# FCC 47 CFR MPE REPORT

DEI Sales Inc. dba Definitive Technology

3.1 Home Theater Sound Bar and Wireless Subwoofer System

Model Number: STUDIO SLIM SUBWOOFER

FCC ID: IPUSTUSLIMSUB

| Prepared for: | DEI Sales Inc. dba Definitive Technology |
|---|---|
| | One Viper Way, Vista CA 92081 United States |
| | |
| Prepared By: | EST Technology Co., Ltd. |
| | Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China |
| Tel: 86-769-83081888-808 | |

| Report Number: | ESTE-R1811064 |
|---|---|
| Date of Test: | Oct. 12 ~ Nov. 19, 2018 |
| Date of Report: | Nov. 21, 2018 |

# Maximum Permissible Exposure

## 1、Applicable Standard

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

### (a)、Limits for Occupational / Controlled Exposure

| Frequency Range (MHz) | Electric Field Strength E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm2) | Averaging Times｜E｜2，｜H｜2 or S (minutes) |
|---|---|---|---|---|
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842/f | 4.89/f | (900/f)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | | | F/300 | 6 |
| 1500-10000 | | | 5 | 6 |

### (b)、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/cm2) | Averaging Times｜E｜2，｜H｜2 or S (minutes) |
|---|---|---|---|---|
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180/f)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | | | F/1500 | 30 |
| 1500-10000 | | | 1.o | 30 |

Note: f=frequency in MHz; *Plane-wave equivalent power density

## 2、MPE Calculation Method

$E$ (V/m) = (30*P*G) 0.5/d        Power Density: $Pd$ (W/m2) = E2/377

$E$ = Electric Field (V/m)

$P$ = Peak RF output Power (W)

$G$ = EUT Antenna numeric gain (numeric)

$d$ = Separation distance between radiator and human body (m)

The formula can be changed to

$Pd$ = (30*P*G) / (377*d2)

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

## 3、**Conducted Power Result**

| Mode | Frequency (MHz) | Peak output power (dBm) | Peak output power (mW) | Target power （dBm） | Antenna gain | |
|------|------|------|------|------|------|------|
| | | | | | (dBi) | (Linear) |
| GFSK | 2403.5 | 11.40 | 13.804 | 11±1 | 3.3 | 2.138 |
| | 2440.4 | 11.53 | 14.223 | 11±1 | 3.3 | 2.138 |
| | 2477.3 | 11.27 | 13.397 | 11±1 | 3.3 | 2.138 |

## 4、**Calculated Result and Limit**

| Mode | Target power （dBm） | Antenna gain | | Power Density (S) (mW /cm2) | Limited of Power Density (S) (mW /cm2) | Test Result |
|------|------|------|------|------|------|------|
| | | (dBi) | (Linear) | | | |
| GFSK | 12 | 3.3 | 2.138 | **0.00674** | 1 | Compiles |