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: March 2024
RSS-210, Issue 11: June 2024

Company ..... :	**STMICROELECTRONICS (Rousset) SAS**
Address..... :	190 AVENUE CELESTIN COQ 13106 ROUSSET FRANCE

Test item description. ..... :	**NFC Reader**
Trade Mark. ..... :	STMICROELECTRONICS
Manufacturer. ..... :	STMICROELECTRONICS
FCC ID..... :	YCPR300AD1
IC. ..... :	8976A-R300AD1
Model/Type reference..... :	STEVAL-25R300KA
Ratings..... :	5Vdc

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

Report Reference No..... :	**RR-EVE-25A212-4A**
Test procedure. ..... :	FCC IC Certification
Diffusion..... :	Mr MAURAN
Applicant's name. ..... :	STMICROELECTRONICS (Rousset) SAS
Date of issue..... :	May 27, 2025
Total number of pages..... :	34
Revision..... :	0
Compiled by..... :	Morgan PATEY
Approved by (+ signature). ..... :	Olivier HEYER (Deputy Laboratory Manager)

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

REPORT INDEX:

REVISION HISTORY:

Revision	Date	Modified pages	Modifications
0	May 27, 2025	/	Creation

1. GENERAL INFORMATIONS

This document submits the results of Radio tests performed on the equipment **NFC Reader STEVAL-25R300KA** (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 & Open Area Test Site in SALINELLES (30)
Address	145 rue de Massacan 34740 VENDARGUES FRANCE
Test procedure	FCC IC Certification
Tested by	Morgan PATEY
Test supervisor	None
Date of receipt of test item	N/A
Date (s) of performance of tests	From January 27th to 29th of 2025

APPLICANT'S GENERAL INFORMATIONS:

Company name	STMICROELECTRONICS (Rousset) SAS
Company address	190 AVENUE CELESTIN COQ 13106 ROUSSET FRANCE
Person(s) present during the tests	No representative for company attended the tests.
Responsible	Mr MAURAN

GENERAL REMARKS:

The information in italics is declared by the manufacturer and is under his responsibility
The test results presented in this report relate only to the object tested.
The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report the decimal separator is point.

POSSIBLE TEST CASE VERDICTS:

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

DEFINITIONS AND ABBREVIATIONS:

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

2. REFERENCE DOCUMENT(S)

NORMATIVE REFERENCES:
The following referenced documents are necessary for the application of the present test report. **FCC 47 CFR PART 15: March 2024** Code of federal regulations – Title 47 telecommunication - Part 15 - Radio frequency devices **FCC 47 CFR PART 15.225: March 2024** Operation within the band 13.110-14.010 MHz **RSS-210, Issue 11: June 2024** Licence-exempt Radio Apparatus: Category I Equipment - Annex B – Devices Operating in Frequency Bands for Any Application **RSS-GEN, Issue 5: April 2018 / AMD1: 2019 / AMD2: 2021** General requirements and Information for the Certification of radio Apparatus **ANSI C63.4:2014** American National Standard for Methods of measurement of Radio-Noise from low-voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz **ANSI C63.10: 2020** 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

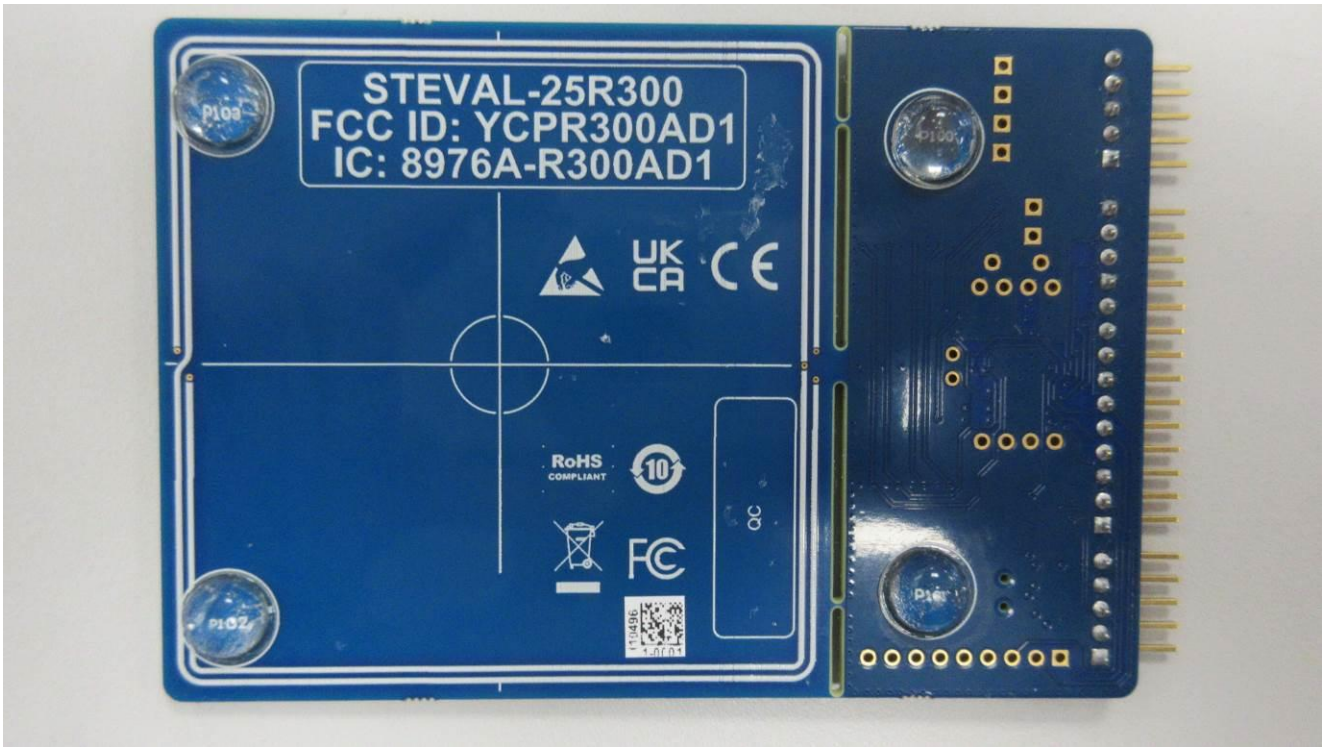
3.1. Test Conditions

Test item description.	:	NFC Reader
Model/Type reference.	:	STEVAL-25R300KA
Trade Mark.	:	STMICROELECTRONICS
Serial number (S/N).	:	Not communicated
Part number (P/N).	:	Not communicated
Software version.	:	*Not communicated*
Firmware version.	:	*Not communicated*
Type of sample.	:	Pre-serial
Function(s).	:	Not communicated
Manufacturer name.	:	STMICROELECTRONICS
Address.	:	776 RUE ALBERT CAQUOT SKY SOPHIA BAT B 06410 BIOT FRANCE

