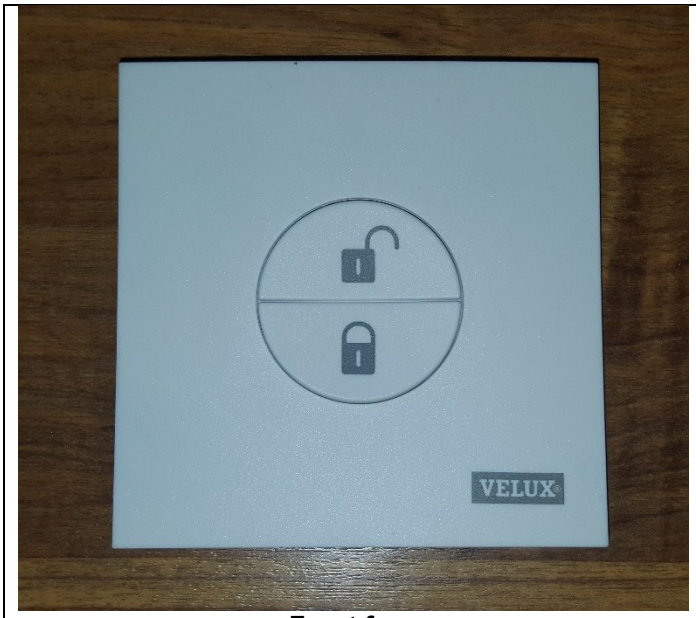
PASS: EUT complies with standard's requirement
FAIL: EUT does not comply with standard's requirement
NA: Not Applicable
NP: Test Not Performed

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

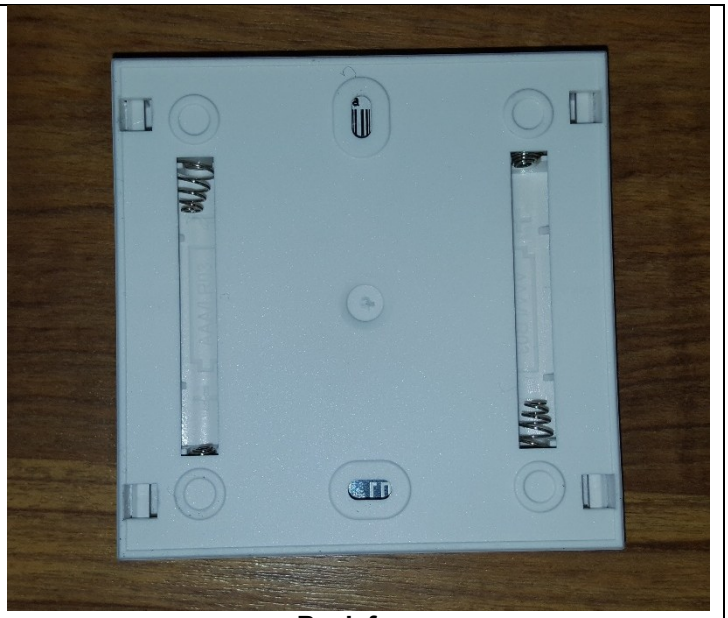
2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):

VELUX ACTIVE with NETATMO NXD01 **Serial Number: -**



Front face



Back face

Equipment Under Test

Equipment information:

Frequency band:	[902 – 928] MHz			
Number of Channel:	2			
Antenna Type:	☑ Integral	☐ External	☐ Dedicated	
Antenna connector:	☐ Yes	☐ No	☑ Temporary for test	
Transmit chains:	☑ 1	☐ 2		
Receiver chains	☑ 1	☐ 2		
Type of equipment:	☑ Stand-alone	☐ Plug-in	☐ Combined	
Duty cycle:	☑ Continuous duty	☐ Intermittent duty	☐ 100% duty	
Equipment type:	☑ Production model	☐ Pre-production model		
Operating temperature range:	Tmin:	☐ -20°C	☑ 0°C	☐ X°C
	Tnom:	20°C		
	Tmax:	☐ 35°C	☑ 55°C	☐ X°C
Type of power source:	☐ AC power supply	☐ DC power supply	☑ Battery	
Operating voltage range:	Vnom:	☐ 120V/60Hz	☑ 3.0 Vdc	

Antenna Characteristic			
Antenna assembly	**Gain (dBi)**	**Frequency Band (MHz)**	**Impedance(Ω)**
1	0.95	922.2	50

CHANNEL PLAN	
Channel	**Frequency (MHz)**
Cmin	922.2
Cmax	922.6

Modulation Type	Worst Case Modulation
GFSK	☑

2.2. RUNNING MODE

The EUT is set in the following modes during tests:
- Permanent emission with modulation on a fixed channel in the data rate that produced the highest power
- Permanent reception

2.3. EQUIPMENT LABELLING

2.4. EQUIPMENT MODIFICATION

☑ None ☐ Modification:

3. OCCUPIED BANDWIDTH

3.1. TEST CONDITIONS

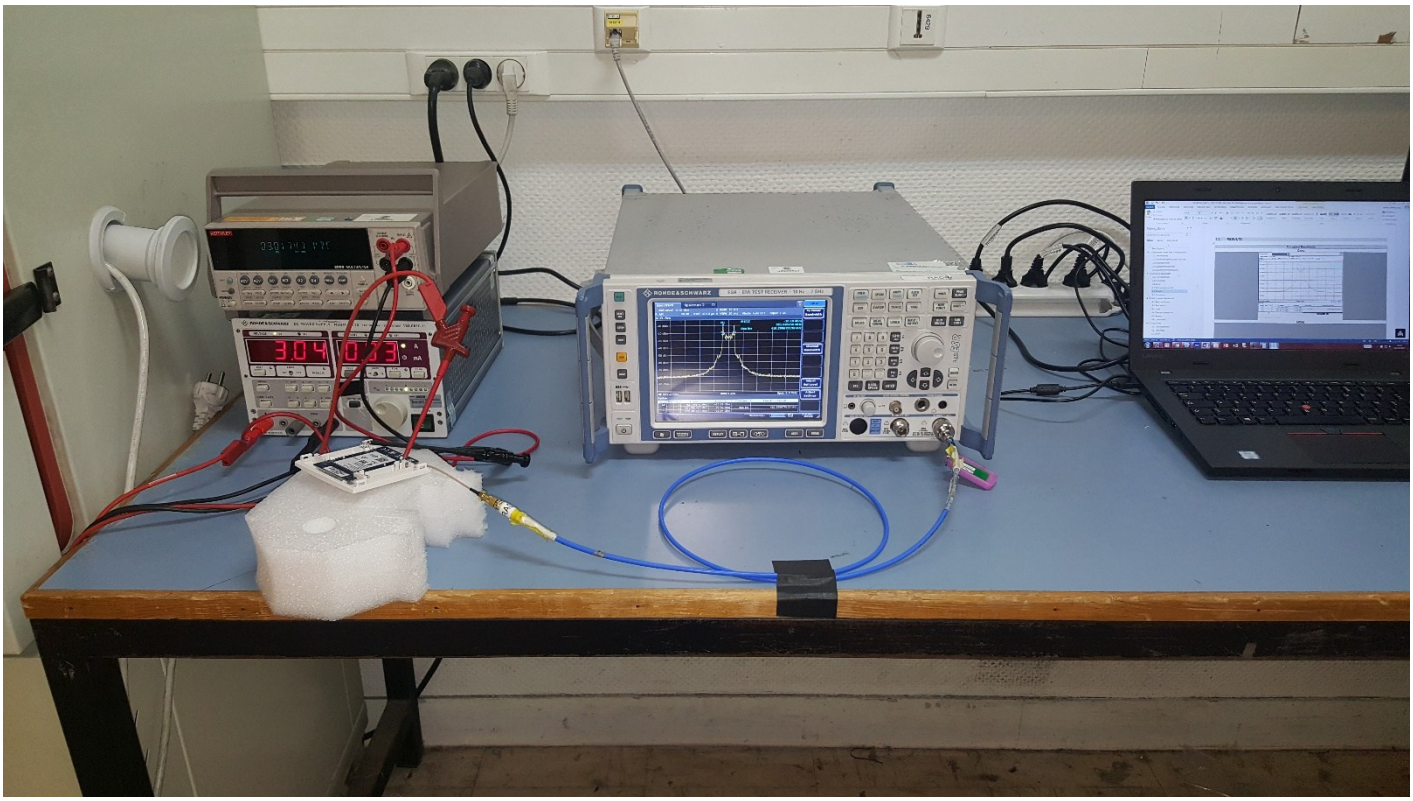
Test performed by : Armand MAHOUNGOU
Date of test : November 17, 2017
Ambient temperature : 27 °C
Relative humidity : 44 %

3.2. TEST SETUP

- The Equipment Under Test is installed:
☑ On a table
☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:
☑ Conducted Method
☐ Radiated Method

- Test Procedure:
☑ RSS-Gen Issue 4 § 6.6
☑ ANSI C63.10 § 6.9.2



Photograph for Occupied bandwidth

3.1. LIMIT

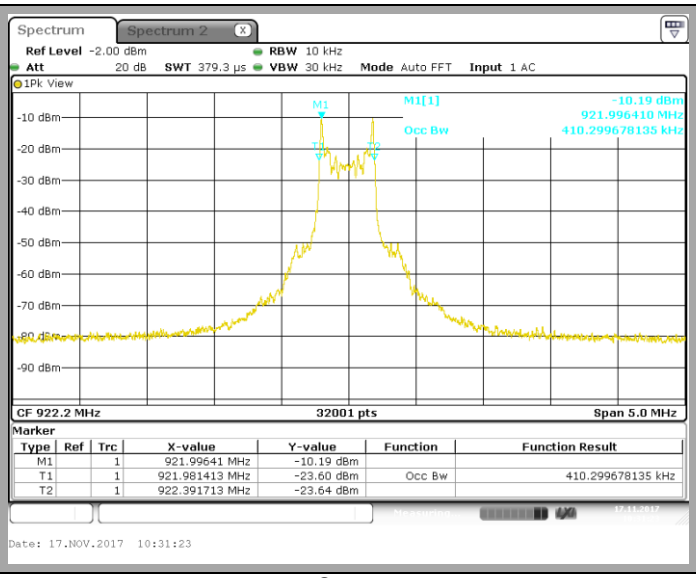
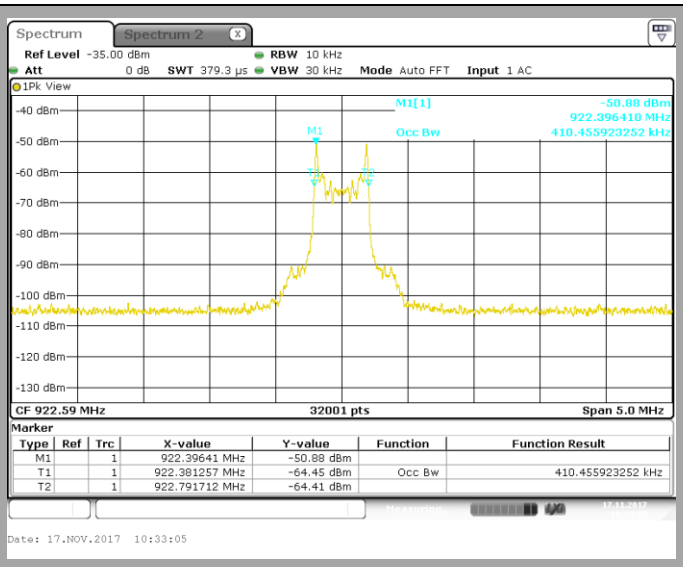
None

3.2. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Multi-meter	KEITHLEY	2000	A1242090	2016/06	2018/06
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2017/09	2018/09
Programmable DC power supply	ROHDE & SCHWARZ	NGSM32/10	A7040074	2016/06	2018/06

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

3.3. RESULTS

Occupied Bandwidth	
Cmin	
	
Cmax	
	
Channel	Occupied Bandwidth (kHz)
Cmin	410.299
Cmax	410.456

3.1. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **VELUX ACTIVE with NETATMO NXD01**, SN: **-**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS-GEN ISSUE 4** limits.

