



LCIE

Arva Template: Release October 12th, 2021

TEST REPORT

N° 174422-771672-C (FILE#3241125):

Version : 02

Subject

Electromagnetic compatibility tests according to the standards: FCC CFR 47 Part 15, Subpart C
ANSI C63.4 & RSS-210 Issue 10

Issued to

ASTEELFLASH FRANCE
43 Chemin du vieux chene
38240 – MEYLAN
France

Apparatus under test

- ↪ Product
- ↪ Trade mark
- ↪ Manufacturer
- ↪ Model under test
- ↪ Serial number
- ↪ FCCID
- ↪ IC

DETECTING AVALANCHE VICTIMS
ARVA
ASTEELFLASH
NEO BT PRO
RF SIMPLE
O9BARVANEGBT
22008-ARVANEGBT

Conclusion

See Test Program chapter §1

Test date

October 28, 2021 to November 5, 2021

Test location

MOIRANS

FCC Test site

FR0008 - 197516

ISED Test site

FR0008 - 6500A

Sample receipt date

October 28, 2021

Composition of document

31 pages

Document issued on

September 19, 2022

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PUBLICATION HISTORY

Version	Date	Author	Modification
01	December 20, 2021	Mounir BOUAMARA	Creation of the document
02	September 19, 2022	Majid MOURZAGH	Correction of applicant mailing address on page1

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



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1. TEST PROGRAM

Standard:

- FCC Part 15, Subpart C
- ANSI C63.10 (2013)
- RSS-210 Issue 10
- RSS-Gen Issue 5

EMISSION TEST	LIMITS			RESULTS (Comments)
	Frequency	Quasi-peak value (dBµV)	Average value (dBµV)	
Limits for conducted disturbance at mains ports 150kHz-30MHz <i>CFR 47 §15.207</i>	150-500kHz	66 to 56	56 to 46	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/> NA <input type="checkbox"/> NP
	0.5-5MHz	56	46	
	5-30MHz	60	50	
Radiated emissions 9kHz-30MHz <i>CFR 47 §15.209 (a)</i> <i>CFR 47 §15.225</i> <i>RSS-Gen §4.9</i>	Measure at 300m 9kHz-490kHz : 67.6dBµV/m /F(kHz) Measure at 30m 490kHz-1.705MHz : 87.6dBµV/m /F(kHz) 1.705MHz-30MHz : 29.5 dBµV/m			<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/> NA <input type="checkbox"/> NP
Radiated emissions 30MHz-25GHz* <i>CFR 47 §15.209 (a)</i> <i>CFR 47 §15.225</i> <i>RSS-Gen §4.9</i> <i>Highest frequency :</i> <i>(Declaration of provider)</i>	Measure at 3m 30MHz-88MHz : 40 dBµV/m 88MHz-216MHz : 43.5 dBµV/m 216MHz-960MHz : 46.0 dBµV/m Above 960MHz : 54.0 dBµV/m			<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/> NA <input type="checkbox"/> NP
Fundamental field strength limit <i>CFR 47 §15.225</i> <i>RSS-210</i>	Operation within the band 456.9-457.1kHz			<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/> NA <input type="checkbox"/> NP
Fundamental frequency tolerance <i>CFR 47 §15.225</i> <i>RSS-210</i>	Operation within the band 456.9-457.1kHz			<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/> NA <input type="checkbox"/> NP
Occupied bandwidth <i>RSS-Gen Issue 5 §6.7</i>	No limit			<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/> NA <input type="checkbox"/> NP
Receiver Spurious Emission** <i>RSS-Gen Issue 5 §7.3</i>	See RSS-Gen §7.3 30MHz-88MHz : 40 dBµV/m 88MHz-216MHz : 43.5 dBµV/m 216MHz-960MHz : 46.0 dBµV/m Above 960MHz : 54.0 dBµV/m			<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/> NA <input type="checkbox"/> NP

*§15.33: The highest internal source of a testing device is defined like more the highest frequency generated or used in the testing device or on which the testing device works or agrees.

- If the highest frequency of the internal sources of the testing device is lower than 108 MHz, measurement must be only performed until 1GHz.

- If the highest frequency of the internal sources of the testing device ranges between 108 MHz and 500 MHz, measurement must be only performed until 2GHz.

- If the highest frequency of the internal sources of the testing device ranges between 500 MHz and 1 GHz, measurement must be only performed until 5GHz.

If the highest frequency of the internal sources of the testing device is above 1 GHz, measurement must be only performed until 5 times the highest frequency or 40 GHz, while taking smallest of both.

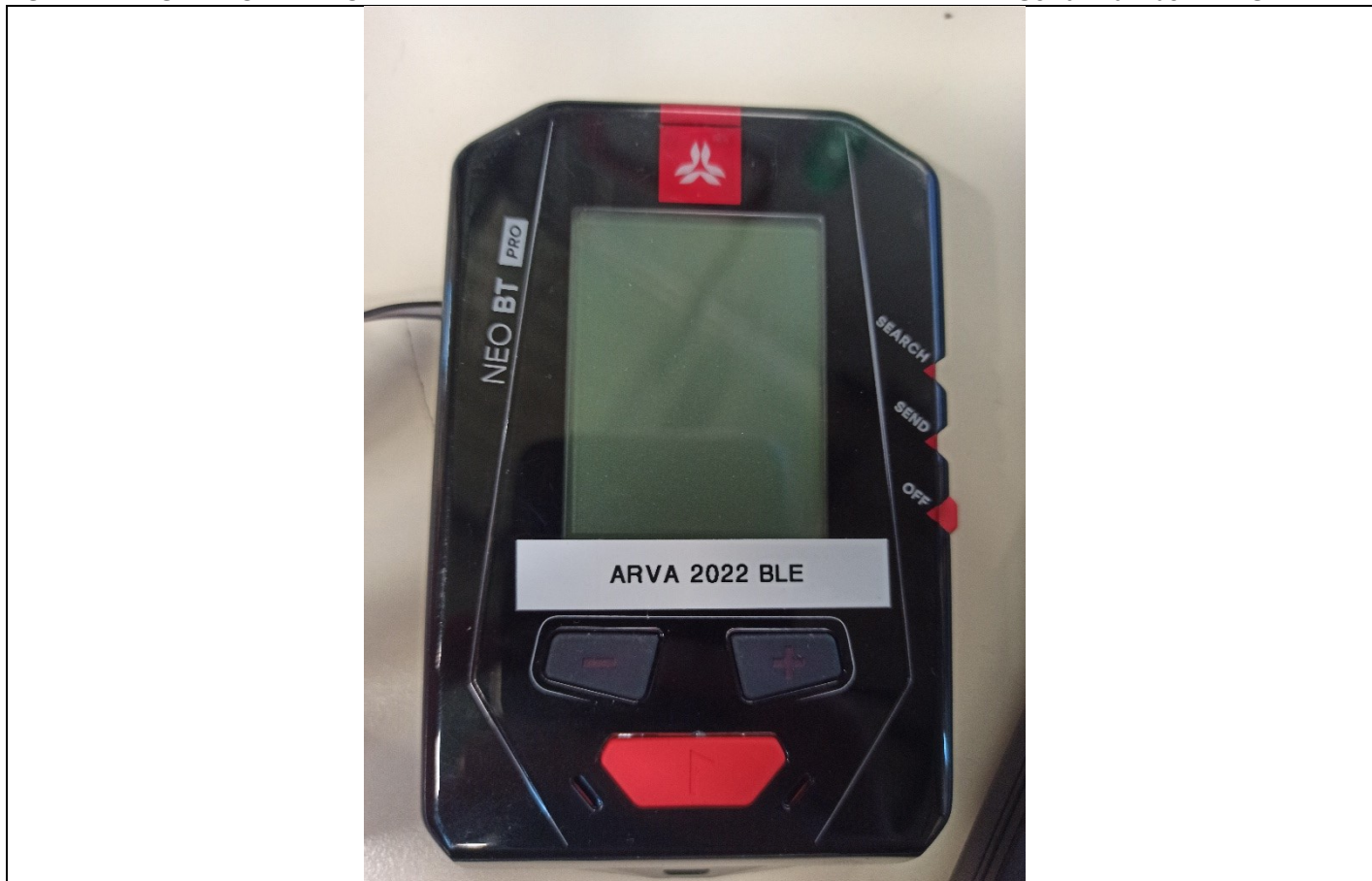
**Testing covered the receive mode, and receiver spurious emissions are considered to be the same as transmitter.

2. SYSTEM TEST CONFIGURATION

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):
ASTEELFLASH NEO BT PRO

Serial Number: RF SIMPLE



Equipment Under Test

Power supply:

During all the tests, EUT is supplied by Vnom: 4.5 VDC
 For measurement with different voltage, it will be presented in test method.

Name	Type	Rating	Reference / Sn	Comments
Supply1	<input type="checkbox"/> AC <input type="checkbox"/> DC <input checked="" type="checkbox"/> Battery	3*1.5 VDC		

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
No input or output						



Equipment information (declaration of provider):

EQUIPMENT INFORMATION				
RF module:	Not communicated			
Frequency Carrier:	[457 kHz]			
Sub-band REC7003:	ANNEX 2 – Band a1 [456.9-457.1kHz]			
RF mode:	<input checked="" type="checkbox"/> Transmitter	<input type="checkbox"/> Transceiver	<input checked="" type="checkbox"/> Receiver	<input type="checkbox"/> Standby
Antenna type:	<input type="checkbox"/> External:		<input checked="" type="checkbox"/> Internal:	
Antenna gain:	Not communicated			
Equipment location	<input checked="" type="checkbox"/> Mobile station		<input type="checkbox"/> Fixed station	
Extreme temperature range:	<input type="checkbox"/> Category (General): -20°C to +50°C		<input type="checkbox"/> other*: From -30 to 55°C	
Extreme test source voltage:	<input type="checkbox"/> ±15%:	<input type="checkbox"/> other*: From 4.05VDC to 4.95VDC		
Rmq: *ask from provider				

2.2. EUT CONFIGURATION

A special configuration of the EUT permits:
 - Permanent emission of the carrier frequency with modulation
 - Permanent RX mode

2.3. EQUIPMENT MODIFICATIONS

None Modification:

2.4. FIELD STRENGTH CALCULATION

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

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

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

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

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

The 32 dBµV/m value can be mathematically converted to its corresponding level in µV/m.

