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- The RvA is a signatory to the EA MLA.
- The RvA is a signatory to the ILAC MRA.
- The RvA is a signatory to the IAF MLA.
- ISED CABid: NL0003

Test report No:

2283777.0504A-EMC

TEST REPORT

FCC Rules&Requlations 47 CFR Chapter I - Part 18 & ICES-001

(*) Identification of item tested	Shaver + Qi-charger + Adapter
(*) Trademark	Philips
(*) Model and /or type reference	Shaver: SP9883 Charging pad:HQ8510 Adapter: HQ87
(*) Other information of the product	FCC ID: 2AICSHQ8510 IC: 21912-HQ8510
(*) Features	AC/DC adapter: 100 – 240 Vac / 50 / 60 Hz, Shaver: 3.6 Vdc, 5 W Wireless Charger
(*) Derived model(s)	Shaver: SP9890, SP9888, SP9887, SP9886, SP9885, SP9884, SP9882, SP9880,SP9879, SP9873, SP9872, SP9871, SP9870, SP9863, SP9862, SP9861,SP9860 Charging pad: HQ8509
(*) Applicant´s name / address	Philips Consumer Lifestyle B.V., Oliemolenstraat 5, 9203 ZN Drachten, Netherlands
Test method requested, standard	FCC Rules and Regulations 47 CFR Chapter I - Part 18; ICES-001 Issue 5 in conjunction with RSS-216 Issue 2
Verdict Summary	IN COMPLIANCE (refer to chapter 3 for details)
Tested by (name / position & signature) Supervised by (name / position & signature)	Jose Carlos Luque Technical Professional EMC Supervised by Sky Zhang Technical Professional EMC
Approved by (name / position & signature)	Sedat Eser Technical Professional EMC
Date of issue	2024-11-07
Report template No	TRF_EMC_FCC18_ISED001 R2.0 (*) "Data provided by the applicant"

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COMPETENCES AND GUARANTEES

The DEKRA Certification B.V. EMC laboratory has been designated by the "Radio communications Agency of the Netherlands" as a Conformity Assessment Body for all products addressed by Parts 15 and Part 18 of the FCC rules per designation AT-EZ/EU-USA/MRA002 since December 1, 2005.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

GENERAL CONDITIONS

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

UNCERTAINTY

For all measurements where guidance for the calculation of the instrumentation uncertainty of a measurement is specified in EN 55016-4-2 (CISPR 16-4-2), the measurement instrumentation uncertainty has been calculated and applied in accordance with these standards. For all other measurements where no guidance is available, the measurement instrumentation uncertainty has been calculated and applied in accordance with ISO/IEC Guide 98-3 document.

Uncertainties have been calculated according to the DEKRA internal document AMS#1167. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. Refer to the Annex 1 for furter information.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%
Atmospheric pressure	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

☒ Indicates that the listed condition, standard or equipment is applicable for this report/test/EUT.				
☐ Indicates that the listed condition, standard or equipment is not applicable for this report/test/EUT.				
Decimal separator used in this report	☒	Comma (,)	☐	Point (.)

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT : Equipment Under Test
QP : Quasi-Peak
CAV : CISPR Average
AV : Average
PK : Peak
CDN : Coupling Decoupling Network
SAC : Semi-Anechoic Chamber
OATS : Open Area Test Site
BW : Bandwidth
U_N : Nominal voltage
Tx : Transmitter
Rx : Receiver
N/A : Not Applicable
N/M : Not Measured
RGP : Reference Ground Plane

DATA PROVIDED BY THE APPLICANT

The following data has been provided by the client:

1. Information relating to the description of the sample ('Identification of the item tested', 'Trademark', 'Model and/ or type reference tested', Features and 'Derived model(s)').
2. Derived models not tested. These models have been declared by the applicant as being the same as the model under test.
3. Similarity declaration (Annex 2).

DEKRA Certification B.V. declines any responsibility with respect to the information provided by the applicant and that may affect the validity of results.

DOCUMENT HISTORY

Report nr.	Date	Description
2283777.0504-EMC	2024-05-14	First release.
2283777.0504A-EMC	2024-11-07	Second release. Some typos were corrected. The photo annex was removed. This annex will go into a separate report containing only the photos.This revision of the test report cancels and replaces the test report with a reference number 2283777.0504-EMC

CONCLUSION, REMARKS AND COMMENTS

The Equipment Under Test (EUT) / Device Under Test (DUT) as described in this report complies with the stated requirements.

The EUT consist of the following units.

1. Shaver
2. Charger base (Wireless Power Transfer, WPT)
3. AC/DC adapter

The WPT system uses frequency range of 100 kHz to 148.5 kHz.
The EUT is classified as a Type 2 WPT Source Subassembly according to RSS-216.

The test results stated in this report of models SP9883, HQ8510 and HQ87 are also representative for models in the Annex 3. Similarity declaration also describes the differences from the tested model(s).

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

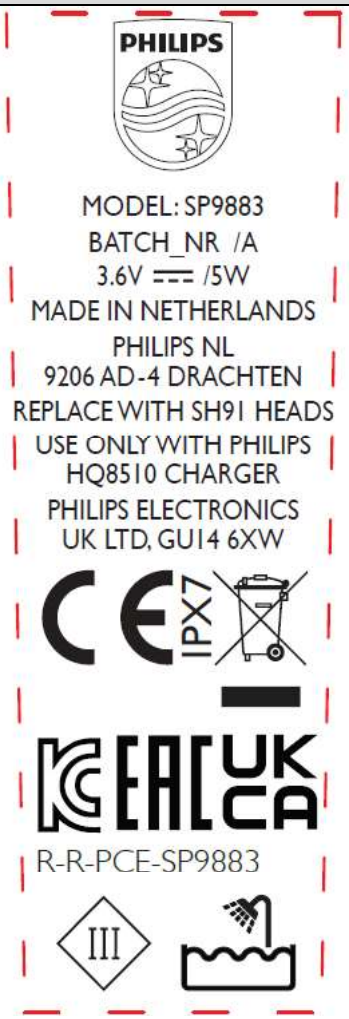
Description of the item.....:	Shaver + Qi-charger + USB-adapter
Model / Type number .....:	SP9883 + HQ8510 + HQ87
Serial number.....:	---
Trademark .....:	Philips
Manufacturer.....:	Philips
Address .....:	Tussendiepen 4, 9206AD, Drachten, Netherlands

Rated power supply.....:	Voltage and Frequency		Power connection type				
			L1	L2	L3	N	PE
	☒	AC: 100 – 240 V, 50/60 Hz	☒	☐	☐	☒	☐
Rated Power .....:	Adapter:11 W Shaver: 5 W						
Other parameters.....:	Qi BPP						
Software version .....:	NU1708AQCDB (Nuvolta)						
Hardware version.....:	FW 1.3						
Dimensions in cm (W x H x D)....:	Divers, all within 18x10x7 cm						
Mounting position.....:	☒	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☒	Hand-held equipment					
	☐	Other: Bath-room					

Intended use of the Equipment Under Test (EUT)
Facial shaving, charging the shaver.

