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Canadian CAB Identifier: FR0003

This test report cancels and replaces RR-EVE-24D574-7A Ed.0

Test report issued under the responsibility of:

EMITECH MONTPELLIER laboratory

Registration Number: 954701

Registration Number: 4379C

RADIO TEST REPORT

FCC 47 CFR PART 15.247: November 2024

RSS-247, Issue 4: July 2025

ANSI C63.10: 2020

(Partial tests)

Company: **STID**
Address.....: 20 PA DES PRADEAUX
13850 GREASQUE
FRANCE

Test item description: **RFID radio module included in UHF RFID middle range reader**
Trade Mark: Spectre Nano Access
Manufacturer.....: STID
Model/Type reference.....: MUF / MUF included in SNA-W5X
Relevant product family: Hosts : SNA-W5X and SNA-R5X
FCC ID.....: OVNMF
IC: 10520A-MUF
Ratings.....: 9 VDC to 36 VDC

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

Report Reference No.....: **RR-EVE-24D574-7A**
Test procedure: FCC IC Certification
Diffusion.....: Mr BOALLAL
Applicant's name: STID
Date of issue.....: July 31, 2026
Total number of pages.....: 32
Revision: 1
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:

1. GENERAL INFORMATIONS	3
2. REFERENCE DOCUMENT(S)	4
3. EQUIPMENT TECHNICAL DESCRIPTION	5
3.1. TEST CONDITIONS	5
3.2. E.U.T. GENERAL VIEW	6
3.3. E.U.T. INTERNAL VIEW & ELECTRONIC BOARD	6
3.4. E.U.T. BLE MODULE	7
3.5. E.U.T. MECHANICAL AND ELECTRICAL DESIGN.....	7
3.6. E.U.T. INPUT/OUTPUT PORTS.....	8
3.7. SUPPORTING EQUIPMENT USED DURING TEST	9
3.8. EUT RADIO SPECIFICATIONS.....	10
4. RESULT SUMMARY	11
5. MEASUREMENT UNCERTAINTY	12
6. TEST CONDITIONS AND RESULTS	13
6.1. CONDUCTED EMISSION	13
6.2. RADIATED EMISSION.....	16
6.3. MAXIMUM PEAK POWER OF THE INTENTIONAL RADIATOR.....	30

REVISION HISTORY:

Revision	Date	Modified pages	Modifications
0	April 10, 2026	/	Creation
1	July 31, 2026	1 and 4	Change to the publication date of RSS 247 (updated to Edition 4) and addition of host devices from the product family (Relevant product family)

1. GENERAL INFORMATIONS

This document submits the results of Radio tests performed on the equipment **HF RFID middle range reader SNA-W5X** (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.....		Morgan PATEY			
Test supervisor.....		None			
Date of receipt of test item		N/A			
Date (s) of performance of tests.....		From April the 6 th of 2025 to January the 26 th of 2026			
APPLICANT'S GENERAL INFORMATIONS:					
Company name		STID			
Company address.		20 PARC D'ACTIVITES DES PRADEAUX 13850 GREASQUE FRANCE			
Person(s) present during the tests.		No representative for company attended the tests.			
Responsible.....		Mr BOALLAL			
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 15.247: March 2024

Operation within the bands 902 928 MHz, 2400 2483.5 MHz, and 5725 5850MHz. (frequency hopping and digitally modulated)

ANSI C63.10: 2020

American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

RSS-247, Issue 4: July 2025

Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 MHz bands

RSS-GEN, Issue 5: April 2018 / AMD1: 2019 / AMD2: 2021

General requirements and Information for the Certification of radio Apparatus

KDB 996369 D04 Module Integration Guide v02

Modular transmitter integration guide guidance for host product manufacturers

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. :	RFID radio module included in UHF RFID middle range reader
Model/Type reference..... :	MUF / MUF included in SNA-W5X
Trade Mark. :	Spectre Nano Access
Serial number (S/N)..... :	Not communicated
Part number (P/N). :	Not communicated
Software version..... :	<i>Not communicated</i>
Firmware version..... :	SA281A01
Type of sample. :	Pre-serial
Function(s)..... :	UHF RFID reader
Manufacturer name. :	STID
Address. :	20 PARC D'ACTIVITES DES PRADEAUX 13850 GREASQUE FRANCE

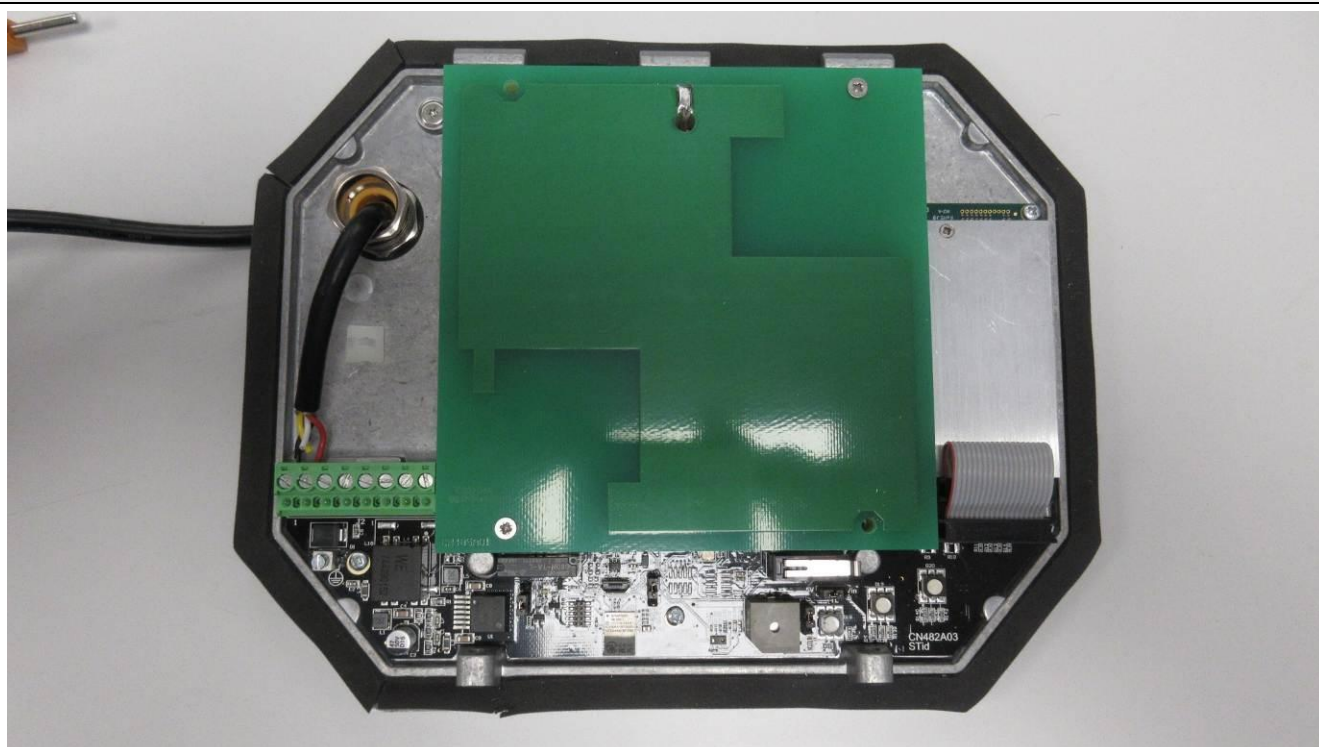
General product information:

