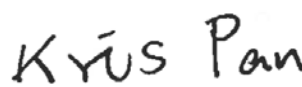


## MPE Report

Applicant : Edimax Technology Co., Ltd.  
Product Type : Air Box  
Trade Name : EDIMAX  
Model Number : AI-1001W V5  
Applicable Standard : IEEE Std.C95.1  
47 CFR § 2.1091 / 47 CFR § 1.1310  
Received Date : Feb. 11, 2020  
Test Period : Feb. 14, 2020  
Issue Date : Feb. 27, 2020

### Issued by

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Taiwan Accreditation Foundation accreditation number: 1330  
Test Firm MRA designation number: TW0010

#### Note:

- 1.The test results are valid only for samples provided by customers and under the test conditions described in this report.
- 2.This report shall not be reproduced except in full, without the written approval of A Test Lab Technology Corporation.
- 3.The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.



### **Revision History**

| Rev. | Issued Date   | Revisions     | Revised By   |
|------|---------------|---------------|--------------|
| 00   | Feb. 27, 2020 | Initial Issue | Jennifer Liu |
|      |               |               |              |
|      |               |               |              |
|      |               |               |              |



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## 1. Reference Applicable Standard

| Standard            | Description                                                                                                                                      | Version |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| ANSI/IEEE C95.1     | American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York. | 1992    |
| 47 CFR Part §2.1091 | Radiofrequency radiation exposure evaluation: mobile devices.                                                                                    | -       |
| 47 CFR Part §1.1310 | Radiofrequency radiation exposure limits.                                                                                                        | -       |

## 2. Description of Equipment under Test (EUT)

|                     |                                                                                         |                       |     |
|---------------------|-----------------------------------------------------------------------------------------|-----------------------|-----|
| Applicant           | Edimax Technology Co., Ltd.<br>No.278, Xinhua 1st Rd., Neihu Dist., Taipei City, Taiwan |                       |     |
| Manufacturer        | Edimax Technology Co., Ltd.<br>No.278, Xinhua 1st Rd., Neihu Dist., Taipei City, Taiwan |                       |     |
| Product Type        | Air Box                                                                                 |                       |     |
| Trade Name          | EDIMAX                                                                                  |                       |     |
| Model Number        | AI-1001W V5                                                                             |                       |     |
| FCC ID              | NDD9510032001                                                                           |                       |     |
| Frequency Range     | Operate Band                                                                            | Frequency Range (MHz) |     |
|                     | IEEE 802.11b / 802.11g / 802.11n 2.4 GHz 20 MHz                                         | 2412 - 2462           |     |
|                     | IEEE 802.11n 2.4 GHz 40 MHz                                                             | 2422 - 2452           |     |
| Antenna Information | Type                                                                                    | Max. Gain (dBi)       |     |
|                     | Dipole antenna                                                                          | 2412 - 2462           | 4.7 |
| Antenna Delivery    | 1TX                                                                                     |                       |     |
| RF Evaluation       | 0.059 mW/cm <sup>2</sup>                                                                |                       |     |
| Operate Temp. Range | -10 ~ 60°C                                                                              |                       |     |

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.



### 3. *Human Exposure Assessment*

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled "Radiofrequency radiation exposure limits", generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as "a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. " This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: "IMPORTANT: To meet the FCC's RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna". Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a "mobile device" as defined in section § 2.1091 paragraph (b).

Exposure evaluation

$$S_{eirp} = \frac{EIRP}{4\pi d^2} = \frac{PG}{4\pi d^2} (W / m^2)$$

Where

S: is the input power (W);

G: is the antenna gain;

d : is the distance between antennas and evaluation point (m).



#### 4. Power Density Limit – RF Exposure Evaluation

Thv In 47 CFR § 1.1310, use of the device as based upon the user's awareness and ability to exercise control over human exposure. The two categories defined are Occupational / Controlled Exposure and General Population / Uncontrolled. These two categories are defined as follow:

| Limits for General Population / Uncontrolled Exposure |                                   |                                   |                                         |                                                                 |
|-------------------------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------------|-----------------------------------------------------------------|
| Frequency Range (MHz)                                 | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm <sup>2</sup> ) | Averaging Time E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
| 0.3-1.34                                              | 614                               | 1.63                              | (100)*                                  | 30                                                              |
| 1.34-30                                               | 824 / f                           | 2.19 / f                          | (180 / f <sup>2</sup> )*                | 30                                                              |
| 30-300                                                | 27.5                              | 0.073                             | 0.2                                     | 30                                                              |
| 300-1500                                              | -                                 | -                                 | F / 1,500                               | 30                                                              |
| 1,500-100,000                                         | -                                 | -                                 | 1.0                                     | 30                                                              |
| Limits for Occupational / Controlled Exposure         |                                   |                                   |                                         |                                                                 |
| Frequency Range (MHz)                                 | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm <sup>2</sup> ) | Averaging Time E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
| 0.3-3.0                                               | 614                               | 1.63                              | (100)*                                  | 6                                                               |
| 3.0-30                                                | 1,842 / f                         | 4.89 / f                          | (900 / f <sup>2</sup> )*                | 6                                                               |
| 30-300                                                | 61.4                              | 0.163                             | 1.0                                     | 6                                                               |
| 300-1,500                                             | -                                 | -                                 | F / 300                                 | 6                                                               |
| 1,500-100,000                                         | -                                 | -                                 | 5                                       | 6                                                               |

#### 4.1 Conducted Power

| Band                           | Data Rate (Mbps) | Frequency (MHz) | Average Conducted power (dBm) |
|--------------------------------|------------------|-----------------|-------------------------------|
| IEEE 802.11b                   | 1                | 2412.0          | <b>19.75</b>                  |
|                                | 6                | 2437.0          | 19.45                         |
|                                | 11               | 2462.0          | 19.34                         |
| IEEE 802.11g                   | 1                | 2412.0          | 15.84                         |
|                                | 6                | 2437.0          | 15.66                         |
|                                | 11               | 2462.0          | 15.35                         |
| IEEE 802.11n<br>2.4 GHz 20 MHz | 1                | 2412.0          | 15.76                         |
|                                | 6                | 2437.0          | 15.57                         |
|                                | 11               | 2462.0          | 15.30                         |
| IEEE 802.11n<br>2.4 GHz 40 MHz | 3                | 2422.0          | 15.35                         |
|                                | 6                | 2437.0          | 15.48                         |
|                                | 9                | 2452.0          | 15.31                         |



## 5. Test Result

| Antenna       | Band   | Frequency (MHz) | Limit (w)/m <sup>2</sup> | Distance (m) [d] | Max Tune-up Power [P] (dBm) | ANT Gain (dBi) | Numeric Gain [G] | Duty Cycle | Power with Duty cycle [TP] (W) | Power Density [S] (w)/m <sup>2</sup> |
|---------------|--------|-----------------|--------------------------|------------------|-----------------------------|----------------|------------------|------------|--------------------------------|--------------------------------------|
| Wi-Fi Antenna | 2.4GHz | 2412-2462       | 1                        | 20               | 20.00                       | 4.70           | 2.95             | 1          | 295                            | 0.059                                |

Note:

1. Mobile or fixed location transmitters, minimum separation distance is 20 cm, even if calculations indicate MPE distance is less.
2. We used the maximum power to provide MPE results.
3. The Numeric Gain calculated by  $10^{(\text{ant. Gain(dBi)} / 10)}$ .
4. The MPE results are evaluated by lowest data rate for WLAN.

---END---