DEKRA Testing and Certification, S.A.U.
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2 · 29590 Campanillas · Málaga · España
C.I.F. A29507456

ISED CABid: ES1909
Lab. Company Number: 4621A

Test report No:
74608RRF.003

Test Report
USA FCC Part 15.209
CANADA RSS-Gen, RSS-210

(*) Identification of item tested	Receiver Control Unit
(*) Trademark	LID Technologies S.A.S.
(*) Model and /or type reference	21191
Other identification of the product	N/A
(*) Features	433.92 MHz Receiver, 125 KHz Transceiver HW version: 321-191-0090-C SW version: 1.2
Applicant	LID Technologies S.A.S. 3 rue Giotto, Parc Technologique du Canal, 31520 Ramonville-Saint-Agne, FRANCE
Test method requested, standard	USA FCC Part 15.209 (10–1–19 Edition): Radiated emission limits, general requirements. CANADA RSS-Gen Issue 5 (March 2019) Amendment 1. General Requirements for Compliance of Radio Apparatus. CANADA RSS-210 Issue 10 (December 2019). ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager Firmado digitalmente por 53680346W JOSE MANUEL GOMEZ (C:A29507456)
Date of issue	2024-01-30
Report template No	FDT08_22 (*) "Data provided by the client"

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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 a FCC-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report.

DEKRA Testing and Certification is an ISED-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test 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.

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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 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.

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 the 21191 model (Receiver Control Unit, RCU). The RCU is designed to be located on passenger vehicles, and receives data supplied by Wheel Unit Sensors and Key for unlocking and immobilization. It is powered by the 12V vehicle battery.

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	74608B_1.1	Receiver Control Unit Radiated	21191	B96CBFFD	2023-04-10	Element Under Test
	74608B_10.1	Key and lock	--	--	2023-04-10	Auxiliary element
	74608B_11.1	Harness	--	--	2023-04-10	Auxiliary element
	74608B_14.1	Device electronic	--	--	2023-04-10	Auxiliary element

Notes referenced to samples during the project:

Id	Type
S/01	Test sample used for testing.

Test sample description

Ports…… :	Port name and description	Cable			
		Specified max length [m]	Attached during test	Shielded	Coupled to patient(3)
	Power, LF and CAN	2	[X]	[ ]	[ ]

Supplementary information to the ports…… :	.....					
Rated power supply .....:	Voltage and Frequency		Reference poles			
			L1	L2	L3	N	PE
	[ ]	AC:	[ ]	[ ]	[ ]	[ ]	[ ]
	[X]	DC: Nominal 12V					
	[X]	DC: Tolerated 8-18V					
Rated Power .....:	--						
Clock frequencies.....:	16.00 MHz, 24.00 MHz						
Other parameters .....:	--						
Software version .....:	1.2						
Hardware version .....:	321-191-0090-C						
Dimensions in cm (W x H x D) ....:	9.5 x 8.8 x 3.2 cm						
Mounting position .....:	[ ]	Table top equipment					
	[ ]	Wall/Ceiling mounted equipment					
	[ ]	Floor standing equipment					
	[ ]	Hand-held equipment					
	[X]	Other: mounted on vehicle					

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
	RCU Gen2 21191	EUT	LID Technologies
Accessories (not part of the test item) .....:	Description	Type	Manufacturer
	Harness for Power and communication with DUT	Cable with connectors	LID Technologies
Documents as provided by the applicant .....:	Description	File name	Issue date
	Quick Guide	321-191-Z052_Quick_Guide	22/11/2023
	Product description	321-191-Z053_Product_Description	22/11/2023

(3) Only for Medical Equipment

Identification of the client

LID Technologies S.A.S.

3 rue Giotto, Parc Technologique du Canal, 31520 Ramonville-Saint-Agne,

FRANCE

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2024-01-09
Date (finish)	2024-01-11

Document history

Report number	Date	Description
74608RRF.003	2024-01-30	First release

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: Carmen Vázquez, Sergio Carrasco, Rafael Fernández and Valentín Andarias.

Control No.	Equipment	Model	Manufacturer	Next Calibration
4825	SEMIANECHOIC ABSORBER LINED CHAMBER	FACT 3 200 STP	ETS LINDGREN	N/A
4826	SHIELDED ROOM	S101	ETS LINDGREN	N/A
0242	ACTIVE LOOP ANTENNA 9 KHZ-30 MHz	11966A	HEWLETT PACKARD	2024-08-18
6165	EMI TEST RECEIVER 9kHz-7GHz	ESR7	ROHDE AND SCHWARZ	2025-12-27
6793	SHIELDED ROOM	S101	ETS LINDGREN	N/A
4773	H FIELD LOOP PROBE 6 cm UP TO 790MHz	7405-901	ETS LINDGREN	N/A
6668	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2024-12-14
0922	POWER SUPPLY DC 40V/40A	NGPE 40/40	ROHDE AND SCHWARZ	N/A
5850	DIGITAL MULTIMETER	FLUKE	179	2024-11-02

Testing verdicts

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

Summary

1. SRD 125 kHz.

FCC PART 15.209 / RSS-210 PARAGRAPH Requirement – Test case	Verdict	Remark
Occupied bandwidth	P	
FCC 15.209 (a) / RSS-210 7.3. Transmitter emission limits	P	
Supplementary information and remarks: None.		