N/A

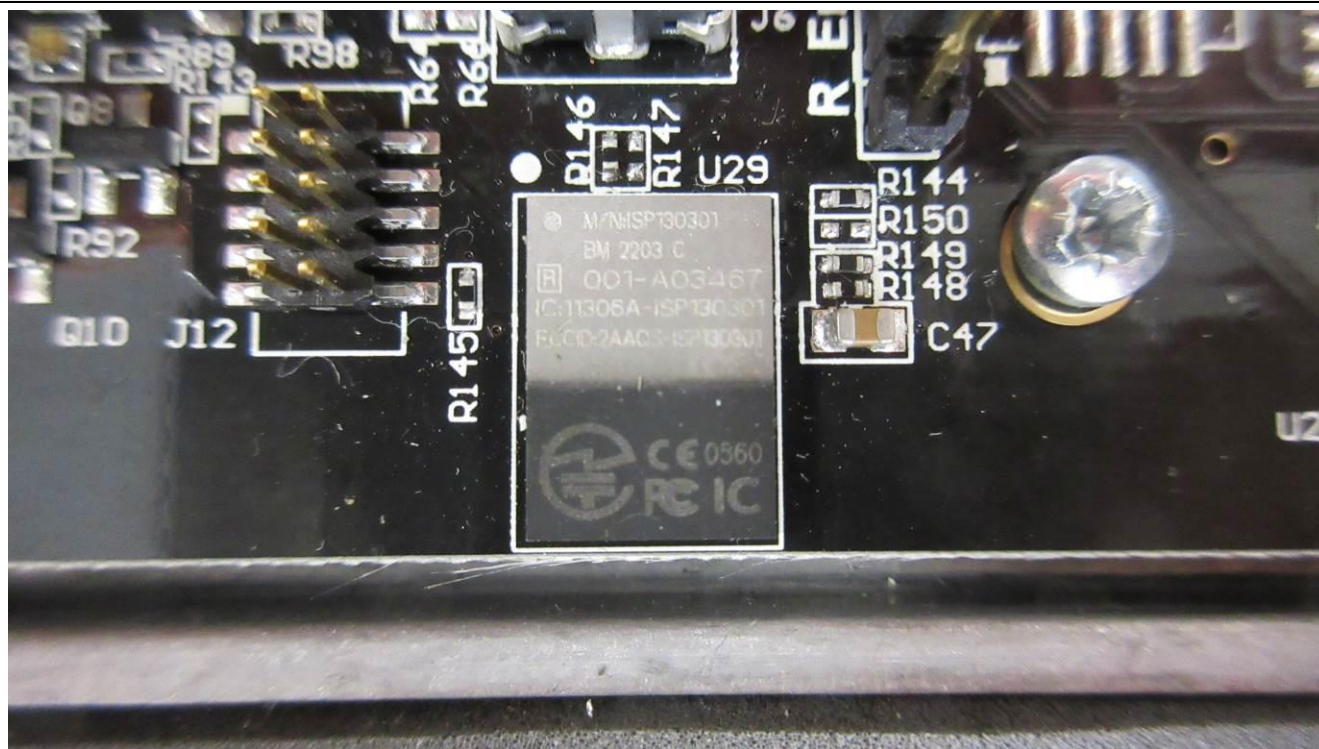
3.2. E.U.T. General view



3.3. E.U.T. Internal view & Electronic board



3.4.E.U.T. BLE module



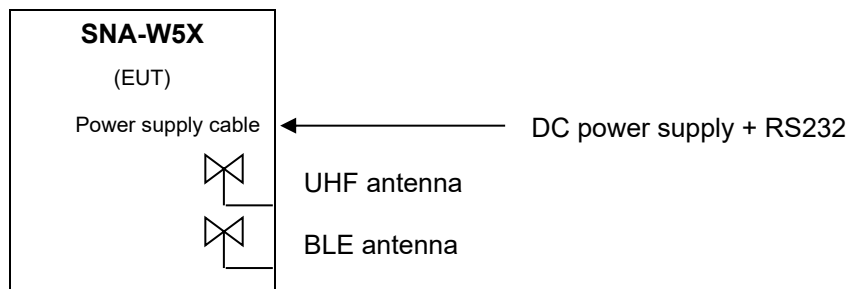
3.5.E.U.T. Mechanical and Electrical Design

Power supply.....	: 12 VDC
Power supply range.....	: 9 VDC to 36 VDC
Power type.....	: DC
Power (W).....	: <i>Not communicated</i>
Nominal current (A).	: 0.45
Dimensions (L x W x H) (m).	: 0.230 x 0.183 x 0.035
Weight (kg).	: <1.5kg
Temperature range (°C).	: -25 to +60
Ground bounding strap.....	: No

Comments:

N/A

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



PORT	NAME	TYPE	LENGTH	CABLE TYPE	COMMENTS
0	Main frame	N/E	N/A	Metallic	N/A
1	DC power supply + RS232	DC	> 3m	Shielded	12 VDC + RS232
2	UHF antenna	RF	N/A	N/A	868 MHz
3	BLE antenna	RF	N/A	N/A	2.4 GHz

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

3.7. Supporting Equipment Used During Test

Sample subject to the tests was tested with following equipment.

PRODUCT TYPE	MANUFACTURER	MODEL	N°EMITECH / COMMENTS
Laptop	XPS	Not communicated	Used to set EUT operation modes through RS232
AC/DC block	MEAN WELL	GE40I12-P1J	Used as EUT's power supply for AC main conducted measurement

LAPTOP (AE)



AC/DC BLOCK (AE)



3.8. EUT Radio Specifications

a) GENERAL INFORMATIONS	
According to manufacturer's declarations :	
EUT type.....	Transceiver
Technology	RFID UHF + BLE
Environmental profile.....	Data transmissions
Temperature range.....	-25°C to +60°C
Antenna type	Integrated
Antenna Gain.....	Not communicated
Comments:	
<i>EUT includes a BLE RF module already certified, see appropriate tests report for full testing results.</i>	
FCC ID: 2AAQS-ISP130301	
IC: 2AAQS-ISP130301	
b) TRANSMITTER PARAMETERS (Tx)	
Frequency bands.....	BLE: 2400 MHz to 2483.5 MHz RFID UHF: 902 MHz to 928 MHz
RF Power.....	BLE: < 10dBm RFID UHF: 30 dBm (1 W)
Number of channels / Separation.....	BLE: 40 channels / 2 MHz RFID UHF: 50 / 500 kHz
Modulation type	BLE: GFSK. RFID UHF: AM
Duty cycle	Not communicated
Tested frequency.....	BLE: 2402 MHz (Low channel) 2426 MHz (Mid channel) 2480 MHz (High channel) RFID UHF: 902.75 MHz (low channel) to 927.25 MHz (high channel)
c) RECEIVER PARAMETERS (Rx)	
Frequency bands.....	BLE: 2400 MHz to 2483.5 MHz RFID UHF: 902 MHz to 928 MHz

4. RESULT SUMMARY

TEST DESIGNATION	SEVERITY	VERDICT	BASIC STANDARDS / COMMENTS
Conducted emission - 120Vac/60Hz	15.207	PASS	ANSI C63.10: 2020
Radiated emission - Radiated measurement / 0° - Radiated measurement / 45° - Radiated measurement / 90° - Radiated measurement / BLE / 30 MHz to 1 GHz - Radiated emissions / BLE / 1 GHz to 18 GHz - Radiated measurement / RFID UHF + BLE / 30 MHz to 1GHz - Radiated measurement / RFID UHF + BLE / 1GHz to 18GHz	15.209 15.209 15.209 15.209 15.209 15.209	PASS PASS PASS PASS PASS PASS	ANSI C63.10: 2020
Maximum peak power of the intentional radiator - EIRP / BLE All channels	1W	PASS	ANSI C63.10: 2020

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	$\pm 1 \times 10^{-7}$	$\pm 1 \times 10^{-7}$
RF power, conducted		
RF power	$\pm 0.8\text{dB}$	$\pm 1 \text{ dB}$
Power spectral density	$\pm 2.7\text{dB}$	$\pm 3 \text{ dB}$
Occupied bandwidth		
RF power	$\pm 3.8 \%$	$\pm 5 \%$
Adjacent channel power	$\pm 1.6 \text{ dB}$	$\pm 3 \text{ dB}$
Sensitivity of receiver (conducted)	$\pm 2.0 \text{ dB}$	$\pm 3 \text{ dB}$
Blocking	$\pm 4.0 \text{ dB}$	$\pm 4 \text{ dB}$
Transient		
Amplitude	$\pm 8.5 \%$	$\pm 20 \%$
At the frequency	$\pm 166 \text{ Hz}$	$\pm 250 \text{ Hz}$
Conducted emission (spurious)		
$f \leq 1 \text{ GHz}$	$\pm 0.8 \text{ dB}$	
$1 \text{ GHz} - 12.75 \text{ GHz}$	$\pm 1.6 \text{ dB}$	$\pm 3 \text{ dB}$
Radiated power (ERP / EIRP / spurious)		
$f \leq 62.5 \text{ MHz}$	$\pm 5.2 \text{ dB}$	$\pm 6 \text{ dB}$
$62.5 \text{ MHz} - 1 \text{ GHz}$	$\pm 5.4 \text{ dB}$	$\pm 6 \text{ dB}$
$1 \text{ GHz} - 18 \text{ GHz}(\sim)$	$\pm 5.2 \text{ dB}$	$\pm 6 \text{ dB}$
$18 \text{ GHz} - 40 \text{ GHz}$	$\pm 5.8 \text{ dB}$	$\pm 6 \text{ dB}$
$40 \text{ GHz} - 110 \text{ GHz}$	$\pm 5.5 \text{ dB}$	Between ± 6 to 10 dB
EIRP and power spectral density with diode	$\pm 5.4 \text{ dB}$	$\pm 6 \text{ dB}$
Radiated emission (magnetic field)		
$9\text{kHz} - 30\text{MHz}$	$\pm 4.3 \text{ dB}$	$\pm 6 \text{ dB}$
RF level for a given BER	$\pm 0.8 \text{ dB}$	$\pm 1.5 \text{ dB}$
Supply voltages	$\pm 2.9 \%$	$\pm 3 \%$
Temperature	$\pm 0.95 \text{ }^{\circ}\text{C}$	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 4.6 \%$	$\pm 5 \%$
Time / Duty cycle	$\pm 4.4 \%$	$\pm 5 \%$
Adaptivity	$\pm 3.2 \text{ dB}$	/
Conducted emission (FCC)		
(Artificial Mains Network) $150\text{kHz} - 30\text{MHz}$	$\pm 3.7 \text{ dB}$	/
Radiated emission (electric field for FCC standard)		
$9\text{kHz} - 30\text{MHz}$	$\pm 4.3 \text{ dB}$	/
$30\text{MHz} - 1\text{GHz}$	$\pm 5.9 \text{ dB}$	/
$1\text{GHz} - 18\text{GHz}$	$\pm 4.8 \text{ dB}$	/
$18\text{GHz} - 40\text{GHz}$	$\pm 5.9 \text{ dB}$	/
$40\text{GHz} - 140\text{GHz}$	$\pm 5.7 \text{ dB}$	/

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

6. TEST CONDITIONS AND RESULTS

6.1. Conducted emission

Reference standard:	FCC 47 CFR PART 15.107, & 15.207 RSS-Gen; RSS-247
Test method:	ANSI C63.10: 2020
General test setup: EUT is set on an insulating support at 40cm 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. Additional ground terminals (if any) are connected to earth terminal of the AMN.	

