中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 6356.01

RF EXPOSURE EVALUATION

Applicant: **Sveabot Tek AB**

Address: Hogmossevagen 11, SE-641 39,Katrineholm ,Sweden

FCC ID: **2A9RD-SVBR02AT**

Product Name: **Sveabot M100E Autonomous Floor Scrubber**

Standard(s): **47 CFR §1.1307, 47 CFR §2.1091**
447498 D04 Interim General RF Exposure Guidance v01

The above device has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: **2403W29386E-RF-00D**

Date Of Issue: **2024/10/12**

Reviewed By: **Calvin Chen**

Title: RF Engineer

Approved By: **Sun Zhong**

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Test Laboratory: **China Certification ICT Co., Ltd (Dongguan)**
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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2403W29386E-RF-00D	Original Report	2024/10/12

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Sveabot M100E Autonomous Floor Scrubber
Trade Name:	SVEABOT
EUT Model:	SVBR02AT
Rated Input Voltage:	DC 57.6V Charging from adapter or DC 48V from battery
EUT Received Date:	2024/8/24
EUT Received Status:	Good

2. RF EXPOSURE EVALUATION

2.1 Applicable Standard

According to subpart 15.247(i)and subpart §1.1310, systems operating under the provisions of this 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.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	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;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

2.2 EUT WWAN Information▲:

Operation Modes	Operation Frequency (MHz)	Maximum Conducted Power including Tune-up Tolerance (dBm)	Antenna Gain (dBi)	Max Gain Allowed (dBi)
GSM850	824-849	25.81	0.55	8.6
PCS1900	1850-1910	22.81	3.98	10.19
WCDMA B2	1850-1910	25	3.98	8
WCDMA B4	1710-1755	25	2.25	5
WCDMA B5	824-849	25	0.55	9.42
LTE B2	1850-1910	25	3.98	8
LTE B4	1710-1755	25	2.25	5
LTE B5	824-849	25	0.55	9.41
LTE B7	2570-2620	25	4.54	8
LTE B12	699-716	25	-1.34	8.7
LTE B13	777-787	25	-1.34	9.16
LTE B25	1850-1915	25	3.98	8
LTE B26	814-824	25	0.55	9.36
LTE B26	824-849	25	0.55	9.41
LTE B38	2570-2620	25	4.54	8
LTE B41	2496-2690	25	4.54	8

Note:
The devices contain certified WWAN Module, FCC ID: XMR201903EG25G.

2.3 Measurement Result

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance	Power Density	MPE Limit
		(dBi)	(numeric)	(dBm)	(mW)	(cm)	(mW/cm^2)	(mW/cm^2)
GSM850	824-849	0.55	1.14	25.81	381.07	20	0.0864	0.549
GSM1900	1850-1910	3.98	2.5	22.81	190.99	20	0.0950	1
WCDMA B2	1850-1910	3.98	2.5	25	316.23	20	0.1573	1
WCDMA B4	1710-1755	2.25	1.68	25	316.23	20	0.1057	1
WCDMA B5	824-849	0.55	1.14	25	316.23	20	0.0717	0.549
LTE B2	1850-1910	3.98	2.5	25	316.23	20	0.1573	1
LTE B4	1710-1755	2.25	1.68	25	316.23	20	0.1057	1
LTE B5	824-849	0.55	1.14	25	316.23	20	0.0717	0.549
LTE B7	2500-2570	4.54	2.84	25	316.23	20	0.1787	1
LTE B12	699-716	-1.34	0.73	25	316.23	20	0.0459	0.466
LTE B13	777-787	-1.34	0.73	25	316.23	20	0.0629	0.518
LTE B25	1850-1915	3.98	2.5	25	316.23	20	0.1573	1
LTE B26	814-824	0.55	1.14	25	316.23	20	0.0717	0.543
	824-849	0.55	1.14	25	316.23	20	0.0717	0.549
LTE B38	2570-2620	4.54	2.84	25	316.23	20	0.1787	1
LTE B41	2496-2690	4.54	2.84	25	316.23	20	0.1787	1
2.4G Wi-Fi	2412-2472	2.44	1.75	25.5	354.81	20	0.1235	1
5.2G Wi-Fi	5180-5240	2.39	1.73	9.5	8.91	20	0.0031	1
5.8G Wi-Fi	5745-5825	2.65	1.84	10.5	11.22	20	0.0041	1

Note:

The 2.4G Wi-Fi or 5G Wi-Fi and WWAN can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$=S_{W2.4G\ Wi\text{-}Fi}/S_{limit\text{-}2.4G\ Wi\text{-}Fi} + S_{WWAN}/S_{limit\text{-}WWAN}$

$=0.1235/1 + 0.1787/1$

$=0.302$

< 1.0

Result: The device meets FCC MPE at **20 cm** distance

3. EUT PHOTOGRAPHS

Please refer to the attachment 2403W29386E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2403W29386E-RF-INP EUT INTERNAL PHOTOGRAPHS

===== END OF REPORT =====