



LCIE

Bluetooth Low Energy Template: Release February 6, 2020

TEST REPORT

N°: 169250-755846-A (FILE#1034406)

Version : 03

Subject

Radio spectrum matters
tests according to standards:
47 CFR Part 15.247 & RSS-247 Issue 2 & RSS-Gen Issue 5

Issued to

JAY ELECTRONIQUE
ZAC La Batie, Rue Champrond
B.P.5
38334 – Saint-Ismier cedex
FRANCE

Apparatus under test

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

Radio Module 2.4GHz
JAY ELECTRONIQUE
JAY ELECTRONIQUE
S5
None
OQMS5
3393A-S5

Conclusion

See Test Program chapter

Test date

October 21, 2020 to October 22, 2020 and April 29, 2021

Test location

Moirans

Test Site

6500A-1 & 6500A-3

Sample receipt date

October 21, 2020

Composition of document

60 pages

Document issued on

April 30, 2021

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PUBLICATION HISTORY

Version	Date	Author	Modification
01	October 27, 2020	Majid MOURZAGH	Creation of the document
02	December 18, 2020	Majid MOURZAGH	Add informations
03	April 30, 2021	Majid MOURZAGH	Adding conducted emission tests on power line.

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.



SUMMARY

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1. TEST PROGRAM

References

- 47 CFR Part 15.247
- RSS 247 Issue 2
- RSS Gen Issue 5
- KDB 558074 D01 DTS Meas Guidance v05r02
- ANSI C63.10-2013

Radio requirement:

Clause (47CFR Part 15.247 & RSS-247 Issue 2 & RSS-Gen Issue 5) 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)
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):

JAY ELECTRONIQUE S5

Serial Number: None



Equipment Under Test

Power supply:

During all the tests, EUT is supplied by V_{nom} : 3.7VDC

For measurement with different voltage, it will be presented in test method.

Name	Type	Rating	Reference / Sn	Comments
Supply1	☐ AC ☒ DC ☐ Battery	3.7Vdc	/	Powered through Beta Operator module

Voltage table used (for Power Line Conducted Emissions):

Type	Measurement performed:	
☒ AC	☒ 120VAC/60Hz	☒ 240VAC/50Hz
☒ DC	☐ +12VDC	☒ -3.7VDC
☐ Battery	☐ +3.6VDC	☐ -....VDC
☐ USB (Laptop auxiliary)	☐ 120VAC/60Hz (Laptop auxiliary)	☐ 240VAC/50Hz(Laptop auxiliary)

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
1	Flat cable 16 wires	0.6	☐	☐	☒	

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
JAY	BETA operator Module 1	160688001E1	:

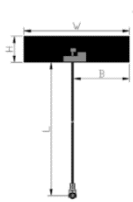
Equipment information:

Frequency band:	[2400 – 2483.5] MHz		
Spectrum Modulation:	☒ DSSS (Tested like it)		
Number of Channel:	64		
Spacing channel:	1.25MHz		
Antenna Type:	☐ Integral	☒ External	☐ Dedicated
Antenna connector:	☒ Yes	☐ No	☐ Temporary for test
Transmit chains:	1		
	Single antenna		
	Gain: 5.5dBi worst case (several ref)		
Antenna requirements §15.203	<i>The transmitter uses two UFL connectors antenna. Therefore, the transmitter meets the requirements of 15.203.</i>		
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:	Tnom:		20°C
Type of power source:	☐ AC power supply	☒ DC power supply	☐ Battery
Operating voltage range:	Vnom:		☐ 230V/50Hz ☒ 3.7Vdc

Antenna information:

Following authorized antenna:

Manufacturer	Reference	Gain	Type	Photo
Pulse	W3334B0100	5.5dBi	Dipole	
Inventek Systems	W24P-U	3.2dBi	Dipole	

Yageo	ANTX100P111B24003	3.3dBi	Dipole	
EBDS	EBDS-ACJANT-HM-24-3M	3dBi	Monopole	
EBDS	EBDS-ACJANT-HM-24-3M-SMAM	2dBi	Monopole	
Sirreta	OSCAR40/5M/LL/SMAM/S/S/33	5.5dBi	Monopole	
RF Solution	ANT-24G-WPJ-SMA	2.15dBi	Monopole	

Bandes 2,4 GHz

Canal	Fréquence MHz	Canal	Fréquence MHz
01	2402,00	33	2442,00
02	2403,25	34	2443,25
03	2404,50	35	2444,50
04	2405,75	36	2445,75
05	2407,00	37	2447,00
06	2408,25	38	2448,25
07	2409,50	39	2449,50
08	2410,75	40	2450,75
09	2412,00	41	2452,00
10	2413,25	42	2453,25
11	2414,50	43	2454,50
12	2415,75	44	2455,75
13	2417,00	45	2457,00
14	2418,25	46	2458,25
15	2419,50	47	2459,50
16	2420,75	48	2460,75
17	2422,00	49	2462,00
18	2423,25	50	2463,25
19	2424,50	51	2464,50
20	2425,75	52	2465,75
21	2427,00	53	2467,00
22	2428,25	54	2468,25
23	2429,50	55	2469,50
24	2430,75	56	2470,75
25	2432,00	57	2472,00
26	2433,25	58	2473,25
27	2434,50	59	2474,50
28	2435,75	60	2475,75
29	2437,00	61	2477,00
30	2438,25	62	2478,25
31	2439,50	63	2479,50
32	2440,75	64	2480,75

Cmin = Canal 01
 Cmid = Canal 32
 Cmax = canal 64

DATA RATE			
Available	Data Rate (Mbps)	Modulation Type	Worst Case Modulation
☒	44.4 Kb/s	Proprietary spread spectrum modulation that is similar to an derivative of chirp spread spectrum (CSS) modulation.(LoRa)	☒

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
Test mode 2	Permanent reception
Test	Running mode
Occupied Bandwidth	☒ Test mode 1 (1) ☐ Alternative test mode()
6dB Bandwidth	☒ Test mode 1 (1) ☐ Alternative test mode()
Duty Cycle	☐ Test mode 1 (1) ☐ Alternative test mode()
Maximum Conducted Output Power	☒ Test mode 1 (1) ☐ Alternative test mode()
Power Spectral Density	☒ Test mode 1 (1) ☐ Alternative test mode()
Conducted Spurious Emission at the Band Edge	☒ Test mode 1 (1) ☐ Alternative test mode()
Unwanted Emissions into Non-Restricted Frequency Bands	☒ Test mode 1 (1) ☐ Alternative test mode()
Power Line Conducted Emission	☒ Test mode 1 (1) ☐ Alternative test mode()
Unwanted Emissions into Restricted Frequency Bands	☒ Test mode 2 (1) ☐ Alternative test mode()

(1) Following commands with auxiliary "BETA Operator module 1" used to set the product:

(2) Following commands with auxiliary "BETA Operator module 1" used to set the product
 With antenna dipole, Pulse reference W3334B0100 & with antenna monopole, Siretta reference OSCAR40/5M/LL/SMAM/S/S/33, worst case configurations with highest gain by type of antenna.

Hardware information		
Application Software product	V. :	V2.44
		

2.3. EQUIPMENT LABELLING

BETA 6 product used for testing radio module

2.4. EQUIPMENT MODIFICATION

☒ None
 ☐ Modification:

3. OCCUPIED BANDWIDTH

3.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
Date of test : October 21, 2020
Ambient temperature : 22 °C
Relative humidity : 39 %

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:

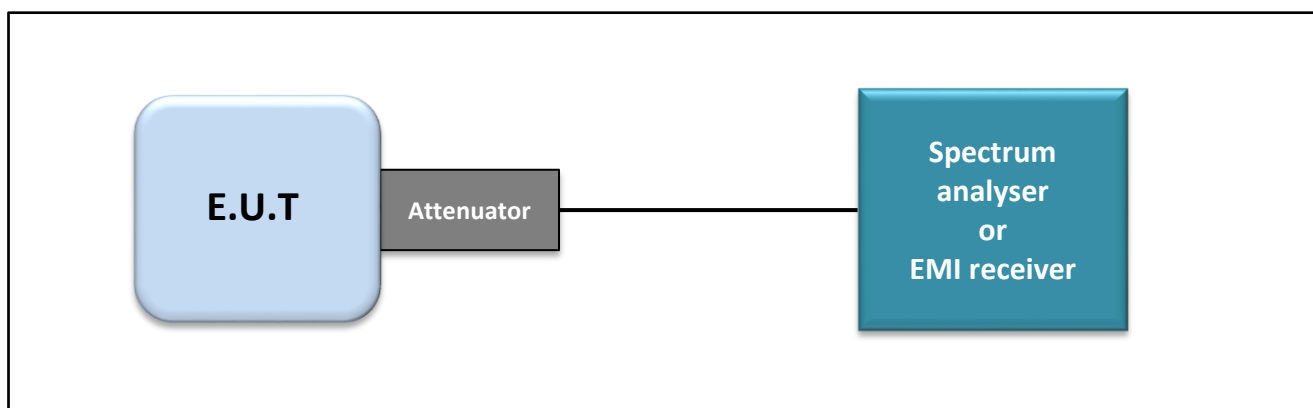
- ☒ Conducted Method
- ☐ Radiated Method

- Test Procedure:

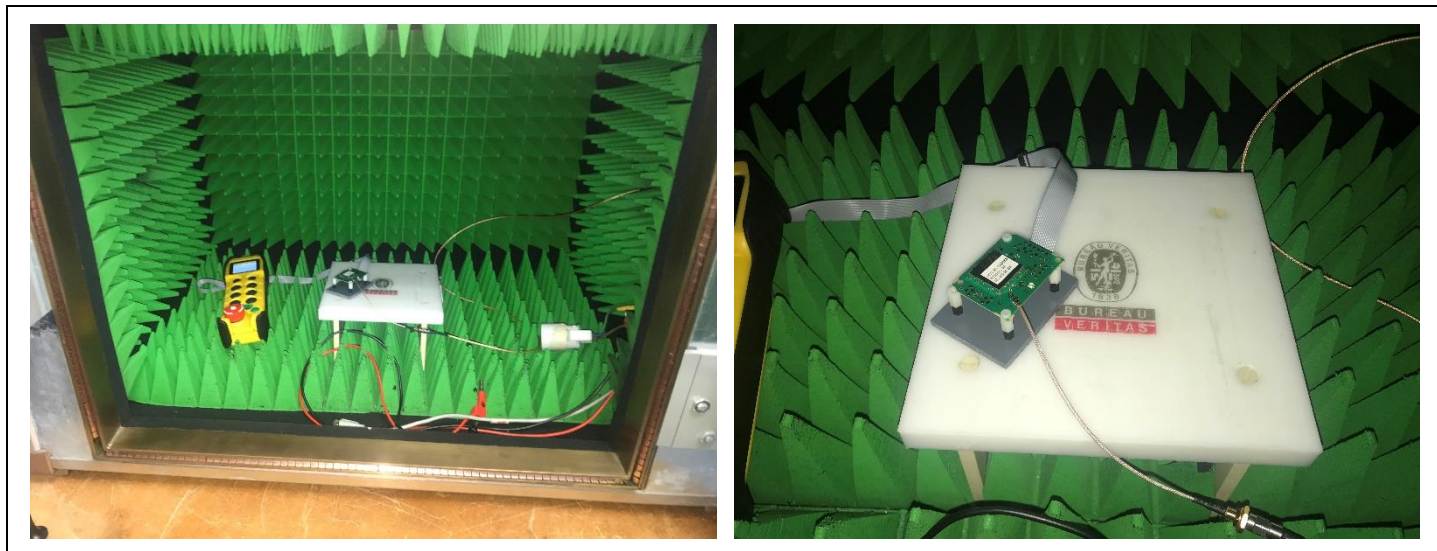
- ☐ RSS-Gen Issue 5 § 6.7
- ☒ ANSI C63.10 § 6.9.2

Measurement Procedure:

- a) RBW shall be in the range of 1% to 5% of the anticipated occupied bandwidth
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW
- c) SPAN = Capture all products of the modulation process
- d) Detector = Peak.
- e) Trace mode = max hold.
- f) Sweep = auto couple.
- g) Allow the trace to stabilize.
- h) OBW 99% function of spectrum analyzer used



Test set up of Occupied Bandwidth



Photograph for Occupied bandwidth

3.3. *LIMIT*

None

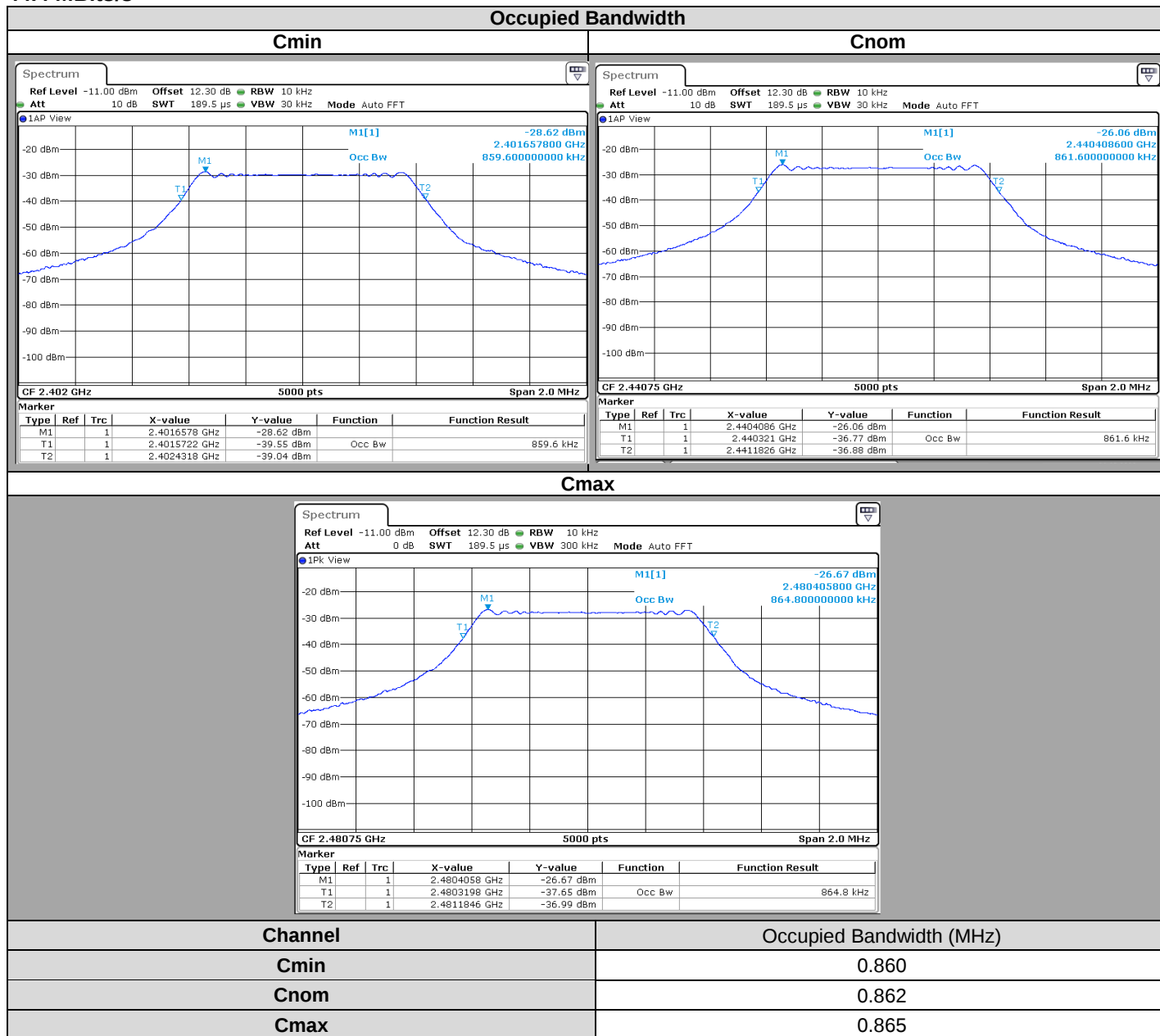
3.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122267	05/19	05/21
CABLE SMA 1m	RADIAL	18GHz	A5329862	11/18	10/20
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	11/18	11/20
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	05/19	05/21
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	08/18	12/20

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

3.5. RESULTS

44.4 Mbits/s



3.6. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **JAY ELECTRONIQUE S5**, SN: **None**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS-GEN ISSUE 5** limits.

4. 6dB EMISSION BANDWIDTH

4.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
Date of test : October 21, 2020
Ambient temperature : 22 °C
Relative humidity : 39 %

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:

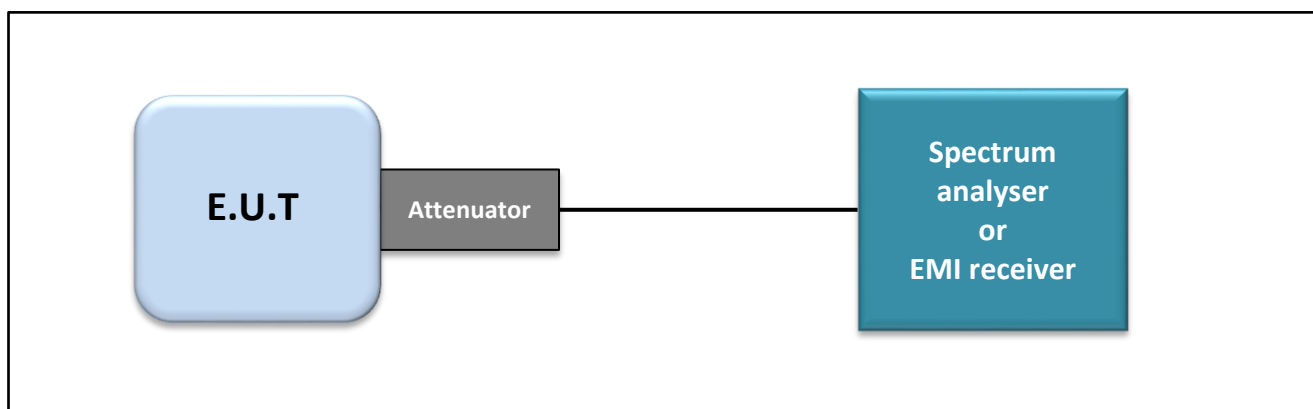
- ☒ Conducted Method
- ☐ Radiated Method

- Test Procedure:

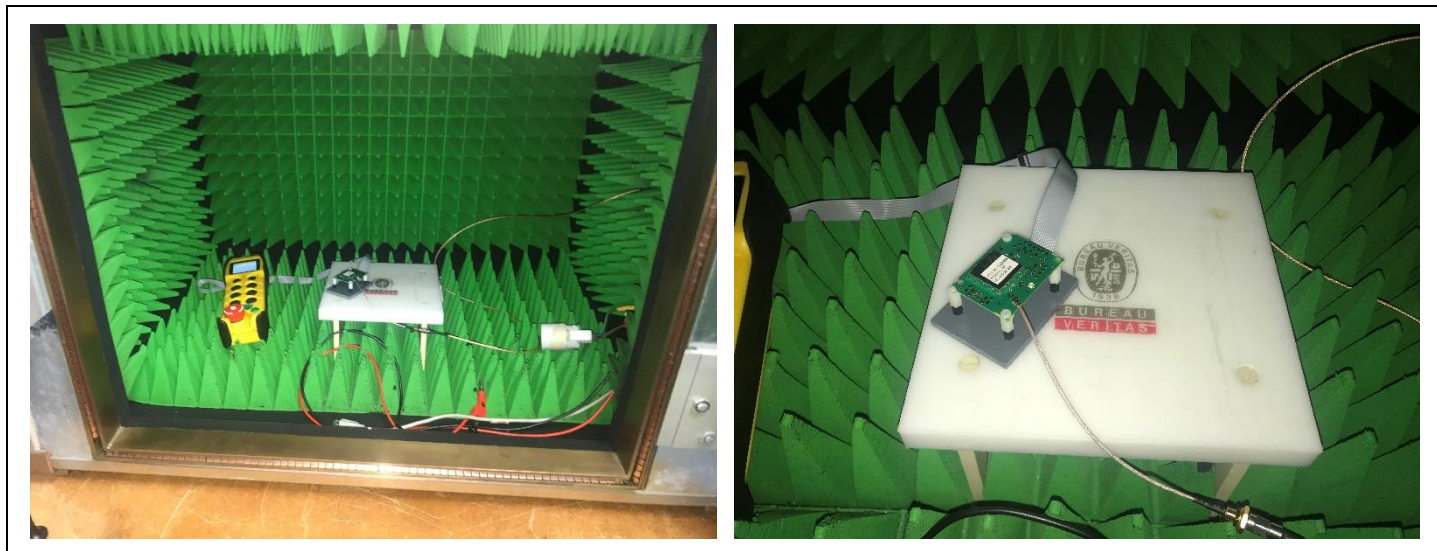
- ☒ KDB 558074 D01 DTS Meas Guidance v05r02 § 8.2

Measurement Procedure:

1. Set resolution bandwidth (RBW) = 100kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. Compare the resultant bandwidth with the RBW setting of the analyzer.



