



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch

Report No.: GZEM200501228203

Page: 1 of 15

FCC ID: 2AVIA2020UVBOX

TEST REPORT

Application No.: GZEM2005012282CR
Applicant: Samsung Trading (Shanghai) Co., Ltd.
Address of Applicant: China (Shanghai) Pilot Free Trade Zone C Zone the Building of Waigaoqiao Rm.526
Manufacturer: Shenzhen Bifoxs Industrial Design Co., Ltd
Address of Manufacturer: 5#, Jianxing Rd., Luoqu Community, Shiyan, Baoan District, Shenzhen, 518108, P.R.China
Factory: Shenzhen Silver Basis Technology Co., Ltd.
Address of Factory: 5#, Jianxing Rd., Luoqu Community, Shiyan, Baoan District, Shenzhen, 518108, P.R.China
Equipment Under Test (EUT):
FCC ID: 2AVIA2020UVBOX
EUT Name: IT FIT UV STERILIZER WITH WIRELESS CHARGING
Model No.: GP-TOU020SABWW
Standard(s) : 47 CFR PART 1, Subpart I, Section 1.1310
Date of Receipt: 2020-05-12
Date of Test: 2020-05-21
Date of Issue: 2020-05-21

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Kobe Jian

EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2020-05-21		Original

Authorized for issue by:			
Tested By	 Jackson_Yuan /Project Engineer	2020-05-21	Date
Checked By	 Ricky_Liu /Reviewer	2020-05-21	Date



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2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
RF Exposure	47 CFR PART 1, Subpart I, Section 1.1310	CFR 47 Part 1.1310	CFR 47 Part 1.1310	Pass



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4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 5/9 V
Test Voltage:	AC 120 V, 60 Hz powered by DC power refer to section 4.2
Cable:	Type C power input ports with unshielded cables (0.5m)
Max Internal Source:	< 108MHz
Operation Frequency:	126.8-147.4 kHz
Antenna Type:	Inductive Loop Coil Antenna
Modulation Type:	Load Modulation

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Mobile Phone	SAMSUNG	GT-9500	RV1D82X8W9X
AC/DC Adapter	SGS	DC 5/9V	REF. No.SEA0500

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 5.5 \times 10^{-8}$
2	Duty cycle	$\pm 0.57\%$
3	Occupied Bandwidth	$\pm 3\%$
4	RF Conducted power	$\pm 0.68\text{dB}$
5	RF Power Density	$\pm 1.50\text{dB}$
6	Conducted Spurious Emissions	$\pm 1.04\text{dB}$
7	RF Radiated Power	$\pm 4.5\text{dB}$ (below 1GHz)
		$\pm 4.8\text{dB}$ (above 1GHz)
8	Radiated Spurious Emission Test	$\pm 4.5\text{dB}$ (30MHz-1GHz)
		$\pm 4.8\text{dB}$ (1GHz-18GHz)
9	Temperature	$\pm 0.4^\circ\text{C}$
10	Humidity	$\pm 1.3\%$
11	Supply Voltages	$\pm 1.5\%$
12	Time	$\pm 3\%$

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.5 Test Facility

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

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

● **Industry Canada (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● **VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-10449 and T-11179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	Zhong Yu	8 x 3 x 3.8 m ³	EMC0306	2019-10-20	2022-10-19
Electric and Magnetic Field Analyzer	narda	NBM-550/EHP-50F	EMC2143	2019-02-07	2021-02-06



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6 Radio Spectrum Technical Requirement

6.1 RF Exposure

6.1.1 Test Requirement:

CFR 47 Part 1.1310

Limit:

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in Part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) 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
(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
300-1,500			f/1500	30
1,500-100,000			1.0	30

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

According to IEEE C95.3:2002 section 5.5.1.1, The power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula

$$S = \frac{PG}{4\pi d^2}$$

S = power density (mW/cm²)
P = the net power delivered to the antenna (mW)
G = gain of the antenna in linear scale
d = distance between observation point and center of the radiator (cm)



6.1.2 E.U.T. Operation

Operating Environment:

Temperature: 24.0 °C Humidity: 52% RH Atmospheric Pressure: 1015 mbar

EUT Operation:

This device has been tested the worst status of full load and the device has been tested with mobile phone at zero charge, intermediate charge, and full charge.

