

ISED CABid: ES1909

Test report No:
NIE: 67050REM.002A2

Test report

**FCC Rules and Regulations CFR 47, Part 15, Subpart B
(10-1-19 Edition) & ICES-003 Issue 7 (October 2020)**

(*) Identification of item tested	S7700 series Philips shaver with Bluetooth (S77xx).
(*) Trademark	Philips (or PHilips Norelco in the US)
(*) Model and /or type reference	S7700 series Tested model: S7783
Other identification of the product	HW Version: 1.0 SW Version: 1711 FCC ID: 2AICSS77A IC: 21912-S77A
(*) Features	Bluetooth 5.1
Manufacturer	Philips Consumer Lifestyle B.V. Tussendiepen 4 9206 AD Drachten, The Netherlands.
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 7 (October 2020)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López EMC Consumer & RF Lab. Manager
Date of issue	2021-10-25
Report template No	FDT08_23 (*) "Data provided by the client"

Index

ACRONYMS3

COMPETENCES AND GUARANTEES3

GENERAL CONDITIONS4

UNCERTAINTY4

DATA PROVIDED BY THE CLIENT4

USAGE OF SAMPLES5

TEST SAMPLE DESCRIPTION6

IDENTIFICATION OF THE CLIENT7

TESTING PERIOD AND PLACE7

DOCUMENT HISTORY7

ENVIRONMENTAL CONDITIONS8

REMARKS AND COMMENTS9

TESTING VERDICTS9

LIST OF EQUIPMENT USED DURING THE TEST9

SUMMARY..... 10

APPENDIX A: TEST RESULTS 11

PHOTOGRAPHS22

Acronyms

Acronym ID	Acronym Description
Avg	Radiated Average Level
Az	Azimuth
Code	EMC Test Code
Freq	Frequency
Freq Rng	Frequency Range
H	Height
Line	Conducted Emissions - Tested Line
MP	Measurement Point
MaxPeak	Radiated Maximum Peak Level
OM	Operation Mode
Pol	Polarization
QuasiPeak	Radiated Quasi Peak Level
S/	Sample
V	Verdict

Competences and guarantees

DEKRA Testing and Certification S.A.U. 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 S.A.U. is an FCC-recognized accredited testing laboratory with the appropriate scope of accreditation that covers the performed tests in this report.

DEKRA Testing and Certification S.A.U. is an ISED-recognized accredited testing laboratory, CABid: ES1909, with the appropriate scope of accreditation that covers the performed tests in this report.

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

DEKRA Testing and Certification S.A.U. 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 S.A.U. at the time of performance of the test.

DEKRA Testing and Certification S.A.U. 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.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA Testing and Certification S.A.U.

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 S.A.U.
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 S.A.U. and the Accreditation Bodies.

Uncertainty

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

The total uncertainty of the measurement system for the measured conducted disturbance characteristics of EUT from 150 kHz to 30 MHz is $l = \pm 3,9$ dB for quasi-peak measurements, $l = \pm 3,2$ dB for peak measurements ($k = 2$).

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.

DEKRA Testing and Certification S.A.U. 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.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	67050_01	S7700 series Philips shaver with Bluetooth (S77xx)	S7783	---	2021-02-01	Element Under Test
	67050_04	AC/DC Adapter	---	---	2021-02-01	Element Under Test

Notes referenced to samples during the project.

Id	Note
	N/A

Test sample description

Test Sample description (compulsory information for EMC and RF testing services)

Ports..... :	Port name and description		Cable				
			Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾	
	N/A						
Supplementary information to the ports..... :	N/A						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☒	AC: 110 Vac	[X]	[]	[]	[X]	[]
	☒	DC: 3.6Vdc (Internal Battery)					
Rated Power	Not provided data						
Clock frequencies.....	Not provided data						
Other parameters	Not provided data						
Software version	1711						
Hardware version	1.0						
Dimensions in cm (W x H x D)	46,72 mm X 138,98 mm x 53,33 mm						
Mounting position	[]	Table top equipment					
	[]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[X]	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						

⁽³⁾ Only for Medical Equipment

Identification of the client

Philips Consumer Lifestyle B.V.
Oliemolenstraat 5, 9203 ZN Drachten, The Netherlands.

