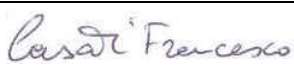


RF TEST REPORT

Test Report No:	25-4791735805-6-1-0-RAD-A	
UL Project No:	4791735805	
Date of issue:	2025-10-21	
Total number of pages:	34	
Applicant:	ASSA ABLOY Global Solutions Lodjursgatan 10 261 44 Landskrona - Sweden	
Contact's person:	Robin Bengtsson (Robin.bengtsson@assaabloy.com)	
Testing Laboratory:	UL International Italia S.r.l. Via delle Industrie, 6 20061 Carugate (MI) – Italy	
Testing location:	UL International Italia S.r.l. Via delle Industrie, 6 20061 Carugate (MI) – Italy	
Test specification:		
Regulations:	FCC/ISED	
Standards:	FCC Parts 15.207 & 15.209(a) & 15.247 RSS-247 Issue 4: 2025 RSS-Gen Issue 5:2021	
TRF No.:	Base RSE_rev 05	
Test Report Form(s) Originator:	UL International Italia S.r.l.	
Master TRF	2025-02	
Tested by: (name, function, signature)	Borghesi Matteo Laboratory Technician 	
Approved by: (name, function, signature)	Galbiati Andrea Giovanni Senior Engineering Associate 	
Authorized by: (name, function, signature)	Casati Francesco Operations Leader 	
General disclaimer: The test results presented in this test report relate only to the object tested, as received and not selected by UL. All technical records will be maintained by the Laboratory for minimum 10 years. This report shall not be reproduced, except in full, without the written approval of the issuing Testing Laboratory. This document contains data (of information) using color and if printed, should be printed in color to retain legibility and the information represented by the color.		
Declaration of responsibility: Data provided by the customer are clearly identified with (*). UL International Italia S.r.l. cannot be considered responsible for this information, for any other document sent by the Applicant/Manufacturer and for any difference between the software version present in the tested sample and that present in the object intended for final sale. In some cases, the software in the tested sample is in a version dedicated exclusively to the test, and therefore does not represent the software installed in the final version of the product.		

Test Item Description:	Maritime electronic lock
Trade Mark: (*)	ASSA ABLOY Global Solutions
Manufacturer: (*)	ASSA ABLOY Global Solutions Lodjursgatan 10 261 44 Landskrona - Sweden
Model/Type reference: (*)	Adorn ID 100
Ratings: (*)	Battery supply: 3 x 1.5 V AA batteries
FCC ID:	Contains 2BRES-ADORNV1C1
IC ID:	Contains 34655-ADORNV1C1
PMN:	Adorn
HVIN:	ADORNV1C1
HMN:	Adorn ID 100
Testing:	
Date of receipt of test item:	2025-09-24
UL Sample Tag No.:	8898571
Status of sample upon receipt:	☒ New and operational ☐ Reconditioned ☐ Damaged ☐ Unknown
Date(s) of performance of tests:	2025-10-02 to 2025-10-09
Name and address of factory(ies): (*)	No information available
General remarks: A cross ☒ in a rectangular shape means that this option is applied. ☒ Indicates that the listed condition, standard or equipment is applicable for this report. ☐ Indicates that the listed condition, standard or equipment is not applicable for this report. Throughout this report a ☐ comma / ☒ point is used as decimal separator. Where not otherwise specified or communicated in writing, statements of conformity (e.g. Pass/Fail) are established according to the following decision rule: considering that the applied test standards take measurement uncertainty into account, acceptance limit equals the tolerance limit (simple acceptance). This leads to a maximum 50% of false accept or false reject when the measured value equals the tolerance limit. See ILAC-G8:09/2019 for further details.	

General product information: (*)

The Adorn ID100 is an electronic RFID lock engineered for the maritime industry.
 The Adorn ID100 lock is a standalone electronic lock with RFID (radio frequency identification) and Bluetooth LE technology

Document history

Test Report No.	Reason for change	Date of issue
25-4791735805-6-1-0-RAD-A	Original release	2025-10-21

NOTE: New test report issue cancels and replaces the previous one.



FCC Accredited Test Firm

Accreditation	MRA	Designation Number	Expiration Date
Ministero dello Sviluppo Economico- Direzione Generale Pianificazione e Gestione dello Spettro Radioelettrico <u>Scope:</u> - Unintentional Radiators - FCC Part 15 Subpart B - Industrial, Scientific, and Medical Equipment - FCC Part 18 - Intentional Radiators - FCC Part 15 Subpart C	US-EU	IT0010	2027-04-02

ISED Wireless Device Testing Laboratory

Organization	CAB identifier	Scope of Recognition	Recognition Status
UL INTERNATIONAL ITALIA S.R.L. Company Number : 31386	IT0008	RSS-GEN RSS-210 (≤ 40 GHz) RSS-247	RECOGNIZED UNTIL: 2027-09-30 ACCREDIA ISO/IEC 17025:2017 Expires: 2029-06-15

Table of Contents

1	Test Item Description	6
1.1	Additional information of radio device(s)	8
2	Verdict summary section	9
3	Conformity decision rule	10
4	Formulas used	11
5	Test Setup Diagrams	12
6	Tests	13
6.1	Transmitter radiated emission ≤ 30 MHz.....	13
6.2	Transmitter radiated emission ≥ 30 MHz.....	18
6.3	Restricted bands and transmitter radiated band edge	24
7	List of test equipment.....	29
8	Measurement instrumentation uncertainties.....	31
	Attachment 1: Critical Component List (*)	32
	Attachment 2: Product Identity Declaration / Model Variants (*).....	33
	Attachment 3: Opinions and Interpretations	34

1 Test Item Description

Serial number: (*)		No information available				
Date of production: (*)		No information available				
Ports: (*)						
Port name	Description	Max. length (m)	Attached during test	Shielded	Symmetric	Outdoor use
USB-C	Service port ^	1	☒	☐ (^)	☒	☐
Wired network port	RJ45 Ethernet and PoE ^	30	☒	☐	☒	☐
Supplementary information to the ports:		n.d. = not defined (^) This cable can be shielded or unshielded as declared by the client. Unshielded cable represent the worst case condition used in the tests.				
Rated power supply: (*)		Voltage and frequency		Reference poles		
				N	L1	L2
		☐ AC:		☐	☐	☐
		☒ DC:4.5 V (Battery mode)				
Rated power: (*)		---				
Working frequencies: (*)		NFC: 13.56 MHz BT LE: 2400-2483.5 MHz				
Other parameters: (*)		No information available				
Firmware/Software version: (*)		No information available				
Hardware version: (*)		No information available				
Dimensions in cm (W x H x D): (*)		16 x 30 x 8				
Mounting position: (*)		☐ Table top equipment ☐ Wall/Ceiling mounted equipment ☐ Floor standing equipment ☐ Hand-held equipment ☒ Other: Component, treated as table top equipment				
Modules/parts: (*)		Module/parts of test item		Type	Manufacturer	
		---		---	---	

Operating modes:			
No.	Description		
1	Continuous transmission on Bluetooth LE: Channel: Top (Center frequency: 2480 MHz) Data rate: 1 Mbps Max Power		
2	Continuous transmission on Bluetooth LE: Channel: Bottom (Center frequency: 2402 MHz) Data rate: 1 Mbps Max Power		
Supplemental information to the operating mode:		(^) Worst case selected from the test report No. 25-4791735782-4-1-0-RAD-A	
Auxiliary equipment (AuxEq): <i>Peripheral equipment that is part of the system under test</i>		Description	Manufacturer
		---	---
Associated equipment (AE): <i>Equipment that is not part of the system under test but needed to exercise and/or monitor the EUT</i>		Description	Manufacturer
		---	---
Documents as provided by the applicant: (*)		Description	File name
		Product description	UL CAR_EMC items for clients ADORN ID 200
		Instruction	test instructions
		Technical manual	IM-ID100-002
Modifications to the test item during testing:		None	

Copy of marking plate: (*)
Not Available

1.1 Additional information of radio device(s)

Technology Tested:	BLE	
Type of Unit:	Chip with BLE function	
Transmit Frequency Range:	2400-2483.5 MHz	
Model of radio module:	nRF52840	
Brand of radio module:	Nordic	
Transmit Channels Tested:	Channel ID	Channel Frequency (MHz)
	Bottom	2402
	Top	2480
Gain (dBi)	3.7	

2 Verdict summary section

Standard clause		Description	Accreditation	Verdict	Note
FCC	ISED				
15.209	RSS-Gen 8.9	Radiated emissions	Accredia	P	1
15.247(d) 15.205	RSS-247 5.5 RSS-Gen 8.10	Radiated band edge and restricted bands	Accredia	P	1
Notes:					
1. Delta-type Approval according to "KDB 996369 D04 Module Integration Guide v02"					

Possible test case verdicts:

Test case not performed: N/P

Test case does not apply to test object: N/A

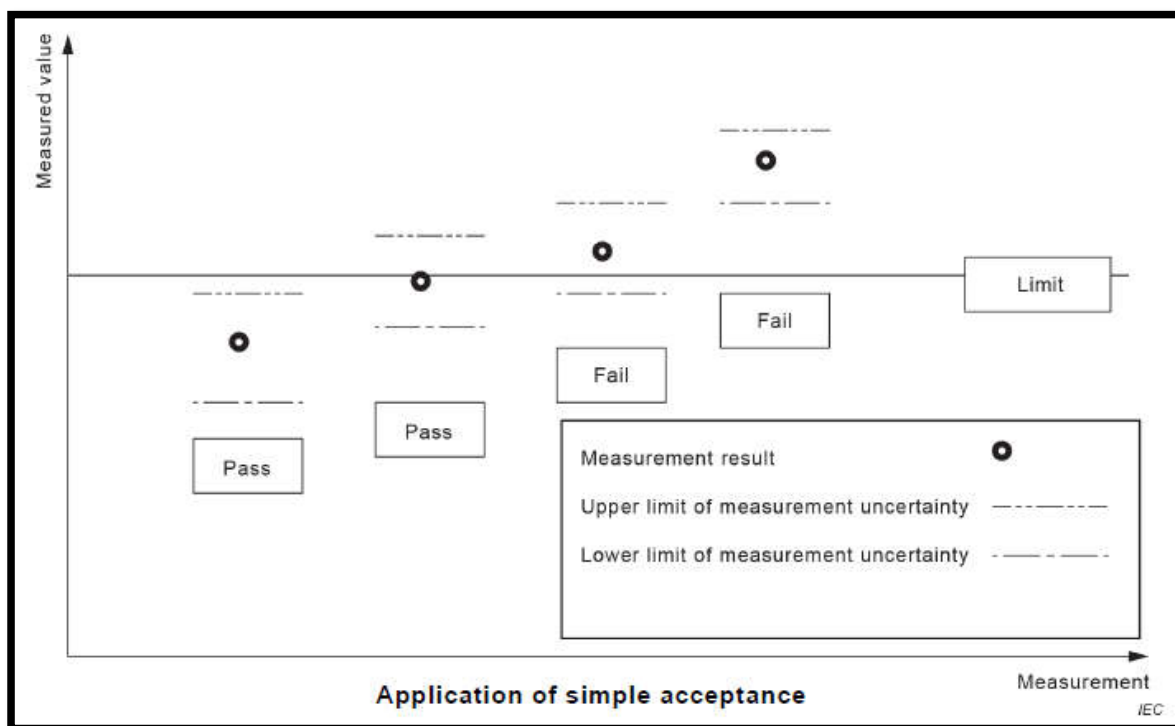
Test object does meet requirement: Pass (P)

Test object does not meet requirement: Fail (F)

Methods and Procedures
ANSI C63.10-2020+Cor.1-2023 for FCC
American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 for ISED
American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 558074 D01 15.247 Meas Guidance v05r02 GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES
FCC KDB 414788 D01 Radiated Test Site v01r01
TEST SITES FOR RADIATED EMISSION MEASUREMENTS
FCC KDB 996369 D04 Module Integration Guide v02 (October 13, 2020)
MODULAR TRANSMITTER INTEGRATION GUIDE GUIDANCE FOR HOST PRODUCT MANUFACTURERS

3 Conformity decision rule

Applied decision rule(s)	
☐	The conformity statements for EMC emission measurements according CISPR standards are decided as required by the applied product standard, typically referring to the decision rule of CISPR 16-4-2 clause 4.
☐	A decision rule for EMC immunity tests is not required since the test instrumentation uncertainty (e. g. as calculated according to the IEC 61000-4-X series) has no influence on the test signal and therefore the test result.
☒	Conformity statements for other measurements than EMC emission or EMC immunity in this report are decided in accordance with IEC Guide 115:2023, Simple Acceptance.
☐	The conformity statements in this report are decided in accordance with the following procedure. Procedure number, issue date and title: --



4 Formulas used

☐ Disturbance voltage

$$V \text{ (dB}\mu\text{V)} = V \text{ receiver (dB}\mu\text{V)} + \text{Correction (dB)}$$

where:

$$\text{Correction (dB)} = \text{I.L. transducer (dB)} + \text{I.L. cable (dB)}$$

☐ Magnetic field

$$H \text{ (dB}\mu\text{A/m)} = V \text{ receiver (dB}\mu\text{V)} + \text{Correction (dB)}$$

where:

$$\text{Correction (dB)} = \text{Magnetic antenna factor (dB}/\Omega\text{m)} + \text{I.L. cables (dB)}$$

☒ Electric field

$$E \text{ (dB}\mu\text{V/m)} = V \text{ receiver (dB}\mu\text{V)} + \text{Correction (dB)}$$

where:

$$\text{Correction (dB)} = \text{Electric antenna factor (dB/m)} - \text{Gain external preamplifier (dB)} + \text{I.L. external filter (dB)} + \text{I.L. cables (dB)}$$

Note: external preamplifier and external filter are optional and, if used, are indicated in the list of test equipment

☐ Radiated power (substitution method)

$$\text{Radiated power (dBm)} = V \text{ receiver (dB}\mu\text{V)} + \text{Correction (dB)}$$

where:

$$\text{Correction (dB)} = \text{Chamber attenuation (dB)} + \text{Gain of calibration transmitting antenna (dBi)} - \text{Gain external preamplifier (dB)} + \text{I.L. external filter (dB)}$$

Note: external preamplifier and external filter are optional and, if used, are indicated in the list of test equipment

$$\square E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20 \log D + 104.8; \text{ where } D \text{ is the measurement distance in meters}$$

$$\square \text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20 \log D - 104.8; \text{ where } D \text{ is the measurement distance in meters}$$

$$\square \text{ERP} = \text{EIRP} - 2.15 \text{ (dB)}; \text{ where ERP and EIRP are expressed in consistent units}$$

$$\square \text{EIRP} = \text{ERP} + 2.15 \text{ (dB)}; \text{ ERP and EIRP are expressed in consistent units}$$

☒ Margin

$$\text{Margin (dB)} = \text{Measure} - \text{Limit}$$

☐ Radiated emission limit conversion for a different measuring distance

40 dB/decade ($f < 30$ MHz); 20 dB/decade ($f \geq 30$ MHz)

☐ Correction of radiated field from 5 m to 3 m

+8.87 dB ($f < 30$ MHz); +4.44 dB ($f \geq 30$ MHz)

☒ Linear to logarithmic conversion

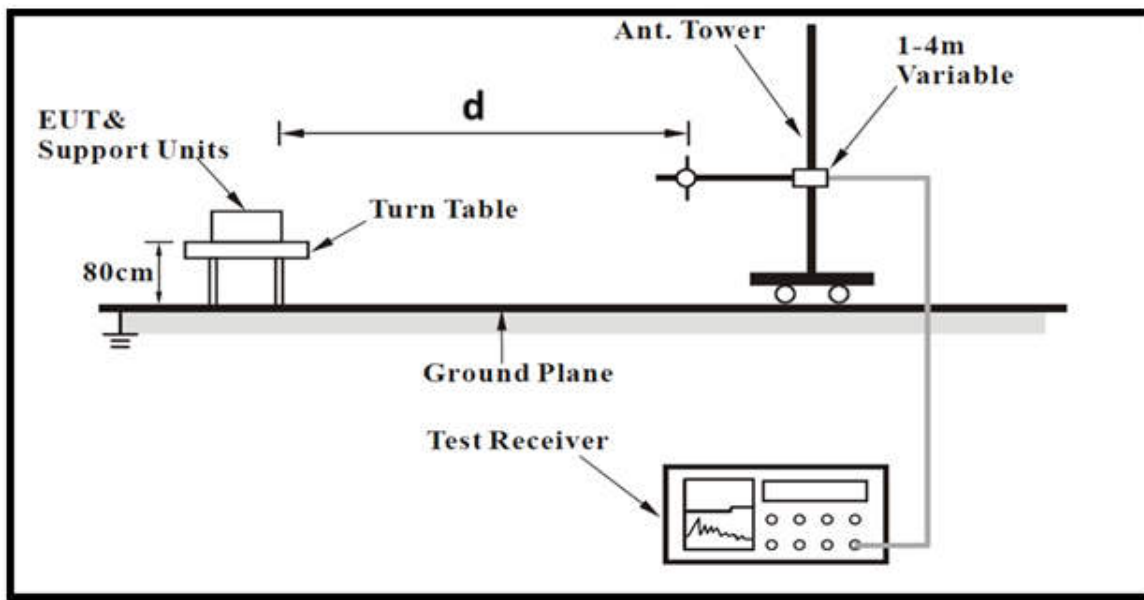
$\text{Log} = 20 \cdot \log(\text{Lin})$ for voltage and current; $\text{Log} = 10 \cdot \log(\text{Lin})$ for power

☐ Conducted Radio Measurements

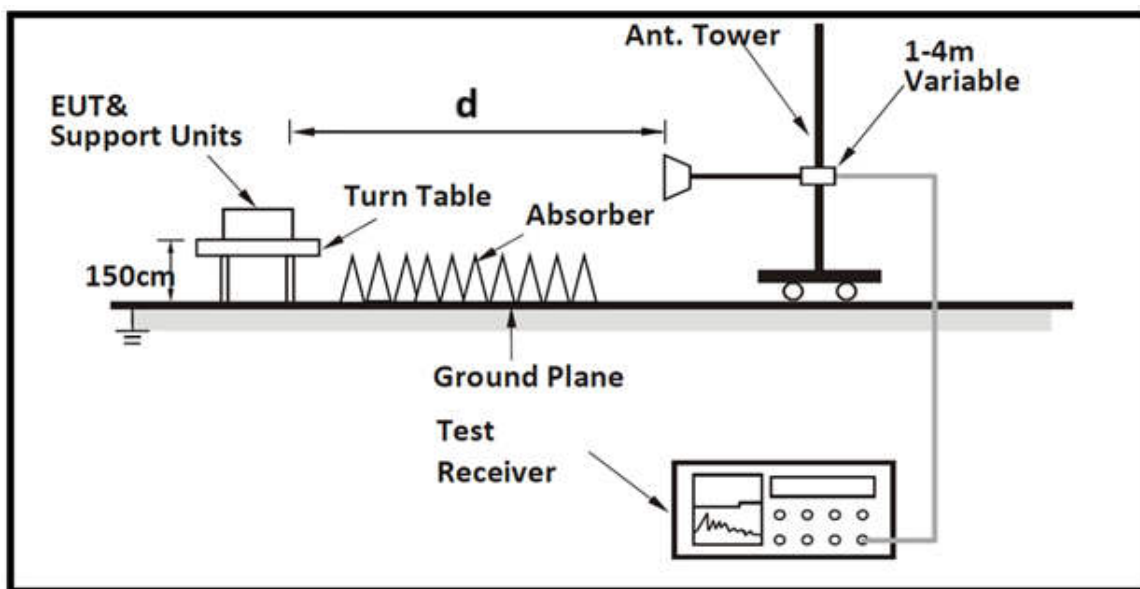
$$P_{\text{out_EUT}} = P_{\text{read_Amplifier}} \text{ (dBm)} + \text{Cable Losses (dB)} + \text{Attenuator (dB)}$$

