TEST REPORT

N°: 149480-706239 **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 Indoor Climate Control**
Trade mark	**VELUX ACTIVE with NETATMO**
Manufacturer	**VELUX A/S**
Model under test	**NXG01S**
Serial number	**-**
FCC ID	**XSG-831591**
IC ID	**8642A-831591**
Industry Canada Number	6230B(FAR) & 6230B-1(Ecuelles)

Test date	: July 24, 2017 to October 16, 2017
Test location	Fontenay Aux Roses
Composition of document	69 pages
Document issued on	January 22, 2018

Written by :
Armand MAHOUNGOU
Tests operator

Approved by :
Arnaud FAYETTE
Technical manager

This document shall not be reproduced, except in full, without the written approval of the LCIE. This document contains results related only to the items tested. It does not imply the conformity of the whole production to the items tested. Unless otherwise specified, the decision of conformity takes into account the uncertainty of measurement. This document doesn't anticipate any certification decision.

PUBLICATION HISTORY

Version	Date	Author	Modification
01	October 16, 2017	Armand MAHOUNGOU	Creation of the document

SUMMARY

1. TEST PROGRAM 4
2. EQUIPMENT UNDER TEST: CONFIGURATION (DECLARED BY PROVIDER) 5
3. OCCUPIED BANDWIDTH 11
4. 6DB EMISSION BANDWIDTH 16
5. DUTY CYCLE 22
6. MAXIMUM CONDUCTED OUTPUT POWER 26
7. POWER SPECTRAL DENSITY 32
8. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS AT THE BAND EDGE 38
9. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS 43
10. AC POWER LINE CONDUCTED EMISSIONS 49
11. UNWANTED EMISSIONS IN RESTRICTED FREQUENCY BANDS 54
12. UNCERTAINTIES CHART 69

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**	☐ **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

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** NXG01S **Serial Number: -**

Equipment Under Test

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
Power supply	-	-	☐	☐	☐	-

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Laptop	-	-	-
Isolation transformer	-	-	-

Equipment information:

Type:	**WIFI**			
Frequency band:	2400MHz-2483.5MHz			
Standard:	☑ 802.11b	☑ 802.11g	☑ 802.11n HT20	☐ 802.11n HT40
Spectrum Modulation:	☑ DSSS		☑ OFDM	
Number of Channel:	11			
Spacing channel:	5MHz			
Channel bandwidth:	☑ 20MHz		☐ 40MHz	
Antenna Type:	☑ Integral	☐ External	☐ Dedicated	
Antenna connector:	☐ Yes	☐ No	☑ Temporary for test	
Transmit chains:	☑ 1	☐ 2	☐ 3	☐ 4
Beam forming gain:	☐ Yes: XdB		☑ No	
Receiver chains	☑ 1	☐ 2	☐ 3	☐ 4
Type of equipment:	☑ Stand-alone	☐ Plug-in	☐ Combined	
Ad-Hoc mode:	☐ Yes		☑ No	
Duty cycle:	☑ Continuous duty	☐ Intermittent duty	☐ 100% duty	
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	☐ X Vdc	

Antenna Characteristic			
Antenna assembly	**Gain (dBi)**	**Frequency Band (MHz)**	**Impedance(Ω)**
Accumulated	5.56	2412	50

CHANNEL PLAN	
802.11b / 802.11g / 802.11n HT20	
Channel	Frequency (MHz)
Cmin: 1	**2412**
2	2417
3	2422
4	2427
5	2432
Cmid: 6	**2437**
7	2442
8	2447
9	2452
10	2457
Cmax: 11	**2462**

DATA RATE		
802.11b		
Data Rate (Mbps)	**Modulation Type**	**Modulation Worst Case**
1	DBPSK	☐
2	DQPSK	☐
5.5	DQPSK	☑
11	CCK	☐

DATA RATE		
802.11g		
Data Rate (Mbps)	**Modulation Type**	**Modulation Worst Case**
6	BPSK	☑
9	BPSK	☐
12	QPSK	☐
18	QPSK	☐
24	16-QAM	☐
36	16-QAM	☐
48	64-QAM	☐
54	64-QAM	☐

DATA RATE									
802.11n HT20									
Available for EUT	MCS Index	Spatial streams	Modulation				Data Rate (Mbps)		Worst Case Modulation
							(GI = 800ns)	(GI = 400ns)	
☑	0	1	BPSK				6.5	7.2	☑
	1	1	QPSK				13	14.4	☐
	2	1	QPSK				19.5	21.7	☐
	3	1	16-QAM				26	28.9	☐
	4	1	16-QAM				39	43.3	☐
	5	1	64-QAM				52	57.8	☐
	6	1	64-QAM				58.5	65	☐
	7	1	64-QAM				65	72.2	☐
	32	1	BPSK	-	-	-	-	-	☐
☐	8	2	BPSK				13	14.4	☐
	9	2	QPSK				26	28.9	☐
	10	2	QPSK				39	43.3	☐
	11	2	16-QAM				52	57.8	☐
	12	2	16-QAM				78	86.7	☐
	13	2	64-QAM				104	115.6	☐
	14	2	64-QAM				117	130.3	☐
	15	2	64-QAM				130	144.4	☐
	33	2	16-QAM	QPSK	-	-	39	43.3	☐
	34	2	64-QAM	QPSK	-	-	52	57.8	☐
	35	2	64-QAM	16-QAM	-	-	65	72.2	☐
	36	2	16-QAM	QPSK	-	-	58.5	65	☐
	37	2	64-QAM	QPSK	-	-	78	86.7	☐
	38	2	64-QAM	16-QAM	-	-	97.5	108.3	☐
☐	16	3	BPSK				19.5	21.7	☐
	17	3	QPSK				39	43.3	☐
	18	3	QPSK				58.5	65	☐
	19	3	16-QAM				78	86.7	☐
	20	3	16-QAM				117	130	☐
	21	3	64-QAM				156	173.3	☐
	22	3	64-QAM				175.5	195	☐
	23	3	64-QAM				195	216.7	☐
	39	3	16-QAM	QPSK	QPSK	-	52	57.8	☐
	40	3	16-QAM	16-QAM	QPSK	-	65	72.2	☐
	41	3	64-QAM	QPSK	QPSK	-	65	72.2	☐
	42	3	64-QAM	16-QAM	QPSK	-	78	86.7	☐
	43	3	64-QAM	16-QAM	16-QAM	-	91	101.1	☐
	44	3	64-QAM	64-QAM	QPSK	-	91	101.1	☐
	45	3	64-QAM	64-QAM	16-QAM	-	104	115.6	☐
	46	3	16-QAM	QPSK	QPSK	-	78	86.7	☐
	47	3	16-QAM	16-QAM	QPSK	-	97.5	108.3	☐
	48	3	64-QAM	QPSK	QPSK	-	97.5	108.3	☐
	49	3	64-QAM	16-QAM	QPSK	-	117	130	☐
	50	3	64-QAM	16-QAM	16-QAM	-	136.5	151.7	☐
	51	3	64-QAM	64-QAM	QPSK	-	136.5	151.7	☐
	52	3	64-QAM	64-QAM	16-QAM	-	156	173.3	☐
☐	24	4	BPSK				26	28.9	☐
	25	4	QPSK				52	57.8	☐
	26	4	QPSK				78	86.7	☐
	27	4	16-QAM				104	115.6	☐
	28	4	16-QAM				156	173.3	☐
	29	4	64-QAM				208	231.1	☐
	30	4	64-QAM				234	260	☐
	31	4	64-QAM				260	288.9	☐
	53	4	16-QAM	QPSK	QPSK	QPSK	65	72.2	☐
	54	4	16-QAM	16-QAM	QPSK	QPSK	78	86.7	☐
	55	4	16-QAM	16-QAM	16-QAM	QPSK	91	101.1	☐
	56	4	64-QAM	QPSK	QPSK	QPSK	78	86.7	☐
	57	4	64-QAM	16-QAM	QPSK	QPSK	91	101.1	☐
	58	4	64-QAM	16-QAM	16-QAM	QPSK	104	115.6	☐
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	117	130	☐
	60	4	64-QAM	QPSK	QPSK	QPSK	104	115.6	☐
	61	4	64-QAM	16-QAM	16-QAM	QPSK	117	130	☐
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	130	144.4	☐
	63	4	64-QAM	64-QAM	64-QAM	QPSK	130	144.4	☐
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	143	158.9	☐
	65	4	16-QAM	QPSK	QPSK	QPSK	97.5	108.3	☐
	66	4	16-QAM	16-QAM	QPSK	QPSK	117	130	☐
	67	4	16-QAM	16-QAM	16-QAM	QPSK	136.5	151.7	☐
	68	4	64-QAM	QPSK	QPSK	QPSK	117	130	☐
	69	4	64-QAM	16-QAM	QPSK	QPSK	136.5	151.7	☐
	70	4	64-QAM	16-QAM	16-QAM	QPSK	156	173.3	☐
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	175.5	195	☐
	72	4	64-QAM	64-QAM	QPSK	QPSK	156	173.3	☐
	73	4	64-QAM	64-QAM	16-QAM	QPSK	175.5	195	☐
	74	4	64-QAM	64-QAM	16-QAM	16-QAM	195	216.7	☐
	75	4	64-QAM	64-QAM	64-QAM	QPSK	195	216.7	☐
	76	4	64-QAM	64-QAM	64-QAM	16-QAM	214.5	238.3	☐

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

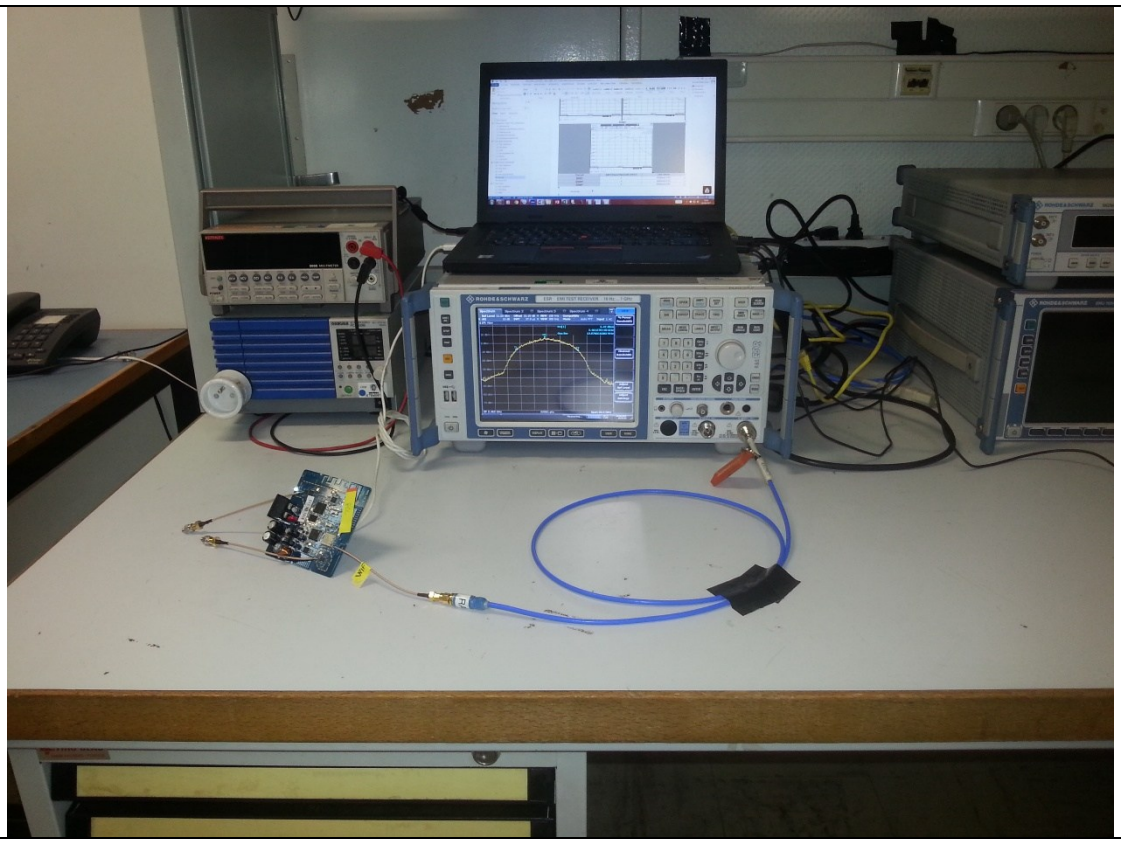
Test performed by : Armand MAHOUNGOU
Date of test : August 1, 2017
Ambient temperature : 26 °C
Relative humidity : 44 %

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
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329675	2016/09	2017/09
Load 50 ohms	TELEGARTNER		A7150103	2016/12	2017/12
Load 50 ohms	TELEGARTNER		A7150104	2016/12	2017/12

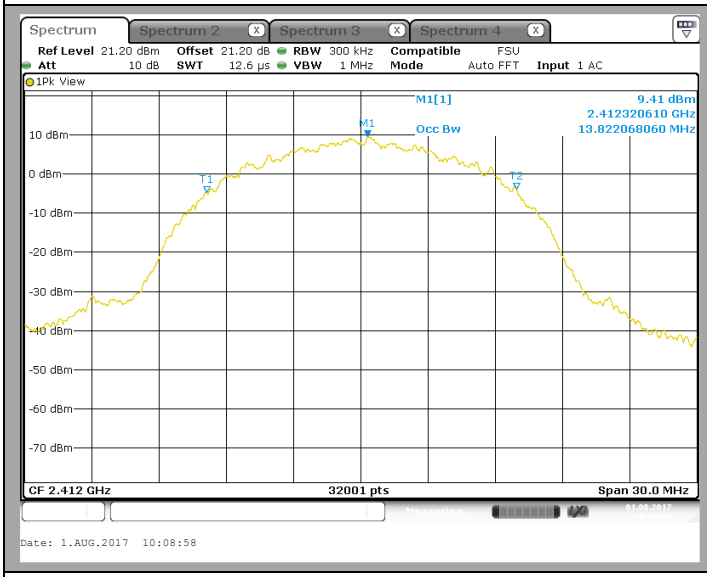
Note: In our quality system, the test equipment calibration due is more & less 2 months

3.3. RESULTS

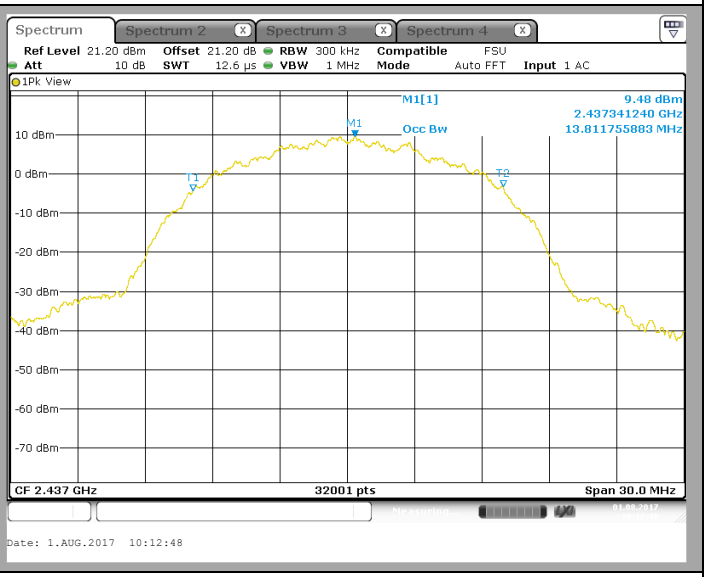
802.11b

Occupied Bandwidth

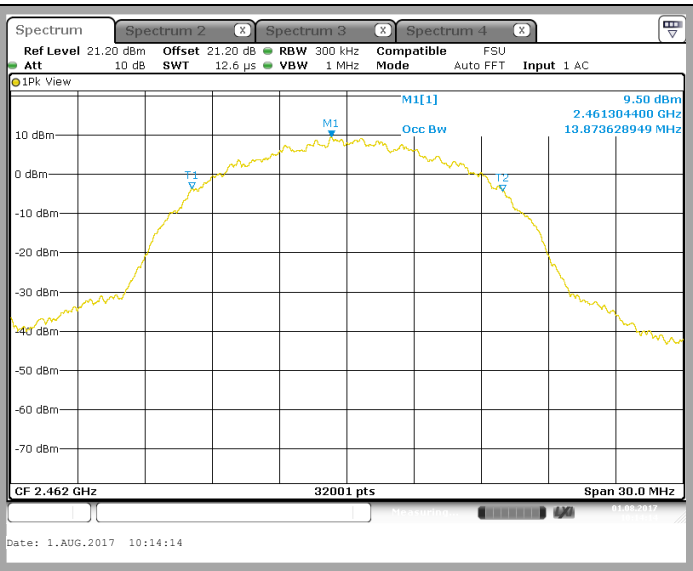
Cmin



Cnom



Cmax

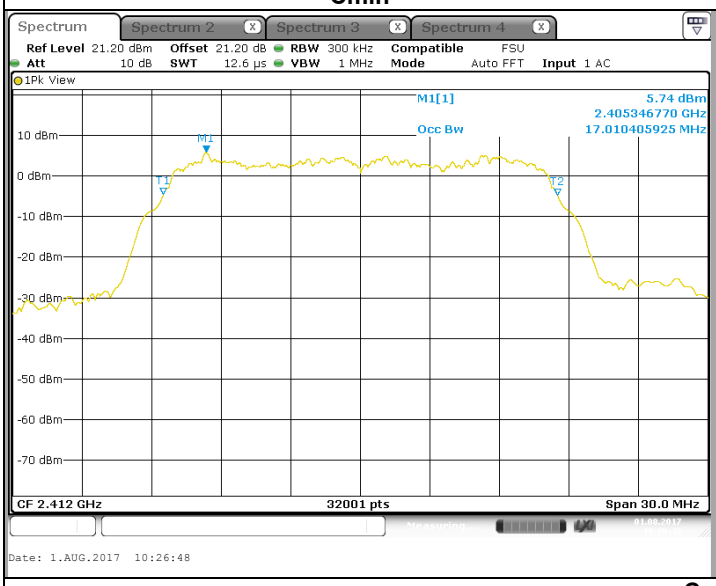


Channel	Occupied Bandwidth (MHz)
Cmin	13.822
Cnom	13.812
Cmax	13.874

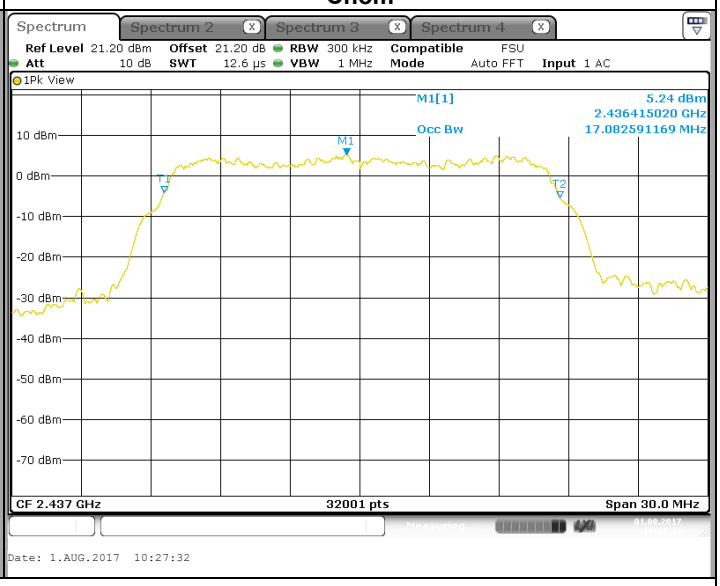
802.11g

Occupied Bandwidth

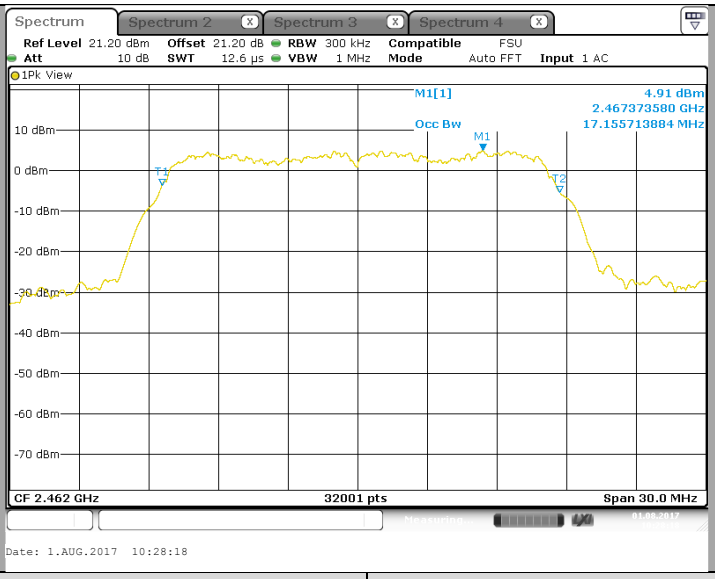
Cmin



Cnom



Cmax

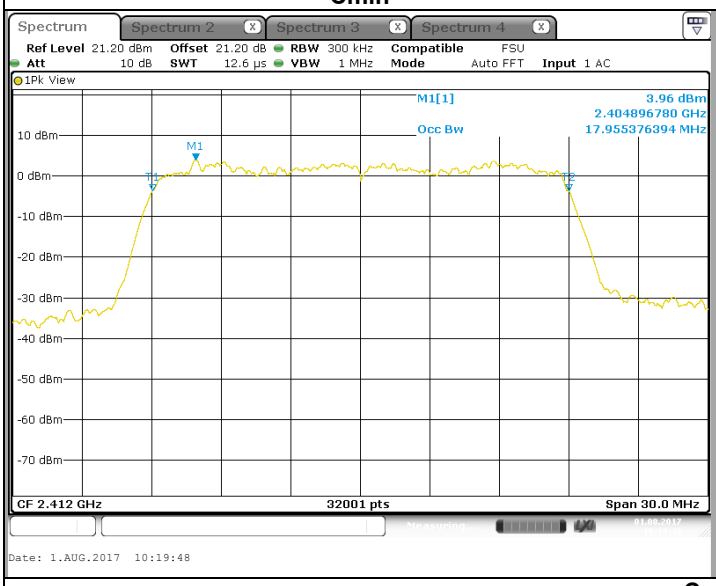


Channel	Occupied Bandwidth (MHz)
Cmin	17.010
Cnom	17.082
Cmax	17.156

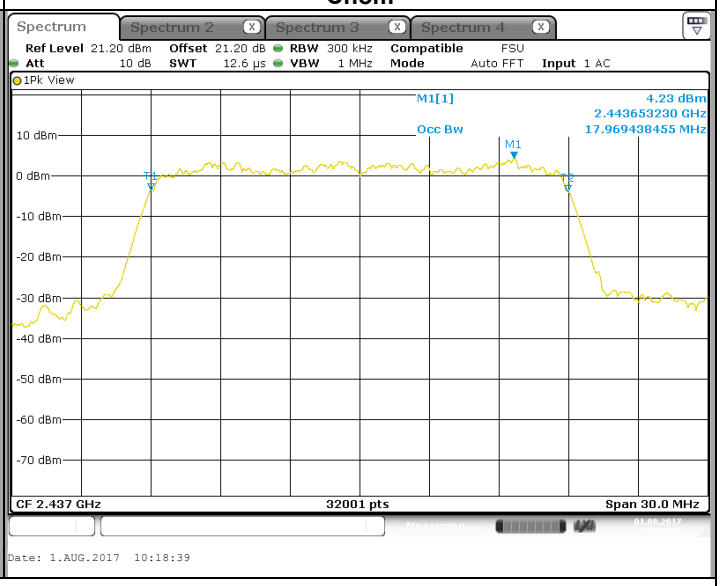
802.11n HT20

Occupied Bandwidth

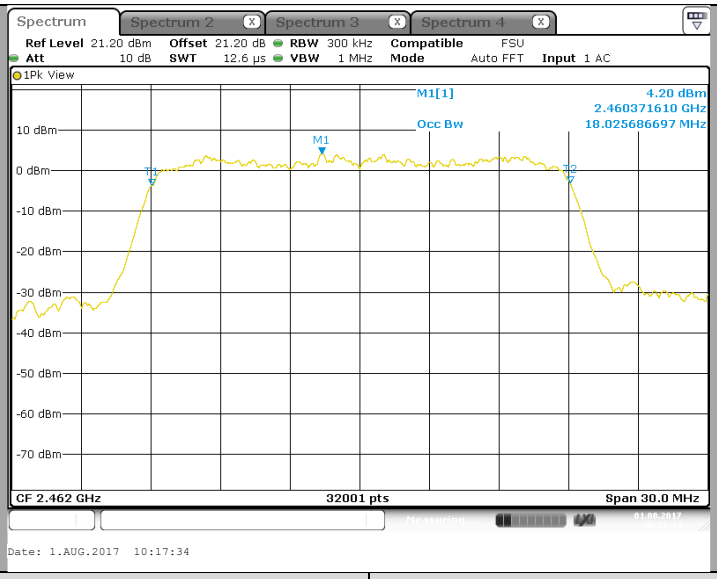
Cmin



Cnom



Cmax



Channel	Occupied Bandwidth (MHz)
Cmin	17.953
Cnom	17.969
Cmax	18.026

3.1. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **VELUX ACTIVE** with **NETATMO** NXG01S, 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

