

TEST REPORT

FCC RF Exposure

Report Reference No. : **REP119025**

Date of issue : 2025-10-28

Test Report Verdict : PASS

Testing Laboratory : **Nemko S.p.A.**

Address : Via Del Carroccio, 4

City : 20853 Biassono (MB)

Country : Italy

Testing location : Described at clause 1.4

Customer name : PRS LAB Srl Unipersonale

Customer contact information : Via Campagna 92, 22020 Faloppio (CO)
Italy

Reference standards : **FCC CFR 47 Part 1 Subpart I**
§ 1.1310 – Radiofrequency radiation exposure limits

Standard application : Full application

Equipment under test : Wireless charging bases

Trademark(s) : /

Manufacturer : Datalogic S.r.l

Model/Type reference : Described at clause 4.1

Tests performed by : Luis Anticono

Report approved by : Paolo Barbieri



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1. GENERAL INFORMATION

1.1 Project history

Report number	Modification to the report / comments	Date
REP119025	First release	2025-10-08
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1.2 Symbol used in the report

☒	The crossed square indicates that the listed condition, standard or equipment is applicable for this report.
☐	The empty square indicates that the listed condition, standard or equipment is not applicable for this report.
NP (Not performed).....	Test case not performed according to customer request
N (Not applicable)	Test case does not apply to the test object
P (Pass)	Test object does meet the requirement
F (Fail)	Test object does not meet the requirement
☐ Comma (,) / ☒ Dot (.).....	Symbol used as decimal separator throughout this report
Asterisk (*)	Symbol not used throughout this report
EUT	Equipment Under Test
The results contained in this report reflect the results for this particular model(s) and serial number(s) and apply to the sample(s) as received. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.	

1.3 Date of sample(s) reception and tests

Date of receipt of test sample(s)	2025-10-01
Testing start date	2025-10-07
Testing termination date	2025-10-08

1.4 Testing location

The tests have been performed in the place indicated below:

☒ Nemko premises location: Nemko S.p.A.
 Via Del Carroccio, 4
 20853 Biassono (MB) - Italy

☐ Other location: --
 --
 --

1.5 Environmental conditions

The tests were carried out in the ranges of environmental conditions specified below:

Ambient temperature: 18-33 °C
 Relative Humidity: 25-70 %
 Atmospheric pressure: 860-1060 hPa

Notes:

The following instruments are used to monitor the environmental conditions:

Equipment	Trademark	Model	Serial No.
Thermo-hygrometer	Testo	175-H2	20012380/305
Thermo-hygrometer	Testo	175-H2	20013013/305
Barometer	Castle	GPB 3300	072015

1.6 Measurement uncertainty and assessment of conformity

The measurement uncertainty was calculated for each test and quantity listed in this test report, according to CISPR 16-4-2 and other specific test standard and is documented in Nemko Spa working manual WML1002 and WML0078. The assessment of conformity for each test performed on the equipment is performed not taking into account the measurement uncertainty. The two following possible verdicts are stated in the report:

P (Pass) - The measured values of the equipment respect the specification limit at the points tested. The specific risk of false accept is up to 50% when the measured result is close to the limit.

F (Fail) - One or more measured values of the equipment do not respect the specification limit at the points tested. The specific risk of false reject is up to 50% when the measured result is close to the limit.

Hereafter Nemko's measurement uncertainties are reported:

