MPE Calculation

Applicant:	Hangzhou Tuya Information Technology Co.,Ltd
Address:	Room 301,Building 1,Huace Center,Xihu District,
	Hangzhou,Zhejiang, China
FCC ID:	2ANDL-T3-E2
Product:	Wi-Fi and Bluetooth Module
Model No.:	T3-E2
Reference RF report #	709502403740-00A, 709502403740-00B

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) (KDB 447498 D01, §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/f²)	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);

EMC_SHA_F_R_02.06E

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
3-13, No.151, Heng Tong Road, Shanghai, 200070, P.R. China
Phone: +86 21 61410123, Fax:+86 21 61408600

Page 1 of 2
Rev. 23.00

Calculated Data for Wi-Fi

Maximum peak output power at antenna input terminal (dBm):	24.63
Maximum peak output power at antenna input terminal (mW):	290.40
Prediction distance (cm):	20
Antenna Gain, typical (dBi):	1.73
Maximum Antenna Gain (numeric):	1.489
The worst case is power density at predication frequency at 20 cm (mW/cm^2):	0.086
MPE limit for general population exposure at prediction frequency (mW/cm^2):	1.0

The max power density 0.086 (mW/cm^2) < 1 (mW/cm^2)
Result: Compliant

Calculated Data for BLE

Maximum peak output power at antenna input terminal (dBm):	7.66
Maximum peak output power at antenna input terminal (mW):	5.834
Prediction distance (cm):	20
Antenna Gain, typical (dBi):	1.73
Maximum Antenna Gain (numeric):	1.489
The worst case is power density at predication frequency at 20 cm (mW/cm^2):	0.0017
MPE limit for general population exposure at prediction frequency (mW/cm^2):	1.0

The max power density 0.0017 (mW/cm^2) < 1 (mW/cm^2)
Result: Compliant

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

Reviewed by:	Prepared by:	Tested by:
_____	_____	_____
Hui TONG	Jiaxi XU	Cheng Huali
EMC Section Manager	EMC Project Engineer	EMC Test Engineer
Date: 2024-09-18	Date: 2024-09-18	Date: 2024-09-18

EMC_SHA_F_R_02.06E

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
3-13, No.151, Heng Tong Road, Shanghai, 200070, P.R. China
Phone: +86 21 61410123, Fax:+86 21 61408600

Page 2 of 2
Rev. 23.00