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

RADIO TEST REPORT

FCC 47 CFR PART 15.247
RSS-247_Issue 2, February 2017

Company .....:	**XPLORER**
Address.....:	40 CHEMIN DU MOULIN 31320 MERVILLA FRANCE

Test item description. .....:	**Device for metal detecting in hobby use**
Trade Mark. .....:	XTREM HUNTER
Manufacturer.....:	XP METAL DETECTORS
Model/Type reference.....:	XTR115 / XTREM HUNTER
FCC ID.....:	XFJXTR115
IC. .....:	8392A-XTR115
Ratings.....:	3.4Vdc to 4.2Vdc

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

Report Reference No.....:	**RR-EVE-23B416-4A**
Test procedure. .....:	FCC IC Certification
Diffusion.....:	Mr LOUBET Alain, CEO
Applicant's name. .....:	XPLORER
Date of issue.....:	October 16, 2023
Total number of pages.....:	78
Revision. .....:	0
Compiled by.....:	Alexis TOUZET
Approved by (+ signature). .....:	Olivier HEYER (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.

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REVISION HISTORY:

Revision	Date	Modified pages	Modifications
0	October 16, 2023	/	Creation

1. GENERAL INFORMATIONS

This document submits the results of Radio tests performed on the equipment **Wireless metal detection sensor XTR115** (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.....:	Robin GIL & Alexis TOUZET
Test supervisor.....:	None
Date of receipt of test item .....:	N/A
Date (s) of performance of tests.....:	From May 2nd to July 11th of 2023

APPLICANT'S GENERAL INFORMATIONS:	
Company name.....:	XPLORER
Company address. .....:	40 CHEMIN DU MOULIN 31320 MERVILLA FRANCE
Person(s) present during the tests. .....:	No representative for company attended the tests.
Responsible.....:	Mr LOUBET Alain, CEO

GENERAL REMARKS:

EUT photos and test setup photos are available on annex in test report RR-EVE-23B416-4A Annex.

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 DOCUMENT(S)

NORMATIVE REFERENCES:
The following referenced documents are necessary for the application of the present test report. **FCC 47 CFR PART 15: 2017** Code of federal regulations – Title 47 telecommunication Part 15- Radio frequency devices **FCC part 15.247** Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850MHz. (frequency hopping and digitally modulated) **RSS-247_Issue 2, February 2017** Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence Exempt Local Area Network (LE-LAN) Devices **RSS/CNR-Gen, Issue 5, April 2018, AMD1: 2019, AMD2: 2021** Exigences générales et information relatives à la certification du matériel de radiocommunication **ANSI C 63.10:2013** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices 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. ..... :	Device for metal detecting in hobby use
Model/Type reference..... :	XTR115 / XTREM HUNTER
Trade Mark. ..... :	XTREM HUNTER
FCC ID..... :	XFJXTR115
IC. ..... :	8392A-XTR115
Serial number (S/N)..... :	Not communicated
Part number (P/N). ..... :	Not communicated
Software version..... :	*Not communicated*
Firmware version. ..... :	*Not communicated*
Type of sample. ..... :	Standard equipment
Function(s)..... :	Wireless object detection sensor
Manufacturer name. ..... :	XP METAL DETECTORS
Address. ..... :	40 chemin du Moulin 31320 MERVILLA FRANCE

General product information:

N/A

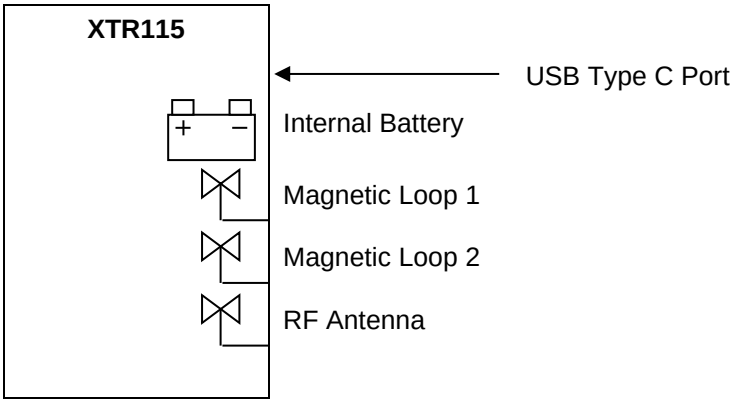
3.2. E.U.T. Mechanical and Electrical Design

Power supply. ..... :	*3.7Vdc*
Power supply range..... :	*3.4Vdc to 4.2Vdc*
Power type..... :	*Battery powered*
Power (W)..... :	*2.2*
Nominal current (A). ..... :	*0.6*
Dimensions (L x W x H) (m). ..... :	*0.50 x 0,35 x 1.25*
Weight (kg). ..... :	*2.6*
Temperature range (°C). ..... :	*-10 to 40*
Ground bounding strap..... :	*No*

Comments:

N/A

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



Port	Name	Type	Length	Cable Type	Comments
0	Main frame	N/E	N/A	Plastic	-
1	USB Type C Port	DC	N/A	N/A	Used for Battery charging (5Vdc)
2	Internal Battery	DC	N/A	N/A	3.7Vdc
3	Magnetic Loop 1	RF	N/A	N/A	From 5kHz to 7.35kHz
4	Magnetic Loop 2	RF	N/A	N/A	From 5kHz to 7.35kHz
5	RF Antenna	RF	N/A	N/A	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

3.4. Supporting Equipment Used During Test

Sample subject to the tests was tested with following equipment.

Product Type	Manufacturer	Model	N°Emitech / Comments
Remote control	XPLORER	DEUS II	Used to have communication with EUT during the tests
Charger	XPLORER	T038-1	Charging mode

3.5. EUT Radio Specifications

a) GENERAL INFORMATIONS	
According to manufacturer's declarations :	
EUT type..... :	*Transceiver*
Technology ..... :	*SRD (Metal and object detection sensors) and SRD 2.4GHz*
Environmental profile..... :	*Data transmissions*
Temperature range..... :	*-10°C to +40°C*
Antenna type ..... :	*Integral*
Antenna Gain..... :	*Not communicated*
Comments:	
N/A	

b) TRANSMITTER PARAMETERS (TX)	
Frequency bands..... :	*2400MHz to 2483.5MHz*
RF Power..... :	*Not communicated*
Number of channels / Separation..... :	*24 channels*
Modulation type ..... :	*GFSK*
Duty cycle ..... :	*Not communicated*
Tested frequency..... :	*2406MHz (Low channel)* *2440MHz (Mid channel)* *2476MHz (High channel)*

c) RECEIVER PARAMETERS (RX)	
Frequency bands..... :	*2400MHz to 2483.5MHz*
Category/Class ..... :	*Not communicated*
Bandwidth..... :	*2MHz*

4. OPINION(S) AND INTERPRETATION(S)

TEST(S) PERFORMED	DEVIATION(S) TO TEST METHOD(S)
FCC part 15.247 subclause d) and RSS-247	N/A
FCC part 15.247 and RSS-247	N/A
FCC part 15.109, 15.209, 15.205, 15.215, CNR-Gen	N/A
FCC part 15.109, 15.209, 15.205, 15.215, CNR-Gen	The EUT is encapuslated in a casing. We were not able to measure its voltage supply during radiated tests
FCC part 15.109, 15.209, 15.205, 15.215 RSS-247, CNR Gen	N/A
FCC part 15 Radio part 15.215 and RSS Gen	N/A

Comments: N/A

5. 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	Class B	PASS	15.107
Radiated emission limits	Class B	PASS	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			
Equipment authorization requirement		PASS	15.201 / Transmitter part is subject to Certification procedure

TEST DESIGNATION	SEVERITY	VERDICT	BASIC STANDARDS / COMMENTS
Certified operating frequency range		**N/A**	**15.202**
Antenna requirement		**PASS**	**15.203 / Dedicated and glued antenna**
External radio frequency power amplifiers and antenna modifications		**N/A**	**15.204**
Restricted bands of operation		**PASS**	**15.204**
Conducted limits	**Class B**	**PASS**	**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)
- Digital modulation system		PASS	a) (2)
- **Maximum peak conducted output power**		**-**	**b)**
- For hopping system in the 2400-2483.5 MHz and 5725-5850 MHz bands		N/A	b) (1)
- For hopping system in the 902-928MHz band		N/A	b) (2)
- 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/A**	**g)**
- **Frequency hopping intelligence**		**N/A**	**h)**
- **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)
FCC part 15.247 subclause d) and RSS-247	N/A
FCC part 15.247 and RSS-247	N/A
FCC part 15.109, 15.209, 15.205, 15.215, CNR-Gen	N/A
FCC part 15.109, 15.209, 15.205, 15.215 RSS-247, CNR Gen	N/A
FCC part 15 Radio part 15.215 and RSS Gen	N/A

6. MEASUREMENT UNCERTAINTY

PARAMETER	MAXIMAL EMITECH UNCERTAINTY	MINIMAL STANDARD UNCERTAINTY
Radio frequency	± 1 x 10^{-7}	±1 x 10^{-7}
RF power, conducted		
RF power	± 0.8dB	± 1 dB
RF power (EN 300328 / EN 301893)	± 1.3dB	± 1.5 dB
Power spectral density	± 2.3dB	± 3 dB
Occuped bandwidth		
RF power	± 3.8 %	± 5 %
RF power (EN 300328 / EN 301893)	± 3.8 %	± 5 %
Maximum frequency deviation		
300 Hz < audio frequency < 6 kHz	± 1.2 %	± 5 %
6 kHz < audio frequency < 25 kHz	± 1.2 %	± 3 dB
Amplitude	± 8.5 %	± 20 %
At the frequency	± 166 Hz	± 250 Hz
Conducted emission (spurious)		
f ≤ 1 GHz	± 0.8 dB	± 3 dB
1 GHz - 12.75 GHz	± 1.6 dB	
Radiated emission (PAR / PIRE / RNE)		
f ≤ 62.5 MHz	± 5.7 dB	± 6 dB
62.5 MHz - 1 GHz	± 5.8 dB	± 6 dB
1 GHz - 18 GHz	± 5.6 dB	± 6 dB
18 GHz – 40 GHz	± 5.6 dB	± 6 dB
40 GHz – 110 GHz	± 5.9 dB	Between ± 6 to 10 dB
180-1000 MHz / 1 – 12.75 GHz (EN 301 908-1)	± 3.0 / 2.9 dB	± 3 dB
RF power (EN 300328 / EN 301893)	± 5.3 dB	± 6 dB
PIRE and power spectral density with diode	± 5.7 dB	± 6 dB
Radiated emission (magnetic field)		
9kHz – 30MHz	± 3.4 dB	± 6 dB
RF level for a given BER	± 0.8 dB	± 1.5 dB
Supply voltages	± 3 %	± 3 %
Temperature	± 1 °C	± 1°C
Humidity	± 5 %	± 5 %
Time / Duty cycle	± 4.4 %	± 5 %
Adaptivity	± 2.9 dB	/
Conducted emission (FCC)		
(Artificial Mains Network) 150kHz – 30MHz	± 3.4 dB	± 3.4 dB
Radiated emission (electric field for FCC standard)		
9kHz – 30MHz	± 2.7 dB	/
30MHz – 1GHz	± 5.0 dB	/
1GHz – 18GHz	± 5.3 dB	/
18GHz – 40GHz	± 6.1 dB	/
40GHz – 140GHz	± 5.7 dB	/

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

7. TEST CONDITIONS AND RESULTS

7.1. Conducted emission (measurement)

Reference standard:	FCC part 15.107, 15.207 and RSS-Gen
Test method:	ANSI C63.10: 2013
General test setup: EUT is set on an insulating support at 80cm from the ground reference plane. All power was connected to the system through Artificial Mains Network (AMN). The AMN is placed at 80cm from the boundary of the EUT and bonded to a ground reference plane. All tested telecommunications lines (if applicable) were connected to an Asymmetric Artificial Network (AAN) and conducted voltage measurements on telecommunications lines were made at the output of the AAN. Where an AAN was not appropriate or available, measurements were made using a Capacitive Voltage Probe and/or a Current probe. Additionnal ground terminals (if any) are connected to earth terminal of the AMN.	

TESTED CABLE	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
Conducted measurement / 120Vac/60Hz / All channels	150kHz-30MHz	Class B	EMI4181	**PASS**
Conducted measurement / 120Vac/60Hz / Standby	150kHz-30MHz	Class B	EMI4131	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	*See Graph(s)*
Relative Humidity	30 to 60 %	*See Graph(s)*
Atmospheric pressure	N/A	*See Graph(s)*
Test method deviation: N/A		
Supplementary information: N/A		

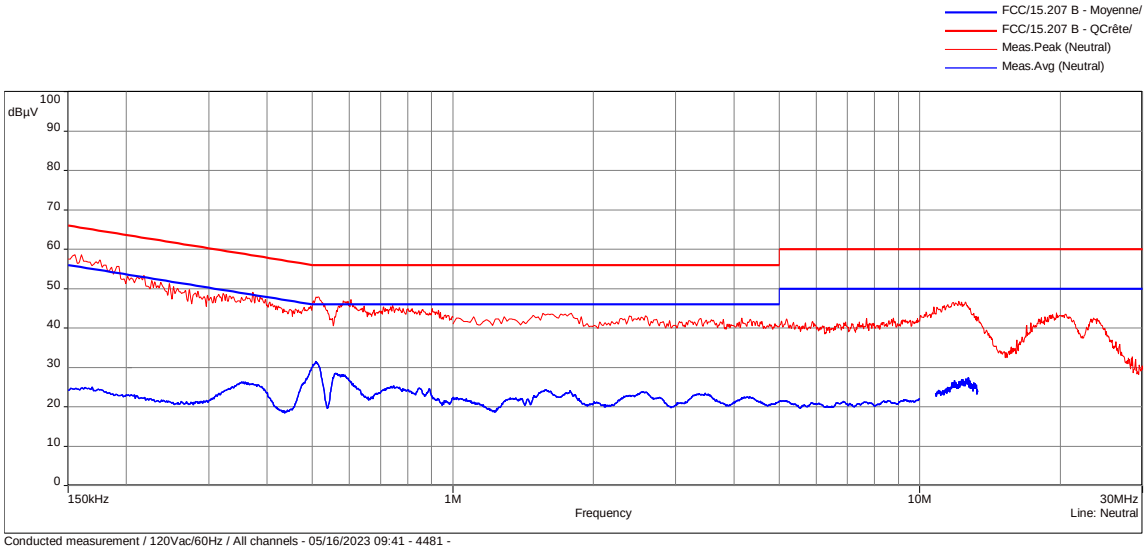
TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Artificial hand	EMITECH	Souple	4619	09/08/2022	09/10/2024
Cable	EMITECH	Current absorber sheath	18366	26/01/2022	26/03/2024
Cable	/	N-3m 3GHz	16410	10/11/2021	10/01/2024
LISN	Rohde & Schwarz	ENV216	17925	24/09/2021	24/11/2023
Receiver	Rohde & Schwarz	ESI	9704	21/11/2022	21/01/2024
Thermohygrometer	Testo	608-H2	12268	24/10/2022	24/12/2024
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023

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

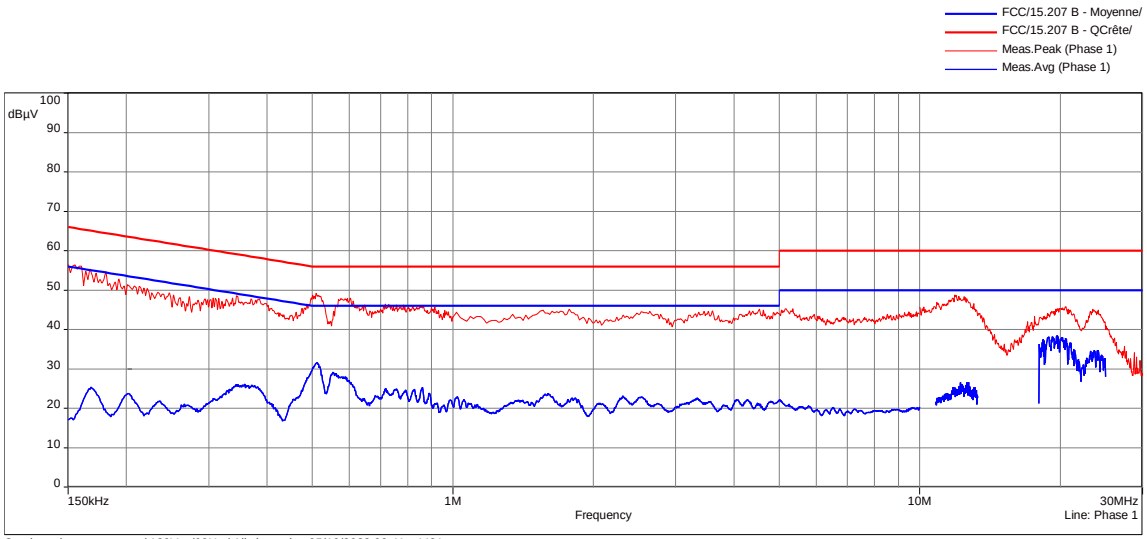
CONDUCTED EMISSION (MEASUREMENT) - TABULATED RESULTS						
CONDUCTED MEASUREMENT / 120VAC/60HZ / ALL CHANNELS						EMI4481
Terminal	**Test Frequency (MHz)**	**Detector (Pk/QP/Av)**	**Gain/Loss Factor (dB)**	**Level dB (µV)**	**Limit dB (µV)**	**Margin (dB)**
Neutral	0.353	Av	9.60	26.31	48.89	-22.58
Neutral	0.509	Av	9.61	31.57	46.00	-14.43
Neutral	0.564	Av	9.61	28.55	46.00	-17.45
Neutral	0.746	Av	9.62	25.34	46.00	-20.66
Neutral	1.577	Av	9.65	24.42	46.00	-21.58
Neutral	12.706	Av	9.87	27.41	50.00	-22.59
Line	0.359	Av	9.60	26.11	48.89	-22.78
Line	0.513	Av	9.61	31.61	46.00	-14.39
Line	0.554	Av	9.61	29.15	46.00	-16.85
Line	12.224	Av	9.86	26.58	50.00	-23.42
Line	19.697	Av	9.94	38.60	50.00	-11.40
Line	24.101	Av	9.99	34.68	50.00	-15.32
Supplementary information: N/A						

CONDUCTED EMISSION (MEASUREMENT) - TABULATED RESULTS						
CONDUCTED MEASUREMENT / 120VAC/60HZ / STANDBY						EMI4831
Terminal	**Test Frequency (MHz)**	**Detector (Pk/QP/Av)**	**Gain/Loss Factor (dB)**	**Level dB (µV)**	**Limit dB (µV)**	**Margin (dB)**
Neutral	0.463	Av	9.61	19.89	46.64	-26.75
Neutral	0.536	Av	9.61	23.60	46.00	-22.40
Neutral	0.586	Av	9.61	18.02	46.00	-27.98
Line	0.452	Av	9.60	20.56	46.82	-26.26
Line	0.535	Av	9.61	25.03	46.00	-20.97
Line	0.583	Av	9.61	18.69	46.00	-27.31
Supplementary information: N/A						

CONDUCTED EMISSION (MEASUREMENT) - GRAPH			
CONDUCTED MEASUREMENT / 120VAC/60HZ / ALL CHANNELS		EMI4481	
EUT mode:	Tx mode	**T (°C):**	22.9
Test Date:	16/05/2023	**H (%):**	36.8
Test Operator:	ATO	**P (hPa):**	995



Conducted measurement / 120Vac/60Hz / All channels - 05/16/2023 09:41 - 4481 -

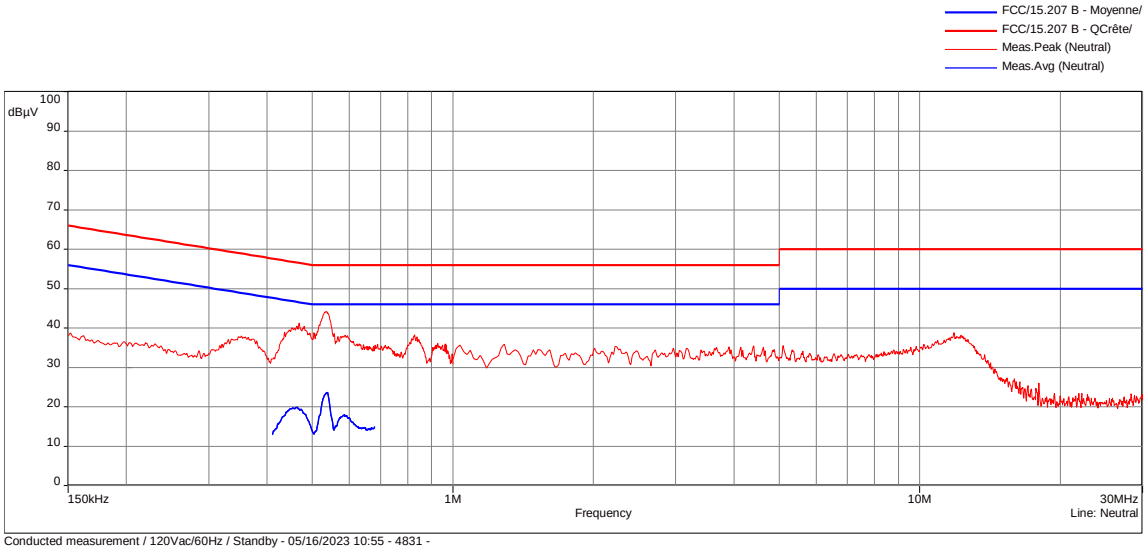


Conducted measurement / 120Vac/60Hz / All channels - 05/16/2023 09:41 - 4481 -

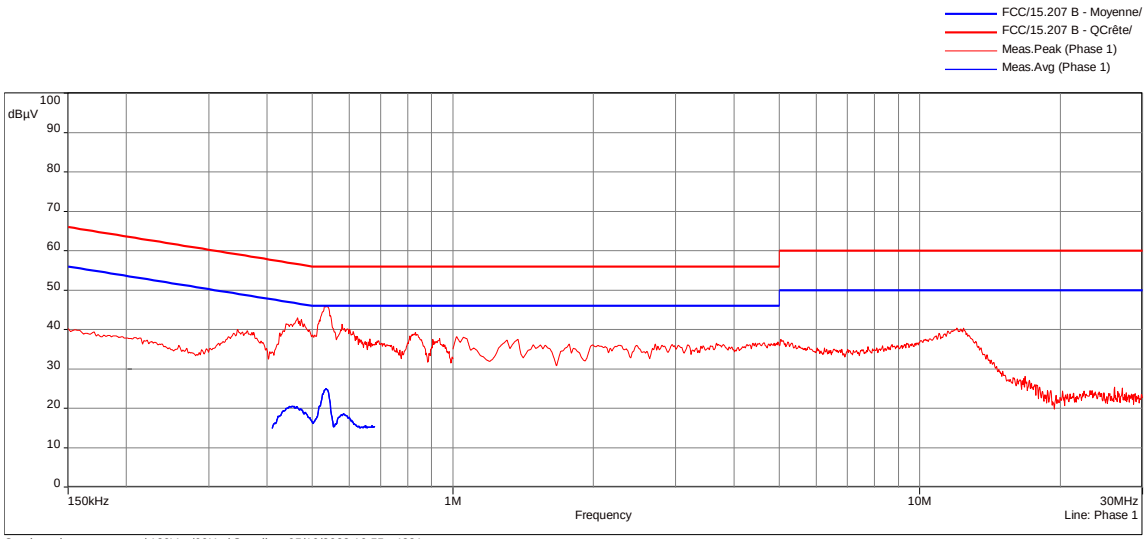
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Neutral	150kHz-1MHz	10kHz	30kHz	Peak
Neutral	1MHz-10MHz	10kHz	30kHz	Peak
Neutral	10MHz-30MHz	10kHz	30kHz	Peak
Phase 1	150kHz-1MHz	10kHz	30kHz	Peak
Phase 1	1MHz-10MHz	10kHz	30kHz	Peak
Phase 1	10MHz-30MHz	10kHz	30kHz	Peak
Neutral	150kHz-1MHz	9kHz	-	Average
Neutral	1MHz-10MHz	9kHz	-	Average
Neutral	10.8MHz-13.3MHz	9kHz	-	Average
Phase 1	150kHz-1MHz	9kHz	-	Average
Phase 1	1MHz-10MHz	9kHz	-	Average
Phase 1	10.8MHz-13.3MHz	9kHz	-	Average
Phase 1	18MHz-25MHz	9kHz	-	Average
Measure with:	A.M.N.			

CONDUCTED EMISSION (MEASUREMENT) - GRAPH		
CONDUCTED MEASUREMENT / 120VAC/60HZ / ALL CHANNELS		EMI4481
Comments:	N/A	
EUT modification(s): N/A		

CONDUCTED EMISSION (MEASUREMENT) - GRAPH			
CONDUCTED MEASUREMENT / 120VAC/60HZ / STANDBY		EMI4831	
EUT mode:	Tx mode	**T (°C):**	22.9
Test Date:	16/05/2023	**H (%):**	36.8
Test Operator:	ATO	**P (hPa):**	995



Conducted measurement / 120Vac/60Hz / Standby - 05/16/2023 10:55 - 4831 -



Conducted measurement / 120Vac/60Hz / Standby - 05/16/2023 10:55 - 4831 -

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Neutral	150kHz-1MHz	10kHz	30kHz	Peak
Neutral	1MHz-10MHz	10kHz	30kHz	Peak
Neutral	10MHz-30MHz	10kHz	30kHz	Peak
Phase 1	150kHz-1MHz	10kHz	30kHz	Peak
Phase 1	1MHz-10MHz	10kHz	30kHz	Peak
Phase 1	10MHz-30MHz	10kHz	30kHz	Peak
Neutral	410kHz-680kHz	9kHz	-	Average
Phase 1	410kHz-680kHz	9kHz	-	Average
Measure with:	A.M.N.			
Comments:	N/A			
EUT modification(s): N/A				

7.2. 6dB bandwidth

Reference standard:	FCC part 15 Radio part 15.247 and RSS-247
Test method:	FCC part 15.247 and RSS-247
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.	