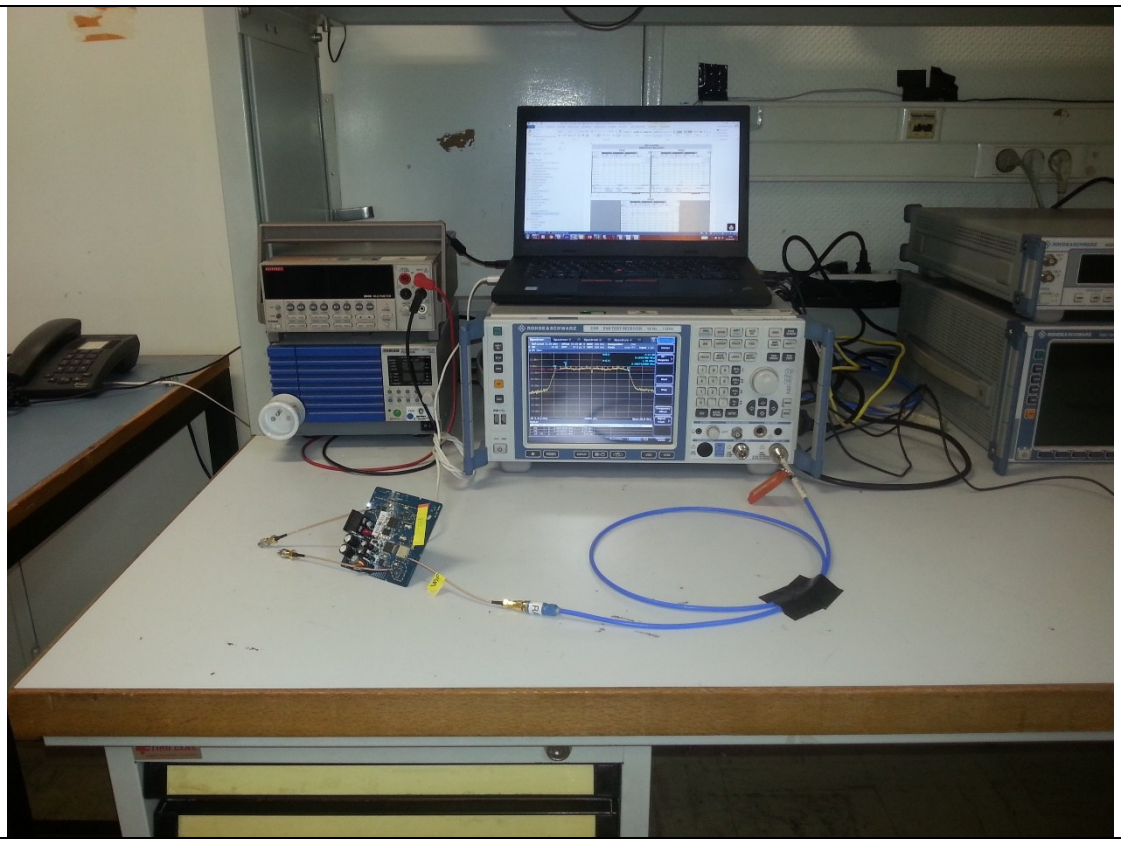
Test performed by : Armand MAHOUNGOU
Date of test : August 1, 2017
Ambient temperature : 26 °C
Relative humidity : 44 %

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
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329675	2016/09	2017/09
Load 50 ohms	TELEGARTNER		A7150103	2016/12	2017/12
Load 50 ohms	TELEGARTNER		A7150104	2016/12	2017/12

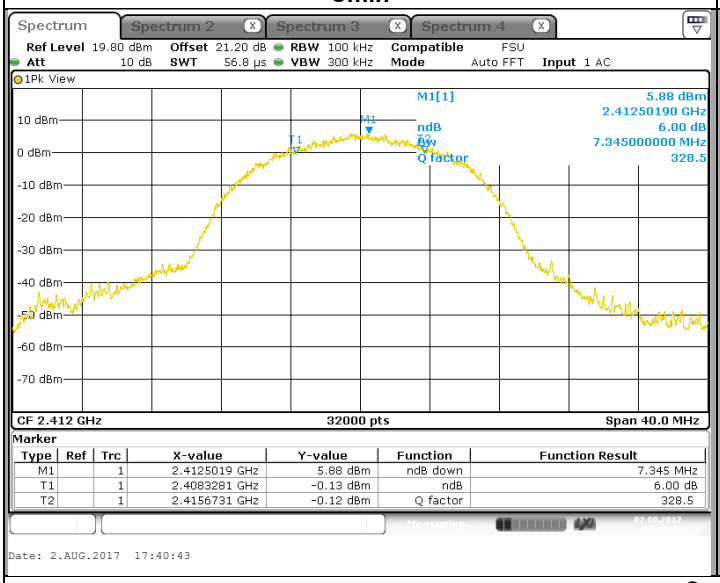
Note: In our quality system, the test equipment calibration due is more & less 2 months

4.5. RESULTS

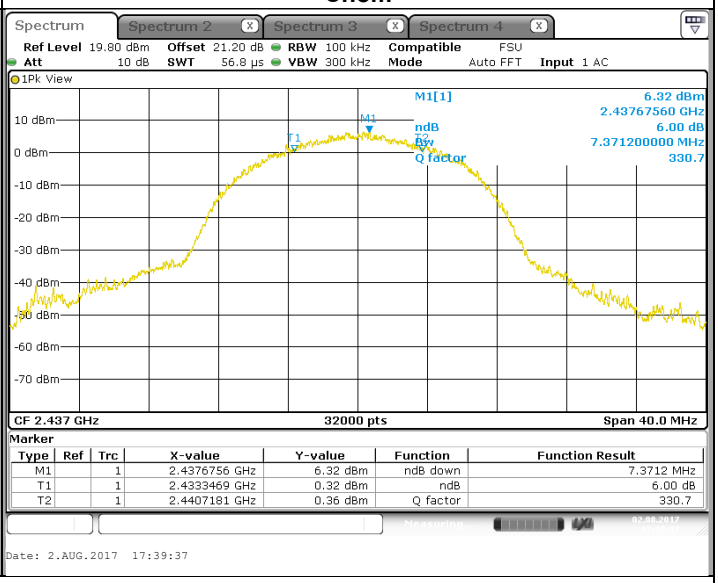
802.11b

6dB Emission Bandwidth

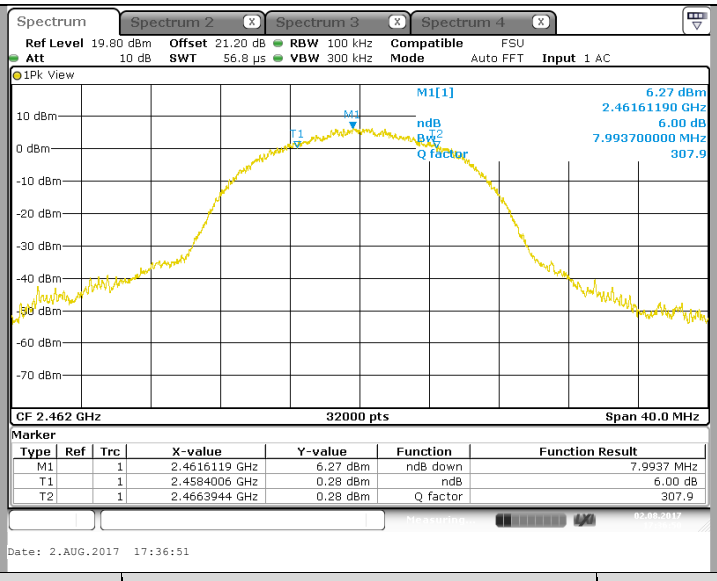
Cmin



Cnom



Cmax

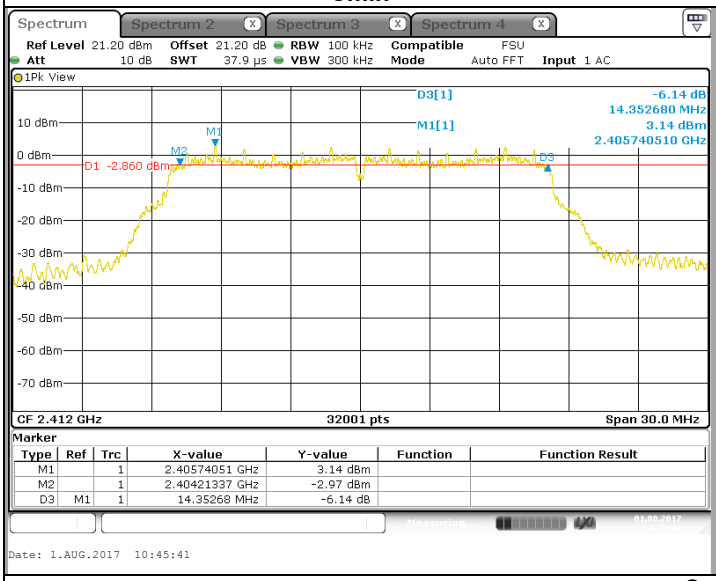


Channel	6dB Emission Bandwidth (MHz)	Limit (MHz)
Cmin	7.345	Minimum 0.5
Cnom	7.371	Minimum 0.5
Cmax	7.994	Minimum 0.5

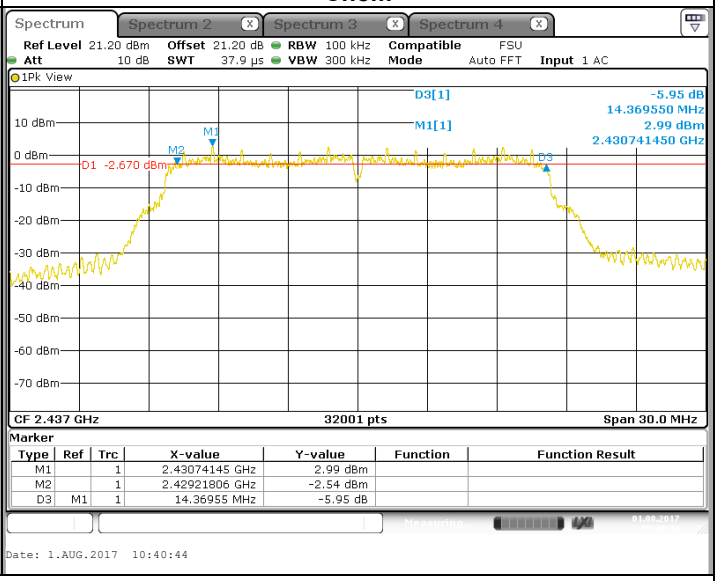
802.11g

6dB Emission Bandwidth

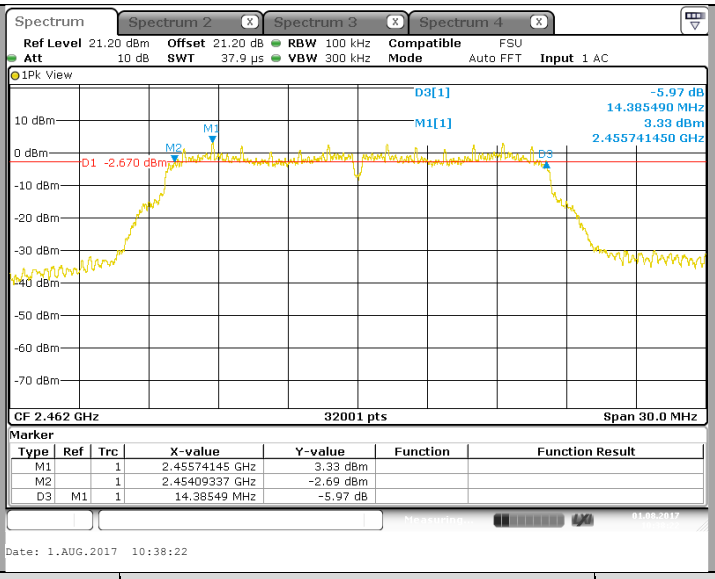
Cmin



Cnom



Cmax

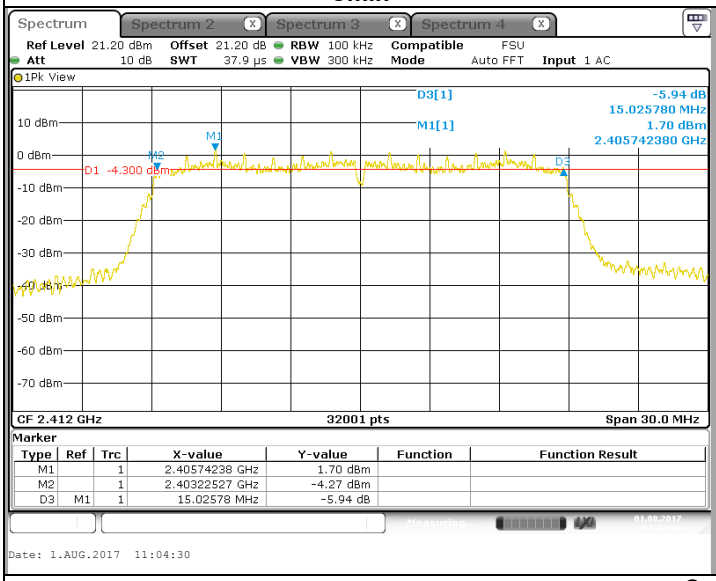


Channel	6dB Emission Bandwidth (MHz)	Limit (MHz)
Cmin	14.352	Minimum 0.5
Cnom	14.369	Minimum 0.5
Cmax	14.385	Minimum 0.5

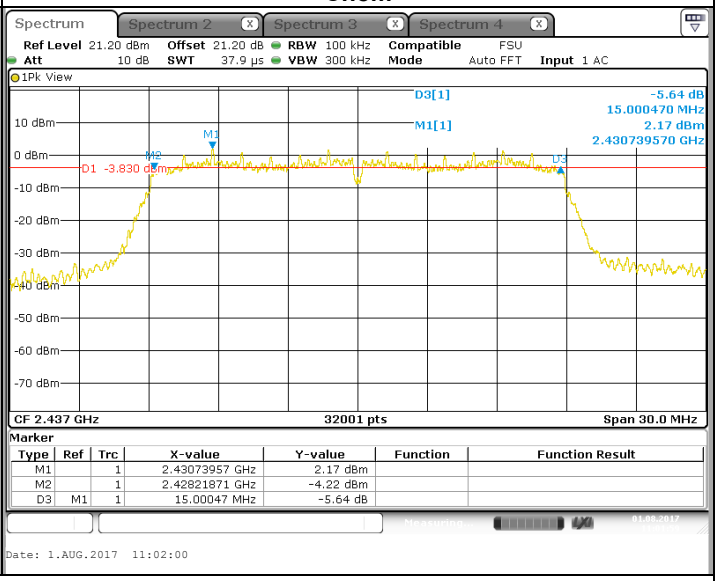
802.11n HT20

6dB Emission Bandwidth

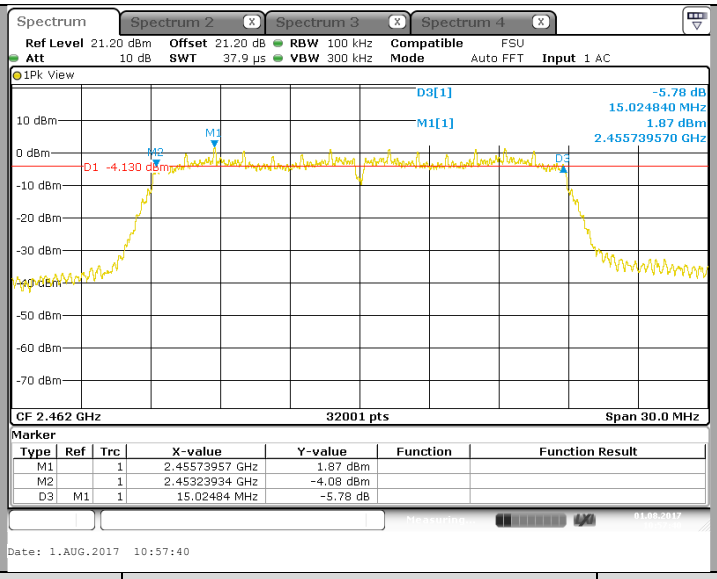
Cmin



Cnom



Cmax



Channel	6dB Emission Bandwidth (MHz)	Limit (MHz)
Cmin	15.026	Minimum 0.5
Cnom	15.000	Minimum 0.5
Cmax	15.025	Minimum 0.5

4.6. CONCLUSION

6dB Emission Bandwidth measurement performed on the sample of the product **VELUX ACTIVE** with **NETATMO** NXG01S, 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

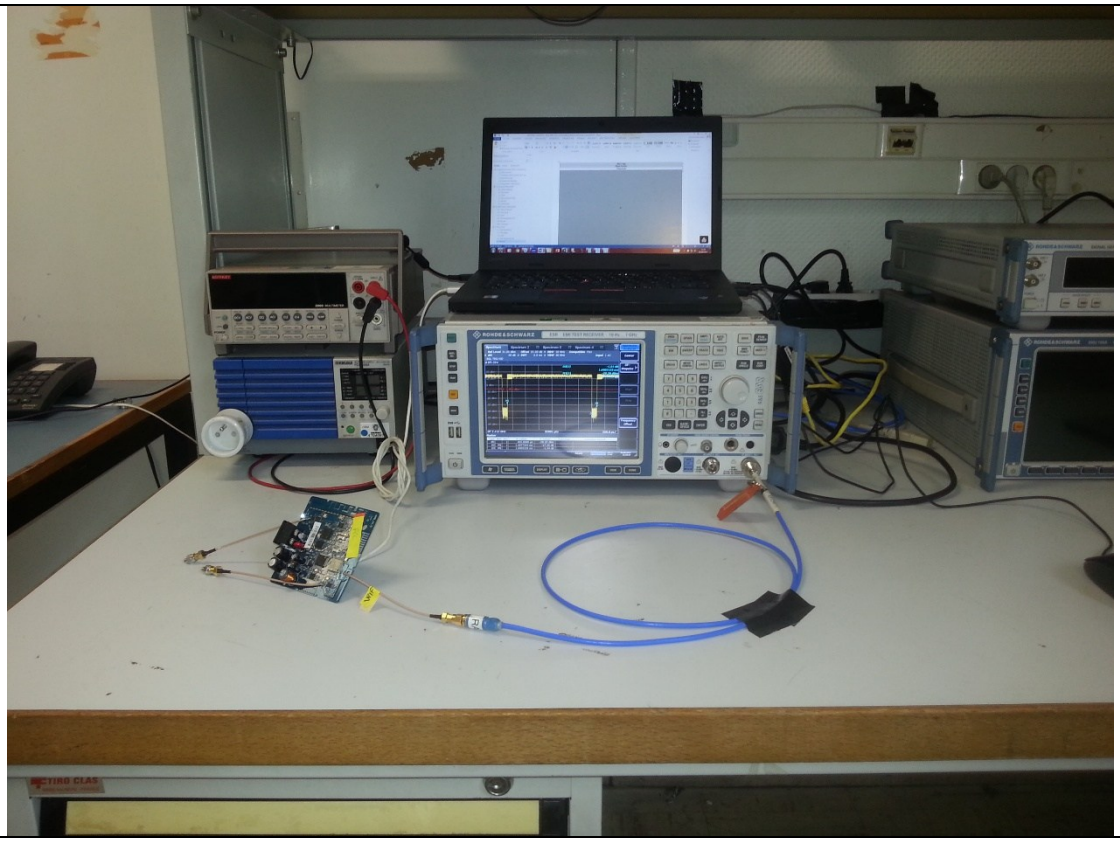
Test performed by : Armand MAHOUNGOU
Date of test : August 1, 2017
Ambient temperature : 26 °C
Relative humidity : 44 %

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
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329675	2016/09	2017/09
Load 50 ohms	TELEGARTNER		A7150103	2016/12	2017/12
Load 50 ohms	TELEGARTNER		A7150104	2016/12	2017/12

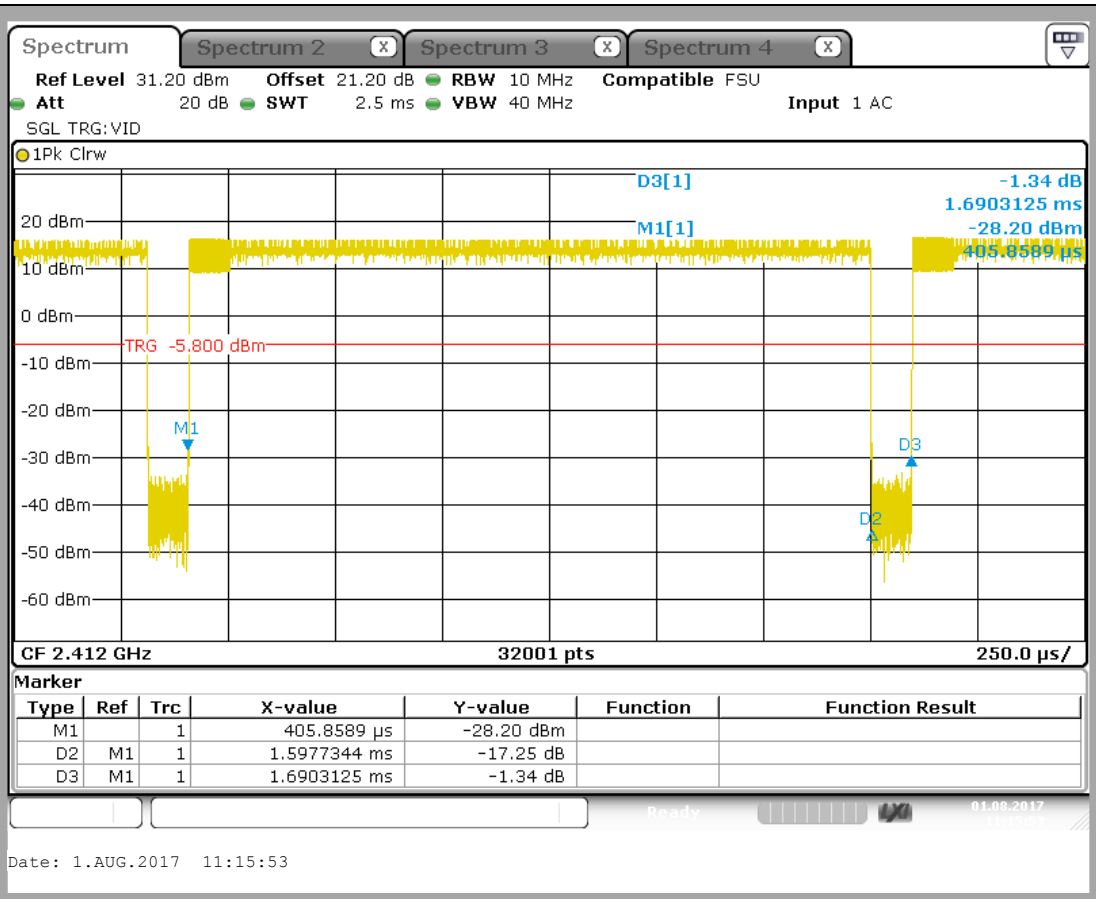
Note: In our quality system, the test equipment calibration due is more & less 2 months