Test set up of 6dB Emission Bandwidth



Photograph for 6dB emission bandwidth

4.3. LIMIT

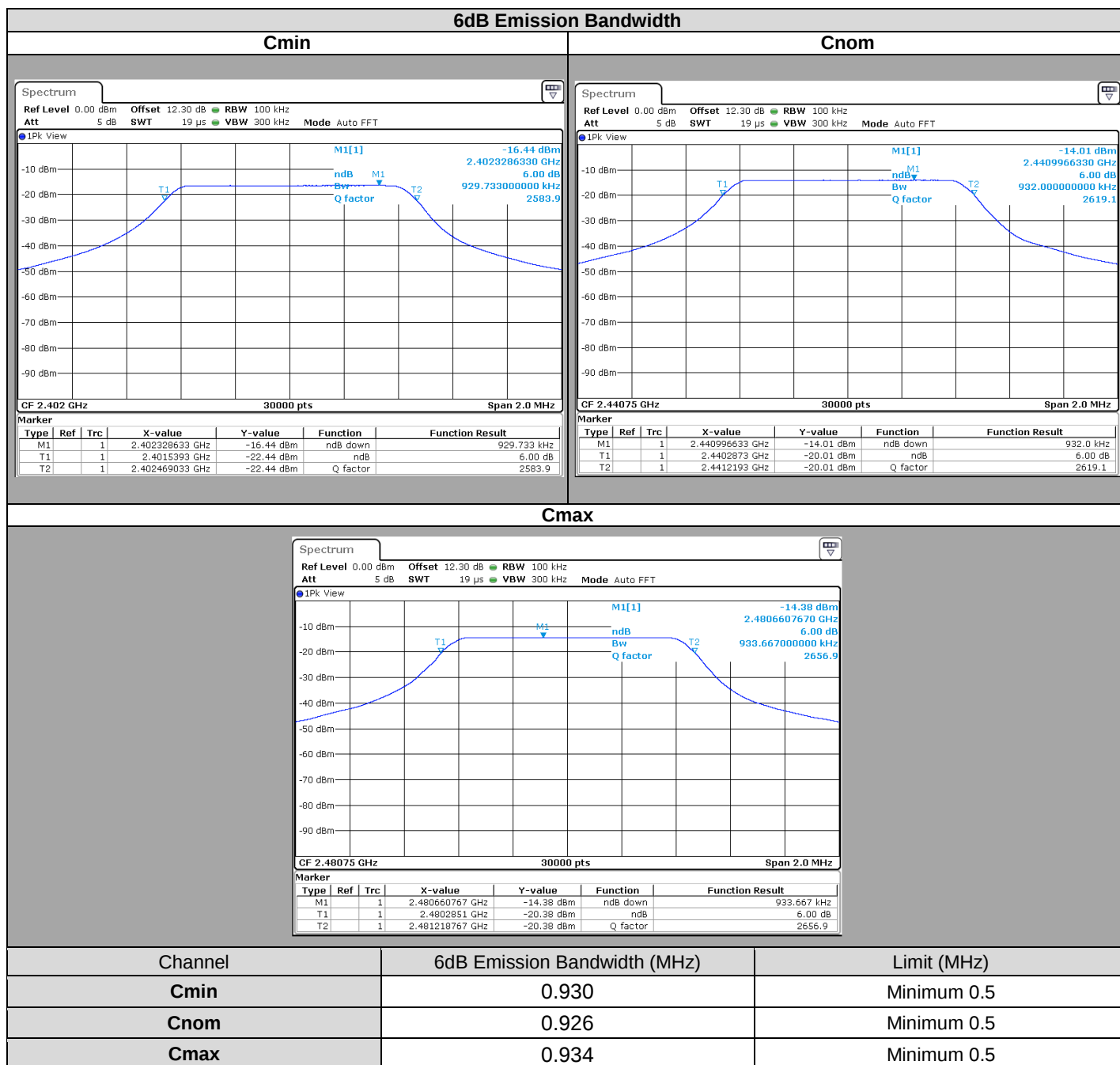
The 6dB bandwidth shall be at least 500kHz

4.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122267	05/19	05/21
CABLE SMA 1m	RADIALL	18GHz	A5329862	11/18	10/20
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	11/18	11/20
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	05/19	05/21
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	08/18	12/20

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

4.5. RESULTS



4.6. CONCLUSION

6dB Emission Bandwidth measurement performed on the sample of the product **JAY ELECTRONIQUE S5**, SN: **None**, 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. MAXIMUM CONDUCTED OUTPUT POWER

5.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
Date of test : October 21, 2020
Ambient temperature : 22 °C
Relative humidity : 39 %

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 v05r02 § 8.3.1.1

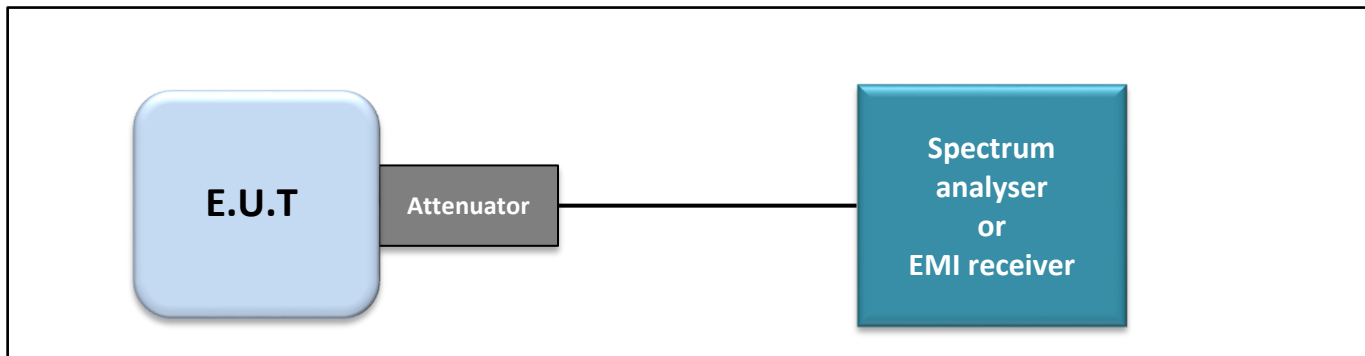
This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the DTS bandwidth.

- a) Set the RBW $\geq$ DTS bandwidth.
- b) Set VBW $\geq 3 \times$ RBW.
- c) Set span $\geq 3 \times$ RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

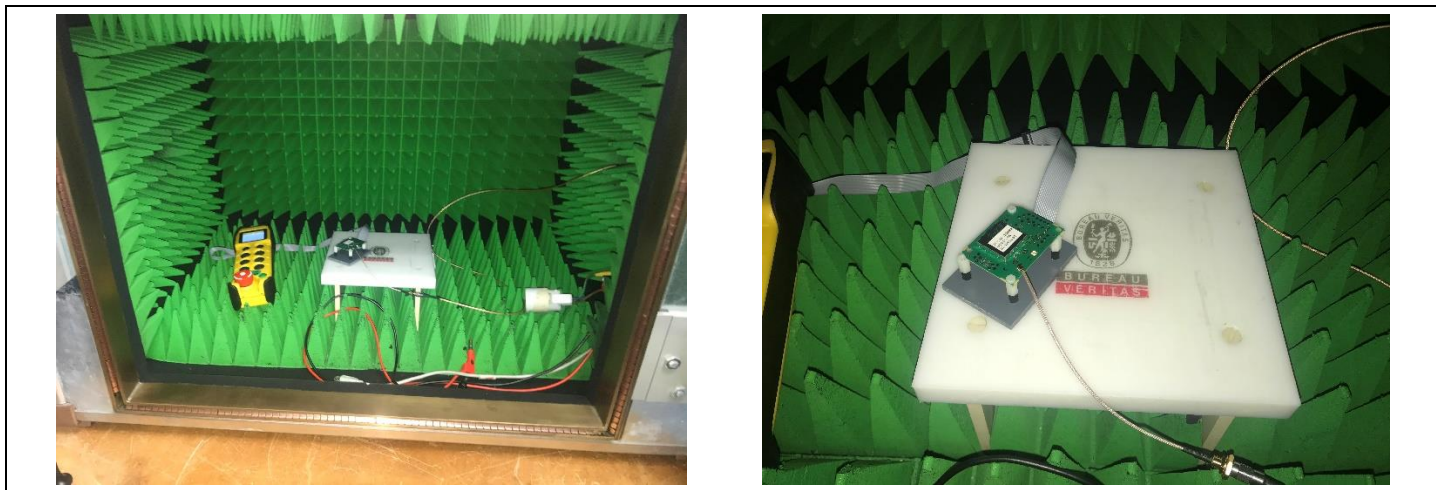
- ☐ KDB 558074 D01 DTS Meas Guidance v05r02 § 8.3.1.2

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

- a) Set the RBW = 1 MHz.
- b) Set the VBW $\geq 3 \times$ RBW
- c) Set the span $\geq 1.5 \times$ DTS bandwidth.
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges



Test set up of Maximum Conducted Output Power



Photograph for Maximum Conducted Output Power

5.3. LIMIT

Maximum Conducted Output power:

2400MHz-2483.5MHz: Shall not exceed 30dBm

Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

5.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122267	05/19	05/21
CABLE SMA 1m	RADIALL	18GHz	A5329862	11/18	10/20
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	11/18	11/20
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	05/19	05/21
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	08/18	12/20

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

5.5. RESULTS

44.4 Mbits/s



5.6. CONCLUSION

Maximum Conducted Output Power measurement performed on the sample of the product **JAY ELECTRONIQUE S5**, SN: **None**, 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. POWER SPECTRAL DENSITY

6.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
Date of test : October 21, 2020
Ambient temperature : 22 °C
Relative humidity : 39 %

6.2. TEST SETUP

- The Equipment Under Test is installed:

- ☐ On a table
☒ In an anechoic chamber

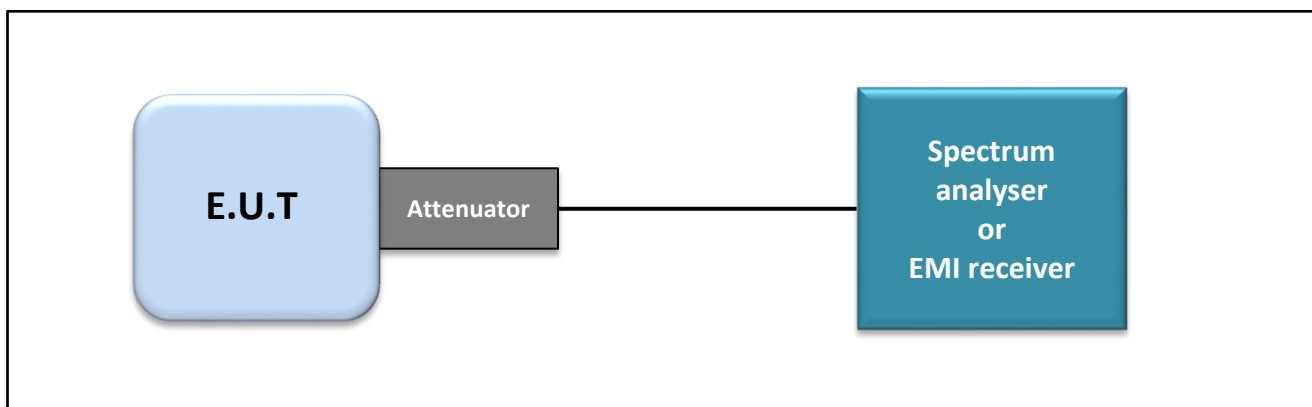
- Measurement is performed with a spectrum analyzer in:

- ☒ Conducted Method
☐ Radiated Method

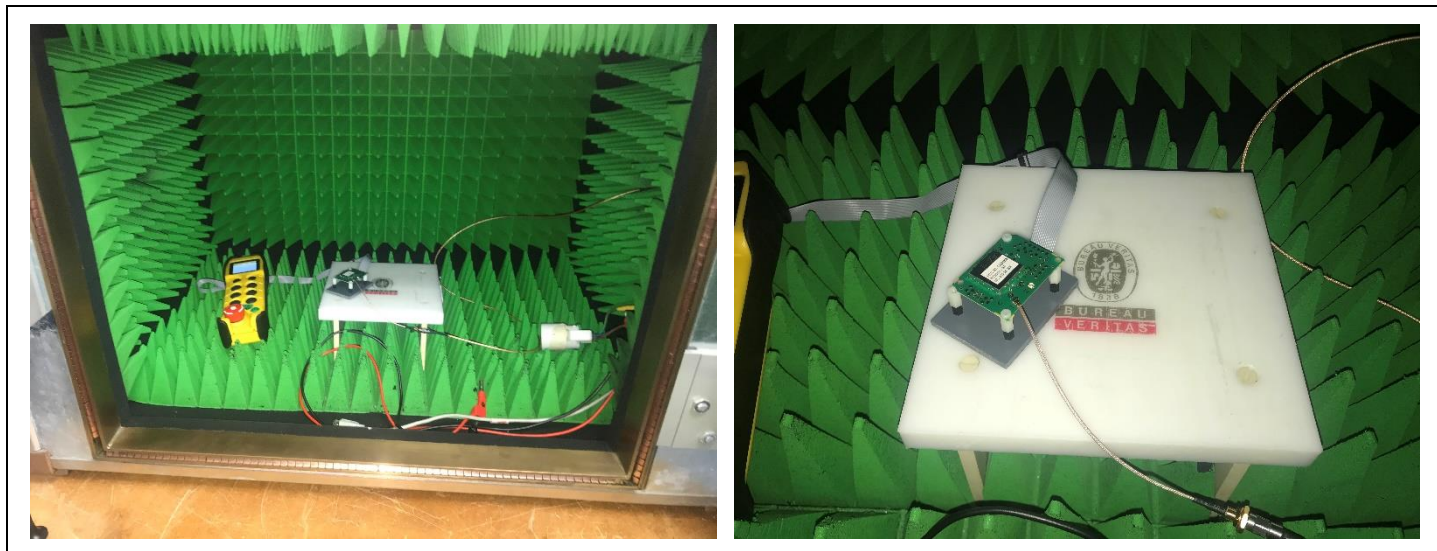
- Test Procedure:

- ☒ KDB 558074 D01 DTS Meas Guidance v05r02 § 8.4 (Method PKPSD)

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: 3 kHz.
- Set the VBW $\geq 3 \times$ RBW.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test set up of Power Spectral Density



Photograph for Power Spectral Density

6.3. LIMIT

Power Spectral Density:

2400MHz-2483.5MHz: Shall not exceed 8dBm/3kHz

Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

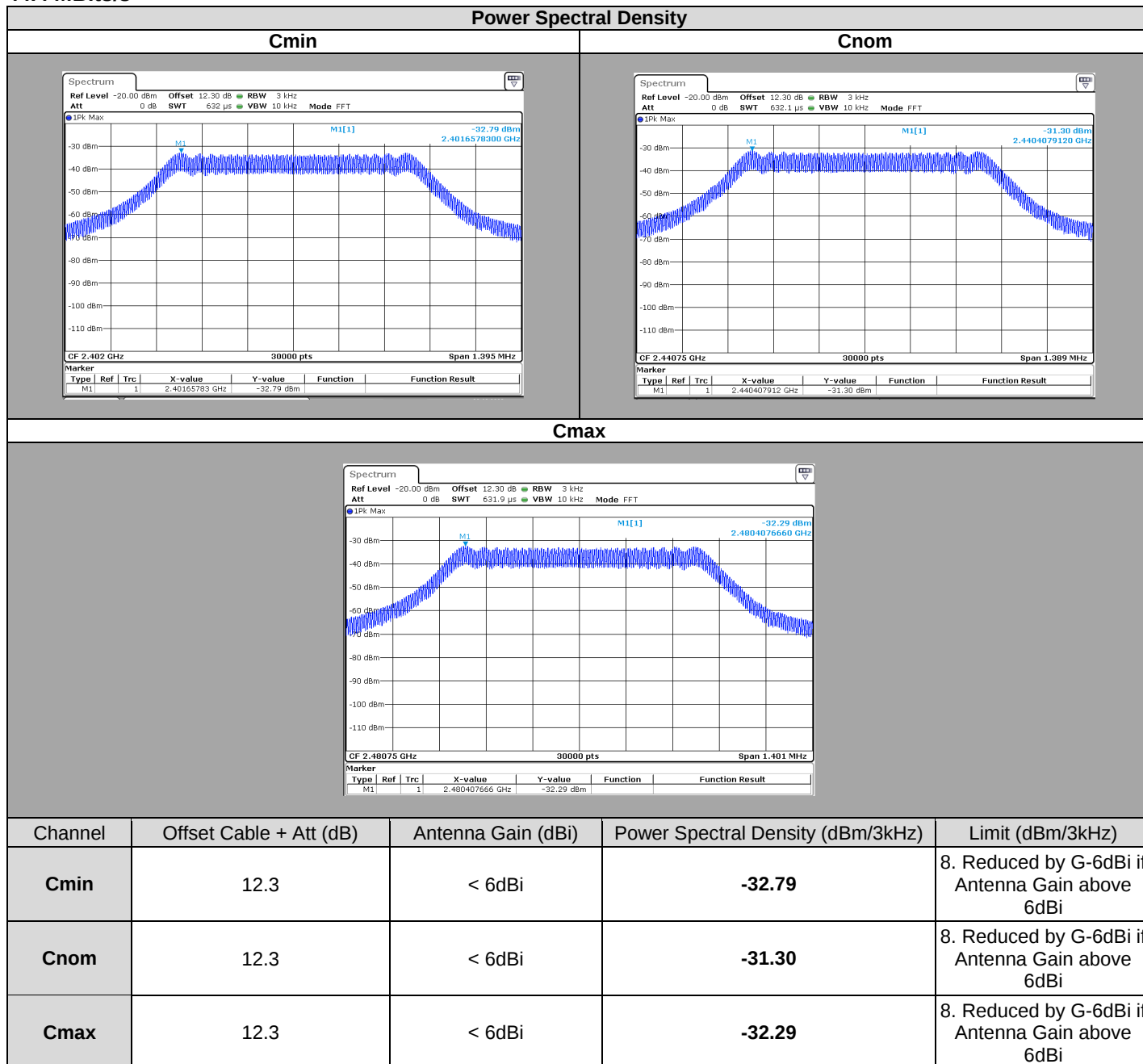
6.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122267	05/19	05/21
CABLE SMA 1m	RADIALL	18GHz	A5329862	11/18	10/20
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	11/18	11/20
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	05/19	05/21
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	08/18	12/20

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

6.5. RESULTS

44.4 Mbits/s



6.6. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **JAY ELECTRONIQUE S5**, SN: **None**, 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. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS AT THE BAND EDGE

7.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
Date of test : October 21, 2020
Ambient temperature : 22 °C
Relative humidity : 39 %

7.2. TEST SETUP

- The Equipment Under Test is installed:

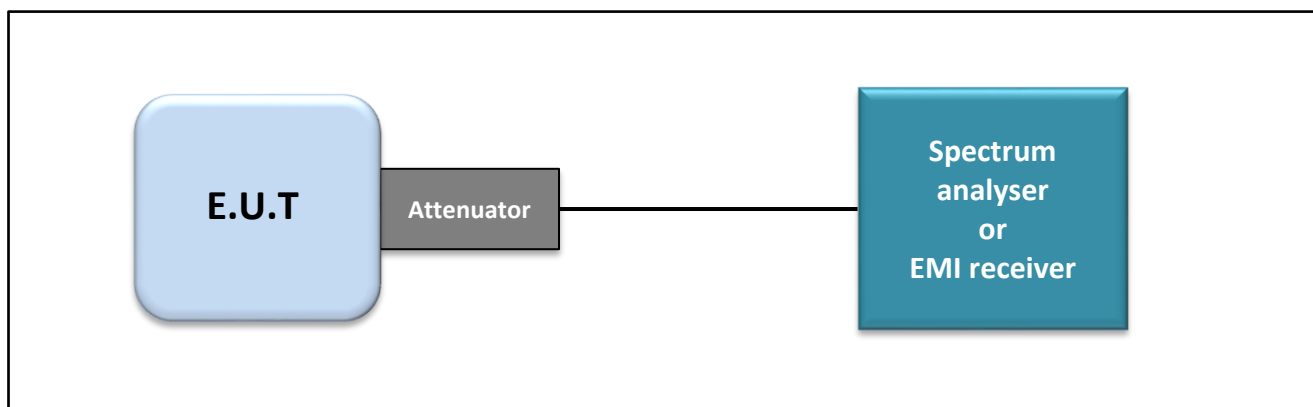
- ☒ On a table
- ☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

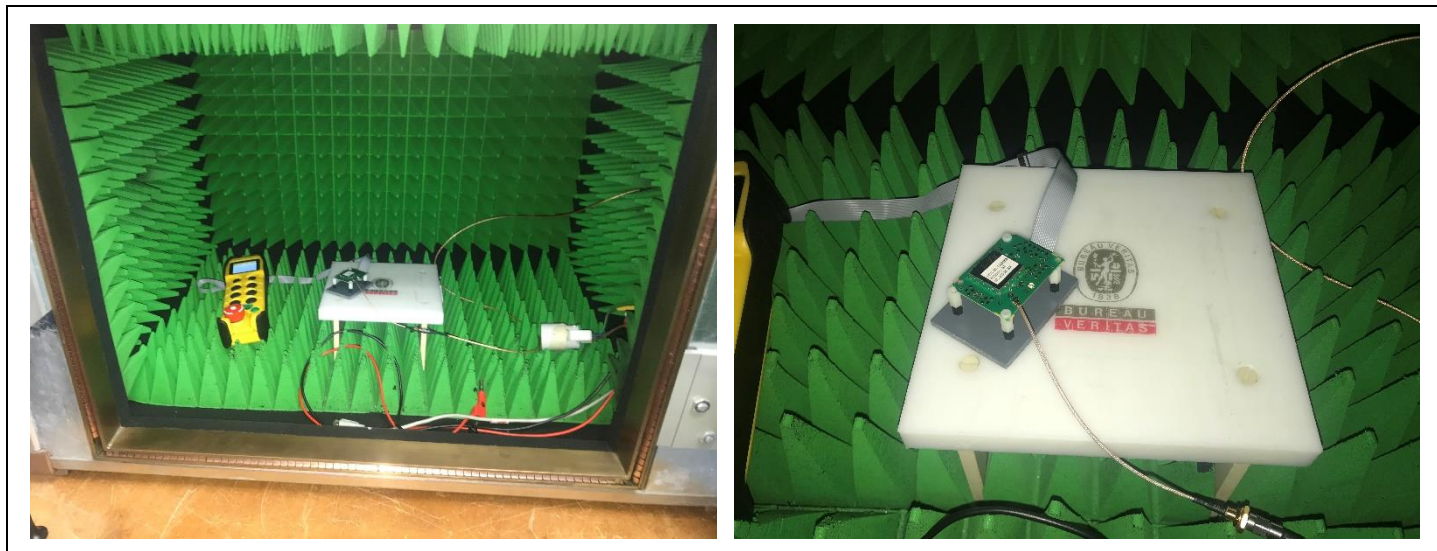
- ☒ Conducted Method
- ☐ Radiated Method

