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Snap Inc.

MPE ASSESSMENT REPORT

Report Type:
FCC Part §2.1091, §2.1093 and §1.1307(b) assessment report

MODEL:
006

REPORT NUMBER:
220100298SHA-004

ISSUE DATE:
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TEST REPORT

Report no.: 220100298SHA-004

Applicant:	Snap Inc.
	2772 Donald Douglas Loop North, Santa Monica, California, United States.
Manufacturer:	Hangzhou Zero Zero Technology Co., Ltd
	401, 4th floor, building #2, Wudi Center, #2399 Yuhangtang Road, Yuhang District, Hangzhou, Zhejiang, China
Product Name:	pixy
Type/Model:	006
FCC ID:	2AIRN-006

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:	**REVIEWED BY:**
Project Engineer Erick Liu	Reviewer Wakeyou Wang

Revision History

Report No.	Version	Description	Issued Date
220100298SHA-004	Rev. 01	Initial issue of report	April 27, 2022

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	pixy
Type/Model:	006
Description of EUT:	The EUT is a drone with BLE and WIFI function, it has only one model.
Rating:	Powered by Battery: 3.85V DC, 860mAh,3.311Wh
EUT type:	☒ Table top ☐ Floor standing
Sample received date:	December 29, 2021
Date of test:	December 29, 2021 ~ March 1, 2022

1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20), IEEE 802.11n(HT40), IEEE 802.11ac(VHT20), IEEE 802.11ac(VHT40)
Operating Frequency:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT20): OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT40): OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11ac(VHT20): OFDMA (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11ac(VHT40): OFDMA (64-QAM, 16-QAM, QPSK, BPSK)
Type of Modulation:	2412MHz to 2462MHz for IEEE 802.11b/g/n(HT20)/ac(VHT20) 2422MHz to 2452MHz for IEEE 802.11n(HT40)/ac(VHT40)
Channel Number:	11 Channels for 802.11b, 802.11g, 802.11n(HT20) and 802.11ac(VHT20) 7 Channels for 802.11n(HT40) and 802.11ac(VHT40)
Antenna Information:	Dipole Antenna: 3.46dBi

Frequency Band:	5150 ~ 5250MHz 5725 ~ 5850MHz
Support Standards:	802.11a, 802.11n(HT20), 802.11n(HT40), 802.11ac(VHT20), 802.11ac(VHT40), 802.11ac(VHT80)
Type of Modulation:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Number:	For 5150 ~ 5250MHz band: Channel 36 - 48 For 5725 ~ 5850MHz band: Channel 149 - 165
Antenna Information:	Dipole Antenna: 3.62dBi for 5150 ~ 5250MHz 2.66dBi for 5725 ~ 5850MHz

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.15.1
Type of Modulation:	GFSK
Channel Number:	40
Data Rate:	1Mbps/2Mbps
Channel Separation:	2MHz
Antenna Information:	Dipole antenna, 3.46dBi

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1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0051
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

TEST REPORT

2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m^2)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

2.2 Assessment Results

Power density (S) is calculated according to the formula:
$S = PG / (4\pi R^2)$
Where S = power density in mW/cm^2
P = Radiated transmit power in mW
G = numeric gain of transmit antenna
R = distance (cm)

As we can see from the test report 220100298SHA-001 & 220100298SHA-002 & 220100298SHA-003:

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Mode	Frequency band	Power		Antenna Gain	R	S	Limits
	(MHz)	dBm	mW	dBi	(cm)	(mW/cm^2)	(mW/cm^2)
BLE	2400 – 2483.5	7.11	5.14	3.46	20	0.0023	1
2.4G WIFI	2400 – 2483.5	19.48	88.72	3.46	20	0.0392	1
5G WIFI	5150 - 5250	17.52	56.49	3.62	20	0.0259	1
	5725 - 5850	17.70	58.88	2.66	20	0.0216	1

Pixy cannot send photos/videos to the mobile via WIFI while flying. So, the WiFi and BLE cannot support simultaneous transmission.

The worst MPE = 0.0.0392mW/cm2 < 1 mW/cm2.

Note: 1 mW/cm2 from 1.310 Table 1.

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Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

**********END**********