EUT	Type	Test	Range	Measurement Uncertainty	Notes
Transmitter	Conducted	Frequency error	0.001 MHz ÷ 40 GHz	0.08 ppm	(1)
		Carrier power RF Output Power	0.009 MHz ÷ 30 MHz	1.1 dB	(1)
			30 MHz ÷ 18 GHz	1.5 dB	(1)
			18 MHz ÷ 40 GHz	3.0 dB	(1)
			40 MHz ÷ 140 GHz	5.0 dB	(1)
		Adjacent channel power	1 MHz ÷ 18 GHz	1.4 dB	(1)
		Conducted spurious emissions	0.009 MHz ÷ 18 GHz	3.0 dB	(1)
			18 GHz ÷ 40 GHz	4.2 dB	(1)
			40 GHz ÷ 220 GHz	6.0 dB	(1)
		Intermodulation attenuation	1 MHz ÷ 18 GHz	2.2 dB	(1)
		Attack time – frequency behaviour	1 MHz ÷ 18 GHz	2.0 ms	(1)
		Attack time – power behaviour	1 MHz ÷ 18 GHz	2.5 ms	(1)
		Release time – frequency behaviour	1 MHz ÷ 18 GHz	2.0 ms	(1)
		Release time – power behaviour	1 MHz ÷ 18 GHz	2.5 ms	(1)
		Transient behaviour of the transmitter – Transient frequency behaviour	1 MHz ÷ 18 GHz	0.2 kHz	(1)
		Transient behaviour of the transmitter – Power level slope	1 MHz ÷ 18 GHz	9%	(1)
		Frequency deviation - Maximum permissible frequency deviation	0.001 MHz ÷ 18 GHz	1.3%	(1)
		Frequency deviation - Response of the transmitter to modulation frequencies above 3 kHz	0.001 MHz ÷ 18 GHz	0.5 dB	(1)
		Dwell time	-	3%	(1)
		Hopping Frequency Separation	0.01 MHz ÷ 18 GHz	1%	(1)
		Occupied Channel Bandwidth	0.01 MHz ÷ 18 GHz	2%	(1)
		Modulation Bandwidth	0.01 MHz ÷ 18 GHz	2%	(1)
	Radiated	Radiated spurious emissions	0.009 MHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
			66 GHz ÷ 220 GHz	10 dB	(1)
		Effective radiated power transmitter	10 kHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
Receiver	Radiated	Radiated spurious emissions	66 GHz ÷ 220 GHz	10 dB	(1)
			0.009 MHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
	Conducted	Sensitivity measurement	1 MHz ÷ 18 GHz	6.0 dB	(1)
		Conducted spurious emissions	0.009 MHz ÷ 18 GHz	3.0 dB	(1)
			18 GHz ÷ 40 GHz	4.2 dB	(1)
			40 GHz ÷ 220 GHz	6.0 dB	(1)

NOTES:

(1) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95 %

2. STANDARDS, TEST METHODS AND TECHNICAL PROCEDURES

2.1 Standard(s) or other specifications applied

The following standard(s) or specifications were applied:

FCC CFR 47 Part 1.1310

Radiofrequency radiation exposure limits.

2.2 Test method(s) applied

The following document(s) are referred to in the standard(s) or specifications cited at clause 2.1 in such a way that some or all of their content constitutes requirements for the standard itself. For undated document(s), only the edition cited in the standard(s) applies; dated document(s), including amendments, are used when the standard(s) requires to apply the latest edition of the referenced document:

FCC CFR 47 Part 1.1307

Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.

KDB 447498 D01 v06

General RF Exposure Guidance

ANSI/IEEE Std C95.1

IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz

2.3 Nemko technical procedures

WM L0177: General routines for using instruments at Nemko

WM L1002: Measurement Uncertainty - Policy and Statement

WM L0078: Electromagnetic compatibility and radio spectrum matters (ERM) measurement uncertainty

WM L0077: General procedure for conducting EMC tests

3. SUMMARY OF TEST RESULTS AND VERDICTS

Emission Tests		
Requirement / test	Method Standard	Verdict
Radiofrequency radiation exposure limits.	KDB 447498 D01 v06	P

4. EQUIPMENT UNDER TEST

4.1 EUT Identification

Short description of the EUT	
Wireless charging bases	
Copy of marking plate(s) (if present)	
 	
Sample ID	P25P01056
Model/Type reference	WLC4690/ BK-BT
Ratings	4.75-14 Vdc, I _{max} =1A
Equipment use	Portable
Accessories and detachable parts included	None
Test performed.....	All tests were performed on this sample
Sample ID	P25P01108
Model/Type reference	WLC4690/ BK-910
Ratings	4.75-14 Vdc, I _{max} =1A
Equipment use	Portable
Accessories and detachable parts included	None
Test performed.....	All tests were performed on this sample

4.2 EUT Power Supply

Used ¹	N° ²	Type	Supply Voltage	Phases N°	Supplementary Information
☒	1	AC	230 V / 50 Hz	L+N+PE	
☒	2	DC	5 V		
Notes: ¹ The crossed square indicates that the supply voltage is used in at least one test. ² This number will be used all over the report to identify the supply voltage(s) used for each test.					