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2021-02-02
Date (finish)	2021-02-17

Document history

Report number	Date	Description
67050REM.002	2021-04-12	First release
67050REM.002A1	2021-05-04	This modification test report cancels and replaces the test report 67050REM.002. In the main page, the IC and FCC ID codes are corrected from FCC ID: 2AICSS77 IC: 21912-S77 by the correct codes: FCC ID: 2AICSS77a IC: 21912-S77a
67050REM.002A2	2021-10-25	Third edition. A typo in the FCC ID and IC numbers is corrected from FCC ID: 2AICSS77a IC: 21912-S77a to FCC ID: 2AICSS77A IC: 21912-S77A The Bluetooth version in the main page is corrected to Bluetooth 5.1. This reports cancels and replaces the previous version 67050REM.002A1

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. = 20 % Max. = 75 %

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

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

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. = 20 % Max. = 35 %

Remarks and comments

The tests have been performed by the technical personnel: Jaime Barranquero, Antonio Manuel Sánchez and Lorena Oviedo.

Testing verdicts

Fail	F
Inconclusive	I
Not applicable	N/A
Not measured	N/M
Pass	P

List of equipment used during the test

Control Number	Description	Model	Manufacturer	Next Calibration
3258	SONDA DE TEMPERATURA Y HUMEDAD RELATIVA	HUMIDIPROBE	PICO TECHNOLOGY	2021-04-22
3545	USB TEMPERATURE AND HUMIDITY SENSOR	HUMIDIPROBE	PICO TECHNOLOGY	2021-04-22
4575	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	TR-702W	T&D	2021-04-22
7769	PREAMPLIFIER 30dB 500MHz-18GHz	BBV 9718 C	SCHWARZBECK	2022-02-10
7817	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2021-10-29
7826	ULTRALOG ANTENNA 30MHz-6GHz	HL562E_UPG	ROHDE AND SCHWARZ	2022-10-15
7853	EMI RECEIVER 10Hz-30MHz	PMM 9010F	NARDA	2021-10-30
7859	THREE-PHASE ARTIFICIAL NETWORK 32A	PMM L3-32	NARDA	2021-11-20
8130	SEMIANECHOIC ABSORBER LINED CHAMBER VI	P29419	ALBATROSS	---
8134	SHIELDED ROOM	P29419	ALBATROSS PROJECTS GMBH	---

Summary

Test Specification.	Requirement – Test case	Verdict	Remark
FCC 47 CFR Part 15B	Continuous conducted emission	Pass	---
FCC 47 CFR Part 15B	Radiated emission. Electromagnetic field measure	Pass	---
<u>Supplementary information and remarks:</u> None			

Appendix A: Test results

Appendix A content

DESCRIPTION OF THE OPERATION MODES13

TEST STANDARDS VERSION APPLIED14

TEST CASES DETAILS15

PHOTOGRAPHS22

Description of the operation modes

The operation modes described in this paragraph constitute a functionality of the sample under test for itself. Every operation mode takes a failure criteria for the immunity test that they were applying to it and a monitoring to guarantee performance of the same ones.

The operation modes used by the samples to which the present report refers, are shown in the following table:

Id	Description
01	EUT ON. Charging battery. Bluetooth without communication established. Power supply: 110Vac.
02	EUT ON. Charging battery. Bluetooth ON with communication established. Power supply: 110 Vac.

Test standards version applied

The product standards and test standards applied for each test cases are shown in the following table:

Product Test Standard	Test standard	Requirement – Test case
FCC CFR 47, Part 15, Subpart B y C (10-1-19 Edition) Secs. 15.109 and 15.207 & ICES-003 Issue 7 (Oct 2020).	ANSI C63.4 (2014)	Radiated emission.
	ANSI C63.4 (2014)	Continuous conducted emission

Test Cases Details

FCC 47 CFR Part 15B Continuous conducted emission

Limits of interference Class B

The applied limit for continuous conducted emissions in power leads in the frequency range 0,15 to 30 MHz, for Class B equipment is:

Frequency range (MHz)	Limit (dBµV)	
	Quasi-Peak	Average
0,15 to 0,5	66 - 56	56 - 46
0,5 to 5	56	46
5 to 30	60	50

