DEKRA Testing and Certification, S.A.U.
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2 · 29590 Campanillas · Málaga · España
C.I.F. A29 507 456

Test report No:
NIE: 65597REM.002

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	OCS Lock
(*) Trademark	Ojmar
(*) Model and /or type reference	Model - OCS Smart Type - 5010
Other identification of the product	HW version: 1.0 SW version: 1.0 FCC ID: 2ANY7OJM003
(*) Features	Not provided data
Manufacturer	OJMAR, S.A. Pol. Ind. De Lerun, s/n. 20870. Elgoibar (Guipuzcoa) Spain.
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 Martín EMC Consumer & RF Lab. Manager  RAFAEL LÓPEZ MARTÍN 2021.02.16 08:29:39 +01'00'
Date of issue	2021-02-15
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.

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 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"

2. The sample consists of an electronic lock powered by battery which is used to close lockers. The lock is composed by two blocks. The outside block has a buzzer, a Led and a keyboard. The inside block has the battery and a locking system that works with a motor.

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 Nº	Date of Reception	Application
S/01	64682_03	OCS Lock	OCS SMART	---	2020-09-09	Element under test
S/01	64682_08	Electronic keyboard	---	---	2020-09-09	Element under test

Notes referenced to samples during the project.

Id	Note
	N/A

Test sample description

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:						
	X	DC: 6Vdc. (4 x 1.5Vdc internal batteries)						
Rated Power .....:	Battery						
Clock frequencies.....:	32MHz						
Other parameters .....:	Not provided data						
Software version .....:	1.0						
Hardware version .....:	1.0						
Dimensions in cm (W x H x D) ....:	Not provided data						
Mounting position .....:		Table top equipment					
		Wall/Ceiling mounted equipment					
		Floor standing equipment					
		Hand-held equipment					
	X	Other: Lock mounted in a door.					
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

OJMAR, S.A.
Pol. Ind. De Lerun, s/n. 20870. Elgoibar (Guipuzcoa) Spain.

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-09-09
Date (finish)	2020-09-09

Document history

Report number	Date	Description
65597REM.002	2020-11-25	First release
65597REM.002A1	2021-02-15	Second release. Photographs are separated from the rest of the report,

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. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: Daniel López.

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
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) Not applicable According to standard. Equipment is Battery powered.

Appendix A: Test results

Appendix A context

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 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. Electronic lock activated, at locked position and status LED blinking red. Power supply: 6Vdc. (4 x 1.5Vdc internal batteries)

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

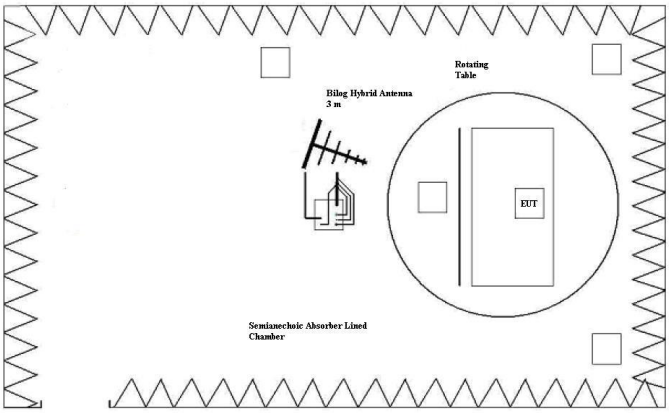
FCC CFR 47, Part 15, Subpart B (10-1-19 Edition), Sec. 15.109 & ICES-003 Issue 6 (April 2019)

RE Radiated emission

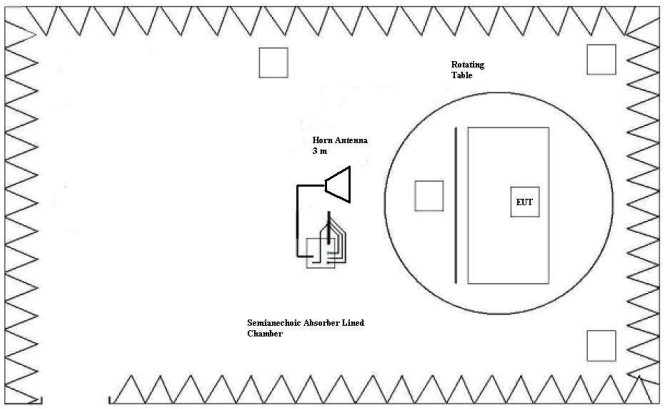
Limits of interference Class B

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 (microvolt/meter)
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_PP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR_PH	Range: 1 GHz – 12.75 GHz. Horizontal Polarization.	P
CR0101HR_PV	Range: 1 GHz – 12.75 GHz. Vertical Polarization.	P

