EMITECH GROUPE

RCE-100-19-105868-2-A

E.M.C Test Report

According to the standards:

FCC 47 CFR PART 15 : 2019 (§15.247)
RSS-247 issue 2 : 2017
RSS-Gen Issue 5 : 2019

Equipment under test:

Nano SPY
(FCC ID: W4512525)
(IC: 25800-12525)

Company:

JRI

FCC accredited: FR0004
IC accredited: 4379A

Distribution: Mr. PEYRICHOU **(Company:** JRI**)**

Number of pages: 33 with 2 annexes

Ed.	Date	Modified pages	Written by Name / Visa	Technical Verification and Quality Approval Name / Visa
0		Creation	**F. LHEUREUX** Radio Technician	

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TEST CERTIFICATION FOR:	:	FCC and Canada Certifications
NAME OF THE EQUIPMENT UNDER TEST	:	Nano SPY
Serial number	:	3660251125500
Reference / model (P/N)	:	11570 2
Software version	:	V 3.1
Other reference family		Nano SPY T1 Nano SPY T2 Nano SPY T3 Nano SPY TH
NAME OF THE MANUFACTURER	:	JRI
ADDRESS OF THE APPLICANT	:	
Company	:	JRI
Address	:	16 rue louis rameau 95870 Bezons FRANCE
Person present during the tests	:	None
Responsible	:	Mr. PEYRICHOU
DATES OF TESTS	:	2020, from the 5th to the 6th of February
TESTS LOCATION	:	EMITECH MONTIGNY 3, rue des Coudrier ZA de l'Observatoire 78180 Montigny-le-Bretonneux FRANCE
TESTS SUPERVISOR	:	None
TESTS OPERATORS	:	F. LHEUREUX

TABLE OF CONTENTS

1. INTRODUCTION

This document presents the results of Electromagnetic Compatibility tests performed on the equipment **« Nano SPY »** according to reference documents listed below.

2. REFERENCE DOCUMENTS

FCC 47 CFR Part 15: 2019
Code of Federal Regulations. Title 47- Telecommunication
Chapter 1- Federal Communication Commission
Part 15- Radio frequency devices

RSS-247 issue 2: 2017
Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

RSS-Gen Issue 5: March 2019
General Requirements and Information for the Certification of Radio Apparatus

ANSI C63.4: 2014
Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronics Equipment in the range of 9 kHz to 40 GHz.

KDB 558074 D01 DTS Meas Guidance V05 r02
Guidance for performing compliance measurement on Digital Transmission Systems (DTS) operating under § 15.247.

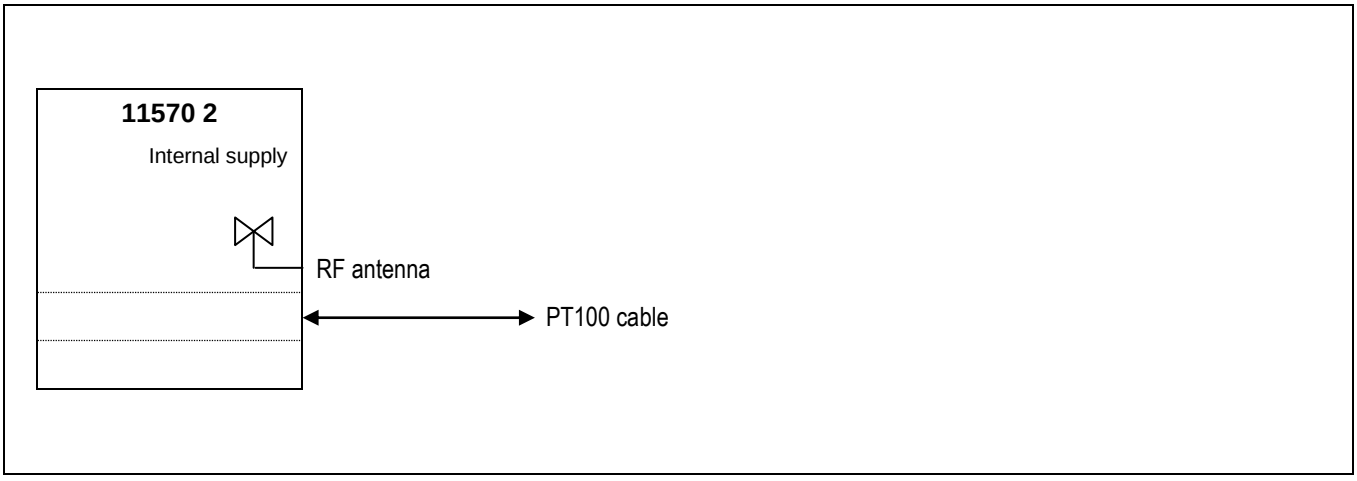
ANSI C63.10 : 2013
American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

3. PRODUCT DESCRIPTION

Class:	B (Residential and light industrial environment)
Antenna type and gain:	Integral antenna: PCB antenna printed antenna +1.2 dBi
Operating frequency range:	from 2405 MHz to 2480 MHz
Number of channels:	16
Channel spacing:	5 MHz
Modulation:	ZigBee (802.15.4)
Power source:	3.0 Vdc (by lithium no rechargeable battery)
Output power:	+ 5.0 dBm
Software power setting:	-

Modification of the equipment during the tests: No.

Measurement and recording of physical quantities such as temperature and humidity – radiofrequency transmission.



E.U.T.: Equipment under Test.

4. TESTS AND CONCLUSION

The following table summarizes test results of the EUT.

Subpart B of the standard FCC part 15 – Unintentional radiators

Test procedure	Designation of test	Test results				Comments
		Pass	Fail	N.A.	N.P.	
15.107	Measurement of conducted emission on AC mains ports			X		
15.109	Radiated emission limits	X				

Subpart C of the standard FCC part 15 – Intentional radiators

Test procedure	Designation of test	Test results				Comments
		Pass	Fail	N.A.	N.P.	
15.205	Restricted bands of operation	X				
15.207	Measurement of conducted emission on AC mains ports			X		
15.209	Radiated emission limits; general requirements	X				
15.215	Additional provisions to the general radiated emission limitations					
	(a) Alternative to general radiated emission limits			X		
	(b) Unwanted emissions outside of § 15.247 frequency bands	X				
	(c) 20 dB bandwidth and band-edge compliance			X		
15.247	Intentional radiated emissions					
	a) frequency hopping and digitally modulated					
	a) (1) hopping mode			X		
	a) (1) (i) frequency hopping in the band 902-928 MHz			X		
	a) (1) (ii) frequency hopping in the band 5725–5850 MHz			X		
	a) (1) (iii) frequency hopping in the band 2400–2483.5 MHz			X		
	a) (2) systems using digital modulation in the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz (6 dB bandwith)	X				
	b) maximum peak conducted					
	b) (1) frequency hopping in the bands 2400–2483.5 MHz or 5725–5850 MHz			X		
	b) (2) frequency hopping in the band 902-928 MHz			X		

Test procedure	Designation of test	Test results				Comments
		Pass	Fail	N.A.	N.P.	
15.247	b) (3) systems using digital modulation in the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz	X				
	b) (4) maximum peak conducted > 6 dBi			X		
	b) (4) (i) frequency hopping in the band 2400–2483.5 MHz			X		
	b) (4) (ii) frequency hopping in the band 5725–5850 MHz			X		
	b) (4) (iii) fixed, point-to-point			X		
	c) directional antenna > 6 dBi					
	c) (1) fixed, point-to-point operation			X		
	c) (1) (i) in the band 2400–2483.5 MHz			X		
	c) (1) (ii) in the band 5725–5850 MHz			X		
	c) (1) (iii) fixed, point-to-point			X		
	c) (2) multiple directional beams in the band 2400–2483.5 MHz			X		
	c) (2) (i) information			X		
	c) (2) (ii) sum of the power supplied to all antennas			X		
	c) (2) (iii) one antenna for multiple directional beams			X		
	c) (2) (iv) single directional beam			X		
	d) intentional radiator	X				
	e) peak power spectral density	X				
	f) hybrid system			X		
	g) continuous data stream during the test			X		
	h) to avoid hopping on occupied channels			X		
	i) RF exposure compliance			X		P < 500 mW