TESTED CABLE	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
120Vac / 60Hz	150kHz-30MHz	15.207	EMI4471	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	See Graph(s)
Relative Humidity	10 to 90 %	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
AC power source	GW Instek	APS-1102	17782	04/09/2024	04/11/2025
Cable	C&C	N-3m	14335	09/06/2025	09/08/2027
Cable	EMITECH	Current absorber sheath	18366	02/09/2025	02/11/2027
Ground plane	EMITECH	Test area	11569		
LISN	Rohde & Schwarz	ENV216	17925	06/12/2023	06/02/2026
Multimeter	FLUKE	8808A	12446	14/03/2025	14/05/2026
PE choke	EMITECH	CISPR 16-2-1 : 2008	10071		
Receiver	Rohde & Schwarz	ESI	9704	31/03/2025	31/05/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025
Thermohygrometer	Testo	608-H2	12268	18/02/2025	18/04/2027

BAT-EMC software version: V3.18.0.26

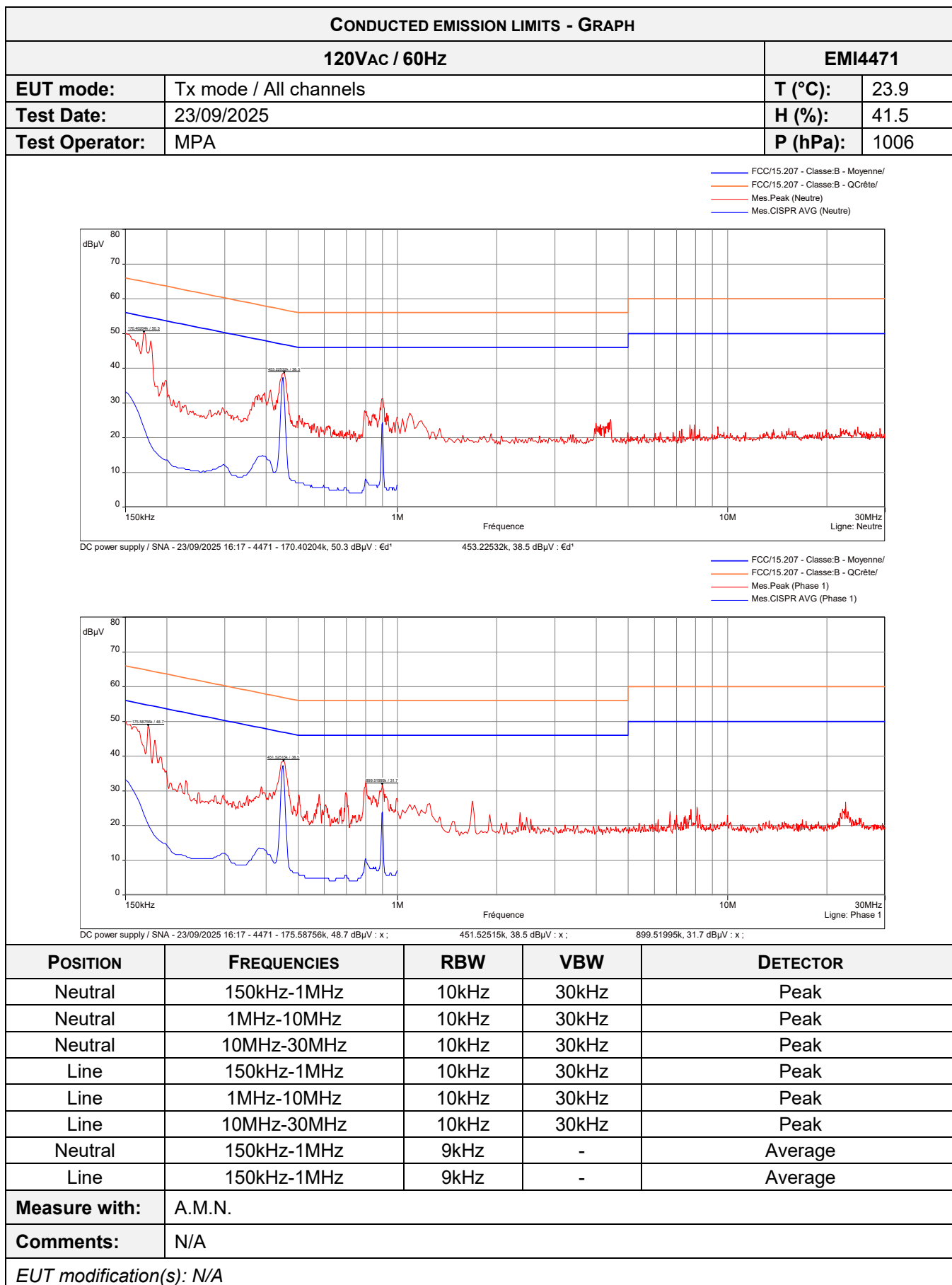
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TEST SETUP PHOTO(S)



CONDUCTED EMISSION (MEASUREMENT) - TABULATED RESULTS

DC POWER SUPPLY / SNA							EMI4471	
Frequency (MHz)	Terminal	Peak level (dBμV)	Average level (dBμV)	Average limit (dBμV)	Average margin (dBμV)	QPeak level (dBμV)	QPeak limit (dBμV)	QPeak margin (dBμV)
0.170	Line	50.27	22.63	54.94	-32.31	N/P	64.94	-14.67
0.412	Line	33.79	20.50	47.60	-27.10	N/P	57.60	-23.81
0.453	Line	38.50	37.38	46.82	-9.44	N/P	56.82	-18.32
0.903	Line	31.31	24.32	46	-21.68	N/P	56	-24.69
1.090	Line	27.04	N/P	46	-18.96	N/P	56	-28.96
4.427	Line	25.28	N/P	46	-20.72	N/P	56	-30.72
0.165	Neutral	47.19	26.77	55.19	-28.42	N/P	65.19	-18.00
0.176	Neutral	48.68	21.30	54.69	-33.39	N/P	64.69	-16.01
0.184	Neutral	44.61	17.29	54.30	-37.01	N/P	64.30	-19.69
0.452	Neutral	38.53	37.30	46.85	-9.55	N/P	56.85	-18.32
0.802	Neutral	33.09	10.51	46	-35.49	N/P	56	-22.91
0.900	Neutral	31.72	23.89	46	-22.11	N/P	56	-24.28
Comments:		When margin between Peak measurements and QPeak or Average limit is greater than 6dB, no QPeak or Average measurements were performed.						



6.2. Radiated emission

Reference standard:	FCC 47 CFR PART 15.205, & 15.209, & 15.247 RSS-Gen; RSS-247
Test method:	ANSI C63.10: 2020
General test setup: For $f < 30\text{MHz}$, 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 $f > 30\text{MHz}$, EUT is set on an insulating support at 80cm above the ground reference plane (150cm for $f > 1\text{GHz}$). 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 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 / 0°	9kHz-30MHz	15.209	EMI5118	PASS
Radiated measurement / 45°	9kHz-30MHz	15.209	EMI5119	PASS
Radiated measurement / 90°	9kHz-30MHz	15.209	EMI5120	PASS
Radiated measurement / BLE / 30 MHz to 1 GHz	30MHz-1GHz	15.209	EMI5012	PASS
Radiated measurement /BLE / 1 GHz to 18 GHz	1GHz-18GHz	15.209	EMI5138	PASS
Radiated measurement / RFID UHF + BLE / 30 MHz to 1GHz	30MHz-1GHz	15.209	EMI5135	PASS
Radiated measurement / RFID UHF + BLE / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI4491	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	10 to 40°C	See Graph(s)
Relative Humidity	10 to 90 %	See Graph(s)
Atmospheric pressure	N/A	See Graph(s)
Test method deviation: N/A		
Supplementary information: From 9 kHz to 30 MHz, the limit indicated on graphs is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor. From 30 MHz to 1 GHz, quasi-peak limit provided is the limit given in §15.209. Above 1 GHz average limit in restricted bands §15.205 is 54 dB$\mu\text{V}/\text{m}$. Otherwise, the limit is 20 dB under carrier emission level at 3 meter without averaging. Pre-scan measurements were performed from 18 GHz to 25 GHz, with no spurious emissions detected.		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
AC power source	GW Instek	APS-1102	17782	04/09/2024	04/11/2025
Antenna	ETS-Lindgren	3117	8387	24/03/2023	24/05/2026
Antenna	ETS lindgren	3142E	14523 ^{note2}	08/08/2025	08/10/2028
Antenna	Rohde & Schwarz	HFH2-Z2	5825 ^{note1}	17/08/2022	17/05/2025
Cable	Techniwave	N-1.5m	18342 ^{note2}	20/05/2024	20/07/2026
Cable	/	N-1m	3625 ^{note2}	09/06/2025	09/08/2027
Cable	SUCOFLEX	N-3m	14378 ^{note1}	17/08/2023	17/10/2025
Cable	SUCOFLEX	N-3m	14379 ^{note2}	01/09/2025	01/11/2027
Cable	Techniwave	N-3m	18346 ^{note1}	17/08/2023	17/10/2025
Cable	SUCOFLEX	N-6,5m	14380 ^{note1}	17/08/2023	17/10/2025
Cable	Techniwave	N-8m	18349 ^{note1}	17/08/2023	17/10/2025
Cable	MegaPhase	TM18-N1N1-118	12841	03/12/2024	03/02/2027
Filter	Micro-Tronics	HPM15162	19385	25/03/2024	25/05/2026
Filter	Micro-Tronics	HPM18865	12843	03/12/2024	03/02/2028
Multimeter	FLUKE	8808A	12446	14/03/2025	14/05/2026
Preamplifier	Techniwave	APS16-0087	14040	17/07/2024	17/03/2026
Receiver	Rohde & Schwarz	ESW8	19536 ^{note1}	14/06/2024	14/08/2025
Receiver	Rohde & Schwarz	FSW43	14830 ^{note2}	07/07/2025	07/09/2027
Shielded enclosure	RAY PROOF	C.V1	1123	05/11/2024	05/01/2028
Shielded enclosure	COMTEST	SAC 3m	14494	08/08/2023	08/10/2026
Software	Nexio	BAT EMC	0000		
Thermohygrometer	Testo	608-H1	7561	20/12/2024	20/02/2026
Thermohygrometer	Testo	608-H2	12269	18/02/2025	18/04/2027
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/09/2023	25/11/2025