RESULTS

ID	S/	OM	Parameters				V
			Code	Freq Rng (MHz)	Line	Single measured points	
1	01	01	CE01010N	[0.15, 30]	N	10	P
2	01	01	CE0101L1	[0.15, 30]	L1	10	P
1	01	02	CE02010N	[0.15, 30]	N	10	P
2	01	02	CE0201L1	[0.15, 30]	L1	10	P

VERDICT

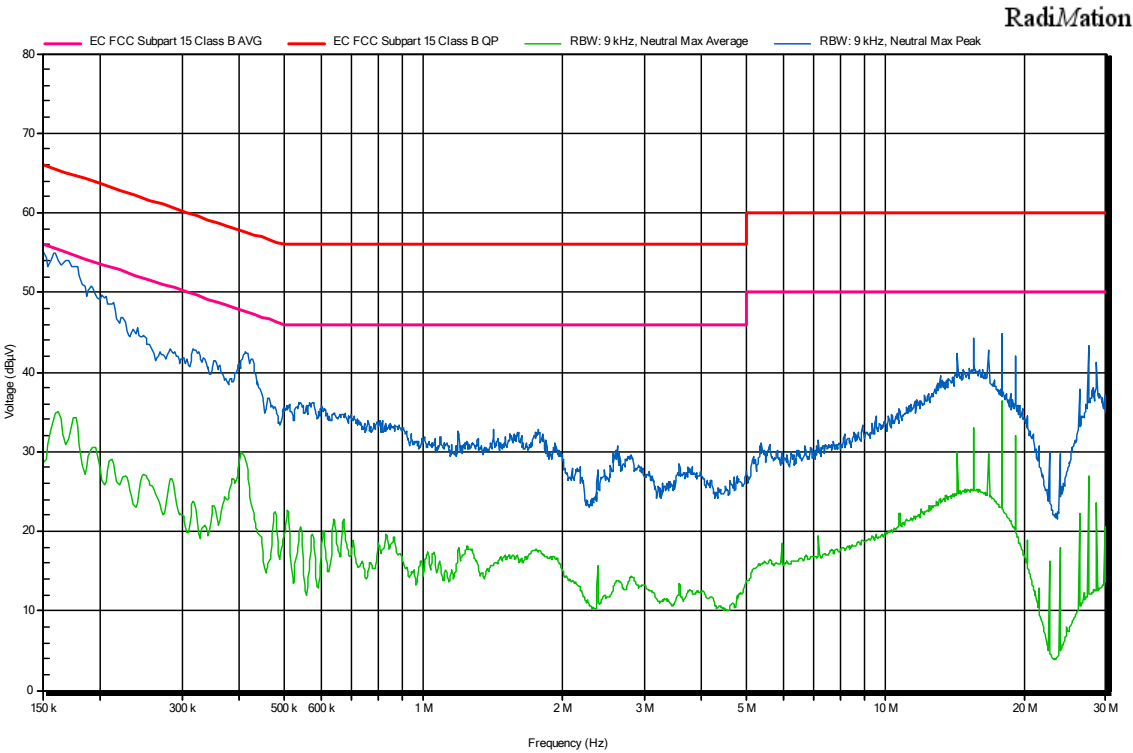
Pass

ATTACHMENTS

Project:
Company:
Sample:
Operation mode:
Graphical code:
Description:

67050REM.002
PHILIPS CONSUMER LIFESTYLE B.V.
01
01
CE0101_0N
EUT ON. Charging battery. Bluetooth without communication established. Power supply: 110 Vac. Neutral wire noise

Full Spectrum



Final_Result

Frequency	Peak	Average
150 kHz	55,1 dBµV	28,7 dBµV
250,189 kHz	44,3 dBµV	27 dBµV
284,949 kHz	42,5 dBµV	26,5 dBµV
411,719 kHz	42,4 dBµV	29 dBµV
507,819 kHz	35,3 dBµV	22,6 dBµV
540,533 kHz	36,2 dBµV	20,5 dBµV
15,489 MHz	44,2 dBµV	32,9 dBµV
16,679 MHz	42,7 dBµV	29,9 dBµV
17,871 MHz	44,7 dBµV	36,3 dBµV
27,401 MHz	42,7 dBµV	26,9 dBµV

Project:

Company:

Sample:

Operation mode:

Graphical code:

Description:

67050REM.002

PHILIPS CONSUMER LIFESTYLE B.V.