5 Test Setup Diagrams

Radiated emission from 30 MHz to 1 GHz



Radiated emission > 1 GHz



6 Tests

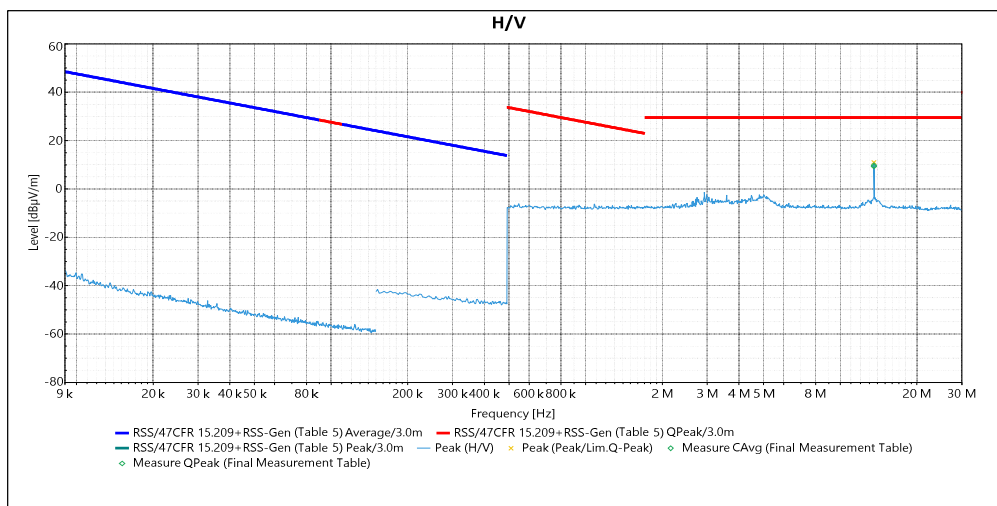
6.1 Transmitter radiated emission ≤ 30 MHz

Tested by:	Borghesi Matteo	
Test date:	2025-10-09	
Test location (stand):	Area 8: SAC 3-1.2 (RF emission)	
Ambient temperature:	24 °C	
Relative humidity:	49 %	
Atmospheric pressure:	1001 mbar	
FCC Reference:	§15.209	
ISED Canada Reference:	RSS-Gen §6.13, §8.9, §8.10	
Test Method Used	ANSI C63.10, §6.3, §6.4	
Test set-up description:	☒	Table-top EUT placed on an insulating support raised 80 cm above the reference ground plane.
	☐	Floor-standing EUT with its base in direct electrical contact with, or connected to, a grounded metal floor or grid, placed directly on the reference ground plane, making electric contact
	☐	Floor-standing EUT placed on an insulating support raised up to 12 mm above the reference ground plane
	☐	Floor-standing EUT for raised/false floor installation placed on an insulating support raised up to 34 cm above the reference ground plane
	☐	<u>For floor-standing equipment only</u> If possible, the antenna(s) of the EUT is located at a height of 1.5 m above the floor, and the intentional radiator circuitry is located within the system at a height of at least 0.8 m above the floor.
Test facility:	OATS or SAC using active loop antenna (distance: 3 m; height: 1 m)	
Supplementary test set-up description:	---	
Used mains voltage/frequency:	Battery mode	
Deviation to the standard:	None	
Supplementary information:	- In accordance with FCC KDB 414788, an alternative test site may be used for the measurement below 30 MHz (the OATS / SAC comparison data is available upon request). Therefore the result from the semi-anechoic chamber tests is shown in this section of the test report. - The limits are specified at a test distance of 30 m & 300 m. However, as specified by FCC Section 15.31(f)(2), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor. - Therefore the measurement values are extrapolated to a measurement distance of 3 m where field strength of X dBμV/m was measured. ➤ 9-490 kHz: from 300 m to 3 m subtracting 80 dB (40 dB/decade). ➤ 490-1705 kHz: from 30 m to 3 m subtracting 40 dB (40 dB/decade).	

	<i>Measurements were performed against CFR 47, Part 15, Subpart C, paragraph 15.209 (a) limits. These limits are identical to those in RSS-Gen Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X kHz resulted in a level of Y dBμV/m, which is equivalent to $Y - 51.5 = Z$ dBμA/m, which has the same margin, W dB, to the corresponding RSS-Gen Table 6 limit as it has to the 15.209(a) limit.</i>
--	--

Results

Operating mode	1
Axis	X
Verdict.....	Pass
Instrument settings	Start Frequency: 9 kHz; Stop Frequency: 150 kHz; Step: 50 Hz; Sweep Time: 500 ms/Step; RF Attenuation: Auto; RBW: 200 Hz; VBW: Auto; Preamplifier: OFF; Preselector: ON
Instrument settings	Start Frequency: 150 kHz; Stop Frequency: 30 MHz; Step: 2.25 kHz; Sweep Time: 500 ms/Step; RF Attenuation: Auto; RBW: 9 kHz; VBW: Auto; Preamplifier: OFF; Preselector: ON

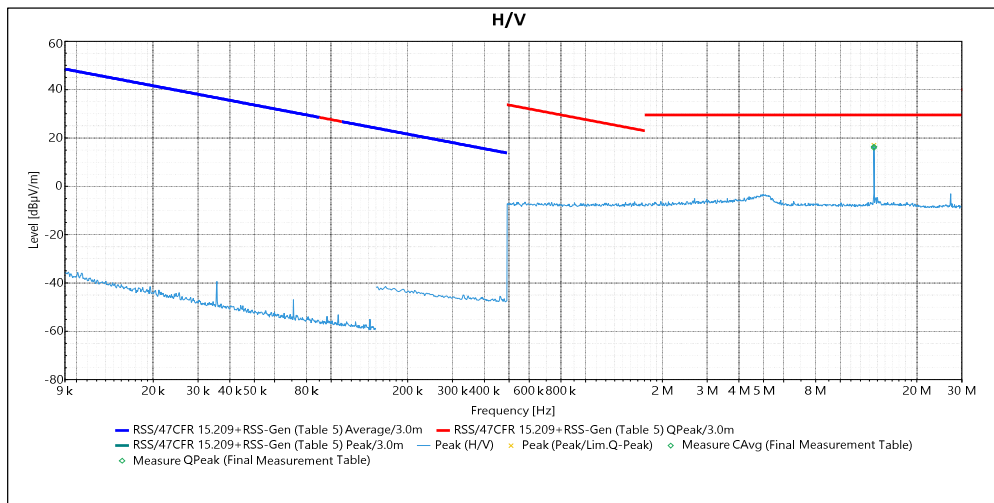


- ☐ The emissions are below the measurement system noise floor or 20 dB or more below the limit
- ☒ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

Final Measurement Table

Frequency	Measure CAVg (dBµV/m)	Limit Avg (dBµV/m)	Measure QPeak (dBµV/m)	Limit QPeak (dBµV/m)	Margin QPeak	Angle (°)	RBW (Hz)	Meas.Time (s)	Comments	Correction (dB)
13.56 MHz	9.29	NaN	9.78	29.54	-19.76	29.9	9 kHz	5	Pass	-19.98

Operating mode	1
Axis	Y
Verdict	Pass
Instrument settings	Start Frequency: 9 kHz; Stop Frequency: 150 kHz; Step: 50 Hz; Sweep Time: 500 ms/Step; RF Attenuation: Auto; RBW: 200 Hz; VBW: Auto; Preamplifier: OFF; Preselector: ON
Instrument settings	Start Frequency: 150 kHz; Stop Frequency: 30 MHz; Step: 2.25 kHz; Sweep Time: 500 ms/Step; RF Attenuation: Auto; RBW: 9 kHz; VBW: Auto; Preamplifier: OFF; Preselector: ON