N.A.: Not Applicable
N.P.: Not Performed

Standard RSS-247 Issue 2 : 2017

Designation of test	Test results				Comments
	Pass	Fail	N.A.	N.P.	
1. Scope					
3. Certification Requirements					
3.1 RSS-gen compliance			X		*See RSS-Gen Issue 5*
			X		*See RSS-Gen Issue 5*
			X		*See RSS-Gen Issue 5*
			X		*See CS-03*
			X		*See RSS-Gen Issue 5*
5.2 Digital Modulation Systems					
(1) -6 dB bandwidth	X				
(2) transmitter power spectral density	X				
5.4 Transmitter Output Power and e.i.r.p. Requirements					
1) 902-928 MHz frequency hopping systems output power / e.i.r.p.			X		
2) 2400-2483.5 MHz frequency hopping systems output power / e.i.r.p.			X		
3) 5725-5850 MHz frequency hopping systems output power / e.i.r.p.			X		
4) Digital modulation systems output power / e.i.r.p.	X				
5) point-to-point systems (2400-2483.5 and 5725-5850 MHz)			X		
6) Multiple directional beams antenna systems (2400-2483.5 MHz)			X		
5.5 Unwanted emission	X				

Standard RSS-Gen Issue 5 : March 2019

Designation of test	Test results				Comments
	Pass	Fail	N.A.	N.P.	
1. Scope					
2. Purpose and application					
2.1 Certification of Radio Apparatus			X		
2.2 Categories of radio Equipment					*Category 1*
2.3 Exclusions			X		
2.4 Determination of Interference			X		
3. Normative Reference Publications					
4. application for an Exemption					
5. Receivers					
5.1 Scanner Receivers			X		
5.2 Stand-Alone Receivers Operating in the Band 30-960 MHz (Category II)			X		
5.3 Receivers Exempted From Industry Canada Requirement (Category II)			X		
6. Technical Requirements					
6.1 Test Site Facilities					*See ANSI C63.4-2014*
6.2 Test report					
6.3 External control			X		
6.4 Near Field Measurement Method Below 30 MHz			X		
6.5 Measurement Distance Above 30 MHz					
6.6 Occupied Bandwidth	X				
6.7 Transmitter Antenna for Licensed Radio Apparatus			X		
6.8 Operating Bands and Selection of Test Frequencies			X		
6.9 CISPR Quasi-peak Detector	X				
6.10 Pulsed Operation			X		
6.11 Transmitter Frequency Stability			X		
6.12 Transmitter Output Power	X				See RSS 247
6.13 Transmitter unwanted Emissions	X				
7. Receiver limit					
8.Licence-Exempt radio Apparatus					
8.1 Measurement Bandwiths and Detector Functions	X				
8.2 Amplifiers			X		
8.3 Transmitter Antenna for Licence-Exempt Radio Apparatus			X		
8.4 User Manual notice for Licence-Exempt Radio Apparatus			X		
8.5 Measurement of Licence-Exempt Devices On-Site (in-situ)			X		
8.6 Operating frequency Range of Device in Master/Slave networks			X		
8.7 Radio Frequency identification (RFID) Devices			X		
8.8 AC Power Line Conducted Emission Limits for licence-Exempt Radio Apparatus			X		
8.9 Transmitter Emission limits for Licence-Exempt Radio Apparatus			X		
8.10 Restricted Frequency bands			X		
8.11 Frequency Stability for Licence-Exempt transmitters			X		

Designation of test	Test results				Comments
	Pass	Fail	N.A.	N.P.	
7. Licence-exempt Radio Apparatus					
7.1 General Informations					
7.1.1 External Amplifiers			X		
7.1.2 Transmitter Antenna			X		
7.1.3 User manual Notice			X		*User manual shall include the required statements*
7.1.4 Radio Apparatus Containing Digital Circuits			X		*See ICES-003*
7.1.5 Measurement After Installation			X		
7.1.6 operating Frequency range of Devices in Master/Slave Networks			X		
7.1.7 Home-built Devices			X		
7.1.8 RFID Devices			X		
7.2 Measurement Methods and Standard Specifications					
7.2.1 Measurement Bandwidths and Detector Functions	X				
7.2.2 Emissions Falling Within Restricted Frequency Bands			X		
7.2.3 Devices Employing Pulsed Operation			X		
7.2.4 AC Power Line Conducted Emissions Limits			X		
7.2.5 Transmitter Spurious Emission Limits	X				
7.2.6 Transmitter Frequency Stability			X		
7.2.7 Measurement Distance			X		

Note 1: *Single / Split / limited modular transmitter.*
The host devices of the certified module(s) shall be properly labeled to identify the module(s) within.
Note 2: Spectrum investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz to the 10th harmonic of the highest fundamental frequency or 40 GHz, whichever is lower (F<10 GHz) or to the 5th harmonic of the highest fundamental frequency or 100 GHz, whichever is lower (F≥10 GHz).
Note 3: Spectrum investigated from the lowest frequency internally generated or used in the receiver or 30 MHz, whichever is higher to at least 3 times the highest tune-able or local oscillator frequency, whichever is higher without exceeding 40 GHz.
Note 4: *The certificate holder shall be able to demonstrate a quality control process used for production.*
Inspection and testing in accordance with good engineering practices.
Note 5: *The device must be properly identified and labeled.*
Note 6: *Suppliers of radio apparatus shall provide notices and user information in both English and French.*
Note 7: *The device shall not have any external controls accessible to the user.*
Note 8: *When transitioning between bands, the equipment shall not actively transmit*

Conclusion:

The tested sample «**Nano SPY**» submitted to the tests complies with the requirements of the standards:

- FCC 47 CFR PART 15 : 2019
- RSS-247 issue 2: 2017
- RSS-Gen Issue 5 : March 2019

According to the limits specified in this report.

5. DIGITAL MODULATION SYSTEMS

Standards: FCC 47 CFR PART 15 : 2019
RSS-247 Issue 2 : 2017
RSS-Gen Issue 5 : 2019

Sections: §15.247 a) (2) of FCC 47 CFR PART 15 : 2019
§5.2 a) of RSS-247 issue 2 : 2017
§6.6 of RSS-Gen issue 5 : 2019

Test configuration:

The system is tested in normalized test site.

The test unit is placed on a rotating table, 1.5 m from a ground plane. Zero degree azimuth corresponds to the front of the equipment under test.

The level was maximised in azimuth and polarization. The maximum level measured on the spectrum analyser was recorded.

Distance of antenna: 3 meters

Instrumentation test list:

Category	Manufacturer	Type	Emitech Nr	Last validity date	Next validity date
Antenna	Emco	3115	0941	08/02/2019	08/04/2022
Cable	C&C	N-2m	11178	04/05/2018	04/07/2020
Cable	C&C	N-2m	11182	18/04/2018	18/06/2020
Cable	C&C	N-8m	11183	18/04/2018	18/06/2020
Receiver	Rohde & Schwarz	ESR7	14768	10/01/2019	10/03/2020
Shielded enclosure	Comtest	SAC 3m	14803	-	-

Equipment under test operating condition:

EUT is in continuous transmission mode.

Measure conditions:

Ambient temperature (°C): 22
Relative humidity (%): 36

Resolution bandwidth: 100 kHz for 6 dB bandwidth
Resolution bandwidth: 10 kHz for 99% bandwidth

Results:

Power source: 3.0 Vdc

6 dB bandwidth

Frequency	Results (MHz)	Comments
2405 MHz	0.510	See annex n°1
2440 MHz	0.510	See annex n°1
2480 MHz	0.500	See annex n°1

99% bandwidth

Frequency	Results (MHz)	Comments
2405 MHz	2.490	See annex n°1
2440 MHz	2.510	See annex n°1
2480 MHz	2.520	See annex n°1

Test conclusion: Complies with the requirements of the standards.

