TEST REPORT

Applicant:	Yuneec Technology Co., Limited
Address:	Unit 2301, 23/F, 9 Chong Yip Street, Kwun Tong, Kowloon, Hong Kong
Equipment Type:	Radio Transmit Module
Model Name:	YUNC201-D
Brand Name:	YUNEEC
FCC ID:	2ACS5-H850
Test Standard:	47 CFR Part 2.1091 KDB 447498 D01 v06
Test Date:	Mar. 14, 2022 - Mar. 30, 2022
Date of Issue:	Jun. 22, 2022

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Julie Zhu **Checked by:** Zong Liyao **Approved by:** Wei Yanquan (Chief Engineer)

Revision History

Version	Issue Date	Revisions Content
Rev. 01	Jun. 15, 2022	Initial Issue
Rev. 02	Jun. 22, 2022	Update frequency range and modulation technology in chapter 2.6

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.
Description	All measurement facilities used to collect the measurement data are located at Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Yuneec Technology Co., Limited
Address	Unit 2301, 23/F, 9 Chong Yip Street, Kwun Tong, Kowloon, Hong Kong

2.2 Manufacturer Information

Manufacturer	Yuneec International (China) Co., Ltd
Address	No.388 East Zhengwei Road, Jinxi Town, Kunshan, Jiangsu 215324, China

2.3 Factory Information

Factory	Yuneec International (China) Co., Ltd
Address	No.388 East Zhengwei Road, Jinxi Town, Kunshan, Jiangsu 215324, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Radio Transmit Module
Model Name Under Test	YUNC201-D
Series Model Name	N/A
Description of Model name differentiation	N/A
Serial Number	YUNC201D001
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Note: Not applicable.

2.6 Technical Information

Network and Wireless connectivity	2.4G ISM Band (OFDM modulation) 5.8G ISM Band (OFDM modulation)

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	2.4G ISM Band (OFDM modulation) 5.8G ISM Band (OFDM modulation)	
Frequency Range	2.4G ISM Band (FHSS modulation)	2405 MHz – 2473 MHz
	2.4G ISM Band (DTS modulation)	2406 MHz – 2466 MHz
	5.8G ISM Band (OFDM modulation)	5725 MHz – 5850 MHz
Antenna Type	Dipole Antenna	
Exposure Category	General Population/Uncontrolled Exposure	
EUT Stage	Mobile Device	

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices
2	KDB 447498 D01 v06	447498 D01 General RF Exposure Guidance D01 v06

4 DEVICE CATEGORY AND LEVELS LIMITS

Mobile Derives:

CFR Title 47 §2.1091(b)

(b) For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

FCC KDB 447498 D01 General RF Exposure Guidance v06 Limit

Devices operating in standalone mobile exposure conditions may contain a single transmitter or multiple transmitters that do not transmit simultaneously. A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits. The distance must be fully supported by the operating and installation configurations of the transmitter and its antenna(s), according to the source-based time-averaged maximum power requirements of § 2.1091(d)(2). In cases where cable losses or other attenuations are applied to determine compliance, the most conservative operating configurations and exposure conditions must be evaluated. The minimum test separation distance required for a device to comply with mobile exposure conditions must be clearly identified in the installation and operating instructions, for all installation and exposure conditions, to enable users and installers to comply with RF exposure requirements. For mobile devices that have the potential to operate in portable device exposure conditions, similar to the configurations described in § 2.1091(d)(4), a KDB inquiry is required to determine the SAR test requirements for demonstrating compliance.

When the categorical exclusion provision of § 2.1091(c) applies, the minimum test separation distance may be estimated, when applicable, by simple calculations according to plane-wave equivalent conditions, to ensure the transmitter and its antenna(s) can operate in manners that meet or exceed the estimated distance. The source-based time-averaged maximum radiated power, according to the maximum antenna gain, must be applied to calculate the field strength and power density required to establish the minimum test separation distance. When the estimated test separation distance becomes overly conservative and does not support compliance, MPE measurement or computational modeling may be used to determine the required minimum separation distance.

According to FCC Part 1.1307, systems operating under the provisions of this section shall be operated in a manner the ensures that the public is not exposed to radio frequency energy level in excess of the commission's guidelines.

Limits for General Population/ Uncontrolled Exposure			
Frequency Range (MHz)	Electric Field Strength(E)(V/m)	Magnetic Field Strength (H)(A/m)	Power Density (S)(mW/cm^2)
0.3-1.34	614	1.63	(100)*
1.34-30	824/f	2.19/f	(180/f2)*
30-300	27.5	0.073	0.2
300-1500			f/1500
1500-100,000			1.0

MPE calculation formula

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = power density

P = output power (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Separation distance between radiator and human body (cm)

5 ASSESSMENT RESULT

5.1 Output Power

2.4G ISM Band (OFDM modulation)						
Mode	Ground Mode			Sky Mode		
	Low Channel	Middle Channel	High Channel	Low Channel	Middle Channel	High Channel
Peak Power (dBm)	17.03	16.66	**18.51**	22.24	**22.68**	22.52
Note: This report listed the maximal case peak power value, please refer to Report No. BL-EC220046-601 & BL-EC220046-602 for more details.						

5.8G ISM Band (OFDM modulation)						
Mode	Ground Mode			Sky Mode		
	Channel 1	Channel 3	Channel 5	Channel 1	Channel 3	Channel 5
Peak Power (dBm)	15.14	**15.19**	14.97	15.21	15.26	**15.49**
Note: This report listed the maximal case peak power value, please refer to Report No. BL-EC220046-603 for more details.						

5.2 Turn-up power

Mode		Range
2.4G ISM Band (OFDM modulation)	Ground Mode	16.00-19.50
	Sky Mode	21.50-23.50
5.8G ISM Band (OFDM modulation)	Ground Mode	14.00-16.00
	Sky Mode	14.50-16.00

5.3 RF Exposure Evaluation Result

Evolution mode	Max. output power (dBm)	Antenna Gain (typical) (dBi):	Total Power (mw)	Distance (cm)	Limit of Power Density (mW/cm²)	Power Density (mW/cm²)	Verdict
2.4G ISM Band (OFDM modulation)	23.50	5	707.95	20	1	0.141	Pass
5.8G ISM Band (OFDM modulation)	16.00	5	125.89	20	1	0.025	Pass

5.4 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
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6. This report shall not be partially reproduced without the written permission of the laboratory.
7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--END OF REPORT--