Maximum Permissible Exposure Evaluation

FCC ID: 2A5OS-CQ1H

1. Client Information

Applicant	:	Shenzhen Tino Security Corp., LTD
Address	:	201, No.7, HeDian Industry Park FuMin Community, FuCheng Street, LongHua District, Shenzhen, China
Manufacturer	:	Shenzhen Tino Security Corp., LTD
Address	:	201, No.7, HeDian Industry Park FuMin Community, FuCheng Street, LongHua District, Shenzhen, China

2. General Description of EUT

EUT Name	:	4G Battery Camera	
Models No.	:	CQ1H, CQ1A, CQ1B, CQ1C, CQ1D, CQ1E, CQ1F, CQ1G, CQ1I, CQ1J, CQ1K, CQ1L, CQ1M, CQ1N, CQ1O, CQ1P, CQ1Q, CQ1R, CQ1S, CQ1T, CQ1U, CQ1V, CQ1W, CQ1X, CQ1Y, CQ1Z	
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is appearance and model name.	
Sample ID	:	HC-C-202405-0318-01-01-1#&HC-C-202405-0318-01-01-2#	
Product Description	:	Frequency Bands:	LTE Band 2: TX: 1850MHz-1910MHz LTE Band 4: TX: 1710MHz-1755MHz LTE Band 5: TX: 824MHz-849MHz LTE Band 12: TX: 699MHz-716MHz LTE Band 13: TX: 777MHz-787MHz LTE Band 66: TX: 1710MHz-1780MHz
		Modulation Type:	QPSK, 16QAM
		Antenna Gain:	3.06dBi Dipole Antenna for LTE Band 2 2.28dBi Dipole Antenna for LTE Band 4 1.99dBi Dipole Antenna for LTE Band 5 1.92dBi Dipole Antenna for LTE Band 12 1.92dBi Dipole Antenna for LTE Band 13 2.76dBi Dipole Antenna for LTE Band 66
Power Rating	:	USB Input: DC 5V/1A DC 3.7V 9000mAh 33.3Wh Rechargeable Li-ion battery	
Software Version	:	39.0.174	
Hardware Version	:	GL_I11e_MAIN_V0_3	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	the evaluation report used the EUT(HC-C-202405-0318-01-01-2#).	

Method of Measurement for FCC

1/F.,Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China
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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. **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, is ≤ 1.0.
   This means that:
   ∑ of MPE ratios ≤ 1.0

4. Test Result:

LTE Worst Maximum MPE Result								
Mode	N_{TX}	Conducted Output 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]	Power Density Limit (mW/cm^2) [S]
LTE Band 2	1	24.49	24±1	25	3.06	20	0.12727	1.0
LTE Band 4	1	23.58	23±1	24	2.28	20	0.08448	1.0
LTE Band 5	1	24.23	24±1	25	1.99	20	0.09948	0.549
LTE Band 12	1	24.08	24±1	25	1.92	20	0.09789	0.466
LTE Band 13	1	23.25	23±1	24	1.92	20	0.07776	0.518
LTE Band 66	1	23.51	23±1	24	2.76	20	0.09435	1.0
Note: N_{TX}= Number of Transmit Antennas RF Output power specifies that Maximum Conducted 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 LTE:
The worst MPE is calculated as ***0.12727mW/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.

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

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

The RF Exposure Information page from the manual is included here for reference.
For a more detailed features description, please refer to the RF Test Report.

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