



RF Exposure Evaluation

FCC ID: 2A6WN-HSTW-1

1. Client Information

| | | |
|---------------------|---|--|
| Applicant | : | Guangzhou Hansong ElectricTechnology Co., Ltd |
| Address | : | No. 1, Xiaotang, Tanbu Town, Huadu District,Guangzhou, Guangdong,China |
| Manufacturer | : | Guangzhou Hansong ElectricTechnology Co., Ltd |
| Address | : | No. 1, Xiaotang, Tanbu Town, Huadu District,Guangzhou, Guangdong,China |

2. General Description of EUT

| | | |
|---|---|---|
| EUT Name | : | TOWEL WARMER |
| Model No. | : | HSTW-1, HSTW-2, HSTW-3, HSTW-4, HSTW-5, HSTW-6, HSTW-7, HSTW-8, HSTW-9, HSTW-10, HSTW-11, HSTW-12, HSTW-13, HSTW-14, HSTW-15, HSTW-16, HSTW-17, HSTW-18, HSTW-19, HSTW-20 |
| Model Difference | : | All these models are identical in the same PCB, layout and electrical circuit, The only difference is model name, brand name and product name. |
| Sample ID | : | HC-C-202407-0003-02-01 |
| Product Description | : | Operation Frequency: 433.925MHz |
| | : | Antenna Gain: -5.1dBi PCB Antenna |
| Power Rating | : | 3V DC (powered by 2pcs AAA batteries) |
| Software Version | : | HXD2151V04 DT202406191603 CK55EC.ZCW |
| Hardware Version | : | HXD2151 V2 |
| Remark: The antenna gain provided by the applicant, and verified for the RF conduction test and adapter provided by TOBY test lab. | | |

Note: More test information about the EUT please refer the RF Test Report.

The RF Exposure Evaluation for FCC:

SAR Test Exclusion Calculations

FCC: According to 447498 D04 Interim General RF Exposure Guidance v01.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

| Frequency (MHz) | Distance (mm) | | | | | | | | | |
|-----------------|---------------|----|----|-----|-----|-----|-----|-----|-----|-----|
| | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| 300 | 39 | 65 | 88 | 110 | 129 | 148 | 166 | 184 | 201 | 217 |
| 450 | 22 | 44 | 67 | 89 | 112 | 135 | 158 | 180 | 203 | 226 |
| 835 | 9 | 25 | 44 | 66 | 90 | 116 | 145 | 175 | 207 | 240 |
| 1900 | 3 | 12 | 26 | 44 | 66 | 92 | 122 | 157 | 195 | 236 |
| 2450 | 3 | 10 | 22 | 38 | 59 | 83 | 111 | 143 | 179 | 219 |
| 3600 | 2 | 8 | 18 | 32 | 49 | 71 | 96 | 125 | 158 | 195 |
| 5800 | 1 | 6 | 14 | 25 | 40 | 58 | 80 | 106 | 136 | 169 |



Calculation:

| Frequency (MHz) | Max. Output Power (dBuV/m) | Max. Output Power (dBm) | Tolerance \pm (dB) | Output power (Max. Turn-up Procedure) (mW) | Limit P_{th} (mW) |
|--|----------------------------|-------------------------|----------------------|--|---------------------|
| 433.925MHz | 66.16 | -35.1 | ± 1 | 0.000389 | 22 |
| <p>Note: For conducted measurements below 1000 MHz, the field strength shall be computed as specified in item d), and then an additional 4.7 dB shall be added as an upper bound on the field strength that would be observed on a test range with a ground plane for frequencies between 30 MHz and 1000 MHz, or an additional 6 dB shall be added for frequencies below 30 MHz.</p> $E = EIRP - 20 \log d + 104.8$ <p>where</p> <p>E is the electric field strength in dBuV/m $EIRP$ is the equivalent isotropically radiated power in dBm d is the specified measurement distance in m</p> <p>So: $EIRP = E + 20 \log 3 - 104.8 - (4.7 \text{ or } 6)$</p> <p>Note: At separation distance of ≤ 5 mm</p> | | | | | |

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 D04, No SAR is required.

-----END OF THE REPORT-----