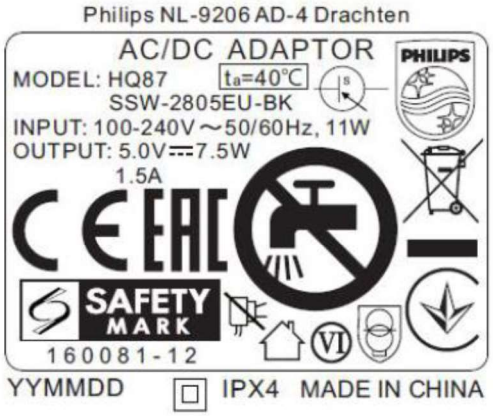
Modifications to the test item during testing .....:	☒	N/A	☐	

Copy of marking plate:



Shaver

Charging Pad



USB-adapter

1.2 The environment(s) in which the DUT is intended to be used

The equipment under test (EUT) is intended to be used in the following environment(s):

☒	Residential (domestic) environment.
☐	Commercial and light-industrial environment.
☐	Industrial environment.
☐	Vehicular environment
☐	Telecommunication centre environment

1.3 Classification

ICES-001: The equipment under test (EUT) is classified as:

☐	Class A	Equipment that is, by virtue of its characteristics, highly unlikely to be used in a residential environment, including a home business shall be classified as Class A and shall comply with the Class A limits specified in the applicable ICES standard. Characteristics considered in this assessment include price, marketing and advertising methodology, the degree to which the functional design inhibits applications suitable to residential environments, or any combination of features that would effectively preclude the use of such equipment in a residential environment.
☒	Class B	Equipment that cannot be classified as Class A shall comply with the Class B limits specified in the applicable ICES standard.
☐	Group 1	*Group 1 equipment:* Group 1 contains all equipment in the scope of this standard which is not classified as group 2 equipment.
☒	Group 2	*Group 2 equipment:* Group 2 contains all ISM RF equipment in which radio-frequency energy in the frequency range 9 kHz to 400 GHz is intentionally generated and used or only used locally, in the form of electromagnetic radiation, inductive and/or capacitive coupling, for the treatment of material, for inspection/analysis purposes, or for transfer of electromagnetic energy.

RSS-216: The EUT is classified as a Type 2 WPT Source Subassembly according to RSS-216.

2 DESCRIPTION OF TEST SETUP

2.1 Sample(s) used for tests

During the tests the following sample(s) has(have) been used.

Sample	Logistics number	Model number	Serial number	Remark(s) / Changes
01	101435/1-5 + 100200/1-7 + 100200/1-11	HQ8510 + HQ87 + SP9883	NA	---
Supplementary information: ---				

2.2 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

Operating mode	Operating mode description	Sup. Info / Remark
01	EUT ON. Waiting Mode. Power supply 120 Vac/60Hz.	---
02	EUT ON. Charging mode. Power supply 120 Vac/60Hz.	---
03	EUT ON. Shaving mode.	---
Supplementary information: ---		

2.3 Port(s) of the EUT

Port name and description	Connected to / Termination	Cable			Sup. Info / Remark
		Length used during test [m]	Attached during test	Shielded	
AC power port	AC Mains	1	Yes	No	---
Supplementary information: ---					

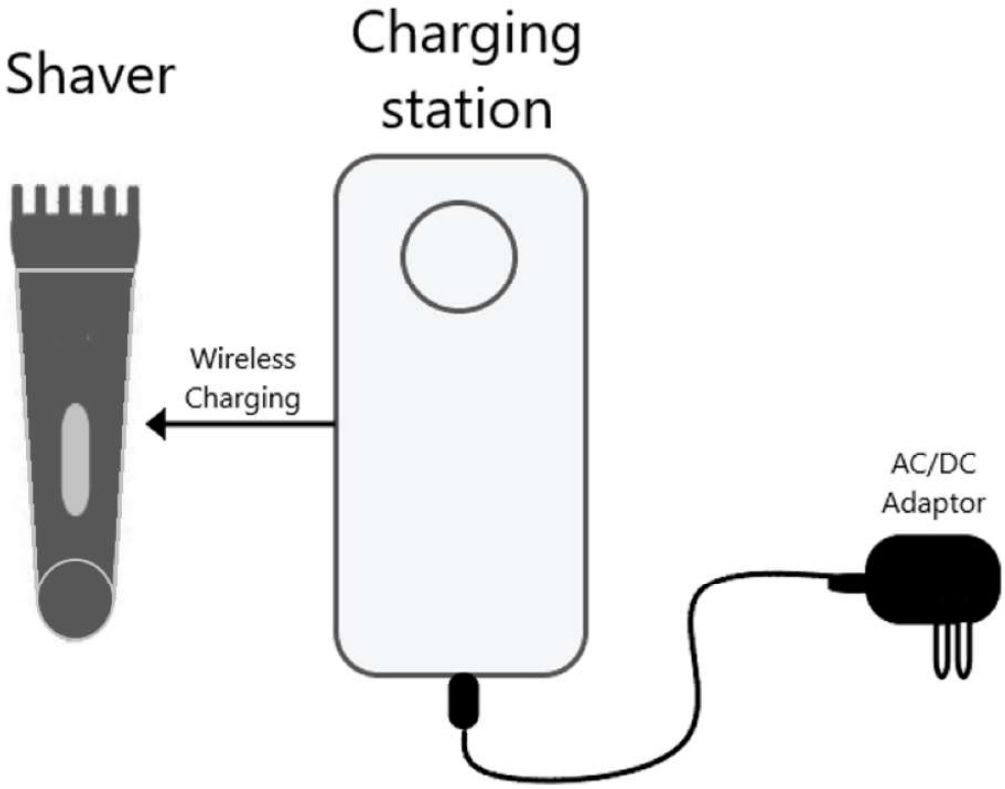
2.4 Support / Auxiliary equipment / unit / software for the EUT

The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment / unit / software	Type / Version	Manufacturer	Supplied by
--	--	--	--
Supplementary information: --			

2.5 Test Configuration / Block diagram used for tests

The following configuration has been used during the tests.



The adapter was connected to the mains (120 Vac/60 Hz).

3 MEASUREMENT PROCEDURE

3.1 Conducted emissions

In accordance with section 18.307 of 47 CFR and Clause 3.3.3 of ICES-001 the conducted radio frequency disturbance voltages between each of the power lines (live and neutral) and the ground terminal have been determined over the frequency range from 9 kHz / 150 kHz to 30 MHz.

The test set-up and method of measurements was in accordance with the requirements of FCC Measurement Procedure MP-5 (Methods of Measurements of Radio Noise Emissions from ISM equipment) and CS CISPR 11. The EUT has been configured ad described at chapter 2.

The measurement result/emission level (Vm) is calculated by adding correction factor (CF) to the measured level (V_{RX}) from the receiver. This correction factor includes cable loss (L_{CABLE}) and the insertion loss (IL) of the LISN or Voltage probe.

$$CF\ (dB) = L_{CABLE}\ (dB) + IL\ (dB)$$
$$Vm\ (dB\mu V) = V_{RX}\ (dB\mu V) + CF\ (dB)$$

Sample Calculation:

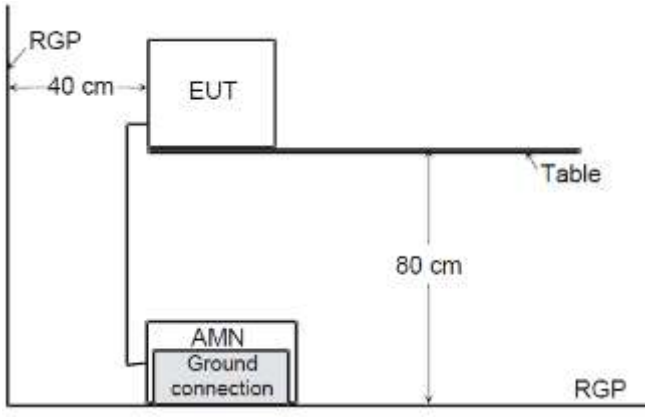
CF (dB) : 1.2 dB + 0,8 dB = 2.0 dB
Vm (dB) : 43.4 dBµV + 1.2 dB = 44.6 dBµV/m.

