RF Exposure Evaluation
FCC ID: 2BOMF-Q09

Applicant:	Dongguan Runwei Electronics Co., Ltd
Address:	No. 401, 4th Floor, Comprehensive Building, No.1 Senhu 2nd Road, Bihu Industrial Zone, Wulian Village, Fenggang Town, Dongguan, China
Manufacturer:	Dongguan Runwei Electronics Co., Ltd
Address:	No. 401, 4th Floor, Comprehensive Building, No.1 Senhu 2nd Road, Bihu Industrial Zone, Wulian Village, Fenggang Town, Dongguan, China
EUT:	Bulb Camera
Trade Mark:	N/A
Model Number:	TV-XMC-Q09-5G-2MP
Date of Receipt:	Mar. 21, 2025
Test Date:	Mar. 21, 2025 - Apr. 12, 2025
Date of Report:	Apr. 12, 2025
Prepared By:	Shenzhen DL Testing Technology Co., Ltd.
Address:	101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 KDB 447498 D01 General RF Exposure Guidance v06
Test Result:	Pass
Report Number:	DLE-250410007R-1

Prepared by(Engineer):	Ken Tan
Reviewer(Supervisor):	Jack Bu
Approved(Manager):	Jade Yang

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.

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11. TEST FACILITY

Test lab: Shenzhen DL Testing Technology Co., Ltd.
Address: 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China
FCC Test Firm Registration Number: 854456
Designation Number: CN1307
IC Registered No.: 27485
CAB ID.: CN0118

1.11.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**,providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	Conducted Emission Test	±2.56dB
2	RF power,conducted	±0.42dB
3	Spurious emissions,conducted	±2.76dB
4	All emissions,radiated(<1G)	±3.65dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%
8	20dB Bandwidth	±0.2MHz

22. GENERAL INFORMATION

2.1 2.1 GENERAL DESCRIPTION OF EUT

Product Name:	Bulb Camera
Trademark:	N/A
Model No.:	TV-XMC-Q09-5G-2MP
Model Difference:	N/A
Sample No.:	DLE-250410008-001#
Operation Frequency:	2412~2462 MHz for 802.11b/g/nHT20 2422~2452 MHz for 802.11nHT40
Channel numbers:	11 Channels for 802.11b/g/n(HT20) 7 channels for 802.11nHT40
Channel separation:	5MHz
Modulation technology:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n(20/40): OFDM(QPSK, BPSK, 16-QAM, 64-QAM)
Rate of Transmitter:	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps
Antenna Type:	FPC Antenna
Antenna gain:	2.73 dBi
Power Supply:	AC 100-240V, 50/60Hz

Note:

1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.The EUT's all information provided by client.

33. METHOD OF MEASUREMENT

3.13.1 APPLICABLE STANDARD

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
According to §1.1310 and §2.1091 RF exposure is calculated.
FCC KDB 447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures

3.23.2 EVALUATION METHOD AND LIMIT

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f)*	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

3.3 MPE CALCULATION METHOD

Predication of MPE limit at a given distance
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 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

3.4 ANTENNA INFORMATION

EUT can only use antennas certificated as follows provided by manufacturer;

Antenna	Model No. of antenna:	Type of antenna:	Gain of the antenna (Max.)	Frequency range:
WIFI	/	FPC Antenna	2.73 dBi	2400-2500MHz

3.5 MANUFACTURING TOLERANCE

Frequency (MHz)	11b(Peak)		
	2412	2437	2462
Target (dBm)	15.0	15.0	15.0
Tolerance ± (dB)	1.0	1.0	1.0
Frequency (MHz)	11g(Peak)		
	2412	2437	2462
Target (dBm)	16.0	16.0	16.0
Tolerance ± (dB)	1.0	1.0	1.0
Frequency (MHz)	11n(HT20) (Peak)		
	2412	2437	2462
Target (dBm)	16.0	16.0	16.0
Tolerance ± (dB)	1.0	1.0	1.0
Frequency (MHz)	11n(HT40) (Peak)		
	2422	2437	2452
Target (dBm)	16.0	16.0	16.0
Tolerance ± (dB)	1.0	1.0	1.0

4. EVALUATION RESULTS

4.1 STANDALONE EVALUATION

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, r =20cm, as well as the gain of the used antenna is refer to section 4, the RF power density can be obtained.

Modulation Type	Output power with tune_up		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
2.4G WLAN	17	50.119	2.73	1.875	0.01870	1

Remark:

1. Output power (Peak) including turn-up tolerance;
2. MPE evaluate distance is 20cm from user manual provide by manufacturer.
3. WIFI do not support simultaneous transmission.
4. The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

※※※※※ **END OF REPORT** ※※※※※