4. 6DB EMISSION BANDWIDTH

4.1. TEST CONDITIONS

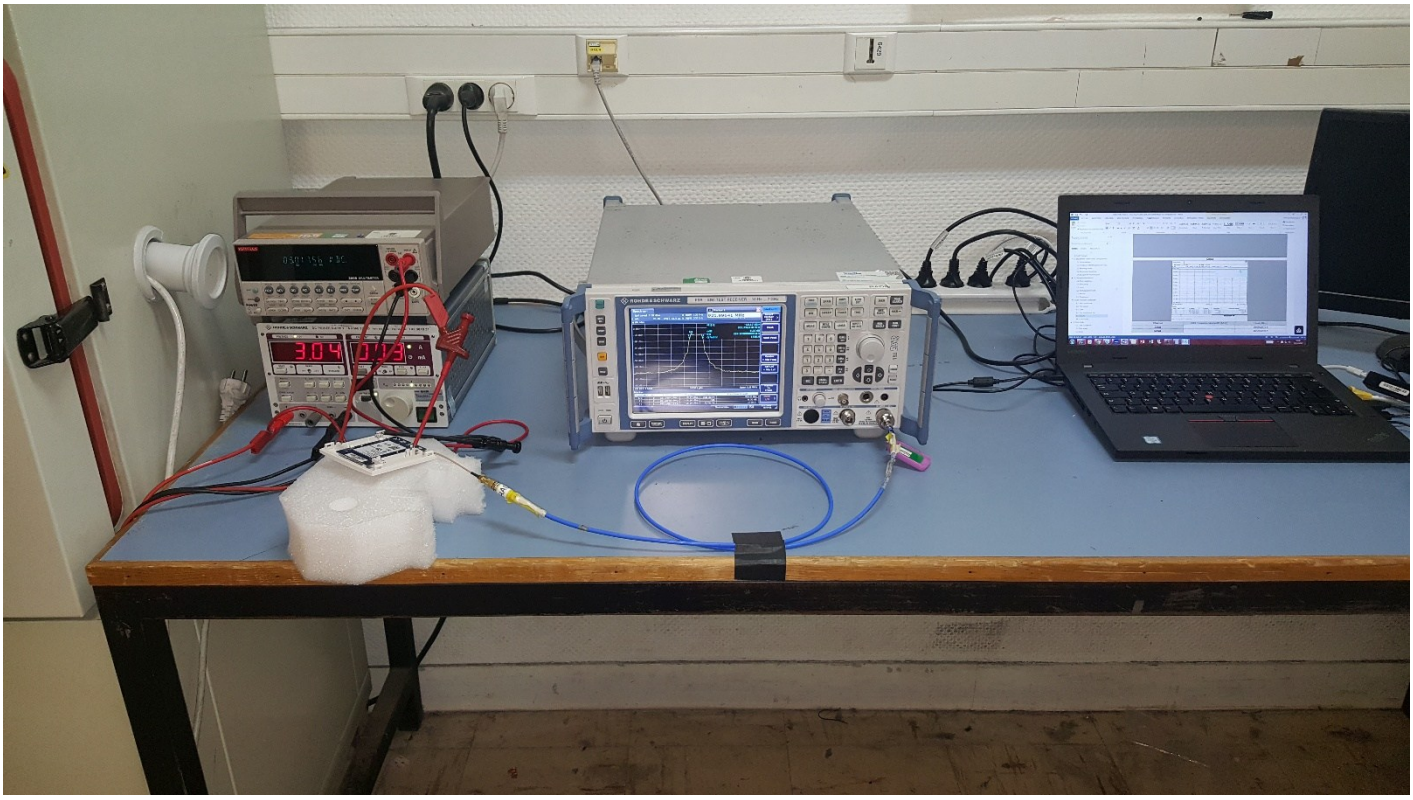
Test performed by : Armand MAHOUNGOU
Date of test : November 17, 2017
Ambient temperature : 27 °C
Relative humidity : 44 %

4.2. TEST SETUP

- The Equipment Under Test is installed:
☑ On a table
☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:
☑ Conducted Method
☐ Radiated Method

- Test Procedure:
☐ KDB 558074 D01 DTS Meas Guidance v04 § 8.1
☑ KDB 558074 D01 DTS Meas Guidance v04 § 8.2



Photograph for 6dB emission bandwidth

4.3. LIMIT

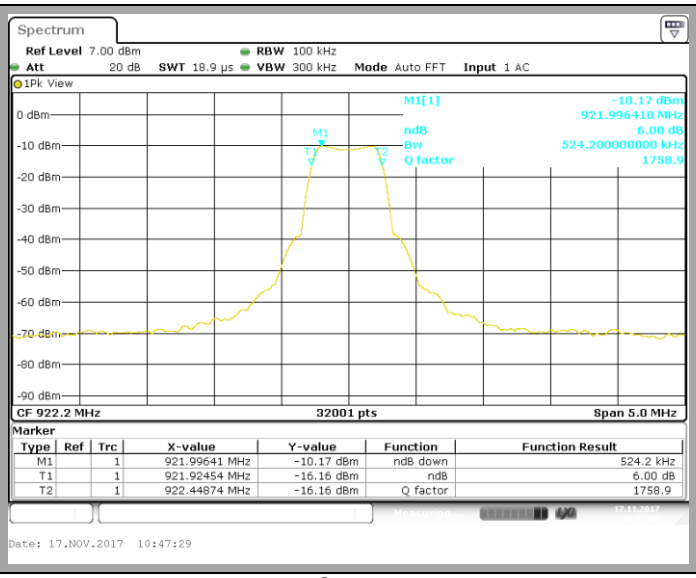
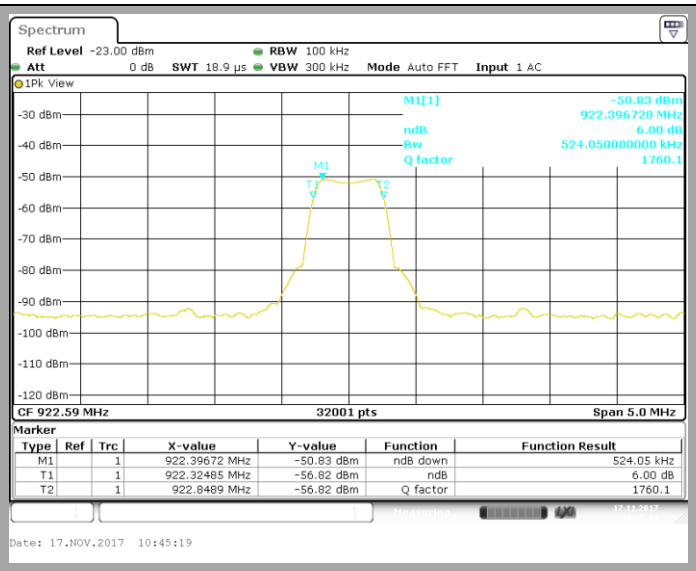
The 6dB bandwidth shall be at least 500kHz

4.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Multi-meter	KEITHLEY	2000	A1242090	2016/06	2018/06
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2017/09	2018/09
Programmable DC power supply	ROHDE & SCHWARZ	NGSM32/10	A7040074	2016/06	2018/06

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

4.5. RESULTS

6dB Emission Bandwidth		
Cmin		
		
Cmax		
		
Channel	6dB Emission Bandwidth (kHz)	Limit (kHz)
Cmin	524.20	Minimum 500
Cmax	524.05	Minimum 500

4.6. CONCLUSION

6dB Emission Bandwidth measurement performed on the sample of the product **VELUX ACTIVE with NETATMO NXD01**, SN: **-**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

