

# Maximum Permissible Exposure Evaluation

**FCC ID: 2AE6WRP-R1**

## 1. Client Information

**Applicant** : Shenzhen omimo Technology Co.,Ltd.  
**Address** : Room1212, Chuangjian Building, No.6023, Shennan Boulevard,  
Futian District, Shenzhen, China  
**Manufacturer** : Shenzhen omimo Technology Co.,Ltd.  
**Address** : Room1212, Chuangjian Building, No.6023, Shennan Boulevard,  
Futian District, Shenzhen, China

## 2. General Description of EUT

|                            |   |                          |                                                                                                                                                                                       |
|----------------------------|---|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT Name</b>            | : | omimo WIFI Repeater      |                                                                                                                                                                                       |
| <b>Models No.</b>          | : | RP-R1                    |                                                                                                                                                                                       |
| <b>Model Difference</b>    | : | N/A                      |                                                                                                                                                                                       |
| <b>Product Description</b> | : | Operation Frequency:     | 802.11b/g/n(HT20): 2412MHz~2462MHz<br>802.11n(HT40): 2422MHz~2452MHz                                                                                                                  |
|                            |   | Number of Channel:       | 802.11b/g/n(HT20):11 channels<br>802.11n(HT40): 7 channels                                                                                                                            |
|                            |   | RF Output Power:         | 802.11b: 14.54 dBm<br>802.11g: 14.64 dBm<br>802.11n (HT20): 14.33 dBm<br>802.11n (HT40): 14.41 dBm                                                                                    |
|                            |   | Antenna Gain:            | 1 dBi PCB Antenna                                                                                                                                                                     |
|                            |   | Modulation Type:         | 802.11b: DSSS(BPSK, QPSK, CCK)<br>802.11g/n:OFDM(BPSK,QPSK,16QAM, 64QAM)                                                                                                              |
|                            |   | Bit Rate of Transmitter: | 802.11b:11/5.5/2/1 Mbps<br>802.11g:54/48/36/24/18/12/9/6 Mbps<br>802.11n(HT20):14.44/28.88/43.34/57.78/86.66/115.56 /130/144.44Mbps<br>802.11n(HT40):30/60/90/120/180/240/270/300Mbps |
|                            |   |                          |                                                                                                                                                                                       |

TB-RF-075-1.0

|                               |   |                                              |
|-------------------------------|---|----------------------------------------------|
| <b>Power Supply</b>           | : | DC 5V supplied by AC/DC Adapter.             |
| <b>Power Rating</b>           | : | Input: AC 100~240V, 50/60Hz<br>Output: DC 5V |
| <b>Connecting I/O Port(S)</b> | : | Please refer to the User's Manual            |



## MPE Calculations for WIFI

### 1. Antenna Gain:

PCB Antenna: 1 dBi.

