

RF Exposure Evaluation

FCC ID: 2A365-Q1

1. Client Information

Applicant	:	Guangzhou Qiangle Electronics Co., Ltd.
Address	:	1512, Zhongjiaohuitong Center (Building C2), No.4 Huitong 2nd Street, Hengli Town, Nansha District, Guangzhou City, Guangdong, China
Manufacturer	:	Guangzhou Qiangle Electronics Co., Ltd.
Address	:	1512, Zhongjiaohuitong Center (Building C2), No.4 Huitong 2nd Street, Hengli Town, Nansha District, Guangzhou City, Guangdong, China

2. General Description of EUT

EUT Name	:	Bluetooth headset	
Model(s) No.	:	Q1, V1, V2, V3, V5, V6, V7, V8, V9, V10, S1, S2, S3, S5, S6	
Model Different	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is that names and appearance.	
Product Description	:	Operation Frequency:	Bluetooth V5.3: 2402MHz~2480MHz
		Number of Channel:	Bluetooth 5.3(BDR+EDR): 79 channels
		RF Output Power:	-0.51dBm (Max)
		Antenna Gain:	0 dBi ceramic Antenna
		Modulation Type:	GFSK, $\pi/4$ -DQPSK
		Bit Rate of Transmitter:	1/2Mbps
Power Supply	:	Input: DC 5V DC 3.7V by 40mAh Li-ion battery in the headphone compartment DC 3.7V by 500mAh Li-ion battery in the battery compartment	
Software Version	:	6983D/Jerry 6983D	
Hardware Version	:	N/A	
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.

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

- (1) Clause 4.3: General SAR test reduction and exclusion guidance

- Sub clause 4.31: Standalone SAR test exclusion considerations

- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 5 mm are determined by:

- $$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{\text{GHz}}}] \leq 3.0 \text{ for 1-g SAR}$$

- $$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{\text{GHz}}}] \leq 7.5.0 \text{ for 10-g SAR}$$

2. Calculation:

Test separation: 5mm						
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-1.472	-1±1	0	1.00	0.3130	3.0
2.441	-1.655	-1±1	0	1.00	0.3130	3.0
2.480	-2.006	-2±1	-1.0	0.79	0.2487	3.0
Bluetooth Mode (π/4-QPSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-0.51	0±1	1.0	1.26	0.3941	3.0
2.441	-0.809	0±1	1.0	1.26	0.3941	3.0
2.480	-1.159	-1±1	0	1.00	0.3130	3.0

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.

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