

Test Report

Verified code: 505014

Report No.: E202409271682-2EN

Customer: Kostal (shanghai) Management Co.Ltd

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

Sample Name: PEPS

Sample Model: SCW-433MHz

Receive Sample Date: Feb.18,2025

Test Date: Mar.17,2025 ~ Mar.21,2025

Reference Document: 47 CFR 2.1091 Radio frequency radiation exposure evaluation:mobile devices.

Test Result: Pass

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GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2025-04-15

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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	E202409271682-2EN	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: PEPS
Product Model: SCW-433MHz
Adding Model: /
Model Difference: /
Trade Name: KOSTAL
Power Supply: DC 9-16V
Frequency Band: 125kHz
FCC ID: 2AYARZWFR1020NCE
Antenna Type: External Antenna
Antenna 1: LF Antenna with high performance(in the driver door)
Antenna 2: LF Antenna with high performance(in the passenger door)
Antenna 3: LF Antenna with IMMO(under the cup holder)
Antenna 4: LF antenna(on the rear bumper)
Modulation type: ASK for 125kHz
Sample submitting way: ☒ Provided by customer ☐ Sampling
Sample No: E202409271682-0007
Temperature Range: -40℃ ~ +80℃

Hardware version: 002

Software version: C01

Note:

1. The basic description of the EUT 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. The smart antenna of EUT can not transmit simultaneously, it can switch four antennas intelligently and only one antenna transmits.

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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.

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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

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

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3.2 TEST RESULT

Frequency Band	Antenna	Antenna type
125kHz	Antenna 1	External Antenna
	Antenna 2	External Antenna
	Antenna 3	External Antenna
	Antenna 4	External Antenna

Antenna	Maximum E-Field at 3m (dBμV/m)	Maximum E-Field at 3m (V/m)	Maximum E-Field at 0.2m (dBμV/m)	Maximum E-Field at 0.2m (V/m)	Limit (V/m)
Antenna 1	86.44	0.02	133.48	4.72	614
Antenna 2	100.34	0.10	147.38	23.39	614
Antenna 3	95.99	0.06	143.03	14.17	614
Antenna 4	95.64	0.06	142.68	13.61	614

Note:

1. Antenna 1: Maximum E-Field@ 0.2m= $E(\text{dB}\mu\text{V/m})@3\text{m}+40\log(3/0.2) = 133.48 \text{ dB}\mu\text{V/m}$;
 2. Antenna 2: Maximum E-Field@ 0.2m= $E(\text{dB}\mu\text{V/m})@3\text{m}+40\log(3/0.2) = 147.38 \text{ dB}\mu\text{V/m}$;
 3. Antenna 3: Maximum E-Field@ 0.2m= $E(\text{dB}\mu\text{V/m})@3\text{m}+40\log(3/0.2) = 143.03 \text{ dB}\mu\text{V/m}$;
 4. Antenna 4: Maximum E-Field@ 0.2m= $E(\text{dB}\mu\text{V/m})@3\text{m}+40\log(3/0.2) = 142.68 \text{ dB}\mu\text{V/m}$;
 5. $E\text{-Field}(\text{dB}\mu\text{V/m})=20\log[E\text{-Field}(\mu\text{V/m})]$;
 6. The Maximum E-Field please refer to the report E202409271682-1EN.
 7. The four antennas of the EUT can't transmitting simultaneously.
- The output power is less than 1mW, the measurement results comply with the FCC Limit per 47 CFR 2.1091 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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