Test report issued under the responsibility of:
EMITECH MONTPELLIER laboratory
MRA US-EU Designation Number: FR0006
Canadian CAB Identifier: FR0003

RADIO TEST REPORT

FCC PART 15.247: 2024
RSS-247_ Issue 3, Aout 2023
ANSI C 63.10: 2013

Company ..... :	**VISHAY SA**
Address..... :	199 Boulevard de la Madelaine, 06003 Nice France

Test item description. ..... :	**WIRELESS Device**
Trade Mark. ..... :	VISHAY SA
Manufacturer..... :	VISHAY SA
Model/Type reference..... :	WLMO Rev-00 / WLMO2LD
FCC ID..... :	2BKGFWLMO2LD
IC. ..... :	33601-WLMO2LD
Ratings..... :	1.8Vdc to 3.3Vdc

Testing Laboratory ..... :	**EMITECH MONTPELLIER laboratory**
Address..... :	145 rue de Massacan 34740 VENDARGUES FRANCE

Report Reference No..... :	**RR-EVE-24D383-1A**
Test procedure. ..... :	FCC IC Certification
Diffusion..... :	M.RAFIDISON
Applicant's name. ..... :	VISHAY SA
Date of issue..... :	July 15, 2025
Total number of pages..... :	77
Revision..... :	0
Compiled by..... :	Maxime MARKOVIC
Approved by (+ signature). ..... :	Olivier HEYER (Deputy Laboratory Manager)

Duplication of this test report is only permitted for an integral photographic facsimile. It includes the number of pages referenced here above. This document is the result of testing a specimen or a sample of the product submitted. It does not imply an assessment of the conformity of the whole manufactured products of the tested sample.

REPORT INDEX:

REVISION HISTORY:

Revision	Date	Modified pages	Modifications
0	July 15, 2025	/	Creation

1. GENERAL INFORMATIONS

This document submits the results of Electromagnetic Compatibility tests performed on the equipment **WIRELESS Module WLMO** (denominated hereafter E.U.T.: equipment under test) according to document(s) listed in §2 of this test report.

TESTING PROCEDURE AND TESTING LOCATION:

Testing Location ..... :	EMITECH MONTPELLIER laboratory
Address. ..... :	145 rue de Massacan 34740 VENDARGUES FRANCE
Test procedure. ..... :	FCC IC Certification
Tested by ..... :	Olivier AELBRECHT & Maxime MARKOVIC (Training)
Test supervisor ..... :	N/A
Date of receipt of test item ..... :	N/A
Date (s) of performance of tests ..... :	February the 24th to February the 28th of 2025

APPLICANT'S GENERAL INFORMATIONS:

Company name ..... :	VISHAY SA
Company address. ..... :	199 Boulevard de la Madelaine, 06003 Nice France
Person(s) present during the tests. ..... :	M.RAFIDISON
Responsible. ..... :	M.RAFIDISON

GENERAL REMARKS:

The information in italics is declared by the manufacturer and is under his responsibility
The test results presented in this report relate only to the object tested.
The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report the decimal separator is point.

POSSIBLE TEST CASE VERDICTS:

Test case does not apply to the test object. :	N/A
Test case not performed ..... :	N/P
Test object does meet the requirement. ..... :	P (Pass)
Test object does not meet the requirement. ..... :	F (Fail)

DEFINITIONS AND ABBREVIATIONS:

E.U.T.	Equipment Under Test	AE	Ancillary Equipment	Pk	Peak detector
RBW	Resolution BandWidth	VBW	Video BandWidth	QP	Quasi-peak detector
FSOATS	Free Space Open Area Test Site	FAR	Full Anechoic Room	Av	Average detector
VP	Vertical Polarization	HP	Horizontal Polarization	RMS	Root Mean Square
RF	Radio Frequency	N.T.R	Nothing To Report	N/C	Not Communicated
SAC	Semi Anechoic Chamber				

2. REFERENCE DOCUMENTS

NORMATIVE REFERENCES:

The following referenced documents are necessary for the application of the present test report.

FCC 47 CFR PART 15: 2024
Code of federal regulations – Title 47 telecommunication
Part 15- Radio frequency devices

RSS-247_ Issue 3, Aout 2023
Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

ANSI C63.10: 2020
American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

KDB 447498 D01
General RF Exposure Guidance V06

KDB 558074 D01 DTS v03r03
Guidance for Performing Compliance on Digital Transmission
Systems Operating under §15.247

Public Notice DA 00-705
Filing and Measurement Guideline for Frequency Hopping Spread
Spectrum Systems.

Although the product standard uses obsolete technical standards, the latest versions of standards achievable by the laboratory will be used for testing.

INFORMATIVE REFERENCES:

The following referenced documents are not necessary for the application of the present test report but they assist the user with regard to a particular subject area.

3. EQUIPMENT TECHNICAL DESCRIPTION

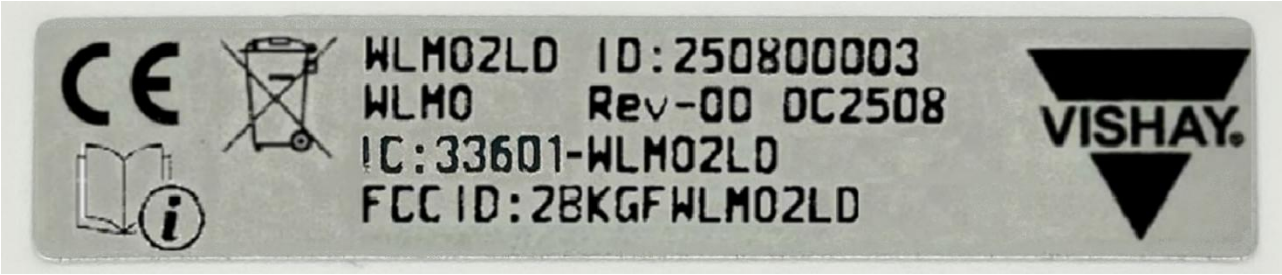
3.1. Test Conditions

Test item description.	:	WIRELESS Device
Model/Type reference	:	WLMO Rev-00 / WLMO2LD
Trade Mark.	:	VISHAY SA
Serial number (S/N).	:	WLMO2LD ID 250600001
Part number (P/N).	:	DC2506
Software version.	:	*Rev-00*
Firmware version.	:	*WLMO2LD Rev-00*
Type of sample.	:	Pre-serial
Function(s)	:	Transducer data emitter LoRa module
Manufacturer name.	:	VISHAY SA
Address.	:	199 Boulevard de la Madeleine, 06003 Nice

General product information:

N/A

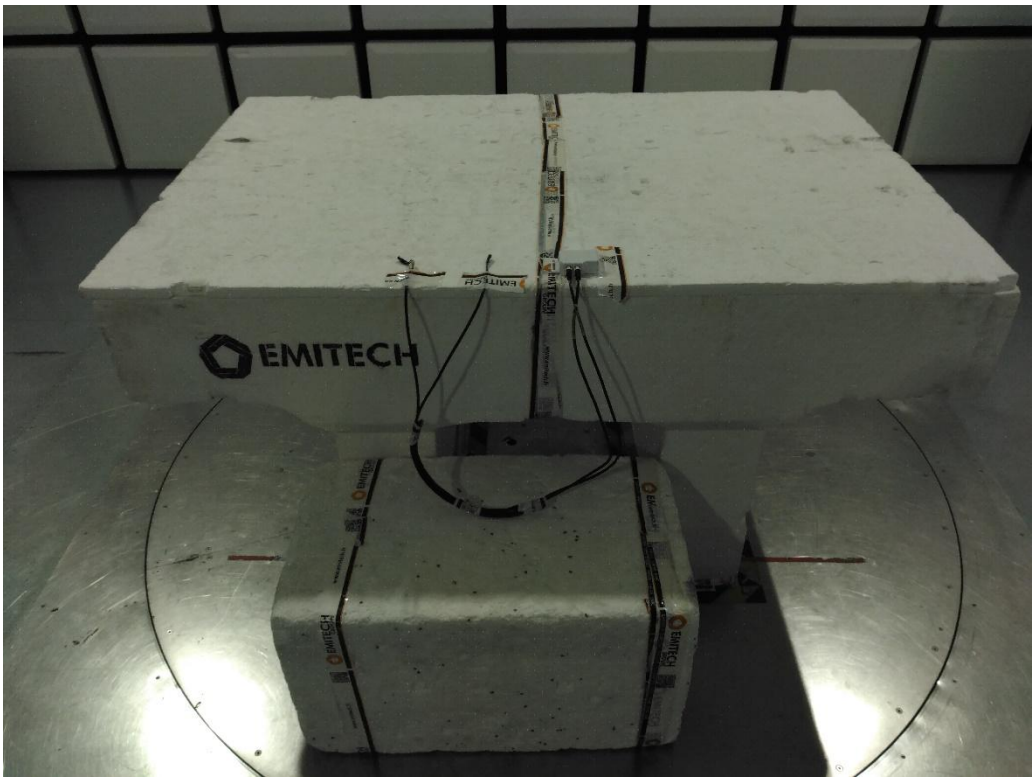
3.2. E.U.T. Marking plate



3.3. E.U.T. Modification(s)

No modification

3.4. E.U.T. General view



3.5. E.U.T. Electronic board

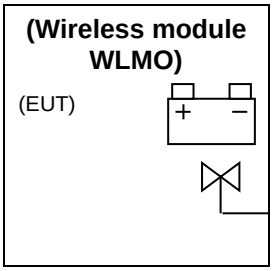
3.6. E.U.T. Mechanical and Electrical Design

Power supply.	:	*3.3Vdc*
Power supply range.	:	*1.8Vdc to 3.3Vdc*
Power type.	:	*2 batteries AAA 1.5Vdc 625mAh*
Power (W).	:	*N/A*
Nominal current (A).	:	*N/A*
Dimensions (L x W x H) (m).	:	*0.0890 x 0.0555 x 0.0216 m*
Weight (kg).	:	*0.0594 kg*
Temperature range (°C).	:	*-20°C to +60°C*
Ground bounding strap.	:	*No*

Comments:

N/A

3.7. E.U.T. Input/Output ports



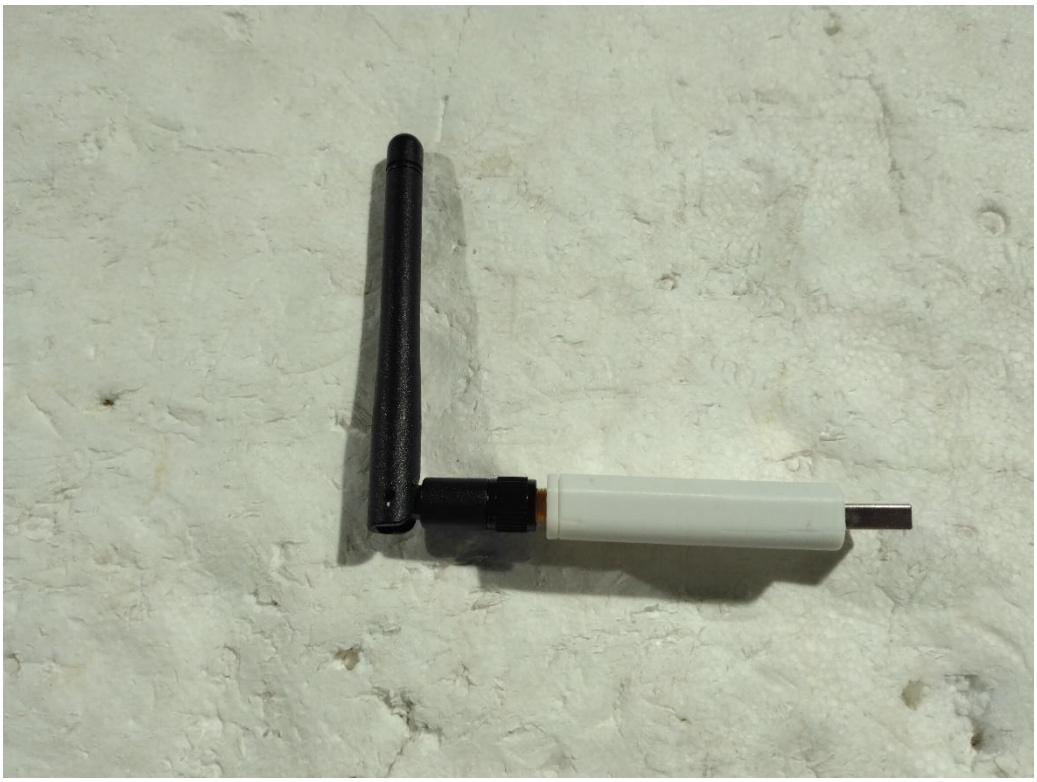
PORT	NAME	TYPE	LENGTH	CABLE TYPE	COMMENTS
0	Main frame	N/E	N/A	Plastic	
1	DC power source	DC		N/A	2 batteries AAA 1.5Vdc 625mAh
2	RF antenna	RF	N/A	N/A	LoRa 2.4GHz

AC/DC : AC/DC Converter port
I/O .....: Input or Output port
N/E .....: Non Electrical port
AC..... : Alternative current port
TP..... : Telecommunication port
DC ..... : Direct current port
RF..... : Radio frequency port

3.8. Supporting Equipment Used During Test

Sample subject to the tests was tested with following equipment.

PRODUCT TYPE	MANUFACTURER	MODEL	N°EMITECH / COMMENTS
DONGLE	VISHAY		Used for Rx

DONGLE (EA)


3.9. EUT Radio Specifications

a) GENERAL INFORMATIONS	
According to manufacturer's declarations :	
EUT type	*Transmitter*
Technology	*Private LoRa 2.4GHz*
Environmental profile	*Data Transmission*
Temperature range	*-20°C to +60°C*
Antenna type	*Integral*
Antenna Gain	*Not Communicated*
Comments:	

b) TRANSMITTER PARAMETERS (TX)	
Frequency bands	*2.4GHz to 2.4835GHz*
RF Power	*8.5dBm*
Number of channels / Separation	*5 Channels*
Modulation type	*Chirp Spread Spectrum (CSS)*
Duty cycle	*N/A*
Tested frequency	*2.402GHz , 2.450GHz & 2.480GHz*

c) RECEIVER PARAMETERS (RX)	
Frequency bands	*Not Communicated*
Category/Class	*Not Communicated*
Bandwidth	*Not Communicated*

4. RESULT SUMMARY

TEST DESIGNATION	SEVERITY	VERDICT	BASIC STANDARDS / COMMENTS
SUBPART A - GENERAL			
Labeling requirements		**PASS**	**15.19 / See certification documents**
Information to user		**PASS**	**15.21 / See certification documents**
Home-built devices		**N/A**	**15.23**
Kits		**N/A**	**15.25**
Special Accessories		**PASS**	**15.27 / See certification documents**
Inspection by the Commission		**N/A**	**15.29**
Measurement standards		**PASS**	**15.31**
Test procedure for CPU boards and computer power supplies		**N/A**	**15.32**
Frequency range of radiated measurements		**PASS**	**15.33**
Measurement detector functions and bandwidths		**PASS**	**15.35**
Transition provisions for compliance with the rules		**PASS**	**15.37 / See certification documents**
SUBPART B – UNINTENTIONAL RADIATORS			
Equipment authorization			**15.101**
- Verification		N/A	
- Declaration of Conformity		N/A	
CPU boards and power supplies used in personal computers		**N/A**	**15.102**
Exempted device		**N/A**	**15.103**
Information to the user		**PASS**	**15.105 / See certification documents**
Conducted limits		**N/A**	**15.107**
Radiated emission limits		**N/A**	**15.109**
Antenna power conduction limits for receivers		**N/A**	**15.111**
Power line carrier systems		**N/A**	**15.113**
TV interface devices, including cable system terminal devices		**N/A**	**15.115**
TV broadcast receivers		**N/A**	**15.117**
Cable ready consumer electronics equipment		**N/A**	**15.118**
Program blocking technology requirements for TV receivers		**N/A**	**15.120**
Scanning receivers and frequency converters used with scanning receivers		**N/A**	**15.121**
Labeling of digital cable ready products		**N/A**	**15.123**
SUBPART C –INTENTIONAL RADIATORS			

TEST DESIGNATION	SEVERITY	VERDICT	BASIC STANDARDS / COMMENTS
Equipment authorization requirement		**PASS**	**15.201 / Transmitter part is subject to Certification procedure**
Certified operating frequency range		**N/A**	**15.202**
Antenna requirement		**PASS**	**15.203 / Dedicated integral antenna**
External radio frequency power amplifiers and antenna modifications		**N/A**	**15.204**
Restricted bands of operation		**PASS**	**15.204**
Conducted limits		**N/A**	**15.207**
Radiated emission limits; general requirements	**Class B**	**PASS**	**15.209**
Tunnel radio systems		**N/A**	**15.211**
Modular transmitters		**N/A**	**15.212**
Cable locating equipment		**N/A**	**15.213**
Cordless telephones		**N/A**	**15.214**
Additional provisions to the general radiated emission limits		**PASS**	**15.215**
Operation within the band 902-928MHz, 2400-2483.5MHz and 5725-5850MHz			**15.247**
- **Frequency hopping and digitally modulated**		**-**	**a)**
- Frequency hopping system		N/A	a) (1) Non-FHSS equipement
- Digital modulation system		PASS	a) (2) -6dB BW > 500kHz
- **Maximum peak conducted output power**		**-**	**b)**
- For hopping system in the 2400-2483.5 MHz and 5725-5850 MHz bands		N/A	b) (1) Non-FHSS equipement
- For hopping system in the 902-928MHz band		N/A	b) (2) Non-FHSS equipement
- For system using digital modulation in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands		PASS	b) (3)
- **Operation with directional antenna gains > 6 dBi**		**N/A**	**c)**
- **Out-of-band emissions**		**PASS**	**d)**
- **Power spectral density conducted**		**PASS**	**e)**
- **Hybrid system**		**N/A**	**f)**
- **Frequency hopping additional requirements**		**N/P**	**g) See certification documents**
- **Frequency hopping intelligence**		**N/P**	**h) See certification documents**
- **RF exposure compliance**		**PASS**	**i)**

Sample subject to the test complies for tests done with the requirements of the reference document(s) listed in §2 of this test report and, where applicable, with deviation(s) specified in this document.

To declare, or not, the compliance with the specifications, it was not explicitly taken into account of uncertainty associated with the results with the exception of emission tests based on CISPR standards.

TEST(S) PERFORMED	MODIFICATION(S)
ANSI C63.10: 2013	N/A

5. MEASUREMENT UNCERTAINTY

Uncertainties values presented below are required by standards:

PARAMETER	MAXIMAL EMITECH UNCERTAINTY	STANDARD UNCERTAINTY
Conducted emission		
(Artificial Mains Network) 150kHz – 30MHz	± 3,4 dB	± 3.4 dB
Radiated magnetic field emission		
9kHz – 30MHz	± 4,3 dB	/
Radiated electric field emission		
(FSOATS/SAC) HP-VP 30MHz – 200MHz	± 4.5 - 4.6 dB	± 5.1 - 5.2 dB
(FSOATS/SAC) HP-VP 200MHz – 1GHz	± 4,7 - 5.8 dB	± 5.3 - 6.3 dB
(FSOATS/SAC) HP-VP with bilog. 30MHz – 1GHz	± 4,7 - 5.9 dB	± 5.2 - 6.3 dB
(FAR) 30MHz – 200MHz	± 4.5 dB	± 5.0 dB
(FAR) 200MHz – 1GHz	± 4,8 dB	± 5.3 dB
(FAR) with bilog 30MHz – 1GHz	± 4,8 dB	± 5.3 dB
(FSOATS/FAR) 1GHz - 6GHz	± 4,7 dB	± 5.2 dB
(FSOATS/FAR) 6GHz - 18GHz	± 4,8 dB	± 5.5 dB
18GHz - 40GHz	± 5,9 dB	/
40GHz - 140GHz	± 5.7 dB	/

For the calculation of expanded uncertainty, the confidence interval is 95 % (k=2).

6. TEST CONDITIONS AND RESULTS

6.1. 6dB bandwidth , 20dB bandwidth & 99% Occupied Bandwidth

Reference standard:	FCC part 15 Radio part 15.247, 15.215 RSS-247 & RSS-GEN
Test method:	ANSI C63.10: 2013

Test description: a) (2):

Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

EUT is connected to the measuring receiver via 50Ω attenuator(s). Tests are done in max-hold mode in order to capture all channels..

The occupied bandwidth (OBW) is the Frequency Range in which 99 % of the total mean power of a given emission falls. The residual part of the total power being denoted as β, which, in cases of symmetrical spectra, splits up into β/2 on each side of the spectrum. Unless otherwise specified, β/2 is taken as 0,5 %.

The maximum occupied bandwidth includes all associated side bands above the appropriate emissions level and the frequency error or drift under extreme test conditions.

EUT is connected to the measuring receiver via 50Ω attenuator(s).

TESTED PARAMETER	RESULT	SEVERITY	RESULT TAB.	VERDICT
6dB bandwidth Low channel	546.0kHz	≥ 500 kHz	EMI4661	**PASS**
6dB bandwidth Mid channel	535.5 kHz		EMI4674	**PASS**
6dB bandwidth High channel	564.4 kHz		EMI4677	**PASS**
20dB bandwidth Low channel	761.5 kHz		EMI4672	**PASS**
20dB bandwidth Mid channel	786.4 kHz		EMI4676	**PASS**
20dB bandwidth High channel	819.2 kHz		EMI4678	**PASS**
99% OBW / Low channel	641.351 kHz	Within the band	EMI4675	**PASS**
99% OBW / Mid channel	649.500 kHz		EMI4673	**PASS**
99% OBW / High channel	643.252 kHz		EMI4679	**PASS**

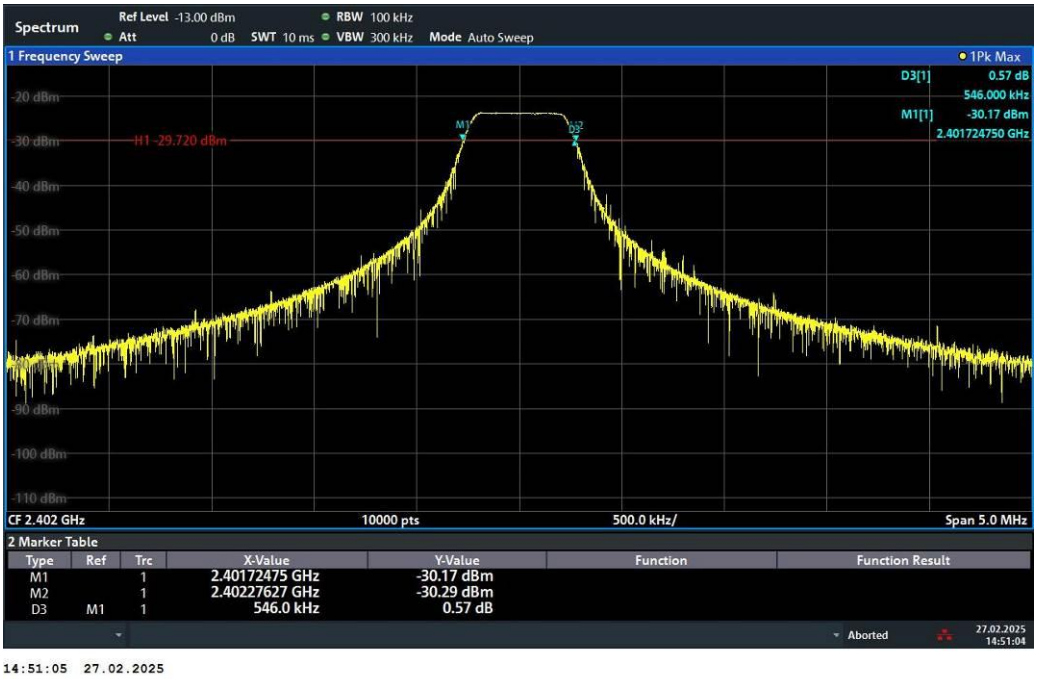
LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	20.4 °C
Relative Humidity	20 to 75 %	34.7 %
Atmospheric pressure	N/A	1014 hPa
Test method deviation: N/A		
Supplementary information:		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	09/09/2022	09/11/2025
Cable	SUCOFLEX	N-3m	14379	17/08/2023	17/10/2025
Cable	Techniwave	N-3.5m	18354	17/08/2023	17/10/2025
Receiver	Rohde & Schwarz	FPL1003	16027	03/04/2024	03/06/2025
Shielded enclosure	RAY PROOF	C.V2	1423	10/08/2023	10/10/2026
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermohygrometer	Testo	608-H1	7562	28/09/2023	28/11/2025

Blank cells = Permanent validity

6DB BANDWIDTH , 20DB BANDWIDTH & 99% OCCUPIED BANDWITDH - TABULATED RESULTS				
TEST CASE	FREQUENCIES	LIMITS	BANDWIDTH	RESULT TAB.
6dB bandwidth Low channel	2401.725 MHz 2402.228 MHz	≥ 500 kHz	546.0kHz	EMI4661
6dB bandwidth Mid channel	2449.732 MHz 2450.274 MHz		535.5 kHz	EMI4674
6dB bandwidth High channel	2479.720 MHz 2480.285 MHz		559.4 kHz	EMI4677
20dB bandwidth Low channel	2401.624 MHz 2402.382 MHz		761.5 kHz	EMI4672
20dB bandwidth Mid channel	2449.608 MHz 2450.397 MHz		786.4 kHz	EMI4676
20dB bandwidth High channel	2479.590 MHz 2480.410 MHz		819.2 kHz	EMI4678
OBW / Low channel	2401.675 MHz 2402.316 MHz	Within the band	641.351 kHz	EMI4675
OBW / Mid channel	2449.675MHz 2450.325MHz		649.500 kHz	EMI4673
OBW / High channel	2479.679 MHz 2480.322 MHz		643.252 kHz	EMI4679

