

Test report No:
NIE: 70982REM.002

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-20 Edition) & ICES-003 Issue 7 (October 2020)

(*) Identification of item tested	OCS Lock
(*) Trademark	Ojmar
(*) Model and /or type reference	OCS SMART
Other identification of the product	FCC ID: 2ANY7OJM005 HW version: 5.3 SW version: 3.0.0
(*) Features	Bluetooth low energy
Manufacturer	OJMAR S.A. Pol. Indus. de Lerun s/n 20870 Elgoibar (Gipuzkoa)
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-20 Edition) & ICES-003 Issue 7 (October 2020)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael Lopez Martín EMC Consumer & RF Lab. Manager
Date of issue	2022-06-09
Report template No	FDT08_24 (* "Data provided by the client")



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Acronyms

Acronym ID	Acronym Description
Code	EMC Test Code
Freq Rng	Frequency Range
MP	Measurement Point
OM	Operation Mode
S/	Sample
V	Verdict

Competences and guarantees

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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 $I = \pm 3,9$ dB for quasi-peak measurements, $I = \pm 3,2$ dB for peak measurements ($k = 2$).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 12.75 GHz is $I = \pm 2,6$ 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").
2. The sample consists of an electronic lock powered by battery which is used to close lockers.

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 undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	70982B_11.1	Intelligent locking systems	OCS	--	2022-03-28	Element Under Test
S/01	70982B_12.1	keyboard	OCS	1	2022-03-28	Element Under Test
S/01	70982B_13.1	Sample Holder	--	--	2022-03-28	Auxiliary Element

Notes referenced to samples during the project.

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
.....	[]	[]	[]	[]		
Supplementary information to the ports..... :						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	[]	AC:	[]	[]	[]	[]	[]
[]	DC:						
Rated Power	Battery						
Clock frequencies..... :	32 MHz						
Other parameters						
Software version						
Hardware version						
Dimensions in cm (W x H x D):						
Mounting position	[]	Table top equipment					
	[]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[]	Hand-held equipment					
	[]	Other:					
Modules/parts..... :	Module/parts of test item		Type	Manufacturer			
			
Accessories (not part of the test item)	Description		Type	Manufacturer			
			
Documents as provided by the applicant..... :	Description		File name	Issue date			
			

⁽³⁾ Only for Medical Equipment

Identification of the client

OJMAR S.A.
Pol. Indus. de Lerun s/n 20870 Elgoibar (Gipuzkoa)

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2022-04-13
Date (finish)	2022-04-13

Document history

Report number	Date	Description
70982REM.002	2022-06-09	First release

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. = 860mbar Max. = 1060mbar

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. = 860mbar Max. = 1060mbar

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. = 860mbar Max. = 1060mbar

Remarks and comments

The tests have been performed by the technical personnel: Juan Manuel Pino Blanco.

Testing verdicts

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

List of equipment used during the test

Control No.	Equipment	Model	Manufacturer	Next Calibration
6666	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2024-03-04
6607	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2023-04-28
5779	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2023-04-28
0246	HORN ANTENNA 1-18GHz	11966E	HEWLETT PACKARD	2024-11-12
6815	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2025-03-04
4659	PRE-AMPLIFIER G>28dB 1-18GHz	BBV 9718	SCHWARZBECK	2022-07-09
7614	SEMIANECHOIC ABSORBER LINED CHAMBER V	FACT 3 200 STP	ETS LINDGREN	--
4848	EMC/RF MEASUREMENT SOFTWARE	EMC32	ROHDE AND SCHWARZ	--

Summary

Test Specification.	Requirement – Test case	Verdict	Remark
FCC CFR 47, Part 15, Subpart B (10-1-20 Edition) & ICES-003 Issue 7 (October 2020)	RE Radiated emission. Electromagnetic field measure	P	--
	CE Continuous conducted emission	N/A	(1)
<u>Supplementary information and remarks:</u> (1) Not applicable according to standard. DC powered equipment by batteries.			

Appendix A: Test results

Appendix A content

DESCRIPTION OF THE OPERATION MODES	13
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FCC CFR 47, PART 15, SUBPART B (10-1-20 EDITION) & ICES-003 ISSUE 7 (OCTOBER 2020)	15
<i>RE Radiated emission. Electromagnetic field measure</i>	15

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:

Id	Description
OM/01	EUT ON. Bluetooth RX in mode. Power supply: Internal battery.

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 (10-1-20 Edition) & ICES-003 Issue 7 (October 2020)	ANSI C63.4 (2014)	RE Radiated emission.

