



Maximum Permissible Exposure Evaluation

FCC ID: ZRR-BS954

1. Client Information

Applicant	:	Shenzhen Adition Audio Science & Technology Co., Ltd
Address	:	Floor1-5, No.2 Building, Huidebao Industrial Park, No.11, Second Industrial Zone, Baihua Community, Guangming Sub-district, Guangming District, Shenzhen City, China
Manufacturer	:	Shenzhen Adition Audio Science & Technology Co., Ltd
Address	:	Floor1-5, No.2 Building, Huidebao Industrial Park, No.11, Second Industrial Zone, Baihua Community, Guangming Sub-district, Guangming District, Shenzhen City, China

2. General Description of EUT

EUT Name	:	2.1 CH 3D soundbar with build-in subwoofer	
Models No.	:	L220BW, BS954	
Model Different	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is that model name.	
Product Description	:	Operation Frequency:	Bluetooth 5.0: 2402MHz~2480MHz
		Number of Channel:	79 channels
		Antenna Gain:	2.07dBi PCB Antenna
Power Rating	:	Input: AC 100-240V~50/60Hz Output: 18V, 2.5A	
Software Version	:	----	
Hardware Version	:	----	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	the evaluation report used the EUT(202211-0129-1-2#).	

MPE Calculations

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. Test Result:

Bluetooth 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]
GFSK	1	2402	1.272	1 ± 1	2	2.07	20	0.0005
		2441	1.755	1 ± 1	2	2.07	20	0.0005
		2480	0.651	0 ± 1	1	2.07	20	0.0004
Pi/4-DQPS K	1	2402	1.118	1 ± 1	2	2.07	20	0.0005
		2441	1.710	1 ± 1	2	2.07	20	0.0005
		2480	0.625	0 ± 1	1	2.07	20	0.0004
8-DPSK	1	2402	1.147	1 ± 1	2	2.07	20	0.0005
		2441	1.710	1 ± 1	2	2.07	20	0.0005
		2480	0.709	0 ± 1	1	2.07	20	0.0004

Note:

N_{TX}= Number of Transmit Antennas

RF Output power specifies that Maximum Conducted Peak Output Power.



4. 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:2402~2480 MHz

MPE limit S: 1mW/ cm²

The MPE is calculated as **0.0005 mW / 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.

Note

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

5. 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-----

