



RF EXPOSURE Test Report

Report No.: MTi240103011-01E3

Date of issue: 2024-03-19

Applicant: Dongguan Lingdu Electronic Technology Co.,Ltd

Product: Dash Cam

Model(s): LD02-3CH, LD02-1CH, LD02-2CH, LD02 Lite, LD02, D22, D24, D25

FCC ID: 2BEAP-LD02-3CH

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

Instructions

1. The report shall not be partially reproduced without the written consent of the laboratory;
2. The test results of this report are only responsible for the samples submitted;
3. This report is invalid without the seal and signature of the laboratory;
4. This report is invalid if transferred, altered or tampered with in any form without authorization;
5. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.



Test Result Certification	
Applicant:	Dongguan Lingdu Electronic Technology Co.,Ltd
Address:	No.1, Longcheng Street, Qingxi Town, Dongguan City, Guangdong Province, China
Manufacturer:	Dongguan Lingdu Electronic Technology Co.,Ltd
Address:	No.1, Longcheng Street, Qingxi Town, Dongguan City, Guangdong Province, China
Product description	
Product name:	Dash Cam
Trademark:	N/A
Model name:	LD02-3CH
Serial Model:	LD02-1CH, LD02-2CH, LD02 Lite, LD02, D22, D24, D25
Standards:	N/A
Test procedure:	KDB 447498 D01 v06
Date of Test	
Date of test:	2024-02-22 to 2024-03-05
Test result:	Pass

Test Engineer :

(Maleah Deng)

Reviewed By :

(Leon Chen)

Approved By :

(Tom Xue)



RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

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 Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm(20cm)

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

2.4GWiFi:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz, n HT40: 2422-2452

Power density limited: 1mW/ cm²

5GWiFi:

802.11a: 20 MHz

802.11n: 20 MHz, 40 MHz

802.11ac: 20 MHz, 40 MHz, 80MHz

Antenna Type: FPC Antenna;

Antenna gain:

2.4G: 4.66 dBi

5G: U-NII 1: 5.54dBi; U-NII 3: 6.03dBi

R=20cm

mW=10^{^(dBm/10)}

2.4G: antenna gain Numeric=10^{^(dBi/10)}= 10^{^(4.66/10)}= 2.92

5G:

U-NII 1: antenna gain Numeric=10^{^(dBi/10)}= 10^{^(5.54/10)}= 3.58

U-NII 3: antenna gain Numeric=10^{^(dBi/10)}= 10^{^(6.03/10)}= 4.01

2.4GWiFi:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain Numeric	Power density(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)			
2412	802.11b	15.80	15±1	16	39.811	2.92	0.02316	1
2437		15.01	15±1	16	39.811	2.92	0.02316	1
2462		15.41	15±1	16	39.811	2.92	0.02316	1
2412	802.11g	14.70	14±1	15	31.623	2.92	0.01840	1
2437		14.15	14±1	15	31.623	2.92	0.01840	1
2462		14.52	14±1	15	31.623	2.92	0.01840	1
2412	802.11n H20	14.69	14±1	15	31.623	2.92	0.01840	1
2437		13.95	14±1	15	31.623	2.92	0.01840	1
2462		14.36	14±1	15	31.623	2.92	0.01840	1
2422	802.11n H40	14.82	14±1	15	31.623	2.92	0.01840	1
2437		14.32	14±1	15	31.623	2.92	0.01840	1
2452		14.07	14±1	15	31.623	2.92	0.01840	1



5G WIFI: UNII-1

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	Numeric		
5180	11a	9.65	9±1	10	10.000	3.58	0.00712	1
5200	11a	7.45	7±1	8	6.310	3.58	0.00450	1
5240	11a	8.81	8±1	9	7.943	3.58	0.00566	1
5180	11n (VHT20)	8.53	8±1	9	7.943	3.58	0.00566	1
5200	11n (VHT20)	8.97	9±1	10	10.000	3.58	0.00712	1
5240	11n (VHT20)	8.29	8±1	9	7.943	3.58	0.00566	1
5190	11n (VHT40)	9.07	9±1	10	10.000	3.58	0.00712	1
5230	11n (VHT40)	10.55	10±1	11	12.589	3.58	0.00897	1
5180	11ac (VHT20)	8.86	8±1	9	7.943	3.58	0.00566	1
5200	11ac (VHT20)	8.99	9±1	10	10.000	3.58	0.00712	1
5240	11ac (VHT20)	8.21	8±1	9	7.943	3.58	0.00566	1
5190	11ac (VHT40)	9.25	9±1	10	10.000	3.58	0.00712	1
5230	11ac (VHT40)	9.94	10±1	11	10.000	3.58	0.00712	1
5210	11ac (VHT80)	9.77	9±1	10	10.000	3.58	0.00712	1

5G WIFI: UNII-3

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	Numeric		
5745	11a	8.36	8±1	9	7.943	4.01	0.00633	1
5785	11a	8.77	8±1	9	7.943	4.01	0.00633	1
5825	11a	9.40	9±1	10	10.000	4.01	0.00797	1
5745	11n (VHT20)	9.55	9±1	10	10.000	4.01	0.00797	1
5785	11n (VHT20)	9.40	9±1	10	10.000	4.01	0.00797	1
5825	11n (VHT20)	10.16	10±1	11	12.589	4.01	0.01004	1
5755	11n (VHT40)	9.80	9±1	10	10.000	4.01	0.00797	1
5795	11n (VHT40)	9.97	9±1	10	10.000	4.01	0.00797	1
5745	11ac (VHT20)	9.37	9±1	10	10.000	4.01	0.00797	1
5785	11ac (VHT20)	9.58	9±1	10	10.000	4.01	0.00797	1
5825	11ac (VHT20)	9.21	9±1	10	10.000	4.01	0.00797	1
5755	11ac (VHT40)	9.65	9±1	10	10.000	4.01	0.00797	1
5795	11ac (VHT40)	9.60	9±1	10	10.000	4.01	0.00797	1
5775	11ac (VHT80)	9.40	9±1	10	10.000	4.01	0.00797	1

Conclusion:

Note: 2.4GWIFI and 5GWIFI cannot work at the same time

For the max result: $0.02316 \leq 1.0$ test exclusion threshold, No SAR is required.

----END OF REPORT----