5.5. RESULTS

802.11b

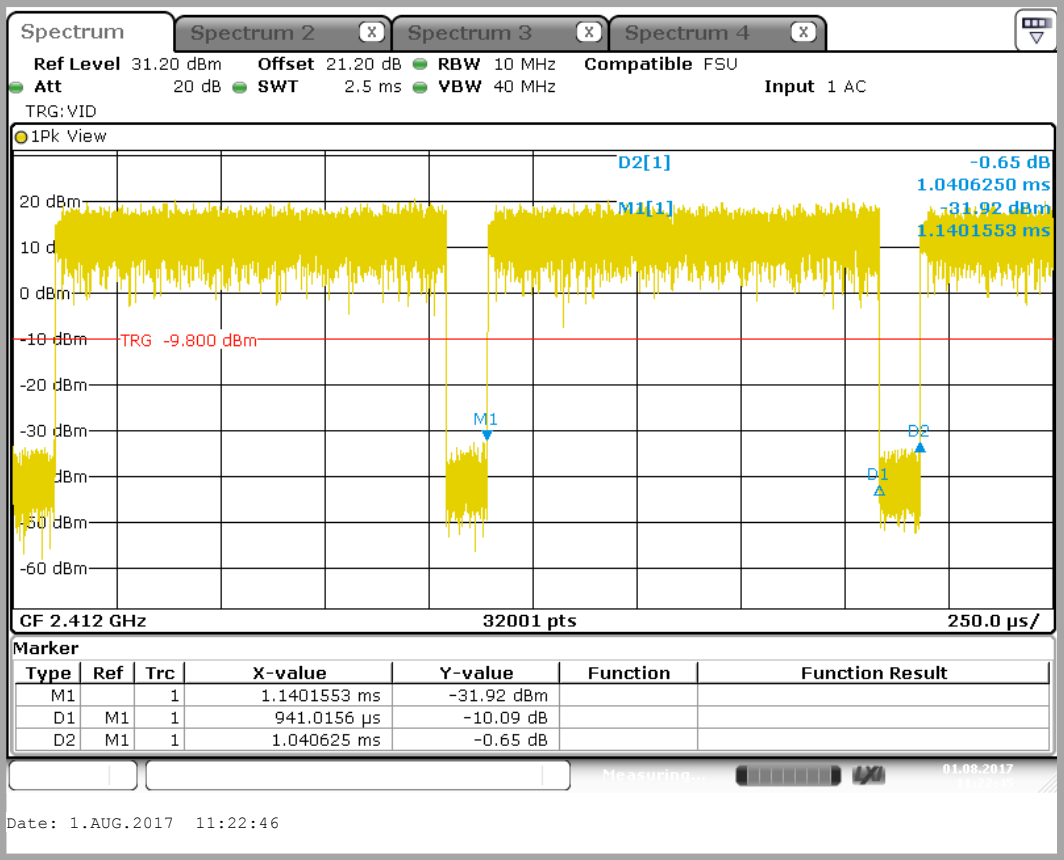
Duty Cycle

Cmin



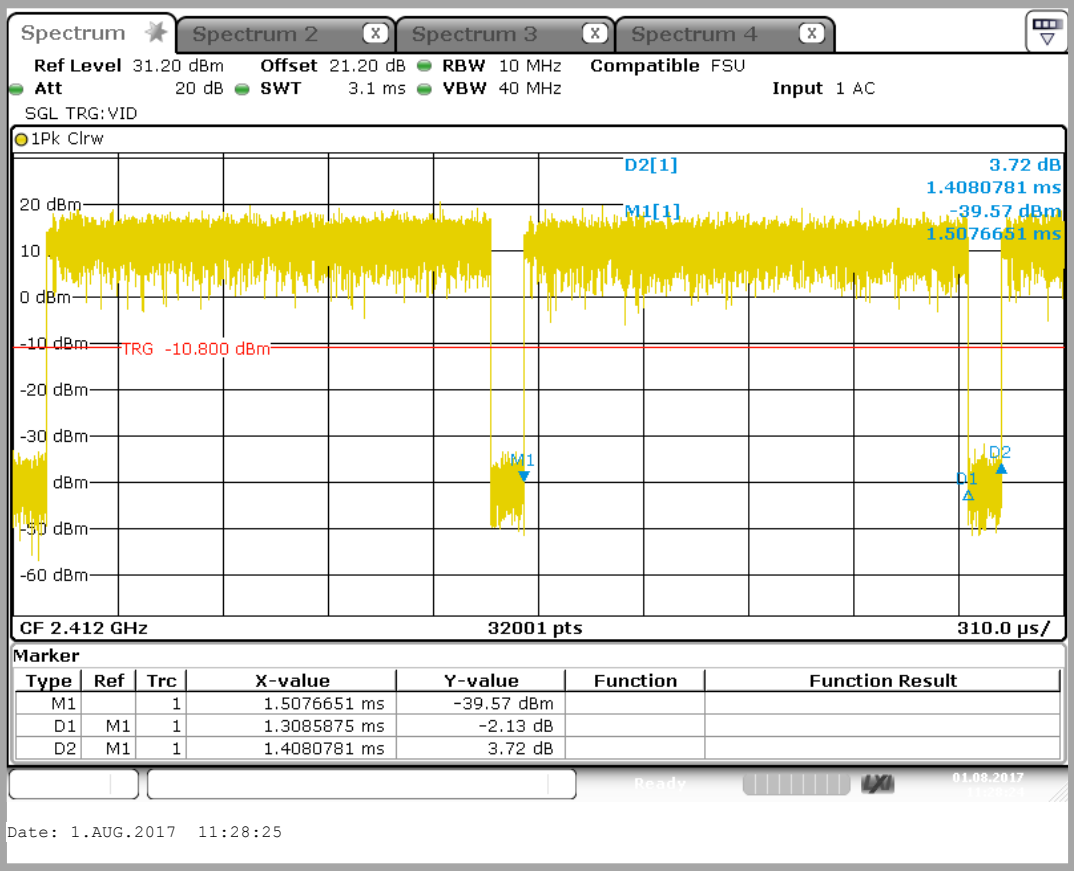
Channel	Duty Cycle (%)	Duty Cycle Correction (dB)
Channel	94.522	0.245

802.11g
Duty Cycle
Cmin



Channel	Duty Cycle (%)	Duty Cycle Correction (dB)
Channel	90.428	0.437

802.11n HT20
Duty Cycle
Cmin



Channel	Duty Cycle (%)	Duty Cycle Correction (dB)
Channel	92.934	0.318

5.6. CONCLUSION

Duty Cycle measurement performed on the sample of the product **VELUX ACTIVE** with **NETATMO** NXG01S, 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

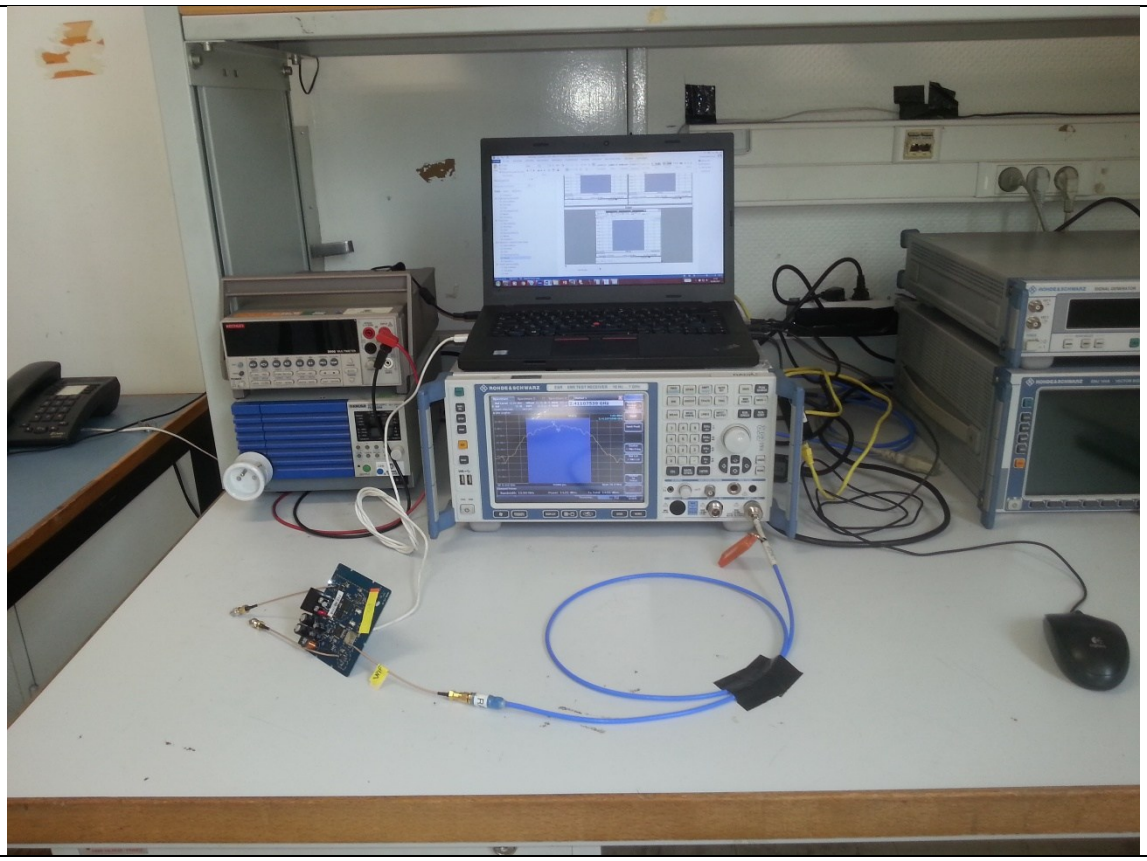
Test performed by : Armand MAHOUNGOU
Date of test : August 1, 2017
Ambient temperature : 26 °C
Relative humidity : 44 %

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 § 9.2.2.2 (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:
2400MHz-2483.5MHz: 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
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329675	2016/09	2017/09
Load 50 ohms	TELEGARTNER		A7150103	2016/12	2017/12
Load 50 ohms	TELEGARTNER		A7150104	2016/12	2017/12

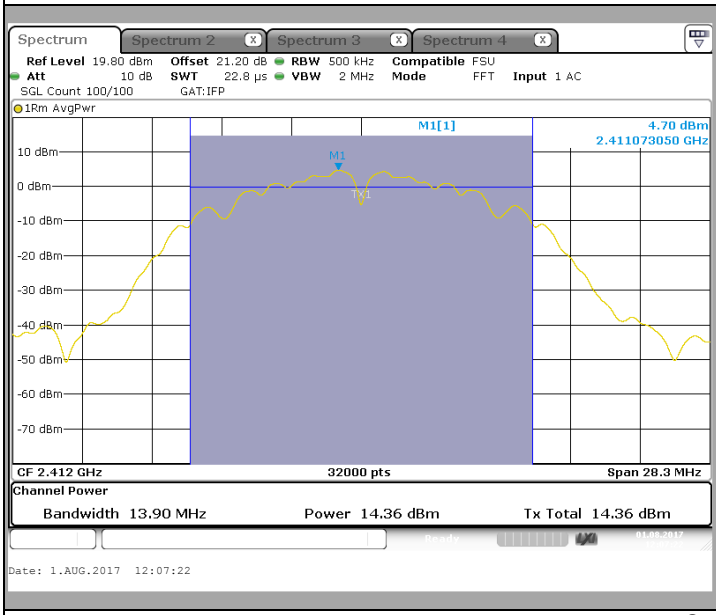
Note: In our quality system, the test equipment calibration due is more & less 2 months

6.5. RESULTS

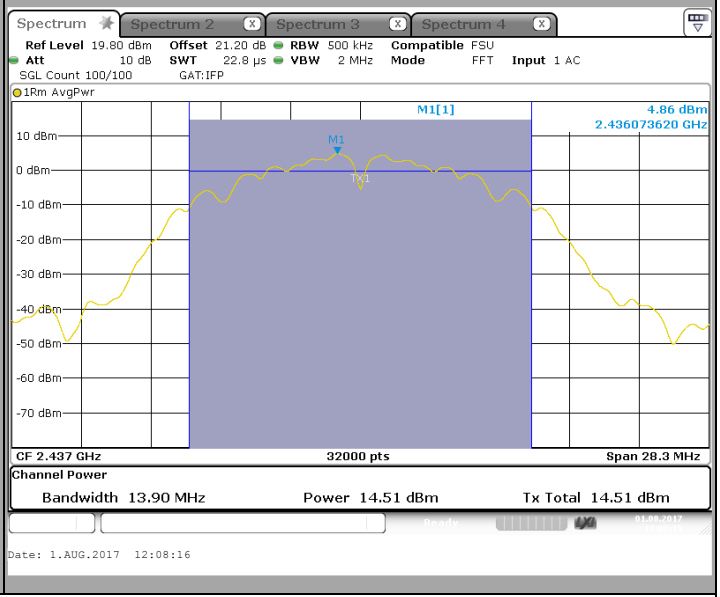
802.11b

Tx1

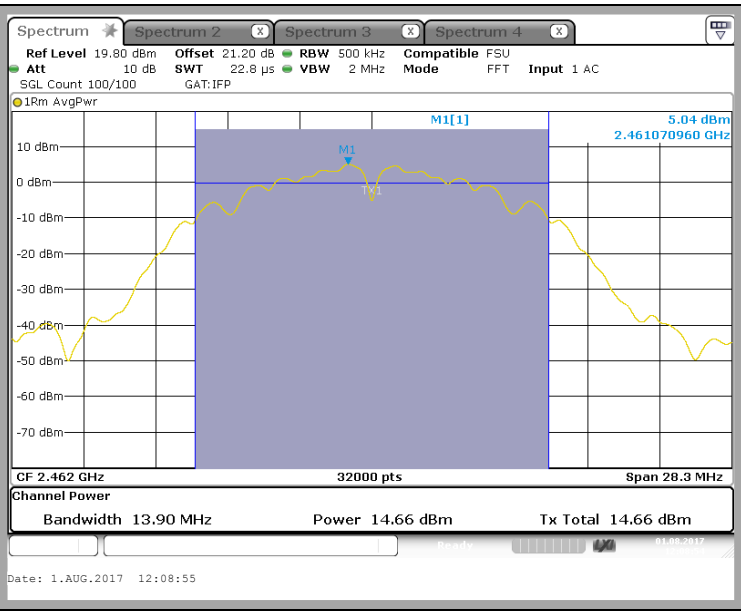
Cmin



Cnom



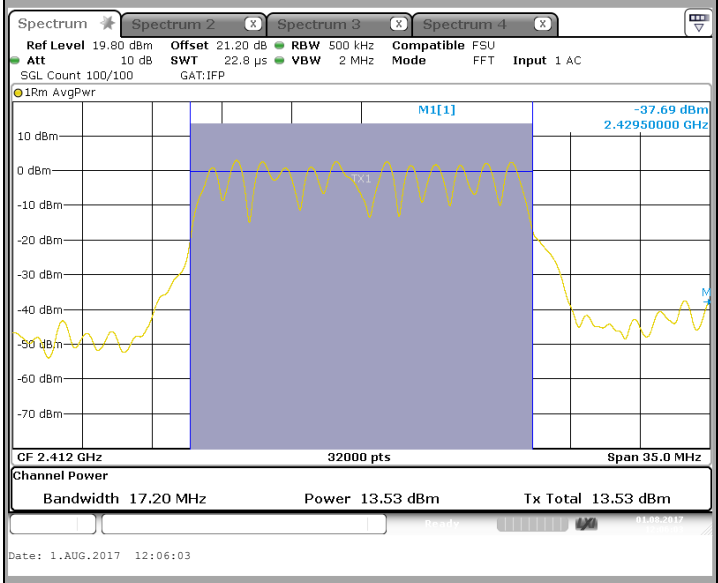
Cmax



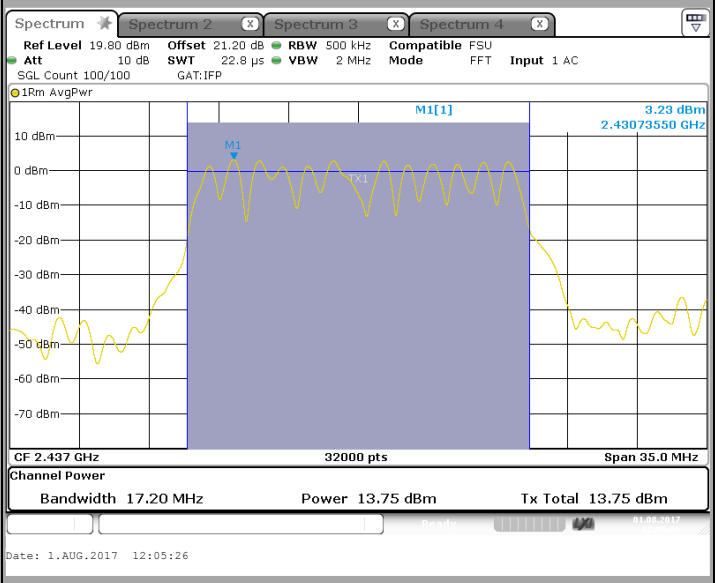
802.11g

Tx1

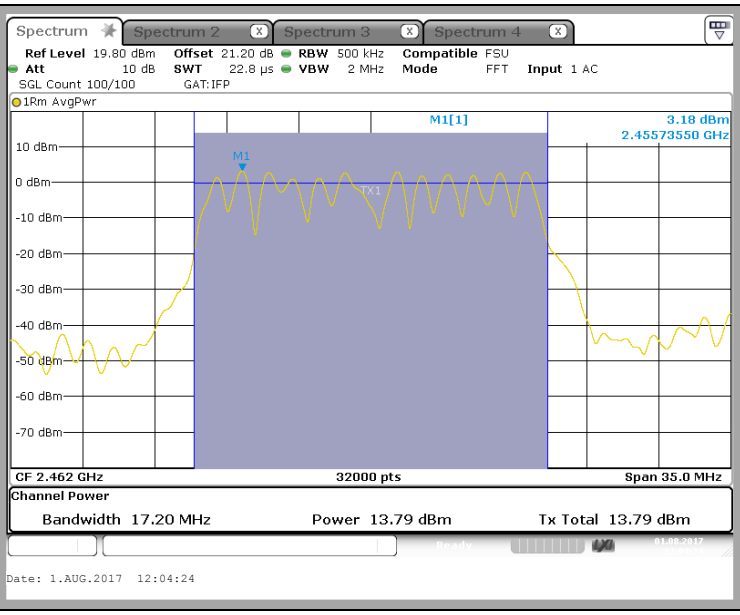
Cmin



Cnom



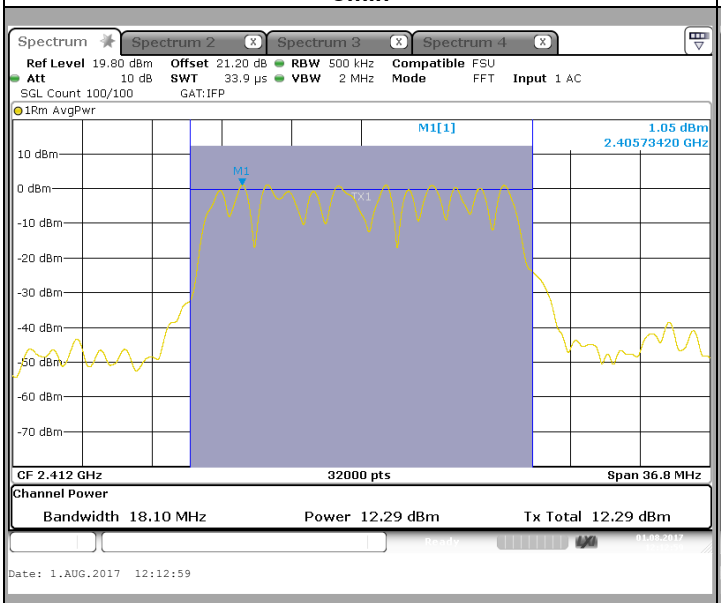
Cmax



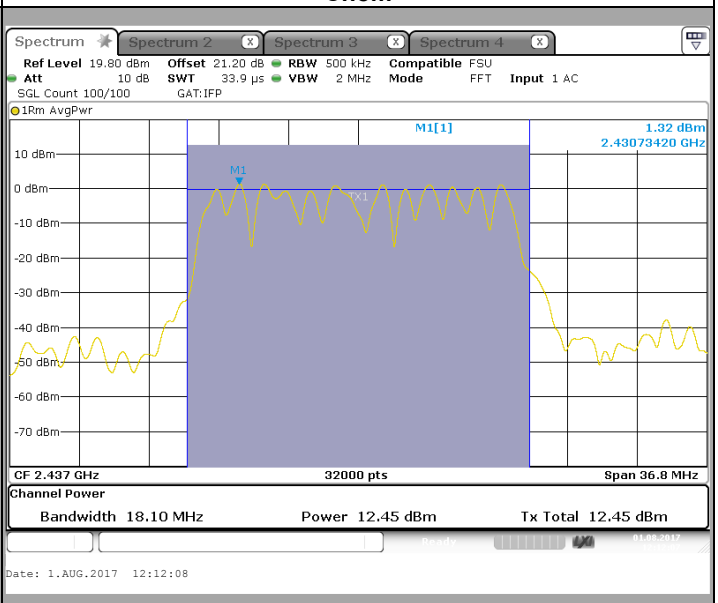
802.11n HT20

Tx1

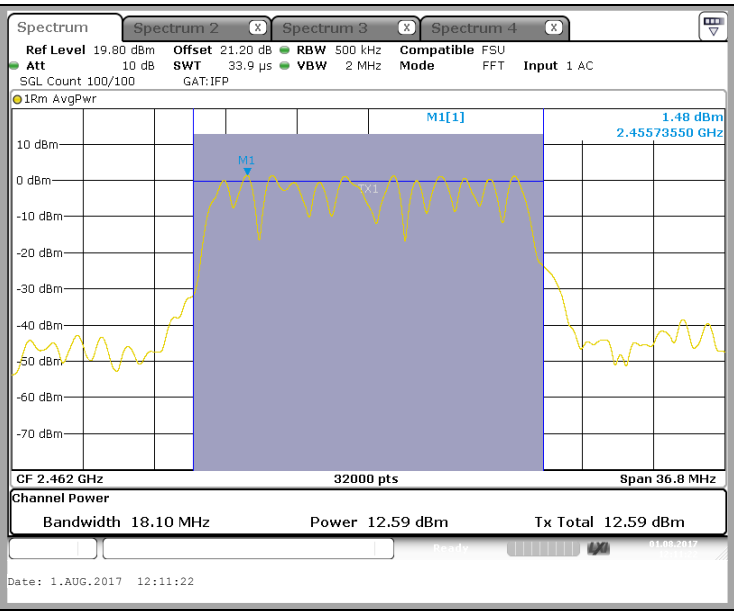
Cmin



Cnom



Cmax



Spectrum Analyzer Offset:
Cable Loss=1.20dB + Attenuator= 20dB

802.11b				
Channel	**Tx1 (dBm)**	**Overall Antenna Gain (dBi)**	**Maximum Conducted Power (dBm)**	**Limit (dBm)**
Cmin	14.36	5.56	14.36	30
Cnom	14.51	5.56	14.51	30
Cmax	14.66	5.56	14.66	30

802.11g				
Channel	**Tx1 (dBm)**	**Overall Antenna Gain (dBi)**	**Maximum Conducted Power (dBm)**	**Limit (dBm)**
Cmin	13.53	5.56	13.53	30
Cnom	13.75	5.56	13.75	30
Cmax	13.79	5.56	13.79	30

802.11n HT20				
Channel	**Tx1 (dBm)**	**Overall Antenna Gain (dBi)**	**Maximum Conducted Power (dBm)**	**Limit (dBm)**
Cmin	12.29	5.56	12.29	30
Cnom	12.45	5.56	12.45	30
Cmax	12.59	5.56	12.29	30

6.6. CONCLUSION

Maximum Conducted Output Power measurement performed on the sample of the product **VELUX ACTIVE** with **NETATMO** NXG01S, 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

