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Report No.: 1601RSU02004 Report Version: Issue Date: 02-18-2016

# **RF Exposure Evaluation Declaration**

FCC ID: 2ACS5-ST16

APPLICANT: Yuneec Technology Co., Limited

**Application Type:** Certification

**Product:** Radio Controller

ST16\*\*\*\*\* (The "\*" can be 0 to 9, a to z, A to Z, blank or Model No.:

plus, for marketing purpose.)

**Brand Name:** YUNEEC

FCC Classification: Digital Transmission System (DTS)

Unlicensed National Information Infrastructure (UNII)

Reviewed By : Robin Wu )

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( Marlin Chen )



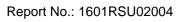


The test results relate only to the samples tested.

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.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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# **Revision History**

Report No.	Version	Description	Issue Date
1601RSU02004	Rev. 01	Initial report	02-18-2016

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# 1. PRODUCT INFORMATION

# 1.1. Equipment Description

Product Name	Radio Controller		
Model No.	ST16**** (The "*" can be 0 to 9, a to z, A to Z, blank or plus, for		
	marketing purpose.)		
Power Type	DC 3.6V		
Frequency Range	For 2.4GHz Band:		
	802.15.4:		
	2405 ~ 2475 MHz		
	802.11b/g/n-HT20		
	2412 ~ 2462MHz		
	For 5.0GHz Band:		
	802.11a:		
	5745 ~ 5825MHz		
Type of Modulation	802.15.4: OQPSK		
	802.11b: DSSS		
	802.11a/g/n-HT20: OFDM		

# 1.2. Antenna Description

Antenna Type	Manufacturer	Frequency Band (MHz)	Max Peak Gain (dBi)
Dipole Antenna A	Yuneec Technology Co., Limited	2405~2475	1.28
Dipole Antenna B		2405~2475	-0.11
Dipole Antenna		2412~2462	-0.11
Omni-directional Antenna		5745~5825	-3.48

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## 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	Electric Field	Magnetic Field	Power Density	Average Time
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm <sup>2</sup> )	(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.

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### 2.2. Test Result of RF Exposure Evaluation

Product	Radio Controller
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 $R = 20 \text{ cm}$ $(\text{mW/cm}^2)$	Limit (mW/cm²)
802.15.4	2405 ~ 2475	16.49	0.0119	1
802.11b/g/n-HT20	2412 ~ 2462	7.78	0.0012	1
802.11a	5745 ~ 5825	21.55	0.0128	1

#### **CONCULISON:**

Both of the Zig-Bee 2.4GHz and WLAN 2.4GHz or WLAN 5GHz can transmit simultaneously. Therefore, the Max Power Density at R (20 cm) = 0.0119mW/cm<sup>2</sup> + 0.0128mW/cm<sup>2</sup> = 0.0247mW/cm<sup>2</sup> < 1mW/cm<sup>2</sup>.

So the EUT complies with the requirement.

The End

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