

TEST REPORT



BNNetzA-CAB-02/21-102

Test report no.: 1-6232_23-01-03-A

Testing laboratory

cetecom advanced GmbH
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Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2018-03) by the Deutsche Akkreditierungsstelle GmbH (DAkkS).

The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12047-01-00.

ISED Testing Laboratory Recognized Listing Number: DE0001
FCC designation number: DE0002

Applicant

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DK-3540 Lynge / DENMARK
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Contact: Richard Rose
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Manufacturer

WSAUD A/S
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Test standard/s

FCC - Title 47 CFR Part 15 FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices

RSS - 210 Issue 10 incl. Spectrum Management and Telecommunications Radio Standards Amendment
Specification - Licence-Exempt Radio Apparatus: Category I Equipment

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item: **MI Module for Hearing Instruments**
Model name: **MI Module 3 (Limited Modular Approval)**
FCC ID: **2AXDT-MIM003**
ISED certification number: **26428-MIM003**
Frequency: 1.705 – 30.0MHz
Technology tested: proprietary
Antenna: Ferrite coil antenna
Power supply: 3.3 V to 4.2 V DC, by built in battery
Temperature range: 0°C to +50°C

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorized:

Christoph Schneider
Lab Manager
Radio Labs

Test performed:

p.o.

Hans-Joachim Wolsdorfer
Lab Manager
Radio Labs

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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. cetecom advanced GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of cetecom advanced GmbH.

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This test report replaces the test report with the number 1-6232_23-01-03 and dated 2023-06-28.

2.2 Application details

Date of receipt of order: 2023-04-20

Date of receipt of test item: 2023-05-17

Start of test:* 2023-05-18

End of test:* 2023-05-22

Person(s) present during the test: -/-

*Date of each measurement, if not shown in the plot, can be requested. Dates are stored in the measurement software.

2.3 Test laboratories sub-contracted

None

3 Test standard/s, references and accreditations

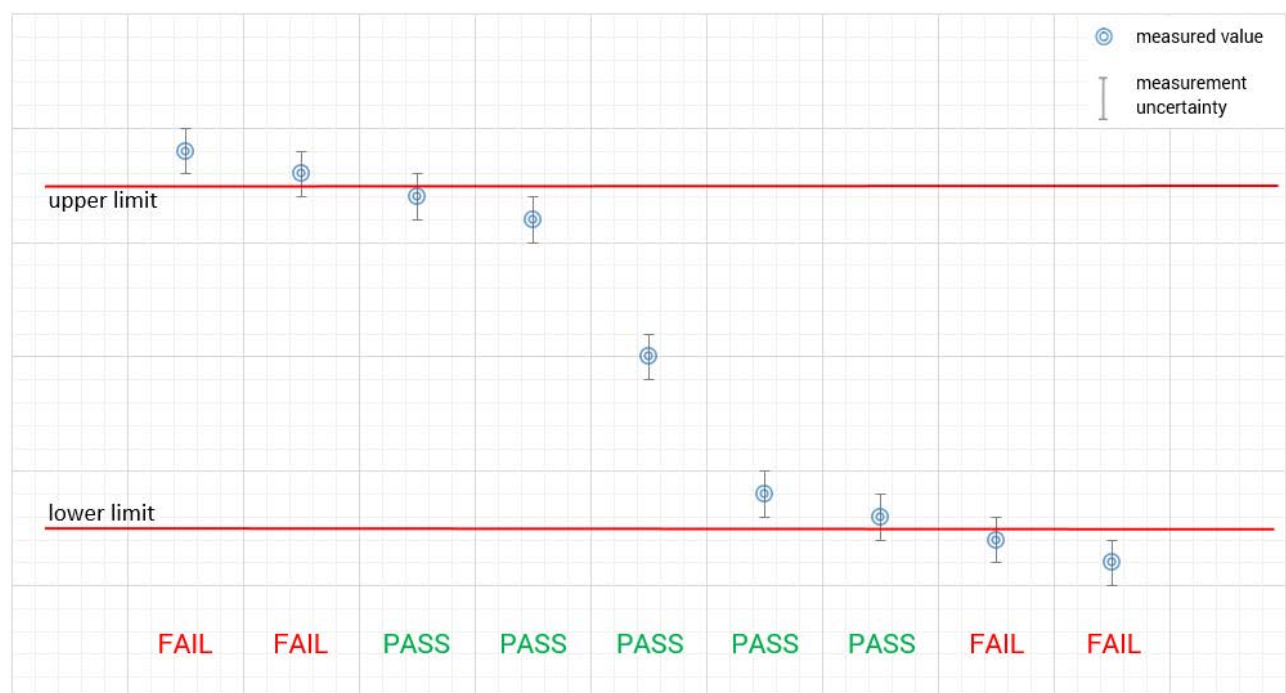
Test standard	Date	Description
FCC - Title 47 CFR Part 15		FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices
RSS - 210 Issue 10 incl. Amendment	April 2020	Spectrum Management and Telecommunications Radio Standards Specification - Licence-Exempt Radio Apparatus: Category I Equipment
RSS - Gen Issue 5 incl. Amendment 1 & 2	February 2021	Spectrum Management and Telecommunications Radio Standards Specification - General Requirements for Compliance of Radio Apparatus
Guidance	Version	Description
ANSI C63.4-2014	-/-	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10-2013	-/-	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

4 Reporting statements of conformity – decision rule

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3.

The measurement uncertainty is mentioned in this test report, see chapter 9, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong."

measured value, measurement uncertainty, verdict



5 Test environment

Temperature :	T _{nom} T _{max} T _{min}	+22 °C during room temperature tests +50 °C during high temperature tests 0 °C during low temperature tests
Relative humidity content :		55 %
Barometric pressure :		1021 hpa
Power supply :	V _{nom} V _{max} V _{min}	3.85 V DC, by built in battery 4.2 V 3.3 V

6 Test item

6.1 General description

Kind of test item :	MI Module for Hearing Instruments
Model name :	MI Module 3 (Limited Modular Approval)
HMN :	-/-
PMN :	MI Module 3
HVIN :	MIM003
FVIN :	-/-
S/N serial number :	SLKR3C5941
Hardware status :	D12BF12A
Software status :	-/-
Firmware status :	11.0.60
Frequency band :	1.705 – 30.0MHz
Type of radio transmission :	modulated carrier
Use of frequency spectrum :	
Type of modulation :	QPSK
Number of channels :	1
Antenna :	Ferrite coil antenna
Power supply :	3.3 V to 4.2 V DC, by built in battery
Temperature range :	0°C to +50°C

6.2 Additional information

The content of the following annexes is defined in the QA. It may be that not all of the listed annexes are necessary for this report, thus some values in between may be missing.

Test setup and EUT photos are included in test report:

1-6232_23-01-01_AnnexA
1-6232_23-01-01_AnnexB
1-6232_23-01-01_AnnexX

7 Description of the test setup

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, RF generating and signaling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Lab/Item).