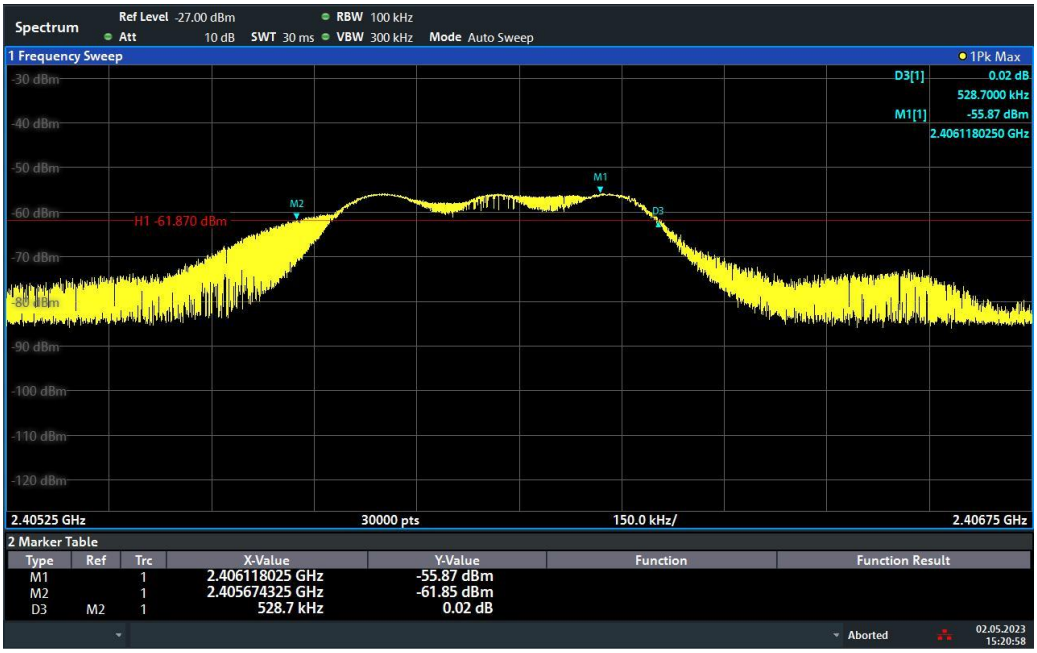
TEST CASE AND CONDITIONS	MODULATION BANDWIDTH	RESULT TAB.	VERDICT
Low channel	528.7 kHz	EMI4471	**PASS**
Mid channel	532.85 kHz	EMI5097	**PASS**
High channel	507.55 kHz	EMI5098	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	24.3 °C
Relative Humidity	20 to 75 %	43.3 %
Atmospheric pressure	N/A	1003 hPa
Test method deviation: N/A		
Supplementary information:		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	8387	24/03/2023	24/05/2026
Cable	SUCOFLEX	N-3m	14379	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-5,5m	14381	23/08/2021	23/10/2023
Receiver	Rohde & Schwarz	FPL1007	17908	02/11/2022	02/01/2024
Shielded enclosure	RAY PROOF	C.V1	1123	19/08/2021	19/10/2024
Thermohygrometer	Testo	608-H1	7561	19/06/2023	19/08/2024
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023

Blank cells = Permanent validity

6dB bandwidth - Graph	
Low channel	EMI4471
EUT mode:	Modulated
Test Date:	02/05/2023
Test Operator:	ATO

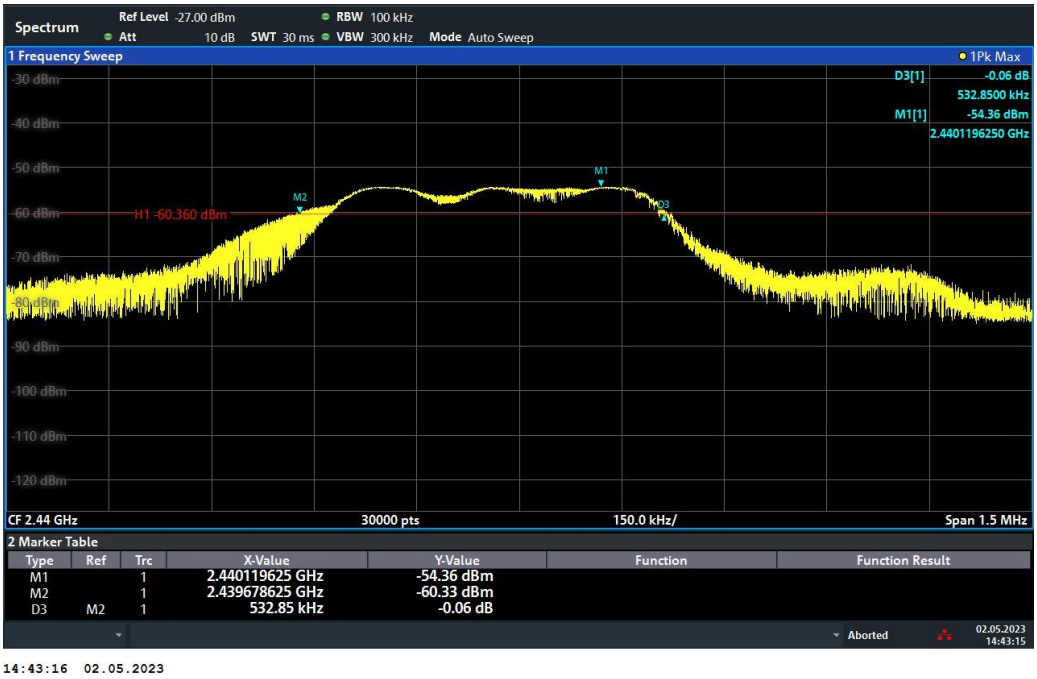


15:20:59 02.05.2023

EUT modification(s): N/A

6dB Bandwith - Tabulated Results			
Low channel			
Frequency	**RBW**	**6 dB Bandwith**	**Limit**
2404 MHz	100kHz	528.7 kHz	>500kHz

6dB bandwidth - Graph	
Mid channel	EMI5097
EUT mode:	Modulated
Test Date:	02/05/2023
Test Operator:	ATO



14:43:16 02.05.2023

EUT modification(s): N/A

6dB Bandwith - Tabulated Results			
Mid channel			
Frequency	**RBW**	**6 dB Bandwith**	**Limit**
2440 MHz	100kHz	532.85 kHz	>500kHz

6dB bandwidth - Graph	
High channel	EMI5098
EUT mode:	Modulated
Test Date:	02/05/2023
Test Operator:	ATO

14:31:06 02.05.2023

EUT modification(s): N/A

6dB Bandwith - Tabulated Results			
Low channel			
Frequency	**RBW**	**6 dB Bandwith**	**Limit**
2476 MHz	100kHz	507.55 kHz	>500kHz

7.3. Occupied bandwidth

Reference standard:	FCC part 15 Radio part 15.247 and RSS-247
Test method:	FCC part 15.247 and RSS-247
Test description: 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.	

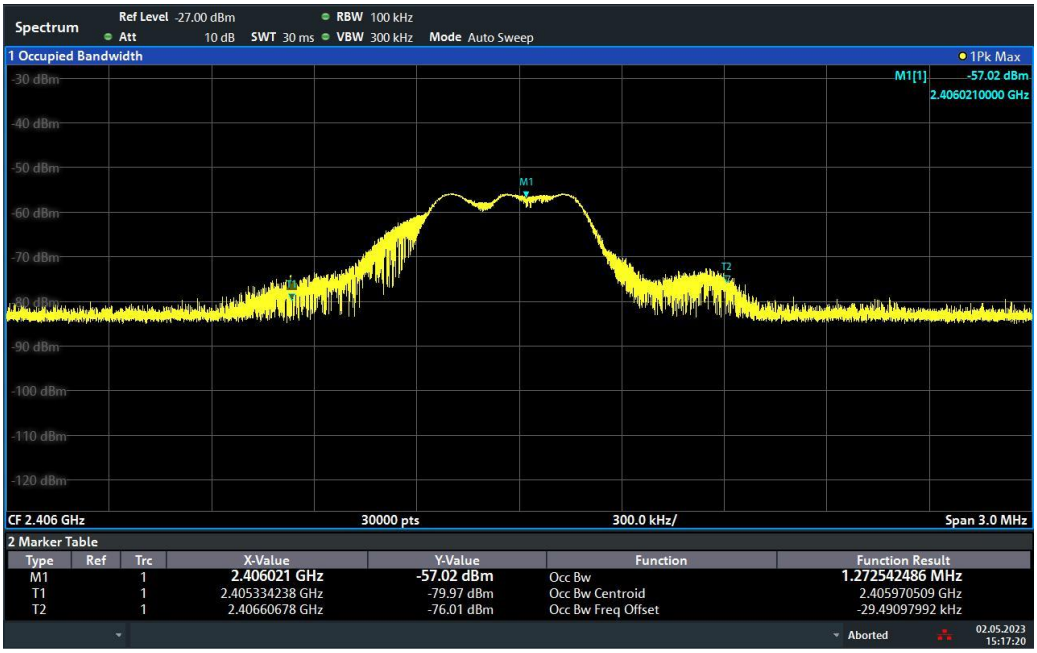
TEST CASE AND CONDITIONS	MODULATION BANDWIDTH	RESULT TAB.	VERDICT
Low channel	1272.54 kHz	EMI5099	**N/A**
Mid channel	979.51 kHz	EMI5100	**N/A**
High channel	971.89 kHz	EMI5101	**N/A**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	24.3 °C
Relative Humidity	20 to 75 %	43.3 %
Atmospheric pressure	N/A	1003 hPa
Test method deviation: N/A		
Supplementary information:		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	8387	24/03/2023	24/05/2026
Cable	SUCOFLEX	N-3m	14379	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-5,5m	14381	23/08/2021	23/10/2023
Receiver	Rohde & Schwarz	FPL1007	17908	02/11/2022	02/01/2024
Shielded enclosure	RAY PROOF	C.V1	1123	19/08/2021	19/10/2024
Thermohygrometer	Testo	608-H1	7561	19/06/2023	19/08/2024
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023

Blank cells = Permanent validity

OCCUPIED BANDWIDTH - GRAPH	
LOW CHANNEL	EMI5099
EUT mode:	Modulated
Test Date:	02/05/2023
Test Operator:	ATO

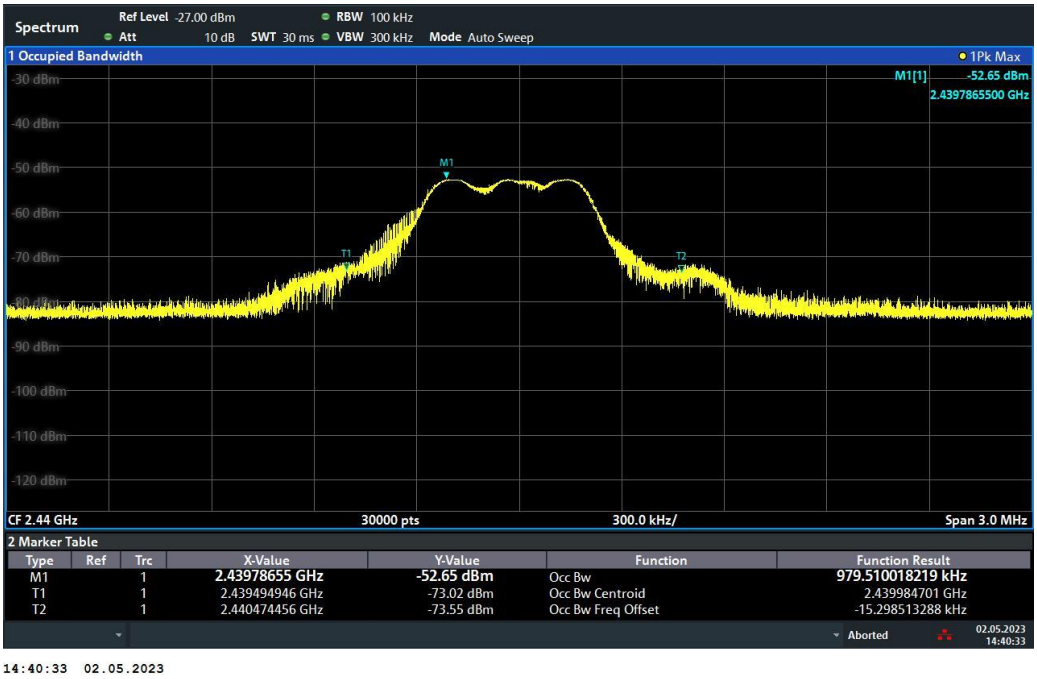


15:17:20 02.05.2023

EUT modification(s): N/A

OCCUPIED BANDWIDTH - TABULATED RESULTS			
LOW CHANNEL			
Frequency	**RBW**	**OBW 99%**	**Limit**
2404 MHz	100 kHz	1272.52 kHz	> 500kHz

OCCUPIED BANDWIDTH - GRAPH	
MID CHANNEL	EMI5100
EUT mode:	Modulated
Test Date:	02/05/2023
Test Operator:	ATO

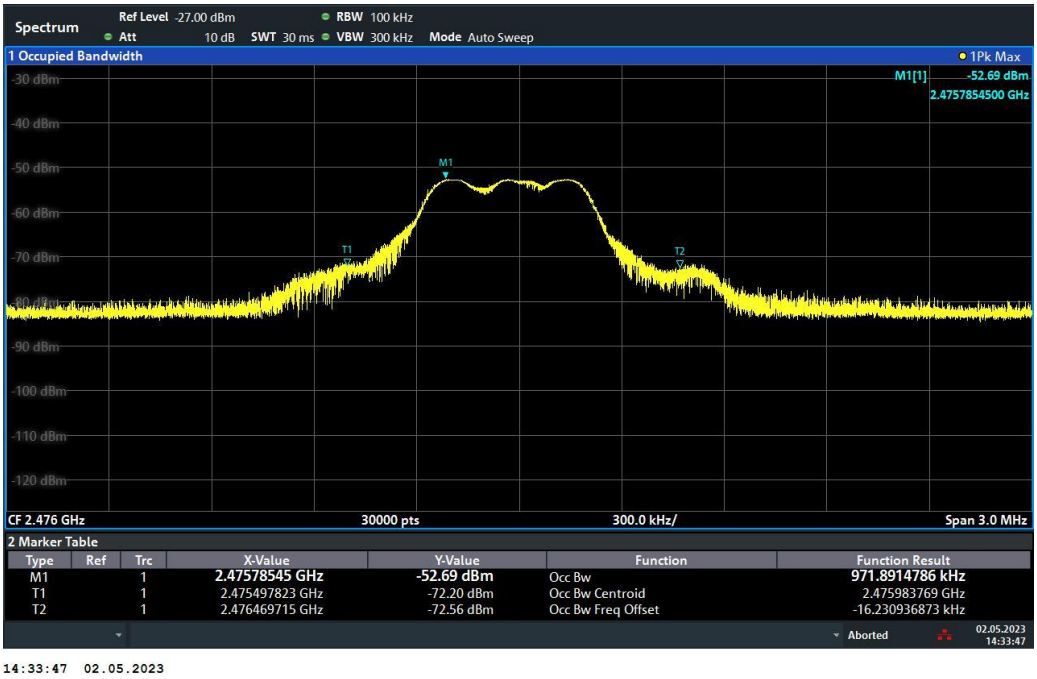


14:40:33 02.05.2023

EUT modification(s): N/A

OCCUPIED BANDWIDTH - TABULATED RESULTS			
LOW CHANNEL			
Frequency	**RBW**	**OBW 99%**	**Limit**
2440 MHz	100 kHz	979.51 kHz	> 500kHz

OCCUPIED BANDWIDTH - GRAPH	
HIGH CHANNEL	EMI5101
EUT mode:	Modulated
Test Date:	02/05/2023
Test Operator:	ATO



14:33:47 02.05.2023

EUT modification(s): N/A

OCCUPIED BANDWIDTH - TABULATED RESULTS			
LOW CHANNEL			
Frequency	**RBW**	**OBW 99%**	**Limit**
2476 MHz	100 kHz	971.89 kHz	> 500kHz

7.4. Maximum effective isotropic radiated power

Reference standard:	FCC part 15 Radio part 15.247 and RSS-247
Test method:	FCC part 15.247 and RSS-247

Test description: EUT is set on an insulating support at 150cm above the ground reference plane.

Measurement are 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.

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
EIRP / All Positions / Low channel	2.404GHz-2.408GHz	30 dBm	EMI4713	**PASS**
EIRP / All Positions / Mid channel	2.438GHz-2.442GHz	30 dBm	EMI4736	**PASS**
EIRP / All Positions / High channel	2.474GHz-2.478GHz	30 dBm	EMI4737	**PASS**

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

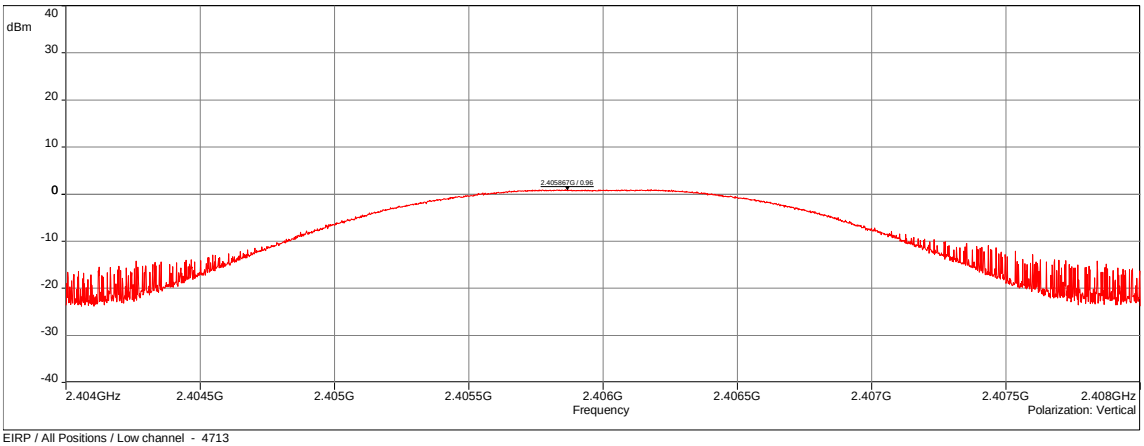
TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	8387	24/03/2023	24/05/2026
Attenuator	EMITECH	SUB.V1-H	14780	20/04/2023	20/06/2024
Attenuator	EMITECH	SUB.V1-V	14781	20/04/2023	20/06/2024
Cable	SUCOFLEX	N-3m	14379	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-5,5m	14381	23/08/2021	23/10/2023
Receiver	Rohde & Schwarz	FPL1007	17908	02/11/2022	02/01/2024
Shielded enclosure	RAY PROOF	C.V1	1123	19/08/2021	19/10/2024
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023
Thermohygrometer	Testo	608-H1	7561	16/05/2022	16/07/2023

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

EFFECTIVE ISOTROPIC RADIATED POWER - GRAPH			
EIRP / ALL POSITIONS / LOW CHANNEL		EMI4713	
EUT mode:	Tx mode	**T (°C):**	24.3
Test Date:	02/05/2023	**H (%):**	43.3
Test Operator:	RGI & ATO	**P (hPa):**	1003

Meas.Peak (Vertical)

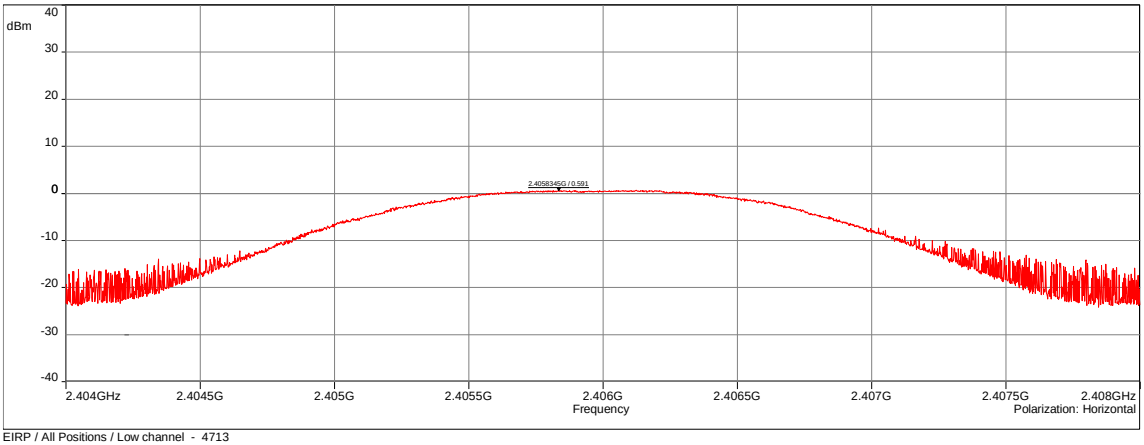
Sub-range 1
Frequencies: 2.404 GHz - 2.408 GHz (Analyser mode) 30000 Points
Settings: RBW: 1MHz, VBW: 3MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



EIRP / All Positions / Low channel - 4713

Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 2.404 GHz - 2.408 GHz (Analyser mode) 30000 Points
Settings: RBW: 1MHz, VBW: 3MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m



EIRP / All Positions / Low channel - 4713

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.404GHz-2.408GHz	1MHz	3MHz	Peak
Horizontal	2.404GHz-2.408GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			

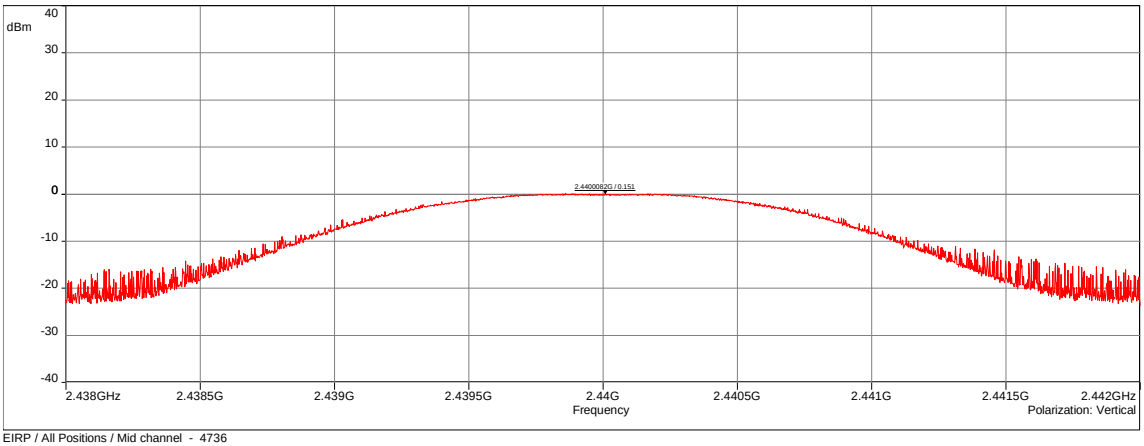
EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS			
EIRP / ALL POSITIONS / LOW CHANNEL			EMI4713
Frequency (MHz)	**Polarization**	**Level (dBm)**	**Limit (dBm)**
2404.00	Vertical	0.96	30.00
2404.00	Horizontal	0.59	30.00

EFFECTIVE ISOTROPIC RADIATED POWER - GRAPH			
EIRP / ALL POSITIONS / MID CHANNEL		EMI4736	
EUT mode:	Tx mode	**T (°C):**	24.3
Test Date:	02/05/2023	**H (%):**	43.3
Test Operator:	RGI & ATO	**P (hPa):**	1003

Meas.Peak (Vertical)

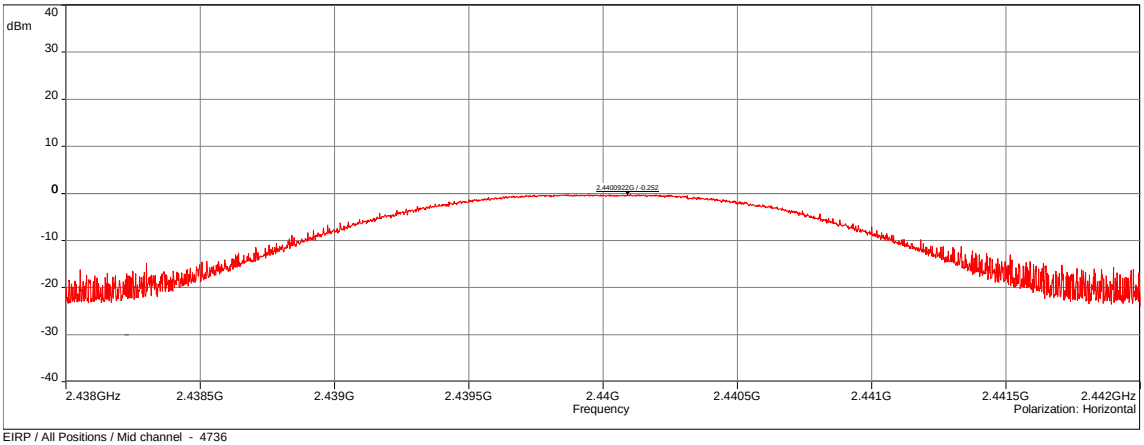
Sub-range 1
Frequencies: 2.438 GHz - 2.442 GHz (Analyser mode) 30000 Points
Settings: RBW: 1MHz, VBW: 3MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



EIRP / All Positions / Mid channel - 4736

Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 2.438 GHz - 2.442 GHz (Analyser mode) 30000 Points
Settings: RBW: 1MHz, VBW: 3MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m



EIRP / All Positions / Mid channel - 4736

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.438GHz-2.442GHz	1MHz	3MHz	Peak
Horizontal	2.438GHz-2.442GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			

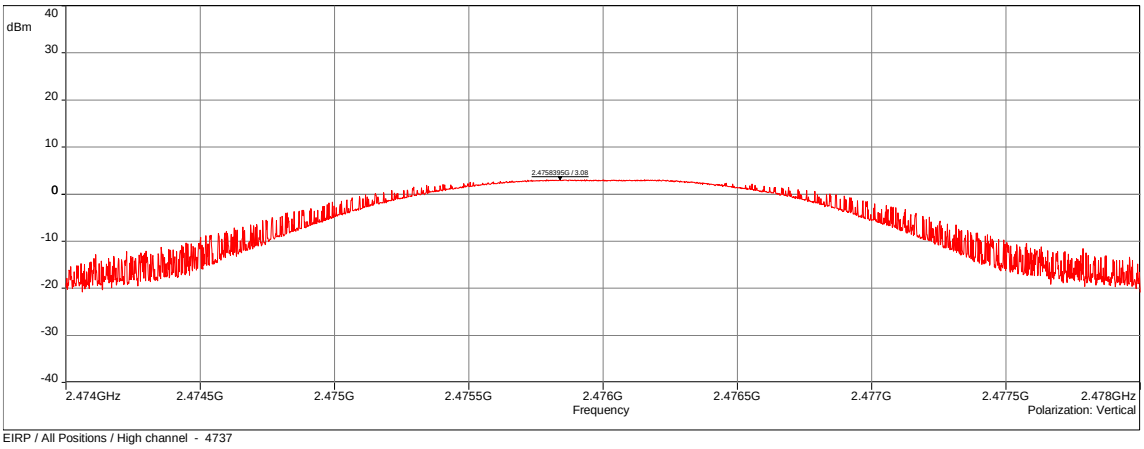
EUT modification(s): N/A

EFFECTIVE ISOTROPIC RADIATED POWER - TABULATED RESULTS			
EIRP / ALL POSITIONS / MID CHANNEL			EMI4736
Frequency (MHz)	**Polarization**	**Level (dBm)**	**Limit (dBm)**
2440.00	Vertical	0.151	30.00
2440	Horizontal	-0.252	30.00

EFFECTIVE ISOTROPIC RADIATED POWER - GRAPH			
EIRP / ALL POSITIONS / HIGH CHANNEL		EMI4737	
EUT mode:	Tx mode	**T (°C):**	24.3
Test Date:	02/05/2023	**H (%):**	43.3
Test Operator:	RGI & ATO	**P (hPa):**	1003

Meas.Peak (Vertical)

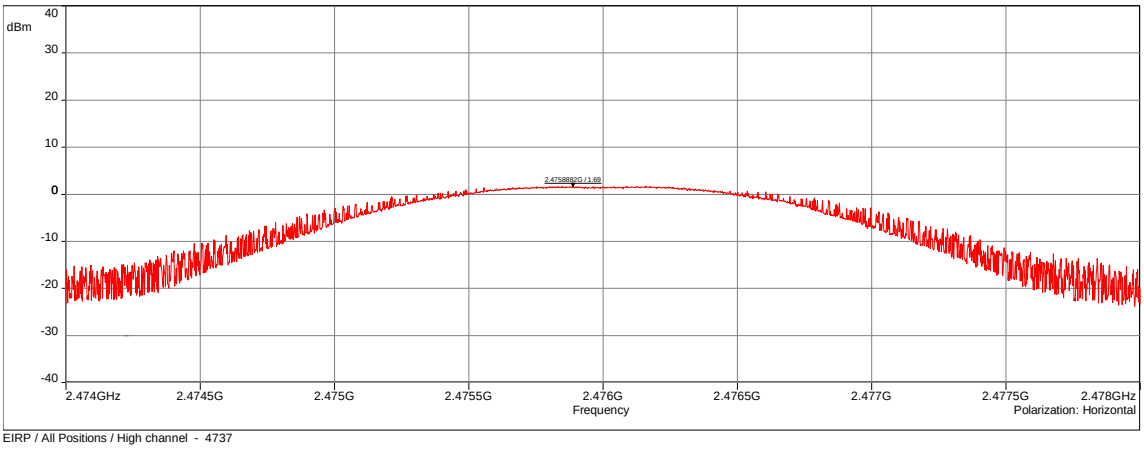
Sub-range 1
Frequencies: 2.474 GHz - 2.478 GHz (Analyser mode) 30000 Points
Settings: RBW: 1MHz, VBW: 3MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



EIRP / All Positions / High channel - 4737

Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 2.474 GHz - 2.478 GHz (Analyser mode) 30000 Points
Settings: RBW: 1MHz, VBW: 3MHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m



EIRP / All Positions / High channel - 4737

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.474GHz-2.478GHz	1MHz	3MHz	Peak
Horizontal	2.474GHz-2.478GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			

EUT modification(s): N/A

EFFECTIVE ISOTROPIC RADIATED POWER - TABULATED RESULTS			
EIRP / ALL POSITIONS / HIGH CHANNEL			EMI4737
Frequency (MHz)	**Polarization**	**Level (dBm)**	**Limit (dBm)**
2476.00	Vertical	3.08	30.00
2476.00	Horizontal	1.69	30.00

7.5. Band-edge compliance

Reference standard:	FCC part 15 Radio part 15.247 and RSS-247
Test method:	FCC part 15.247 subclause d) and RSS-247

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.