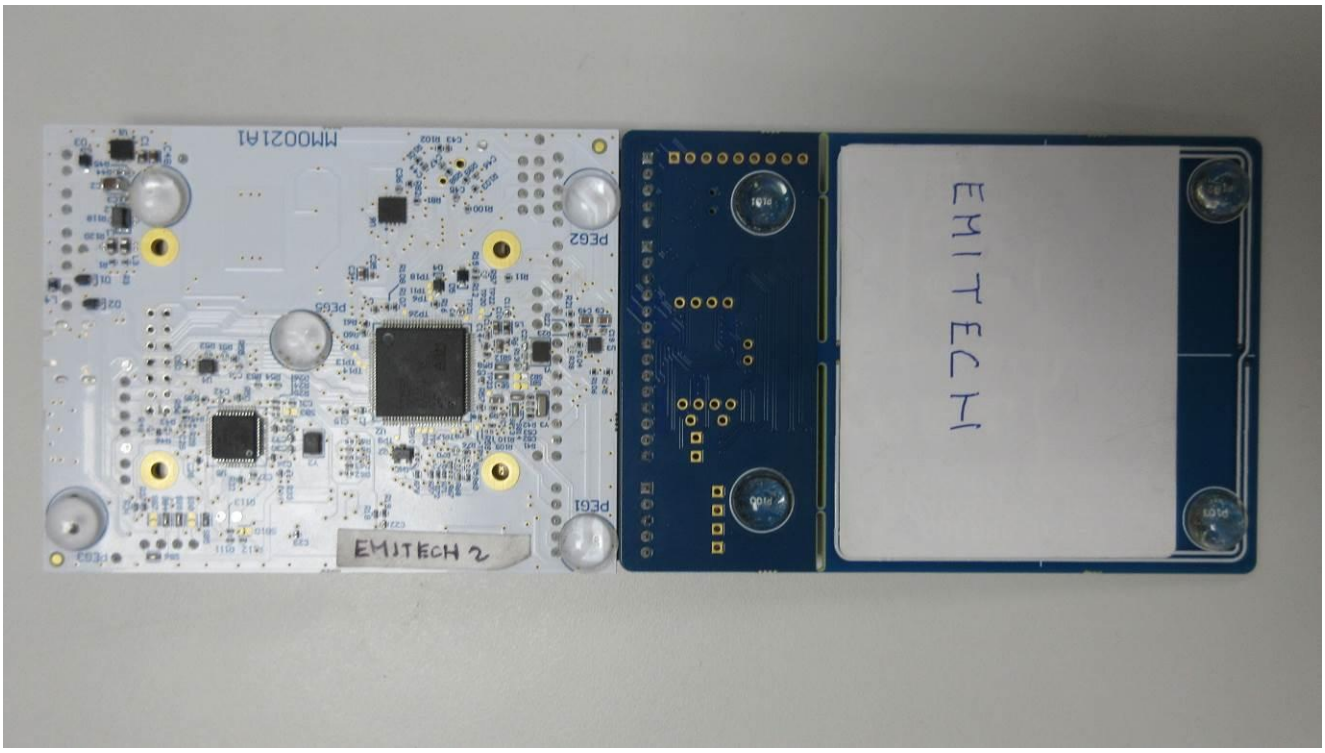
General product information:

N/A

3.2. E.U.T. Marking plate



3.3. E.U.T. General view

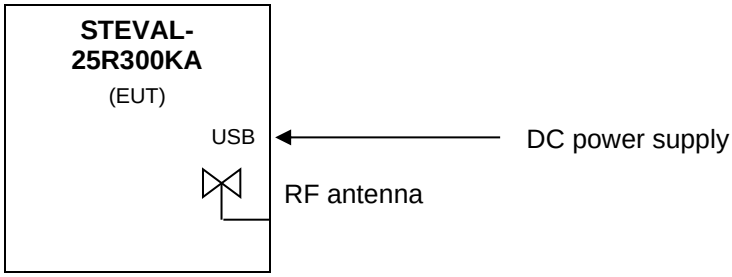


3.4. E.U.T. Mechanical and Electrical Design

Power supply. ..... : *5Vdc*
Power supply range. ..... : *5Vdc*
Power type. ..... : *DC*
Power (W). ..... : *Not communicated*
Nominal current (A). ..... : *Not communicated*
Dimensions (L x W x H) (m). ..... : *Not communicated*
Weight (kg). ..... : *Not communicated*
Temperature range (°C). ..... : *0 to +60*
Ground bounding strap. ..... : *No*

Comments:
N/A

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



PORT	NAME	TYPE	LENGTH	CABLE TYPE	COMMENTS
0	Main frame	N/E	N/A	PCB	N/A
1	DC power supply	DC	50cm	N/A	5Vdc
2	RF antenna	RF	N/A	PCB	13.56MHz

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

3.6. Supporting Equipment Used During Test

Sample subject to the tests was tested with following equipment.

PRODUCT TYPE	MANUFACTURER	MODEL	N°EMITECH / COMMENTS
AC/DC block	HN Electronic Components GmbH & Co, KG	HNP06-USBL6	Used to power EUT through USB

(AE)

3.7. EUT Radio Specifications

a) GENERAL INFORMATIONS
According to manufacturer's declarations : EUT type..... : *Transceiver* Technology ..... : *RFID* Environmental profile..... : *Data transmissions* Temperature range..... : *0°C to +60°C* Antenna type ..... : *PCB* Antenna Gain..... : *Not communicated* **Comments:** *N/A*
b) TRANSMITTER PARAMETERS (TX)
Frequency bands..... : *13.553 MHz to 13.567 MHz* RF Power..... : *Not communicated* Number of channels / Separation..... : *1* Modulation type ..... : *Not communicated* Duty cycle ..... : *Not communicated* Tested frequency..... : *13.56 MHz*
c) RECEIVER PARAMETERS (RX)
Frequency bands..... : *13.553 MHz to 13.567 MHz* Category/Class ..... : *Not communicated* Bandwidth..... : *Not communicated*

4. RESULT SUMMARY

TEST DESIGNATION	SEVERITY	VERDICT	COMMENTS
GENERAL			
Labeling requirements		N/P	15.19 / See certification documents
Information to user		N/P	15.21 / See certification documents
Home-built devices		N/A	15.23
Kits		N/A	15.25
Special Accessories		N/P	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		N/P	15.37 / See certification documents
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		N/P	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
INTENTIONAL RADIATORS			

TEST DESIGNATION	SEVERITY	VERDICT	COMMENTS
Equipment authorization requirement		**PASS**	**15.201 / Transmitter part is subject to Certification procedure**
Certified operating frequency range		**N/A**	**15.202**
Antenna requirement		**PASS**	**15.203 / Dedicated integral antenna**
External radio frequency power amplifiers and antenna modifications		**N/A**	**15.204**
Restricted bands of operation		**PASS**	**15.205**
Conducted limits		**PASS**	**15.207**
Radiated emission limits; general requirements		**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 13.110-14.010 MHz.		**PASS**	**15.225**
- **Field strength in the band 13.553-13.567 MHz**		**PASS**	**(a)**
- **Field strength in the band 13.410-13.553 MHz and 13.567-13.710 MHz**		**PASS**	**(b)**
- **Field strength in the band 13.110-13.410 MHz and 13.710-14.010 MHz**		**PASS**	**(c)**
- **Field strength outside the band 13.110-14.010 MHz**		**PASS**	**(d)**
- **Frequency tolerance of the carrier signal**		**PASS**	**(e)**
- **Radio frequency powered tag**		**N/A**	**(f) EUT is an RFID reader**

Sample subject to the test complies 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 account of uncertainty associated with the results.

Opinion(s) and interpretation(s): N/A

5. MEASUREMENT UNCERTAINTY

PARAMETER	MAXIMAL EMITECH UNCERTAINTY	MINIMAL STANDARD UNCERTAINTY
Radio frequency	± 1 x 10^{-7}	±1 x 10^{-7}
Occuped bandwidth		
RF power	± 3.8 %	± 5 %
Supply voltages	± 3 %	± 3 %
Temperature	± 1 °C	± 1°C
Humidity	± 5 %	± 5 %
Time / Duty cycle	± 4.4 %	± 5 %
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).

