

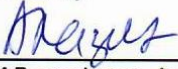
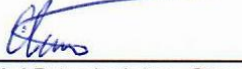


EMC TEST REPORT #	1446-3	 
Date of issue	18.07.2024.	
Date of testing	12. and 15.07.2024.	
Job #	1446	
Customer	Grigorii Grabovoi PR KONSALTING TECHNOLOGIES OF ETERNAL DEVELOPMENT, Kneza Mihaila 21A lok 113 TC Milenijum, 11102 Beograd, Srbija	
Manufacturer	Grigorii Grabovoi PR KONSALTING TECHNOLOGIES OF ETERNAL DEVELOPMENT, Kneza Mihaila 21A lok 113 TC Milenijum, 11102 Beograd, Srbija	
Product/EUT	The device of development of concentrations of eternal life PRK-1UM is of three-modes	
Model	PRK-1UM three-modes	
Serial No.	P189489D82.2M1	
VERDICT (based solely on tests listed in Clause 1)	PASS	
Remarks:	None.	

Tested by:


LAB engineer, Andrijana Lazic


LAB technician, Slaven Pavlekić

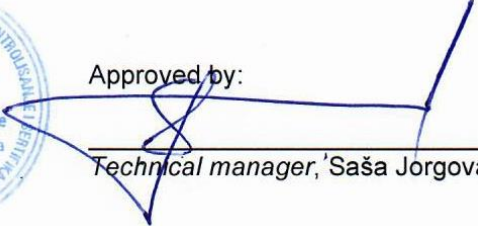

LAB apprentice Miloš Maksimović

Verified by:


LAB engineer, Andrijana Lazic



Approved by:


Technical manager, Saša Jorgovanović

Disclaimer:

This testing and results apply only for tested sample of the product (EUT). Laboratory is not responsible for the data submitted by the customer. Laboratory accepts no responsibility either misuses or wrong interpretations and decisions based on this report.

1. TEST SUMMARY

The EUT is tested as tabletop equipment.

This is a **partial** test report.

The EUT was previously tested according to **EN IEC 61000-3-2:2019 + A1:2021, EN 61000-3-3:2013 + A1:2019 + A2:2021 + AC:2022-01, EN IEC 55014-1:2021 and EN IEC 55014-2:2021** and the test report #1446-2 was issued on 24.05.2024. by Idvorsky Laboratories.

The EUT was **partially** tested according to **EN IEC 55014-1:2021** in order to confirm compliance with the standard due to following changes:

- New LED laser.

The EUT contains the following ports:

- **enclosure port**
- **DC mains port – USB, 5 V DC.**

Only tests concerning these ports shall be taken into account following the customer's request:

- **enclosure port**
- **AC mains port of the auxiliary equipment.**

Overview of the test results according to the test plan and specified performance criteria listed in Clause 3.5 and in EUT's mode of operation as noted in Clause 3.4 of this report:

STANDARD	TEST METHOD	PORT	MODE OF OPERATION	TEST SPECIFICATIONS	VERDICT
EN IEC 55014-1: 2021	Conducted RF emission test	AC mains port of the auxiliary equipment	The fourth and the fifth mode	Frequency range: 150 kHz – 30 MHz Measurement by application of LISN. Limits: Table 5, Clause 4.3.3.6 of EN IEC 55014-1: 2021	PASS
EN IEC 55014-1: 2021	Radiated RF emission test Applied ⁽¹⁾ EN 55016-2-3:2017 + A1:2019	Enclosure	The fourth and the fifth mode	Frequency range: 30 MHz – 1GHz ⁽²⁾ Limits: Table 9, Clause 4.3.4.5 of EN IEC 55014-1:2021 Performed in SAC with BiLog antenna at 3 m distance.	PASS

(1) In cases where, in regard to the year of publication, the test method referenced by the applied product standard does not coincide with the laboratory's scope of accreditation (SoA), the test method within the SoA shall be applied as noted. In all such cases, the test methods were compared and no significant differences consigning to the testing had been found.

(2) The highest internal frequency of the EUT is 16 MHz, according to the customer. The test was performed up to 1 GHz in accordance with clause 4.3.5.1 and table 10 of standard EN IEC 55014-1:2021.

2. CONTENTS

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6. Measurement equipment
7. Measurement uncertainty
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3. IDENTIFICATION of the EUT

3.1. Data*

EUT: PRK-1UM three-modes
Model: PRK-1UM three-modes
Serial number: P189489D82.2M1

Nominal voltage: 5 V DC
Nominal current: 0.4 A
Dimensions: 200 mm x 160 mm x 65 mm
Mass: 1 kg

USB power supply cable: 95 cm length, with the ferrite choke CF-65SN (2 turns) at 3 cm distance from EUT's connector

Note: EUT is not a medical device, according to the customer.

**Supplied by the customer*

3.2. Photographs/schematics



EUT, top side



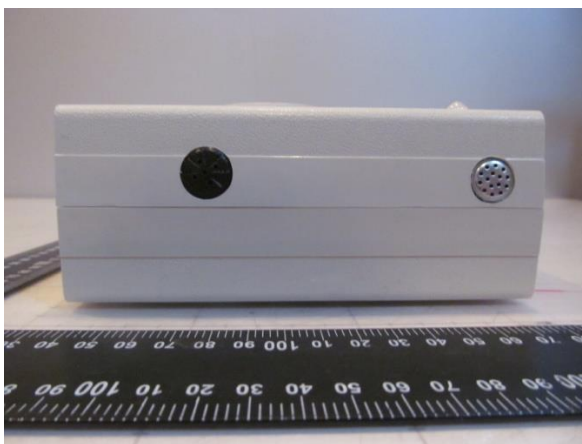
EUT, bottom side



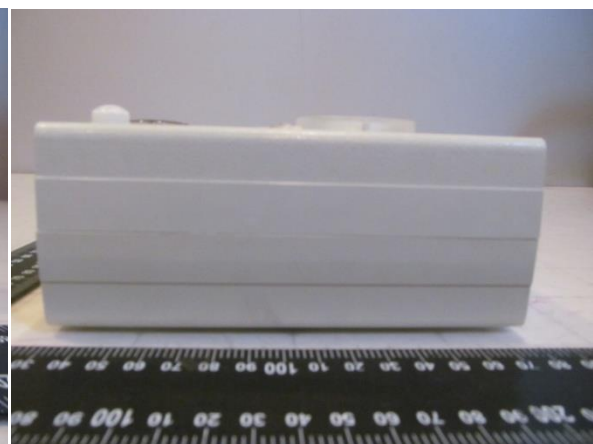
EUT, front side



EUT, rear side



EUT, left side



EUT, right side



EUT, USB power supply cable (95 cm length)



