



Test report issued under the responsibility of:
EMITECH MONTPELLIER laboratory
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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. : **Wireless metal detection sensor**
Trade Mark. : FMF
Manufacturer..... : XPLORER
Model/Type reference..... : XPMF / FMF3428
FCC ID..... : XFJMF
IC : 8392A-MF
Ratings..... : 3.45Vdc to 4.2Vdc

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

Report Reference No. : **RR410-20-101751-13A**
Test procedure. : FCC IC Certification
Diffusion..... : Mr LOUBET
Applicant's name. : XPLORER
Date of issue..... : November 3, 2021
Total number of pages..... : 118
Revision..... : 0
Modified page(s)..... : Creation
Compiled by..... : Alexis TOUZET
Approved by (+ signature)..... : Olivier HEYER (Laboratory Manager)

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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	November 3, 2021	/	Creation

1. GENERAL INFORMATION

This document submits the results of Radio tests performed on the equipment **Wireless metal detection sensor Disk FMF 34x28cm** (denominated hereafter E.U.T.: equipment under test) according to document(s) listed in §2 of this test report.

TESTING PROCEDURE AND TESTING LOCATION:					
Testing Location : EMITECH MONTPELLIER laboratory Address : 145 rue de Massacan 34740 VENDARGUES FRANCE Test procedure : FCC IC Certification Tested by : Olivier AELBRECHT & Alexis TOUZET Test supervisor : Olivier AELBRECHT Date of receipt of test item : N/A Date (s) of performance of tests : From February the 15 th of 2021 to April the 30 th of 2021					
APPLICANT'S GENERAL INFORMATION:					
Company name : XPLOER 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					
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
OATS	Open area test site	FAR	Full anechoic room	Av	Average detector
VP	Vertical Polarization	HP	Horizontal Polarization	RMS	Root Mean Square
RF	Radio frequency	NTR	Nothing to report	N/C	Not communicated

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

ANSI C 63.4:2014

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

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

INFORMATIVE REFERENCES:

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

3. EQUIPMENT TECHNICAL DESCRIPTION

3.1. Test Conditions

Test item description. : Wireless metal detection sensor
Model/Type reference..... : XPMF / FMF3428
Trade Mark. : FMF
FCC ID..... : XFJMF
IC. : 8392A-MF
Serial number (S/N)..... : 51304A
Part number (P/N). : Not communicated
Software version..... : 20210126
Firmware version. : *Not communicated*
Type of sample..... : Pre-serial
Function(s)..... : Wireless object detection sensor
Manufacturer name. : XPLOER
Address. : 8 rue du Développement - ZI de Vic
31320 CASTANET-TOLOSAN
FRANCE

General product information:

N/A

3.2. EUT Marking plate



3.3.EUT General view



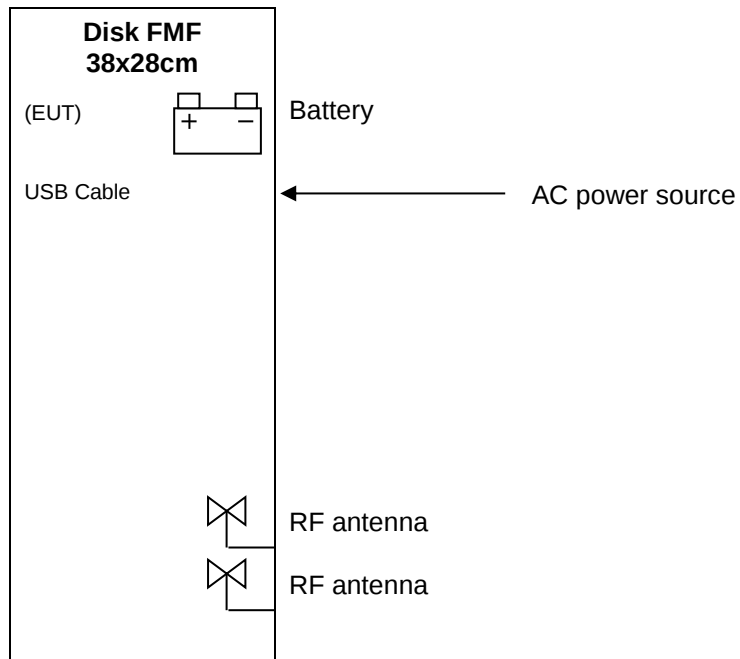
3.4.EUT Mechanical and Electrical Design

Power supply	: 3.7Vdc
Power supply range.....	: 3.45Vdc to 4.2Vdc
Power type.....	: <i>Battery powered</i>
Power (W).....	: 5
Nominal current (A).	: 1
Dimensions (L x W x H) (m).	: 0.34x0.28x0.04
Weight (kg).	: 0.501
Temperature range (°C).	: -5°C to +40°C
Ground bounding strap.....	: No

Comments:

N/A

3.5. EUT Input/Output ports



PORT	NAME	TYPE	LENGTH	CABLE TYPE	COMMENTS
0	Main frame	N/E	N/A	Plastic	
1	Battery	DC	N/A	N/A	
2	AC power source	AC/DC	1m	2P	
3	RF antenna	RF	N/A	N/A	2.4GHz
4	RF antenna	RF	N/A	N/A	Metal detector

AC/DC : AC/DC Converter port AC : Alternative current port DC : Discontinuous current port
I/O : Input or Output port TP : Telecommunication port RF : Radio frequency port
N/E : Non Electrical 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
Battery charger (AC/DC)	Sinohero Industrial Ltd.	SJ-0510-E	Used for conducted emission

BATTERY CHARGER (AC/DC) (AE)



3.7. EUT Radio Specifications

a) GENERAL INFORMATIONS	
According to manufacturer's declarations :	
EUT type.....	Transmitter
Technology	SRD (Metal and object detection sensors) SRD 2.4GHz
Environmental profile.....	Data transmissions
Temperature range.....	-5°C to +40°C
Antenna type	Integral
Antenna Gain.....	not communicated
Comments:	
N/A	
b) TRANSMITTER PARAMETERS (Tx)	
Frequency bands.....	1kHz to 148.5kHz 2400 MHz to 2483.5MHz
RF Power.....	Not communicated
Number of channels / Separation.....	Multiple
Modulation type	GFSK
Duty cycle	Not communicated
Tested frequency.....	4.1kHz low Channel 45.19kHz High Channel 2404MHz Low channel 2440MHz Mid channel 2476 High channel
c) RECEIVER PARAMETERS (Rx)	
Frequency bands.....	1kHz to 148.5kHz 2400 MHz to 2483.5MHz
Category/Class	N/A Category 2
Bandwidth.....	N/A 2404MHz to 2476MHz

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 encapsulated 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
ANSI C63.4: 2014	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

TEST DESIGNATION	SEVERITY	VERDICT	BASIC STANDARDS / COMMENTS
SUBPART C –INTENTIONAL RADIATORS			
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 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 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

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
ANSI C63.4: 2014	N/A

6. 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	$\pm 0.8\text{dB}$	$\pm 1 \text{ dB}$
RF power (EN 300328 / EN 301893)	$\pm 1.3\text{dB}$	$\pm 1.5 \text{ dB}$
Power spectral density	$\pm 2.3\text{dB}$	$\pm 3 \text{ dB}$
Occupied bandwidth		
RF power	$\pm 3.8 \%$	$\pm 5 \%$
RF power (EN 300328 / EN 301893)	$\pm 3.8 \%$	$\pm 5 \%$
Maximum frequency deviation		
300 Hz < audio frequency < 6 kHz	$\pm 1.2 \%$	$\pm 5 \%$
6 kHz < audio frequency < 25 kHz	$\pm 1.2 \%$	$\pm 3 \text{ dB}$
Adjacent channel power	$\pm 1.6 \text{ dB}$	$\pm 3 \text{ dB}$
Sensibility 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)		
$f \leq 1 \text{ GHz}$	$\pm 0.8 \text{ dB}$	$\pm 3 \text{ dB}$
1 GHz - 12.75 GHz	$\pm 1.6 \text{ dB}$	
Radiated emission (PAR / PIRE / RNE)		
$f \leq 62.5 \text{ MHz}$	$\pm 5.1 \text{ dB}$	$\pm 6 \text{ dB}$
62.5 MHz - 1 GHz	$\pm 5.1 \text{ dB}$	$\pm 6 \text{ dB}$
1 GHz - 18 GHz	$\pm 5.2 \text{ dB}$	$\pm 6 \text{ dB}$
18 GHz – 26 GHz	$\pm 5.1 \text{ dB}$	$\pm 6 \text{ dB}$
26 GHz – 40 GHz	$\pm 5.4 \text{ dB}$	$\pm 6 \text{ dB}$
180-1000 MHz / 1 – 12.75 GHz (EN 301 908-1)	$\pm 3.0 / 2.9 \text{ dB}$	$\pm 3 \text{ dB}$
RF power (EN 300328 / EN 301893)	$\pm 5.3 \text{ dB}$	$\pm 6 \text{ dB}$
PIRE and power spectral density with diode	$\pm 5.2 \text{ dB}$	$\pm 6 \text{ dB}$
Radiated emission (magnetic field)		
9kHz – 30MHz	$\pm 3 \text{ dB}$	$\pm 6 \text{ dB}$
RF level for a given BER	$\pm 0.8 \text{ dB}$	$\pm 1.5 \text{ dB}$
Supply voltages	$\pm 3 \%$	$\pm 3 \%$
Temperature	$\pm 1 \text{ }^{\circ}\text{C}$	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5 \%$	$\pm 5 \%$
Time / Duty cycle	$\pm 4.4 \%$	$\pm 5 \%$
Adaptivity	$\pm 2.9 \text{ dB}$	/
Conducted emission (FCC)		
(Artificial Mains Network) 150kHz – 30MHz	$\pm 3.4 \text{ dB}$	$\pm 3.4 \text{ dB}$
Radiated emission (electric field for FCC standard)		
9kHz – 30MHz	$\pm 2.7 \text{ dB}$	/
30MHz – 1GHz	$\pm 5.0 \text{ dB}$	/
1GHz – 18GHz	$\pm 5.6 \text{ dB}$	/
18GHz – 26GHz	$\pm 5.7 \text{ dB}$	/
26GHz – 40GHz	$\pm 5.7 \text{ dB}$	/

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

7. RF EXPOSURE

Maximum EIRP = 0.251dBm (1.78 mW) at 2404MHz

In accordance with KDB 447498 D01 General RF Exposure Guidance v06:

$PSD = EIRP / (4 * \pi * R^2) = 0.73 / (4 * \pi * (20 \text{ cm})^2) = 0.00015 \text{ mW/cm}^2$

Limit= 1 mW/cm²

8. TEST CONDITIONS AND RESULTS

8.1. Conducted emission (measurement)

Reference standard:	FCC part 15.107, 15.207 and RSS-Gen
Test method:	ANSI C63.4: 2014
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. Additional ground terminals (if any) are connected to earth terminal of the AMN.	

TESTED CABLE	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
120Vac/60Hz power supply / All channels	150kHz-30MHz	Class B	EMI5903	PASS
120Vac/60Hz power supply / Standby mode	150kHz-30MHz	Class B	EMI5898	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
AC power source	CHROMA	61603	12532	25/07/2019	25/09/2021
Cable	N	3m	16422	04/05/2019	04/07/2021
Cable	EMITECH	Current absorber sheath	9491	23/06/2020	23/08/2022
Cable	C&C	N-3m	14331	18/03/2021	18/05/2023
Ground plane	EMITECH	Test area	11569		
LISN	PMM	L2-16	1209	08/06/2020	08/08/2022
LISN	AFJ	LT32C\10	12007	11/01/2019	11/03/2021
Multimeter	FLUKE	8808A	12446	29/09/2020	29/11/2021
Receiver	Rohde & Schwarz	ESHS10	3371	27/04/2020	27/06/2021
Receiver	Rohde & Schwarz	FPL1003	16027	14/08/2020	14/10/2021
Software	Nexio		0000		
Surges Suppressor	Hewlett Packard	11947A	0238	20/12/2019	20/02/2023
Thermohygrometer	Testo	608-H1	7562	26/01/2019	26/09/2021
Thermohygrometer	Testo	608-H2	12268	07/05/2020	07/07/2022
Thermohygrometer	Bioblock Scientific	Météostar	0963	26/01/2019	26/09/2021
TV	DESIMET	TVC 2437B	0903		

BAT-EMC software version: V3.18.0.26

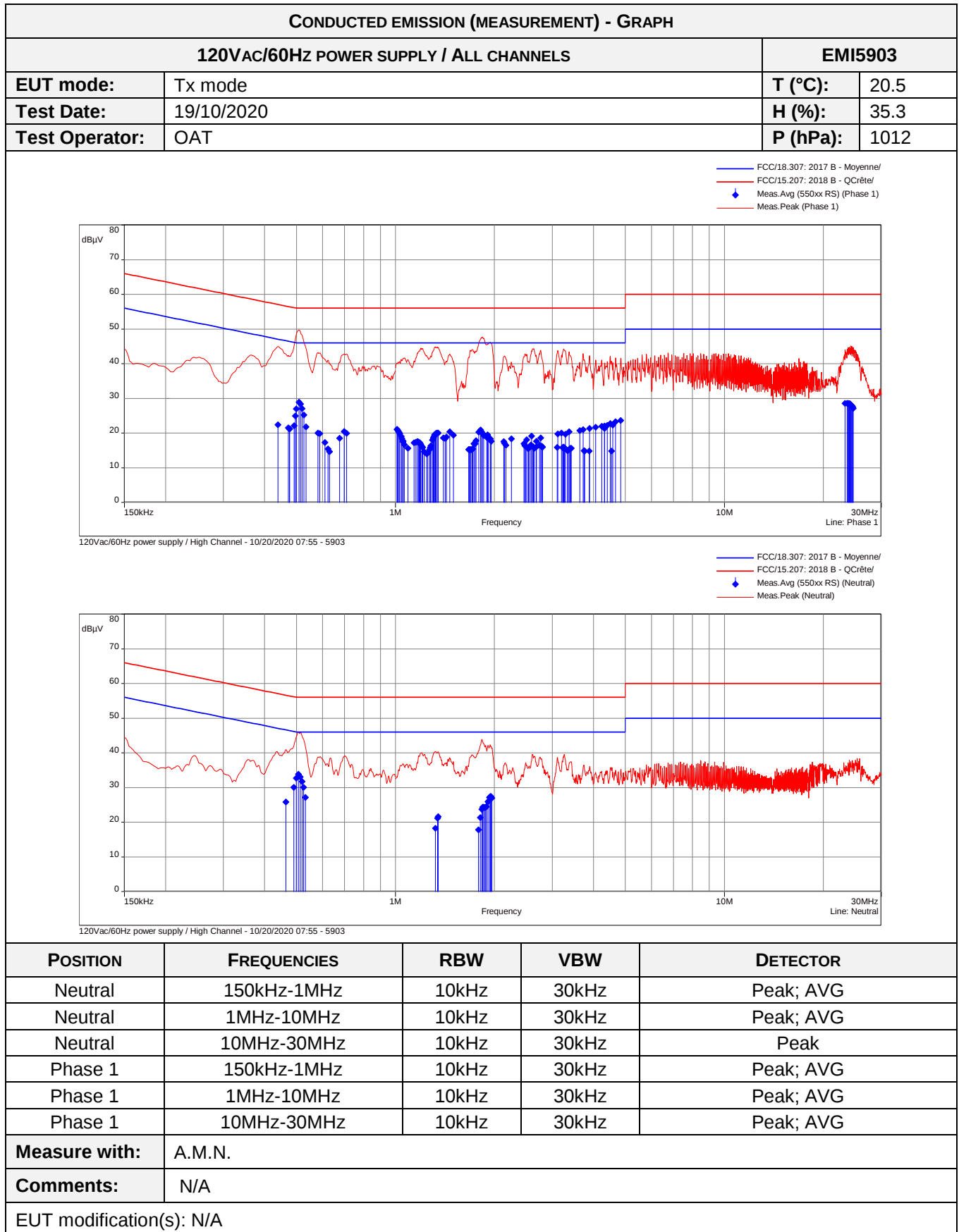
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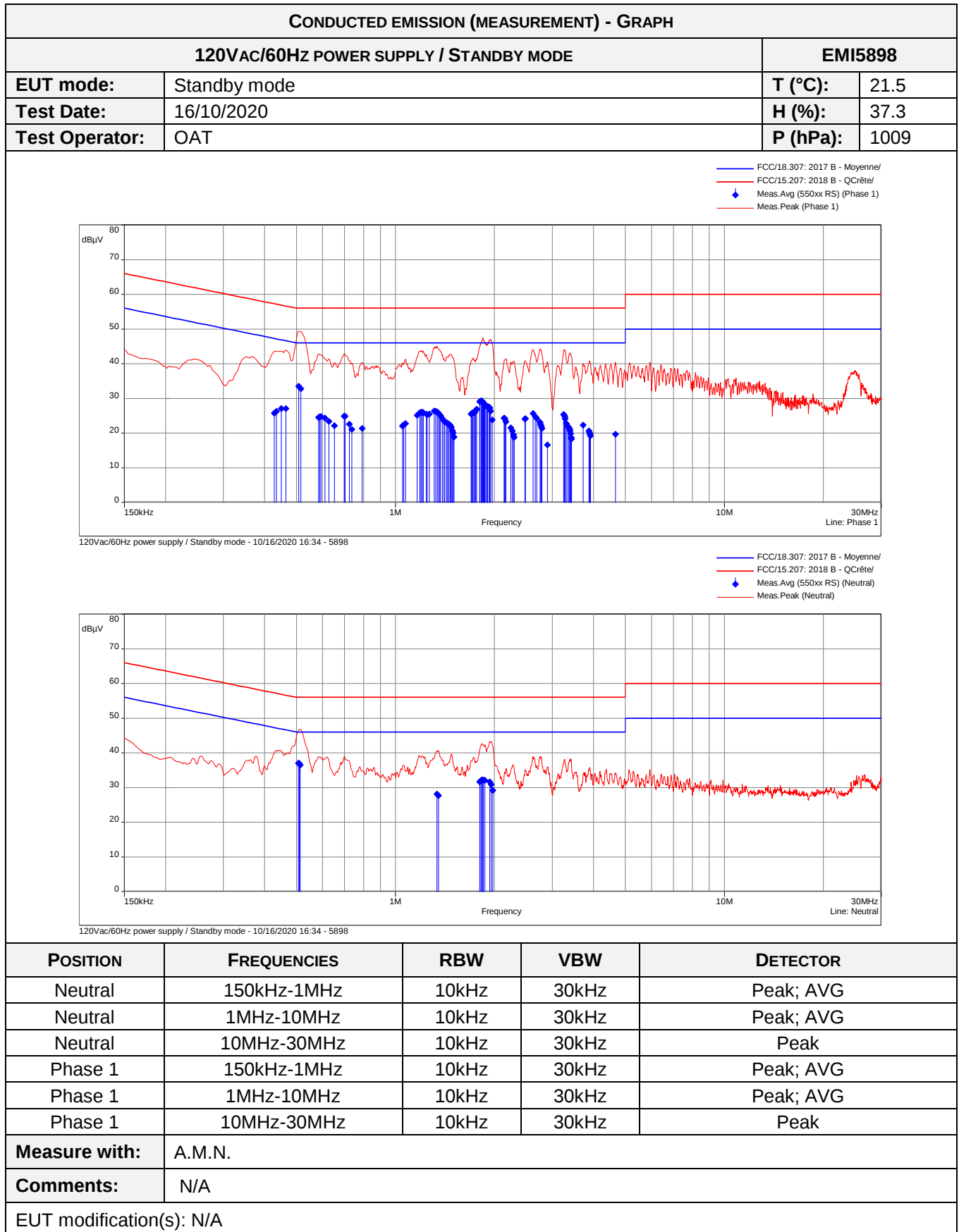


CONDUCTED EMISSION (MEASUREMENT) - TABULATED RESULTS						
120VAC/60HZ POWER SUPPLY / ALL CHANNELS						EMI5903
Terminal	Test Frequency (MHz)	Gain/Loss Factor (dB)	Level Pk (dBµV)	Level Avg (dBµV)	Limit Avg (dBµV)	Margin Lvl Avg - Limit Avg (dB)
Neutral	0.464	10.4	36.63	25.82	46.61	-20.79
Neutral	0.491	10.4	39.21	30.07	46.15	-16.08
Neutral	0.499	10.4	41.47	32.73	46.01	-13.28
Neutral	0.507	10.4	42.41	33.8	46	-12.2
Neutral	0.514	10.4	42.09	33.06	46	-12.94
Neutral	0.520	10.4	41.06	31.7	46	-14.3
Neutral	0.525	10.4	39.64	30.07	46	-15.93
Neutral	0.533	10.4	37.56	27.16	46	-18.84
Neutral	1.344	10.46	31.49	21.18	46	-24.82
Neutral	1.348	10.46	32.22	21.59	46	-24.41
Neutral	1.810	10.48	30.31	21.29	46	-24.71
Neutral	1.832	10.48	34.59	23.69	46	-22.31
Neutral	1.844	10.48	35.82	24.29	46	-21.71
Neutral	1.853	10.48	36.24	24.35	46	-21.65
Neutral	1.869	10.48	36.14	24.24	46	-21.76
Neutral	1.880	10.48	35.53	24.3	46	-21.7
Neutral	1.888	10.48	35.35	24.52	46	-21.48
Neutral	1.913	10.48	35.77	25.91	46	-20.09
Neutral	1.932	10.48	35.19	27.1	46	-18.9
Neutral	1.941	10.48	35.52	27.45	46	-18.55
Neutral	1.953	10.48	36.71	27.45	46	-18.55
Neutral	1.965	10.48	37.44	26.93	46	-19.07
Phase	0.440	10.39	40.24	22.34	47.07	-24.73
Phase	0.473	10.4	39.19	21.47	46.47	-25
Phase	0.492	10.4	40.88	22.08	46.14	-24.06
Phase	0.496	10.4	42.94	24.97	46.06	-21.09
Phase	0.500	10.4	44.53	27	46.01	-19.01
Phase	0.509	10.4	46.27	28.9	46	-17.1
Phase	0.515	10.4	45.35	28.34	46	-17.66
Phase	0.520	10.4	44.65	27.08	46	-18.92
Phase	0.526	10.4	42.8	25.22	46	-20.78
Phase	0.535	10.4	39.54	21.76	46	-24.24
Phase	1.010	10.44	38.83	21.1	46	-24.9
Phase	3.891	10.53	39.94	21.33	46	-24.67
Phase	4.064	10.54	39.66	21.66	46	-24.34
Phase	4.237	10.54	39.23	21.96	46	-24.04
Phase	4.322	10.54	38.21	21.37	46	-24.63
Phase	4.326	10.54	38.53	22	46	-24
Phase	4.410	10.54	39.27	22.17	46	-23.83
Phase	4.497	10.54	39.41	22.71	46	-23.29
Phase	4.582	10.55	38.67	22.31	46	-23.69
Phase	4.671	10.55	40.22	23.24	46	-22.76
Phase	4.843	10.55	40.49	23.63	46	-22.37
Phase	23.265	10.57	43.31	28.51	50	-21.49
Phase	23.611	10.57	43.6	28.52	50	-21.48

CONDUCTED EMISSION (MEASUREMENT) - TABULATED RESULTS						
120VAC/60HZ POWER SUPPLY / ALL CHANNELS						EMI5903
Terminal	Test Frequency (MHz)	Gain/Loss Factor (dB)	Level Pk (dBµV)	Level Avg (dBµV)	Limit Avg (dBµV)	Margin Lvl Avg - Limit Avg (dB)
Phase	23.783	10.57	43.79	28.51	50	-21.49
Phase	23.869	10.57	43.84	28.38	50	-21.62
Phase	23.957	10.57	43.87	28.39	50	-21.61
Phase	24.043	10.57	44.05	28.42	50	-21.58
Phase	24.129	10.57	44.04	28.36	50	-21.64
Phase	24.215	10.57	43.9	28.04	50	-21.96
Phase	24.303	10.57	43.81	27.9	50	-22.1
Phase	24.389	10.57	43.74	27.91	50	-22.09
Phase	24.475	10.57	43.79	27.69	50	-22.31
Phase	24.561	10.57	46.75	27.5	50	-22.5
Phase	24.649	10.57	43.44	27.16	50	-22.84
Supplementary information: Margin between peak measurements and quasi-peak limit is > 6dB, so no quasi-peak measurements were performed. Spurious which has more than 25 dB of margin compared to the applicable limit is not necessarily reported.						

CONDUCTED EMISSION (MEASUREMENT) - TABULATED RESULTS						
120VAC/60HZ POWER SUPPLY / STANDBY MODE						EMI5898
Terminal	Test Frequency (MHz)	Gain/Loss Factor (dB)	Level Pk (dBμV)	Level Avg (dBμV)	Limit Avg (dBμV)	Margin Lvl Avg - Limit Avg (dB)
Neutral	0.507	10.4	46.07	36.98	46	-9.02
Neutral	0.510	10.4	46.13	36.93	46	-9.07
Neutral	0.514	10.4	45.67	36.48	46	-9.52
Neutral	1.338	10.46	39.49	28.1	46	-17.9
Neutral	1.351	10.46	39.49	27.7	46	-18.3
Neutral	1.804	10.48	41.35	31.68	46	-14.32
Neutral	1.817	10.48	41.77	31.99	46	-14.01
Neutral	1.833	10.48	42.23	32.13	46	-13.87
Neutral	1.840	10.48	42.45	32.13	46	-13.87
Neutral	1.849	10.48	42.22	32.18	46	-13.82
Neutral	1.872	10.48	41.21	32.04	46	-13.96
Neutral	1.935	10.48	41.37	31.65	46	-14.35
Neutral	1.955	10.48	41.75	30.87	46	-15.13
Neutral	1.977	10.48	39.98	29.13	46	-16.87
Phase	0.450	10.39	43.51	27.07	46.87	-19.8
Phase	0.464	10.4	43.62	27.08	46.62	-19.54
Phase	0.508	10.4	49.84	33.49	46	-12.51
Phase	0.516	10.4	49.09	32.81	46	-13.19
Phase	1.313	10.45	43.34	26.34	46	-19.66
Phase	1.327	10.45	44.3	26.3	46	-19.7
Phase	1.756	10.47	41.93	26.54	46	-19.46
Phase	1.766	10.47	43.06	26.89	46	-19.11
Phase	1.804	10.48	45.93	29.05	46	-16.95
Phase	1.807	10.48	46.31	29.11	46	-16.89
Phase	1.823	10.48	47.08	29.3	46	-16.7
Phase	1.828	10.48	46.98	29.24	46	-16.76
Phase	1.834	10.48	46.74	29.18	46	-16.82
Phase	1.844	10.48	46.51	28.98	46	-17.02
Phase	1.851	10.48	46.3	28.72	46	-17.28
Phase	1.857	10.48	46.1	28.57	46	-17.43
Phase	1.863	10.48	45.76	28.36	46	-17.64
Phase	1.869	10.48	45.46	28.14	46	-17.86
Phase	1.882	10.48	44.62	27.82	46	-18.18
Phase	1.896	10.48	44.13	27.74	46	-18.26
Phase	1.906	10.48	43.99	27.67	46	-18.33
Phase	1.908	10.48	44.41	27.67	46	-18.33
Phase	1.926	10.48	44.93	27.52	46	-18.48
Phase	1.934	10.48	45.01	27.26	46	-18.74
Phase	1.948	10.48	44.58	26.36	46	-19.64
Supplementary information:						
Margin between peak measurements and quasi-peak limit is > 6dB, so no quasi-peak measurements were performed.						
Spurious which has more than 20 dB of margin compared to the applicable limit is not necessarily reported.						





8.2.6dB 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	SEVERITY	RESULT TAB.	VERDICT
Low Channel	>500kHz	EMI8061	PASS
Mid Channel	>500kHz	EMI8062	PASS
High Channel	>500kHz	EMI8063	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	22.1 °C
Relative Humidity	20 to 75 %	47.3 %
Atmospheric pressure	N/A	999 hPa
Test method deviation: N/A		
Supplementary information:		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	24/07/2019	24/09/2022
Cable	SUCOFLEX	N-3m	14379	25/06/2019	25/08/2021
Cable	SUCOFLEX	N-5,5m	14381	25/06/2019	25/08/2021
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Receiver	Rohde & Schwarz	FSW43	14830	29/07/2020	29/09/2021
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H1	7562	25/01/2019	25/03/2021
Thermohygrometer	Bioblock Scientific	Météostar	0963	26/01/2019	26/09/2021

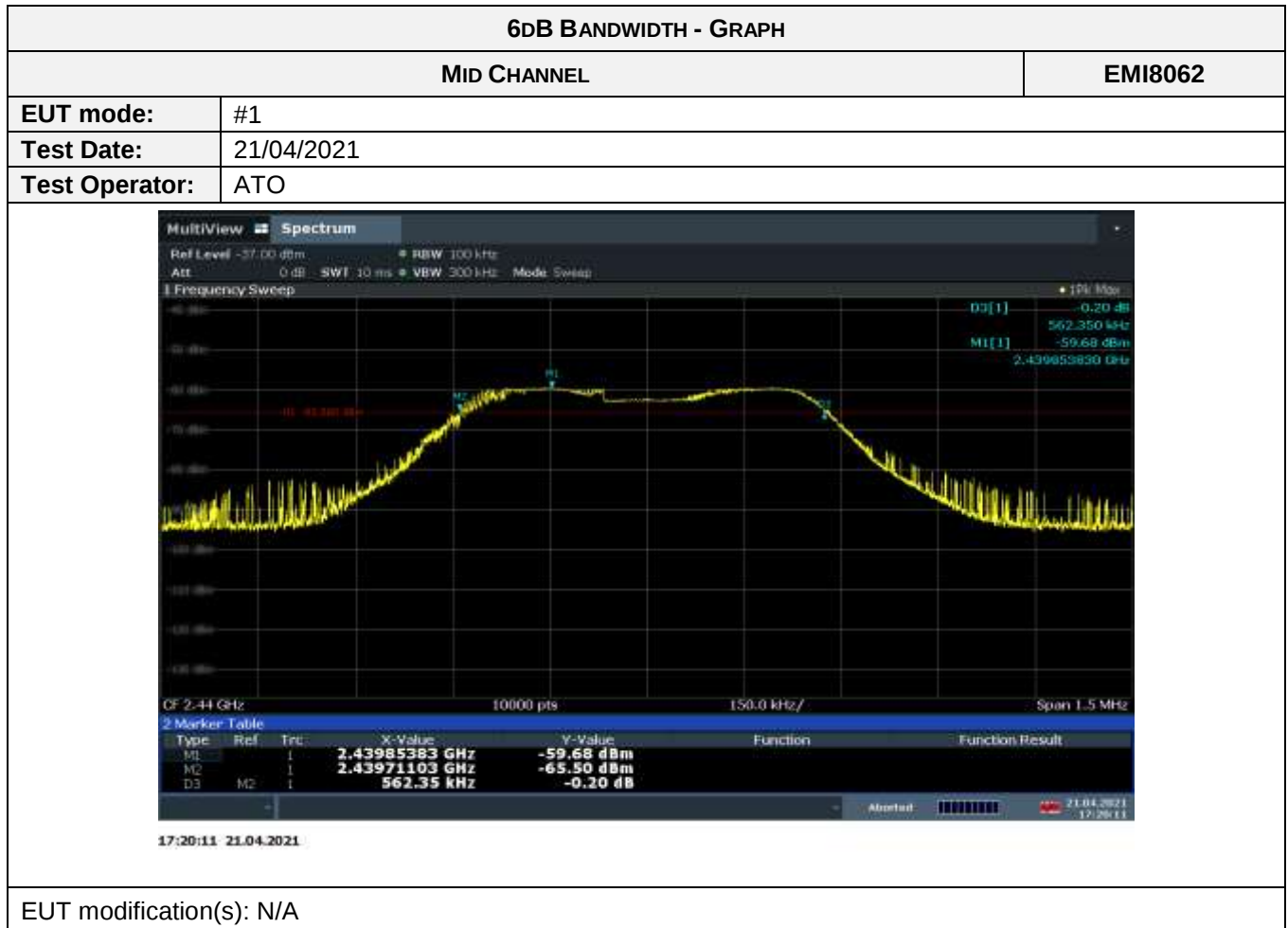
Blank cells = Permanent validity

TEST SETUP PHOTO(S) – 6dB BANDWIDTH



6dB BANDWIDTH - GRAPH		
LOW CHANNEL		EMI8061
EUT mode:	#1	
Test Date:	21/04/2021	
Test Operator:	ATO	
MultViewSpectrum Ref Level: -57.00 dBmAtt: 0 dB, SWF: 10 ms, VBW: 300 kHz, Mode: Sweep 1 Frequency Sweep 100 kHz 10		