6. TEST CONDITIONS AND RESULTS

6.1. AC power-line conducted emissions

Reference standard:	FCC part 15.225 & 15.207 RSS-210 & RSS-Gen
Test method:	ANSI C63.10: 2020
General test setup: EUT is set on an insulating support at 80cm above the horizontal ground reference plane, and at 40cm of the vertical 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.	

TESTED CABLE	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
120 VAC / 60 HZ / STEVAL-25R300KA / 50 OHM LOAD	150kHz-30MHz	15.207	EMI4708	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	*See Graph(es)*
Relative Humidity	30 to 60 %	*See Graph(es)*
Atmospheric pressure	N/A	*See Graph(es)*
Test method deviation: N/A		
Supplementary information: EUT power supply is done trought a “standard power supply” wich meets FCC and RSS requirements. As provide in §6.2.5 of ANSI C63.10 (2020), antena is replaced with a dummy load.		

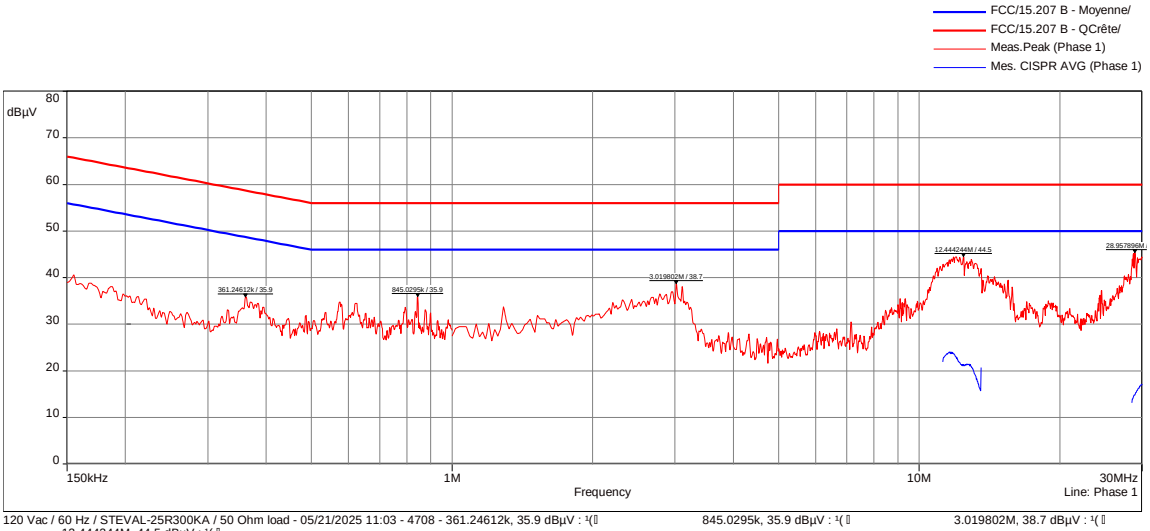
TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
AC power source	KIKUSUI	PCR 4000L	15322	20/02/2024	20/04/2026
Cable	N	3m	16413	16/08/2023	16/10/2025
Cable	EMITECH	Current absorber sheath	18366	17/08/2023	17/10/2025
LISN	Rohde & Schwarz	ENV216	17925	06/12/2023	06/02/2026
Multimeter	FLUKE	8808A	10382	11/07/2024	11/09/2025
Receiver	Rohde & Schwarz	ESI	9704	31/03/2025	31/05/2026
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermohygrometer	Testo	608-H1	19386	08/03/2024	08/05/2026

Blank cells = Permanent validity

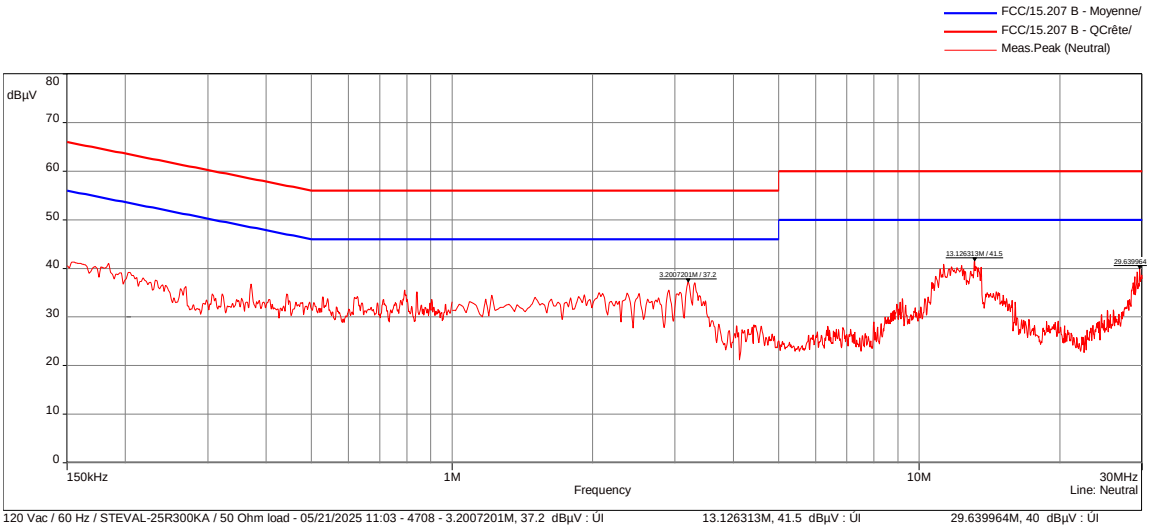
TEST SETUP PHOTO(S) – CONDUCTED MEASUREMENT


AC POWER-LINE CONDUCTED EMISSIONS - TABULATED RESULTS					
120 VAC / 60 HZ / STEVAL-25R300KA / 50 OHM LOAD					EMI4708
TERMINAL	FREQUENCY (MHZ)	DETECTOR (PK/QP/AV)	LEVEL (dBµV)	LIMIT (dBµV)	MARGIN (dB)
Neutral	0.155	Peak	41.28	55.72	-14.44
Neutral	0.371	Peak	36.74	48.47	-11.73
Neutral	3.201	Peak	37.21	46	-8.79
Neutral	13.126	Peak	41.53	50	-8.47
Neutral	28.918	Peak	38.28	50	-11.72
Neutral	29.640	Peak	39.97	50	-10.03
Line 1	0.155	Peak	40.56	55.72	-15.16
Line 1	12.444	Peak	44.51	50	-5.49
Line 1	28.558	Peak	43.99	50	-6.01
Line 1	28.758	Peak	45.15	50	-4.85
Line 1	28.958	Peak	45.34	50	-4.66
Line 1	29.960	Peak	44.41	50	-5.59
Line 1	12.444	Average	20.95	50	-29.05
Line 1	28.758	Average	14.55	50	-35.45
Line 1	28.958	Average	15.82	50	-34.18
Line 1	29.960	Average	17.13	50	-32.87
Supplementary information: When margin between peak measurements and Average or Qpeak limit(s) is > 6dB, no Average or Qpeak measurements were performed.					