The new laser label

3.3. Auxiliary equipment

MARK	NAME / TYPE / PURPOSE	QUANTITY
Turnmax power supply	AC/DC adapter for power supply of the EUT	1

Photographs:

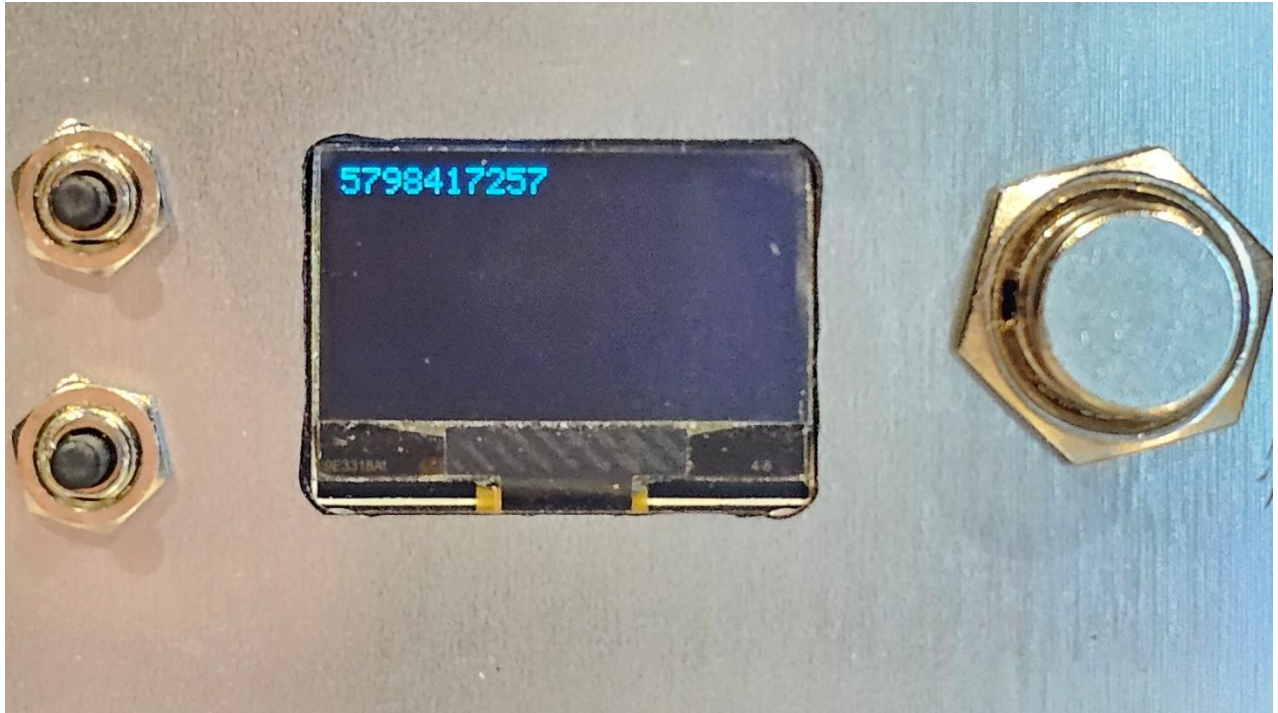


AC/DC power supply adapter 5 V DC

3.4. Modes of operation

MODE OF OPERATION	DESCRIPTION
The fourth mode	The EUT is powered via USB cable of 95 cm connected to 5 V DC AC/DC adapter which is connected to 230 V, 50 Hz distribution network. Button 1 and 2 are off. The fourth mode is activated by turning on the button 3 which lights up blue when is turned on. This mode includes two lasers and an OLED screen. The inclusion of the laser can be observed from the back of the device through the ventilation holes. The required series of numbers is written to the SD card. An OLED display is used to read the numeric series. For this additional function, It is necessary to turn off the button on the left side of the OLED screen, insert the SD card and turn on the button on the left side of the OLED screen. Inscriptions appear on the display. SD card is inserted into a special slot on the front panel on the right side.
The fifth mode	The EUT is powered via USB cable of 95 cm connected to 5 V DC AC/DC adapter which is connected to 230 V, 50 Hz distribution network. Button 1 and 2 are off. Button 3 is turned on and lights up blue. This mode includes two lasers and an OLED screen. The inclusion of the laser can be observed from the back of the device through the ventilation holes. The required series of numbers is written to the SD card. An OLED display is used to read the numeric series. For this additional function, It is necessary to turn off the button on the left side of the OLED screen, insert the SD card and turn on the button on the left side of the OLED screen. Inscriptions appear on the display. SD card is inserted into a special slot on the front panel on the right side. The fifth mode is activated by pressing the metal button on the right side of the screen. The LED on the front panel above the SD card is flashing.

The manufacturer's remark: Mode 4th refers to the additional functions of modes 1 and 2.



OLED display showing the numeric series

3.5. Performance criteria

3.5.1. Emission criteria

Conducted RF emission 150 kHz – 30 MHz: Required emission limits are according to the customer's request and also in accordance with table 5, Clause 4.3.3.6 of EN IEC 55014-1:2021.

Radiated RF emission 30 MHz – 1 GHz: Required emission limits are according to the customer's request and also in accordance with the limits from table 9, Clause 4.3.4.5 of EN IEC 55014-1:2021.

3.5.2. Immunity criteria

None.