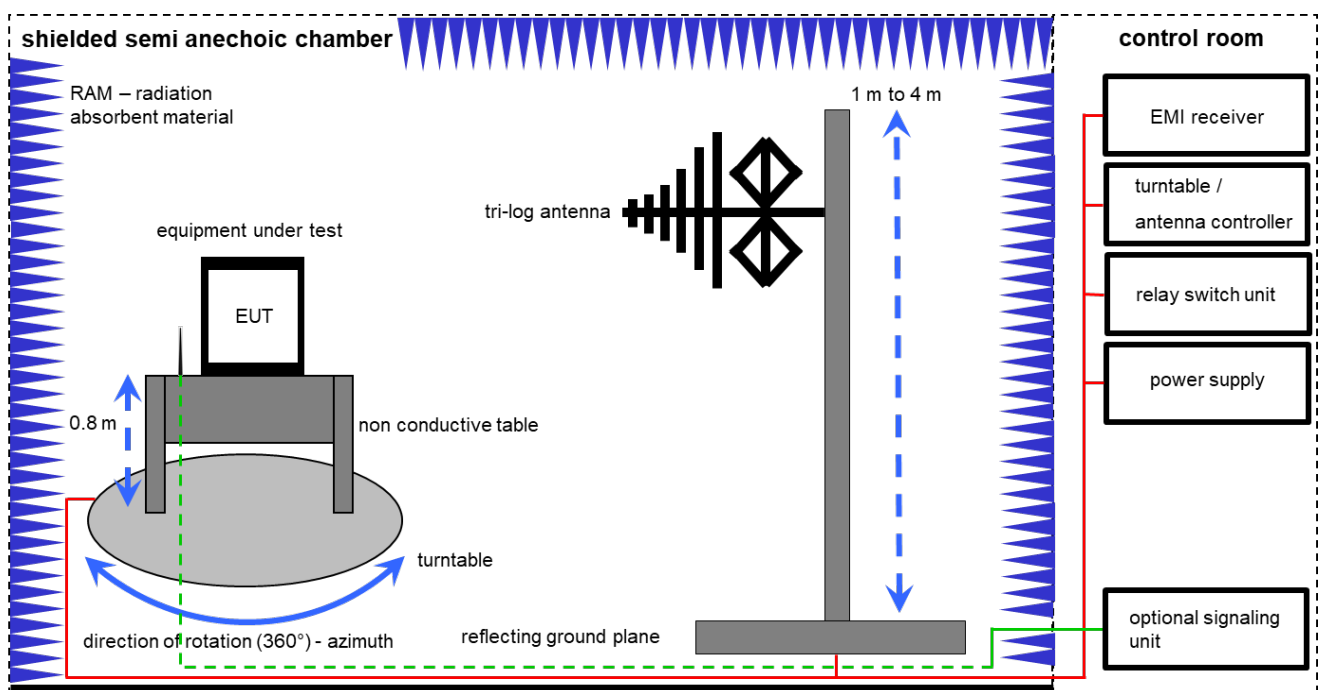
Each block diagram listed can contain several test setup configurations. All devices belonging to a test setup are identified with the same letter syntax. For example: Column Setup and all devices with an A.

Agenda: Kind of Calibration

k	calibration / calibrated	EK	limited calibration
ne	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
ev	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vlk!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress

7.1 Shielded semi anechoic chamber

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 30 MHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are conform to specifications ANSI C63. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analyzers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.



Measurement distance: tri-log antenna 10 meter

EMC32 software version: 10.59.00

$FS = UR + CL + AF$

(FS-field strength; UR-voltage at the receiver; CL-loss of the cable; AF-antenna factor)

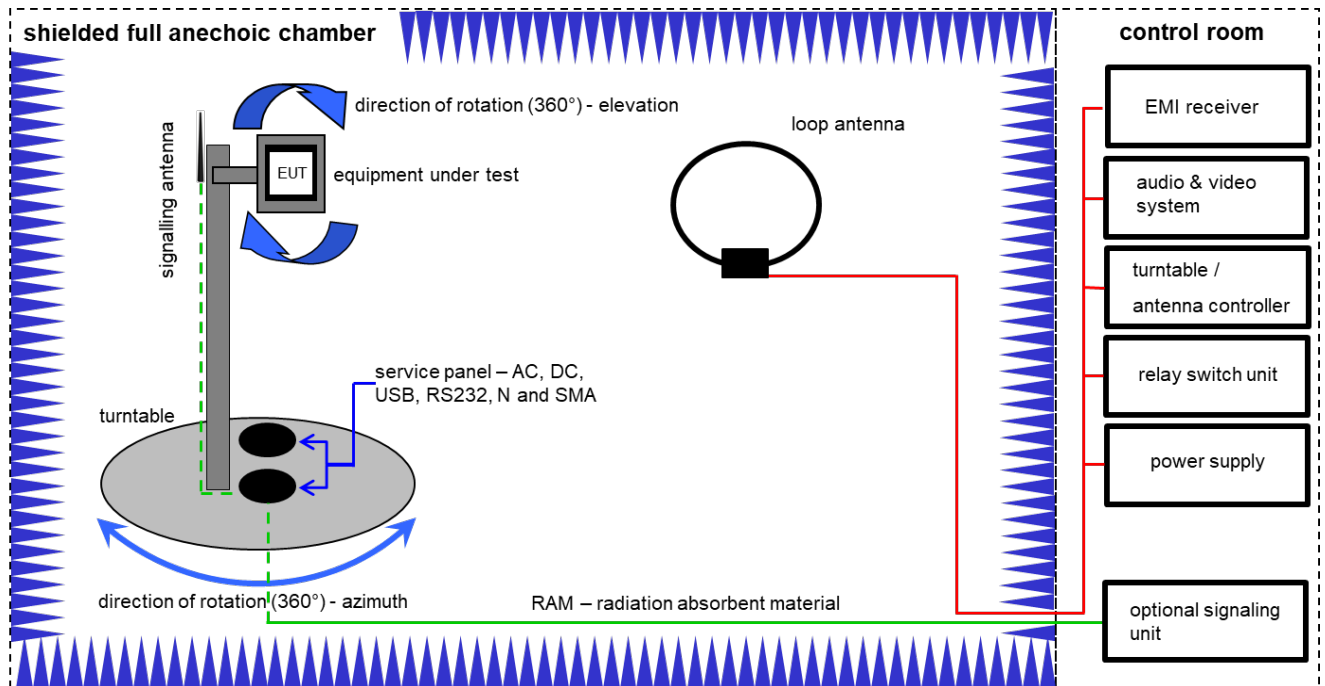
Example calculation:

$FS [dB\mu V/m] = 12.35 [dB\mu V/m] + 1.90 [dB] + 16.80 [dB/m] = 31.05 [dB\mu V/m] (35.69 \mu V/m)$

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Switch-Unit	3488A	HP	2719A14505	300000368	ev	-/-	-/-
2	A	Semi anechoic chamber	3000023	MWB AG		300000551	ne	-/-	-/-
3	A	Antenna Tower	Model 2175	ETS-Lindgren	64762	300003745	izw	-/-	-/-
4	A	Positioning Controller	Model 2090	ETS-Lindgren	64672	300003746	izw	-/-	-/-
5	A	Turntable Interface-Box	Model 105637	ETS-Lindgren	44583	300003747	izw	-/-	-/-
6	A	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck Mess-Elektronik	318	300003696	vKI!	30.09.2021	29.09.2023
7	A	Turntable	2089-4.0	EMCO		300004394	ne	-/-	-/-
8	A	PC	TecLine	F+W		300004388	ne	-/-	-/-
9	A	EMI Test Receiver	ESR3	Rohde & Schwarz	102587	300005771	k	09.12.2022	31.12.2023

7.2 Shielded fully anechoic chamber



Measurement distance: loop antenna 3 meter / 1 meter

$FS = UR + CA + AF$

(FS-field strength; UR-voltage at the receiver; CA-loss of the signal path; AF-antenna factor)