***Important Note**: This is a sample calculation only for the purpose of demonstration, and does not reflect data in this report.*

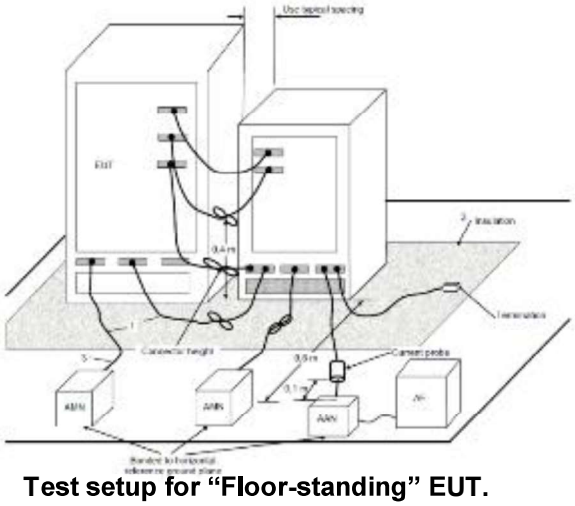
The AC power line conducted emission measurements were performed at the line voltage of 120 V_{AC} and at the power frequency of 60 Hz.

The initial step in collecting conducted data was a peak scan measurement over the frequency range of interest. Significant peaks were marked, and these peaks were re-measured using a quasi peak and average detector. This procedure was implemented by using EMI test receiver and control software (see used equipment section). The test receiver used also meets the requirement as mentioned in section 2 of MP-5 document and CS CISPR 11.

According to section 2.2.2 of MP-5 the test receiver employs an AV detector function with a bandwidth of 9 kHz for measurements from 150 kHz to 30 MHz and 200 Hz for measurements below 150 kHz. Unless otherwise specified for a given device.



Test setup for "Table-top" EUT.



Test setup for "Floor-standing" EUT.

3.2 Radiated emissions

The field strength levels of spurious radiated emissions from this ISM device have been determined according to the section 18.305 of 47 CFR and Clause 3.3.4 of ICES-001.

Measurements have been performed in a Semi Anechoic Chamber (SAC) at 3 meter measurement distance using the test setup described chapter 2. The field strength (FS) is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor (AF), cable loss (L_{CABLE}) and pre-amplifiers gain (PA_{GAIN}). Final measurements are made with the Azimuth, Polarisation, Height, and EUT Cables positioned for máximum radiation.

$$CF\ (dB) = AF(dB/m) + L_{CABLE}\ (dB) - PA_{GAIN}\ (dB)$$
$$FS\ (dB\mu V/m) = V_{RX}\ (dB\mu V) + CF\ (dB)$$

Sample Calculation:

CF (dB) : 11.8 (dB/m) + 2.3 (dB) - 20.8 (dB) = - 6.7 dB
FS (dBµV/m) : 39.8 (dBµV) – 6.7 (dB) = 33.1 dBµV/m.

***Important Note**: This is a sample calculation only for the purpose of demonstration, and does not reflect data in this report.*

The measurements have been conducted in accordance with the methodology as described in FCC MP-5 (Methods of Measurements of Radio Noise Emissions from ISM equipment), as required by sections 18.311 of 47CFR and according to the test methods as described in CS CISPR 11 as referd by the ICES-001 document.

The frequency band in which the DUT is operating is 100 kHz to 148,5 kHz. Thus, according to the table below, the frequency range of interest was up 1 GHz.

Fequency band in which device operates (MHz)	Range of frequency measurements	
	Lowest frequency	Highest frequency
Below 1,705	Lowest frequency generated in the device, but not lower than 9 kHz.	30 MHz.
1,705 to 30	Lowest frequency generated in the device, but not lower than 9 kHz.	400 MHz.
30 to 500	Lowest frequency generated in the device or 25 MHz, whichever is lower.	Tenth harmonic or 1000 MHz, whichever is higher.
500 to 1000	Lowest frequency generated in the device or 100 MHz, whichever is lower.	Tenth harmonic.
Above 1000	.....do	Tenth harmonic or highest detectable emission

4 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

For the DUT the following measurement clauses are applicable:

FCC Rules and Regulations 47 CFR Chapter I - Part 18 - Industrial, Scientific and Medical Equipment				
Section	Requirement – Test case	Basic standard	Verdict	Remark
18.307	Conducted emissions	FCC MP-5:1986	PASS	---
18.305	Radiated emissions	FCC MP-5:1986	PASS	---
Supplementary information:				

ICES-001 Issue 5 - Industrial, Scientific and Medical (ISM) Equipment / RSS-216				
Applied	Requirement – Test case	Basic standard	Verdict	Remark
☒	Conducted emissions	CS CISPR 11:19, RSS-216 Issue 2	PASS	---
☒	Radiated emissions (below 30 MHz)	CS CISPR 11:19, RSS-216 Issue 2	PASS	---
☒	Radiated emissions (30-1000 MHz)	CS CISPR 11:19, RSS-216 Issue 2	PASS	---
☐	Radiated emissions (above 1 GHz)	CS CISPR 11:19, RSS-216 Issue 2	N/A	---
Supplementary information:				
---				

5 TEST RESULTS

5.1 Conducted emissions	VERDICT: PASS

Standard	FCC Rules & Regulations 47 CFR Chapter I - Part 18 Clause 18.307 ICES-001 Clause 3.3.3 and RSS-216
Basic standard	FCC MP-5 / CS CISPR 11

Limits – FCC Part 18

☒ All other part 18 Consumer devices

Frequency range [MHz]	Limit: QP [dB(µV)[1) 2)]]	Limit: AV [dB(µV) [1) 2)]]	IF BW	Detector(s)
0,15 - 0,50	66 – 56 [3)]	56 - 46 [3)]	9 kHz	QP, CAV
0,50 - 5,0	56	46	9 kHz	QP, CAV
5,0 - 30	60	50	9 kHz	QP, CAV

[1)] At the transition frequency, the lower limit applies.
[2)] The limits apply only outside of the frequency bands specified in section 18.301.
[3)] The limit decreases linearly with the logarithm of the frequency.

Limits – ICES-001: Appliances rated 120 V rated, without an earth connection

Frequency range [MHz]	Limit: QP [dB(µV)[1)]]	Limit: AV [dB(µV) [1)]]	IF BW	Detector(s)
0,009 - 0,050	122	---	200 Hz	QP
0,050 - 0,15	102 – 92 [2)]	---	200 Hz	QP
0,15 - 0,50	72 – 62 [2)]	62 - 52 [2)]	9 kHz	QP, CAV
0,50 - 5,0	56	46	9 kHz	QP, CAV
5,0 - 30	60	50	9 kHz	QP, CAV

[1)] At the transition frequency, the lower limit applies.
[2)] The limit decreases linearly with the logarithm of the frequency.