6dB BANDWIDTH - TABULATED RESULTS			
LOW CHANNEL			
Frequency	RBW	6 dB Bandwidth	Limit
2404 MHz	100kHz	551.55 kHz	>500kHz



6dB BANDWIDTH - TABULATED RESULTS			
MID CHANNEL			
Frequency	RBW	6 dB Bandwidth	Limit
2440 MHz	100kHz	562.35 kHz	>500kHz

6dB BANDWIDTH - GRAPH	
HIGH CHANNEL	
EUT mode:	#1
Test Date:	21/04/2021
Test Operator:	ATO
 17:22:13 21.04.2021	
EUT modification(s): N/A	

6dB BANDWIDTH - TABULATED RESULTS			
HIGH CHANNEL			
Frequency	RBW	6 dB Bandwidth	Limit
2476 MHz	100kHz	547.35 kHz	>500kHz

8.3. 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 $\beta/2$ on each side of the spectrum. Unless otherwise specified, $\beta/2$ 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	SEVERITY	RESULT TAB.	VERDICT
Low Channel	>500kHz	EMI8064	PASS
Mid Channel	>500kHz	EMI8065	PASS
High Channel	>500kHz	EMI8066	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	21.8 °C
Relative Humidity	20 to 75 %	42.1 %
Atmospheric pressure	N/A	1005 hPa
Test method deviation: N/A		
Supplementary information:		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	24/07/2019	24/09/2022
Cable	SUCOFLEX	N-3m	14379	25/06/2019	25/08/2021
Cable	SUCOFLEX	N-5,5m	14381	25/06/2019	25/08/2021
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Receiver	Rohde & Schwarz	FSW43	14830	29/07/2020	29/09/2021
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H1	7562	25/01/2019	25/03/2021
Thermohygrometer	Bioblock Scientific	Météostar	0963	26/01/2019	26/09/2021

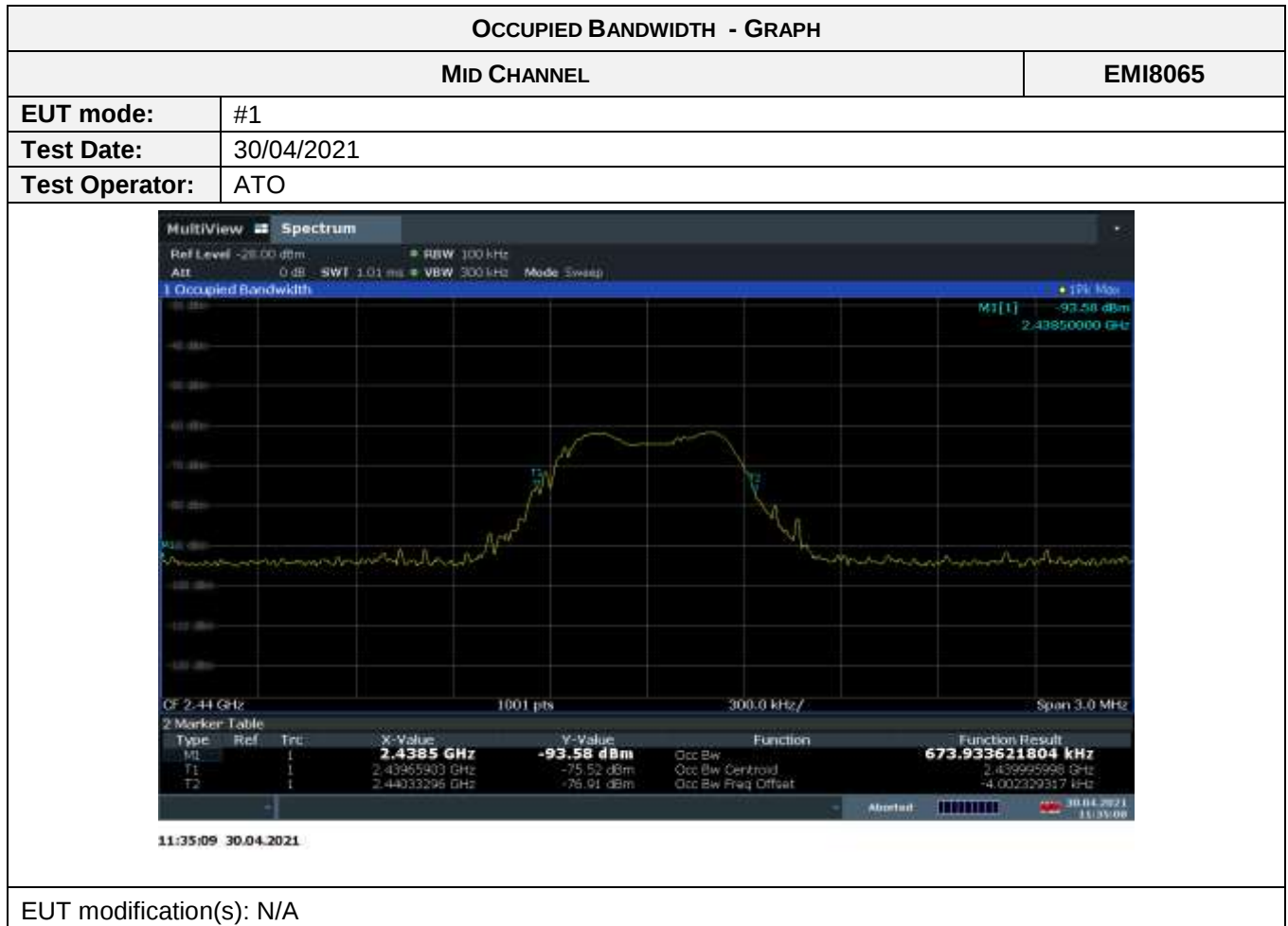
Blank cells = Permanent validity

TEST SETUP PHOTO(S) – OCCUPIED BANDWIDTH



OCCUPIED BANDWIDTH - GRAPH	
LOW CHANNEL	
EUT mode:	#1
Test Date:	30/04/2021
Test Operator:	ATO
	
EUT modification(s): N/A	

OCCUPIED BANDWIDTH - TABULATED RESULTS			
LOW CHANNEL			
Frequency	RBW	OBW 99%	Limit
2404 MHz	100 kHz	641.47 kHz	> 500kHz



OCCUPIED BANDWIDTH - TABULATED RESULTS			
MID CHANNEL			
Frequency	RBW	OBW 99%	Limit
2440 MHz	100 kHz	673.93 MHz	> 500kHz

OCCUPIED BANDWIDTH - GRAPH	
HIGH CHANNEL	
EUT mode:	#1
Test Date:	30/04/2021
Test Operator:	ATO
	
EUT modification(s): N/A	

OCCUPIED BANDWIDTH - TABULATED RESULTS			
HIGH CHANNEL			
Frequency	RBW	OBW 99%	Limit
2476 MHz	100 kHz	690.55 kHz	> 500kHz

8.4. 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 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
EIRP / All Positions / Low channel	2.402GHz- 2.406GHz	30dBm	EMI6699	PASS
EIRP / All Positions / Mid channel	2.438GHz- 2.442GHz	30dBm	EMI6700	PASS
EIRP / All Positions / High channel	2.474GHz- 2.478GHz	30dBm	EMI6701	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	5456	24/07/2019	24/09/2022
Attenuator	EMITECH	SUB.V2-H	14495	13/01/2021	13/03/2022
Attenuator	EMITECH	SUB.V2-V	14496	13/01/2021	13/03/2022
Cable	MegaPhase	N-3m	14852	30/10/2018	30/06/2021
Cable	SUCOFLEX	N-5,5m	14381	25/06/2019	25/08/2021
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Receiver	Rohde & Schwarz	FSW43	14830	29/07/2020	29/09/2021
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H1	7562	25/01/2019	25/03/2021
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021

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TEST SETUP PHOTO(S) - POSITION 1



TEST SETUP PHOTO(S) - POSITION 2

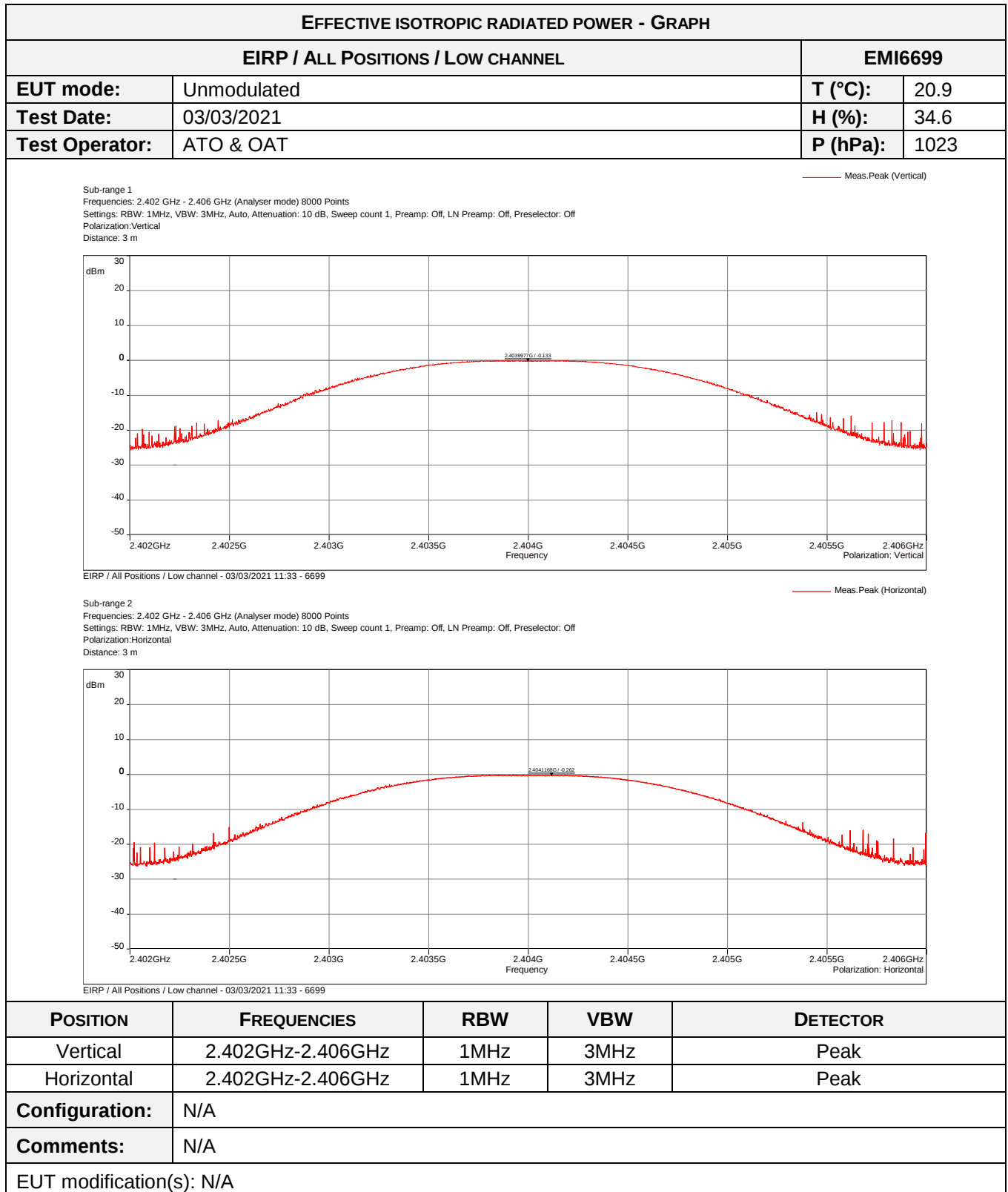


TEST SETUP PHOTO(S) - POSITION 3

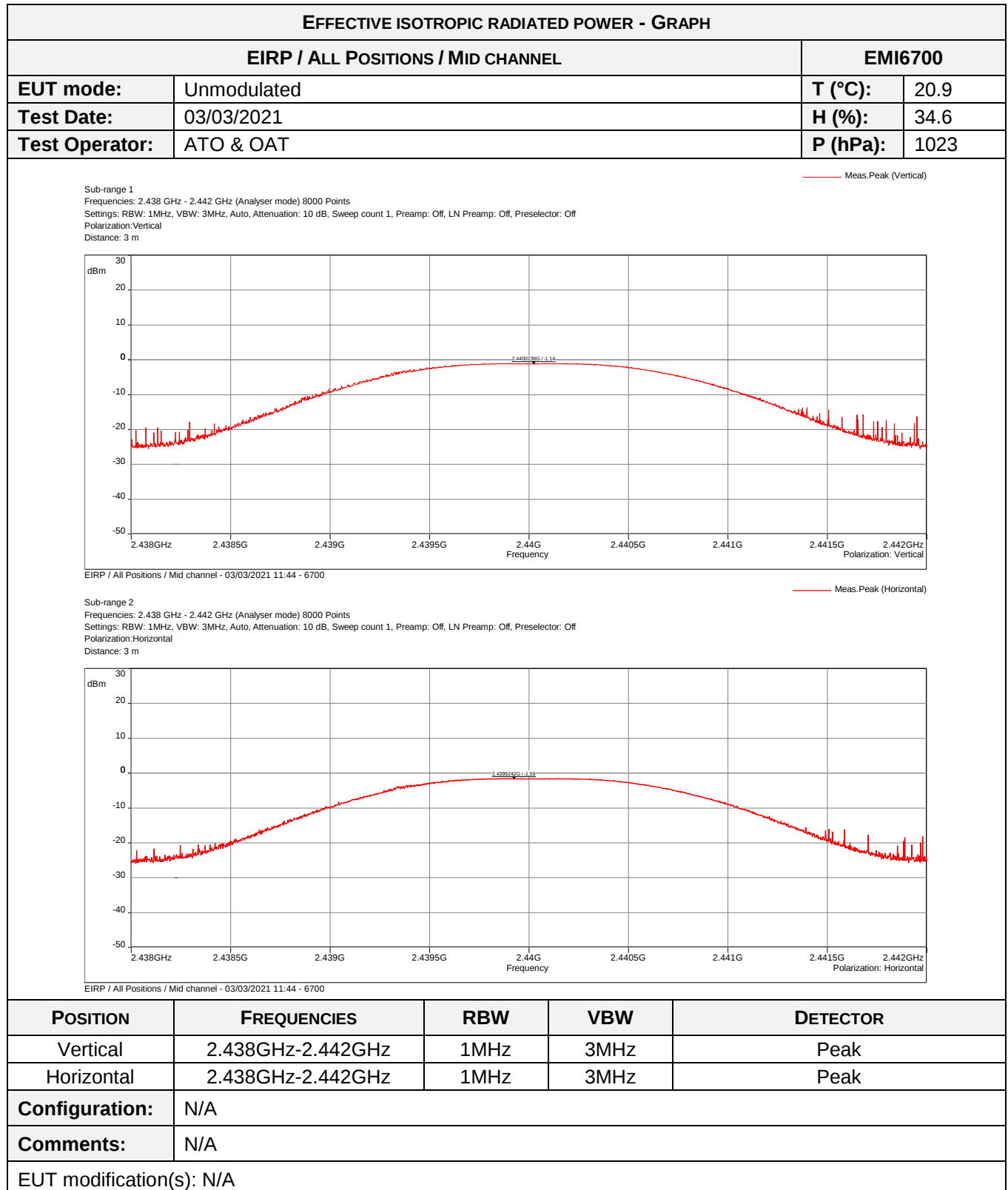


TEST SETUP PHOTO(S) - EIRP

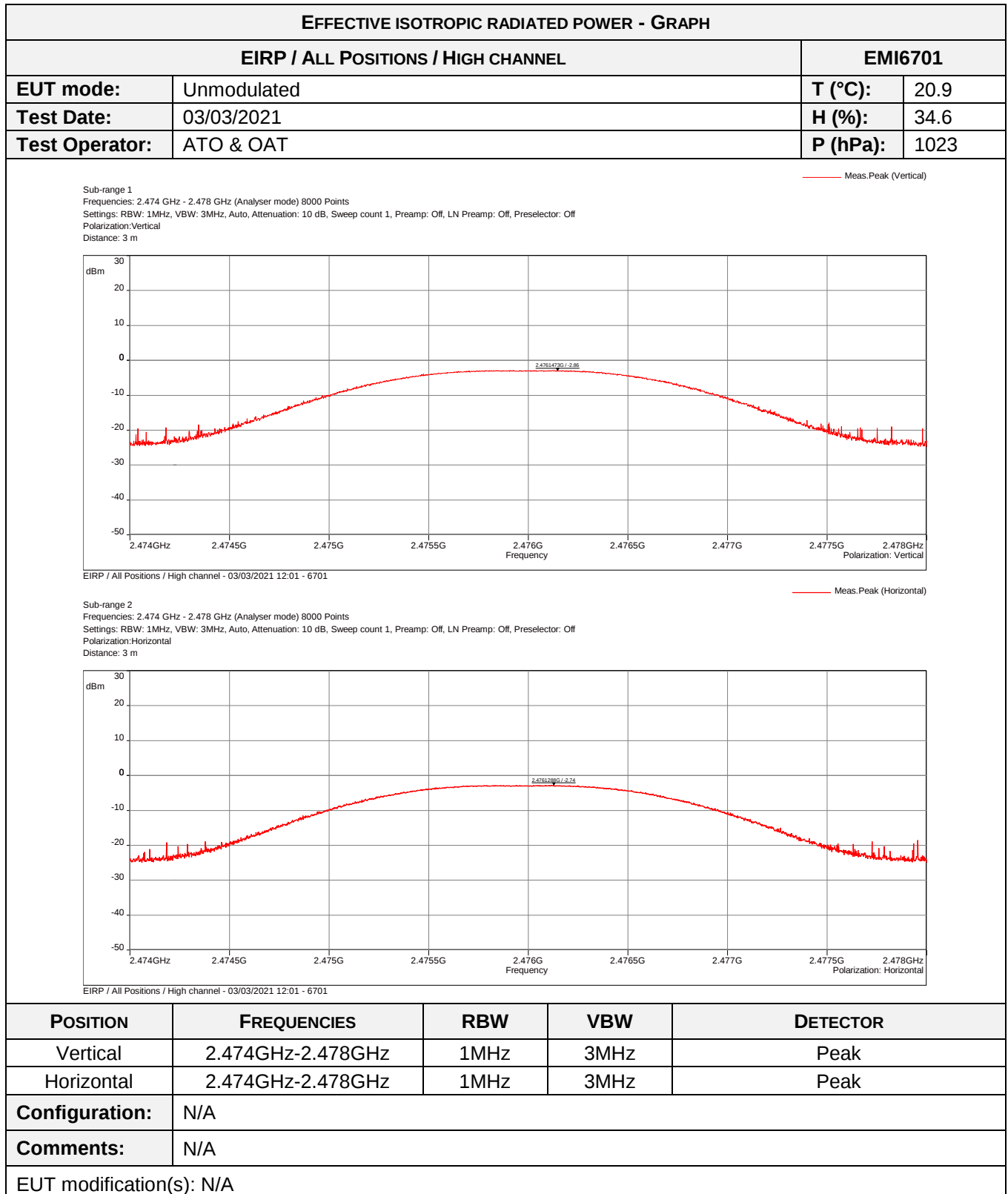




EFFECTIVE ISOTROPIC RADIATED POWER - TABULATED RESULTS			
EIRP / ALL POSITIONS / LOW CHANNEL			EMI6699
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
2403.99	Vertical	-0.133	30
2404.11	Horizontal	-0.262	30



EFFECTIVE ISOTROPIC RADIATED POWER - TABULATED RESULTS			
EIRP / ALL POSITIONS / MID CHANNEL			EMI6700
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
2440.00	Vertical	-1.14	30
2439.92	Horizontal	-1.59	30



EFFECTIVE ISOTROPIC RADIATED POWER - TABULATED RESULTS			
EIRP / ALL POSITIONS / HIGH CHANNEL			EMI6701
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
2476.14	Vertical	-2.86	30
2476.12	Horizontal	-2.74	30

8.5. 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
All Positions / Low channel	2.38GHz-2.5GHz	>20dBc	EMI6730	PASS
All Positions / Mid channel	2.38GHz-2.5GHz	>20dBc	EMI6732	PASS
All Positions / High channel	2.38GHz-2.5GHz	>20dBc	EMI6734	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	5456	24/07/2019	24/09/2022
Cable	SUCOFLEX	N-3m	14379	25/06/2019	25/08/2021
Cable	SUCOFLEX	N-5,5m	14381	25/06/2019	25/08/2021
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Receiver	Rohde & Schwarz	FSW43	14830	29/07/2020	29/09/2021
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H1	7562	25/01/2019	25/03/2021
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021

BAT-EMC software version: V3.18.0.26

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TEST SETUP PHOTO(S) - POSITION 1



TEST SETUP PHOTO(S) - POSITION 2

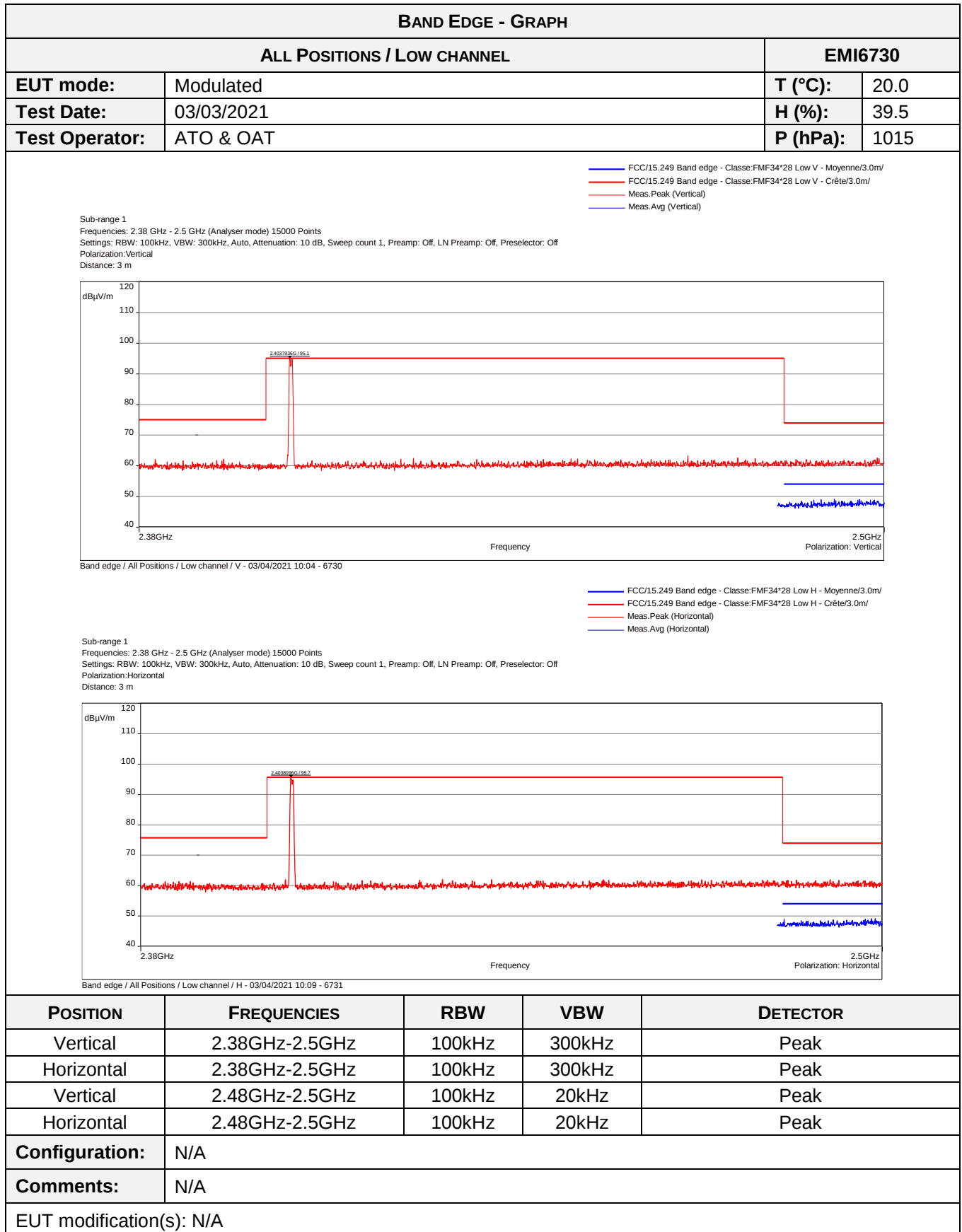


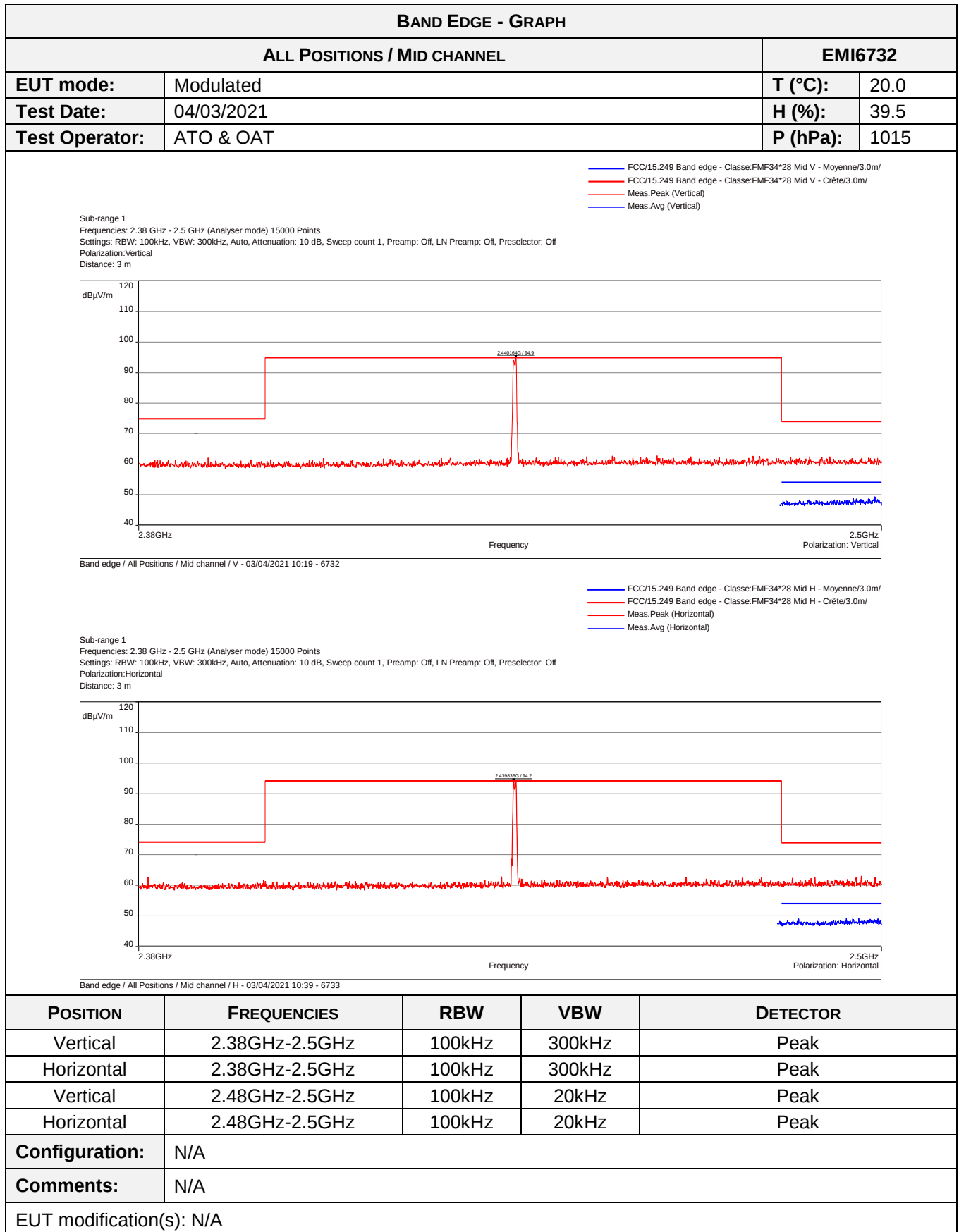
TEST SETUP PHOTO(S) - POSITION 3

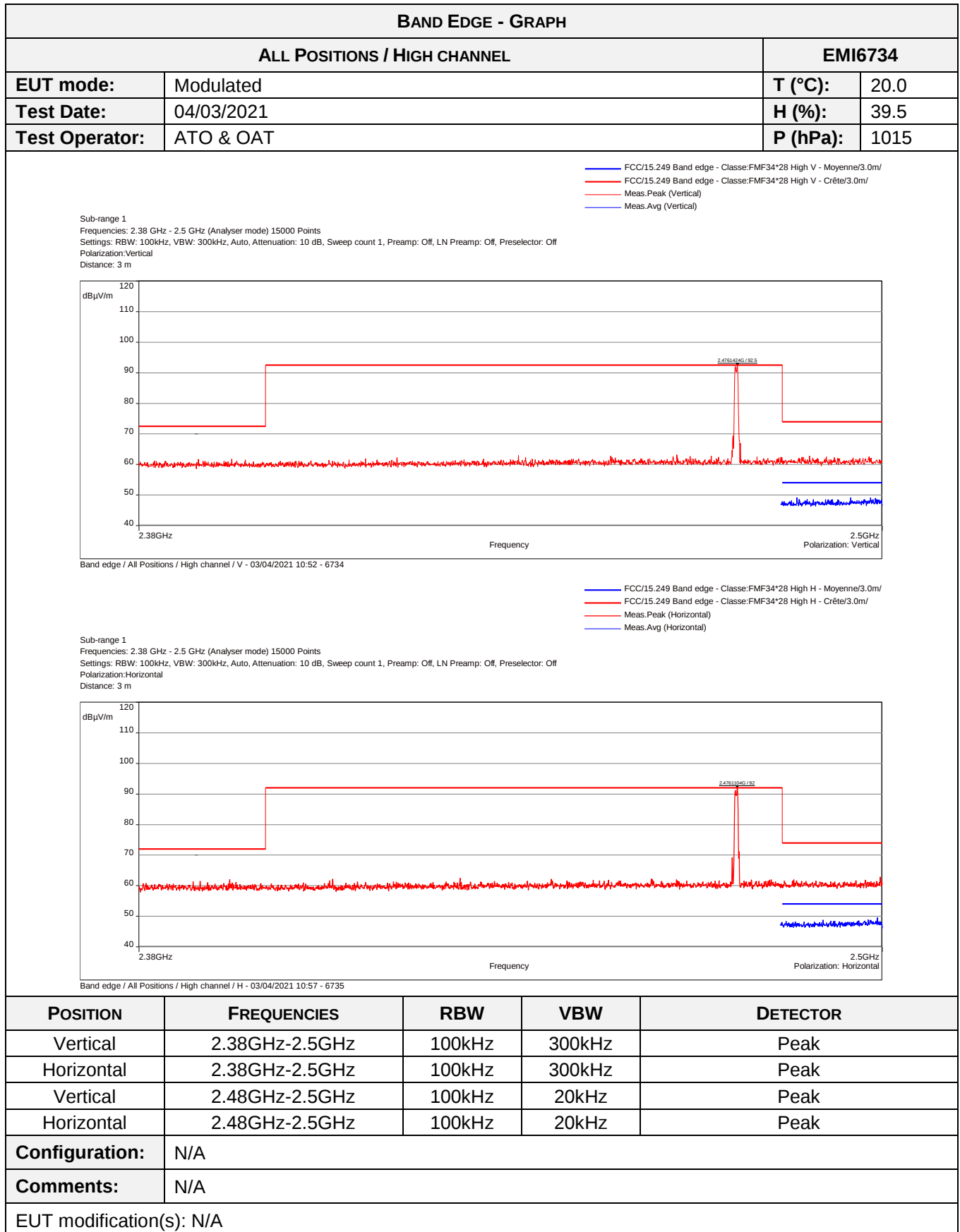


TEST SETUP PHOTO(S) – BAND EDGE









8.6. 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
All Positions / Low channel	2.4035GHz- 2.4045GHz	8dBm/3kHz	EMI6711	PASS
All Positions / Mid channel	2.4395GHz- 2.4405GHz	8dBm/3kHz	EMI6712	PASS
All Positions / High channel	2.4755GHz- 2.4765GHz	8dBm/3kHz	EMI6713	PASS