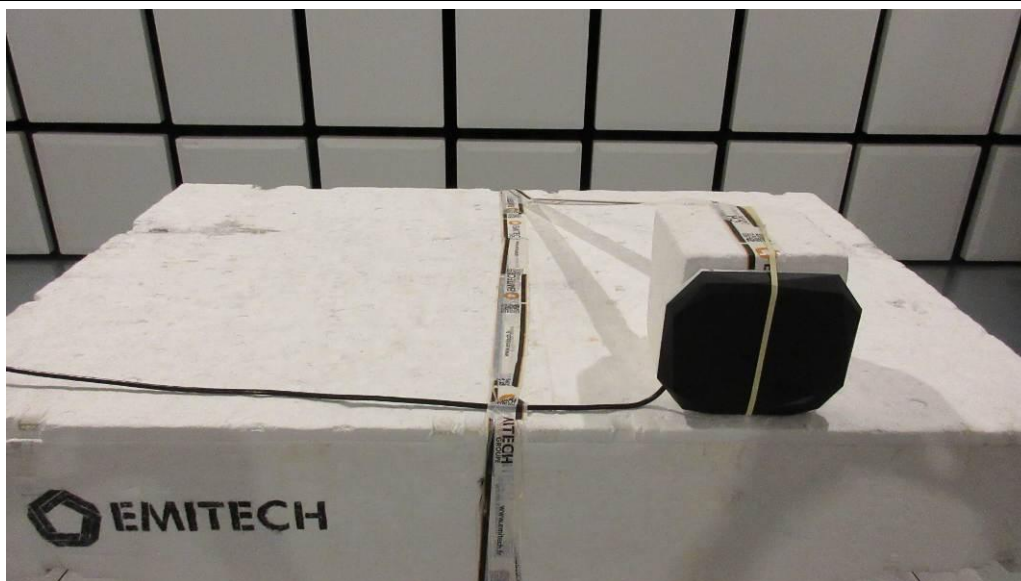
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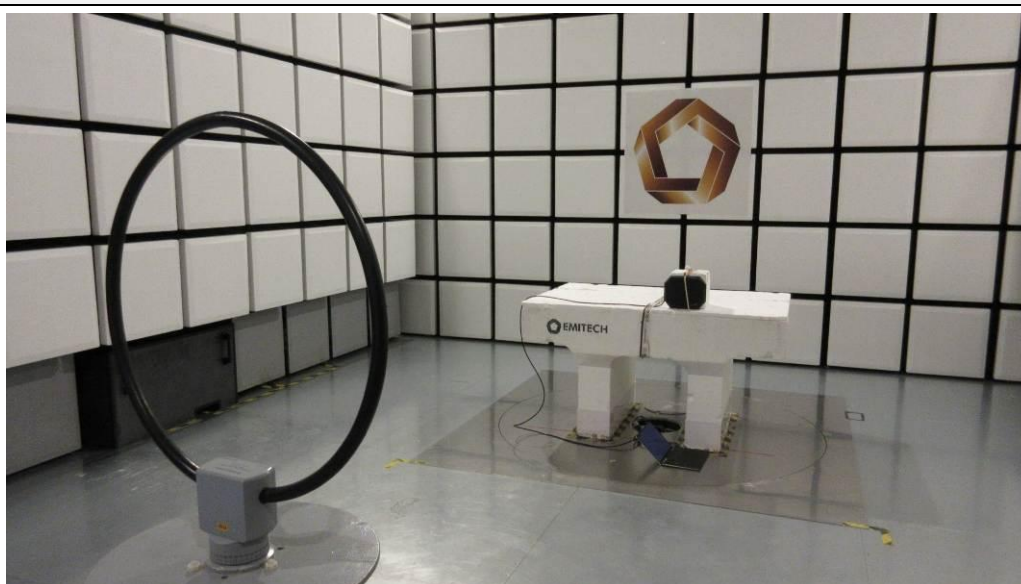
note1 : Equipment used for test performed on April the the 24th of 2025

note2 : Equipment used for test performed from October the 06th to the 16th of 2025

TEST SETUP PHOTO(S)



TEST SETUP PHOTO(S) – 9 kHz TO 30 MHz



TEST SETUP PHOTO(S) - 30 MHz TO 1 GHz



TEST SETUP PHOTO(S) - 1 GHz TO 18 GHz



RADIATED EMISSION– TABULATED RESULTS							
RADIATED MEASUREMENT / 0°						EMI5118	
FREQUENCY (MHz)	PEAK LEVEL (dBμV/m)	QPEAK LEVEL (dBμA/m)	QPEAK LIMIT (dBμA/m)	QPEAK MARGIN (dB)	AVERAGE LEVEL (dBμA/m)	AVERAGE LIMIT (dBμA/m)	AVERAGE MARGIN (dB)
0.057	-5.95	N/A	N/A	N/A	N/P	60.95	-66.91
0.086	-9.09	N/A	N/A	N/A	N/P	57.42	-66.51
0.111	-12.82	N/A	N/A	N/A	N/P	55.18	-67.99
0.114	-12.72	N/A	N/A	N/A	N/P	54.93	-67.66
0.123	-13.46	N/A	N/A	N/A	N/P	54.33	-67.79
0.139	-15.85	N/A	N/A	N/A	N/P	53.22	-69.07
Comments:	When margin between Peak measurements and QPeak or Average limit is greater than 6dB, no QPeak or Average measurements were performed.						

RADIATED EMISSION– TABULATED RESULTS							
RADIATED MEASUREMENT / 45°						EMI5119	
FREQUENCY (MHz)	PEAK LEVEL (dBμV/m)	QPEAK LEVEL (dBμA/m)	QPEAK LIMIT (dBμA/m)	QPEAK MARGIN (dB)	AVERAGE LEVEL (dBμA/m)	AVERAGE LIMIT (dBμA/m)	AVERAGE MARGIN (dB)
0.029	-3.95	N/A	N/A	N/A	N/P	66.84	-70.79
0.059	-6.26	N/A	N/A	N/A	N/P	60.63	-66.89
0.087	-9.38	N/A	N/A	N/A	N/P	57.33	-66.72
0.098	-16.53	N/A	N/A	N/A	N/P	56.29	-72.82
0.111	-12.82	N/A	N/A	N/A	N/P	55.16	-67.99
0.139	-16.56	N/A	N/A	N/A	N/P	53.24	-69.80
Comments:	When margin between Peak measurements and QPeak or Average limit is greater than 6dB, no QPeak or Average measurements were performed.						