AC POWER-LINE CONDUCTED EMISSIONS - GRAPH			
120 VAC / 60 HZ / STEVAL-25R300KA / 50 OHM LOAD		EMI4708	
EUT mode:	Tx mode	**T (°C):**	23.1
Test Date:	21/05/2025	**H (%):**	46.7
Test Operator:	MPA + OHE	**P (hPa):**	1012



120 Vac / 60 Hz / STEVAL-25R300KA / 50 Ohm load - 05/21/2025 11:03 - 4708 - 361.24612k, 35.9 dBµV : ¹(845.0295k, 35.9 dBµV : ¹(3.019802M, 38.7 dBµV : ¹(12.444244M, 44.5 dBµV : ¹(28.957896M, 45.3 dBµV : ¹(



120 Vac / 60 Hz / STEVAL-25R300KA / 50 Ohm load - 05/21/2025 11:03 - 4708 - 3.2007201M, 37.2 dBµV : Ûl 13.126313M, 41.5 dBµV : Ûl 29.639964M, 40 dBµV : Ûl

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
Phase 1	11.24MHz-13.57MHz	9kHz	27kHz	Average
Phase 1	28.54MHz-30MHz	9kHz	27kHz	Average
Measure with:	A.M.N.			
Comments:	Antena replaced by a 50Ω load			
EUT modification(s): N/A				

6.2. Occupied bandwidth

Reference standard:	FCC part 15 Radio part 15.205 RSS-Gen
Test method:	ANSI C63.10: 2020
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. EUT is connected to the measuring receiver via 50Ω attenuator(s).	

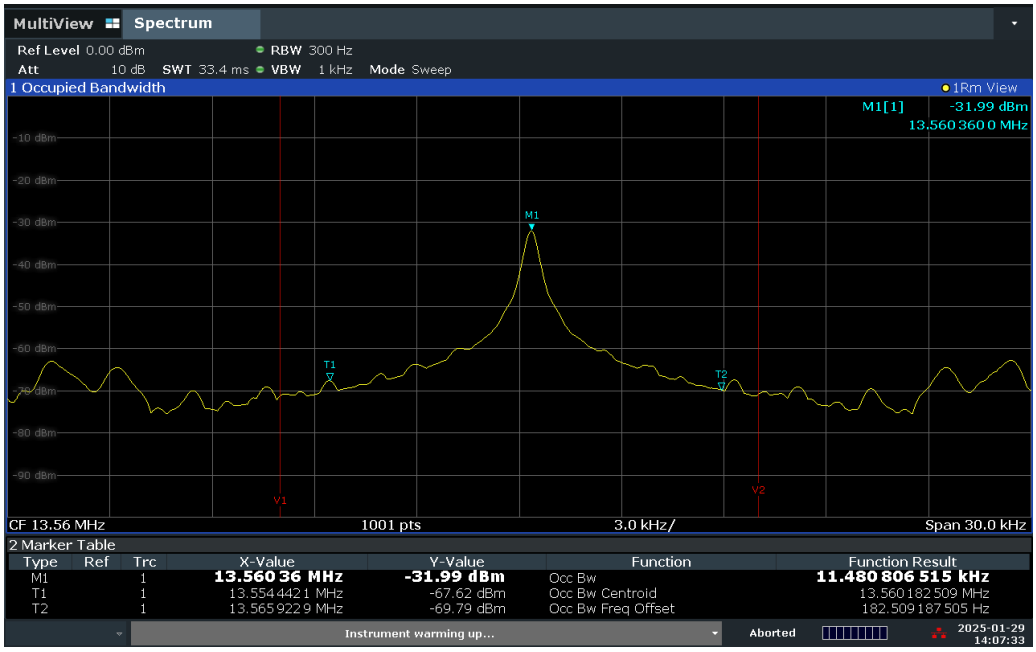
TESTED CABLE	OBW	SEVERITY	RESULT TAB.	VERDICT
99% bandwidth	11.480 MHz	< 14 kHz	EMI4678	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	23.5 °C
Relative Humidity	20 to 75 %	34.1 %
Atmospheric pressure	N/A	1017 hPa
Test method deviation: N/A		
Supplementary information:		

TEST EQUIPMENT USED					
CATEGORY	**BRAND**	**TYPE**	**IDENTIFIER**	**CAL. DATE**	**CAL. DUE**
Antenna	EMITECH	3.5 cm	4653		
Cable	SUCOFLEX	N-3m	14379	17/08/2023	17/10/2025
Multimeter	FLUKE	8808A	10382	12/07/2024	12/09/2025
Spectrum analyzer	Rohde & Schwarz	FSW43	14830	31/08/2022	28/04/2025
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermo-Hygromètre	Testo	608-H1	19386	08/03/2024	08/05/2026

Blank cells = Permanent validity

OCCUPIED BANDWIDTH - GRAPH		
99% BANDWIDTH		EMI4519
EUT mode:	Tx mode	
Test Date:	29/01/2025	
Test Operator:	MPA	



Results:	The system has an OBW of 11.480 kHz in the 13.553 MHz to 13.567 MHz band.

EUT modification(s): N/A

6.3. Radiated spurious emissions

Reference standard:	FCC Part 15.225 & RSS-Gen
Test method:	ANSI C63.10: 2020

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

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

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

For f > 30MHz, EUT is set on an insulating support at 80cm above the ground reference plane. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3-meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities.

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

All frequencies were investigated, where applicable.

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

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
Radiated measurement / 0°	9kHz-30MHz	§15.209	EMI4633	**PASS**
Radiated measurement / 45°	9kHz-30MHz	§15.209	EMI4634	**PASS**
Radiated measurement / 90°	9kHz-30MHz	§15.209	EMI4635	**PASS**
Tx mode / 30 MHz to 1 GHz	30MHz-1GHz	§15.209	EMI4574	**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:

From 9 kHz to 30MHz: limit indicated on the curves is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

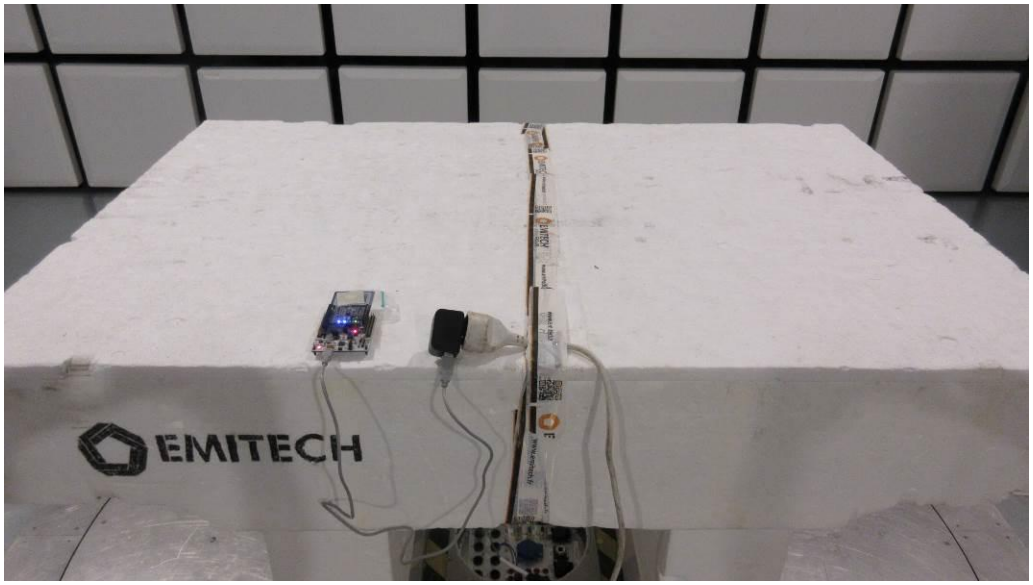
From 30MHz to 1GHz Quasi peak limit provided is the limit given in §15.209.