5. DUTY CYCLE

5.1. TEST CONDITIONS

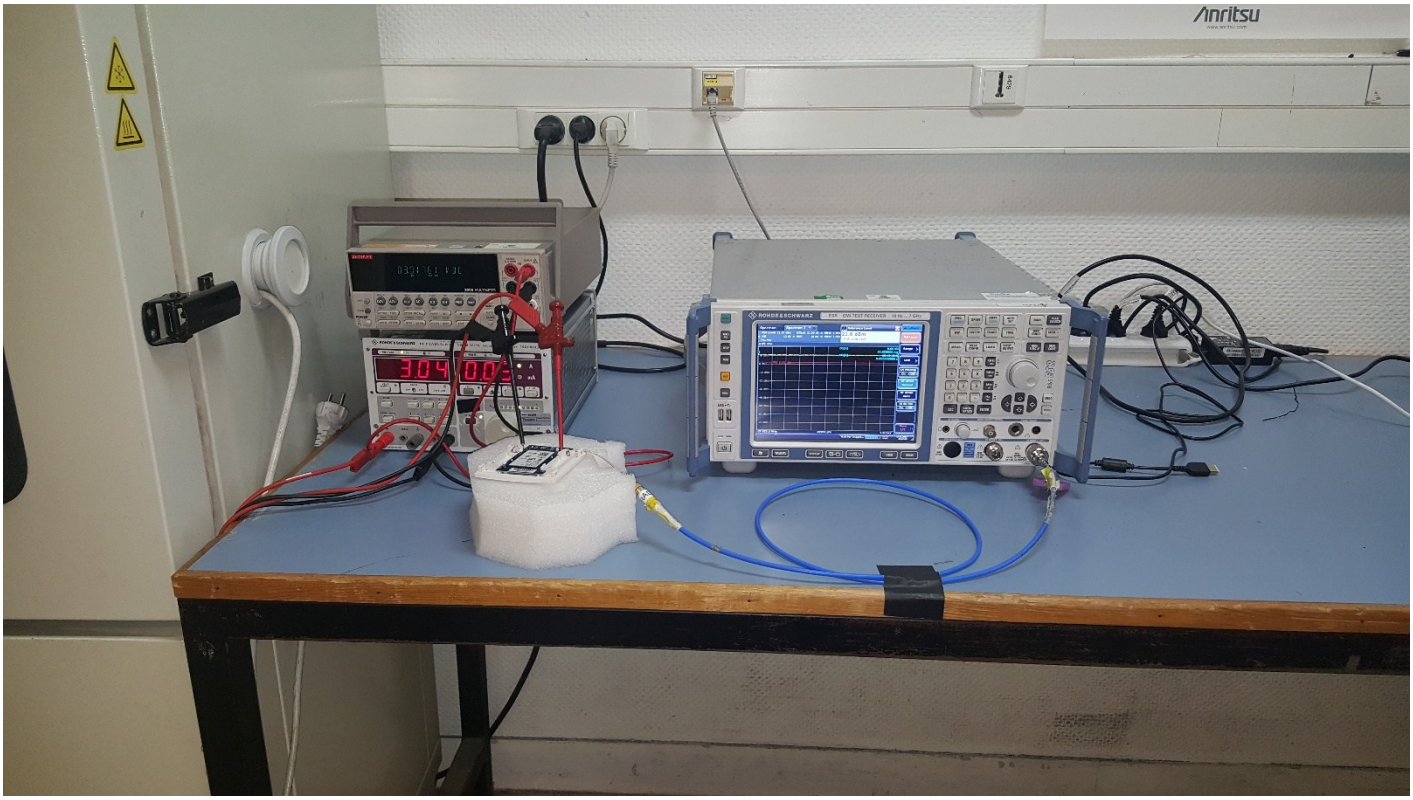
Test performed by : Armand MAHOUNGOU
Date of test : November 17, 2017
Ambient temperature : 27 °C
Relative humidity : 44 %

5.2. TEST SETUP

- The Equipment Under Test is installed:
☑ On a table
☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:
☑ Conducted Method
☐ Radiated Method

- Test Procedure:
☑ KDB 558074 D01 DTS Meas Guidance v04 § 6.0 b)



Photograph for Duty Cycle

5.3. LIMIT

None

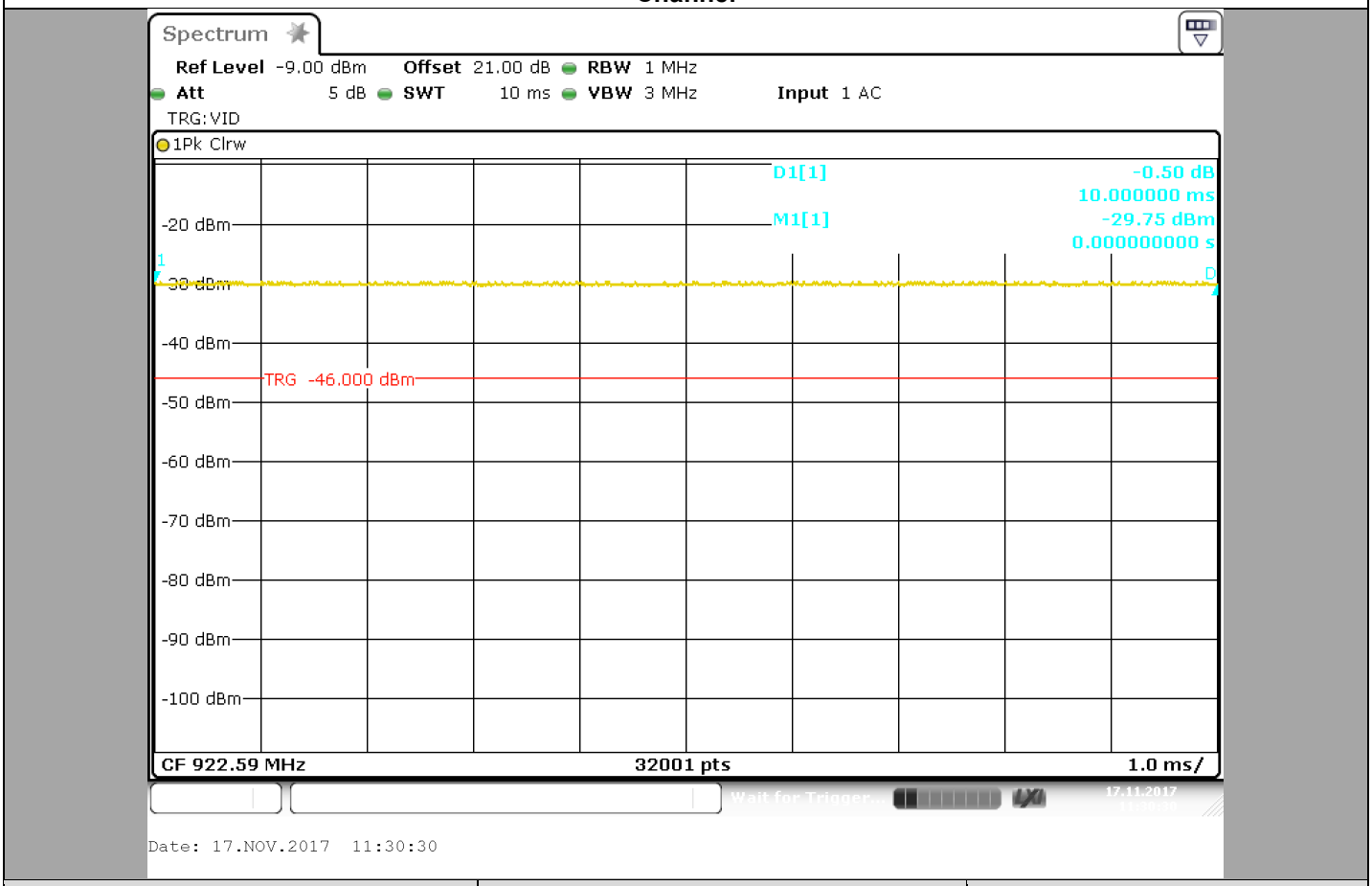
5.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Multi-meter	KEITHLEY	2000	A1242090	2016/06	2018/06
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2017/09	2018/09
Programmable DC power supply	ROHDE & SCHWARZ	NGSM32/10	A7040074	2016/06	2018/06

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

5.5. RESULTS

Duty Cycle
Channel



Channel	Duty Cycle (%)	Duty Cycle Correction (dB)
Channel	100	0

5.6. CONCLUSION

Duty Cycle measurement performed on the sample of the product **VELUX ACTIVE with NETATMO NXD01** , SN: **-**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

6. MAXIMUM CONDUCTED OUTPUT POWER

6.1. TEST CONDITIONS

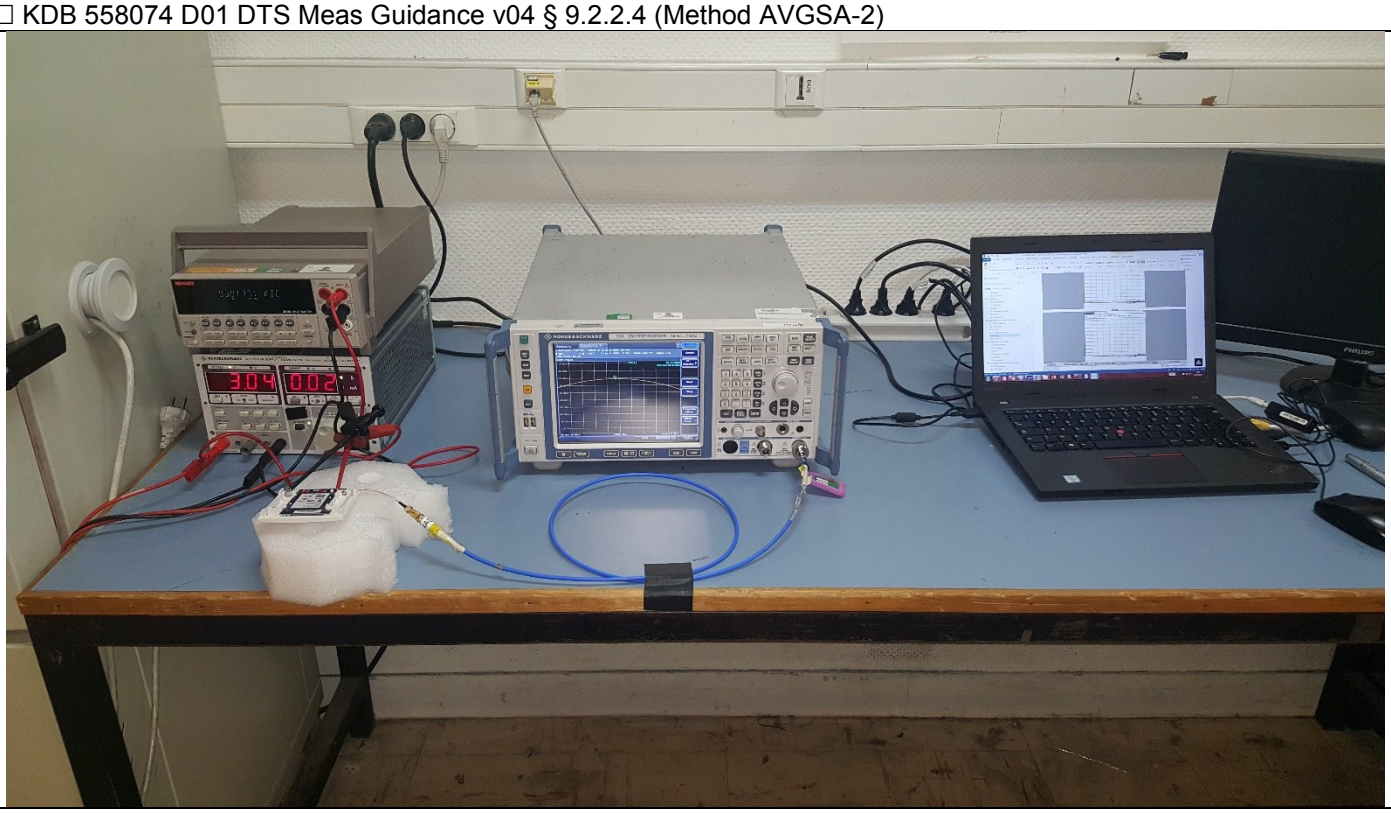
Test performed by : Armand MAHOUNGOU
Date of test : November 17, 2017
Ambient temperature : 27 °C
Relative humidity : 44 %