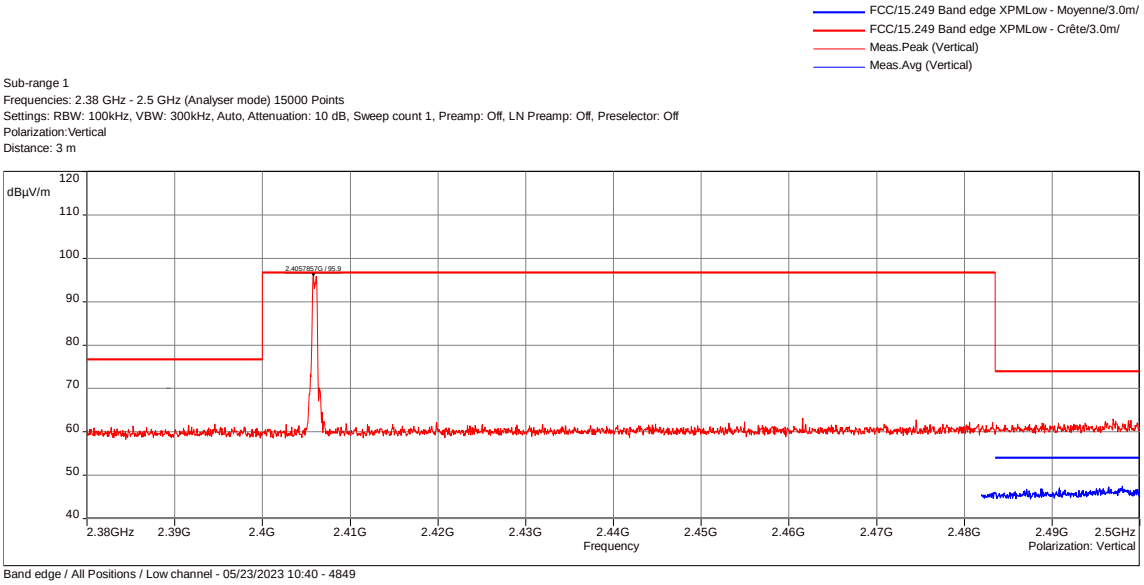
TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
Band edge / All Positions / Low channel	2.38GHz-2.5GHz	>20dBc	EMI4849	**PASS**
Band edge / All Positions / Mid channel	2.38GHz-2.5GHz	>20dBc	EMI4851	**PASS**
Band edge / All Positions / High channel	2.38GHz-2.5GHz	>20dBc	EMI4853	**PASS**

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

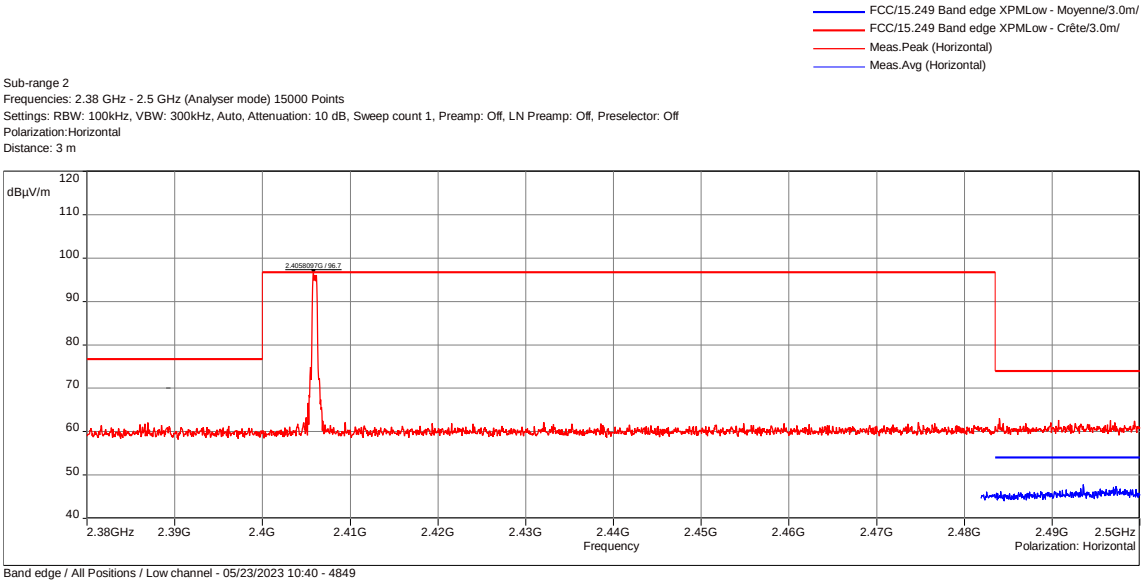
TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	8387	24/03/2023	24/05/2026
Attenuator	EMITECH	SUB.V1-H	14780	20/04/2023	20/06/2024
Attenuator	EMITECH	SUB.V1-V	14781	20/04/2023	20/06/2024
Cable	SUCOFLEX	N-3m	14379	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-5,5m	14381	23/08/2021	23/10/2023
Receiver	Rohde & Schwarz	FPL1007	17908	02/11/2022	02/01/2024
Shielded enclosure	RAY PROOF	C.V1	1123	19/08/2021	19/10/2024
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023
Thermohygrometer	Testo	608-H1	7561	16/05/2022	16/07/2023

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

BAND EDGE - GRAPH			
BAND EDGE / ALL POSITIONS / LOW CHANNEL		EMI4849	
EUT mode:	Modulated	**T (°C):**	21.1
Test Date:	23/05/2023	**H (%):**	42.4
Test Operator:	ATO & RGI	**P (hPa):**	995



Band edge / All Positions / Low channel - 05/23/2023 10:40 - 4849

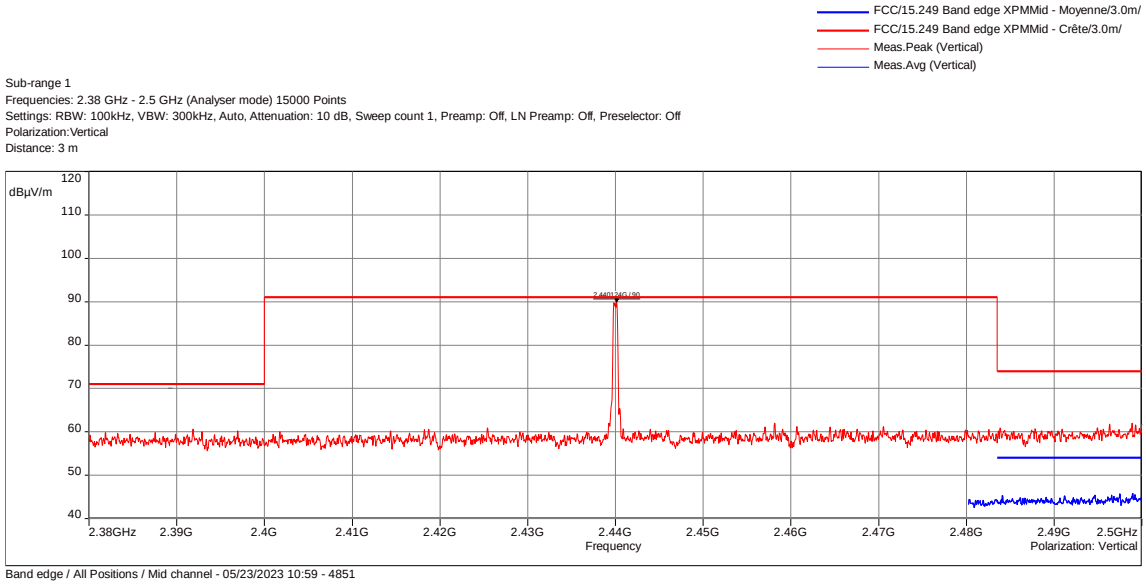


Band edge / All Positions / Low channel - 05/23/2023 10:40 - 4849

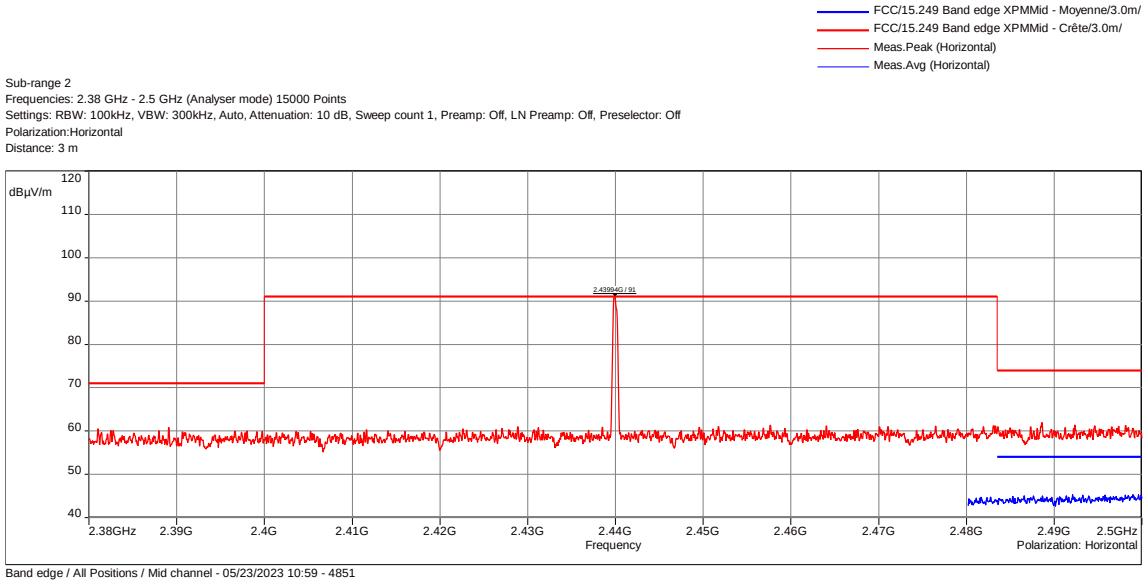
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.38GHz-2.5GHz	100kHz	300kHz	Peak
Horizontal	2.38GHz-2.5GHz	100kHz	300kHz	Peak
Vertical	2.48GHz-2.5GHz	100kHz	20kHz	Peak
Horizontal	2.48GHz-2.5GHz	100kHz	20kHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

No spurious emissions were detected.

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
BAND EDGE / ALL POSITIONS / MID CHANNEL		EMI4851	
EUT mode:	Modulated	**T (°C):**	21.1
Test Date:	23/05/2023	**H (%):**	42.4
Test Operator:	ATO & OAT	**P (hPa):**	995



Band edge / All Positions / Mid channel - 05/23/2023 10:59 - 4851

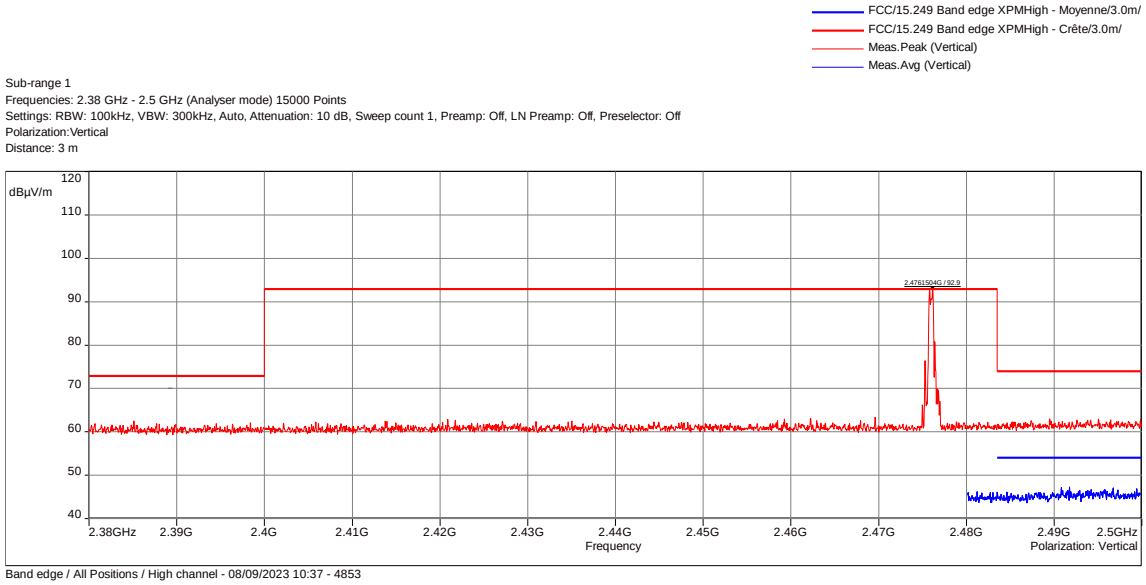


Band edge / All Positions / Mid channel - 05/23/2023 10:59 - 4851

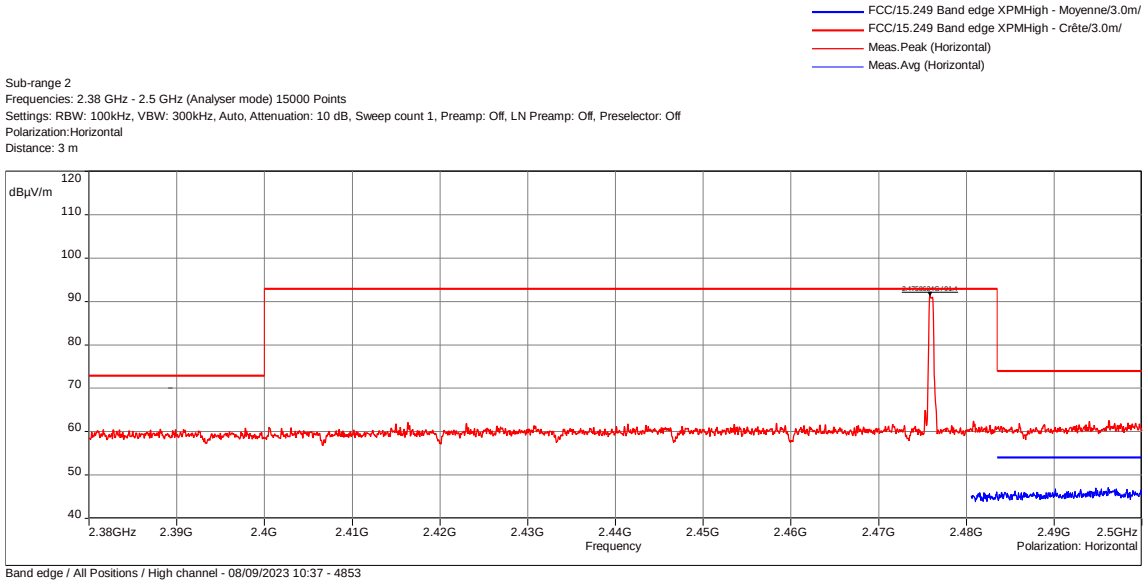
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.38GHz-2.5GHz	100kHz	300kHz	Peak
Horizontal	2.38GHz-2.5GHz	100kHz	300kHz	Peak
Vertical	2.48GHz-2.5GHz	100kHz	20kHz	Peak
Horizontal	2.48GHz-2.5GHz	100kHz	20kHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

No spurious emissions were detected.

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
BAND EDGE / ALL POSITIONS / HIGH CHANNEL		EMI4853	
EUT mode:	Modulated	**T (°C):**	21.1
Test Date:	23/05/2023	**H (%):**	42.4
Test Operator:	ATO & OAT	**P (hPa):**	995



Band edge / All Positions / High channel - 08/09/2023 10:37 - 4853



Band edge / All Positions / High channel - 08/09/2023 10:37 - 4853

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.38GHz-2.5GHz	100kHz	300kHz	Peak
Horizontal	2.38GHz-2.5GHz	100kHz	300kHz	Peak
Vertical	2.48GHz-2.5GHz	100kHz	20kHz	Peak
Horizontal	2.48GHz-2.5GHz	100kHz	20kHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

No spurious emissions were detected.

7.6. Power spectral density

Reference standard:	FCC part 15 Radio part 15.247 and RSS-247
Test method:	FCC part 15.247 and RSS-247

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.

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

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
PSD / All Positions / Low channel	2.4055GHz-2.4065GHz	8dBm/3kHz	EMI4848	**PASS**
PSD / All Positions / Mid channel	2.4395GHz-2.4405GHz	8dBm/3kHz	EMI4850	**PASS**
PSD / All Positions / High channel	2.4755GHz-2.4765GHz	8dBm/3kHz	EMI4852	**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		

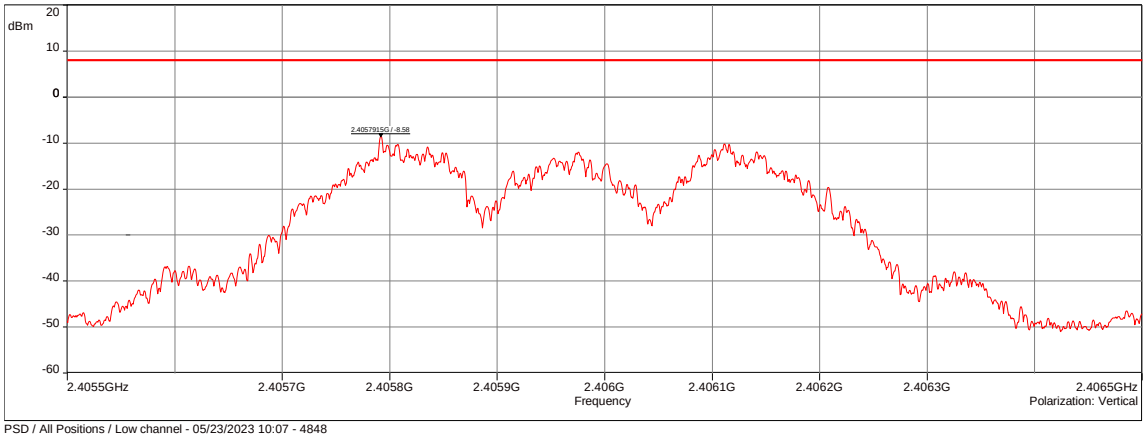
TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	8387	24/03/2023	24/05/2026
Attenuator	EMITECH	SUB.V1-H	14780	20/04/2023	20/06/2024
Attenuator	EMITECH	SUB.V1-V	14781	20/04/2023	20/06/2024
Cable	SUCOFLEX	N-3m	14379	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-5,5m	14381	23/08/2021	23/10/2023
Receiver	Rohde & Schwarz	FPL1007	17908	02/11/2022	02/01/2024
Shielded enclosure	RAY PROOF	C.V1	1123	19/08/2021	19/10/2024
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023
Thermohygrometer	Testo	608-H1	7561	16/05/2022	16/07/2023

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

POWER SPECTRAL DENSITY - GRAPH			
PSD / ALL POSITIONS / LOW CHANNEL		EMI4848	
EUT mode:	Modulated	**T (°C):**	21.1
Test Date:	23/05/2023	**H (%):**	42.4
Test Operator:	ATO	**P (hPa):**	995

FCC/15.249: 2020 e) PSD - Crête/3.0m/
Meas.Peak (Vertical)

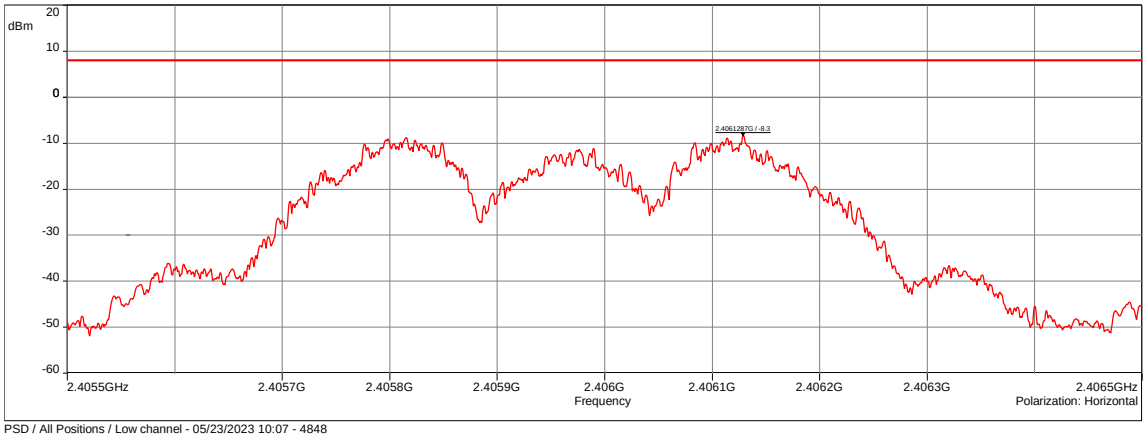
Sub-range 1
Frequencies: 2.4055 GHz - 2.4065 GHz (Analyser mode) 8000 Points
Settings: RBW: 3kHz, VBW: 9kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



PSD / All Positions / Low channel - 05/23/2023 10:07 - 4848

FCC/15.249: 2020 e) PSD - Crête/3.0m/
Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 2.4055 GHz - 2.4065 GHz (Analyser mode) 8000 Points
Settings: RBW: 3kHz, VBW: 9kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m



PSD / All Positions / Low channel - 05/23/2023 10:07 - 4848

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.4055GHz-2.4065GHz	3kHz	9kHz	Peak
Horizontal	2.4055GHz-2.4065GHz	3kHz	9kHz	Peak
Configuration:	N/A			
Comments:	N/A			

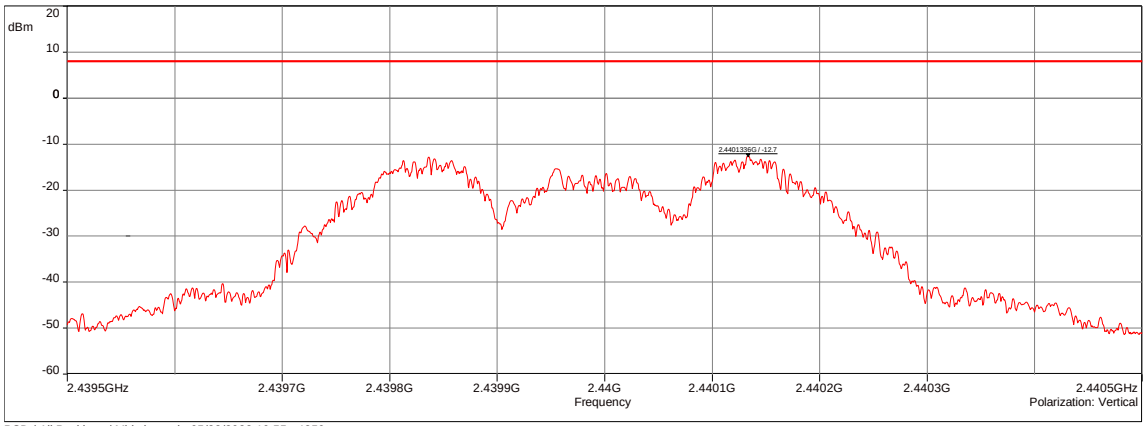
EUT modification(s): N/A

POWER SPECTRAL DENSITY - TABULATED RESULTS			
PSD / ALL POSITIONS / LOW CHANNEL			EMI4848
Frequency (MHz)	**Polarization**	**Level (dBm)**	**Limit (dBm)**
2404.00	Vertical	-8.58	8.00
2404.00	Horizontal	-8.30	8.00

POWER SPECTRAL DENSITY - GRAPH			
PSD / ALL POSITIONS / MID CHANNEL		EMI4850	
EUT mode:	Modulated	**T (°C):**	21.1
Test Date:	23/05/2023	**H (%):**	42.4
Test Operator:	ATO	**P (hPa):**	995

FCC/15.249: 2020 e) PSD - Crête/3.0m/
Meas.Peak (Vertical)

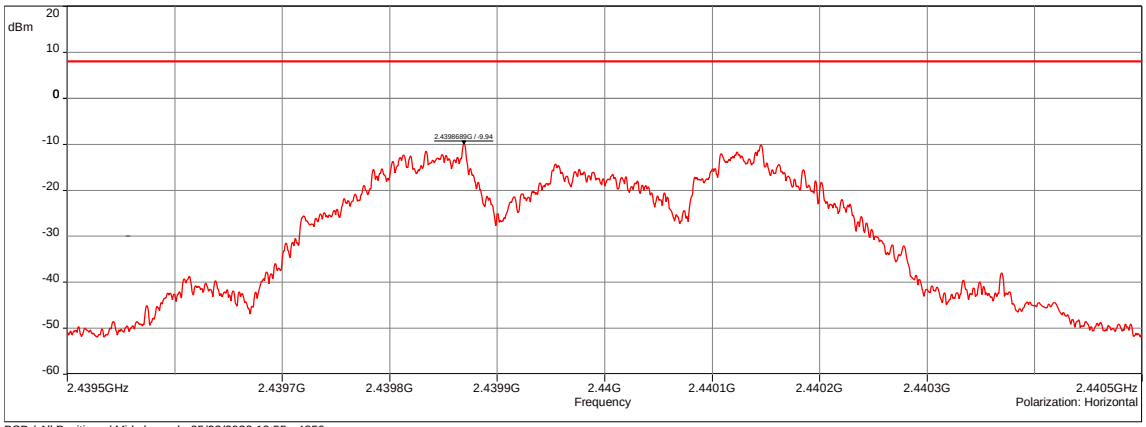
Sub-range 1
Frequencies: 2.4395 GHz - 2.4405 GHz (Analyser mode) 8000 Points
Settings: RBW: 3kHz, VBW: 9kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