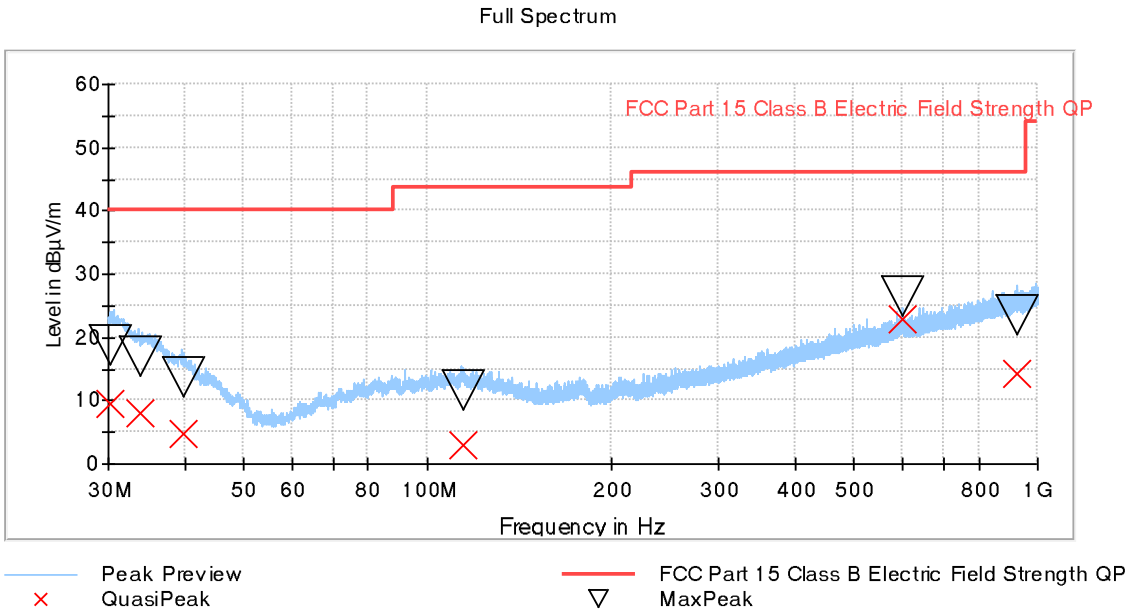
mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

VERDICT

Pass

Images:

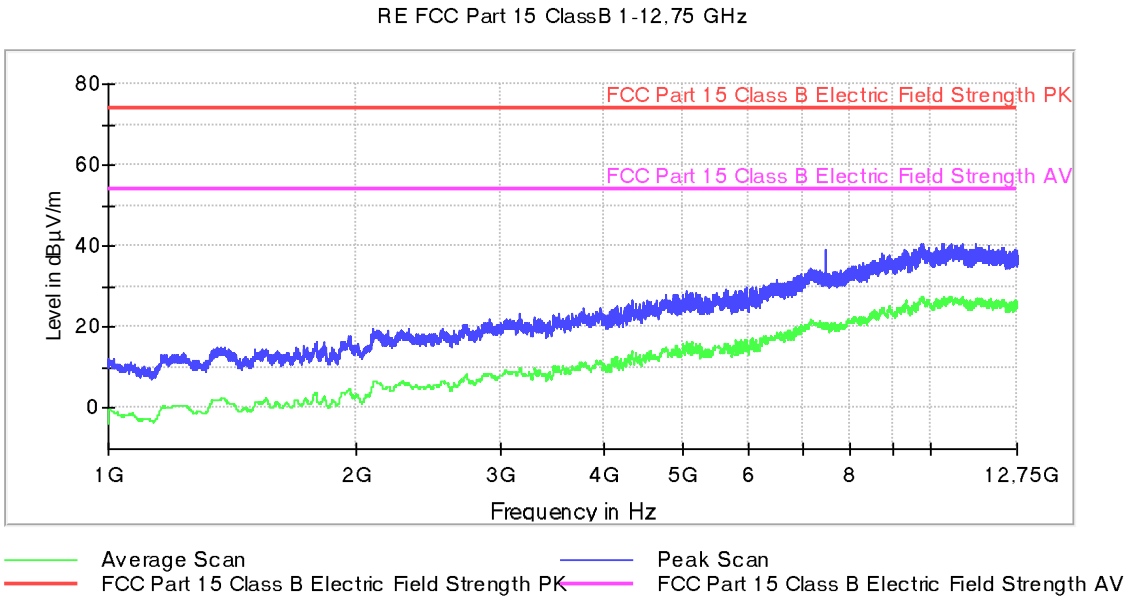
Project:	65597REM.002
Company:	OJMAR S.A.
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Electronic lock activated, at locked position and status LED blinking red. Power supply: 6Vdc. (4 x 1.5Vdc internal batteries)



Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
30.209720	9.39	18.61	40.00	30.61	194.0	H	216.0
33.782000	8.01	16.87	40.00	31.99	248.0	V	110.0
39.900000	4.74	13.53	40.00	35.26	125.0	H	270.0
114.063000	2.92	11.67	43.52	40.60	382.0	V	222.0
600.000000	23.00	26.35	46.00	23.00	346.0	H	160.0
923.154000	14.30	23.61	46.00	31.70	296.0	V	218.0

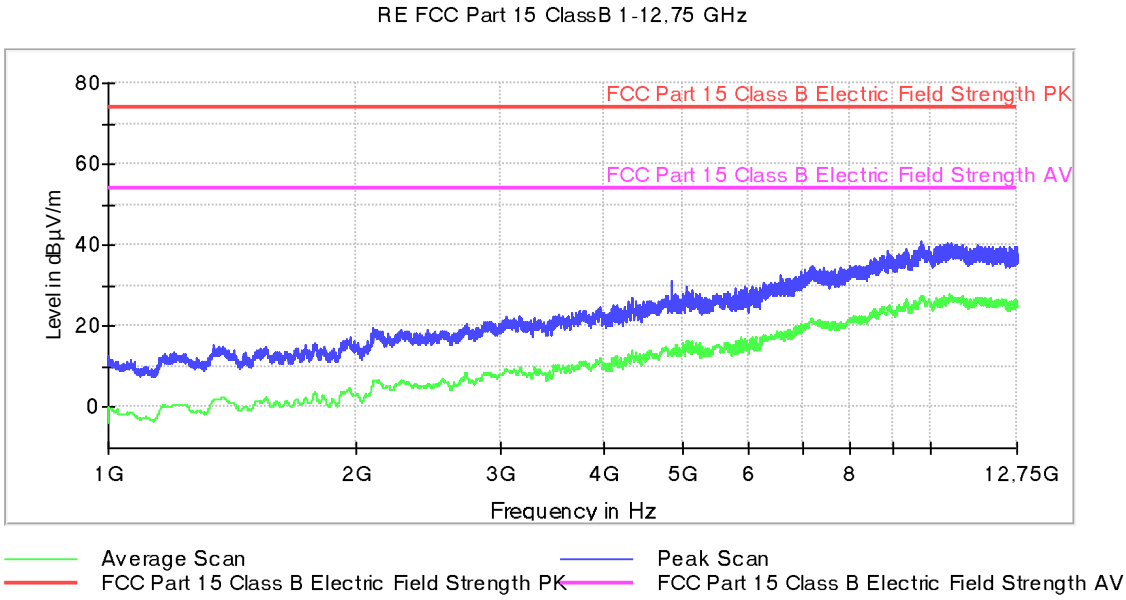
Project:	65597REM.002
Company:	OJMAR S.A.
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Electronic lock activated, at locked position and status LED blinking red. Power supply: 6Vdc. (4 x 1.5Vdc internal batteries).Horizontal Polarization.



Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1232.000000	13.4	0.6
1386.400000	15.2	2.1
2101.600000	19.7	6.4
2708.000000	20.8	7.3
3527.600000	23.3	10.5
4330.800000	26.9	13.9
5628.000000	29.5	15.9
7440.800000	39.0	20.5
9774.800000	40.7	27.4
10969.600000	40.7	26.9

Project:	65597REM.002
Company:	OJMAR S.A.
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Electronic lock activated,at locked position and status LED blinking red. Power supply: 6Vdc. (4 x 1.5Vdc internal batteries).Vertical Polarization.



Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1203.600000	13.9	0.8
1346.000000	15.4	2.1
2098.800000	19.5	6.1
2731.200000	20.8	7.9
3528.400000	23.1	10.5
4334.800000	27.3	14.1
4854.400000	31.1	14.1
7201.600000	34.9	21.3
9769.600000	41.2	27.6
10580.400000	40.5	27.6