

FCC RF Exposure Report

For

Guangzhou Skydance Co., Ltd.

1-3F, No.19, ChuangYuan Road, Zhongcun Street, Panyu District,

Guangzhou, China 511495

Model: ES-D, ES-DP, ES-D(WT), ES-DP(WT)

Test Engineer: Zeng Longhao

Report Number: WSCT-ANAB-R&E241100067A-SAR

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Check By: Jiang Xuling

Approved By: Li Huaibi

Prepared By: World Standardization Certification & Testing Group
(Shenzhen) Co., Ltd.
Building A-B, Baoli'an Industrial Park, No.58 and
60, Tangtou Avenue, Shiyao Street, Bao'an District,
Shenzhen City, Guangdong Province, China
Tel: +86-755-26996192
Fax: +86-755-86376605

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Modified History

REV.	Modification Description	Issued Date	Remark
REV.1.0	Initial Test Report Release	14 January 2025	Li Huaibi

1 General information

1.1 Notes

The test results of this test report relate exclusively to the test item specified in this test report. Shenzhen Timeway Testing Laboratories does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report is not to be reproduced or published in full without the prior written permission.

1.2 EUT Information

Device Information:	
Product Type:	Sensor Controller
Model:	ES-D,ES-DP,ES-D(WT),ES-DP(WT)
Trade Name:	Skydance
Device Type:	Single fixed
Exposure Category:	uncontrolled environment / general population
Production Unit or Identical Prototype:	Production Unit
Antenna Type :	Wire antenna
Antenna Gain:	2.5dBi.
Modulation:	GFSK
Operation Frequency:	2478MHz
Operating Voltage:	DC 24V from DC source(Product operating voltage range:5-24V)

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2. ES-D, ES-DP, ES-D(WT) and ES-DP(WT) are series models with only differences in appearance and color, while all other specifications are identical. ES-D is the main test model; Operation Frequency each of channel 2478MHz, and only a single RF source.

3. EUT built-in CBU exists 2.4GWIFI and BLE modules, but the whole machine only supports transmitting 2478MHz RF signals

2 Testing laboratory

Test Site	World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.
Laboratory A:	Building A-B, Baoli'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyang Street, Bao'an District, Shenzhen City, Guangdong Province, China
Laboratory B:	Building J-7F and Building D, Dongjiang Science & Technology Park, Tangjia Community, Fenghuang Street, Guangming District, Shenzhen City, Guangdong Province, China

3 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

CBTL	IECEE (international Electrotechnical Commission, The certificate registration number is TL672)	Laboratory A ☐
		Laboratory B ☐
China	CNAS (The certificated registration number: L3732)	Laboratory A ☐
		Laboratory B ☐
USA	A2LA (The certificated registration number: 5768.01)	Laboratory A ☐
		Laboratory B ☐
USA	ANAB (The certificated registration number: AT-3951)	Laboratory A ☒
		Laboratory B ☐

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

4 Applicant and Manufacturer

Applicant/Client Name:	Guangzhou Skydance Co., Ltd.
Applicant Address:	1-3F, No.19, ChuangYuan Road, Zhongcun Street, Panyu District, Guangzhou, China 511495
Manufacturer Name:	Guangzhou Skydance Co., Ltd.
Manufacturer Address:	1-3F, No.19, ChuangYuan Road, Zhongcun Street, Panyu District, Guangzhou, China 511495

5 Test standard/s:

No.	Identity	Document Title
1	47 CFR Part 1.1307	Actions that may have a significant environmental effect
2	47 CFR Part 15C	Intentional Radiators

6 Test Data

According to § 1.1307(b)(3)(i):

For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

- (A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
- (B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

d = the separation distance (cm);

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Since the product is a stationary RF source, test distance greater than 20cm, P_{th} (mW)=3060

Built-in CBU module 2.4GWIFI and BLE conduction power

2.4GWIFI				
Mode	Channel	Freq.(MHz)	EIPR Power(dBm)	Turn up
802.11b	1	2412	20.96	21.00
802.11b	6	2437	20.74	21.50
802.11b	11	2462	21.58	22.00
802.11g	1	2412	23.57	24.00
802.11g	6	2437	23.55	24.00
802.11g	11	2462	23.98	24.00
802.11n(HT20)	1	2412	23.08	23.50
802.11n(HT20)	6	2437	22.90	23.00
802.11n(HT20)	11	2462	23.49	23.50
802.11n(HT40)	3	2422	22.73	23.00
802.11n(HT40)	6	2437	22.30	22.50
802.11n(HT40)	9	2452	22.32	22.50

MAX EIPR=24.00dBm≈251.19mw<3060

Mode	Date Rate	Channel	Freq.(MHz)	EIPR Power(dBm)	Turn up
BLE	1Mbps	0	2402	7.86	8.00
BLE	1Mbps	19	2440	8.06	8.50
BLE	1Mbps	39	2480	8.19	8.50

MAX EIPR=8.50dBm≈7.08mw<3060

EUT conduction power

Test channel	Maximum Conducted Output Power (dBm)	Turn up
2478MHz	-2.23	-2.00

-2dBm≈0.63mw<3060

7 Conclusion

The test result is passed.

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