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C.I.F. A29 507 456

Test report No:
NIE: 66727REM.002A1

Test report

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

(*) Identification of item tested	a learning aid for golfers
(*) Trademark	deWiz Golf
(*) Model and /or type reference	deWiz
Other identification of the product	HW version: RB2 SW version: 1.5.2 FCC ID: 2AYW6-000 IC: 26977-000
(*) Features	Bluetooth LE
Manufacturer	DeWiz Golf AB Krankajen 14 C/O Finanshuset AB, 211 12 Malmö, Sweden
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (April 2019)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López EMC Consumer & RF Lab. Manager RAFAEL LÓPEZ MARTÍN 2021.02.24 15:00:50 +01'00'
Date of issue	2021-02-24
Report template No	FDT08_23 (*) “Data provided by the client”

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Acronyms

Acronym ID	Acronym Description
Avg	Radiated Average Level
Avg	Conducted Average Level
Az	Azimuth
CPL	Zones / Coupling Cables
Code	EMC Test Code
Freq	Frequency
Freq Rng	Frequency Range
H	Height
Line	Conducted Emissions - Tested Line
MP	Measurement Point
Max	Conducted Maximum Level
MaxPeak	Radiated Maximum Peak Level
OM	Operation Mode
Pol	Polarization
QuasiPeak	Conducted Quasi Peak Level
QuasiPeak	Radiated Quasi Peak Level
S/	Sample
V	Verdict
Volt Immunity Lvl	Voltage Immunity Severity Level
Volt Immunity Type	Voltage Immunity Type

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.

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.

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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.
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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 I = ± 4,9 dB for quasi-peak measurements, I = ± 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 I = ± 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 learning aid for golfers.

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.

Sample 01: S/01

Id	Control Number	Description	Model	Serial Nº	Date of Reception	Application
S/01	66727_06	Sport band device	deWiz	---	2020-12-11	Element under test
S/01	66727_08	USB charging cable	---	---	2020-12-11	Element under test

Notes referenced to samples during the project.

Id	Note
S/01	Sample for battery charging mode.

Test sample description

Ports…… :	Port name and description	Cable			
		Specified max length [m]	Attached during test	Shielded	Coupled to patient(3)
	USB Port	>3m	Yes	N/A	N/A

Supplementary information to the ports…… :	N/A					
Rated power supply .....:	Voltage and Frequency		Reference poles			
			L1	L2	L3	N	PE
		AC:					
	☒	DC: 3.75 V (Nom) Internal battery Charger: 5V USB with supplied cable					
Rated Power .....:	Not provided data						
Clock frequencies.....:	64MHz.						
Other parameters .....:	Not provided data						
Software version .....:	1.5.1						
Hardware version .....:	RB2						
Dimensions in cm (W x H x D) ....:	4x1.2x26cm (including wrist band)						
Mounting position .....:	X	Hand-held equipment					
	X	Other: Wrist					

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
	N/A		
Accessories (not part of the test item) .....:	Description	Type	Manufacturer
	BLE USB Dongle nRF52:Dongle	USB-dongle	Nordic Semi
Documents as provided by the applicant .....:	Description	File name	Issue date
	00-1834-01-00-02 Certification Sample Guide.pdf		
	FRF88_03 ApplicationForm_300328v020202_1.pdf		

Identification of the client

Svep Design Center AB
S:t Lars väg 42A
222 70 Lund, Sweden.

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-12-15
Date (finish)	2020-12-16

Document history

Report number	Date	Description
66727REM.002	2021-01-28	First release
66727REM.002A1	2021-02-24	Second release. FCC ID & IC identification numbers are included on the cover.

Environmental conditions

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

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

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

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

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

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 35 %

Remarks and comments

The tests have been performed by the technical personnel: Daniel Mejías & Antonio Sánchez.

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
4575	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	TR-702W	T&D	2021-04-22
7763	HORN ANTENNA 1-18GHz	BBHA 9120D	SCHWARZBECK MESS-ELEKTRONIK	2022-11-15
7769	PREAMPLIFIER 30dB 500MHz-18GHz	BBV 9718 C	SCHWARZBECK	2021-01-09
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
8130	SEMIANECHOIC ABSORBER LINED CHAMBER VI	P29419	ALBATROSS	---
8134	SHIELDED ROOM	P29419	ALBATROSS PROJECTS GMBH	---

Summary

Test Specification.	Requirement – Test case	Verdict	Remark
FCC CFR 47, Part 15, Subpart B y C (10-1-19 Edition) Secs. 15.107 and 15.207 & ICES-003 Issue 6 (April 2019). ANSI C63.4 (2014)	Radiated emission	Pass	---
FCC CFR 47, Part 15, Subpart B y C (10-1-19 Edition) Secs. 15.107 and 15.207 & ICES-003 Issue 6 (April 2019) ANSI C63.4 (2014)	Conducted emission	N/A	(1)

(1) Only applicable to AC ports connected to public network. The EUT is powered by internal batteries and USB.