Test Cases Details

FCC CFR 47, Part 15, Subpart B (10-1-20 Edition) & ICES-003 Issue 7 (October 2020) RE Radiated emission. Electromagnetic field measure

Limits of interference Class B

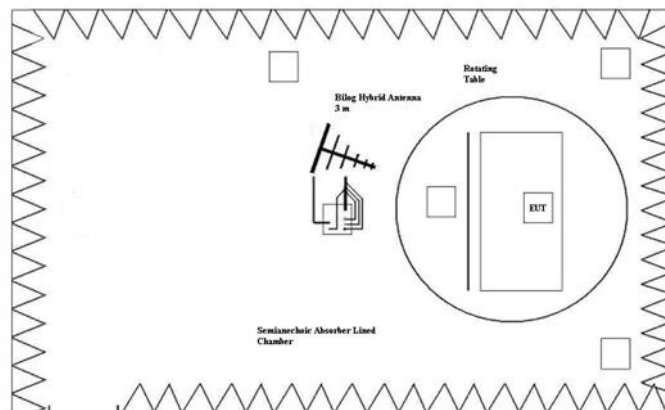
The applied limit for radiated emissions, 3 m distance, according to the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-20 Edition), Secs. 15.109 & ICES-003 Issue 7 (October 2020)

Frequency range (MHz)	FCC Part 15B		ICES-003 Issue 7		FCC Part 15B & ICES-003 Issue 7	
	QP Limit for 3 m		QP Limit for 3 m		PK Limit for 3 m	AVG Limit for 3 m
	($\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)	($\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)
30 to 88	100	40	100	40	---	---
88 to 216	150	43.5	150	43.5	---	---
216 to 230	200	46	200	46	---	---
230 to 960	200	46	224	47	---	---
960 to 1000	500	54	500	54	---	---
Above 1000	---	---	---	---	74	54

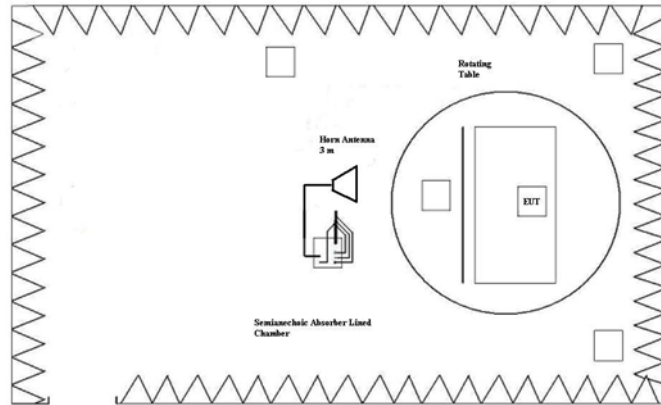
NOTE: FCC QP and AVG limits are in concordance with RSS-Gen Issue 5 (March 2019), Secs. 7.1 and 7.3.

Limits according to FCC Part 15B, are equal or more stringent than those of ICES-003 Issue 7.

Setup for measurements



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

Results

S/	OM	Code	Freq Rng (MHz)	V
01	OM/01	RE0101HR	[1000, 12750]	P
01	OM/01	RE0101LR	[30, 1000]	P

Verdict

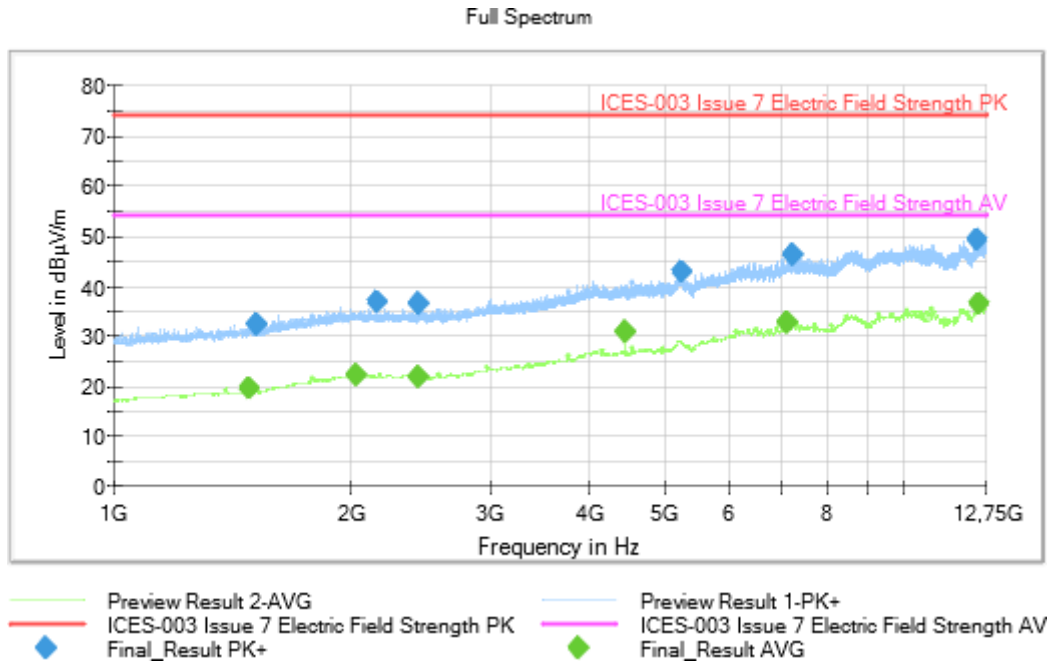
P

EMC Test Code = RE0101HR, Frequency Range MHz = [1000, 12750]

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Bluetooth RX in mode. Power supply: Internal battery.

