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# RF Exposure Evaluation Report

**Report No. :** CQASZ20191001099E-02  
**Applicant:** SHENZHEN HUBSAN TECHNOLOGY CO., LTD.  
**Address of Applicant:** 13th Floor, Bldg 1C, Shenzhen Software Industry Base, Xuefu Road, Nanshan District, Shenzhen, China 518054  
**Equipment Under Test (EUT):**  
**Product:** Hubsan HT016P Transmitter  
**Model No.:** HT016P  
**Brand Name:** Hubsan  
**FCC ID:** 2AN75-HT016PTX  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 1.1310  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2019-11-01  
**Date of Test:** 2019-11-01 to 2019-11-25  
**Date of Issue:** 2019-11-25  
**Test Result :** **PASS\***

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

**Tested By:**

(Tom chen)

**Reviewed By:**

(Aaron Ma)

**Approved By:**

  
( Jack Ai)

## 1 Version

### Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20191001099E-02	Rev.01	Initial report	2019-11-25

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### 3 General Information

#### 3.1 Client Information

Applicant:	SHENZHEN HUBSAN TECHNOLOGY CO., LTD.
Address of Applicant:	13th Floor, Bldg 1C, Shenzhen Software Industry Base, Xuefu Road, Nanshan District, Shenzhen, China 518054
Manufacturer:	SHENZHEN HUBSAN TECHNOLOGY CO., LTD.
Address of Manufacturer:	13th Floor, Bldg 1C, Shenzhen Software Industry Base, Xuefu Road, Nanshan District, Shenzhen, China 518054

#### 3.2 General Description of EUT

Product Name:	Hubsan HT016P Transmitter
Model No.:	HT016P
Trade Mark:	Hubsan
Hardware version:	V1.0
Software version:	V1.0
Operation Frequency:	5725 ~ 5850 MHz
Channel Numbers:	5725 ~ 5850 MHz: 5 for 802.11a
Type of Modulation:	IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	IEEE 802.11a: 20 MHz
Sample Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Test Software of EUT:	Atheros Radio test 2(manufacturer declare )
Antenna Type:	Integral antenna
Antenna Gain:	ANT1: 3.0dBi ANT2: 3.0dBi
Power Supply:	Battery: 3.6 V 2600 mAh Li-Po

## 4 SAR 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:

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

f(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 5G WIFI

Antenna Gain: 3.0dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

### Measurement Data

ANT1:

802.11a mode				
Test channel	Average Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
5745	7.34	6.5±1.0	7.5	5.623
5785	7.16	6.5±1.0	7.5	5.623
5825	7.23	6.5±1.0	7.5	5.623

The worst case:

Worst case: 802.11a mode						
Channel	Average Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (5745MHz)	7.34	6.5±1.0	7.5	5.623	2.70	3.0
Middle (5785MHz)	7.16	6.5±1.0	7.5	5.623	2.71	
Highest (5825MHz)	7.23	6.5±1.0	7.5	5.623	2.71	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

ANT2:

802.11a mode				
Test channel	Average Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
5745	7.26	6.5±1.0	7.5	5.623
5785	7.11	6.5±1.0	7.5	5.623
5825	7.06	6.5±1.0	7.5	5.623

The worst case:

Worst case: 802.11a mode						
Channel	Average Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (5745MHz)	7.26	6.5±1.0	7.5	5.623	2.70	3.0
Middle (5785MHz)	7.11	6.5±1.0	7.5	5.623	2.71	
Highest (5825MHz)	7.06	6.5±1.0	7.5	5.623	2.71	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20191001099E-01

These tow antennas does not transmit simultaneously.