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. 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
OM_01	EUT ON. BLE OFF. Charging batteries. Power supply: 5Vdc (by USB). Internal battery: 3.7Vdc.

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. 15.107 and 15.207 & ICES-003 Issue 6 (April 2019).	ANSI C63.4 (2014)	Radiated emission

Test Cases Details

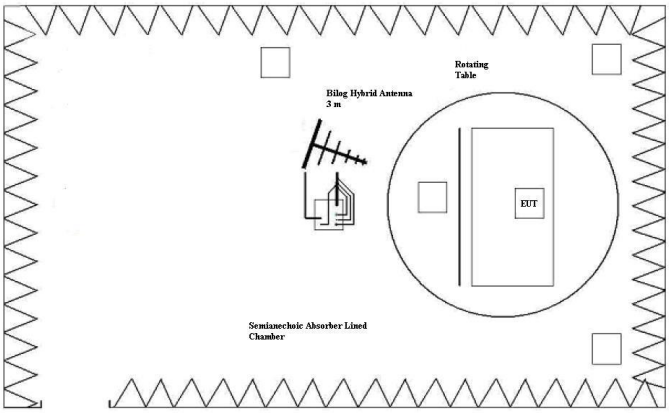
FCC CFR 47, Part 15, Subpart B (10-1-19 Edition), Sec. 15.109 & ICES-003 Issue 6 (April 2019)

RE Radiated emission

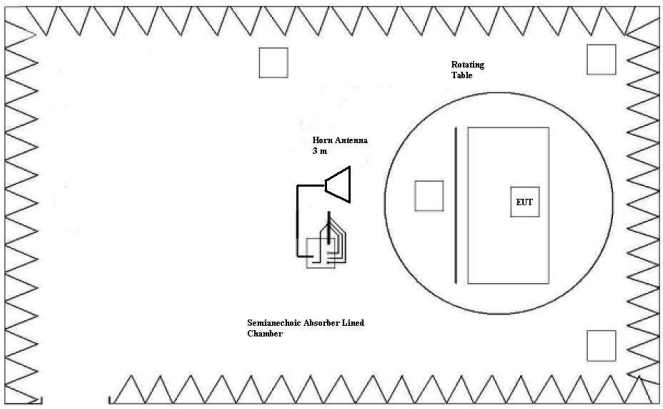
Limits of interference Class B

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 limit (microvolt/meter) (QuasiPeak Detector)
30-88	100
88-216	150
21-960	200
Above 960	500
*Above 1GHz, the limit is defined for an AVG detector.	



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

RESULTS

CRmmnnRR	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR	Range: 1 GHz – 17 GHz.	P
CR0101HR2	Range: 17 GHz – 40 GHz.	N/A*

mm: Sample number; nn: Operation mode; RR: Measurement range.

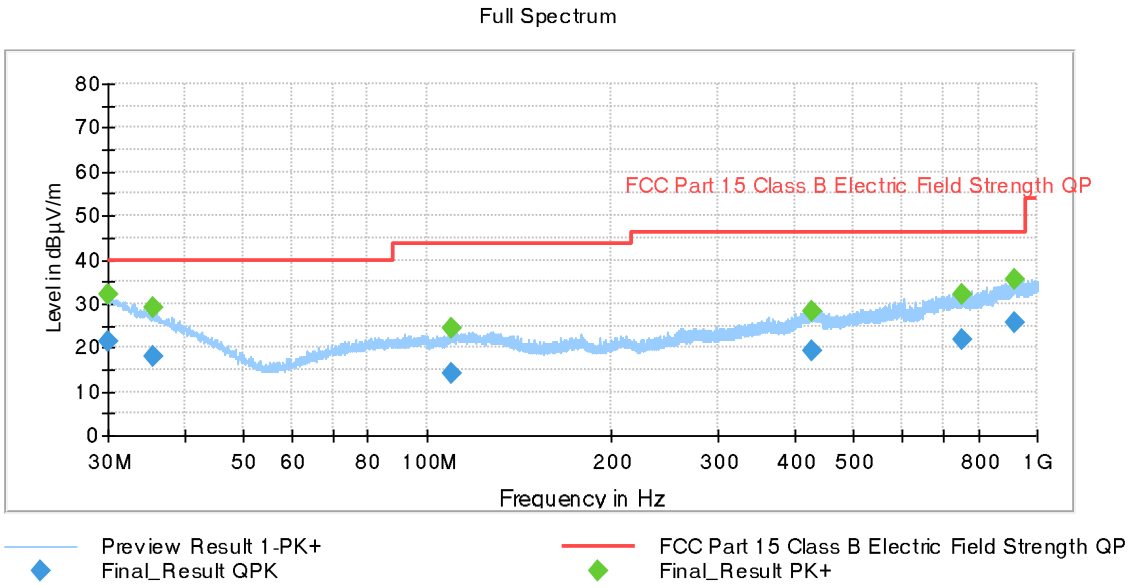
*According to FCC 47 CFR Part 15B / ICES-003 Issue 6, this measurement is only needed up to the fifth harmonic of the internal working frequency.

