

# Maximum Permissible Exposure Evaluation

## FCC ID: 2AL64-WF238

### 1. Client Information

<b>Applicant</b>	:	Shenzhen qiuyu Electronic Co.,Ltd
<b>Address</b>	:	3F, E Building, Hongzhuyongqi Industrial Park, Lezhujiao village, Xixiang town, Bao'an District, Shenzhen, China
<b>Manufacturer</b>	:	Shenzhen qiuyu Electronic Co.,Ltd
<b>Address</b>	:	3F, E Building, Hongzhuyongqi Industrial Park, Lezhujiao village, Xixiang town, Bao'an District, Shenzhen, China

### 2. General Description of EUT

<b>EUT Name</b>	:	KODAK 23-Inch Wall Photo Frame / Wi-Fi Enabled	
<b>Models No.</b>	:	WF238, WF320, WF215, WF490	
<b>Model Different</b>	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is Appearance color.	
<b>Brand Name</b>	:	----	
<b>Product Description</b>	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
		Number of Channel:	802.11b/g/n(HT20):11 channels
		RF Output Power:	802.11b: 13.26 dBm 802.11g: 12.78 dBm 802.11n (HT20): 12.56 dBm
		Antenna Gain:	1.14dBi PIFA Antenna
<b>Power Rating</b>	:	Adapter(J361-1203000I) Input:AC 100-240V, 50/60Hz. 1.5A Output:12V 3A	
<b>Software Version</b>	:	Android 8.1	
<b>Hardware Version</b>	:	RGQ40E-MB_V1.1	
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual	
<b>Remark</b>	:	the MPE report used the EUT(TBBJ-20200711-07-2#).	

## MPE Calculations for WIFI

### 1. Antenna Gain:

PIFA Antenna: 1.14dBi.

### 2. EUT Operation Condition:

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

### 3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = (PG) / 4\pi R^2$$

Where

**S:** power density

**P:** power input to the antenna

**G:** power gain of the antenna in the direction of interest relative to an isotropic radiator.

**R:** distance to the center of radiation of the antenna

### 4. Test Result:

Worst Maximum MPE Result								
Mode	N <sub>TX</sub>	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm <sup>2</sup> ) [S]
802.11b	1	2412	13.20	13±1	14	1.14	20	0.0065
		2437	13.26	13±1	14	1.14	20	0.0065
		2462	13.18	13±1	14	1.14	20	0.0065
802.11g	1	2412	12.53	12±1	13	1.14	20	0.0051
		2437	12.78	12±1	13	1.14	20	0.0051
		2462	12.30	12±1	13	1.14	20	0.0051
802.11n(HT20)	1	2412	12.56	12±1	13	1.14	20	0.0051
		2437	12.45	12±1	13	1.14	20	0.0051
		2462	12.45	12±1	13	1.14	20	0.0051

**Note:**  
 (1) N<sub>TX</sub>= Number of Transmit Antennas  
 (2) RF Output power specifies that Maximum Conducted Peak Output Power.

**5. Conclusion:**

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

**Limits for General Population/ Uncontrolled Exposure**

Frequency Range (MHz)	Power density (mW/ cm <sup>2</sup> )
300-1,500	F/1500
1,500-100,000	1.0

For 2.4WIFI:2412~2462 MHz

MPE limit S: 1mW/ cm<sup>2</sup>

The MPE is calculated as **0.0065 mW / cm<sup>2</sup> < limit 1mW / cm<sup>2</sup>**. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

**Note**

For a more detailed features description, please refer to the RF Test Report.

**6. Conclusion:**

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

-----END OF REPORT-----