PSD / All Positions / Mid channel - 05/23/2023 10:55 - 4850

FCC/15.249: 2020 e) PSD - Crête/3.0m/
Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 2.4395 GHz - 2.4405 GHz (Analyser mode) 8000 Points
Settings: RBW: 3kHz, VBW: 9kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m



PSD / All Positions / Mid channel - 05/23/2023 10:55 - 4850

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.4395GHz-2.4405GHz	3kHz	9kHz	Peak
Horizontal	2.4395GHz-2.4405GHz	3kHz	9kHz	Peak
Configuration:	N/A			
Comments:	N/A			

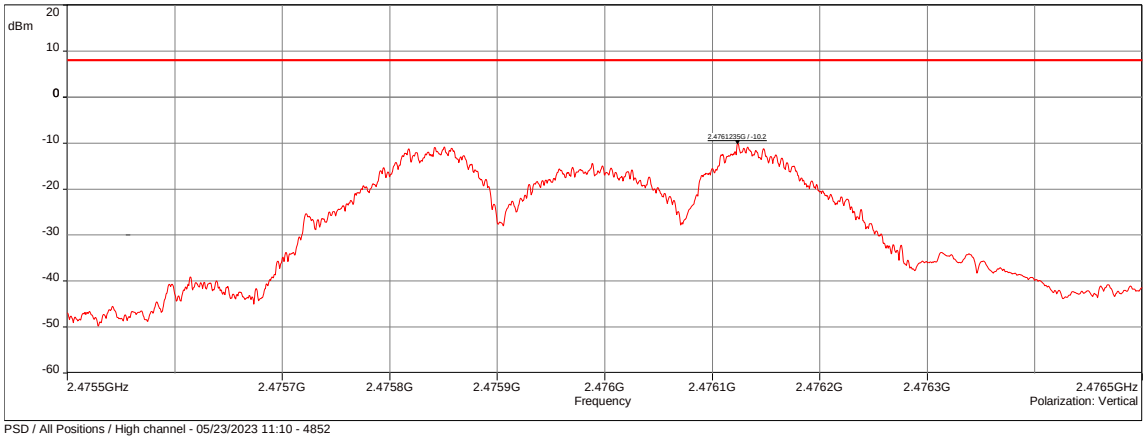
EUT modification(s): N/A

POWER SPECTRAL DENSITY - TABULATED RESULTS			
PSD / ALL POSITIONS / MID CHANNEL			EMI4850
Frequency (MHz)	**Polarization**	**Level (dBm)**	**Limit (dBm)**
2440.00	Vertical	-12.7	8.00
2440.00	Horizontal	-9.94	8.00

POWER SPECTRAL DENSITY - GRAPH			
PSD / ALL POSITIONS / HIGH CHANNEL		EMI4852	
EUT mode:	D-M2	**T (°C):**	21.1
Test Date:	23/05/2023	**H (%):**	42.4
Test Operator:	ATO	**P (hPa):**	995

FCC/15.249: 2020 e) - Classe:PSD - Crête/3.0m/
Meas.Peak (Vertical)

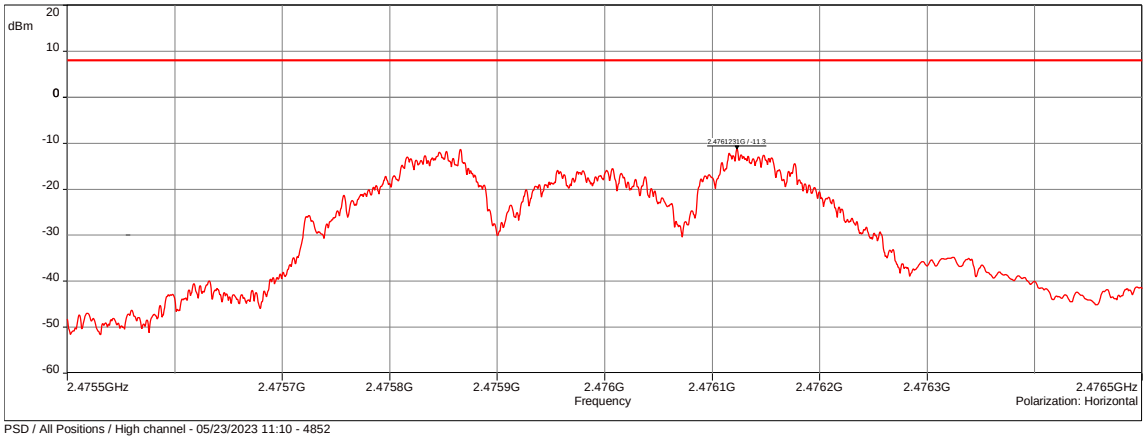
Sub-range 1
Frequencies: 2.4755 GHz - 2.4765 GHz (Analyser mode) 8000 Points
Settings: RBW: 3kHz, VBW: 9kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



PSD / All Positions / High channel - 05/23/2023 11:10 - 4852

FCC/15.249: 2020 e) - Classe:PSD - Crête/3.0m/
Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 2.4755 GHz - 2.4765 GHz (Analyser mode) 8000 Points
Settings: RBW: 3kHz, VBW: 9kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m



PSD / All Positions / High channel - 05/23/2023 11:10 - 4852

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	2.4755GHz-2.4765GHz	3kHz	9kHz	Peak
Horizontal	2.4755GHz-2.4765GHz	3kHz	9kHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

POWER SPECTRAL DENSITY - TABULATED RESULTS			
PSD / ALL POSITIONS / HIGH CHANNEL			EMI4852
Frequency (MHz)	**Polarization**	**Level (dBm)**	**Limit (dBm)**
2476.00	Vertical	-10.2	8.00
2476.00	Horizontal	-11.3	8.00

7.7. Transmitter radiated spurious emissions at frequencies <30MHz

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

Test description: : Spurious domain emission limits are limits on emissions at frequencies other than those of the carrier and sidebands associated with normal test modulation**.**

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 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.

All frequencies were investigated, where applicable.

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
Radiated measurement / All Positions / Standby / 0°	9kHz-30MHz	Tx	EMI4835	**PASS**
Radiated measurement / All Positions / Standby / 45°	9kHz-30MHz	Tx	EMI4836	**PASS**
Radiated measurement / All Positions / Standby / 90°	9kHz-30MHz	Tx	EMI4837	**PASS**
Radiated measurement / All Positions / Standby + charging / 0°	9kHz-30MHz	Tx	EMI4838	**PASS**
Radiated measurement / All Positions / Standby + charging / 45°	9kHz-30MHz	Tx	EMI4839	**PASS**
Radiated measurement / All Positions / Standby + charging / 90°	9kHz-30MHz	Tx	EMI4840	**PASS**
Radiated measurement / All Positions / All Channels + Charging / 0°	9kHz-30MHz	Tx	EMI4841	**PASS**
Radiated measurement / All Positions / All Channels + Charging / 45°	9kHz-30MHz	Tx	EMI4842	**PASS**
Radiated measurement / All Positions / All Channels + Charging / 90°	9kHz-30MHz	Tx	EMI4843	**PASS**
Radiated measurement / All Positions / All Channels / 0°	9kHz-30MHz	Tx	EMI4844	**PASS**
Radiated measurement / All Positions / All Channels / 45°	9kHz-30MHz	Tx	EMI4845	**PASS**
Radiated measurement / All Positions / All Channels / 90°	9kHz-30MHz	Tx	EMI4846	**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	Rohde & Schwarz	HFH2-Z2	5825	16/08/2022	16/10/2024
Cable	SUCOFLEX	N-3m	14378	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-6,5m	14380	23/08/2021	23/10/2023
Cable	Techniwave	N-8m	18349	25/01/2022	25/03/2024
Receiver	Rohde & Schwarz	ESW26	17791	08/02/2023	08/04/2024
Shielded enclosure	COMTEST	SAC 3m	14494	23/01/2023	23/03/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H2	12269	07/06/2022	07/08/2024
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023

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

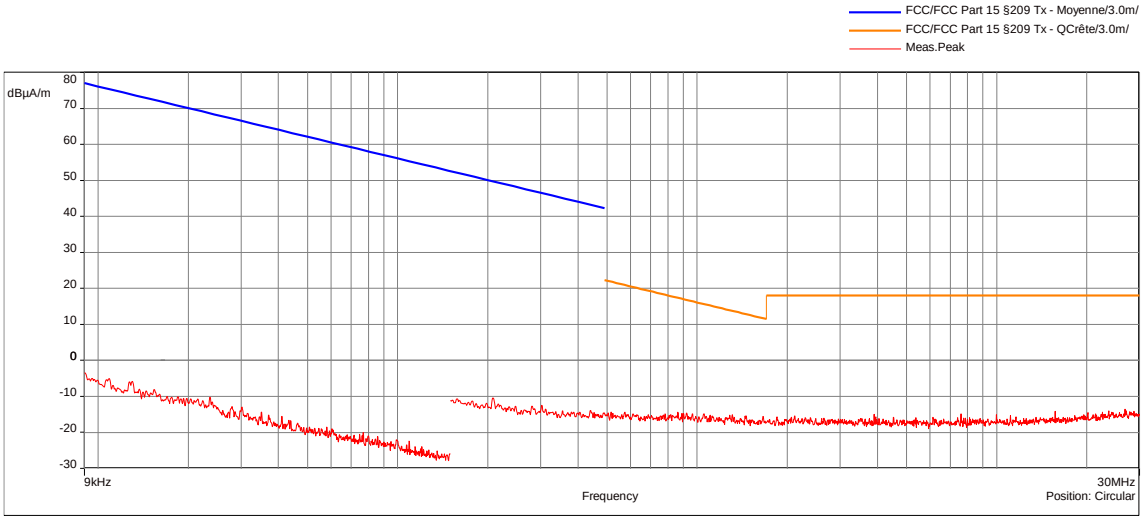
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - TABULATED RESULTS				
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY + CHARGING				
Frequency (kHz)	**Preliminary measurement (Pk) (dBµA/m)**	**Final measurement (OATS) (dBµA/m)**	**Limit (dBµA/m)**	**Margin (Level-Limit)**
0.015	62.68	N/P	72.59	-9.9
0.025	48.59	N/P	68.15	-19.55
0.035	54.88	N/P	65.23	-10.35
0.045	42.44	N/P	63.04	-20.6
0.055	46.24	N/P	61.3	-15.05
0.085	36.58	N/P	57.52	-20.93
0.105	36.81	N/P	55.68	-18.87
0.125	32.7	N/P	54.17	-21.47
0.176	29.55	N/P	51.18	-21.63
0.555	10.36	N/P	21.23	-10.86
0.704	5.48	N/P	19.16	-13.67
0.776	4.21	N/P	18.31	-14.1
0.846	2.61	N/P	17.55	-14.94
0.935	0.71	N/P	16.69	-15.97
1.000	-1.4	N/P	16.1	-17.5
1.151	-2.93	N/P	14.88	-17.82
1.223	-3.39	N/P	14.35	-17.74
1.293	-5.3	N/P	13.87	-19.17

Supplementary information: When margin between peak measurements and quasi-peak or average limit is > 6dB, so no quasi-peak or average measurements were performed.

Spurious which has more than 20 dB of margin compared to the applicable limit is not necessarily reported.

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - TABULATED RESULTS				
RADIATED MEASUREMENT / ALL POSITIONS / ALL CHANNELS				
Frequency (kHz)	**Preliminary measurement (Pk) (dBµA/m)**	**Final measurement (OATS) (dBµA/m)**	**Limit (dBµA/m)**	**Margin (Level-Limit)**
0.022	67.86	28.71	69.23	-40.52
0.037	50.54	N/P	64.8	-14.25
0.051	55.3	18.04	61.87	-43.83
0.066	43.12	N/P	59.69	-16.58
0.081	44.65	N/P	57.95	-13.3
0.152	32.3	N/P	52.49	-20.2
0.187	32.39	N/P	50.66	-18.28
0.312	21.99	N/P	46.21	-24.22
0.545	9.36	N/P	21.38	-12.01
0.580	12.95	N/P	20.84	-7.89
0.615	11.79	N/P	20.32	-8.53
0.652	5.55	N/P	19.82	-14.27
0.705	9.2	N/P	19.14	-9.94
0.741	8.94	N/P	18.71	-9.77
0.777	4.11	N/P	18.3	-14.19
0.830	5.35	N/P	17.72	-12.36
0.866	5.94	N/P	17.35	-11.42
0.991	2.38	N/P	16.18	-13.8
1.006	0.04	N/P	16.05	-16.02
1.131	-0.04	N/P	15.04	-15.08
1.255	-0.74	N/P	14.13	-14.87
1.293	-3.23	N/P	13.87	-17.1
1.345	-4.84	N/P	13.53	-18.37
1.383	-2.5	N/P	13.29	-15.79
1.418	-4.05	N/P	13.07	-17.13
1.473	-7.42	N/P	12.74	-20.17
1.508	-4.25	N/P	12.54	-16.79
1.542	-5.52	N/P	12.34	-17.86
1.632	-6.69	N/P	11.85	-18.54
1.667	-7.2	N/P	11.67	-18.86
Supplementary information: When margin between peak measurements and quasi-peak or average limit is > 6dB, so no quasi-peak or average measurements were performed. Spurious which has more than 20 dB of margin compared to the applicable limit is not necessarily reported.				

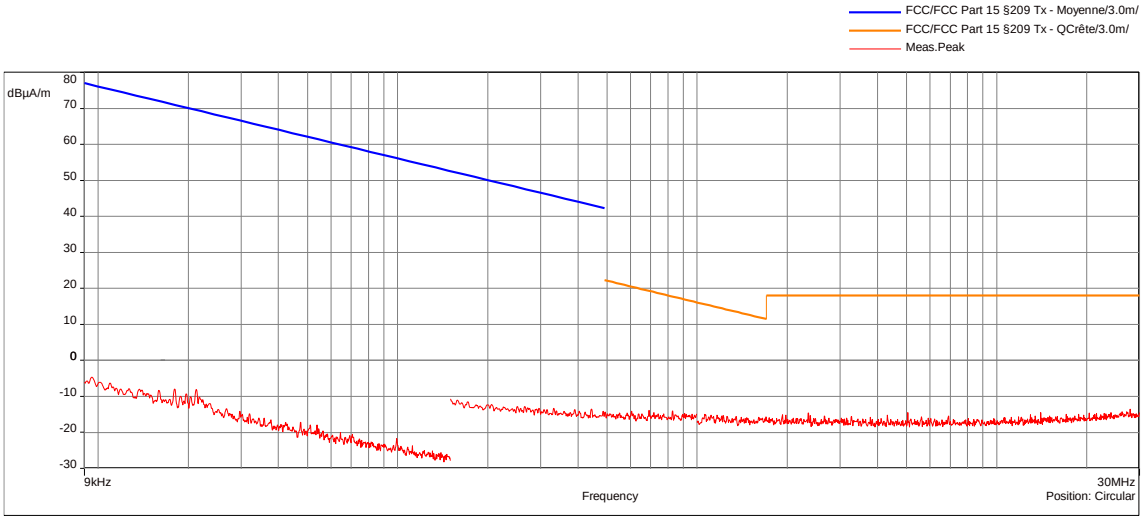
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY / 0°		EMI4835	
EUT mode:	Modulated	**T (°C):**	21.4
Test Date:	22/05/2023	**H (%):**	42.6
Test Operator:	ATO	**P (hPa):**	1005



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

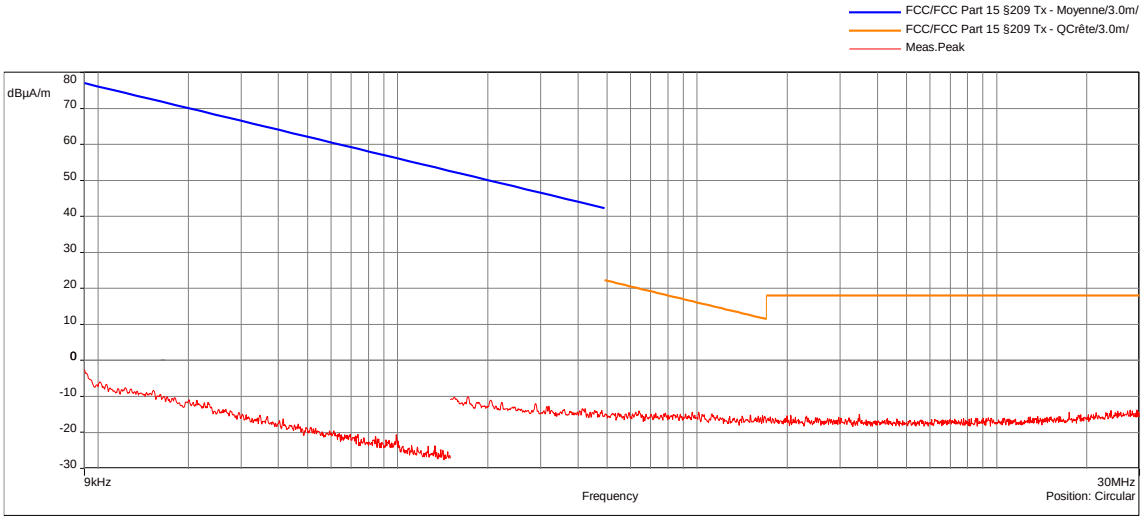
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY / 45°		EMI4836	
EUT mode:	Modulated	**T (°C):**	21.4
Test Date:	22/05/2023	**H (%):**	42.6
Test Operator:	ATO	**P (hPa):**	1005



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

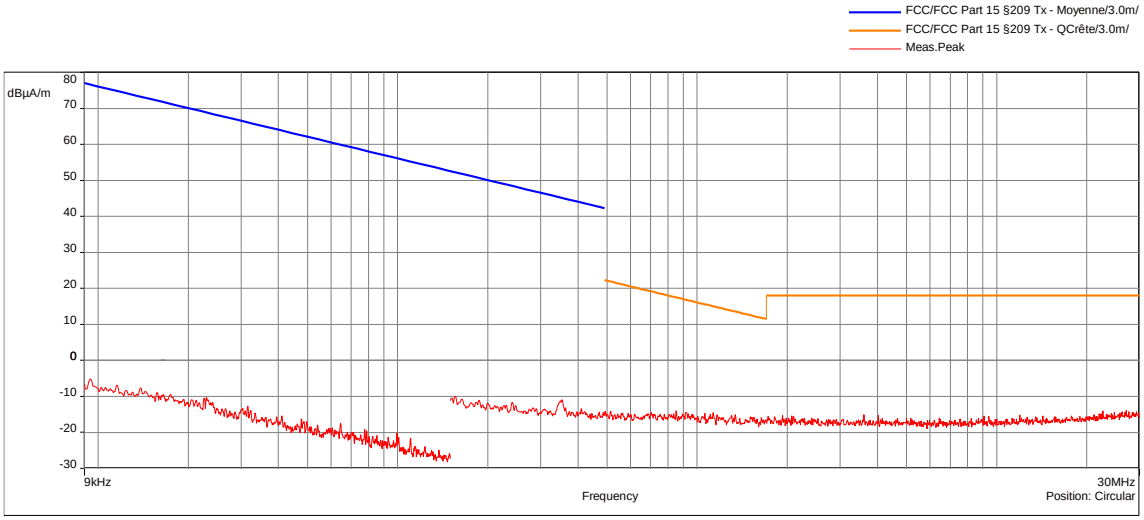
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY / 90°		EMI4837	
EUT mode:	Modulated	**T (°C):**	21.4
Test Date:	22/05/2023	**H (%):**	42.6
Test Operator:	ATO	**P (hPa):**	1005



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

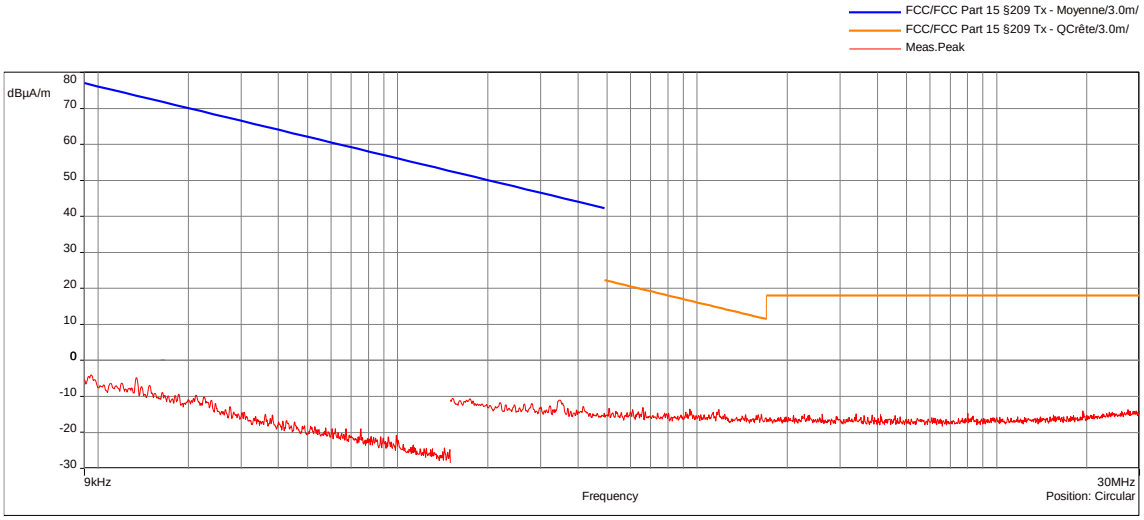
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY + CHARGING / 0°		EMI4838	
EUT mode:	Modulated	**T (°C):**	21.4
Test Date:	22/05/2023	**H (%):**	42.6
Test Operator:	ATO	**P (hPa):**	1005



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

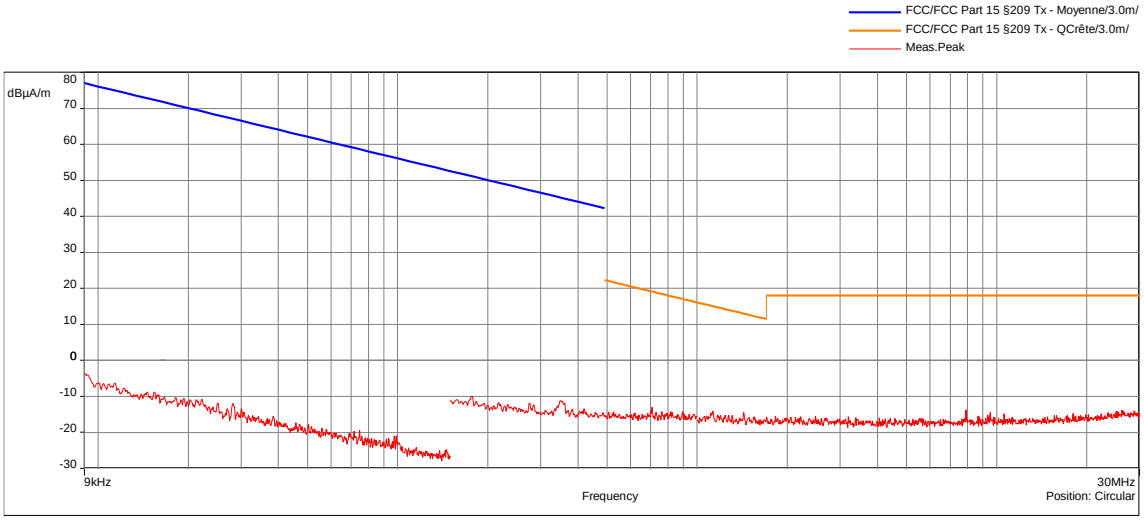
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY + CHARGING / 45°		EMI4839	
EUT mode:	Modulated	**T (°C):**	21.4
Test Date:	22/05/2023	**H (%):**	42.6
Test Operator:	ATO	**P (hPa):**	1005



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

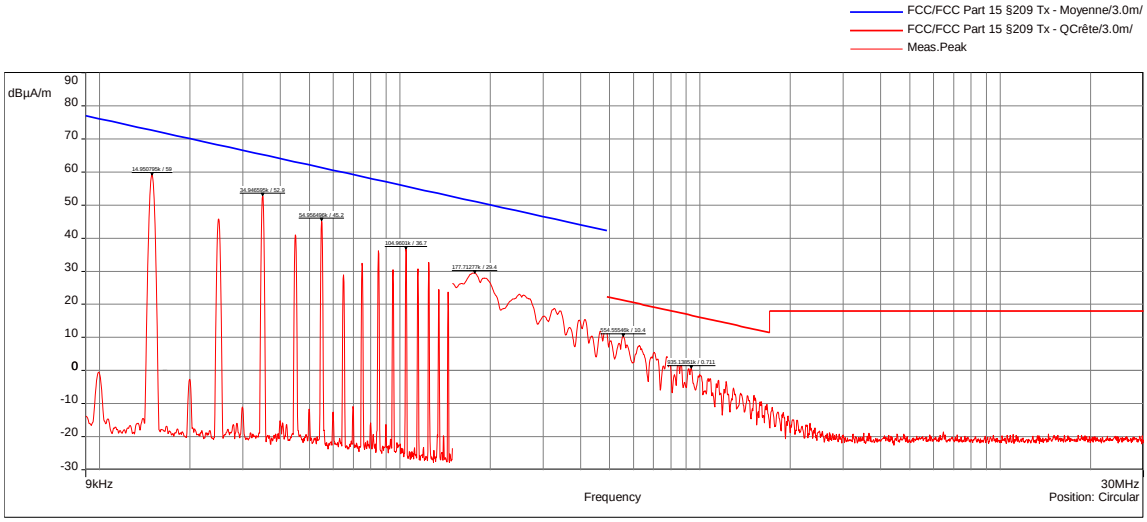
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY + CHARGING / 90°		EMI4840	
EUT mode:	Modulated	**T (°C):**	21.4
Test Date:	22/05/2023	**H (%):**	42.6
Test Operator:	ATO	**P (hPa):**	1005



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

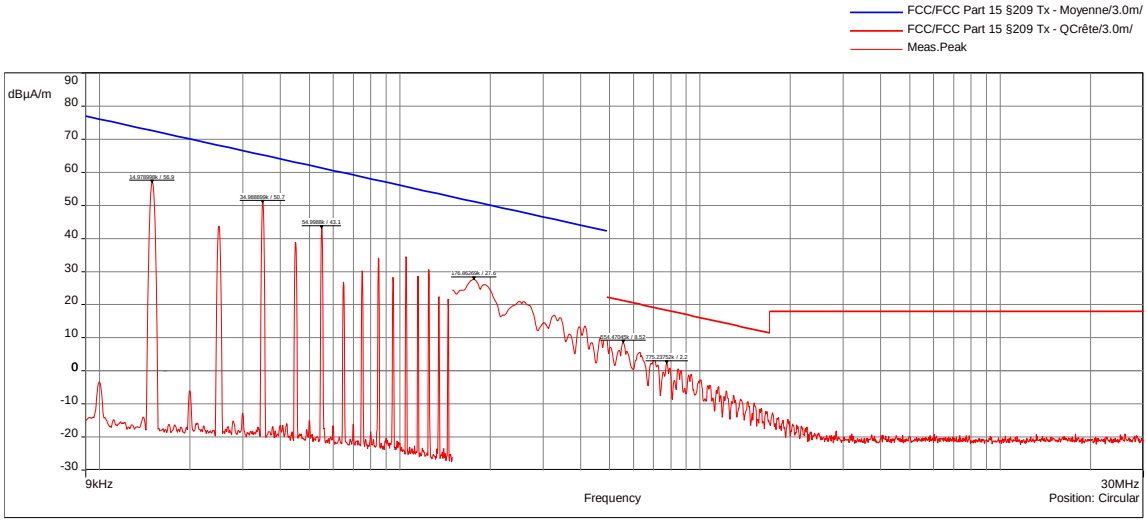
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / ALL CHANNELS + CHARGING / 0°		EMI4841	
EUT mode:	Tx mode	**T (°C):**	22.2
Test Date:	06/06/2023	**H (%):**	62.6
Test Operator:	MPA	**P (hPa):**	1012



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.			

