

Maximum Permissible Exposure Evaluation

FCC ID: 2ANK8-TH06

1. Client Information

Applicant	:	Shenzhen Forever Young Technology Co., Ltd
Address	:	2/F, No B2 Bldg, Fu Yuan Industrial Park, Fu Yong Town, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen Forever Young Technology Co., Ltd
Address	:	2/F, No B2 Bldg, Fu Yuan Industrial Park, Fu Yong Town, Bao'an District, Shenzhen, China

2. General Description of EUT

EUT Name	:	Wi-Fi Temperature & Humidity Sensor	
Models No.	:	TH06	
Model Different	:	----	
Product Description	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz 2402-2480MHz for BLE
	:	Number of Channel:	802.11b/g/n(HT20):11 channels 802.11n(HT40):7 channels 40 channels for BLE
	:	RF Output Power:	802.11b:17.529dBm 802.11g:15.673dBm 802.11n (HT20): 13.434dBm 802.11n (HT40): 13.008dBm BLE: 5.319dbm
	:	Antenna Gain:	1.5 dBi PCB Antenna
Power Rating	:	Input: DC 5V/1A	
Software Version	:	TH06-WB3S-V1.0	
Hardware Version	:	TH06-WB3S-V1.2	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	the evaluation report used the EUT(TBBJ-20210525-02-02#).	

MPE Calculations for WIFI

1. Antenna Gain:

PCB Antenna:1.5dBi.

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:

2.4G WiFi

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)
802.11B	17.529	17±1	18	1.5	20	0.01773	1
802.11G	15.673	10±1	16	1.5	20	0.01119	1
802.11N(HT20)	13.434	13±1	14	1.5	20	0.00706	1
802.11N(HT40)	13.008	13±1	14	1.5	20	0.00706	1
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	5.319	5+1	6	1.5	20	0.00112	1

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 2.4WIFI:2412~2462 MHz

MPE limit S: 1mW/ cm²

The MPE is calculated as $0.01773\text{mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$. 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.

6. Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

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