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

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	24/07/2019	24/09/2022
Attenuator	EMITECH	SUB.V2-H	14495	13/01/2021	13/03/2022
Attenuator	EMITECH	SUB.V2-V	14496	13/01/2021	13/03/2022
Cable	SUCOFLEX	N-3m	14379	25/06/2019	25/08/2021
Cable	MegaPhase	N-3m	14852	30/10/2018	30/06/2021
Cable	SUCOFLEX	N-5,5m	14381	25/06/2019	25/08/2021
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Receiver	Rohde & Schwarz	FSW43	14830	29/07/2020	29/09/2021
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H1	7562	25/01/2019	25/03/2021
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021

BAT-EMC software version: V3.18.0.26

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TEST SETUP PHOTO(S) - POSITION 1



TEST SETUP PHOTO(S) - POSITION 2

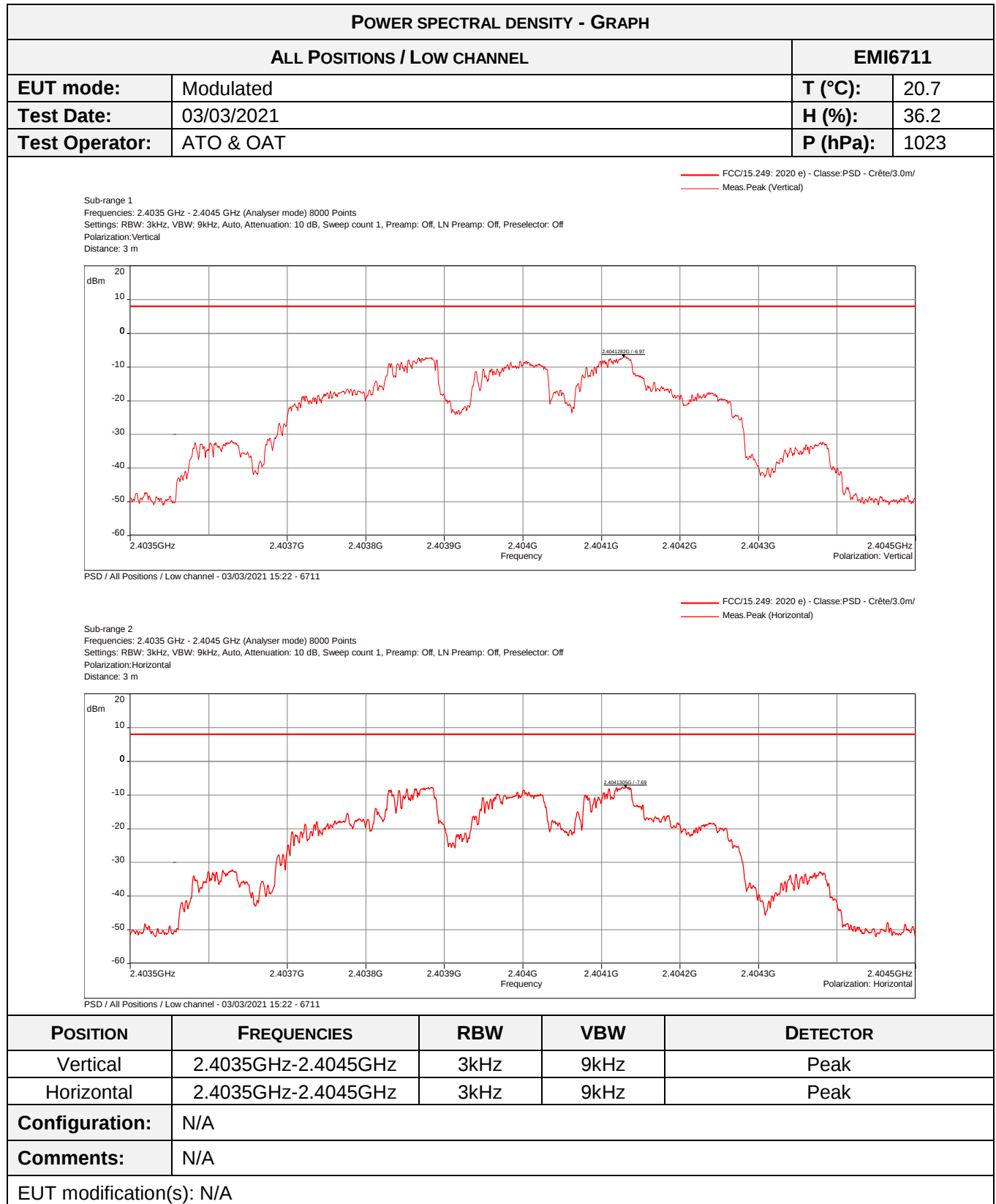


TEST SETUP PHOTO(S) - POSITION 3

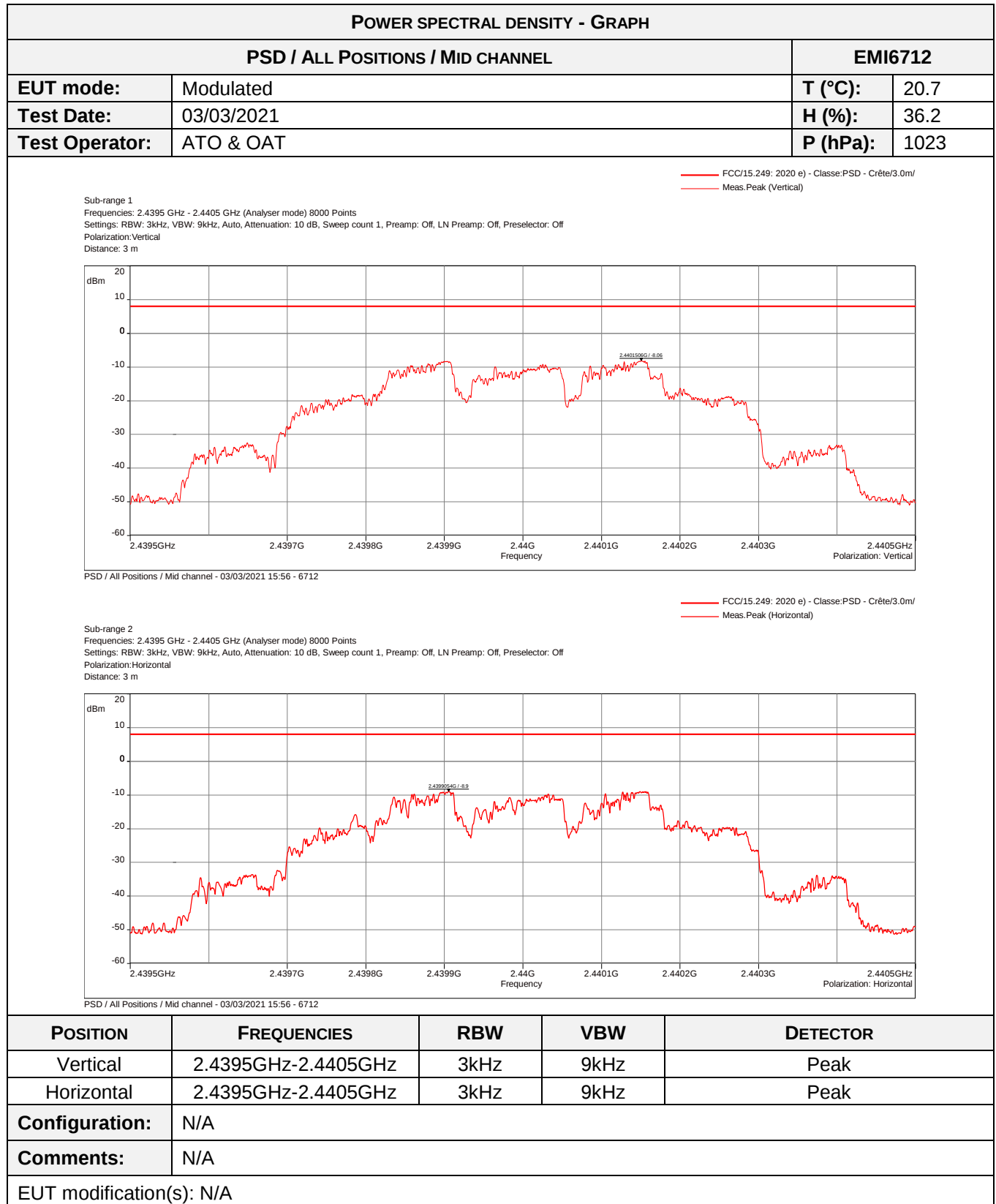


TEST SETUP PHOTO(S) – PSD

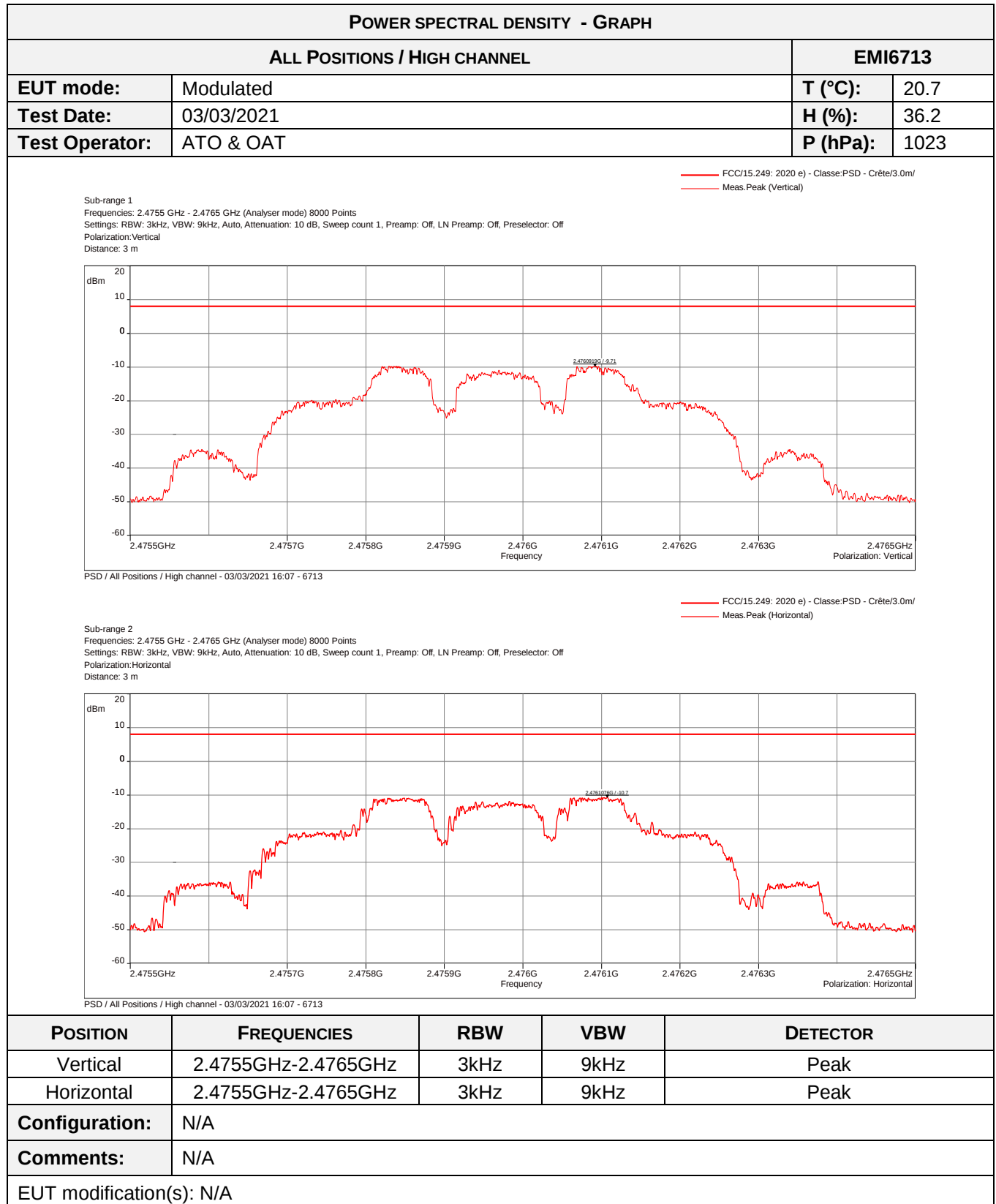




POWER SPECTRAL DENSITY - TABULATED RESULTS			
ALL POSITIONS / LOW CHANNEL			EMI6703
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
2404.12	Vertical	-6.97	8
2404.13	Horizontal	-7.69	8



POWER SPECTRAL DENSITY - TABULATED RESULTS			
PSD / ALL POSITIONS / MID CHANNEL			EMI6704
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
2440.15	Vertical	-9.22	8
2440.14	Horizontal	-8.42	8



POWER SPECTRAL DENSITY - TABULATED RESULTS			
ALL POSITIONS / HIGH CHANNEL			EMI6705
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)
2476.09	Vertical	-9.71	8
2476.10	Horizontal	-10.7	8

8.7. Transmitter radiated spurious emissions at frequencies <30MHz

Reference standard:	FCC part 15 Radio part 15.247 and RSS-247
Test method:	FCC part 15.109, 15.209, 15.205, 15.215 RSS-247, CNR Gen
General test setup: 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
Tx Mode / Low channel / 0° - Position 1	9kHz-30MHz	15.209	EMI5210	PASS
Tx Mode / Low channel / 45° - Position 1	9kHz-30MHz	15.209	EMI5211	PASS
Tx Mode / Low channel / 90° - Position 1	9kHz-30MHz	15.209	EMI5212	PASS
Tx Mode / Low channel / 0° - Position 2	9kHz-30MHz	15.209	EMI5213	PASS
Tx Mode / Low channel / 45° - Position 2	9kHz-30MHz	15.209	EMI5214	PASS
Tx Mode / Low channel / 90° - Position 2	9kHz-30MHz	15.209	EMI5215	PASS
Tx Mode / Low channel / 0° - Position 3	9kHz-30MHz	15.209	EMI5216	PASS
Tx Mode / Low channel / 45° - Position 3	9kHz-30MHz	15.209	EMI5217	PASS
Tx Mode / Low channel / 90° - Position 3	9kHz-30MHz	15.209	EMI5218	PASS
Tx Mode / High channel / 0° - Position 1	9kHz-30MHz	15.209	EMI5219	PASS
Tx Mode / High channel / 45° - Position 1	9kHz-30MHz	15.209	EMI5220	PASS
Tx Mode / High channel / 90° - Position 1	9kHz-30MHz	15.209	EMI5221	PASS
Tx Mode / High channel / 0° - Position 2	9kHz-30MHz	15.209	EMI5222	PASS
Tx Mode / High channel / 45° - Position 2	9kHz-30MHz	15.209	EMI5223	PASS
Tx Mode / High channel / 90° - Position 2	9kHz-30MHz	15.209	EMI5224	PASS
Tx Mode / High channel / 0° - Position 3	9kHz-30MHz	15.209	EMI5225	PASS
Tx Mode / High channel / 45° - Position 3	9kHz-30MHz	15.209	EMI5226	PASS
Tx Mode / High channel / 90° - Position 3	9kHz-30MHz	15.209	EMI5227	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: From 9 kHz to 30MHz: limit indicated on the curves is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	Rohde & Schwarz	HFH2-Z2	5825	24/04/2020	24/06/2022
Cable	MegaPhase	N-3m	14852	29/10/2018	29/12/2020
Cable	SUCOFLEX	N-6,5m	14380	25/07/2019	25/09/2021
Cable	MegaPhase	N-8m	15813	12/11/2018	12/01/2021
Receiver	Rohde & Schwarz	FPL1003	16027	14/08/2020	14/10/2021
Shielded enclosure	COMTEST	SAC 3m	14494	02/10/2019	02/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H1	7561	25/01/2019	25/03/2021
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021

BAT-EMC software version: V3.18.0.26

Blank cells = Permanent validity

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHz - TABULATED RESULTS				
Tx MODE / LOW CHANNEL - ALL POSITIONS (OATS)				
Frequency (kHz)	Preliminary measurement (Pk) (dBμA/m)	Final measurement (Avg) (dBμA/m)	Limit Avg (dBμA/m)	Margin (Avg-Limit)
12.322	54.35	27.78	53.37	-25.59
20.533	45.52	19.24	48.94	-29.70
28.762	32.19	6.86	46.01	-39.15
45.201	31.93	5.83	42.09	-36.26
53.412	28.95	3.07	40.63	-37.56
78.063	22.47	-2.84	37.34	-40.18
86.291	20.51	-3.55	36.47	-40.02
Supplementary information: Spurious which has more than 40 dB of margin compared to the applicable limit is not necessarily reported.				

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHz - TABULATED RESULTS				
Tx MODE / HIGH CHANNEL - ALL POSITIONS (OATS)				
Frequency (kHz)	Preliminary measurement (Pk) (dBμA/m)	Final measurement (Avg) (dBμA/m)	Limit Avg (dBμA/m)	Marging (Avg-Limit)
45.201	53.52	27.12	42.08	-14.96
135.592	34.54	8.21	32.54	-24.33
225.961	6.46	3.61	28.11	-24.50
316.347	25.84	2.31	25.19	-22.88
406.837	20.09	-2.56	23.00	-25.56
Supplementary information: Spurious which has more than 30 dB of margin compared to the applicable limit is not necessarily reported. The frequency 45.201 kHz is the utile signal.				

TEST SETUP PHOTO(S) -EUT POSITIONS



TEST SETUP PHOTO(S) -EUT POSITIONS

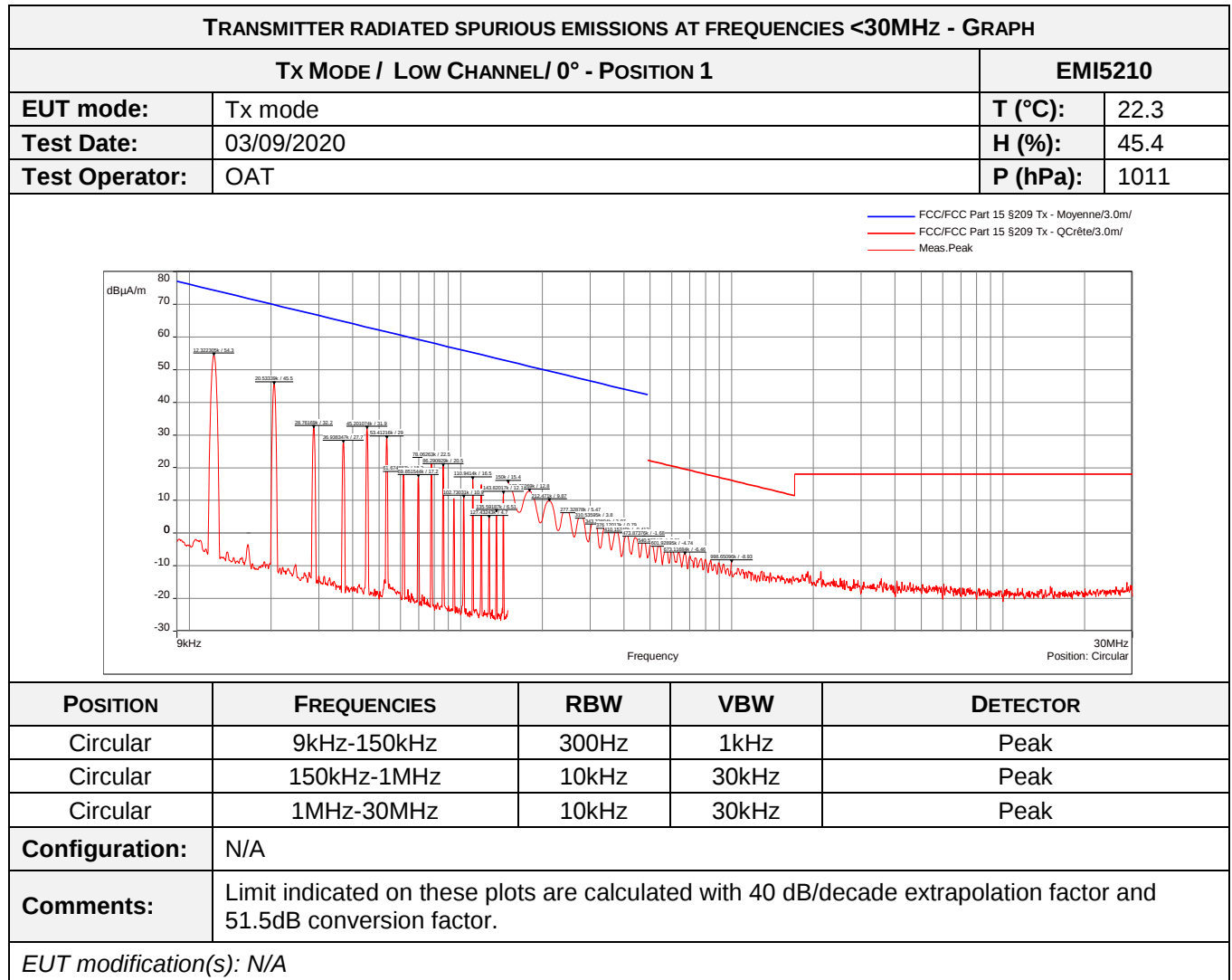


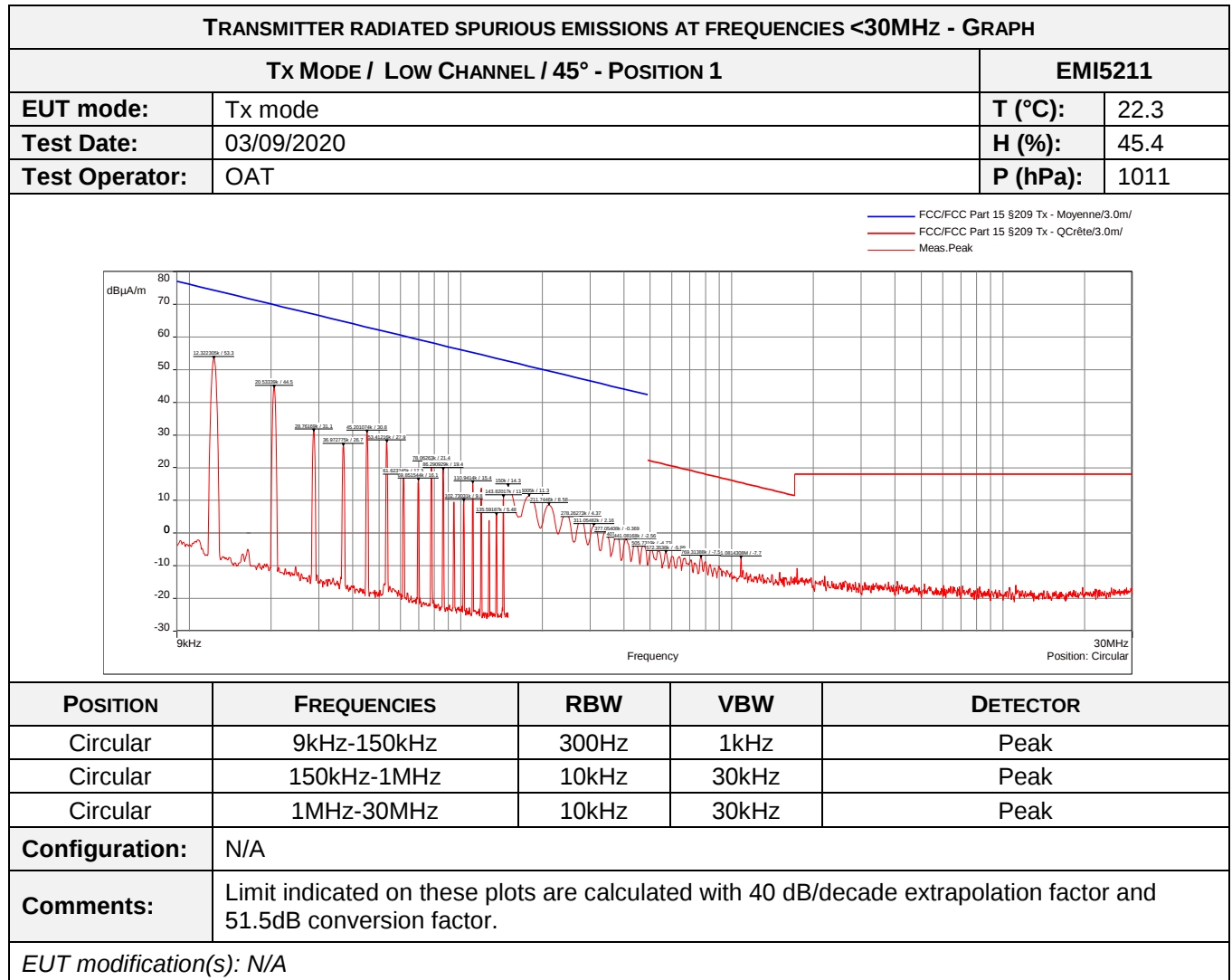
TEST SETUP PHOTO(S) – FOR PRELIMINARY MEASUREMENT

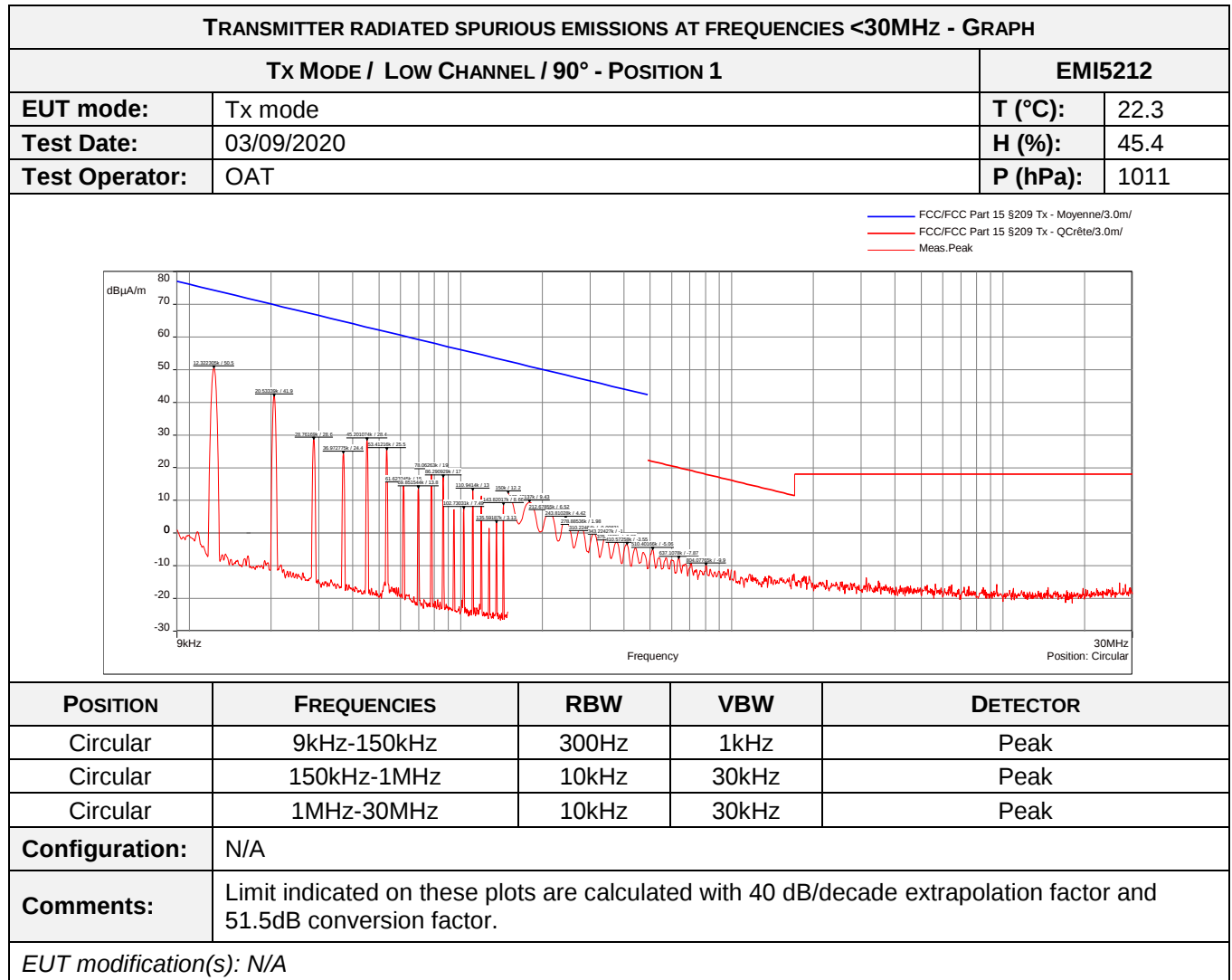


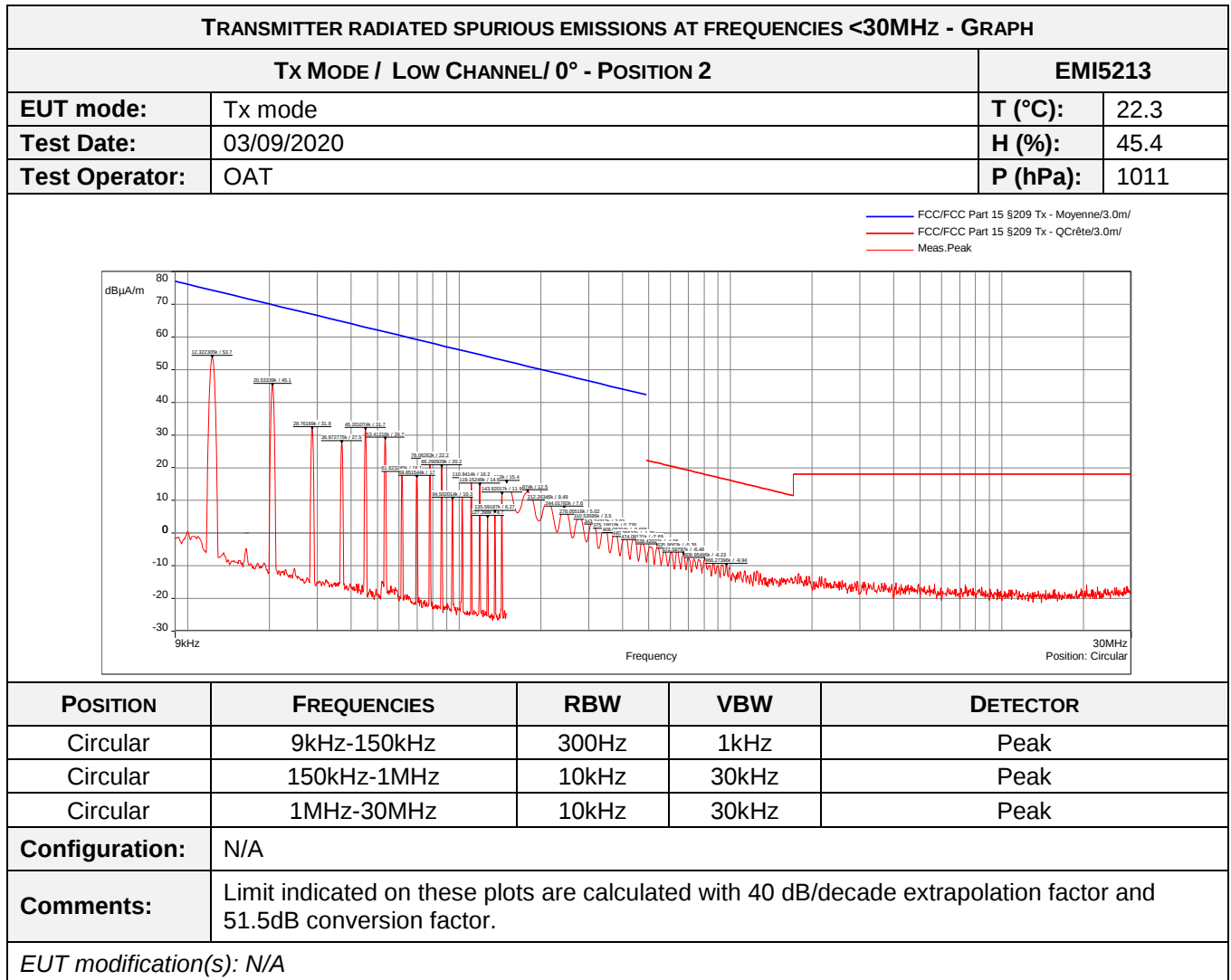
TEST SETUP PHOTO(S) - (OATS) - FOR FINAL MEASUREMENT