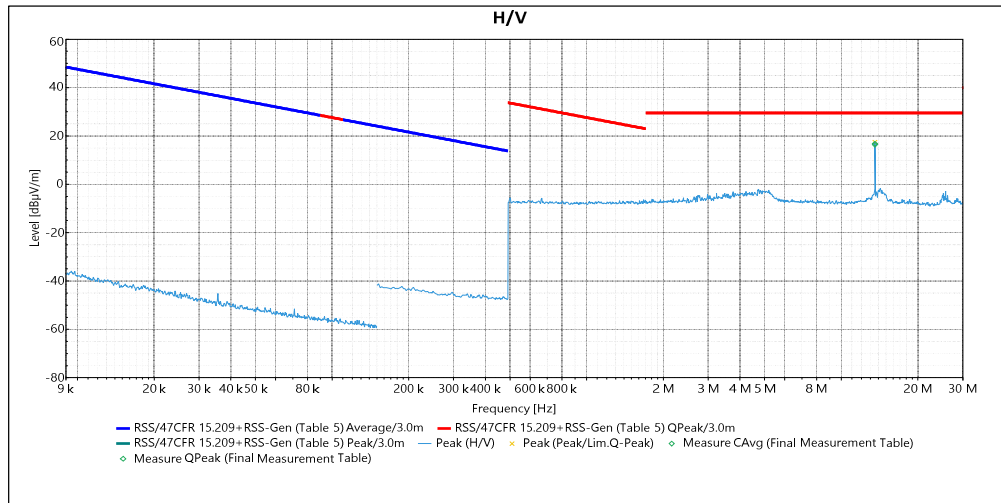


- ☐ The emissions are below the measurement system noise floor or 20 dB or more below the limit
- ☒ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

Final Measurement Table

Frequency	Measure CAvg (dBµV/m)	Limit Avg (dBµV/m)	Measure QPeak (dBµV/m)	Limit QPeak (dBµV/m)	Margin QPeak	Angle (°)	RBW (Hz)	Meas.Time (s)	Comments	Correction (dB)
13.56 MHz	15.94	NaN	16.35	29.54	-13.19	329.9	9 kHz	5	Pass	-19.98

Operating mode	1
Axis	Z
Verdict	Pass
Instrument settings	Start Frequency: 9 kHz; Stop Frequency: 150 kHz; Step: 50 Hz; Sweep Time: 500 ms/Step; RF Attenuation: Auto; RBW: 200 Hz; VBW: Auto; Preamplifier: OFF; Preselector: ON
Instrument settings	Start Frequency: 150 kHz; Stop Frequency: 30 MHz; Step: 2.25 kHz; Sweep Time: 500 ms/Step; RF Attenuation: Auto; RBW: 9 kHz; VBW: Auto; Preamplifier: OFF; Preselector: ON



- ☐ The emissions are below the measurement system noise floor or 20 dB or more below the limit
- ☒ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

Final Measurement Table

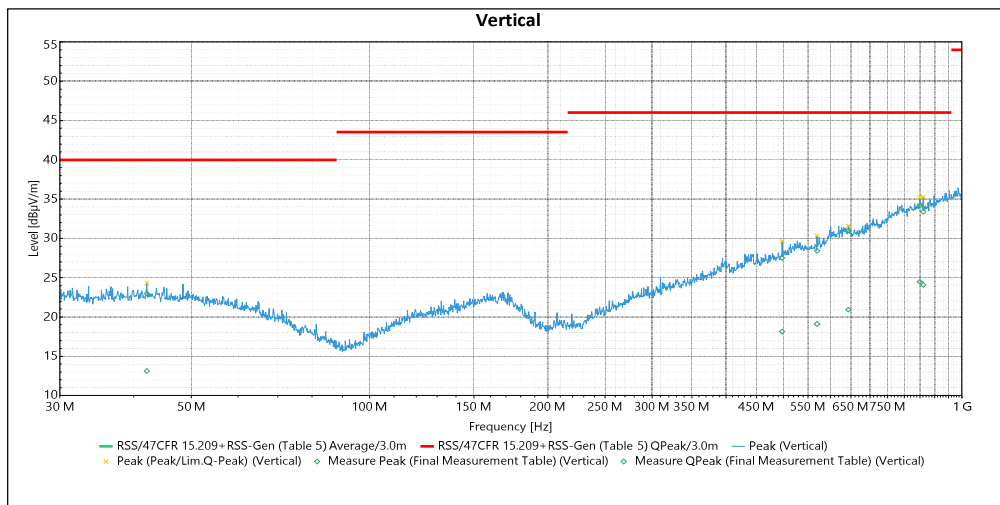
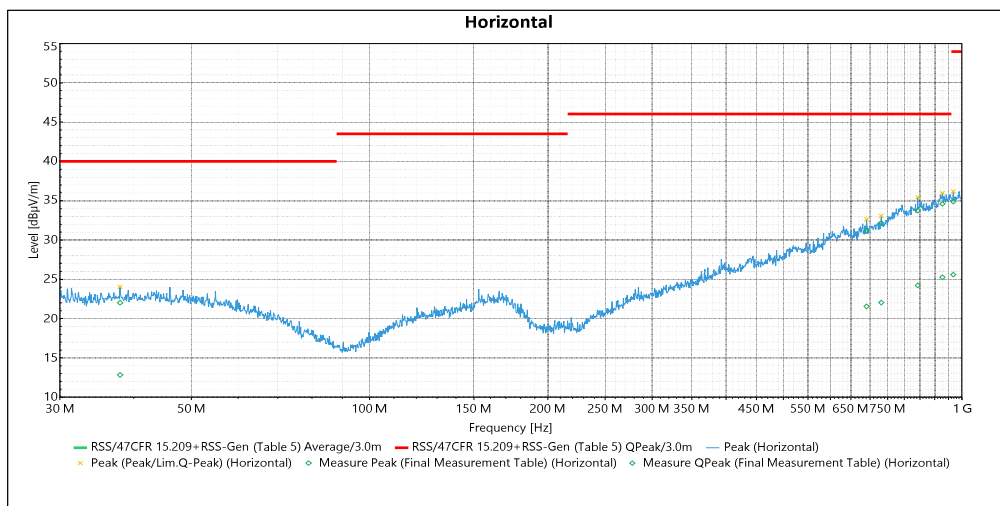
Frequency	Measure CAvg (dBµV/m)	Limit Avg (dBµV/m)	Measure QPeak (dBµV/m)	Limit QPeak (dBµV/m)	Margin QPeak	Angle (°)	RBW (Hz)	Meas.Time (s)	Comments	Correction (dB)
13.56 MHz	16.36	NaN	16.78	29.54	-12.76	29.9	9 kHz	5	Pass	-19.98

6.2 Transmitter radiated emission ≥ 30 MHz

Tested by:	Borghesi Matteo												
Test date:	2025-10-02 to 2025-10-08												
Test location (stand):	Area 8: SAC 3-1.2 (RF emission)												
Ambient temperature:	23 °C												
Relative humidity:	44 to 47 %												
Atmospheric pressure:	1001 to 1005 mbar												
FCC Reference:	§15.209												
ISED Canada Reference:	RSS-Gen §6.13, §8.9, §8.10												
Test Method Used	ANSI C63.10, §6.3, §6.5, §6.6												
Test set-up description:	<table border="1"> <tr> <td>☒</td><td>Table-top EUT placed on an insulating support raised 80 cm above the reference ground plane (for measurement frequency range: 30-1000 MHz)</td></tr> <tr> <td>☒</td><td>Table-top EUT placed on an insulating support raised 150 cm above the reference ground plane (for measurement frequency above 1 GHz)</td></tr> <tr> <td>☐</td><td>Floor-standing EUT with its base in direct electrical contact with, or connected to, a grounded metal floor or grid, placed directly on the reference ground plane, making electric contact</td></tr> <tr> <td>☐</td><td>Floor-standing EUT placed on an insulating support raised up to 12 mm above the reference ground plane</td></tr> <tr> <td>☐</td><td>Floor-standing EUT for raised/false floor installation placed on an insulating support raised up to 34 cm above the reference ground plane</td></tr> <tr> <td>☐</td><td><u>For floor-standing equipment only</u> If possible, the antenna(s) of the EUT is located at a height of 1.5 m above the floor, and the intentional radiator circuitry is located within the system at a height of at least 0.8 m above the floor.</td></tr> </table>	☒	Table-top EUT placed on an insulating support raised 80 cm above the reference ground plane (for measurement frequency range: 30-1000 MHz)	☒	Table-top EUT placed on an insulating support raised 150 cm above the reference ground plane (for measurement frequency above 1 GHz)	☐	Floor-standing EUT with its base in direct electrical contact with, or connected to, a grounded metal floor or grid, placed directly on the reference ground plane, making electric contact	☐	Floor-standing EUT placed on an insulating support raised up to 12 mm above the reference ground plane	☐	Floor-standing EUT for raised/false floor installation placed on an insulating support raised up to 34 cm above the reference ground plane	☐	<u>For floor-standing equipment only</u> If possible, the antenna(s) of the EUT is located at a height of 1.5 m above the floor, and the intentional radiator circuitry is located within the system at a height of at least 0.8 m above the floor.
☒	Table-top EUT placed on an insulating support raised 80 cm above the reference ground plane (for measurement frequency range: 30-1000 MHz)												
☒	Table-top EUT placed on an insulating support raised 150 cm above the reference ground plane (for measurement frequency above 1 GHz)												
☐	Floor-standing EUT with its base in direct electrical contact with, or connected to, a grounded metal floor or grid, placed directly on the reference ground plane, making electric contact												
☐	Floor-standing EUT placed on an insulating support raised up to 12 mm above the reference ground plane												
☐	Floor-standing EUT for raised/false floor installation placed on an insulating support raised up to 34 cm above the reference ground plane												
☐	<u>For floor-standing equipment only</u> If possible, the antenna(s) of the EUT is located at a height of 1.5 m above the floor, and the intentional radiator circuitry is located within the system at a height of at least 0.8 m above the floor.												
Test facility:	<u>Range: 30 MHz to 1 GHz</u> OATS or SAC using hybrid (bicon/log) antenna (distance: 3 m; height: 1 m to 4 m; tilt disabled) <u>Range: 1 GHz to 26 GHz</u> FSOATS using double-ridged guide horn antenna (distance: 3 m; height: 1 m to 4 m; tilt enabled)												
Supplementary test set-up description:	---												
Used mains voltage/frequency:	Battery mode												
Deviation to the standard:	None												
Supplementary information:	Correction duty cycle of 2.05 dB was added to average values. Correction duty cycle taken from the report No. 25-4791735782-4-1-0-RAD-A												

