



Test report No:
NIE: 64798REM.002A1

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)

(*) Identification of item tested	Bluetooth connected shaver
(*) Trademark	Philips
(*) Model and /or type reference	Series 9000 Tested model: S9985 Similar models not tested: S9982, S9983, S9986, S9987 and S9989
Other identification of the product	HW version: 1.0 SW (FW) version: 1346 FCC ID: 2AICSS99 IC (ISED): 21912-S99
(*) Features	Not provided data
Manufacturer	Philips Oliemolenstraat 5, 9203 ZN Drachten. The Netherlands.
Test method requested, standard	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López Martín EMC Consumer & RF Lab. Manager
Date of issue	2021-04-09
Report template No	FDT08_22 (*) "Data provided by the client"

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Competences and guarantees

DEKRA Testing and Certification is a testing laboratory accredited by the National Accreditation Body (ENAC - Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

DEKRA Testing and Certification is a FCC recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report, FCC designation number ES0004.

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

DEKRA Testing and Certification 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 on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification at the time of performance of the test.

DEKRA Testing and Certification 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.

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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 Testing and Certification.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification internal document PODT000.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is $l = \pm 4,9$ dB for quasi-peak measurements, $l = \pm 4,6$ dB for peak measurements ($k=2$).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 12.75 GHz is $l = \pm 2,6$ dB for peaks and average measurements ($k=2$).

Data provided by the client

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").

The sample consists of a Bluetooth connected shaver (which can be connected to a mobile application/App).

Derived models not tested: S9982, S9983, S9986, S9987 and S9989.

These models have been declared by the supplier as equivalent, as shown in the following form:



Drachten (the Netherlands), 9th of October 2020

DECLARATION of EQUIVALENCE

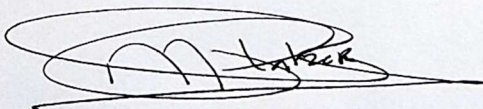
By means of this letter, we, Philips Consumer Lifestyle BV, declare that the following series of shavers are identical in electrical construction. These models have identical RF characteristics and specifications for Bluetooth Low Energy interface on the 2,4GHz band. Except for model name, type marking and cover edge/finishing of the outer body, which does not affect the Safety, EMC and Energy test results.

The devices with their differences are listed below:

Model	Differences
S9982	Colouring/finishing of the hardware/shaver body ('Ice blue')
S9983	Colouring/finishing of the hardware/shaver body ('Ash gold')
S9985	Colouring/finishing of the hardware/shaver body ('Chrome Silver')
S9986	Colouring/finishing of the hardware/shaver body ('Ink Black')
S9987	Colouring/finishing of the hardware/shaver body ('Dark Chrome')
S9989	Colouring/finishing of the hardware/shaver body ('Ultra Black')

Please feel free to contact me in case you need any more information,

Yours sincerely,



Martijn Platzer

Quality Assurance Manager

Philips Consumer Lifestyle

Oliemolenstraat 5, 9203 ZN Drachten, The Netherlands

Email: Martijn.Platzer@philips.com



DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples under test have been selected by: The client.

Sample S/01 is composed of the following element:

Control Nº	Description	Model	Serial Nº	Date of reception
64798/001	Electric shaver	S9985	---	2020-08-21

Auxiliary element used with the sample S/01:

Control Nº	Description	Model	Serial Nº	Date of reception
64305/001	AC/DC adapter	AD21163HF	---	2020-07-13

Test sample description

Ports..... :	Port name and description		Cable				
			Specified length [m]	Attached during test	Shielded		
	N/A			☐	☐		
				☐	☐		
Supplementary information to the ports..... :							
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☒	AC: 230Vac.	☒	☐	☐	☒	☐
	☒	DC: 3.6Vdc (Internal battery)					
Rated Power	Not provided data						
Clock frequencies.....	Not provided data						
Other parameters	Not provided data						
Software version	SW (FW) version: 1346						
Hardware version	1.0						
Dimensions in mm (L x W x D)....	Not provided data						
Mounting position	☐	Table top equipment					
	☐	Wall/Ceiling mounted equipment (Receiver)					
	☐	Floor standing equipment					
	☒	Hand-held equipment					
	☐	Other:					
Modules/parts.....	Module/parts of test item		Type			Manufacturer	
	N/A						
Accessories (not part of the test item)	Description		Type			Manufacturer	
	N/A						
Documents as provided by the applicant.....	Description		File name			Issue date	
	N/A						

Identification of the client

Philips
Oliemolenstraat 5, 9203 ZN Drachten.
The Netherlands

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-08-25
Date (finish)	2020-08-25

Document history

Report number	Date	Description
64798REM.001	2020-09-16	First release
64798REM.002A1	2021-04-09	A new operation mode #03 is defined for the conducted emission in Bluetooth communication mode. These new conducted measurements are included in this test report.