3.6. Product related notes

Data of the new laser, provided by the customer:



Dot laser, red, 650 nm, 0.4 mW

LFD650-0.4-12(9x20)
 Order Number: 70108507

Main Parameters (*)	min	typ	max	Unit
Wavelength		650		nm
Optical Diode Power	0.2	0.4	0.4	mW
Operating Voltage	3	3	12	V DC
Operating Current	5	15	25	mA
Operating Temperature	-20		40	°C
Storage Temperature	-40		80	°C

Main Data

Warranty 1 years

Technical Parameters

Lifetime > 3,000 h
 RoHS yes

Optical Parameters

Beam Shape	Dot
Laser Class	1
Divergence	H - 1.0 mrad
Beam Diameter	3 mm
Size of Laserdot	<4.5mm@5m
Operating Distance	10 m
Optics	acryl lens
Laser technology	diode
Focus	collimated

Electrical Parameters

Power Supply LFNT-3

Mechanical Parameters

Size	Ø9x20 mm
Material	Brass
Cable length	100 mm
Wire type	26AWG, 0.14mm ²
Output Aperture	3 mm
Weight	6 g

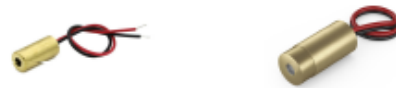
(*) Over the complete operating temperature range

Features

- Compact size

- Laser Class 1
- Low power consumption
- Operating Voltage 3-12V DC
- Low cost

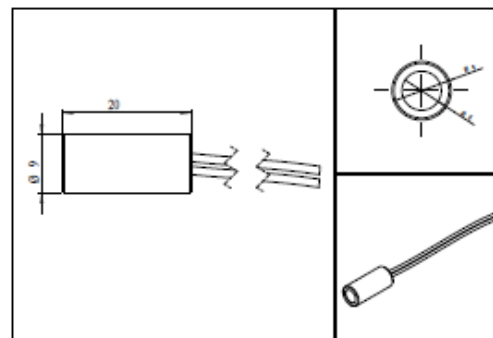
Picture



Cable color

Ground		black	GND
Positive		red	3 - 12, typ 3 V DC

Drawing



Safety Label



Valid Revision

13 | 06-MAY-2022

4. TESTING LOCATION AND CONDITIONS

Location: **Idvorsky Laboratories Ltd. Belgrade**
 Volgina 15, 11060 Belgrade, Serbia

Conditions:

Temperature: 25.7 °C – 27.3 °C
 Relative humidity: 50.1 % – 56.3 %
 Atmospheric pressure: 987 hPa – 989 hPa

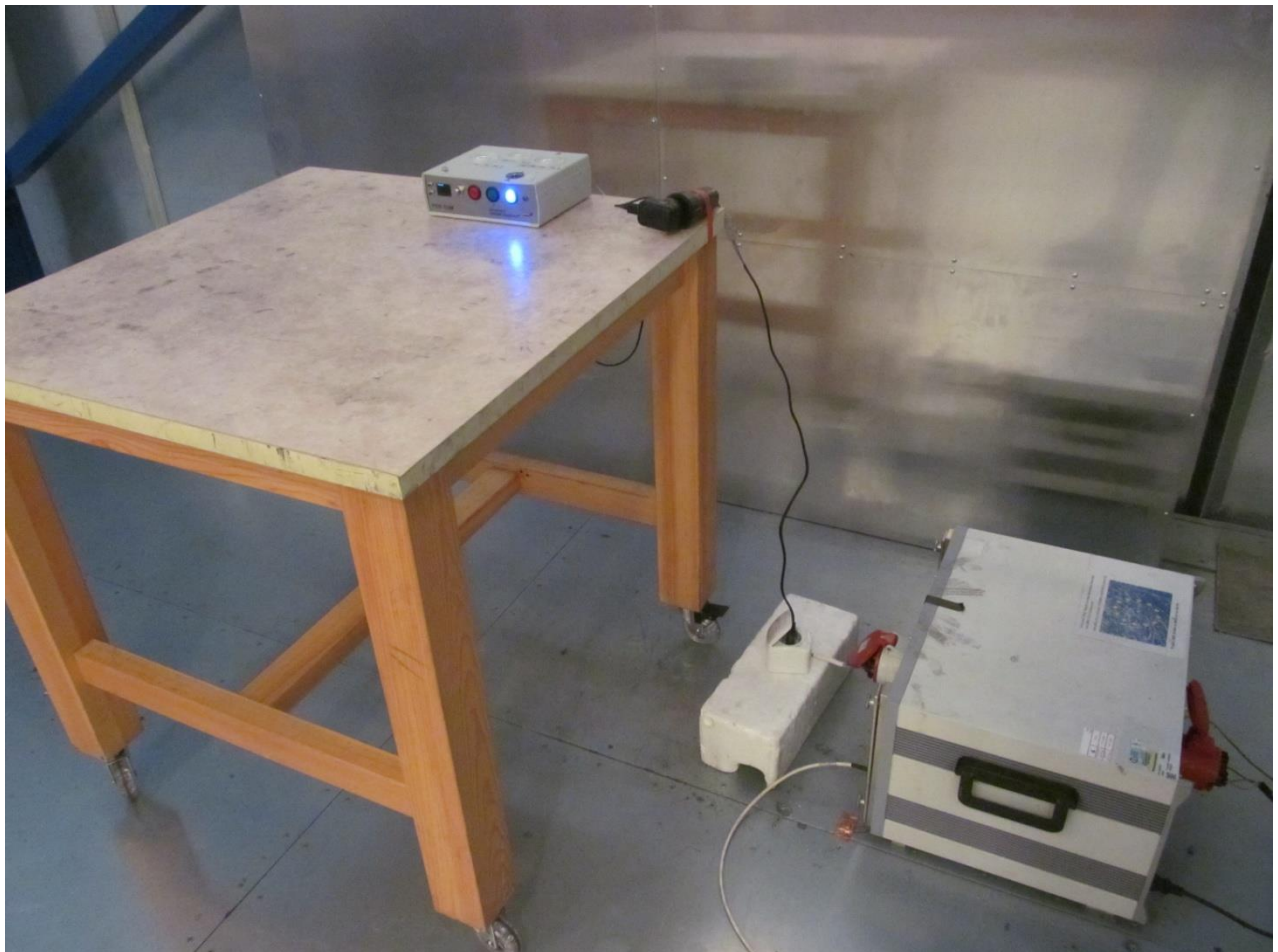
5. TEST RESULTS

5.1. Conducted RF emission test

Date: 12.07.2024.
Test standard: EN IEC 55014-1:2021
Tested by: Andrijana Lazić, Slaven Pavlekić and Miloš Maksimović