6. TRANSMITTER OUTPUT POWER

Standards: FCC 47 CFR PART 15 : 2019
RSS-247 Issue 2 : 2017

Sections: §15.247 b) (3) of FCC 47 CFR PART 15 : 2019
§5.4 of RSS-247 issue 2 : 2017

Test configuration:

The system is tested in normalized test site.

The test unit is placed on a rotating table, 1.5 m from a ground plane. Zero degree azimuth corresponds to the front of the equipment under test.

The level was maximised in azimuth and polarization. The maximum level measured on the spectrum analyser was recorded.

Distance of antenna: 3 meters.

Instrumentation test list:

Category	Manufacturer	Type	Emitech Nr	Last validity date	Next validity date
Antenna	Emco	3115	0941	08/02/2019	08/04/2022
Cable	C&C	N-2m	11178	04/05/2018	04/07/2020
Cable	C&C	N-2m	11182	18/04/2018	18/06/2020
Cable	C&C	N-8m	11183	18/04/2018	18/06/2020
Receiver	Rohde & Schwarz	ESR7	14768	10/01/2019	10/03/2020
Shielded enclosure	Comtest	SAC 3m	14803	-	-

Equipment under test operating condition:

EUT is in continuous transmission mode.

Measure conditions:

Ambient temperature (°C): 22
Relative humidity (%): 36

Resolution bandwidth: 1 MHz

Results:

Power source: 3.0 Vdc

Frequency	Electro-magnetic field (dBµV/m)	TP* (dBm)	Limit (dBm)
2405 MHz	97.42	+ 0.042	+ 30
2440 MHz	97.87	+ 0.493	+ 30
2480 MHz	98.78	+ 1.403	+ 30

* TP = $(E \times d)^2 / (30 \times 1.64)$ for d = 3 m

Test conclusion: Complies with the requirements of the standards.

7. PEAK POWER SPECTRAL DENSITY

Standards: FCC 47 CFR PART 15 : 2019
RSS-247 Issue 2 : 2017

Sections: §15.247 e) of FCC 47 CFR PART 15 : 2019
§5.2 b) of RSS-247 issue 2 : 2017

Test configuration:

The system is tested in normalized test site.

The test unit is placed on a rotating table, 1.5m from a ground plane. Zero degree azimuth corresponds to the front of the equipment under test.

The level was maximised in azimuth and polarization. The maximum level measured on the spectrum analyser was recorded.

Distance of antenna: 3 meters

Instrumentation test list:

Category	Manufacturer	Type	Emitech Nr	Last validity date	Next validity date
Antenna	Emco	3115	0941	08/02/2019	08/04/2022
Cable	C&C	N-2m	11178	04/05/2018	04/07/2020
Cable	C&C	N-2m	11182	18/04/2018	18/06/2020
Cable	C&C	N-8m	11183	18/04/2018	18/06/2020
Receiver	Rohde & Schwarz	ESR7	14768	10/01/2019	10/03/2020
Shielded enclosure	Comtest	SAC 3m	14803	-	-

Equipment under test operating condition:

EUT is in continuous transmission mode.

Measure conditions:

Ambient temperature (°C): 22
Relative humidity (%): 36

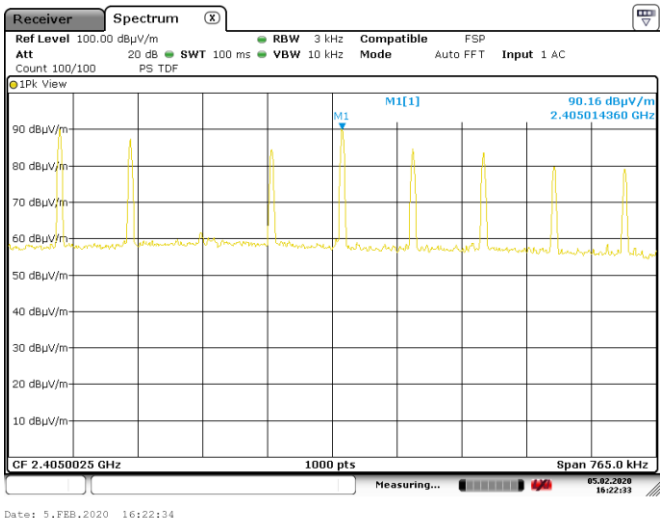
Resolution bandwidth: 3 kHz
Video bandwidth: 10 kHz

Results:

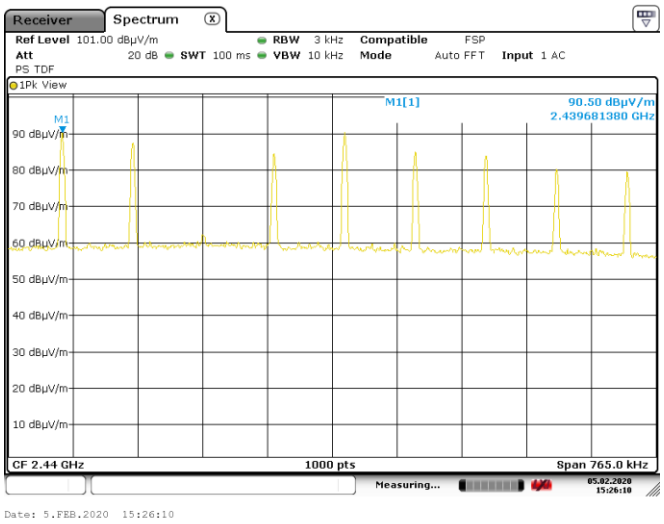
Power source: 3.0 Vdc

Frequency	Electro-magnetic field (dBµV/m)	PPSD* (dBm)	Limit (dBm)
2405 MHz	90.16	- 7.217	+ 8.0
2440 MHz	90.50	- 6.877	
2480 MHz	91.26	- 6.117	

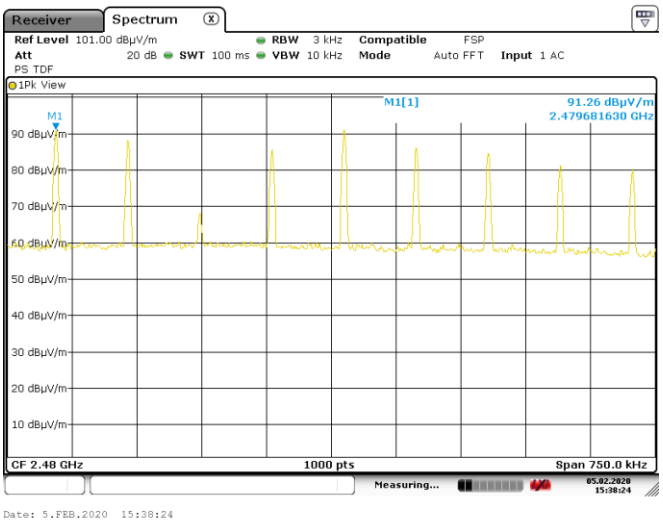
* PPSD = $(E \times d)^2 / (30 \times 1.64)$ for d = 3 m



2405 MHz



2440 MHz



2480 MHz

Test conclusion: Complies with the requirements of the standards.

