



EMI – TEST REPORT

- FCC Part 15.225, RSS 210-

Type / Model Name : AX500 SMG NG

Product Description : Ticket reader

Applicant : Axess AG

Address : Sonystraße 18

5081 Anif/Salzburg, Austria

Manufacturer : Axess AG

Address : Sonystraße 18

5081 Anif/Salzburg, Austria

Test Result according to the standards
listed in clause 1 test standards:

POSITIVE

Test Report No. : 80219256-04 Rev_0

04. March 2025

Date of issue



Deutsche
Akkreditierungsstelle
D-PL-12030-01-00

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IC ID: 12296A-AX500SMGNG

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules and Regulations Part 15, Subpart A - General (October 2024)

Part 15, Subpart A, Section 15.31	Measurement standards
Part 15, Subpart A, Section 15.33	Frequency range of radiated measurements
Part 15, Subpart A, Section 15.35	Measurement detector functions and bandwidths

FCC Rules and Regulations Part 15, Subpart C - Intentional Radiators (October 2024)

Part 15, Subpart C, Section 15.207	Conducted limits
Part 15, Subpart C, Section 15.209	Radiated emission limits, general requirements
Part 15, Subpart C, Section 15.225	Operation within the band 13.110 - 14.010 MHz

RSS Rules and Regulations

RSS-Gen Issue 5, March 2018 Amendment 1 (March 2019) Amendment 2 (February 2021)	General Requirements and Information for the Certification of Radiocommunication Equipment
RSS-210 Issue 11, June 2024	Low Power Licence – Exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment
ANSI C63.10: 2013	Testing Unlicensed Wireless Devices

The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

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2 EQUIPMENT UNDER TEST

2.1 Information provided by the Client

Please note, we do not take any responsibility for information provided by the client or his representative which may have an influence on the validity of the test results.

2.2 Sampling

The customer is responsible for the choice of sample. Sample configuration, start-up and operation is carried out by the customer or according to his/her instructions.

2.3 Photo documentation of the EUT

Detailed photos see ATTACHMENT A and ATTACHMENT B

ATTACHMENT A: External views

ATTACHMENT B: Internal views

2.4 Short description of the equipment under test (EUT)

The EUT is a Ticket reader.
RFID technology 13.56 MHz

Number of tested samples: 1
Serial number: 1 7000000 0100 24 0230

EUT operation mode:

The equipment under test was operated during the measurement under the following conditions:

- Continuous reading mode (13.56 MHz) with TAG

EUT configuration:

The following peripheral devices and interface cables were connected during the measurements:

- Power supply	Model : AX500 POWER SUPPLY, Axess AG*)
- RFID Card	Model : Axess AG

*) SN.: 115002500100240113

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2.5 Power supply system utilised

Power supply voltage : 24 V DC

All tests were carried out with a supply voltage of 24 V DC unless otherwise stated. Exceptions are described in the detailed test conditions.

The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

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3 TEST RESULT SUMMARY

FCC Rule Part	RSS Rule Part	Description	Result
15.207	RSS Gen, 8.8	AC power line conducted emissions	passed
15.225	RSS-210, B.6	Field strength of fundamental	passed
15.209	RSS Gen, 8.9	Spurious emissions	passed
15.225	RSS-210, B.6	Frequency tolerance	passed
15.215	RSS-Gen, 6.7	Occupied bandwidth	passed
15.225	RSS-210, B.6	Transmitter spectrum mask	passed

3.1 Revision history of test report

Test report No	Rev.	Issue Date	Changes
80219256-04	0	04 March 2025	Initial test report

The test report with the highest revision number replaces the previous test reports.

3.2 FINAL ASSESSMENT

The equipment under test fulfills the EMI requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 10 October 2024

Testing concluded on : 24 February 2025

Checked by:

 Jürgen Pessinger
2025.03.05 16:48:28
+01'00'

Jürgen Pessinger
Deputy Teamleader Radio

Tested by:

 Markus Friedl
I am the author of
this document.
2025.03.04 20:29:52
+01'00'

Markus Friedl
Radio Team

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4 TEST ENVIRONMENT

4.1 Address of the test laboratory

CSA Group Bayern GmbH
Straubinger Straße 100
94447 PLATTLING
GERMANY

4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15 - 35 ° C

Humidity: 30 - 60 %

Atmospheric pressure: 86 - 106 kPa

4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. It is noted that the expanded measurement uncertainty corresponds to the measurement results from the standard measurement uncertainty multiplied by the coverage factor $k = 2$. The true value is located in the corresponding interval with a probability of 95 %. The measurement uncertainty was calculated for all measurements listed in this test report on basis of the ETSI Technical Report TR 100 028 Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1 and Part 2. The results are documented in the quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	± 3.29 dB
20 dB Bandwidth	Center frequency of EuT	95%	$\pm 2.5 \cdot 10^{-7}$
99% Occupied Bandwidth	Center frequency of EuT	95%	$\pm 2.5 \cdot 10^{-7}$
Radiated Spurious Emissions	9 kHz to 30 MHz	95%	± 3.53 dB
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	± 3.71 dB
Radiated Spurious Emissions	1000 MHz to 10000 MHz	95%	± 2.34 dB
Peak conducted output power	902 MHz to 928 MHz	95%	± 0.35 dB
Conducted Spurious Emissions	9 kHz to 10000 MHz	95%	± 2.15 dB

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4.4 Conformity Decision Rule

The applied conformity decision rule is based on ILAC G8:09/2019 clause 4.2.1 Binary Statement for Simple Acceptance Rule ($w = 0$).

Details can be found in the procedure CSA_B_V50_29.

4.5 Measurement protocol for FCC and ISED

4.5.1 GENERAL INFORMATION

CSA Group Bayern GmbH is recognized as wireless testing laboratory under the CAB identifier:

FCC: DE 0011

ISED: DE0009

4.5.2 General Standard information

The test methods used comply with ANSI C63.10 - "Testing Unlicensed Wireless Devices".

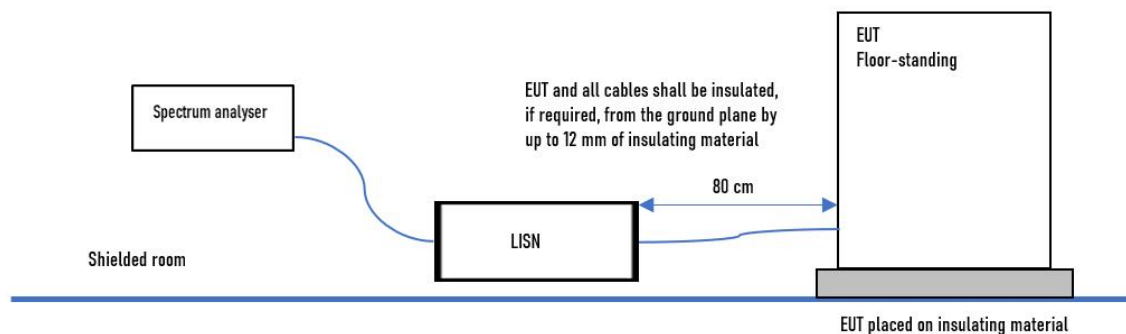
4.5.2.1 Justification

The equipment under test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions.