6dB BANDWIDTH , 20dB BANDWIDTH & 99% OCCUPIED BANDWITDH - GRAPH	
6dB BANDWIDTH LOW CHANNEL	EMI4661
EUT mode:	Tx mode
Test Date:	27/02/2025
Test Operator:	OAT & MMA



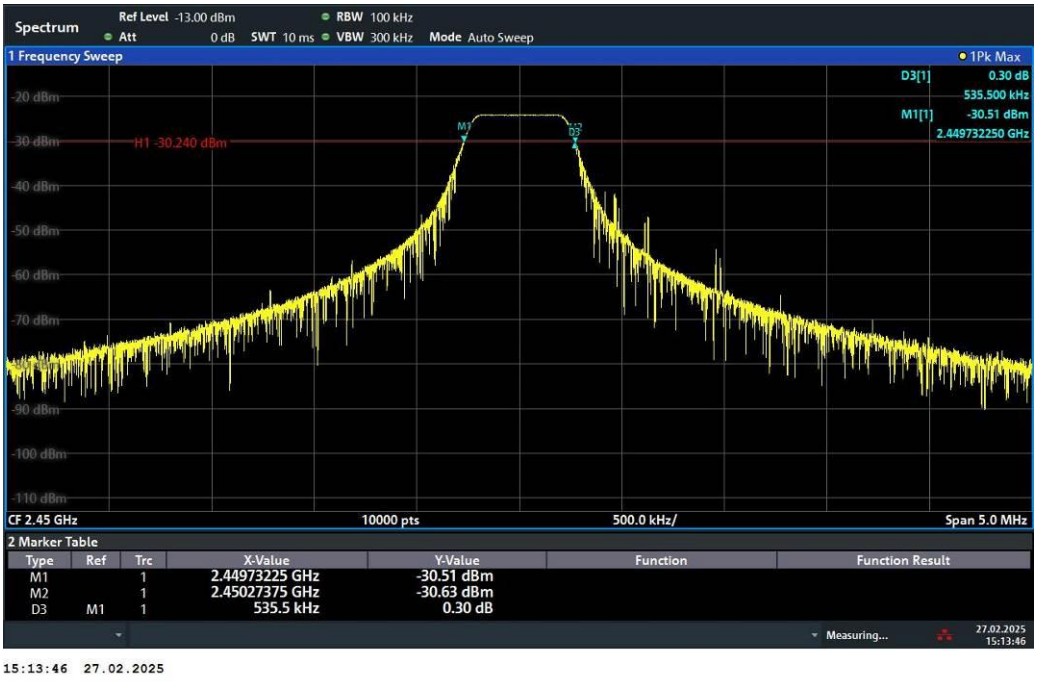
EUT modification(s): N/A

FREQUENCIES	RBW	VBW	DETECTOR
2402 MHz	100 kHz	300 kHz	Peak

Configuration:	N/A
Comments:	The 6 dB bandwidth is 546.00 kHz

EUT modification(s): N/A

6DB BANDWIDTH , 20DB BANDWIDTH & 99% OCCUPIED BANDWITDH - GRAPH		
6DB BANDWIDTH MID CHANNEL		EMI4674
EUT mode:	Tx mode	
Test Date:	27/02/2025	
Test Operator:	OAT & MMA	

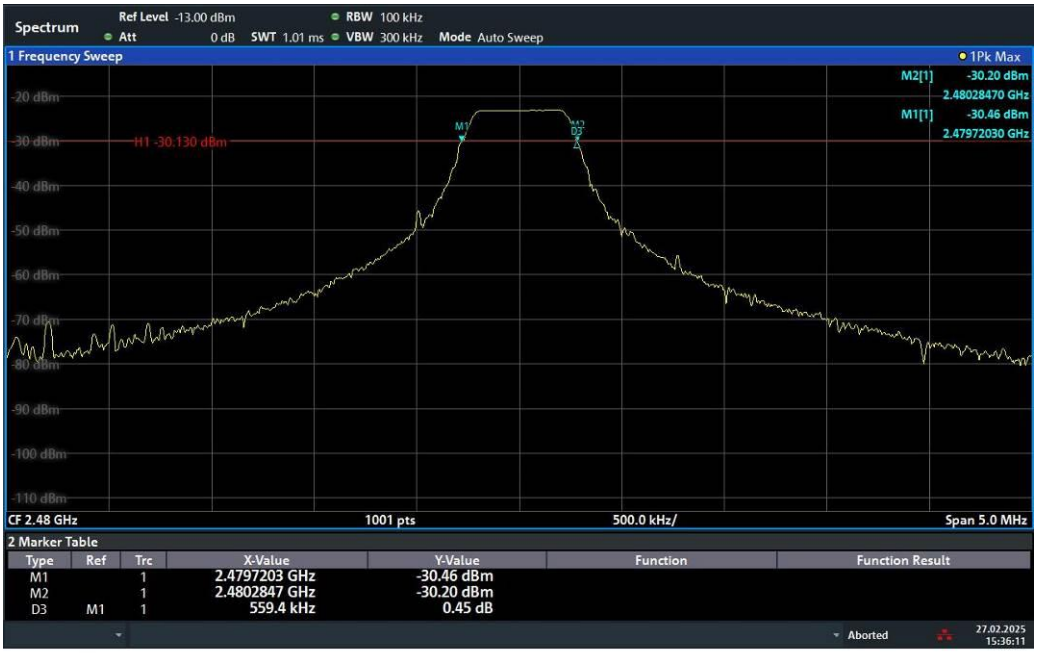


EUT modification(s): N/A

FREQUENCIES	RBW	VBW	DETECTOR
2450 MHz	100 kHz	300 kHz	Peak
Configuration:	N/A		
Comments:	The 6 dB bandwidth is 535.50 kHz		

EUT modification(s): N/A

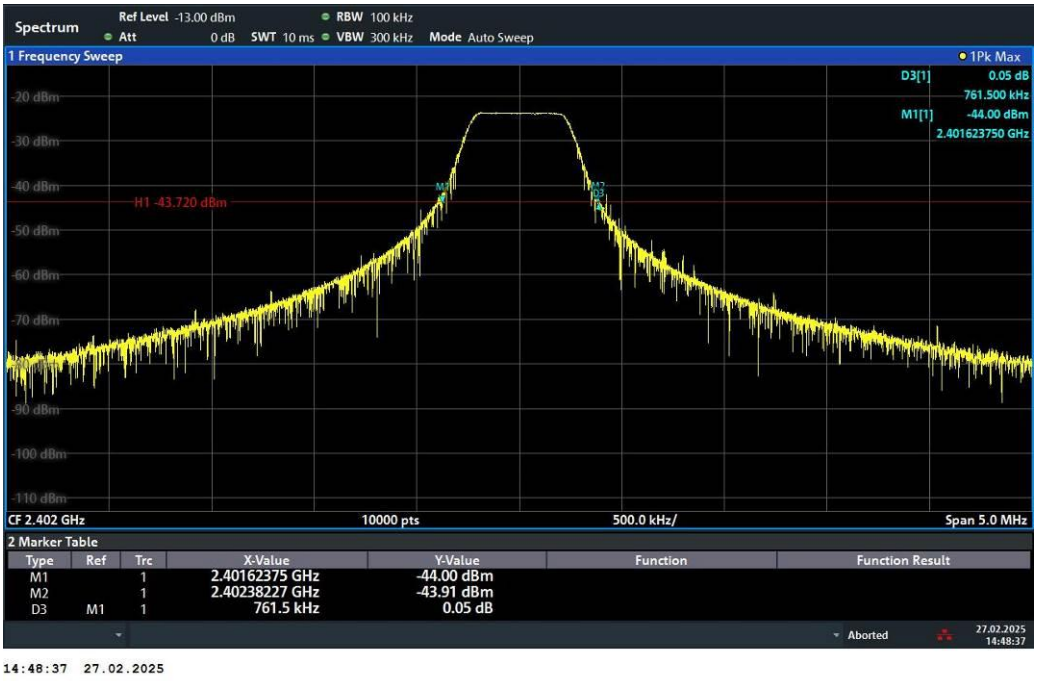
6dB bandwidth , 20dB Bandwidth & 99% Occupied Bandwitdh - Graph	
6dB bandwidth High channel	EMI4677
EUT mode:	Tx mode
Test Date:	27/02/2025
Test Operator:	OAT & MMA



EUT modification(s): N/A

Frequencies	RBW	VBW	Detector
2480 MHz	100 kHz	300 kHz	Peak
Configuration:	N/A		
Comments:	The 6 dB bandwidth is 559.40 kHz		
EUT modification(s): N/A			

6dB BANDWIDTH , 20dB BANDWIDTH & 99% OCCUPIED BANDWITDH - GRAPH	
20dB BANDWIDTH LOW CHANNEL	EMI4672
EUT mode:	Tx mode
Test Date:	27/02/2025
Test Operator:	OAT & MMA

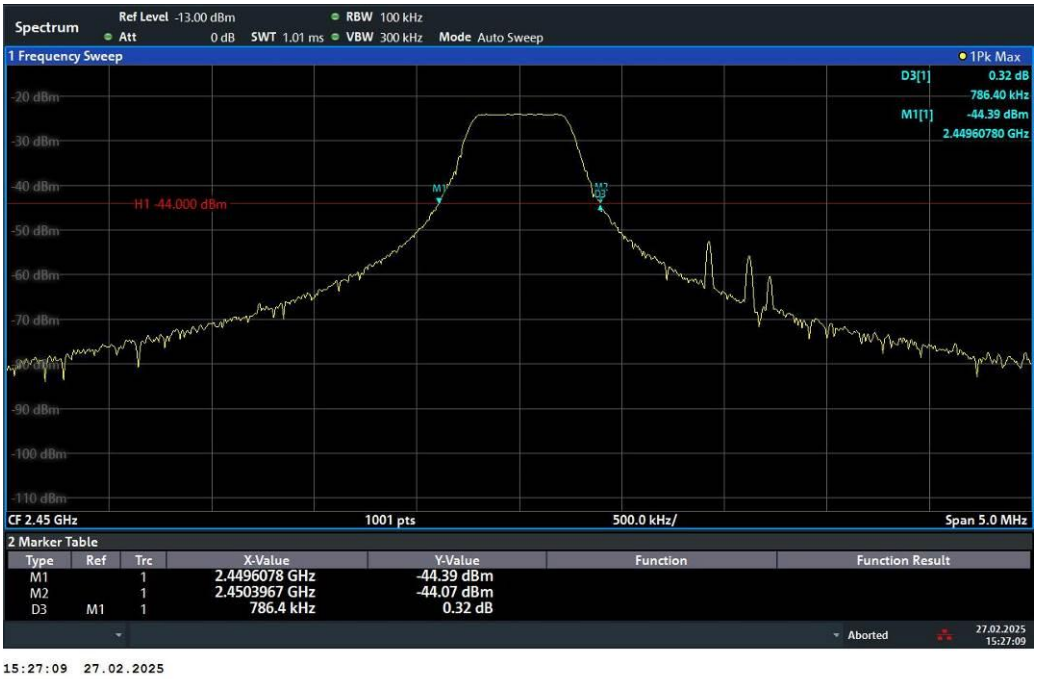


EUT modification(s): N/A

FREQUENCIES	RBW	VBW	DETECTOR
2402 MHz	100 kHz	300 kHz	Peak
Configuration:	N/A		
Comments:	The 20 dB bandwidth is 761.5 kHz		

EUT modification(s): N/A

6dB bandwidth , 20dB Bandwidth & 99% Occupied Bandwitdh - Graph	
20dB bandwidth Mid channel	**EMI4676**
EUT mode:	Tx mode
Test Date:	27/02/2025
Test Operator:	OAT & MMA

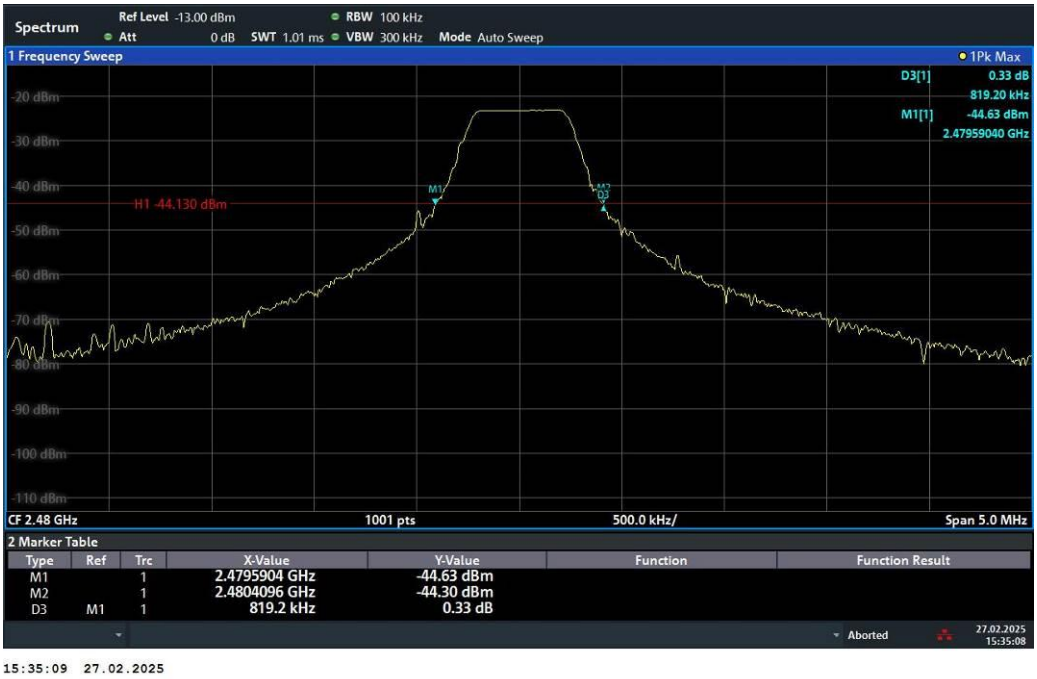


EUT modification(s): N/A

Frequencies	RBW	VBW	Detector
2450 MHz	100 kHz	300 kHz	Peak
Configuration:	N/A		
Comments:	The 20 dB bandwidth is 786.4 kHz		

EUT modification(s): N/A

6dB bandwidth , 20dB Bandwidth & 99% Occupied Bandwitdh - Graph	
20dB bandwidth High channel	EMI4678
EUT mode:	TX mode
Test Date:	27/02/2025
Test Operator:	OAT & MMA



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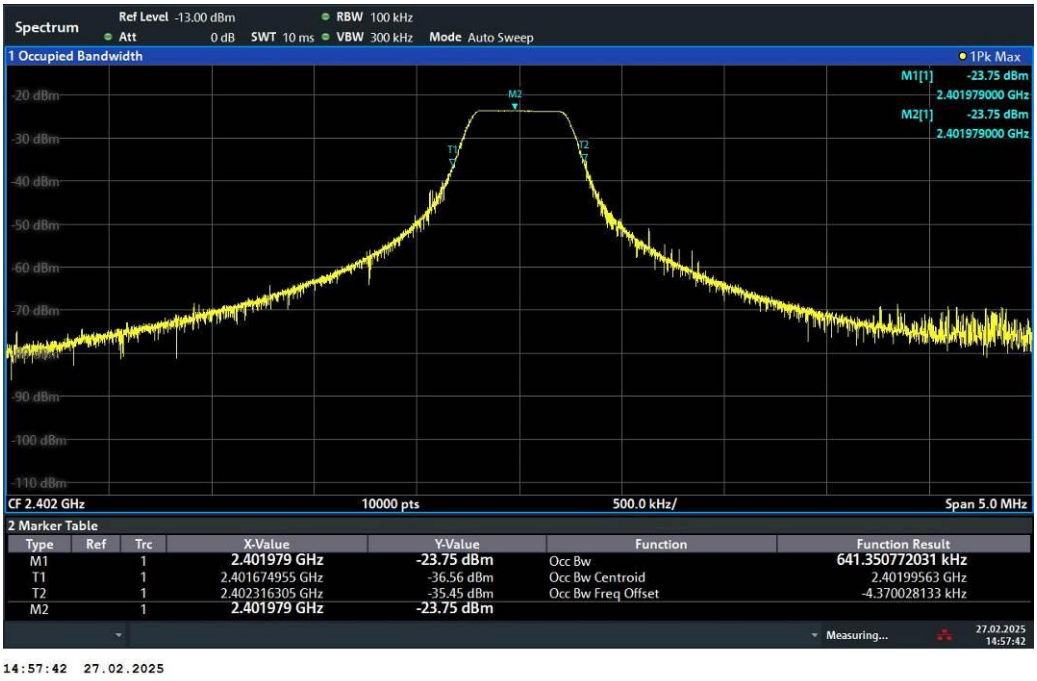
EUT modification(s): N/A

Frequencies	RBW	VBW	Detector
2480 MHz	100 kHz	300 kHz	Peak
Configuration:	N/A		
Comments:	The 20 dB bandwidth is 819.2 kHz		
EUT modification(s): N/A			

6dB BANDWIDTH , 20dB BANDWIDTH & 99% OCCUPIED BANDWITDH - GRAPH		
99% OBW / LOW CHANNEL		EMI4675
EUT mode:	TX mode	
Test Date:	27/02/2025	
Test Operator:	OAT & MMA	

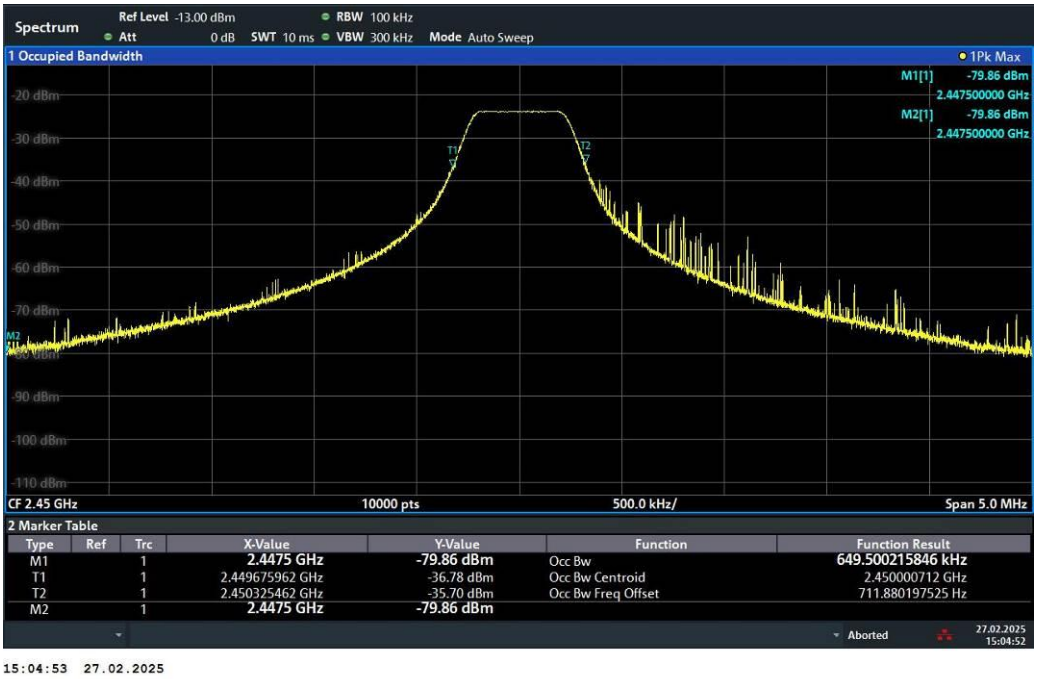


EUT modification(s): N/A

FREQUENCIES	RBW	VBW	DETECTOR
2402 MHz	100 kHz	300 kHz	RMS
Configuration:	N/A		
Comments:	The 99% occupied bandwidth is 641.351 kHz. The carrier modulation is contained within the operating band.		

EUT modification(s): N/A

6dB BANDWIDTH , 20dB BANDWIDTH & 99% OCCUPIED BANDWITDH - GRAPH		
99% OBW / MID CHANNEL		**EMI4673**
EUT mode:	TX mode	
Test Date:	27/02/2025	
Test Operator:	OAT & MMA	



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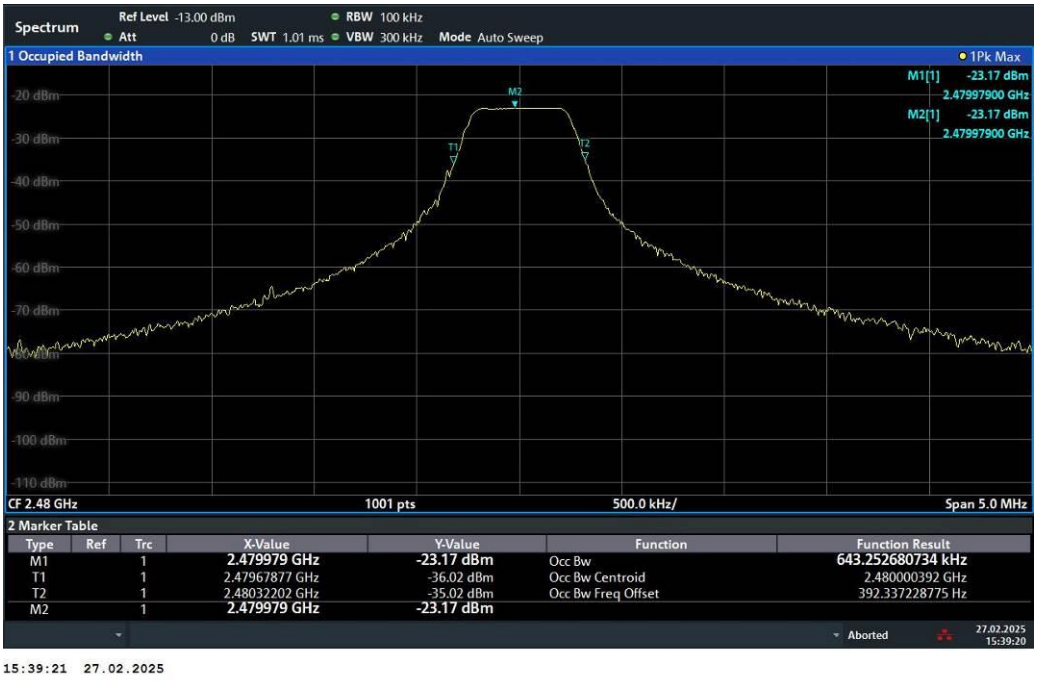
EUT modification(s): N/A

FREQUENCIES	RBW	VBW	DETECTOR
2450 MHz	100 kHz	300 kHz	RMS
Configuration:	N/A		
Comments:	The 99% occupied bandwidth is 649.500 kHz. The carrier modulation is contained within the operating band.		

EUT modification(s): N/A

6dB BANDWIDTH , 20dB BANDWIDTH & 99% OCCUPIED BANDWITDH - GRAPH		
99% OBW / HIGH CHANNEL		**EMI4679**
EUT mode:	TX mode	
Test Date:	27/02/2025	
Test Operator:	OAT & MMA	



15:39:21 27.02.2025

EUT modification(s): N/A

FREQUENCIES	RBW	VBW	DETECTOR
2480 MHz	100 kHz	300 kHz	RMS
Configuration:	N/A		
Comments:	The 99% occupied bandwidth is 643.252 kHz. The carrier modulation is contained within the operating band.		
EUT modification(s): N/A			

6.2. Radiated emission limits

Reference standard:	FCC 47 CFR PART 15.109 & 15.209: 2020
Test method:	ANSI C63.10: 2013

Test description: : For f <30MHz, EUT is set on an insulating support at 80cm above the ground reference plane.

Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3-meter in a semi-anechoic chamber. The EUT was rotated 360° in order to maximize radiated levels. Test antenna was oriented in 3 axes (0°, 45° and 90°).

Final measurements (quasi-peak) were then performed in a 10-meter Open Area Test Site that complies to CISPR 16 in the same measurement conditions.

For f > 30MHz, EUT is set on an insulating support at 80cm above the ground reference plane (150cm for f >1GHz).

Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3-meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities.

Final measurements (quasi-peak or average) were then performed in a semi-anechoic chamber or Open Area Test Site that complies to CISPR 16. The EUT was rotated 360° about its azimuth and adjusting the receive antenna height from 1 to 4 m.

All frequencies were investigated, where applicable.

For portable equipements a research of maximum level is done on the 3 axes. Only the highest levels are recorded.

