

## Maximum Permissible Exposure Evaluation

**FCC ID: 2AXKF-C003**

### 1. Client Information

<b>Applicant</b>	:	Shenzhen Xingmai Digital Co.,Ltd.
<b>Address</b>	:	Room 401, Building C, Huali Industrial Park, No. 404, Yu'an 2nd Road, 28 District, Xin'an Street, Bao'an District, Shenzhen, China
<b>Manufacturer</b>	:	Shenzhen Xingmai Digital Co.,Ltd.
<b>Address</b>	:	Room 401, Building C, Huali Industrial Park, No. 404, Yu'an 2nd Road, 28 District, Xin'an Street, Bao'an District, Shenzhen, China

### 2. General Description of EUT

<b>EUT Name</b>	:	Beidou+GPS tracker
<b>Models No.</b>	:	C003, AK-GT01, AK-GT02, AK-GT03, AK-GTZZ, X1, X2, X3, X5, X6, X7, X8, X9, X10, X11, X12, X13, X13B, X13C, X20, X21, X22, X33, X35, X36, X37, X38, X39, X50, X51, X52, X53, X55, X56, X57, X58, X59, X60, XZZ, C001, C002, C003, C005, C006, C007, C008, C009, C10, C11, C12, C13, C15, C16, C17, C18, C19, C20, C21, C22, C23, C25, C26, C27, C28, C29, C30, C31, C32, C33, C35, C36, C37, C38, C39, C50, C51, C52, C53, C55, C56, C57, C58, C59, C60, CZZ, ZZ means digital number
<b>Model Difference</b>	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is the appearance.
<b>Sample ID</b>	:	20200804-10_1-01
<b>S/N</b>	:	19171534261
<b>Product Description</b>	:	UMTS Band II: TX:1850MHz-1910MHz, RX: 1930MHz-1990MHz UMTS Band IV: TX:1710MHz-1755MHz, RX: 2110MHz-2155MHz UMTS Band V: TX: 824MHz-849MHz, RX: 869MHz-894MHz 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: FPC Antenna
		Antenna Gain: 0.7dBi;
<b>Power Rating</b>	:	Input: DC 9V-95V or DC 3.7V by Li-ion Battery.
<b>Software Version</b>	:	C003_XM_808_2_9_20200702
<b>Hardware Version</b>	:	20200623

TB-RF-075-1.0



## MPE Calculations

### 1. Antenna Gain:

Band	Antenna Type	Antenna Gain
UMTS Band II	FPC	0.7 dBi
UMTS Band IV	FPC	0.7 dBi
UMTS Band V	FPC	0.7 dBi
LTE Band 2	FPC	0.7 dBi
LTE Band 4	FPC	0.7 dBi
LTE Band 12	FPC	0.7 dBi

### 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 <sub>TX</sub>	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 <sup>2</sup> ) [S]
WCDMA Band II	1	22.85	22±1	23	0.7	20	0.0446
WCDMA Band IV	1	22.20	22±1	23	0.7	20	0.0446
WCDMA Band V	1	21.92	22±1	23	0.7	20	0.0446
LTE Band 2	1	23.10	23±1	24	0.7	20	0.0587
LTE Band 4	1	23.64	23±1	24	0.7	20	0.0587
LTE Band 12	1	21.11	21±1	22	0.7	20	0.0370

Note:

(1) N<sub>TX</sub>= 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 <sup>2</sup> )
300-1,500	F/1500
1,500-100,000	1.0

**300-1500MHz:**

The worst MPE is calculated as  $0.0446 \text{ mW} / \text{cm}^2 < \text{limit } 846.6/1500=0.5644 \text{ mW/cm}^2$ . So, RF exposure limit warning or SAR test are not required.

**1500-100000MHz:**

The worst MPE is calculated as  $0.0587 \text{ mW} / \text{cm}^2 < \text{limit } 1\text{mW/cm}^2$ . 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.

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