4.5.3 Details of test procedures

4.5.3.1 Conducted emission

Test setup according ANSI C63.10 (example EUT Floor-standing)



The final level, expressed in dBmV, is arrived at by taking the reading directly from the Spectrum analyser. This level is compared to the limit.

To convert between dBmV and mV, the following conversions apply:

$$\text{dBmV} = 20(\log \text{mV})$$

$$\text{mV} = \text{Inverse log}(\text{dBmV}/20)$$

Conducted emissions on the 50 Hz and/or 60 Hz power interface of the EUT are measured in the frequency range of 150 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasi-peak detection and a Line Impedance Stabilization Network (LISN) with 50 W / 50 mH (CISPR 16) characteristics. The receiver is protected by means of an impedance matched pulse limiter connected directly to the RF input. Table top equipment is placed on a non-conducting table 80 centimetres above the floor and is positioned 40 centimetres from the vertical ground plane (wall) of the screen room. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other

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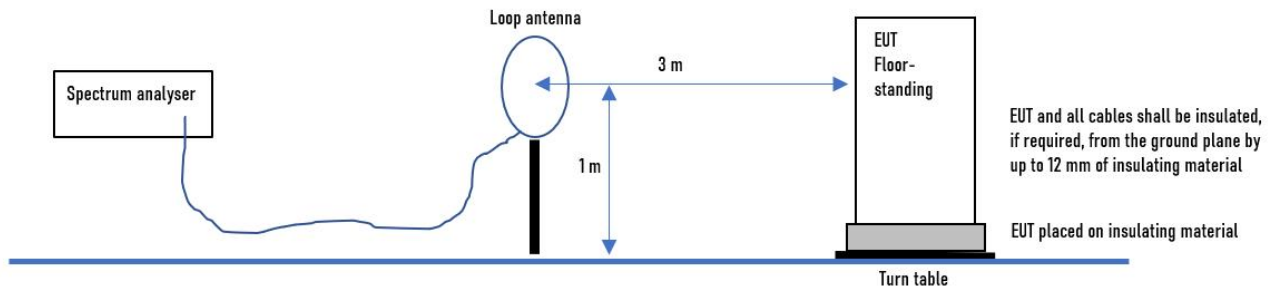
surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

If the minimum limit margin appears to be less than 20 dB with a peak mode measurement, the emission is re-measured using a tuned receiver with quasi-peak and average detection and recorded on the data sheets.

4.5.3.2 Radiated emission

4.5.3.2.1 Anechoic chamber (9 kHz - 30 MHz):

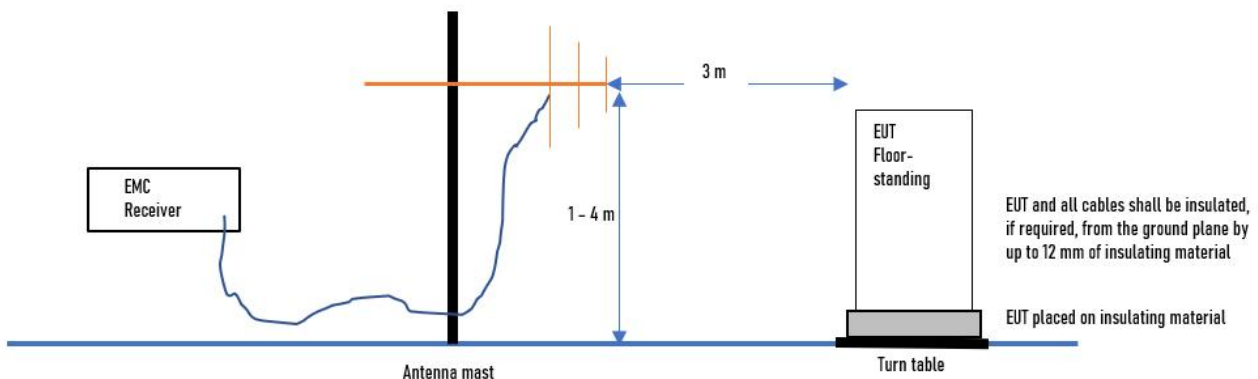
Test setup according ANSI C63.10 (example EUT Floor-standing)



Emissions from the EUT are measured in the frequency range of 9 kHz to 30 MHz using a tuned receiver and a calibrated loop antenna. Table top equipment is placed on a 1.0 X 1.5 m non-conducting table 80 centimetres above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. If necessary to prevent direct metallic contact of the EUT and the reference ground plane, insulating material (up to 12 mm thick) shall be placed under the EUT. Cables to simulators/testers (if used in this test) are routed through the centre of the table and to a screened room located outside the test area. The antenna is positioned 3, 10 or 30 metres horizontally from the EUT and is repeated vertically. To locate maximum emissions from the test sample the antenna is varied along the site axis and the EUT is rotated 360 degrees.

4.5.3.2.2 Anechoic chamber (30 MHz - 1 GHz):

Test setup according ANSI C63.10. (example EUT Floor-standing)



Spurious emissions from the EUT are measured in the frequency range of 30 MHz to 1000 MHz using a tuned receiver and appropriate broadband linearly polarised antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection. Table top equipment is placed on a 1.0 X 1.5 m non-conducting table 80 centimetres above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. If necessary to prevent direct metallic contact of the EUT and the reference ground plane, insulating material (up to 12 mm thick) shall be placed under the EUT. Cables to simulators/testers (if used in this test) are routed through the centre of the table and to a screened room located outside the test area. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 metres and the EUT is rotated

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360 degrees. The final level in dB μ V/m is calculated by taking the reading from the EMI receiver (Level dB μ V) and adding the correction factors and cable loss factor (dB). The FCC limit is subtracted from this result in order to provide the limit margin listed in the measurement protocol.

The resolution bandwidth setting:

30 MHz – 1000 MHz: RBW: 120 kHz

Example:

Frequency (MHz)	Level (dB μ V)	+	Factor (dB)	=	Level (dB μ V/m)	-	Limit (dB μ V/m)	=	Delta (dB)
719.0	75.0	+	32.6	=	107.6	-	110.0	=	-2.4

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5 TEST CONDITIONS AND RESULTS

5.1 Conducted emissions

For test instruments and accessories used, see section 6 Part A 4.

5.1.1 Description of the test location

Test location: Shielded Room SR9

5.1.2 Photo documentation of the test set-up

See attachment C to this report.

5.1.3 Applicable standard

FCC Part 15, Section 15.207.

5.1.4 Description of Measurement

The radiated power of the spurious emission from the EUT is measured in a test setup following the procedures set out in ANSI C63.10.

5.1.5 Test result

Frequency range: 0.15 MHz - 30 MHz

Min. limit margin 9.58 dB at 150 kHz

Limit according to FCC Part 15, Section 15.207:

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency

The requirements are **FULFILLED**.

