



Test Report No.: SA181120W004-1



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 |



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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°C | |
| MODULATION TYPE | WLAN | CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM |
| | BT_LE | BT-LE(GFSK) for DTS |
| | Bluetooth | GFSK, $\pi/4$ -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

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

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

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 |

$\pi/4$ 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 |



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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 |



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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 |



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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 |

--END--