

# RF Exposure Evaluation Report

**Application No.:** SZCR2107022017AT  
**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):**  
**EUT Name:** Wifi Digital photo frame  
**Model No.:** W15F  
**FCC ID:** 2ABC5-W0551  
**Standards:** 47 CFR PART 1, Subpart I, Section 1.1307  
47 CFR PART 1, Subpart I, Section 1.1310  
47 CFR PART 2, Subpart J, Section 2.1091  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2021-07-08  
**Date of Test:** 2021-07-13 to 2021-07-23  
**Date of Issue:** 2021-07-30

<b>Test Result :</b>	<b>PASS*</b>
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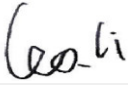
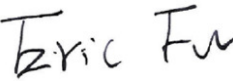
\* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu  
EMC Laboratory Manager



## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-07-30		Original

Authorized for issue by:			
		 <hr/> <b>Leo Li/Project Engineer</b>	
		 <hr/> <b>Eric Fu/Reviewer</b>	



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## 4 General Information

### 4.1 General Description of EUT

Power supply:	DC 5V from adapter input AC 120V/60Hz Adapter Model:S024-1B120200VU Input:AC100-240V~, 50/60Hz 0.6A Output:DC 12.0V 2.0A 3V DC(3V x 1 "CR2032" Button Cells) for remote
Cable(s):	Adapter DC Cable: 200cm length
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)
Number of Channels:	802.11b/g/n(HT20):11;802.11n(HT40):7
Channel Spacing:	5MHz
Antenna Type:	FPC Antenna
Antenna Gain:	2.87dBi

#### Declaration of EUT Family Grouping:

This device contains two kinds of TFT-LCD Screen samples, one TFT-LCD Screen model No. is LQ150X1LW94 and the other one TFT-LCD Screen model No. is LQ150X1LCN7.

Only the sample with TFT-LCD Screen model No. LQ150X1LCN7 was tested fully. According to the declaration from the applicant, the electrical circuit design, PCB layout, components used and internal wiring were identical for mainboard of EUTs, only difference on TFT-LCD Screen model names and TFT-LCD Screen model No. LQ150X1LCN7 has an LCD driver board installed.

An evaluation based on the detailed difference and the same RF module show that the RF performance should be the same.



## 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.



## 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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	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:  $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd is the limit of MPE, 1 mW/cm<sup>2</sup>. 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.



## 5.2 EUT RF Exposure Evaluation

### For 2.4G WIFI:

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:

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
Highest	2462	10.02	10.05	0.004	1.0	PASS

Note: Refer to report No. SZCR210702201701 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 -