EUT modification(s): N/A

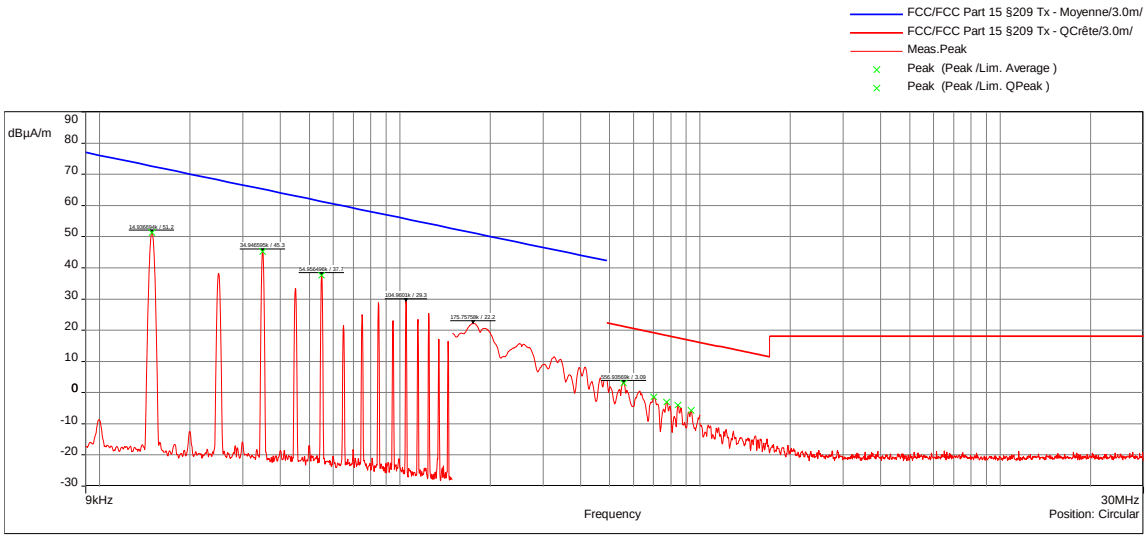
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / ALL CHANNELS + CHARGING / 45°		EMI4842	
EUT mode:	Tx mode	**T (°C):**	22.2
Test Date:	06/06/2023	**H (%):**	62.6
Test Operator:	MPA	**P (hPa):**	1012



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.			

EUT modification(s): N/A

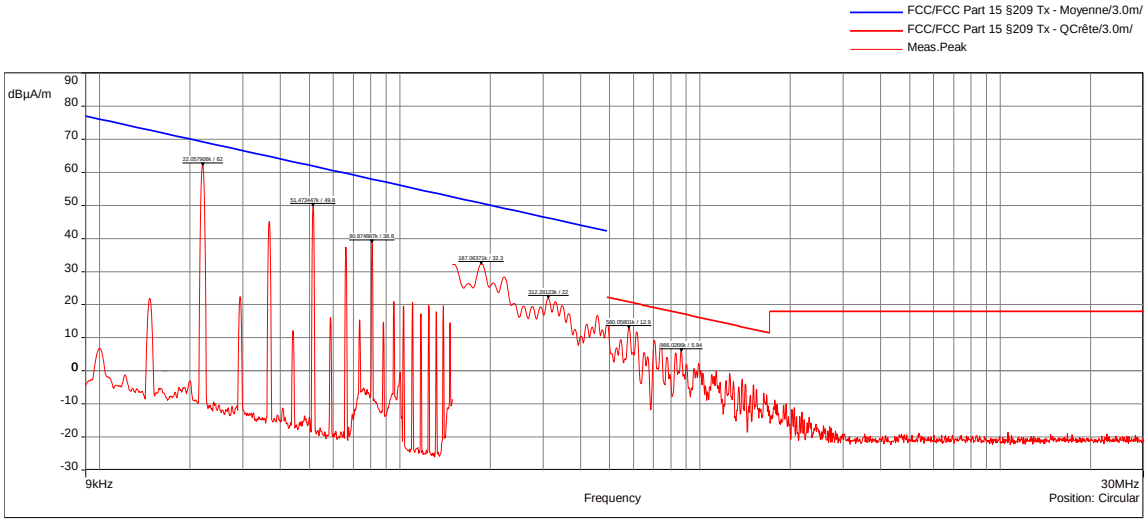
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / ALL CHANNELS + CHARGING / 90°		EMI4843	
EUT mode:	Tx mode	**T (°C):**	22.2
Test Date:	06/06/2023	**H (%):**	62.6
Test Operator:	MPA	**P (hPa):**	1012



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.			

EUT modification(s): N/A

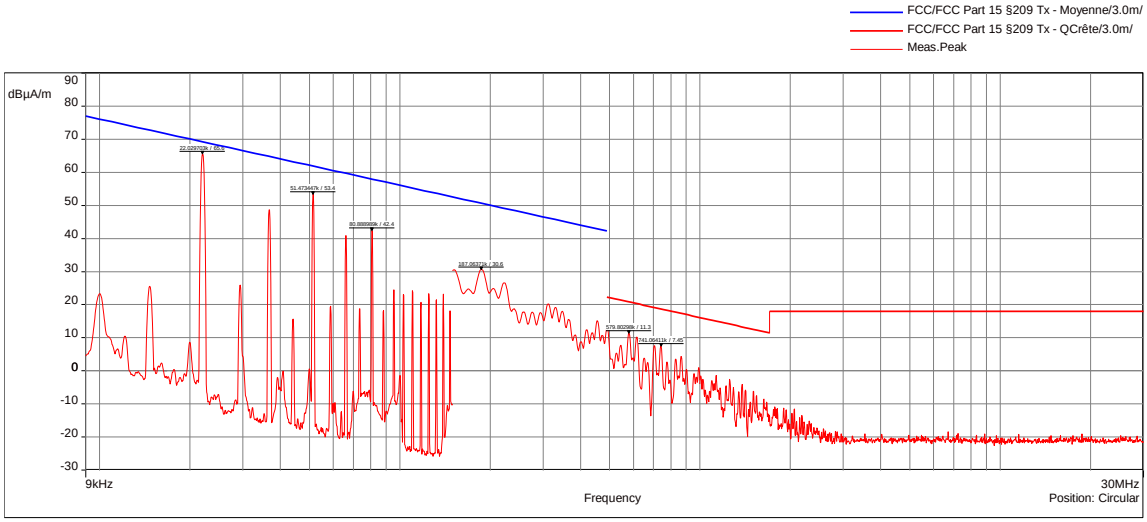
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / ALL CHANNELS / 0°		EMI4844	
EUT mode:	Tx mode	**T (°C):**	22.2
Test Date:	06/06/2023	**H (%):**	54.2
Test Operator:	OAT + RGI	**P (hPa):**	1010



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.			

EUT modification(s): N/A

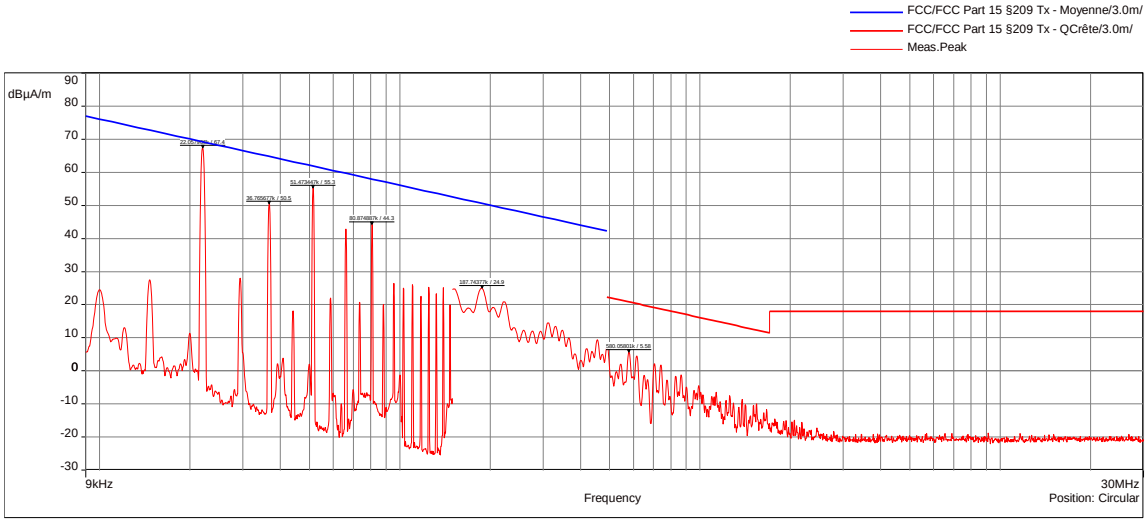
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / ALL CHANNELS / 45°		EMI4845	
EUT mode:	Tx mode	**T (°C):**	22.2
Test Date:	06/06/2023	**H (%):**	54.2
Test Operator:	OAT + RGI	**P (hPa):**	1010



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.			

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / ALL CHANNELS + CHARGING / 90°		EMI4846	
EUT mode:	Tx mode	**T (°C):**	22.2
Test Date:	06/06/2023	**H (%):**	54.2
Test Operator:	OAT + RGI	**P (hPa):**	1010



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.			

EUT modification(s): N/A

7.8. Transmitter radiated spurious emissions at frequencies >30MHz

Reference standard:	FCC part 15 Radio part 15.109, 15.209 & CNR-Gen
Test method:	ANSI C63.10: 2013

General test setup: EUT is set on an insulating support at 150cm above the ground reference plane.

Measurement are 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.

For portable equipments 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 / All Positions / All Frequency	30MHz-1GHz	15.209	EMI4739	**PASS**
Radiated measurement / All Positions / Standby + Charging	30MHz-1GHz	15.209	EMI4740	**PASS**
Radiated measurement / All Positions / Standby	30MHz-1GHz	15.209	EMI4741	**PASS**
Radiated measurement / All Positions / All Frequency + Charging	30MHz-1GHz	15.209	EMI4833	**PASS**
Radiated measurement / All Positions / Low channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4855	**PASS**
Radiated measurement / All Positions / Mid channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4856	**PASS**
Radiated measurement / All Positions / High channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4857	**PASS**
Radiated measurement / All Positions / Low channel + Charging / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4858	**PASS**
Radiated measurement / All Positions / Mid channel + Charging / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4859	**PASS**
Radiated measurement / All Positions / High channel + Charging / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4860	**PASS**
Radiated measurement / All Positions / Standby / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4861	**PASS**
Radiated measurement / All Positions / Standby + Charging / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4862	**PASS**
Radiated measurement / All Positions / Low channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI4864	**PASS**
Radiated measurement / All Positions / Mid channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI4865	**PASS**
Radiated measurement / All Positions / High channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI4866	**PASS**
Radiated measurement / All Positions / Low channel + Charging / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI4867	**PASS**
Radiated measurement / All Positions / Mid channel + Charging / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI4868	**PASS**
Radiated measurement / All Positions / High channel + Charging / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI4869	**PASS**
Radiated measurement / All Positions / Standby / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI4870	**PASS**

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
Radiated measurement / All Positions / Standby + Charging / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI4871	**PASS**

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS						
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY + CHARGING						EMI4740
Test Frequency (MHz)	**Polarization**	**Detector (Pk/QP/Av)**	**Gain/Loss Factor (dB)**	**Level dB (µA)**	**Limit dB (µA)**	**Margin (dB)**
31.29	Vertical	Pk	24.29	33.73	40.00	-6.27
35.46	Vertical	Pk	21.96	31.93	40.00	-8.07
64.88	Vertical	Pk	14.44	29.88	40.00	-10.12
130.30	Horizontal	Pk	15.33	28.45	43.50	-15.05
131.30	Horizontal	Pk	15.40	28.64	43.50	-14.86
257.56	Horizontal	Pk	21.73	28.35	46.00	-17.65
Supplementary information: N/A						

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS						
RADIATED MEASUREMENT / ALL POSITIONS / ALL FREQUENCY + CHARGING						EMI4833
Test Frequency (MHz)	**Polarization**	**Detector (Pk/QP/Av)**	**Gain/Loss Factor (dB)**	**Level dB (µA)**	**Limit dB (µA)**	**Margin (dB)**
34.74	Vertical	QP	22.36	27.48	40.00	-12.52
35.46	Vertical	QP	21.96	27.77	40.00	-12.23
39.21	Vertical	Pk	19.97	33.46	40.00	-6.54
61.94	Horizontal	Pk	14.82	32.71	40.00	-7.29
62.62	Horizontal	Pk	14.69	60.62	40.00	20.62
77.07	Horizontal	Pk	14.27	31.55	40.00	-8.45
Supplementary information: N/A						

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS						
RADIATED MEASUREMENT / ALL POSITIONS / LOW CHANNEL / 1GHZ TO 18GHZ						EMI4855
Test Frequency (MHz)	**Polarization**	**Detector (Pk/QP/Av)**	**Gain/Loss Factor (dB)**	**Level dB (µA)**	**Limit dB (µA)**	**Margin (dB)**
4810.68	Vertical	Av	0.67	47.55	54.00	-6.45
7216.92	Vertical	Av	6.27	53.18	54.00	-0.82
4810.68	Horizontal	Av	0.67	39.20	54.00	-14.8
7218.42	Horizontal	Av	6.27	52.68	54.00	-1.32
Supplementary information: N/A						

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS						
RADIATED MEASUREMENT / ALL POSITIONS / MID CHANNEL / 1GHZ TO 18GHZ						EMI4856
Test Frequency (MHz)	Polarization	Detector (Pk/QP/Av)	Gain/Loss Factor (dB)	Level dB (µA)	Limit dB (µA)	Margin (dB)
4879.68	Vertical	Av	0.91	46.94	54.00	-7.06
7318.93	Vertical	Av	6.31	53.32	54.00	-0.68
4879.68	Horizontal	Av	0.91	39.39	54.00	-14.61
7318.93	Horizontal	Av	6.31	51.95	54.00	-2.05
Supplementary information: N/A						

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS						
RADIATED MEASUREMENT / ALL POSITIONS / HIGH CHANNEL / 1GHZ TO 18GHZ						EMI4857
Test Frequency (MHz)	Polarization	Detector (Pk/QP/Av)	Gain/Loss Factor (dB)	Level dB (µA)	Limit dB (µA)	Margin (dB)
4951.69	Vertical	Av	0.90	47.89	54.00	-6.11
7428.44	Vertical	Av	6.46	52.47	54.00	-1.53
4951.69	Horizontal	Av	0.90	47.02	54.00	-6.98
7428.44	Horizontal	Av	4.46	50.30	54.00	-3.70
Supplementary information: N/A						

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS						
RADIATED MEASUREMENT / ALL POSITIONS / LOW CHANNEL + CHARGING / 1GHZ TO 18GHZ						EMI4857
Test Frequency (MHz)	Polarization	Detector (Pk/QP/Av)	Gain/Loss Factor (dB)	Level dB (µA)	Limit dB (µA)	Margin (dB)
4810.68	Vertical	Av	0.67	40.12	54.00	-13.88
7216.92	Vertical	Av	6.27	52.55	54.00	-1.45
4810.68	Horizontal	Av	0.67	41.95	54.00	-12.05
7218.42	Horizontal	Av	6.27	53.69	54.00	-0.31
Supplementary information: N/A						

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS						
RADIATED MEASUREMENT / ALL POSITIONS / MID CHANNEL + CHARGING / 1GHZ TO 18GHZ						EMI4858
Test Frequency (MHz)	Polarization	Detector (Pk/QP/Av)	Gain/Loss Factor (dB)	Level dB (µA)	Limit dB (µA)	Margin (dB)
4879.68	Vertical	Av	0.91	47.68	54.00	-6.32
7318.93	Vertical	Av	6.31	53.32	54.00	-0.68
4879.68	Horizontal	Av	0.91	41.30	54.00	-12.7
7318.93	Horizontal	Av	6.31	52.05	54.00	-1.95
Supplementary information: N/A						

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - TABULATED RESULTS						
RADIATED MEASUREMENT / ALL POSITIONS / HIGH CHANNEL + CHARGING / 1GHZ TO 18GHZ						EMI4859
Test Frequency (MHz)	**Polarization**	**Detector (Pk/QP/Av)**	**Gain/Loss Factor (dB)**	**Level dB (µA)**	**Limit dB (µA)**	**Margin (dB)**
4951.69	Vertical	Av	0.90	49.42	54.00	-4.58
7428.44	Vertical	Av	6.46	51.51	54.00	-2.49
9903.69	Vertical	Av	8.25	48.87	54.00	-5.13
4951.69	Horizontal	Av	0.90	48.75	54.00	-5.25
7428.44	Horizontal	Av	4.46	49.55	54.00	-4.45
9903.69	Horizontal	Av	8.25	45.02	54.00	-8.98
Supplementary information: N/A						

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		

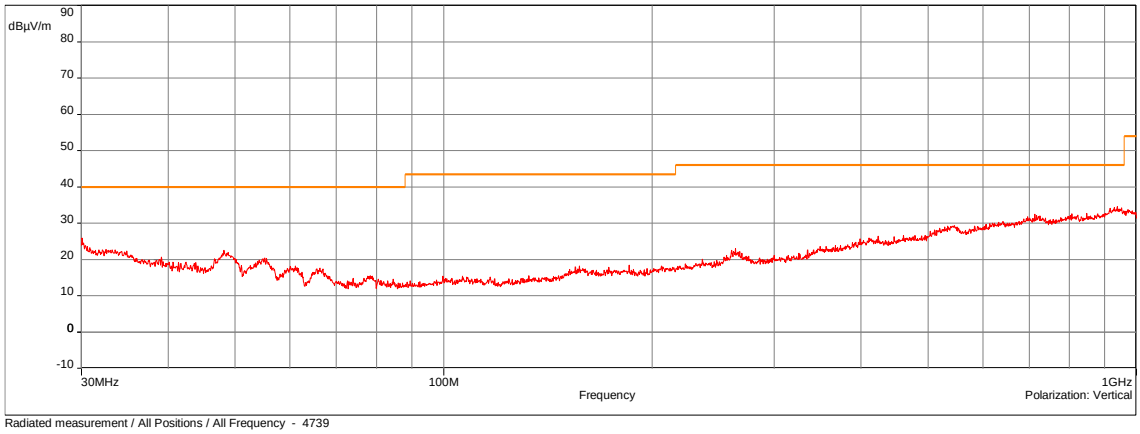
TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	8387	24/03/2023	24/05/2026
Antenna	ETS lindgren	3142E	14523	27/01/2022	27/03/2025
Antenna	ETS lindgren	3160-09	14690	07/01/2022	07/03/2025
Attenuator	EMITECH	SUB.V1-H	14780	20/04/2023	20/06/2024
Attenuator	EMITECH	SUB.V1-V	14781	20/04/2023	20/06/2024
Cable	JYE BAO	K30K30-5003-40G1	14887	20/04/2023	20/06/2025
Cable	Huber + Suhner	K-5m	14460	19/01/2022	19/03/2024
Cable	cables and connectors	N-1.5m	4203	03/03/2023	03/05/2025
Cable	SUCOFLEX	N-3m	14378	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-3m	14379	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-5,5m	14381	23/08/2021	23/10/2023
Cable	SUCOFLEX	N-6,5m	14380	23/08/2021	23/10/2023
Cable	Techniwave	N-8m	18349	25/01/2022	25/03/2024
Filter	Micro-Tronics	HPM 11630	4392	22/11/2021	22/01/2025
Filter	Micro-Tronics	HPM 15162	10273	26/11/2021	26/01/2025
Filter	Wainwright Instruments	WRCGV 2402/2480-2380/2500-40/10EE-200W	9771	15/03/2022	15/05/2025
Preamplifier	Wright Technologie	ASL40-B3015	14851	20/04/2023	20/06/2024
Preamplifier	IMPULSE	CA118-546ACN	9169	27/04/2022	27/12/2023
Receiver	Rohde & Schwarz	ESW26	17791	08/02/2023	08/04/2024
Receiver	Rohde & Schwarz	FPL1007	17908	02/11/2022	02/01/2024
Receiver	Rohde & Schwarz	FSW43	14830	10/08/2022	10/10/2024
Shielded enclosure	RAY PROOF	C.V1	1123	19/08/2021	19/10/2024
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2023
Shielded enclosure	COMTEST	SAC 3m	14494	08/07/2020	08/01/2024
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H1	7561	19/05/2022	19/09/2023
Thermohygrometer	Testo	608-H2	12269	07/06/2022	07/08/2024
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023

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

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / ALL FREQUENCY		EMI4739	
EUT mode:	Modulated	**T (°C):**	25.3
Test Date:	02/05/2023	**H (%):**	35.3
Test Operator:	RGI & ATO	**P (hPa):**	1003

FCC/15.209 - QCrête/3.0m/
Meas.Peak (Vertical)

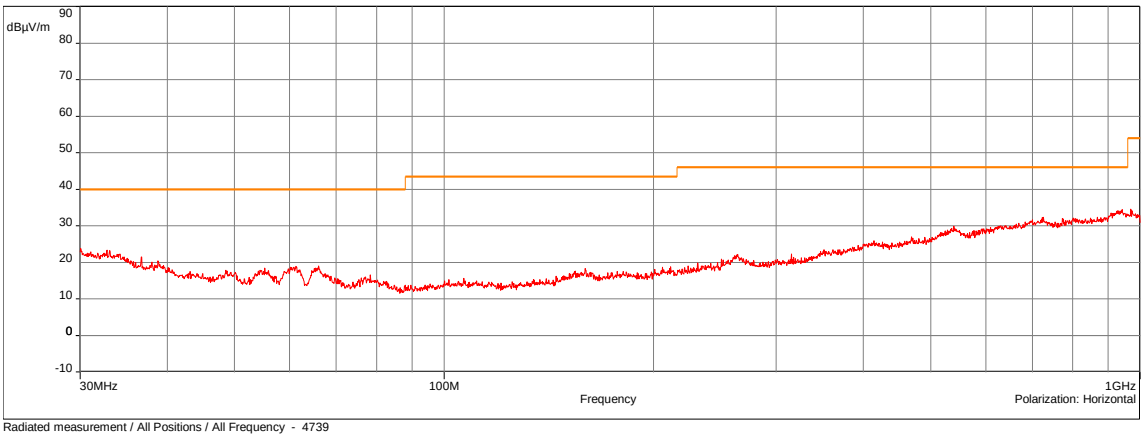
Sub-range 1
Frequencies: 30 MHz - 1 GHz (Analyser mode) 30000 Points
Settings: RBW: 100kHz, VBW: 300kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: On: 10 dB, LN Preamp: Off, Preselector: Off
Polarization:Vertical
Distance: 3 m



Radiated measurement / All Positions / All Frequency - 4739

FCC/15.209 - QCrête/3.0m/
Meas.Peak (Horizontal)

Sub-range 2
Frequencies: 30 MHz - 1 GHz (Analyser mode) 30000 Points
Settings: RBW: 100kHz, VBW: 300kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: On: 10 dB, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m

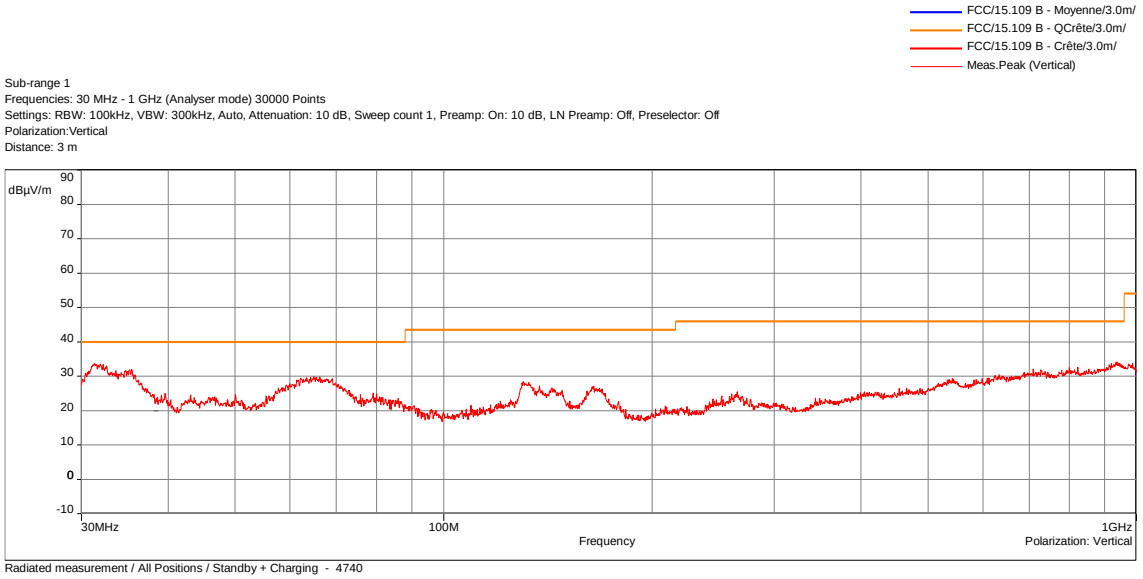


Radiated measurement / All Positions / All Frequency - 4739

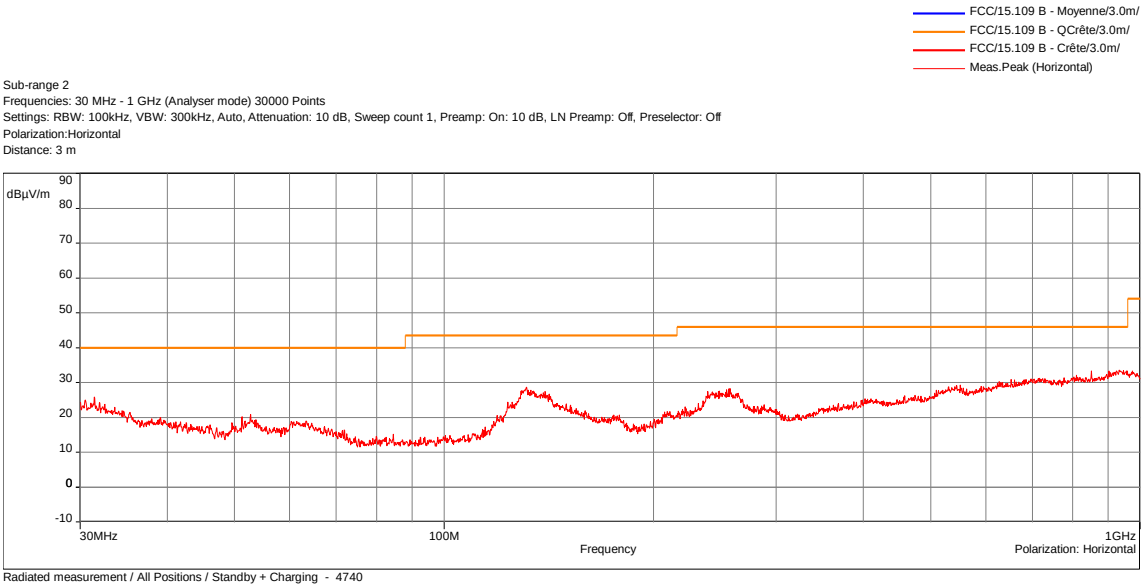
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-1GHz	100kHz	300kHz	Peak
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak
Configuration:	N/A			
Comments:	Frequencies from 2400MHz to 2483.5MHz are the operating frequencies. No spurious emissions were detected.			

