

Report No.: SEWM2307000296RG03

Rev.: 01

Page: 1 of 7

TEST REPORT

Application No.: SEWM2307000296RG
Applicant: SUZHOU EAVISION ROBOTIC TECHNOLOGIES CO.,LTD
Address of Applicant: Unit 1-A, No.3 Workshop, 28 Xiasheng Road, SIP, Suzhou, China
Manufacturer: SUZHOU EAVISION ROBOTIC TECHNOLOGIES CO.,LTD
Address of Manufacturer: Unit 1-A, No.3 Workshop, 28 Xiasheng Road, SIP, Suzhou, China
Factory: SUZHOU EAVISION ROBOTIC TECHNOLOGIES CO., LTD
Address of Factory: Unit 1-A, No.3 Workshop, 28 Xiasheng Road, SIP, Suzhou, China
EUT Description: EA-20XEP Agricultural Spraying Drone
Model No.: EA-20XEP, 3WWDZ-20D
Trade Mark: EAVISION
FCC ID: 2AXLB-EA20XEP
Standards: 47 CFR Part 2.1091
FCC KDB 447498 D01 v06
Date of Receipt: 2023/07/31
Date of Issue: 2023/09/06

Test Result:**PASS***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Well Wei

Well Wei

Wireless Laboratory Manager



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

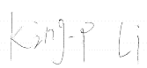
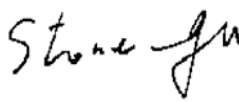
South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000
中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000

t (86-512) 62992980 www.sgsgroup.com.cn
t (86-512) 62992980 sgs.china@sgs.com

Report No.: SEWM2307000296RG03
Rev.: 01
Page: 2 of 7

1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023/09/06		Original

Prepared By	 _____ (King-p Li) / Test Engineer
Checked By	 _____ (Stone Gu) / Reviewer



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000
中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南面 邮编: 215000

t (86-512) 62992980 www.sgsgroup.com.cn
t (86-512) 62992980 sgs.china@sgs.com

Report No.: SEWM2307000296RG03
Rev.: 01
Page: 3 of 7

Contents

1	Version	2
2	General Information	4
2.1	Client Information	4
2.2	Test Facility	4
2.3	General Description of EUT	5
3	RF Exposure Evaluation	6
3.1	RF Exposure Compliance Requirement	6
3.1.1	Limits	6
3.1.2	RF Exposure Evaluation	7



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 t (86-512) 62992980 www.sgsgroup.com.cn
中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000 t (86-512) 62992980 sgs.china@sgs.com

2 General Information

2.1 Client Information

Applicant:	SUZHOU EAVISION ROBOTIC TECHNOLOGIES CO.,LTD
Address of Applicant:	Unit 1-A,No.3 Workshop,28 Xiasheng Road,SIP,Suzhou,China
Manufacturer:	SUZHOU EAVISION ROBOTIC TECHNOLOGIES CO.,LTD
Address of Manufacturer:	Unit 1-A,No.3 Workshop,28 Xiasheng Road,SIP,Suzhou,China

2.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

- **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 t (86-512) 62992980 www.sgsgroup.com.cn
中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南面 邮编: 215000 t (86-512) 62992980 sgs.china@sgs.com

2.3 General Description of EUT

EUT Description:	EA-20XEP Agricultural Spraying Drone
Model No.:	EA-20XEP, 3WWDZ-20D
Trade Mark:	EAVISION
Power Supply:	DC 48.75V by Battery Battery model:JM1-20000mAh-48.75V Max Charge Voltage:56.55V Nominal Voltage:48.75V Rated Capacity:20000mAh,975Wh
Frequency Range:	Obstacle avoidance radar :24GHz-24.25GHz Terrain following radar: 24GHz-24.25GHz 5.8GWIFI: 5725MHz to 5850MHz
Modulation Type:	Obstacle avoidance radar: FMCW Terrain following radar: FMCW 5.8GWIFI: 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Bandwidth:	5.8GWIFI:20MHz
Channel Spacing:	5.8GWIFI:20MHz
Antenna Type:	Obstacle avoidance radar: PCB Antenna Terrain following radar: PCB Antenna 5.8GWIFI: Ant1: Dipole Antenna, Ant2: Dipole Antenna
Antenna Gain:	5.8G WIFI: 4.91dBi (Ant1); 4.91dBi (Ant2);
	Note: The antenna gain are derived from the gain information report provided by the manufacturer.
Remark: As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 t (86-512) 62992980 www.sgsgroup.com.cn
中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000 t (86-512) 62992980 sgs.china@sgs.com

3 RF Exposure Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
(B) 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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz
 *=Plane-wave equivalent power density
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000
 中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000

t (86-512) 62992980 www.sgsgroup.com.cn
 t (86-512) 62992980 sgs.china@sgs.com

Member of the SGS Group (SGS SA)

3.1.2 RF Exposure Evaluation

24G:

EUT	Frequency (GHz)	dBuV/m @ 1m	E.I.R.P. Power (dBm)	E.I.R.P. Power (mW)
Terrain following radar	24.125	114.49	9.69	9.31
Obstacle avoidance radar		113.99	9.19	8.30

5.8G WIFI:

Test Mode	Test Frequency (MHz)	Output Power (dBm)	Output Power (mW)
802.11a (ANT1)	5745	14.76	29.92
	5785	14.75	29.85
	5825	14.06	25.47
802.11a (ANT2)	5745	14.32	27.04
	5785	14.92	31.05
	5825	14.07	25.53

24G

Terrain following radar:

$$S=(P_{out} \cdot G)/(4 \cdot \pi \cdot R^2)=0.0093/(4 \cdot 0.2 \cdot 0.2 \cdot 3.1416)=0.0185W/m^2$$

Obstacle avoidance radar:

$$S=(P_{out} \cdot G)/(4 \cdot \pi \cdot R^2)=0.0083/(4 \cdot 0.2 \cdot 0.2 \cdot 3.1416)=0.0165W/m^2$$

5.8G WiFi

The Max Conducted Average Output Power is 29.92 mW for antenna1.

The Max Conducted Average Output Power is 31.05 mW for antenna2.

The best case gain of the antenna is 4.91dBi for antenna1 ,4.91dBi for antenna2.

4.91dBi logarithmic terms convert to numeric result is nearly 3.10

4.91dBi logarithmic terms convert to numeric result is nearly 3.10

According to the formula. calculate the EIRP test result:

$$\text{Antenna1: EIRP}= P \times G = 29.92mW \times 3.10 = 92.752mW=0.093W$$

$$\text{Antenna2: EIRP}= P \times G = 31.05mW \times 3.10 = 96.255mW=0.096W$$

$$\text{Antenna1:S}=(P_{out} \cdot G)/(4 \cdot \pi \cdot R^2)=0.093/4 \cdot 0.2 \cdot 0.2 \cdot 3.1416=0.185W/m^2$$

$$\text{Antenna2: S}=(P_{out} \cdot G)/(4 \cdot \pi \cdot R^2)=0.096/4 \cdot 0.2 \cdot 0.2 \cdot 3.1416=0.191W/m^2$$

There are two Obstacle avoidance radar, one Terrain following radar and one 5.8GHz WIFI Module on the EUT. The 5.8GHz WiFi and 24G Radar can transmit simultaneously, but the maximum rate of MPE is $0.191/1+0.0185/1+0.0165/1+0.0165/1=0.2425 \leq 1$.

So, the device is to qualify for SAR test exemption, the exemption report is in lieu of the SAR report.

---End of Report---