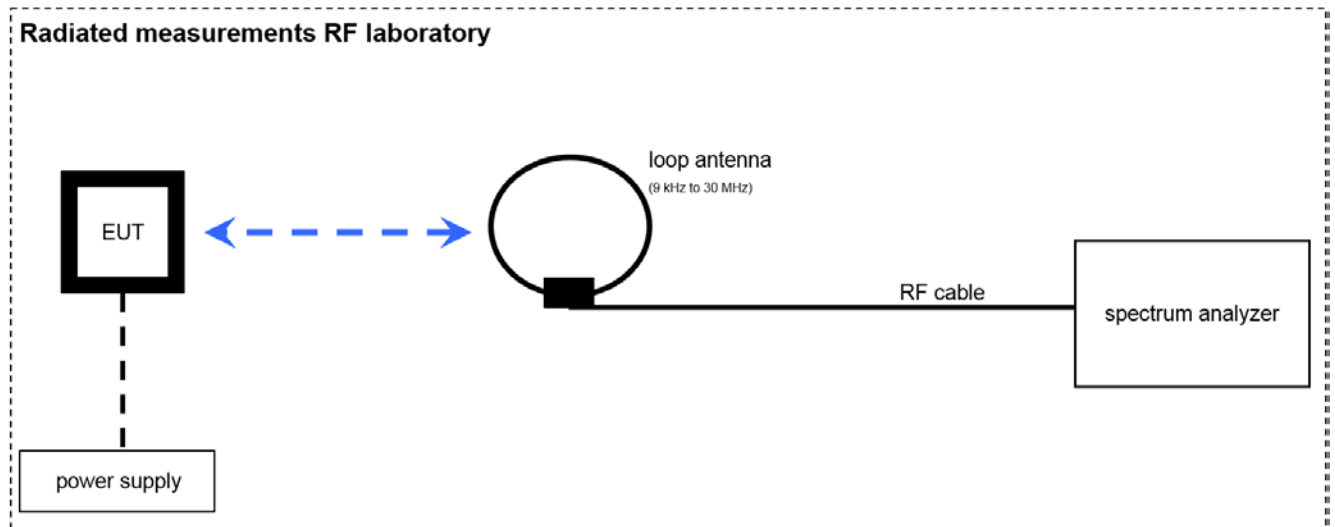
Example calculation:

$FS \text{ [dB}\mu\text{V/m]} = 40.0 \text{ [dB}\mu\text{V/m]} + (-35.8) \text{ [dB]} + 32.9 \text{ [dB/m]} = 37.1 \text{ [dB}\mu\text{V/m]} \text{ (71.61 } \mu\text{V/m)}$

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Active Loop Antenna 9 kHz to 30 MHz	6502	EMCO/2	8905-2342	300000256	vKI!	17.06.2021	30.06.2023
2	A	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev	-/-	-/-
3	A	Switch / Control Unit	3488A	HP	*	300000199	ne	-/-	-/-
4	A	EMI Test Receiver 20Hz- 26,5GHz	ESU26	R&S	100037	300003555	k	07.12.2022	31.12.2023
5	A	4U RF Switch Platform	L4491A	Agilent Technologies	MY50000037	300004509	ne	-/-	-/-
6	A	NEXIO EMV-Software	BAT EMC V3.22.0.13	Nexio		300004682	ne	-/-	-/-
7	A	Open Switch and Control Unit and Power Sensors	OSP120 incl. B157	Rohde & Schwarz	101274, 100877	300004825	vKI!	16.12.2020	15.12.2022
8	A	PC	ExOne	F+W		300004703	ne	-/-	-/-

7.3 Radiated measurements RF laboratory



Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Signal analyzer	FSW26	Rohde&Schwarz	101455	300004528	k	07.12.2022	31.12.2023
2	A	Loop Antenna		ZEG TS Steinfurt		400001208	ev	-/-	-/-
3	A	RF-Cable SRD021 No. 1	Enviroflex 316 D	Huber & Suhner		400001311	ev	-/-	-/-

8 Sequence of testing

8.1 Sequence of testing radiated spurious 9 kHz to 30 MHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, it is placed on a table with 0.8 m height.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.4) – see test details.
- EUT is set into operation.

Premeasurement*

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 1 m.
- At each turntable position the analyzer sweeps with positive-peak detector to find the maximum of all emissions.

Final measurement

- Identified emissions during the pre-measurement are maximized by the software by rotating the turntable from 0° to 360°.
- Loop antenna is rotated about its vertical axis for maximum response at each azimuth about the EUT. (For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT)
- The final measurement is done in the position (turntable and elevation) causing the highest emissions with quasi-peak (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. A plot with the graph of the premeasurement and the limit is stored.

*Note: The sequence will be repeated three times with different EUT orientations.

8.2 Sequence of testing radiated spurious 30 MHz to 1 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 10 m or 3 m (see ANSI C 63.4) – see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 m to 3 m.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximize the peaks by changing turntable position $\pm 45^\circ$ and antenna height between 1 and 4 m.
- The final measurement is done with quasi-peak detector (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.

9 Measurement uncertainty

Measurement uncertainty	
Test case	Uncertainty
Occupied bandwidth	\pm used RBW
Field strength of the fundamental	± 3 dB
Field strength of the harmonics and spurious	± 3 dB
Receiver spurious emissions and cabinet radiations	± 3 dB
Conducted limits	± 2.6 dB

10 Summary of measurement results

<input checked="" type="checkbox"/>	No deviations from the technical specifications were ascertained
<input type="checkbox"/>	There were deviations from the technical specifications ascertained
<input type="checkbox"/>	This test report is only a partial test report. The content and verdict of the performed test cases are listed below.

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	CFR Part 15 RSS 210 Issue 10 RSS Gen Issue 5	See table!	2023-09-07	-/-

Test specification clause	Test case	Temperature conditions	Power source conditions	C	NC	NA	NP	Remark
RSS Gen Issue 4 (6.6)	Occupied bandwidth	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-/-
§ 15.209	Field strength of the fundamental	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-/-
§ 15.209 RSS Gen Issue 4 (6.13)	Field strength of the harmonics and spurious	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-/-
§15.107 §15.207	Conducted limits	Nominal	Nominal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Battery powered only!

Note: NA = Not applicable; NP = Not performed; C = Compliant; NC = Not compliant

11 Additional comments

Reference documents: Customer Questionnaire_MIM003

Special test descriptions: None

Configuration descriptions: None

12 Measurement results

12.1 Occupied bandwidth

Measurement:

The emission bandwidth (x dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated x dB below the maximum in-band spectral density of the modulated signal.