Measurement data

Port under test		Terminal							
☒	AC mains input power	☒	N	☒	L1	☐	L2	☐	L3
☐	DC input power	☐	Positive (+)			☐	Negative (-)		

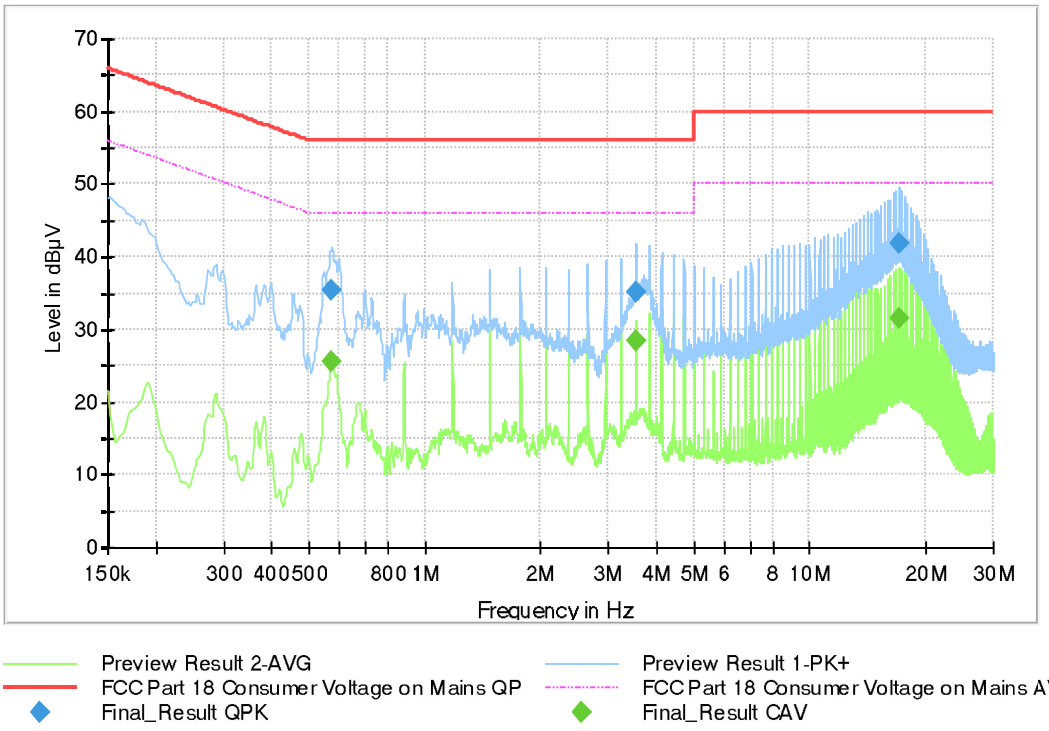
Voltage – Mains [V]	120 V			
Frequency – Mains [Hz]	60 Hz			
Test method applied	☒	Artificial mains network (50 µH / 50 Ω)		
	☐	Voltage probe		
	☐	Artificial mains network (5 µH / 50 Ω), high power devices		
Test setup	☒	Table top	☐	Artificial hand applied
	☐	Floor standing	☐	Other:
	Refer to the Annex 2 for test setup photo(s).			
Operating mode(s) used	1, 2			
Remark	The RF disturbance level was investigated at all operating modes respectively. The worst case results were reported.			

Used equipment	Manufacturer	Model	DEKRA ID	Cal. Date	Cal. Due
EMI Test Receiver	Rohde&Schwarz	ESR 7	132185	2023-09-28	WK39 2024
Coax Cable	Huber&Suhner	RG 223-U	128370	2022-09-22	WK39 2024
Artificial Mains Network	Rohde&Schwarz	ESH2-Z5	128201	2023-09-24	WK39 2024
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	116978	2022-09-26	WK39 2027
Test Software	Rohde&Schwarz	EMC32 V.10.60.20	500005	---	---

Measurement data / FCC Part 18	Port under test	AC mains input power
Operating mode / voltage / frequency used during the test		Mode 2 / 120 Vac / 60 Hz

Common Information

EUT/Sample # / OM# : Shaver + Qi-Charger + USB-adapter / 01 / 02
Voltage/Frequency : 120 Vac / 60 Hz
Port/Terminal under test : AC mains Power Input
Remark/Comment : Charging Mode.



Final_Result

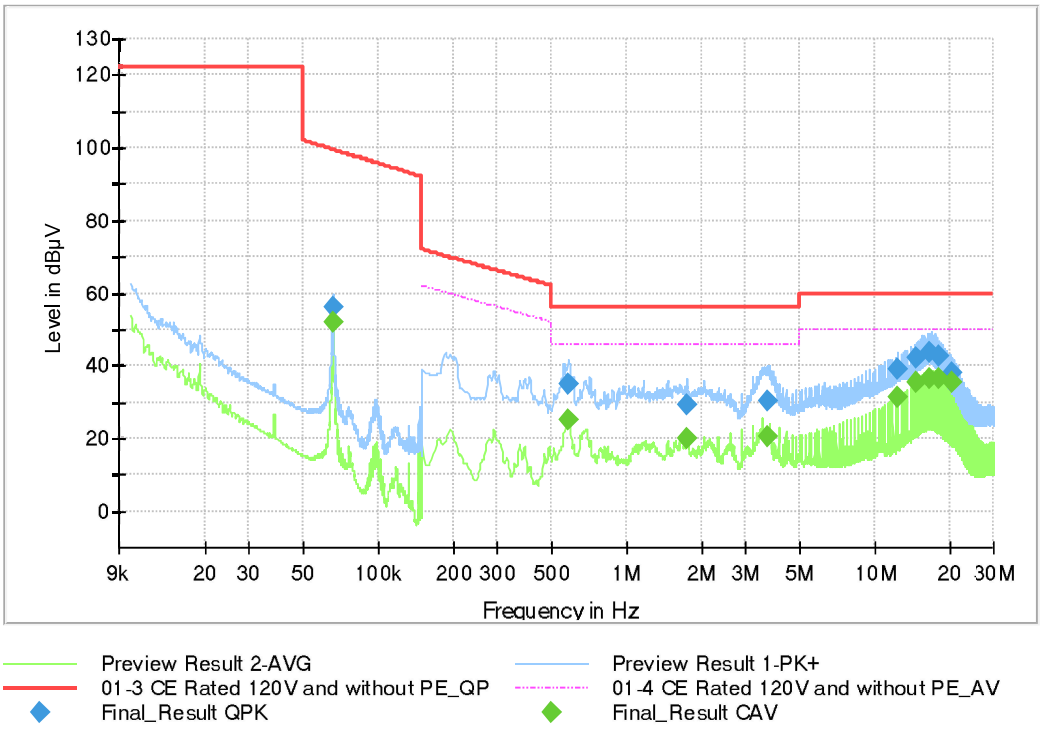
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.575250	35.28	---	56.00	20.72	3000.0	9.000	L1	GND	10.0
0.575250	---	25.47	46.00	20.53	3000.0	9.000	L1	GND	10.0
3.531750	35.11	---	56.00	20.89	3000.0	9.000	L1	GND	10.2
3.531750	---	28.32	46.00	17.68	3000.0	9.000	L1	GND	10.2
17.079000	41.94	---	60.00	18.06	3000.0	9.000	N	GND	10.5
17.079000	---	31.64	50.00	18.36	3000.0	9.000	N	GND	10.5

Remark	The given graph is the combination of max-hold function of each line.