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
Radiated measurement / 0° / All positions	9kHz-30MHz	15.209	EMI4884	**PASS**
Radiated measurement / 45° / All positions	9kHz-30MHz	15.209	EMI4886	**PASS**
Radiated measurement / 90° / All positions	9kHz-30MHz	15.209	EMI4887	**PASS**
Radiated measurement > 30MHz / Position 1	30MHz-1GHz	15.209	EMI4881	**PASS**
Radiated measurement > 30MHz / Position 2	30MHz-1GHz	15.209	EMI4882	**PASS**
Radiated measurement > 30MHz / Position 3	30MHz-1GHz	15.209	EMI4854	**PASS**
Tx mode / 1GHz to 18GHz / Position 1 / Low channel (Carrier Wave at 4dBm)	1GHz-18GHz	15.209	EMI4855	**PASS**
Tx mode / 1GHz to 18GHz / Position 1 / Mid channel	1GHz-18GHz	15.209	EMI4856	**PASS**
Tx mode / 1GHz to 18GHz / Position 1 / High channel	1GHz-18GHz	15.209	EMI4857	**PASS**
Tx mode / 1GHz to 18GHz / Position 2 / Low channel	1GHz-18GHz	15.209	EMI4858	**PASS**
Tx mode / 1GHz to 18GHz / Position 2 / Mid channel	1GHz-18GHz	15.209	EMI4859	**PASS**
Tx mode / 1GHz to 18GHz / Position 2 / High channel	1GHz-18GHz	15.209	EMI4860	**PASS**
Tx mode / 1GHz to 18GHz / Position 3 / Low channel	1GHz-18GHz	15.209	EMI4861	**PASS**
Tx mode / 1GHz to 18GHz / Position 3 / Mid channel	1GHz-18GHz	15.209	EMI4862	**PASS**
Tx mode / 1GHz to 18GHz / Position 3 / High channel	1GHz-18GHz	15.209	EMI4863	**PASS**
Tx mode / 18GHz to 26.5GHz / All positions / Low channel	18GHz-26.5GHz	15.209	EMI4873	**PASS**
Tx mode / 18GHz to 26.5GHz / All positions / Mid channel	18GHz-26.5GHz	15.209	EMI4874	**PASS**

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
Tx mode / 18GHz to 26.5GHz / All positions / High channel	18GHz-26.5GHz	15.209	EMI4876	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	*See Graph(s)*
Relative Humidity	20 to 75 %	*See Graph(s)*
Atmospheric pressure	N/A	*See Graph(s)*
Test method deviation: N/A		
Supplementary information: N/A		

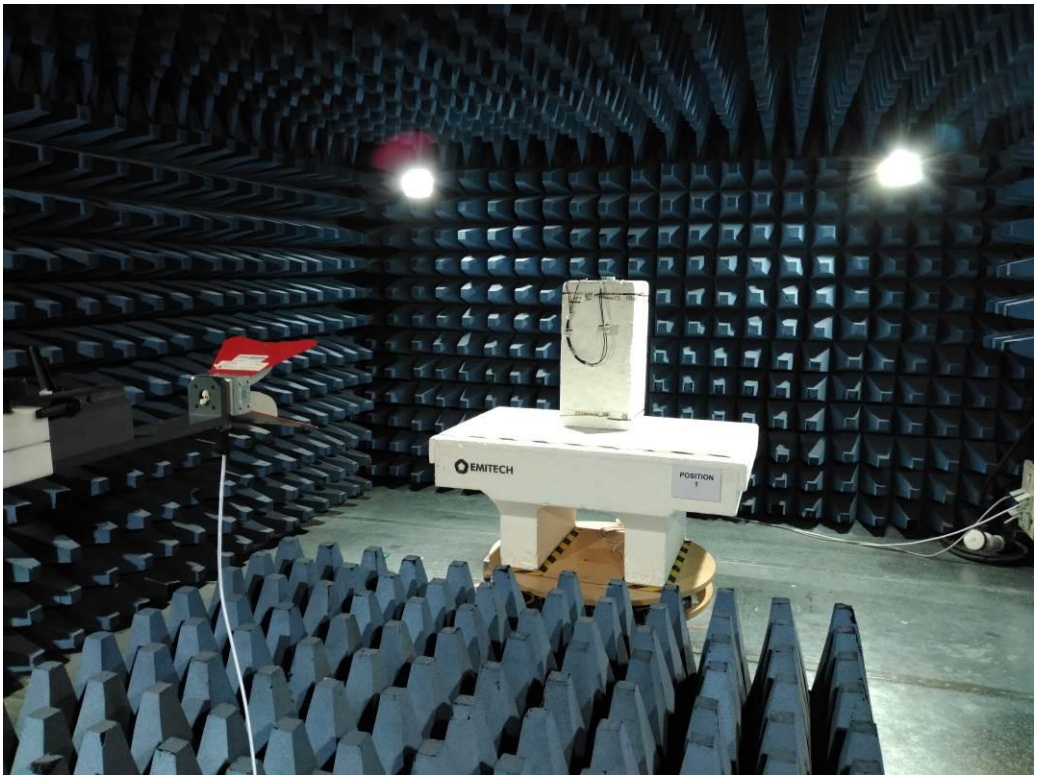
TEST EQUIPMENT USED – 9KHZ-26.5GHZ					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	09/09/2022	09/11/2025
Antenna	ETS lindgren	3142E	14523	27/01/2022	27/03/2025
Antenna	ETS lindgren	3160-09	14690	17/01/2024	17/03/2027
Antenna	Rohde & Schwarz	HFH2-Z2	5825	17/08/2022	17/05/2025
Cable	Huber + Suhner	K-1m	14522	29/01/2024	29/03/2026
Cable	JYE BAO	K30K30-5003-40G1	14887	29/01/2024	29/03/2026
Cable	cables and connectors	N-1.5m	4203	03/03/2023	03/05/2025
Cable	/	N-1m	3627	03/03/2023	03/05/2025
Cable	SUCOFLEX	N-3m	14378	17/08/2023	17/10/2025
Cable	SUCOFLEX	N-3m	14379	17/08/2023	17/10/2025
Cable	SUCOFLEX	N-6,5m	14380	17/08/2023	17/10/2025
Cable	Techniwave	N-8m	18349	17/08/2023	17/10/2025
Filter	Micro-Tronics	HPM 11630	4392	20/10/2023	20/12/2026
Filter	Micro-Tronics	HPM15162	19385	25/03/2024	25/05/2026
Filter	Wainwright Instruments	WRCGV 2402/2480-2380/2500-40/10EE-200W	9771	28/09/2023	28/11/2026
Preamplifier	Techniwave	APS16-0087	14040	15/07/2024	15/09/2025
Preamplifier	Wright Technologie	ASL40-B3015	14851	29/01/2024	29/03/2025
Receiver	Rohde & Schwarz	ESW8	19536	02/05/2024	02/07/2025
Receiver	Rohde & Schwarz	FSW43	14830(1)	31/08/2022	28/04/2025
Shielded enclosure	RAY PROOF	C.V2	1423	10/08/2023	10/10/2026
Shielded enclosure	COMTEST	SAC 3m	14494	08/08/2023	08/10/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H1	7562	28/09/2023	28/11/2025
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025

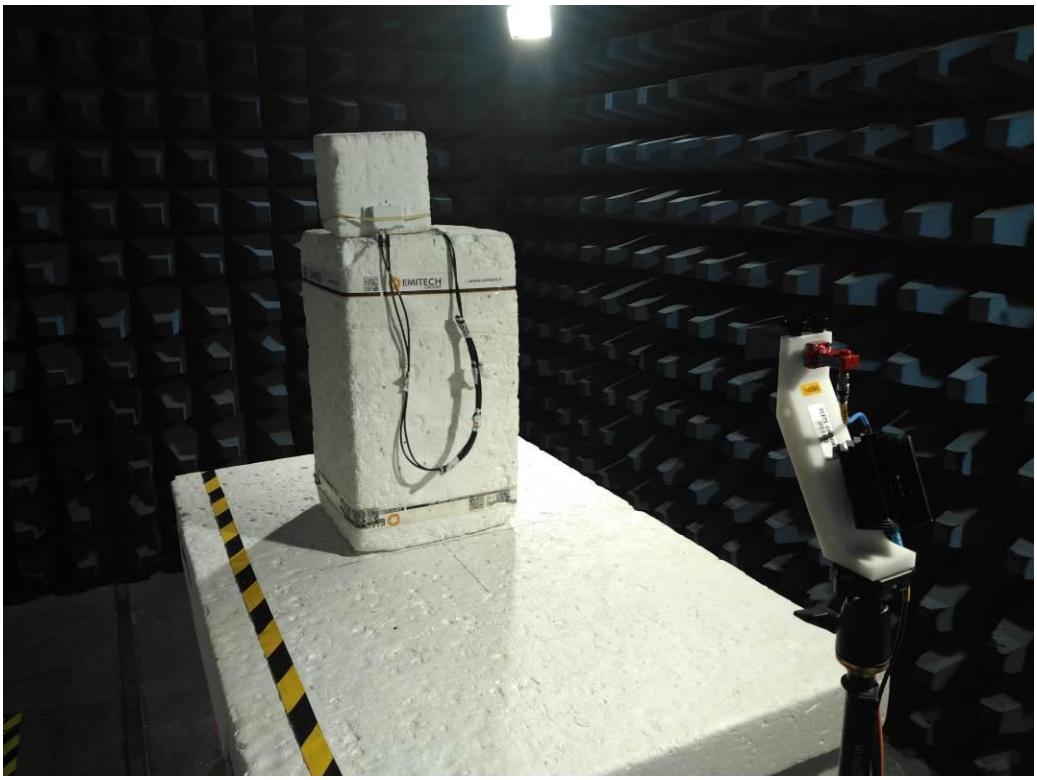
BAT-EMC software version: V3.18.0.26 Blank cells = Permanent validity

(1) Under derogation EQSDER000S4100139

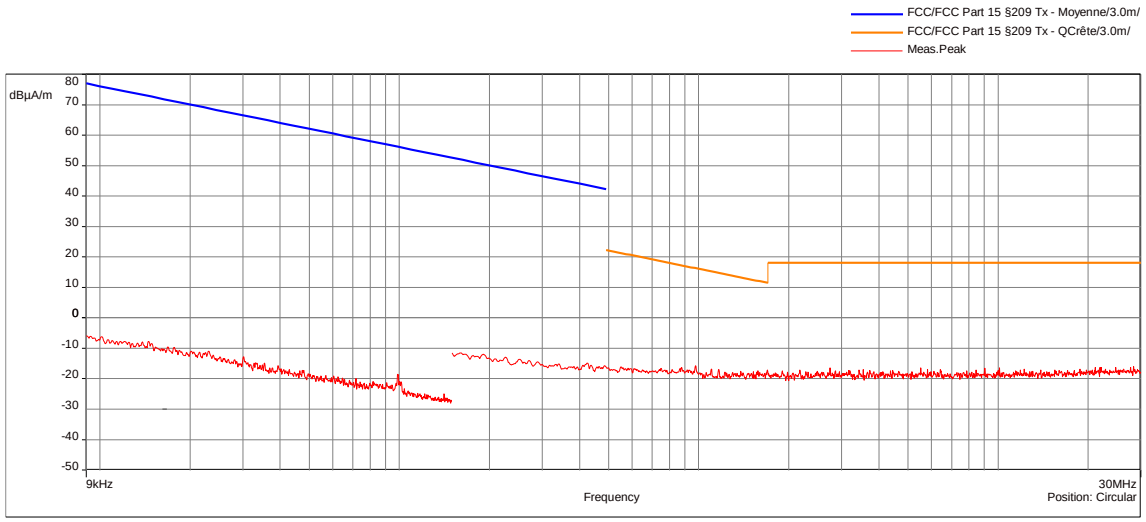
TEST SETUP PHOTO(S) - 9 KHZ TO 30 MHZ


TEST SETUP PHOTO(S) – 30MHZ – 1GHZ


TEST SETUP PHOTO(S) – 1GHZ – 18GHZ


TEST SETUP PHOTO(S) – 18GHZ – 26.5GHZ


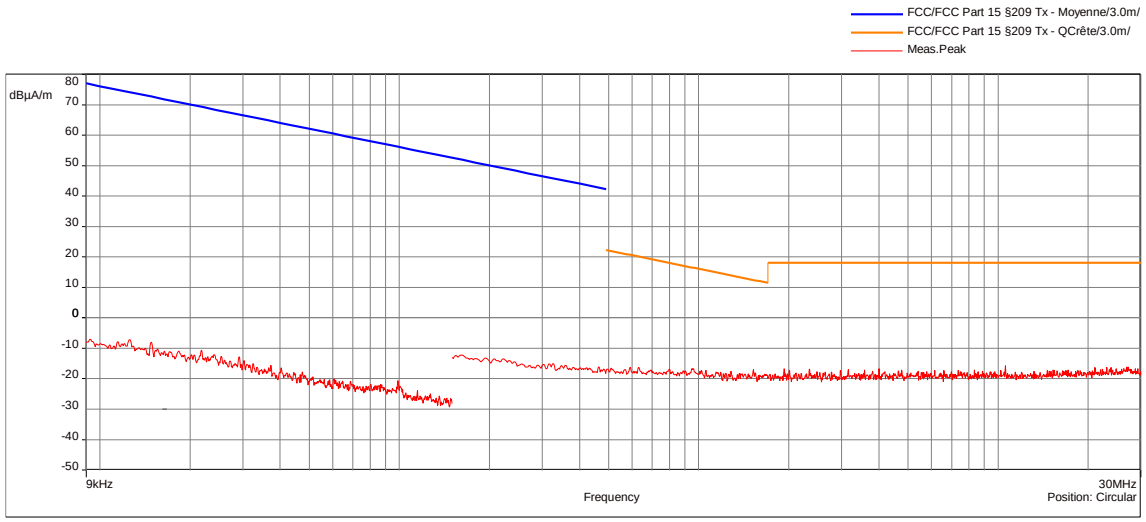
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / 0° / ALL POSITIONS		EMI4884	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	24/02/2025	**H (%):**	41.8
Test Operator:	OAT & MMA	**P (hPa):**	1002



POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Circular	9kHz-150kHz	300Hz	1kHz	Peak
Circular	150kHz-1MHz	10kHz	30kHz	Peak
Circular	1MHz-30MHz	10kHz	30kHz	Peak
Configuration:	N/A			
Comments:	Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor. No spurious emissions were detected.			
EUT modification(s): N/A				

RADIATED EMISSION LIMITS – TABULATED RESULTS							
RADIATED MEASUREMENT / 0° / ALL POSITIONS						EMI4884	
FREQUENCY (MHZ)	**PEAK LEVEL (DBµV/M)**	**QPEAK LEVEL (DBµV/M)**	**QPEAK LIMIT (DBµV/M)**	**QPEAK MARGIN (DB)**	**AVERAGE LEVEL (DBµV/M)**	**AVERAGE LIMIT (DBµV/M)**	**AVERAGE MARGIN (DB)**
0.424	-14.84	N/A	N/A	N/A	N/P	43.55	-58.39
0.465	-16.03	N/A	N/A	N/A	N/P	42.76	-58.79
0.485	-15.79	N/A	N/A	N/A	N/P	42.38	-58.17
0.877	-16.34	N/P	17.25	-33.59	N/A	N/A	N/A
0.977	-15.75	N/P	16.31	-32.06	N/A	N/A	N/A
1.696	-17.14	N/P	11.52	-28.66	N/A	N/A	N/A
Comments:	No more spurious emissions detected.						

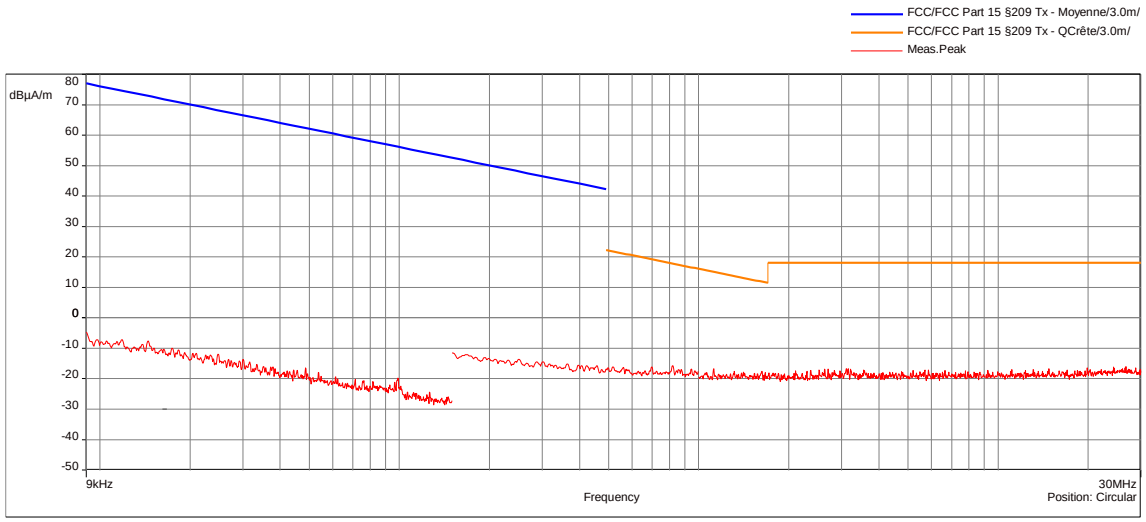
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / 45° / ALL POSITIONS		EMI4886	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	24/02/2025	**H (%):**	41.8
Test Operator:	OAT & MMA	**P (hPa):**	1002



POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Circular	9kHz-150kHz	300Hz	1kHz	Peak
Circular	150kHz-1MHz	10kHz	30kHz	Peak
Circular	1MHz-30MHz	10kHz	30kHz	Peak
Configuration:	N/A			
Comments:	Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor. No spurious emissions were detected.			
EUT modification(s): N/A				

RADIATED EMISSION LIMITS – TABULATED RESULTS							
RADIATED MEASUREMENT / 45° / ALL POSITIONS						EMI4886	
FREQUENCY (MHZ)	**PEAK LEVEL (DBµV/M)**	**QPEAK LEVEL (DBµV/M)**	**QPEAK LIMIT (DBµV/M)**	**QPEAK MARGIN (DB)**	**AVERAGE LEVEL (DBµV/M)**	**AVERAGE LIMIT (DBµV/M)**	**AVERAGE MARGIN (DB)**
0.464	-16.17	N/A	N/A	N/A	N/P	42.77	-58.94
0.472	-17.17	N/A	N/A	N/A	N/P	42.62	-59.78
0.482	-16.87	N/A	N/A	N/A	N/P	42.44	-59.31
0.950	-16.67	N/P	16.55	-33.22	N/A	N/A	N/A
0.960	-16.70	N/P	16.46	-33.16	N/A	N/A	N/A
1.525	-16.96	N/P	12.44	-29.40	N/A	N/A	N/A
Comments:	No more spurious emissions detected.						

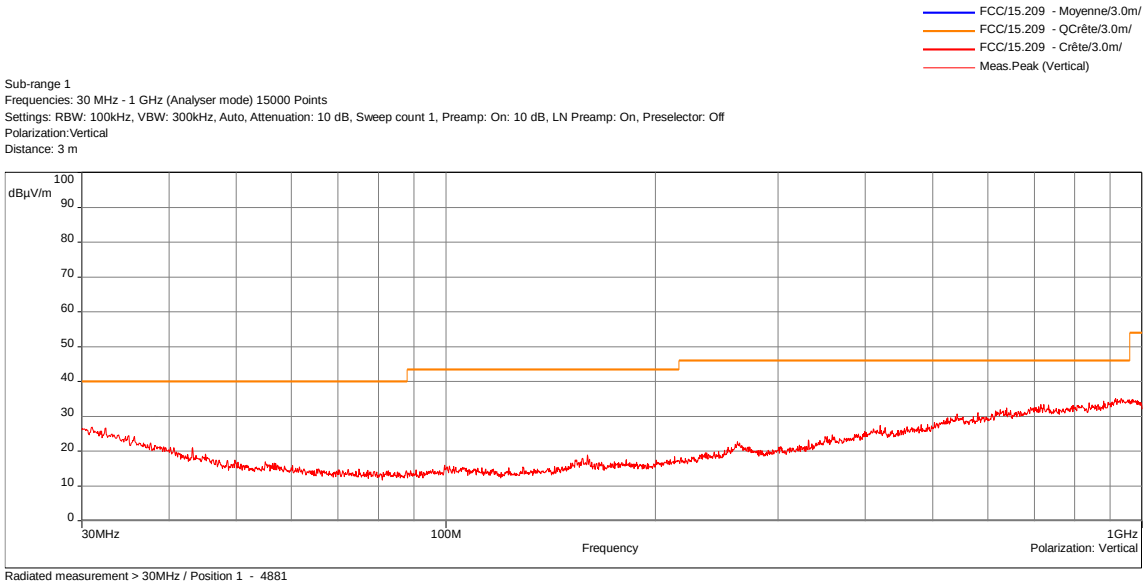
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / 90° / ALL POSITIONS		EMI4887	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	24/02/2025	**H (%):**	41.8
Test Operator:	OAT & MMA	**P (hPa):**	1002



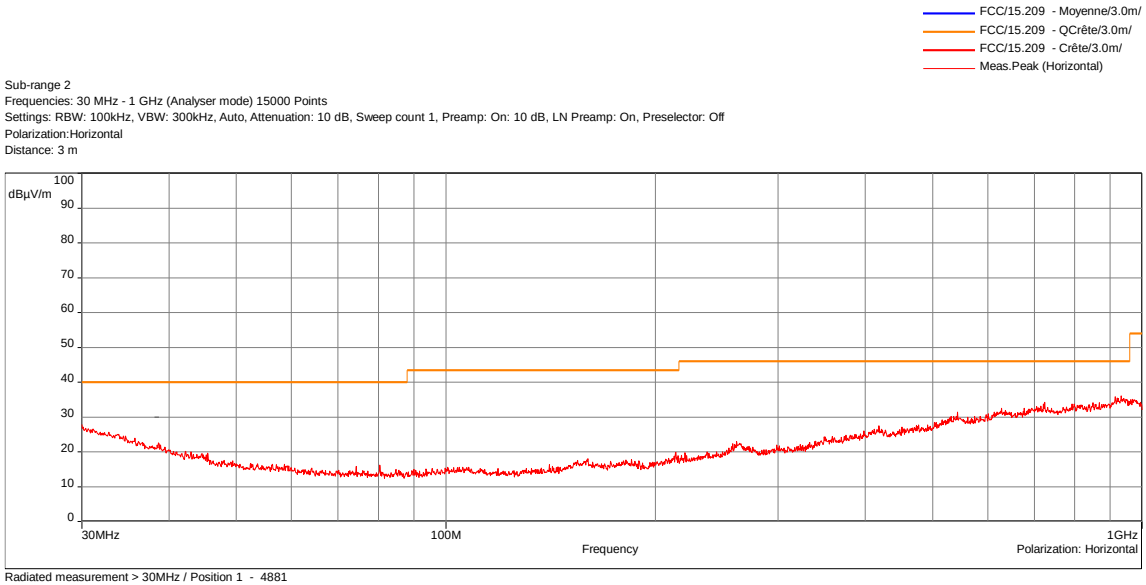
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Circular	9kHz-150kHz	300Hz	1kHz	Peak
Circular	150kHz-1MHz	10kHz	30kHz	Peak
Circular	1MHz-30MHz	10kHz	30kHz	Peak
Configuration:	N/A			
Comments:	Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor. No spurious emissions were detected.			
EUT modification(s): N/A				

RADIATED EMISSION LIMITS – TABULATED RESULTS							
RADIATED MEASUREMENT / 90° / ALL POSITIONS						EMI4887	
FREQUENCY (MHZ)	**PEAK LEVEL (DBµV/M)**	**QPEAK LEVEL (DBµV/M)**	**QPEAK LIMIT (DBµV/M)**	**QPEAK MARGIN (DB)**	**AVERAGE LEVEL (DBµV/M)**	**AVERAGE LIMIT (DBµV/M)**	**AVERAGE MARGIN (DB)**
0.423	-15.73	N/A	N/A	N/A	N/P	43.58	-59.31
0.452	-16.35	N/A	N/A	N/A	N/P	43.01	-59.36
0.457	-15.76	N/A	N/A	N/A	N/P	42.91	-58.67
0.819	-15.70	N/P	17.84	-33.54	N/A	N/A	N/A
0.945	-16.83	N/P	16.59	-33.43	N/A	N/A	N/A
0.971	-17.40	N/P	16.36	-33.75	N/A	N/A	N/A
Comments:	No more spurious emissions detected.						

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT > 30MHZ / POSITION 1		EMI4881	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	24/02/2025	**H (%):**	41.8
Test Operator:	OAT & MMA	**P (hPa):**	1002



Radiated measurement > 30MHz / Position 1 - 4881



Radiated measurement > 30MHz / Position 1 - 4881

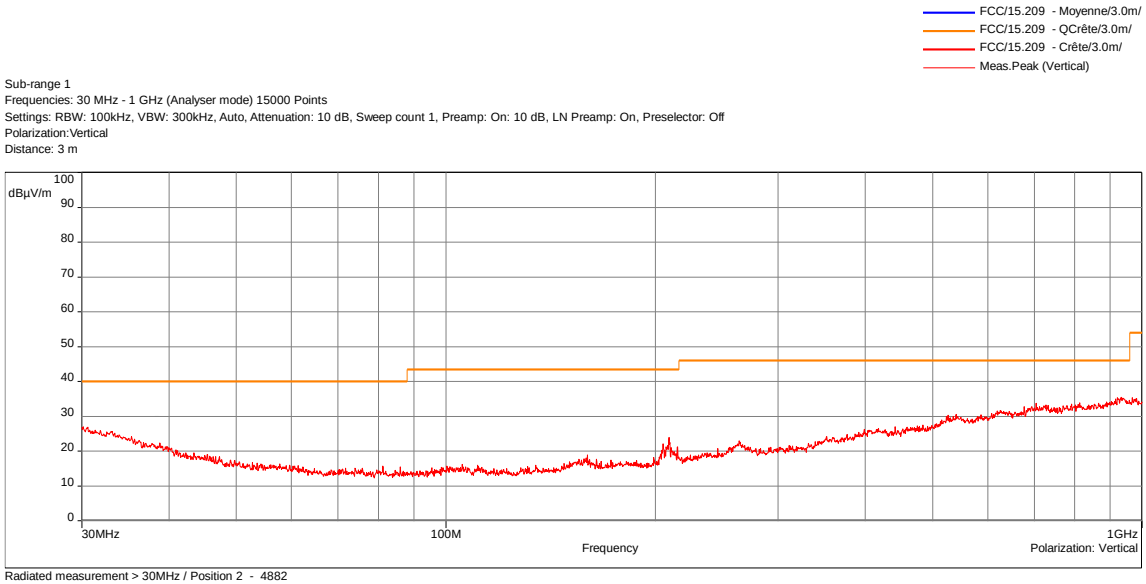
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-1GHz	100kHz	300kHz	Peak
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak

Configuration:	N/A
Comments:	No spurious emissions were detected.

