RF EXPOSURE Test Report

Report No.:	MTi240226010-01E2
Date of issue:	2024-05-10
Applicant:	Dongguan Lingdu Electronic Technology Co.,Ltd
Product:	IP Camera
Model(s):	K06, K03, K05, K08, K09, K10, K15, K16, K27, K28, C620, C610
FCC ID:	2BEAP-K06

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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:	IP Camera
Trademark:	Arpha
Model name:	K06
Series Model:	K03, K05, K08, K09, K10, K15, K16, K27, K28, C620, C610
Standards:	N/A
Test procedure:	KDB 447498 D01 v06
Date of Test	
Date of test:	2024-04-24 to 2024-05-07
Test result:	Pass

Test Engineer : Yanice Xie

(Yanice Xie)

Reviewed By: : David. Lee

(David Lee)

Approved By: : Leon chen

(Leon Chen)

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: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm^2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1415926

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

Pd the limit of MPE, $1mW/cm^2$. 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/ cm^2

Antenna Type: FPC Antenna;

Antenna gain:

2.4G WIFI: 3.26dBi

R=20cm

mW=10^(dBm/10)

2.4G antenna gain Numeric=10^(dBi/10)= 10^(3.26/10)= 2.12

2.4G WIFI:

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/cm2)	(mW/cm2)
				(dBm)	(mW)	(dBi)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2412	802.11b	19.46	20±1	21	125.893	3.26	2.12	0.05306	1
2437		19.96	20±1	21	125.893	3.26	2.12	0.05306	1
2462		19.71	20±1	21	125.893	3.26	2.12	0.05306	1
2412	802.11g	19.39	20±1	21	125.893	3.26	2.12	0.05306	1
2437		20.06	20±1	21	125.893	3.26	2.12	0.05306	1
2462		19.97	20±1	21	125.893	3.26	2.12	0.05306	1
2412	802.11n H20	18.37	19±1	20	100.000	3.26	2.12	0.04214	1
2437		18.90	19±1	20	100.000	3.26	2.12	0.04214	1
2462		18.65	19±1	20	100.000	3.26	2.12	0.04214	1

Conclusion:

For the max result: 0.05306≤ 1.0 test exclusion threshold, No SAR is required.

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