Results:

Operating mode	1
Verdict.....	Pass
Instrument settings	Start Frequency: 30 MHz; Stop Frequency: 1 GHz; Step: 30 kHz; Sweep Time: 20 ms/Step; RF Attenuation: Auto; RBW: 120 kHz; VBW: Auto; Preamplifier: ON; Preselector: ON



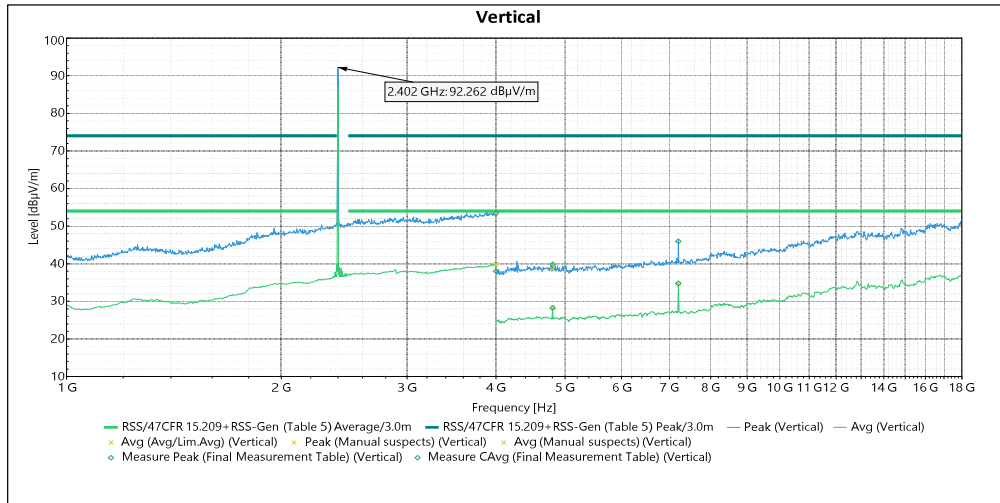
☐ The emissions are below the measurement system noise floor or 20 dB or more below the limit

☒ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

Final Measurement Table

Frequency	Measure Peak (dBuV/m)	Measure QPeak (dBuV/m)	Limit QPeak (dBuV/m)	Margin QPeak (dB)	Max height (m)	Max angle (°)	Polarization	RBW (Hz)	Meas.Time (s)	Comments	Correction (dB)
37.92 MHz	22.03	12.84	40	-27.16	3.57	18	Horizontal	120	5	Pass	19.25
690.81 MHz	31.21	21.55	46.02	-24.47	3.46	244.7	Horizontal	120	5	Pass	29.02
731.49 MHz	32.18	22.04	46.02	-23.98	1.84	152.8	Horizontal	120	5	Pass	29.79
842.64 MHz	33.75	24.22	46.02	-21.8	3.25	61.3	Horizontal	120	5	Pass	31.2
927.39 MHz	34.59	25.26	46.02	-20.76	3.38	188.8	Horizontal	120	5	Pass	32.22
967.98 MHz	34.88	25.6	53.98	-28.38	3.72	319.4	Horizontal	120	5	Pass	32.82
42.06 MHz	22.98	13.13	40	-26.87	3.88	332.3	Vertical	120	5	Pass	19.85
497.19 MHz	27.52	18.15	46.02	-27.87	3.33	204.7	Vertical	120	5	Pass	25.51
569.76 MHz	28.43	19.11	46.02	-26.91	3.77	184.6	Vertical	120	5	Pass	26.87
643.5 MHz	31.02	20.93	46.02	-25.09	1.89	103.8	Vertical	120	5	Pass	28.61
849.54 MHz	34.16	24.47	46.02	-21.55	1.76	258.2	Vertical	120	5	Pass	31.68
861.15 MHz	33.4	24.08	46.02	-21.94	3.79	226.6	Vertical	120	5	Pass	31.44

Operating mode	2
Verdict	Pass
Instrument settings	Start Frequency: 1 GHz; Stop Frequency: 4 GHz; Step: 250 kHz; Sweep Time: 20 ms/Step; RF Attenuation: Auto; RBW: 1 MHz; VBW: Auto; Preamplifier: ON; Preselector: ON
Instrument settings	Start Frequency: 4 GHz; Stop Frequency: 18 GHz; Step: 250 kHz; Sweep Time: 20 ms/Step; RF Attenuation: Auto; RBW: 1 MHz; VBW: Auto; Preamplifier: OFF; Preselector: ON

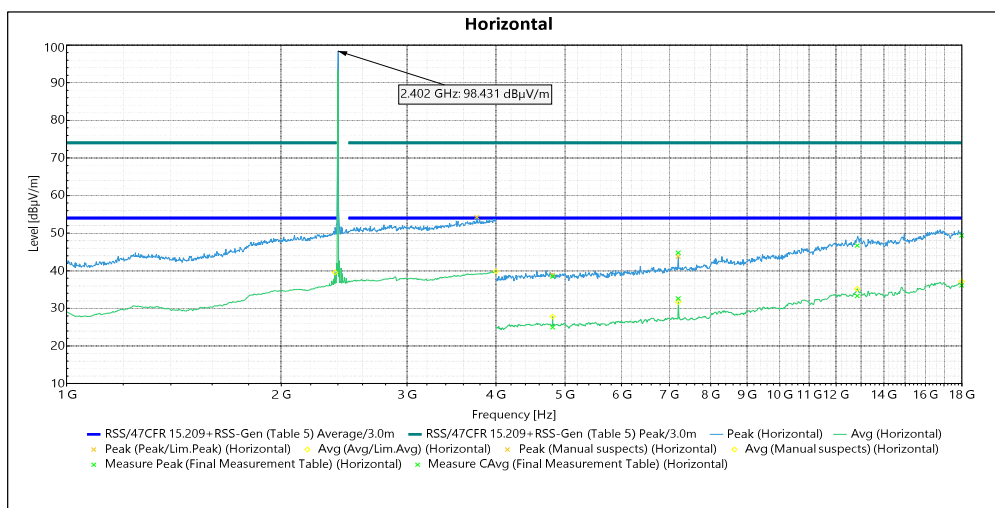


- ☐ The emissions are below the measurement system noise floor or 20 dB or more below the limit
- ☒ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

Final Measurement Table

Frequency (GHz)	Measure Peak (dBμV/m)	Limit Peak (dBμV/m)	Margin Peak (dB)	Measure CAvg (dBμV/m)	Duty cycle correction (dBμV/m)	Limit Avg (dBμV/m)	Margin Avg (dB)	Height (m)	Angle (°)	Polarization	RBW (Hz)	Meas. Time (s)	Comments	Correction (dB)
3.999	53.4	74	-20.6	38.06	40.11	54	-13.89	3.87	280.5	Vertical	1 MHz	5	Pass	39.45
4.804	39.9	74	-34.1	28.29	30.34	54	-23.66	2.25	175.6	Vertical	1 MHz	5	Pass	-0.29
7.206	45.97	74	-28.03	34.77	36.82	54	-17.18	2.18	212.4	Vertical	1 MHz	5	Pass	3.56

Operating mode	2
Verdict	Pass
Instrument settings	Start Frequency: 1 GHz; Stop Frequency: 4 GHz; Step: 250 kHz; Sweep Time: 20 ms/Step; RF Attenuation: Auto; RBW: 1 MHz; VBW: Auto; Preamplifier: ON; Preselector: ON
Instrument settings	Start Frequency: 4 GHz; Stop Frequency: 18 GHz; Step: 250 kHz; Sweep Time: 20 ms/Step; RF Attenuation: Auto; RBW: 1 MHz; VBW: Auto; Preamplifier: OFF; Preselector: ON