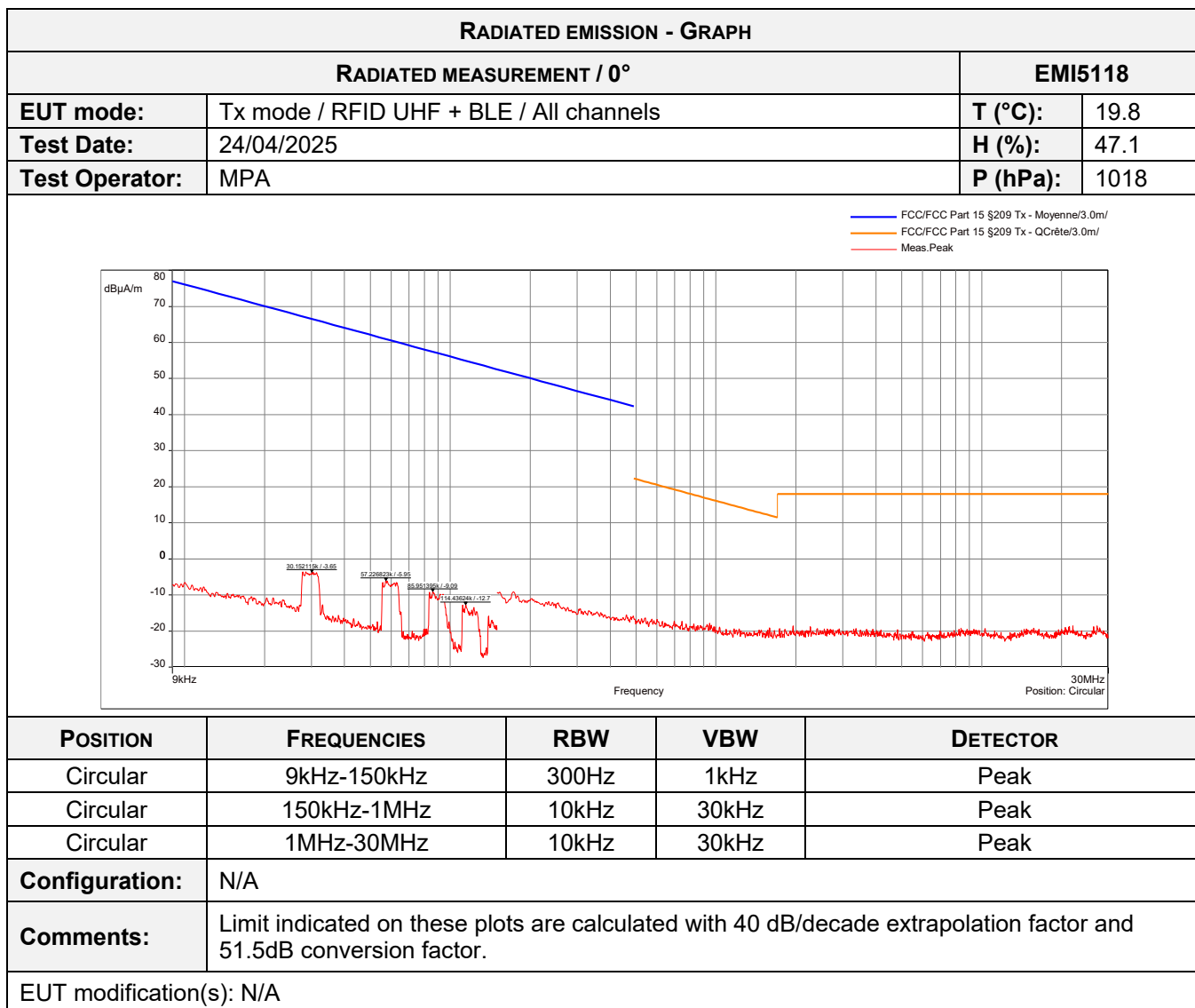
RADIATED EMISSION– TABULATED RESULTS							
RADIATED MEASUREMENT / 90°						EMI5120	
FREQUENCY (MHz)	PEAK LEVEL (dBμV/m)	QPEAK LEVEL (dBμA/m)	QPEAK LIMIT (dBμA/m)	QPEAK MARGIN (dB)	AVERAGE LEVEL (dBμA/m)	AVERAGE LIMIT (dBμA/m)	AVERAGE MARGIN (dB)
0.058	-9.76	N/A	N/A	N/A	N/P	60.82	-70.58
0.086	-12.65	N/A	N/A	N/A	N/P	57.39	-70.04
0.111	-16.65	N/A	N/A	N/A	N/P	55.17	-71.82
0.114	-16.6	N/A	N/A	N/A	N/P	54.94	-71.54
0.126	-17.39	N/A	N/A	N/A	N/P	54.13	-71.52
0.139	-19.56	N/A	N/A	N/A	N/P	53.23	-72.79
Comments:	When margin between Peak measurements and QPeak or Average limit is greater than 6dB, no QPeak or Average measurements were performed.						

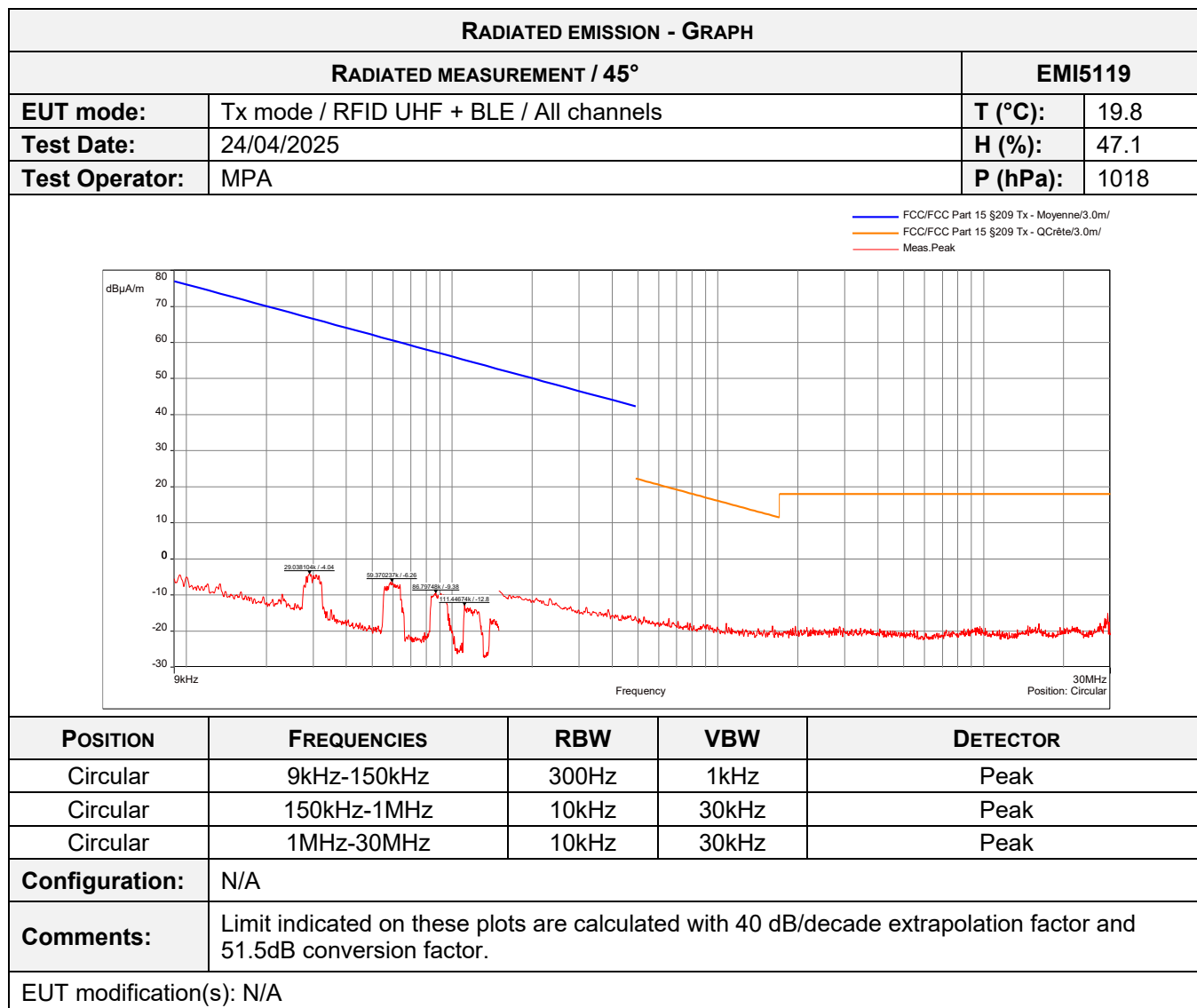
RADIATED EMISSION– TABULATED RESULTS					
RADIATED MEASUREMENT / BLE / 30 MHz TO 1 GHz					EMI5012
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµV/m)	QPEAK LEVEL (dBµV/m)	QPEAK LIMIT (dBµV/m)	QPEAK MARGIN (dB)
74.945	Vertical	22.65	N/P	40	-17.35
75.495	Vertical	22.66	N/P	40	-17.34
75.980	Vertical	22.34	N/P	40	-17.66
77.596	Vertical	25.53	N/P	40	-14.47
78.243	Vertical	24.23	N/P	40	-15.77
81.250	Vertical	24.53	N/P	40	-15.47
63.951	Horizontal	18.71	N/P	40	-21.29
75.398	Horizontal	26.94	N/P	40	-13.06
77.208	Horizontal	27.76	N/P	40	-12.24
81.929	Horizontal	29.27	N/P	40	-10.73
91.888	Horizontal	25.99	N/P	43.5	-17.51
97.353	Horizontal	20.93	N/P	43.5	-22.57
COMMENT:	When margin between peak measurements and QPeak limit is greater than 6dB, no QPeak measurements were performed.				

