MPE Report

Applicant	:	D-Link Corporation
Product Type	:	2K Outdoor Wi-Fi Camera
Trade Name	:	D-Link Corporation
Model Number	:	DCS-8302LH
Applicable Standard	:	47 CFR § 2.1091
Received Date	:	Jan. 04, 2022
Issue Date	:	Jan. 21, 2022

Issued by

Approved By : Kris Pan

(Kris Pan)

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Taiwan Accreditation Foundation accreditation number: 1330
Test Firm MRA designation number: TW0010

Note:

1.The test results are valid only for samples provided by customers and under the test conditions described in this report.
2.This report shall not be reproduced except in full, without the written approval of A Test Lab Technology Corporation.
3.The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Revision History

Rev.	Issued Date	Revisions	Revised By
00	Jan. 21, 2022	Initial Issue	Nicole Chu

Contents

1. General Information

1.1 Reference Applicable Standard

Standard	Description	Version
IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York.	1992
47 CFR Part §2.1091	Radiofrequency radiation exposure evaluation: mobile devices.	-
47 CFR Part §1.1310	Radiofrequency radiation exposure limits.	-

2. Description of Equipment under Test (EUT)

Applicant	D-Link Corporation 14420 Myford Road Suite 100 Irvine California United States 92606				
Product Type	2K Outdoor Wi-Fi Camera				
Trade Name	D-Link Corporation				
Model Number	DCS-8302LH				
FCC ID	KA2CS8302LHB1				
Frequency Range	WLAN 2.4 GHz Band：2412 - 2462 MHz Bluetooth：2402 - 2480 MHz				
Supported Modulations	WLAN 2.4 GHz : 802.11b/g/n HT20 / HT40				
	Bluetooth: LE				
Antenna Information	Band	Model	Type	Max. Gain (dBi)	
	2.4 GHz	VIC-N20-C-WB-T606	IFA Antenna	2412 - 2472	2.01
	Bluetooth	VIC-N20-C-WB-T606	IFA Antenna	2412 - 2480	1.24
Antenna Delivery	1Tx				
RF Evaluation	0.025 mW/cm^2				

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

3. Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled “Radiofrequency radiation exposure limits”, generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as “a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter’s radiating structure(s) and the body of the user or nearby persons. ” This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: “IMPORTANT: To meet the FCC’s RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna”. Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a “mobile device” as defined in section § 2.1091 paragraph (b).

Exposure evaluation
$$S_{eirp} = \frac{EIRP}{4\pi d^2} = \frac{PG}{4\pi d^2}\left(W/m^2\right)$$ Where   S: is the input power (W);   G: is the antenna gain;   d : is the distance between antennas and evaluation point (m).

4. Power Density Limit – RF Exposure Evaluation

Thv In 47 CFR § 1.1310, use of the device as based upon the user's awareness and ability to exercise control over human exposure. The two categories defined are Occupational / Controlled Exposure and General Population / Uncontrolled. These two categories are defined as follow:

Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time|E|²,|H|² or S (minutes)
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 / 1,500	30
1,500-100,000	-	-	1.0	30
Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time|E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1,842 / 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

5. Conducted Power

WLAN 2.4 G					
Band	Date Rate or Sub-test	CH	Frequency (MHz)	Average Conducted power	Tune-up Power
				dBm	dBm
802.11b	1M	1	2412	18.85	19.00
		6	2437	18.20	19.00
		11	2462	18.31	19.00
802.11g	6M	1	2412	17.00	17.50
		6	2437	16.70	17.50
		11	2462	16.63	17.50
802.11n_HT20	6.5M	1	2412	16.33	17.00
		6	2437	16.49	17.00
		11	2462	15.70	17.00
802.11n_HT40	13.5M	3	2422	13.45	14.00
		6	2437	17.15	18.00
		9	2452	17.17	18.00

Bluetooth LE		
MHz	Average Power	Tune-up Power
	dBm	dBm
2402	5.37	6.00
2440	5.07	6.00
2480	5.04	6.00

6. Test Result

Antenna	Band	Frequency (MHz)	Limit (mW)/cm²	Distance	Tune-up Power	ANT Gain	Numeric Gain	Duty Cycle	Power with Duty cycle	Power Density
				(cm)	(dBm)				(mW)	(mW)/cm²
				[R]	[P]	(dBi)	[G]		[P]x[G]	[S]
WiFi Antenna	2.4GHz	2412-2462	1.0	20	19.00	2.01	1.59	1	126.30	0.025
Bluetooth Antenna	Bluetooth	2402-2480	1.0	20	6.00	1.20	1.32	1	5.26	0.001

Note:

1. Mobile or fixed location transmitters, minimum separation distance is 20 cm, even if calculations indicate MPE distance is less.
2. We used the maximum power and gain to provide MPE results.
3. The Numeric Gain calculated by 10^(ant. Gain(dBi) /10).
4. The MPE results are evaluated by lowest data rate for WLAN.
5. The device operating IEEE 802.11 b/g/n mode is 1TX (SISO).
6. The Wi-Fi antenna and Bluetooth antenna cannot transmit simultaneously.

MPE = 0.025 W/m² < 1 mW/cm²

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