

RF Exposure Evaluation Report

Product : Relay Box
Trade mark : Ring
Model/Type reference : RSUCPU
Serial Number : N/A
Report Number : EED32L00265002
FCC ID : 2AUOBRSUCPU
Date of Issue : Aug. 10, 2020
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01v06
Test result : PASS

Prepared for:
Ring Automotive
Gelderd Road, Leeds, LS12 6NA, UK.

Prepared by:
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Aug. 10, 2020

Check No.:3915681977



2 Version

Version No.	Date	Description
00	Jan. 14, 2020	Original
01	Aug. 10, 2020	Retest Field Strength Of The Fundamental Signal

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4 General Information

4.1 Client Information

Applicant:	Ring Automotive
Address of Applicant:	Gelderd Road, Leeds, LS12 6NA, UK.
Manufacturer:	Zhejiang Leiya Electronics Co., Ltd.
Address of Manufacturer:	No.519, Fifteen Road, Binhai Park, Econ and Technological Development Zone, Wenzhou City, P.R. China
Factory:	Zhejiang Leiya Electronics Co., Ltd.
Address of Factory:	No.519, Fifteen Road, Binhai Park, Econ and Technological Development Zone, Wenzhou City, P.R. China

4.2 General Description of EUT

Product Name:	Relay Box
Model No.(EUT):	RSUCPU
Trade Mark:	Ring
EUT Supports Radios application	2401MHz to 2479MHz

4.3 Product Specification subjective to this standard

Frequency Range:	2401MHz~2479MHz		
Modulation Type:	GFSK		
Number of Channels:	28 (declared by the client)		
Test Power Grade:	Default		
Test Software of EUT:	Default		
Antenna Type:	PCB antenna		
Antenna Specification	Antenna Gain -5.00 dBi (Numeric 0.32)		
Max. EIRP	92.26 dBμV/m (-2.97 dBm)		
	The EIRP data refer to the report EED32L00265001		
Max. conducted power	2.03dBm		
Power Supply:	DC12V		
Sample Received Date:	Sep. 17, 2019		
Sample tested Date:	Sep. 17, 2019 to Aug. 10, 2020		
The tested sample(s) and the sample information are provided by the client.			

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4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
1	2401	1.596	0.32	20	0.00010	1

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00265001 for EUT external and internal photos.

*** End of Report ***

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.