List of equipment used during the test

Control Number	Description	Model	Manufacturer	Next Calibration
0482	SEMIANECHOIC ABSORBER LINED CHAMBER 1	11.BS	IRSA	---
0564	CAMARA SUSCEPTIBILIDAD	12.BC	IRSA	---
1650	THREE-PHASE ARTIFICIAL V-NETWORK 100A	NNLK8121	SCHWARZBECK	2021-09-24
1935	PRECOMPLIANCE EMI TEST RECEIVER 9kHz-3GHz	ESPI3	ROHDE AND SCHWARZ	2022-02-05
3545	USB TEMPERATURE AND HUMIDITY SENSOR	HUMIDIPROBE	PICO TECHNOLOGY	2021-04-22
3547	USB TEMPERATURE AND HUMIDITY SENSOR	HUMIDIPROBE	PICO TECHNOLOGY	2021-04-03
3548	USB TEMPERATURE AND HUMIDITY SENSOR	HUMIDIPROBE	PICO TECHNOLOGY	2021-04-29
4659	PRE-AMPLIFIER G>28dB 1-18GHz	BBV 9718	SCHWARZBECK	2021-06-05
5151	TRANSIENT LIMITER 10DB N CONNECTOR	VTSD 9561-F	SCHWARZBECK	2020-10-01
7006	HORN ANTENNA 1-18GHz	BBHA 9120D	SCHWARZBECK MESS-ELEKTRONIK	2021-05-15
7746	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2023-07-23
7816	EMI TEST RECEIVER 1Hz-26.5GHz	ESW26	ROHDE AND SCHWARZ	2021-09-05

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The test have been performed by the technical personnel: José A. Santiago & Fco. Jesús Olmo.

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

Emission Test		
Requirement – Test case	Verdict	Remark
Radiated emission. Electromagnetic field measure (30 MHz – 1000 MHz)	P	---
Radiated emission. Electromagnetic field measure (1 GHz – 12.75 GHz)	P	---
Radiated emission. Electromagnetic field measure (12.75 GHz – 40 GHz)	N/A	(1)
Continuous conducted emission (150 KHz – 30 MHz)	P	---
<u>Supplymentary information and remarks:</u>		
(1) Range: f>12.75 GHz. Test required only if the 5 th harmonics of the maximum internal work frequency EUT is higher than 12.75GHz.		

Appendix A: Test results

Appendix A content

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DESCRIPTION OF THE OPERATION MODES

The operation modes described in this paragraph constitute a functionality of the sample under test for itself. The operation modes used by the samples to which the present report refers, are shown in the following table:

OPERATION MODE	DESCRIPTION
OM#01	EUT ON. Charging battery. Bluetooth without communication established. Power supply: 110 Vac.
OM#02	EUT ON. Shaver is working continuously. Bluetooth without communication established. Power supply: 3.6Vdc (internal battery).
OM#03	EUT ON. Charging battery. Bluetooth with communication established. Power supply: 110 Vac.

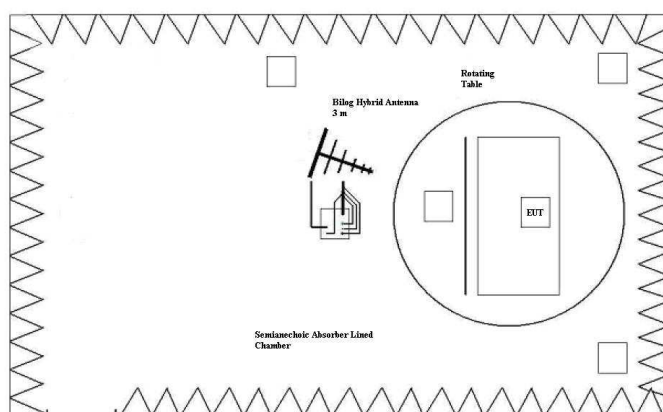
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)

