Maximum Permissible Exposure Evaluation

FCC ID: 2BCNR-MOBI-8C-010

1. Client Information

Applicant	:	SHENZHEN EESTANDARD TECHNOLOGY CO., LTD
Address	:	601, Building 1, Yibaolai Industrial City, Qiaotou Community, Fuhai Street, Bao 'an District, Shenzhen City, China
Manufacturer	:	SHENZHEN EESTANDARD TECHNOLOGY CO., LTD
Address	:	601, Building 1, Yibaolai Industrial City, Qiaotou Community, Fuhai Street, Bao 'an District, Shenzhen City, China

2. General Description of EUT

EUT Name	:	Mobi Scale	
Models No.	:	MOBI-8C-010, MOBI-XX-XXX	
Model Difference	:	All PCB boards and circuit diagrams are the same, the only difference is that model names.	
Product Description	:	Operation Frequency:	Bluetooth 5.0(BLE): 2402MHz~2480MHz
		Number of Channel:	40 channels
		RF Output Power:	BLE: 7.265dBm
		Antenna Gain:	3.75dBi PCB Antenna
Power Rating	:	DC 7.2V by 3000mAh Rechargeable Li-ion battery	
Software Version	:	V0.9	
Hardware Version	:	V1.1	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	The antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.	

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MPE Calculations for 2.4G

1. **Antenna Gain:**
   PCB Antenna: 3.75dBi.

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

3. **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

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]
BLE (1Mbps)	1	2402	5.487	5±1	6	3.75	20	0.0019
		2440	3.497	3±1	4	3.75	20	0.0012
		2480	7.265	7±1	8	3.75	20	0.0030
BLE (2Mbps)	1	2402	5.145	5±1	6	3.75	20	0.0019
		2440	3.313	3±1	4	3.75	20	0.0012
		2480	4.143	4±1	5	3.75	20	0.0015

Note:
(1) N_{TX}= Number of Transmit Antennas
(2) 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 BLE:2402~2480 MHz

MPE limit S: 1mW/ cm^2

The MPE is calculated as **0.0030** ***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.

6. 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-----