8. ADDITIONAL PROVISIONS TO THE GENERAL RADIATED EMISSIONS LIMITATION

Standards: FCC 47 CFR PART 15 : 2019
RSS-247 Issue 2 : 2017

Sections: §15.215 (b) and §15.247 (d) of FCC 47 CFR PART 15 : 2019
§5.5 of RSS-247 issue 2 : 2017

Instrumentation test list:

Category	Manufacturer	Type	Emitech Nr	Last validity date	Next validity date
Antenna	Emco	3115	0941	08/02/2019	08/04/2022
Cable	C&C	N-2m	11178	04/05/2018	04/07/2020
Cable	C&C	N-2m	11182	18/04/2018	18/06/2020
Cable	C&C	N-8m	11183	18/04/2018	18/06/2020
Receiver	Rohde & Schwarz	ESR7	14768	10/01/2019	10/03/2020
Shielded enclosure	Comtest	SAC 3m	14803	-	-

Equipment under test arrangement:

The system is tested in normalized test site.
The test unit is placed on a rotating table, 1.5 m from a ground plane. Zero degree azimuth corresponds to the front of the equipment under test.
The level was maximised in azimuth and polarization. The maximum level measured on the spectrum analyser was recorded.

Results:

Ambient temperature (°C): 22
Relative humidity (%): 36

Lower Band Edge: from 2310 MHz to 2390 MHz
Upper Band Edge: from 2483.5 MHz to 2500 MHz

Polarization of test antenna: Horizontal (height = 138 cm)
Position of equipment: azimuth = 170° } For 2405 MHz

Polarization of test antenna: Horizontal (height = 175 cm)
Position of equipment: azimuth = 160° } For 2480 MHz

Fundamental frequency (MHz)	Field Strength Level of fundamental (dBµV/m)	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) *	Calculated Max Out of Band Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)
2404.65	93.29	Average	2383.95	-	33.12	54.0	20.88
2479.69	88.94	Average	2484.01	-	51.13		2.87

* According to step 2 of Marker-Delta Method DA 00-705.

Band-edge curves are given in annex 2.

Test conclusion: Complies with the requirements of the standards.

9. UNINTENTIONAL RADIATED EMISSIONS AND TRANSMITTER UNWANTED EMISSION IN THE BAND 9 kHz – 25 GHz

Standards: FCC 47 CFR PART 15 : 2019
RSS-Gen Issue 5 : March 2019

Sections: §15.205; 15.109; 15.209 and §15.247 of FCC 47 CFR PART 15 : 2019
§6.13 of RSS-Gen Issue 5 : March 2019

Equipment under test arrangement:

The equipment under test (EUT) is placed on a non-conductive test table at 0.8 m (<1GHz) and 1.5 m (>1GHz) above the horizontal metal ground plane.

For maximum meter reading at each frequency, the antenna height is adjusted between 1 m and 4 m above the ground plane for 30 MHz - 1 GHz, at 1 m for 9 kHz - 30 MHz and 1.5 m for 1 GHz - 25 GHz. A 360 degrees rotation of the EUT is performed in vertical and horizontal polarization. The frequency azimuth and antenna height are presented in the table on the next pages.

The E.U.T. is blocked in continuous transmission.

Frequencies range:
9 kHz - 30 MHz
30 MHz - 1 GHz
1 GHz - 25 GHz

Detections mode:
Quasi-peak for 9 kHz - 30 MHz
Quasi-peak for 30 MHz - 1 GHz
Average for 1 GHz - 25 GHz

Resolutions bandwidth:
200 Hz for 9 kHz - 150 kHz
9 kHz for 150 kHz - 30 MHz
120 kHz for 30 MHz - 1 GHz
1 MHz for 1 GHz - 25 GHz

Measurements distance:
3 meters from 9 kHz to 30 MHz
3 meters from 30 MHz to 25 GHz

Limit for emission radiated outside the frequency band, except the harmonics, shall be attenuated by at least 20 dB below the level of fundamental or the general radiated emission limits.

From 9 kHz to 30 MHz

Frequencies range	Limit (µV/m)
9 – 490 kHz	2400/F (F in kHz) *
490 – 1705 kHz	24000/F (F in kHz) **
1.705 – 30 MHz	30 **

* Limits in µV/m can be extrapolated to 3 m using 40 dB / decade.
** Limits in µV/m can be extrapolated to 3 m using 20 dB / decade.

From 30 MHz to 25 GHz

Frequencies range (MHz)	Limit (dBµV/m)	(µV/m)
30 to 88	40.0	100
88 to 216	43.5	150
216 to 960	46.0	200
Above 960	54.0	500

Instrumentation test list:

Order Nr	Category	Manufacturer	Type	Specifications	Next validity date
02205	Spectrum analyzer	Agilent Technologies	E7405A (V A.14.06)	9kHz-26.5GHz	04/25/2021
11178	Cable	C&C	N-2m	DC-18GHz	09/17/2021
11182	Cable	C&C	N-2m	DC-18GHz	09/17/2021
14487	Amplifier	Agilent	8449B	1G-26,5GHz 30dB	11/11/2020
11183	Cable	C&C	N-8m	DC-18GHz	09/17/2021
00941	Antenna	Emco	3115	1GHz-18GHz	04/08/2022
04691	Filter	Micro-Tronics	HPM 14758	Fc: 3GHz	07/21/2021
11135	Cable	C&C	K-4m	DC-40GHz K-4m	07/23/2020
11134	Cable	C&C	K-4m	DC-40GHz K-4m	07/23/2020
01045	Antenna	Oritel	CM 42/25	18GHz-26.5GHz	08/27/2022
06368	Amplifier	Mini-circuit	ZFL-1000-LN	300kHz-1GHz 26dB	01/04/2021
03106	Antenna	Schwarzbeck	UHALP 9108	200MHz-1GHz	06/07/2020
03426	Antenna	Schwarzbeck	VHA 9103	30MHz-300MHz	09/05/2020
09579	Antenna	Emco	6502	9kHz-30MHz	12/22/2021
14768	Receiver	Rohde & Schwarz	ESR7	10Hz-7GHz	03/09/2021
14803	Shielded enclosure	COMTEST	SAC 3m	C3	-
00000	Software	Nexio	BAT EMC	-	-

Results:

Maximal uncertainty: 5.53 dB

Ambient temperature (°C): 22
Relative humidity (%): 33
Power source: 3.0 Vdc

Frequency 2405 MHz in Tx

Frequency (MHz)	Height (cm)	Polarization (H or V)	Azimuth (°)	Electro-magnetic field (dBµV/m)	Limit (dBµV/m)	Margin (dB)
304.001	100	H	65	19.6	46.0	26.4
4809.04	150	V	40	52.1	54.0	1.9
4809.03	150	H	50	51.9	54.0	2.1

H : Horizontal – V : Vertical

Frequency 2440 MHz in Tx

Frequency (MHz)	Height (cm)	Polarization (H or V)	Azimuth (°)	Electro-magnetic field (dBµV/m)	Limit (dBµV/m)	Margin (dB)
304.001	100	H	65	19.6	46.0	26.4
4879.01	150	V	45	50.7	54.0	3.3
4809.01	150	H	50	49.8	54.0	4.2