6.1.3 Measurement Data

Output Voltage=DC 5 V; The max output power = 10 W;

Calculation of resistor value= 2.5 Ω

Electric Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (V/m)	50% Limit (V/m)
127.4kHz which is the worst case within the operation frequency range	15	Side 1	4.260	307
		Side 2	4.560	
		Side 3	4.231	
		Side 4	4.512	
		Top	4.0143	

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)	50% Limit (A/m)
127.4kHz which is the worst case within the operation frequency range	15	Side 1	0.733	0.815
		Side 2	0.786	
		Side 3	0.724	
		Side 4	0.661	
		Top	0.873	

Mobile phone has been charging at zero charge, intermediate charge, and full charge.

Electric Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(V/m)			50 % Limit (V/m)
			zero charge	intermediate charge	full charge	
127.4kHz which is the worst case within the operation frequency range	15	Side 1	4.718	4.411	4.350	307
		Side 2	4.690	4.940	4.389	
		Side 3	4.896	4.208	4.564	
		Side 4	4.487	4.320	4.083	
		Top	4.925	4.991	4.986	

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)
			zero charge	intermediate charge	full charge	
127.4kHz which is the worst case within the operation frequency range	15	Side 1	0.765	0.656	0.702	0.815
		Side 2	0.672	0.771	0.733	
		Side 3	0.771	0.753	0.766	
		Side 4	0.656	0.667	0.628	
		Top	0.799	0.752	0.726	

