

Maximum Permissible Exposure Evaluation

FCC ID: 2AQ7C-M100-A

1. Client Information

Applicant	:	SHENZHEN TOVISION TECHNOLOGY CO.,LTD
Address	:	5B1, Building 4, Fuhong industrial park, Fuhai street, Bao'an District, SHENZHEN City, CHINA
Manufacturer	:	SHENZHEN TOVISION TECHNOLOGY CO.,LTD
Address	:	5B1, Building 4, Fuhong industrial park, Fuhai street, Bao'an District, SHENZHEN City, CHINA

2. General Description of EUT

EUT Name	:	Wireless base unit	
Models No.	:	M100-A	
Sample ID	:	TBBJ-20200509-02-1#	
Product Description	:	Frequency Bands: 2.4G: 2478MHz UMTS Band II: 1852.40MHz-1907.60MHz UMTS Band V:826.40MHz-846.60MHz LTE Band 2:TX: 1850MHz-1910MHz, RX: 1930MHz-1990MHz LTE Band 4:TX: 1710MHz-1755MHz, RX: 2110MHz-2155MHz LTE Band 12: TX: 699MHz -716MHz, RX: 729MHz-746MHz	
		Antenna Type:	Dipole Antenna
		Antenna Gain:	2dBi
Power Rating	:	DC 12*1.5V AA Battery. DC 6V from DC Port.	
Software Version	:	M100_LB_V005	
Hardware Version	:	M100_M_V03	

Note: More test information about the EUT please refer the RF Test Report.

MPE Calculations for GSM

1. Antenna Gain:

2 dBi Dipole Antenna

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. 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.

Limits for General Population/ Uncontrolled Exposure

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure

Frequency Range (MHz)	Power density (mW/ cm ²)
300-1,500	F/1500
1,500-100,000	1.0
Note: For 300-1500MHz the worst Limit is $0.4665 \text{ mW/cm}^2 = (699.70/1500) \text{ mW/cm}^2$	

This means that:

$$\sum \text{ of MPE ratios } \leq 0.4665$$

5. Test Result:

Worst Maximum MPE Result							
Mode	N _{TX}	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]
2.4G	1	22.34	22±1	23	2	20	0.0629
WCDMA Band II	1	21.77	21±1	22	2	20	0.0500
WCDMA Band V	1	22.14	22±1	23	2	20	0.0629
LTE BAND 2	1	24.45	24±1	25	2	20	0.0997
LTE BAND 4	1	24.44	24±1	25	2	20	0.0997
LTE BAND 12	1	25.22	25±1	26	2	20	0.1255

Note:
 (1) N_{TX}= Number of Transmit Antennas
 RF Output power specifies that Maximum Conducted Peak Output Power.

6. Summary simultaneous transmission information

Synchronization transmit
2.4G+WCDMA Band II
2.4G+WCDMA Band V
2.4G+LTE BAND 2
2.4G+LTE BAND 4
2.4G+LTE BAND 12

7. Summary simultaneous transmission results

Maximum Simultaneous transmission MPE Ratios is 2.4G and LTE BAND 12:

Maximum MPE ratio 2.4G	Maximum MPE ratio LTE BAND 12	∑MPE ratios	Limit	Results
0.0629	0.1255	0.1884	0.4665	PASS

8. Conclusion:

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

Note

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

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