4.3 EUT Information declared by the Customer ¹

Information	Radio Module ²	Declaration
Other information	-	Cables (see par. 4.6)
Notes: ¹ Nemko S.p.A. declines all responsibility for the information above declared by the customer that may influence the validity of the results contained in this test report. ² See clause 4.9 for radio module information		

4.4 EUT Operation Modes

N°	Description
1	Normal charging battery both from the AC/DC power supply (worst case) and USB-RJ45 cable, provided by the customer.
Notes:	

4.5 EUT Configuration Modes

The EUT was configured to measure its highest possible radiation level. The test modes selected are according to EUT instruction manual.

N°	Description
1	EUT in maximum output power transfer mode, WTP battery initially discharged radiated measurements were performed with the reader placed above the base; it produced worst case emissions and output power, therefore this alignment was used for all measurements
Notes:	

4.6 EUT Input/Output Ports

Port	Name	Type ¹	Cable Max. >3m	Cable Shielded	Description
0	Enclosure	N/E	—	—	—
1	RJ45	I/O	☐	☐	
2	DC	DC	☐	☐	
Notes: ¹ Port type: AC = AC Power Port DC = DC Power Port N/E = Non-Electrical ANT = Antenna Port I/O = Signal/Control Input or Output Port TP = Wired network or telecommunication Port					

4.7 EUT and Equipment Used During Test

Use ¹	Product Type	Manufacturer	Model	Comments
AE	PC	DELL	Latitude 7370	Provided by customer
AE	Power scan	Datalogic	GBT4600	Provided by customer
AE	Power scan	Datalogic	GM4600	Provided by customer
AE	AC/DC power supply	PHIHONG	PSAA1BU-120	Provided by customer
Notes: ¹ Use EUT - Equipment Under Test SIM - Simulator (Not Subjected to Test) AE - Auxiliary/Associated Equipment (Not Subjected to Test)				

4.8 Information about radio module(s)

Radio module 1	
Description	Information
Identification:	Model: / Trademark: /
Frequency band (MHz):	
Modulation type:	
Antenna information:	
Number of channels:	
Other information:	
Notes:	

5 TEST RESULTS

5.1 Radiofrequency radiation exposure limits

5.1.1 Test result

Verdict:	☒ P ☐ F
Frequency range:	100 kHz – 300 kHz

5.1.2 Test method

For devices designed for typical desktop applications, such as wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device.

5.1.3 Limits

The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils must be less than 50% of the MPE limit.

Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m.

5.1.4 Test results

WLC4690/ BK-BT

Test point	Distance	E-field strengths [V/m]	H-field strengths [A/m]	Verdict
Front side	15 cm	2.9	0.1	P
Right side	15 cm	1.9	0.07	P
Left side	15 cm	1.6	0.06	P
Rear side	15 cm	0.9	0.05	P
Above the top	15 cm	2.2	0.06	P
bottom	15 cm	1.8	0.06	P

WLC4690/ BK-910

Test point	Distance	E-field strengths [V/m]	H-field strengths [A/m]	Verdict
Front side	15 cm	1.5	0.06	P
Right side	15 cm	1.3	0.04	P
Left side	15 cm	1.5	0.06	P
Rear side	15 cm	0.70	0.05	P
Above the top	15 cm	1.8	0.06	P
bottom	15 cm	1.5	0.05	P