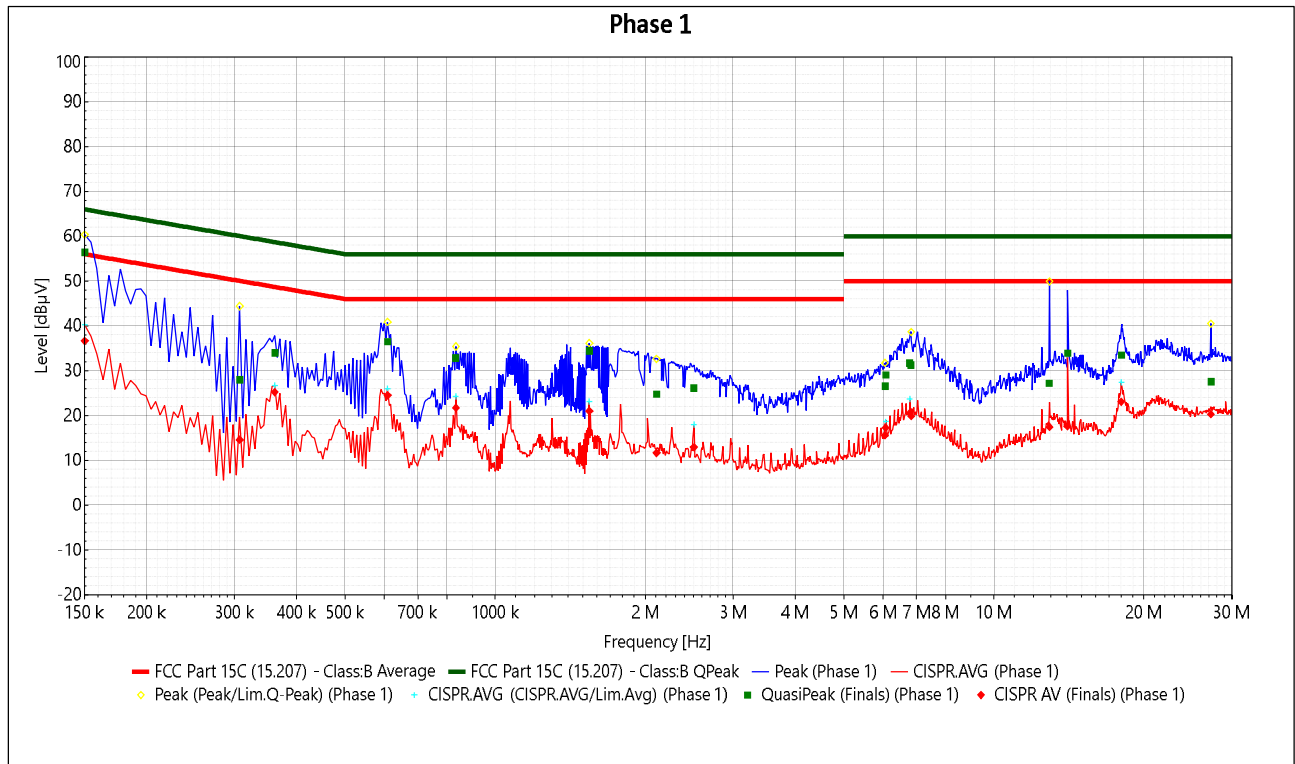
Remarks: The EUT (DC 24V) is supplied via AX500 POWER SUPPLY (Axess AG) for the A4 test.

The measurement was performed at the AC power input of the AX500 POWER SUPPLY.