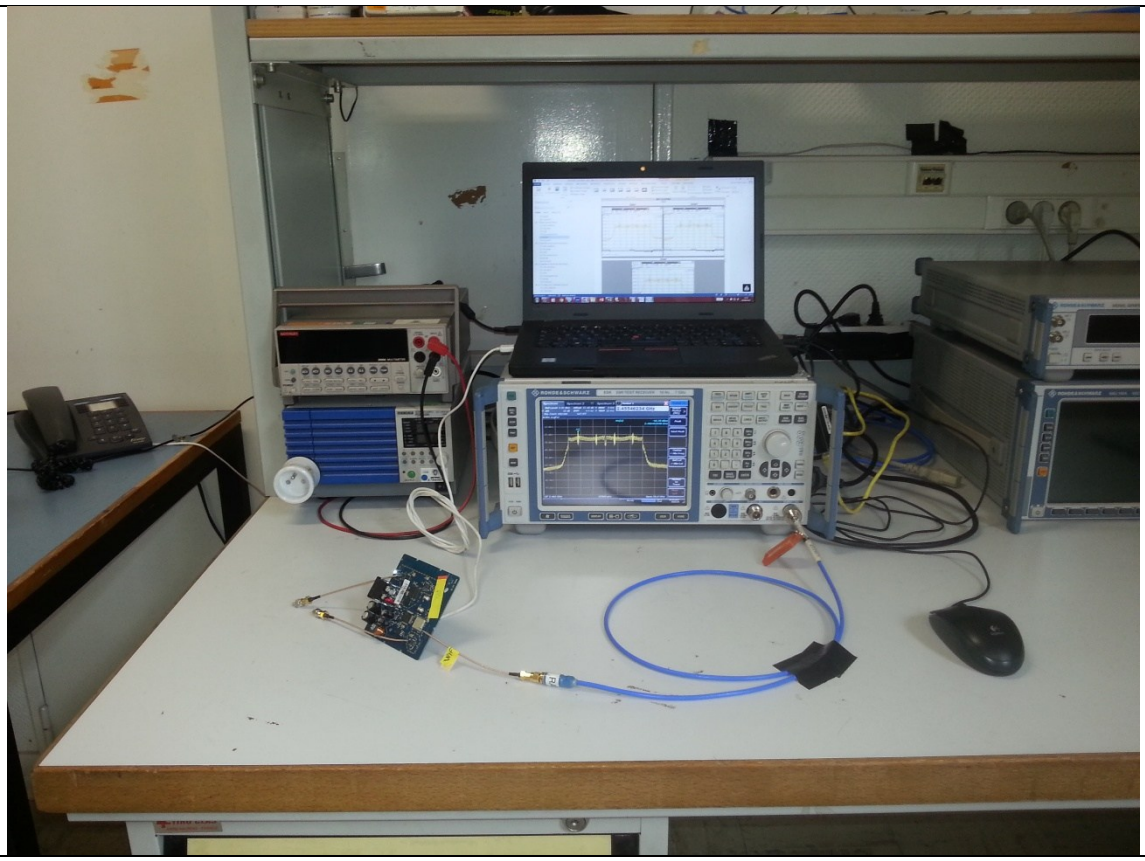
Test performed by : Armand MAHOUNGOU
Date of test : August 1, 2017
Ambient temperature : 26 °C
Relative humidity : 44 %

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

7.3. LIMIT

Power Spectral Density:
2400MHz-2483.5MHz: Shall not exceed 8dBm/3kHz
Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

7.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329675	2016/09	2017/09
Load 50 ohms	TELEGARTNER		A7150103	2016/12	2017/12
Load 50 ohms	TELEGARTNER		A7150104	2016/12	2017/12

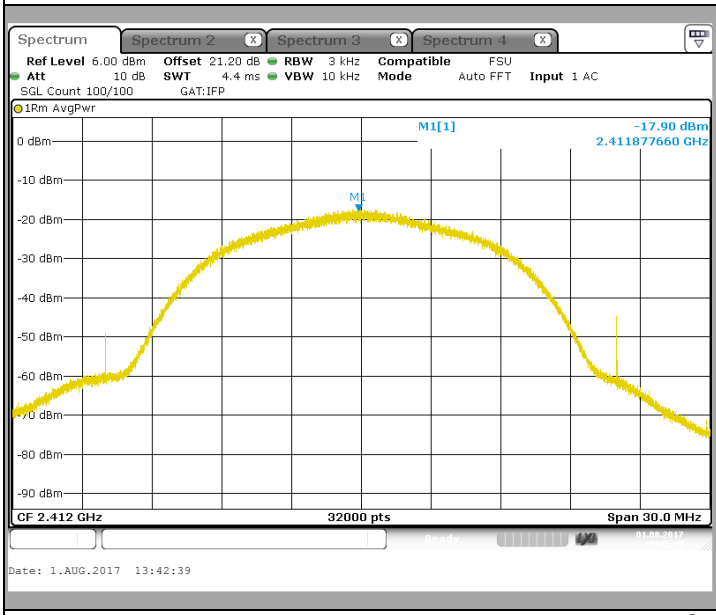
Note: In our quality system, the test equipment calibration due is more & less 2 months

7.5. RESULTS

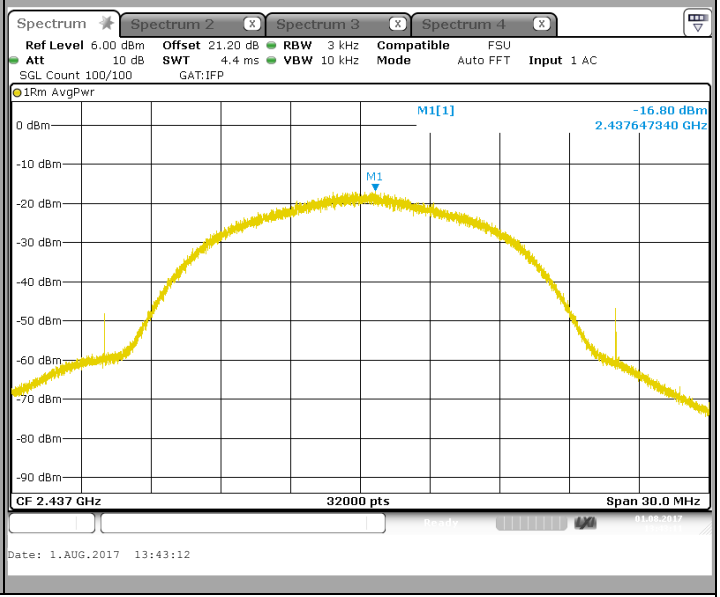
802.11b

Tx1

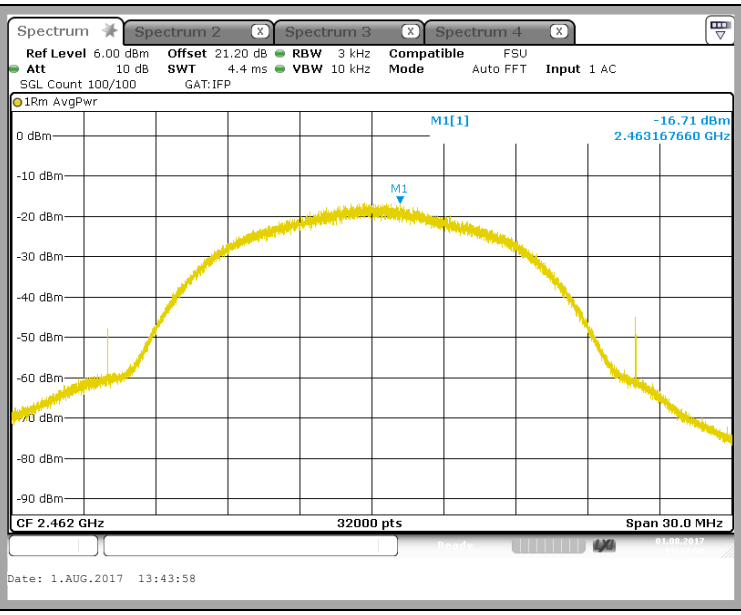
Cmin



Cnom



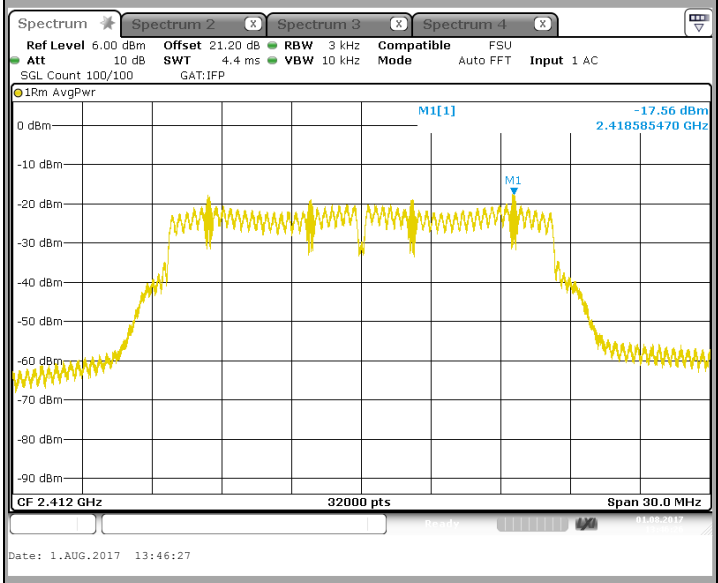
Cmax



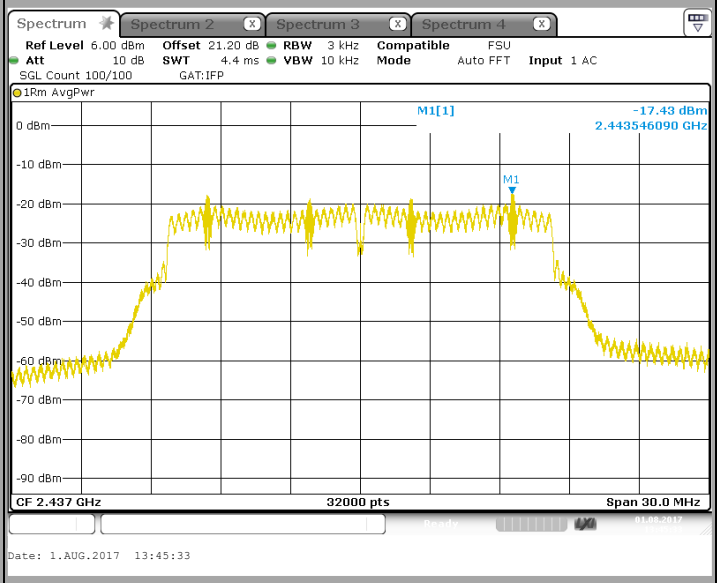
802.11g

Tx1

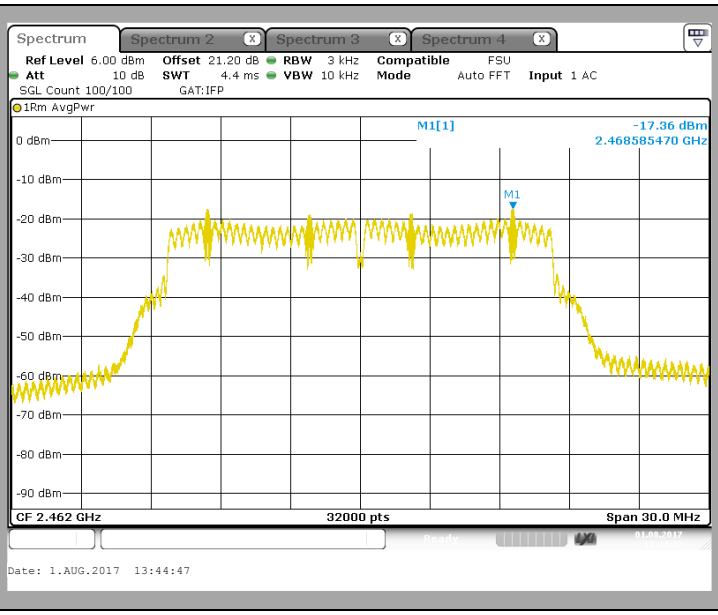
Cmin

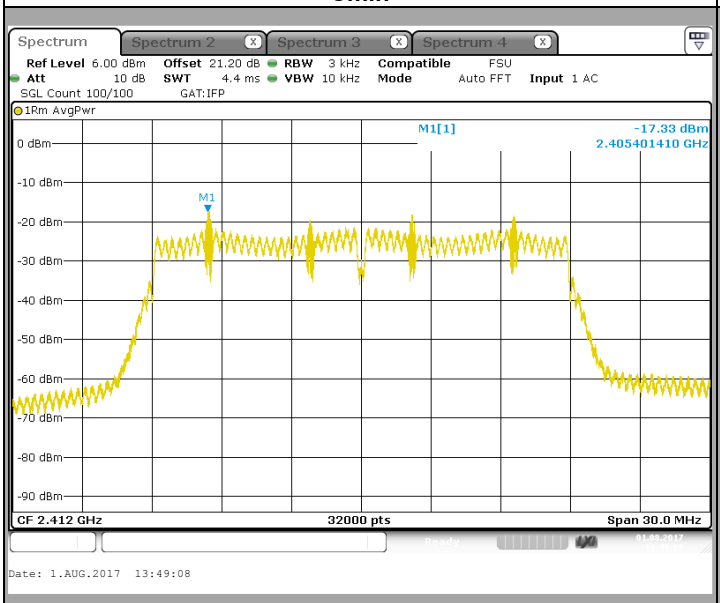
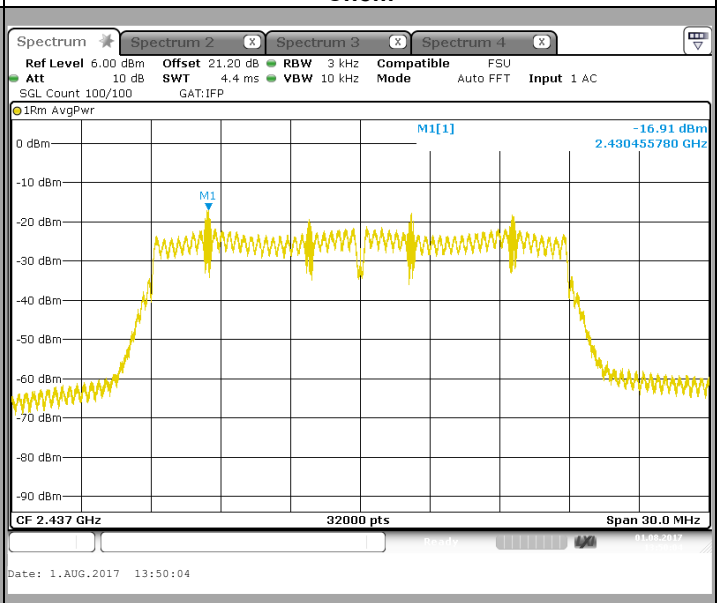
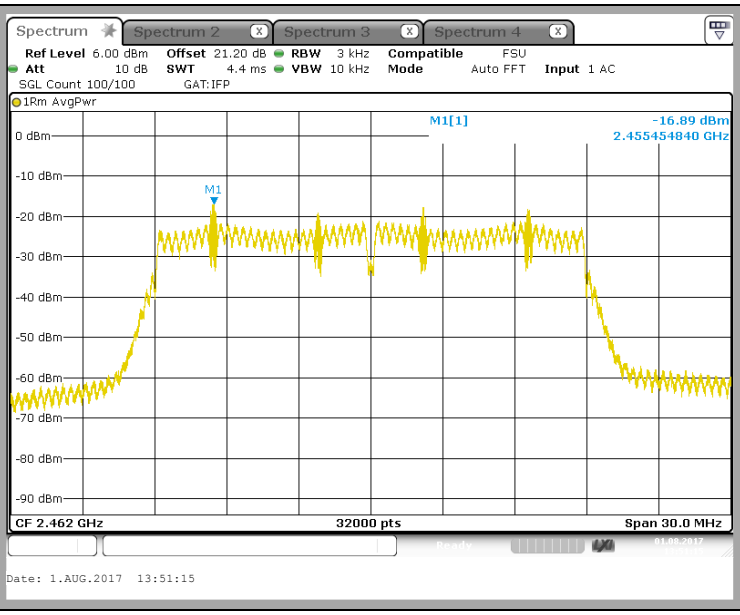


Cnom



Cmax



802.11n HT20	
Tx1	
Cmin	Cnom
	
Cmax	
	

Spectrum Analyzer Offset:
Cable Loss=1.2dB + Attenuator= 20dB

802.11b				
Channel	**Tx1 (dBm/3kHz)**	**Overall Antenna Gain (dBi)**	**Power Spectral Density (dBm)**	**Limit (dBm/3kHz)**
Cmin	-17.90	5.56	-17.90	8
Cnom	-16.80	5.56	-16.80	8
Cmax	-16.71	5.56	-16.71	8

802.11g				
Channel	**Tx1 (dBm/3kHz)**	**Overall Antenna Gain (dBi)**	**Power Spectral Density (dBm)**	**Limit (dBm/3kHz)**
Cmin	-17.56	5.56	-17.56	8
Cnom	-17.43	5.56	-17.43	8
Cmax	-17.36	5.56	-17.36	8

802.11nHT20				
Channel	**Tx1 (dBm/3kHz)**	**Overall Antenna Gain (dBi)**	**Power Spectral Density (dBm)**	**Limit (dBm/3kHz)**
Cmin	-17.33	5.56	-17.33	8
Cnom	-16.91	5.56	-16.91	8
Cmax	-16.89	5.56	-16.89	8

7.6. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **VELUX ACTIVE** with **NETATMO** NXG01S, 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

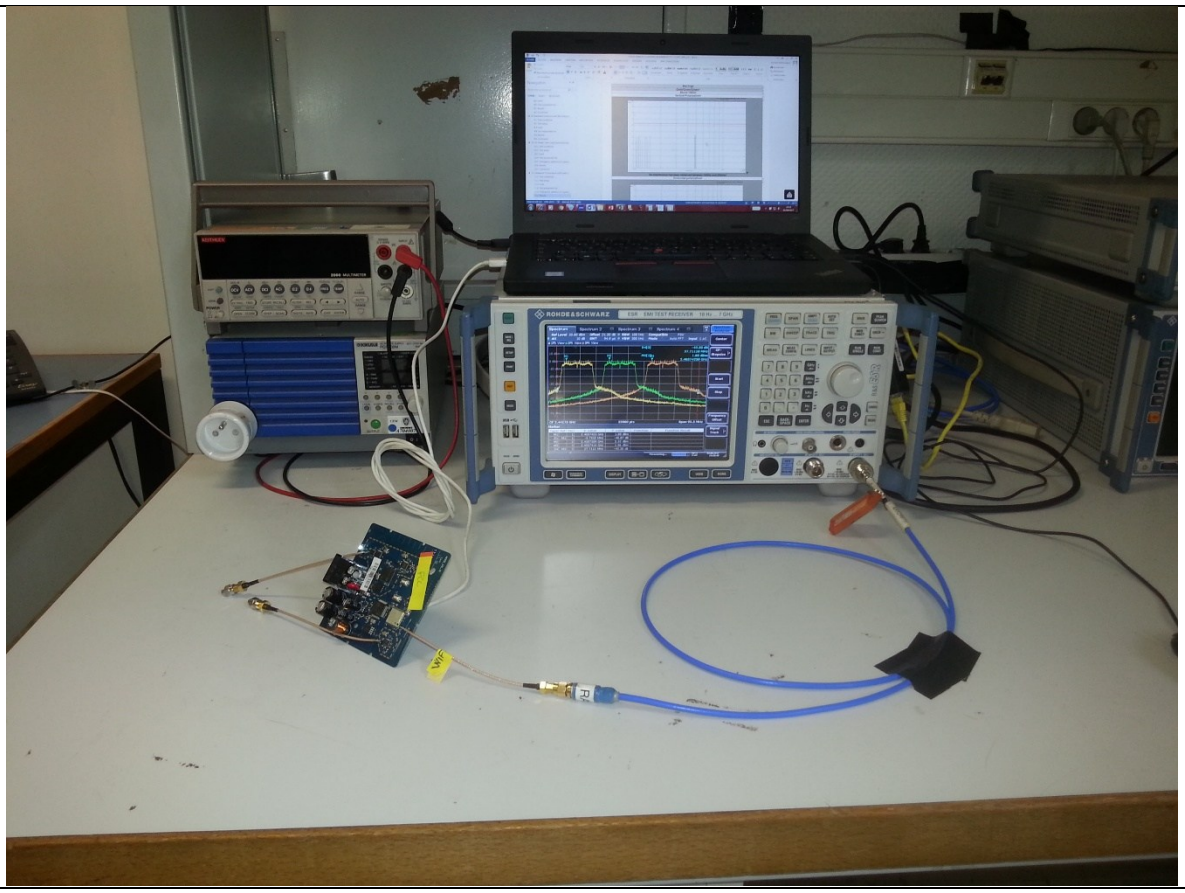
Test performed by : Armand MAHOUNGOU
Date of test : August 1, 2017
Ambient temperature : 26 °C
Relative humidity : 44 %

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 “2400MHz & 2483,5MHz”

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
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329675	2016/09	2017/09
Load 50 ohms	TELEGARTNER		A7150103	2016/12	2017/12
Load 50 ohms	TELEGARTNER		A7150104	2016/12	2017/12

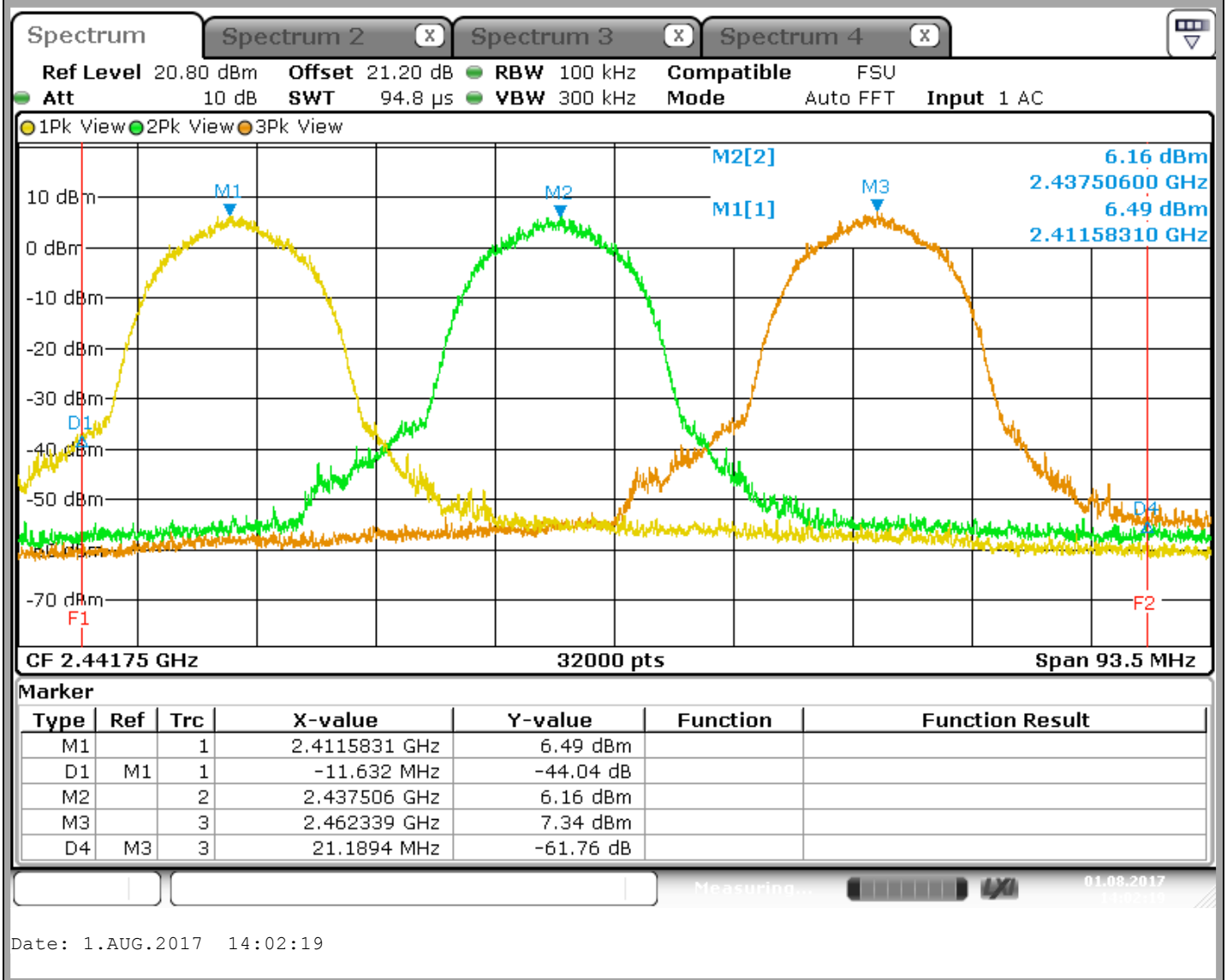
Note: In our quality system, the test equipment calibration due is more & less 2 months