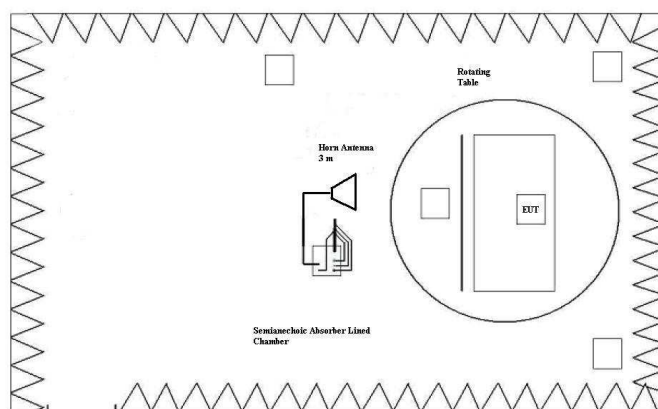
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.109 & ICES-003 Issue 6 (Updated 04-2019)

Frequency of emission (MHz)	Field strength (microvolt/meter)
30-88	100
88-216	150
21-960	200
Above 960	500



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

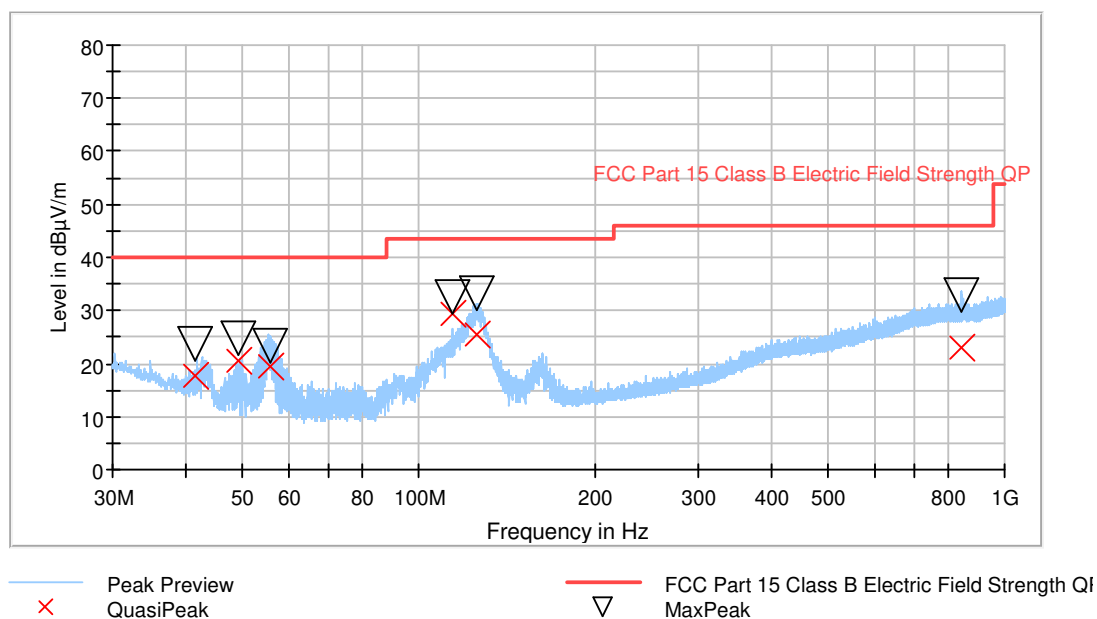
TESTED SAMPLE:	S/01
TESTED OPERATION MODES:	OM#01 & OM#02
TEST RESULTS:	CRmmnnRRPP: CR, Radiated Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR	Range: 1 GHz – 12.75 GHz.	P
CR0102LR	Range: 30 MHz - 1000 MHz.	P
CR0102HR	Range: 1 GHz – 12.75 GHz.	P

Radiated Emission. CR0101LR

Project: 64798REM.002
Company: PHILIPS CONSUMER LIFESTYLE B.V.
Sample: S/01
Operation mode: OM#01
Description: EUT ON. Charging battery. Bluetooth without communication established. Power supply:110 Vac