Measurement data / ICES-001	Port under test	AC mains input power
Operating mode / voltage / frequency used during the test		Mode 2 / 120 Vac / 60 Hz

Common Information

EUT/Sample # / OM# : Shaver + Qi-Charger + USB-adapter / 01 / 02
Voltage/Frequency : 120 Vac / 60 Hz
Port/Terminal under test : AC mains Power Input
Remark/Comment : Charging Mode.



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.065550	56.24	---	99.54	43.29	5000.0	0.200	L1	GN	10.0
0.065550	---	52.24	---	---	5000.0	0.200	L1	GN	10.0
0.586500	34.87	---	56.00	21.13	3000.0	9.000	N	GN	10.0
0.586500	---	25.21	46.00	20.79	3000.0	9.000	N	GN	10.0
1.745250	29.47	---	56.00	26.53	3000.0	9.000	L1	GN	10.1
1.745250	---	20.16	46.00	25.84	3000.0	9.000	L1	GN	10.1
3.669000	30.38	---	56.00	25.62	3000.0	9.000	L1	GN	10.2
3.669000	---	20.64	46.00	25.36	3000.0	9.000	L1	GN	10.2
12.372000	38.85	---	60.00	21.15	3000.0	9.000	L1	GN	10.4
12.372000	---	31.56	50.00	18.44	3000.0	9.000	L1	GN	10.4
14.700750	42.43	---	60.00	17.57	3000.0	9.000	L1	GN	10.5
14.700750	---	35.64	50.00	14.36	3000.0	9.000	L1	GN	10.5
16.451250	43.83	---	60.00	16.17	3000.0	9.000	L1	GN	10.5
16.451250	---	36.34	50.00	13.66	3000.0	9.000	L1	GN	10.5
18.192750	42.69	---	60.00	17.32	3000.0	9.000	L1	GN	10.6
18.192750	---	36.53	50.00	13.47	3000.0	9.000	L1	GN	10.6
20.523750	37.79	---	60.00	22.21	3000.0	9.000	L1	GN	10.7
20.523750	---	35.27	50.00	14.73	3000.0	9.000	L1	GN	10.7

Remark	The given graph is the combination of max-hold function of each line.

5.2 Radiated emissions — VERDICT: PASS

Standard	FCC Rules & Regulations 47 CFR Chapter I - Part 18 Clause 18.305 ICES-001 Clause 3.3.4 and RSS-216
Basic standard(s)	FCC MP-5 / CS CISPR 11

Field strength limits / FCC Part 18

Equipment		Operating frequency		DUT RF Power, P [W]		Limit: AV [µV/m] [5]	[4] Distance [m]
☒	Any type unless otherwise specified (miscellaneous)	Any ISM Frequency		☐	< 500	25	300
				☐	≥ 500	25xSQRT(P/500)	300 [1]
		Any non-ISM frequency		☒	< 500	15	300
				☐	≥ 500	15xSQRT(P/500)	300 [1]
☐	Industrial heaters and RF stabilized arc welders	☐	≤ 5,725 MHz	Any		10	1600
		☐	> 5,725 MHz	Any		[2]	[2]
☐	Medical diathermy	Any ISM Frequency		Any		25	300
		Any non-ISM frequency		Any		15	300
☐	Ultrasonic	☐	< 490 kHz	☐	< 500	2400 / f(kHz)	300
				☐	≥ 500	2400/f(kHz) xSQRT(P/500)	300 [3]
		☐	≥ 490 – 1600 kHz	Any		2400 / f(kHz)	30
		☐	> 1600 kHz	Any		15	30
☐	Induction cooking ranges	☐	< 90 kHz	Any		1500	30
		☐	≥ 90 kHz	Any		300	30

[1] Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

[2] Reduced to the greatest extent possible.

[3] Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

[4] According to section 18.305 note 2, testing at closer distances is permitted, the permissible field strength limit shall be adjusted using 1/d as attenuation factor.

[5] The limits apply only outside of the frequency bands specified in section 18.301.

Limits / ICES-001, below 30 MHz (60 cm loop antenna method)

Frequency range [MHz]	Limit: QP@3m [dB(µA/m)[1]]	IF BW	Detector(s)
0,009 - 0,07	69	200 Hz	Quasi-Peak (QP)
0,07 - 0,15	69 – 39 [2]	200 Hz	Quasi-Peak (QP)
0,15 - 30	39 – 7 [2]	9 kHz	Quasi-Peak (QP)

[1] At the transition frequency, the lower limit applies.

[2] The limit decreases linearly with the logarithm of the frequency.

Limits / ICES-001, 30-1000 MHz

Frequency [MHz]	Limit: QP [dB(μV/m)[1)]]			IF BW	Detector
	@3 m.	@5 m.	@10 m.		
30 - 230	40	36	30	120 kHz	QP
230 - 300	47	43	37	120 kHz	QP

[1)] At the transition frequency, the lower limit applies.

Measurement data

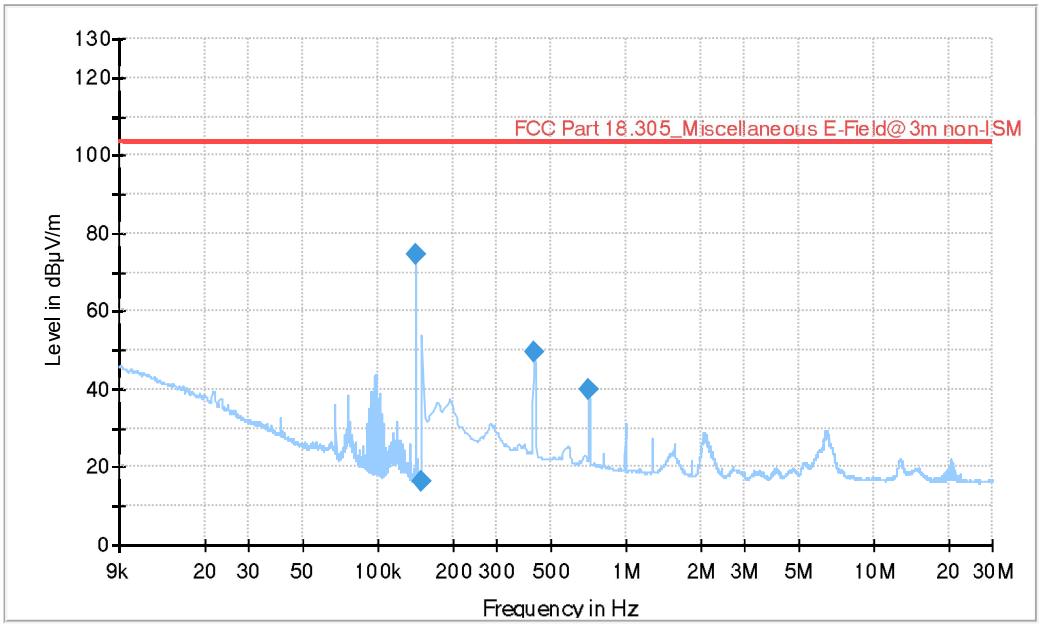
Port under test	Enclosure	
Voltage – Mains [V]	120 V	
Frequency – Mains [Hz]	60 Hz	
Test method applied (below 1 GHz)	☒	SAC with measurement distance [m]: 3 m.
	☐	OATS or SAC with measurement distance [m]: 5 m.
	☒	OATS or SAC with measurement distance [m]: 10 m.
Test method applied (above 1 GHz)	☐	Absorber-lined SAC with measurement distance [m]: 3 m.
	☐	Absorber-lined OATS or SAC with measurement distance [m]: 1 m.
Test setup	☒	Equipment on a table of 80 cm height
	☐	Equipment on the floor (insulated from ground plane)
	☐	Other:
	Refer to the Annex 2 for test setup photo(s).	
Operating mode(s) used	1, 2, 3	
Remark	The RF disturbance level was investigated at all operating modes respectively. The worst case results were reported	