6.2. TEST SETUP

- The Equipment Under Test is installed:
☑ On a table
☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:
☑ Conducted Method
☐ Radiated Method

- Test Procedure:
☐ KDB 558074 D01 DTS Meas Guidance v04 § 9.1.1 (RBW≥DTS bandwidth)
☑ KDB 558074 D01 DTS Meas Guidance v04 § 9.2.2.2 (Method AVGSA-1)
☐ KDB 558074 D01 DTS Meas Guidance v04 § 9.2.2.4 (Method AVGSA-2)



Photograph for Maximum Conducted Output Power

6.3. LIMIT

Maximum Conducted Output power:
902MHz-928MHz : Shall not exceed 30dBm
Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

6.4. TEST EQUIPMENT LIST

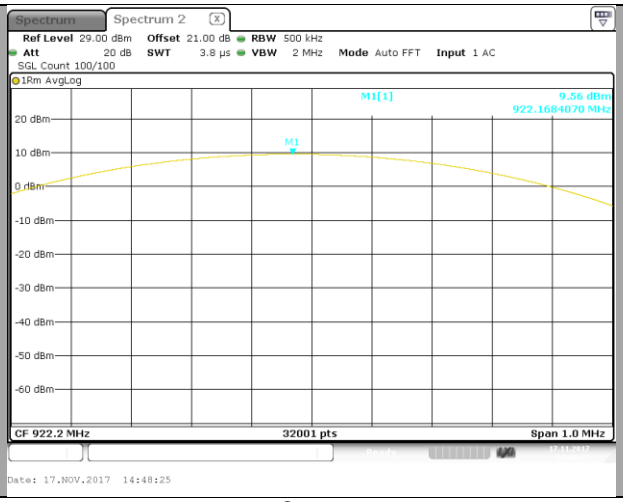
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Multi-meter	KEITHLEY	2000	A1242090	2016/06	2018/06
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2017/09	2018/09
Programmable DC power supply	ROHDE & SCHWARZ	NGSM32/10	A7040074	2016/06	2018/06

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

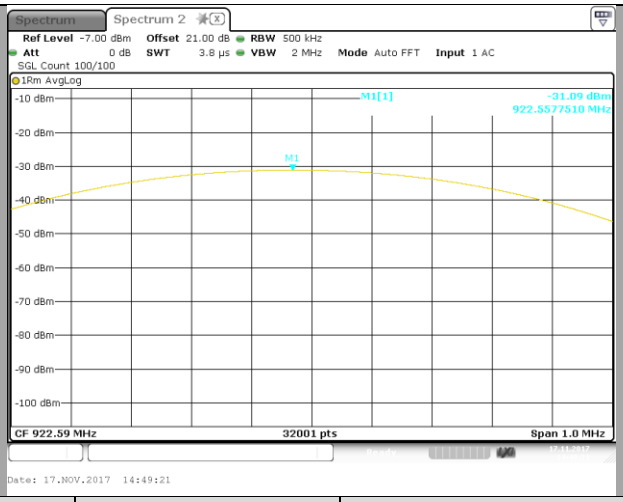
6.5. RESULTS

Maximum Conducted Output Power

Cmin



Cmax



Channel	Offset Cable + Att (dB)	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Limit (dBm)
Cmin	21.0	0.95	9.56	30
Cmax	21.0	0.95	-31.09	30

6.6. CONCLUSION

Maximum Conducted Output Power measurement performed on the sample of the product **VELUX ACTIVE with NETATMO NXD01**, SN: **-**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

7. POWER SPECTRAL DENSITY

7.1. TEST CONDITIONS

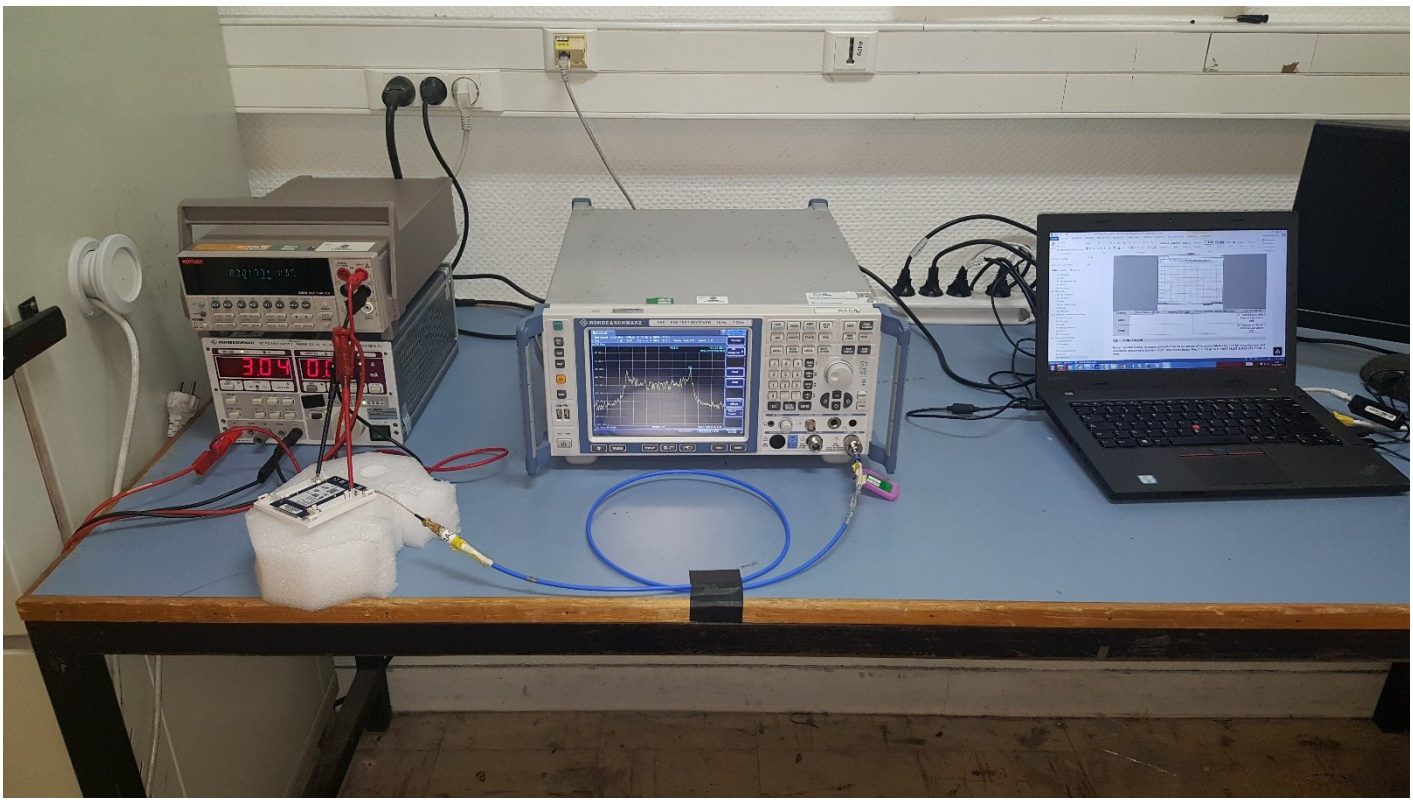
Test performed by : Armand MAHOUNGOU
Date of test : November 17, 2017
Ambient temperature : 27 °C
Relative humidity : 44 %

7.2. TEST SETUP

- The Equipment Under Test is installed:
☑ On a table
☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:
☑ Conducted Method
☐ Radiated Method

- Test Procedure:
☐ KDB 558074 D01 DTS Meas Guidance v04 § 10.2 (Method PKPSD)
☑ KDB 558074 D01 DTS Meas Guidance v04 § 10.3 (Method AVGPSD-1)



Photograph for Power Spectral Density

7.1. LIMIT

Power Spectral Density:
902MHz-928MHz : Shall not exceed 8dBm/3kHz
Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

7.2. TEST EQUIPMENT LIST

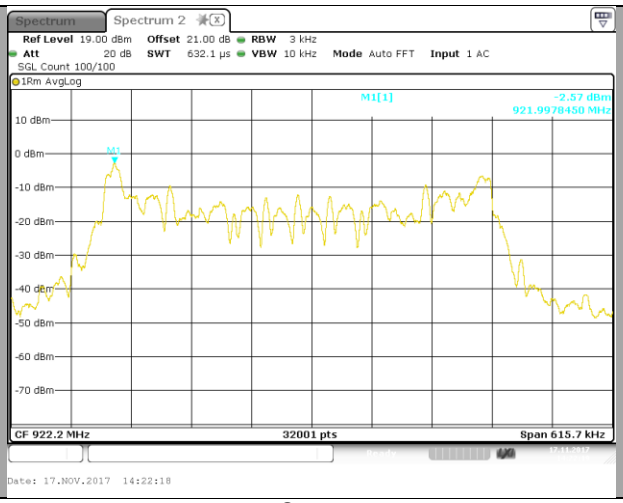
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Multi-meter	KEITHLEY	2000	A1242090	2016/06	2018/06
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2017/09	2018/09
Programmable DC power supply	ROHDE & SCHWARZ	NGSM32/10	A7040074	2016/06	2018/06

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

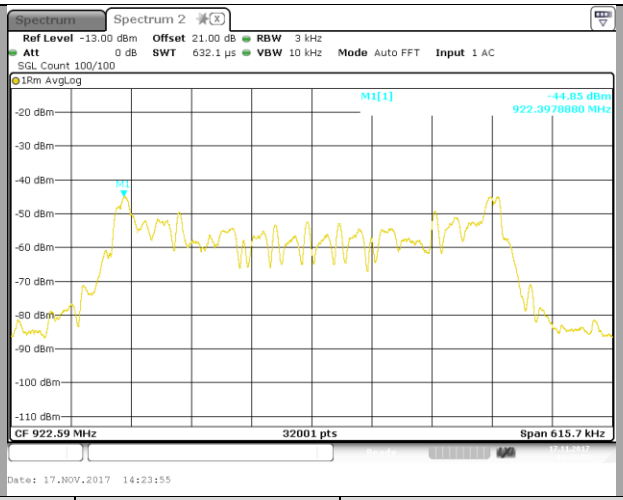
7.3. RESULTS

Power Spectral Density

Cmin



Cmax



Channel	Offset Cable + Att (dB)	Antenna Gain (dBi)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
Cmin	21.0	0.95	-2.57	8
Cmax	21.0	0.95	-44.85	8

7.4. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **VELUX ACTIVE with NETATMO NXD01**, SN: **-**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