Test voltage: 120 V AC 60 Hz

For detailed test result please refer to following test protocols

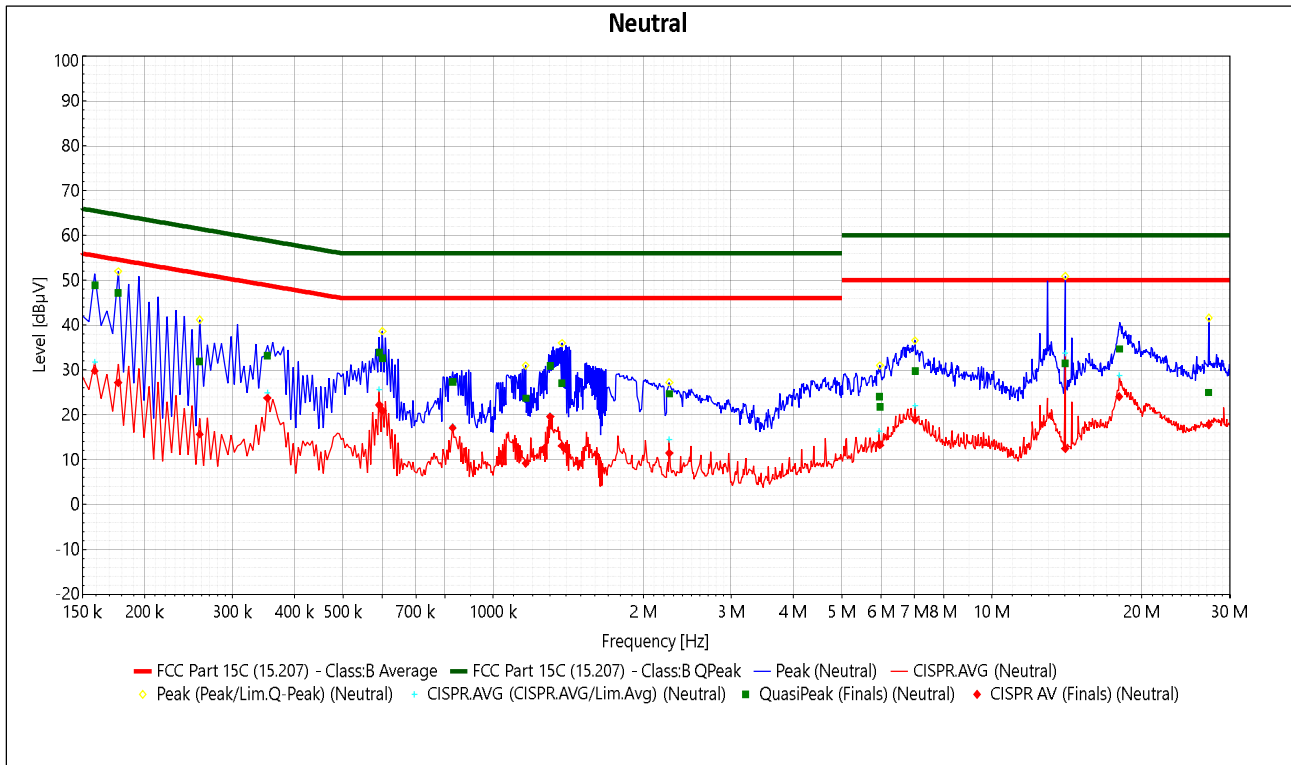
5.1.6 Test protocol



Frequency (Hz)	QuasiPeak (dBμV)	QP Margin	QP Limit (dBμV)	CISPR AV (dBμV)	CISPR AV Margin	AV Limit (dBμV)	Line	Correction (dB)
150 k	56.42	-9.58	66	36.66	-19.34	56	Phase 1	10.03
307.5 k	28.02	-32.01	60.04	14.59	-35.45	50.04	Phase 1	10.07
361.5 k	34.02	-24.68	58.69	25.24	-23.46	48.69	Phase 1	10.09
609 k	36.48	-19.52	56	24.49	-21.51	46	Phase 1	10.16
834 k	32.84	-23.16	56	21.72	-24.28	46	Phase 1	10.22
1.545 M	34.37	-21.63	56	21.03	-24.97	46	Phase 1	10.34
2.108 M	24.75	-31.25	56	11.67	-34.33	46	Phase 1	10.38
2.504 M	26.14	-29.86	56	12.94	-33.06	46	Phase 1	10.38
6.05 M	26.59	-33.41	60	15.6	-34.4	50	Phase 1	10.45
6.068 M	29.04	-30.96	60	17.29	-32.71	50	Phase 1	10.45
6.788 M	31.71	-28.29	60	20.62	-29.38	50	Phase 1	10.48
6.824 M	31.22	-28.78	60	19.88	-30.12	50	Phase 1	10.48
12.926 M	27.19	-32.81	60	17.45	-32.55	50	Phase 1	10.88
14.051 M	33.91	-26.09	60	17.61	-32.39	50	Phase 1	10.97
18.011 M	33.49	-26.51	60	23.11	-26.89	50	Phase 1	11.18
27.249 M	27.58	-32.42	60	20.31	-29.69	50	Phase 1	11.53

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Frequency (Hz)	QuasiPeak (dBµV)	QP Margin	QP Limit (dBµV)	CISPR AV (dBµV)	CISPR AV Margin	AV Limit (dBµV)	Line	Correction (dB)
159 k	48.91	-16.6	65.52	29.85	-25.66	55.52	Neutral	10.06
177 k	47.16	-17.46	64.63	27.19	-27.43	54.63	Neutral	10.07
258 k	31.89	-29.61	61.5	15.7	-35.8	51.5	Neutral	10.09
352.5 k	33.2	-25.7	58.9	23.72	-25.19	48.9	Neutral	10.12
591 k	33.9	-22.1	56	22.22	-23.78	46	Neutral	10.19
600 k	32.59	-23.41	56	20.93	-25.07	46	Neutral	10.19
829.5 k	27.38	-28.62	56	17.1	-28.9	46	Neutral	10.24
1.163 M	23.7	-32.3	56	9.18	-36.82	46	Neutral	10.31
1.302 M	30.94	-25.06	56	19.61	-26.39	46	Neutral	10.33
1.374 M	27.07	-28.93	56	13.09	-32.91	46	Neutral	10.34
2.256 M	24.69	-31.31	56	11.45	-34.55	46	Neutral	10.42
5.946 M	24.1	-35.9	60	13.61	-36.39	50	Neutral	10.44
5.969 M	21.8	-38.2	60	13.27	-36.73	50	Neutral	10.44
7.013 M	29.8	-30.2	60	18.9	-31.1	50	Neutral	10.47
14.033 M	31.46	-28.54	60	12.45	-37.55	50	Neutral	10.89
18.02 M	34.73	-25.27	60	24.06	-25.94	50	Neutral	11.04
27.227 M	24.98	-35.02	60	17.79	-32.21	50	Neutral	11.14

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5.2 Field strength of the fundamental wave

For test instruments and accessories used see section 6 Part CPR 1.

5.2.1 Description of the test location

Test location: Anechoic chamber SAC 2
Test distance: 3 metres

5.2.2 Photo documentation of the test set-up

See attachment C to this report.

5.2.3 Applicable standard

FCC Part 15, Section 15.225(a).

5.2.4 Description of Measurement

The radiated power of the spurious emission from the EUT is measured in a test setup following the procedures set out in ANSI C63.10.

5.2.5 Test result

- a) Result at a measurement distance of 3m

Frequency (MHz)	Level (dBμV)	Ant. factor (dB 1/m)	Field strength dB(μV/m)
13.56	70	20.0	90

- b) Result extrapolated to a distance of 30 m

Frequency (MHz)	Field strength dB(μV/m) @3m	Extrapolation factor (dB)	Field strength dB(μV/m) @30m	Limit dB(μV/m)	Delta (dB)
13.56	90	-40	50	84.0	34

Limit according to FCC Part 15, Section 15.225(a):

Frequency (MHz)	Field strength of fundamental wave (μV/m)	dB(μV/m)	Measurement distance (metres)
13.553 - 13.567	15848	84.0	30

The requirements are **FULFILLED**.

Remarks: None

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5.3 Spurious emissions

For test instruments and accessories used see section 6 Part **SER 1**, **SER 2**.

5.3.1 Description of the test location

Test location: Anechoic chamber SAC 2
Test distance: 3 metres

5.3.2 Photo documentation of the test set-up

See attachment C to this report.

5.3.3 Applicable standard

FCC Part 15, Section 15.209.

5.3.4 Description of Measurement

The radiated power of the spurious emission from the EUT is measured in a test setup following the procedures set out in ANSI C63.10.

The resolution bandwidth during the measurement is as follows:

9 kHz – 150 kHz: RBW: 200 Hz
150 kHz – 30 MHz: RBW: 9 kHz
30 MHz – 1000 MHz: RBW: 120 kHz

Detector: QP (In frequency range 9-90 kHz and 110-490 kHz a linear average detector is used for iSED)

5.3.5 Test result < 30MHz

FCC

f (MHz)	Level QP@3m (dBμV)	Ant. factor (dB/m)	Field strength QP@3m dB(μV/m)	Distance corr. 3m to 30m (dB)	Corrected level QP@30m dB(μV/m)	Limit QP@30m dB(μV/m)	Delta (dB)
27.12	17.6	20	37.6	-40	2.4	29.5	27.1

