

## RF Exposure Evaluation Declaration

**FCC ID:** 2ACS5-YUNFBD

**APPLICANT:** Yuneec Technology Co., Limited

**Application Type:** Certification

**Product:** Firebird FPV

**Model No.:** YUNFBD

**Brand Name:** YUNEEC

**FCC Classification:** Digital Transmission System (DTS)

Unlicensed National Information Infrastructure (UNII)

**Test Procedure(s):** KDB 447498 D01v06

**Test Date:** November 24 ~ December 07, 2017

Reviewed By : Paddy Chen

( Paddy Chen )

Approved By : Chenz Ker

( Chenz Ker )



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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## Revision History

Report No.	Version	Description	Issue Date	Note
1711TW0109-U4	Rev. 01	Initial Report	01-04-2018	Valid

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name	Firebird FPV
Model No.	YUNFBD
Brand Name	YUNEEC
Wi-Fi Specification	802.11a/n-HT20
ZigBee Specification	802.15.4

### 1.2. Antenna Description

Antenna Type	Manufacturer	Frequency Band (MHz)	Max Peak Gain (dBi)
Omni-directional Antenna	Cortec Technology Inc.	2400 ~ 2483.5	1.5
Omni-directional Antenna	Yuneec International (China) Co., Ltd.	5180 ~ 5240	3.0
		5745 ~ 5825	3.0

## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of 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 <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula:  $Pd = (Pout * G) / (4 * \pi * r^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

## 2.2. Test Result of RF Exposure Evaluation

Product	Firebird FPV
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to Clause 1.2 of antenna description.

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
802.15.4	2405 ~ 2475	17.77	0.0168	1
802.11a/n-HT20	5180 ~ 5240	23.93	0.0981	1
	5745 ~ 5825			

### CONCLUSION:

The Zig-Bee 2.4GHz and WLAN 5GHz can transmit simultaneously. Therefore, the Max Power Density at R (20 cm) = 0.0168mW/cm<sup>2</sup> + 0.0981mW/cm<sup>2</sup> = 0.1149mW/cm<sup>2</sup> < 1mW/cm<sup>2</sup>. So the EUT complies with the requirement.

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The End

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