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY + CHARGING		EMI4740	
EUT mode:	Modulated	**T (°C):**	25.3
Test Date:	02/05/2023	**H (%):**	35.3
Test Operator:	RGI & ATO	**P (hPa):**	1003



Radiated measurement / All Positions / Standby + Charging - 4740

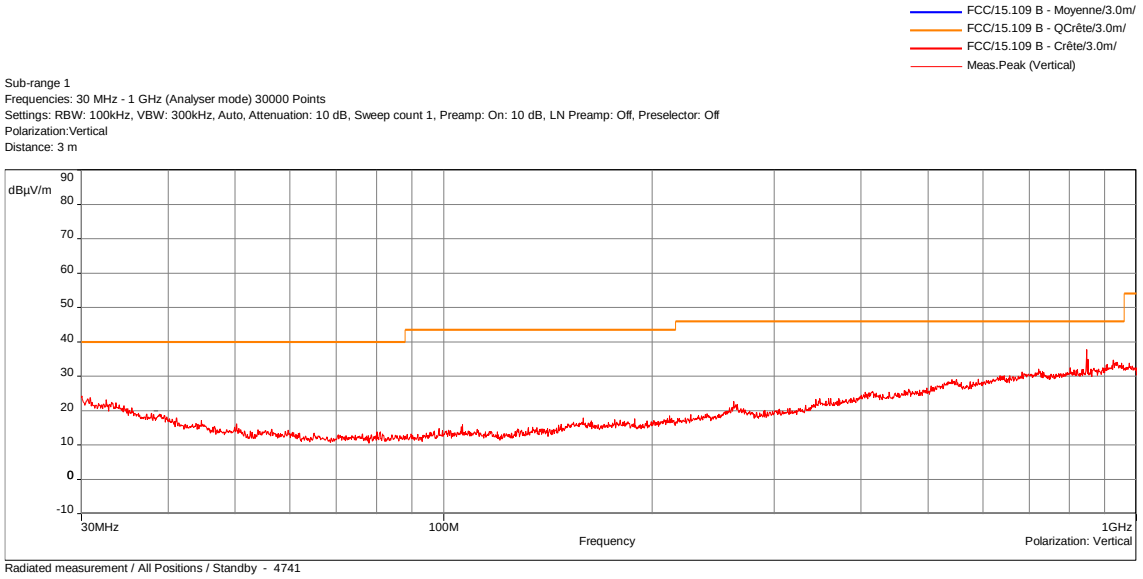


Radiated measurement / All Positions / Standby + Charging - 4740

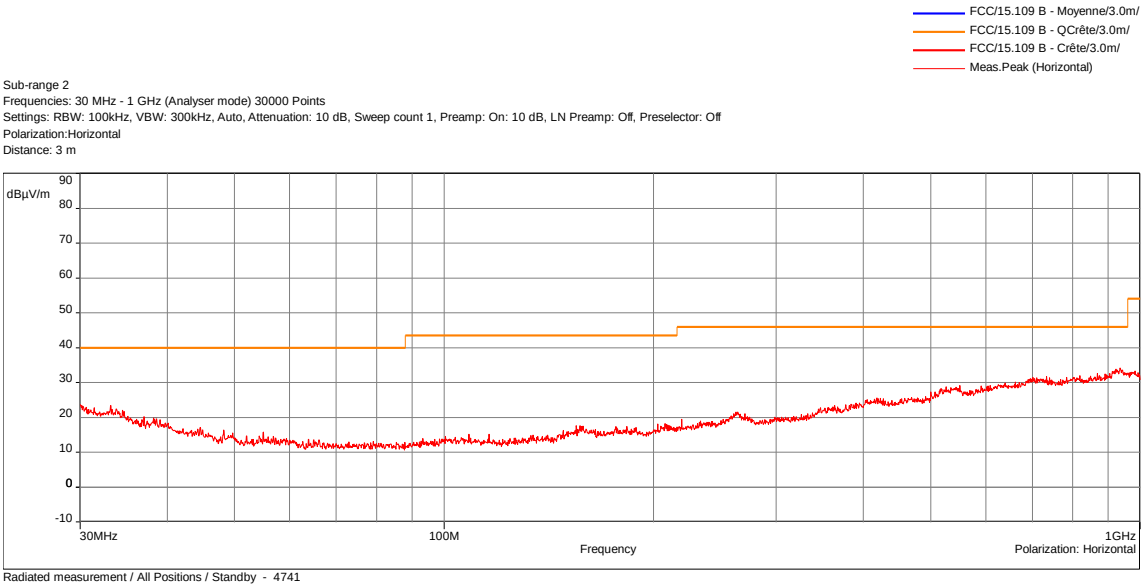
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-1GHz	100kHz	300kHz	Peak
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak
Configuration:	N/A			
Comments:	Frequencies from 2400MHz to 2483.5MHz are the operating frequencies. No spurious emissions were detected.			

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY		EMI4741	
EUT mode:	Modulated	**T (°C):**	25.3
Test Date:	02/05/2023	**H (%):**	35.3
Test Operator:	RGI & ATO	**P (hPa):**	1003



Radiated measurement / All Positions / Standby - 4741

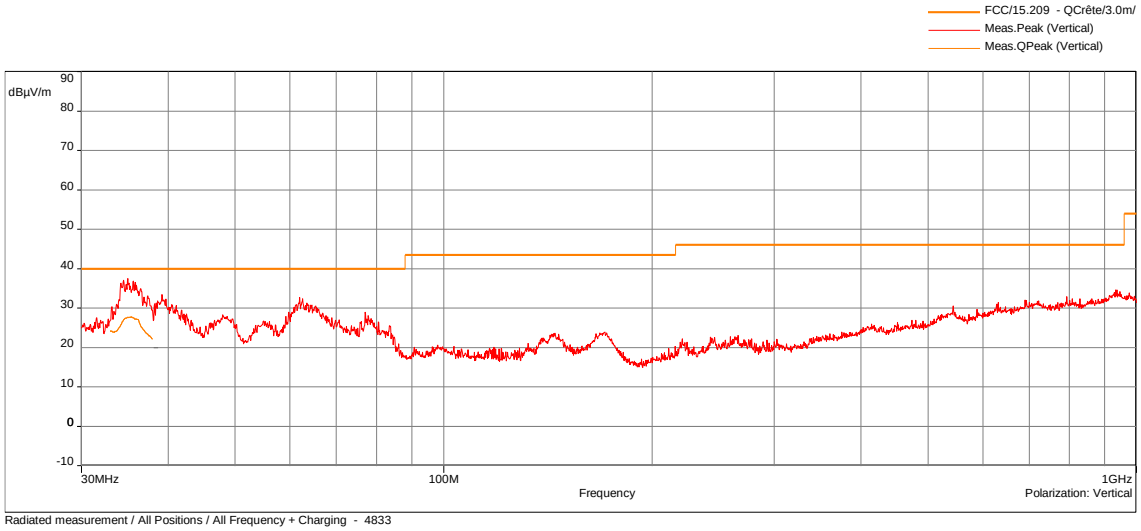


Radiated measurement / All Positions / Standby - 4741

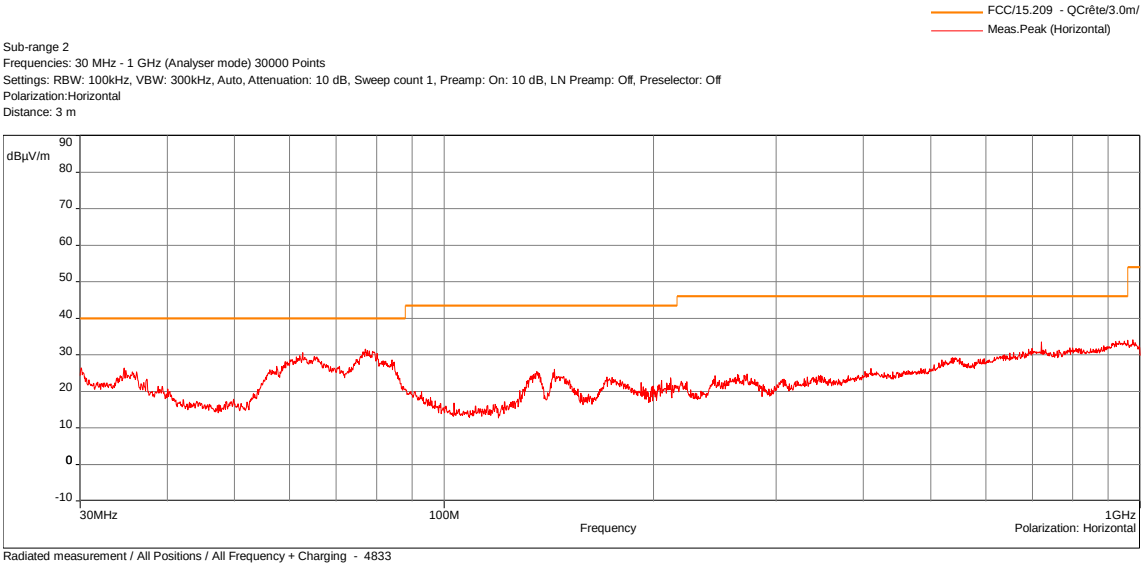
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-1GHz	100kHz	300kHz	Peak
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak
Configuration:	N/A			
Comments:	Frequencies from 2400MHz to 2483.5MHz are the operating frequencies. No spurious emissions were detected.			

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / ALL FREQUENCY + CHARGING		EMI4833	
EUT mode:	Modulated	**T (°C):**	25.3
Test Date:	16/05/2023	**H (%):**	35.3
Test Operator:	RGI & ATO	**P (hPa):**	1003



Radiated measurement / All Positions / All Frequency + Charging - 4833



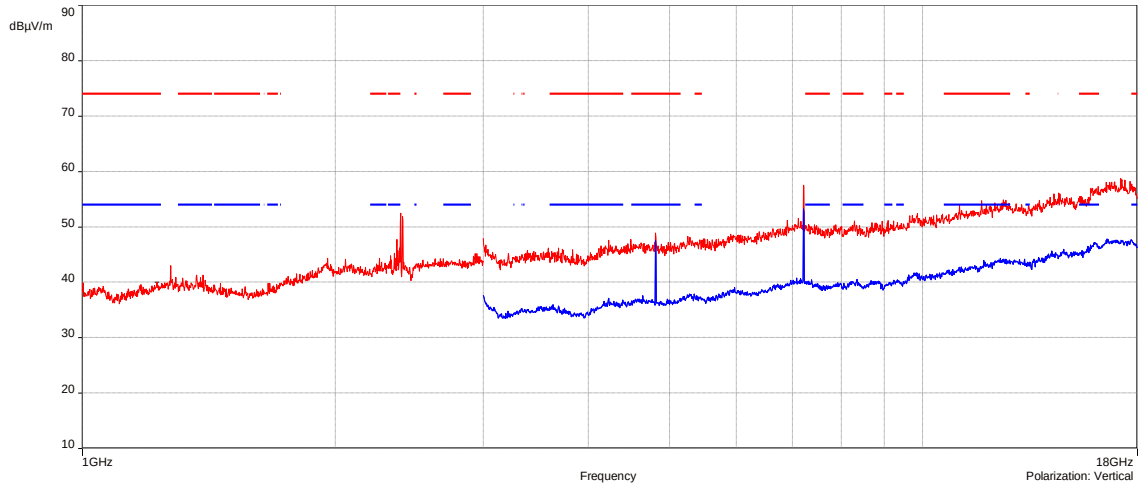
Sub-range 2
Frequencies: 30 MHz - 1 GHz (Analyser mode) 30000 Points
Settings: RBW: 100kHz, VBW: 300kHz, Auto, Attenuation: 10 dB, Sweep count 1, Preamp: On: 10 dB, LN Preamp: Off, Preselector: Off
Polarization:Horizontal
Distance: 3 m

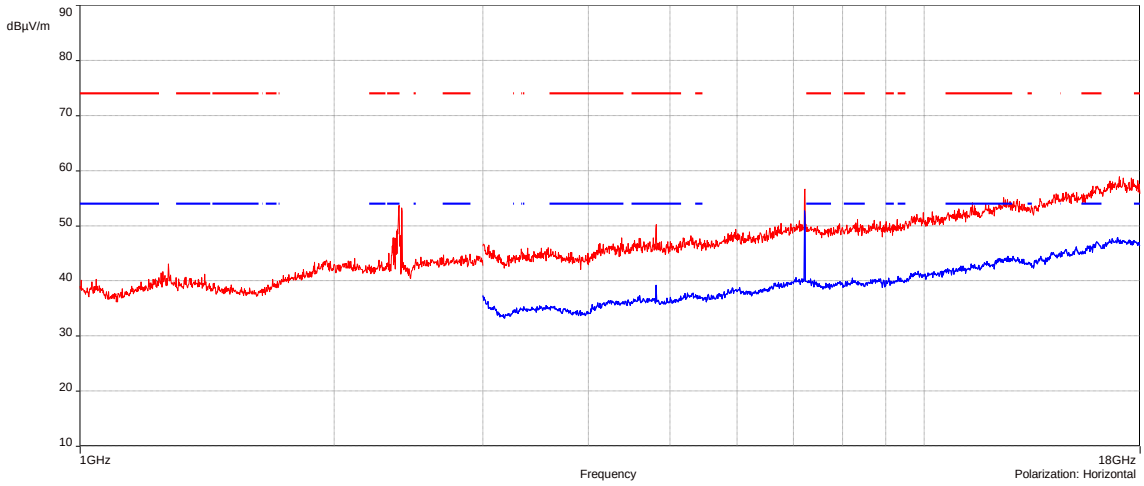
Radiated measurement / All Positions / All Frequency + Charging - 4833

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-1GHz	100kHz	300kHz	Peak
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak
Vertical	33MHz-38MHz	120kHz	360kHz	QPeak
Configuration:	N/A			
Comments:	Frequencies from 2400MHz to 2483.5MHz are the operating frequencies. No spurious emissions were detected.			

EUT modification(s): N/A

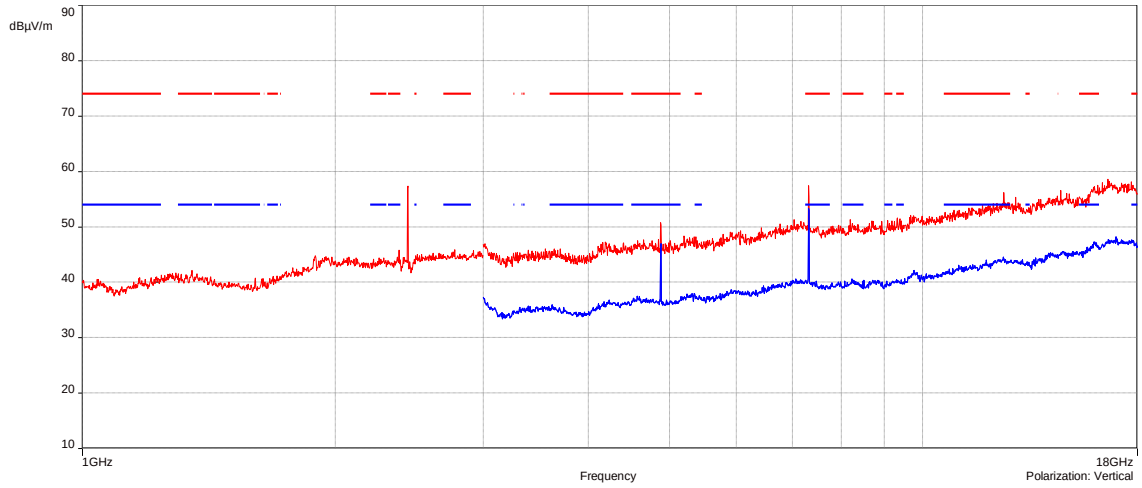
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / LOW CHANNEL / 1GHZ TO 18GHZ		EMI4855	
EUT mode:	Modulated	**T (°C):**	22.0
Test Date:	23/05/2023	**H (%):**	41.9
Test Operator:	ATO & RGI	**P (hPa):**	995

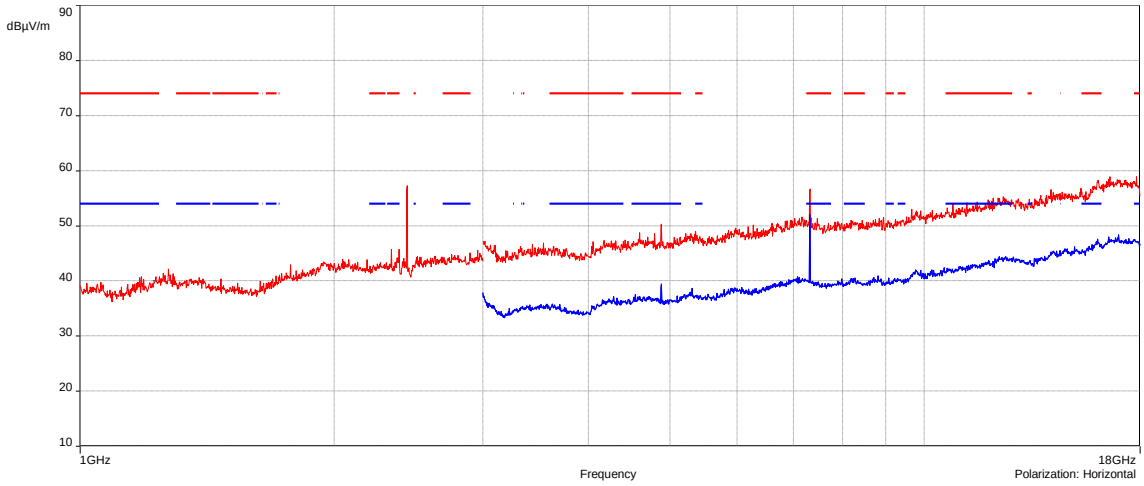




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	20kHz	Peak
Horizontal	3GHz-18GHz	1MHz	20kHz	Peak
Configuration:	N/A			
Comments:	Operating frequency: 2.4GHz			
EUT modification(s): N/A				

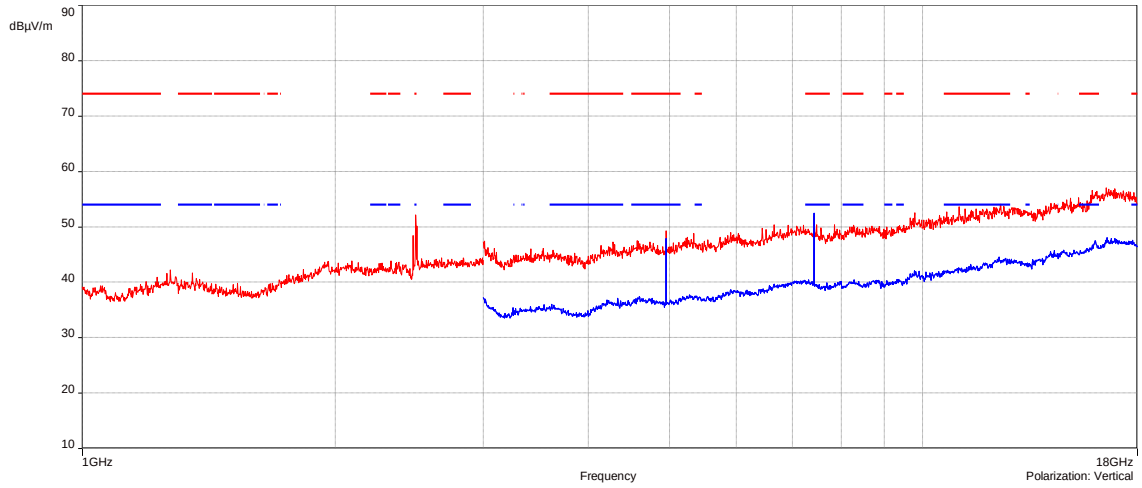
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / MID CHANNEL / 1GHZ TO 18GHZ		EMI4856	
EUT mode:	Modulated	**T (°C):**	22.0
Test Date:	23/05/2023	**H (%):**	41.9
Test Operator:	ATO & RGI	**P (hPa):**	995

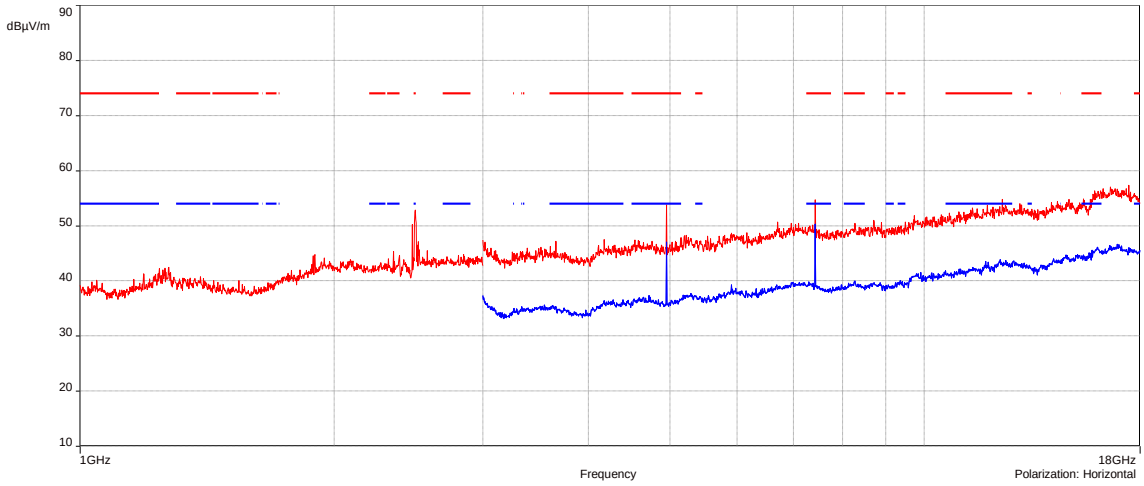




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	20kHz	Peak
Horizontal	3GHz-18GHz	1MHz	20kHz	Peak
Configuration:	N/A			
Comments:	Operating frequency: 2.4GHz			
EUT modification(s): N/A				

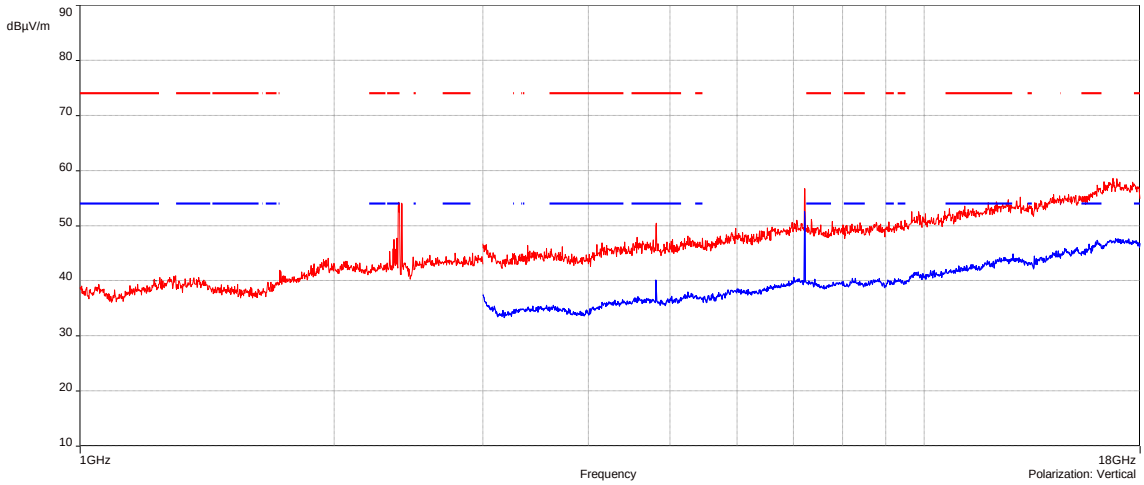
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / HIGH CHANNEL / 1GHZ TO 18GHZ		EMI4857	
EUT mode:	Modulated	**T (°C):**	22.1
Test Date:	23/05/2023	**H (%):**	39.6
Test Operator:	ATO & RGI	**P (hPa):**	1015

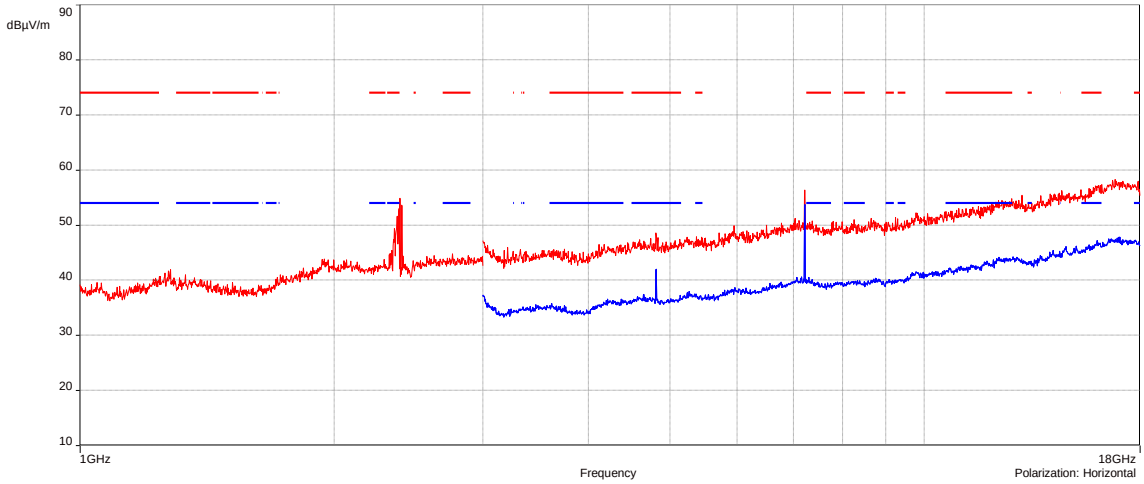




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	20kHz	Peak
Horizontal	3GHz-18GHz	1MHz	20kHz	Peak
Configuration:	N/A			
Comments:	Operating frequency: 2.4GHz			
EUT modification(s): N/A				