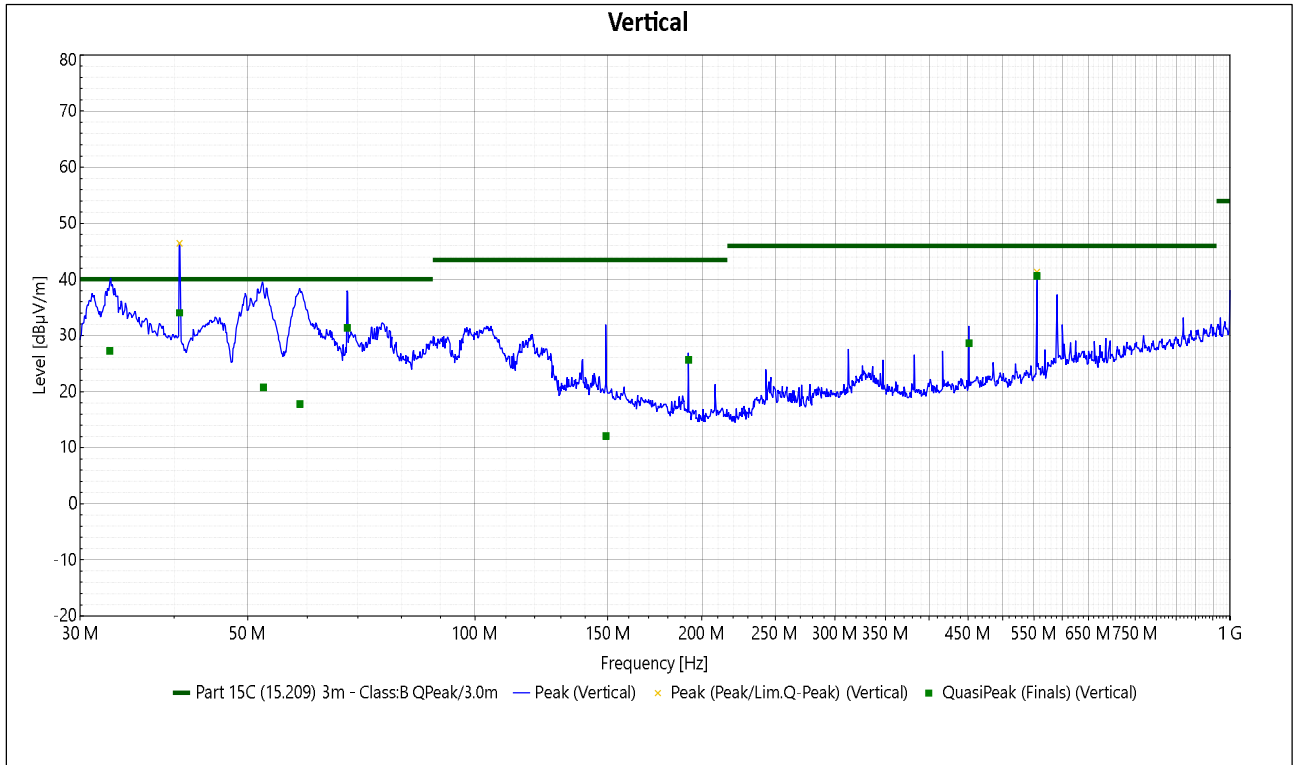
iSED

f (MHz)	Level QP@3m (dBμA)	Ant. factor (dB/m)	Field strength QP@3m dB(μA/m)	Distance corr. 3m to 30m (dB)	Corrected level QP@30m dB(μA/m)	Limit QP@30m dB(μA/m)	Delta (dB)
27.12	-33.9	20	-13.9	-40	-53.9	-22	31.9

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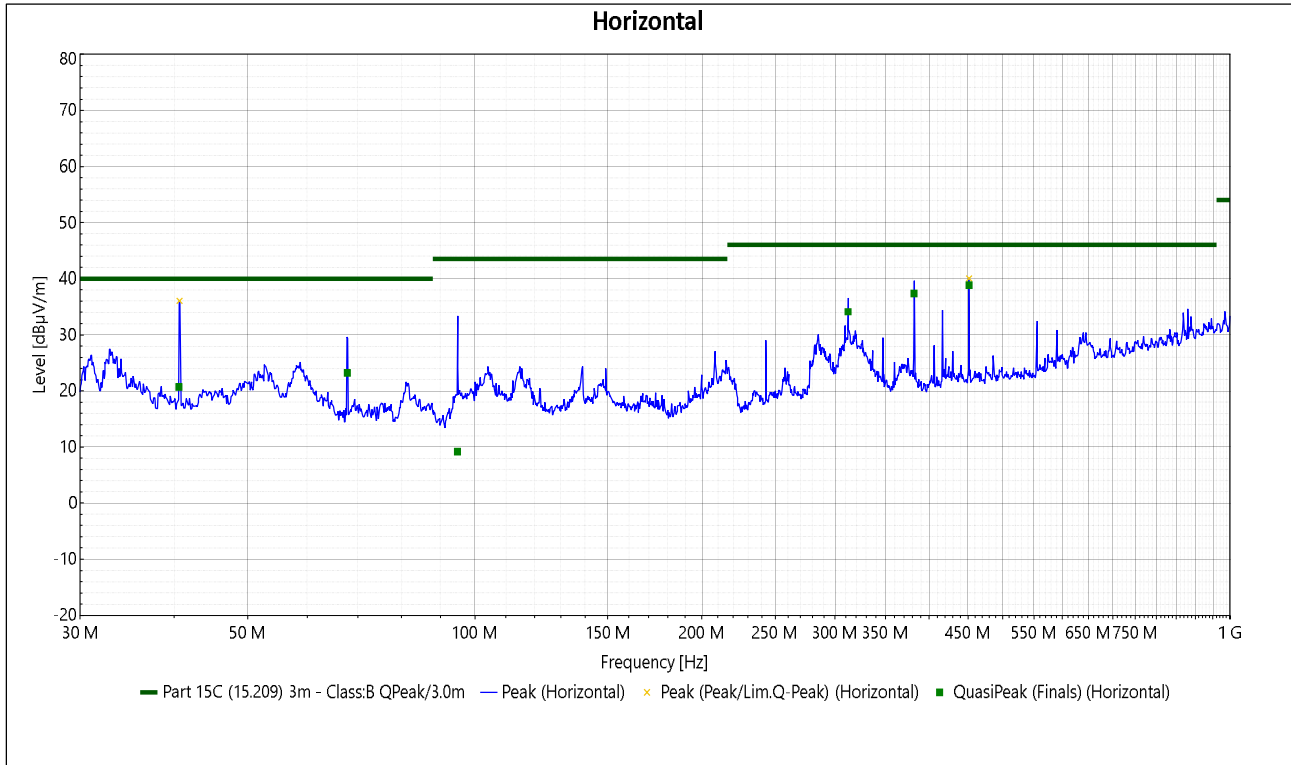
5.3.6 Test result 30 MHz < f < 1 GHz



Frequency (Hz)	QuasiPeak (dBµV/m)	QP Margin	QP Limit (dBµV/m)	angle	height	polarization	RBW (Hz)	Correction (dB)
32.845 M	27.22	-12.78	40	288	1.17	Vertical	120000	-13.16
40.618 M	34.05	-5.95	40	57	1.4	Vertical	120000	-11.69
52.457 M	20.73	-19.27	40	357	1.21	Vertical	120000	-11.03
58.718 M	17.76	-22.24	40	343	1.07	Vertical	120000	-11.25
67.758 M	31.39	-8.61	40	35	1.02	Vertical	120000	-13.01
149.109 M	12.09	-31.41	43.5	19	2.5	Vertical	120000	-9.08
192.004 M	25.69	-17.81	43.5	211	1	Vertical	120000	-11.89
451.304 M	28.64	-17.36	46	59	2.5	Vertical	120000	-5.45
555.42 M	40.58	-5.42	46	84	1	Vertical	120000	-3.43