Measurement parameters	
Detector:	Peak
Resolution bandwidth:	1 % – 5 % of the occupied bandwidth
Video bandwidth:	≥ 3x RBW
Trace mode:	Max hold
Analyser function:	99 % power function
Used test setup:	See sub clause 7.3A
Measurement uncertainty:	See sub clause 9

Limit:

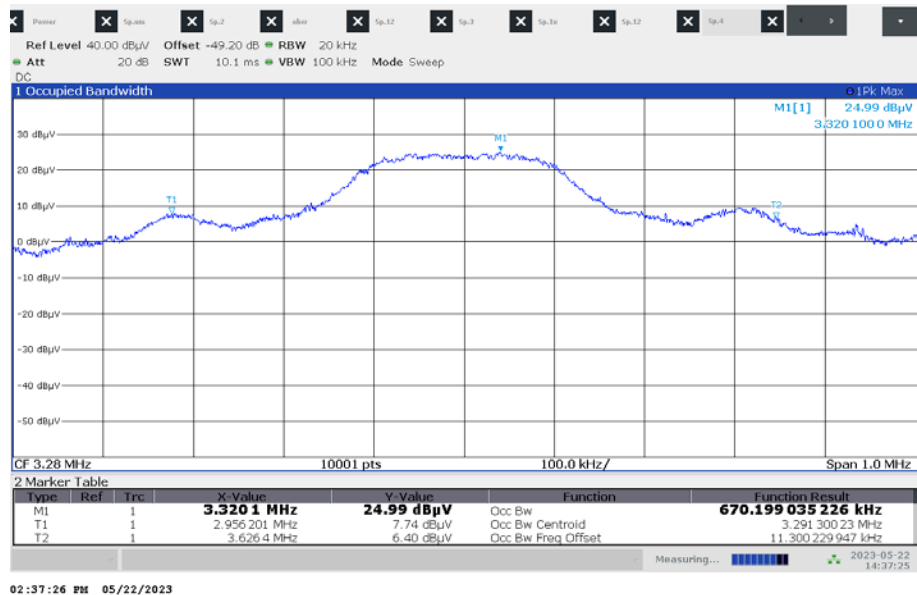
IC
for RSP-100 test report coversheet only

Result:

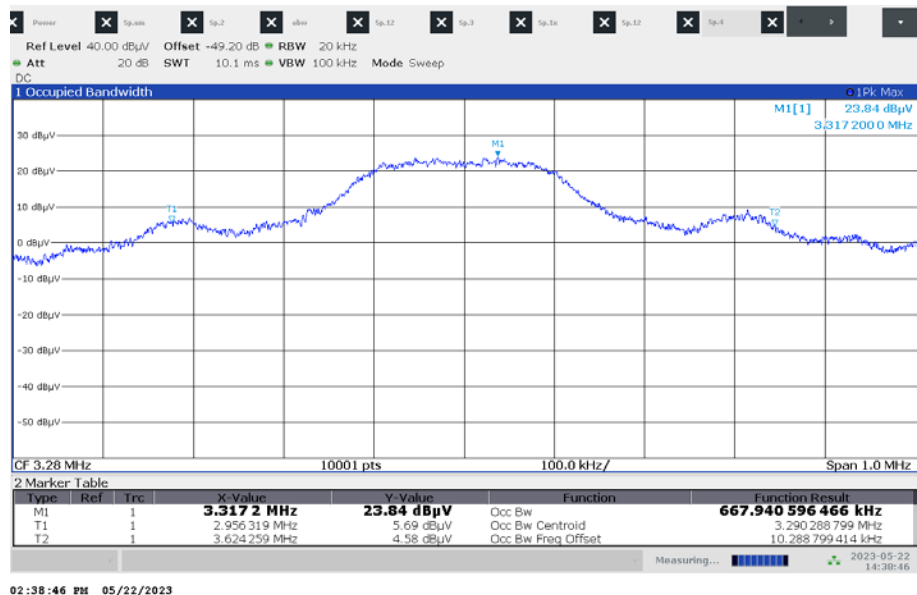
99% emission bandwidth	
MI e2eAudioHi mode	670.19kHz
MI e2eAudioLo mode	667.94kHz
MI e2eData mode	595.66kHz

Plot:

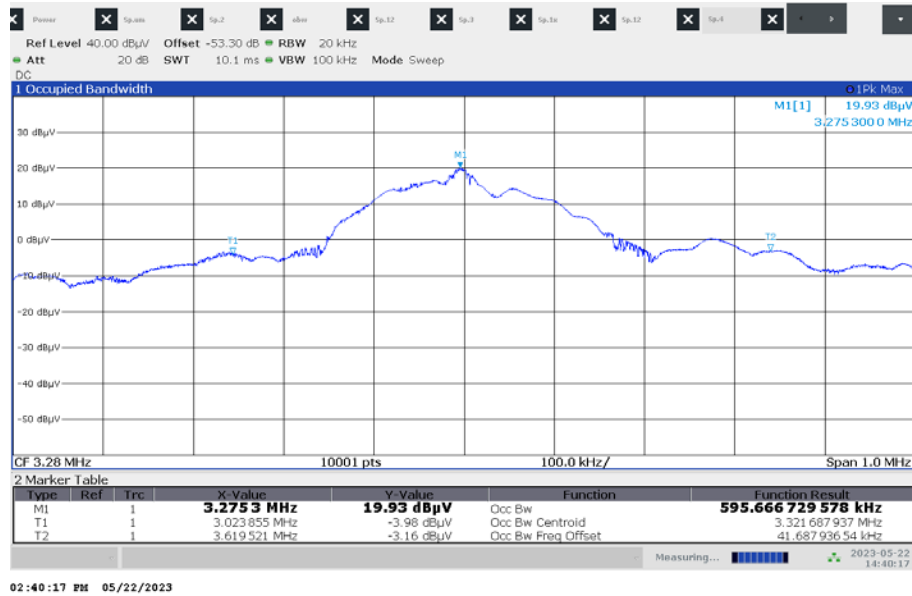
Plot 1: 99 % emission bandwidth MI e2eAudioHi mode



Plot 2: 99 % emission bandwidth MI e2eAudioLo mode



Plot 3: 99 % emission bandwidth MI e2eData mode



12.2 Field strength of the fundamental

Measurement:

The maximum detected field strength for the carrier signal.

Measurement parameters	
Detector:	average
Resolution bandwidth:	9 kHz > OBW
Video bandwidth:	≥ 3x RBW
Trace mode:	Max hold
Used test setup	See sub clause 7.2A
Measurement uncertainty:	See sub clause 9

Limit:

FCC & IC		
Frequency (MHz)	Field strength (μV/m)	Measurement distance (m)
1.705 – 30.0	30	30

Recalculation:

According to ANSI C63.10		
Frequency	Formula	Correction value
3.28MHz	$FS_{limit} = FS_{max} - 40 \log\left(\frac{d_{nearfield}}{d_{measure}}\right) - 20 \log\left(\frac{d_{limit}}{d_{nearfield}}\right)$ <p> FS_{limit} is the calculation of field strength at the limit distance, expressed in dBμV/m FS_{max} is the measured field strength, expressed in dBμV/m $d_{nearfield}$ is the $\lambda/2\pi$ distance $d_{measure}$ is the distance of the measurement point from EUT d_{limit} is the reference limit distance </p>	-52.8 dB from 1 m to 30 m

Results FCC:

MI e2eAudioHi mode

Field strength of the fundamental		
Frequency	3.28 MHz	
Distance	@ 1 m	@ 30 m
Measured / calculated value (peak measurement)	24.3 dB μ V/m	-28.5 dB μ V/m
Measured / calculated value (QP measurement)	16.2 dB μ V/m	-36.6 dB μ V/m

MI e2eAudioLo mode

Field strength of the fundamental		
Frequency	3.28 MHz	
Distance	@ 1 m	@ 30 m
Measured / calculated value (peak measurement)	22.4 dB μ V/m	-30.4 dB μ V/m
Measured / calculated value (QP measurement)	14.2 dB μ V/m	-37.6 dB μ V/m

MI e2eData mode

Field strength of the fundamental		
Frequency	3.28 MHz	
Distance	@ 1 m	@ 30 m
Measured / calculated value (peak measurement)	20.8 dB μ V/m	-32.0 dB μ V/m
Measured / calculated value (QP measurement)	11.5 dB μ V/m	-41.3 dB μ V/m

Result IC:

MI e2eAudioHi mode

Field strength of the fundamental		
Frequency	3.28 MHz	
Distance	@ 1 m	@ 30 m
Measured / calculated value (peak measurement)	-28.26 dB μ A/m	-81.0 dB μ A/m
Measured / calculated value (QP measurement)	-35.27 dB μ A/m	-88.0 dB μ A/m

MI e2eAudioLo mode

Field strength of the fundamental		
Frequency	3.28 MHz	
Distance	@ 1 m	@ 30 m
Measured / calculated value (peak measurement)	-29.82 dB μ A/m	-82.6 dB μ A/m
Measured / calculated value (QP measurement)	-38.41 dB μ A/m	-91.2 dB μ A/m

MI e2eData mode

Field strength of the fundamental		
Frequency	3.28 MHz	
Distance	@ 1 m	@ 30 m
Measured / calculated value (peak measurement)	-28.0 dB μ A/m	-80.8 dB μ A/m
Measured / calculated value (QP measurement)	-38.7 dB μ A/m	-90.7 dB μ A/m

12.3 Field strength of the harmonics and spurious

Measurement:

The maximum detected field strength for the harmonics and spurious.