- Test Procedure:

- ☒ KDB 558074 D01 DTS Meas Guidance v05r02 § 8.5



Test set up of Unwanted Emissions into Non-Restricted Frequency Bands at the Band Edge



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

7.3. LIMIT

All Spurious Emissions must be at least 20dB below the Fundamental Radiator Level at the Band Edge Edge “2400MHz & 2483,5MHz”

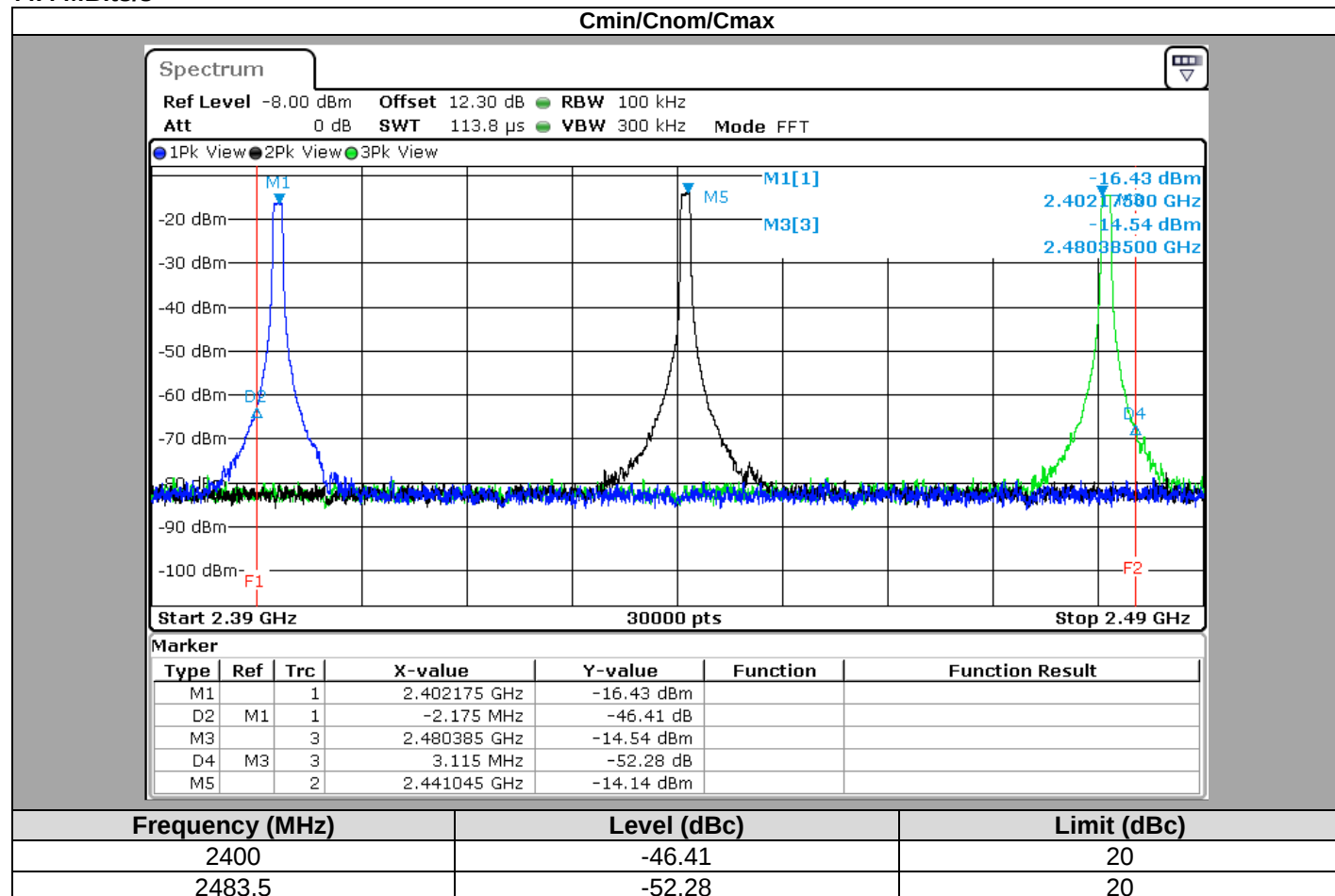
7.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122267	05/19	05/21
CABLE SMA 1m	RADIALL	18GHz	A5329862	11/18	10/20
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	11/18	11/20
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	05/19	05/21
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	08/18	12/20

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

7.5. RESULTS

44.4 Mbits/s



7.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands at the band edge measurement performed on the sample of the product **JAY ELECTRONIQUE S5**, SN: **None**, 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

8.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
Date of test : October 21, 2020
Ambient temperature : 22 °C
Relative humidity : 39 %

8.2. TEST SETUP

- The Equipment under Test is installed:

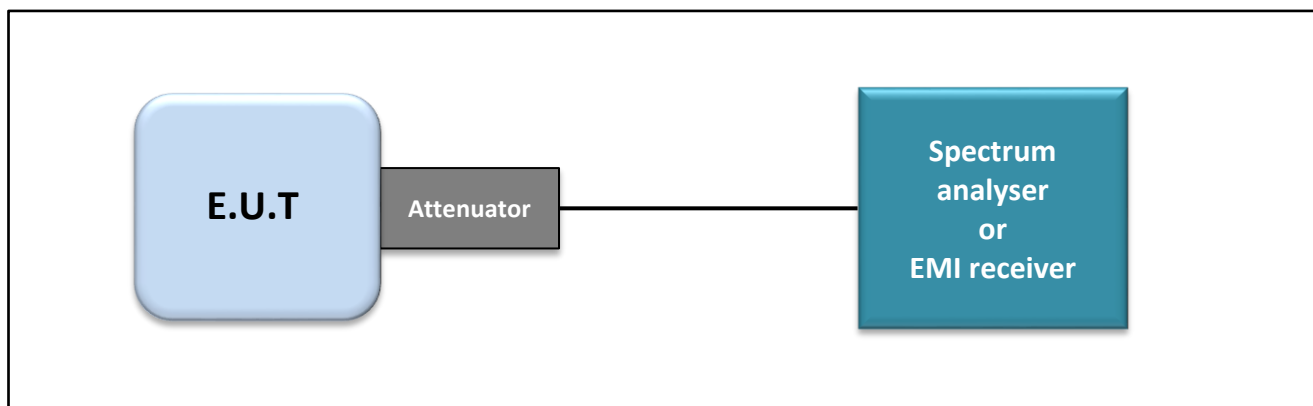
- ☒ On a table
- ☐ In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

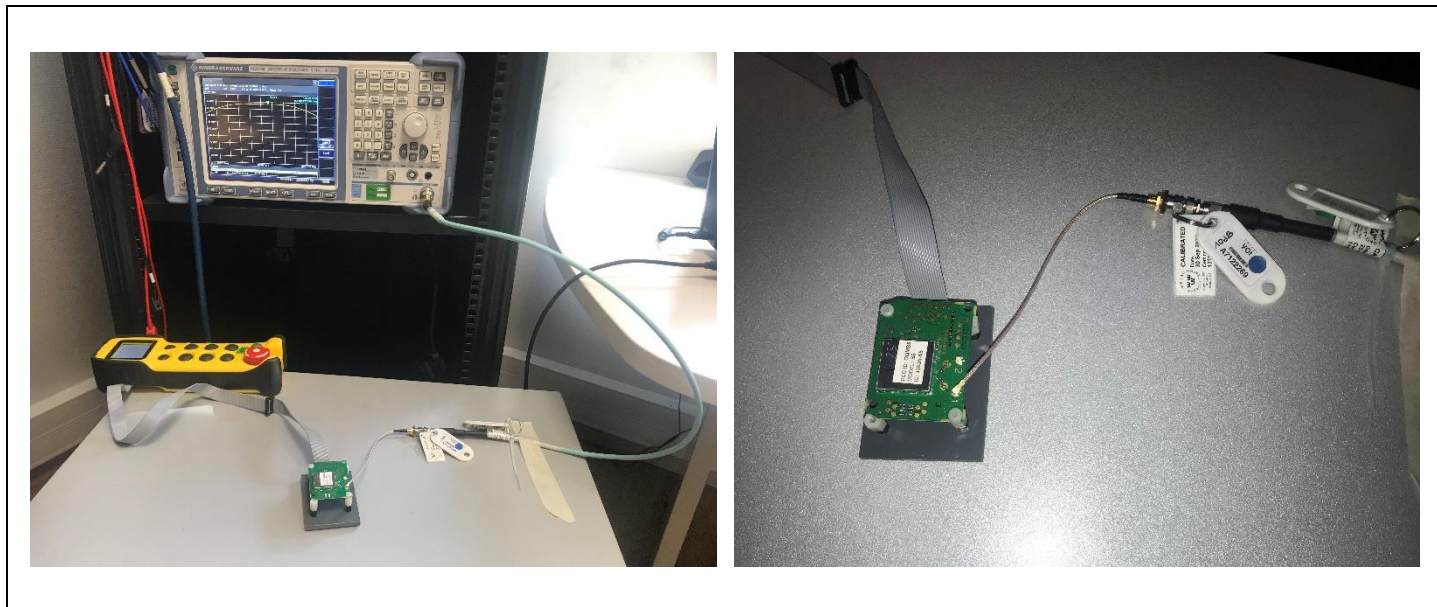
- ☒ Conducted Method
- ☐ Radiated Method

- Test Procedure:

- ☒ KDB 558074 D01 DTS Meas Guidance v05r02 § 8.5



Test set up of Unwanted Emissions into Non-Restricted Frequency Bands



Photograph for Unwanted Emission into non-restricted frequency bands

8.3. LIMIT

All Spurious Emissions must be at least 20 below the Fundamental Radiator Level

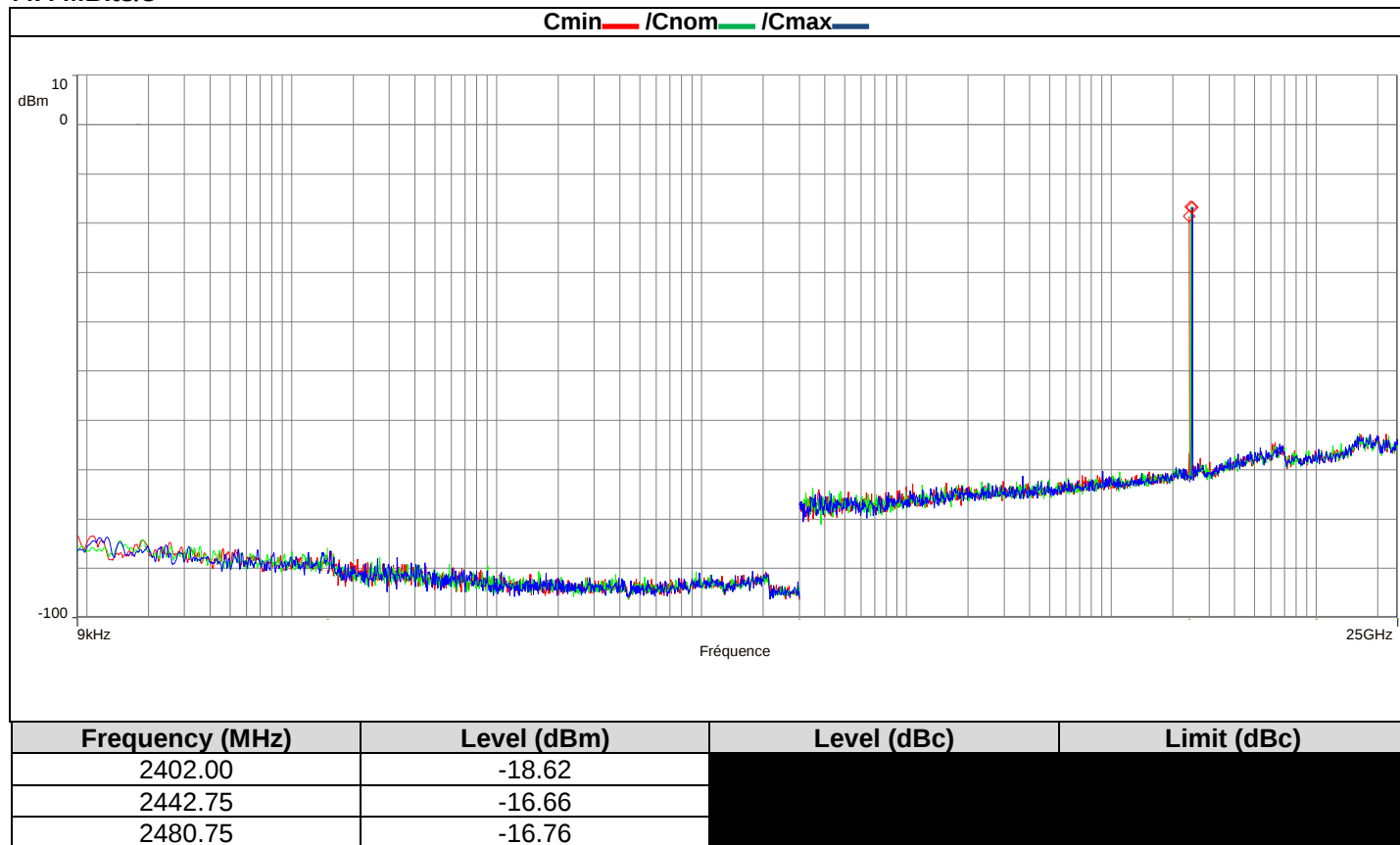
8.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Cable Measure	—	36G	A5329604	02/19	10/20
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	05/19	05/21
Attenuator 10dB	TECHNIWAVE	—	A7122273	08/20	08/22
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	08/18	12/20
BAT EMC	NEXIO	v3.19.1.23	L1000115		

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

8.5. RESULTS

44.4 Mbits/s



8.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands measurement performed on the sample of the product **JAY ELECTRONIQUE S5**, SN: **None**, 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 IN RESTRICTED FREQUENCY BANDS

9.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
 Date of test : October 21, 2020
 Ambient temperature : 22 °C
 Relative humidity : 39 %

9.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013) and FCC part15 subpart C.

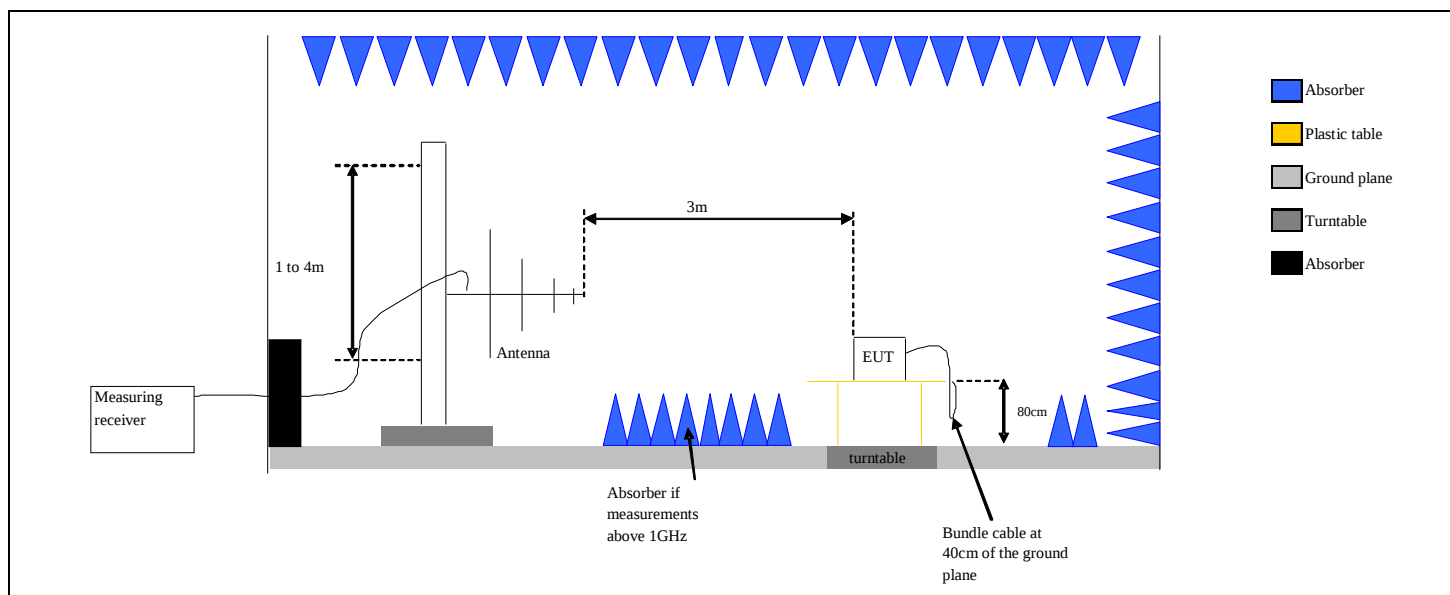
Test is performed in parallel, perpendicular and ground parallel axis with a loop antenna below 30MHz. Measurement bandwidth was 200Hz below 150kHz and 9kHz between 150kHz & 30MHz. The level has been maximised by the turntable rotation of 360 degrees range on all axis of EUT used in normal configuration. Antenna height was 1m. The EUT is placed **on an open area test site**. Distance between measuring antenna and the EUT is **10m**.

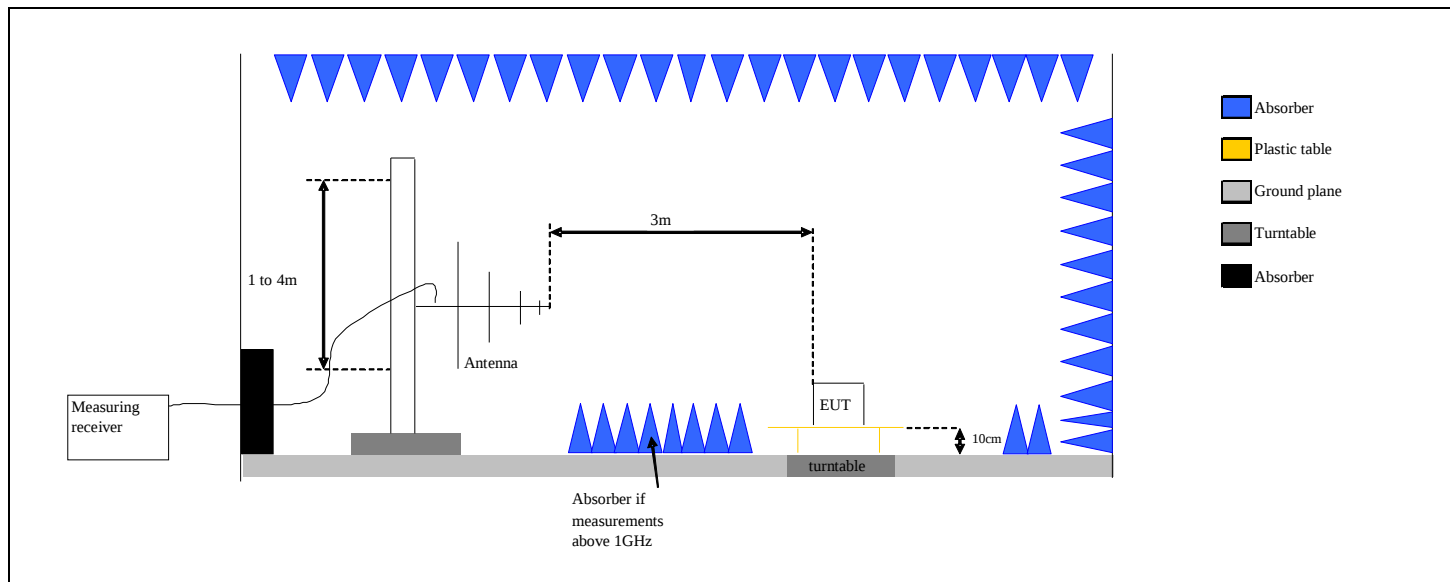
Test is performed in horizontal (H) and vertical (V) polarization with **bilog** between 30MHz & 1GHz and with a horn antenna above 1GHz. Measurement bandwidth was 120kHz below 1GHz and 1MHz above 1GHz. The level has been maximised by the turntable rotation of 360 degrees range on all axis of EUT used in normal configuration. The EUT is placed at 1.5m high above 1GHz and at 0.8m high under 1GHz. The EUT is placed **in a full anechoic chamber** above 1GHz and **on an open area test site** from 30MHz to 1GHz. Distance between measuring antenna and the EUT is **3m**. The height antenna is varied from 1m to 4m from 30MHz to 1GHz and above 1GHz is:

☐ On mast, varied from 1m to 4m

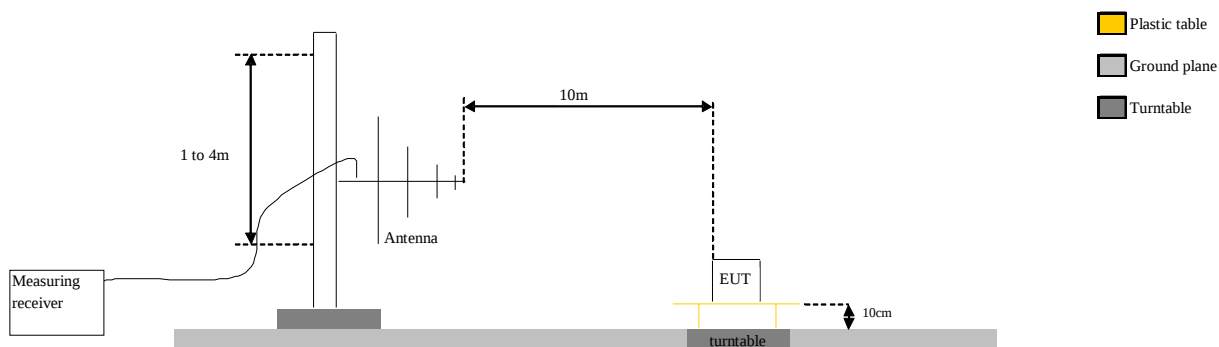
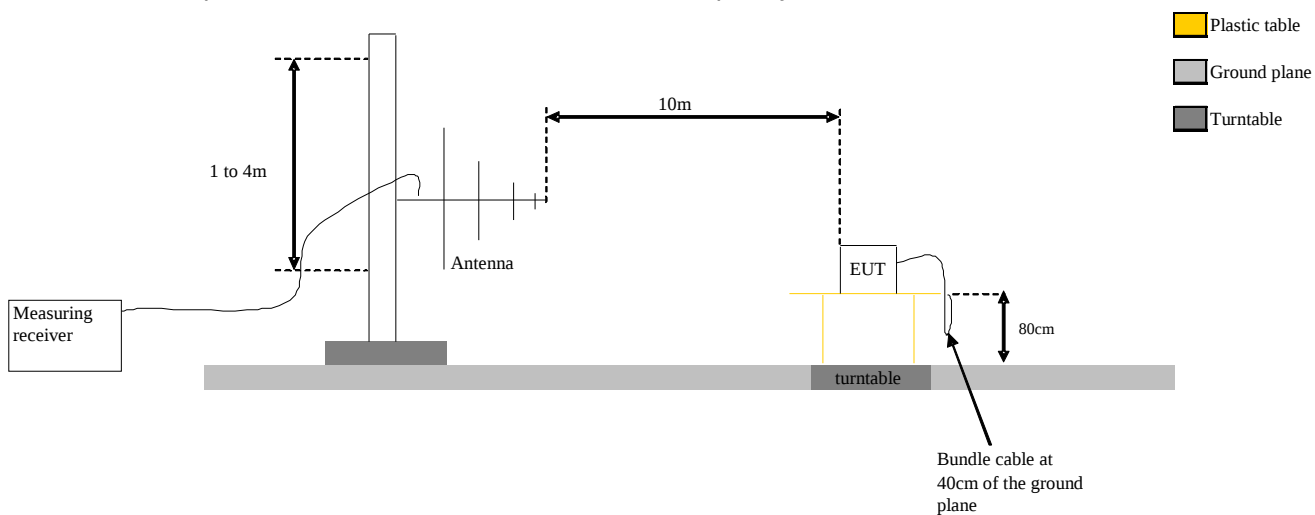
☒ Fixed and centered on the EUT (EUT smaller than the beamwidth of the measurement antenna, ANSI C63.10 §6.6.5)

Frequency list has been created with anechoic chamber pre-scan results.