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Frequency (Hz)	QuasiPeak (dBµV/m)	QP Margin	QP Limit (dBµV/m)	angle	height	polarization	RBW (Hz)	Correction (dB)
40.596 M	20.69	-19.31	40	78	3.6	Horizontal	120000	-10.44
67.76 M	23.19	-16.81	40	71	2.83	Horizontal	120000	-12.28
94.842 M	9.18	-34.32	43.5	262	3.5	Horizontal	120000	-16.3
312.414 M	34.1	-11.9	46	30	1	Horizontal	120000	-8.74
381.814 M	37.37	-8.63	46	40	1.31	Horizontal	120000	-6.67
451.28 M	38.82	-7.18	46	88	1.02	Horizontal	120000	-5.17

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Limit according to FCC Part 15 Subpart 15.209(a)

Frequency (MHz)	Field strength of spurious emissions		Measurement distance (metres)
	($\mu\text{V/m}$)	dB($\mu\text{V/m}$)	
0.009 - 0.490	2400/F(kHz)	--	300
0.490 - 1.705	24000/F (kHz)	--	30
1.705 - 30.0	30	29.5	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Limit according to RSS-Gen clause 8.9

Frequency (MHz)	Field strength of spurious emissions		Measurement distance (metres)
	($\mu\text{A/m}$)	dB($\mu\text{A/m}$)	
0.009 - 0.490	6.37/F(kHz)	--	300 (Note 1)
0.490 - 1.705	63.7/F (kHz)	--	30
1.705 - 30.0	0.08	-22	30
Frequency (MHz)	Field strength of spurious emissions		Measurement distance (metres)
	($\mu\text{V/m}$)	dB($\mu\text{V/m}$)	
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

The requirements are **FULFILLED**.

Remarks: Measurement has been performed up to 1000 MHz.

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5.4 Frequency tolerance

For test instruments and accessories used see section 6 Part FE.

5.4.1 Description of the test location

Test location: AREA 4

5.4.2 Photo documentation of the test set-up

See attachment C to this report.

5.4.3 Applicable standard

According to FCC Part 15, Section 15.225(e).

5.4.4 Description of Measurement

The radiated power of the spurious emission from the EUT is measured in a test setup following the procedures set out in ANSI C63.10.

5.4.5 Test result

24 V DC

Test conditions		Test result	Tolerance	Limit
		Frequency (MHz)	(kHz)	(kHz)
$T_{min} (-20)^{\circ}C$	$V_{nom} (24 V)$	13.5592931	- 0.707	± 1.356
$T (-10)^{\circ}C$	$V_{nom} (24 V)$	13.5593181	- 0.682	± 1.356
$T (0)^{\circ}C$	$V_{nom} (24 V)$	13.5593181	- 0.682	± 1.356
$T (10)^{\circ}C$	$V_{nom} (24 V)$	13.5593061	- 0.694	± 1.356
$T_{nom} (20)^{\circ}C$	$V_{min} (21.6 V)$	13.5592561	- 0.744	± 1.356
	$V_{nom} (24 V)$	13.5592561	- 0.744	± 1.356
	$V_{max} (26.4 V)$	13.5592561	- 0.744	± 1.356
$T (30)^{\circ}C$	$V_{nom} (24 V)$	13.5592561	- 0.744	± 1.356
$T (40)^{\circ}C$	$V_{nom} (24 V)$	13.5592431	- 0.757	± 1.356
$T_{max} (50)^{\circ}C$	$V_{nom} (24 V)$	13.5592431	- 0.757	± 1.356

FCC ID: 2AC3W-AX500SMGNG
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120 V AC

[The EUT (DC 24V) is supplied via AX500 POWER SUPPLY (Acess AG) for the test.

At the AC input (AX500 POWER SUPPLY) the extreme voltages were set.]

Test conditions		Test result	Tolerance	Limit
		Frequency (MHz)	(kHz)	(kHz)
$T_{min} (-20)^{\circ}C$	$V_{nom} (120 V)$	13.560106	+ 0.106	± 1.356
$T (-10)^{\circ}C$	$V_{nom} (120 V)$	13.560120	+ 0.120	± 1.356
$T (0)^{\circ}C$	$V_{nom} (120 V)$	13.560119	+ 0.119	± 1.356
$T (10)^{\circ}C$	$V_{nom} (120 V)$	13.560094	+ 0.094	± 1.356
$T_{nom} (20)^{\circ}C$	$V_{min} (100 V)$	13.560057	+ 0.057	± 1.356
	$V_{nom} (120 V)$	13.560057	+ 0.057	± 1.356
	$V_{max} (240 V)$	13.560057	+ 0.057	± 1.356
$T (30)^{\circ}C$	$V_{nom} (120 V)$	13.560057	+ 0.057	± 1.356
$T (40)^{\circ}C$	$V_{nom} (120 V)$	13.560044	+ 0.044	± 1.356
$T_{max} (50)^{\circ}C$	$V_{nom} (120 V)$	13.560044	+0.044	± 1.356

Limit Calculation:

Carrier frequency: $f_c = 13.56 \text{ MHz}$

Max. tolerance: $\pm 0.01 \% \text{ of } 13.56 \text{ MHz} = \pm 1.356 \text{ kHz}$

Limit according to FCC Part 15, Section 15.225(e) and RSS-210 clause B.6(b):

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01 \%$ of the operating frequency.

The requirements are **FULFILLED**.

Remarks: None

FCC ID: 2AC3W-AX500SMGNG**IC ID: 12296A-AX500SMGNG****5.5 Bandwidth**

For test instruments and accessories used see section 6 Part **MB**.

5.5.1 Description of the test location

Test location: AREA 4

5.5.2 Photo documentation of the test set-up

See attachment C to this report.

