Maximum Permissible Exposure Evaluation

FCC ID: 2AJK2TYPE-C

1. Client Information

Applicant : Zhuhai Tianqin IT Co.,Ltd.

Address : No.87 Xinghua Road, Xiangzhou District, Zhuhai, Guangdong, China

Manufacturer : Zhuhai Tianqin IT Co.,Ltd.

Address : No.87 Xinghua Road, Xiangzhou District, Zhuhai, Guangdong, China

2. General Description of EUT

EUT Name	:	GPS/BD GPS TRACKER	
Models No.	:	TYPE-C	
Brand Name	:	Roadcool	
Model Difference	:	N/A	
Product Description	:	Frequency Bands: GSM 850: 824.20MHz-848.80MHz PCS1900: 1850.20MHz-1909.80MHz	
		GSM 850 Power :	Cond:31.70 dBm ERP:30.68 dBm
		PCS 1900 Power :	Cond:28.45 dBm EIRP:26.97 dBm
		Antenna Gain:	GSM 850: 2 dBi PCS 1900: 2 dBi
		Modulation Type:	GSM/GPRS:GMSK
FCC Operating Frequency	:	GSM 850: 824.20MHz-848.80MHz PCS1900: 1850.20MHz-1909.80MHz	
Emission Designator	:	GSM 850: 247KGXW, PCS 1900: 246KGXW GPRS 850: 245KG7W, GPRS 1900: 246KG7W	

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Power Supply	:	DC Voltage supplied from DC battery. DC power by Li-ion Battery.
Power Rating	:	DC 12V by DC battery. DC 3.7V by Li-ion Battery.
Connecting I/O Port(S)	:	Please refer to the User's Manual

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MPE Calculations for WIFI

1. **Antenna Gain:**
   GSM Antenna: 2 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_{TX}	Power(max) (dBm) [P]	ANT Gain (dBi) [G]	Turn-up Power Tolerance (dB)	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
GSM 850	1	31.70	2	±1	20	0.587
PCS 1900	1	28.45	2	±2	20	0.350
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

MPE limit S: 1 mW/ cm^2
The MPE is calculated as 0.587 mW / cm^2 < limit 1 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.

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