Measurement parameters	
Detector:	Quasi peak / average or peak (worst case – pre-scan)
Resolution bandwidth:	F < 150 kHz: 200 Hz 150 kHz < F < 30 MHz: 9 kHz 30 MHz < F < 1 GHz: 120 kHz
Video bandwidth:	F < 150 kHz: 1 kHz 150 kHz < F < 30 MHz: 100 kHz 30 MHz < F < 1 GHz: 300 kHz
Trace mode:	Max hold
Used test setup:	9 kHz to 30 MHz: see sub clause 7.2A 30 MHz to 1 GHz: see sub clause 7.1A
Measurement uncertainty:	See sub clause 9

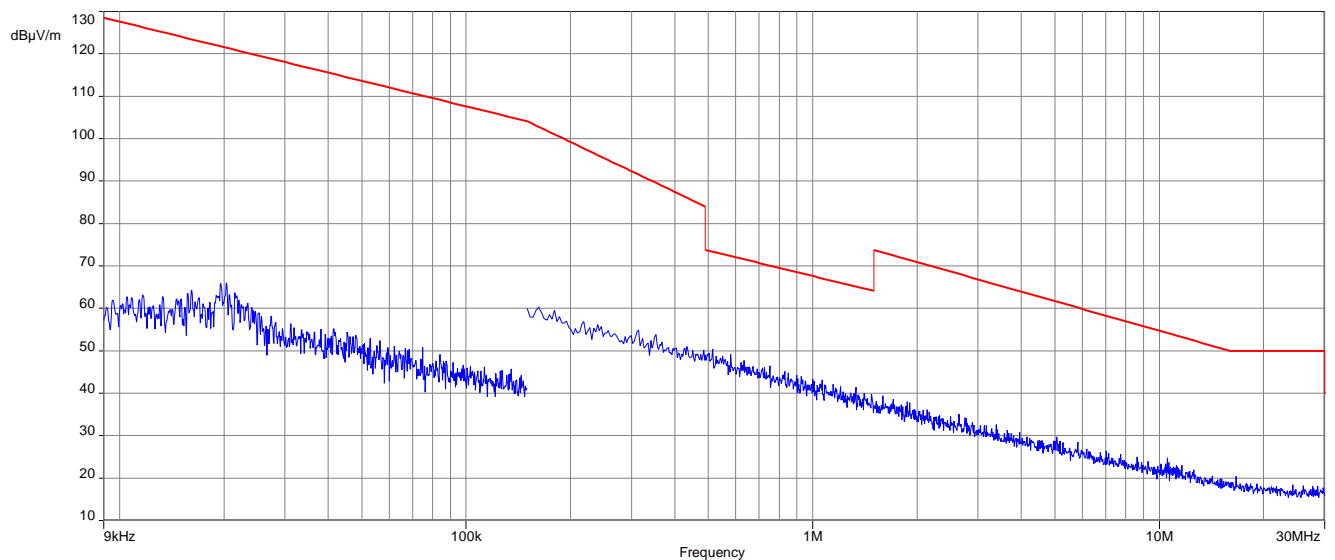
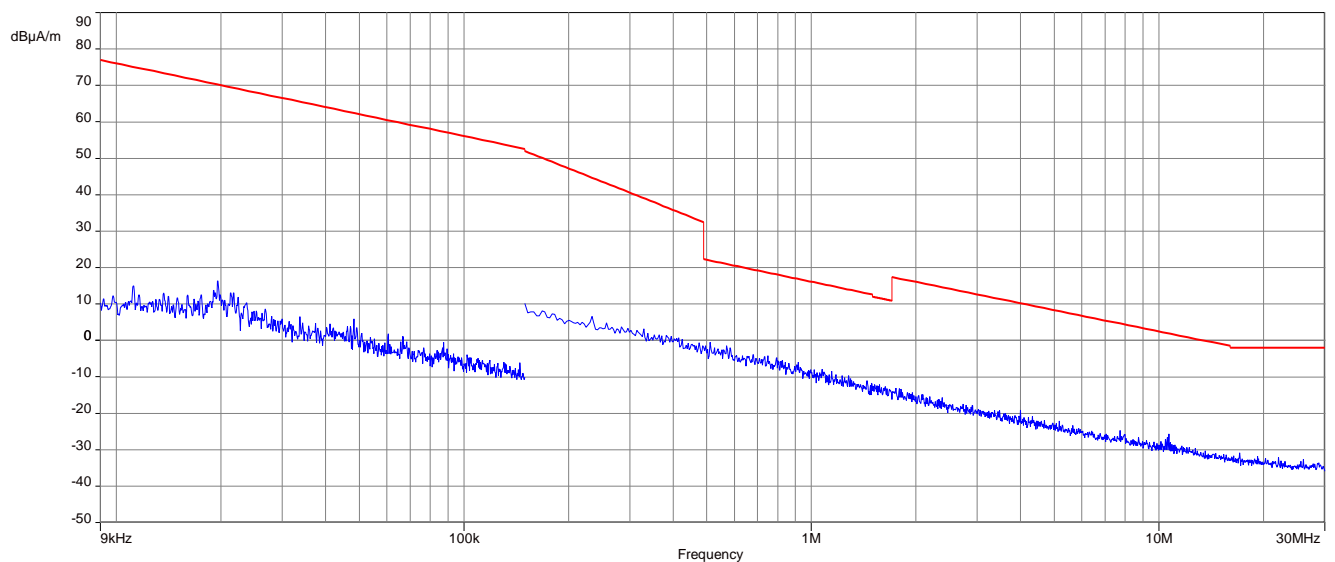
Limit:

FCC		
Frequency (MHz)	Field strength (dB μ V/m)	Measurement distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30 (29.5 dB μ V/m)	30
30 – 88	100 (40 dB μ V/m)	3
88 – 216	150 (43.5 dB μ V/m)	3
216 – 960	200 (46 dB μ V/m)	3