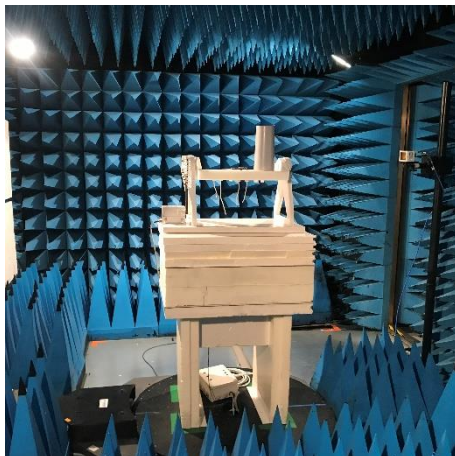




Test set up of Unwanted Emissions in Restricted Frequency Bands in semi anechoic chamber



Test Set up for radiated measurement in open area test site



Axis XY on anechoic chamber



Axis XY on OATS

Photograph for Unwanted Emission in restricted frequency bands

9.3. LIMIT

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

9.4. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

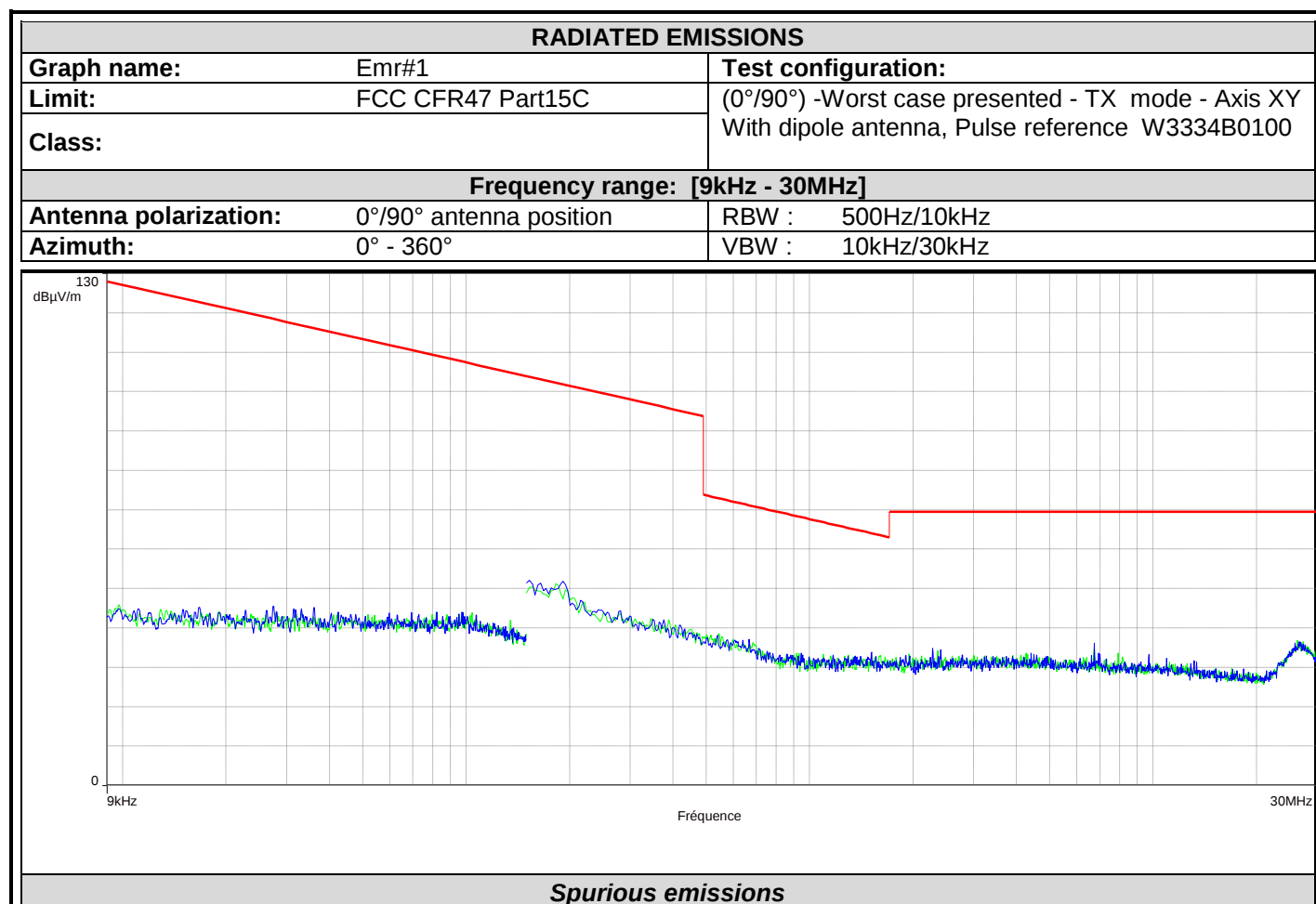
☒ None
 ☐ Divergence:

9.5. TEST EQUIPMENT LIST

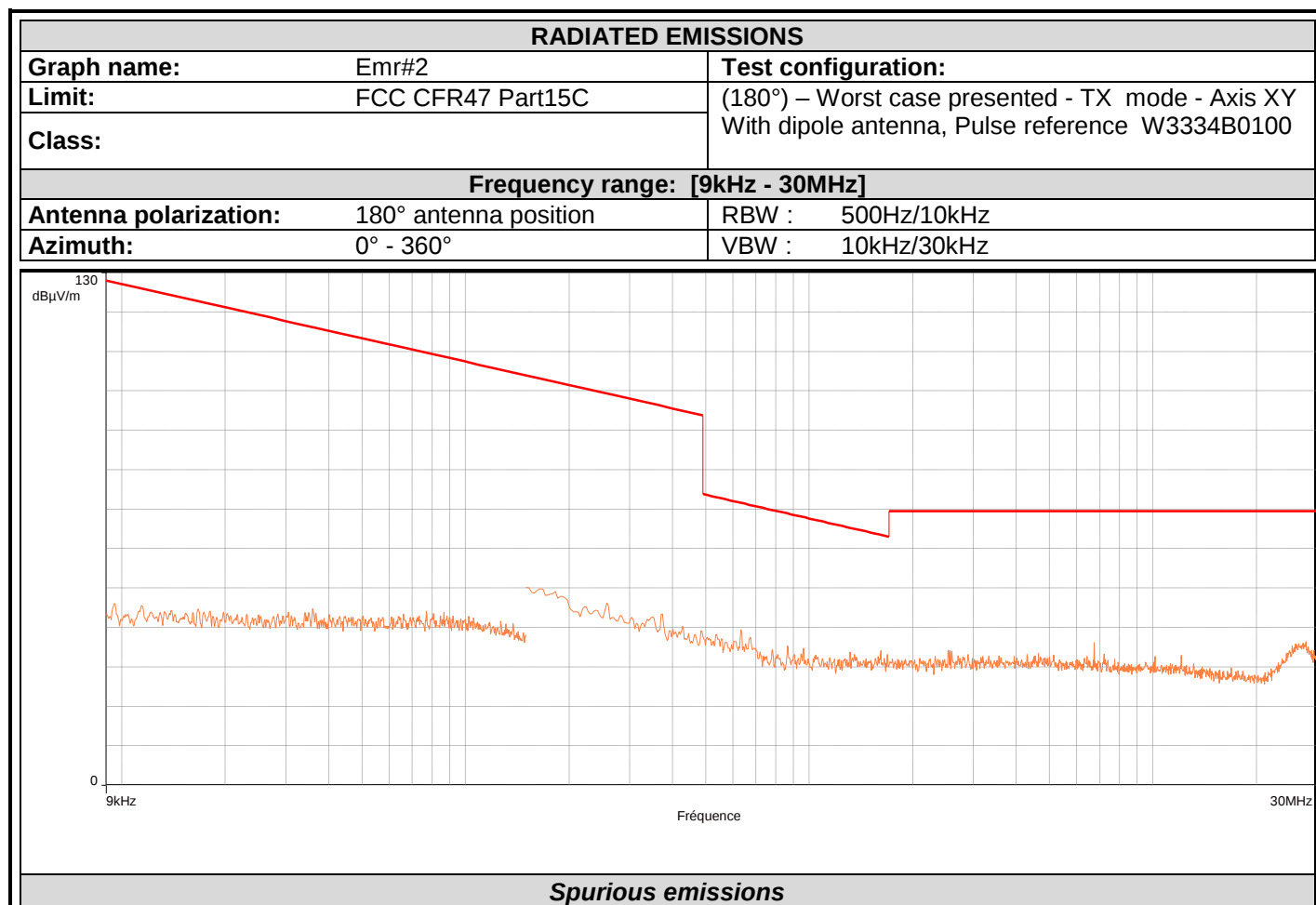
TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Amplifier 9kHz - 40GHz	LCIE SUD EST	—	A7102082	10/18	12/19
Antenna Bi-Log	CHASE	UPA6192	C2040221	01/18	01/20
Antenna horn 18GHz	EMCO	3115	C2042029	09/17	11/20
BAT EMC	NEXIO	v3.9.0.10	L1000115		
Comb EMR HF	YORK	CGE01	A3169114		
Emission Cable (SMA 1m)	TELEDYNE	26GHz	A5329874	01/19	01/20
Emission Cable (SMA 3.3m)	TELEDYNE	26GHz	A5329875	01/19	01/20
Emission Cable (SMA 30cm)	TELEDYNE	26GHz	A5329873	01/19	01/20
Emission Cable <1GHz (Ampl <-> Cage)	-	18GHz	A5329562	08/19	11/20
Emission Cable <1GHz (Ampl <-> Cage)	-	18GHz	A5329907	08/19	11/20
Rehausse Table C3	LCIE	—	F2000507		
Rehausse Table C3	LCIE	—	F2000511		
Semi-Anechoic chamber #3 (BF)	SIEPEL	—	D3044017_BF	03/17	11/20
Semi-Anechoic chamber #3 (VSWR)	SIEPEL	—	D3044017_VSWR	03/17	11/20
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	09/19	11/21
Table C3	LCIE	—	F2000461		
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	08/18	11/20
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371		
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444		
Antenna Bi-log	CHASE	CBL6111A	C2040051	06/19	06/21
Antenna Biconic	EMCO	3104C	C2040175	03/20	03/22
Antenna Mat (OATS)	ETS Lingren	2071-2	F2000392		
Cable (OATS)	—	1GHz	A5329623	05/20	05/21
CALCUL_FACTEURS	LCIE SUD EST	V4	L2000035		
Emission Cable	SUCOFLEX	6GHz	A5329061	06/20	06/21
Emission Cable	MICRO-COAX	1GHz	A5329656	08/20	08/21
OATS	—	—	F2000409	04/20	04/21
Radiated emission comb generator	BARDET	—	A3169050		
Receiver 20Hz – 8GHz	ROHDE & SCHWARZ	ESU8	A2642019	11/19	11/21
Turntable (OATS)	ETS Lingren	Model 2187	F2000403		
Turntable / Mast controller (OATS)	ETS Lingren	Model 2066	F2000372		

9.6. RESULTS

Results in the frequency band [0.009-30] MHz:

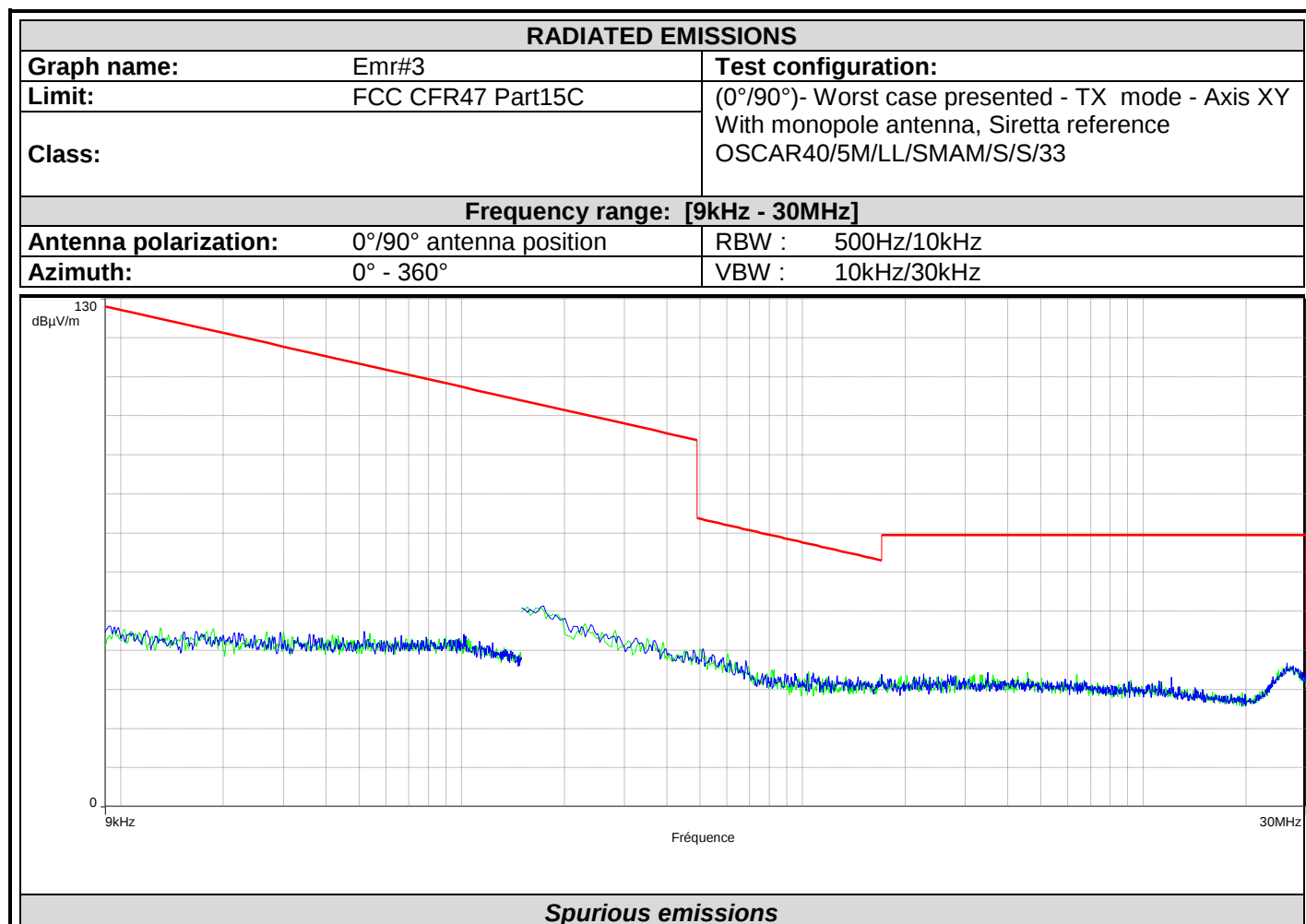


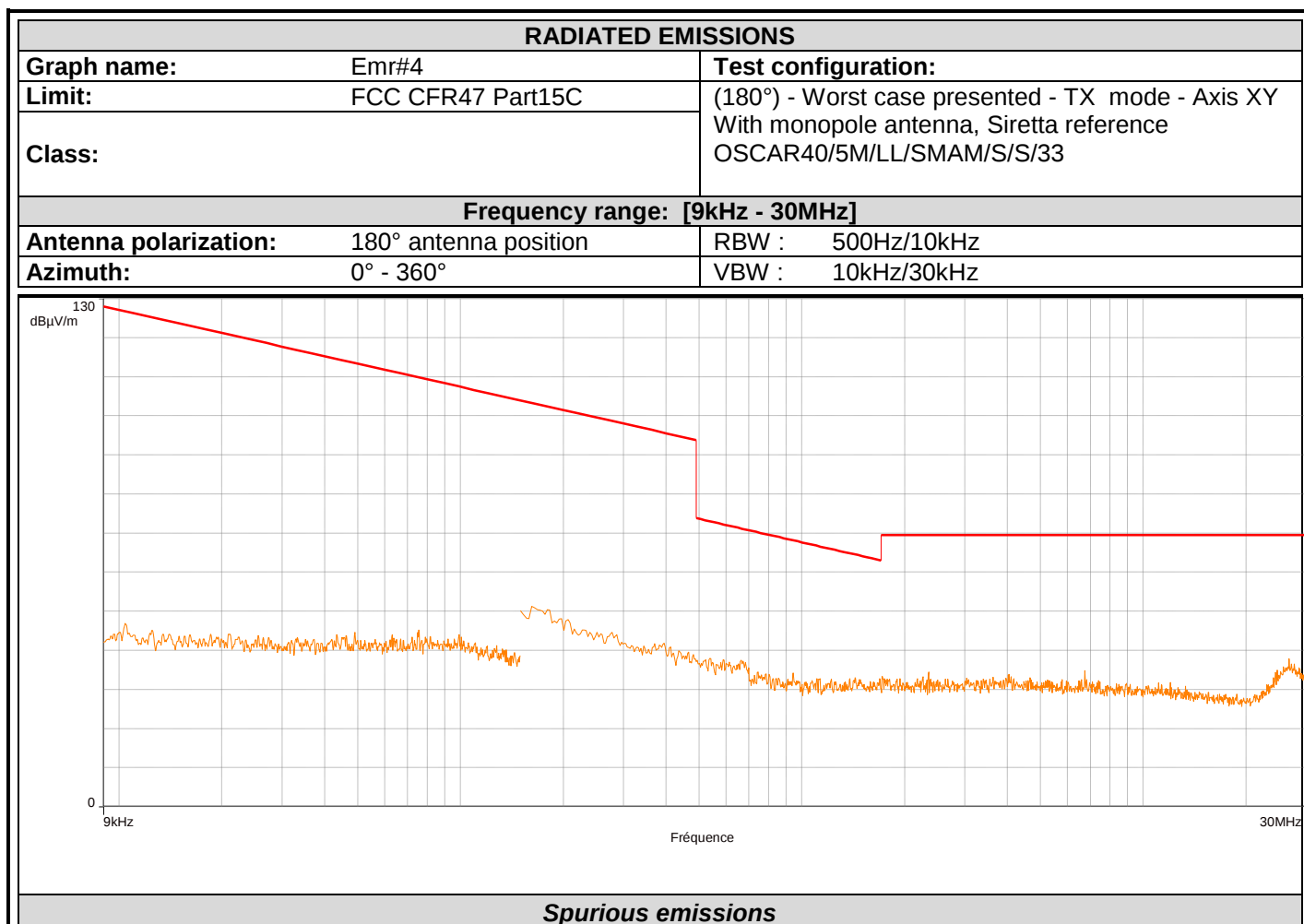
No significant frequency observed



Spurious emissions

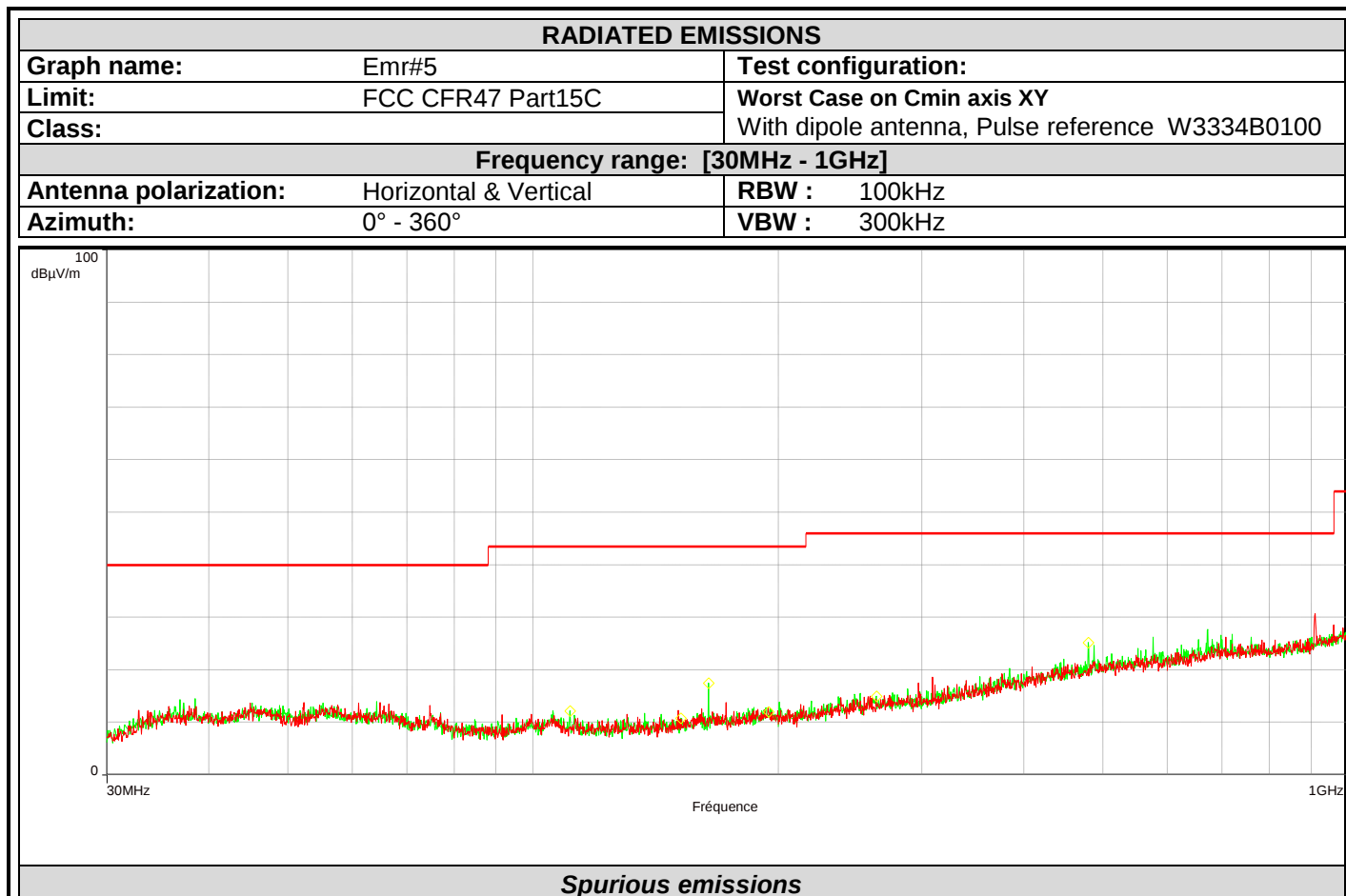
No significative frequency observed



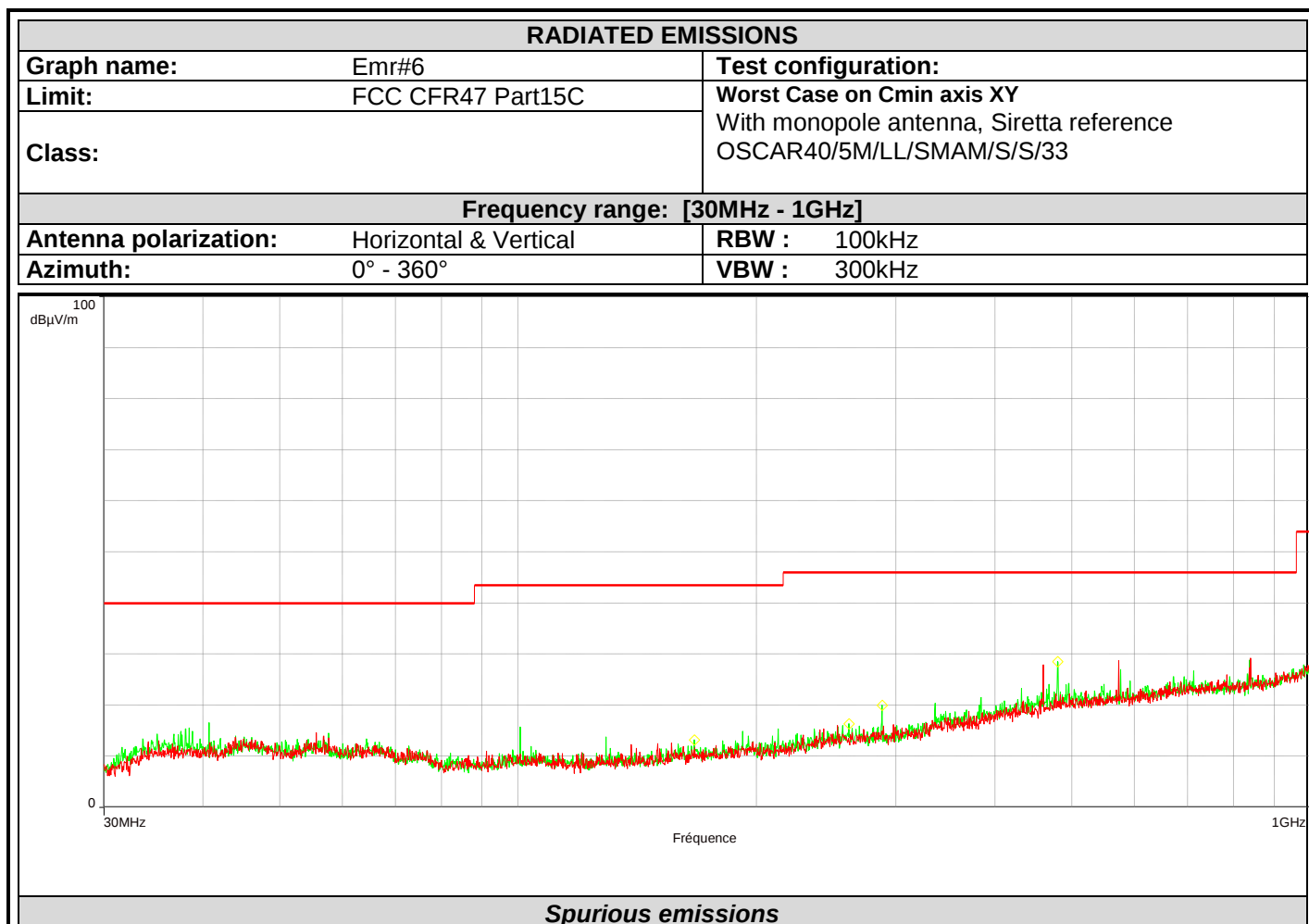


No significative frequency observed

Results in the frequency band [30-1000] MHz: Worst case presented see test results in §8.5(Cmin, Cmid or Cmax):



Frequency (MHz)	Peak Level (dBµV/m)	Polarization	Correction (dB)
194.594	12.0	Horizontal	-15.3
110.903	12.2	Vertical	-17.8
151.703	10.8	Vertical	-16.6
164.079	17.5	Vertical	-15.8
263.560	15.0	Vertical	-12.3
479.960	25.2	Vertical	-6.2

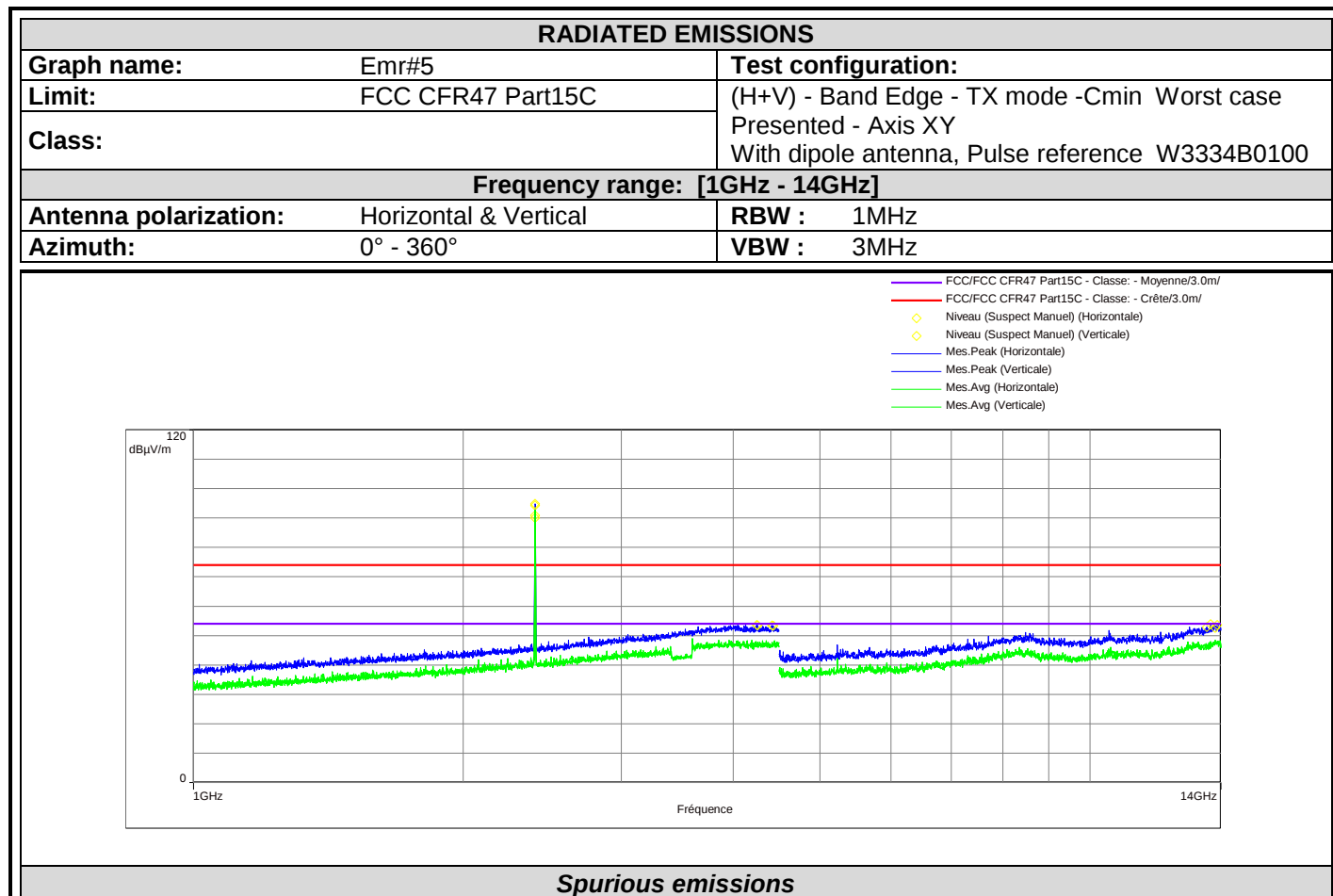


Frequency (MHz)	Peak Level (dBµV/m)	Polarization	Correction (dB)
166.833	13.2	Vertical	-15.8
261.480	16.4	Vertical	-12.4
287.960	20.0	Vertical	-11.9
480.000	28.5	Vertical	-6.2

Worst Case on Cmin

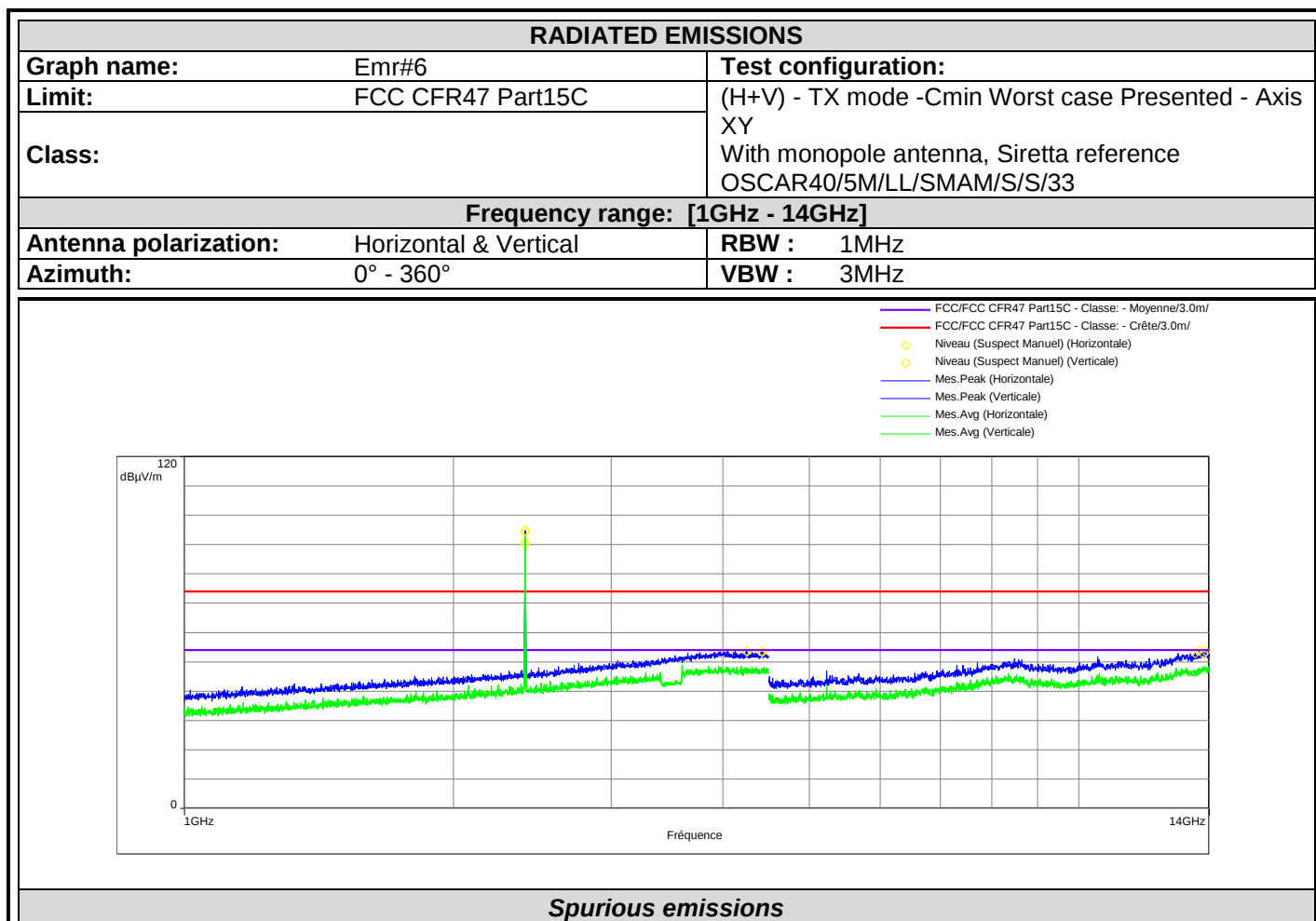
Test Frequency (MHz)	Meter Reading dB(µV)	Detector (Pk/QP/Av)	Polarit y (V/H)	Azimuth (Degrees)	Antenn a Height (cm)	Gain/Los s Factor (dB)	Transduce r Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margi n (dB)
111.838	21.9	QP	V	180	100	-	15.2	37.1	43.5	-6.4
154.138	26	QP	V	90	100	-	14.8	40.8	43.5	-2.7
165.175	15.5	QP	V	150	100	-	16.1	31.6	43.5	-11.9
195.647	16.8	QP	V	50	100	-	20.2	37.0	43.5	-6.5
259.864	16.1	QP	V	285	100	-	16.9	33.0	46.0	-13.0
467.59	15.7	QP	V	265	100	-	22.6	38.3	46.0	-7.7

Results in the frequency band [1-25] GHz:



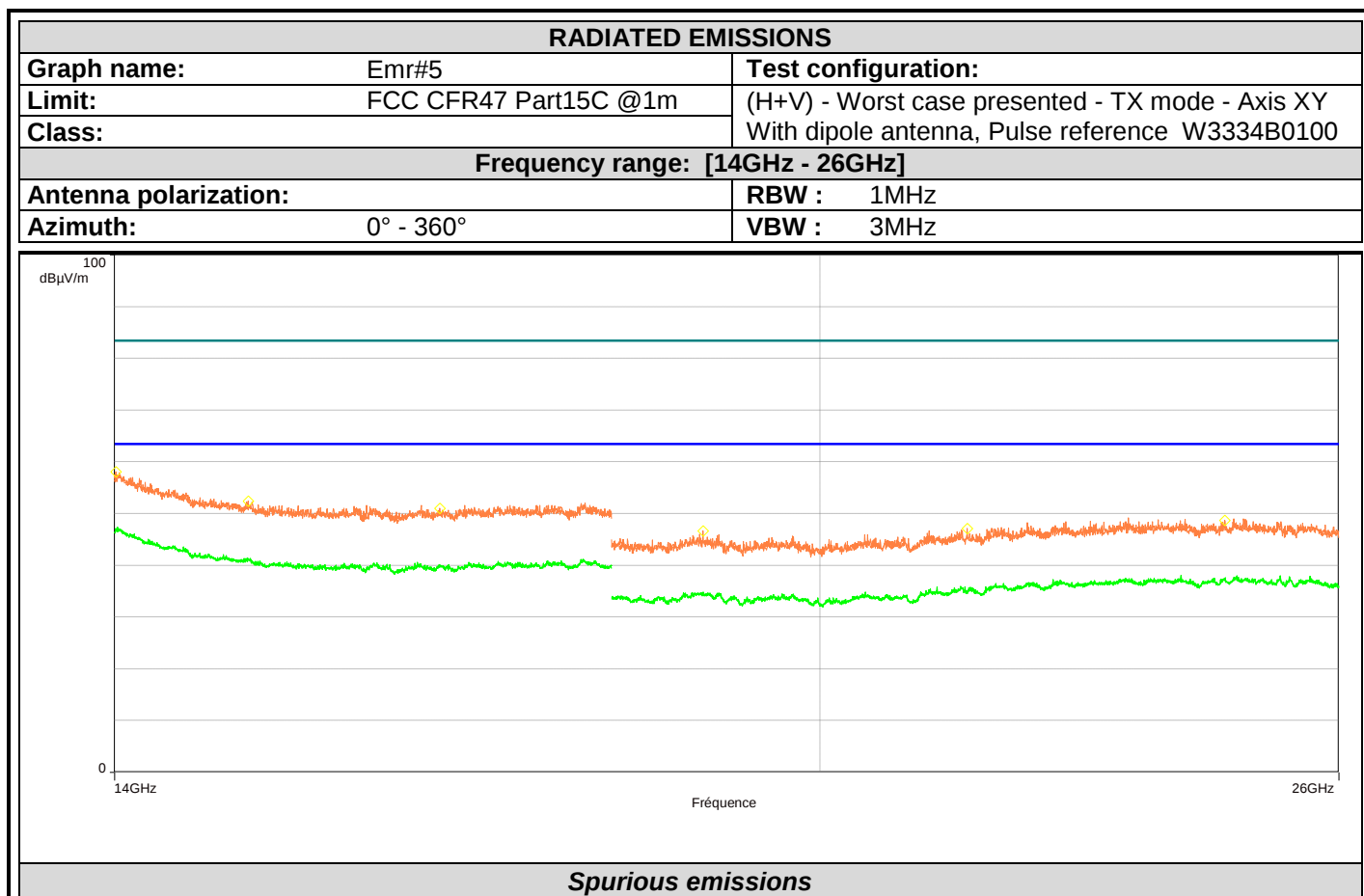
Frequency (MHz)	Peak Level (dBµV/m)	Limit Peak (dBµV)	Polarization Worst case	Correction (dB)
2402.500	90.9	-	Vertical	33.4
4259.000	53.5	74	Vertical	38.2
4433.500	53.4	74	Vertical	38.2
13639.594	53.8	74	Vertical	-14.3
13793.375	52.6	74	Vertical	-14.0

Frequency (MHz)	Average Level (dBµV/m)	Limit Average (dBµV)	Polarization Worst case	Correction (dB)
2402.500	88.94	-	Vertical	33.4
4259.000	47.8	54	Vertical	38.2
4433.500	47.8	54	Vertical	38.2
13639.594	46.47	54	Vertical	-14.3
13793.375	52.6	54	Vertical	-14.0