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

8.1. TEST CONDITIONS

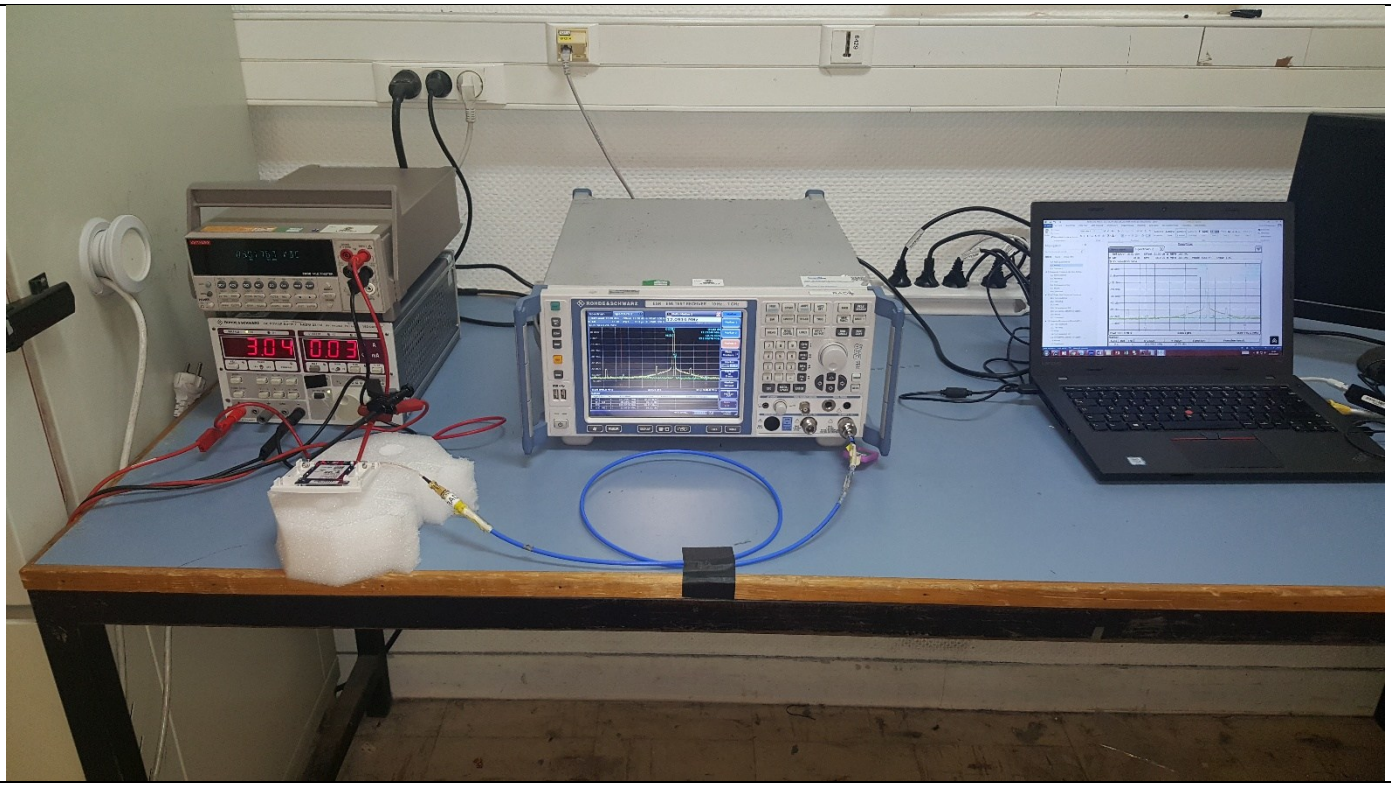
Test performed by : Armand MAHOUNGOU
Date of test : November 17, 2017
Ambient temperature : 27 °C
Relative humidity : 44 %

8.2. TEST SETUP

- The Equipment Under Test is installed:
☑ On a table
☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:
☑ Conducted Method
☐ Radiated Method

- Test Procedure:
☑ KDB 558074 D01 DTS Meas Guidance v04 § 11



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

8.3. LIMIT

All Spurious Emissions must be at least 30dB (Average Conducted Power) below the Fundamental Radiator Level at the Band Edge Edge “902MHz & 928MHz”

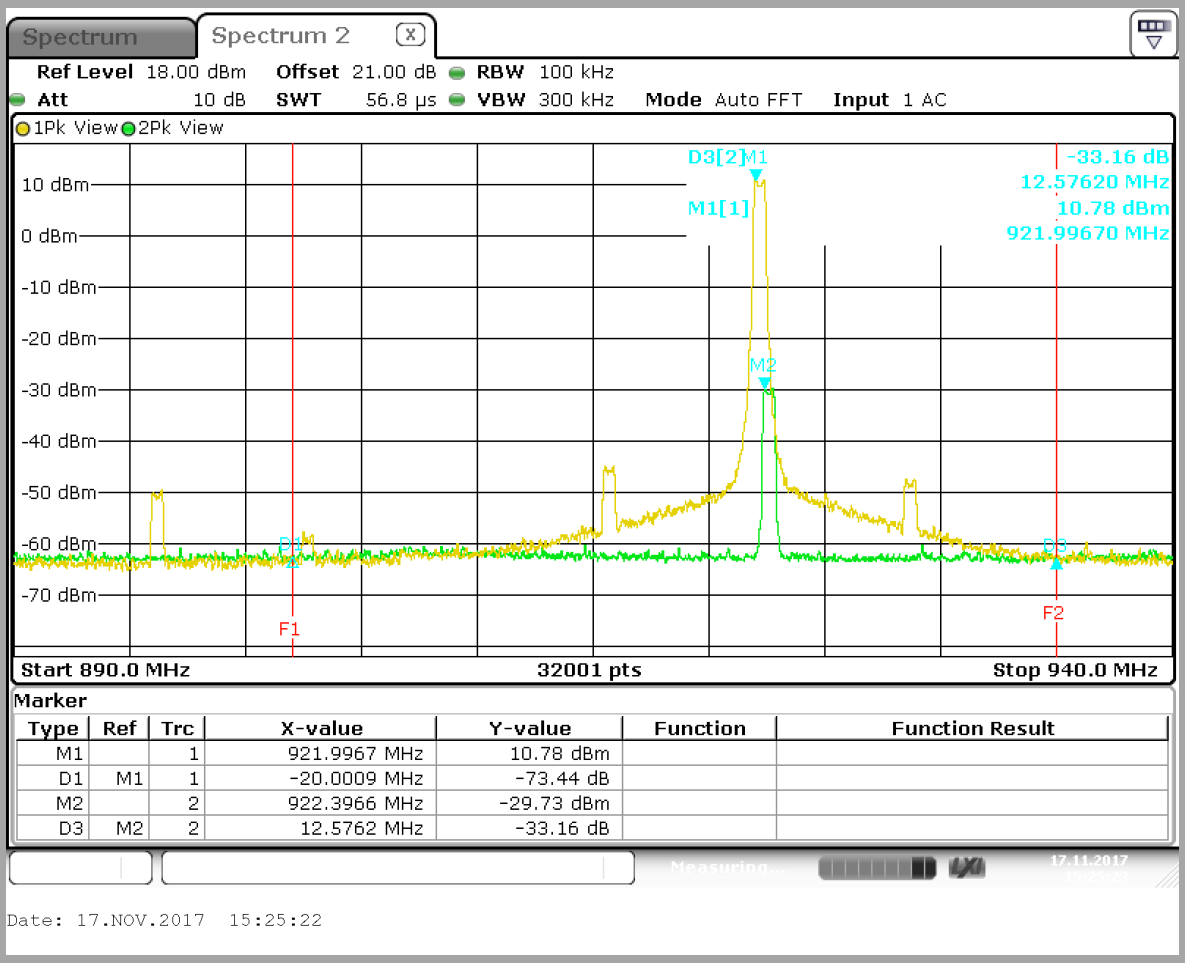
8.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Multi-meter	KEITHLEY	2000	A1242090	2016/06	2018/06
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2017/09	2018/09
Programmable DC power supply	ROHDE & SCHWARZ	NGSM32/10	A7040074	2016/06	2018/06

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

8.5. RESULTS

Cmin/Cmax



Frequency (MHz)	Level (dBc)	Limit (dBc)
902	-73.44	30
928	-33.16	30

8.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands at the band edge measurement performed on the sample of the product **VELUX ACTIVE with NETATMO NXD01**, SN: **-**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

9. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS

9.1. TEST CONDITIONS

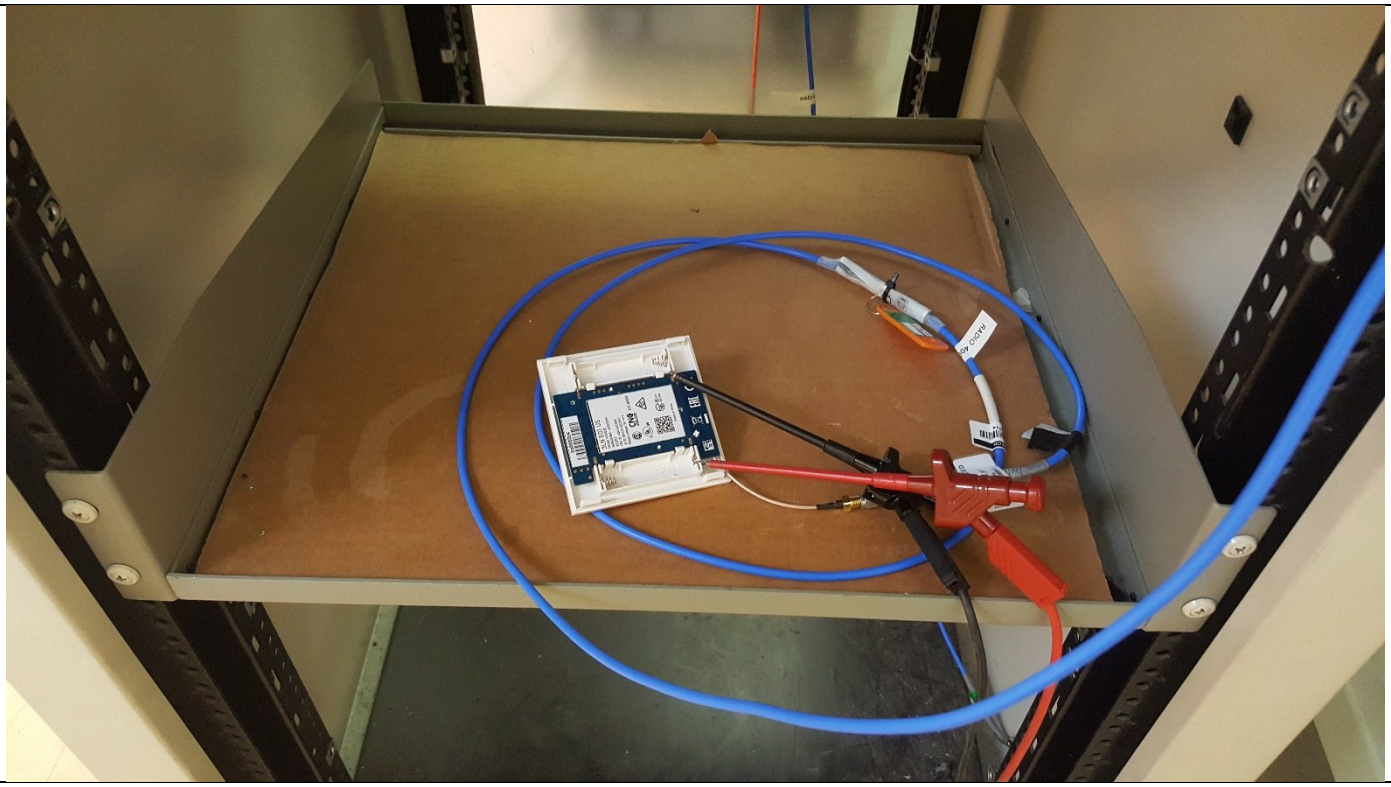
Test performed by : Armand MAHOUNGOU
Date of test : November 16, 2017
Ambient temperature : 24 °C
Relative humidity : 44 %