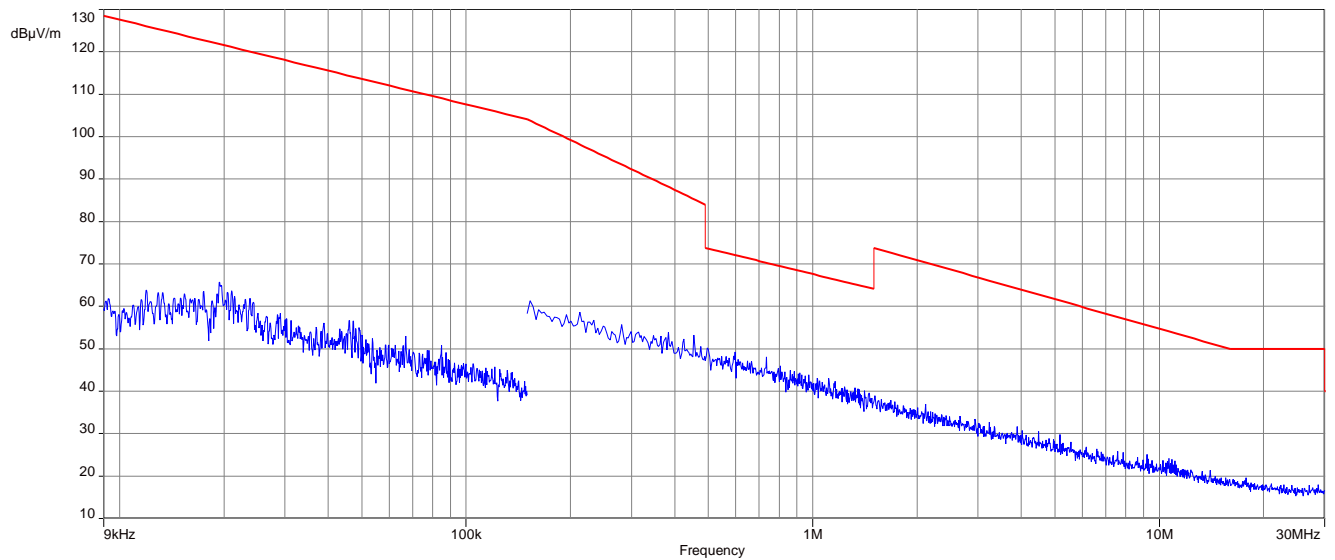
IC		
Frequency (MHz)	Field strength (μ A/m)	Measurement distance (m)
0.009 – 0.490	6.37/F (F in kHz)	300
0.490 – 1.705	63.7/F (F in kHz)	30
1.705 – 30	0.08 (-22 dB μ A/m)	30

Result:

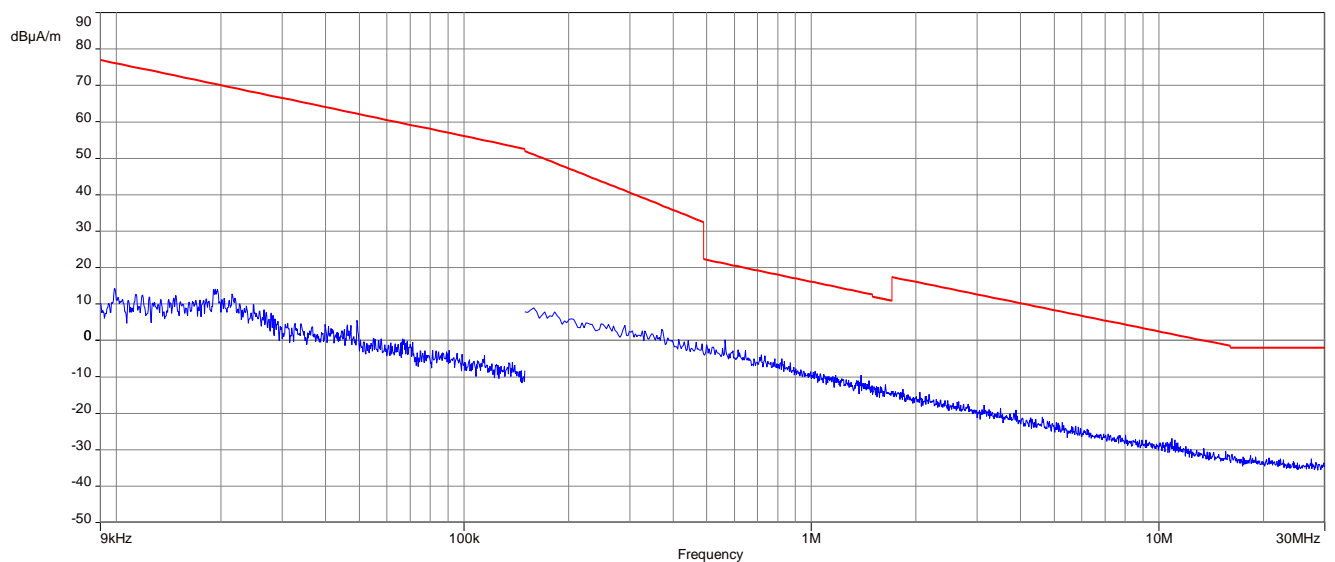
Detected emissions			
Frequency (MHz)	Detector	Resolution bandwidth (kHz)	Detected value
All detected peak emissions below 30 MHz are more than 20 dB below the average limit.			
For emissions above 30 MHz, please look at the table below the 1 GHz plot.			

Plots:**Plot 1:** 9 kHz – 30 MHz, magnetic spurious emissions FCC, MI e2eAudioHi mode**Plot 2:** 9 kHz – 30 MHz, magnetic spurious emissions IC, MI e2eAudioHi mode

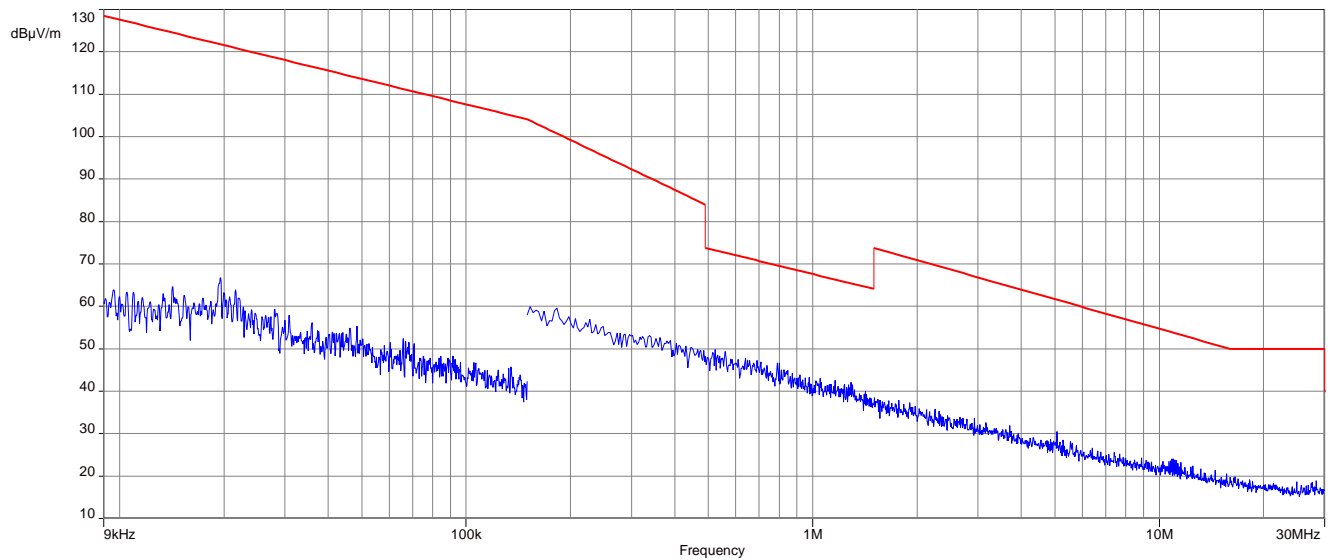
Plot 3: 9 kHz – 30 MHz, magnetic spurious emissions FCC, MI e2eAudioLo mode