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

2.5. CALIBRATION DATE

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

3. RADIATED EMISSION DATA (15.209)

3.1. ENVIRONMENTAL CONDITIONS

Test performed by : Mounir BOUAMARA
Date of test : November 4, 2021
Ambient temperature : 23 °C
Relative humidity : 23 %

3.2. TEST SETUP

The installation of EUT is identical for pre-characterization measures in a 3 meters semi- anechoic chamber and for measures on the 10 meters Open site.

The EUT and auxiliaries are set:

- 80cm above the ground on the non-conducting table (Table-top equipment) - Below 1GHz
- 10cm above the ground on isolating support (Floor standing equipment)

The EUT is powered by V_{nom} .



Test setup on OATS

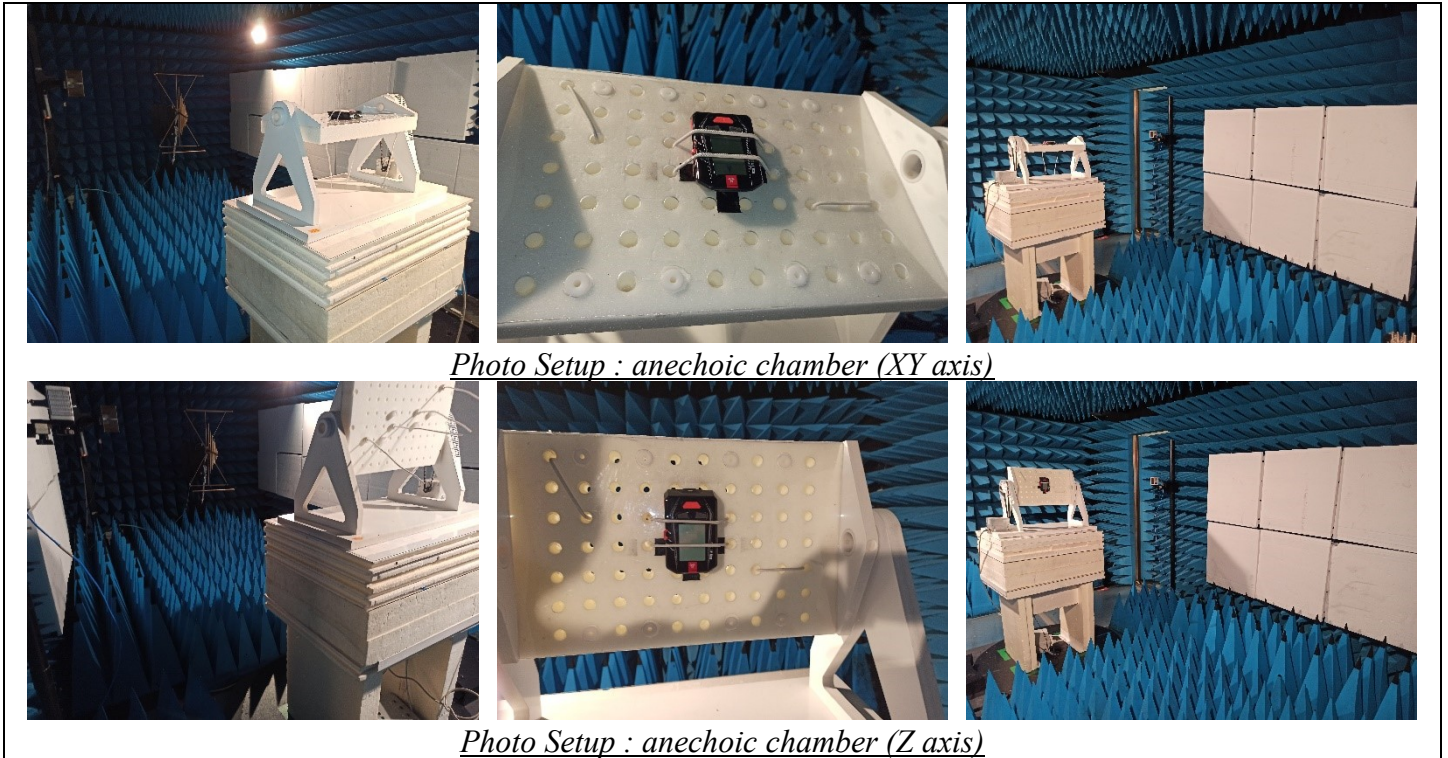


Photo Setup : anechoic chamber (XY axis)

Photo Setup : anechoic chamber (Z axis)

Test setup in anechoic chamber

3.3. TEST METHOD

The product has been tested according to ANSI C63.10, FCC Part 15 Subpart C.

Pre-characterisation measurement: (9kHz – 1GHz)

A pre-scan of all the setup has been performed in a 3 meters semi-anechoic chamber for frequency from 30MHz to 1GHz. Test is performed in horizontal (H) and vertical (V) polarization, the loop antenna was rotated during the test for maximized the emission measurement. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on all axis of EUT used in normal configuration.

Characterization on 10 meters open site from 9kHz to 1GHz:

Radiated Emissions were measured on an open area test site. A description of the facility is on file with the FCC. The product has been tested at a distance of **10 meters** from the antenna and compared to the FCC Part 15 Subpart C limits. Measurement bandwidth was 9kHz below 30MHz and 120kHz from 30 MHz to 1GHz. Test is performed in horizontal (H) and vertical (V) polarization, the loop antenna was rotated during the test for maximized the emission measurement. The height antenna is varied from 1m to 4m. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on all axis of EUT used in normal configuration. A summary of the worst case emissions found in all test configurations and modes is shown. Frequency list has been created with anechoic chamber pre-scan results.



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3.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Amplifier 9kHz - 40GHz	LCIE SUD EST	_	A7102082	06/20	06/22
Antenna Bi-log	AH System	SAS-521-7	C2040180	02/21	02/23
Antenna horn 18GHz	EMCO	3115	C2042029	09/18	09/21
BAT EMC	NEXIO	v3.19.1.23	L1000115		
CABLE N 3m	_	-	A5329206	07/20	07/22
Cable SMA 40GHz 40cm	WITHWAVE	W101-SM1-0.4M	A5329979	04/21	04/22
Comb EMR HF	YORK	CGE01	A3169114		
Emission Cable (SMA 1m)	TELEDYNE	26GHz	A5329874	10/20	10/21
Emission Cable (SMA 3.3m)	TELEDYNE	26GHz	A5329875	10/20	10/21
Emission Cable <1GHz (Ampl <-> Cage)	-	18GHz	A5329907	08/20	08/21*
Filter Matrice	LCIE SUD EST	Combined filters	A7484078	09/20	09/21
Multimeter - CEM	FLUKE	87	A1240251	03/21	03/23
Power supply DC	METRIX	AX503	A7042308		
Rehausse Table C3	LCIE	_	F2000507		
Rehausse Table C3	LCIE	_	F2000511		
Semi-Anechoic chamber #3 (BF)	SIEPEL	_	D3044017_BF	12/19	12/22
Semi-Anechoic chamber #3 (VSWR)	SIEPEL	_	D3044017_VSWR	12/19	12/22
Spare C3 Cable Measure	TELEDYNE	26GHz	A5329681	09/20	09/22
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	09/21	09/23
Table C3	LCIE	_	F2000461		
Thermo-hygrometer (C3)	OREGON	BAR206	B4204078	02/21	02/23
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	01/21	01/23
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371		
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444		
Antenna Loop	ELECTRO-METRICS	EM-6879	C2040052	06/19	06/22

3.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:



3.6. TEST RESULTS

3.6.1. Pre-characterization at 3 meters [9kHz-30MHz]

See graph for 9kHz-30MHz band:

Graph identifier	Polarization	EUT position	Mode	Comments
Emr# 1	0°&90°	Axis XY	TX	See annex 1
Emr# 2	180°	Axis XY	TX	See annex 1
Emr# 3	0°&90°	Axis Z	TX	See annex 1
Emr# 4	180°	Axis Z	TX	See annex 1

