

Test Report

Verified code: 952349

Report No.: E202409271682-5EN

Customer: Kostal (shanghai) Management Co.Ltd

Address: No.189 Xingting Road, Jiading District, Shanghai, P.R.China

Sample Name: Keyfob

Sample Model: SCW-433MHz

Receive Sample Date: Feb.18,2025

Test Date: Mar.11,2025 ~ Mar.25,2025

Reference Document: 47 CFR 2.1093 Radiofrequency radiation exposure evaluation: portable devices.

Test Result: Pass

Prepared by: Huang Lifang
Huang Lifang

Reviewed by: Wu Haoting
Wu Haoting

Approved by: Xiao Liang
Xiao Liang

GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2025-04-14

GRG METROLOGY & TEST GROUP CO., LTD.

Address: No.8, Chuangyun Road, Panyu District, Guangzhou, Guangdong, China

Tel: (+86) 400-602-0999 FAX: (+86) 020-38698685 Web: <http://www.grgtest.com>



Statement

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5. This testing report is only for scientific research, teaching, internal quality control, etc.

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202409271682-5EN	Original Issue	2025-03-27

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1. GENERAL DESCRIPTION OF EUT

1.1 APPLICANT

Name: Kostal (shanghai) Management Co.Ltd

Address: No.189 Xingting Road, Jiading District, Shanghai, P.R.China

1.2 MANUFACTURER

Name: Kostal (shanghai) Management Co.Ltd

Address: No.189 Xingting Road, Jiading District, Shanghai, P.R.China

1.3 FACTORY

Name : Kostal (shanghai) Management Co.Ltd

Address : No.189 Xingting Road, Jiading District, Shanghai, P.R.China

1.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: Keyfob

Product Model: SCW-433MHz

Adding Model: /

Model Difference: /

Trade Name: KOSTAL

Power Supply: DC 3V

Battery Specification: Model: CR2032
Nominal Voltage: 3Vdc

Frequency Band: 433.92MHz

FCC ID: 2AYAR2024HZZW

Antenna Type: PCB Antenna

Modulation type: FSK

Sample submitting way: ☒ Provided by customer ☐ Sampling

Sample No: E202409271682-0002, E202409271682-0006, E202409271682-0008

Temperature Range: -40°C ~ +85°C

1. The EUT information is provided by the applicant. This report is made solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions.
2. There has four different vehicle logo to show on the Keyfob, the difference between of them only the Silk screen logo, the same technical construction including circuit diagram, PCB LAYOUT, hardware version and software version identical.

Note:

Product name	Model	Brand	Vehicle logo	KOSTAL part number
Keyfob	SCW-433MHz	KOSTAL	CITROEN	9873097580
			OPEL	9873097080
			VAUXHALL	9873097480
			FIAT	9873097180

After evaluation, the difference do not affect test results, so the Vehicle logo CITROEN was tested in this report.

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2. LABORATORY AND MEASUREMENT UNCERTAINTY

2.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST group CO., LTD.

Add : No.1301 Guangang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China

P.C. : 518110

Tel : 0755-61180008

Fax : 0755-61180008

2.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

USA A2LA(Certificate #2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada ISED (Company Number: 24897, CAB identifier:CN0069)

USA FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
<http://www.grgtest.com>

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3. TECHNICAL REQUIREMENTS SPECIFICATION

3.1 TEST LIMIT

According to the KDB 447498 D04 Interim General RF Exposure Guidance v01, Per § 1.1307(b)(3)(i)(A), a single RF source is exempt RF device (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1mW, regardless of separation distance. This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.

As discussed in § 1.1307(b)(3)(ii)(A), the 1-mW exemption intended for single transmitters may be also applied to simultaneous transmission conditions, within the same host device, according one of the following criteria:

- a) When maximum available power each individual transmitting antenna within the same time averaging period is ≤ 1 mW, and the nearest parts of the antenna structures of the simultaneously operating transmitters are separated by at least 2 cm.
- b) When the aggregate maximum available power of all transmitting antennas is ≤ 1 mW in the same time-averaging period.

This exemption may not be combined with any other exemption.

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3.2 TEST RESULT

Frequency Band	Antenna	Antenna type	Maximum antenna gain
433.92MHz	Antenna 1	PCB antenna	-2.16dBi

Frequency Band	Antenna	Maximum E-Field at 3m (dB μ V/m)	Output power (dBm)	Output power (mW)	Limit (mW)
433.92MHz	Antenna 1	81.8	-13.43	0.05	1

Note:

1. 433.92MHz: $EIRP = E(dB\mu V/m) @ 3m + 20\log(d) - 104.77 = 81.8 + 20\log(3) - 104.77 = -13.43$ dBm;
 $mW = 10^{(EIRP/10)} = 10^{(-13.43/10)} = 0.05$ mW;
2. The EUT antenna gain is provided by the applicant. This report is made solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions.
3. The Maximum E-Field please refer to the report E202409271682-4EN.
The output power is less than 1mw, the measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure of mobile device.

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PHOTOGRAPHS OF THE EUT

Please refer to the attached document E202409271682-EUT photo.

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