9.2. TEST SETUP

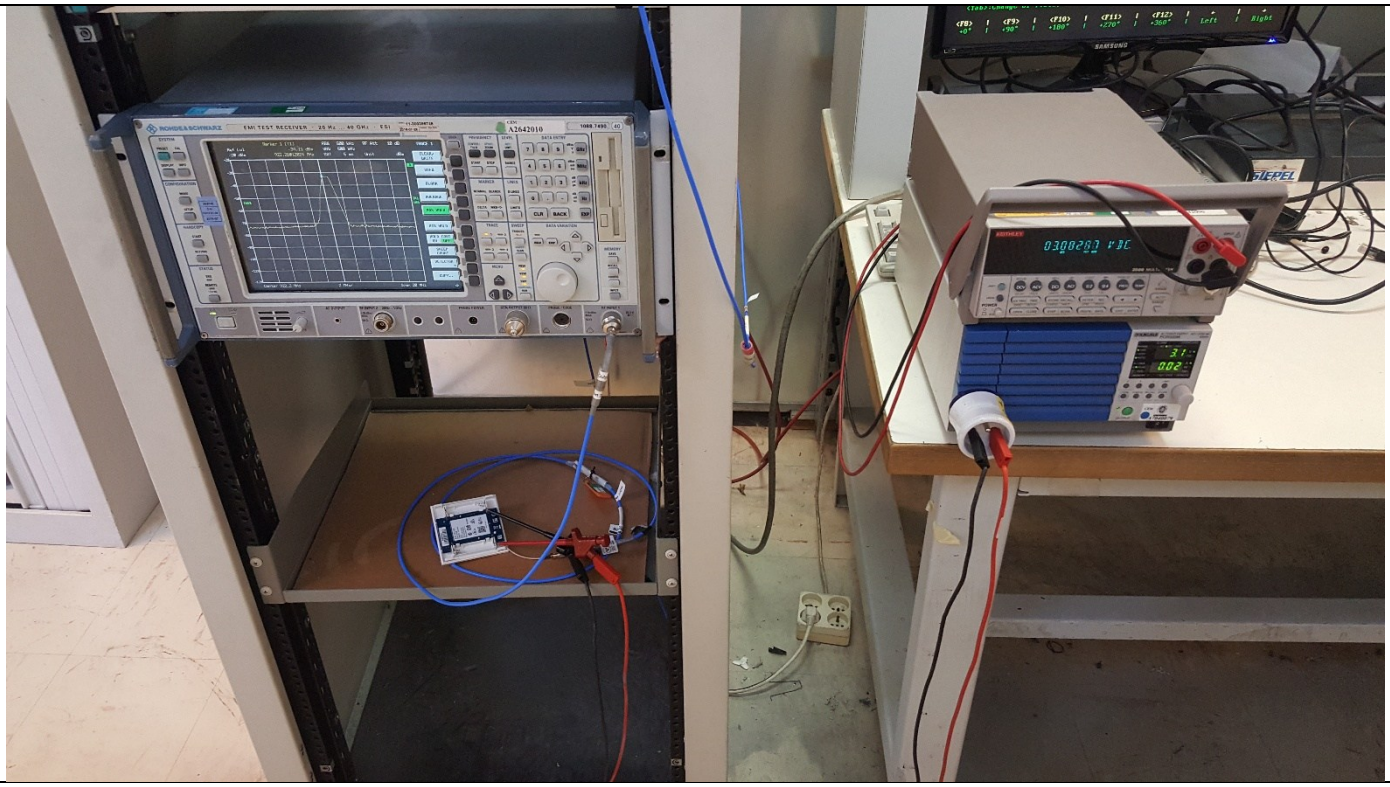
- The Equipment Under Test is installed:
☑ On a table
☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:
☑ Conducted Method
☐ Radiated Method

- Test Procedure:
☑ KDB 558074 D01 DTS Meas Guidance v04 § 11



Photograph for Unwanted Emission into non-restricted frequency bands



Photograph for Unwanted Emission into non-restricted frequency bands

9.3. LIMIT

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

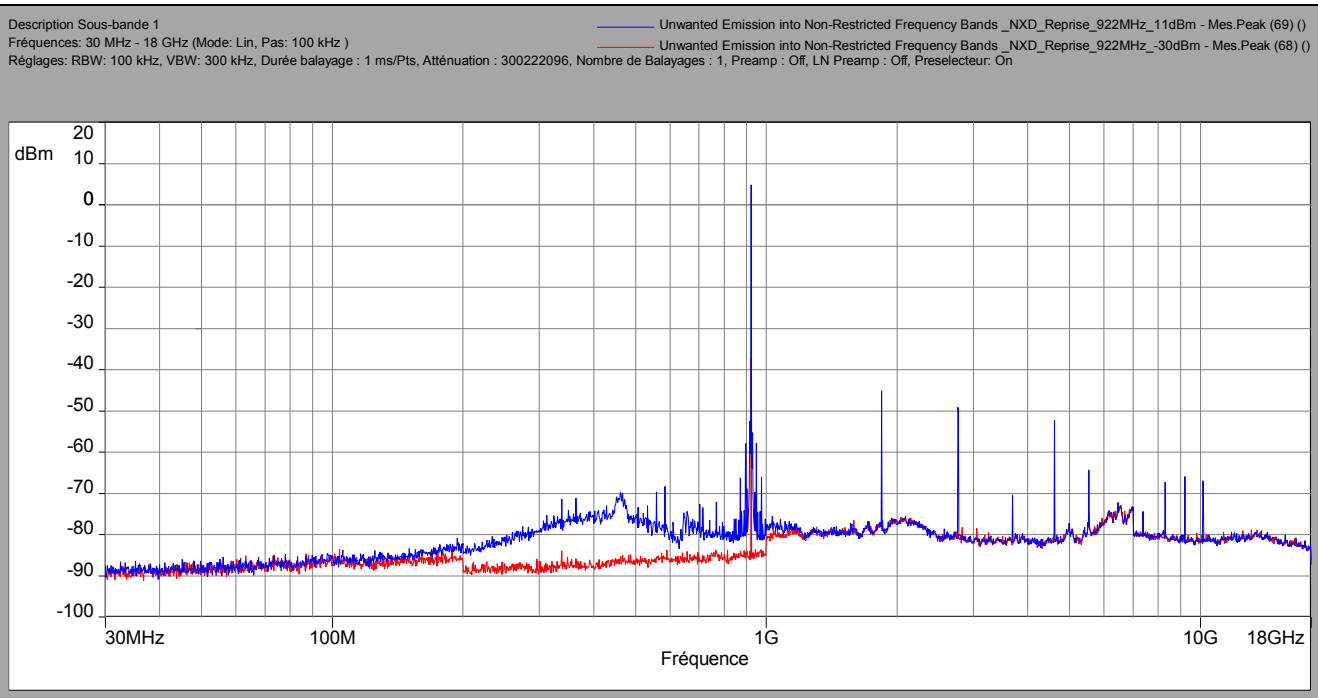
9.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESI40 1088 740K40	A2642010	2016/07	2018/07
Multi-meter	KEITHLEY	2000	A1242090	2016/06	2018/06
Programmable DC power supply	ROHDE & SCHWARZ	NGSM32/10	A7040074	2016/06	2018/06
High pass filter 1,6GHz	TRILITHIC	3HC1850/13G-3-KK	A7484044	2016/12	2017/12
cable	Télédyne	084-0555-2MTR	A5329758	2017/10	2018/10
Attenuator 3dB	WEINSCHEL	WA54-3-12	A7122223	2017/10	2018/10

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

9.5. RESULTS

CminCmax



Frequency (MHz)	Level (dBm)	Level (dBc)	Limit (dBc)
922.2	4.852		
1844	-45.187	50.039	30
2766	-49.174	54.026	30
3688	-70.435	75.287	30
4612	-52.328	57.180	30
5532	-64.343	69.195	30
7376	-74.337	79.189	30
8301	-67.340	72.195	30
9224	-65.959	70.811	30
10142	-66.973	71.825	30
922.6	-37.085		
1725	-76.773	39.688	30
5534	-74.903	37.818	30
6555	-72.957	35.872	30

9.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands measurement performed on the sample of the product **VELUX ACTIVE with NETATMO NXD01**, SN: **-**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