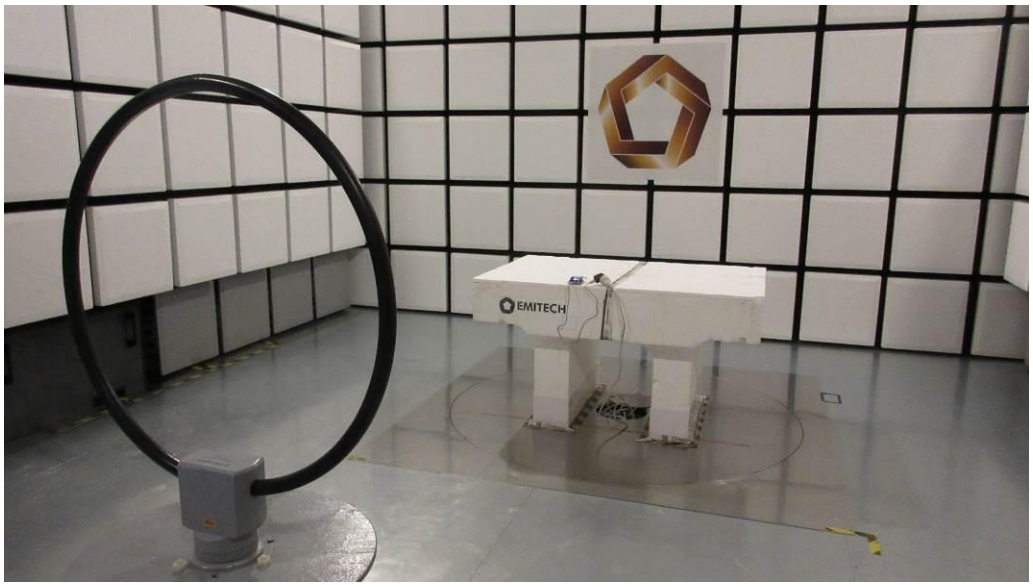
TEST EQUIPMENT USED – 9 KHZ TO 30 MHZ					
CATEGORY	**BRAND**	**TYPE**	**IDENTIFIER**	**CAL. DATE**	**CAL. DUE**
Antenna	Rohde & Schwarz	HFH2-Z2	5825	17/08/2022	17/04/2025
Cable	SUCOFLEX	N-3m	14378	17/08/2023	17/10/2025
Cable	SUCOFLEX	N-6,5m	14380	17/08/2023	17/10/2025
Cable	Techniwave	N-8m	18349	17/08/2023	17/10/2025
Multimeter	FLUKE	8808A	10382	12/07/2024	12/09/2025
Receiver	Rohde & Schwarz	ESW8	19536	02/05/2024	02/07/2025
Shielded enclosure	COMTEST	SAC 3m	14494	08/08/2023	08/10/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H1	7562	28/09/2023	28/11/2025
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025

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

TEST EQUIPMENT USED – 30 MHZ TO 1 GHZ					
CATEGORY	**BRAND**	**TYPE**	**IDENTIFIER**	**CAL. DATE**	**CAL. DUE**
Antenna	ETS lindgren	3142E	14523	27/01/2022	27/03/2025
Cable	SUCOFLEX	N-3m	14378	17/08/2023	17/10/2025
Cable	SUCOFLEX	N-6,5m	14380	17/08/2023	17/10/2025
Cable	Techniwave	N-8m	18349	17/08/2023	17/10/2025
Converter		2.15	9988		
Multimeter	FLUKE	8808A	10382	12/07/2024	12/09/2025
Receiver	Rohde & Schwarz	ESW8	19536	02/05/2024	02/07/2025
Shielded enclosure	COMTEST	SAC 3m	14494	08/08/2023	08/10/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H1	7561	17/12/2024	17/02/2026
Thermohygrometer	Testo	608-H1	7562	28/09/2023	28/11/2025
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025

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

TEST SETUP PHOTO(S) – EUT POSITION


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


TEST SETUP PHOTO(S) - 30 MHZ TO 1 GHZ

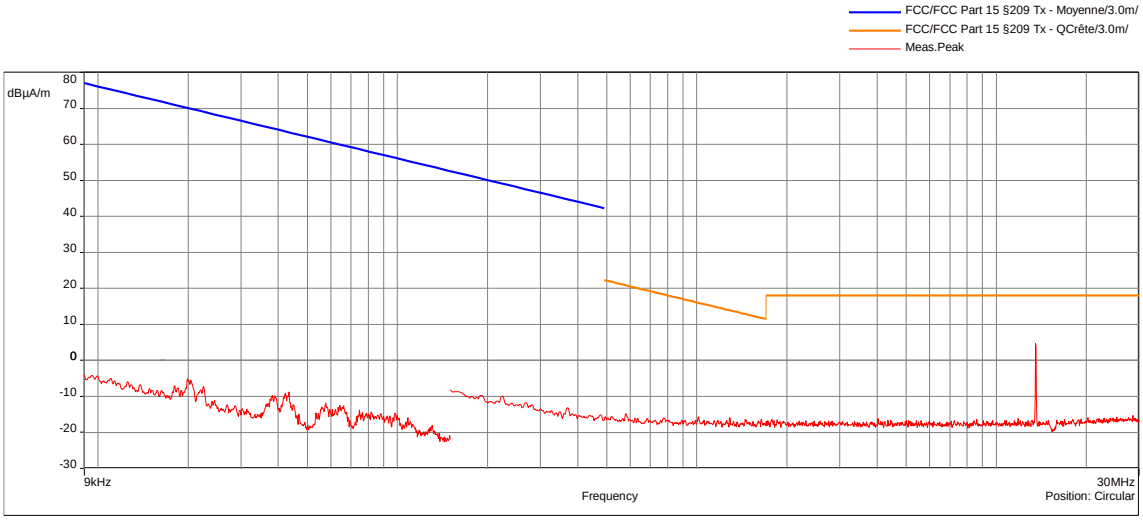

RADIATED SPURIOUS EMISSIONS – TABULATED RESULTS					
RADIATED MEASUREMENT / 0°					EMI4633
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµA/m)	AVERAGE OR QPEAK LEVEL (dBµA/m)	LIMIT (dBµA/m)	MARGING (dB)
0.020	0°	-5.14	N/P	70.12	-75.26
0.038	0°	-9.81	N/P	64.46	-74.27
0.043	0°	-8.79	N/P	63.36	-72.15
0.058	0°	-11.84	N/P	60.90	-72.74
0.075	0°	-13.83	N/P	58.64	-72.47
0.108	0°	-15.91	N/P	55.41	-71.32
Supplementary information: When margin between peak measurements and average/quasi-peak limit(s) is >6dB, no average/quasi-peak measurements were performed.					

RADIATED SPURIOUS EMISSIONS – TABULATED RESULTS					
RADIATED MEASUREMENT / 45°					EMI4634
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµA/m)	AVERAGE OR QPEAK LEVEL (dBµA/m)	LIMIT (dBµA/m)	MARGING (dB)
0.009	45°	-1.09	N/P	76.61	-77.70
0.038	45°	-10.57	N/P	64.61	-75.18
0.043	45°	-11.23	N/P	63.47	-74.69
0.058	45°	-13.96	N/P	60.91	-74.86
0.066	45°	-14.10	N/P	59.74	-73.84
0.151	45°	-8.73	N/P	52.54	-61.26
Supplementary information: When margin between peak measurements and average/quasi-peak limit(s) is >6dB, no average/quasi-peak measurements were performed.					