VERDICT

Pass

Images:

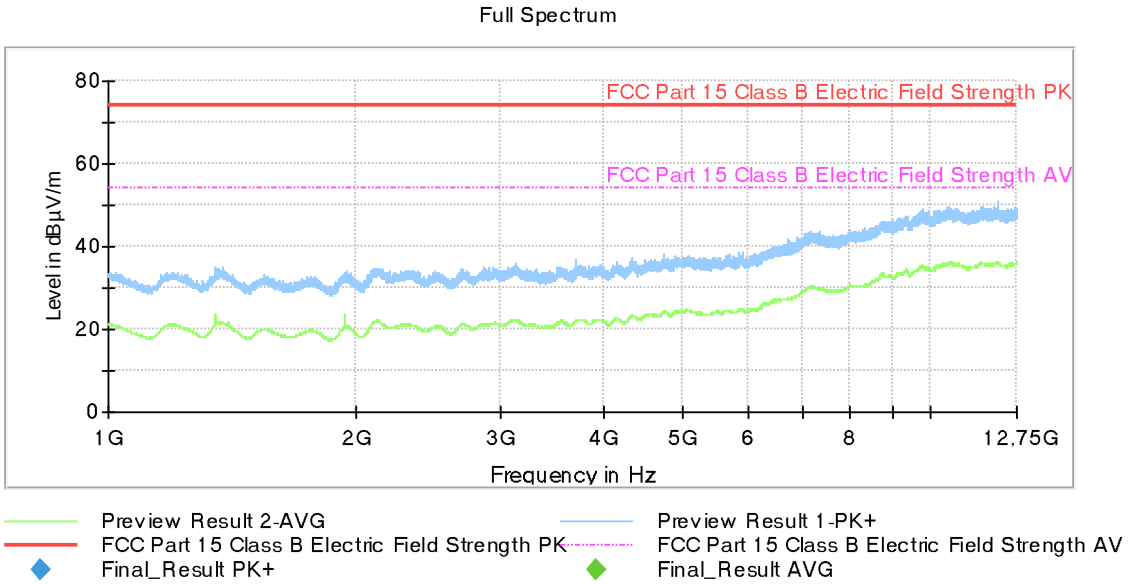
Project:	66727REM.002
Company:	SVEP DESIGN CENTER AB
Sample:	S/01
Operation mode:	01
Graphical code:	RE0101LR
Description:	EUT ON. BLE OFF. Charging batteries. Power supply: 5Vdc (vía USB). Internal battery: 3.7Vdc.
Verdict:	Passed



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
30.097760	21.56	---	40.00	18.44	309.0	V	73.0
30.097760	---	32.05	---	---	309.0	V	73.0
35.549000	17.85	---	40.00	22.15	350.0	V	259.0
35.549000	---	29.15	---	---	350.0	V	259.0
109.340000	14.06	---	43.52	29.46	246.0	V	60.0
109.340000	---	24.22	---	---	246.0	V	60.0
428.240000	19.05	---	46.00	26.95	182.0	H	79.0
428.240000	---	28.43	---	---	182.0	H	79.0
751.616000	---	32.13	---	---	364.0	H	273.0
751.616000	21.63	---	46.00	24.37	364.0	H	273.0
918.721000	---	35.40	---	---	377.0	H	114.0
918.721000	25.47	---	46.00	20.53	377.0	H	114.0

Project:	66727REM.002
Company:	SVEP DESIGN CENTER AB
Sample:	S/01
Operation mode:	01
Graphical code:	RE0101HR
Description:	EUT ON. BLE OFF. Charging batteries. Power supply: 5Vdc (vía USB). Internal battery: 3.7Vdc.
Verdict:	Passed



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)
---	---	---	---	---