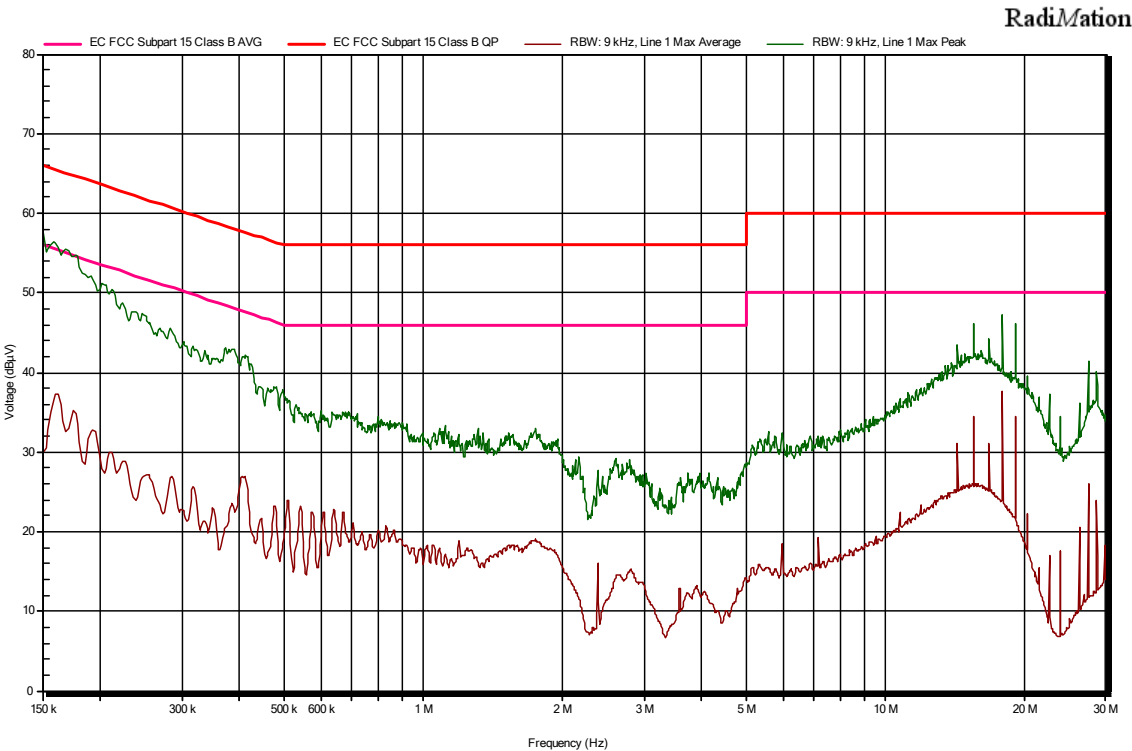
01

01

CE0101_L1

EUT ON. Charging battery. Bluetooth without communication established. Power supply: 110 Vac. Phase wire noise