Full Spectrum



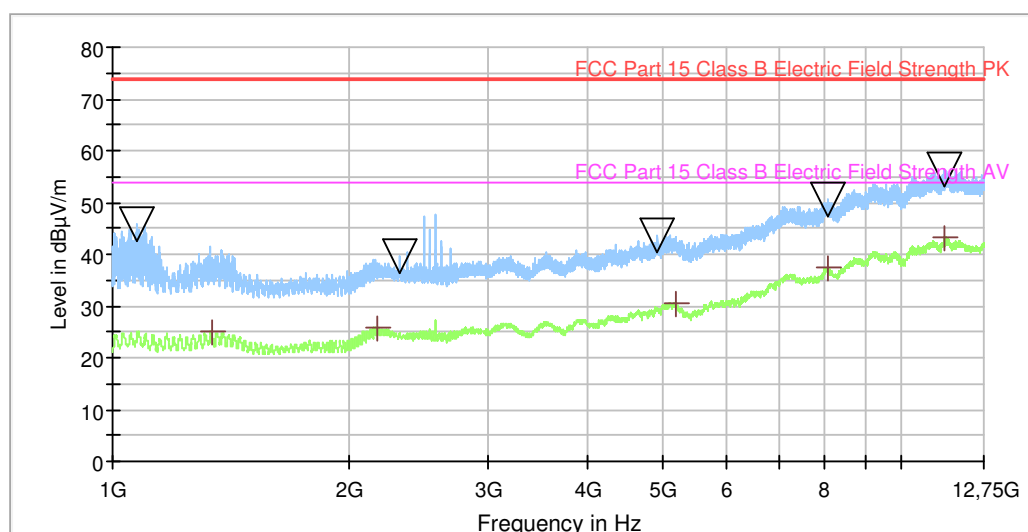
Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
41.665000	17.81	23.57	40.00	22.19	125.0	V	334.0	13.4
49.084000	20.40	24.81	40.00	19.60	118.0	V	232.0	10.4
55.798000	19.40	23.34	40.00	20.60	169.0	V	192.0	10.0
114.417000	29.55	32.43	43.52	13.97	111.0	V	283.0	12.0
125.869000	25.52	33.27	43.52	18.00	111.0	V	254.0	12.2
843.099000	23.13	33.09	46.00	22.87	387.0	H	242.0	28.2

Radiated Emission. CR0101HR

Project: 64798REM.002
Company: PHILIPS CONSUMER LIFESTYLE B.V.
Sample: S/01
Operation mode: OM#01
Description: EUT ON. Charging battery. Bluetooth without communication established. Power supply:110 Vac

Full Spectrum



— Average Preview
— FCC Part 15 Class B Electric Field Strength PK
— Peak Preview
— FCC Part 15 Class B Electric Field Strength AV
▽ MaxPeak
+ Average

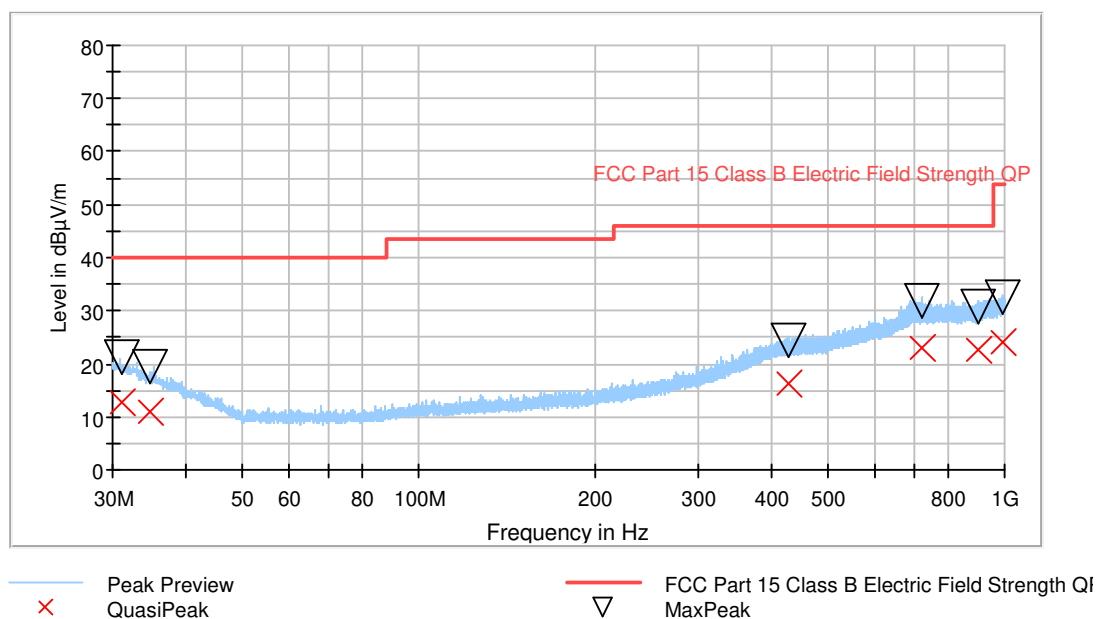
Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Corr. (dB/m)
1074.000000	45.69	25.09	73.97	28.28	-5.0
2320.000000	39.80	25.71	73.97	34.17	1.0
4921.600000	43.68	30.73	73.97	30.29	8.2
8067.200000	50.38	37.44	73.97	23.59	18.1
11376.800000	56.50	43.30	73.97	17.47	25.3