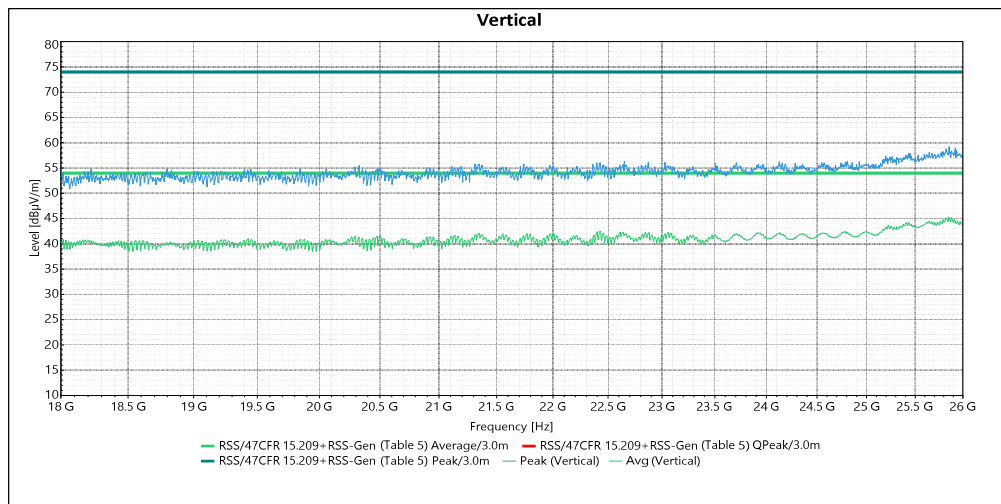
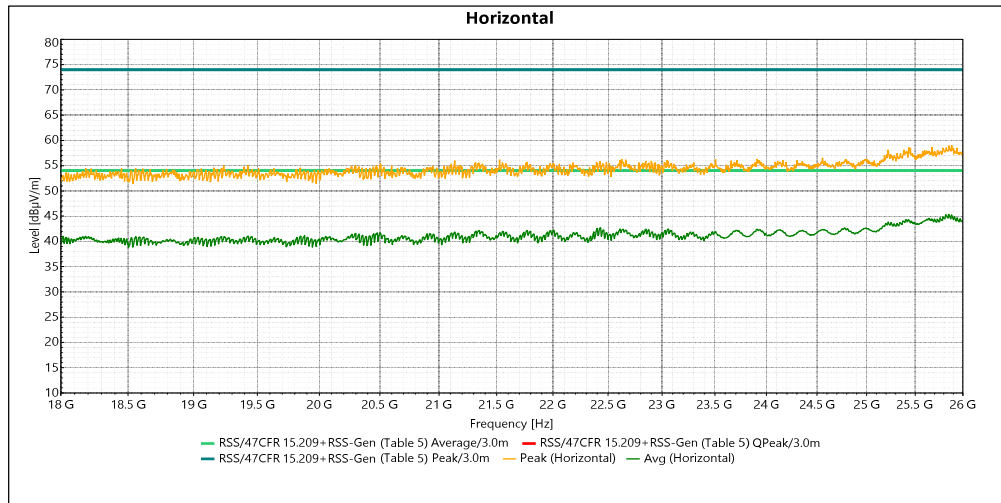


- ☐ The emissions are below the measurement system noise floor or 20 dB or more below the limit
- ☒ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

Final Measurement Table

Frequency (GHz)	Measure Peak (dBμV/m)	Limit Peak (dBμV/m)	Margin Peak (dB)	Measure CAvg (dBμV/m)	Duty cycle correction (dBμV/m)	Limit Avg (dBμV/m)	Margin Avg (dB)	Height (m)	Angle (°)	Polarization	RBW (MHz)	Meas. Time (s)	Comments	Correction (dB)
4.804	38.49	74	-35.51	24.99	27.04	54	-26.96	4	317.6	Horizontal	1	5	Pass	-0.29
7.206	44.78	74	-29.22	32.66	34.71	54	-19.29	2.43	230.2	Horizontal	1	5	Pass	3.56
12.84	46.72	74	-27.28	33.32	35.37	54	-18.63	1.05	19.2	Horizontal	1	5	Pass	11.74
17.998	49.4	74	-24.6	36.13	38.18	54	-15.82	1.44	139.7	Horizontal	1	5	Pass	14.4

Operating mode	2
Verdict	Pass
Instrument settings	Start Frequency: 18 GHz; Stop Frequency: 26 GHz; Step: 250 kHz; Sweep Time: 20 ms/Step; RF Attenuation: Auto; RBW: 1 MHz; VBW: Auto; Preamplifier: OFF; Preselector: ON



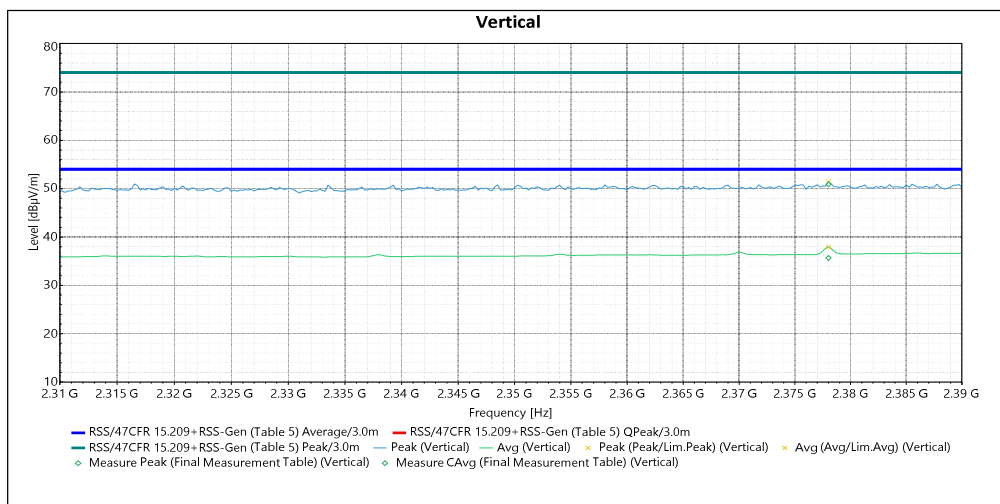
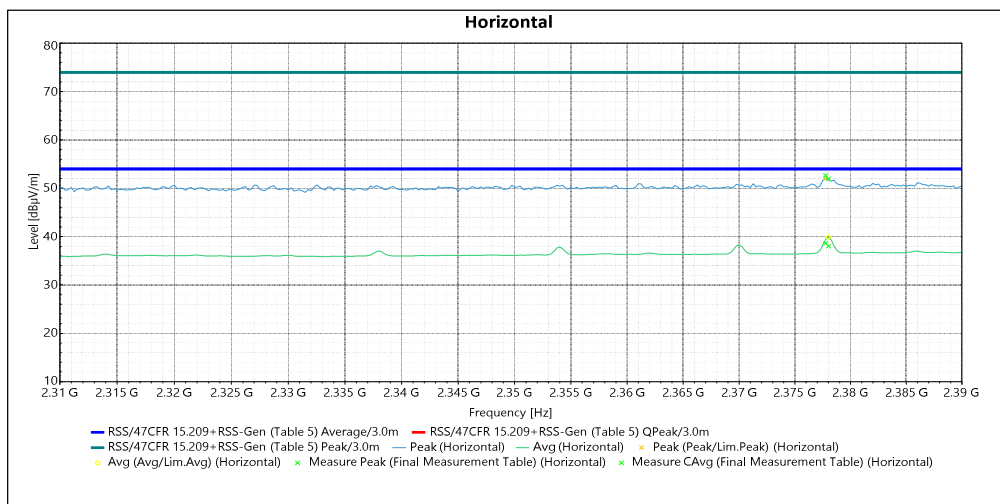
- ☒ The emissions are below the measurement system noise floor or 20 dB or more below the limit
- ☐ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

6.3 Restricted bands and transmitter radiated band edge

Tested by:	Borghesi Matteo	
Test date:	2025-10-03	
Test location (stand):	Area 8: SAC 3-1.2 (RF emission)	
Ambient temperature:	23 °C	
Relative humidity:	42 %	
Atmospheric pressure:	1003 mbar	
FCC Reference:	15.247(d), 15.205(a)(b), 15.209	
ISED Canada Reference:	RSS-Gen, 6.13 & 8.9 RSS-247, 5.5	
Test Method Used	KDB 558074 Section 8.7 referencing ANSI C63.10 Sections 11.11 and 11.12	
Test set-up description:	☐	Table-top EUT placed on an insulating support raised 80 cm above the reference ground plane (for measurement frequency range: 30-1000 MHz)
	☒	Table-top EUT placed on an insulating support raised 150 cm above the reference ground plane (for measurement frequency above 1 GHz)
	☐	Floor-standing EUT with its base in direct electrical contact with, or connected to, a grounded metal floor or grid, placed directly on the reference ground plane, making electric contact
	☐	Floor-standing EUT placed on an insulating support raised up to 12 mm above the reference ground plane
	☐	Floor-standing EUT for raised/false floor installation placed on an insulating support raised up to 34 cm above the reference ground plane
	☐	For floor-standing equipment only If possible, the antenna(s) of the EUT is located at a height of 1.5 m above the floor, and the intentional radiator circuitry is located within the system at a height of at least 0.8 m above the floor.
Test facility:	Range: 1 GHz to 26 GHz FSOATS using double-ridged guide horn antenna (distance: 3 m; height: 1 m to 4 m; tilt enabled)	
Supplementary test set-up description:	---	
Used mains voltage/frequency:	Battery mode	
Deviation to the standard:	None	
Supplementary information:	Correction duty cycle of 2.05 dB was added to average values. Correction duty cycle taken from the report No. 25-4791735782-4-1-0-RAD-A	

Restricted band evaluation:

Operating mode	2
Verdict	Pass
Instrument settings	Start Frequency: 2.31 GHz; Stop Frequency: 2.39 GHz; Step: 250 kHz; Sweep Time: 500 ms/Step; RF Attenuation: Auto; RBW: 1 MHz; VBW: Auto; Preamplifier: ON; Preselector: ON