### 2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

### 3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = (PG) / 4\pi R^2$$

Where

**S:** power density

**P:** power input to the antenna

**G:** power gain of the antenna in the direction of interest relative to an isotropic radiator.

**R:** distance to the center of radiation of the antenna

### 4. Test Result:

| Worst Maximum MPE Result                                                                                                              |                 |                |                                         |       |                             |                         |                                                   |        |        |                                                     |        |       |      |       |      |       |      |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|-----------------------------------------|-------|-----------------------------|-------------------------|---------------------------------------------------|--------|--------|-----------------------------------------------------|--------|-------|------|-------|------|-------|------|
| Mode                                                                                                                                  | N <sub>TX</sub> | Freq.<br>(MHz) | Conducted<br>Power(max)<br>(dBm)<br>[P] |       | ANT<br>Gain<br>(dBi)<br>[G] | Distance<br>(cm)<br>[R] | Power<br>Density<br>(mW/ cm <sup>2</sup> )<br>[S] |        |        | Power<br>Density<br>Limit<br>(mW/ cm <sup>2</sup> ) | Result |       |      |       |      |       |      |
|                                                                                                                                       |                 |                | Ant a                                   | Ant b |                             |                         | Ant 1                                             | Ant 2  | Sum    |                                                     |        |       |      |       |      |       |      |
| 802.11b                                                                                                                               | 1               | 2412           | 14.28                                   | 14.34 | 1                           | 20                      | 0.0067                                            | 0.0068 | ---    | 1.000                                               | PASS   |       |      |       |      |       |      |
|                                                                                                                                       |                 | 2437           | 14.52                                   | 14.48 | 1                           | 20                      | 0.0071                                            | 0.0070 | ---    |                                                     |        |       |      |       |      |       |      |
|                                                                                                                                       |                 | 2462           | 14.54                                   | 14.41 | 1                           | 20                      | 0.0071                                            | 0.0069 | ---    |                                                     |        |       |      |       |      |       |      |
| 802.11g                                                                                                                               | 1               | 2412           | 14.14                                   | 14.34 | 1                           | 20                      | 0.0065                                            | 0.0068 | ---    |                                                     |        | 1.000 | PASS |       |      |       |      |
|                                                                                                                                       |                 | 2437           | 14.49                                   | 14.14 | 1                           | 20                      | 0.0070                                            | 0.0065 | ---    |                                                     |        |       |      |       |      |       |      |
|                                                                                                                                       |                 | 2462           | 14.64                                   | 14.16 | 1                           | 20                      | 0.0073                                            | 0.0065 | ---    |                                                     |        |       |      |       |      |       |      |
| 802.11n<br>(HT20)                                                                                                                     | 2               | 2412           | 11.14                                   | 11.07 | 1                           | 20                      | 0.0033                                            | 0.0032 | 0.0064 |                                                     |        |       |      | 1.000 | PASS |       |      |
|                                                                                                                                       |                 | 2437           | 11.57                                   | 10.91 | 1                           | 20                      | 0.0036                                            | 0.0031 | 0.0067 |                                                     |        |       |      |       |      |       |      |
|                                                                                                                                       |                 | 2462           | 11.17                                   | 11.46 | 1                           | 20                      | 0.0033                                            | 0.0035 | 0.0068 |                                                     |        |       |      |       |      |       |      |
| 802.11n<br>(HT40)                                                                                                                     | 2               | 2422           | 11.71                                   | 10.90 | 1                           | 20                      | 0.0037                                            | 0.0031 | 0.0068 |                                                     |        |       |      |       |      | 1.000 | PASS |
|                                                                                                                                       |                 | 2437           | 11.35                                   | 11.45 | 1                           | 20                      | 0.0032                                            | 0.0035 | 0.0067 |                                                     |        |       |      |       |      |       |      |
|                                                                                                                                       |                 | 2452           | 11.05                                   | 11.28 | 1                           | 20                      | 0.0034                                            | 0.0034 | 0.0068 |                                                     |        |       |      |       |      |       |      |
| Note:<br>(1) N <sub>TX</sub> = Number of Transmit Antennas<br>(2) RF Output power specifies that Maximum Conducted Peak Output Power. |                 |                |                                         |       |                             |                         |                                                   |        |        |                                                     |        |       |      |       |      |       |      |

**5. Conclusion:**

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

**Limits for General Population/ Uncontrolled Exposure**

| Frequency Range (MHz) | Power density (mW/ cm <sup>2</sup> ) |
|-----------------------|--------------------------------------|
| 300-1,500             | F/1500                               |
| 1,500-100,000         | 1.0                                  |

For 802.11b/g/n (2412~2462 MHz)

MPE limit S: 1 mW/ cm<sup>2</sup>

The MPE is calculated as ***0.0073mW / cm<sup>2</sup> < limit 1 mW / cm<sup>2</sup>***. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

**Note**

For a more detailed features description, please refer to the RF Test Report.

-----END OF REPORT-----