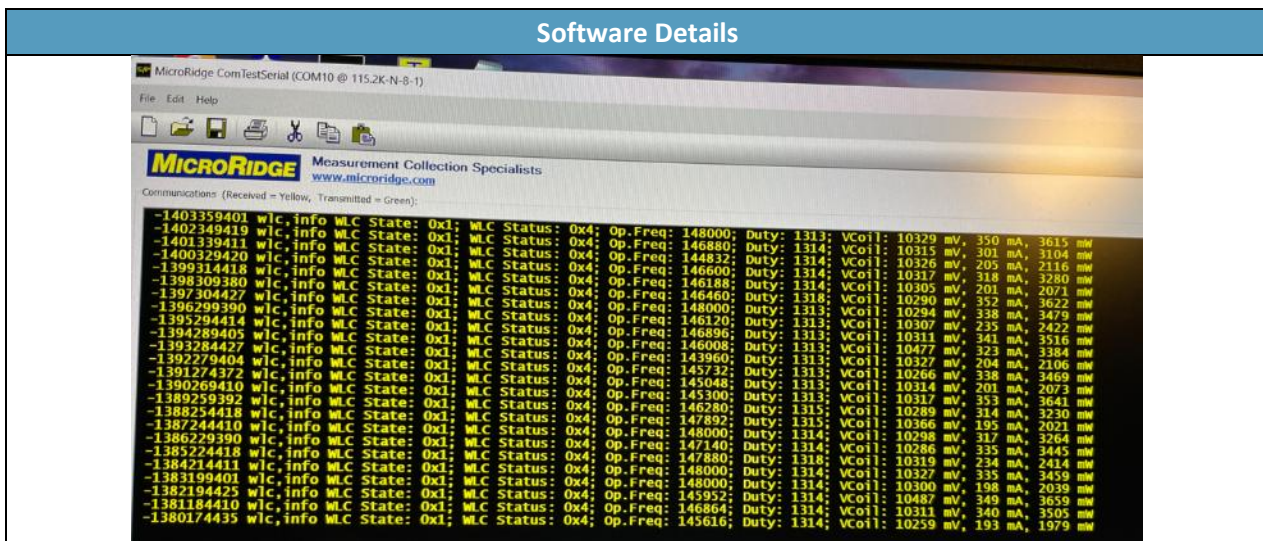
5.1.5 Test equipment used

Equipment	Manufacturer	Model	Serial N°	Cal Date	Due Date
Filed meter	Narda	EHP-200A	170WX90208	2024-05	2026-05
Filed meter	Narda	EHP-50G	510ZY00109	2024-05	2026-05
Shielded room	Siemens	Conducted emission test room	1862	NSC	NSC

NSC = Not Subject to Calibration

5.1.6 Test software details

Software Details

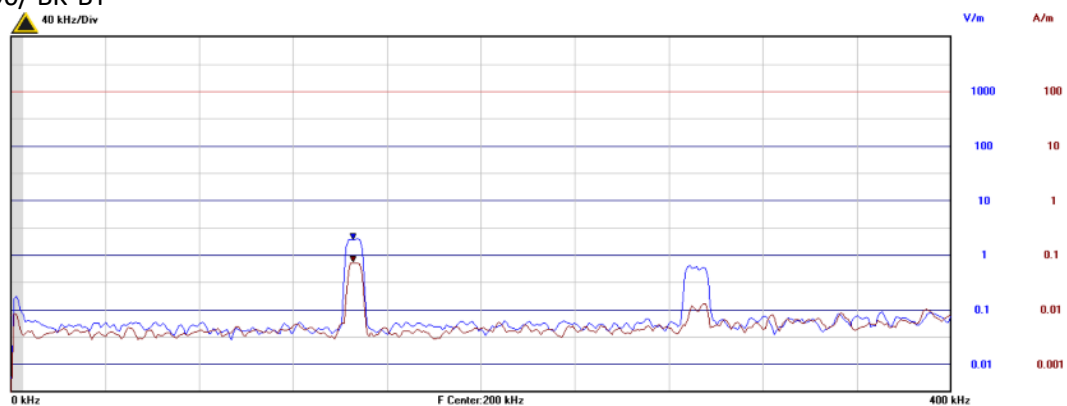


The screenshot displays the MicroRidge ComTestSerial (COM10 @ 115.2K-N-8-1) interface. The software window includes a menu bar (File, Edit, Help) and a toolbar. The main display area shows a list of test results for various frequencies and duty cycles. The results are organized into columns: Frequency (Op.Freq), Duty Cycle (Duty), Voltage (VCoil), and Current (mA). The data is presented in a table format with alternating yellow and green rows for received and transmitted signals respectively.

