



# MPE ESTIMATION

**Test report  
On Behalf of  
Shenzhen Zidoo Technology Co., Ltd.  
For  
4K UHD Media Player**

**Model No.: Z1000, Z2000, Z3000, Z5000, Z6000 · Z7000,  
Z8000, Z9000, UHD1000, UHD2000, UHD3000, UHD5000,  
UHD6000, UHD7000, UHD8000, UHD9000, Z1000 PRO,  
Z2000 PRO, Z3000 PRO, Z5000 PRO, Z6000 PRO,  
Z7000 PRO, Z8000 PRO, Z9000 PRO**

**FCC ID: 2AGN7-Z1000**

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**Date of Test:** Apr. 03, 2019 ~ Apr. 18, 2019

**Date of Report:** Apr. 18, 2019

**Report Number:** HK1904110796-4E



### 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      | 14.45                    | 14±1(15)           | 31.62                 | 1                 | 1.2589                | 0.00792                   |
| 11g      | 13.68                    | 13±1(14)           | 25.12                 | 1                 | 1.2589                | 0.00629                   |
| 11n/HT20 | 10.65                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n/HT40 | 10.02                    | 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 HK1904110796-1E, 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        | 10.67                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT20)  | 9.99                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11n(HT40)  | 9.71                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT20) | 9.94                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT40) | 9.15                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT80) | 8.99                     | 8±1(9)             | 7.94                  | 1                 | 1.2589                | 0.00199                   |

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

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1904110796-2E, 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        | 10.69                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT20)  | 9.99                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11n(HT40)  | 9.78                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT20) | 9.74                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT40) | 8.89                     | 8±1(9)             | 7.94                  | 1                 | 1.2589                | 0.00199                   |
| 11ac(HT80) | 8.80                     | 8±1(9)             | 7.94                  | 1                 | 1.2589                | 0.00199                   |

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

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1904110796-3E, 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      | 14.52                    | 14±1(15)           | 31.62                 | 1                 | 1.2589                | 0.00792                   |
| 11g      | 12.52                    | 12±1(13)           | 19.95                 | 1                 | 1.2589                | 0.00500                   |
| 11n/HT20 | 11.02                    | 11±1(12)           | 15.85                 | 1                 | 1.2589                | 0.00397                   |
| 11n/HT40 | 10.01                    | 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 HK1904110796-1E, 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        | 10.76                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT20)  | 9.99                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11n(HT40)  | 9.99                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT20) | 9.95                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT40) | 8.78                     | 8±1(9)             | 7.94                  | 1                 | 1.2589                | 0.00199                   |
| 11ac(HT80) | 9.06                     | 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 HK1904110796-2E, 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        | 10.79                    | 10±1(11)           | 12.59                 | 1                 | 1.2589                | 0.00315                   |
| 11n(HT20)  | 9.88                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11n(HT40)  | 9.79                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT20) | 9.84                     | 9±1(10)            | 10.00                 | 1                 | 1.2589                | 0.00251                   |
| 11ac(HT40) | 8.58                     | 8±1(9)             | 7.94                  | 1                 | 1.2589                | 0.00199                   |
| 11ac(HT80) | 8.91                     | 8±1(9)             | 7.94                  | 1                 | 1.2589                | 0.00199                   |

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

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power.

Conducted power see the test report HK1904110796-3E, 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 | 13.78                    | 13±1(14)           | 25.12                 | 4.01              | 2.518                 | 0.01256                   |
| 11n/HT40 | 12.96                    | 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:

PK Output power= conducted power.

Conducted power see the test report HK1904110796-1E, 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)  | 13.00                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11n(HT40)  | 12.84                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT20) | 12.96                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT40) | 11.94                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT80) | 12.04                    | 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:

PK Output power= conducted power.

Conducted power see the test report HK1904110796-2E, 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)  | 12.84                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11n(HT40)  | 12.66                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT20) | 12.80                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT40) | 11.67                    | 12±1(13)           | 19.95                 | 4.01              | 2.518                 | 0.00998                   |
| 11ac(HT80) | 11.87                    | 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:

PK Output power= conducted power.

Conducted power see the test report HK1904110796-2E, 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  $0.00792\text{mW}/\text{cm}^2$  which is  $< 1.0\text{mW}/\text{cm}^2$ , SAR testing is not required.

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