Images:



Tables:

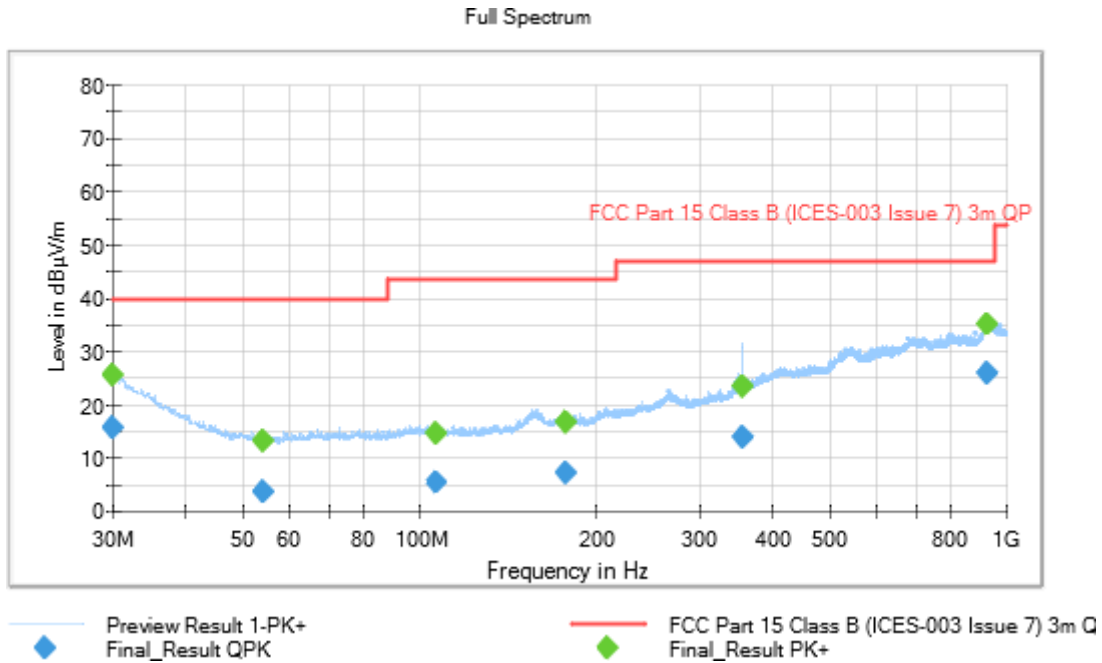
Frequency(MHz)	MaxPeak(dBµV/m)	Average(dBµV/m)	Limit(dBµV/m)	Margin(dB)
1485.200000	---	19.39	53.97	34.58
1516.800000	32.43	---	73.97	41.54
2034.400000	---	22.28	53.97	31.69
2150.000000	36.84	---	73.97	37.13
2426.000000	36.50	---	73.97	37.47
2426.000000	---	21.92	53.97	32.05
4454.800000	---	30.81	53.97	23.16
5237.200000	42.75	---	73.97	31.22
7142.400000	---	32.69	53.97	21.28
7235.600000	46.11	---	73.97	27.86
12380.800000	49.19	---	73.97	24.78
12502.000000	---	36.46	53.97	17.51

EMC Test Code = RE0101LR, Frequency Range MHz = [30, 1000]

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Bluetooth RX in mode. Power supply: Internal battery.

Images:



Tables:

Frequency(MHz)	QuasiPeak(dBµV/m)	MaxPeak(dBµV/m)	Limit(dBµV/m)	Margin(dB)	Height(cm)	Pol	Azimuth(deg)
30.037730	---	25.47	---	---	140.0	V	276.0
30.037730	15.47	---	40.00	24.53	140.0	V	276.0
54.195000	3.69	---	40.00	36.31	269.0	H	278.0
54.195000	---	13.19	---	---	269.0	H	278.0
107.090000	---	14.35	---	---	326.0	H	85.0
107.090000	5.20	---	43.52	38.32	326.0	H	85.0
177.367000	---	16.80	---	---	253.0	H	160.0
177.367000	7.06	---	43.52	36.46	253.0	H	160.0
355.420000	13.73	---	47.00	33.27	185.0	H	76.0
355.420000	---	23.33	---	---	185.0	H	76.0
931.478000	---	35.20	---	---	204.0	H	300.0
931.478000	25.86	---	47.00	21.14	204.0	H	300.0