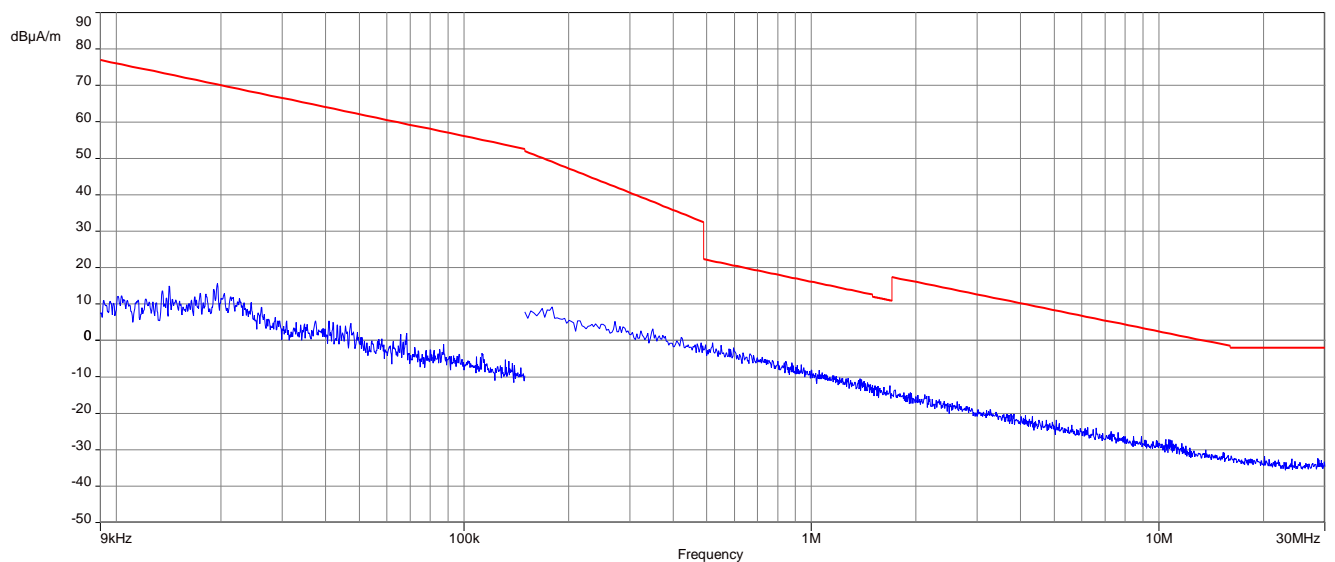
Plot 4: 9 kHz – 30 MHz, magnetic spurious emissions IC, MI e2eAudioLo mode