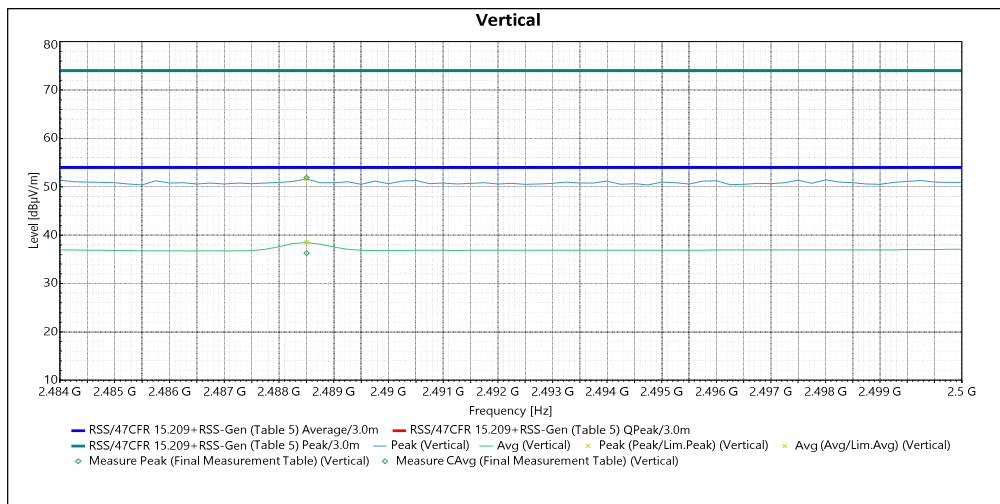
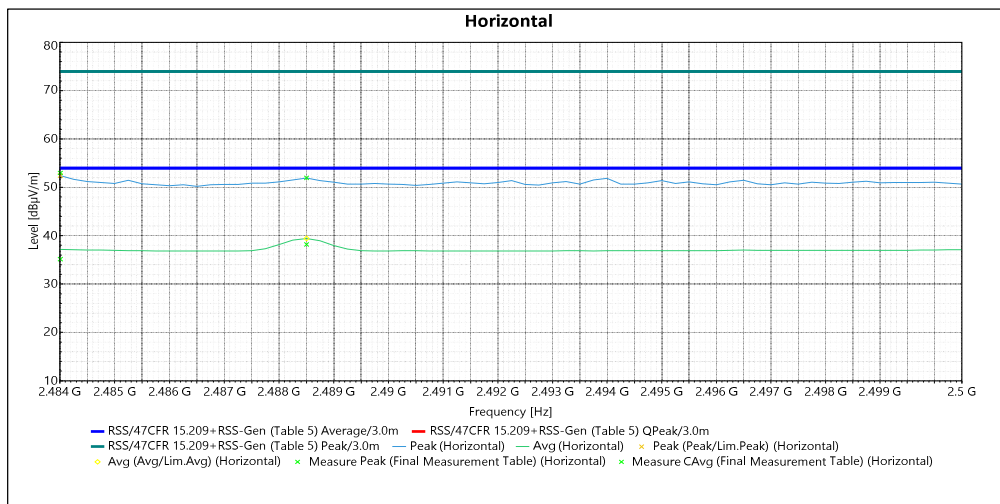


- ☐ The emissions are below the measurement system noise floor or 20 dB or more below the limit
- ☒ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

Final Measurement Table

Frequency (GHz)	Measure Peak (dBμV/m)	Limit Peak (dBμV/m)	Margin Peak (dB)	Measure CAvg (dBμV/m)	Duty cycle correction (dBμV/m)	Limit Avg (dBμV/m)	Margin Avg (dB)	Height (m)	Angle (°)	Polarization	RBW (Hz)	Meas.Time (s)	Comments	Correction (dB)
2.378	52.63	74	-21.37	38.63	40.68	54	-13.32	3.87	344.5	Horizontal	1	5	Pass	36.75
2.378	51.99	74	-22.01	38.01	40.06	54	-13.94	3.87	3.4	Horizontal	1	5	Pass	36.75
2.378	50.88	74	-23.12	35.68	37.73	54	-16.27	1	332.2	Vertical	1	5	Pass	36.75

Operating mode.....	1
Verdict.....	Pass
Instrument settings	Start Frequency: 2.4835 GHz; Stop Frequency: 2.5 GHz; Step: 250 kHz; Sweep Time: 500 ms/Step; RF Attenuation: Auto; RBW: 1 MHz; VBW: Auto; Preamplifier: ON; Preselector: ON



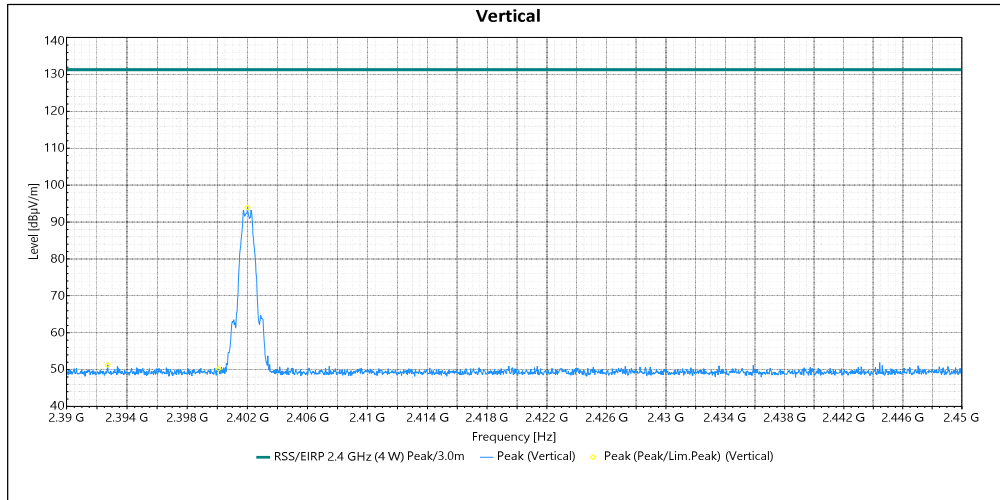
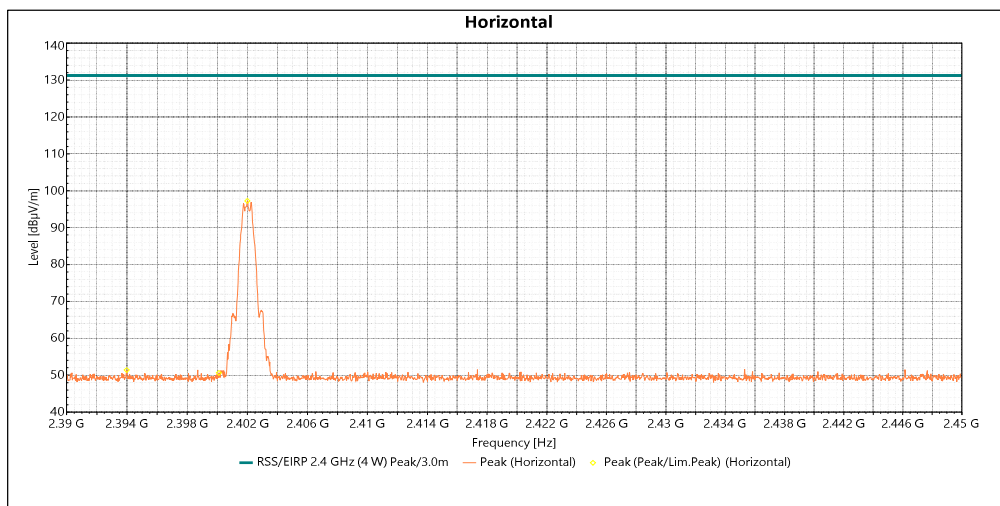
- ☐ The emissions are below the measurement system noise floor or 20 dB or more below the limit
- ☒ Final measurements for emissions that are above -20 dB from the applicable limits are shown below (at least 6 worst frequencies):

Final Measurement Table

Frequency (GHz)	Measure Peak (dBμV/m)	Limit Peak (dBμV/m)	Margin Peak (dB)	Measure CAvg (dBμV/m)	Duty cycle correction (dBμV/m)	Limit Avg (dBμV/m)	Margin Avg (dB)	Height (m)	Angle (°)	Polarization	RBW (Hz)	Meas.Time (s)	Comments	Correction (dB)
2.484	52.99	74	-21.01	35.17	37.22	54	-16.78	4	335.6	Horizontal	1 MHz	5	Pass	36.97
2.488	51.97	74	-22.03	38.22	40.27	54	-13.73	3.72	324.2	Horizontal	1 MHz	5	Pass	37.01
2.488	51.9	74	-22.1	36.26	38.31	54	-15.69	2.63	326.9	Vertical	1 MHz	5	Pass	37.01

Band Edge Evaluation:

Operating mode	2
Verdict	Pass
Instrument settings	Start Frequency: 2.39 GHz; Stop Frequency: 2.45 GHz; Step: 20000 Pts; Sweep Time: 1 s; RF Attenuation: 10 dB; RBW: 100 kHz; VBW: 300 kHz; Preamplifier: ON; Preselector: ON



Final measurement

Channel	Band-edge frequency (MHz)	Max peak in band-edge (dBμV/m)	Max peak of fundamental (dBμV/m)	Delta (dB)	Delta Requirement (dB)	Antenna polarization	Result
Low	2390-2400	51.39	97.25	45.86	>20 dB	Horizontal	Pass
Low	2400	50.61	97.25	46.64	>20 dB	Horizontal	Pass
Low	2390-2400	51.26	93.96	42.7	>20 dB	Vertical	Pass
Low	2400	50.20	93.96	43.76	>20 dB	Vertical	Pass

