

# Maximum Permissible Exposure Evaluation

**FCC ID: Y9E-IAD18006**

## 1. Client Information

|                     |   |                                                                        |
|---------------------|---|------------------------------------------------------------------------|
| <b>Applicant</b>    | : | IAdea Corporation                                                      |
| <b>Address</b>      | : | 3F, No. 21 Lane 168, Xingshan Road, Neihu Dist., Taipei, Taiwan, R.O.C |
| <b>Manufacturer</b> | : | IAdea Corporation                                                      |
| <b>Address</b>      | : | 3F, No. 21 Lane 168, Xingshan Road, Neihu Dist., Taipei, Taiwan, R.O.C |

## 2. General Description of EUT

|                               |   |                                                                                                                                                                                         |                                                                        |
|-------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>EUT Name</b>               | : | Smart Signboard<br>(Tablet without battery)                                                                                                                                             |                                                                        |
| <b>Models No.</b>             | : | XDS-1088-H/IAD-18006,XDS-1088-A/IAD-18004,<br>XDS-108Z-Y/IAD-18006,XDS-108Z-Y/IAD-18004<br>(Note: Z is "0~9", and Y is "A~Z",<br>represents the software version or customer's models ) |                                                                        |
| <b>Model Difference</b>       | : | All models are in the same PCB layout interior structure and electrical circuits, Just different on colors,software version or customer's model number.                                 |                                                                        |
| <b>Product Description</b>    | : | Operation Frequency:                                                                                                                                                                    | Bluetooth (BLE): 2402MHz~2480MHz<br>802.11b/g/n(HT20): 2412MHz~2462MHz |
|                               |   | Max Output Power:                                                                                                                                                                       | WIFI: 16.08dBm<br>Bluetooth (BLE): 8.527dBm                            |
|                               |   | Antenna Gain:                                                                                                                                                                           | BLE:1.14dBi FPC Antenna<br>WIFI:1.5dBi FPC Antenna                     |
| <b>Power Supply</b>           | : | AC/DC Adapter(FJ-SW1202000N)<br>Input: AC 100~240V, 50/60Hz, 0.6A.<br>Output: DC 12V, 2A.                                                                                               |                                                                        |
| <b>Software Version</b>       | : | N/A                                                                                                                                                                                     |                                                                        |
| <b>Hardware Version</b>       | : | R35                                                                                                                                                                                     |                                                                        |
| <b>Connecting I/O Port(S)</b> | : | Please refer to the User's Manual                                                                                                                                                       |                                                                        |

## MPE Calculations for WIFI

### 1. Antenna Gain:

BLE: 1.14dBi FPC Antenna

WIFI: 1.5dBi FPC Antenna.

### 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:

| Mode              | Conducted Power(max)<br>(dBm) | Turn-up Power<br>(dB) | Max tune up power<br>(dBm)<br>[P] | ANT Gain<br>(dBi)<br>[G] | Distance<br>(cm)<br>[R] | Power Density<br>(mW/ cm <sup>2</sup> )<br>[S] |
|-------------------|-------------------------------|-----------------------|-----------------------------------|--------------------------|-------------------------|------------------------------------------------|
| 802.11b           | 16.08                         | 16±1                  | 17                                | 1.5                      | 20                      | 0.014085                                       |
| 802.11g           | 14.83                         | 15±1                  | 16                                | 1.5                      | 20                      | 0.011188                                       |
| 802.11n<br>(HT20) | 14.84                         | 15±1                  | 16                                | 1.5                      | 20                      | 0.011188                                       |
| BLE               | 8.527                         | 8±1                   | 9                                 | 1.14                     | 20                      | 0.002055                                       |

**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

For Bluetooth (BLE): 2402MHz~2480MHz

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

The MPE is calculated as  $0.014085 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{ mW} / \text{cm}^2$ . 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-----