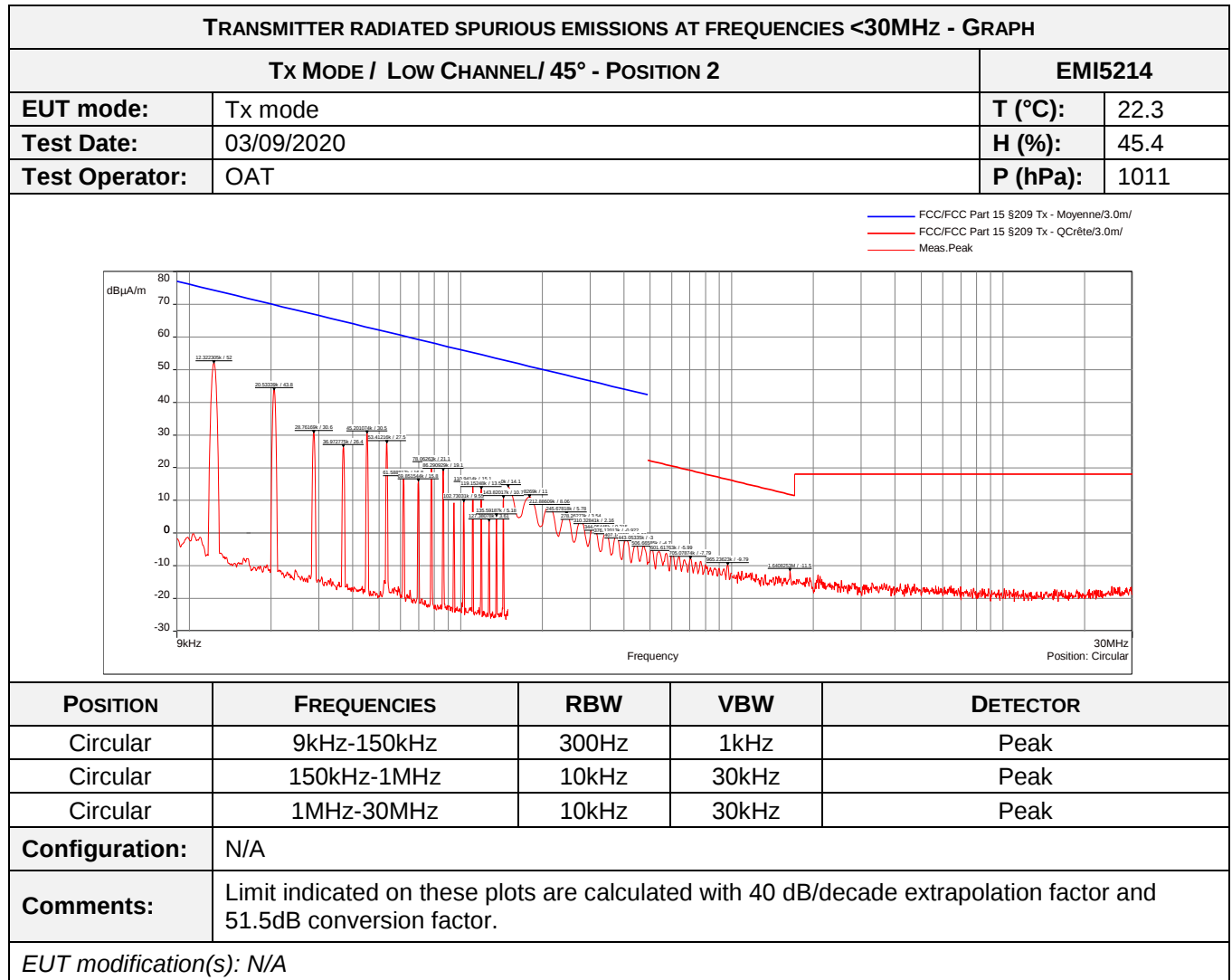


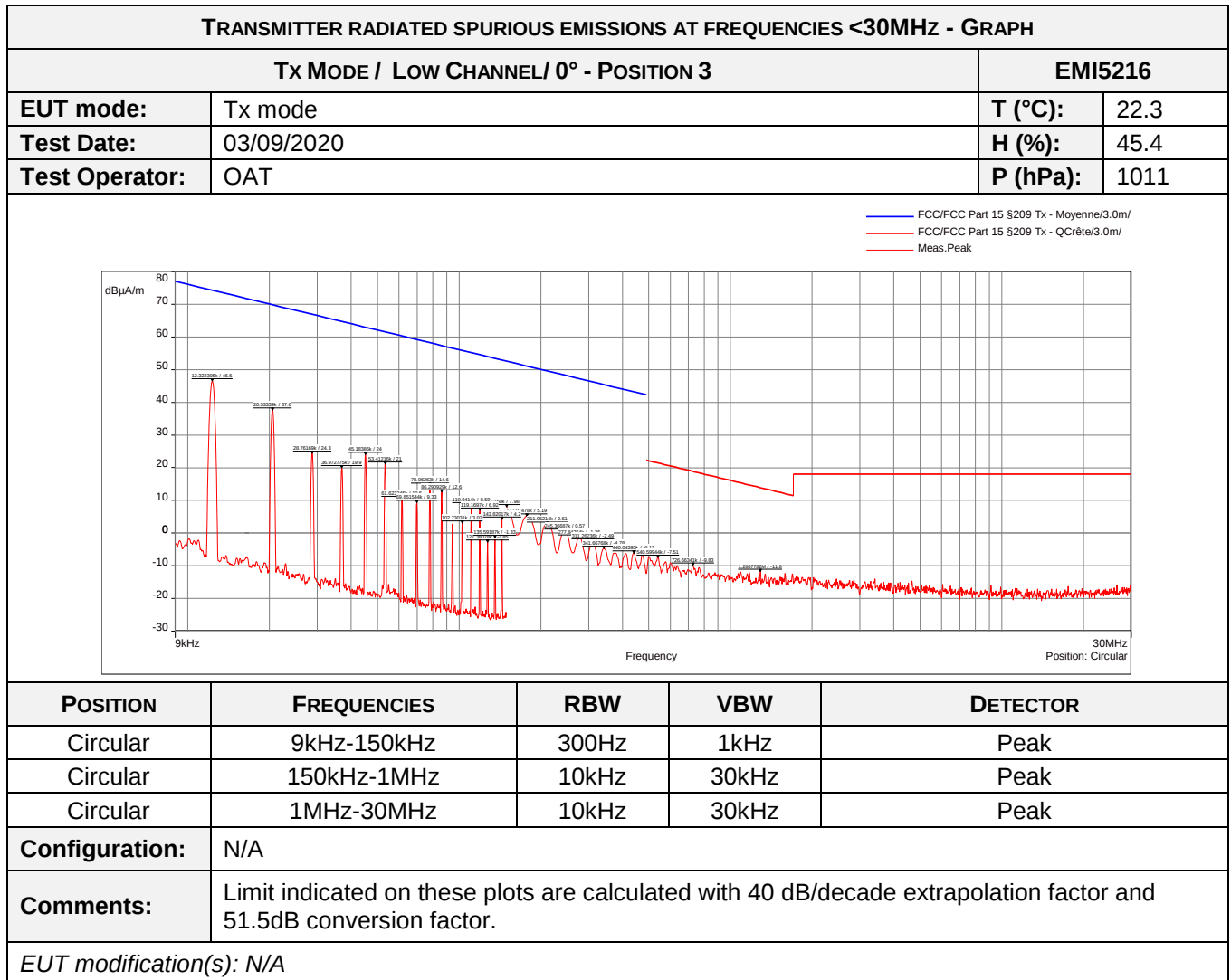


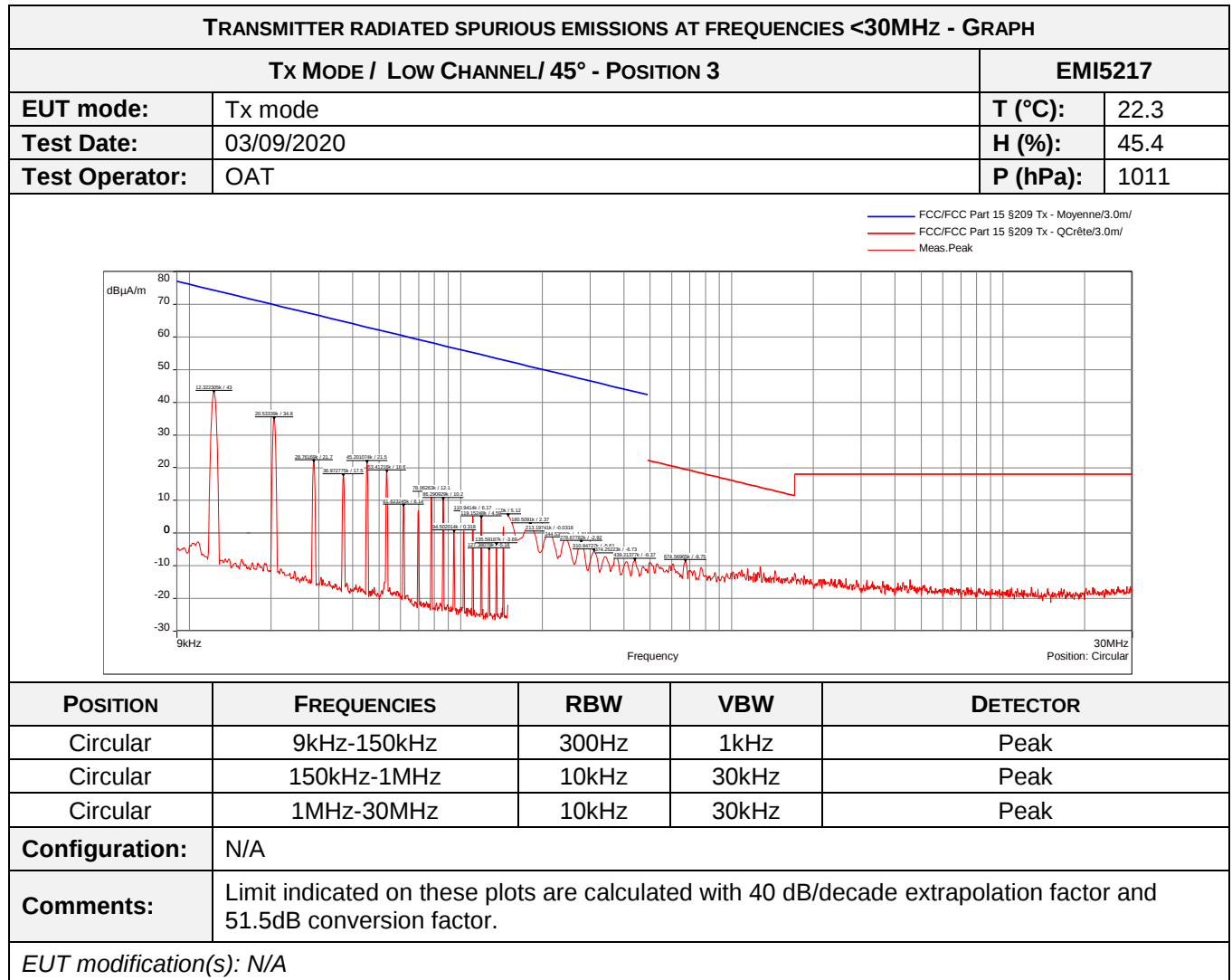


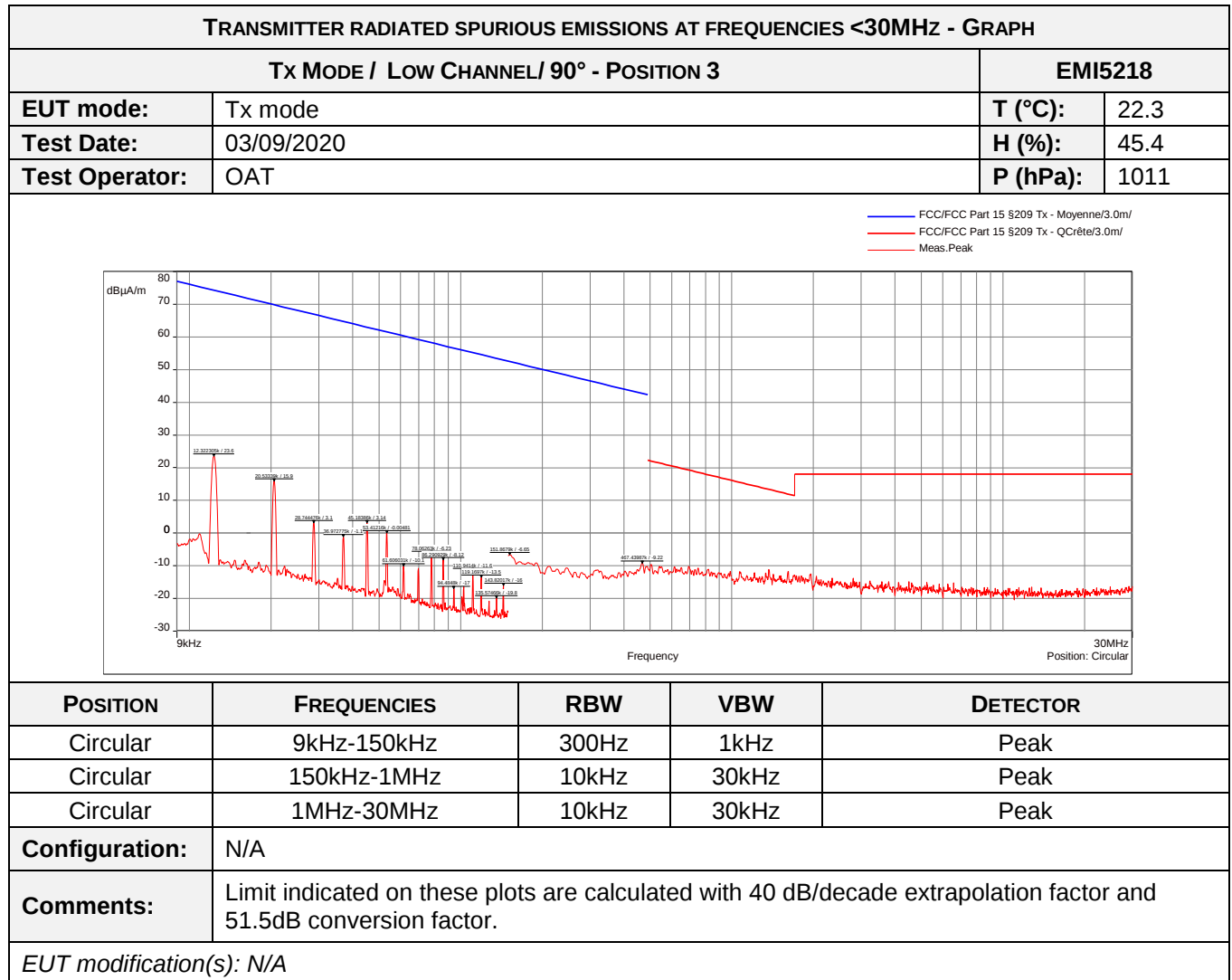


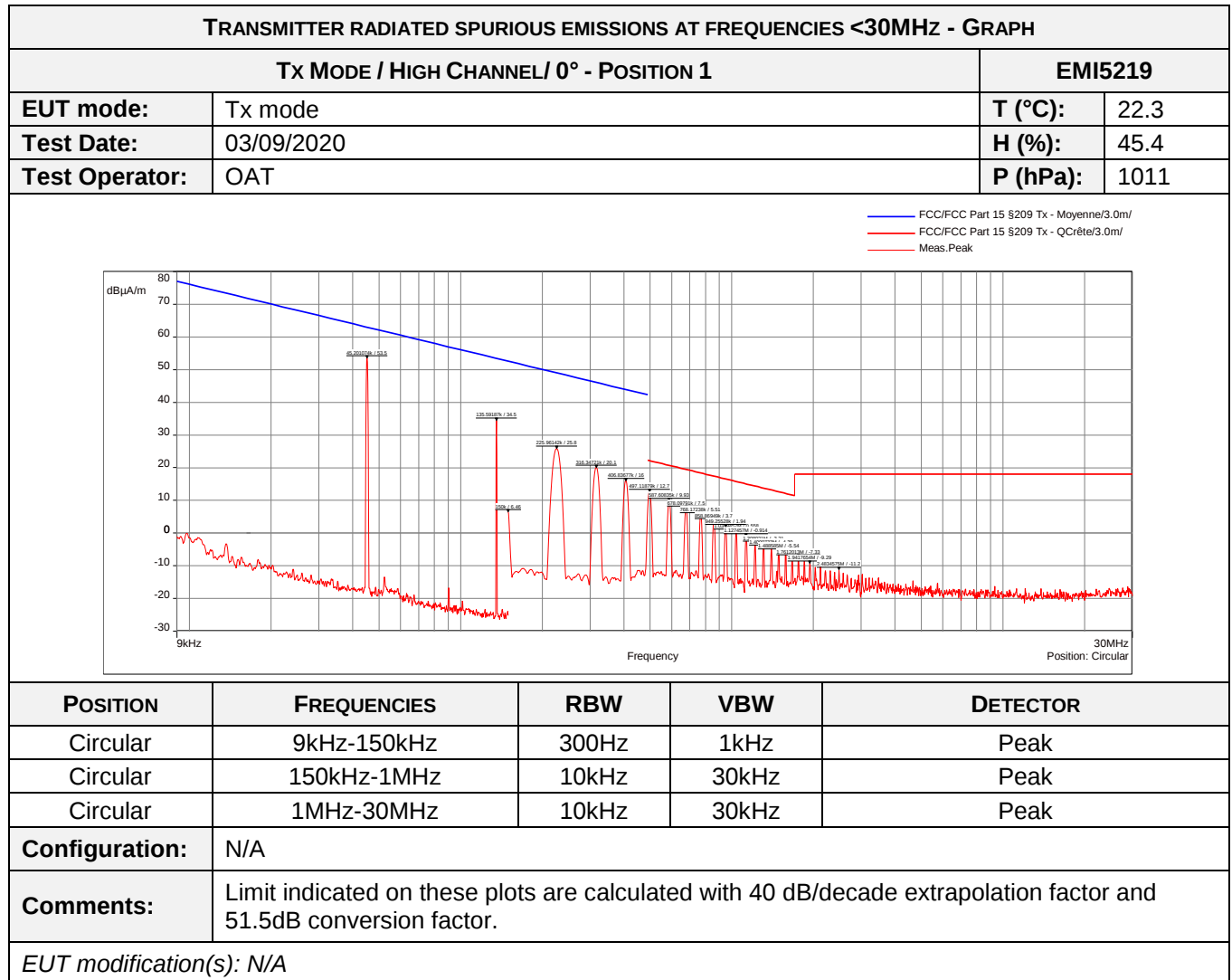


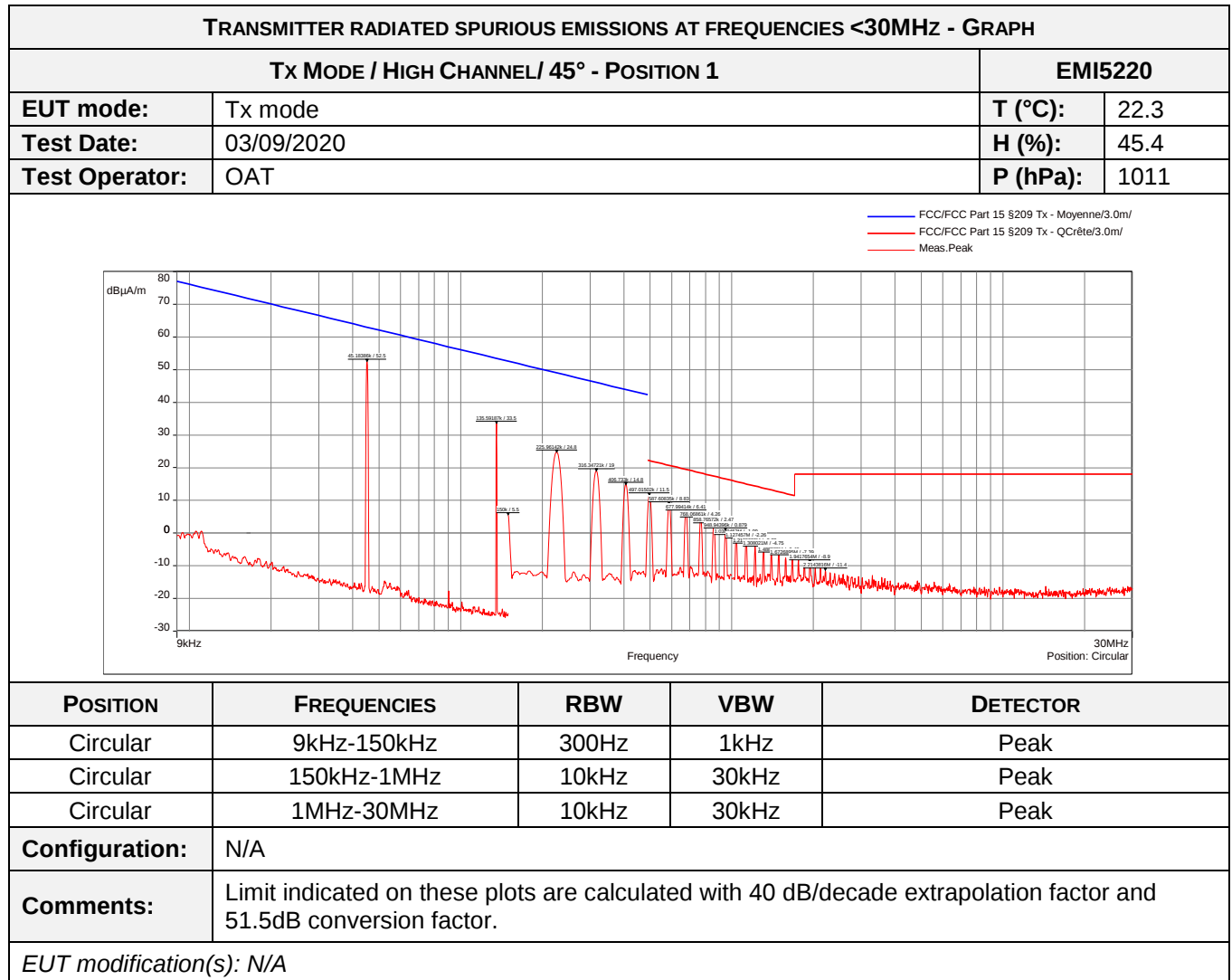


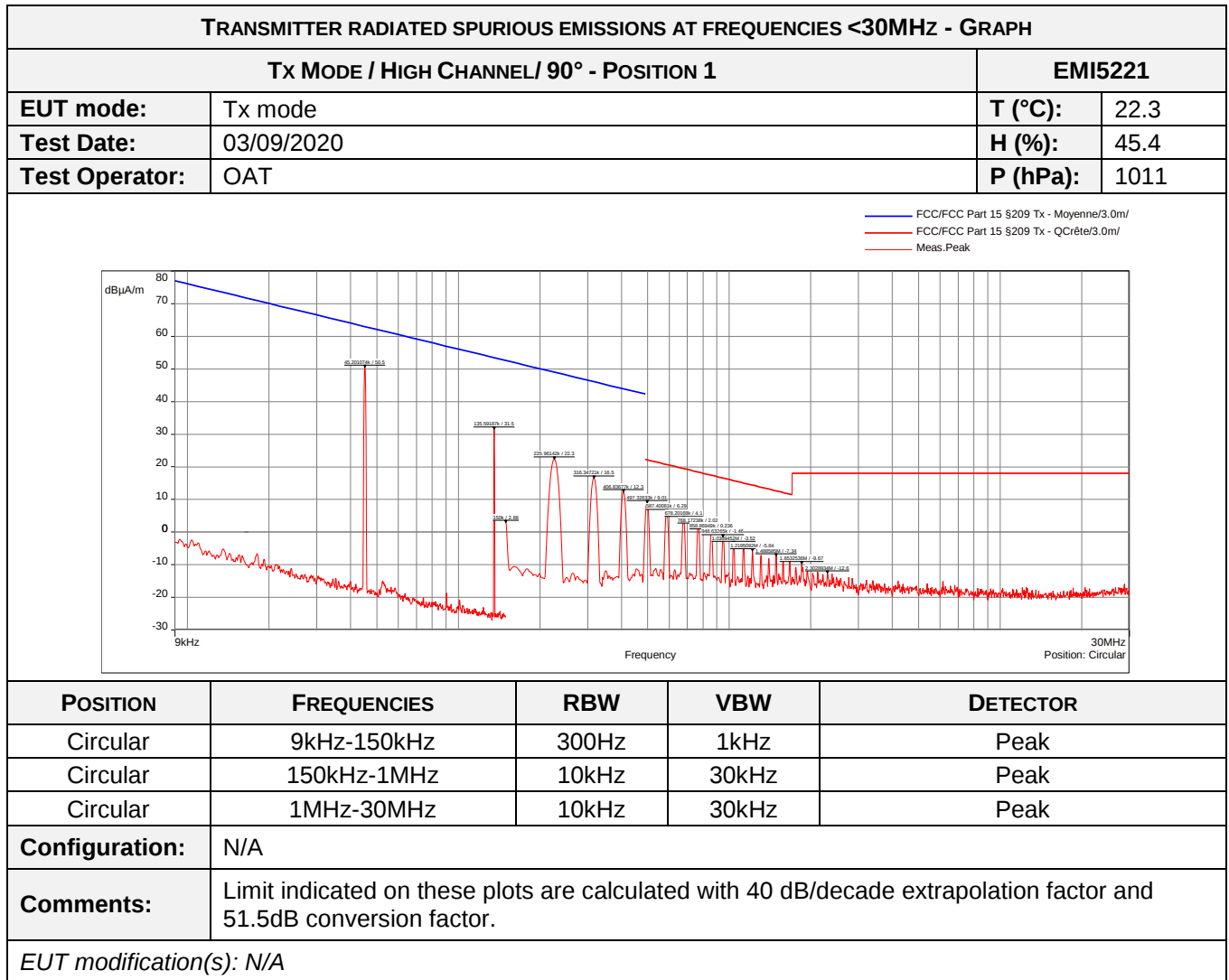


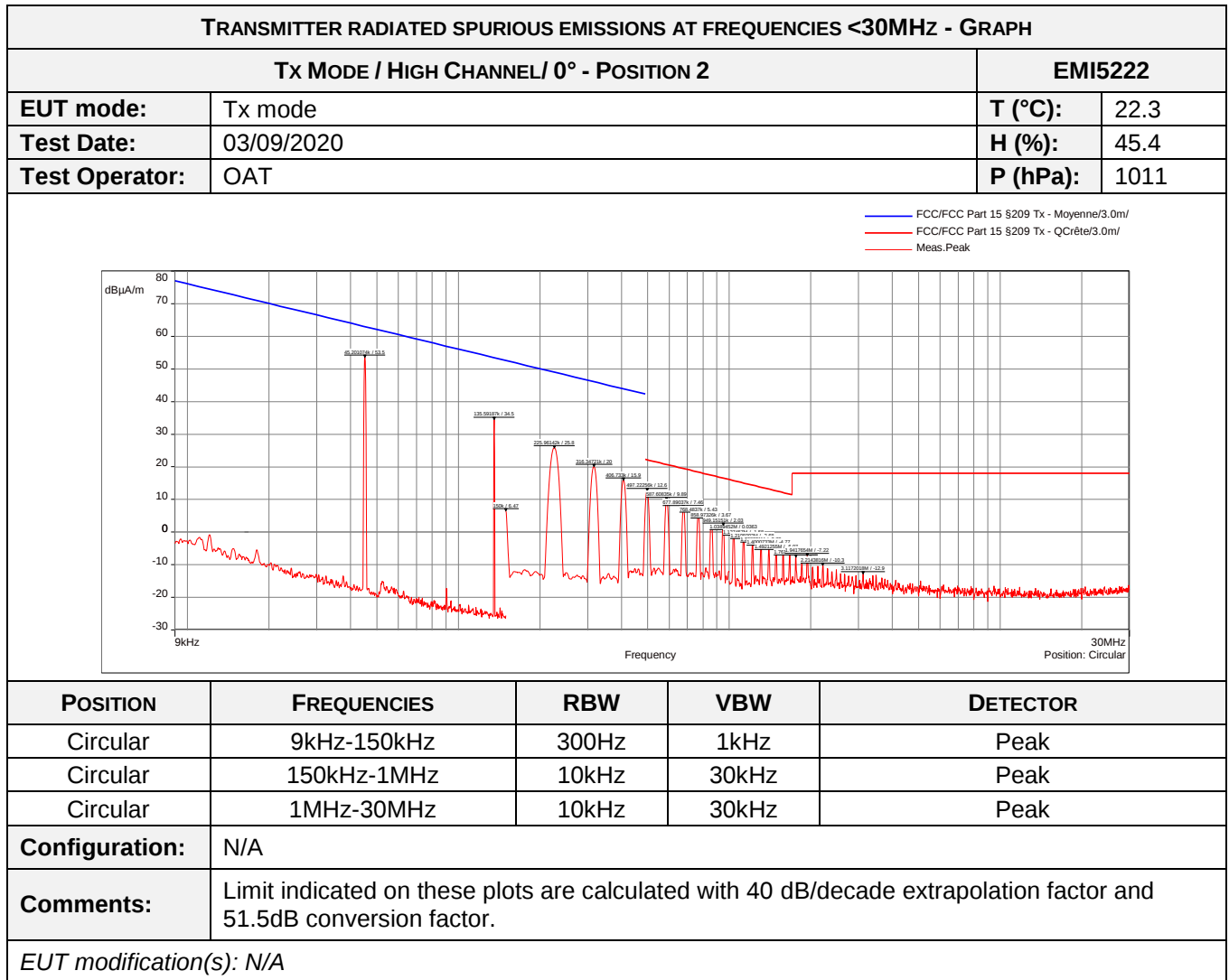


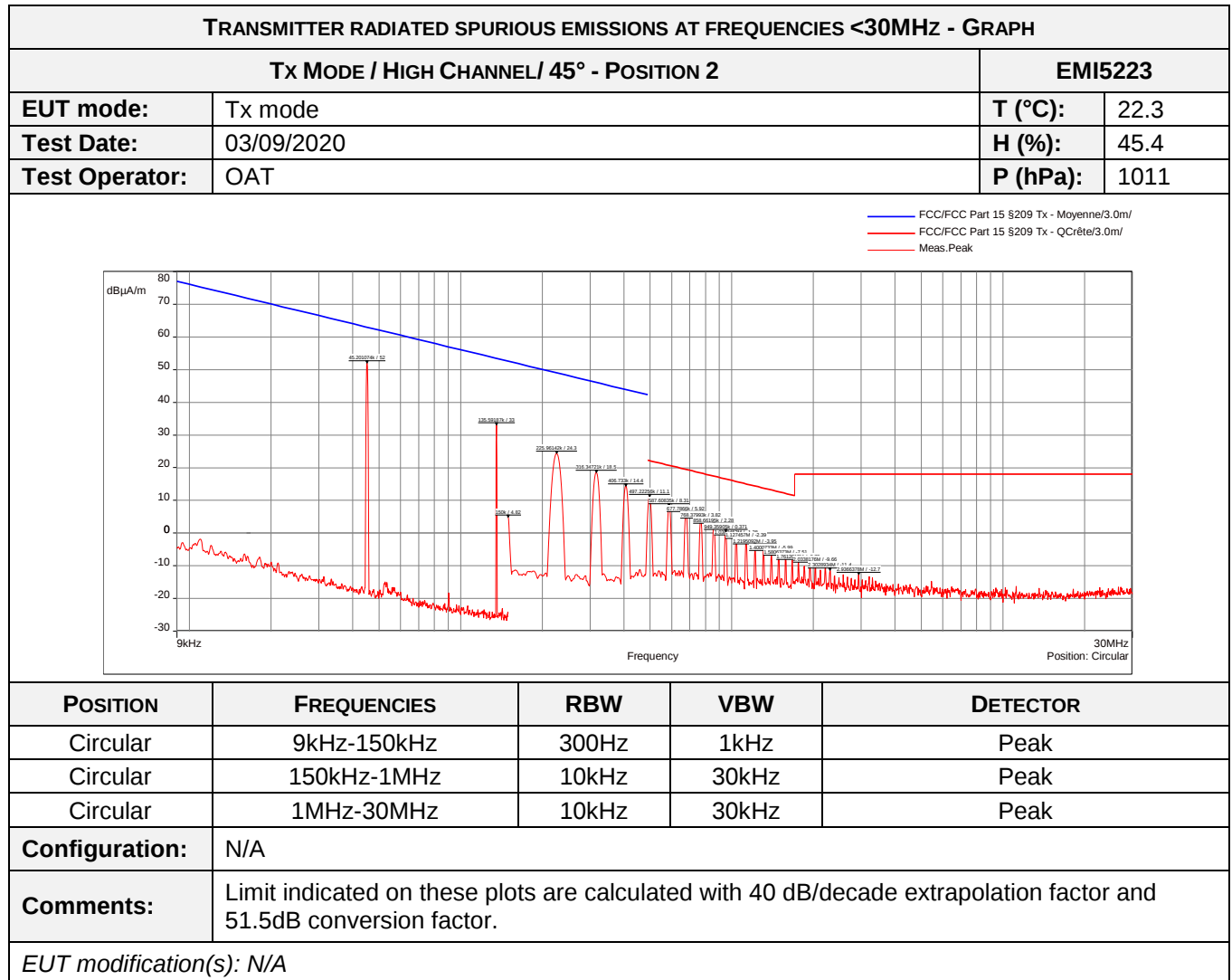


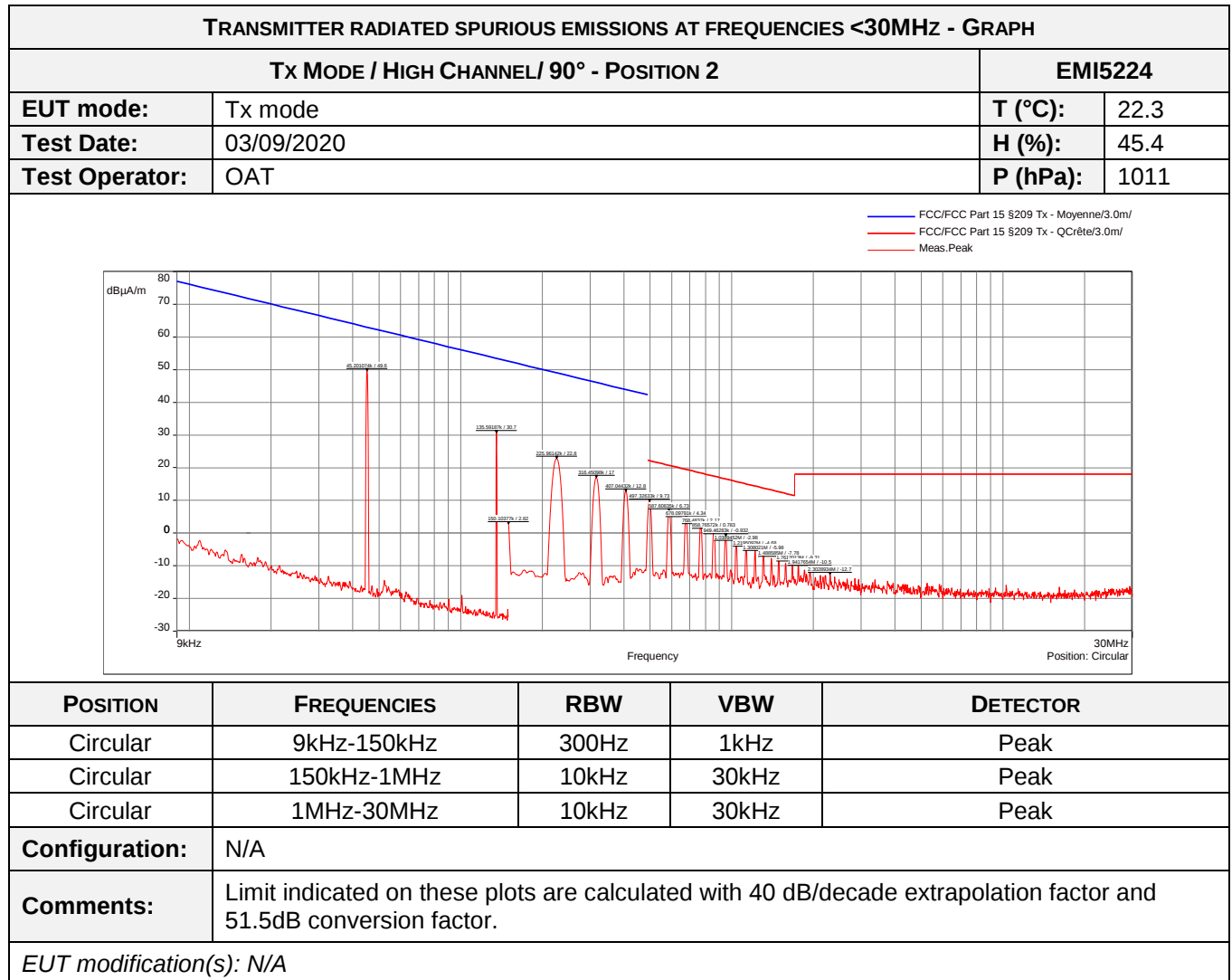


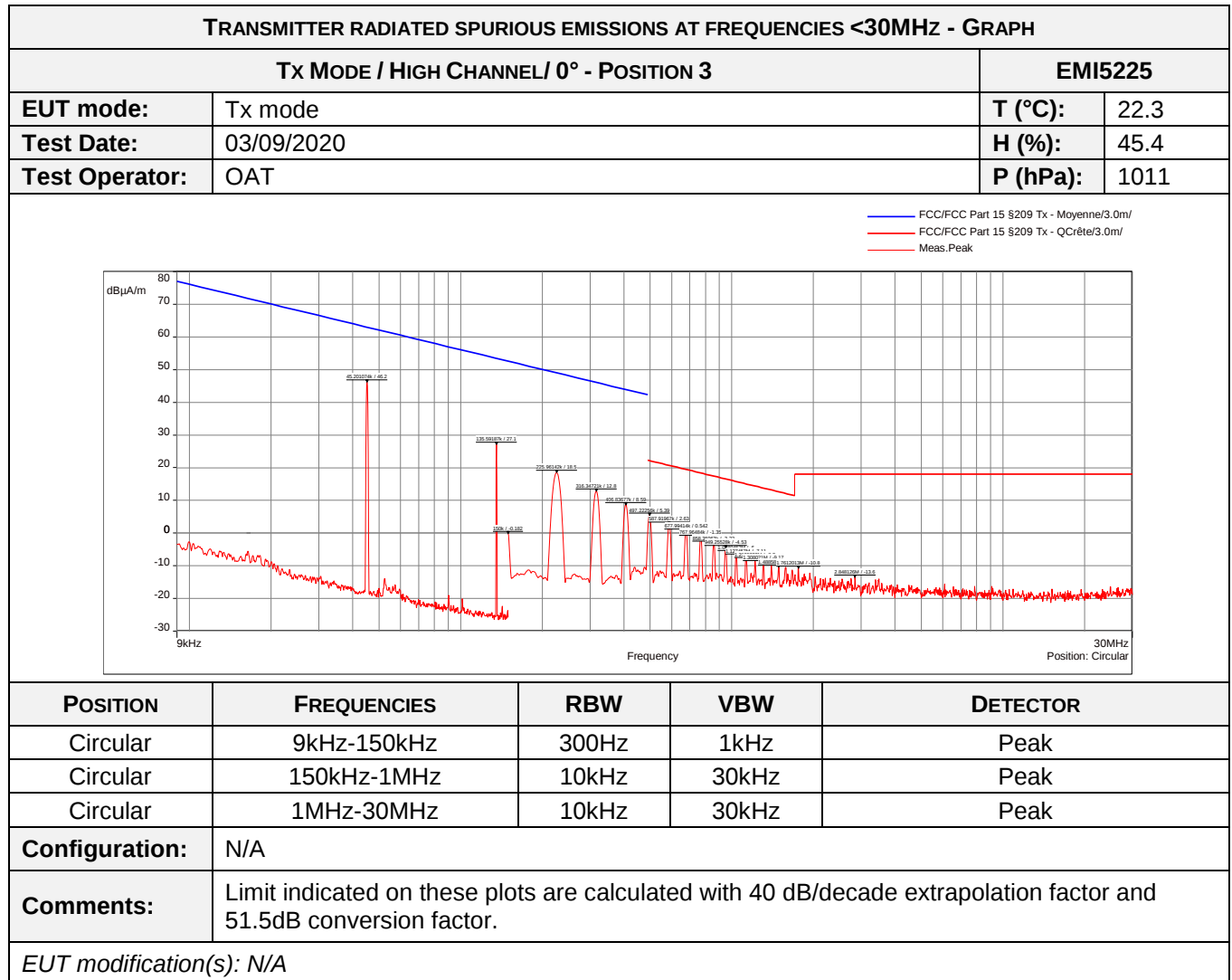


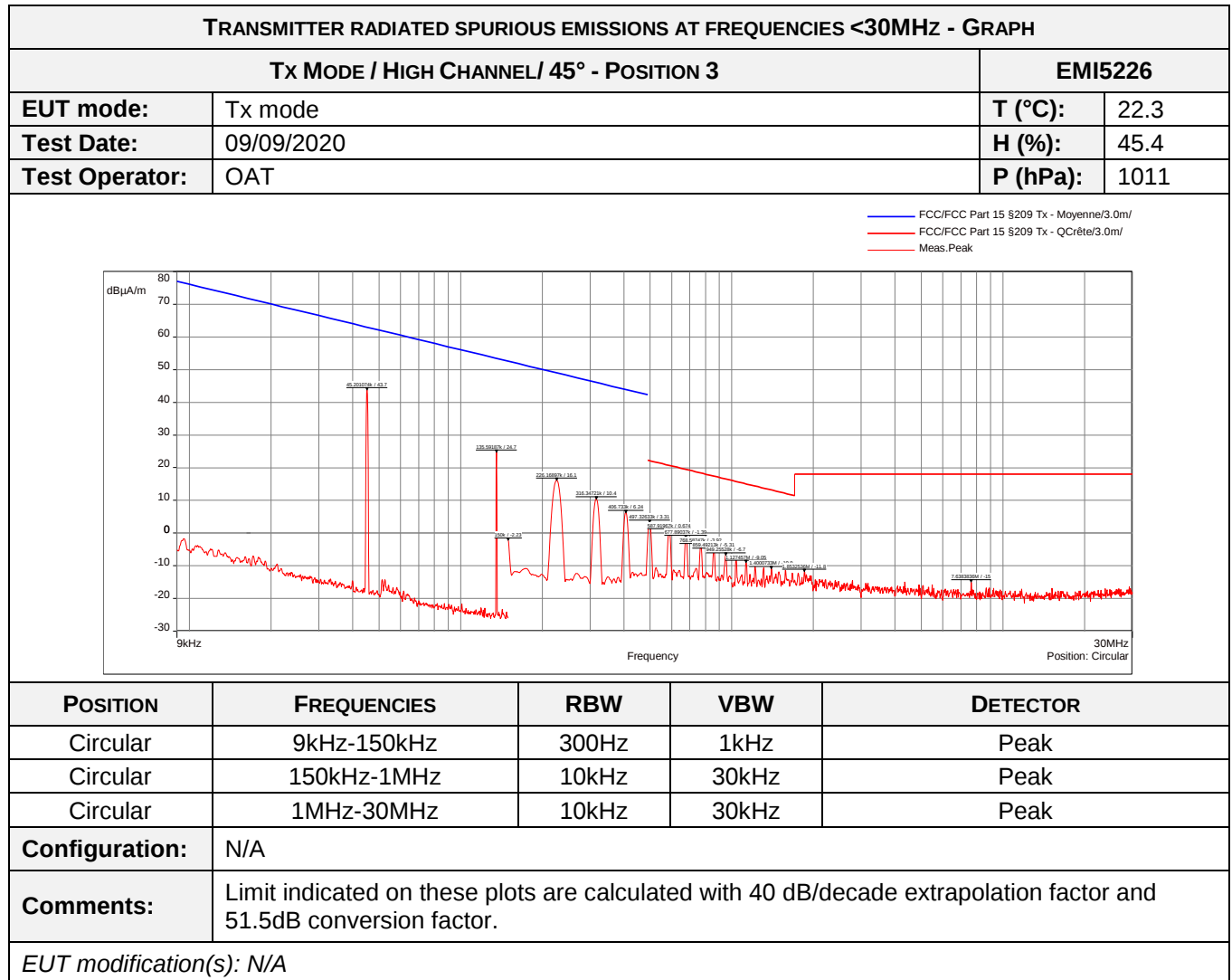


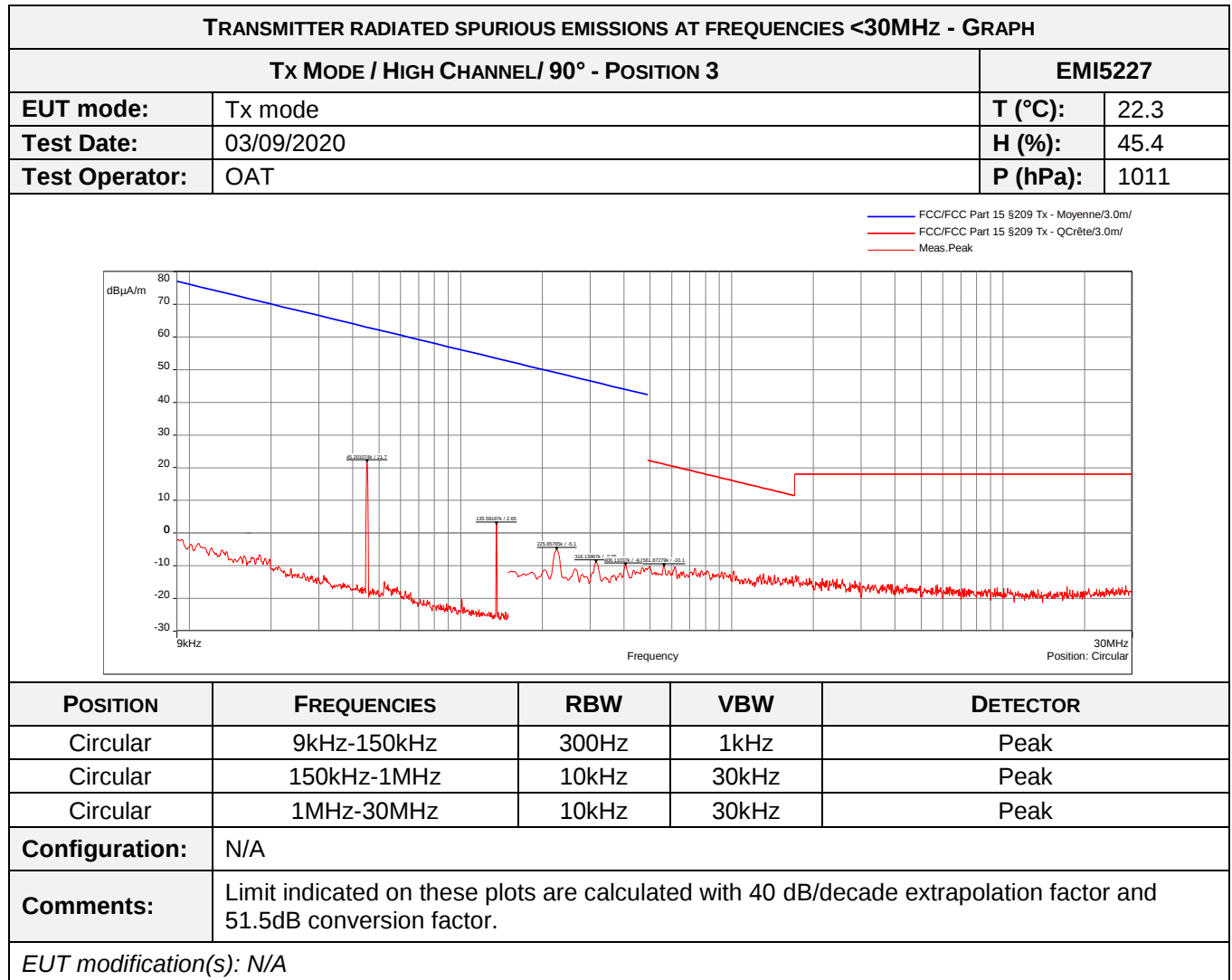












8.8. Transmitter radiated spurious emissions at frequencies >30MHz

Reference standard:	FCC part 15 Radio part 15.209 & CNR-Gen
Test method:	FCC part 15.109, 15.209, 15.205, 15.215, CNR-Gen
General test setup: 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 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
Tx mode / All Channels- All Positions	30MHz-1GHz	15.209	EMI5199	PASS
Charging + Tx mode / All Positions / All channels	30MHz-1GHz	15.209	EMI6985	PASS
Tx mode / All Positions / Low channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI6757	PASS
Tx mode / All Positions / Mid channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI6758	PASS
Tx mode / All Positions / High channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI6759	PASS
Charging + Tx mode / All Positions / Low channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI7044	PASS
Charging + Tx mode / All Positions / Mid channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI7045	PASS
Charging + Tx mode / All Positions / High channel / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI7046	PASS
Tx mode / All Positions / Low channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI6782	PASS
Tx mode / All Positions / Mid channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI6783	PASS
Tx mode / All Positions / High channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI6784	PASS
Charging + Tx mode / All Positions / Low channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI7277	PASS
Charging + Tx mode / All Positions / Mid channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI7278	PASS
Charging + Tx mode / All Positions / High channel / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI7279	PASS

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

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	24/07/2019	24/09/2022
Antenna	ETS lindgren	3160-09	14690	26/09/2017	26/05/2021
Antenna	Electro Metrics	BIA-30HF	0824	13/06/2018	13/08/2021
Antenna	Rohde & Schwarz	HL223	3126	13/06/2018	13/08/2021
Cable	MegaPhase	F135N1N28	16664	25/10/2019	25/12/2021
Cable	MegaPhase	F135N1N28	16666	25/10/2019	25/12/2021
Cable	JYE BAO	K30K30-5003-40G1	14887	25/06/2019	25/08/2021
Cable	Huber + Suhner	K-5m	14460	25/06/2019	25/08/2021
Cable	C&C	N-1.5m	10554	20/12/2019	20/02/2022
Cable	/	N-1m	3625	27/01/2021	27/03/2023
Cable	/	N-1m	3626	27/01/2021	27/03/2023
Cable	SUCOFLEX	N-3m	14379	25/06/2019	25/08/2021
Cable	MegaPhase	N-3m	14852	29/10/2018	29/12/2020
Cable	MegaPhase	N-3m	14852	30/10/2018	30/06/2021
Cable	SUCOFLEX	N-5,5m	14381	25/06/2019	25/08/2021
Cable	SUCOFLEX	N-6,5m	14380	25/07/2019	25/09/2021
Cable	MegaPhase	N-8m	15813	12/11/2018	12/01/2021
Cable	MegaPhase	N-8m	15813	14/01/2021	14/03/2023
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Cable	MegaPhase	TM18-N1N1-118	12841	14/08/2020	14/10/2022
Cable	MegaPhase	TM18-N1N1-118	12842	02/12/2020	02/02/2023
Filter	Micro-Tronics	HPM 15162	10273	12/01/2019	12/03/2022
Filter	Micro-Tronics	HPM18865	12843	09/06/2018	09/08/2021
Filter	Wainwright Instruments	WRCGV 2402/2480- 2380/2500- 40/10EE-200W	9771	08/01/2019	08/03/2022
Preamplifier	Techniwave	APS16-0087	14040	02/12/2020	02/02/2022
Preamplifier	Wright Technologie	ASL40-B3015	14851	12/08/2020	12/10/2021
Preamplifier	IMPULSE	CA118-546ACN	9169	13/01/2021	13/03/2022
Preamplifier	Mini-circuit	ZFL-1000LN	1321	25/06/2019	25/02/2021
Receiver	Agilent Technologies	E4440A	5824	22/10/2020	22/12/2022
Receiver	Rohde & Schwarz	ESI	9704	03/03/2020	03/05/2021
Receiver	Rohde & Schwarz	FPL1003	16027	14/08/2020	14/10/2021
Receiver	Rohde & Schwarz	FSW43	14830	29/07/2020	29/09/2021
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2022
Shielded enclosure	COMTEST	SAC 3m	14494	02/10/2019	02/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H1	7562	25/01/2019	25/03/2021
Thermohygrometer	Testo	608-H2	12269	07/05/2020	07/07/2022
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021

BAT-EMC software version: V3.18.0.26

Blank cells = Permanent validity

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHz- TABULATED RESULTS					
CHARGING + TX MODE / ALL POSITIONS / ALL CHANNELS				EMI6985	
Frequency MHz	Polarization	Level peak dBμV/m	Level Qpeak dBμV/m	Limit dBμV/m	Margin dB
30.02	Verticale	30.35	22.83	40	-17.17
30.22	Verticale	30.68	23.92	40	-16.08
30.41	Verticale	32.3	24.82	40	-15.18
30.58	Verticale	33.6	25.86	40	-14.14
30.75	Verticale	34.93	26.79	40	-13.21
30.85	Verticale	34.97	27.41	40	-12.59
31.56	Verticale	40.68	31.48	40	-8.52
31.80	Verticale	41.73	32.74	40	-7.26
32.16	Verticale	43.15	33.91	40	-6.09
32.38	Verticale	42.85	34.27	40	-5.73
32.53	Verticale	42.24	33.72	40	-6.28
32.64	Verticale	42.13	33.87	40	-6.13
32.89	Verticale	41.2	32.79	40	-7.21
32.98	Verticale	41.08	32.87	40	-7.13
33.06	Verticale	41.24	32.93	40	-7.07
33.21	Verticale	40.3	32.4	40	-7.6
33.54	Verticale	40.5	32.75	40	-7.25
33.66	Verticale	40.75	33.51	40	-6.49
33.91	Verticale	41.48	33.4	40	-6.6
34.23	Verticale	41.42	33.94	40	-6.06
34.57	Verticale	42.24	34.98	40	-5.02
34.66	Verticale	42.09	35.73	40	-4.27
34.95	Verticale	41.82	36.04	40	-3.96
35.15	Verticale	42.28	37.01	40	-2.99
35.56	Verticale	41.46	36.59	40	-3.41
35.93	Verticale	41.11	35.92	40	-4.08
36.39	Verticale	40.38	34.35	40	-5.65
36.77	Verticale	36.72	30.1	40	-9.9
37.36	Verticale	32.98	26.37	40	-13.63
37.48	Verticale	33.07	26.5	40	-13.5
37.68	Verticale	32.45	25.54	40	-14.46
38.06	Verticale	31.27	23.31	40	-16.69
38.19	Verticale	29.51	23.05	40	-16.95
38.40	Verticale	31.28	23.86	40	-16.14
38.48	Verticale	31.03	23.93	40	-16.07