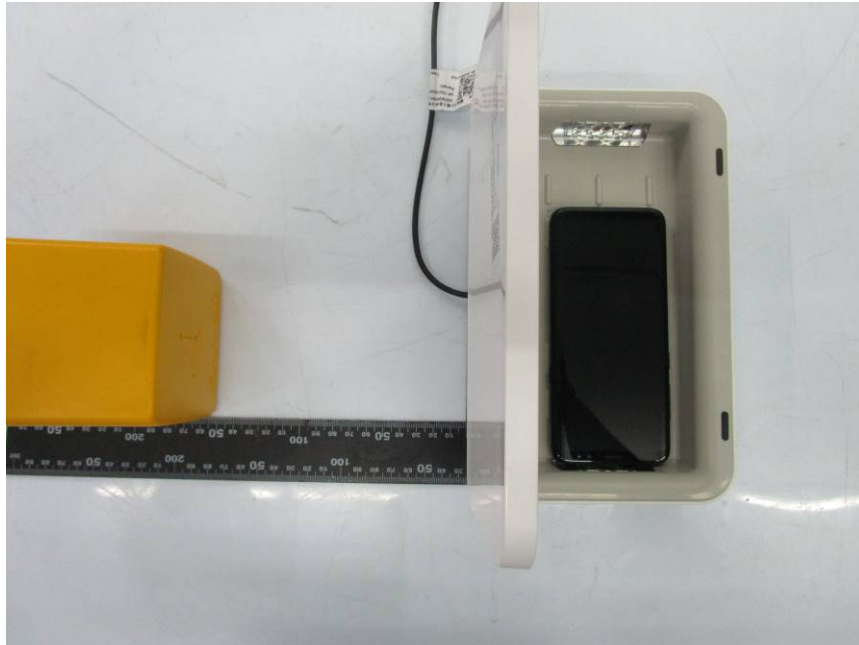


7 RF exposure setup Test Setup

Side 1



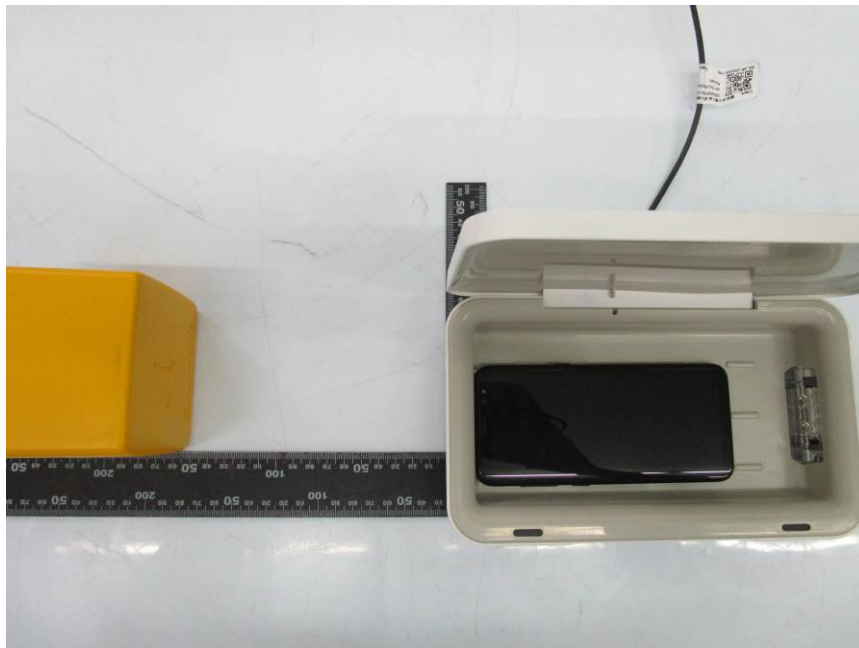
Side 2



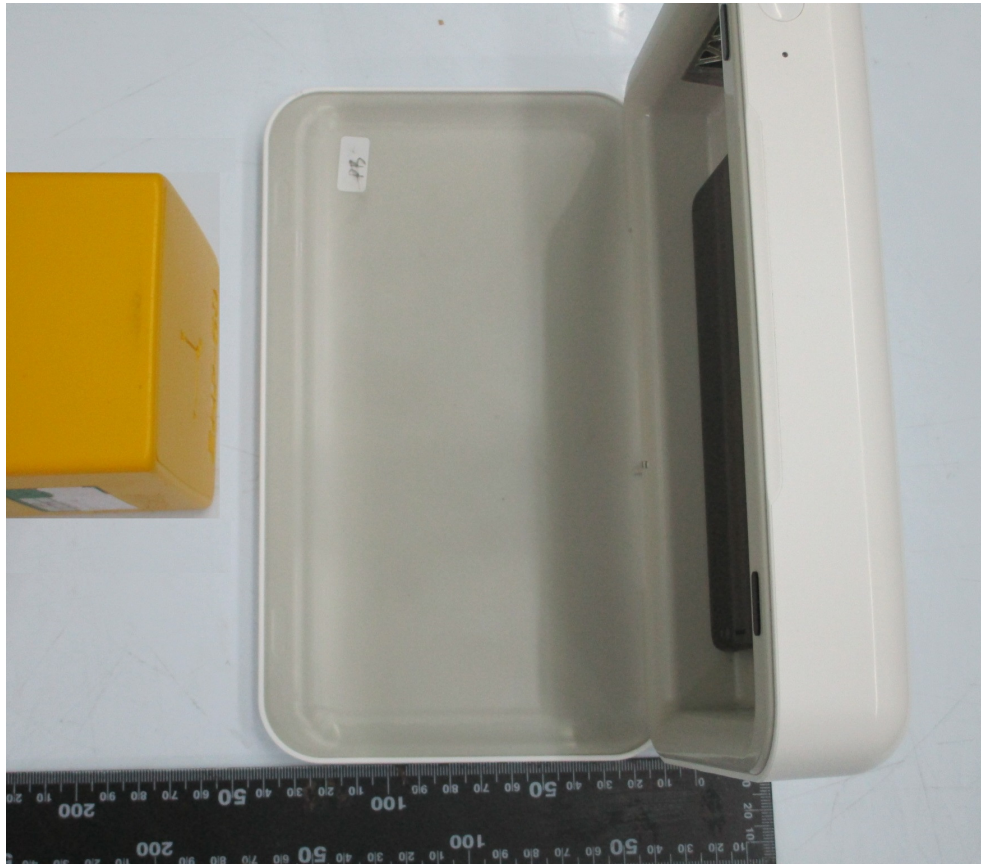
Side 3



Side 4



Top



8 Photographs

8.1 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for GZEM2005012282CR

--End of Report--



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