

Maximum Permissible Exposure Evaluation

FCC ID:2BKFY-E300

1. Client Information

Applicant	:	Shenzhen Jiuzilong Technology Co., Ltd
Address	:	B1008-F61, Zhonghuayuan, No. 2010, Caitian Road, Fushan Community, Futian Street, Futian District, Shenzhen, China
Manufacturer	:	Shenzhen Jiuzilong Technology Co., Ltd
Address	:	B1008-F61, Zhonghuayuan, No. 2010, Caitian Road, Fushan Community, Futian Street, Futian District, Shenzhen, China

2. General Description of EUT

EUT Name	:	All-in-one CD Player	
Models No.	:	E300, E300A, E300B, E300L	
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name.	
Product Description	:	Operation Frequency:	Bluetooth V5.3: 2402MHz~2480MHz
	:	Antenna Gain:	-0.58dBi PCB Antenna
Power Rating	:	Input: 5V	
Li-ion Polymer Battery	:	3600mAh Rechargeable Li-ion battery	
Software Version	:	----	
Hardware Version	:	----	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	the evaluation report used the EUT(HC-C-202408-0099-01-02#).	

Method of Measurement for FCC

1. EUT Operation Condition:

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

2. 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

3. Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1. Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0 .

This means that:

$$\sum \text{of MPE ratios} \leq 1.0$$

4. Test Result:

Worst Maximum MPE Result								
Mode	N _{TX}	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 ²) [S]
Bluetooth (GFSK)	1	2402	-6.02	-6±1	-5	-0.58	20	0.0001
		2441	-6.335	-6±1	-5	-0.58	20	0.0001
		2480	-6.121	-6±1	-5	-0.58	20	0.0001
Bluetooth (Pi/4-DQP SK)	1	2402	-5.279	-5±1	-4	-0.58	20	0.0001
		2441	-5.324	-5±1	-4	-0.58	20	0.0001
		2480	-5.164	-5±1	-4	-0.58	20	0.0001
Bluetooth (8-DPSK)	1	2402	-4.635	-4±1	-3	-0.58	20	0.0001
		2441	-4.882	-4±1	-3	-0.58	20	0.0001
		2480	-4.724	-4±1	-3	-0.58	20	0.0001
Bluetooth LE (1Mbps)	1	2402	-1.594	-1±1	0	-0.58	20	0.0002
		2440	-1.62	-1±1	0	-0.58	20	0.0002
		2480	-1.415	-1±1	0	-0.58	20	0.0002
Bluetooth LE (2Mbps)	1	2402	-1.146	-1±1	0	-0.58	20	0.0002
		2440	-1.243	-1±1	0	-0.58	20	0.0002
		2480	-1.084	-1±1	0	-0.58	20	0.0002
Note: N _{TX} = Number of Transmit Antennas 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 ²)
300-1,500	F/1500
1,500-100,000	1.0

For Bluetooth: 2402~2480MHz

MPE limit S: 1mW/ cm²

The worst MPE is calculated as **0.0002mW/cm² < limit 1mW/cm²**. 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.

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

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

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

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

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