38.70	Verticale	32.9	24.77	40	-15.23
38.82	Verticale	31.52	24.43	40	-15.57
38.89	Verticale	31.63	24.47	40	-15.53
39.11	Verticale	31.6	24.45	40	-15.55
39.23	Verticale	31.11	24.73	40	-15.27
39.62	Verticale	33.46	25.85	40	-14.15
39.74	Verticale	32.88	25.91	40	-14.09
39.89	Verticale	34.14	26.32	40	-13.68
40.07	Verticale	34.19	27.11	40	-12.89
40.30	Verticale	36.58	29.28	40	-10.72

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ- TABULATED RESULTS					
CHARGING + TX MODE / ALL POSITIONS / ALL CHANNELS				EMI6985	
40.52	Verticale	37.77	30.94	40	-9.06
40.88	Verticale	40.18	34.05	40	-5.95
41.27	Verticale	42.32	37.19	40	-2.81
41.41	Verticale	43	37.84	40	-2.16
41.65	Verticale	44.43	38.96	40	-1.04
41.73	Verticale	44.48	39.02	40	-0.98
42.12	Verticale	43.77	38.31	40	-1.69
42.28	Verticale	43.24	37.73	40	-2.27
42.39	Verticale	42.43	37.05	40	-2.95
42.79	Verticale	39.5	34.23	40	-5.77
43.04	Verticale	38.39	33.39	40	-6.61
43.69	Verticale	36.65	31.26	40	-8.74
43.79	Verticale	36.45	30.95	40	-9.05
44.16	Verticale	37.44	30.87	40	-9.13
44.26	Verticale	36.63	30.74	40	-9.26
44.60	Verticale	36.59	30.14	40	-9.86
45.42	Verticale	34.02	27.34	40	-12.66
45.73	Verticale	32.37	25.72	40	-14.28
46.02	Verticale	31.64	25	40	-15
46.13	Verticale	31.43	24.8	40	-15.2
46.27	Verticale	31.78	24.95	40	-15.05
46.51	Verticale	31.67	24.77	40	-15.23
46.63	Verticale	31.6	24.66	40	-15.34
46.93	Verticale	31.02	24.09	40	-15.91
61.57	Verticale	32.62	27.08	40	-12.92
61.66	Verticale	32.83	27.14	40	-12.86
61.93	Verticale	33.14	27.32	40	-12.68
62.08	Verticale	33.07	27.39	40	-12.61
62.34	Verticale	33.31	27.49	40	-12.51
62.44	Verticale	32.94	27.48	40	-12.52
62.54	Verticale	32.95	27.53	40	-12.47
62.68	Verticale	33.02	27.58	40	-12.42
62.75	Verticale	33.5	27.67	40	-12.33
62.86	Verticale	33.59	27.74	40	-12.26
62.98	Verticale	33.44	27.93	40	-12.07
63.15	Verticale	33.93	28.13	40	-11.87
63.41	Verticale	33.86	28.48	40	-11.52
63.56	Verticale	33.87	28.66	40	-11.34
63.75	Verticale	34.18	28.96	40	-11.04
63.87	Verticale	34.28	29.05	40	-10.95
63.99	Verticale	35.31	29.23	40	-10.77
64.28	Verticale	34.6	29.38	40	-10.62
64.53	Verticale	34.45	29.47	40	-10.53
64.60	Verticale	34.23	29.44	40	-10.56
64.68	Verticale	34.65	29.42	40	-10.58
64.90	Verticale	33.98	29.28	40	-10.72
65.28	Verticale	33.82	29.08	40	-10.92
65.69	Verticale	33.61	29.03	40	-10.97
65.86	Verticale	33.22	29.02	40	-10.98

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHZ- TABULATED RESULTS					
CHARGING + TX MODE / ALL POSITIONS / ALL CHANNELS				EMI6985	
66.20	Verticale	33.43	29.06	40	-10.94
66.28	Verticale	33.08	29.11	40	-10.89
66.40	Verticale	33.61	29.12	40	-10.88
66.69	Verticale	33.55	29.29	40	-10.71
66.88	Verticale	33.47	29.36	40	-10.64
67.08	Verticale	33.4	29.45	40	-10.55
67.34	Verticale	33.66	29.6	40	-10.4
67.51	Verticale	33.89	29.69	40	-10.31
67.56	Verticale	33.97	29.74	40	-10.26
67.71	Verticale	33.44	29.77	40	-10.23
67.76	Verticale	33.73	29.76	40	-10.24
150.95	Horizontale	32.06	23.76	43.5	-19.74
151.80	Horizontale	33.73	25.1	43.5	-18.4
152.02	Horizontale	34.76	25.48	43.5	-18.02
152.24	Horizontale	34.19	25.92	43.5	-17.58
152.50	Horizontale	34.59	26.51	43.5	-16.99
152.60	Horizontale	35.59	26.67	43.5	-16.83
152.65	Horizontale	34.7	26.68	43.5	-16.82
152.75	Horizontale	35.24	26.95	43.5	-16.55
152.79	Horizontale	34.44	26.92	43.5	-16.58
152.89	Horizontale	35.53	27.18	43.5	-16.32
152.97	Horizontale	35.07	27.3	43.5	-16.2
153.08	Horizontale	35.73	27.41	43.5	-16.09
153.19	Horizontale	35.49	27.67	43.5	-15.83
153.23	Horizontale	35.99	27.77	43.5	-15.73
153.33	Horizontale	35.74	27.98	43.5	-15.52
153.43	Horizontale	36.94	28.09	43.5	-15.41
153.45	Horizontale	35.43	28.13	43.5	-15.37
153.57	Horizontale	37.37	28.24	43.5	-15.26
153.59	Horizontale	36.41	28.34	43.5	-15.16
153.72	Horizontale	37.12	28.54	43.5	-14.96
153.89	Horizontale	36.85	28.68	43.5	-14.82
153.91	Horizontale	36.98	28.74	43.5	-14.76
154.04	Horizontale	36.79	28.94	43.5	-14.56
154.11	Horizontale	36.84	28.95	43.5	-14.55
154.13	Horizontale	37.47	29.07	43.5	-14.43
154.21	Horizontale	36.97	29.02	43.5	-14.48
154.28	Horizontale	37.65	29.26	43.5	-14.24
154.37	Horizontale	37.21	29.33	43.5	-14.17
154.45	Horizontale	37.6	29.53	43.5	-13.97
154.49	Horizontale	37.8	29.51	43.5	-13.99
154.64	Horizontale	37.7	29.72	43.5	-13.78
154.76	Horizontale	37.98	29.82	43.5	-13.68
154.78	Horizontale	38.02	29.82	43.5	-13.68
154.98	Horizontale	38.59	30.14	43.5	-13.36
155.06	Horizontale	38.54	30.24	43.5	-13.26
155.18	Horizontale	39.22	30.31	43.5	-13.19
155.32	Horizontale	38.68	30.41	43.5	-13.09
155.44	Horizontale	38.51	30.53	43.5	-12.97

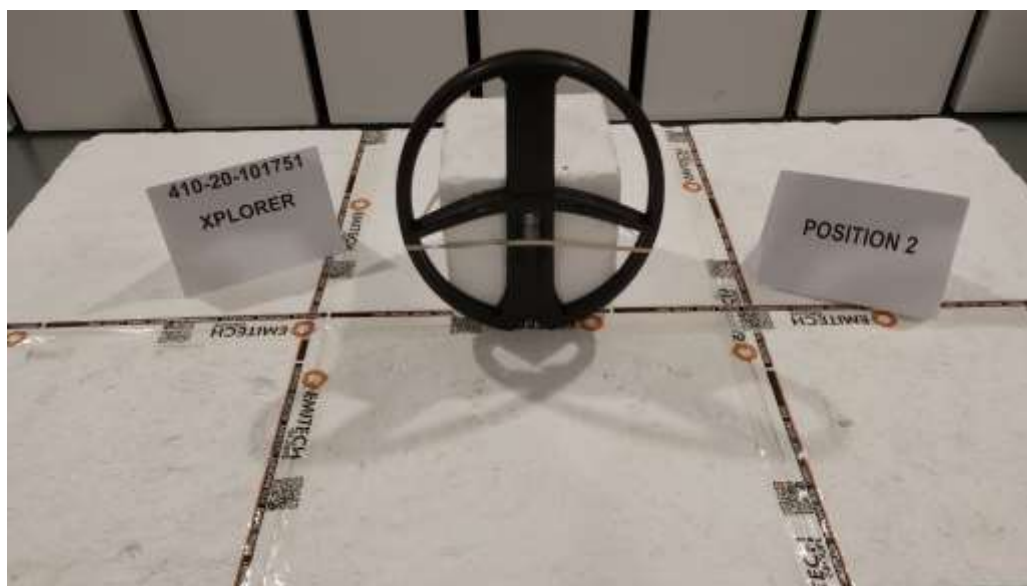
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHz- TABULATED RESULTS					
CHARGING + Tx MODE / ALL POSITIONS / ALL CHANNELS				EMI6985	
155.57	Horizontale	39.14	30.82	43.5	-12.68
155.85	Horizontale	38.93	30.91	43.5	-12.59
155.95	Horizontale	38.97	30.88	43.5	-12.62
156.19	Horizontale	38.99	31.11	43.5	-12.39
156.39	Horizontale	38.65	30.96	43.5	-12.54
156.58	Horizontale	38.98	31.02	43.5	-12.48
156.88	Horizontale	39.71	31.08	43.5	-12.42
156.97	Horizontale	38.68	31.01	43.5	-12.49
157.07	Horizontale	38.7	31.03	43.5	-12.47
157.16	Horizontale	38.61	30.86	43.5	-12.64
157.24	Horizontale	38.33	30.86	43.5	-12.64
157.43	Horizontale	38.16	30.88	43.5	-12.62
157.48	Horizontale	38.39	30.9	43.5	-12.6
157.65	Horizontale	38.4	30.82	43.5	-12.68
157.73	Horizontale	37.97	30.87	43.5	-12.63
157.84	Horizontale	37.56	30.77	43.5	-12.73
157.92	Horizontale	37.93	30.77	43.5	-12.73
158.09	Horizontale	37.63	30.81	43.5	-12.69
158.19	Horizontale	37.65	30.83	43.5	-12.67
158.28	Horizontale	37.68	30.87	43.5	-12.63
158.40	Horizontale	37.5	30.82	43.5	-12.68
158.58	Horizontale	37.67	30.96	43.5	-12.54
158.80	Horizontale	38.03	31.11	43.5	-12.39
158.97	Horizontale	37.37	31.22	43.5	-12.28
159.30	Horizontale	37.68	31.41	43.5	-12.09
159.60	Horizontale	37.52	31.77	43.5	-11.73
159.71	Horizontale	37.46	31.83	43.5	-11.67
159.96	Horizontale	37.5	32.07	43.5	-11.43
160.20	Horizontale	37.54	32.32	43.5	-11.18
160.42	Horizontale	37.29	32.46	43.5	-11.04
160.78	Horizontale	37.81	32.71	43.5	-10.79
161.00	Horizontale	37.84	32.78	43.5	-10.72