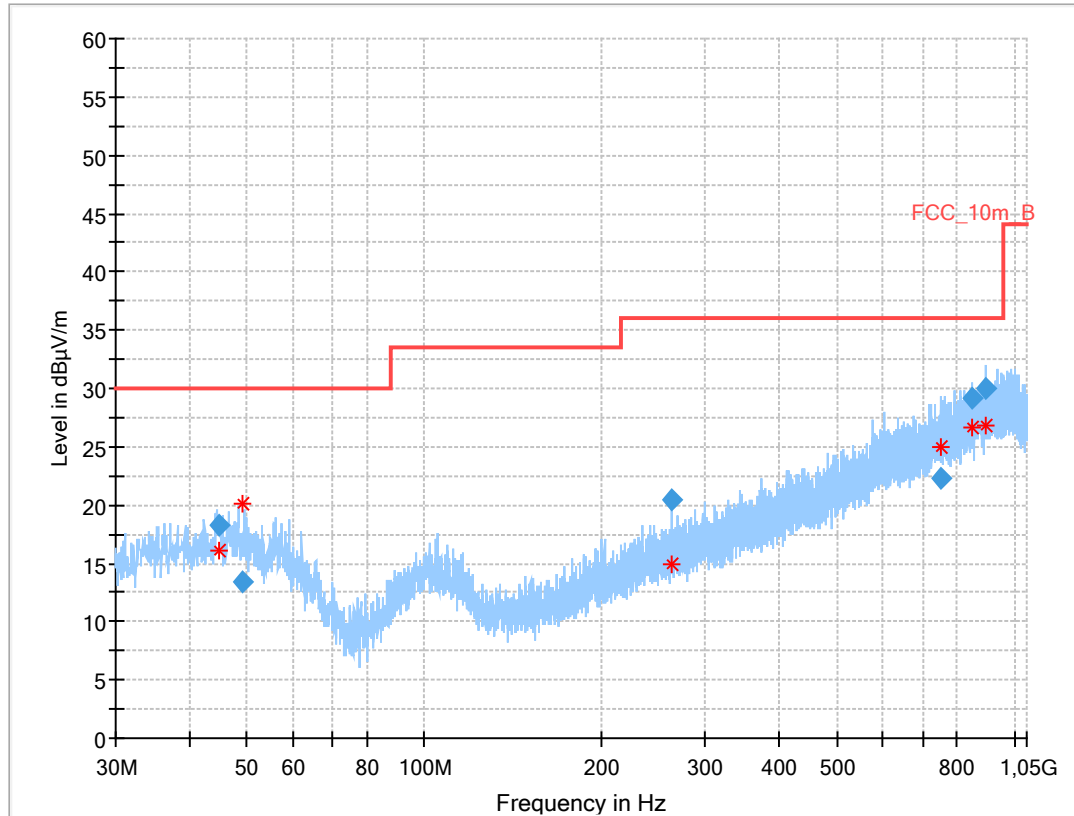


Plot 5: 9 kHz – 30 MHz, magnetic spurious emissions FCC, MI e2eData mode

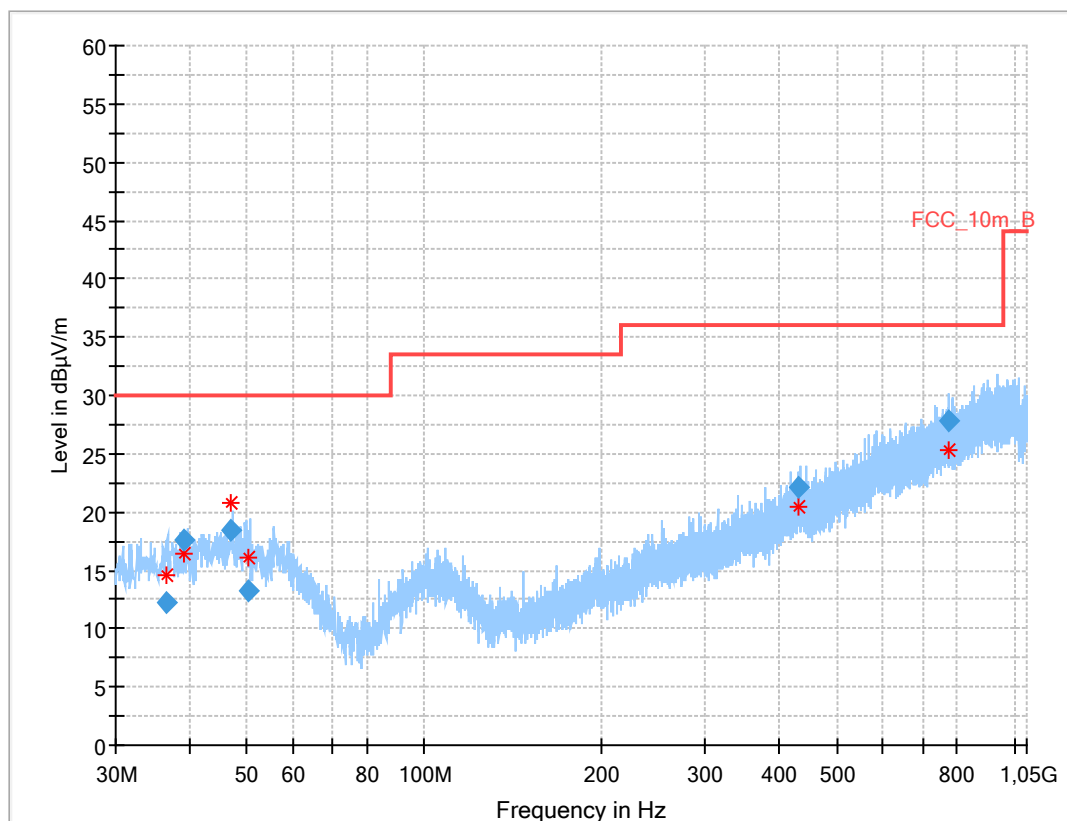


Plot 6: 9 kHz – 30 MHz, magnetic spurious emissions IC, MI e2eData mode

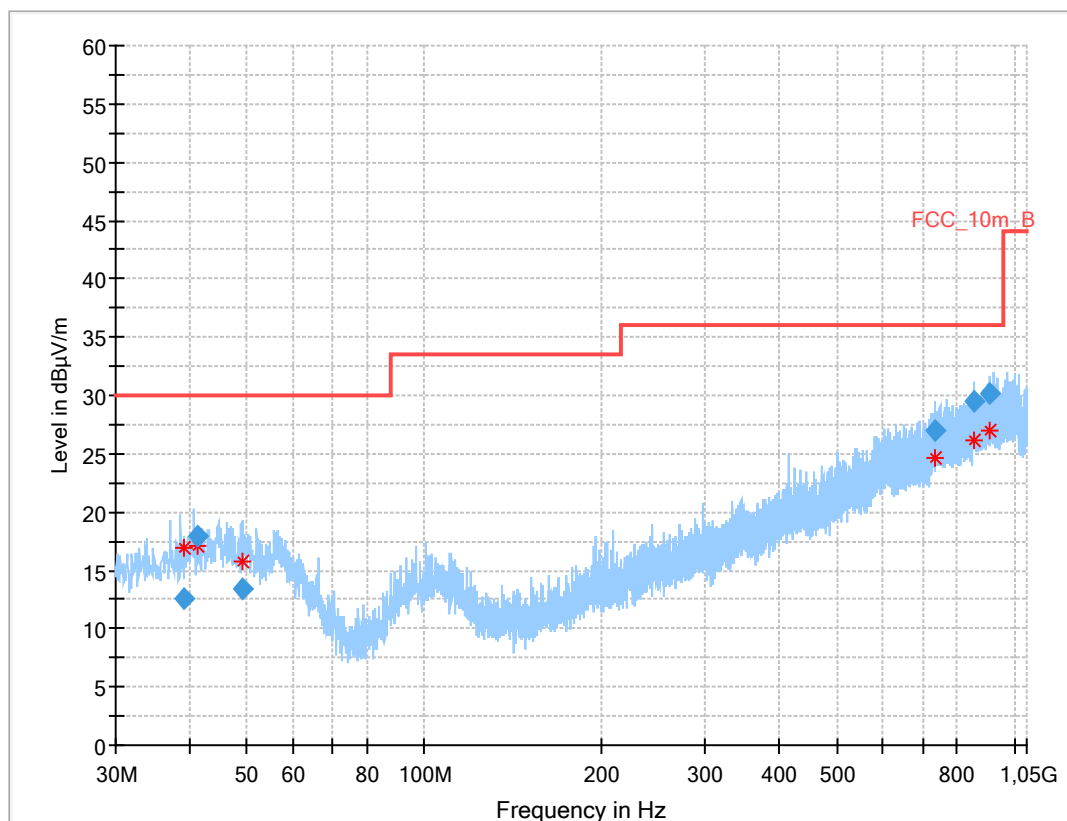


Plots 30 MHz – 1 GHz:**Plot 1:** 30 MHz – 1 GHz, vertical and horizontal polarization MI e2eAudioHi mode

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
44.966	18.26	30.0	11.7	1000	120.0	195.0	H	52	16
49.274	13.40	30.0	16.6	1000	120.0	104.0	V	232	16
262.009	20.53	36.0	15.5	1000	120.0	182.0	H	52	14
749.044	22.35	36.0	13.7	1000	120.0	107.0	H	142	24
849.901	29.15	36.0	6.9	1000	120.0	115.0	V	240	25
894.502	29.92	36.0	6.1	1000	120.0	195.0	H	142	25

Plot 2: 30 MHz – 1 GHz, vertical and horizontal polarization MI e2eAudioLo mode

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
36.679	12.29	30.0	17.7	1000	120.0	137.0	V	120	15
39.309	17.63	30.0	12.4	1000	120.0	126.0	H	142	15
47.131	18.43	30.0	11.6	1000	120.0	108.0	V	13	16
50.415	13.16	30.0	16.8	1000	120.0	102.0	V	244	16
431.511	22.11	36.0	13.9	1000	120.0	104.0	V	142	19
773.877	27.78	36.0	8.2	1000	120.0	195.0	V	142	24

Plot 3: 30 MHz – 1 GHz, vertical and horizontal polarization MI e2eData mode

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
39.041	12.53	30.0	17.5	1000	120.0	195.0	H	142	15
41.196	17.95	30.0	12.1	1000	120.0	146.0	H	142	15
49.186	13.39	30.0	16.6	1000	120.0	172.0	V	147	16
731.535	26.92	36.0	9.1	1000	120.0	188.0	V	-37	23
856.062	29.46	36.0	6.5	1000	120.0	190.0	V	142	25
905.777	30.17	36.0	5.8	1000	120.0	147.0	H	217	26

13 Glossary

EUT	Equipment under test
DUT	Device under test
UUT	Unit under test
GUE	GNSS User Equipment
ETSI	European Telecommunications Standards Institute
EN	European Standard
FCC	Federal Communications Commission
FCC ID	Company Identifier at FCC
IC	Industry Canada
PMN	Product marketing name
HMN	Host marketing name
HVIN	Hardware version identification number
FVIN	Firmware version identification number
EMC	Electromagnetic Compatibility
HW	Hardware
SW	Software
Inv. No.	Inventory number
S/N or SN	Serial number
C	Compliant
NC	Not compliant
NA	Not applicable
NP	Not performed
PP	Positive peak
QP	Quasi peak
AVG	Average
OC	Operating channel
OCW	Operating channel bandwidth
OBW	Occupied bandwidth
OOB	Out of band
DFS	Dynamic frequency selection
CAC	Channel availability check
OP	Occupancy period
NOP	Non occupancy period
DC	Duty cycle
PER	Packet error rate
CW	Clean wave
MC	Modulated carrier
WLAN	Wireless local area network
RLAN	Radio local area network
DSSS	Dynamic sequence spread spectrum
OFDM	Orthogonal frequency division multiplexing
FHSS	Frequency hopping spread spectrum
GNSS	Global Navigation Satellite System
C/N₀	Carrier to noise-density ratio, expressed in dB-Hz

14 Document history

Version	Applied changes	Date of release
-/-	Initial release	2023-06-28
A	Editorial changes	2023-09-07

END OF TEST REPORT