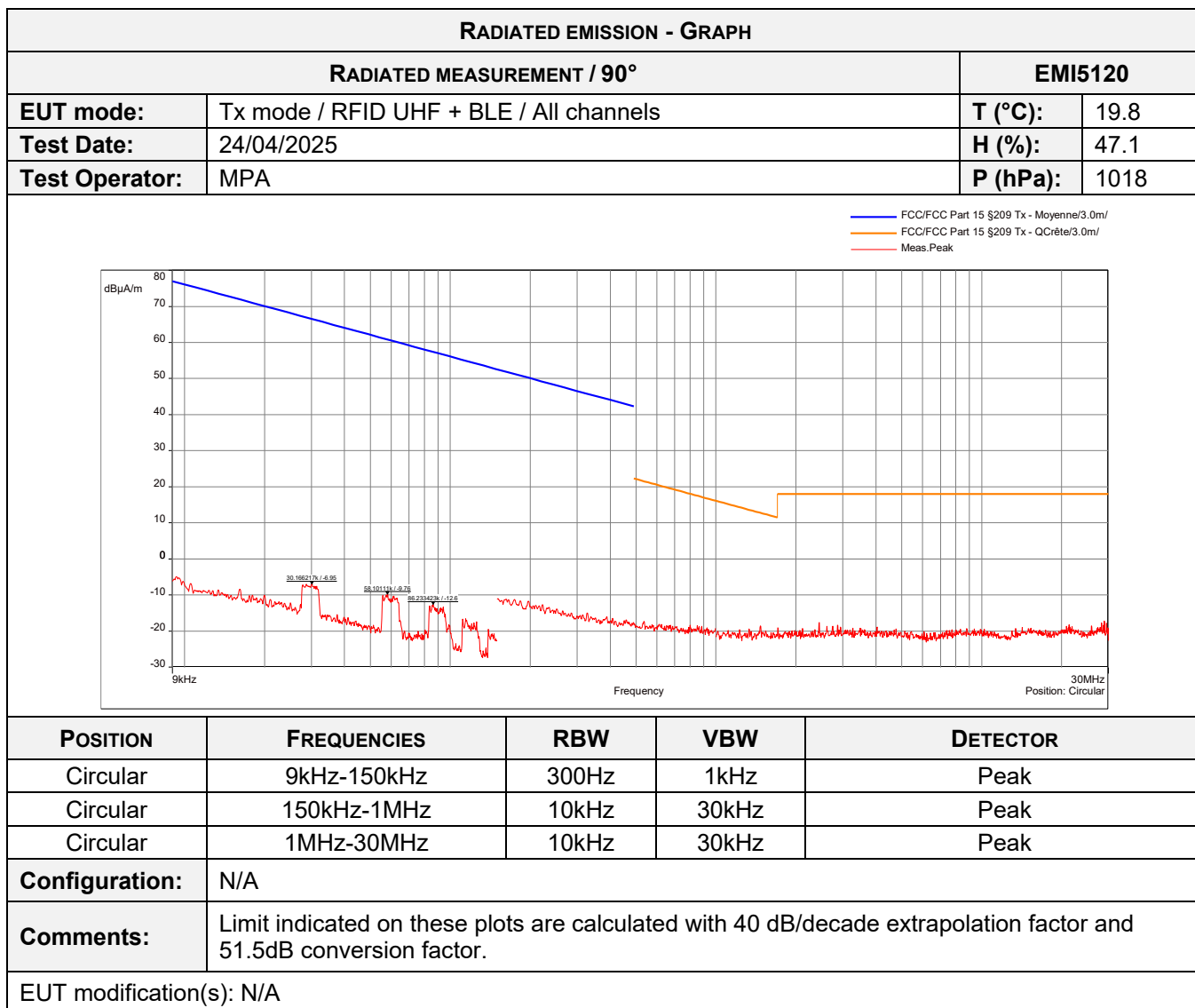
RADIATED EMISSION– TABULATED RESULTS							
RADIATED MEASUREMENT / BLE / 1 GHz TO 18 GHz						EMI5138	
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµV/m)	PEAK LIMIT (dBµV/m)	PEAK MARGIN (dB)	AVERAGE LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE MARGIN (dB)
2349.690	Vertical	45.67	74	-28.33	N/P	54	-8.33
12010.934	Vertical	48.99	74	-25.01	48.47	54	-5.53
12129.609	Vertical	47.74	74	-26.26	47.93	54	-6.07
12397.627	Vertical	48.93	74	-25.07	43.17	54	-10.83
12010.601	Horizontal	55.92	74	-18.08	53.16	54	-0.84
12131.609	Horizontal	54.66	74	-19.34	52.24	54	-1.76
12398.627	Horizontal	53.40	74	-20.60	50.24	54	-3.76
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.						

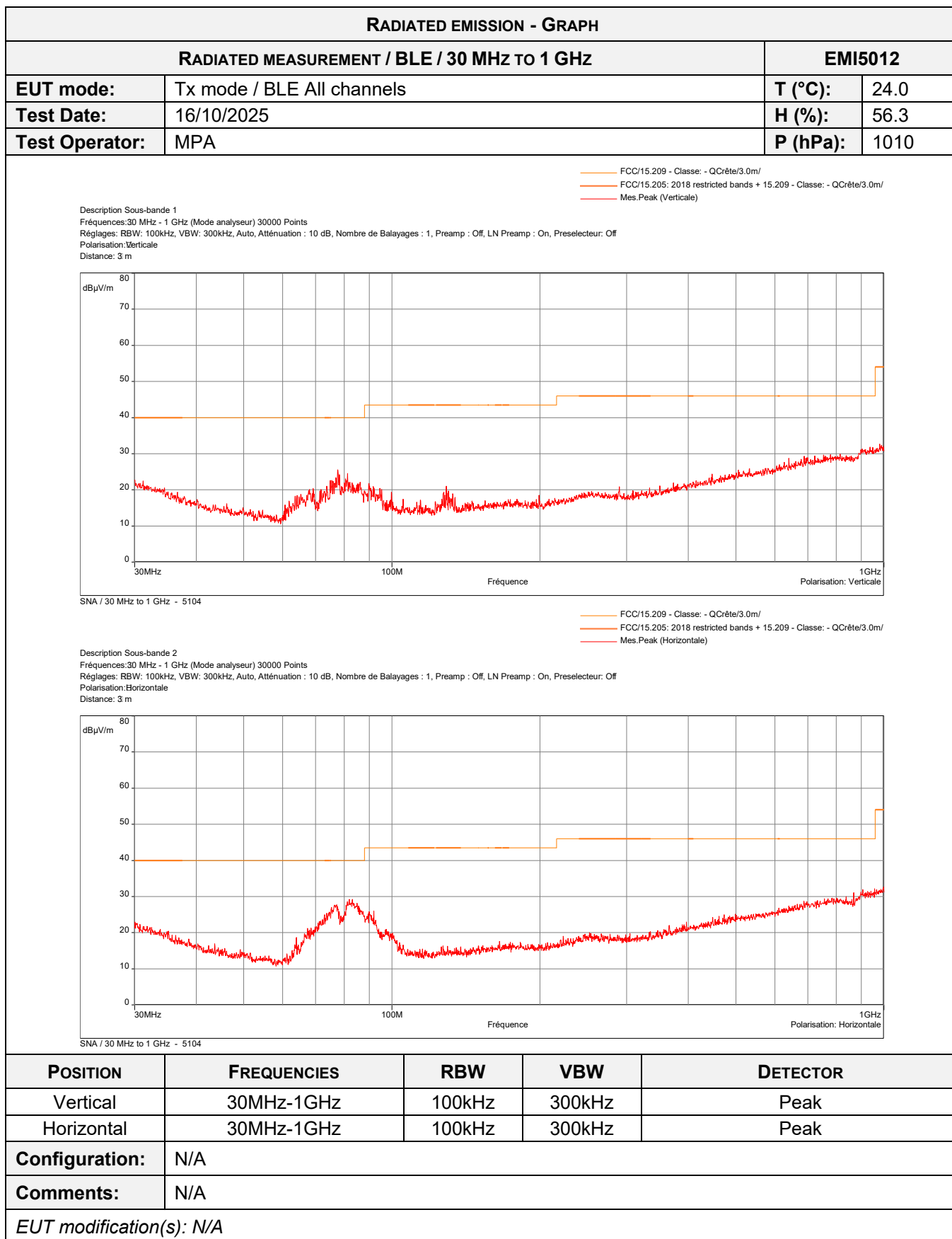
RADIATED EMISSION – TABULATED RESULTS					
RADIATED MEASUREMENT / RFID UHF + BLE / 30 MHz TO 1GHz					EMI5135
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµV/m)	QPEAK LEVEL (dBµV/m)	QPEAK LIMIT (dBµV/m)	QPEAK MARGIN (dB)
83.646	Vertical	21.34	N/P	40.00	-18.66
85.296	Vertical	18.92	N/P	40.00	-21.08
109.645	Vertical	24.69	N/P	43.50	-18.81
131.957	Vertical	21.48	N/P	43.50	-22.02
852.060	Vertical	40.44	37.01	46.00	-8.99
895.812	Vertical	39.04	N/P	46.00	-6.96
59.879	Horizontal	23.72	N/P	40.00	-16.28
80.833	Horizontal	18.77	N/P	40.00	-21.23
132.151	Horizontal	22.83	N/P	43.50	-20.67
567.725	Horizontal	33.26	N/P	46.00	-12.74
847.889	Horizontal	42.92	37.58	46.00	-8.42
895.618	Horizontal	39.16	N/P	46.00	-6.84
COMMENT:	When margin between peak measurements and QPeak limit is greater than 6dB, no QPeak measurements were performed.				

RADIATED EMISSION – TABULATED RESULTS							
RADIATED MEASUREMENT / RFID UHF + BLE / 1GHz TO 18GHz						EMI4491	
FREQUENCY (MHz)	POLARIZATION	PEAK LEVEL (dBµV/m)	PEAK LIMIT (dBµV/m)	PEAK MARGIN (dB)	AVERAGE LEVEL (dBµV/m)	AVERAGE LIMIT (dBµV/m)	AVERAGE MARGIN (dB)
2713.714	Vertical	49.89	74	-24.11	41.54	54	-12.46
2731.849	Vertical	50.40	74	-23.60	42.82	54	-11.18
2742.049	Vertical	50.37	74	-23.63	43.32	54	-10.68
2763.584	Vertical	46.39	74	-27.61	38.97	54	-15.03
3648.777	Vertical	40.15	74	-33.85	N/P	54	-13.85
3664.644	Vertical	39.85	74	-34.15	N/P	54	-14.15
2713.714	Horizontal	48.16	74	-25.84	41.59	54	-12.41
2731.849	Horizontal	51.91	74	-22.09	43.18	54	-10.82
2771.518	Horizontal	47.67	74	-26.33	45.28	54	-8.72
3611.374	Horizontal	44.01	74	-29.99	N/P	54	-9.99
3632.909	Horizontal	44.84	74	-29.16	N/P	54	-9.16
3664.644	Horizontal	44.18	74	-29.82	N/P	54	-9.82
Comments:	When margin between peak measurements and Average limit is greater than 6dB, no Average measurements were performed.						