RADIATED SPURIOUS EMISSIONS – TABULATED RESULTS					
RADIATED MEASUREMENT / 90°					EMI4635
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµA/m)	AVERAGE OR QPEAK LEVEL (dBµA/m)	LIMIT (dBµA/m)	MARGING (dB)
0.042	90°	-12.25	N/P	63.60	-75.85
0.056	90°	-15.62	N/P	61.09	-76.70
0.082	90°	-17.15	N/P	57.88	-75.03
0.092	90°	-17.73	N/P	56.81	-74.53
0.099	90°	-13.84	N/P	56.22	-70.07
0.106	90°	-19.97	N/P	55.57	-75.54
Supplementary information: When margin between peak measurements and average/quasi-peak limit(s) is >6dB, no average/quasi-peak measurements were performed.					

RADIATED SPURIOUS EMISSIONS – TABULATED RESULTS					
TX MODE / 30 MHZ TO 1 GHZ					EMI4574
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµV/m)	QPEAK LEVEL (dBµV/m)	QPEAK LIMIT (dBµV/m)	MARGING (dB)
32.062	Vertical	38.92	28.75	40.00	-11.25
37.518	Vertical	41.03	32.82	40.00	-7.18
44.552	Vertical	37.20	30.48	40.00	-9.52
71.958	Vertical	30.70	N/P	40.00	-9.30
94.877	Vertical	30.22	N/P	43.50	-13.28
143.989	Vertical	32.14	N/P	43.50	-11.36
32.183	Horizontal	32.86	N/P	40.00	-7.14
71.958	Horizontal	22.37	N/P	40.00	-17.63
90.026	Horizontal	26.47	N/P	43.50	-17.03
94.877	Horizontal	30.89	N/P	43.50	-12.61
176.246	Horizontal	23.77	N/P	43.50	-19.73
311.941	Horizontal	29.81	N/P	46.00	-16.19
Supplementary information: When margin between peak measurements and quasi-peak limit(s) is > 6dB, no quasi-peak measurements were performed					

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / 0°		EMI4633	
EUT mode:	Tx mode	**T (°C):**	21.7
Test Date:	27/01/2025	**H (%):**	45.3
Test Operator:	MPA	**P (hPa):**	1005

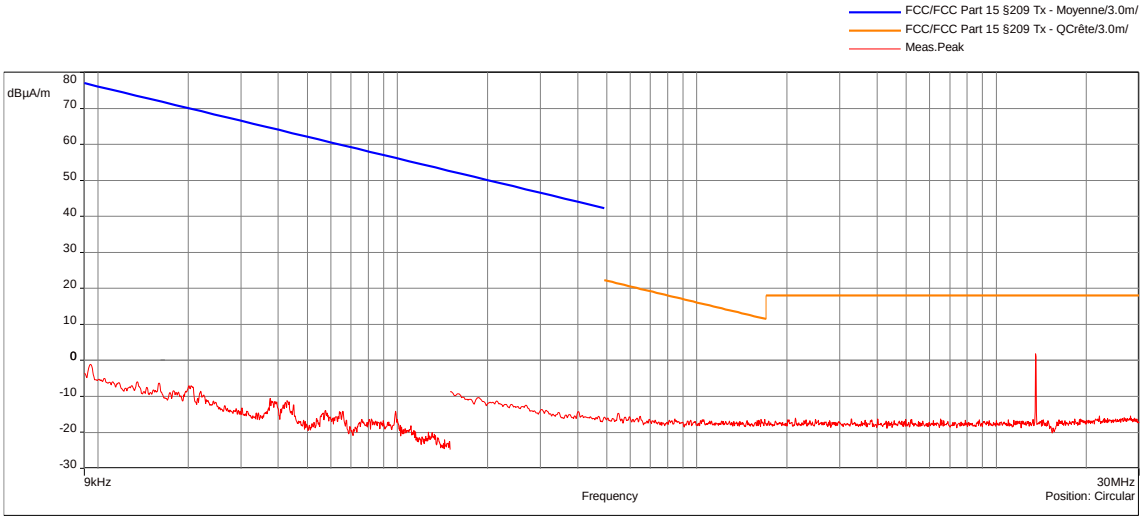


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Circular	9kHz-150kHz	300Hz	1kHz	Peak
Circular	150kHz-1MHz	10kHz	30kHz	Peak
Circular	1MHz-30MHz	10kHz	30kHz	Peak

Configuration:	N/A
Comments:	Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor. The 13.56 MHz is the main carrier frequency of the EUT's radio signal.

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / 45°		EMI4634	
EUT mode:	Tx mode	**T (°C):**	21.7
Test Date:	27/01/2025	**H (%):**	45.3
Test Operator:	MPA	**P (hPa):**	1005

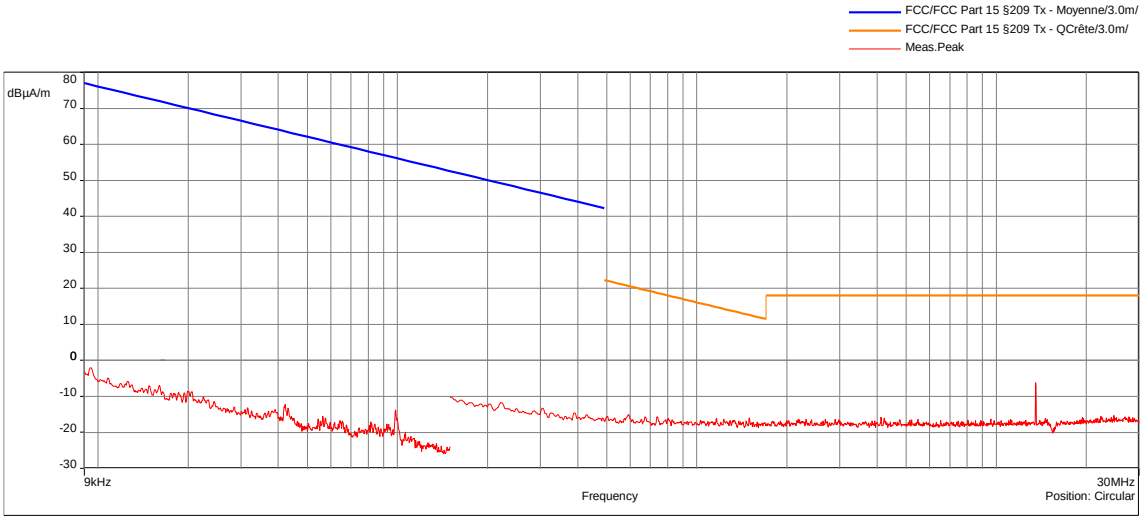


POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Circular	9kHz-150kHz	300Hz	1kHz	Peak
Circular	150kHz-1MHz	10kHz	30kHz	Peak
Circular	1MHz-30MHz	10kHz	30kHz	Peak

Configuration:	N/A
Comments:	Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor. The 13.56 MHz is the main carrier frequency of the EUT's radio signal.

