

# RF Exposure Evaluation Report

**Product** : Sonic Electric Toothbrush  
**Trade mark** : fairywill  
**Model/Type reference** : P80S  
**Serial Number** : N/A  
**Report Number** : EED32N80162602  
**FCC ID** : 2AZJKP80S  
**Date of Issue** : Apr. 16, 2021  
: 47 CFR Part 1.1307  
: 47 CFR Part 2.1093  
**Test Standards** : KDB447498D01 General RF  
Exposure Guidance v06  
**Test result** : PASS

Prepared for:

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## 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | Apr. 16, 2021 | Original    |
|             |               |             |
|             |               |             |

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## 4 General Information

### 4.1 Client Information

|                          |                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------|
| Applicant:               | zhuhai zonghengyupin kuajingdianshang youxiangongsi                                                     |
| Address of Applicant:    | HENGQIN XINQU BAOHUALU 6HAO 105SHI-17877 ZHUHAI GUANGDONG China 519031                                  |
| Manufacturer:            | Thumbs Up Innovations Technology Co., Ltd.                                                              |
| Address of Manufacturer: | Building 5, No.12, Pingdong 3 <sup>Rd</sup> , Nanping Science Industrial Park, Zhuhai, Guangdong, China |
| Factory:                 | Shenzhen Risun Technology Co.,Ltd                                                                       |
| Address of Factory:      | Buiding A, No.6 of Xinmu Road, Xinmu community, Pinghu, Longgang District, Shenzhen, China              |

### 4.2 General Description of EUT

|                                  |                                         |
|----------------------------------|-----------------------------------------|
| Product Name:                    | Sonic Electric Toothbrush               |
| Mode No.:                        | P80S                                    |
| Trade Mark:                      | fairywill                               |
| EUT Supports Radios application: | BT 5.0 Single module 2402MHz to 2480MHz |

### 4.3 Product Specification subjective to this standard

|                                                                                                                                                                                              |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Frequency Range:                                                                                                                                                                             | BT 5.0 Single module 2402MHz to 2480MHz;                                                |
| Modulation Type:                                                                                                                                                                             | GFSK                                                                                    |
| Test Power Grade:                                                                                                                                                                            | Default                                                                                 |
| Test Software of EUT:                                                                                                                                                                        | nRFgo Studio                                                                            |
| Antenna Type:                                                                                                                                                                                | Ceramic antenna                                                                         |
| Antenna Gain:                                                                                                                                                                                | 2.0dBi                                                                                  |
| Power Supply:                                                                                                                                                                                | Lithium battery: DC 3.7V, Charge by DC 5.0V                                             |
| Max Conducted Peak Output Power:                                                                                                                                                             | -1.59dBm<br>The Max Conducted Peak Output Power data refer to the report EED32N80162601 |
| Sample Received Date:                                                                                                                                                                        | Mar. 26, 2021                                                                           |
| Sample tested Date:                                                                                                                                                                          | Mar. 26, 2021 to Apr. 8, 2021                                                           |
| Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified. |                                                                                         |

#### 4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

#### 4.5 Deviation from Standards

None.

#### 4.6 Abnormalities from Standard Conditions

None.

#### 4.7 Other Information Requested by the Customer

None.

## 5 SAR Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$\left[ \frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion



### 5.1.2 EUT RF Exposure

#### Measurement Data

| GFSK mode        |                            |                            |                       |       |
|------------------|----------------------------|----------------------------|-----------------------|-------|
| Test channel     | Peak Output Power<br>(dBm) | Tune up tolerance<br>(dBm) | Maximum tune-up Power |       |
|                  |                            |                            | (dBm)                 | (mW)  |
| Lowest(2402MHz)  | -1.59                      | -2.0±0.5                   | -1.5                  | 0.708 |
| Middle(2440MHz)  | -2.65                      | -3.0±0.5                   | -2.5                  | 0.562 |
| Highest(2480MHz) | -3.92                      | -4.0±0.5                   | -3.5                  | 0.447 |

| Worst case: GFSK                                        |                                                    |                               |                           |       |                     |                        |
|---------------------------------------------------------|----------------------------------------------------|-------------------------------|---------------------------|-------|---------------------|------------------------|
| Channel                                                 | Maximum Peak<br>Conducted<br>Output Power<br>(dBm) | Tune up<br>tolerance<br>(dBm) | Maximum tune-<br>up Power |       | Calculated<br>value | Exclusion<br>threshold |
|                                                         |                                                    |                               | (dBm)                     | (mW)  |                     |                        |
| Lowest<br>(2402MHz)                                     | -1.59                                              | -2.0±0.5                      | -1.5                      | 0.708 | 0.219               | 3.0                    |
| Middle<br>(2440MHz)                                     | -2.65                                              | -3.0±0.5                      | -2.5                      | 0.562 | 0.176               |                        |
| Highest<br>(2480MHz)                                    | -3.92                                              | -4.0±0.5                      | -3.5                      | 0.447 | 0.141               |                        |
| Conclusion: the calculated value ≤3.0, SAR is exempted. |                                                    |                               |                           |       |                     |                        |

Remark: The Max Conducted Peak Output Power data refer to report Report No.: EED32N80162601

## PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32N80162601 for EUT external and internal photos.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

\*\*\* End of Report \*\*\*