H : Horizontal – V : Vertical

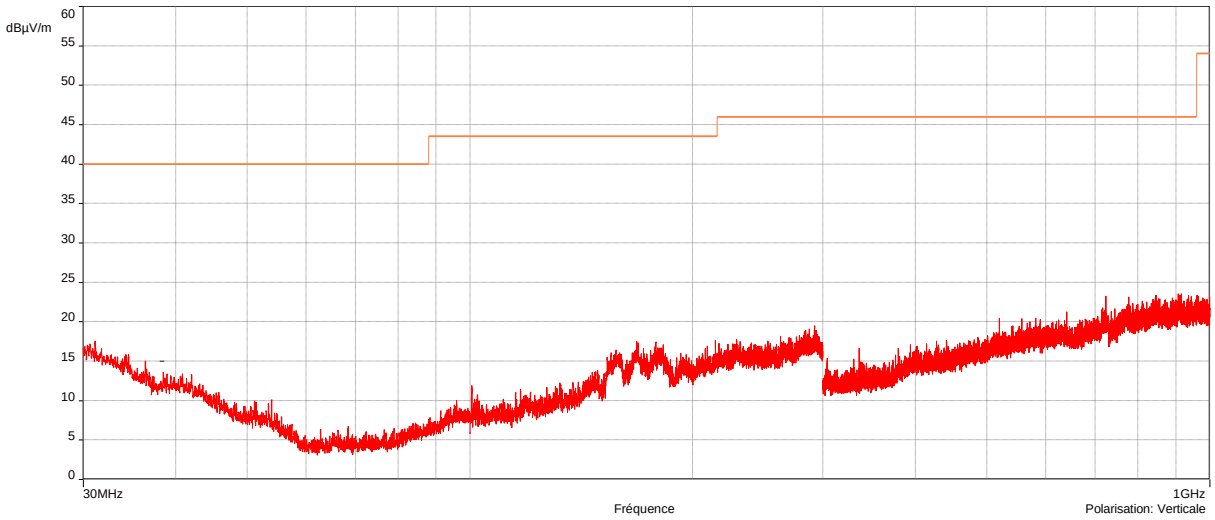
Frequency 2480 MHz in Tx

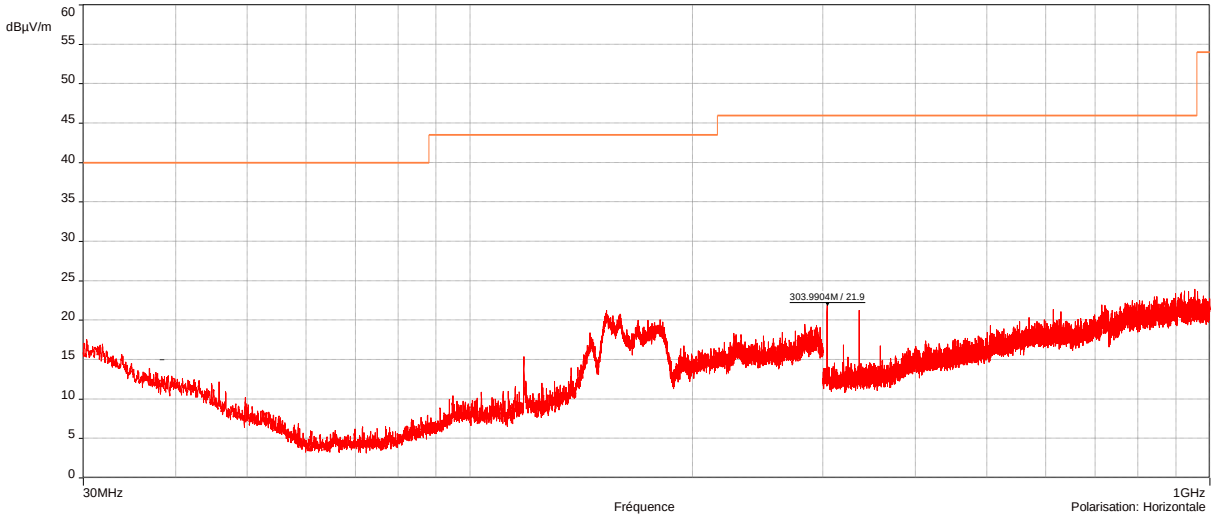
Frequency (MHz)	Height (cm)	Polarization (H or V)	Azimuth (°)	Electro-magnetic field (dBµV/m)	Limit (dBµV/m)	Margin (dB)
304.001	100	H	65	19.6	46.0	26.4
4959.02	150	V	40	49.6	54.0	4.4
4959.03	150	H	40	50.0	54.0	4.0

H : Horizontal – V : Vertical

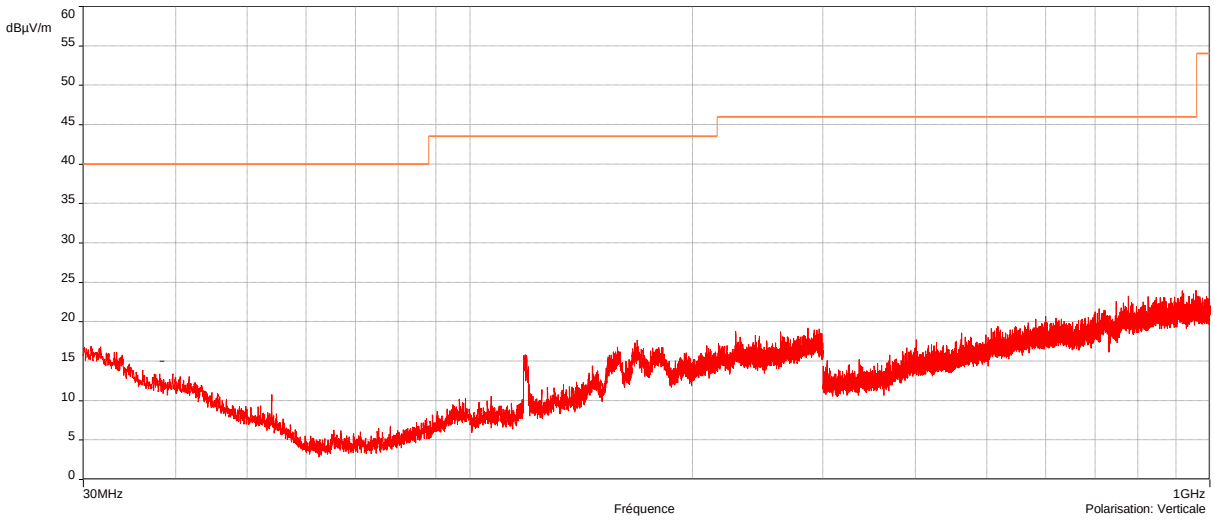
No significant frequency has been found other than those given above between 9 kHz to 30 MHz and 1 GHz to 25 GHz.