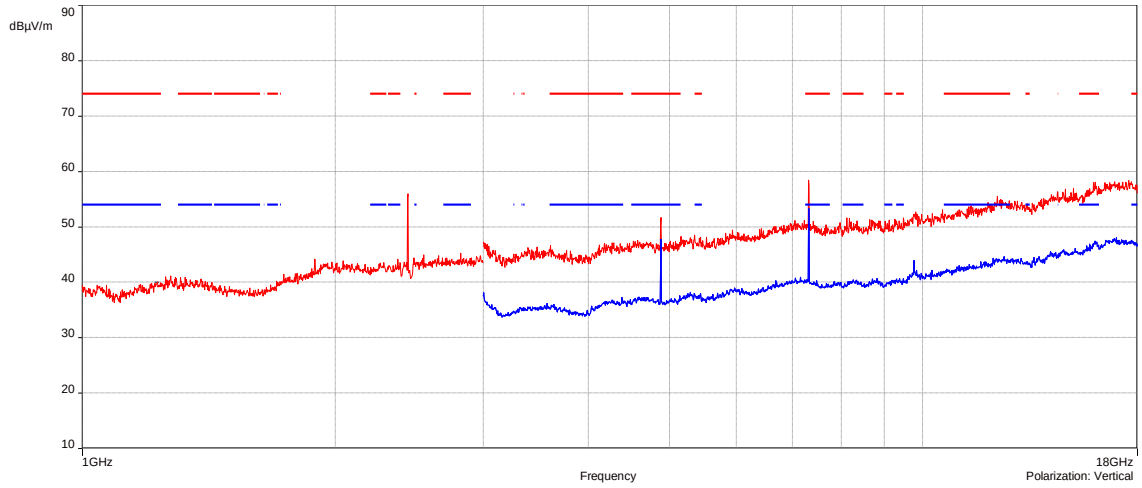
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / LOW CHANNEL + CHARGING / 1GHZ TO 18GHZ		EMI4858	
EUT mode:	Modulated	**T (°C):**	22.0
Test Date:	23/05/2023	**H (%):**	41.9
Test Operator:	ATO & RGI	**P (hPa):**	995

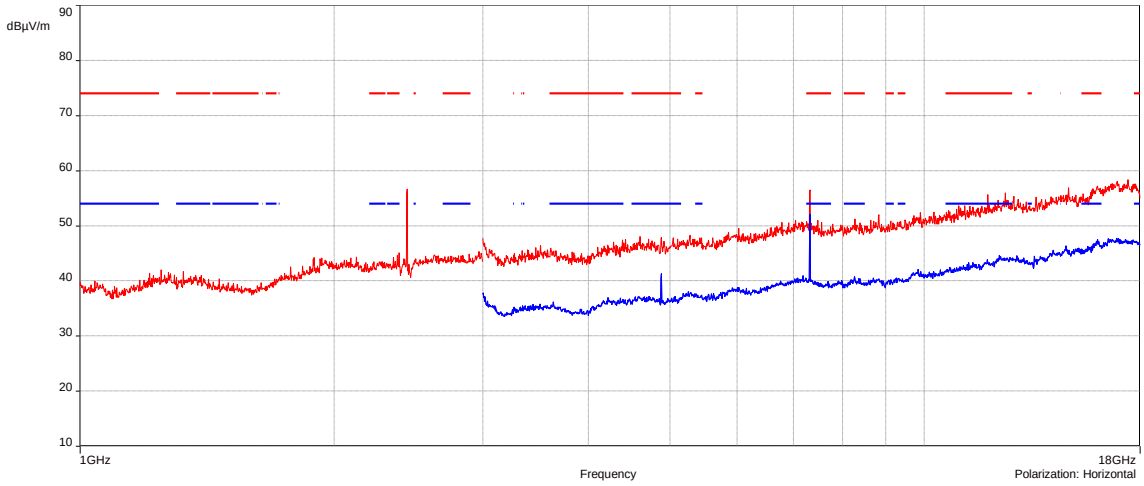




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	20kHz	Peak
Horizontal	3GHz-18GHz	1MHz	20kHz	Peak
Configuration:	N/A			
Comments:	Operating frequency: 2.4GHz			
EUT modification(s): N/A				

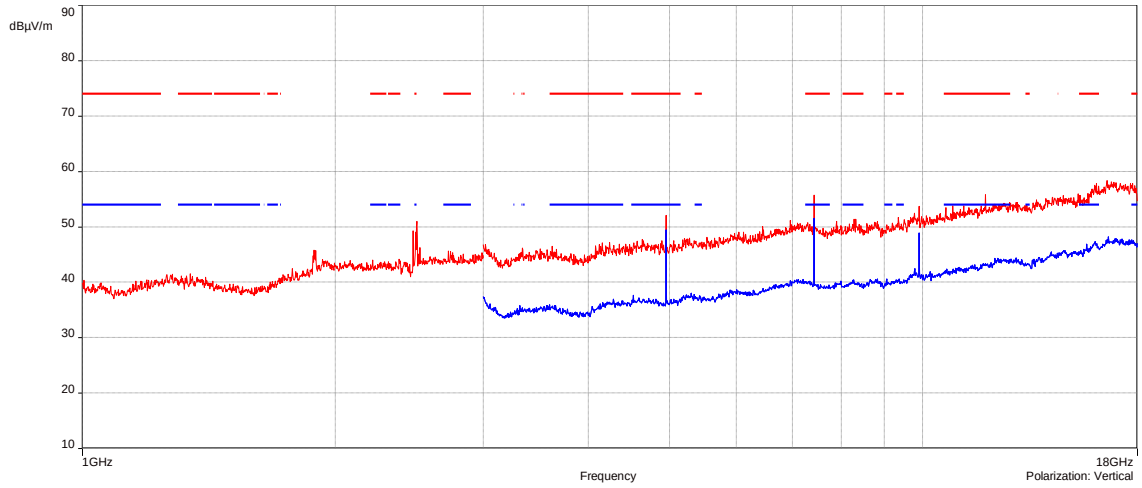
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / MID CHANNEL + CHARGING / 1GHZ TO 18GHZ		EMI4859	
EUT mode:	Modulated	**T (°C):**	22.0
Test Date:	23/05/2023	**H (%):**	41.9
Test Operator:	ATO & RGI	**P (hPa):**	995

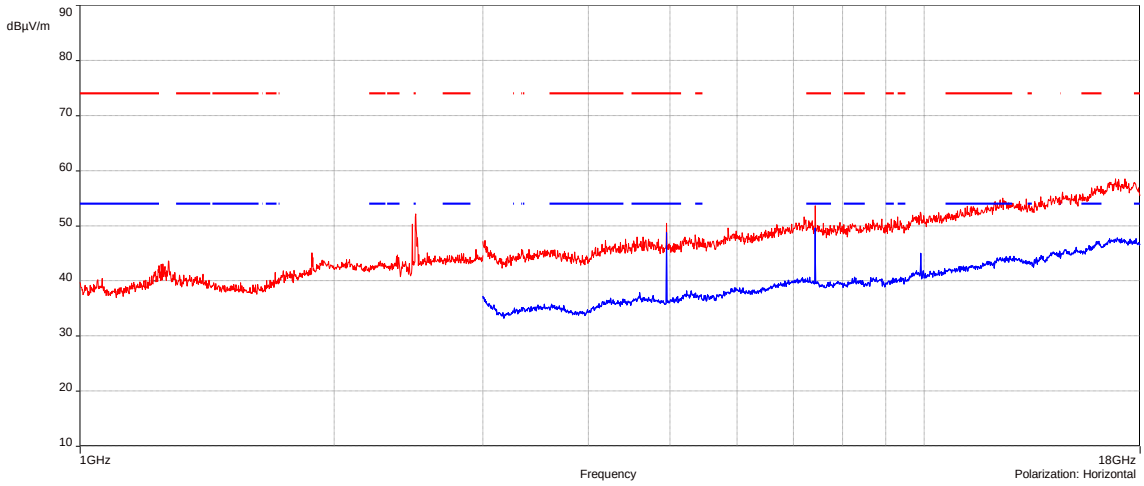




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	20kHz	Peak
Horizontal	3GHz-18GHz	1MHz	20kHz	Peak
Configuration:	N/A			
Comments:	Operating frequency: 2.4GHz			
EUT modification(s): N/A				

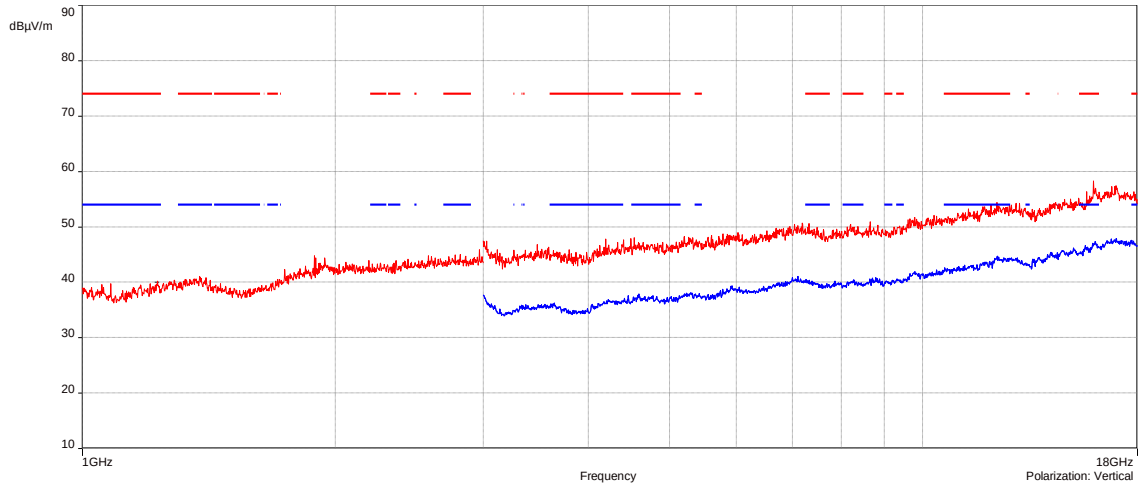
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / HIGH CHANNEL + CHARGING / 1GHZ TO 18GHZ		EMI4860	
EUT mode:	Modulated	**T (°C):**	22.0
Test Date:	23/05/2023	**H (%):**	41.9
Test Operator:	ATO & RGI	**P (hPa):**	995

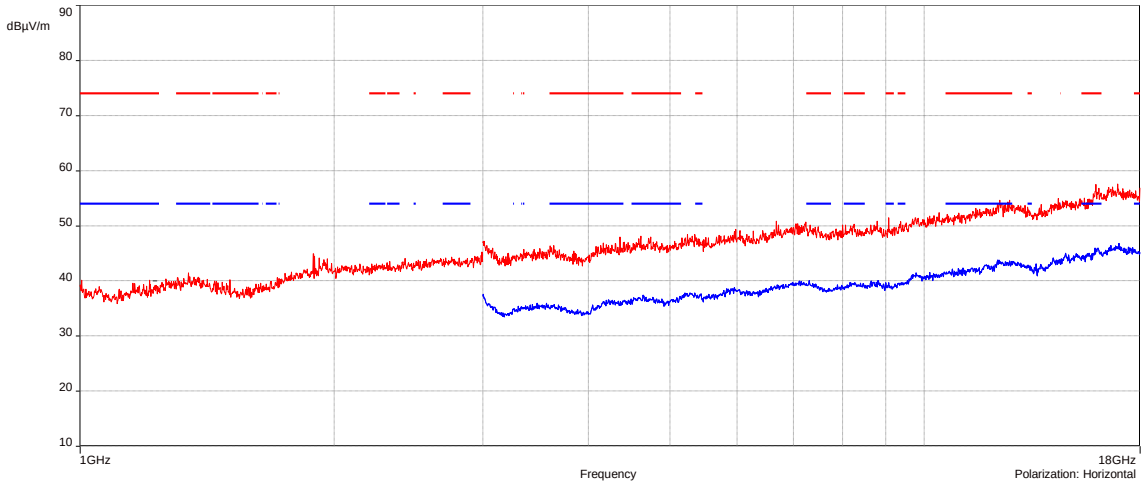




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	20kHz	Peak
Horizontal	3GHz-18GHz	1MHz	20kHz	Peak
Configuration:	N/A			
Comments:	Operating frequency: 2.4GHz			
EUT modification(s): N/A				

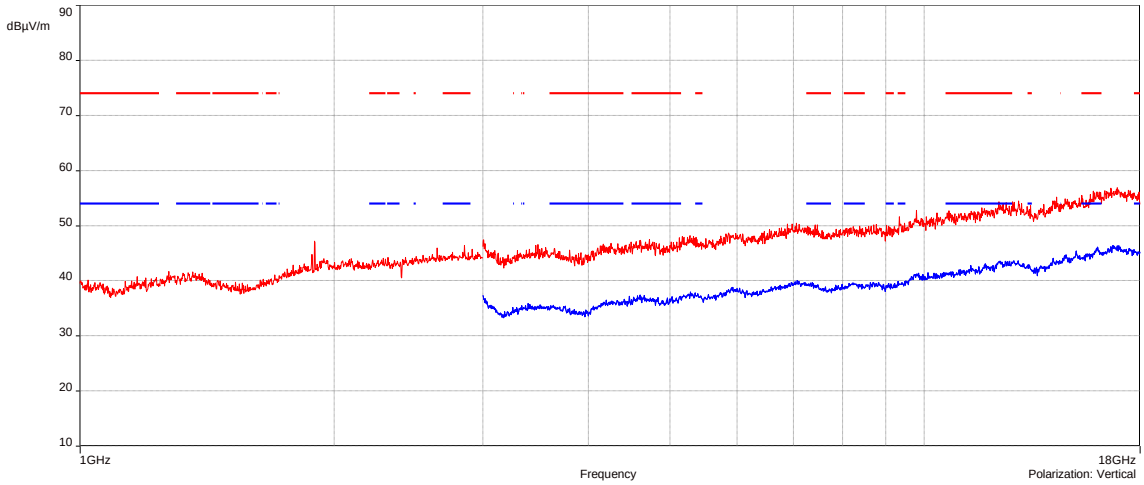
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY / 1GHZ TO 18GHZ		EMI4861	
EUT mode:	Modulated	**T (°C):**	22.0
Test Date:	23/05/2023	**H (%):**	41.9
Test Operator:	ATO & RGI	**P (hPa):**	995

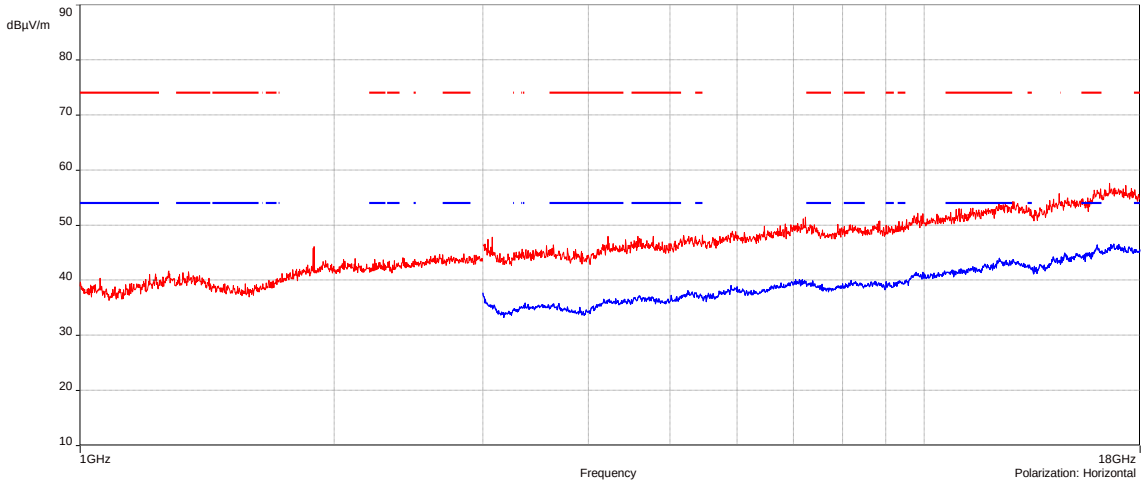




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	20kHz	Peak
Horizontal	3GHz-18GHz	1MHz	20kHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY + CHARGING / 1GHZ TO 18GHZ		EMI4862	
EUT mode:	Modulated	**T (°C):**	22.0
Test Date:	23/05/2023	**H (%):**	41.9
Test Operator:	ATO & RGI	**P (hPa):**	995

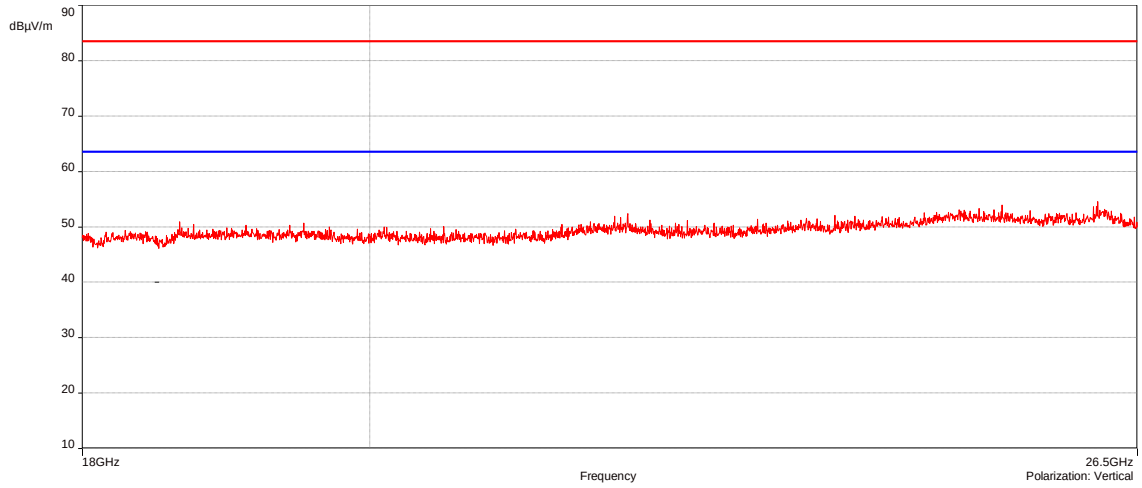


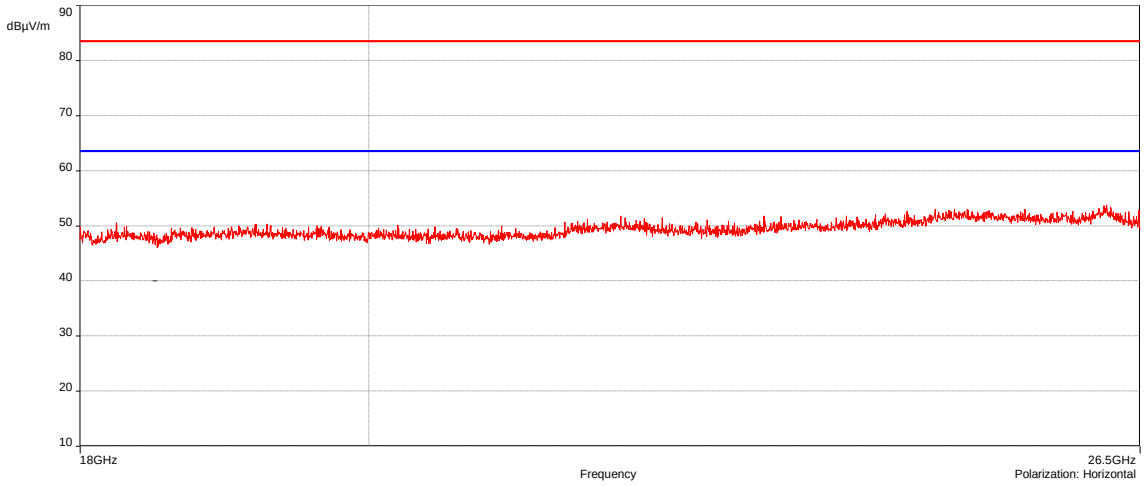


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	20kHz	Peak
Horizontal	3GHz-18GHz	1MHz	20kHz	Peak
Configuration:	N/A			
Comments:	N/A			

EUT modification(s): N/A

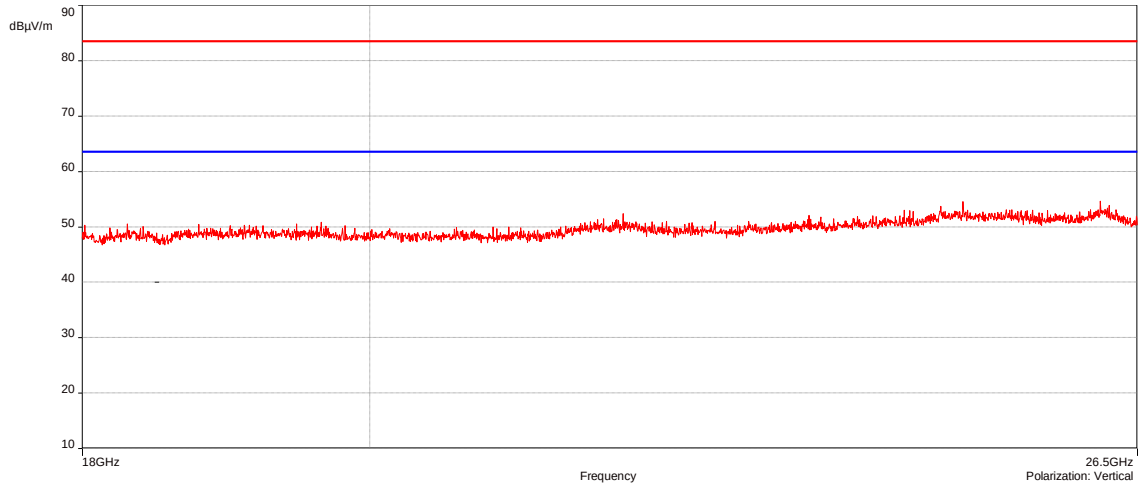
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / LOW CHANNEL / 18GHZ TO 26.5GHZ		EMI4864	
EUT mode:	Modulated	**T (°C):**	24.5
Test Date:	11/07/2023	**H (%):**	50.9
Test Operator:	ATO & RGI	**P (hPa):**	1010

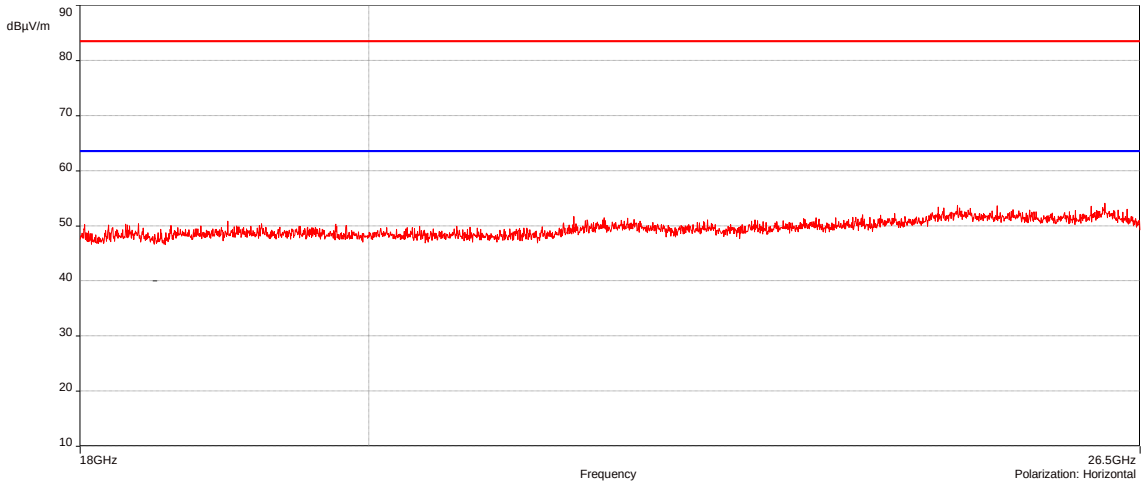




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

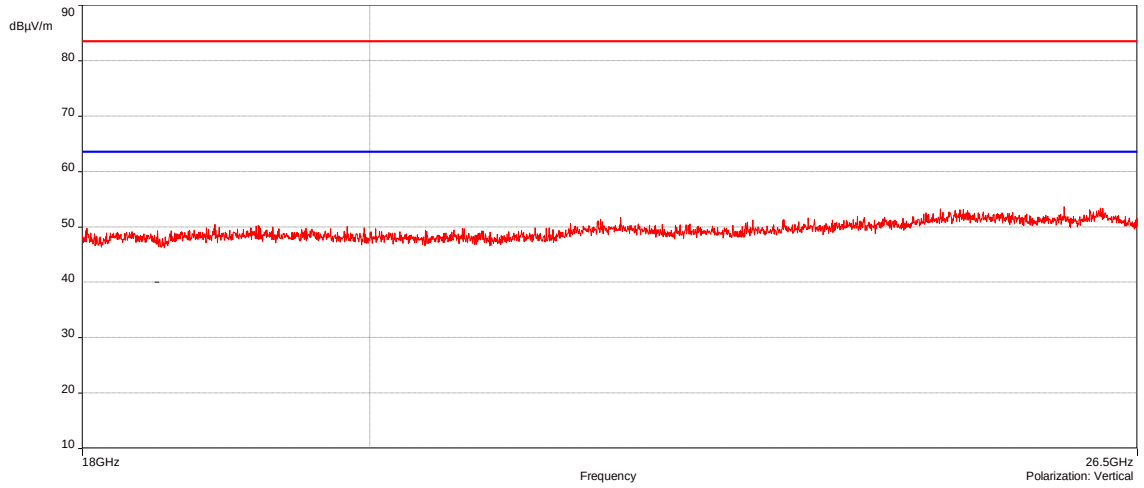
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / MID CHANNEL / 18GHZ TO 26.5GHZ		EMI4865	
EUT mode:	Modulated	**T (°C):**	24.5
Test Date:	11/07/2023	**H (%):**	50.9
Test Operator:	ATO & RGI	**P (hPa):**	1010