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

TEST SETUP PHOTO(S) – TX MODE / POSITION 1



TEST SETUP PHOTO(S) – TX MODE – POSITION 2



TEST SETUP PHOTO(S) – TX MODE – POSITION 3



TEST SETUP PHOTO(S) – CHARGING + TX MODE – POSITION 1



TEST SETUP PHOTO(S) - CHARGING + TX MODE – POSITION 2



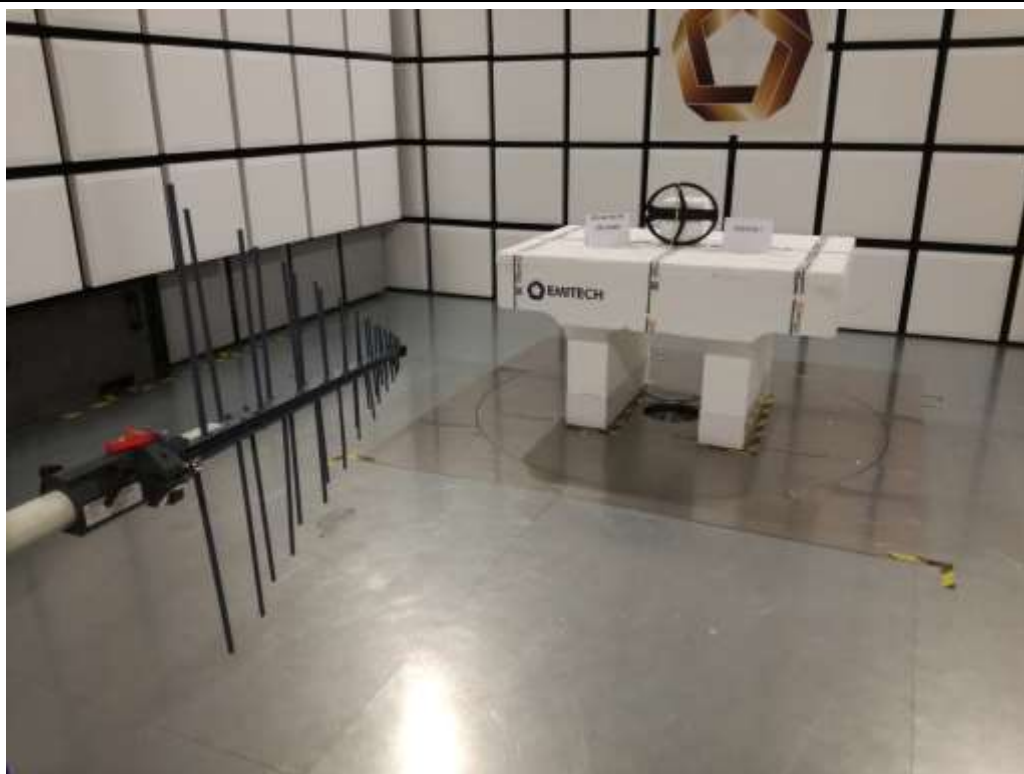
TEST SETUP PHOTO(S) - CHARGING + TX MODE – POSITION 3



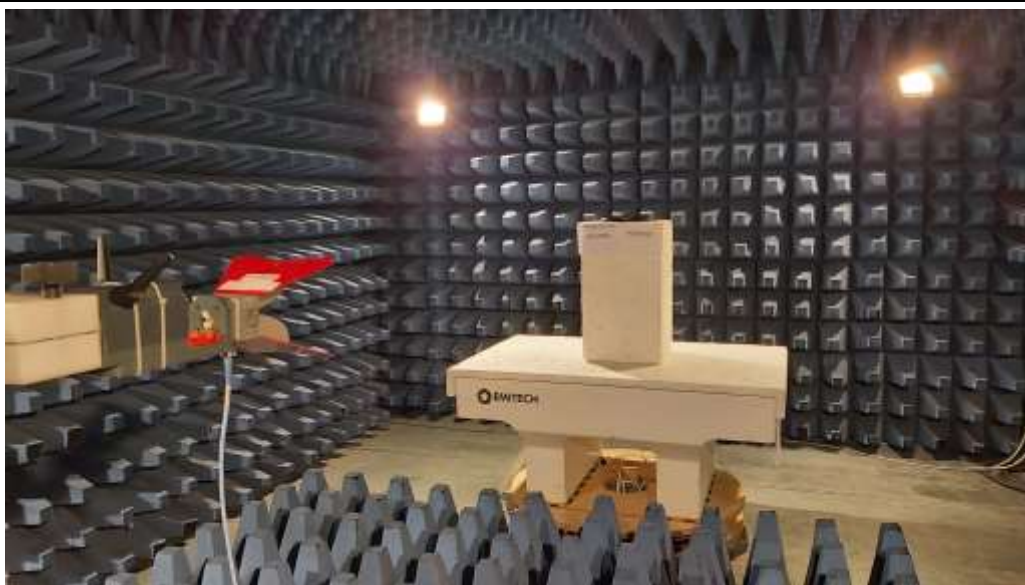
TEST SETUP PHOTO(S) – TX MODE – 30MHz TO 200MHz



TEST SETUP PHOTO(S) – TX MODE – 200MHz TO 1GHz

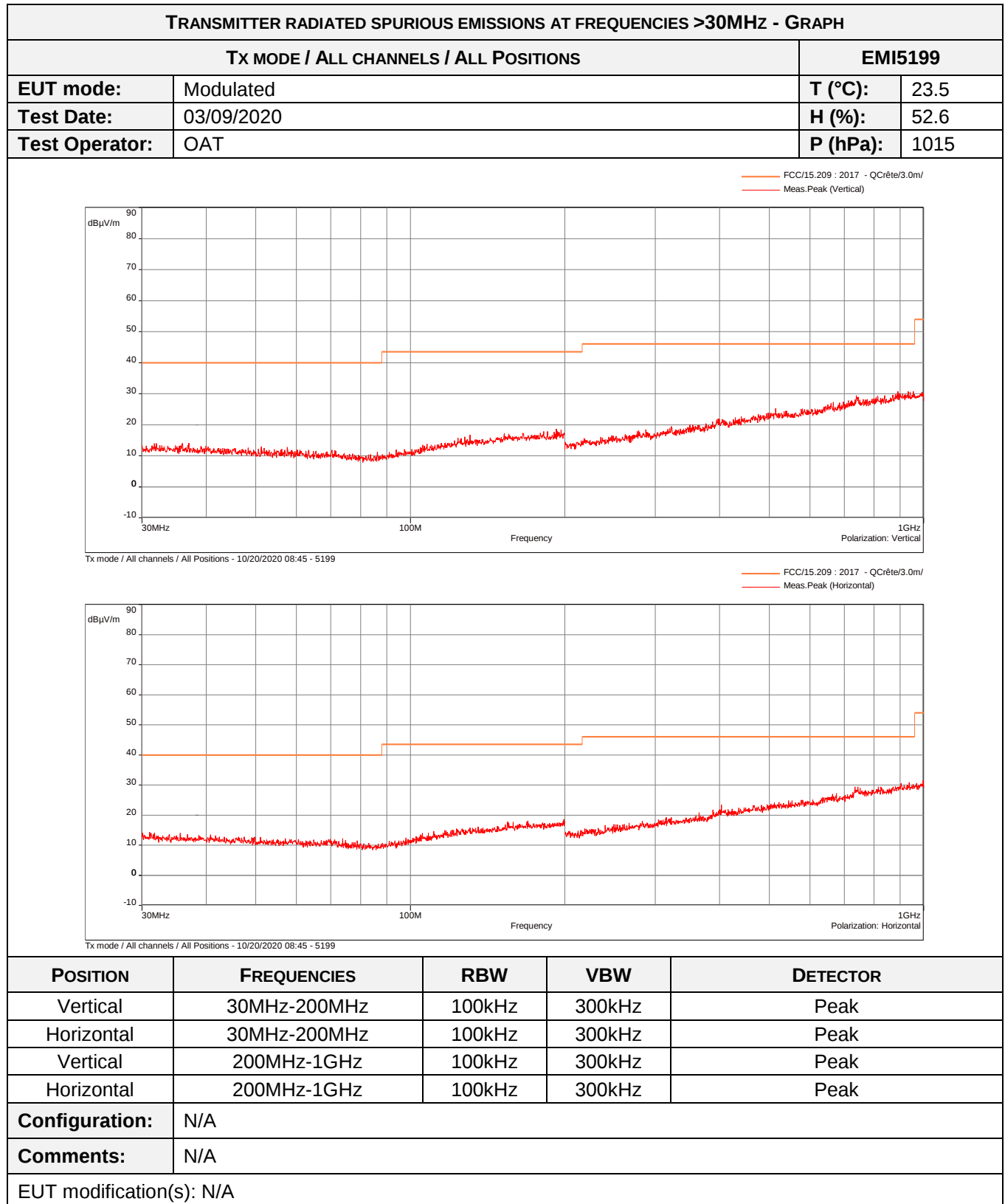


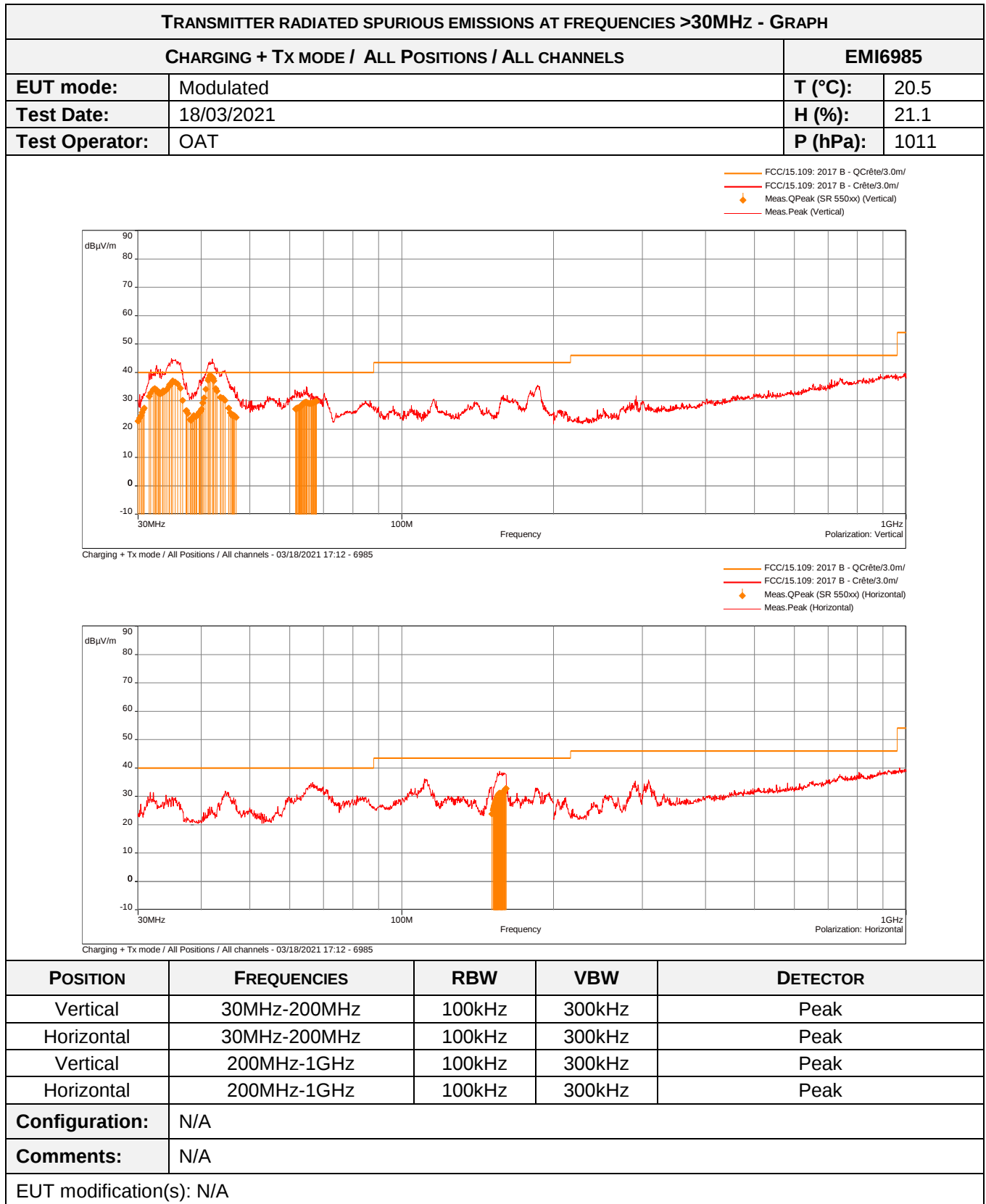
TEST SETUP PHOTO(S) – TX MODE – 1GHZ TO 18GHZ

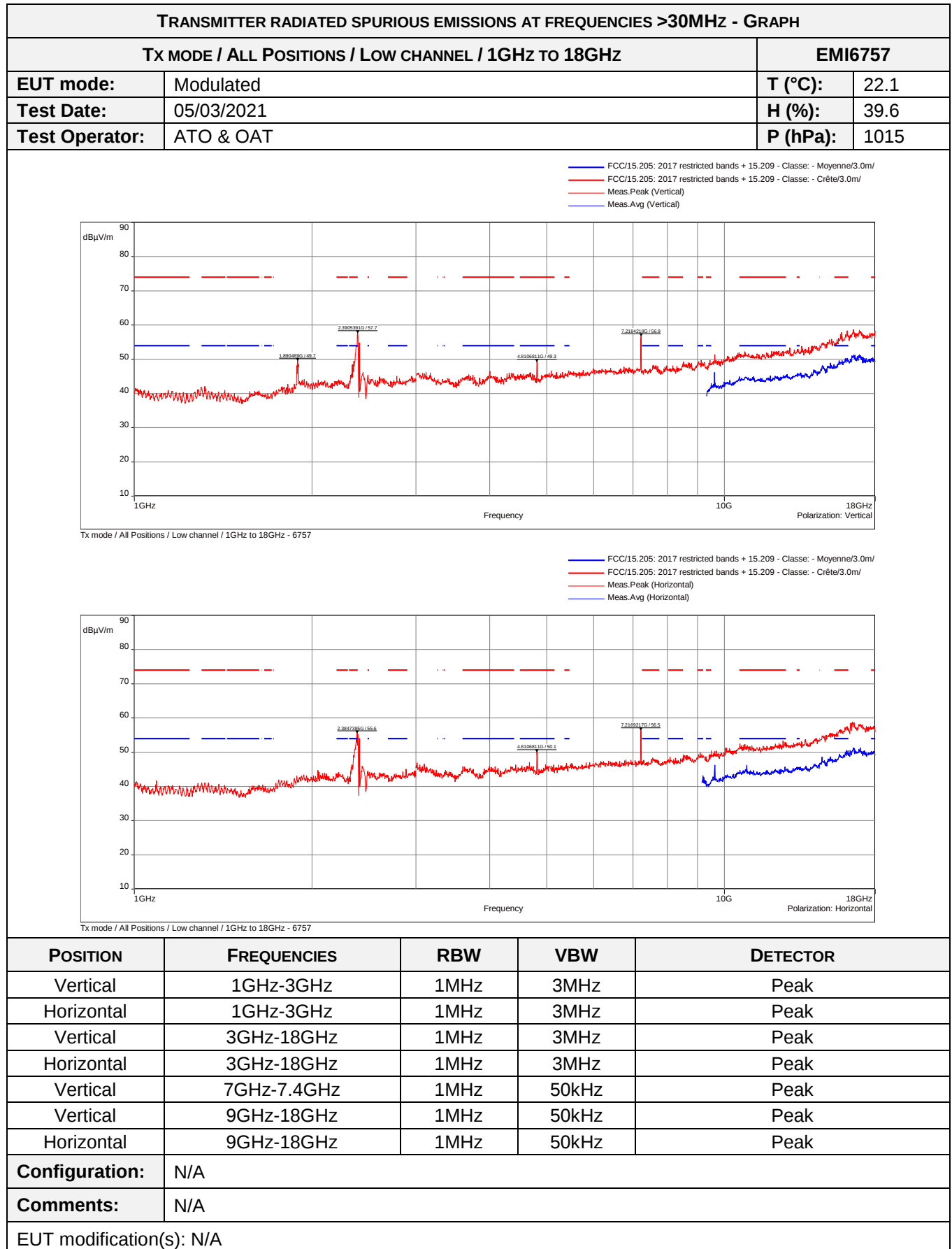


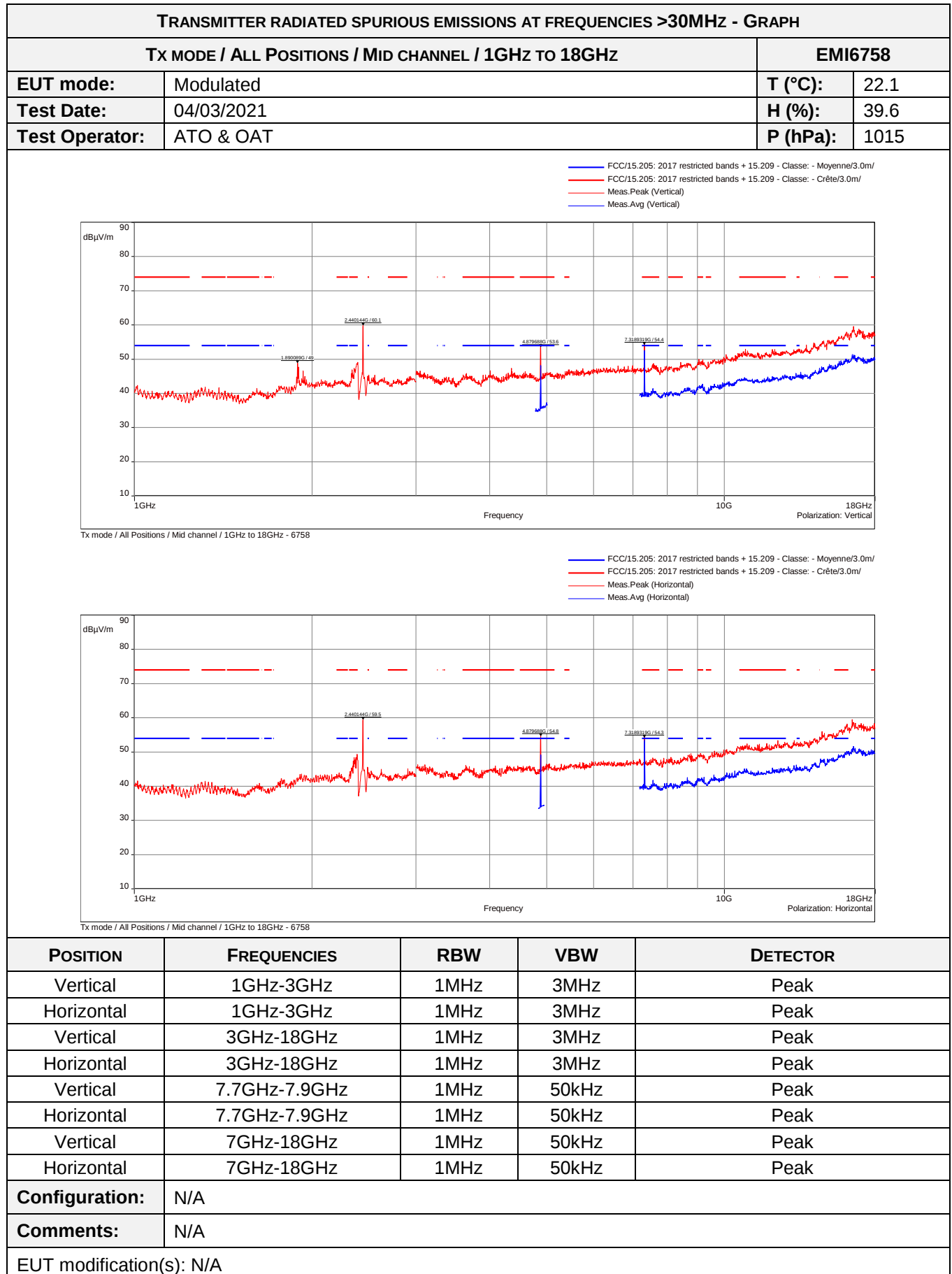
TEST SETUP PHOTO(S) - TX MODE / 18GHZ TO 26.5GHZ