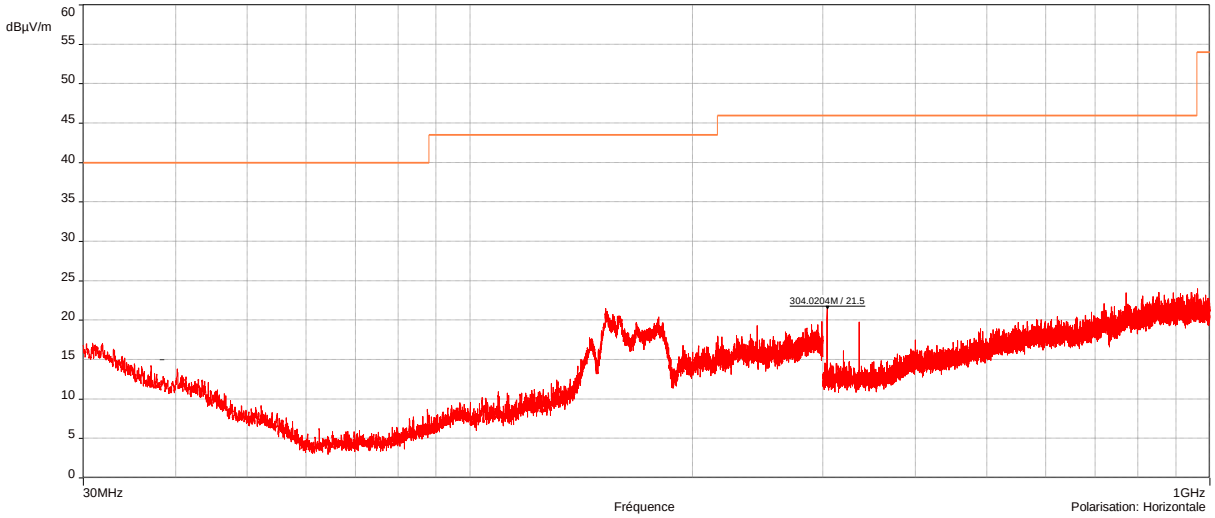
Frequency 2405 MHz in Tx



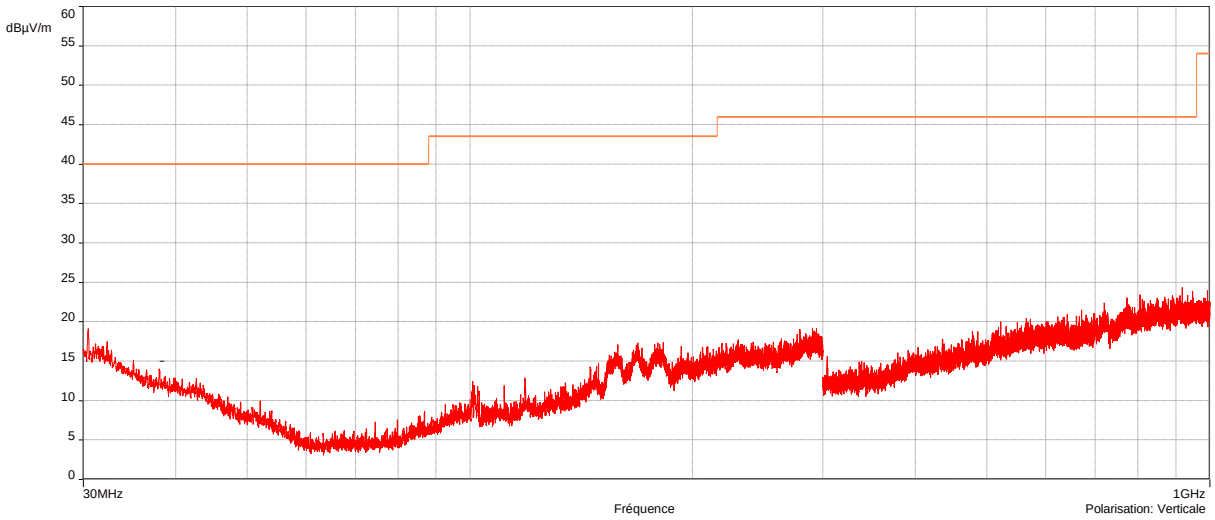


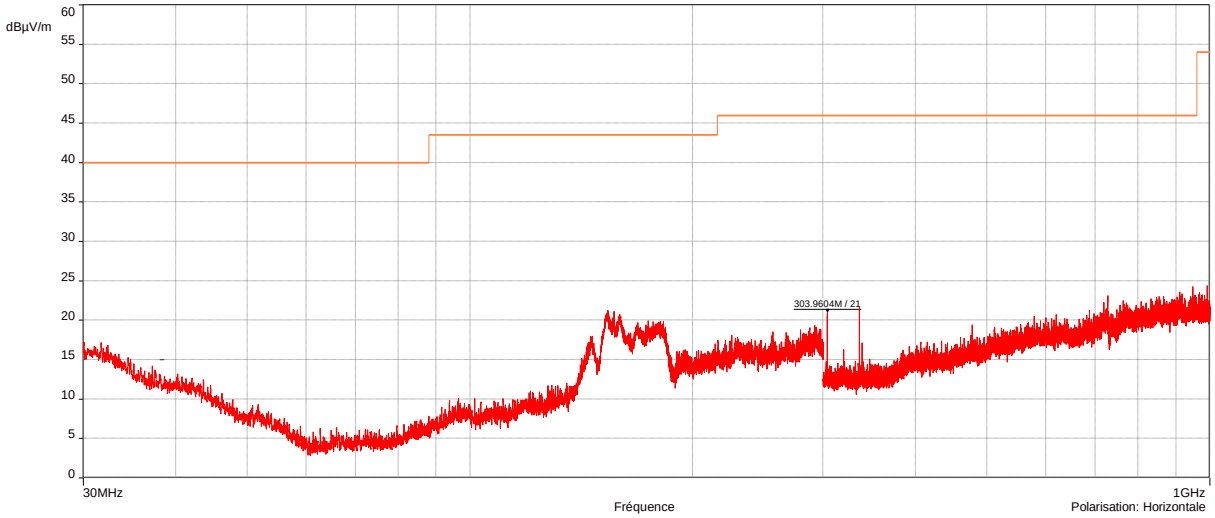
Frequency 2440 MHz in Tx





Frequency 2480 MHz in Tx





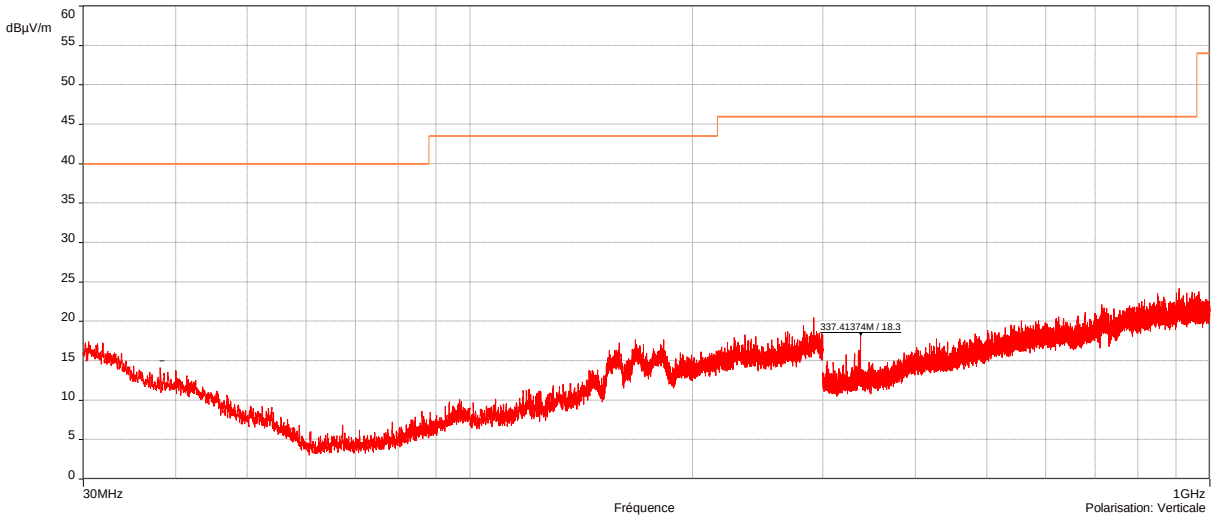
Rx mode

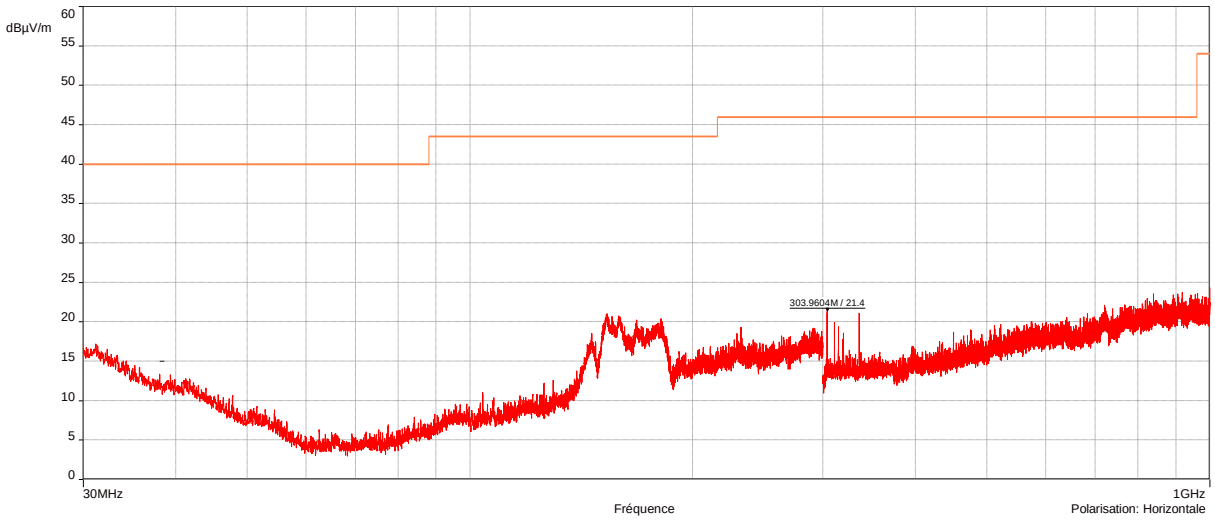
Frequency (MHz)	Height (cm)	Polarization (H or V)	Azimuth (°)	Electro-magnetic field (dBµV/m)	Limit (dBµV/m)	Margin (dB)
304.001	100	H	65	19.6	46.0	26.4

H : Horizontal – V : Vertical

No significant frequency has been found other than those given above between 9 kHz to 30 MHz and 1 GHz to 25 GHz.