Full Spectrum



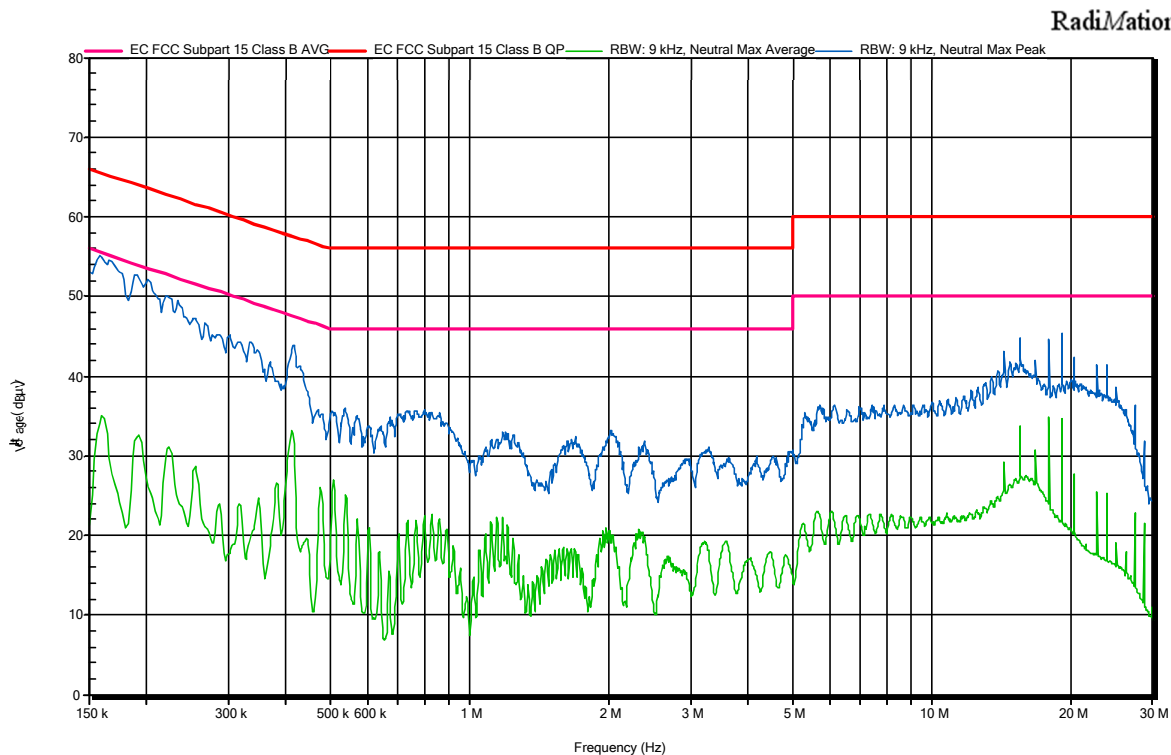
Final_Result

Frequency	Peak	Average
150 kHz	57,5 dBµV	29,9 dBµV
284,949 kHz	45,2 dBµV	26,9 dBµV
317,664 kHz	43,2 dBµV	25,7 dBµV
407,629 kHz	42 dBµV	26,8 dBµV
475,104 kHz	38,2 dBµV	23,2 dBµV
507,819 kHz	36,1 dBµV	23,9 dBµV
15,495 MHz	46 dBµV	34,5 dBµV
16,687 MHz	43,8 dBµV	31 dBµV
17,881 MHz	47,2 dBµV	37,6 dBµV
27,416 MHz	41 dBµV	26,1 dBµV

Project: 67050REM.002
Company: PHILIPS
Sample: 01
Operation mode: 02
Graphical code: CE0102_0N
Description: EUT ON. Charging battery. Bluetooth ON with communication established. Power Supply: 110 Vac. Neutral wire noise.

Verdict: Pass

Full Spectrum



Final Result

Frequency	Peak	Average	Average Limit
160,223 kHz	54,9 dBμV	35 dBμV	55,5 dBμV
192,938 kHz	52,3 dBμV	32,6 dBμV	53,9 dBμV
223,608 kHz	49,9 dBμV	31 dBμV	52,7 dBμV
254,279 kHz	47,3 dBμV	28,6 dBμV	51,6 dBμV
284,949 kHz	45,2 dBμV	23,8 dBμV	50,7 dBμV
317,664 kHz	44,3 dBμV	24 dBμV	49,8 dBμV
413,763 kHz	43,8 dBμV	32,8 dBμV	47,6 dBμV
15,506 MHz	44,9 dBμV	33,6 dBμV	50 dBμV
19,086 MHz	45,3 dBμV	34,6 dBμV	50 dBμV
20,278 MHz	42,4 dBμV	27,6 dBμV	50 dBμV

Project:

Company:

Sample:

Operation mode:

Graphical code:

Description:

67050REM.002

PHILIPS

01

02

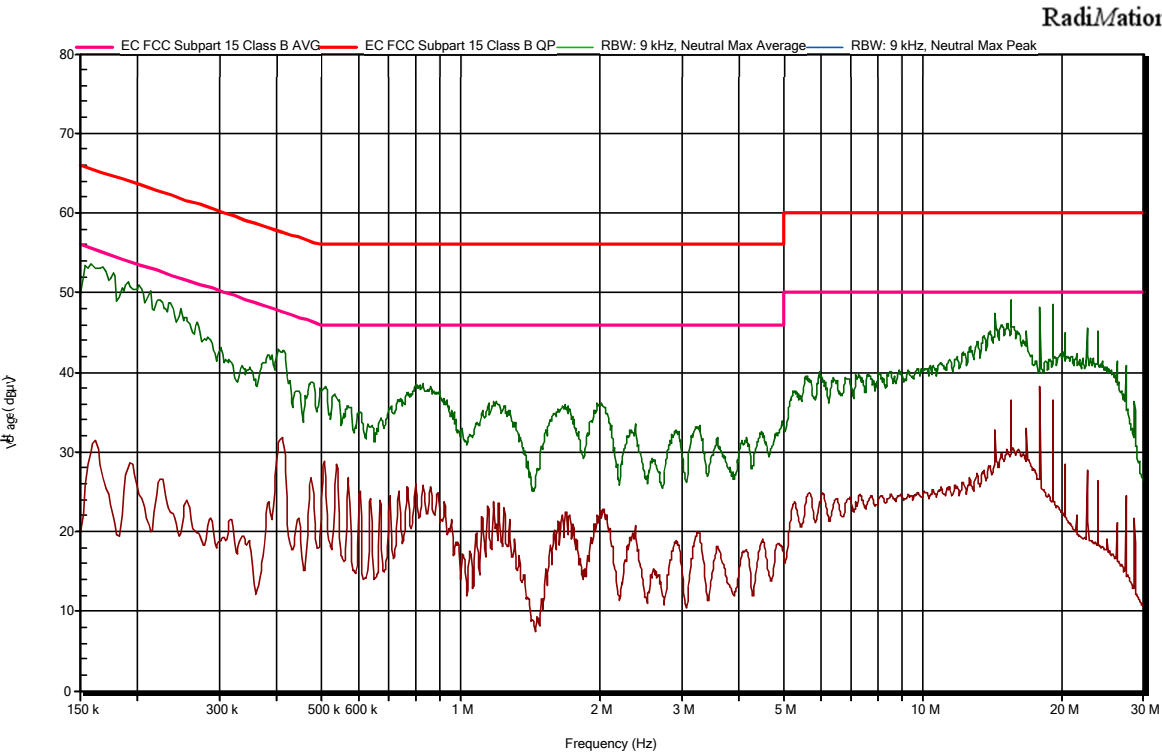
CE0102_L1

EUT ON. Charging battery. Bluetooth ON with communication established. Power Supply: 110 Vac. Phase wire noise.

Verdict:

Pass

Full Spectrum



Final Result

Frequency	Peak	Average	Average Limit
160,223 kHz	53,5 dB μ V	31,2 dB μ V	55,5 dB μ V
192,938 kHz	50,8 dB μ V	28,6 dB μ V	53,9 dB μ V
225,653 kHz	48,7 dB μ V	26,5 dB μ V	52,6 dB μ V
407,629 kHz	42,5 dB μ V	31,7 dB μ V	47,7 dB μ V
13,514 MHz	44,6 dB μ V	27,5 dB μ V	50 dB μ V
15,497 MHz	48,6 dB μ V	36,5 dB μ V	50 dB μ V
16,689 MHz	45,1 dB μ V	33 dB μ V	50 dB μ V
19,073 MHz	48,4 dB μ V	36,6 dB μ V	50 dB μ V
20,266 MHz	44,6 dB μ V	28,5 dB μ V	50 dB μ V
22,648 MHz	45,2 dB μ V	27,5 dB μ V	50 dB μ V

Radiated emission. Electromagnetic field measure

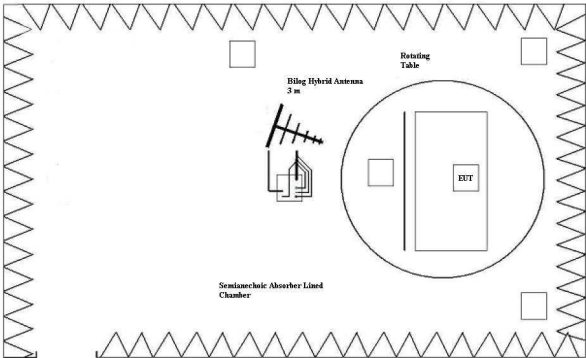
Limits of interference Class B

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 7 (Updated 10-2020)

