

RF Exposure Evaluation Report

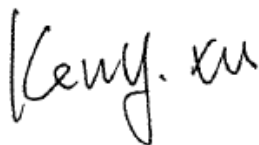
Application No.: SZCR2104020799AT
Applicant: SHENZHEN ELECTRON TECHNOLOGY CO., LTD.
Address of Applicant: Bld.2, Yingfeng Industrial Zone, Tantou Community, Songgang Street, Baoan, Shenzhen, China
Manufacturer: SHENZHEN ELECTRON TECHNOLOGY CO., LTD.
Address of Manufacturer: Bld.2, Yingfeng Industrial Zone, Tantou Community, Songgang Street, Baoan, Shenzhen, China
Factory: SHENZHEN ELECTRON TECHNOLOGY CO., LTD.
Address of Factory: Bld.2, Yingfeng Industrial Zone, Tantou Community, Songgang Street, Baoan, Shenzhen, China

Equipment Under Test (EUT):

Product Name: Wifi Digital photo frame
Model No.: W10K, W10M ♣
 ♣ Please refer to section 4.1 of this report which indicates which model was actually tested and which were electrically identical.
FCC ID: 2ABC5-W0550
Standards: 47 CFR Part 1.1307
 47 CFR Part 1.1310
 47 CFR Part 2.1091
Date of Receipt: 2021-04-28
Date of Test: 2021-04-30 to 2021-05-25
Date of Issue: 2021-06-03

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



Keny Xu
 EMC Laboratory Manager



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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-06-03		Original

Authorized for issue by:			
		<i>Benson Wang</i>	
		Benson Wang/Project Engineer	
		<i>Eric Fu</i>	
		Eric Fu/Reviewer	



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4 General Information

4.1 General Description of EUT

Power supply:	Powered by AC adapter Adapter model: S012-1B050200VU Input: AC 100-240V, 50/60Hz,0.3A; Output: DC 5.0V, 2.0A
Cable(s):	DC cable of adapter: 200cm unshielded
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz, 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK), 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20): 11, 802.11n(HT40):7
Antenna Type:	Integral Antenna
Antenna Gain:	2.87dBi

Declaration of EUT Family Grouping:

Model No.: W10K, W10M

Only the model W10K was tested. According to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on model names.



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 Shenzhen Branch

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4.2 Test Location

All tests were performed at:

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

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.3 Test Facility

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

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

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

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.



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5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

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 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

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.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.



4.1.3 EUT RF Exposure Evaluation

Antenna Gain: 2.87dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.94 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2437	17.20	52.48	0.020	1.0	PASS

Note: Refer to report No. SZCR210402079902 for EUT test Max Conducted Peak Output Power value. The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

- End of the Report -



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