8.5. RESULTS

802.11b

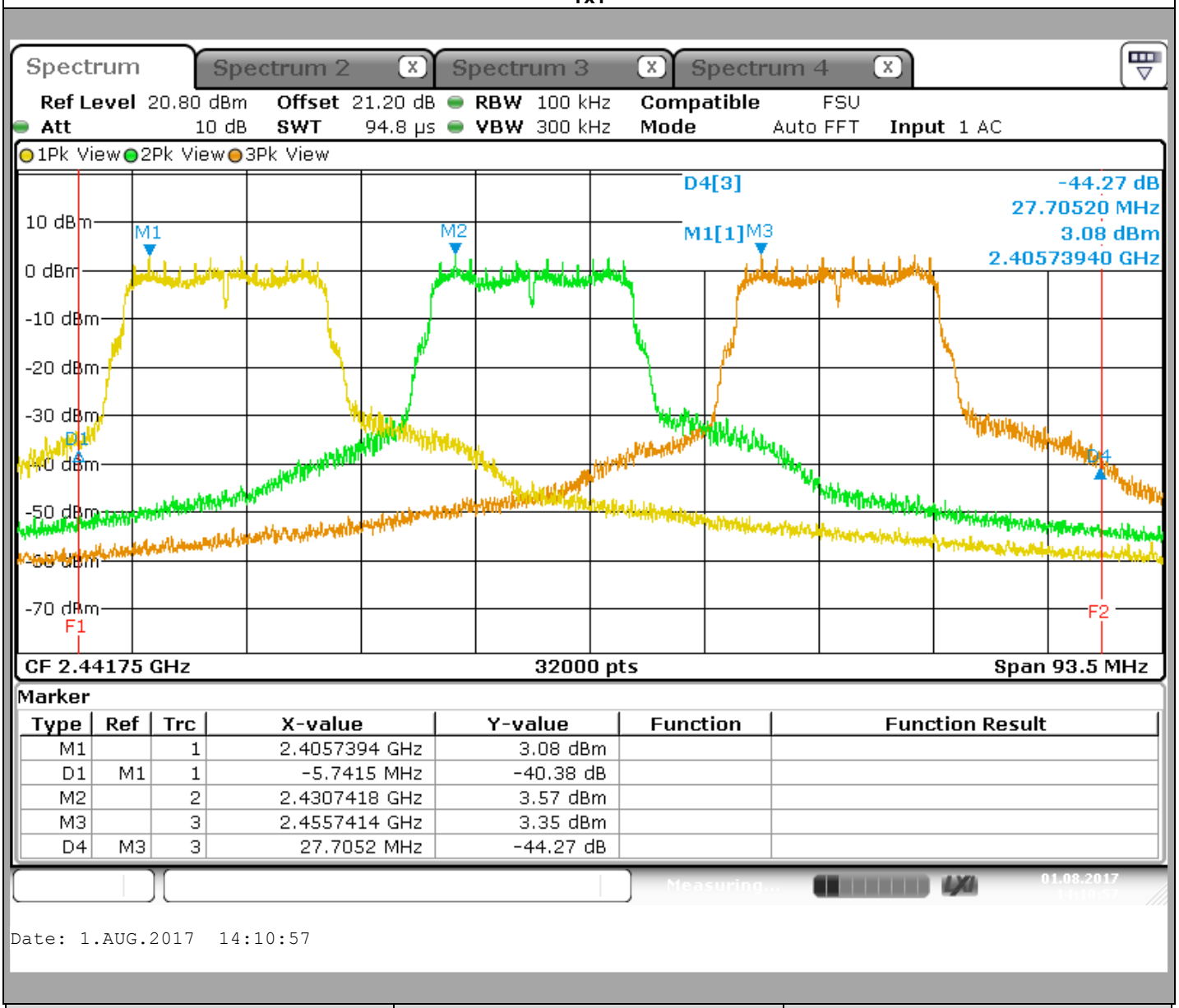
Cmin/Cnom/Cmax

Tx1



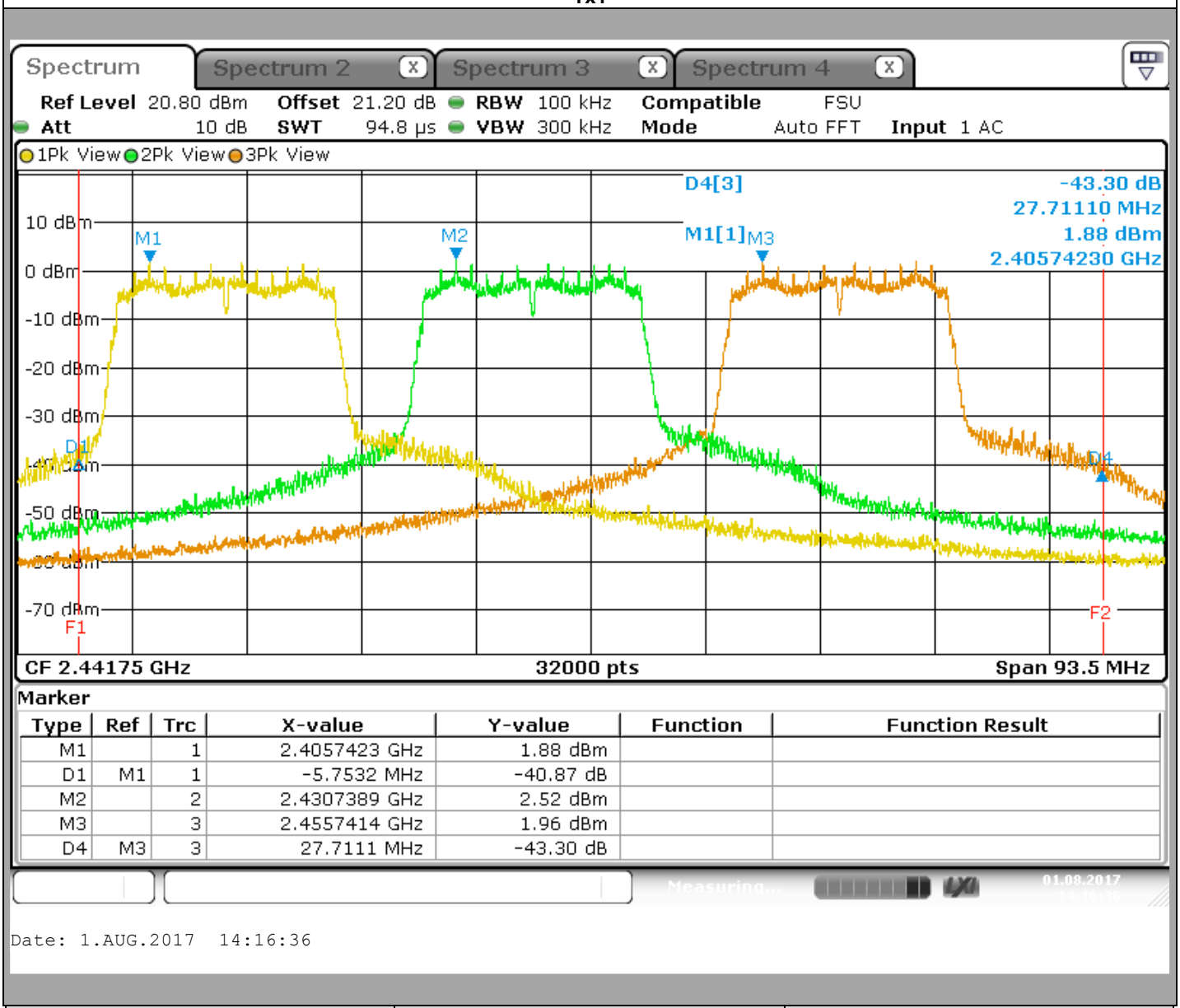
Frequency (MHz)	Level (dBc)	Limit (dBc)
2400	44.04	30
2483.5	61.76	30

802.11g
Cmin/Cnom/Cmax
Tx1



Frequency (MHz)	Level (dBc)	Limit (dBc)
2400	40.38	30
2483.5	44.27	30

802.11n HT20
Cmin/Cnom/Cmax
Tx1



Frequency (MHz)	Level (dBc)	Limit (dBc)
2400	40.87	30
2483.5	43.30	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** NXG01S, 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

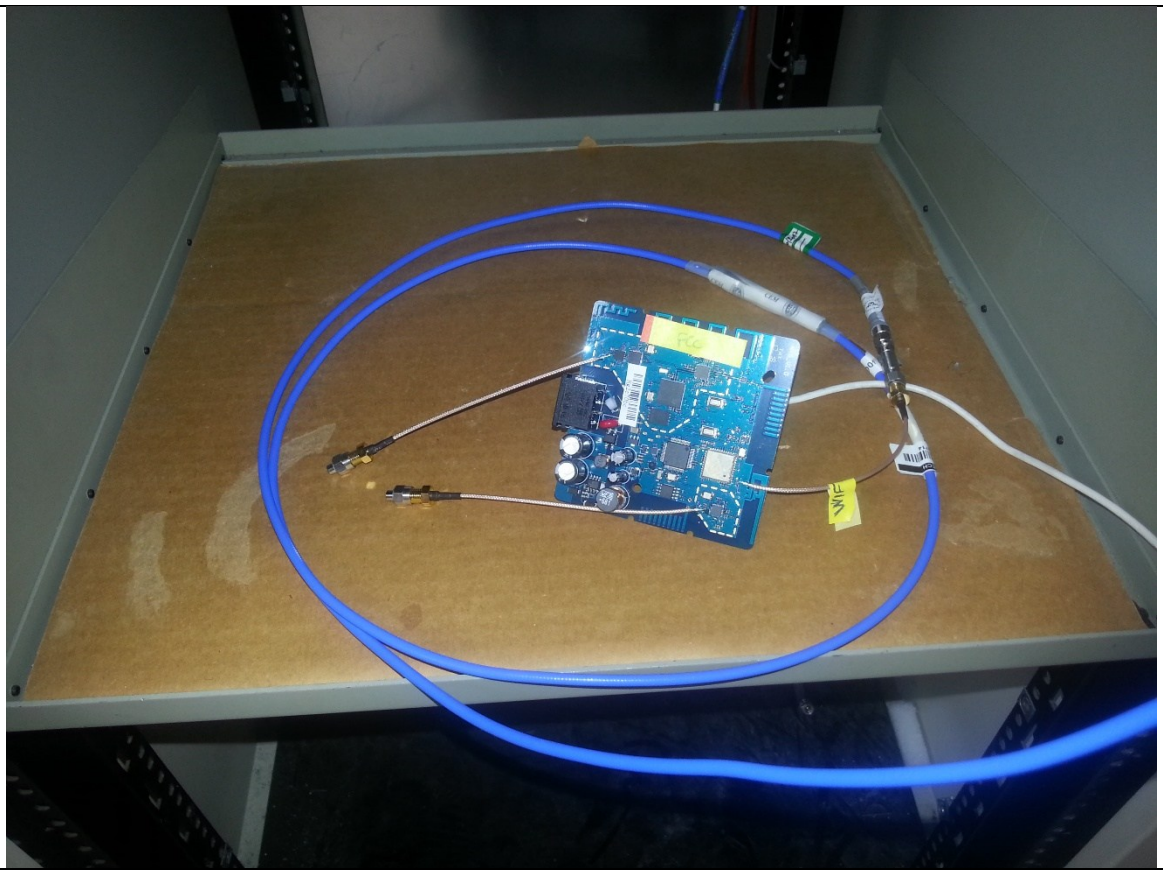
Test performed by : Armand MAHOUNGOU
Date of test : August 2, 2017
Ambient temperature : 25 °C
Relative humidity : 45 %

9.2. TEST SETUP

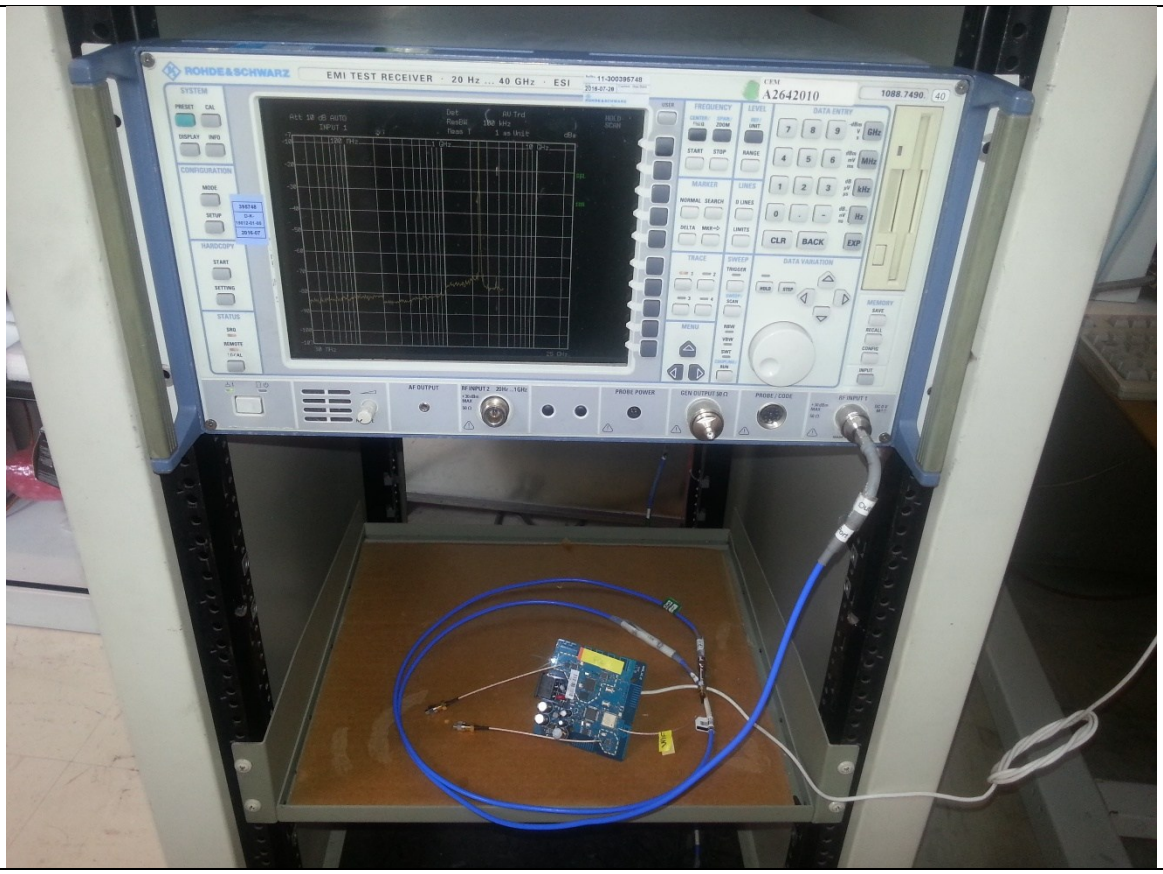
- The Equipment Under Test is installed:
☑ On a table
☐ In an anechoic chamber

- 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

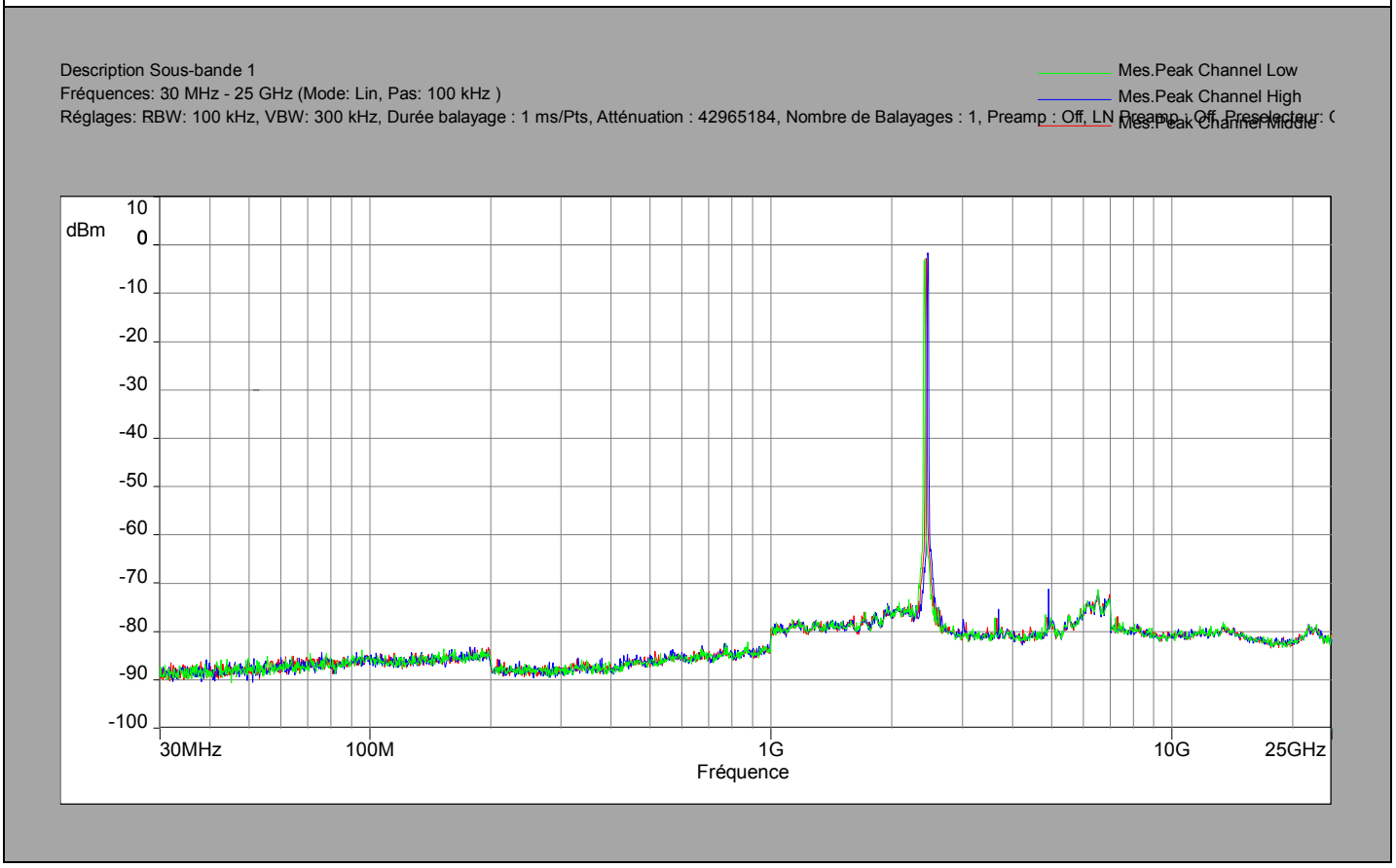
9.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESI40 1088 740K40	A2642010	2017/07	2018/07
Cable	Télédyne	084-0555-2MTR	A5329758	2016/10	2017/10
Attenuator 3dB	WEINSCHEL	WA54-3-12	A7122223	2016/10	2017/10
High pass filter 2,4GHz	Wainwright	WHKX12-2494-2900-18000-80ST	A7484068	2017/03	2018/03
Load 50 ohms	TELEGARTNER		A7150103	2016/12	2017/12
Load 50 ohms	TELEGARTNER		A7150104	2016/12	2017/12

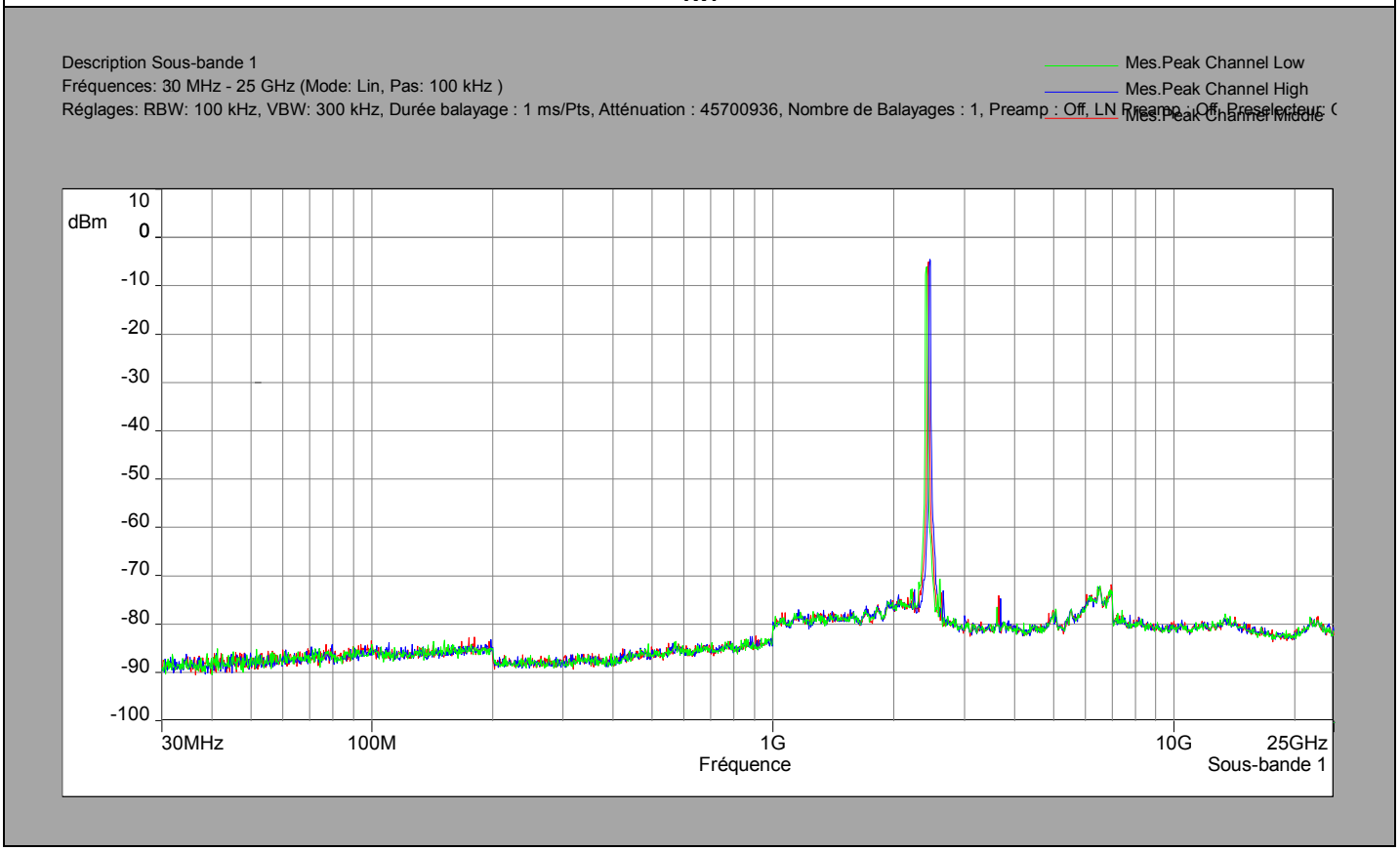
Note: In our quality system, the test equipment calibration due is more & less 2 months