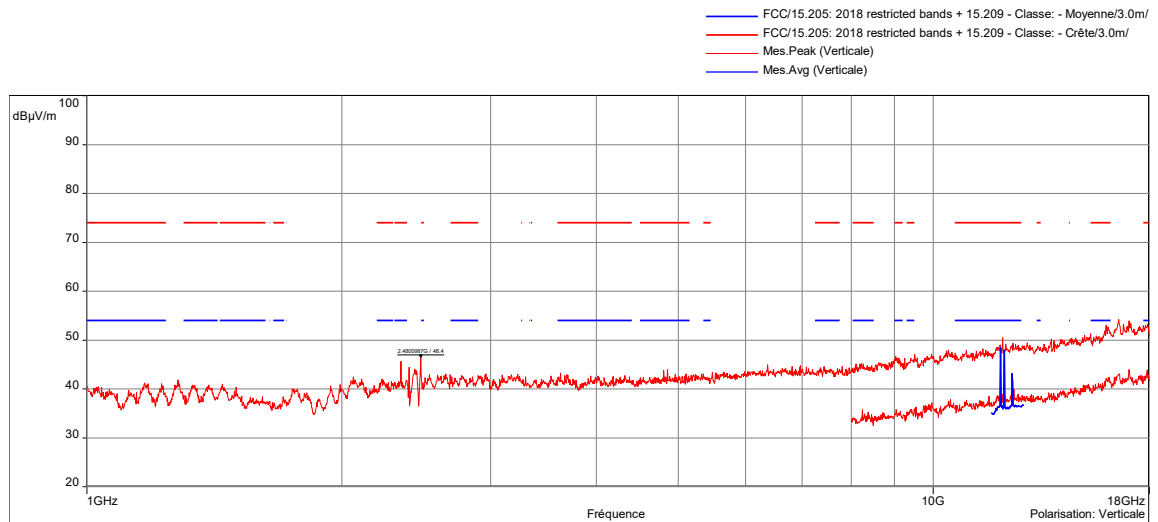




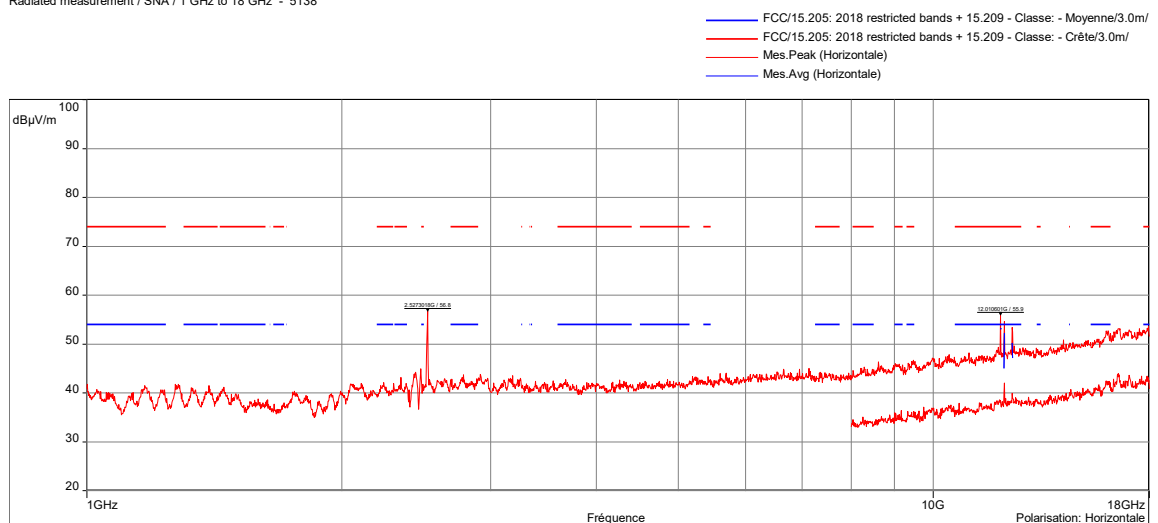


RADIATED EMISSION - GRAPH
RADIATED MEASUREMENT / BLE / 1 GHz TO 18 GHz
EMI5138

EUT mode:	Tx mode / BLE All channels	T (°C):	22.4
Test Date:	06/10/2025	H (%):	35.0
Test Operator:	MPA	P (hPa):	1002