3.6.2. Pre-characterization at 3 meters [30MHz-1GHz]

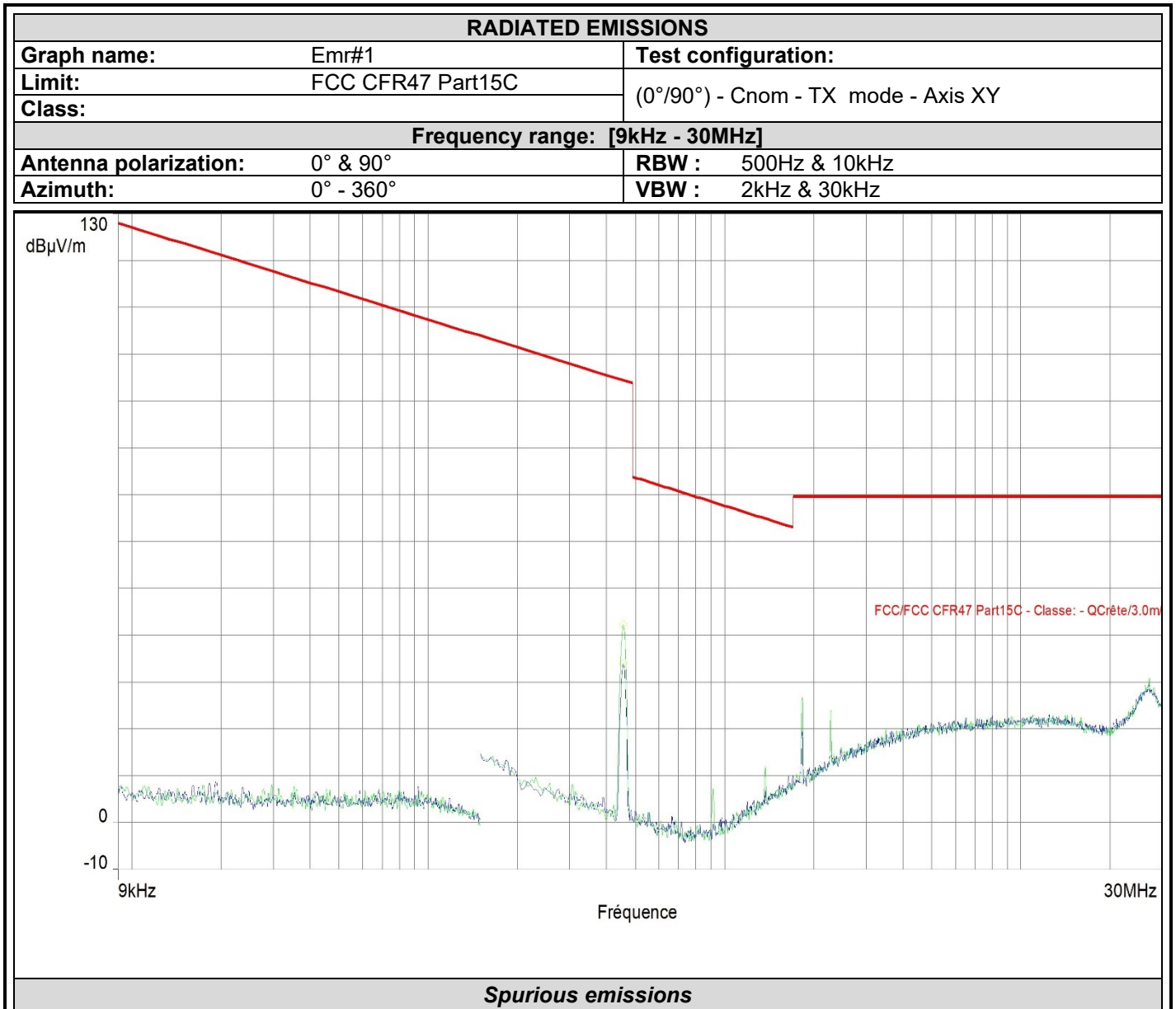
See graphs for 30MHz-1GHz:

Graph identifier	Polarization	EUT position	Mode	Comments
Emr# 5	H & V	Axis XY	TX	See annex 1
Emr# 6	H & V	Axis Z	TX	See annex 1



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Results

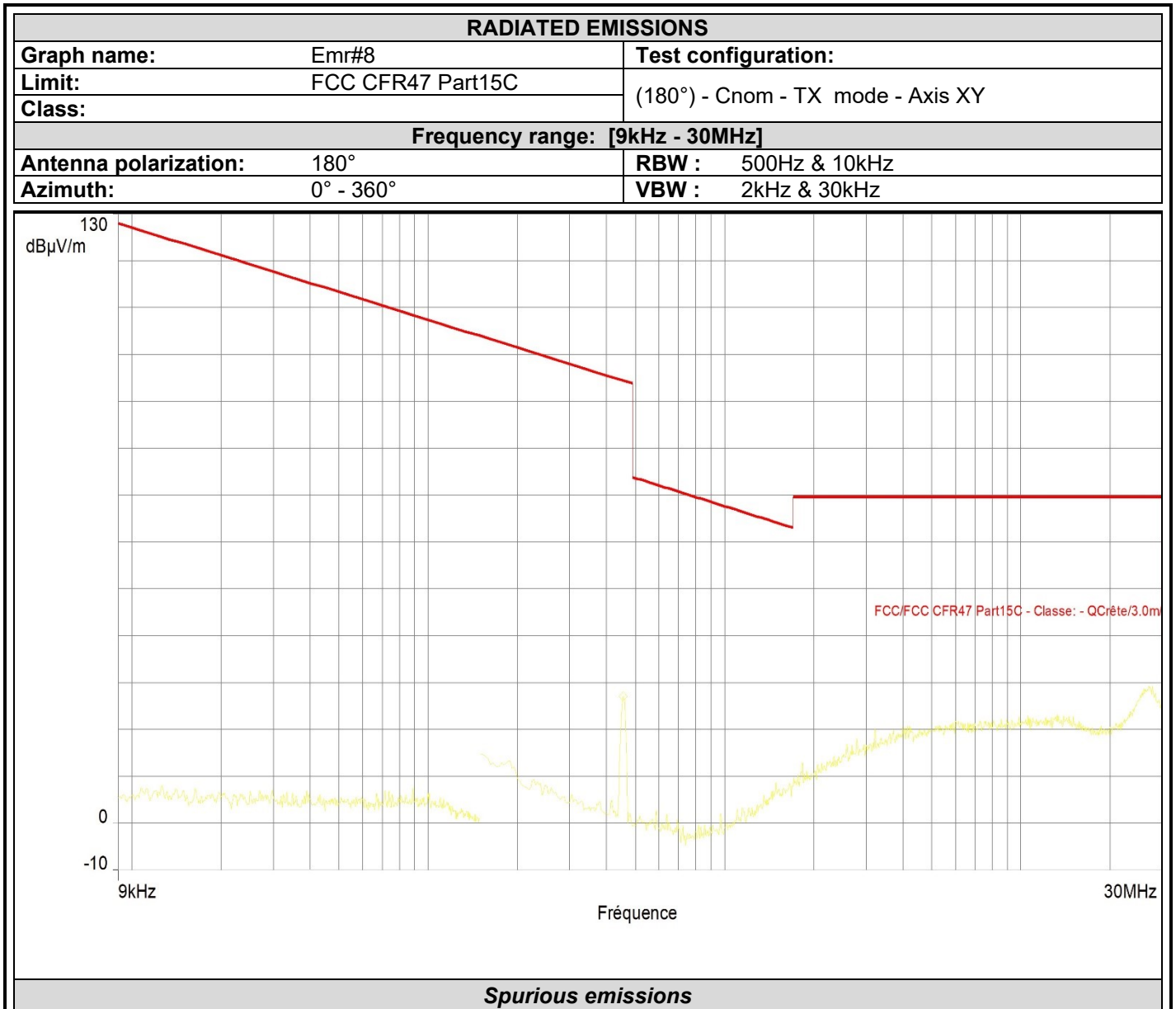


Frequency (MHz)	Peak Level (dBµV/m)	Polarization	Correction (dB)
0.454*	33.9	Horizontal	10.4
0.454*	42.2	Vertical	10.4

*Carrier frequency



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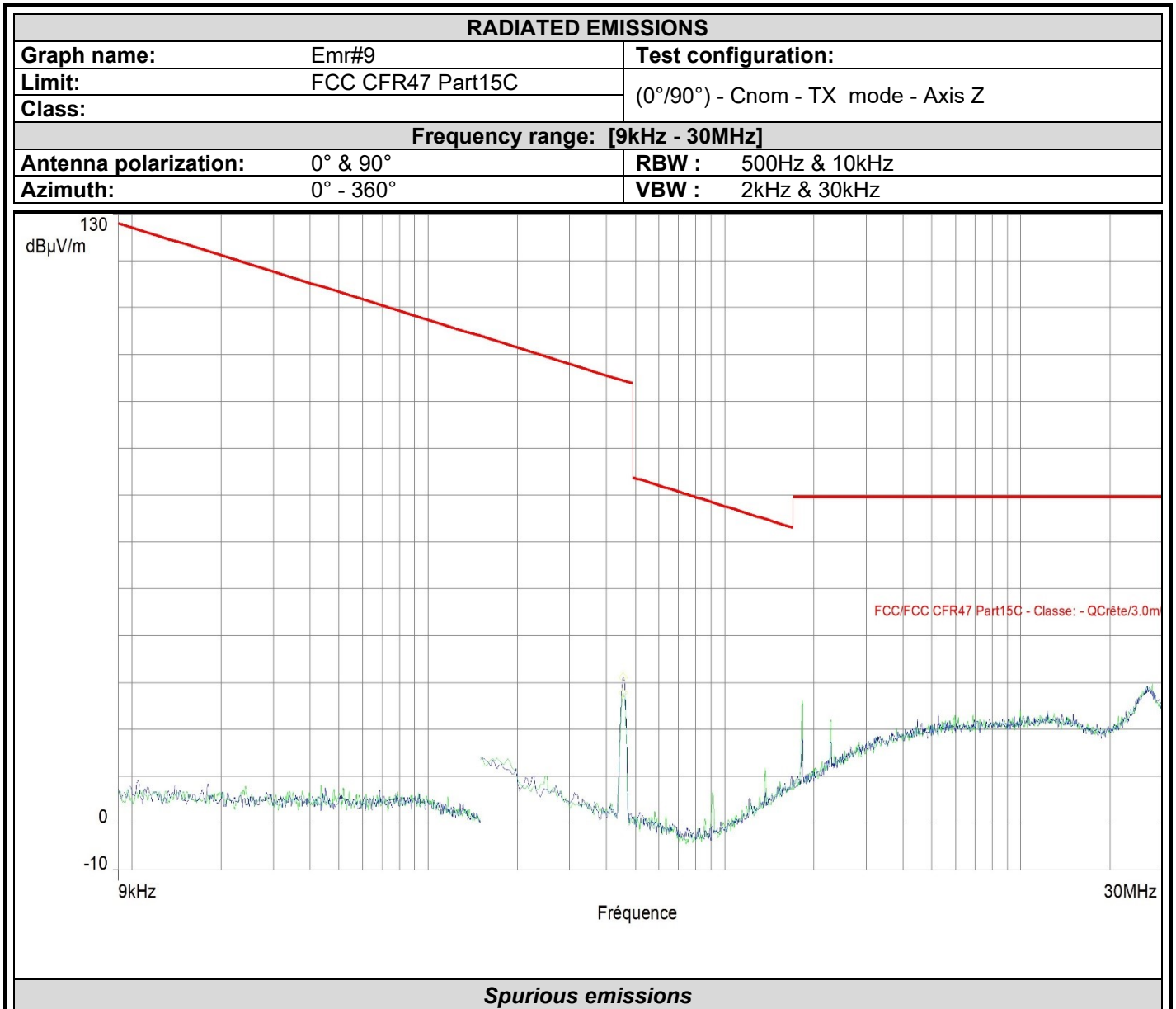


