

# 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

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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

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## RELEASE CONTROL RECORD

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



Test Report No.: SA181120W004-1

## 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 :** Roger, **DATE:** Dec. 24, 2018  
(Roger Li/ Engineer)

**APPROVED BY :** [Signature], **DATE:** Dec. 24, 2018  
( Sam Tung / Manager)



## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                                    |                                                                                                                                             |                                                                                                                                         |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRODUCT</b>                     | 402551 module                                                                                                                               |                                                                                                                                         |
| <b>MODEL NAME</b>                  | MP32-ARGON                                                                                                                                  |                                                                                                                                         |
| <b>NOMINAL VOLTAGE</b>             | 12Vdc (adapter or host equipment)                                                                                                           |                                                                                                                                         |
| <b>OPERATING TEMPERATURE RANGE</b> | 0 ~ 40°C                                                                                                                                    |                                                                                                                                         |
| <b>MODULATION TYPE</b>             | <b>WLAN</b>                                                                                                                                 | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM                                                                         |
|                                    | <b>BT_LE</b>                                                                                                                                | BT-LE(GFSK) for DTS                                                                                                                     |
|                                    | <b>Bluetooth</b>                                                                                                                            | GFSK, $\pi/4$ -DQPSK, 8DPSK                                                                                                             |
| <b>OPERATING FREQUENCY</b>         | <b>WLAN</b>                                                                                                                                 | 2412-2472MHz for 11b/g/n(HT20)<br>5180 ~ 5240MHz, 5260 ~ 5320MHz,<br>5500 ~ 5700MHz, 5745 ~ 5805MHz for<br>11a/n(HT20)/n(HT40)/ac(HT80) |
|                                    | <b>Bluetooth/BT_LE</b>                                                                                                                      | 2402MHz ~ 2480MHz                                                                                                                       |
| <b>ANTENNA TYPE</b>                | PIFA Antenna                                                                                                                                |                                                                                                                                         |
| <b>ANTENNA GAIN</b>                | 2.4dBi for BT/2.4G WLAN<br>2.8dBi for 5180 ~ 5240MHz<br>2.8dBi for 5260 ~ 5320MHz<br>4.2dBi for 5500 ~ 5700MHz<br>4.2dBi for 5745 ~ 5805MHz |                                                                                                                                         |
| <b>HW VERSION</b>                  | A299C                                                                                                                                       |                                                                                                                                         |
| <b>SW VERSION</b>                  | Model AOSP on avn_ref                                                                                                                       |                                                                                                                                         |
| <b>I/O PORTS</b>                   | Refer to user's manual                                                                                                                      |                                                                                                                                         |
| <b>CABLE SUPPLIED</b>              | 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 <sup>2</sup> ) | 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

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER<br>(dBm) | TUNE-UP<br>POWER<br>(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       |

##### $\pi/4$ DQPSK

| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER<br>(dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER<br>(dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER<br>(dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER<br>(dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER<br>(dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER<br>(dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER (dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER (dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER (dBm) | TUNE-UP<br>POWER<br>(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<br>FREQUENCY<br>(MHz) | AVERAGE<br>POWER (dBm) | TUNE-UP<br>POWER<br>(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 <sup>2</sup> ) | limit (mW/cm <sup>2</sup> ) | 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        |

--END--