



RF Exposure Evaluation

For

Shanghai Copartner Information Technology Co., Ltd.

Smart Collar GateWay

Test Model: KCU01BC

Additional Model No.: KCU01SC、KCU01BX、KCU01SX

Prepared for : Shanghai Copartner Information Technology Co., Ltd.
Address : Room807, Building 1, No.49, Lane 299, Jiangchang West Road, Jing' An District, Shanghai

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : May 25, 2025
Number of tested samples : 2
Sample No. : A250314060-1, A250314060-2
Serial number : Prototype
Date of Test : May 25, 2025 ~ June 12, 2025
Date of Report : June 12, 2025



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Scan code to check authenticity



RF Exposure Evaluation	
Report Reference No.	LCSA03245104EB
Date of Issue	June 12, 2025
Testing Laboratory Name	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Testing Location/ Procedure	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name	Shanghai Copartner Information Technology Co., Ltd.
Address	Room807, Building 1, No.49, Lane 299, Jiangchang West Road, Jing' An District, Shanghai
Test Specification	
Standard	FCC KDB publication 447498 D01 General RF Exposure Guidance v06 FCC CFR 47 part1 1.1310 FCC CFR 47 part2 2.1091
Test Report Form No.	TRF-4-E-215 A/0
TRF Originator	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF	Dated 2011-03
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Test Item Description : Smart Collar GateWay	
Trade Mark	N/A
Test Model	KCU01BC
Ratings	Please Refer to Page 6
Result	Pass

Compiled by:

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RF Exposure Evaluation

Test Report No. : LCSA03245104EB	<u>June 12, 2025</u> Date of issue
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EUT.....	: Smart Collar GateWay
Test Model.....	: KCU01BC
Applicant.....	: Shanghai Copartner Information Technology Co., Ltd.
Address.....	: Room807, Building 1, No.49, Lane 299, Jiangchang West Road, Jing' An District, Shanghai
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Manufacturer.....	: Shanghai Copartner Information Technology Co., Ltd.
Address.....	: Room807, Building 1, No.49, Lane 299, Jiangchang West Road, Jing' An District, Shanghai
Telephone.....	: /
Fax.....	: /
Factory.....	: Shanghai Copartner Information Technology Co., Ltd.
Address.....	: Room807, Building 1, No.49, Lane 299, Jiangchang West Road, Jing' An District, Shanghai
Telephone.....	: /
Fax.....	: /

Test Result	Pass
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.





Revision History

Report Version	Issue Date	Revision Content	Revised By
000	June 12, 2025	Initial Issue	---





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1. Product Information

EUT	: Smart Collar GateWay
Test Model	: KCU01BC
Additional Model No.	: KCU01SC、KCU01BX、KCU01SX
Model Declaration	: PCB board, structure and internal of these model(s) are the same, So no additional models were tested
Ratings	: Input: 100-240V~, 50/60Hz, 0.55A Output: 12V==1.67A DC 3.7V by Rechargeable Li-ion Battery, 5000mAh
Hardware Version	: V1.0
Software Version	: V1.0
LTE	:
Support Band	: ☒ E-UTRA Band 5(U.S.-Band) ☒ E-UTRA Band 38(U.S.-Band) ☒ E-UTRA Band 41(U.S.-Band)
LTE Release Version	: R13
Type Of Modulation	: QPSK/16QAM
Antenna Description	: PIFA Antenna 5.0dBi (max.) For E-UTRA Band 5 5.0dBi (max.) For E-UTRA Band 38 5.0dBi (max.) For E-UTRA Band 41
Power Class	: Class 3
Extreme temp.	: -10°C to +50°C
Tolerance	
Extreme vol. Limits	: 3.1VDC to 4.2VDC (nominal: 3.7VDC)
Exposure category	: General population/uncontrolled environment
EUT Type	: Production Unit
Device Type	: Mobile Device

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.





2. Evaluation Method

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modelled or measured field strengths or power density, is ≤ 1.0 . The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

3. Limit

3.1 Refer Evaluation Method

[ANSI C95.1-2019](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz

[FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06](#): Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

[FCC CFR 47 part2 2.1091](#): Radiofrequency radiation exposure evaluation: mobile devices.

3.2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
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 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Uncontrolled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f ²)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

F=frequency in MHz

*=Plane-wave equivalent power density





4. MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

5. Conducted Power

[LTE Max Average Power]

Test Mode		Channel	Max Average Power (dBm)	ANT Max. Tune Up Power (dBm)
LTE	Band 5	LCH	23.32	23.0±1.0
		MCH	23.16	23.0±1.0
		HCH	23.21	23.0±1.0
	Band 38	LCH	23.72	23.0±1.0
		MCH	23.87	23.0±1.0
		HCH	23.80	23.0±1.0
	Band 41	LCH	23.04	23.0±1.0
		MCH	22.40	22.0±1.0
		HCH	21.79	21.0±1.0





7. Measurement Results

7.1 Standalone MPE Evaluation

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r=20\text{cm}$, as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm ²)	MPE Limits (mW/cm ²)	MPE ratios
	dBm	mW					
LTE Band 5	24.0	251.1886	5.0	3.1623	0.1580	0.5493	0.2876
LTE Band 38	24.0	251.1886	5.0	3.1623	0.1580	1.7133	0.0922
LTE Band 41	24.0	251.1886	5.0	3.1623	0.1580	1.6640	0.0950

Remark:

1. Output power including tune-up tolerance;
2. Output power was adjusted to duty cycle at 100% if measured duty cycle less than 98%;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer.

7.2 Simultaneous Transmission MPE Evaluation

The EUT equipped with one antenna. So no need consider simultaneous transmission.

8. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

9. Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Test Firm Registration Number: 254912.

10. Measurement Uncertainty

4G:

Test Item		Frequency Range	Uncertainty	Note
Output power	:	1GHz-40GHz	$\pm 0.57\text{dB}$	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

-----THE END OF REPORT-----