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH			
RADIATED MEASUREMENT / 90°		EMI4635	
EUT mode:	Tx mode	**T (°C):**	21.7
Test Date:	27/01/2025	**H (%):**	45.3
Test Operator:	MPA	**P (hPa):**	1005

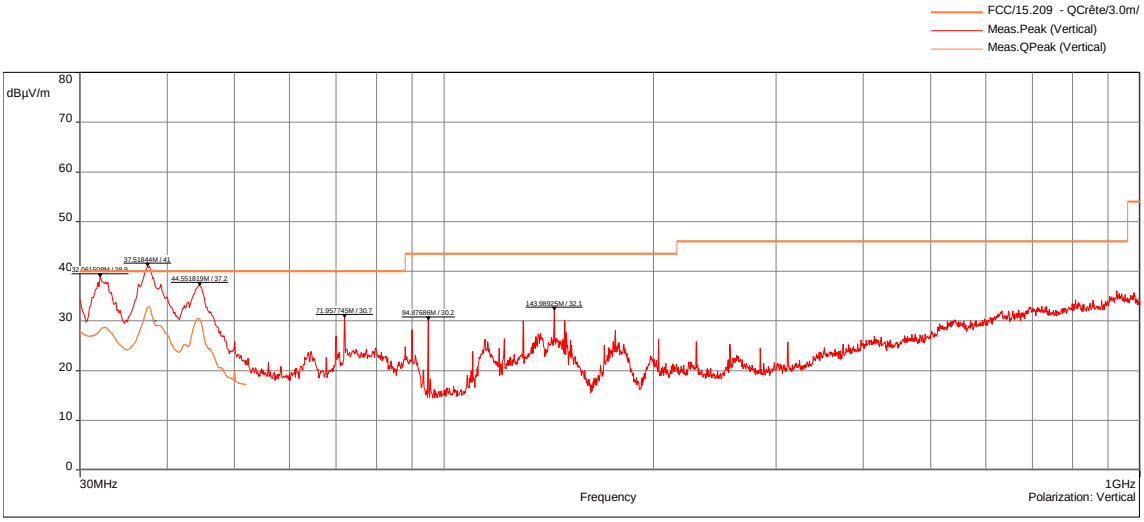


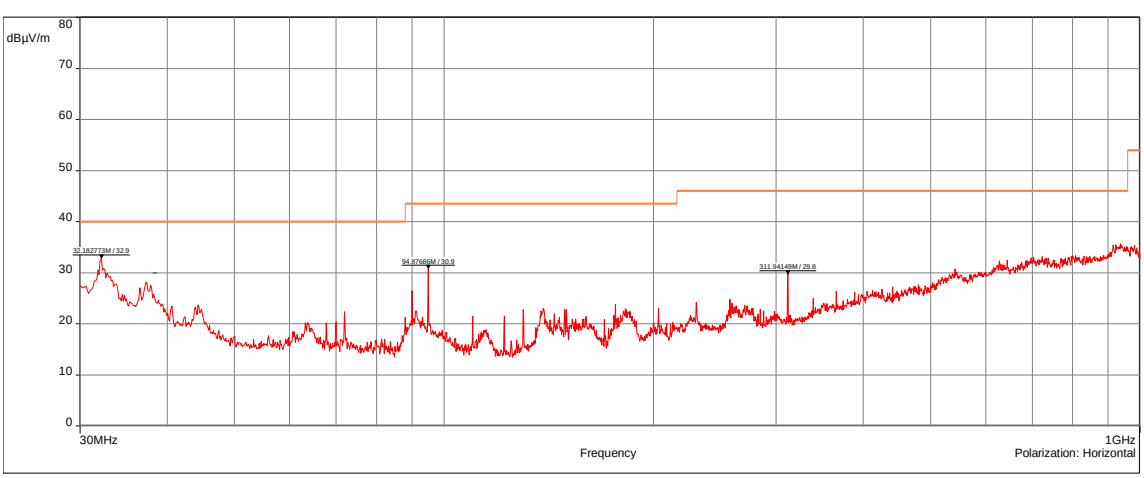
POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Circular	9kHz-150kHz	300Hz	1kHz	Peak
Circular	150kHz-1MHz	10kHz	30kHz	Peak
Circular	1MHz-30MHz	10kHz	30kHz	Peak

Configuration:	N/A
Comments:	Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor. The 13.56 MHz is the main carrier frequency of the EUT's radio signal.

EUT modification(s): N/A

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ - GRAPH			
TX MODE / 30 MHZ TO 1 GHZ		EMI4574	
EUT mode:	Tx mode	**T (°C):**	21.7
Test Date:	27/01/2025	**H (%):**	45.3
Test Operator:	MPA+RBU+PLH	**P (hPa):**	1005





POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-1GHz	100kHz	300kHz	Peak
Horizontal	30MHz-1GHz	100kHz	300kHz	Peak
Vertical	30MHz-52MHz	120kHz	360kHz	QPeak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				

6.4. Field strength in the band 13.553-13.567MHz

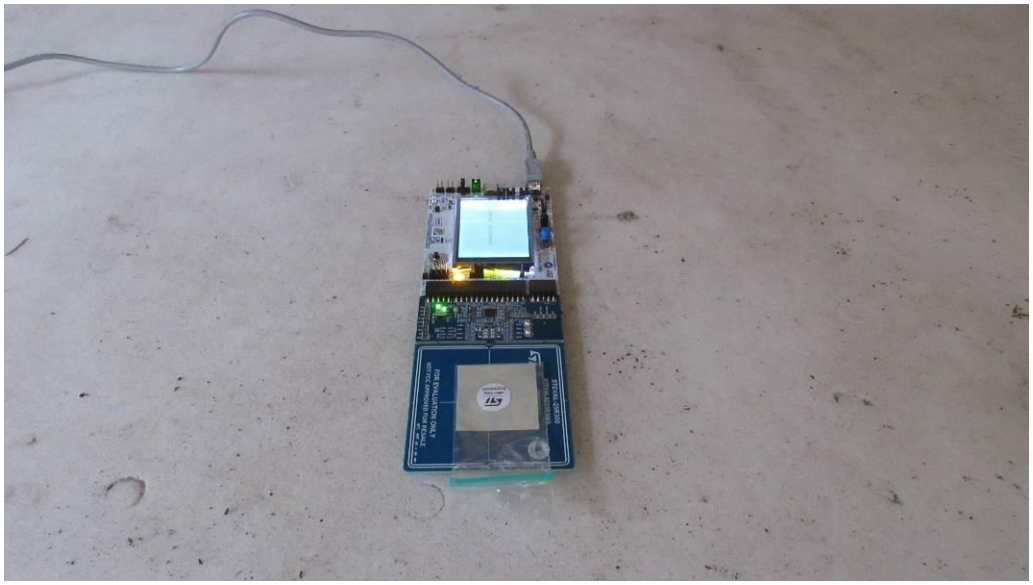
Reference standard:	FCC Part 15.225 a) & RSS-210
Test method:	ANSI C63.10: 2020
General test setup: EUT is set on an insulating support at 80cm. Measurements were then performed in a 10-meter Open Area Test Site that complies to CISPR 16. The EUT was rotated 360° in order to maximize radiated levels. Test antenna was oriented in 3 axes (0°, 45° and 90°). For portable equipements a research of maximum level is done on the 3 axes. Only the highest levels are recorded.	

