# MPE Calculation

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|---|---|
| Applicant: | Hangzhou Tuya Information Technology Co.,Ltd |
| Address: | Room701,Building3,More Center,No.87 GuDun Road,Hangzhou,Zhejiang China |
| Product: | Bluetooth Module |
| FCC ID: | 2ANDL-BF6H-M |
| Model No.: | BF6H-M |
| Reference RF report # | 7095021029138-00A |

According to subpart 15.247(i)and subpart §1.1307(b)(1), 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 of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

| (B) Limits for General Population/Uncontrolled Exposure | | | | |
|---|---|---|---|---|
| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density ($mW/cm^2$) | Averaging Time (minutes) |
| 0.3–1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34–30 | 824/f | 2.19/f | *($180/f^2$) | 30 |
| 30–300 | 27.5 | 0.073 | 0.2 | 30 |
| 300–1,500 | / | / | f/1500 | 30 |
| 1,500–100,000 | / | / | 1.0 | 30 |

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

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:
Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. $mW/cm^2$);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);


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Calculated Data: PCB antenna

| | |
|---|---|
| Maximum peak output power at antenna input terminal (dBm): | 4.66 |
| Maximum peak output power at antenna input terminal (mW): | 2.92 |
| Prediction distance (cm): | 20 |
| Antenna Gain, typical (dBi): | 3.37 |
| Maximum Antenna Gain (numeric): | 2.17 |
| The worst case is power density at predication frequency at 20 cm (mW/cm$^2$): | 0.00126 |
| MPE limit for general population exposure at prediction frequency (mW/cm$^2$): | 1.0 |

The max power density 0.00126 (mW/cm2) < 1 (mW/cm2)
Result: Compliant

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| Reviewed by: | Prepared by: | Tested by: |
|---|---|---|
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| Date: 2022-03-11 | Date: 2022-03-11 | Date: 2022-03-11 |


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