Test equipment used					
Equipment	Manufacturer	Model	Dekra ID	Cal. Date	Cal. Due
Anechoic Chamber	ETS	SAC-3m	135615	2023-27	2026-27
Antenna	Rohde-Schwarz	HL562E	134929	2022-27	2025-29
Loop Antenna	Rohde-Schwarz	HFH2-Z2E	134139	2023-49	2026-49
Coaxial cable (5m)	Huber&Suhner	SUCOFLEX 126EA	134190	2022-40	2024-39
Coaxial cable (2m)	Huber&Suhner	SUCOFLEX 126EA	132529	2022-40	2024-39
Coaxial cable (3m)	Huber&Suhner	SUCOFLEX 126EA	132528	2022-40	2024-39
EMI Test Receiver	Rohde-Schwarz	ESW44	135750	2023-10	2024-10
Test-Control Software	Rohde-Schwarz	ELEKTRA V5.01	500159	2023-12	2026-12

Measurement data / FCC Part 18	☐	**Horizontal**	☐	**Vertical**
Operating mode / voltage / frequency used during the test		Mode 2 / 120 Vac / 60 Hz		

Common Information

EUT/Sample # / OM# : Shaver + Qi-Charger + USB-adapter / 01 / 02
Voltage/Frequency : 120 Vac / 60 Hz
Port/Terminal under test : AC mains Power Input
Remark/Comment : Charging Mode. Axis-X



Preview Result 1-AVG
FCC Part 18.305_Miscellaneous E-Field@3m non-ISM
Final_Result CAV

Final_Result

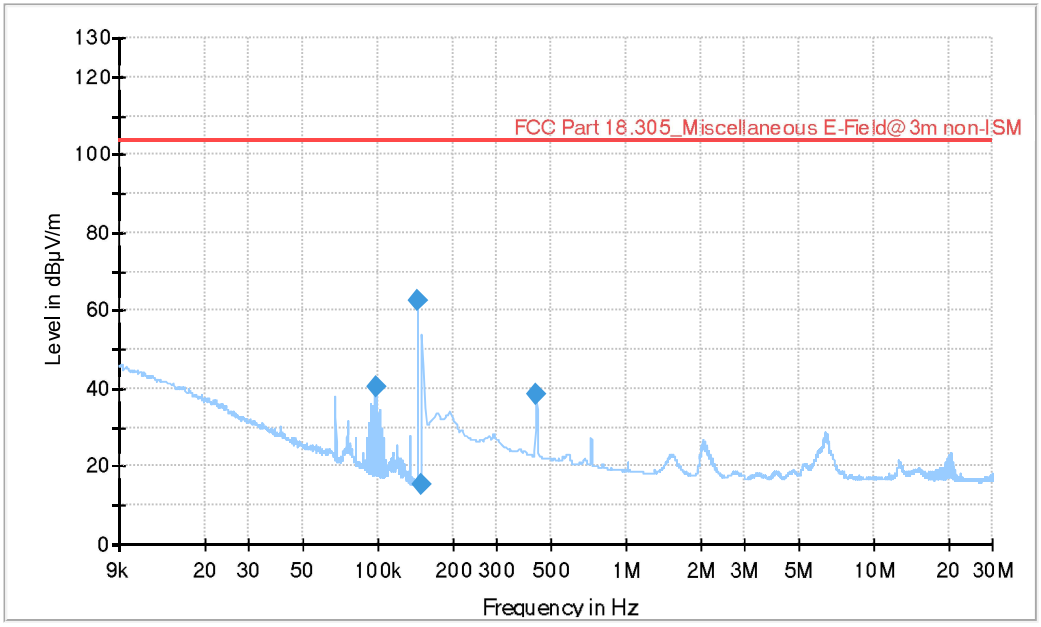
Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Axis	Azimuth (deg)	Comment
0.142139	74.40	103.52	29.12	0.200	200.0	X	133.0	See 2
0.150000	16.55	103.52	86.87	0.200	200.0	X	355.0	
0.426750	49.67	103.52	53.85	9.000	200.0	X	130.0	
0.710250	39.87	103.52	63.65	9.000	200.0	X	132.0	

Remark	1. The level at 3m is calculated as 20*log(15)+**40***log(300/3)=103.52 dBµV/m. 2. The level at 10m is 41.6 dBµV/m. This value complies with the limit at 10m (20*log(15)+**20***log(300/10)=53.06 dBµV/m.

Measurement data / FCC Part 18	☐	**Horizontal**	☐	**Vertical**
Operating mode / voltage / frequency used during the test		Mode 2 / 120 Vac / 60 Hz		

Common Information

EUT/Sample # / OM# : Shaver + Qi-Charger + USB-adapter / 01 / 02
Voltage/Frequency : 120 Vac / 60 Hz
Port/Terminal under test : AC mains Power Input
Remark/Comment : Charging Mode. Axis-Y



Preview Result 1-AVG
FCC Part 18.305_Miscellaneous E-Field@3m non-ISM
Final_Result CAV