7 List of test equipment

Equipment	Type	Inventory Number	Manufacturer	Serial Number	Last Calibration Date	Calibration Due Date
Test Stand: Disturbance field strength / Electric field 30-1000 MHz						
Tilting Antenna Mast Positioning Tower	2171B/2170B	135821	ETS-Lindgren (Cedar Park, Texas)	-	-	-
EMI TEST RECEIVER	ESW26	246431	Rohde & Schwarz (Koeln) GmbH & Co. KG	103182	2025-03-31	2026-01-28
Cable 2000mm - 18 GHz	SF126/11SMA/11N/2000	220503	Huber+Suhner	554756/126	2025-05-28	2026-05-28
Cable 8000mm - 18 GHz	SF126/11N/11N/8000	220502	Huber+Suhner	556226/126	2025-05-28	2026-05-28
Software - EMC	BAT-EMC	156535	Nexio Technologies		-	-
NSA Normalized Site Attenuation	NSA FACT3-1.2 STD	210410	ETS-Lindgren	None	2025-08-28	2028-08-28
SEMI-ANECHOIC CHAMBER	FACT3-1.2 STD	210407	ETS-Lindgren	-	-	-
6dB Attenuator	DGA 9552 N	210263	Schwarzbeck Mess-Elektronik OHG	CH9006	2025-09-12	2026-09-28
Trilog-Broadband Antenna	VULB 9168	210290	Schwarzbeck Mess-Elektronik OHG	12441244	2025-09-03	2027-09-28
Center, Modular RF Platform	7000-011	210859	ETS-Lindgren	00231682	-	-
Test Stand: Disturbance field strength / Electric field 1-18 GHz						
SEMI-ANECHOIC CHAMBER	FACT3-1.2 STD	210407	ETS-Lindgren	-	-	-
Center, Modular RF Platform	7000-011	210859	ETS-Lindgren	00231682	-	-
Low-Noise EMI Preamp	BLMA 0118-4A	209025	BONN Elektronik	2113244A2113244A	2025-03-24	2026-03-28
Software - EMC	BAT-EMC	156535	Nexio Technologies		-	-
SVSWR Voltage Standing Wave Ratio	SVSWR FACT3-1.2 STD	210409	ETS-Lindgren	None	2025-08-28	2028-08-28
EMI TEST RECEIVER	ESW26	246431	Rohde & Schwarz (Koeln) GmbH & Co. KG	103182	2025-03-31	2026-01-28
Tilting Antenna Mast Positioning Tower	2171B/2170B	135821	ETS-Lindgren (Cedar Park, Texas)	-	-	-
Highpass Filter	WHKX12-2520-2800-18000-60ST	154712	Wainwright Instruments GmbH	1	2024-10-28	2025-10-28
Absorber High Frequency	EHP-12	212616	ETS-Lindgren	-	-	-
Double Ridged Broadband Horn Antenna	3117	138662	ETS-Lindgren (Cedar Park, Texas)	00208482	2025-01-30	2027-01-28
Cable 2000mm - 18 GHz	SF126/11SMA/11N/2000	220503	Huber+Suhner	554756/126	2025-05-28	2026-05-28
Cable 8000mm - 18 GHz	SF126/11N/11N/8000	220502	Huber+Suhner	556226/126	2025-05-28	2026-05-28
Microwave Coaxial Cable N to Sma-M	AK 9515 H	213199	Schwarzbeck Mess-Elektronik OHG	00169	2025-05-23	2026-05-28

Test Stand: Disturbance field strength / Electric field 18-26 GHz						
Cable 500mm - 0.04 to 40 GHz	SF102E-50-2X11SK252	216877	Huber+Suhner	536580/2E	2025-03-24	2026-03-28
Tilting Antenna Mast Positioning Tower	2171B/2170B	135821	ETS-Lindgren (Cedar Park, Texas)	-	-	-
Absorber High Frequency	EHP-12	212616	ETS-Lindgren	-	-	-
Software - EMC	BAT-EMC	156535	Nexio Technologies	-	-	-
Double Ridged Broadband Horn Antenna	3116C	210452	ETS-Lindgren	0024001100240011	2024-05-20	2027-05-28
Cable 6000mm - 0.04 to 26.5 GHz	SF526S-600-2X11PC35501	216873	Huber+Suhner	2717237001	2025-03-24	2026-03-28
Low-Noise EMI Preamplifier	BLMA 1840-1A	209026	BONN Elektronik	2113244B	2025-07-17	2026-07-28
Center, Modular RF Platform	7000-011	210859	ETS-Lindgren	00231682	-	-
SEMI-ANECHOIC CHAMBER	FACT3-1.2 STD	210407	ETS-Lindgren	-	-	-
EMI TEST RECEIVER	ESW26	246431	Rohde & Schwarz (Koeln) GmbH & Co. KG	103182	2025-03-31	2026-01-28
Test Stand: Auxiliary equipment						
Mini Datalogger (FACT3)	174H	211147	Testo	83306371	2024-10-25	2025-10-28
CLIMATIC CENTRAL UNIT (SACs side)	iBTHX-W	70611	Omega Engineering Inc.	1040495	2025-04-28	2026-04-28
Laser Measure	RSLDM-50H	224436	RS Pro	210743764	2023-11-10	2025-11-28
Test Stand: Disturbance field strength / Electric field 9kHz-30 MHz						
Software - EMC	BAT-EMC	156535	Nexio Technologies	-	-	-
SEMI-ANECHOIC CHAMBER	FACT3-1.2 STD	210407	ETS-Lindgren	-	-	-
NSIL Normalised Site Insertion Loss	NSIL FACT3-1.2 STD	268431	ETS-Lindgren	None	2025-06-23	2028-06-28
Antenna Tripod	CTP 6099	155934	Teseq, Inc	-	-	-
10m coaxial cable	10m N(m)-N(m) Highflexx 7	266860	Kabel Kusch	None	2025-07-15	2026-07-28
DC Power Injector	PI 6121	155980	Teseq, Inc	-	-	-
Center, Modular RF Platform	7000-011	210859	ETS-Lindgren	00231682	-	-
Active Loop Antenna	HLA 6121	155933	Teseq, Inc	45746	2025-02-14	2027-02-28
EMI TEST RECEIVER	ESW26	207263	Rohde & Schwarz (Koeln) GmbH & Co. KG	101512	2025-05-09	2026-05-28

8 Measurement instrumentation uncertainties

The Uncertainty of Measurement (UoM) for each unit measured in this Test Report was estimated in accordance with the UL International Italia document No. ULID-005850 and is retained on file. Details of the estimation of UoM may be made available upon request, in particular for quantities not listed.

Measurement	Range	Ulab	Unit
Frequency	9 kHz to 40 GHz	0.5	kHz
Time	0.7 μ s to 16000 s	3.00	%
Conducted power, by spectrum analyzer	9 kHz to 40 GHz	0.51	dB
Conducted power, by fast power meter	9 kHz to 8 GHz	0.49	dB
Temperature (ambient)	15 to 35 °C	0.72	°C
Temperature (climatic chamber)	-40 to 100 °C	1.63	°C
Humidity (ambient)	30 to 70 %	5.76	%RH
Humidity (climatic chamber)	30 to 95 %	3.95	%RH
Supply voltage (AC)	0 to 500 V	3.00	%
Supply voltage (DC)	0 to 15 V	0.28	%
Conducted disturbance at mains and other port power using V-AMN	9 kHz to 150 kHz	3.71	dB
Conducted disturbance at mains and other port power using V-AMN	150 kHz to 30 MHz	3.36	dB
Radiated disturbance (magnetic field using a loop antenna)	9 kHz to 30 MHz	3.16	dB
Radiated disturbance (electric field strength in SAC 3, hybrid antenna, Hor)	30 MHz to 1000 MHz	4.22	dB
Radiated disturbance (electric field strength in SAC 3, hybrid antenna, Ver)	30 MHz to 1000 MHz	5.64	dB
Radiated disturbance (electric field strength in SAC 5, hybrid antenna, Hor)	30 MHz to 1000 MHz	3.98	dB
Radiated disturbance (electric field strength in SAC 5, hybrid antenna, Ver)	30 MHz to 1000 MHz	5.66	dB
Radiated disturbance (electric field strength in FSOATS 3) (1)	1 GHz to 6 GHz	5.43	dB
Radiated disturbance (electric field strength in FSOATS 3) (2)	1 GHz to 6 GHz	4.29	dB
Radiated disturbance (electric field strength in FSOATS 3) (1)	6 GHz to 18 GHz	5.18	dB
Radiated disturbance (electric field strength in FSOATS 3) (2)	6 GHz to 18 GHz	4.22	dB
Radiated disturbance (electric field strength in FSOATS 5) (1)	1 GHz to 6 GHz	5.12	dB
Radiated disturbance (electric field strength in FSOATS 5) (2)	1 GHz to 6 GHz	4.13	dB
Radiated disturbance (electric field strength in FSOATS 5) (1)	6 GHz to 18 GHz	5.63	dB
Radiated disturbance (electric field strength in FSOATS 5) (2)	6 GHz to 18 GHz	4.54	dB
Radiated disturbance (electric field strength in FSOATS 3) (1)	18 GHz to 40 GHz	7.63	dB
Radiated disturbance (electric field strength in FSOATS 5) (1)	18 GHz to 40 GHz	7.63	dB
Radiated Spurious Emission (ERP/EIRP, Substitution Method)	25 MHz to 26 GHz	5.97	dB
Legend/Remarks: n.d.: not defined (1) Using external EMI preamplifier. (2) Not using external EMI preamplifier. Supplementary information: - The measurement uncertainty values are calculated and correspond to an expansion factor (coverage factor) $k = 2$ (which provide confidence level of 95.45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). - Listed values are intended with prefix "±".			



Attachment 1: Critical Component List (*)

(section excluded from ILAC regulations)

Not provided by the Applicant.

< END OF ATTACHMENT 1 >

Attachment 2: Product Identity Declaration / Model Variants (*)

(section excluded from ILAC regulations)

Not provided by the Applicant or Not Applicable.

< END OF ATTACHMENT 2 >

Attachment 3: Opinions and Interpretations

(section excluded from ILAC regulations)

Not Applicable.

< END OF ATTACHMENT 3 >