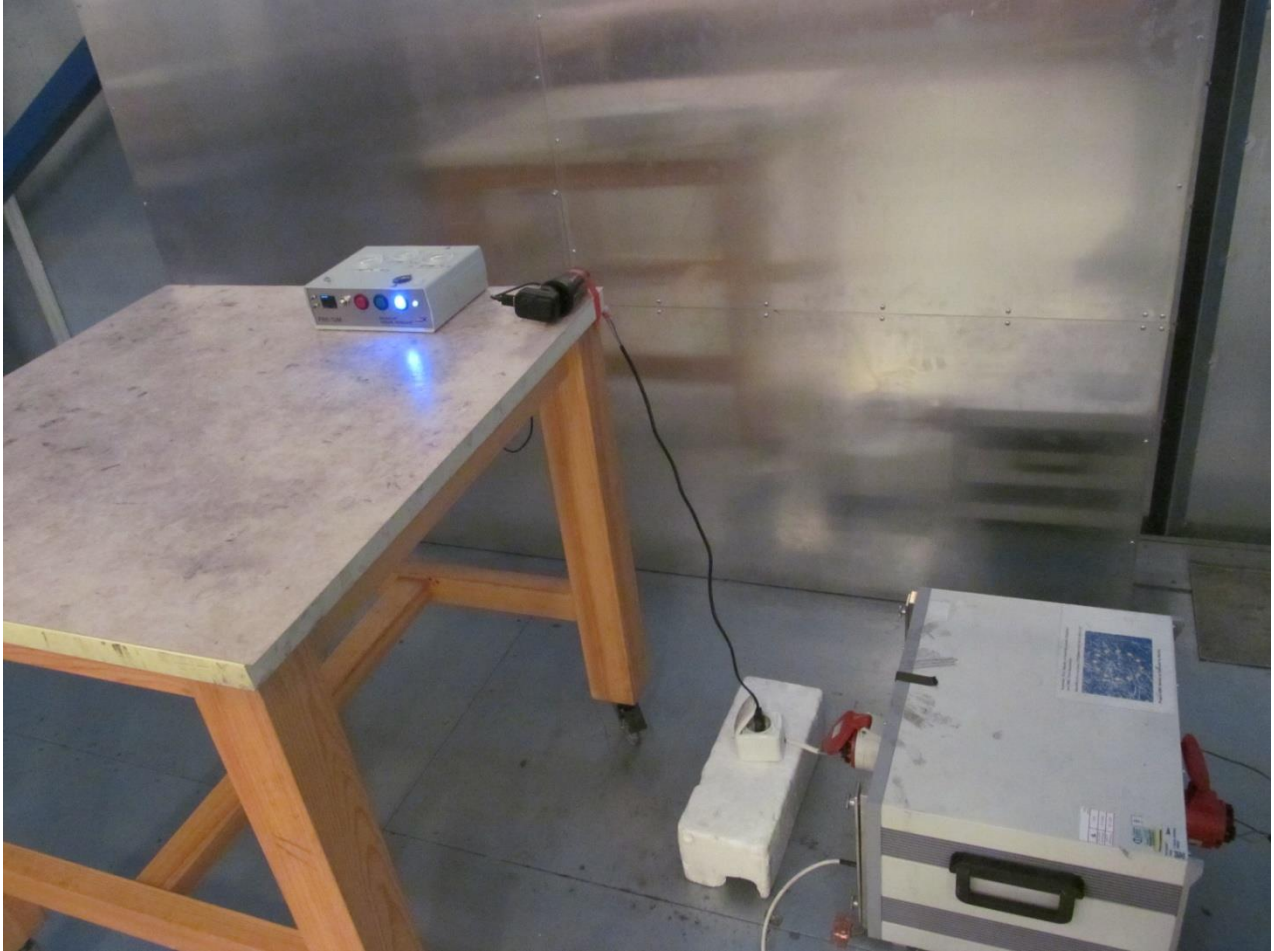
5.1.1. Setup

5.1.1.1. The fourth mode



Port under test: AC mains port of the auxiliary equipment (LISN)
AC mains port voltage: 219 V, 50 Hz ($I_{max} = 10 \text{ mA}$)
Frequency range: 150 kHz – 30 MHz
Pre-scan dwell time: 10 ms
Pre-scan detector: Peak
Step: 4 kHz
Final measurement time: 15 s
Mode of operation: The fourth mode

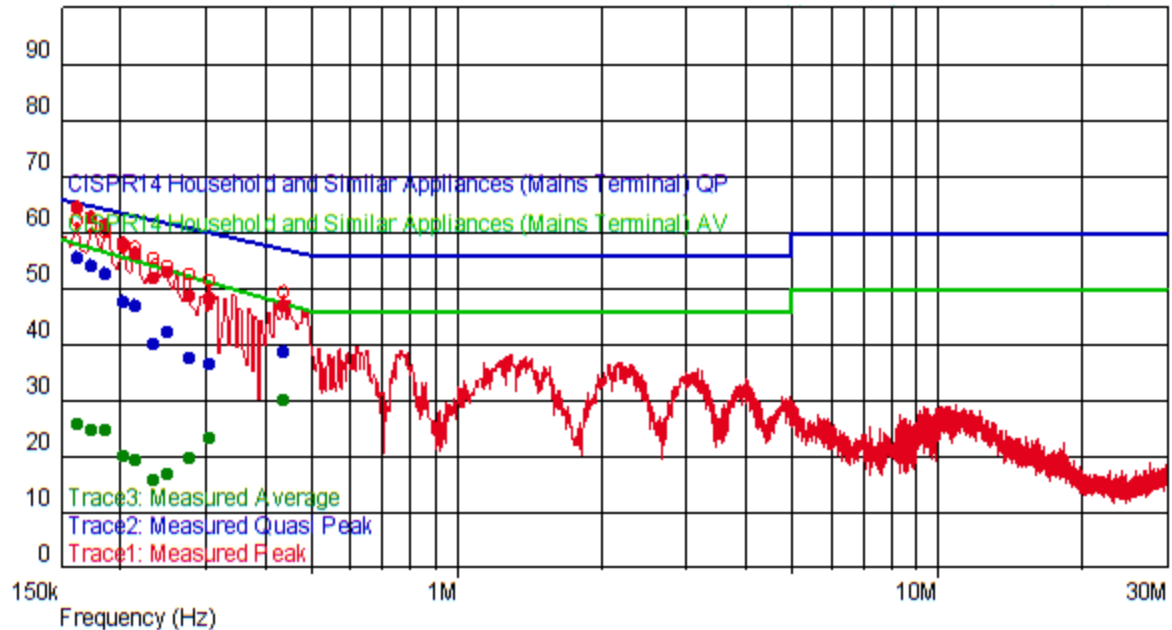
5.1.1.2. The fifth mode



Port under test:	AC mains port of the auxiliary equipment (LISN)
AC mains port voltage:	219 V, 50 Hz ($I_{max} = 10 \text{ mA}$)
Frequency range:	150 kHz – 30 MHz
Pre-scan dwell time:	10 ms
Pre-scan detector:	Peak
Step:	4 kHz
Final measurement time:	15 s
Mode of operation:	The fifth mode