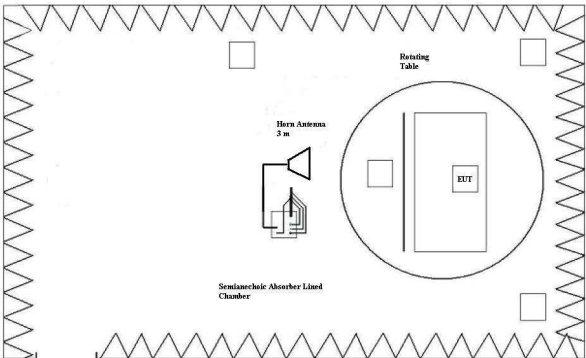
Frequency of emission (MHz)	Field strength limit (microvolt/meter) (QuasiPeak Detector)	ICES-003 Issue 7 Field strength (dBµV/m)
30-88	100	40
88-216	150	43.5
216-230	200	46
230-960	200	47
Above 960	500	54
*Above 1GHz, the limit is defined for an AVG detector.		

Table 3: Required highest measurement frequency for radiated emission

Highest internal Frequency (F _x)	Highest measurement Frequency (F _M)
F _x ≤ 108 MHz	1 GHz
108 MHz < F _x ≤ 500 MHz	2 GHz
500 MHz < F _x ≤ 1 GHz	5 GHz
F _x > 1 GHz	5 x F _x up to a maximum of 40 GHz
*F _x is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.	



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

RESULTS

REmmnnRR	Description	Result
RE0101LR	Range: 30 MHz - 1000 MHz.	P
RE0101HR	Range: 1 GHz – 17 GHz.	P

REmmnnRR: **RE**: Radiated Emission; **mm**: Sample number; **nn**: Operation mode; **RR**: Measurement range.

According to FCC 47 CFR Part 15B / ICES-003 Issue 7, this measurement is only needed up to the fifth harmonic of the internal working frequency.

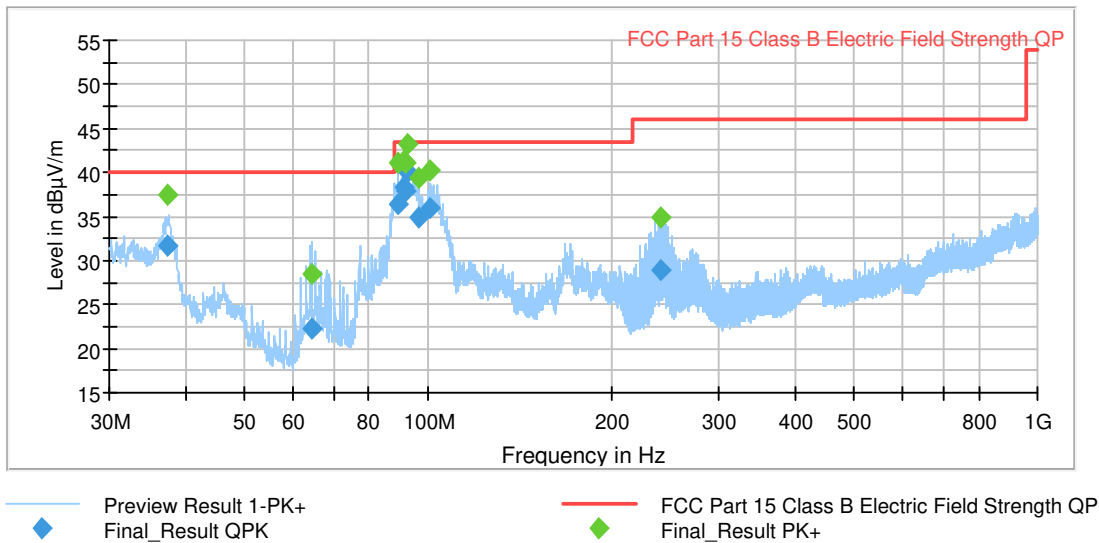
VERDICT

Pass

ATTACHMENTS

Project: 67050REM.002
Company: Philips Consumer Lifestyle
Sample: 01
Operation mode: 01
Graphical code: RE0101LR
Description: EUT ON. Charging battery. Bluetooth without communication established. Power supply: 110 Vac.
Verdict: Pass