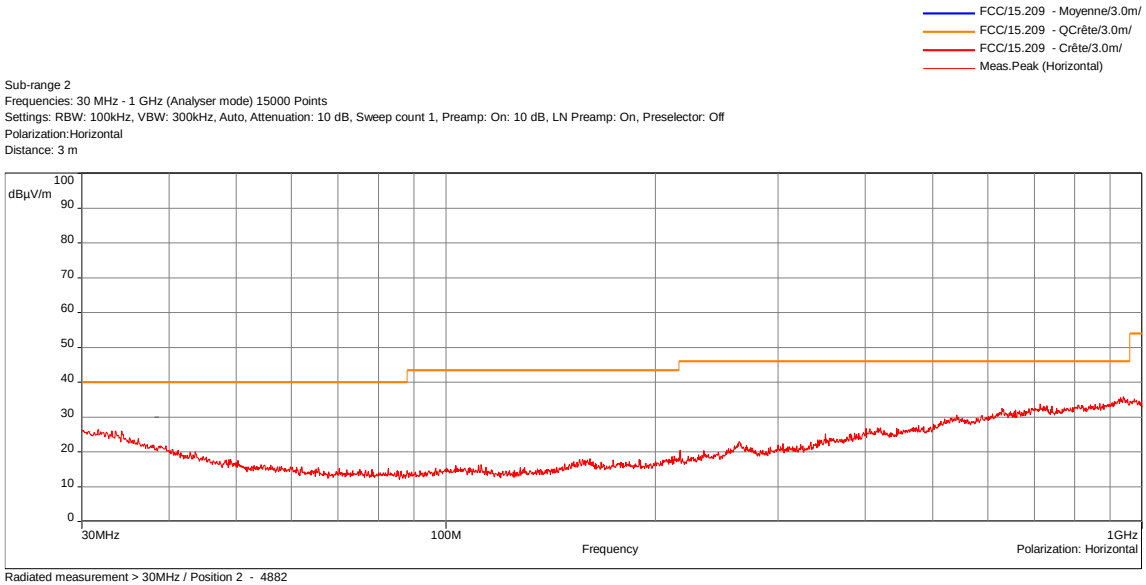
EUT modification(s): N/A

RADIATED EMISSION LIMITS – TABULATED RESULTS					
RADIATED MEASUREMENT > 30MHZ / POSITION 1					EMI4881
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµV/m)	QPEAK LEVEL (dBµV/m)	QPEAK LIMIT (dBµV/m)	QPEAK MARGIN (dB)
915.992	Vertical	35.04	N/P	46.00	-10.96
921.683	Vertical	34.84	N/P	46.00	-11.16
932.742	Vertical	34.84	N/P	46.00	-11.16
932.872	Vertical	35.05	N/P	46.00	-10.95
933.454	Vertical	35.05	N/P	46.00	-10.95
958.869	Vertical	34.77	N/P	46.00	-11.23
915.281	Horizontal	35.81	N/P	46.00	-10.19
916.639	Horizontal	35.52	N/P	46.00	-10.48
921.425	Horizontal	35.43	N/P	46.00	-10.57
924.529	Horizontal	35.40	N/P	46.00	-10.60
933.389	Horizontal	36.10	N/P	46.00	-9.90
941.214	Horizontal	35.32	N/P	46.00	-10.68
COMMENT:	When margin between peak measurements and QPeak limit is greater than 6dB, no QPeak measurements were performed.				

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT > 30MHZ / POSITION 2		EMI4882	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	24/02/2025	**H (%):**	41.8
Test Operator:	OAT & MMA	**P (hPa):**	1002



Radiated measurement > 30MHz / Position 2 - 4882



Radiated measurement > 30MHz / Position 2 - 4882

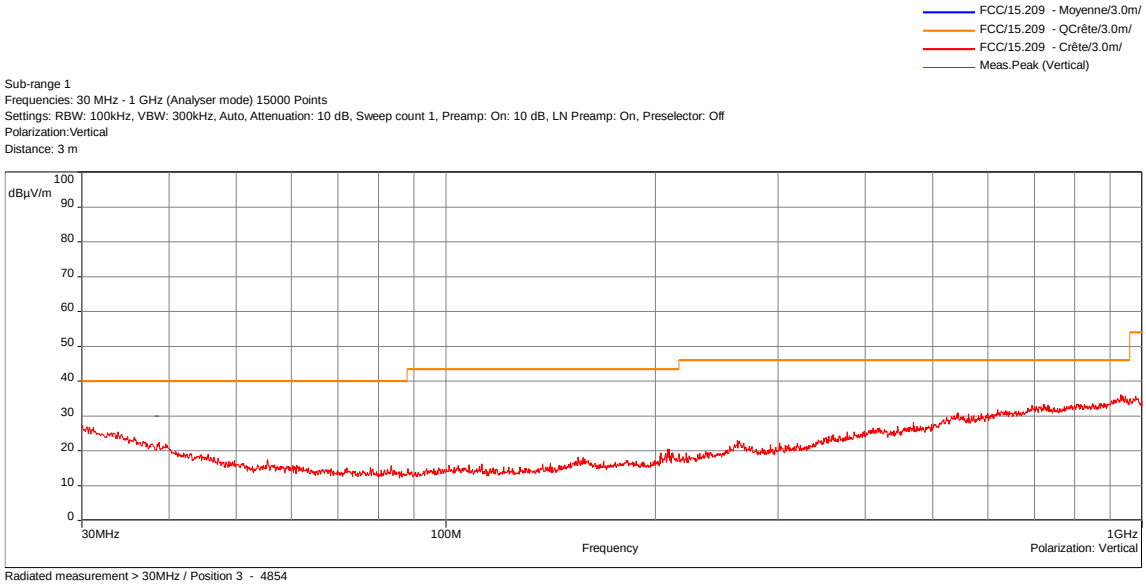
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-1GHz	100kHz	300kHz	Peak
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak

Configuration:	N/A
Comments:	No spurious emissions were detected.

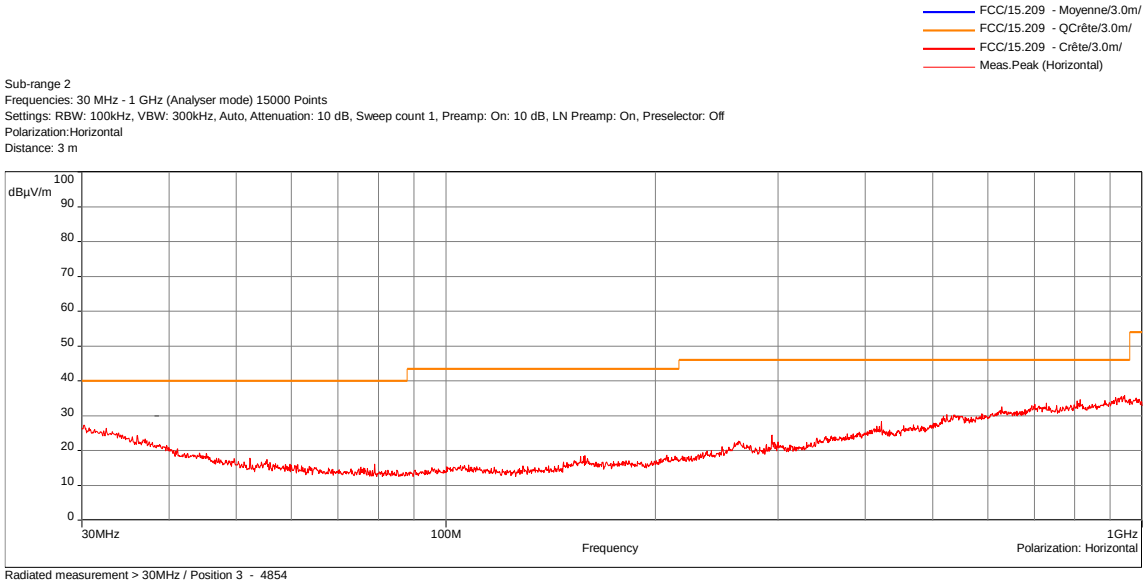
EUT modification(s): N/A

RADIATED EMISSION LIMITS – TABULATED RESULTS					
RADIATED MEASUREMENT > 30MHZ / POSITION 2					EMI4882
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµV/m)	QPEAK LEVEL (dBµV/m)	QPEAK LIMIT (dBµV/m)	QPEAK MARGIN (dB)
921.425	Vertical	35.36	N/P	46.00	-10.64
930.996	Vertical	35.12	N/P	46.00	-10.88
931.125	Vertical	35.12	N/P	46.00	-10.88
932.483	Vertical	35.45	N/P	46.00	-10.55
938.692	Vertical	35.18	N/P	46.00	-10.82
940.955	Vertical	35.15	N/P	46.00	-10.85
930.155	Horizontal	35.41	N/P	46.00	-10.59
931.255	Horizontal	35.57	N/P	46.00	-10.43
940.179	Horizontal	35.79	N/P	46.00	-10.21
941.020	Horizontal	35.65	N/P	46.00	-10.35
943.801	Horizontal	35.28	N/P	46.00	-10.72
953.243	Horizontal	35.12	N/P	46.00	-10.88
COMMENT:	When margin between peak measurements and QPeak limit is greater than 6dB, no QPeak measurements were performed.				

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT > 30MHZ / POSITION 3		EMI4854	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	24/02/2025	**H (%):**	41.8
Test Operator:	OAT & MMA	**P (hPa):**	1002



Radiated measurement > 30MHz / Position 3 - 4854

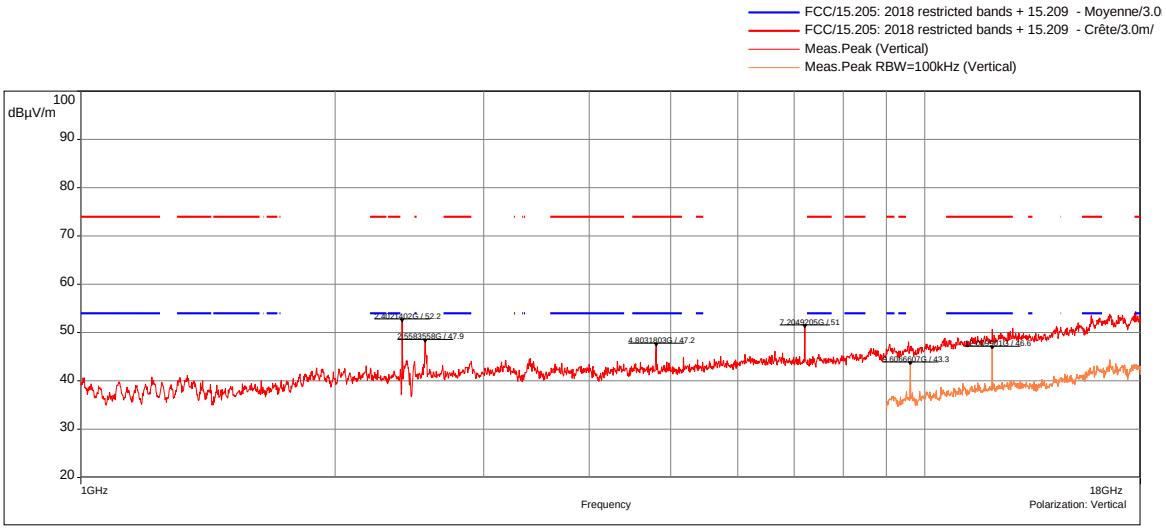


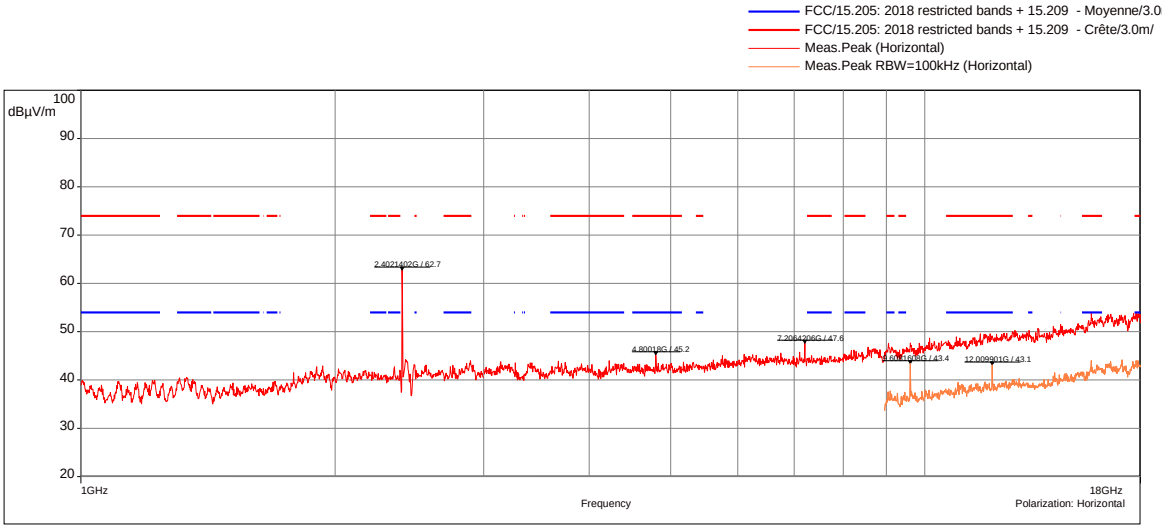
Radiated measurement > 30MHz / Position 3 - 4854

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-1GHz	100kHz	300kHz	Peak
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak
Configuration:	N/A			
Comments:	No spurious emissions were detected.			
EUT modification(s): N/A				

RADIATED EMISSION LIMITS – TABULATED RESULTS					
RADIATED MEASUREMENT > 30MHZ / POSITION 3					EMI4854
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµV/m)	QPEAK LEVEL (dBµV/m)	QPEAK LIMIT (dBµV/m)	QPEAK MARGIN (dB)
922.783	Vertical	34.98	N/P	46.00	-11.02
931.966	Vertical	36.14	N/P	46.00	-9.86
932.678	Vertical	35.31	N/P	46.00	-10.69
935.652	Vertical	35.84	N/P	46.00	-10.16
939.339	Vertical	35.46	N/P	46.00	-10.54
946.064	Vertical	35.69	N/P	46.00	-10.31
916.639	Horizontal	35.17	N/P	46.00	-10.83
933.324	Horizontal	35.17	N/P	46.00	-10.83
933.712	Horizontal	35.43	N/P	46.00	-10.57
934.553	Horizontal	35.43	N/P	46.00	-10.57
939.856	Horizontal	35.43	N/P	46.00	-10.57
944.124	Horizontal	35.78	N/P	46.00	-10.22
COMMENT:	When margin between peak measurements and QPeak limit is greater than 6dB, no QPeak measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 1 / LOW CHANNEL		EMI4855	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002

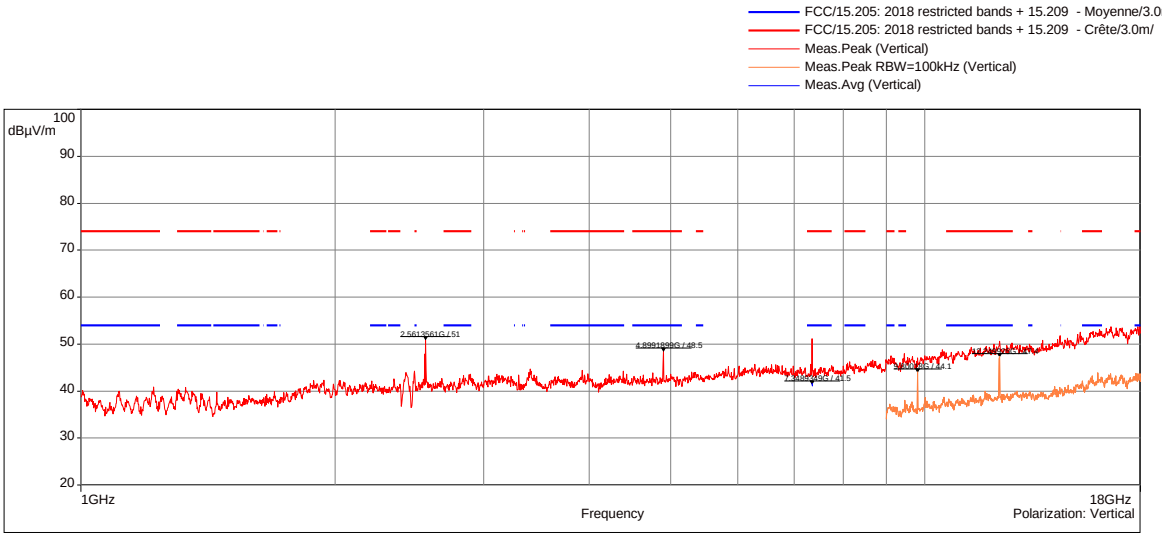


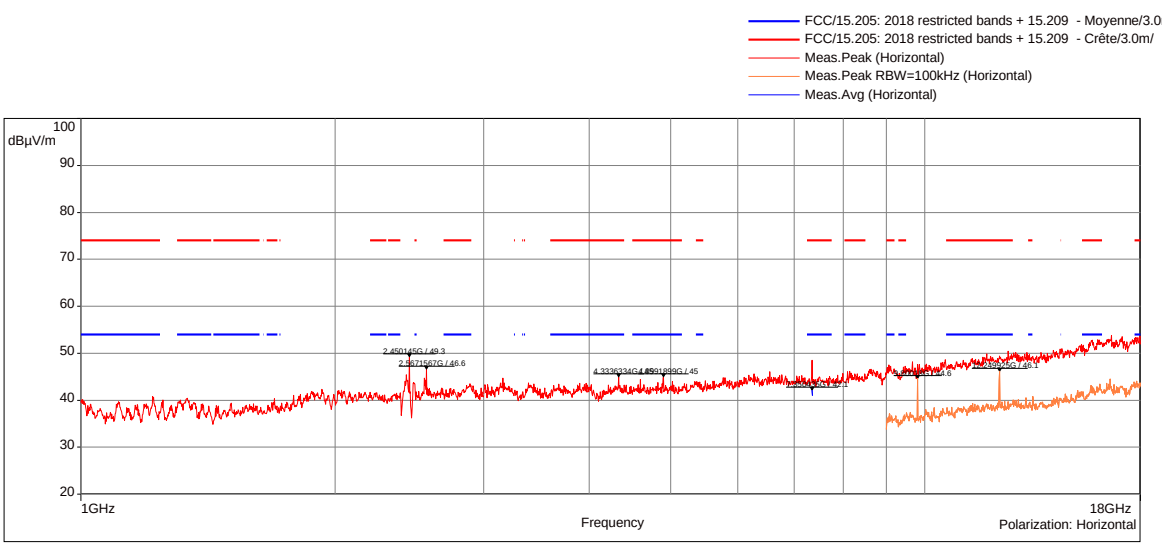


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	2.402GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.			
EUT modification(s): N/A				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 1 / LOW CHANNEL				EMI4855	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1213.62	Vertical	40.76	54	N/P	N/P
1337.23	Vertical	41.16	54	N/P	N/P
2176.92	Vertical	43.11	83.35	N/P	N/P
2555.16	Vertical	46.43	54	N/P	N/P
2558.36	Vertical	47.93	83.35	N/P	N/P
1003.00	Horizontal	39.94	54	N/P	N/P
1334.43	Horizontal	40.51	54	N/P	N/P
1932.69	Horizontal	42.9	81.44	N/P	N/P
2423.74	Horizontal	44.3	81.44	N/P	N/P
2891.99	Horizontal	44	54	N/P	N/P
4803.18	Vertical	47.22	54	N/P	N/P
7204.92	Vertical	51.02	83.35	N/P	N/P
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 1 / MID CHANNEL		EMI4856	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002

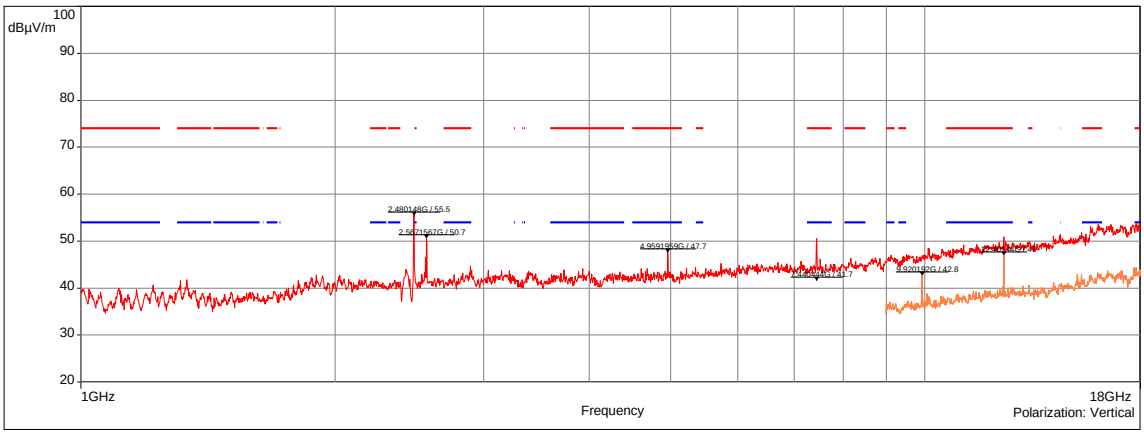


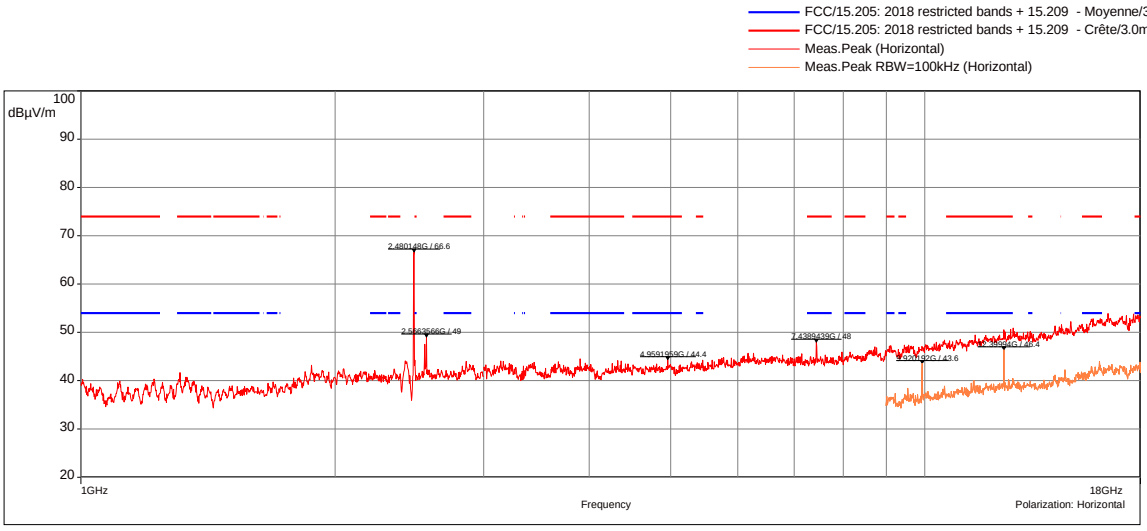


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	2.450GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.			
EUT modification(s): N/A				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 1 / MID CHANNEL				EMI4856	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1219.42	Vertical	40.88	54	N/P	N/P
2349.53	Vertical	42.60	54	N/P	N/P
2427.94	Vertical	43.96	83.46	N/P	N/P
2483.55	Vertical	44.28	54	N/P	N/P
2554.96	Vertical	47.86	83.46	N/P	N/P
2561.36	Vertical	50.99	83.46	N/P	N/P
1216.62	Horizontal	40.82	54	N/P	N/P
1336.03	Horizontal	40.38	54	N/P	N/P
1929.89	Horizontal	42.31	54	N/P	N/P
2430.74	Horizontal	45.43	83.58	N/P	N/P
2567.16	Horizontal	46.63	83.58	N/P	N/P
4899.19	Vertical	48.54	54	45.00	-9.00
7350.44	Vertical	51.20	54	41.73	-12.27
7350.44	Horizontal	48.60	54	42.14	-11.86
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 1 / HIGH CHANNEL		EMI4857	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002

