RF EXPOSURE REPORT

Product:	402551 module
Model Name:	MP32-ARGON
FCC ID:	OMC402551
Applicant:	Icon Health & Fitness, Inc.
Address:	1500 South 1000 West 435-786-5915 Logan, UT 84321, United States
Manufacturer:	Icon Health & Fitness, Inc.
Address:	1500 South 1000 West 435-786-5915 Logan, UT 84321, United States
Prepared by:	BV 7Layers Communications Technology (Shenzhen) Co. Ltd
Lab Location:	No.B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China
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Report No.:	SA181120W004-1
Received Date:	Nov. 20, 2018
Test Date:	Nov. 21, 2018 ~ Dec. 23, 2018
Issued Date:	Dec. 24, 2018

This report should not be used by the client to claim product certification, approval, or endorsement by A2LA or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA181120W004-1	Original release	Dec. 24, 2018

BV 7Layers Communications Technology (Shenzhen) Co. Ltd

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1 CERTIFICATION

PRODUCT:	402551 module
BRAND NAME:	N/A
MODEL NAME:	MP32-ARGON
APPLICANT:	Icon Health & Fitness, Inc.
TESTED:	Nov. 21, 2018 ~ Dec. 23, 2018
TEST SAMPLE:	Production Unit
STANDARDS:	**FCC Part 2 (Section 2.1091)** **FCC OET Bulletin 65, Supplement C (01-01)** **KDB 447498 D01 General RF Exposure Guidance v06** IEEE C95.1

The above equipment has been tested by **BV 7Layers Communications Technology (Shenzhen) Co. Ltd** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE:** Dec. 24, 2018

(Roger Li/ Engineer)

APPROVED BY :  , **DATE:** Dec. 24, 2018

(Sam Tung / Manager)

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	402551 module	
MODEL NAME	MP32-ARGON	
NOMINAL VOLTAGE	12Vdc (adapter or host equipment)	
OPERATING TEMPERATURE RANGE	0 ~ 40℃	
MODULATION TYPE	**WLAN**	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	BT_LE	BT-LE(GFSK) for DTS
	Bluetooth	GFSK, π/4-DQPSK, 8DPSK
OPERATING FREQUENCY	**WLAN**	2412-2472MHz for 11b/g/n(HT20) 5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5805MHz for 11a/n(HT20)/n(HT40)/ac(HT80)
	Bluetooth/BT_LE	2402MHz ~ 2480MHz
ANTENNA TYPE	PIFA Antenna	
ANTENNA GAIN	2.4dBi for BT/2.4G WLAN 2.8dBi for 5180 ~ 5240MHz 2.8dBi for 5260 ~ 5320MHz 4.2dBi for 5500 ~ 5700MHz 4.2dBi for 5745 ~ 5805MHz	
HW VERSION	A299C	
SW VERSION	Model AOSP on avn_ref	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

3 RF EXPOSURE

3.1 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)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

3.2 MPE CALCULATION FORMULA

Pd = (Pout*G) / (4*pi*r2)

where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

3.3 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Module Approval**.

3.4 CONDUCTED POWER

Bluetooth

GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
0	2402	6.26	6.5	N/A
39	2441	6.23	6.5	N/A
78	2480	5.61	6.0	N/A

π /4 DQPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
0	2402	3.81	4.5	N/A
39	2441	3.72	4.5	N/A
78	2480	3.16	4.0	N/A

8DPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
0	2402	3.80	4.5	N/A
39	2441	3.69	4.5	N/A
78	2480	3.08	3.5	N/A

BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
0	2402	5.43	5.5	N/A
39	2441	5.53	6.5	N/A
78	2480	5.40	6.0	N/A

WIFI 2.4G

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
1	2412	15.10	15.5	N/A
6	2437	15.26	15.5	N/A
11	2462	15.28	15.5	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
1	2412	14.20	14.5	N/A
6	2437	14.33	14.5	N/A
11	2462	14.20	14.5	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
1	2412	13.60	14.0	N/A
6	2437	13.72	14.0	N/A
11	2462	13.85	14.0	N/A

WIFI 5G

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
36	5180	13.43	14.0	PASS
40	5200	13.44	14.0	PASS
48	5240	13.45	14.0	PASS
52	5260	13.43	14.0	PASS
60	5300	13.51	14.0	PASS
64	5320	13.44	14.0	PASS
100	5500	13.41	14.0	PASS
116	5580	13.45	14.0	PASS
140	5700	13.50	14.0	PASS
149	5745	13.45	14.0	PASS
157	5785	13.49	14.0	PASS
161	5805	13.45	14.0	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
36	5180	13.42	14.0	PASS
40	5200	13.47	14.0	PASS
48	5240	13.47	14.0	PASS
52	5260	13.51	14.0	PASS
60	5300	13.46	14.0	PASS
64	5320	13.46	14.0	PASS
100	5500	13.43	14.0	PASS
116	5580	13.42	14.0	PASS
140	5700	13.46	14.0	PASS
149	5745	13.42	14.0	PASS
157	5785	13.50	14.0	PASS
161	5805	13.45	14.0	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
38	5190	12.50	13.0	PASS
46	5230	12.52	13.0	PASS
54	5270	12.43	13.0	PASS
62	5310	12.48	13.0	PASS
102	5510	12.45	13.0	PASS
110	5550	12.47	13.0	PASS
134	5670	12.46	13.0	PASS
151	5755	12.40	13.0	PASS
159	5795	12.37	13.0	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	TUNE-UP POWER (dBm)	PASS/FAIL
42	5210	9.58	10.0	PASS
58	5290	10.92	11.5	PASS
106	5530	10.48	11.0	PASS
155	5775	10.75	11.5	PASS

3.5 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

TUNE-UP POWER TABLE

Band	Frequency (MHz)	Operating Mode	Tune-Up Power And Tolerance (dBm)
Bluetooth	2402	GFSK	6.0 ± 0.5
WIFI 2.4G	2462	11b	15.0 ± 0.5
WIFI 5G B1	5200	11n (20MHz)	13.5 ± 0.5
WIFI 5G B2	5300	11a	13.5 ± 0.5
WIFI 5G B3	5700	11a	13.5 ± 0.5
WIFI 5G B4	5785	11n (20MHz)	13.5 ± 0.5

WIFI

Band	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	E.I.R.P Power (mW)	Power Density (mW/cm^2)	limit (mW/cm^2)	PASS / FAIL
Bluetooth	2402	GFSK	2.4	6.5	113.501	0.023	1.00	PASS
WIFI 2.4G	2462	11b	2.4	15.5	61.660	0.012	1.00	PASS
WIFI 5G B1	5200	11n (20MHz)	2.8	14.0	47.863	0.010	1.00	PASS
WIFI 5G B2	5300	11a	2.8	14.0	47.863	0.010	1.00	PASS
WIFI 5G B3	5700	11a	4.2	14.0	66.069	0.013	1.00	PASS
WIFI 5G B4	5785	11n (20MHz)	4.2	14.0	66.069	0.013	1.00	PASS

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