



# MPE ESTIMATION

**Test report**  
**On Behalf of**  
**Shenzhen Four Seas Global Link Network Technology Co., Ltd**  
**For**  
**Wireless AP**  
**Model No.: CF-EW72, CF-EW71, CF-EW73, CF-EW74, CF-EW75,**  
**CF-E5, CF-E7, CF-WA900 V2, CF-E313AC, CF-WR754AC,**  
**CF-WR755AC**

**FCC ID: OYR-CF-EW72**

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**Date of Test:**       **Aug. 02, 28, 2019 ~Aug. 13, 2019**  
**Date of Report:**   **Aug. 13, 2019**  
**Report Number:**   **HK1907291852-4E**

**1, Limit for General Population/ Uncontrolled Exposures**

| Frequency        | Power density (mW/ cm <sup>2</sup> ) | Averaging time(minutes) |
|------------------|--------------------------------------|-------------------------|
| 300MHz----1.5GHz | F/1500                               | 30                      |
| 1.5GHz---100GHz  | 1.0                                  | 30                      |

Note: F= Frequency in MHz

**2, Estimation Result****For antenna 1:****2.4G WIFI**

| Mode     | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|----------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11b      | 14.32                    | 14±1(15)           | 31.62                 | 1                 | 1.2589                | 0.00792                   |
| 11g      | 13.23                    | 13±1(14)           | 25.12                 | 1                 | 1.2589                | 0.00629                   |
| 11n/HT20 | 10.36                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n/HT40 | 9.58                     | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |

$$Pd = \frac{Pout * G}{4\pi r^2};$$

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1907291852-1E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi, MIMO gain=4.01dBi

**5.2G WIFI**

| Mode       | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|------------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11a        | 10.35                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT20)  | 10.28                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT40)  | 9.56                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT20) | 10.37                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11ac(HT40) | 9.26                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT80) | 9.21                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |

$$Pd = \frac{Pout * G}{4\pi r^2};$$

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1907291852-2E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi,MIMO gain=4.01dBi

**5.8G WIFI**

| Mode       | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|------------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11a        | 10.25                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT20)  | 10.56                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT40)  | 10.12                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11ac(HT20) | 11.41                    | 11±1(12)           | 15.85                 | 1                 | 1.2589                | 0.00397                   |
| 11ac(HT40) | 10.41                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11ac(HT80) | 9.39                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |

$$Pd = \frac{Pout * G}{4\pi r^2};$$

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1907291852-3E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi,MIMO gain=4.01dBi

**For antenna 2:****2.4G WIFI**

| Mode     | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|----------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11b      | 14.34                    | 14±1(15)           | 31.62                 | 1                 | 1.2589                | 0.00792                   |
| 11g      | 12.63                    | 12±1(13)           | 19.95                 | 1                 | 1.2589                | 0.00500                   |
| 11n/HT20 | 10.63                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n/HT40 | 10.43                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |

$$Pd = \frac{P_{out} * G}{4\pi r^2};$$

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1907291852-1E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi, MIMO gain=4.01dBi

**5.2G WIFI**

| Mode       | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|------------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11a        | 10.47                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT20)  | 9.69                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11n(HT40)  | 9.55                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT20) | 9.56                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT40) | 8.53                     | 8±1(9)             | 7.94                  | 1                 | 1.2589                | 0.00199                   |
| 11ac(HT80) | 9.26                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |

$$Pd = \frac{P_{out} * G}{4\pi r^2};$$

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1907291852-2E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi, MIMO gain=4.01dBi

**5.8G WIFI**

| Mode       | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|------------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11a        | 10.54                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT20)  | 10.19                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT40)  | 10.20                    | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT20) | 10.55                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11ac(HT40) | 10.28                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11ac(HT80) | 9.39                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |

$$Pd = \frac{P_{out} * G}{4\pi r^2};$$

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1907291852-3E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi, MIMO gain=4.01dBi

**For MIMO:****2.4G WIFI**

| Mode     | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|----------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11b      | --                       | --                 | --                    | --                | --                    | --                        |
| 11g      | --                       | --                 | --                    | --                | --                    | --                        |
| 11n/HT20 | 13.43                    | 13±1(14)           | 25.12                 | 4.01              | 2.518                 | 0.01256                   |
| 11n/HT40 | 13.02                    | 13±1(14)           | 25.12                 | 4.01              | 2.518                 | 0.01256                   |

$$Pd = \frac{P_{out} * G}{4\pi r^2};$$

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1907291852-1E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi, MIMO gain=4.01dBi

**5.2G WIFI**

| Mode                                                                                                                                                                     | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11b                                                                                                                                                                      | --                       | --                 | --                    | --                | --                    | --                        |
| 11n(HT20)                                                                                                                                                                | 13.01                    | 13±1(14)           | 25.12                 | 4.01              | 2.518                 | 0.01256                   |
| 11n(HT40)                                                                                                                                                                | 12.48                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT20)                                                                                                                                                               | 12.99                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT40)                                                                                                                                                               | 11.84                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT80)                                                                                                                                                               | 12.25                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| $Pd = \frac{Pout * G}{4\pi r^2};$                                                                                                                                        |                          |                    |                       |                   |                       |                           |
| Note:                                                                                                                                                                    |                          |                    |                       |                   |                       |                           |
| Note: The estimation distance is 20cm                                                                                                                                    |                          |                    |                       |                   |                       |                           |
| Note:<br>PK Output power= conducted power.<br>Conducted power see the test report HK1907291852-2E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi, MIMO gain=4.01dBi |                          |                    |                       |                   |                       |                           |

**5.8G WIFI**

| Mode                                                                                                                                                                     | Max PK Output power(dBm) | Tune Up Power(dBm) | Max Tune Up power(mW) | Antenna Gain(dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------|-----------------------|-------------------|-----------------------|---------------------------|
| 11b                                                                                                                                                                      | --                       | --                 | --                    | --                | --                    | --                        |
| 11n(HT20)                                                                                                                                                                | 13.37                    | 13±1(14)           | 25.12                 | 4.01              | 2.518                 | 0.01256                   |
| 11n(HT40)                                                                                                                                                                | 13.17                    | 13±1(14)           | 25.12                 | 4.01              | 2.518                 | 0.01256                   |
| 11ac(HT20)                                                                                                                                                               | 13.68                    | 13±1(14)           | 25.12                 | 4.01              | 2.518                 | 0.01256                   |
| 11ac(HT40)                                                                                                                                                               | 13.36                    | 13±1(14)           | 25.12                 | 4.01              | 2.518                 | 0.01256                   |
| 11ac(HT80)                                                                                                                                                               | 12.59                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| $Pd = \frac{Pout * G}{4\pi r^2};$                                                                                                                                        |                          |                    |                       |                   |                       |                           |
| Note:                                                                                                                                                                    |                          |                    |                       |                   |                       |                           |
| Note: The estimation distance is 20cm                                                                                                                                    |                          |                    |                       |                   |                       |                           |
| Note:<br>PK Output power= conducted power.<br>Conducted power see the test report HK1907291852-3E, antenna port 1 gain=1dBi, antenna port 2 gain=1dBi, MIMO gain=4.01dBi |                          |                    |                       |                   |                       |                           |

Note: the device could not transmit simultaneously in 2.4G and 5G.



when the minimum test separation distance is  $>20$  cm, a distance of 20 cm is applied to determine SAR test exclusion. The test exclusion threshold is  $0.01256\text{mW}/\text{cm}^2$  which is  $< 1.0\text{mW}/\text{cm}^2$ , SAR testing is not required.

-----The End-----