

# FCC RF Exposure Report

**FCC ID** : P27-IP5446M  
**Equipment** : IP5446M  
**Model No.** : IP5446M  
**Multiple Listing** : IP5446MXXX  
(the X should be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose)  
**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** : May 12, 2023  
**Tested Date** : May 15 ~ Jun. 01, 2023

We, International Certification Corporation, 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 shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:

  
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Along Chen / Assistant Manager

  
\_\_\_\_\_  
Gary Chang / Manager

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## Release Record

Report No.	Version	Description	Issued Date
FA351201	Rev. 01	Initial issue	Jul. 07, 2023

# 1 MPE EVALUATION OF MOBILE DEVICES

## 1.1 LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE

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

## 1.2 MPE EVALUATION FORMULA

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

Where

Pd= Power density in mW/cm<sup>2</sup>

Pt= EIRP in mW

Pi= 3.1416

R= Measurement distance

## 1.3 REFERENCE GUIDANCE

447498 D01 General RF Exposure Guidance v06

## 1.4 DEVIATION FROM TEST STANDARD AND MEASUREMENT PROCEDURE

None

## 1.5 MEASUREMENT UNCERTAINTY

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.

## 1.6 MPE EVALUATION RESULTS

### Non-beamforming mode

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Maximum Tune Up Limit (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	*Ratio	Pass / Fail
2412-2462	27.63	28.0	3.1	24	0.178	1	0.178	Pass
5180-5240	27.19	27.5	3.2	24	0.162	1	0.162	Pass
5260-5320	22.77	23.0	3.2	24	0.058	1	0.058	Pass
5500-5720	23.62	24.0	3.0	24	0.069	1	0.069	Pass
5745-5825	29.54	30.0	3.1	24	0.282	1	0.282	Pass

\*Ratio = Power density / Limit.

### Beamforming mode

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Maximum Tune Up Limit (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	*Ratio	Pass / Fail
2412-2462	25.46	25.5	8.97	24	0.387	1	0.387	Pass
5180-5240	26.89	27.0	9.00	24	0.550	1	0.550	Pass
5260-5320	20.95	21.0	9.00	24	0.138	1	0.138	Pass
5500-5720	21.07	21.5	8.82	24	0.149	1	0.149	Pass
5745-5825	27.04	27.5	8.80	24	0.589	1	0.589	Pass

\*Ratio = Power density / Limit.

Remarks:

For 2412~2462MHz:

Directional gain =  $10 \times \log((10^{3.1/20} + 10^{3/20} + 10^{3.1/20} + 10^{2.6/20})^2/4) = 8.97$  dBi

For 5180~5240MHz:

Directional gain =  $10 \times \log((10^{3/20} + 10^{2.9/20} + 10^{3.2/20} + 10^{2.8/20})^2/4) = 9.00$  dBi

For 5260~5320MHz:

Directional gain =  $10 \times \log((10^{3/20} + 10^{2.9/20} + 10^{3.2/20} + 10^{2.8/20})^2/4) = 9.00$  dBi

For 5500~5700MHz:

Directional gain =  $10 \times \log((10^{2.6/20} + 10^{2.6/20} + 10^{3/20} + 10^{3/20})^2/4) = 8.82$  dBi

For 5745~5825MHz:

Directional gain =  $10 \times \log((10^{2.4/20} + 10^{3.1/20} + 10^{2.9/20} + 10^{2.7/20})^2/4) = 8.8$  dBi

## 1.7 MPE EVALUATION OF SIMULTANEOUS TRANSMISSION

### *Non-beamforming mode*

Mode	Max Ratio of Each Mode
WLAN 5GHz	0.178
BT	0.282
Sum	0.46
Limit	1
Pass / Fail	Pass

### *Beamforming mode*

Mode	Max Ratio of Each Mode
WLAN 5GHz	0.387
BT	0.589
Sum	0.976
Limit	1
Pass / Fail	Pass

## 2 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 Corporation (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**

Tel: 886-2-2601-1640

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 Dist., Tao Yuan  
City 33381, Taiwan (R.O.C.)  
No.2-1, Lane 6, Wen San 3rd  
St., Kwei Shan Dist., Tao Yuan  
City 33381, Taiwan (R.O.C.)

### **Kwei Shan Site II**

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd  
St., Kwei Shan Dist., Tao Yuan  
City 33381, Taiwan (R.O.C.)

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

Tel: 886-3-271-8666

Fax: 886-3-318-0345

Email: ICC\_Service@icertifi.com.tw

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