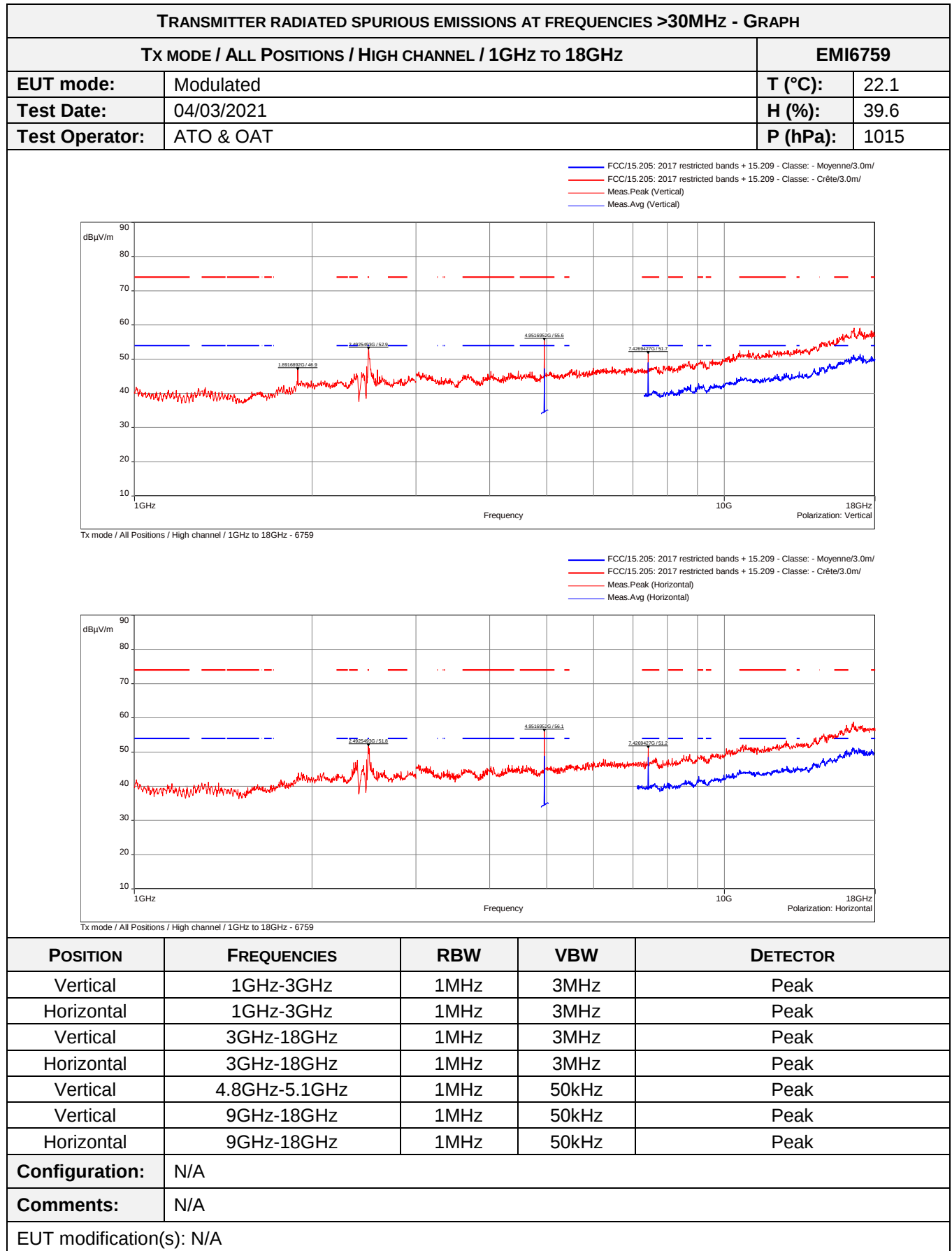


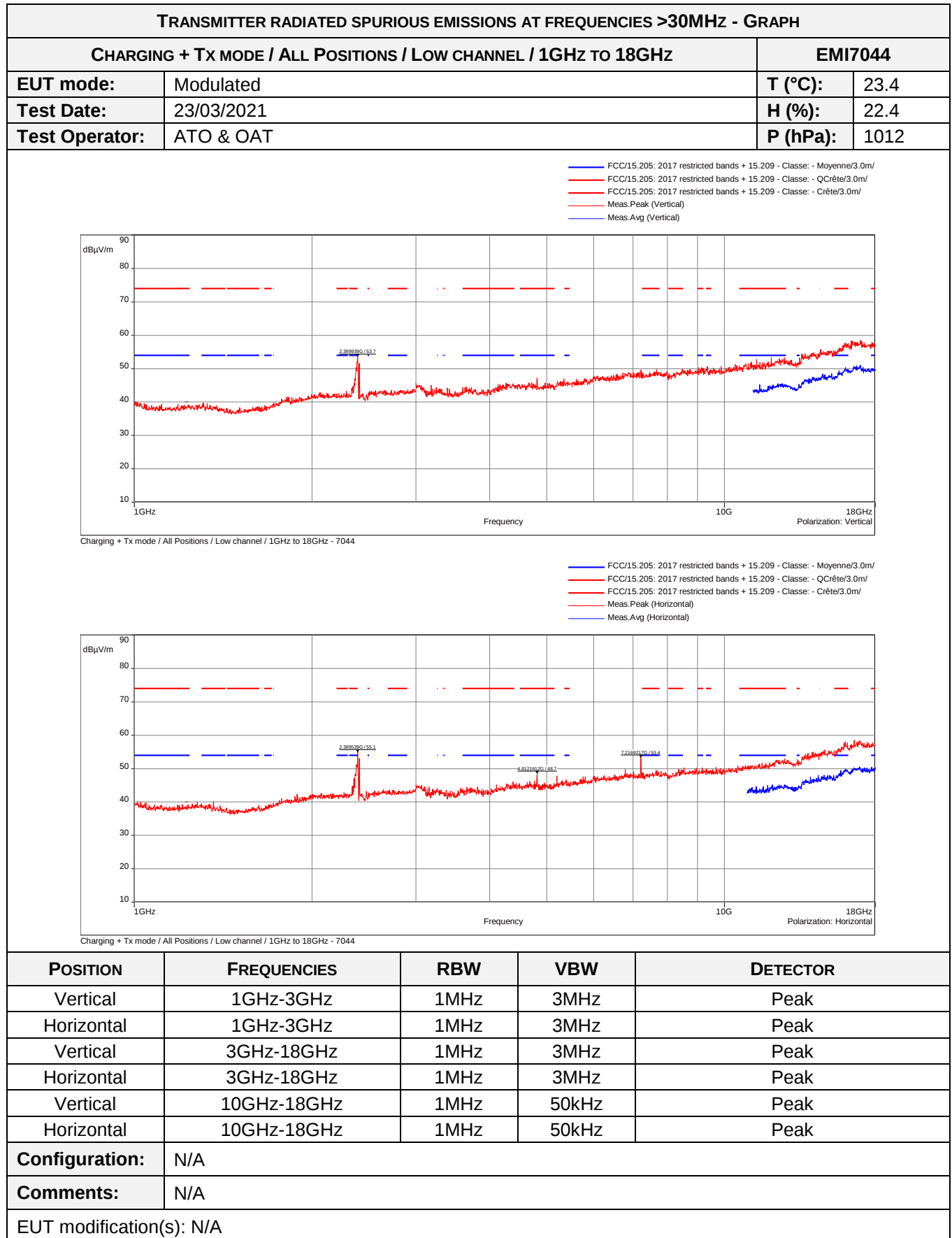


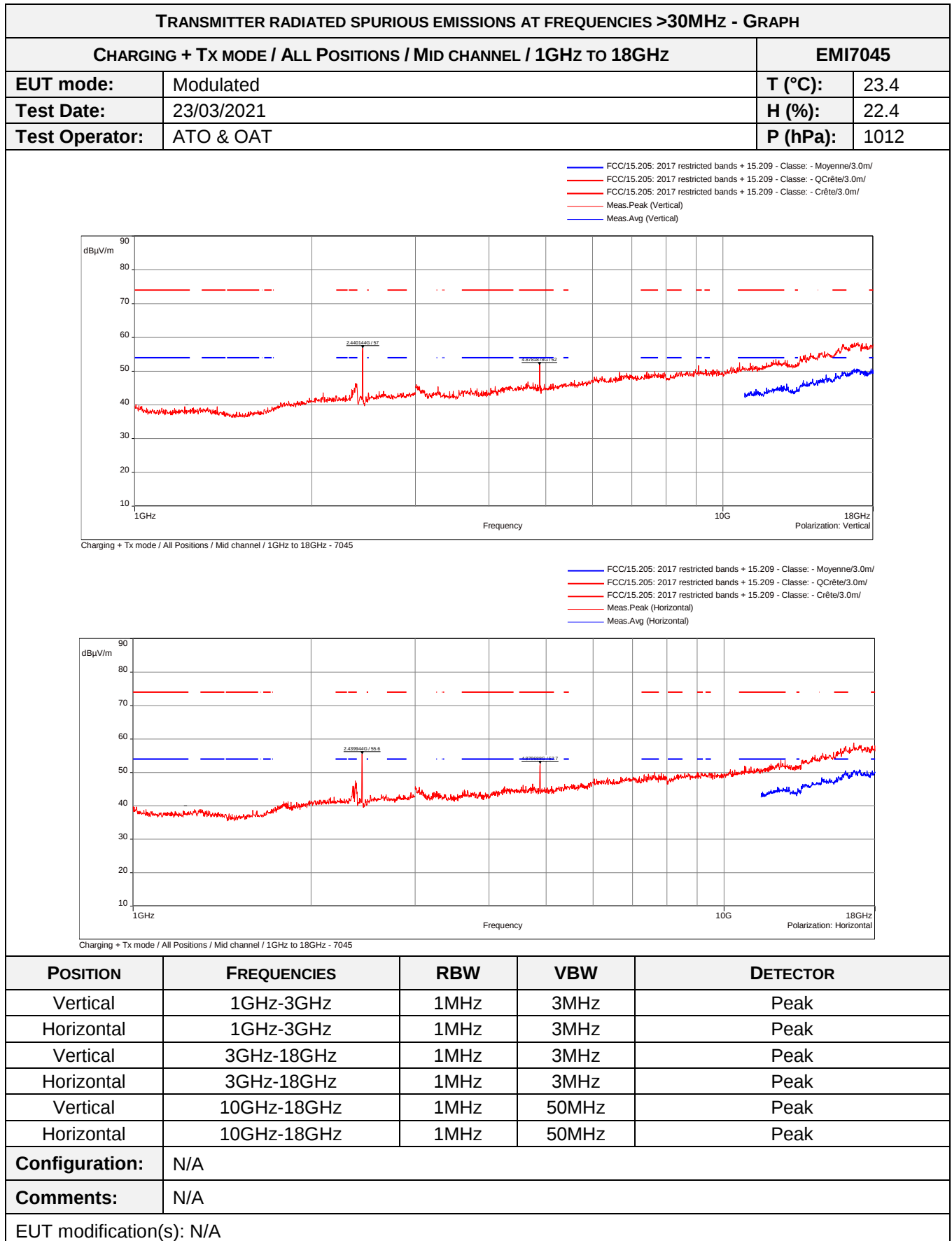


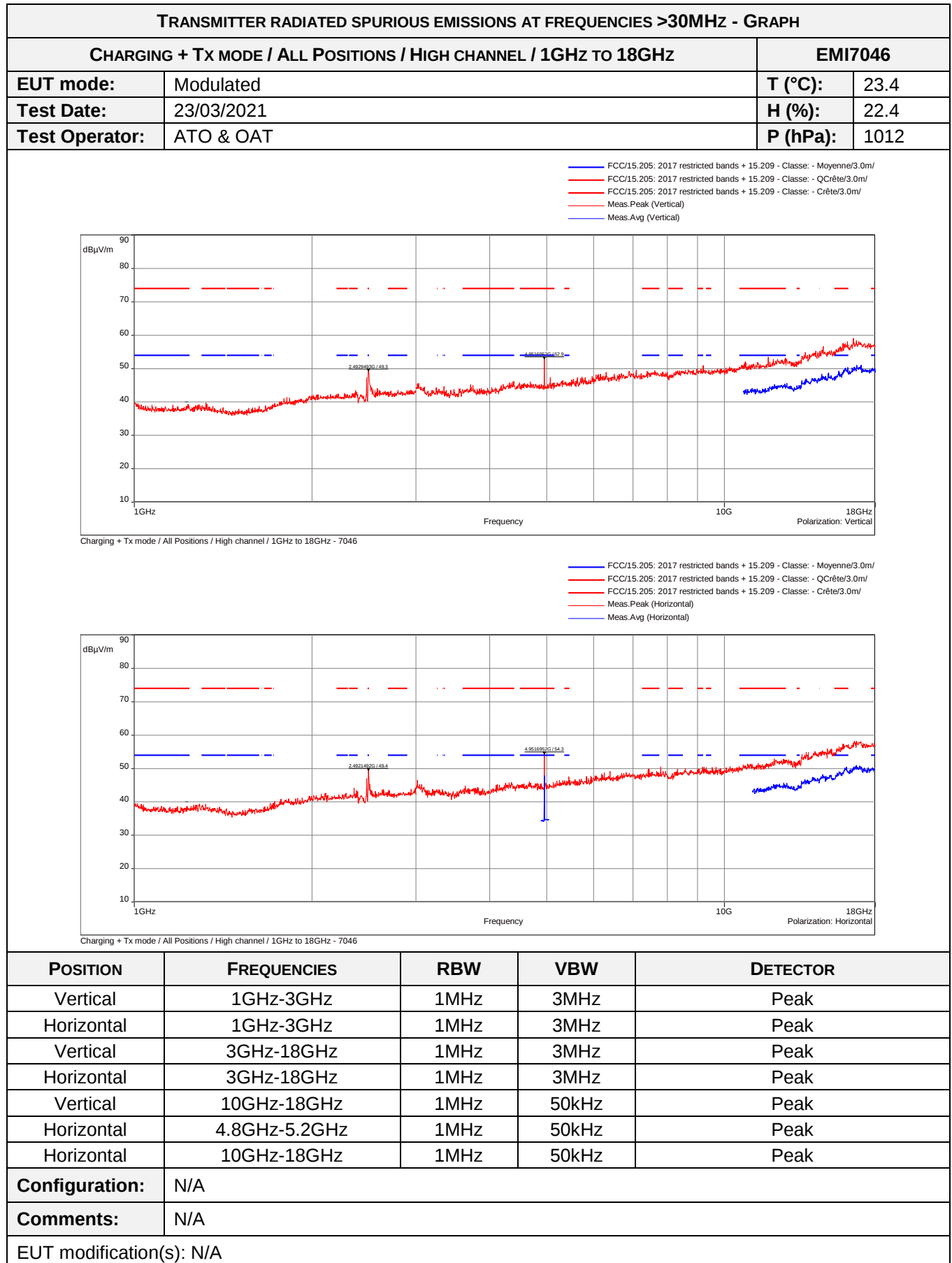


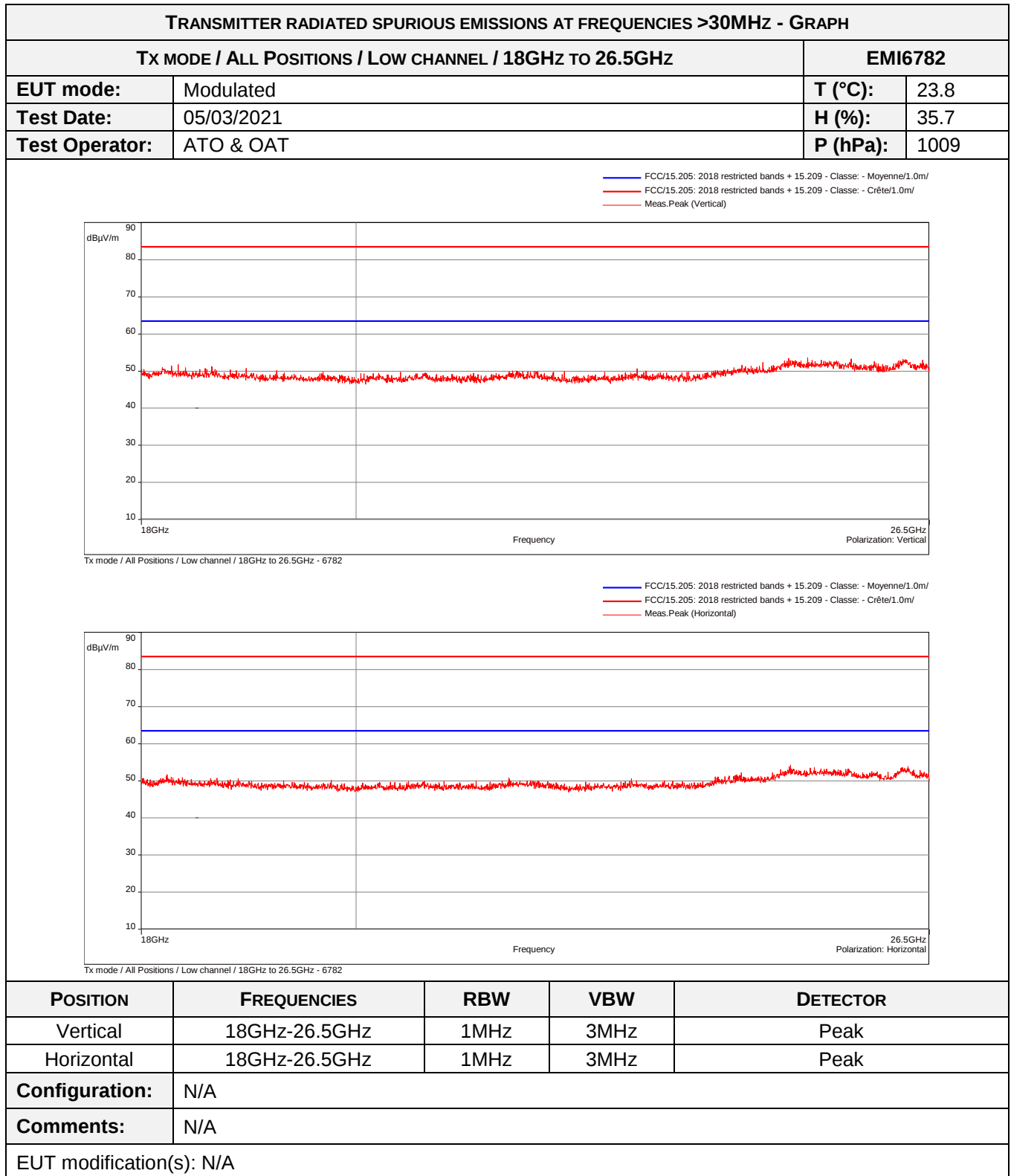




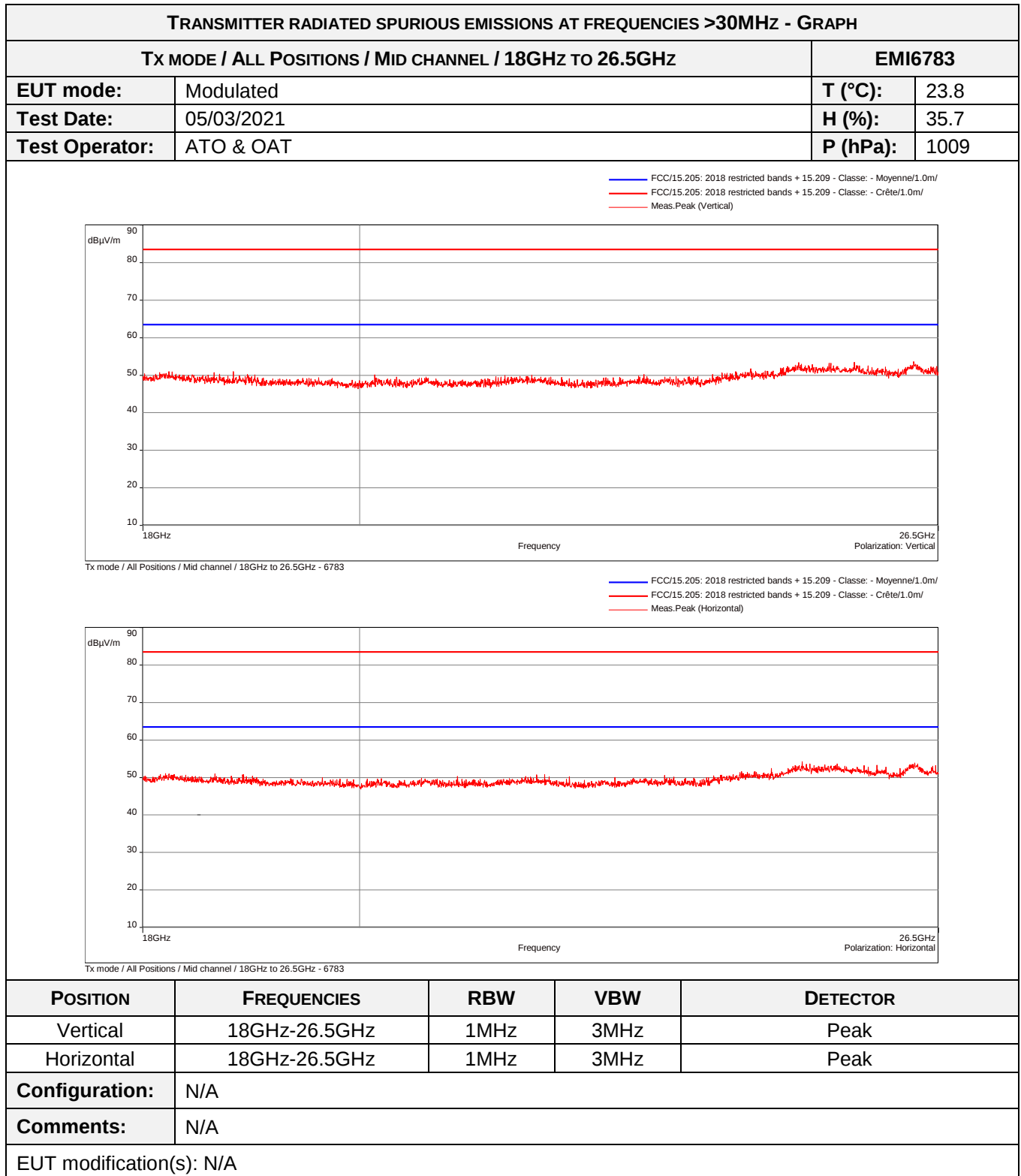




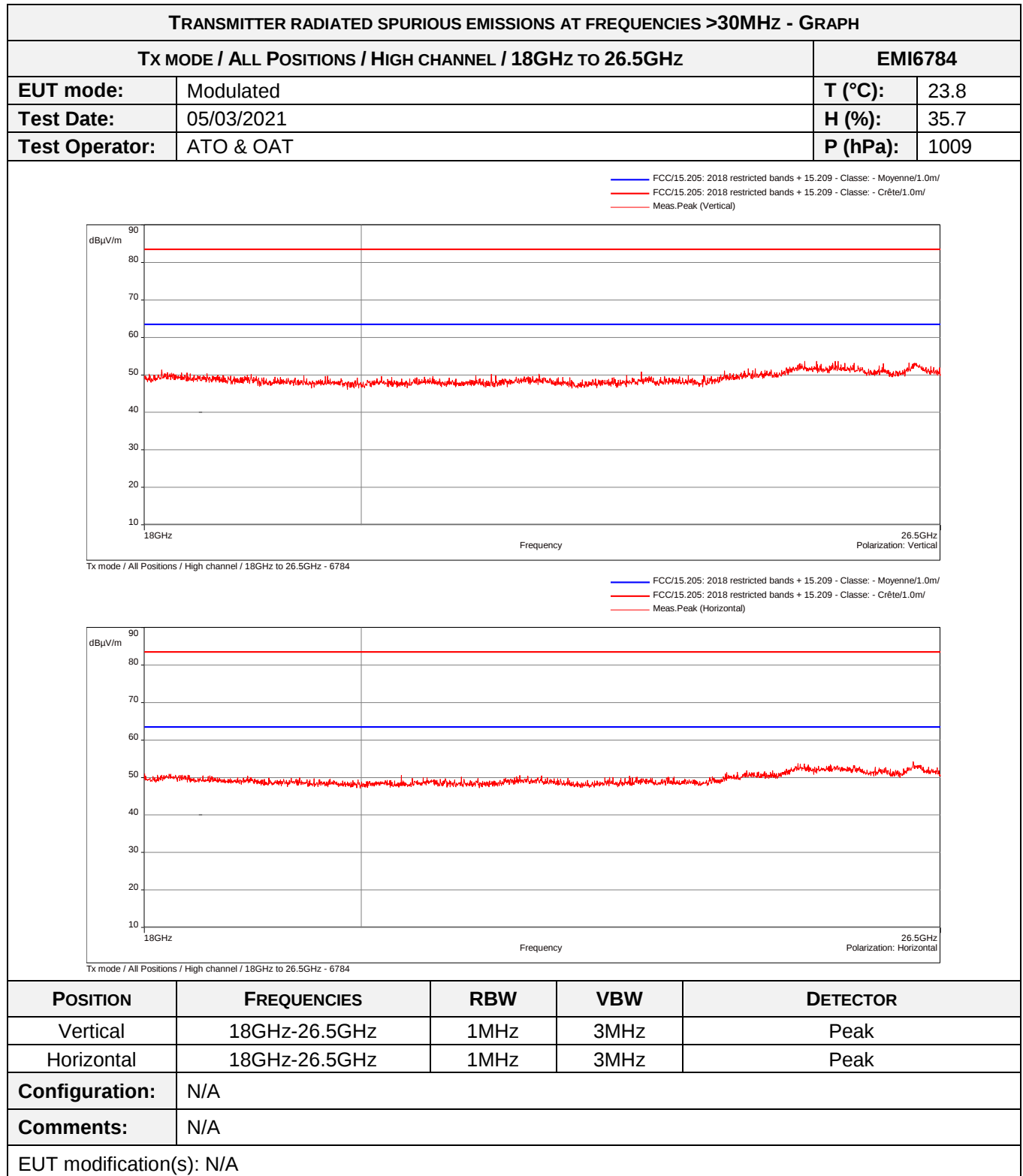




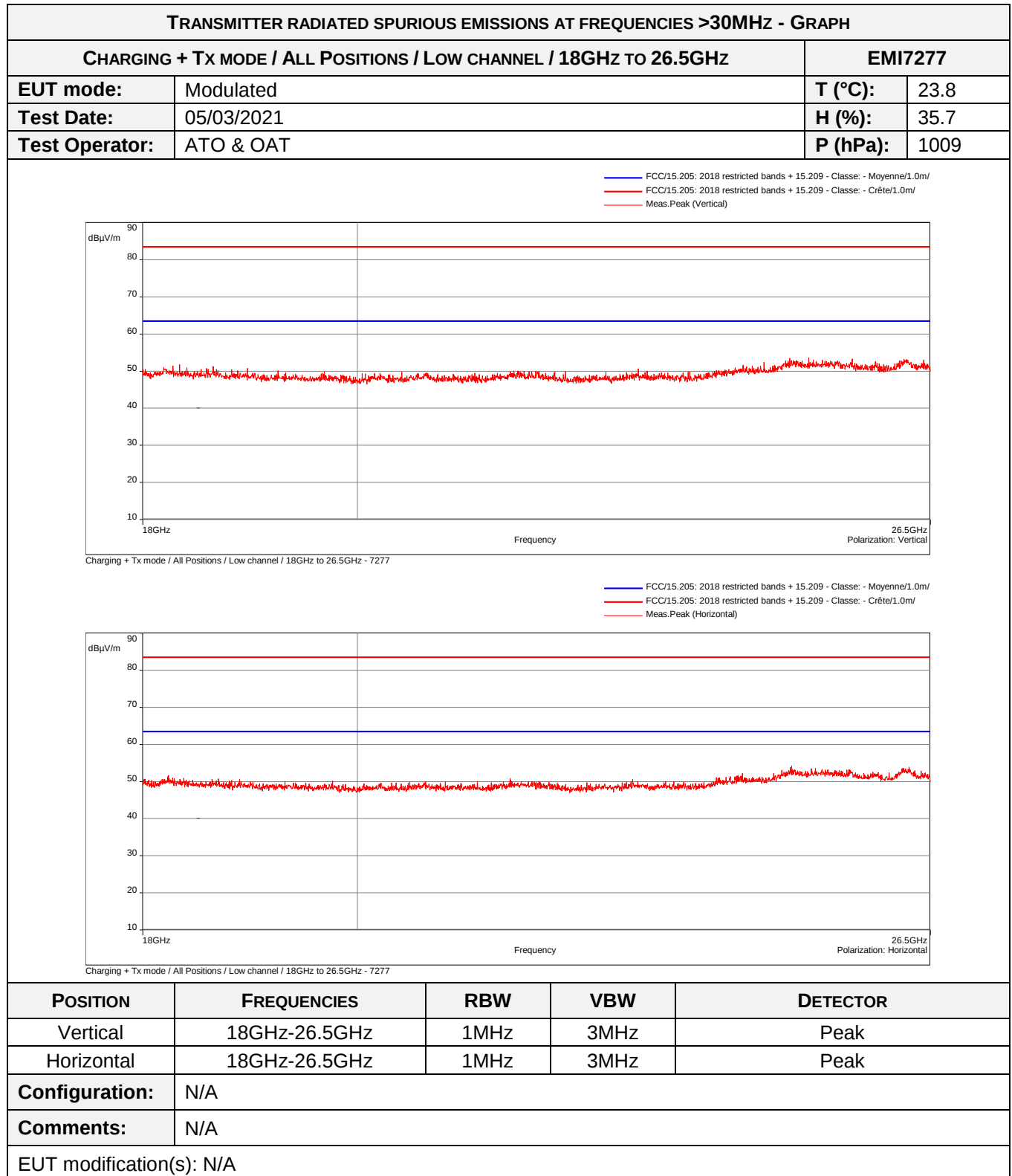
No spurious emissions were detected.



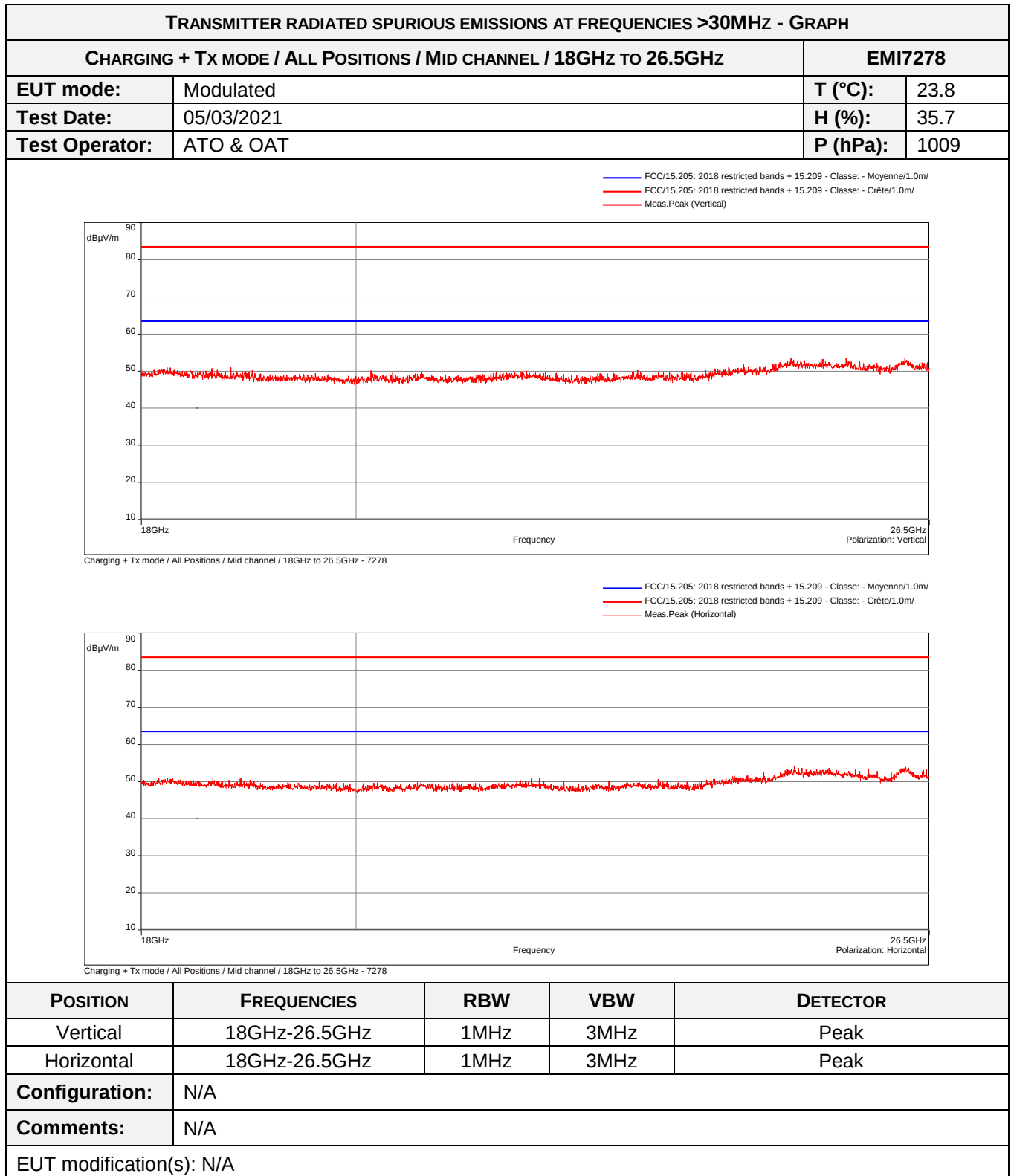
No spurious emissions were detected.



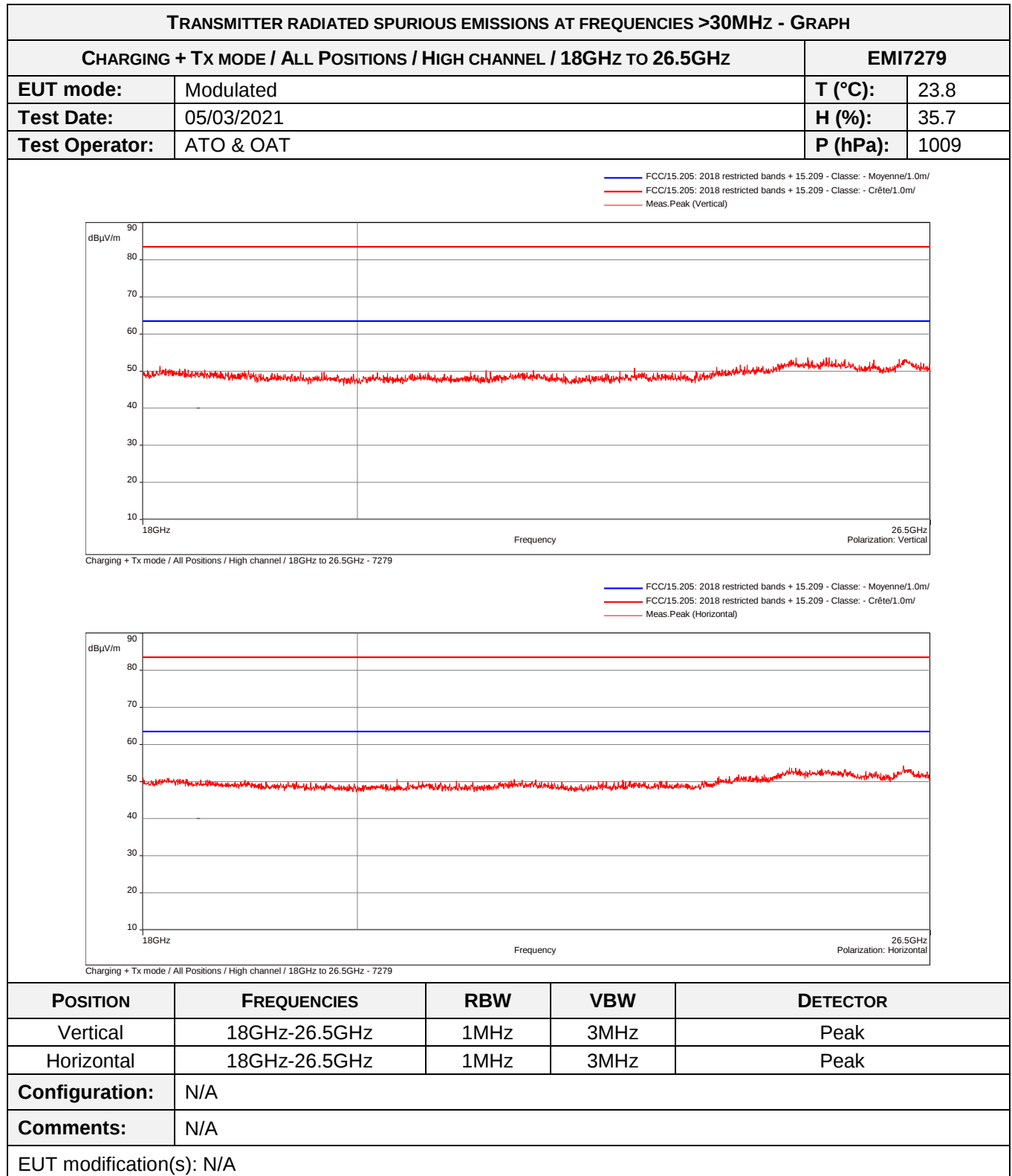
No spurious emissions were detected.



No spurious emissions were detected.



No spurious emissions were detected.



No spurious emissions were detected.

8.9. Radiated spurious emissions (receiver)

Reference standard:	FCC part 15 Radio part 15.209 & CNR-Gen
Test method:	FCC part 15.109, 15.209, 15.205, 15.215, CNR-Gen
General test setup: EUT is set on an insulating support at 80cm 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
Rx mode / All Positions / All channels/ For freq <1GHz	30MHz-1GHz	15.209	EMI6982	PASS
Charging + Rx mode / All Positions / All channels	30MHz-1GHz	15.209	EMI6980	PASS
Rx mode / All Positions / All channels / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI7025	PASS
Charging + Rx mode / All Positions / All channels / 1GHz to 18GHz	1GHz-18GHz	15.209	EMI7030	PASS
Rx mode / All Positions / All channels / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI7304	PASS
Charging + Rx mode / All Positions / All channels / 18GHz to 26.5GHz	18GHz-26.5GHz	15.209	EMI7308	PASS

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

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	24/07/2019	24/09/2022
Antenna	ETS lindgren	3160-09	14690	26/09/2017	26/11/2021
Antenna	Electro Metrics	BIA-30HF	0824	13/06/2018	13/08/2021
Antenna	Rohde & Schwarz	HL223	3126	13/06/2018	13/08/2021
Cable	MegaPhase	F135N1N28	16664	25/10/2019	25/12/2021
Cable	MegaPhase	F135N1N28	16666	25/10/2019	25/12/2021
Cable	JYE BAO	K30K30-5003-40G1	14887	25/06/2019	25/08/2021
Cable	Huber + Suhner	K-5m	14460	25/06/2019	25/08/2021
Cable	/	N-1m	3625	27/01/2021	27/03/2023
Cable	SUCOFLEX	N-5,5m	14381	25/06/2019	25/08/2021
Cable	SUCOFLEX	N-6,5m	14380	25/07/2019	25/09/2021
Cable	MegaPhase	N-8m	15813	14/01/2021	14/03/2023
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Cable	Huber + Suhner	SF102K	16042	24/03/2021	24/05/2023
Cable	MegaPhase	TM18-N1N1-118	12841	14/08/2020	14/10/2022
Cable	MegaPhase	TM18-N1N1-118	12842	02/12/2020	02/02/2023
Preamplifier	Wright Technologie	ASL40-B3015	14851	12/08/2020	12/10/2021
Preamplifier	IMPULSE	CA118-546ACN	9169	13/01/2021	13/03/2022
Receiver	Agilent Technologies	E4440A	5824	22/10/2020	22/12/2022
Receiver	Rohde & Schwarz	ESI	9704	03/03/2020	03/05/2021
Receiver	Rohde & Schwarz	FSW43	14830	29/07/2020	29/09/2021
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2022
Shielded enclosure	COMTEST	SAC 3m	14494	02/10/2019	02/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H1	7562	25/01/2019	25/03/2021
Thermohygrometer	Testo	608-H2	12268	07/05/2020	07/07/2022
Thermohygrometer	Testo	608-H2	12269	07/05/2020	07/07/2022
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021
Thermohygrometer	Bioblock Scientific	Météostar	0963	26/01/2019	26/09/2021

BAT-EMC software version: V3.18.0.26

Blank cells = Permanent validity

RADIATED SPURIOUS EMISSIONS (RECEIVER)- TABULATED RESULTS					
CHARGING + TX MODE / ALL POSITIONS / ALL CHANNELS				EMI6980	
Frequency MHz	Polarization	Level peak dBµV/m	Level Qpeak dBµV/m	Limit dBµV/m	Margin dB
30.07	Verticale	38.42	30.81	40	-9.19
30.19	Verticale	39.49	31.82	40	-8.18
30.46	Verticale	40.57	32.56	40	-7.44
30.71	Verticale	40.19	31.39	40	-8.61
30.77	Verticale	39.86	31.33	40	-8.67
31.14	Verticale	37.1	30.82	40	-9.18
31.28	Verticale	37.15	31.35	40	-8.65
31.34	Verticale	37.24	31.42	40	-8.58
31.50	Verticale	37.21	31.14	40	-8.86
31.60	Verticale	38.05	31.94	40	-8.06
31.70	Verticale	37.17	31.39	40	-8.61
31.87	Verticale	38.4	32.15	40	-7.85
32.01	Verticale	38.41	32.47	40	-7.53
32.24	Verticale	39.28	33.04	40	-6.96
32.64	Verticale	40.17	33.88	40	-6.12
32.94	Verticale	39.9	33.97	40	-6.03
33.03	Verticale	40.79	34.2	40	-5.8
33.26	Verticale	40.96	34.74	40	-5.26
33.35	Verticale	40.91	34.85	40	-5.15
33.45	Verticale	40.72	34.33	40	-5.67
33.55	Verticale	39.95	35.05	40	-4.95
33.76	Verticale	41.48	35.06	40	-4.94
34.03	Verticale	42.01	36.34	40	-3.66
34.15	Verticale	41.37	35.79	40	-4.21
34.51	Verticale	42.09	36.74	40	-3.26
34.83	Verticale	42.83	37.81	40	-2.19
35.10	Verticale	42.74	38.36	40	-1.64
35.32	Verticale	42.66	38.41	40	-1.59
35.66	Verticale	41.87	37.6	40	-2.4
35.83	Verticale	41.4	37.43	40	-2.57
36.05	Verticale	41.33	36.54	40	-3.46
36.29	Verticale	40.69	35.74	40	-4.26
36.49	Verticale	39.14	34.4	40	-5.6
37.23	Verticale	34.06	28.13	40	-11.87
37.55	Verticale	33.9	27.92	40	-12.08
37.79	Verticale	33.17	26.48	40	-13.52
37.96	Verticale	32.12	25.55	40	-14.45
38.30	Verticale	32.15	25.63	40	-14.37
38.59	Verticale	32.29	26.05	40	-13.95
38.70	Verticale	32.3	26.07	40	-13.93
38.82	Verticale	31.79	25.59	40	-14.41
38.93	Verticale	32.2	25.75	40	-14.25
38.99	Verticale	32.75	26.11	40	-13.89
39.20	Verticale	33.73	26.3	40	-13.7
39.44	Verticale	33.16	27.41	40	-12.59