9.5. RESULTS

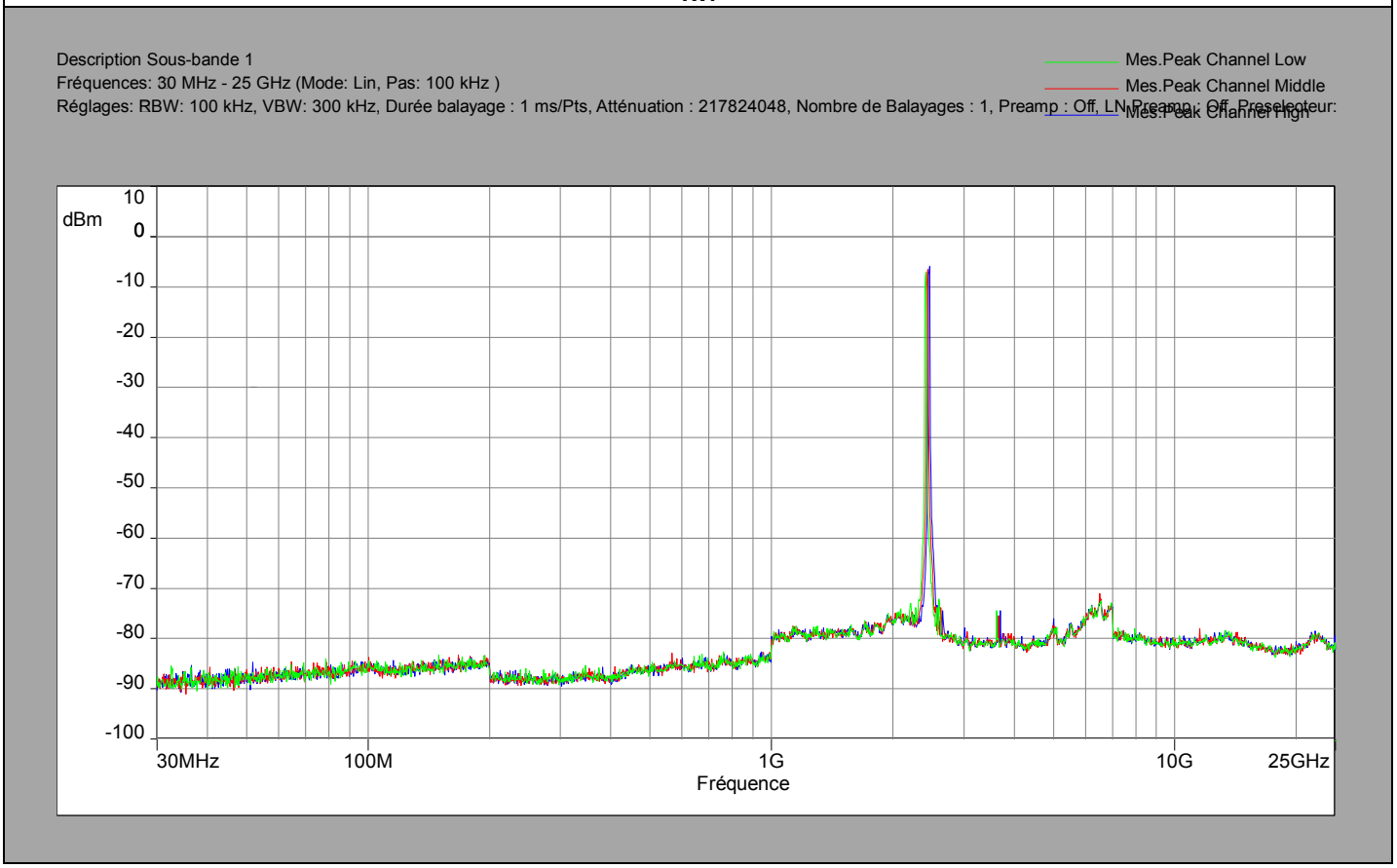
802.11b
Cmin/Cnom/Cmax
Tx1



802.11g
Cmin/Cnom/Cmax
Tx1



802.11n HT20
Cmin/Cnom/Cmax
Tx1



802.11b			
Frequency (MHz)	**Level (dBm)**	**Level (dBc)**	**Limit (dBc)**
2412	-2.96		
4829.5	-76.44	73.48	30
2437	-2.71		
4869.2	-77.07	74.11	30
2462	-1.67		
4924	-71.18	69.51	30

802.11g			
Frequency (MHz)	**Level (dBm)**	**Level (dBc)**	**Limit (dBc)**
2412	-6.02		
4826	-76.47	70.45	30
2437	-5.03		
4876	-74.09	69.06	30
2462	-4.58		
4925	-74.71	70.13	30

802.11n HT20			
Frequency (MHz)	**Level (dBm)**	**Level (dBc)**	**Limit (dBc)**
2412	-7.13		
4826	-74.45	67.33	30
2437	-6.51		
4876	-75.46	68.95	30
2462	-5.88		
4925	-74.47	68.59	30

9.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands measurement performed on the sample of the product **VELUX ACTIVE** with **NETATMO** NXG01S, 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. AC POWER LINE CONDUCTED EMISSIONS

10.1. TEST CONDITIONS

Test performed by	: Armand MAHOUNGOU
Date of test	: July 25, 2017
Ambient temperature	: 27 °C
Relative humidity	: 48 %

10.2. 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 50Ω / 50µH. Interconnecting cables and equipment's were moved to position that maximized emission.

Photograph for AC Power Line Conducted Emissions (Front view)

Photograph for AC Power Line Conducted Emissions (Rear view)

10.3. LIMIT

Quasi-Peak
0,15kHz to 0,5MHz: 66dBµV to 56dBµV*
0,5MHz to 5MHz: 56dBµV
5MHz to 30MHz: 60dBµV

Average
0,15kHz to 0,5MHz: 56dBµV to 46dBµV*
0,5MHz to 5MHz: 46dBµV
5MHz to 30MHz: 50dBµV

*Decreases with the logarithm of the frequency

10.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Semi anechoic chamber	SIEPEL	-	D3044008	2017/06	2018/06
V LISN	ROHDE & SCHWARZ	ESH3-Z5	C2322003	2016/08	2017/08
pulse limiter	ROHDE & SCHWARZ	ESH3-Z2	A2649004	2017/03	2018/03
Cable	-		A5329531	2017/02	2018/02

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

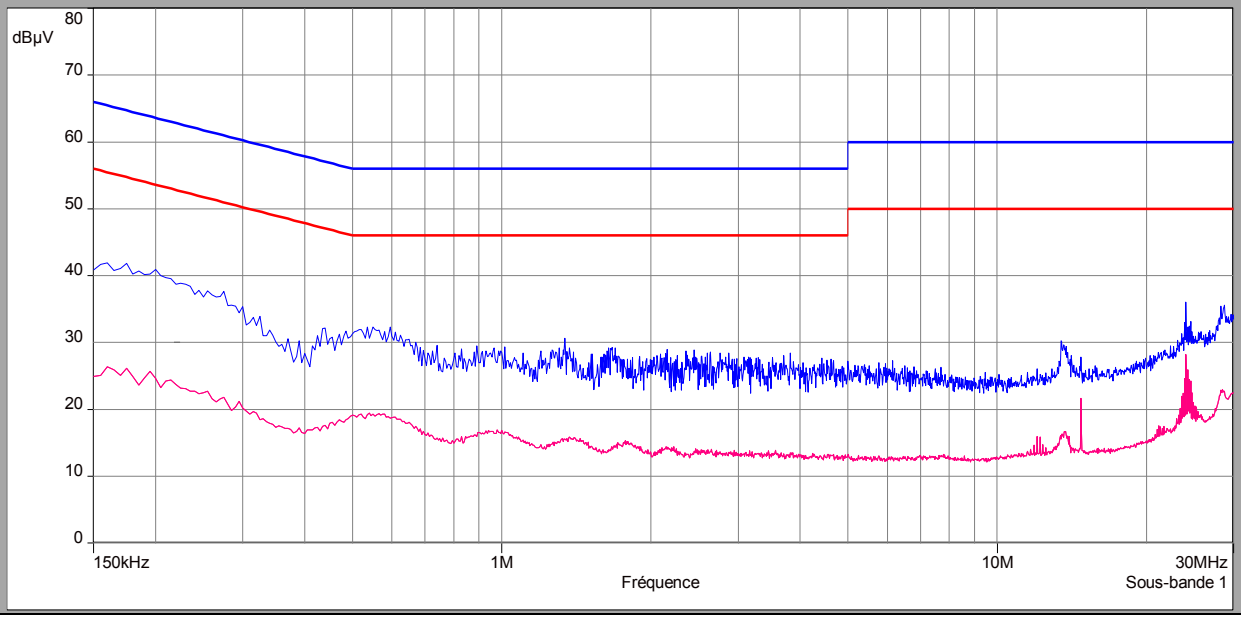
802.11b

Cmin

Phase

Description Sous-bande 1
Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)
Réglages: RBW: 9 kHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 160667760, Nombre de Balayages : 1, Preamp : Off, LN Preamp : Off, Preselecteur: On
Ligne:Phase 1

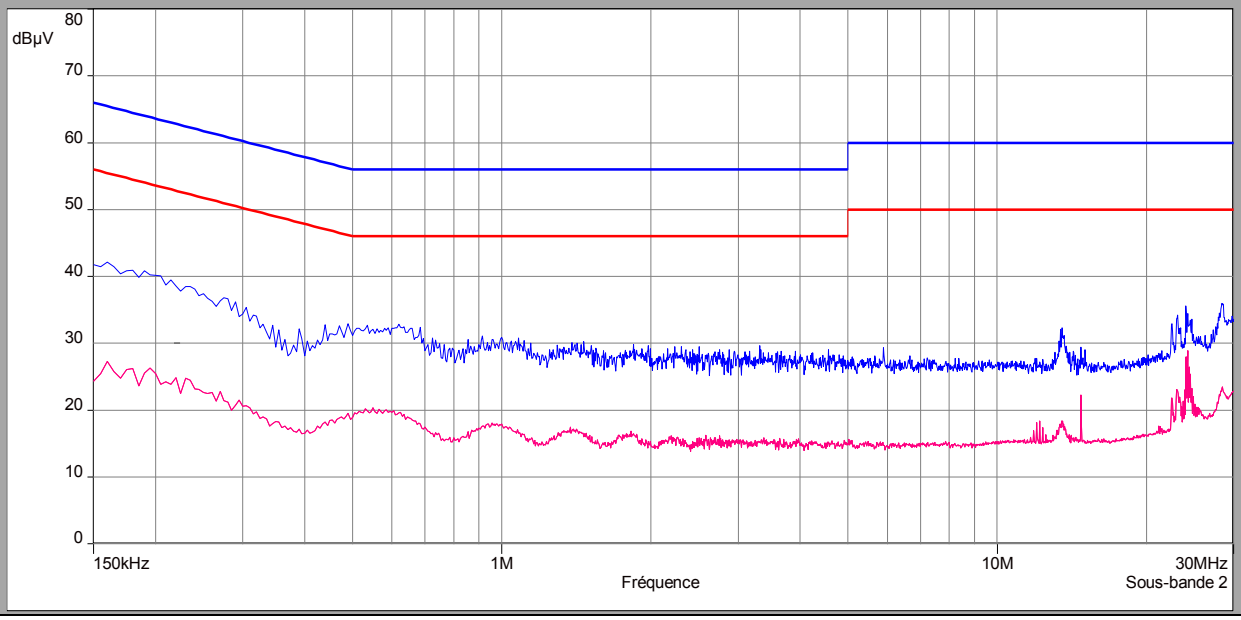
FCC/FCC 15.107 - Classe:B - Moyenne/
FCC/FCC 15.107 - Classe:B - QCrête/
Mes.Peak (Phase 1)
Mes.Avg (Phase 1)



Line

Description Sous-bande 2
Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)
Réglages: RBW: 9 kHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 160642672, Nombre de Balayages : 1, Preamp : Off, LN Preamp : Off, Preselecteur: On
Ligne:Neutre

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



Phase Line							
Frequency (MHz)	**Peak Level (dBµV)**	**Quasi-Peak Level (dBµV)**	**Quasi-Peak Limit (dBµV)**	**Peak Margin (dBµV/m)**	**Average Level (dBµV)**	**Average Limit (dBµV)**	**Average Margin (dBµV/m)**
14.74	32.31	-	60	27.69	22.25	50	27.75
24.00	35.59	-	60	24.41	28.89	50	21.11
28.46	35.94	-	60	24.06	23.48	50	26.52

Neutral Line							
Frequency (MHz)	**Peak Level (dBµV)**	**Quasi-Peak Level (dBµV)**	**Quasi-Peak Limit (dBµV)**	**Peak Margin (dBµV/m)**	**Average Level (dBµV)**	**Average Limit (dBµV)**	**Average Margin (dBµV/m)**
14.74	30.24	-	60	29.76	21.61	50	28.39
24.00	36.06	-	60	23.94	28.18	50	21.82
28.46	35.56	-	60	24.44	22.91	50	27.09

10.7. CONCLUSION

Ac Power Line Conducted Emission measurement performed on the sample of the product **VELUX ACTIVE** with **NETATMO** NXG01S, 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. UNWANTED EMISSIONS IN RESTRICTED FREQUENCY BANDS

11.1. TEST CONDITIONS

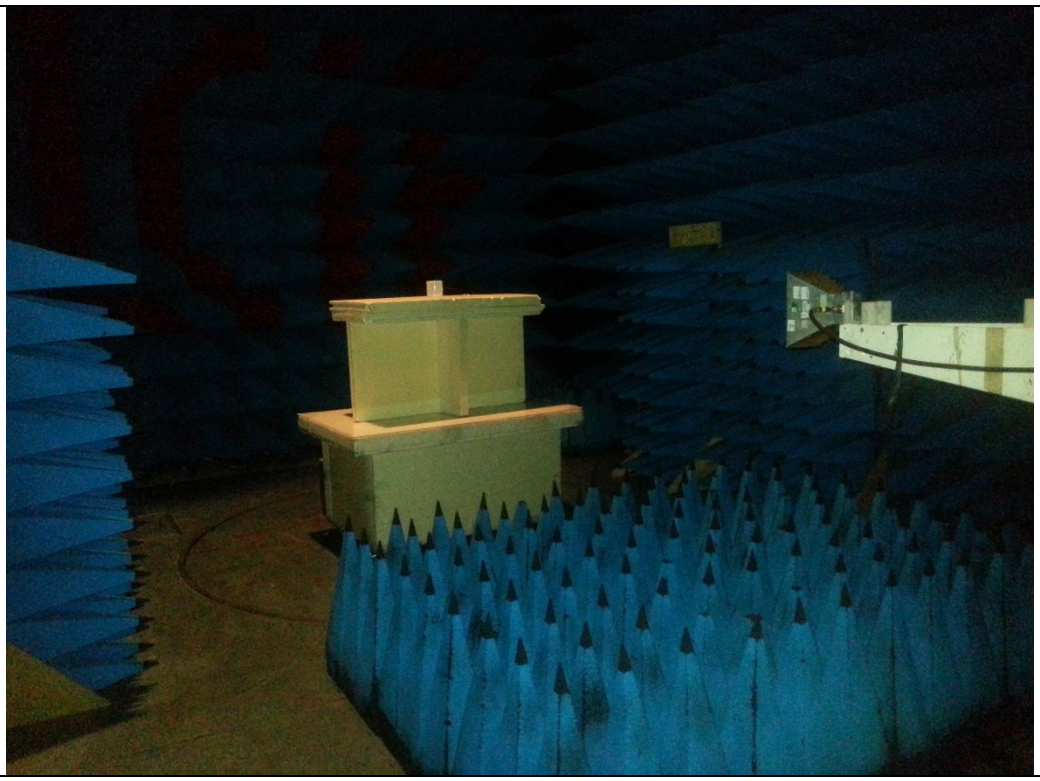
Test performed by	: Armand MAHOUNGOU
Date of test	: July 24, 2017 to July 25, 2017
Ambient temperature	: 25 °C & 26 °C
Relative humidity	: 46 % & 48 %

11.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013). The EUT is placed **ina semi-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 Emissions

Photograph for Unwanted Emissions



Photograph for Unwanted Emissions

11.3. 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

11.4. 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	2016/10	2017/10
Bilog antenna	SCHWARZBECK	VULB 9160	C2040150	2017/03	2018/03
High pass filter 2,4GHz	Wainwright	WHKX12-2494-2900-18000-80ST	A7484068	2017/03	2018/03
RF cable	RADIALL; CDI	30990-7M	A5329711	2017/03	2018/03
Cable	CABLES & CONNECTIQUES	3.5MD/CSU528AA/3.5MC/4000	A5329431	2017/03	2018/03
Horn antenna	A-INFOMW	LB-10180-NF	C2042018	2017/03	2018/03
Cable	CABLES & CONNECTIQUES	3.5MD/CSU528AA/3.5MD/1500	A5329364	2016/11	2017/11
Preamplifier	BONN Elektronik	BLNA 3018-8F305	A7080053	2017/04	2018/04

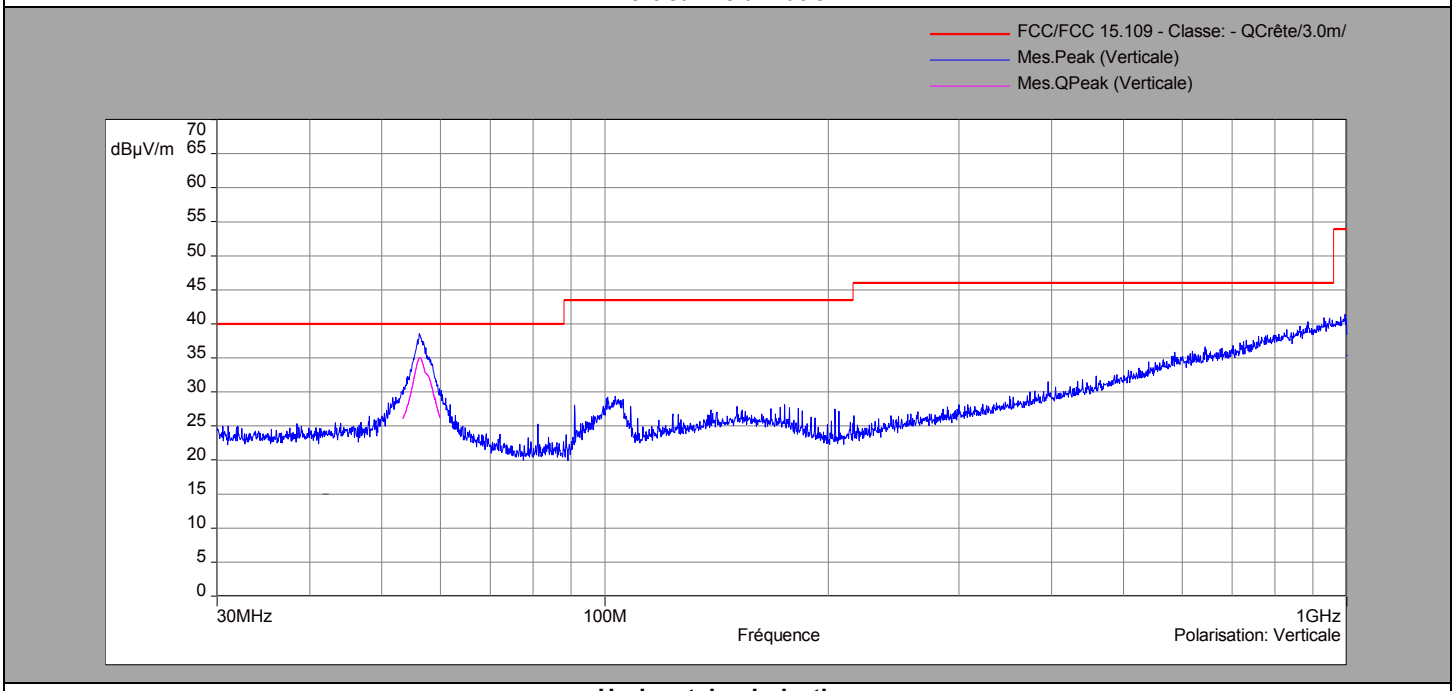
Note: In our quality system, the test equipment calibration due is more & less 2 months

11.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

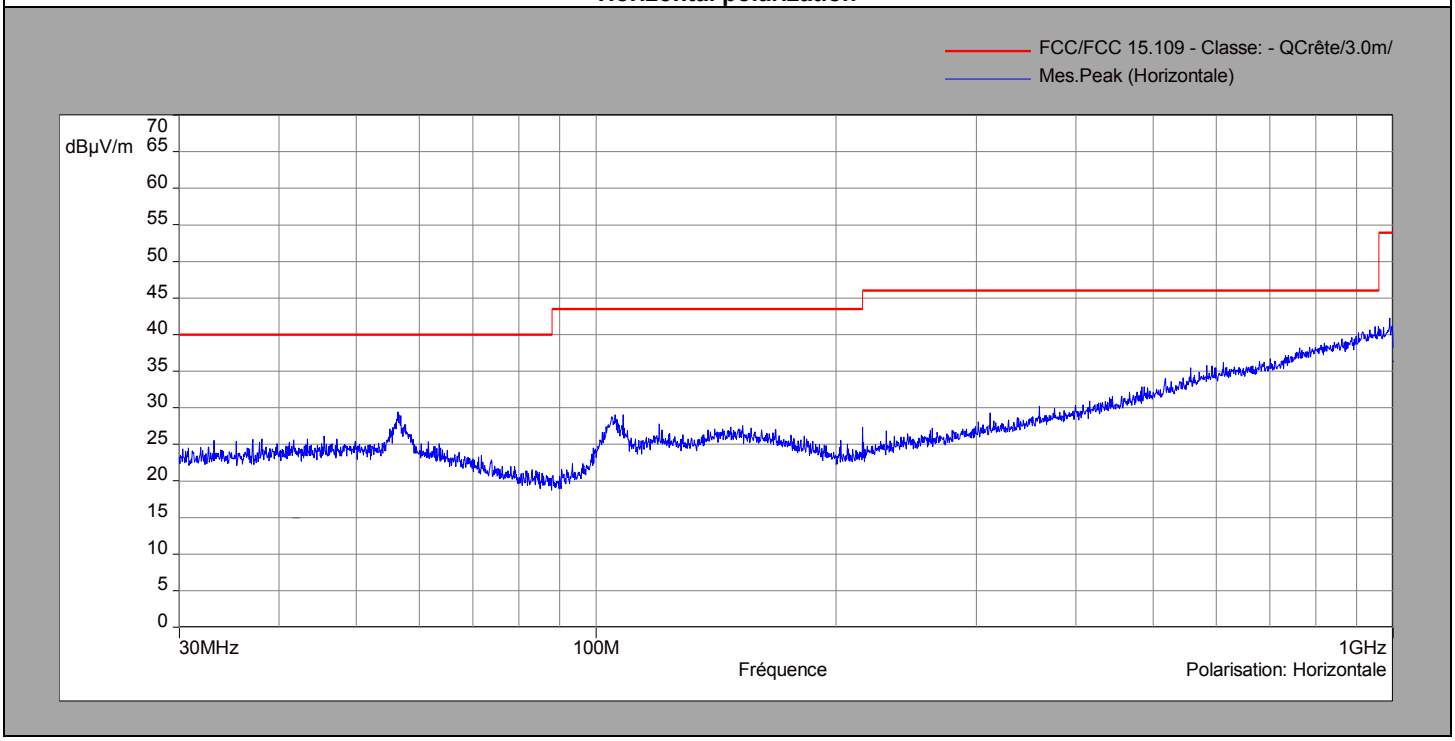
☑ None ☐ Divergence:

11.6. RESULTS

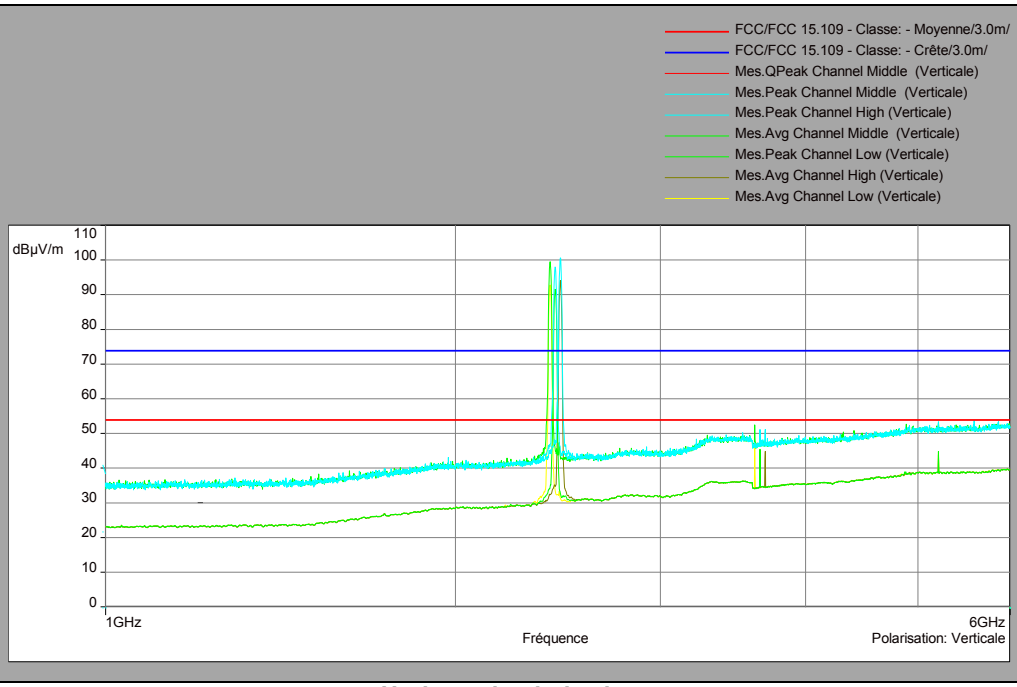
802.11b
Cnom
Below 1GHz
Vertical Polarization