5.5.3 Applicable standard

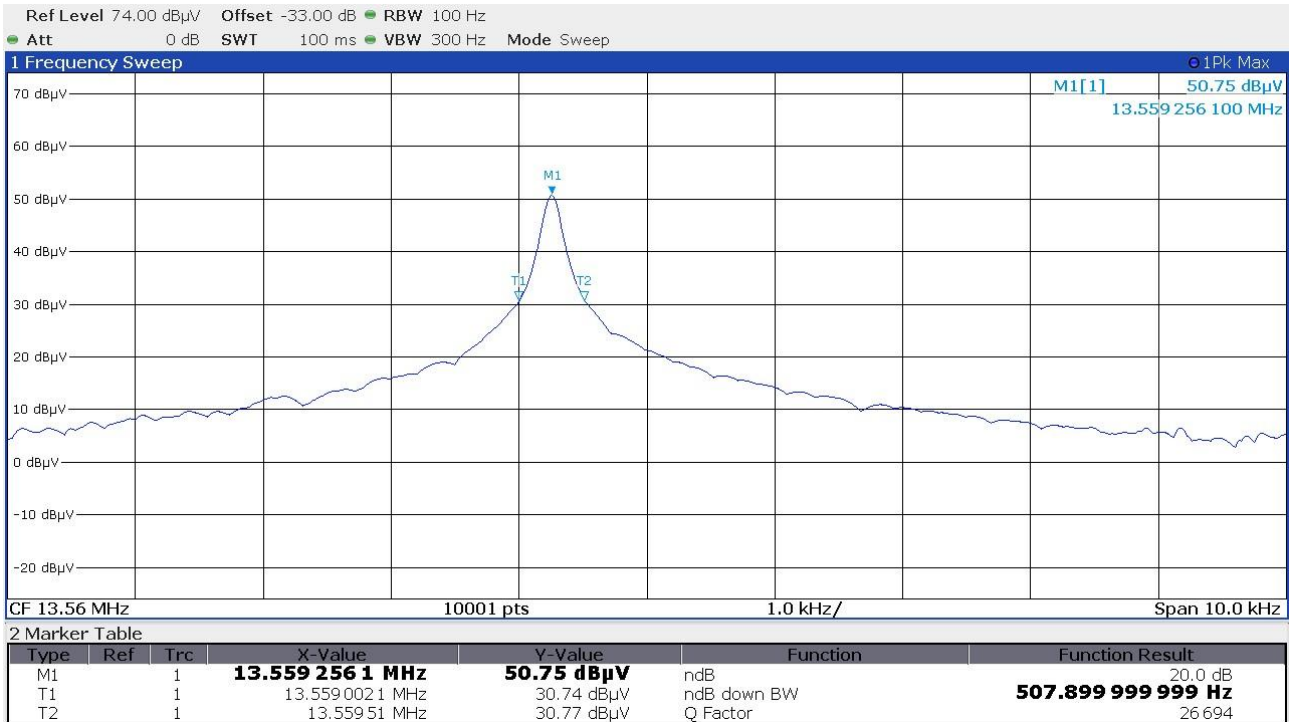
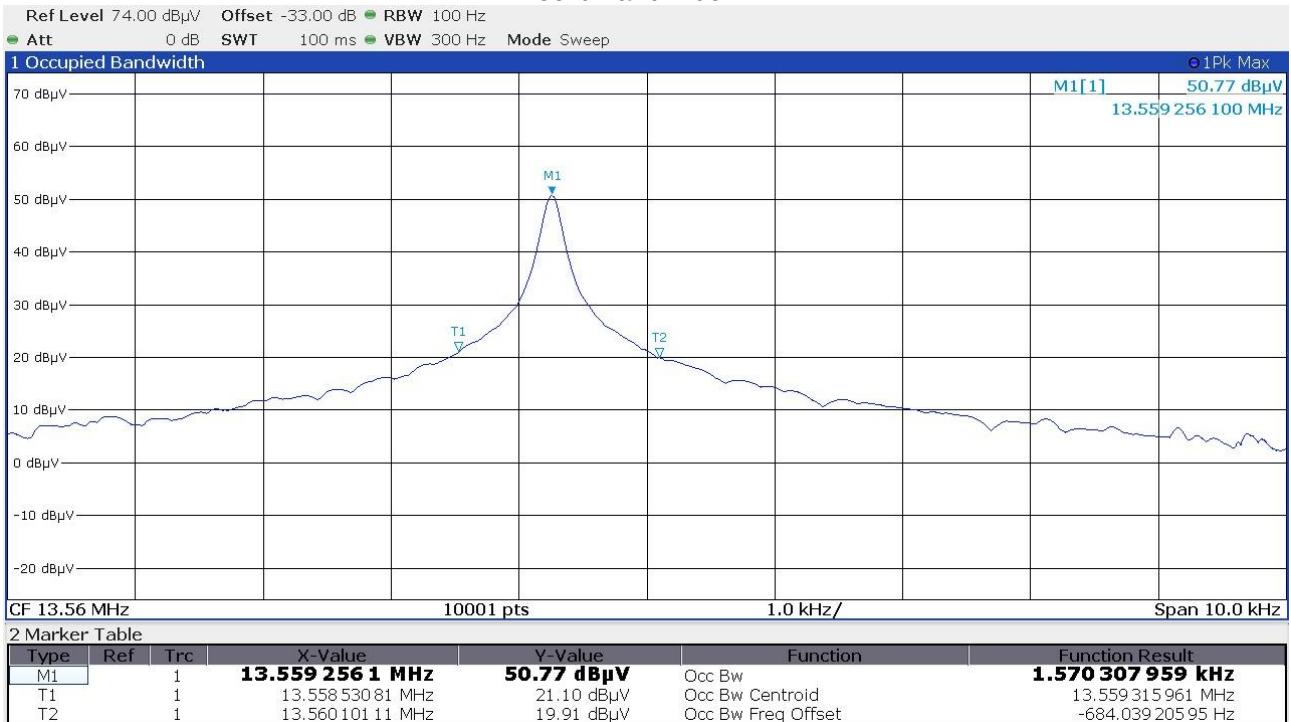
According to FCC Part 15, Section 15.215(c).

5.5.4 Test result

Measured Bandwidth	result (kHz)	Limit (kHz)
20dB	0.508	--
99%	1.570	--

The requirements are **FULFILLED**.

Remarks: For detailed test result please refer to following test protocol.

5.5.5 Test protocol
20 dB bandwidth

99% Bandwidth


FCC ID: 2AC3W-AX500SMGNG
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5.6 Transmitter spectrum mask

For test instruments and accessories used see section 6 Part MB.

5.6.1 Description of the test location

Test location: AREA 4

5.6.2 Photo documentation of the test set-up

See attachment C to this report.

