

FCC RF Exposure Report

FCC ID : MXF-WAPQ-245
Equipment : Router
Model No. : AC3000
Brand Name : Onelink
Applicant : Gemtek Technology Co., Ltd.
Address : No.15-1 Zhonghua Rd, Hsinchu Industrial
Park, Hukou, Hsinchu, Taiwan, R.O.C
Standard : 47 CFR FCC Part 2.1091
Received Date : Mar. 29, 2019
Tested Date : Nov. 13 ~ Nov. 15, 2018 (for original test)
Apr. 10 ~ Jun. 06, 2019 (for new test)

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:


Along Chen / Assistant Manager

Approved by:


Gary Chang / Manager



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Release Record

| Report No. | Version | Description | Issued Date |
|-------------|---------|---------------|---------------|
| FA8O3101-01 | Rev. 01 | Initial issue | Aug. 02, 2019 |

1 General Description

1.1 Information

This report is issued as a duplicate report to the original ICC report no. FA8O3101. . The difference is concerned with following items:

- ✧ Antenna change and enable beamforming function for 2.4G and 5GHz UNII band 1 and 3 by software setting
- ✧ Hardware minor change of non-RF PCB layout is to reserve coexistence function.

.

Note:

Previous version of hardware: V03A

Current version (Re-layout) of hardware: V04

2 MPE EVALUATION OF MOBILE DEVICES

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 22 cm or more from persons.

2.1 LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE

| Frequency Range (MHz) | Power Density (mW /cm ²) | Averaging Time (minutes) |
|-----------------------|--------------------------------------|--------------------------|
| 300~1500 | F/1500 | 30 |
| 1500~100000 | 1.0 | 30 |

2.2 MPE EVALUATION FORMULA

$$Pd = \frac{Pt}{4 * Pi * R^2}$$

Where

Pd= Power density in mW/cm²
 Pt= EIRP in mW
 Pi= 3.1416
 R= Measurement distance

2.3 DEVIATION FROM TEST STANDARD AND MEASUREMENT PROCEDURE

None

2.4 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

| Parameters | Uncertainty |
|-----------------|-------------|
| Conducted power | ±0.808 dB |

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared values of gain for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of the gain.

2.5 MPE EVALUATION RESULTS

MPE Evaluation of Single Transmission

Non-beamforming mode

| Frequency Range (MHz) | Maximum Conducted Power (dBm) | Rated Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) | Ratio | Pass / Fail |
|-----------------------|-------------------------------|-------------------|--------------------|---------------|-------------------------------------|-----------------------------|-------|-------------|
| 2412 ~ 2462 | 23.29 | 23.5 | 2.8 | 22 | 0.070 | 1 | 0.070 | Pass |
| 5180 ~ 5240 | 23.89 | 24 | 5.3 | 22 | 0.140 | 1 | 0.140 | Pass |
| 5745 ~ 5825 | 29.42 | 29.5 | 4.8 | 22 | 0.443 | 1 | 0.443 | Pass |

Beamforming mode

| Frequency Range (MHz) | Maximum Conducted Power (dBm) | Rated Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) | Ratio | Pass / Fail |
|-----------------------|-------------------------------|-------------------|--------------------|---------------|-------------------------------------|-----------------------------|-------|-------------|
| 2412 ~ 2462 | 23 | 23 | 5.66 | 22 | 0.121 | 1 | 0.121 | Pass |
| 5180 ~ 5240 | 23.08 | 23.1 | 7.55 | 22 | 0.191 | 1 | 0.191 | Pass |
| 5745 ~ 5825 | 25.77 | 26 | 10.13 | 22 | 0.674 | 1 | 0.674 | Pass |

Note:

2412-2462 MHz

Directional gain = $10 * \log((10^{2.8/20} + 10^{2.5/20})^2 / 2) = 5.66$ dBi

5150-5250 MHz

Directional gain = $10 * \log((10^{5.3/20} + 10^{3.7/20})^2 / 2) = 7.55$ dBi

5725 ~ 5850 MHz

Directional gain = $10 * \log((10^{4.8/20} + 10^{3.8/20} + 10^{3.6/20} + 10^{4.2/20})^2 / 4) = 10.13$ dBi.

2.6 MPE EVALUATION OF SIMULTANEOUS TRANSMISSION

| Mode | Max Ratio of Each Mode | |
|----------------------------|-----------------------------|-------------------------|
| | <i>Non-beamforming mode</i> | <i>Beamforming mode</i> |
| WLAN 2.4GHz | 0.070 | 0.121 |
| WLAN 5GHz(5180 ~ 5240 MHz) | 0.140 | 0.191 |
| WLAN 5GH(5745 ~ 5825 MHz) | 0.443 | 0.674 |
| Sum | 0.653 | 0.986 |
| Limit | 1 | 1 |
| Pass / Fail | Pass | Pass |

3 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

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No. 30-2, Ding Fwu Tsuen, Lin
Kou District, New Taipei City,
Taiwan, R.O.C.

Kwei Shan

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd St.,
Kwei Shan District, Tao Yuan City
333, Taiwan, R.O.C.

Kwei Shan Site II

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If you have any suggestion, please feel free to contact us as below information.

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