5.1.2. Results

5.1.2.1. The fourth mode



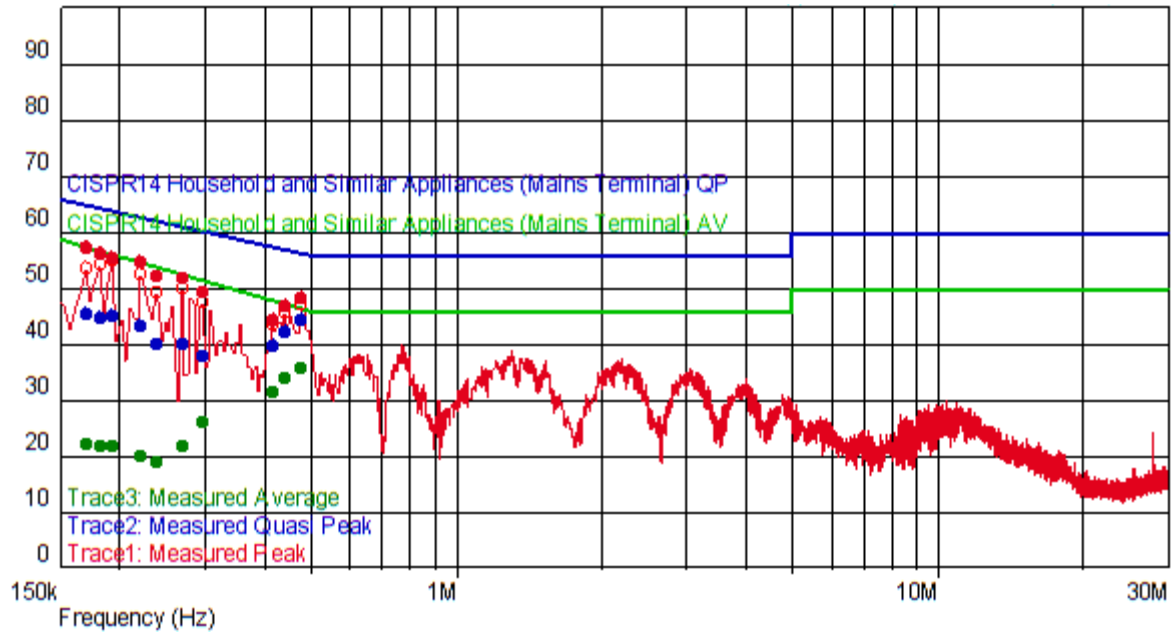
List of selected disturbances:

f [MHz]	Pk level [dBuV]	QP level [dBuV]	QP limit [dBuV]	QP margin [dB]	Av level [dBuV]	Av limit [dBuV]	Av margin [dB]	LINE
0.162	64.096	55.270	65.361	-10.090	25.856	58.169	-32.313	N
0.174	62.285	54.010	64.767	-10.760	24.905	57.397	-32.492	N
0.186	60.908	52.470	64.213	-11.750	24.618	56.677	-32.059	N
0.202	57.927	47.370	63.528	-16.160	20.227	55.786	-35.559	N
0.214	56.196	46.950	63.049	-16.100	19.436	55.163	-35.727	N
0.234	51.737	40.190	62.307	-22.120	15.987	54.198	-38.212	N
0.250	52.867	42.100	61.757	-19.660	16.777	53.484	-36.707	N
0.278	48.657	37.540	60.875	-23.340	19.607	52.338	-32.731	N
0.306	48.214	36.470	60.078	-23.600	23.474	51.302	-27.828	N
0.438	46.873	38.650	57.100	-18.450	30.193	47.429	-17.236	N

Limits: Clause 4.3.3.6, table 5 of EN IEC 55014-1:2021.

Verdict: **PASS**

5.1.2.2. The fifth mode



List of selected disturbances:

f [MHz]	Pk level [dBuV]	QP level [dBuV]	QP limit [dBuV]	QP margin [dB]	Av level [dBuV]	Av limit [dBuV]	Av margin [dB]	LINE
0.170	57.041	45.490	64.960	-19.470	22.301	57.649	-35.348	L1
0.182	56.218	44.800	64.394	-19.600	21.938	56.912	-34.975	L1
0.194	55.485	44.910	63.864	-18.950	21.975	56.223	-34.248	L1
0.222	54.694	43.120	62.744	-19.620	20.174	54.767	-34.593	L1
0.238	52.028	40.210	62.166	-21.960	19.158	54.015	-34.858	L1
0.270	51.751	40.180	61.118	-20.940	21.891	52.653	-30.762	L1
0.298	49.208	37.940	60.298	-22.360	26.118	51.588	-25.469	L1
0.418	44.385	39.690	57.488	-17.800	31.665	47.934	-16.269	L1
0.442	46.943	42.230	57.024	-14.790	33.963	47.331	-13.368	L1
0.478	48.369	44.180	56.374	-12.190	35.769	46.486	-10.717	L1

Limits: Clause 4.3.3.6, table 5 of EN IEC 55014-1:2021.

Verdict: **PASS**

5.1.3. Deviations

None.