Radiated Emission. CR0102LR

Project: 64798REM.002
Company: PHILIPS CONSUMER LIFESTYLE B.V.
Sample: S/01
Operation mode: OM#02
Verdict: Passed
Description: EUT ON. Shaver is working continuously. Bluetooth without communication established. Power supply: 3.6Vdc (internal battery).

Full Spectrum



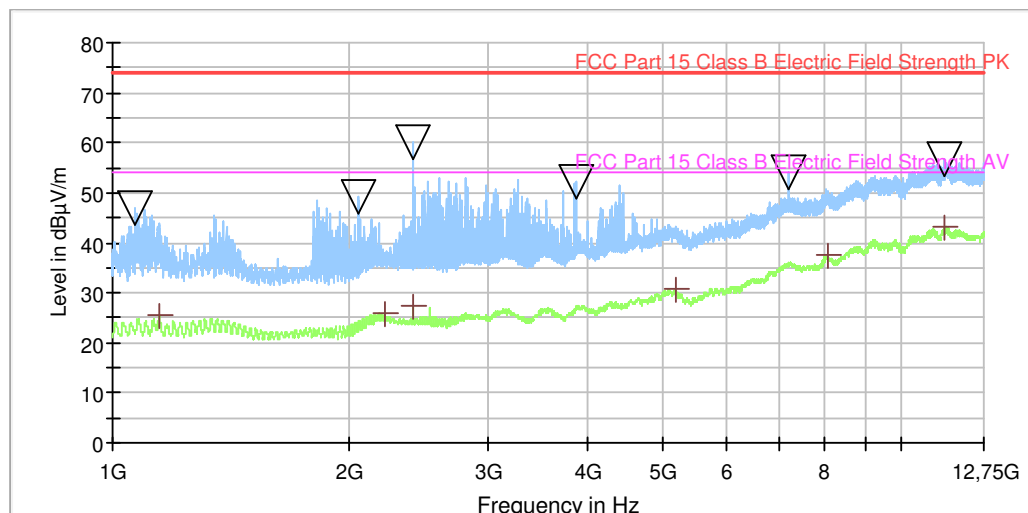
Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.169000	12.60	21.31	40.00	27.40	278.0	H	0.0	17.7
34.884000	11.07	19.63	40.00	28.93	240.0	V	341.0	16.1
427.332000	16.33	24.57	46.00	29.67	388.0	V	105.0	22.3
720.616000	23.05	31.76	46.00	22.95	154.0	V	227.0	27.6
904.471000	22.80	30.95	46.00	23.20	314.0	H	13.0	28.2
994.617000	24.07	32.66	53.97	29.90	400.0	H	195.0	29.2

Radiated Emission. CR0102HR

Project: 64798REM.002
Company: PHILIPS CONSUMER LIFESTYLE B.V.
Sample: S/01
Operation mode: OM#02
Description: EUT ON. Shaver is working continuously. Bluetooth without communication established. Power supply: 3.6Vdc (internal battery).

Full Spectrum



— Average Preview
— FCC Part 15 Class B Electric Field Strength PK
— Peak Preview
— FCC Part 15 Class B Electric Field Strength AV
▽ MaxPeak
+ Average

Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Corr. (dB/m)
1066.000000	47.05	25.72	73.97	26.92	-5.0
2047.600000	49.33	25.83	73.97	24.64	-0.5
2403.600000	60.12	27.50	73.97	13.85	0.6
3867.600000	52.06	30.69	73.97	21.91	4.3
7206.800000	53.97	37.52	73.97	20.00	17.3
11382.400000	56.61	43.31	73.97	17.36	25.3

