

RF Exposure Evaluation Report

Product Name : Smart Dashcam

Model No. : DC-100

FCC ID : ZOQDC-100

Applicant : Verizon Connect

Address : 5055 North Point Pkwy 14 Floor Room 1406 Alpharetta Georgia United States

Date of Receipt : Mar. 26, 2021

Date of Declaration : June 08, 2021

Report No. : 2131050R-E3082100013

Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Issued Date: June 08, 2021

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Product Name	Smart Dashcam	
Applicant	Verizon Connect	
Address	5055 North Point Pkwy 14 Floor Room 1406 Alpharetta Georgia United States	
Manufacturer	Wistron NeWeb Corp.	
Model No.	DC-100	
FCC ID.	ZOQDC-100	
Applicable Standard	KDB 447498 D01 v06	☒ Minimum test separation distance ≥ 20 cm
		☐ For low power devices
Test Result	Complied	

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Revision History

Report No.	Version	Description	Issued Date
2131050R-E3082100013	V1.0	Initial issue of report.	2021-06-08

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Smart Dashcam
Model No.	DC-100
FCC ID.	ZOQDC-100
Frequency Range	802.11b/g/n-20MHz: 2412-2462MHz, 802.11n40: 2422-2452MHz 802.11a/n/ac-20MHz: 5180-5240MHz, 5745-5825MHz 802.11n/ac-40MHz: 5190-5230MHz, 5755-5795MHz 802.11ac-80MHz: 5210MHz, 5775MHz BLE: 2402 – 2480MHz
Channel Number	802.11b/g/n-20MHz: 11, 802.11n40: 7CH 802.11a/n/ac-20MHz: 9; 802.11n/ac-40MHz: 4, 802.11ac-80MHz: 2 BLE: V4.2: 40CH
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11a/g/n/ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) BLE: V4.2: GFSK(1Mbps)
Channel Control	Auto
Antenna Type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”

1.2. Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	WNC	DC-100	PIFA Antenna	2.18dBi for 2.4 GHz 2.95dBi for 5.150-5.250 GHz 2.73dBi for 5.725~5.85GHz

2. RF Exposure Evaluation

2.1. Standard Applicable

According to KDB 447498 D01 (7.1), A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits.

2.2. Limits

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)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

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

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

2.3. Test Result of RF Exposure Evaluation

Product : Smart Dashcam
Test Item : RF Exposure Evaluation

WLAN 2.4G Peak Gain: 2.18dBi

Channel	Frequency	Conducted Peak Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mWc/m ²)	Pass/Fail
06	2462	22.92	195.884	0.0644	1	Pass

Note: The conducted output power is refer to report No.: 2131050R-E3032110116, 2131050R-E3032110118 from the DEKRA.

WLAN 5G Peak Gain: 2.95dBi

Channel	Frequency	Conducted AV Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mWc/m ²)	Pass/Fail
165	5240	13.97	24.946	0.0098	1	Pass

Note: The conducted output power is refer to report No.: 2131050R-E3032110129 from the DEKRA.