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# RF Exposure Evaluation Report

**Report No.:** CQASZ20210600783E-02  
**Applicant:** SHENZHEN HUBSAN TECHNOLOGY CO., LTD  
**Address of Applicant:** Unit 2801-2802A, Building F, Xinghe WORLD, Yabao Road, Bantian Street, Longgang District, Shenzhen, China.  
**Equipment Under Test (EUT):**  
**EUT Name:** HUBSAN HT018F Remote Control  
**Model No.:** HT018F  
**Brand Name:** HUBSAN  
**FCC ID:** 2AN75-HT018F-1TX  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 1.1310  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2021-6-1  
**Date of Test:** 2021-6-1 to 2021-7-6  
**Date of Issue:** 2021-7-6  
**Test Result:** **PASS\***

\*In the configuration tested, the EUT complied with the standards specified above

**Tested By:**

*Lewis Zhou*

(Lewis Zhou)

**Reviewed By:**

*Jun Li*

(Jun Li)

**Approved By:**

*Sheek Luo*

(Sheek Luo)



## 1 Version

### Revision History Of Report

| Report No.           | Version | Description    | Issue Date |
|----------------------|---------|----------------|------------|
| CQASZ20210600783E-02 | Rev.01  | Initial report | 2021-7-6   |

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### 3 General Information

#### 3.1 Client Information

|                          |                                                                                                               |
|--------------------------|---------------------------------------------------------------------------------------------------------------|
| Applicant:               | SHENZHEN HUBSAN TECHNOLOGY CO., LTD                                                                           |
| Address of Applicant:    | Unit 2801-2802A, Building F, Xinghe WORLD , Yabao Road,<br>Bantian Street, Longgang District, Shenzhen,China. |
| Manufacturer:            | SHENZHEN HUBSAN TECHNOLOGY CO., LTD                                                                           |
| Address of Manufacturer: | Unit 2801-2802A, Building F, Xinghe WORLD , Yabao Road,<br>Bantian Street, Longgang District, Shenzhen,China. |
| Factory:                 | Dongguan Tengsheng Industrial Co., Ltd.                                                                       |
| Address of Factory:      | A22# Luyi Street, Tianxin Village, Tangxia Town, Dongguan, China.                                             |

#### 3.2 General Description of EUT

|                       |                                                                                                                    |
|-----------------------|--------------------------------------------------------------------------------------------------------------------|
| Product Name:         | HUBSAN HT018F Remote Control                                                                                       |
| Model No.:            | HT018F                                                                                                             |
| Trade Mark:           | HUBSAN                                                                                                             |
| Hardware Version:     | V1.0                                                                                                               |
| Software Version:     | V1.0                                                                                                               |
| Frequency Range:      | 2405MHz ~ 2475MHz                                                                                                  |
| Modulation Type:      | OFDM                                                                                                               |
| Number of Channels:   | 36(declared by the client)                                                                                         |
| Sample Type:          | <input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location |
| Test Software of EUT: | RF test                                                                                                            |
| Antenna Type:         | PCB antenna                                                                                                        |
| Antenna Gain:         | 2dBi                                                                                                               |
| Power Supply:         | Battery: 3.6V 4400mAh Li-Po 15.84Wh                                                                                |

## 4 RF Exposure Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

##### 4.3.1. 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.

#### 4.1.2 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

## 4.2 EUT RF Exposure Evaluation

### 1) For 2.4G

$$e_{irp} = p_t \times g_t = (E \times d)^2 / 30$$

where:

$p_t$  = transmitter output power in watts,

$g_t$  = numeric gain of the transmitting antenna (unitless),

$E$  = electric field strength in V/m,  $10^{((dB_{\mu V/m})/20)/10^6}$ ,

$d$  = measurement distance in meters (m)---3m,

$$\text{So } p_t = (E \times d)^2 / 30 / g_t$$

The worst case (refer to report CQASZ20210600780E-01) is below:

| Antenna polarization: Horizontal |                |              |
|----------------------------------|----------------|--------------|
| Frequency (MHz)                  | Level (dBuV/m) | Polarization |
| 2475                             | 90.87          | Peak         |
| 2475                             | 86.85          | Average      |

For 2475MHz wireless:

Field strength = 90.87dB $\mu$ V/m @3m

Ant. gain 0dBi; so Ant numeric gain=1.0

$$\text{So } p_t = \{ [10^{(90.87/20)} / 10^6 \times 3]^2 / 30 / 1.0 \} \times 1000 \text{mW} = 0.367 \text{mW}$$

$$\text{So } (0.367 \text{mW} / 5 \text{mm}) \times \sqrt{2.475 \text{GHz}} = 0.115,$$

$$0.115 < 3.0 \text{ for 1-g SAR}$$

So the SAR report is not required.