Final_Result

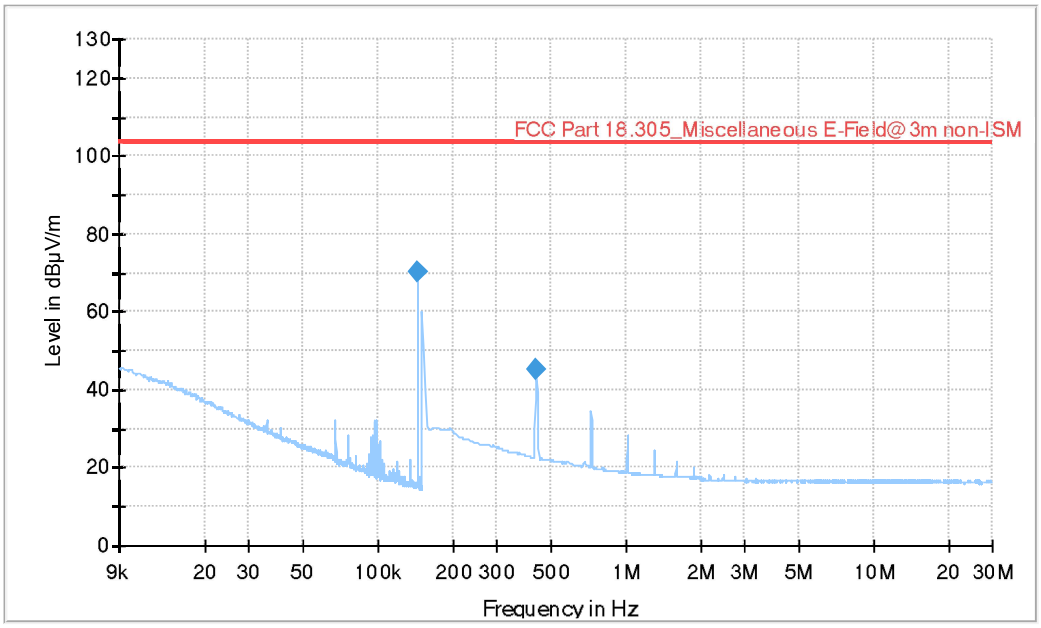
Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Axis	Azimuth (deg)
0.097363	40.48	103.52	63.04	0.200	200.0	Y	273.0
0.144876	62.51	103.52	41.01	0.200	200.0	Y	70.0
0.150000	15.28	103.52	88.24	0.200	200.0	Y	267.0
0.433500	38.30	103.52	65.22	9.000	200.0	Y	65.0

Remark	1. The level at 3m is calculated as 20*log(15)+**40***log(300/3)=103.52 dBµV/m.

Measurement data / FCC Part 18	☐	**Horizontal**	☐	**Vertical**
Operating mode / voltage / frequency used during the test		Mode 2 / 120 Vac / 60 Hz		

Common Information

EUT/Sample # / OM# : Shaver + Qi-Charger + USB-adapter / 01 / 02
Voltage/Frequency : 120 Vac / 60 Hz
Port/Terminal under test : AC mains Power Input
Remark/Comment : Charging Mode. Axis-Z



Preview Result 1-AVG
FCC Part 18.305_Miscellaneous E-Field@3m non-ISM
Final_Result CAV

Final_Result

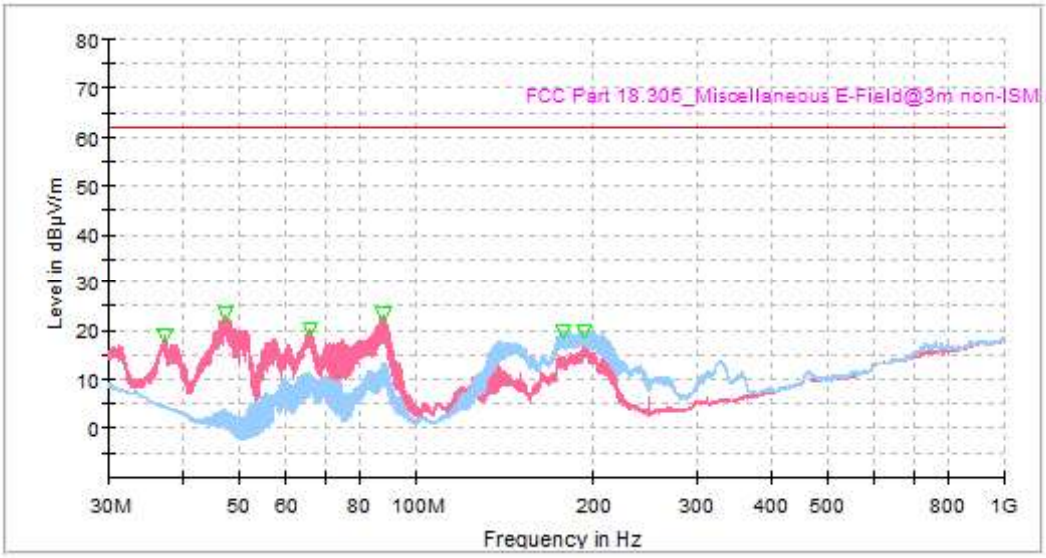
Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Comment
0.144627	70.22	103.52	33.30	0.200	200.0	V	141.0	See 2
0.433500	45.47	103.52	58.05	9.000	200.0	V	131.0	

Remark	1. The level at 3m is calculated as 20*log(15)+40*log(300/3)=103.52 dBµV/m. 2. The level at 10m is 34.8 dBµV/m. This value complies with the limit at 10m (20*log(15)+20*log(300/10)=53.06 dBµV/m.

Measurement data / FCC Part 18	☒	**Horizontal**	☒	**Vertical**
Operating mode / voltage / frequency used during the test		Mode 2 / 120 Vac / 60 Hz		

Common Information

EUT/Sample # / OM# : Shaver + Qi-Charger + USB-adapter / 01 / 02
Voltage/Frequency : 120 Vac / 60 Hz
Port/Terminal under test : AC mains Power Input
Remark/Comment : Charging Mode.



Preview Result 1V-AVG
Preview Result 1H-AVG
Critical_Freqs AVG
Final_Result PK+
Final_Result AVG
FCC Part 18.305_Miscellaneous E-Field@3m non-ISM above 30MHz

Final_Result

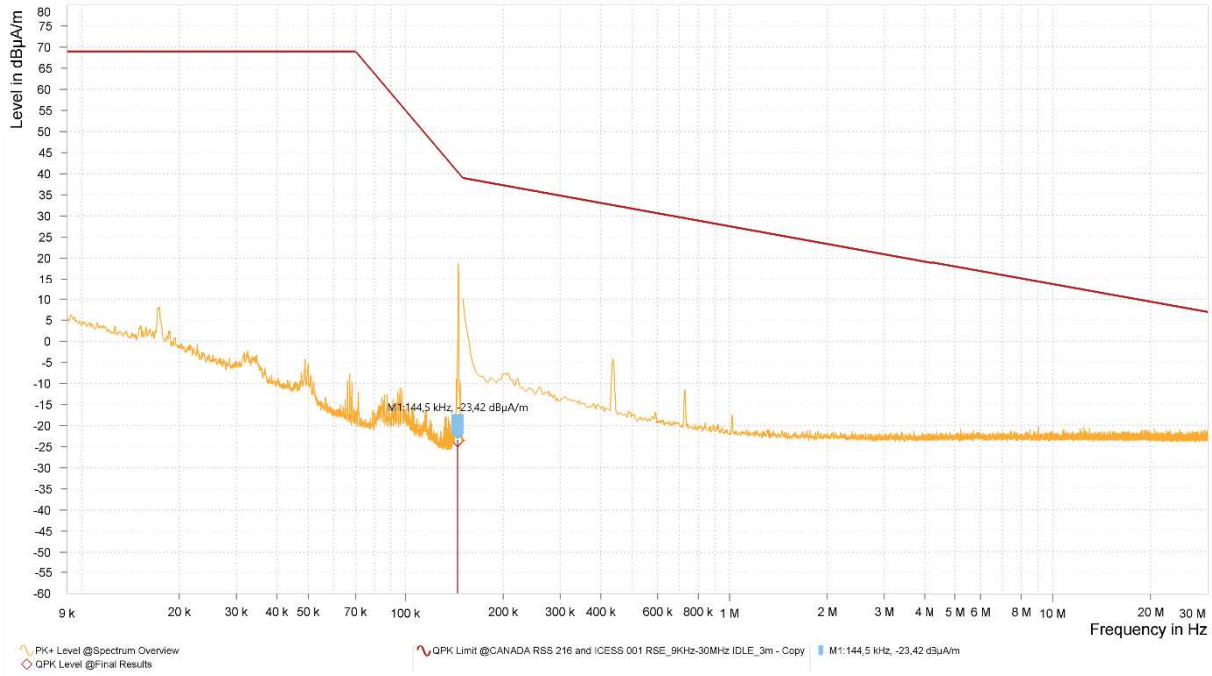
Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
37.320000	18.84	63.52	44.68	100.0	V	0.0
47.550000	23.23	63.52	40.29	100.0	V	0.0
65.880000	20.32	63.52	43.20	200.0	V	0.0
87.990000	23.14	63.52	40.38	100.0	V	180.0
178.080000	19.64	63.52	43.88	200.0	H	270.0
192.390000	19.87	63.52	43.65	200.0	H	90.0

Remark	1. The level at 3m is calculated as 20*log(15)+20*log(300/3)=63.52 dBµV/m.