Frequency (MHz)	Peak Level (dBµV/m)	Polarization	Correction (dB)
0.454	27.1	Horizontal	10.4

*Carrier frequency



L C I E

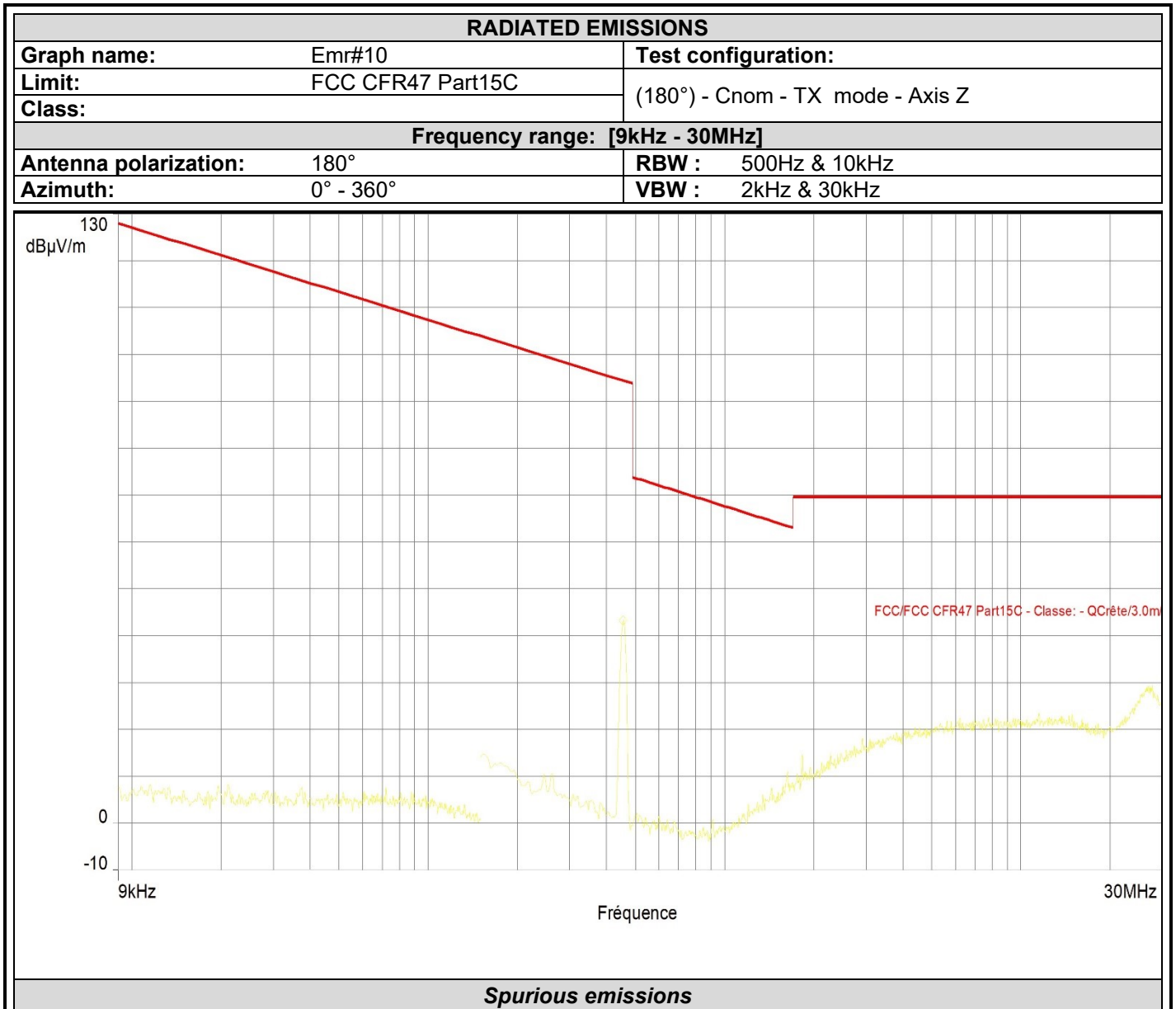


Frequency (MHz)	Peak Level (dBµV/m)	Polarization	Correction (dB)
0.454*	31.1	Horizontal	10.4
0.454*	27.8	Vertical	10.4

*Carrier frequency



L C I E

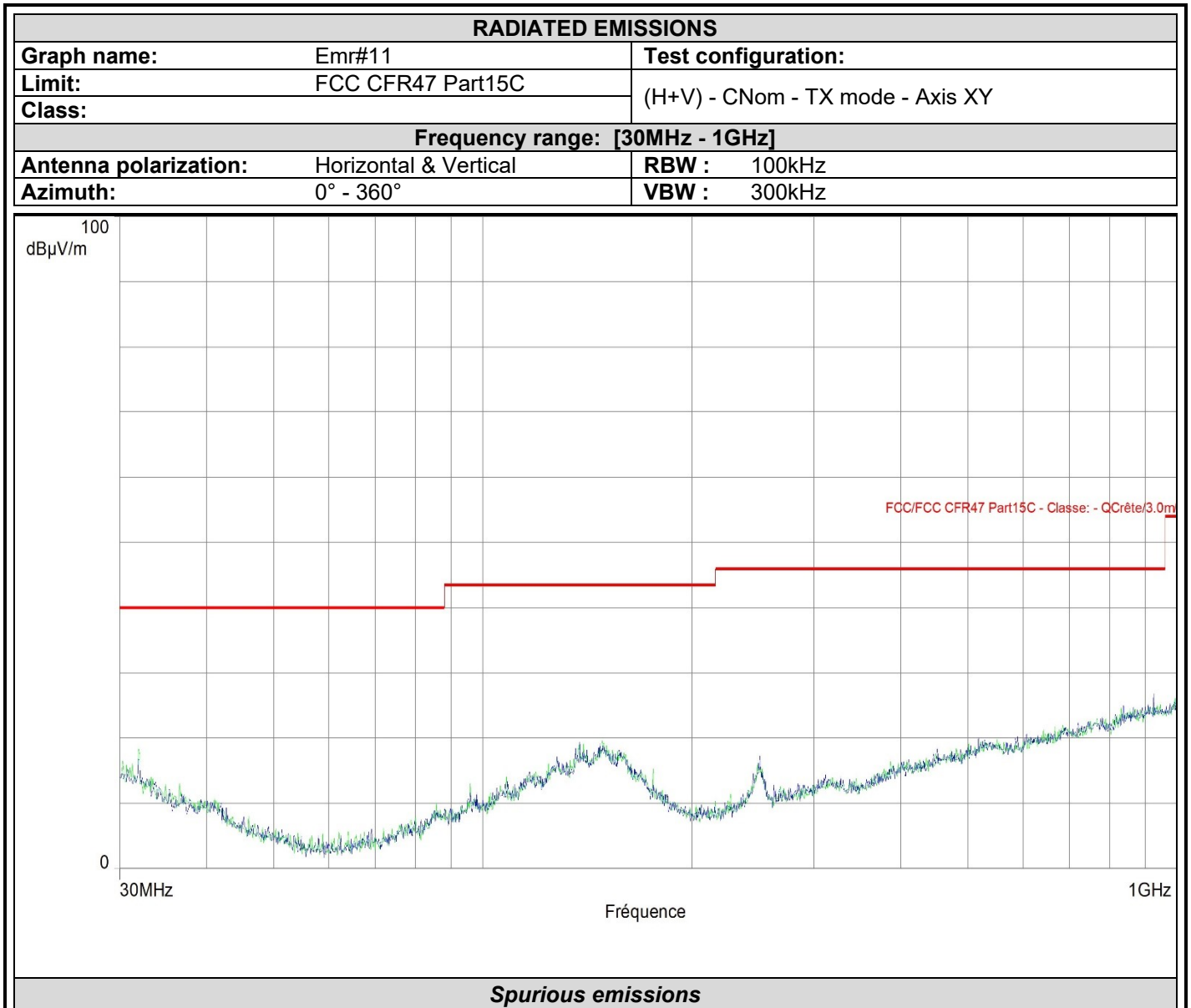


Frequency (MHz)	Peak Level (dBµV/m)	Polarization	Correction (dB)
0.454*	43.2	Horizontal	10.4