CONTINUOUS CONDUCTED EMISSION

LIMITS:	Product standard :	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition), Secs. 15.107; ICES-003 Issue 6 (January 2016, updated April 2019)
	Test standard :	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition), Secs. 15.107; ICES-003 Issue 6 (January 2016, updated April 2019)

CLASS B

The applied limit for continuous conducted emissions in power leads, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.107 & ICES-003 Issue 6 (January 2019), in the frequency range 0,15 to 30 MHz, for Class B equipment was:

Frequency range (MHz)	Limit (dB μ V)	
	Quasi-peak	Average
0,15 to 0,5	66 - 56	56 - 46
0,5 to 5	56	46
5 to 30	60	50

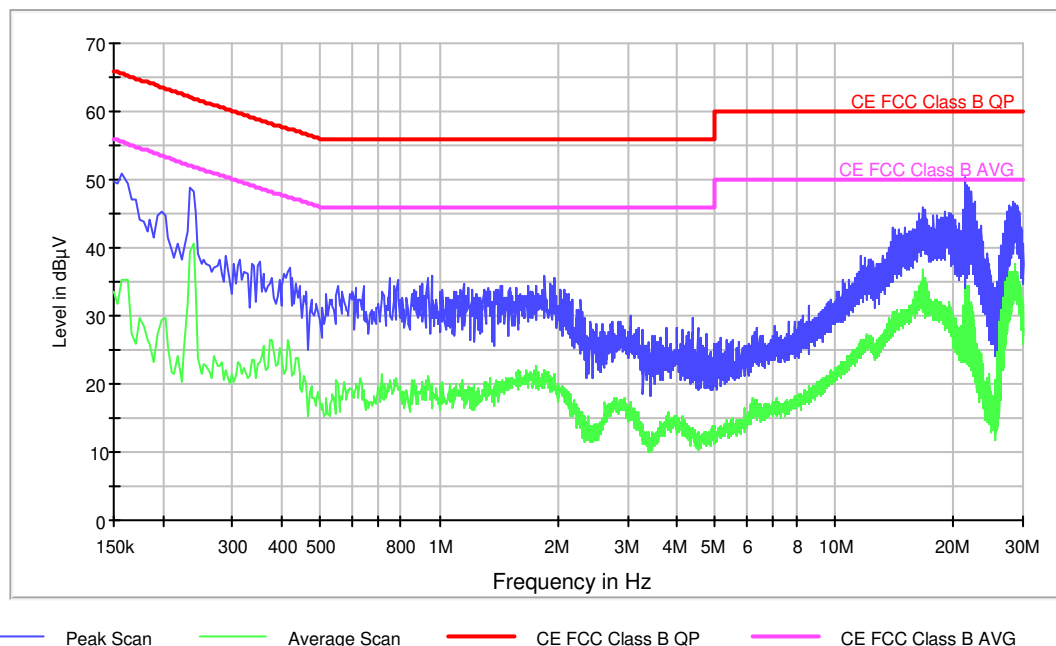
TESTED SAMPLES:	S/01
TESTED OPERATION MODES:	OM#01, OM#03
TEST RESULTS:	CCmmnnhh: CC, Conducted Condition; mm: Sample number; nn: Operation mode; hh: wire

CCmmnnhh	DESCRIPTION	RESULT
CC01010N	Range: 150kHz – 30MHz. Neutral AC wire noise.	P
CC0101L1	Range: 150kHz – 30MHz. Phase AC wire noise.	P
CC01030N	Range: 150kHz – 30MHz. Neutral AC wire noise.	P
CC0103L1	Range: 150kHz – 30MHz. Phase AC wire noise.	P

Conducted Emission. CC01010N

Project: 64798REM.002
Company: PHILIPS CONSUMER LIFESTYLE B.V.
Sample: S/01
Operation mode: OM#01
Description: EUT ON. Charging battery. Bluetooth without communication established. Power supply:110 Vac. Neutral wire noise.