5.1.4. Comments

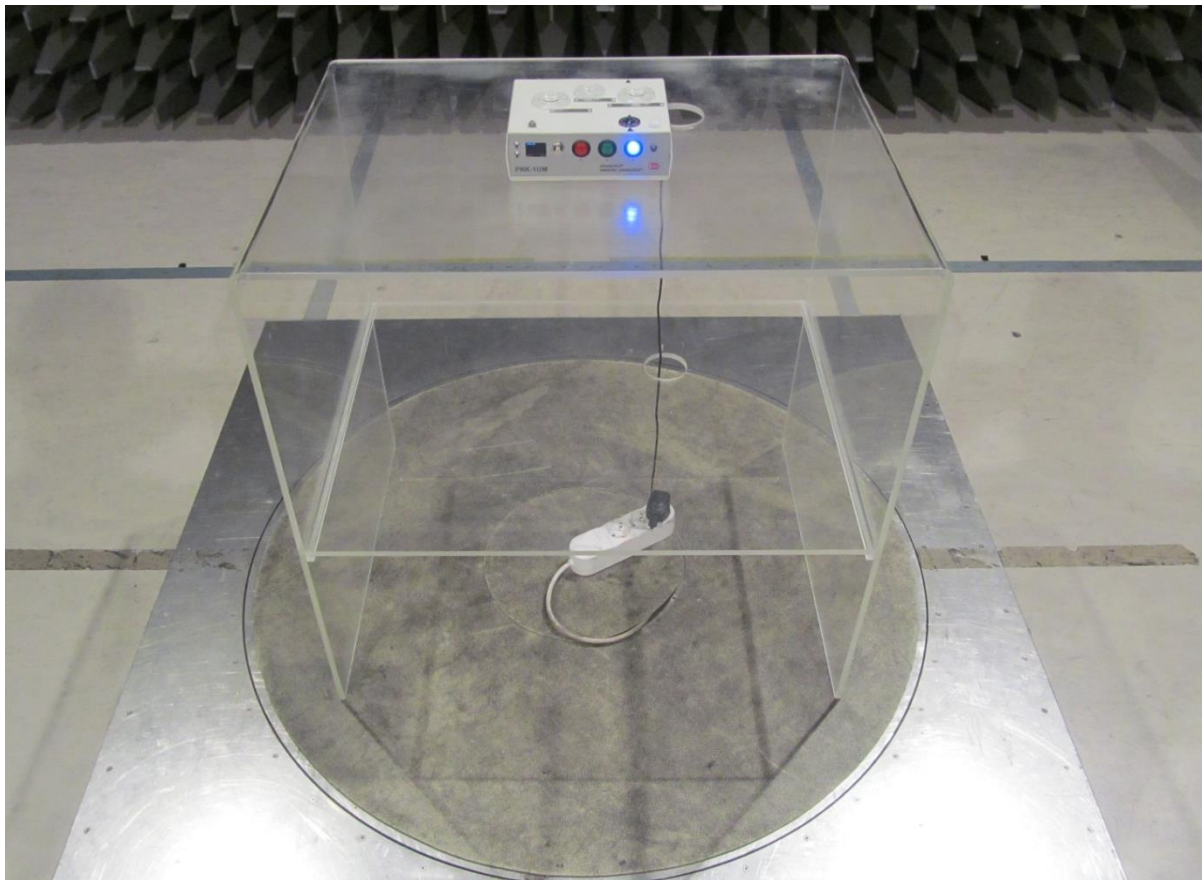
None.

5.2. Radiated RF emission test

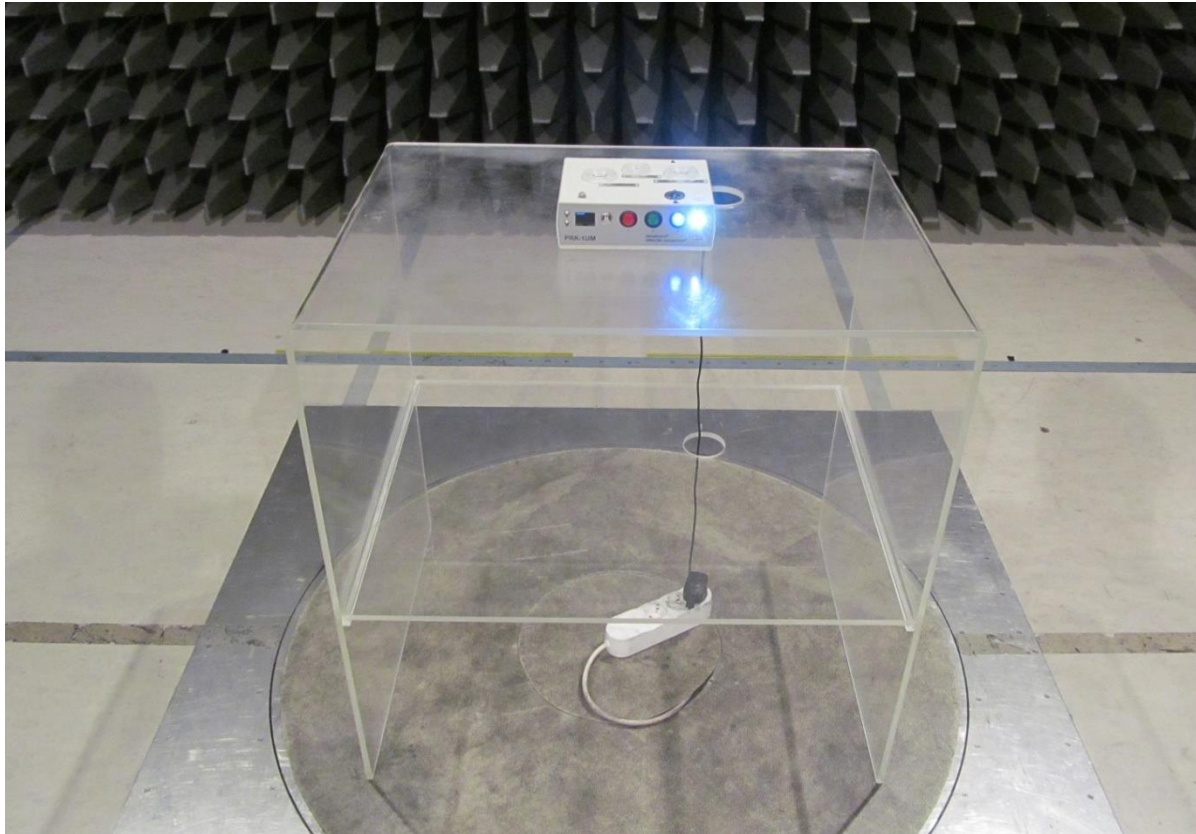
Date: 12. and 15.07.2024.
Test standard: EN 55016-2-3:2017 + A1:2019
Tested by: Andrijana Lazić, Slaven Pavlekić and Miloš Maksimović

5.2.1. Setup

Note: Pre-scan measurements were made in different modes of operation of the EUT in order to determine the worst case regarding radiated RF emission.