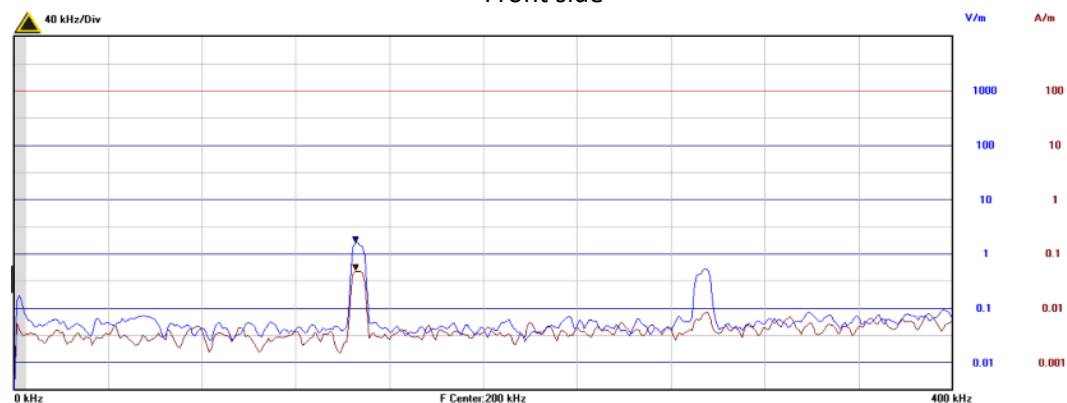
Frequency (Op.Freq)	Duty Cycle (Duty)	Voltage (VCoil)	Current (mA)
148000	1313	10329	350
146880	1314	10315	301
144832	1314	10326	205
146600	1314	10317	318
146188	1314	10305	201
146460	1318	10290	352
148000	1313	10294	338
146120	1313	10307	235
146896	1313	10311	341
146008	1313	10477	323
143960	1313	10327	204
145732	1313	10266	338
145048	1313	10314	201
145300	1313	10317	353
146280	1315	10289	314
147892	1315	10366	195
148000	1314	10298	317
147140	1314	10286	335
147880	1318	10319	234
148000	1314	10327	335
148000	1314	10300	198
145952	1314	10487	349
146864	1314	10311	340
145616	1314	10259	193