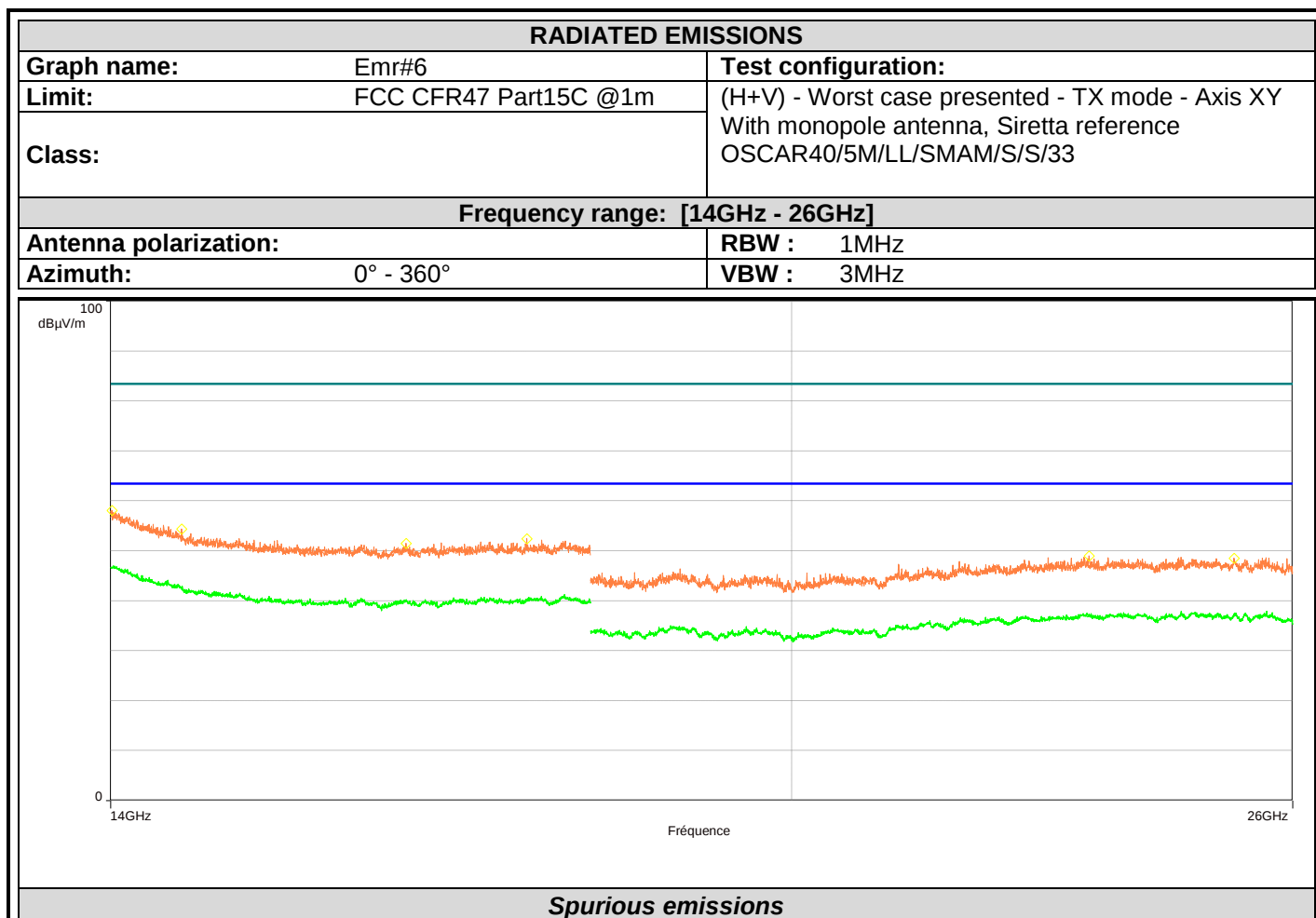


Frequency (MHz)	Peak Level (dBμV/m)	Limit Peak (dBμV)	Polarization Worst case	Correction (dB)
2402.000	94.3	74	Vertical	33.4
4250.000	53.6	74	Vertical	38.2
4420.000	53.5	74	Vertical	38.2
13499.469	52.9	74	Vertical	-14.6
13862.250	53.6	74	Vertical	-13.8

Frequency (MHz)	Average Level (dBμV/m)	Limit Average (dBμV)	Polarization Worst case	Correction (dB)
2402.000	92.77	54	Vertical	33.4
4250.000	48.23	54	Vertical	38.2
4420.000	48.11	54	Vertical	38.2
13499.469	48.13	54	Vertical	-14.6
13862.250	47.25	54	Vertical	-13.8



Frequency (MHz)	Peak Level (dBμV/m)	Polarization	Correction (dB)
14009.500	58.1	Horizontal	5.6
14981.000	52.4	Horizontal	-0.7
16505.000	51.1	Horizontal	-2.5
18854.000	46.6	Horizontal	-2.0
21549.000	47.1	Horizontal	-1.2
24543.000	48.7	Horizontal	0.0



Frequency (MHz)	Peak Level (dBμV/m)	Polarization	Correction (dB)
14010.000	58.1	Horizontal	5.6
14532.500	54.4	Horizontal	0.8
16343.000	51.5	Horizontal	-2.2
17409.000	52.4	Horizontal	-2.7
23369.000	49.0	Horizontal	-0.3
25218.000	48.5	Horizontal	0.5

Frequency (MHz)	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Avg Level (dBμV/m)	Avg Limit (dBμV/m)	Margin (dB)	Polarization	Correction (dB)
4250	40.30	53.60	-13.3	28.63	54	-25.37	Vertical	38.2
4420	36.00	53.50	-17.5	29.06	54	-24.94	Vertical	38.2
13499.469	38.40	52.90	-14.5	25.19	54	-28.81	Vertical	-14.6
13862.25	40.00	53.60	-13.6	27.65	54	-26.35	Vertical	-13.8
4250	48.23	74.00	-25.77	31.87	54	-22.13	Vertical	38.2
4420	48.11	74.00	-25.89	30.68	54	-23.32	Vertical	38.2
13499.469	48.13	74.00	-25.87	25.34	54	-28.66	Vertical	-14.6
13862.25	47.25	74.00	-26.75	26.39	54	-27.61	Vertical	-13.8
14009.5	58.10	74.00	-20.1	45.8	54	-8.2	Horizontal	5.6
14981	52.40	74.00	-20.6	45.1	54	-8.9	Horizontal	-0.7
16505	51.10	74.00	-20.5	44.2	54	-9.8	Horizontal	-2.5
18854	46.60	74.00	-27.4	44.6	54	-9.4	Horizontal	-2
21549	47.10	74.00	-20.1	43.8	54	-8.2	Horizontal	-1.2
24543	48.70	74.00	-30	35.4	54	-18.6	Horizontal	0
14010	58.10	74.00	-15.9	36.84	54	-17.16	Horizontal	5.6
14532.5	54.40	74.00	-29.7	32.34	54	-21.66	Horizontal	0.8
16343	51.50	74.00	-31.7	30.78	54	-23.22	Horizontal	-2.2
17409	52.40	74.00	-32	31.35	54	-22.65	Horizontal	-2.7
23369	49.00	74.00	-35.8	29.35	54	-24.65	Horizontal	-0.3
25218	48.50	74.00	-33.8	28.58	54	-25.42	Horizontal	0.5

9.7. CONCLUSION

Unwanted Emission in restricted frequency bands measurement performed on the sample of the product **JAY ELECTRONIQUE S5**, SN: **None**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.247 & RSS 247 ISSUE 2 limits.

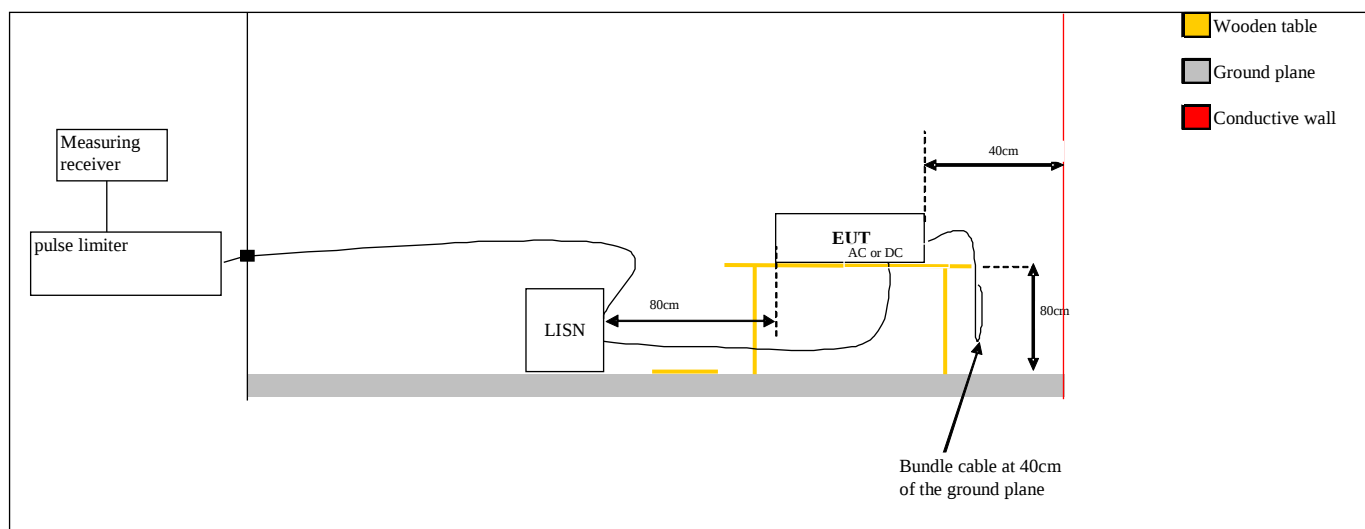
10. POWER LINE CONDUCTED EMISSIONS

10.1. TEST CONDITIONS

Test performed by : Majid MOURZAGH
 Date of test : April 29, 2021
 Ambient temperature : 22 °C
 Relative humidity : 43 %

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 $50\Omega / 50\mu\text{H}$. Interconnecting cables and equipment's were moved to position that maximized emission.





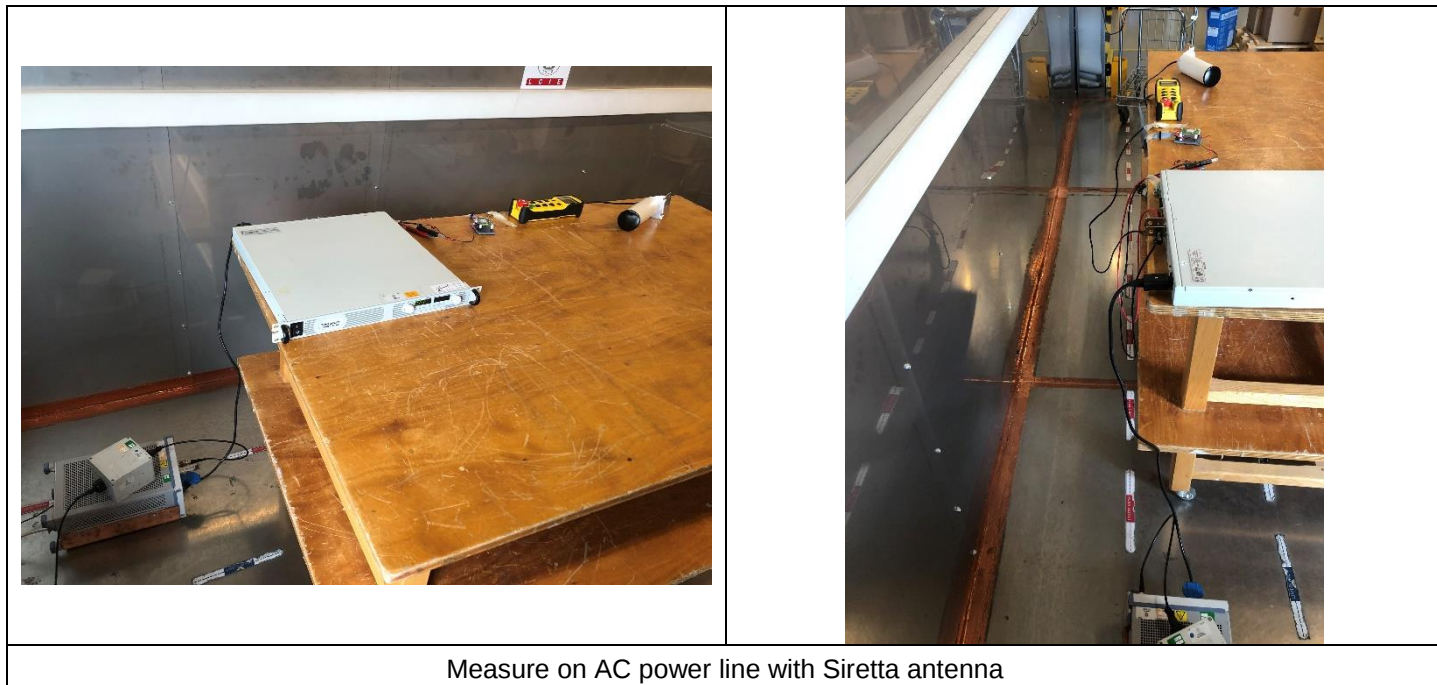
Measure on DC power line with Pulse antenna



Measure on DC power line with Siretta antenna



Measure on AC power line with Pulse antenna



Measure on AC power line with Siretta antenna
Photograph for Power Line Conducted Emissions

10.3. LIMIT

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

*Decreases with the logarithm of the frequency

10.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
BAT EMC	NEXIO	v3.19.1.23	L1000115		
EMC comb generator	LCIE SUD EST	—	A3169098		
LISN	ROHDE & SCHWARZ	ENV216	C2320291	06/20	06/21
Receiver 20Hz – 8GHz	ROHDE & SCHWARZ	ESU8	A2642019	11/20	11/22
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	01/21	01/23
Transient limiter	ROHDE & SCHWARZ	ESH3-Z2	A7122204	08/20	08/21
Cable + self	—	—	A5329585	07/20	07/21
dc power supply 30V 25A	TDK	GEN30-25	A7044070		

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

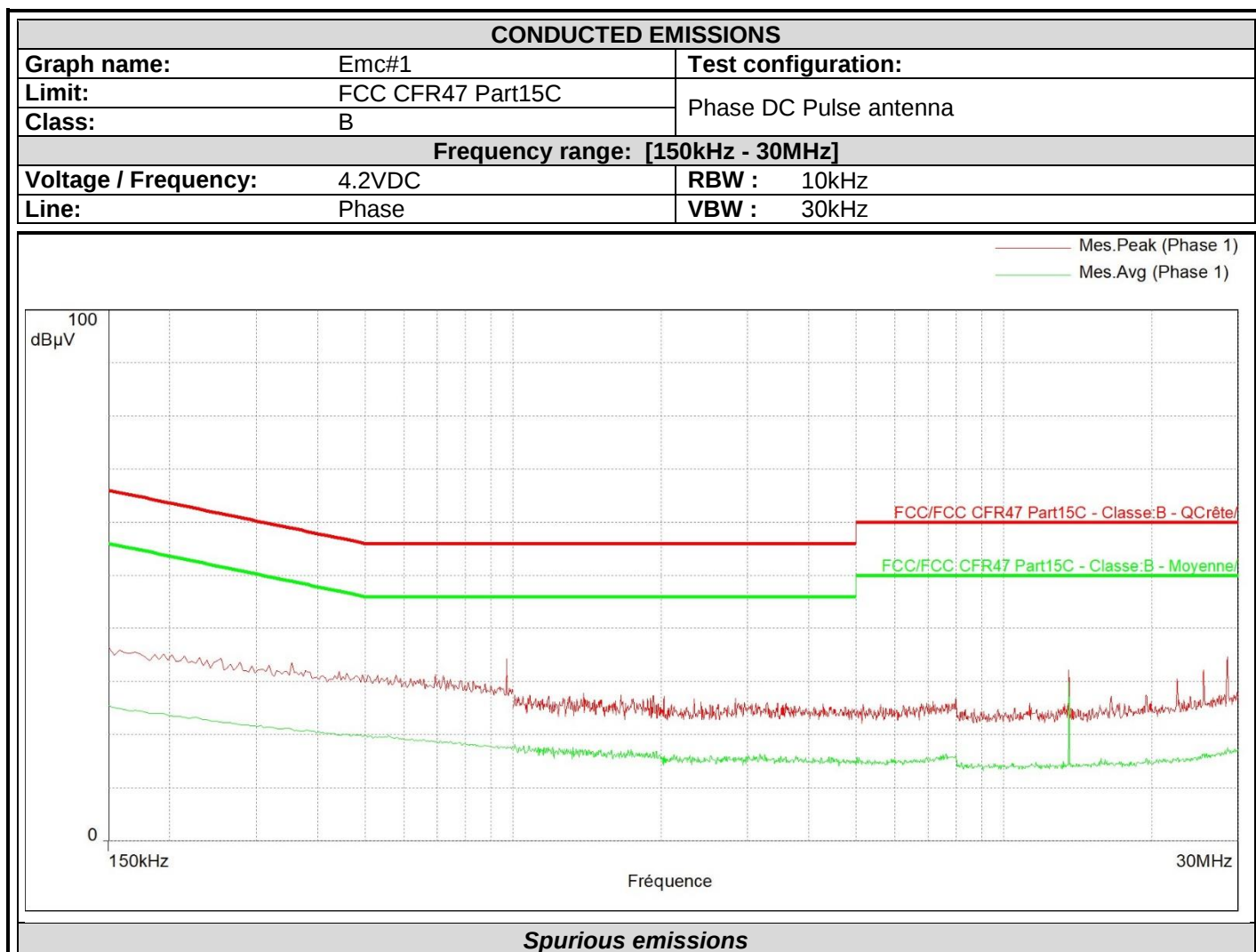
☒ None ☐ Divergence:

10.6. RESULTS

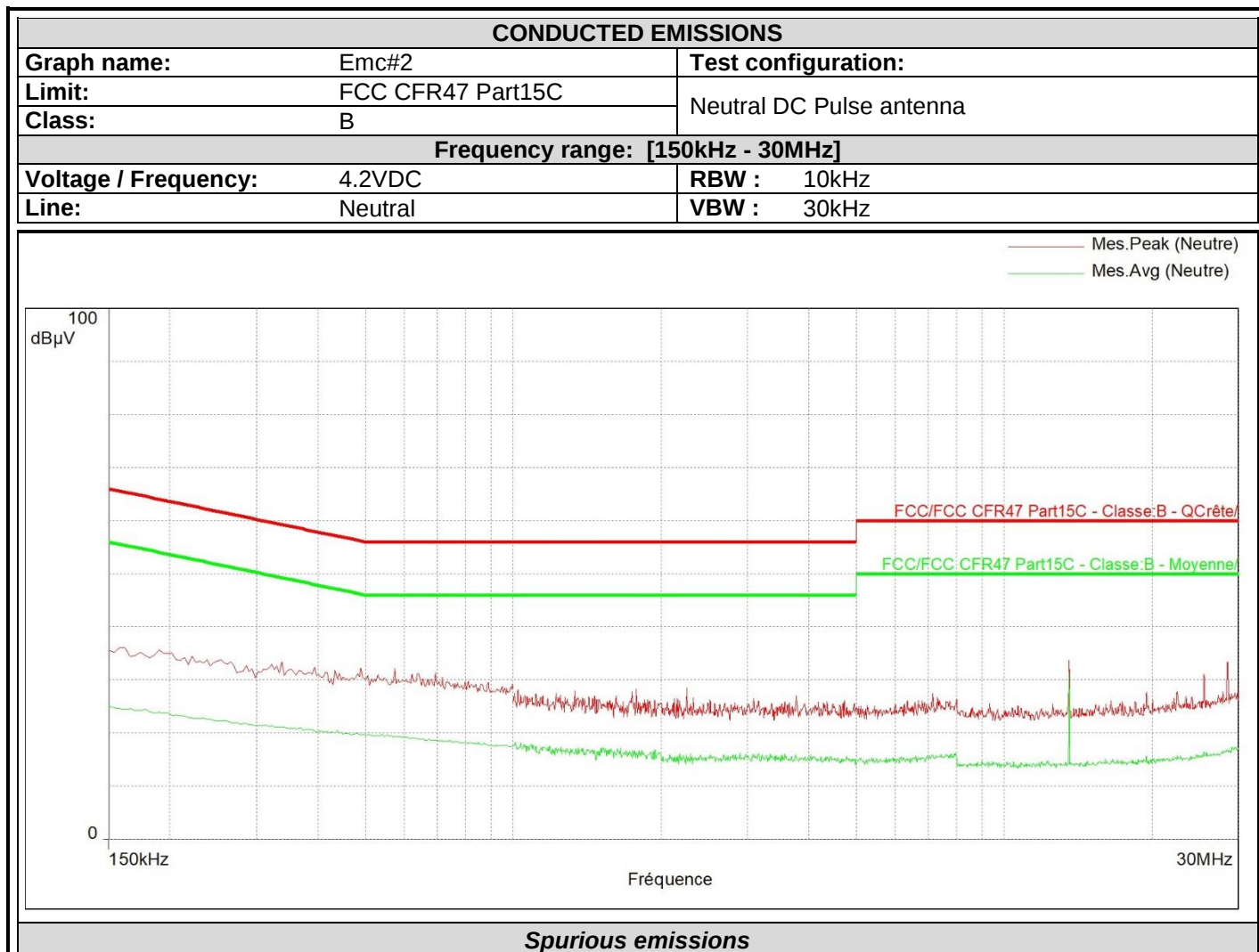
Measurements are performed on the phase (L1) and neutral (N) of the power line.