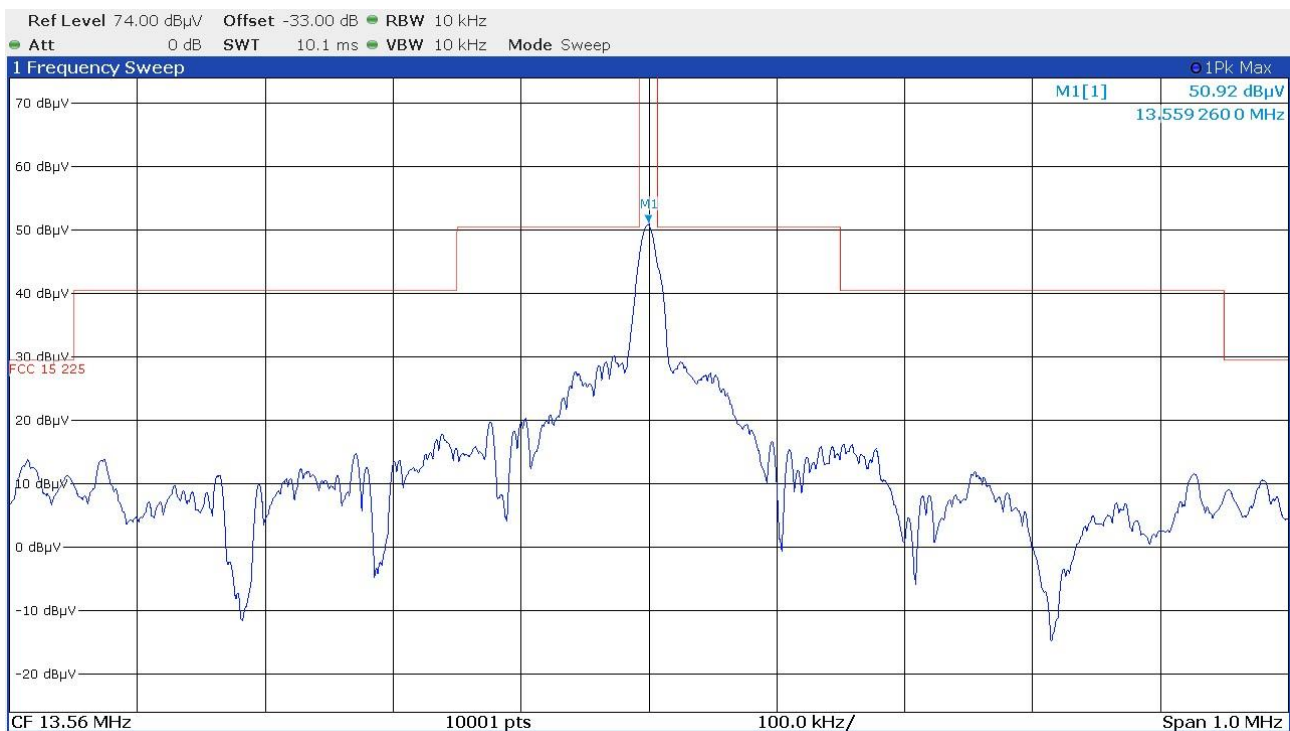
5.6.3 Applicable standard

According to FCC Part 15, Section 15.225 (a-d).

5.6.4 Description of Measurement

The radiated power of the spurious emission from the EUT is measured in a test setup following the procedures set out in ANSI C63.10.

5.6.5 Test result



FCC ID: 2AC3W-AX500SMGNG
IC ID: 12296A-AX500SMGNG

Limits according to FCC Part 15, Section 15.225(a-d)

Frequency band (MHz)	Emission level limit at 30 m (μV/m)	Emission level limit at 30 m (dBμV/m)
13.110 – 13.410	106	40.5
13.410 - 13.553	334	50.5
13.553 - 13.567	15.848	84.0
13.567 – 13.710	334	50.5
13.710 – 14.010	106	40.5
outside of 13.110 – 14.010	30	29.5

Limits according to RSS-210 clause B.6 (i-iv)

Frequency band (MHz)	Emission level limit at 30 m (μV/m)	Emission level limit at 30 m (dBμV/m)
13.110 – 13.410	106	40.5
13.410 - 13.553	334	50.5
13.553 - 13.567	15.848	84.0
13.567 – 13.710	334	50.5
13.710 – 14.010	106	40.5
Frequency band (MHz)	Emission level limit at 30 m (μA/m)	Emission level limit at 30 m (dBμA/m)
outside of 13.110 – 14.010	0.08	-22

The requirements are **FULFILLED**.

Remarks: None

FCC ID: 2AC3W-AX500SMGNG
IC ID: 12296A-AX500SMGNG

6 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used are calibrated and verified regularly. The calibration history is available on request.
All listed measuring devices were calibrated at the time of use.

Test ID	Model Type	Equipment No.	Next Calib.	Last Calib.	Next Verif.	Last Verif.
A 4	BAT-EMC 2023.0.8.0	01-02/68-13-001				
	ESCI	02-02/03-15-001	11/07/2025	11/07/2024		
	ESH 2 - Z 5	02-02/20-05-004	13/10/2025	13/10/2022	19/03/2025	19/03/2024
	N-4000-BNC	02-02/50-05-138				
	KK-SPU195FR01-2X11N-12	09-02/50-21-035				
A4 tested 10.10.2024						
CPR 1	ESR7	09-02/03-21-004	05/08/2025	05/08/2024		
	HFH2-Z2E	09-02/24-21-001	05/08/2025	05/08/2024		
	IN600	09-02/50-21-015				
	KK-7.8F-2XNM_4.0M	09-02/50-21-018				
	KK-7.8F-2XNM-10.0M	09-02/50-21-019				
	KK-7.8F-2XNM_4.5M	09-02/50-21-023				
	KK-7.8F-2XNM_9.5M	09-02/50-21-025				
	CDB-10K-18-50V-NMF-I	09-02/50-22-031			17/07/2025	17/07/2024
CPR1 tested 22.10.2024						
FE	FSW43	02-02/11-15-001	19/08/2025	19/08/2024		
	HFRAE 5161	02-02/24-11-004				
	WK-340/40	02-02/45-05-001	17/07/2025	17/07/2024	17/01/2025	17/07/2024
	EA-PS 3032-05 B	02-02/50-20-008				
FE tested 29.10.2024 (24 V DC)						
FE	FSW43	02-02/11-15-001	19/08/2025	19/08/2024		
	HFRAE 5161	02-02/24-11-004				
	WK-340/40	02-02/45-05-001	17/07/2025	17/07/2024	16/07/2025	16/01/2025
	6430	02-02/50-13-014				
FE tested 24.02.2025 (120 V AC)						
MB	FSW43	02-02/11-15-001	19/08/2025	19/08/2024		
	HFRAE 5161	02-02/24-11-004				
MB tested 23.10.2024						
SER 1	ESR7	09-02/03-21-004	05/08/2025	05/08/2024		
	HFH2-Z2E	09-02/24-21-001	05/08/2025	05/08/2024		
	IN600	09-02/50-21-015				
	KK-7.8F-2XNM_4.0M	09-02/50-21-018				
	KK-7.8F-2XNM-10.0M	09-02/50-21-019				
	KK-7.8F-2XNM_4.5M	09-02/50-21-023				
	KK-7.8F-2XNM_9.5M	09-02/50-21-025				
	CDB-10K-18-50V-NMF-I	09-02/50-22-031			17/07/2025	17/07/2024
SER1 tested 23.10.2024						

FCC ID: 2AC3W-AX500SMGNG**IC ID: 12296A-AX500SMGNG**

SER 2	ESR7	09-02/03-21-004	05/08/2025	05/08/2024		
	BBV 9743 B	09-02/17-21-002			19/12/2024	19/12/2023
	VULB9168	09-02/24-22-003	06/08/2025	06/08/2024	12/08/2025	12/08/2024
	KK-7.8F-2XNM_4.0M	09-02/50-21-018				
	KK-7.8F-2XNM-10.0M	09-02/50-21-019				
	KK-7.8F-2XNM_4.5M	09-02/50-21-023				
	KK-7.8F-2XNM_9.5M	09-02/50-21-025				
	50F-003 N 3dB	09-02/50-22-002				
	CDB-10K-18-50V-NMF-I	09-02/50-22-031			17/07/2025	17/07/2024
	BAT-EMC 2023.0.8.0	09-02/68-21-002				

SER2 tested 23.10.2024