Measurement data / ICES-001	☒	**Horizontal**	☒	**Vertical**
Operating mode / voltage / frequency used during the test		Mode 2 / 120 Vac / 60 Hz		

Common Information

EUT/Sample # / OM# : Shaver + Qi-Charger + USB-adapter / 01 / 02
Voltage/Frequency : 120 Vac / 60 Hz
Port/Terminal under test : AC mains Power Input
Remark/Comment : Charging Mode.



EMI Final Results

Rg	Frequency [MHz]	QPK Level [dBµA/m]	QPK Limit [dBµA/m]	Axis	Azimuth [deg]	Meas. BW [kHz]
1	0.145	-23.42	40.47	Z	105.1	0.200

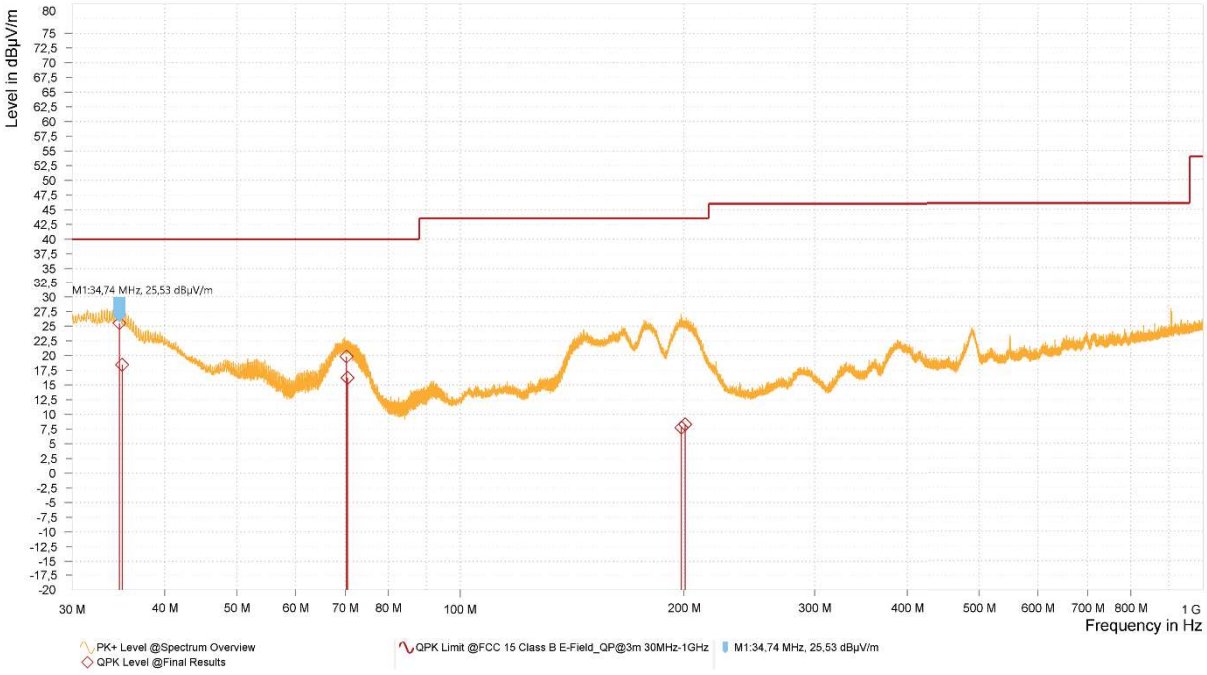
Remark	---

ICES-001 data above 30 MHz

Measurement data / ICES-001	☒	**Horizontal**	☒	**Vertical**
Operating mode / voltage / frequency used during the test		Mode 2 / 120 Vac / 60 Hz		

Common Information

EUT/Sample # / OM# : Shaver + Qi-Charger + USB-adapter / 01 / 02
Voltage/Frequency : 120 Vac / 60 Hz
Port/Terminal under test : AC mains Power Input
Remark/Comment : Charging Mode.



EMI Final Results

Rg	Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
1	34,740	25,53	40,00	14,47	V	-12	0,98	120,000
1	35,040	18,44	40,00	21,56	V	63,8	0,98	120,000
1	70,260	19,84	40,00	20,16	V	-59	1,47	120,000
1	70,500	16,22	40,00	23,78	V	-90,2	1,32	120,000
1	198,570	7,75	43,52	35,77	V	-84,7	1,44	120,000
1	200,790	8,32	43,52	35,20	V	-31,6	2,46	120,000

Remark	---

ANNEX 1: MEASUREMENT UNCERTAINTIES

The table(s) below show(s) the measurement uncertainties of the EMC test set-ups. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Emission tests	Uncertainty	Ucispr
RF Conducted disturbance (mains port) 9 kHz – 150 kHz	1,55 dB	3,80 dB
RF Conducted disturbance (mains port) 150 kHz – 30 MHz	2,15 dB	3,40 dB
Radiated magnetic field emissions; 9 kHz – 30 MHz	3,44 dB	na
Radiated emissions; 30 MHz – 1000 MHz (Horz.) , SAC@3m	3,81 dB	5,21 dB
Radiated emissions; 30 MHz – 1000 MHz (Vert.) , SAC@3m	5,56 dB	6,21 dB

ANNEX 2: SIMILARITY DECLARATION

PHILIPS

Identity Declaration

Ref.: AST 230S-246388
Date: 15/03/2024
By: K. Kloosterman

This is to declare that the design of following shavers:

SP9890	SP9884	SP9873	SP9862	
SP9888	SP9883	SP9872	SP9861	
SP9887	SP9882	SP9871	SP9860	
SP9886	SP9880	SP9870		
SP9885	SP9879	SP9863		3.6V= / 5W

(type ref., input rating)

all are identical in electrical and mechanical aspects, except for the following:

- o Software (having washing cycle or not)
- o Outside colors
- o Shaving system click-on
- o Included accesories and Packaging

All can be charged by these wireless chargers:

HQ8510	
HQ8509	230V, 50/60Hz

(type ref., input rating)

which are identical in electrical and mechanical aspects, except for the following:

- o Outside colors

Investigator: Klaas Kloosterman Signature:

Function: Safety & Compliance Engineer Date: 15/03/2024

Philips Consumer Lifestyle Drachten

www.philips.com