Test location:	semi-anechoic chamber
EUT to antenna distance:	3 m
Pre-scan RBW:	120 kHz (step 40 kHz)
Pre-scan dwell time:	2 ms
Final measurement:	15 s
Final RBW:	120 kHz
Mode of operation:	The fourth mode ($U = 223 \text{ V}$, $I_{\text{max}} = 10 \text{ mA}$)



Test location: semi-anechoic chamber
 EUT to antenna distance: 3 m
 Pre-scan RBW: 120 kHz (step 40 kHz)
 Pre-scan dwell time: 2 ms
 Final measurement: 15 s
 Final RBW: 120 kHz
 Mode of operation: The fifth mode (U = 223 V, I_{max} = 10 mA)

Pre-scan, both modes of operation, deciding the worst case:

Pre-scan angles: 0°, 90°, 180° and 270°
 Pre-scan antenna height: 1 m
 Pre-scan antenna polarization: HOR and VER

Pre-scan, the worst case, complete test

Pre-scan angles: 0°, 90°, 180° and 270°
 Pre-scan antenna height: 1 m, 2.5 m and 4 m
 Pre-scan antenna polarization: HOR and VER
 Mode of operation: The fifth mode (U = 223 V, I_{max} = 10 mA)

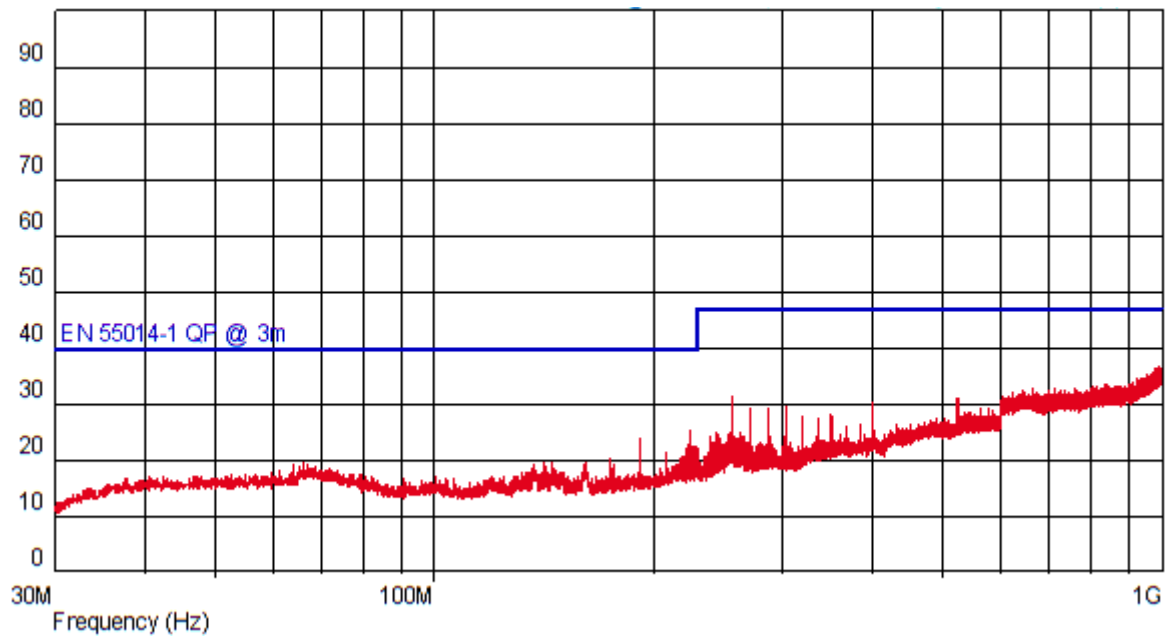
Limits:

Frequency range [MHz]	Average limit dB(μV/m)	Quasi-peak limit dB(μV/m)	Peak limit dB(μV/m)
30 – 230	--	40	--
230 – 1000	--	47	--

5.2.2. Results

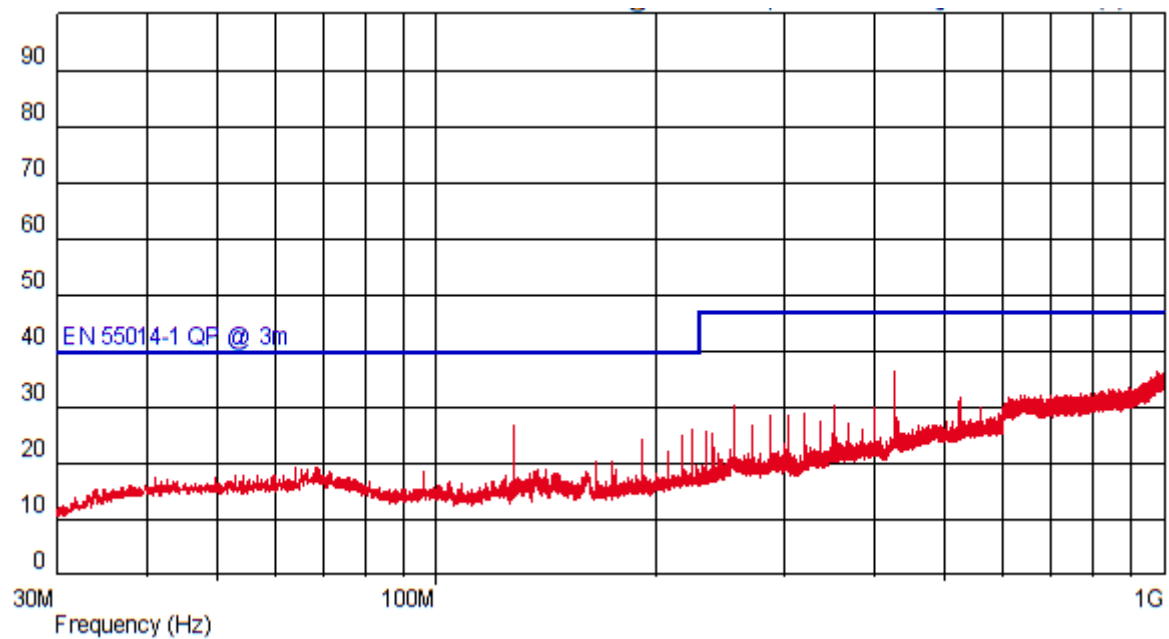
5.2.2.1. Pre-scan, both modes of operation, deciding the worst case