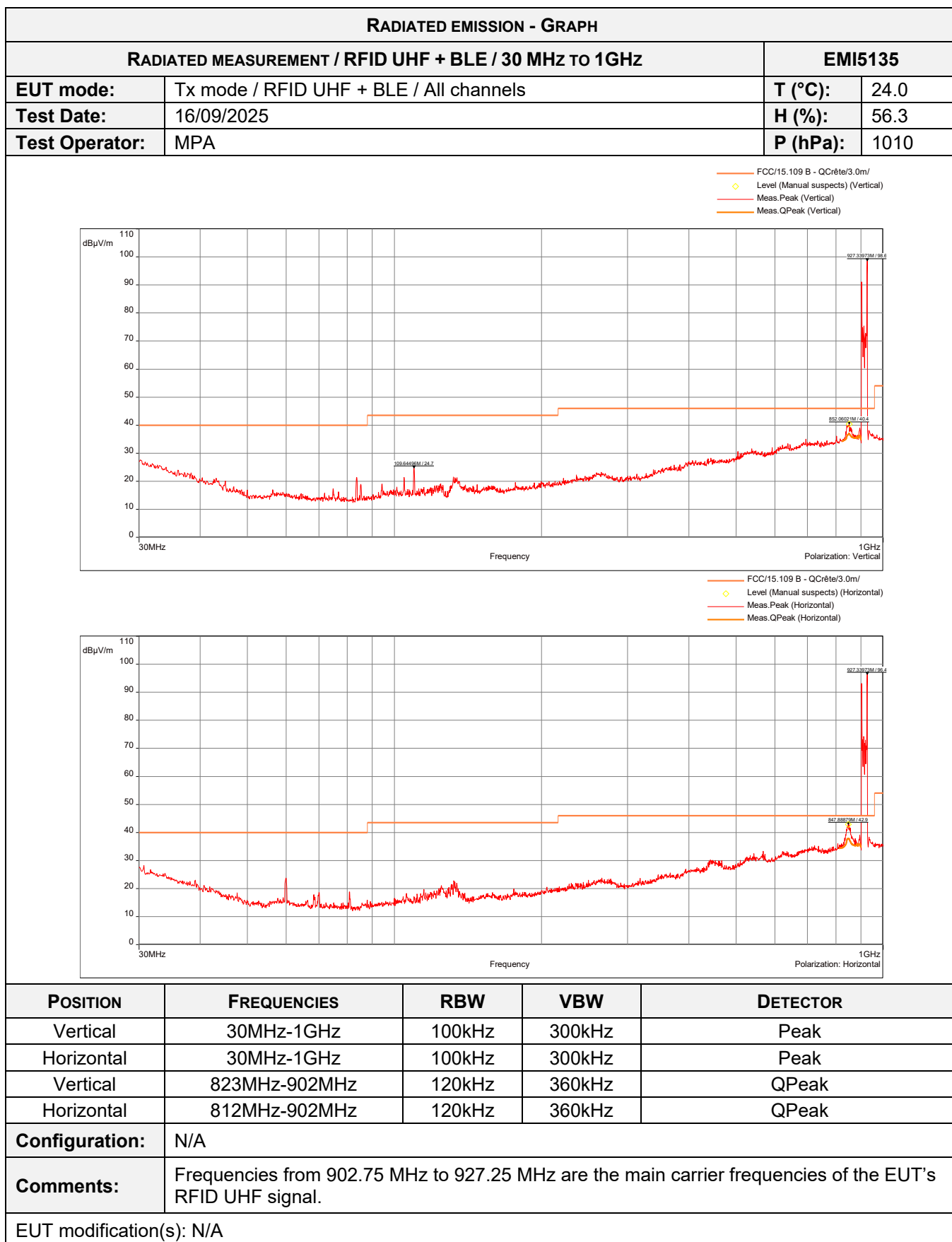


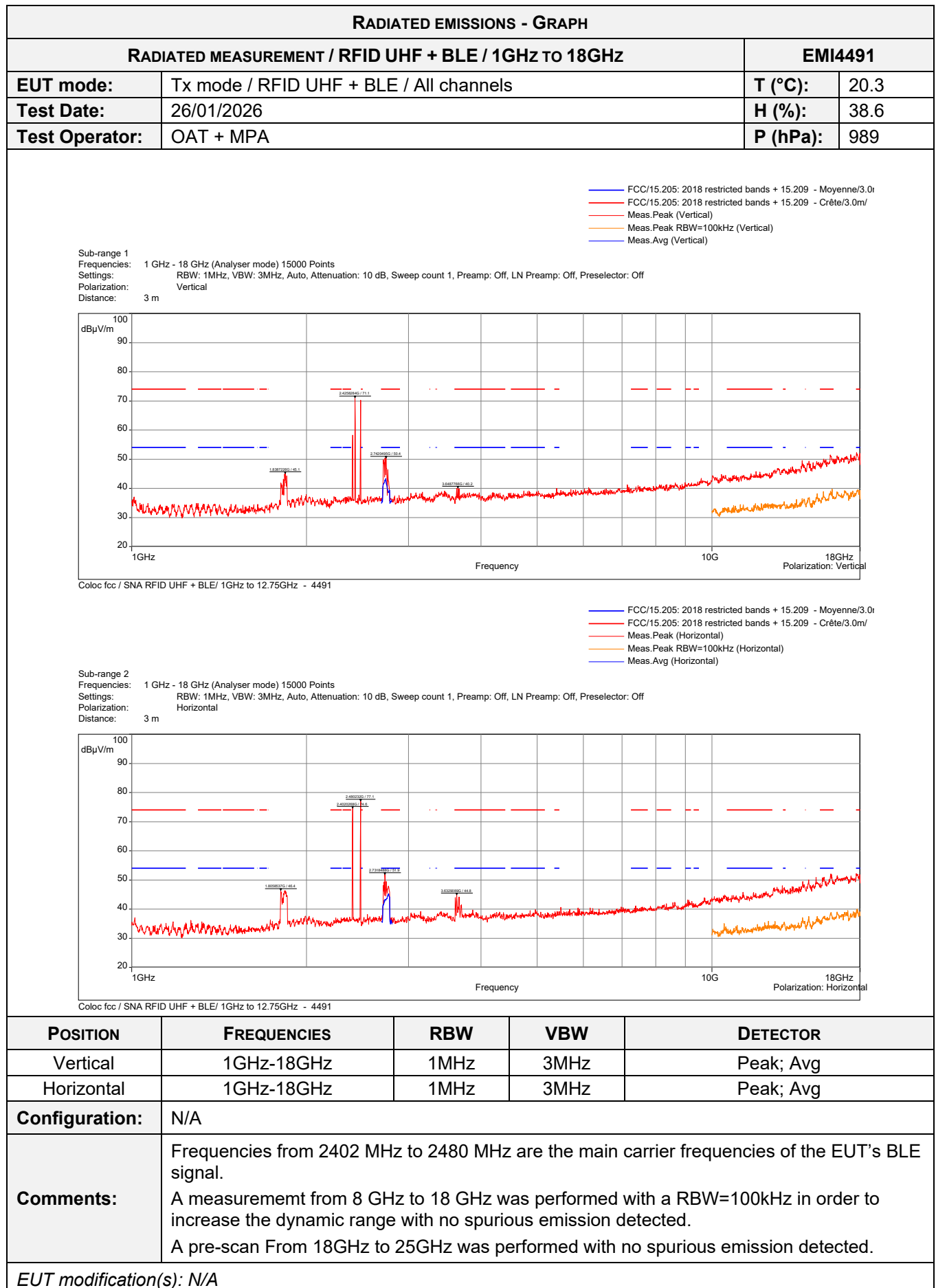
Radiated measurement / SNA / 1 GHz to 18 GHz - 5138



Radiated measurement / SNA / 1 GHz to 18 GHz - 5138

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	1GHz-3GHz	1MHz	3MHz	Peak
Horizontal	1GHz-3GHz	1MHz	3MHz	Peak
Vertical	3GHz-18GHz	1MHz	3MHz	Peak / Average
Horizontal	3GHz-18GHz	1MHz	3MHz	Peak / Average
Vertical	8GHz-18GHz	100kHz	300kHz	Peak
Horizontal	8GHz-18GHz	100kHz	300kHz	Peak
Configuration:	N/A			
Comments:	Frequencies from 2402 MHz to 2480 MHz are the main carrier frequencies of the EUT's BLE signal.			
	A measurement from 8 GHz to 18 GHz was performed with a RBW=100kHz in order to increase the dynamic range with no additional spurious emission detected.			
	A pre-scan From 18GHz to 25GHz was performed with no spurious emission detected.			
EUT modification(s): N/A				





6.3. Maximum peak power of the intentional radiator

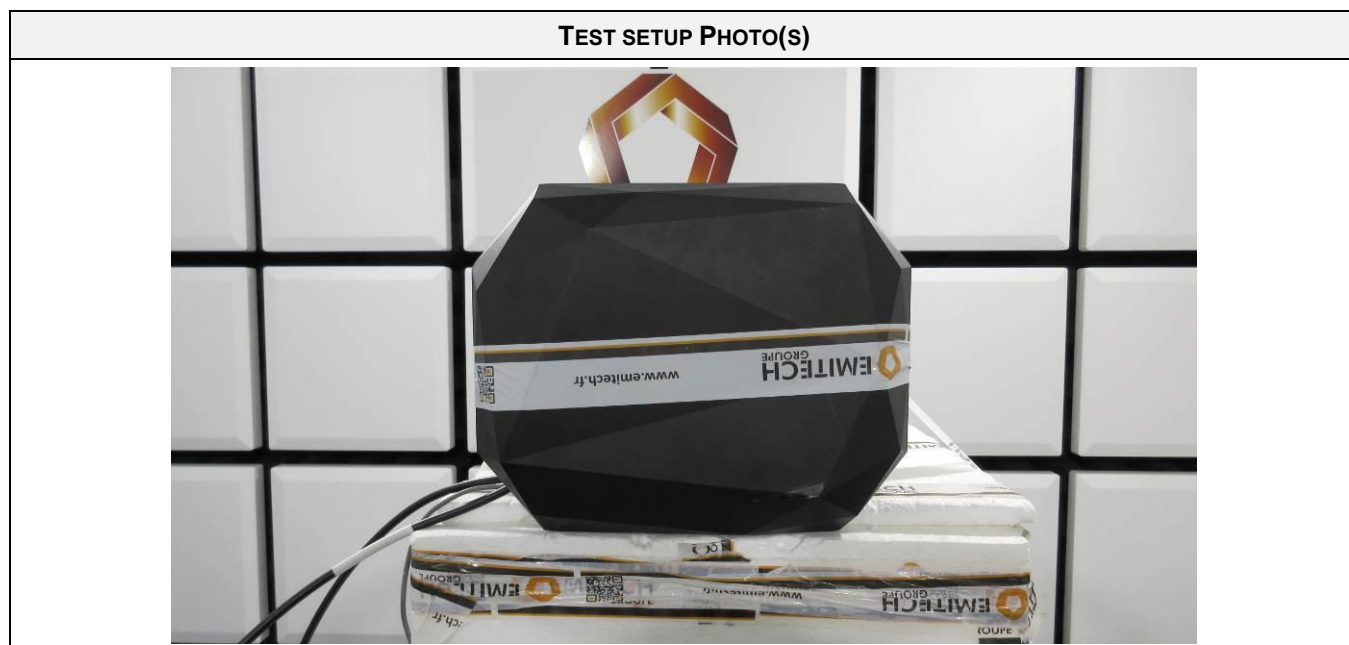
Reference standard:	FCC 47 CFR PART 15.247 RSS-247
Test method:	ANSI C63.10 : 2020
Test description: b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode. For EUT without dedicated or integral antenna, EUT is connected to the measuring receiver via 50Ω attenuator(s). Radiated power limit applies to the maximum measured conducted power value adjusted by the antenna gain and beamforming gain. For EUT with integral or dedicated antenna, measurements are done on a normalized test site. EUT is set on an insulating support at 150 cm above the ground reference plane. Measurement is done on a normalized test site by the substitution method. The test antenna is oriented in the two polarizations (vertical and horizontal), and the product is rotated at 360° in the horizontal plane (See photo(s) for initial position of the EUT(0°)). If applicable the test antenna was raised and lowered through the specified range of height until a maximum signal level is detected. For portable equipments: - For frequencies < 1GHz a research of maximum level is done on 3 axes - For frequencies > 1GHz styrofoam wedges, precut to the 30°, 60°, and 90° angles, are used to support the EUT in the 6 different orientations. Only the highest levels are recorded.	

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
EIRP / BLE All channels	2400MHz-2483.5MHz	1 W (30 dBm)	EMI7001	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
AC power source	GW Instek	APS-1102	17782	04/09/2024	04/11/2025
Antenna	ETS-Lindgren	3117	8387	24/03/2023	24/05/2026
Attenuator	EMITECH	SUB.V1-V	14781	03/06/2024	03/02/2026
Cable	/	N-1m	3625	03/05/2023	03/07/2025
Cable	SUCOFLEX	N-3m	14379	17/08/2023	17/10/2025
Multimeter	FLUKE	8808A	12446	14/03/2025	14/05/2026
Preamplifier	Techniwave	APS16-0087	14040	17/07/2024	17/03/2026
Spectrum analyzer	Rohde & Schwarz	FPL1007	17908	04/04/2025	04/06/2026
Shielded enclosure	RAY PROOF	C.V1	1123	05/11/2024	05/01/2028
Thermohygrometer	Testo	608-H1	7561	20/12/2024	20/02/2026
Thermohygrometer	Bioblock Scientific	Météostar	0963	28/09/2023	28/05/2026

Blank cells = Permanent validity



TEST SETUP PHOTO(S)



MAXIMUM PEAK POWER OF THE INTENTIONAL RADIATOR - GRAPH

EIRP / ALL CHANNELS				EMI7001	
EUT mode:	Tx mode			T (°C):	19.7
Test Date:	25/04/2025			H (%):	41.1
Test Operator:	MPA			P (hPa):	1015
Frequency (MHz)		Configuration	Level (dBm)	Limit (dBm)	
2402		Vertical	-12.71	30	
2426		Vertical	-13.16	30	
2480		Vertical	-13.95	30	
Configuration:	N/A				
Comments:	N/A				
EUT modification(s): N/A					

End of test report