5.1.7 Test data

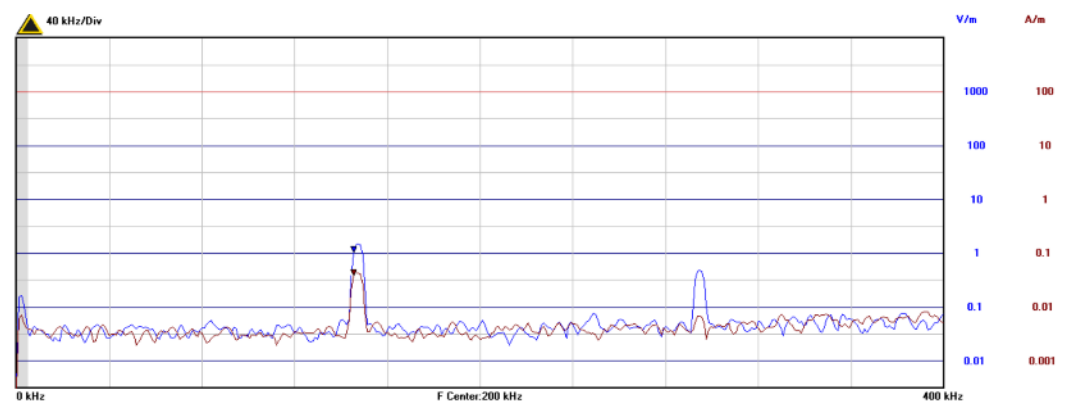
WLC4690/ BK-BT



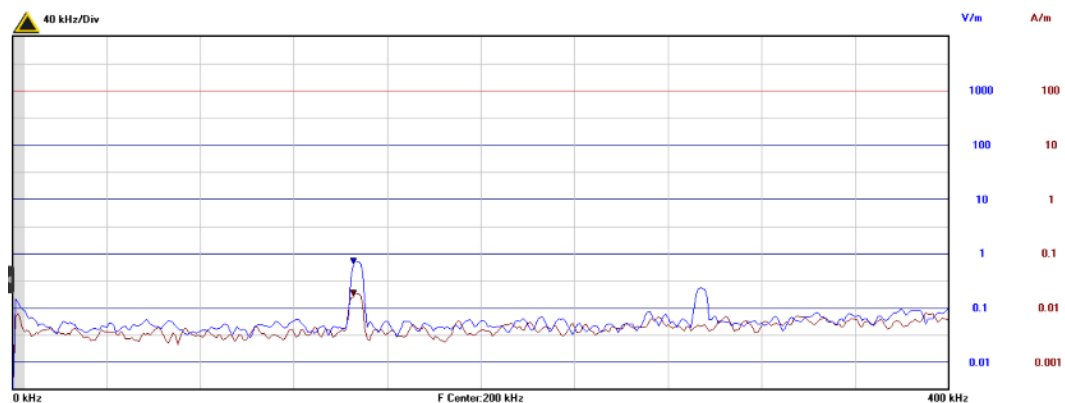
Front side



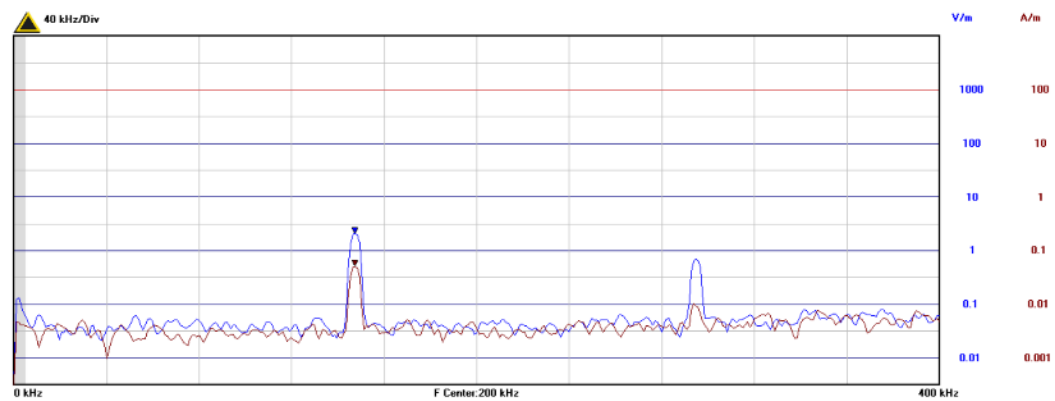
Right side



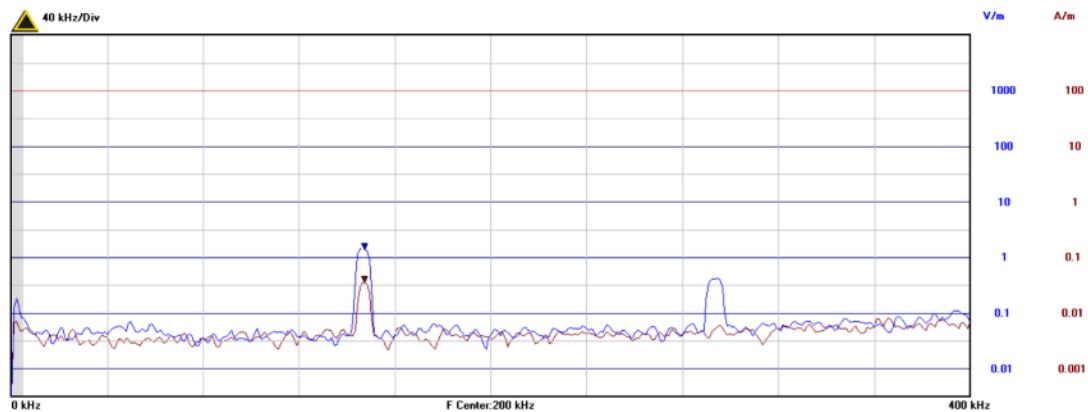
Left side



Rear side