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TEST CONDITIONS

POWER SUPPLY (V):

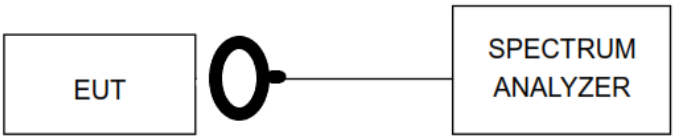
Vnominal:	12 Vdc
Type of Power Supply:	External DC (Car Battery).
Type of Antenna:	Schaffner 810981 LC resonant antenna (external)

TEST FREQUENCIES:

Nominal Operating Frequency: 125 kHz

CONDUCTED MEASUREMENTS

The equipment under test EUT was set up in a shielded room and it is connected to the spectrum analyzer through a RF cable and a coupling device.



Coupling device

RADIATED MEASUREMENTS

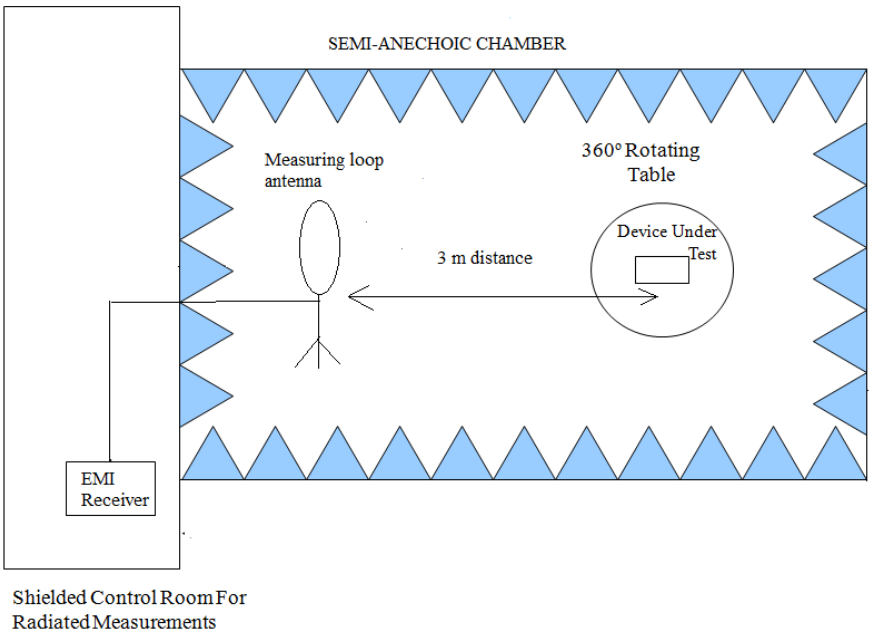
All radiated tests were performed in a semi-anechoic chamber. The measuring antenna is situated at a distance of 3 m (Loop antenna for the range between 9 kHz to 30 MHz).

For radiated emissions in the range 9 kHz to 30 MHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 40 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

In the range between 9 kHz and 30 MHz the measurements were made in the three different orientation planes of the loop antenna to determine the maximum received field.

