

TEST REPORT

FCC ID. :	2BN8F-CAMQ50-4G	
Test Report No..... :	TCT250317E003	
Date of issue..... :	Mar. 20, 2025	
Testing laboratory	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	NUMLAKE TECH LIMITED	
Address..... :	UNIT 1505, 15/F WORKINGPORT COMMERCIAL BUILDING 3 HAU FOOK STREET TSIM SHA TSUI HONG KONG, China	
Manufacturer's name ... :	NUMLAKE TECH LIMITED	
Address..... :	UNIT 1505, 15/F WORKINGPORT COMMERCIAL BUILDING 3 HAU FOOK STREET TSIM SHA TSUI HONG KONG, China	
Standard(s)	FCC CFR Title 47 Part 1.1307	
Product Name..... :	4G 1080p Battery Camera with Solar Panel	
Trade Mark	N/A	
Model/Type reference..... :	Q50, Q10, Q20, Q30, Q40, Q60, Q70, Q80, Q90, Q51, Q52, Q53, Q54, Q55, Q50 pro, Q50 plus	
Rating(s)..... :	Rechargeable Li-ion Battery DC 3.7V	
Date of receipt of test item	Mar. 17, 2025	
Date (s) of performance of test..... :	Mar. 17, 2025 ~ Mar. 20, 2025	
Tested by (+signature) ... :	Aaron MO	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

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1. General Product Information

1.1. EUT description

Product Name.....:	4G 1080p Battery Camera with Solar Panel
Model/Type reference.....:	Q50
Sample Number.....:	TCT250317E002-0101
Operation Frequency	LTE Band 2: TX: 1850 MHz ~ 1910 MHz RX: 1930 MHz ~ 1990 MHz LTE Band 4: TX: 1710 MHz ~ 1755 MHz RX: 2110 MHz ~ 2155 MHz LTE Band 5: TX: 824 MHz ~ 849 MHz RX: 869 MHz ~ 894 MHz LTE Band 12: TX: 699 MHz ~ 716 MHz RX: 729 MHz ~ 746 MHz LTE Band 13: TX: 777 MHz ~ 787 MHz RX: 746 MHz ~ 756 MHz
Modulation Type.....:	QPSK/16QAM
Antenna Type.....:	FPC Antenna
Antenna Gain.....:	2dBi
Rating(s).....:	Rechargeable Li-ion Battery DC 3.7V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

No.	Model No.	Tested with
1	Q50	☒
Other models	Q10, Q20, Q30, Q40, Q60, Q70, Q80, Q90, Q51, Q52, Q53, Q54, Q55, Q50 pro, Q50 plus	☐

Note: Q50 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names. So the test data of Q50 can represent the remaining models.

2. General Information

2.1. Test environment and mode

Item	Normal condition
Temperature	+25°C
Voltage	DC 3.7V
Humidity	56%
Atmospheric Pressure:	1008 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel

2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

3. Facilities and Accreditations

3.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Innovation, Science and Economic Development Canada for radio equipment testing.

3.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4. Test Results and Measurement Data

According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1)

For LTE Band 2: The maximum output power for antenna is 22.00dBm (158.49mW) at 1852.5MHz, 2dBi antenna gain(with 1.58 numeric antenna gain.)

For LTE Band 4: The maximum output power for antenna is 22.92dBm (195.88mW) at 1752.5MHz, 2dBi antenna gain(with 1.58 numeric antenna gain.)

For LTE Band 5: The maximum output power for antenna is 22.58dBm (181.13mW) at 846.5MHz, 2dBi antenna gain(with 1.58 numeric antenna gain.)

For LTE Band 12: The maximum output power for antenna is 22.59dBm (181.55mW) at 701.5MHz, 2dBi antenna gain(with 1.58 numeric antenna gain.)

For LTE Band 13: The maximum output power for antenna is 23.51dBm (224.39mW) at 779.5MHz, 2dBi antenna gain(with 1.58 numeric antenna gain.)

- 2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

Calculation:

Given $E = \frac{\sqrt{30 \cdot P \cdot G}}{d}$ & $S = \frac{E^2}{3770}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Substituting the MPE safe distance using $d=20\text{cm}$ into above equation.

Yields: $S=0.000199 \cdot P \cdot G$

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz
 *=Plane-wave equivalent power density
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

LTE:

Mode	Power(mW)	numeric antenna gain	Power density (mW/cm ²)	Limit (mW/cm ²)	Result
LTE Band 2	158.49	1.58	0.049832	1	
LTE Band 4	195.88	1.58	0.061589	1	
LTE Band 5	181.13	1.58	0.056951	0.56	
LTE Band 12	181.55	1.58	0.057083	0.47	
LTE Band 13	224.39	1.58	0.070553	0.52	

*******END OF REPORT*******