Results: (PEAK detection)

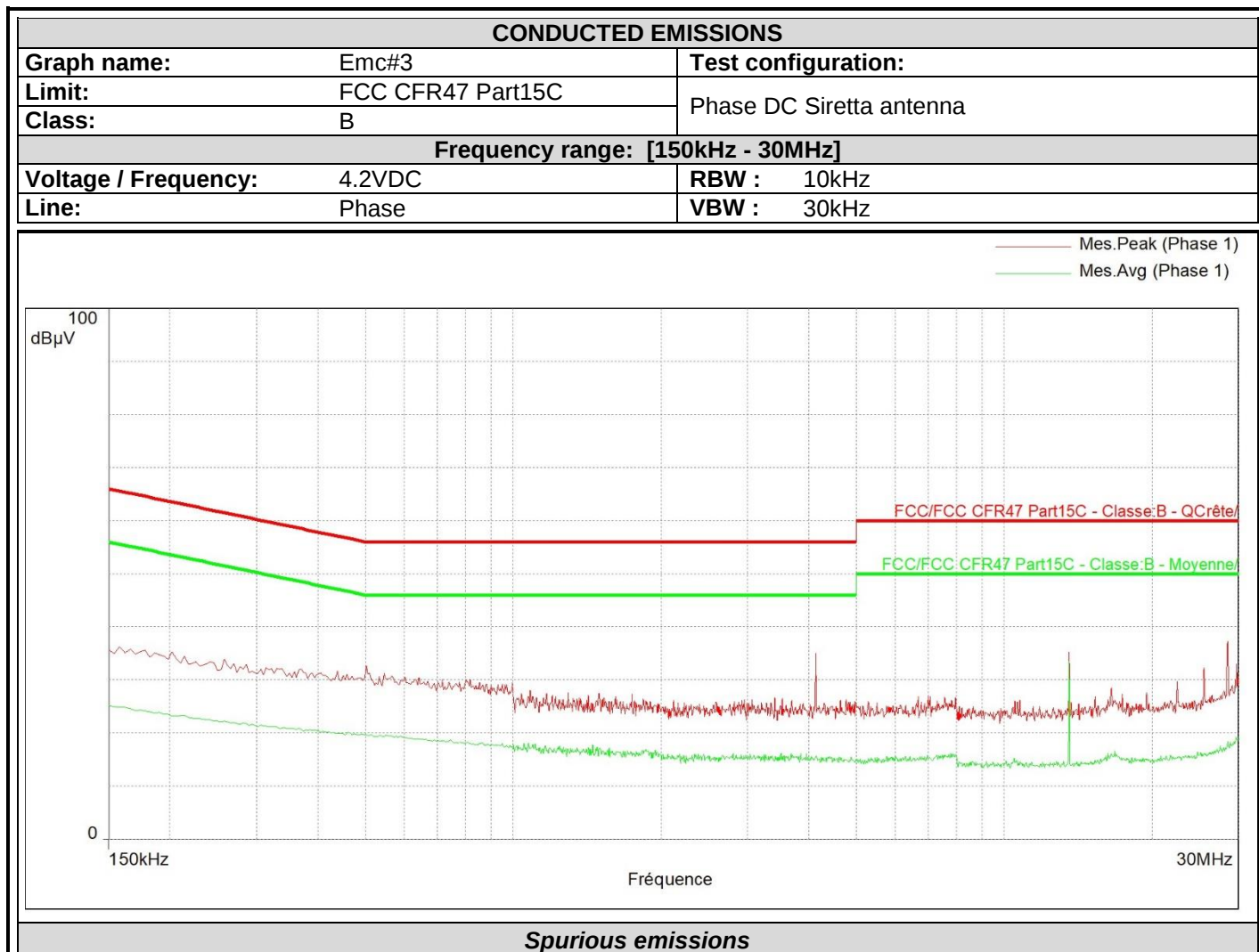
Graph identifier	Line	Comments	
Emc# 1	Phase	On DC with Pulse antenna	See below
Emc# 2	Neutral	On DC with Pulse antenna	See below
Emc# 3	Phase	On DC with Siretta antenna	See below
Emc# 4	Neutral	On DC with Siretta antenna	See below
Emc# 5	Phase	On AC 120V / 60Hz with Pulse antenna	See below
Emc# 6	Neutral	On AC 120V / 60Hz with Pulse antenna	See below
Emc# 7	Phase	On AC 240V / 50Hz with Pulse antenna	See below
Emc# 8	Neutral	On AC 240V / 50Hz with Pulse antenna	See below
Emc# 9	Phase	On AC 120V / 60Hz with Siretta antenna	See below
Emc# 10	Neutral	On AC 120V / 60Hz with Siretta antenna	See below
Emc# 11	Phase	On AC 240V / 50Hz with Siretta antenna	See below
Emc# 12	Neutral	On AC 240V / 50Hz with Siretta antenna	See below



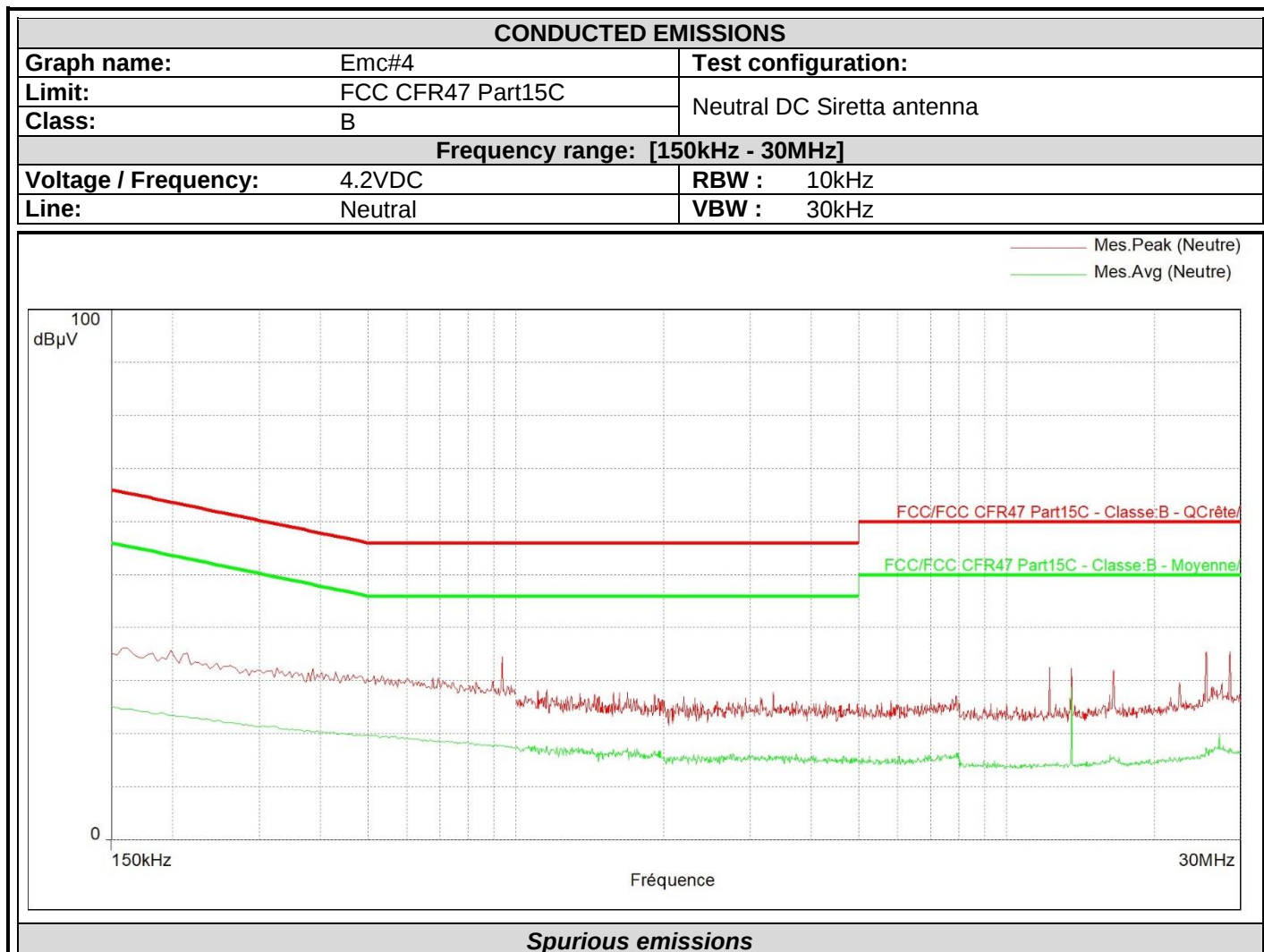
Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.926	30.1	23.4	56.0	-32.6	17.6	46.0	-28.4	19.6
13.560	32.9	30.2	60.0	-29.8	28.7	50.0	-21.3	20.4
28.496	36.7	27.5	60.0	-32.5	16.2	50.0	-33.8	21.3



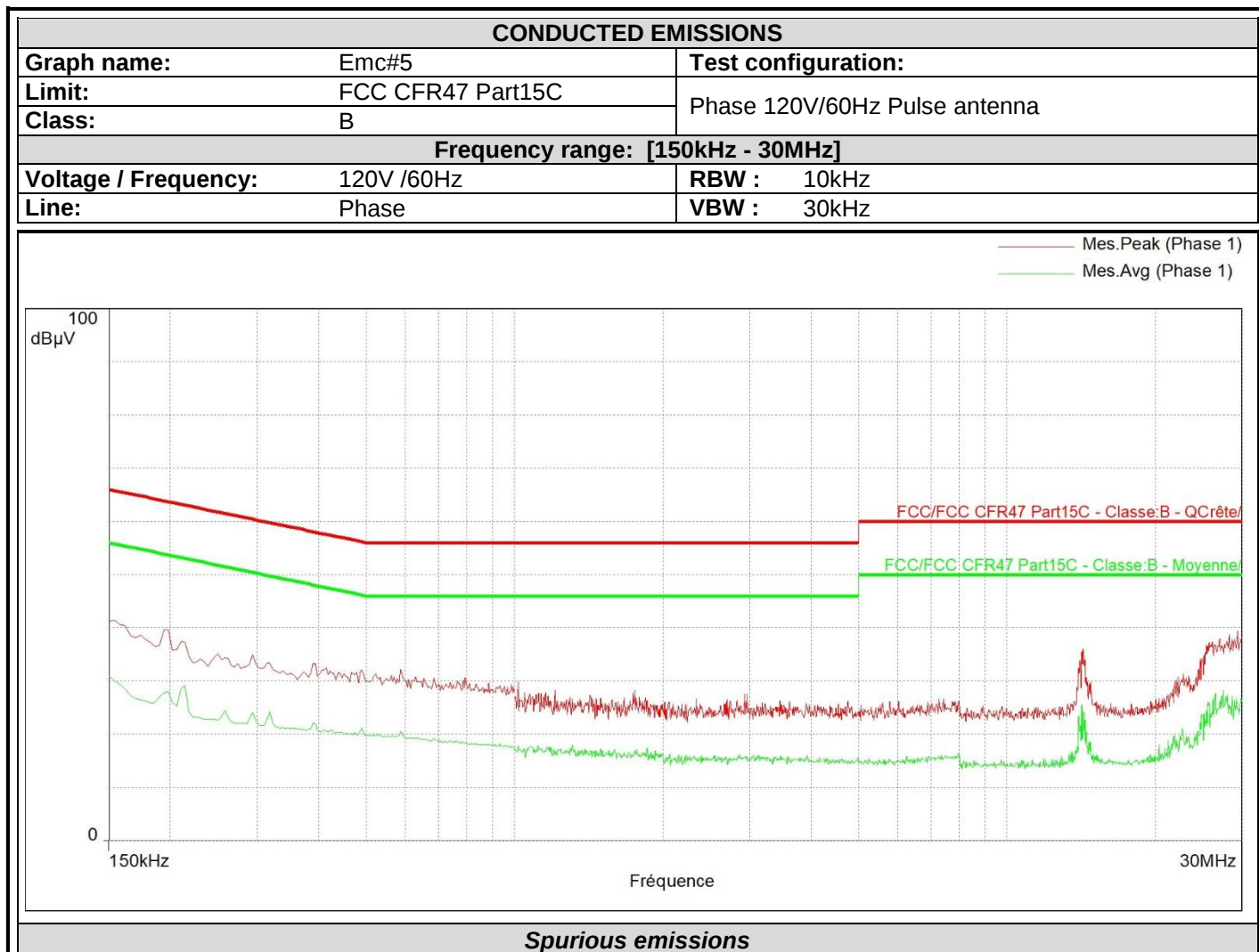
Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.354	31.9	26.6	58.9	-32.3	20.8	48.9	-28.1	19.5
13.560	33.8	31.3	60.0	-28.7	30.1	50.0	-19.9	20.4
28.520	35.0	25.3	60.0	-34.7	16.1	50.0	-33.9	21.3



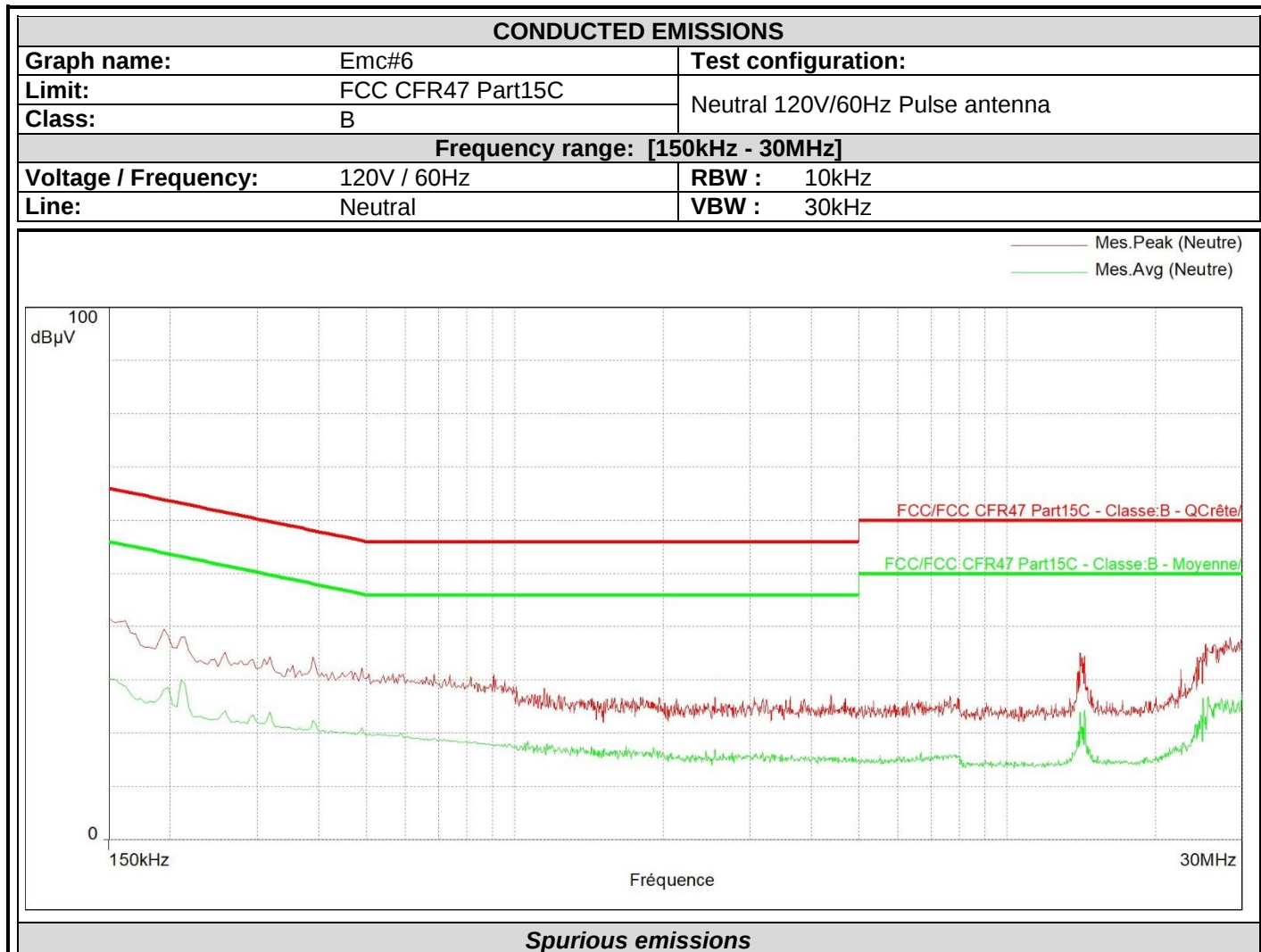
Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.154	37.8	30.7	65.8	-35.1	24.8	55.8	-31.0	19.4
4.156	26.7	20.4	56.0	-35.6	14.7	46.0	-31.3	19.8
13.560	36.9	35.1	60.0	-24.9	34.5	50.0	-15.5	20.4
28.484	37.5	28.4	60.0	-31.6	16.9	50.0	-33.1	21.3



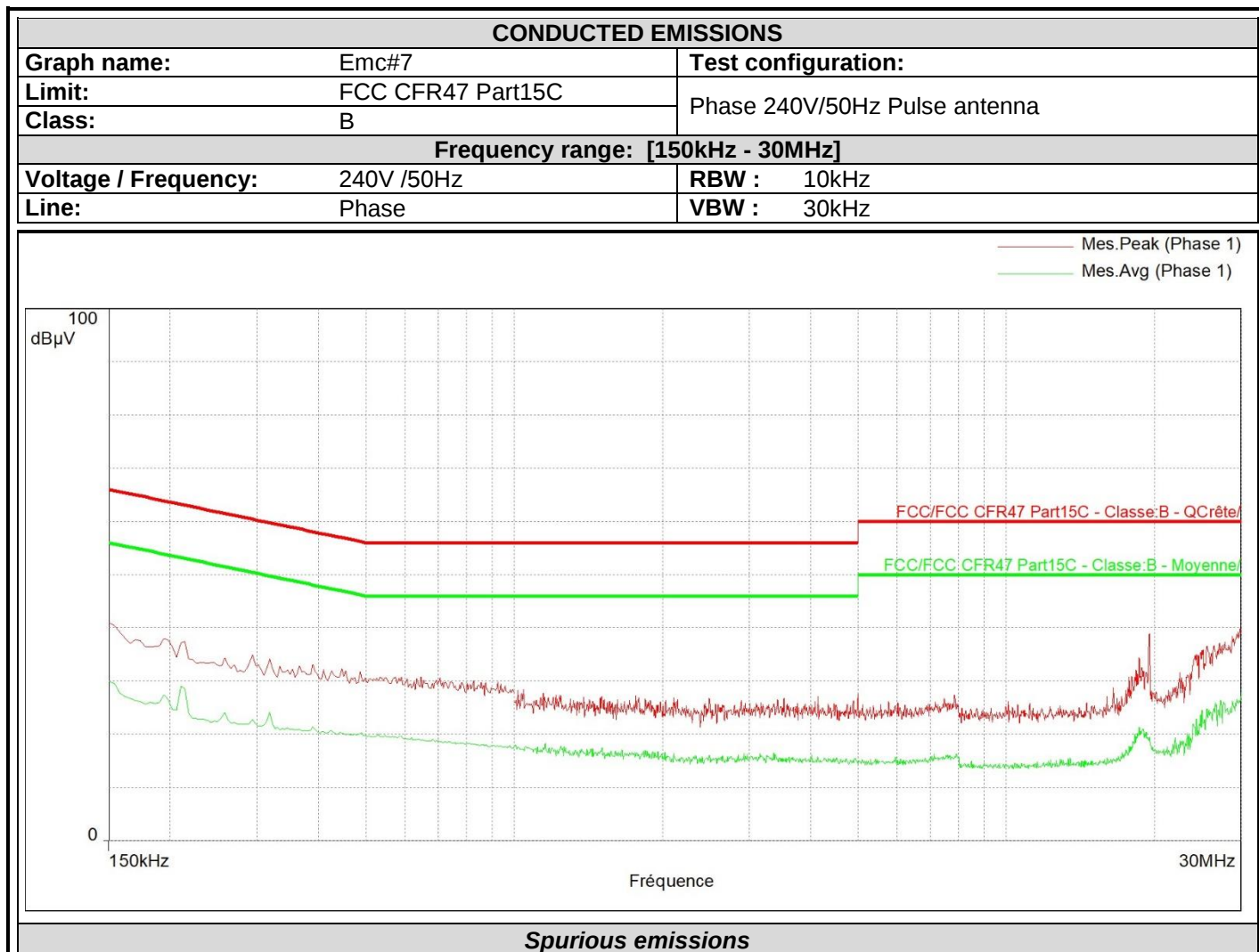
Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.158	36.9	30.6	65.6	-34.9	24.7	55.6	-30.8	19.5
0.990	29.2	23.1	56.0	-32.9	17.4	46.0	-28.6	19.6
13.560	35.2	32.6	60.0	-27.4	31.6	50.0	-18.4	20.4
25.484	36.8	27.5	60.0	-32.5	16.0	50.0	-34.0	21.1



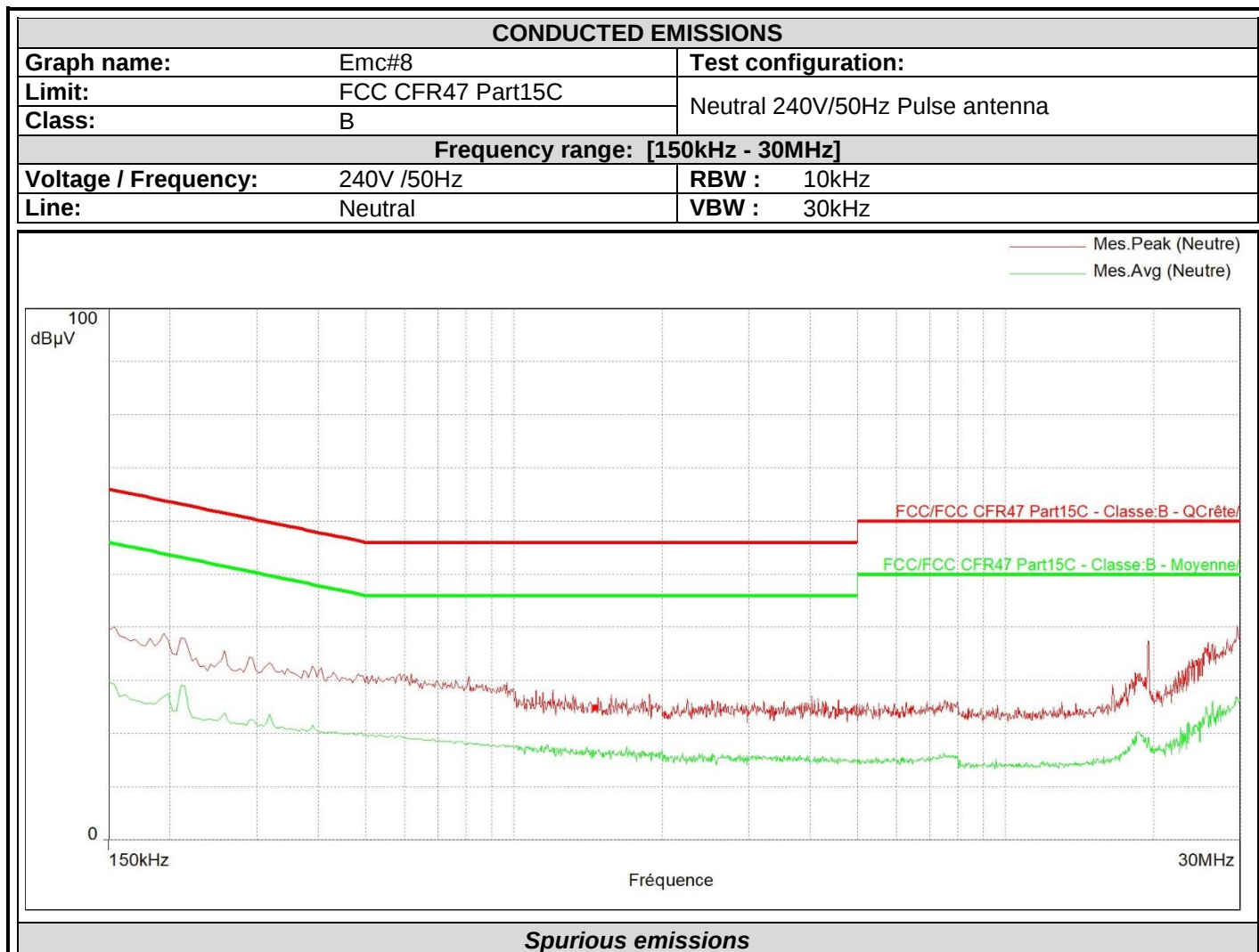
Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.154	41.5	36.2	65.8	-29.6	29.6	55.8	-26.2	19.4
0.390	34.9	28.9	58.1	-29.1	22.0	48.1	-26.0	19.5
0.586	31.4	26.2	56.0	-29.8	20.3	46.0	-25.7	19.7
1.196	28.1	22.8	56.0	-33.2	16.9	46.0	-29.1	19.6
14.276	35.6	29.3	60.0	-30.7	19.3	50.0	-30.7	20.5
25.752	37.4	30.8	60.0	-29.2	19.9	50.0	-30.1	21.2