RADIATED SPURIOUS EMISSIONS (RECEIVER)- TABULATED RESULTS					
CHARGING + TX MODE / ALL POSITIONS / ALL CHANNELS				EMI6980	
39.84	Verticale	35.56	29.62	40	-10.38
40.42	Verticale	39.83	34.91	40	-5.09
40.75	Verticale	41.11	36.55	40	-3.45
40.92	Verticale	42.12	37.04	40	-2.96
41.07	Verticale	41.94	37.6	40	-2.4
41.15	Verticale	42.3	37.75	40	-2.25
41.22	Verticale	42.36	37.84	40	-2.16
41.39	Verticale	42.42	37.52	40	-2.48
41.58	Verticale	42.04	37.36	40	-2.64
41.92	Verticale	40.85	36.18	40	-3.82
42.16	Verticale	39.82	34.83	40	-5.17
42.24	Verticale	39.4	34.59	40	-5.41
42.50	Verticale	38.11	33.24	40	-6.76
42.60	Verticale	37.76	32.79	40	-7.21
42.77	Verticale	36.79	31.78	40	-8.22
42.97	Verticale	35.83	31.39	40	-8.61
43.18	Verticale	35.92	31.13	40	-8.87
43.41	Verticale	34.77	29.82	40	-10.18
43.53	Verticale	33.59	28.92	40	-11.08
43.62	Verticale	33.41	28.75	40	-11.25
43.79	Verticale	33.32	28.4	40	-11.6
44.08	Verticale	33.5	28.35	40	-11.65
44.21	Verticale	33.14	27.81	40	-12.19
44.30	Verticale	32.9	27.83	40	-12.17
44.50	Verticale	32.45	27.23	40	-12.77
44.93	Verticale	31.24	25.66	40	-14.34
45.05	Verticale	31.02	25.28	40	-14.72
45.13	Verticale	30.34	25.06	40	-14.94
45.30	Verticale	30.25	24.35	40	-15.65
45.69	Verticale	30.78	23.52	40	-16.48

TEST SETUP PHOTO(S) – Rx MODE / POSITION 1



TEST SETUP PHOTO(S) – Rx MODE – POSITION 2



TEST SETUP PHOTO(S) – RX MODE – POSITION 3



TEST SETUP PHOTO(S) – CHARGING + RX MODE – POSITION 1



TEST SETUP PHOTO(S) - CHARGING + RX MODE – POSITION 2



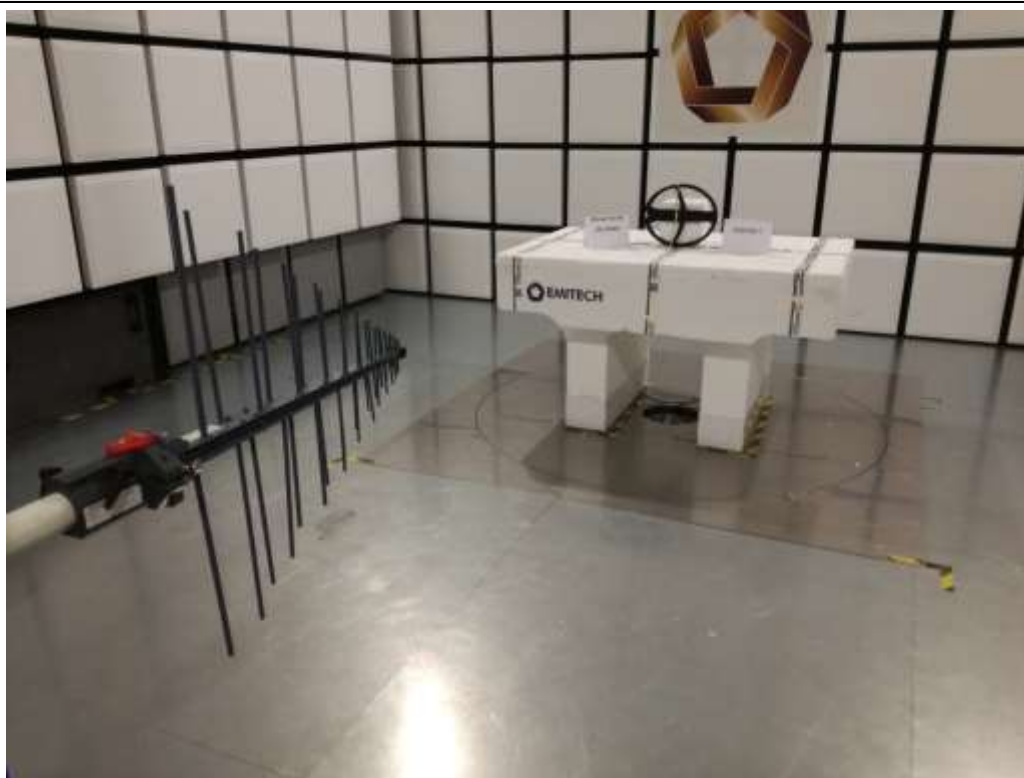
TEST SETUP PHOTO(S) - CHARGING + RX MODE – POSITION 3



TEST SETUP PHOTO(S) – RX MODE – 30MHZ TO 200MHZ



TEST SETUP PHOTO(S) – RX MODE – 200MHZ TO 1GHz

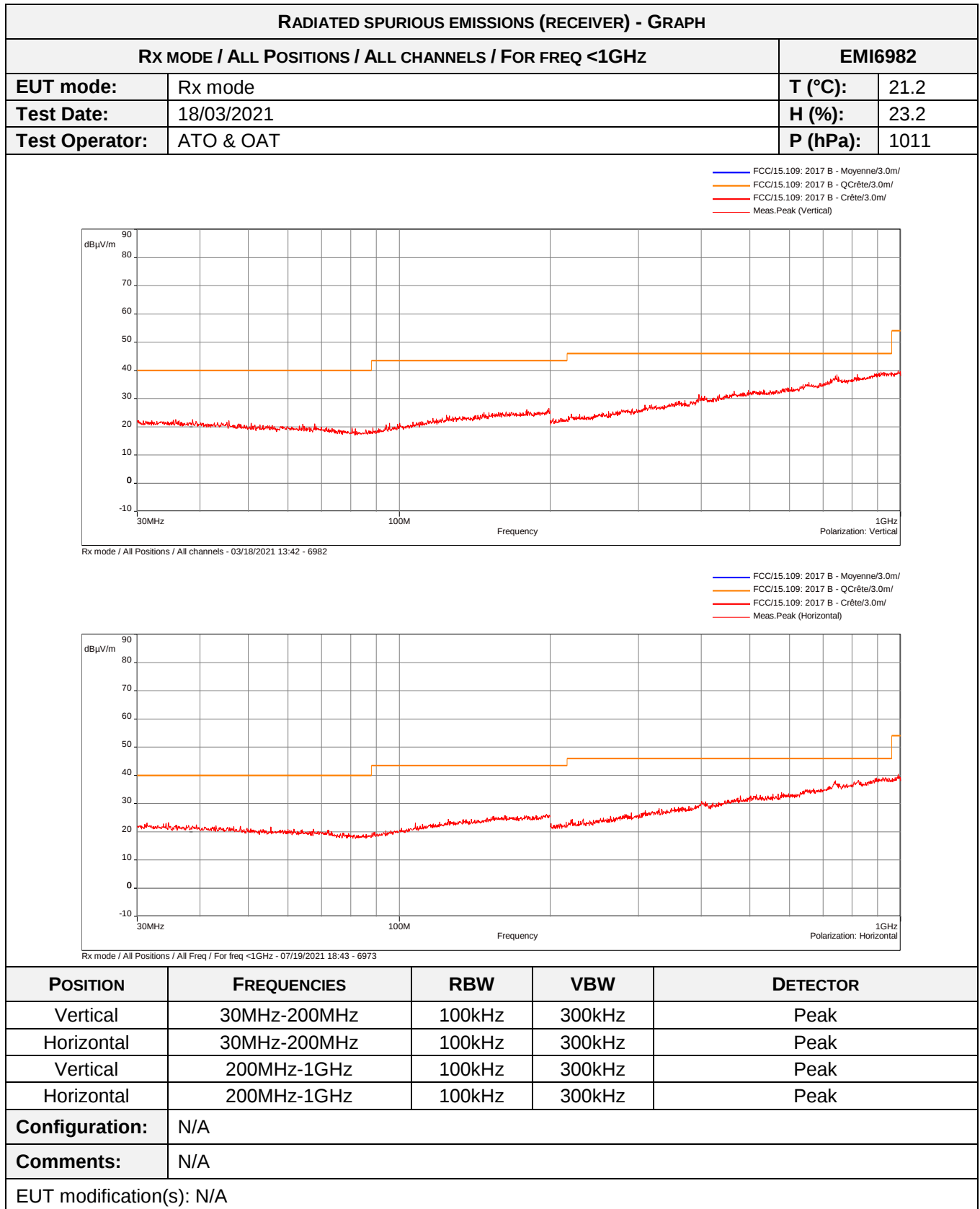


TEST SETUP PHOTO(S) – RX MODE – 1GHZ TO 18GHZ

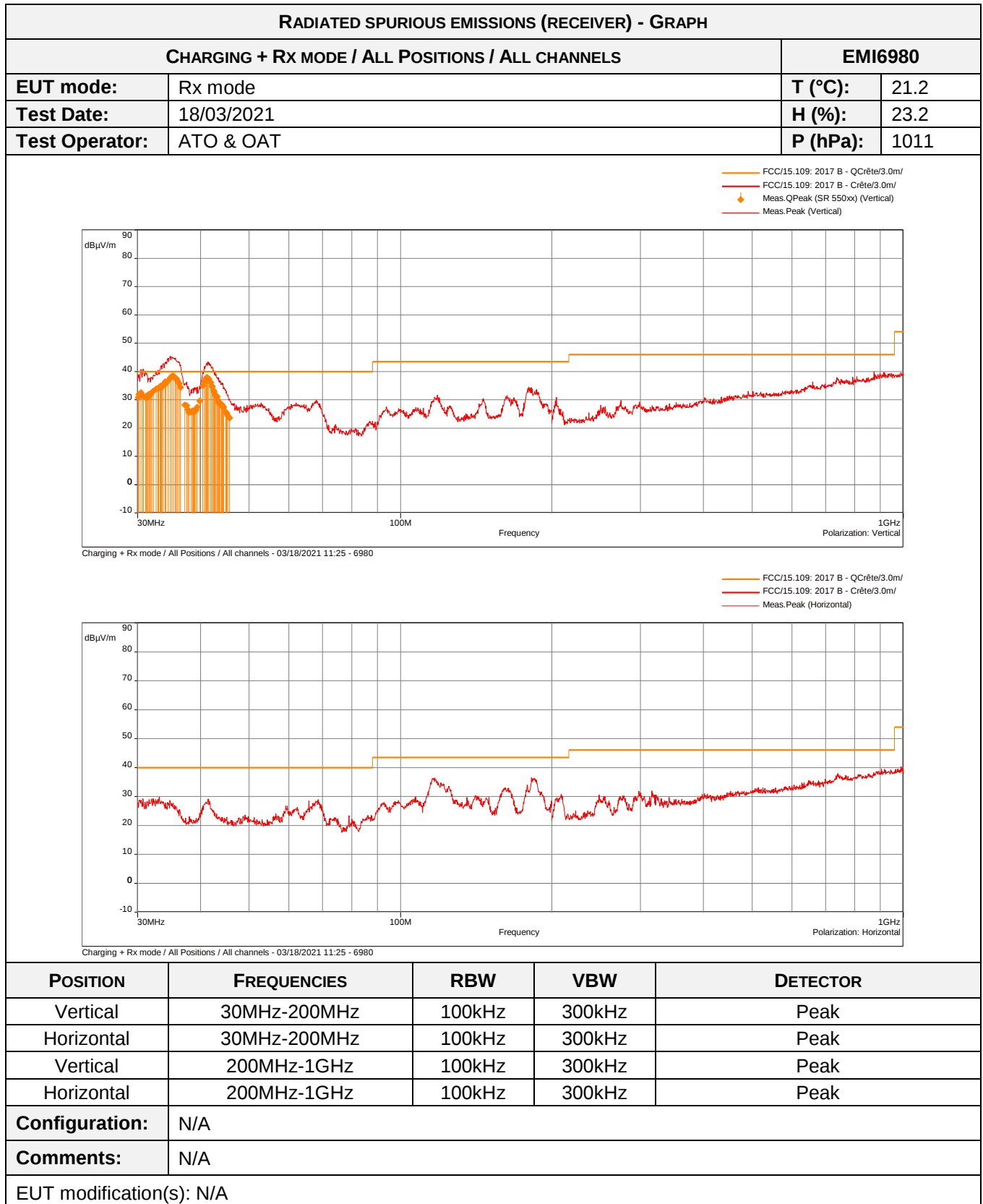


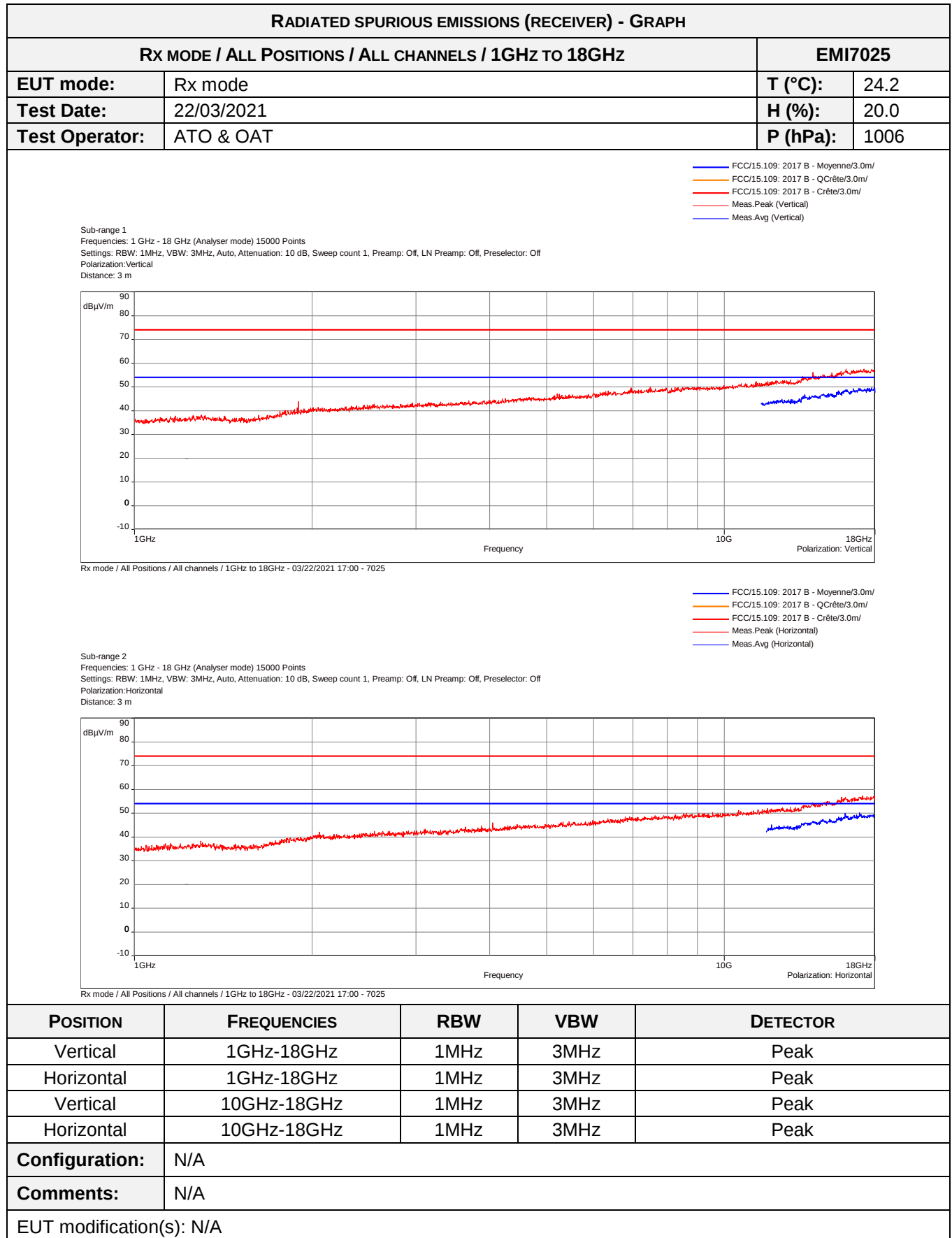
TEST SETUP PHOTO(S) - RX MODE / 18GHZ TO 26.5GHZ

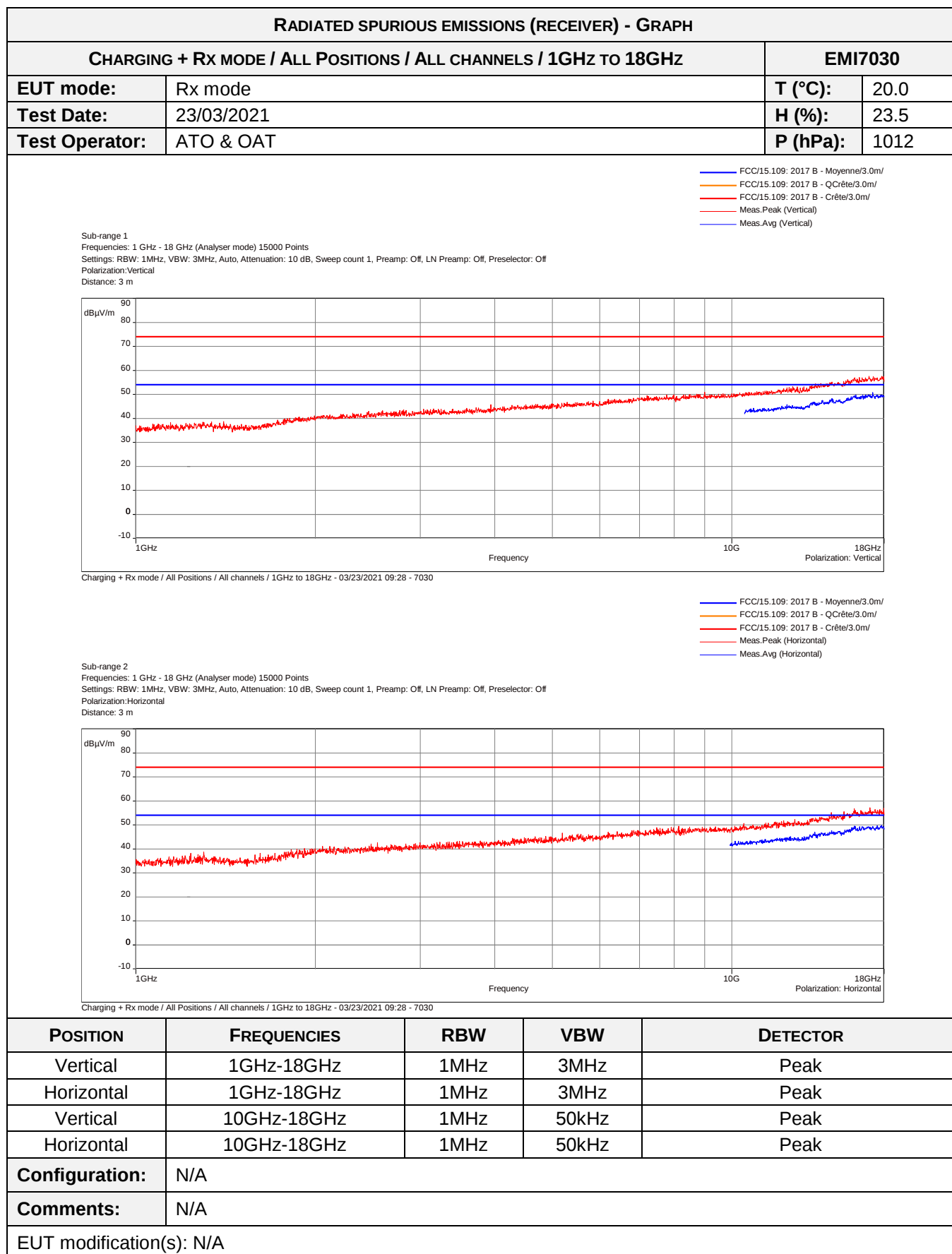


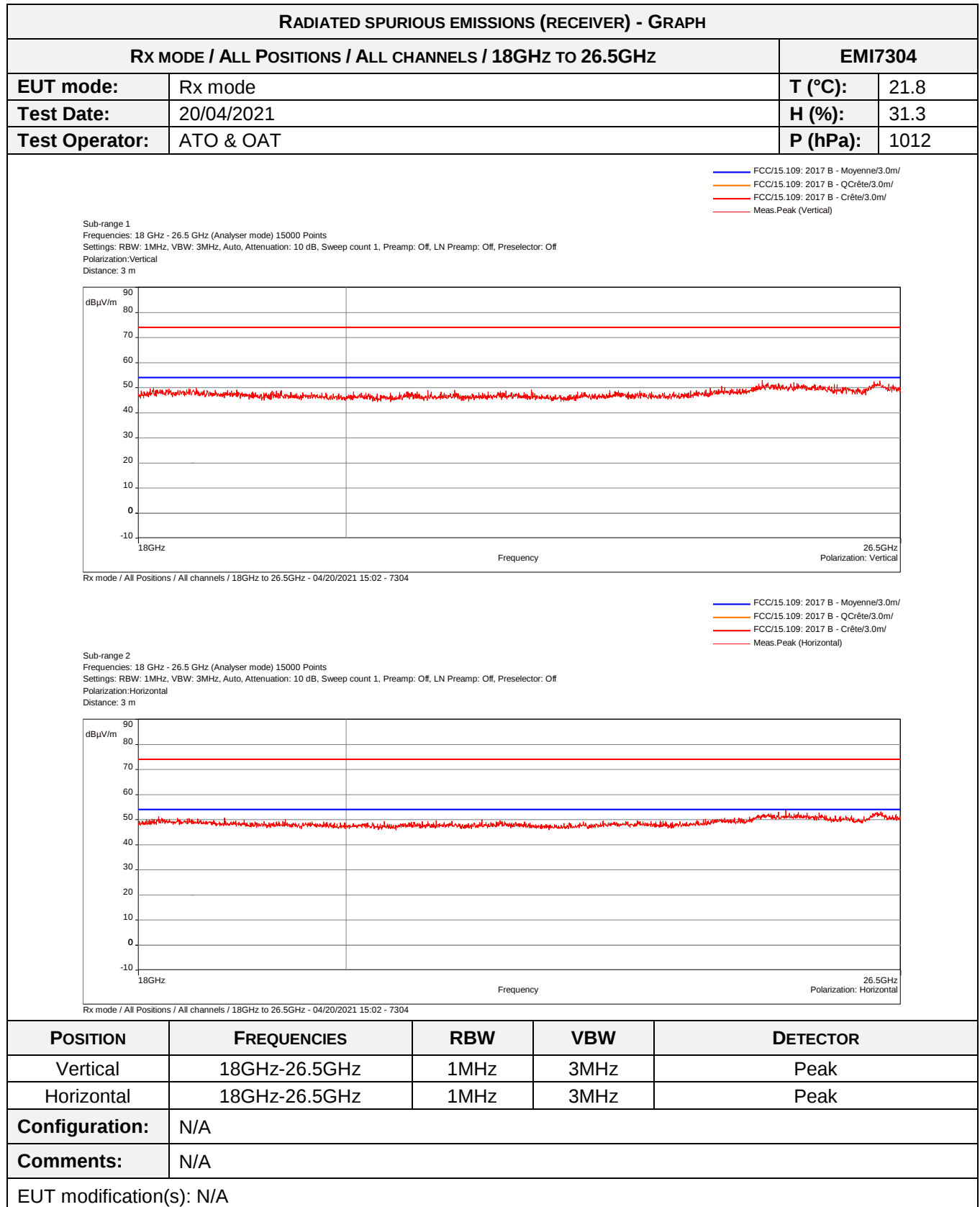


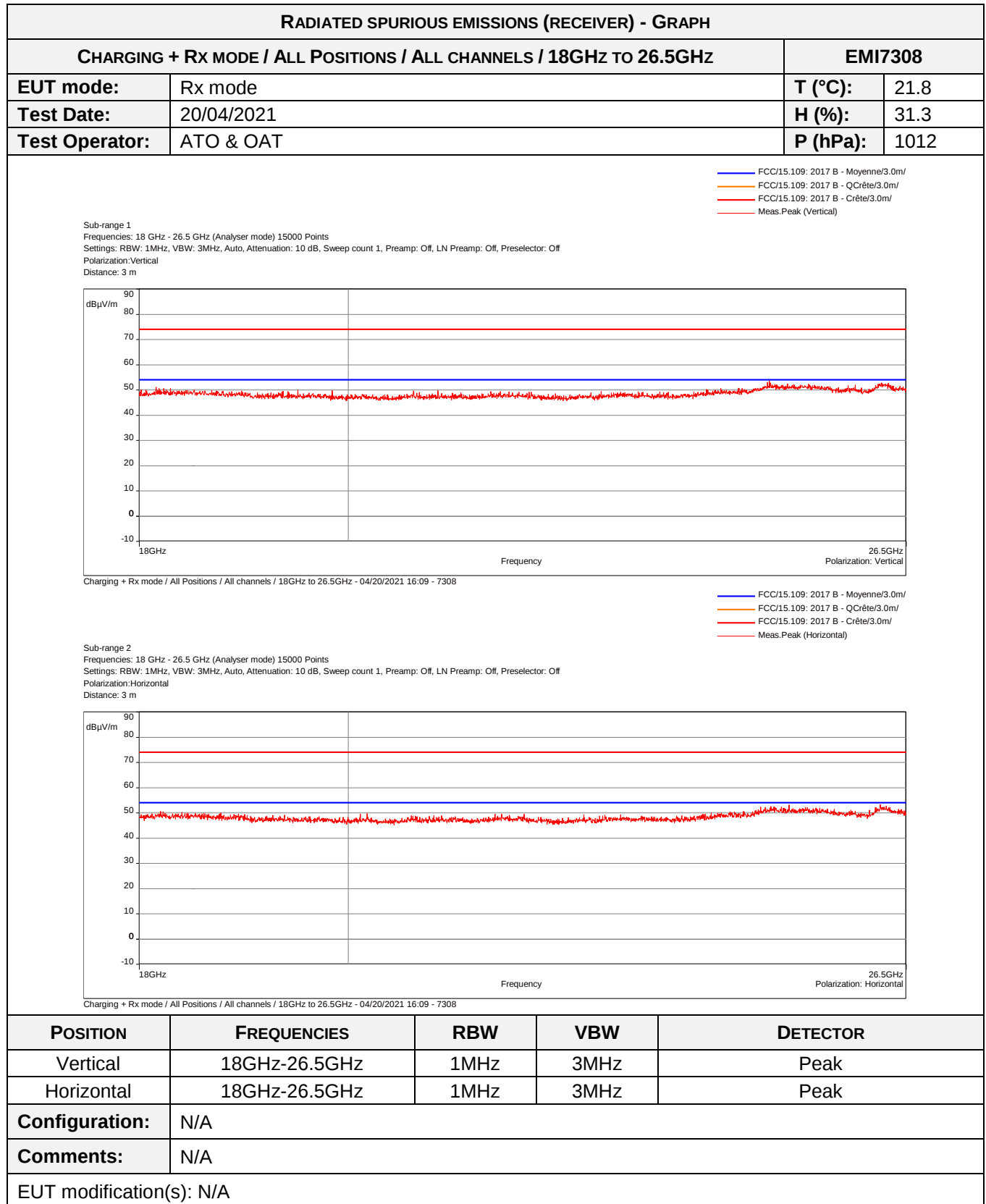
No spurious emissions were detected.











8.10. 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 %	EMI6803	PASS
Low channel / 25°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6804	PASS
Low channel / 25°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6805	PASS
Mid channel / 25°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI6806	PASS
Mid channel / 25°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6807	PASS
Mid channel / 25°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6808	PASS
High channel / 25°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI6809	PASS
High channel / 25°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6810	PASS
High channel / 25°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6811	PASS
Low channel / -5°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI6860	PASS
Low channel / -5°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6861	PASS
Low channel / -5°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6862	PASS
Mid channel / -5°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI6863	PASS
Mid channel / -5°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6864	PASS
Mid channel / -5°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6865	PASS
High channel / -5°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI6866	PASS
High channel / -5°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6867	PASS
High channel / -5°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6868	PASS
Low channel / 40°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI6941	PASS
Low channel / 40°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6942	PASS
Low channel / 40°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6943	PASS
Mid channel / 40°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI6944	PASS
Mid channel / 40°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6945	PASS
Mid channel / 40°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6946	PASS
High channel / 40°C/ 3.7Vdc	Continuous Tx	0.001 %	EMI6947	PASS
High channel / 40°C/ 4.2Vdc	Continuous Tx	0.001 %	EMI6948	PASS
High channel / 40°C/ 3.45Vdc	Continuous Tx	0.001 %	EMI6949	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	22.1 °C
Relative Humidity	20 to 75 %	47.3 %
Atmospheric pressure	N/A	999 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
Attenuator	Radiall	R412710124	17328	22/06/2020	22/08/2023
Attenuator	Radiall	R412710124	17329	22/06/2020	22/08/2023
Cable	N	3m	16417	04/05/2019	04/07/2021
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Cable	Radiall	SMA-0,5m	14890	17/06/2020	17/08/2022
Climatic enclosure	CLIMATS	EXCAL 7714-HA	14261	19/09/2019	19/11/2020
Multimeter	FLUKE	8808A	12446	29/09/2020	29/11/2021
Power supply	TTI	PL303QMD	8496		
Receiver	Rohde & Schwarz	FPL1003	16027	14/08/2020	14/10/2021
Thermo-Hygro-Baromètre	LUFFT	OPUS 20	14563	11/12/2019	11/02/2021
Thermohygrometer	Testo	608-H2	12268	07/05/2020	07/07/2022
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021
Wattmeter	Rohde & Schwarz	HMC 8015	17005	05/03/2020	05/05/2021

Blank cells = Permanent validity



FREQUENCY ERROR - TABULATED RESULTS				
TEST CASE	FREQUENCY	FREQUENCY ERROR	LIMIT	RESULT TAB.
Low channel / 25°C/ 3.7Vdc	2.403952478 GHz	0 %	0.001 %	EMI6803
Low channel / 25°C/ 4.2Vdc	2.403952539 GHz	0.0000025 %	0.001 %	EMI6804
Low channel / 25°C/ 3.45Vdc	2.403952478 GHz	0.0000000 %	0.001 %	EMI6805
Mid channel / 25°C/ 3.7Vdc	2.439952174 GHz	0 %	0.001 %	EMI6806
Mid channel / 25°C/ 4.2Vdc	2.439951920 GHz	0.0000104 %	0.001 %	EMI6807
Mid channel / 25°C/ 3.45Vdc	2.439951822 GHz	0.0000144 %	0.001 %	EMI6808
High channel / 25°C/ 3.7Vdc	2.475950968 GHz	0 %	0.001 %	EMI6809
High channel / 25°C/ 4.2Vdc	2.475951120 GHz	0.0000061 %	0.001 %	EMI6810
High channel / 25°C/ 3.45Vdc	2.475951205 GHz	0.0000096 %	0.001 %	EMI6811
Low channel / -5°C/ 3.7Vdc	2.403955990 GHz	0.0001461 %	0.001 %	EMI6860
Low channel / -5°C/ 4.2Vdc	2.403955959 GHz	0.0001448 %	0.001 %	EMI6861
Low channel / -5°C/ 3.45Vdc	2.403955975 GHz	0.0001455 %	0.001 %	EMI6862
Mid channel / -5°C/ 3.7Vdc	2.439955214 GHz	0.0001246 %	0.001 %	EMI6863
Mid channel / -5°C/ 4.2Vdc	2.439955161 GHz	0.0001224 %	0.001 %	EMI6864
Mid channel / -5°C/ 3.45Vdc	2.439955185 GHz	0.0001234 %	0.001 %	EMI6865
High channel / -5°C/ 3.7Vdc	2.475954297 GHz	0.0001345 %	0.001 %	EMI6866
High channel / -5°C/ 4.2Vdc	2.475954276 GHz	0.0001336 %	0.001 %	EMI6867
High channel / -5°C/ 3.45Vdc	2.475954309 GHz	0.0001349 %	0.001 %	EMI6868
Low channel / 40°C/ 3.7Vdc	2.403945600 GHz	0.0002861 %	0.001 %	EMI6941
Low channel / 40°C/ 4.2Vdc	2.403945607 GHz	0.0002858 %	0.001 %	EMI6942
Low channel / 40°C/ 3.45Vdc	2.403945577 GHz	0.0002871 %	0.001 %	EMI6943
Mid channel / 40°C/ 3.7Vdc	2.439944777 GHz	0.0003032 %	0.001 %	EMI6944
Mid channel / 40°C/ 4.2Vdc	2.439944779 GHz	0.0003031 %	0.001 %	EMI6945
Mid channel / 40°C/ 3.45Vdc	2.439944740 GHz	0.0003047 %	0.001 %	EMI6946
High channel / 40°C/ 3.7Vdc	2.475943954 GHz	0.0002833 %	0.001 %	EMI6947
High channel / 40°C/ 4.2Vdc	2.475943962 GHz	0.0002830 %	0.001 %	EMI6948
High channel / 40°C/ 3.45Vdc	2.475943905 GHz	0.0002853 %	0.001 %	EMI6949

End of test report