# FCC RF Exposure Report

| | | |
|---|---|---|
| **FCC ID** | : | **P27RP324** |
| **Equipment** | : | **AC2100 Wi-Fi Mesh Extender** |
| **Model No.** | : | **RP324** |
| **Multiple Listing** | : | **Refer to item 1.1.1 for more details.** |
| **Brand Name** | : | **Sercomm** |
| **Applicant** | : | **Sercomm Corporation** |
| **Address** | : | **8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.** |
| **Standard** | : | **47 CFR FCC Part 2.1091** |
| **Received Date** | : | **Oct. 02, 2019** |
| **Tested Date** | : | **Oct. 05 ~ Nov. 12, 2019** |

**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:** **Approved by:**

**Along Chen / Assistant Manager** **Gary Chang / Manager**

Testing Laboratory 2732

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# Release Record

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| FA9O0208 | Rev. 01 | Initial issue | Dec. 09, 2019 |

# 1 General Description

## 1.1 INFORMATION

### 1.1.1 PRODUCT DETAILS

The following models are provided to this EUT.

| Model Name | Description |
|---|---|
| RP324 | Main tested model. |
| RP324XX | the 1st X should be "blank" or "-"; the rest X could be 0 to 9, A to Z, "blank" or "-", for marketing purpose. |
| ✦ All models are electrically identical, different model names are for marketing purpose. | |

# 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 20 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

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

Where

Pd= Power density in mW/cm$^2$
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 of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification. |

## 2.5 MPE EVALUATION RESULTS

***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 | 22.77 | 23.00 | 3.14 | 20 | 0.082 | 1 | 0.082 | Pass |
| 5180-5240 | 25.78 | 26.00 | 3.25 | 20 | 0.167 | 1 | 0.167 | Pass |
| 5745-5825 | 25.73 | 26.00 | 3.20 | 20 | 0.165 | 1 | 0.165 | Pass |

*Ratio = Power density / Limit.

***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 |
|---|---|---|---|---|---|---|---|---|
| 5180-5240 | 25.48 | 25.50 | 8.98 | 20 | 0.558 | 1 | 0.558 | Pass |
| 5745-5825 | 25.14 | 25.50 | 8.97 | 20 | 0.557 | 1 | 0.557 | Pass |

*Ratio = Power density / Limit.

**Note:**

For 5150~5250 MHz band

Directional gain = 10 x $\log((10^{2.38/20}+10^{3.25/20}+10^{3.04/20}+10^{3.14/20})^2/4)$ = 8.98 dBi.

For 5745~5850 MHz band

Directional gain = 10 x $\log((10^{2.3/20}+10^{3.14/20}+10^{3.13/20}+10^{3.2/20})^2/4)$ = 8.97 dBi.

## 2.6 MPE EVALUATION OF SIMULTANEOUS TRANSMISSION

| Mode | Max Ratio of Each Mode |
|---|---|
| **WLAN 2.4GHz *(Non-beamforming mode)*** | 0.082 |
| **WLAN 5GHz *(Non-beamforming mode)*** | 0.167 |
| Sum | 0.249 |
| Limit | 1 |
| Pass / Fail | Pass |

| Mode | Max Ratio of Each Mode |
|---|---|
| **WLAN 2.4GHz( *Non-beamforming mode)*** | 0.082 |
| **WLAN 5GHz (*Beamforming mode* )** | 0.558 |
| Sum | 0.64 |
| Limit | 1 |
| Pass / Fail | 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** | **Kwei Shan** | **Kwei Shan Site II** |
|---|---|---|
| Tel: 886-2-2601-1640 | Tel: 886-3-271-8666 | Tel: 886-3-271-8640 |
| No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C. | No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C. | No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C. |

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

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Email: ICC_Service@icertifi.com.tw

**==END==**