FCC Class B



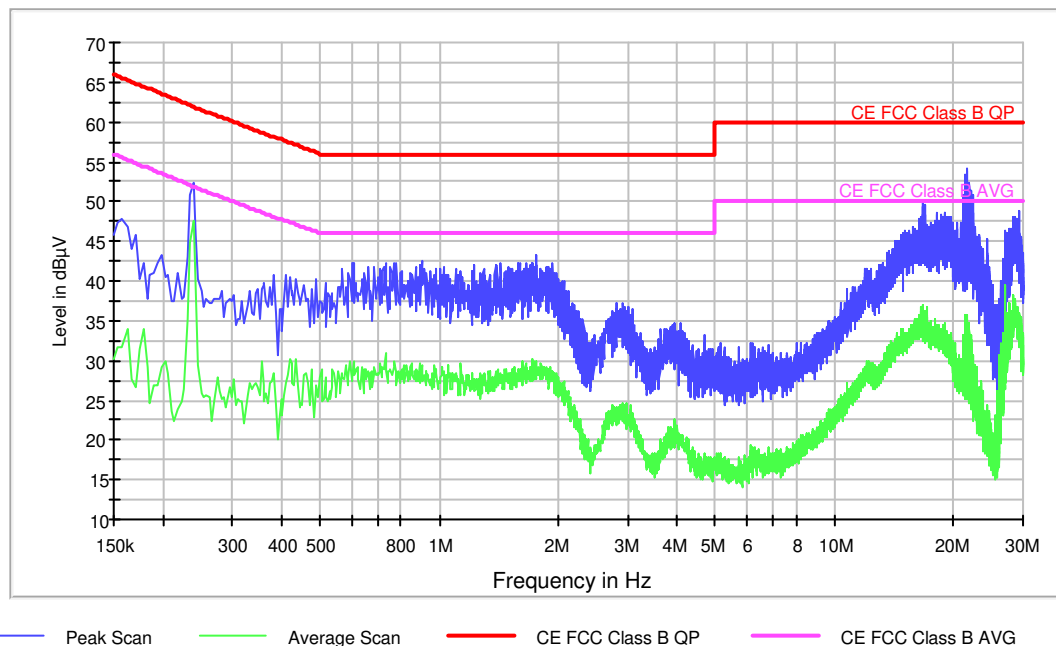
Result Table

Frequency (MHz)	MaxPeak-ClearWrite (dBμV)	Average-ClearWrite (dBμV)
0.150000	49.8	33.4
0.154000	49.4	31.8
0.158000	51.0	35.3
0.162000	49.4	35.4
0.166000	47.0	27.3
0.170000	47.0	25.9
0.174000	44.2	29.7
0.178000	43.9	28.7
0.182000	42.4	26.4
0.186000	44.0	25.9

Conducted Emission. CC0101L1

Project: 64798REM.002
Company: PHILIPS CONSUMER LIFESTYLE B.V.
Sample: S/01
Operation mode: OM#01
Description: EUT ON. Charging battery. Bluetooth without communication established. Power supply:110 Vac. Phase wire noise.

FCC Class B



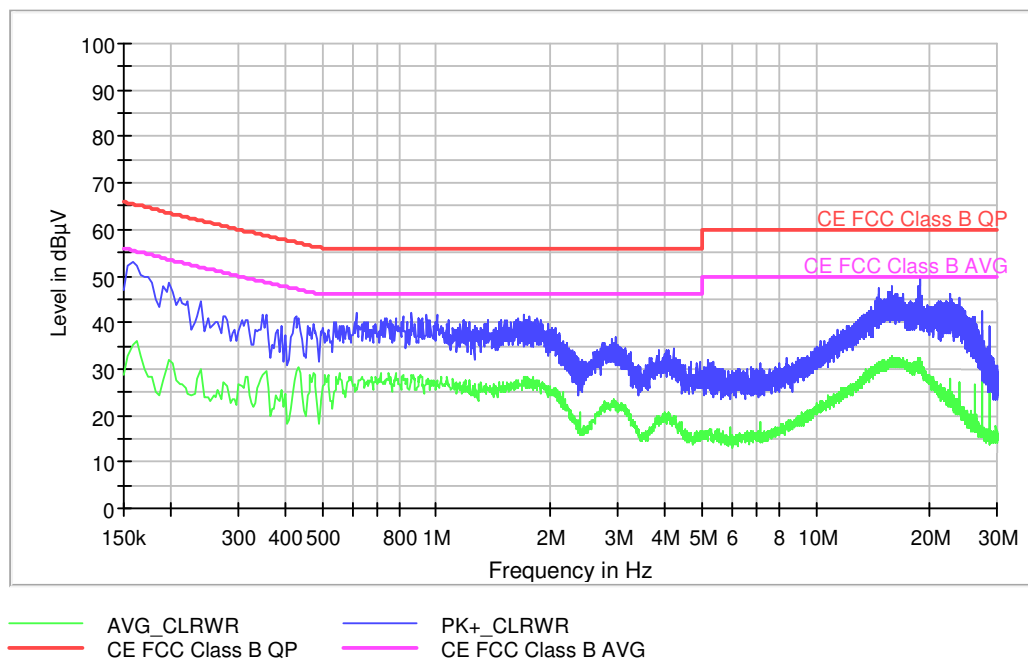
Result Table

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.150000	45.8	30.0
0.154000	47.2	31.6
0.158000	47.9	31.7
0.162000	46.8	33.9
0.166000	43.9	27.7
0.170000	45.9	26.7
0.174000	40.3	31.4
0.178000	42.2	33.9
0.182000	37.7	29.0
0.186000	40.9	24.7