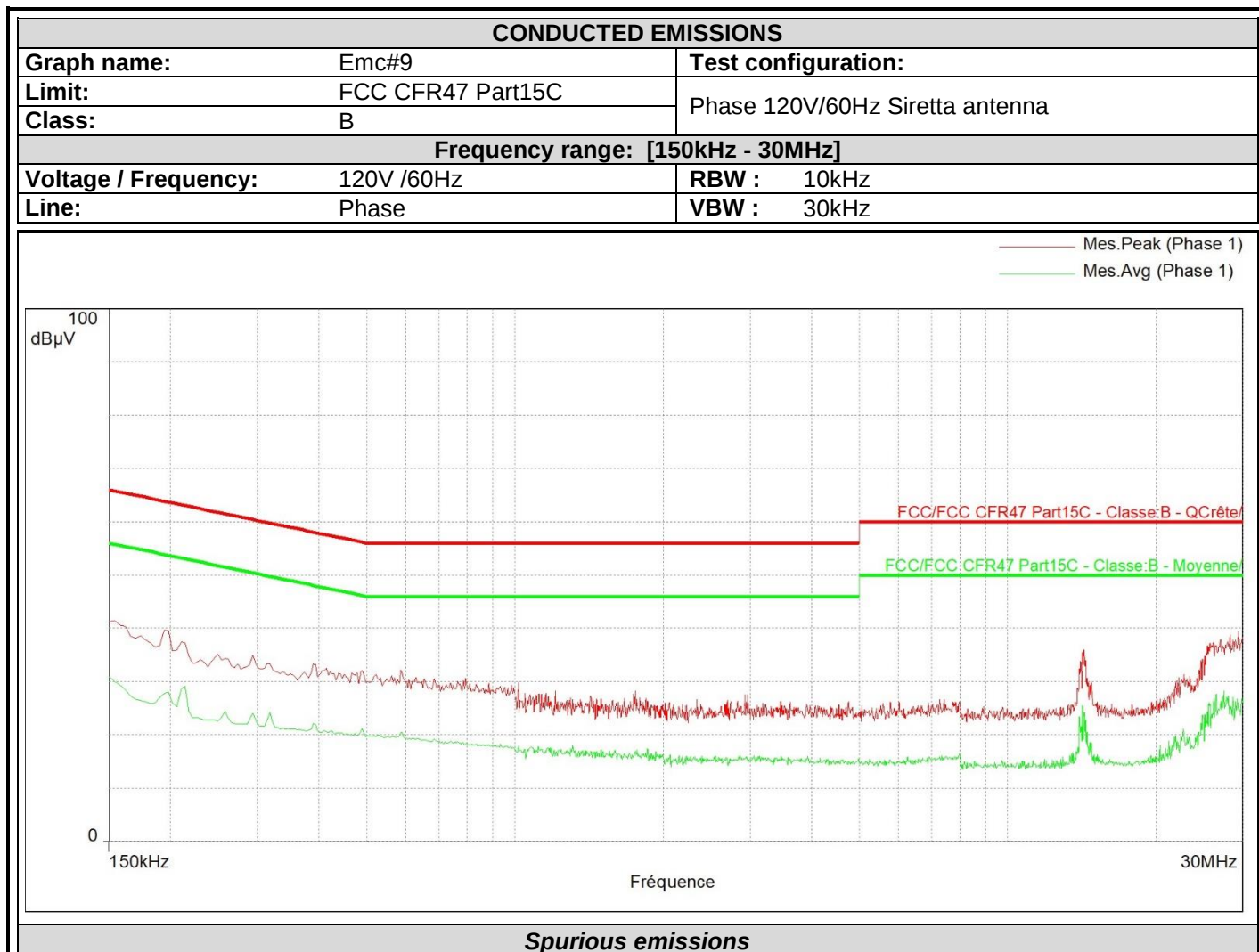
Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.162	41.8	35.5	65.4	-29.8	28.2	55.4	-27.2	19.5
0.214	38.7	34.6	63.0	-28.4	29.6	53.0	-23.5	19.6
0.390	34.8	29.1	58.1	-29.0	22.3	48.1	-25.8	19.5
1.608	28.0	21.9	56.0	-34.1	16.2	46.0	-29.8	19.6
14.060	35.9	29.6	60.0	-30.4	19.3	50.0	-30.7	20.5
25.240	35.2	28.6	60.0	-31.4	18.4	50.0	-31.6	21.1



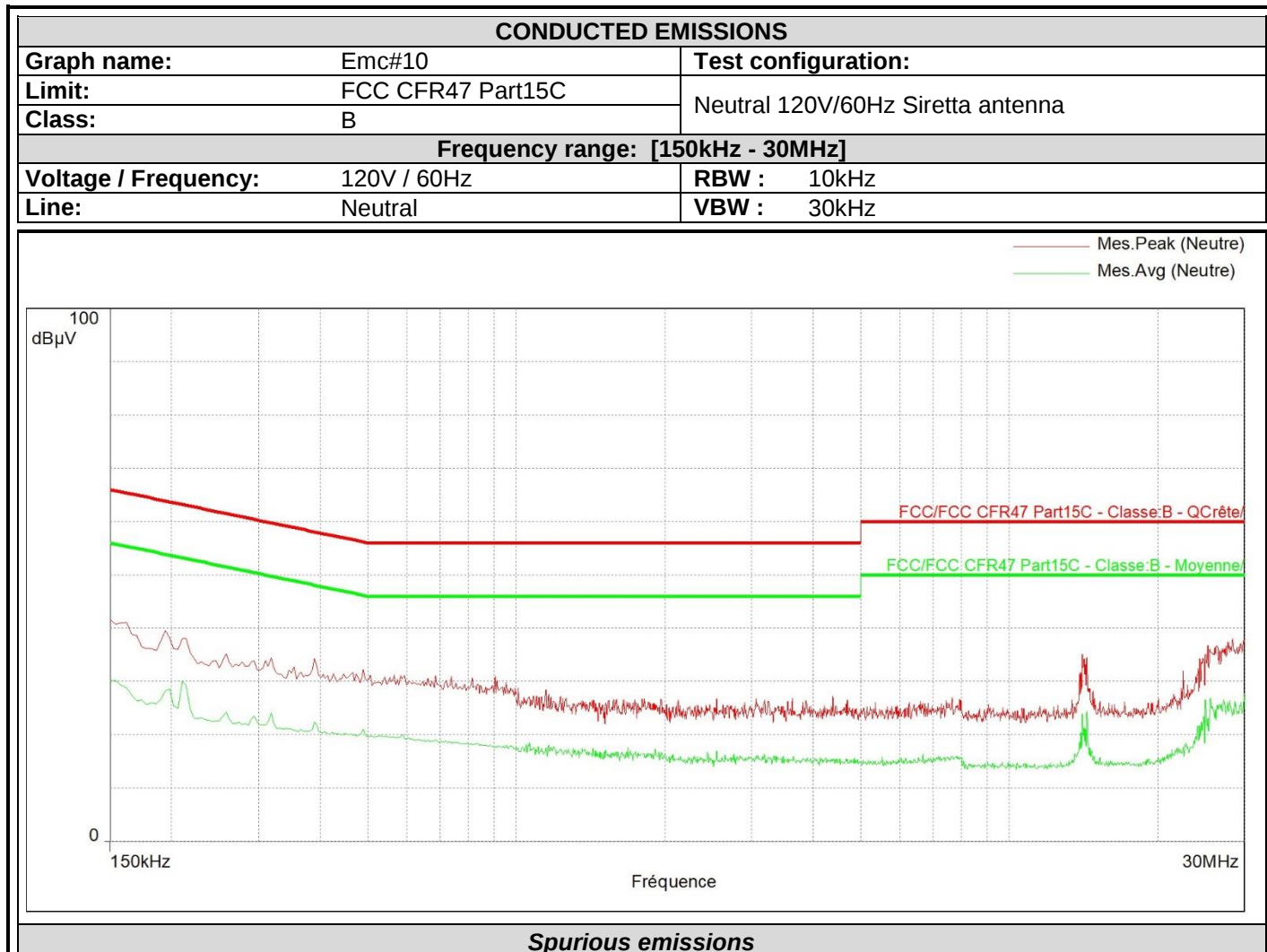
Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.210	37.7	33.1	63.2	-30.1	28.0	53.2	-25.2	19.6
0.258	34.3	29.7	61.5	-31.8	23.8	51.5	-27.7	19.5
1.348	28.3	22.6	56.0	-33.4	16.6	46.0	-29.4	19.6
18.644	34.0	27.1	60.0	-32.9	18.6	50.0	-31.4	20.8
19.492	39.7	30.8	60.0	-29.2	17.1	50.0	-32.9	20.8
25.600	37.7	31.2	60.0	-28.8	21.5	50.0	-28.5	21.1



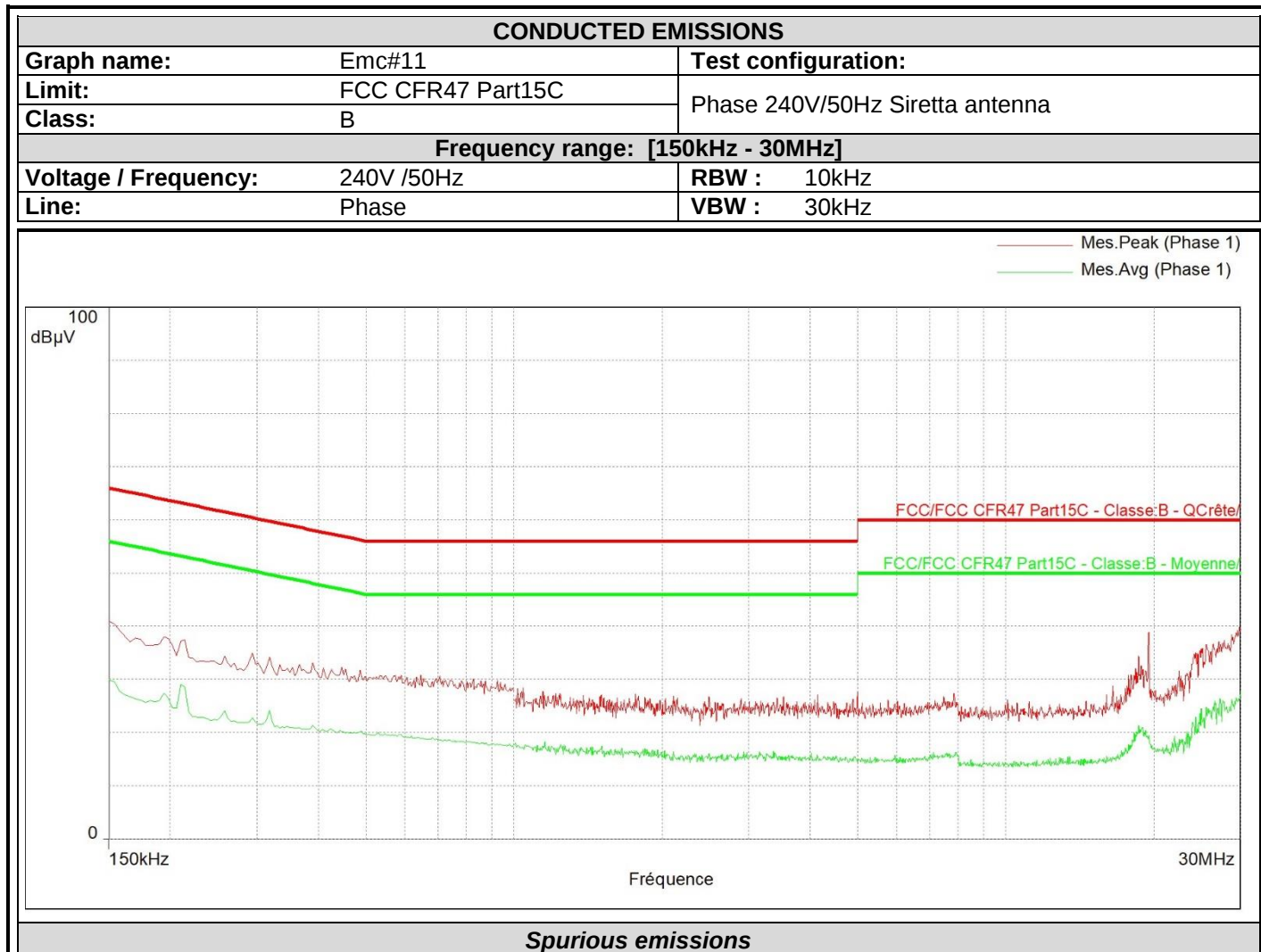
Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.150	42.0	36.4	66.0	-29.6	29.6	56.0	-26.4	19.4
0.194	39.4	34.0	63.9	-29.8	27.4	53.9	-26.4	19.6
0.386	32.6	26.4	58.2	-31.7	20.7	48.2	-27.5	19.5
1.920	27.2	21.6	56.0	-34.4	16.0	46.0	-30.0	19.6
18.352	32.6	25.3	60.0	-34.7	17.2	50.0	-32.8	20.7
19.488	39.5	30.5	60.0	-29.5	17.0	50.0	-33.0	20.8
29.548	40.4	32.9	60.0	-27.1	22.4	50.0	-27.6	21.4



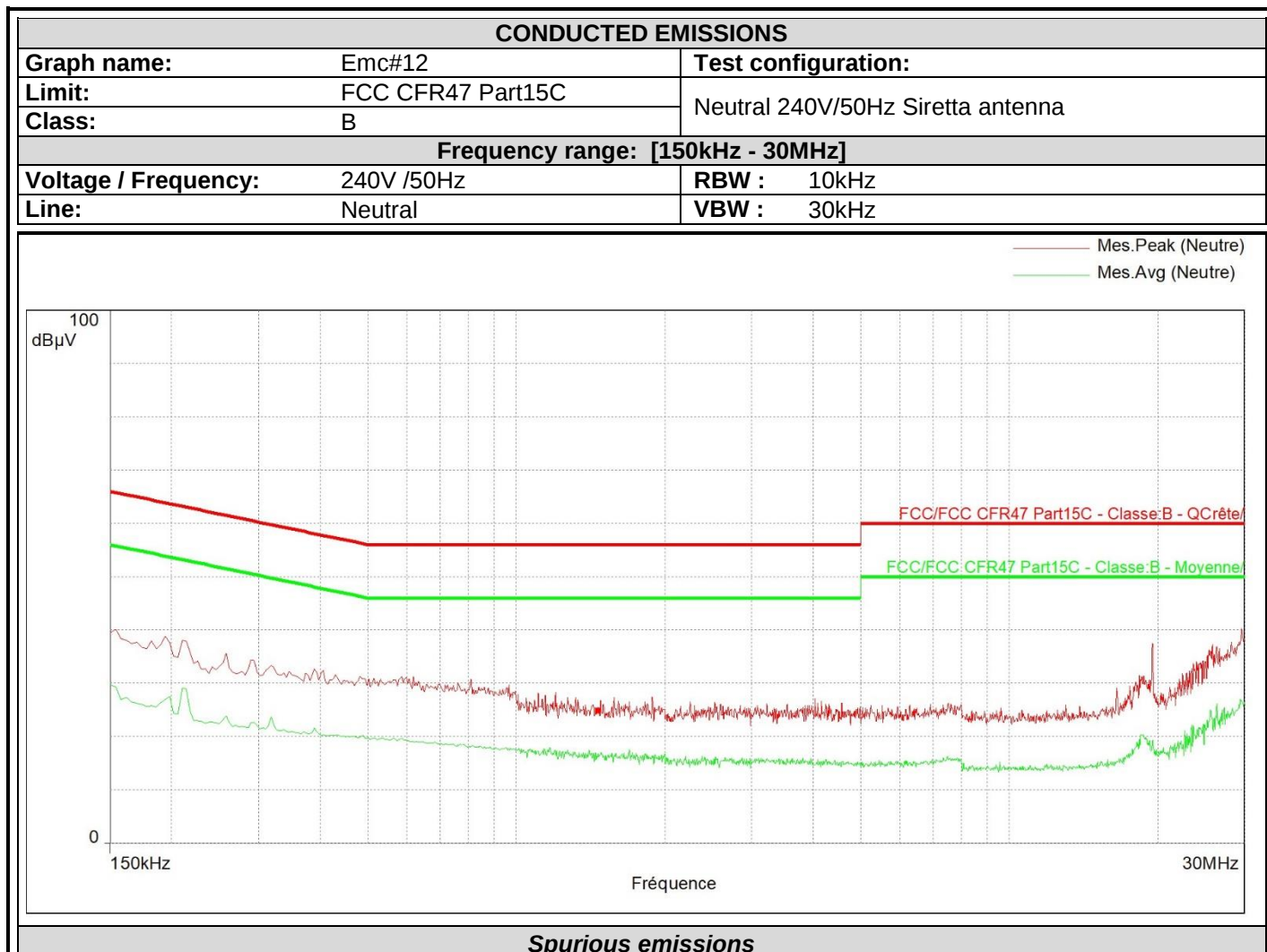
Frequency (MHz)	Mes.Peak (dBμV)	Mes.QPeak (dBμV)	LimQP (dBμV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBμV)	LimAvg (dBμV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.210	38.9	34.8	63.2	-28.4	29.7	53.2	-23.5	19.6
0.294	35.4	29.8	60.4	-30.6	23.5	50.4	-27.0	19.5
1.740	27.2	21.8	56.0	-34.2	16.1	46.0	-29.9	19.6
14.172	35.4	29.6	60.0	-30.4	19.6	50.0	-30.4	20.5
29.344	37.5	30.0	60.0	-30.0	21.7	50.0	-28.3	21.3



Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.150	42.2	37.4	66.0	-28.6	30.4	56.0	-25.6	19.4
0.154	41.3	36.2	65.8	-29.6	29.6	55.8	-26.2	19.4
0.294	35.5	29.5	60.4	-30.9	23.0	50.4	-27.4	19.5
1.140	29.0	22.8	56.0	-33.2	17.0	46.0	-29.0	19.6
14.360	35.0	29.1	60.0	-30.9	19.1	50.0	-30.9	20.5
28.352	37.0	31.8	60.0	-28.2	22.8	50.0	-27.2	21.3



Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.154	42.0	36.1	65.8	-29.7	29.6	55.8	-26.2	19.4
0.294	34.8	29.4	60.4	-31.0	23.0	50.4	-27.4	19.5
0.386	32.6	26.7	58.2	-31.5	21.0	48.2	-27.2	19.5
4.176	27.6	20.5	56.0	-35.5	14.6	46.0	-31.4	19.8
19.480	25.4	19.9	60.0	-40.1	14.0	50.0	-36.0	20.8
29.860	37.7	32.3	60.0	-27.7	22.1	50.0	-27.9	21.4



Frequency (MHz)	Mes.Peak (dBµV)	Mes.QPeak (dBµV)	LimQP (dBµV)	Mes.QPeak-LimQP (dB)	Mes.Avg (dBµV)	LimAvg (dBµV)	Mes.Avg-LimAvg (dB)	Correction (dB)
0.158	41.3	35.5	65.6	-30.0	28.4	55.6	-27.1	19.5
0.210	39.1	33.8	63.2	-29.4	28.7	53.2	-24.5	19.6
0.390	34.9	28.8	58.1	-29.2	22.1	48.1	-26.0	19.5
1.164	29.1	23.0	56.0	-33.0	17.2	46.0	-28.8	19.6
19.520	26.5	19.9	60.0	-40.1	14.2	50.0	-35.8	20.8
25.792	37.0	31.5	60.0	-28.5	20.7	50.0	-29.3	21.2

10.7. CONCLUSION

Ac Power Line Conducted Emission measurement performed on the sample of the product **JAY ELECTRONIQUE S5**, SN: **None**, in configuration and description presented in this test report, show levels **Select Result** to the 47 CFR PART 15.247 & RSS 247 ISSUE 2 limits.

11. UNCERTAINTIES CHART

Type de mesure / Kind of measurement	Incertitude élargie laboratoire / Wide uncertainty laboratory (k=2) $\pm x$	Incertitude limite du CISPR / CISPR uncertainty limit $\pm y$
Measurement of conducted disturbances in voltage on the power port	3.29dB	3.4 dB
Measurement of conducted disturbances in voltage on the telecommunication port.	3.26 dB	5dB
Measurement of discontinuous conducted disturbances in voltage	3.33 dB	3.4 dB
Measurement of conducted disturbances in current	2.67 dB	2.9dB
Spurious emission, radiated (Semi anechoic chamber & open test site)	5.60 dB	6 dB
Spurious emission, radiated (Full anechoic chamber above 1GHz)	± 3.8 dB	± 6 dB
Occupied Channel Bandwidth	± 2.8 %	± 5 %
RF power, conducted	± 1.2 dB	± 1.5 dB
Power Spectral Density, Conducted	± 1.7 dB	± 3 dB
Spurious emission, conducted	± 2.3 dB	± 3 dB
Temperature	± 0.75 °C	± 3 °C
Supply Voltages	± 1.7 %	± 3 %

Les valeurs d'incertitudes calculées du laboratoire étant inférieures aux valeurs d'incertitudes limites établies par la norme, la conformité de l'échantillon est établie directement par les niveaux limites applicables. / The uncertainty values calculated by the laboratory are lower than limit uncertainty values defined by the standard. The conformity of the sample is directly established by the applicable limits values.