Rx mode





Test conclusion: The equipment complies with the requirements of the standards.

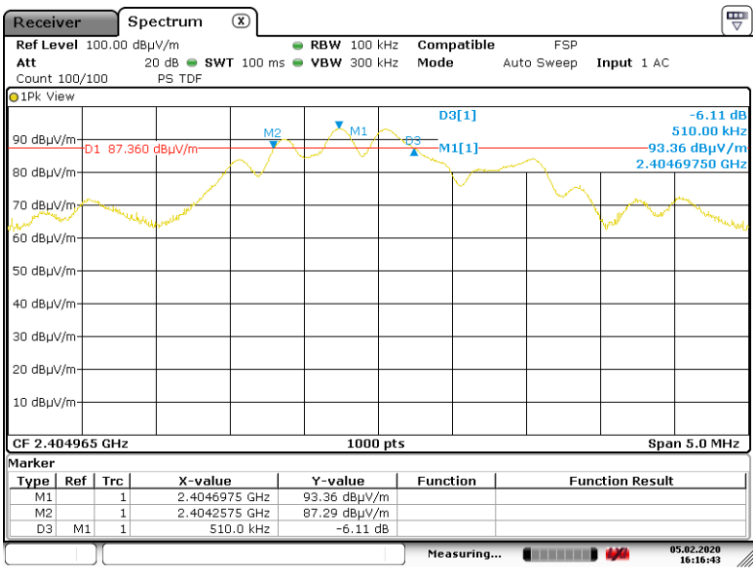
« □□□ End of report, 2 annexes to be forwarded □□□ »

ANNEX 1:

6 dB BANDWIDTH
99% BANDWIDTH

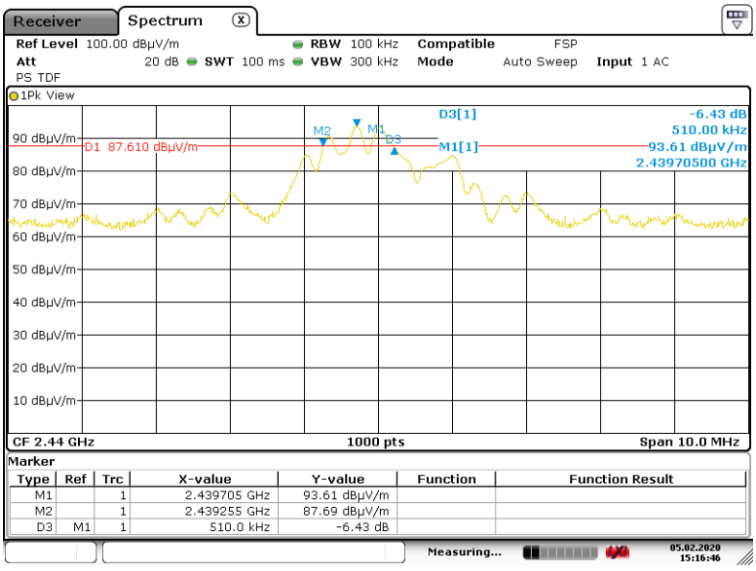
6 dB BANDWIDTH

Frequency 2405 MHz



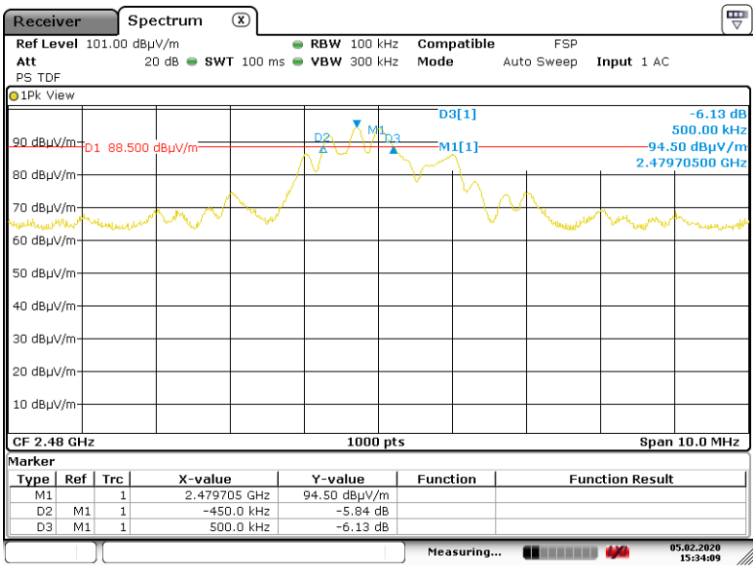
Date: 5.FEB.2020 16:16:43

Frequency 2440 MHz



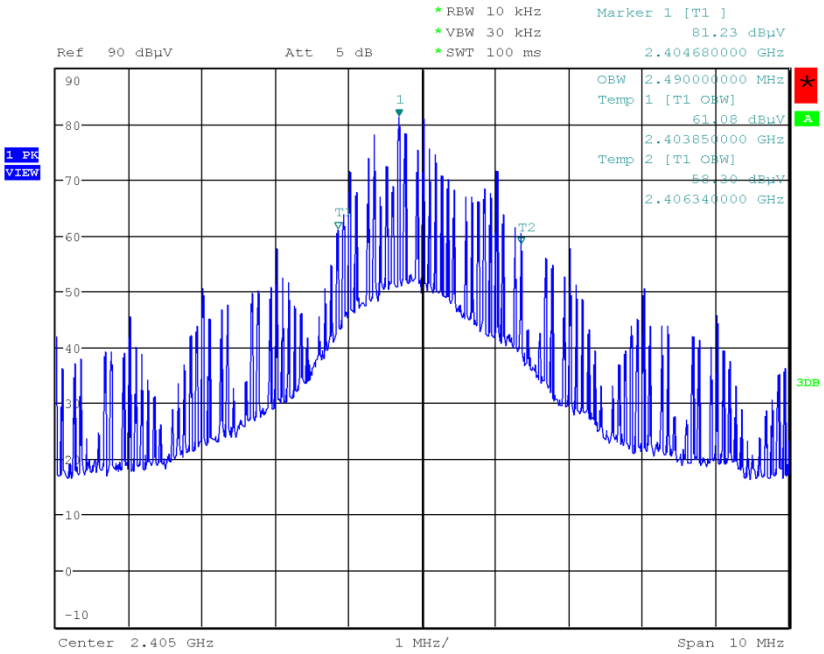
Date: 5.FEB.2020 15:16:46

Frequency 2480 MHz



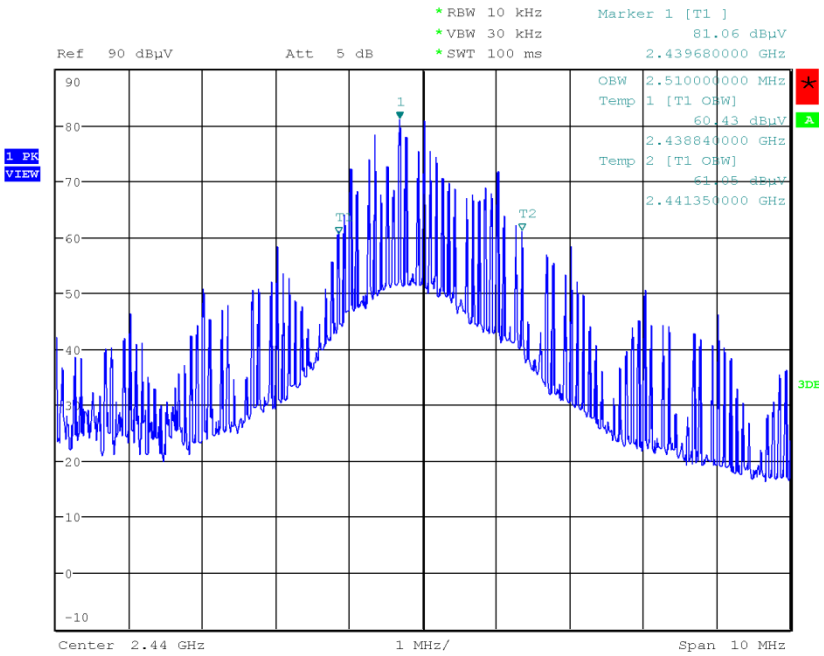
99% BANDWIDTH

Frequency 2405 MHz



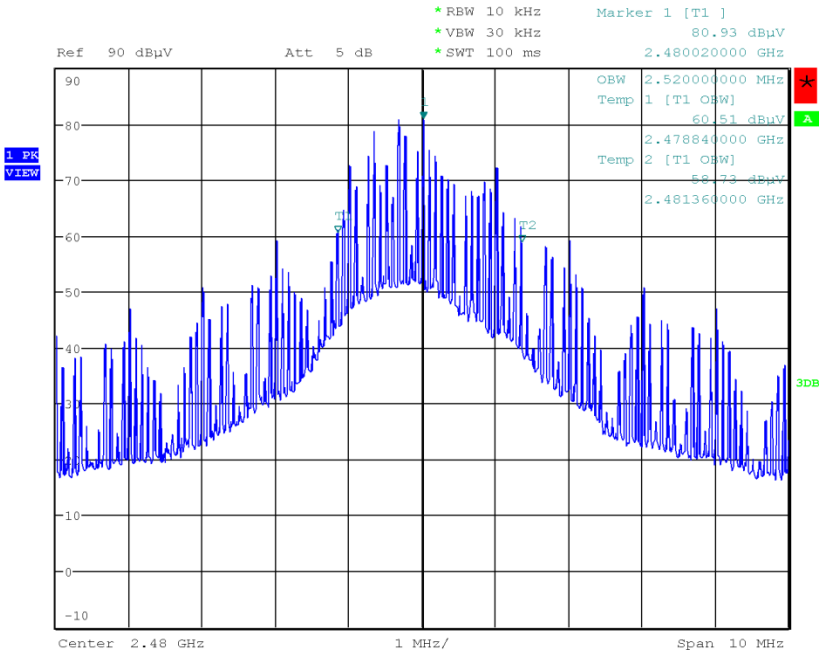
Date: 19.FEB.2020 15:32:06

Frequency 2440 MHz



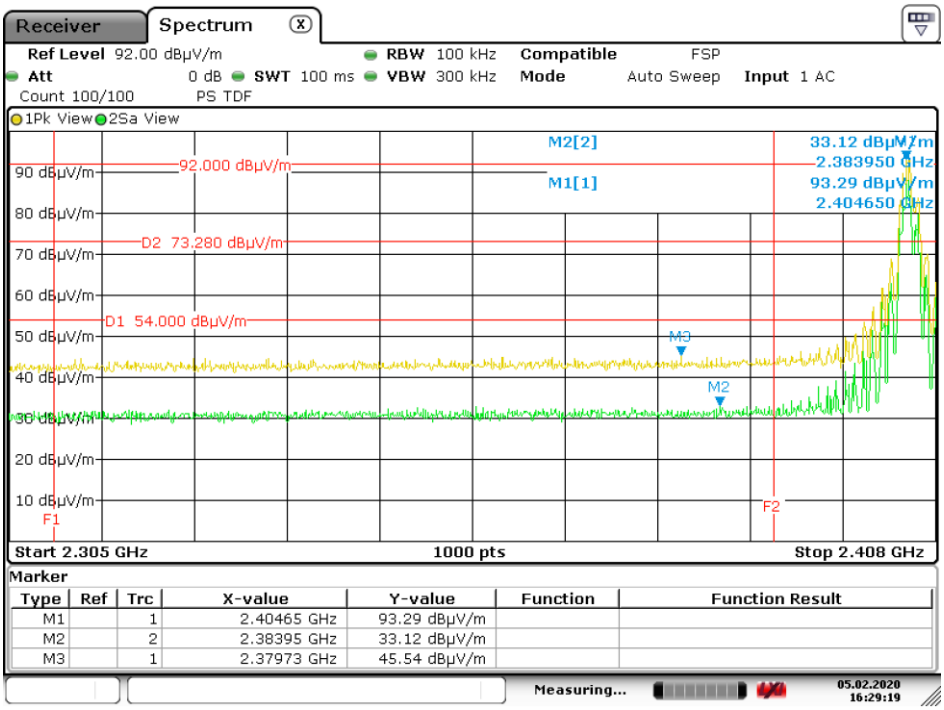
Date: 19.FEB.2020 15:33:20

Frequency 2480 MHz

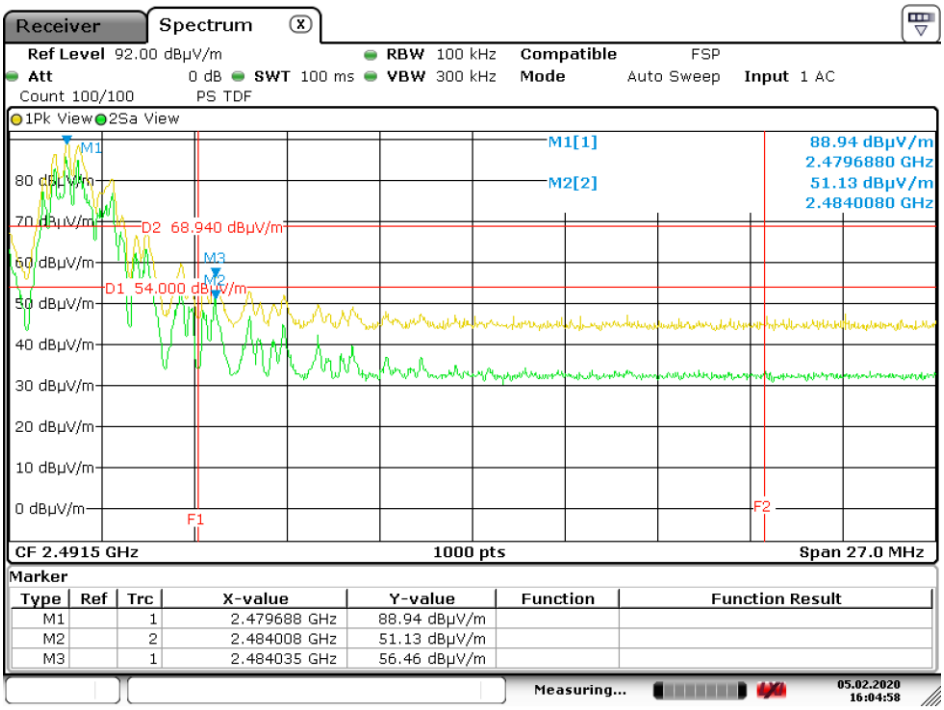


ANNEX 2:

BAND EDGE



Date: 5.FEB.2020 16:29:19



Date: 5.FEB.2020 16:04:58