*Carrier frequency



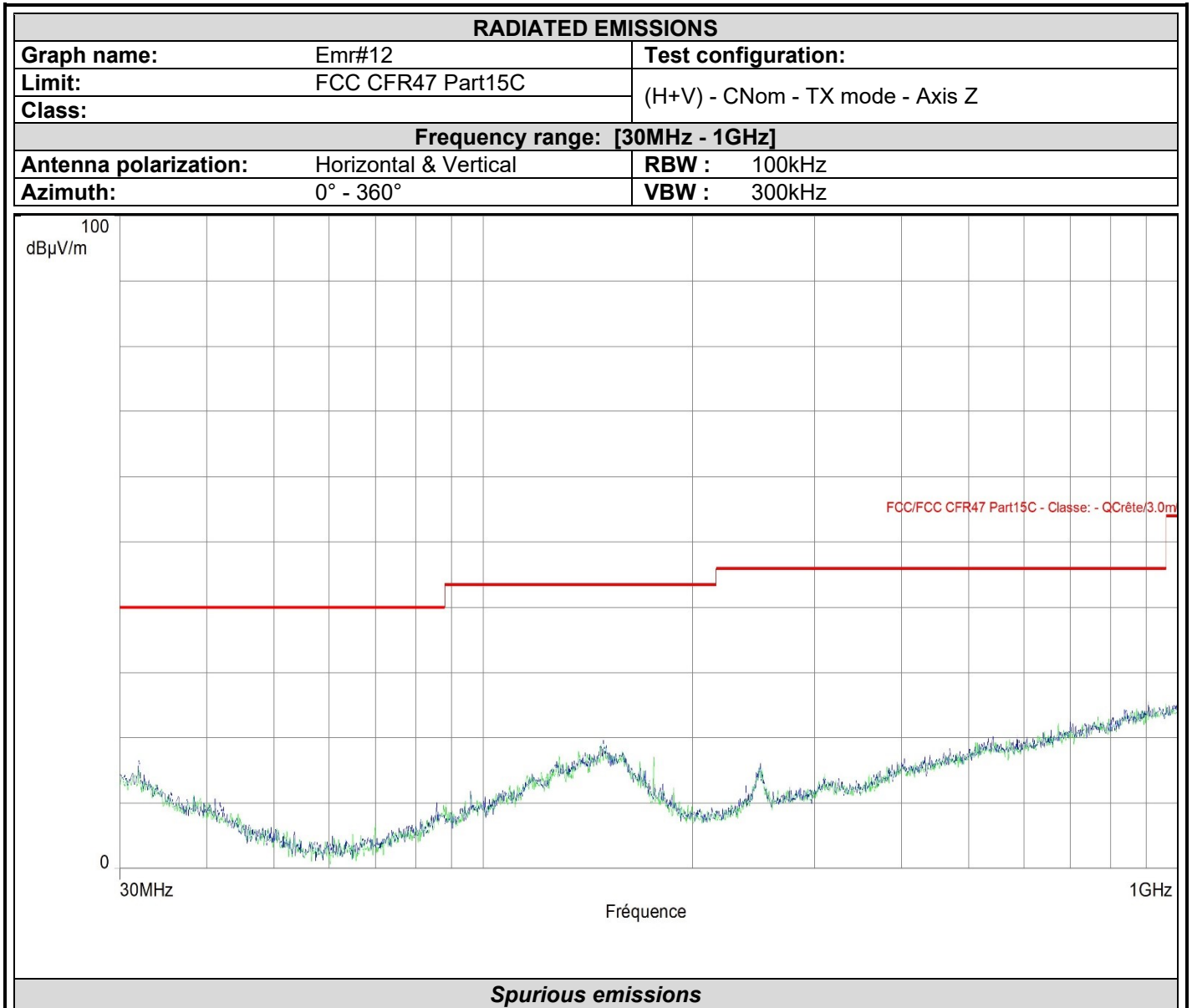
L C I E



No significant frequency observed, the margin >10dB.



L C I E



No significant frequency observed, the margin >10dB.

3.6.3. Characterization on 10 meters open site below 30 MHz

Worst case final data result:

Frequency list has been created with semi-anechoic chamber pre-scan results. Measurements are performed using a QUASI-PEAK detection.

No	Frequency (MHz)	QPeak Limit (dBµV/m) @ 10m	Qpeak (dBµV/m)	Margin (Mes-Lim) (dB)	Angle Table (deg)	Pol Ant.	Ht Ant. (cm)	Correc. Factor (dB)	Comments
1	0.457	73.5	32.1	31.4	360	H	300	45.2	

*: Measure have been done at 10m distance and corrected according to requirements of 15.209.e (M@300m = M@10m-59.1dB)



3.6.4. Characterization on 10 meters open site from 30MHz to 1GHz

Worst case final data result:

Frequency list has been created with semi-anechoic chamber pre-scan results.
Measurements are performed using a QUASI-PEAK detection.

Test Frequency (MHz)	Meter Reading dB(μ V)	Detector (Pk/QP/Av)	Polarity (V/H)	Azimuth (Degrees)	Antenna Height (cm)	Transducer Factor (dB)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
No frequency observed, margin >20dB in pre-characterization									

3.7. CONCLUSION

The sample of the equipment **ASTEELFLASH NEO BT PRO**, Sn: **RF SIMPLE**, tested in the configuration presented in this test report **compliant** to requirements of class B limits of the standard FCC Part 15 Subpart C, for radiated emissions.

4. FUNDAMENTAL FREQUENCY TOLERANCE (RSS)

4.1. ENVIRONMENTAL CONDITIONS

Test performed by : Mounir BOUAMARA
Date of test : November 4, 2021
Ambient temperature : 23 °C
Relative humidity : 23 %

4.2. TEST SETUP

Frequency of carrier: 457kHz

The equipment (RF box) is set in a climatic chamber. Measure is performed on one channel of RF module.



Test setup

4.3. TEST METHOD

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency when the temperature is varied from -20°C to $+50^{\circ}\text{C}$ at the nominal power voltage and the primary power voltage is varied from battery's operating end-point voltage to nominal voltage at 20°C .



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4.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
AC source 1kW	KEYSIGHT	AC6802A	A7042305		
Antenna Loop (near field)	ELECTRO-METRICS	EM-6993	C2040215	06/19	06/22
Attenuator 10dB	AEROFLEX	_	A7122267	08/21	08/23
Cable SMA 2m	_	6GHz	A5329635	02/20	02/22
Climatic chamber	BIA CLIMATIC	CL 6-25	D1022117	12/20	12/21
Data Logger (CEM1)	AGILENT	34970A	A6440083	11/20	11/22
Frequency Counter	HEWLETT PACKARD	HP 5350B	B2082009	08/19	08/24
Multimeter - CEM	FLUKE	87	A1240251	03/21	03/23
Spectrum Analyzer 9kHz - 6GHz	ROHDE & SCHWARZ	FSL6	A2642020	08/20	08/22
Thermo-hygrometer	TESTO	608-H1	B4204120	12/20	12/22
Thermo-hygrometer (PM11/2/3)	KIMO	HQ 210	B4206022	01/21	01/23

4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:

4.6. TEST RESULTS

Voltage VDC	Temperature	-30	20	50
4.05	Frequency (kHz)	456.9987	456.9998	456.99255
	Frequency Drift (%)	-0.0003%	0.0000%	-0.0017%
4.5	Frequency (kHz)	456.9986	456.9998	456.99245
	Frequency Drift (%)	-0.0003%	0.0000%	-0.0016%
4.95	Frequency (kHz)	456.9987	457	456.9924
	Frequency Drift (%)	-0.0003%	0.0000%	-0.0017%

Frequency drift measured is **7.6Hz** when the temperature is varied from -30°C to +50°C and voltage is varied.

4.1. CONCLUSION

The sample of the equipment **ASTEELFLASH NEO BT PRO**, SN: **RF SIMPLE**, tested in the configuration presented in this test report **compliant** to requirements of the standard FCC Part 15 Subpart C, for fundamental frequency tolerance.



5. OCCUPIED BANDWIDTH

5.1. ENVIRONMENTAL CONDITIONS

Test performed by : Mounir BOUAMARA
 Date of test : November 4, 2021
 Ambient temperature : 23 °C
 Relative humidity : 23 %

5.2. SETUP

Conducted measurement:

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

Radiated measurement:

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

Measurement Procedure:

1. RBW used in the range of 1% to 5% of the anticipated emission bandwidth
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. OBW 99% function of spectrum analyzer used

5.3. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
AC source 1kW	KEYSIGHT	AC6802A	A7042305		
Antenna Loop (near field)	ELECTRO-METRICS	EM-6993	C2040215	06/19	06/22
Attenuator 10dB	AEROFLEX	_	A7122267	08/21	08/23
Cable SMA 2m	_	6GHz	A5329635	02/20	02/22
Climatic chamber	BIA CLIMATIC	CL 6-25	D1022117	12/20	12/21
Data Logger (CEM1)	AGILENT	34970A	A6440083	11/20	11/22
Frequency Counter	HEWLETT PACKARD	HP 5350B	B2082009	08/19	08/24
Multimeter - CEM	FLUKE	87	A1240251	03/21	03/23
Spectrum Analyzer 9kHz - 6GHz	ROHDE & SCHWARZ	FSL6	A2642020	08/20	08/22
Thermo-hygrometer	TESTO	608-H1	B4204120	12/20	12/22
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	01/21	01/23

5.4. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:

6. RECEIVER SPURIOUS EMISSION

6.1. ENVIRONMENTAL CONDITIONS

Test performed by : Mounir BOUAMARA
Date of test : November 4, 2021
Ambient temperature : 23 °C
Relative humidity : 23 %

6.2. TEST SETUP

The installation of EUT is identical for pre-characterization measures in a 3 meters semi- anechoic chamber and for measures on the 10 meters Open site.