Above the top

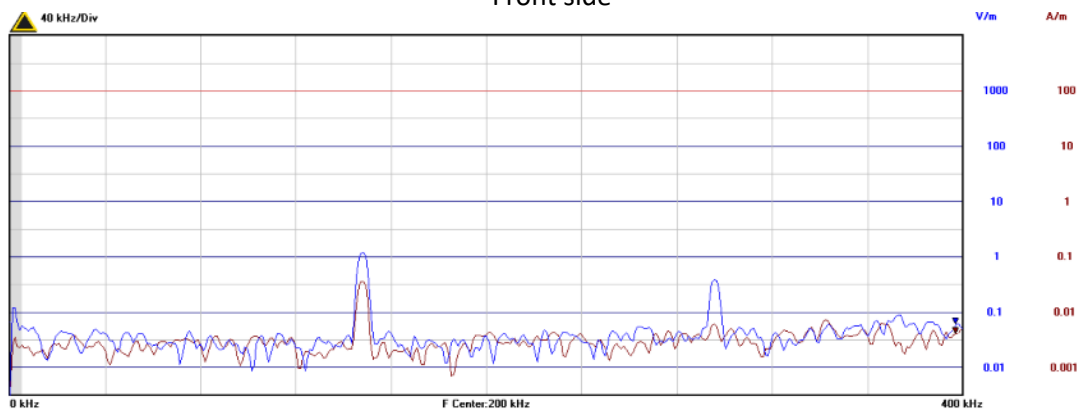


bottom

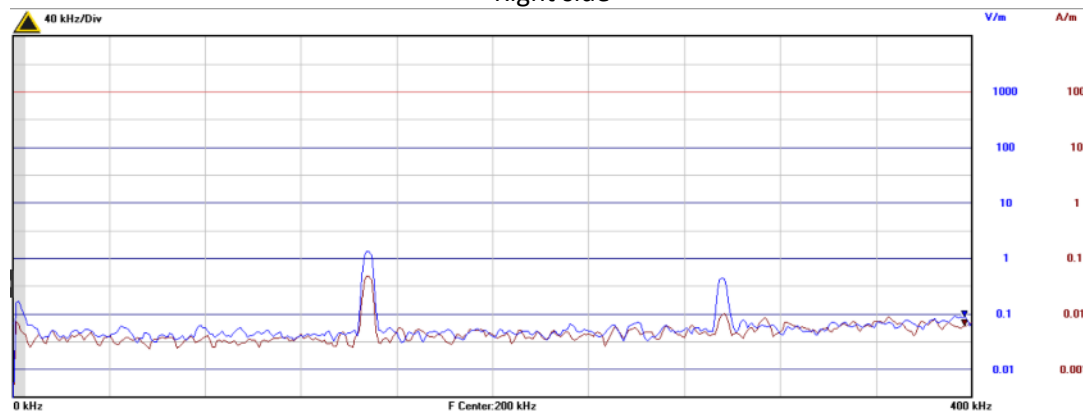
WLC4690/ BK-910



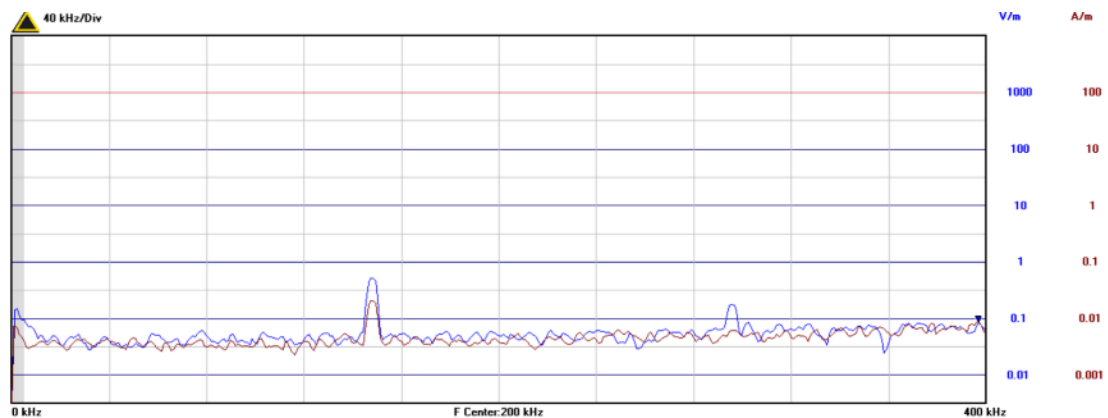
Front side



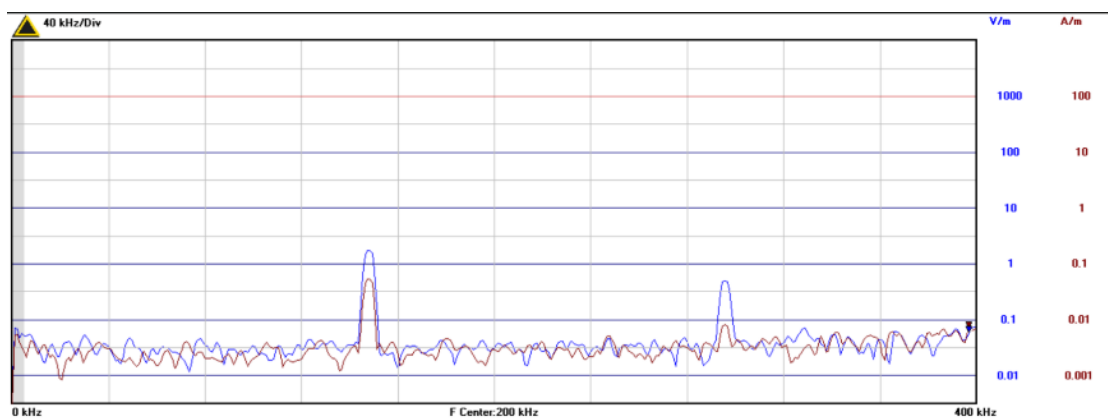
Right side



