



RADIO TEST REPORT

Report No: STS2108194H01

Issued for

Shenzhen Yi Bi Cheng E-Commerce Co., LTD

Room 2716, Nanguang Jiejia Building, No.3037 Shennan
Middle Road, Futian District, Shenzhen, china

Product Name:	RC DRONE
Brand Name:	N/A
Model Name:	EC20
Series Model:	EC20D, EC20E, EC30, EC40, EC50, EC60, EC70, EC80, EC90, EC100, EC110, EC120, EC130, EC140, EC150, EC160, EC170, EC180, EC190, EC200, EC210, EC220, EC230, EC240, EC250, EC260, EC270, EC280, EC290, EC300, EC310, EC320, EC330, EC340, EC350, EC360, EC370, EC380, EC390, EC400, EC410
FCC ID:	2A24EYBCDRONE01
Test Standard:	FCC 47CFR §2.1091

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Test Report Certification

Applicant's Name : Shenzhen Yi Bi Cheng E-Commerce Co., LTD
Address : Room 2716, Nanguang Jiejia Building, No.3037 Shennan Middle Road, Futian District, Shenzhen, china
Manufacturer's Name : Shenzhen Yi Bi Cheng E-Commerce Co., LTD
Address : Room 2716, Nanguang Jiejia Building, No.3037 Shennan Middle Road, Futian District, Shenzhen, china

Product Description

Product Name : RC DRONE
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Model Name : EC20
Series Model : EC20D, EC20E, EC30, EC40, EC50, EC60, EC70, EC80, EC90, EC100, EC110, EC120, EC130, EC140, EC150, EC160, EC170, EC180, EC190, EC200, EC210, EC220, EC230, EC240, EC250, EC260, EC270, EC280, EC290, EC300, EC310, EC320, EC330, EC340, EC350, EC360, EC370, EC380, EC390, EC400, EC410

Standards : FCC 47CFR §2.1091

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Date of Test

Date of receipt of test item : 30 Aug. 2021

Date (s) of performance of tests : 30 Aug. 2021 ~ 14 Oct. 2021

Date of Issue : 14 Oct. 2021

Test Result : **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Vita Li)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	14 Oct. 2021	STS2108194H01	ALL	Initial Issue





1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	RC DRONE	
Brand Name	N/A	
Model Name	EC20	
Series Model	EC20D, EC20E, EC30, EC40, EC50, EC60, EC70, C80, EC90, EC100, EC110, EC120, EC130, EC140, EC150, EC160, EC170, EC180, EC190, EC200, EC210, EC220, C230, EC240, EC250, EC260, EC270, EC280, EC290, EC300, C310, EC320, EC330, EC340, EC350, EC360, EC370, EC380, C390, EC400, EC410	
Model Difference	Only the model name is different, the others are the same.	
Product Description	The EUT is RC DRONE	
	Operation Frequency:	2.4G WLAN: 802.11b/g/n 20: 2412~2462 MHz 802.11n(40MHz):2422~2452MHz 5G WLAN: 802.11a/n/ac(VHT20): 5180~5240MHz 802.11n/ac(VHT40): 5190~5230MHz 802.11ac(VHT80): 5210MHz 802.11a/n/ac(VHT20):: 5745~5825MHz 802.11n/ac(VHT40): 5755~5795MHz 802.11ac(VHT80): 5775MHz
	Modulation Type:	2.4G WLAN: 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 5G WLAN: 802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM
	Antenna gain:	ANT A: 2 dBi, ANT B: 2 dBi MIMO A+B: 5.01dBi
	Antenna Designation:	Copper tube antenna
Battery	Rated Voltage:7.6V Charge Limit Voltage: 8.2V Capacity: 2200mAh	
Hardware version number	H4811-V1.0	
Software version number	H4811-V1.0	



1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01





2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.



2.5 TEST RESULT

Turn up

Mode	Detector	Turn up Power
2.4G WIFI	AV	12±1dBm
5.2G WIFI	AV	12±1dBm
5.8G WIFI	AV	12±1dBm

ANT Gain (G)

2402-2483.5MHz: 5.01dBi (gain of antenna in linear scale=3.170)

Protocol	Max Turn up Power (dBm)	Max Turn up Power (mW)	ANT Gain(gain of antenna in linear scale)	Power Density (mW/cm ²)	Limit (mW/c m ²)	Ratio	Result
2.4G WIFI	13	19.953	3.170	0.0126	1	0.0126	Pass
5.2G WIFI	13	19.953	3.170	0.0126	1	0.0126	Pass
5.8G WIFI	13	19.953	3.170	0.0126	1	0.0126	Pass

*****END OF THE REPORT*****