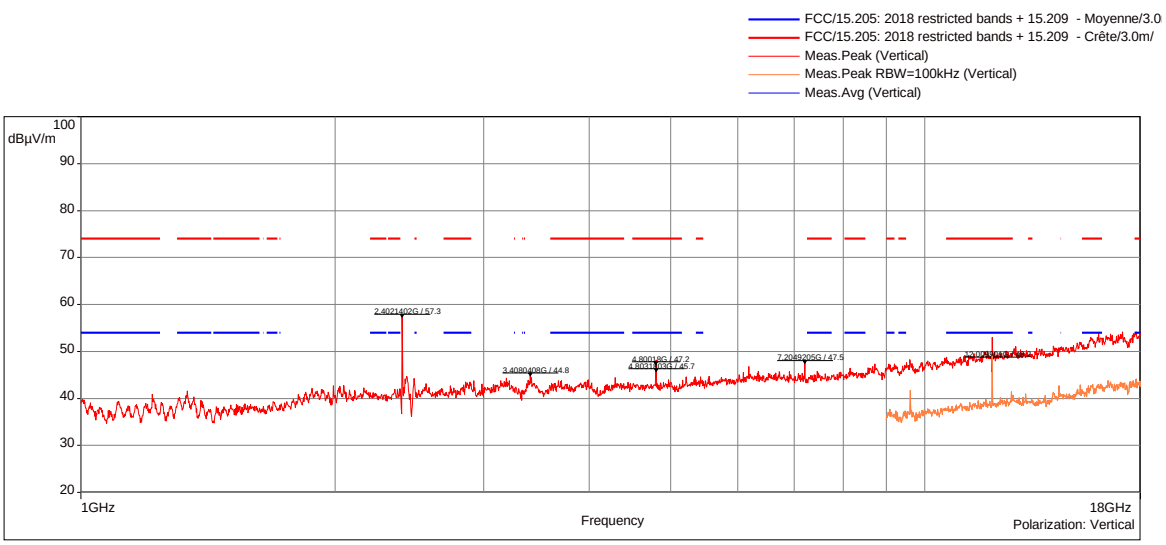


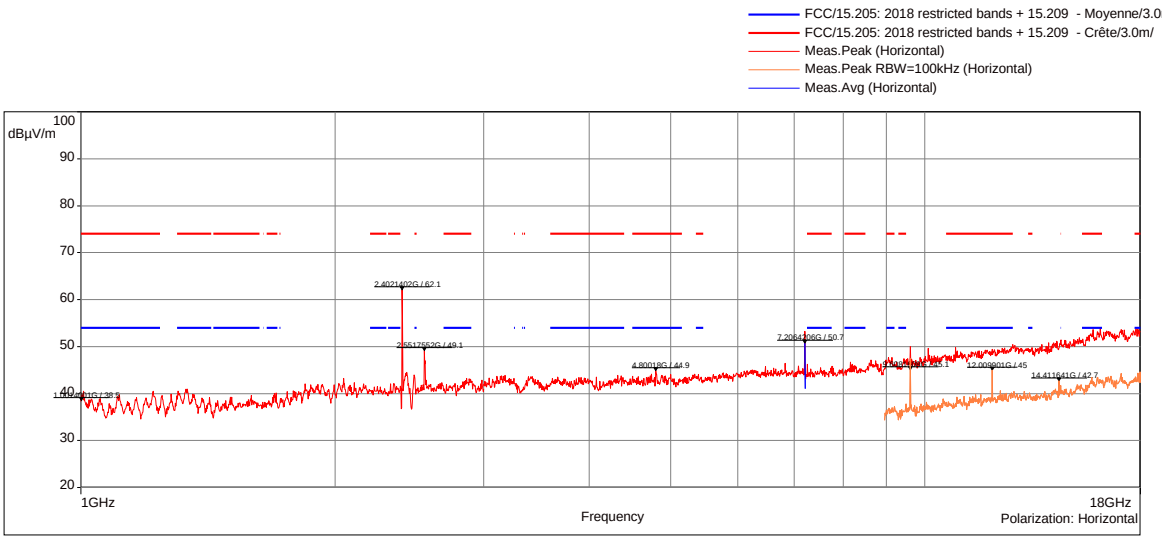


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak & Average
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak & Average
Configuration:	N/A			
Comments:	2.480GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.			
EUT modification(s): N/A				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 1 / HIGH CHANNEL				EMI4857	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1899.29	Vertical	42.81	83.86	N/P	N/P
2428.14	Vertical	43.99	83.86	N/P	N/P
2561.76	Vertical	46.48	83.86	N/P	N/P
2567.16	Vertical	50.74	83.86	N/P	N/P
2892.19	Vertical	44.71	54	N/P	N/P
1310.03	Horizontal	41.65	54	N/P	N/P
1877.09	Horizontal	43.15	54	N/P	N/P
2422.94	Horizontal	44.07	54	N/P	N/P
2555.56	Horizontal	47.56	83.58	N/P	N/P
2566.36	Horizontal	49.03	83.58	N/P	N/P
4959.20	Vertical	47.73	54	N/P	N/P
7440.44	Vertical	50.52	54	41.70	-12.30
7438.94	Horizontal	47.99	54	N/P	N/P
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 2 / LOW CHANNEL		EMI4858	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002

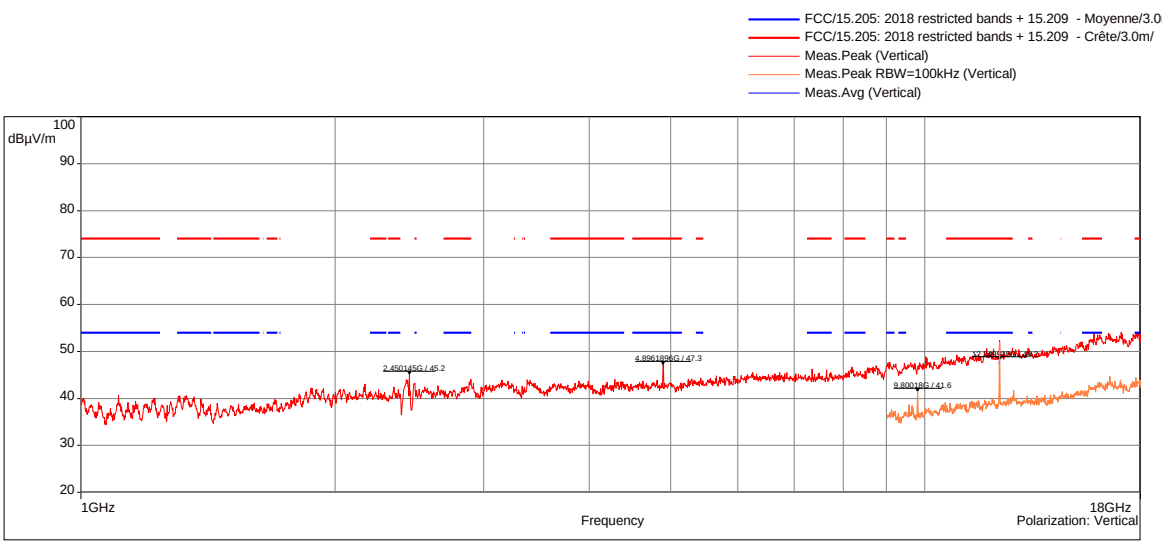


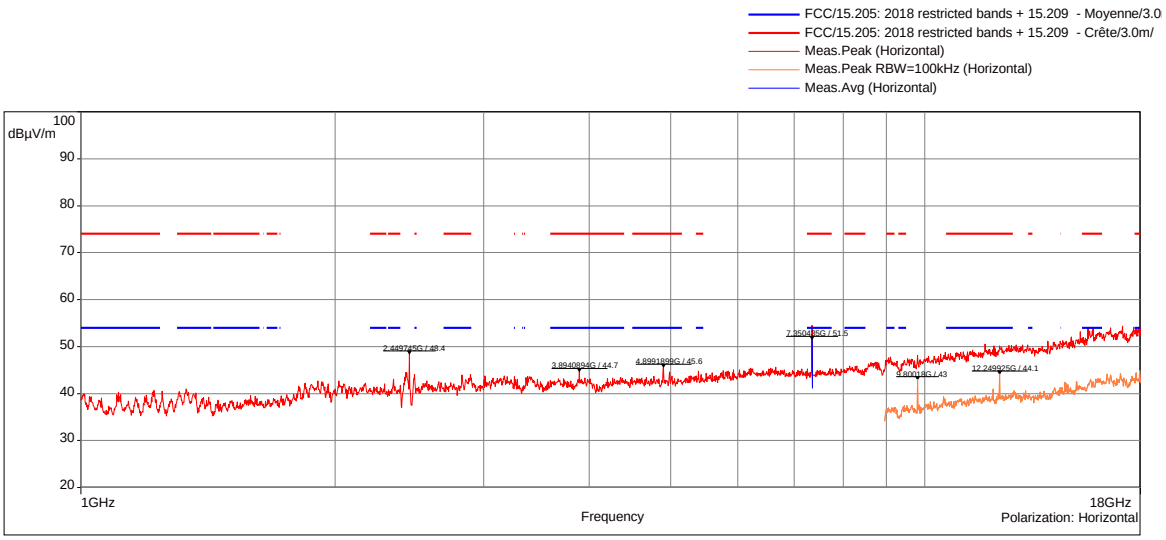


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak & Average
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak & Average
Configuration:	N/A			
Comments:	2.402GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.			
EUT modification(s): N/A				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 2 / LOW CHANNEL				EMI4858	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1215.22	Vertical	40.89	54	N/P	N/P
1336.83	Vertical	41.60	54	N/P	N/P
2046.10	Vertical	42.82	83.35	N/P	N/P
2431.14	Vertical	44.66	83.35	N/P	N/P
2480.15	Vertical	44.23	83.35	N/P	N/P
1331.23	Horizontal	40.99	54	N/P	N/P
2047.30	Horizontal	43.20	81.44	N/P	N/P
2432.94	Horizontal	44.51	81.44	N/P	N/P
2551.76	Horizontal	49.14	81.44	N/P	N/P
2557.96	Horizontal	47.01	81.44	N/P	N/P
4803.18	Vertical	48.15	54	N/P	N/P
12009.90	Vertical	52.98	54	48.16	-5.84
7206.42	Horizontal	53.24	81.44	N/P	N/P
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 2 / MID CHANNEL		EMI4859	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002





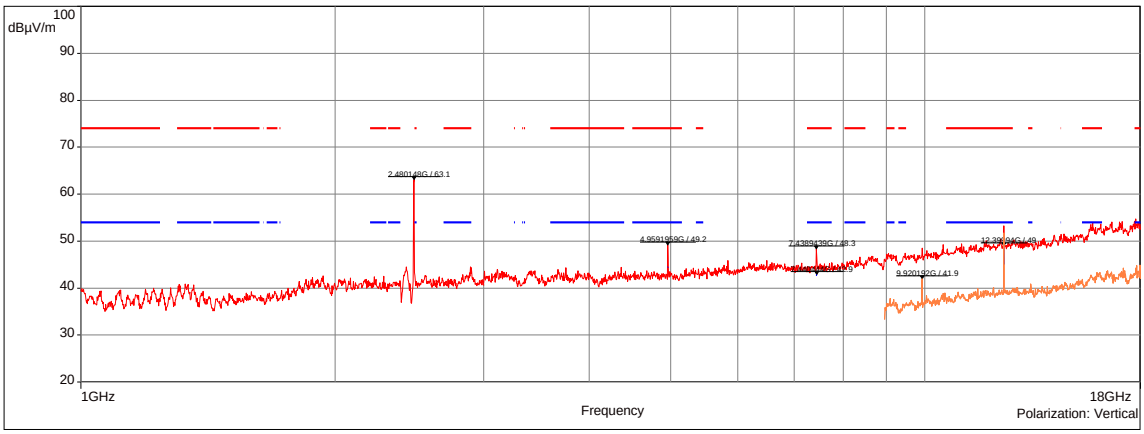
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak & Average
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak & Average

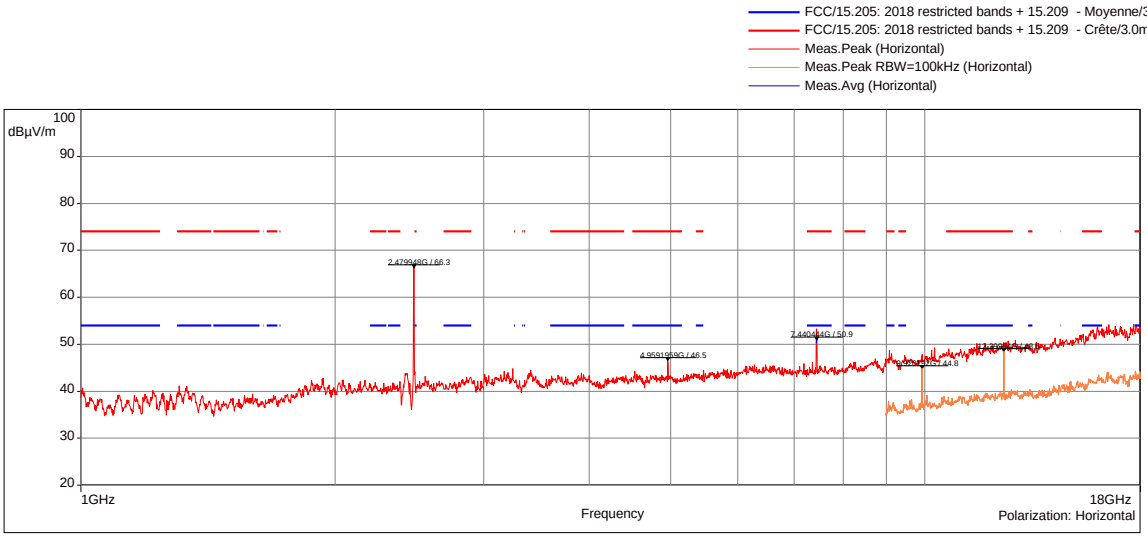
Configuration:	N/A
Comments:	2.450GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.

EUT modification(s): N/A

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 2 / MID CHANNEL				EMI4859	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1007.00	Vertical	40.07	54.00	N/P	N/P
1107.81	Vertical	40.69	54.00	N/P	N/P
1309.03	Vertical	40.64	54.00	N/P	N/P
2170.12	Vertical	43.02	83.46	N/P	N/P
2895.59	Vertical	44.10	54.00	N/P	N/P
1332.63	Horizontal	40.96	54.00	N/P	N/P
1909.09	Horizontal	42.69	54.00	N/P	N/P
2345.53	Horizontal	43.07	54.00	N/P	N/P
2427.54	Horizontal	44.50	54.00	N/P	N/P
2484.35	Horizontal	44.07	54.00	N/P	N/P
4896.19	Vertical	47.28	54.00	N/P	N/P
12249.92	Vertical	53.10	54.00	48.23	-5.77
7350.44	Horizontal	54.52	54.00	51.49	-2.51
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 2 / HIGH CHANNEL		EMI4860	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002





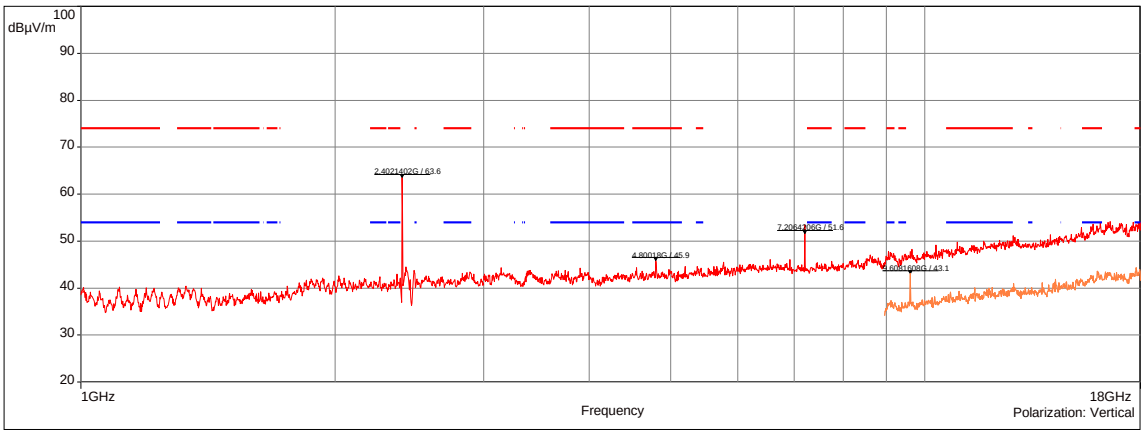
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak & Average
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak & Average

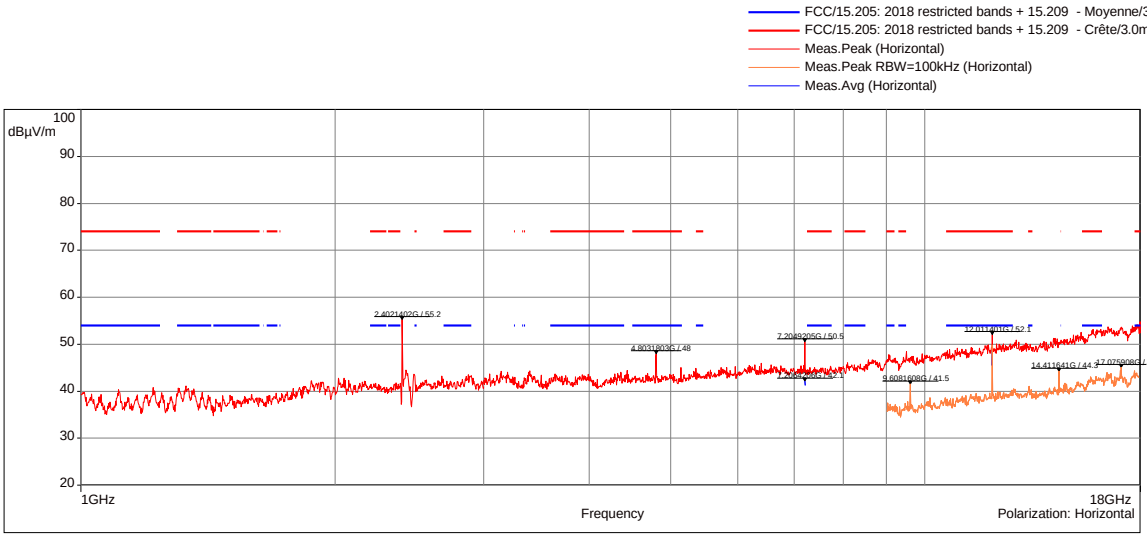
Configuration:	N/A
Comments:	2.480GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.

EUT modification(s): N/A

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 2 / HIGH CHANNEL				EMI4860	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1002.00	Vertical	39.84	54.00	N/P	N/P
1328.63	Vertical	40.87	54.00	N/P	N/P
1935.09	Vertical	42.65	83.86	N/P	N/P
2430.74	Vertical	44.55	83.86	N/P	N/P
2894.19	Vertical	44.50	54.00	N/P	N/P
1004.40	Horizontal	40.67	54.00	N/P	N/P
1216.22	Horizontal	40.18	54.00	N/P	N/P
1307.43	Horizontal	41.11	54.00	N/P	N/P
1934.89	Horizontal	42.77	83.58	N/P	N/P
2422.54	Horizontal	43.81	83.58	N/P	N/P
4959.20	Vertical	49.19	54.00	N/P	N/P
7438.94	Vertical	48.30	54.00	42.90	-11.10
12399.94	Vertical	53.23	54.00	49.01	-4.99
7440.44	Horizontal	53.26	54.00	50.91	-3.09
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 3 / LOW CHANNEL		EMI4861	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002

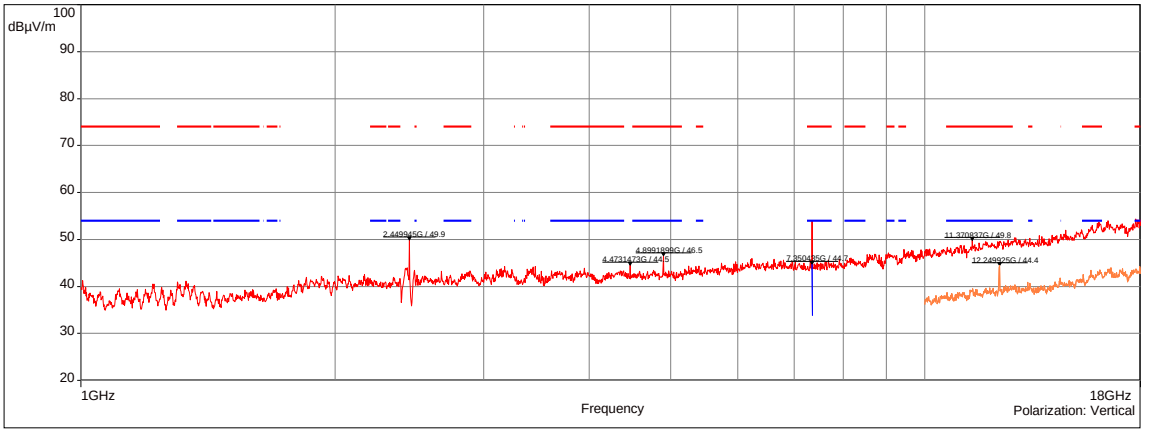


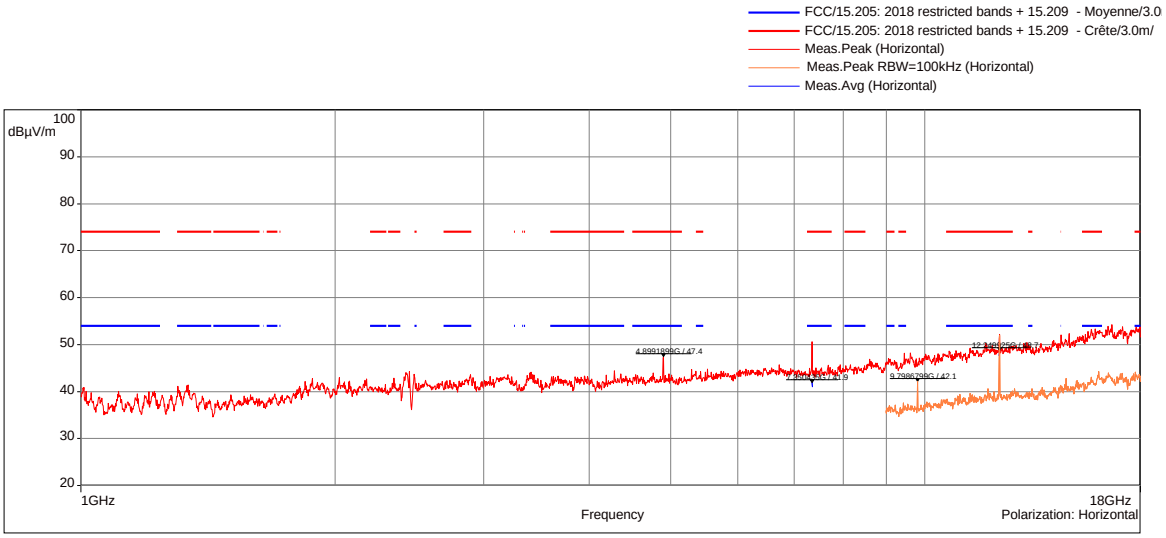


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak & Average
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak & Average
Configuration:	N/A			
Comments:	2.402GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.			
EUT modification(s): N/A				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 3 / LOW CHANNEL				EMI4861	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1110.61	Vertical	40.26	54.00	N/P	N/P
1331.83	Vertical	40.41	54.00	N/P	N/P
2367.74	Vertical	42.99	54.00	N/P	N/P
2425.94	Vertical	44.55	83.35	N/P	N/P
2481.55	Vertical	43.77	83.35	N/P	N/P
1217.62	Horizontal	40.79	54.00	N/P	N/P
1332.03	Horizontal	41.16	54.00	N/P	N/P
2019.30	Horizontal	42.80	54.00	N/P	N/P
2426.34	Horizontal	44.54	54.00	N/P	N/P
2479.15	Horizontal	43.60	54.00	N/P	N/P
7204.92	Vertical	53.45	83.35	N/P	N/P
4803.18	Horizontal	48.01	54.00	46.00	-8.00
7204.92	Horizontal	50.49	81.44	N/P	N/P
4803.18	Horizontal	46.08	54.00	N/P	N/P
12009.90	Horizontal	52.10	54.00	48.76	-5.24
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 3 / MID CHANNEL		EMI4862	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002





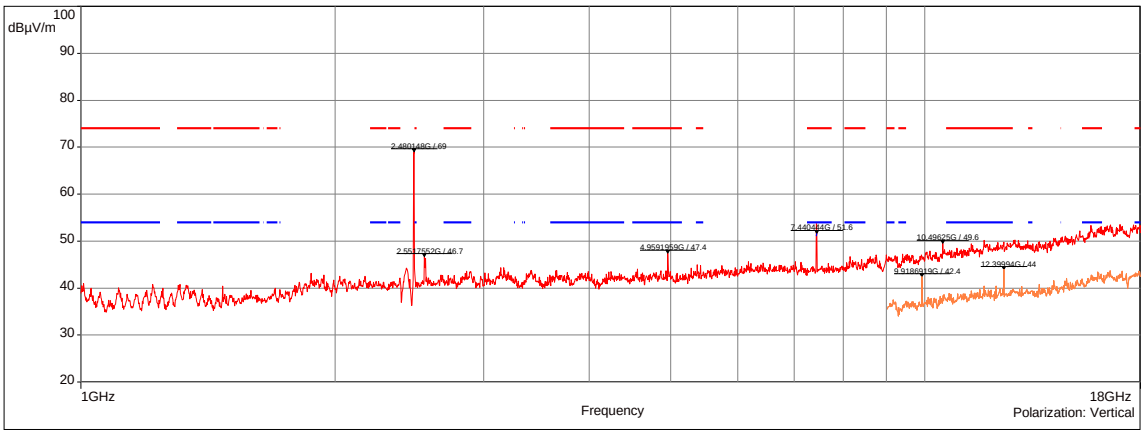
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak & Average
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak & Average

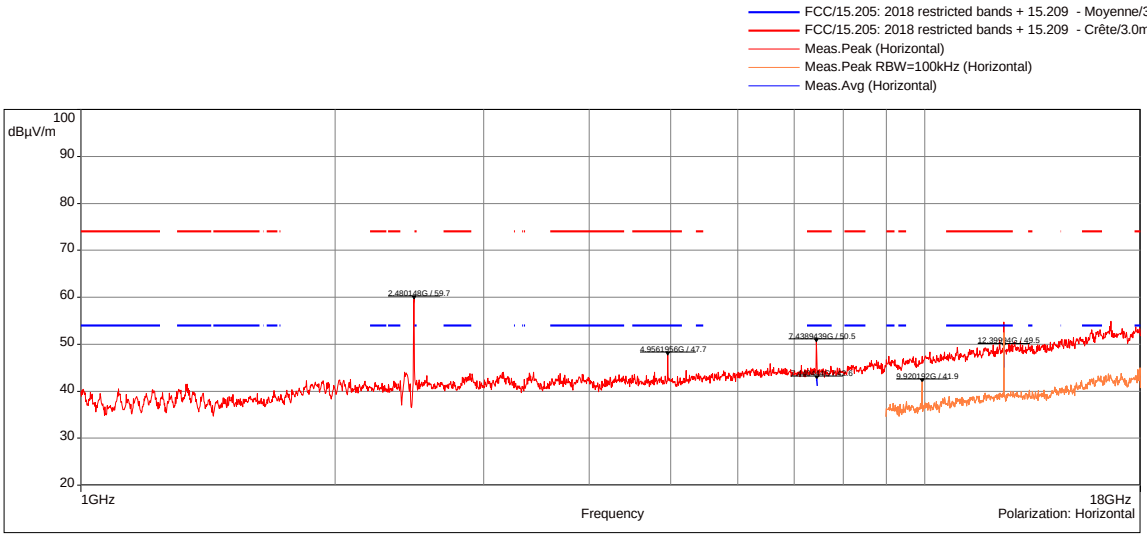
Configuration:	N/A
Comments:	2.450GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.