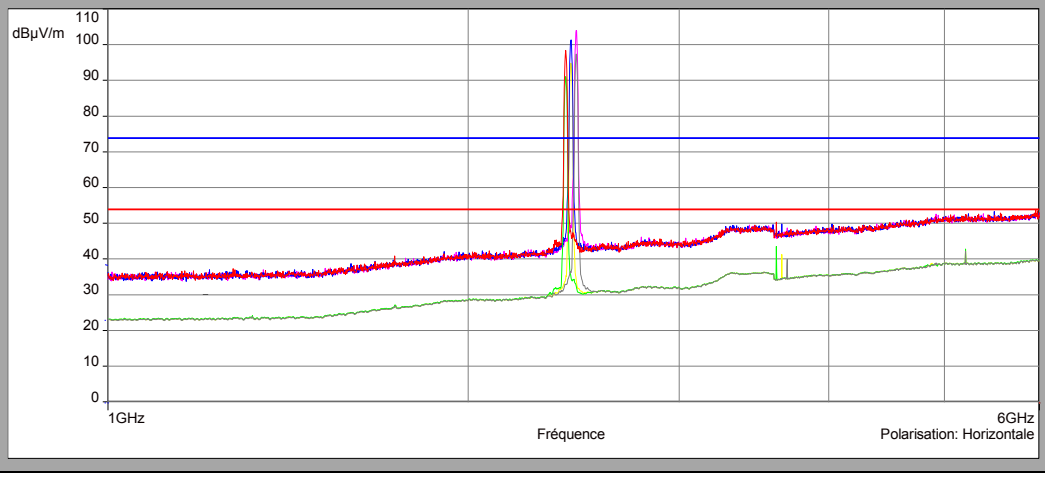
Horizontal polarization



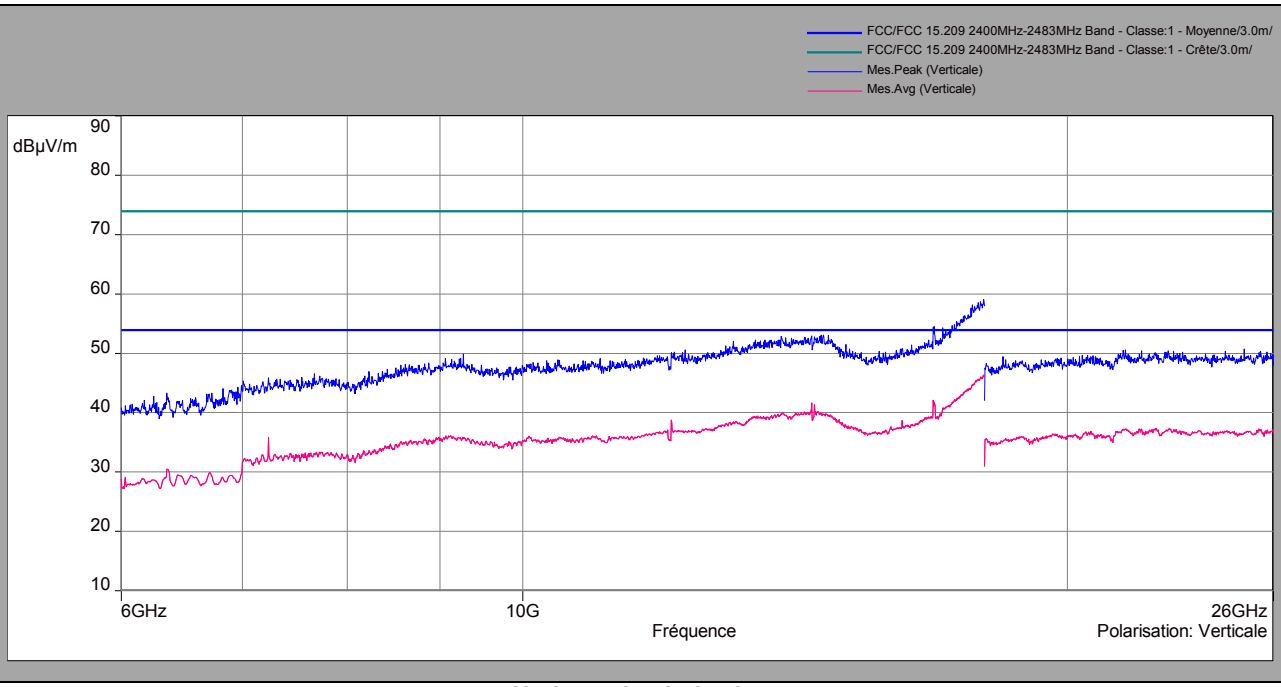
802.11b
Cmin/Cnom/Cmax
Above 1GHz
Vertical Polarization



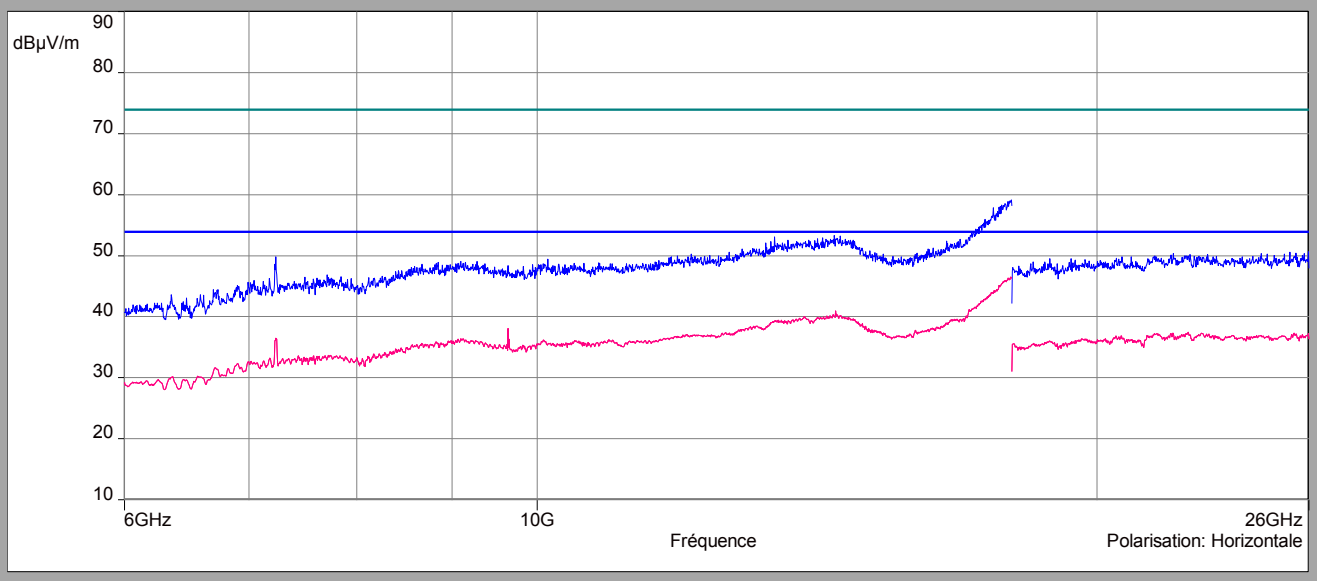
Horizontal polarization



802.11b
Cmin/Cnom/Cmax
Above 1GHz
Vertical Polarization



Horizontal polarization



802.11b

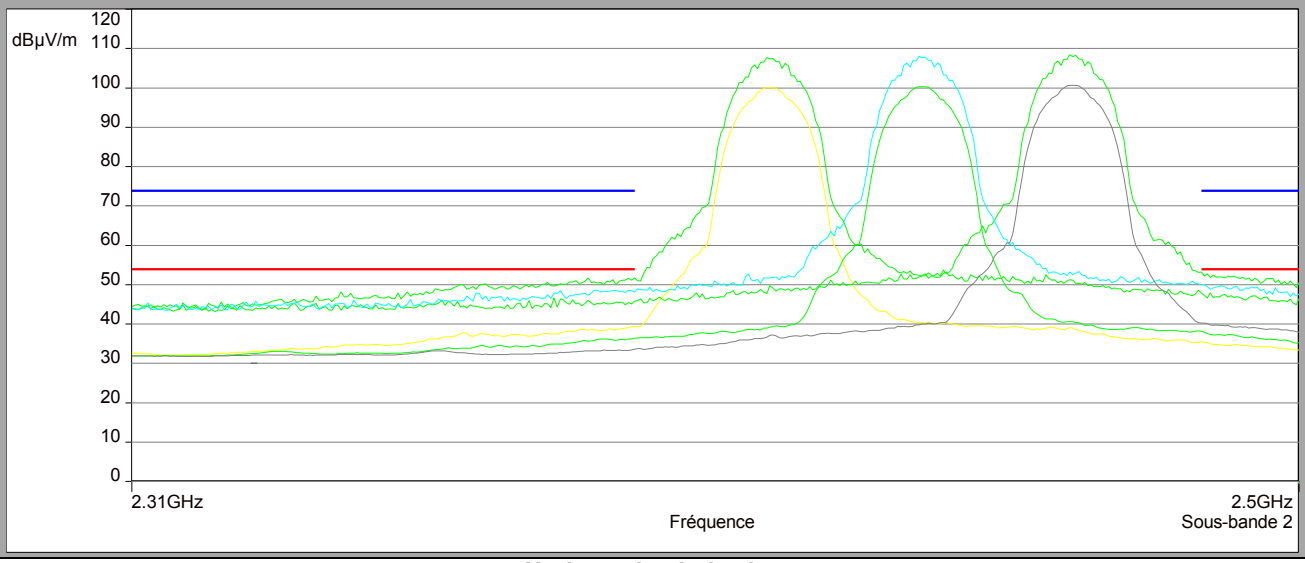
Cmin/Cnom/Cmax

Zoom 2310MHz-2500MHz

Vertical Polarization

Description Sous-bande 2
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 500 kHz)
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 182191856, Nombre de Balayages : 1, Preamp : On: 20 dB, LN Preamp : Off, Preselecteur: Off
Polarisation:Verticale
Distance: 3 m

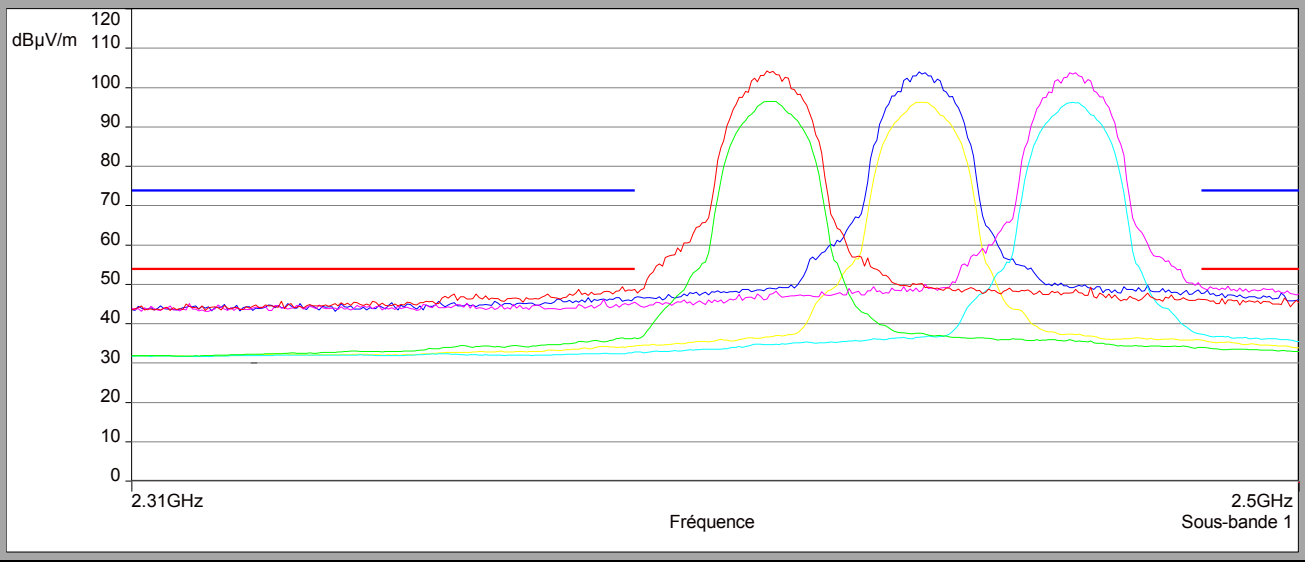
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
Mes.Avg Channel High (Verticale)
Mes.Peak Channel Middle (Verticale)
Mes.Avg Channel Middle (Verticale)
Mes.Peak Channel Low (Verticale)
Mes.Peak Channel High (Verticale)
Mes.Avg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



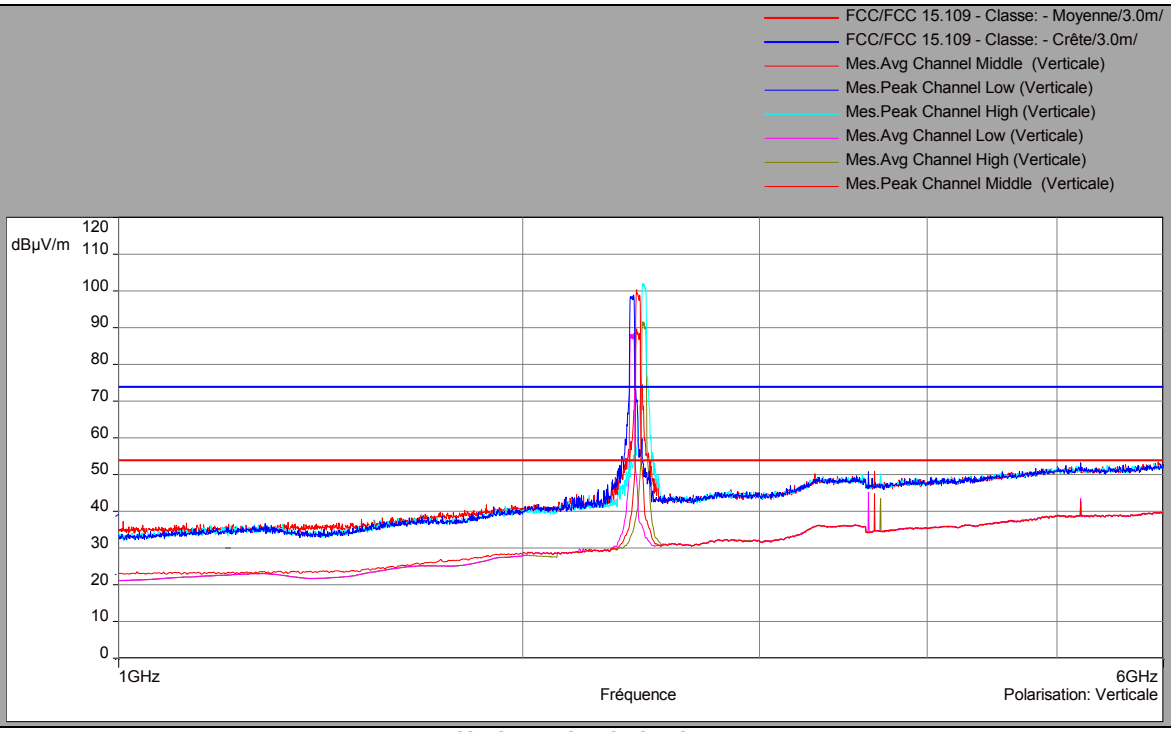
Horizontal polarization

Description Sous-bande 1
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 500 kHz)
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 182191920, Nombre de Balayages : 1, Preamp : On: 20 dB, LN Preamp : Off, Preselecteur: Off
Polarisation:Horizontale
Distance: 3 m

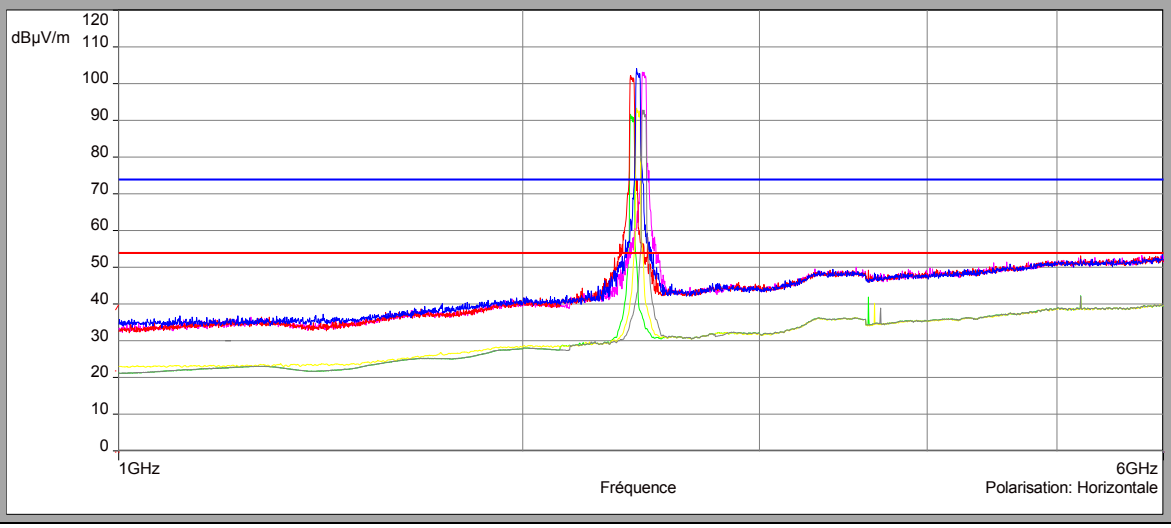
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
Mes.Peak Channel Low (Horizontale)
Mes.Peak Channel High (Horizontale)
Mes.Avg Channel Low (Horizontale)
Mes.Avg Channel High (Horizontale)
Mes.Peak Channel Middle (Horizontale)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



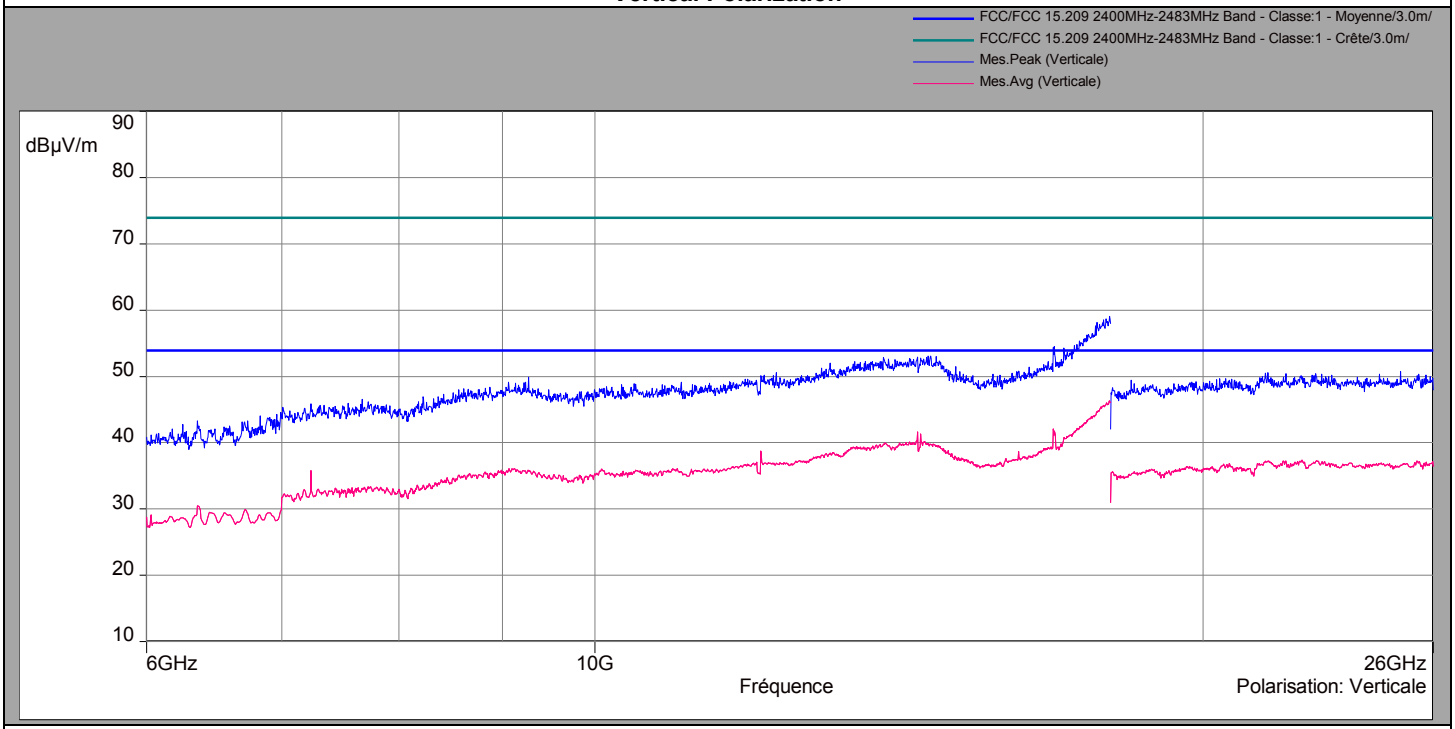
802.11g
Cmin/Cnom/Cmax
Above 1GHz
Vertical Polarization