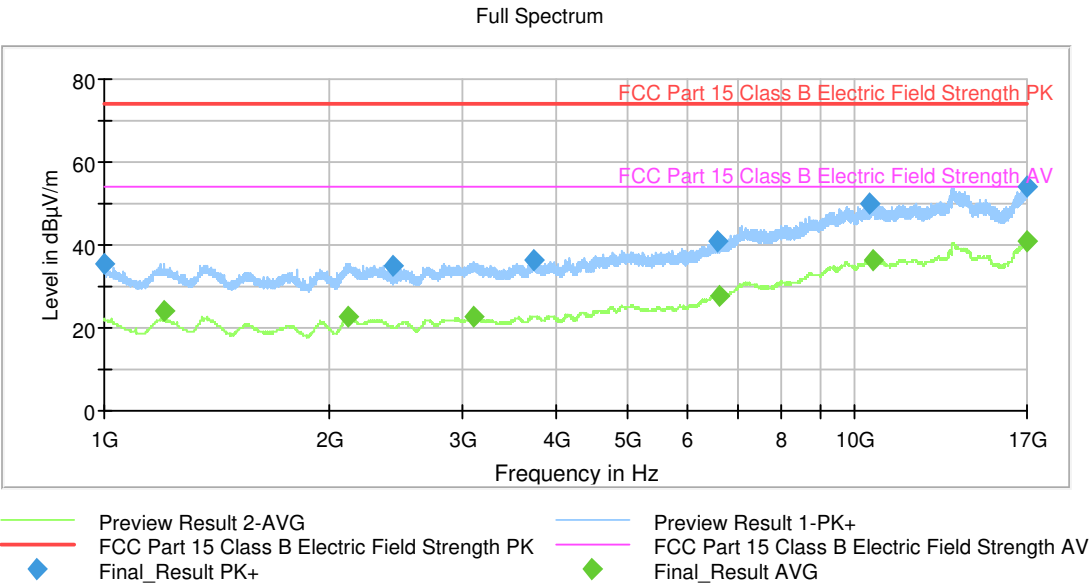
Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
37.396000	---	37.50	100.0	V	55.0
37.396000	31.65	---	100.0	V	55.0
64.385000	---	28.47	152.0	V	15.0
64.385000	22.30	---	152.0	V	15.0
89.191000	36.37	---	100.0	V	316.0
89.191000	---	41.11	100.0	V	316.0
91.498000	38.29	---	100.0	V	326.0
91.498000	---	41.27	100.0	V	326.0
91.982000	---	41.07	105.0	V	332.0
91.982000	37.84	---	105.0	V	332.0
92.783000	---	43.32	107.0	V	333.0
92.783000	39.95	---	107.0	V	333.0
96.471000	---	39.45	106.0	V	310.0
96.471000	34.81	---	106.0	V	310.0
100.831000	36.02	---	105.0	V	336.0
100.831000	---	40.26	105.0	V	336.0
240.312000	28.91	---	151.0	H	1.0
240.312000	---	35.00	151.0	H	1.0

Project: 67050REM.002
Company: Philips Consumer Lifestyle
Sample: 01
Operation mode: 01
Graphical code: RE0101HR
Description: EUT ON. Charging battery. Bluetooth without communication established. Power supply: 110 Vac.
Verdict: Passed



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1002.000000	35.34	---	73.97	38.63
1200.000000	---	23.92	53.97	30.05
2117.200000	---	22.62	53.97	31.35
2424.000000	34.84	---	73.97	29.13
3118.000000	---	22.95	53.97	31.02
3744.800000	36.21	---	73.97	37.76
6586.800000	41.12	---	73.97	32.85
6609.200000	---	27.75	53.97	26.22
10462.800000	49.81	---	73.97	24.16
10597.200000	---	36.39	53.97	17.58
16955.600000	54.08	---	73.97	19.89
16992.400000	---	40.74	53.97	13.23