EUT modification(s): N/A

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 3 / MID CHANNEL				EMI4862	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1005.20	Vertical	41.21	54.00	N/P	N/P
1221.02	Vertical	40.54	54.00	N/P	N/P
1331.43	Vertical	41.18	54.00	N/P	N/P
2167.52	Vertical	42.48	83.46	N/P	N/P
2484.75	Vertical	43.43	54.00	N/P	N/P
1008.40	Horizontal	40.89	54.00	N/P	N/P
1108.41	Horizontal	40.08	54.00	N/P	N/P
1339.43	Horizontal	41.39	54.00	N/P	N/P
2022.50	Horizontal	43.01	83.58	N/P	N/P
2481.35	Horizontal	43.68	83.58	N/P	N/P
7350.44	Vertical	53.87	54.00	44.68	-9.32
4899.19	Horizontal	47.45	54.00	N/P	N/P
7348.93	Horizontal	50.65	54.00	41.90	-12.10
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 1GHZ TO 18GHZ / POSITION 3 / HIGH CHANNEL		EMI4863	
EUT mode:	Tx mode	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002





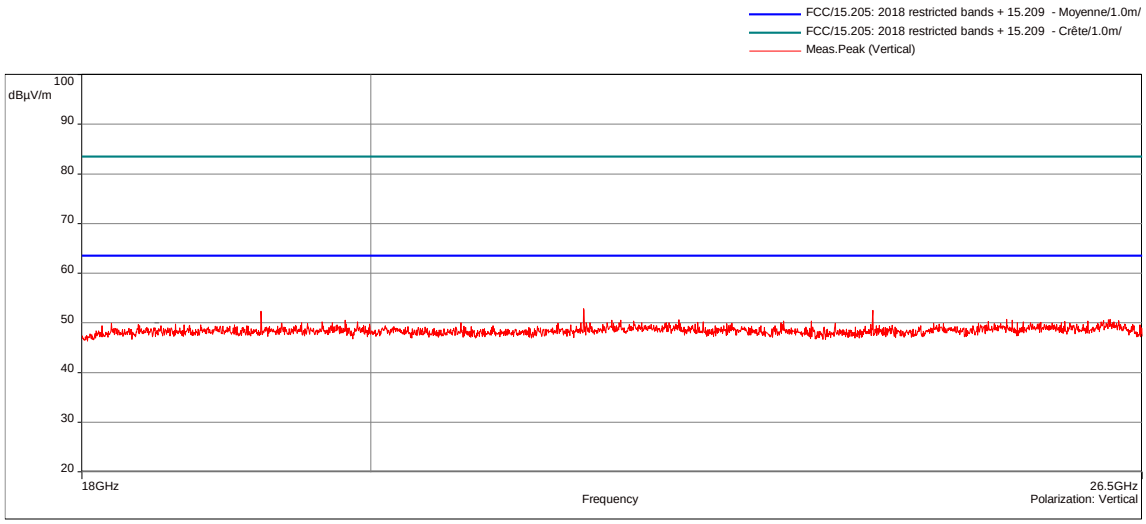
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak & Average
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak & Average

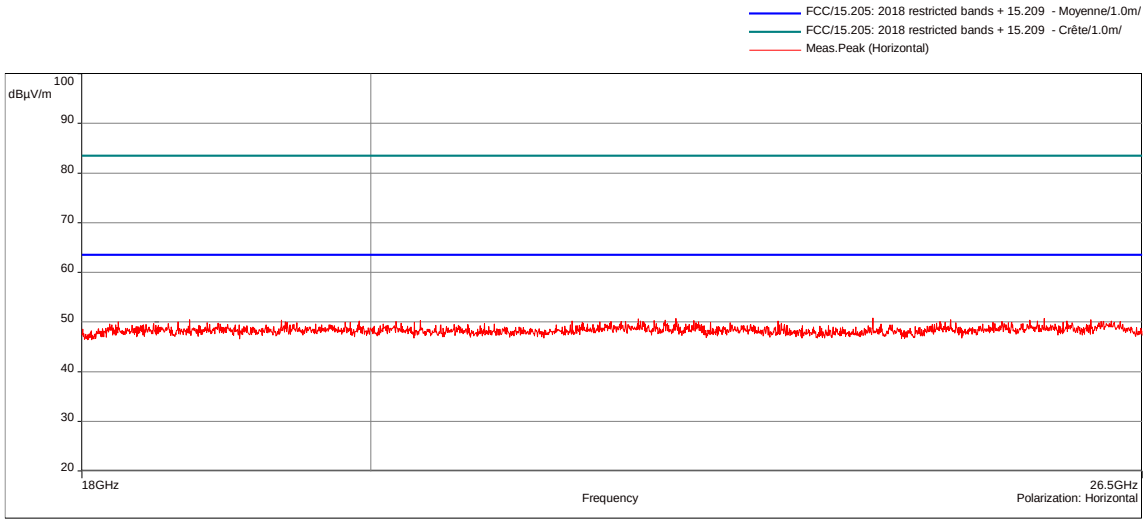
Configuration:	N/A
Comments:	2.480GHz is the main carrier frequency of the EUT's radio signal A trace from 9GHz to 18GHz was performed with an RBW = 100kHz in order to increase measurement dynamics.

EUT modification(s): N/A

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH					
TX MODE / 1GHZ TO 18GHZ / POSITION 3 / HIGH CHANNEL				EMI4863	
FREQUENCY (MHZ)	POLARIZATION	PEAK LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE LEVEL (dBµV/m)	AVERAGE MARGIN (dB)
1006.80	Vertical	40.92	54.00	N/P	N/P
1873.69	Vertical	43.17	54.00	N/P	N/P
2429.34	Vertical	44.25	54.00	N/P	N/P
2551.76	Vertical	46.72	83.86	N/P	N/P
2559.96	Vertical	46.36	83.86	N/P	N/P
1006.40	Horizontal	40.44	54.00	N/P	N/P
1108.41	Horizontal	40.47	54.00	N/P	N/P
1332.23	Horizontal	41.50	54.00	N/P	N/P
2086.51	Horizontal	42.51	54.00	N/P	N/P
2419.14	Horizontal	44.04	54.00	N/P	N/P
4959.20	Vertical	47.39	54.00	N/P	N/P
7440.44	Vertical	53.70	54.00	51.59	-2.41
4956.20	Horizontal	47.68	54.00	N/P	N/P
7440.44	Horizontal	50.53	54.00	42.60	-11.40
12399.94	Horizontal	54.75	54.00	49.50	-4.50
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 18GHZ TO 26.5GHZ / ALL POSITIONS / LOW CHANNEL		EMI4873	
EUT mode:	TX MODE	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002



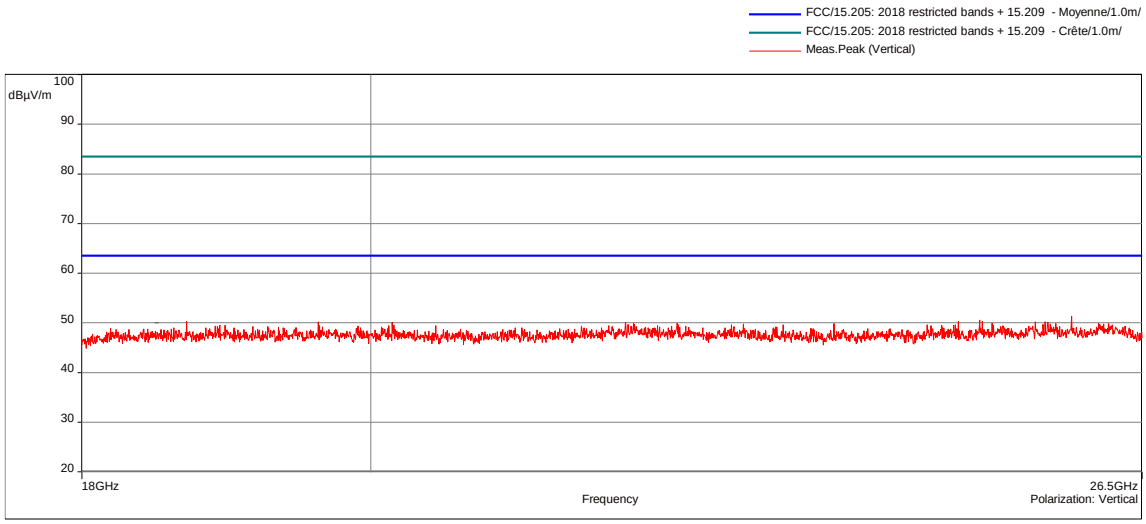


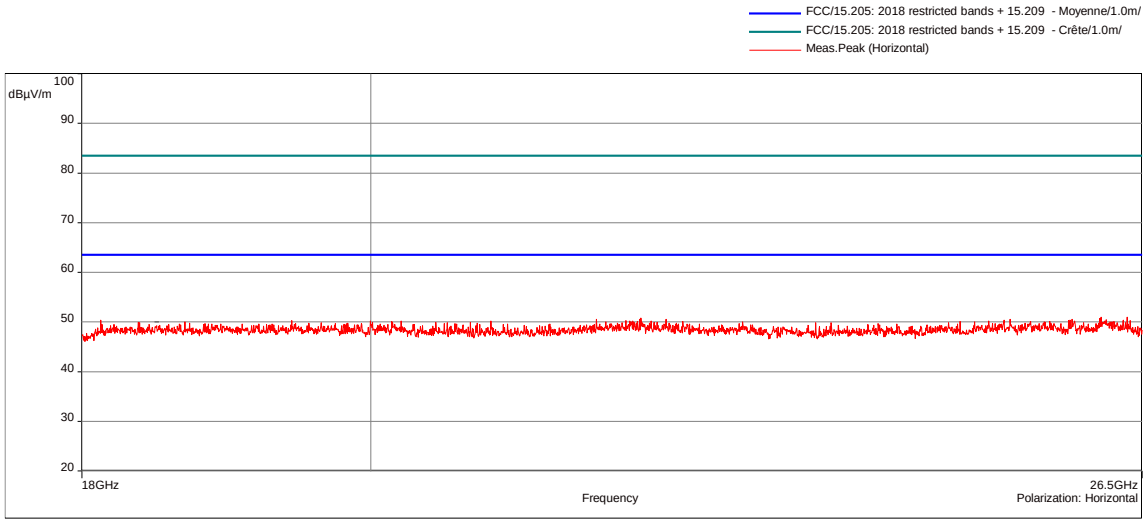
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak

Configuration:	N/A
Comments:	In order to increase the dynamics of the measurements, these were carried out at a distance of 1 meter and the limit was recalculated.

EUT modification(s): N/A

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 18GHZ TO 26.5GHZ / ALL POSITIONS / MID CHANNEL		EMI4874	
EUT mode:	TX MODE	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002



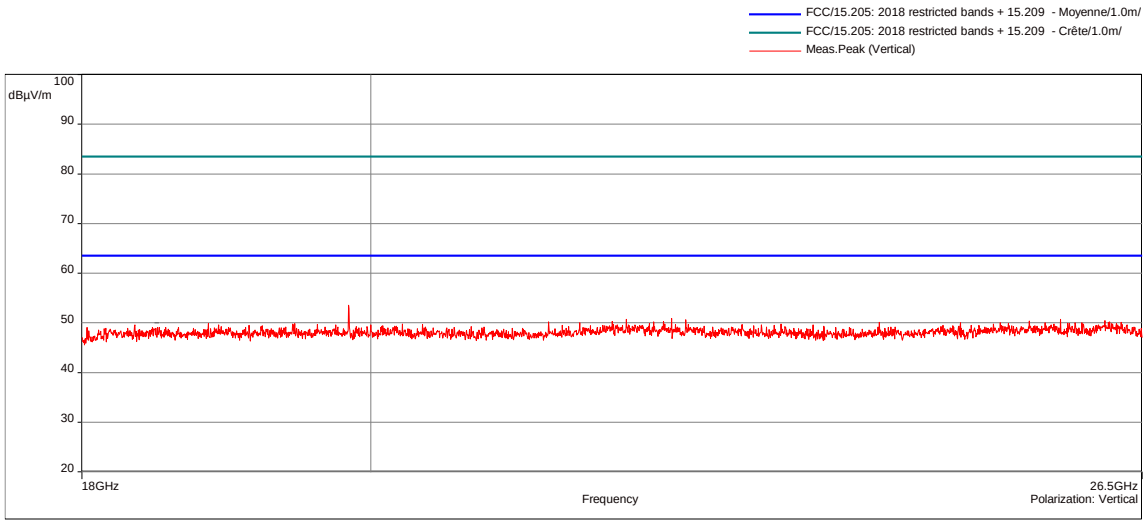


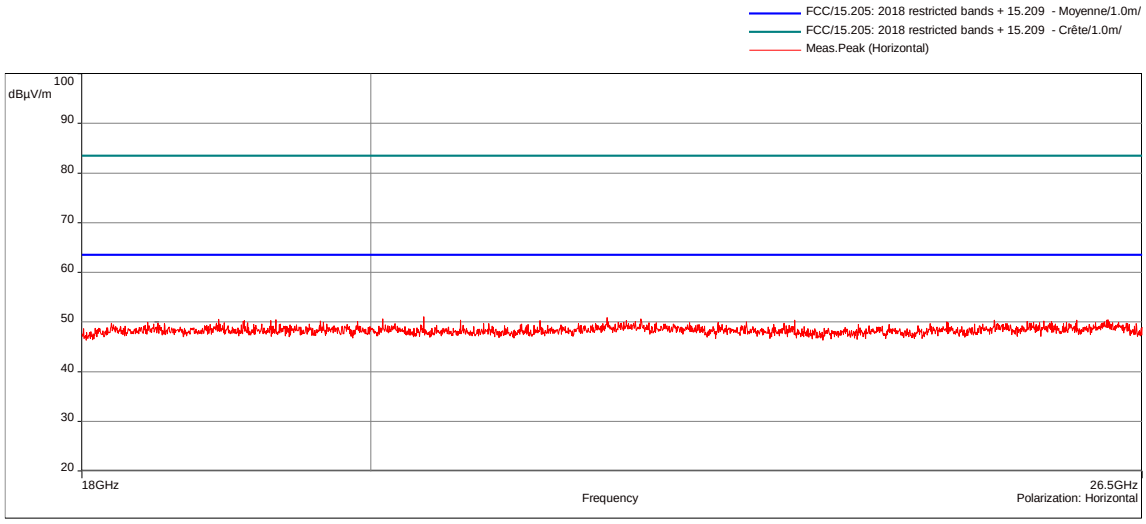
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak

Configuration:	N/A
Comments:	In order to increase the dynamics of the measurements, these were carried out at a distance of 1 meter and the limit was recalculated.

EUT modification(s): N/A

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
TX MODE / 18GHZ TO 26.5GHZ / ALL POSITIONS / HIGH CHANNEL		EMI4876	
EUT mode:	TX MODE	**T (°C):**	19.9
Test Date:	25/02/2025	**H (%):**	41.2
Test Operator:	OAT & MMA	**P (hPa):**	1002





POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak

Configuration:	N/A
Comments:	In order to increase the dynamics of the measurements, these were carried out at a distance of 1 meter and the limit was recalculated.

EUT modification(s): N/A

6.3. Maximum peak power of the intentional radiator

Reference standard:	FCC 47 CFR PART 15.247 RSS-247
Test method:	ANSI C63.10 : 2013

Test description: b) (3)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

For EUT without dedicated or integral antenna, EUT is connected to the measuring receiver via 50Ω attenuator(s). Radiated power limit applies to the maximum measured conducted power value adjusted by the antenna gain and beamforming gain.

For EUT with integral or dedicated antenna, measurements are done on a normalized test site. EUT is set on an insulating support at 150 cm above the ground reference plane. Measurement is done on a normalized test site by the substitution method. The test antenna is oriented in the two polarizations (vertical and horizontal), and the product is rotated at 360° in the horizontal plane (See photo(s) for initial position of the EUT(0°)). If applicable the test antenna was raised and lowered through the specified range of height until a maximum signal level is detected. Only the highest levels are recorded.

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
RF output power / All positions / Low Channel	2.397GHz-2.407GHz	1 W (30 dBm)	EMI4640	**PASS**
RF output power / All positions / Mid Channel	2.44GHz-2.46GHz		EMI4641	**PASS**
RF output power / All positions / High Channel	2.47GHz-2.49GHz		EMI4644	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	*See Graph(s)*
Relative Humidity	20 to 75 %	*See Graph(s)*
Atmospheric pressure	N/A	*See Graph(s)*

Test method deviation: N/A

Supplementary information: N/A

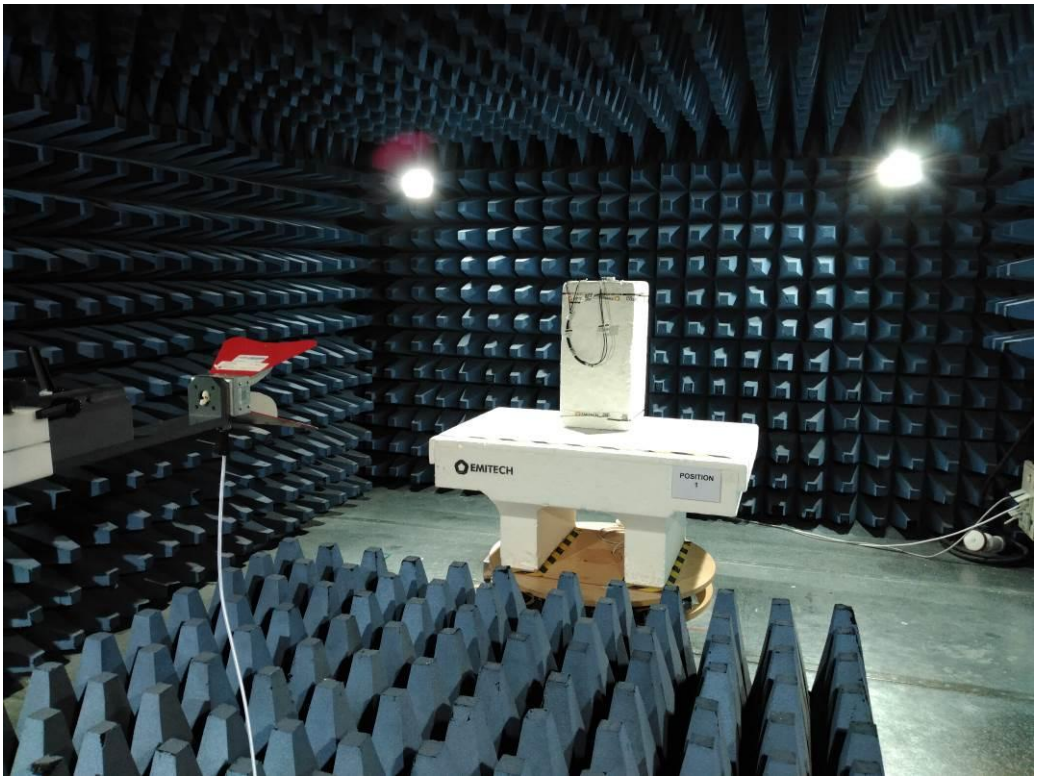
TEST EQUIPMENT USED

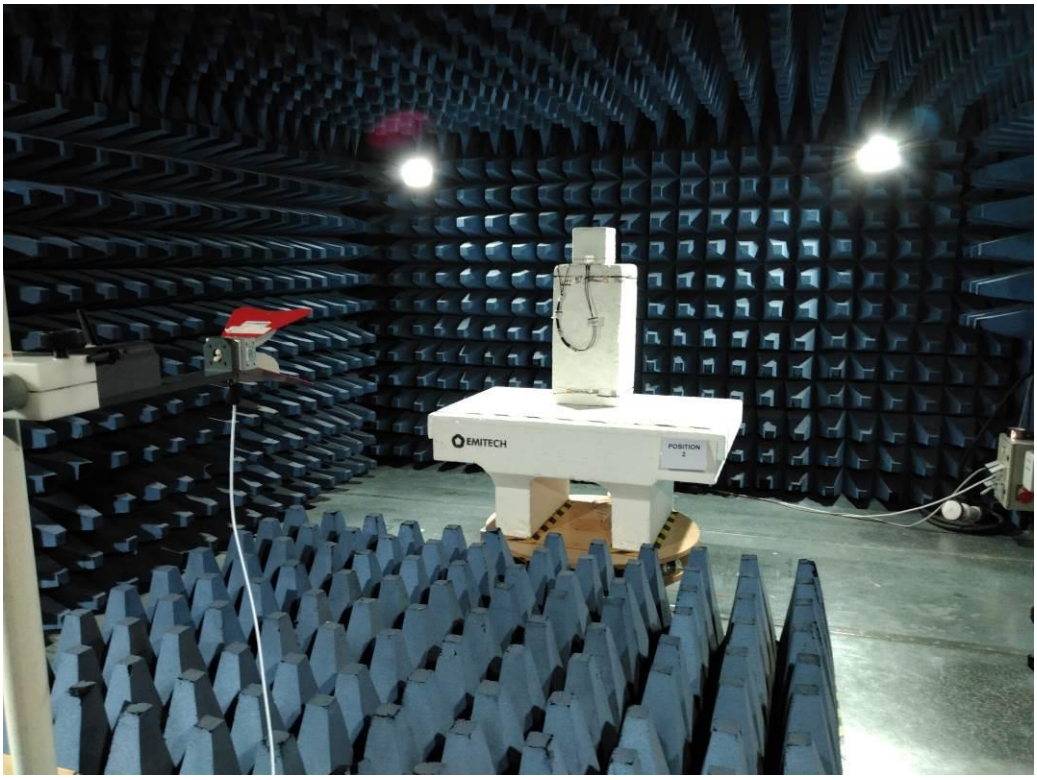
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	09/09/2022	09/11/2025
Attenuator	EMITECH	SUB.V2-H	14495	03/06/2024	03/08/2025
Attenuator	EMITECH	SUB.V2-V	14496	14/05/2024	14/07/2025
Cable	cables and connectors	N-1.5m	4203	03/03/2023	03/05/2025
Cable	/	N-1m	3627	03/03/2023	03/05/2025
Cable	Techniwave	N-3.5m	18354	17/08/2023	17/10/2025
Multimeter	FLUKE	8808A	12446	11/04/2024	11/06/2025
Preamplifier	Techniwave	APS16-0087	14040	15/07/2024	15/09/2025

CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Receiver	Rohde & Schwarz	FPL1003	16027	04/04/2024	04/06/2025
Shielded enclosure	RAY PROOF	C.V2	1423	10/08/2023	10/10/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H1	7562	28/09/2023	28/11/2025
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025

BAT-EMC software version: V3.18.0.26 Blank cells = Permanent validity

TEST SETUP PHOTO - RF OUTPUT POWER / POSITION 1



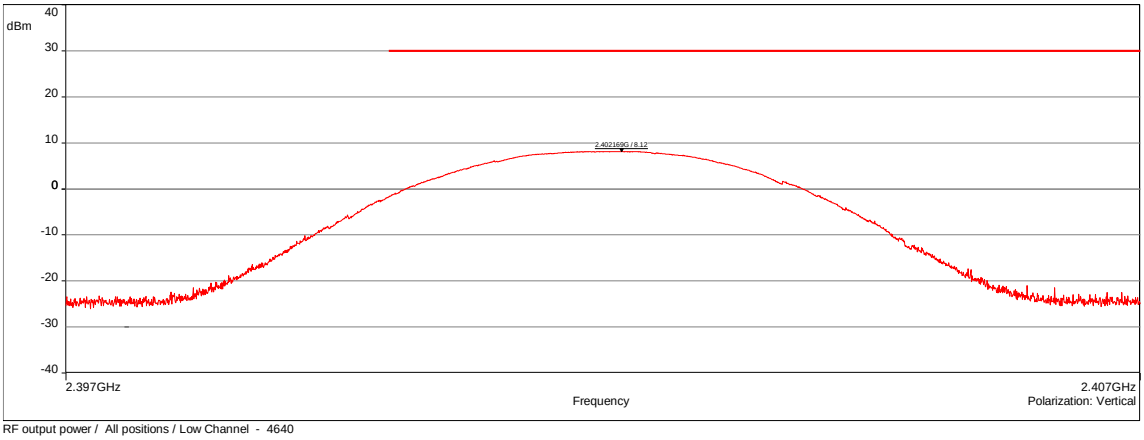
TEST SETUP PHOTO - RF OUTPUT POWER / POSITION 2


TEST SETUP PHOTO - RF OUTPUT POWER / POSITION 3


MAXIMUM PEAK POWER OF THE INTENTIONAL RADIATOR - GRAPH			
RF OUTPUT POWER / ALL POSITIONS / LOW CHANNEL		EMI4640	
EUT mode:	Tx mode	**T (°C):**	20.3
Test Date:	26/02/2025	**H (%):**	38.6
Test Operator:	OAT & MMA	**P (hPa):**	1013

FCC/15.247 : 2017 F0 1W - Crête/3.0m/
Meas.Peak (Vertical)

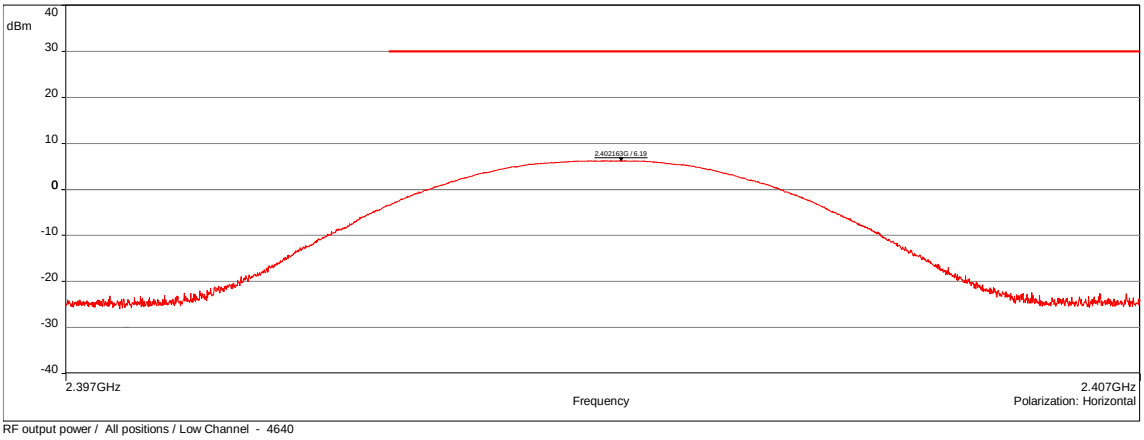
Sub-range 1
Frequencies: 2.397 GHz - 2.407 GHz (Analyser mode) 15000 Points
Settings: RBW: 2MHz, VBW: 6MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



