



RF Exposure Evaluation Declaration

FCC ID: 2ACS5-YUNHDA
APPLICANT: Yuneec Technology Co., Limited

Application Type: Certification
Product: Inductrix FPV HD RTF
Model No.: BLH9900
Trademark: Blade
FCC Classification: Unlicensed National Information Infrastructure (UNII)

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Revision History

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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Report No.	Version	Description	Issue Date	Note
1803RSU014-U2	Rev. 01	Initial Report	05-26-2018	Invalid
1803RSU014-U2	Rev. 02	Update Product Name, Model, Brand Name and Raise the Target Power	10-18-2018	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Inductrix FPV HD RTF
Model No.	BLH9900
Brand Name:	Blade
Wi-Fi Specification:	802.11a
Zigbee Specification	802.15.4 (Receive only)
Antenna Type:	PCB Antenna
Antenna Gain:	1.49dBi

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 ²)	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: $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

Pd = power density in mW/cm²

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/cm². 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.

According to RSS-102:

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation.

**RF Field Strength Limits for Devices Used by the General Public
(Uncontrolled Environment)**

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m ²)	Reference Period (minutes)
0.003-10 ²¹	83	90	-	Instantaneous*
0.1-10	-	0.73/ <i>f</i>	-	6**
1.1-10	87/ <i>f</i> ^{0.5}	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07/ <i>f</i> ^{0.25}	0.1540/ <i>f</i> ^{0.25}	8.944/ <i>f</i> ^{0.5}	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 <i>f</i> ^{0.3417}	0.008335 <i>f</i> ^{0.3417}	0.02619 <i>f</i> ^{0.6834}	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ <i>f</i> ^{1.2}
150000-300000	0.158 <i>f</i> ^{0.5}	4.21 x 10 ⁻⁴ <i>f</i> ^{0.5}	6.67 x 10 ⁻⁵ <i>f</i>	616000/ <i>f</i> ^{1.2}
Note: <i>f</i> is frequency in MHz. *Based on nerve stimulation (NS). ** Based on specific absorption rate (SAR).				

f= Frequency in MHz

Calculation 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 center of the radiator in cm

P_d is the limit of MPE, 1mW/cm². 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	Inductrix FPV HD RTF
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
802.11a	5150 ~ 5250	25.30	26.79	0.0950	1
802.11a	5725 ~ 5850	25.23	26.72	0.0935	1

CONCLUSION:

The max Power Density at R (20 cm) = 0.0950mW/cm² < 1mW/cm².

Therefore, the Min Safety Distance is 20cm.

The End