TEST CASE	EUT MODE	SEVERITY	RESULT TAB.	VERDICT
Field strength	Tx mode	15848µV/m at 30m	EMI4400	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	23.5 °C
Relative Humidity	20 to 75 %	34.1 %
Atmospheric pressure	N/A	1017 hPa
Test method deviation: N/A		
Supplementary information: Only maximum level is recorded		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	Rohde & Schwarz	HFH2-Z2	5825	17/08/2022	17/04/2025
Cable	Huber + Suhner	N-10m	8472	16/08/2023	16/10/2025
Multimeter	FLUKE	8808A	10382	12/07/2024	12/09/2025
Open area test site	EMITECH	Salinelles	3482	22/08/2021	22/04/2025
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermo-Hygromètre	Testo	608-H1	19386	08/03/2024	08/05/2026
Voltmeter	Rohde & Schwarz	ESHS10	3371	17/12/2024	17/02/2026

Blank cells = Permanent validity

TEST SETUP PHOTO(S) – EUT POSITION


TEST SETUP PHOTO(S) - OATS


FIELD STRENGTH - TABULATED RESULTS				EMI4400
Frequency (MHz)	**Polarization (°)**	**Level at 10m (dBµA/m)**	**Limit at 10m (dBµA/m)**	**Limit at 30m (µV/m)**
13.56	0	-5.24	51.58	15848
13.56	45	-13.74	51.58	15848
13.56	90	-20.14	51.58	15848
Comments:	Maximun level at 10 m is -5.24 dBµA/m for a limit at 51.58 dBµA/m. Using an extrapolation factor of 40 dB/dec and a conversion factor of -51.5 dB, level at 30m is 27.18 dBµV/m for a limit at 84 dBµV/m.			

EUT MODIFICATIONS	OPERATOR	TEST DATE	RESULT TAB.
N/A	MPA	29/01/2025	EMI4400

6.5. Field strength outside the band 13.110-14.010MHz

Reference standard:	FCC Part 15.225 b) c) & d) RSS-210
Test method:	ANSI C63.10: 2020
General test setup: EUT is set inside the climatic enclosure. Carrier level are correlated with the maximum carrier level measured in normal conditions.	

FREQUENCY BAND	SEVERITY	RESULT TAB.	VERDICT
13.110-13.410MHz	106µV/m at 30m	See graphic	**PASS**
13.410-13.553MHz	334µV/m at 30m	See graphic	**PASS**
13.553-13.567MHz	15,848µV/m at 30m	See graphic & §6.4 of this report	**PASS**
13.567-13.710MHz	334µV/m at 30m	See graphic	**PASS**
13.710-14.010MHz	106µV/m at 30m	See graphic	**PASS**
Above 14.010MHz	§15.209	See graphic & §6.3 of this report	**PASS**
Below 13.110MHz	§15.209	See graphic & §6.3 of this report	**PASS**

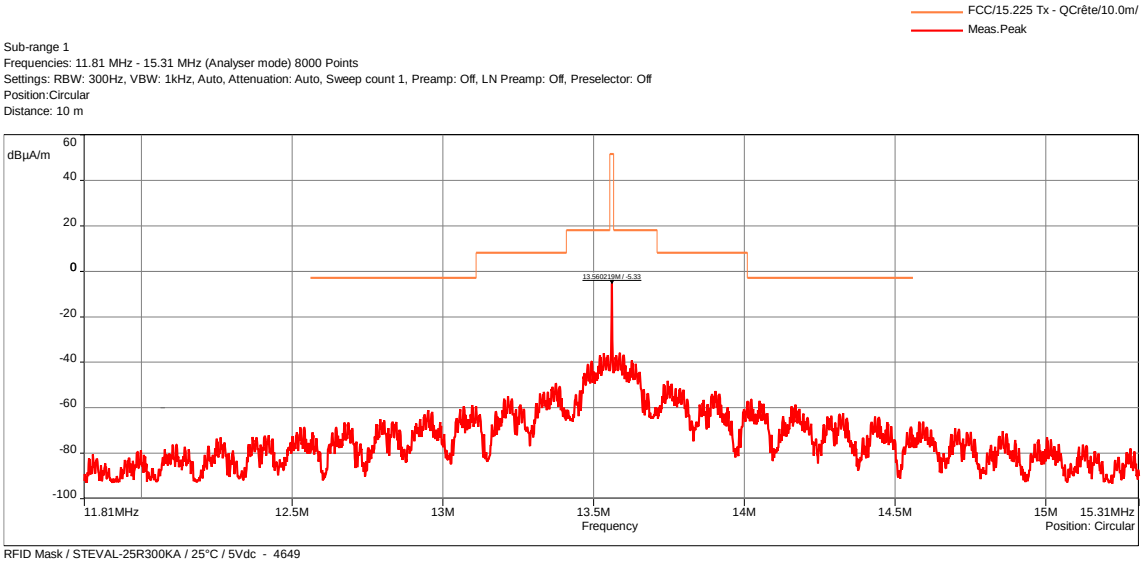
LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	*See Graph(es)*
Relative Humidity	20 to 75 %	*See Graph(es)*
Atmospheric pressure	N/A	*See Graph(es)*
Test method deviation: N/A		
Supplementary information: N/A		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	EMITECH	3.5 cm	4653		
Climatic enclosure	Secasi	SM600C	1670		
Multimeter	FLUKE	8808A	10382	12/07/2024	12/09/2025
Receiver	Rohde & Schwarz	FPL1003	16027	03/04/2024	03/06/2025
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermohygrometer	Testo	608-H1	19386	08/03/2024	08/05/2026

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

TEST SETUP PHOTO(S) – CLIMATIC ENCLOSURE


FIELD STRENGTH IN THE BAND 13.110-14.010MHZ AND OUTSIDE – GRAPH			
FIELD STRENGTH IN THE BAND 13.110-14.010MHZ AND OUTSIDE		EMI4649	
EUT mode:	Tx mode	**T (°C):**	23.5
Test Date:	29/01/2025	**H (%):**	34.1
Test Operator:	MPA	**P (hPa):**	1017



POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Circular	11.81MHz-15.31MHz	300Hz	1kHz	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				

6.6. Measurement of Frequency Stability

Reference standard:	FCC 47 CRF Part 15.225 e) RSS-210
Test method :	ANSI C63.10: 2020
General test setup: The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery. EUT is set inside the climatic enclosure. Carrier level are correlated with the maximum carrier level measured in normal conditions.	

TEST CASE	EUT MODE	SEVERITY	RESULT TAB.	VERDICT
Frequency stability	Tx mode	+/-0.01%	EMI4500	**PASS**

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	23.5 °C
Relative Humidity	20 to 75 %	34.1 %
Atmospheric pressure	N/A	1017 hPa
Test method deviation: N/A		
Supplementary information: N/A		

TEST EQUIPMENT USED					
CATEGORY	**BRAND**	**TYPE**	**IDENTIFIER**	**CAL. DATE**	**CAL. DUE**
Antenna	EMITECH	3.5 cm	4653		
Cable	SUCOFLEX	N-3m	14379	17/08/2023	17/10/2025
Climatic enclosure	Secasi	SM600C	1670		
Multimeter	FLUKE	8808A	10382	12/07/2024	12/09/2025
Spectrum analyzer	Rohde & Schwarz	FSW43	14830	31/08/2022	28/04/2025
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H1	7562	28/09/2023	28/11/2025

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

TEST SETUP PHOTO(S)


FREQUENCY STABILITY / CARD - TABULATED RESULTS					EMI4500
Test Case	**Temperature (°C)**	**Power supply (Vdc)**	**Frequency (MHz)**	**Frequency error (%)**	**Limit (%)**
Normal conditions	+25	5	13.560395	-	+/- 0.01
Extremes conditions	0	5	13.560435	0.00029	
	+60	5	13.560304	0.00067	

EUT MODIFICATIONS	OPERATOR	TEST DATE	RESULT TAB.
N/A	MPA	29/01/2025	EMI4500

End of test report