RF output power / All positions / Low Channel - 4640

FCC/15.247 : 2017 F0 1W - Crête/3.0m/
Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 2.397 GHz - 2.407 GHz (Analyser mode) 15000 Points
Settings: RBW: 2MHz, VBW: 6MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m

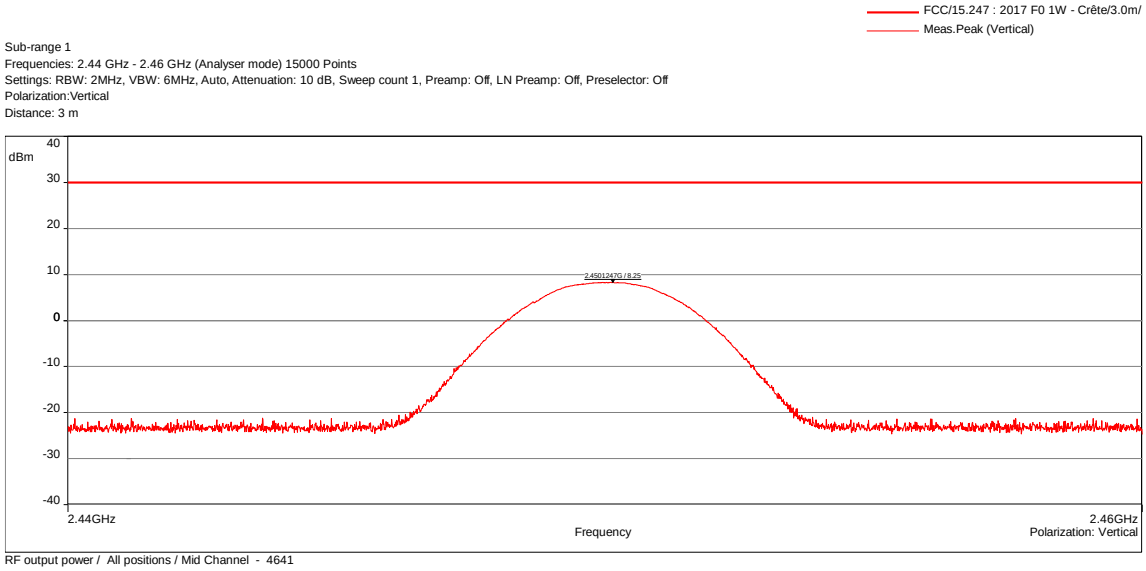


RF output power / All positions / Low Channel - 4640

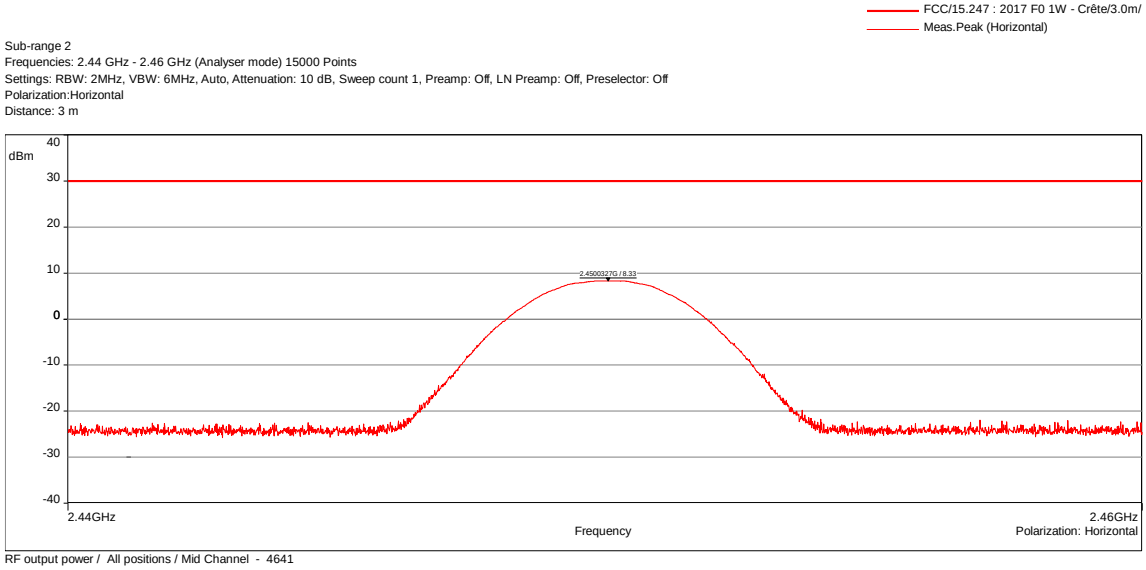
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.397GHz-2.407GHz	2MHz	6MHz	Peak
Horizontal	2.397GHz-2.407GHz	2MHz	6MHz	Peak
Configuration:	N/A			
Comments:	PV : 2.402GHz / Position n°3 Az : 100° / 8.12 dBm PH : 2.402 GHz / Position n°1 Az : 0° / 6.19 dBm			

EUT modification(s): N/A

MAXIMUM PEAK POWER OF THE INTENTIONAL RADIATOR - GRAPH			
RF OUTPUT POWER / ALL POSITIONS / MID CHANNEL		EMI4641	
EUT mode:	Tx mode	**T (°C):**	20.3
Test Date:	26/02/2025	**H (%):**	38.6
Test Operator:	OAT & MMA	**P (hPa):**	1013



RF output power / All positions / Mid Channel - 4641



RF output power / All positions / Mid Channel - 4641

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.44GHz-2.46GHz	2MHz	6MHz	Peak
Horizontal	2.44GHz-2.46GHz	2MHz	6MHz	Peak

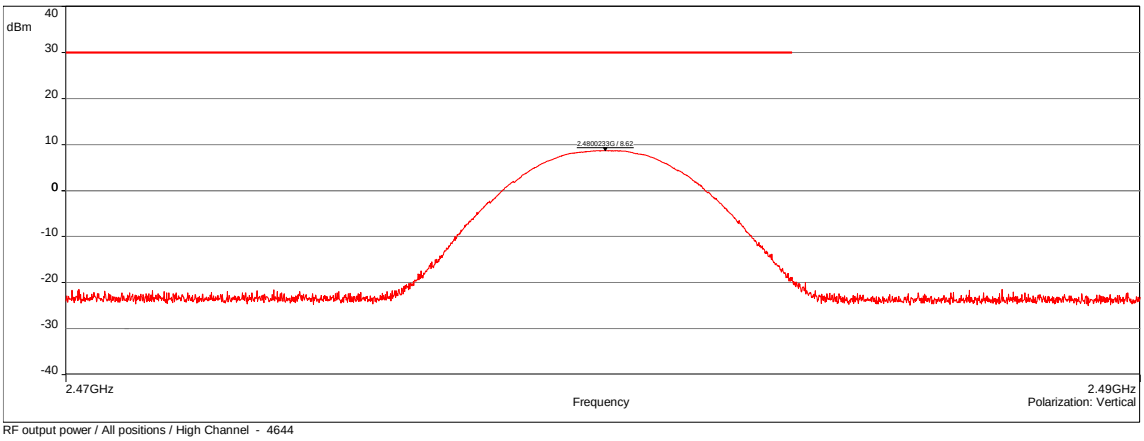
Configuration:	N/A
Comments:	PV : 2.440GHz / Position n°3 Az : 100° / 8.25 dBm PH : 2.440 GHz / Position n°1 Az : 0° / 8.33 dBm

EUT modification(s): N/A

MAXIMUM PEAK POWER OF THE INTENTIONAL RADIATOR - GRAPH			
RF OUTPUT POWER / ALL POSITIONS / HIGH CHANNEL		EMI4644	
EUT mode:	Tx mode	**T (°C):**	20.3
Test Date:	26/02/2025	**H (%):**	38.6
Test Operator:	OAT & MMA	**P (hPa):**	1013

FCC/15.247 : 2017 F0 1W - Crête/3.0m/
Meas.Peak (Vertical)

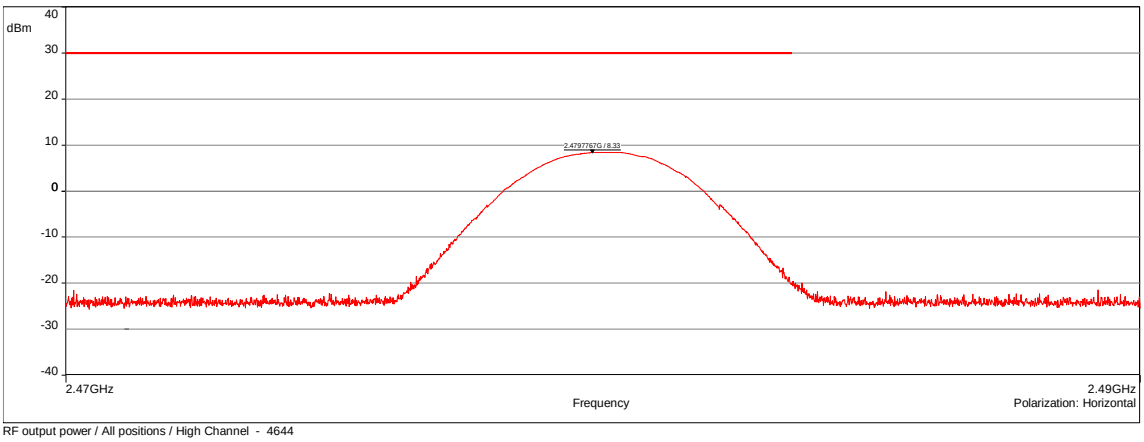
Sub-range 1
Frequencies: 2.47 GHz - 2.49 GHz (Analyser mode) 15000 Points
Settings: RBW: 2MHz, VBW: 6MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



RF output power / All positions / High Channel - 4644

FCC/15.247 : 2017 F0 1W - Crête/3.0m/
Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 2.47 GHz - 2.49 GHz (Analyser mode) 15000 Points
Settings: RBW: 2MHz, VBW: 6MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m



RF output power / All positions / High Channel - 4644

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.47GHz-2.49GHz	2MHz	6MHz	Peak
Horizontal	2.47GHz-2.49GHz	2MHz	6MHz	Peak

Configuration:	N/A
Comments:	PV: 2.48 GHz / Position n°3 Az : 140° / 8.62 dBm PH: 2.48 GHz / Position n°1 Az: 0° / 8.33 dBm

EUT modification(s): N/A

6.4. Power Spectral Density

Reference standard:	FCC part 15 Radio part 15.247 RSS-247
Test method:	ANSI C63.10: 2013

Test description: e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

For EUT without dedicated or integral antenna, EUT is connected to the measuring receiver via 50Ω attenuator(s). Radiated power limit applies to the maximum measured conducted power value adjusted by the antenna gain and beamforming gain.

For EUT with integral or dedicated antenna, measurements are done on a normalized test site. EUT is set on an insulating support at 150 cm above the ground reference plane. Measurement is done on a normalized test site by the substitution method. The test antenna is oriented in the two polarizations (vertical and horizontal), and the product is rotated at 360° in the horizontal plane (See photo(s) for initial position of the EUT(0°)). If applicable the test antenna was raised and lowered through the specified range of height until a maximum signal level is detected.Only the highest levels are recorded.

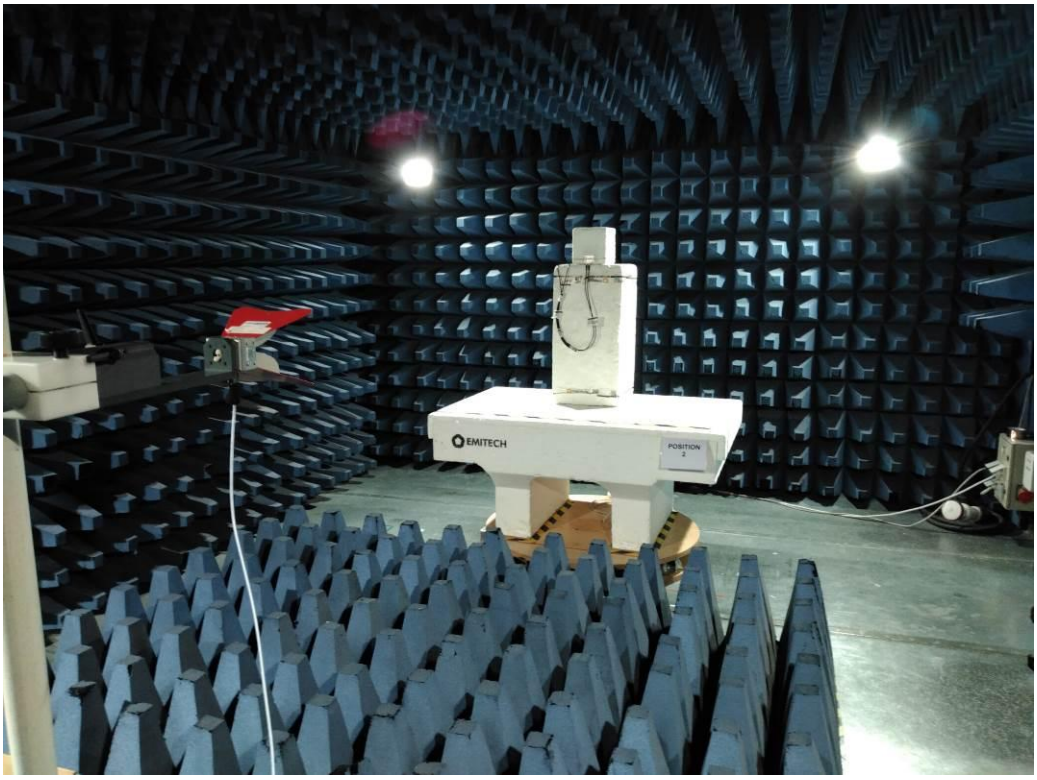
TESTED CONFIGURATION	RESULT	SEVERITY	RESULT TAB.	VERDICT
PSD / Low channel	0.06dBm/3kHz	8 dBm/3kHz	EMI4645	**PASS**
PSD / Mid channel	1.55dBm/3kHz		EMI4646	**PASS**
PSD / High channel	3.22dBm/3kHz		EMI4647	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	*See Graph(s)*
Relative Humidity	20 to 75 %	*See Graph(s)*
Atmospheric pressure	N/A	*See Graph(s)*
Test method deviation: N/A		
Supplementary information: N/A		

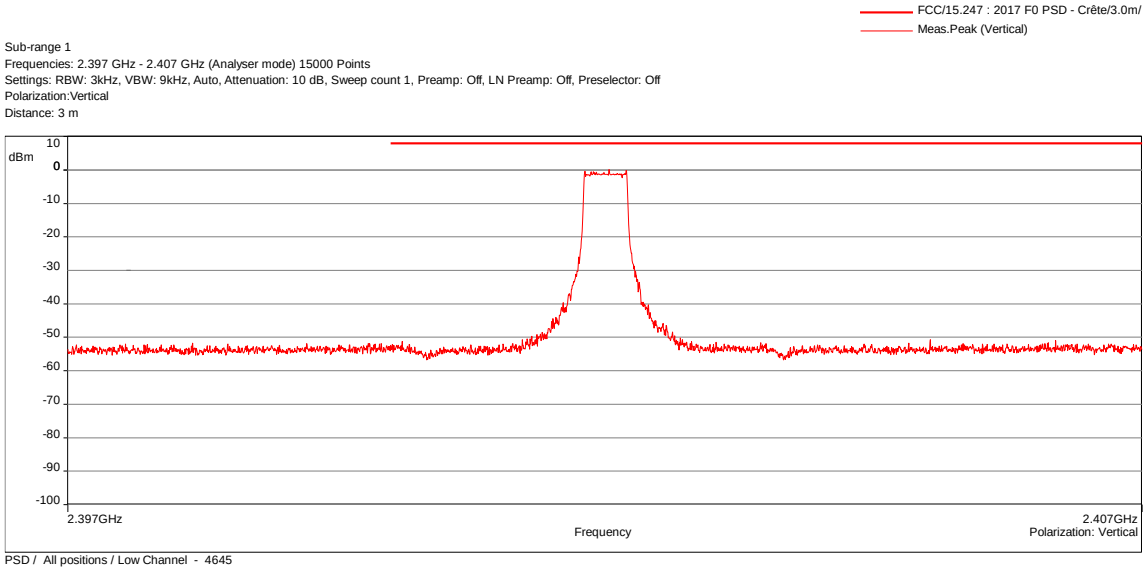
TEST EQUIPMENT USED

CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	09/09/2022	09/11/2025
Attenuator	EMITECH	SUB.V2-H	14495	03/06/2024	03/08/2025
Attenuator	EMITECH	SUB.V2-V	14496	14/05/2024	14/07/2025
Cable	SUCOFLEX	N-3m	14379	17/08/2023	17/10/2025
Cable	Techniwave	N-3.5m	18354	17/08/2023	17/10/2025
Receiver	Rohde & Schwarz	FPL1003	16027	04/04/2024	04/06/2025
Shielded enclosure	RAY PROOF	C.V2	1423	10/08/2023	10/10/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermohygrometer	Testo	608-H1	7562	28/09/2023	28/11/2025

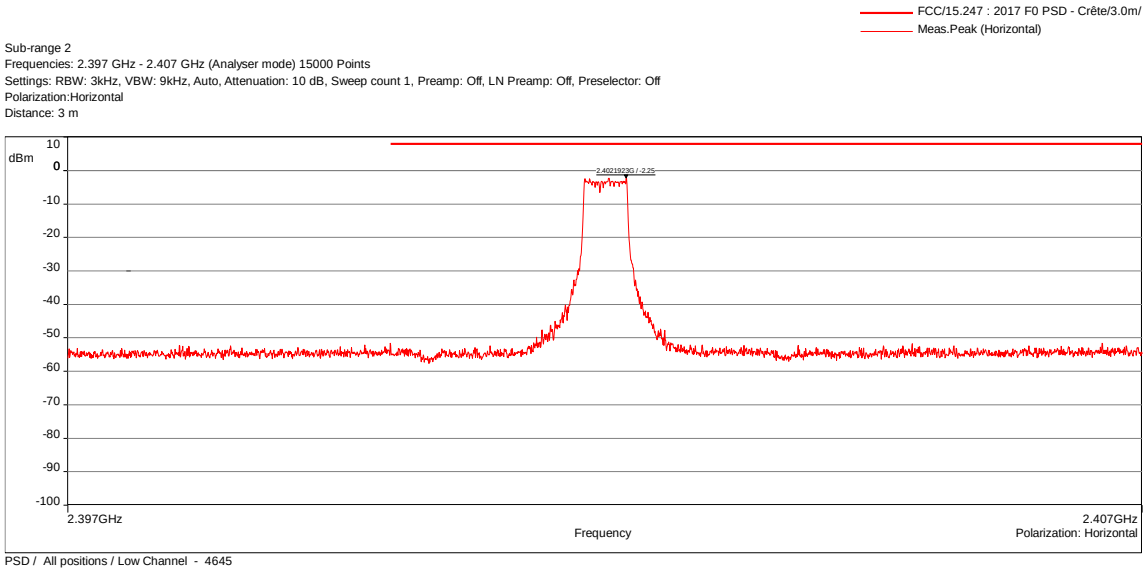
Blank cells = Permanent validity

TEST SETUP PHOTO(S) – PSD


TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
PSD / ALL POSITIONS / LOW CHANNEL		EMI4645	
EUT mode:	Tx mode	**T (°C):**	20.3
Test Date:	26/02/2025	**H (%):**	38.6
Test Operator:	OAT & MMA	**P (hPa):**	1013



PSD / All positions / Low Channel - 4645



PSD / All positions / Low Channel - 4645

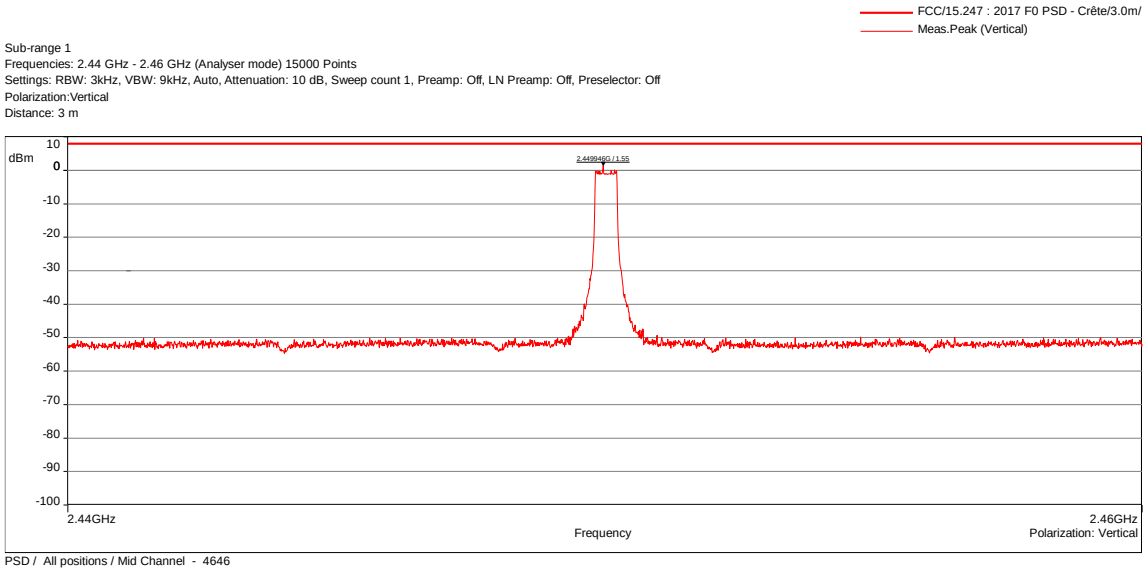
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.397GHz-2.407GHz	3kHz	9kHz	Peak
Horizontal	2.397GHz-2.407GHz	3kHz	9kHz	Peak

Configuration:	N/A
Comments:	PV : 2.402GHz / Position n°3 Az : 100° / 0.06 dBm PH : 2.402 GHz / Position n°1 Az : 0° / -2.25dBm

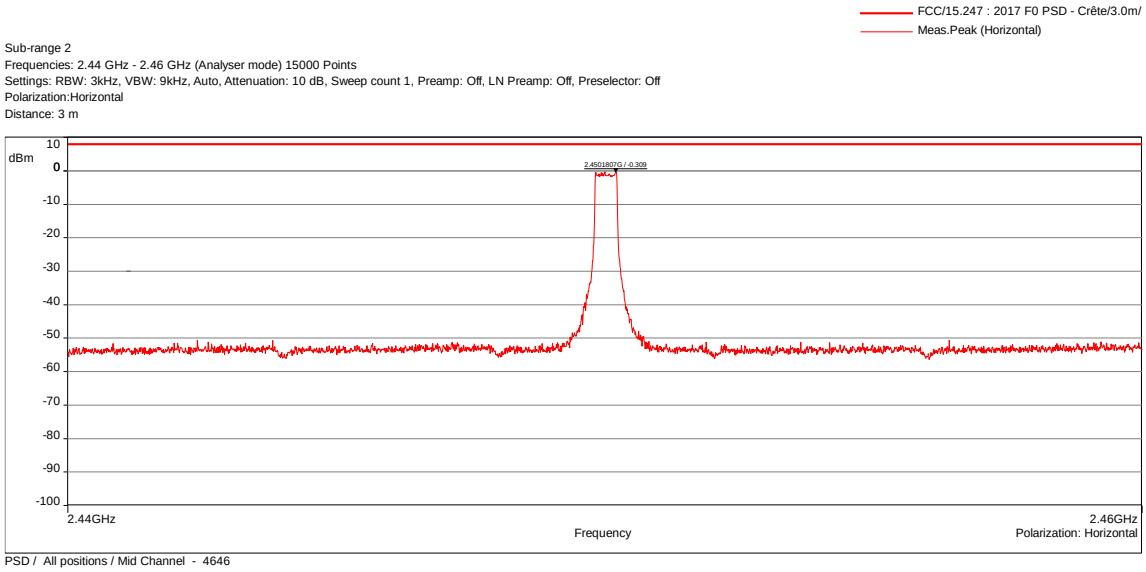
EUT modification(s): N/A

Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
N/A	N/A	N/A	N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
PSD / ALL POSITIONS / MID CHANNEL		EMI4646	
EUT mode:	Tx mode	**T (°C):**	20.3
Test Date:	26/02/2025	**H (%):**	38.6
Test Operator:	OAT & MMA	**P (hPa):**	1013