10. UNWANTED EMISSIONS IN RESTRICTED FREQUENCY BANDS

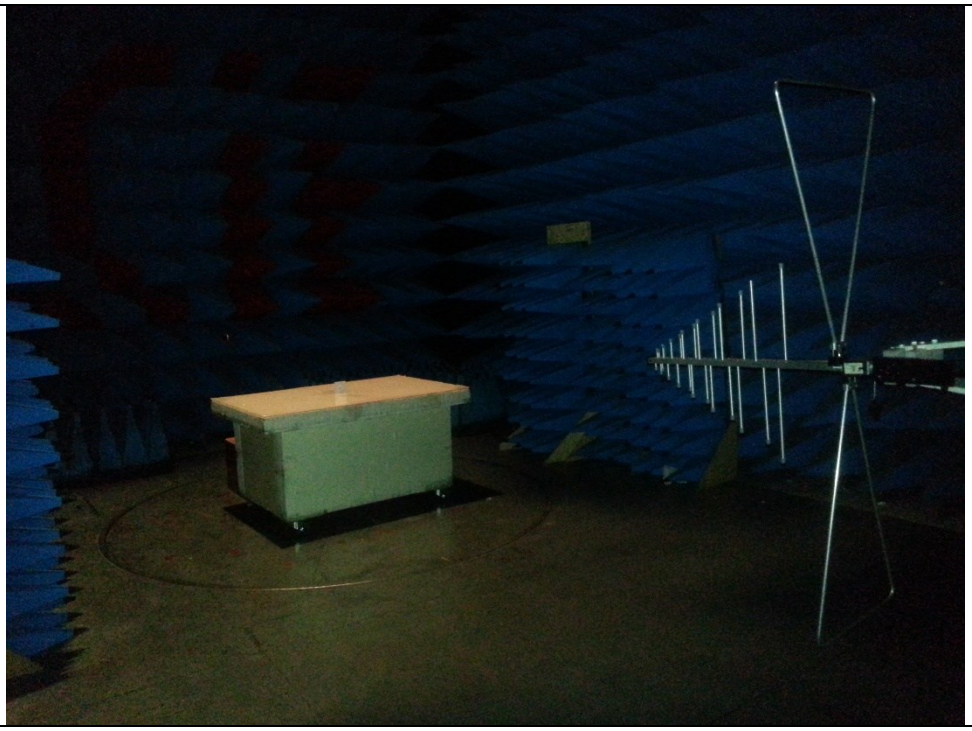
10.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU
Date of test : November 16, 2017 to November 23, 2017
Ambient temperature : 24 °C
Relative humidity : 44 %

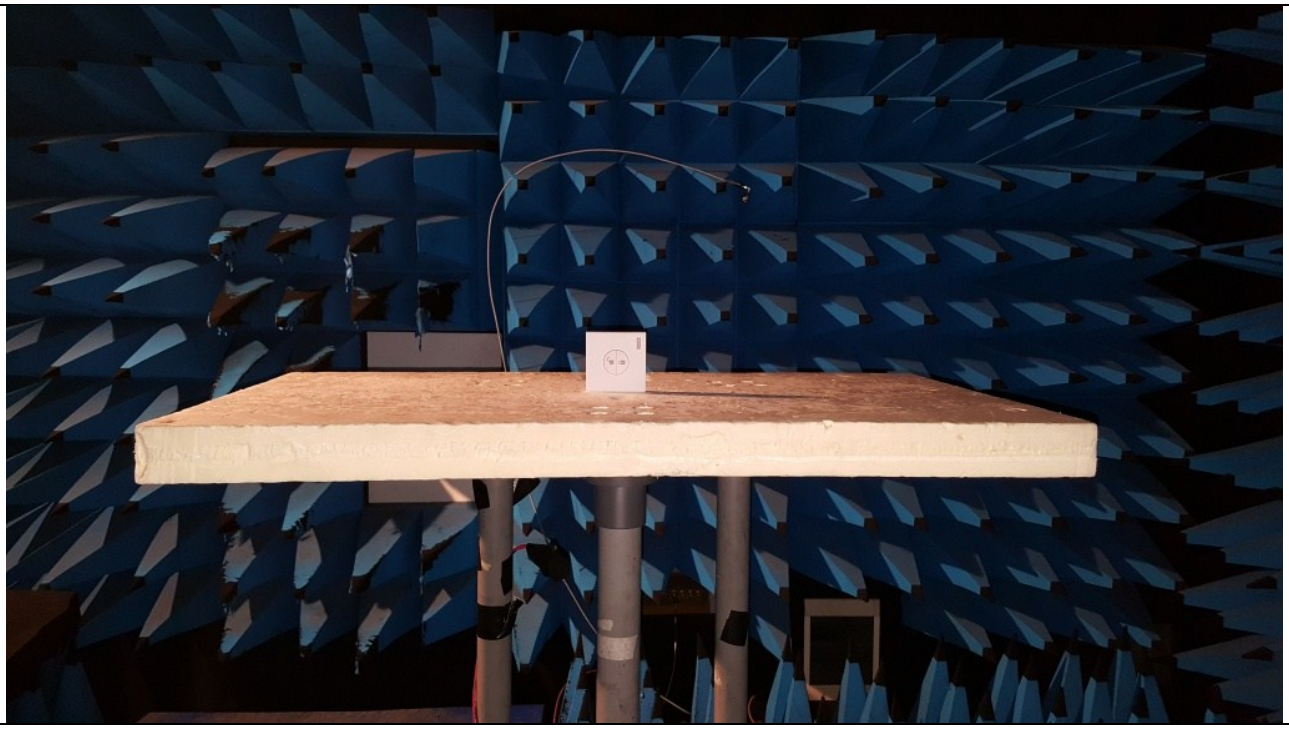
10.2. TEST SETUP

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

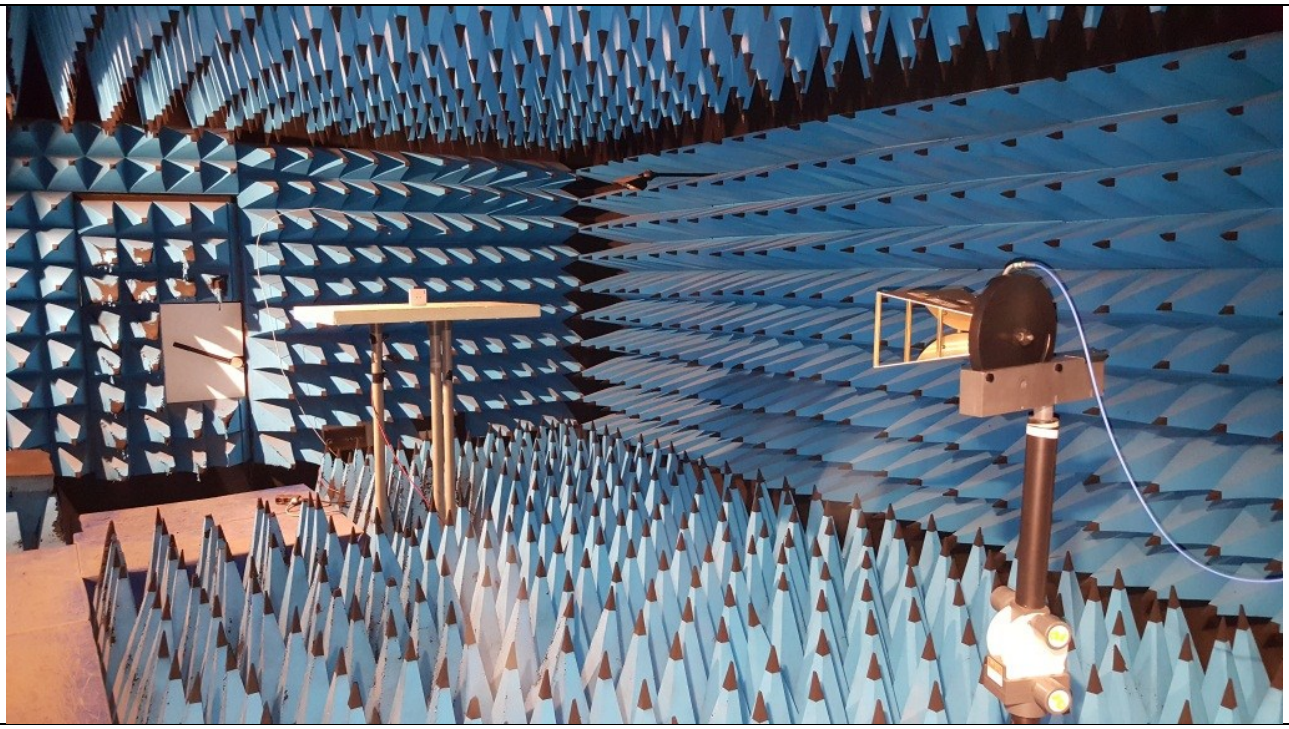
Photograph for Unwanted Emission in restricted frequency bands



Photograph for Unwanted Emission in restricted frequency bands



Photograph for Unwanted Emission in restricted frequency bands



Photograph for Unwanted Emission in restricted frequency bands

10.3. LIMIT

Limit at 3m:

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

Limit at 10m:

30MHz to 88MHz:	29.5dBµV/m QPeak
88MHz to 216MHz:	33dBµV/m QPeak
216MHz to 960MHz:	35.5dBµV/m QPeak
960MHz to 1000MHz:	43.5dBµV/m QPeak
Above 1000MHz:	63.5BµV/m Peak
	43.5BµV/m Average

10.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Semi anechoic chamber	SIEPEL	-	D3044008	2017/06	2018/06
EMI receiver	ROHDE & SCHWARZ	ESU26	A2642018	2017/10	2018/10
Bilog antenna	SCHWARZBECK	VULB 9160	C2040150	2017/03	2018/03
RF cable	RADIALL; CDI	30990-7M	A5329711	2017/03	2018/03
Cable	CABLES & CONNECTIQUES	3.5MD/CSU528AA/3.5MC/4000	A5329436	2017/03	2018/03
Full anachoic chamber	SIEPEL	-	D3044019	2014/10	2018/10
Preamplifier	LCIE; LCIE	LCIE-ALB-001	A7080073	2016/08	2018/08
Horn antenna	AH SYSTEMS	SAS 571	C2042041	2017/04	2018/04
High pass filter 1,6GHz	TRILITHIC	3HC1850/13G-3-KK	A7484044	2016/12	2017/12
EMI receiver	ROHDE & SCHWARZ	ESI40 1088 740K40	A2642010	2016/07	2018/07
cable	Télédyne	084-0505-1MTR	A5329757	2017/03	2018/03
cable	Télédyne	084-0555-3MTR	A5329760	2017/03	2018/03
cable	Télédyne	084-555-1.5MTR	A5329759	2017/03	2018/03