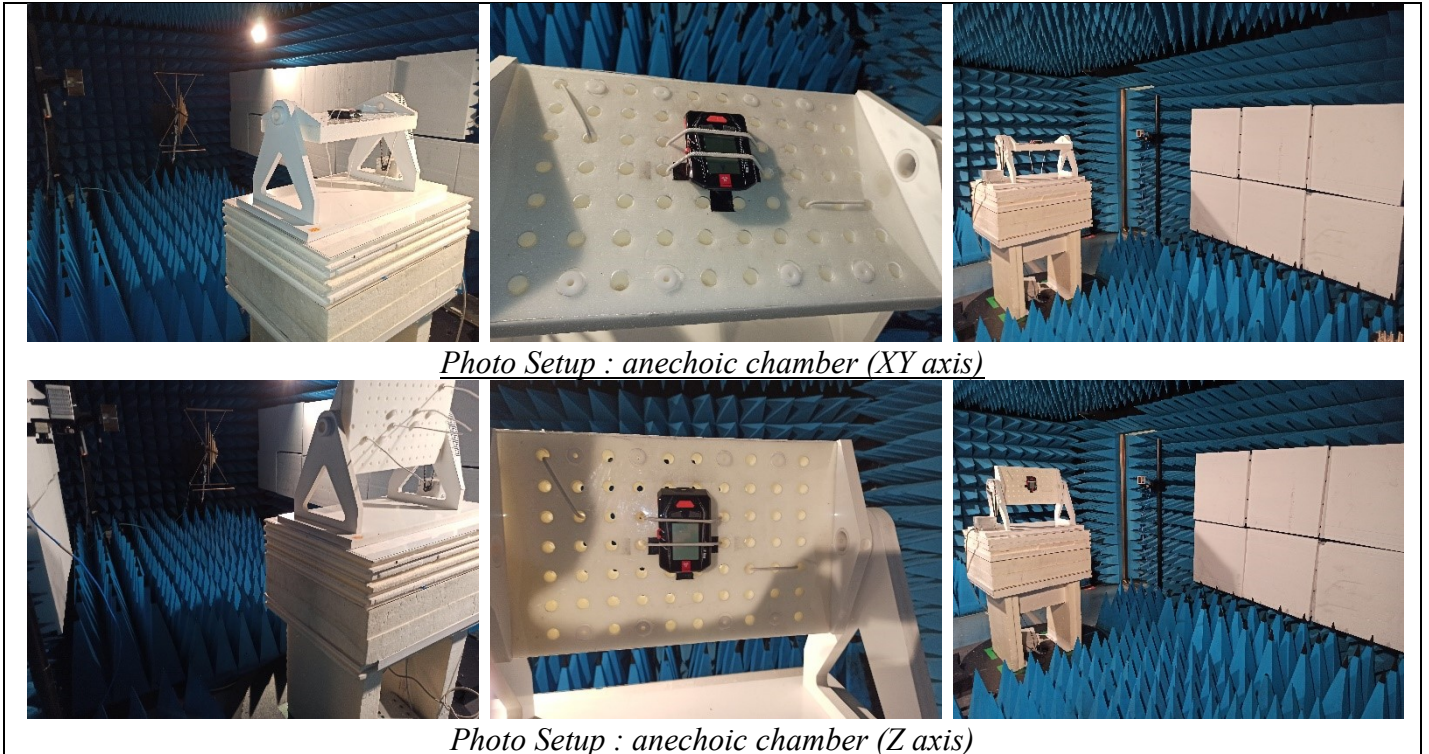
The EUT and auxiliaries are set:

- 80cm above the ground on the non-conducting table (Table-top equipment) - Below 1GHz
- 10cm above the ground on isolating support (Floor standing equipment)

The EUT is powered by V_{nom} .



Photo Setup – OATS



6.3. TEST METHOD

The product has been tested according to RSS GEN.

Pre-characterisation measurement: (9kHz – 1GHz)

A pre-scan of all the setup has been performed in a 3 meters semi-anechoic chamber for frequency from 30MHz to 1GHz. Test is performed in horizontal (H) and vertical (V) polarization, the loop antenna was rotated during the test for maximized the emission measurement. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on all axis of EUT used in normal configuration.

Characterization on 10 meters open site from 9kHz to 1GHz:

Radiated Emissions were measured on an open area test site. A description of the facility is on file with the RSS GEN. The product has been tested at a distance of **10 meters** from the antenna and compared to the RSS GEN limits. Measurement bandwidth was 9kHz below 30MHz and 120kHz from 30 MHz to 1GHz. Test is performed in horizontal (H) and vertical (V) polarization, the loop antenna was rotated during the test for maximized the emission measurement. The height antenna is varied from 1m to 4m. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on all axis of EUT used in normal configuration. A summary of the worst case emissions found in all test configurations and modes is shown. Frequency list has been created with anechoic chamber pre-scan results.



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6.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Amplifier 9kHz - 40GHz	LCIE SUD EST	_	A7102082	06/20	06/22
Antenna Bi-log	AH System	SAS-521-7	C2040180	02/21	02/23
Antenna horn 18GHz	EMCO	3115	C2042029	09/18	09/21
BAT EMC	NEXIO	v3.19.1.23	L1000115		
CABLE N 3m	_	-	A5329206	07/20	07/22
Cable SMA 40GHz 40cm	WITHWAVE	W101-SM1-0.4M	A5329979	04/21	04/22
Comb EMR HF	YORK	CGE01	A3169114		
Emission Cable (SMA 1m)	TELEDYNE	26GHz	A5329874	10/20	10/21
Emission Cable (SMA 3.3m)	TELEDYNE	26GHz	A5329875	10/20	10/21
Emission Cable <1GHz (Ampl <-> Cage)	-	18GHz	A5329907	08/20	08/21*
Filter Matrice	LCIE SUD EST	Combined filters	A7484078	09/20	09/21
Multimeter - CEM	FLUKE	87	A1240251	03/21	03/23
Power supply DC	METRIX	AX503	A7042308		
Semi-Anechoic chamber #3 (BF)	SIEPEL	_	D3044017_BF	12/19	12/22
Semi-Anechoic chamber #3 (VSWR)	SIEPEL	_	D3044017_VSWR	12/19	12/22
Spare C3 Cable Measure	TELEDYNE	26GHz	A5329681	09/20	09/22
Spectrum analyzer	ROHDE & SCHWARZ	FSU 26	A4060058	09/21	09/23
Table C3	LCIE	_	F2000461		
Thermo-hygrometer (C3)	OREGON	BAR206	B4204078	02/21	02/23
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	01/21	01/23
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371		
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444		
Antenna Loop	ELECTRO-METRICS	EM-6879	C2040052	06/19	06/22
Antenna Bi-log	CHASE	CBL6111A	C2040051	07/20	07/22
Antenna Loop	ELECTRO-METRICS	EM-6879	C2040052	06/19	06/22
Antenna Mat (OATS)	ETS Lingren	2071-2	F2000392		
Cable (OATS)	_	1GHz	A5329623	05/20	05/22
Emission Cable	SUCOFLEX	6GHz	A5329061	08/21	08/22
Multimeter - CEM	FLUKE	87	A1240251	03/21	03/23
OATS	_	_	F2000409	04/21	04/22
Receiver 20Hz – 8GHz	ROHDE & SCHWARZ	ESU8	A2642019	11/20	11/22
Rehausse Table C1/OATS	LCIE	_	F2000512		
Table C1/OATS	LCIE	_	F2000445		
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	01/21	01/23
Turntable (OATS)	ETS Lingren	Model 2187	F2000403		
Turntable / Mast controller (OATS)	ETS Lingren	Model 2066	F2000372		

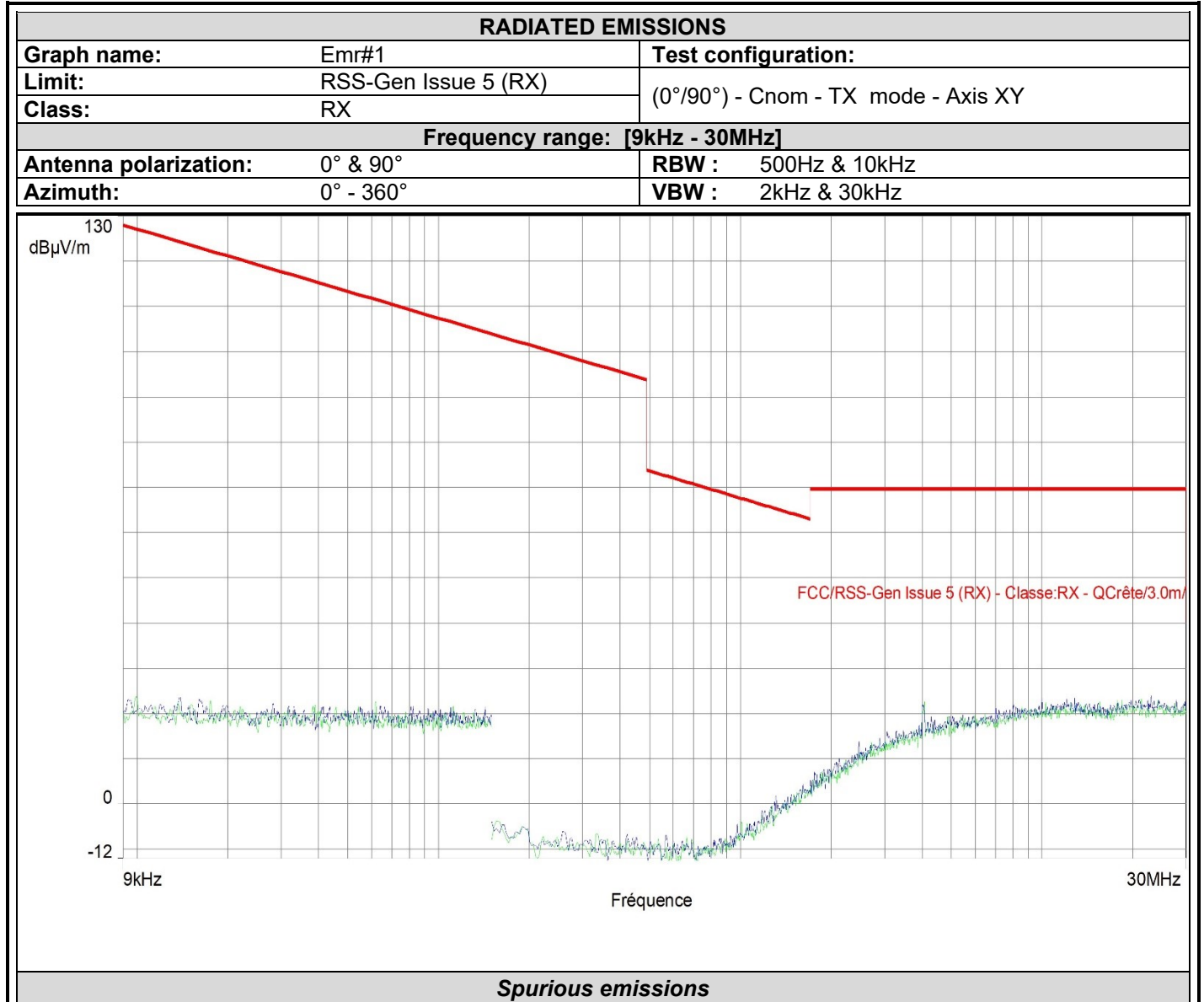


L C I E

6.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:

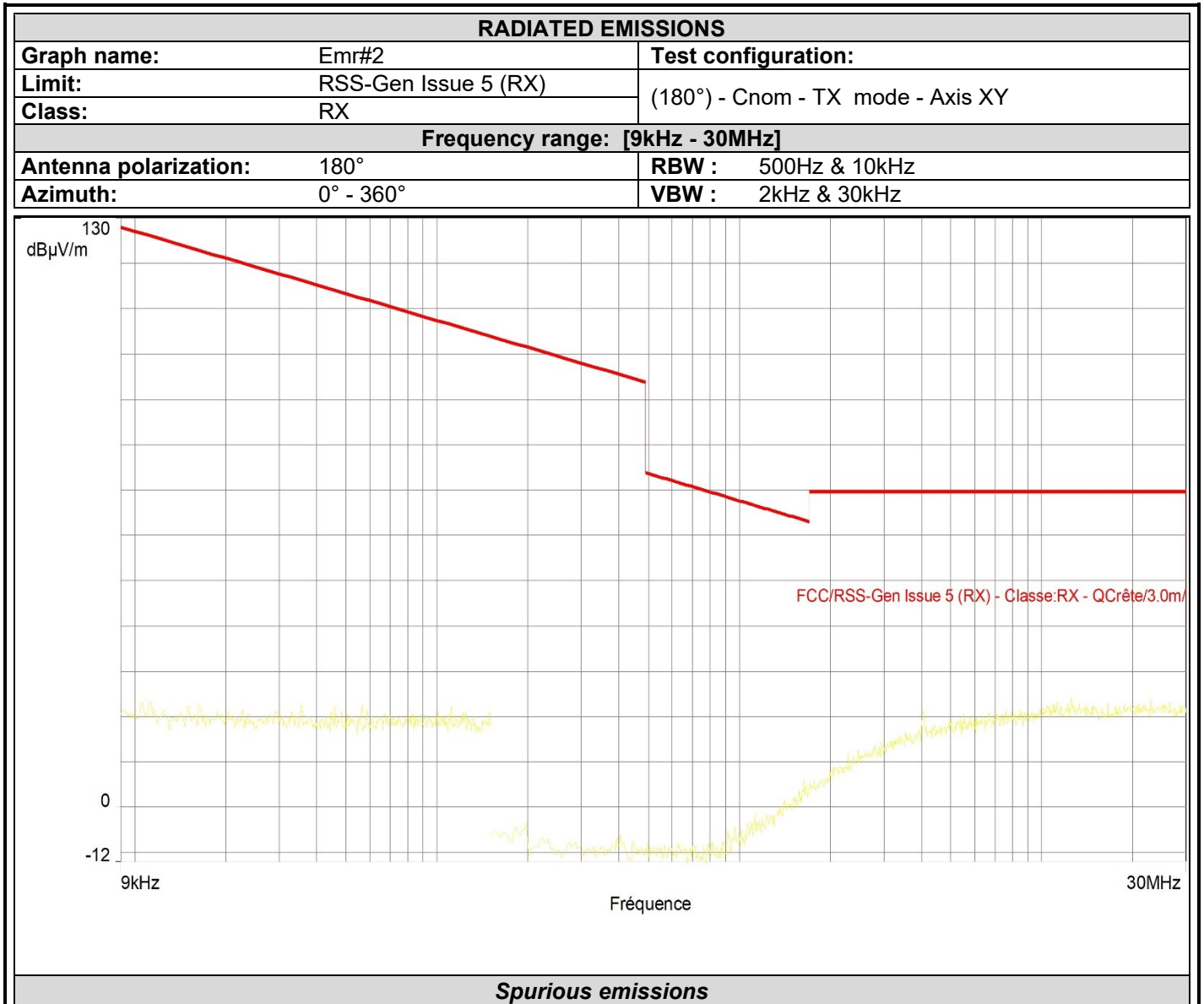
6.6. TEST RESULTS



No significative frequency observed



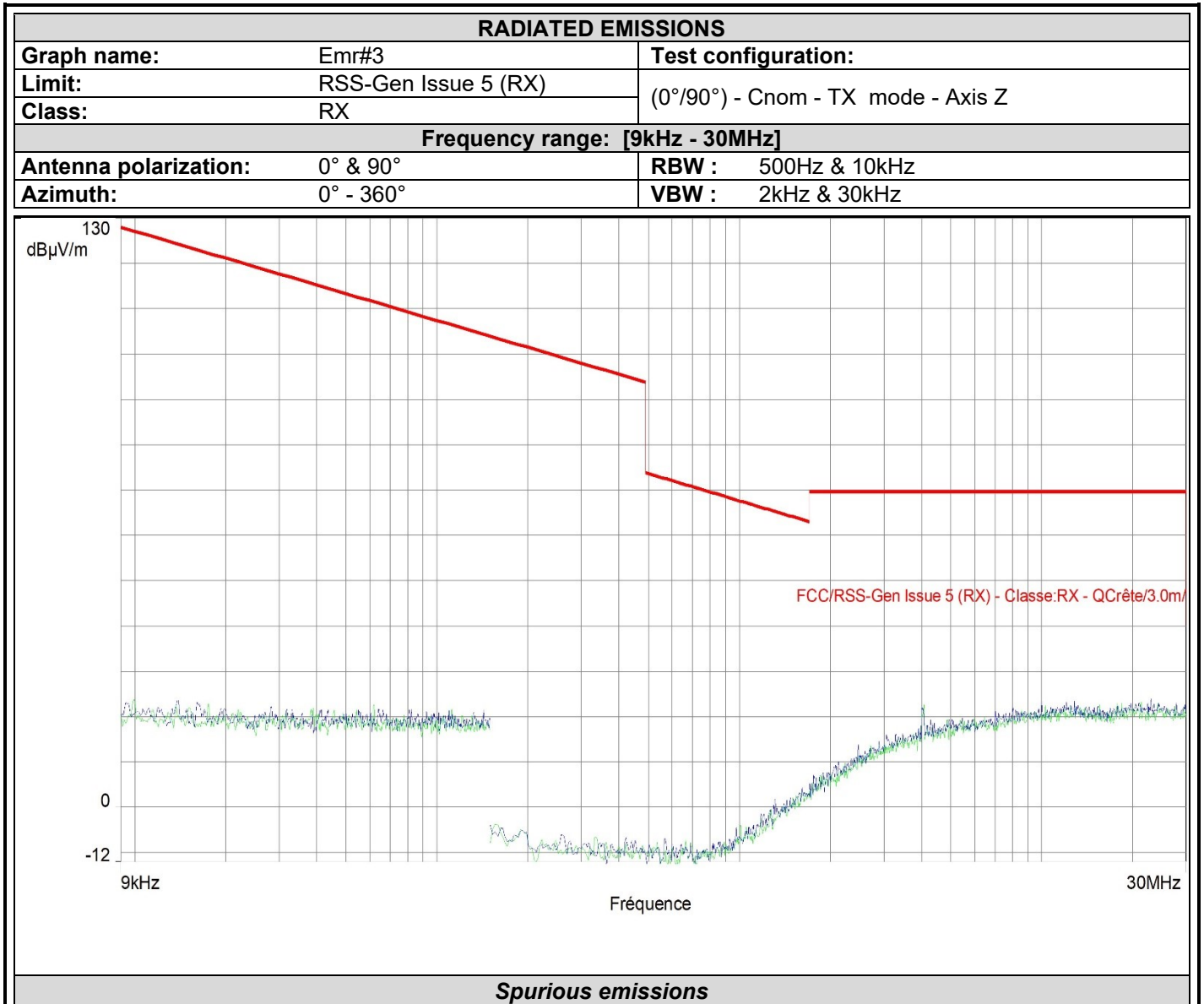
L C I E



No significative frequency observed



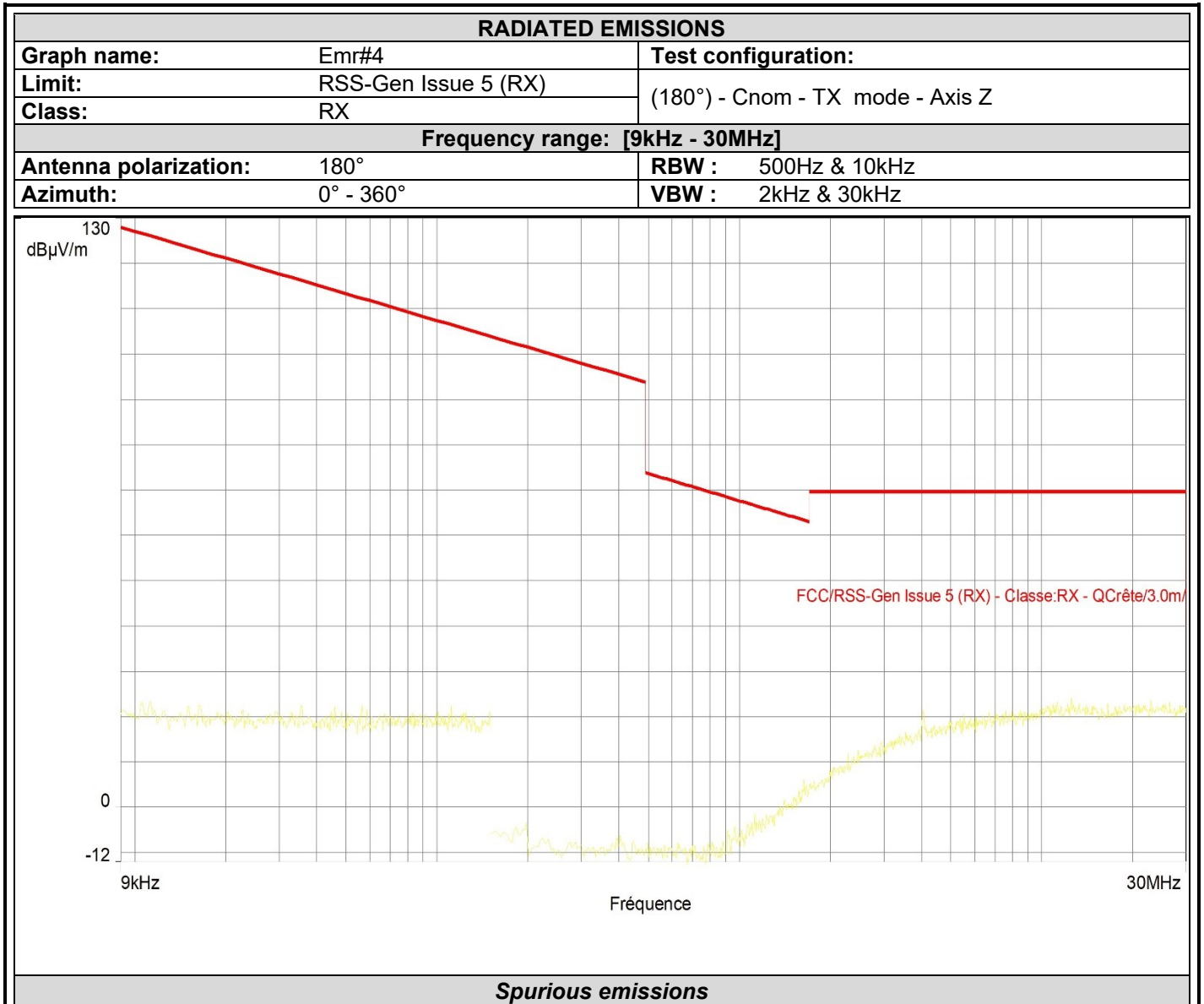
L C I E



No significative frequency observed



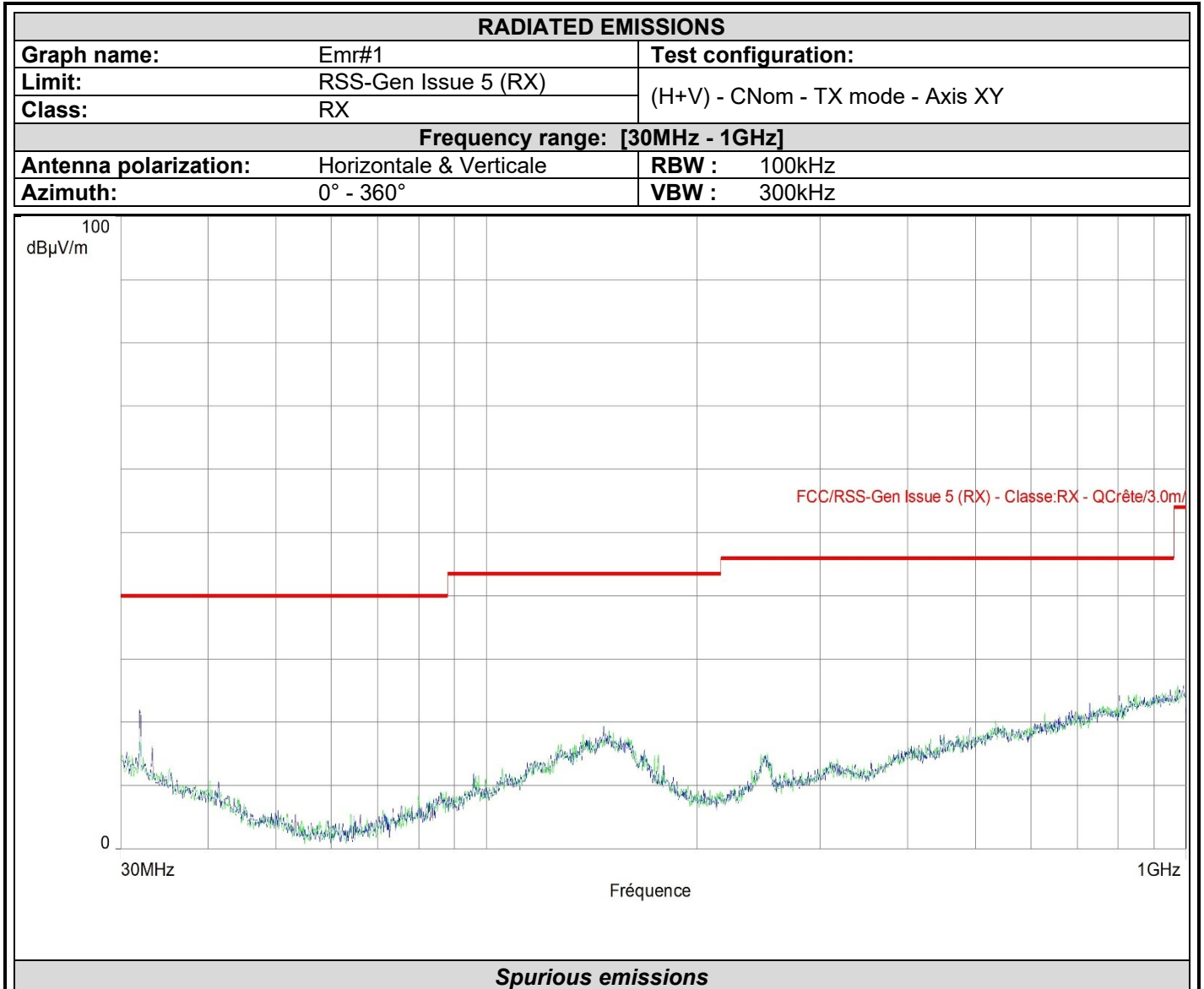
L C I E



No significative frequency observed

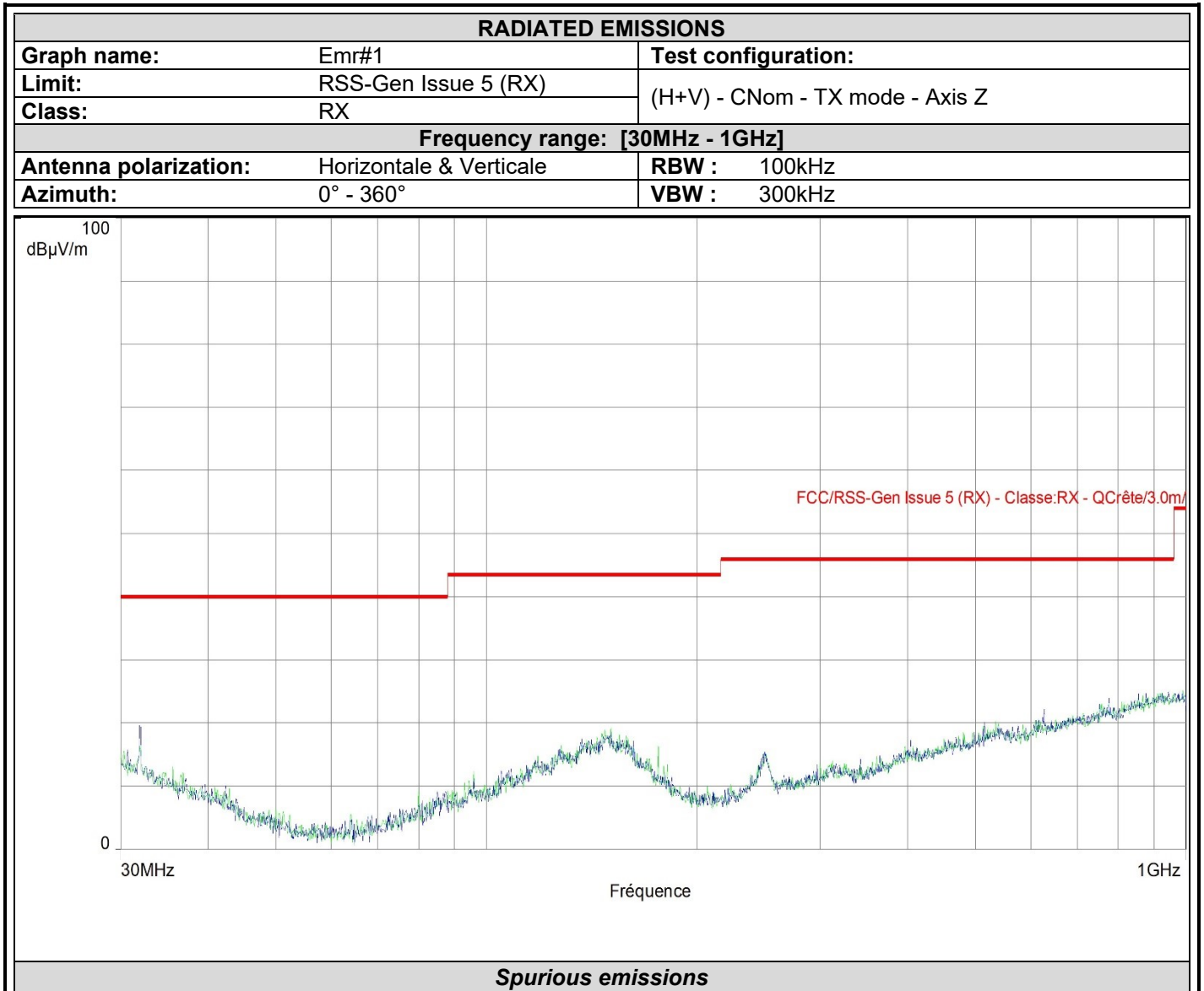


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6.7. CONCLUSION

The sample of the equipment **ASTEELFLASH NEO BT PRO**, SN: **RF SIMPLE**, tested in the configuration presented in this test report **compliant** to requirements of the standard RSS GEN, for Receiver Spurious Emission.



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7. UNCERTAINTIES CHART

Type de mesure / Kind of measurement	Incertitude élargie laboratoire / Wide uncertainty laboratory (k=2) ± x	Incertitude limite du CISPR / CISPR uncertainty limit ± 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 %
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.