PSD / All positions / Mid Channel - 4646

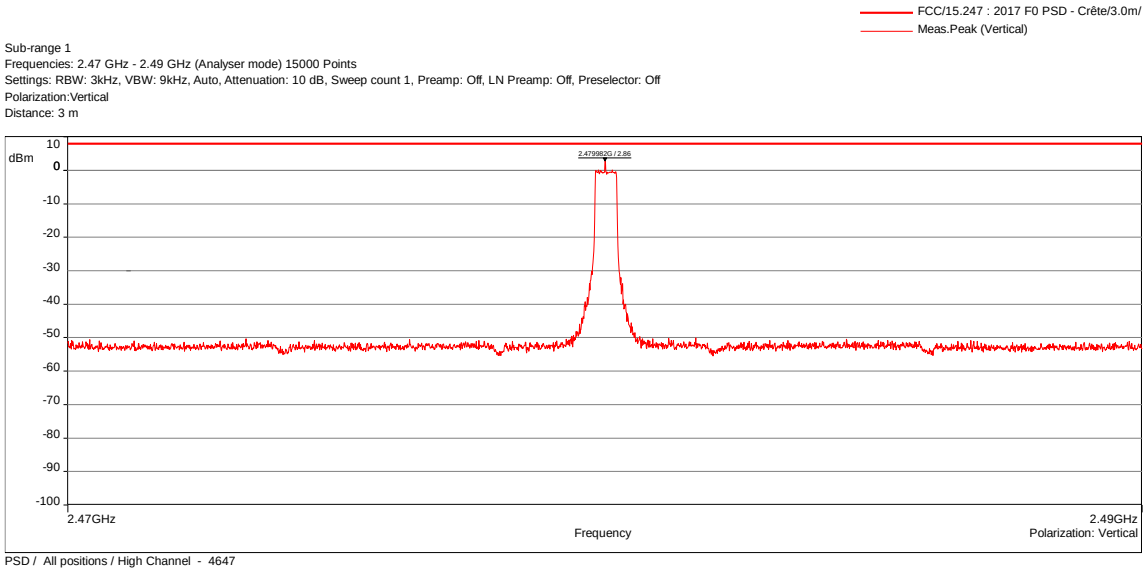


PSD / All positions / Mid Channel - 4646

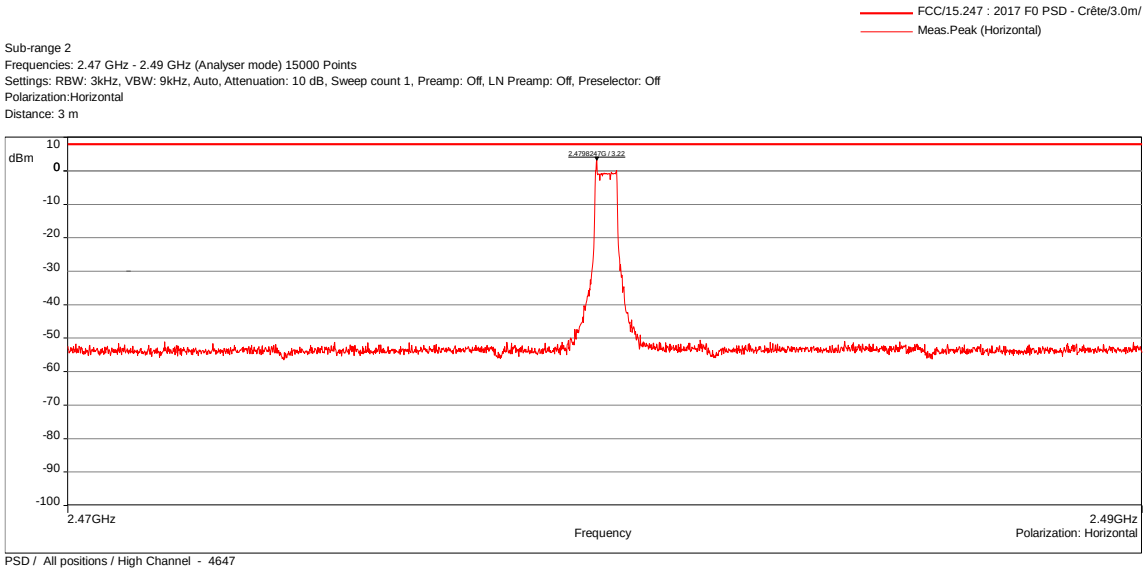
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.44GHz-2.46GHz	3kHz	9kHz	Peak
Horizontal	2.44GHz-2.46GHz	3kHz	9kHz	Peak
Configuration:	N/A			
Comments:	PV : 2.450GHz / Position n°3 Az : 100° / 1.55 dBm PH : 2.450 GHz / Position n°1 Az : 0° / -0.3 dBm			
EUT modification(s): N/A				

Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
N/A	N/A	N/A	N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
PSD / ALL POSITIONS / HIGH CHANNEL		EMI4647	
EUT mode:	Tx mode	**T (°C):**	20.3
Test Date:	26/02/2025	**H (%):**	38.6
Test Operator:	OAT & MMA	**P (hPa):**	1013



PSD / All positions / High Channel - 4647



PSD / All positions / High Channel - 4647

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.47GHz-2.49GHz	3kHz	9kHz	Peak
Horizontal	2.47GHz-2.49GHz	3kHz	9kHz	Peak
Configuration:	N/A			
Comments:	PV : 2.480GHz / Position n°3 Az : 140° / 2.86 dBm PH : 2.480 GHz / Position n°1 Az : 0° / 3.22 dBm			
EUT modification(s): N/A				

Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
N/A	N/A	N/A	N/A

6.5. Band-edge compliance of emissions

Reference standard:	FCC part 15 Radio part 15.247 RSS-247
Test method:	ANSI C63.10: 2013

Test description: d)

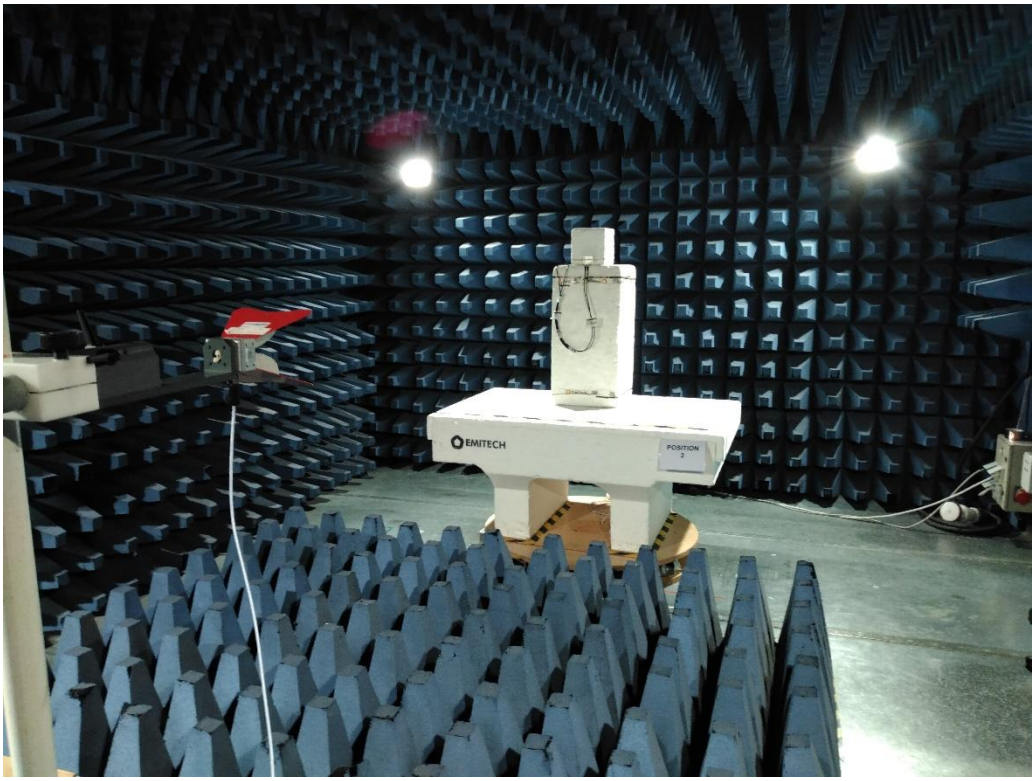
In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

EUT is connected to the measuring receiver via 50Ω attenuator(s).Only the highest levels are recorded.

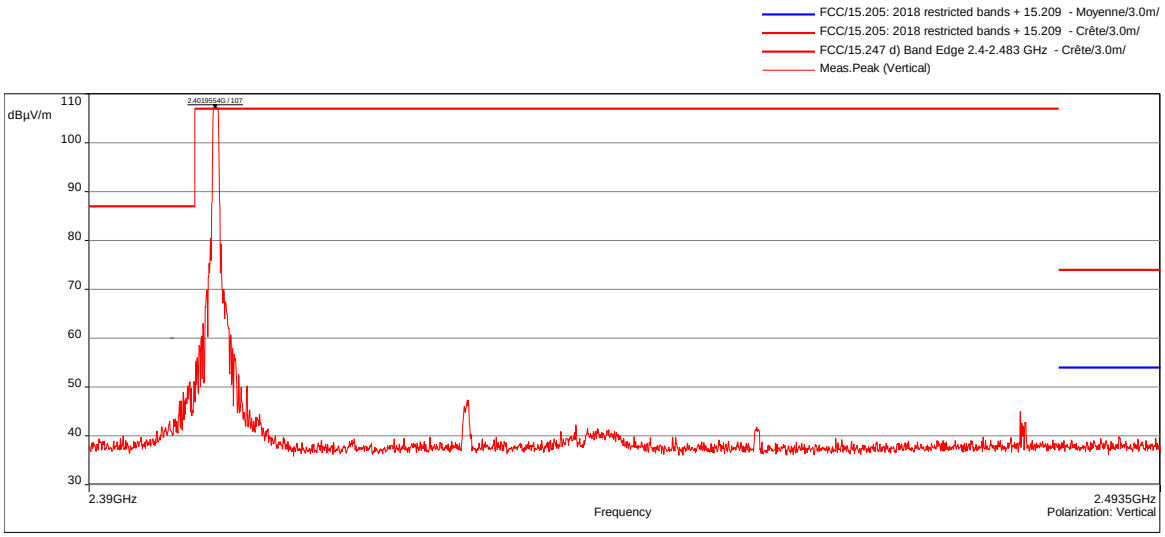
TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
Band edge / All positions / Low channel	2.39GHz-2.4935GHz	-20dBc	EMI4648	**PASS**
Band edge / All positions / Mid channel	2.39GHz-2.4935GHz	-20dBc	EMI4649	**PASS**
Band edge / All positions / High channel	2.39GHz-2.4935GHz	-20dBc	EMI4650	**PASS**

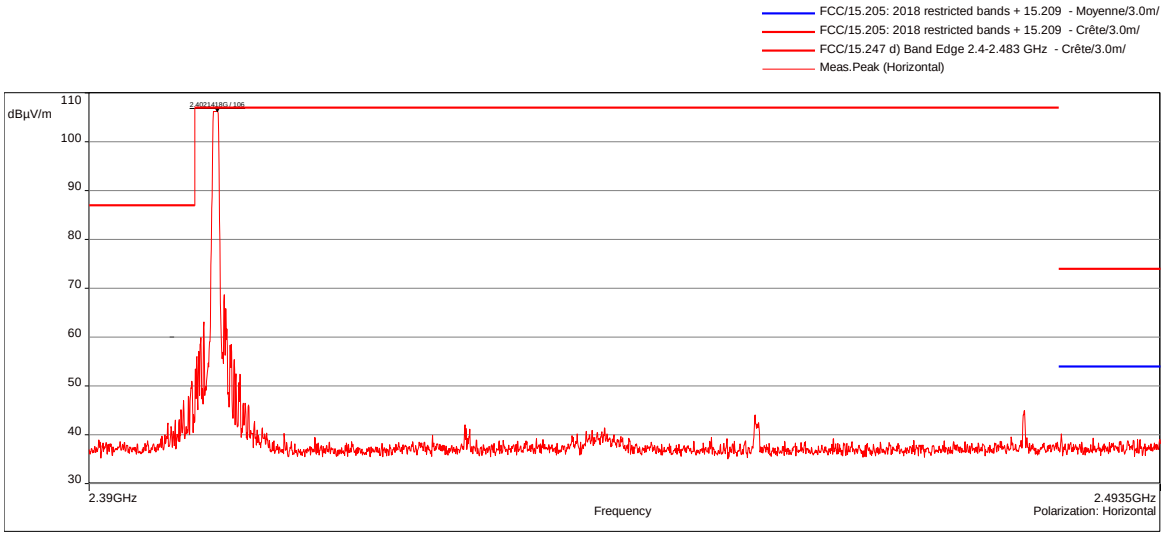
LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	*See Graph(s)*
Relative Humidity	20 to 75 %	*See Graph(s)*
Atmospheric pressure	N/A	*See Graph(s)*
Test method deviation: N/A		
Supplementary information: N/A		

TEST EQUIPMENT USED					
CATEGORY	**BRAND**	**TYPE**	**IDENTIFIER**	**CAL. DATE**	**CAL. DUE**
Antenna	ETS-Lindgren	3117	5456	09/09/2022	09/11/2025
Cable	SUCOFLEX	N-3m	14379	17/08/2023	17/10/2025
Cable	SUCOFLEX	N-5,5m	14381	17/08/2023	17/10/2025
Filter	Wainwright Instruments	WRCGV 2402/2480-2380/2500-40/10EE-200W	9771	28/09/2023	28/11/2026
Multimeter	FLUKE	8808A	12446	11/04/2024	11/06/2025
Receiver	Rohde & Schwarz	FPL1007	17908	05/12/2023	05/05/2025
Shielded enclosure	RAY PROOF	C.V2	1423	10/08/2023	10/10/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermohygrometer	Testo	608-H1	7562	28/09/2023	28/11/2025

TEST SETUP PHOTO(S) – BAND EDGE


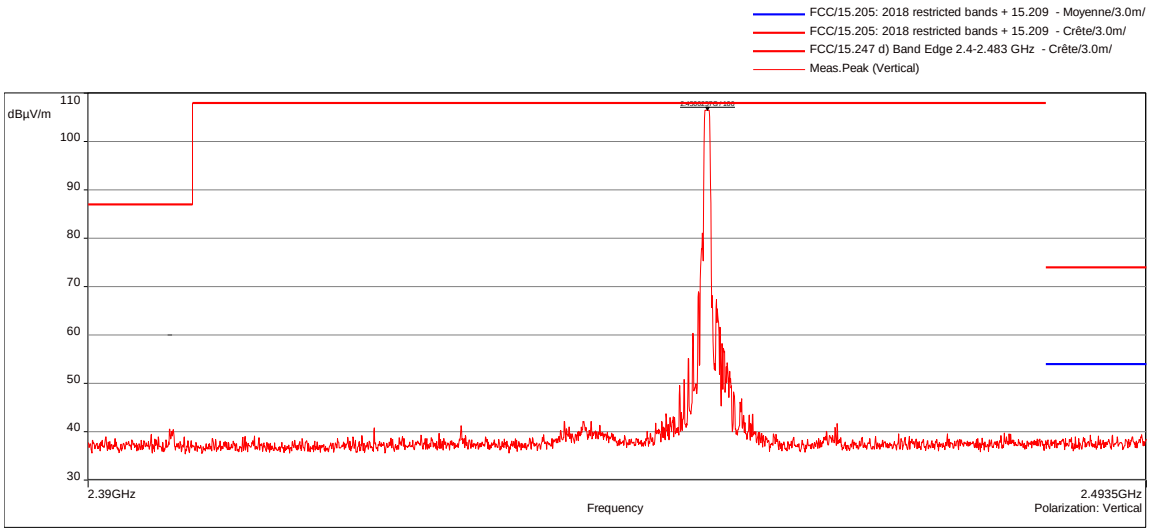
RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
BAND EDGE / ALL POSITIONS / LOW CHANNEL		EMI4648	
EUT mode:	Tx mode	**T (°C):**	21.5
Test Date:	26/02/2025	**H (%):**	36.6
Test Operator:	OAT & MMA	**P (hPa):**	1009

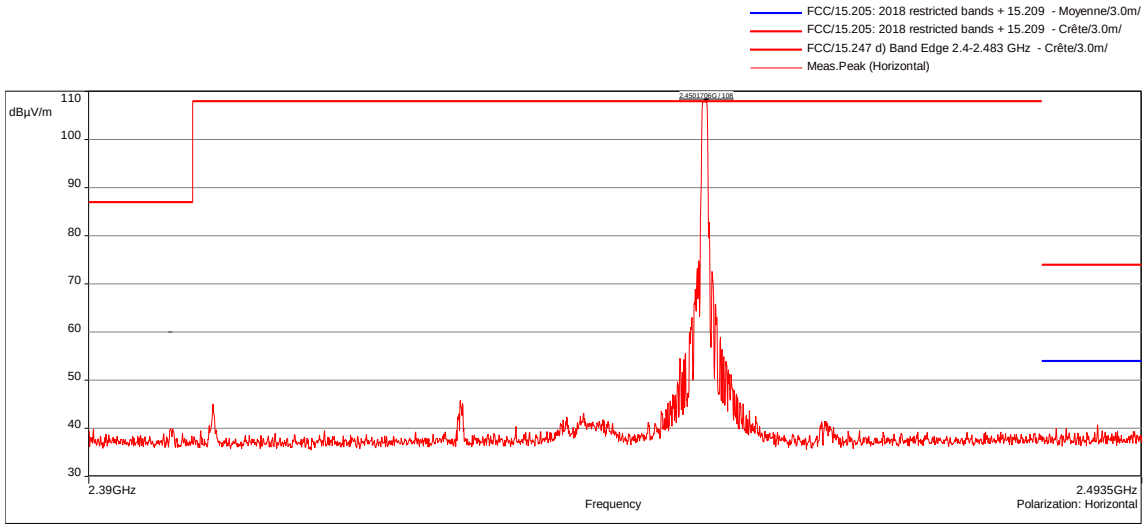




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.39GHz-2.4935GHz	100kHz	300kHz	Peak
Horizontal	2.39GHz-2.4935GHz	100kHz	300kHz	Peak
Configuration:				
Comments:	2.402GHz is the main carrier frequency of the EUT's radio signal No emission outside the operating band was detected.			
EUT modification(s): N/A				

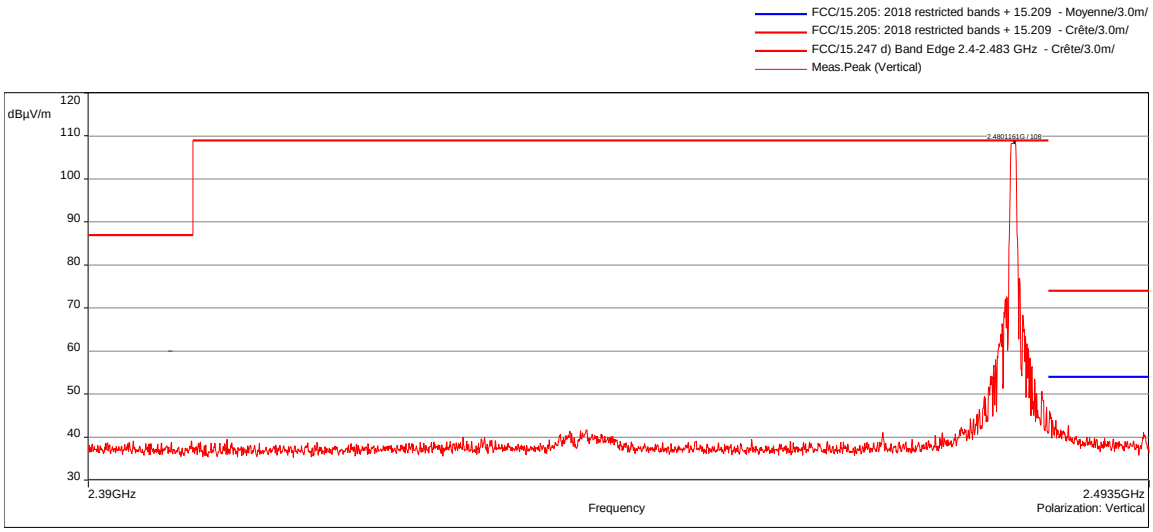
RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
BAND EDGE / ALL POSITIONS / MID CHANNEL		EMI4649	
EUT mode:	TX mode	**T (°C):**	21.5
Test Date:	26/02/2025	**H (%):**	36.6
Test Operator:	OAT & MMA	**P (hPa):**	1009

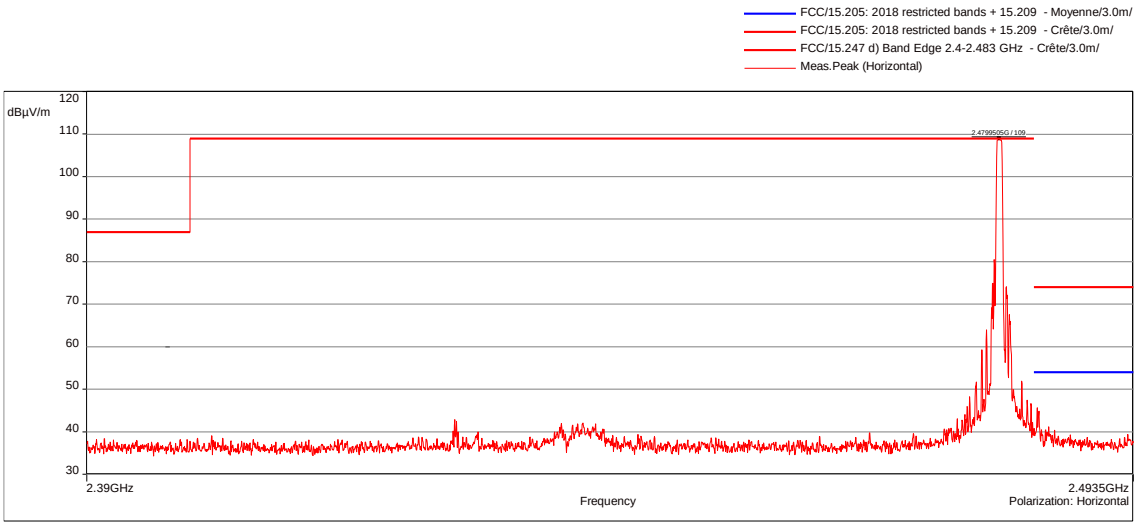




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.39GHz-2.4935GHz	100kHz	300kHz	Peak
Horizontal	2.39GHz-2.4935GHz	100kHz	300kHz	Peak
Configuration:				
Comments:	2.450GHz is the main carrier frequency of the EUT's radio signal No emission outside the operating band was detected.			
EUT modification(s): N/A				

RADIATED SPURIOUS EMISSIONS (TRANSMITTER) - GRAPH			
BAND EDGE / ALL POSITIONS / HIGH CHANNEL		EMI4650	
EUT mode:	TX mode	**T (°C):**	21.5
Test Date:	26/02/2025	**H (%):**	36.6
Test Operator:	OAT & MMA	**P (hPa):**	1009





POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.39GHz-2.4935GHz	100kHz	300kHz	Peak
Horizontal	2.39GHz-2.4935GHz	100kHz	300kHz	Peak
Configuration:	N/A			
Comments:	2.480GHz is the main carrier frequency of the EUT's radio signal No emission outside the operating band was detected.			
EUT modification(s): N/A				

6.6. Frequency Stability

Reference standard:	FCC part 15 Radio part 15.215 RSS-Gen
Test method:	ANSI C63.10: 2013
General test setup: The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation. EUT is set inside the climatic enclosure. EUT is connected to the measuring receiver via 50Ω attenuator(s).	

TEST CASE	EUT MODE	SEVERITY	RESULT TAB.	VERDICT
Low Channel	Tx mode	2400MHz-2483.5MHz	EMI5000	**PASS**
Mid Channel			EMI5001	**PASS**
High Channel			EMI5002	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	20.4°C
Relative Humidity	20 to 75 %	34.7%
Atmospheric pressure	N/A	N/A
Test method deviation: N/A		
Supplementary information: EUT power supply is replaced by a stabilized power supply.		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Cable	SUCOFLEX	N-3m	14379	17/08/2023	17/10/2025
Climatic enclosure	CLIMATS	EXCAL 7714-HA	14261		
Climatic station	Testo	608-H1	19386	08/03/2024	08/05/2026
Multimeter	FLUKE	8842A	1838	11/01/2025	11/03/2027
Power supply	TTI	PL303QMD	8496		
Spectrum analyzer	Rohde & Schwarz	FPL1003	16027	03/04/2024	03/06/2025
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermometer contactless	GHM Greisinger	GMH 3710	12968	03/03/2023	03/05/2025

BAT-EMC software version: V3.18.0.26 Blank cells = Permanent validity

TEST SETUP PHOTO(S)


TEST SETUP PHOTO(S)


MEASUREMENT OF FREQUENCY STABILITY - TABULATED RESULTS					
LOW CHANNEL					EMI5000
Test case	**Temperature (°C)**	**Power supply (Vdc)**	**Frequency (MHz)**	**Frequency error (kHz)**	**Limit**
Normal conditions	25	3.3	2401.8082	0	Within 2400MHz to 2483.5MHz
Extreme voltage conditions	25	1.8	2401.8082	0	
Extreme temperature conditions	60	3.3	2401.8082	0	
	-20	1.8	2401.8082	0	

MEASUREMENT OF FREQUENCY STABILITY - TABULATED RESULTS					
MID CHANNEL					EMI5001
Test case	**Temperature (°C)**	**Power supply (Vdc)**	**Frequency (MHz)**	**Frequency error (kHz)**	**Limit**
Normal conditions	25	3.3	2449.8062	0	Within 2400MHz to 2483.5MHz
Extreme voltage conditions	25	1.8	2449.8062	0	
Extreme temperature conditions	60	3.3	2449.8062	0	
	-20	1.8	2449.8062	0	

MEASUREMENT OF FREQUENCY STABILITY - TABULATED RESULTS					
HIGH CHANNEL					EMI5002
Test case	**Temperature (°C)**	**Power supply (Vdc)**	**Frequency (MHz)**	**Frequency error (kHz)**	**Limit**
Normal conditions	25	3.3	2479.8082	0	Within 2400MHz to 2483.5MHz
Extreme voltage conditions	25	1.8	2479.8082	0	
Extreme temperature conditions	60	3.3	2479.8082	0	
	-20	1.8	2479.8082	0	

EUT MODIFICATIONS	OPERATOR	TEST DATE	RESULT TAB.
N/A	MMA	28/02/2025	-

End of test report