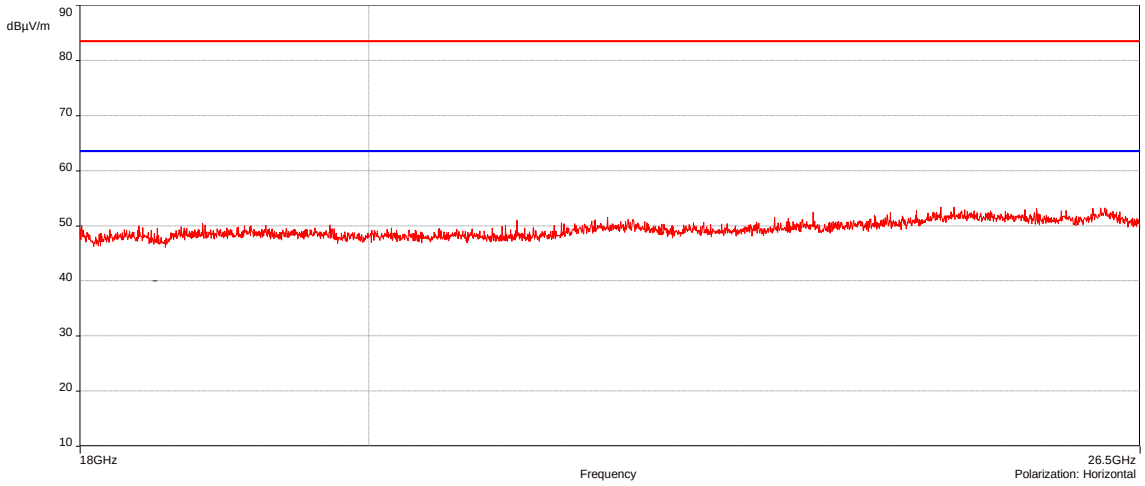




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

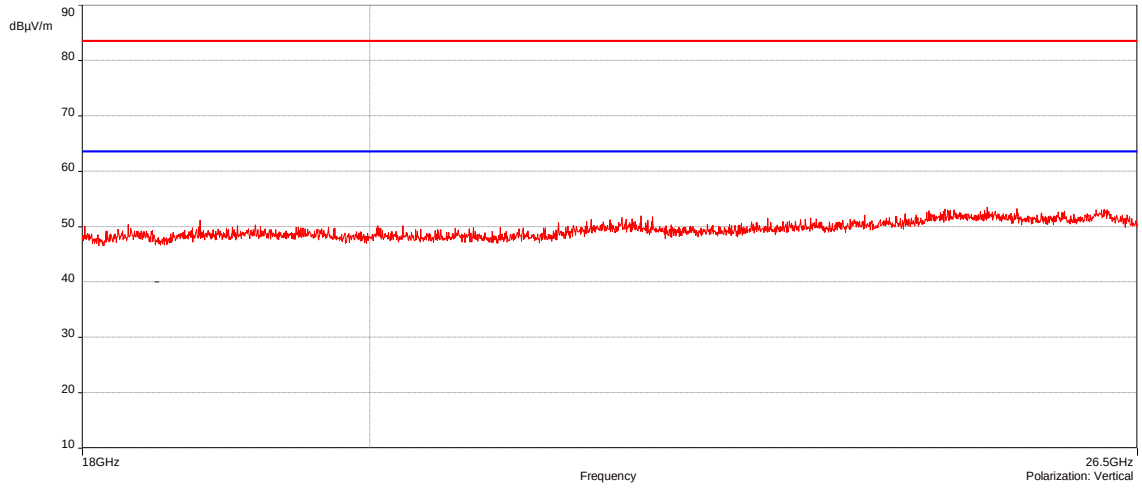
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / HIGH CHANNEL / 18GHZ TO 26.5GHZ		EMI4866	
EUT mode:	Modulated	**T (°C):**	24.5
Test Date:	11/07/2023	**H (%):**	50.9
Test Operator:	ATO & RGI	**P (hPa):**	1010

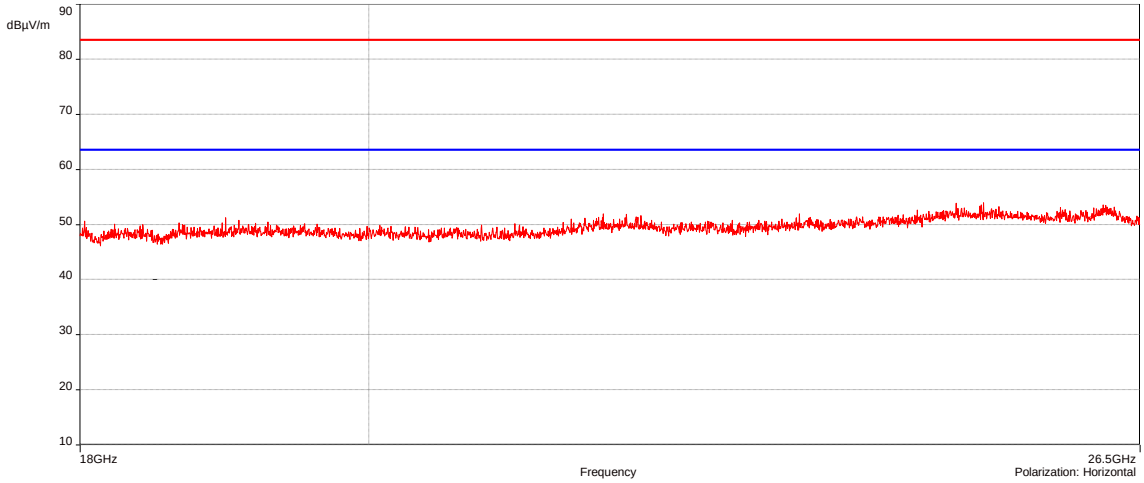




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / LOW CHANNEL + CHARGING / 18GHZ TO 26.5GHZ		EMI4867	
EUT mode:	Modulated	**T (°C):**	24.5
Test Date:	11/07/2023	**H (%):**	50.9
Test Operator:	ATO & RGI	**P (hPa):**	1010

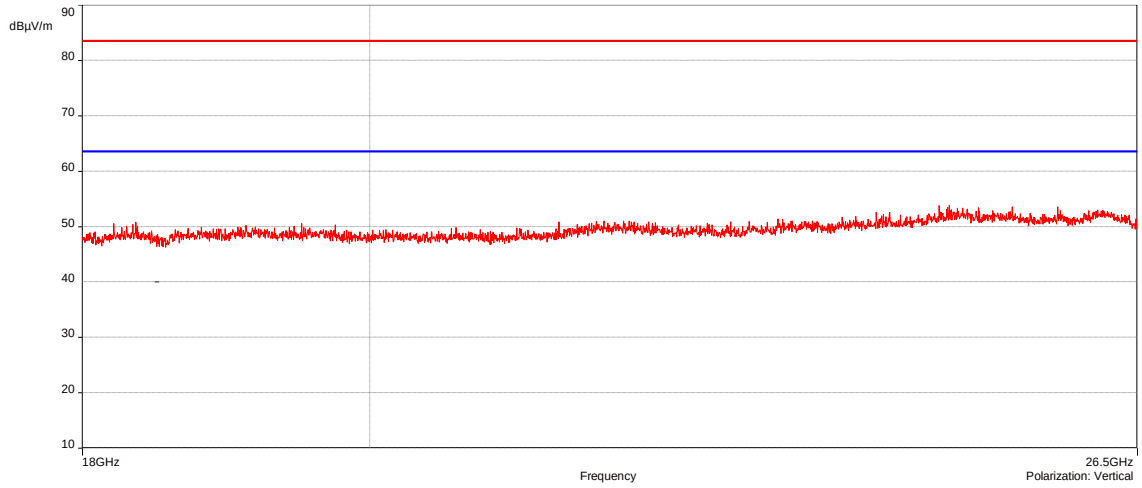


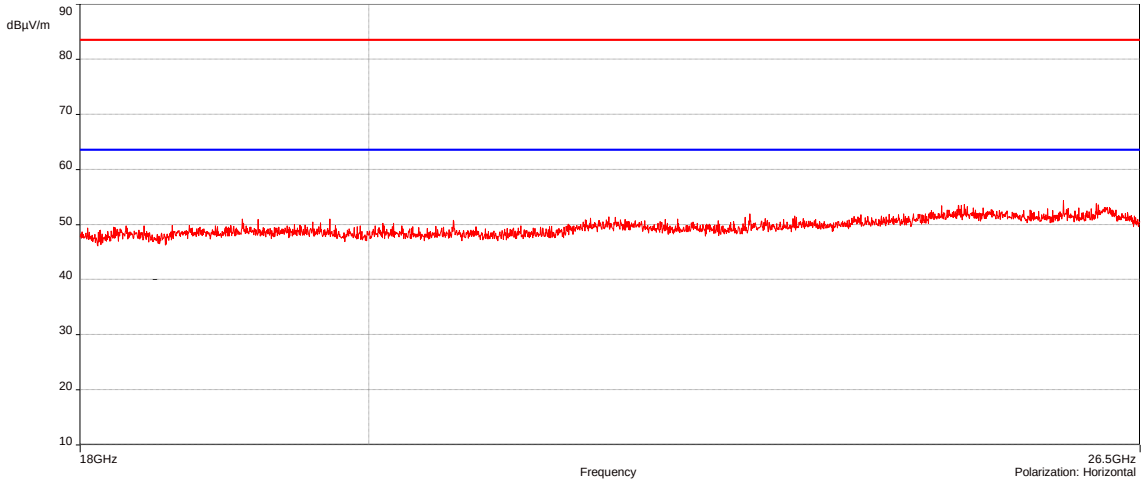


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / MID CHANNEL + CHARGING / 18GHZ TO 26.5GHZ		EMI4868	
EUT mode:	Modulated	**T (°C):**	24.5
Test Date:	11/07/2023	**H (%):**	50.9
Test Operator:	ATO & RGI	**P (hPa):**	1010

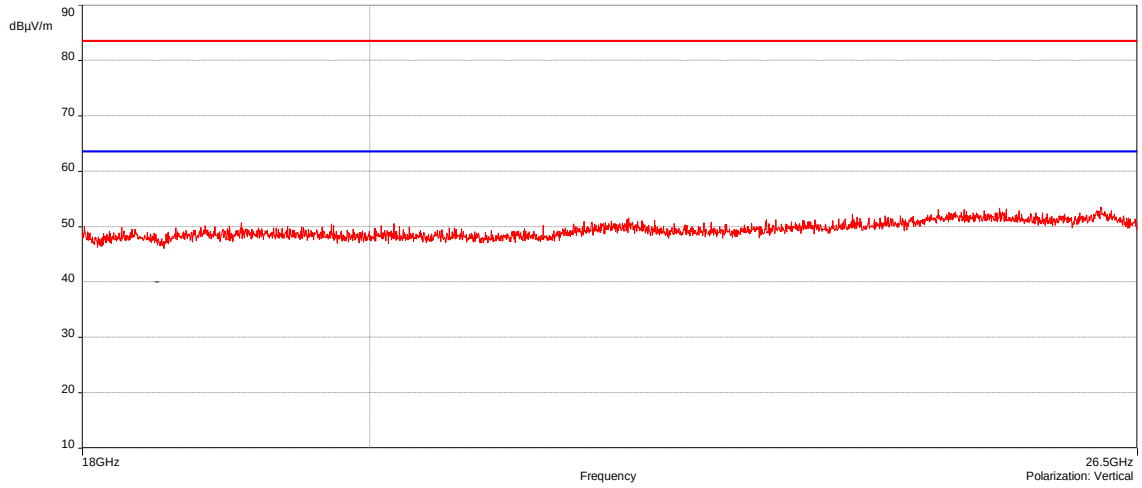


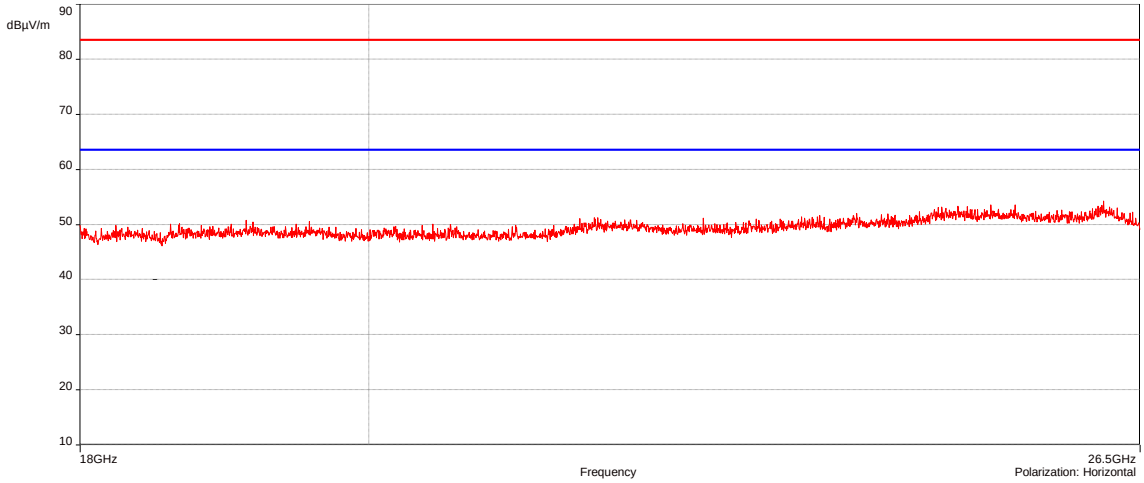


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / HIGH CHANNEL + CHARGING / 18GHZ TO 26.5GHZ		EMI4869	
EUT mode:	Modulated	**T (°C):**	24.5
Test Date:	11/07/2023	**H (%):**	50.9
Test Operator:	ATO & RGI	**P (hPa):**	1010

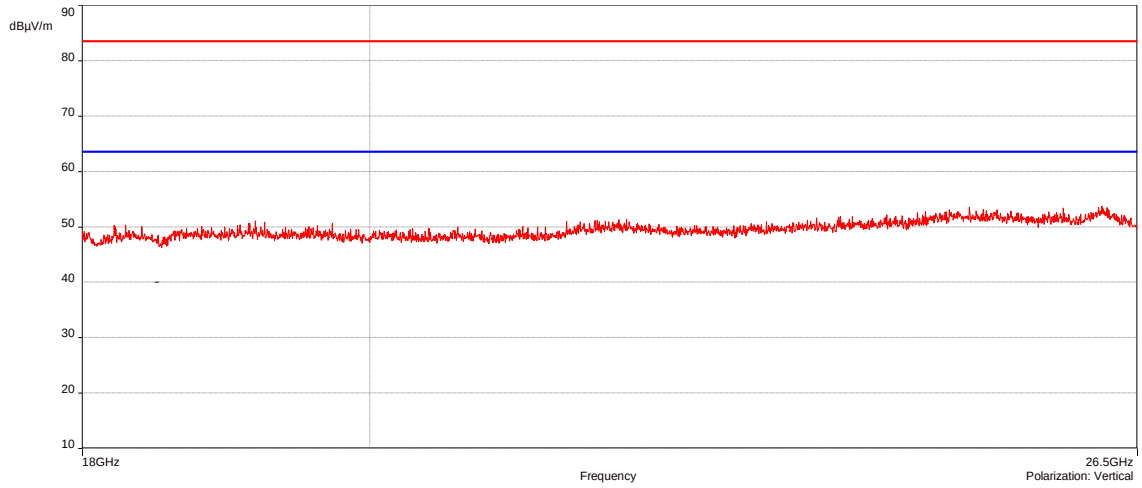


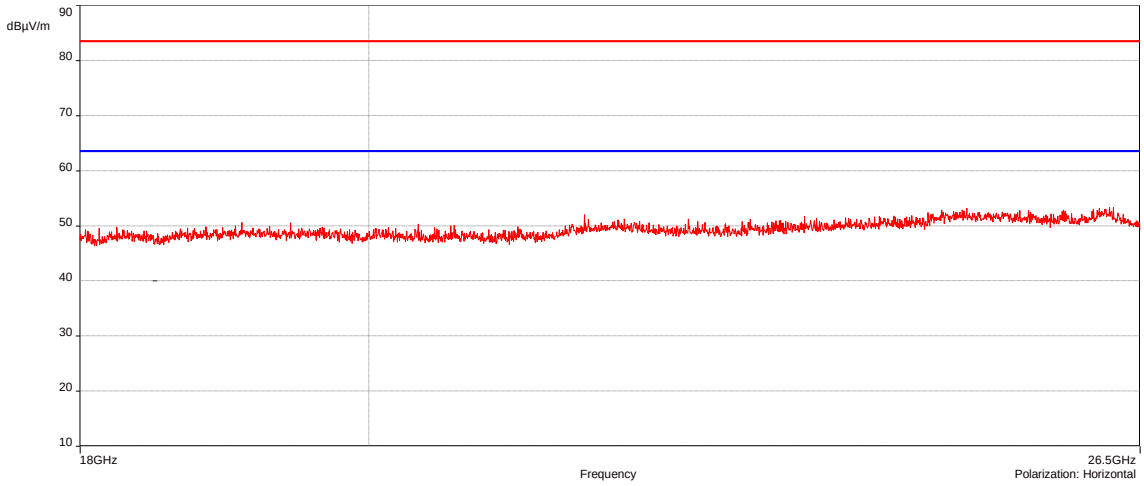


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			

EUT modification(s): N/A

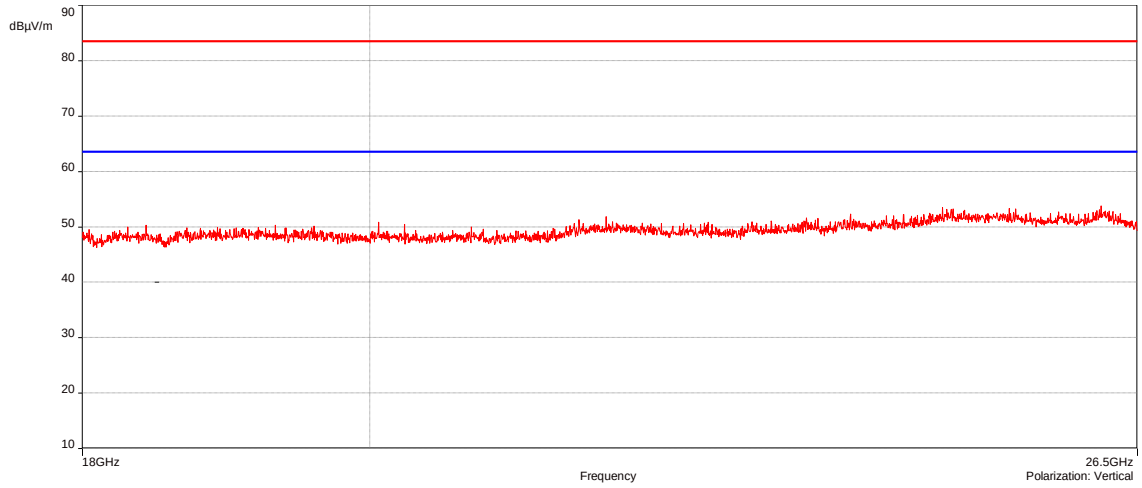
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY / 18GHZ TO 26.5GHZ		EMI4870	
EUT mode:	Modulated	**T (°C):**	24.5
Test Date:	11/07/2023	**H (%):**	50.9
Test Operator:	ATO & RGI	**P (hPa):**	1010

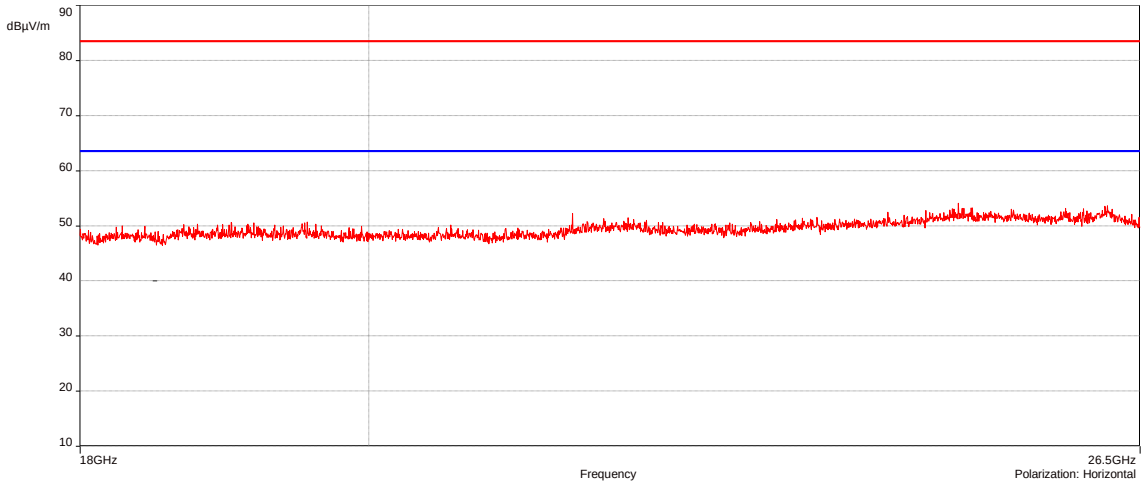




POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
RADIATED MEASUREMENT / ALL POSITIONS / STANDBY + CHARGING / 18GHZ TO 26.5GHZ		EMI4871	
EUT mode:	Modulated	**T (°C):**	24.5
Test Date:	11/07/2023	**H (%):**	50.9
Test Operator:	ATO & RGI	**P (hPa):**	1010





POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	18GHz-26.5GHz	1MHz	3MHz	Peak
Horizontal	18GHz-26.5GHz	1MHz	3MHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

7.9. Frequency error

Reference standard:	FCC part 15 Radio part 15.215 and RSS Gen
Test method:	FCC part 15 Radio part 15.215 and RSS Gen
Test description: Frequency error is the difference between the measured unmodulated carrier frequency under extreme conditions and the nominal Centre Frequency as stated by the manufacturer. This measurement procedure only applies if the EUT can generate an unmodulated carrier. EUT is set inside the climatic enclosure. It is connected to the measuring receiver via 50Ω attenuator(s). RBW=200Hz	

TEST CASE	EUT MODE	SEVERITY	RESULT TAB.	VERDICT
Low channel / 25°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7434	**PASS**
Low channel / 25°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7435	**PASS**
Low channel / 25°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7436	**PASS**
Mid channel / 25°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7437	**PASS**
Mid channel / 25°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7438	**PASS**
Mid channel / 25°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7439	**PASS**
High channel / 25°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7440	**PASS**
High channel / 25°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7441	**PASS**
High channel / 25°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7442	**PASS**
Low channel / -5°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7443	**PASS**
Low channel / -5°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7444	**PASS**
Low channel / -5°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7445	**PASS**
Mid channel / -5°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7446	**PASS**
Mid channel / -5°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7447	**PASS**
Mid channel / -5°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7448	**PASS**
High channel / -5°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7449	**PASS**
High channel / -5°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7450	**PASS**
High channel / -5°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7451	**PASS**
Low channel / 40°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7452	**PASS**
Low channel / 40°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7453	**PASS**
Low channel / 40°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7454	**PASS**
Mid channel / 40°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7455	**PASS**
Mid channel / 40°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7456	**PASS**
Mid channel / 40°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7457	**PASS**
High channel / 40°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI7458	**PASS**
High channel / 40°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI7459	**PASS**
High channel / 40°C/ 3.4Vdc	Continuous Tx	0.001 %	EMI7460	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	24.5 °C
Relative Humidity	20 to 75 %	35.9 %
Atmospheric pressure	N/A	1003 hPa
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
Antenna	EMITECH	3.5 cm	4653		
Cable	N	3m	16418	07/10/2021	07/12/2023
Climatic enclosure	CLIMATS	EXCAL 7714-HA	14261	01/09/2022	01/11/2023
Multimeter	Keysight	34460A	12431	05/05/2021	05/07/2023
Power supply	TTI	TSX-1820P	4365		
Spectrum analyzer	Rohde & Schwarz	FPL1007	17908	02/11/2022	02/01/2024
Thermohygrometer	Testo	608-H1	7561	16/05/2022	16/07/2023
Thermohygrometer	Bioblock Scientific	Météostar	0963	07/06/2021	07/08/2023
Thermometer contactless	GHM Greisinger	GMH 3710	12968	28/02/2023	28/04/2025

Blank cells = Permanent validity

FREQUENCY ERROR - TABULATED RESULTS				
TEST CASE	FREQUENCY	FREQUENCY ERROR	LIMIT	RESULT TAB.
Low channel / 25°C/ 3.7Vdc	2.40597274 GHz	0 %	0.001 %	EMI7434
Low channel / 25°C/ 4.2Vdc	2.40597424 GHz	0.00006 %	0.001 %	EMI7435
Low channel / 25°C/ 3.4Vdc	2.40597334 GHz	0.00002 %	0.001 %	EMI7436
Mid channel / 25°C/ 3.7Vdc	2.43998986 GHz	0 %	0.001 %	EMI7437
Mid channel / 25°C/ 4.2Vdc	2.43998816 GHz	0.00007%	0.001 %	EMI7438
Mid channel / 25°C/ 3.4Vdc	2.43998796 GHz	0.00008%	0.001 %	EMI7439
High channel / 25°C/ 3.7Vdc	2.475987225 GHz	0 %	0.001 %	EMI7440
High channel / 25°C/ 4.2Vdc	2.47598764 GHz	0.00002%	0.001 %	EMI7441
High channel / 25°C/ 3.4Vdc	2.47598864 GHz	0.00006%	0.001 %	EMI7442
Low channel / -5°C/ 3.7Vdc	2.405983337 GHz	0.00044 %	0.001 %	EMI7443
Low channel / -5°C/ 4.2Vdc	2.40598345 GHz	0.00045 %	0.001 %	EMI7444
Low channel / -5°C/ 3.4Vdc	2.405983275 GHz	0.00044 %	0.001 %	EMI7445
Mid channel / -5°C/ 3.7Vdc	2.43998734 GHz	0.00010%	0.001 %	EMI7446
Mid channel / -5°C/ 4.2Vdc	2.43998605 GHz	0.00016%	0.001 %	EMI7447
Mid channel / -5°C/ 3.4Vdc	2.43998674 GHz	0.00013%	0.001 %	EMI7448
High channel / -5°C/ 3.7Vdc	2.47598764 GHz	0.00002%	0.001 %	EMI7449
High channel / -5°C/ 4.2Vdc	2.475987678 GHz	0.00002%	0.001 %	EMI7450
High channel / -5°C/ 3.4Vdc	2.47598705 GHz	0.00001%	0.001 %	EMI7451
Low channel / 40°C/ 3.7Vdc	2.40595995 GHz	0.00053 %	0.001 %	EMI7452
Low channel / 40°C/ 4.2Vdc	2.40595465 GHz	0.00075 %	0.001 %	EMI7453
Low channel / 40°C/ 3.4Vdc	2.405956502 GHz	0.00067 %	0.001 %	EMI7454
Mid channel / 40°C/ 3.7Vdc	2.43996585 GHz	0.00098%	0.001 %	EMI7455
Mid channel / 40°C/ 4.2Vdc	2.43996574 GHz	0.00099%	0.001 %	EMI7456
Mid channel / 40°C/ 3.4Vdc	2.4399664 GHz	0.00096%	0.001 %	EMI7457
High channel / 40°C/ 3.7Vdc	2.47597496 GHz	0.00050%	0.001 %	EMI7458
High channel / 40°C/ 4.2Vdc	2.47597512 GHz	0.00049%	0.001 %	EMI7459
High channel / 40°C/ 3.4Vdc	2.47597485 GHz	0.00050%	0.001 %	EMI7460

End of test report