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

10.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

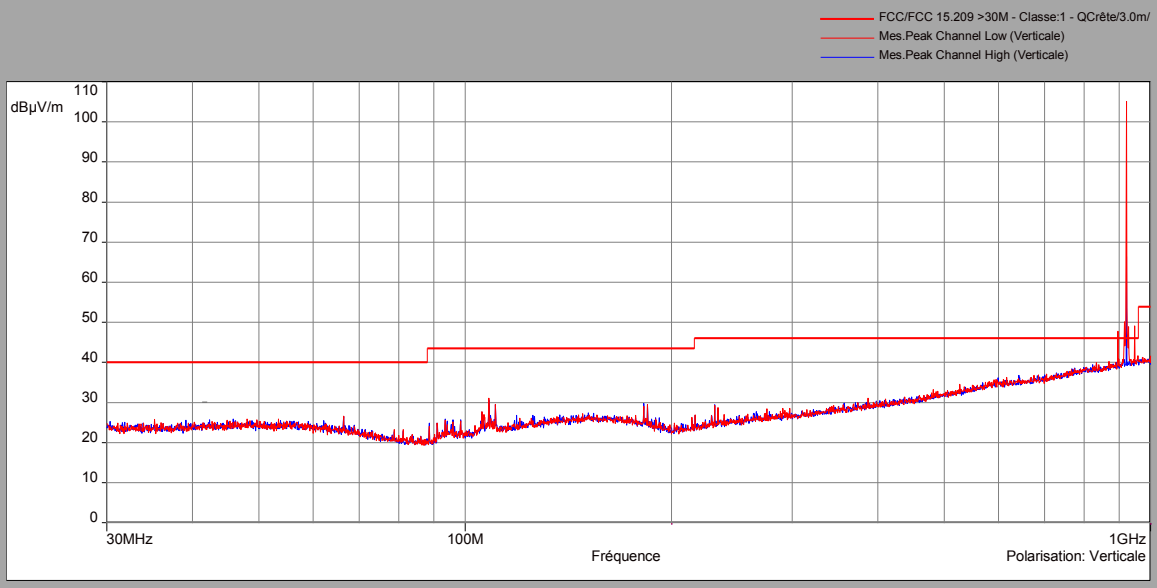
☑ None ☐ Divergence:

10.6. RESULTS

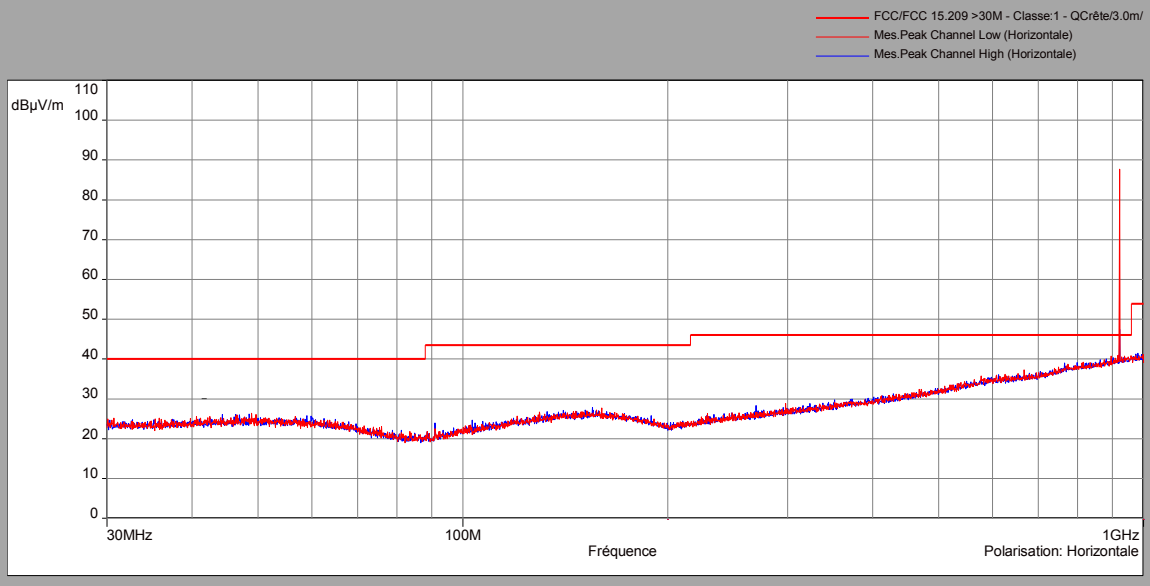
Below 1GHz

Cmin/Cmax

Vertical Polarization



Horizontal polarization



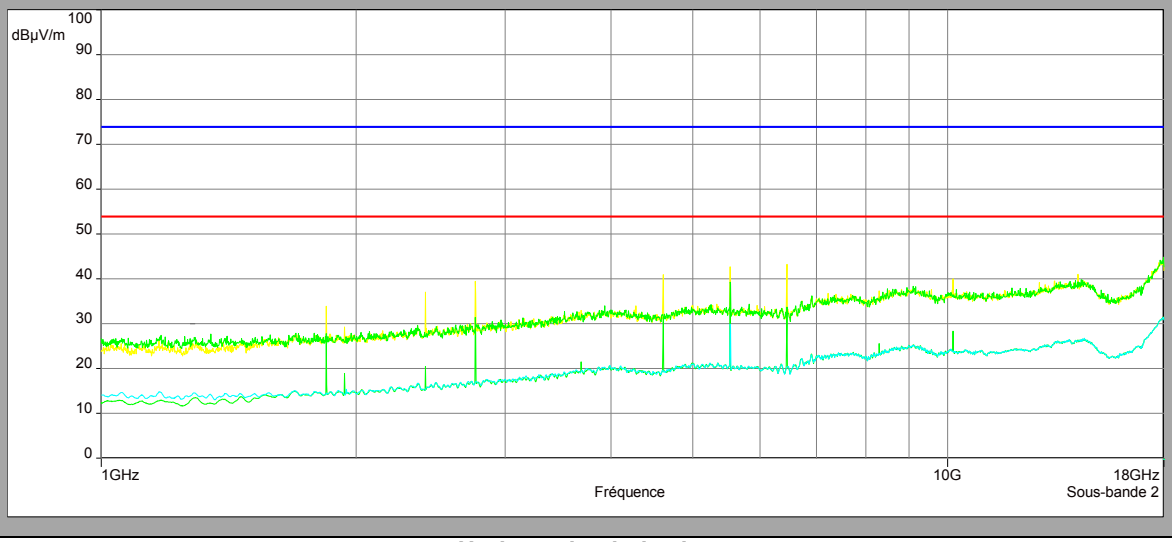
Above 1GHz

Cmin/Cmax

Vertical Polarization

Description Sous-bande 2
Fréquences: 1 GHz - 18 GHz (Mode: Lin, Pas: 500 kHz)
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 10 ms/Pts, Atténuation : 166734800, Nombre de Balayages : 1, Preamp : On: 20 dB, LN Preamp : Off, Preselecteur: Off
Polarisation:Verticale
Distance: 3 m

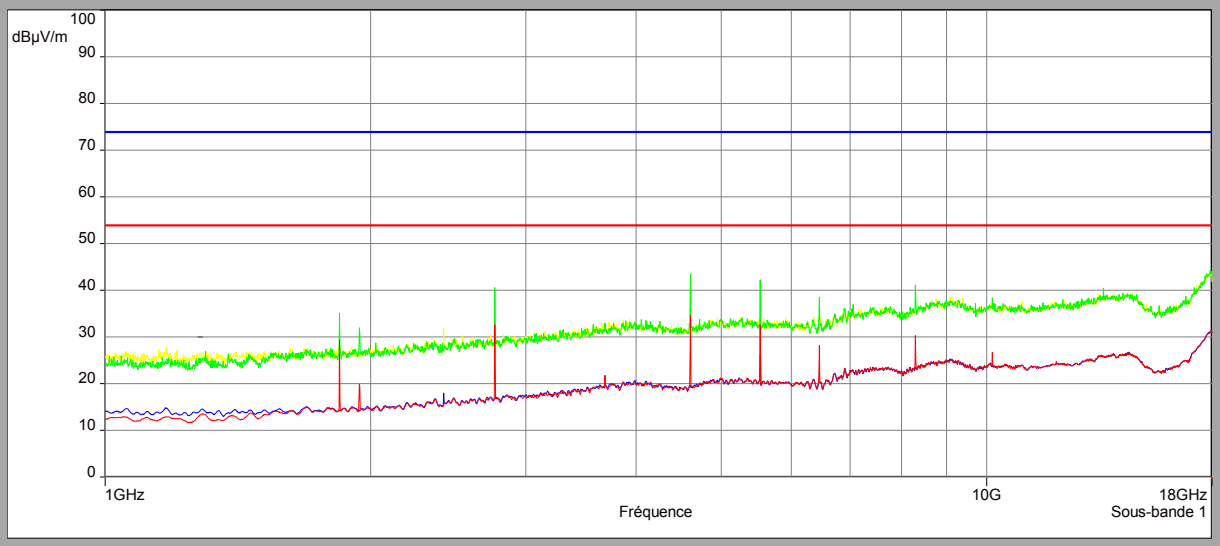
FCC/FCC 15.109 - Classe: - Moyenne/3.0m/
FCC/FCC 15.109 - Classe: - Crête/3.0m/
Mes.Avg Channel High (Verticale)
Mes.Peak Channel High (Verticale)
Mes.Avg Channel Low (Verticale)
Mes.Peak Channel Low (Verticale)



Horizontal polarization

Description Sous-bande 1
Fréquences: 1 GHz - 18 GHz (Mode: Lin, Pas: 500 kHz)
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 10 ms/Pts, Atténuation : 203477520, Nombre de Balayages : 1, Preamp : On: 20 dB, LN Preamp : Off, Preselecteur: Off
Polarisation:Horizontale
Distance: 3 m

FCC/FCC 15.109 - Classe: - Moyenne/3.0m/
FCC/FCC 15.109 - Classe: - Crête/3.0m/
Mes.Avg Channel Low (Horizontale)
Mes.Peak Channel Low (Horizontale)
Mes.Avg Channel High (Horizontale)
Mes.Peak Channel High (Horizontale)



Above 1GHz								
Cmin/Cmax								
Polarization	**Frequency (MHz)**	**Duty cycle correction (dB)**	**Average Level (dBµV/m)**	**Average Limit (dBµV/m)**	**Average Margin (dBµV/m)**	**Peak Level (dBµV/m)**	**Peak Limit (dBµV/m)**	**Peak Margin (dBµV/m)**
Horizontal	1844	0	29.24	54	24.76	35.01	74	38.99
Horizontal	1943.5	0	19.98	54	34.02	31.95	74	42.05
Vertical	2416.5	0	20.48	54	33.52	37.01	74	36.99
Horizontal	2766	0	32.49	54	21.51	40.57	74	33.43
Horizontal	4610	0	34.77	54	19.23	43.46	74	30.54
Vertical	5532	0	39.22	54	14.78	42.71	74	31.29
Horizontal	6454	0	33.02	54	20.98	43.29	74	30.71
Horizontal	8300.5	0	30.45	54	23.55	41.08	74	32.92
Vertical	10142	0	38.30	54	15.70	40.02	74	33.98

10.7. CONCLUSION

Unwanted Emission in restricted frequency bands measurement performed on the sample of the product **VELUX ACTIVE with NETATMO NXD01**, SN: **-**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.247 & RSS 247 ISSUE 2 limits.

11. 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