

RF Exposure Evaluation

FCC ID: 2AOKR-ZL-2

1. Client Information

Applicant	:	Dongguan Zhanlian Plastic Manufacture Co.,Ltd.
Address	:	Building M, Dongxing Industrial Shanxia Zone, Hengli Town, Dongguan City, Guangdong Province, CN
Manufacturer	:	Dongguan Zhanlian Plastic Manufacture Co.,Ltd.
Address	:	Building M, Dongxing Industrial Shanxia Zone, Hengli Town, Dongguan City, Guangdong Province, CN

2. General Description of EUT

EUT Name	:	Multi-function Desktop Bluetooth Speaker	
Models No.	:	ZL-2	
Model Difference	:	----	
Product Description	:	Operation Frequency:	Bluetooth 5.0: 2402MHz~2480MHz
		RF Output Power:	GFSK:0.251dBm π /4-DQPSK:-1.052dBm
		Antenna Gain:	2dBi PCB Antenna
Power Supply	:	DC Voltage Supply from Adapter DC Voltage supplied by Li-ion battery.	
Power Rating	:	Input: DC 5V, 2A DC 3.7V by 1200mAh Li-ion battery	
Software Version	:	K-787_AC692x_SDK_release_V2.5.1_20190604_6928B_ZL-2_1F91456B	
Hardware Version	:	VER:1.0	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

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:

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

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

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	0.251	0 ± 1	1	1.995	0.618	3.0
2.441	0.203	0 ± 1	1	1.995	0.618	3.0
2.480	-0.462	0 ± 1	1	1.995	0.618	3.0
Bluetooth Mode (π /4-DQPSK)						
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	-1.088	-1 ± 1	0	1.585	0.491	3.0
2.441	-1.055	-1 ± 1	0	1.585	0.491	3.0
2.480	-1.052	-1 ± 1	0	1.585	0.491	3.0

Test separation: 5mm		
The worst RF Exposure Evaluation		
Worst Calculation Value	Total Calculation Value	Threshold Value
Bluetooth Mode (π /4-DQPSK)		
0.618	0.618	3.0

The worst RF Exposure Evaluation is calculated as $0.618 / \text{cm}^2 < \text{limit } 3.0$, So standalone SAR measurements are not required.

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