Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640
Fax: +86-755-26648637
Website: www.cqa-cert.com

Report Template Version: V03
Report Template Revision Date: Mar.1st, 2017

RF Exposure Evaluation Report

Report No. :	CQASZ20181100066E-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
Manufacturer:	SHENZHEN HUBSAN TECHNOLOGY CO., LTD
Address of Manufacturer:	13th Floor, Bldg 1C, Shenzhen Software Industry Base, Xuefu Road, Nanshan District, Shenzhen, China 518054
Factory:	Dongguan Tengsheng Industrial Co., Ltd.
Address of Factory:	A22# Luyi Street, Tianxin Village, Tangxia Town, Dongguan, China.
Equipment Under Test (EUT):	
Product:	Hubsan HT016 Transmitter B
Model No.:	HT016
Brand Name:	N/A
FCC ID:	2AN75-HT016TX
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06
Date of Test:	2018-11-26 to 2018-11-30
Date of Issue:	2018-11-30
Test Result :	**PASS***

Tested By： Daisy Qin

(Daisy Qin)

Reviewed By: Aaron Ma

(Aaron Ma)

Approved By:

(Jack Ai)

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

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20181100066E-02	Rev.01	Initial report	2018-11-30

2 Contents

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
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 HT016 Transmitter B
Model No.:	HT016
Trade Mark:	N/A
Hardware version:	V1.0
Software version:	V1.0
Operation Frequency:	5725 ~ 5850 MHz
Channel Numbers:	5725 ~ 5850 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
Type of Modulation:	IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM(64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	IEEE 802.11a/n-HT20: 20 MHz IEEE 802.11n-HT40: 40 MHz
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	Atheros Radio test 2(manufacturer declare)
Antenna Type:	Integral antenna
Antenna Gain:	ANT1: 2.99dBi ANT2: 2.99dBi
Power Supply:	Battery: 3.7 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 ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 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[17]
The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 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: 2.99dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.99 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	7.23	6.5±1.0	7.5	5.623
5785	6.81	6.5±1.0	7.5	5.623
5825	6.49	6.5±1.0	7.5	5.623
802.11n(HT20) mode				
Test channel	Average Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
5745	7.06	6±1.5	7.5	5.623
5785	5.16	6±1.5	7.5	5.623
5825	6.48	6±1.5	7.5	5.623
802.11n(HT40)mode				
Test channel	Average Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
5755	7.07	6±1.5	7.5	5.623
5795	6.81	6±1.5	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)	7.23	6.5±1.0	7.5	5.623	2.70	3.0
Middle (5785MHz)	6.81	6.5±1.0	7.5	5.623	2.71	
Highest (5825MHz)	6.49	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	6.72	6.5±1.0	7.5	5.623
5785	6.45	6.5±1.0	7.5	5.623
5825	7.02	6.5±1.0	7.5	5.623
802.11n(HT20) mode				
Test channel	Average Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
5745	6.71	6±1.0	7	5.012
5785	6.2	6±1.0	7	5.012
5825	6.78	6±1.0	7	5.012
802.11n(HT40)mode				
Test channel	Average Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
5755	6.56	6±1.0	7	5.012
5795	6.55	6±1.0	7	5.012

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)	6.72	6.5±1.0	7.5	5.623	2.70	3.0
Middle (5785MHz)	6.45	6.5±1.0	7.5	5.623	2.71	
Highest (5825MHz)	7.02	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.: CQASZ20181100066E-01