The fourth mode



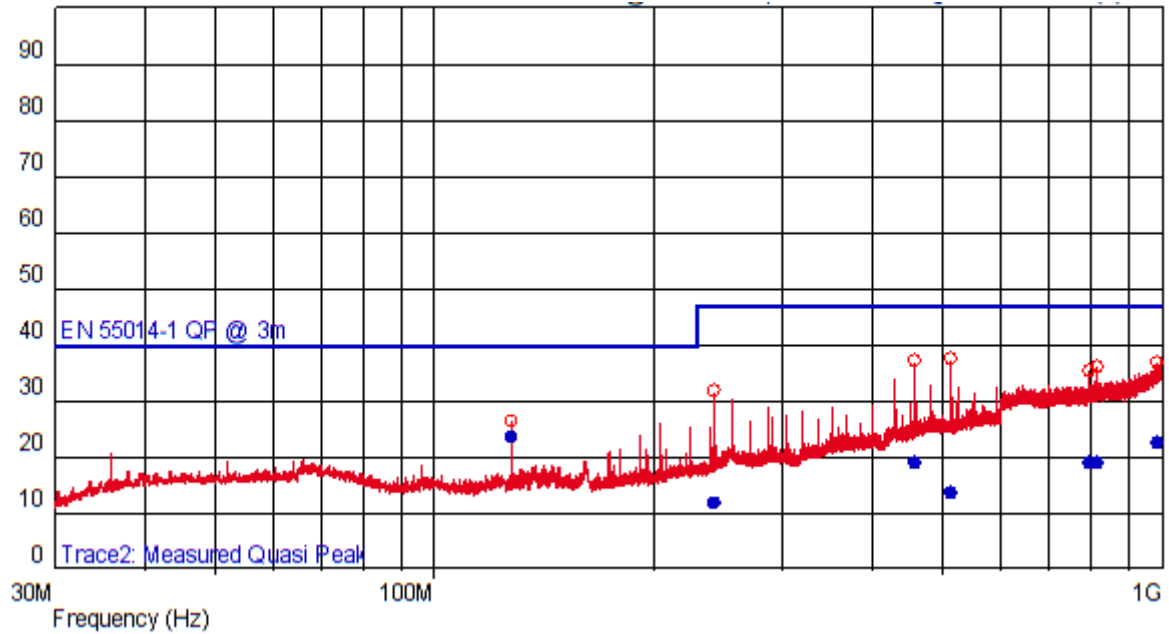
Note: Pre-scan measurement was made in order to determine the worst case regarding radiated RF emission.

The fifth mode



Note: Pre-scan measurement was made in order to determine the worst case regarding radiated RF emission.

5.2.2.2. Complete test, the fifth mode



List of selected disturbances:

Frequency [MHz]	QP level [dBuV/m]	QP limit [dBuV/m]	Margin [dB]	Antenna polarization	Azimuth [deg]	Antenna height [m]
127.999	23.770	40	-16.230		85	1.030
241.960	12.010	47	-34.990	--	165	1.030
457.200	18.900	47	-28.100		2	1.820
513.601	13.520	47	-33.480	--	239	4.000
794.639	18.870	47	-28.130	--	360	3.990
814.520	19.190	47	-27.810		252	1.250
984.199	22.720	47	-24.280		66	1.250

Limits: Clause 4.3.4.5, table 9 of EN IEC 55014-1:2021

Verdict: **PASS**

5.2.3. Deviations

None.

5.2.4. Comments

The highest internal frequency of the EUT is 16 MHz, according to the customer. The test was performed up to 1 GHz in accordance with clause 4.3.5.1 and table 10 of standard EN IEC 55014-1:2021.

6. MEASUREMENT EQUIPMENT

The following equipment is used for tests:

Type	Manufacturer	Model	Ser.No.	IN number	USED IN TEST/-S Reported in the Clause/-s:
EMI receiver	Schaffner	SMR4503	81	0138	5.1. 5.2
Software	Teseq	Compliance 5 E/I v5.26.4	517-2881623-74 and 517-2846725-70	0125	5.1. 5.2
V-network 4-line	Teseq	NNB52	27384	0134	5.1
Antenna	Teseq	CBL6144	35349	0115	5.2
Semi anechoic chamber	Comtest	3m	/	0305	5.2
Antenna mast	Maturo	CAM-4.0	/	306	5.2
Controller	Maturo	MSU	/	307	5.2
Pulse limiter	Schwarzbeck	VTSD 9561-F	9561-F-N 0971	0356	5.1

7. MEASUREMENT UNCERTAINTY

For test 5.1: AC mains port: $U_{LAB} = U_{CISPR} = 3.4$ dB in frequency range 150 kHz – 30 MHz. Expanded uncertainty of measurement. expressed as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for normal distribution corresponds to a coverage probability of approximately 95 %. Measurement uncertainty calculation is carried out according to EN 55016-4-2:2011 + A1:2014 + A2:2018.

For test 5.2: 4.9 dB (HOR 30 MHz – 300 MHz)
5 dB (VER 30 MHz – 300 MHz)
5.2 dB (HOR and VER 300 MHz – 1000 MHz)
Expanded uncertainty of measurement expressed as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$. which for normal distribution corresponds to a coverage probability of approximately 95 %.
Measurement uncertainty is according to EN 55016-4-2:2011 + A1:2014 + A2:2018 ($U_{LAB} \leq U_{CISPR}$).

8. GENERAL REMARKS

Date format is dd.mm.yyyy.

Decimal mark is indicated by dot (.) within the report.

9. APPENDIXES

None.

END OF THE REPORT