

# Maximum Permissible Exposure Evaluation

## FCC ID: Y9E-IAD18007

### 1. Client Information

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

### 2. General Description of EUT

<b>EUT Name</b>	:	Smart Signboard (Tablet without battery)	
<b>Models No.</b>	:	XDS-1588-H/IAD-18007, XDS-1588-A/IAD-18008, XDS-158Z-Y/IAD-18007, XDS-158Z-Y/IAD-18008 (Note: Z is "0~9", and Y is "A~Z", represents the appearance color or customer models )	
<b>Model Difference</b>	:	All these models are the same PCB, layout and electrical circuit, the only different is appearance color or customer models.	
<b>Product Description</b>	Operation Frequency:	Bluetooth (BLE): 2402MHz~2480MHz 802.11b/g/n(HT20): 2412MHz~2462MHz	
	Max Output Power:	WIFI: 19.95dBm Bluetooth (BLE): 7.916dBm	
	Antenna Gain:	1.14dBi FPC Antenna	
<b>Power Supply</b>	:	AC Adapter(FJ-SW1202000N): Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 12V, 2.0A	
<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	

TB-RF-075-1.0

## MPE Calculations for WIFI

### 1. Antenna Gain:

BLE&WIFI: 1.14dBi 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

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

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) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm <sup>2</sup> ) [S]
802.11b	17.67	17±1	18	1.14	20	0.01632
802.11g	19.95	19±1	20	1.14	20	0.02587
802.11n (HT20)	19.19	19±1	20	1.14	20	0.02587
BLE	7.916	8±1	9	1.14	20	0.00205

**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: 1mW/ cm<sup>2</sup>

The MPE is calculated as **0.02587mW / cm<sup>2</sup> < limit 1mW / 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.

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