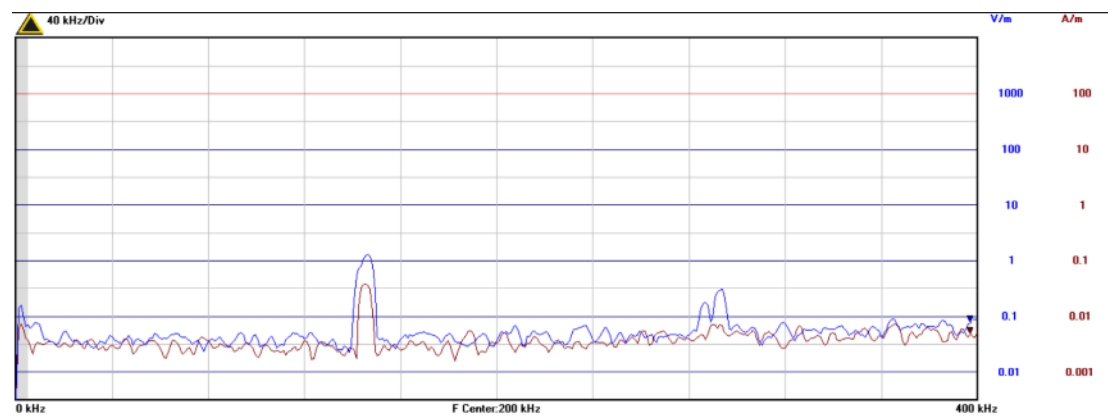
Left side



Rear side



Above the top



bottom

5.1.8 Set-up photos



Front side



Right side



Left side



Rear side

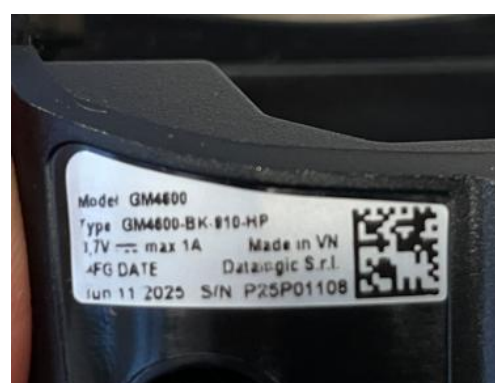


Above the top



bottom

6 EUT PHOTOS







End of report