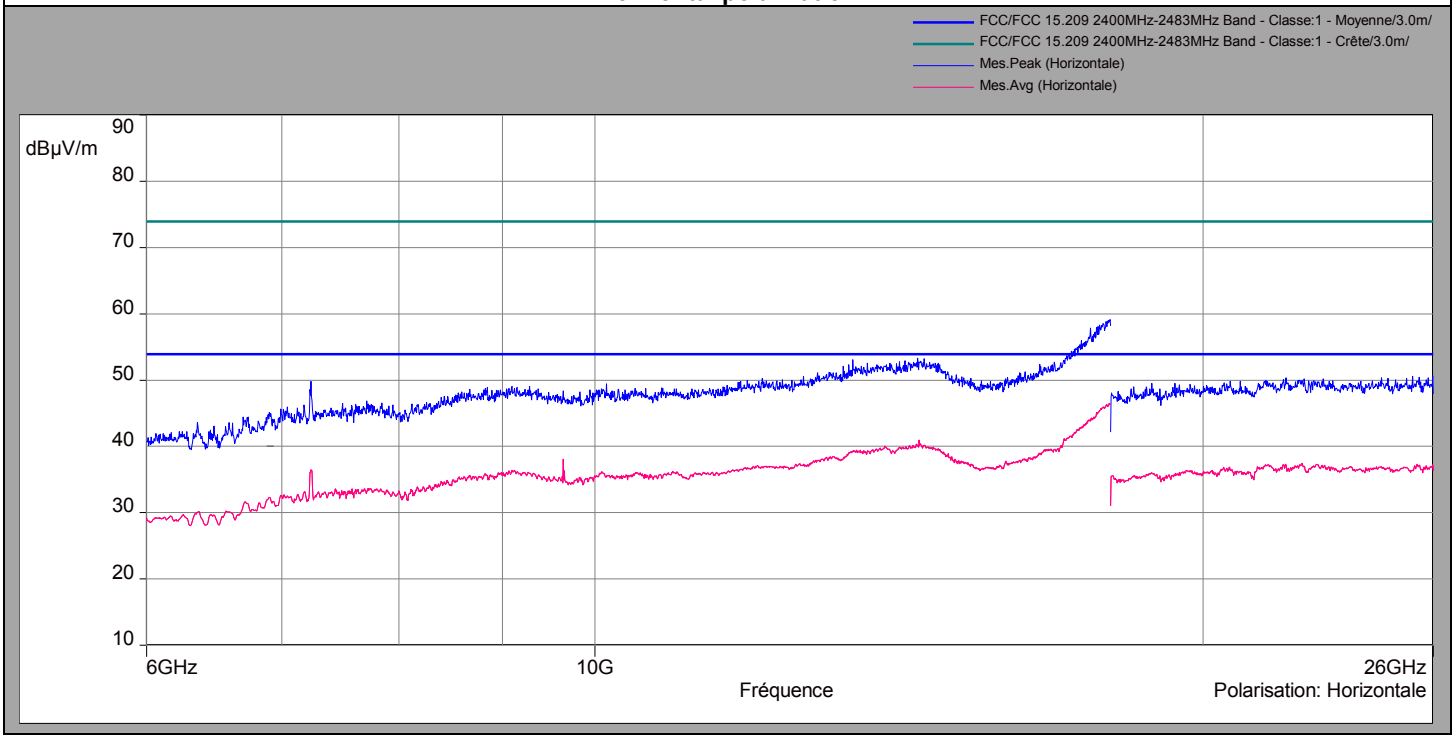
Horizontal polarization



802.11b
Cmin/Cnom/Cmax
Above 1GHz
Vertical Polarization



Horizontal polarization



802.11g

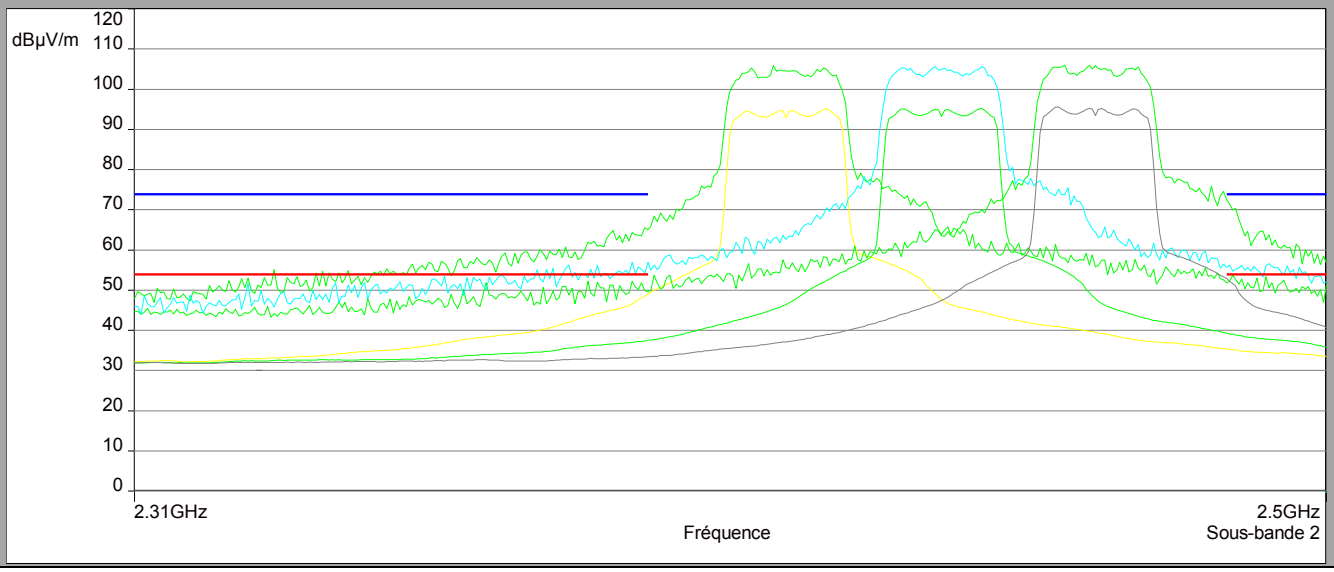
Cmin/Cnom/Cmax

Zoom 2310MHz-2500MHz

Vertical Polarization

Description Sous-bande 2
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 500 kHz)
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 43941424, Nombre de Balayages : 1, Preamp : On: 20 dB, LN Preamp : Off, Preselecteur: Off
Polarisation:Verticale
Distance: 3 m

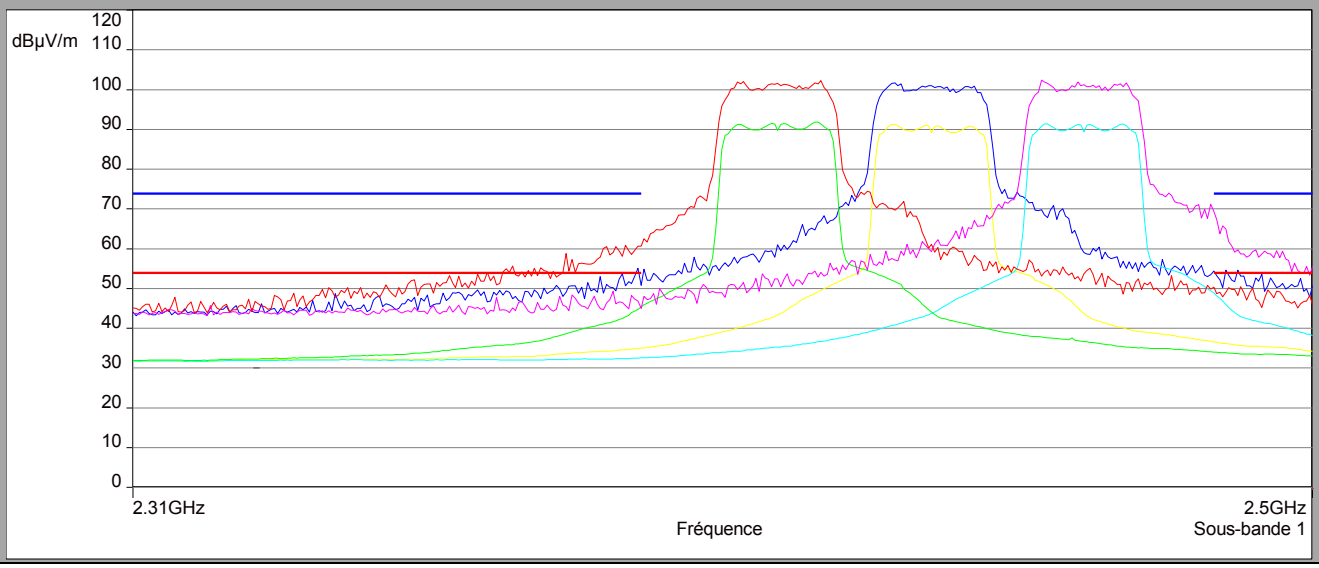
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
Mes.Avg Channel High (Verticale)
Mes.Peak Channel Middle (Verticale)
Mes.Avg Channel Middle (Verticale)
Mes.Peak Channel Low (Verticale)
Mes.Peak Channel High (Verticale)
Mes.Avg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



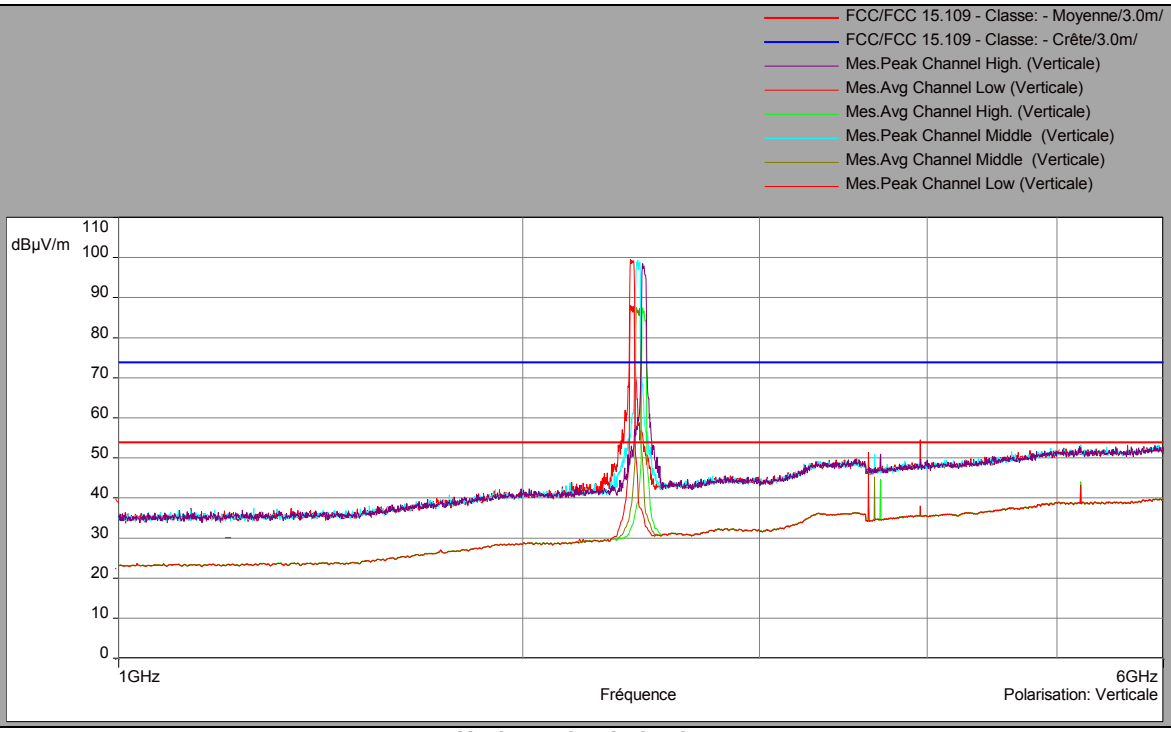
Horizontal polarization

Description Sous-bande 1
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 500 kHz)
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 43941456, Nombre de Balayages : 1, Preamp : On: 20 dB, LN Preamp : Off, Preselecteur: Off
Polarisation:Horizontale
Distance: 3 m

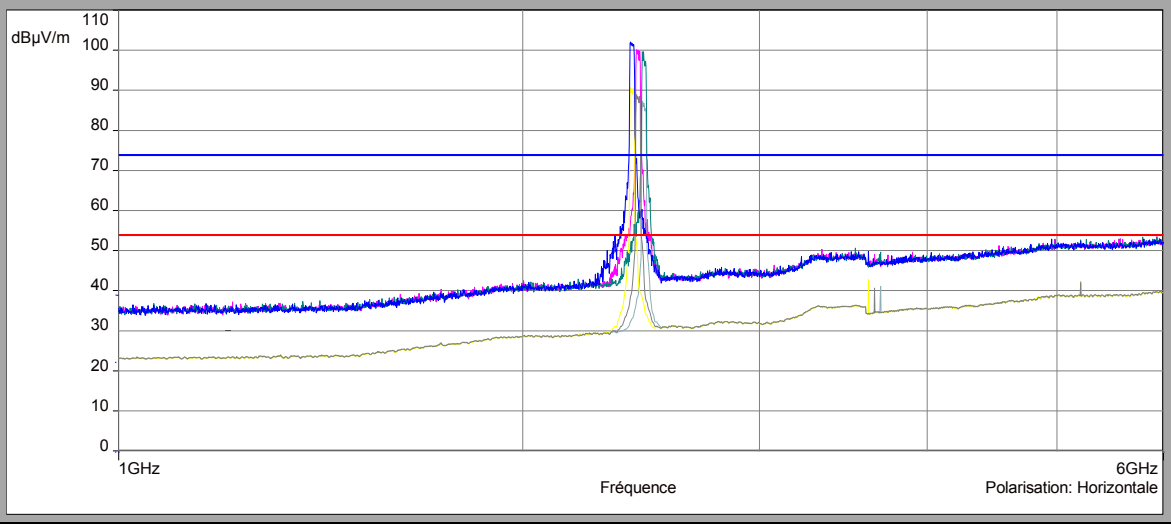
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
Mes.Peak Channel Low (Horizontale)
Mes.Peak Channel High (Horizontale)
Mes.Avg Channel Low (Horizontale)
Mes.Avg Channel High (Horizontale)
Mes.Peak Channel Middle (Horizontale)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



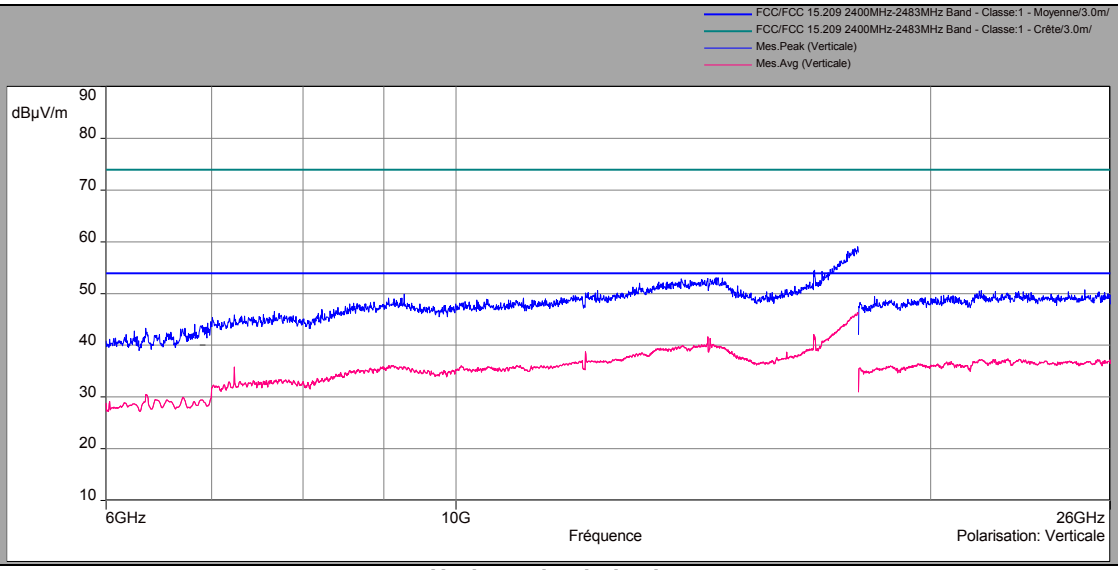
802.11n HT20
Cmin/Cnom/Cmax
Above 1GHz
Vertical Polarization



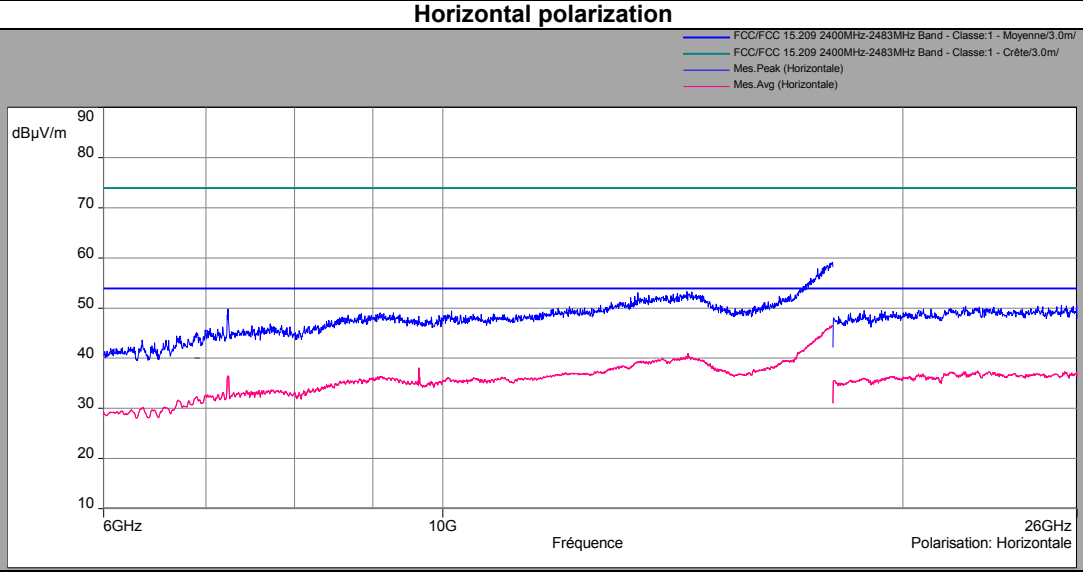
Horizontal polarization



802.11n HT20
Cmin/Cnom/Cmax
Above 1GHz
Vertical Polarization



Horizontal polarization



802.11n HT20

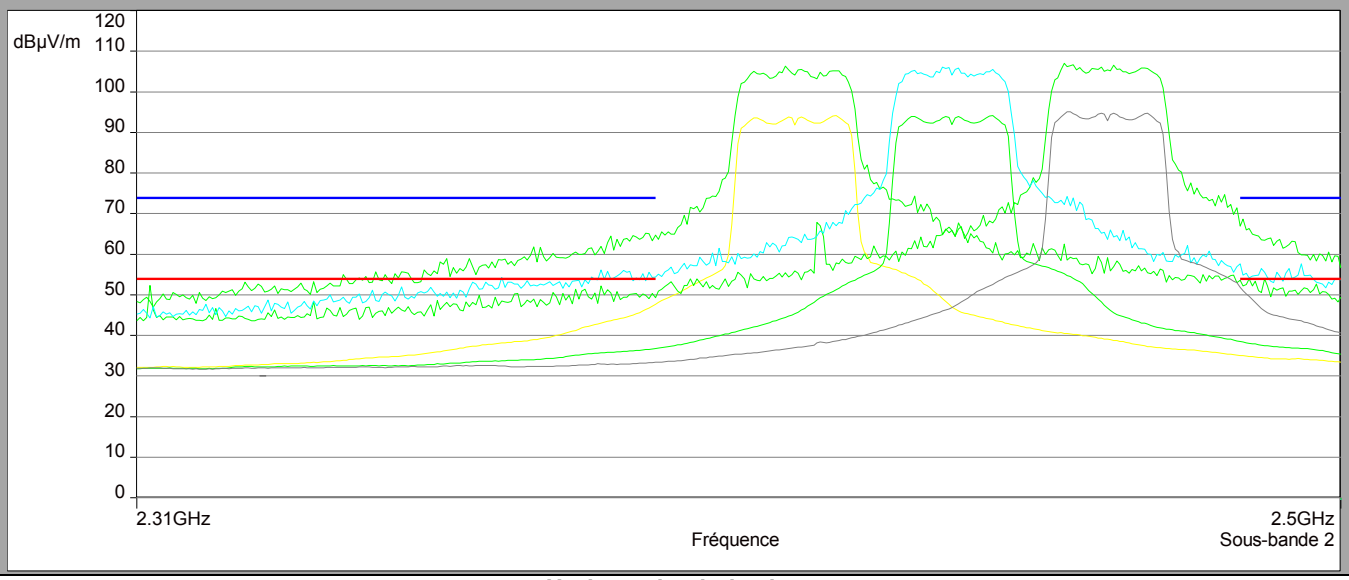
Cmin/Cnom/Cmax

Zoom 2310MHz-2500MHz

Vertical Polarization

Description Sous-bande 2
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 500 kHz)
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 178114400, Nombre de Balayages : 1, Preamp : On: 20 dB, LN Preamp : Off, Preselecteur: Off
Polarisation:Verticale
Distance: 3 m

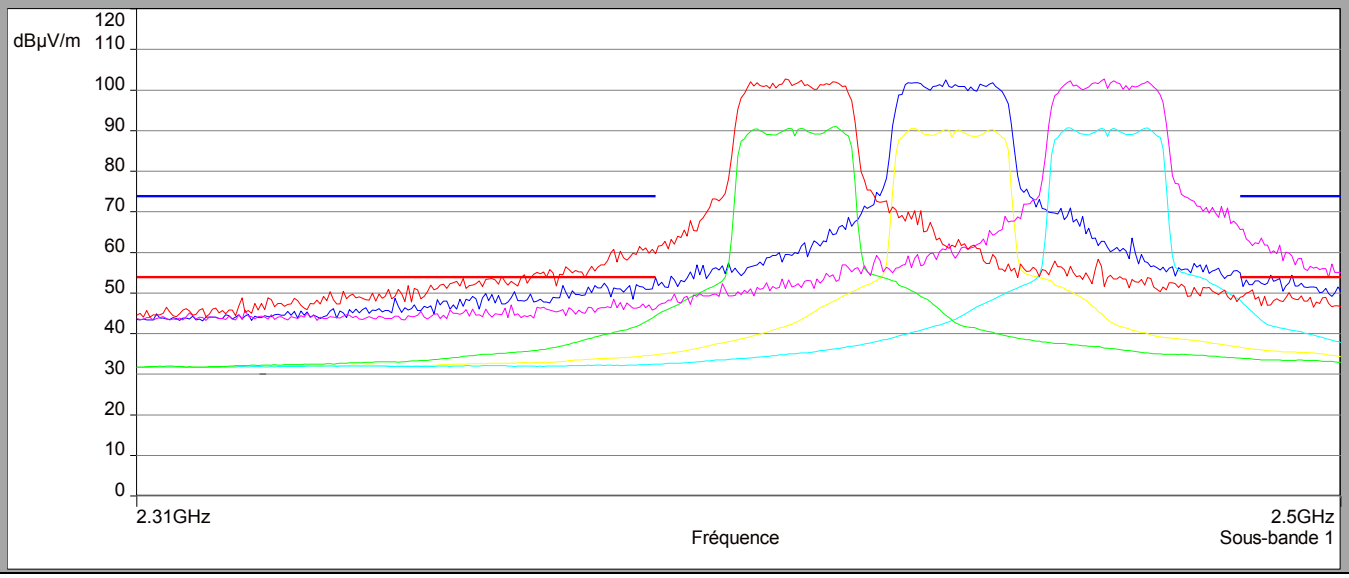
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Crête/3.0m/
Mes.Avg Channel High (Verticale)
Mes.Peak Channel Middle (Verticale)
Mes.Avg Channel Middle (Verticale)
Mes.Peak Channel Low (Verticale)
Mes.Peak Channel High (Verticale)
Mes.Avg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



Horizontal polarization

Description Sous-bande 1
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 500 kHz)
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 178114848, Nombre de Balayages : 1, Preamp : On: 20 dB, LN Preamp : Off, Preselecteur: Off
Polarisation:Horizontale
Distance: 3 m

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



802.11b					
Cnom					
Below 1GHz					
Polarization	**Frequency (MHz)**	**Peak Level (dBµV/m)**	**QPeak Level (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dBµV/m)**
Horizontal	56.4	29.41	-	40	10.59
Vertical	56.2	38.55	35.02	40	4.98
Horizontal	108	29.07	-	43.5	14.43

802.11b								
Cmin/Cnom/Cmax								
Above 1GHz								
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	1972	0,245	28,99	54	25,00	43.08	74	30,92
Vertical	2390	0,245	39,60	54	14,39	51.71	74	22,29
Vertical	2483.5	0,245	40,50	54	13,49	53.23	74	20,77
Horizontal	3618	0,245	47,20	54	6,79	52.42	74	21,58
Vertical	3655	0,245	45,63	54	8,36	51.11	74	22,89
Vertical	3695	0,245	45,07	54	8,92	51.18	74	22,82
Vertical	5206	0,245	45,06	54	8,93	53.40	74	20,6

802.11g								
Cmin/Cnom/Cmax								
Above 1GHz								
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)**
Vertical	2153.5	0,437	30,27	54	23,73	43.86	74	30,14
Vertical	2275.5	0,437	30,14	54	23,86	45.89	74	28,11
Horizontal	2313	0,437	30,95	54	23,05	47.24	74	26,76
Vertical	2390	0,437	40,49	54	13,51	68.31	74	5,69
Vertical	2483.5	0,437	52,65	54	1,35	72.48	74	1,52
Vertical	3618	0,437	45,60	54	8,40	50.84	74	23,16
Vertical	3655	0,437	45,17	54	8,83	50.91	74	23,09
Horizontal	3693	0,437	43,92	54	10,08	50.28	74	23,72
Vertical	5206	0,437	44,25	54	9,75	53.24	74	20,76

802.11n HT20								
Cmin/Cnom/Cmax								
Above 1GHz								
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)**
Vertical	2174	0,318	30,10	54	23,90	43.90	74	30,1
Vertical	2300	0,318	29,92	54	24,08	46.16	74	27,84
Vertical	2390	0,318	48,07	54	5,93	64.69	74	9,31
Vertical	2483.5	0,318	52,25	54	1,75	66.95	74	7,05
Vertical	3618	0,318	46,68	54	7,32	51.34	74	22,66
Vertical	3655	0,318	45,64	54	8,36	50.80	74	23,2
Vertical	3693	0,318	45,11	54	8,89	50.92	74	23,08
Vertical	3954.5	0,318	38,48	54	15,52	54.74	74	19,26
Vertical	5206	0,318	44,45	54	9,55	53.20	74	20,8

11.7. CONCLUSION

Unwanted emissions measurement performed on the sample of the product **VELUX ACTIVE** with **NETATMO** NXG01S, 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.

12. 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