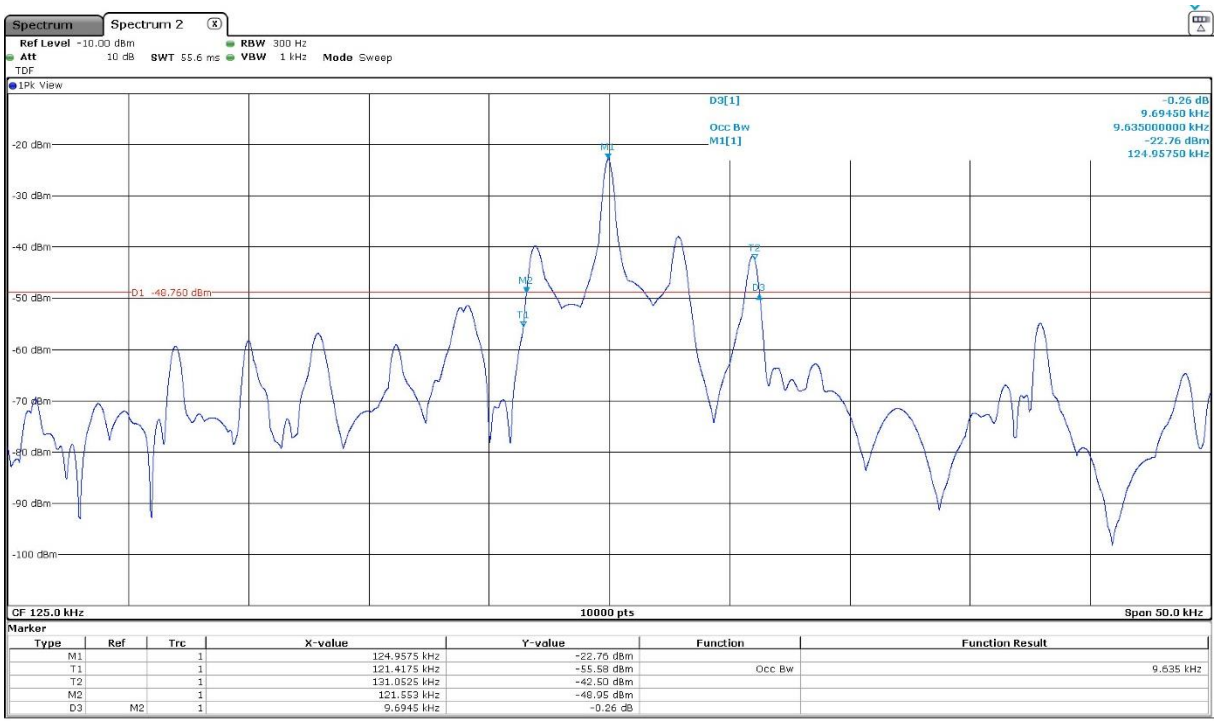
Radiated measurements setup f < 30 MHz:



Occupied Bandwidth

RESULTS:

99% Bandwidth (kHz)	9.6350
-26 dB Bandwidth (kHz)	9.6945
Measurement uncertainty (kHz)	<±0.50



FCC 15.209 (a) / RSS-210 7.3. Transmitter emission limits

SPECIFICATION:

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table (see §15.205(c) / RSS-Gen):

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	29.54	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

RESULTS:

All tests were performed in a semi-anechoic chamber at a distance of 3 m.

The spectrum was inspected from 9 kHz to 30 MHz searching for spurious signals.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyser. This correction factor includes antenna factor and cable loss.

Frequency range 9 kHz - 30 MHz:

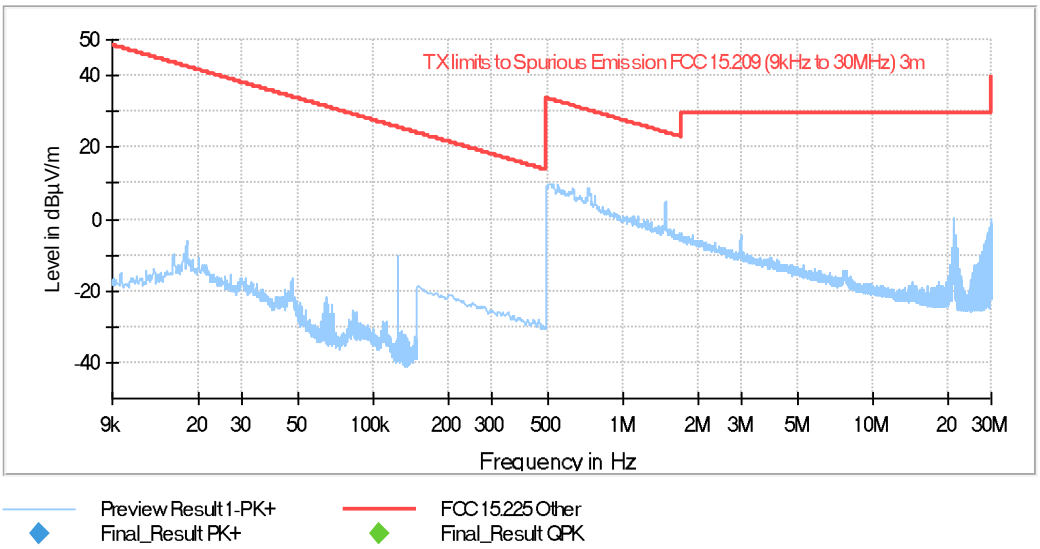
No spurious frequencies detected at less than 20 dB below the limit.

The maximum field strength of fundamental emission:

Frequency (kHz)	Maximum field strength (dBµV/m) measured at 3 m (quasi-peak detector)	Limit (dBµV/m)
125.00	-9.88	25.66

Verdict: PASS

FREQUENCY RANGE 9 kHz - 30 MHz:



Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
Receiver: [ESW 44]					
9 kHz - 150 kHz	50 Hz	PK+	200 Hz	0,1 s	0 dB
150 kHz - 30 MHz	2,25 kHz	PK+	9 kHz	0,1 s	0 dB

Note: The scan is performed with a peak detector. The peaks closest to the limit are re-measured with the detector type as specified in FCC 15.209.

The limits shown in the above plot are measured at 3 meters. The highest peak (125 kHz) corresponds to the carrier level.