Conducted Emission. CC01030N

Project: 64798REM.002
Company: PHILIPS CONSUMER LIFESTYLE B.V.
Sample: S/01
Operation mode: OM#03
Description: EUT ON. Charging battery. Bluetooth with communication established. Power supply:110 Vac. Neutral wire noise.

FCC Class B



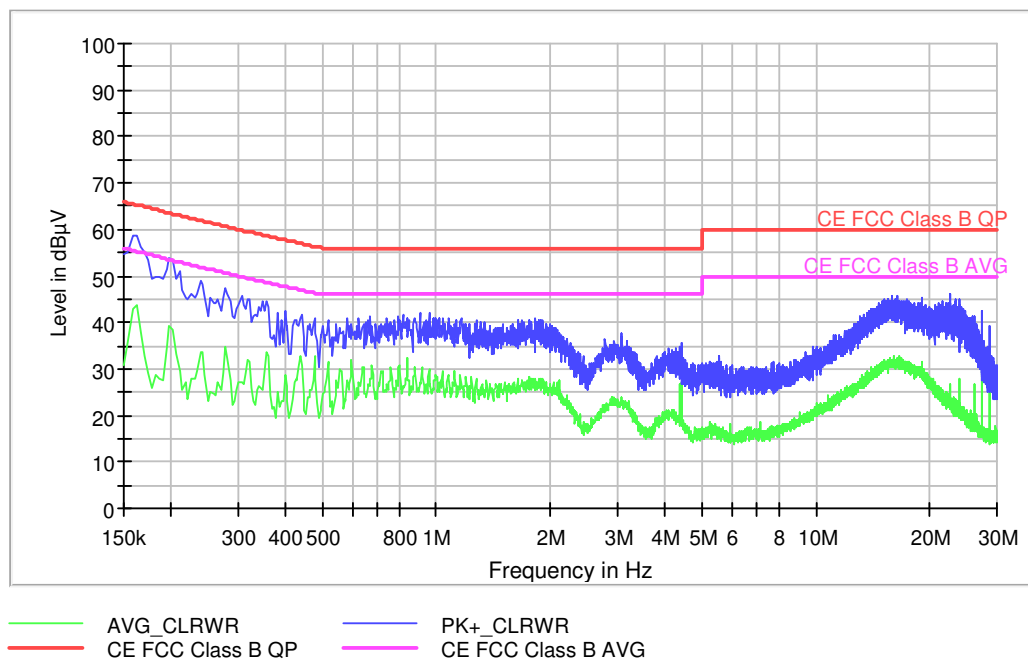
Subrange Maxima

Frequency (MHz)	PK+ CLRWR (dBµV)	AVG CLRWR (dBµV)
0.158000	53.1	35.3
0.358000	41.6	29.7
0.614000	41.9	25.9
0.862000	41.9	28.8
1.694000	41.6	27.4
2.958000	36.9	23.2
4.206000	34.2	19.7
10.294000	35.9	23.1
15.878000	47.8	31.2
18.722000	49.9	32.1

Conducted Emission. CC0103L1

Project: 64798REM.002
Company: PHILIPS CONSUMER LIFESTYLE B.V.
Sample: S/01
Operation mode: OM#03
Description: EUT ON. Charging battery. Bluetooth with communication established. Power supply:110 Vac. Phase wire noise.

FCC Class B



Subrange Maxima

Frequency (MHz)	PK+ CLRWR (dBµV)	AVG CLRWR (dBµV)
0.158000	58.8	42.9
0.278000	47.2	34.8
0.442000	41.8	31.0
0.906000	42.0	27.1
1.826000	40.7	27.9
3.078000	37.7	22.9
4.422000	35.7	26.3
9.858000	34.9	21.1
16.366000	45.9	31.9
22.666000	46.3	26.6