RF Exposure Evaluation

*FCC ID:*2A888-QY-BC-300H

1. Client Information

Applicant	:	Shenzhen Qingyu Electronics Co., Ltd
Address	:	Eight buildings and three floors of Buxin industrial Zone, Dapeng New District, Shenzhen, China
Manufacturer	:	Shenzhen Qingyu Electronics Co., Ltd
Address	:	Eight buildings and three floors of Buxin industrial Zone, Dapeng New District, Shenzhen, China

2. General Description of EUT

EUT Name	:	2.4GWireless mouse	
Model(s) No.	:	QY-BC-300(H)	
Model Difference	:	----	
Product Description	:	Operation Frequency:	2.4G: 2402MHz~2480MHz
		RF Output Power:	-8.042dBm
		Antenna Gain:	-4.62dBi PCB Antenna
Power Supply	:	DC 1.5V by AAA battery*2	
Software Version	:	04-0008	
Hardware Version	:	BYKC~V1.8	
Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab.			

Note: More test information about the EUT please refer the RF Test Report.

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The RF Exposure Evaluation for FCC:

SAR Test Exclusion Calculations

FCC: According to 447498 D04 Interim General RF Exposure Guidance v01.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{\text{th}}\ (\text{mW}) = \begin{cases} ERP_{20\ \text{cm}}(d/20\ \text{cm})^x & d \le 20\ \text{cm} \\ ERP_{20\ \text{cm}} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ \text{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

Calculation:

Test separation: 5mm					
2.4G					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mW)	Limit P_{th}(mW)
2.402	-8.042	-8±1	-7	0.200	3
2.440	-8.722	-9±1	-8	0.158	3
2.480	-9.3	-9±1	-8	0.158	3

Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06, No SAR is required.

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