RF Exposure Evaluation

FCC ID: Y9E-IAD18005

1. Client Information

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

2. General Description of EUT

EUT Name	:	Smart Signboard	
Models No.	:	XDS-1588, XDS-1588-A, XDS-1588-H, XDS-158X-Y(Note: X is "0~9", and Y is "A~Z", represents the appearance color or customer models)	
Model Difference	:	All these models are the same PCB, layout and electrical circuit, the only different is appearance color or customer models.	
Product Description	:	Operation Frequency:	Bluetooth V4.0: 2402MHz~2480MHz 802.11b/g/n(HT20): 2412MHz~2462MHz
		RF Output Power:	802.11b: 16.56dBm 802.11g: 15.65dBm 802.11n (HT20): 15.74dBm BLE: 8.155dBm
		Antenna Gain:	1.14dBi FPC Antenna
Power Supply	:	AC Adapter(FJ-SW1202000N): Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 12V, 2.0A	
Software Version	:	N/A	
Hardware Version	:	R35	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

Note: More test information about the EUT please refer the RF Test Report.

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MPE Calculations for WIFI

1. Antenna Gain:

FPC Antenna: 1.14dBi.

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) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]	Limit of Power Density (mW/ cm^2) (S)
BLE	8.155	8±1	9	1.14	20	0.00205	1
802.11B	16.56	16±1	17	1.14	20	0.01296	1
802.11G	15.65	15±1	16	1.14	20	0.01030	1
802.11N(HT20)	15.74	15±1	16	1.14	20	0.01030	1

The worst RF Exposure Evaluation			
Worst Calculation Value		Total Calculation Value	Threshold Value
WiFi Mode	Bluetooth Mode		
0．01296	0．00205	0．01501	1.0

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^2)
300-1,500	F/1500
1,500-100,000	1.0

For BT:2402~2480 MHz
For WIFI:2412~2462 MHz
MPE limit S: $1mW/cm^2$
The MPE is calculated as ***$0.01501mW/cm^2 < limit\ 1mW/cm^2$***. 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-----